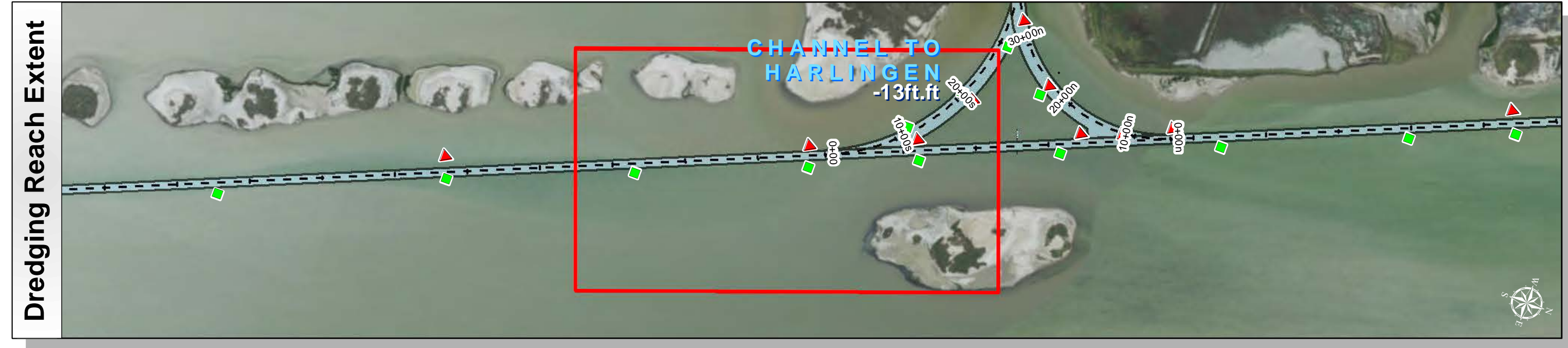
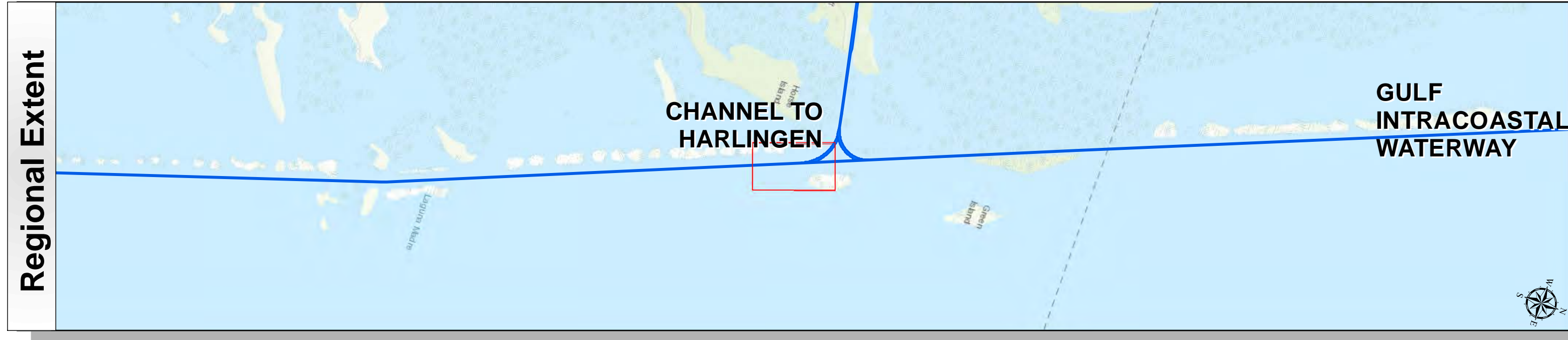


# Gulf Intracoastal Waterway: Arroyo Colorado to Port Brownsville



U.S. Army Corps of Engineers  
Galveston District



**Channel Features**

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

**Aids to Navigation**

- Lights
- Red Side Aids
- Green Side Aids
- Mooring Buoy

**MLLW**

|     |       |       |       |        |         |         |         |      |
|-----|-------|-------|-------|--------|---------|---------|---------|------|
| > 3 | 3 - 5 | 5 - 7 | 7 - 9 | 9 - 11 | 11 - 13 | 13 - 15 | 15 - 17 | < 17 |
|-----|-------|-------|-------|--------|---------|---------|---------|------|

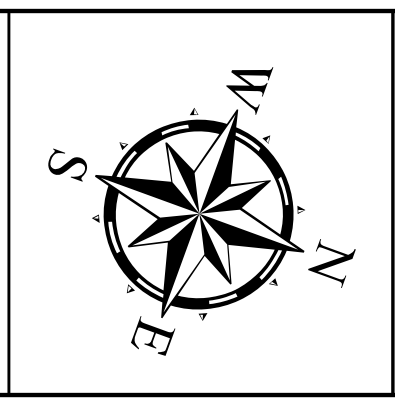
**NOAA Bathymetry (DREDGING REACH EXTENT)**

|        |         |         |         |         |         |
|--------|---------|---------|---------|---------|---------|
| 0 - 10 | 10 - 15 | 15 - 20 | 20 - 25 | 25 - 30 | 30 - 50 |
|--------|---------|---------|---------|---------|---------|

**NOTES:**

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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 FIPS 4205 Feet  
Projection: Lambert Conformal Conic /Datum: North American 1983

**Dredging Reach Extent**

0 0.425 0.85 Miles

**Hydrographic Survey Extent**

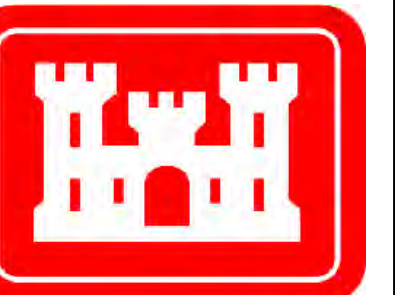
0 205 410 820 Feet

|                               |   |
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| Survey Date(s): 22 March 2018 | Authorized Depth: -13ft.                |
| Page: 317 of 23               | Side Slope Ratio: (Rise : Run)          |
| Scale: 1:2,400                | Additional Imagery: © DigitalGlobe Inc. |
| Mapped by: MSAOXFAC           | Print Date: 4/13/2018                   |
| Additional Info:              |   |

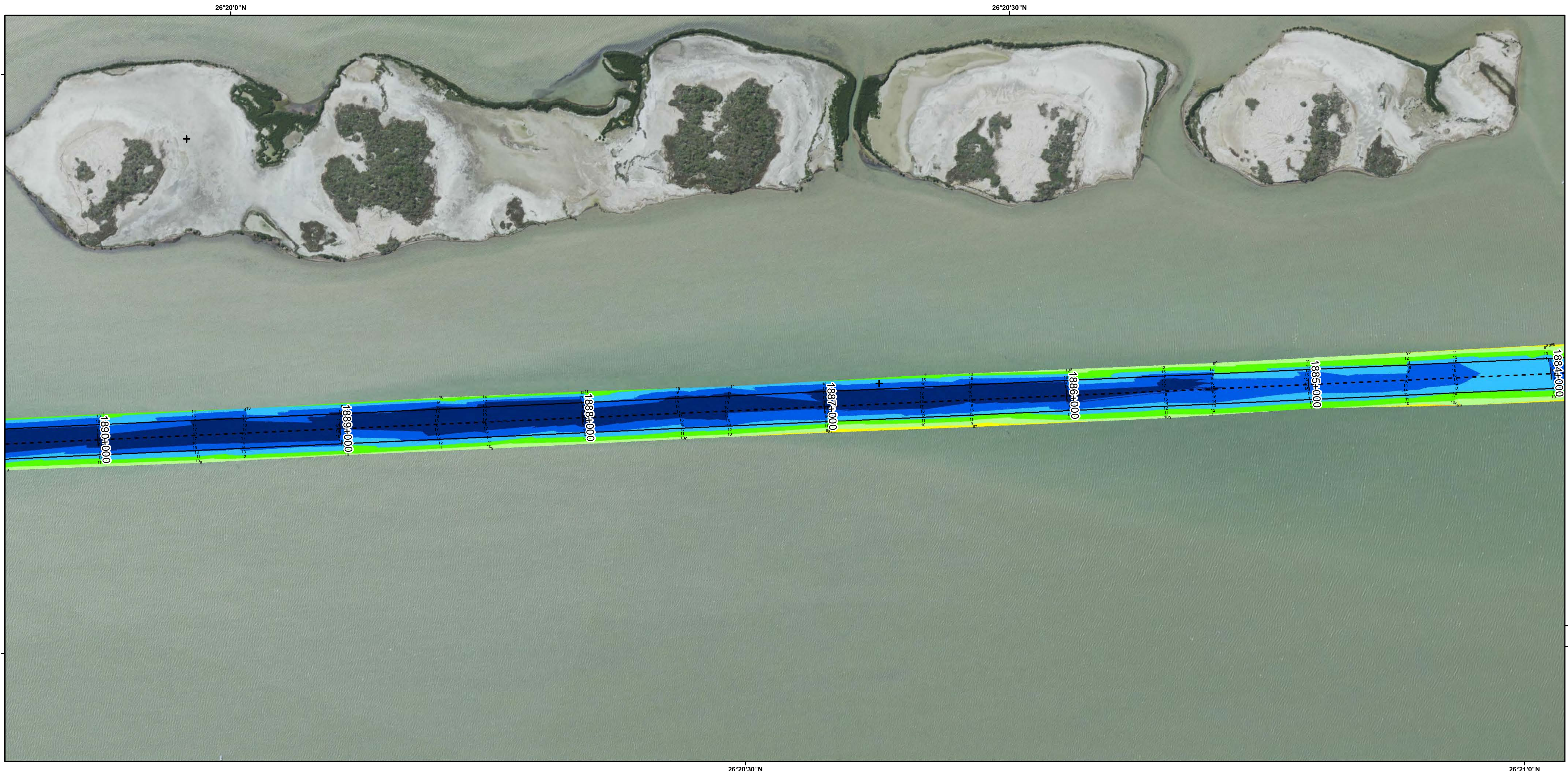
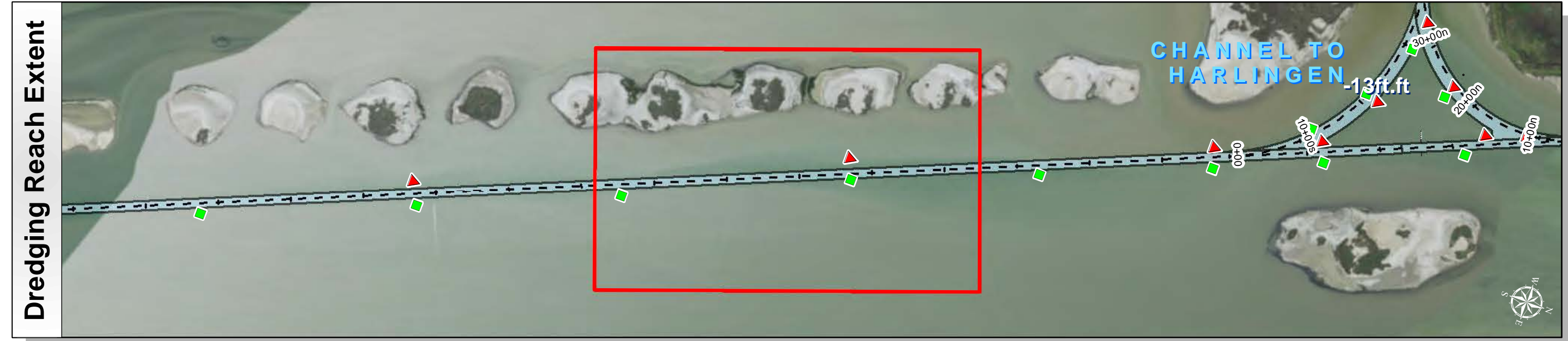
**HYDROGRAPHIC SURVEY**  
U.S. ARMY ENGINEER DISTRICT  
CORPS OF ENGINEERS  
GALVESTON, TEXAS  
Arroyo Colorado to Port Brownsville

**Station: 1878+700 to 1999+277**  
**GULF INTRACOASTAL WATERWAY**  
, TEXAS

# Gulf Intracoastal Waterway: Arroyo Colorado to Port Brownsville



U.S. Army Corps of Engineers  
Galveston District



|                               |   |
|-------------------------------|---|
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| Page: 318 of 23               | Side Slope Ratio: (Rise : Run)          |
| Scale: 1:2,400                | Additional Imagery: © DigitalGlobe Inc. |
| Mapped by: MSAOX PAC          | Print Date: 4/13/2018                   |
| Additional Info :             |   |

**Channel Features**

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

**Aids to Navigation**

- Lights
- Red Side Aids
- Green Side Aids
- Mooring Buoy

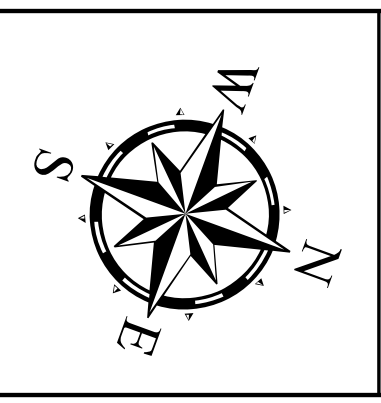
**MLLW**

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 FIPS 4205 Feet  
Projection: Lambert Conformal Conic /Datum: North American 1983

**Dredging Reach Extent**

0 0.425 0.85 Miles

**Hydrographic Survey Extent**

0 205 410 820 Feet

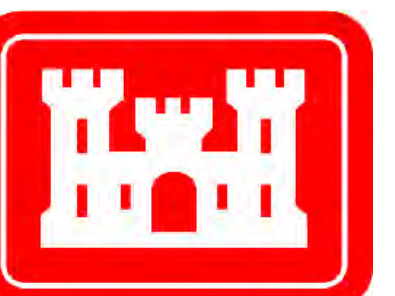
**HYDROGRAPHIC SURVEY**

U.S. ARMY ENGINEER DISTRICT  
CORPS OF ENGINEERS  
GALVESTON, TEXAS  
Arroyo Colorado to Port Brownsville

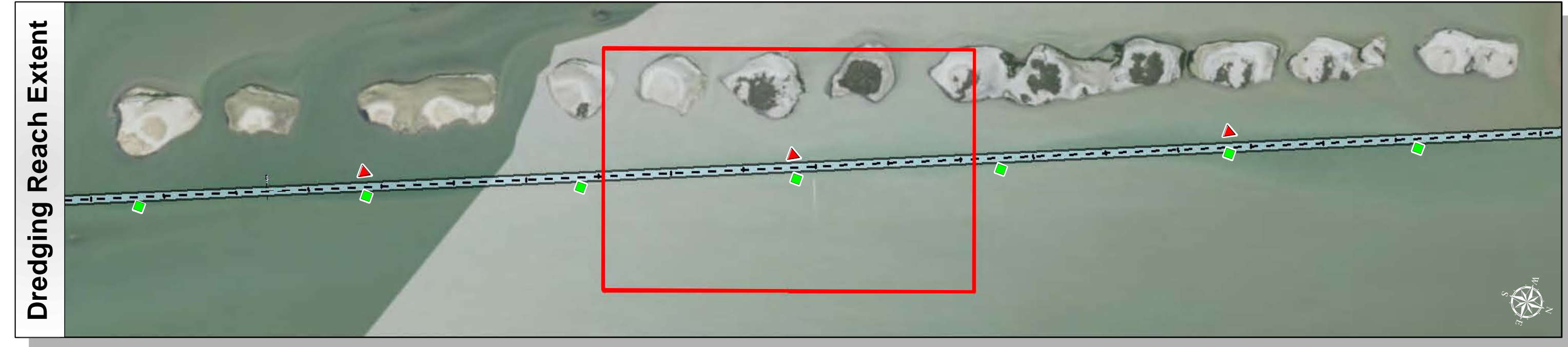
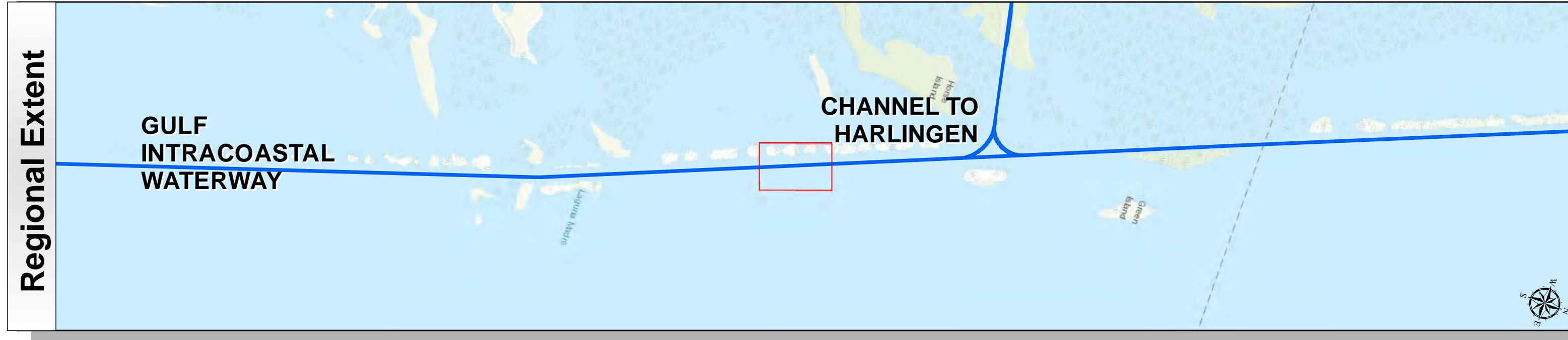
**Station: 1878+700 to 1999+277**

**GULF INTRACOASTAL WATERWAY**  
TEXAS

# Gulf Intracoastal Waterway: Arroyo Colorado to Port Brownsville



U.S. Army Corps of Engineers  
Galveston District

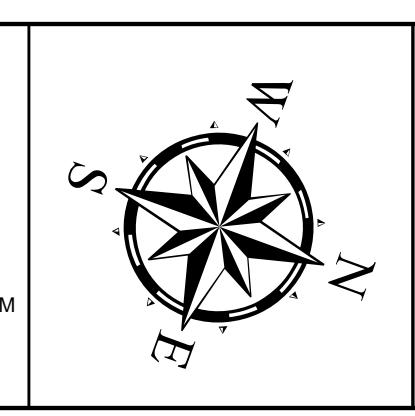


| Channel Features          | Aids to Navigation | MLLW   |
|---------------------------|--------------------|--|
| — Channel Toe             | ★ Lights           |  |
| - - - Channel Center Line | ▲ Red Side Aids    | NOAA Bathymetry (DREDGING REACH EXTENT)        |
| — Channel Station Lines   | ■ Green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

NOTES:

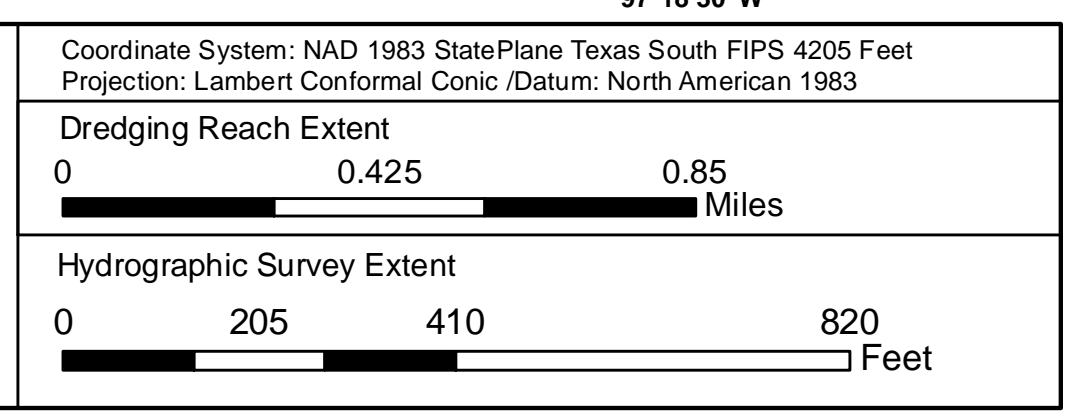
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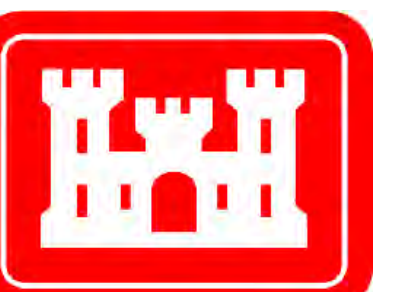


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| Survey Date(s): 22 March 2018 | Authorized Depth: -13ft.                     |
| Page: 319 of 23               | Side Slope Ratio: (Rise : Run)               |
| Scale: 1:2,400                | Map: Additional Imagery: © DigitalGlobe Inc. |
| Mapped by: M3A0XPAC           | Print Date: 4/13/2018                        |
| Additional Info:              |  |

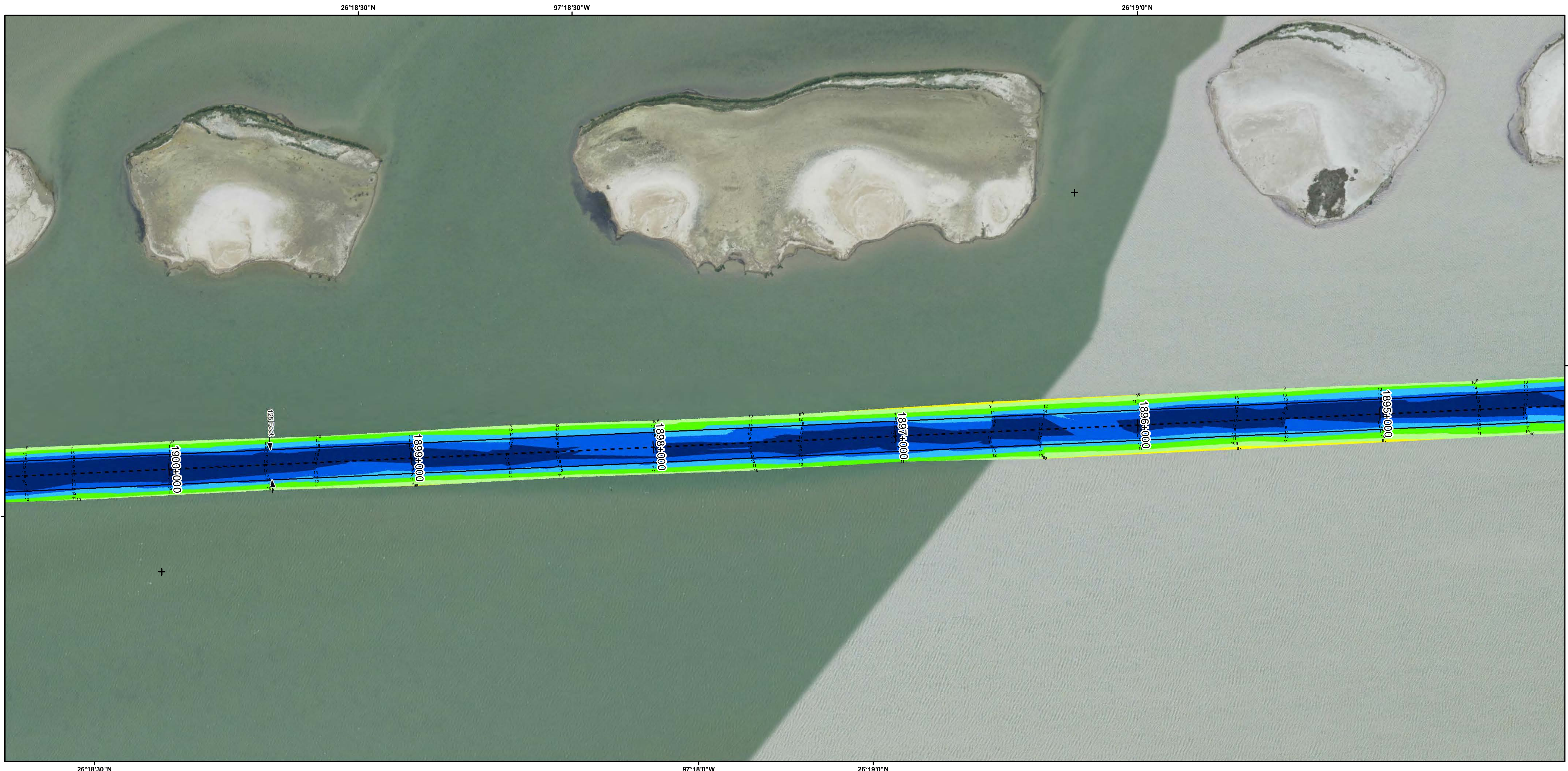
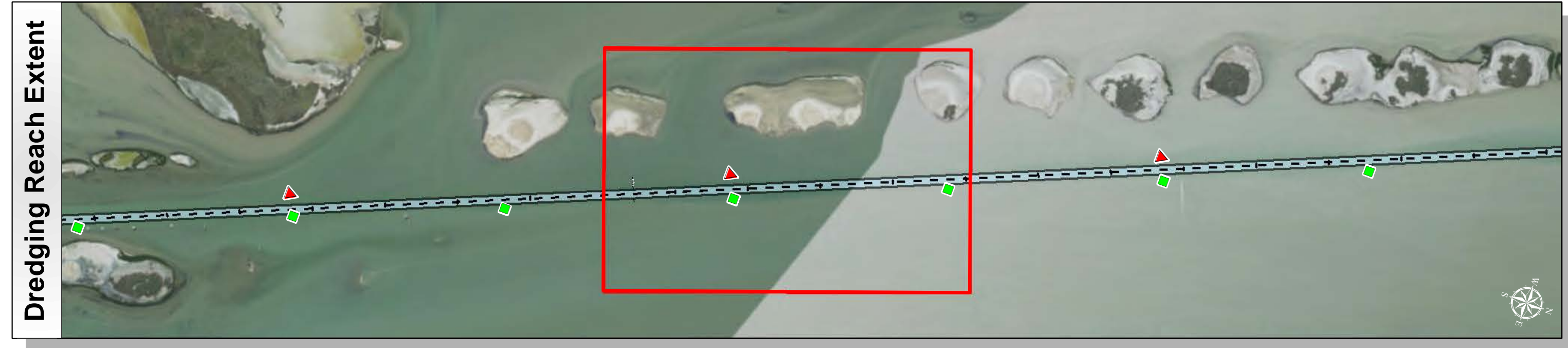
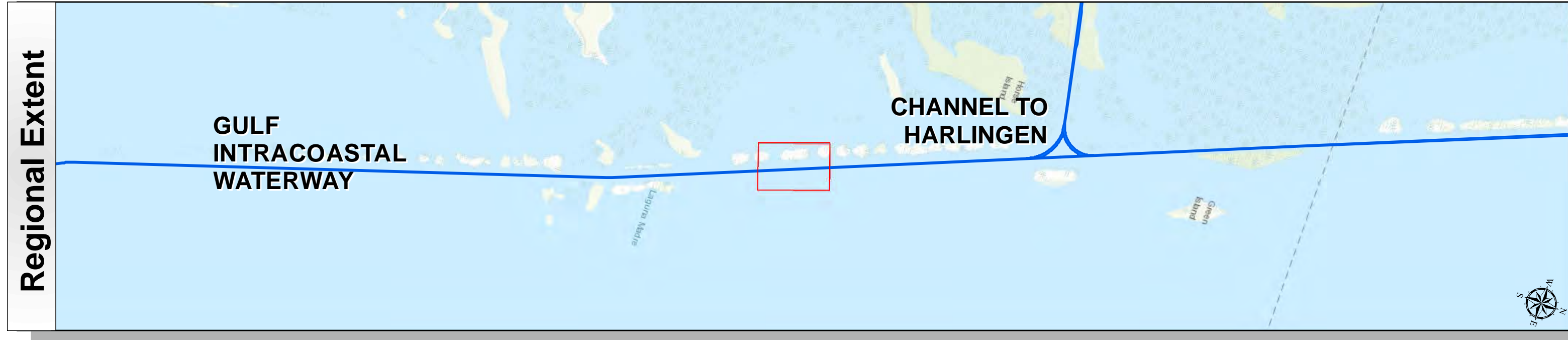
**HYDROGRAPHIC SURVEY**  
U.S. ARMY ENGINEER DISTRICT  
CORPS OF ENGINEERS  
GALVESTON, TEXAS  
Arroyo Colorado to Port Brownsville

