

D00230

NOAA Form 76-35A

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

DESCRIPTIVE REPORT

Type of Survey: Natural Disaster Response

Registry Number: D00230

LOCALITY

State: Texas

General Locality: Galveston Bay

Sub-locality: Bolivar Roads Anchorage Area A and B, Galveston Channel, Morgans Point to Turning Basin

2017

CHIEF OF PARTY
Dan Jacobs, NOAA

LIBRARY & ARCHIVES

Date:

HYDROGRAPHIC TITLE SHEET

D00230

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: **Texas**

General Locality: **Galveston Bay**

Sub-Locality: **Bolivar Roads Anchorage Area A and B, Galveston Channel,
Morgans Point to Turning Basin**

Scale: **1: 10,000**

Dates of Survey: **08/31/2017 to 09/07/2017**

Instructions Dated: **09/03/2017**

Project Number: **S-K913-NRB-17**

Field Unit: **NOAA Navigation Response Team 4**

Chief of Party: **Dan Jacobs**

Soundings by: **Multibeam Echo Sounder**

Imagery by: **Side Scan Sonar**

Verification by: **Pacific 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 Centers for Environmental Information (NCEI) and can be retrieved via <http://www.ncei.noaa.gov/>.



DESCRIPTIVE REPORT MEMO

October 12, 2017

MEMORANDUM FOR: Pacific Hydrographic Branch

FROM: Dan Jacobs
Team Lead, NRT4, Navigation Response Team 4

SUBJECT: Submission of Suvey D00230

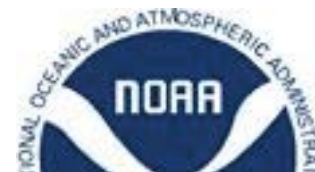
JACOBS.D Digitally signed
by
AN.L.115 JACOBS.DAN.L.1
151633478
1633478 Date: 2017.10.23
13:55:44 -05'00'

The purpose of this survey is to respond to requests for hydrographic surveys to reopen the channels in Galveston Bay and Vicinity due to the effects of Hurricane Harvey. The survey limits and methods will be determined by the Team Lead in consult with the NRB Chief and NOAA Navigation Manager. Data will be collected in the most efficient manner to provide USACE and USCG information that is critical to make real-time decisions on channel and/or port closures and openings. The data from this survey are not intended to meet NOAA charting specifications, and are not intended to be applied to the nautical chart with the exception of hazards to navigation (i.e., DTONs), subject to branch review. As such, the field unit submit a DR Memo in lieu of an XML Descriptive Report.

NRT4 created a power point of foreign objects that may interfere with future dredging operations. The objects included boats, posts, tires, abandoned structures, and elevated metal piping. Findings were included from Galveston Channel, Galveston anchorage areas A&B, and the Upper Houston Shipping Channel. The R/V Manta provided a PDF document that detailed all sidescan contacts. The USACE also requested XYZ ASCII centerline data from our survey areas. A XYZ ASCII file was created for each survey sheet. The data were exported using the State Plane Texas South Central Projection in US Survey Feet at MLLW. The R/V Manta's sidescan sonar data were gridded and placed in a geotiff for submission to the USACE, to be passed on to their dredging subcontractor. The USACE later requested the entire processed CARIS dataset. All information was submitted to Matthew Duke, Chief, Hydrographic Survey Section of the U.S. Army Corps of Engineers Galveston District. Additional personnel included on the e-mails included Michael Davidson, Ryan Wartick, Alan Bunn, Dan Jacobs, and Erin Diurba.

Soundings were reduced to Mean Lower Low Water (MLLW) using observed tides from tide stations 8770613, 8770777, 8771013, 8771341, 8771450, and TCARI grid K913NRT4KR2017.tc provided by CO-OPS from a 2017 survey of this area.

All survey systems and methods utilized during this survey were as described in NRT4_DAPR_2017. Most survey systems and methods utilized during this survey were described in the NRT4_HSRR_2017. Due to time constraints, the sidescan sonar system on the Universal Sonar Mount were not calibrated to FPM requirements prior surveying (Missing confidence radius test). However, NRT4 did complete a confidence



radius test on 9/26/2017 and found that their system was within the 5m radius requirements. The R/V Manta did not complete the HSRR, or a SSS confidence radius test, prior to the start of the response survey.

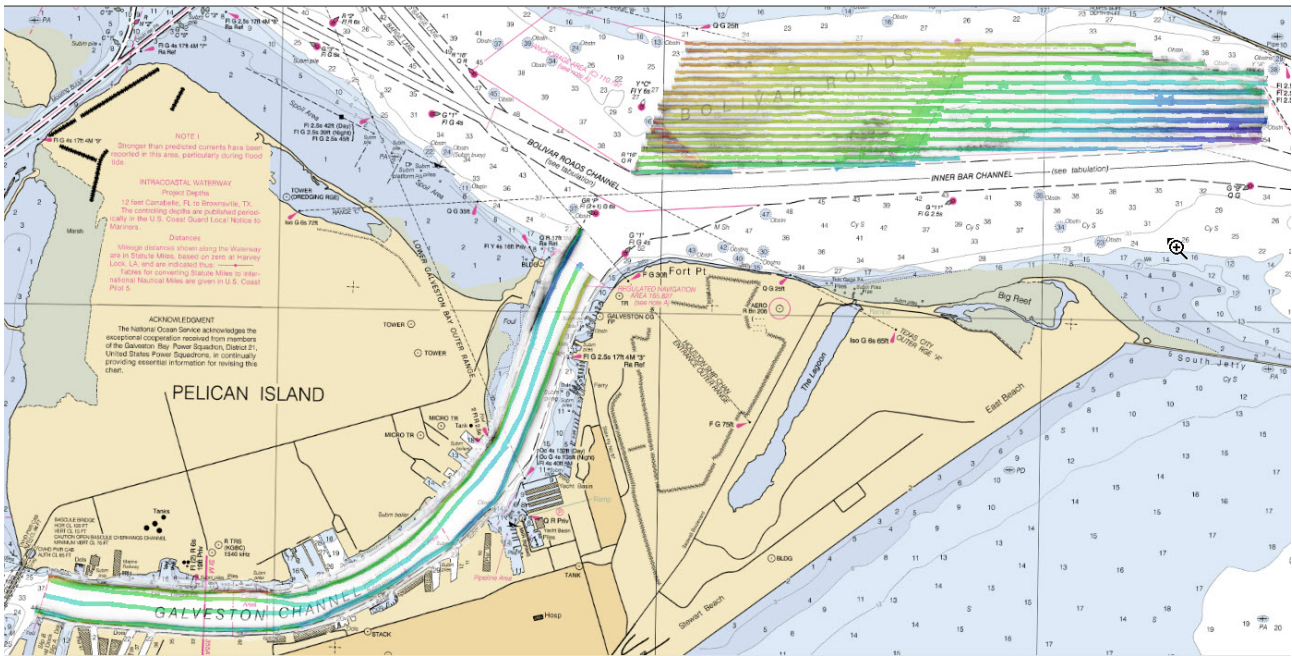
All data was reviewed for DTON and none were found.

All data were acquired by a NOAA or NOAA Contractor field unit

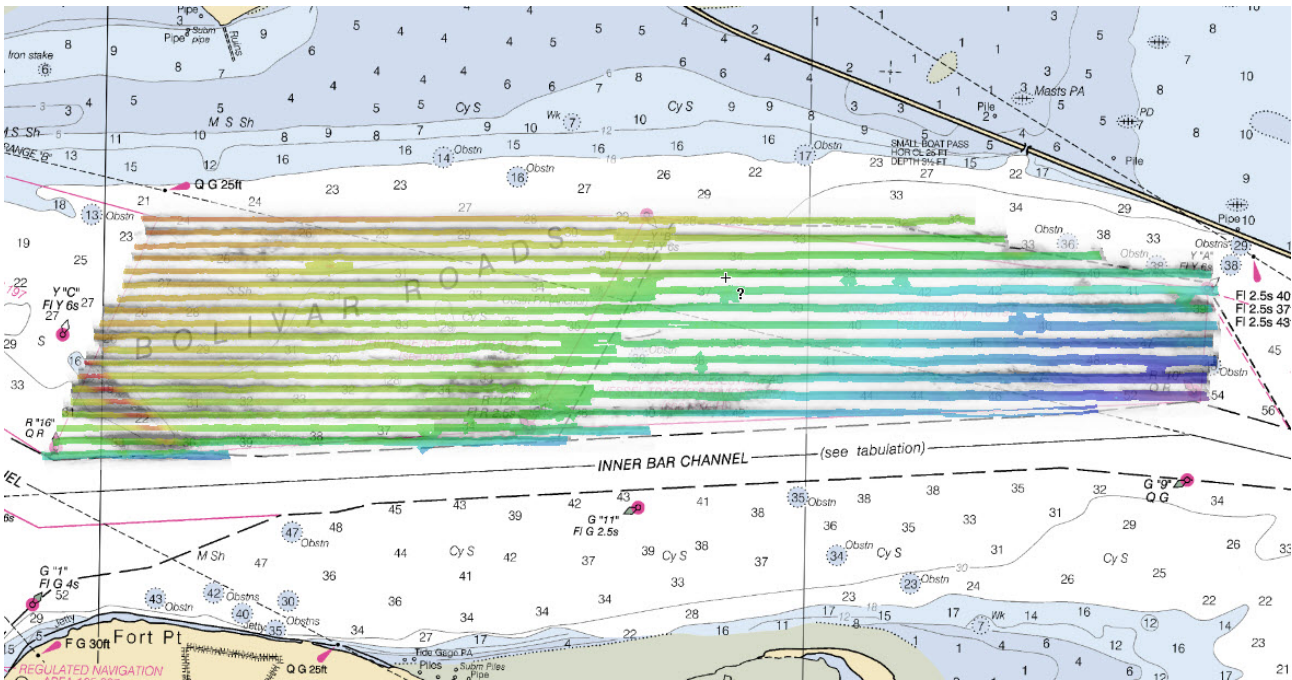
Anchorage Area A - Object Detection Coverage (200% sidescan coverage with concurrent multibeam data. The data were reviewed for DTON's and the detected contacts were investigated further with the multibeam system.) Anchorage Area B - Object Detection Coverage (200% sidescan coverage with concurrent multibeam data.) Morgan Point to San Jacinto State Park - Object Detection Coverage (200% sidescan coverage with concurrent multibeam data) were completed the entire length of the segment obtaining 100% multibeam coverage in most areas.) San Jacinto State Park to Patrick Bayou - Object Detection Coverage (200% side scan coverage concurrent with single beam). Patrick Bayou to Green Bayou - Object Detection Coverage with 200% side scan concurrent with single beam data. Green Bayou to Cotton Patch Bayou - Object Detection Coverage (200% side scan with concurrent single beam sonar). Cotton Patch Bayou to Sims Bayou Turning Basin - Object Detection Coverage (200% side scan concurrent with single beam sonar.) Galveston Channel object detection surveying was not completed on account of shifting priorities resultant from additional, follow up discussion between USCG and NSD.

This survey does not meet charting specifications and is not adequate to supersede prior data. All side scan targets were assessed with NRT4 multibeam and results forwarded to USACE Galveston personnel. Graphics and correspondence are provided in Appendix II - Supplemental Records and Correspondence.

Although not intended for chart application, portions of the Harvey response survey were brought up to NOAA specification for archival in the National Bathymetric Source (NBS) database. In addition, the surveyed anchorages will be sent to the Marine Charting Division (MCD) for chart update. The data produced by the Manta R/V (vessel of opportunity) is not being utilized because the uncertainty is too high, the survey data is located within a USACE channel, and the obstructions have since been removed resulting in outdated data. The survey data acquired by NRT4's vessel S3008 in Bolivar Roads Anchorages A and B and Galveston Channel was deemed usable and brought up to specification by the processing branch. It will be archived at NCEI and in the NBS. In addition to archival, the Bolivar Roads Anchorage will be used to supersede prior chart data since this is the best data available for the area and the obstructions located post Hurricane Harvey have not been removed. See images below.



Bolivar Roads Anchorage Areas A/B and Galveston Channel have been brought up to specification in the processing branch and will be sent to NCEI and NBS for archival.



Bolivar Roads Anchorage Areas A/B will also be sent to MCD for chart update.

Metadata for Survey D00230	
Project	S-K913-NRB-17
Survey	D00230
State	Texas
Locality	Galveston Bay, TX
Sub-Locality	Bolivar Roads Anchorage Area A and B, Galvestion Channel, Morgans Point to Turning Basin.
Scale of Survey	1:10000
Sonars Used	Kongsberg Maritime EM 2040C (MBES) EdgeTech 4125 (SSS) ODIM Brooke Ocean Echotrac CV200 (SBES)
Horizontal Datum	North American Datum of 1983 (NAD83)
Vertical Datum	Mean Lower Low Water
Vertical Datum Correction	TCARI
Projection	UTM Zone 15N
Field Unit	Navigation Response Team 4
Survey Dates	08/31/2017 - 09/07/2017
Chief of Party	Dan Jacobs
Submission Date	10/12/2017



NOAA Navigation Response Team 4 (S3008)

Supplemental Obstruction Information

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NATIONAL OCEAN SERVICE - OFFICE OF COAST SURVEY

Contact:

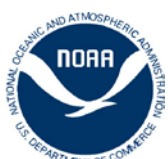
Navigation Manager – Erin Diurba, NOAA

Erin.Diurba@noaa.gov

NOAA Sounding Data Report

Data collected from 2006-2017.

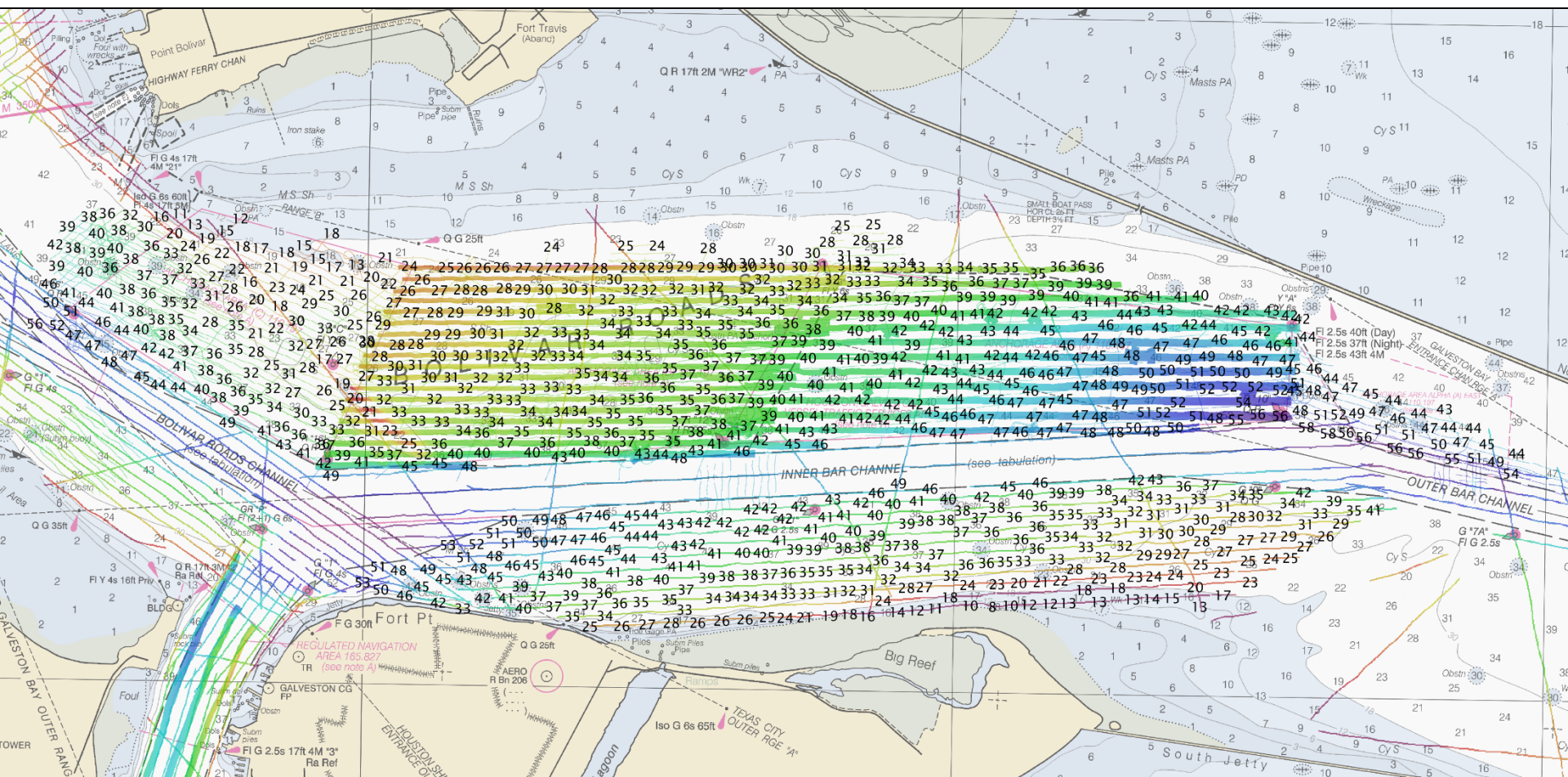
Surveys H11528 (2006), F00592 (2010), D00230(2017)



NOAA Navigation Response Team 4 (S3008)
Supplemental Obstruction Information
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL COAST SERVICE - OFFICE OF COAST SURVEY

Contact:
Navigation Manager – Erin Diurba, NOAA
Erin.Diurba@noaa.gov

Project:	Anchorage Area Data Request	Chart Number:	11324
Survey:	H11528, F00592, D00230	Sounding Units:	Feet (NOAA rounded)
Locality:	Galveston Bay	Datum:	MLLW
Sublocality:	Anchorage Areas A,B, C, 5, and 6	Dates of survey:	2006-2017



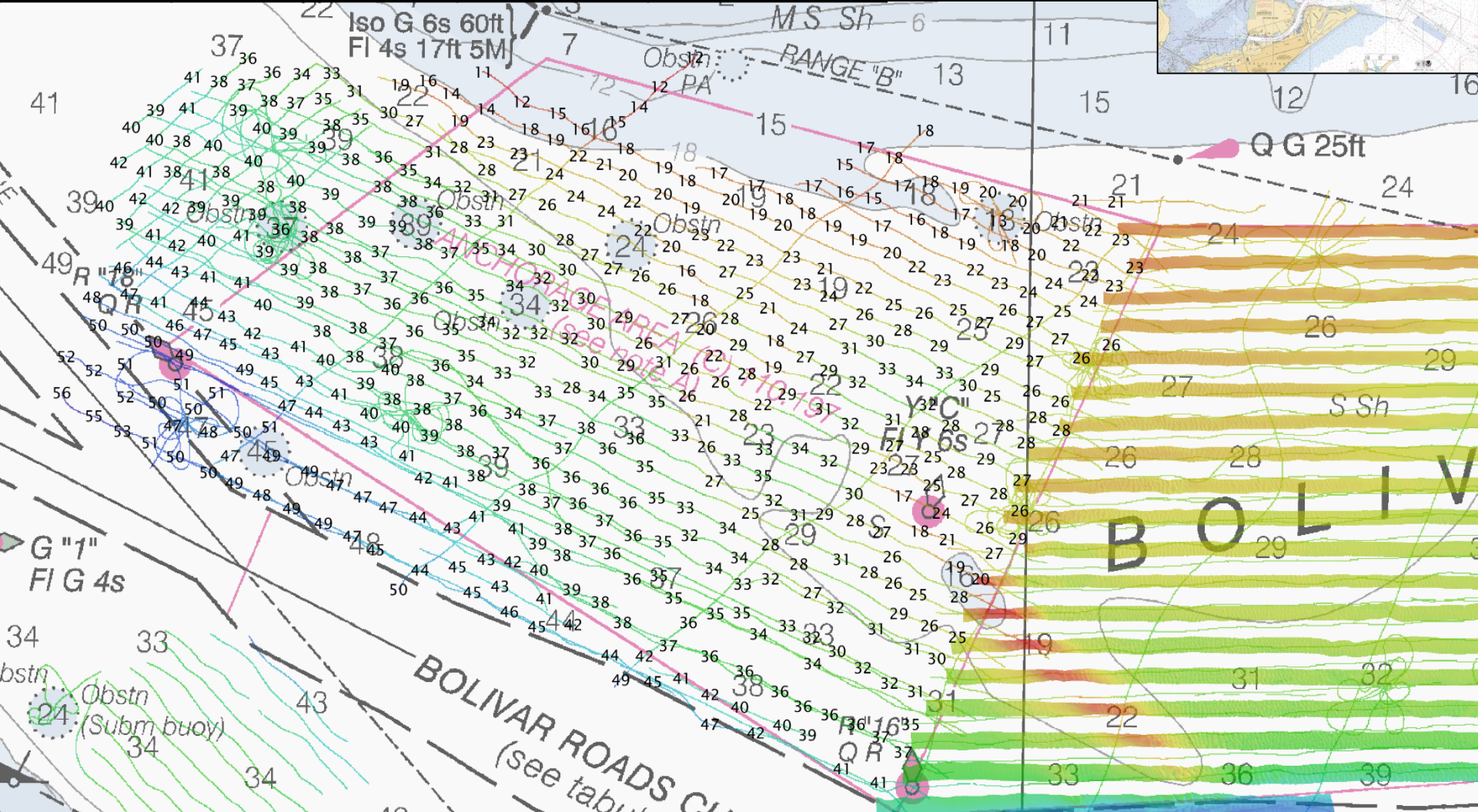
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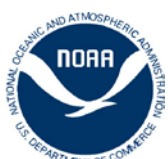
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Survey:	H11528, F00592	Sounding Units:	Feet (NOAA rounded)
Locality:	Galveston Bay	Datum:	MLLW
Sublocality:	Anchorage Area C	Dates of survey:	2006-2010



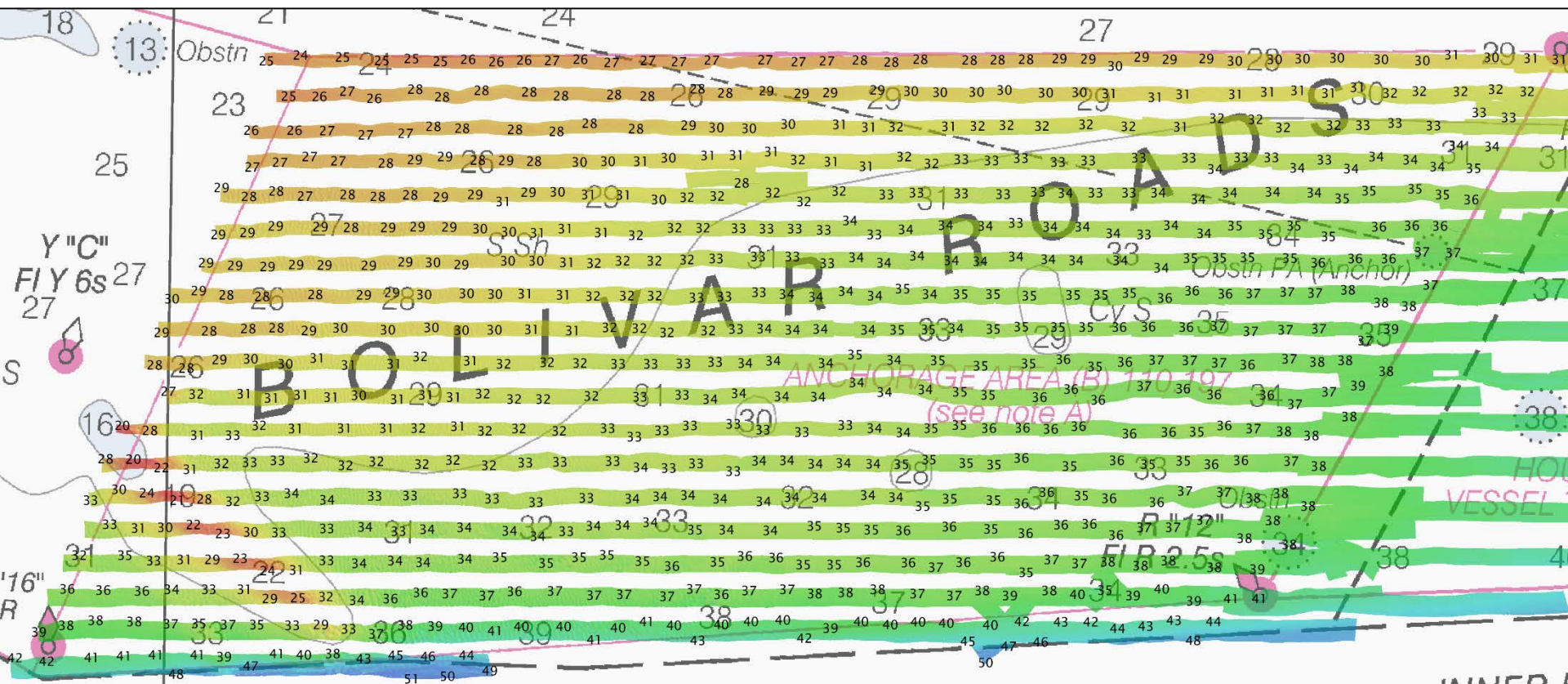
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Survey:	D00230	Sounding Units:	Feet (NOAA rounded)
Locality:	Galveston Bay	Datum:	MLLW
Sublocality:	Anchorage Area B	Dates of survey:	2017

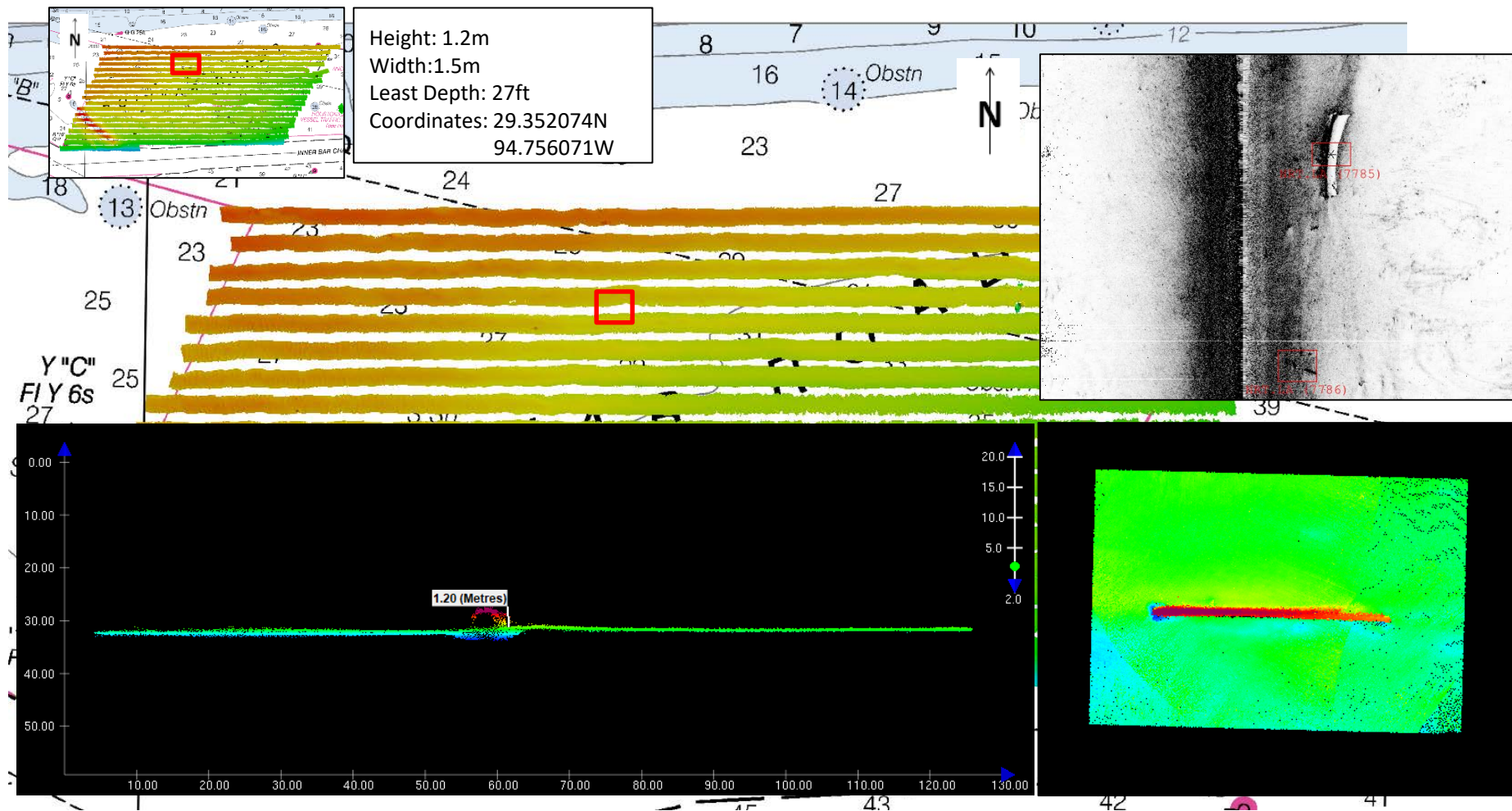




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Survey:	D00230	Sounding Units:	Feet (NOAA rounded)
Locality:	Galveston Bay	Datum:	MLLW
Sublocality:	Anchorage Area B	Dates of survey:	2017

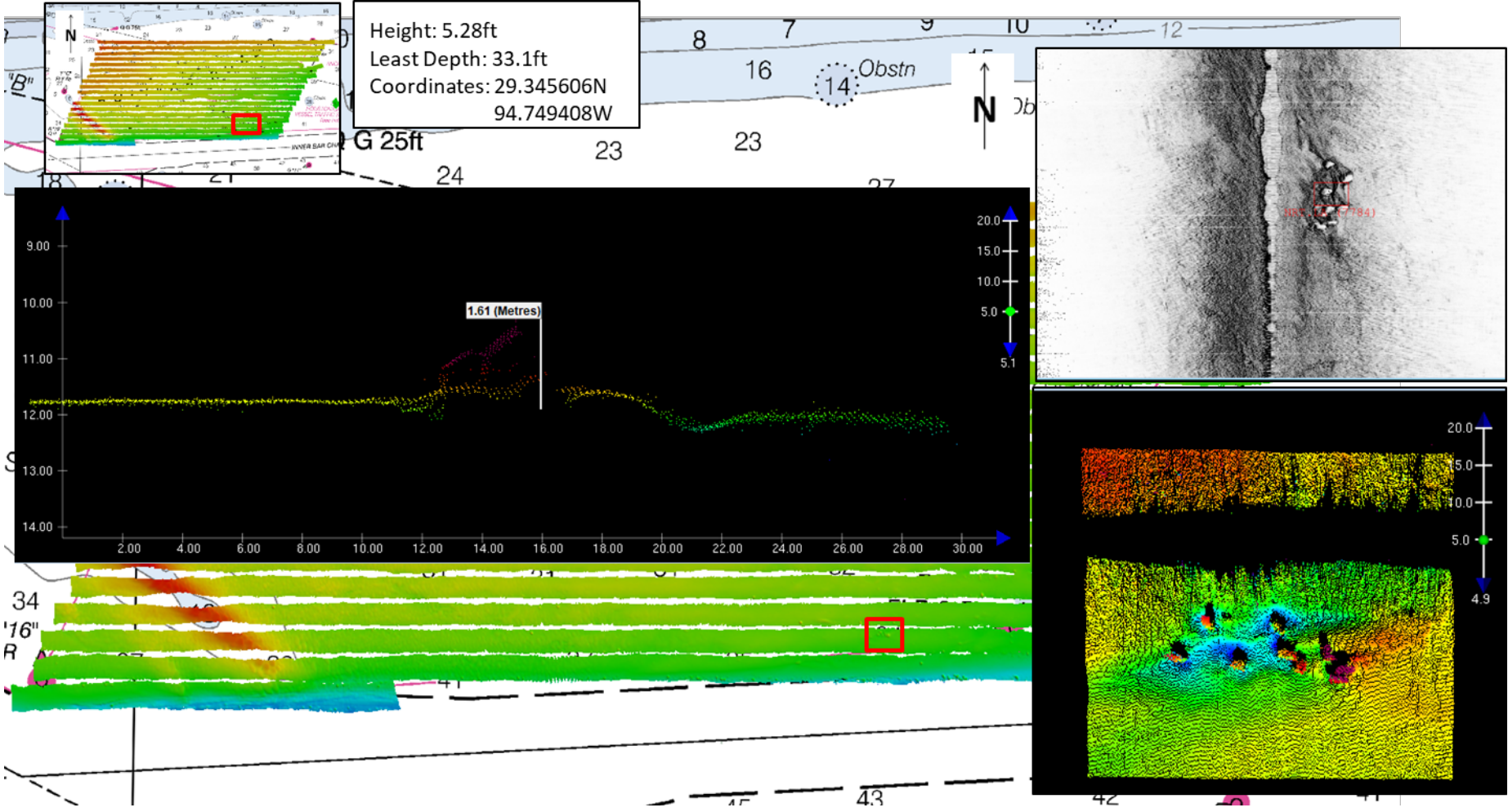




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Survey:	D00230	Sounding Units:	Feet (NOAA rounded)
Locality:	Galveston Bay	Datum:	MLLW
Sublocality:	Anchorage Area B	Dates of survey:	2017

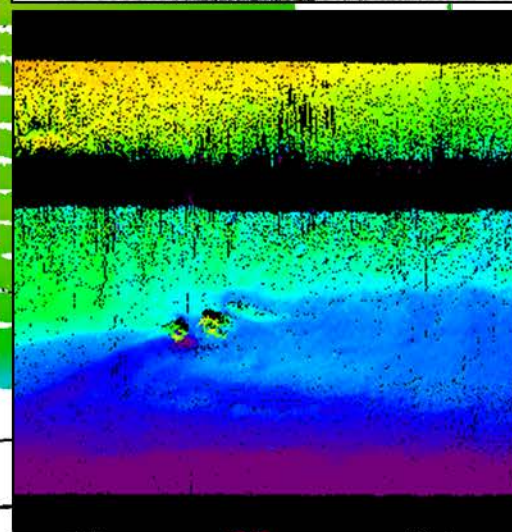
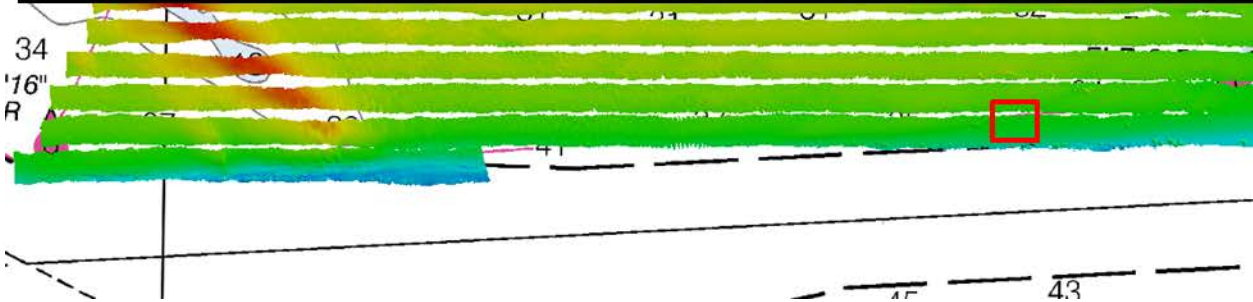
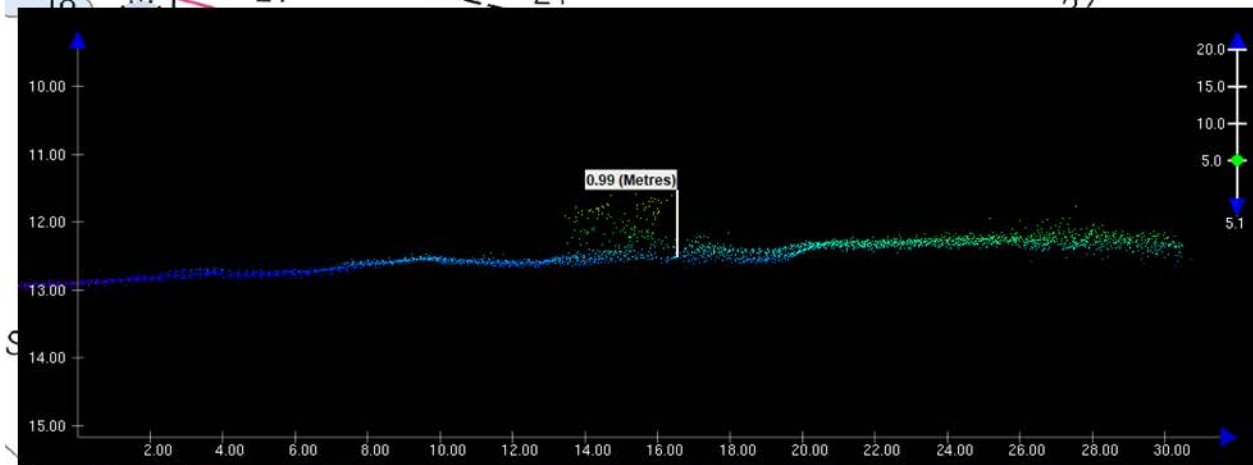
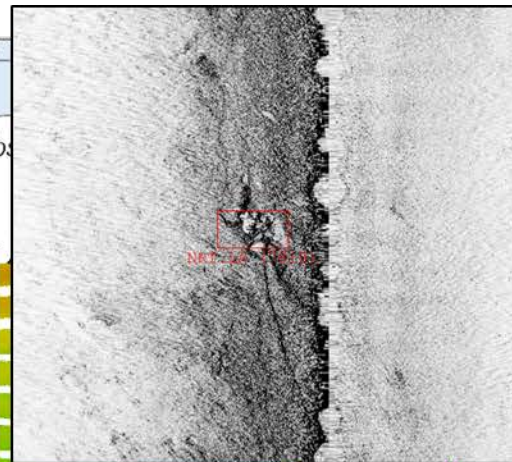
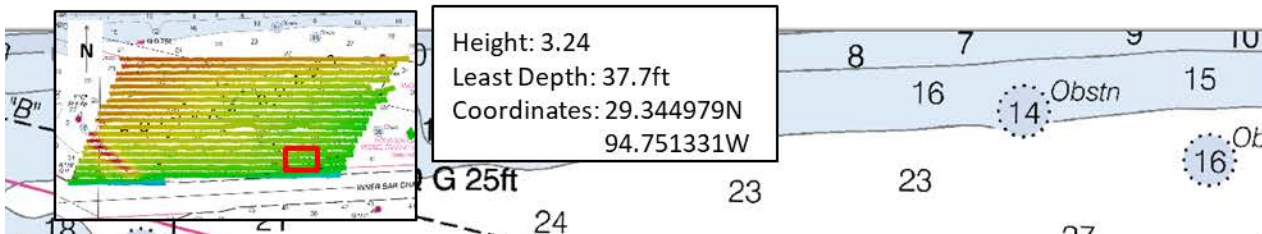




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Locality:	Galveston Bay	Datum:	MLLW
Sublocality:	Anchorage Area B	Dates of survey:	2017

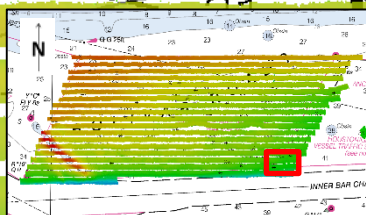




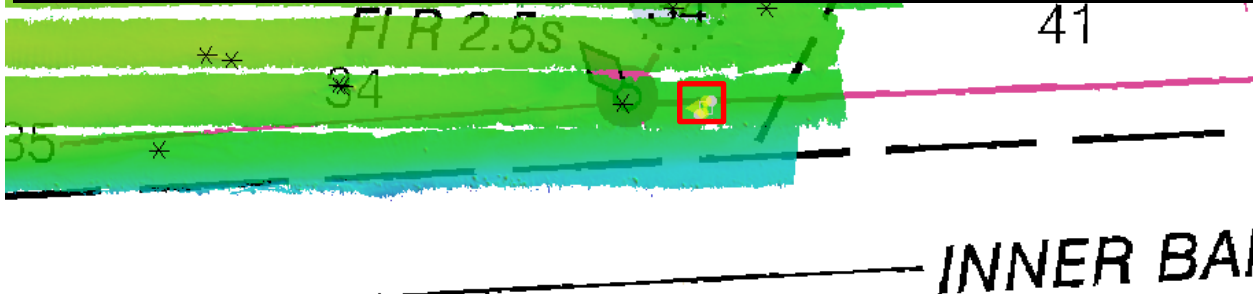
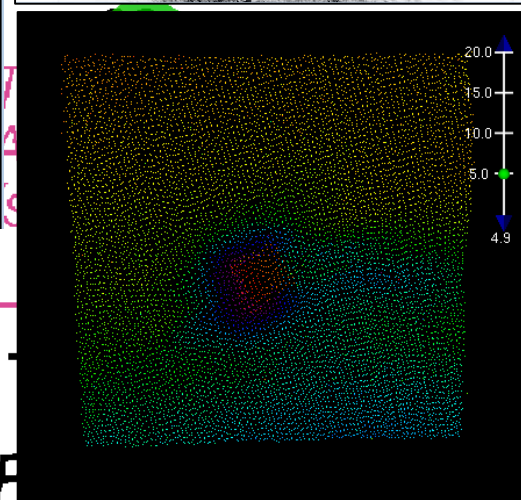
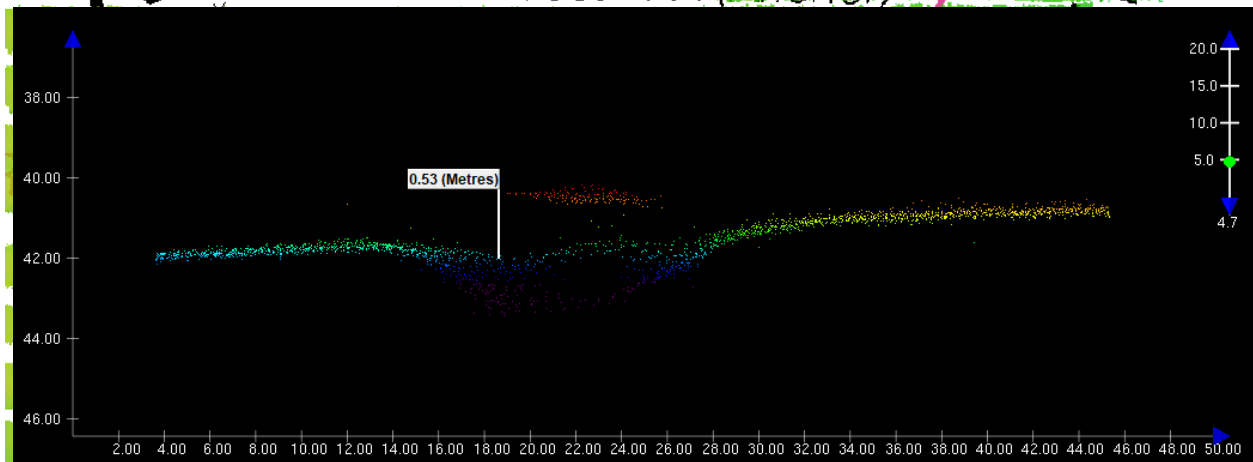
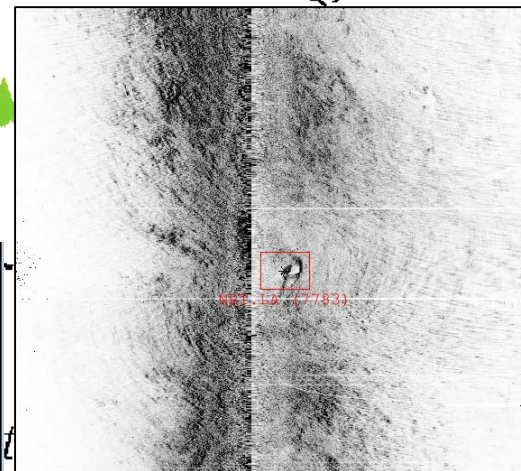
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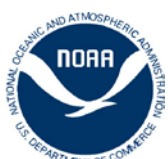
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Survey:	D00230	Sounding Units:	Feet (NOAA rounded)
Locality:	Galveston Bay	Datum:	MLLW
Sublocality:	Anchorage Area B	Dates of survey:	2017



Least Depth: 111.5m (37.7ft)
 Coordinates: 29.344979N 94.751331W
 Possible abandoned buoy block.

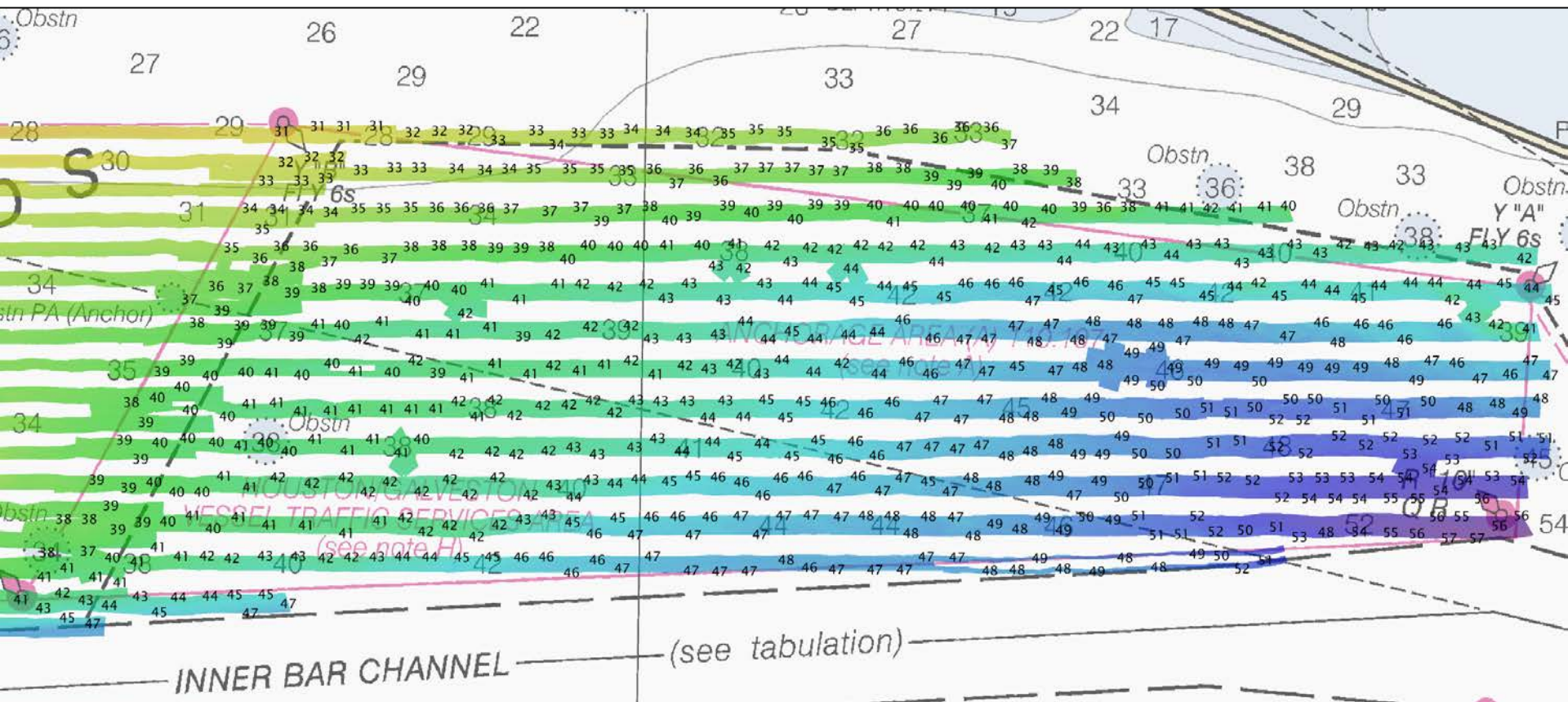


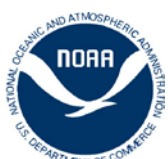


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Survey:	D00230	Sounding Units:	Feet (NOAA rounded)
Locality:	Galveston Bay	Datum:	MLLW
Sublocality:	Anchorage Area A	Dates of survey:	2017

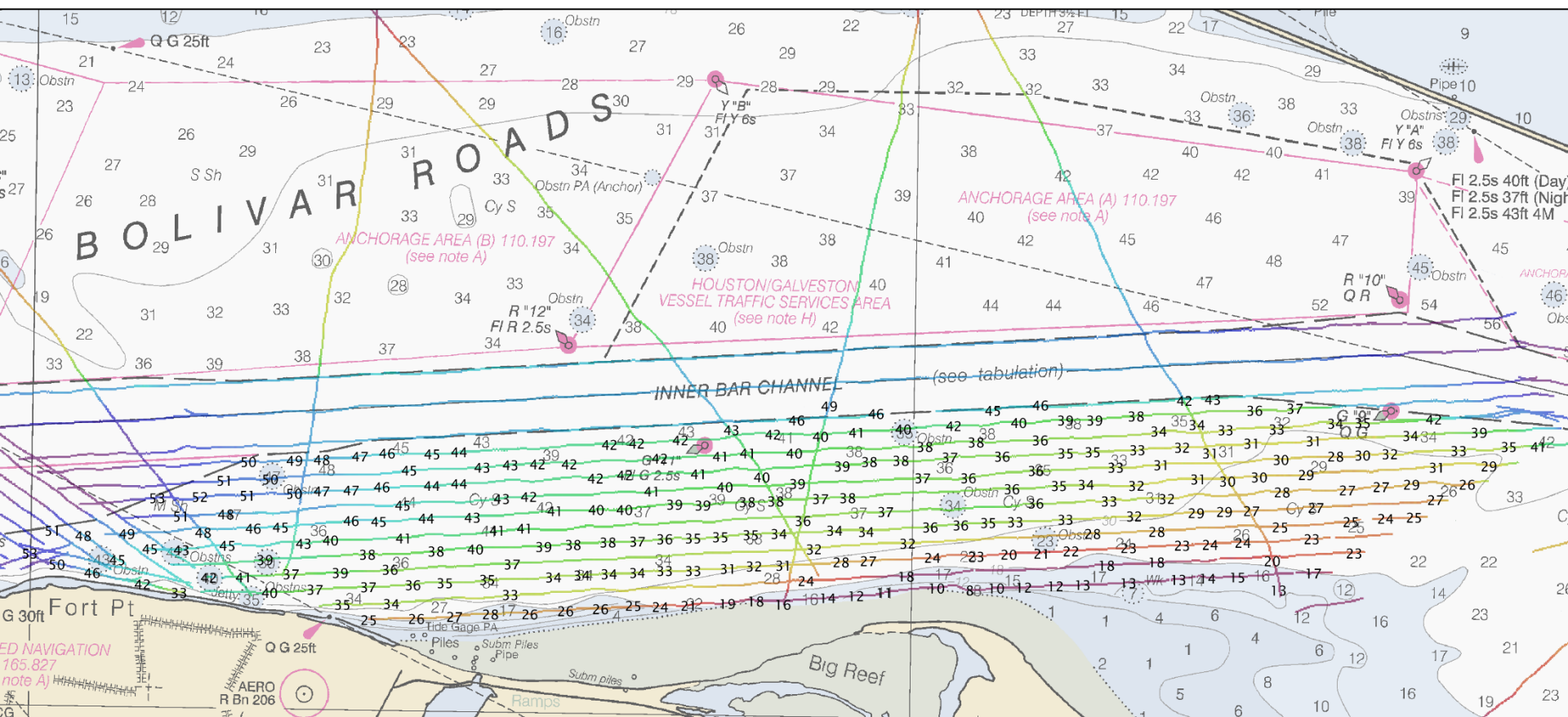




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NATIONAL OCEAN SERVICE - OFFICE OF COAST SURVEY

Contact:
 Navigation Manager – Erin Diurba, NOAA
 Erin.Diurba@noaa.gov

Project:	Anchorage Area Data Request	Chart Number:	11324
Survey:	H11528, F00592	Sounding Units:	Feet (NOAA rounded)
Locality:	Galveston Bay	Datum:	MLLW
Sublocality:	Anchorage Areas 5 and 6	Dates of survey:	2006-2010



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Laura Pagano - NOAA Federal <laura.pagano@noaa.gov>

Fwd: DANGERS TO NAVIGATION _ BOLIVAR ANCHORAGE B

Duke, Matthew A CIV USARMY CESWG (US) <Matthew.A.Duke@usace.army.mil>

Tue, Nov 6, 2018 at 11:34 AM

To: Michael Davidson - NOAA Federal <michael.davidson@noaa.gov>

Cc: Erin Diurba - NOAA Affiliate <erin.diurba@noaa.gov>, Laura Pagano <laura.pagano@noaa.gov>

Hey Mike,

The answer from our Operations Division is "They weren't salvaged because anchorage B and C are not USACE Anchorage Areas."

Have fun charting!

- Matt

Matthew Duke, GISP
Chief, Hydrographic Survey Section
U.S. Army Corps of Engineers Galveston District
Office: 409.766.3968
Cell: 409.795.0524

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

From: Michael Davidson - NOAA Federal [mailto:michael.davidson@noaa.gov]

Sent: Tuesday, November 06, 2018 10:45 AM

To: Duke, Matthew A CIV USARMY CESWG (US) <Matthew.A.Duke@usace.army.mil>

Cc: Erin Diurba - NOAA Affiliate <erin.diurba@noaa.gov>; Laura Pagano <laura.pagano@noaa.gov>

Subject: [Non-DoD Source] Fwd: DANGERS TO NAVIGATION _ BOLIVAR ANCHORAGE B

Matt,

I hope all is going well. I received an inquiry regarding the status of features that NOAA reported to USACE during the Hurricane HARVEY response. These were not immediately sent to the chart via our Dangers to Navigation process for one of two reasons: we anticipated these items would be salvaged, or they did not meet Danger to Navigation criteria and were routed for regular priority charting following a full office review. I have included the email below that contains the original report for Anchorage B that we sent to USACE. I have also attached the report that we submitted for the item that we found and reported to USACE for Anchorage A.

I don't have any records indicating that these items were salvaged by USACE. Will you please confirm whether or not USACE salvaged these? If these items have not been salvaged, then NOAA will move forward with charting them.

I have copied Erin Diurba (acting Navigation Manager for the Western Gulf, and Laura Pagano (physical scientist conducting the office review for Coast Survey). Please reply all when you respond.

Thank you for your time and attention to this matter.

Best regards,
Mike

----- Forwarded message -----

From: Michael Davidson - NOAA Federal <michael.davidson@noaa.gov <mailto:michael.davidson@noaa.gov> >

Date: Sun, Sep 3, 2017 at 9:29 AM

Subject: DANGERS TO NAVIGATION _ BOLIVAR ANCHORAGE B

To: Duke, Matthew A CIV USARMY CESWG (US) <Matthew.A.Duke@usace.army.mil <mailto:Matthew.A.Duke@usace.army.mil> >, Frabotta, Christopher SWG <Christopher.C.Frabotta@usace.army.mil <mailto:Christopher.C.Frabotta@usace.army.mil> >

Cc: Alan Bunn <alan.bunn@noaa.gov <mailto:alan.bunn@noaa.gov> >, Ryan Wartick <Ryan.Wartick@noaa.gov <mailto:Ryan.Wartick@noaa.gov> >, _NOS OCS NSD Response <nsd.response@noaa.gov <mailto:nsd.response@noaa.gov> >, Erin Diurba - NOAA Affiliate <erin.diurba@noaa.gov <mailto:erin.diurba@noaa.gov> >, Dan Jacobs <dan.jacobs@noaa.gov <mailto:dan.jacobs@noaa.gov> >

Matt,

Attached are two dangers to navigation found in Bolivar Anchorage B. There are many other contacts that we are still combining through, but I wanted to get these to you ASAP. I may send another batch of features for your information from Bolivar B.

Will send the XYZ as soon as it is ready. Sending 1 feature from Anchorage A for your information shortly as well.

