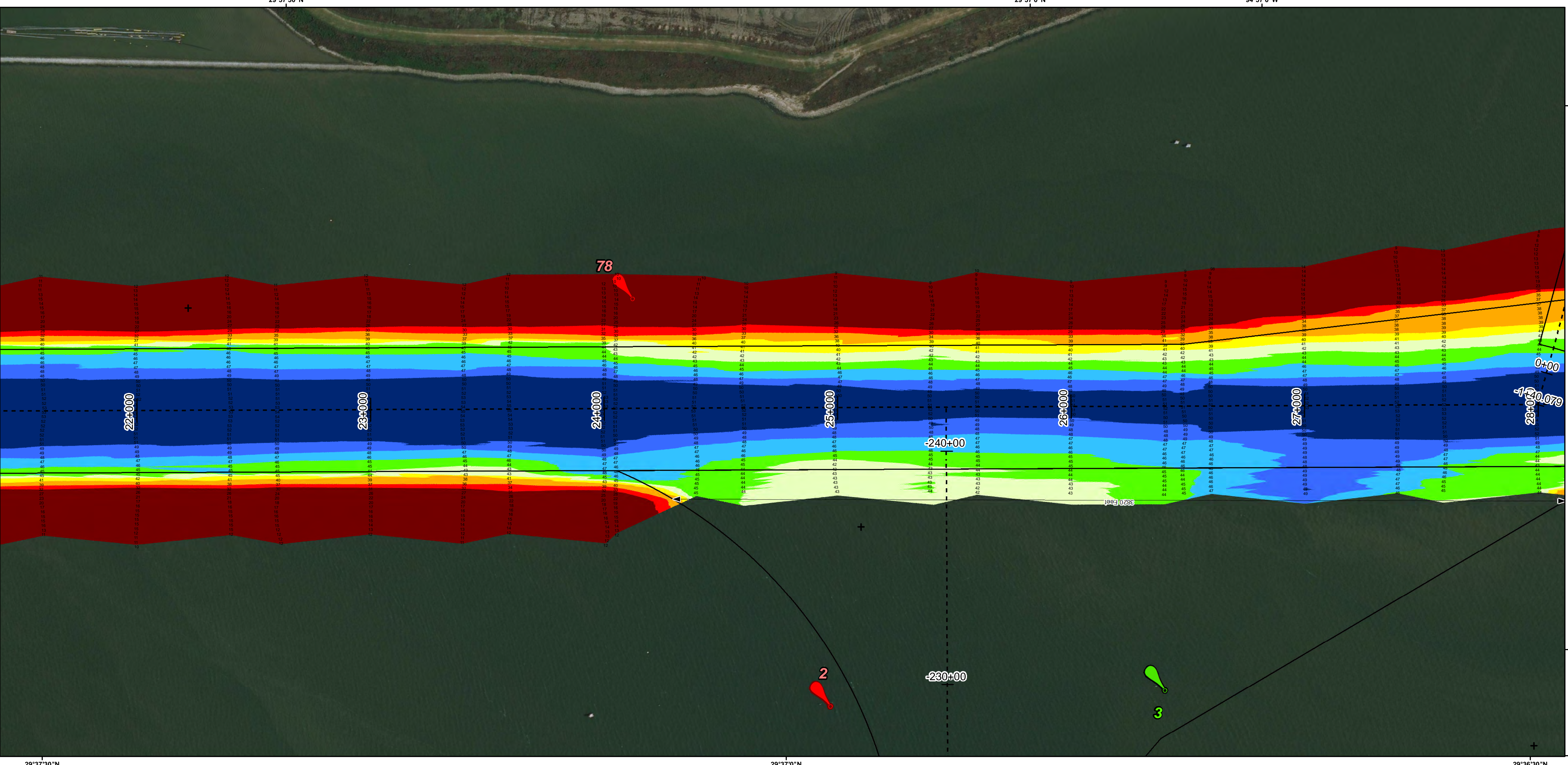
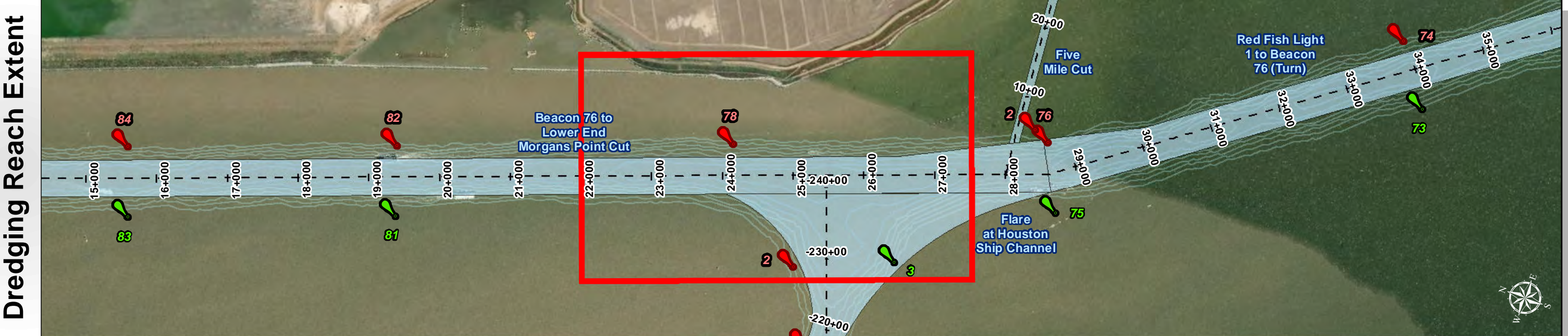
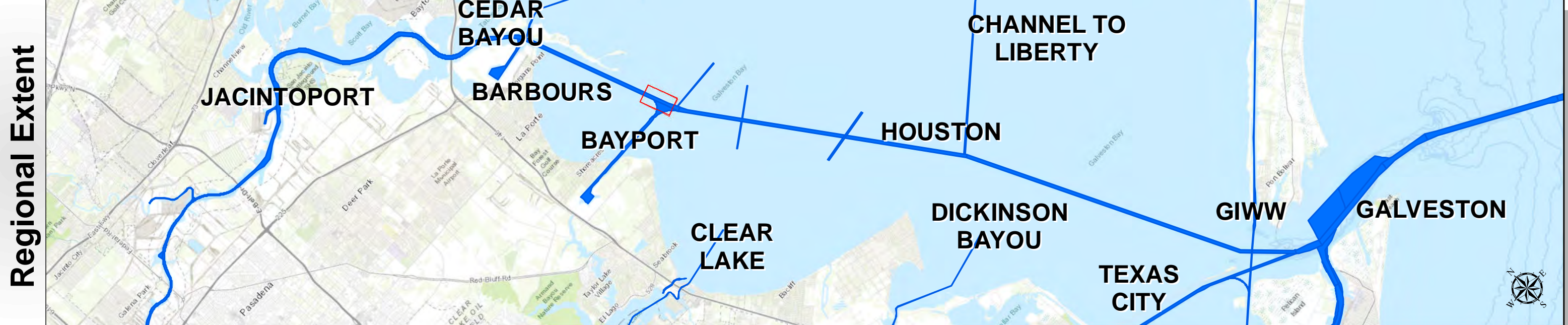


