



PORT HOUSTON
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Houston Ship Channel Deferred Environmental Restoration of Atkinson Marsh Cells M7/8/9 & M10

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Port Commission



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Presentation Agenda

- Project Purpose
- Project Area
- M7/8/9 & M10
- PA 14 and PA 15
- Bid Schedule
- Order of Work



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Houston-Galveston Navigation Channels, Texas
Houston Ship Channel
**DEFERRED ENVIRONMENTAL
RESTORATION OF M7/8/9 & M10
ATKINSON MARSH CELLS**



Center of Excellence



Coastal Navigation and Environmental Restoration
Turner Collier & Braden Inc.
SAHAGAN & BRYANT ASSOCIATES, INC.
Office of the District Engineer
U. S. Army Engineer District, Galveston
Corps of Engineers
Galveston, Texas
July 2016

This project was designed by the Joint Ventures of TCB & GBA (STATE No. 0-10798). The initials or signatures and registration designations of individuals appear on these project documents within the scope of their employment as required by ER 1313.2-0123.

REGULATION NO. 091204-16-0-0024



AECOM

GBA
ENGINEERS ★ SURVEYORS

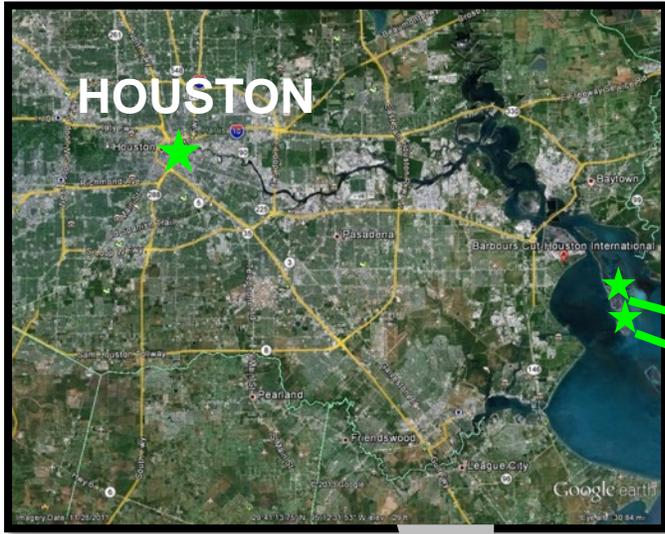
Project Purpose

- The main focus of the project is to conduct Deferred Environmental Restoration by rehabilitating the dikes for Atkinson Marsh Cells M7/8/9 & M10 to assure the future capacity of those cells for the placement of maintenance dredged materials.
- Secondary is to borrow new work clays from the HSC widener and the BSC Flare to rehabilitate said dikes while accomplishing a secondary navigation need.

Project Area



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Pre-Construction Dike Conditions



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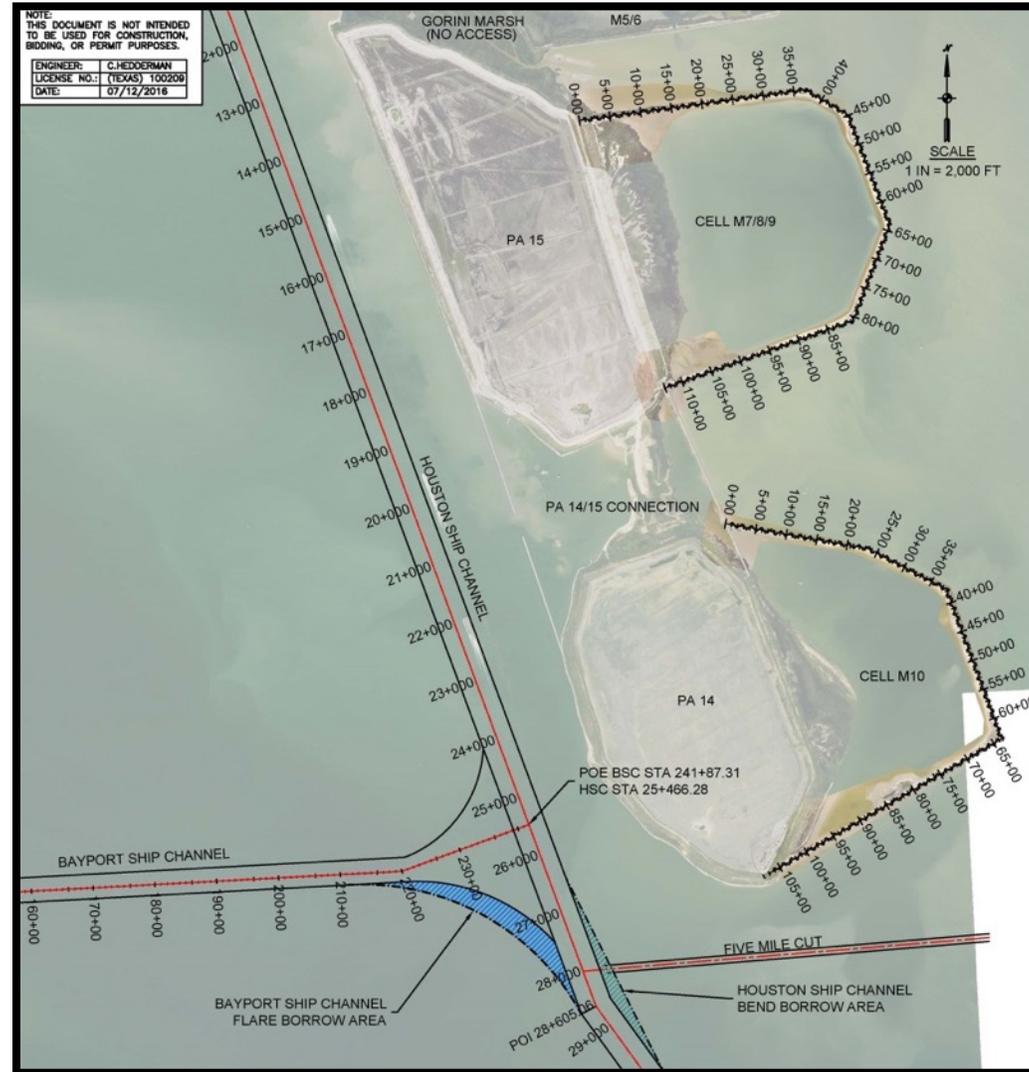


- Loss of dike due to settlement and erosion.
- Existing dikes were breached in multiple locations.

Project Overview



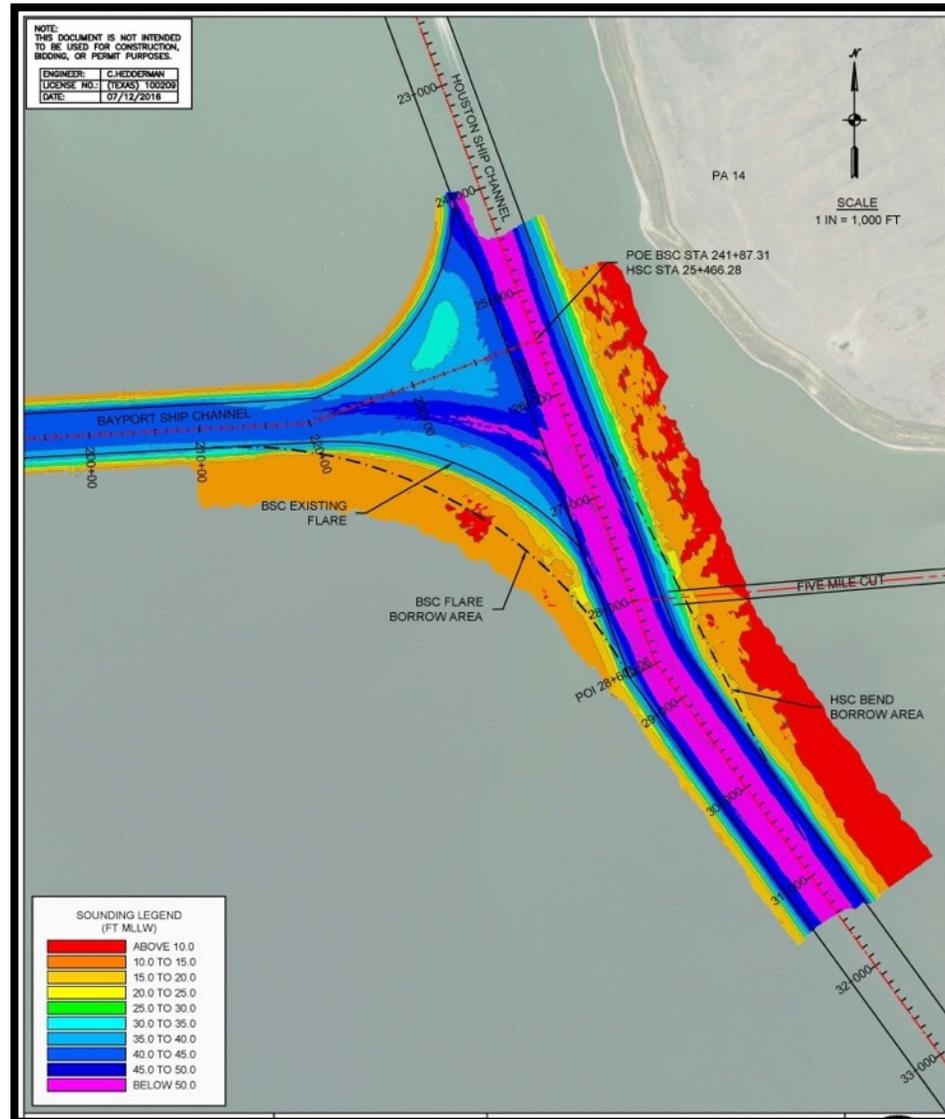
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Existing Channel Bathymetry