Best regards,
Mike

--

Michael C. Davidson
Operations Manager
NOAA Office of Coast Survey

Navigation Response Branch

1315 East West Hwy, SSMC3, Sta 6216 ***new station number***
Silver Spring, MD 20910
240-533-0058 office ***new office number***
757-771-5305 work cell

michael.davidson@noaa.gov <mailto:michael.davidson@noaa.gov>

--

Michael C. Davidson
Operations Manager
NOAA Office of Coast Survey

Navigation Response Branch

1315 East West Hwy, SSMC3, Sta 6216 ***new station number***
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757-771-5305 work cell

michael.davidson@noaa.gov <mailto:michael.davidson@noaa.gov>

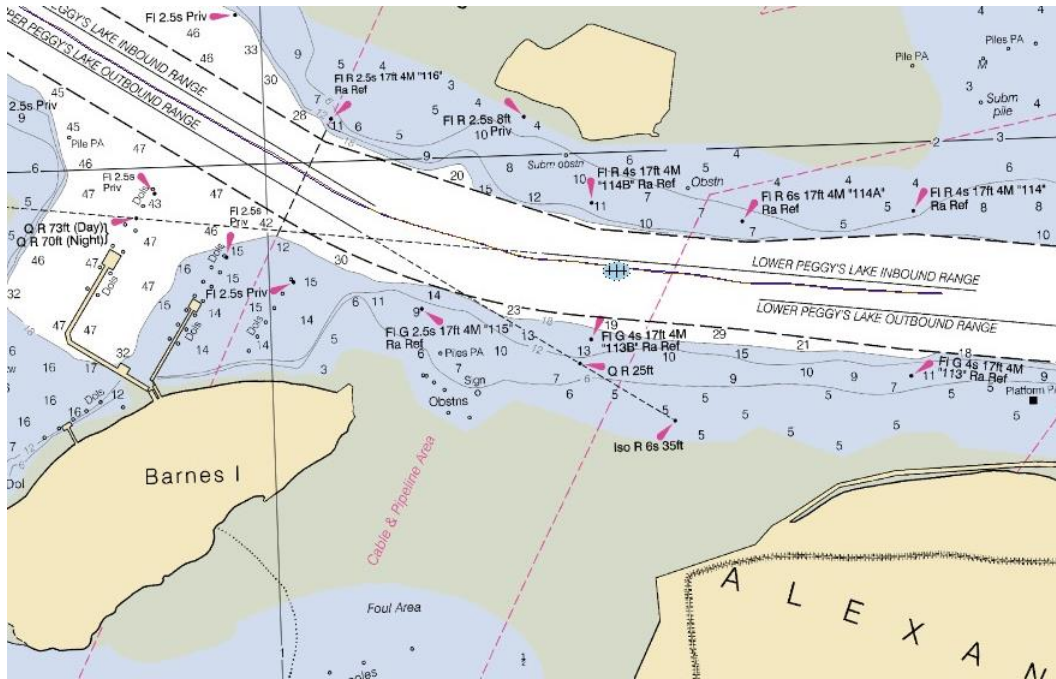
Houston Ship Channel Debris Removal Information

Location A:

29 43 52.9N / 95 02 36.1W

Approximate height off the bottom: 4.75 feet

A1:



A2:

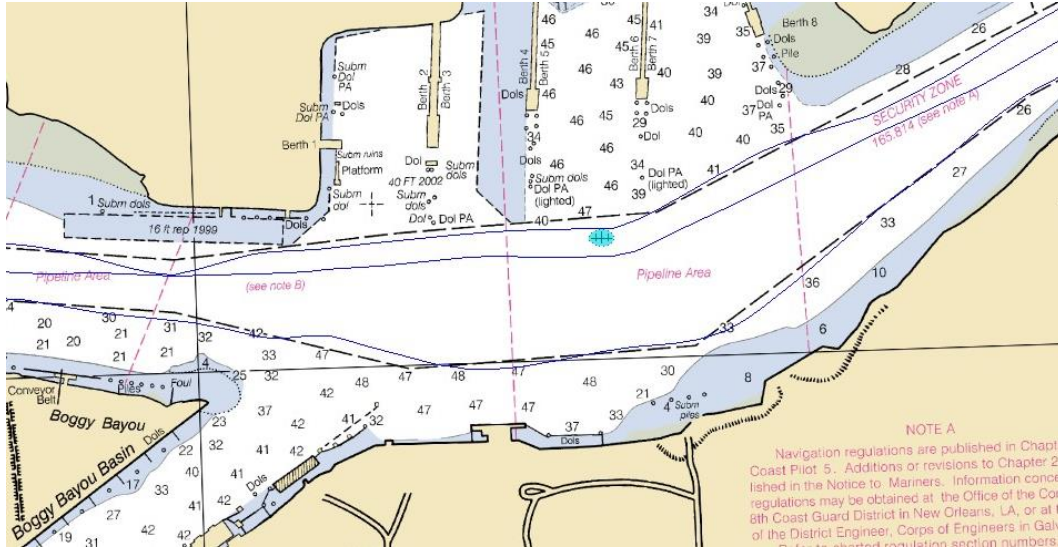


Location B:

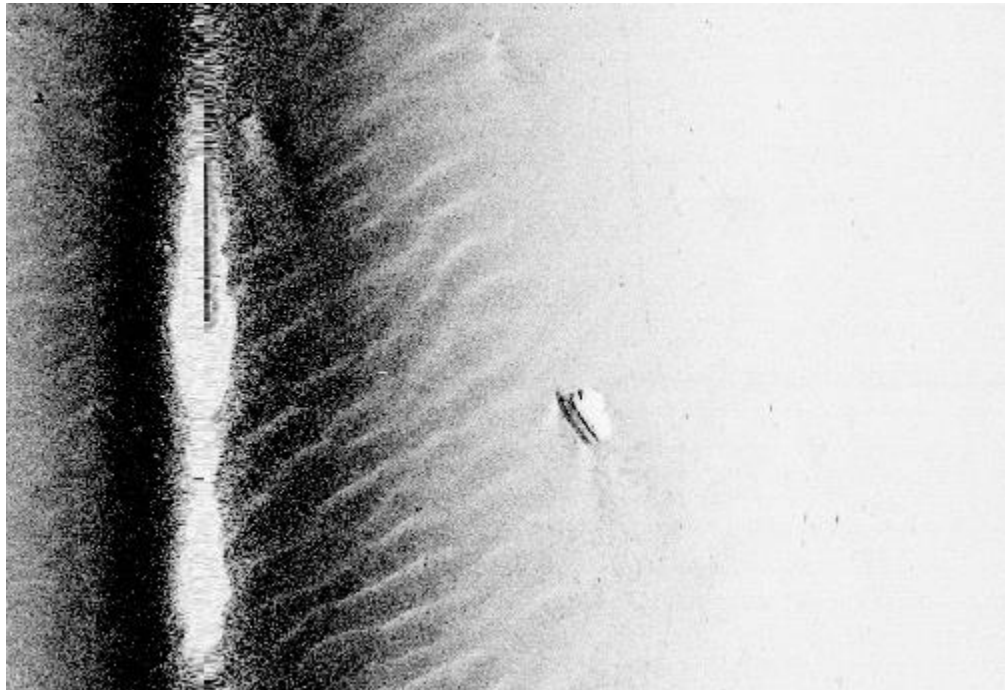
29 44 6.9N / 95 07 33.5W

Approximate height off the bottom: 4 feet (Boat-shaped, appx. 25ft x 5ft).

B1:



B2:

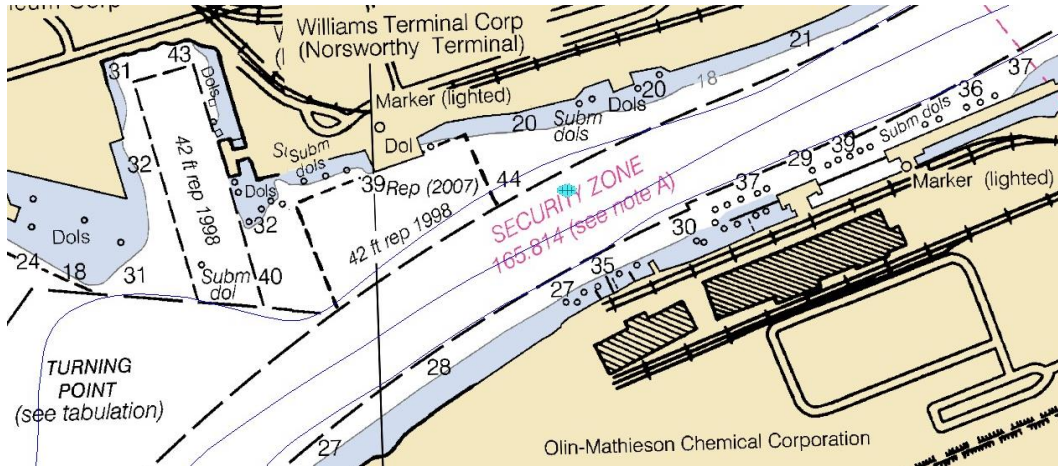


Location D:

29 44 30.5N / 95 11 52.6W

Approximate height off the bottom: 3.5 feet

D1:



D2:

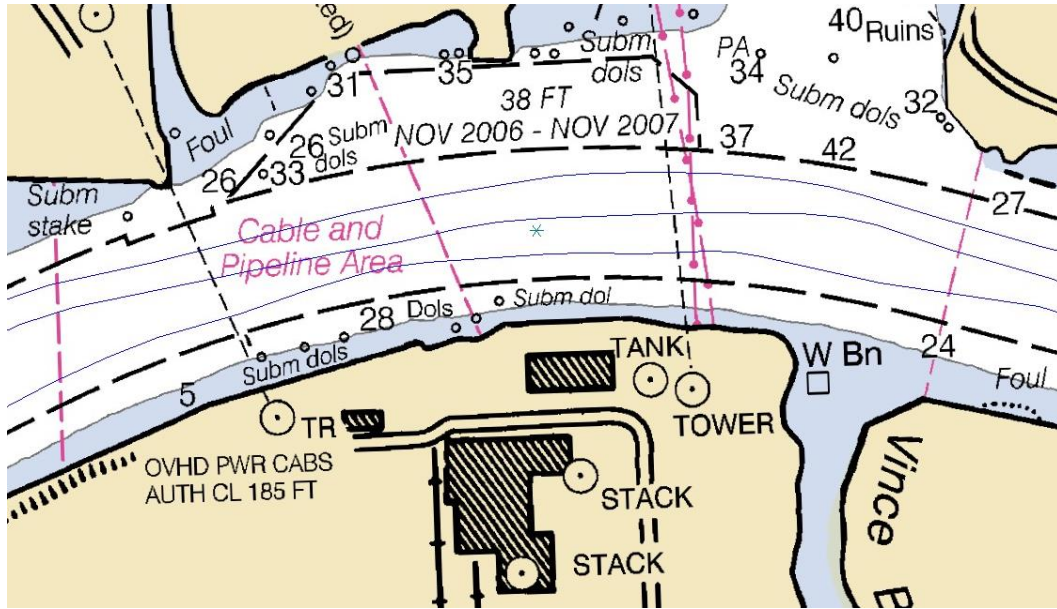


Location E:

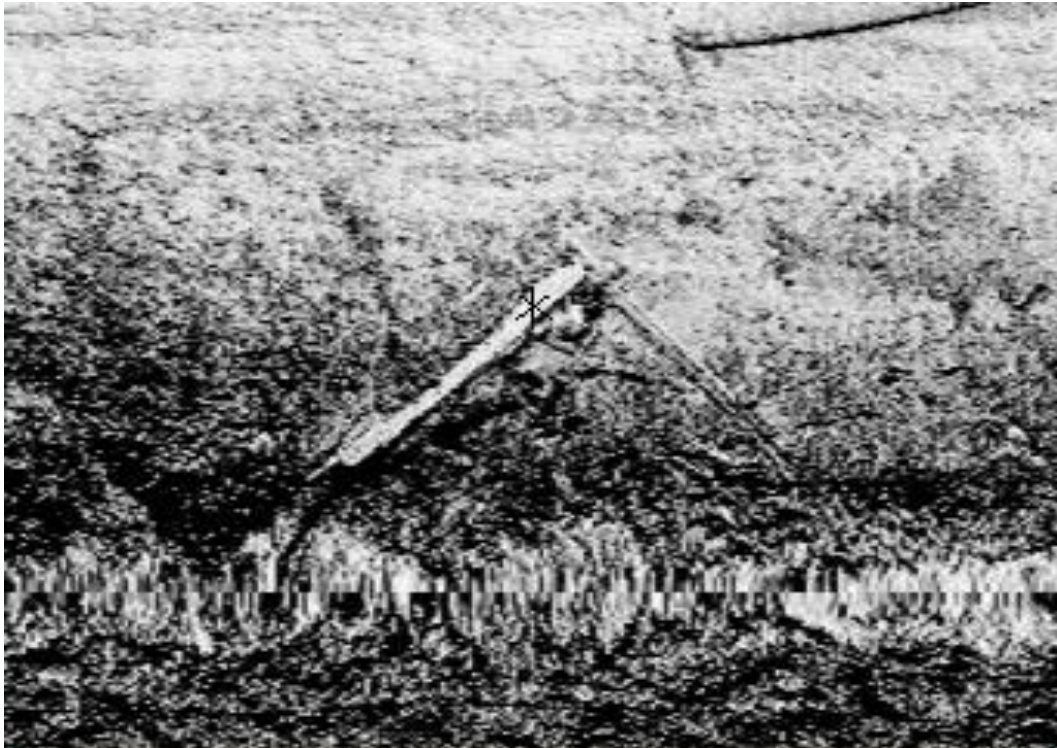
29 43 31.9N / 95 13 34.0W

Approximate height off the bottom: 4 feet (Appx 74 ft long).

E1:



E2:

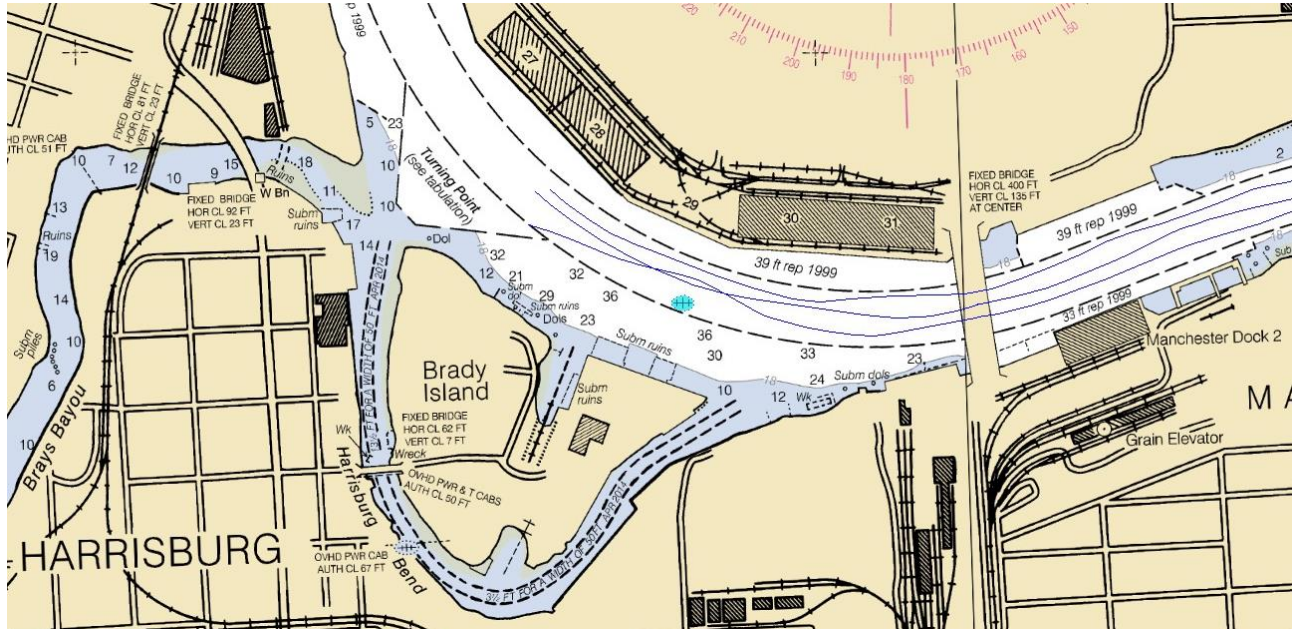


Location F:

29 43 30.7N / 95 16 17.3W

Approximate height off the bottom: 6 feet (Appx 180 ft long).

F1:



F2:

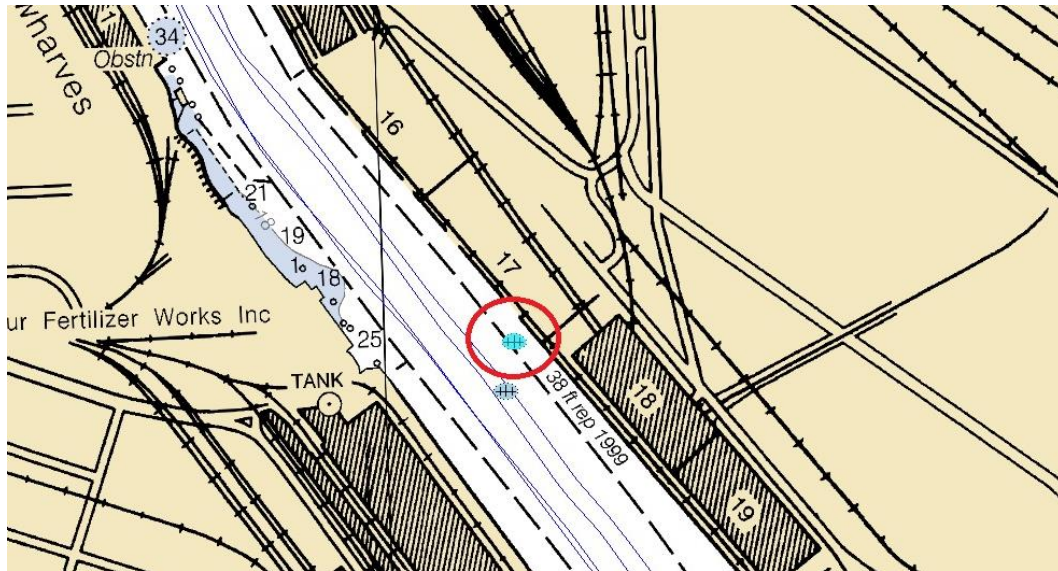


Location G:

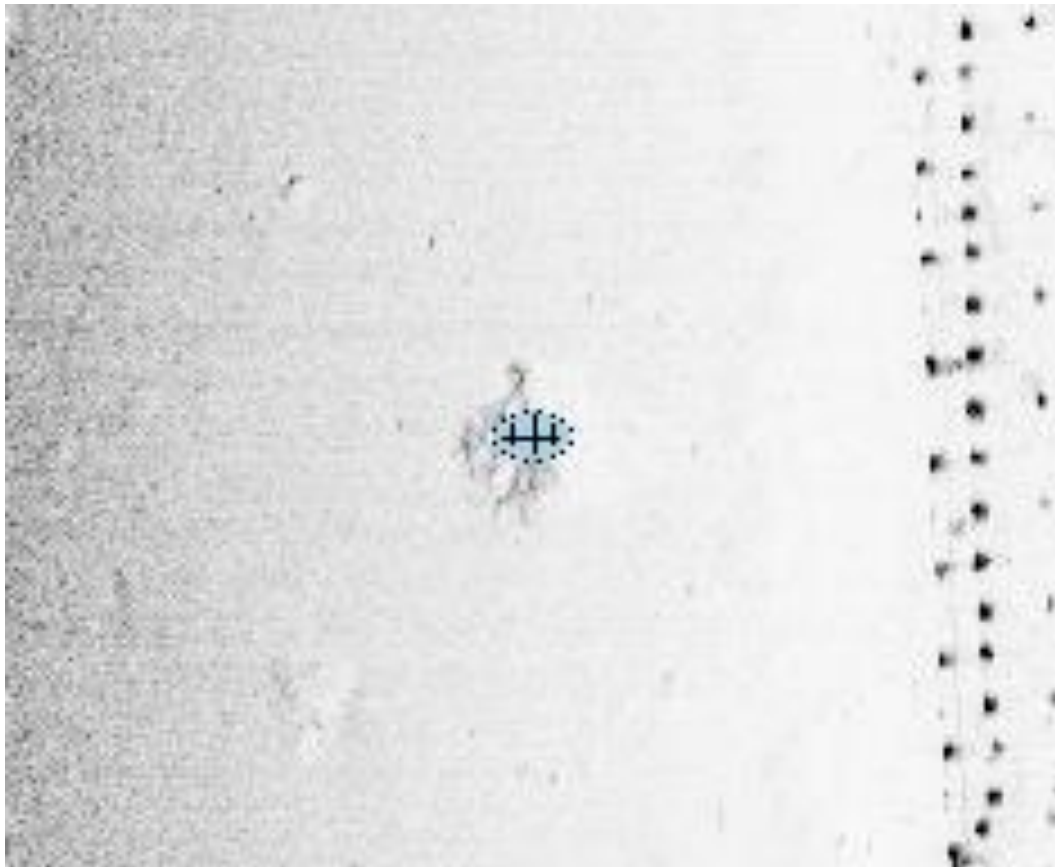
29 44 33.1N / 95 16 55.2W

Approximate height off the bottom: 3.5 feet

G1:



G2:

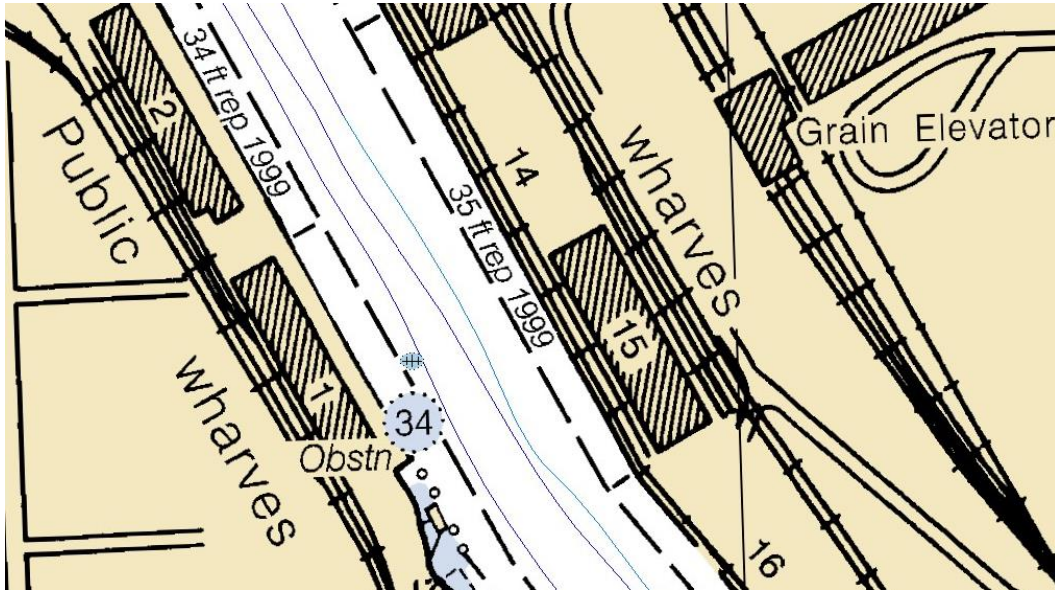


Location H:

29 44 44.7N / 95 17 07.8W

Approximate height off the bottom: 4.25 feet

H1:



H2:

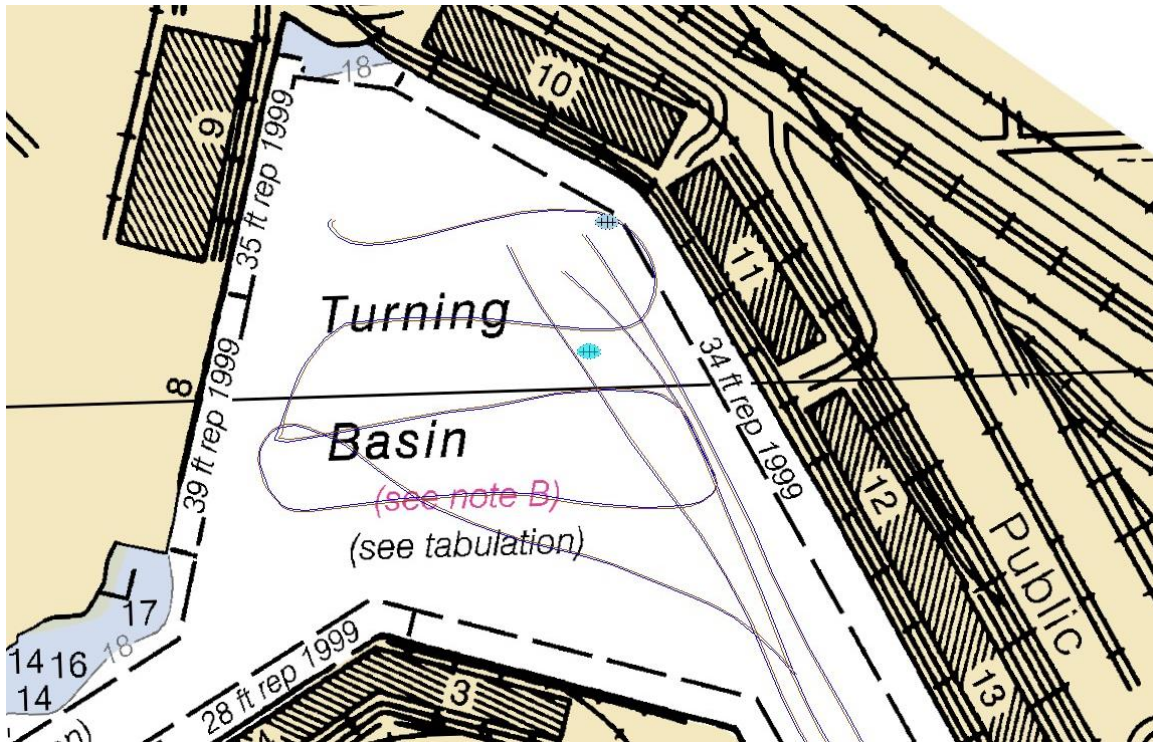


Location I:

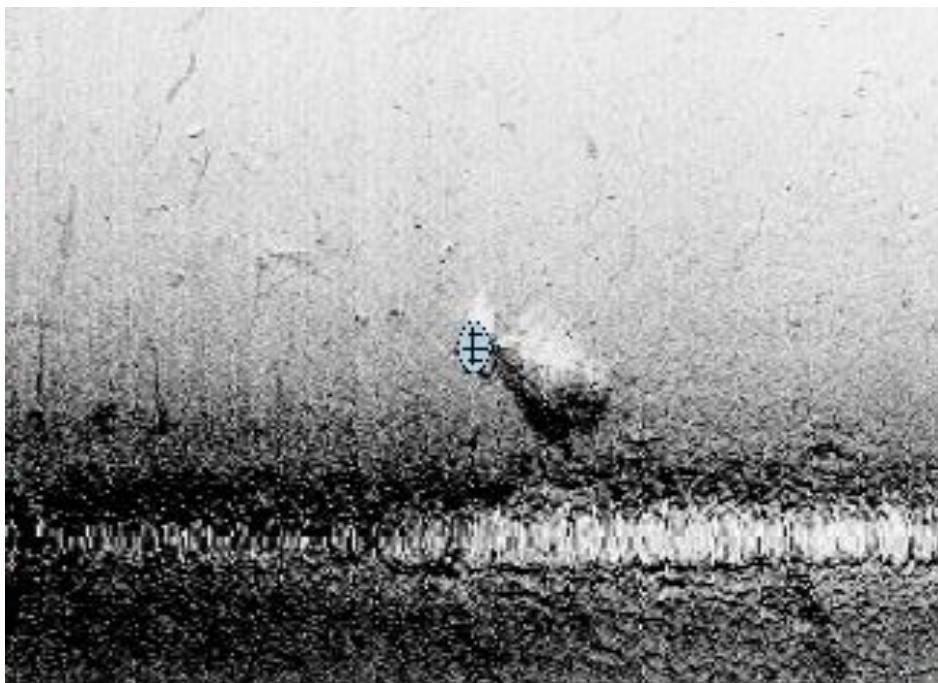
29 45 0.8N / 95 17 17.1W

Approximate height off the bottom: 6.5 feet

I1:



I2:

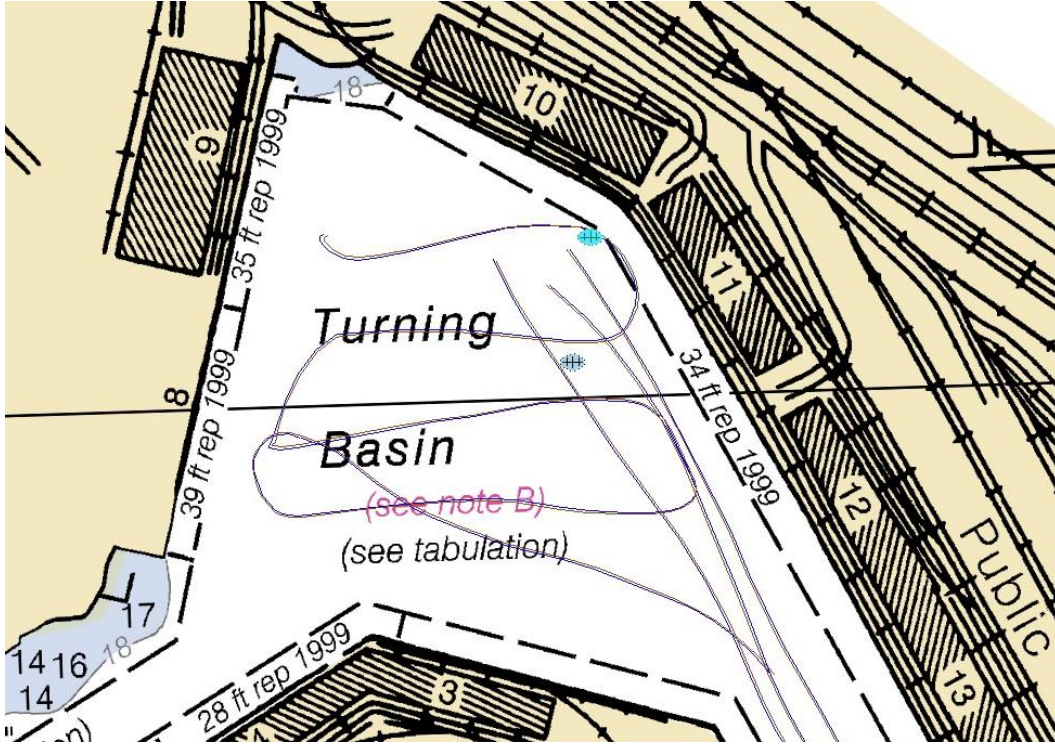


Location J:

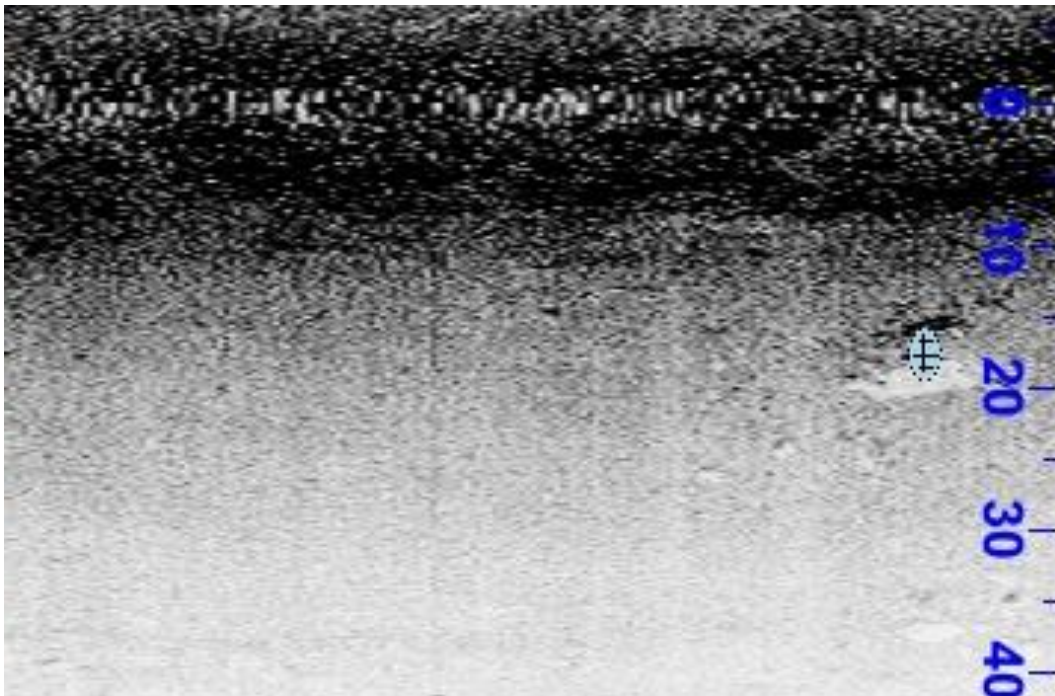
29 46 3.6N / 95 17 16.5W

Approximate height off the bottom: 4 feet

J1:



J2:

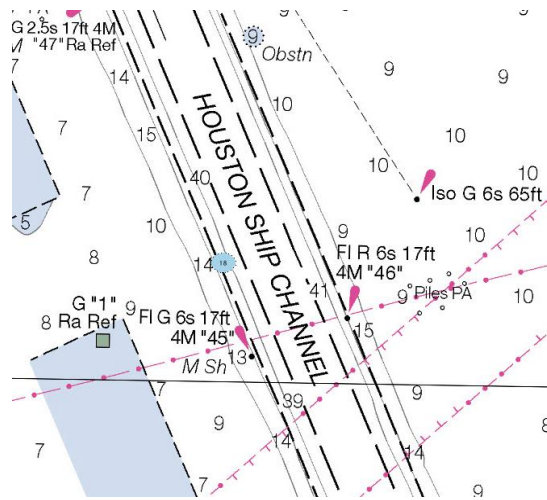


Debris Field:

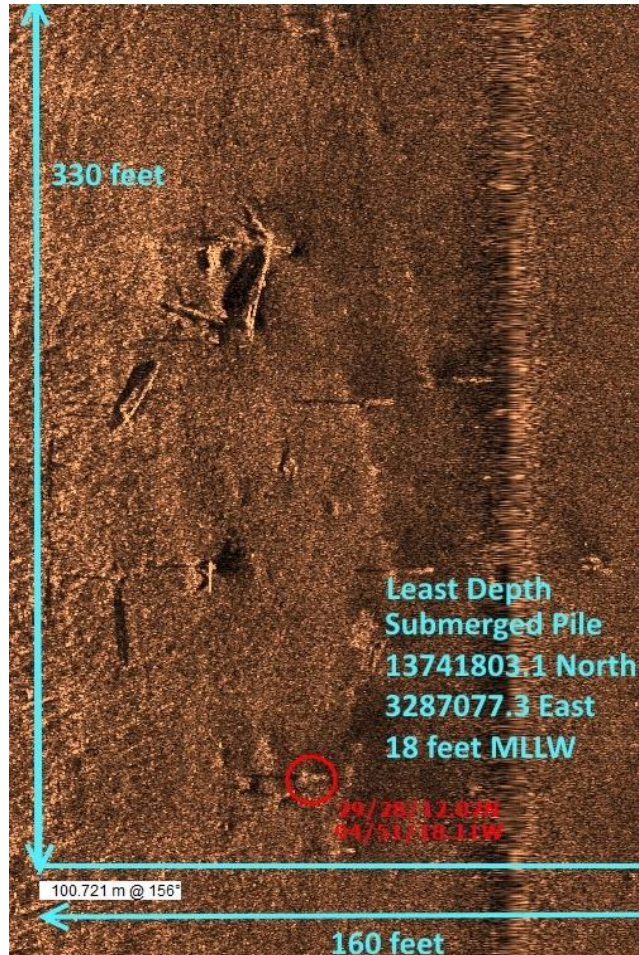
29 43 52.9N / 95 02 36.1W

Approximate area of 50 meters x 100 meters.

DF1:



DF2:



NRT 4 – Section 1
Turning Basin to Cotton Patch Bayou

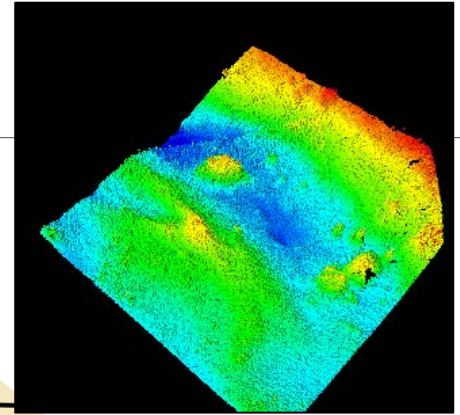
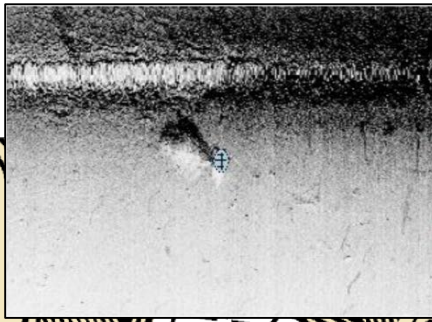
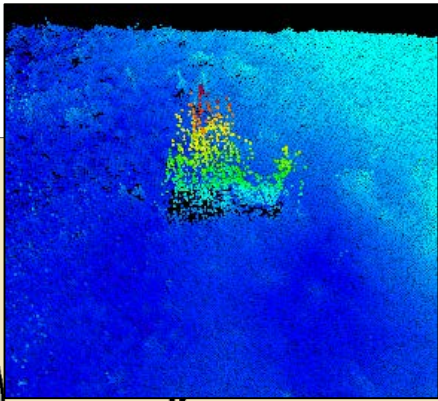


NATIONAL OCEANIC AND
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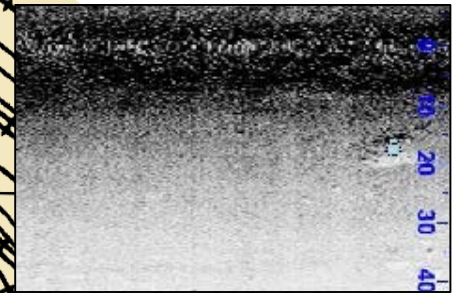
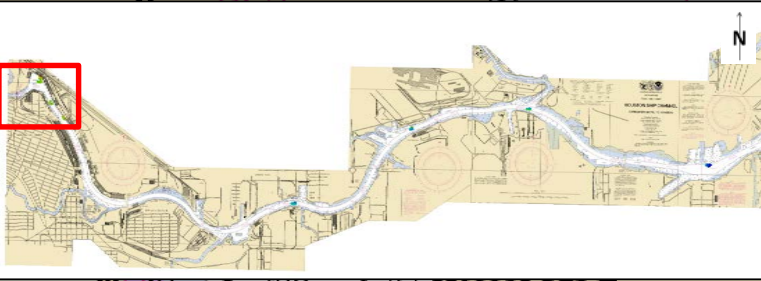
Project:	Hurricane Harvey	Sounding Units:	Feet
Survey:	Turning Basin to Lynchburg Landing	Sounding Datum:	MLLW
State:	Texas	Horizontal Datum:	NAD 83 UTM 15 N
Locality:	Houston	Chart Number:	11325
Sublocality:	Houston Ship Channel		11329
Survey Scale:	1:25,000		

NOAA NRT 4
D. Jacobs
Commanding

Survey Date:
09/05/2017



Length: 32ft
 Width: 12.5ft
 Height: 8.5ft
 Least Depth: 26ft
 Coordinates: 29.750276N
 95.288148W



Length: Largest is 32ft
 Width: 11 - 18ft
 Height: None above 3ft
 Least Depth: 26ft
 Coordinates: 29.750900N
 95.287958W

Chartlet 1 of 5: Contacts
Preliminary Data - NOT FOR NAVIGATION

Bathymetry data were acquired and inspected from the Lynchburg Landing to the Turning Basin. Possible obstructions were found in the channel by the R/V Manta using sidescan sonar then later developed by NRT4. Data reflects state of seafloor on the date surveyed.



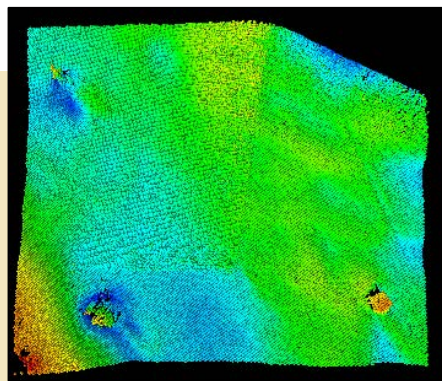
NATIONAL OCEANIC AND
 ATMOSPHERIC ADMINISTRATION
 NATIONAL OCEAN SERVICE

Project: Hurricane Harvey
Survey: Turning Basin to Cotton Patch Bayou
State: Texas
Locality: Houston
Sublocality: Houston Ship Channel
Survey Scale: 1:25,000

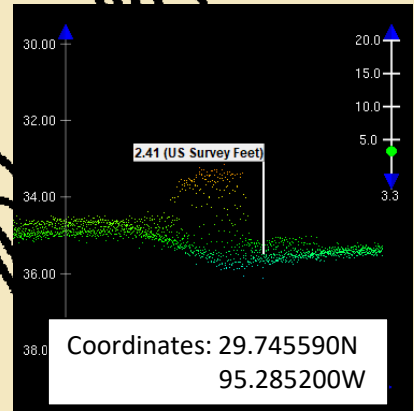
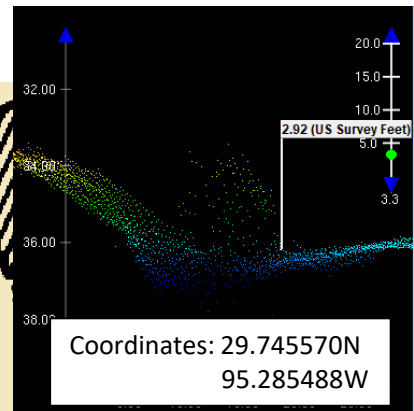
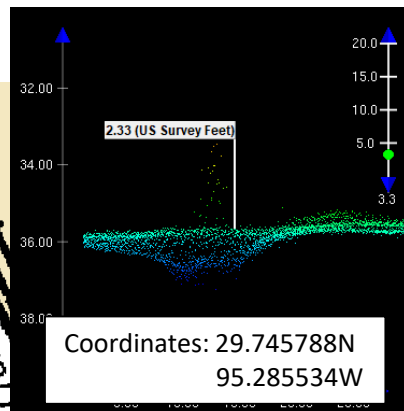
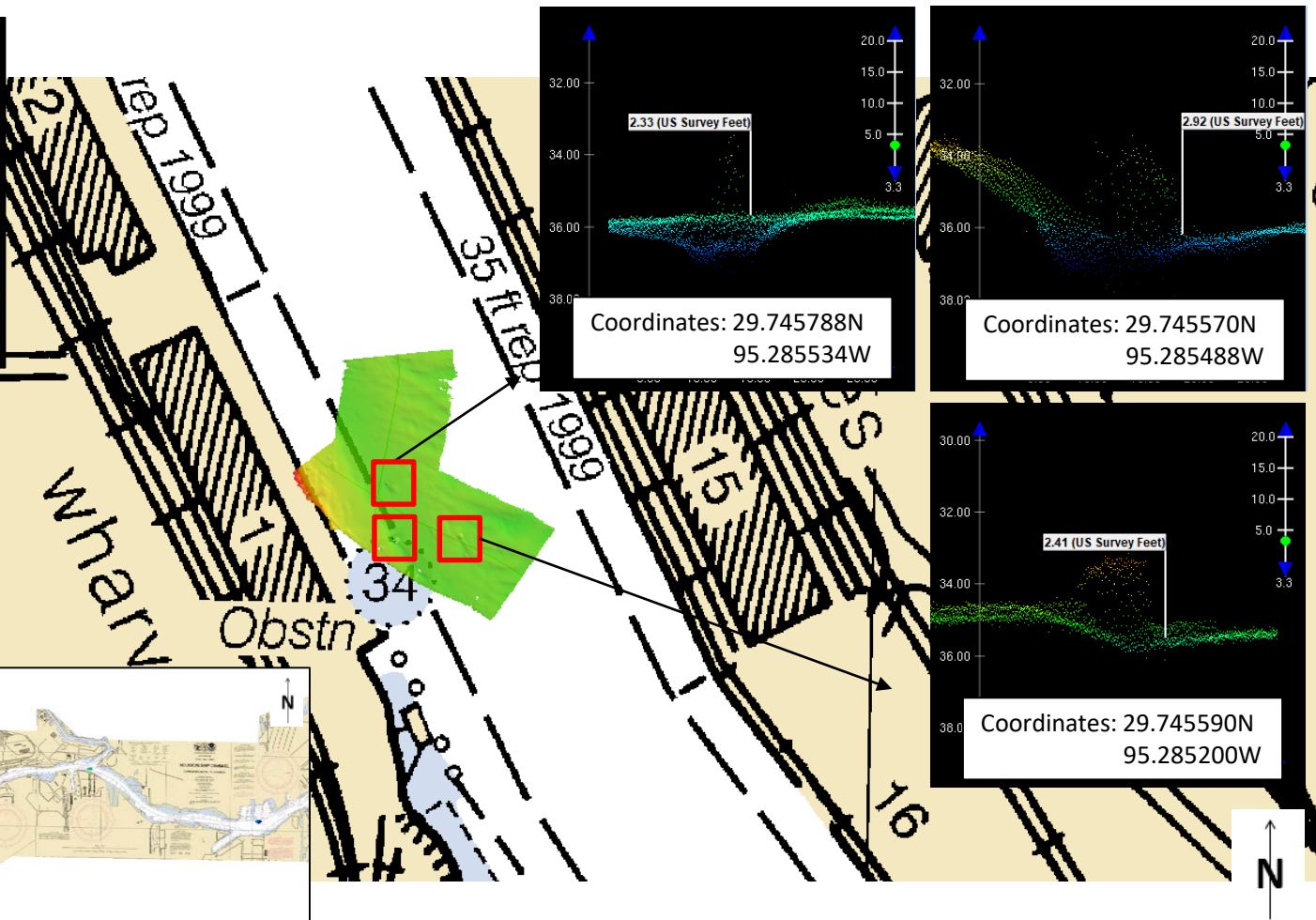
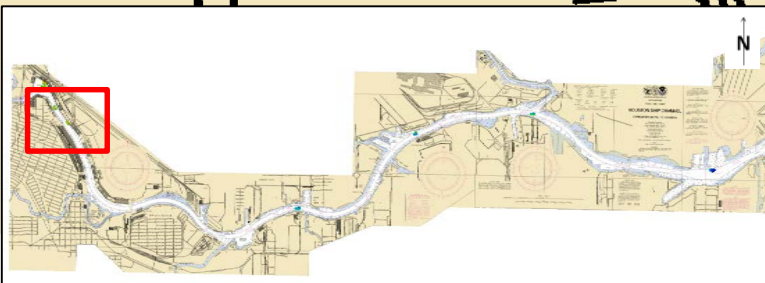
Sounding Units: Feet
Sounding Datum: MLLW
Horizontal Datum: NAD 83 UTM 15 N
Chart Number: 11325
 11329

NOAA NRT 4
D. Jacobs
Commanding

Survey Date:
 09/05/2017



Longest Length: 11ft
 Widest Width: 9ft
 Tallest Height: 2.92ft
 Least Depth: 33ft



Chartlet 2 of 5: Contacts
Preliminary Data - NOT FOR NAVIGATION

Bathymetry data were acquired and inspected from the Lynchburg Landing to the Turning Basin. Possible obstructions were found in the channel by the R/V Manta using sidescan sonar then later developed by NRT4. Data reflects state of seafloor on the date surveyed.



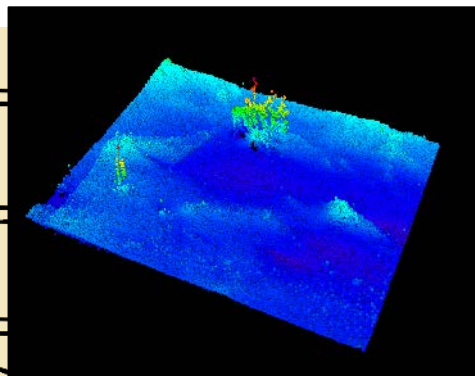
NATIONAL OCEANIC AND
 ATMOSPHERIC ADMINISTRATION
 NATIONAL OCEAN SERVICE

Project: Hurricane Harvey
Survey: Turning Basin to Cotton Patch Bayou
State: Texas
Locality: Houston
Sublocality: Houston Ship Channel
Survey Scale: 1:25,000

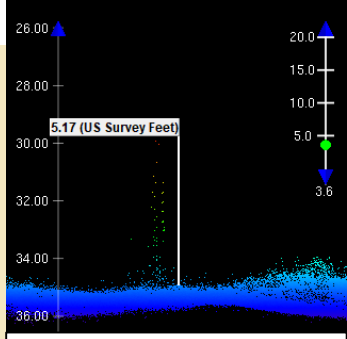
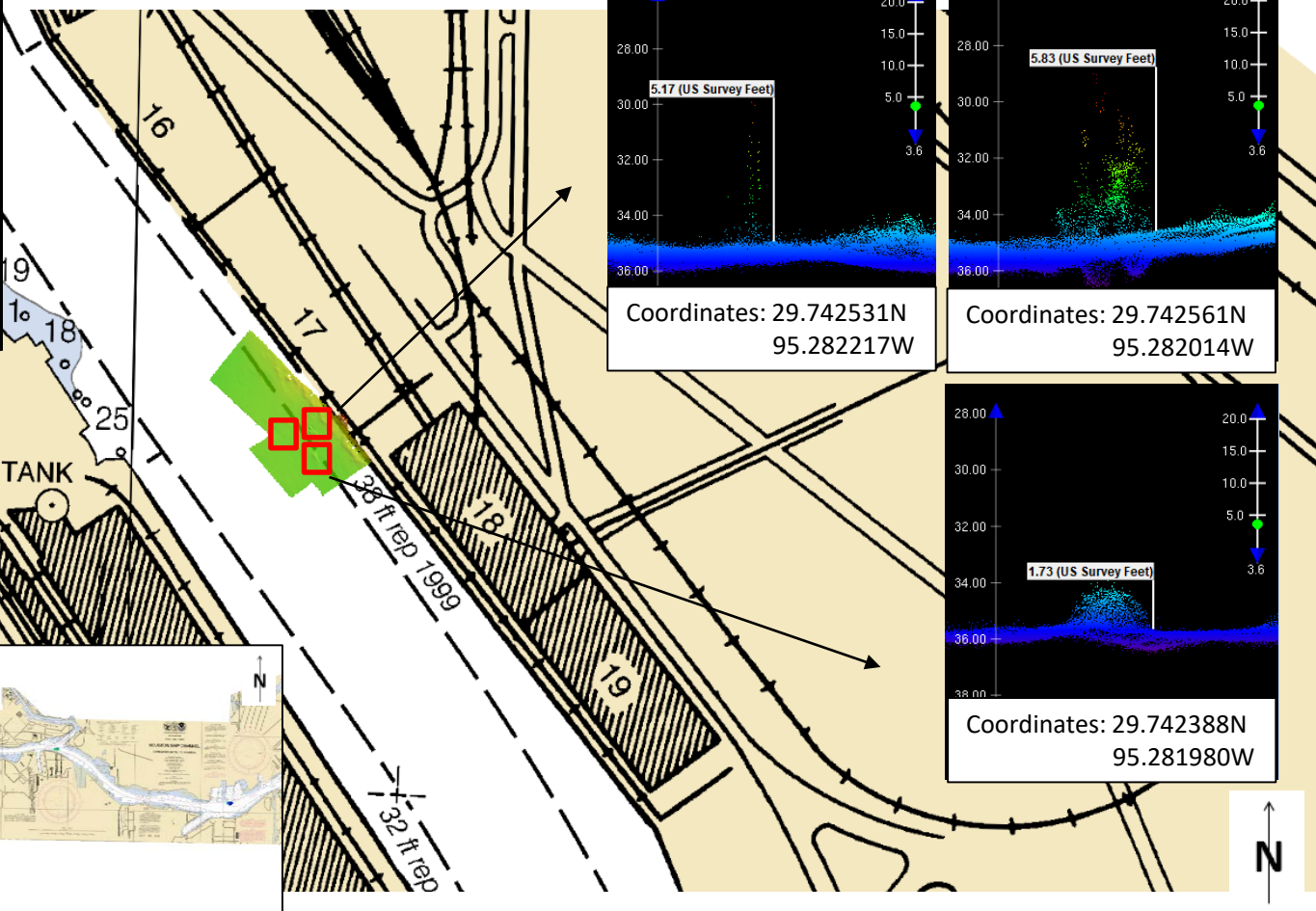
Sounding Units: Feet
Sounding Datum: MLLW
Horizontal Datum: NAD 83 UTM 15 N
Chart Number: 11325
 11329

NOAA NRT 4
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Commanding

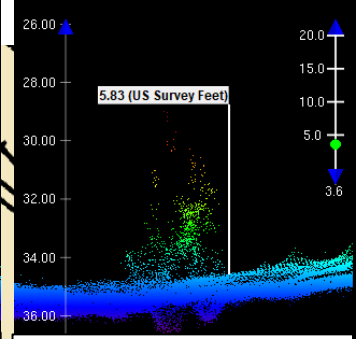
Survey Date:
 09/05/2017



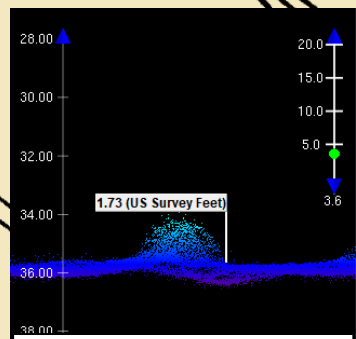
Longest Length: 35ft
 Widest Width: 10ft
 Tallest Height: 5.83ft
 Least Depth: 29ft



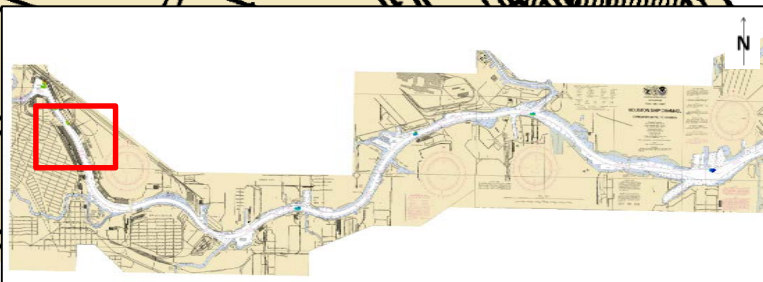
Coordinates: 29.742531N
 95.282217W



Coordinates: 29.742561N
 95.282014W



Coordinates: 29.742388N
 95.281980W



Chartlet 3 of 5: Contacts
Preliminary Data - NOT FOR NAVIGATION

Bathymetry data were acquired and inspected from the Lynchburg Landing to the Turning Basin. Possible obstructions were found in the channel by the R/V Manta using sidescan sonar then later developed by NRT4. Data reflects state of seafloor on the date surveyed.