**Station: 1878+700 to 1999+277**  
**GULF INTRACOASTAL WATERWAY**  
, TEXAS

# Gulf Intracoastal Waterway: Arroyo Colorado to Port Brownsville



U.S. Army Corps of Engineers  
Galveston District



|                               |   |
|-------------------------------|---|
| Survey Date(s): 22 March 2018 | Authorized Depth: -13ft.                |
| Page: 320 of 23               | Side Slope Ratio: (Rise : Run)          |
| Scale: 1:2,400                | Additional Imagery: © DigitalGlobe Inc. |
| Mapped by: MSAOX PAC          | Print Date: 4/13/2018                   |
| Additional Info:              |   |

**Channel Features**

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

**Aids to Navigation**

- Lights
- Red Side Aids
- Green Side Aids
- Mooring Buoy

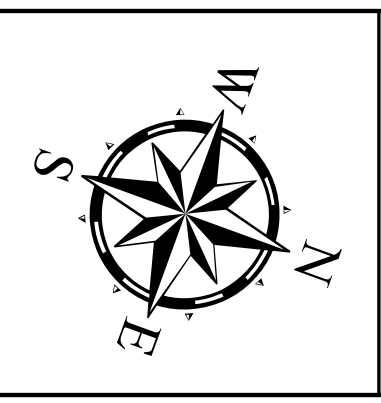
**MLLW**

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 FIPS 4205 Feet  
Projection: Lambert Conformal Conic /Datum: North American 1983

**Dredging Reach Extent**

0 0.425 0.85 Miles

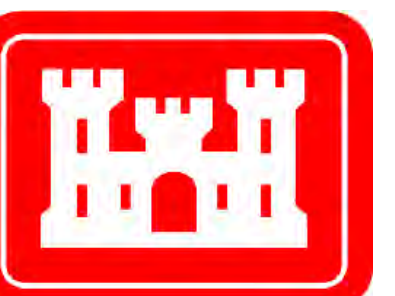
**Hydrographic Survey Extent**

0 205 410 820 Feet

**HYDROGRAPHIC SURVEY**  
U.S. ARMY ENGINEER DISTRICT  
CORPS OF ENGINEERS  
GALVESTON, TEXAS  
Arroyo Colorado to Port Brownsville

**Station: 1878+700 to 1999+277**  
**GULF INTRACOASTAL WATERWAY**  
, TEXAS

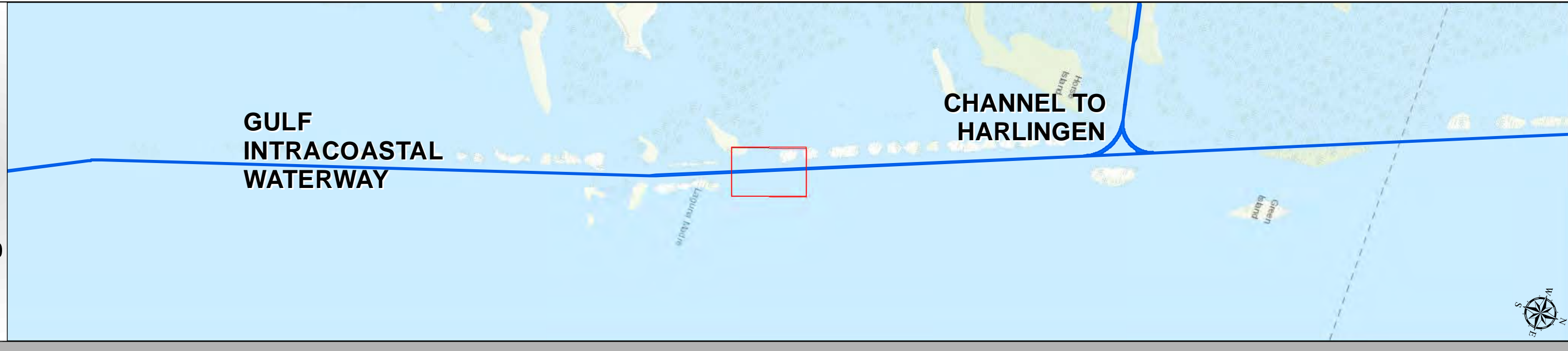
# Gulf Intracoastal Waterway: Arroyo Colorado to Port Brownsville



U.S. Army Corps of Engineers  
Galveston District



Regional Extent



Dredging Reach Extent



|                               |   |
|-------------------------------|---|
| Survey Date(s): 22 March 2018 | Authorized Depth: -13ft.                |
| Page: 321 of 23               | Side Slope Ratio: (Rise : Run)          |
| Scale: 1:2,400                | Additional Imagery: © DigitalGlobe Inc. |
| Mapped by: M3A0XPAC           | Print Date: 4/13/2018                   |
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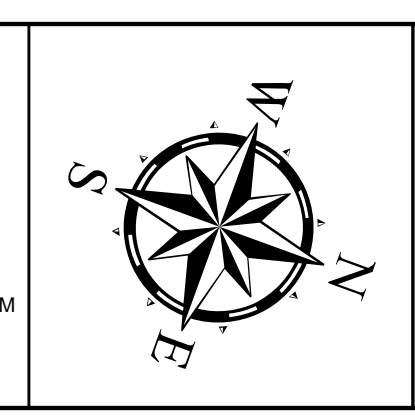
**MLLW**

NOAA Bathymetry (DREDGING REACH EXTENT)

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

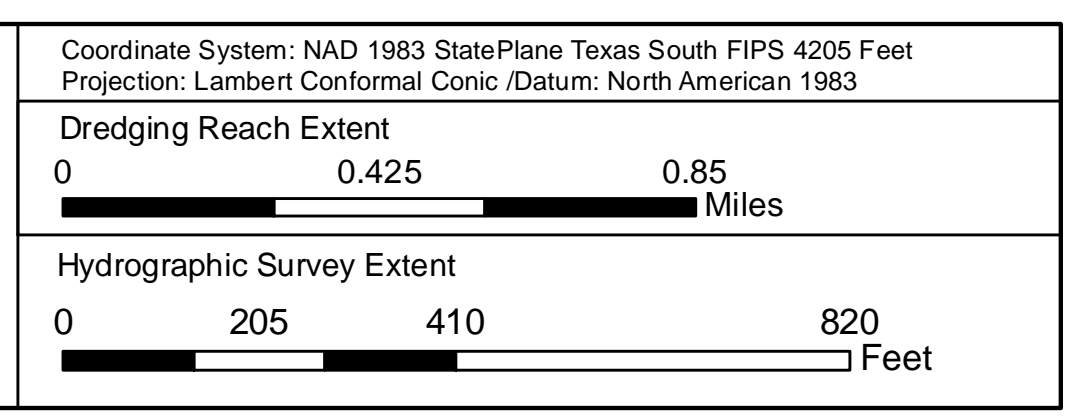
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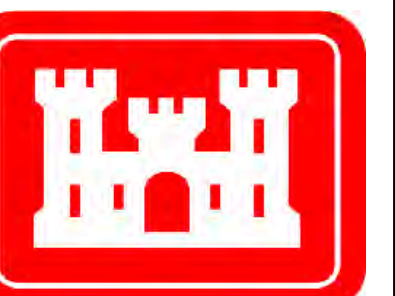
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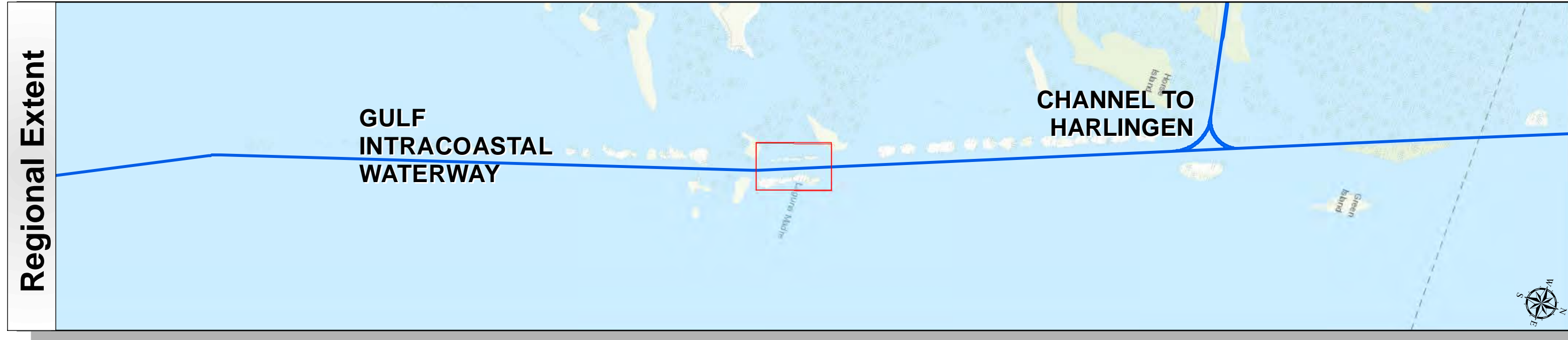
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U.S. ARMY ENGINEER DISTRICT  
CORPS OF ENGINEERS  
GALVESTON, TEXAS  
Arroyo Colorado to Port Brownsville

Station: 1878+700 to 1999+277  
GULF INTRACOASTAL WATERWAY  
, TEXAS

# Gulf Intracoastal Waterway: Arroyo Colorado to Port Brownsville



U.S. Army Corps of Engineers  
Galveston District



|                               |   |
|-------------------------------|---|
| Survey Date(s): 22 March 2018 | Authorized Depth: -13ft.                |
| Page: 322 of 323              | Side Slope Ratio: (Rise : Run)          |
| Scale: 1:2,400                | Additional Imagery: © DigitalGlobe Inc. |
| Map: Mapped by: MSAOX PAC     | Print Date: 4/13/2018                   |
| Map: Additional Info:         |   |

**Channel Features**

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**Aids to Navigation**

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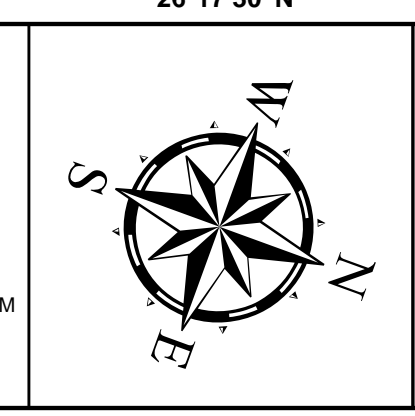
**MLLW**

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 FIPS 4205 Feet  
Projection: Lambert Conformal Conic /Datum: North American 1983

**Dredging Reach Extent**

0 0.425 0.85 Miles

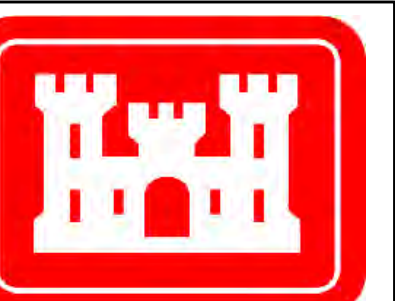
**Hydrographic Survey Extent**

0 205 410 820 Feet

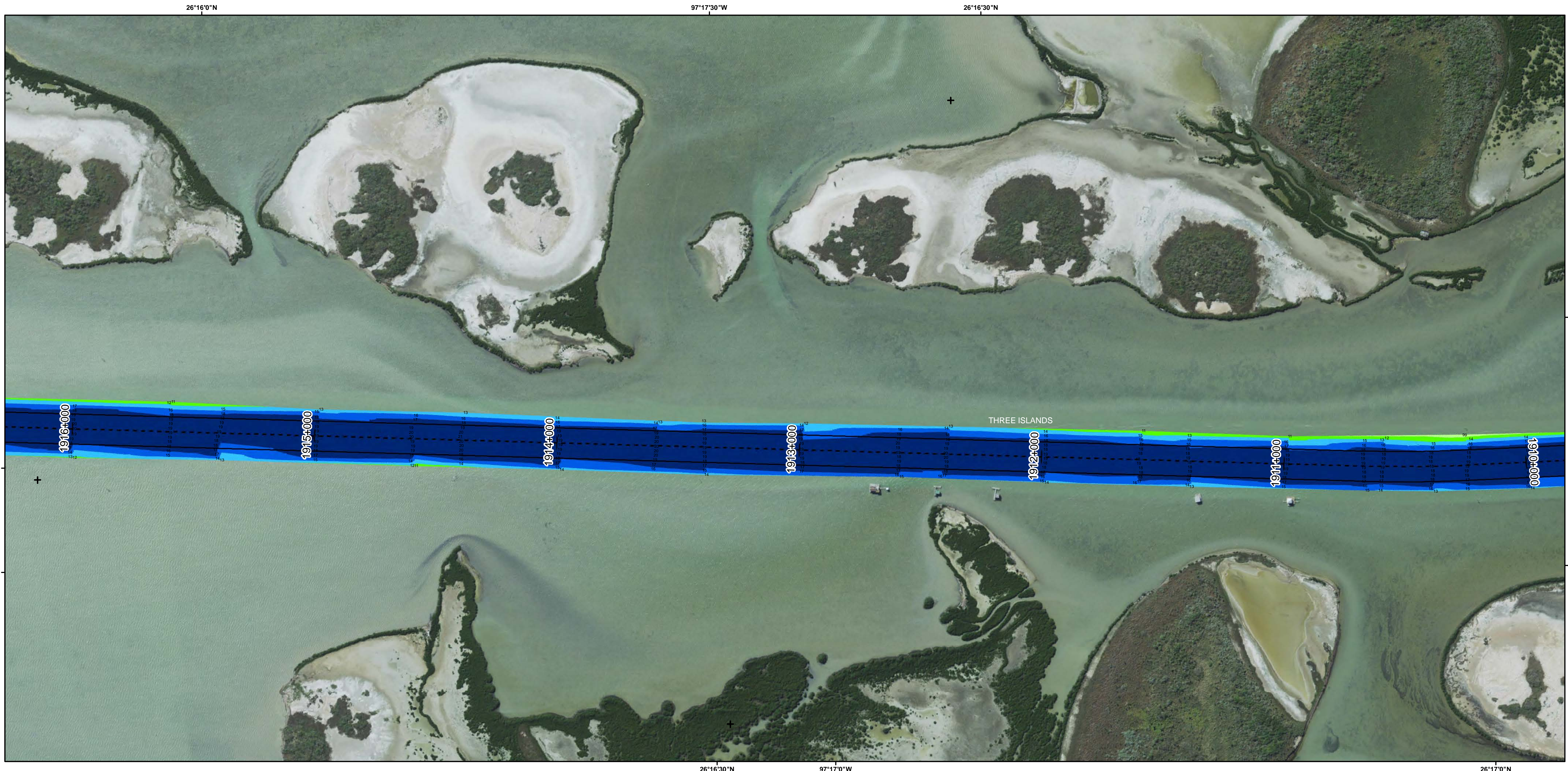
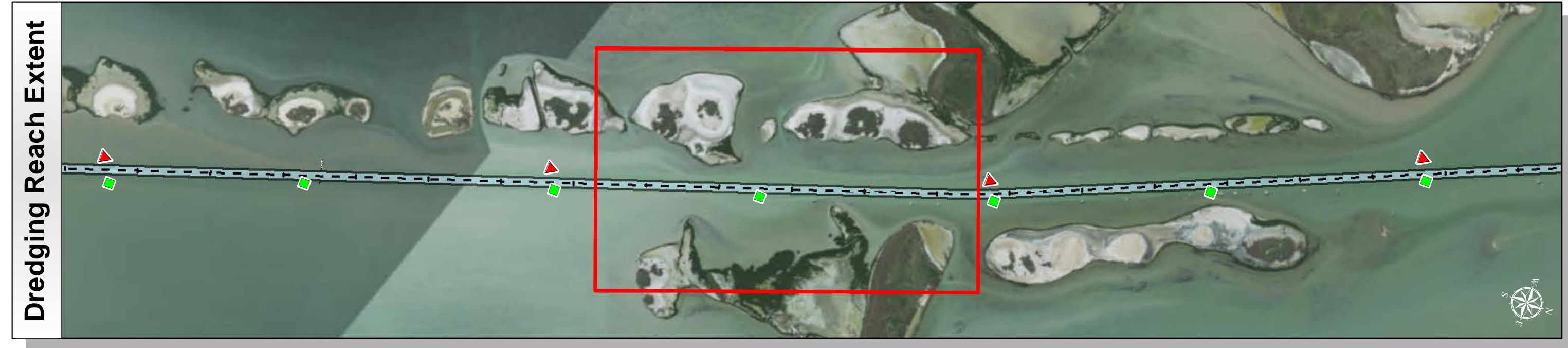
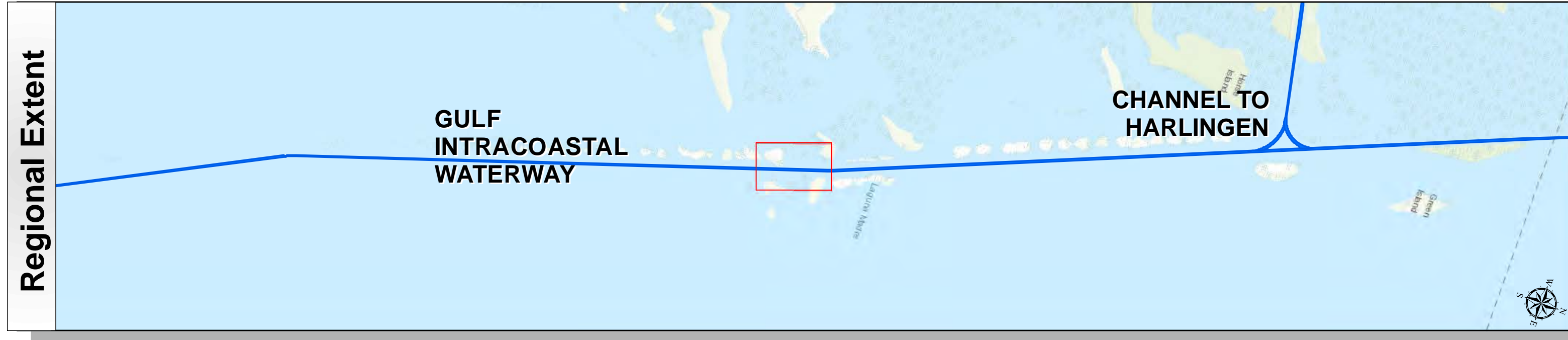
**HYDROGRAPHIC SURVEY**  
U.S. ARMY ENGINEER DISTRICT  
CORPS OF ENGINEERS  
GALVESTON, TEXAS  
Arroyo Colorado to Port Brownsville

**Station: 1878+700 to 1999+277**  
**GULF INTRACOASTAL WATERWAY**  
TEXAS

# Gulf Intracoastal Waterway: Arroyo Colorado to Port Brownsville



U.S. Army Corps of Engineers  
Galveston District



|                               |   |
|-------------------------------|---|
| Survey Date(s): 22 March 2018 | Authorized Depth: -13ft.                |
| Page: 323 of 23               | Side Slope Ratio: (Rise : Run)          |
| Scale: 1:2,400                | Additional Imagery: © DigitalGlobe Inc. |
| Mapped by: M3A0XPAC           | Print Date: 4/13/2018                   |
| Additional Info:              |   |

**Channel Features**

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

**Aids to Navigation**

- Lights
- Red Side Aids
- Green Side Aids
- Mooring Buoy

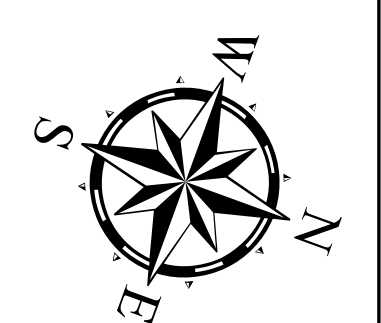
**MLLW**

NOAA Bathymetry (DREDGING REACH EXTENT)

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

**NOTES:**

- HORIZONTAL COORDINATES ARE REFERENCED TO TEXAS STATE PLANE COORDINATE SYSTEM, SOUTH CENTRAL ZONE NAD83 US SURVEY FEET.
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Coordinate System: NAD 1983 StatePlane Texas South FIPS 4205 Feet  
Projection: Lambert Conformal Conic /Datum: North American 1983

