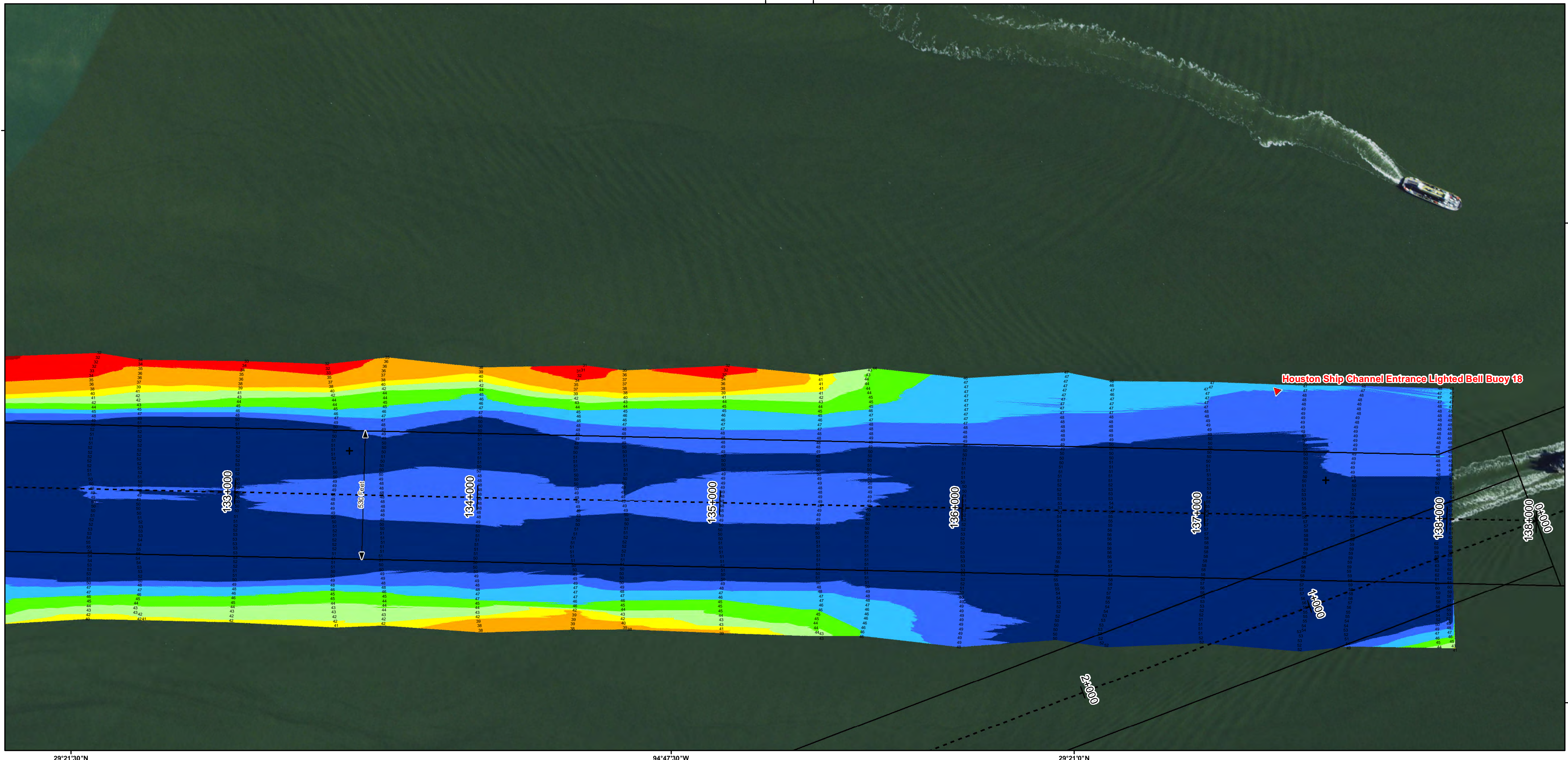
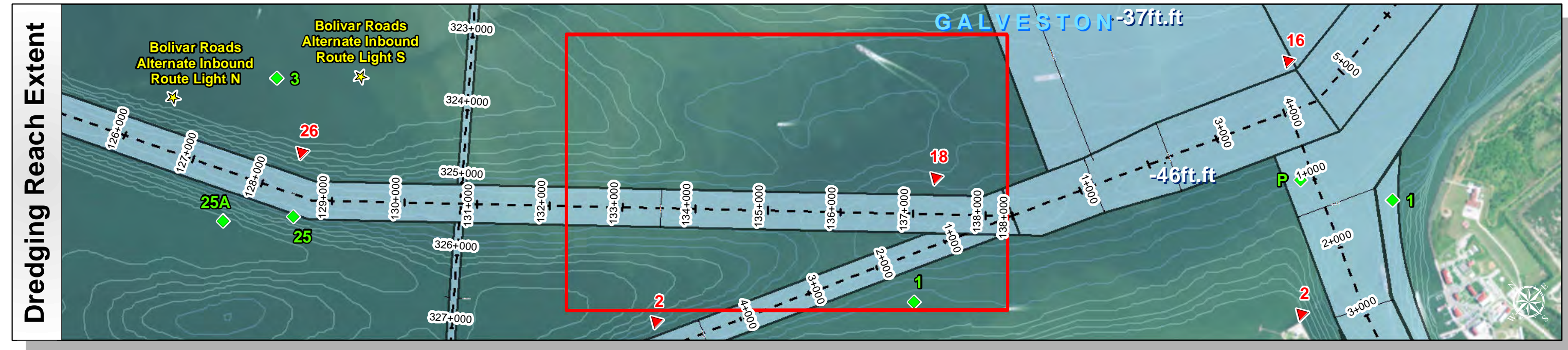
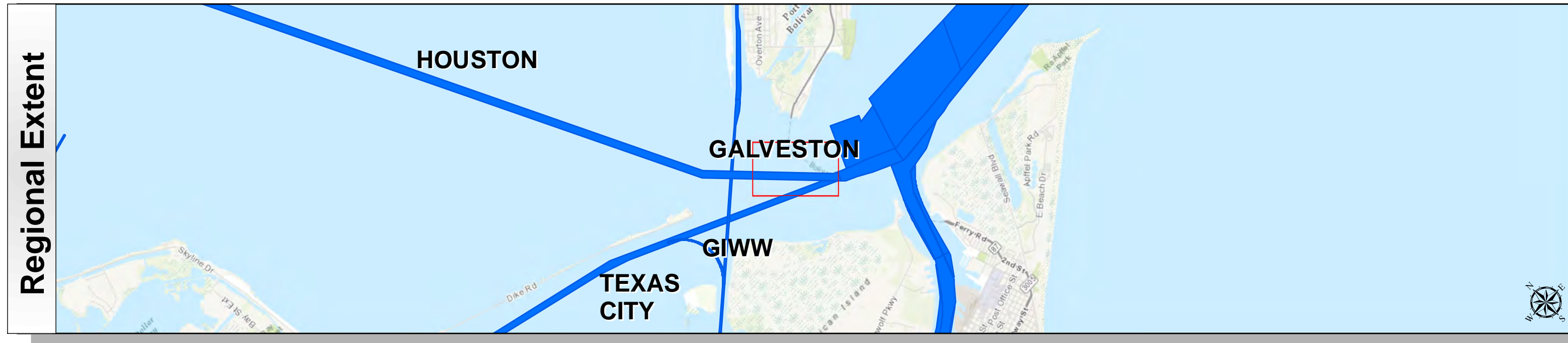


Houston Ship Channel: Bolivar Roads to Red Fish Light 1



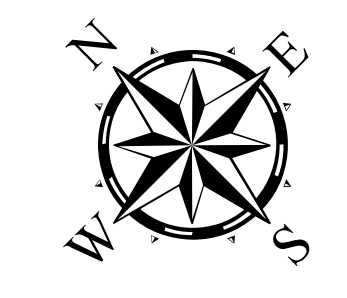
U.S. Army Corps of Engineers
Galveston District



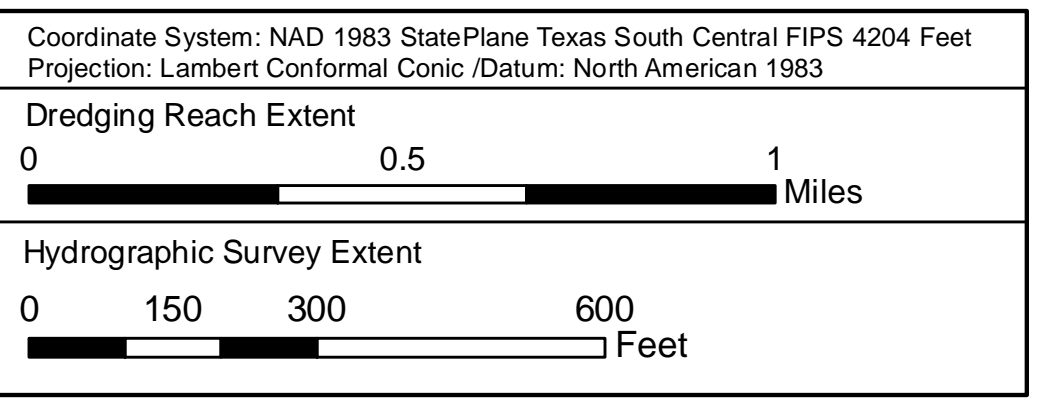
Channel Features	Aids to Navigation	MLLW
— Channel Toe	★ Lights	0 - 30
- - - Channel Center Line	▲ Red Side Aids	30 - 35
— Channel Station Lines	■ Green Side Aids	35 - 40
↔ Channel Dimensions	◆ Mooring Buoy	40 - 42
		42 - 44
		44 - 46
		46 - 48
		48 - 50
		50+
		NOAA Bathymetry (DREDGING REACH EXTENT)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