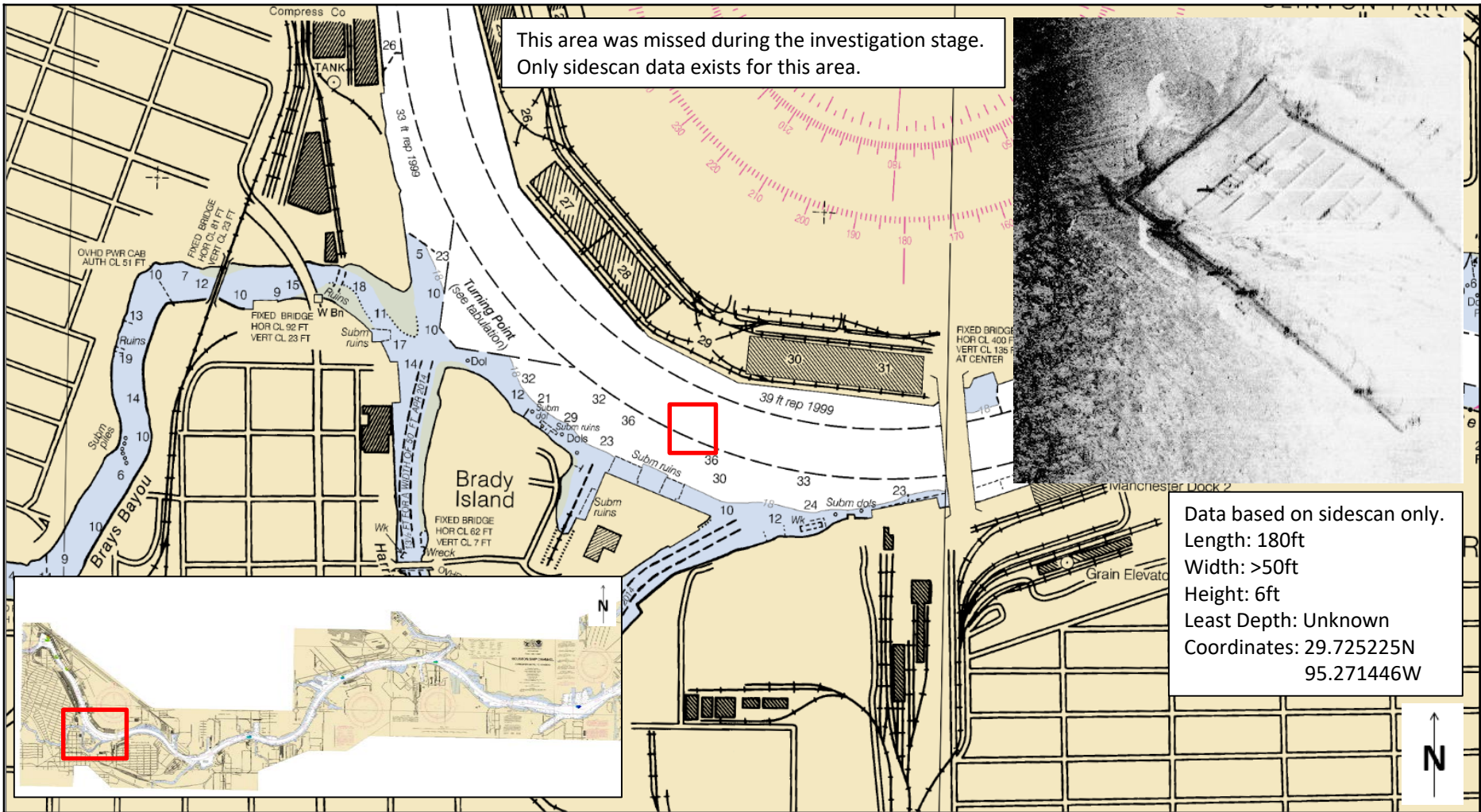
NATIONAL OCEANIC AND
 ATMOSPHERIC ADMINISTRATION
 NATIONAL OCEAN SERVICE

Project: Hurricane Harvey
Survey: Turning Basin to Cotton Patch Bayou
State: Texas
Locality: Houston
Sublocality: Houston Ship Channel
Survey Scale: 1:25,000

Sounding Units: Feet
Sounding Datum: MLLW
Horizontal Datum: NAD 83 UTM 15 N
Chart Number: 11325
 11329

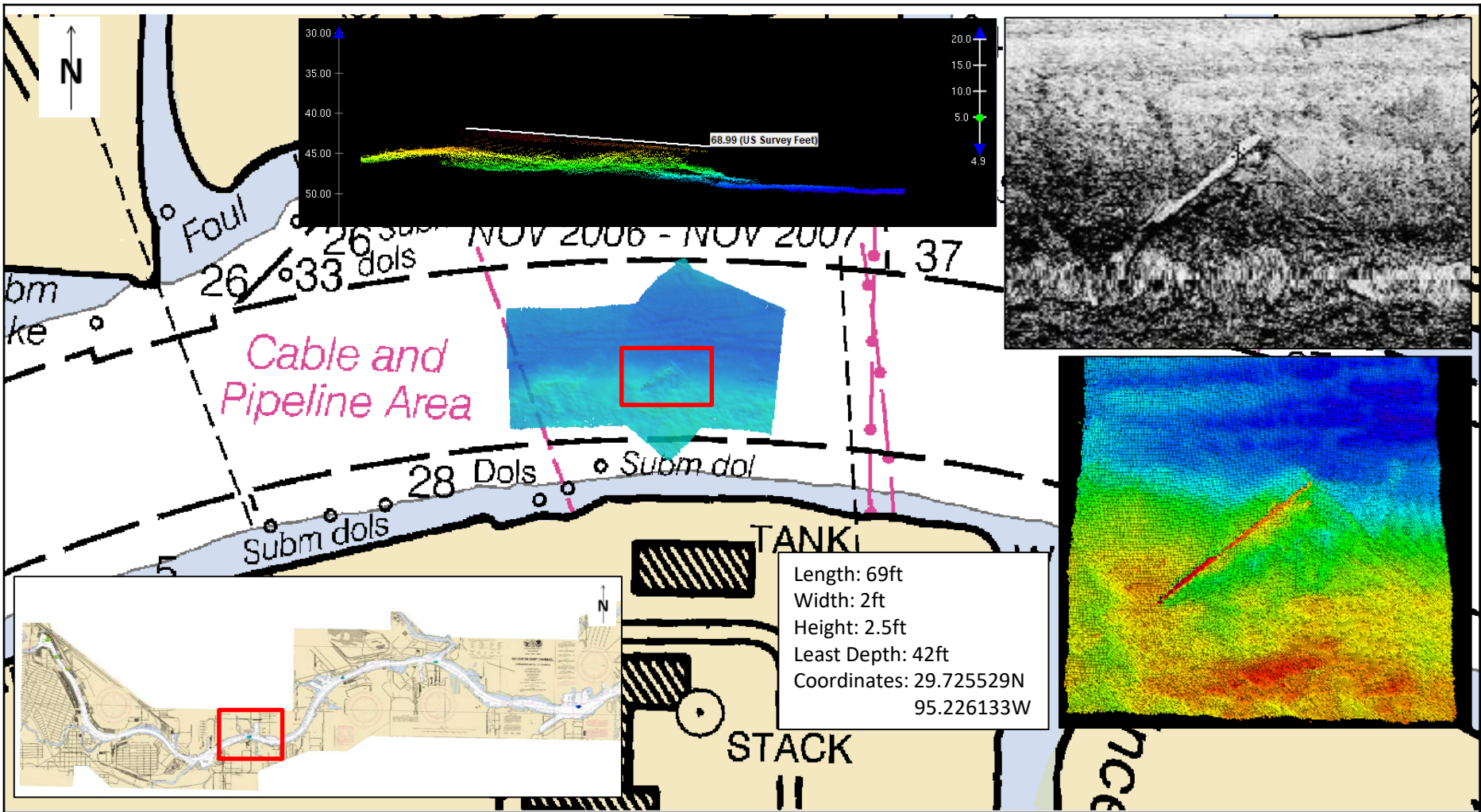
NOAA NRT 4
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Commanding

Survey Date:
 09/05/2017



Data based on sidescan only.
 Length: 180ft
 Width: >50ft
 Height: 6ft
 Least Depth: Unknown
 Coordinates: 29.725225N
 95.271446W

Bathymetry data were acquired and inspected from the Lynchburg Landing to the Turning Basin. Possible obstructions were found in the channel by the R/V Manta using sidescan sonar then later developed by NRT4. Data reflects state of seafloor on the date surveyed.



Length: 69ft
 Width: 2ft
 Height: 2.5ft
 Least Depth: 42ft
 Coordinates: 29.725529N
 95.226133W

Chartlet 5 of 5: Contacts
Preliminary Data - NOT FOR NAVIGATION

Bathymetry data were acquired and inspected from the Lynchburg Landing to the Turning Basin. Possible obstructions were found in the channel by the R/V Manta using sidescan sonar then later developed by NRT4. Data reflects state of seafloor on the date surveyed.



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Project: Hurricane Harvey
Survey: Turning Basin to Cotton Patch Bayou
State: Texas
Locality: Houston
Sublocality: Houston Ship Channel
Survey Scale: 1:25,000

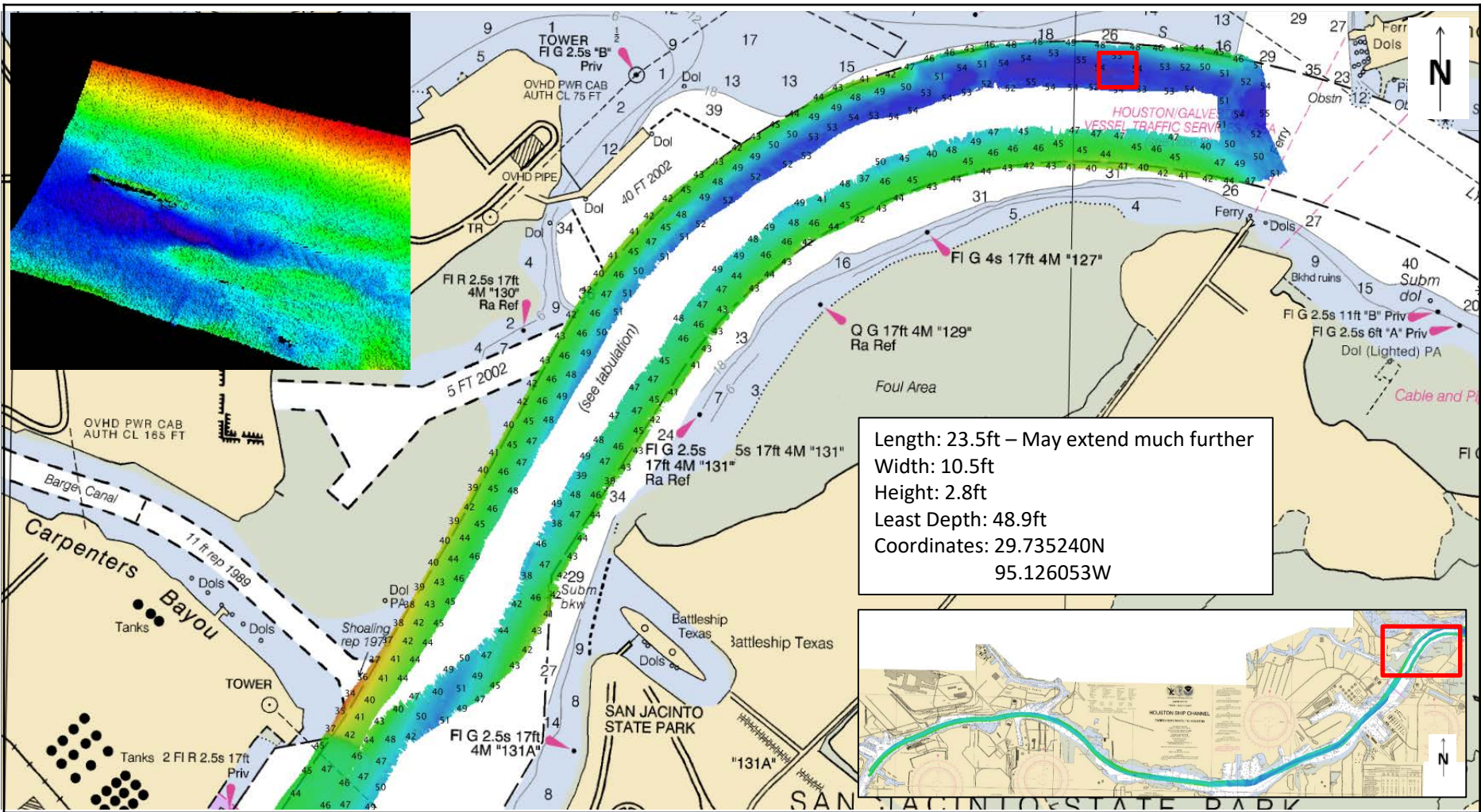
Sounding Units: Feet
Sounding Datum: MLLW
Horizontal Datum: NAD 83 UTM 15 N
Chart Number: 11325
 11329

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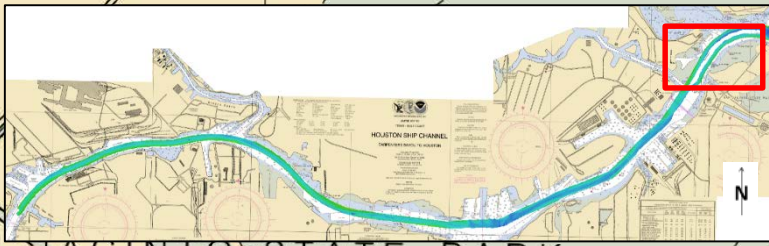
Survey Date:
 09/05/2017

NRT 4 – Section 2
Lynchburg Landing to Cotton Patch Bayou

 <p>NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION NATIONAL OCEAN SERVICE</p>	<p>Project: Hurricane Harvey Survey: Lynchburg Landing to Cotton Patch Bayou State: Texas Locality: Houston Sublocality: Houston Ship Channel Survey Scale: 1:25,000</p> <p>Sounding Units: Feet Sounding Datum: MLLW Horizontal Datum: NAD 83 UTM 15 N Chart Number: 11325 11329</p>	<p>NOAA NRT 4 D. Jacobs Commanding</p> <p>Survey Date: 09/07/2017</p>
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Length: 23.5ft – May extend much further
 Width: 10.5ft
 Height: 2.8ft
 Least Depth: 48.9ft
 Coordinates: 29.735240N
 95.126053W



Chartlet 1 of 7: Contacts
Preliminary Data - NOT FOR NAVIGATION

Bathymetry data were acquired and inspected from the Lynchburg Landing to Cotton Patch Bayou. Possible obstructions were found in the channel by the R/V Manta using sidescan sonar then later developed by NRT4. Data reflects state of seafloor on the date surveyed.

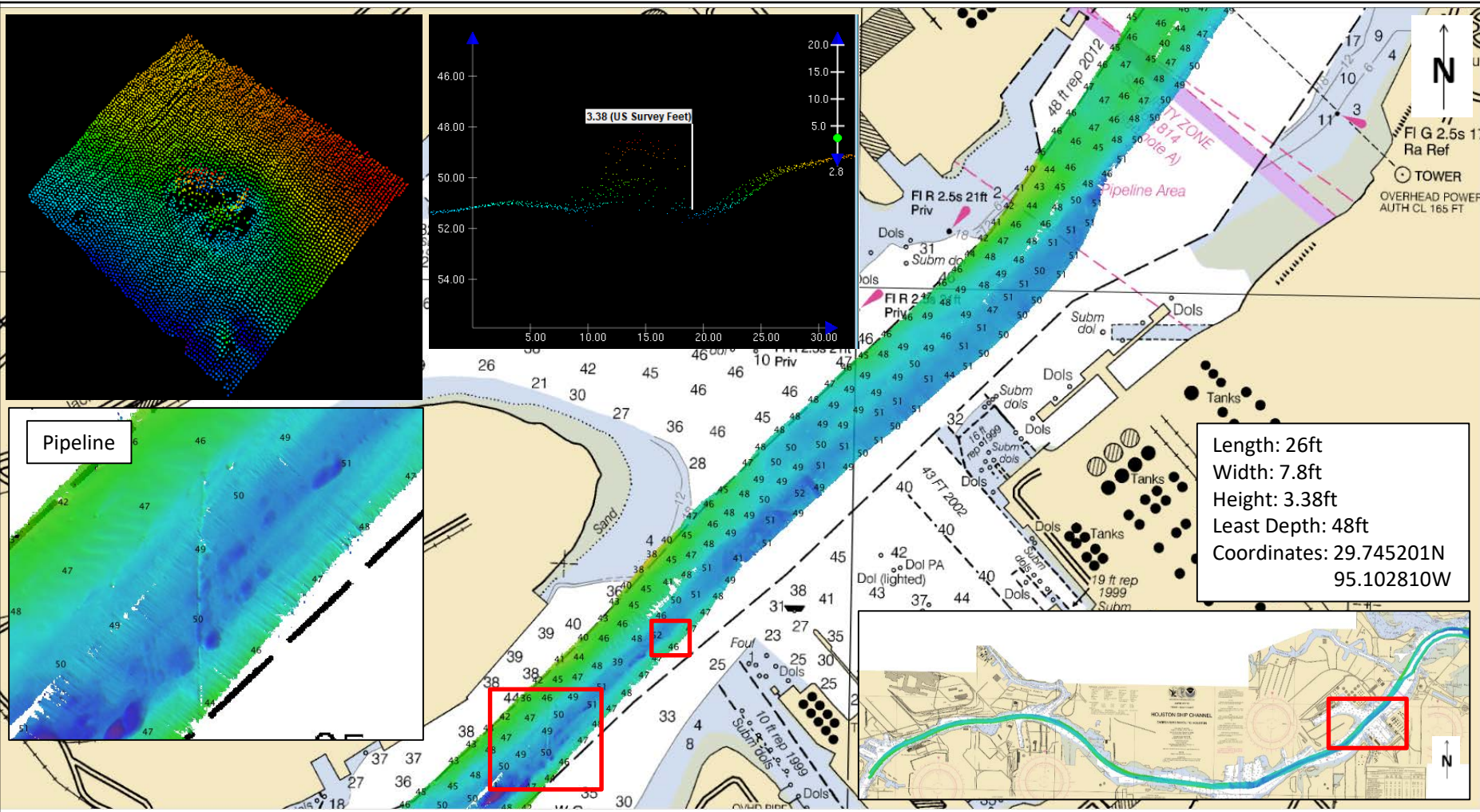


NATIONAL OCEANIC AND
 ATMOSPHERIC ADMINISTRATION
 NATIONAL OCEAN SERVICE

Project:	Hurricane Harvey	Sounding Units:	Feet
Survey:	Lynchburg Landing to Cotton Patch Bayou	Sounding Datum:	MLLW
State:	Texas	Horizontal Datum:	NAD 83 UTM 15 N
Locality:	Houston	Chart Number:	11325
Sublocality:	Houston Ship Channel		11329
Survey Scale:	1:25,000		

NOAA NRT 4
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Commanding

Survey Date:
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Length: 26ft
 Width: 7.8ft
 Height: 3.38ft
 Least Depth: 48ft
 Coordinates: 29.745201N
 95.102810W

Chartlet 2 of 7: Contacts
Preliminary Data - NOT FOR NAVIGATION

Bathymetry data were acquired and inspected from the Lynchburg Landing to Cotton Patch Bayou. Possible obstructions were found in the channel by the R/V Manta using sidescan sonar then later developed by NRT4. Data reflects state of seafloor on the date surveyed.

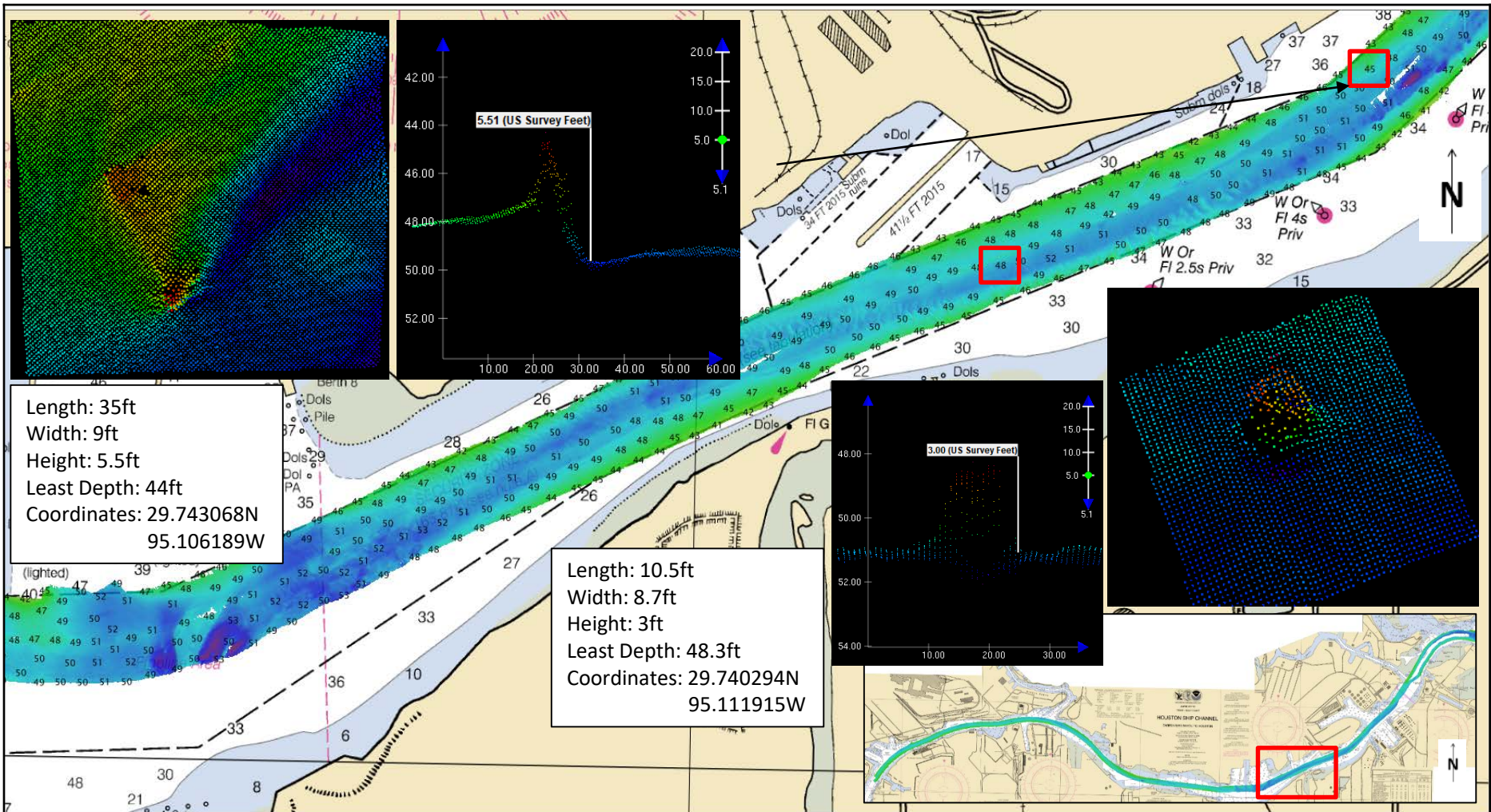


NATIONAL OCEANIC AND
 ATMOSPHERIC ADMINISTRATION
 NATIONAL OCEAN SERVICE

Project:	Hurricane Harvey	Sounding Units:	Feet
Survey:	Lynchburg Landing to Cotton Patch Bayou	Sounding Datum:	MLLW
State:	Texas	Horizontal Datum:	NAD 83 UTM 15 N
Locality:	Houston	Chart Number:	11325
Sublocality:	Houston Ship Channel		11329
Survey Scale:	1:25,000		

NOAA NRT 4
D. Jacobs
Commanding

Survey Date:
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Chartlet 3a of 7: Contacts
Preliminary Data - NOT FOR NAVIGATION

Bathymetry data were acquired and inspected from the Lynchburg Landing to Cotton Patch Bayou. Possible obstructions were found in the channel by the R/V Manta using sidescan sonar then later developed by NRT4. Data reflects state of seafloor on the date surveyed.

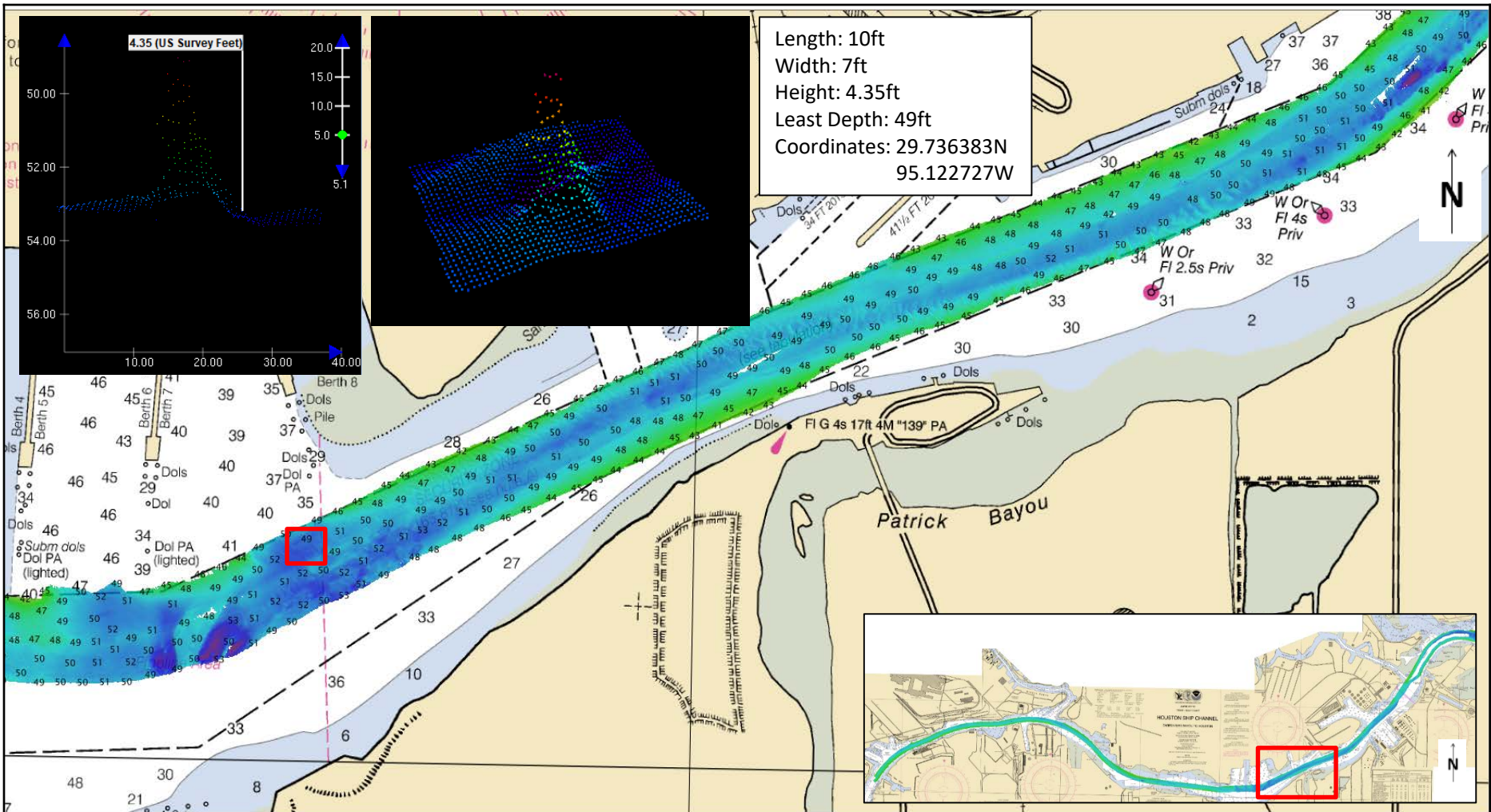


NATIONAL OCEANIC AND
 ATMOSPHERIC ADMINISTRATION
 NATIONAL OCEAN SERVICE

Project:	Hurricane Harvey	Sounding Units:	Feet
Survey:	Lynchburg Landing to Cotton Patch Bayou	Sounding Datum:	MLLW
State:	Texas	Horizontal Datum:	NAD 83 UTM 15 N
Locality:	Houston	Chart Number:	11325
Sublocality:	Houston Ship Channel		11329
Survey Scale:	1:25,000		

NOAA NRT 4
D. Jacobs
Commanding

Survey Date:
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Chartlet 3b of 7: Contacts
Preliminary Data - NOT FOR NAVIGATION

Bathymetry data were acquired and inspected from the Lynchburg Landing to Cotton Patch Bayou. Possible obstructions were found in the channel by the R/V Manta using sidescan sonar then later developed by NRT4. Data reflects state of seafloor on the date surveyed.

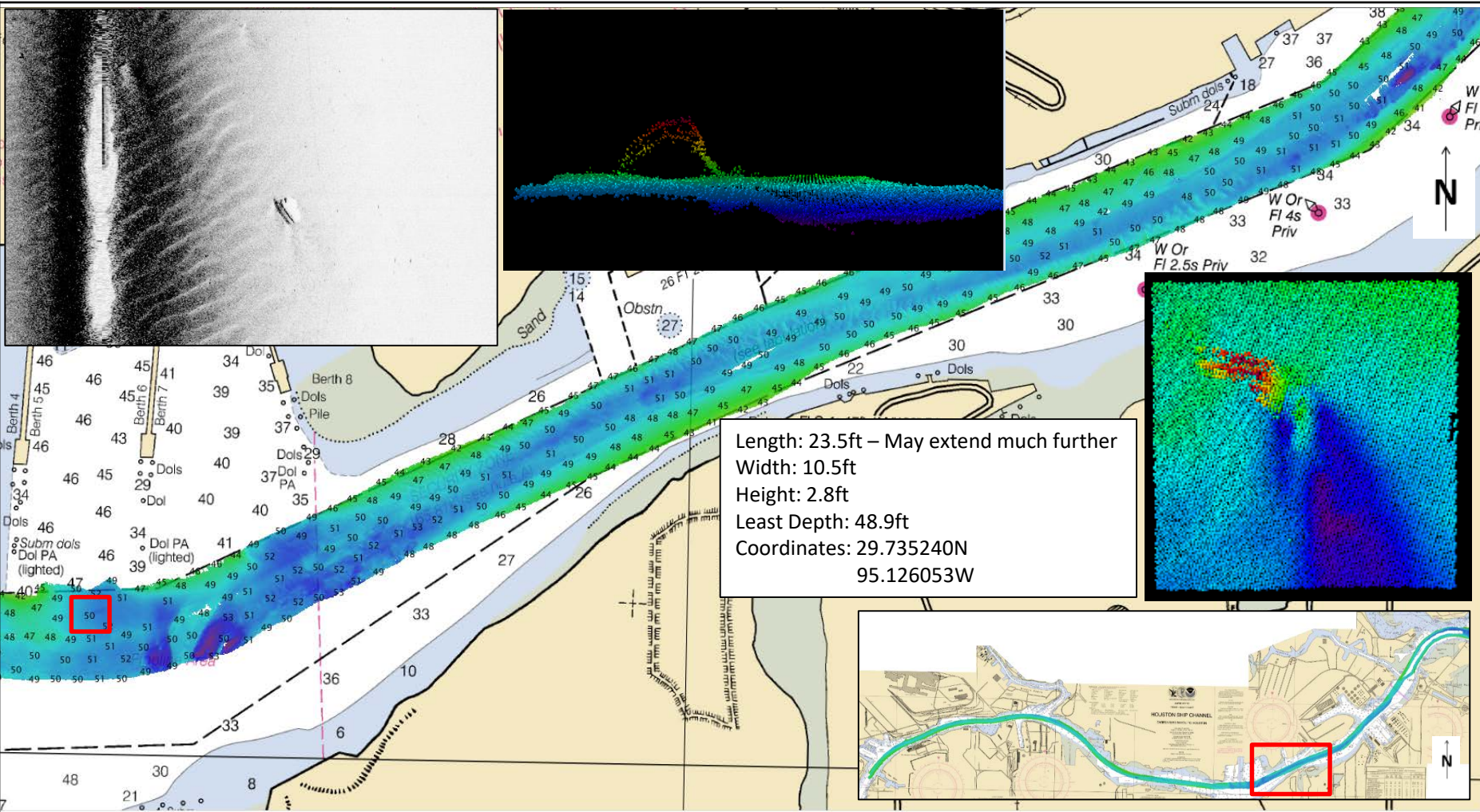


NATIONAL OCEANIC AND
 ATMOSPHERIC ADMINISTRATION
 NATIONAL OCEAN SERVICE

Project:	Hurricane Harvey	Sounding Units:	Feet
Survey:	Lynchburg Landing to Cotton Patch Bayou	Sounding Datum:	MLLW
State:	Texas	Horizontal Datum:	NAD 83 UTM 15 N
Locality:	Houston	Chart Number:	11325
Sublocality:	Houston Ship Channel		11329
Survey Scale:	1:25,000		


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Chartlet 3c of 7: Contacts
Preliminary Data - NOT FOR NAVIGATION

Bathymetry data were acquired and inspected from the Lynchburg Landing to Cotton Patch Bayou. Possible obstructions were found in the channel by the R/V Manta using sidescan sonar then later developed by NRT4. Data reflects state of seafloor on the date surveyed.



NATIONAL OCEANIC AND
 ATMOSPHERIC ADMINISTRATION
 NATIONAL OCEAN SERVICE

Project:	Hurricane Harvey	Sounding Units:	Feet
Survey:	Lynchburg Landing to Cotton Patch Bayou	Sounding Datum:	MLLW
State:	Texas	Horizontal Datum:	NAD 83 UTM 15 N
Locality:	Houston	Chart Number:	11325
Sublocality:	Houston Ship Channel		11329
Survey Scale:	1:25,000		

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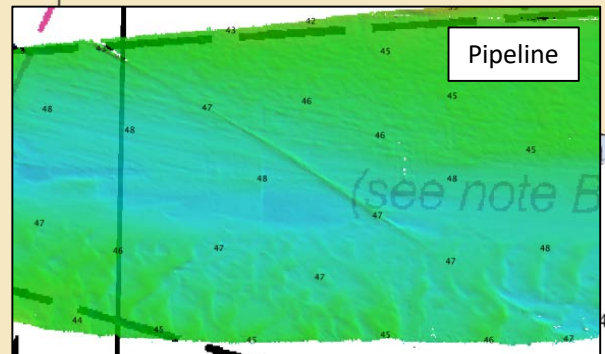
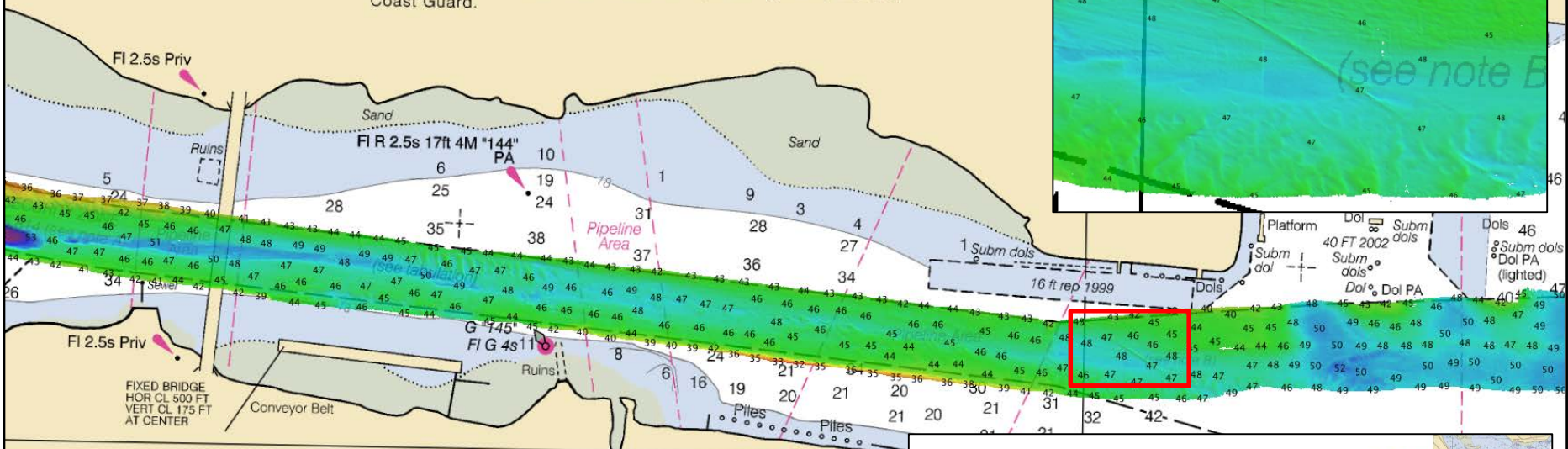


Additional information can be obtained at nauticalcharts.noaa.gov.

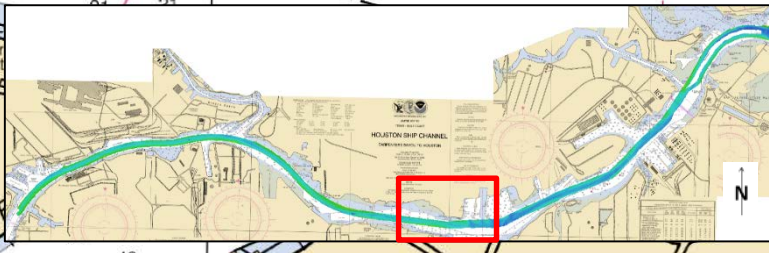
HEIGHTS
Heights in feet above Mean High Water.

AUTHORITIES
Hydrography and topography by the National Ocean Service, Coast Survey, with additional data from the Corps of Engineers, and U.S. Coast Guard.

The prudent mariner will not rely solely on any single aid to navigation, particularly on floating aids. See U.S. Coast Guard Light List and U.S. Coast Pilot for details.



HORIZONTAL DATUM
The horizontal reference datum of this chart is North American Datum of 1983 (NAD 83), which for charting purposes is considered equivalent to the World Geodetic System 1984 (WGS 84). Geographic positions referred to the North American Datum of 1927 must be corrected an average of 0.820" northward and 0.757" westward to agree with this chart.



Chartlet 4 of 7: Contacts

Preliminary Data - NOT FOR NAVIGATION

Bathymetry data were acquired and inspected from the Lynchburg Landing to Cotton Patch Bayou. Possible obstructions were found in the channel by the R/V Manta using sidescan sonar then later developed by NRT4. Data reflects state of seafloor on the date surveyed.

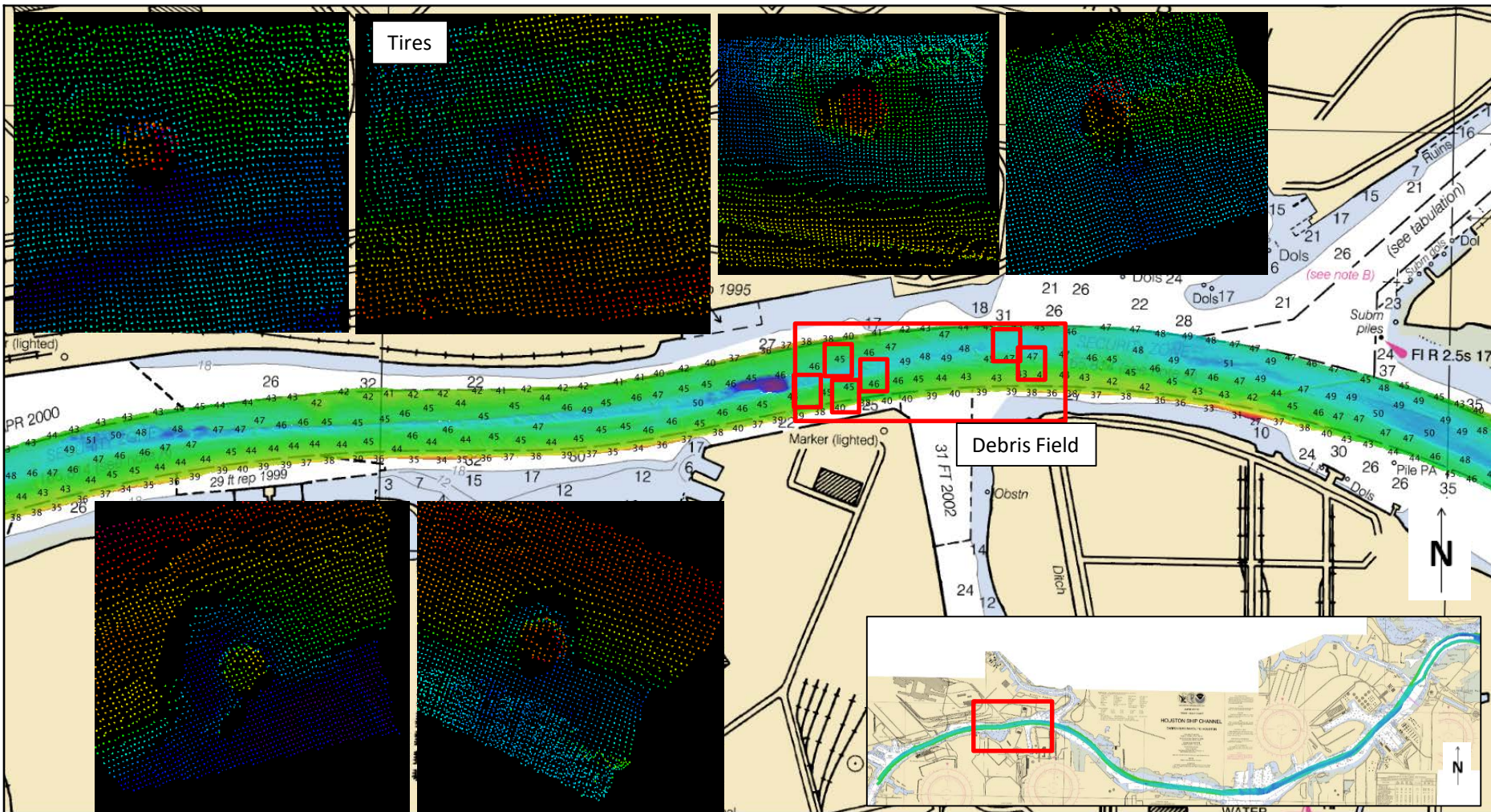


NATIONAL OCEANIC AND
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NATIONAL OCEAN SERVICE

Project:	Hurricane Harvey	Sounding Units:	Feet
Survey:	Lynchburg Landing to Cotton Patch Bayou	Sounding Datum:	MLLW
State:	Texas	Horizontal Datum:	NAD 83 UTM 15 N
Locality:	Houston	Chart Number:	11325
Sublocality:	Houston Ship Channel		11329
Survey Scale:	1:25,000		


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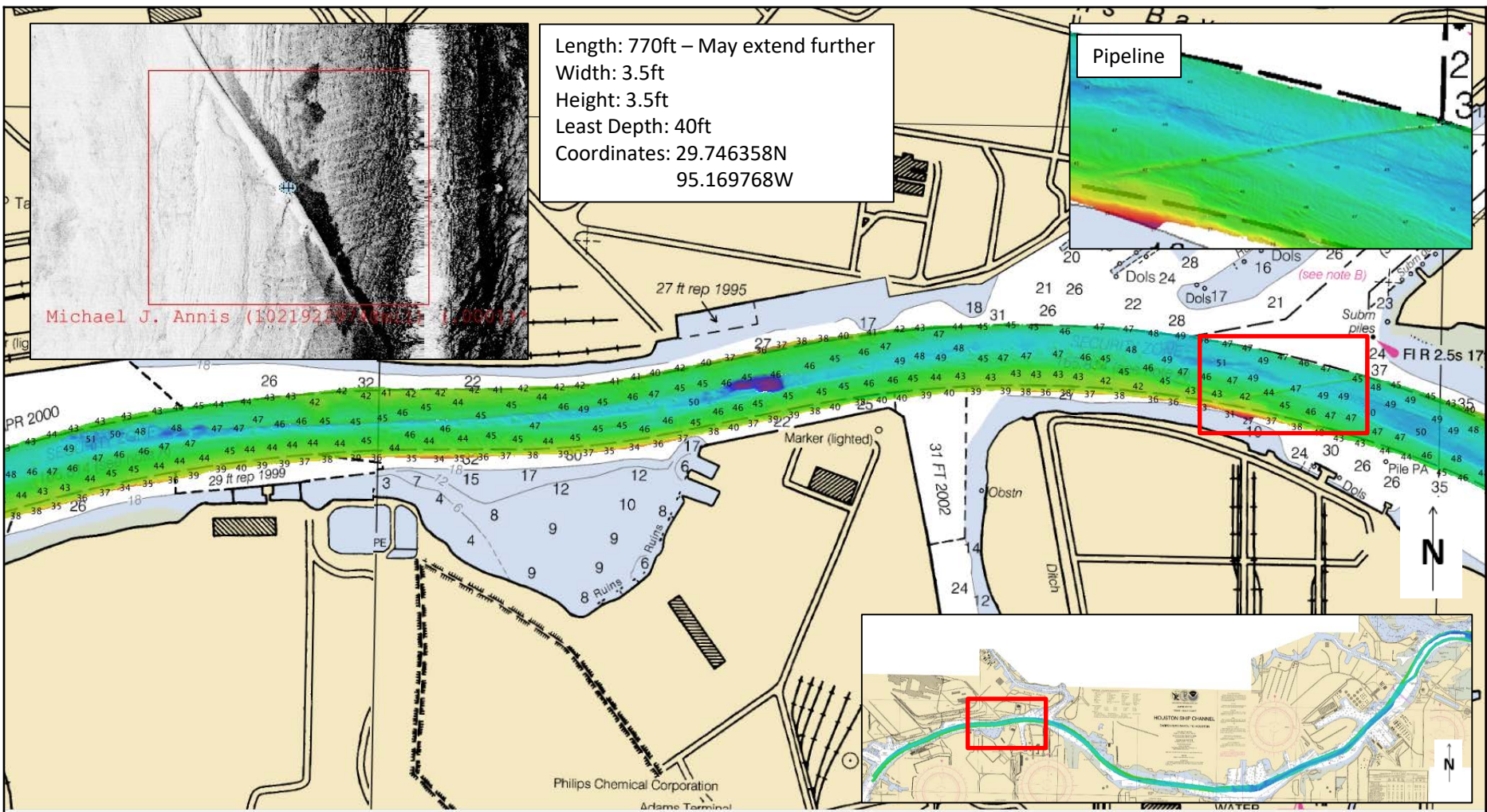
Survey Date:
09/07/2017



Chartlet 6a of 7: Contacts
Preliminary Data - NOT FOR NAVIGATION

Bathymetry data were acquired and inspected from the Lynchburg Landing to Cotton Patch Bayou. Possible obstructions were found in the channel by the R/V Manta using sidescan sonar then later developed by NRT4. Data reflects state of seafloor on the date surveyed.

 <p>NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION NATIONAL OCEAN SERVICE</p>	<p>Project: Hurricane Harvey</p> <p>Survey: Lynchburg Landing to Cotton Patch Bayou</p> <p>State: Texas</p> <p>Locality: Houston</p> <p>Sublocality: Houston Ship Channel</p> <p>Survey Scale: 1:25,000</p>	<p>Sounding Units: Feet</p> <p>Sounding Datum: MLLW</p> <p>Horizontal Datum: NAD 83 UTM 15 N</p> <p>Chart Number: 11325</p>	<p>NOAA NRT 4 D. Jacobs Commanding</p> <p>Survey Date: 09/07/2017</p>
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Length: 770ft – May extend further
 Width: 3.5ft
 Height: 3.5ft
 Least Depth: 40ft
 Coordinates: 29.746358N
 95.169768W

Pipeline

Michael J. Annis (10219219700025 1.000000)

Chartlet 6b of 7: Contacts
Preliminary Data - NOT FOR NAVIGATION

Bathymetry data were acquired and inspected from the Lynchburg Landing to Cotton Patch Bayou. Possible obstructions were found in the channel by the R/V Manta using sidescan sonar then later developed by NRT4. Data reflects state of seafloor on the date surveyed.

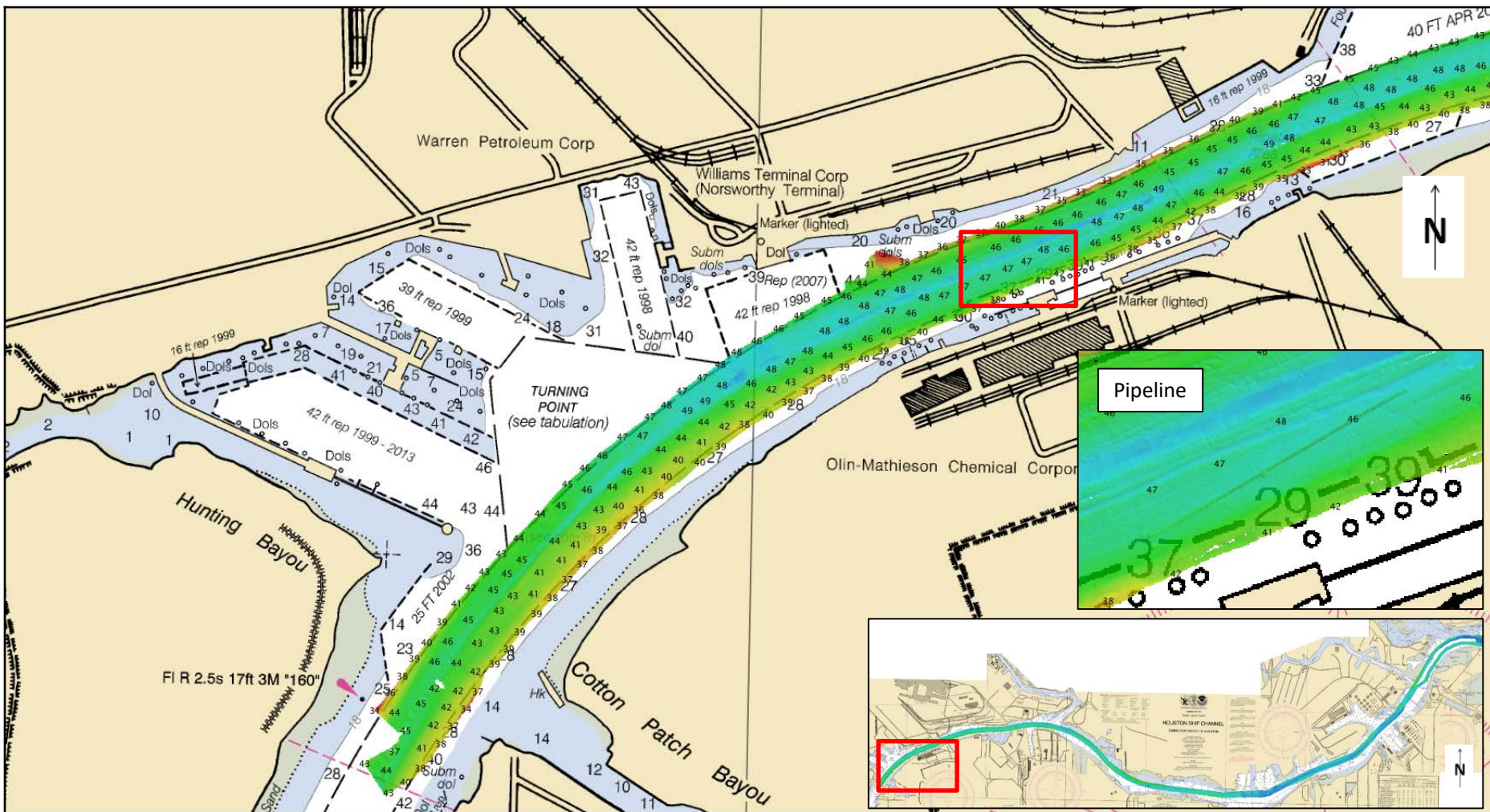


NATIONAL OCEANIC AND
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 NATIONAL OCEAN SERVICE

Project:	Hurricane Harvey	Sounding Units:	Feet
Survey:	Lynchburg Landing to Cotton Patch Bayou	Sounding Datum:	MLLW
State:	Texas	Horizontal Datum:	NAD 83 UTM 15 N
Locality:	Houston	Chart Number:	11325
Sublocality:	Houston Ship Channel		11329
Survey Scale:	1:25,000		

NOAA NRT 4
D. Jacobs
Commanding

Survey Date:
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Chartlet 7a of 7: Contacts
Preliminary Data - NOT FOR NAVIGATION

Bathymetry data were acquired and inspected from the Lynchburg Landing to Cotton Patch Bayou. Possible obstructions were found in the channel by the R/V Manta using sidescan sonar then later developed by NRT4. Data reflects state of seafloor on the date surveyed.

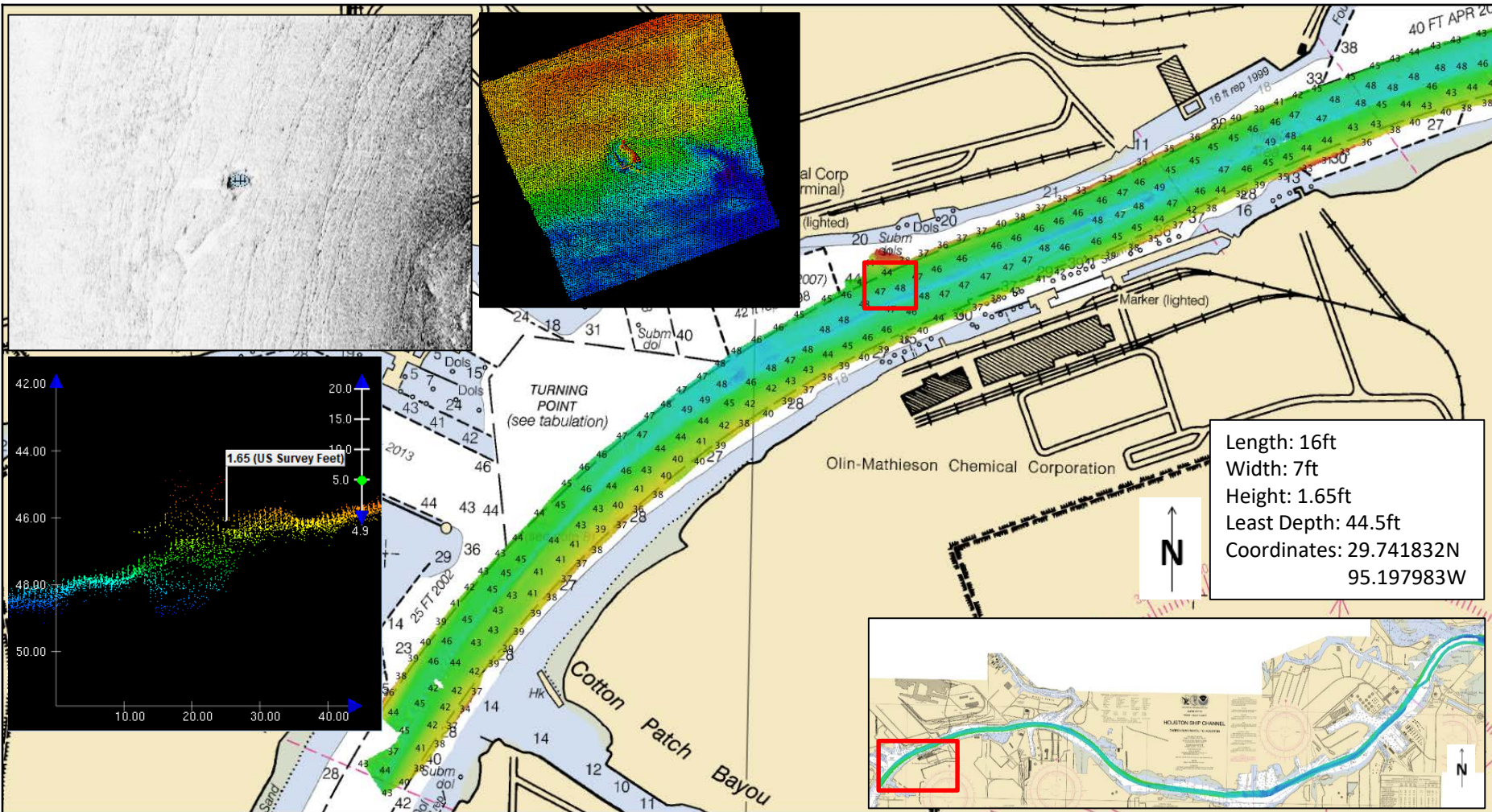


NATIONAL OCEANIC AND
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Project:	Hurricane Harvey	Sounding Units:	Feet
Survey:	Lynchburg Landing to Cotton Patch Bayou	Sounding Datum:	MLLW
State:	Texas	Horizontal Datum:	NAD 83 UTM 15 N
Locality:	Houston	Chart Number:	11325
Sublocality:	Houston Ship Channel		11329
Survey Scale:	1:25,000		

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Chartlet 7b of 7: Contacts
Preliminary Data - NOT FOR NAVIGATION

Bathymetry data were acquired and inspected from the Lynchburg Landing to Cotton Patch Bayou. Possible obstructions were found in the channel by the R/V Manta using sidescan sonar then later developed by NRT4. Data reflects state of seafloor on the date surveyed.




