



Houston Ship Channel Expansion Project 11

Dredging Industry Day Notification and Update

October 5, 2020

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Houston Ship Channel Expansion Project 11

AGENDA:

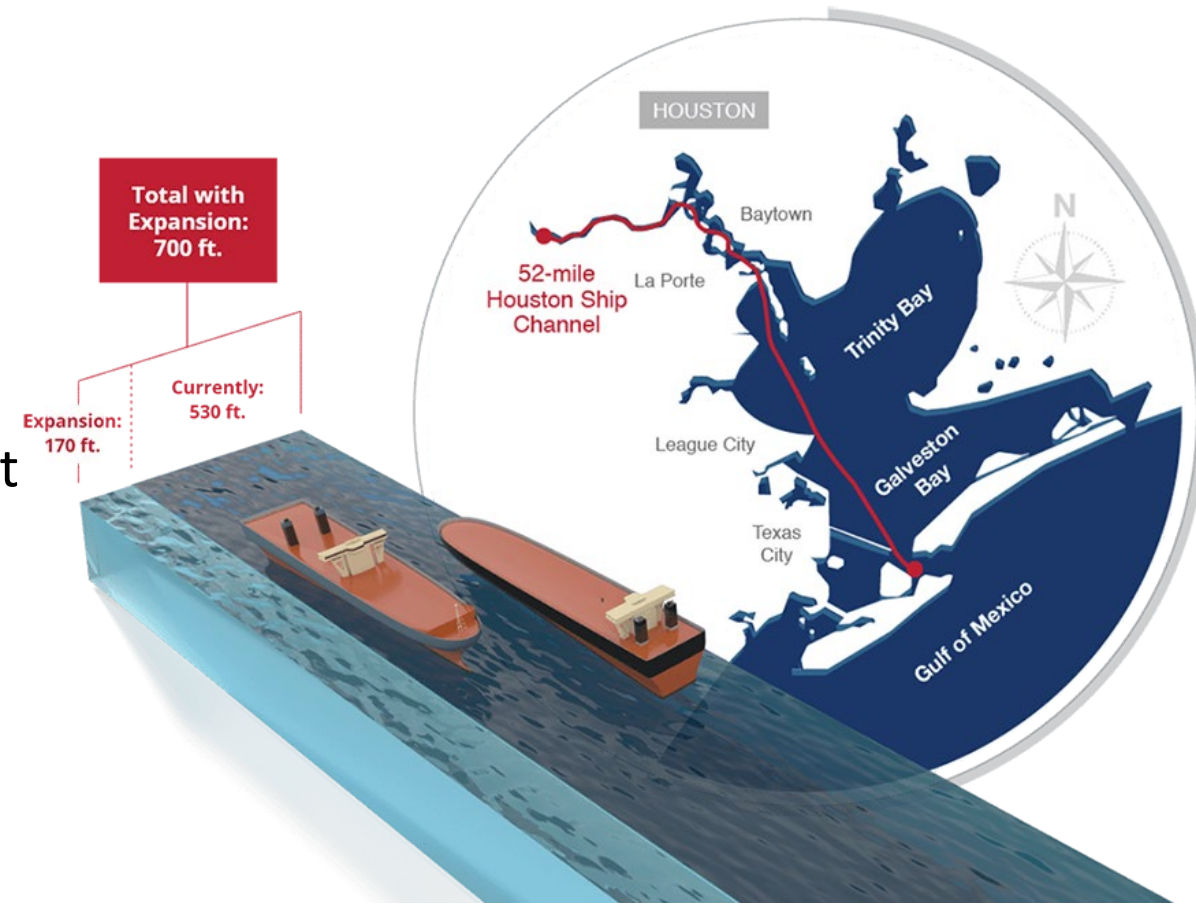
- **Introduction** — Tara Davis (Hollaway Environmental)
- **Project Overview** — Rich Byrnes, Charlie Jenkins and Lori Brownell (Port Houston)
- **Design Package Overview** — Gahagan & Bryant Associates, Inc., AECOM and HDR
- **Questions** — Port Houston

Project Overview

Purpose:

To inform the dredging industry of the Houston Ship Channel Expansion Channel Improvement Project (Project 11)

- Provide current schedule, relative size, and project location
- Allow the dredging industry to ask questions and determine interest in the project
- **This information does not initiate any type of procurement**



Project 11 is under design; therefore, this information is subject to change and some details may not be available at this time.

Project Overview

- Port Houston is the non-Federal sponsor to the **USACE Feasibility Study** to allow for Federal investment of deepening and widening improvements to the entire HSC.
- The **USACE Feasibility Study** was completed between **November 2015 and April 2020**, with an anticipated Congressional Authorization by **December 2020**.
- Award of the Port-led contracts will allow for an accelerated implementation (by **June 2021**) of the Feasibility Study for construction before the anticipated start in **2024** or later.

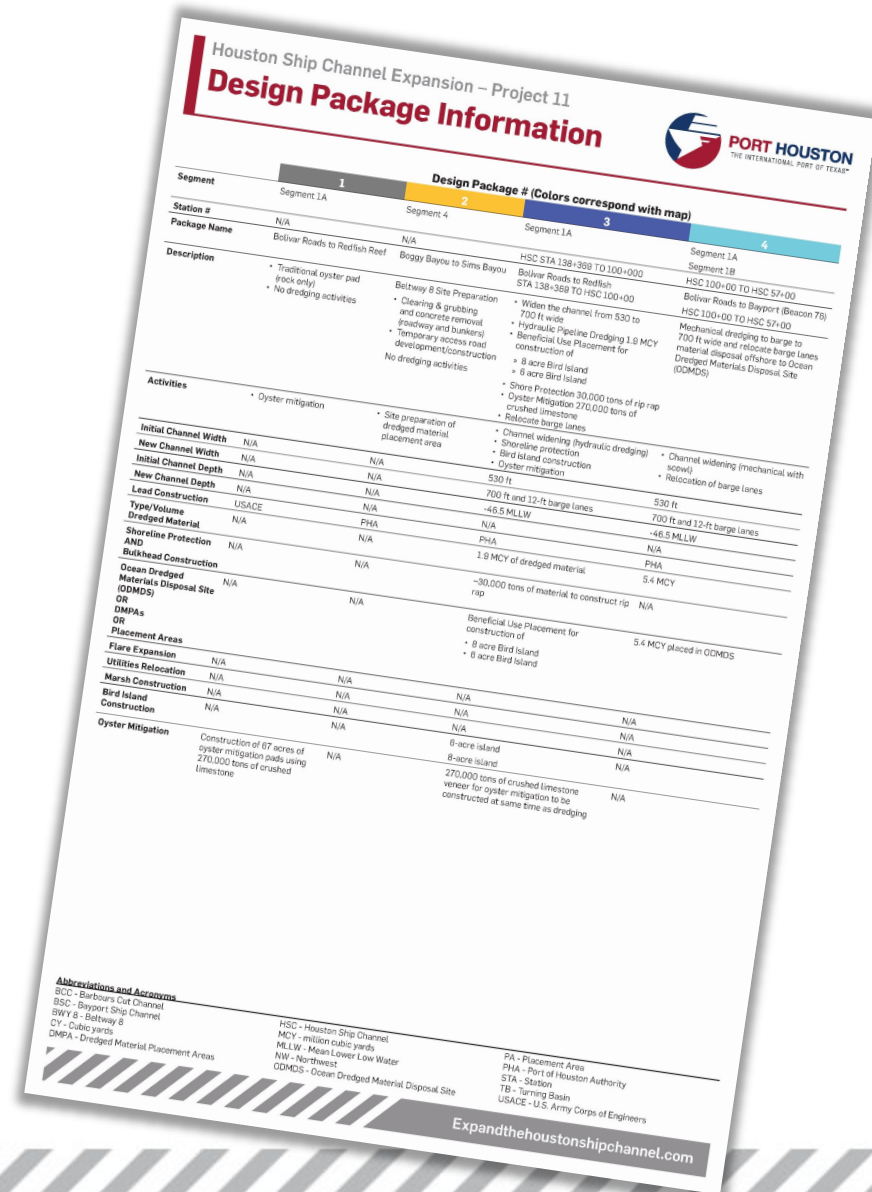


Project Overview

Activities:

- Channel Widening and Deepening
- Dredged Material Placement Areas (DMPA) Construction (new development)
- Shoreline Protection
- Cutoff Wall Construction
- Marsh, Bird Island, and Oyster Reef Construction

For more details, please refer to the design package handout



The handout is titled "Houston Ship Channel Expansion - Project 11 Design Package Information". It features the Port Houston logo and a color-coded map of the project segments. The table below summarizes the key activities and specifications for each segment.

Segment	1	2	3	4
Station #	Segment 1A	Segment 4	Segment 1A	Segment 1A
Package Name	Bolivar Roads to Redfish Reef	N/A	Bolivar Roads to Redfish Reef	Bolivar Roads to Bayport (Beacon 78)
Description	• Traditional oyster pad (rock only) • No dredging activities	Beltway 8 Site Preparation • Clearing & grubbing and concrete removal (roadway and bunkers) • Temporary access road development/construction • No dredging activities	HSC STA 138+369 TO 100+000 Bolivar Roads to Redfish STA 138+369 TO HSC 100+00 • Widen the channel from 530 to 700 ft wide • Hydraulic Pipeline Dredging 1.9 MCY • Beneficial Use Placement for construction of: • 8 acre Bird Island • 8 acre Bird Island • Shore Protection 30,000 tons of rip rap • Oyster Mitigation 270,000 tons of crushed limestone • Relocate barge lanes	HSC 100+00 TO HSC 57+00 Bolivar Roads to Bayport (Beacon 78) • Mechanical dredging to barge to material disposal offshore to Ocean Dredged Materials Disposal Site (ODMDS)
Activities	• Oyster mitigation	• Site preparation of dredged material placement area	• Channel widening (hydraulic dredging) • Shoreline protection • Bird Island construction • Oyster mitigation	• Channel widening (mechanical with scoop) • Relocation of barge lanes
Initial Channel Width	N/A	N/A	530 ft	530 ft
New Channel Width	N/A	N/A	700 ft and 12-ft barge lanes	700 ft and 12-ft barge lanes
Initial Channel Depth	N/A	N/A	-46.5 MLLW	-46.5 MLLW
New Channel Depth	N/A	N/A	N/A	N/A
Lead Construction	USACE	N/A	1.9 MCY of dredged material	5.4 MCY
Type/Volume Dredged Material	N/A	N/A	N/A	N/A
Shoreline Protection AND Bulkhead Construction	N/A	N/A	N/A	N/A
Ocean Dredged Materials Disposal Site (ODMDS) OR DMPAs	N/A	N/A	Beneficial Use Placement for construction of: • 8 acre Bird Island • 8 acre Bird Island	5.4 MCY placed in ODMDS
Flare Expansion	N/A	N/A	N/A	N/A
Utilities Relocation	N/A	N/A	N/A	N/A
Marsh Construction	N/A	N/A	N/A	N/A
Bird Island Construction	N/A	N/A	N/A	N/A
Oyster Mitigation	Construction of 67 acres of oyster mitigation pads using 270,000 tons of crushed limestone	N/A	8-acre island 8-acre island 270,000 tons of crushed limestone veneer for oyster mitigation to be constructed at same time as dredging	N/A

Abbreviations and Acronyms
BCC - Barbours Cut Channel
BSC - Bayport Ship Channel
BWY 8 - Beltway 8
CY - Cubic yards
DMPA - Dredged Material Placement Area
HSC - Houston Ship Channel
MCY - million cubic yards
MLLW - Mean Lower Low Water
NW - Northwest
ODMDS - Ocean Dredged Material Disposal Site
PA - Placement Area
PHA - Port of Houston Authority
STA - Station
TB - Turning Basin
USACE - U.S. Army Corps of Engineers

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Project Overview

Port Houston

USACE

Segment 1 – Bolivar Roads to Boggy Bayou

- Houston Ship Channel (HSC) bend easing (4) with associated barge lane relocation
- Widen HSC from 530 feet to 700 feet from Bolivar Roads to Barbours Cut Channel (BCC) with associated barge lane relocation

Segment 2 – Bayport Ship Channel (BSC)

- Widen BSC from existing 400 feet to 455 feet

Segment 3 – Barbours Cut Channel

- Widen BCC from existing 400 feet to 455 feet
- BCC Combined Flare and Turning Basin

Segment 4 – Boggy Bayou to Sims Bayou

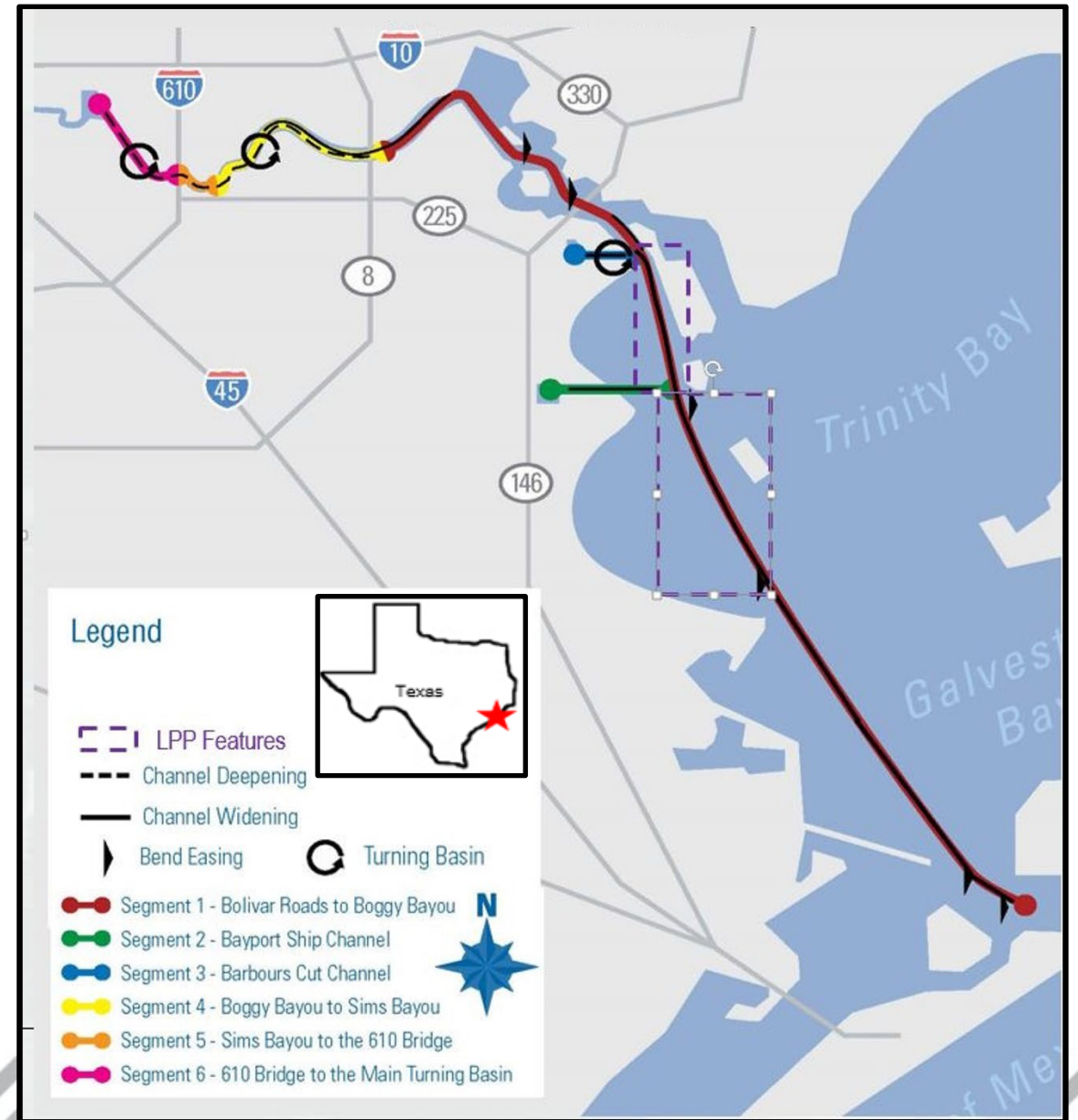
- Deepen HSC from 41.5 feet to 46.5 feet from Boggy Bayou to Hunting Turning Basin
- Widen HSC from 400 feet up to 530 feet from Boggy to Greens Bayou
- Hunting Turning Basin Improvements

Segment 5 – Sims Bayou to I-610 Bridge

- Deepen HSC from 37.5 feet up to 41.5 feet from Sims Bayou to I-610 Bridge

Segment 6 – I-610 Bridge to Main Turning Basin

- Deepen HSC from 37.5 feet up to 41.5 feet from I-610 Bridge to Main Turning Basin
- Improvements to Turning Basin near Brady's Island



Design Package Overview

Project Number	Project Name	Dredging	Existing PA	New PA
C90-D13-P11-002	Beltway 8 DMPA Bunker removal and Clear and Grubbing	--	Remove 54 WWII Bunkers, Clear and Grub Beltway 8	Preparation of New PA
C90-D13-P11-003	Bolivar Roads to Redfish HSC Station 138+369 to HSC Station 98+000	Widen existing 530-FT HSC to 700-FT from approximate Station 138+369 to 98+000		New Evia Island II New Long Bird Island
C90-D13-P11-004	Redfish to South Boaters Cut HSC Station 98+000 to HSC Station 57+000	Widen existing 530-FT HSC to 700-FT from approximate Station 98+000 – 57+000	ODMDS	
C90-D13-P11-005	South Boaters Cut to Bayport (Beacon 76) HSC Station 57+000 to 20+000 & Bayport Ship Channel Station 241+87 to 25+58	Widen existing 530-FT HSC to 700-FT from approximate Station 57+000 – 20+000 Widen existing 4,000-FT BSC Flare to align with 700-FT HSC widening from approximate HSC Station 26+750 to 28+605.05 Widen existing 350/400-FT existing BSC to 455-FT from approximate Station 422+07.80 to 222+75.87 Dredging of BSC Dock 7 (BSC Station 45+59.70 to 60+00) and Dock 1 (BSC Station 110+00 to 122+31.79)		Bird Island Marsh San Leon Oyster Mitigation Dollar Reef Oyster Mitigation
C90-D13-P11-006	Bayport (Beacon 76) to Morgans Point HSC Station 20+000 to HSC Station -0+003.94	Widen existing 530-FT HSC to 700-FT from approximate Station 20+000 to -0+003.94 and HSC Bayou Station 00+00 to 27+48.18	Dike Rehabilitation of M7/8/9 & M10	M11
C90-D13-P11-007	Barbours Cut Terminal CIP	Widen existing to 455 FT from Station 8+28 to 67+11 and Flare easing, bulkheads for Morgans Point and Spilman Island	New work 3,925,000 yds Overdepth 160,500 yds	M12
C90-D13-P11-008	DMPA Development E2 Clinton and Beltway 8	Develop new DMPAs at Beltway 8 and E2 Clinton. New outfalls, site drainage and capacity for one time use of channel deepening	Beltway 8 DMPA 315 acres 3,490,000 CY capacity E2 Clinton DMPA 73 Acres 2,600,000 CY capacity	Beltway 8 and E2 Clinton
C90-D13-P11-009	Boggy Bayou to Sims Bayou Channel Widening and Deepening	Widen existing channel to 530-FT and deepen to 46.5 ft MLLW from Station 677+52 to 823+35 and Deepen Existing Channel from Station 677+52 to 930+00 to 46.5 ft.	New Work 3,521,000 yds Overdepth 726,000 yds	Beltway 8 and E2 Clinton



