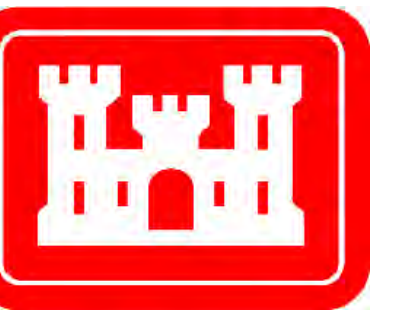
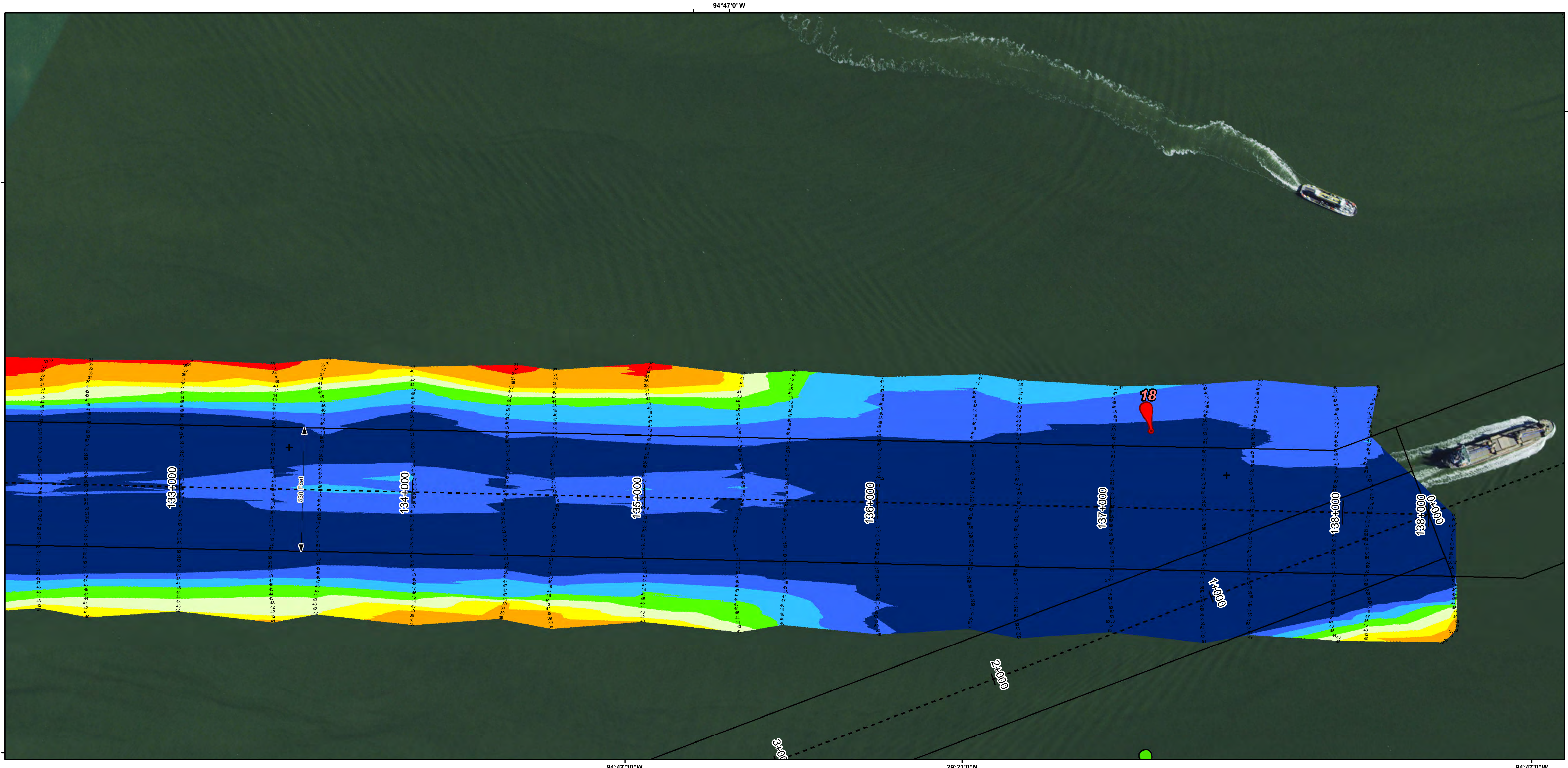
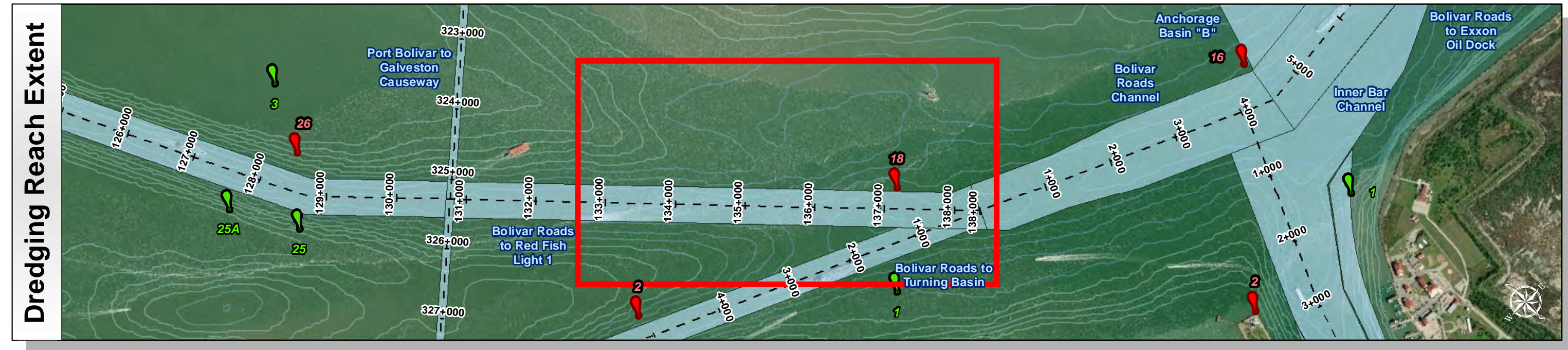
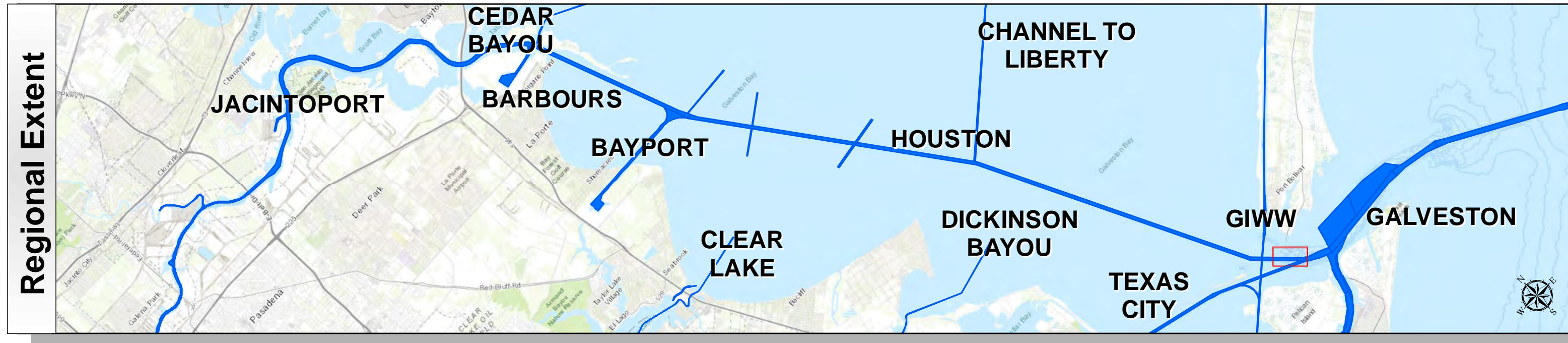


# Houston Ship Channel: Bolivar Roads to Red Fish Light 1



U.S. Army Corps of Engineers  
Galveston District

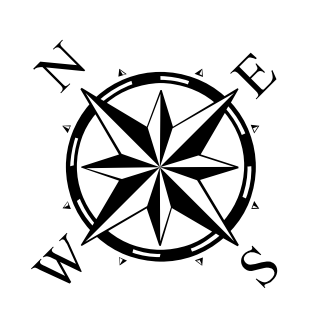


Channel Features	Aids to Navigation	MLLW
Channel Toe	Green Side Aids	0 - 30
Channel Center Line	Red Side Aids	30 - 35
Channel Station Lines	Lights	35 - 40
Channel Dimensions		40 - 42
		42 - 44
		44 - 46
		46 - 48
		48 - 50
		50+

NOTES:  
 1. HORIZONTAL COORDINATES ARE REFERENCED TO TEXAS STATE PLANE COORDINATE SYSTEM, SOUTH CENTRAL ZONE NAD83 US SURVEY FEET.  
 2. ELEVATIONS ARE REFERENCED TO MEAN LOWER LOW TIDE (MLLW) DATUM.  
 3. THIS PROJECT WAS DESIGNED BY THE GALVESTON DISTRICT OF THE U.S. ARMY CORPS OF ENGINEERS. THE INITIALS AND SIGNATURES AND REGISTRATION DESIGNATIONS OF INDIVIDUALS APPEAR ON THESE PROJECT DOCUMENTS WITHIN THE SCOPE OF THEIR EMPLOYMENT AS REQUIRED BY ER1110-1-8152.

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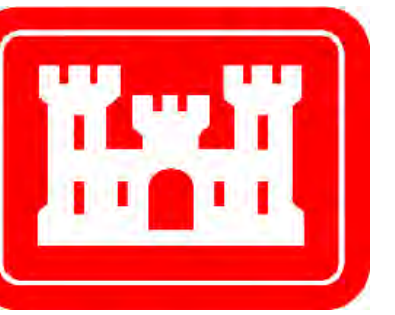