Houston Ship Channel: Beacon 76 to Lower End Morgans Point Cut



| | |
|------------------------------|---|
| Survey Date(s): 18 July 2019 | Authorized Depth: -46ft. |
| Page: 20 of 56 | Side Slope Ratio: (Rise : Run) |
| Scale: 1:2,500 | Additional Imagery: © DigitalGlobe Inc. |
| Mapped by: MSAOX PAC | Print Date: 7/24/2019 |
| Additional Info: | |

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+

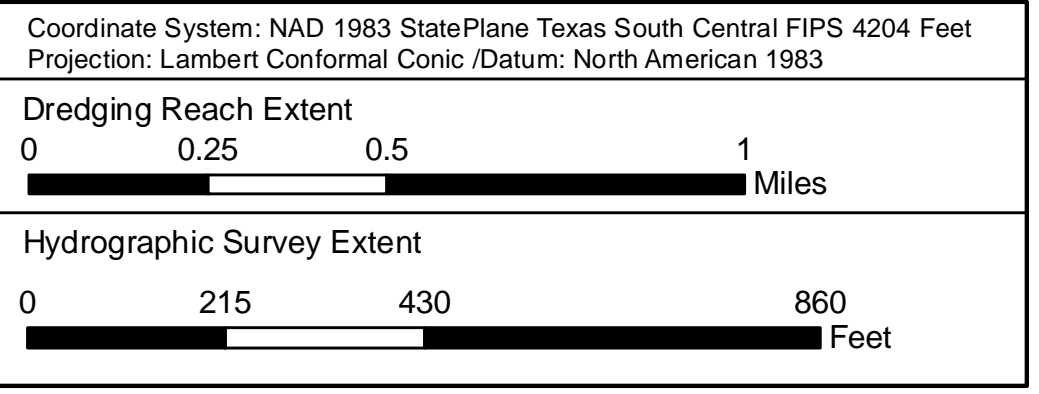
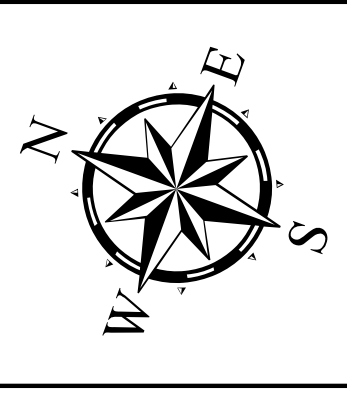
NOAA Bathymetry (DREDGING REACH EXTENT)