NOTES:
 1. HORIZONTAL COORDINATES ARE REFERENCED TO TEXAS STATE PLANE COORDINATE SYSTEM, SOUTH CENTRAL ZONE NAD83 US SURVEY FEET.
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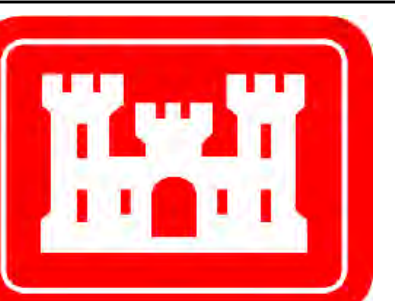
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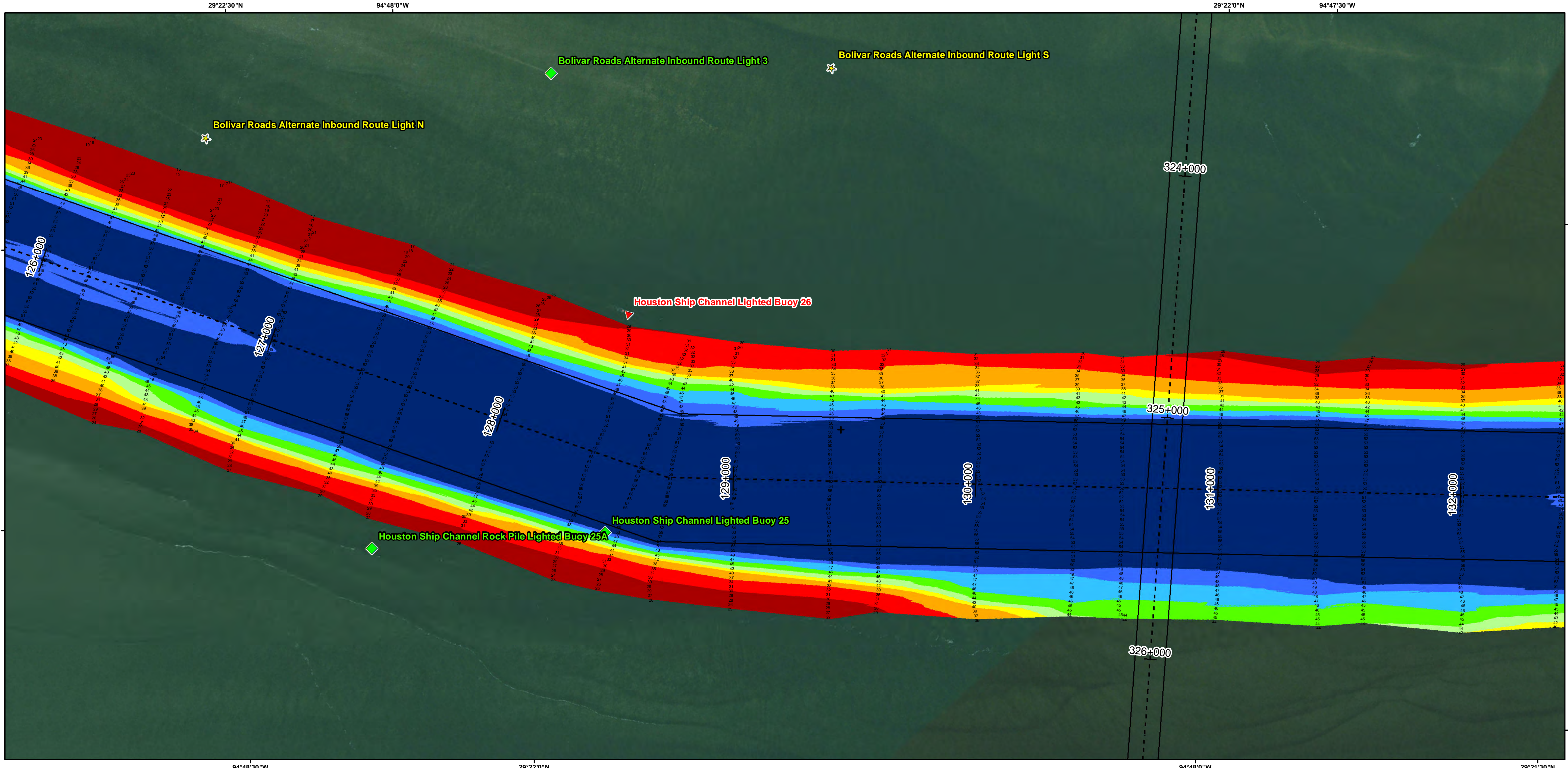
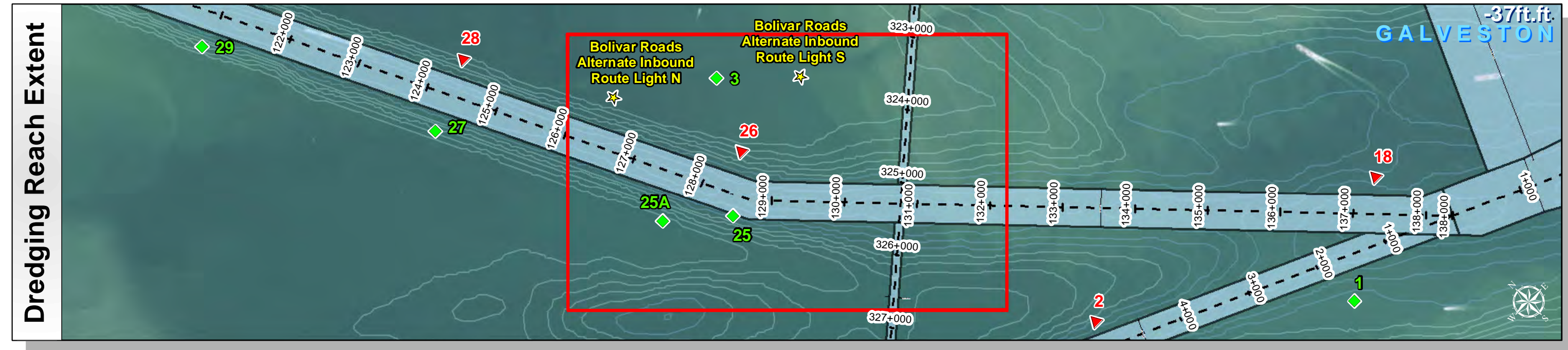
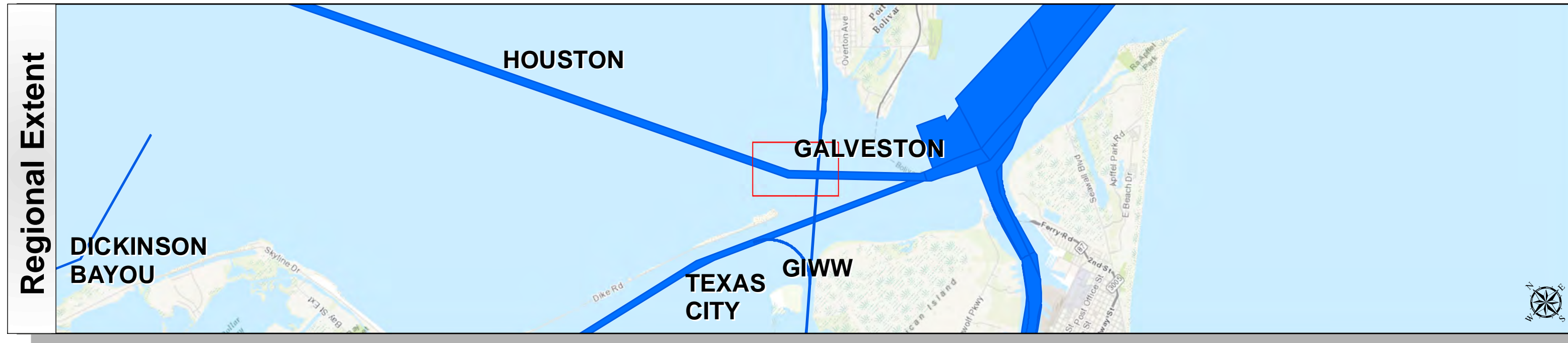
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Page: 1 of 56	Side Slope Ratio: (Rise : Run)
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Mapped by: M3A0XPAC	Print Date: 12/5/2017
Additional Info :	

HYDROGRAPHIC SURVEY
 U.S. ARMY ENGINEER DISTRICT
 CORPS OF ENGINEERS
 GALVESTON, TEXAS
 Bolivar Roads to Red Fish Light 1
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



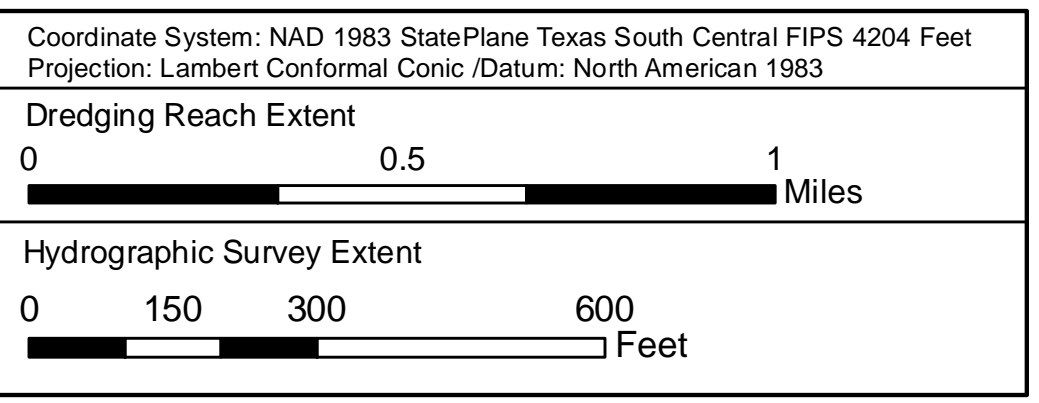
Channel Features	Aids to Navigation	MLLW
— Channel Toe	★ Lights	0 - 30
- - - Channel Center Line	▲ Red Side Aids	30 - 35
— Channel Station Lines	■ Green Side Aids	35 - 40
↔ Channel Dimensions	◆ Mooring Buoy	40 - 42
		42 - 44
		44 - 46
		46 - 48
		48 - 50
		50+
		NOAA Bathymetry (DREDGING REACH EXTENT)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

NOTES:
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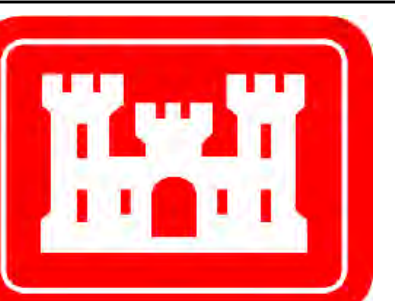
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 Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



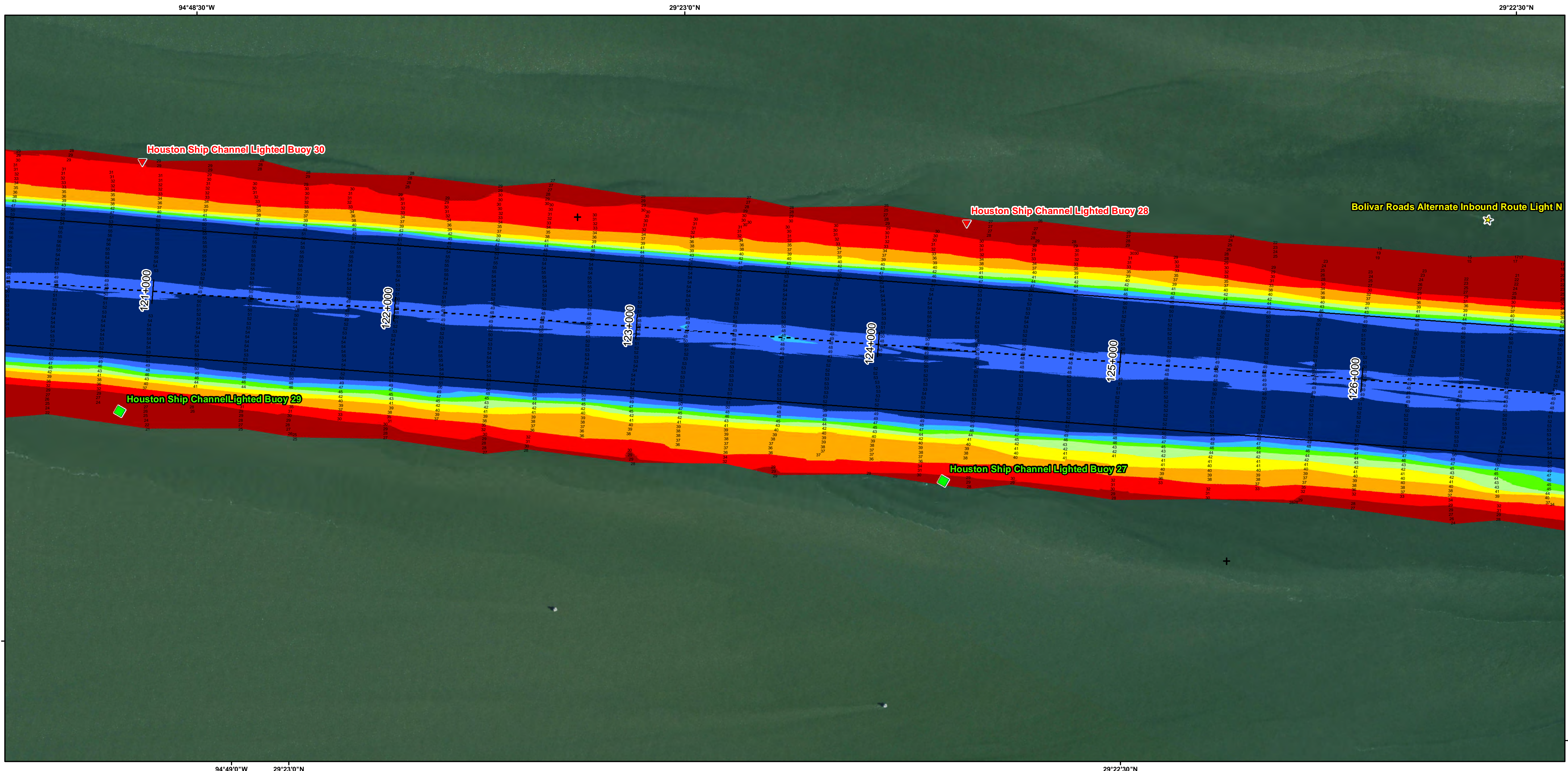
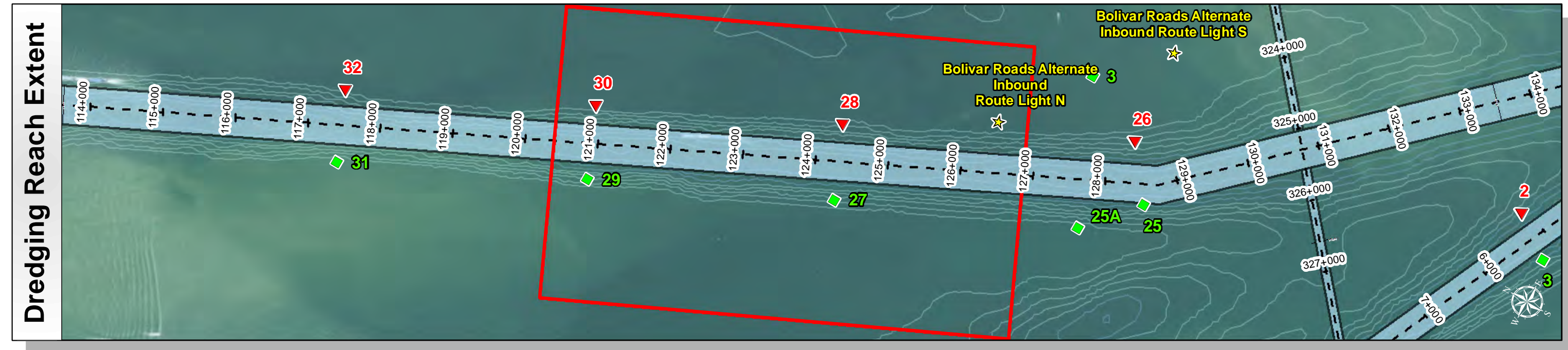
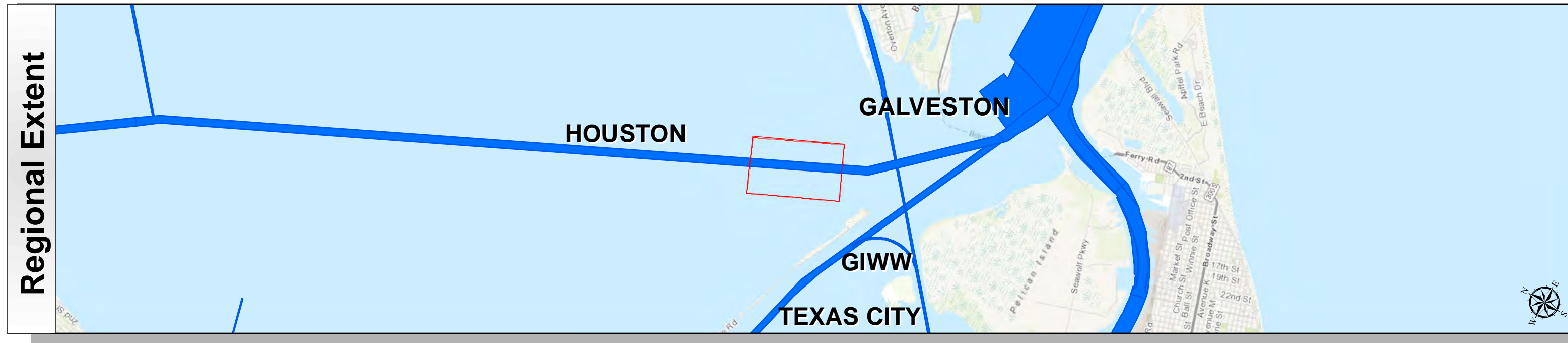
Survey Date(s): 25 November 2017	Authorized Depth: -46ft.
Page: 2 of 56	Side Slope Ratio: (Rise : Run)
Map:	Additional Imagery: © DigitalGlobe Inc.
Scale: 1:2,400	Print Date: 12/5/2017
Mapped by: MSAOX PAC	Additional Info:

HYDROGRAPHIC SURVEY
 U.S. ARMY ENGINEER DISTRICT
 CORPS OF ENGINEERS
 GALVESTON, TEXAS
 Bolivar Roads to Red Fish Light 1
Station: 138+476 to 78+844
HOUSTON
 HOUSTON, TEXAS

Houston Ship Channel: Bolivar Roads to Red Fish Light 1



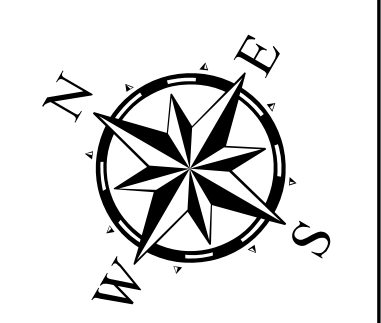
U.S. Army Corps of Engineers
Galveston District



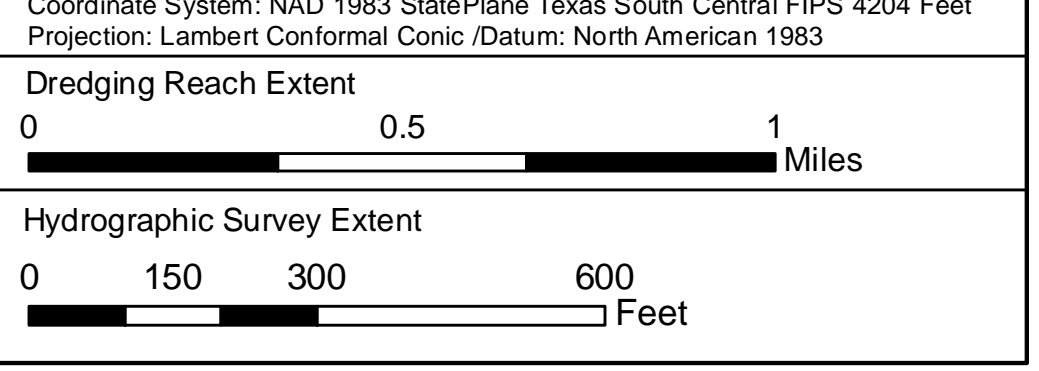
Channel Features	Aids to Navigation	MLLW
— Channel Toe	★ Lights	0 - 30
- - - Channel Center Line	▲ Red Side Aids	30 - 35
— Channel Station Lines	■ Green Side Aids	35 - 40
↔ Channel Dimensions	◆ Mooring Buoy	40 - 42
		42 - 44
		44 - 46
		46 - 48
		48 - 50
		50+
		NOAA Bathymetry (DREDGING REACH EXTENT)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

NOTES:

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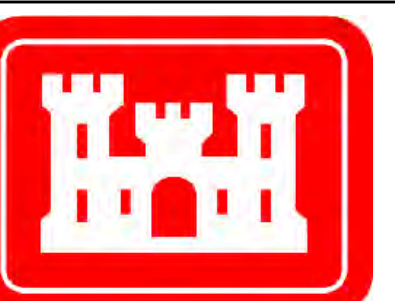


Survey Date(s): 25 November 2017	Authorized Depth: -46ft.
Page: 3 of 56	Side Slope Ratio: (Rise : Run)
Scale: 1:2,400	Additional Imagery: © DigitalGlobe Inc.
Mapped by: MSAOX PAC	Print Date: 12/5/2017
Additional Info :	

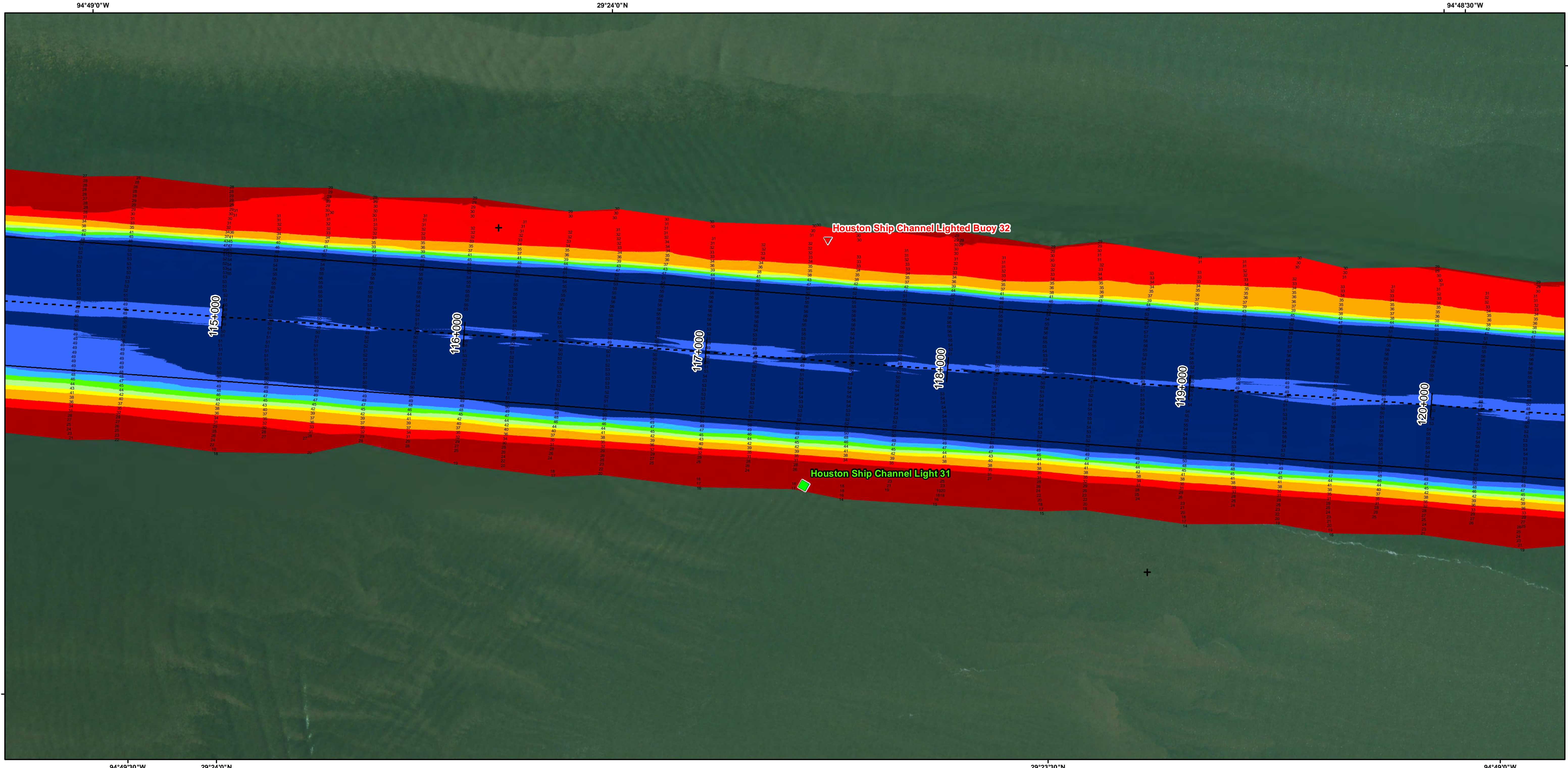
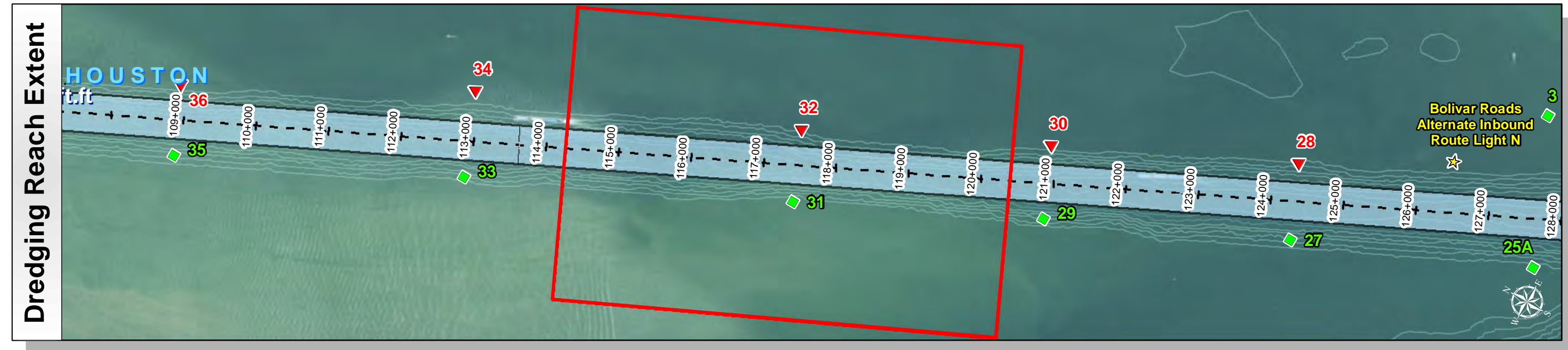
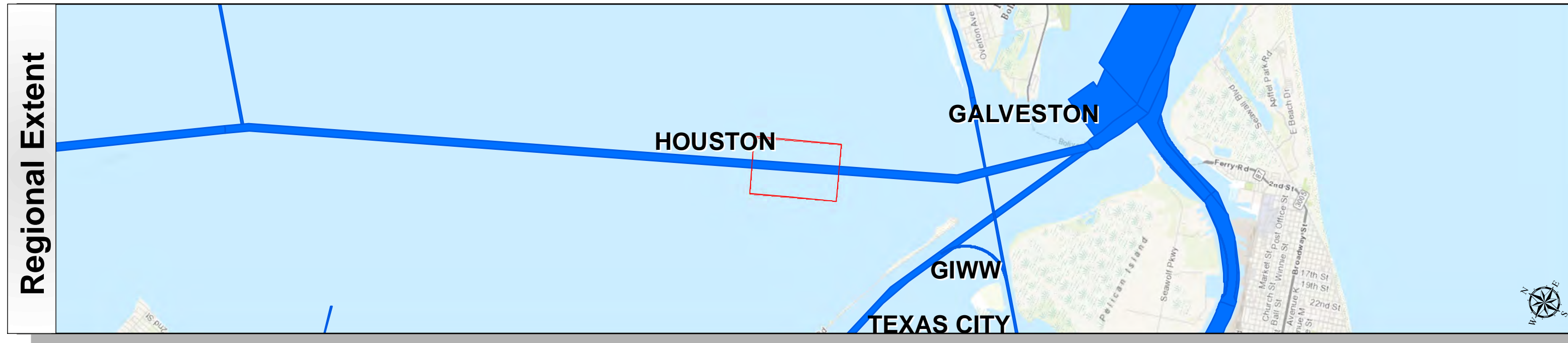
HYDROGRAPHIC SURVEY
U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
GALVESTON, TEXAS
Bolivar Roads to Red Fish Light 1