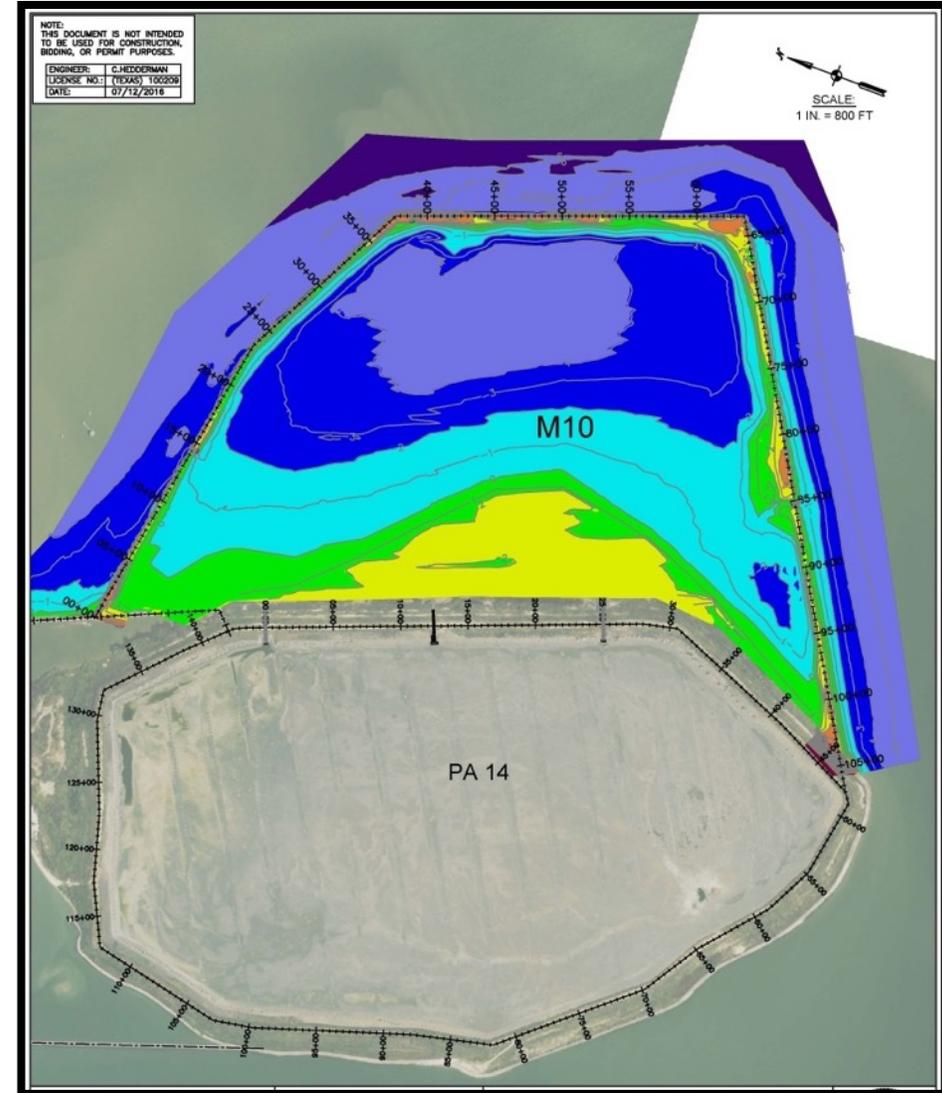
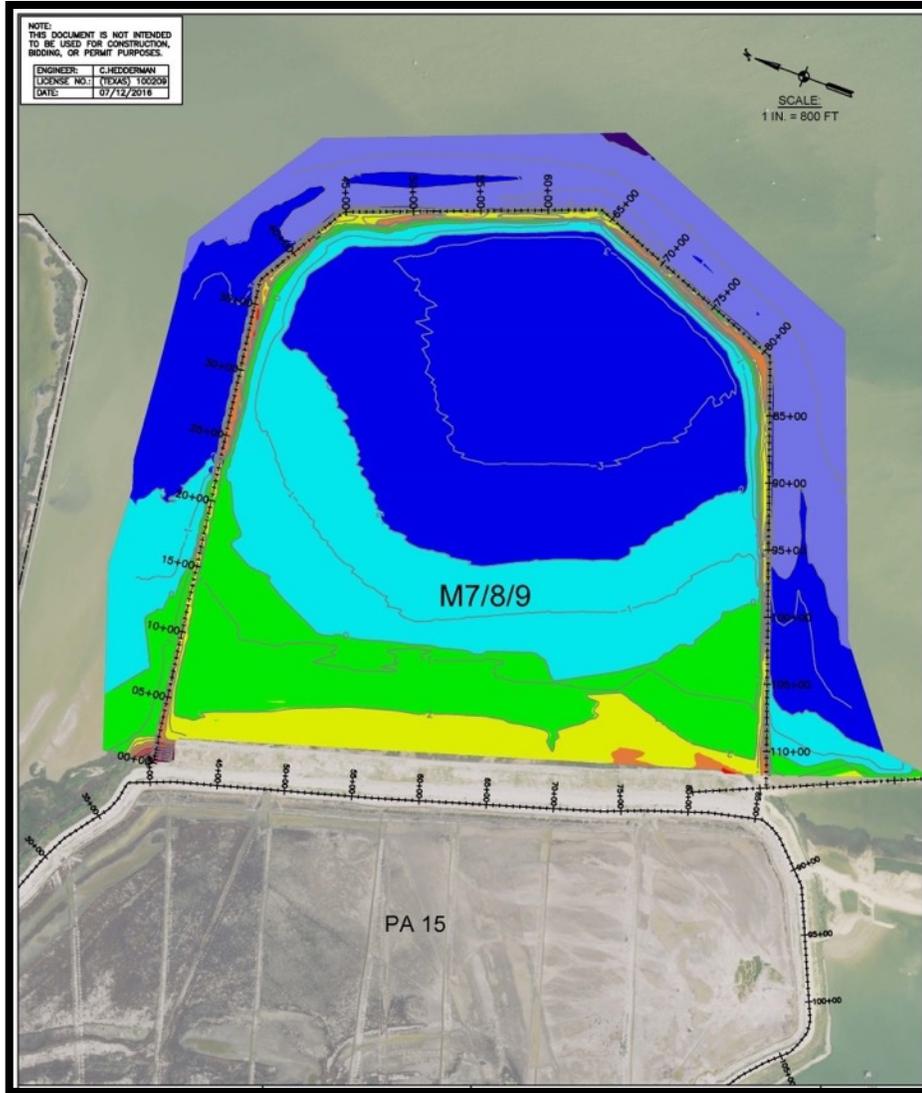
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Existing Conditions



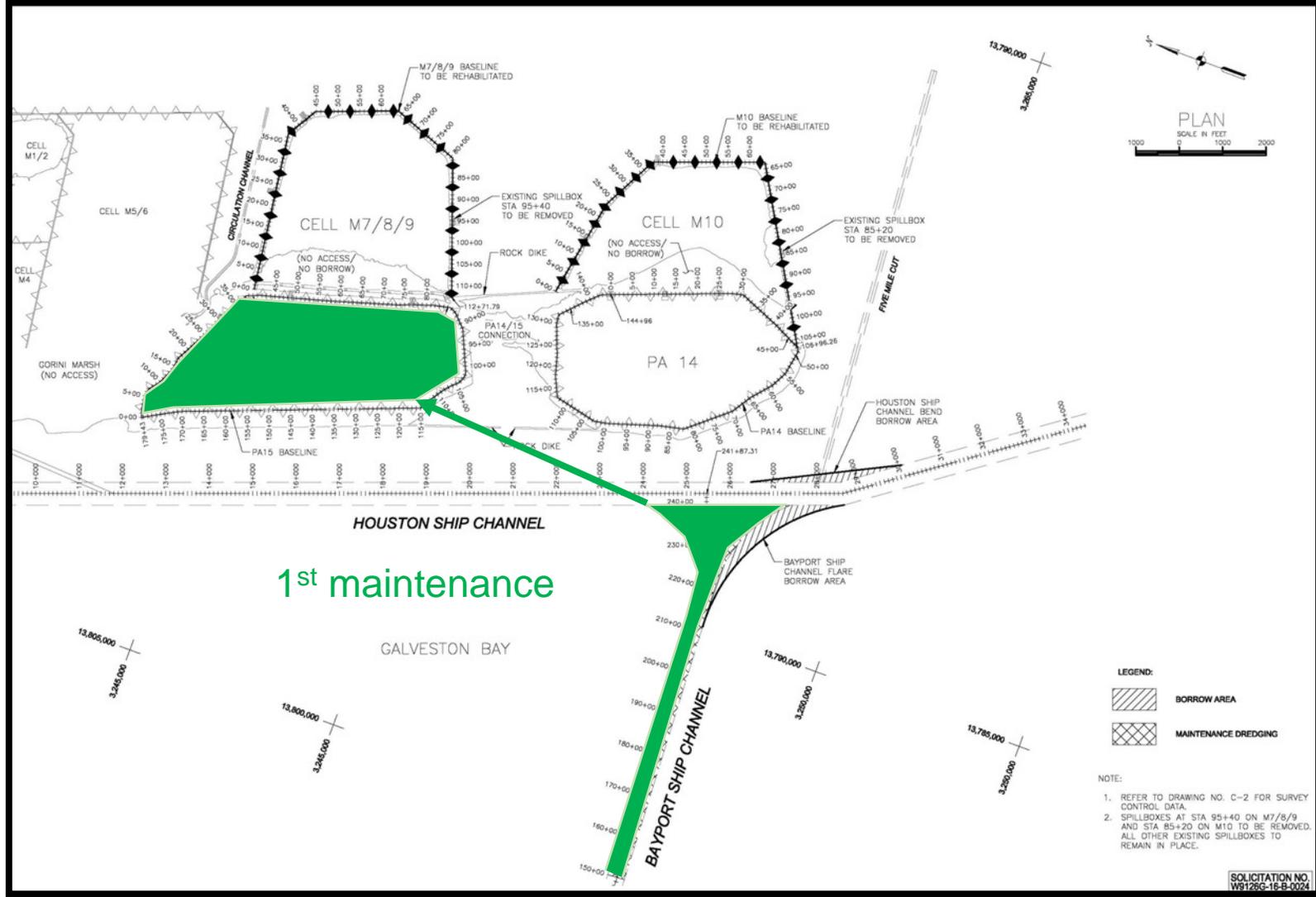
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Dredging & Placement Areas