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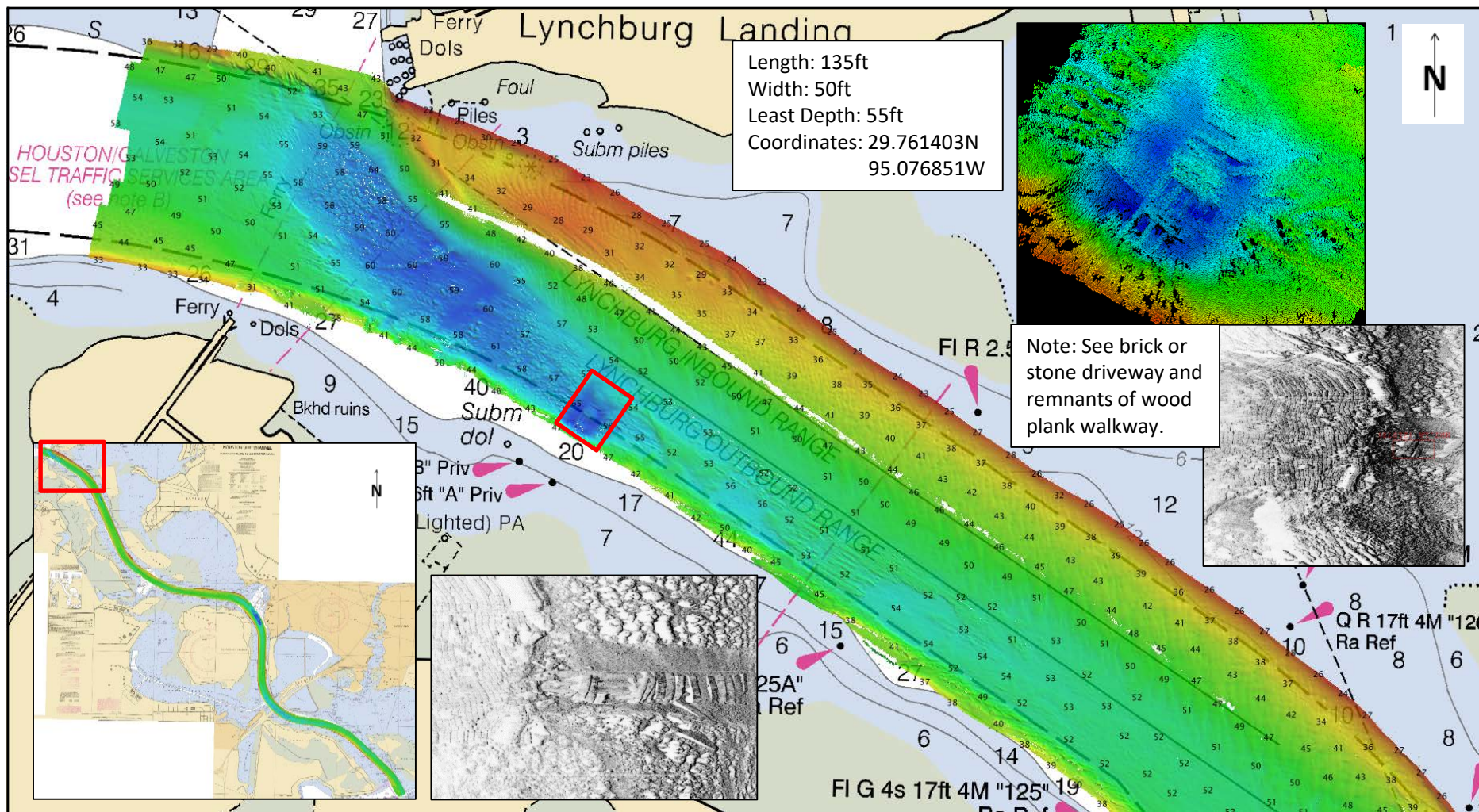
Project:	Hurricane Harvey	Sounding Units:	Feet
Survey:	Lynchburg Landing to Cotton Patch Bayou	Sounding Datum:	MLLW
State:	Texas	Horizontal Datum:	NAD 83 UTM 15 N
Locality:	Houston	Chart Number:	11325
Sublocality:	Houston Ship Channel		11329
Survey Scale:	1:25,000		

NOAA NRT 4
D. Jacobs
Commanding

Survey Date:
 09/07/2017

NRT 4 – Section 3
Lynchburg Landing to Barbours Terminal Channel

 <p>NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION NATIONAL OCEAN SERVICE</p>	<p>Project: Hurricane Harvey Survey: Lynchburg Landing to Barbours Terminal State: Texas Locality: Houston Sublocality: Houston Ship Channel Survey Scale: 1:25,000</p> <p>Sounding Units: Feet Sounding Datum: MLLW Horizontal Datum: NAD 83 UTM 15 N Chart Number: 11328 11329</p>	<p>NOAA NRT 4 D. Jacobs Commanding</p> <p>Survey Date: 09/03/2017</p>
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Chartlet 1 of 11: Bathymetry
Preliminary Data - NOT FOR NAVIGATION

Bathymetry with concurrent side scan were acquired and inspected from Barbour's Terminal Channel at Morgan's Point to Lynchburg Landing. Possible obstructions were found in the channel. Data reflects state of seafloor on the date surveyed.

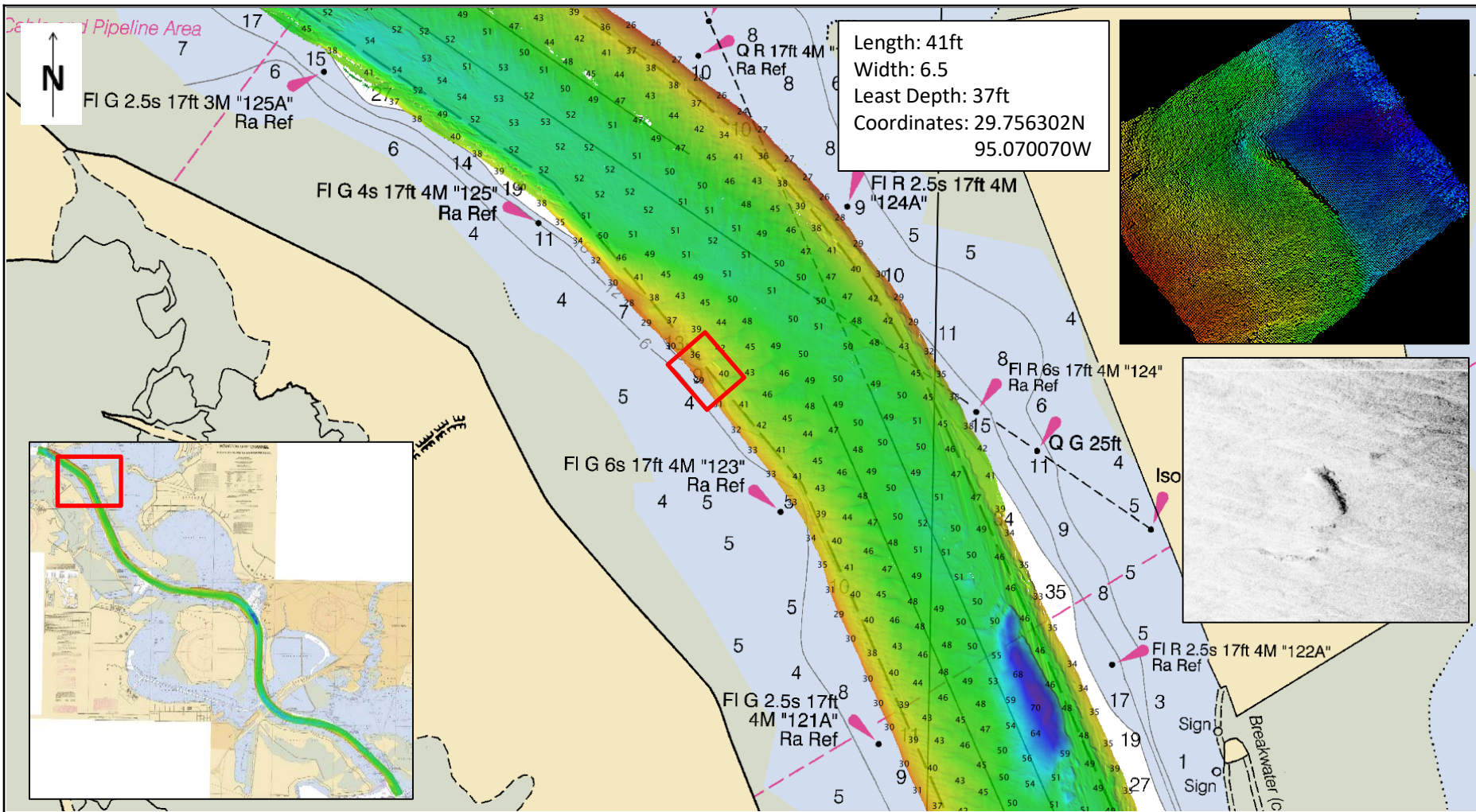


NATIONAL OCEANIC AND
 ATMOSPHERIC ADMINISTRATION
 NATIONAL OCEAN SERVICE

Project:	Hurricane Harvey	Sounding Units:	Feet
Survey:	Lynchburg Landing to Barbour's Terminal	Sounding Datum:	MLLW
State:	Texas	Horizontal Datum:	NAD 83 UTM 15 N
Locality:	Houston	Chart Number:	11328
Sublocality:	Houston Ship Channel		11329
Survey Scale:	1:25,000		

NOAA NRT 4
D. Jacobs
Commanding

Survey Date:
 09/03/2017
 09/05/2017



Chartlet 2 of 11: Bathymetry
Preliminary Data - NOT FOR NAVIGATION

Bathymetry with concurrent side scan were acquired and inspected from Barbour's Terminal Channel at Morgan's Point to Lynchburg Landing. Possible obstructions were found in the channel. Data reflects state of seafloor on the date surveyed.

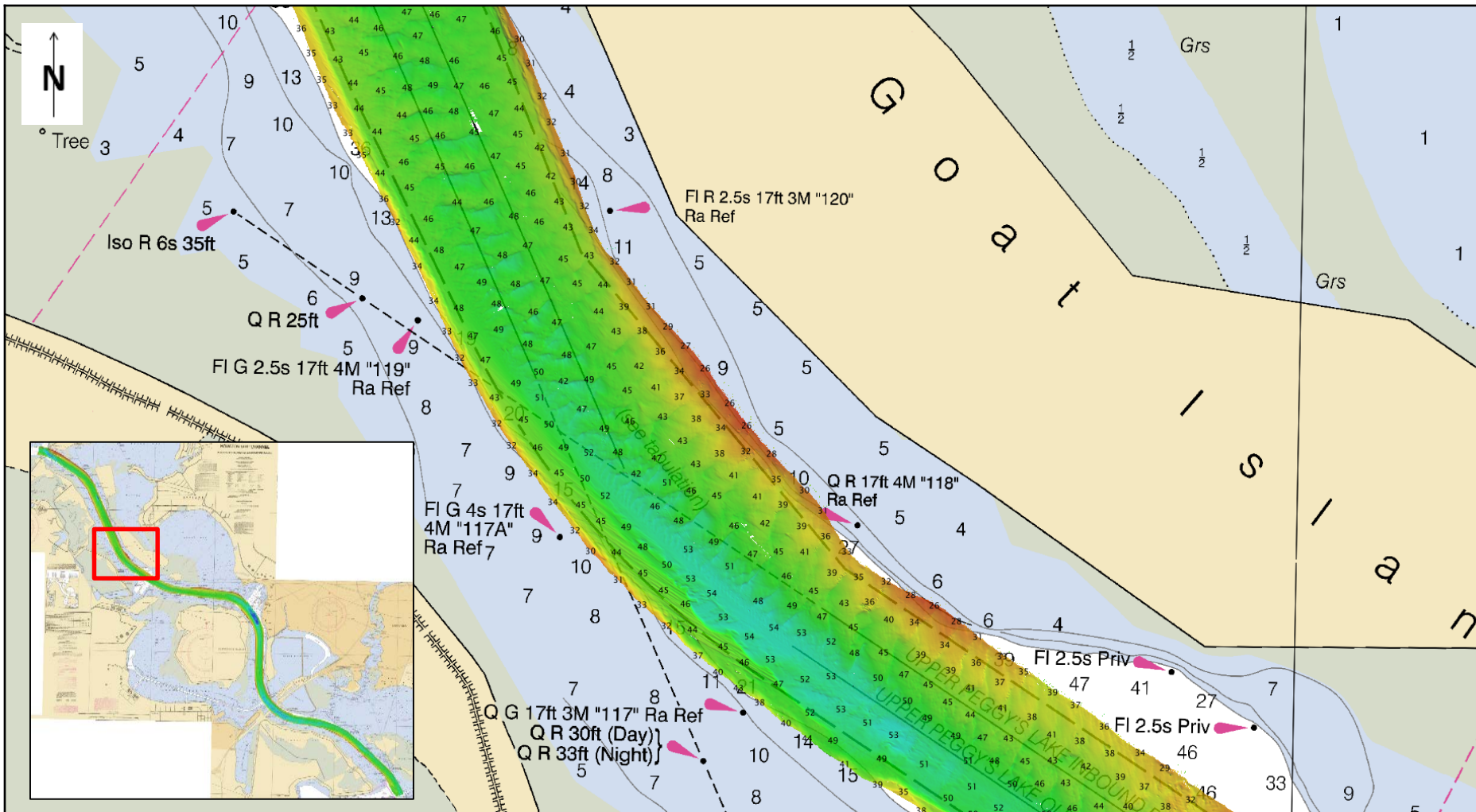


NATIONAL OCEANIC AND
 ATMOSPHERIC ADMINISTRATION
 NATIONAL OCEAN SERVICE

Project:	Hurricane Harvey	Sounding Units:	Feet
Survey:	Lynchburg Landing to Barbour's Terminal	Sounding Datum:	MLLW
State:	Texas	Horizontal Datum:	NAD 83 UTM 15 N
Locality:	Houston	Chart Number:	11328
Sublocality:	Houston Ship Channel		11329
Survey Scale:	1:25,000		

NOAA NRT 4
D. Jacobs
Commanding

Survey Date:
 09/03/2017
 09/05/2017



Chartlet 4 of 11: Bathymetry
Preliminary Data - NOT FOR NAVIGATION

Bathymetry with concurrent side scan were acquired and inspected from Barbour's Terminal Channel at Morgan's Point to Lynchburg Landing. Possible obstructions were found in the channel. Data reflects state of seafloor on the date surveyed.



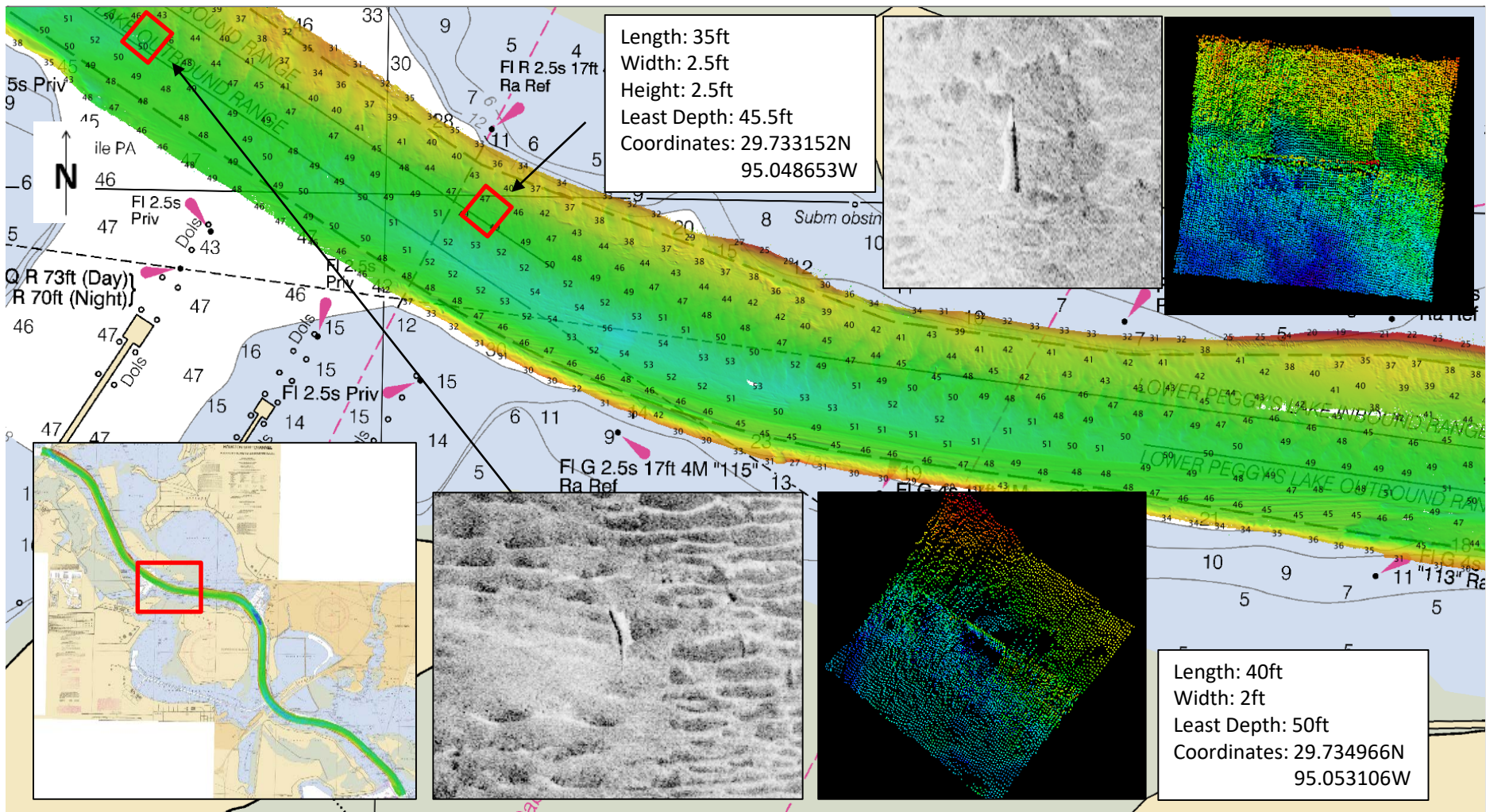
NATIONAL OCEANIC AND
 ATMOSPHERIC ADMINISTRATION
 NATIONAL OCEAN SERVICE

Project: Hurricane Harvey
Survey: Lynchburg Landing to Barbour's Terminal
State: Texas
Locality: Houston
Sublocality: Houston Ship Channel
Survey Scale: 1:25,000

Sounding Units: Feet
Sounding Datum: MLLW
Horizontal Datum: NAD 83 UTM 15 N
Chart Number: 11328

NOAA NRT 4
D. Jacobs
Commanding

Survey Date:
 09/03/2017
 09/05/2017



Chartlet 5a of 11: Bathymetry
Preliminary Data - NOT FOR NAVIGATION

Bathymetry with concurrent side scan were acquired and inspected from Barbour's Terminal Channel at Morgan's Point to Lynchburg Landing. Possible obstructions were found in the channel. Data reflects state of seafloor on the date surveyed.

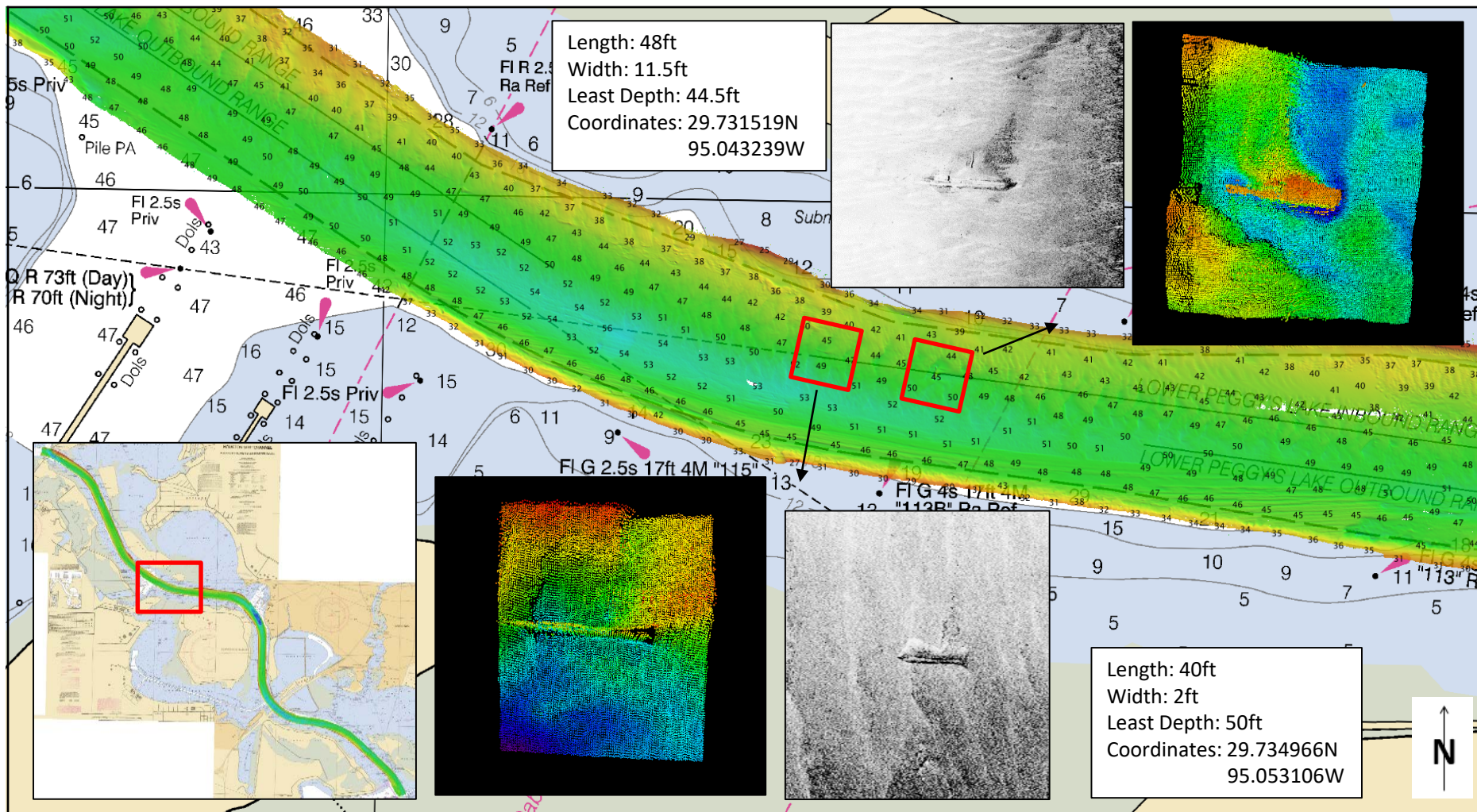


NATIONAL OCEANIC AND
 ATMOSPHERIC ADMINISTRATION
 NATIONAL OCEAN SERVICE

Project:	Hurricane Harvey	Sounding Units:	Feet
Survey:	Lynchburg Landing to Barbour's Terminal	Sounding Datum:	MLLW
State:	Texas	Horizontal Datum:	NAD 83 UTM 15 N
Locality:	Houston	Chart Number:	11328
Sublocality:	Houston Ship Channel		11329
Survey Scale:	1:25,000		


NOAA NRT 4
D. Jacobs
Commanding

Survey Date:
 09/03/2017
 09/05/2017



Chartlet 5b of 11: Bathymetry
Preliminary Data - NOT FOR NAVIGATION

Bathymetry with concurrent side scan were acquired and inspected from Barbour's Terminal Channel at Morgan's Point to Lynchburg Landing. Possible obstructions were found in the channel. Data reflects state of seafloor on the date surveyed.

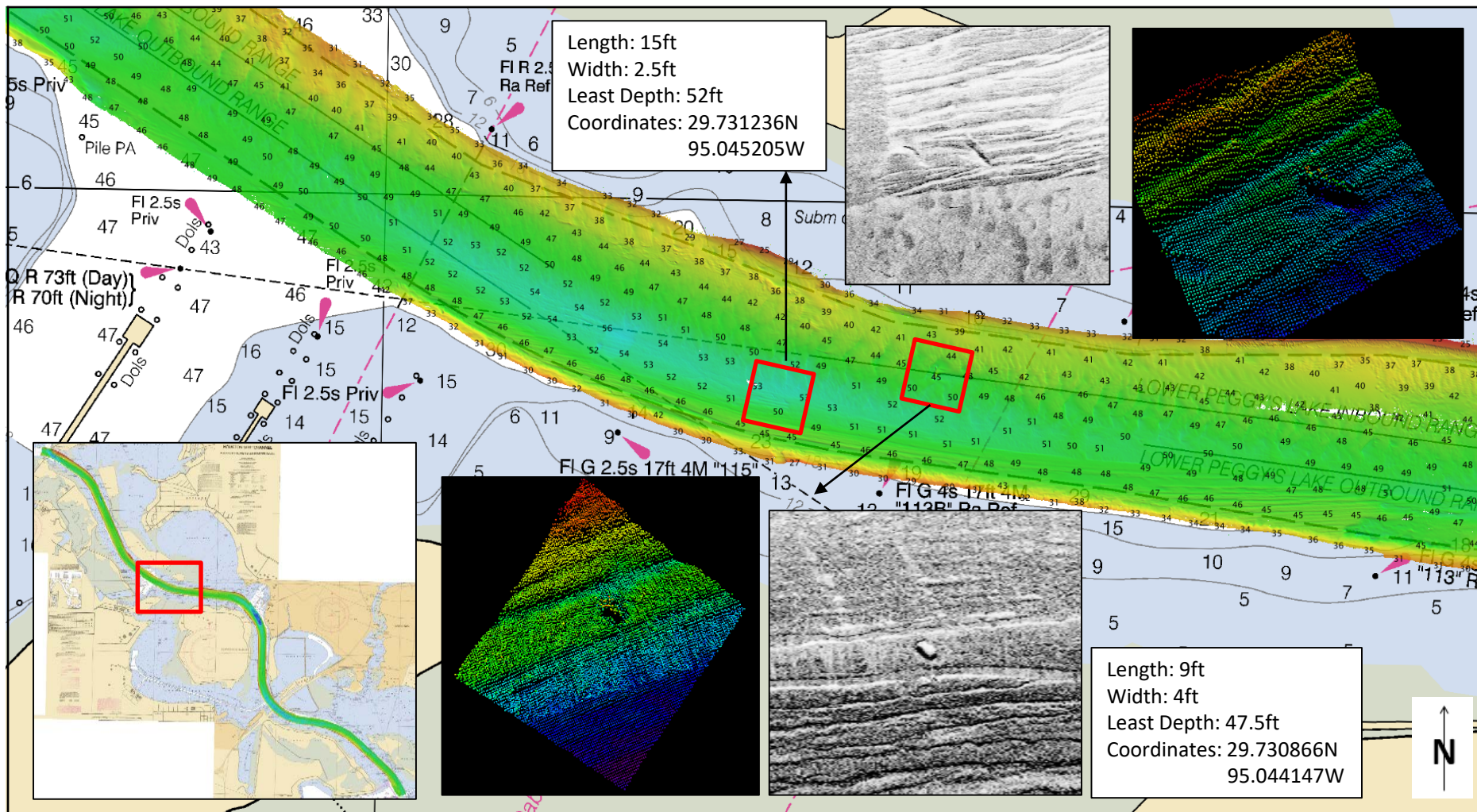


NATIONAL OCEANIC AND
 ATMOSPHERIC ADMINISTRATION
 NATIONAL OCEAN SERVICE


Project:	Hurricane Harvey	Sounding Units:	Feet
Survey:	Lynchburg Landing to Barbour's Terminal	Sounding Datum:	MLLW
State:	Texas	Horizontal Datum:	NAD 83 UTM 15 N
Locality:	Houston	Chart Number:	11328
Sublocality:	Houston Ship Channel		11329
Survey Scale:	1:25,000		

NOAA NRT 4
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Commanding

Survey Date:
 09/03/2017
 09/05/2017



Bathymetry with concurrent side scan were acquired and inspected from Barbour's Terminal Channel at Morgan's Point to Lynchburg Landing. Possible obstructions were found in the channel. Data reflects state of seafloor on the date surveyed.

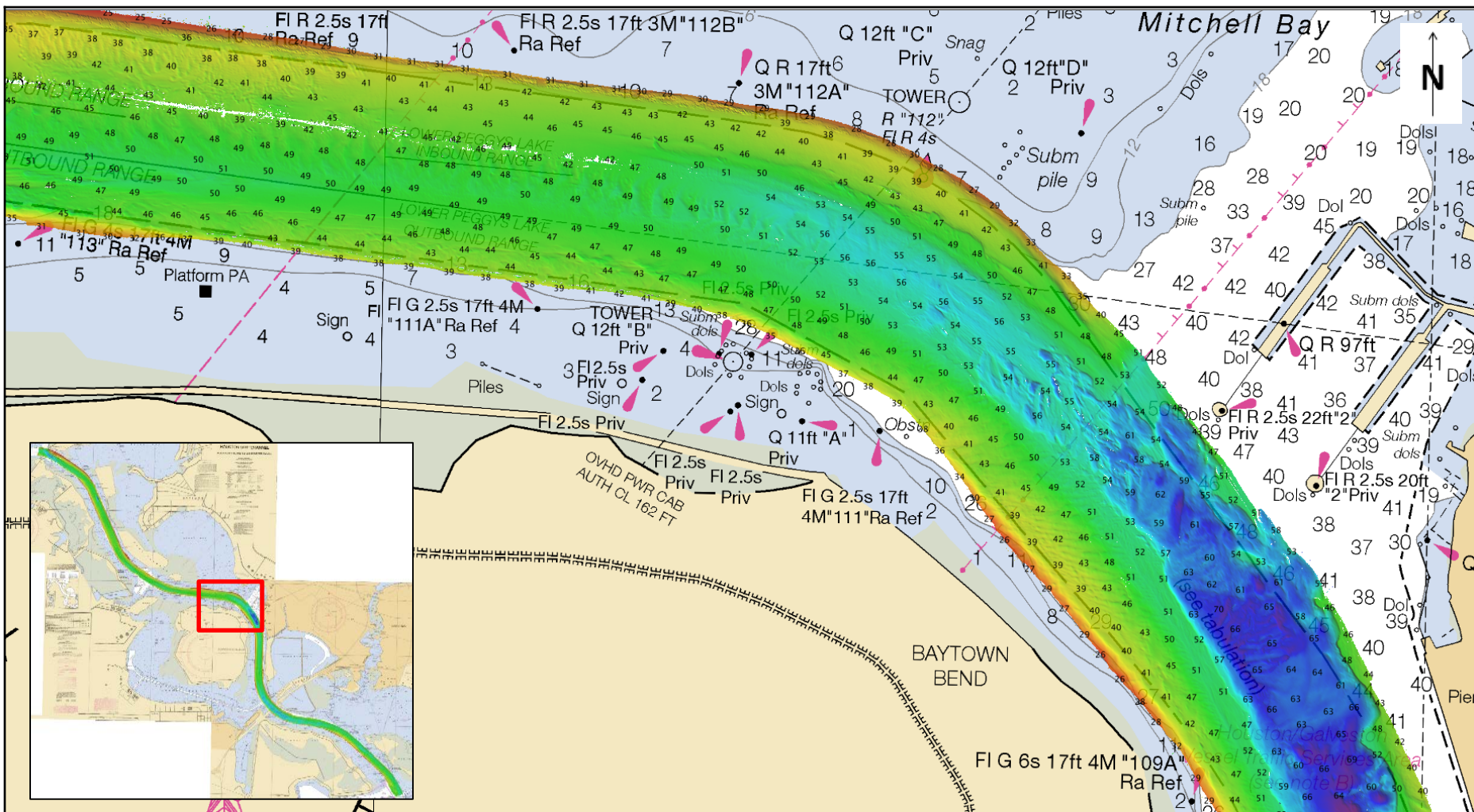


NATIONAL OCEANIC AND
ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SERVICE

Project:	Hurricane Harvey	Sounding Units:	Feet
Survey:	Lynchburg Landing to Barbours Terminal	Sounding Datum:	MLLW
State:	Texas	Horizontal Datum:	NAD 83 UTM 15 N
Locality:	Houston	Chart Number:	11328
Sublocality:	Houston Ship Channel		11329
Survey Scale:	1:25,000		

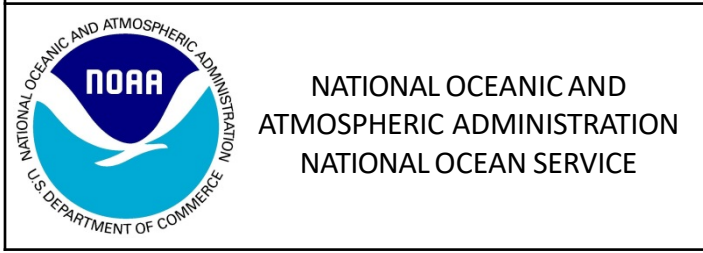
NOAA NRT 4
D. Jacobs
Commanding

Survey Date:
09/03/2017
09/05/2017



Chartlet 6 of 11: Bathymetry
Preliminary Data - NOT FOR NAVIGATION

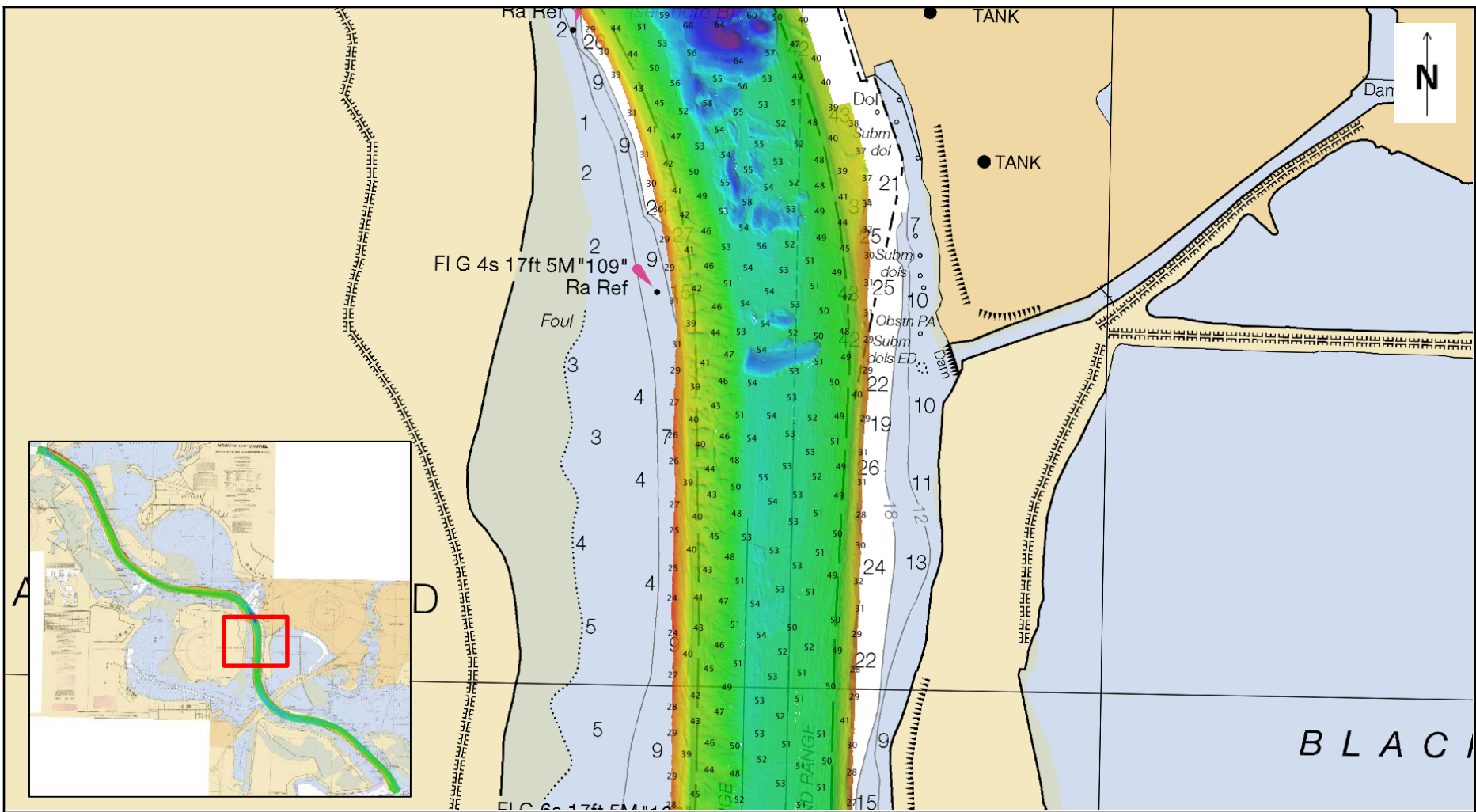
Bathymetry with concurrent side scan were acquired and inspected from Barbour's Terminal Channel at Morgan's Point to Lynchburg Landing. Possible obstructions were found in the channel. Data reflects state of seafloor on the date surveyed.



Project:	Hurricane Harvey	Sounding Units:	Feet
Survey:	Lynchburg Landing to Barbour's Terminal	Sounding Datum:	MLLW
State:	Texas	Horizontal Datum:	NAD 83 UTM 15 N
Locality:	Houston	Chart Number:	11328
Sublocality:	Houston Ship Channel		11329
Survey Scale:	1:25,000		

NOAA NRT 4
D. Jacobs
Commanding

Survey Date:
 09/03/2017
 09/05/2017



Chartlet 7 of 11: Bathymetry
Preliminary Data - NOT FOR NAVIGATION

Bathymetry with concurrent side scan were acquired and inspected from Barbour's Terminal Channel at Morgan's Point to Lynchburg Landing. Possible obstructions were found in the channel. Data reflects state of seafloor on the date surveyed.

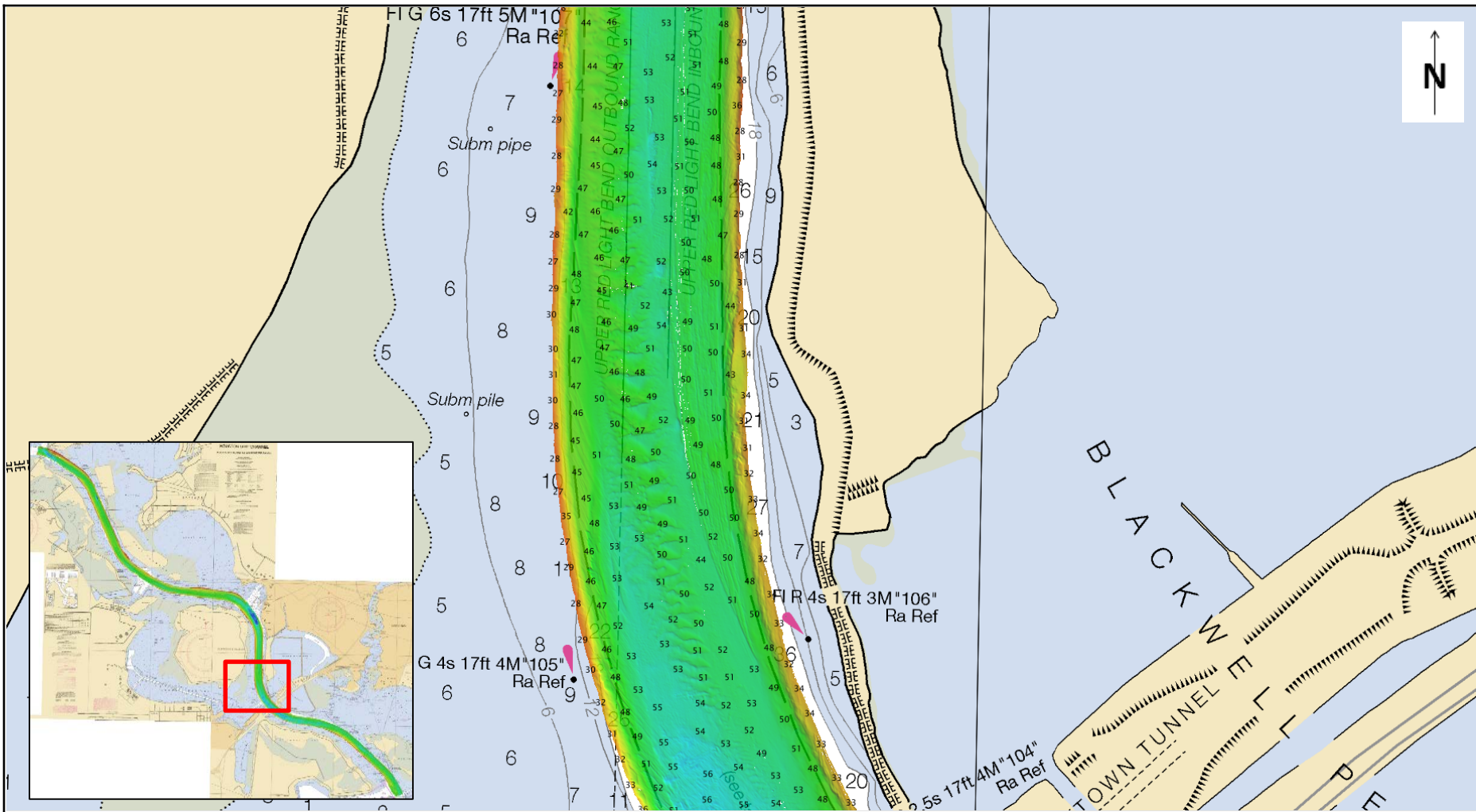


NATIONAL OCEANIC AND
 ATMOSPHERIC ADMINISTRATION
 NATIONAL OCEAN SERVICE

Project:	Hurricane Harvey	Sounding Units:	Feet
Survey:	Lynchburg Landing to Barbour's Terminal	Sounding Datum:	MLLW
State:	Texas	Horizontal Datum:	NAD 83 UTM 15 N
Locality:	Houston	Chart Number:	11328
Sublocality:	Houston Ship Channel		11329
Survey Scale:	1:25,000		


NOAA NRT 4
D. Jacobs
Commanding

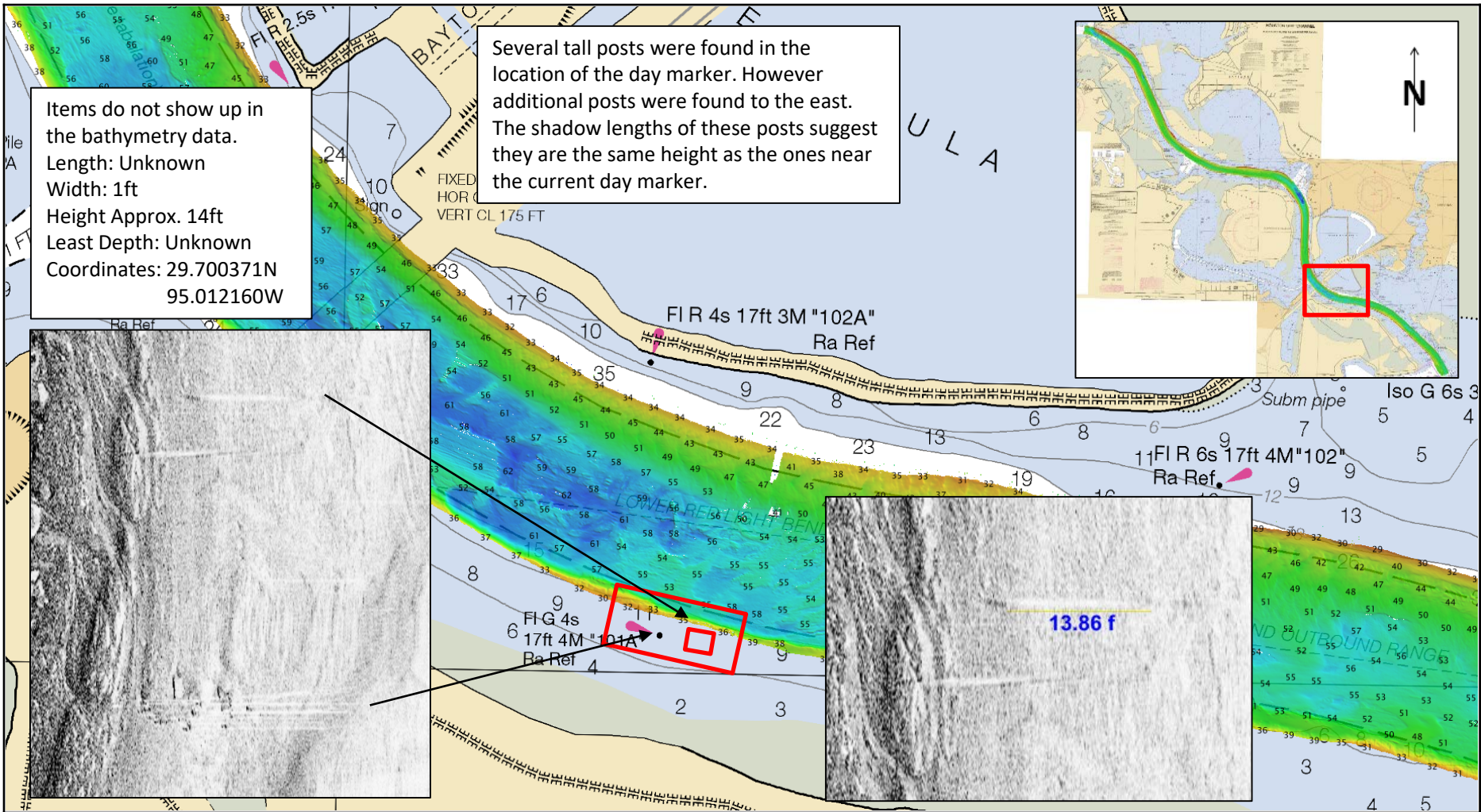
Survey Date:
 09/03/2017
 09/05/2017



Chartlet 8 of 11: Bathymetry
Preliminary Data - NOT FOR NAVIGATION

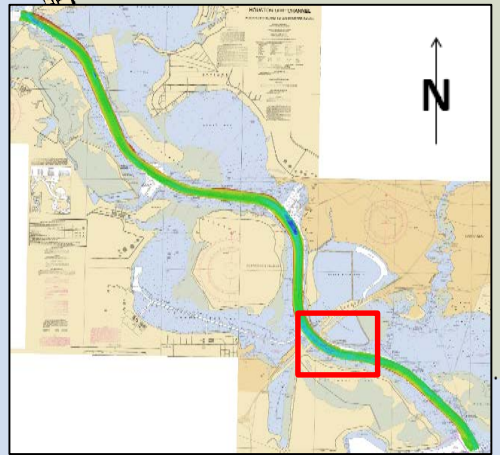
Bathymetry with concurrent side scan were acquired and inspected from Barbour's Terminal Channel at Morgan's Point to Lynchburg Landing. Possible obstructions were found in the channel. Data reflects state of seafloor on the date surveyed.

 <p>NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION NATIONAL OCEAN SERVICE</p>	<p>Project: Hurricane Harvey</p> <p>Survey: Lynchburg Landing to Barbour's Terminal</p> <p>State: Texas</p> <p>Locality: Houston</p> <p>Sublocality: Houston Ship Channel</p> <p>Survey Scale: 1:25,000</p>	<p>Sounding Units: Feet</p> <p>Sounding Datum: MLLW</p> <p>Horizontal Datum: NAD 83 UTM 15 N</p> <p>Chart Number: 11328</p>	<p>NOAA NRT 4 D. Jacobs Commanding</p> <p>Survey Date: 09/03/2017 09/05/2017</p>
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Several tall posts were found in the location of the day marker. However additional posts were found to the east. The shadow lengths of these posts suggest they are the same height as the ones near the current day marker.

Items do not show up in the bathymetry data.
 Length: Unknown
 Width: 1ft
 Height Approx. 14ft
 Least Depth: Unknown
 Coordinates: 29.700371N
 95.012160W



Chartlet 9a of 11: Bathymetry
Preliminary Data - NOT FOR NAVIGATION

Bathymetry with concurrent side scan were acquired and inspected from Barbour's Terminal Channel at Morgan's Point to Lynchburg Landing. Possible obstructions were found in the channel. Data reflects state of seafloor on the date surveyed.

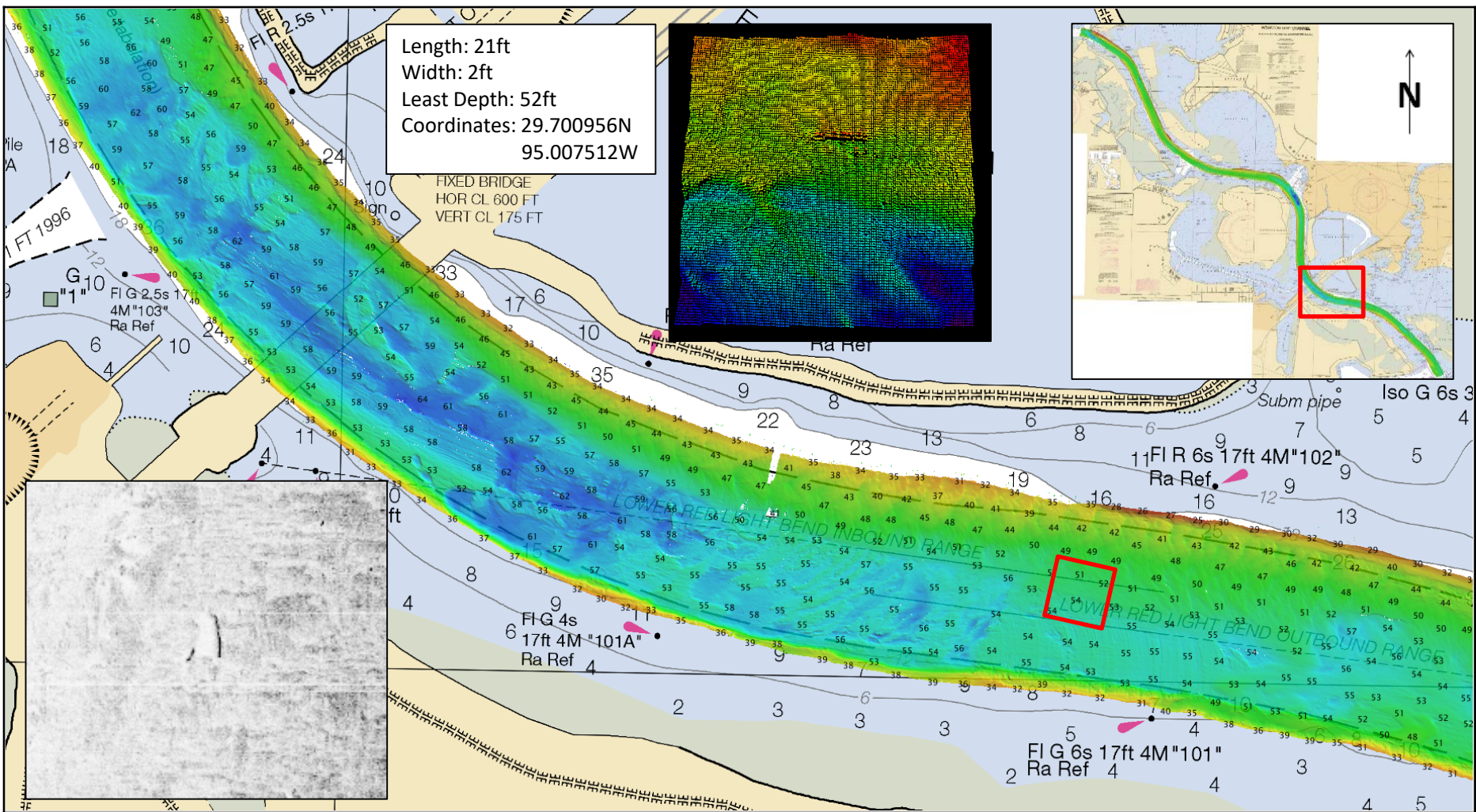


NATIONAL OCEANIC AND
 ATMOSPHERIC ADMINISTRATION
 NATIONAL OCEAN SERVICE


Project:	Hurricane Harvey	Sounding Units:	Feet
Survey:	Lynchburg Landing to Barbour's Terminal	Sounding Datum:	MLLW
State:	Texas	Horizontal Datum:	NAD 83 UTM 15 N
Locality:	Houston	Chart Number:	11328
Sublocality:	Houston Ship Channel		11329
Survey Scale:	1:25,000		

NOAA NRT 4
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Survey Date:
 09/03/2017
 09/05/2017



Bathymetry with concurrent side scan were acquired and inspected from Barbour's Terminal Channel at Morgan's Point to Lynchburg Landing. Possible obstructions were found in the channel. Data reflects state of seafloor on the date surveyed.

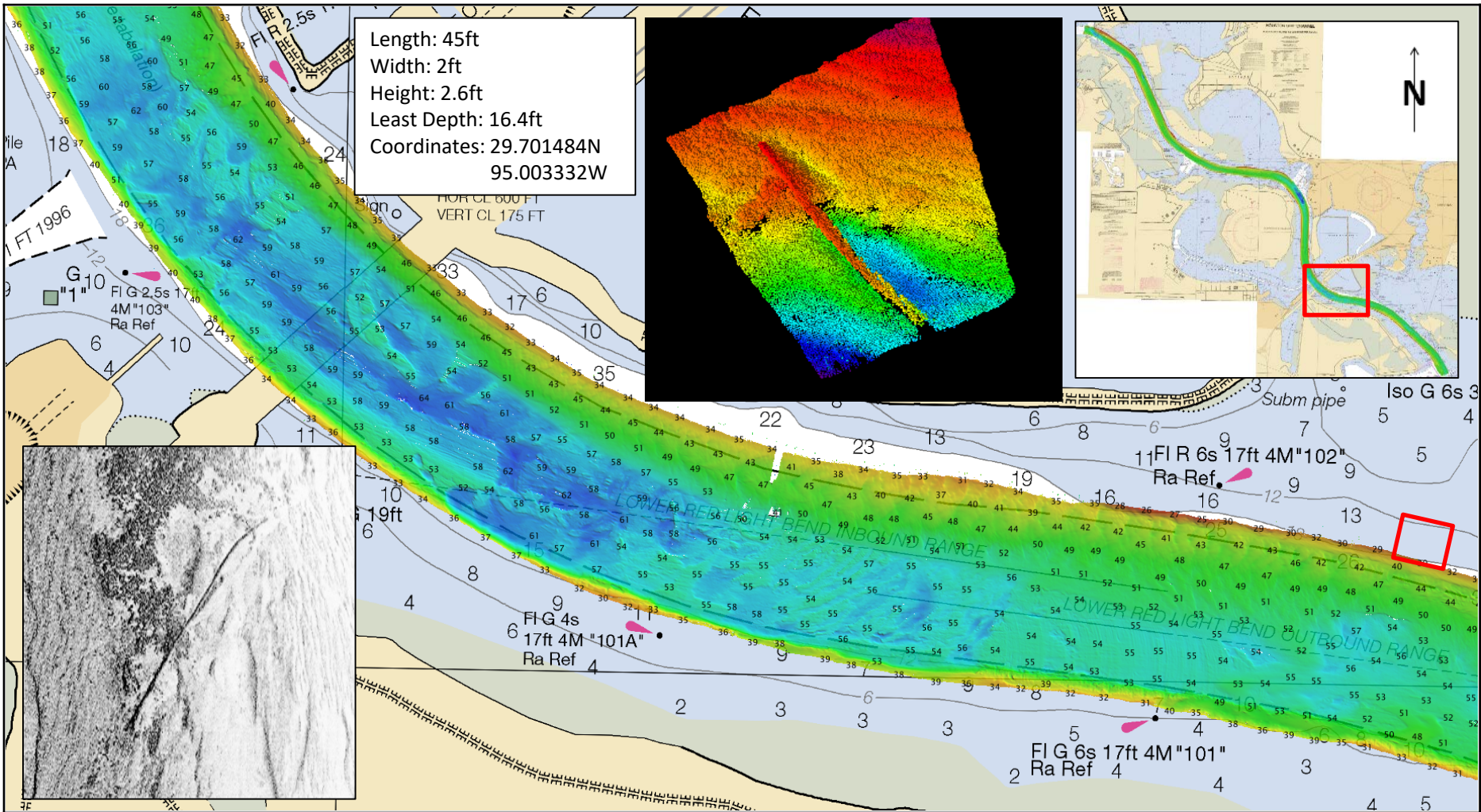


NATIONAL OCEANIC AND
 ATMOSPHERIC ADMINISTRATION
 NATIONAL OCEAN SERVICE

Project:	Hurricane Harvey	Sounding Units:	Feet
Survey:	Lynchburg Landing to Barbour's Terminal	Sounding Datum:	MLLW
State:	Texas	Horizontal Datum:	NAD 83 UTM 15 N
Locality:	Houston	Chart Number:	11328
Sublocality:	Houston Ship Channel		11329
Survey Scale:	1:25,000		

NOAA NRT 4
D. Jacobs
Commanding

Survey Date:
 09/03/2017
 09/05/2017



Chartlet 9c of 11: Bathymetry
Preliminary Data - NOT FOR NAVIGATION

Bathymetry with concurrent side scan were acquired and inspected from Barbour's Terminal Channel at Morgan's Point to Lynchburg Landing. Possible obstructions were found in the channel. Data reflects state of seafloor on the date surveyed.