Coordinate System	Dredging Reach Extent	Hydrographic Survey Extent
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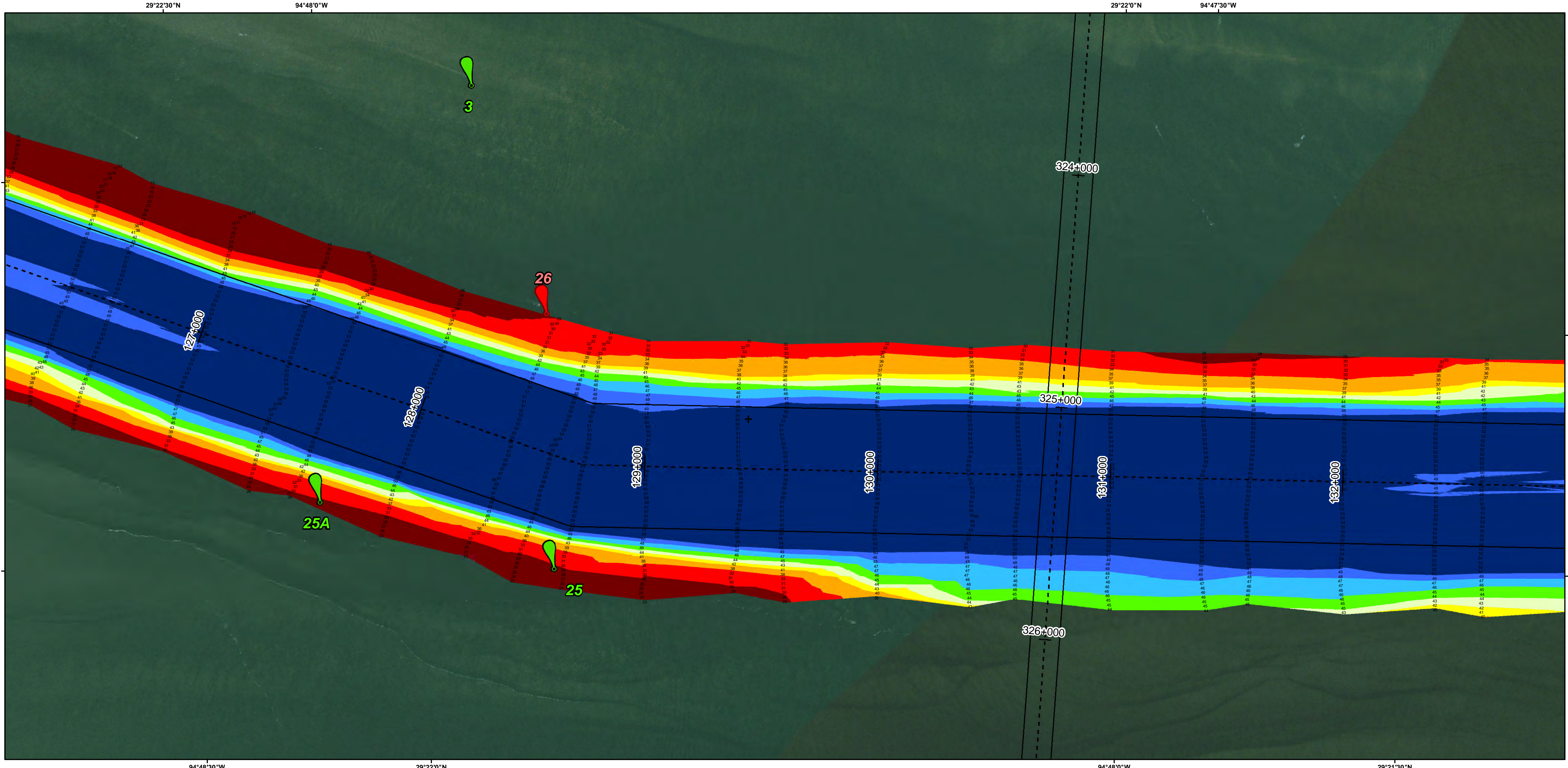
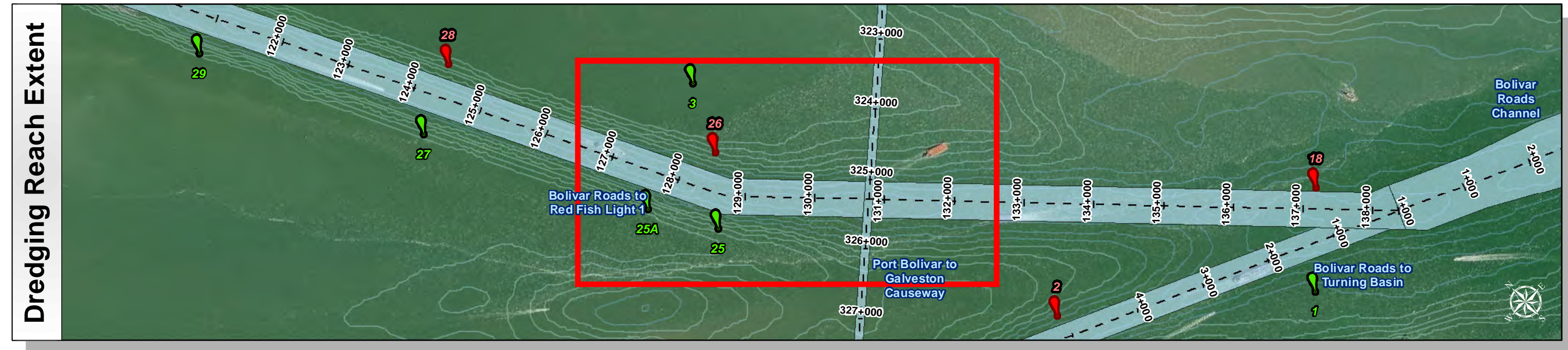
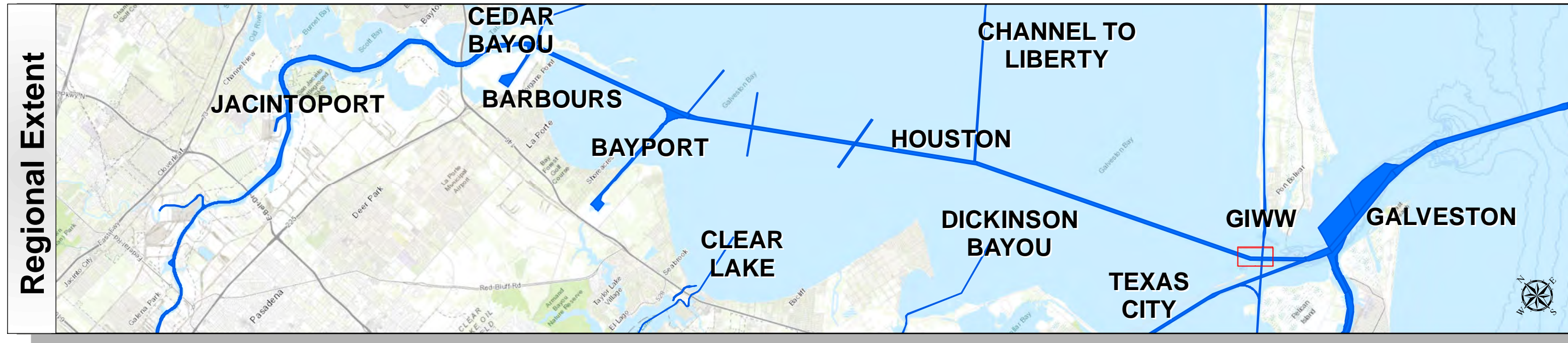
Survey Date(s): 01 April 2019	Authorized Depth: -46ft.
Page: 1 of 61	Side Slope Ratio: (Rise : Run)
Scale: 1:2,500	Additional Imagery: © DigitalGlobe Inc.
Mapped by: MSAOX PAC	Print Date: 5/16/2019
Additional Info:	

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 U.S. ARMY ENGINEER DISTRICT  
 CORPS OF ENGINEERS  
 GALVESTON, TEXAS  
**Station: 138+476 to 78+844**  
**HOUSTON**  
 HOUSTON, TEXAS

# Houston Ship Channel: Bolivar Roads to Red Fish Light 1



U.S. Army Corps of Engineers  
Galveston District



Channel Features	Aids to Navigation	MLLW
Channel Toe	Green Side Aids	0 - 30
Channel Center Line	Red Side Aids	30 - 35
Channel Station Lines	Lights	35 - 40
Channel Dimensions		40 - 42
		42 - 44
		44 - 46
		46 - 48
		48 - 50
		50+
		NOAA Bathymetry (DREDGING REACH EXTENT)
		0 - 10
		10 - 15
		15 - 20
		20 - 25
		25 - 30
		30 - 50

NOTES:

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Coordinate System	Dredging Reach Extent	Hydrographic Survey Extent
NAD 1983 StatePlane Texas South Central FIPS 4204 Feet Projection: Lambert Conformal Conic / Datum: North American 1983	0 0.25 0.5 1 Miles	0 215 430 860 Feet

Survey Date(s): 01 April 2019	Authorized Depth: -46ft.
Page: 2 of 61	Side Slope Ratio: (Rise : Run)
Scale: 1:2,500	Additional Imagery: © DigitalGlobe Inc.
Mapped by: MSAOX PAC	Print Date: 5/16/2019
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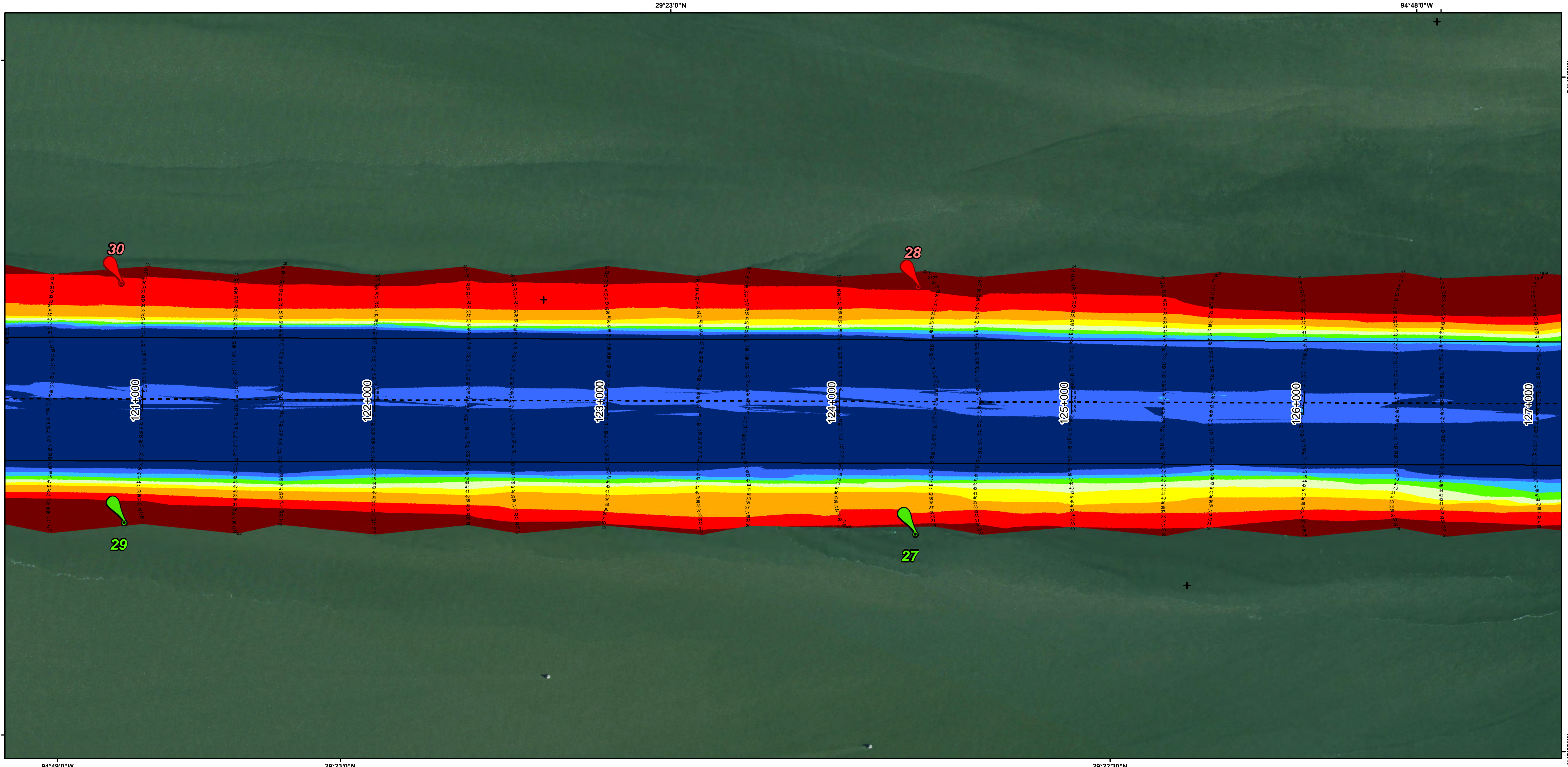
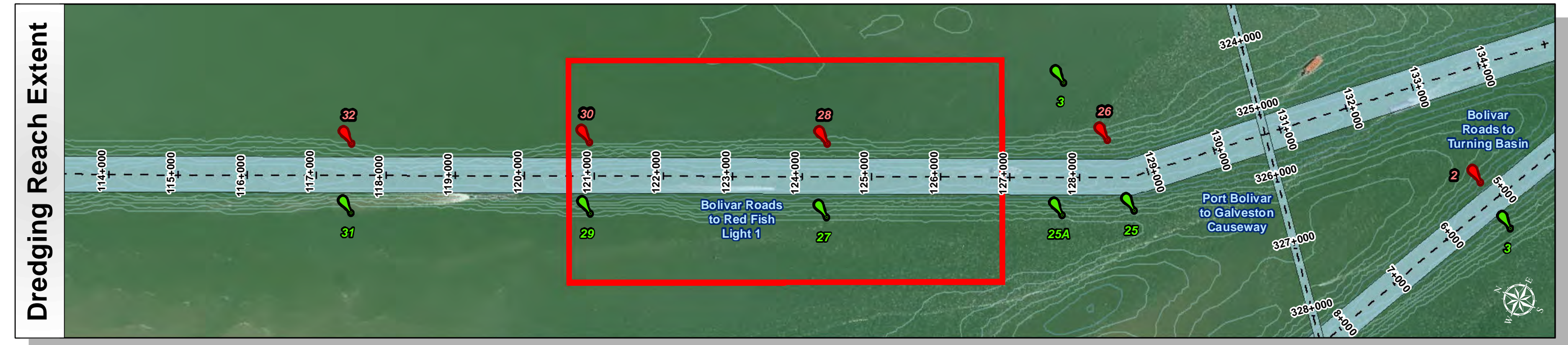
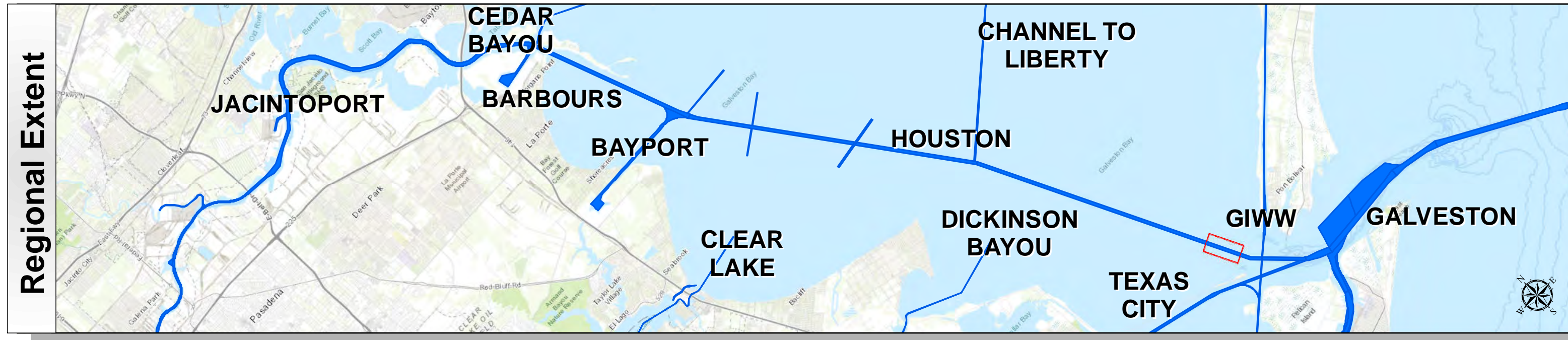
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U.S. ARMY ENGINEER DISTRICT  
CORPS OF ENGINEERS  
GALVESTON, TEXAS