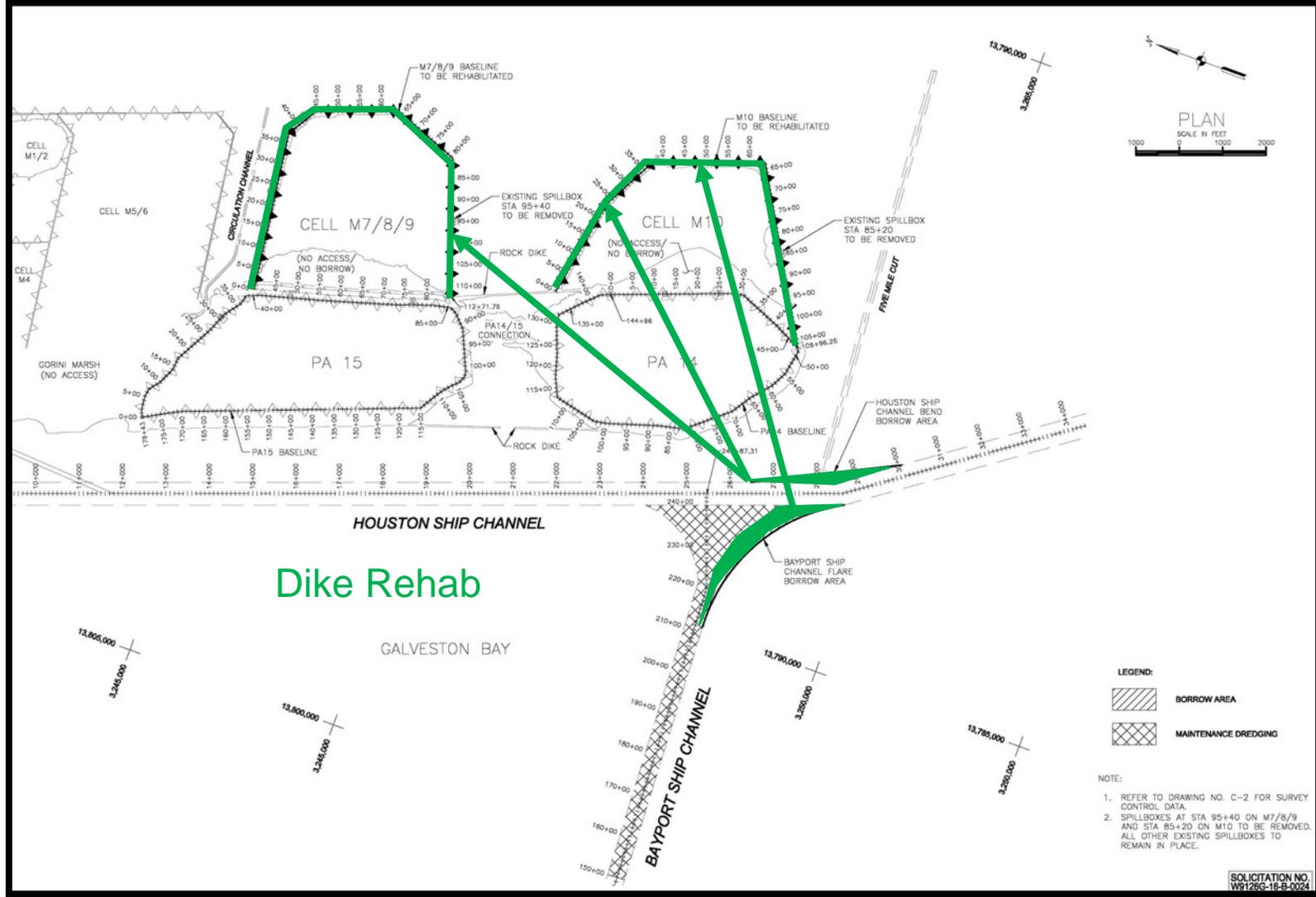
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Dredging & Placement Areas



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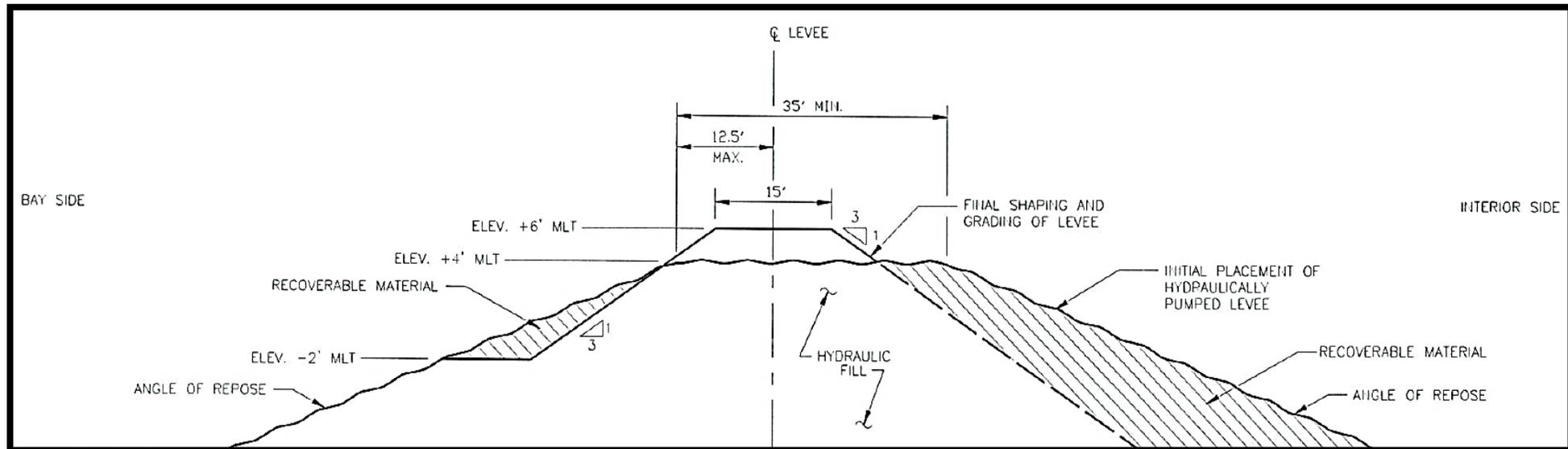


Dike Design



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- Original design proposed constructing a less extensive design than previous marsh cells after input from Resource Agencies.
- Constructed on soft hydraulic fill foundation.
- Originally intended as a perimeter berm that would be raised over time between filling events.



Bid Schedule – Schedule No. 1



Item No.	Description	Estimated Quantity	Unit	Unit Price	Estimated Amount
SCHEDULE NO. 1					
0001	Mobilization and Demobilization	1	JOB	SUM	\$ _____
0002	Maintenance Dredging Bayport Ship Channel Station 150+00 to 239+22 to PA 15	1,505,113	CY	\$ _____	\$ _____
0003	DER Borrow Bayport Ship Channel Station 211+15 to 239+22 to Atkinson Marsh Cells M7/8/9 & M10	1,206,708	CY	\$ _____	\$ _____
0004	DER Shaping and Grading Atkinson Marsh Cell M7/8/9	11,300	LF	\$ _____	\$ _____
0005	DER Shaping and Grading Atkinson Marsh Cell M10	10,700	LF	\$ _____	\$ _____
0006	DER Atkinson Marsh Cell Spillboxes Removal	2	EA	\$ _____	\$ _____
0007	DER Gorini Marsh Circulation Channel	1	JOB	SUM	\$ _____
0008	DER Seeding and Fertilizing	1	JOB	SUM	\$ _____
TOTAL SCHEDULE NO. 1					\$ _____

Order of Work



- 1) Maintenance Dredging BSC Station 150+00 to 239+22 to PA 15.
- 2) Atkinson Marsh Cell Spillboxes Removal.
- 3) New Work Borrow Dredging from BSC Station 211+15 to 239+22 to M7/8/9 & M10 and, if exercised, Option No. 1 HSC Station 26+484 to 30+089 to M7/8/9 and M10.

Order of Work



- 4) Option No. 1 (if exercised) DER HSC, PA 14 Retention Dike, including site preparation, mechanical excavation from the interior of the PA.
- 5) New Work Borrow Dredging HSC Station 26+484 to 30+089 to PA 14 for the construction of the hydraulic fill berms.
- 6) Maintenance Dredging BSC Station 180+00 to 239+22 to M10.

Order of Work



- 7) Creation of a circulation channel from the Gorini Marsh towards the open Bay as shown for DER Gorini Marsh Circulation Channel.