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Package 1: Bolivar Roads to Redfish Reef

Activities:

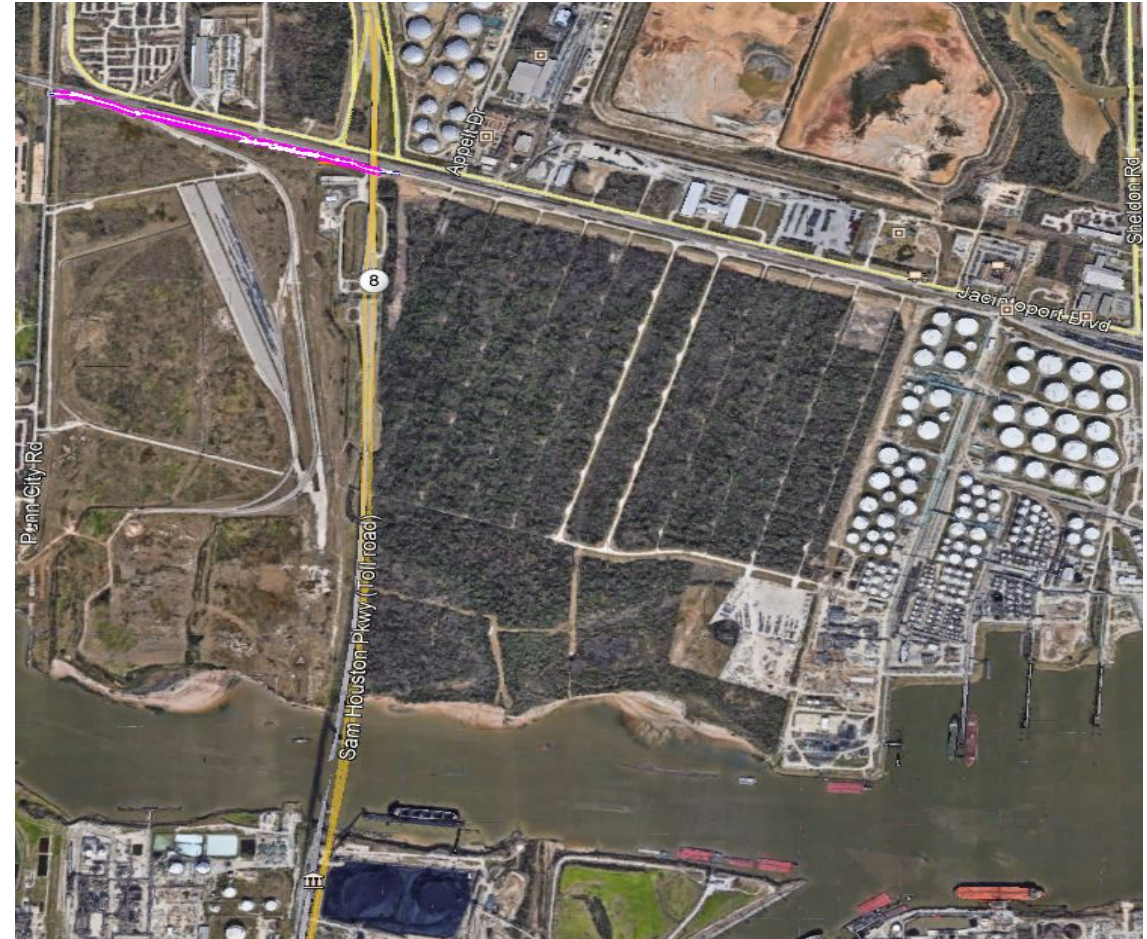
- Dollar Reef Oyster Mitigation
- Standard rock construction using 270,000 tons of crushed limestone/no dredging activities
- New work dredging impacts to Segment 1A addressed



Package 2: Boggy Bayou to Sims Bayou

Activities:

- Site was a WWII Ammo storage site
- ~450 acres, heavily wooded tract
- Has multiple pipeline easements
- Difficult site access



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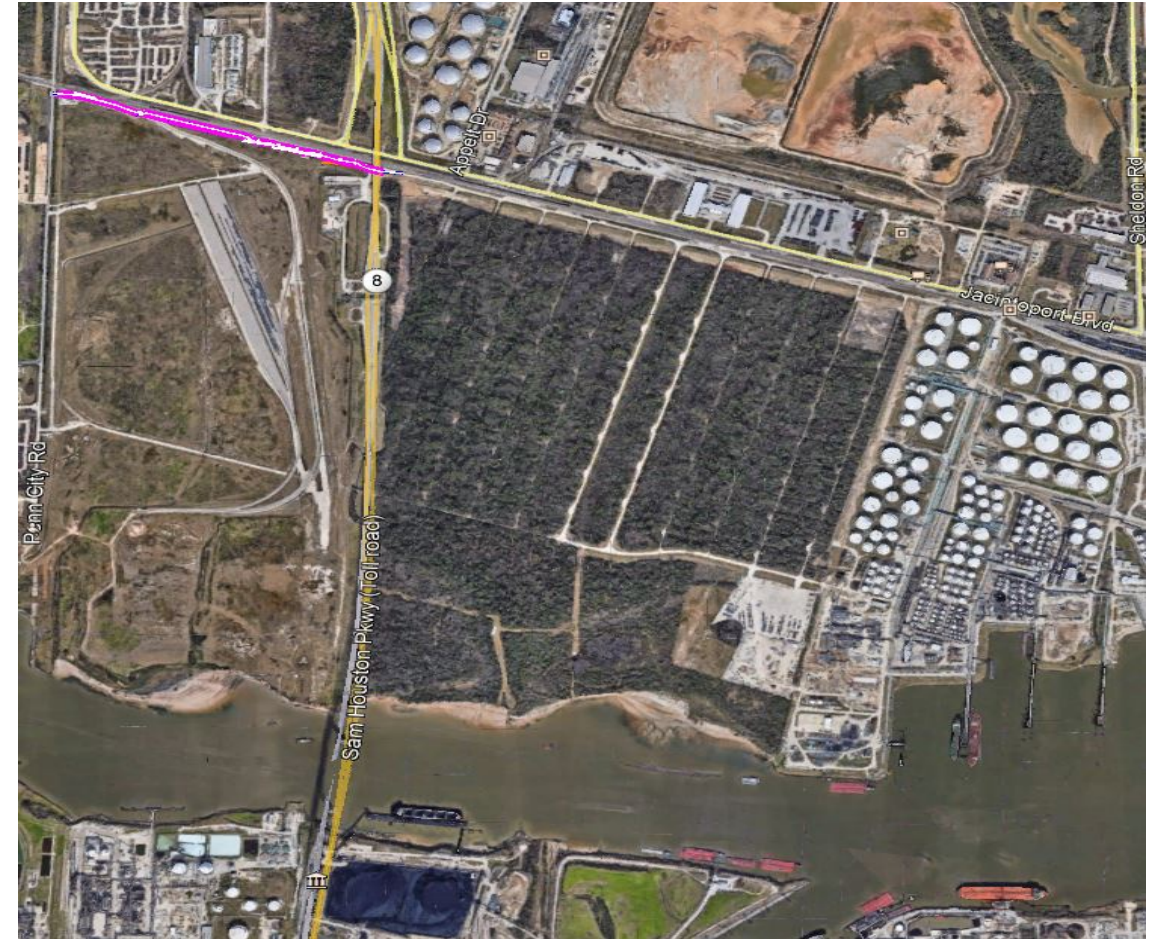


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Package 2: Boggy Bayou to Sims Bayou

Activities:

- Demolition and removal of ~8.5 miles of concrete pavement
- Demolition and removal of 54 WWII Concrete Ammo Bunkers
- Clearing and Grubbing of ~450 acres
- Difficult site access required multiple easement agreements
- Access is coordinated with adjacent HCTRA big bridge project
- Temporary access road that crosses multiple pipelines



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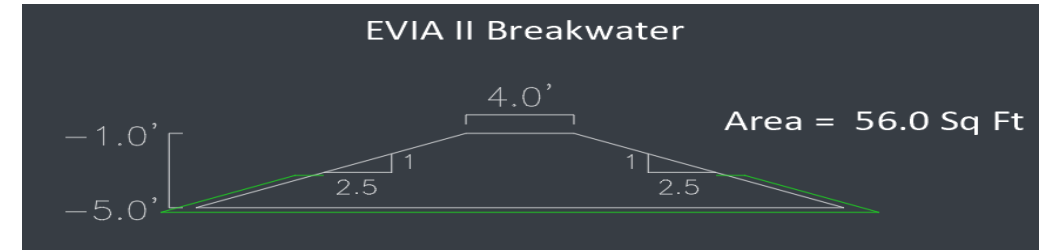
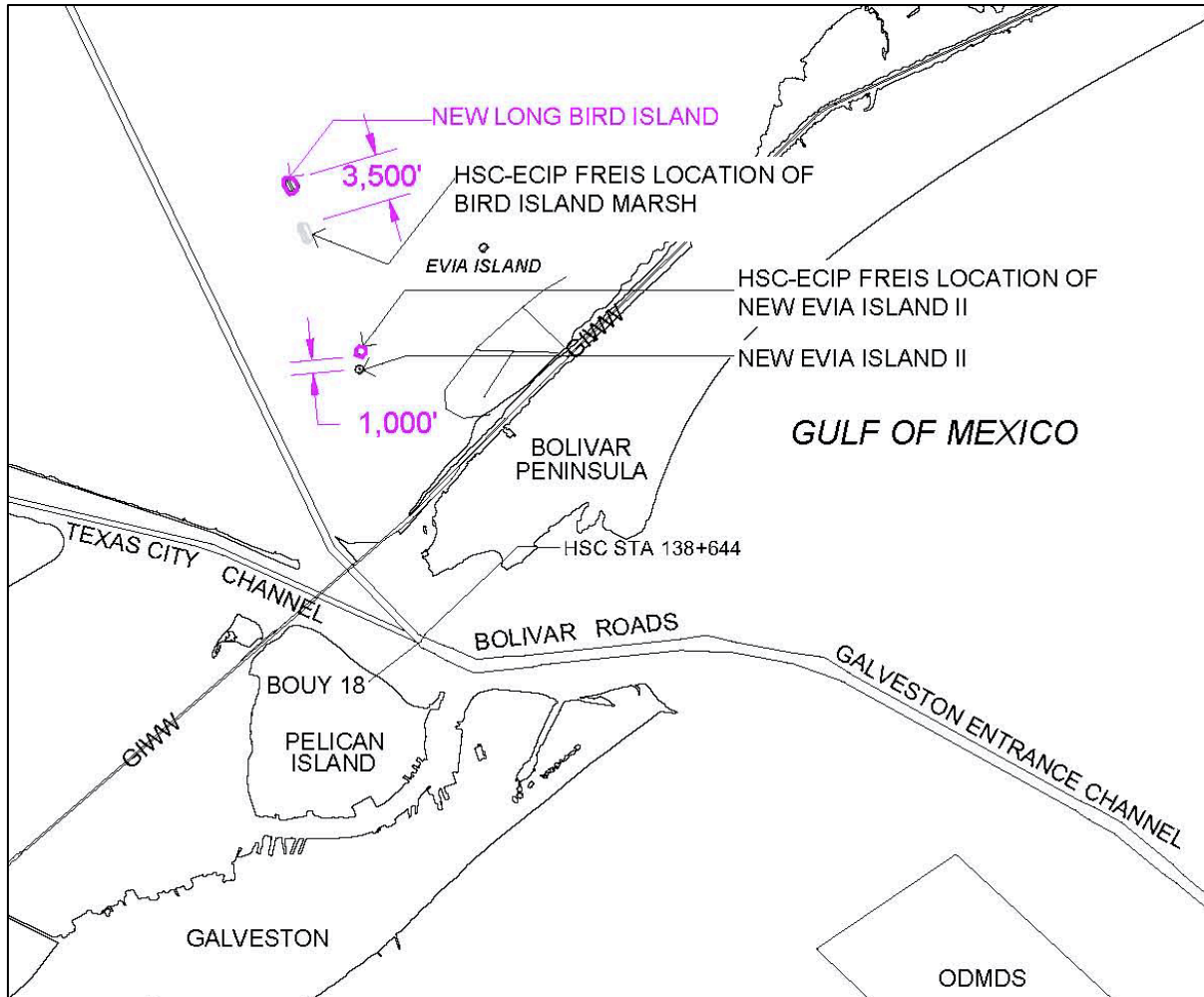
Package 3: Bolivar Roads to Redfish, Station 138+369-98+00

Activities:

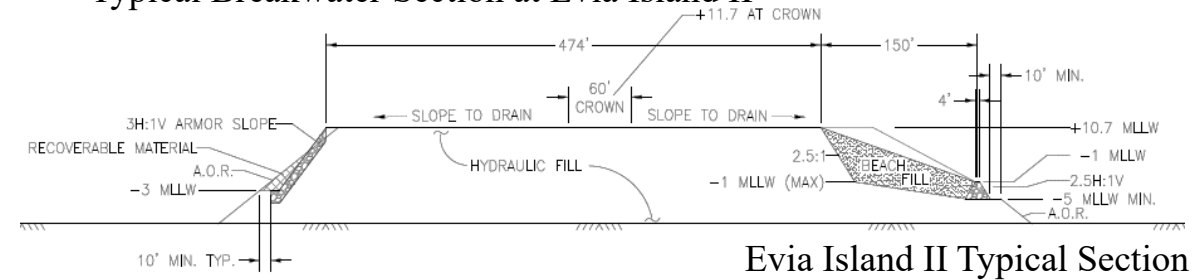
- Channel widening: 530 to 700 feet wide (hydraulic dredging)
 - Excavating 1.9 MCY of dredged material
- Shoreline protection
 - 30,000 tons of material for rip rap
- Bird island construction:
 - New Evia Island II
 - New Long Bird Island



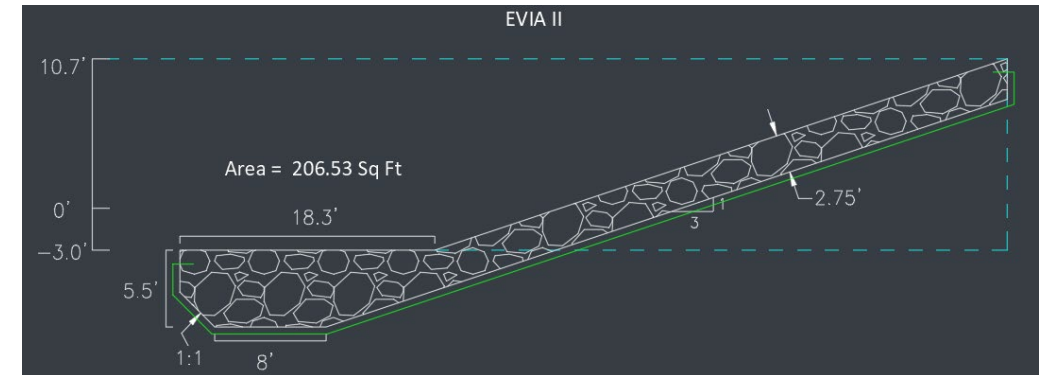
Package 3: Bolivar Roads to Redfish, Station 138+369-98+00



Typical Breakwater Section at Evia Island II



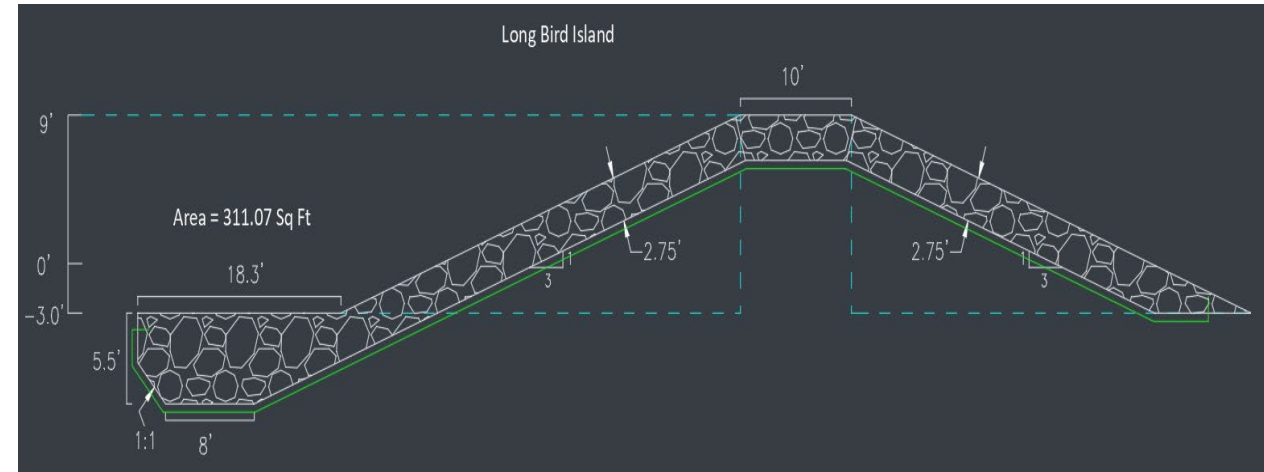
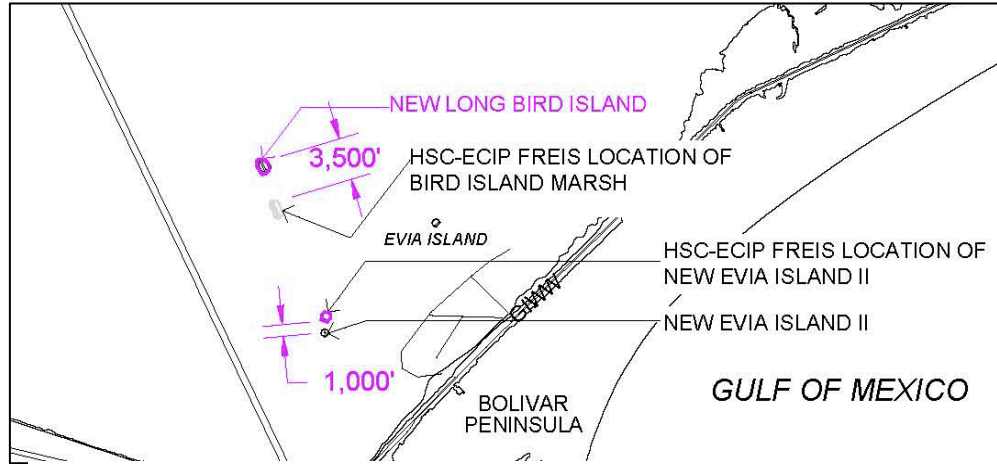
Typical Shore Protection Section at Evia Island II