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.
- 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.
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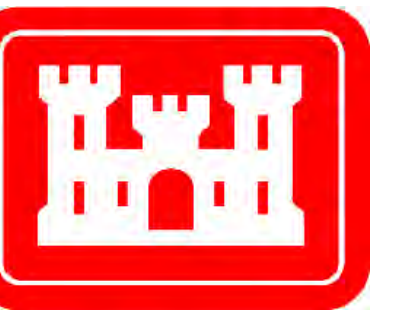
Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
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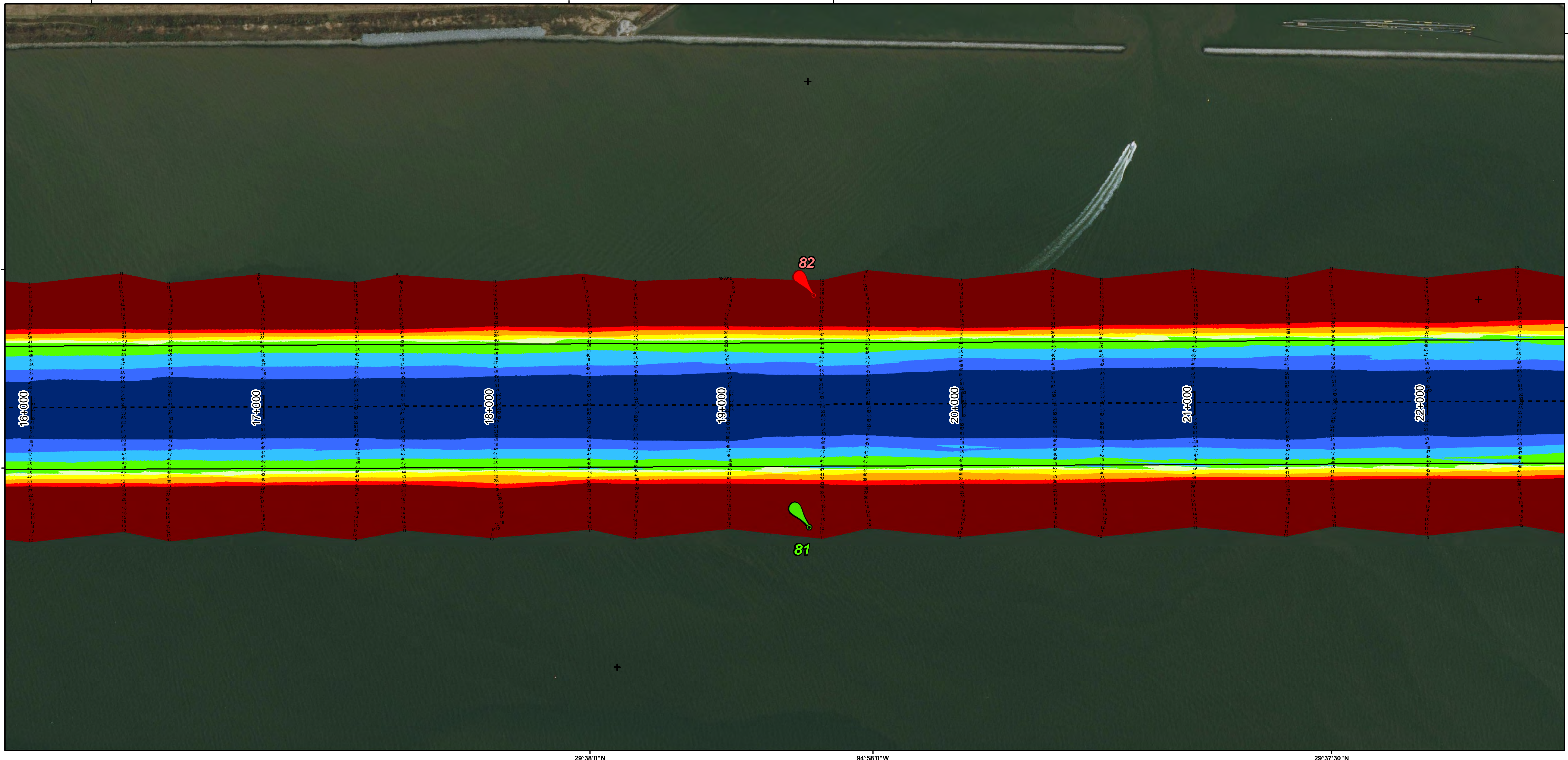
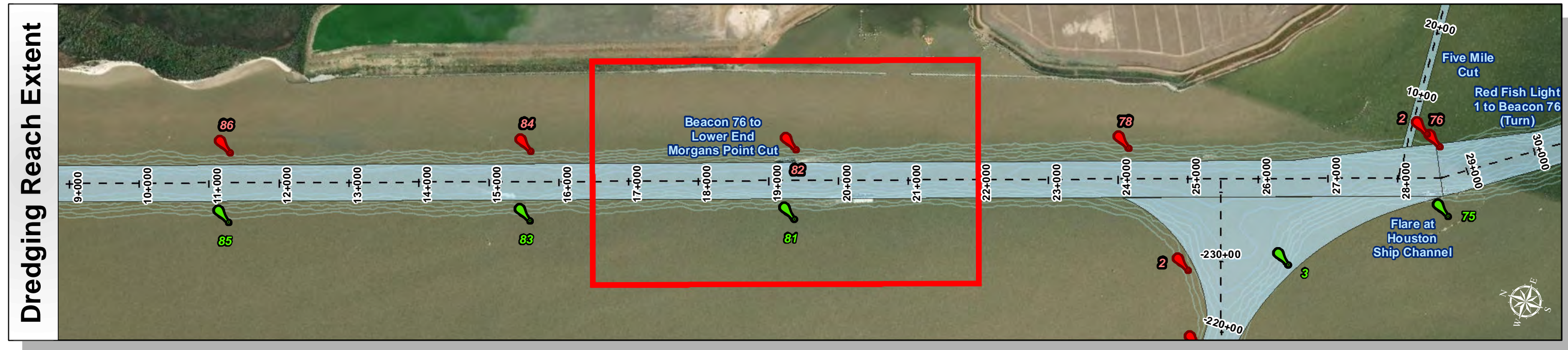
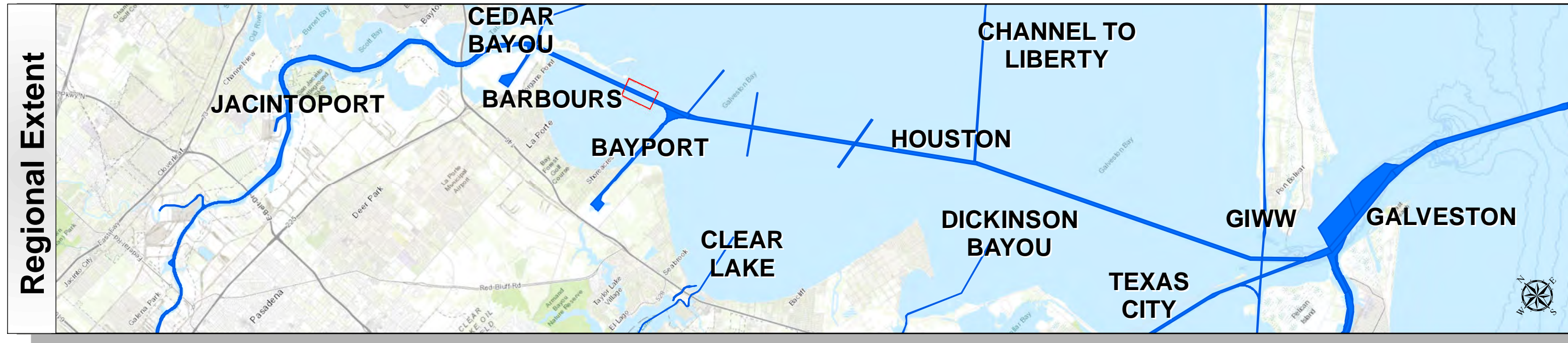
HYDROGRAPHIC SURVEY
U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
GALVESTON, TEXAS