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Special Project Features

Wider, Flatter Template

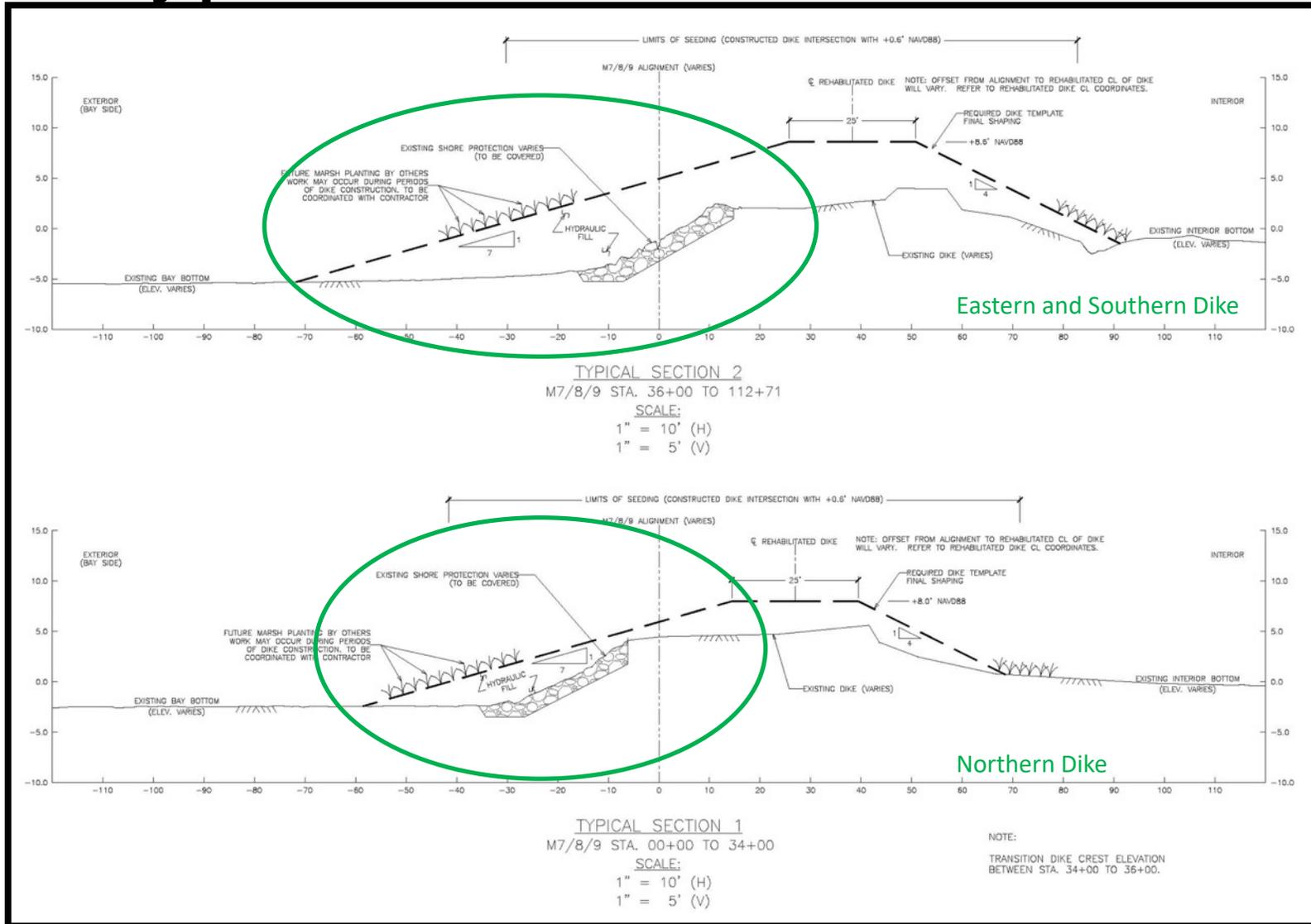


- New work material for dike construction
- Water depth limited access by equipment
- Resources agencies prefer unhardened, natural shorelines
- Cost savings on materials
- Opportunity for future applications at other beneficial use sites

M7/8/9 Typical Sections



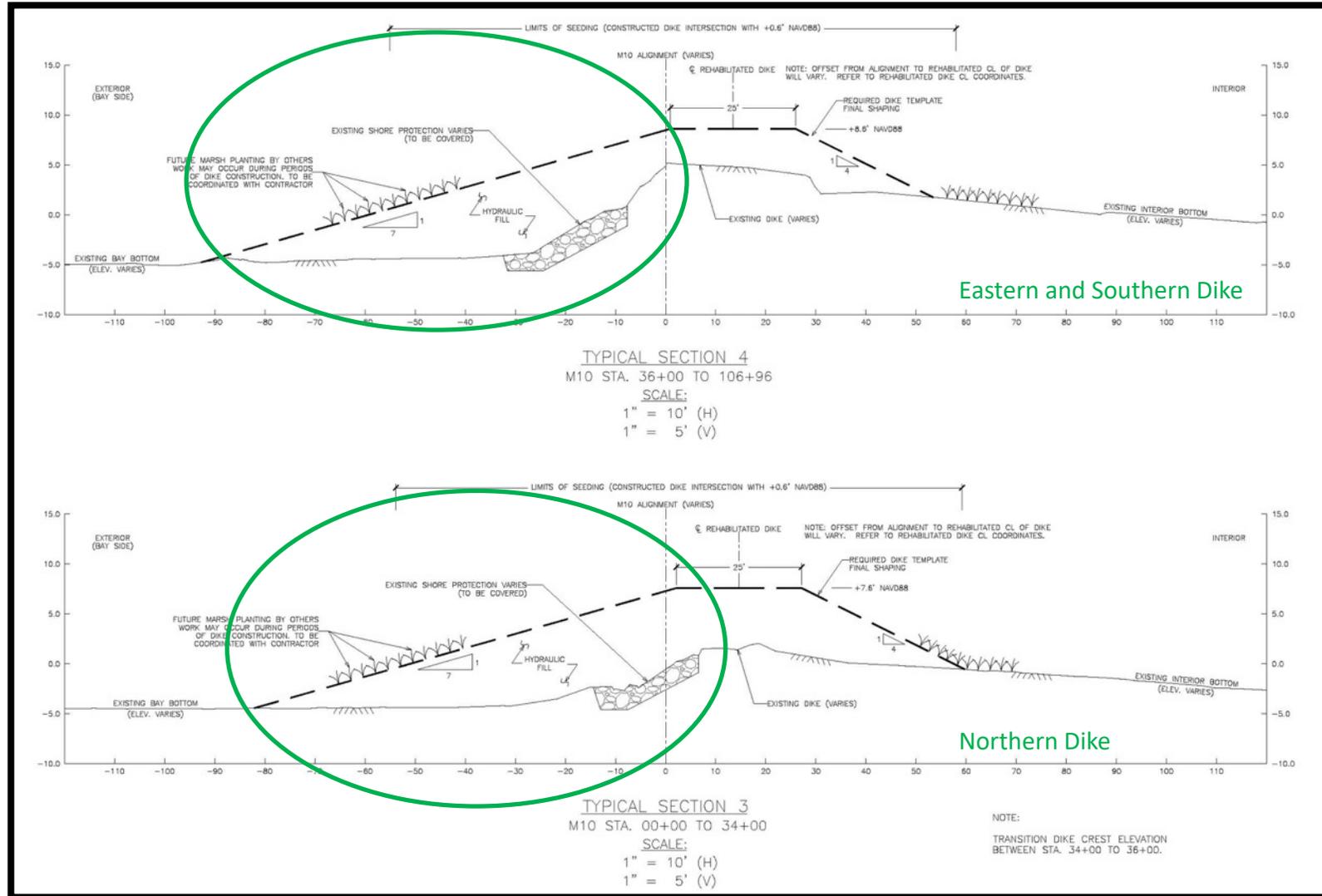
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M10 Typical Sections



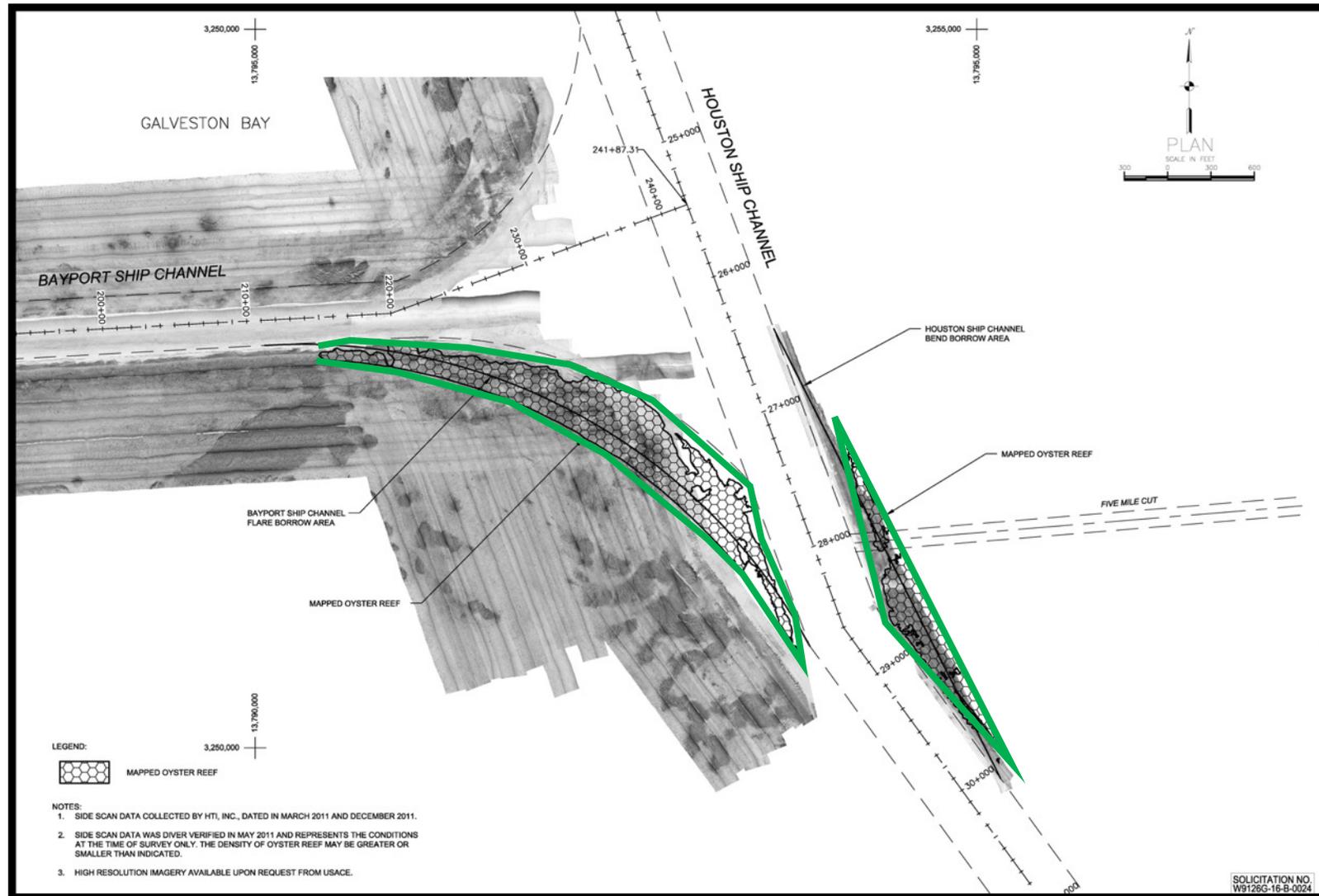
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Oyster Reef