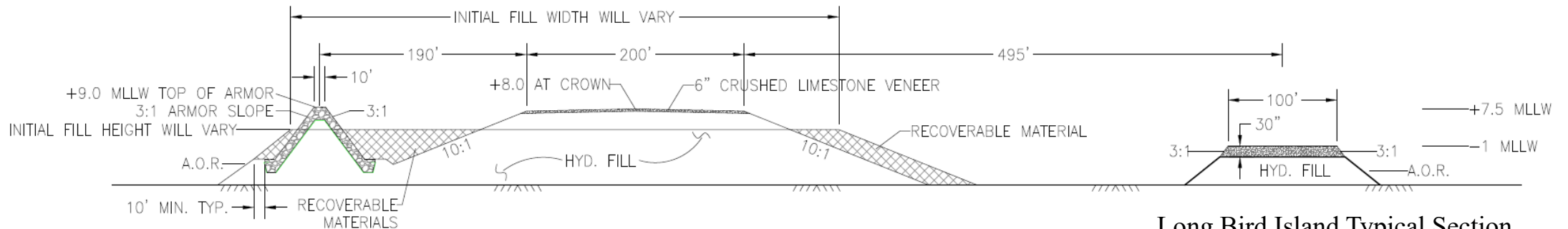
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Package 3: Bolivar Roads to Redfish, Station 138+369-98+00



Typical Shore Protection at LBI



Long Bird Island Typical Section

Package 4: Redfish, Station 98+00-57+00

Activities:

- Channel widening: 530 to 700 feet wide (mechanical dredging)
 - Excavating 5.4 MCY of material
- Offshore material disposal to Ocean Dredged Material Disposal Site (ODMDS)
- Relocation of barge lanes



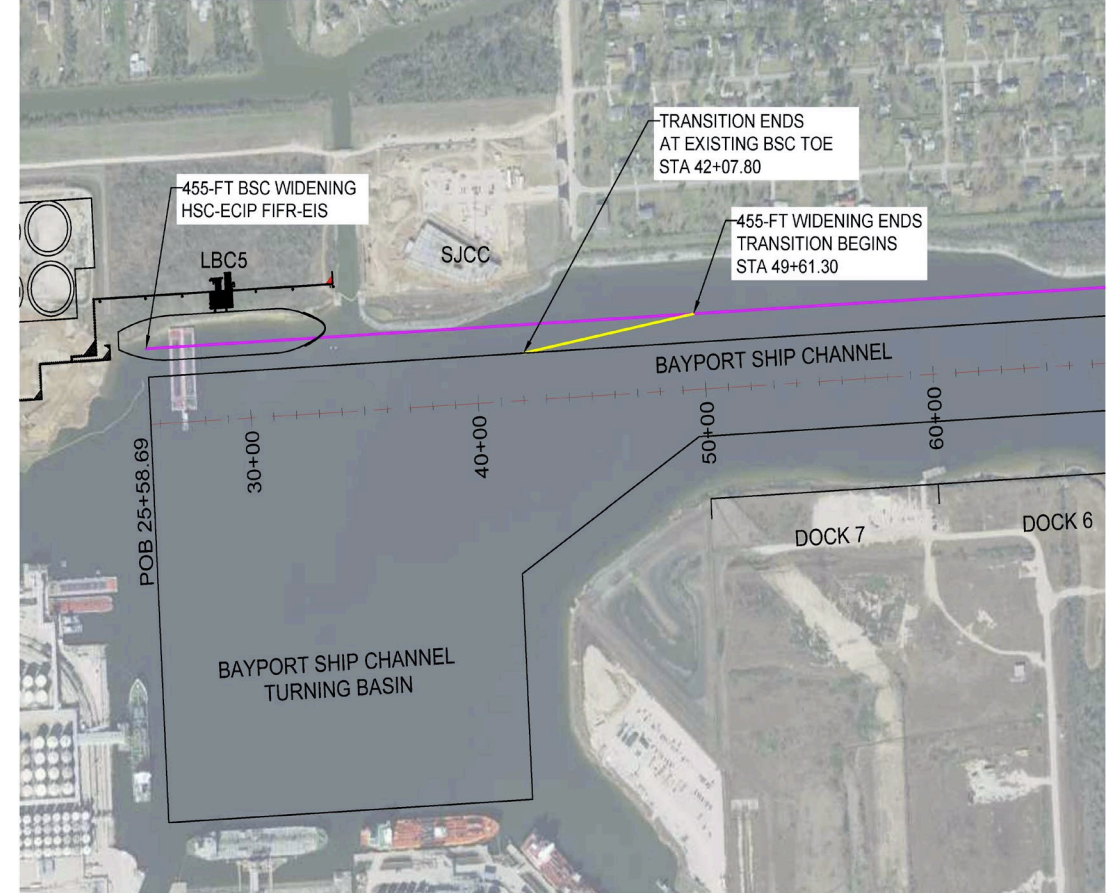
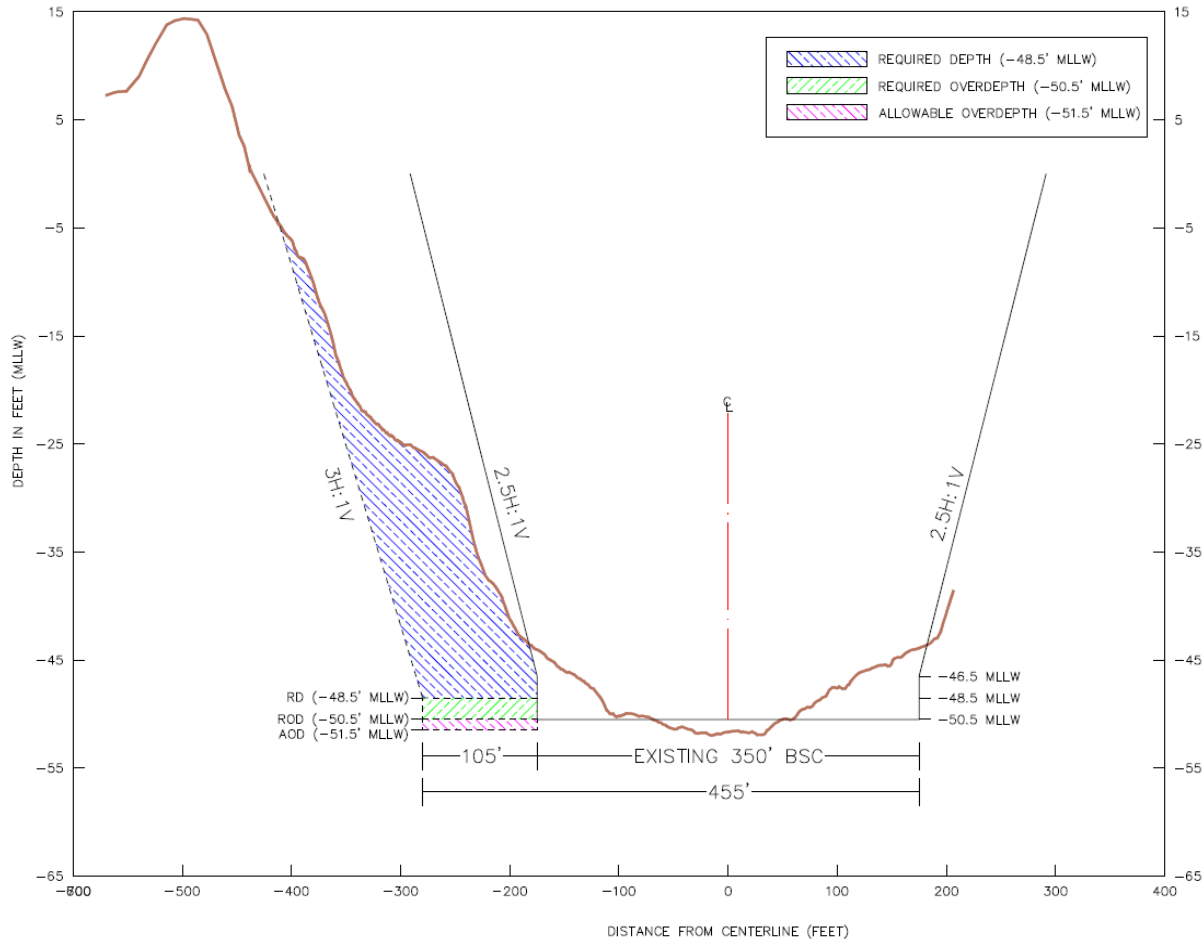
Package 5: Redfish to Bayport (HSC 57+00-20+000 & BSC 241+87-25+58)

Activities:

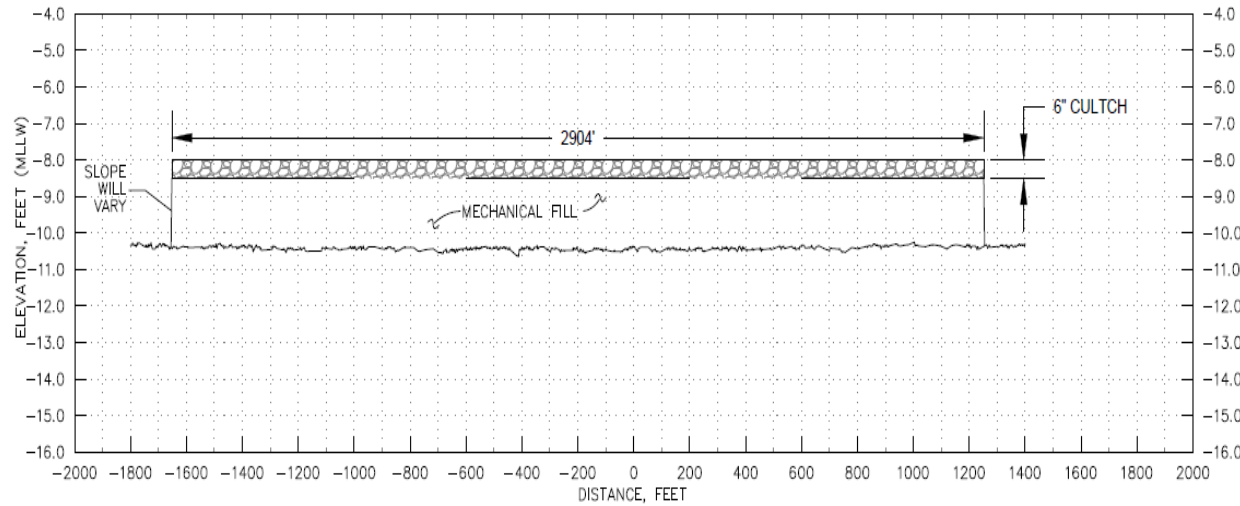
- Channel widening from 530 feet to 700 feet (HSC) and 350/400 feet to 455 feet wide (BSC) (hydraulic dredging)
 - Excavating 9.7 MCY (6.9 MCY HSC, 2.7 MCY BSC) of dredged material
- Relocation of barge lanes (HSC)
- Shoreline Protection
 - 95,000 tons of material to construct rip rap
- Construct bird island/marsh complex and oyster mitigation beds
 - 400,000 tons of crushed limestone for 20 oyster mitigation pads placed as a veneer on a raised bed constructed with dredged material



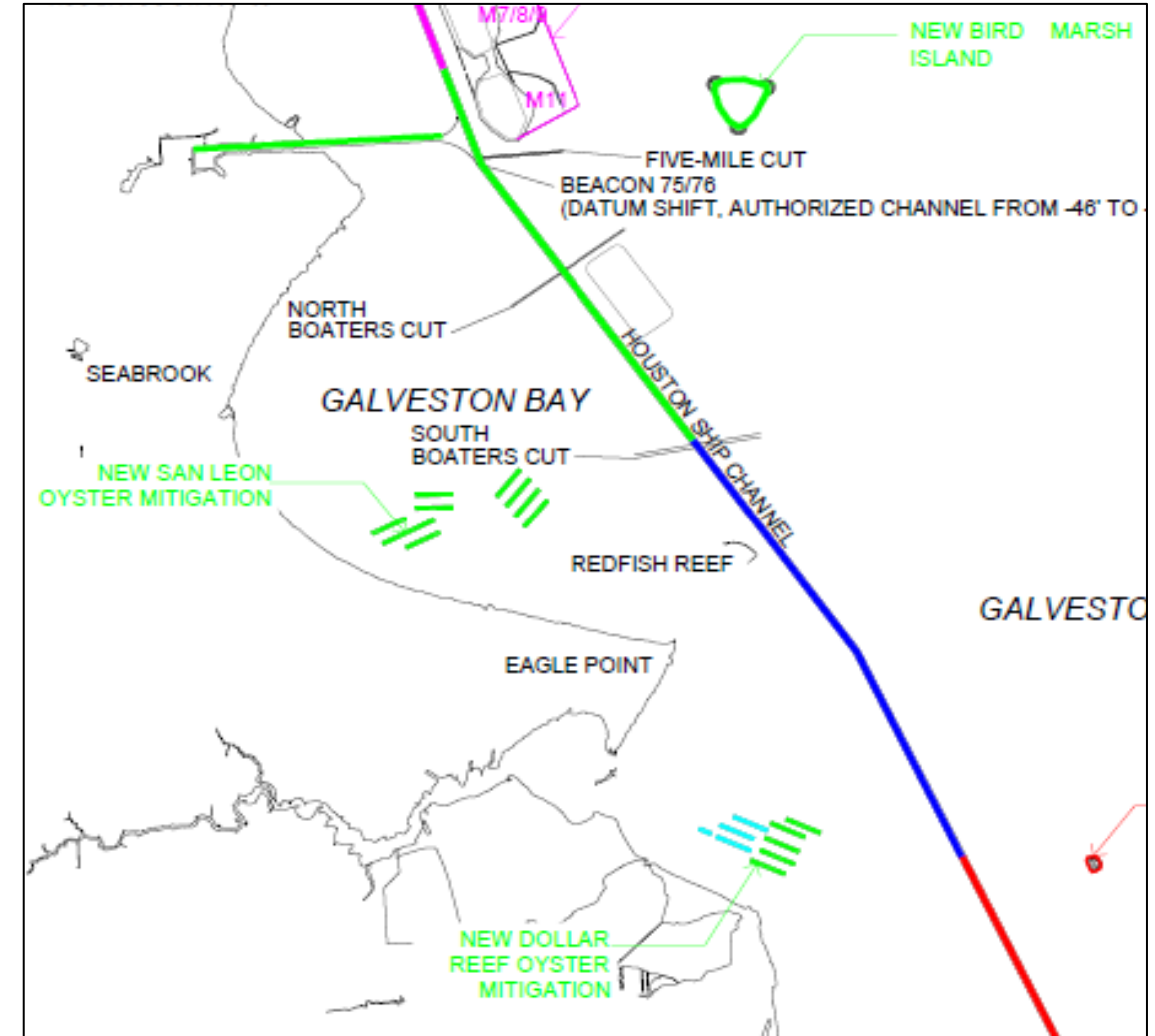
Package 5: Red (241+87-25+58)



Package 5: Redfish to Bayport (HSC 57+00-20+000 & BSC 241+87-25+58)



Mechanical Fill Oyster Pad Typical Section

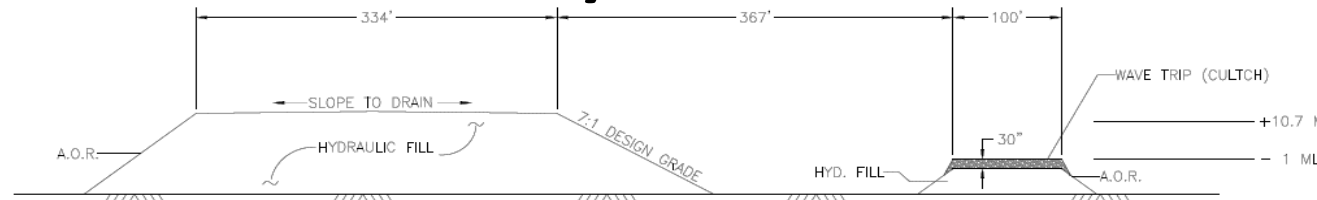


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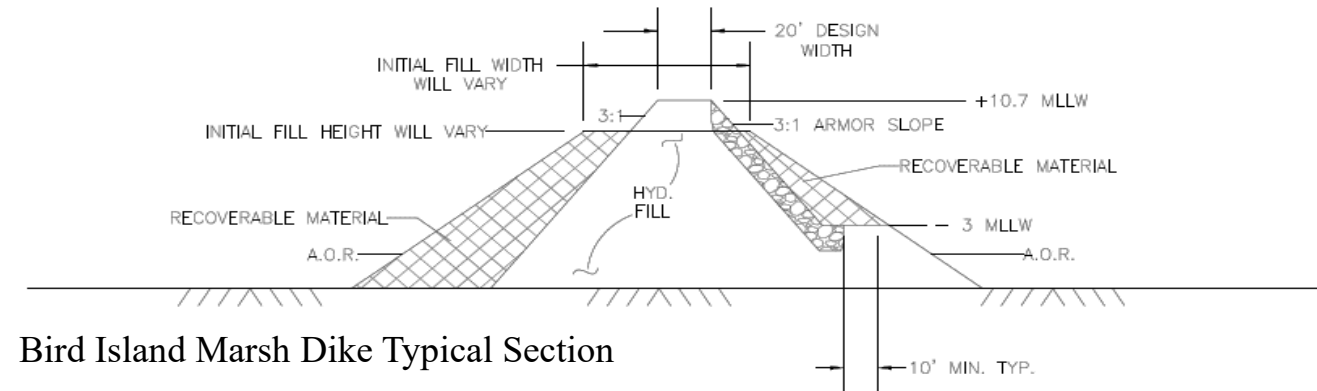


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Package 5: Redfish to Bayport (HSC 57+00-20+000 & BSC 241+87-25+58)