**Dredging Reach Extent**

0 0.425 0.85 Miles

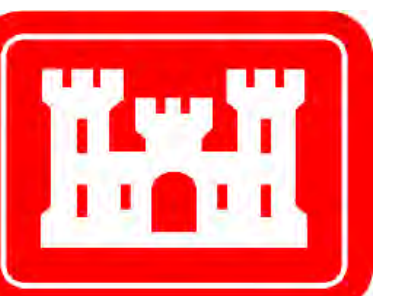
**Hydrographic Survey Extent**

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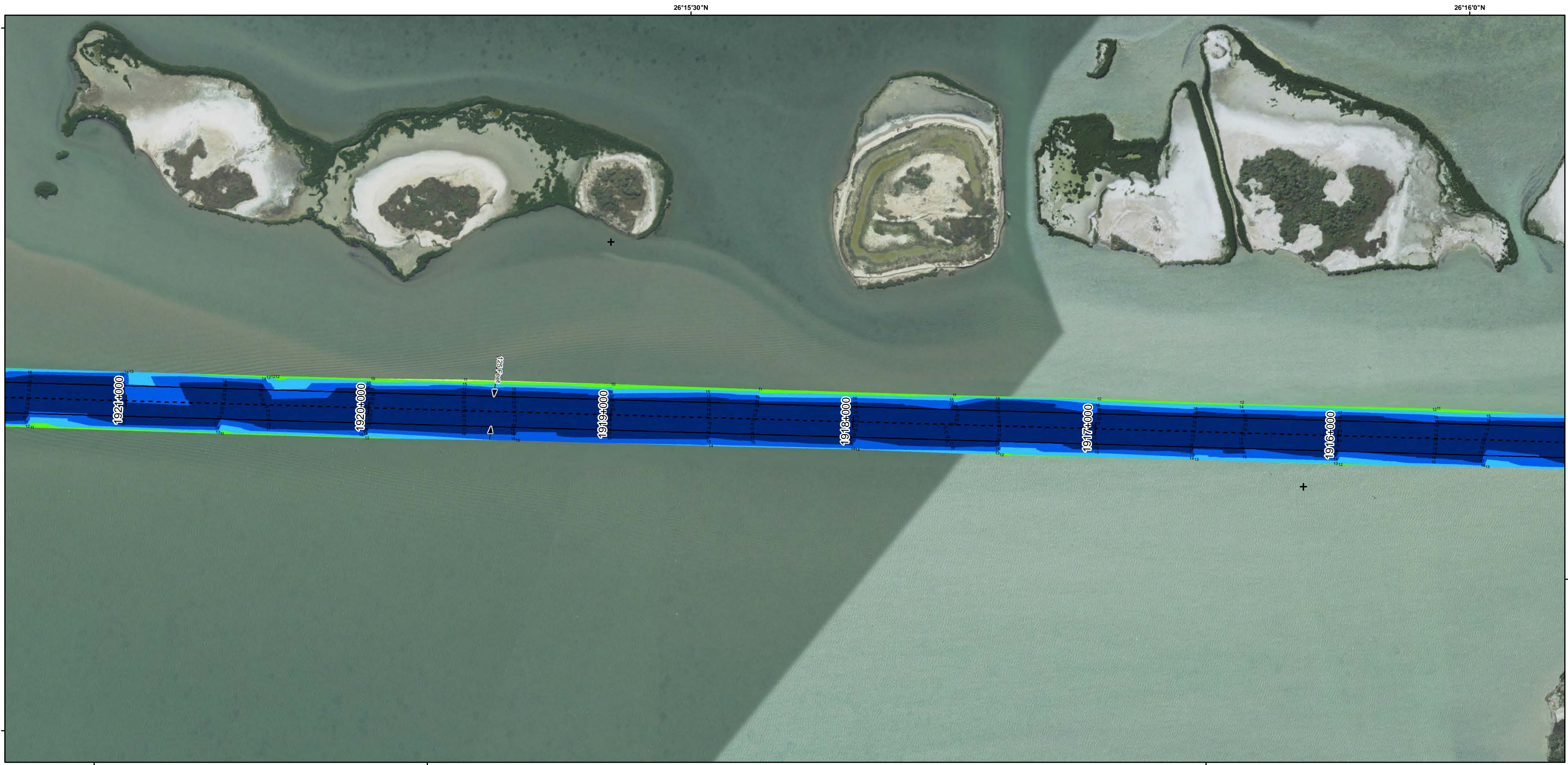
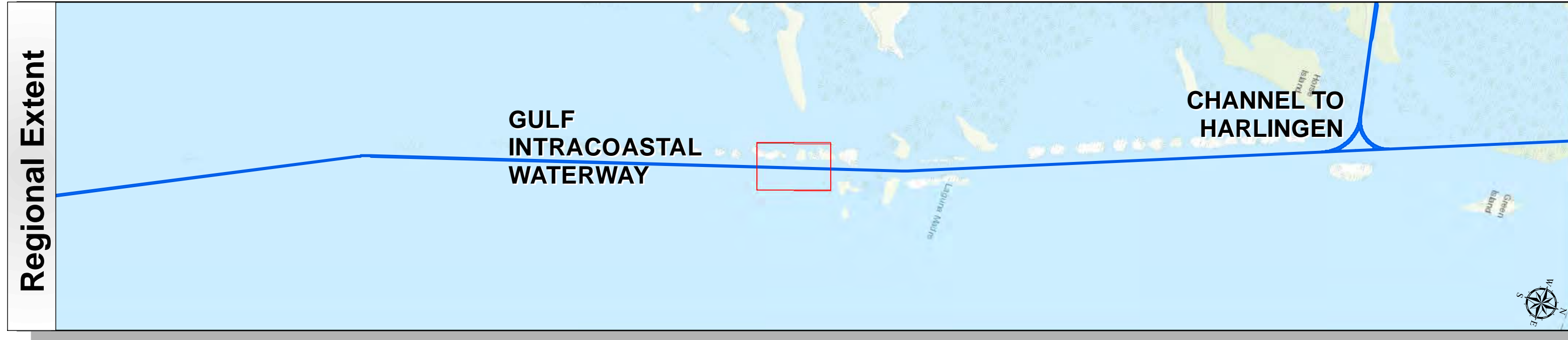
**HYDROGRAPHIC SURVEY**  
U.S. ARMY ENGINEER DISTRICT  
CORPS OF ENGINEERS  
GALVESTON, TEXAS  
Arroyo Colorado to Port Brownsville

**Station: 1878+700 to 1999+277**  
**GULF INTRACOASTAL WATERWAY**  
TEXAS

# Gulf Intracoastal Waterway: Arroyo Colorado to Port Brownsville



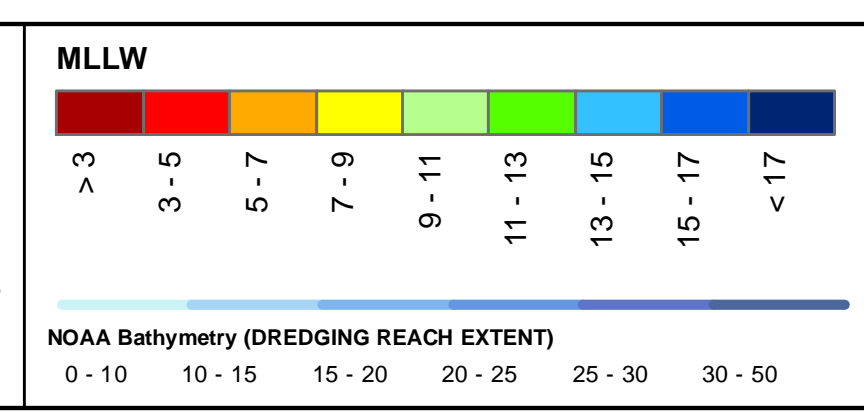
U.S. Army Corps of Engineers  
Galveston District



|                               |   |
|-------------------------------|---|
| Survey Date(s): 22 March 2018 | Authorized Depth: -13ft.                |
| Page: 324 of 23               | Side Slope Ratio: (Rise : Run)          |
| Scale: 1:2,400                | Additional Imagery: © DigitalGlobe Inc. |
| Mapped by: M3AOXPAC           | Print Date: 4/13/2018                   |
| Additional Info :             |   |

**Channel Features**

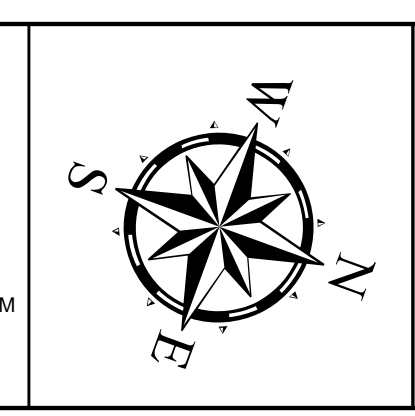
- Channel Toe
- Channel Center Line
- Channel Station Lines
- Channel Dimensions



**NOTES:**

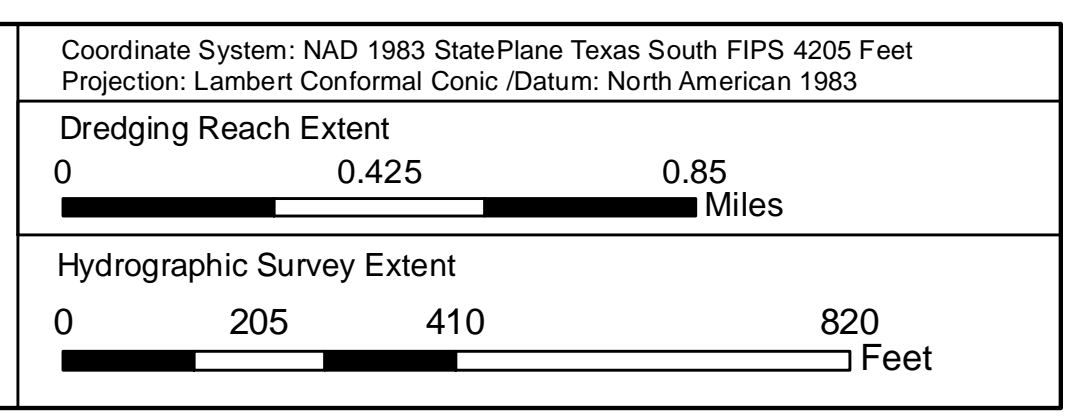
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**HYDROGRAPHIC SURVEY**  
U.S. ARMY ENGINEER DISTRICT  
CORPS OF ENGINEERS  
GALVESTON, TEXAS  
Arroyo Colorado to Port Brownsville

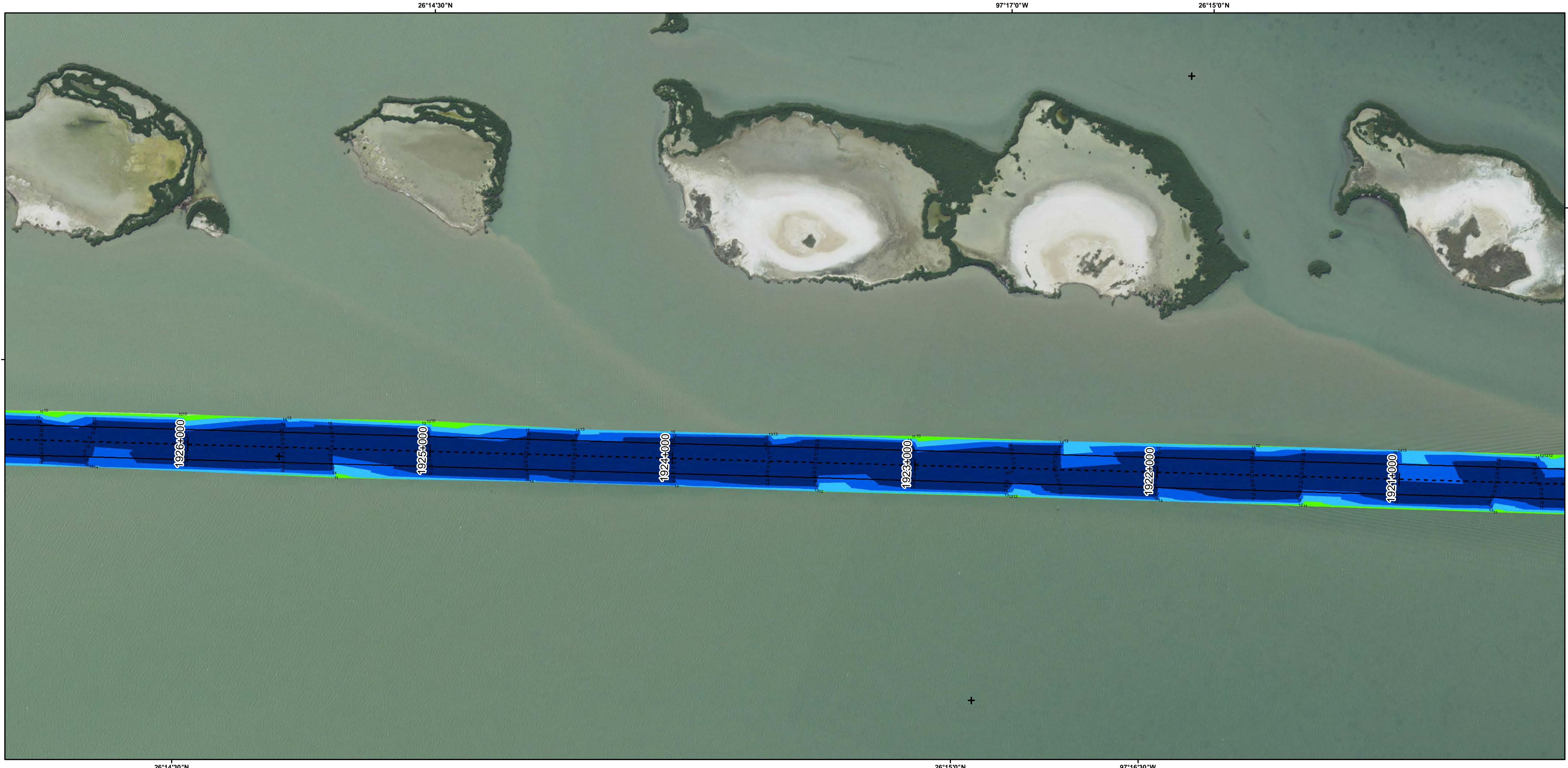
**Station: 1878+700 to 1999+277**  
**GULF INTRACOASTAL WATERWAY**  
, TEXAS



# Gulf Intracoastal Waterway: Arroyo Colorado to Port Brownsville



U.S. Army Corps of Engineers  
Galveston District



|                               |   |
|-------------------------------|---|
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| Page: 325 of 23               | Side Slope Ratio: (Rise : Run)          |
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| Mapped by: MSAOX PAC          | Print Date: 4/13/2018                   |
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**Channel Features**

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

**Aids to Navigation**

- Lights
- Red Side Aids
- Green Side Aids
- Mooring Buoy

**MLLW**

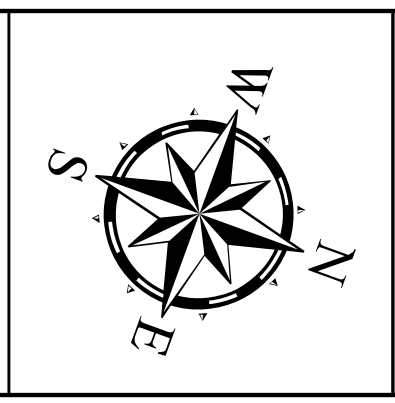
NOAA Bathymetry (DREDGING REACH EXTENT)

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

NOTES:

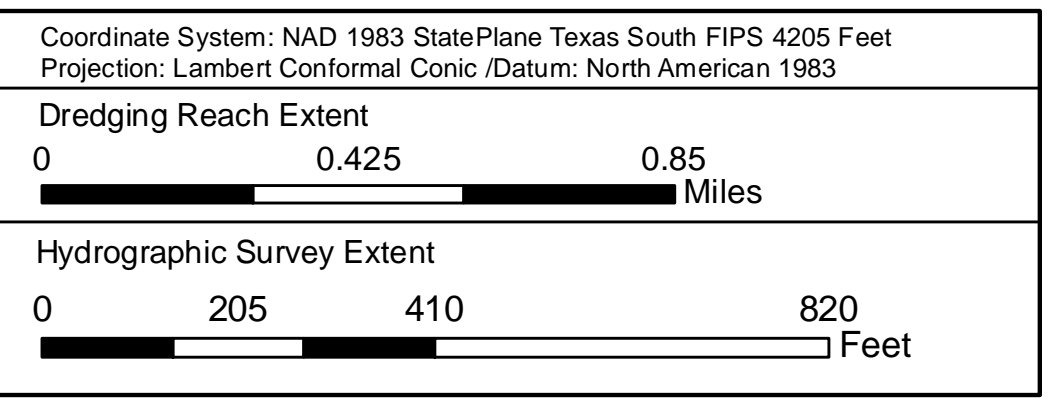
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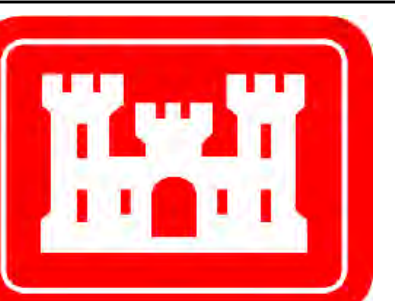
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



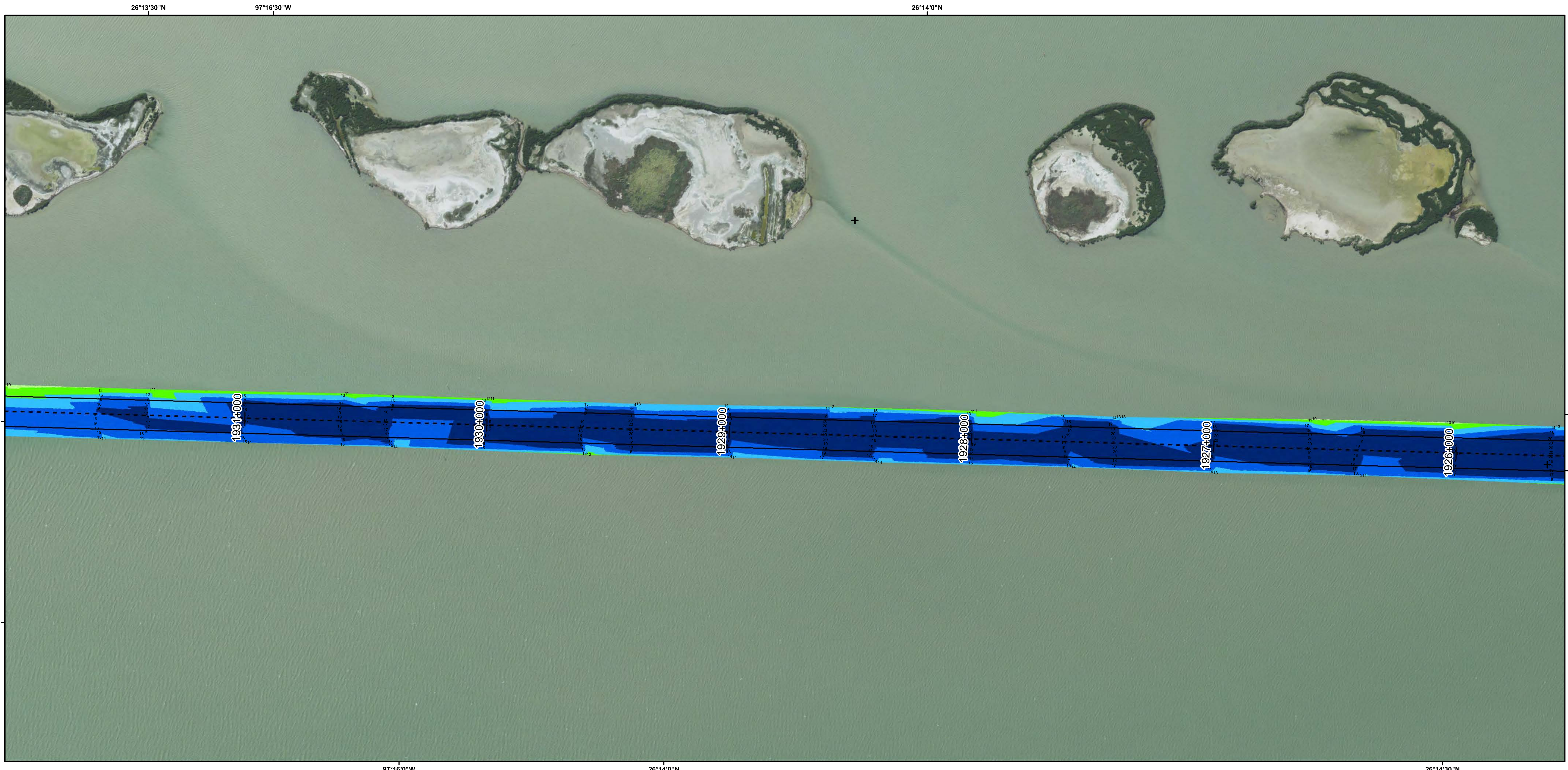
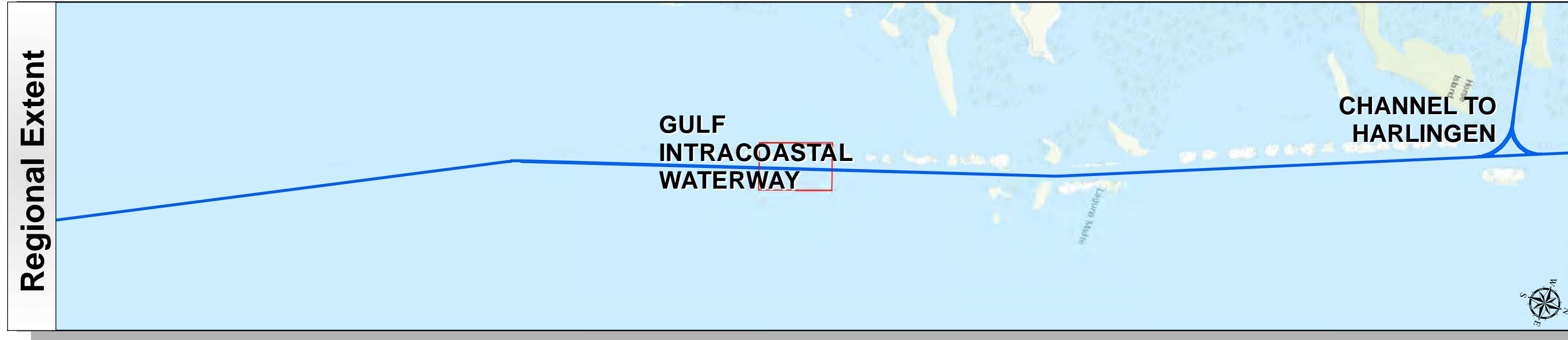
**HYDROGRAPHIC SURVEY**  
U.S. ARMY ENGINEER DISTRICT  
CORPS OF ENGINEERS  
GALVESTON, TEXAS  
Arroyo Colorado to Port Brownsville

**Station: 1878+700 to 1999+277**  
**GULF INTRACOASTAL WATERWAY**  
, TEXAS

# Gulf Intracoastal Waterway: Arroyo Colorado to Port Brownsville



U.S. Army Corps of Engineers  
Galveston District



|                               |   |
|-------------------------------|---|
| Survey Date(s): 22 March 2018 | Authorized Depth: -13ft.                |
| Page: 326 of 23               | Side Slope Ratio: (Rise : Run)          |
| Scale: 1:2,400                | Additional Imagery: © DigitalGlobe Inc. |
| Mapped by: MSAOX PAC          | Print Date: 4/13/2018                   |
| Additional Info:              |   |

**Channel Features**

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

**Aids to Navigation**

- Lights
- Red Side Aids
- Green Side Aids
- Mooring Buoy

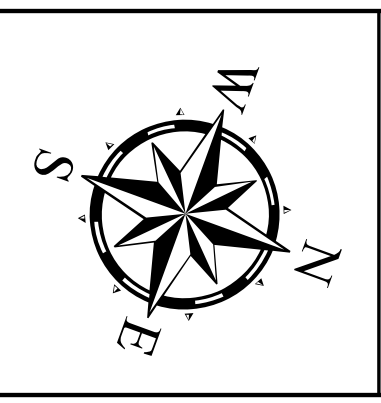
**MLLW**

NOAA Bathymetry (DREDGING REACH EXTENT)

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

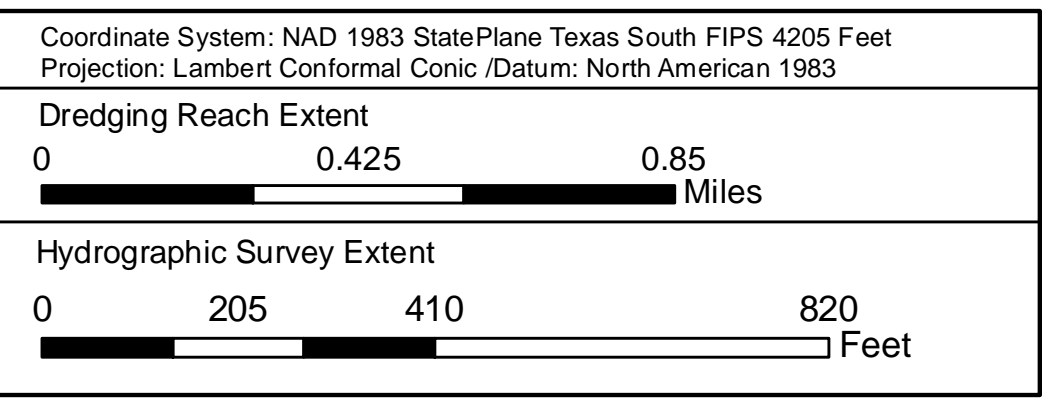
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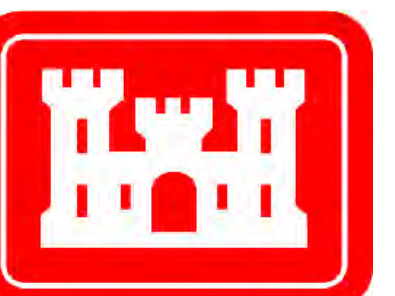
**HYDROGRAPHIC SURVEY**

U.S. ARMY ENGINEER DISTRICT  
CORPS OF ENGINEERS  
GALVESTON, TEXAS  
Arroyo Colorado to Port Brownsville