Station: 28+604.06 to -0+003.944 (Bay)
HOUSTON
HOUSTON, TEXAS

Houston Ship Channel: Beacon 76 to Lower End Morgans Point Cut



U.S. Army Corps of Engineers
Galveston District



| | |
|------------------------------|---|
| Survey Date(s): 18 July 2019 | Authorized Depth: -46ft. |
| Page: 21 of 56 | Side Slope Ratio: (Rise : Run) |
| Scale: 1:2,500 | Additional Imagery: © DigitalGlobe Inc. |
| Mapped by: MSAOX PAC | Print Date: 7/24/2019 |
| Additional Info: | |

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+ |
|--------|---------|---------|---------|---------|---------|---------|---------|-----|

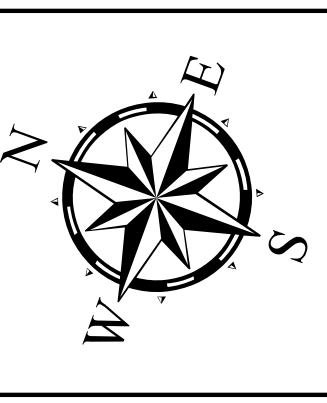
NOAA Bathymetry (DREDGING REACH EXTENT)

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

NOTES:

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Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, © OpenStreetMap contributors, and the GIS User Community
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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

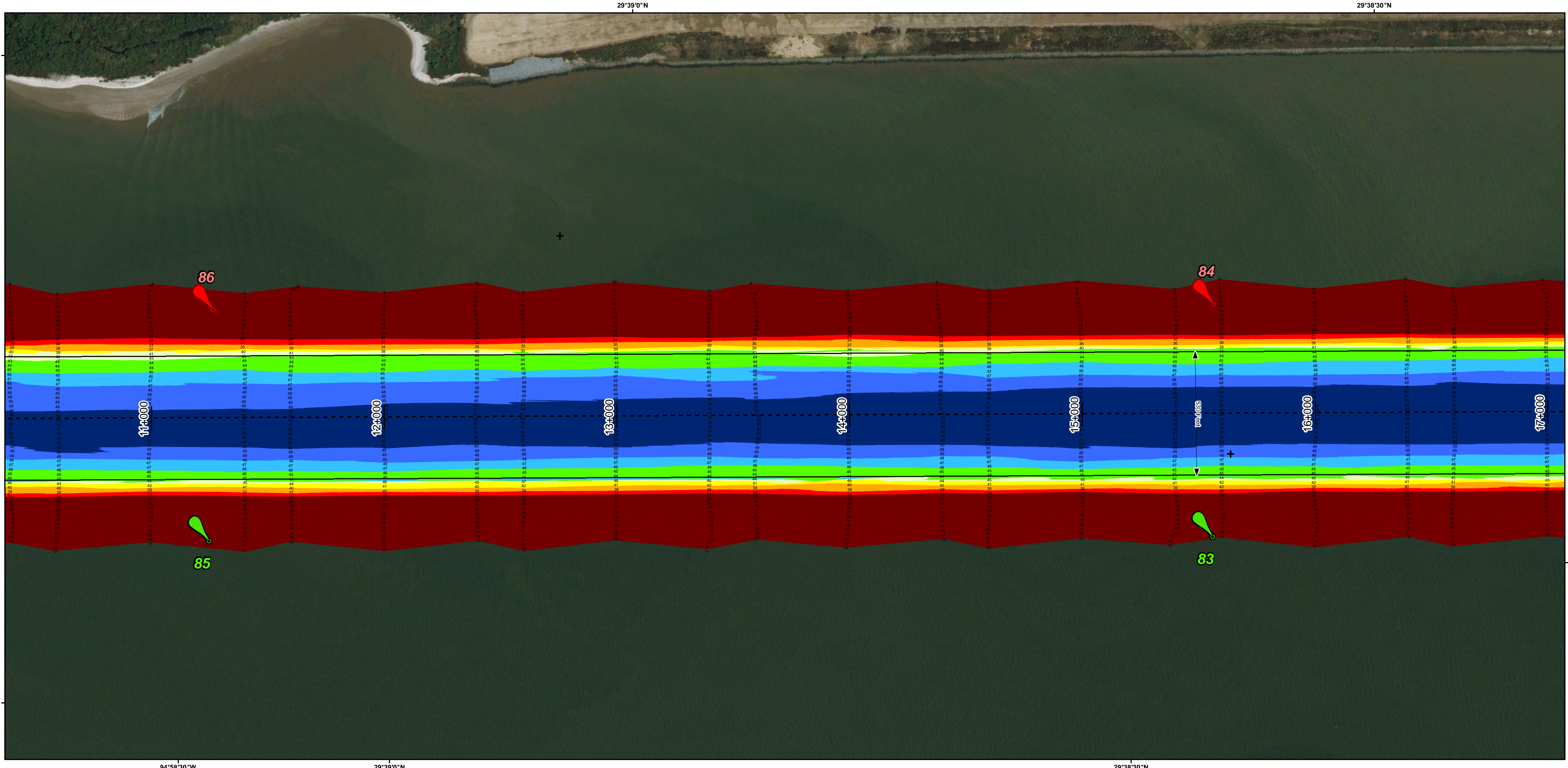
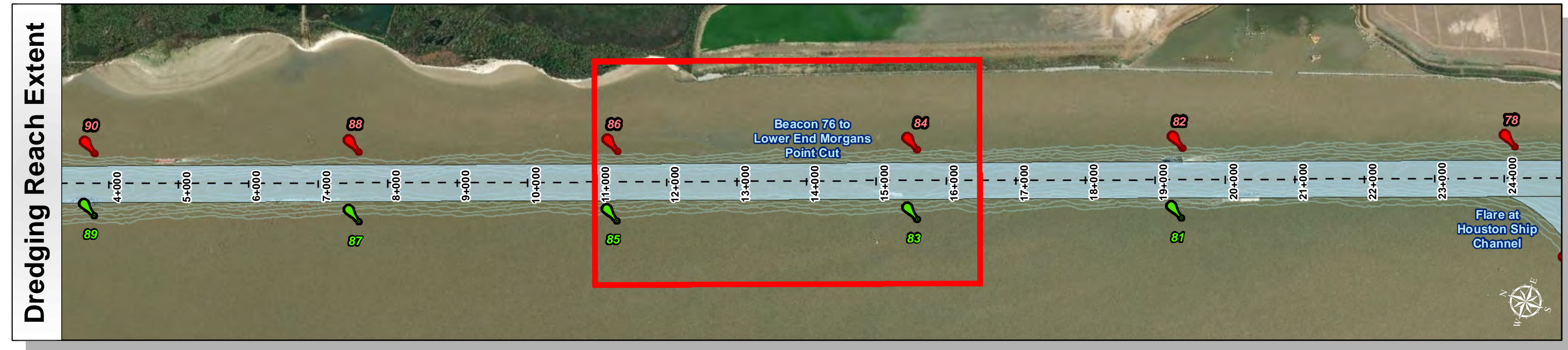
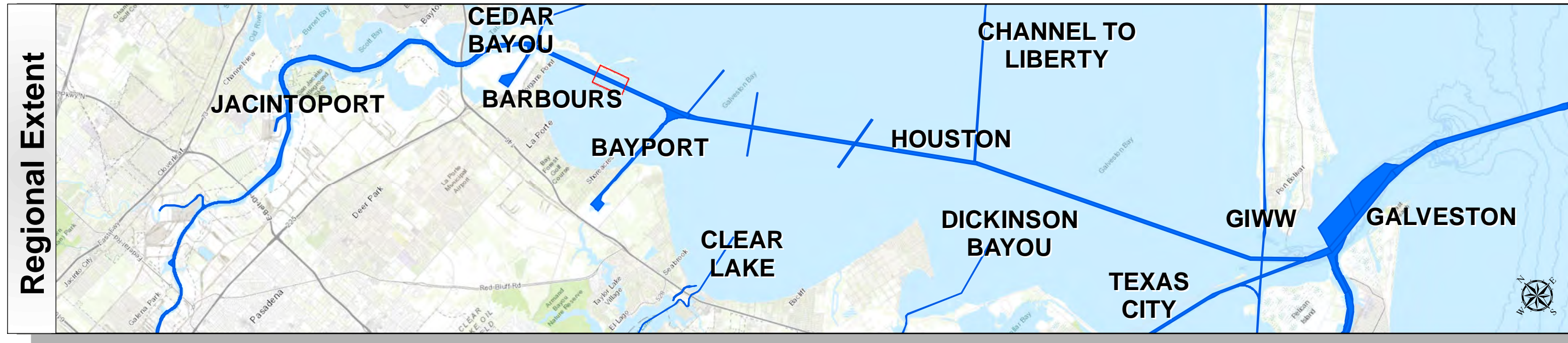
HYDROGRAPHIC SURVEY
U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
GALVESTON, TEXAS