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Oyster Reef



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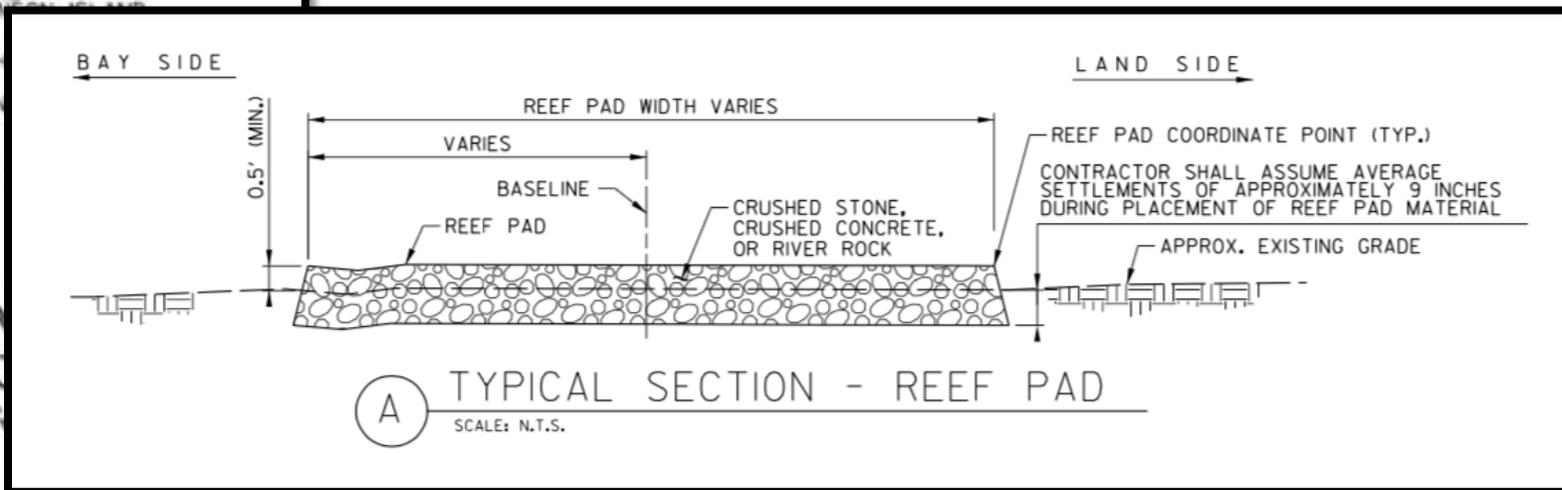
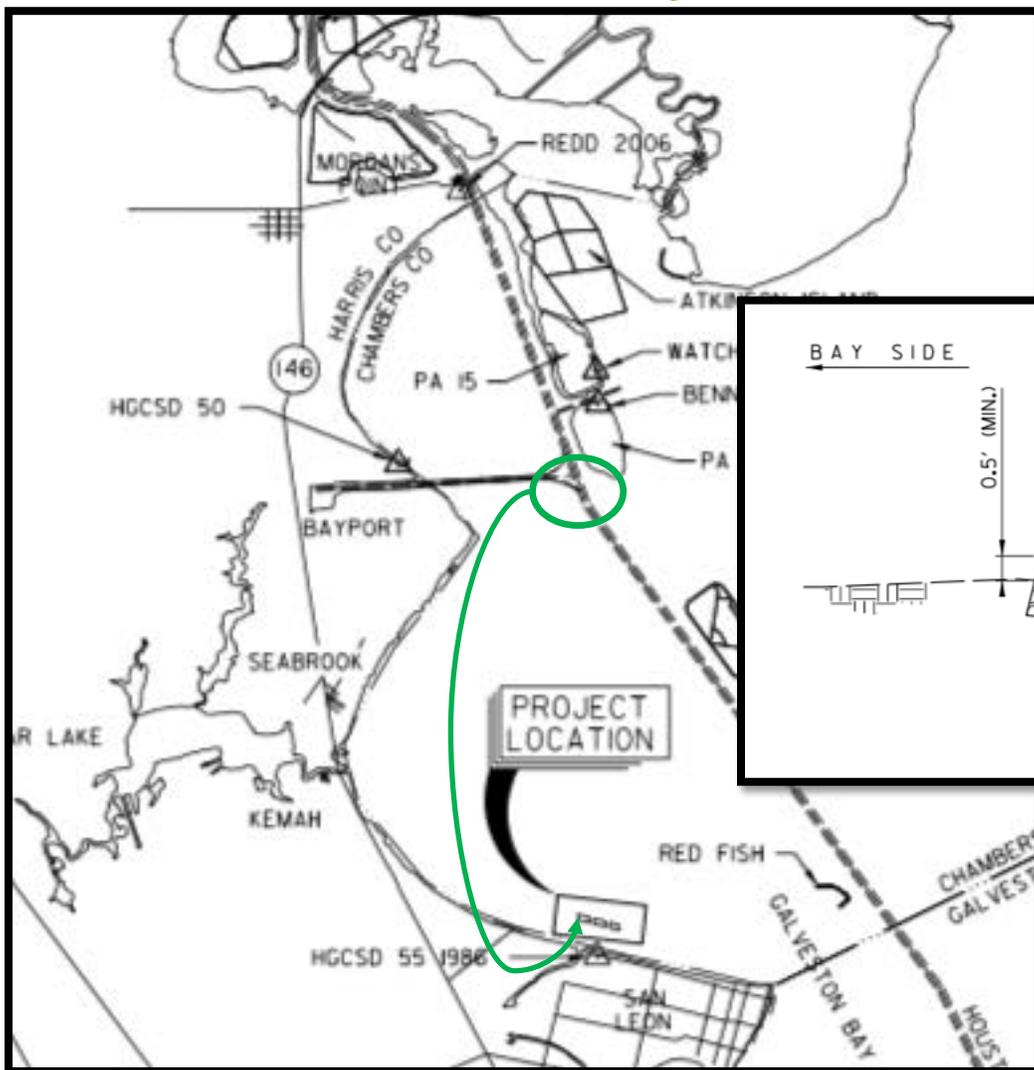
- Contractor stripped borrow area
- Place material outside of dike



Sidebar: Oyster Mitigation



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Sidebar: Oyster Mitigation



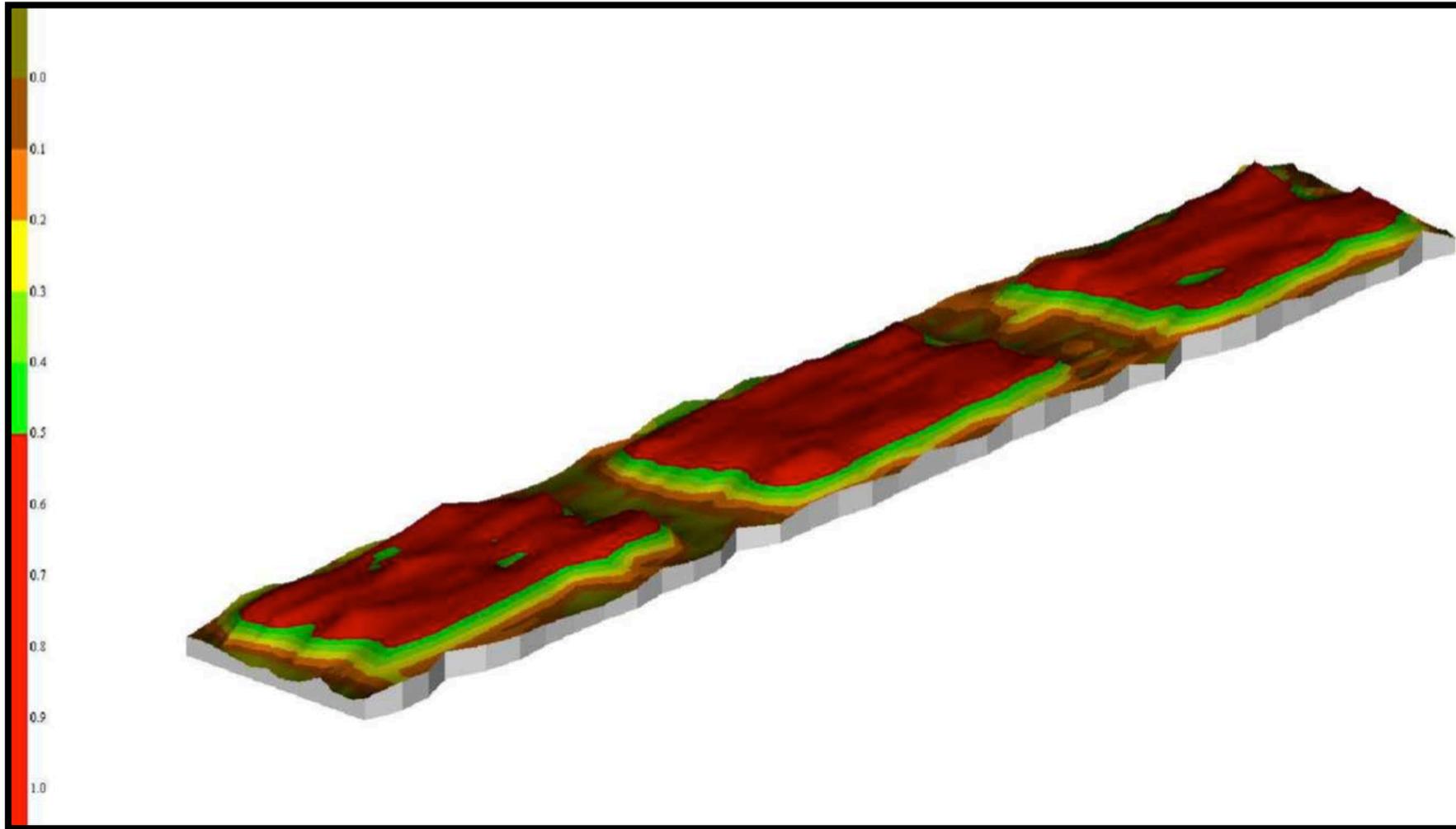
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Sidebar: Oyster Mitigation