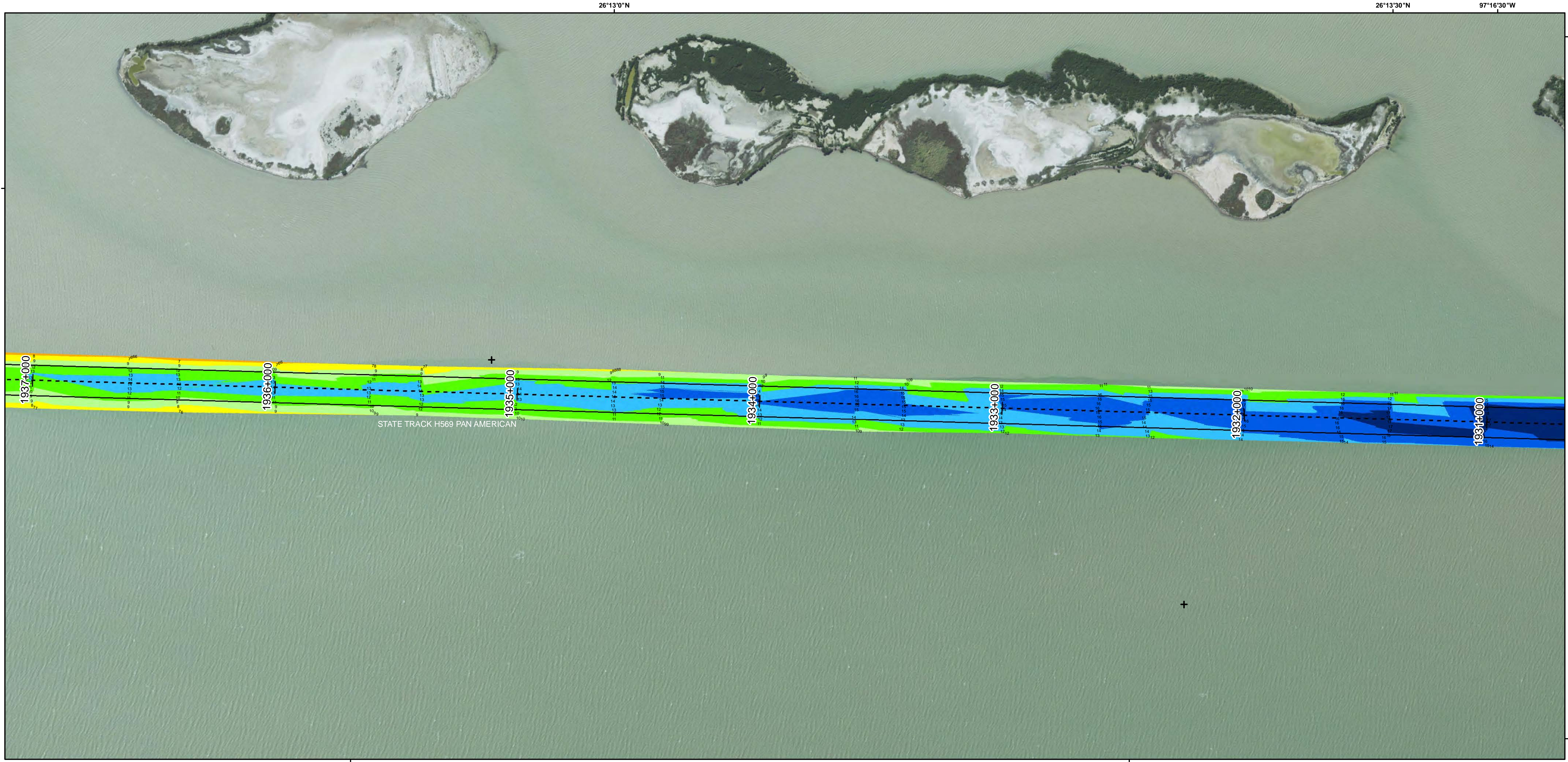
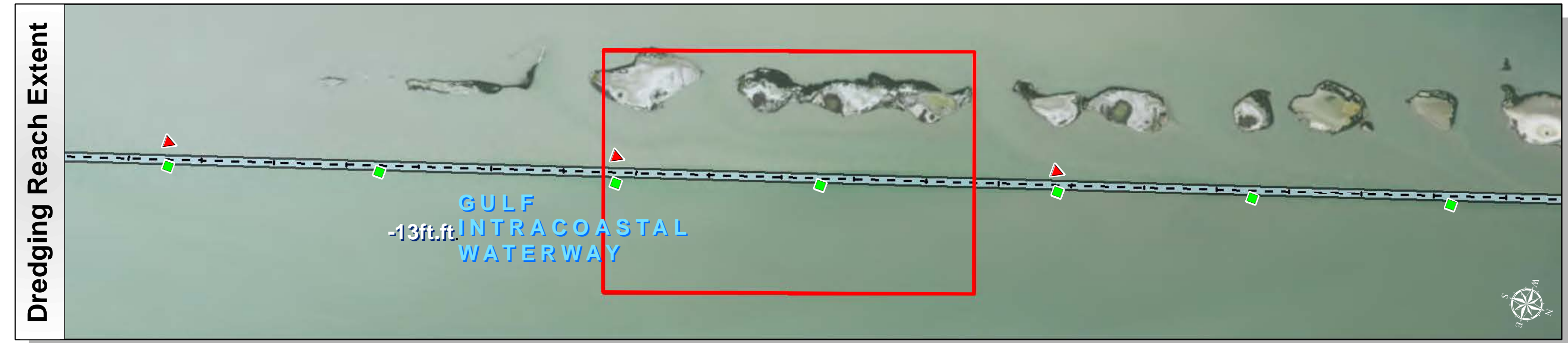
**Station: 1878+700 to 1999+277**

**GULF INTRACOASTAL WATERWAY**  
, TEXAS

# Gulf Intracoastal Waterway: Arroyo Colorado to Port Brownsville



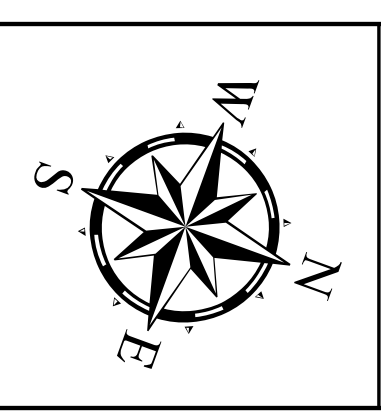
U.S. Army Corps of Engineers  
Galveston District



| 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>Lights</li> <li>Red Side Aids</li> <li>Green Side Aids</li> <li>Mooring Buoy</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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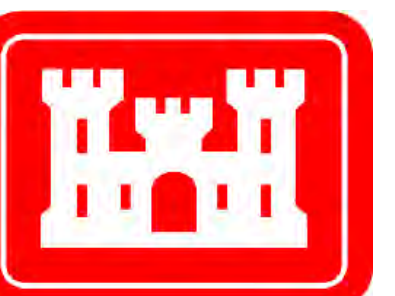
Hydrographic Survey Extent  
 0 205 410 820 Feet

|                               |   |
|-------------------------------|---|
| Survey Date(s): 22 March 2018 | Authorized Depth: -13ft.                |
| Page: 327 of 23               | Side Slope Ratio: (Rise : Run)          |
| Scale: 1:2,400                | Additional Imagery: © DigitalGlobe Inc. |
| Map:                          | Print Date: 4/13/2018                   |
| Mapped by: MSAOXAPAC          |   |
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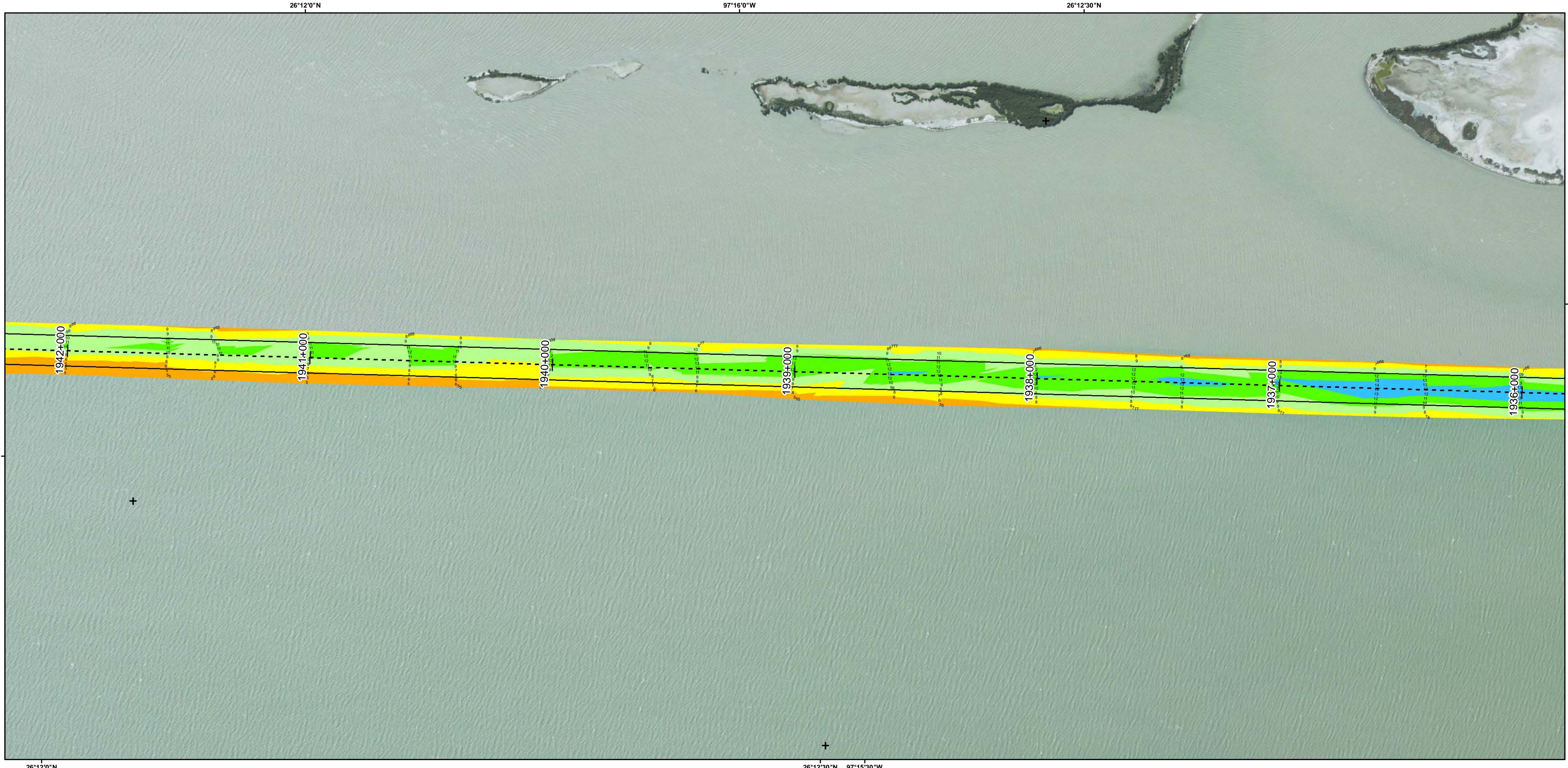
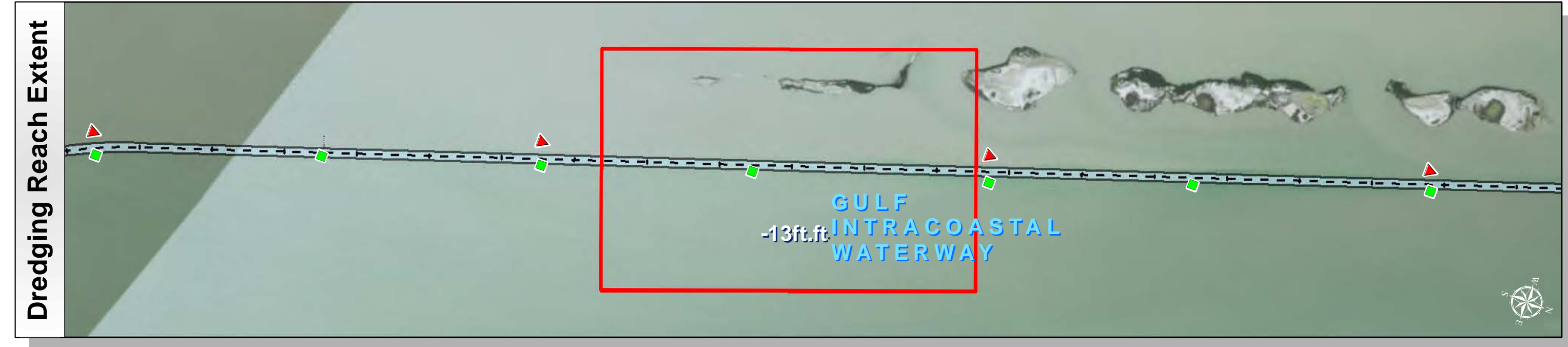
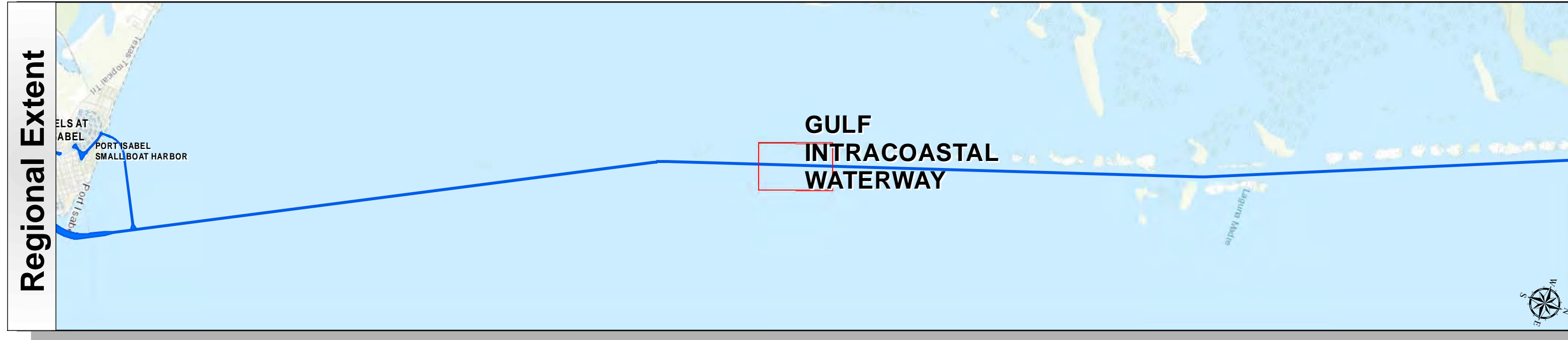
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 U.S. ARMY ENGINEER DISTRICT  
 CORPS OF ENGINEERS  
 GALVESTON, TEXAS  
 Arroyo Colorado to Port Brownsville

**Station: 1878+700 to 1999+277**  
**GULF INTRACOASTAL WATERWAY**  
 TEXAS

# Gulf Intracoastal Waterway: Arroyo Colorado to Port Brownsville



U.S. Army Corps of Engineers  
Galveston District



|                               |   |
|-------------------------------|---|
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| Page: 328 of 328              | Side Slope Ratio: (Rise : Run)          |
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| Map: MSAOX PAC                | Print Date: 4/13/2018                   |
| Mapped by: MSAOX PAC          |   |
| Additional Info:              |   |

**Channel Features**

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- Channel Center Line
- Channel Station Lines
- Channel Dimensions

**Aids to Navigation**

- Lights
- Red Side Aids
- Green Side Aids
- Mooring Buoy

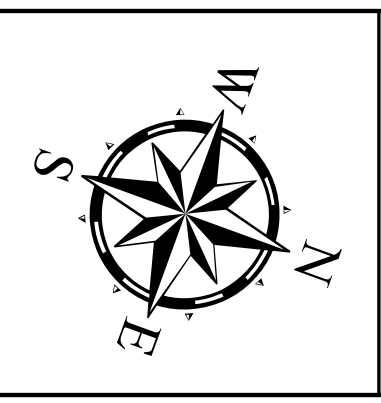
**MLLW**

NOAA Bathymetry (DREDGING REACH EXTENT)

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

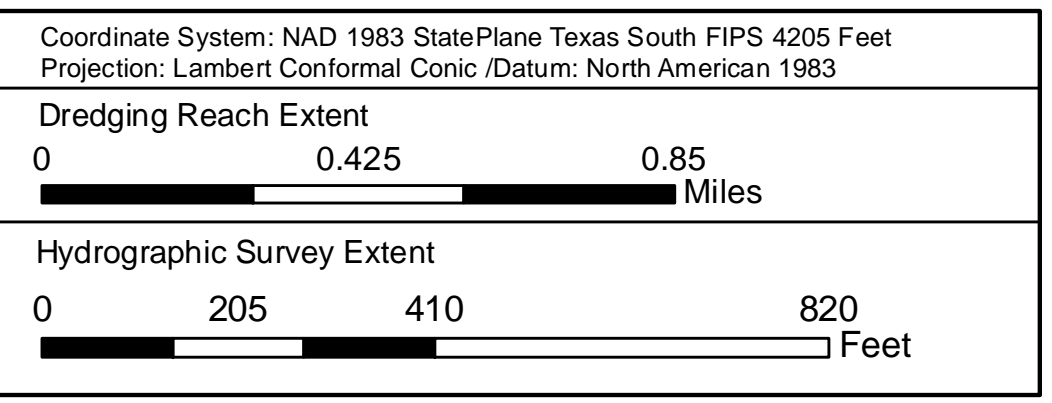
**NOTES:**

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- ELEVATIONS ARE REFERENCED TO MEAN LOWER LOW TIDE (MLLW) DATUM.
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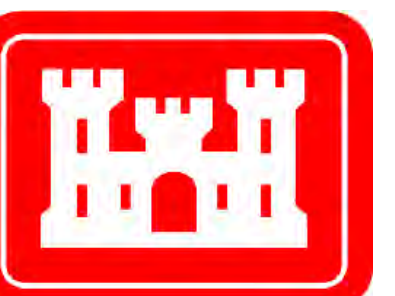
**HYDROGRAPHIC SURVEY**

U.S. ARMY ENGINEER DISTRICT  
CORPS OF ENGINEERS  
GALVESTON, TEXAS  
Arroyo Colorado to Port Brownsville

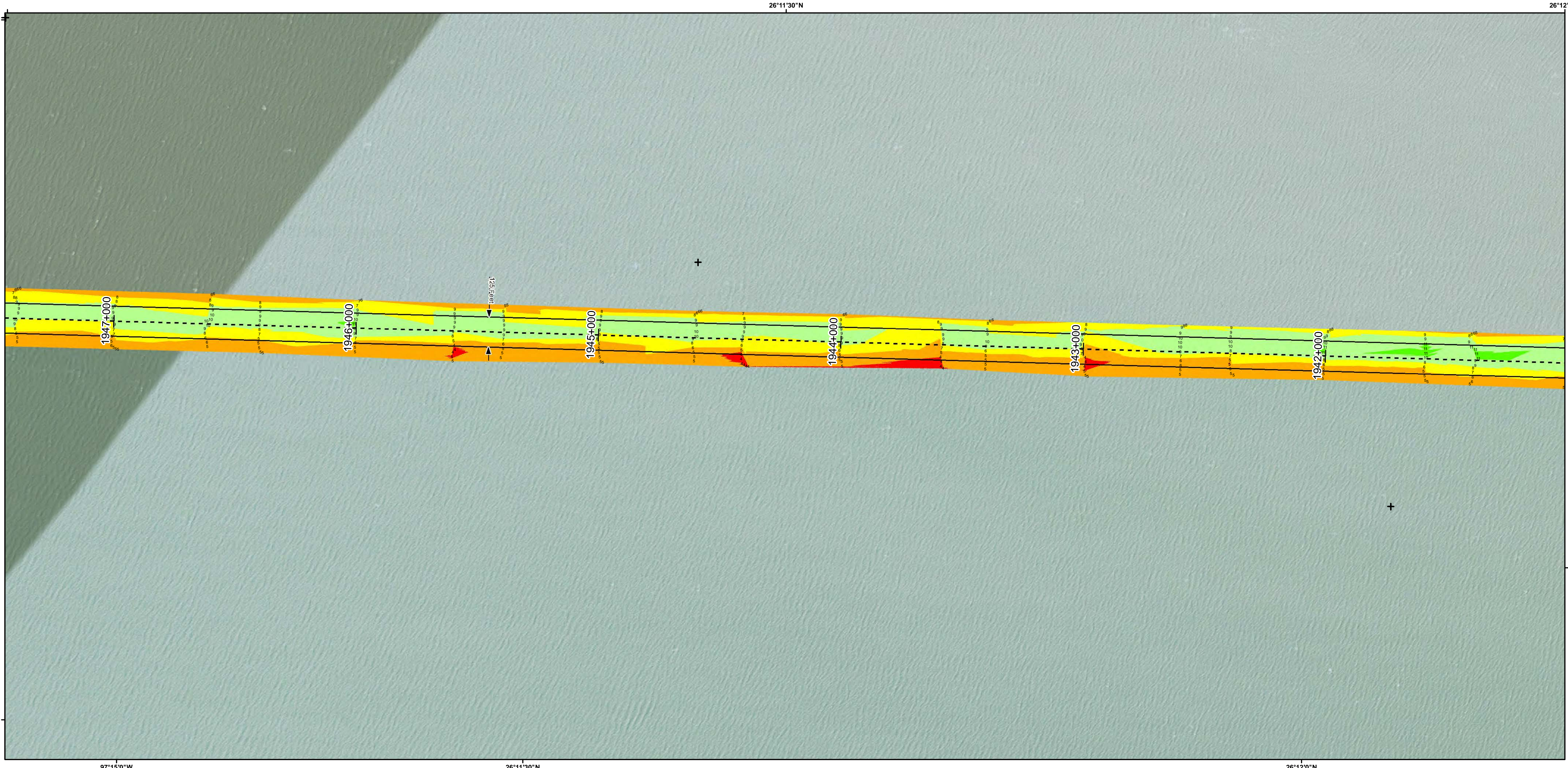
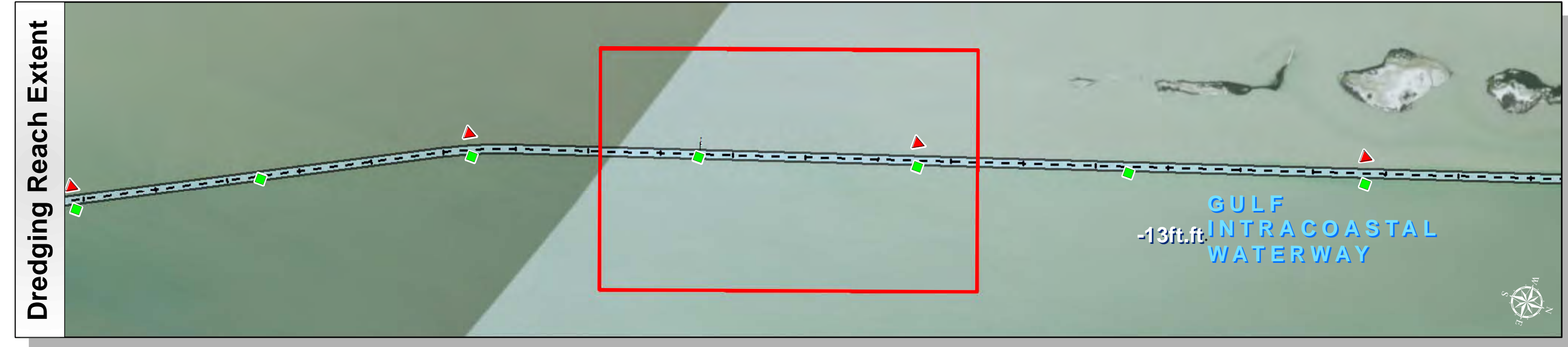
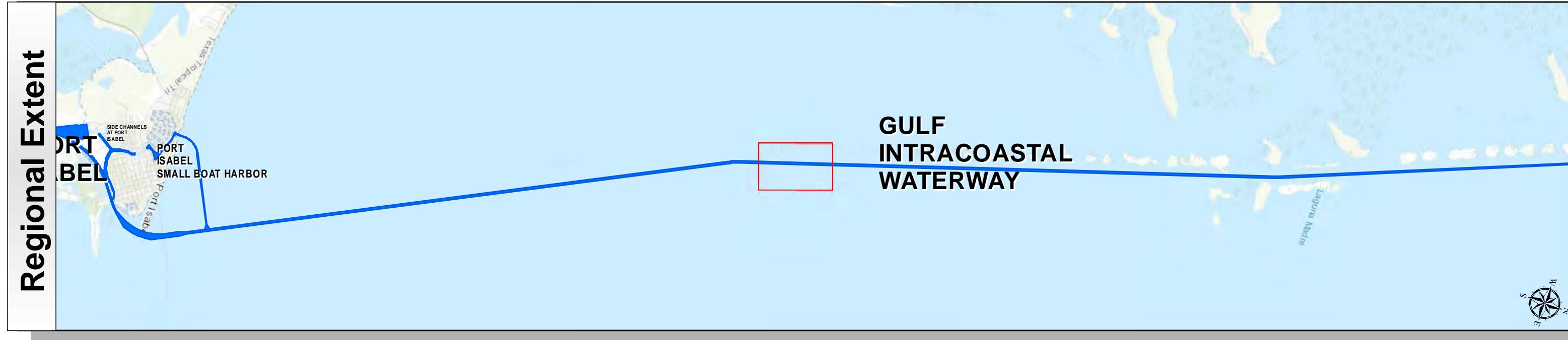
**Station: 1878+700 to 1999+277**