Station: 28+604.06 to -0+003.944 (Bay)
HOUSTON
HOUSTON, TEXAS

Houston Ship Channel: Beacon 76 to Lower End Morgans Point Cut



U.S. Army Corps of Engineers
Galveston District



| Channel Features | Aids to Navigation |
|---------------------------|--------------------|
| — Channel Toe | Green Side Aids |
| - - - Channel Center Line | Red Side Aids |
| — Channel Station Lines | Lights |
| ↔ Channel Dimensions | |

| MLLW |
|---------|
| 0 - 30 |
| 30 - 35 |
| 35 - 40 |
| 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:

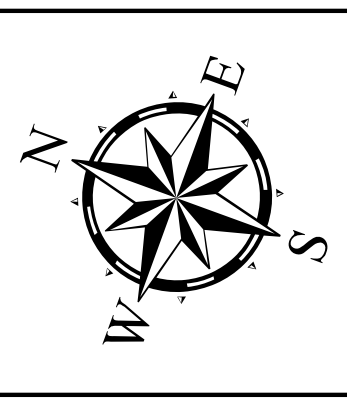
- HORIZONTAL COORDINATES ARE REFERENCED TO TEXAS STATE PLANE COORDINATE SYSTEM, SOUTH CENTRAL ZONE NAD83 US SURVEY FEET.
- ELEVATIONS ARE REFERENCED TO MEAN LOWER LOW TIDE (MLLW) DATUM.
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5. FOR THE MOST UP TO DATE INFORMATION PLEASE CHECK OUR WEBSITE AT: [HTTP://WWW.SVG.USACE.ARMY.MIL/MISSIONS/NAVIGATION/HYDROGRAPHIC-SURVEYS/](http://www.svg.usace.army.mil/missions/navigation/hydrographic-surveys/)

6. 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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| |
|--|
| 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): 18 July 2019 | Authorized Depth: -46ft. |
| Page: 22 of 56 | Side Slope Ratio: (Rise : Run) |
| Scale: 1:2,500 | Additional Imagery: © DigitalGlobe Inc. |
| Mapped by: MSAOX PAC | Print Date: 7/24/2019 |
| Additional Info : | |

