

AIR AND WASTE MANAGEMENT ASSOCIATION

2023 SOUTHERN SECTION ANNUAL
MEETING & TECHNICAL
CONFERENCE

Mobile Harbor Update

27 SEPTEMBER 2023



US Army Corps
of Engineers ©





Mobile Harbor General Reevaluation Report (GRR)



2014 Alabama Port Authority requested Study

2015 Study Initiated

\$7.8M (50/50 Cost Share)

4 Years

2019 (July) Study Public Notice

Cost Estimate \$366M

Benefit-to-Cost Ratio 3.1

2019 (September) Record of Decision

2019 Initiated Preconstruction Engineering and Design

2020 Initiated Construction

75/25 Cost Share



Mobile Harbor By the Numbers



Recommend Plan:

Channel length improved: ~35 miles

Improvement: 5 feet deeper

New Work Volume: 24.1 mcy

(approximately 5.9 mcy O&M annually prior to deepening)

Cost: \$366M

To-date:

Channel length improved: ~20 miles

Improvement: 5 feet deeper

New Work Volume: 12 mcy

(approximately 4 mcy O&M included)

Cost: \$100M



Mobile Harbor Project Plan

- ❑ Channel Deepening: 50 feet Bay/ 52 feet Bar
- ❑ Channel Widening: 3 mi. long, 100 ft wide* **A**
- ❑ Turning Basin Modification **B**
- ❑ Bar Channel Bend Easing **C**



CONSTRUCTION STATUS

- Project Partnership Agreement (PPA): 17 Jun 2020
- First Contract (Phase 1) Awarded: 28 Sep 2020 - Complete
- Second Contract (Phase 3) Awarded: 21 Apr 2021- Complete
- Third Contract (Phase 4) Awarded: 11 July 2022 - Complete