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

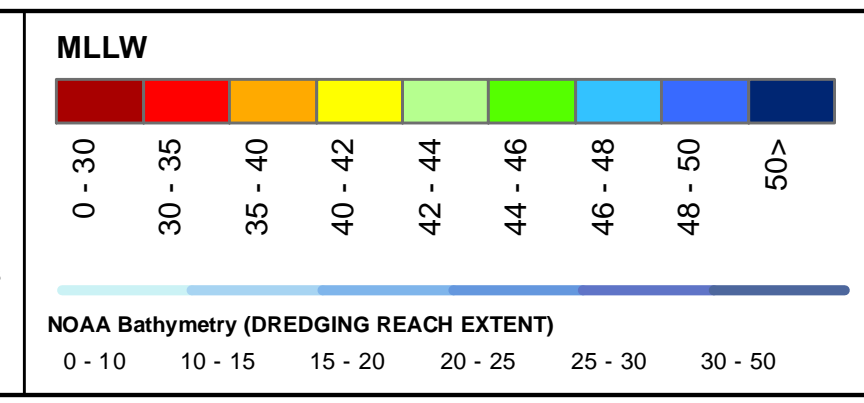
Houston Ship Channel: Bolivar Roads to Red Fish Light 1



U.S. Army Corps of Engineers
Galveston District

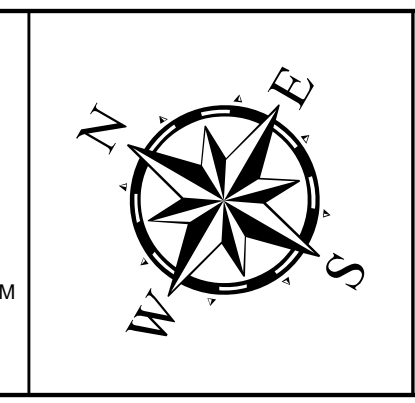


Channel Features	Aids to Navigation
— Channel Toe	★ Lights
- - - Channel Center Line	▲ Red Side Aids
— Channel Station Lines	■ Green Side Aids
↔ Channel Dimensions	◆ Mooring Buoy

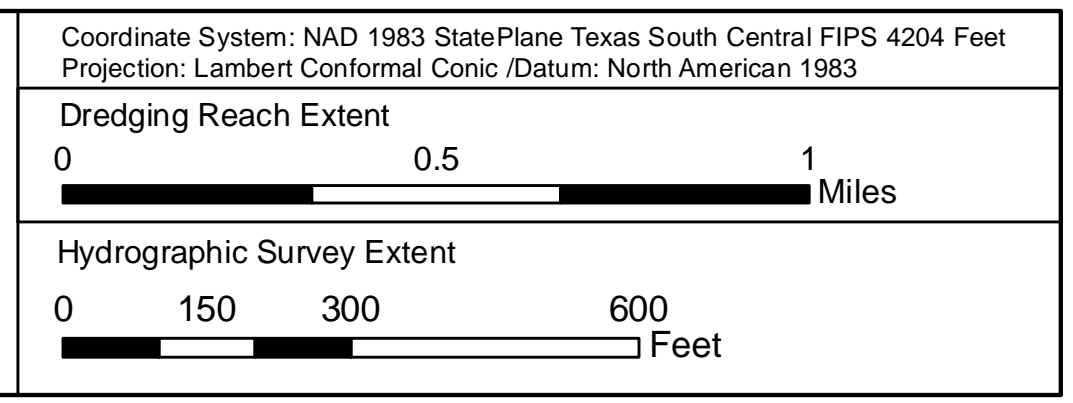


NOTES:
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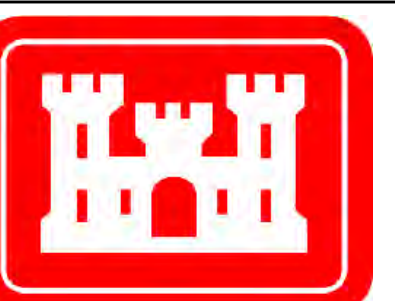
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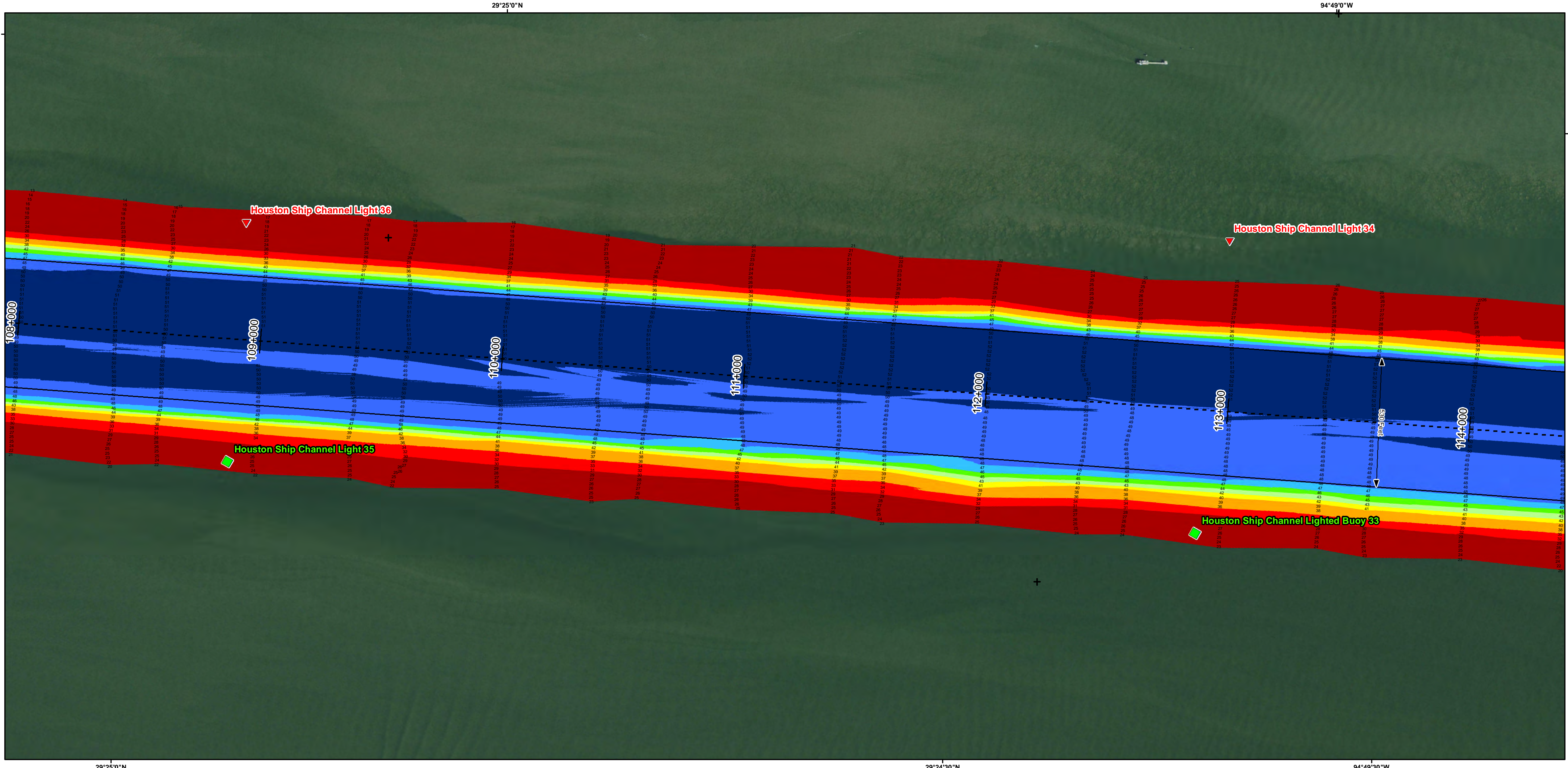
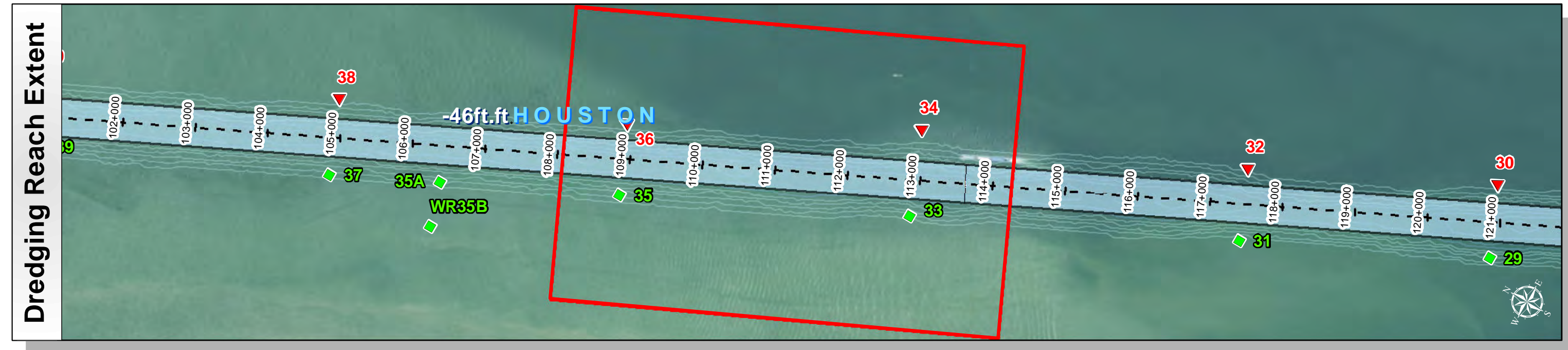
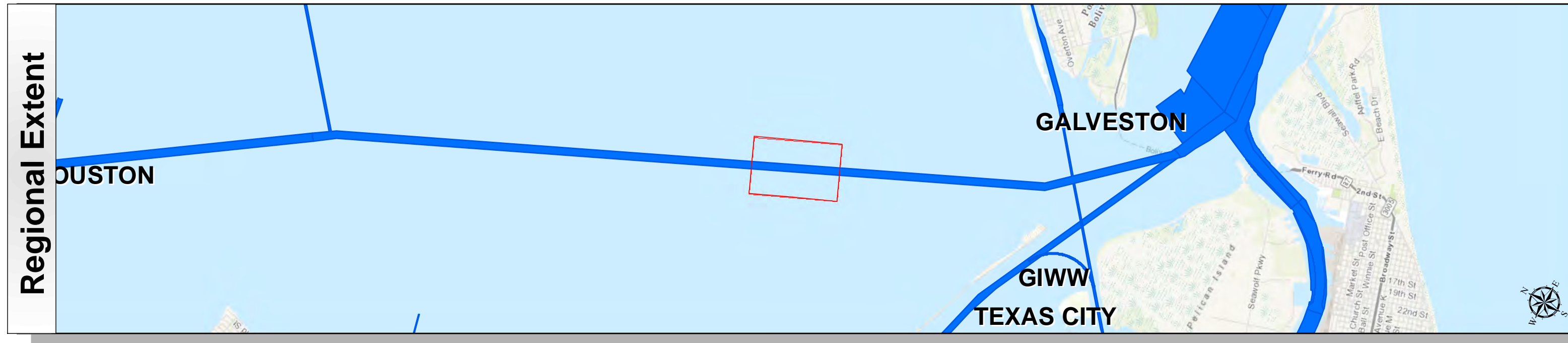
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Page: 4 of 56	Side Slope Ratio: (Rise : Run)
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Mapped by: MSAOX PAC	Print Date: 12/5/2017
Additional Info:	

