H12484

NOAA Form 76-35A

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

DESCRIPTIVE REPORT

Type of Survey: Navigable Area

Registry Number: H12484

LOCALITY

State: Connecticut

General Locality: Long Island Sound

Sub-locality: Vicinity of Falkner Island, CT

2012

CHIEF OF PARTY
CDR Lawrence T. Krepp

LIBRARY & ARCHIVES

Date:

NOAA FORM 77-28 (11-72)	U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION	REGISTRY NUMBER:
HYDROGRAPHIC TITLE SHEET		**H12484**

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:	**Connecticut**
General Locality:	**Long Island Sound**
Sub-Locality:	**Vicinity of Falkner Island, CT**
Scale:	**10000**
Dates of Survey:	**10/07/2012 to 11/06/2012**
Instructions Dated:	**06/13/2012**
Project Number:	**OPR-B370-TJ-12**
Field Unit:	**NOAA Ship *Thomas Jefferson***
Chief of Party:	**CDR Lawrence T. Krepp**
Soundings by:	**Multibeam Echo Sounder**
Imagery by:	
Verification by:	**Atlantic Hydrographic Branch**
Soundings Acquired in:	**meters at Mean Lower Low Water**

Remarks:

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

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Descriptive Report to Accompany Survey H12484

Project: OPR-B370-TJ-12

Locality: Long Island Sound

Sublocality: Vicinity of Falkner Island, CT

Scale: 1:10000

October 2012 - November 2012

NOAA Ship *Thomas Jefferson*

Chief of Party: CDR Lawrence T. Krepp

A. Area Surveyed

This survey was conducted in Long Island Sound in the vicinity of Falkner Island Connecticut.

A.1 Survey Limits

Data was acquired within the following survey limits:

Northeast Limit	Southwest Limit
41.2558111111 N 72.6463611111 W	41.2007305556 N 72.7195888889 W

Table 1: Survey Limits

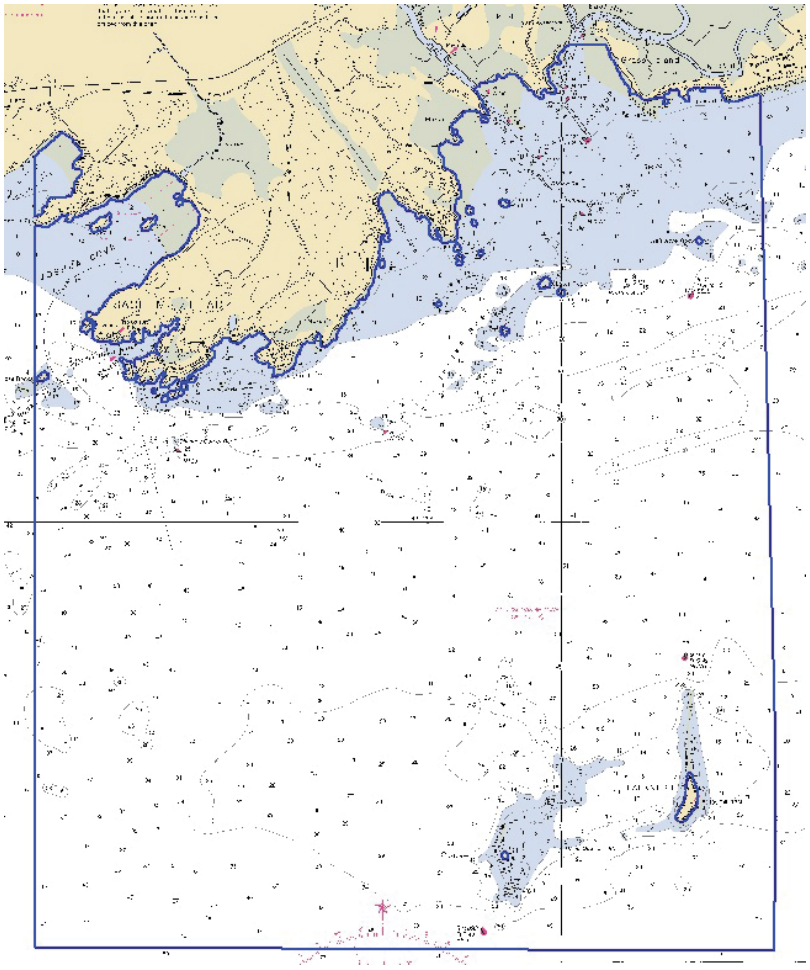


Figure 1: H12484 Survey Limits

Survey Limits were acquired in accordance with the requirements in the Project Instructions and the HSSD.

A.2 Survey Purpose

This project is being conducted in support of NOAA's Office of Coast Survey to provide contemporary hydrographic data in order to update the nautical charting products and reduce the survey backlog within the area. In addition, data from this project will support the Long Island Sound Seafloor Mapping Initiative in New York and Connecticut.

A.3 Survey Quality

The entire survey is adequate to supersede previous data.

A.4 Survey Coverage

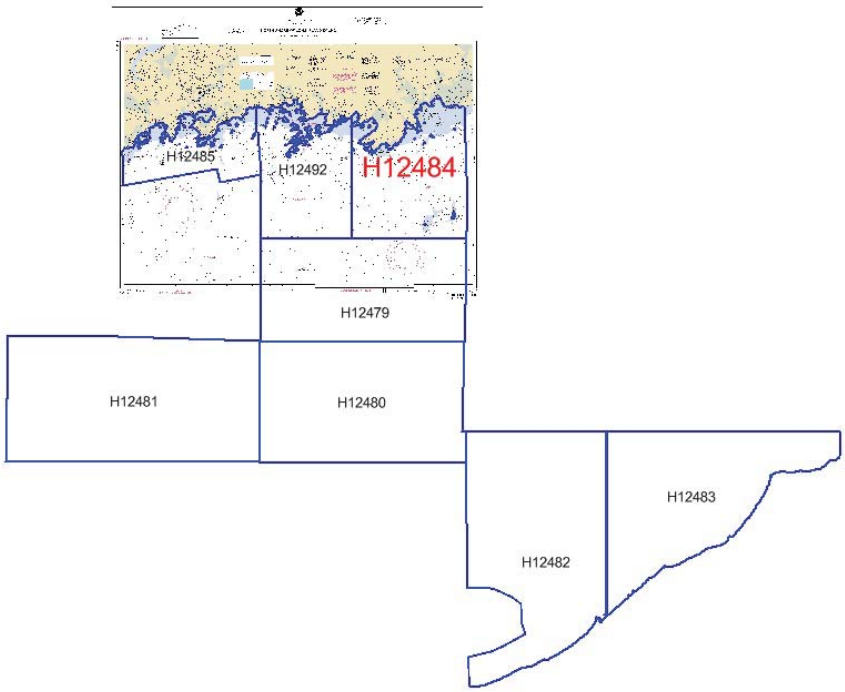


Figure 2: H12484 Within the Project Area

Due to time constraints, the inshore limit of the NALL was not reached in some areas. There are some small holidays mostly in the northern area that were not filled due to the time constraints.

A.5 Survey Statistics

The following table lists the mainscheme and crossline acquisition mileage for this survey:

	HULL ID	*3101*	*3102*	*Total*
LNM	**SBES Mainscheme**	0	0	0
	MBES Mainscheme	273.50	402.43	675.93
	Lidar Mainscheme	0	0	0
	SSS Mainscheme	0	0	0
	SBES/MBES Combo Mainscheme	0	0	0
	SBES/SSS Combo Mainscheme	0	0	0
	MBES/SSS Combo Mainscheme	0	0	0
	SBES/MBES Combo Crosslines	26.36	0	26.36
	Lidar Crosslines	0	0	0
Number of Bottom Samples				0
Number of DPs				0
Number of Items Items Investigated by Dive Ops				0
Total Number of SNM				11

Table 2: Hydrographic Survey Statistics

The following table lists the specific dates of data acquisition for this survey:

Survey Dates
10/07/2012
10/08/2012
10/09/2012
10/10/2012
10/16/2012
10/17/2012
10/18/2012
10/19/2012
10/20/2012
10/21/2012
11/04/2012
11/05/2012
11/06/2012

Table 3: Dates of Hydrography

A.6 Shoreline

Shoreline was investigated in accordance with the Project Instructions and the HSSD.

A.7 Bottom Samples

Bottom samples were to be conducted for this survey. Due to time constraints to finish this survey none were acquired.

B. Data Acquisition and Processing

B.1 Equipment and Vessels

Refer to the Data Acquisition and Processing Report (DAPR) for a complete description of data acquisition and processing systems, survey vessels, quality control procedures and data processing methods. Additional information to supplement sounding and survey data, and any deviations from the DAPR are discussed in the following sections.

B.1.1 Vessels

The following vessels were used for data acquisition during this survey:

Hull ID	*3101*	*3102*
LOA	31 feet	31 feet
Draft	0.8 meters	0.8 meters

Table 4: Vessels Used

Launch 3101 acquired Reson 7125 multibeam echosounder soundings and sound velocity profiles. Launch 3102 acquired Reson 7125 multibeam echosounder soundings, and sound velocity profiles.

B.1.2 Equipment

The following major systems were used for data acquisition during this survey:

Manufacturer	Model	Type
Applanix	POS/MV	Attitude System
Seabird	Seacat 19+	Sound Speed System
Reson	7125 SV 1	MBES

Table 5: Major Systems Used

B.2 Quality Control

B.2.1 Crosslines

AS per the HSSD 2012, section 5.2.4.3 the quality control check was done using the standard deviation layer of the survey's combined surface. Areas of unusually high standard deviation were investigated and resolved in processing, except where caused by areas of high bathymetric relief or features. This value does not exceed 0.1 meters.

B.2.2 Uncertainty

The following survey specific parameters were used for this survey:

Measured	Zoning
0.0meters	0.0meters
0.102meters	0.0meters

Table 6: Survey Specific Tide TPU Values

Hull ID	Measured - CTD	Measured - MVP	Surface
3101	4meters/second	N/Ameters/second	0.2meters/second
3102	4meters/second	N/Ameters/second	0.2meters/second

Table 7: Survey Specific Sound Speed TPU Values

The first set of tide uncertainty values are used on lines that have TCARI tides applied. The second set are applied to lines that have GPS tides applied.

Total Propagated Uncertainty values for survey H12484 were derived from a combination of fixed values for equipment and vessel characteristics, as well as field assigned values for water level and sound speed uncertainties. Uncertainty stemming from survey equipment and vessel configuration were set by the field unit in accordance with the NOAA Field Procedure Manual (ed 2011), Appendix 4, table 4.9. Sound speed uncertainty was based on the frequency and location of CDT casts, in accordance with the guidance set by Appendix 4 of the FPM. Tidal uncertainties were provided by NOAA's Center for Operational Oceanographic Products and Services (CO-OPS),and were applied to depth soundings using a Tidal Constituent and Residual Interpolator (TCARI) grid. TCARI automatically calculates the error associated with water level interpolation, which is then included in the CARIS HDCS lines. For this reason, no Tidal Uncertainties values were entered into the Tide Value section of the CARIS Compute TPU function.

During post processing TCARI data was overwritten by IAPPK smoothed best estimate of trajectory (SBET) solution. The tidal uncertainty above is associated with the SBET uncertainty. Survey H12484 was processed using ERS with the exception of lines DN 294 294_1823, DN 281 000_2050, and DN 311 427_1423. For further information refer to the Additional Data Processing section of this report.

TPU is calculated and written to each line's HDCS file (CARIS processed data format). When surfaces are created, an uncertainty child layer is created. This child layer represents the amount of uncertainty for individual nodes in the surface based on a combination of a priori values from equipment vendors, values determined from environmental observation in the field, and from automated empirical analysis of data in real-time. Once all investigated features have been reviewed and least depths have been designated, surfaces are finalized. In finalization, the standard deviation for each node in the surface is multiplied by 1.96 to provide the 95% (2-sigma) confidence value for the node. This 2-sigma standard deviation is compared to the computed Total Vertical Uncertainty (TVU) for each node. The larger of the two values is retained as the finalized Uncertainty for each node. Uncertainty is reported in meters.

IHO has established allowable TVU values for each order of survey. This survey meets IHO Order I TVU requirements in 98% of nodes in the final surface. Statistical distribution of nodes that meet or exceed the IHO TVU requirements (Zero and Positive values indicate that IHO Order 1 requirements were met).

B.2.3 Junctions

Survey H12492 is a junctioning survey that was not acquired during the 2012 field season.

The following junctions were made with this survey:

Registry Number	Scale	Year	Field Unit	Relative Location
H11252	1:20000	2004	NOAA Ship THOMAS JEFFERSON	SE
H12479	1:10000	2012	NOAA Ship THOMAS JEFFERSON	S

Table 8: Junctioning Surveys

H11252

The BAG files supplied with this survey would not open.Being that this survey is older than three years it is assumed that the soundings are reflected on the chart. See the chart comparison section for further details.

H12479

The difference in soundings between the two surveys is no greater that one foot.

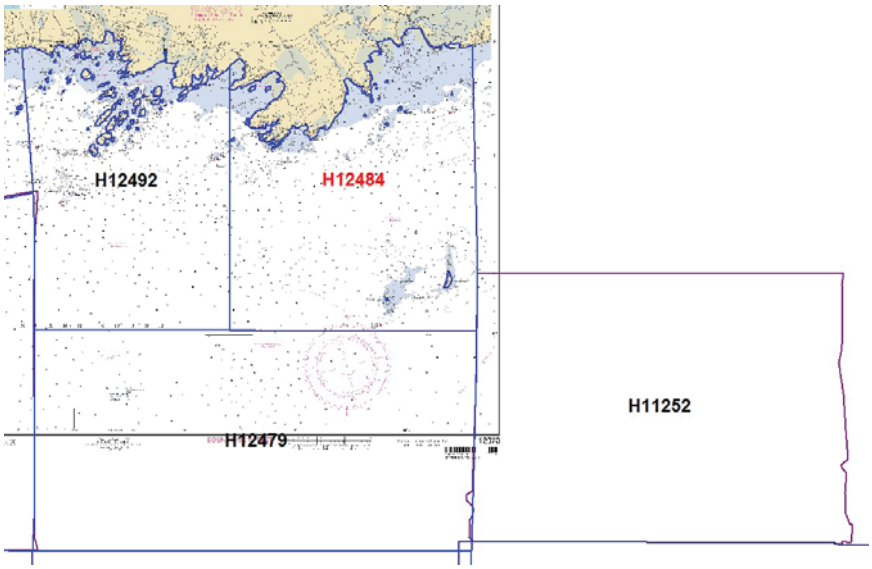


Figure 3: H12484 Junctions

B.2.4 Sonar QC Checks

Sonar system quality control checks were conducted as detailed in the quality control section of the DAPR.

B.2.5 Equipment Effectiveness

B.2.5.1None Exist

There were no conditions or deficiencies that affected equipment operational effectiveness.

B.2.6 Factors Affecting Soundings

B.2.6.1 None Exist

There were no other factors that affected corrections to soundings.

B.2.7 Sound Speed Methods

Sound Speed Cast Frequency: Sound Speed Cast Frequency: 3101 and 3102 took CTDs about every four hours.

No Sound Speed Zoning was required for this survey.

B.2.8 Coverage Equipment and Methods

All equipment and survey methods were used as detailed in the DAPR.

B.3 Echo Sounding Corrections

B.3.1 Corrections to Echo Soundings

All data reduction procedures conform to those detailed in the DAPR.

B.3.2 Calibrations

All sounding systems were calibrated as detailed in the DAPR.

B.4 Backscatter

Backscatter was logged as a 7k file and submitted to NGDC, and is included with the data submitted to the Branch.

B.5 Data Processing

B.5.1 Software Updates

There were no software configuration changes after the DAPR was submitted.

The following Feature Object Catalog was used: NOAA Profile v. 5.2

B.5.2 Surfaces

The following CARIS surfaces were submitted to the Processing Branch:

Surface Name	Surface Type	Resolution	Depth Range	Surface Parameter	Purpose
H12484_MB_50cm_MLLW_Final	CUBE	0.5 meters	0.27 meters - 20.00 meters	NOAA_0.5m	Object Detection
H12484_MB_2m_MLLW_1_Final	CUBE	2 meters	18.00 meters - 28.69 meters	NOAA_2m	Complete MBES
H12484_MB_2m_MLLW_2_Final	CUBE	2 meters	18.00 meters - 28.79 meters	NOAA_2m	Complete MBES
H12484_Combined_2m	CUBE	2 meters	0.27 meters - 28.79 meters	NOAA_2m	Complete MBES

Table 9: CARIS Surfaces

B.5.3 Individual lines that had some problems.

Launch 3101
DN 283 Line 283_1857 did not accept RMS
DN 294 Line 294_1531 did not accept RMS
DN 294 Line 294_1823 did not accept SBET or GPS tide. It was traditionally processed.

Launch 3102
DN 281 Line 000_2050 did not accept SBET or GPS tide. It was traditionally processed.
DN 295 Line 295_1945 did not accept RMS
DN 311 Line 457_1423 after all correctors were applied it was 0.2cm higher than the surrounding depths. TCARI tides are applied.

B.5.4 Vertical offset problems

Vertical offsets are present in the north east portion and middle western side. The value does not exceed 0.2 meters.

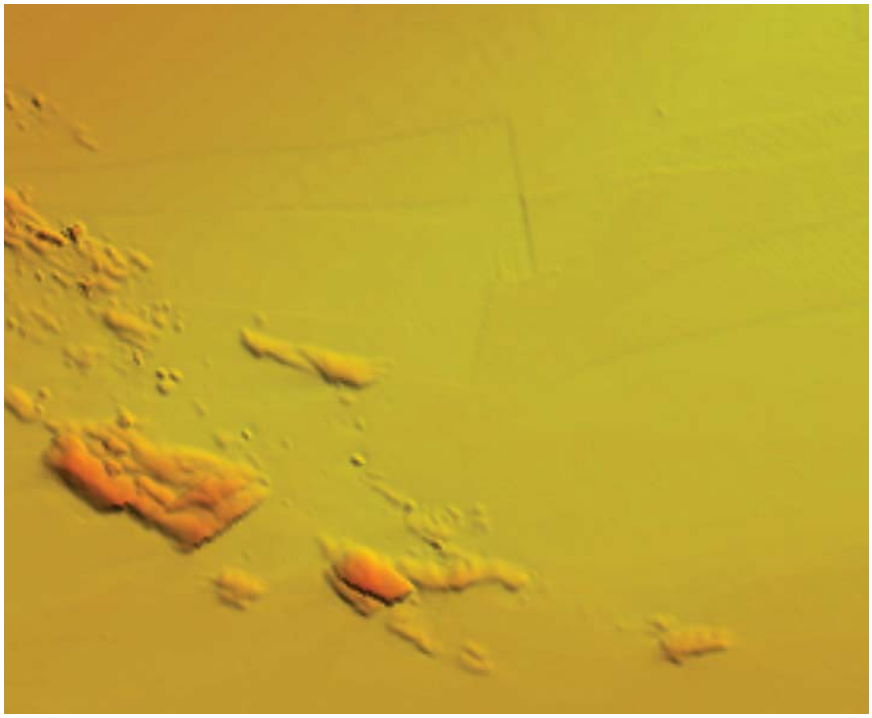


Figure 4: H12484 Vertical Offsets in the North East

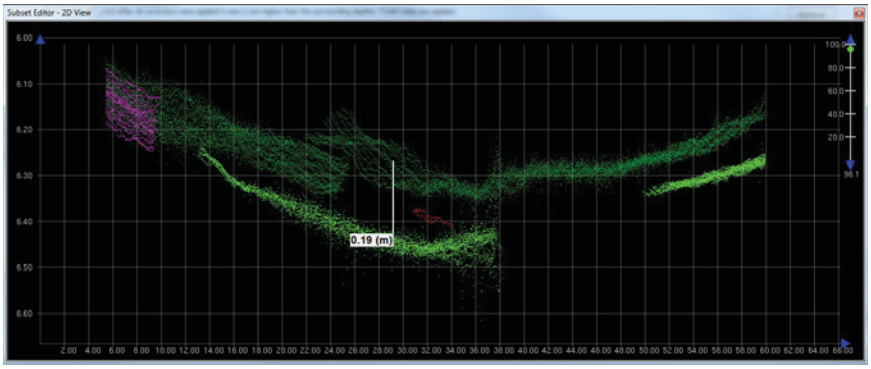


Figure 5: H12484 Vertical offsets in the North East Subset Editor

Figure 6: H12484 Vertical Offset in the Middle Western Side

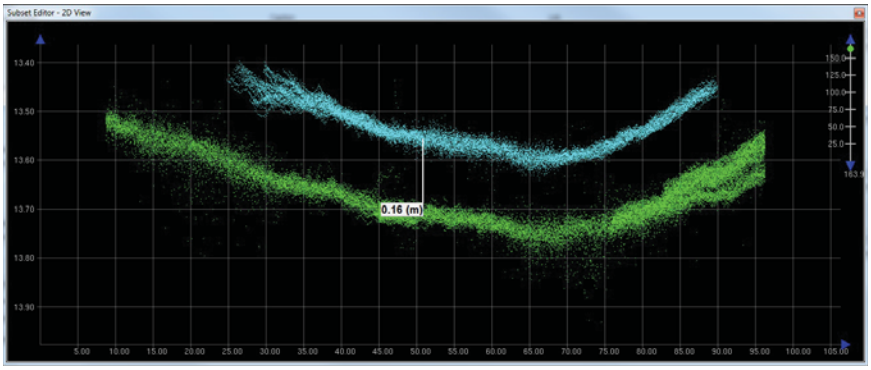


Figure 7: H12484 Vertical offsets in the Middle Western side Subset Editor

C. Vertical and Horizontal Control

Additional information discussing the vertical or horizontal control for this survey can be found in the accompanying HVCR.

C.1 Vertical Control

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

Standard Vertical Control Methods Used:

TCARI

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

Station Name	Station ID
New Haven, CT	8465705
New London, CT	8461490

Table 10: NWLON Tide Stations

File Name	Status
8461490.tid	Final Approved
8465705.tid	Final Approved

Table 11: Water Level Files (.tid)

File Name	Status
B370TJ2012.tc	Final

Table 12: Tide Correctors (.zdf or .tc)

A request for final approved tides was sent to N/OPS1 on 11/08/2012. The final tide note was received on 11/14/2012.

Preliminary zoning was accepted as final.

Non-Standard Vertical Control Methods Used:

VDatum

Ellipsoid to Chart Datum Separation File:

2012_B370_VDatum_Ellip_MLLW.xyz

C.2 Horizontal Control

The horizontal datum for this project is North American Datum of 1983 (NAD83).

The following PPK methods were used for horizontal control:

Smart Base

The following CORS Stations were used for horizontal control:

HVCR Site ID	Base Station ID
CTDA	CTDA
CTGR	CTGR
ZNY1	ZNY1
NYCL	NYCL
NYRH	NYRH
MOR6	MOR6
CTNE	CTNE
CTGU	CTGU
MOR5	MOR5

Table 13: CORS Base Stations

The following DGPS Stations were used for horizontal control:

DGPS Stations
Acushnet 306
Moriches 293

Table 14: USCG DGPS Stations

D. Results and Recommendations

D.1 Chart Comparison

D.1.1 Raster Charts

The following are the largest scale raster charts, which cover the survey area:

Chart	Scale	Edition	Edition Date	LNM Date	NM Date
12373	1:20000	15	06/2005	06/14/2005	06/18/2005

Table 15: Largest Scale Raster Charts

12373

In non-rocky areas the soundings agree between 1 and 3 feet. There are some areas that are up to 12 feet deeper where it has gotten deeper. In the rocky areas some rocks are up to twenty feet shallower than the charted depths.