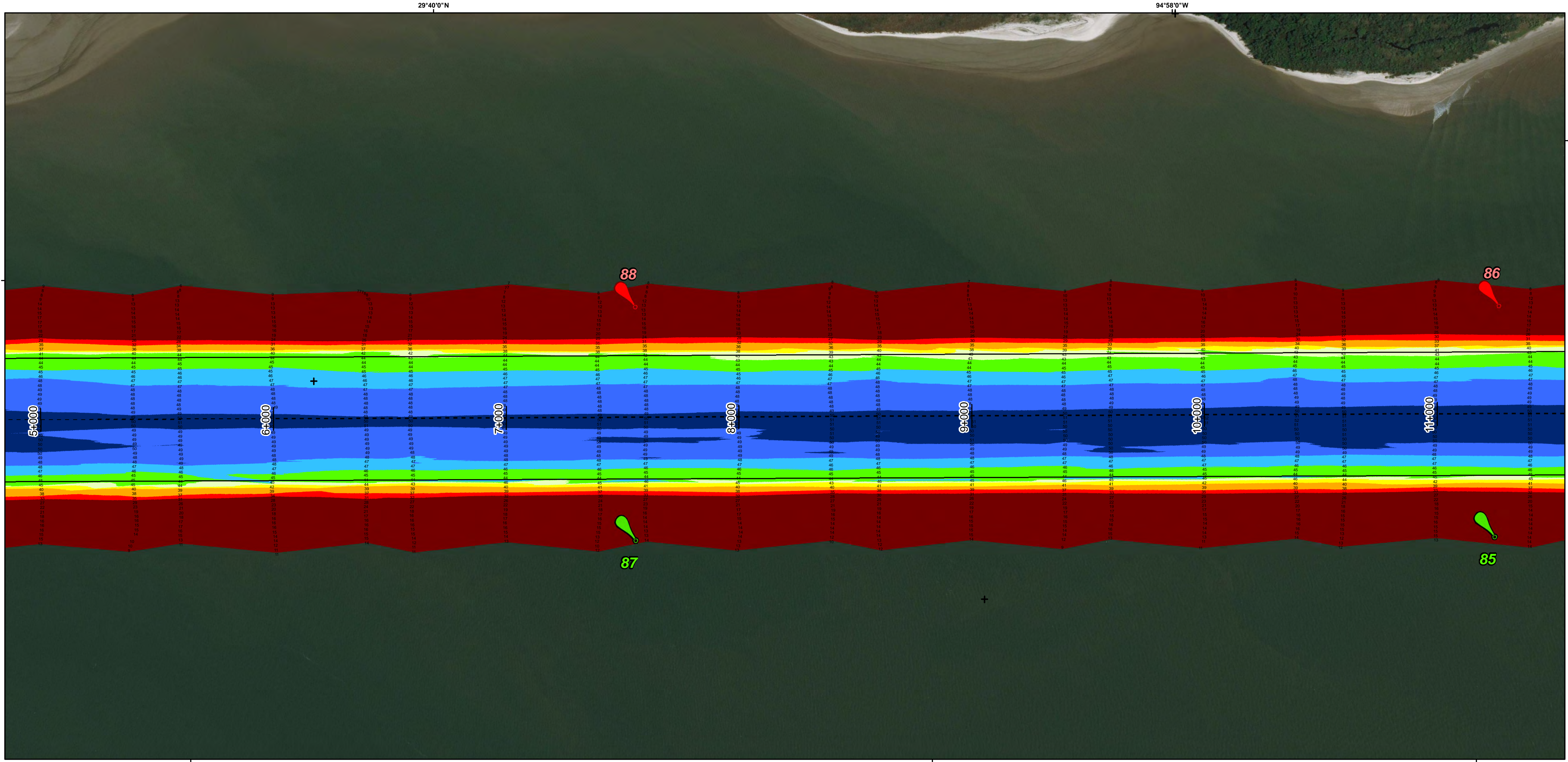
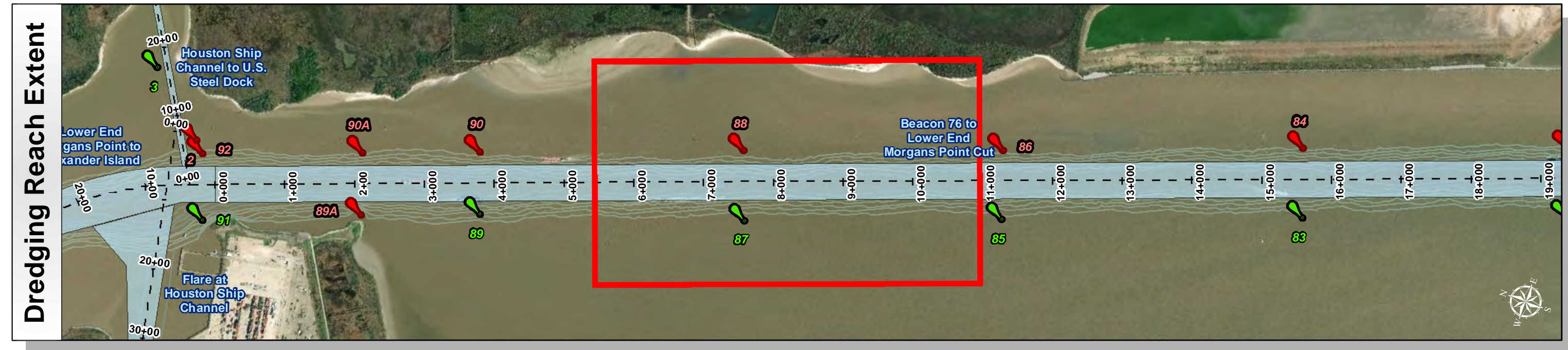
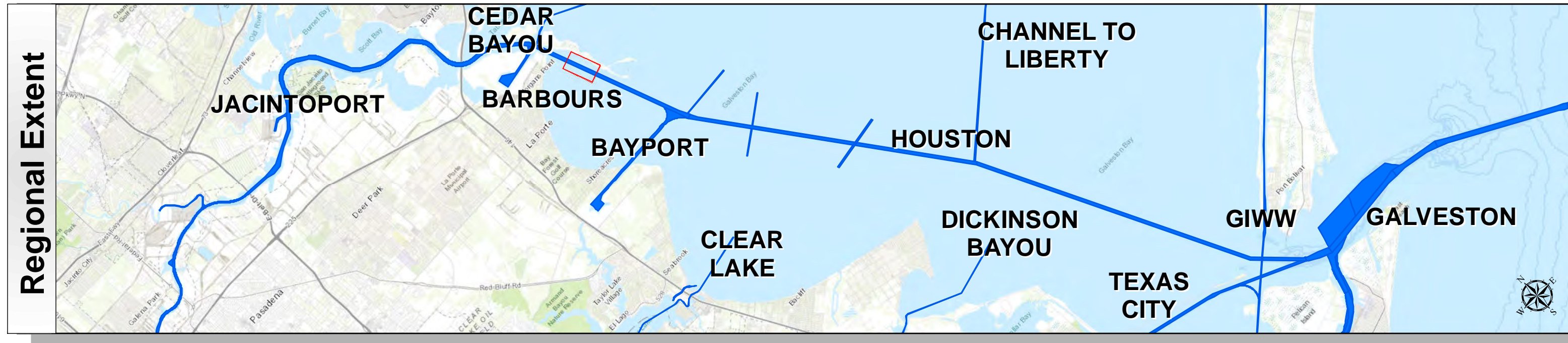
HYDROGRAPHIC SURVEY
U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
GALVESTON, TEXAS