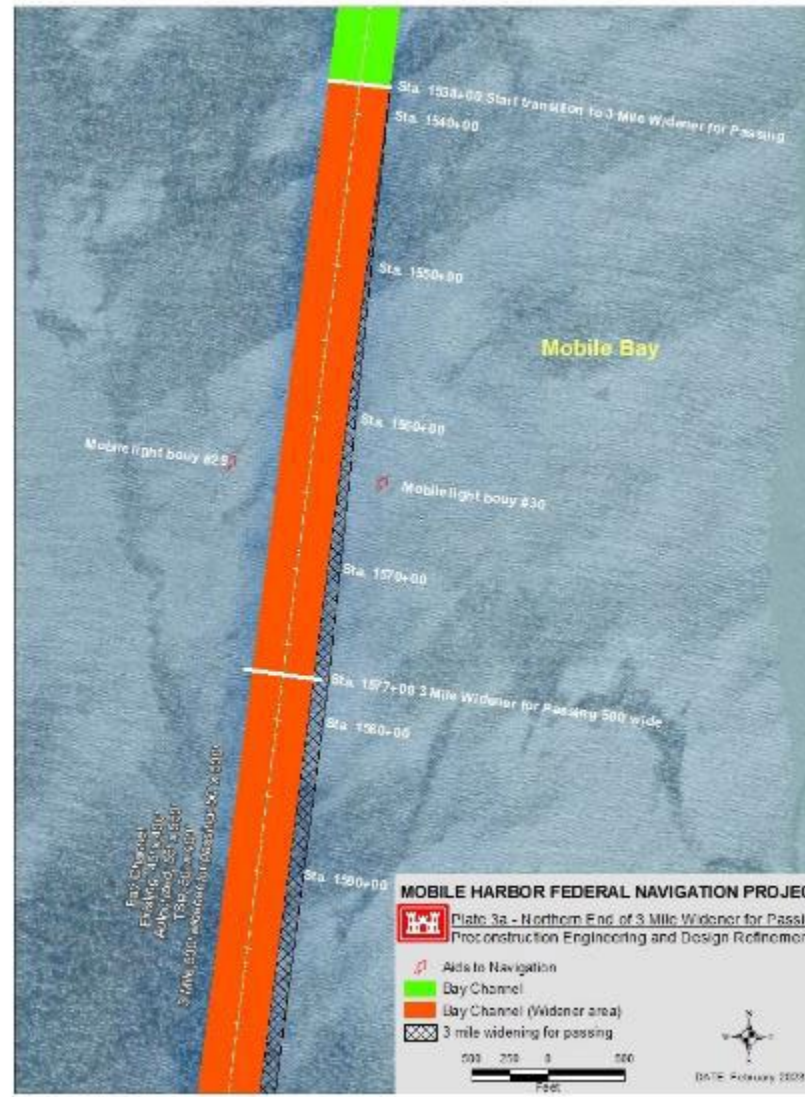
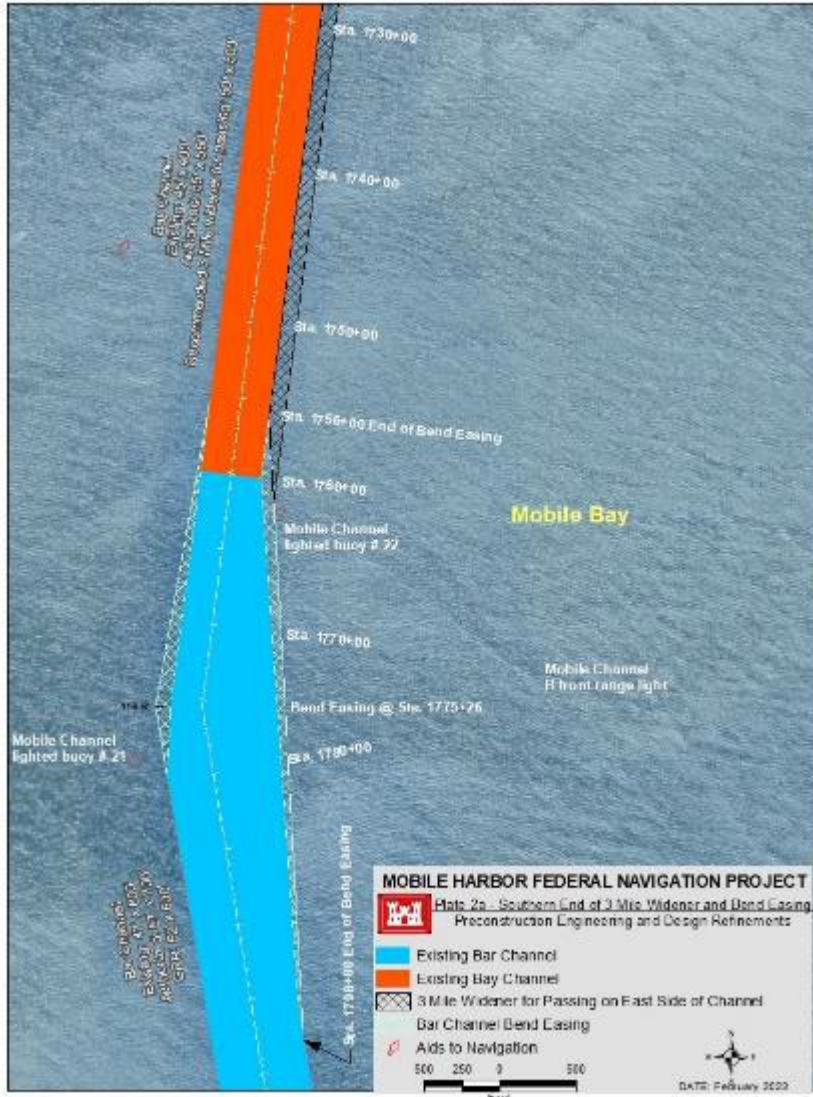
CONSTRUCTION PHASING

Phase 1: Bar Channel Deepening (Complete)	1.6MCY	Hopper/Pipeline
Phase 2a and 2b: Bar Channel & Bend Easings to 52' plus Widener	7.1MCY	Hopper 2
Phase 3: Deepening Lower Bay Channel (Complete)	6.1MCY	Hopper
Phase 4: Deepening remainder of Lower Bay Channel and portion of Upper Bay Channel (Complete)	6.1MCY	Hopper
Phase 5: Deepen Upper Bay Channel (Relic Shell)	4.6MCY	Pipeline 5
Phase 6: Turning Basin	2.1MCY	Bucket and Scow 6

TARGET CONSTRUCTION SCHEDULE

Phase 1	FY20 (Sep 2020)	6-9 month effort
Phase 2a	FY24 (2 nd quarter)	10-12 month effort
Phase 2b	FY24 (2 nd quarter)	10-12 month effort
Phase 3	FY21 (Apr 2021)	12-18 month effort
Phase 4	FY22 (July 2022)	15 month effort
Phase 5	FY24 (1 st quarter)	10-12 month effort
Phase 6	FY24 (2 nd quarter)	8-10 month effort