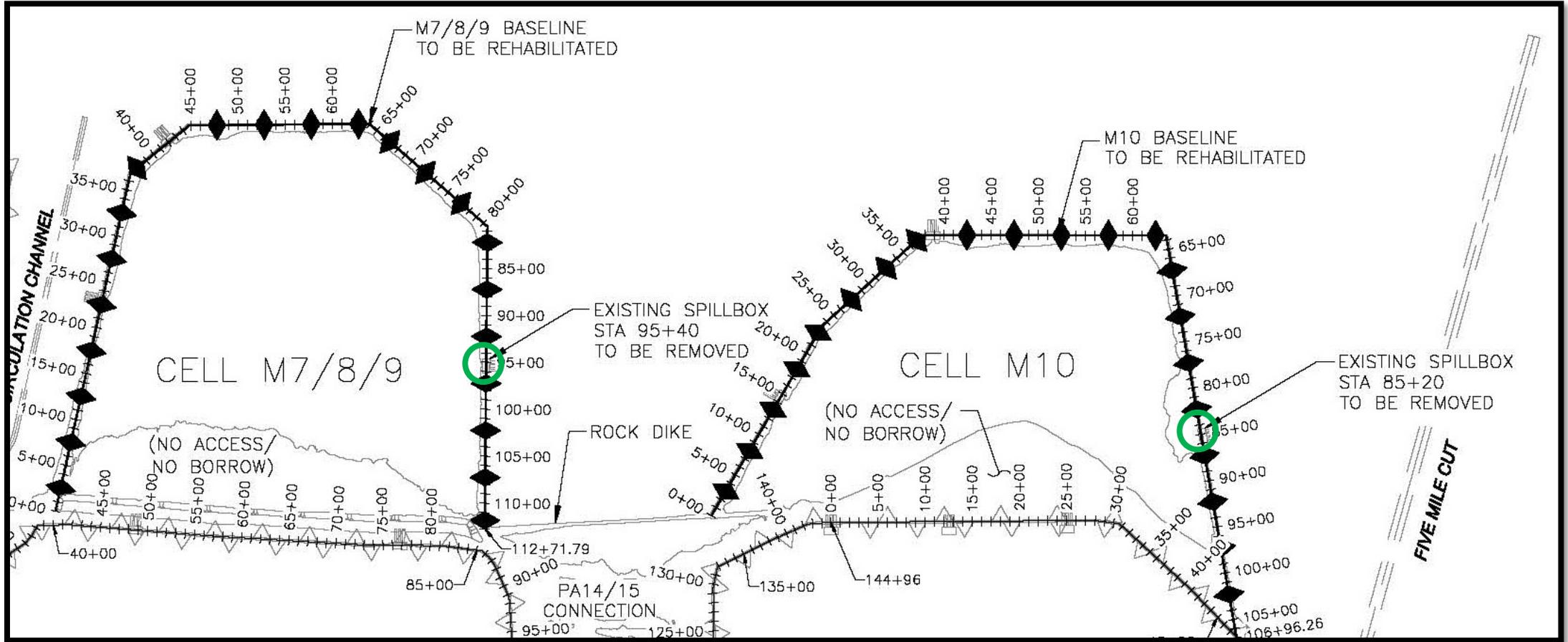
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Existing Spillboxes



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Existing Spillboxes



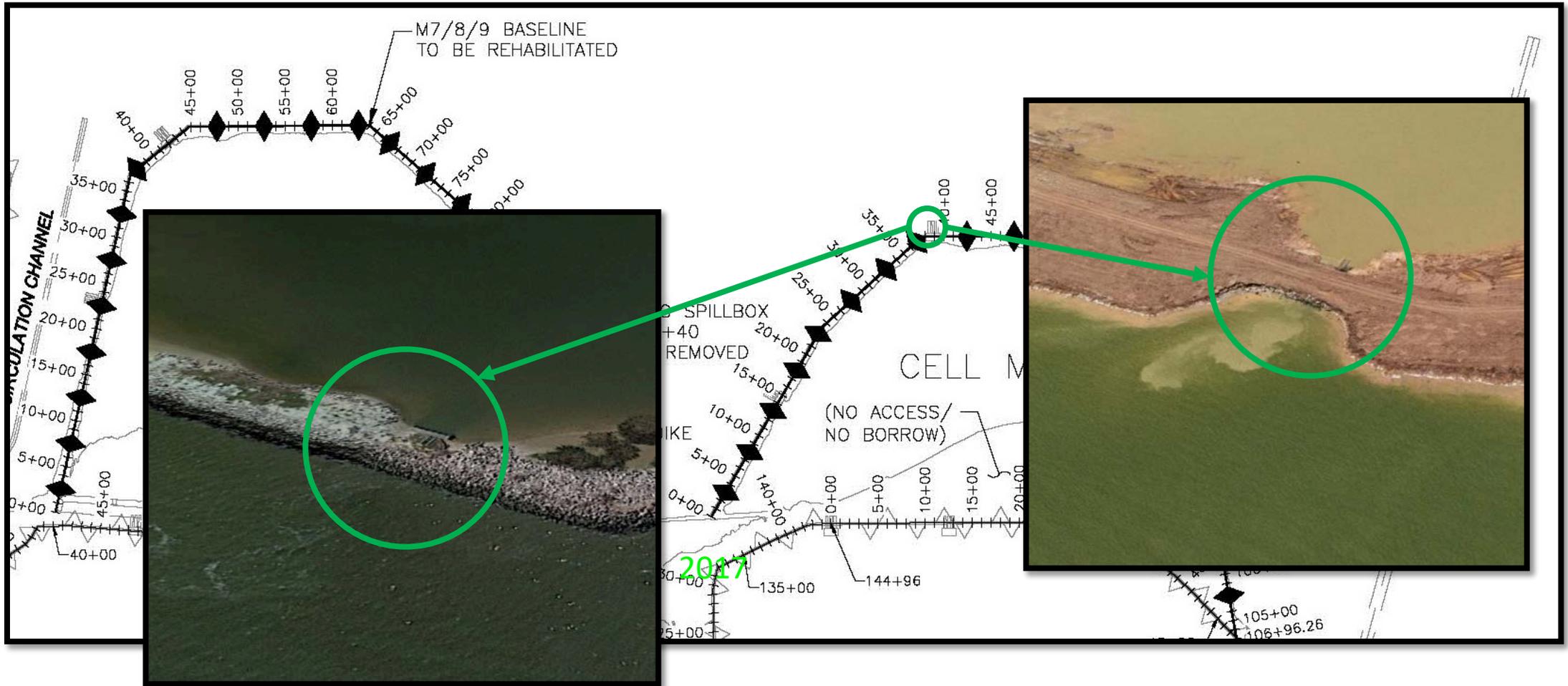
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Existing Spillboxes



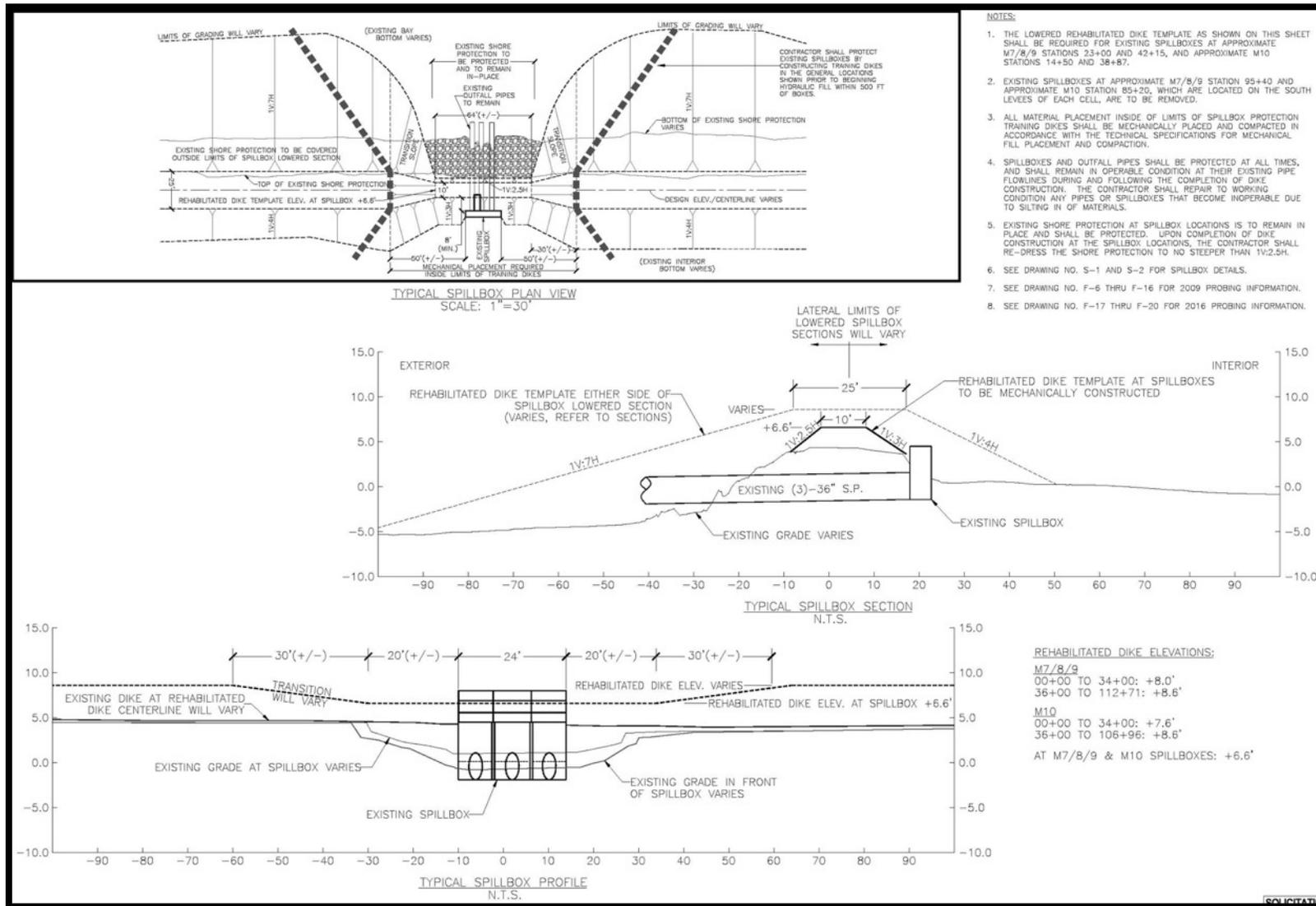
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Typical Sections at Spillboxes