**Station: 138+476 to 78+844**  
**HOUSTON**  
HOUSTON, TEXAS

# Houston Ship Channel: Bolivar Roads to Red Fish Light 1



U.S. Army Corps of Engineers  
Galveston District



**Channel Features**

- Channel Toe
- Channel Center Line
- Channel Station Lines
- Channel Dimensions

**Aids to Navigation**

- Green Side Aids
- Red Side Aids
- Lights

**MLLW**

0 - 30	30 - 35	35 - 40	40 - 42	42 - 44	44 - 46	46 - 48	48 - 50	50+
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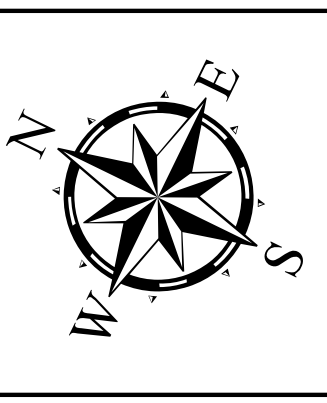
**NOAA Bathymetry (DREDGING REACH EXTENT)**

0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 50
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Coordinate System: NAD 1983 StatePlane Texas South Central FIPS 4204 Feet  
Projection: Lambert Conformal Conic /Datum: North American 1983

**Dredging Reach Extent**

**Hydrographic Survey Extent**

Survey Date(s): 01 April 2019	Authorized Depth: -46ft.
Page: 3 of 61	Side Slope Ratio: (Rise : Run)
Scale: 1:2,500	Additional Imagery: © DigitalGlobe Inc.
Mapped by: MSAOX PAC	Print Date: 5/16/2019
Additional Info :	

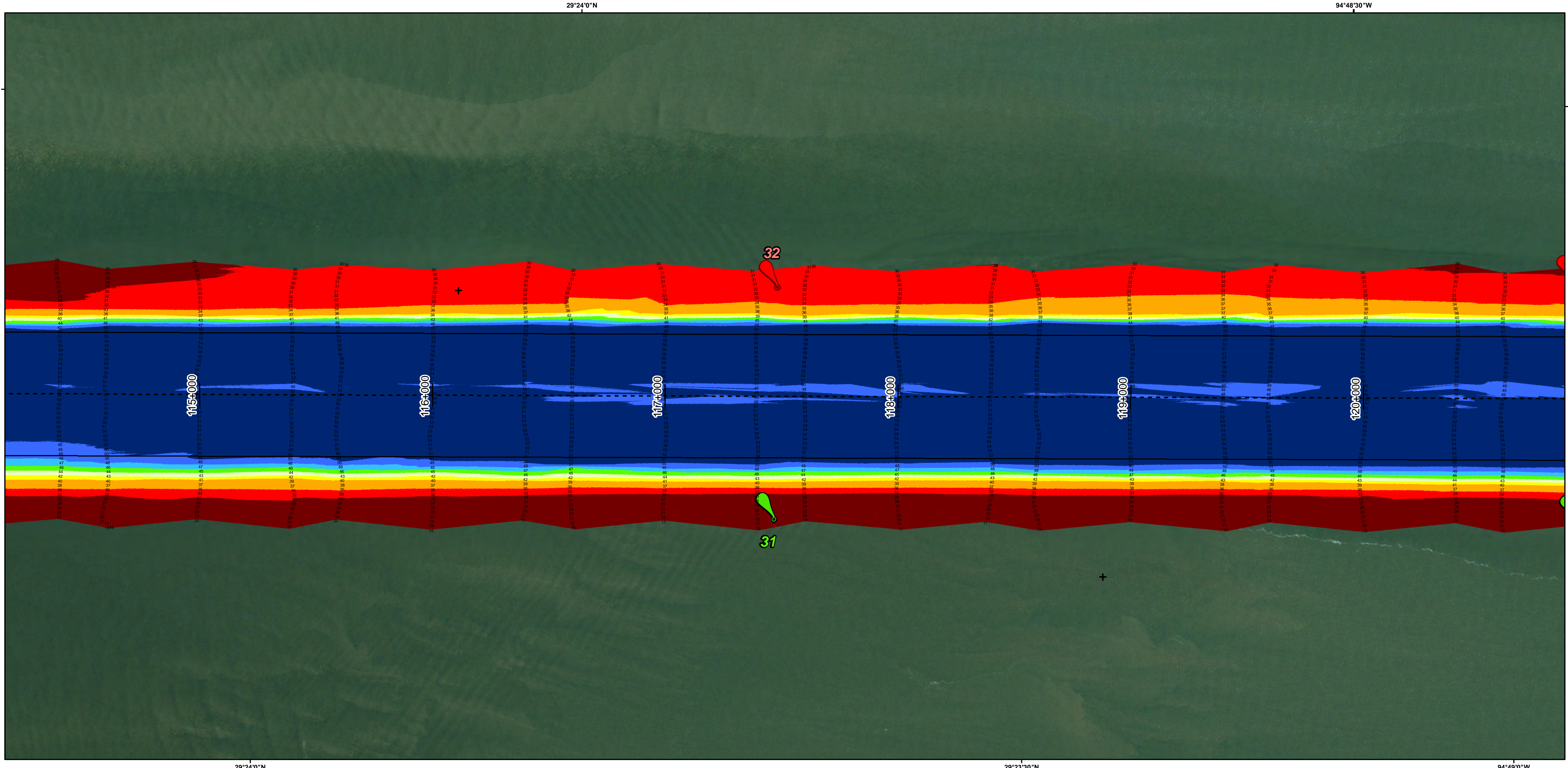
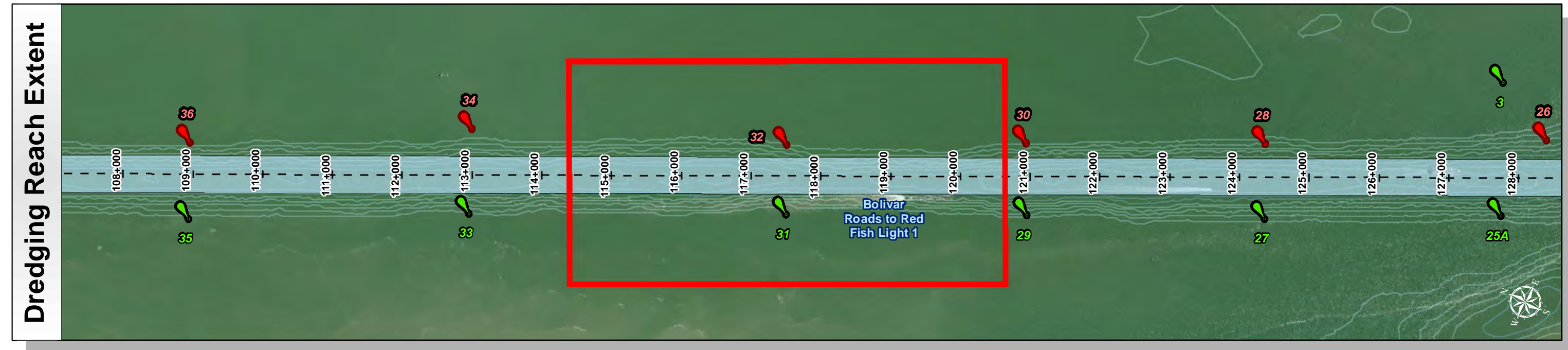
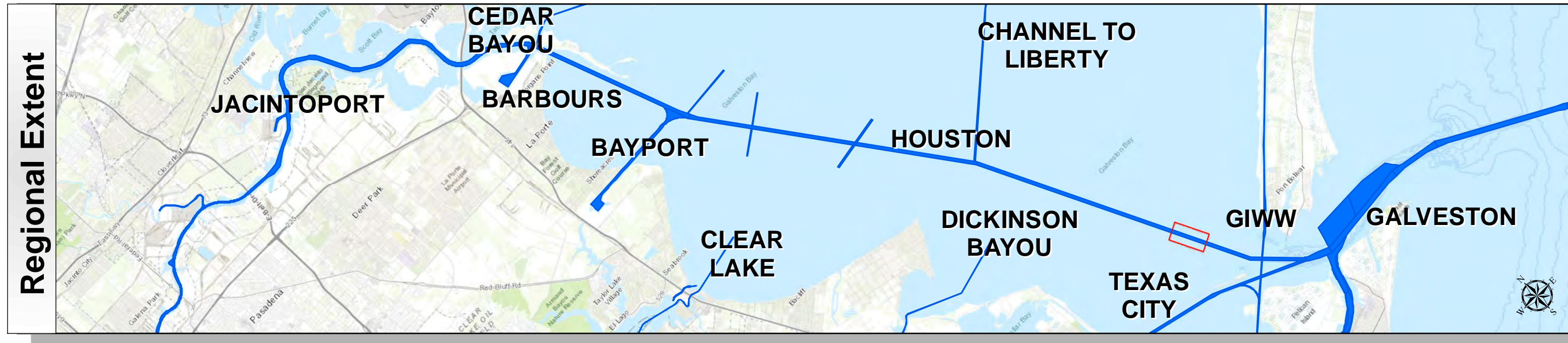
**HYDROGRAPHIC SURVEY**  
U.S. ARMY ENGINEER DISTRICT  
CORPS OF ENGINEERS  
GALVESTON, TEXAS