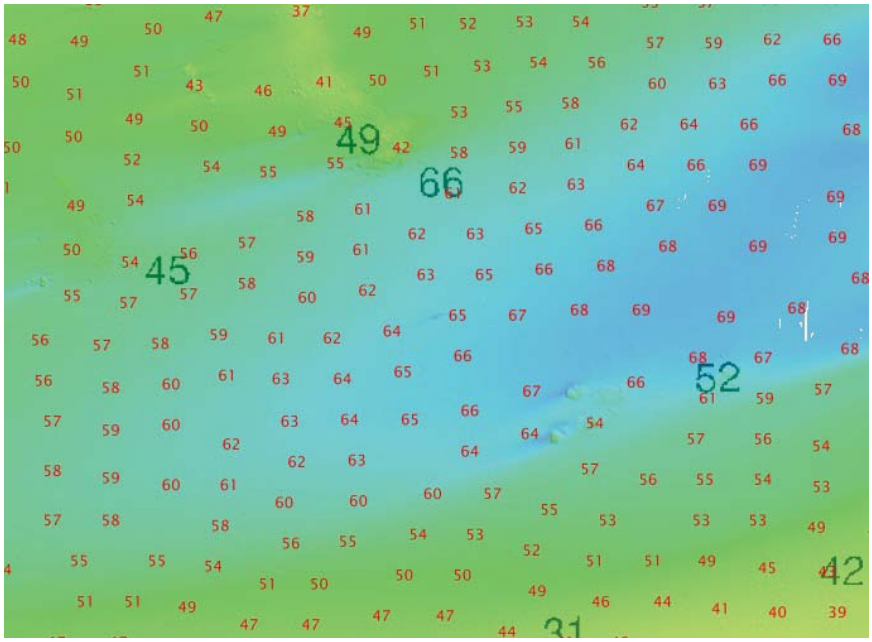


Figure 8: H12484 Deeper Soundings

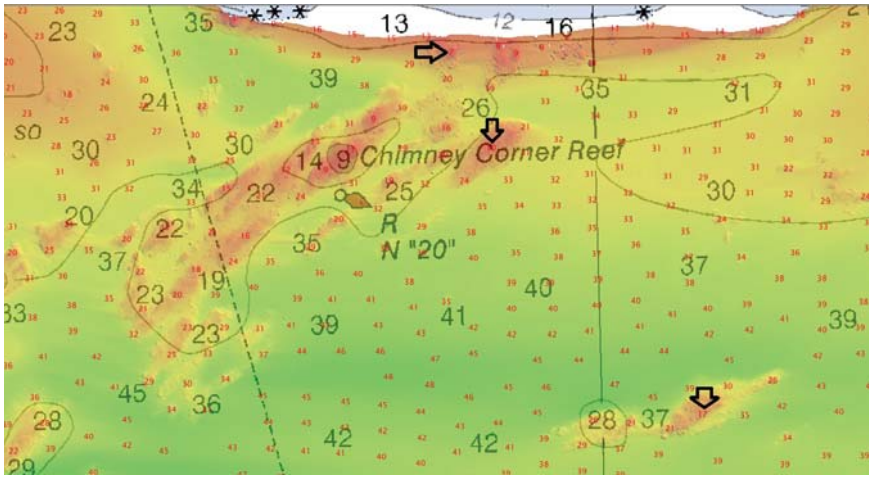


Figure 9: H12484 Rocky Area Example 1

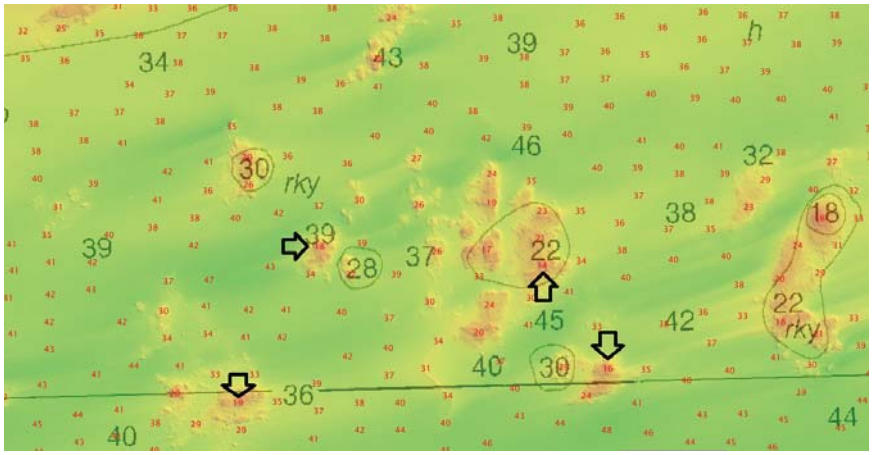


Figure 10: H12484 Rocky Area Example 2

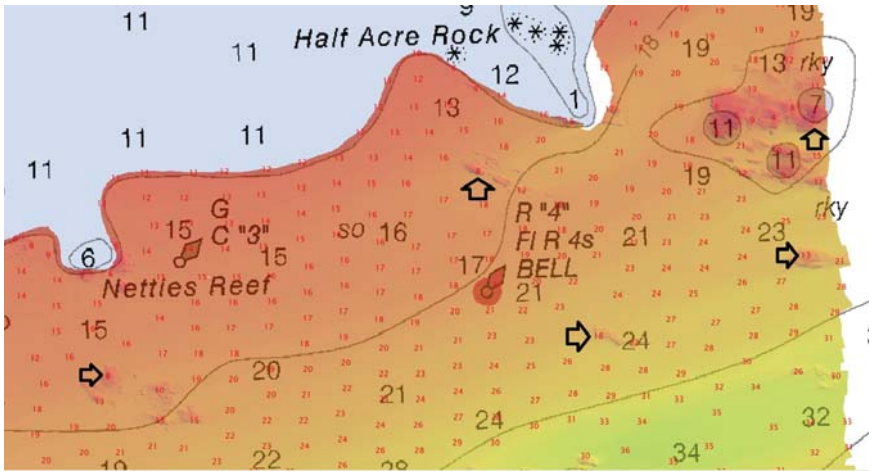


Figure 11: H12484 Rocky Area Example 3

D.1.2 Electronic Navigational Charts

The following are the largest scale ENCs, which cover the survey area:

ENC	Scale	Edition	Update Application Date	Issue Date	Preliminary?
US4NY1JM	1:80000	3	11/30/2011	04/11/2012	NO

Table 16: Largest Scale ENCs

US4NY1JM

In non-rocky areas the soundings agree between 0.3 and 0.9 meters. There are some areas that are up to 3.65 meters deeper where it has gotten deeper. In the rocky areas some rocks are up to 6 meters shallower than the charted depths.

D.1.3 AWOIS Items

No AWOIS items exist for this survey.

D.1.4 Charted Features

Consult the H12484_FFF.hob for more information about the charted features in the survey area.

D.1.5 Uncharted Features

Consult the H12484_FFF.hob for more information about the charted features in the survey area.

D.1.6 Dangers to Navigation

The follwing DTON reports were submitted to the processing branch:

DTON Report Name	Date Submitted
H12484_DTON_1	2012-10-10
H12484_DTON_2	2012-12-03
H12484_DTON_3	2012-12-17

Table 17: DTON Reports

Danger to Navigation Reports are included in Appendix I of this report.

D.1.7 Shoal and Hazardous Features

There are some rocks in the survey area that are up to 20 feet shallower that the charted depths.

D.1.8 Channels

In the north east there is a channel that was not investigated due to it being beyond the 12 foot curve limit and having depths less than that.

D.2 Additional Results

D.2.1 Shoreline

Shoreline was investigated in accordance with the Project instructions and the HSSD.

D.2.2 Prior Surveys

Results of prior surveys are represented by charted features and soundings as discussed in chart comparisons above.

D.2.3 Aids to Navigation

All ATONs were found to be on station and serving their intended purpose.

D.2.4 Overhead Features

Overhead features do not exist for this survey.

D.2.5 Submarine Features

Submarine features do not exist for this survey.

D.2.6 Ferry Routes and Terminals

No ferry routes or terminals exist for this survey.

D.2.7 Platforms

No platforms exist for this survey.

D.2.8 Significant Features

No significant features exist for this survey.

D.2 Construction and Dredging

There is no present or planned construction or dredging within the survey limits.

E. Approval Sheet

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

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

The survey data meets or exceeds requirements as set forth in the NOS Hydrographic Surveys and Specifications Deliverables Manual, Field Procedures Manual, Standing and Letter Instructions, and all HSD Technical Directives. These data are adequate to supersede charted data in their common areas. This survey is complete and no additional work is required with the exception of deficiencies noted in the Descriptive Report.

Approver Name	Approver Title	Approval Date	Signature
CDR Lawrence T. Krepp	Commanding Officer	12/05/2012	
LT William Winner	Field Operations Officer	12/05/2012	
Kimberly Glomb	Sheet Manager	12/05/2012	

APPENDIX I

TIDES AND WATER LEVELS

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

TIDE NOTE FOR HYDROGRAPHIC SURVEY

DATE : November 9, 2012

HYDROGRAPHIC BRANCH: Atlantic
HYDROGRAPHIC PROJECT: OPR-B370-TJ-2012
HYDROGRAPHIC SHEET: H12484

LOCALITY: Vicinity of Falkner Island, Long Island Sound, CT & NY
TIME PERIOD: October 7 - November 6, 2012

TIDE STATION USED: New Haven, CT 8465705
Lat.41° 17.0' N Long. 72° 54.5' W
PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 1.946 meters

TIDE STATION USED: New London, CT 8461490
Lat. 41° 21.7' N Long. 72° 5.4' W
PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 0.839 meters

REMARKS: RECOMMENDED GRID

Please use the TCARI grid "B370TJ2012.tc" as the final grid for project OPR-B370-TJ-2012, H12484, during the time period between October 7 and November 6, 2012.

Refer to attachments for grid information.

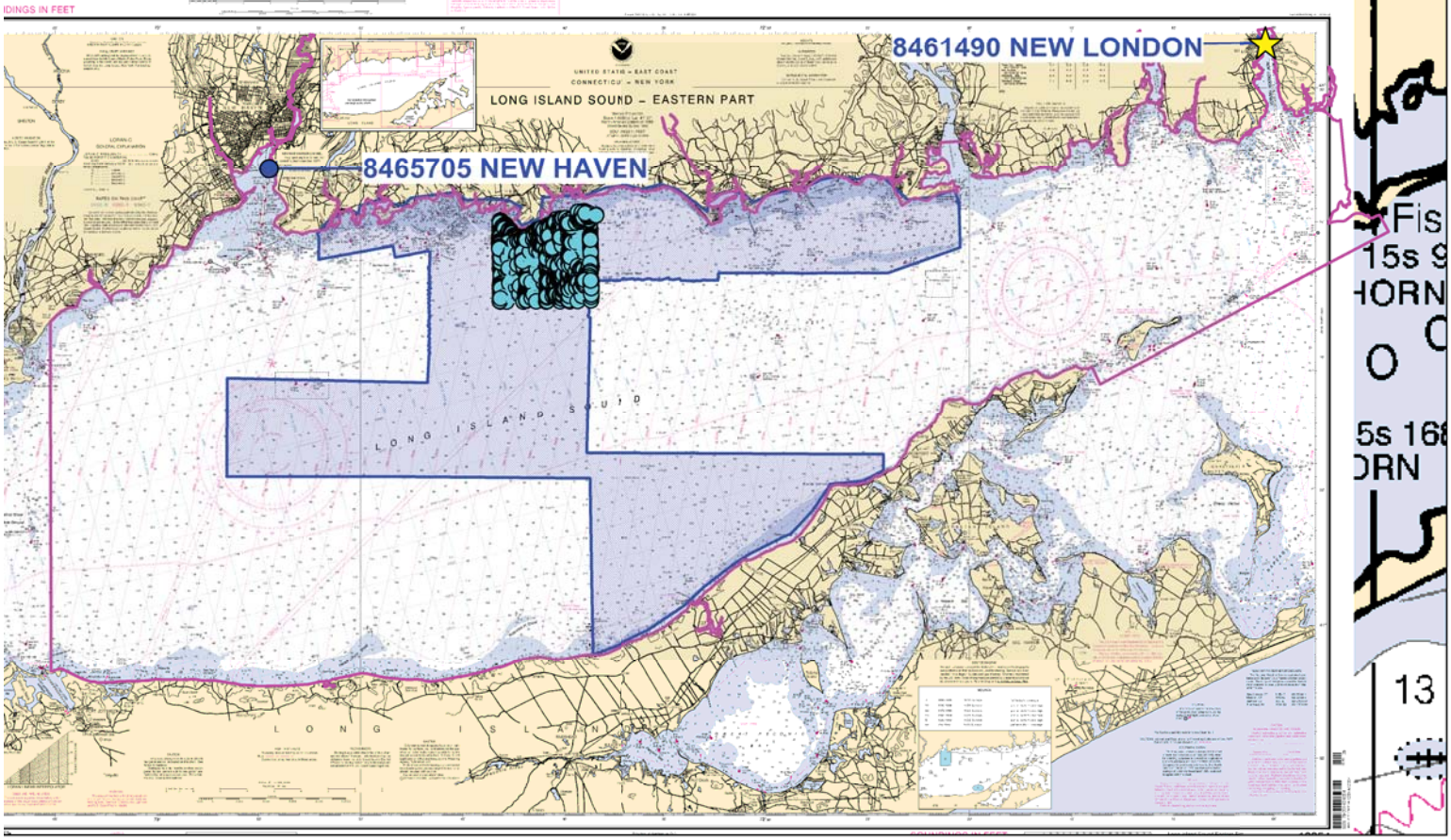
Note 1: Provided time series data are tabulated in metric units (meters), relative to MLLW and on Greenwich Mean Time on the 1983-2001 National Tidal Datum Epoch (NTDE).

HOVIS.GERALD.THOMAS.1365860250

Digitally signed by HOVIS.GERALD.THOMAS.1365860250
DN: c=US, o=U.S. Government, ou=DoD, ou=PKI, ou=OTHER, cn=HOVIS.GERALD.THOMAS.1365860250
Date: 2012.11.14 08:58:06 -05'00'

CHIEF, PRODUCTS AND SERVICES BRANCH

Preliminary as Final TCARI Grid for OPR-B370-TJ-2012, H12484
Vicinity of Falkner Island, Eastern Long Island Sound, CT & NY



APPENDIX II

SUPPLEMENTAL SURVEY RECORDS AND CORRESPONDENCE

Subject: Re: Crossline comparison
From: Chris van Westendorp <Christiaan.VanWestendorp@noaa.gov>
Date: Thu, 10 Sep 2009 13:00:35 -0400
To: "mark.blankenship" <Mark.Blankenship@noaa.gov>
CC: LCDR Rick Brennan <Richard.T.Brennan@noaa.gov>, Castle Parker <Castle.E.Parker@noaa.gov>, Edward Owens <Edward.Owens@noaa.gov>, LT Jasper Schaer <jasper.schaer@noaa.gov>, CDR Shep Smith <Shep.Smith@noaa.gov>, Daniel Wright <Daniel.Wright@noaa.gov>

Mark,

Per 5.1.4.3 of the HSSD, AHB authorizes TJ to use the Standard Deviation layer to conduct surface difference comparison and analysis on future survey submissions of multibeam data. This meets the crossline comparison requirement laid out in HSSD.

Please let me know if you have any questions or need for further clarification.

R/
LCDR Chris van Westendorp, NOAA

mark.blankenship wrote:

> Chris,
> You mentioned in the meeting today that AHB was not going to require the multiple CUBE surface comparison, instead allowing us to use a single surface standard deviation layer to do our checks with. Is there any memo coming out for that?
> Mark

LCDR Chris van Westendorp <christiaan.vanwestendorp@noaa.gov>
Atlantic Hydrographic Branch
NOAA OCS

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
Office of Marine and Aviation Operations,
Marine Operation Center-Atlantic,
NOAA Ship *Thomas Jefferson*
Norfolk, Virginia 23510

3 December 2012

MEMORANDUM TO: Jeffrey Ferguson
Chief, Hydrographic Surveys Division

FROM: Lawrence T. Krepp, CDR/NOAA
Commanding Officer

SUBJECT: H12484 Interim Deliverables

As per the project instructions for OPR-B370-TJ-12, NOAA Ship *Thomas Jefferson* was tasked with providing a recommendation on the vertical transformation technique to be used for each sheet. This recommendation is based upon an analysis of crossline data processed with TCARI tidal zoning and VDatum ERS. This analysis was performed using Pydro's Post Acquisition Tools.

Crossline Analysis
Crosslines from H12484 were parallel processed with one set of depths reduced to MLLW via TCARI tidal zoning and the other set reduced via VDatum ERS. Pydro's Post Acquisition Tool "Compare Time Series Data" yielded the following results:

File-wise Statistics

H12484_3101_GPS_Tides_TJ_3101_Reson7125_400khz_MiddlePD.txt |
H:\Surveys\H12484\Descriptive Report\Separates\IV_Crossline_Comparisons
- (minus)
H12484_3101_Verified_Tides_TJ_3101_Reson7125_400khz_MiddlePD.txt |
H:\Surveys\H12484\Descriptive Report\Separates\IV_Crossline_Comparisons
=====
N,mean,stdev = 130869,0.136,0.039

Sensor-wise Statistics

MiddlePD: N,mean,stdev = 130869,0.136,0.039

Discussion
Results of the analysis showed that the mean difference between ERS and TCARI tidal corrections was 13.6cm with a standard deviation of 3.9cm. This data required further investigation. Once all of the data for the survey had been converted to ERS, the surface did not show any tidal artifacts. When comparing the TCARI data for these crosslines with the correlating mainscheme data, the ERS crosslines matched extremely well while the TCARI crosslines showed an approximately 10-15cm difference between the ERS mainscheme. Based

on this analysis, it is assumed that the launch experienced a tidal aberration during that time that negatively affected TCARI and that was better accounted for with ERS.

Recommendation

Our recommendation is to utilize ERS VDatum for tidal corrections for this survey. The results of the analysis show that there are only minor differences between sounding data reduced to MLLW using TCARI and ERS VDatum. This difference is less than the uncertainty of the VDatum model (10.2cm).

Subject: Fwd: Final Tidal Zoning for OPR-B370-TJ-2012, H12479, H12481, and H12484
From: William Winner <William.Winner@noaa.gov>
Date: 11/14/2012 3:53 PM
To: Kimberly Glomb <Kimberly.Glomb@noaa.gov>, Allison Stone <Allison.C.Stone@noaa.gov>, Matthew Weiss <Matthew.K.Weiss@noaa.gov>

---------- Forwarded message ----------
From: **Cristina Urizar** <Cristina.Urizar@noaa.gov>
Date: Wed, Nov 14, 2012 at 3:37 PM
Subject: Final Tidal Zoning for OPR-B370-TJ-2012, H12479, H12481, and H12484
To: _OMAO MOA CO Thomas Jefferson <CO.Thomas.Jefferson@noaa.gov>, _OMAO MOA OPS Thomas Jefferson <OPS.Thomas.Jefferson@noaa.gov>, _OMAO MOA Tides Thomas Jefferson <Thomas.Jefferson.Tides@noaa.gov>
Cc: "_NOS.CO-OPS.HPT" <NOS.COOPS.HPT@noaa.gov>, Corey Allen <Corey.Allen@noaa.gov>, Marc Moser <Marc.S.Moser@noaa.gov>, Abigail Higgins <Abigail.Higgins@noaa.gov>

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

DATE: 11/14/2012

MEMORANDUM FOR: CDR Larry Krepp
Commanding Officer, NOAA Ship THOMAS JEFFERSON

FROM: Gerald Hovis
Chief, Products and Services Branch, N/OPS3

SUBJECT: Delivery of Tide Requirements for Hydrographic Surveys

This is notification that the preliminary zoning is accepted as the final zoning for survey project OPR-B370-TJ-2012, Registry Nos. H12479, H12481, and H12484 during the time period between October 2 and November 6, 2012. The accepted reference stations for Registry Nos. H12479, H12481, and H12484 are New Haven, CT (8465705) and New London, CT (8461490). Included with this memo are three Tide Notes in .PDF format, stating the preliminary zoning has been accepted as the final zoning.

--
Cristina Urizar
Oceanographer

National Oceanic and Atmospheric Administration
NOS/CO-OPS/Oceanographic Division
263 13th Avenue South, Rm. 302
St. Petersburg, Florida 33701
727-209-5954

http://tidesandcurrents.noaa.gov

--
William Winner, LT/NOAA
Operations Officer
NOAA Ship *THOMAS JEFFERSON*
Marine Operations Center- Atlantic
439 W York St.
Norfolk, VA 23510

Ship's Cell: (757) 647-0187
Personal Cell: (765) 760-0767

Attachments:

H12484.pdf	1.0 MB
H12481.pdf	1.1 MB
H12479.pdf	1.1 MB

APPENDIX III

SURVEY FEATURES REPORT

AWOIS - none
DTONs - 25
Maritime Boundary - none
Wrecks - none

H12484 Danger to Navigation

Registry Number: H12484
State: Connecticut
Locality: Long Island Sound
Sub-locality: Vicinity of Falkner Island
Project Number: OPR-B370-TJ-12
Survey Dates: 01/01/1981 - 11/06/2012

Charts Affected

Number	Edition	Date	Scale (RNC)	RNC Correction(s)*
12372	34th	11/01/2006	1:40,000 (12372_16) 1:20,000 (12372_14)	[L]NTM: ?
12373	15th	06/01/2005	1:20,000 (12373_1)	USCG LNM: 9/10/2013 (9/17/2013) CHS NTM: None (8/30/2013) NGA NTM: None (9/28/2013)
12374	14th	09/01/2007	1:20,000 (12374_1)	[L]NTM: ?
12354	42nd	12/01/2006	1:80,000 (12354_1)	[L]NTM: ?
12300	47th	05/01/2008	1:400,000 (12300_1)	[L]NTM: ?
13006	34th	05/01/2007	1:675,000 (13006_1)	[L]NTM: ?
5161	13th	10/01/2003	1:1,058,400 (5161_1)	[L]NTM: ?
13003	49th	04/01/2007	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	DTON 4: 6.6m Rock	Rock	6.62 m	41° 12' 51.0" N	072° 43' 01.5" W	---
1.2	DTON 11: 6.5m Rock	Rock	6.48 m	41° 14' 11.9" N	072° 43' 00.3" W	---
1.3	DTON 14: 4.6m Rock	Rock	4.61 m	41° 14' 20.4" N	072° 42' 28.2" W	---
1.4	DTON 21: 2.2m Rock	Rock	2.19 m	41° 14' 27.9" N	072° 42' 10.7" W	---
1.5	DTON 2: 3.2m Rock	Rock	3.18 m	41° 14' 22.3" N	072° 42' 07.8" W	---
1.6	DTON 5: 9.3m Rock	Rock	9.30 m	41° 13' 59.9" N	072° 42' 04.2" W	---
1.7	DTON 12: 5.2m Rock	GP	[None]	41° 14' 06.6" N	072° 41' 52.2" W	---

1.8	DTON 13: 7.4m Rock	Rock	7.39 m	41° 14' 17.9" N	072° 41' 50.3" W	---
1.9	DTON 22: 1.9m Rock	Rock	1.93 m	41° 14' 37.9" N	072° 41' 33.4" W	---
1.10	DTON 7: 10.8m Rock	Rock	10.76 m	41° 13' 40.9" N	072° 41' 20.2" W	---
1.11	DTON 8: 6.0m Rock	GP	[None]	41° 13' 59.5" N	072° 41' 10.8" W	---
1.12	DTON 6: 11.5m Rock	GP	[None]	41° 13' 39.1" N	072° 40' 59.2" W	---
1.13	DTON 23: 29m Rock	Rock	2.89 m	41° 14' 33.4" N	072° 40' 50.4" W	---
1.14	DTON 9: 4.2m Rock	GP	[None]	41° 14' 06.5" N	072° 40' 48.6" W	---
1.15	DTON 10: 4.9m Rock	Rock	4.88 m	41° 14' 00.8" N	072° 40' 44.1" W	---
1.16	DTON 1: 3m Rock	Rock	2.99 m	41° 12' 47.5" N	072° 40' 22.1" W	---
1.17	DTON 16: 3.9m Rock	Rock	3.87 m	41° 13' 14.9" N	072° 40' 18.3" W	---
1.18	DTON 15: 3.2m Rock	Rock	3.29 m	41° 12' 11.5" N	072° 40' 16.5" W	---
1.19	DTON 3: 1.0m Rock	Rock	0.96 m	41° 14' 48.9" N	072° 40' 16.3" W	---
1.20	DTON 18: 3.1m Rock	Rock	3.13 m	41° 12' 40.3" N	072° 39' 52.1" W	---
1.21	DTON 19: 6.9m Rock	GP	[None]	41° 14' 37.9" N	072° 39' 36.9" W	---
1.22	DTON 17: 8.3m Rock	GP	[None]	41° 13' 19.7" N	072° 39' 16.8" W	---
1.23	DTON 25: 2.6m Rock	Rock	2.64 m	41° 15' 08.7" N	072° 39' 13.6" W	---
1.24	DTON 20: 4.9m Rock	GP	[None]	41° 14' 44.6" N	072° 39' 02.9" W	---
1.25	DTON 24: 1.1m Rock	Rock	1.13 m	41° 15' 11.5" N	072° 38' 53.6" W	---

1 - DToN

1.1) DTON 4: 6.6m Rock

DANGER TO NAVIGATION

Survey Summary

Survey Position:	41° 12' 51.0" N, 072° 43' 01.5" W
Least Depth:	6.62 m (= 21.74 ft = 3.623 fm = 3 fm 3.74 ft)
TPU (±1.96σ):	**THU (TPEh)** [None] ; **TVU (TPEv)** [None]
Timestamp:	2012-311.00:00:00.000 (11/06/2012)
Dataset:	H12484_Pydro_Features.000
FOID:	0_ 0000004748 00001(FFFE0000128C0001)
Charts Affected:	12373_1, 12372_16, 12354_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

UWTROC/remrks: Dangerous rock found with Reson 7125 object detection Multibeam. Soundings are corrected to MLLW with VDatum solution.

Feature Correlation

Source	Feature	Range	Azimuth	Status
H12484_Pydro_Features.000	0_ 0000004748 00001	0.00	000.0	Primary

Hydrographer Recommendations

Chart dangerous rock.

Cartographically-Rounded Depth (Affected Charts):

21ft (12373_1, 12372_16, 12354_1)

3 ½fm (12300_1, 13006_1, 13003_1)

6.6m (5161_1)

S-57 Data

Geo object 1:	Underwater rock / awash rock (UWTROC)
Attributes:	NINFOM - Chart rock
	QUASOU - 6:least depth known
	SORDAT - 20121106

SORIND - US,US,graph,H12484

TECSOU - 3:found by multi-beam

VALSOU - 6.625 m

WATLEV - 3:always under water/submerged

Office Notes

SAR: Rock observed at survey position by MBES and SSS.

COMPILE : Chart 21.7 ft rock at survey position.