**GULF INTRACOASTAL WATERWAY**  
, TEXAS

# Gulf Intracoastal Waterway: Arroyo Colorado to Port Brownsville

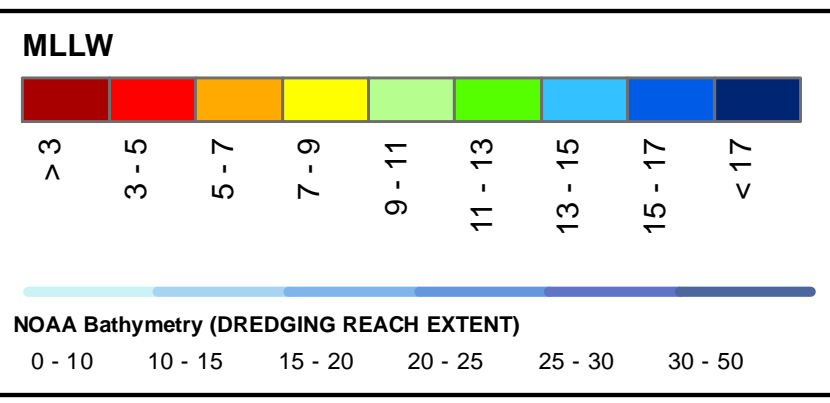


U.S. Army Corps of Engineers  
Galveston District



|                               |   |
|-------------------------------|---|
| Survey Date(s): 22 March 2018 | Authorized Depth: -13ft.                |
| Page: 329 of 23               | Side Slope Ratio: (Rise : Run)          |
| Scale: 1:2,400                | Additional Imagery: © DigitalGlobe Inc. |
| Mapped by: M3A0XPAC           | Print Date: 4/13/2018                   |
| Additional Info:              |   |

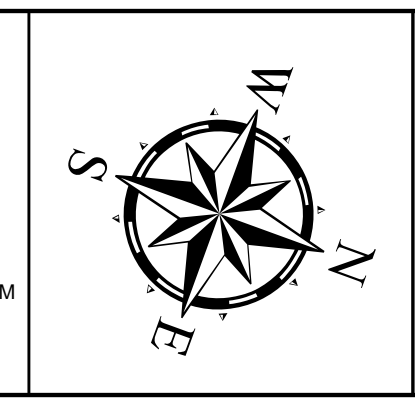
| Channel Features          | Aids to Navigation |
|---------------------------|--------------------|
| — Channel Toe             | ★ Lights           |
| - - - Channel Center Line | ▲ Red Side Aids    |
| — Channel Station Lines   | ■ Green Side Aids  |
| ↔ Channel Dimensions      | ◆ Mooring Buoy 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



**NOTES:**

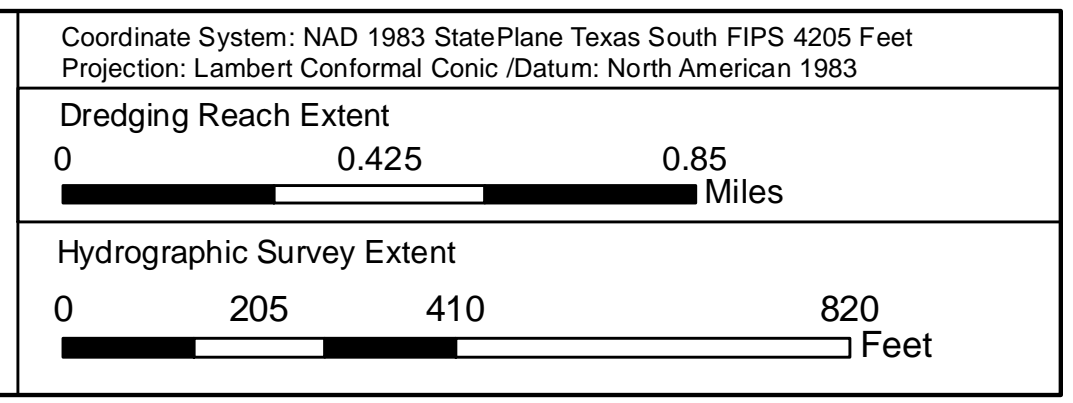
- HORIZONTAL COORDINATES ARE REFERENCED TO TEXAS STATE PLANE COORDINATE SYSTEM, SOUTH CENTRAL ZONE NAD83 US SURVEY FEET.
- ELEVATIONS ARE REFERENCED TO MEAN LOWER LOW TIDE (MLLW) DATUM.
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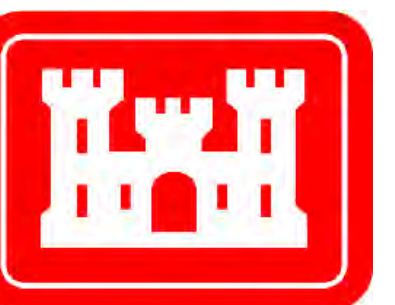
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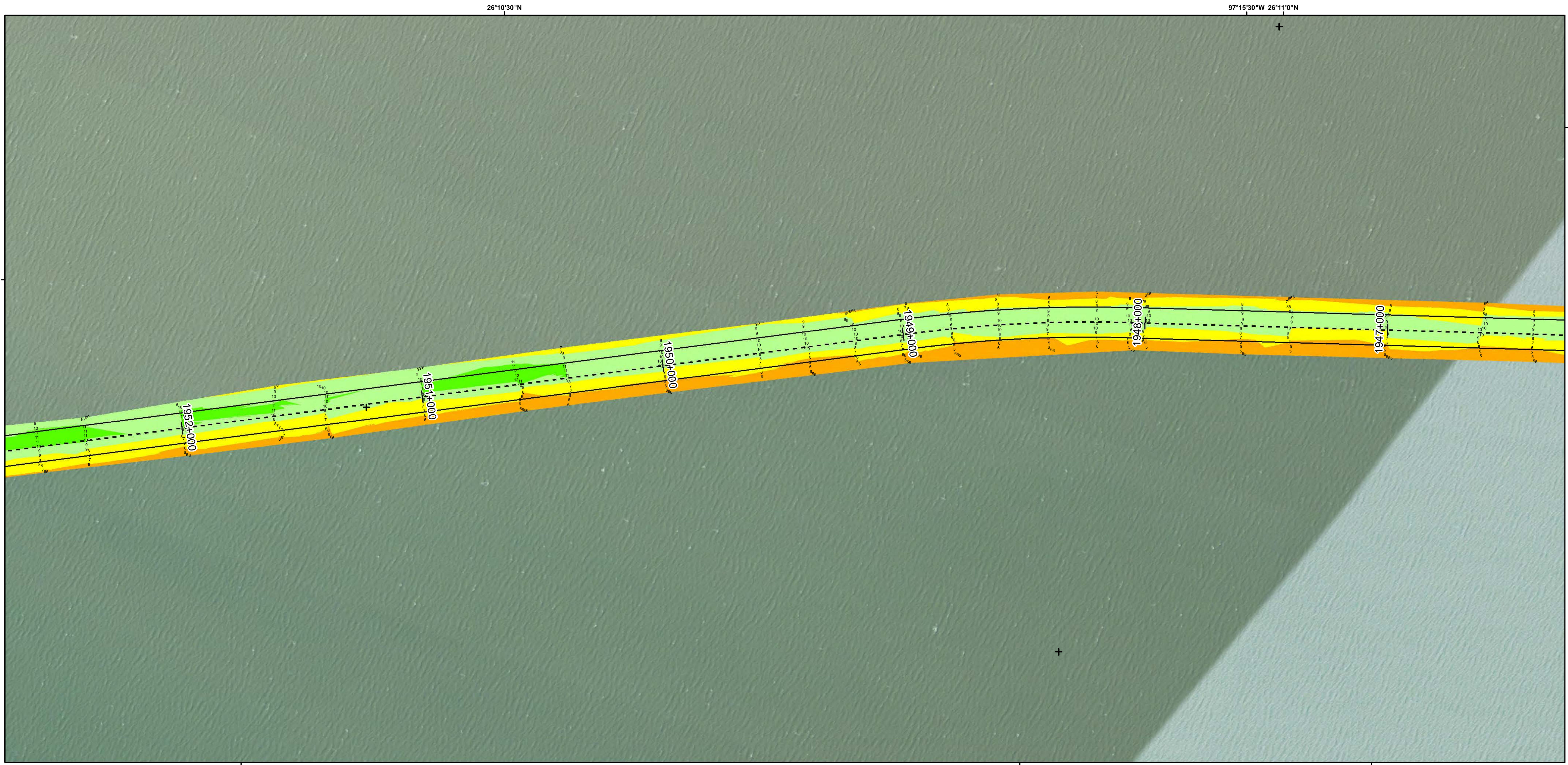
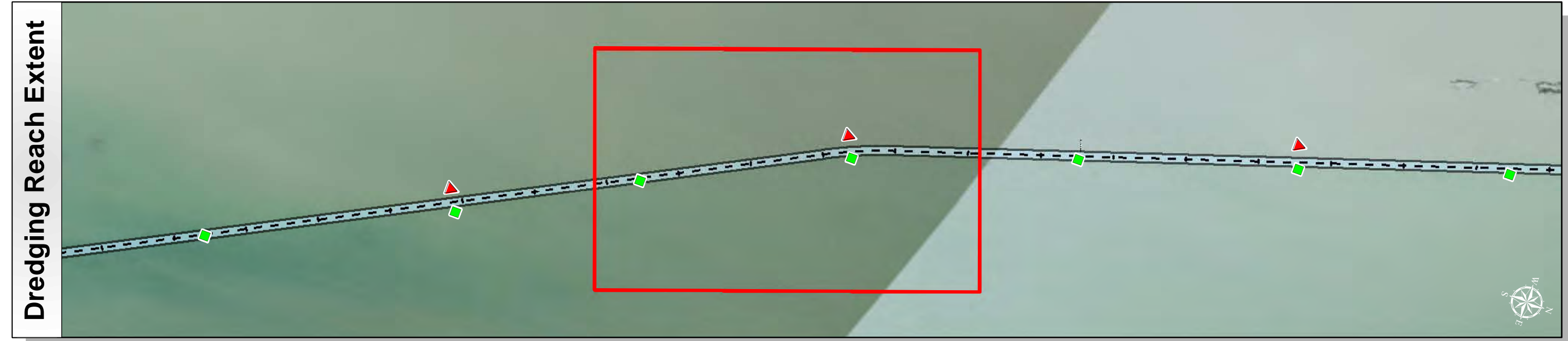
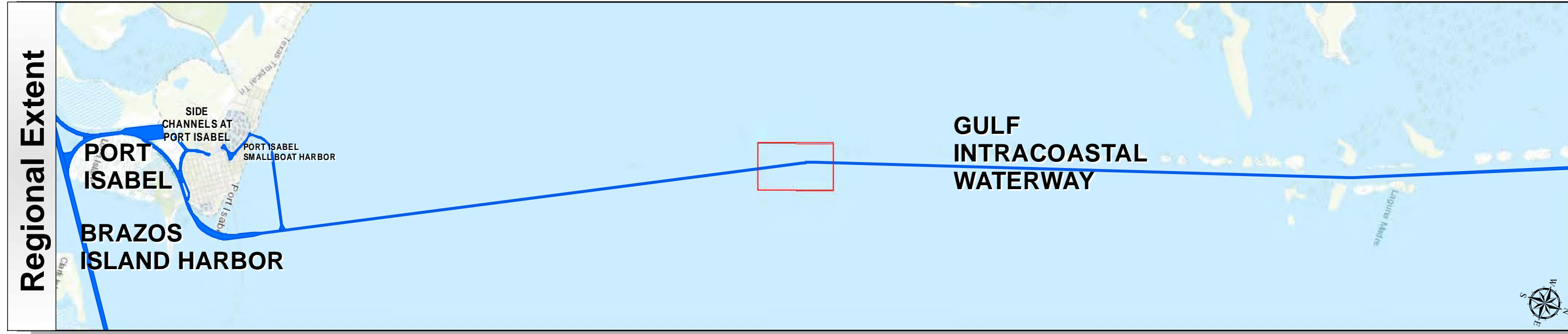
**HYDROGRAPHIC SURVEY**  
U.S. ARMY ENGINEER DISTRICT  
CORPS OF ENGINEERS  
GALVESTON, TEXAS  
Arroyo Colorado to Port Brownsville

**Station: 1878+700 to 1999+277**  
**GULF INTRACOASTAL WATERWAY**  
, TEXAS

# Gulf Intracoastal Waterway: Arroyo Colorado to Port Brownsville



U.S. Army Corps of Engineers  
Galveston District

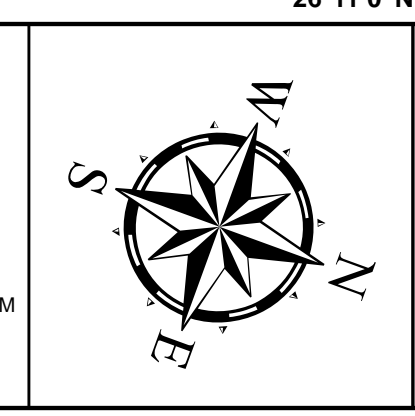


|                               |   |
|-------------------------------|---|
| Survey Date(s): 22 March 2018 | Authorized Depth: -13ft.                |
| Page: 330 of 23               | Side Slope Ratio: (Rise : Run)          |
| Scale: 1:2,400                | Additional Imagery: © DigitalGlobe Inc. |
| Mapped by: M3AOXPAC           | Print Date: 4/13/2018                   |
| Additional Info:              |   |

| Channel Features          | Aids to Navigation | MLLW                                    |
|---------------------------|--------------------|---|
| — Channel Toe             | ★ Lights           | Color scale for MLLW (0 to > 3)         |
| - - - Channel Center Line | ▲ Red Side Aids    | Color scale for MLLW (3-5 to < 17)      |
| — Channel Station Lines   | ■ Green Side Aids  | Color scale for MLLW (0-10 to 30-50)    |
| ↔ Channel Dimensions      | ◆ Mooring Buoy     | NOAA Bathymetry (DREDGING REACH EXTENT) |

**NOTES:**

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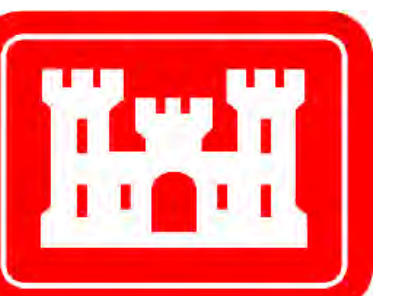


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Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

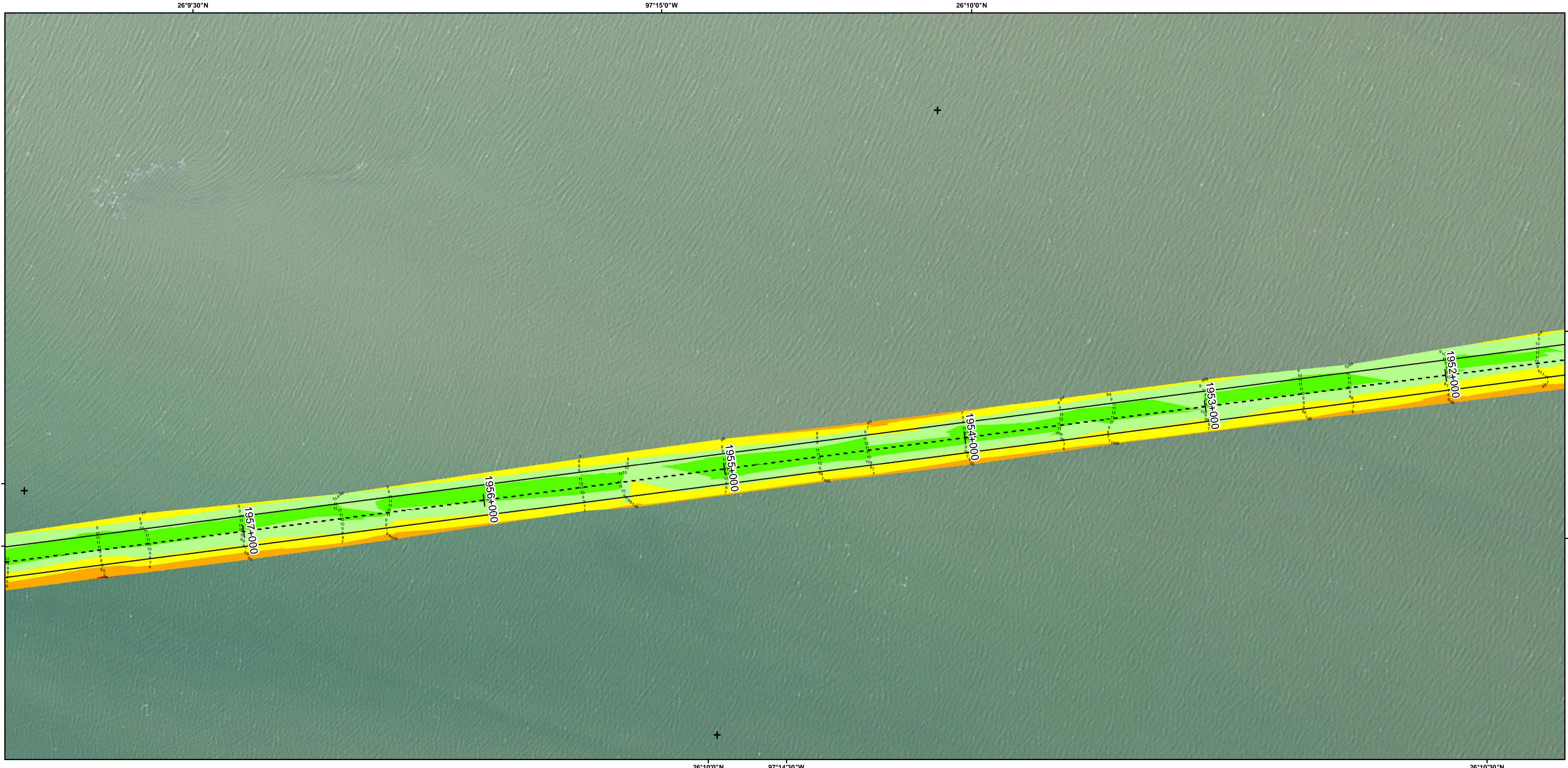
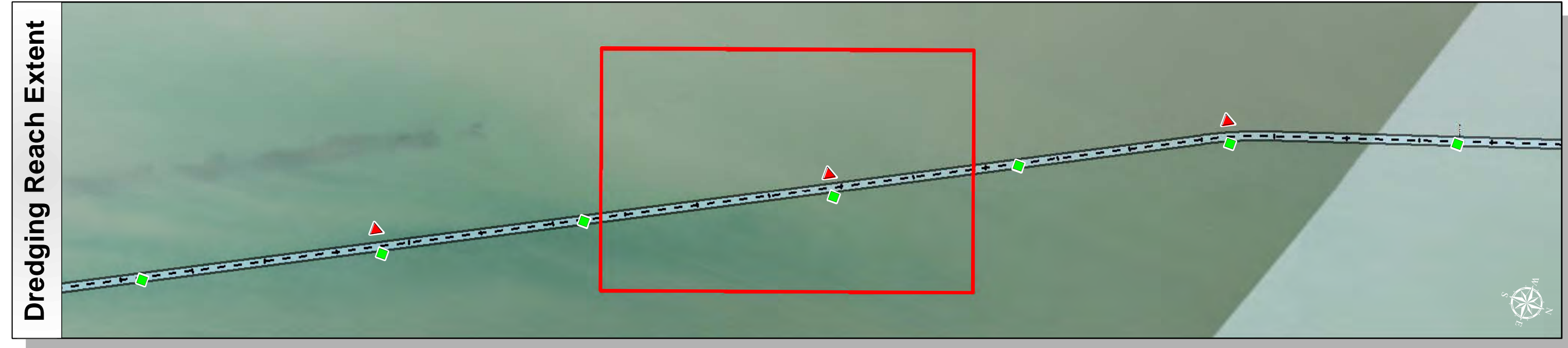
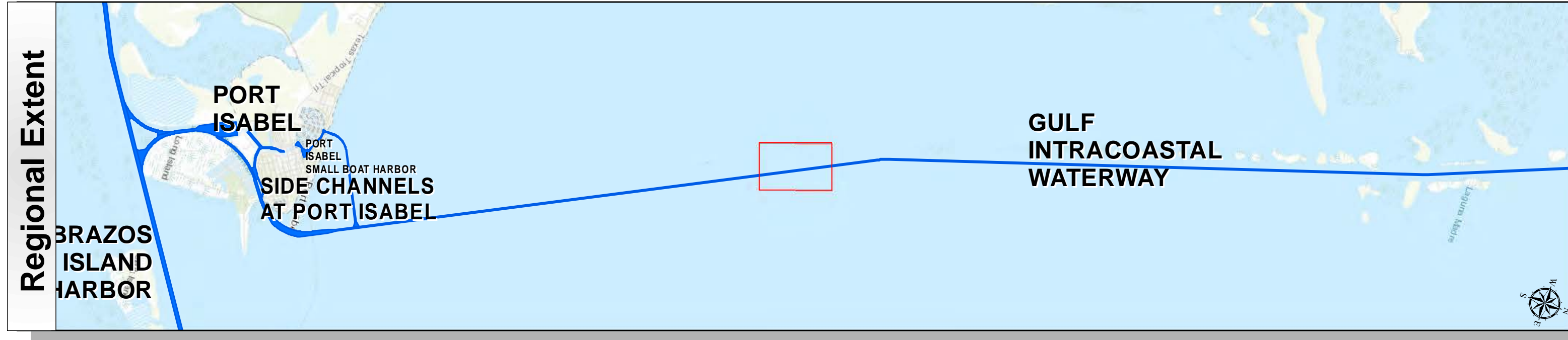
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| Coordinate System: NAD 1983 StatePlane Texas South FIPS 4205 Feet<br>Projection: Lambert Conformal Conic /Datum: North American 1983 |                    |
| Dredging Reach Extent  | 0 0.425 0.85 Miles |
| Hydrographic Survey Extent   | 0 205 410 820 Feet |

**HYDROGRAPHIC SURVEY**  
U.S. ARMY ENGINEER DISTRICT  
CORPS OF ENGINEERS  
GALVESTON, TEXAS  
Arroyo Colorado to Port Brownsville  
**Station: 1878+700 to 1999+277**  
**GULF INTRACOASTAL WATERWAY**  
TEXAS

# Gulf Intracoastal Waterway: Arroyo Colorado to Port Brownsville



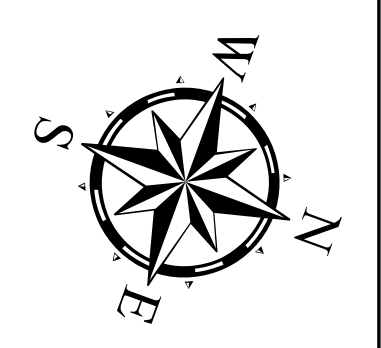
U.S. Army Corps of Engineers  
Galveston District



| Channel Features          | Aids to Navigation | MLLW   |
|---------------------------|--------------------|--|
| — Channel Toe             | ★ Lights           | Color scale for depth (0 to > 17)              |
| - - - Channel Center Line | ▲ Red Side Aids    | NOAA Bathymetry (DREDGING REACH EXTENT)        |
| — Channel Station Lines   | ■ Green Side Aids  | 0 - 10 10 - 15 15 - 20 20 - 25 25 - 30 30 - 50 |
| ↔ Channel Dimensions      | ◆ Mooring Buoy     |  |

NOTES:

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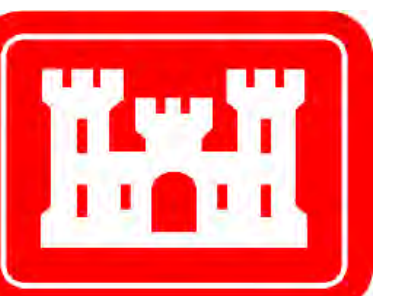
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|  |                    |
|--|--------------------|
| Coordinate System: NAD 1983 StatePlane Texas South FIPS 4205 Feet<br>Projection: Lambert Conformal Conic /Datum: North American 1983 |                    |
| Dredging Reach Extent  | 0 0.425 0.85 Miles |
| Hydrographic Survey Extent   | 0 205 410 820 Feet |