**Station: 138+476 to 78+844**  
**HOUSTON**  
HOUSTON, TEXAS

# Houston Ship Channel: Bolivar Roads to Red Fish Light 1



U.S. Army Corps of Engineers  
Galveston District



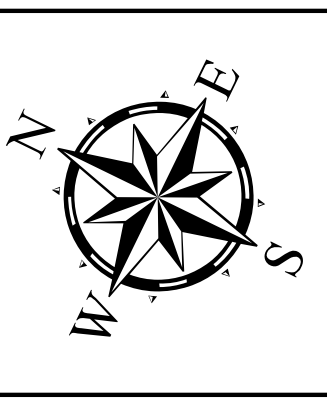
Channel Features	Aids to Navigation	MLLW						
<ul style="list-style-type: none"> <li>Channel Toe</li> <li>Channel Center Line</li> <li>Channel Station Lines</li> <li>Channel Dimensions</li> </ul>	<ul style="list-style-type: none"> <li>Green Side Aids</li> <li>Red Side Aids</li> <li>Lights</li> </ul>	<p>NOAA Bathymetry (DREDGING REACH EXTENT)</p> <table border="1"> <tr> <td>0 - 10</td> <td>10 - 15</td> <td>15 - 20</td> <td>20 - 25</td> <td>25 - 30</td> <td>30 - 50</td> </tr> </table>	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 50
0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 50			

NOTES:

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Coordinate System: NAD 1983 StatePlane Texas South Central FIPS 4204 Feet Projection: Lambert Conformal Conic /Datum: North American 1983
Dredging Reach Extent 0 0.25 0.5 1 Miles
Hydrographic Survey Extent 0 215 430 860 Feet

Survey Date(s): 01 April 2019	Authorized Depth: -46ft.
Page: 4 of 61	Side Slope Ratio: (Rise : Run)
Scale: 1:2,500	Additional Imagery: © DigitalGlobe Inc.
Mapped by: MSAOX PAC	Print Date: 5/16/2019
Additional Info :	

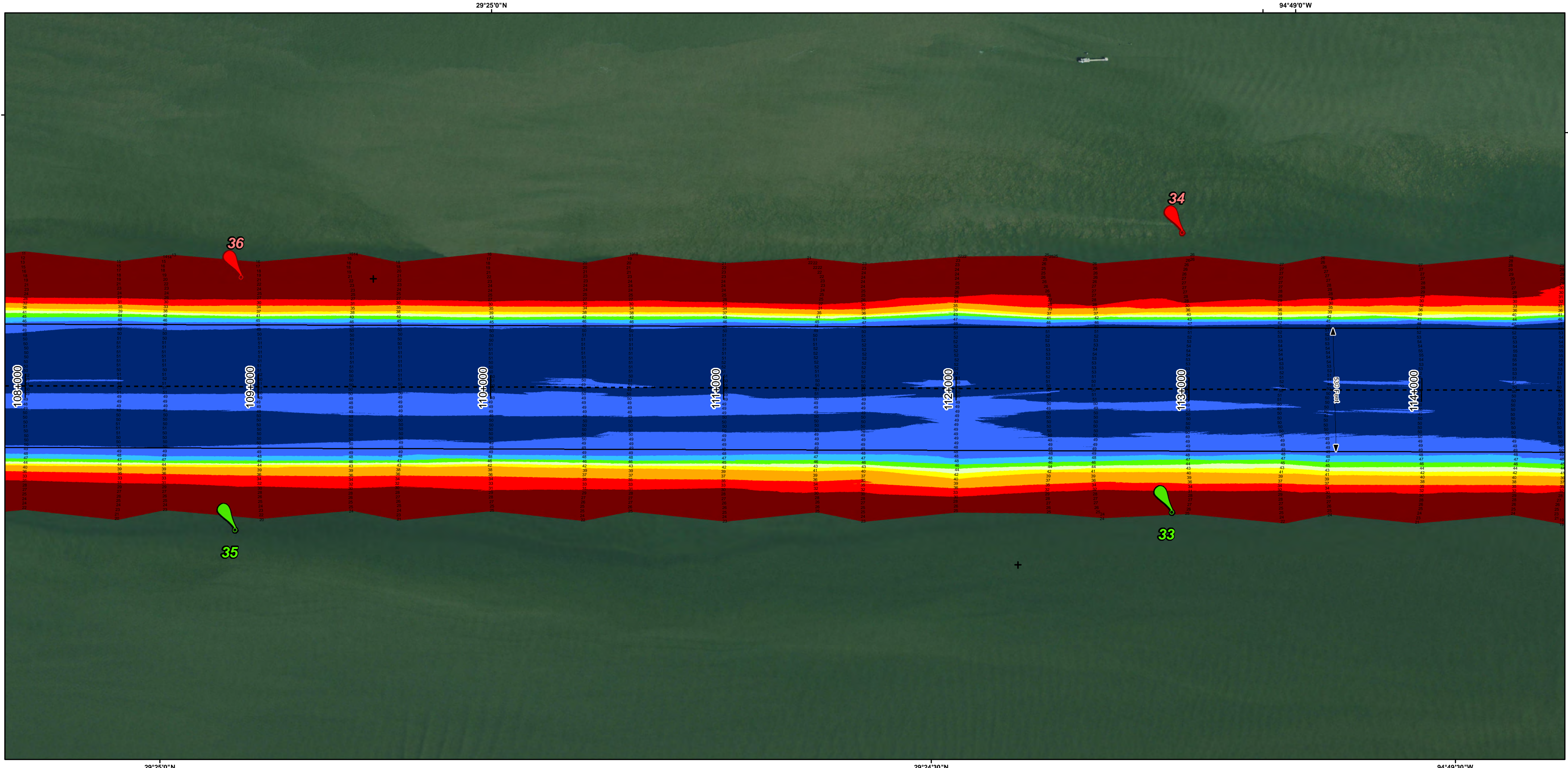
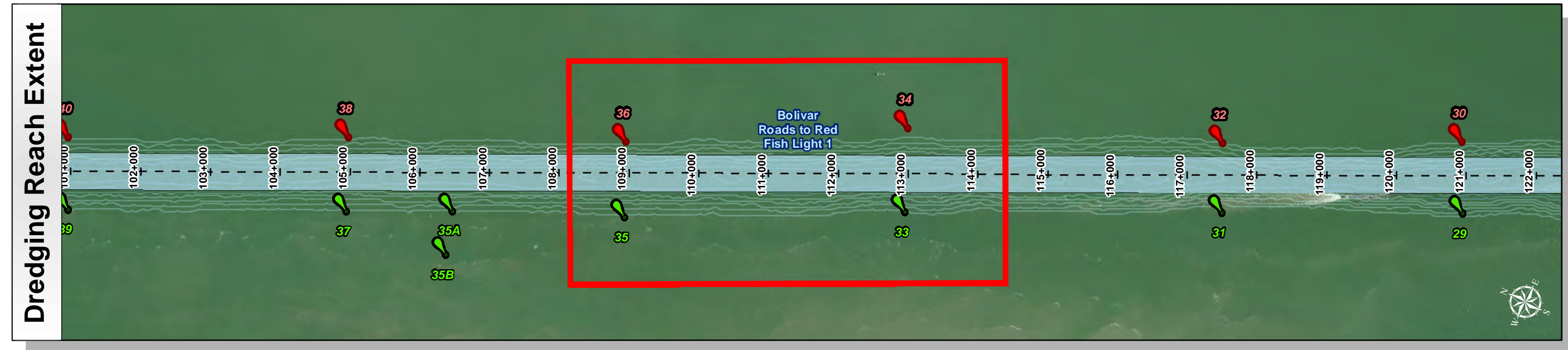
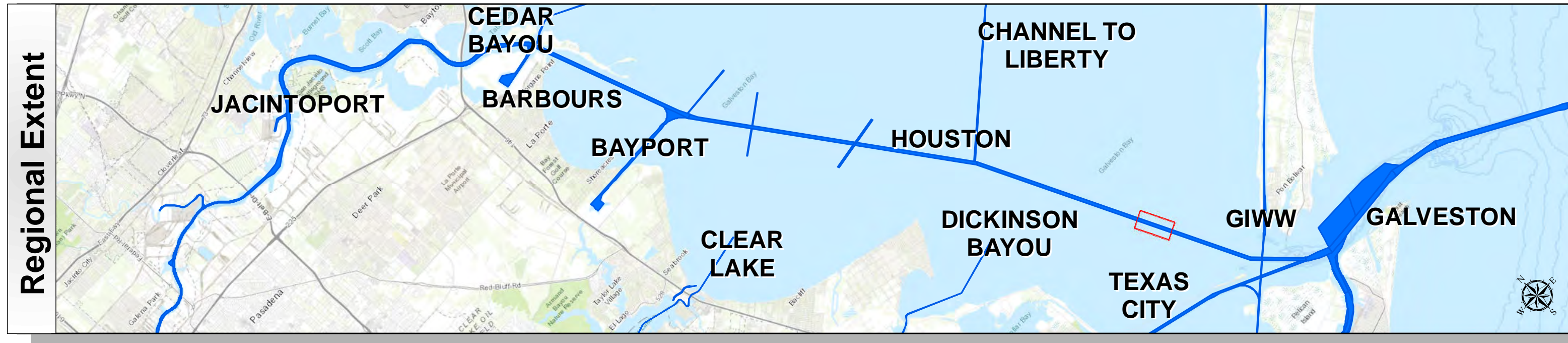
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U.S. ARMY ENGINEER DISTRICT  
CORPS OF ENGINEERS  
GALVESTON, TEXAS

**Station: 138+476 to 78+844**  
**HOUSTON**  
HOUSTON, TEXAS

# Houston Ship Channel: Bolivar Roads to Red Fish Light 1



U.S. Army Corps of Engineers  
Galveston District



Channel Features	Aids to Navigation	MLLW
— Channel Toe	Green Side Aids	0 - 30, 30 - 35, 35 - 40, 40 - 42, 42 - 44, 44 - 46, 46 - 48, 48 - 50, 50+
- - - Channel Center Line	Red Side Aids	NOAA Bathymetry (DREDGING REACH EXTENT)
— Channel Station Lines	Lights	0 - 10, 10 - 15, 15 - 20, 20 - 25, 25 - 30, 30 - 50
↔ Channel Dimensions		

NOTES:

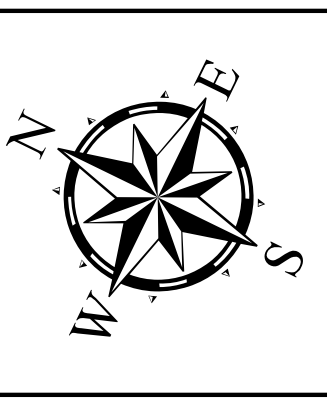
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Dredging Reach Extent 0 0.25 0.5 1 Miles
Hydrographic Survey Extent 0 215 430 860 Feet