Feature Images

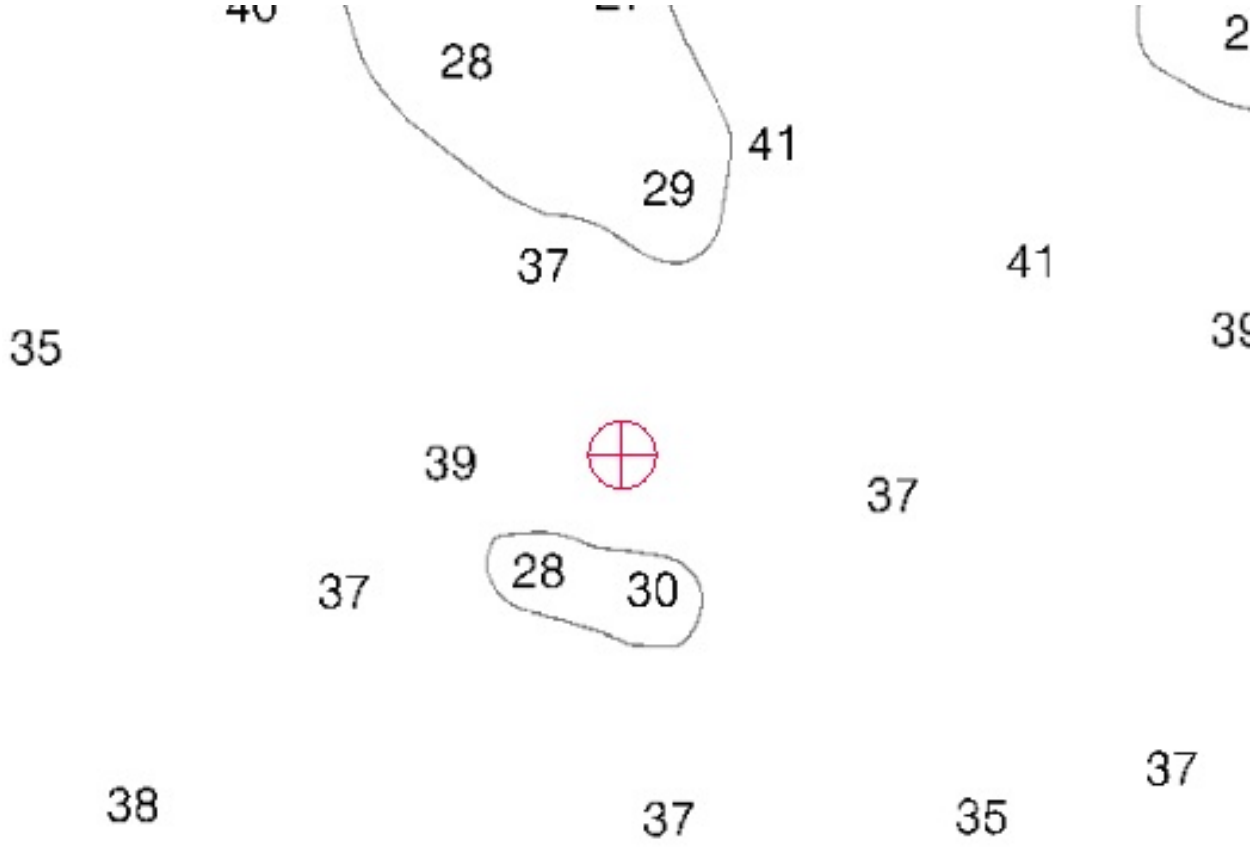


Figure 1.1.1

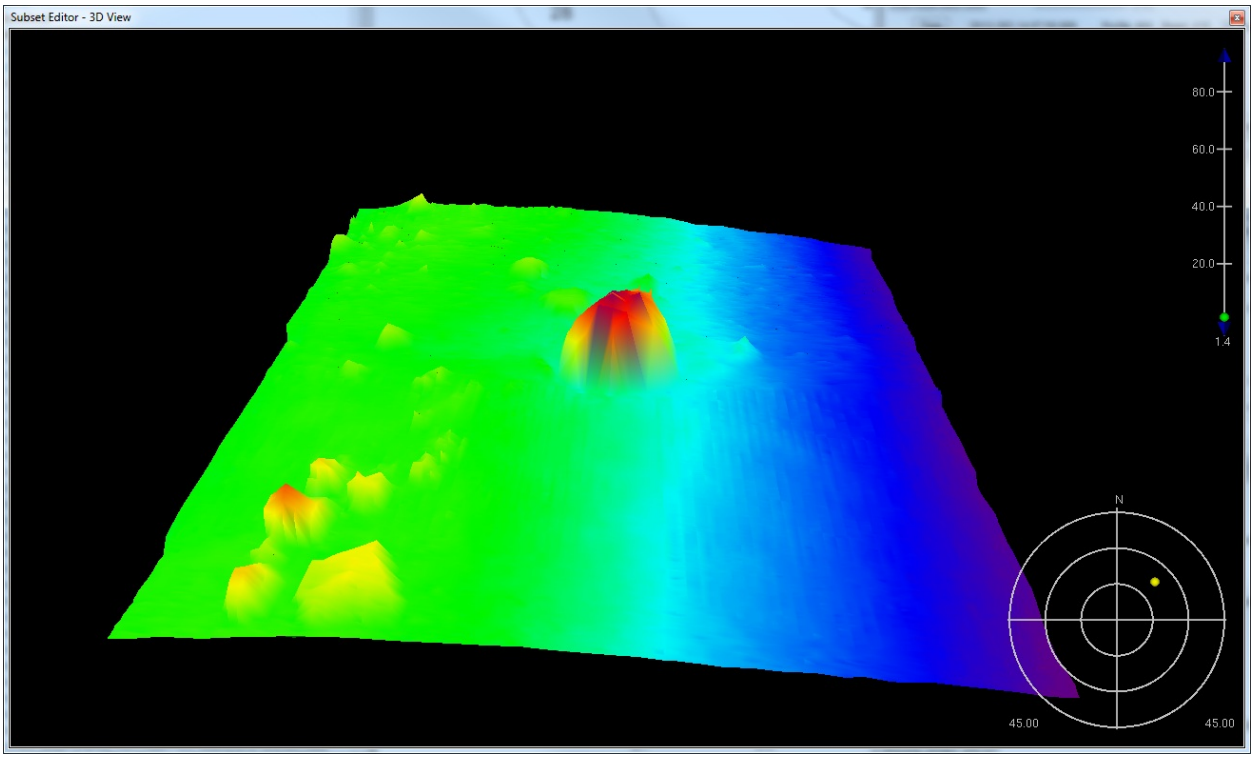


Figure 1.1.2

1.2) DTON 11: 6.5m Rock

DANGER TO NAVIGATION

Survey Summary

Survey Position:	41° 14' 11.9" N, 072° 43' 00.3" W
Least Depth:	6.48 m (= 21.27 ft = 3.545 fm = 3 fm 3.27 ft)
TPU (±1.96σ):	**THU (TPEh)** [None] ; **TVU (TPEv)** [None]
Timestamp:	2012-311.00:00:00.000 (11/06/2012)
Dataset:	H12484_Pydro_Features.000
FOID:	0_ 0000004759 00001(FFFE000012970001)
Charts Affected:	12373_1, 12372_16, 12354_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

UWTROC/remrks: Dangerous rock found with Reson 7125 object detection multibeam. Soundings are corrected to MLLW with VDatum solution.

Feature Correlation

Source	Feature	Range	Azimuth	Status
H12484_Pydro_Features.000	0_ 0000004759 00001	0.00	000.0	Primary

Hydrographer Recommendations

Chart dangerous rock.

Cartographically-Rounded Depth (Affected Charts):

21ft (12373_1, 12372_16, 12354_1)

3 ½fm (12300_1, 13006_1, 13003_1)

6.5m (5161_1)

S-57 Data

Geo object 1:	Underwater rock / awash rock (UWTROC)
Attributes:	NINFOM - Chart rock
	QUASOU - 6:least depth known
	SORDAT - 20121106

SORIND - US,US,graph,H12484

TECSOU - 3:found by multi-beam

VALSOU - 6.483 m

WATLEV - 3:always under water/submerged

Office Notes

SAR: Rock observed at survey position by MBES and SSS.

COMPILE: Chart 21.2 ft rock at survey position.

Feature Images

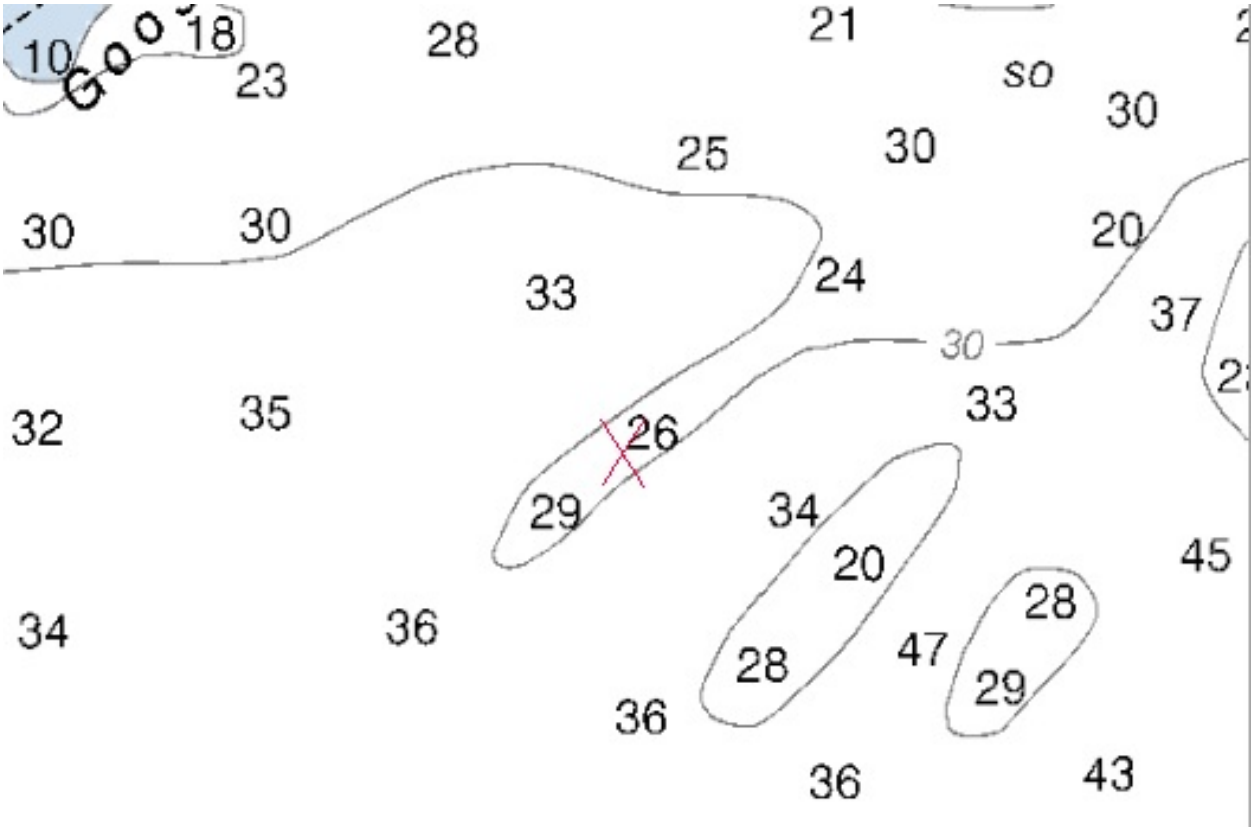


Figure 1.2.1

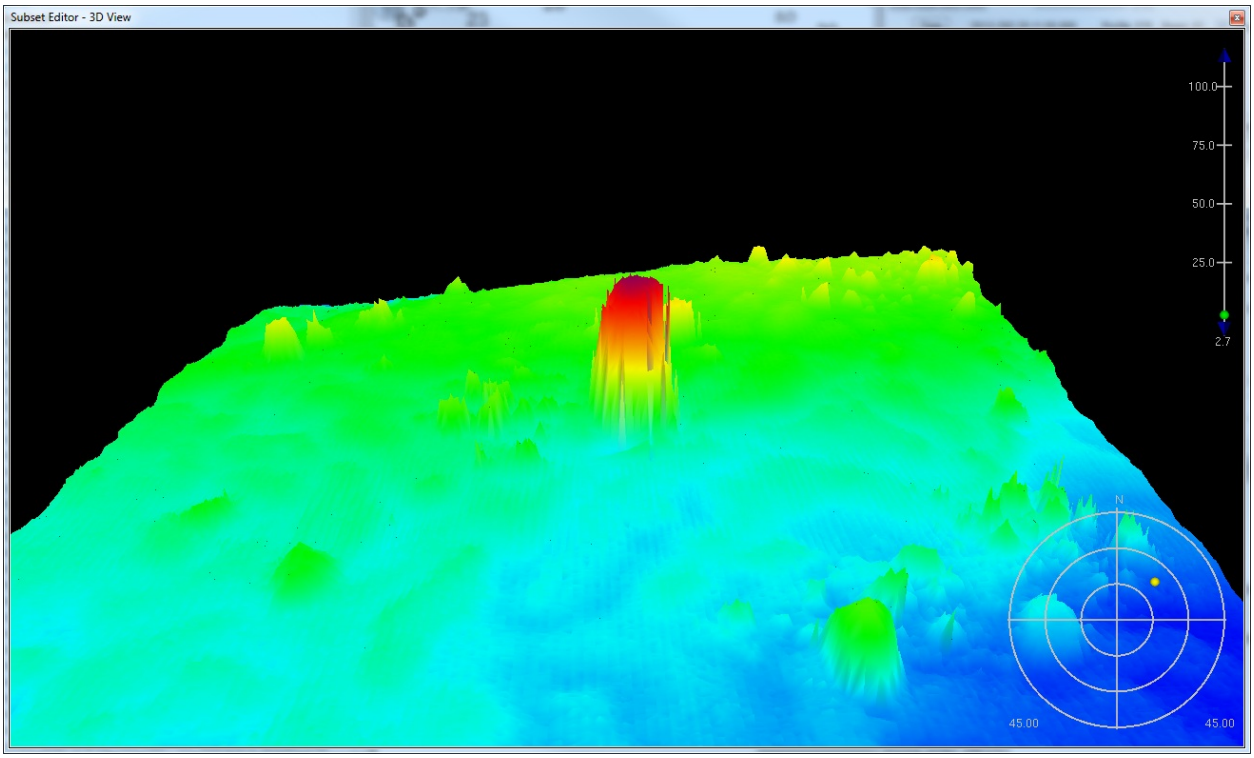


Figure 1.2.2

1.3) DTON 14: 4.6m Rock

DANGER TO NAVIGATION

Survey Summary

Survey Position:	41° 14' 20.4" N, 072° 42' 28.2" W
Least Depth:	4.61 m (= 15.12 ft = 2.520 fm = 2 fm 3.12 ft)
TPU (±1.96σ):	**THU (TPEh)** [None] ; **TVU (TPEv)** [None]
Timestamp:	2012-311.00:00:00.000 (11/06/2012)
Dataset:	H12484_Pydro_Features.000
FOID:	0_ 0000004758 00001(FFFE000012960001)
Charts Affected:	12373_1, 12372_16, 12354_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

UWTROC/remrks: Dangerous rock found with Reson 725 object detection Multibeam. Soundings are corrected to MLLW with VDatum solution.

Feature Correlation

Source	Feature	Range	Azimuth	Status
H12484_Pydro_Features.000	0_ 0000004758 00001	0.00	000.0	Primary

Hydrographer Recommendations

Chart dangerous rock.

Cartographically-Rounded Depth (Affected Charts):

15ft (12373_1, 12372_16, 12354_1)

2 ½fm (12300_1, 13006_1, 13003_1)

4.6m (5161_1)

S-57 Data

Geo object 1:	Underwater rock / awash rock (UWTROC)
Attributes:	NINFOM - Chart rock
	QUASOU - 6:least depth known
	SORDAT - 20121106

SORIND - US,US,graph,H12484

TECSOU - 3:found by multi-beam

VALSOU - 4.608 m

WATLEV - 3:always under water/submerged

Office Notes

SAR: Rock observed at survey position by MBES and SSS.

COMPILE: Chart 15.1 ft rock at survey position.

Feature Images

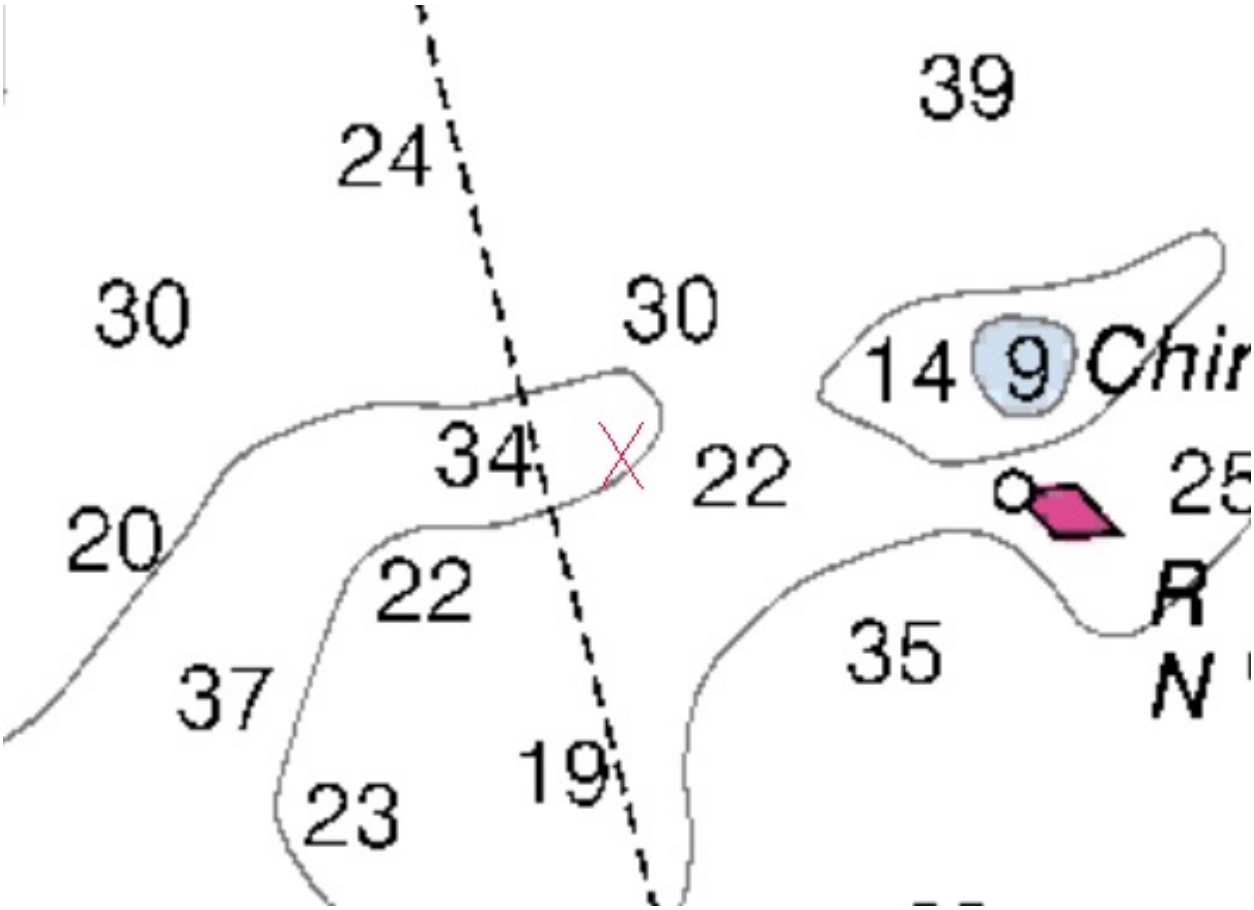


Figure 1.3.1

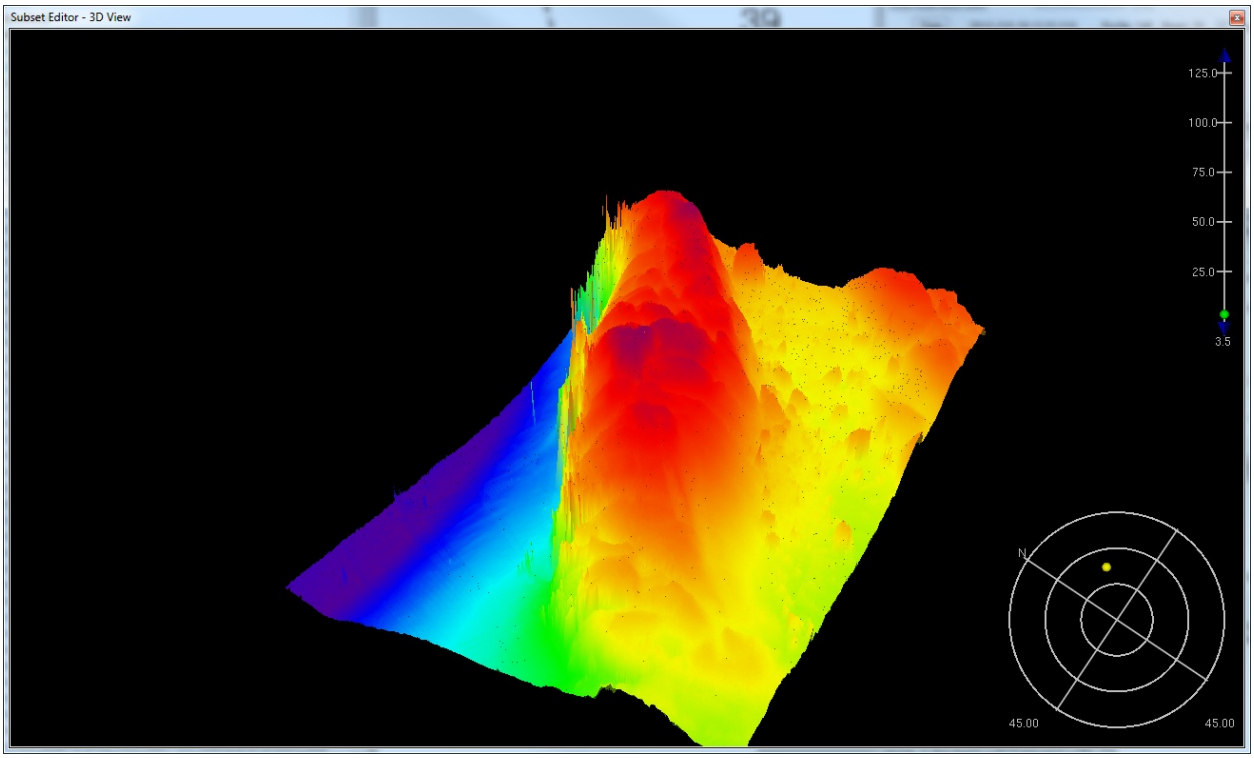


Figure 1.3.2

1.4) DTON 21: 2.2m Rock

DANGER TO NAVIGATION

Survey Summary

Survey Position:	41° 14' 27.9" N, 072° 42' 10.7" W
Least Depth:	2.19 m (= 7.19 ft = 1.199 fm = 1 fm 1.19 ft)
TPU (±1.96σ):	**THU (TPEh)** [None] ; **TVU (TPEv)** [None]
Timestamp:	2012-311.00:00:00.000 (11/06/2012)
Dataset:	H12484_Pydro_Features.000
FOID:	0_ 0000004755 00001(FFFE000012930001)
Charts Affected:	12373_1, 12372_16, 12354_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

UWTROC/remrks: Dangerous rock found with Reson 7125 object detection multibeam. Soundings are corrected to MLLW with VDatum solution.

Feature Correlation

Source	Feature	Range	Azimuth	Status
H12484_Pydro_Features.000	0_ 0000004755 00001	0.00	000.0	Primary

Hydrographer Recommendations

Chart dangerous rock.

Cartographically-Rounded Depth (Affected Charts):

7ft (12373_1, 12372_16, 12354_1)

1 ¼fm (12300_1, 13006_1, 13003_1)

2.2m (5161_1)

S-57 Data

Geo object 1:	Underwater rock / awash rock (UWTROC)
Attributes:	NINFOM - Chart rock
	QUASOU - 6:least depth known
	SORDAT - 20121106

SORIND - US,US,graph,H12484

TECSOU - 3:found by multi-beam

VALSOU - 2.192 m

WATLEV - 3:always under water/submerged

Office Notes

SAR: Rock observed at survey position by MBES and SSS.

COMPILE: Chart 7.1ft rock at survey position.