HYDROGRAPHIC SURVEY
 U.S. ARMY ENGINEER DISTRICT
 CORPS OF ENGINEERS
 GALVESTON, TEXAS
 Bolivar Roads to Red Fish Light 1
Station: 138+476 to 78+844
HOUSTON
 HOUSTON, TEXAS

Houston Ship Channel: Bolivar Roads to Red Fish Light 1



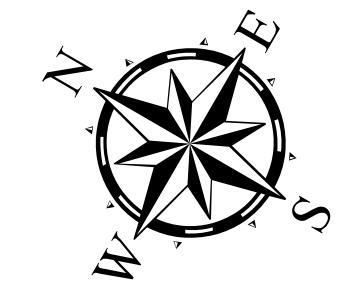
U.S. Army Corps of Engineers
Galveston District



Channel Features	Aids to Navigation	MLLW
— Channel Toe	★ Lights	0 - 30
- - - Channel Center Line	▲ Red Side Aids	30 - 35
— Channel Station Lines	■ Green Side Aids	35 - 40
↔ Channel Dimensions	◆ Mooring Buoy	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

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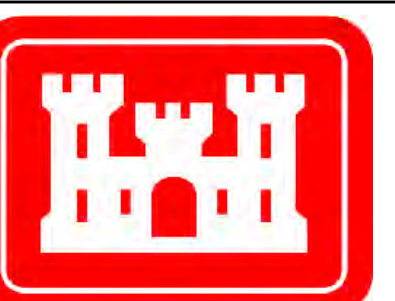
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 Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Coordinate System: NAD 1983 StatePlane Texas South Central FIPS 4204 Feet Projection: Lambert Conformal Conic /Datum: North American 1983
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Hydrographic Survey Extent 0 150 300 600 Feet

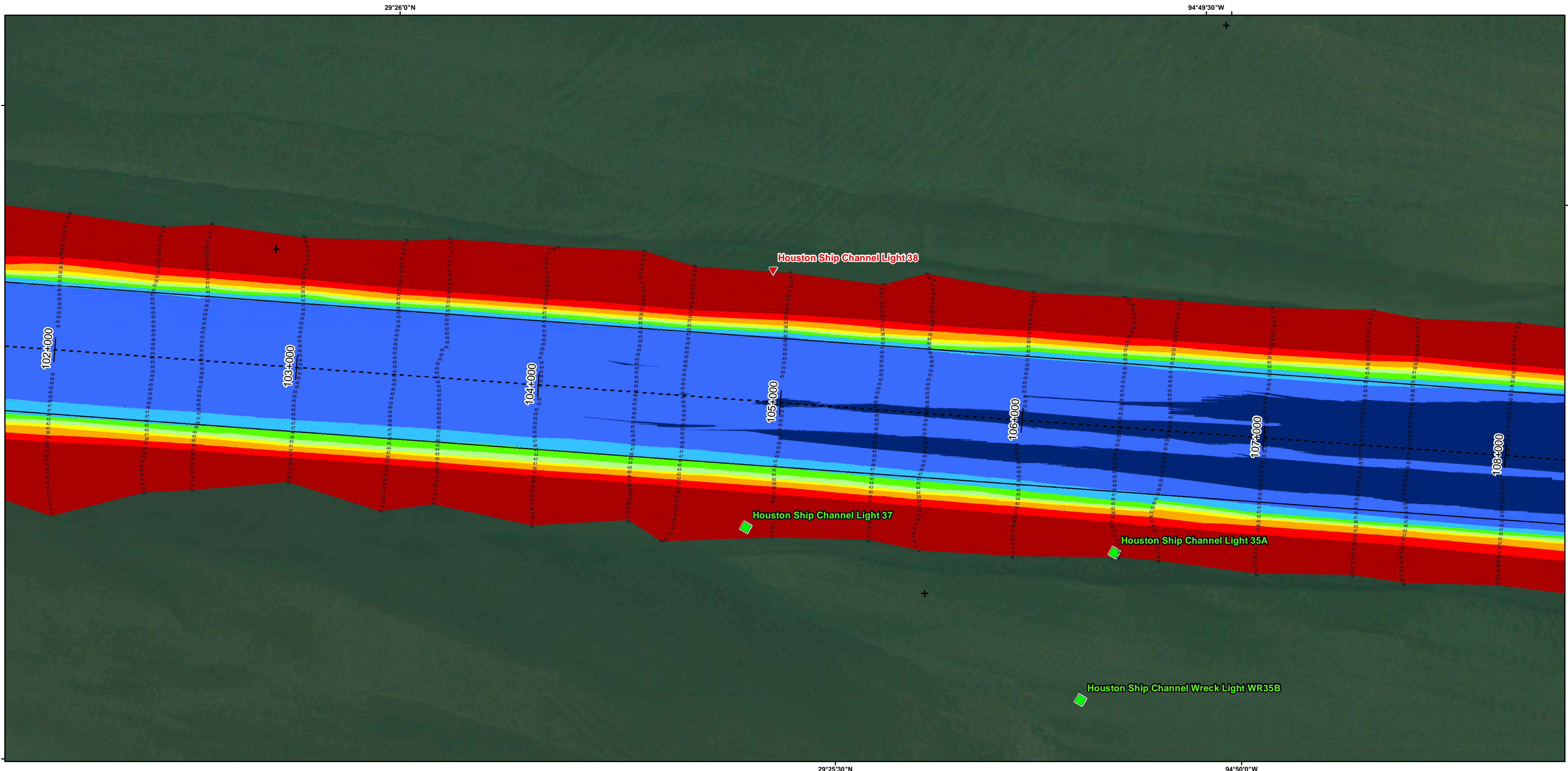
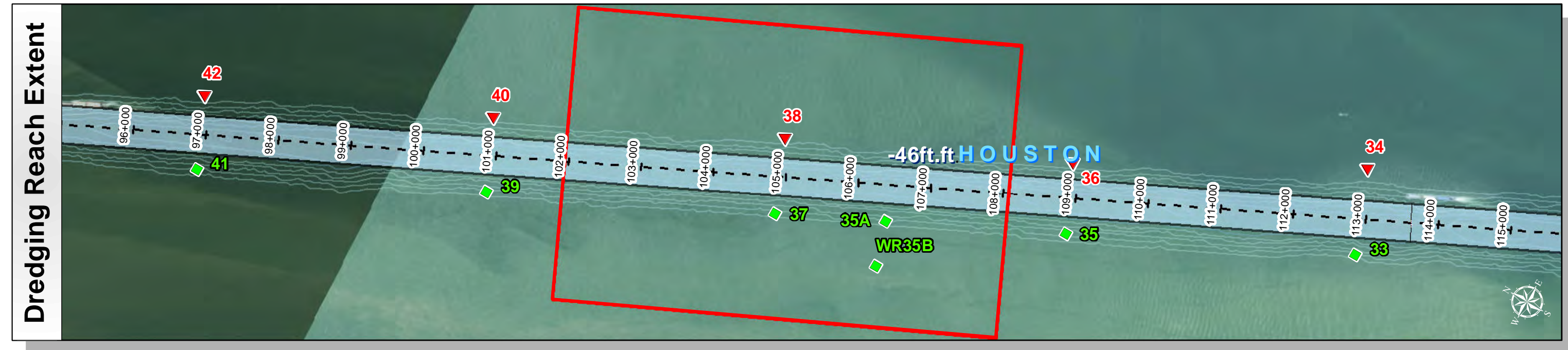
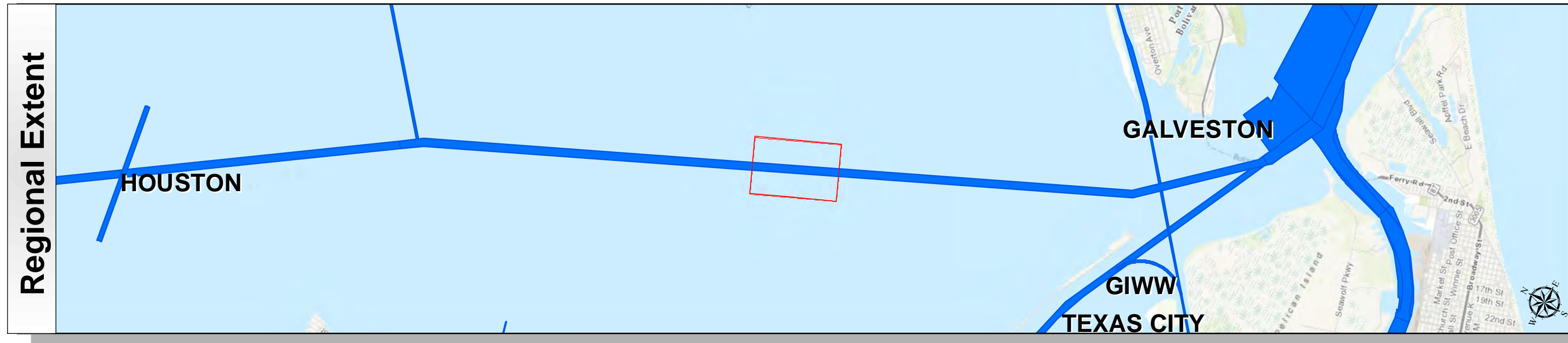
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Page: 5 of 56	Side Slope Ratio: (Rise : Run)
Scale: 1:2,400	Additional Imagery: © DigitalGlobe Inc.
Mapped by: M3A0XPAC	Print Date: 12/5/2017
Additional Info:	

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 CORPS OF ENGINEERS
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Station: 138+476 to 78+844
HOUSTON
 HOUSTON, TEXAS

Houston Ship Channel: Bolivar Roads to Red Fish Light 1



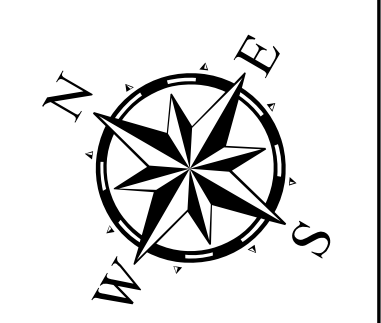
U.S. Army Corps of Engineers
Galveston District



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

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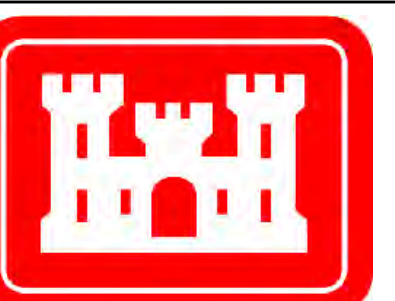
Coordinate System: NAD 1983 StatePlane Texas South Central FIPS 4204 Feet Projection: Lambert Conformal Conic /Datum: North American 1983
Dredging Reach Extent 0 0.5 1 Miles
Hydrographic Survey Extent 0 150 300 600 Feet