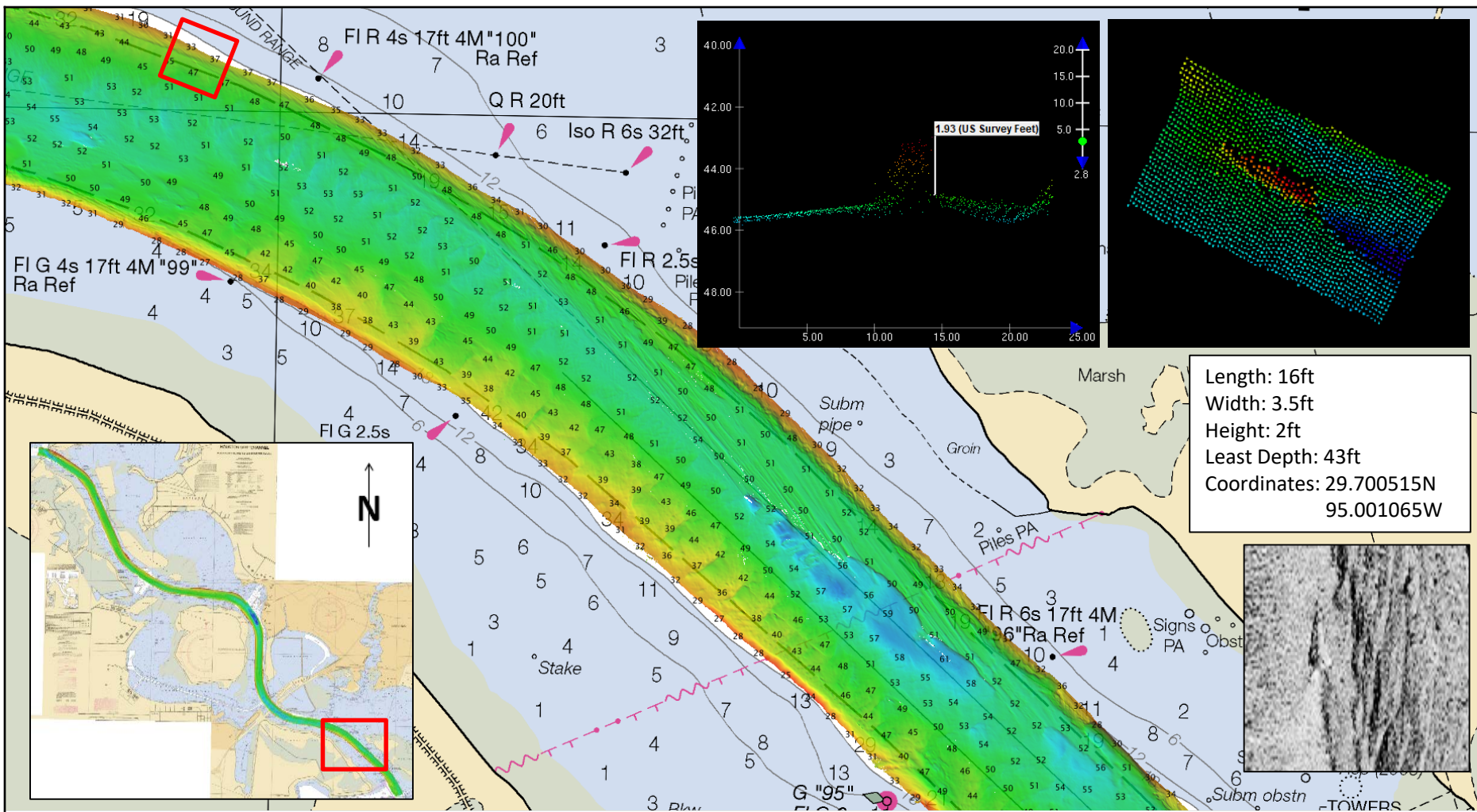


NATIONAL OCEANIC AND
 ATMOSPHERIC ADMINISTRATION
 NATIONAL OCEAN SERVICE

Project:	Hurricane Harvey	Sounding Units:	Feet
Survey:	Lynchburg Landing to Barbour's Terminal	Sounding Datum:	MLLW
State:	Texas	Horizontal Datum:	NAD 83 UTM 15 N
Locality:	Houston	Chart Number:	11328
Sublocality:	Houston Ship Channel		11329
Survey Scale:	1:25,000		


NOAA NRT 4
D. Jacobs
Commanding

Survey Date:
 09/03/2017
 09/05/2017



Chartlet 10a of 11: Bathymetry
Preliminary Data - NOT FOR NAVIGATION

Bathymetry with concurrent side scan were acquired and inspected from Barbour's Terminal Channel at Morgan's Point to Lynchburg Landing. Possible obstructions were found in the channel. Data reflects state of seafloor on the date surveyed.

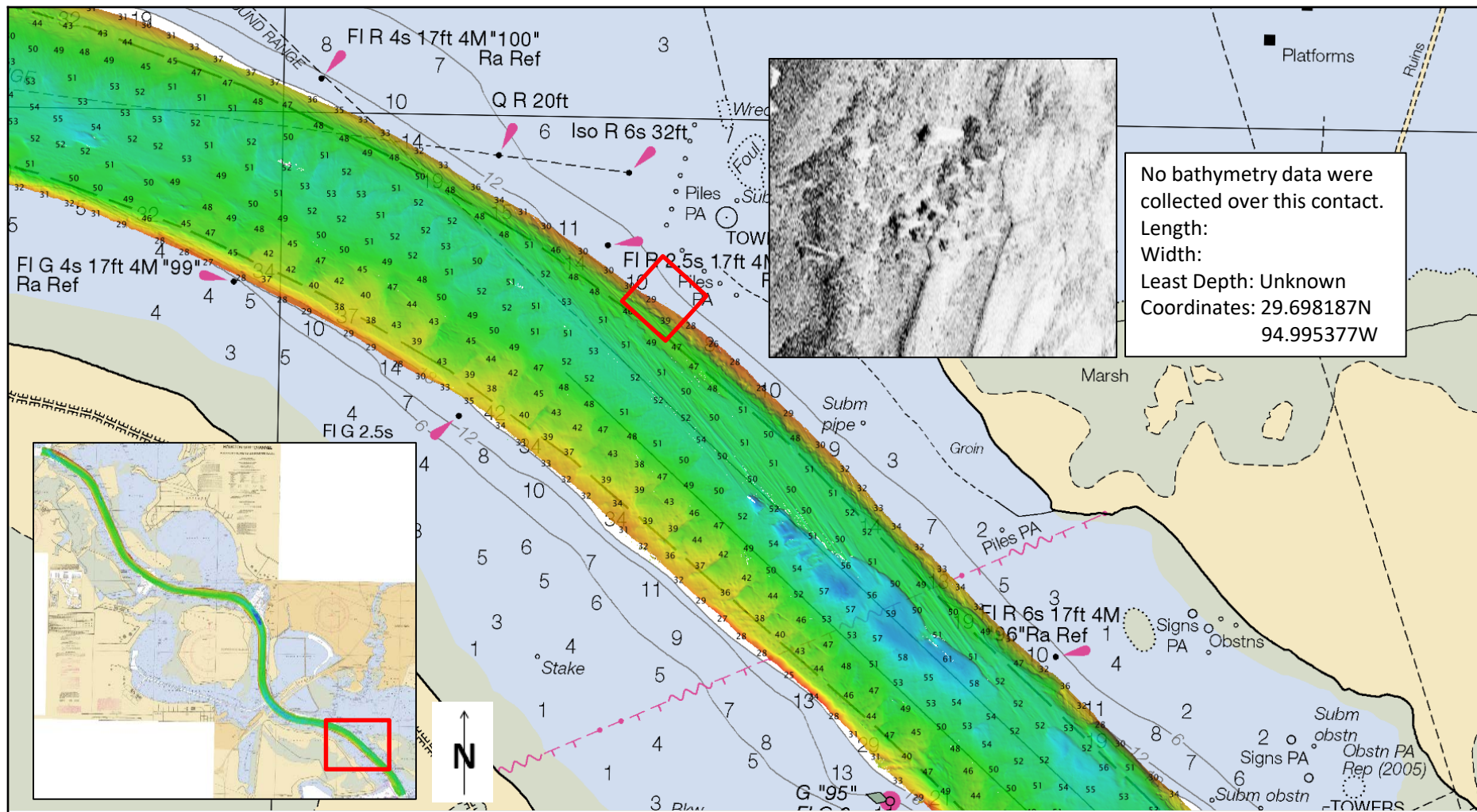


NATIONAL OCEANIC AND
 ATMOSPHERIC ADMINISTRATION
 NATIONAL OCEAN SERVICE


Project:	Hurricane Harvey	Sounding Units:	Feet
Survey:	Lynchburg Landing to Barbour's Terminal	Sounding Datum:	MLLW
State:	Texas	Horizontal Datum:	NAD 83 UTM 15 N
Locality:	Houston	Chart Number:	11328
Sublocality:	Houston Ship Channel		11329
Survey Scale:	1:25,000		

NOAA NRT 4
D. Jacobs
Commanding

Survey Date:
 09/03/2017
 09/05/2017



Bathymetry with concurrent side scan were acquired and inspected from Barbour's Terminal Channel at Morgan's Point to Lynchburg Landing. Possible obstructions were found in the channel. Data reflects state of seafloor on the date surveyed.

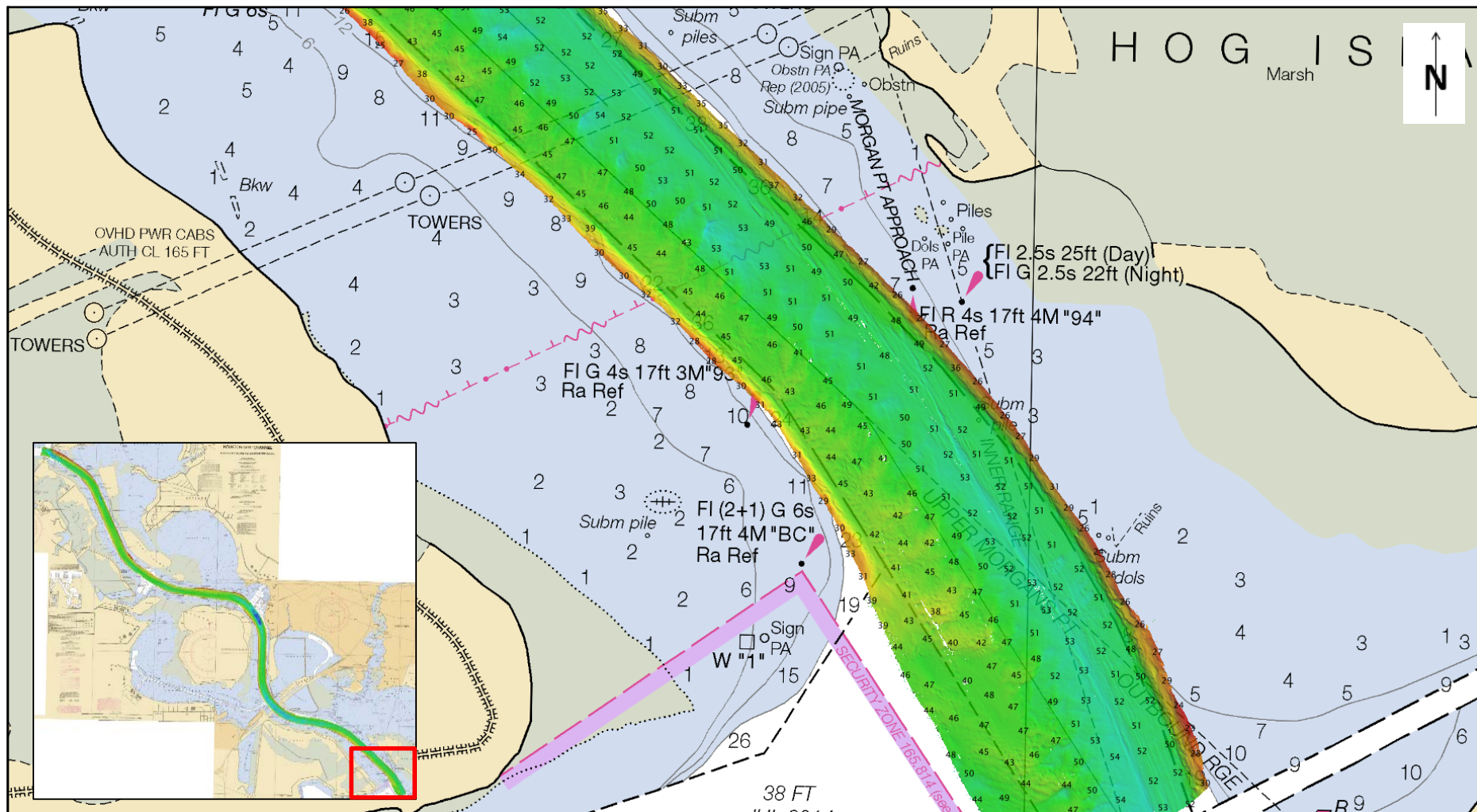


NATIONAL OCEANIC AND
 ATMOSPHERIC ADMINISTRATION
 NATIONAL OCEAN SERVICE

Project:	Hurricane Harvey	Sounding Units:	Feet
Survey:	Lynchburg Landing to Barbour's Terminal	Sounding Datum:	MLLW
State:	Texas	Horizontal Datum:	NAD 83 UTM 15 N
Locality:	Houston	Chart Number:	11328
Sublocality:	Houston Ship Channel		11329
Survey Scale:	1:25,000		


NOAA NRT 4
D. Jacobs
Commanding

Survey Date:
 09/03/2017
 09/05/2017



Chartlet 11 of 11: Bathymetry
Preliminary Data - NOT FOR NAVIGATION

Bathymetry with concurrent side scan were acquired and inspected from Barbour's Terminal Channel at Morgan's Point to Lynchburg Landing. Possible obstructions were found in the channel. Data reflects state of seafloor on the date surveyed.



NATIONAL OCEANIC AND
 ATMOSPHERIC ADMINISTRATION
 NATIONAL OCEAN SERVICE

Project:	Hurricane Harvey	Sounding Units:	Feet
Survey:	Lynchburg Landing to Barbour's Terminal	Sounding Datum:	MLLW
State:	Texas	Horizontal Datum:	NAD 83 UTM 15 N
Locality:	Houston	Chart Number:	11328
Sublocality:	Houston Ship Channel		11329
Survey Scale:	1:25,000		

NOAA NRT 4
D. Jacobs
Commanding

Survey Date:
 09/03/2017
 09/05/2017

R/V Manta – Transit Survey
Section 4
Galveston Bay - Houston Ship Channel
At markers 45/46



NATIONAL OCEANIC AND
ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SERVICE

Project: Hurricane Harvey
Survey: Houston Ship Channel
State: Texas
Locality: Houston
Sublocality: Houston Ship Channel
Survey Scale: 1:25,000

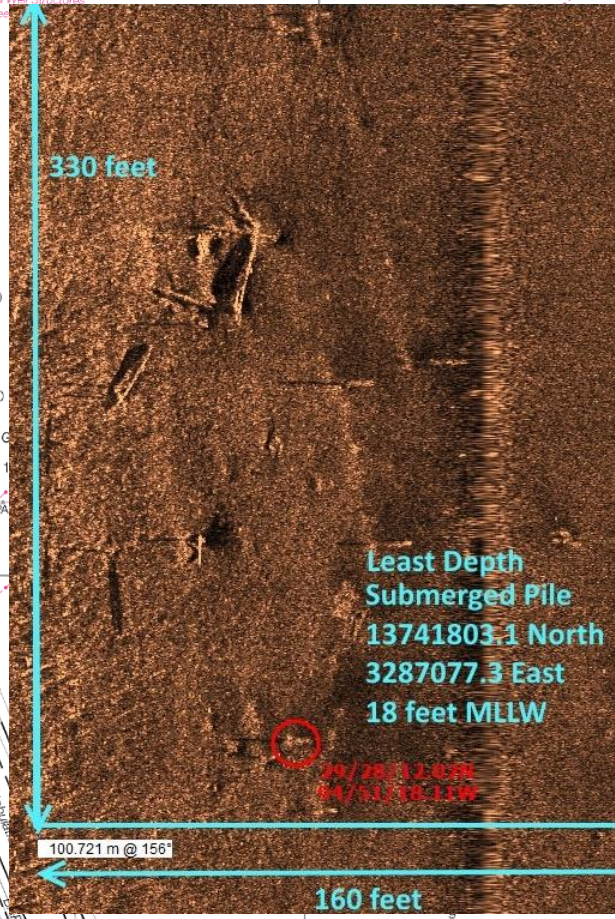
Sounding Units: Feet
Sounding Datum: MLLW
Horizontal Datum: NAD 83 UTM 15 N
Chart Number: 11327

NOAA Manta
M. Annis
Commanding

Survey Date:
09/03/2017

Length: Debris Field is 330ft long
 Width: Debris Field is 160ft across
 Least Depth: 18ft
 Coordinates: 29.470269N
 94.855385W

This area has not been investigated by NRT4 yet.
 Only sidescan data exists for this area.



Chartlet 1 of 1: Sidescan Contact
Preliminary Data - NOT FOR NAVIGATION

Bathymetry data were acquired and inspected along the Houston Shipping Channel. Possible obstructions were found in the channel by the R/V Manta using sidescan sonar. Data reflects state of seafloor on the date surveyed.



NATIONAL OCEANIC AND
 ATMOSPHERIC ADMINISTRATION
 NATIONAL OCEAN SERVICE

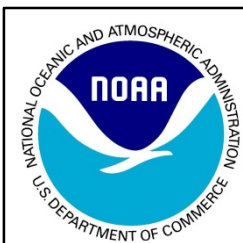
Project: Hurricane Harvey
Survey: Houston Ship Channel
State: Texas
Locality: Houston
Sublocality: Houston Ship Channel
Survey Scale: 1:25,000

Sounding Units: Feet
Sounding Datum: MLLW
Horizontal Datum: NAD 83 UTM 15 N
Chart Number: 11327

NOAA Manta
M. Annis
Commanding

Survey Date:
 09/03/2017

NRT 4 – Section 5
Anchorage Area A – Galveston Bay

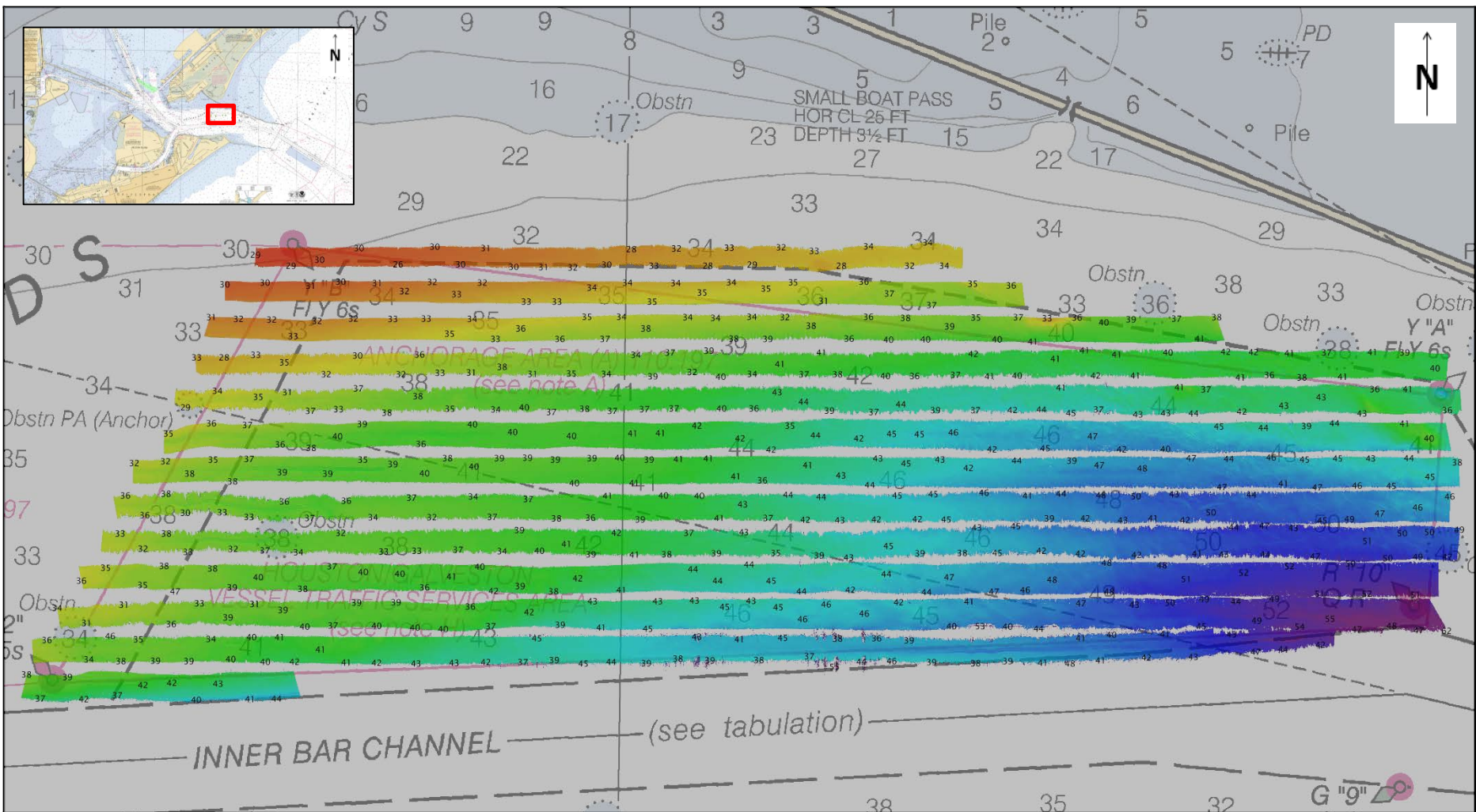


NATIONAL OCEANIC AND
ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SERVICE

Project:	Hurricane Harvey	Sounding Units:	Feet
Survey:	Anchorage A	Sounding Datum:	MLLW
State:	Texas	Horizontal Datum:	NAD 83 UTM 15 N
Locality:	Galveston	Chart Number:	11324
Sublocality:	Galveston Bay		
Survey Scale:	1:25,000		

NOAA NRT 4
D. Jacobs
Commanding

Survey Date:
09/01/2017



Chartlet 1 of 4: Bathymetry
Preliminary Data - NOT FOR NAVIGATION

Bathymetry with concurrent side scan were acquired and inspected for Anchorage Area "A" in Galveston Bay. The soundings show the surveyed depth in feet. No obstructions were found in the anchorage area. Data reflects state of seafloor on the date surveyed.

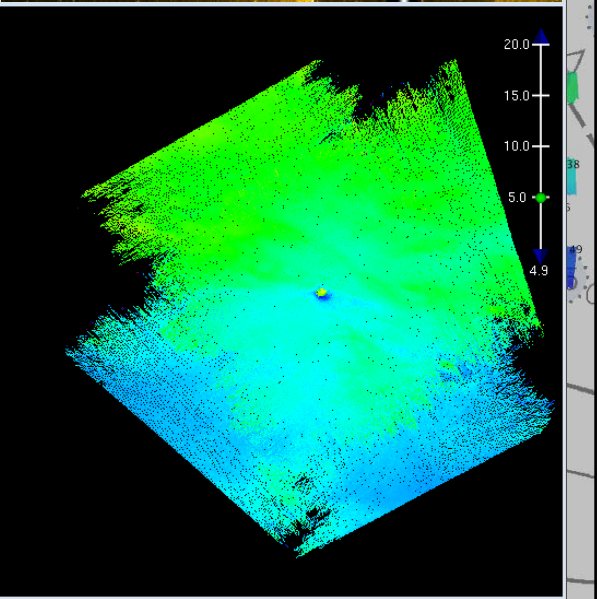
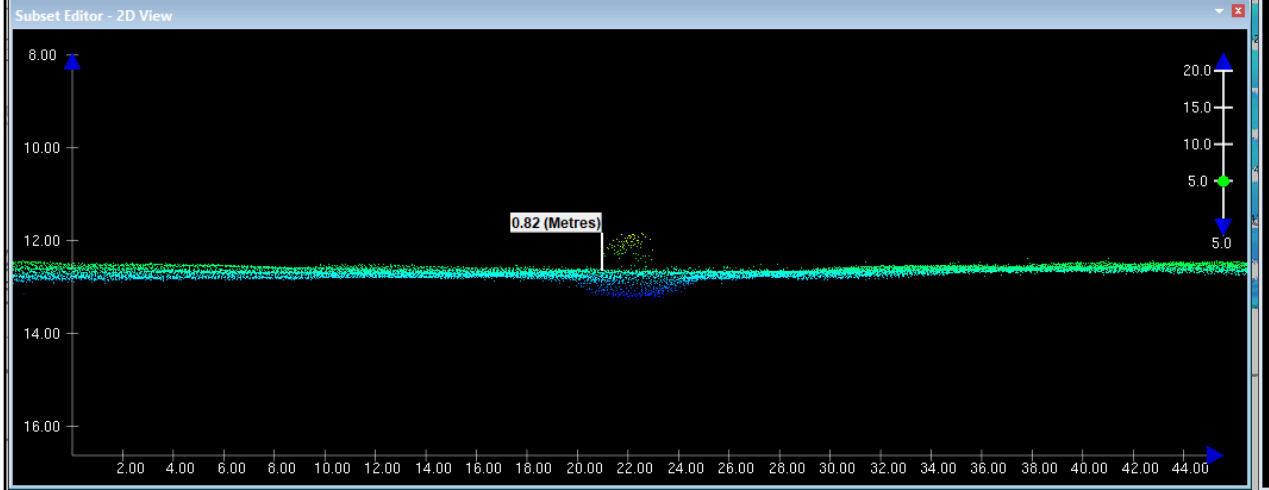
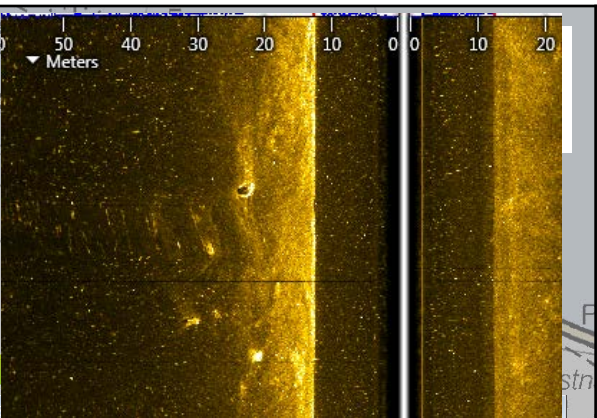
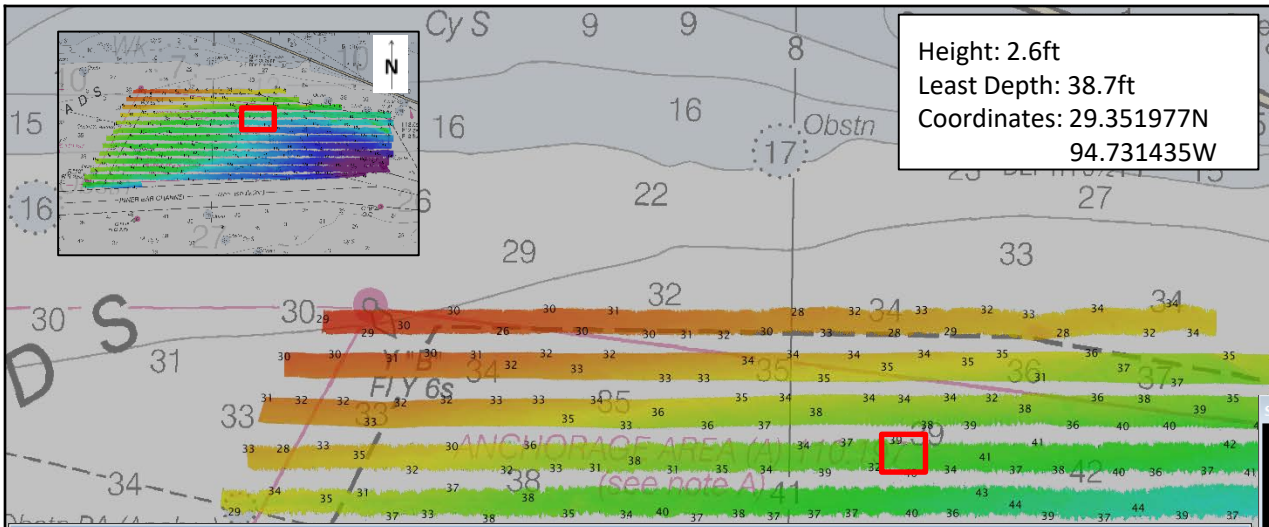


NATIONAL OCEANIC AND
 ATMOSPHERIC ADMINISTRATION
 NATIONAL OCEAN SERVICE

Project:	Hurricane Harvey	Sounding Units:	Feet
Survey:	Anchorage A	Sounding Datum:	MLLW
State:	Texas	Horizontal Datum:	NAD 83 UTM 15 N
Locality:	Galveston	Chart Number:	11324
Sublocality:	Galveston Bay	Chart Edition:	40
Survey Scale:	1:25,000		

NOAA NRT 4
D. Jacobs
Commanding

Survey Date:
 09/01/2017



Chartlet 3 of 4: Object Detection
Preliminary Data - NOT FOR NAVIGATION

Bathymetry with concurrent side scan were acquired and inspected for Anchorage Area "A" in Galveston Bay. The soundings show the surveyed depth in feet. No obstructions were found in the anchorage area. Data reflects state of seafloor on the date surveyed.



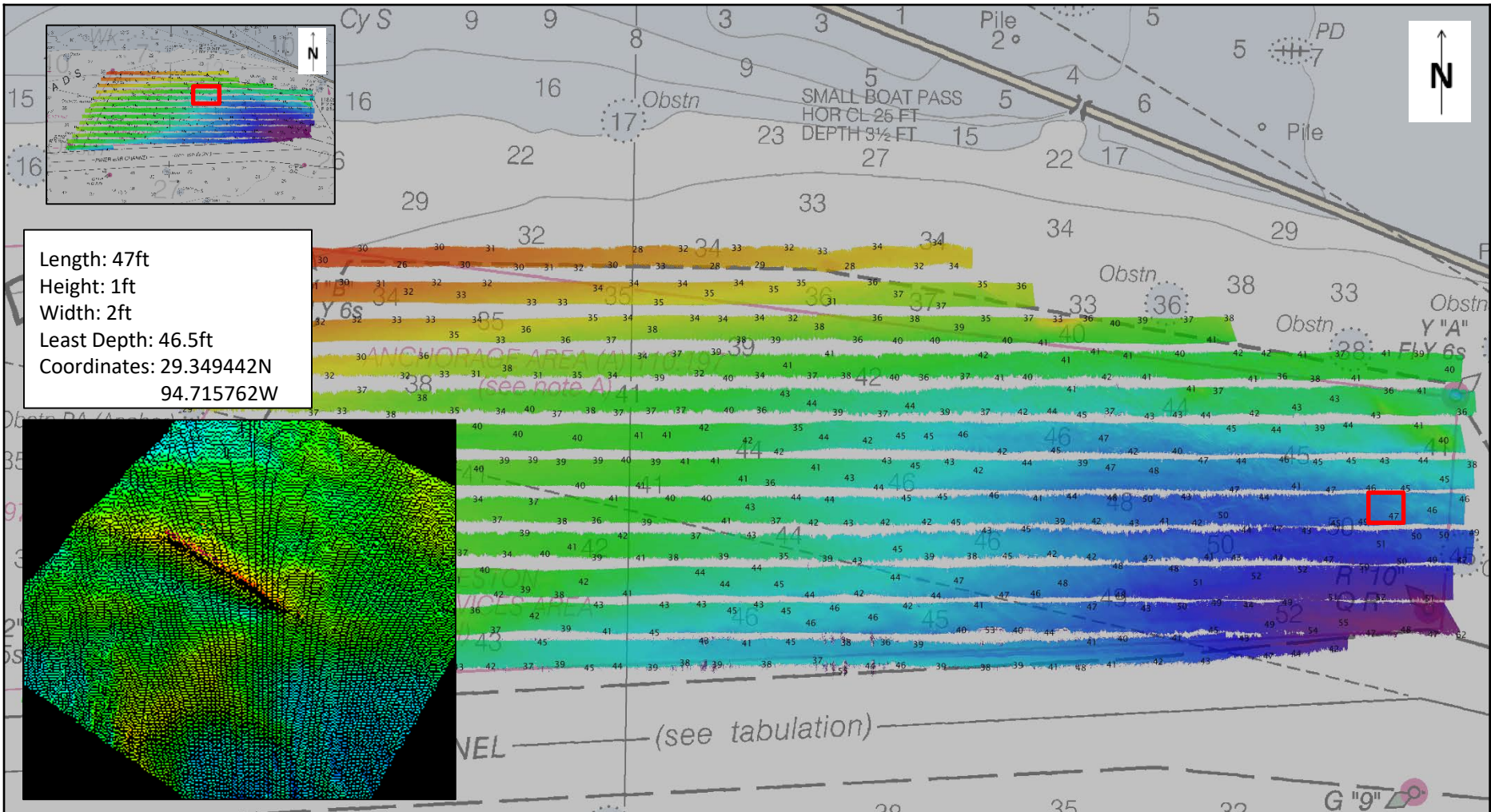
NATIONAL OCEANIC AND
 ATMOSPHERIC ADMINISTRATION
 NATIONAL OCEAN SERVICE

Project: Hurricane Harvey
Survey: Anchorage A
State: Texas
Locality: Galveston
Sublocality: Galveston Bay
Survey Scale: 1:25,000

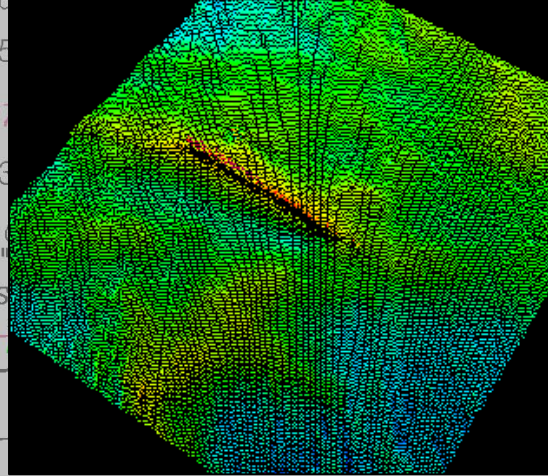
Sounding Units: Feet
Sounding Datum: MLLW
Horizontal Datum: NAD 83 UTM 15 N
Chart Number: 11324
Chart Edition: 40

NOAA NRT 4
D. Jacobs
Commanding

Survey Date:
 09/01/2017




Length: 47ft
 Height: 1ft
 Width: 2ft
 Least Depth: 46.5ft
 Coordinates: 29.349442N
 94.715762W



Chartlet 3 of 4: Object Detection
Preliminary Data - NOT FOR NAVIGATION

Bathymetry with concurrent side scan were acquired and inspected for Anchorage Area "A" in Galveston Bay. The soundings show the surveyed depth in feet. No obstructions were found in the anchorage area. Data reflects state of seafloor on the date surveyed.

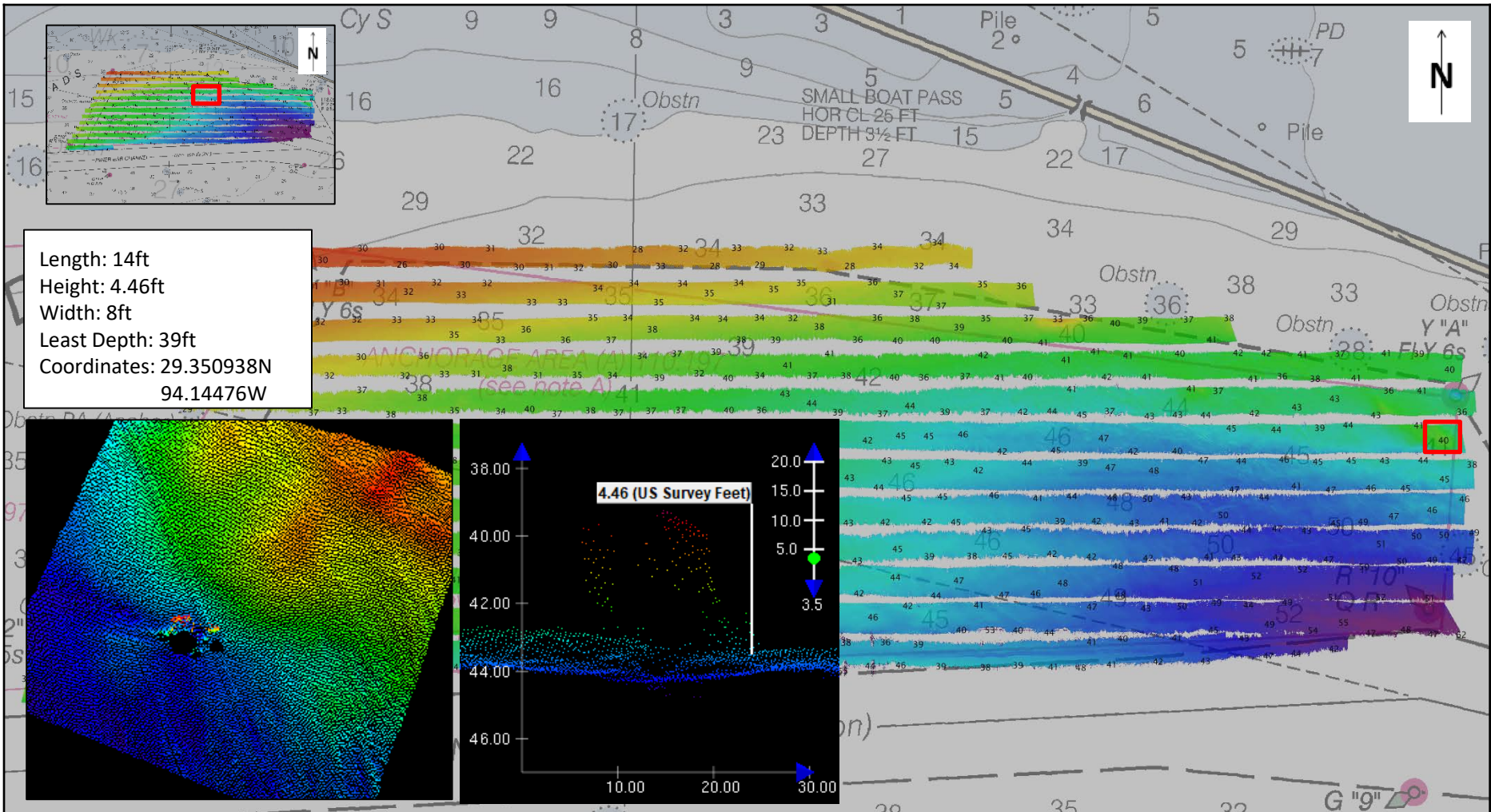


NATIONAL OCEANIC AND
 ATMOSPHERIC ADMINISTRATION
 NATIONAL OCEAN SERVICE

Project:	Hurricane Harvey	Sounding Units:	Feet
Survey:	Anchorage A	Sounding Datum:	MLLW
State:	Texas	Horizontal Datum:	NAD 83 UTM 15 N
Locality:	Galveston	Chart Number:	11324
Sublocality:	Galveston Bay	Chart Edition:	40
Survey Scale:	1:25,000		


NOAA NRT 4
D. Jacobs
Commanding

Survey Date:
 09/01/2017



Chartlet 3 of 4: Object Detection
Preliminary Data - NOT FOR NAVIGATION

Bathymetry with concurrent side scan were acquired and inspected for Anchorage Area "A" in Galveston Bay. The soundings show the surveyed depth in feet. No obstructions were found in the anchorage area. Data reflects state of seafloor on the date surveyed.

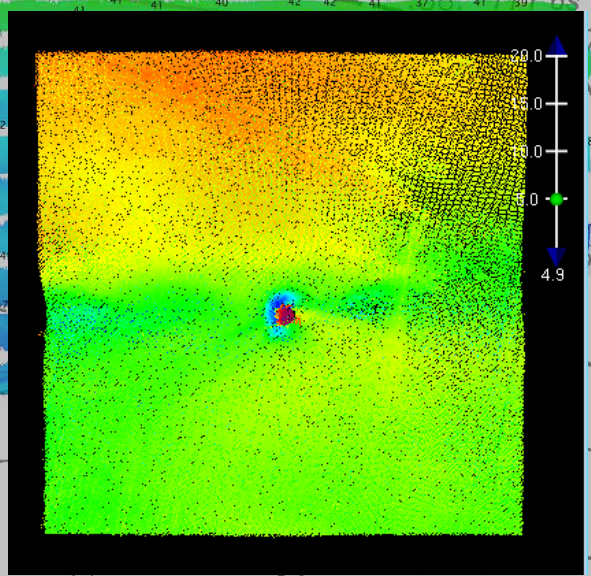
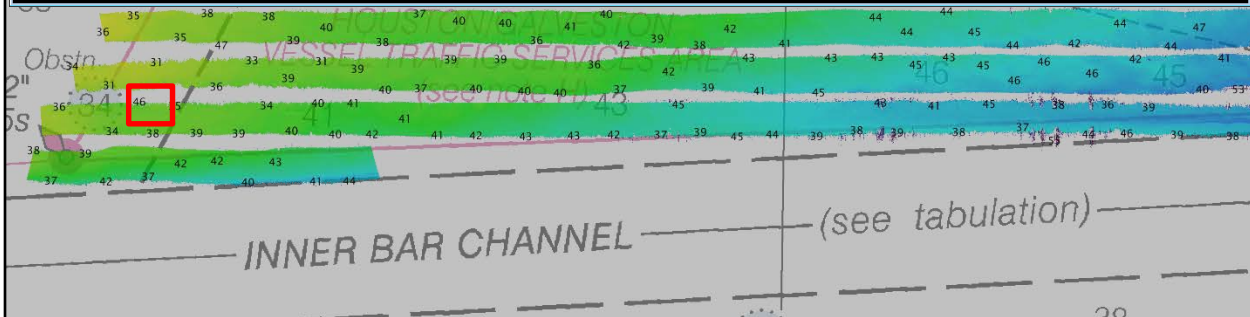
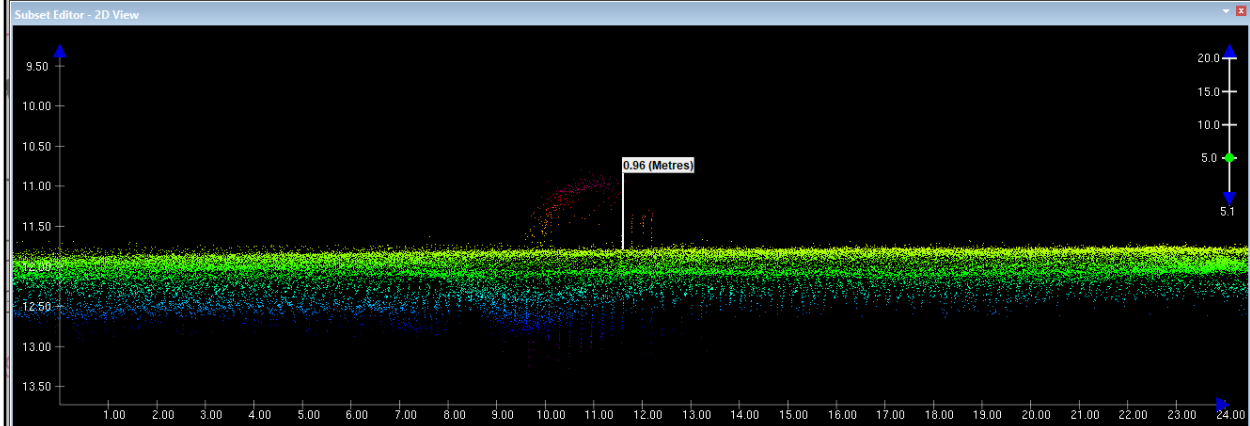
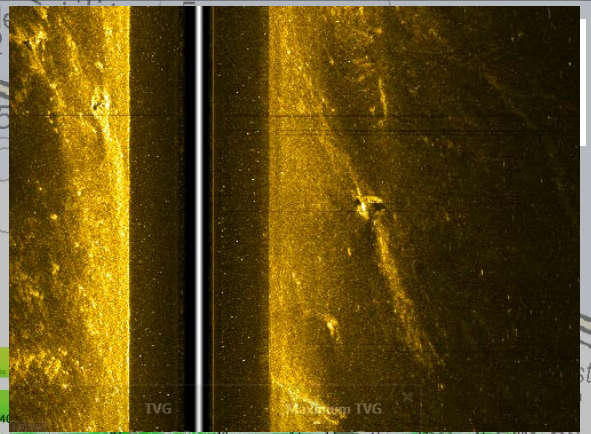
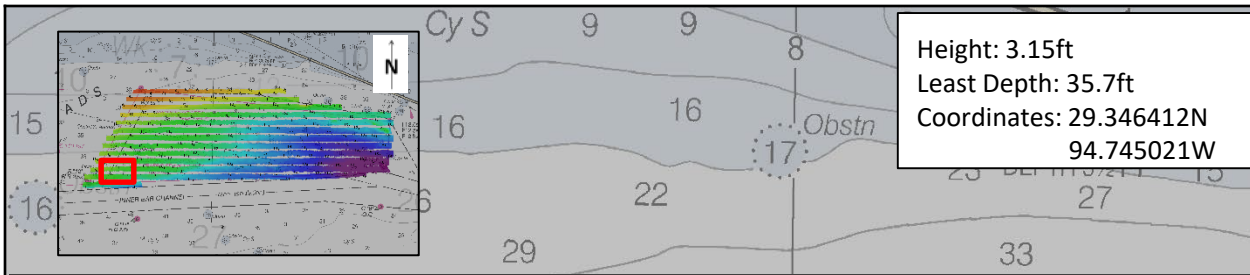


NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
 NATIONAL OCEAN SERVICE

Project:	Hurricane Harvey	Sounding Units:	Feet
Survey:	Anchorage A	Sounding Datum:	MLLW
State:	Texas	Horizontal Datum:	NAD 83 UTM 15 N
Locality:	Galveston	Chart Number:	11324
Sublocality:	Galveston Bay	Chart Edition:	40
Survey Scale:	1:25,000		


NOAA NRT 4
D. Jacobs
Commanding

Survey Date:
 09/01/2017



Chartlet 4 of 4: Object Detection
Preliminary Data - NOT FOR NAVIGATION

Bathymetry with concurrent side scan were acquired and inspected for Anchorage Area "A" in Galveston Bay. The soundings show the surveyed depth in feet. No obstructions were found in the anchorage area. Data reflects state of seafloor on the date surveyed.



NATIONAL OCEANIC AND
 ATMOSPHERIC ADMINISTRATION
 NATIONAL OCEAN SERVICE

Project:	Hurricane Harvey	Sounding Units:	Feet
Survey:	Anchorage A	Sounding Datum:	MLLW
State:	Texas	Horizontal Datum:	NAD 83 UTM 15 N
Locality:	Galveston	Chart Number:	11324
Sublocality:	Galveston Bay	Chart Edition:	40
Survey Scale:	1:25,000		

NOAA NRT 4
D. Jacobs
Commanding

Survey Date:
 09/01/2017

NRT 4 – Section 6
Anchorage Area B – Galveston Bay

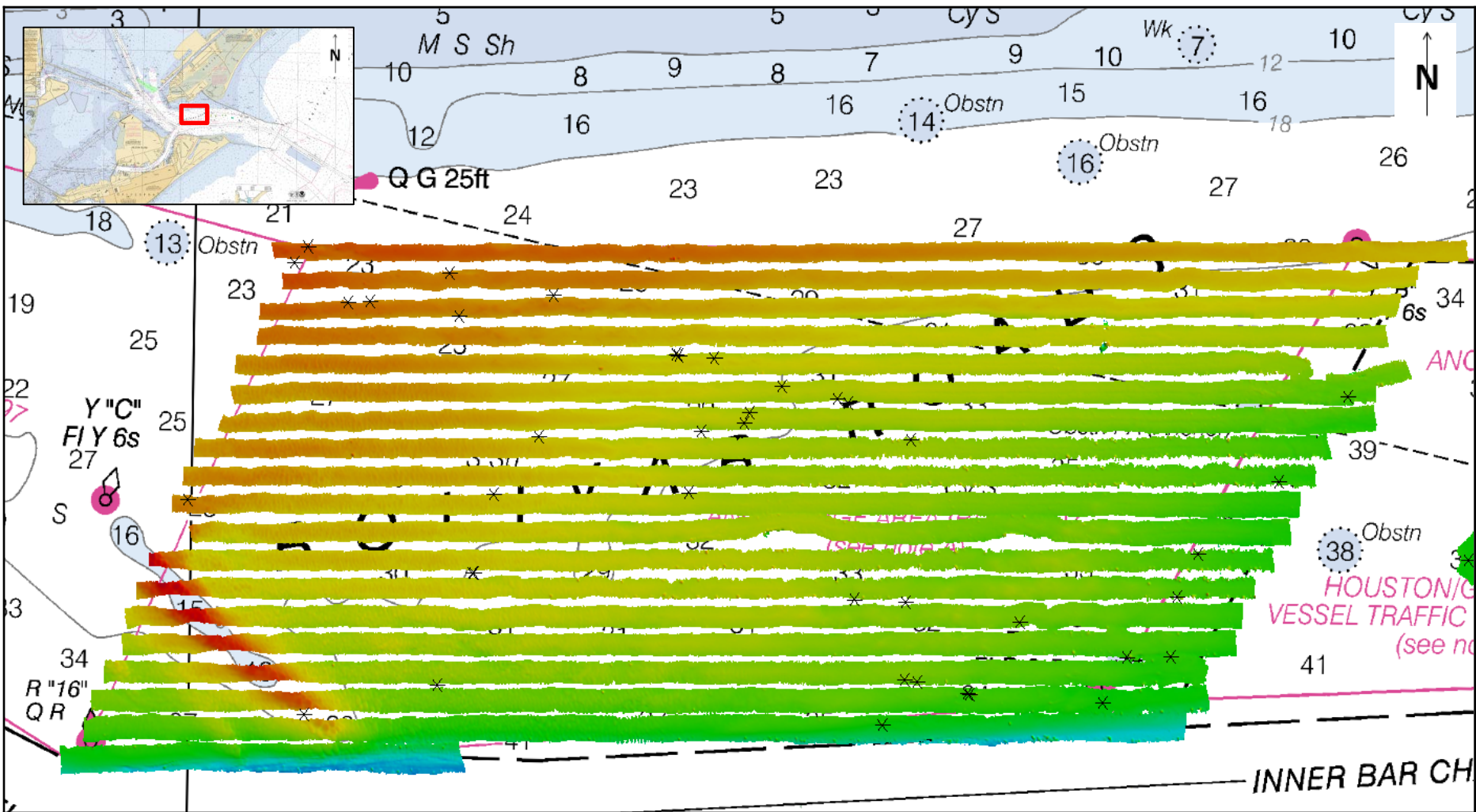


NATIONAL OCEANIC AND
ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SERVICE

Project:	Hurricane Harvey	Sounding Units:	Feet
Survey:	Anchorage A	Sounding Datum:	MLLW
State:	Texas	Horizontal Datum:	NAD 83 UTM 15 N
Locality:	Galveston	Chart Number:	11324
Sublocality:	Galveston Bay	Chart Edition:	40
Survey Scale:	1:25,000		

NOAA NRT 4
D. Jacobs
Commanding

Survey Date:
09/02/2017



Chartlet 1 of 5: Bathymetry
Preliminary Data - NOT FOR NAVIGATION

Bathymetry with concurrent side scan were acquired and inspected for Anchorage Area "A" in Galveston Bay. The soundings show the surveyed depth in feet. No obstructions were found in the anchorage area. Data reflects state of seafloor on the date surveyed.

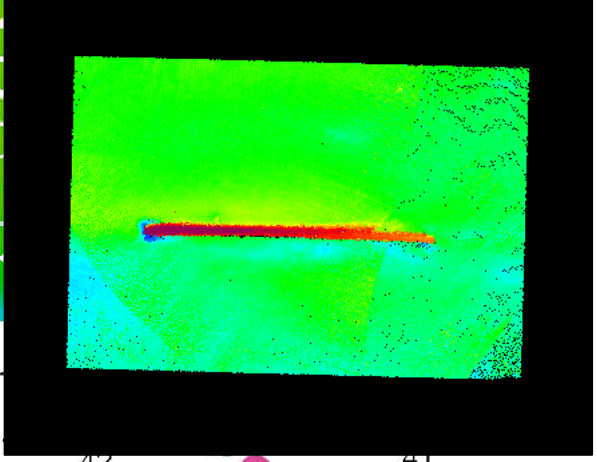
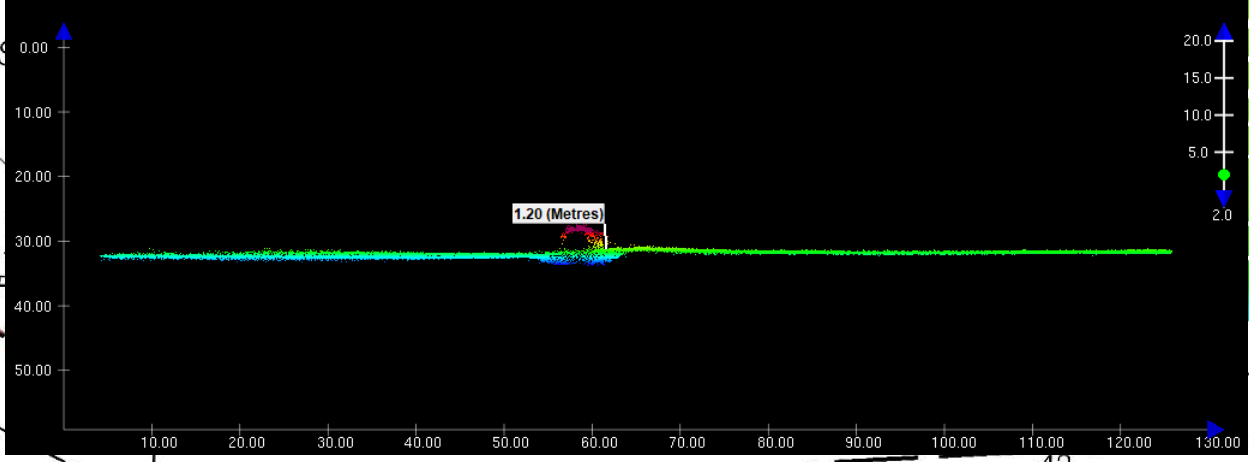
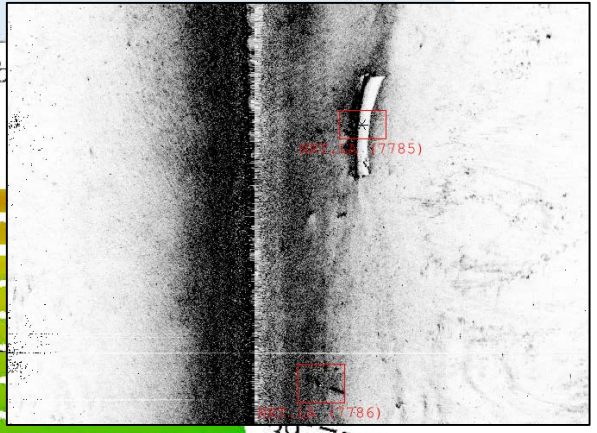
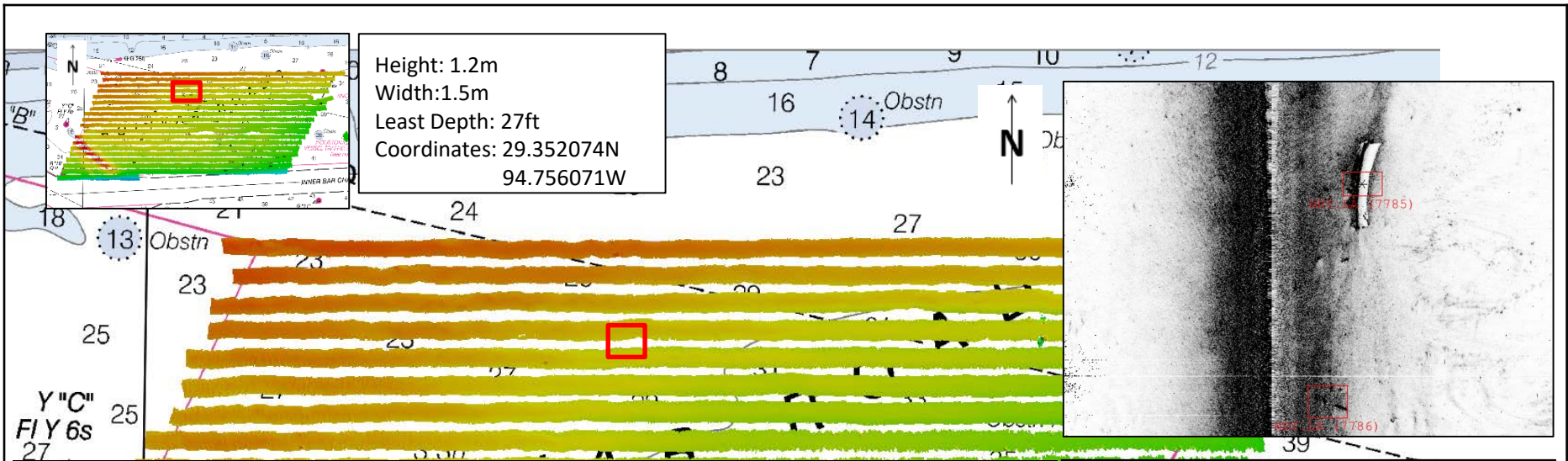


NATIONAL OCEANIC AND
 ATMOSPHERIC ADMINISTRATION
 NATIONAL OCEAN SERVICE

Project:	Hurricane Harvey	Sounding Units:	Feet
Survey:	Anchorage B	Sounding Datum:	MLLW
State:	Texas	Horizontal Datum:	NAD 83 UTM 15 N
Locality:	Galveston	Chart Number:	11324
Sublocality:	Galveston Bay	Chart Edition:	40
Survey Scale:	1:25,000		


NOAA NRT 4
D. Jacobs
Commanding

Survey Date:
 09/02/2017



Chartlet 2 of 5: Object Detection
Preliminary Data - NOT FOR NAVIGATION

Bathymetry with concurrent side scan were acquired and inspected for Anchorage Area "A" in Galveston Bay. The soundings show the surveyed depth in feet. No obstructions were found in the anchorage area. Data reflects state of seafloor on the date surveyed.