Feature Images

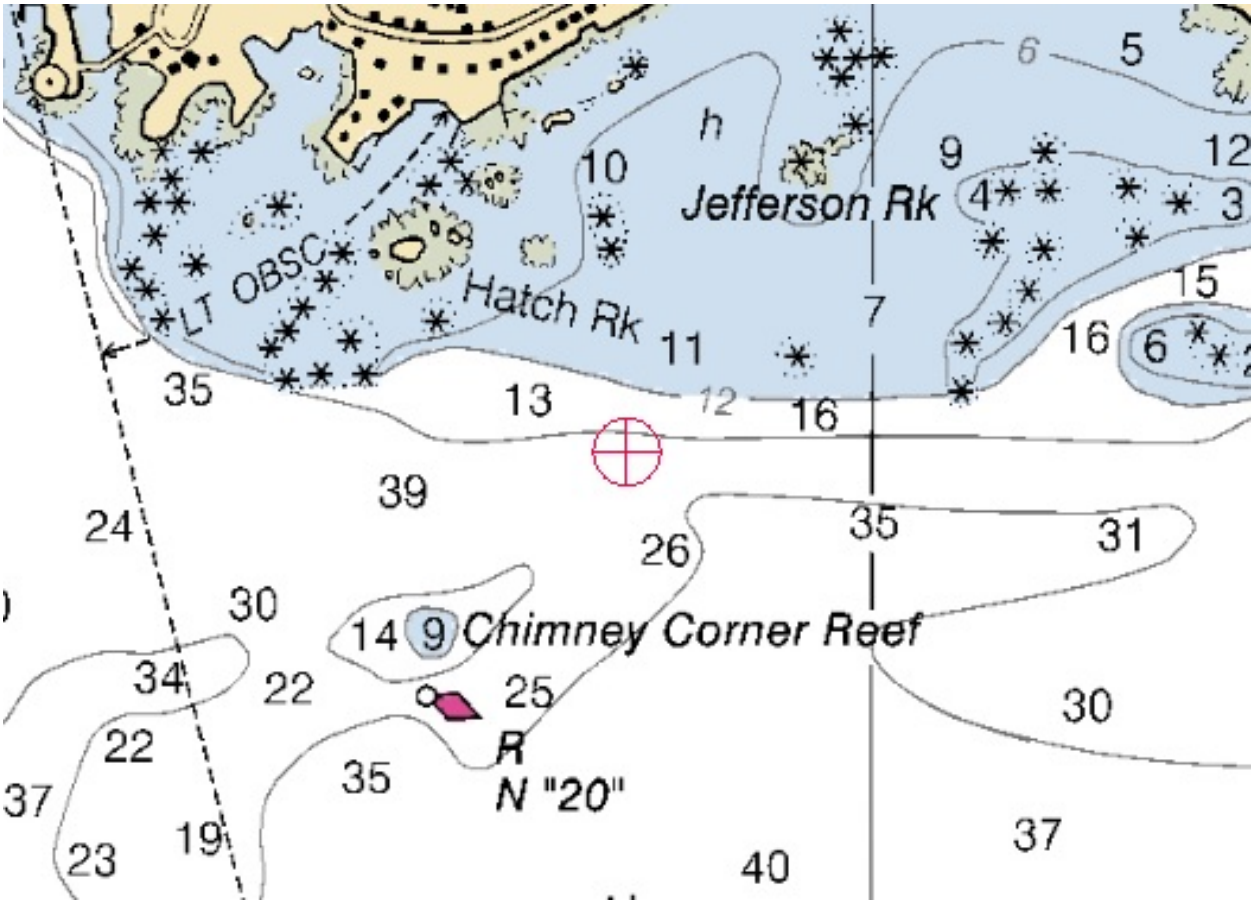


Figure 1.4.1

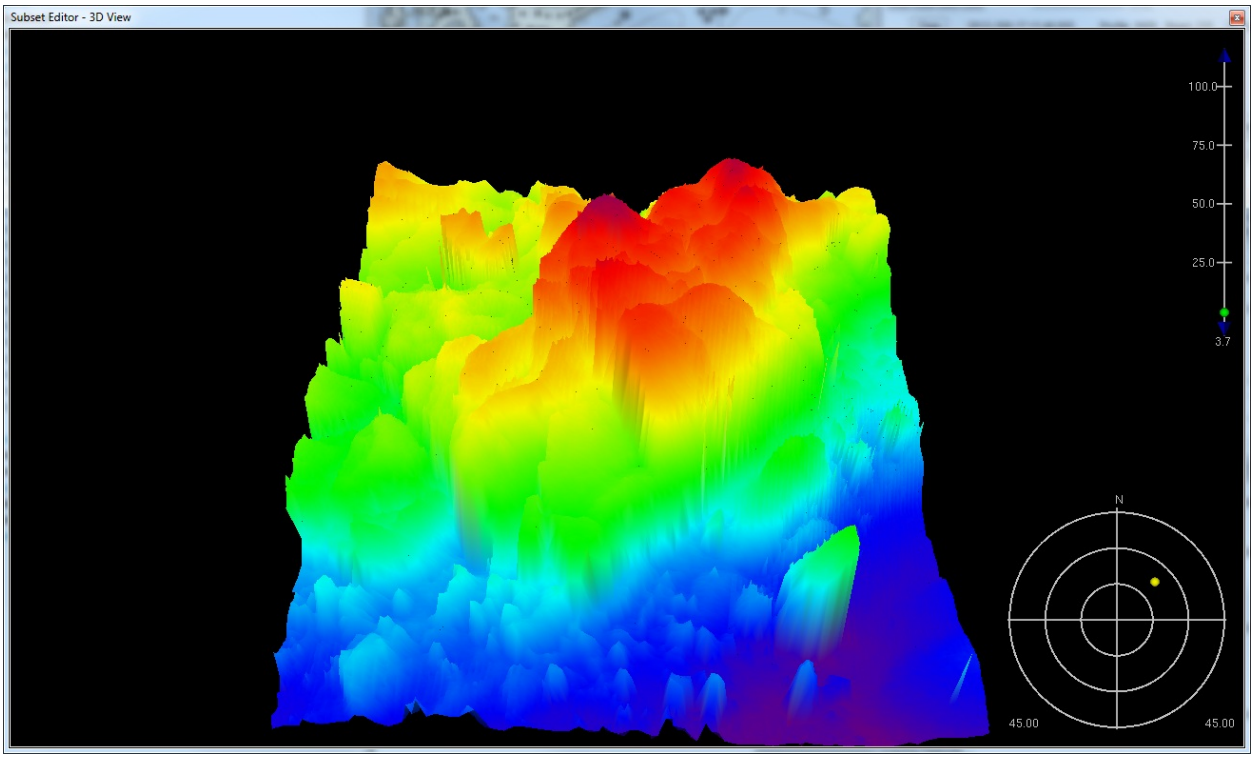


Figure 1.4.2

1.5) DTON 2: 3.2m Rock

DANGER TO NAVIGATION

Survey Summary

Survey Position:	41° 14' 22.3" N, 072° 42' 07.8" W
Least Depth:	3.18 m (= 10.44 ft = 1.740 fm = 1 fm 4.44 ft)
TPU (±1.96σ):	**THU (TPEh)** [None] ; **TVU (TPEv)** [None]
Timestamp:	2012-300.00:00:00.000 (10/26/2012)
Dataset:	H12484_Pydro_Features.000
FOID:	0_ 0000004752 00001(FFFE000012900001)
Charts Affected:	12373_1, 12372_16, 12354_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

UWTROC/remrks: Dangerous rock found with Reson 7125 object detection multibeam. Soundings are corrected to MLLW with observed tides and preliminary zoning.

Feature Correlation

Source	Feature	Range	Azimuth	Status
H12484_Pydro_Features.000	0_ 0000004752 00001	0.00	000.0	Primary

Hydrographer Recommendations

Chart dangerous rock.

Cartographically-Rounded Depth (Affected Charts):

10ft (12373_1, 12372_16, 12354_1)

1 ¾fm (12300_1, 13006_1, 13003_1)

3.2m (5161_1)

S-57 Data

Geo object 1:	Underwater rock / awash rock (UWTROC)
Attributes:	NINFOM - Chart rock
	QUASOU - 6:least depth known
	SORDAT - 20121026

SORIND - US,US,graph,H12484

TECSOU - 3:found by multi-beam

VALSOU - 3.182 m

WATLEV - 3:always under water/submerged

Office Notes

SAR: Rock observed at survey position by MBES and SSS.

COMPILE: Chart 10.4 ft rock at survey position.

Feature Images

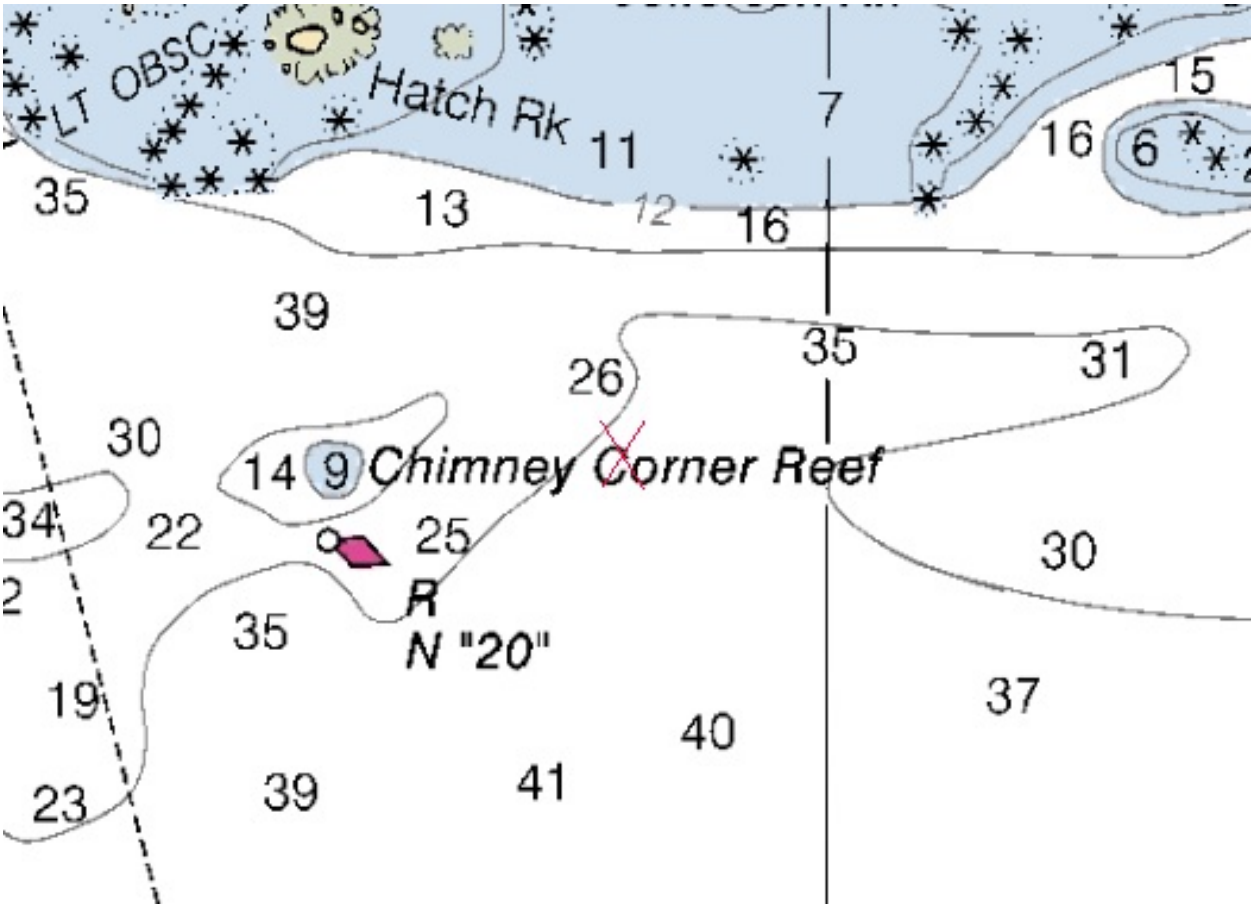


Figure 1.5.1

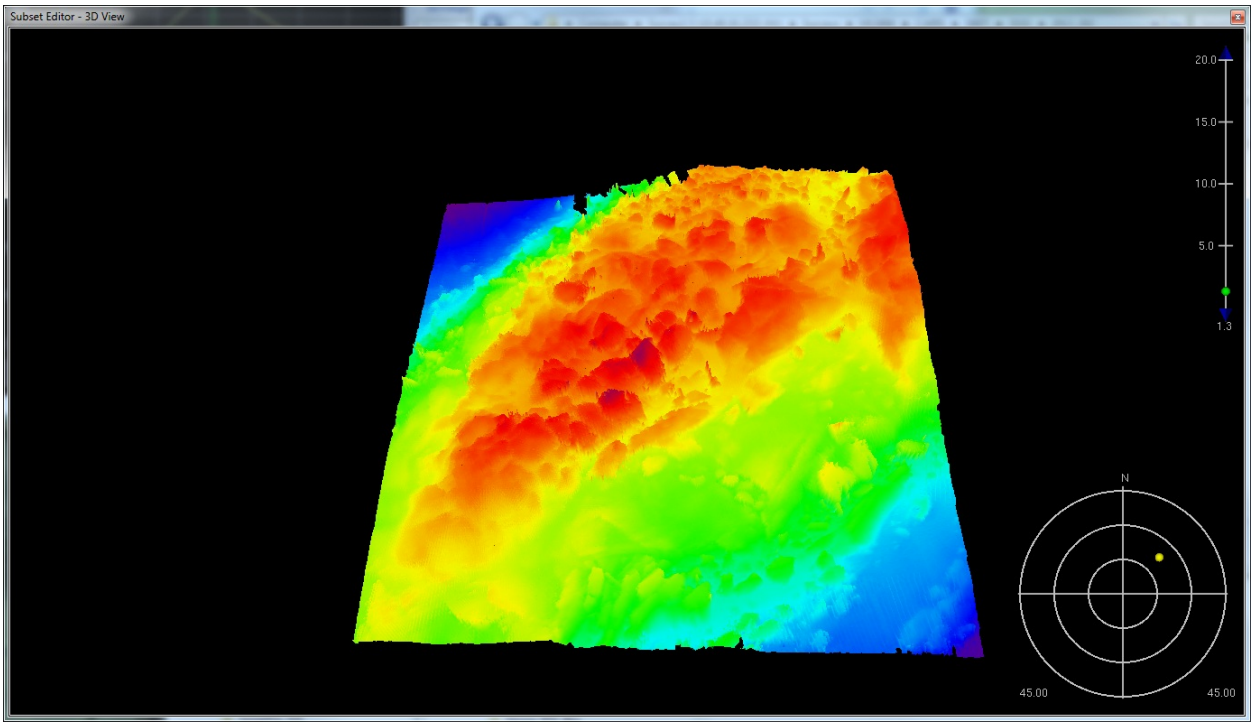


Figure 1.5.2

1.6) DTON 5: 9.3m Rock

DANGER TO NAVIGATION

Survey Summary

Survey Position:	41° 13' 59.9" N, 072° 42' 04.2" W
Least Depth:	9.30 m (= 30.51 ft = 5.085 fm = 5 fm 0.51 ft)
TPU (±1.96σ):	**THU (TPEh)** [None] ; **TVU (TPEv)** [None]
Timestamp:	2012-311.00:00:00.000 (11/06/2012)
Dataset:	H12484_Pydro_Features.000
FOID:	0_ 0000004757 00001(FFFE000012950001)
Charts Affected:	12373_1, 12372_16, 12354_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

UWTROC/remrks: Dangerous rock found with Reson 7125 object detection multibeam. Soundings are corrected to MLLW with VDatum solution.

Feature Correlation

Source	Feature	Range	Azimuth	Status
H12484_Pydro_Features.000	0_ 0000004757 00001	0.00	000.0	Primary

Hydrographer Recommendations

Chart dangerous rock.

Cartographically-Rounded Depth (Affected Charts):

30ft (12373_1, 12372_16, 12354_1)

5fm (12300_1, 13006_1, 13003_1)

9.3m (5161_1)

S-57 Data

Geo object 1:	Underwater rock / awash rock (UWTROC)
Attributes:	NINFOM - Chart rock
	QUASOU - 6:least depth known
	SORDAT - 20121106

SORIND - US,US,graph,H12484

TECSOU - 3:found by multi-beam

VALSOU - 9.300 m

WATLEV - 3:always under water/submerged

Office Notes

SAR: Rock observed at survey position by MBES and SSS.

COMPILE: Chart 30.5 ft rock at survey position.

Feature Images

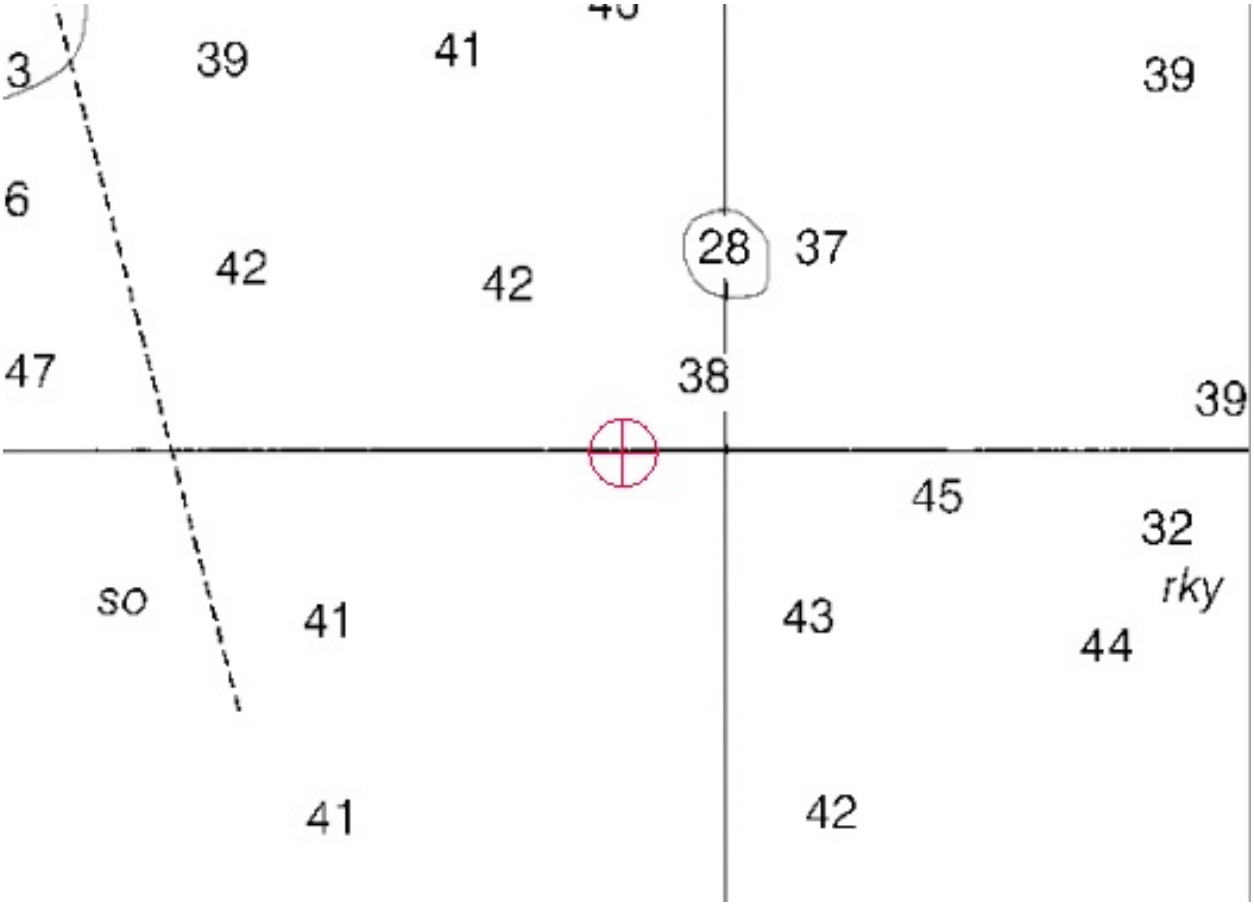


Figure 1.6.1

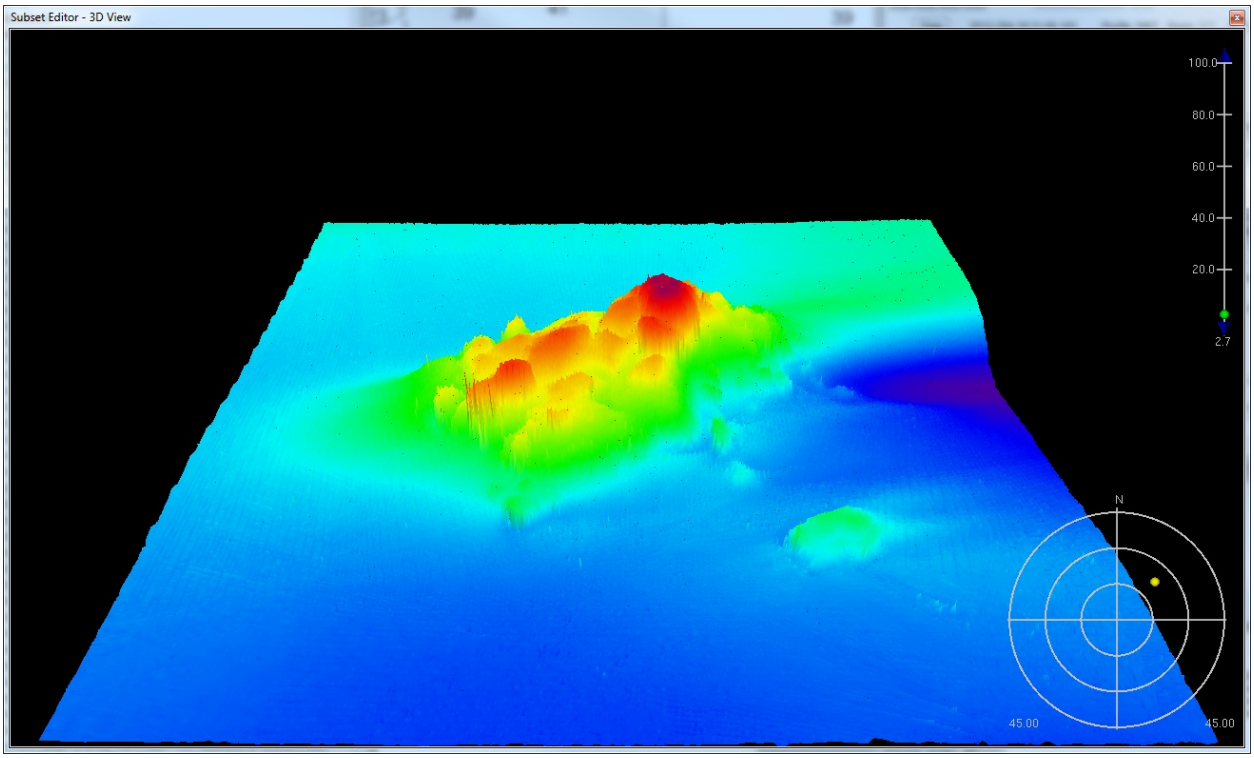


Figure 1.6.2

1.7) DTON 12: 5.2m Rock

DANGER TO NAVIGATION

Survey Summary

Survey Position: 41° 14' 06.6" N, 072° 41' 52.2" W

Least Depth: [None]

TPU (±1.96σ): **THU (TPEh)** [None] ; **TVU (TPEv)** [None]

Timestamp: 1981-001.00:00:00.000 (01/01/1981)

Dataset: H12484_Pydro_Features.000

FOID: 0_ 0000004766 00001(FFFE0000129E0001)

Charts Affected: 12373_1, 12372_16, 12354_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

[None]

Feature Correlation

Source	Feature	Range	Azimuth	Status
H12484_Pydro_Features.000	0_ 0000004766 00001	0.00	000.0	Primary

Hydrographer Recommendations

[None]

S-57 Data

Geo object 1: Cartographic symbol ($CSYMB)

Attributes: NINFOM - Delete rock

NTXTDS - Chart 12373,ED15,NTM 20130928

Office Notes

Delete charted rock. Chart as a 17 ft sounding.

1.8) DTON 13: 7.4m Rock

DANGER TO NAVIGATION

Survey Summary

Survey Position:	41° 14' 17.9" N, 072° 41' 50.3" W
Least Depth:	7.39 m (= 24.26 ft = 4.043 fm = 4 fm 0.26 ft)
TPU (±1.96σ):	**THU (TPEh)** [None] ; **TVU (TPEv)** [None]
Timestamp:	2012-311.00:00:00.000 (11/06/2012)
Dataset:	H12484_Pydro_Features.000
FOID:	0_ 0000004760 00001(FFFE000012980001)
Charts Affected:	12373_1, 12372_16, 12354_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

UWTROC/remrks: Dangerous rock found with Reson 7125 object detection multibeam. Soundings are corrected to MLLW with VDatum solution.

Feature Correlation

Source	Feature	Range	Azimuth	Status
H12484_Pydro_Features.000	0_ 0000004760 00001	0.00	000.0	Primary

Hydrographer Recommendations

Chart dangerous rock.

Cartographically-Rounded Depth (Affected Charts):

24ft (12373_1, 12372_16, 12354_1)

4fm (12300_1, 13006_1, 13003_1)

7.4m (5161_1)

S-57 Data

Geo object 1:	Underwater rock / awash rock (UWTROC)
Attributes:	NINFOM - Chart rock
	QUASOU - 6:least depth known
	SORDAT - 20121106

SORIND - US,US,graph,H12484

TECSOU - 3:found by multi-beam

VALSOU - 7.393 m

WATLEV - 3:always under water/submerged

Office Notes

SAR: Rock observed at survey position by MBES and SSS.

COMPILE: Chart 24.2 ft rock at survey position.