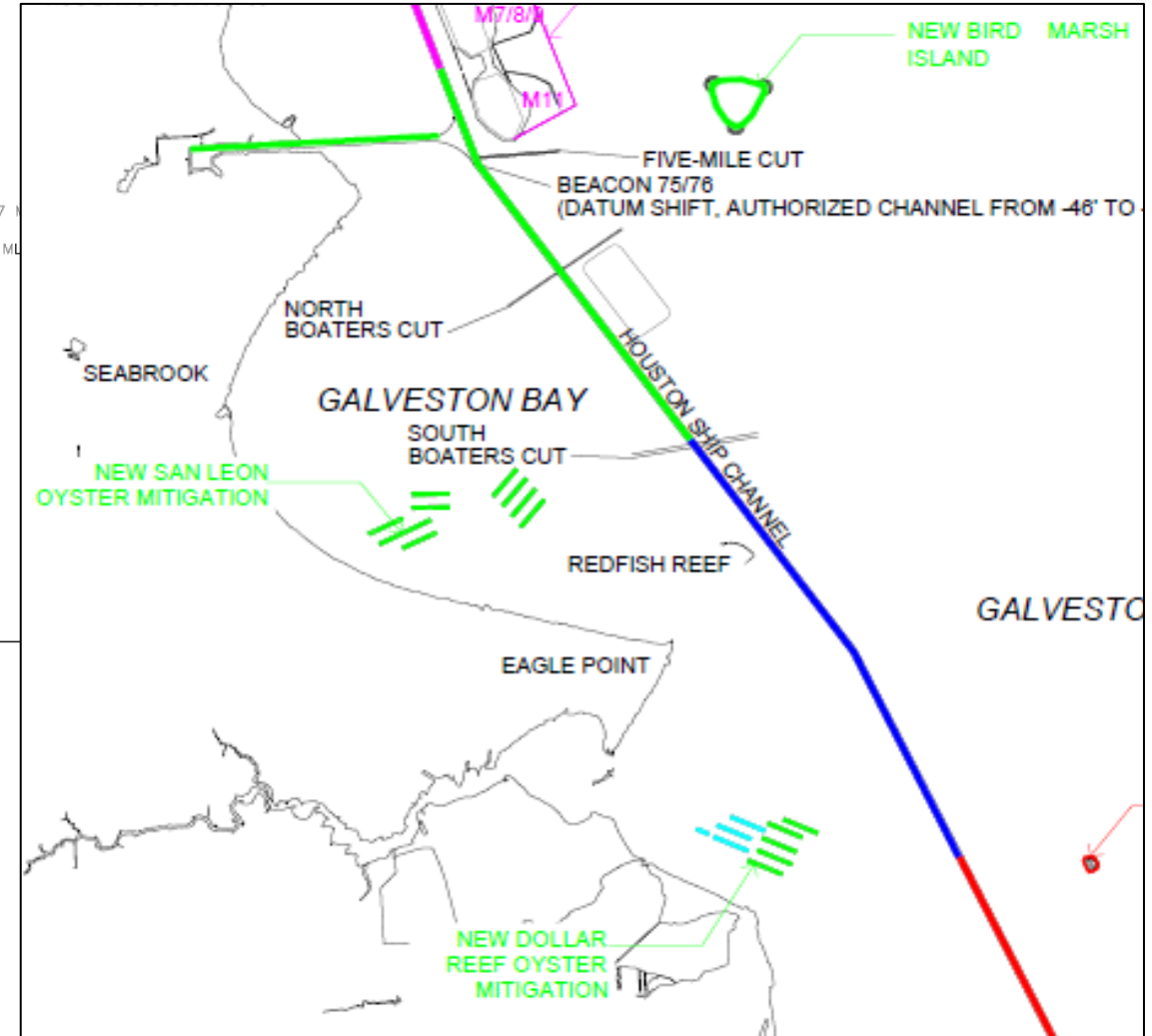
Bird Island Marsh Island and Wave Trip Typical Section



Bird Island Marsh Dike Typical Section



Typical Shore Protection Section at Bird Island Marsh



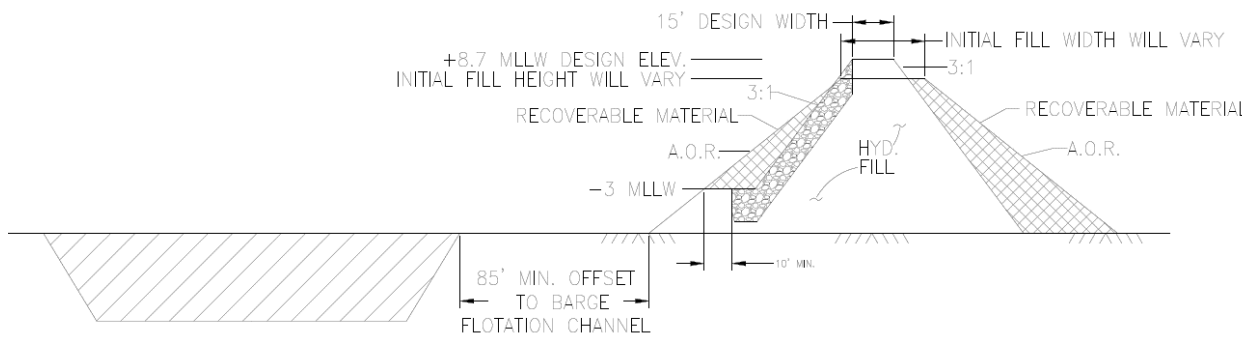
Package 6: Bayport to Morgans Point (HSC Station 20+000-(-0+003.94))

Activities:

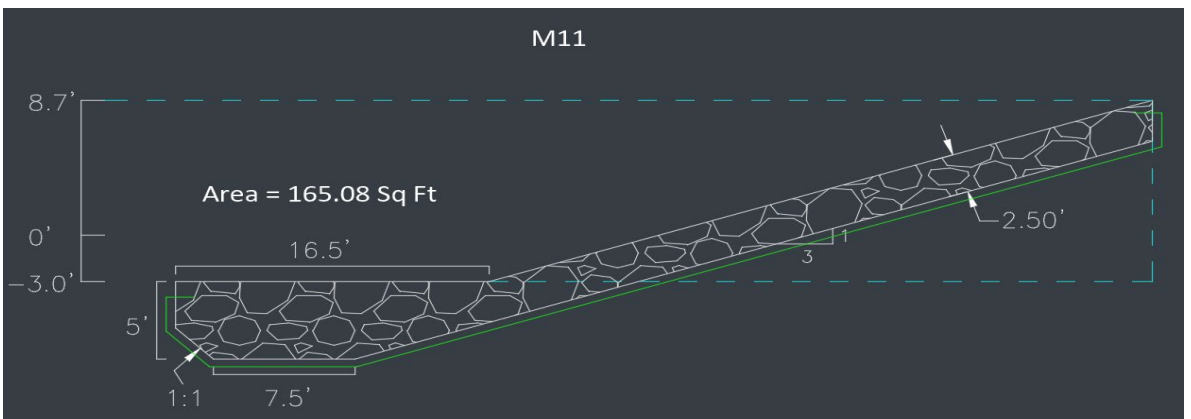
- Relocation of barge lanes (HSC)
 - Excavating 4.0 MCY of dredged material
- Construction of Marsh Cell 11 and repair of existing dikes
- Shoreline protection
- Changes since Feasibility
- Elimination of Shoaling Attenuation Feature
 - Material diverted to BIM and rock diverted to M10/7,8,9



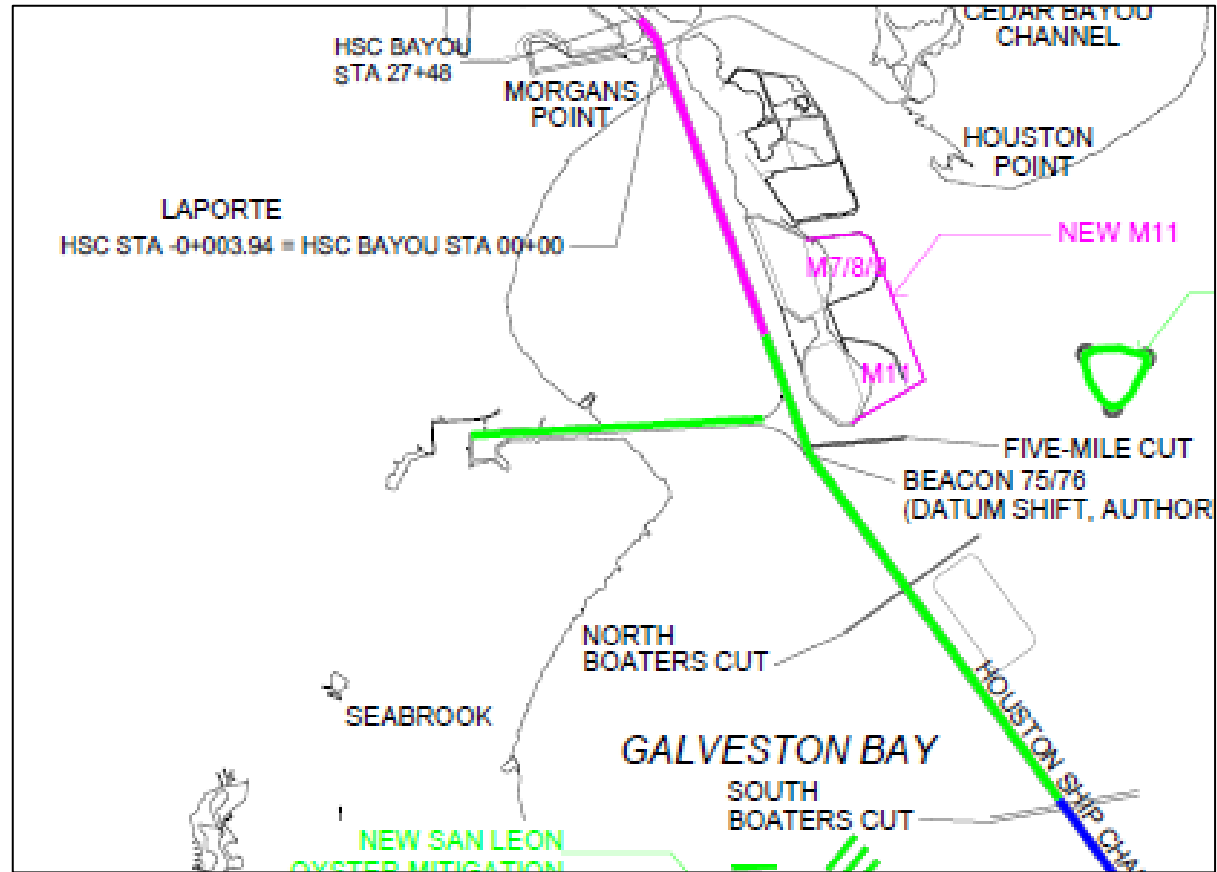
Package 6: Bayport to Morgans Point (HSC Station 20+000-(-0+003.94))



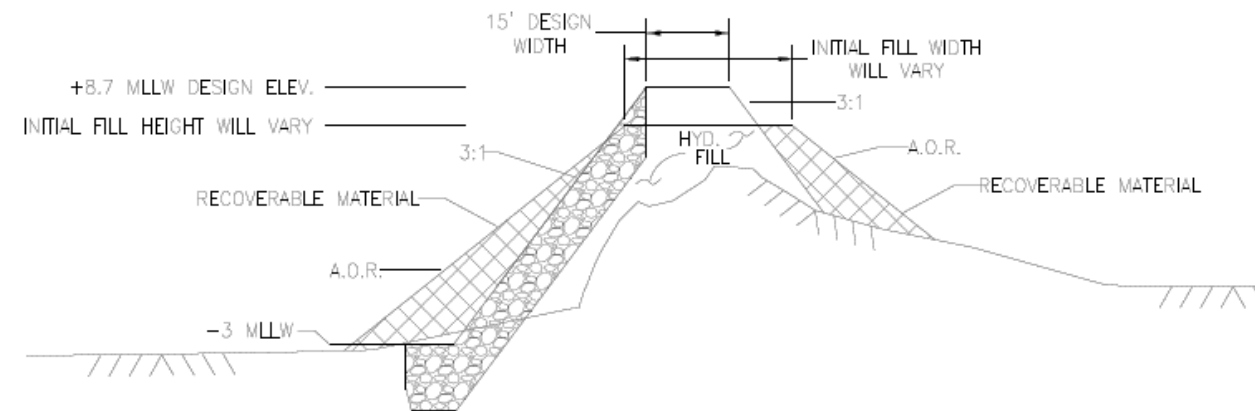
Typical Dike Section



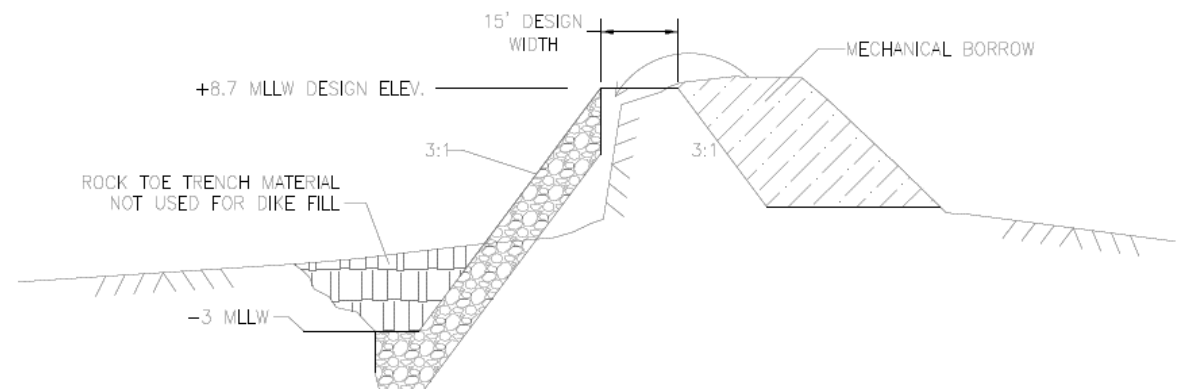
Typical Shore Protection Section of M11



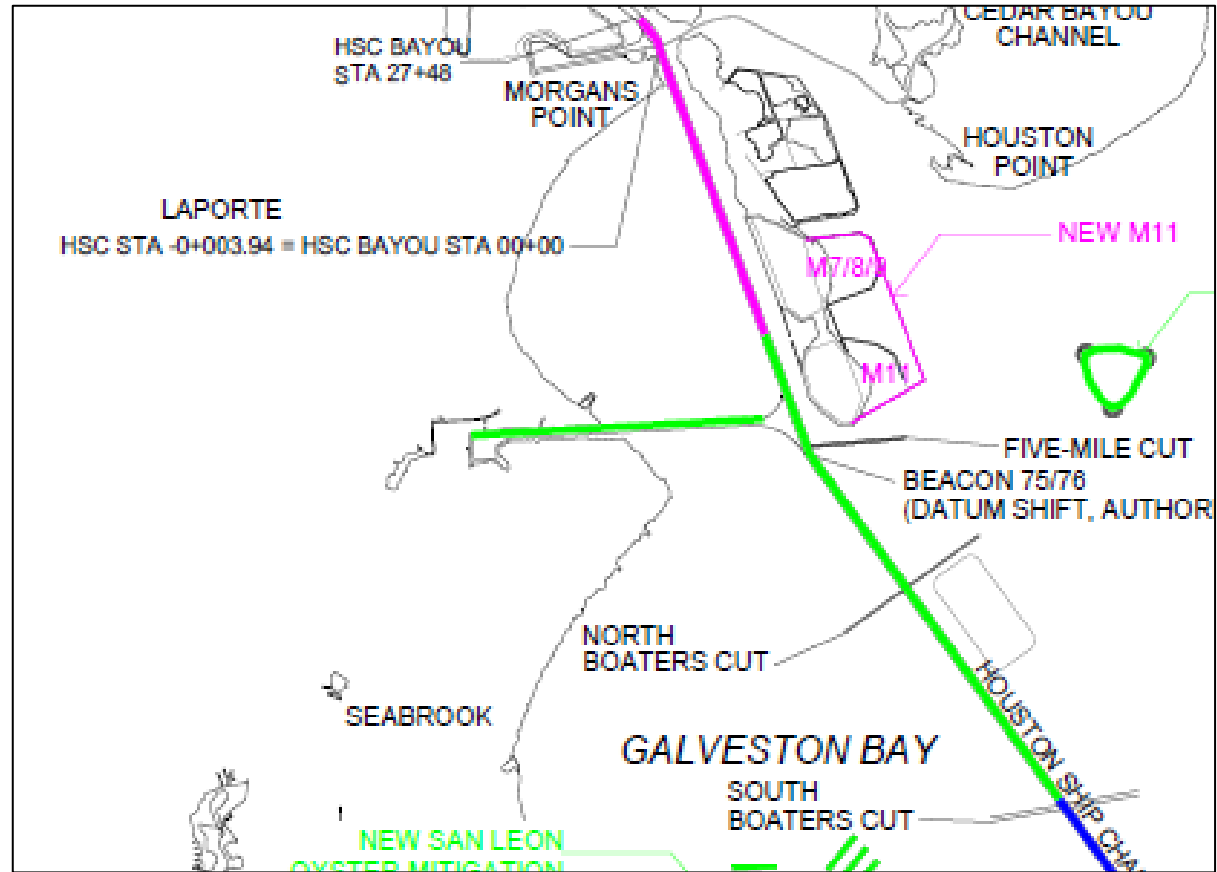
Package 6: Bayport to Morgans Point (HSC Station 20+000-(-0+003.94))



Typical Dike Rehabilitation Section



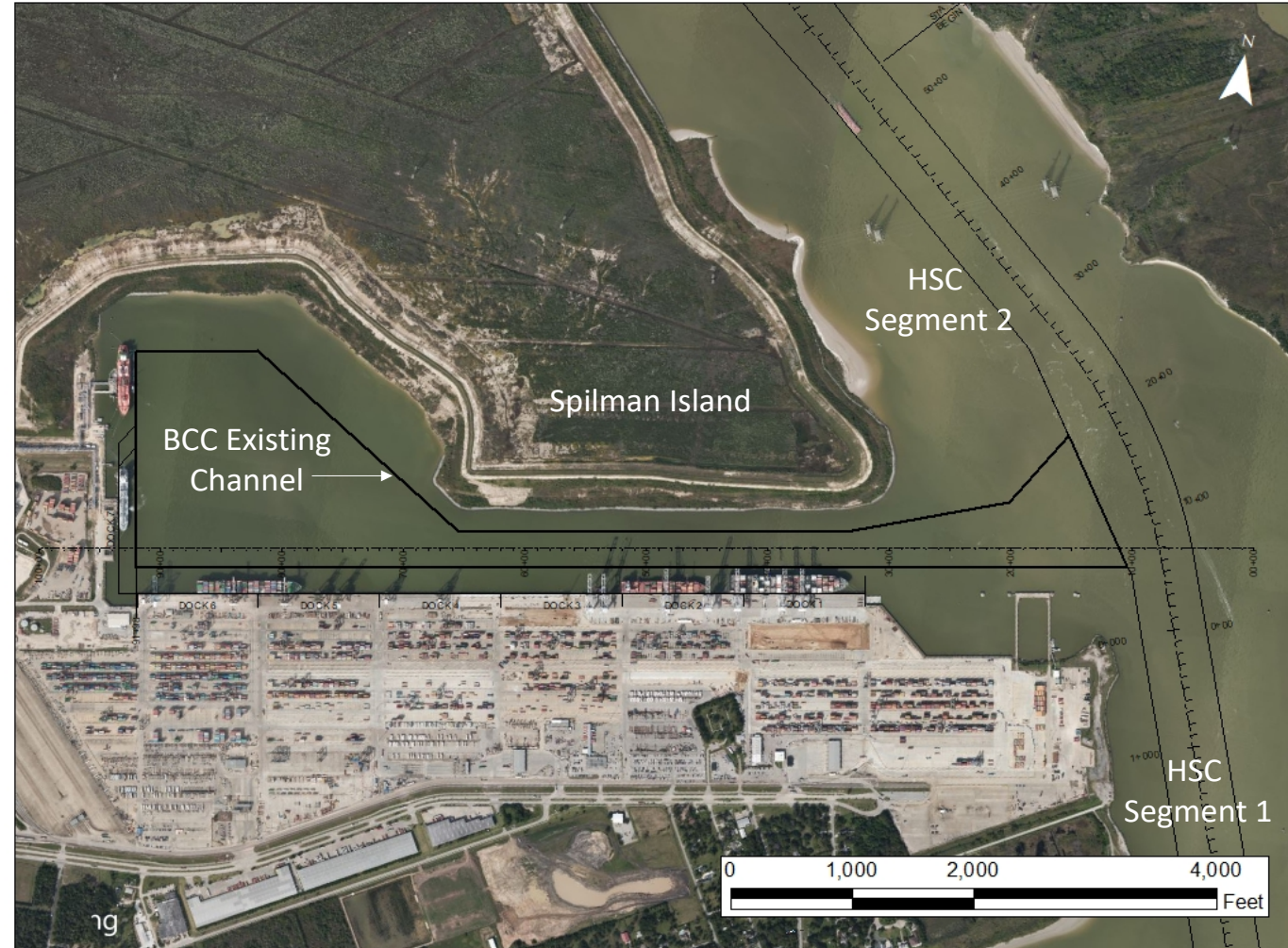
M10 Dike Rehabilitation Typical Section



Package 7: Barbours Cut Channel (BCC 9+63-67+11)