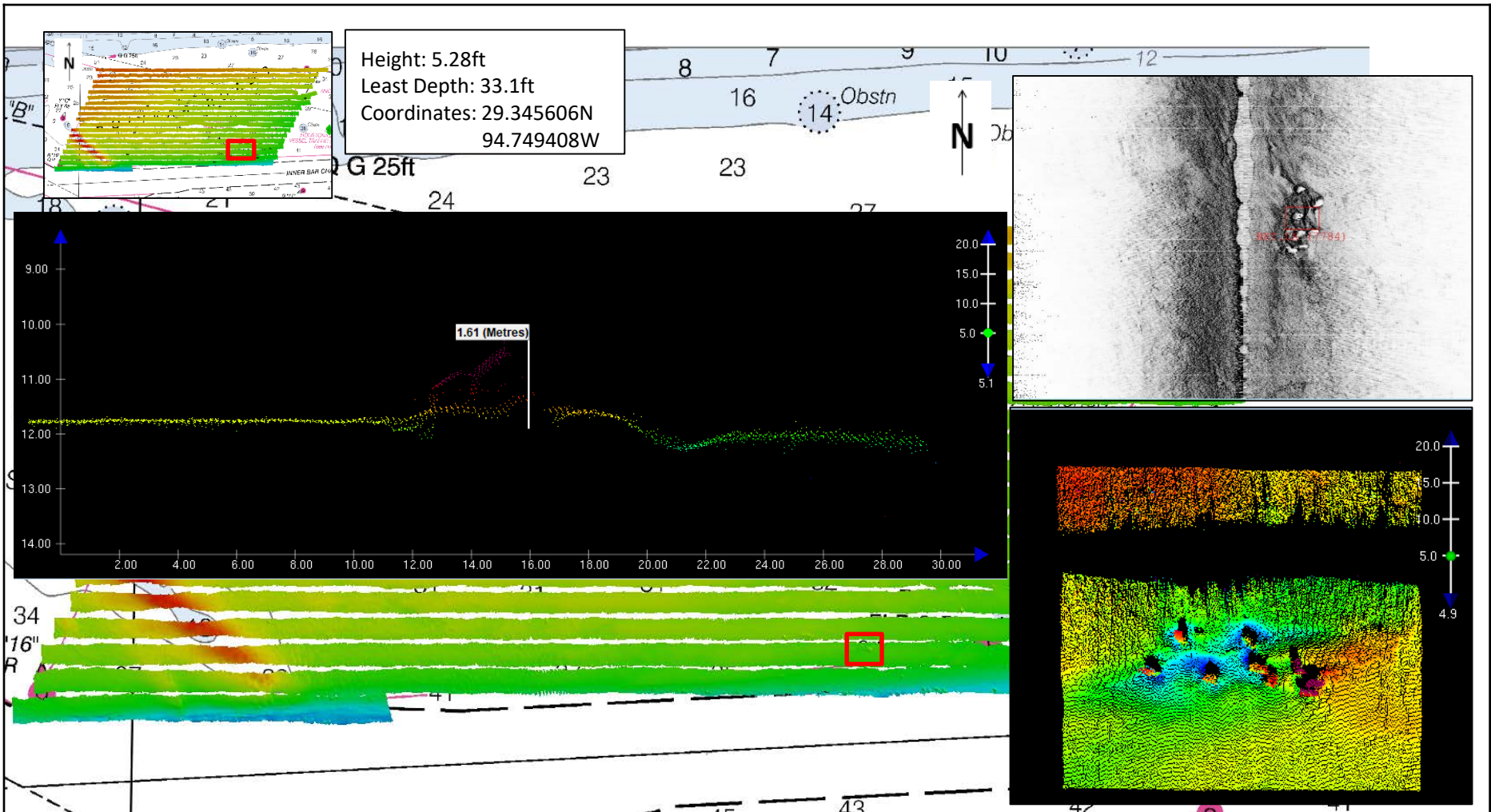


NATIONAL OCEANIC AND
 ATMOSPHERIC ADMINISTRATION
 NATIONAL OCEAN SERVICE

Project:	Hurricane Harvey	Sounding Units:	Feet
Survey:	Anchorage B	Sounding Datum:	MLLW
State:	Texas	Horizontal Datum:	NAD 83 UTM 15 N
Locality:	Galveston	Chart Number:	11324
Sublocality:	Galveston Bay	Chart Edition:	40
Survey Scale:	1:25,000		

NOAA NRT 4
D. Jacobs
Commanding

Survey Date:
 09/03/2017



Chartlet 3 of 5: Object Detection
Preliminary Data - NOT FOR NAVIGATION

Bathymetry with concurrent side scan were acquired and inspected for Anchorage Area "A" in Galveston Bay. The soundings show the surveyed depth in feet. No obstructions were found in the anchorage area. Data reflects state of seafloor on the date surveyed.

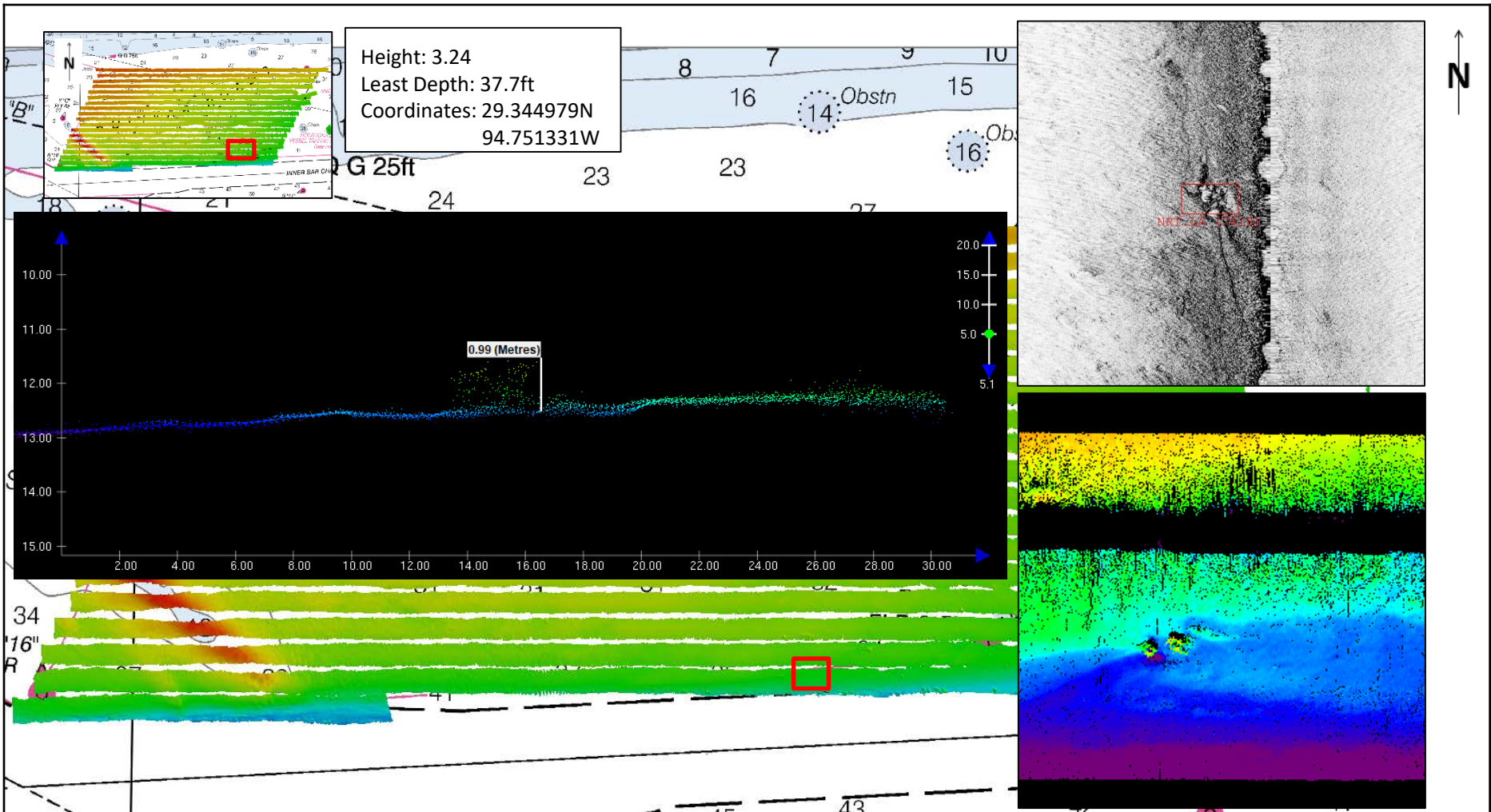


NATIONAL OCEANIC AND
 ATMOSPHERIC ADMINISTRATION
 NATIONAL OCEAN SERVICE

Project:	Hurricane Harvey	Sounding Units:	Feet
Survey:	Anchorage B	Sounding Datum:	MLLW
State:	Texas	Horizontal Datum:	NAD 83 UTM 15 N
Locality:	Galveston	Chart Number:	11324
Sublocality:	Galveston Bay	Chart Edition:	40
Survey Scale:	1:25,000		

NOAA NRT 4
D. Jacobs
Commanding

Survey Date:
 09/02/2017



Chartlet 4 of 5: Object Detection
Preliminary Data - NOT FOR NAVIGATION

Bathymetry with concurrent side scan were acquired and inspected for Anchorage Area "A" in Galveston Bay. The soundings show the surveyed depth in feet. No obstructions were found in the anchorage area. Data reflects state of seafloor on the date surveyed.

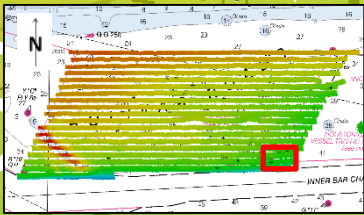


NATIONAL OCEANIC AND
 ATMOSPHERIC ADMINISTRATION
 NATIONAL OCEAN SERVICE

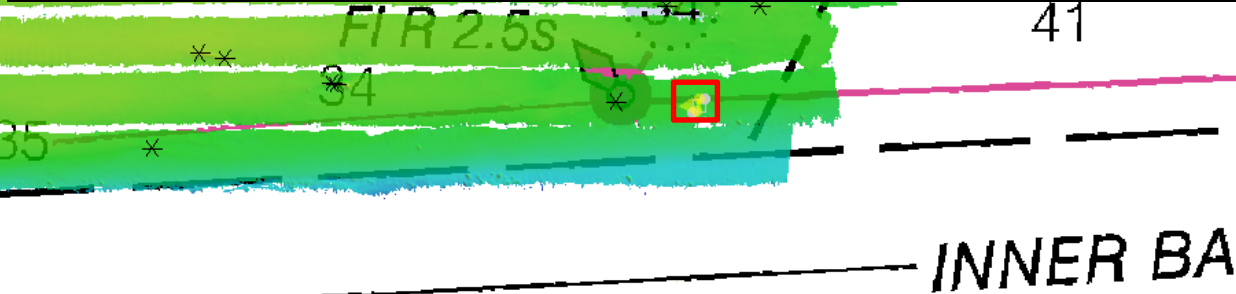
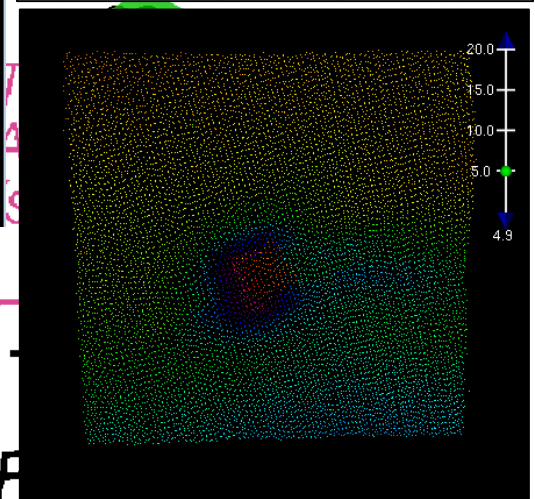
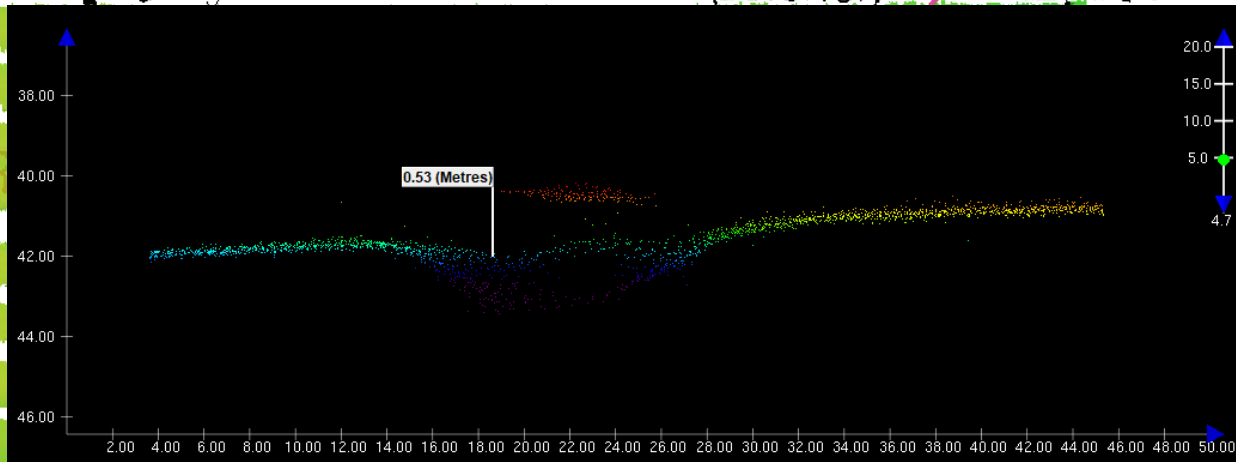
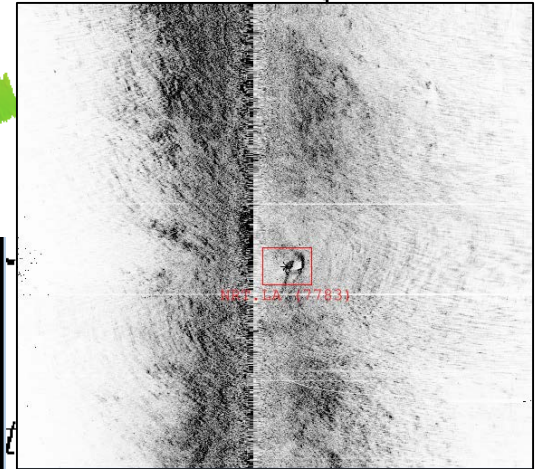
Project:	Hurricane Harvey	Sounding Units:	Feet
Survey:	Anchorage B	Sounding Datum:	MLLW
State:	Texas	Horizontal Datum:	NAD 83 UTM 15 N
Locality:	Galveston	Chart Number:	11324
Sublocality:	Galveston Bay	Chart Edition:	40
Survey Scale:	1:25,000		

NOAA NRT 4
D. Jacobs
Commanding

Survey Date:
 09/02/2017



Least Depth: 111.5m (37.7ft)
 Coordinates: 29.344979N 94.751331W
 Possible abandoned buoy block.



Chartlet 5 of 5: Object Detection
Preliminary Data - NOT FOR NAVIGATION

Bathymetry with concurrent side scan were acquired and inspected for Anchorage Area "A" in Galveston Bay. The soundings show the surveyed depth in feet. No obstructions were found in the anchorage area. Data reflects state of seafloor on the date surveyed.



NATIONAL OCEANIC AND
 ATMOSPHERIC ADMINISTRATION
 NATIONAL OCEAN SERVICE

Project: Hurricane Harvey
Survey: Anchorage A&B
State: Texas
Locality: Galveston
Sublocality: Galveston Bay
Survey Scale: 1:25,000
Sounding Units: Feet
Sounding Datum: MLLW
Horizontal Datum: NAD 83 UTM 15 N
Chart Number: 11324
Chart Edition: 40

NOAA NRT 4
D. Jacobs
Commanding

Survey Date:
 09/02/2017

NRT 4 – Section 7

Galveston Channel

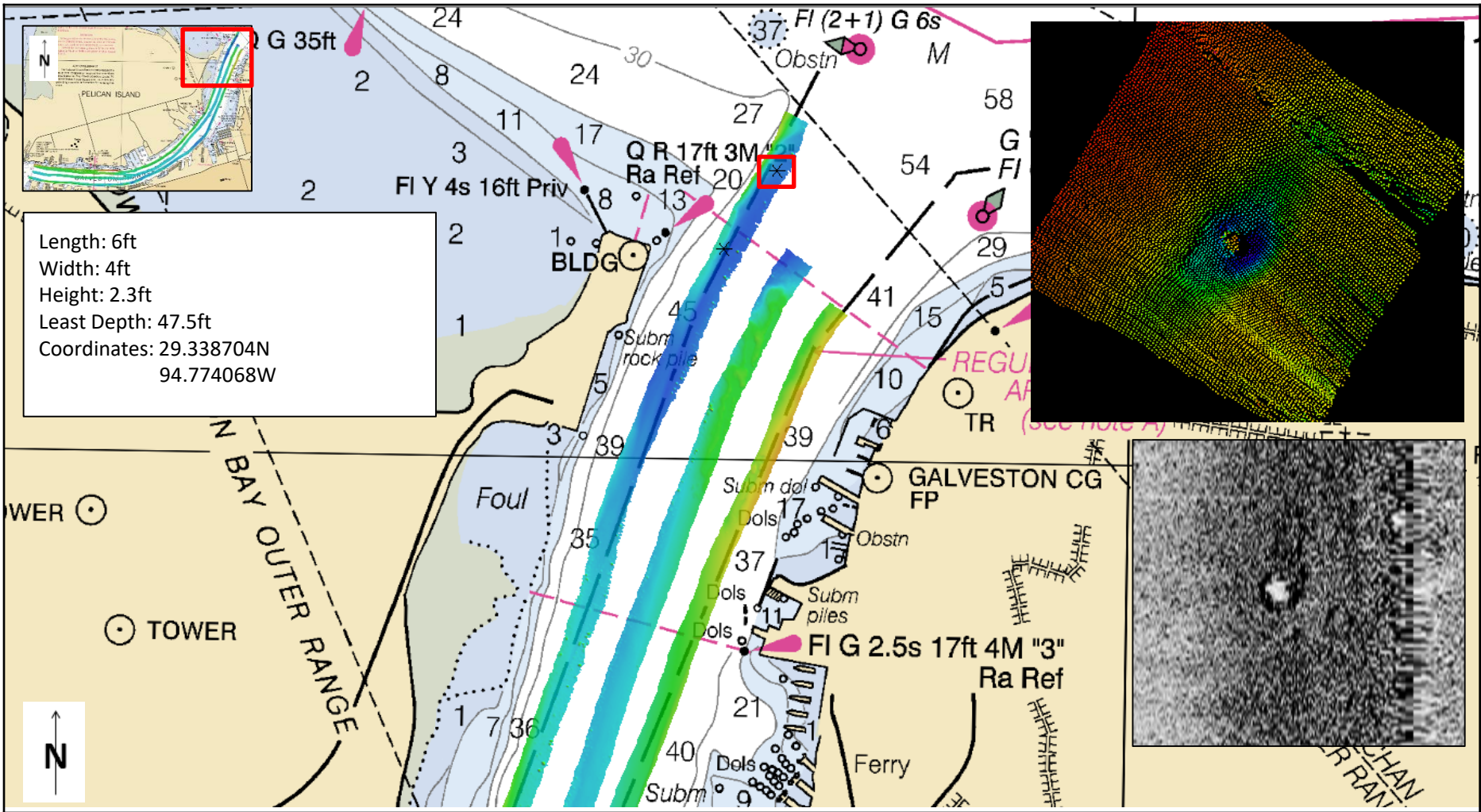


NATIONAL OCEANIC AND
ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SERVICE

Project:	Hurricane Harvey	Sounding Units:	Feet
Survey:	Anchorage A	Sounding Datum:	MLLW
State:	Texas	Horizontal Datum:	NAD 83 UTM 15 N
Locality:	Galveston	Chart Number:	11324
Sublocality:	Galveston Bay	Chart Edition:	40
Survey Scale:	1:25,000		

NOAA NRT 4
D. Jacobs
Commanding

Survey Date:
08/31/2017



Chartlet 1a of 1: Object Detection
Preliminary Data - NOT FOR NAVIGATION

Bathymetry with concurrent side scan were acquired and inspected for Galveston Channel. Some objects were found in the channel. Data reflects state of seafloor on the date surveyed.



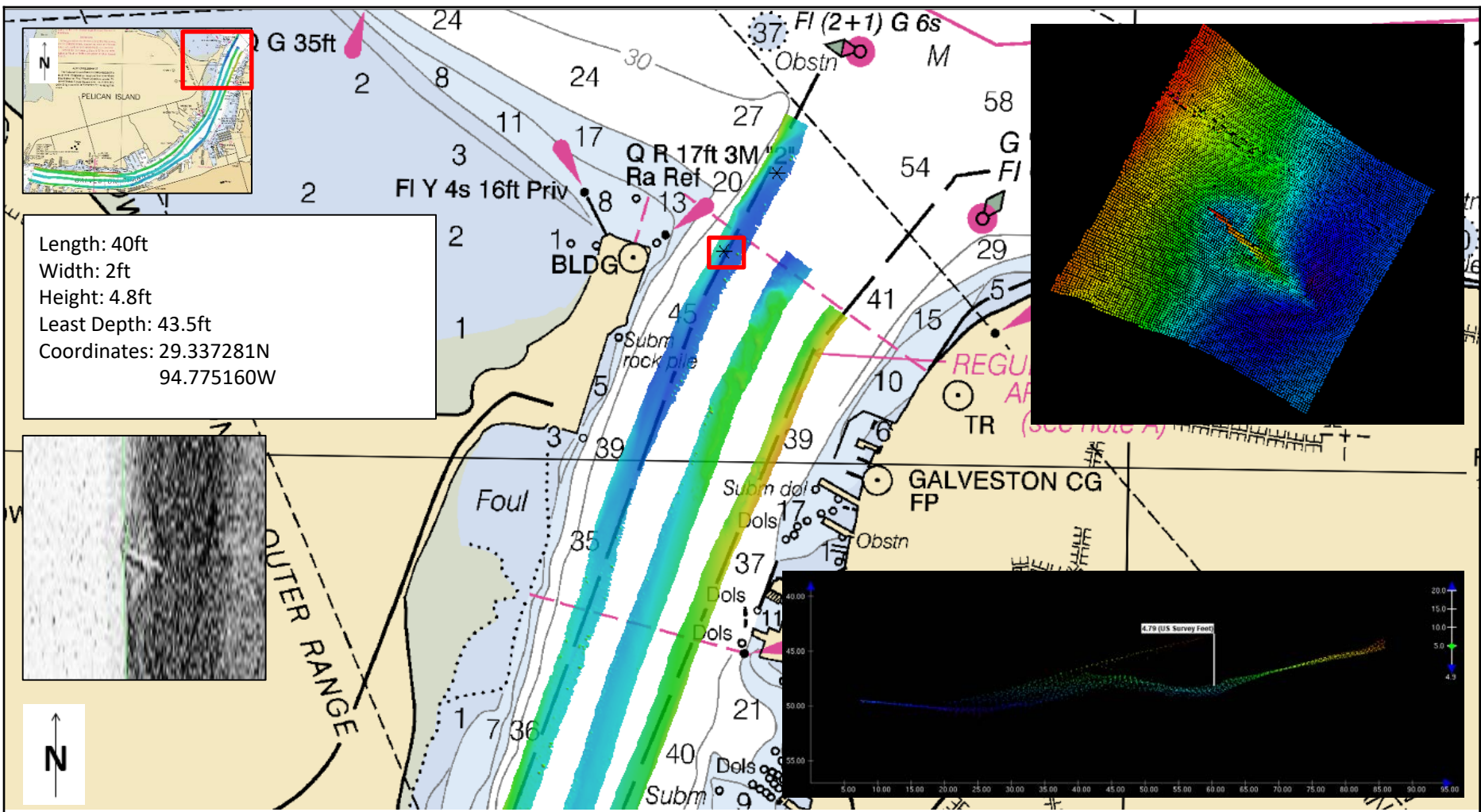
NATIONAL OCEANIC AND
 ATMOSPHERIC ADMINISTRATION
 NATIONAL OCEAN SERVICE

Project: Hurricane Harvey
Survey: Galveston Channel
State: Texas
Locality: Galveston
Sublocality: Galveston Bay
Survey Scale: 1:25,000

Sounding Units: Feet
Sounding Datum: MLLW
Horizontal Datum: NAD 83 UTM 15 N
Chart Number: 11324

NOAA NRT 4
D. Jacobs
Commanding

Survey Date:
 08/31/2017



Chartlet 1b of 1: Object Detection
Preliminary Data - NOT FOR NAVIGATION

Bathymetry with concurrent side scan were acquired and inspected for Galveston Channel. Some objects were found in the channel. Data reflects state of seafloor on the date surveyed.



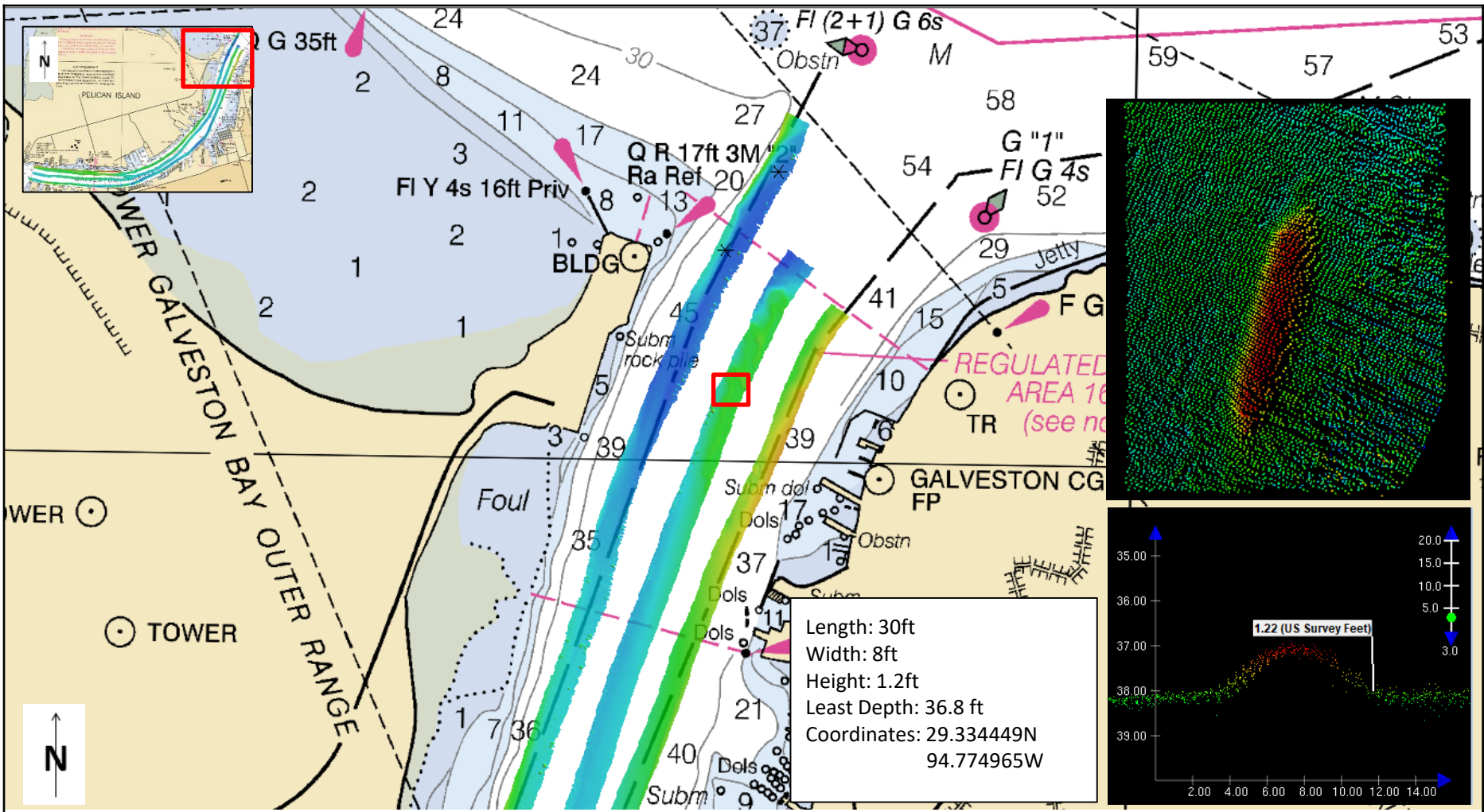
NATIONAL OCEANIC AND
 ATMOSPHERIC ADMINISTRATION
 NATIONAL OCEAN SERVICE

Project: Hurricane Harvey
Survey: Galveston Channel
State: Texas
Locality: Galveston
Sublocality: Galveston Bay
Survey Scale: 1:25,000

Sounding Units: Feet
Sounding Datum: MLLW
Horizontal Datum: NAD 83 UTM 15 N
Chart Number: 11324

NOAA NRT 4
D. Jacobs
Commanding

Survey Date:
 08/31/2017



Chartlet 1c of 1: Object Detection
Preliminary Data - NOT FOR NAVIGATION

Bathymetry with concurrent side scan were acquired and inspected for Galveston Channel. Some objects were found in the channel. Data reflects state of seafloor on the date surveyed.



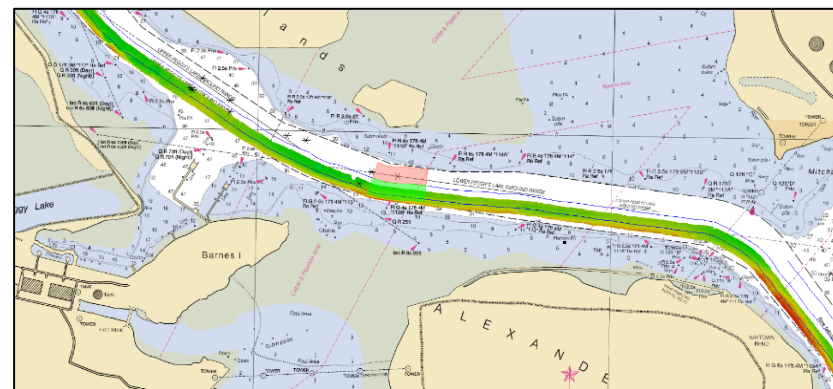
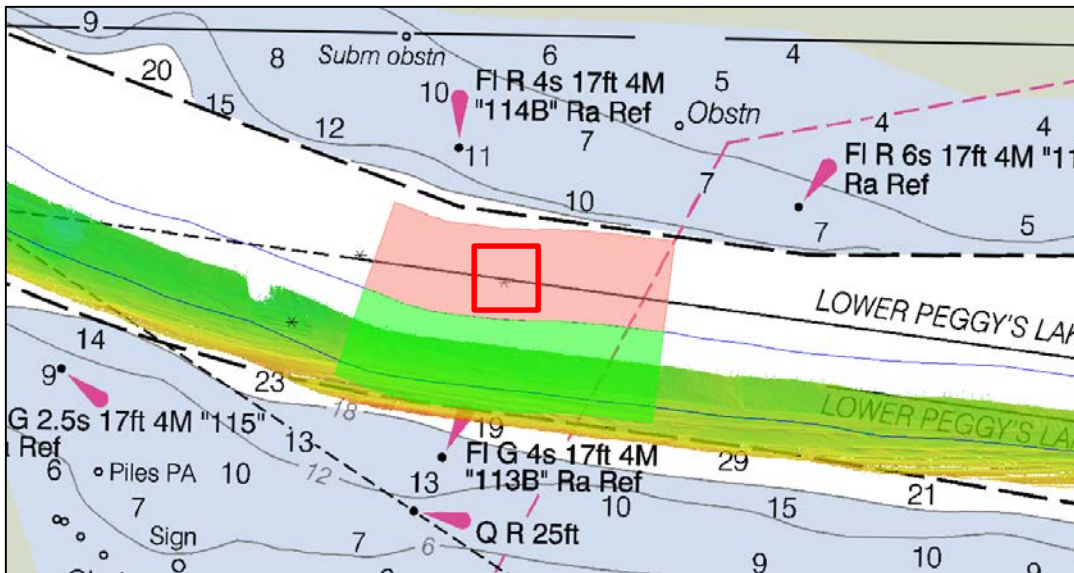
NATIONAL OCEANIC AND
 ATMOSPHERIC ADMINISTRATION
 NATIONAL OCEAN SERVICE

Project: Hurricane Harvey
Survey: Galveston Channel
State: Texas
Locality: Galveston
Sublocality: Galveston Bay
Survey Scale: 1:25,000

Sounding Units: Feet
Sounding Datum: MLLW
Horizontal Datum: NAD 83 UTM 15 N
Chart Number: 11324

NOAA NRT 4
D. Jacobs
Commanding

Survey Date:
 08/31/2017



Name: Possible DTON - 1
Length: Approx. 47ft
Width: Approx. 15ft
Shadow Length: 3ft
Interpretation: Boat?
Coordinates: 29.731572N
 95.043407W

Chartlet 1 of 1: SSS Contacts
Preliminary Data - NOT FOR NAVIGATION

Bathymetry with concurrent side scan were acquired and inspected from Barbour's Terminal Channel at Morgan's Point to Lynchburg Landing. Possible obstructions were found in the channel. Data reflects state of seafloor on the date surveyed.

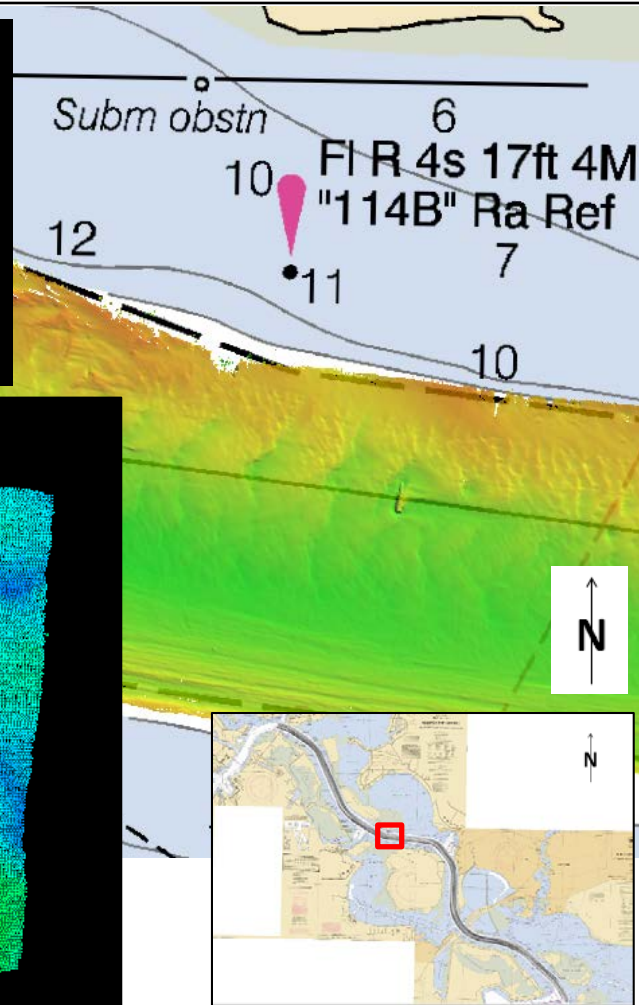
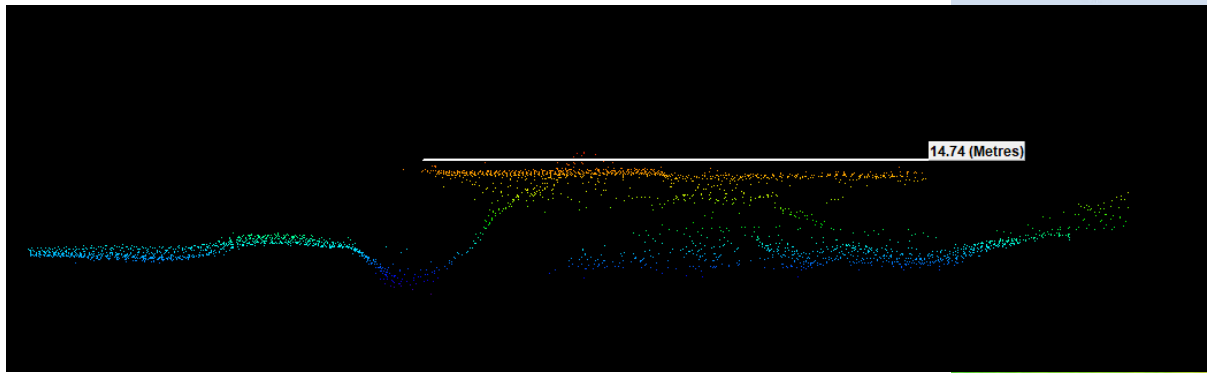


NATIONAL OCEANIC AND
 ATMOSPHERIC ADMINISTRATION
 NATIONAL OCEAN SERVICE

Project: Hurricane Harvey
Survey: San Jacinto Bay
State: Texas
Locality: Houston
Sublocality: San Jacinto Bay
Survey Scale: 1:25,000
Sounding Units: Feet
Sounding Datum: MLLW
Horizontal Datum: NAD 83 UTM 15 N
Chart Number: 11329
Chart Edition: 40

NOAA NRT 4
D. Jacobs
Commanding

Survey Date:
 09/03/2017

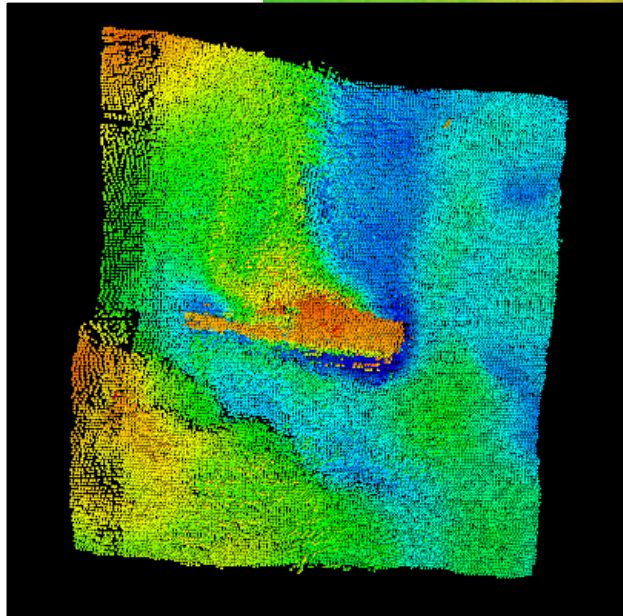
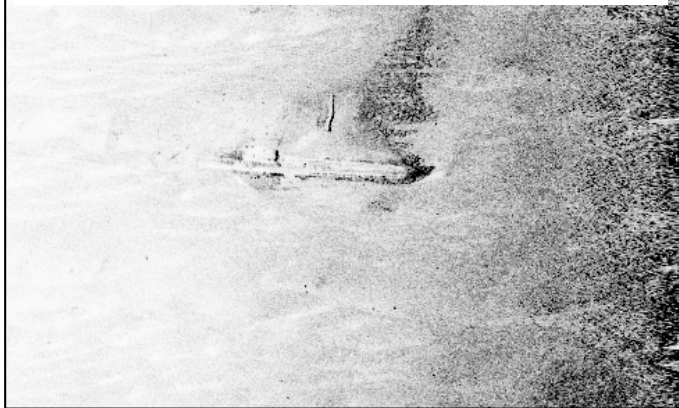


Length: 48.36ft

Width: 11.5ft

Least Depth: 44.5ft

Coordinates: 29.731519N 95.043239W



Chartlet 1 of 1: Contact

Preliminary Data - NOT FOR NAVIGATION

Bathymetry with concurrent side scan were acquired and inspected from Barbour's Terminal Channel at Morgan's Point to Lynchburg Landing. Possible obstructions were found in the channel. Data reflects state of seafloor on the date surveyed.



NATIONAL OCEANIC AND
ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SERVICE

Project: Hurricane Harvey
Survey: San Jacinto Bay
State: Texas
Locality: Houston
Sublocality: San Jacinto Bay
Survey Scale: 1:25,000

Sounding Units: Feet
Sounding Datum: MLLW
Horizontal Datum: NAD 83 UTM 15 N
Chart Number: 11328
11329

NOAA NRT 4
D. Jacobs
Commanding

Survey Date:
09/03/2017 to
09/04/2017



Fwd: ATTENTION REQUIRED: Harvey DTON

1 message

Michael Davidson - NOAA Federal <michael.davidson@noaa.gov>

Sun, Sep 3, 2017 at 10:17 AM

To: "Duke, Matthew A CIV USARMY CESWG (US)" <Matthew.A.Duke@usace.army.mil>, "Frabotta, Christopher SWG" <Christopher.C.Frabotta@usace.army.mil>

Cc: Alan Bunn <alan.bunn@noaa.gov>, Ryan Wartick <Ryan.Wartick@noaa.gov>, _NOS OCS NSD Response <nsd.response@noaa.gov>, Mike Annis Hstp <Michael.J.Annis@noaa.gov>

Matt,

As discussed, I am forwarding what appears to be a dredge pipe or potentially an exposed pipeline in the Upper HSC.

Let me know if you have any questions.

V/R,

Mike

----- Forwarded message -----

From: Michael Annis - NOAA Federal <michael.j.annis@noaa.gov>

Date: Sun, Sep 3, 2017 at 10:05 AM

Subject: ATTENTION REQUIRED: Harvey DTON

To: "NSD.Response@noaa.gov" <NSD.Response@noaa.gov>

Cc: Alan Bunn - NOAA Federal <alan.bunn@noaa.gov>

Houston Ship Channel

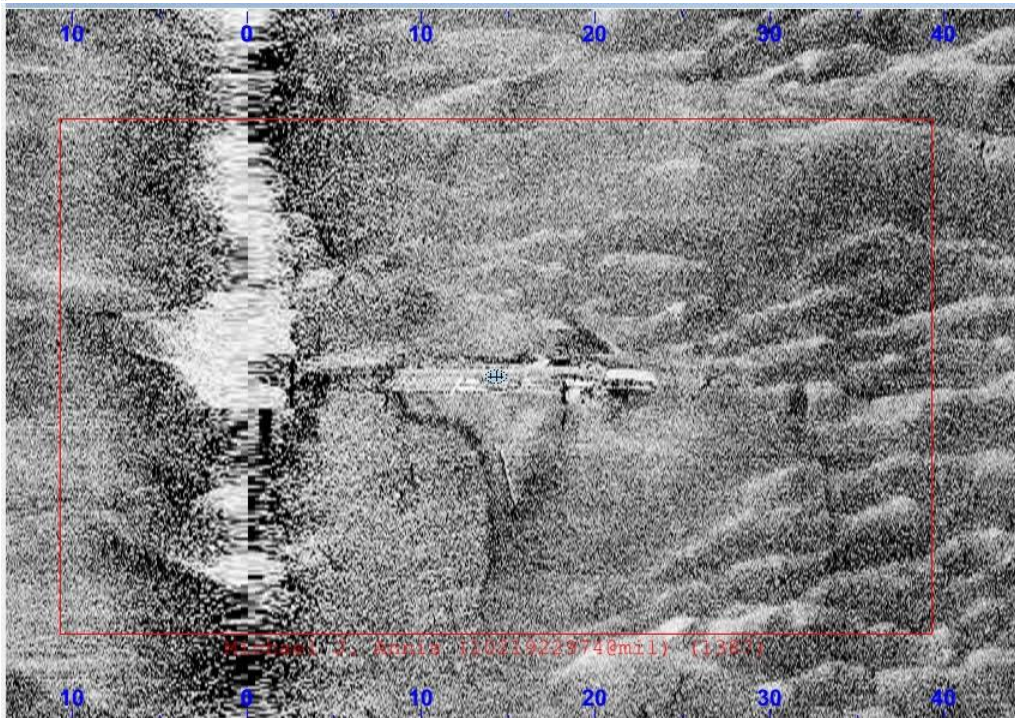
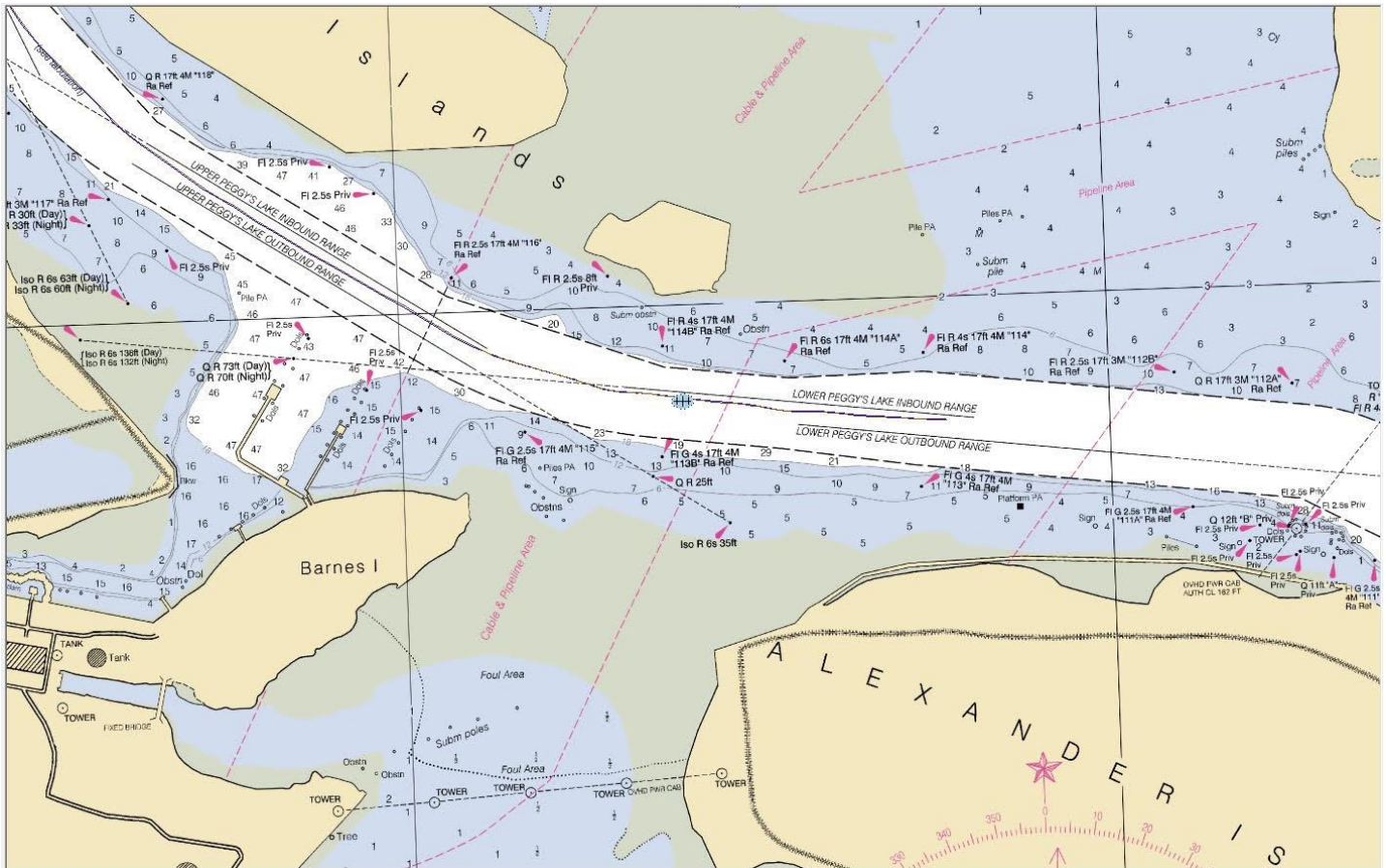
9/2/2017

Lat: 29 43 52.9N

Lon: 095 02 36.1W

Geodesy Information: NAD83 Texas State Plane South Central

Approximate height off the bottom: 4.75 feet (Measured in Caris SIPS)



Michael J. Annis
Physical Scientist
NOAA Office of Coast Survey
1315 East West Highway
SSMC3 room 6210
Silver Spring, MD 20910
Office: 240-533-0051
Cell: 571-332-4508

9/6/2017

National Oceanic and Atmospheric Administration Mail - Fwd: ATTENTION REQUIRED: Harvey DTON

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--

Michael C. Davidson
Operations Manager
NOAA Office of Coast Survey
Navigation Response Branch
1315 East West Hwy, SSMC3, Sta 6216 ***new station number***
Silver Spring, MD 20910
240-533-0058 office ***new office number***
757-771-5305 work cell
michael.davidson@noaa.gov



Fwd: ATTENTION REQUIRED: Harvey DTON

1 message

Michael Davidson - NOAA Federal <michael.davidson@noaa.gov>

Sun, Sep 3, 2017 at 11:19 AM

To: "Duke, Matthew A CIV USARMY CESWG (US)" <Matthew.A.Duke@usace.army.mil>, "Frabotta, Christopher SWG" <Christopher.C.Frabotta@usace.army.mil>

Cc: Alan Bunn <alan.bunn@noaa.gov>, Ryan Wartick <Ryan.Wartick@noaa.gov>, _NOS OCS NSD Response <nsd.response@noaa.gov>, Mike Annis Hstp <Michael.J.Annis@noaa.gov>

Matt,

Forward of contact located in Upper HSC for information. Report is possible dredge pipe, but considering there are tanks on both sides of the HSC in this general vicinity, this may be a pipeline that is not represented on the chart. Forwarding for situational awareness.

V/R,
Mike

----- Forwarded message -----

From: Michael Annis - NOAA Federal <michael.j.annis@noaa.gov>

Date: Sun, Sep 3, 2017 at 10:47 AM

Subject: ATTENTION REQUIRED: Harvey DTON

To: "NSD.Response@noaa.gov" <NSD.Response@noaa.gov>

Cc: Alan Bunn - NOAA Federal <alan.bunn@noaa.gov>

Houston Ship Channel

9/3/2017

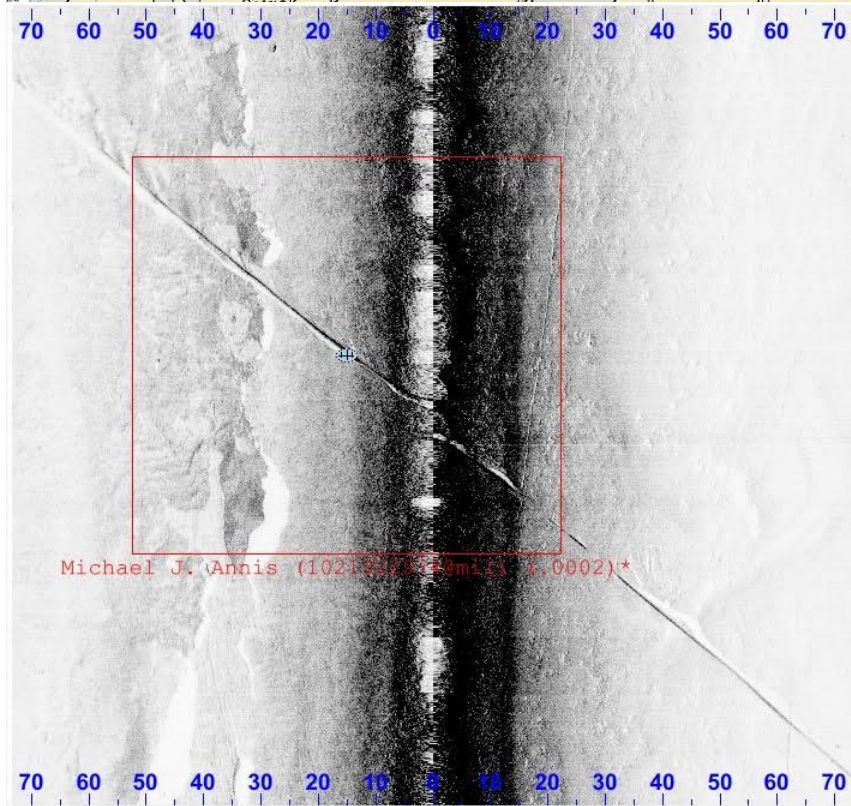
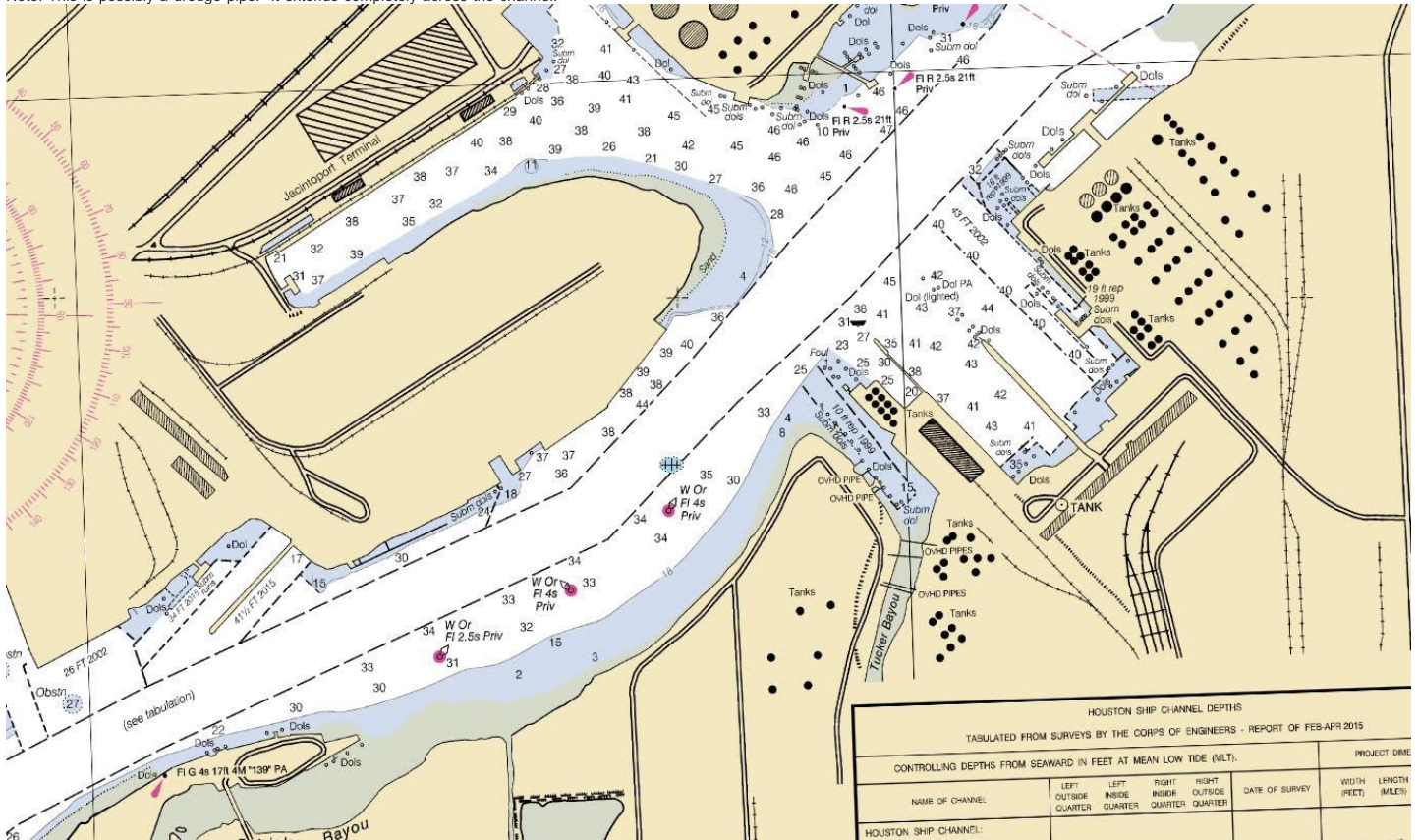
Lat: 29 44 35.5N

Lon: 095 06 17.1W

Geodesy Information: NAD83 Texas State Plane South Central

Approximate height off the bottom: 4 feet (Measured in Caris SIPS)

Note: This is possibly a dredge pipe. It extends completely across the channel.