Feature Images

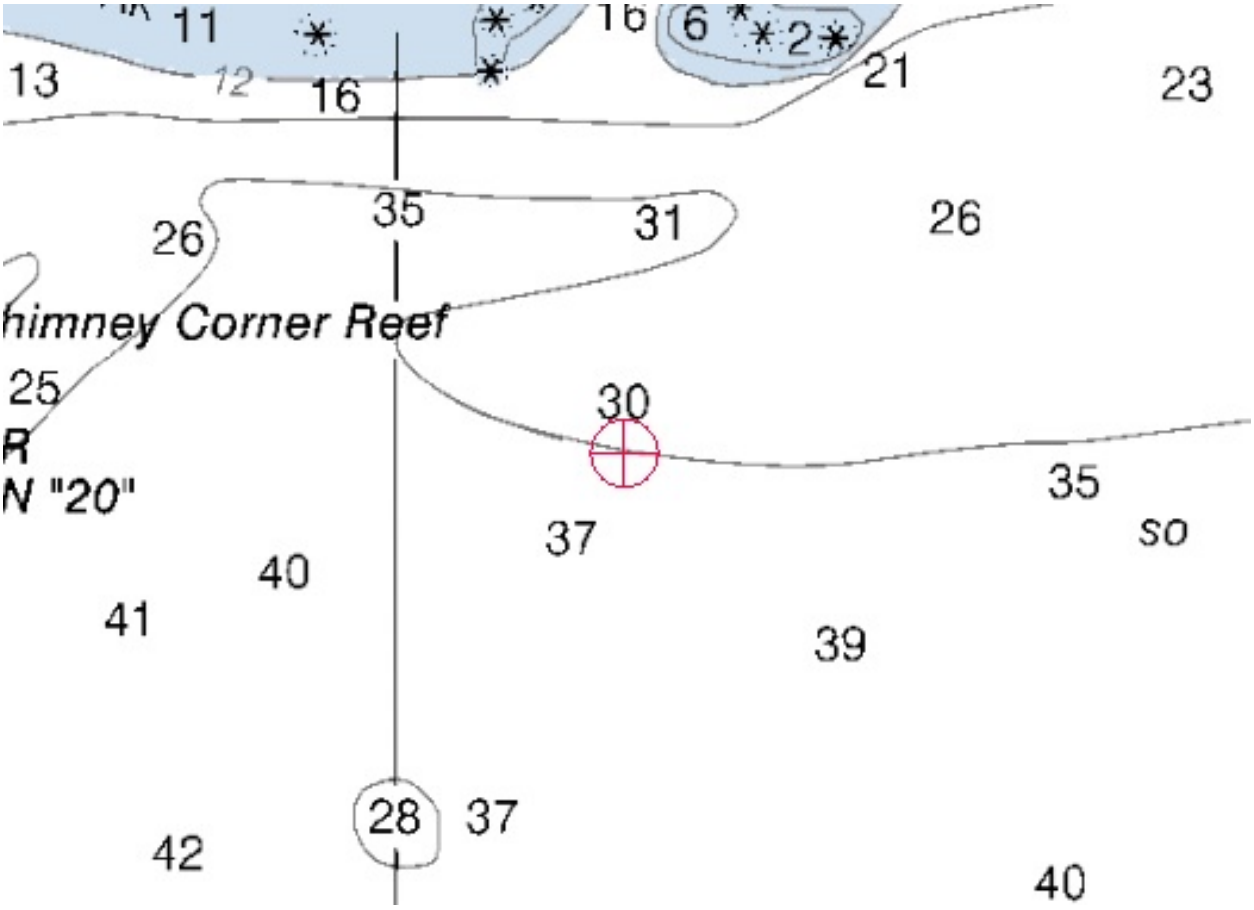


Figure 1.8.1

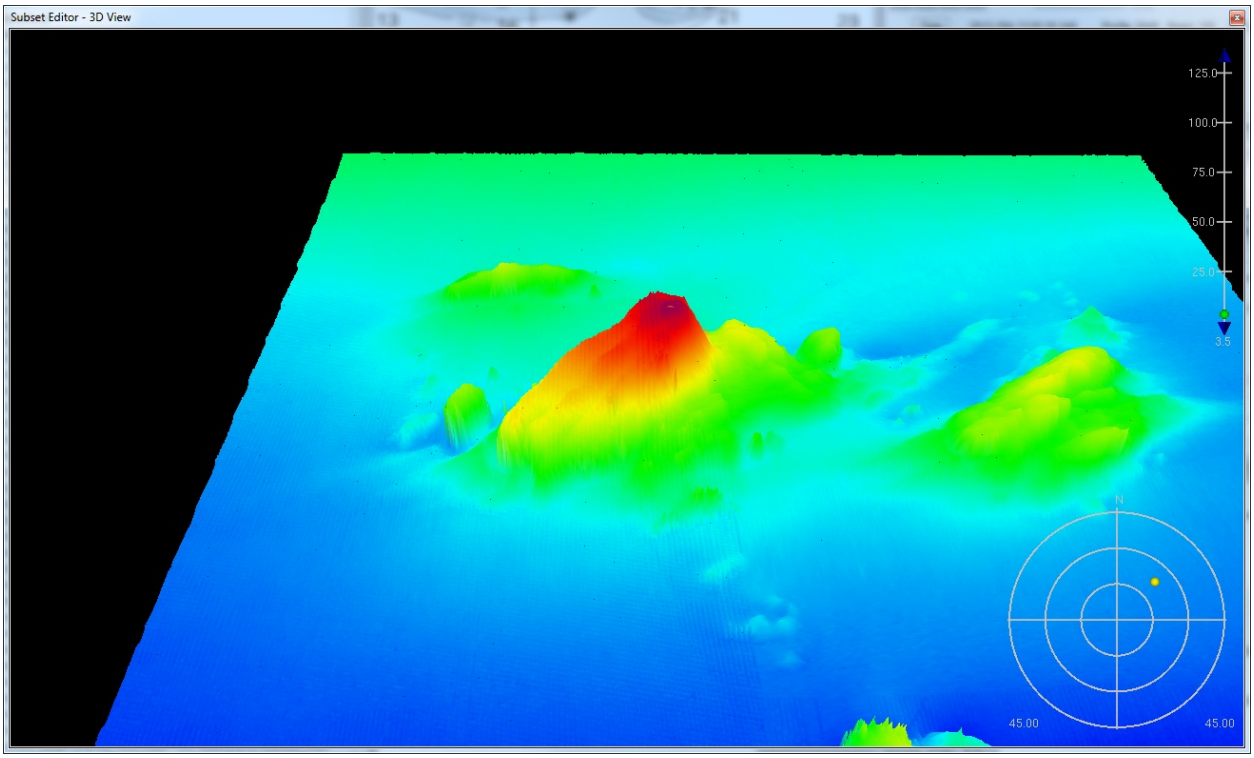


Figure 1.8.2

1.9) DTON 22: 1.9m Rock

DANGER TO NAVIGATION

Survey Summary

Survey Position:	41° 14' 37.9" N, 072° 41' 33.4" W
Least Depth:	1.93 m (= 6.33 ft = 1.055 fm = 1 fm 0.33 ft)
TPU (±1.96σ):	**THU (TPEh)** [None] ; **TVU (TPEv)** [None]
Timestamp:	2012-311.00:00:00.000 (11/06/2012)
Dataset:	H12484_Pydro_Features.000
FOID:	0_ 0000004762 00001(FFFE0000129A0001)
Charts Affected:	12373_1, 12372_16, 12354_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

UWTROC/remrks: Dangerous rock found with Reson 7125 object detection multibeam. Soundings are corrected to MLLW with VDatum solution.

Feature Correlation

Source	Feature	Range	Azimuth	Status
H12484_Pydro_Features.000	0_ 0000004762 00001	0.00	000.0	Primary

Hydrographer Recommendations

Chart dangerous rock.

Cartographically-Rounded Depth (Affected Charts):

6ft (12373_1, 12372_16, 12354_1)

1fm (12300_1, 13006_1, 13003_1)

1.9m (5161_1)

S-57 Data

Geo object 1:	Underwater rock / awash rock (UWTROC)
Attributes:	NINFOM - Chart rock
	QUASOU - 6:least depth known
	SORDAT - 20121106

SORIND - US,US,graph,H12484

TECSOU - 3:found by multi-beam

VALSOU - 1.929 m

WATLEV - 3:always under water/submerged

Office Notes

SAR: Rock observed at survey position by MBES and SSS.

COMPILE: Chart 6.3 ft rock at survey position.

Feature Images

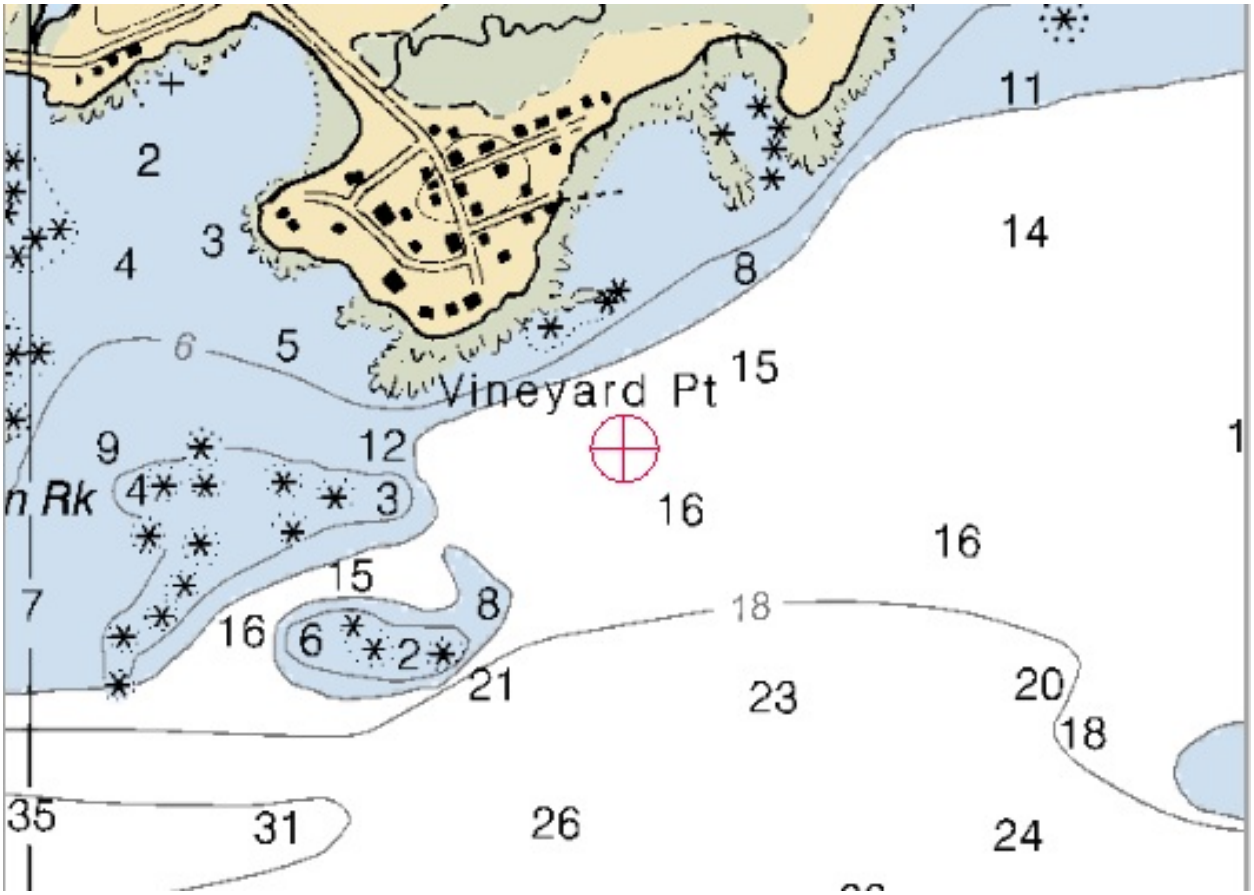


Figure 1.9.1

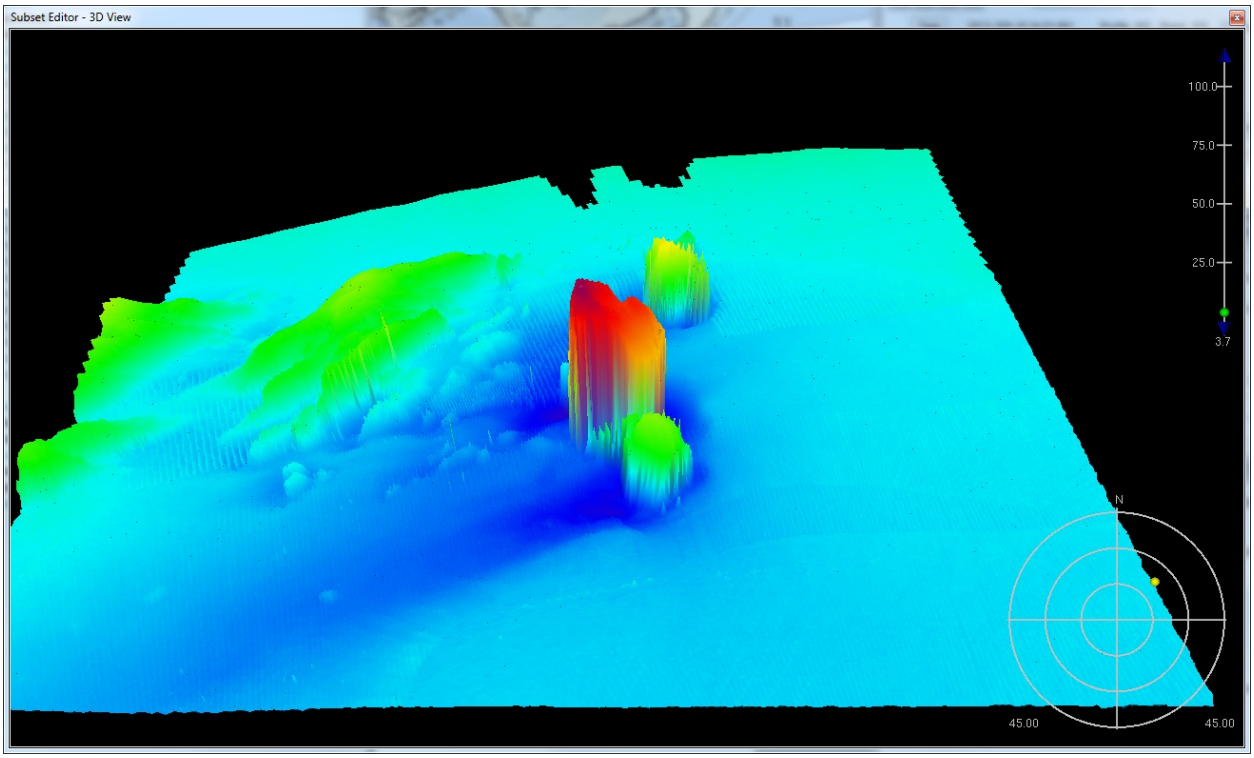


Figure 1.9.2

1.10) DTON 7: 10.8m Rock

DANGER TO NAVIGATION

Survey Summary

Survey Position:	41° 13' 40.9" N, 072° 41' 20.2" W
Least Depth:	10.76 m (= 35.30 ft = 5.883 fm = 5 fm 5.30 ft)
TPU (±1.96σ):	**THU (TPEh)** [None] ; **TVU (TPEv)** [None]
Timestamp:	2012-311.00:00:00.000 (11/06/2012)
Dataset:	H12484_Pydro_Features.000
FOID:	0_ 0000004761 00001(FFFE000012990001)
Charts Affected:	12373_1, 12372_16, 12354_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

UWTROC/remrks: Dangerous rock found with Reson 7125 object detection multibeam Soundings are corrected to MLLW with VDatum solution.

Feature Correlation

Source	Feature	Range	Azimuth	Status
H12484_Pydro_Features.000	0_ 0000004761 00001	0.00	000.0	Primary

Hydrographer Recommendations

Chart dangerous rock.

Cartographically-Rounded Depth (Affected Charts):

35ft (12373_1, 12372_16, 12354_1)

5 ¾fm (12300_1, 13006_1, 13003_1)

10.7m (5161_1)

S-57 Data

Geo object 1:	Underwater rock / awash rock (UWTROC)
Attributes:	NINFOM - Chart rock
	QUASOU - 6:least depth known
	SORDAT - 20121106

SORIND - US,US,graph,H12484

TECSOU - 3:found by multi-beam

VALSOU - 10.758 m

WATLEV - 3:always under water/submerged

Office Notes

SAR: Rock observed at survey position by MBES and SSS.

COMPILE: Chart 35.2 ft rock at survey position.

Feature Images

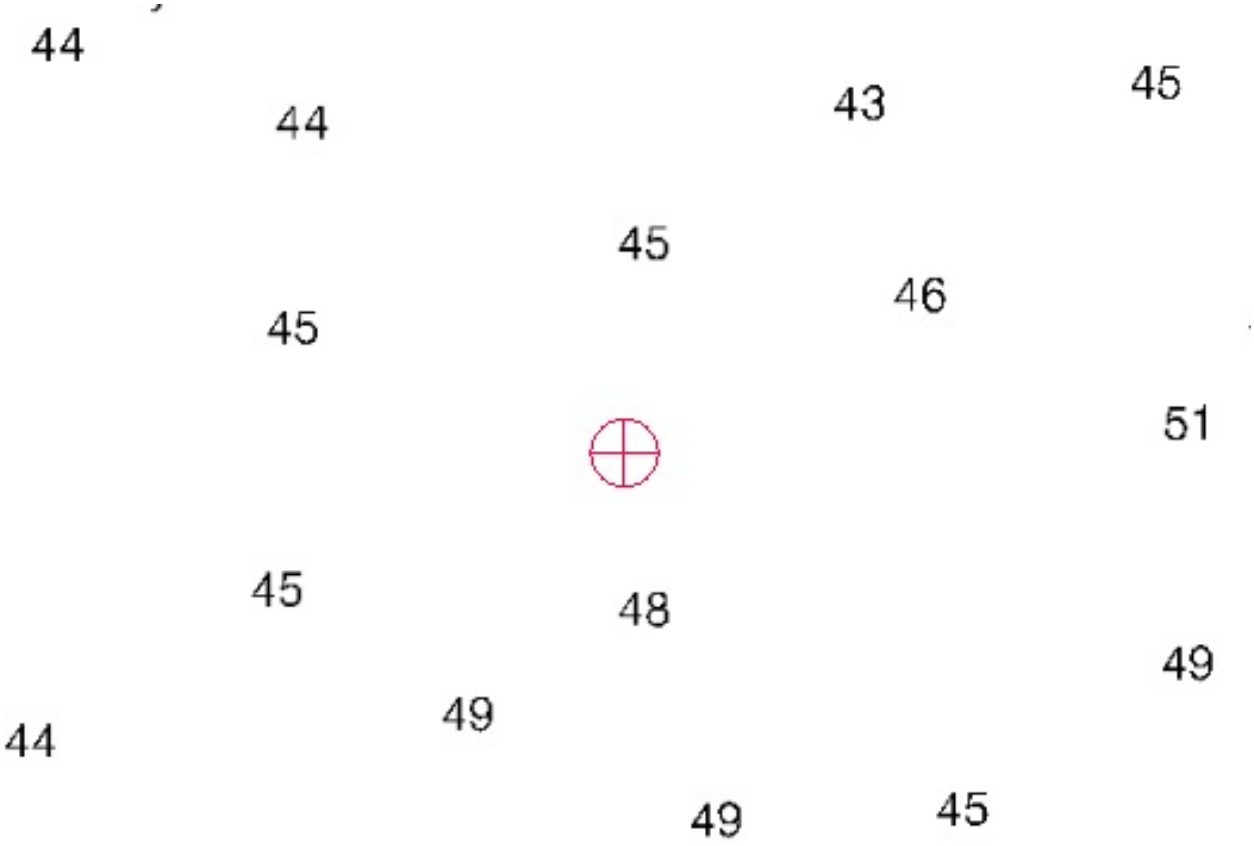


Figure 1.10.1

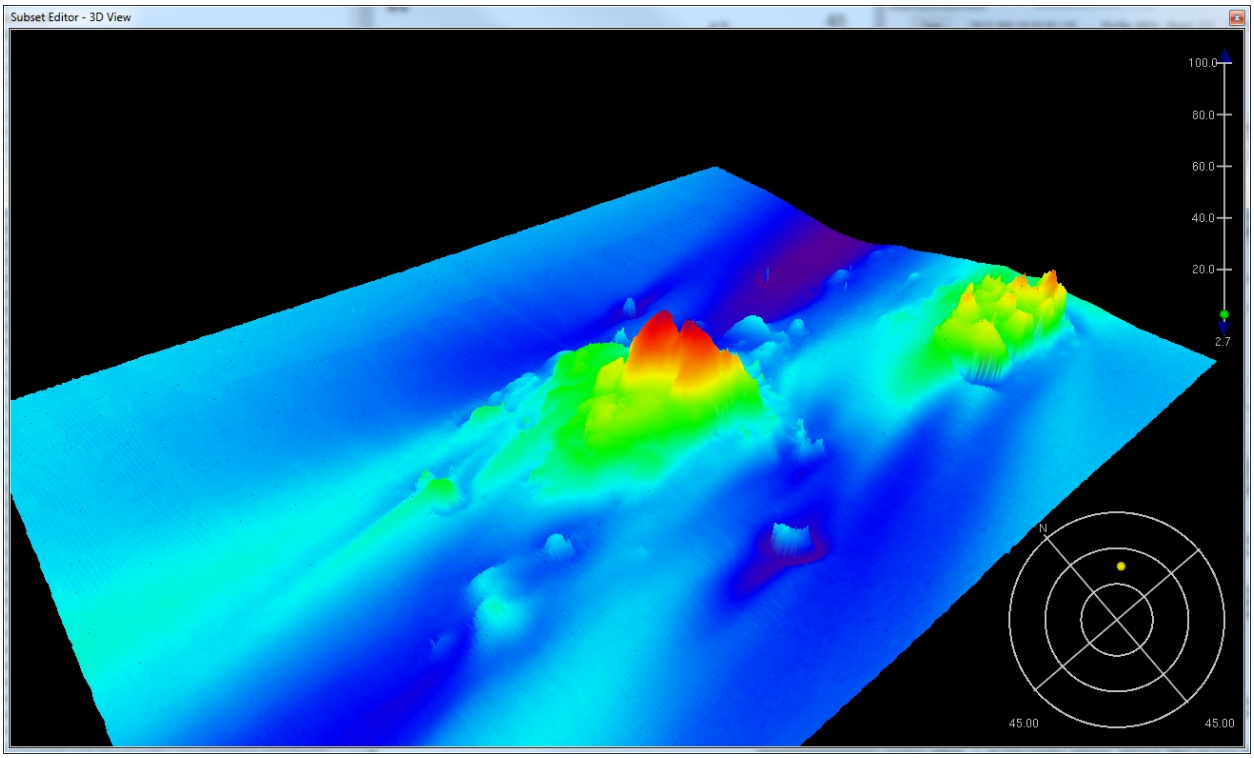


Figure 1.10.2

1.11) DTON 8: 6.0m Rock

DANGER TO NAVIGATION

Survey Summary

Survey Position: 41° 13' 59.5" N, 072° 41' 10.8" W

Least Depth: [None]

TPU (±1.96σ): **THU (TPEh)** [None] ; **TVU (TPEv)** [None]

Timestamp: 1981-001.00:00:00.000 (01/01/1981)

Dataset: H12484_Pydro_Features.000

FOID: 0_ 0000004768 00001(FFFE000012A00001)

Charts Affected: 12373_1, 12372_16, 12354_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

[None]

Feature Correlation

Source	Feature	Range	Azimuth	Status
H12484_Pydro_Features.000	0_ 0000004768 00001	0.00	000.0	Primary

Hydrographer Recommendations

[None]

S-57 Data

Geo object 1: Cartographic symbol ($CSYMB)

Attributes: NINFOM - Delete rock

NTXTDS - Chart 12373,ED15,NTM 20130928

Office Notes

Delete charted rock. Chart as a 19 ft sounding.

1.12) DTON 6: 11.5m Rock

DANGER TO NAVIGATION

Survey Summary

Survey Position: 41° 13' 39.1" N, 072° 40' 59.2" W

Least Depth: [None]

TPU (±1.96σ): **THU (TPEh)** [None] ; **TVU (TPEv)** [None]

Timestamp: 1981-001.00:00:00.000 (01/01/1981)

Dataset: H12484_Pydro_Features.000

FOID: 0_ 0000004770 00001(FFFE000012A20001)

Charts Affected: 12373_1, 12372_16, 12354_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

[None]

Feature Correlation

Source	Feature	Range	Azimuth	Status
H12484_Pydro_Features.000	0_ 0000004770 00001	0.00	000.0	Primary

Hydrographer Recommendations

[None]

S-57 Data

Geo object 1: Cartographic symbol ($CSYMB)

Attributes: NINFOM - Delete rock

NTXTDS - Chart 12373,ED15,NTM 20130928

Office Notes

Delete charted rock. Chart as a 37 ft sounding.

1.13) DTON 23: 29m Rock

DANGER TO NAVIGATION

Survey Summary

Survey Position:	41° 14' 33.4" N, 072° 40' 50.4" W
Least Depth:	2.89 m (= 9.49 ft = 1.582 fm = 1 fm 3.49 ft)
TPU (±1.96σ):	**THU (TPEh)** [None] ; **TVU (TPEv)** [None]
Timestamp:	2012-311.00:00:00.000 (11/06/2012)
Dataset:	H12484_Pydro_Features.000
FOID:	0_ 0000004751 00001(FFFE0000128F0001)
Charts Affected:	12372_14, 12373_1, 12372_16, 12354_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

UWTROC/remrks: Dangerous rock found with Reson 7125 object detection multibeam. Soundings are corrected to MLLW with VDatum solution.

Feature Correlation

Source	Feature	Range	Azimuth	Status
H12484_Pydro_Features.000	0_ 0000004751 00001	0.00	000.0	Primary

Hydrographer Recommendations

Chart dangerous rock.

Cartographically-Rounded Depth (Affected Charts):

9ft (12372_14, 12373_1, 12372_16, 12354_1)

1 ½fm (12300_1, 13006_1, 13003_1)

2.9m (5161_1)

S-57 Data

Geo object 1:	Underwater rock / awash rock (UWTROC)
Attributes:	NINFOM - Chart rock
	QUASOU - 6:least depth known
	SORDAT - 20121106

SORIND - US,US,graph,H12484

TECSOU - 3:found by multi-beam

VALSOU - 2.893 m

WATLEV - 3:always under water/submerged

Office Notes

SAR: Rock observed at survey position by MBES and SSS.

COMPILE: Chart 9.5 ft rock at survey position.