Survey Date(s): 01 April 2019	Authorized Depth: -46ft.
Page: 5 of 61	Side Slope Ratio: (Rise : Run)
Scale: 1:2,500	Additional Imagery: © DigitalGlobe Inc.
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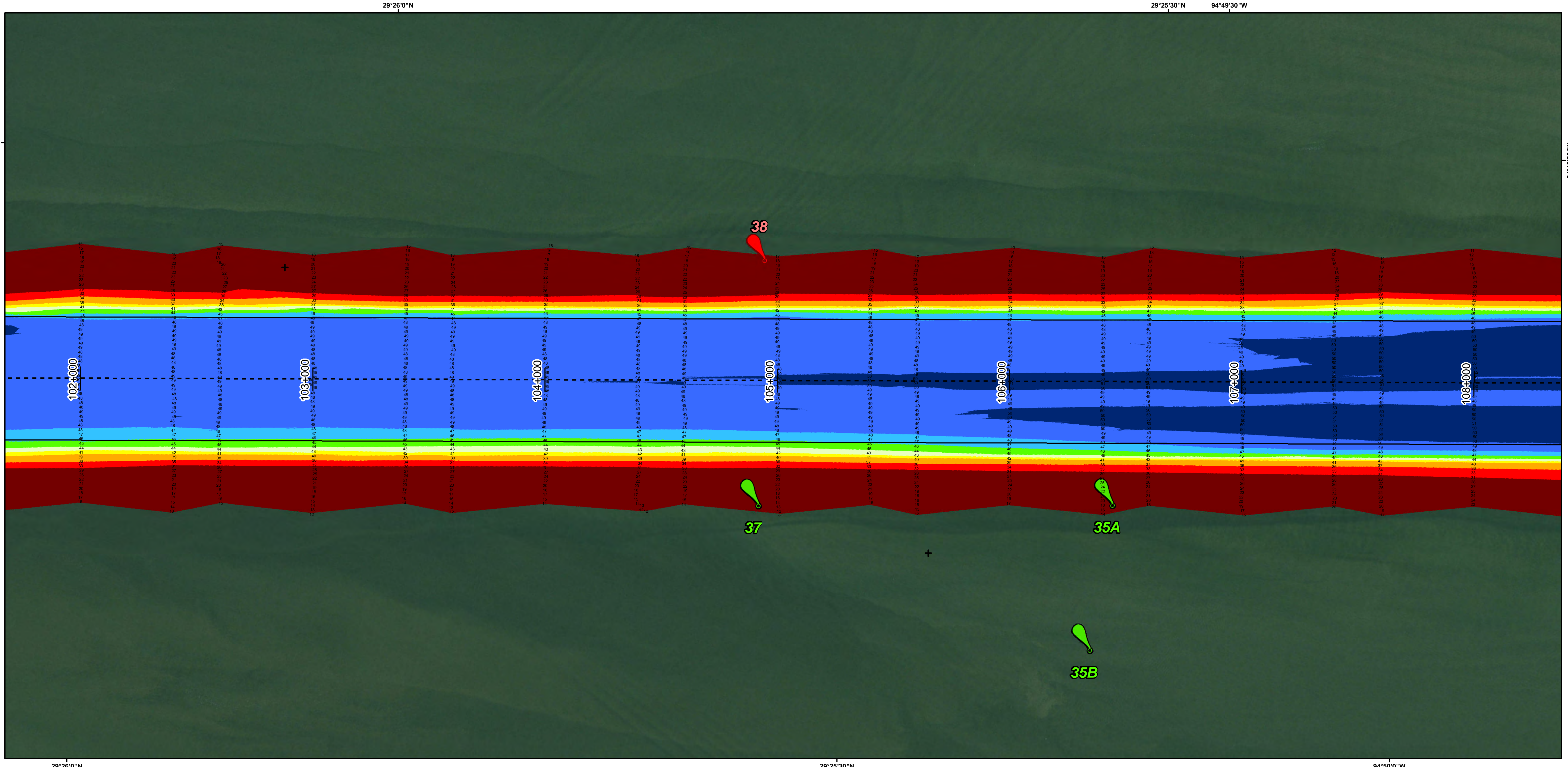
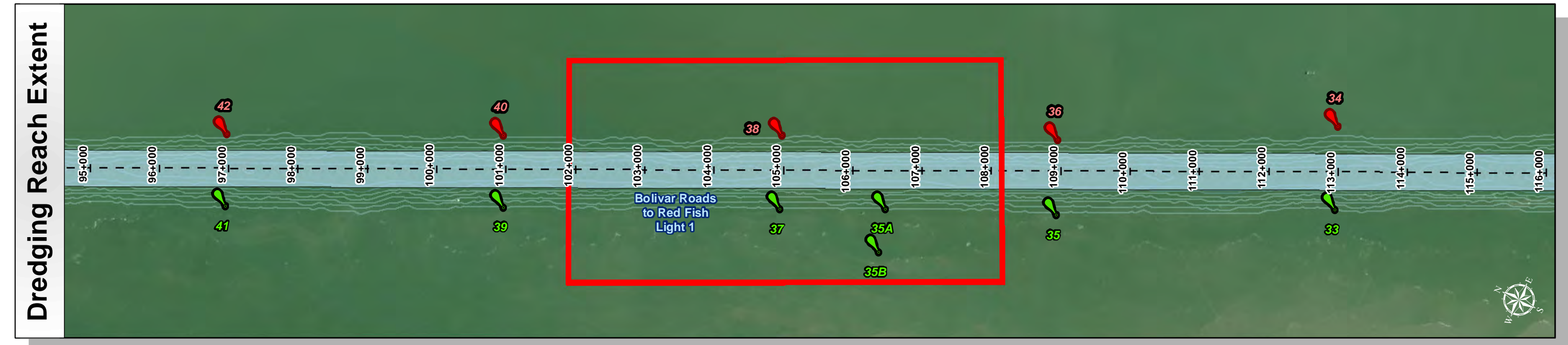
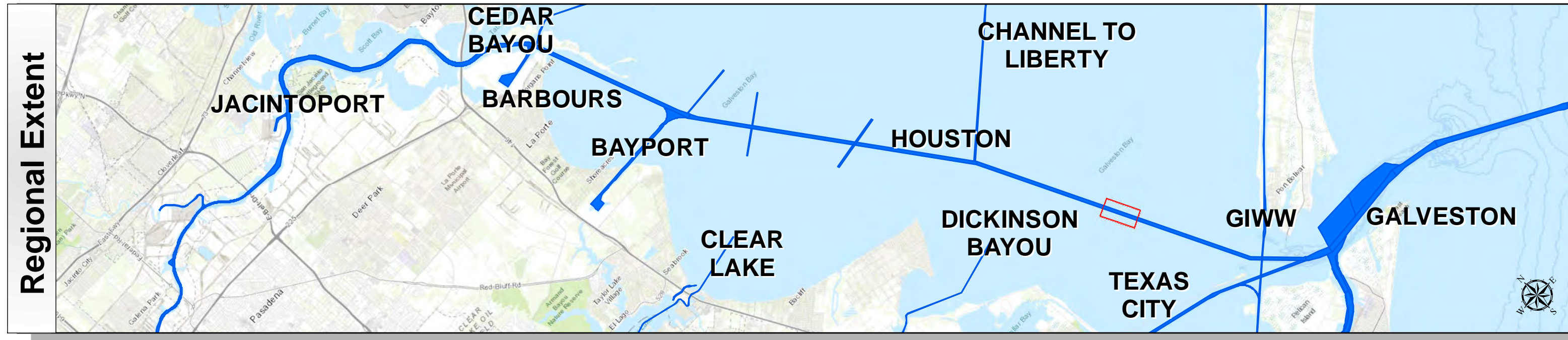
**HYDROGRAPHIC SURVEY**  
U.S. ARMY ENGINEER DISTRICT  
CORPS OF ENGINEERS  
GALVESTON, TEXAS

**Station: 138+476 to 78+844**  
**HOUSTON**  
HOUSTON, TEXAS

# Houston Ship Channel: Bolivar Roads to Red Fish Light 1



U.S. Army Corps of Engineers  
Galveston District

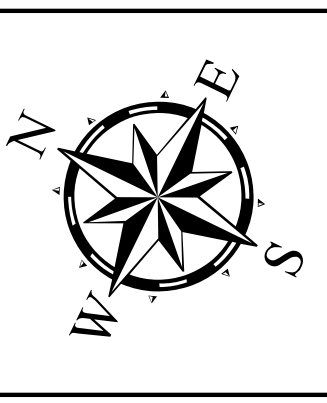


Channel Features	Aids to Navigation	MLLW
<ul style="list-style-type: none"> <li>Channel Toe</li> <li>Channel Center Line</li> <li>Channel Station Lines</li> <li>Channel Dimensions</li> </ul>	<ul style="list-style-type: none"> <li>Green Side Aids</li> <li>Red Side Aids</li> <li>Lights</li> </ul>	<p>0 - 30 30 - 35 35 - 40 40 - 42 42 - 44 44 - 46 46 - 48 48 - 50 50+</p> <p>NOAA Bathymetry (DREDGING REACH EXTENT) 0 - 10 10 - 15 15 - 20 20 - 25 25 - 30 30 - 50</p>

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Coordinate System: NAD 1983 StatePlane Texas South Central FIPS 4204 Feet Projection: Lambert Conformal Conic /Datum: North American 1983
Dredging Reach Extent 0 0.25 0.5 1 Miles
Hydrographic Survey Extent 0 215 430 860 Feet