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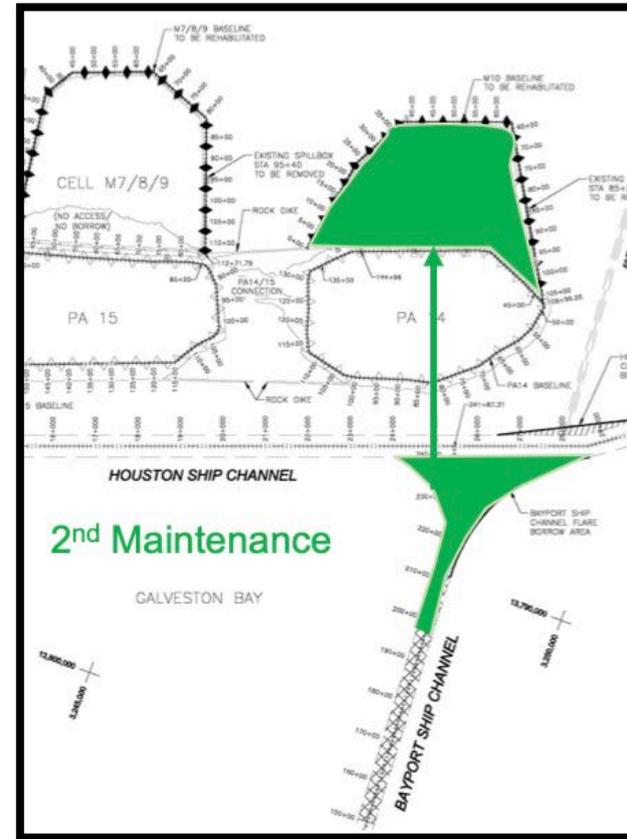
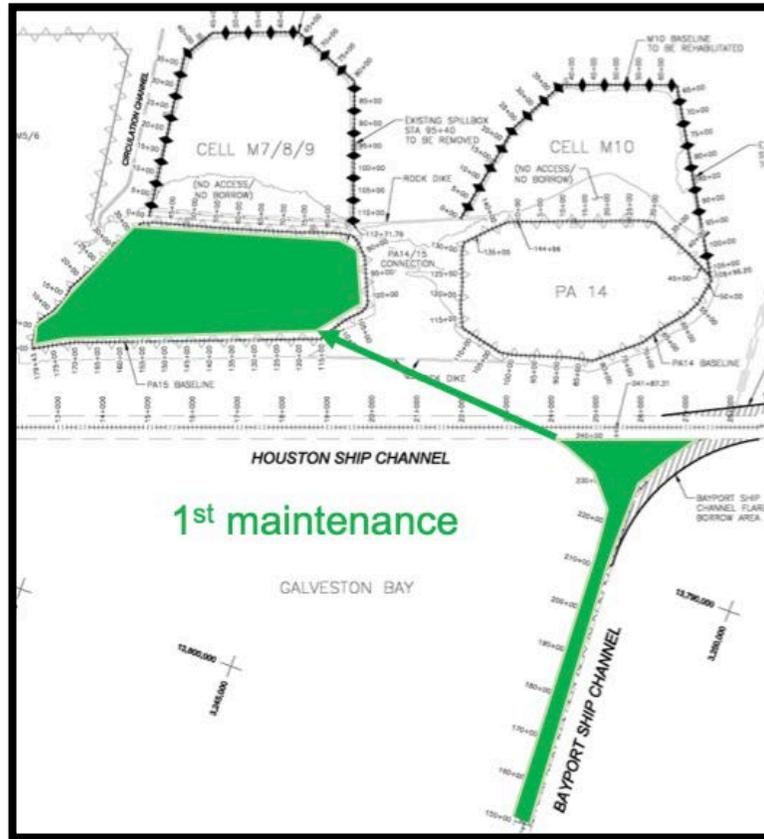


Maintenance Dredging



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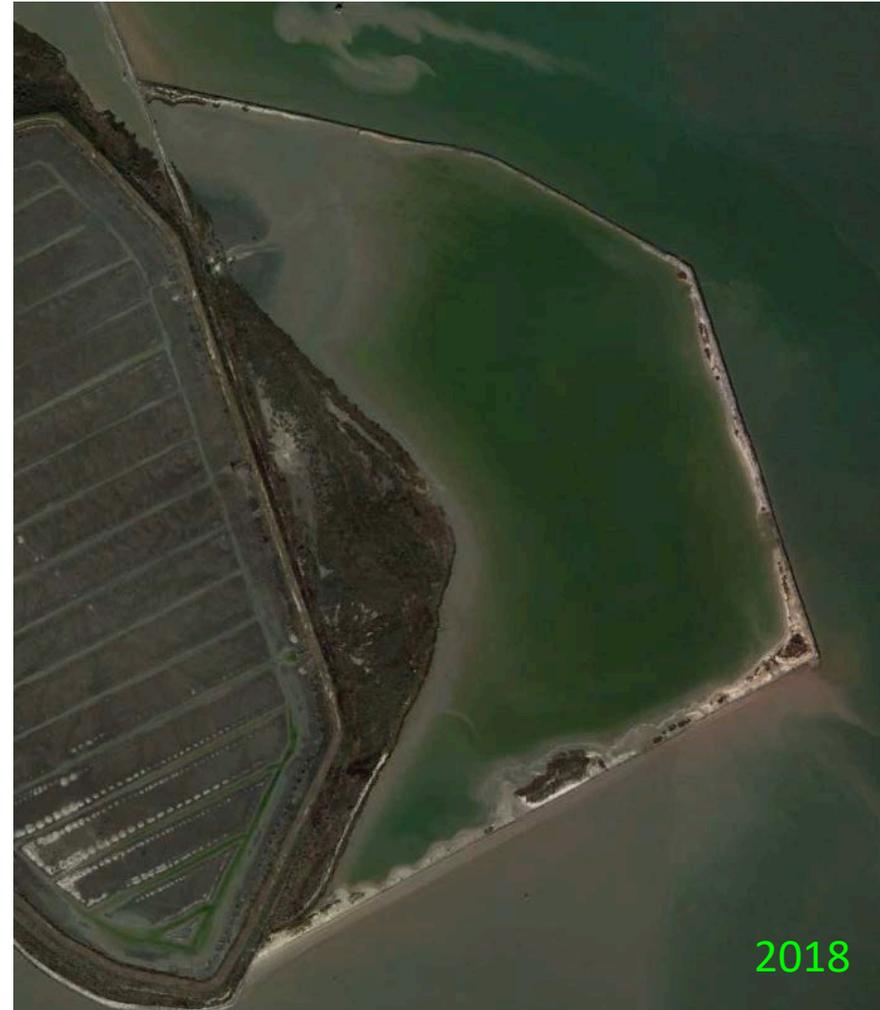
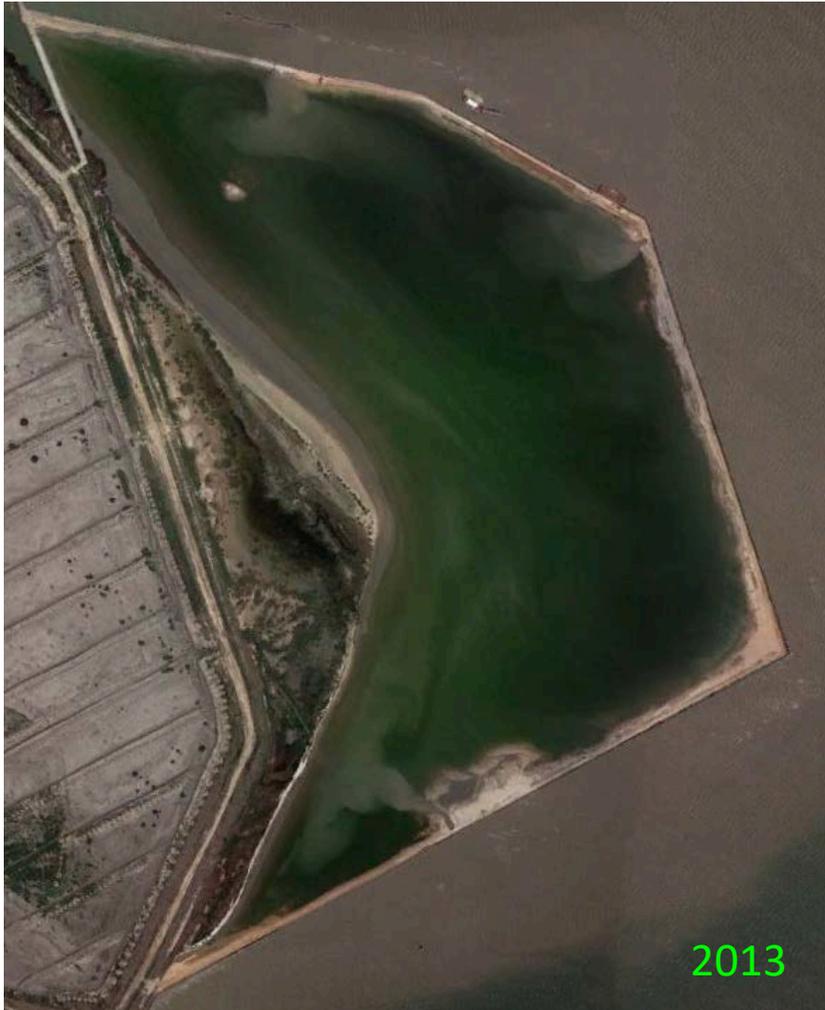
- First - Bayport channel in PA 15
- 2nd - Bayport flare and some of channel in M10