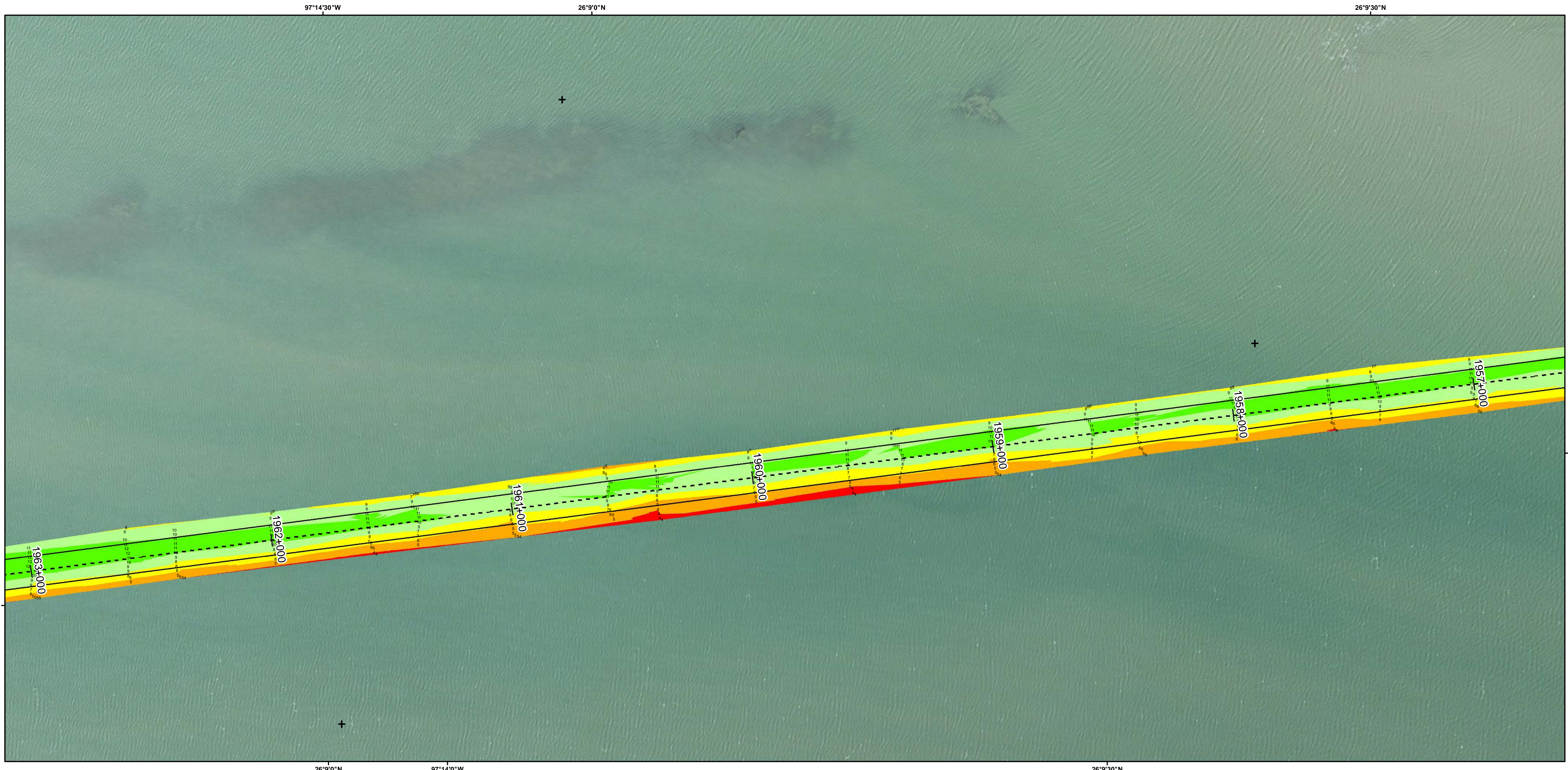
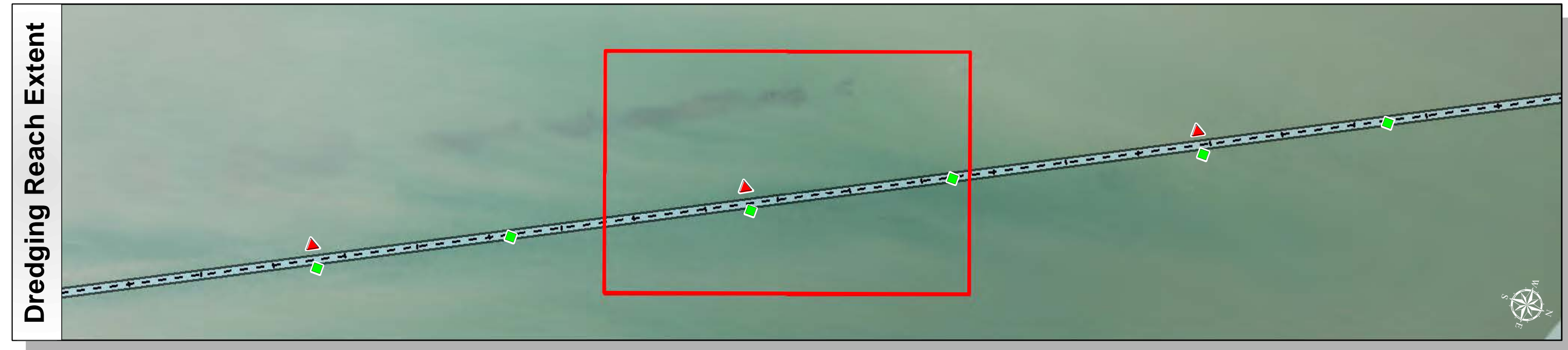
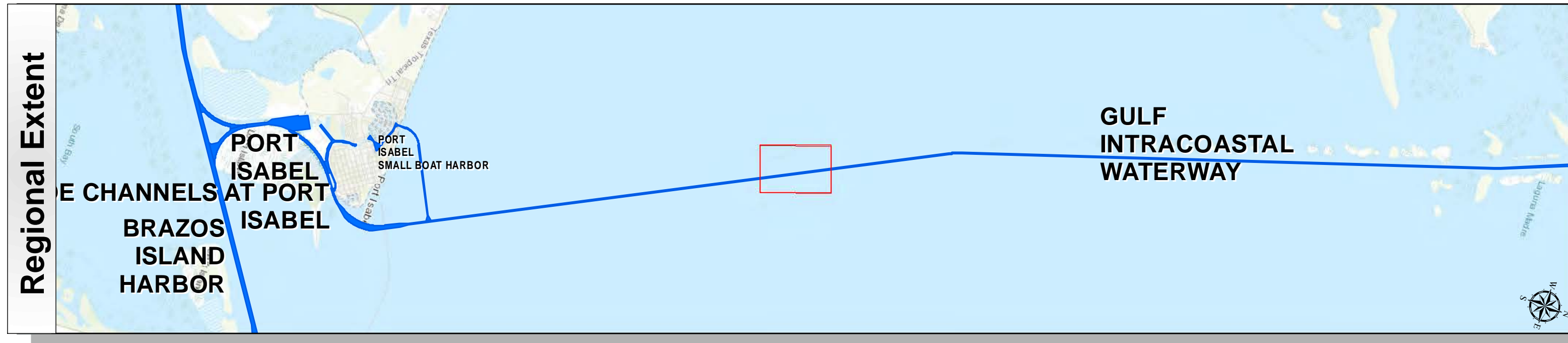
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| Survey Date(s): 22 March 2018 | Authorized Depth: -13ft.                |
| Page: 331 of 23               | Side Slope Ratio: (Rise : Run)          |
| Scale: 1:2,400                | Additional Imagery: © DigitalGlobe Inc. |
| Mapped by: M3A0XPAC           | Print Date: 4/13/2018                   |
| Additional Info:              |   |

**HYDROGRAPHIC SURVEY**  
U.S. ARMY ENGINEER DISTRICT  
CORPS OF ENGINEERS  
GALVESTON, TEXAS  
Arroyo Colorado to Port Brownsville  
**Station: 1878+700 to 1999+277**  
**GULF INTRACOASTAL WATERWAY**  
TEXAS

# Gulf Intracoastal Waterway: Arroyo Colorado to Port Brownsville



U.S. Army Corps of Engineers  
Galveston District

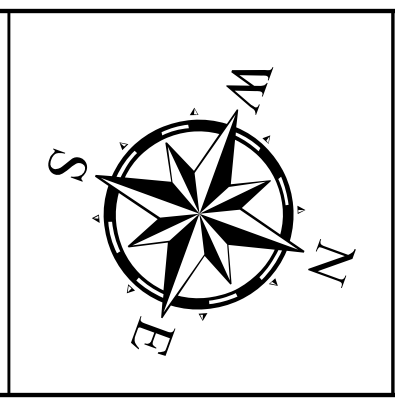


| Channel Features          | Aids to Navigation | MLLW   |
|---------------------------|--------------------|--|
| — Channel Toe             | ★ Lights           | 0 - 3  |
| - - - Channel Center Line | ▲ Red Side Aids    | 3 - 5  |
| — Channel Station Lines   | ■ Green Side Aids  | 5 - 7  |
| ↔ Channel Dimensions      | ◆ Mooring Buoy     | 7 - 9  |
|                           |                    | 9 - 11   |
|                           |                    | 11 - 13  |
|                           |                    | 13 - 15  |
|                           |                    | 15 - 17  |
|                           |                    | < 17   |
|                           |                    | NOAA Bathymetry (DREDGING REACH EXTENT)        |
|                           |                    | 0 - 10 10 - 15 15 - 20 20 - 25 25 - 30 30 - 50 |

**NOTES:**

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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 FIPS 4205 Feet<br>Projection: Lambert Conformal Conic /Datum: North American 1983 |                    |
| Dredging Reach Extent  | 0 0.425 0.85 Miles |
| Hydrographic Survey Extent   | 0 205 410 820 Feet |

|                               |   |
|-------------------------------|---|
| Survey Date(s): 22 March 2018 | Authorized Depth: -13ft.                |
| Page: 332 of 23               | Side Slope Ratio: (Rise : Run)          |
| Scale: 1:2,400                | Additional Imagery: © DigitalGlobe Inc. |
| Map: MSAOX PAC                | Print Date: 4/13/2018                   |
| Additional Info:              |   |

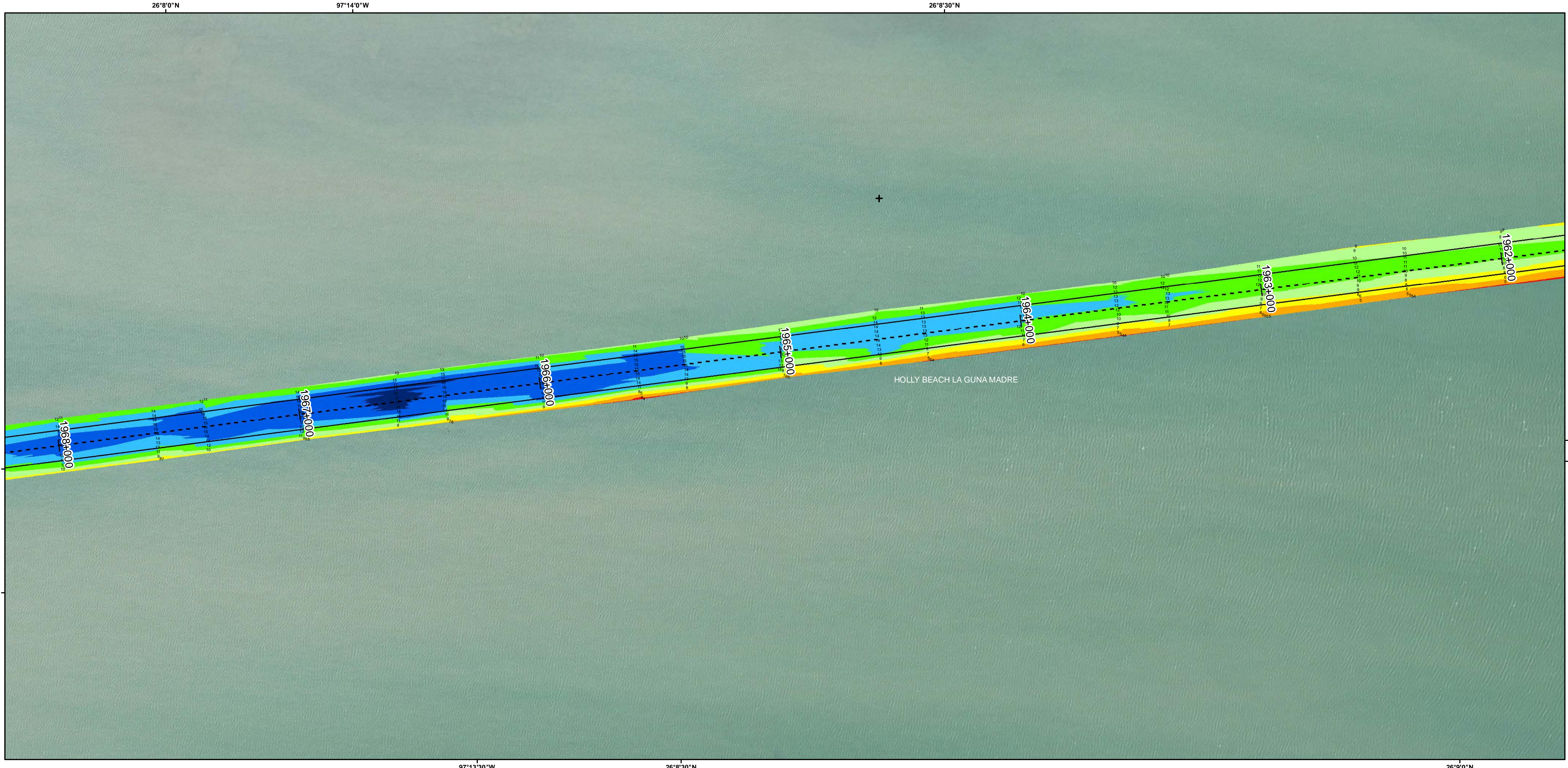
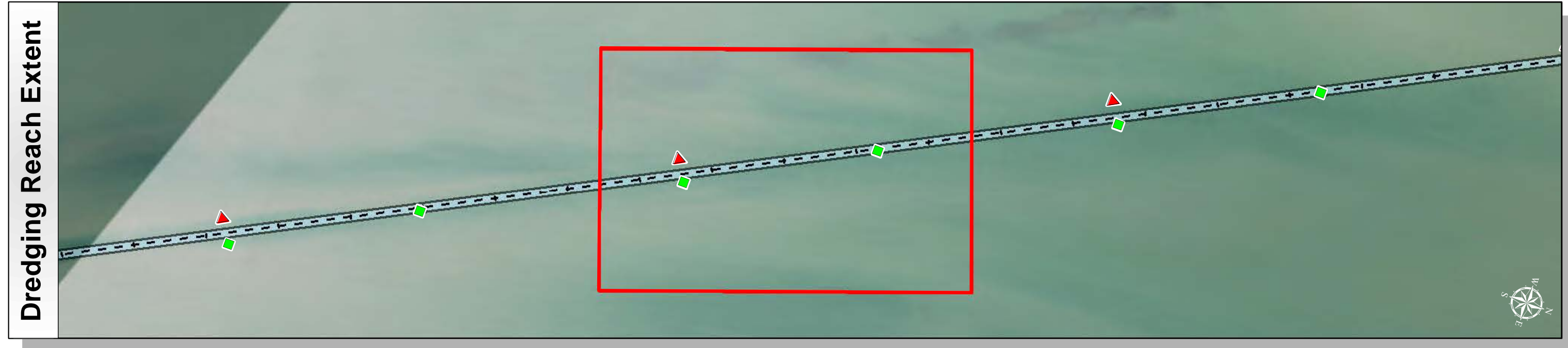
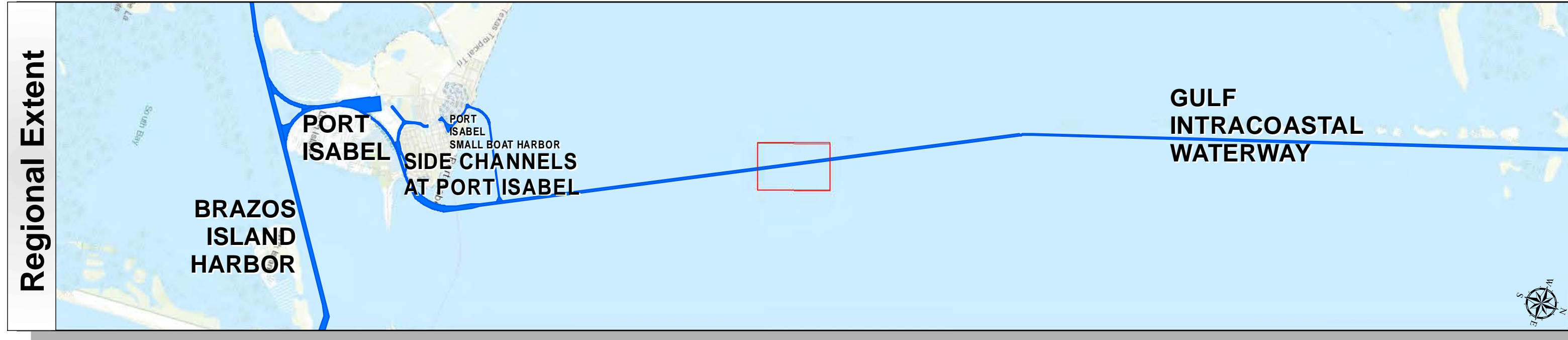
**HYDROGRAPHIC SURVEY**  
U.S. ARMY ENGINEER DISTRICT  
CORPS OF ENGINEERS  
GALVESTON, TEXAS  
Arroyo Colorado to Port Brownsville  
**Station: 1878+700 to 1999+277**  
**GULF INTRACOASTAL WATERWAY**  
, TEXAS



# Gulf Intracoastal Waterway: Arroyo Colorado to Port Brownsville



U.S. Army Corps of Engineers  
Galveston District

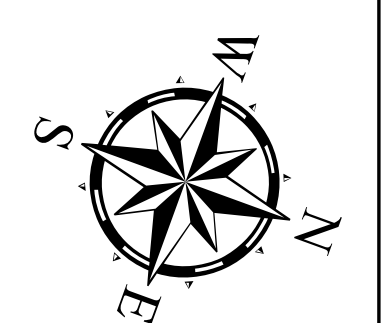


|                               |   |
|-------------------------------|---|
| Survey Date(s): 22 March 2018 | Authorized Depth: -13ft.                |
| Page: 333 of 23               | Side Slope Ratio: (Rise : Run)          |
| Scale: 1:2,400                | Additional Imagery: © DigitalGlobe Inc. |
| Mapped by: M3A0XPAC           | Print Date: 4/13/2018                   |
| Additional Info:              |   |

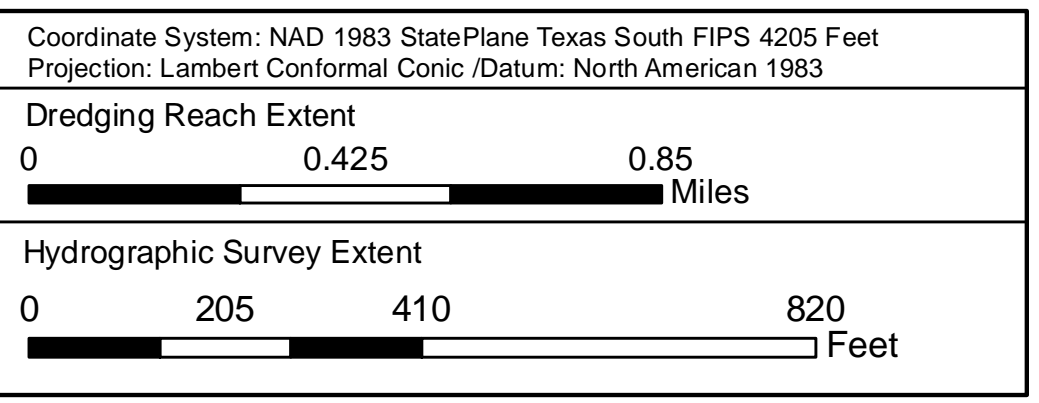
| Channel Features  | Aids to Navigation   | MLLW   |
|---|--|--|
| <ul style="list-style-type: none"> <li>Channel Toe</li> <li>Channel Center Line</li> <li>Channel Station Lines</li> <li>Channel Dimensions</li> </ul> | <ul style="list-style-type: none"> <li>Lights</li> <li>Red Side Aids</li> <li>Green Side Aids</li> <li>Mooring Buoy</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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- NOAA BATHYMETRY CONTOURS PRODUCED FROM HISTORIC BATHYMETRIC (HYDROGRAPHIC) SURVEYS CONDUCTED BY THE NOAA NATIONAL OCEAN SERVICE COAST SURVEY, AVAILABLE FROM THE NATIONAL GEOPHYSICAL DATA CENTER. SURVEYS VARY AS TO SOUNDING DENSITY, ACCURACY OF DEPTH, ACCURACY OF NAVIGATION, ZERO DATUM, DATE OF SURVEY AND TYPE OF INSTRUMENTATION.



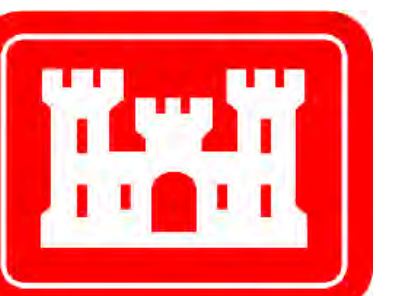
Service Layer Credits: Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community  
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



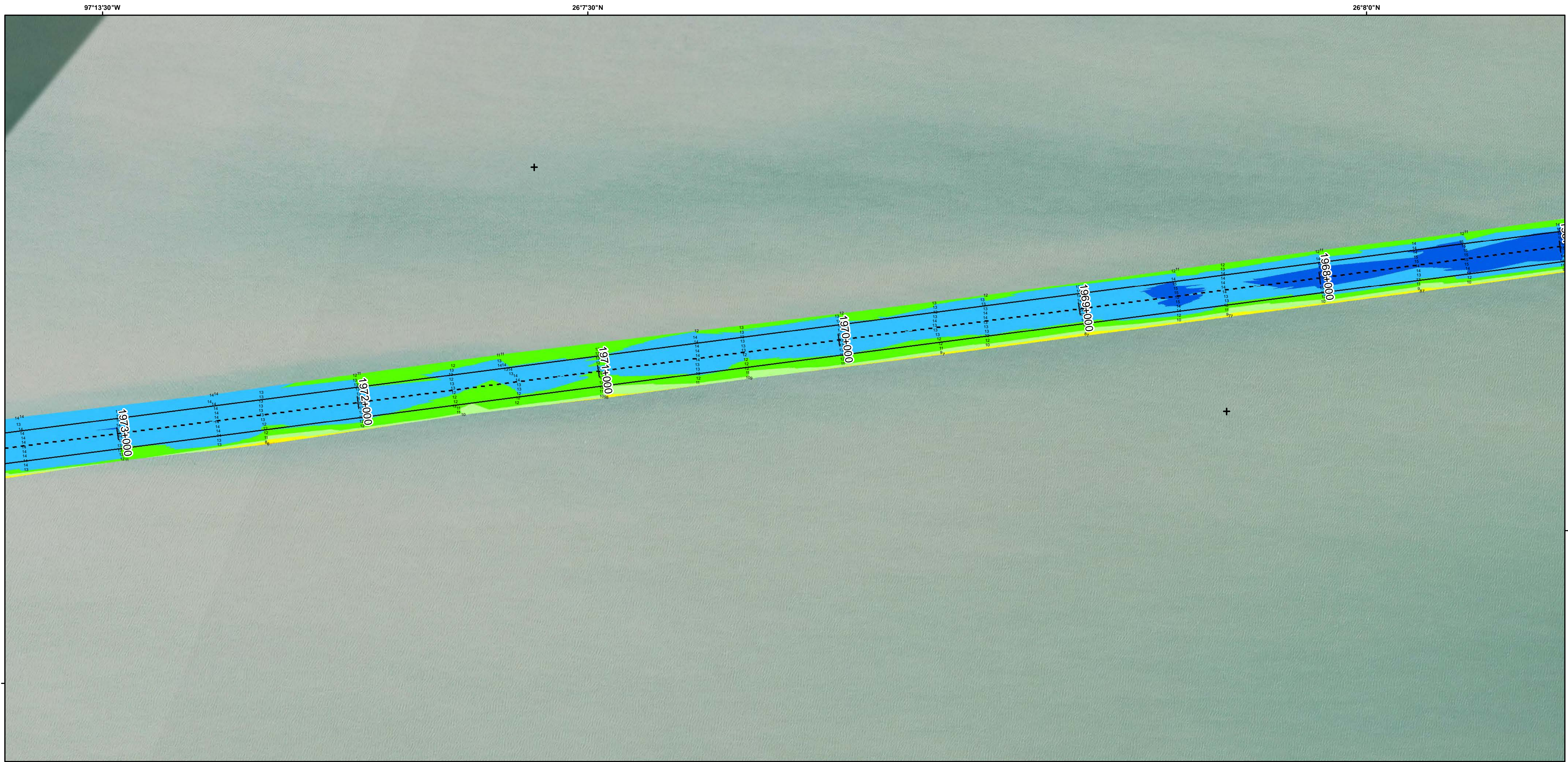
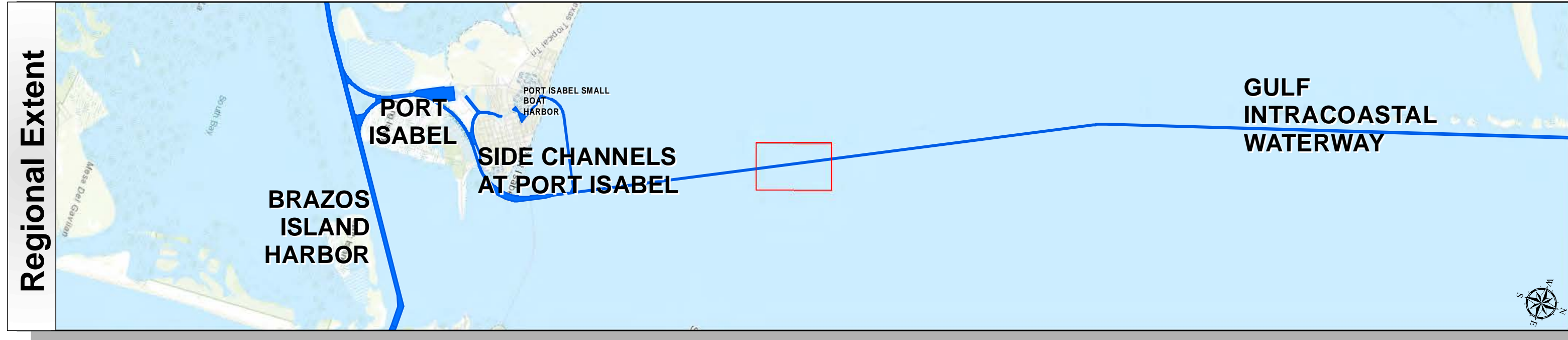
**HYDROGRAPHIC SURVEY**  
U.S. ARMY ENGINEER DISTRICT  
CORPS OF ENGINEERS  
GALVESTON, TEXAS  
Arroyo Colorado to Port Brownsville