Survey Date(s): 25 November 2017	Authorized Depth: -46ft.
Page: 6 of 56	Side Slope Ratio: (Rise : Run)
Scale: 1:2,400	Additional Imagery: © DigitalGlobe Inc.
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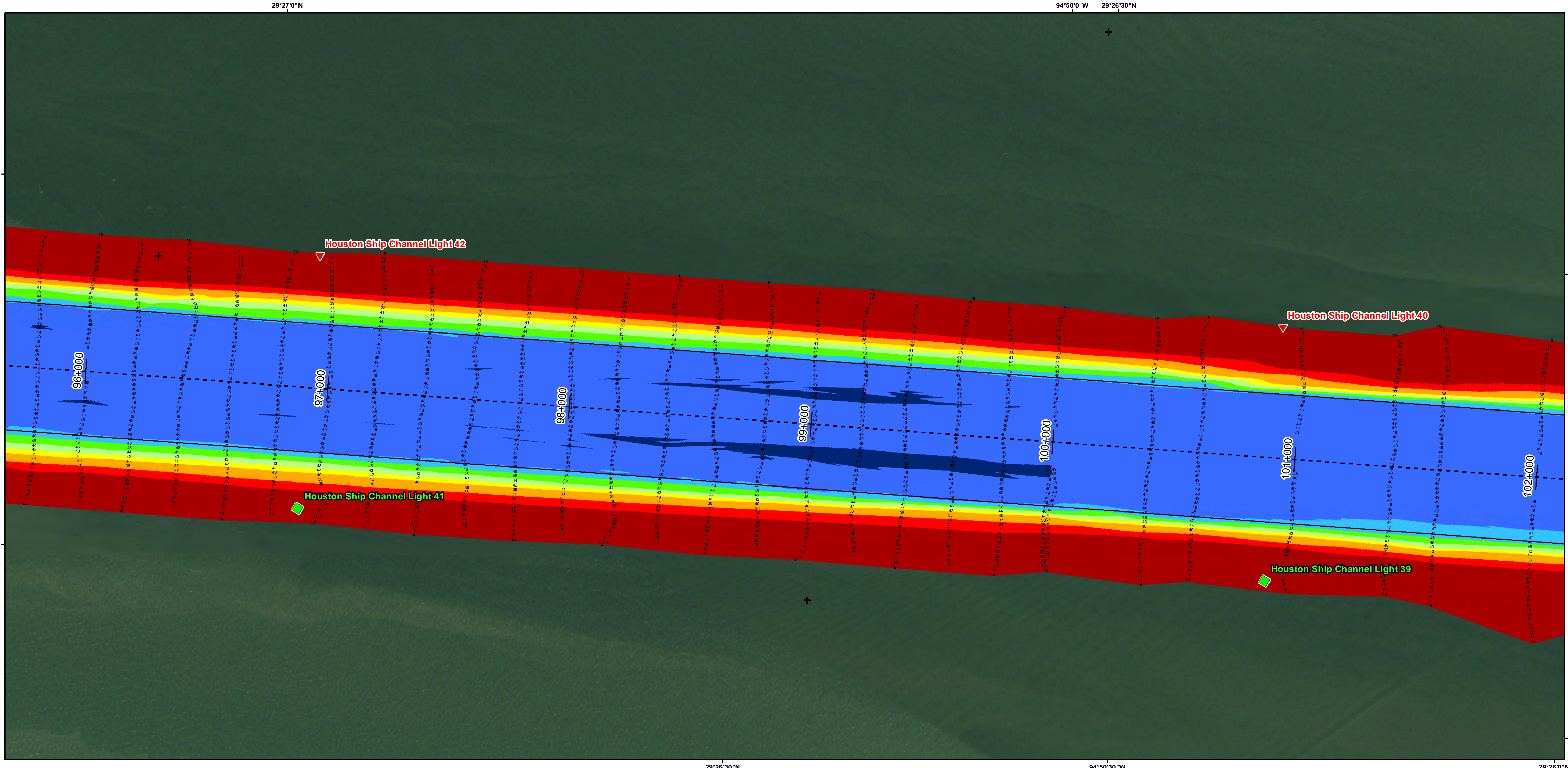
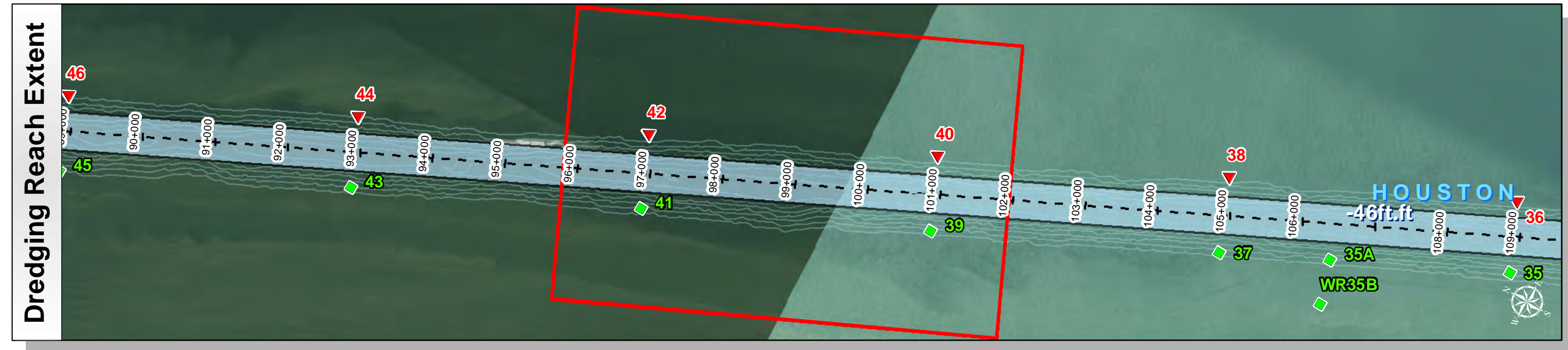
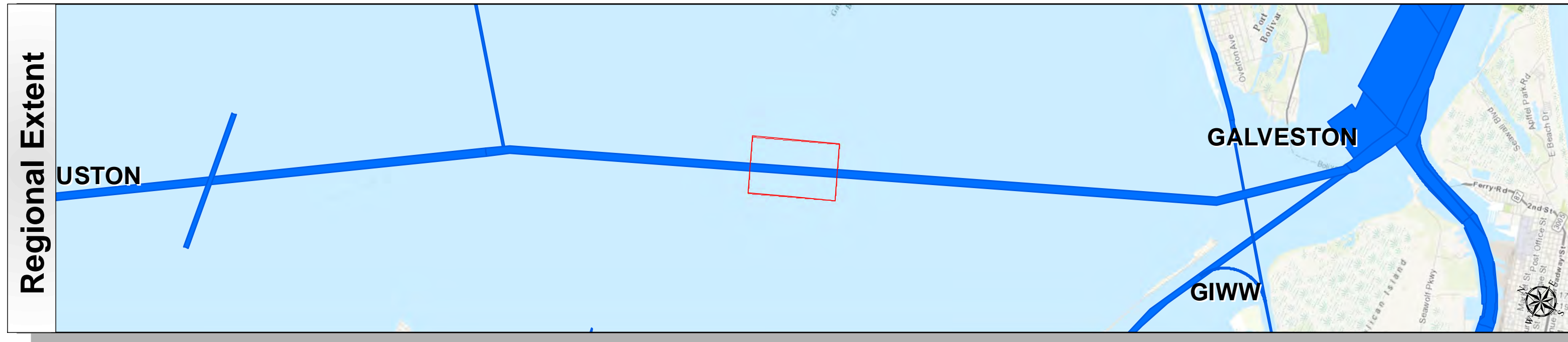
HYDROGRAPHIC SURVEY
U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
GALVESTON, TEXAS
Bolivar Roads to Red Fish Light 1

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

Houston Ship Channel: Bolivar Roads to Red Fish Light 1



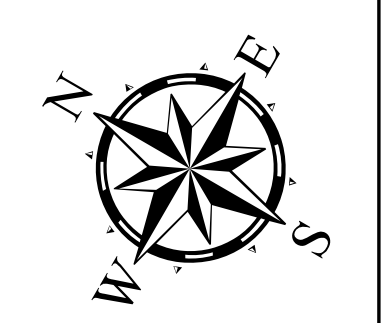
U.S. Army Corps of Engineers
Galveston District



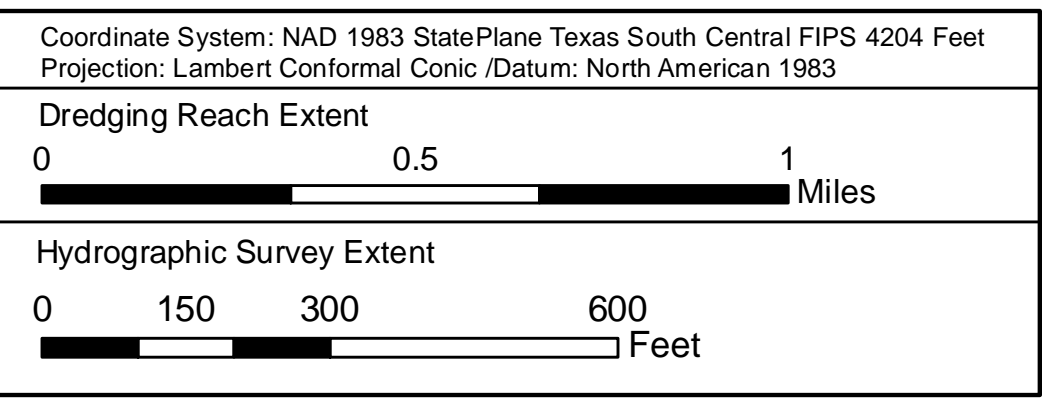
Channel Features	Aids to Navigation	MLLW
— Channel Toe	★ Lights	0 - 30
- - - Channel Center Line	▲ Red Side Aids	30 - 35
— Channel Station Lines	■ Green Side Aids	35 - 40
↔ Channel Dimensions	◆ Mooring Buoy	40 - 42
		42 - 44
		44 - 46
		46 - 48
		48 - 50
		50+
		NOAA Bathymetry (DREDGING REACH EXTENT)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