Mobile Harbor Phase 2 Design Refinements



Phase 2 Design:

- Bend Easing in the Bar Channel at Station 1775+26.
- 3 Mile Widener shift refinements to the East for Passing in Bay Channel.
 - No longer proposed due to pipeline location being verified.
- Ship Simulation confirmed design
- Concurrence needed for NEPA
 - Sediment analysis
 - Cultural Resources
- Data needed for design
 - Bundle 1 Pipeline vertical data

Phase 2 Construction Split:

- Due diligence needed for design requires construction segments to reduce period of performance.
 - Bay vs. Bar
 - Types of Material
 - Deepening vs. Easing/Widener

Mobile Harbor

Phase 6 Design Refinements



Phase 6 Design:

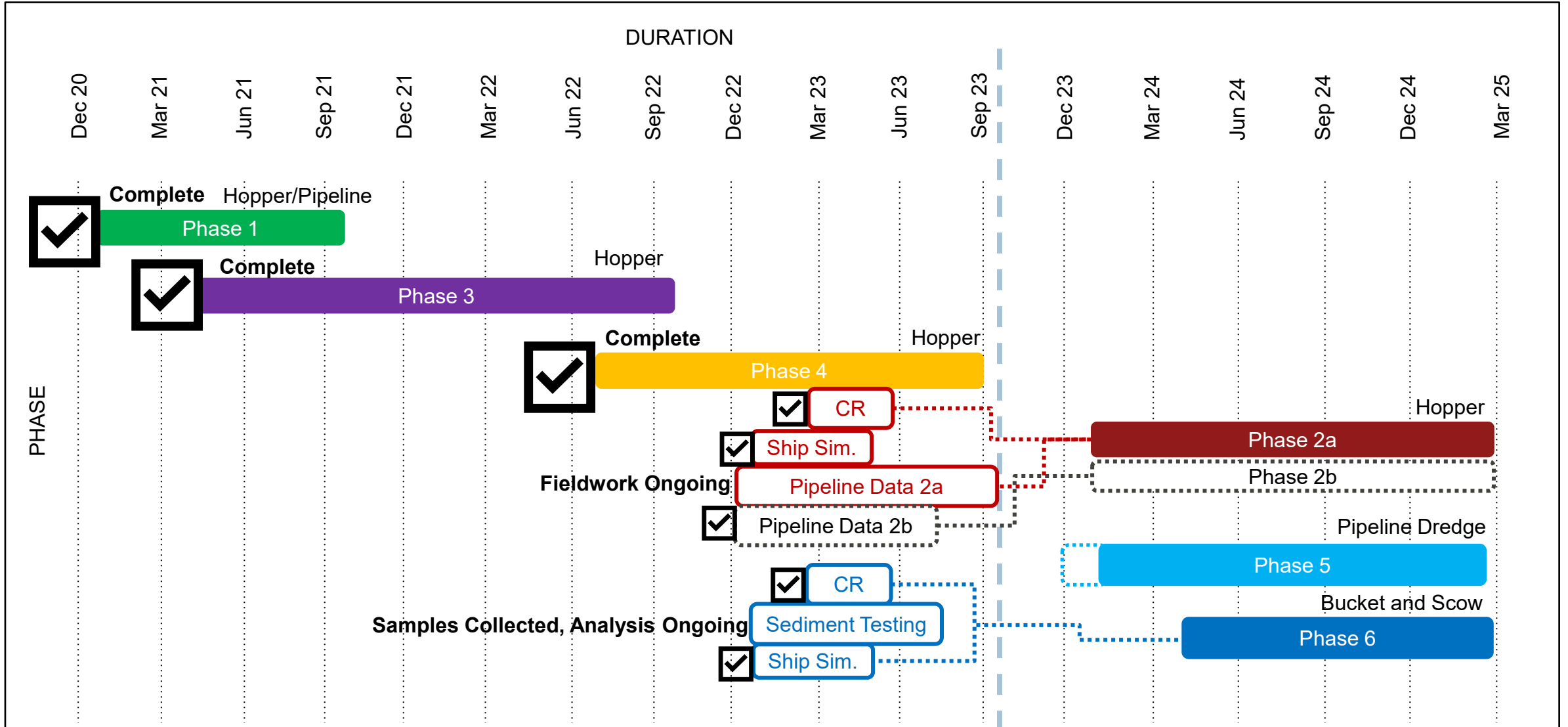
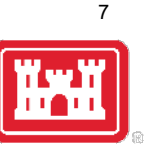
- ❑ Channel widener west and south of Little Sand Island
- ❑ Improves maneuverability for vessels accessing McDuffie Terminal and the Turning Basin
- ❑ Ship Simulation confirmed design
- ❑ Concurrence needed for NEPA
 - ❑ Sediment analysis
 - ❑ Cultural Resources