Pre Construction



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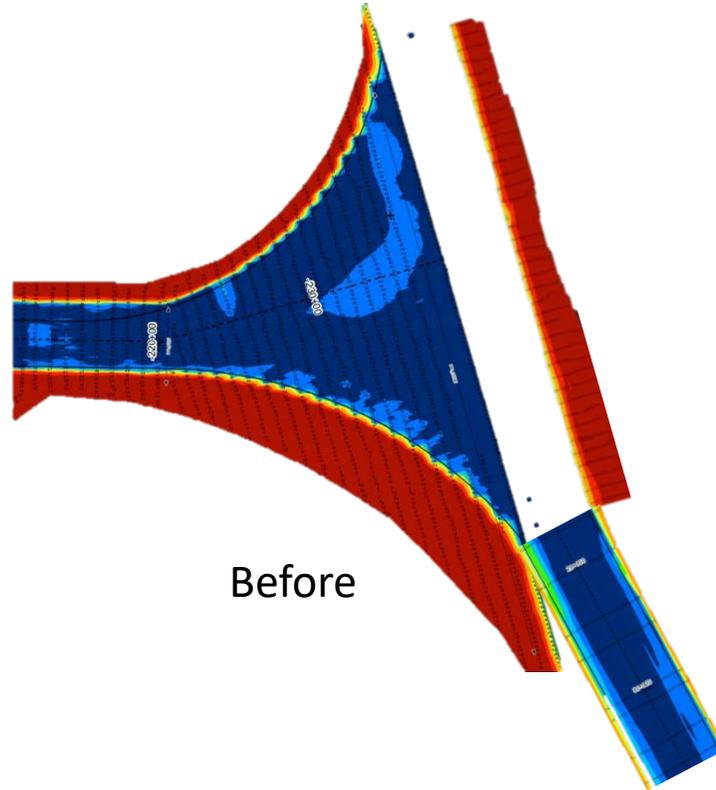
Post Construction



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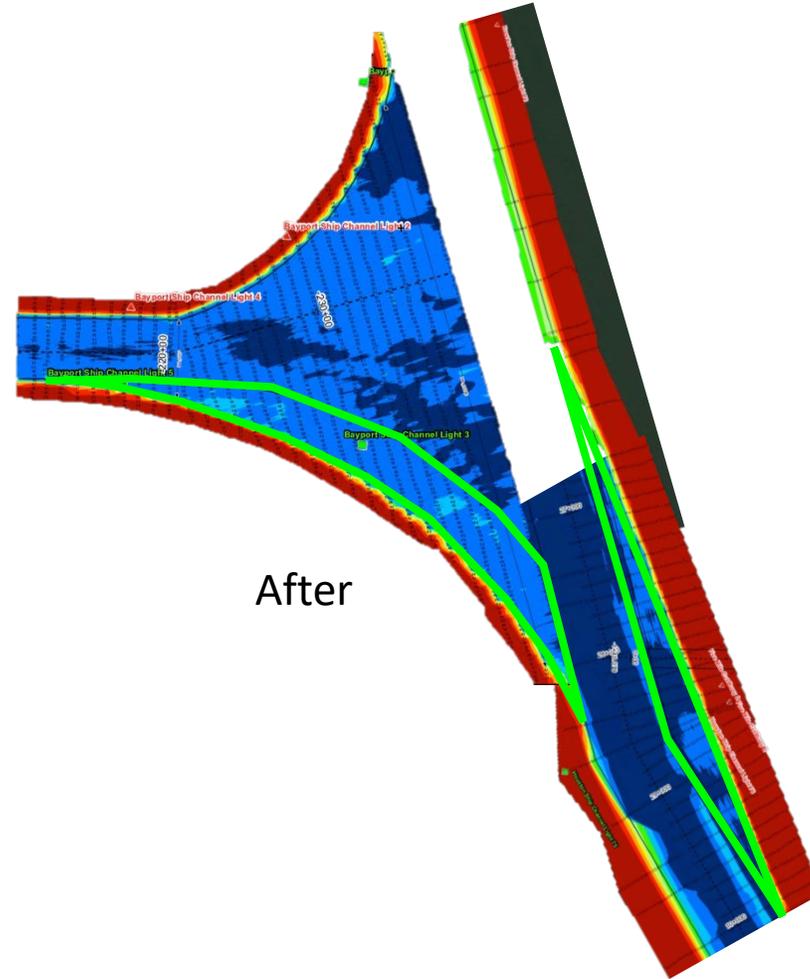
Bayport Flare Improvements



Bayport Flare Improvements



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After

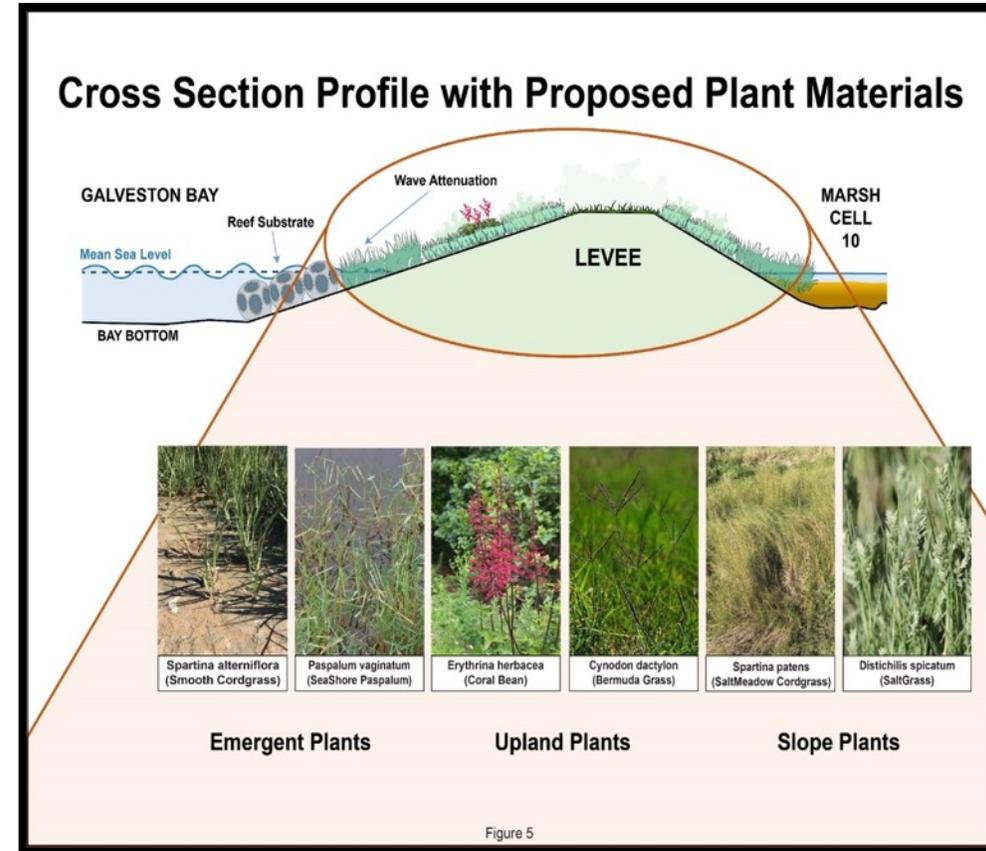
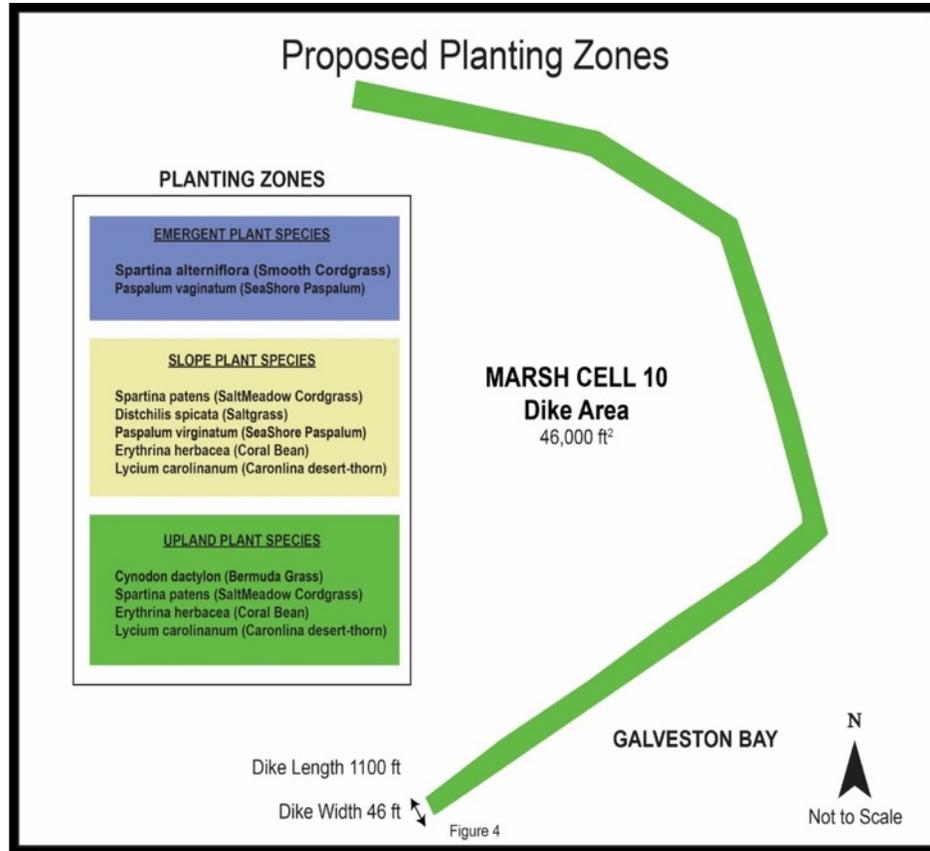
Monitoring



Test Plantings



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THANK YOU

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Project Manager

Port Houston

Questions?

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