NOTES:
 1. HORIZONTAL COORDINATES ARE REFERENCED TO TEXAS STATE PLANE COORDINATE SYSTEM, SOUTH CENTRAL ZONE NAD83 US SURVEY FEET.
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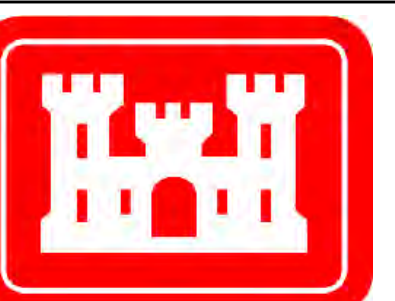
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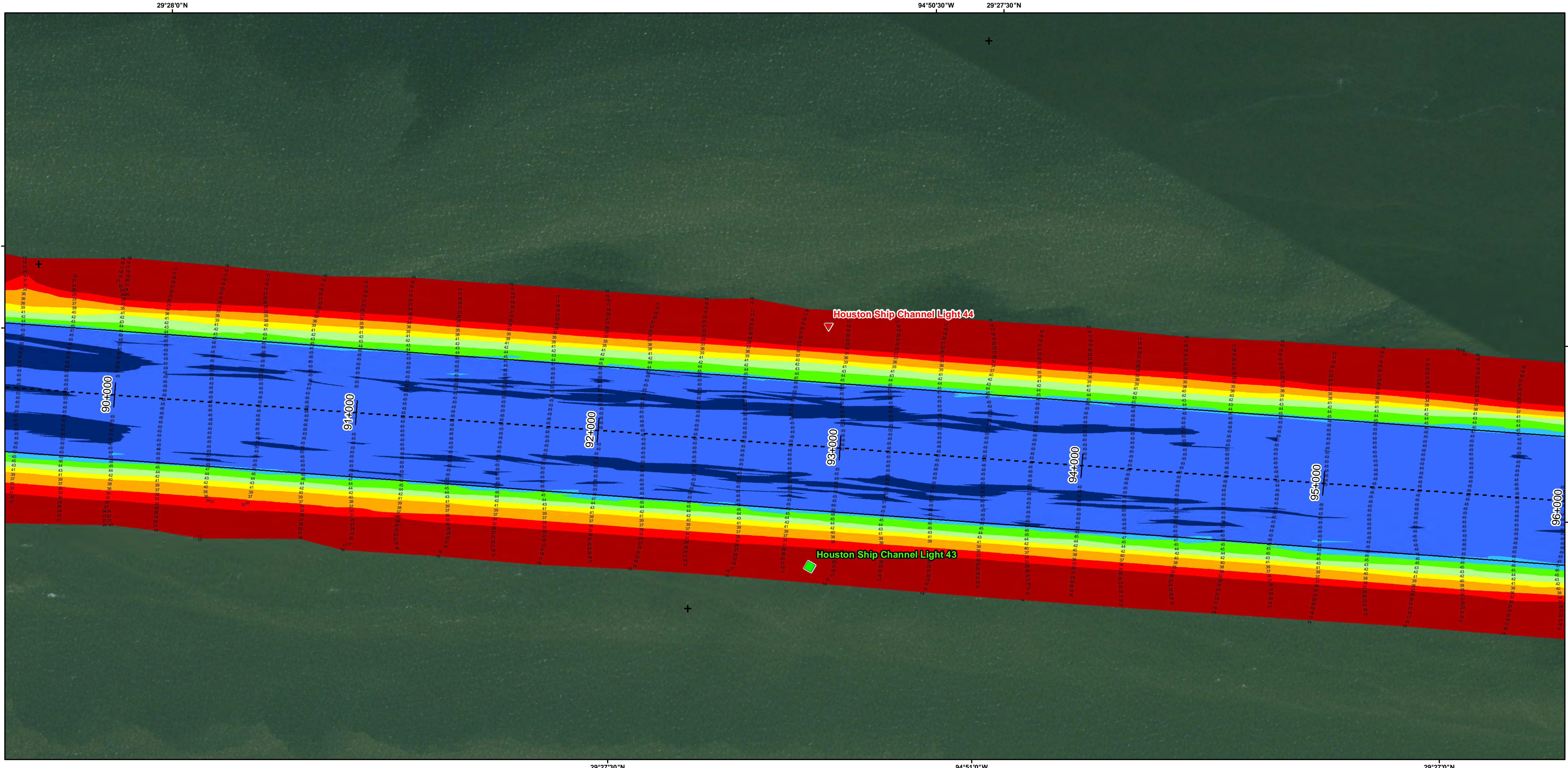
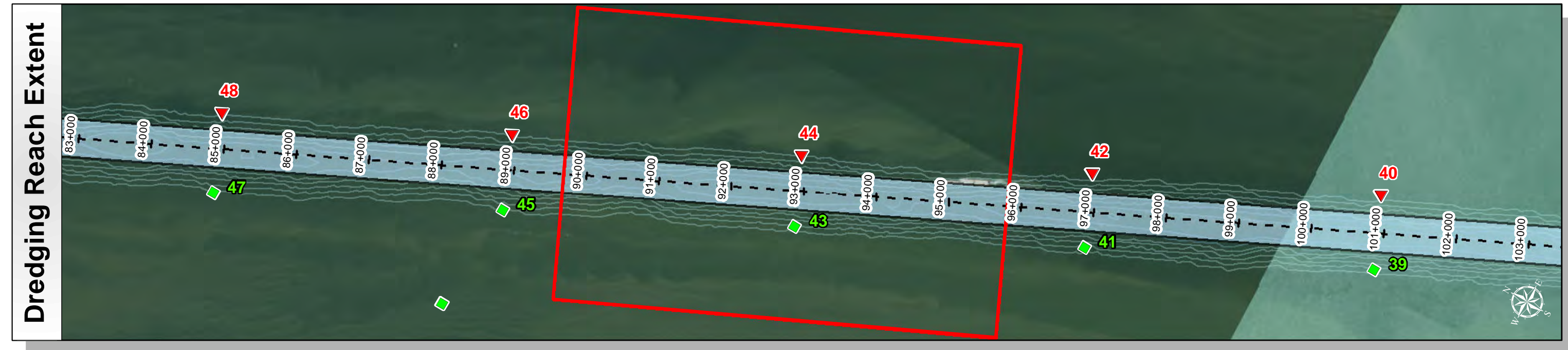
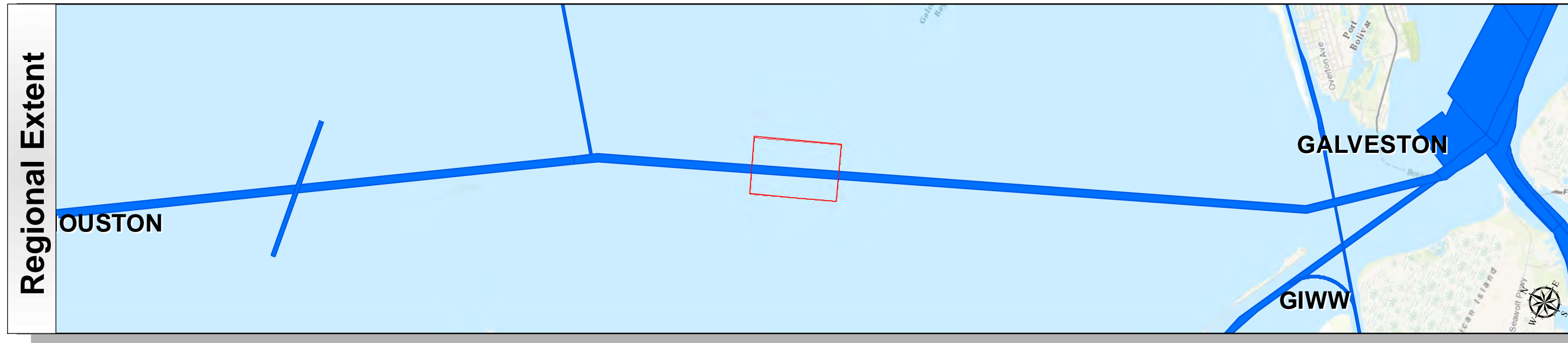
Survey Date(s): 25 November 2017	Authorized Depth: -46ft.
Page: 7 of 56	Side Slope Ratio: (Rise : Run)
Scale: 1:2,400	Additional Imagery: © DigitalGlobe Inc.
Mapped by: MSAOX PAC	Print Date: 12/5/2017
Additional Info :	

HYDROGRAPHIC SURVEY
 U.S. ARMY ENGINEER DISTRICT
 CORPS OF ENGINEERS
 GALVESTON, TEXAS
 Bolivar Roads to Red Fish Light 1
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	★ Lights	0 - 30
- - - Channel Center Line	▲ Red Side Aids	30 - 35
— Channel Station Lines	■ Green Side Aids	35 - 40
↔ Channel Dimensions	◆ Mooring Buoy	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

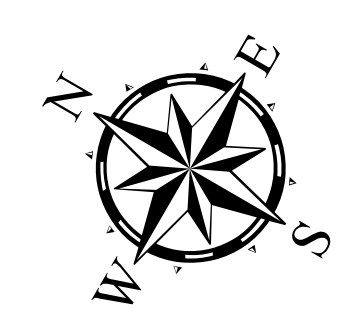
NOTES:

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Coordinate System: NAD 1983 StatePlane Texas South Central FIPS 4204 Feet Projection: Lambert Conformal Conic /Datum: North American 1983
Dredging Reach Extent 0 0.5 1 Miles
Hydrographic Survey Extent 0 150 300 600 Feet

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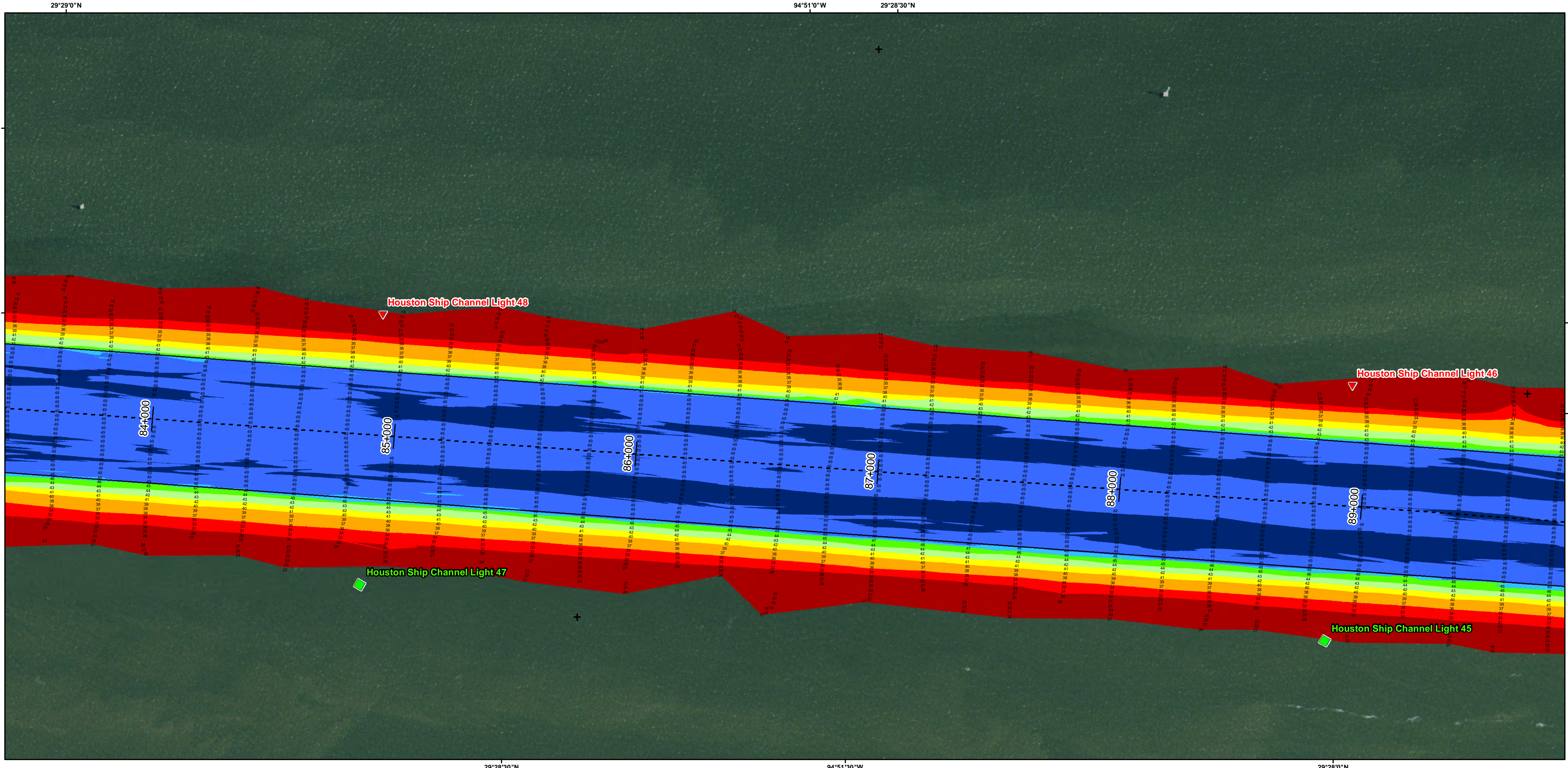
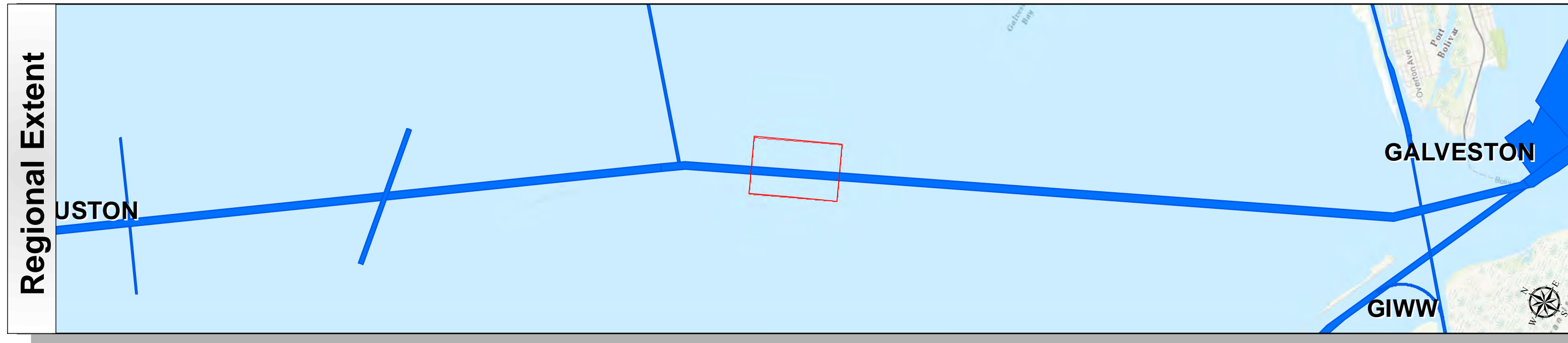
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U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
GALVESTON, TEXAS
Bolivar Roads to Red Fish Light 1