Station: 28+604.06 to -0+003.944 (Bay)
HOUSTON
HOUSTON, TEXAS

Houston Ship Channel: Beacon 76 to Lower End Morgans Point Cut



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+

NOAA Bathymetry (DREDGING REACH EXTENT)

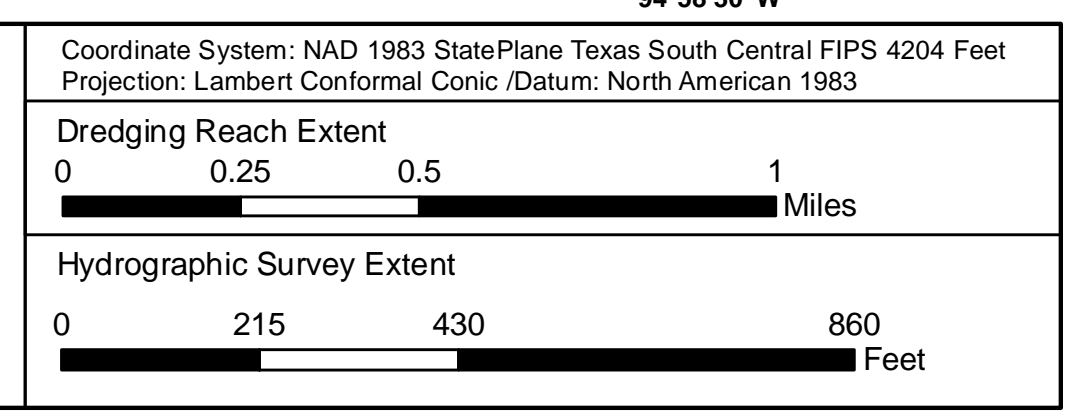
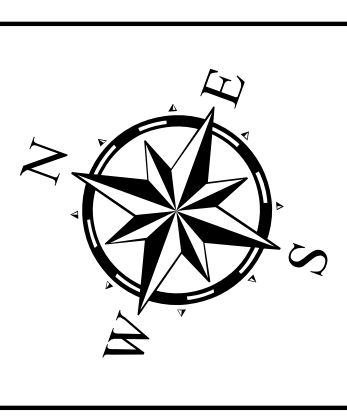
0 - 10 10 - 15 15 - 20 20 - 25 25 - 30 30 - 50

NOTES:

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| | |
|------------------------------|---|
| Survey Date(s): 18 July 2019 | Authorized Depth: -45ft. |
| Page: 23 of 56 | Side Slope Ratio: (Rise : Run) |
| Scale: 1:2,500 | Additional Imagery: © DigitalGlobe Inc. |
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| Additional Info: | |