Activities:

- Channel widening by 155 ft
- Barbours Cut Flare Relief
- M12 Beneficial Use Site
- Cedar Bayou Sweep
- Spilman Island Improvements
- Morgan's Point Shoreline Stabilization

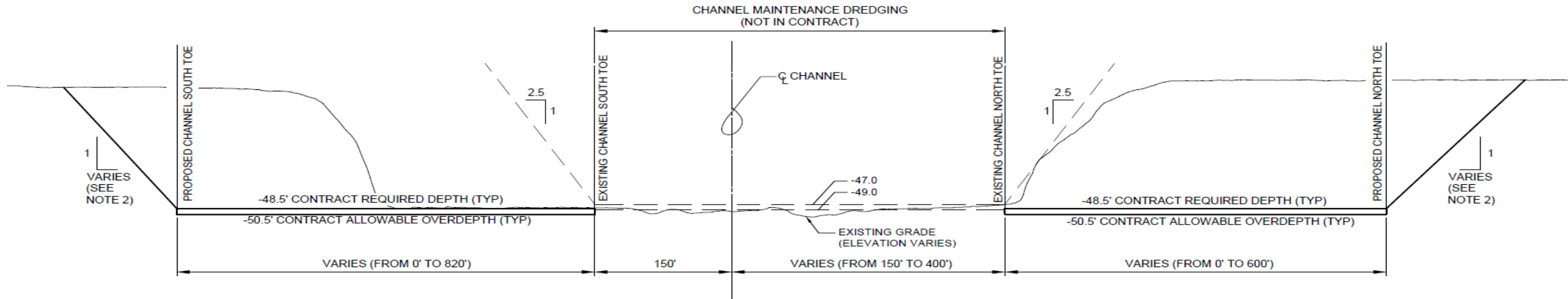


Package 7: Barbours Cut Channel (BCC 9+63-67+11)

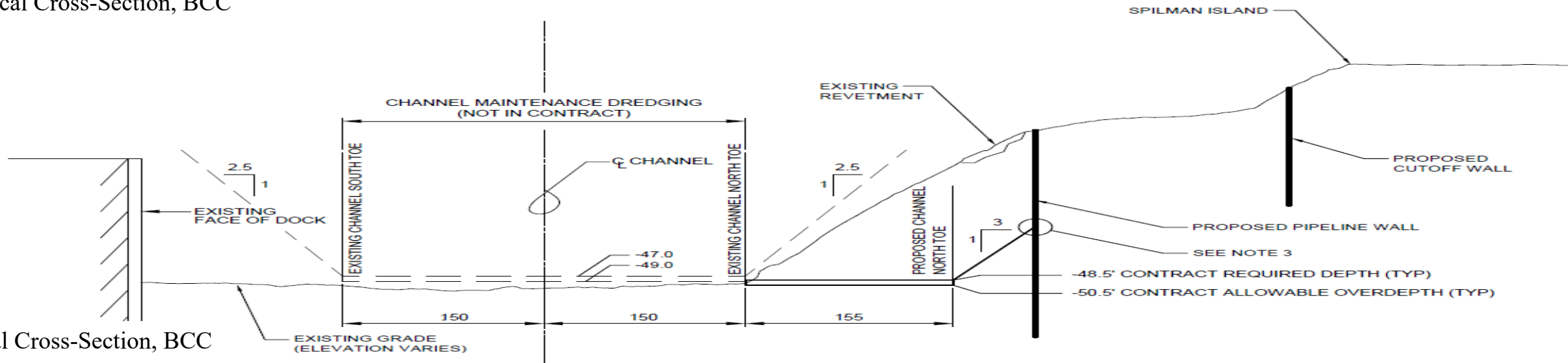
Barbours Cut Flare Relief



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Typical Cross-Section, BCC

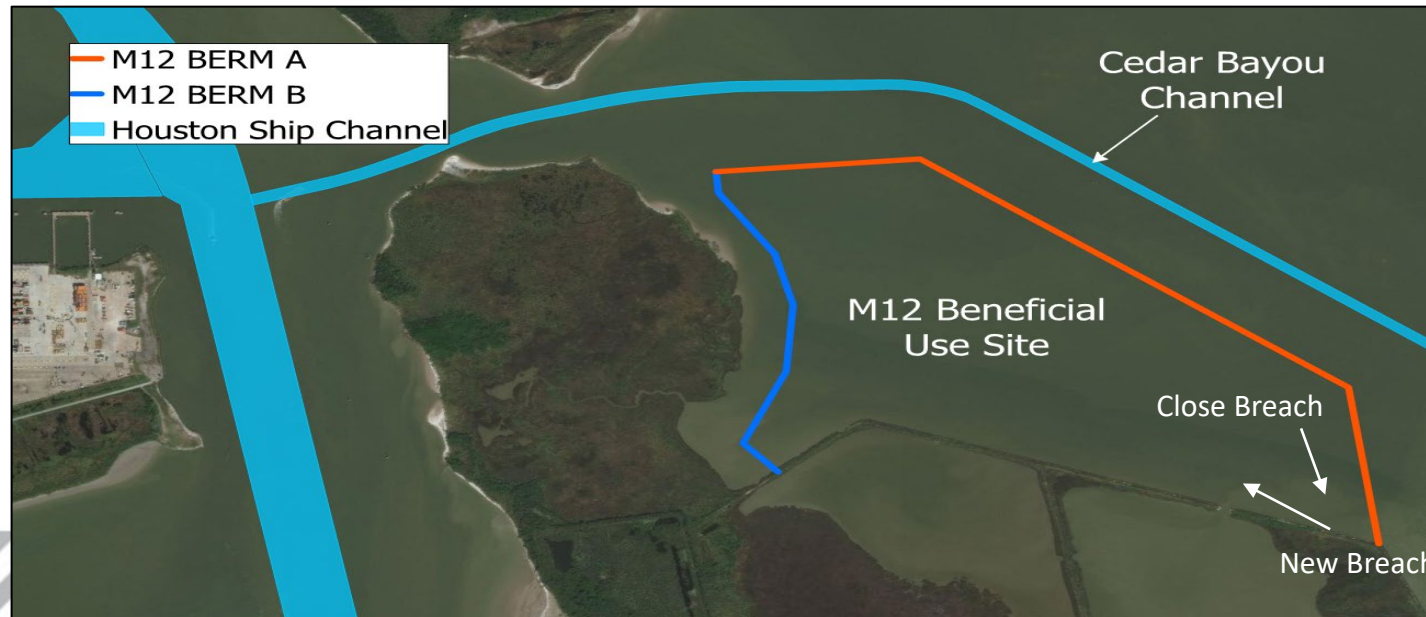
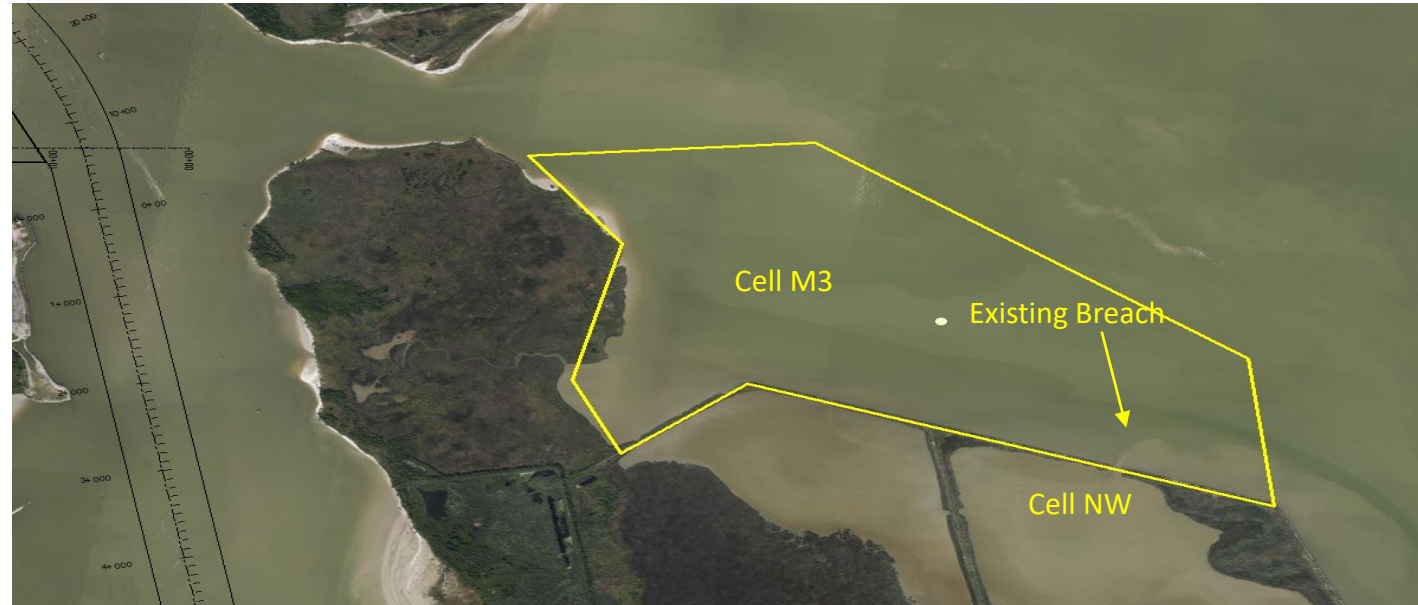


Typical Cross-Section, BCC

Package 7: Barbours Cut Channel (BCC 9+63-67+11) M12 Beneficial Use

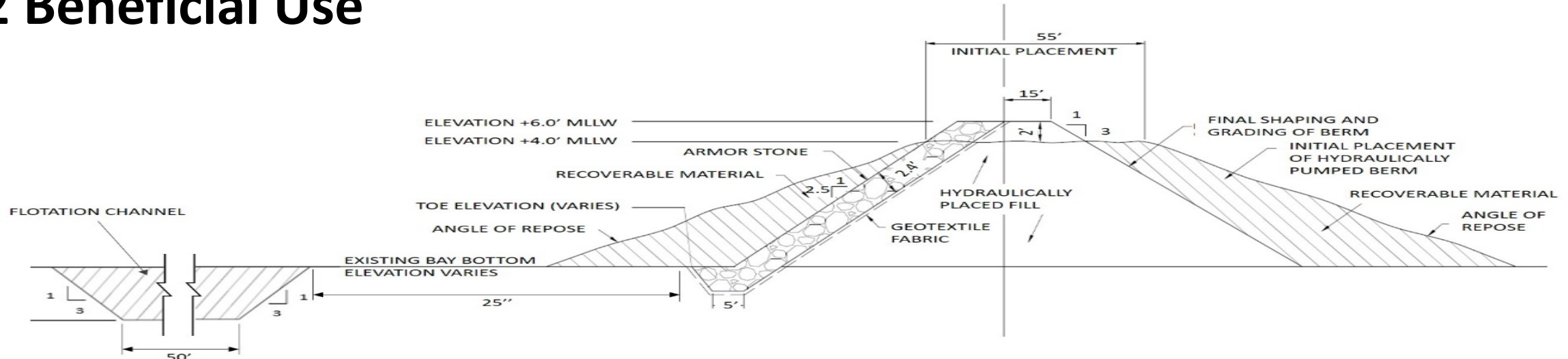
Activities:

- Avoid impacts to Atkinson WMA
- Hydraulically placed Berm A
- Mechanically placed Berm B
- Borrow for Berm B – tidal connection to Atkinson and existing Cells

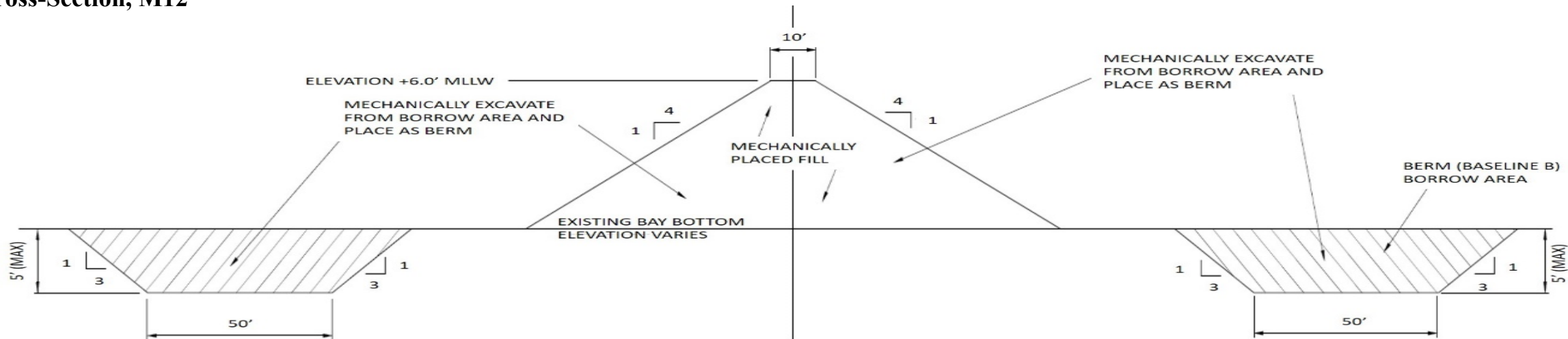


Package 7: Barbours Cut Channel (BCC 9+63-67+11)

M12 Beneficial Use



Typical Cross-Section, M12

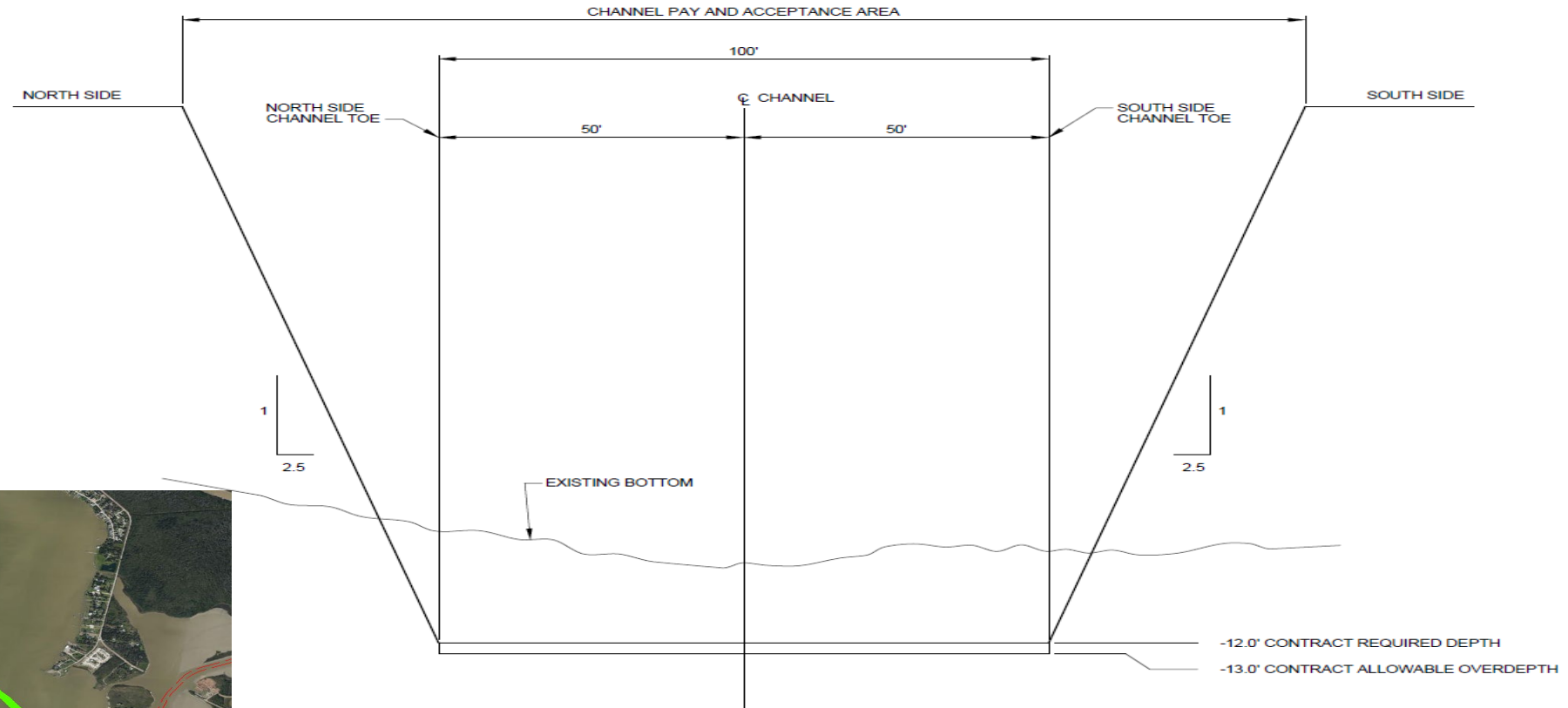


Typical Cross-Section, M12

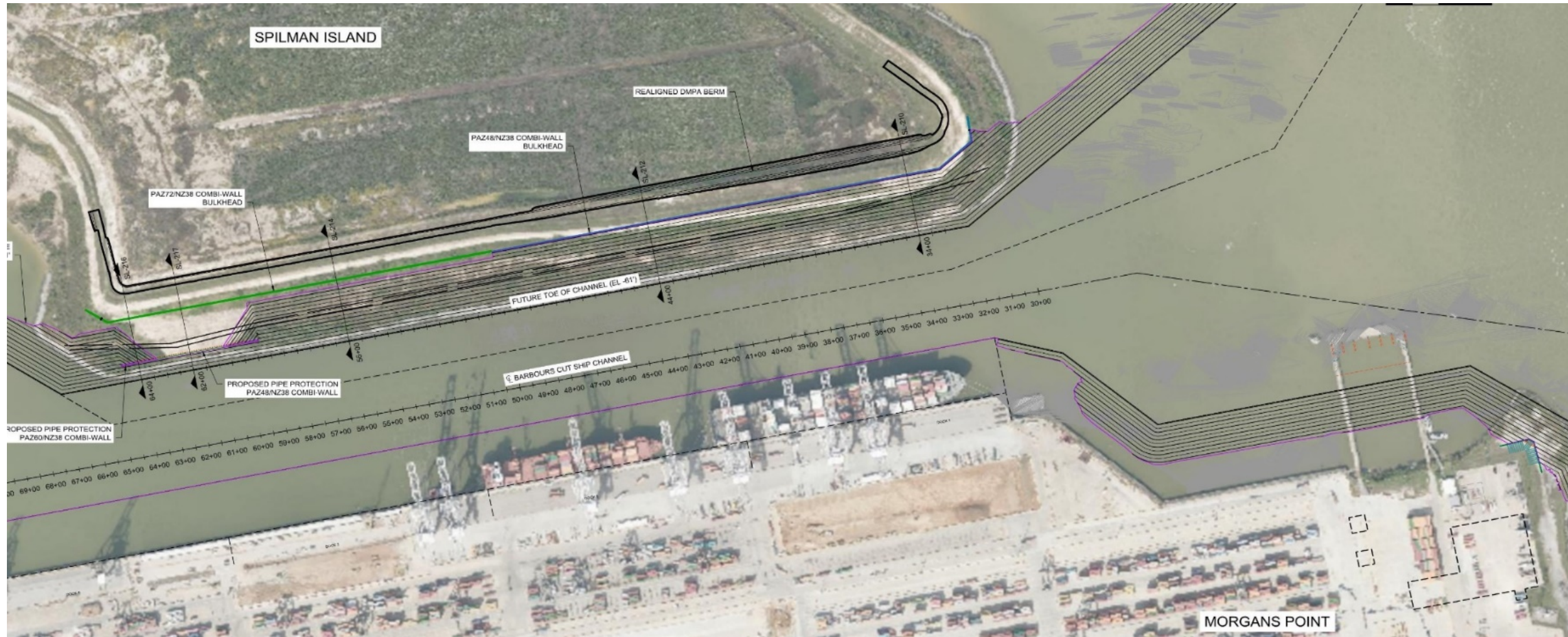
Package 7: Barbours Cut Channel (BCC 9+63-67+11) Cedar Bayou Sweep