Feature Images

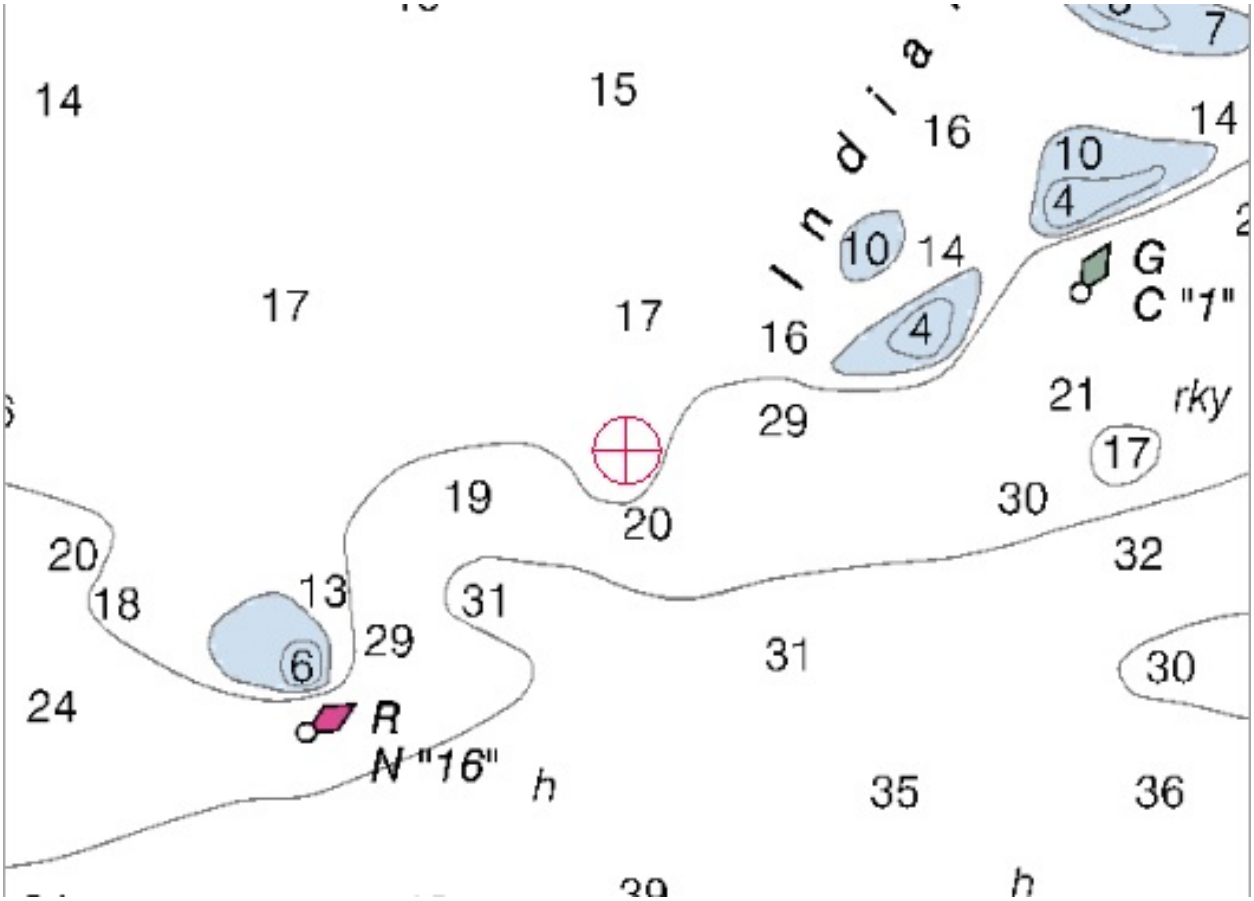


Figure 1.13.1

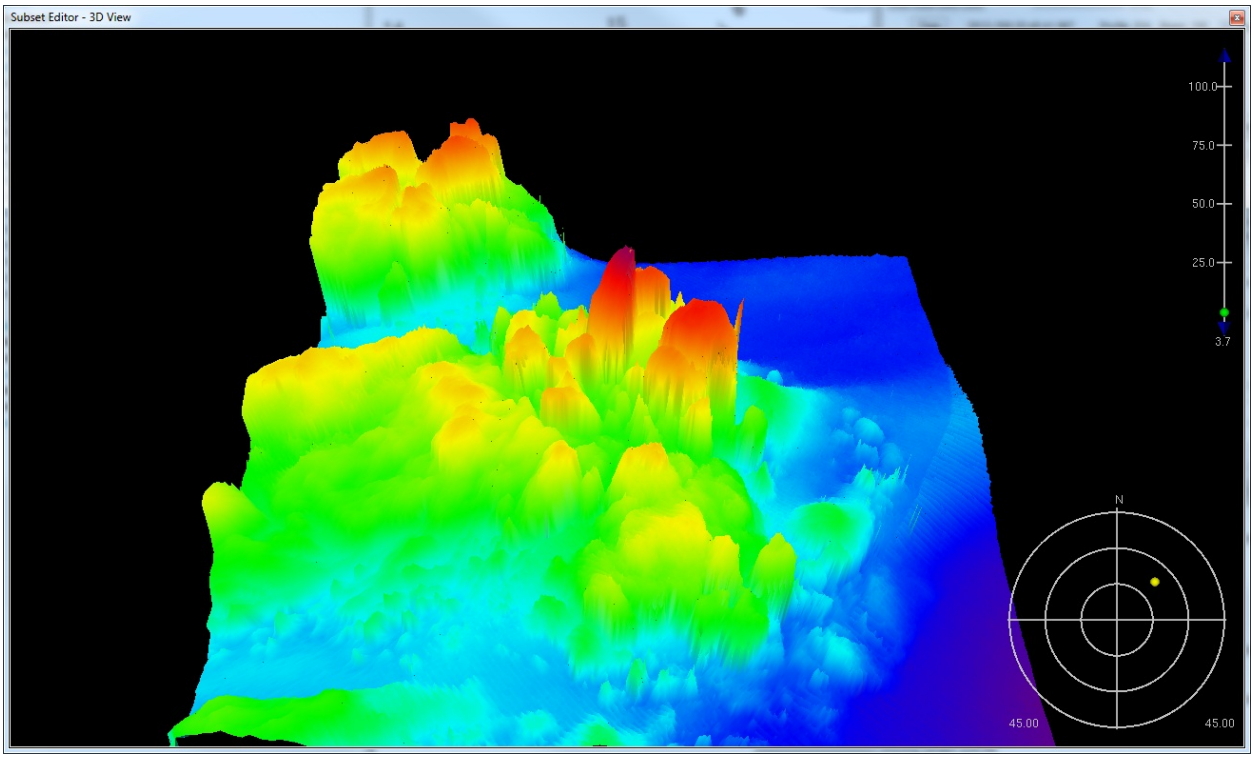


Figure 1.13.2

1.14) DTON 9: 4.2m Rock

DANGER TO NAVIGATION

Survey Summary

Survey Position: 41° 14' 06.5" N, 072° 40' 48.6" W

Least Depth: [None]

TPU (±1.96σ): **THU (TPEh)** [None] ; **TVU (TPEv)** [None]

Timestamp: 1981-001.00:00:00.000 (01/01/1981)

Dataset: H12484_Pydro_Features.000

FOID: 0_ 0000004767 00001(FFFE0000129F0001)

Charts Affected: 12373_1, 12372_16, 12354_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

[None]

Feature Correlation

Source	Feature	Range	Azimuth	Status
H12484_Pydro_Features.000	0_ 0000004767 00001	0.00	000.0	Primary

Hydrographer Recommendations

[None]

S-57 Data

Geo object 1: Cartographic symbol ($CSYMB)

Attributes: NINFOM - Delete rock

NTXTDS - Chart 12373,ED15,NTM 20130928

Office Notes

Delete charted rock. Chart as a 14 ft sounding.

1.15) DTON 10: 4.9m Rock

DANGER TO NAVIGATION

Survey Summary

Survey Position:	41° 14' 00.8" N, 072° 40' 44.1" W
Least Depth:	4.88 m (= 16.02 ft = 2.671 fm = 2 fm 4.02 ft)
TPU (±1.96σ):	**THU (TPEh)** [None] ; **TVU (TPEv)** [None]
Timestamp:	2012-311.00:00:00.000 (11/06/2012)
Dataset:	H12484_Pydro_Features.000
FOID:	0_ 0000004756 00001(FFFE000012940001)
Charts Affected:	12373_1, 12372_16, 12354_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

UWTROC/remrks: Dangerous rock found with Reson 7125 object detection multibeam. Soundings are corrected to MLLW with VDatum solution.

Feature Correlation

Source	Feature	Range	Azimuth	Status
H12484_Pydro_Features.000	0_ 0000004756 00001	0.00	000.0	Primary

Hydrographer Recommendations

Chart dangerous rock.

Cartographically-Rounded Depth (Affected Charts):

16ft (12373_1, 12372_16, 12354_1)

2 ½fm (12300_1, 13006_1, 13003_1)

4.9m (5161_1)

S-57 Data

Geo object 1:	Underwater rock / awash rock (UWTROC)
Attributes:	NINFOM - Chart rock
	QUASOU - 6:least depth known
	SORDAT - 20121106

SORIND - US,US,graph,H12484

TECSOU - 3:found by multi-beam

VALSOU - 4.884 m

WATLEV - 3:always under water/submerged

Office Notes

SAR: Rock observed at survey position by MBES and SSS.

COMPILE: Chart 16 ft rock at survey position.

Feature Images

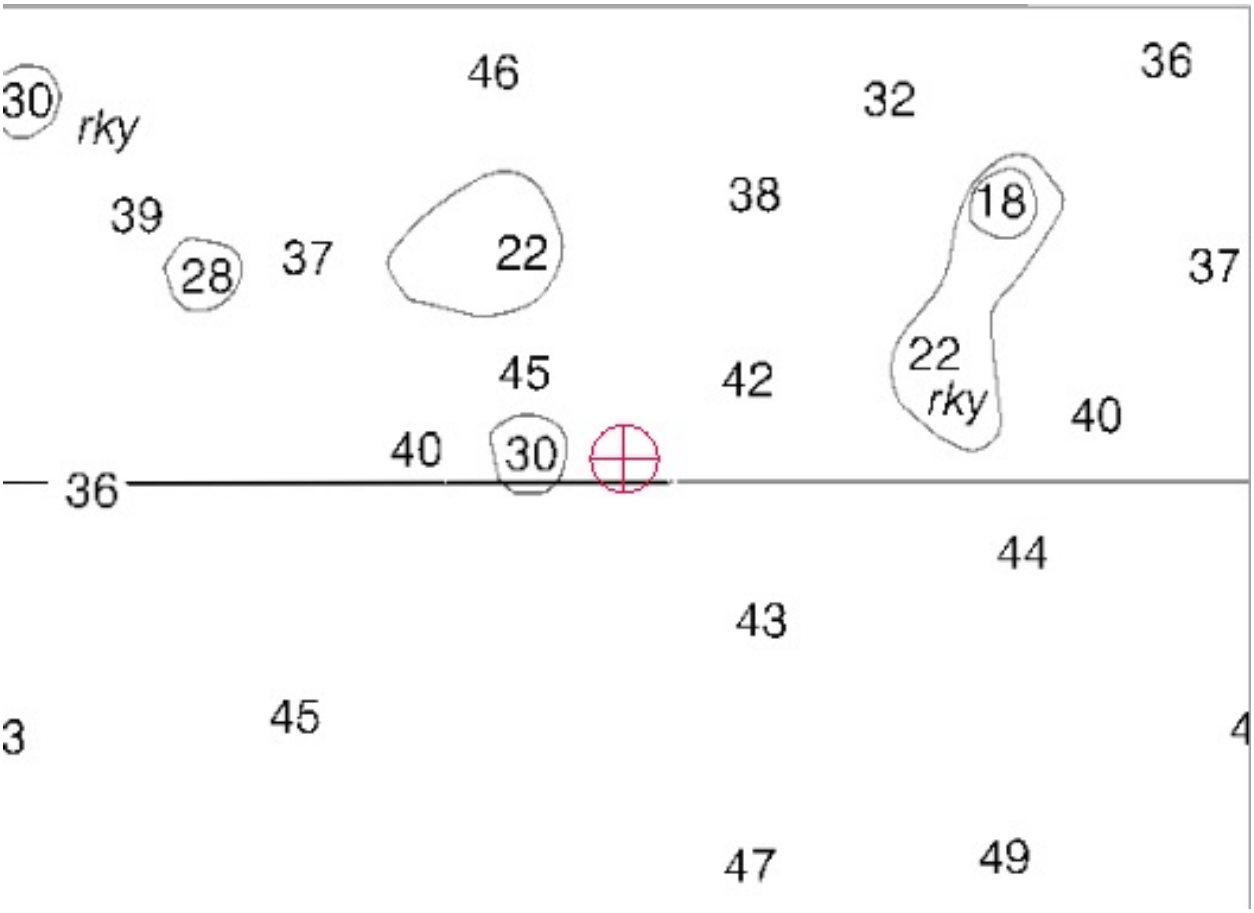


Figure 1.15.1

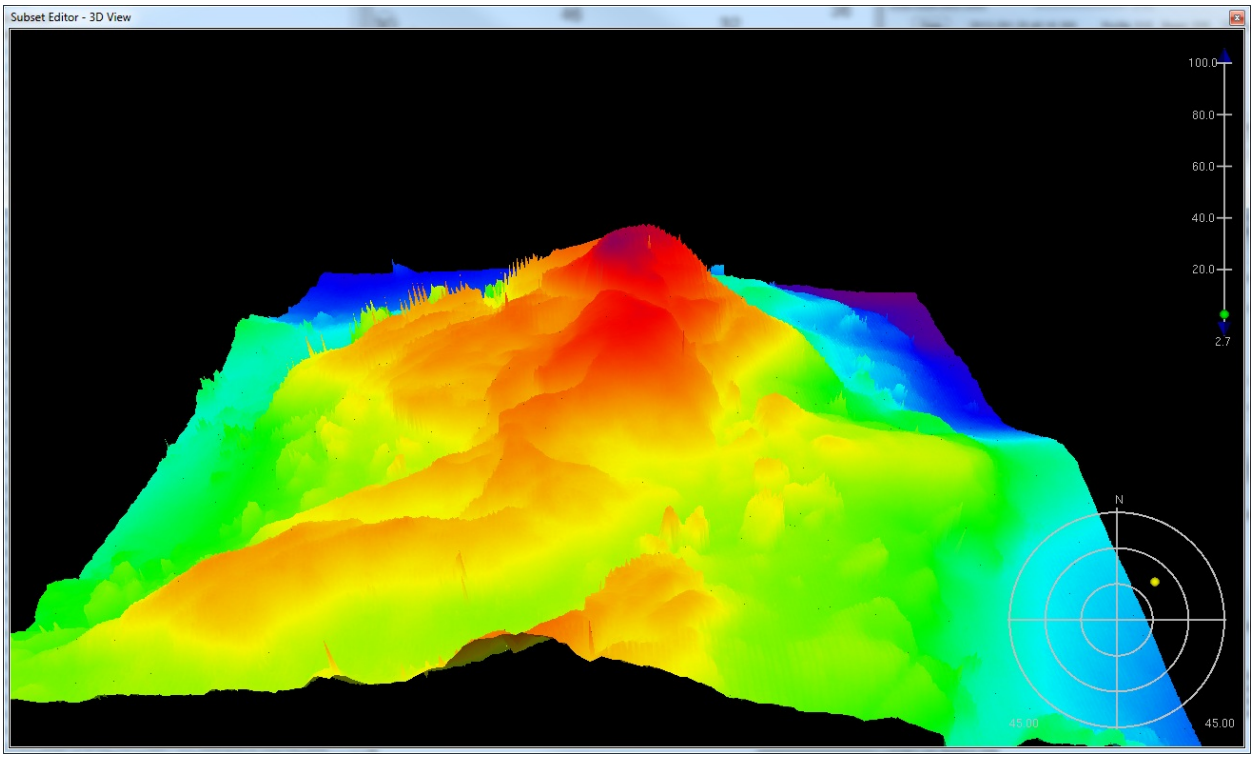


Figure 1.15.2

1.16) DTON 1: 3m Rock

DANGER TO NAVIGATION

Survey Summary

Survey Position:	41° 12' 47.5" N, 072° 40' 22.1" W
Least Depth:	2.99 m (= 9.81 ft = 1.635 fm = 1 fm 3.81 ft)
TPU (±1.96σ):	**THU (TPEh)** [None] ; **TVU (TPEv)** [None]
Timestamp:	2012-284.00:00:00.000 (10/10/2012)
Dataset:	H12484_Pydro_Features.000
FOID:	0_ 0000004750 00001(FFFE0000128E0001)
Charts Affected:	12373_1, 12372_16, 12354_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

UWTROC/remrks: Dangerous rock found with Reson 7125 object detection multibeam. Soundings are corrected to MLLW with observed tides and preliminary zoning.

Feature Correlation

Source	Feature	Range	Azimuth	Status
H12484_Pydro_Features.000	0_ 0000004750 00001	0.00	000.0	Primary

Hydrographer Recommendations

Chart dangerous rock.

Cartographically-Rounded Depth (Affected Charts):

10ft (12373_1, 12372_16, 12354_1)

1 ½fm (12300_1, 13006_1, 13003_1)

3.0m (5161_1)

S-57 Data

Geo object 1:	Underwater rock / awash rock (UWTROC)
Attributes:	NINFOM - Chart rock
	QUASOU - 6:least depth known
	SORDAT - 20121010

SORIND - US,US,graph,H12484

TECSOU - 3:found by multi-beam

VALSOU - 2.991 m

WATLEV - 3:always under water/submerged

Office Notes

SAR: Rock observed at survey position by MBES and SSS.

COMPILE : Chart 9.8 ft rock at survey position.

Feature Images

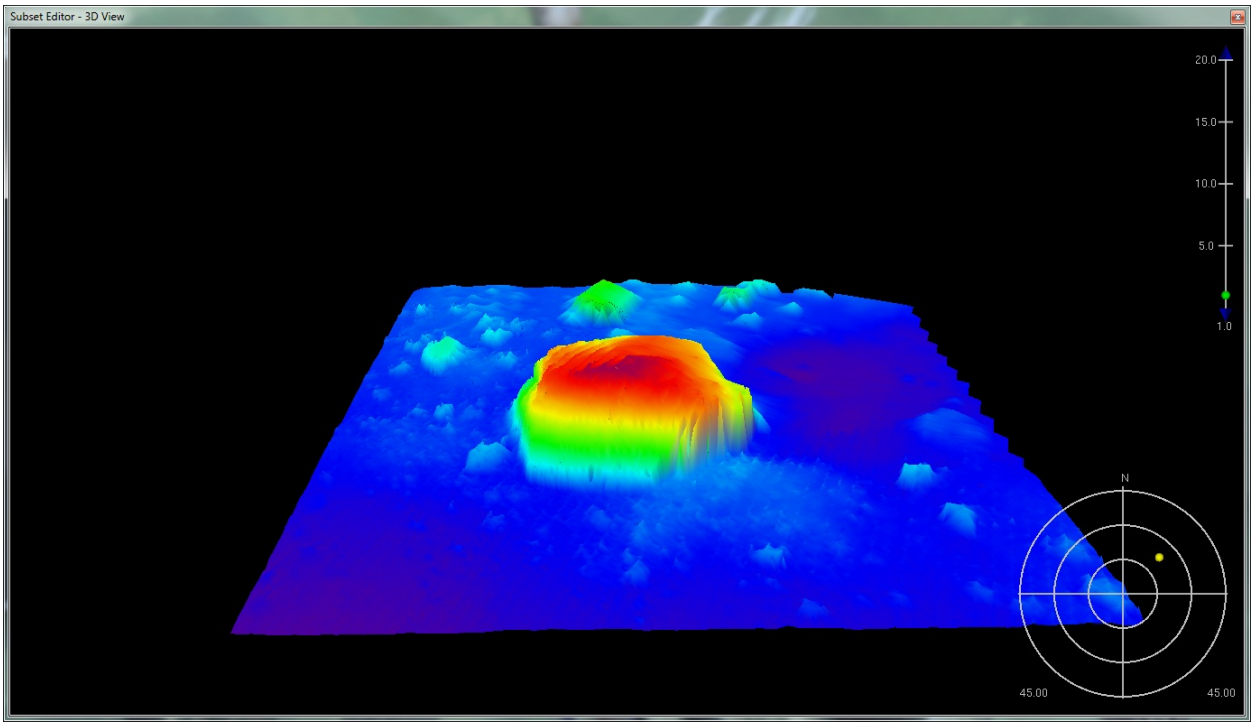


Figure 1.16.1

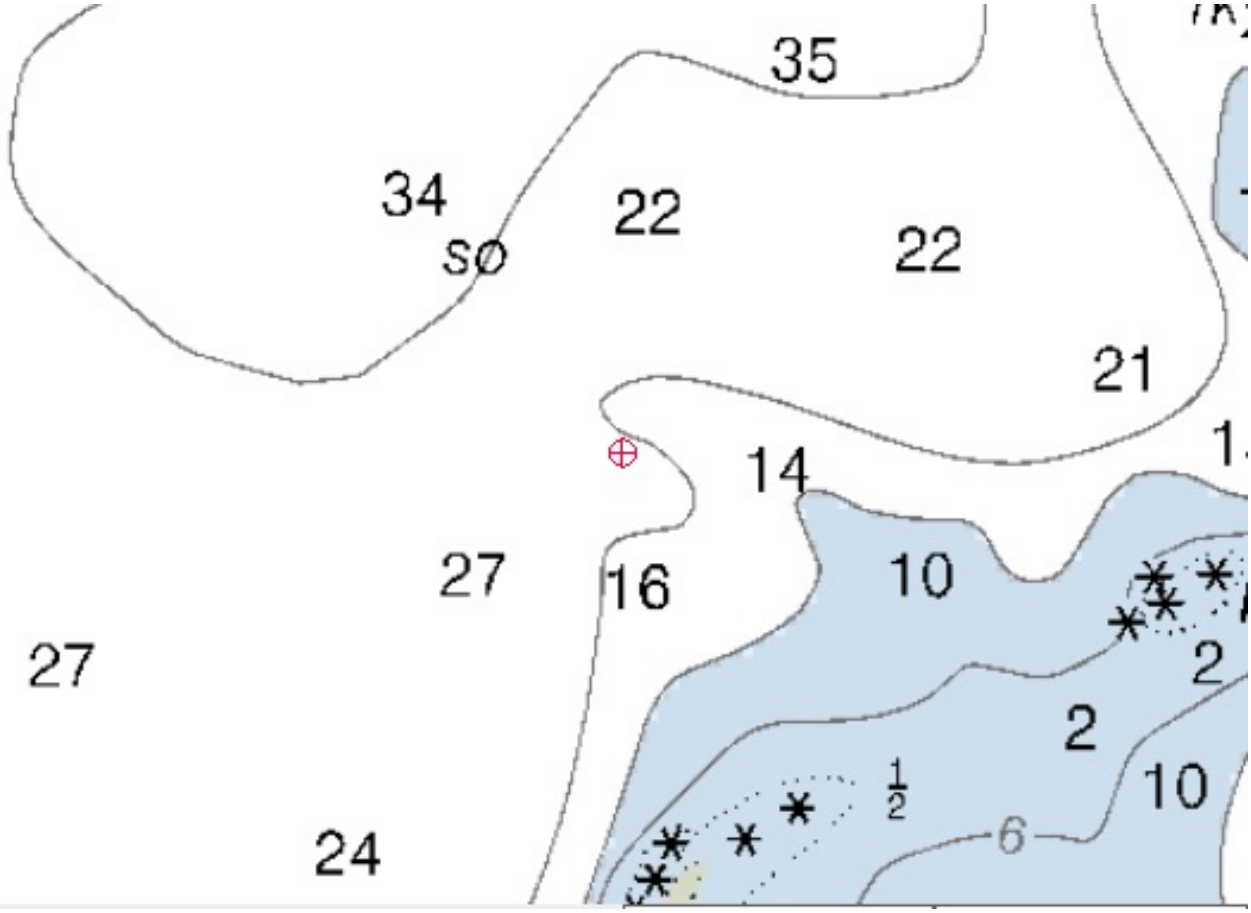


Figure 1.16.2

1.17) DTON 16: 3.9m Rock

DANGER TO NAVIGATION

Survey Summary

Survey Position:	41° 13' 14.9" N, 072° 40' 18.3" W
Least Depth:	3.87 m (= 12.71 ft = 2.118 fm = 2 fm 0.71 ft)
TPU (±1.96σ):	**THU (TPEh)** [None] ; **TVU (TPEv)** [None]
Timestamp:	2012-311.00:00:00.000 (11/06/2012)
Dataset:	H12484_Pydro_Features.000
FOID:	0_ 0000004754 00001(FFFE000012920001)
Charts Affected:	12373_1, 12372_16, 12354_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

UWTROC/remrks: Dangerous rock found with Reson 7125 object detection multibeam. Soundings are corrected to MLLW with VDatum solution.

Feature Correlation

Source	Feature	Range	Azimuth	Status
H12484_Pydro_Features.000	0_ 0000004754 00001	0.00	000.0	Primary

Hydrographer Recommendations

Chart dangerous rock.

Cartographically-Rounded Depth (Affected Charts):

12ft (12373_1, 12372_16, 12354_1)

2fm (12300_1, 13006_1, 13003_1)

3.8m (5161_1)

S-57 Data

Geo object 1:	Underwater rock / awash rock (UWTROC)
Attributes:	NINFOM - Chart rock
	QUASOU - 6:least depth known
	SORDAT - 20121106

SORIND - US,US,graph,H12484

TECSOU - 3:found by multi-beam

VALSOU - 3.873 m

WATLEV - 3:always under water/submerged

Office Notes

SAR: Rock observed at survey position by MBES and SSS.

COMPILE: Chart 12.7ft rock at survey position.