Survey Date(s): 01 April 2019	Authorized Depth: -46ft.
Page: 6 of 61	Side Slope Ratio: (Rise : Run)
Scale: 1:2,500	Additional Imagery: © DigitalGlobe Inc.
Mapped by: MSAOX PAC	Print Date: 5/16/2019
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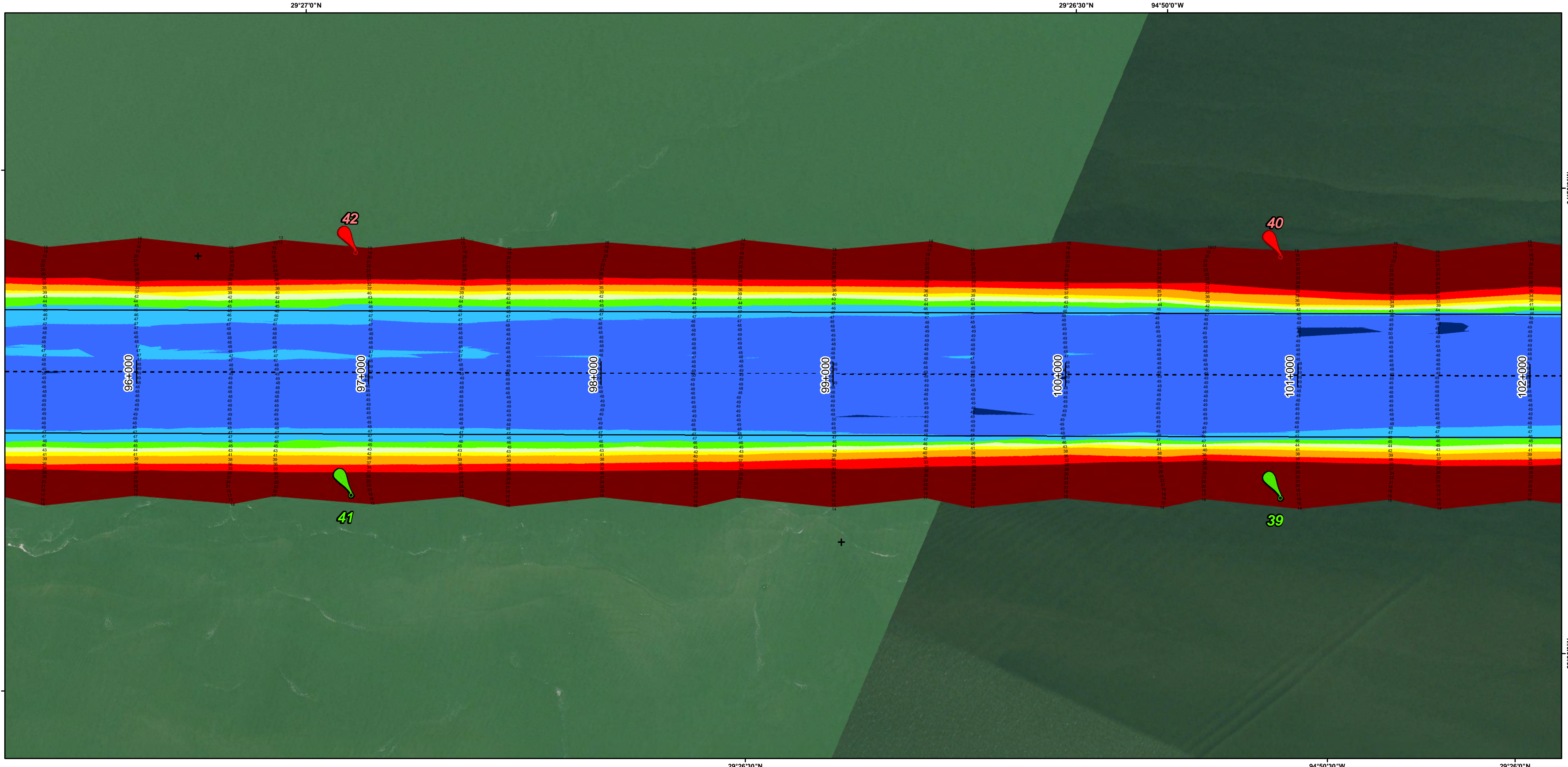
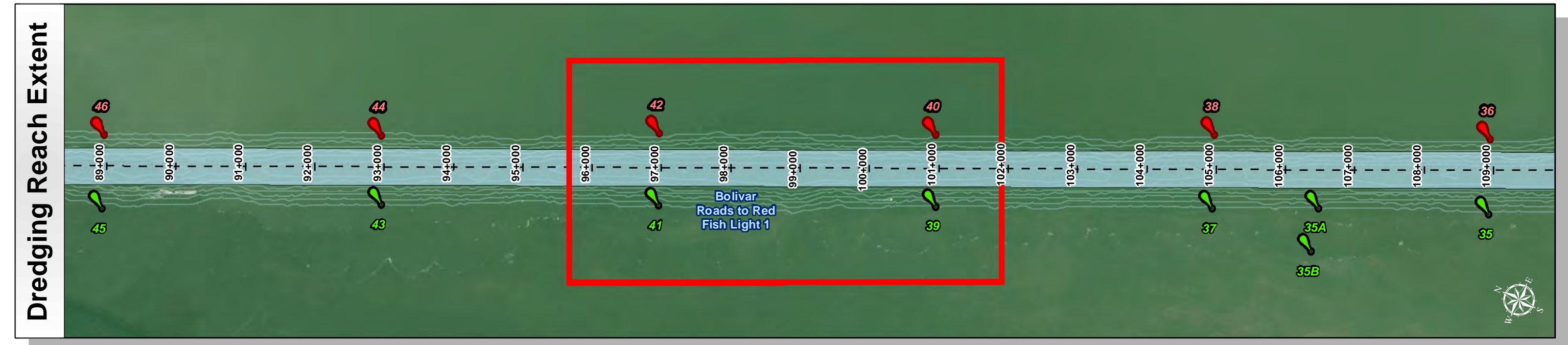
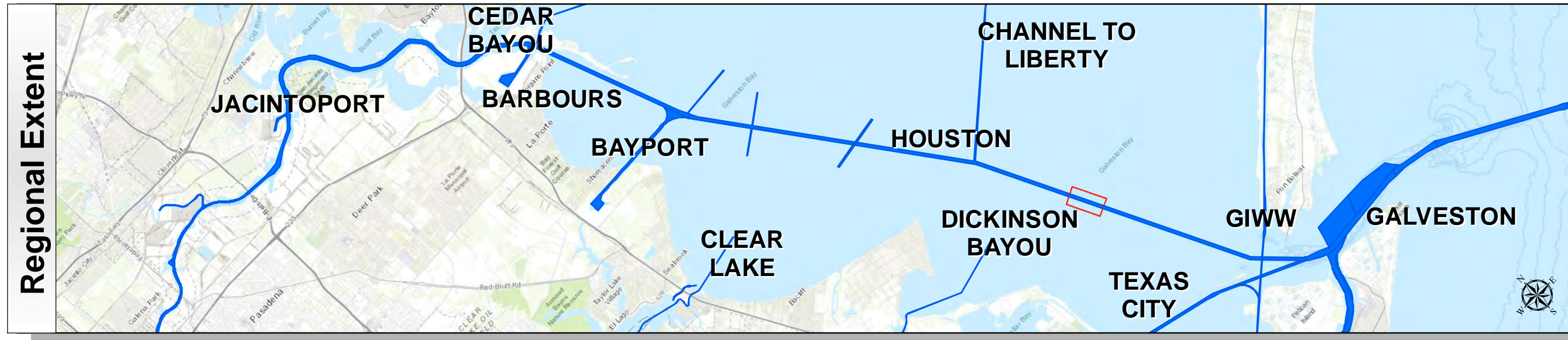
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U.S. ARMY ENGINEER DISTRICT  
CORPS OF ENGINEERS  
GALVESTON, TEXAS

**Station: 138+476 to 78+844**  
**HOUSTON**  
HOUSTON, TEXAS

# Houston Ship Channel: Bolivar Roads to Red Fish Light 1



U.S. Army Corps of Engineers  
Galveston District



**Channel Features**

- Channel Toe
- Channel Center Line
- Channel Station Lines
- Channel Dimensions

**Aids to Navigation**

- Green Side Aids
- Red Side Aids
- Lights

**MLLW**

0 - 30	30 - 35	35 - 40	40 - 42	42 - 44	44 - 46	46 - 48	48 - 50	50+
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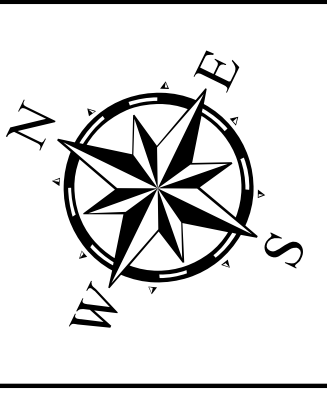
**NOAA Bathymetry (DREDGING REACH EXTENT)**

0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 50
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Coordinate System: NAD 1983 StatePlane Texas South Central FIPS 4204 Feet  
Projection: Lambert Conformal Conic / Datum: North American 1983

**Dredging Reach Extent**

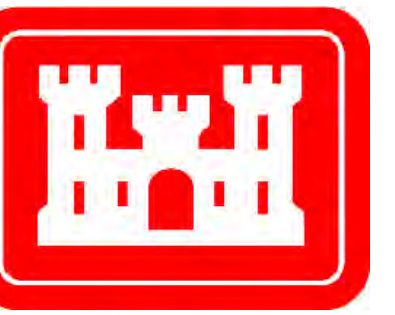
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Survey Date(s): 01 April 2019	Authorized Depth: -46ft.
Page: 7 of 61	Side Slope Ratio: (Rise : Run)
Scale: 1:2,500	Additional Imagery: © DigitalGlobe Inc.
Mapped by: MSAOX PAC	Print Date: 5/16/2019
Additional Info:	

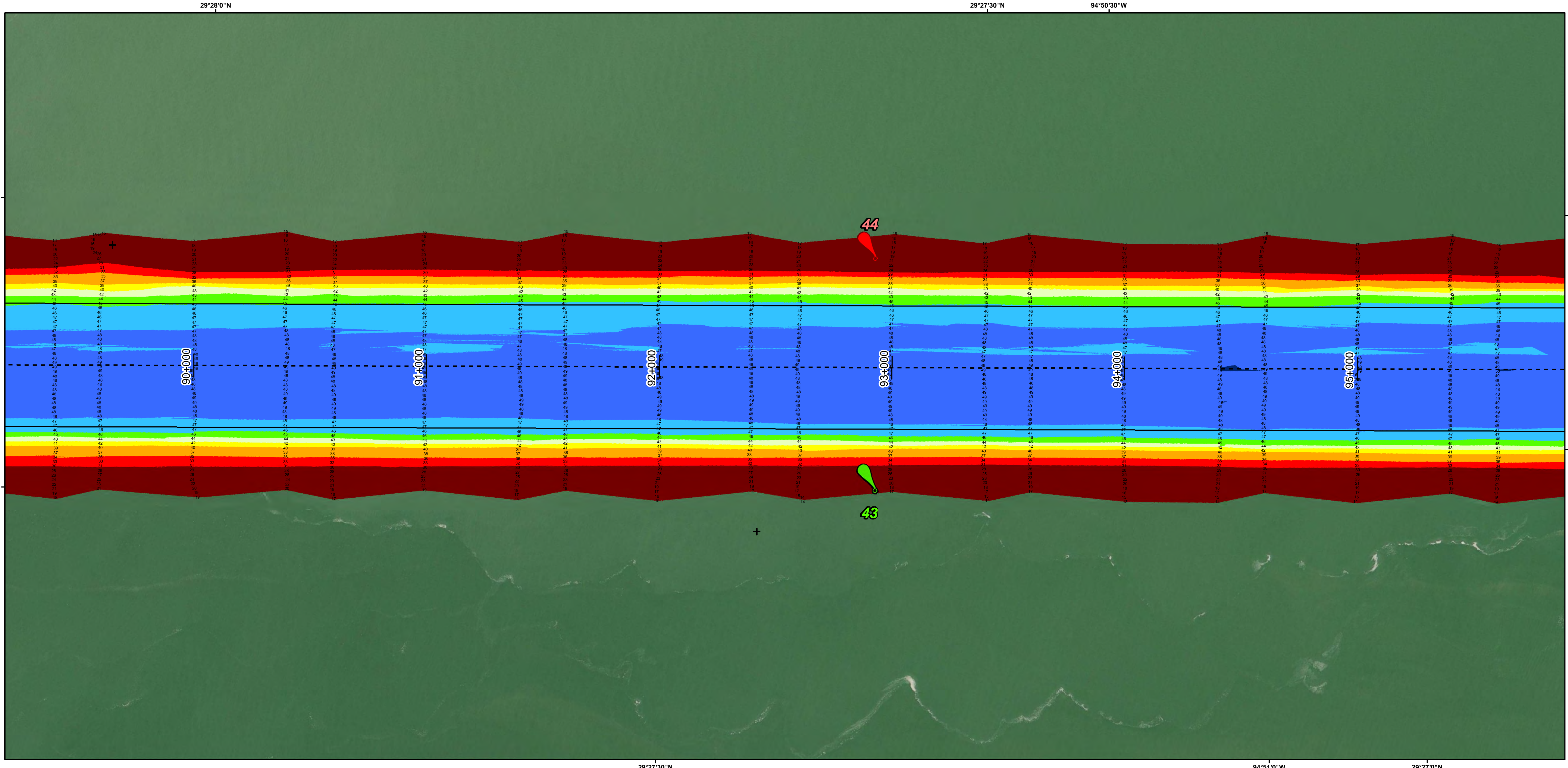
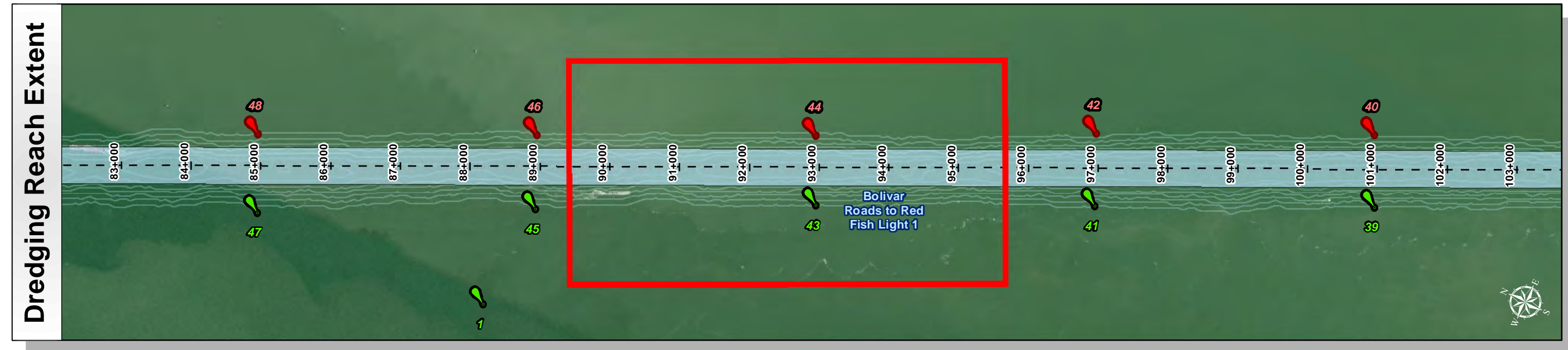
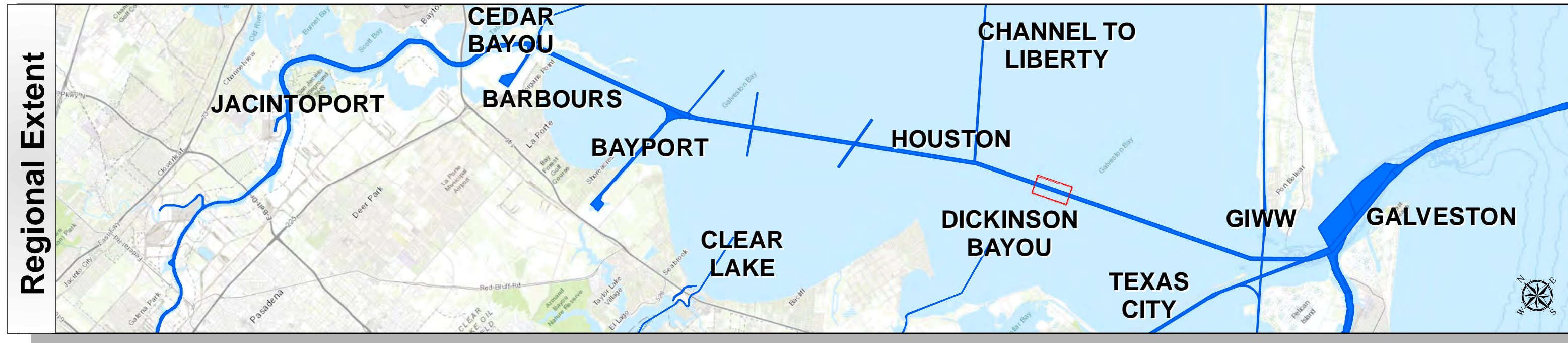
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U.S. ARMY ENGINEER DISTRICT  
CORPS OF ENGINEERS  
GALVESTON, TEXAS