Michael J. Annis (1021530713emil) (1.0002)*

Michael J. Annis
Physical Scientist
NOAA Office of Coast Survey
1315 East West Highway
SSMC3 room 6210

9/6/2017

National Oceanic and Atmospheric Administration Mail - Fwd: ATTENTION REQUIRED: Harvey DTON

Silver Spring, MD 20910
Office: [240-533-0051](tel:240-533-0051)
Cell: [571-332-4508](tel:571-332-4508)

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Reference to any specific commercial products, process, or service by trade name, trademark, manufacturer, or otherwise, does not constitute or imply its endorsement, recommendation, or favoring by the United States Government. The views and opinions of authors do not necessarily state or reflect those of the United States Government, and shall not be used for advertising or product endorsement purposes

--

Michael C. Davidson
Operations Manager
NOAA Office of Coast Survey
Navigation Response Branch
1315 East West Hwy, SSMC3, Sta 6216 *****new station number*****
Silver Spring, MD 20910
[240-533-0058](tel:240-533-0058) office *****new office number*****
[757-771-5305](tel:757-771-5305) work cell
michael.davidson@noaa.gov

9/6/2017

National Oceanic and Atmospheric Administration Mail - Fwd: ATTENTION REQUIRED: Harvey DTON

--

Michael C. Davidson
Operations Manager
NOAA Office of Coast Survey
Navigation Response Branch
1315 East West Hwy, SSMC3, Sta 6216 ***new station number***
Silver Spring, MD 20910
240-533-0058 office ***new office number***
757-771-5305 work cell
michael.davidson@noaa.gov



Fwd: ATTENTION REQUIRED: Harvey DTON

1 message

Michael Davidson - NOAA Federal <michael.davidson@noaa.gov>

Sun, Sep 3, 2017 at 4:58 PM

To: "Duke, Matthew A CIV USARMY CESWG (US)" <Matthew.A.Duke@usace.army.mil>, "Frabotta, Christopher SWG" <Christopher.C.Frabotta@usace.army.mil>

Cc: Ryan Wartick <Ryan.Wartick@noaa.gov>, Alan Bunn <alan.bunn@noaa.gov>, _NOS OCS NSD Response <nsd.response@noaa.gov>, Mike Annis Hstp <Michael.J.Annis@noaa.gov>

Matt,

MANTA found another linear feature in the upper HSC on the south side of the federal channel, IVO Greens Bayou. Imagery and description included in the email below.

V/R,
Mike

----- Forwarded message -----

From: Michael Annis - NOAA Federal <michael.j.annis@noaa.gov>

Date: Sun, Sep 3, 2017 at 4:51 PM

Subject: ATTENTION REQUIRED: Harvey DTON

To: _NOS OCS NSD Response <NSD.Response@noaa.gov>

Cc: Alan Bunn - NOAA Federal <alan.bunn@noaa.gov>

Houston Ship Channel

9/3/2017

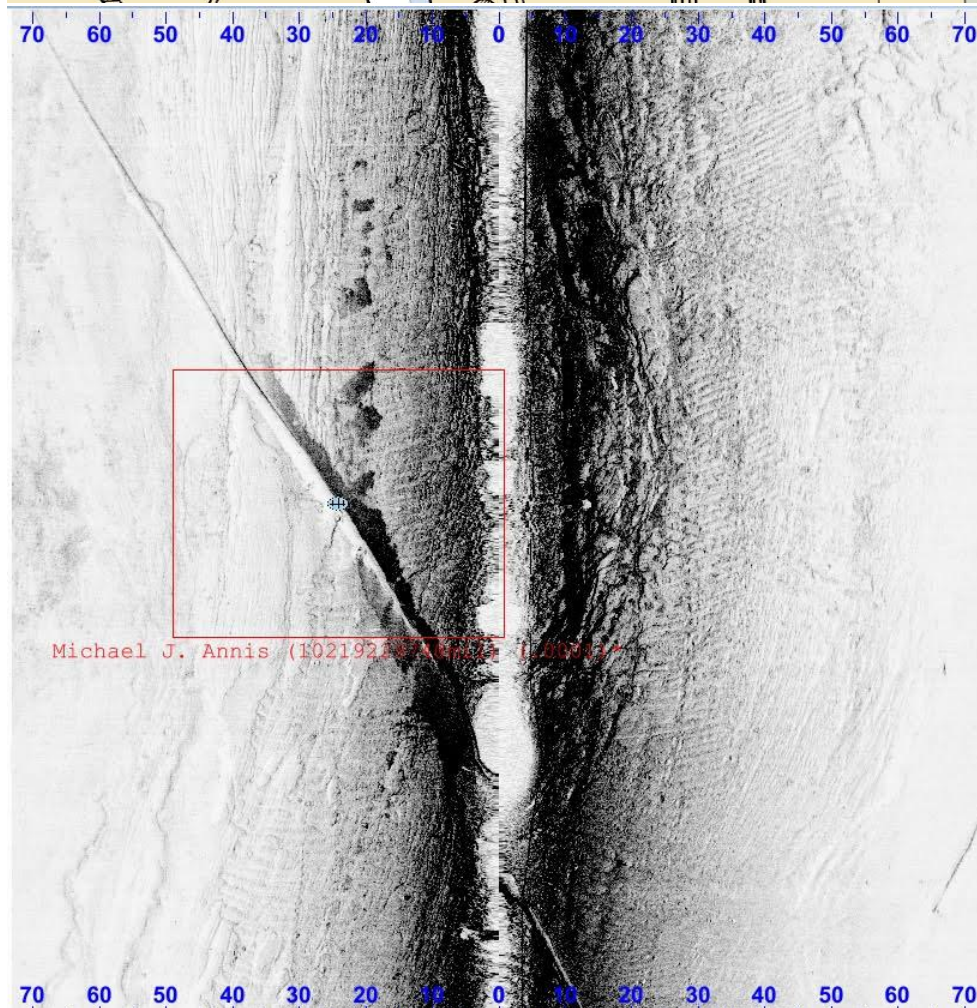
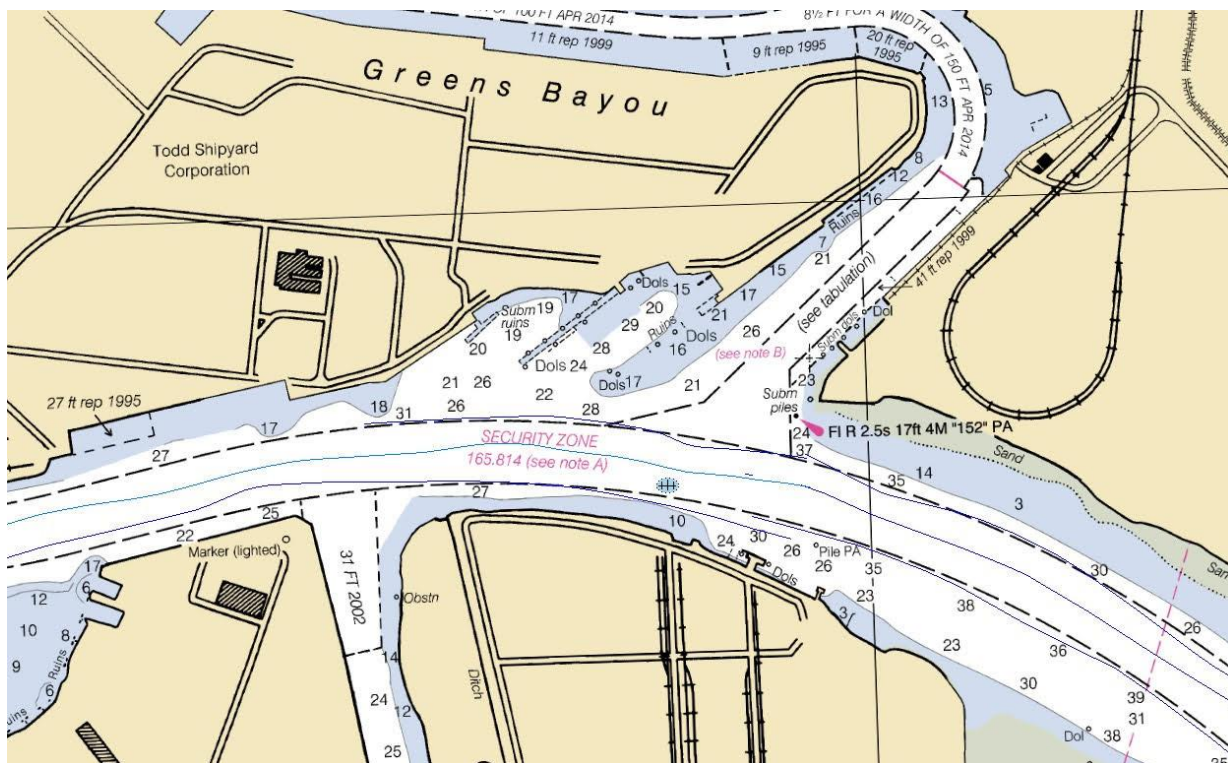
Lat: 29 44 46.8N

Lon: 095 10 10.9W

Geodesy Information: NAD83 Texas State Plane South Central

Approximate height off the bottom: 4 feet (Measured in Caris SIPS)

Possible dredge pipe across the channel.



Michael J. Annis (102192187) (100001)

9/6/2017

National Oceanic and Atmospheric Administration Mail - Fwd: ATTENTION REQUIRED: Harvey DTON

Michael J. Annis
Physical Scientist
NOAA Office of Coast Survey
1315 East West Highway
SSMC3 room 6210
Silver Spring, MD 20910
Office: [240-533-0051](tel:240-533-0051)
Cell: [571-332-4508](tel:571-332-4508)

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--
Michael C. Davidson
Operations Manager
NOAA Office of Coast Survey
Navigation Response Branch
1315 East West Hwy, SSMC3, Sta 6216 *****new station number*****
Silver Spring, MD 20910
240-533-0058 office *****new office number*****
757-771-5305 work cell
michael.davidson@noaa.gov



Fwd: ATTENTION REQUIRED: HARVEY DTON

1 message

Michael Davidson - NOAA Federal <michael.davidson@noaa.gov>

Sun, Sep 3, 2017 at 7:14 PM

To: "Duke, Matthew A CIV USARMY CESWG (US)" <Matthew.A.Duke@usace.army.mil>, "Frabotta, Christopher SWG" <Christopher.C.Frabotta@usace.army.mil>

Cc: Ryan Wartick <Ryan.Wartick@noaa.gov>, Alan Bunn <alan.bunn@noaa.gov>, _NOS OCS NSD Response <nsd.response@noaa.gov>, Mike Annis Hstp <Michael.J.Annis@noaa.gov>

Matt,

Below are 3 additional features located in the MANTA's sidescan today from the Upper HSC. Please review and disseminate as necessary. For all of these features that we are forwarding for your review, we would like to hear back if USACE plans to remove any of these items. Items that are not going to be removed will go through our internal process for potential Dangers to Navigation.

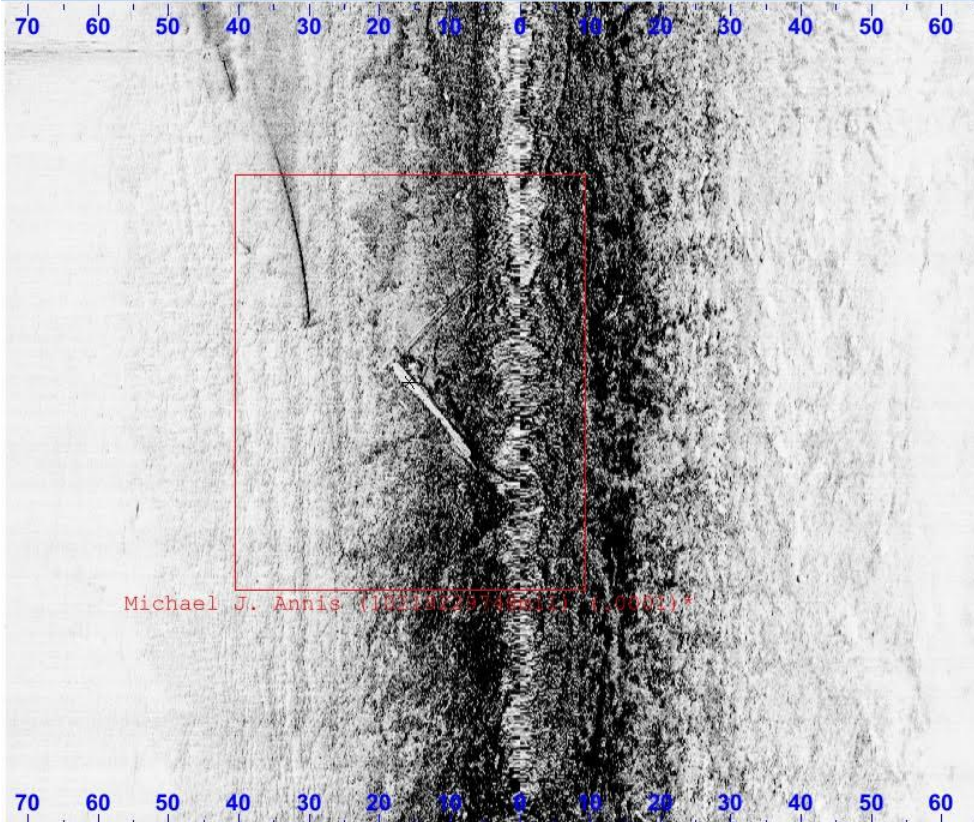
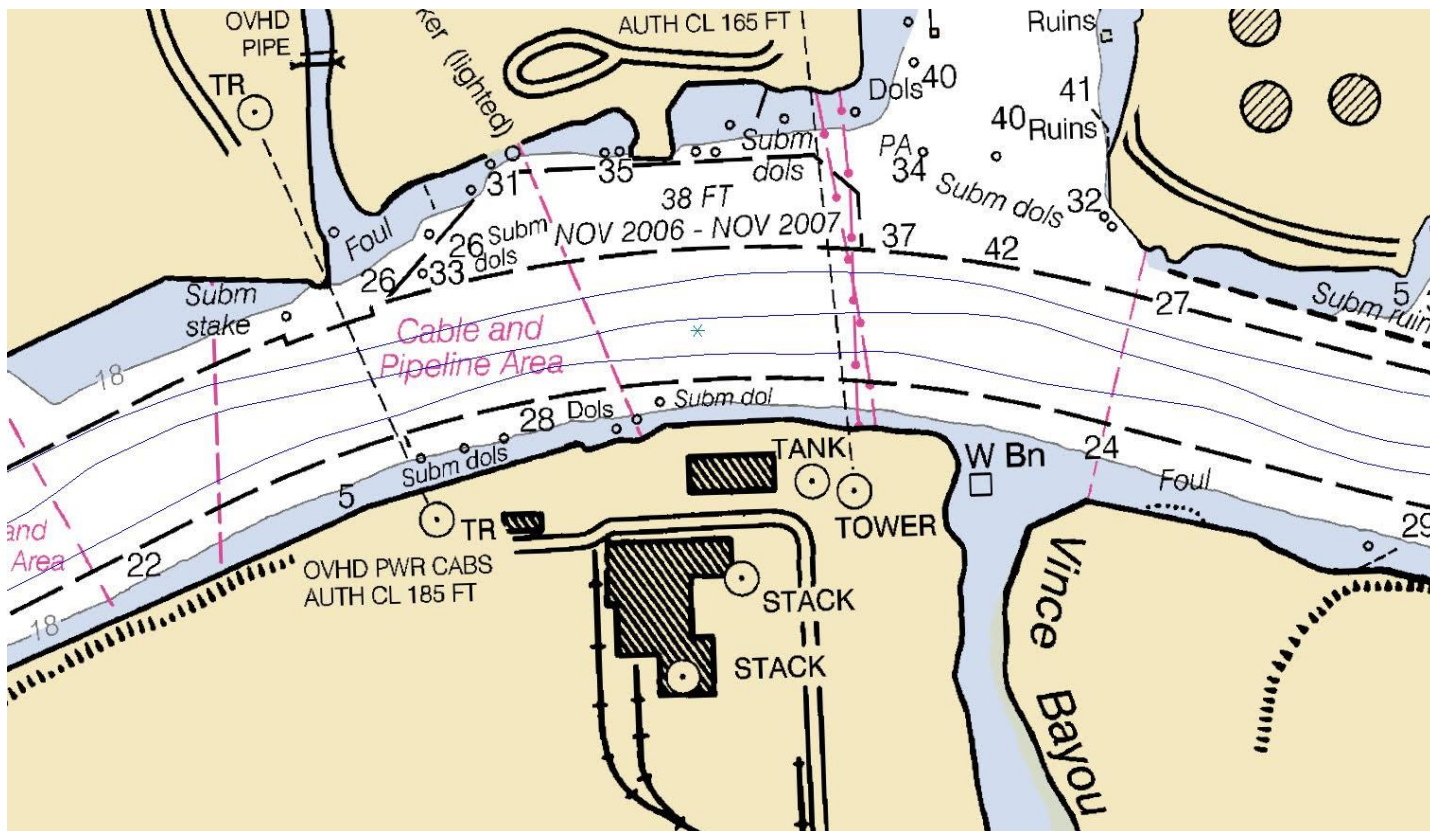
Potential Dangers:

Houston Ship Channel
9/3/2017
Lat: 29 43 31.9N
Lon: 095 13 34.0W

Geodesy Information: NAD83 Texas State Plane South Central

Approximate height off the bottom: 4 feet (Measured in Caris SIPS)

Pipe-shaped object in the channel. Approximately 74 ft long.

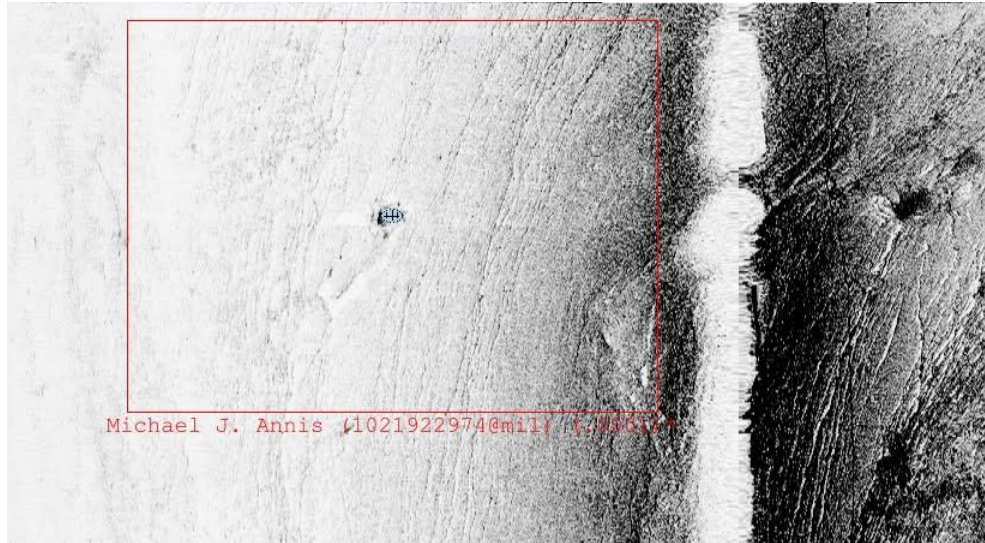
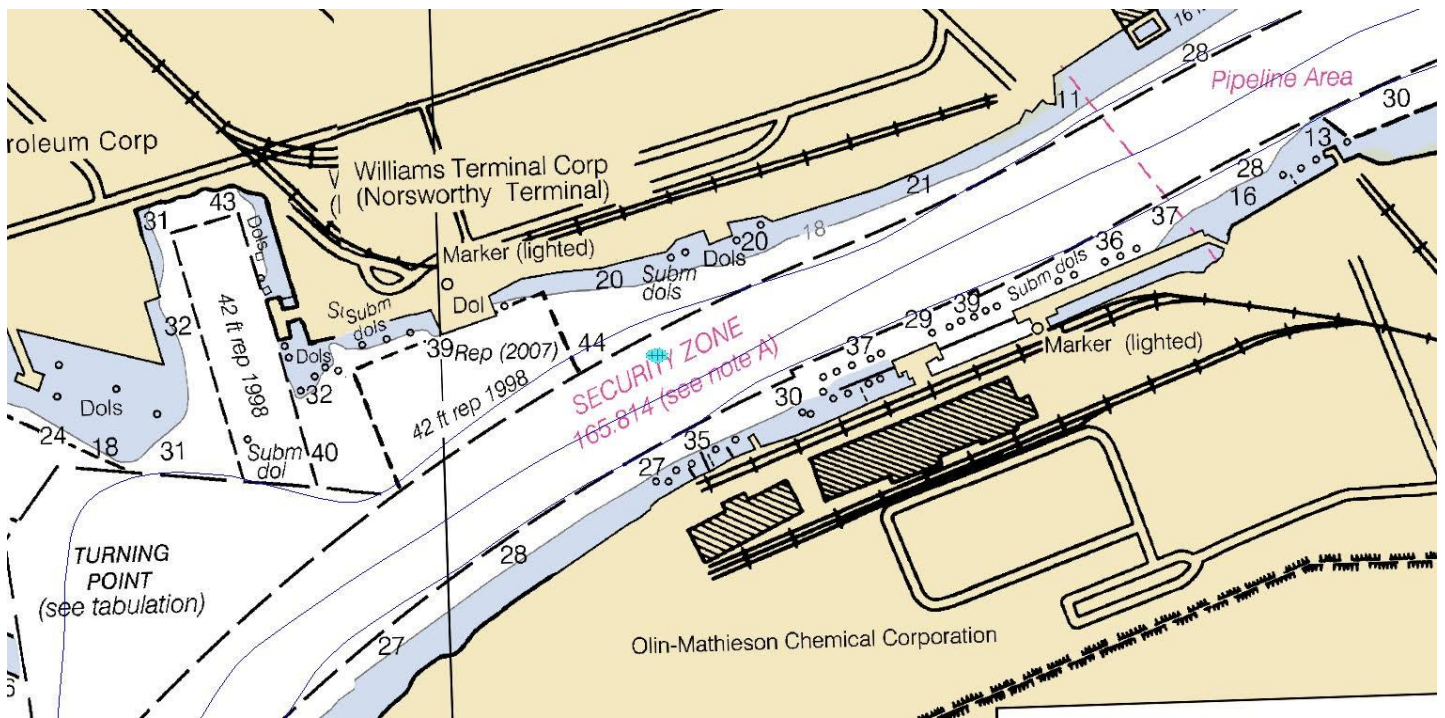


Michael J. Annis (122342946221@noaa.gov)

Houston Ship Channel
9/3/2017
Lat: 29 44 30.5N
Lon: 095 11 52.6W

Geodesy Information: NAD83 Texas State Plane South Central

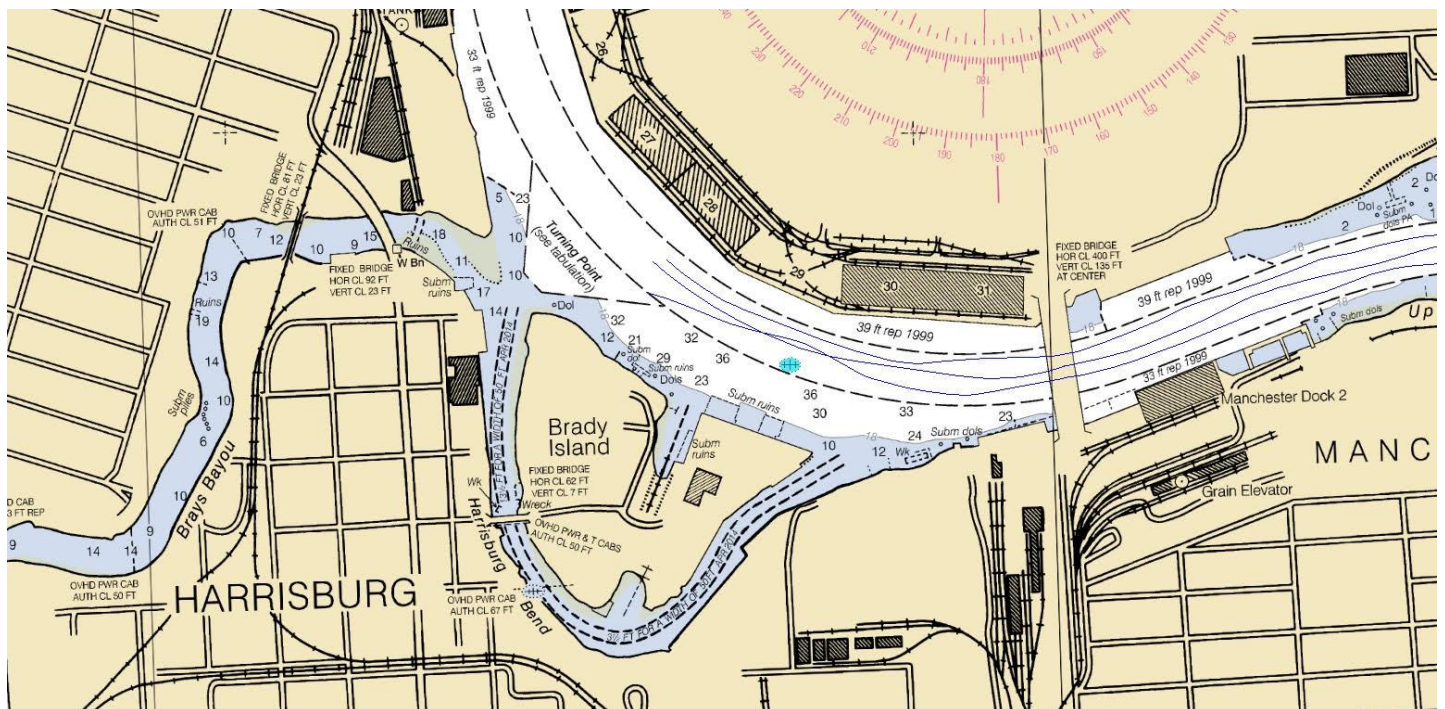
Approximate height off the bottom: 3.5 feet (Measured in Caris SIPS)

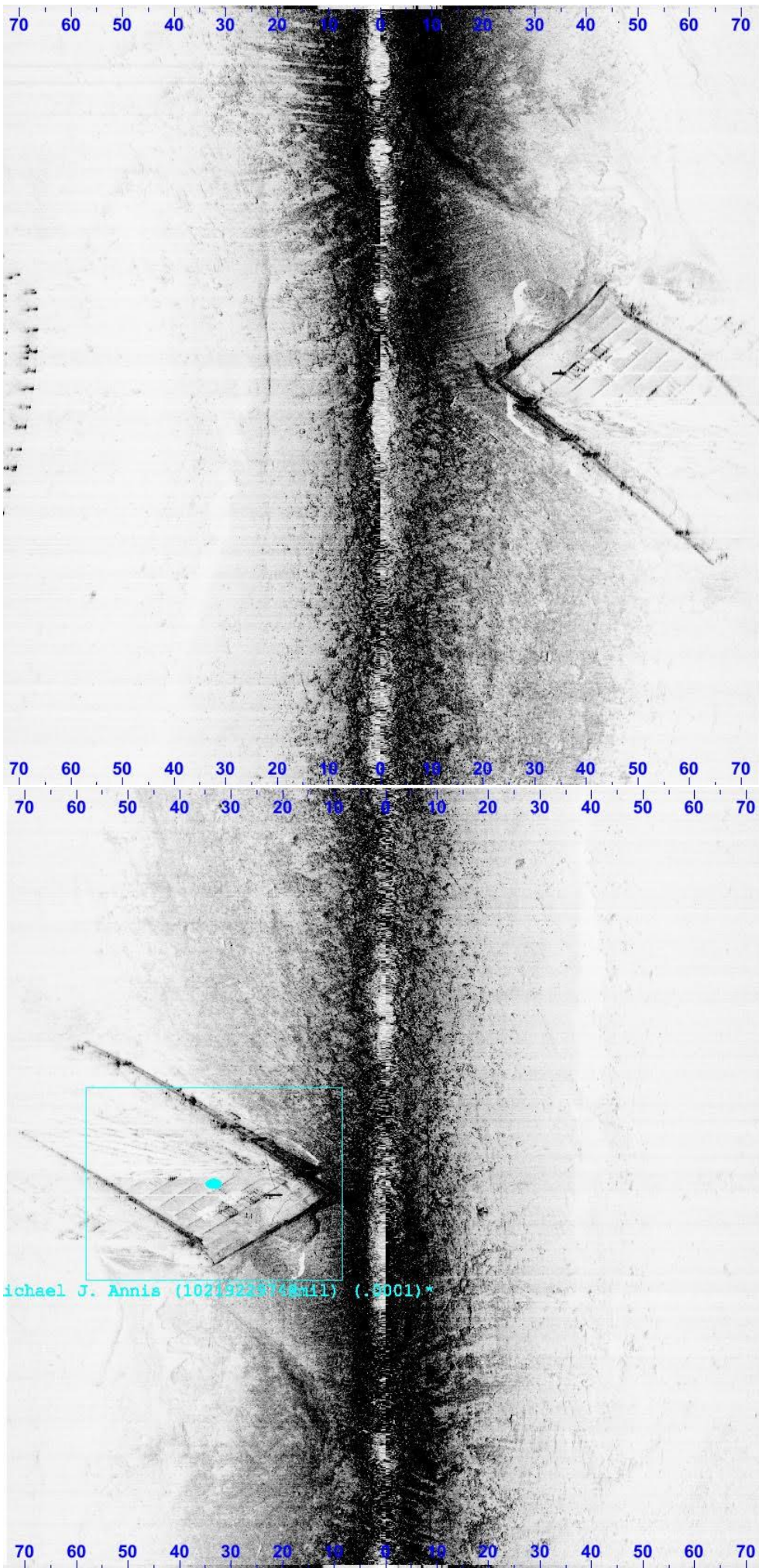


Michael J. Annis (1021922974@mil) (t. 2833)

Houston Ship Channel
9/3/2017
Lat: 29 43 30.7N
Lon: 095 16 17.3W

Geodesy Information: NAD83 Texas State Plane South Central
Approximate height off the bottom: 6 feet (Measured in Caris SIPS)
Sunken Dry Dock, well marked by buoys. Approximately 180ft long.





Michael J. Annis (1021922374@n11) (.5001)*

This is the last email for the evening. Please let me know if you have any questions or concerns about any of these items.

Best Regards,
Mike

--
 Michael C. Davidson
 Operations Manager
 NOAA Office of Coast Survey
 Navigation Response Branch
 1315 East West Hwy, SSMC3, Sta 6216 ***new station number***
 Silver Spring, MD 20910
 240-533-0058 office ***new office number***
 757-771-5305 work cell
michael.davidson@noaa.gov



Fwd: ATTENTION REQUIRED: Harvey DTON

1 message

Michael Davidson - NOAA Federal <michael.davidson@noaa.gov>

Mon, Sep 4, 2017 at 7:39 PM

To: "Duke, Matthew A CIV USARMY CESWG (US)" <Matthew.A.Duke@usace.army.mil>, "Frabotta, Christopher SWG" <Christopher.C.Frabotta@usace.army.mil>
Cc: Ryan Wartick <Ryan.Wartick@noaa.gov>, Alan Bunn <alan.bunn@noaa.gov>, _NOS OCS NSD Response <nsd.response@noaa.gov>, Mike Annis Hstp <Michael.J.Annis@noaa.gov>, Eli Smith - NOAA Federal <eli.r.smith@noaa.gov>, Joshua Bergeron - NOAA Federal <joshua.bergeron@noaa.gov>

Matt,
typo - was supposed to say beginning

I am begging to get some additional contacts from MANTA from their work today. See forwarded email. This is the first of several. Please review and disseminate as necessary.

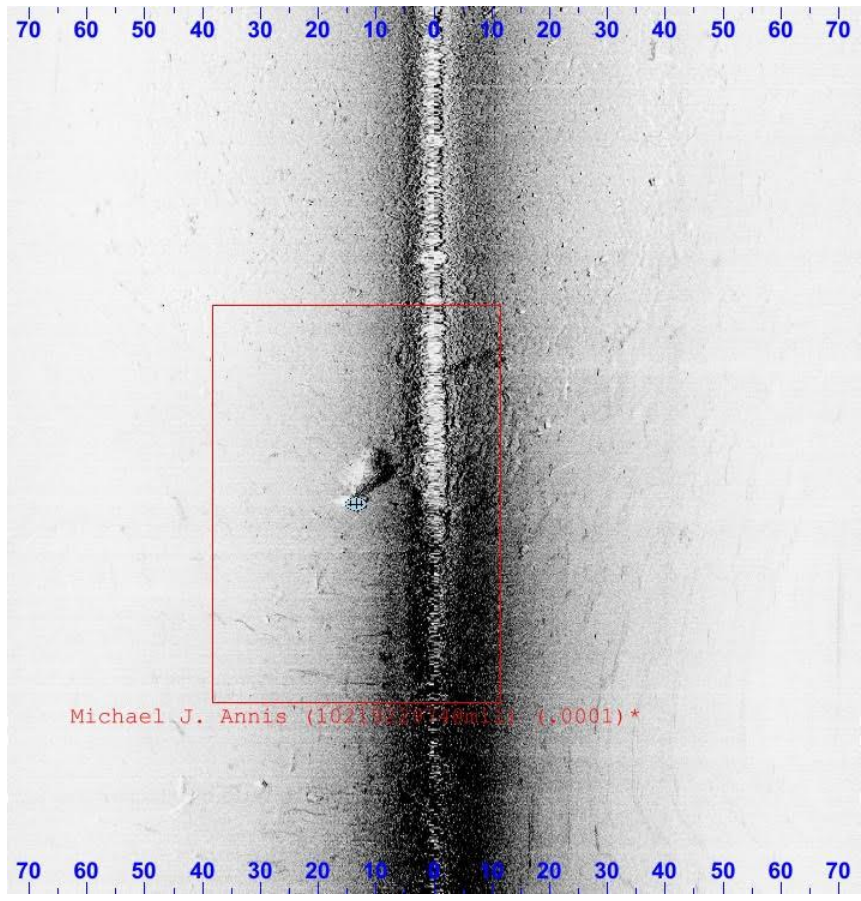
Best regards,
Mike

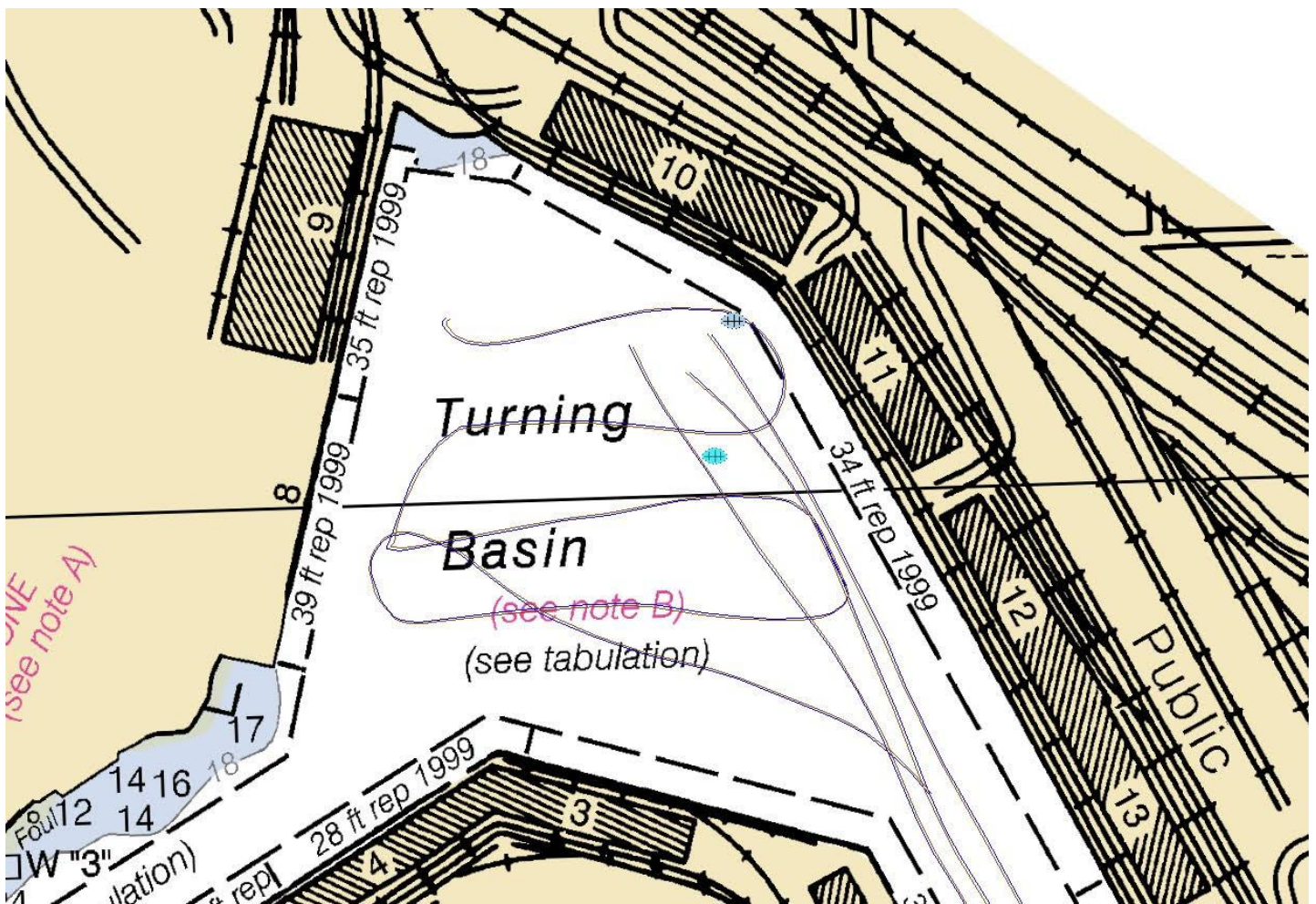
----- Forwarded message -----
From: Michael Annis - NOAA Federal <michael.j.annis@noaa.gov>
Date: Mon, Sep 4, 2017 at 7:26 PM
Subject: ATTENTION REQUIRED: Harvey DTON
To: _NOS OCS NSD Response <NSD.Response@noaa.gov>
Cc: Alan Bunn - NOAA Federal <alan.bunn@noaa.gov>

Houston Ship Channel - Turning Basin
9/4/2017
Lat: 29 45 00.8N
Lon: 095 17 17.1W

Geodesy Information: NAD83 Texas State Plane South Central

Approximate height off the bottom: 6.5 feet (Measured in Caris SIPS)





Michael J. Annis
 Physical Scientist
 NOAA Office of Coast Survey
 1315 East West Highway
 SSMC3 room 6210
 Silver Spring, MD 20910
 Office: 240-533-0051
 Cell: 571-332-4508

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Michael C. Davidson
 Operations Manager
 NOAA Office of Coast Survey
 Navigation Response Branch
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 Silver Spring, MD 20910
 240-533-0058 office ***new office number***
 757-771-5305 work cell
michael.davidson@noaa.gov



Fwd: ATTENTION REQUIRED: Harvey DTON

1 message

Michael Davidson - NOAA Federal <michael.davidson@noaa.gov>

Mon, Sep 4, 2017 at 7:40 PM

To: "Duke, Matthew A CIV USARMY CESWG (US)" <Matthew.A.Duke@usace.army.mil>, "Frabotta, Christopher SWG" <Christopher.C.Frabotta@usace.army.mil>
Cc: Ryan Wartick <Ryan.Wartick@noaa.gov>, Alan Bunn <alan.bunn@noaa.gov>, _NOS OCS NSD Response <nsd.response@noaa.gov>, Mike Annis Hstp <Michael.J.Annis@noaa.gov>

Matt,

#2 for the evening. More to come.

Best Regards,
Mike

----- Forwarded message -----

From: Michael Annis - NOAA Federal <michael.j.annis@noaa.gov>

Date: Mon, Sep 4, 2017 at 7:28 PM

Subject: ATTENTION REQUIRED: Harvey DTON

To: _NOS OCS NSD Response <NSD.Response@noaa.gov>

Cc: Alan Bunn - NOAA Federal <alan.bunn@noaa.gov>

Houston Ship Channel - Turning Basin

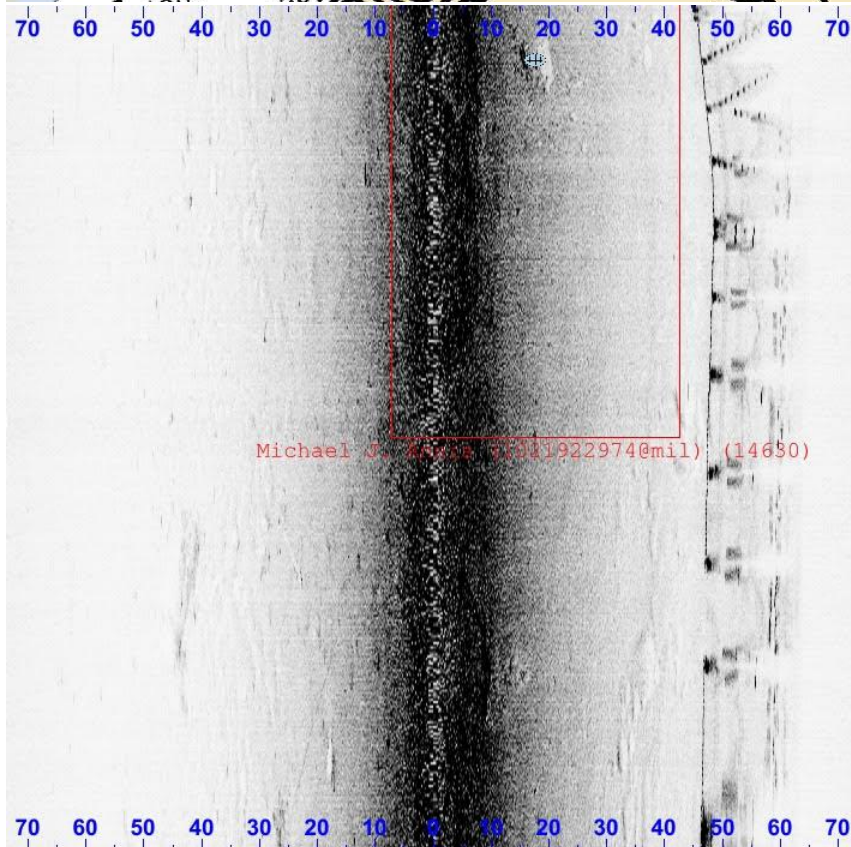
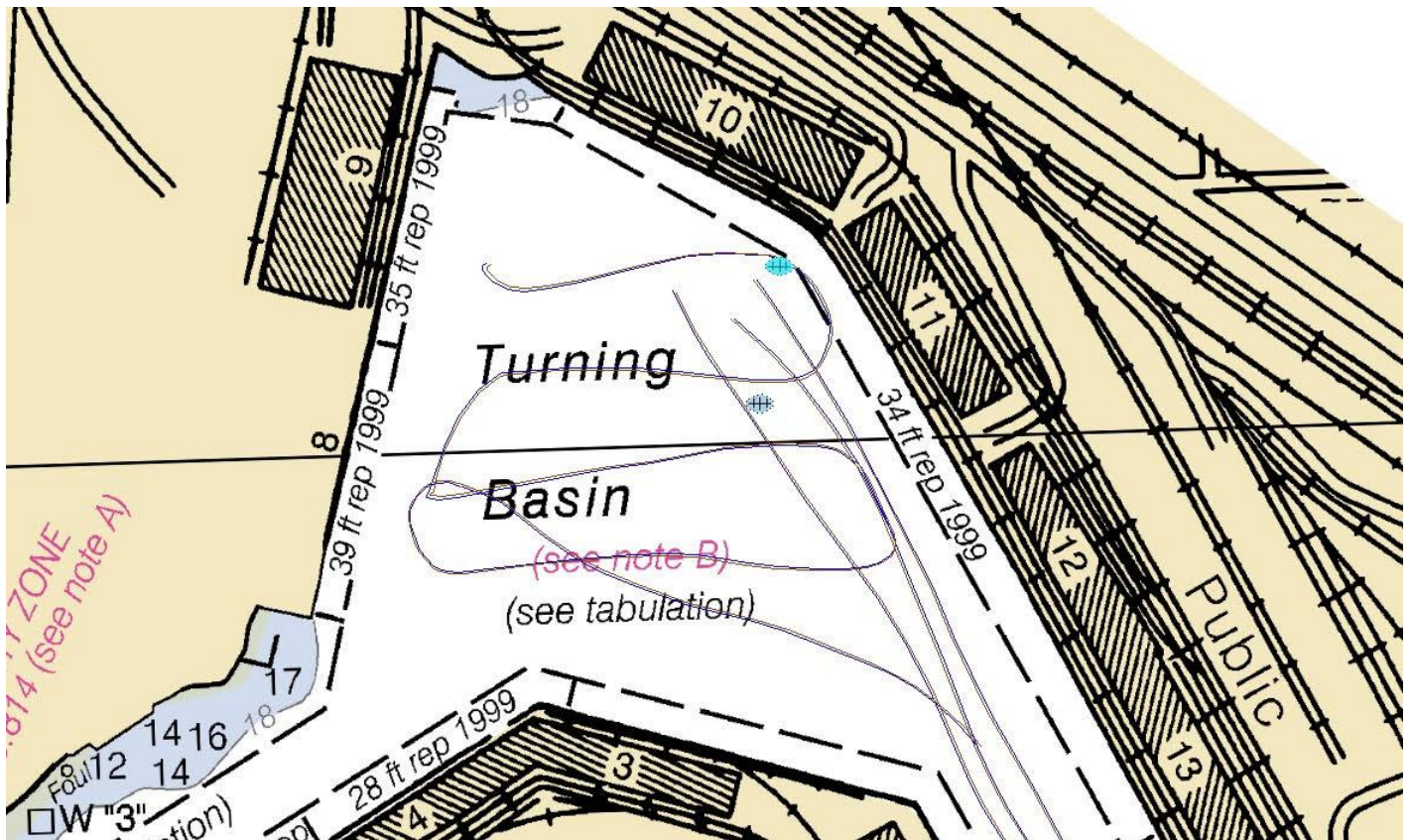
9/4/2017

Lat: 29 45 03.6N

Lon: 095 17 16.5W

Geodesy Information: NAD83 Texas State Plane South Central

Approximate height off the bottom: 4.0 feet (Measured in Caris SIPS)



Michael J. Annis
Physical Scientist
NOAA Office of Coast Survey
1315 East West Highway
SSMC3 room 6210
Silver Spring, MD 20910

9/6/2017

National Oceanic and Atmospheric Administration Mail - Fwd: ATTENTION REQUIRED: Harvey DTON

Office: 240-533-0051
Cell: 571-332-4508

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--
Michael C. Davidson
Operations Manager
NOAA Office of Coast Survey
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240-533-0058 office ***new office number***
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michael.davidson@noaa.gov



Fwd: ATTENTION REQUIRED Harvey DTON

1 message

Michael Davidson - NOAA Federal <michael.davidson@noaa.gov> Mon, Sep 4, 2017 at 7:48 PM
To: "Duke, Matthew A CIV USARMY CESWG (US)" <Matthew.A.Duke@usace.army.mil>, "Frabotta, Christopher SWG" <Christopher.C.Frabotta@usace.army.mil>
Cc: Ryan Wartick <Ryan.Wartick@noaa.gov>, Alan Bunn <alan.bunn@noaa.gov>, _NOS OCS NSD Response <nsd.response@noaa.gov>, Mike Annis Hstp <Michael.J.Annis@noaa.gov>, Eli Smith - NOAA Federal <eli.r.smith@noaa.gov>, Joshua Bergeron - NOAA Federal <joshua.bergeron@noaa.gov>

Matt,

#3 of 4 from MANTA.

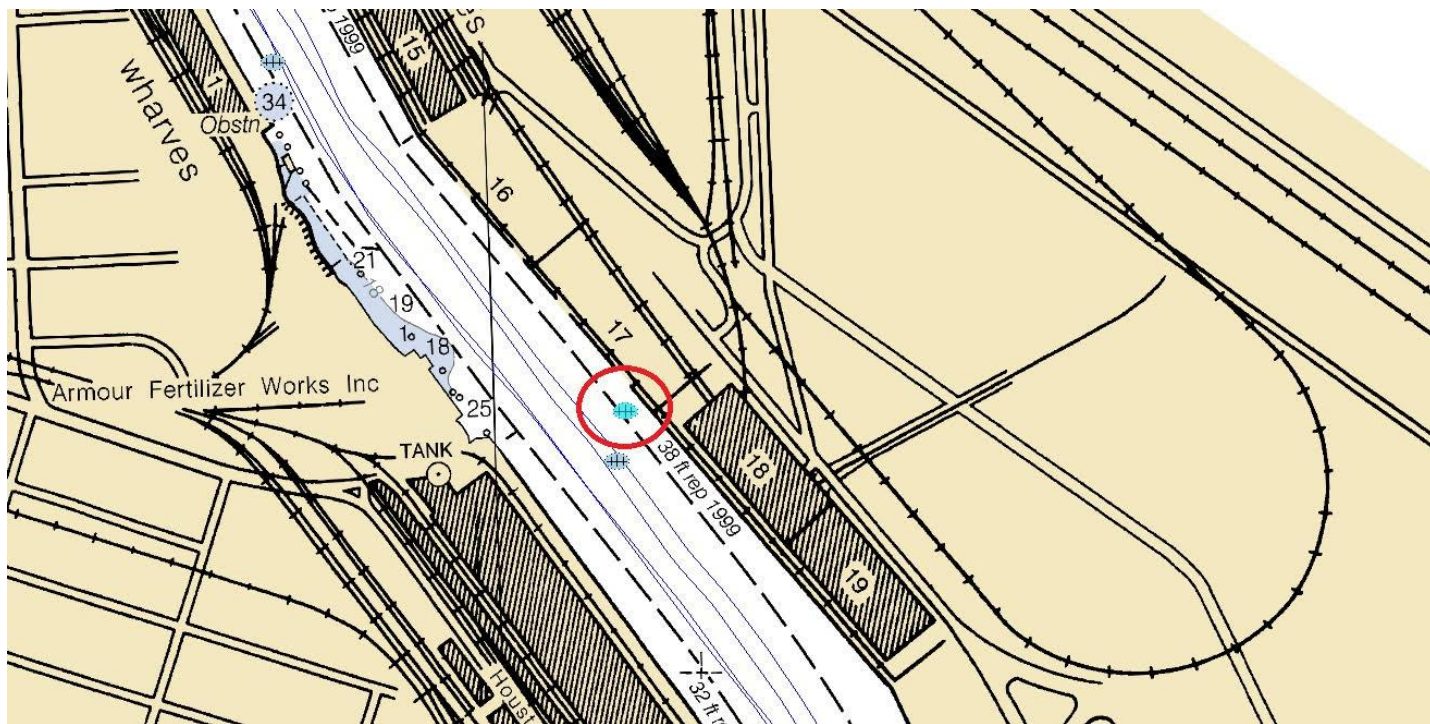
R,
Mike

----- Forwarded message -----
From: Michael Annis - NOAA Federal <michael.j.annis@noaa.gov>
Date: Mon, Sep 4, 2017 at 7:30 PM
Subject: ATTENTION REQUIRED Harvey DTON
To: _NOS OCS NSD Response <NSD.Response@noaa.gov>
Cc: Alan Bunn - NOAA Federal <alan.bunn@noaa.gov>

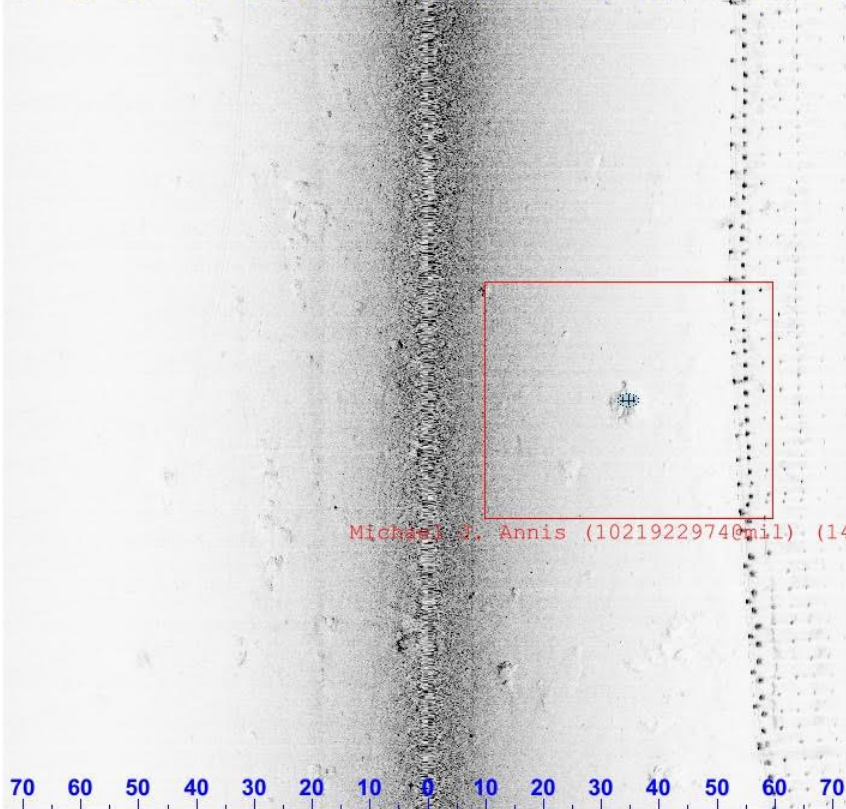
Houston Ship Channel - Turning Basin
9/4/2017
Lat: 29 44 33.1N
Lon: 095 16 55.2W

Geodesy Information: NAD83 Texas State Plane South Central

Approximate height off the bottom: 3.5 feet (Measured in Caris SIPS)



70 60 50 40 30 20 10 0 10 20 30 40 50 60 70



Michael J. Annis (1021922974@mil) (14

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

Michael J. Annis
Physical Scientist
NOAA Office of Coast Survey
1315 East West Highway
SSMC3 room 6210
Silver Spring, MD 20910
Office: 240-533-0051
Cell: 571-332-4508

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National Oceanic and Atmospheric Administration Mail - Fwd: ATTENTION REQUIRED Harvey DTON

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Michael C. Davidson
Operations Manager
NOAA Office of Coast Survey
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Silver Spring, MD 20910
240-533-0058 office ***new office number***
757-771-5305 work cell
michael.davidson@noaa.gov



Fwd: ATTENTION REQUIRED Harvey DTON

1 message

Michael Davidson - NOAA Federal <michael.davidson@noaa.gov> Mon, Sep 4, 2017 at 7:50 PM
To: "Duke, Matthew A CIV USARMY CESWG (US)" <Matthew.A.Duke@usace.army.mil>, "Frabotta, Christopher SWG" <Christopher.C.Frabotta@usace.army.mil>
Cc: Ryan Wartick <Ryan.Wartick@noaa.gov>, Alan Bunn <alan.bunn@noaa.gov>, _NOS OCS NSD Response <nsd.response@noaa.gov>, Mike Annis Hstp <Michael.J.Annis@noaa.gov>, Eli Smith - NOAA Federal <eli.r.smith@noaa.gov>, Joshua Bergeron - NOAA Federal <joshua.bergeron@noaa.gov>

Matt,

#4 of 4.