Feature Images

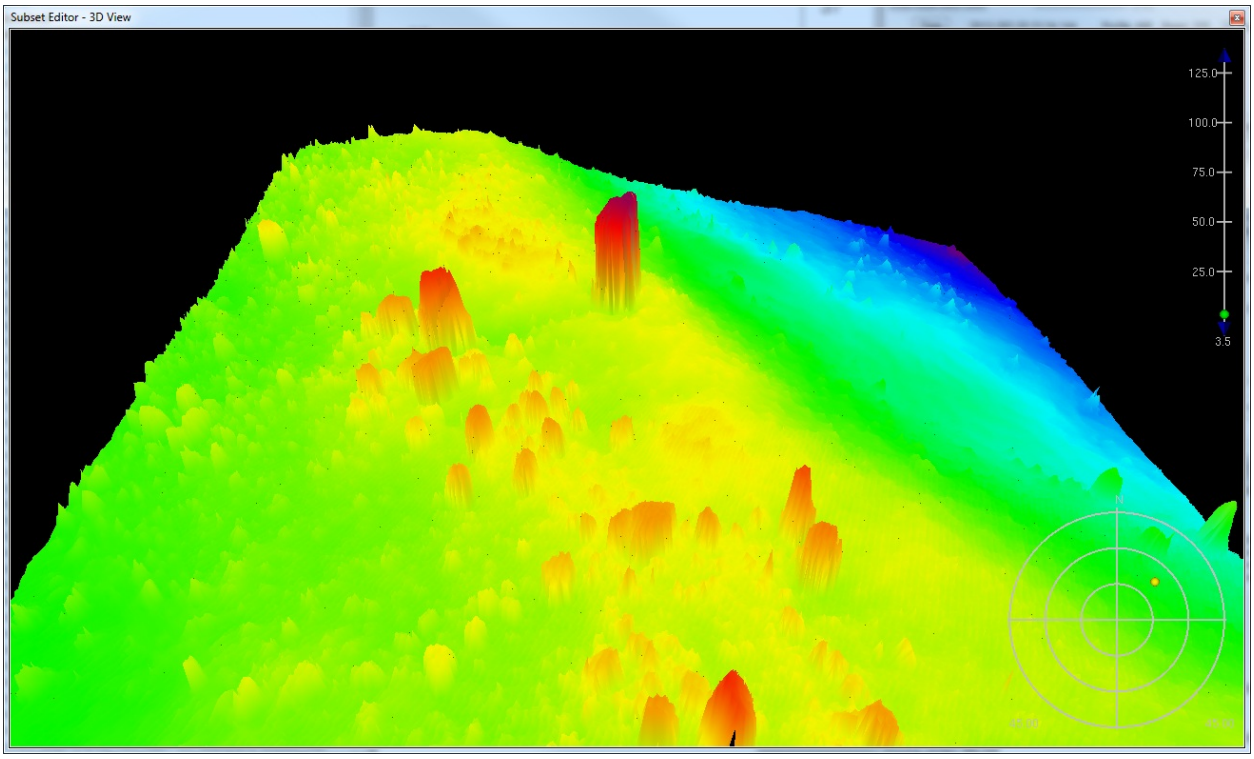


Figure 1.17.1

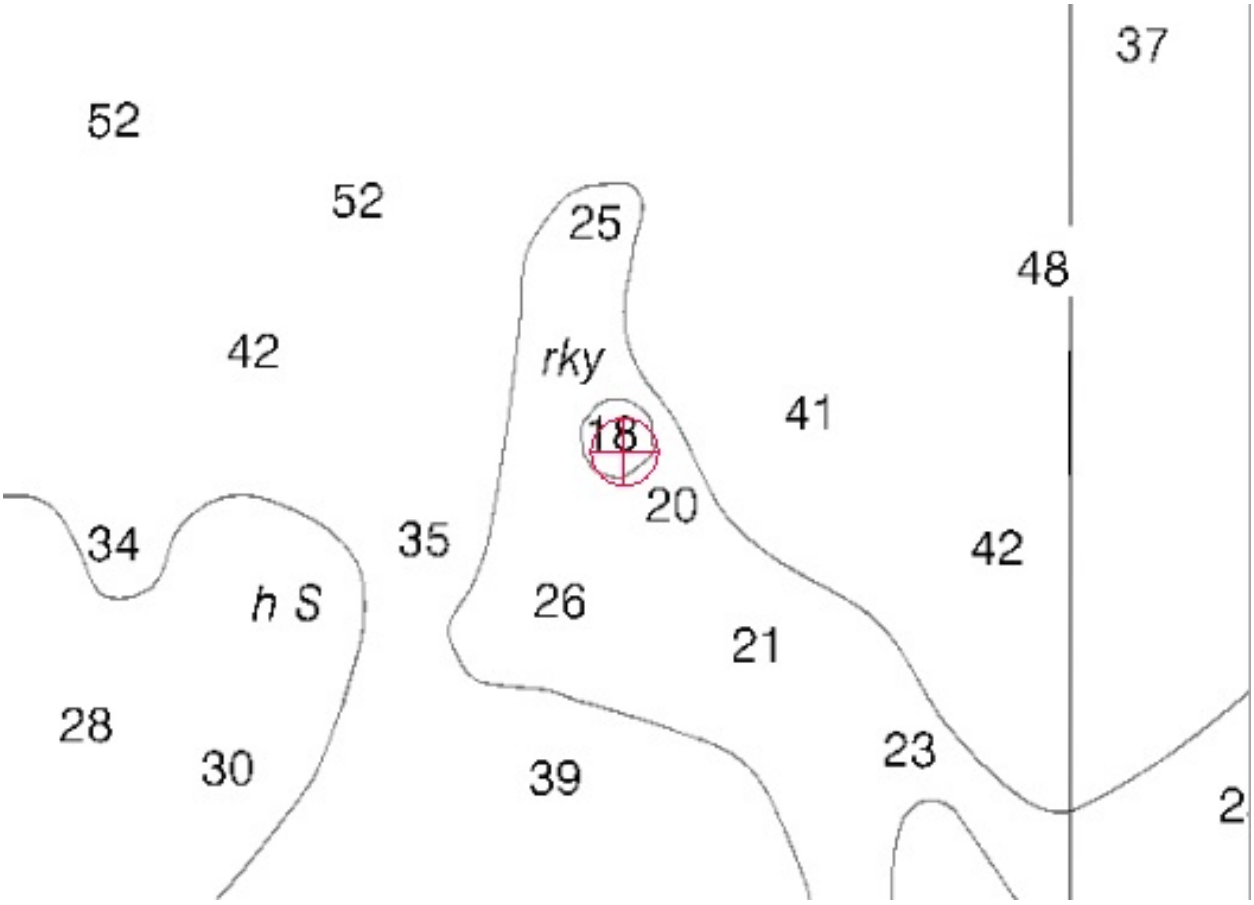


Figure 1.17.2

1.18) DTON 15: 3.2m Rock

DANGER TO NAVIGATION

Survey Summary

Survey Position:	41° 12' 11.5" N, 072° 40' 16.5" W
Least Depth:	3.29 m (= 10.80 ft = 1.801 fm = 1 fm 4.80 ft)
TPU (±1.96σ):	**THU (TPEh)** [None] ; **TVU (TPEv)** [None]
Timestamp:	2012-311.00:00:00.000 (11/06/2012)
Dataset:	H12484_Pydro_Features.000
FOID:	0_ 0000004749 00001(FFFE0000128D0001)
Charts Affected:	12373_1, 12372_16, 12354_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

UWTROC/remrks: Dangerous rock found with Reson 7125 object detection multibeam. Soundings are corrected to MLLW with VDatum solution.

Feature Correlation

Source	Feature	Range	Azimuth	Status
H12484_Pydro_Features.000	0_ 0000004749 00001	0.00	000.0	Primary

Hydrographer Recommendations

Chart dangerous rock.

Cartographically-Rounded Depth (Affected Charts):

11ft (12373_1, 12372_16, 12354_1)

1 ¾fm (12300_1, 13006_1, 13003_1)

3.3m (5161_1)

S-57 Data

Geo object 1:	Underwater rock / awash rock (UWTROC)
Attributes:	NINFOM - Chart rock
	QUASOU - 6:least depth known
	SORDAT - 20121106

SORIND - US,US,graph,H12484

TECSOU - 3:found by multi-beam

VALSOU - 3.293 m

WATLEV - 3:always under water/submerged

Office Notes

SAR: Rock observed at survey position by MBES and SSS.

COMPILE : Chart 10.8ft rock at survey position.

Feature Images

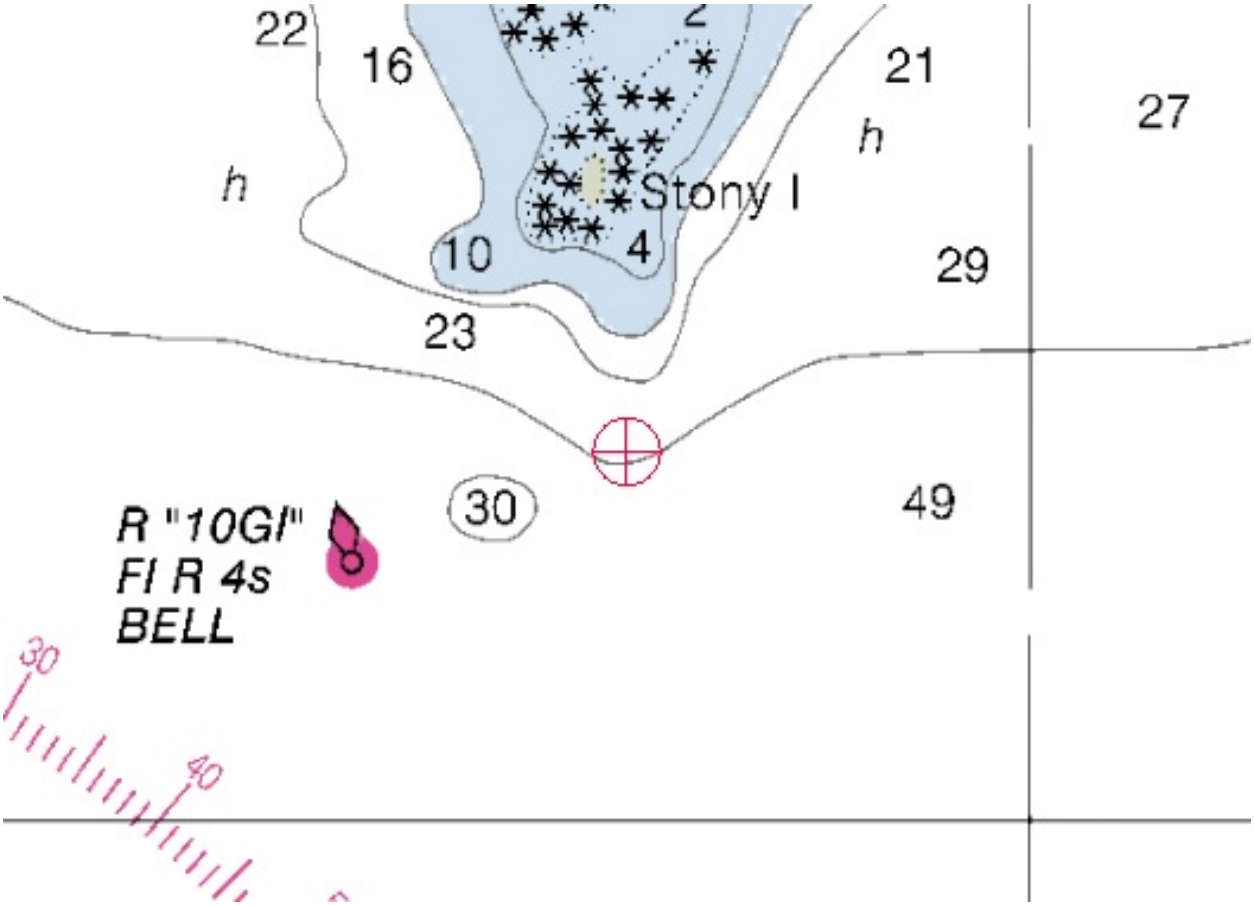


Figure 1.18.1

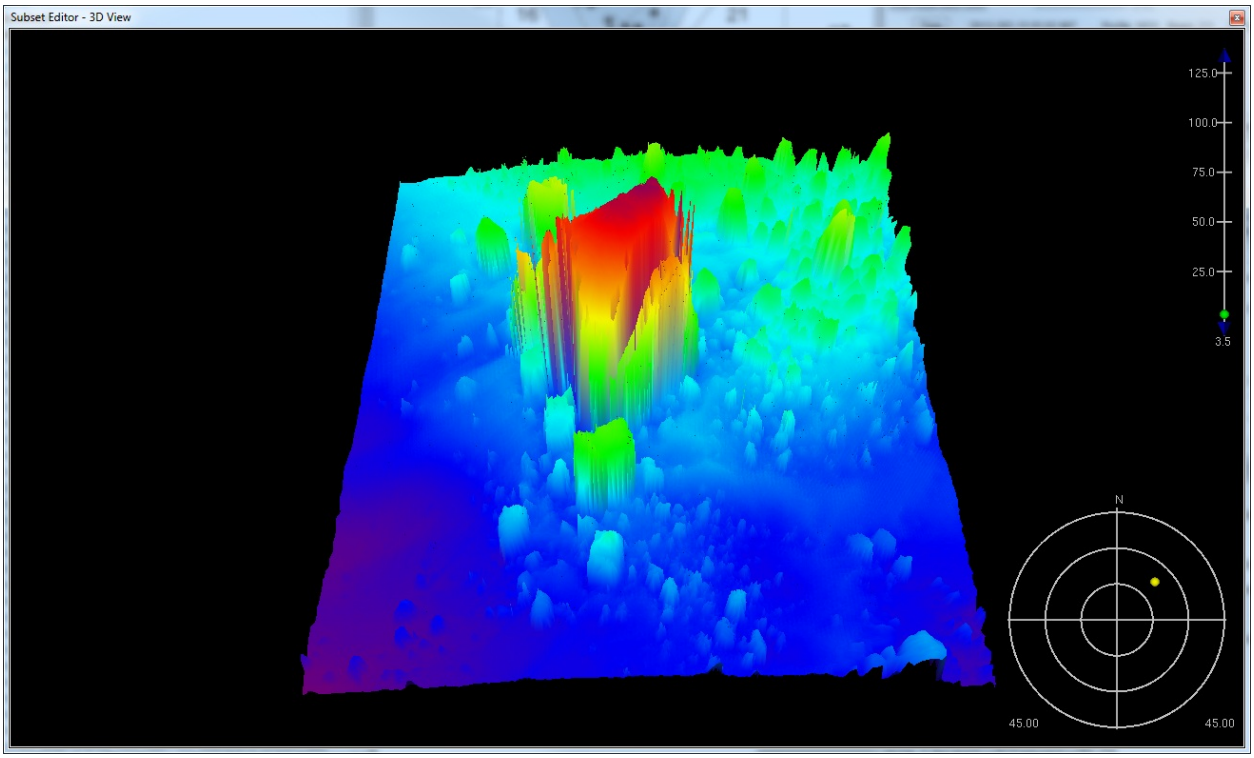


Figure 1.18.2

1.19) DTON 3: 1.0m Rock

DANGER TO NAVIGATION

Survey Summary

Survey Position:	41° 14' 48.9" N, 072° 40' 16.3" W
Least Depth:	0.96 m (= 3.17 ft = 0.528 fm = 0 fm 3.17 ft)
TPU (±1.96σ):	**THU (TPEh)** [None] ; **TVU (TPEv)** [None]
Timestamp:	2012-300.00:00:00.000 (10/26/2012)
Dataset:	H12484_Pydro_Features.000
FOID:	0_ 0000004763 00001(FFFE0000129B0001)
Charts Affected:	12372_14, 12373_1, 12372_16, 12354_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

UWTROC/remrks: Dangerous rock found with Reson 7125 object detection multibeam. Soundings are corrected to MLLW with observed tides and preliminary zoning.

Feature Correlation

Source	Feature	Range	Azimuth	Status
H12484_Pydro_Features.000	0_ 0000004763 00001	0.00	000.0	Primary

Hydrographer Recommendations

Chart dangerous rock.

Cartographically-Rounded Depth (Affected Charts):

3ft (12372_14, 12373_1, 12372_16, 12354_1)

0 ½fm (12300_1, 13006_1, 13003_1)

0.9m (5161_1)

S-57 Data

Geo object 1:	Underwater rock / awash rock (UWTROC)
Attributes:	NINFOM - Chart rock
	QUASOU - 6:least depth known
	SORDAT - 20121026

SORIND - US,US,graph,H12484

TECSOU - 3:found by multi-beam

VALSOU - 0.965 m

WATLEV - 3:always under water/submerged

Office Notes

SAR: Rock observed at survey position by MBES and SSS.

COMPILE: Chart 3.1 ft rock at survey position.

Feature Images

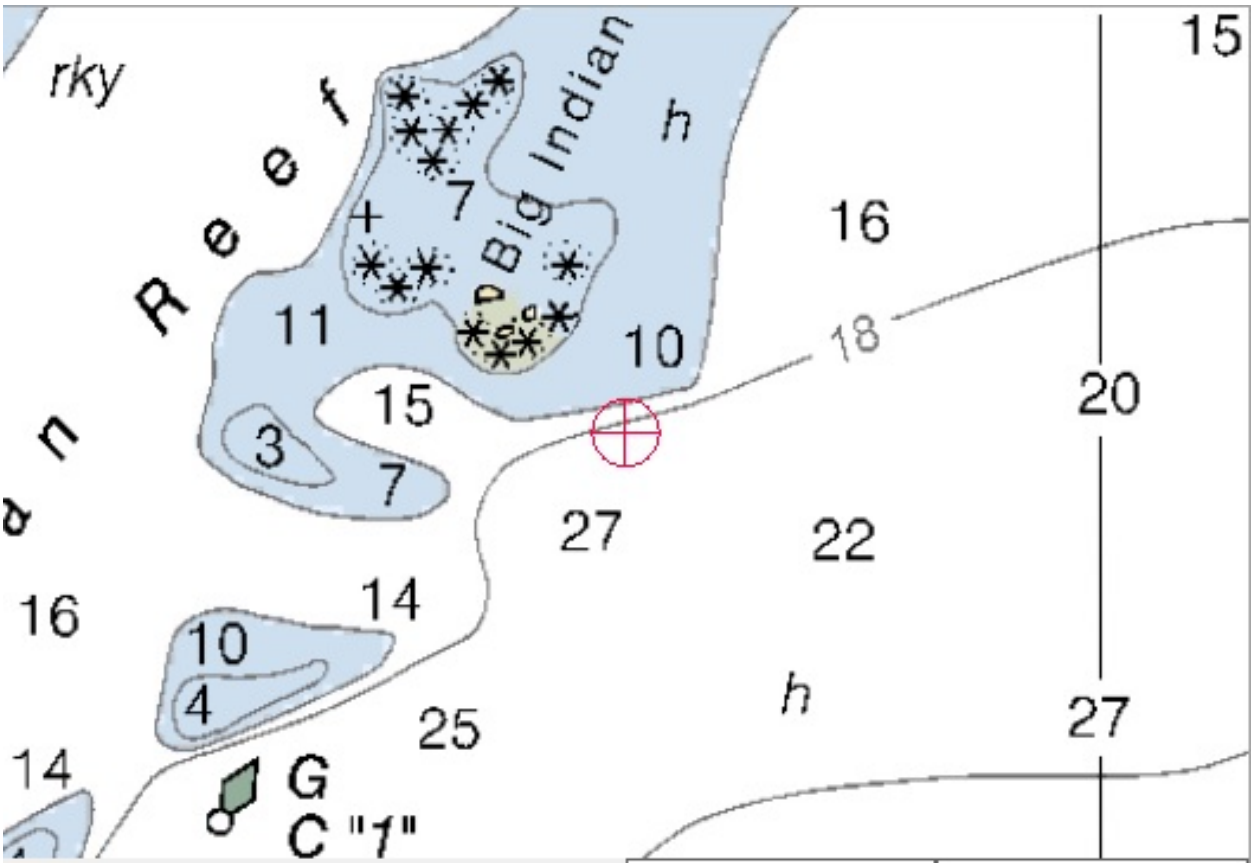


Figure 1.19.1

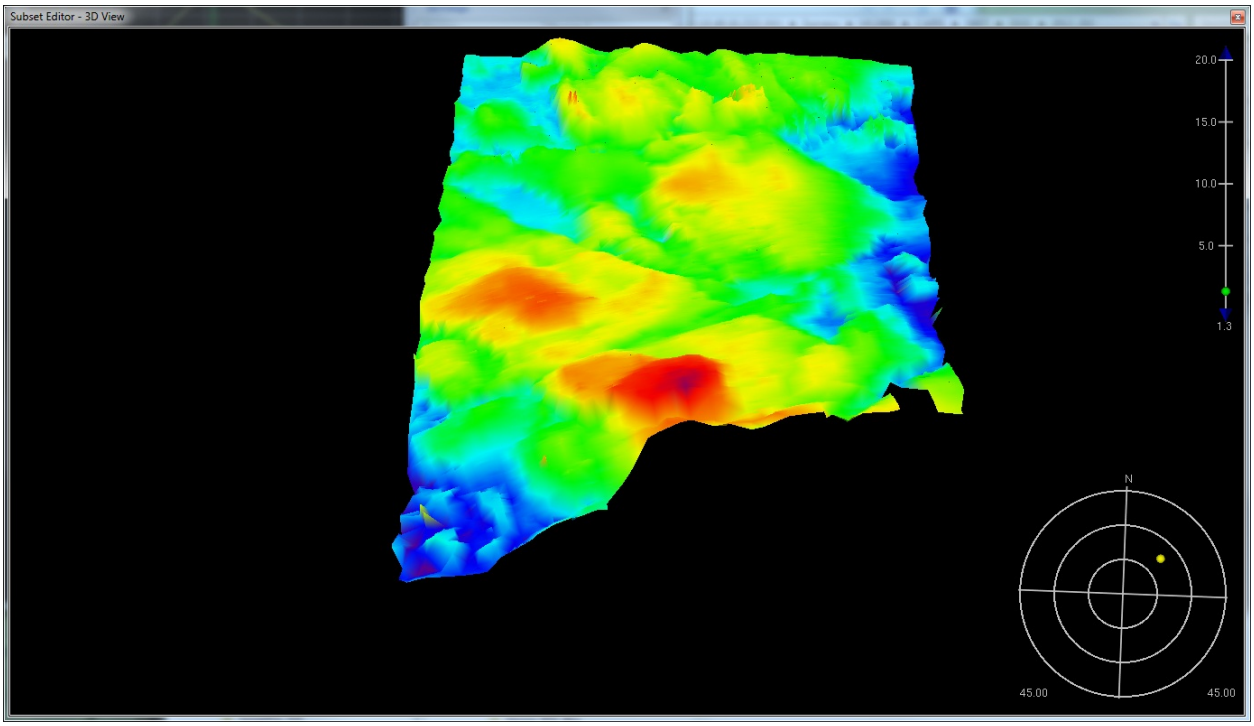


Figure 1.19.2

1.20) DTON 18: 3.1m Rock

DANGER TO NAVIGATION

Survey Summary

Survey Position:	41° 12' 40.3" N, 072° 39' 52.1" W
Least Depth:	3.13 m (= 10.26 ft = 1.710 fm = 1 fm 4.26 ft)
TPU (±1.96σ):	**THU (TPEh)** [None] ; **TVU (TPEv)** [None]
Timestamp:	2012-311.00:00:00.000 (11/06/2012)
Dataset:	H12484_Pydro_Features.000
FOID:	0_ 0000004753 00001(FFFE000012910001)
Charts Affected:	12373_1, 12372_16, 12354_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

UWTROC/remrks: Dangerous rock found with Reson 7125 object detection multibeam. Soundings are corrected to MLLW with VDatum solution.

Feature Correlation

Source	Feature	Range	Azimuth	Status
H12484_Pydro_Features.000	0_ 0000004753 00001	0.00	000.0	Primary

Hydrographer Recommendations

chart dangerous rock.

Cartographically-Rounded Depth (Affected Charts):

10ft (12373_1, 12372_16, 12354_1)

1 ¾fm (12300_1, 13006_1, 13003_1)

3.1m (5161_1)

S-57 Data

Geo object 1:	Underwater rock / awash rock (UWTROC)
Attributes:	NINFOM - Chart rock
	QUASOU - 6:least depth known
	SORDAT - 20121106

SORIND - US,US,graph,H12484

TECSOU - 3:found by multi-beam

VALSOU - 3.127 m

WATLEV - 3:always under water/submerged

Office Notes

SAR: Rock observed at survey position by MBES and SSS.

COMPILE : Chart 10.2ft rock at survey position.