**Station: 138+476 to 78+844**  
**HOUSTON**  
HOUSTON, TEXAS

# Houston Ship Channel: Bolivar Roads to Red Fish Light 1



U.S. Army Corps of Engineers  
Galveston District



Channel Features	Aids to Navigation	MLLW
<ul style="list-style-type: none"> <li>Channel Toe</li> <li>Channel Center Line</li> <li>Channel Station Lines</li> <li>Channel Dimensions</li> </ul>	<ul style="list-style-type: none"> <li>Green Side Aids</li> <li>Red Side Aids</li> <li>Lights</li> </ul>	<p>NOAA Bathymetry (DREDGING REACH EXTENT)</p> <p>0 - 10   10 - 15   15 - 20   20 - 25   25 - 30   30 - 50</p>

NOTES:

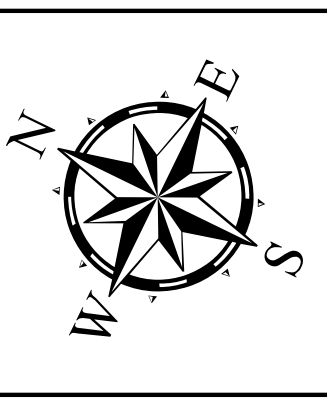
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Coordinate System: NAD 1983 StatePlane Texas South Central FIPS 4204 Feet Projection: Lambert Conformal Conic /Datum: North American 1983
Dredging Reach Extent 0   0.25   0.5   1 Miles
Hydrographic Survey Extent 0   215   430   860 Feet

Survey Date(s): 01 April 2019	Authorized Depth: -46ft.
Page: 8 of 61	Side Slope Ratio: (Rise : Run)
Scale: 1:2,500	Additional Imagery: © DigitalGlobe Inc.
Mapped by: MSAOX PAC	Print Date: 5/16/2019
Additional Info:	

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CORPS OF ENGINEERS  
GALVESTON, TEXAS

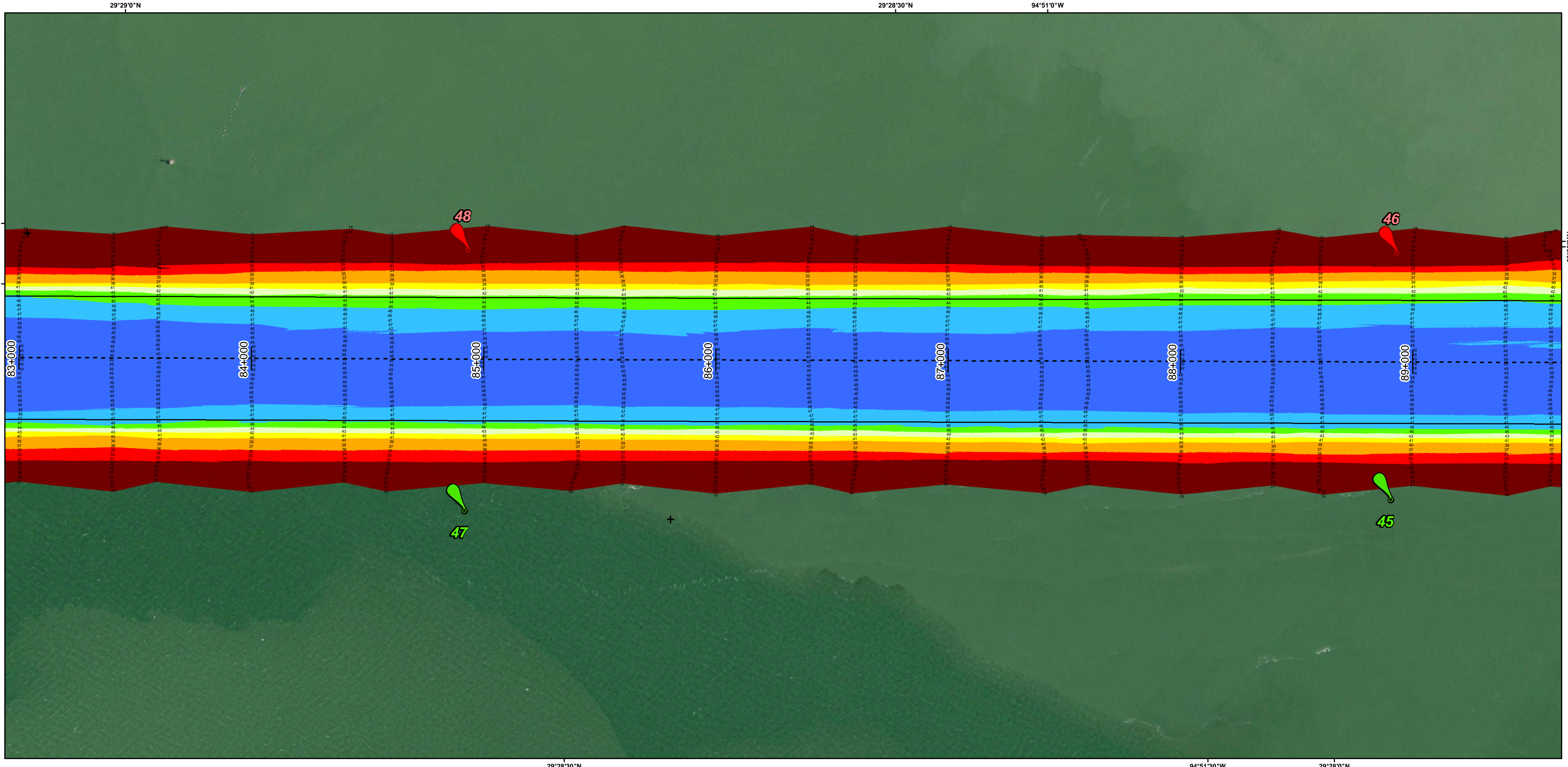
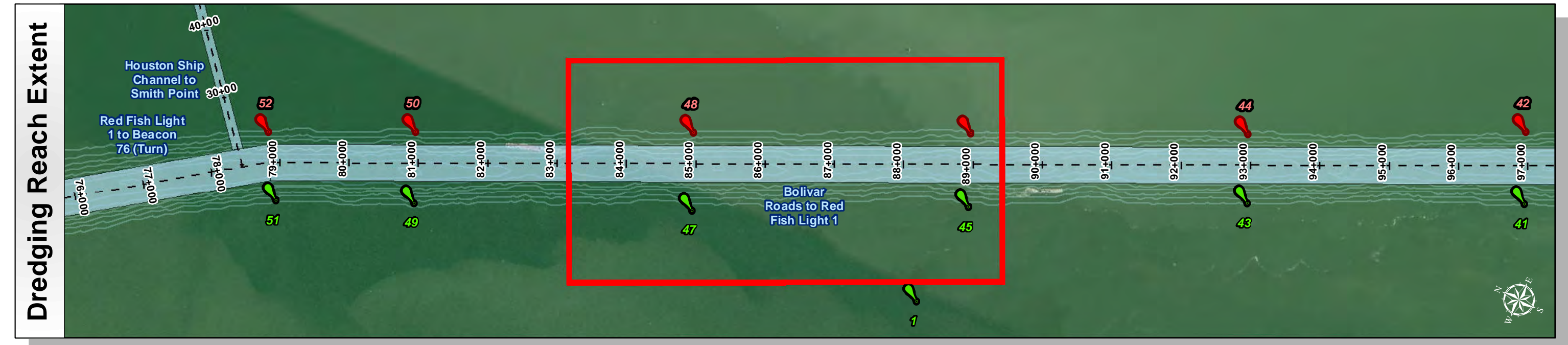
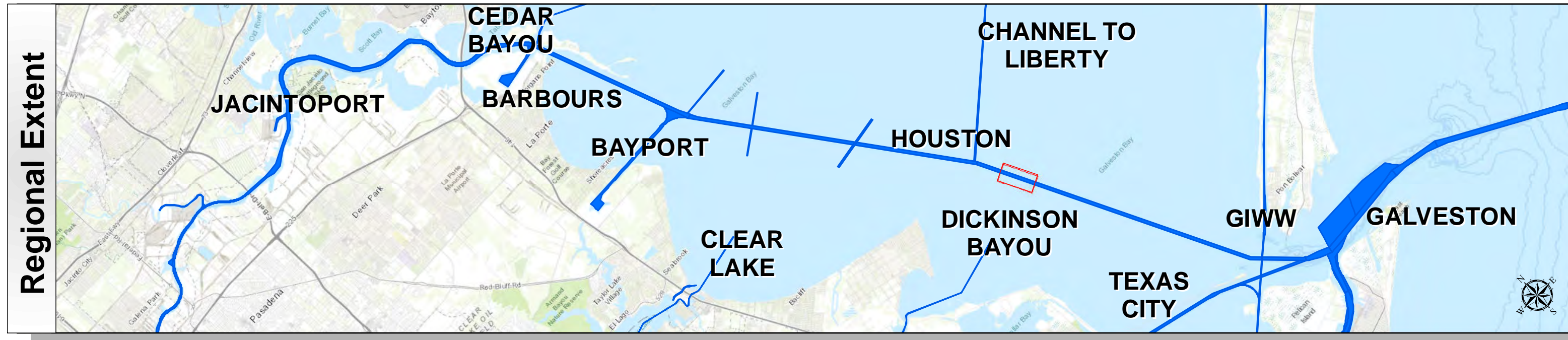
**Station: 138+476 to 78+844**  
**HOUSTON**  
HOUSTON, TEXAS