I will send a least depth from the obstruction IVO 114B as soon as I get that. Hopefully it will be soon.

V/R,
Mike

----- Forwarded message -----

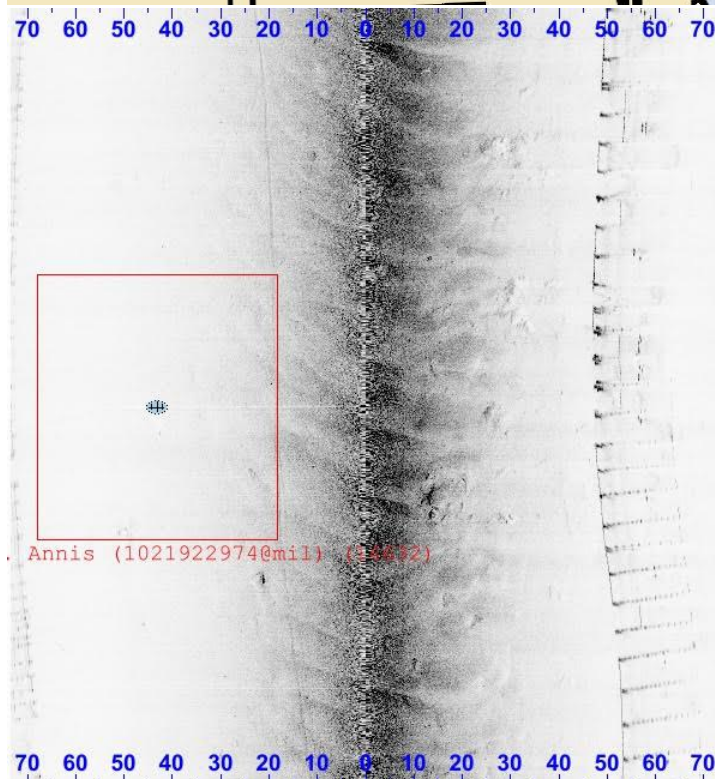
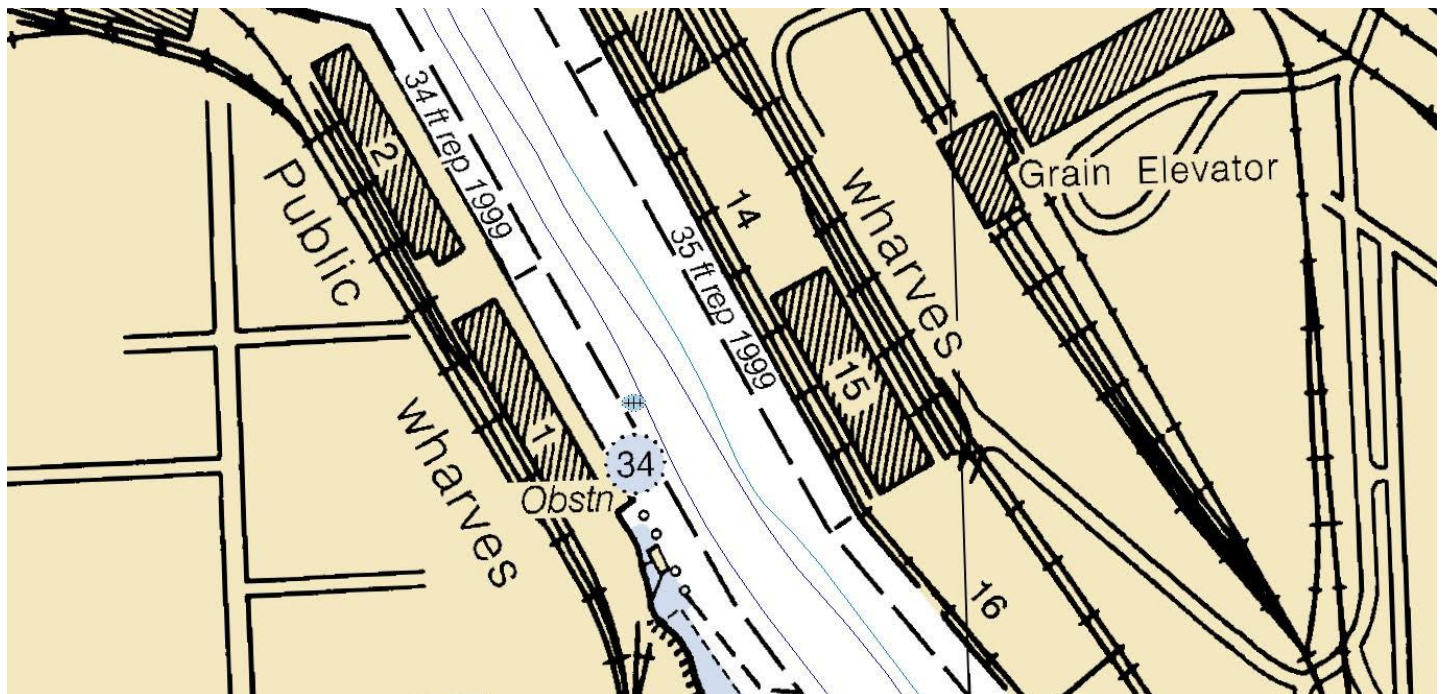
From: Michael Annis - NOAA Federal <michael.j.annis@noaa.gov>
Date: Mon, Sep 4, 2017 at 7:34 PM
Subject: ATTENTION REQUIRED Harvey DTON
To: _NOS OCS NSD Response <NSD.Response@noaa.gov>
Cc: Alan Bunn - NOAA Federal <alan.bunn@noaa.gov>

Houston Ship Channel - Turning Basin
9/4/2017
Lat: 29 44 44.7N
Lon: 095 17 07.8W

Geodesy Information: NAD83 Texas State Plane South Central

Approximate height off the bottom: 4.25 feet (Measured in Caris SIPS)

Small object, obscured in the screen grab.



Michael J. Annis
Physical Scientist
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National Oceanic and Atmospheric Administration Mail - Fwd: ATTENTION REQUIRED Harvey DTON

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--

Michael C. Davidson
Operations Manager
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Silver Spring, MD 20910
240-533-0058 office ***new office number***
757-771-5305 work cell
michael.davidson@noaa.gov

**ATTENTION DTON: Hurricane Harvey - areas of shoaling**

1 message

Michael Davidson - NOAA Federal <michael.davidson@noaa.gov>

Tue, Sep 5, 2017 at 12:52 PM

To: "Duke, Matthew A CIV USARMY CESWG (US)" <Matthew.A.Duke@usace.army.mil>, "Frabotta, Christopher SWG" <Christopher.C.Frabotta@usace.army.mil>, Alan Bunn <alan.bunn@noaa.gov>, _NOS OCS NSD Response <nsd.response@noaa.gov>, Dan Jacobs <dan.jacobs@noaa.gov>, Erin Diurba - NOAA Affiliate <erin.diurba@noaa.gov>, Charles Rowland - NOAA Federal <charles.rowland@noaa.gov>

Matt,

I believe that you all are aware of some of these areas already, but considering the 40' draft restriction on the Upper HSC, I wanted you to see the multibeam that we have of the area from Morgan's Point to San Jac to supplement any cross section data that you may have already. We will get you some XYZ data on this shortly.

Areas of particular concern are:


- 1) Shoaling into the high 20's at the north end of Lynchburg Inbound Range
- 2) Shoaling into high 30's along west side of HSC between 95 and 99 (NE corner of Spillman's Island)
- 3) Shoaling to the high 30's in the north part of Barbour's Cut Flare.
- 4) Depths along channel edges for much of the HSC are at or near the current 40' draft restriction.

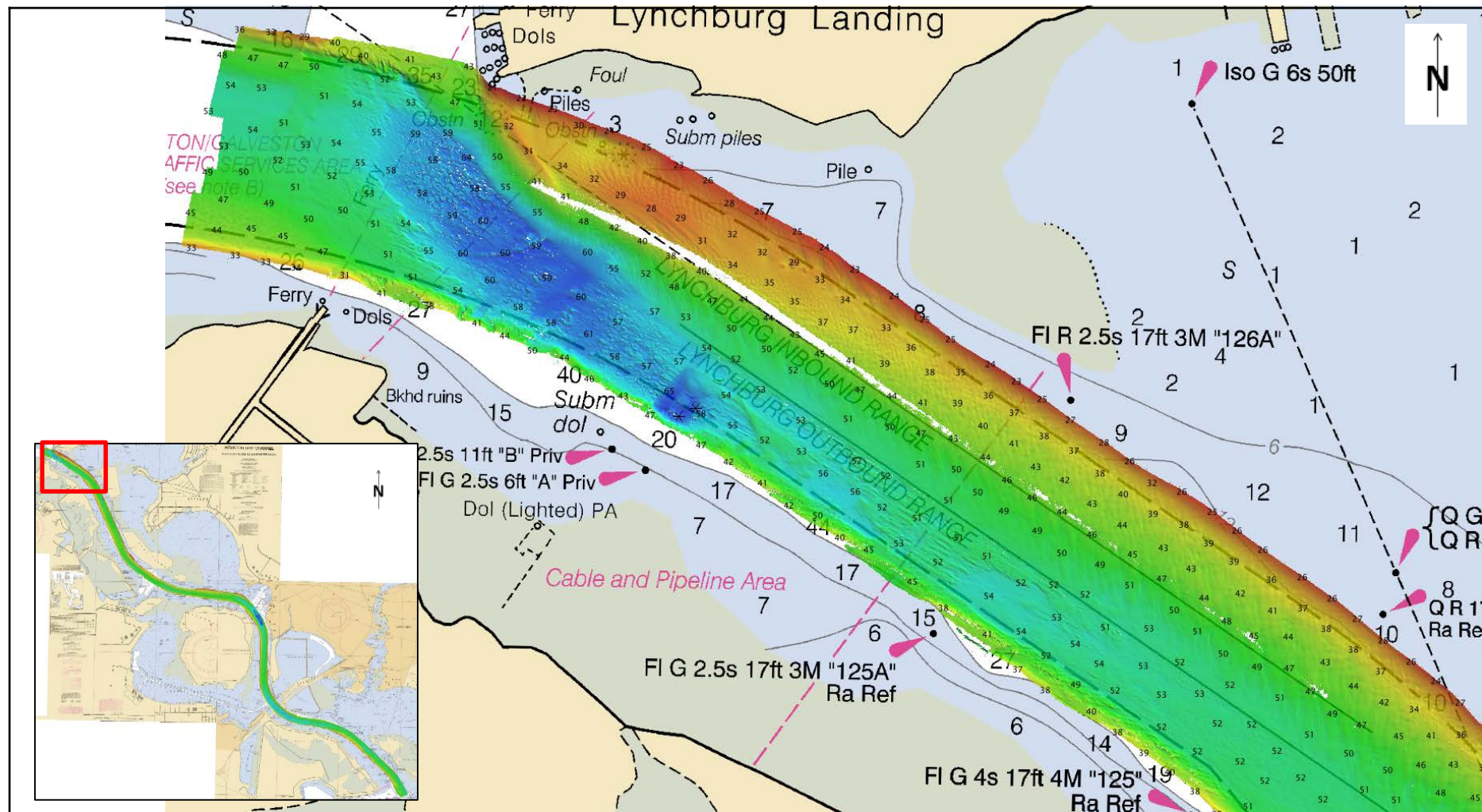
See attached sounding plots for details.

V/R,
Mike

--


Michael C. Davidson
Operations Manager
NOAA Office of Coast Survey
Navigation Response Branch
1315 East West Hwy, SSMC3, Sta 6216 ***new station number***
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240-533-0058 office ***new office number***
757-771-5305 work cell
michael.davidson@noaa.gov

 **Morgan Pt to San Jac_multibeam_coverage_overview.pdf**
10715K



Chartlet 1 of 11: Bathymetry
Preliminary Data - NOT FOR NAVIGATION

Bathymetry with concurrent side scan were acquired and inspected from Barbour's Terminal Channel at Morgan's Point to Lynchburg Landing. Possible obstructions were found in the channel. Data reflects state of seafloor on the date surveyed.

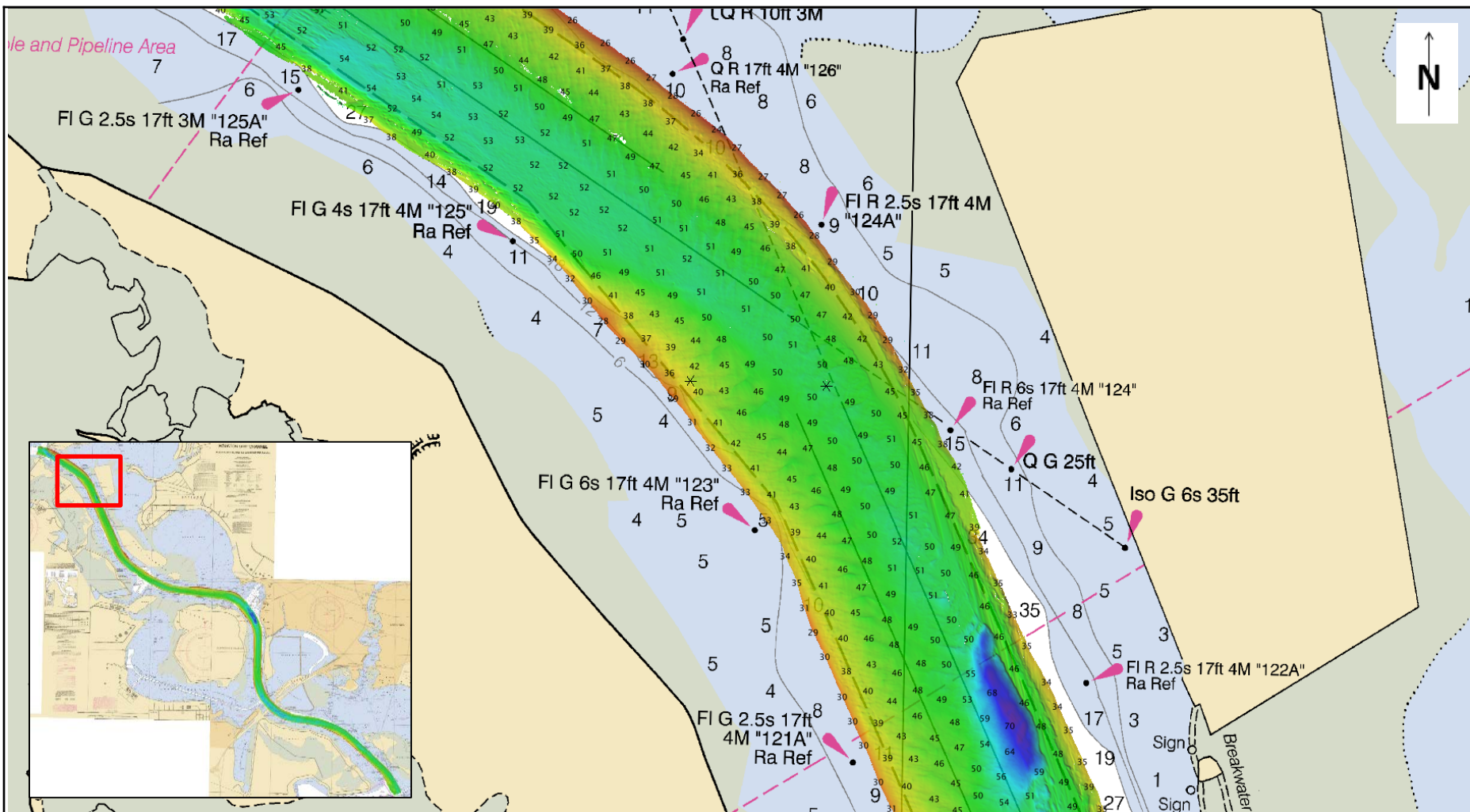


NATIONAL OCEANIC AND
 ATMOSPHERIC ADMINISTRATION
 NATIONAL OCEAN SERVICE

Project:	Hurricane Harvey	Sounding Units:	Feet
Survey:	San Jacinto Bay	Sounding Datum:	MLLW
State:	Texas	Horizontal Datum:	NAD 83 UTM 15 N
Locality:	Houston	Chart Number:	11327
Sublocality:	San Jacinto Bay		11328
Survey Scale:	1:25,000		11329

NOAA NRT 4
D. Jacobs
Commanding

Survey Date:
 09/03/2017
 09/05/2017



Chartlet 2 of 11: Bathymetry
Preliminary Data - NOT FOR NAVIGATION

Bathymetry with concurrent side scan were acquired and inspected from Barbour's Terminal Channel at Morgan's Point to Lynchburg Landing. Possible obstructions were found in the channel. Data reflects state of seafloor on the date surveyed.



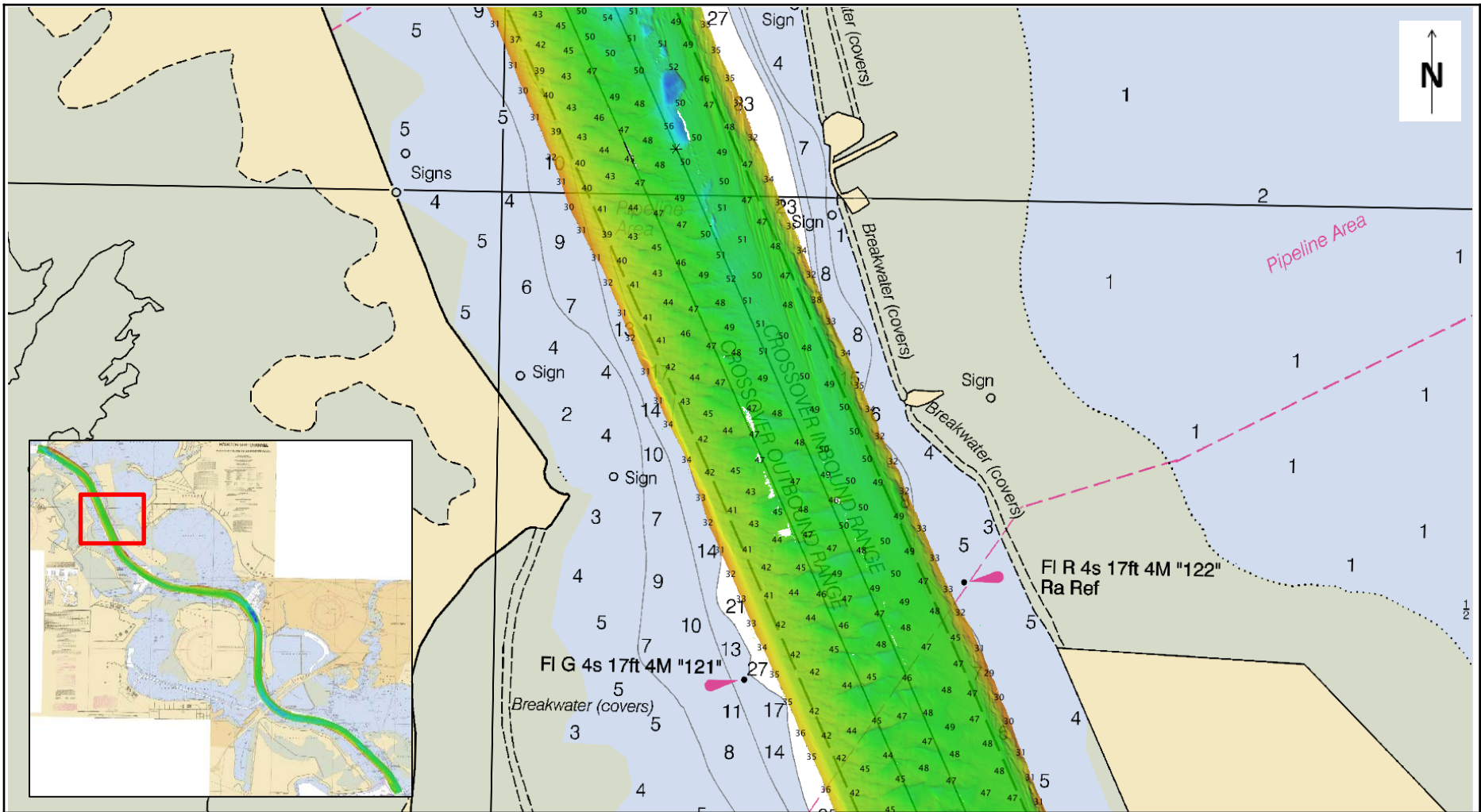
NATIONAL OCEANIC AND
 ATMOSPHERIC ADMINISTRATION
 NATIONAL OCEAN SERVICE

Project: Hurricane Harvey
Survey: San Jacinto Bay
State: Texas
Locality: Houston
Sublocality: San Jacinto Bay
Survey Scale: 1:25,000

Sounding Units: Feet
Sounding Datum: MLLW
Horizontal Datum: NAD 83 UTM 15 N
Chart Number: 11327
 11328
 11329

NOAA NRT 4
D. Jacobs
Commanding

Survey Date:
 09/03/2017
 09/05/2017



Chartlet 3 of 11: Bathymetry
Preliminary Data - NOT FOR NAVIGATION

Bathymetry with concurrent side scan were acquired and inspected from Barbour's Terminal Channel at Morgan's Point to Lynchburg Landing. Possible obstructions were found in the channel. Data reflects state of seafloor on the date surveyed.



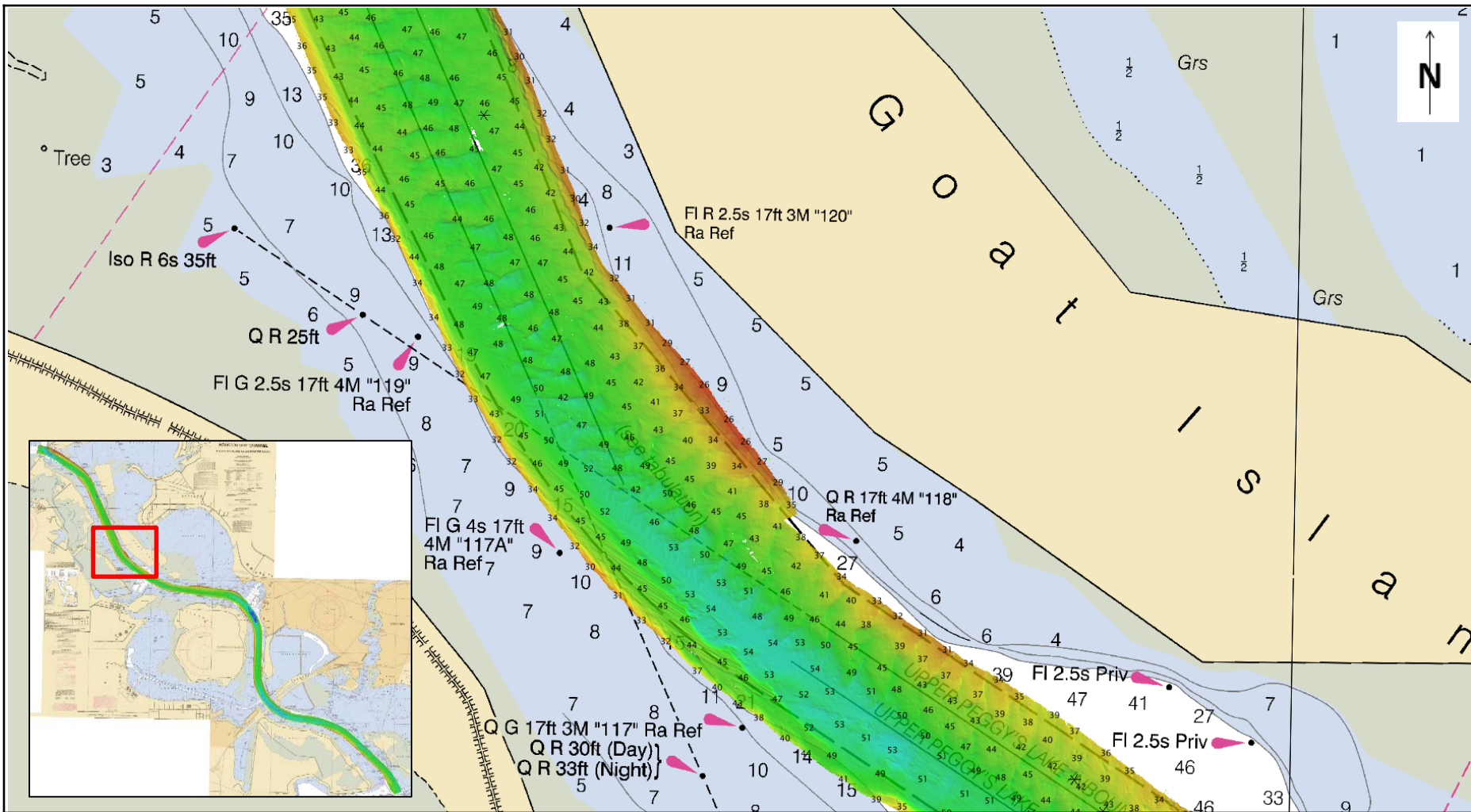
NATIONAL OCEANIC AND
 ATMOSPHERIC ADMINISTRATION
 NATIONAL OCEAN SERVICE

Project: Hurricane Harvey
Survey: San Jacinto Bay
State: Texas
Locality: Houston
Sublocality: San Jacinto Bay
Survey Scale: 1:25,000

Sounding Units: Feet
Sounding Datum: MLLW
Horizontal Datum: NAD 83 UTM 15 N
Chart Number: 11327
 11328
 11329

NOAA NRT 4
D. Jacobs
Commanding

Survey Date:
 09/03/2017
 09/05/2017



Chartlet 4 of 11: Bathymetry
Preliminary Data - NOT FOR NAVIGATION

Bathymetry with concurrent side scan were acquired and inspected from Barbour's Terminal Channel at Morgan's Point to Lynchburg Landing. Possible obstructions were found in the channel. Data reflects state of seafloor on the date surveyed.



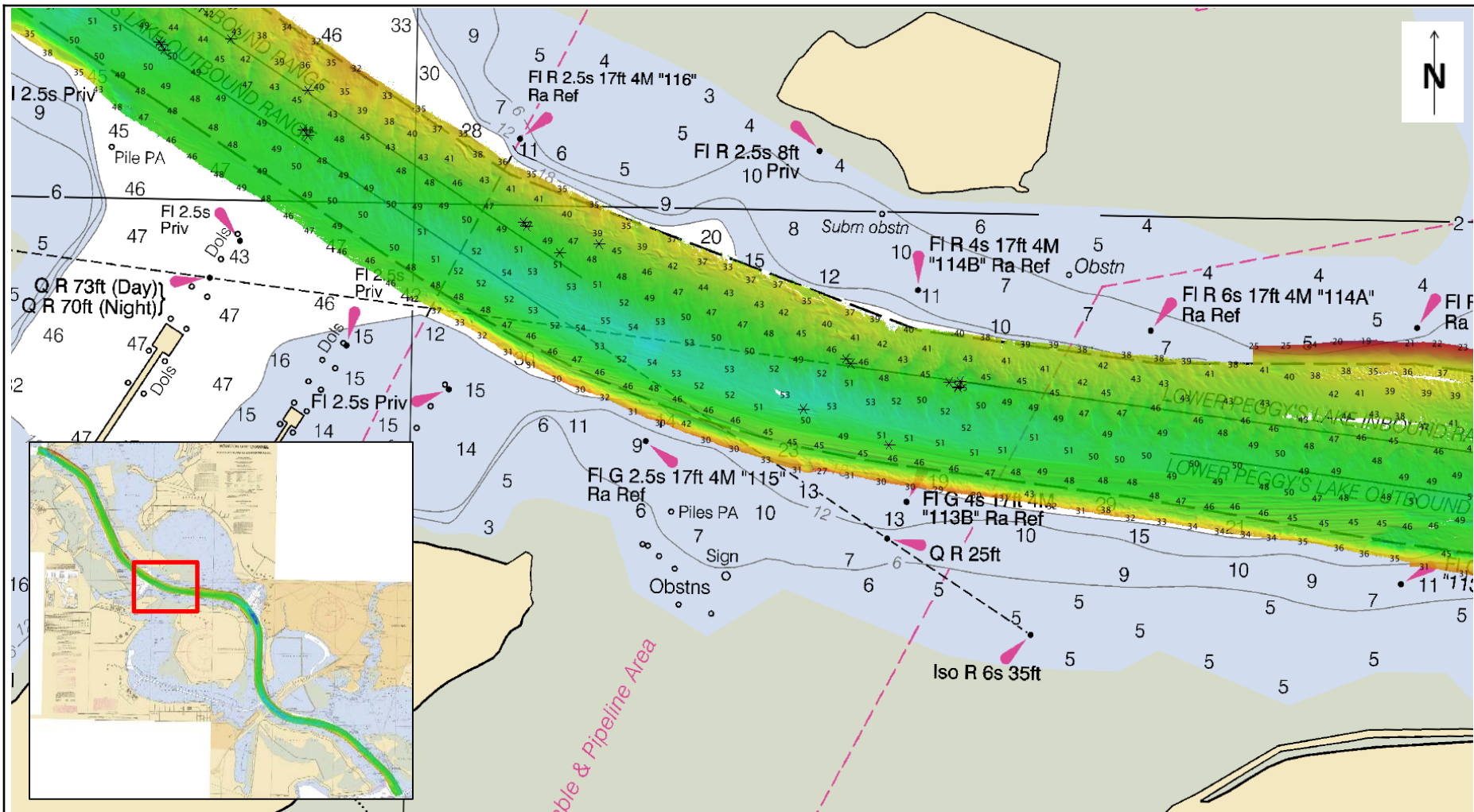
NATIONAL OCEANIC AND
 ATMOSPHERIC ADMINISTRATION
 NATIONAL OCEAN SERVICE

Project: Hurricane Harvey
Survey: San Jacinto Bay
State: Texas
Locality: Houston
Sublocality: San Jacinto Bay
Survey Scale: 1:25,000

Sounding Units: Feet
Sounding Datum: MLLW
Horizontal Datum: NAD 83 UTM 15 N
Chart Number: 11327
 11328
 11329


NOAA NRT 4
D. Jacobs
Commanding

Survey Date:
 09/03/2017
 09/05/2017



Chartlet 5 of 11: Bathymetry
Preliminary Data - NOT FOR NAVIGATION

Bathymetry with concurrent side scan were acquired and inspected from Barbour's Terminal Channel at Morgan's Point to Lynchburg Landing. Possible obstructions were found in the channel. Data reflects state of seafloor on the date surveyed.

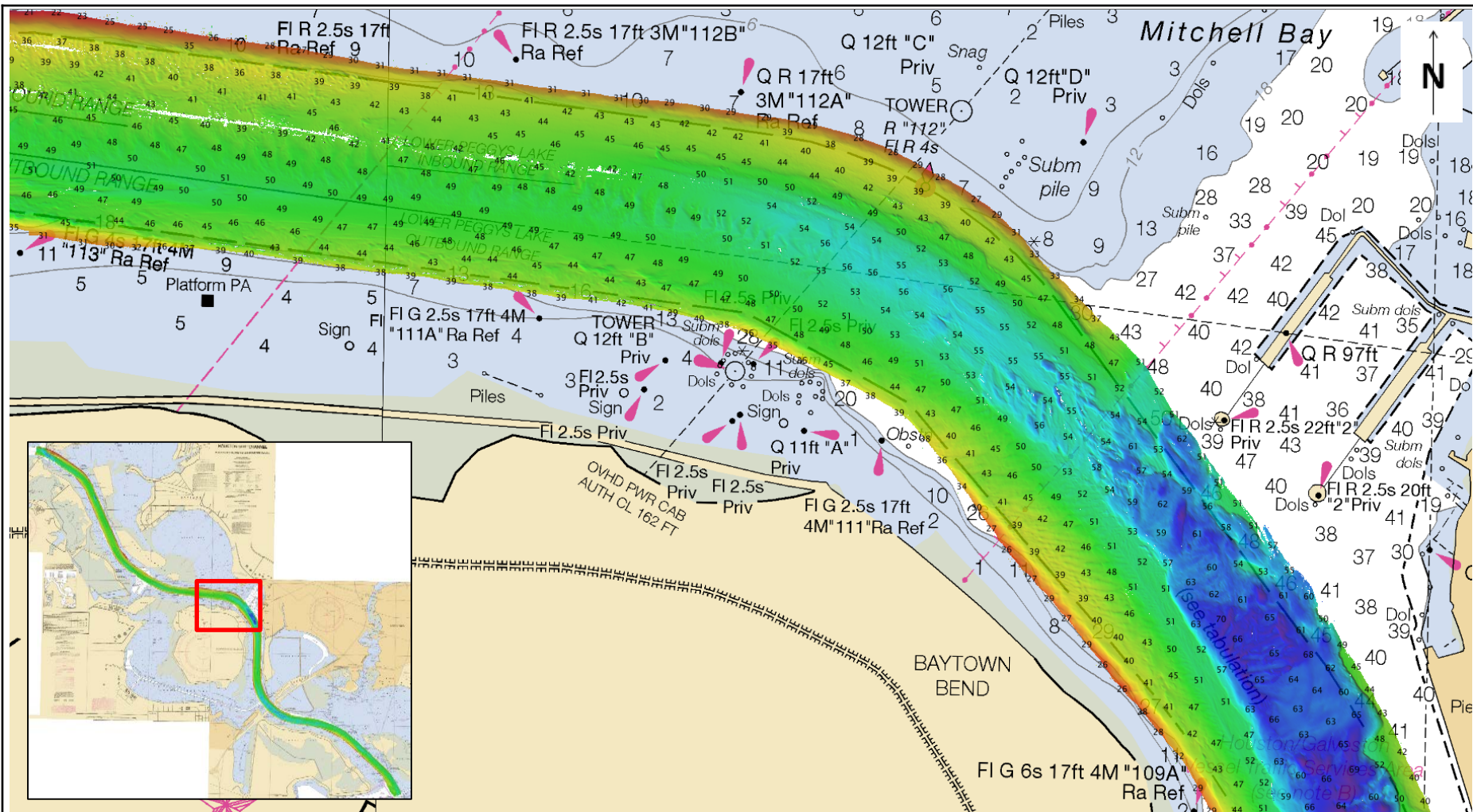


NATIONAL OCEANIC AND
 ATMOSPHERIC ADMINISTRATION
 NATIONAL OCEAN SERVICE

Project:	Hurricane Harvey	Sounding Units:	Feet
Survey:	San Jacinto Bay	Sounding Datum:	MLLW
State:	Texas	Horizontal Datum:	NAD 83 UTM 15 N
Locality:	Houston	Chart Number:	11327
Sublocality:	San Jacinto Bay		11328
Survey Scale:	1:25,000		11329

NOAA NRT 4
D. Jacobs
Commanding

Survey Date:
 09/03/2017
 09/05/2017



Chartlet 6 of 11: Bathymetry
Preliminary Data - NOT FOR NAVIGATION

Bathymetry with concurrent side scan were acquired and inspected from Barbour's Terminal Channel at Morgan's Point to Lynchburg Landing. Possible obstructions were found in the channel. Data reflects state of seafloor on the date surveyed.

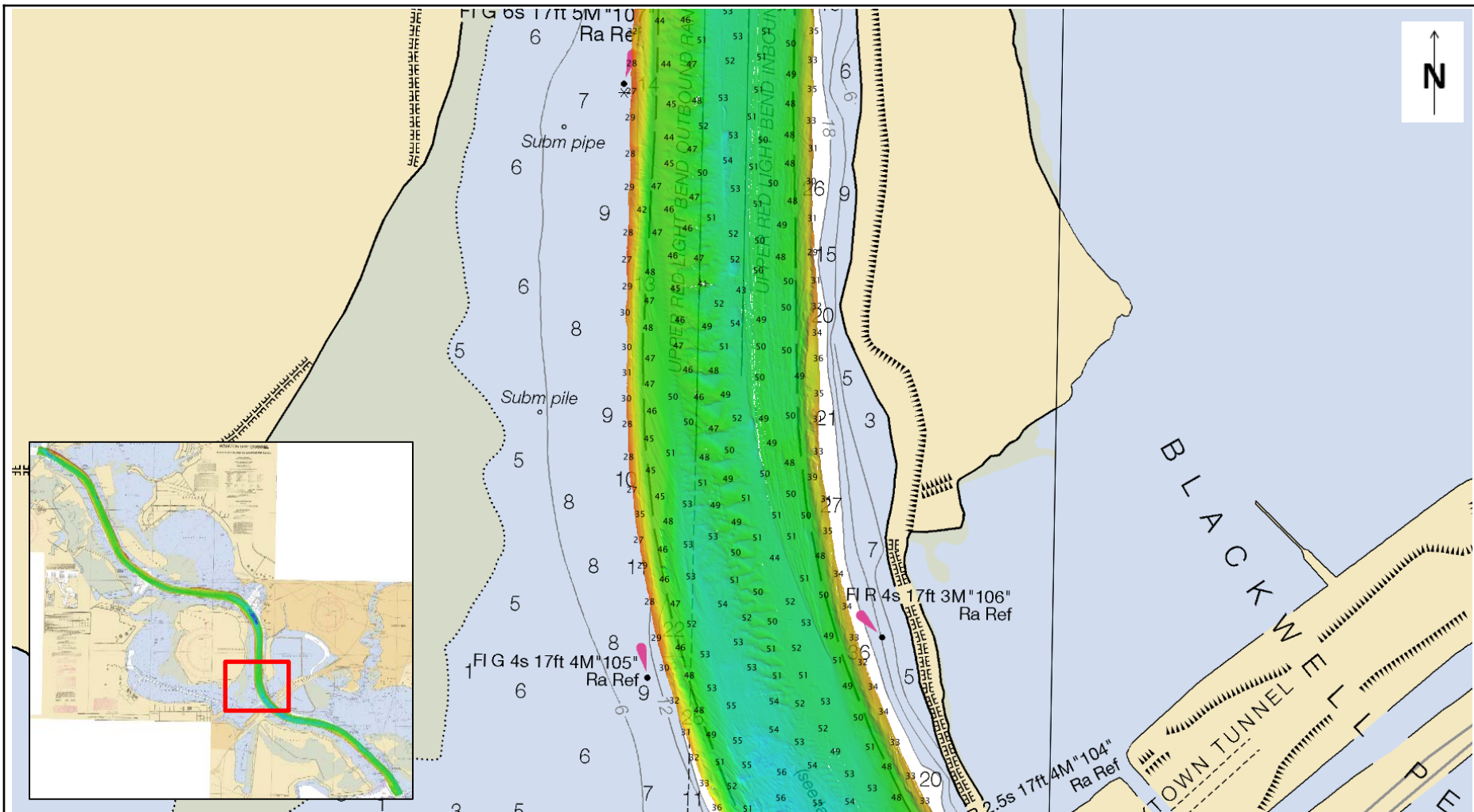


NATIONAL OCEANIC AND
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Project:	Hurricane Harvey	Sounding Units:	Feet
Survey:	San Jacinto Bay	Sounding Datum:	MLLW
State:	Texas	Horizontal Datum:	NAD 83 UTM 15 N
Locality:	Houston	Chart Number:	11327
Sublocality:	San Jacinto Bay		11328
Survey Scale:	1:25,000		11329

NOAA NRT 4
D. Jacobs
Commanding

Survey Date:
 09/03/2017
 09/05/2017



Chartlet 8 of 11: Bathymetry
Preliminary Data - NOT FOR NAVIGATION

Bathymetry with concurrent side scan were acquired and inspected from Barbour's Terminal Channel at Morgan's Point to Lynchburg Landing. Possible obstructions were found in the channel. Data reflects state of seafloor on the date surveyed.



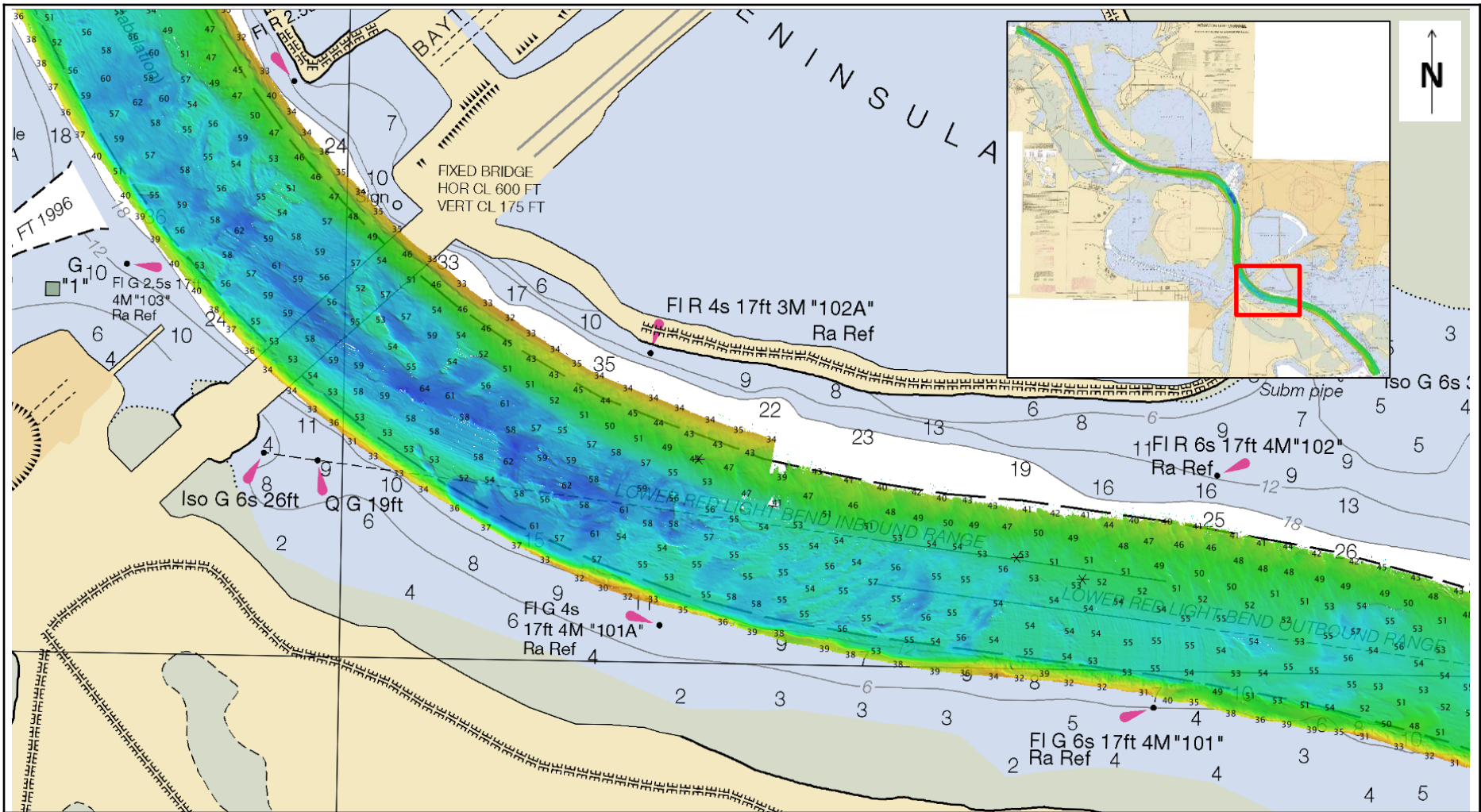
NATIONAL OCEANIC AND
 ATMOSPHERIC ADMINISTRATION
 NATIONAL OCEAN SERVICE

Project: Hurricane Harvey
Survey: San Jacinto Bay
State: Texas
Locality: Houston
Sublocality: San Jacinto Bay
Survey Scale: 1:25,000

Sounding Units: Feet
Sounding Datum: MLLW
Horizontal Datum: NAD 83 UTM 15 N
Chart Number: 11327
 11328
 11329

NOAA NRT 4
D. Jacobs
Commanding

Survey Date:
 09/03/2017
 09/05/2017



Chartlet 9 of 11: Bathymetry
Preliminary Data - NOT FOR NAVIGATION

Bathymetry with concurrent side scan were acquired and inspected from Barbour's Terminal Channel at Morgan's Point to Lynchburg Landing. Possible obstructions were found in the channel. Data reflects state of seafloor on the date surveyed.

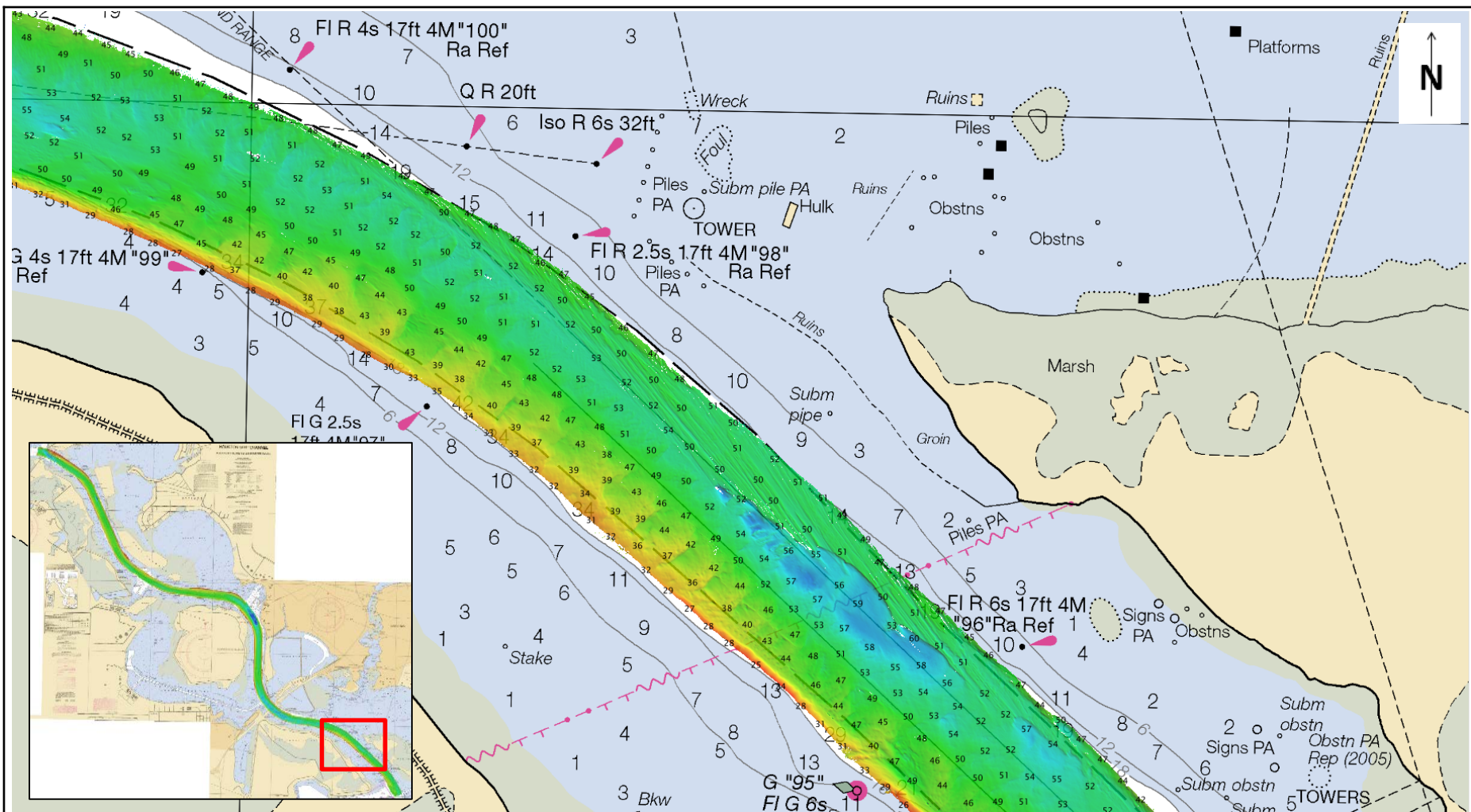


NATIONAL OCEANIC AND
 ATMOSPHERIC ADMINISTRATION
 NATIONAL OCEAN SERVICE

Project:	Hurricane Harvey	Sounding Units:	Feet
Survey:	San Jacinto Bay	Sounding Datum:	MLLW
State:	Texas	Horizontal Datum:	NAD 83 UTM 15 N
Locality:	Houston	Chart Number:	11327
Sublocality:	San Jacinto Bay		11328
Survey Scale:	1:25,000		11329

NOAA NRT 4
D. Jacobs
Commanding

Survey Date:
 09/03/2017
 09/05/2017



Chartlet 10 of 11: Bathymetry
Preliminary Data - NOT FOR NAVIGATION

Bathymetry with concurrent side scan were acquired and inspected from Barbour's Terminal Channel at Morgan's Point to Lynchburg Landing. Possible obstructions were found in the channel. Data reflects state of seafloor on the date surveyed.



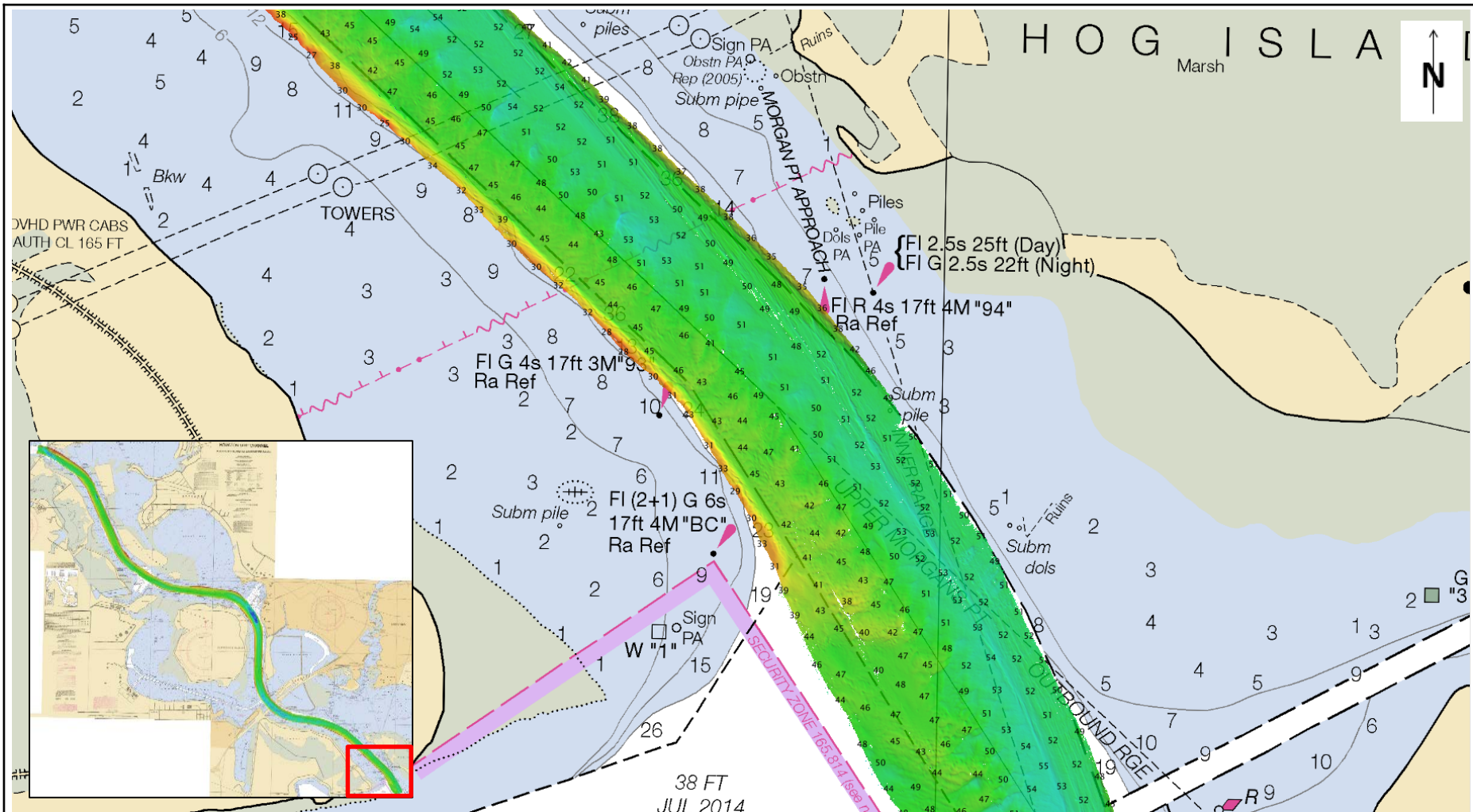
NATIONAL OCEANIC AND
 ATMOSPHERIC ADMINISTRATION
 NATIONAL OCEAN SERVICE

Project: Hurricane Harvey
Survey: San Jacinto Bay
State: Texas
Locality: Houston
Sublocality: San Jacinto Bay
Survey Scale: 1:25,000

Sounding Units: Feet
Sounding Datum: MLLW
Horizontal Datum: NAD 83 UTM 15 N
Chart Number: 11327
 11328
 11329

NOAA NRT 4
D. Jacobs
Commanding

Survey Date:
 09/03/2017
 09/05/2017



Chartlet 11 of 11: Bathymetry
Preliminary Data - NOT FOR NAVIGATION

Bathymetry with concurrent side scan were acquired and inspected from Barbour's Terminal Channel at Morgan's Point to Lynchburg Landing. Possible obstructions were found in the channel. Data reflects state of seafloor on the date surveyed.



NATIONAL OCEANIC AND
 ATMOSPHERIC ADMINISTRATION
 NATIONAL OCEAN SERVICE

Project: Hurricane Harvey
Survey: San Jacinto Bay
State: Texas
Locality: Houston
Sublocality: San Jacinto Bay
Survey Scale: 1:25,000

Sounding Units: Feet
Sounding Datum: MLLW
Horizontal Datum: NAD 83 UTM 15 N
Chart Number: 11327
 11328
 11329

NOAA NRT 4
D. Jacobs
Commanding

Survey Date:
 09/03/2017
 09/05/2017

APPROVAL PAGE

D00230

Data partially meet 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 specific areas as delineated during office processing.

The following products will be sent to NCEI for archive

- Descriptive Report Memo
- Collection of Bathymetric Attributed Grids (BAGs)
- Collection of backscatter mosaics
- Processed survey data and records
- GeoPDF of survey products

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

Approved: _____

Commander Olivia Hauser, NOAA
Chief, Pacific Hydrographic Branch