Activities:

- Monitoring surveys STA
- Review for shoaling
- Mechanical dredge



Package 7: Barbours Cut Channel (BCC 9+63-67+11) Spilman Island

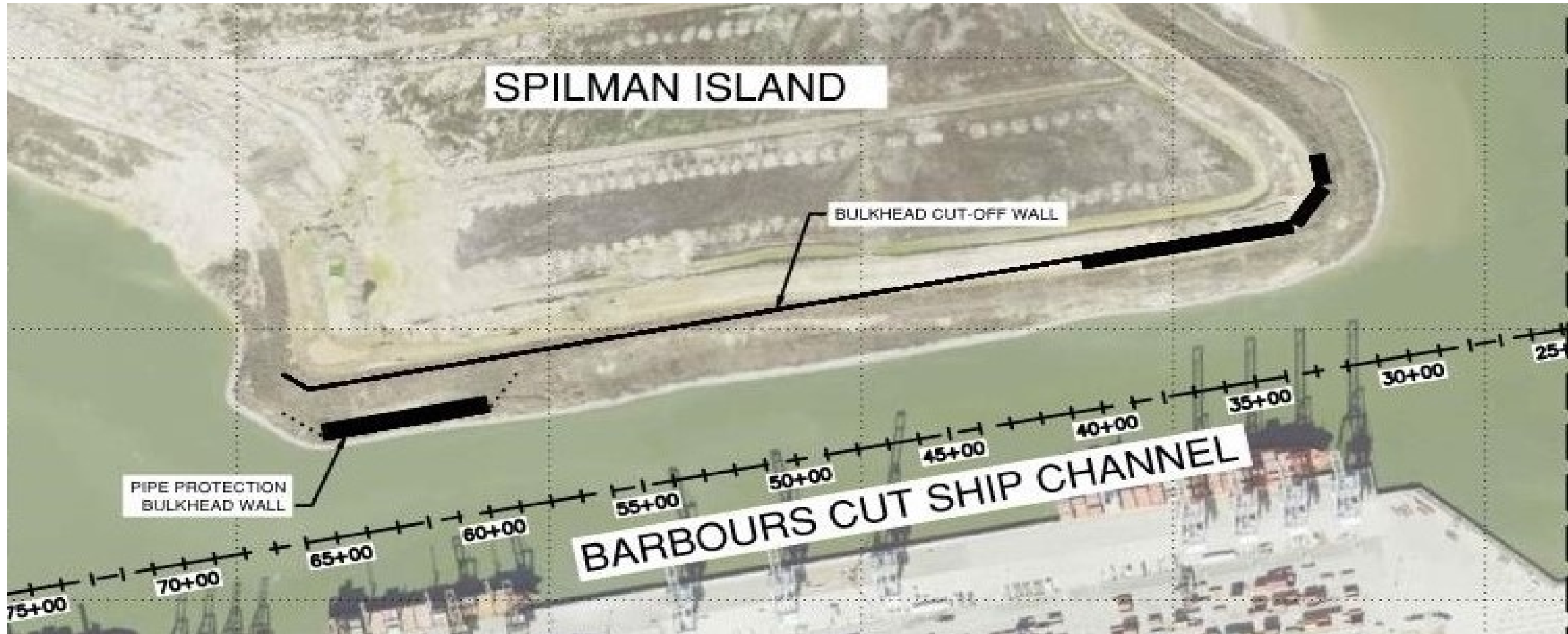


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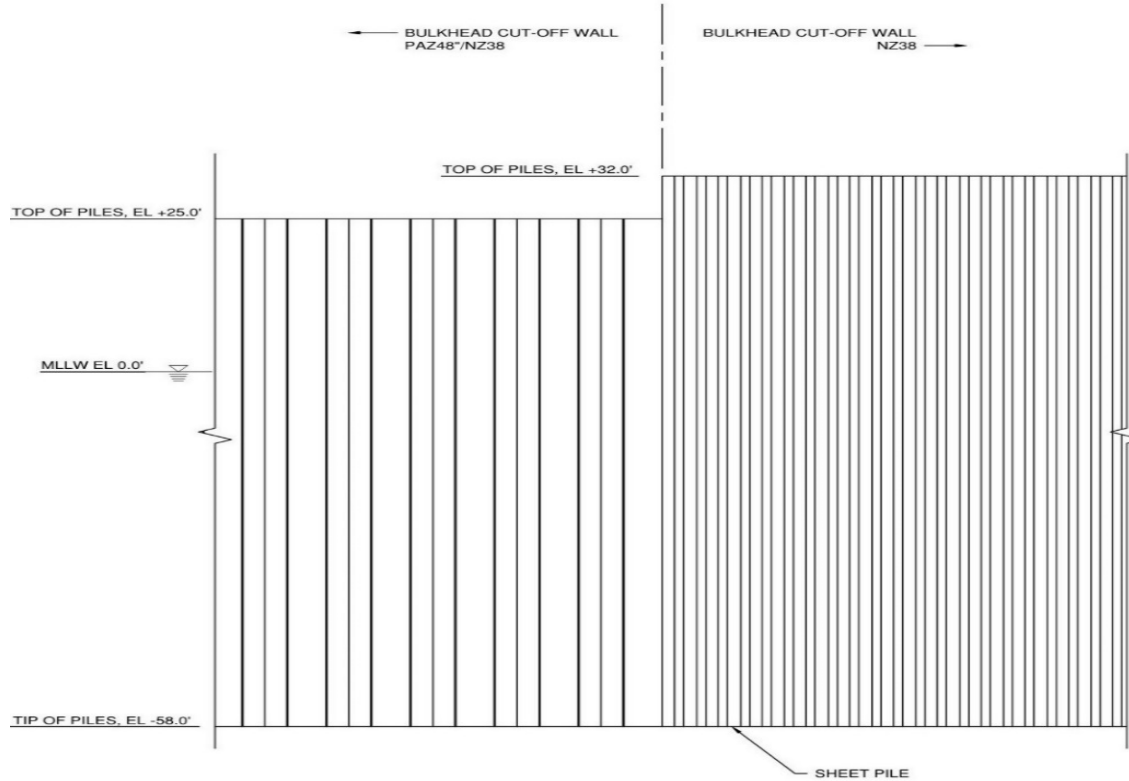


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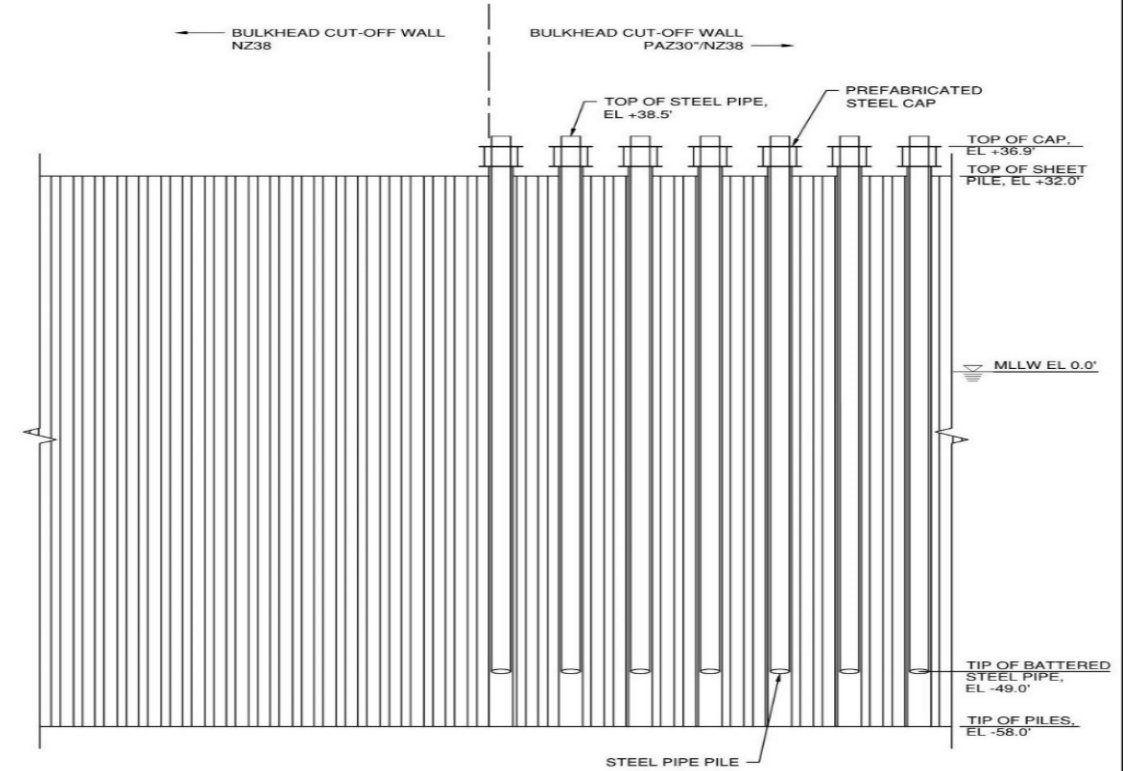
Package 7: Barbours Cut Channel (BCC 9+63-67+11) Spilman Island



Package 7: Barbours Cut Channel (BCC 9+63-67+11) Spilman Island



A PARTIAL ELEVATION-PAZ48"/NZ38 AND NZ38 WALL SYSTEM
SCALE: 1" = 10'



B PARTIAL ELEVATION-NZ38 AND PAZ30"/NZ38 WALL SYSTEM
SCALE: 1" = 10'

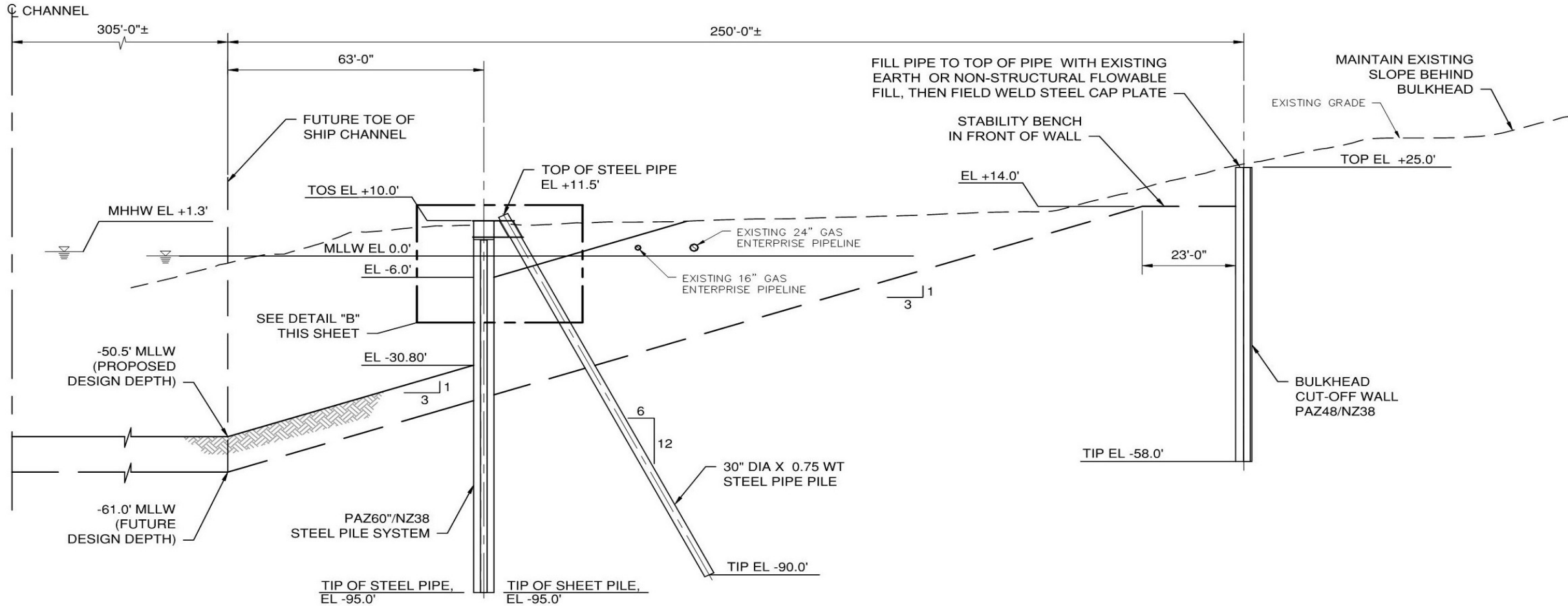


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Package 7: Barbours Cut Channel (BCC 9+63-67+11)

Spilman Island



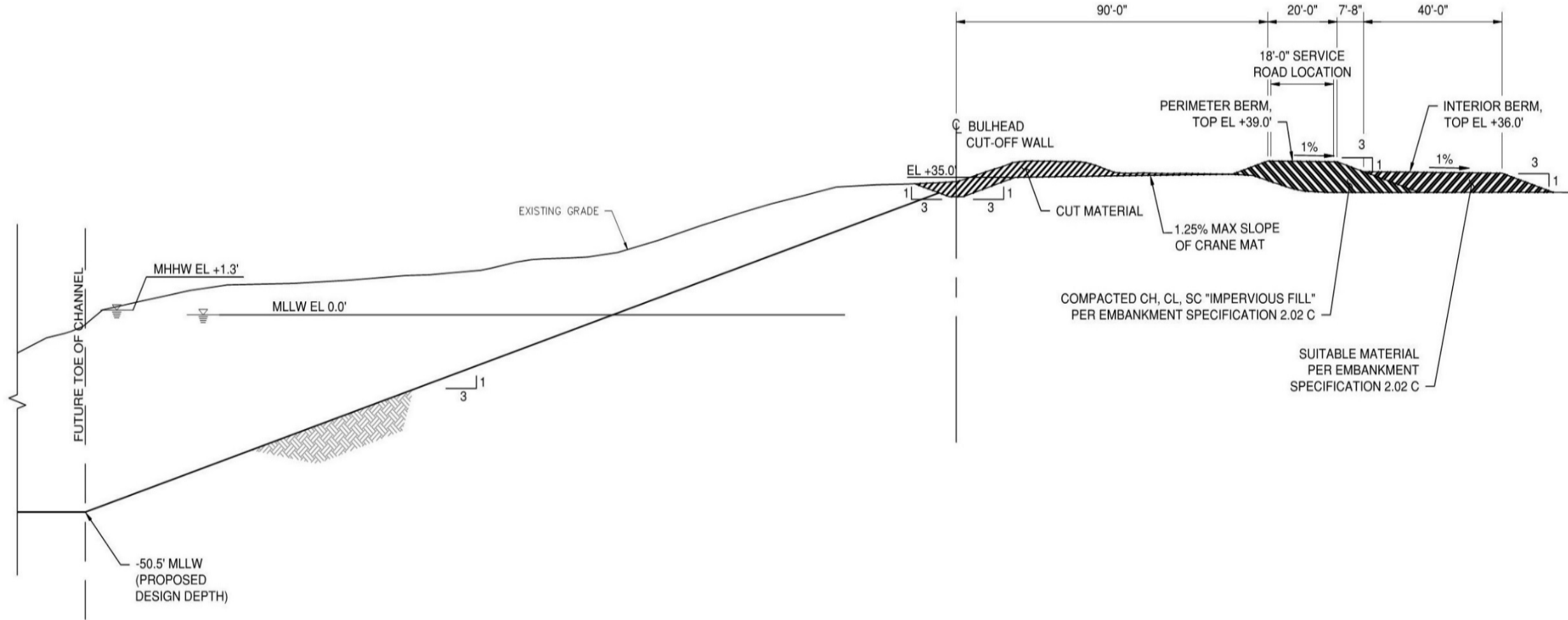
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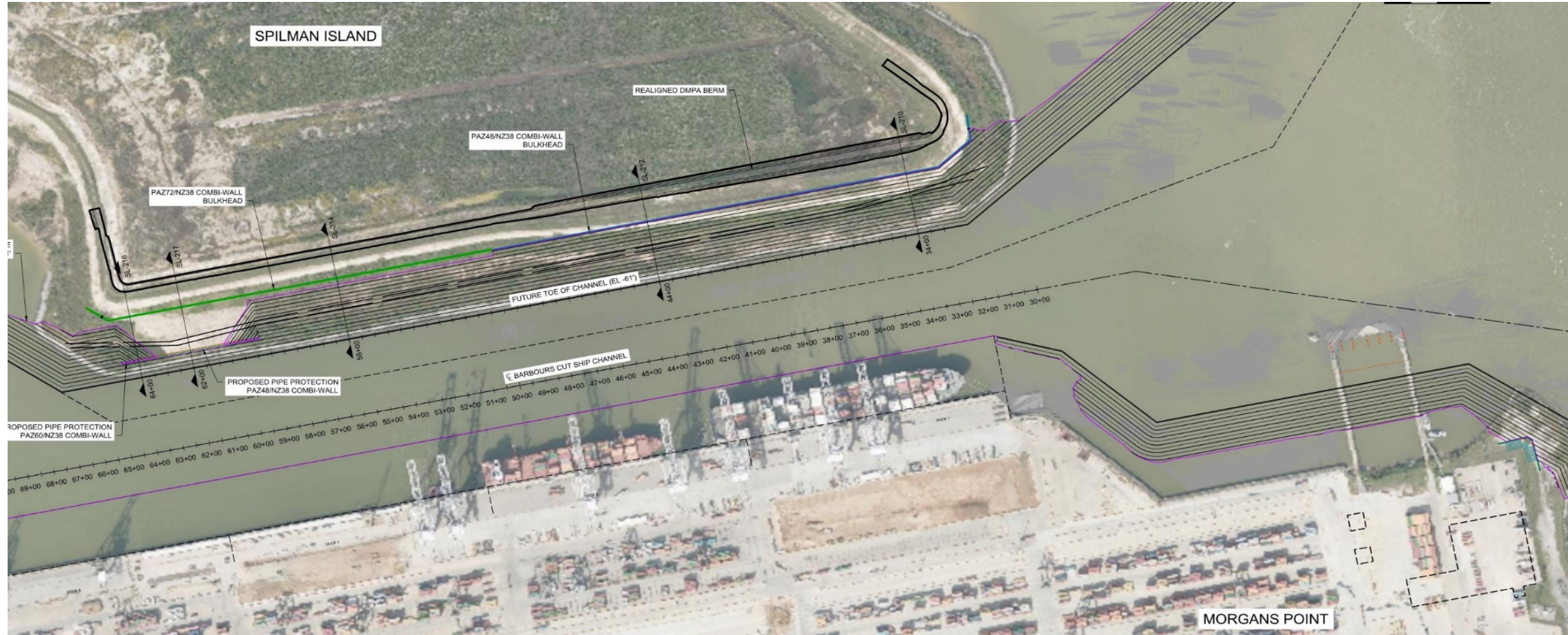
Package 7: Barbours Cut Channel (BCC 9+63-67+11) Spilman Island