Feature Images

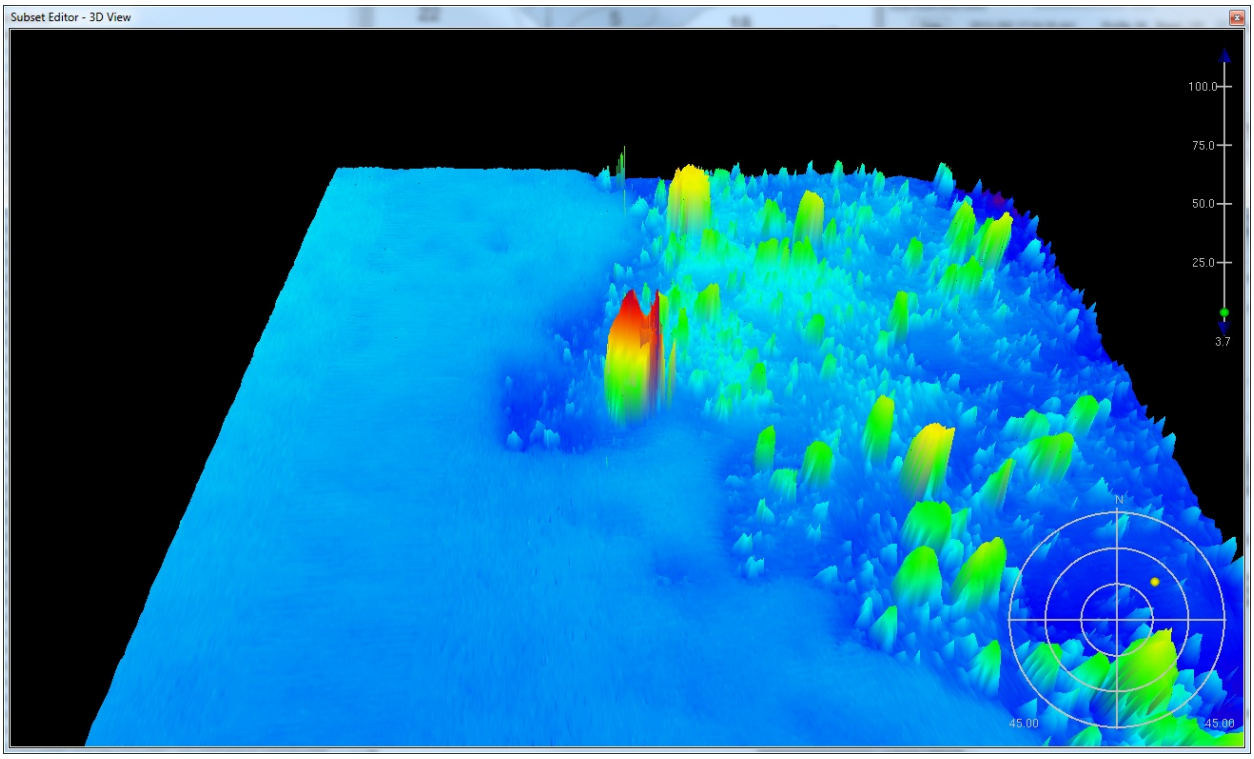


Figure 1.20.1

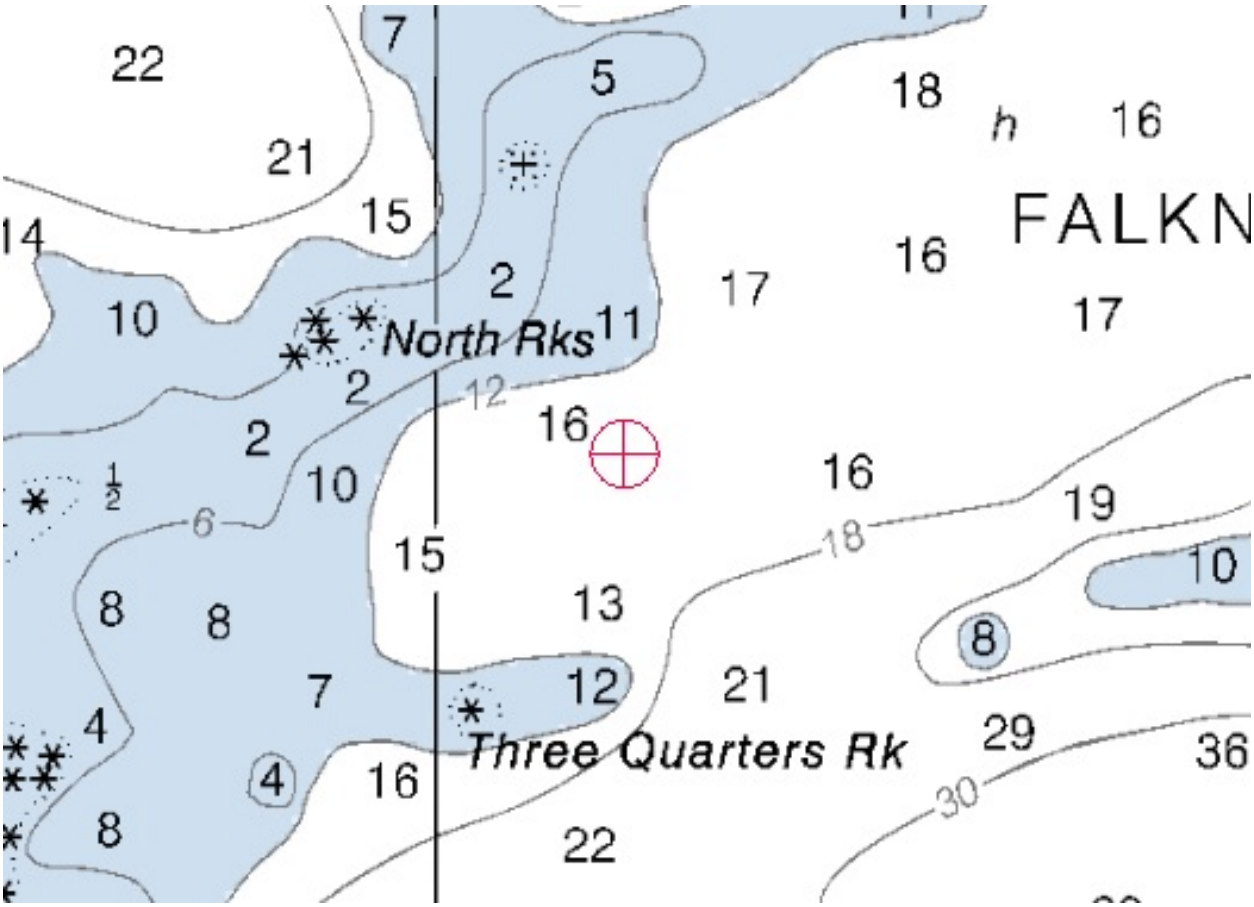

22
7
5
18
h
16
21
15
FALKN
14
16
2
17
17
10
North Rks
11
2
12
16
2
10
16
19
6
18
15
10
8
8
13
8
7
12
21
4
Three Quarters Rk
29
36
4
16
30
8
22

Figure 1.20.2

1.21) DTON 19: 6.9m Rock

DANGER TO NAVIGATION

Survey Summary

Survey Position: 41° 14' 37.9" N, 072° 39' 36.9" W

Least Depth: [None]

TPU (±1.96σ): **THU (TPEh)** [None] ; **TVU (TPEv)** [None]

Timestamp: 1981-001.00:00:00.000 (01/01/1981)

Dataset: H12484_Pydro_Features.000

FOID: 0_ 0000004772 00001(FFFE000012A40001)

Charts Affected: 12372_14, 12373_1, 12372_16, 12354_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

[None]

Feature Correlation

Source	Feature	Range	Azimuth	Status
H12484_Pydro_Features.000	0_ 0000004772 00001	0.00	000.0	Primary

Hydrographer Recommendations

[None]

S-57 Data

Geo object 1: Cartographic symbol ($CSYMB)

Attributes: NINFOM - Delete rock

NTXTDS - Chart 12373,ED15,NTM 20130928

Office Notes

Delete charted rock. Chart as a 22 ft sounding.

1.22) DTON 17: 8.3m Rock

DANGER TO NAVIGATION

Survey Summary

Survey Position: 41° 13' 19.7" N, 072° 39' 16.8" W

Least Depth: [None]

TPU (±1.96σ): **THU (TPEh)** [None] ; **TVU (TPEv)** [None]

Timestamp: 1981-001.00:00:00.000 (01/01/1981)

Dataset: H12484_Pydro_Features.000

FOID: 0_ 0000004771 00001(FFFE000012A30001)

Charts Affected: 12373_1, 12374_1, 12372_16, 12354_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

[None]

Feature Correlation

Source	Feature	Range	Azimuth	Status
H12484_Pydro_Features.000	0_ 0000004771 00001	0.00	000.0	Primary

Hydrographer Recommendations

[None]

S-57 Data

Geo object 1: Cartographic symbol ($CSYMB)

Attributes: NINFOM - Delete rock

NTXTDS - Chart 12373,ED15,NTM 20130928

Office Notes

Delete charted rock. Chart as a 27 ft sounding.

1.23) DTON 25: 2.6m Rock

DANGER TO NAVIGATION

Survey Summary

Survey Position:	41° 15' 08.7" N, 072° 39' 13.6" W
Least Depth:	2.64 m (= 8.66 ft = 1.444 fm = 1 fm 2.66 ft)
TPU (±1.96σ):	**THU (TPEh)** [None] ; **TVU (TPEv)** [None]
Timestamp:	2012-311.00:00:00.000 (11/06/2012)
Dataset:	H12484_Pydro_Features.000
FOID:	0_ 0000004764 00001(FFFE0000129C0001)
Charts Affected:	12372_14, 12373_1, 12372_16, 12354_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

UWTROC/remrks: Dangerous rock found with Reson 7125 object detection multibeam. Soundings are corrected to MLLW with VDatum solution.

Feature Correlation

Source	Feature	Range	Azimuth	Status
H12484_Pydro_Features.000	0_ 0000004764 00001	0.00	000.0	Primary

Hydrographer Recommendations

Chart dangerous rock.

Cartographically-Rounded Depth (Affected Charts):

8ft (12372_14, 12373_1, 12372_16, 12354_1)

1 ½fm (12300_1, 13006_1, 13003_1)

2.6m (5161_1)

S-57 Data

Geo object 1:	Underwater rock / awash rock (UWTROC)
Attributes:	NINFOM - Chart rock
	QUASOU - 6:least depth known
	SORDAT - 20121106

SORIND - US,US,graph,H12484

TECSOU - 3:found by multi-beam

VALSOU - 2.641 m

WATLEV - 3:always under water/submerged

Office Notes

SAR: Rock observed at survey position by MBES and SSS.

COMPILE: Chart 8.6 ft rock at survey position.

Feature Images

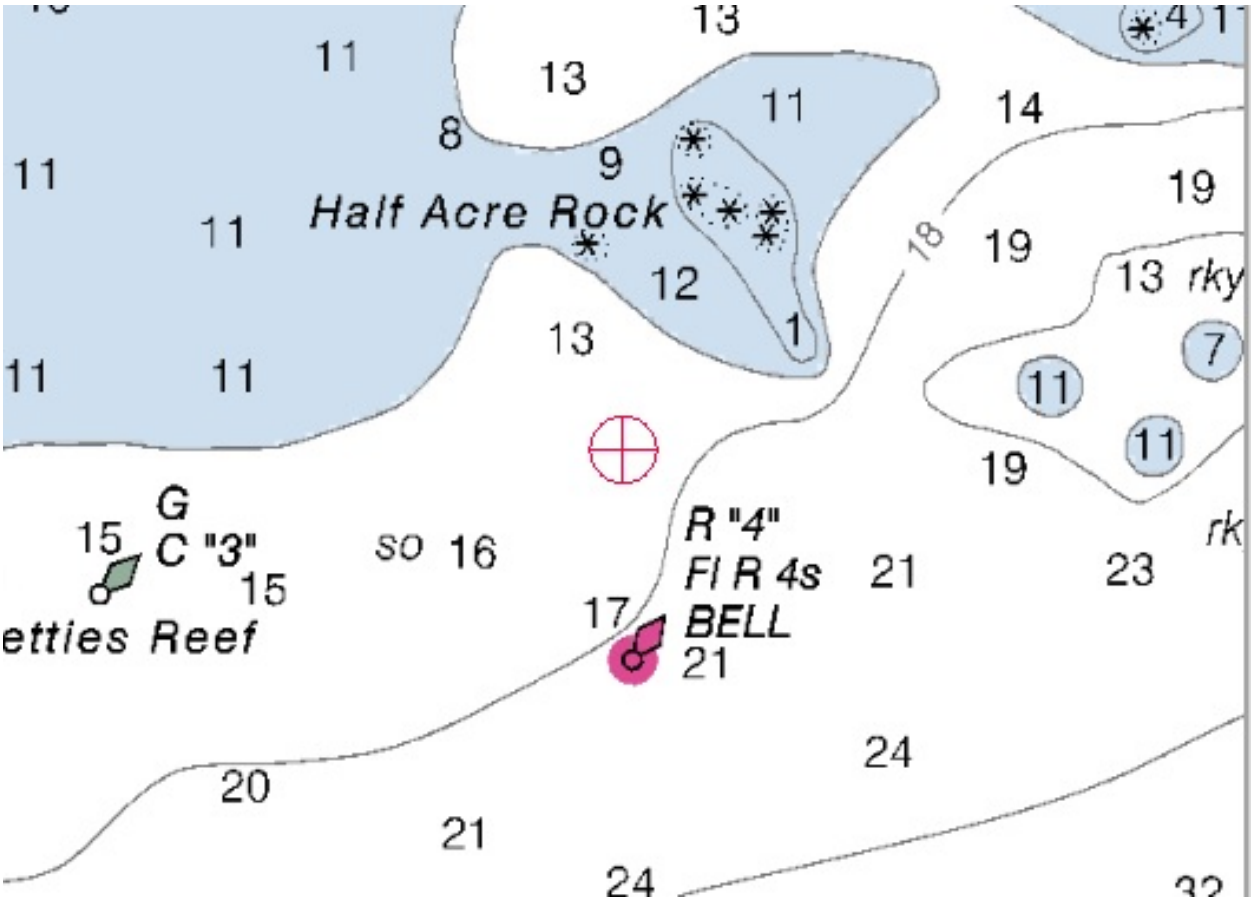


Figure 1.23.1

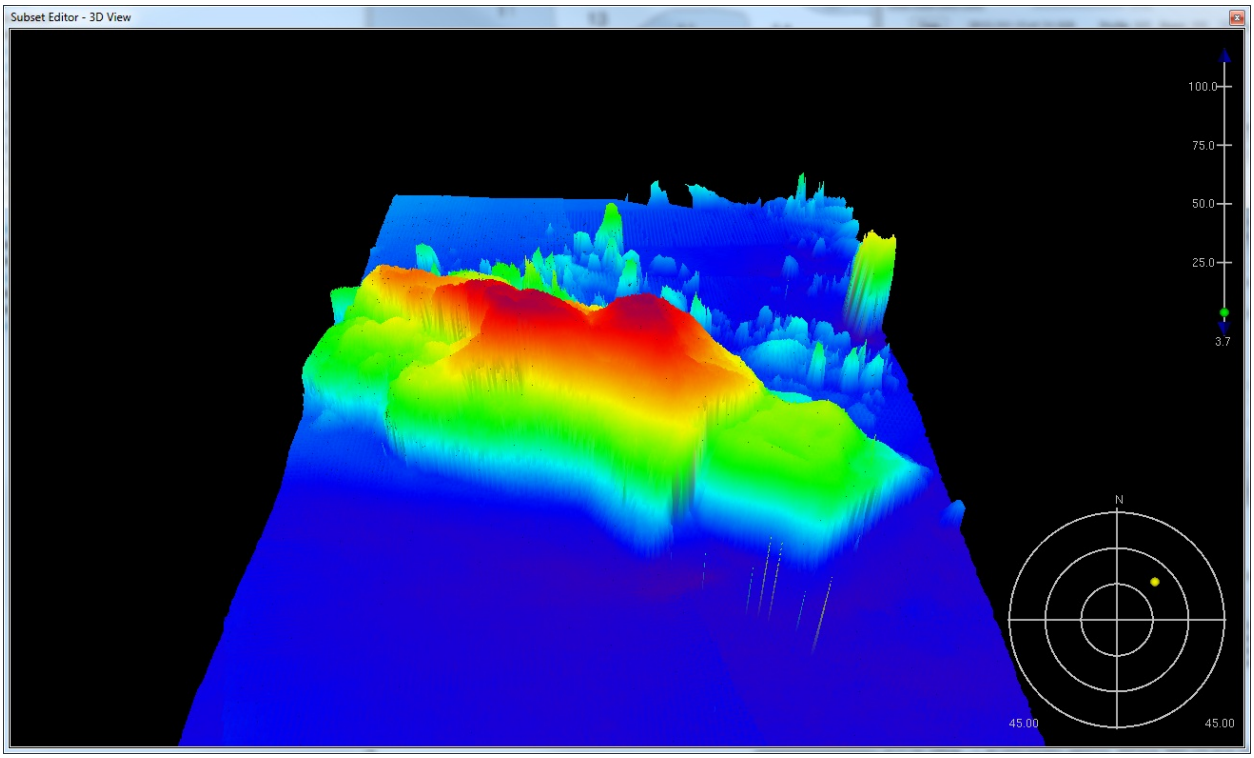


Figure 1.23.2

1.24) DTON 20: 4.9m Rock

DANGER TO NAVIGATION

Survey Summary

Survey Position:	41° 14' 44.6" N, 072° 39' 02.9" W
Least Depth:	[None]
TPU (±1.96σ):	**THU (TPEh)** [None] ; **TVU (TPEv)** [None]
Timestamp:	1981-001.00:00:00.000 (01/01/1981)
Dataset:	H12484_Pydro_Features.000
FOID:	0_ 0000004769 00001(FFFE000012A10001)
Charts Affected:	12372_14, 12373_1, 12374_1, 12372_16, 12354_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

[None]

Feature Correlation

Source	Feature	Range	Azimuth	Status
H12484_Pydro_Features.000	0_ 0000004769 00001	0.00	000.0	Primary

Hydrographer Recommendations

[None]

S-57 Data

Geo object 1:	Cartographic symbol ($CSYMB)
Attributes:	NINFOM - Delete rock
	NTXTDS - Chart 12373,ED15,NTM 20130928

Office Notes

Delete charted rock. Chart as a 16 ft sounding.

1.25) DTON 24: 1.1m Rock

DANGER TO NAVIGATION

Survey Summary

Survey Position:	41° 15' 11.5" N, 072° 38' 53.6" W
Least Depth:	1.13 m (= 3.71 ft = 0.619 fm = 0 fm 3.71 ft)
TPU (±1.96σ):	**THU (TPEh)** [None] ; **TVU (TPEv)** [None]
Timestamp:	2012-311.00:00:00.000 (11/06/2012)
Dataset:	H12484_Pydro_Features.000
FOID:	0_ 0000004765 00001(FFFE0000129D0001)
Charts Affected:	12372_14, 12373_1, 12374_1, 12372_16, 12354_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

UWTROC/remrks: Dangerous rock found with Reson 7125 object detection multibeam. Soundings are corrected to MLLW with VDatum solution.

Feature Correlation

Source	Feature	Range	Azimuth	Status
H12484_Pydro_Features.000	0_ 0000004765 00001	0.00	000.0	Primary

Hydrographer Recommendations

Chart dangerous rock.

Cartographically-Rounded Depth (Affected Charts):

3ft (12372_14, 12373_1, 12374_1, 12372_16, 12354_1)

0 ½fm (12300_1, 13006_1, 13003_1)

1.1m (5161_1)

S-57 Data

Geo object 1:	Underwater rock / awash rock (UWTROC)
Attributes:	NINFOM - Chart rock
	QUASOU - 6:least depth known
	SORDAT - 20121106

SORIND - US,US,graph,H12484

TECSOU - 3:found by multi-beam

VALSOU - 1.132 m

WATLEV - 3:always under water/submerged

Office Notes

SAR: Rock observed at survey position by MBES and SSS.

COMPILE: Chart 3.7 ft rock at survey position.

Feature Images

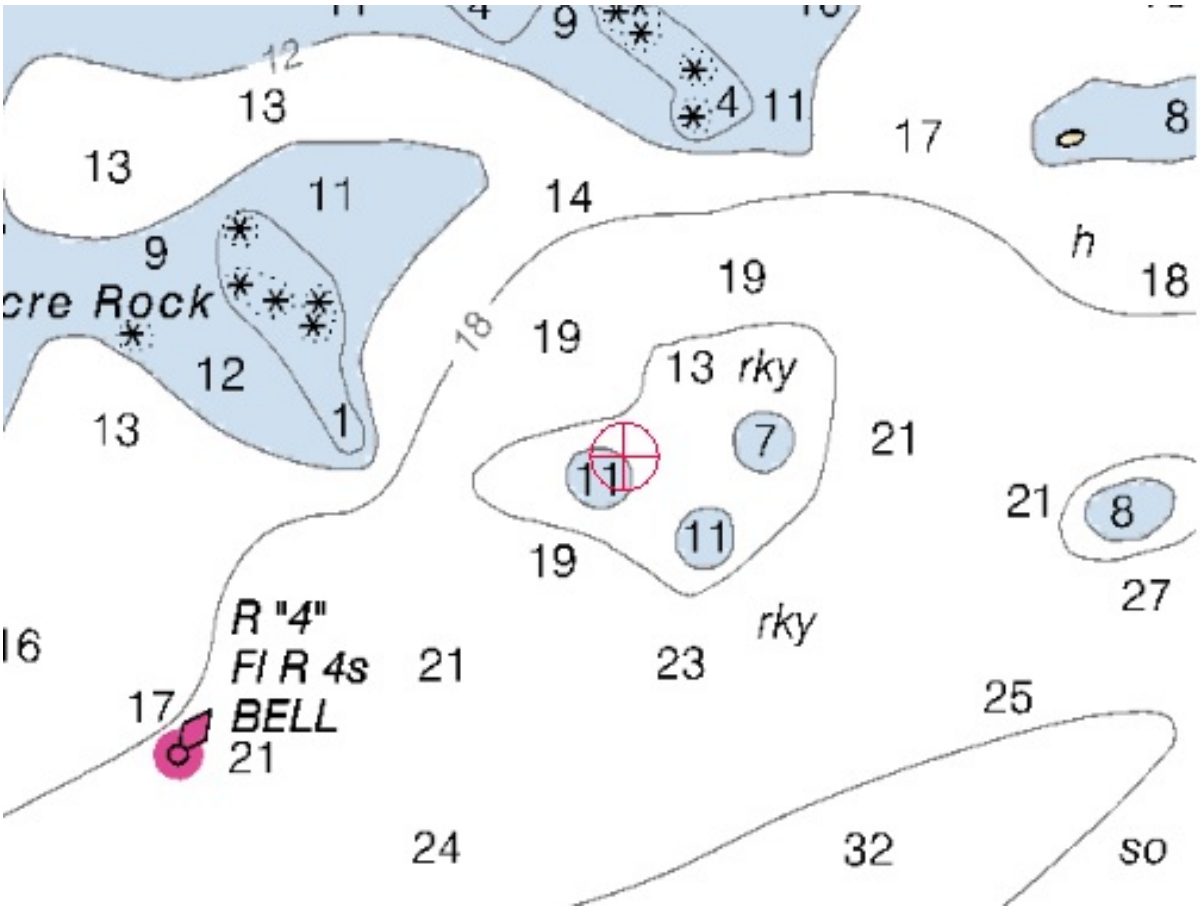


Figure 1.25.1

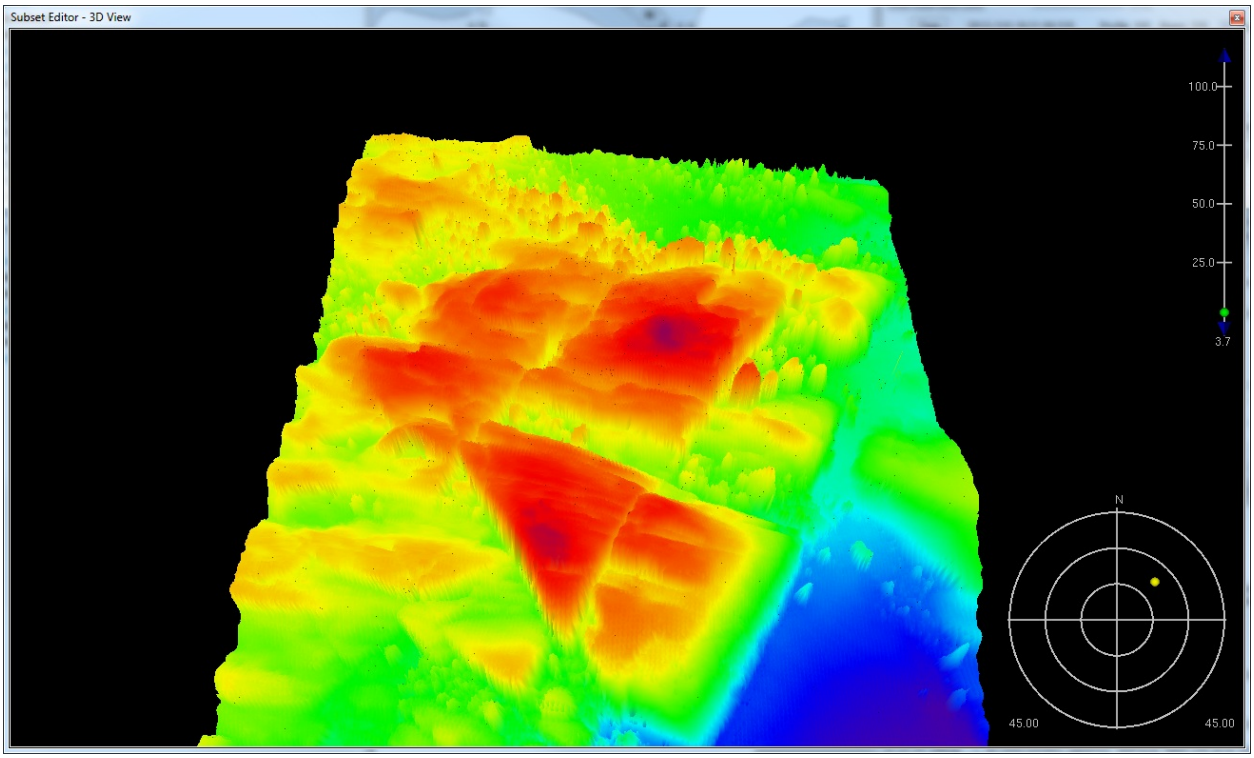


Figure 1.25.2

APPROVAL PAGE

H12484

Data meet or exceed current specifications as certified by the OCS survey acceptance review process. Descriptive Report and survey data except where noted are adequate to supersede prior surveys and nautical charts in the common area.

The following products will be sent to NGDC for archive

- H12484_DR.pdf
- Collection of depth varied resolution BAGS
- Processed survey data and records
- H12484_GeoImage.pdf

The survey evaluation and verification has been conducted according current OCS Specifications, and the survey has been approved for dissemination and usage of updating NOAA's suite of nautical charts.

Approved:_____ _____

LCDR Abigail Higgins, NOAA
Chief, Atlantic Hydrographic Branch