**Station: 1878+700 to 1999+277**  
**GULF INTRACOASTAL WATERWAY**  
TEXAS

# Gulf Intracoastal Waterway: Arroyo Colorado to Port Brownsville



U.S. Army Corps of Engineers  
Galveston District

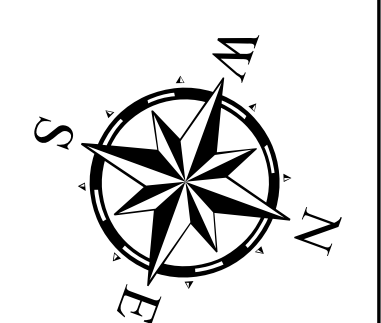


|                               |   |
|-------------------------------|---|
| Survey Date(s): 22 March 2018 | Authorized Depth: -13ft.                |
| Page: 334 of 23               | Side Slope Ratio: (Rise : Run)          |
| Scale: 1:2,400                | Additional Imagery: © DigitalGlobe Inc. |
| Mapped by: M3A0XPAC           | Print Date: 4/13/2018                   |
| Additional Info :             |   |

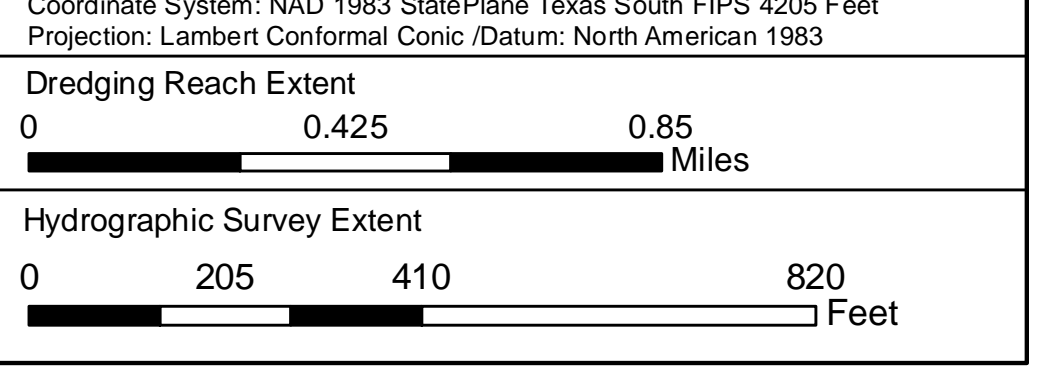
| Channel Features  | Aids to Navigation   | MLLW   |
|---|--|--|
| <ul style="list-style-type: none"> <li>Channel Toe</li> <li>Channel Center Line</li> <li>Channel Station Lines</li> <li>Channel Dimensions</li> </ul> | <ul style="list-style-type: none"> <li>Lights</li> <li>Red Side Aids</li> <li>Green Side Aids</li> <li>Mooring Buoy</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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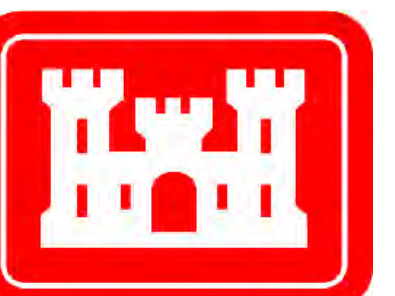
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Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



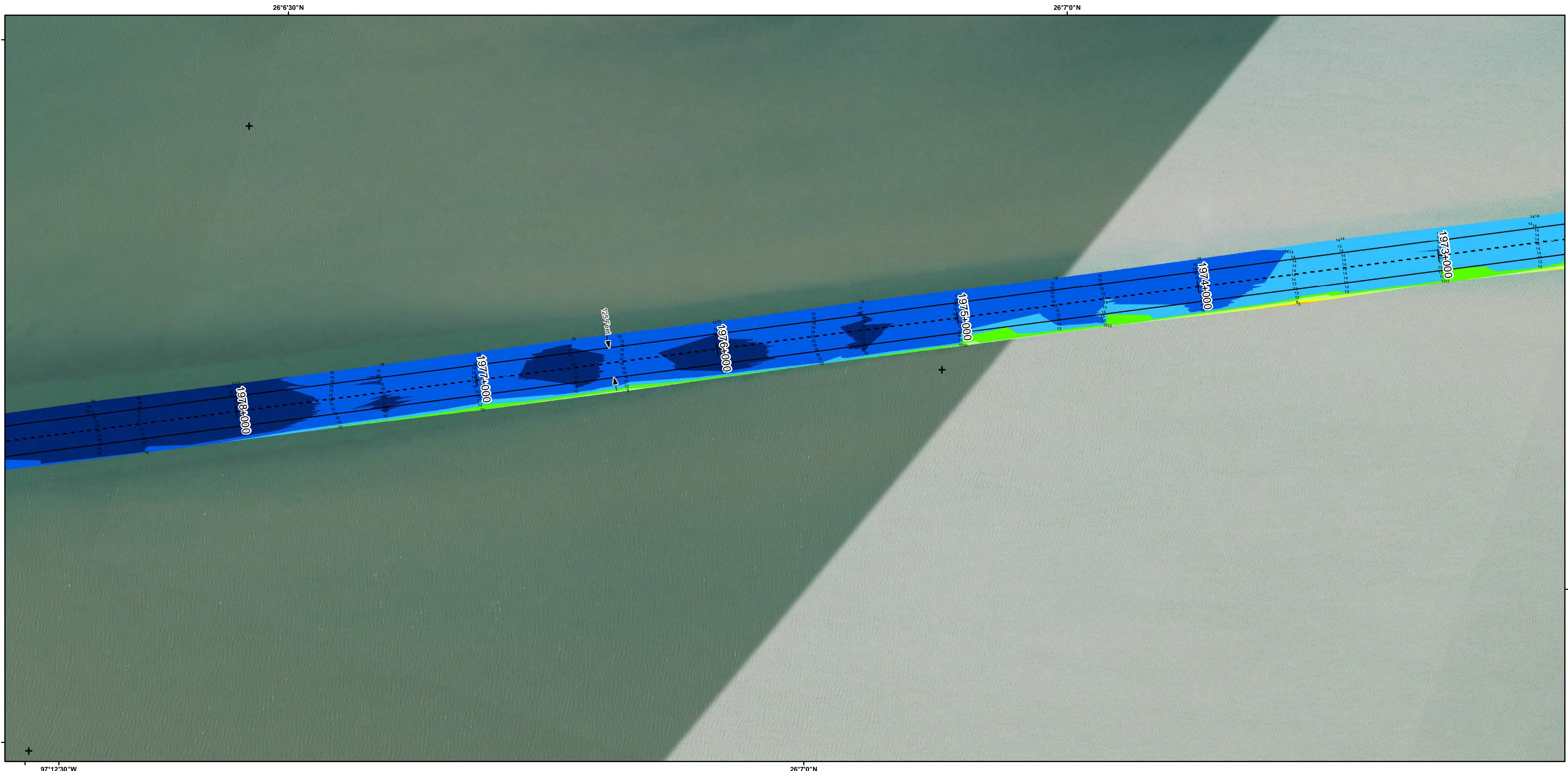
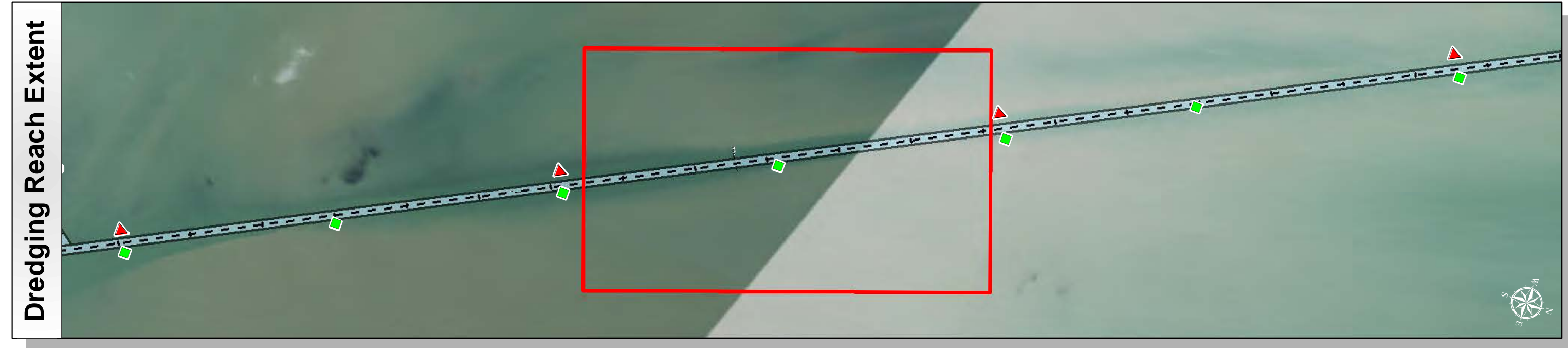
**HYDROGRAPHIC SURVEY**  
U.S. ARMY ENGINEER DISTRICT  
CORPS OF ENGINEERS  
GALVESTON, TEXAS  
Arroyo Colorado to Port Brownsville

**Station: 1878+700 to 1999+277**  
**GULF INTRACOASTAL WATERWAY**  
TEXAS

# Gulf Intracoastal Waterway: Arroyo Colorado to Port Brownsville



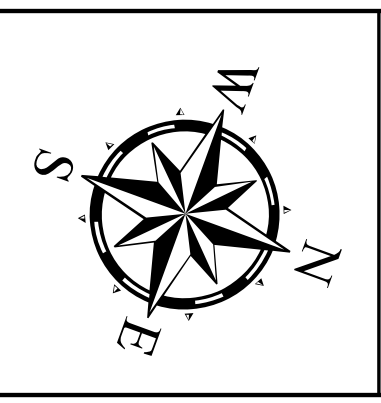
U.S. Army Corps of Engineers  
Galveston District



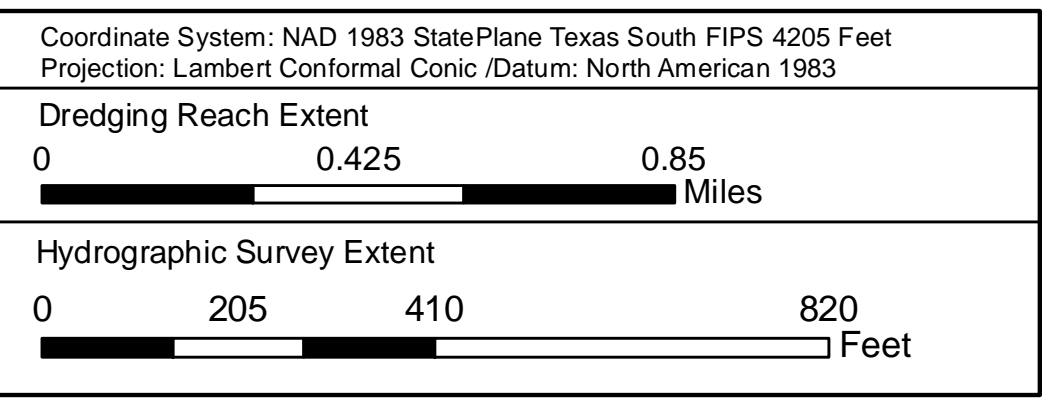
| Channel Features          | Aids to Navigation | MLLW  |
|---------------------------|--------------------|---|
| — Channel Toe             | ★ Lights           | Color scale for MLLW: > 3, 3-5, 5-7, 7-9, 9-11, 11-13, 13-15, 15-17, < 17 |
| - - - Channel Center Line | ▲ Red Side Aids    | NOAA Bathymetry (DREDGING REACH EXTENT)                                   |
| — Channel Station Lines   | ■ Green Side Aids  | 0 - 10, 10 - 15, 15 - 20, 20 - 25, 25 - 30, 30 - 50                       |
| ↔ Channel Dimensions      | ◆ Mooring Buoy     |   |

NOTES:  
 1. HORIZONTAL COORDINATES ARE REFERENCED TO TEXAS STATE PLANE COORDINATE SYSTEM, SOUTH CENTRAL ZONE NAD83 US SURVEY FEET.  
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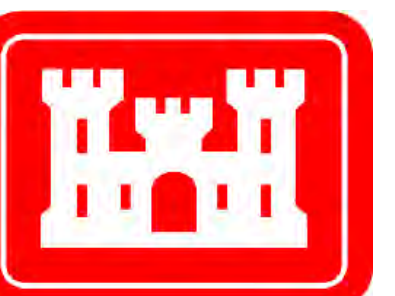
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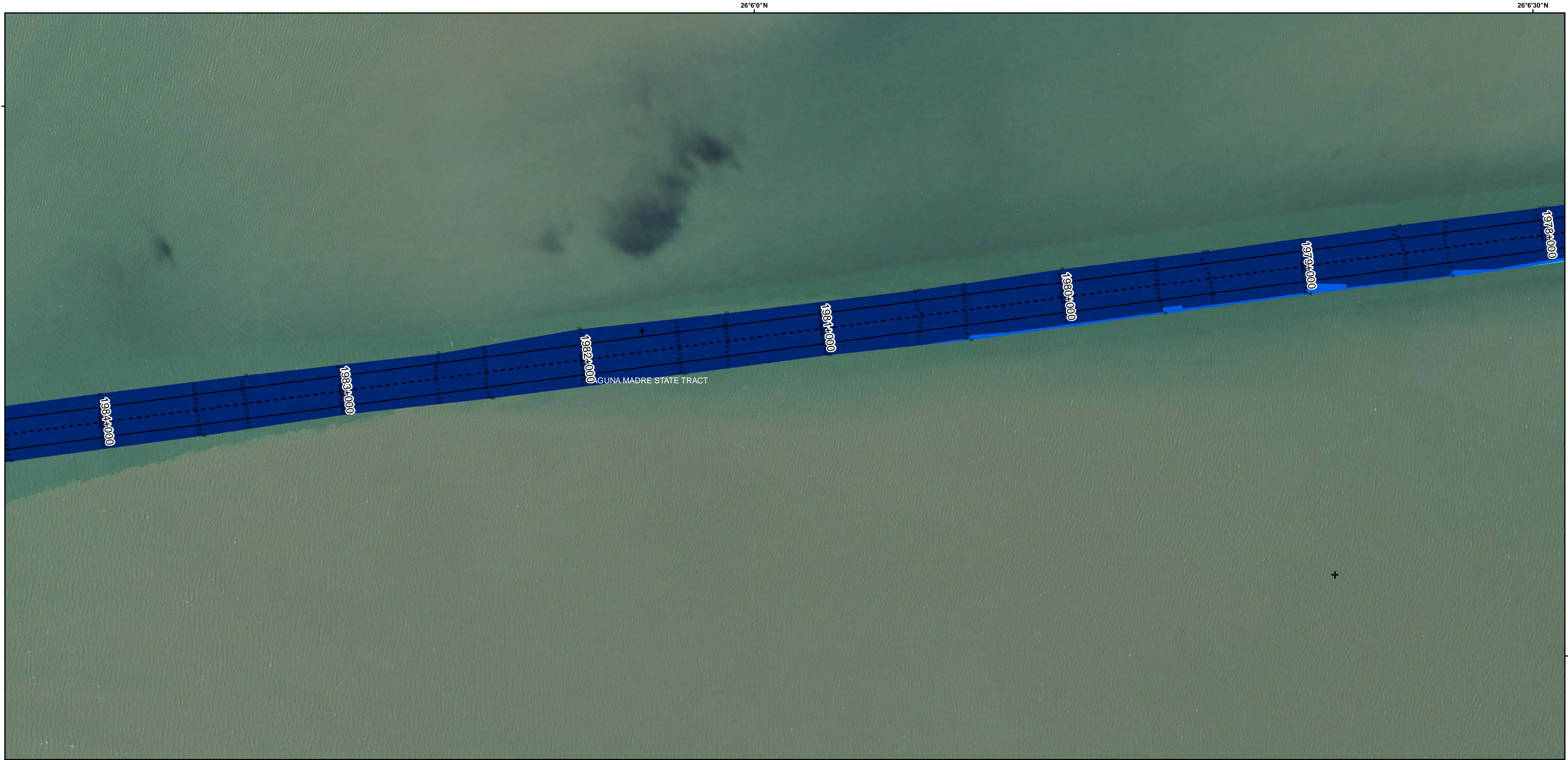
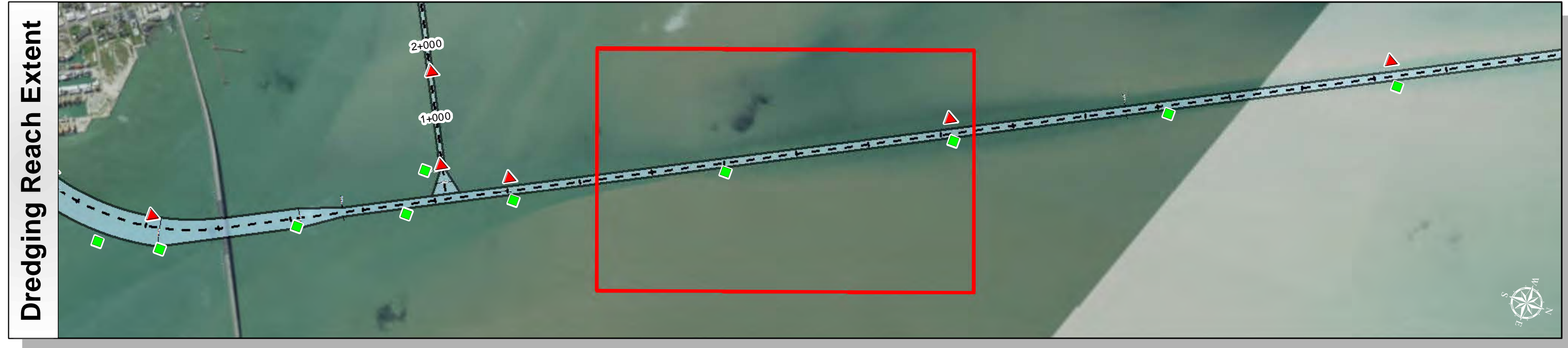
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|-------------------------------|---|
| Survey Date(s): 22 March 2018 | Authorized Depth: -13ft.                |
| Page: 335 of 335              | Side Slope Ratio: (Rise : Run)          |
| Map: 23                       | Additional Imagery: © DigitalGlobe Inc. |
| Scale: 1:2,400                | Print Date: 4/13/2018                   |
| Mapped by: MSAOX PAC          | Additional Info:                        |

**HYDROGRAPHIC SURVEY**  
 U.S. ARMY ENGINEER DISTRICT  
 CORPS OF ENGINEERS  
 GALVESTON, TEXAS  
 Arroyo Colorado to Port Brownsville  
**Station: 1878+700 to 1999+277**  
**GULF INTRACOASTAL WATERWAY**  
 TEXAS

# Gulf Intracoastal Waterway: Arroyo Colorado to Port Brownsville



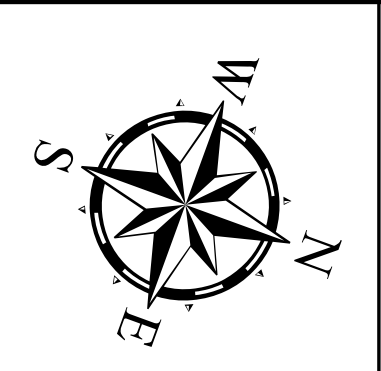
U.S. Army Corps of Engineers  
Galveston District



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

NOTES:

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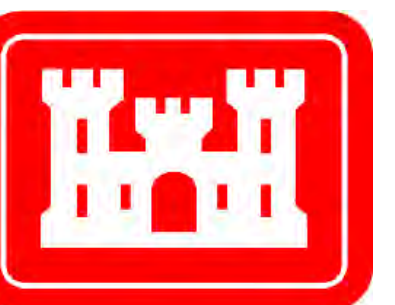
Service Layer Credits: Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community  
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|  |  |
|--|--|
| Coordinate System: NAD 1983 StatePlane Texas South FIPS 4205 Feet<br>Projection: Lambert Conformal Conic /Datum: North American 1983 |  |
| Dredging Reach Extent  |  |
| Hydrographic Survey Extent   |  |