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



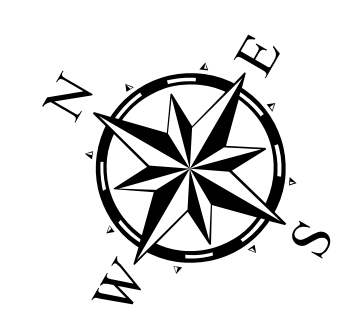
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		48 - 50
		50 >
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		0 - 10 10 - 15 15 - 20 20 - 25 25 - 30 30 - 50

NOTES:

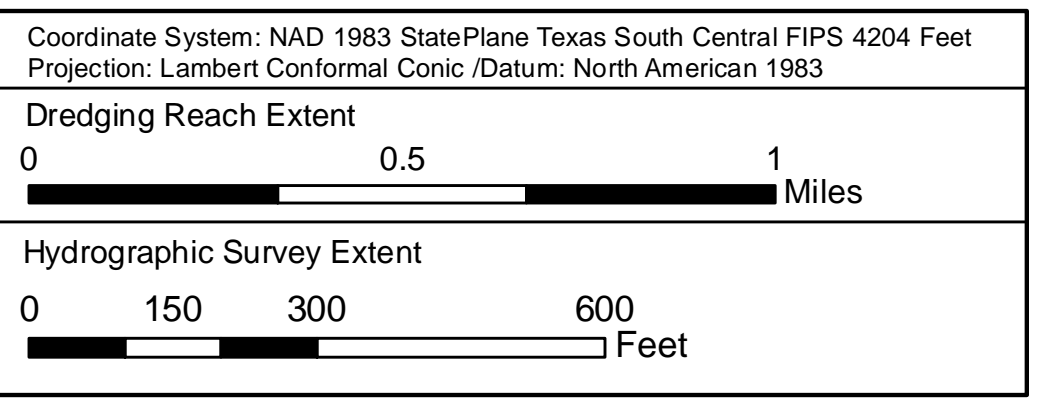
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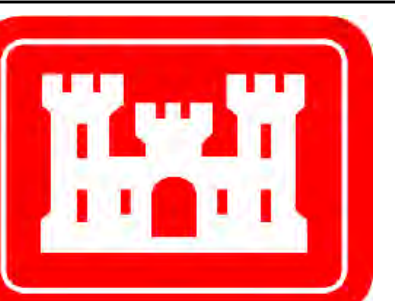
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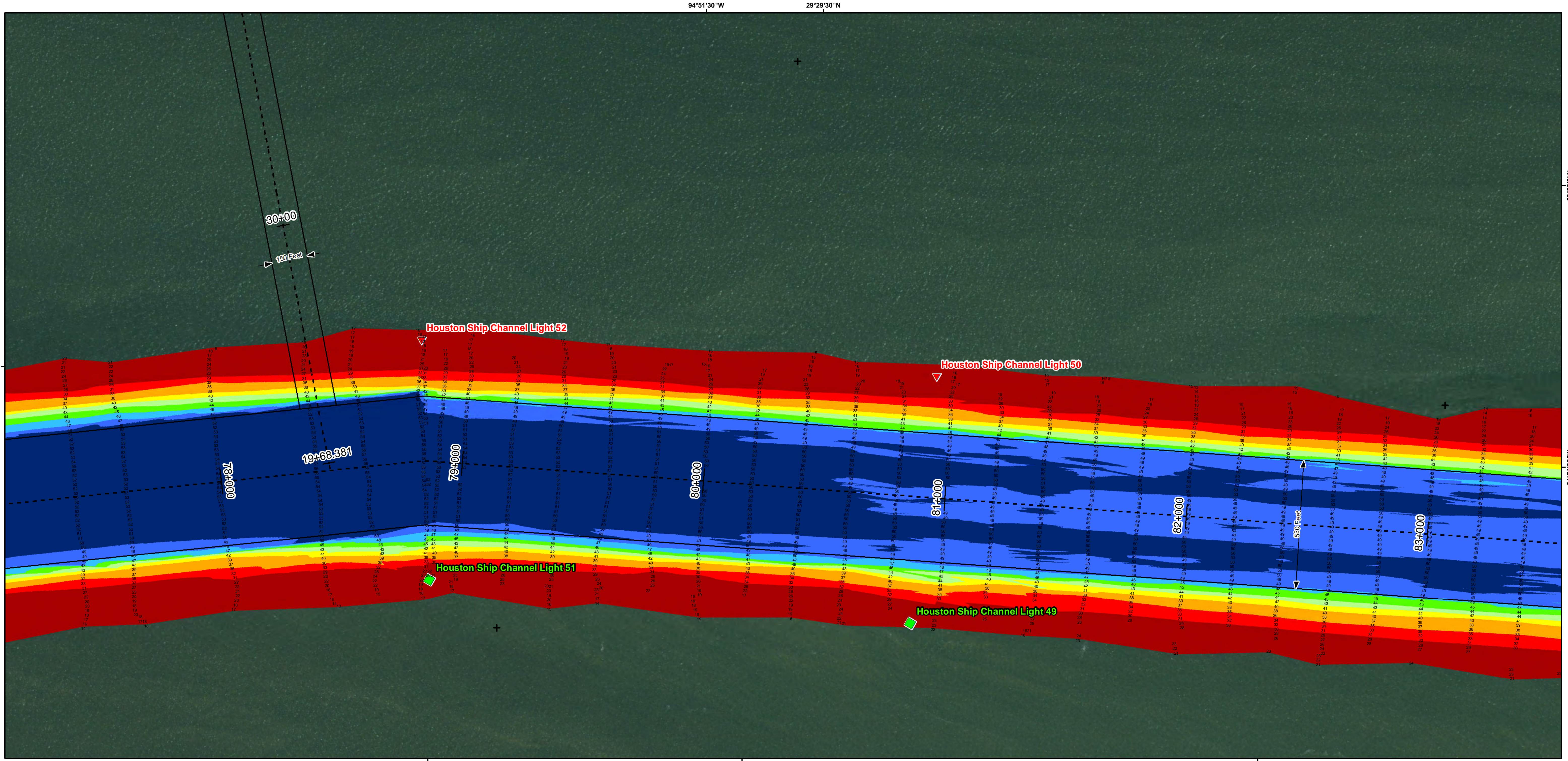
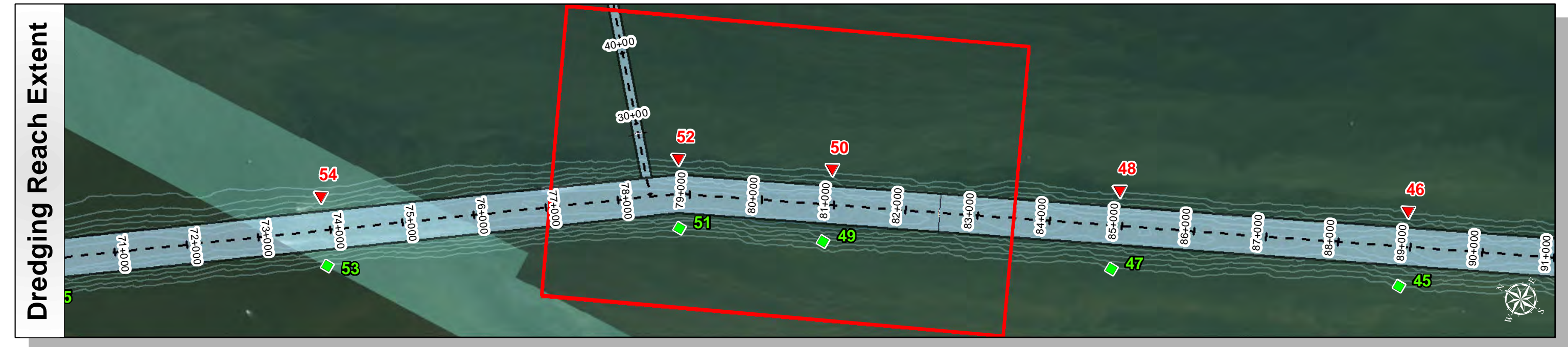
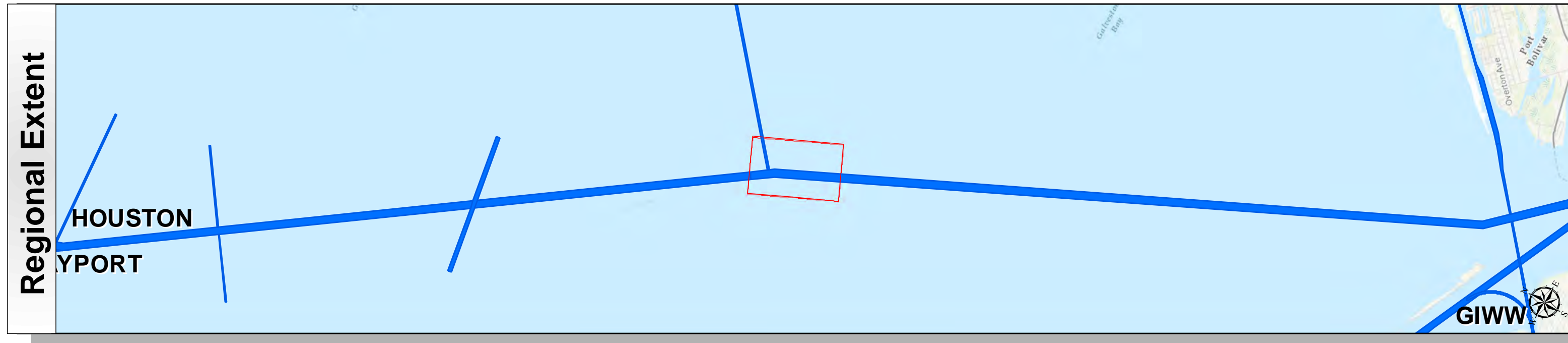
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Bolivar Roads to Red Fish Light 1

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

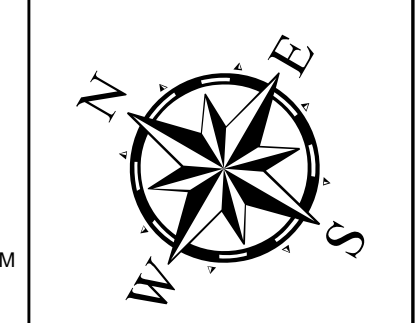


Channel Features	Aids to Navigation	MLLW
— Channel Toe	★ Lights	0 - 30
- - - Channel Center Line	▲ Red Side Aids	30 - 35
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↔ Channel Dimensions	◆ Mooring Buoy	40 - 42
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		25 - 30
		30 - 50

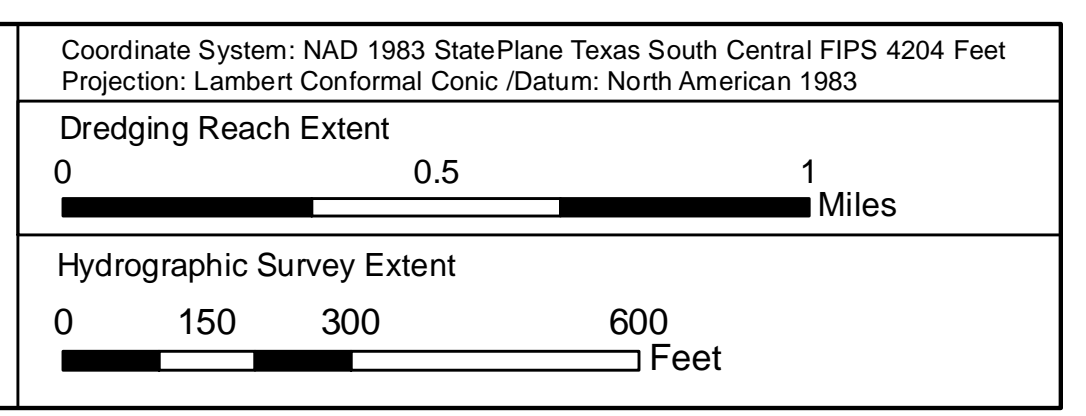
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