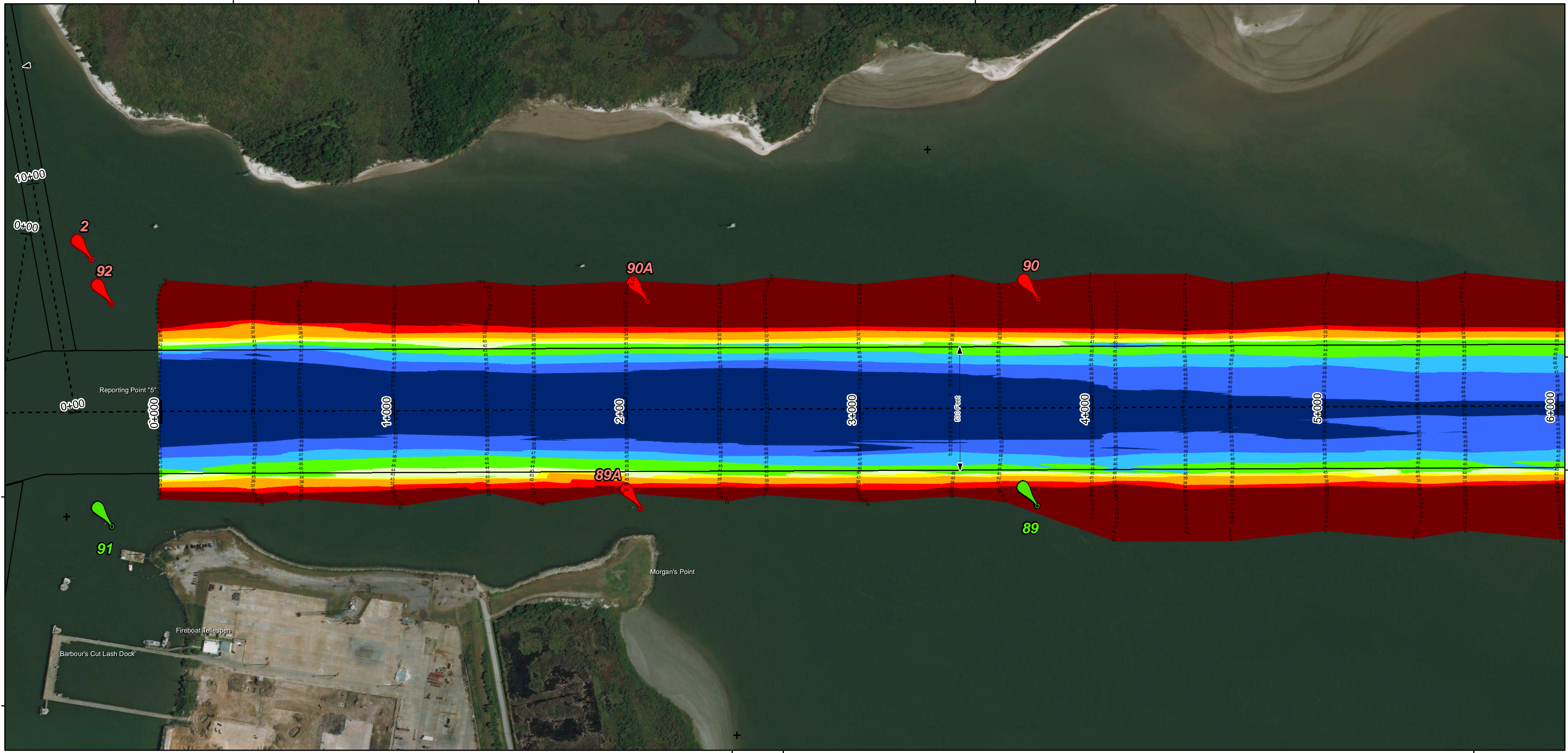
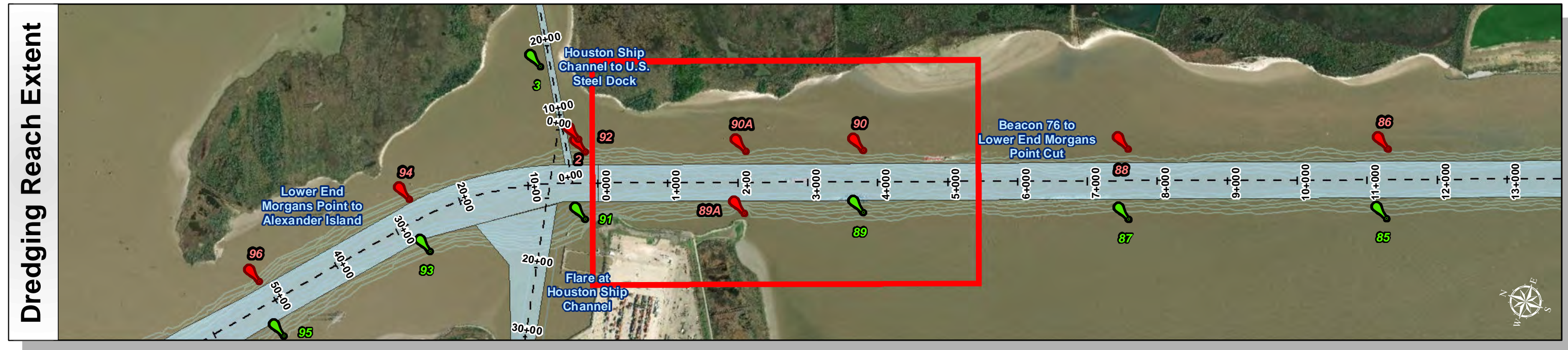
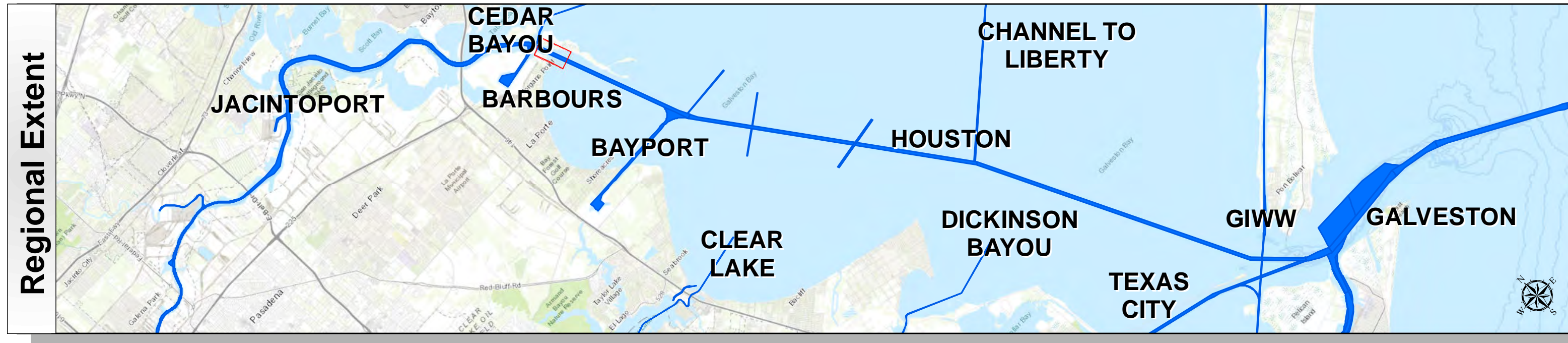
HYDROGRAPHIC SURVEY
U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
GALVESTON, TEXAS

Station: 28+604.06 to -0+003.944 (Bay)
HOUSTON
HOUSTON, TEXAS

Houston Ship Channel: Beacon 76 to Lower End Morgans Point Cut



U.S. Army Corps of Engineers
Galveston District

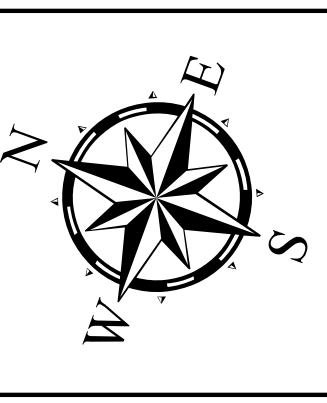


| Channel Features | Aids to Navigation | MLLW |
|---------------------------|--------------------|---------|
| — Channel Toe | Green Side Aids | 0 - 30 |
| - - - Channel Center Line | Red Side Aids | 30 - 35 |
| — Channel Station Lines | Lights | 35 - 40 |
| ↔ Channel Dimensions | | 40 - 42 |
| | |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

NOTES:
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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): 18 July 2019 | Authorized Depth: -45ft. |
| Page: 24 of 56 | Side Slope Ratio: (Rise : Run) |
| Scale: 1:2,500 | Additional Imagery: © DigitalGlobe Inc. |
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| Additional Info: | |

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