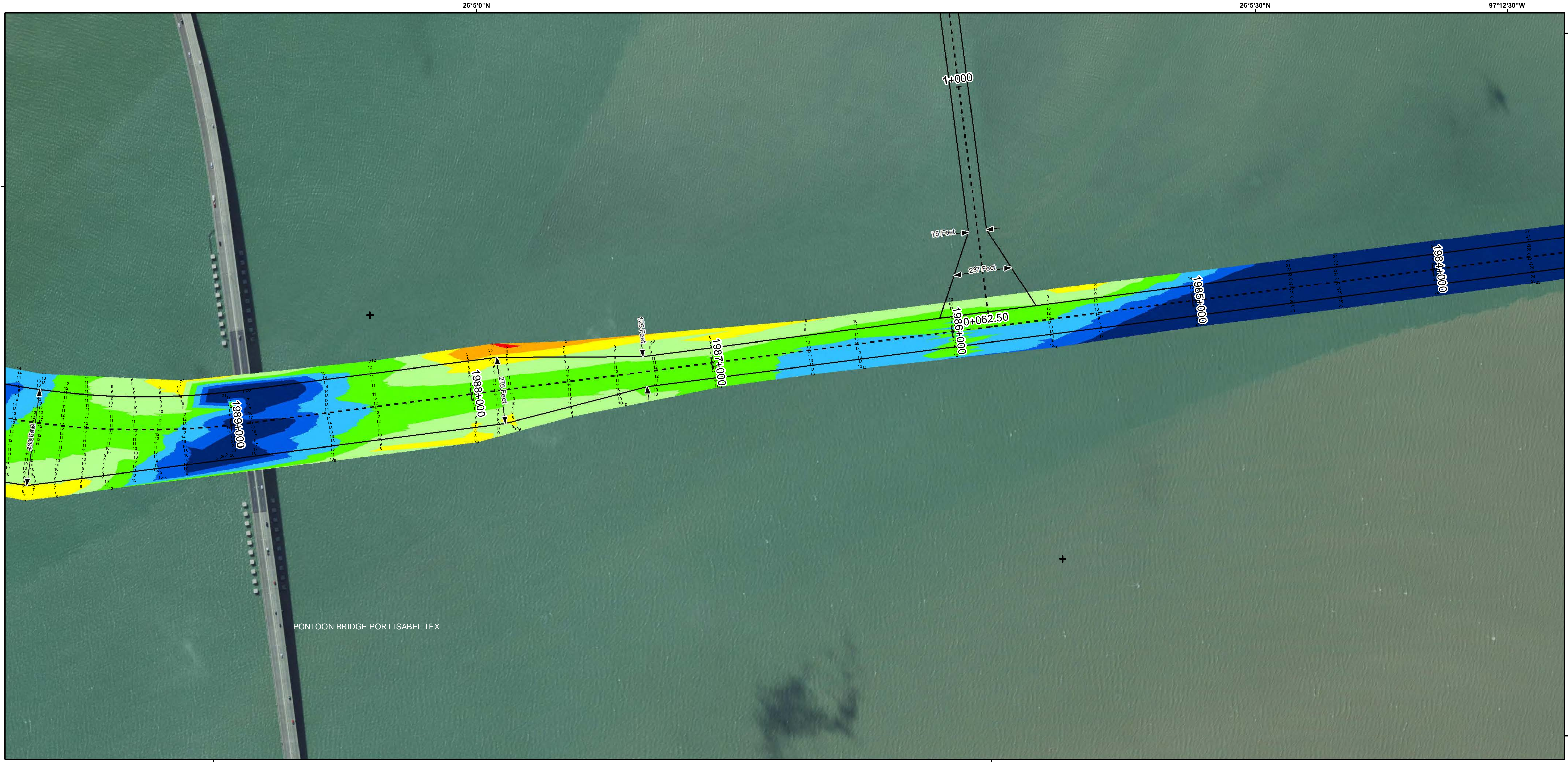
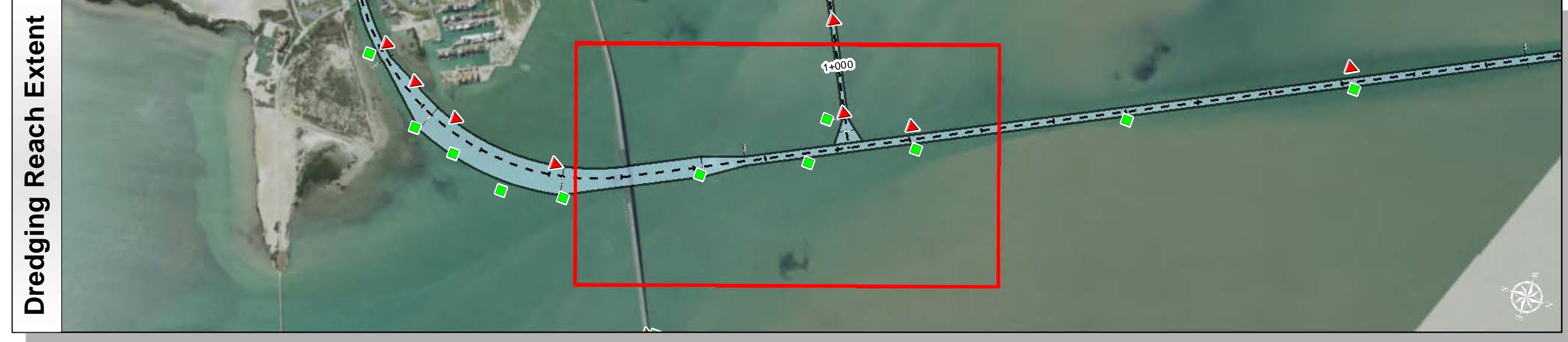
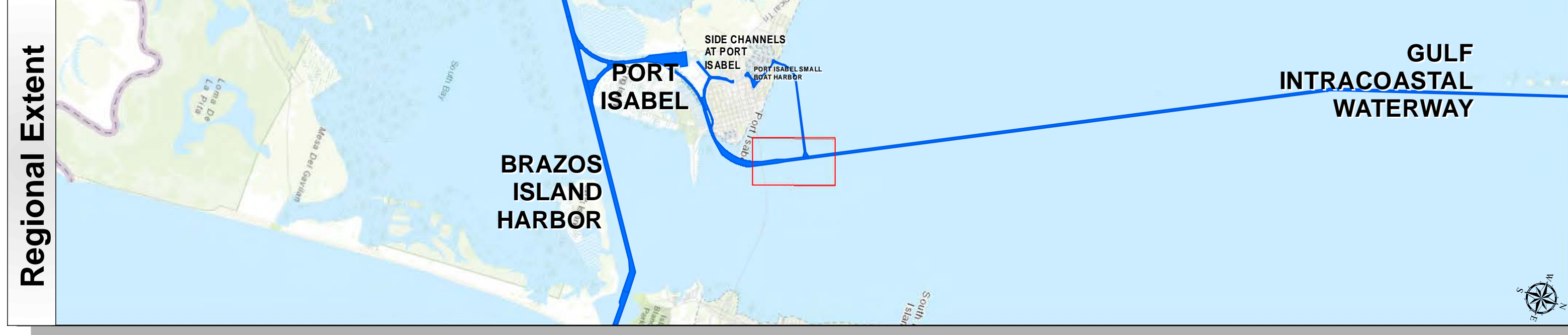
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| Survey Date(s): 22 March 2018 | Authorized Depth: -13ft.                |
| Page: 336 of 23               | Side Slope Ratio: (Rise : Run)          |
| Scale: 1:2,400                | Additional Imagery: © DigitalGlobe Inc. |
| Mapped by: M3AOXPAC           | Print Date: 4/13/2018                   |
| Additional Info:              |   |

**HYDROGRAPHIC SURVEY**  
U.S. ARMY ENGINEER DISTRICT  
CORPS OF ENGINEERS  
GALVESTON, TEXAS  
Arroyo Colorado to Port Brownsville  
**Station: 1878+700 to 1999+277**  
**GULF INTRACOASTAL WATERWAY**  
TEXAS

# Gulf Intracoastal Waterway: Arroyo Colorado to Port Brownsville



U.S. Army Corps of Engineers  
Galveston District

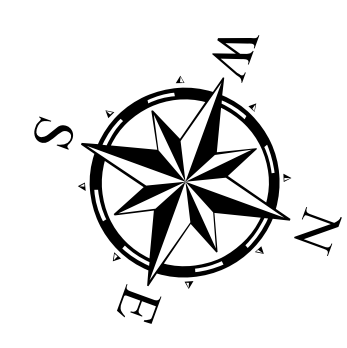


| Channel Features                               | Aids to Navigation | MLLW    |
|--|--------------------|---------|
| — Channel Toe                                  | ★ Lights           | 0 - 3   |
| - - - Channel Center Line                      | ▲ Red Side Aids    | 3 - 5   |
| — Channel Station Lines                        | ■ Green Side Aids  | 5 - 7   |
| ↔ Channel Dimensions                           | ◇ Mooring Buoy     | 7 - 9   |
|  |                    | 9 - 11  |
|  |                    | 11 - 13 |
|  |                    | 13 - 15 |
|  |                    | 15 - 17 |
|  |                    | < 17    |
| <b>NOAA Bathymetry (DREDGING REACH EXTENT)</b> |                    |         |
|  |                    | 0 - 10  |
|  |                    | 10 - 15 |
|  |                    | 15 - 20 |
|  |                    | 20 - 25 |
|  |                    | 25 - 30 |
|  |                    | 30 - 50 |

**NOTES:**

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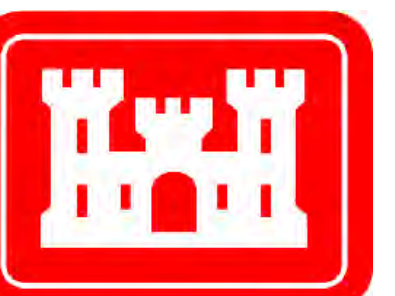
|  |                    |
|--|--------------------|
| Coordinate System: NAD 1983 StatePlane Texas South FIPS 4205 Feet<br>Projection: Lambert Conformal Conic /Datum: North American 1983 |                    |
| Dredging Reach Extent  | 0 0.425 0.85 Miles |
| Hydrographic Survey Extent   | 0 205 410 820 Feet |

|                               |   |
|-------------------------------|---|
| Survey Date(s): 22 March 2018 | Authorized Depth: -13ft.                |
| Page: 337 of 337              | Side Slope Ratio: (Rise : Run)          |
| Map: 23                       | Additional Imagery: © DigitalGlobe Inc. |
| Scale: 1:2,400                | Print Date: 4/13/2018                   |
| Mapped by: MSAOXAPAC          | Additional Info:                        |

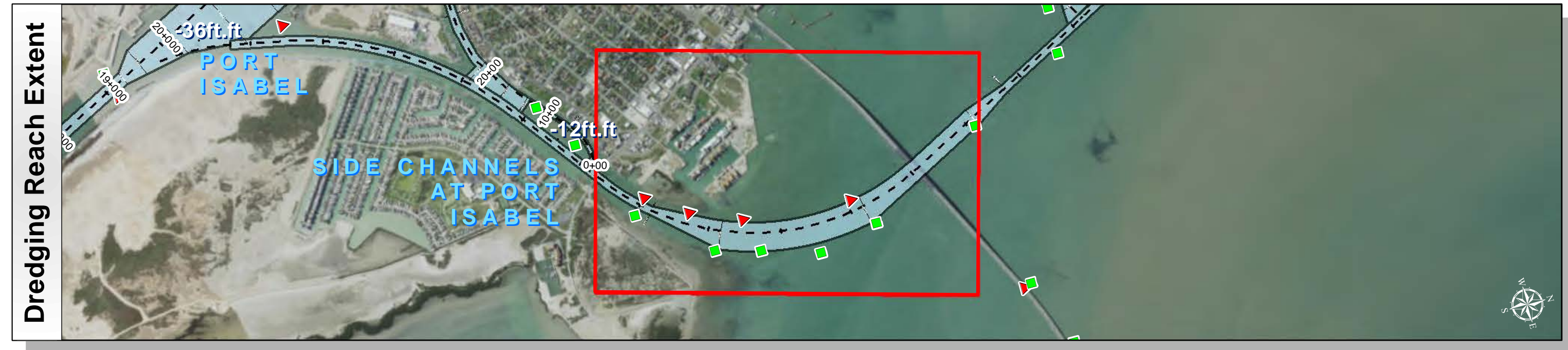
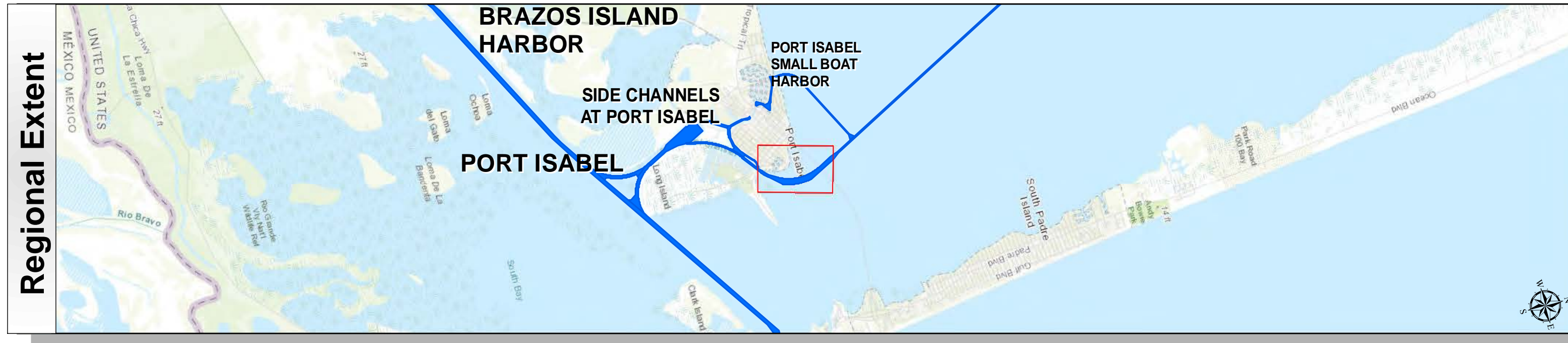
**HYDROGRAPHIC SURVEY**  
U.S. ARMY ENGINEER DISTRICT  
CORPS OF ENGINEERS  
GALVESTON, TEXAS  
Arroyo Colorado to Port Brownsville

**Station: 1878+700 to 1999+277**  
**GULF INTRACOASTAL WATERWAY**  
TEXAS

# Gulf Intracoastal Waterway: Arroyo Colorado to Port Brownsville



U.S. Army Corps of Engineers  
Galveston District



|                               |   |
|-------------------------------|---|
| Survey Date(s): 22 March 2018 | Authorized Depth: -13ft.                |
| Page: 338 of 23               | Side Slope Ratio: (Rise : Run)          |
| Scale: 1:2,400                | Additional Imagery: © DigitalGlobe Inc. |
| Mapped by: MSAOX PAC          | Print Date: 4/13/2018                   |
| Additional Info:              |   |

**Channel Features**

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

**Aids to Navigation**

- Lights
- Red Side Aids
- Green Side Aids
- Mooring Buoy

**MLLW**

> 3  
3 - 5  
5 - 7  
7 - 9  
9 - 11  
11 - 13  
13 - 15  
15 - 17  
< 17

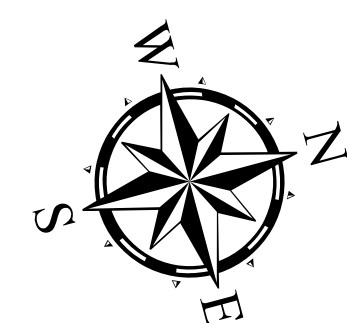
**NOAA Bathymetry (DREDGING REACH EXTENT)**

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

**NOTES:**

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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 FIPS 4205 Feet  
Projection: Lambert Conformal Conic / Datum: North American 1983

**Dredging Reach Extent**

0 0.425 0.85  
Miles

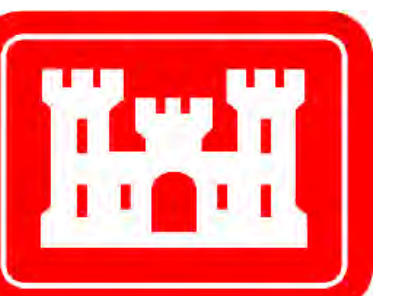
**Hydrographic Survey Extent**

0 205 410 820  
Feet

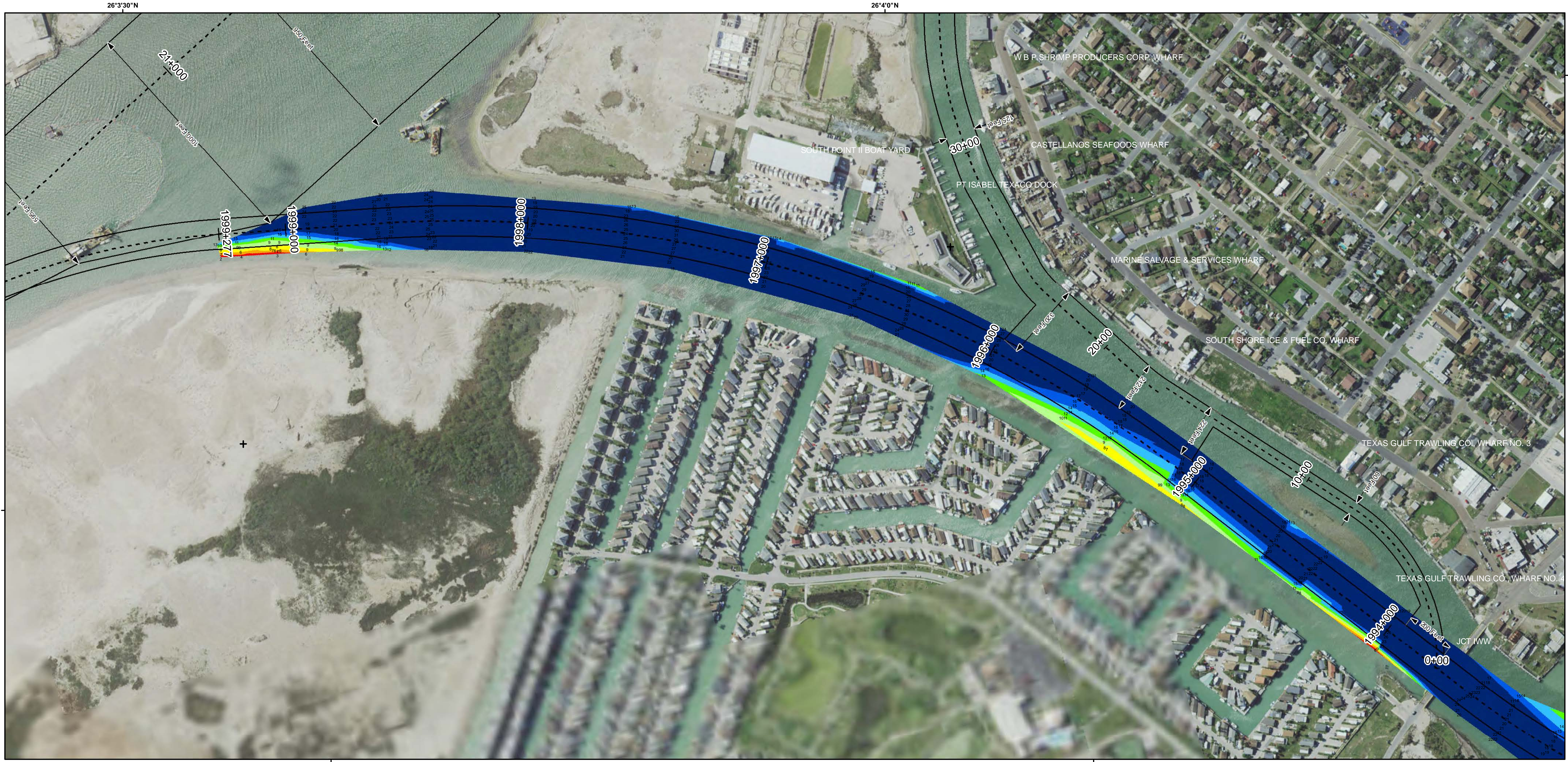
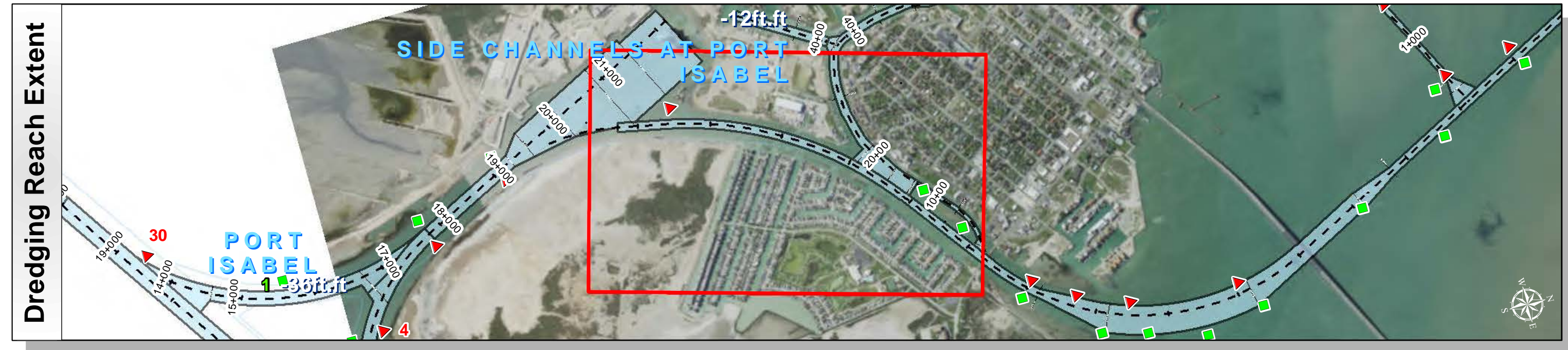
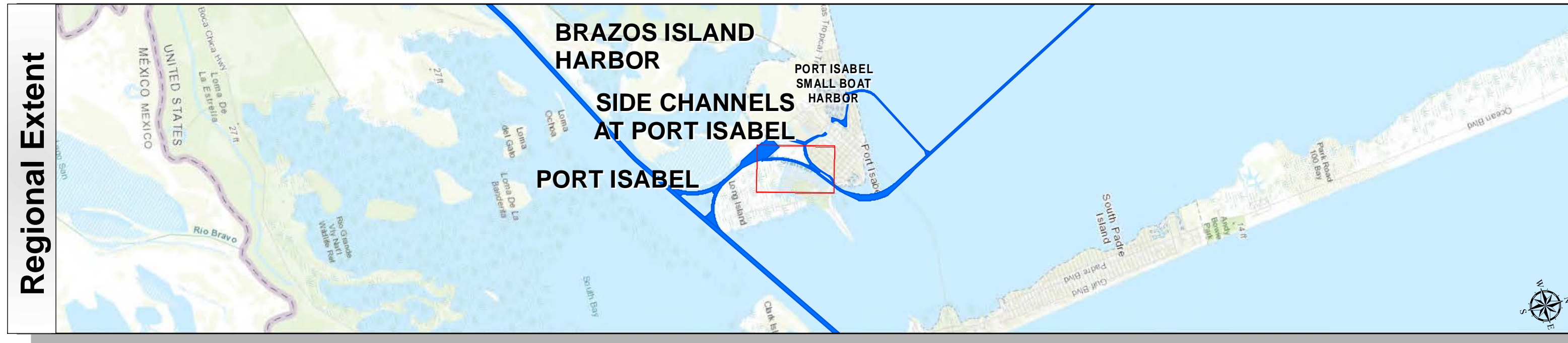
**HYDROGRAPHIC SURVEY**  
U.S. ARMY ENGINEER DISTRICT  
CORPS OF ENGINEERS  
GALVESTON, TEXAS  
Arroyo Colorado to Port Brownsville

**Station: 1878+700 to 1999+277**  
**GULF INTRACOASTAL WATERWAY**  
TEXAS

# Gulf Intracoastal Waterway: Arroyo Colorado to Port Brownsville



U.S. Army Corps of Engineers  
Galveston District

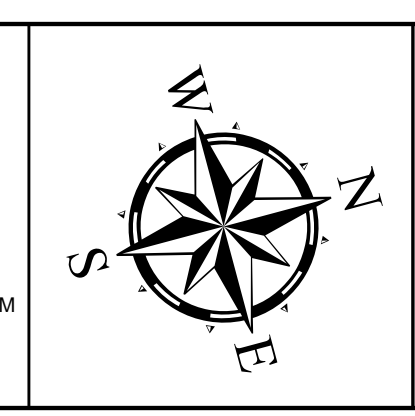


|                               |   |
|-------------------------------|---|
| Survey Date(s): 22 March 2018 | Authorized Depth: -13ft.                |
| Page: 339 of 23               | Side Slope Ratio: (Rise : Run)          |
| Scale: 1:2,400                | Additional Imagery: © DigitalGlobe Inc. |
| Mapped by: M3AOXPAC           | Print Date: 4/13/2018                   |
| Additional Info:              |   |

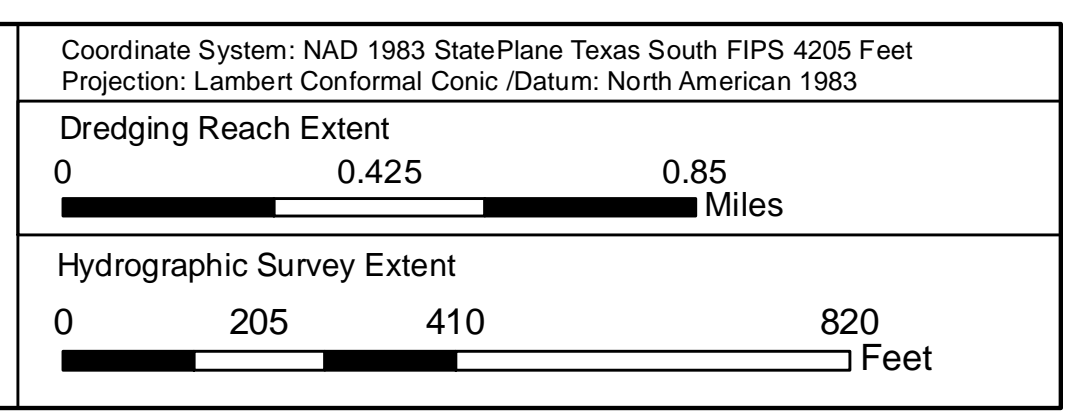
| Channel Features          | Aids to Navigation | MLLW |
|---------------------------|--------------------|------|
| — Channel Toe             | ★ Lights           |      |
| - - - Channel Center Line | ▲ Red Side Aids    |      |
| — Channel Station Lines   | ■ Green Side Aids  |      |
| ↔ Channel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

NOTES:

- HORIZONTAL COORDINATES ARE REFERENCED TO TEXAS STATE PLANE COORDINATE SYSTEM, SOUTH CENTRAL ZONE NAD83 US SURVEY FEET.
- ELEVATIONS ARE REFERENCED TO MEAN LOWER LOW TIDE (MLLW) DATUM.
- 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.
- THE INFORMATION DEPICTED ON THIS SURVEY MAP REPRESENTS THE RESULTS OF SURVEYS MADE ON THE DATES INDICATED AND CAN ONLY BE CONSIDERED AS INDICATING THE GENERAL CONDITIONS EXISTING AT THAT TIME. THESE CONDITIONS ARE SUBJECT TO RAPID CHANGE DUE TO SHOALING EVENTS. A PRUDENT MARINER SHOULD NOT RELY EXCLUSIVELY ON THE INFORMATION PROVIDED HERE, REQUIRED BY 33 CFR 209.325.
- FOR THE MOST UP TO DATE INFORMATION PLEASE CHECK OUR WEBSITE AT: [HTTP://WWW.SWG.USACE.ARMY.MIL/MISSIONS/NAVIGATION/HYDROGRAPHIC/SURVEYS/](http://www.swg.usace.army.mil/missions/navigation/hydrographic/surveys/)
- NOAA BATHYMETRY CONTOURS PRODUCED FROM HISTORIC BATHYMETRIC (HYDROGRAPHIC) SURVEYS CONDUCTED BY THE NOAA NATIONAL OCEAN SERVICE COAST SURVEY, AVAILABLE FROM THE NATIONAL GEOPHYSICAL DATA CENTER. SURVEYS VARY AS TO SOUNDING DENSITY, ACCURACY OF DEPTH, ACCURACY OF NAVIGATION, ZERO DATUM, DATE OF SURVEY AND TYPE OF INSTRUMENTATION.



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