# Houston Ship Channel: Bolivar Roads to Red Fish Light 1



U.S. Army Corps of Engineers  
Galveston District

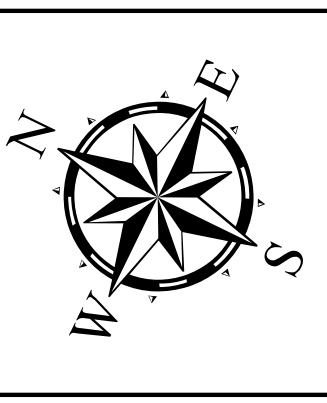


Channel Features	Aids to Navigation	MLLW
<ul style="list-style-type: none"> <li>Channel Toe</li> <li>Channel Center Line</li> <li>Channel Station Lines</li> <li>Channel Dimensions</li> </ul>	<ul style="list-style-type: none"> <li>Green Side Aids</li> <li>Red Side Aids</li> <li>Lights</li> </ul>	<p>NOAA Bathymetry (DREDGING REACH EXTENT)</p> <p>0 - 10   10 - 15   15 - 20   20 - 25   25 - 30   30 - 50</p>

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Projection: Lambert Conformal Conic; /Datum: North American 1983

Dredging Reach Extent  
0   0.25   0.5   1  
Miles

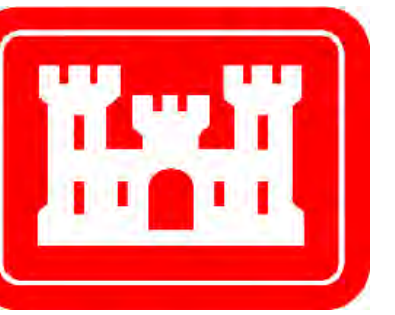
Hydrographic Survey Extent  
0   215   430   860  
Feet

Survey Date(s): 01 April 2019	Authorized Depth: -46ft.
Page: 9 of 61	Side Slope Ratio: (Rise : Run)
Scale: 1:2,500	Additional Imagery: © DigitalGlobe Inc.
Mapped by: MSAOX PAC	Print Date: 5/16/2019
Additional Info:	

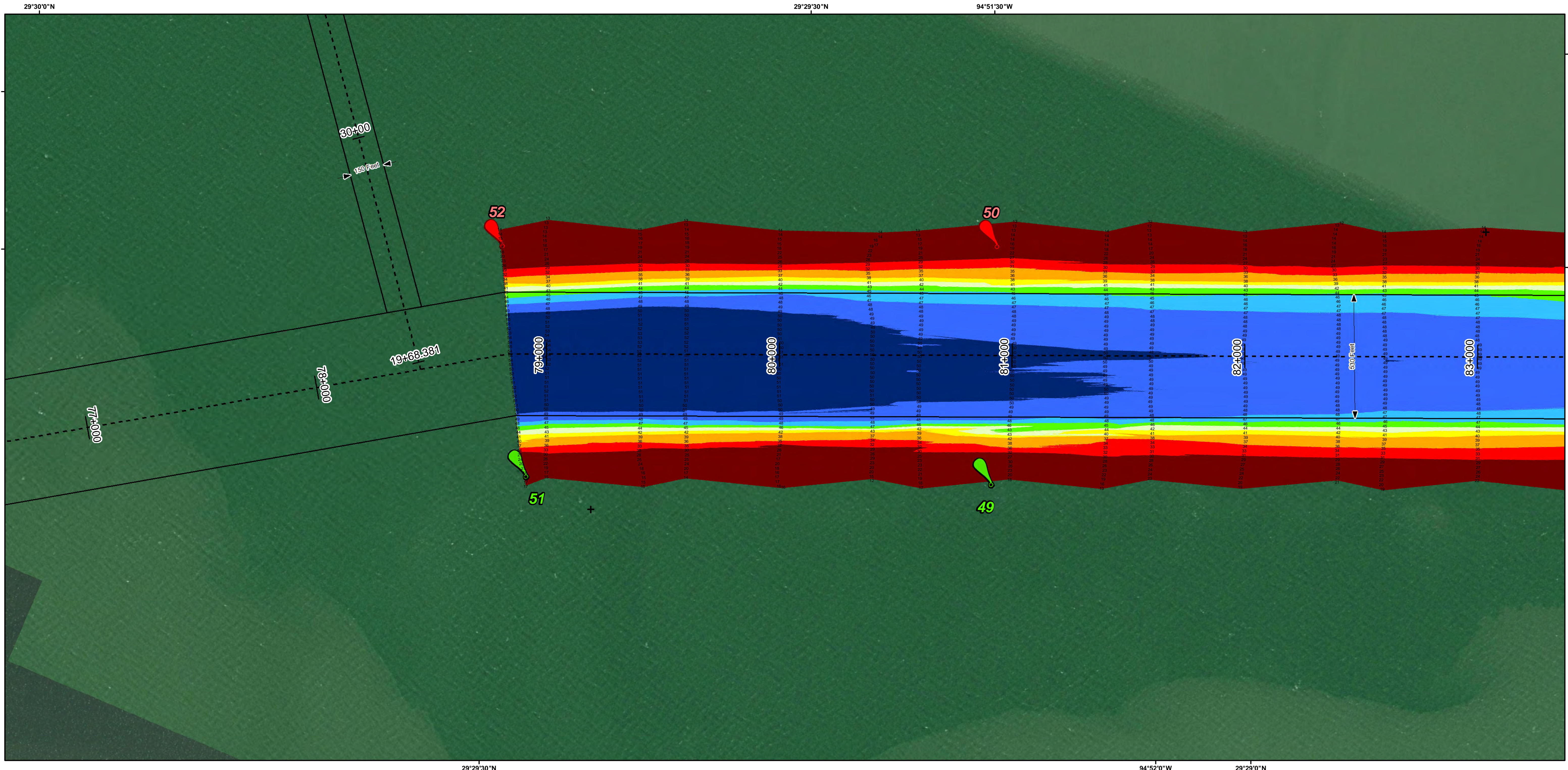
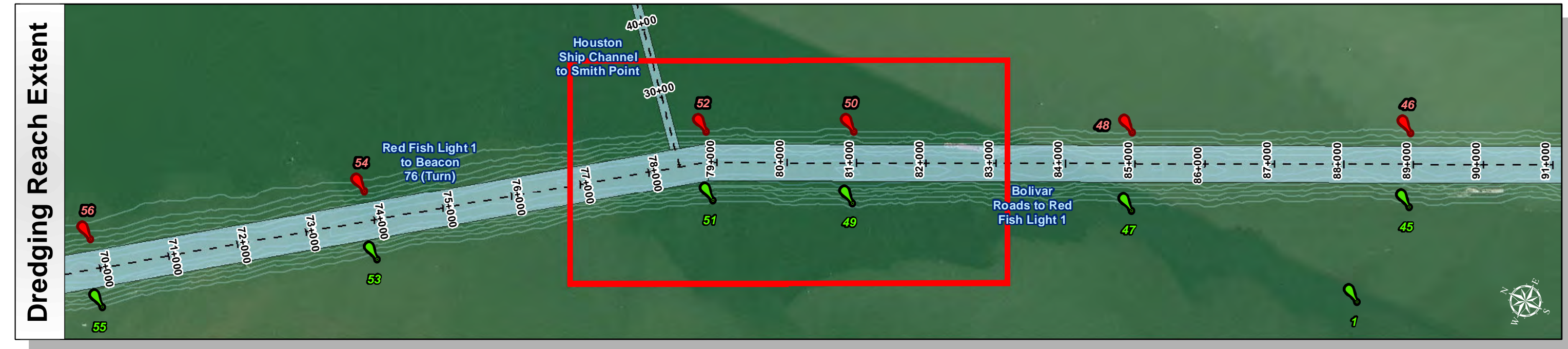
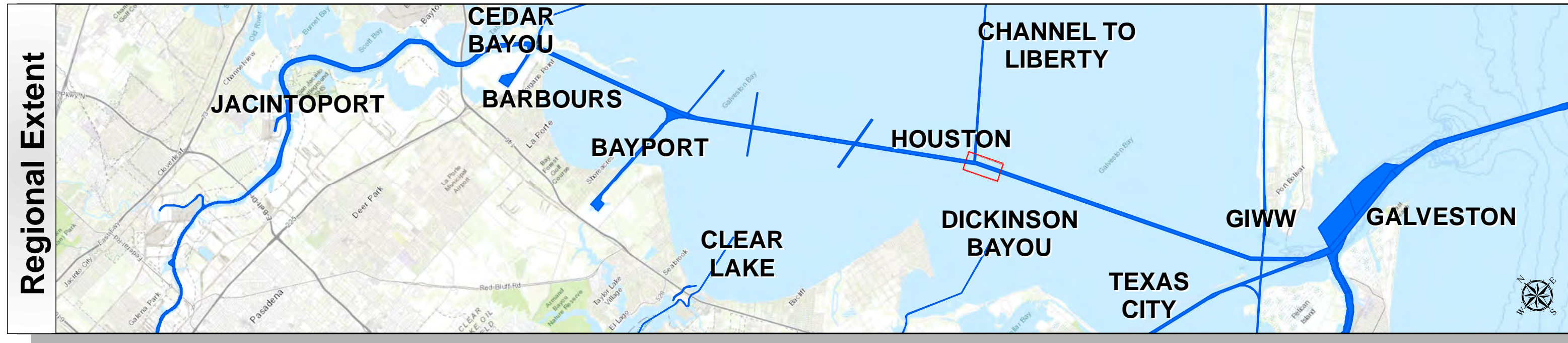
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**HOUSTON**  
HOUSTON, TEXAS

# Houston Ship Channel: Bolivar Roads to Red Fish Light 1



U.S. Army Corps of Engineers  
Galveston District



Survey Date(s): 01 April 2019	Authorized Depth: -46ft.
Page: 10 of 61	Side Slope Ratio: (Rise : Run)
Scale: 1:2,500	Additional Imagery: © DigitalGlobe Inc.
Mapped by: MSAOX PAC	Print Date: 5/16/2019
Additional Info:	

**Channel Features**

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- Channel Station Lines
- Channel Dimensions

**Aids to Navigation**

- Green Side Aids
- Red Side Aids
- Lights

**MLLW**

0 - 30	30 - 35	35 - 40	40 - 42	42 - 44	44 - 46	46 - 48	48 - 50	50+
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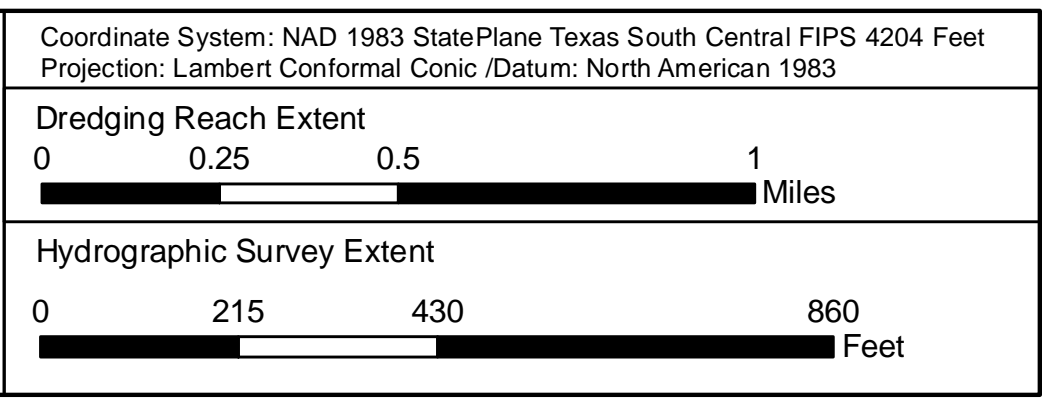
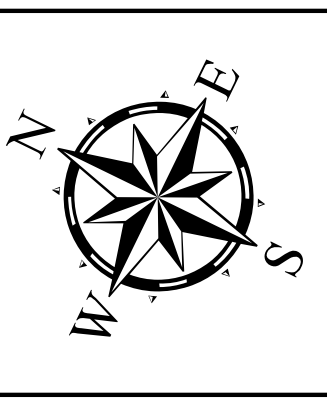
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0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 50
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