SPILMAN
DMPA

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Package 7: Barbours Cut Channel (BCC 9+63-67+11) Morgans Point

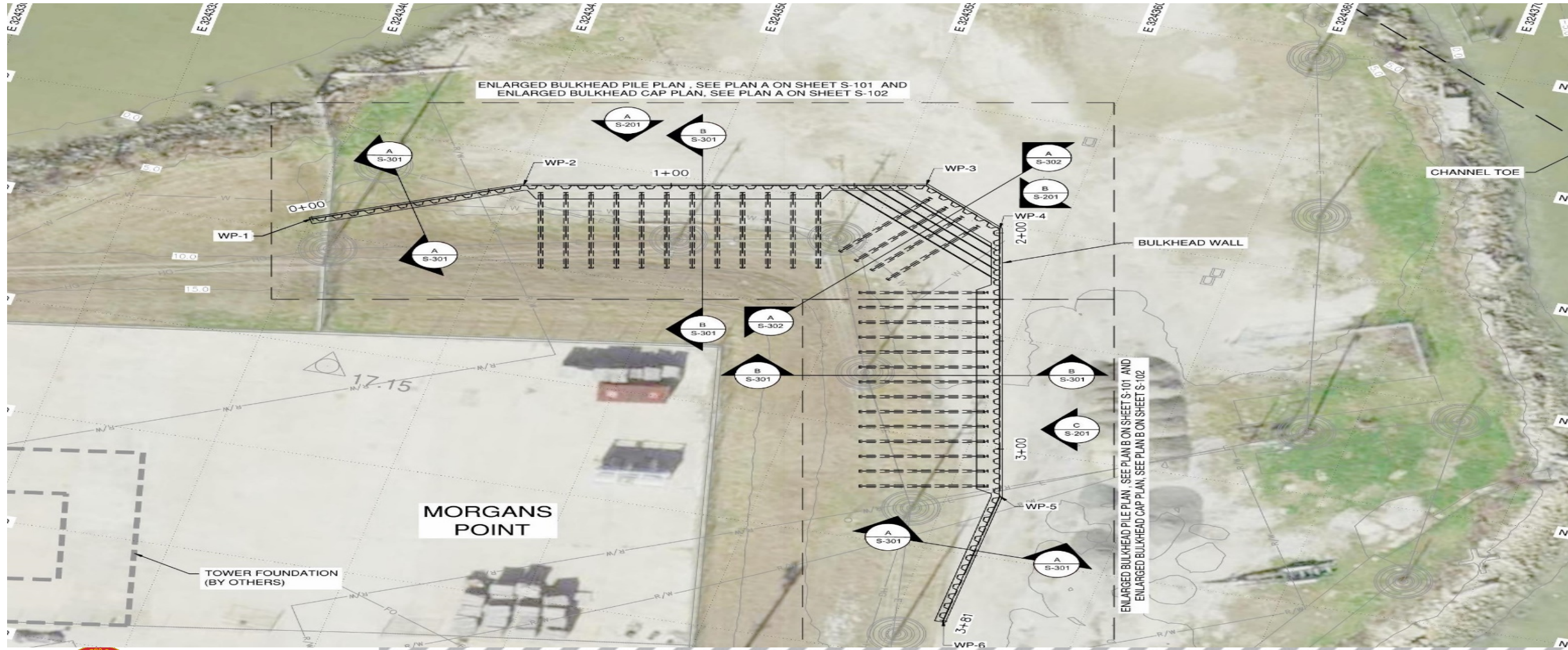


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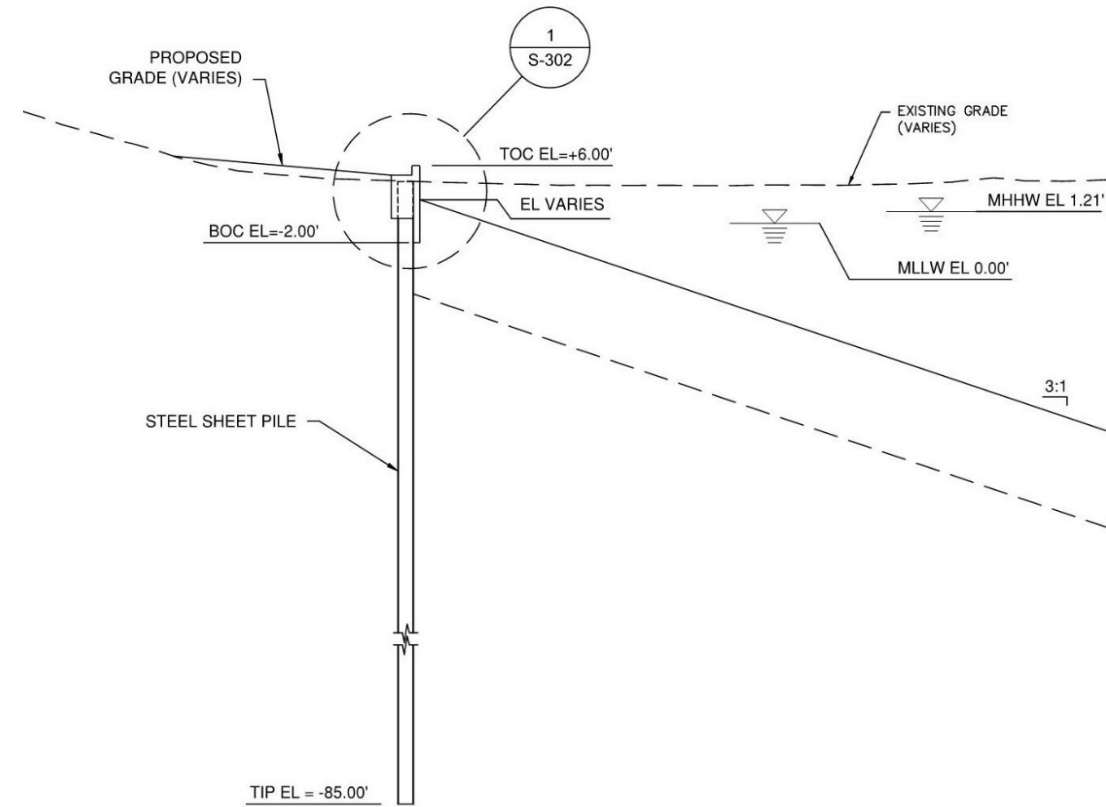
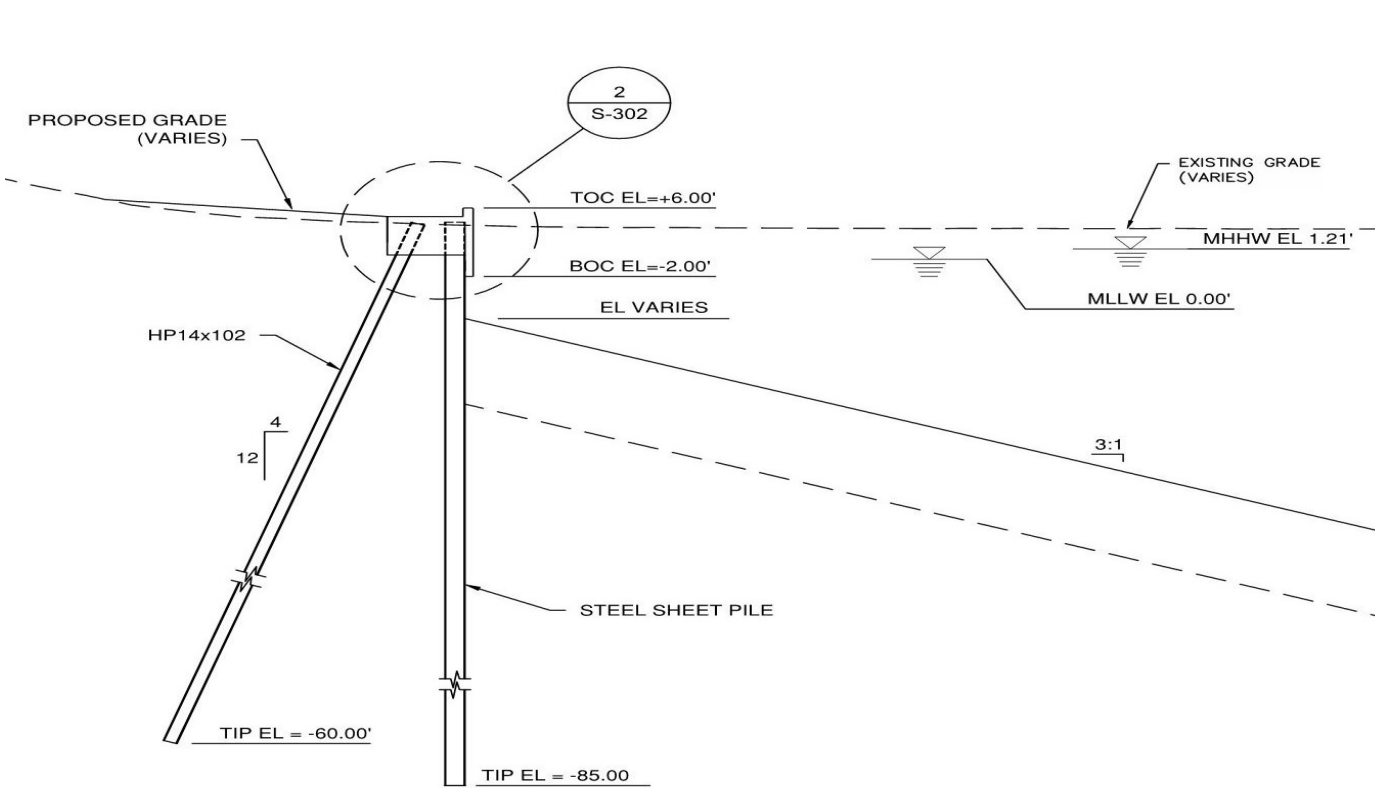
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Package 7: Barbours Cut Channel (BCC 9+63-67+11) Morgans Point

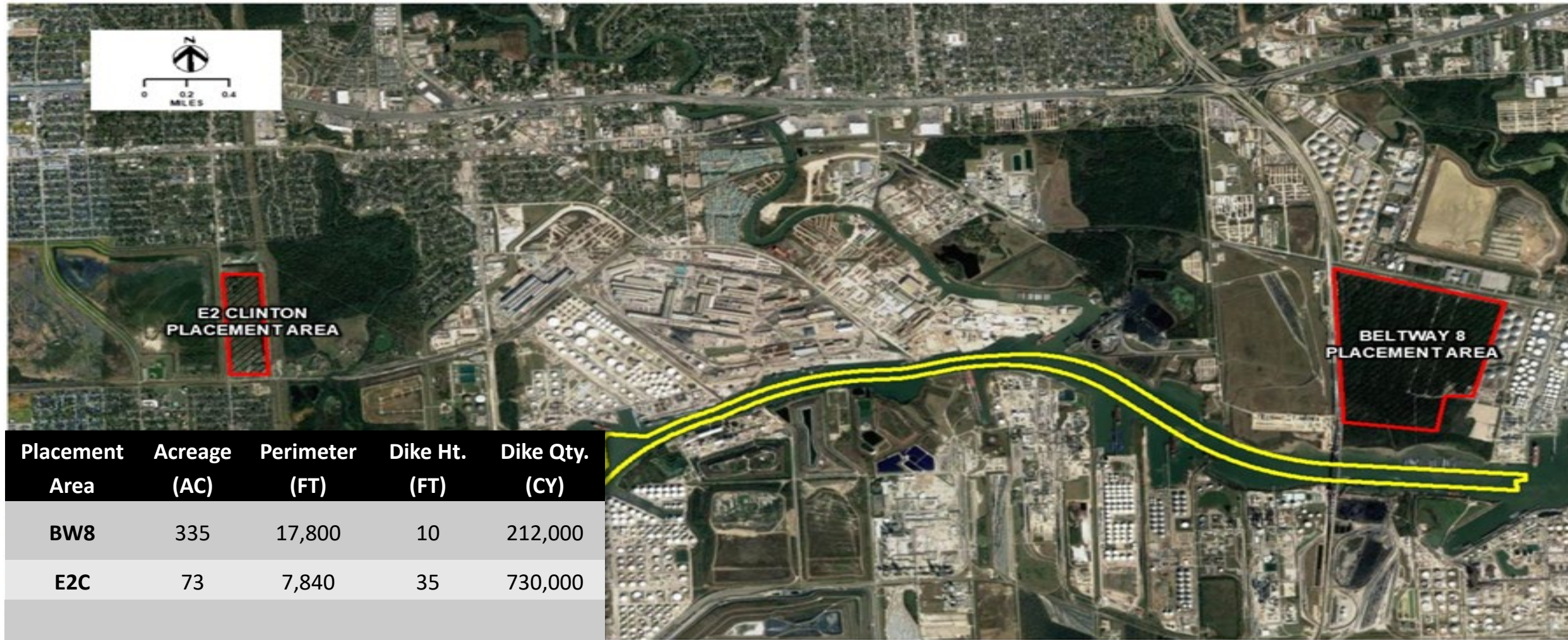


Package 7: Barbours Cut Channel (BCC 9+63-67+11)

Morgans Point Bulkhead



Package 8: Boggy Bayou to Sims Bayou East Clinton 2 and Beltway 8 DMPA



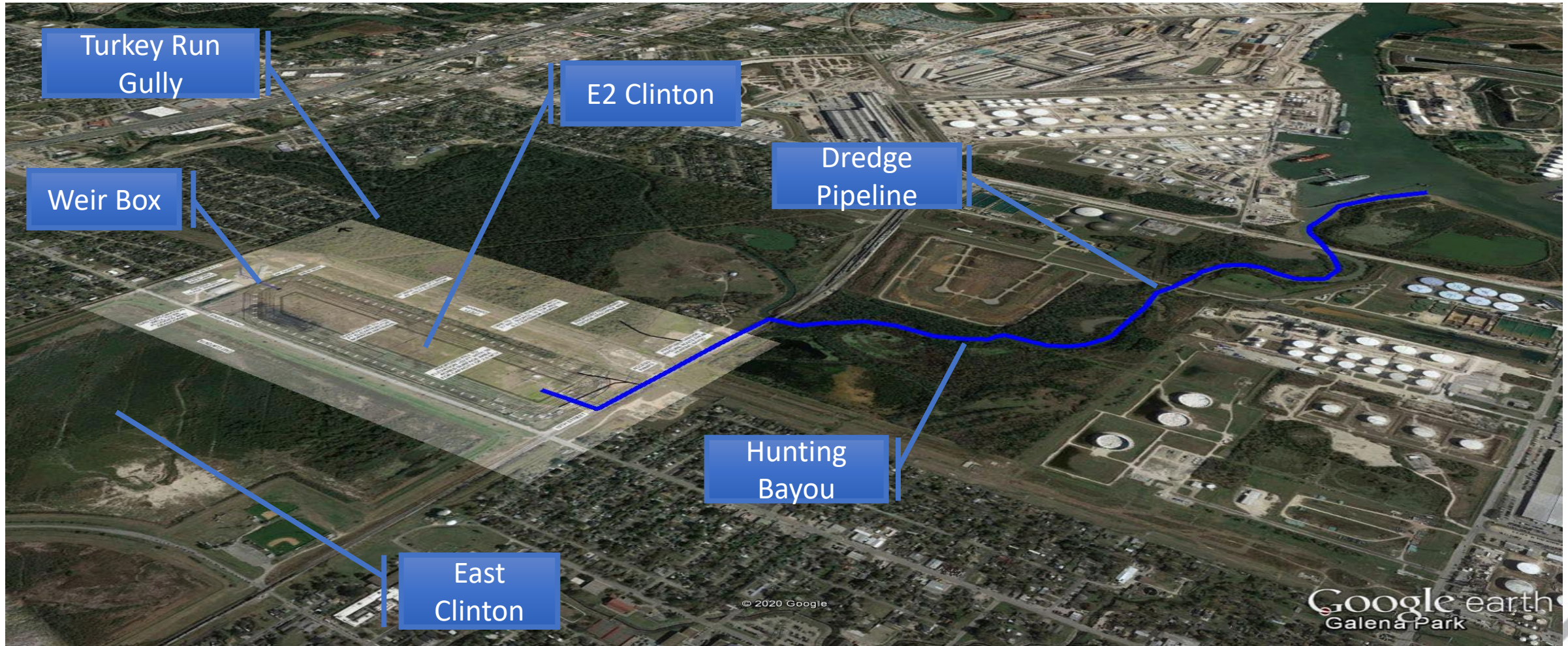
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Package 8: Boggy Bayou to Sims Bayou

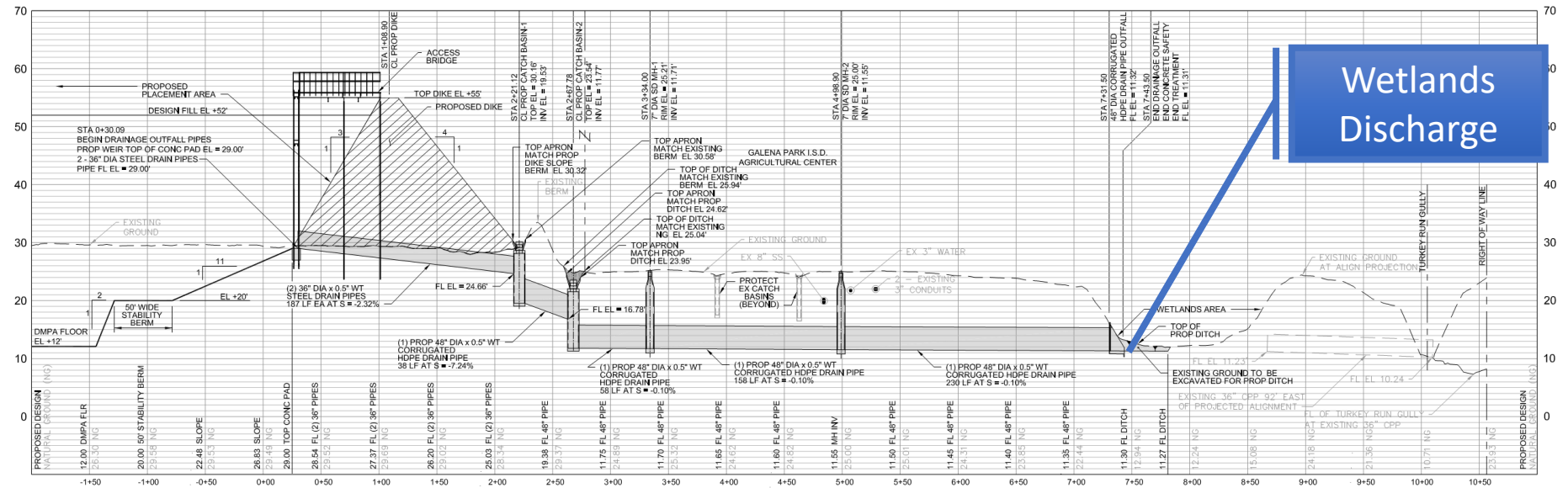
East Clinton 2 DMPA



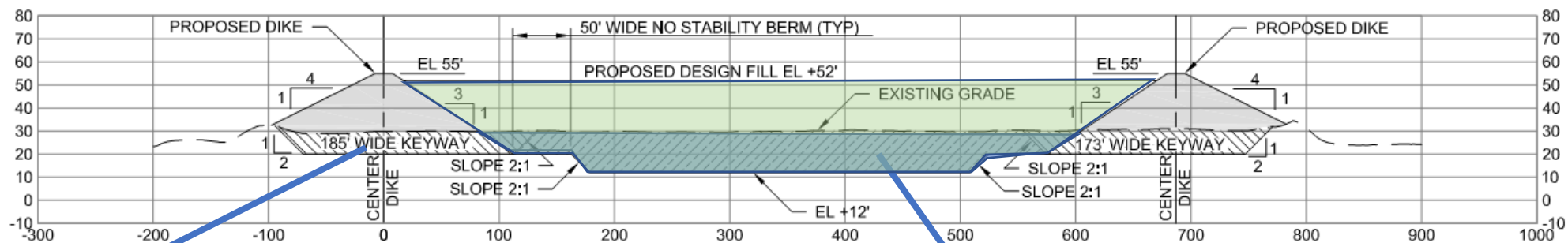
Package 8

Boggy Bayou to Sims Bayou

E2 Clinton Drainage Outfall & Representative Cross-Section



Wetlands
Discharge



Representative
Keyway

Borrow Excavation
for Dike



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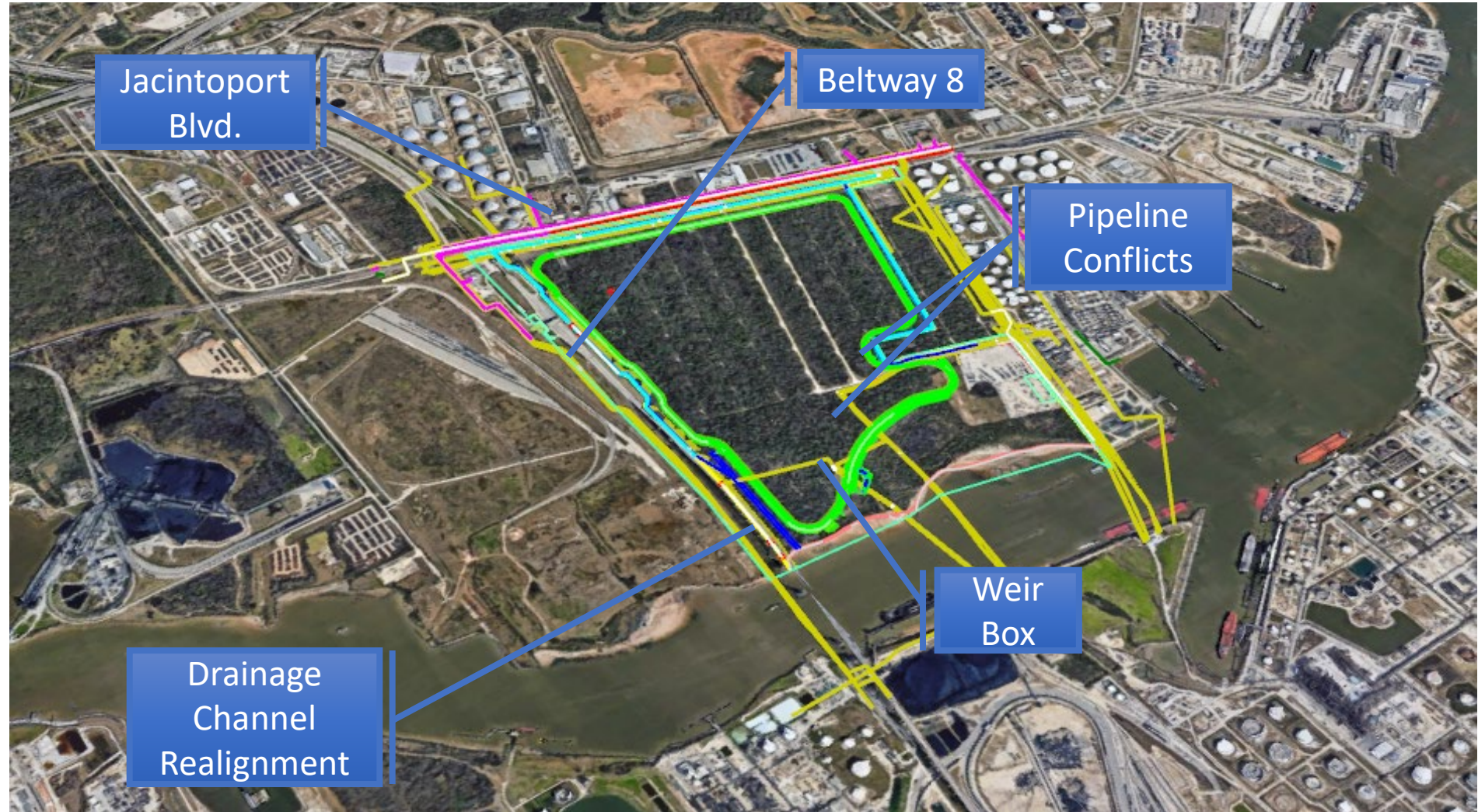


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Package 8

Boggy Bayou to Sims Bayou

*Beltway 8
DMPA
Overview*



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Segments 3-4, Design Packages 2, 7, 8 and 9

Boggy Bayou to Sims Bayou

Drainage Ch

The diagram illustrates the typical cross-section of a perimeter containment dike. The crown width is 10 feet, with a 2.4-foot crown height. The dike has a 2% slope on both sides. The elevation at the crown is EL 30.00', and the elevation at the base is EL 29.80'. The dike is labeled 'PERIMETER CONTAINMENT DIKE' and the section is labeled 'Dike Typical Section'.

A horizontal bar with a repeating pattern of diagonal lines, alternating between light gray and white.



Package 9: Boggy Bayou to Sims Bayou

Activities:

- Approx. 2.8 miles of channel deepening and selective widening.
- Deepening from -41.5 ft to -46.5 ft MLLW from Boggy Bayou (677+52) to Hunting Turning Basin (930+00).
- Widening from 300 ft to 530 ft from Boggy Bayou (677+52) to Greens Bayou (823+35).
- No dredging between Hunting Turning Basin and Sims Bayou because of Washburn Tunnel, a nationally registered historic place.
- New Work Material = 3,521,000 CY
Allowable Overdepth = 726,000 CY
Total Dredging = 4,247,000 CY

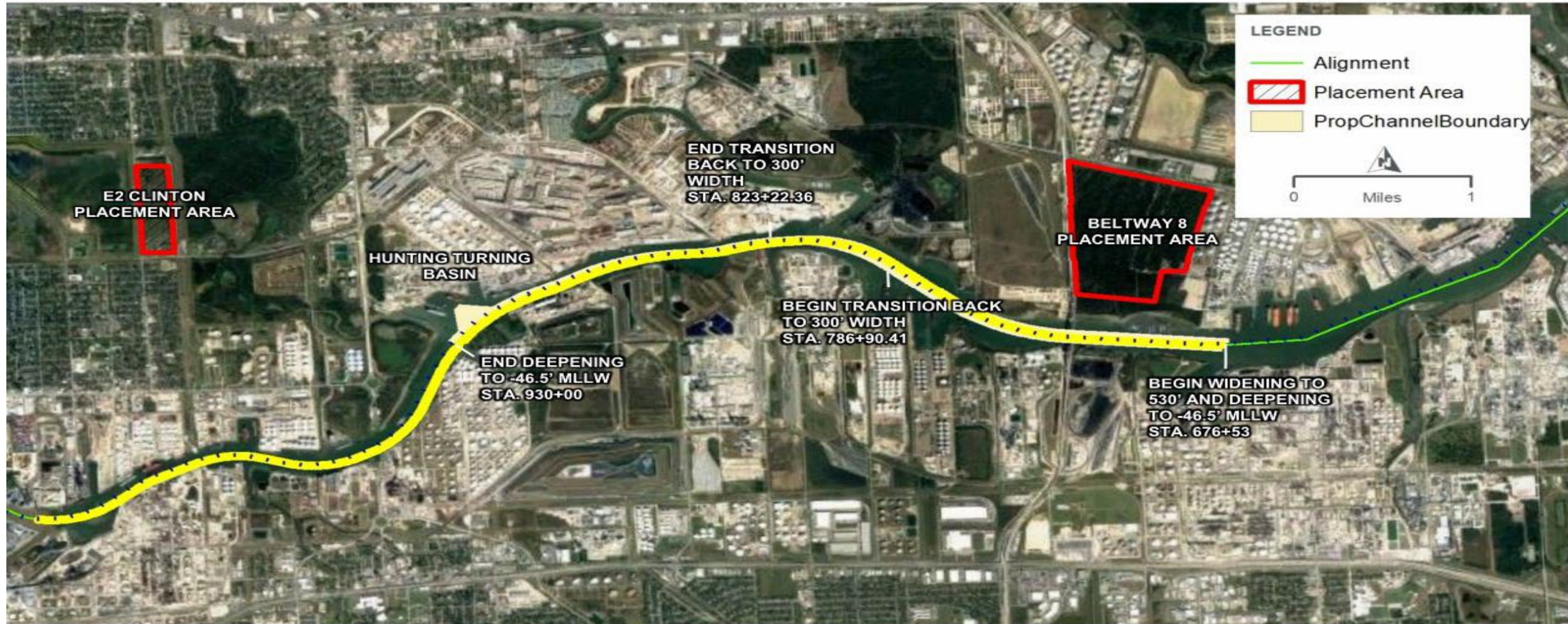


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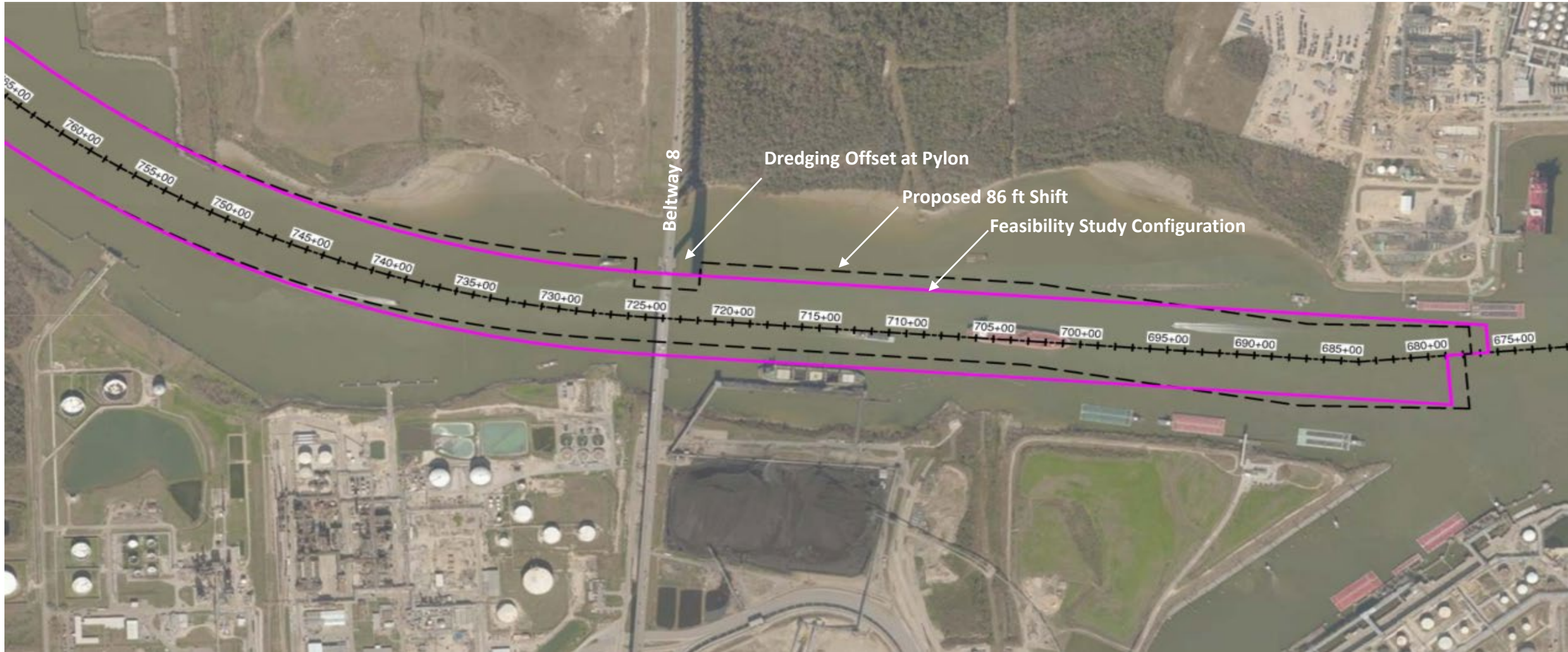


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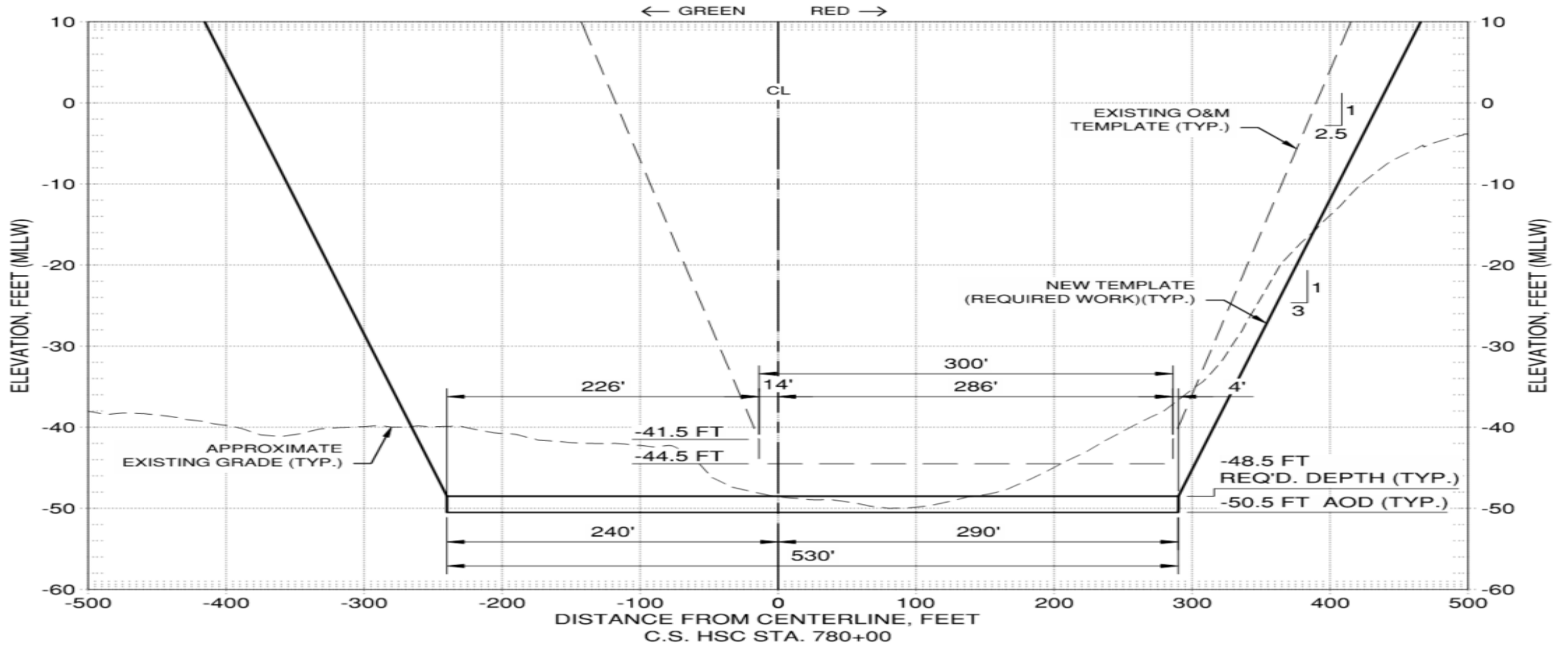
Package 9: Boggy Bayou to Sims Bayou



Package 9: Boggy Bayou to Sims Bayou



Package 9: Boggy Bayou to Sims Bayou



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Design Package Summary

Project 11 – Design Packages:

- Packages 1 – 9 advertised during the second quarter of 2021
- Packages 10-12 advertised in 2024 or after



Package 1:
PHA/USACE

Packages 2 - 9:
Port Houston Authority

Packages 10 - 12:
USACE, Galveston



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Questions



Questions?



Visit the Project 11 Resource Page

<https://www.expandthehoustonshipchannel.com/>



Email the Project Team

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