Phase 6 Construction:

- ❑ Material included in Phase 6 contract

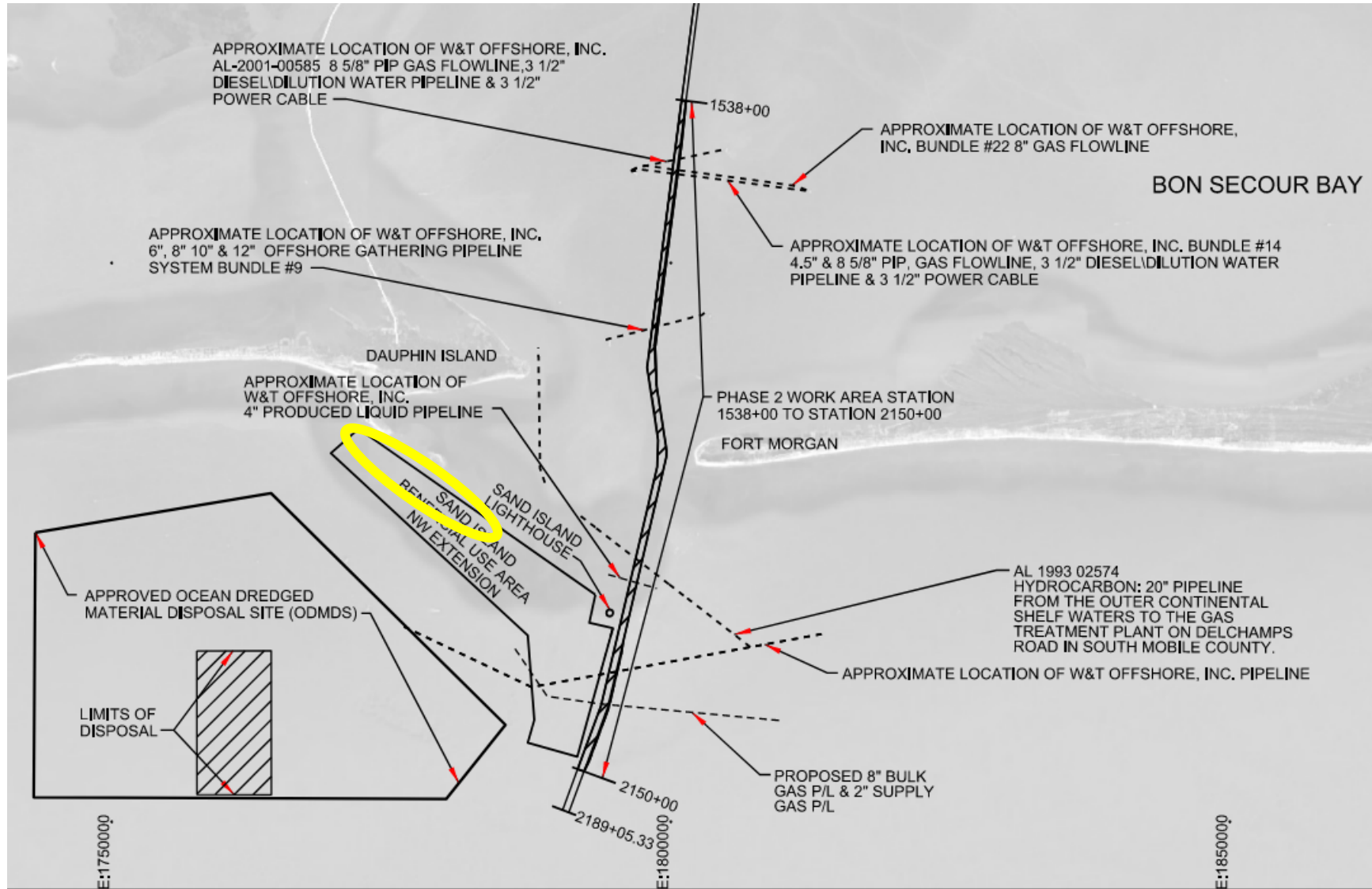


Mobile Harbor Target Construction Schedule





Mobile Harbor Phase 2a (Potential) Beneficial Use

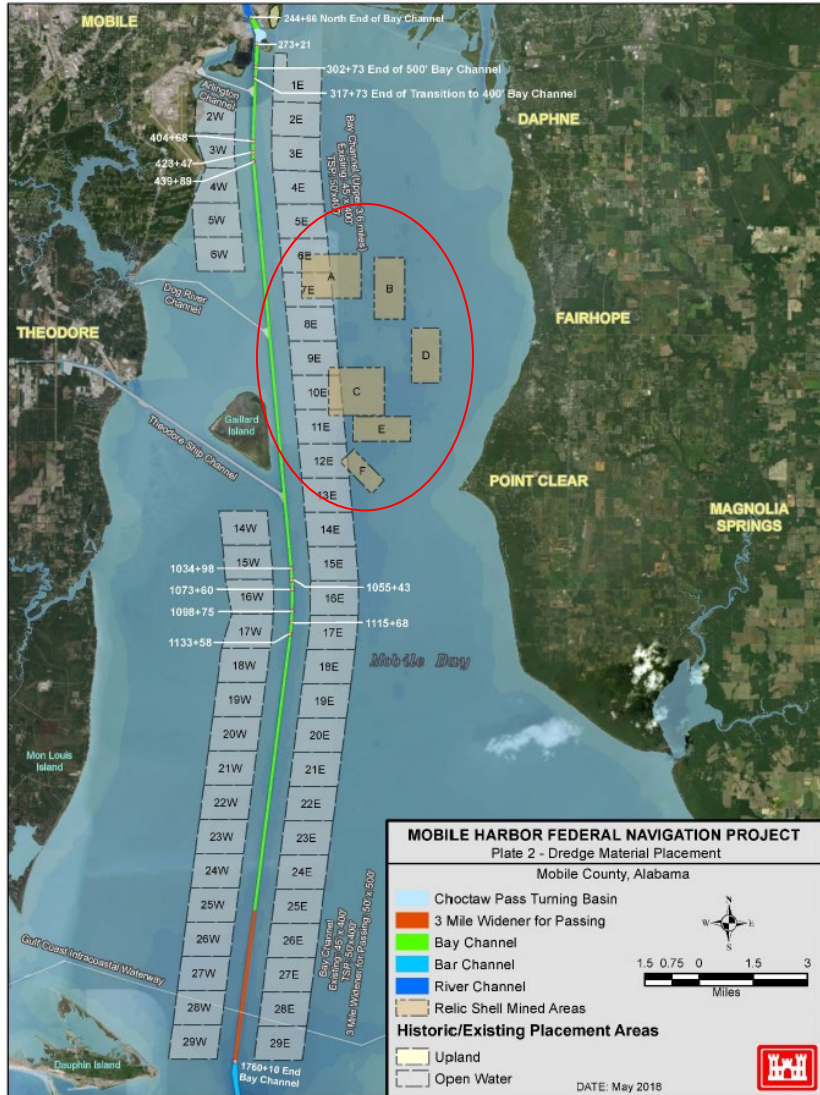


- Phase 2 Beneficial Use:**
- SIBUA NW Extension (near Pelican Key).
 - Additional geotechnical data being evaluated.
 - Feedback requested for construction elevations.



Mobile Harbor Phase 5 Beneficial Use: Relic Shell Mined Areas

Placement Areas



Relic Shell Placement (Phase 5):

- ❑ 5 placement areas
- ❑ Water depths shallow (~ 9 to 14 ft deep)
- ❑ Target lift thickness 1.5ft (not to exceed 3ft)
- ❑ Material from Upper Bay Channel:
 - Primarily poorly graded fine to coarse sands with varying amounts of silt, clay, and gravel (SP, SW, SM, SC) with occasional clay lenses

	Area (acres)	Estimated Site Placement Capacity (CY)	Estimated New Work Dredged Volume (CY)	Approximate Distance (ft) From Channel
A ¹			0	10,000
B	920	2,226,000	1,237,000	18,000
C	1306	3,161,000	1,756,000	12,000
D	770	1,863,000	1,035,000	22,000
E	702	1,699,000	944,000	16,000
F	403	975,000	542,000	12,000
Total	4101	9,924,000	5,514,000	

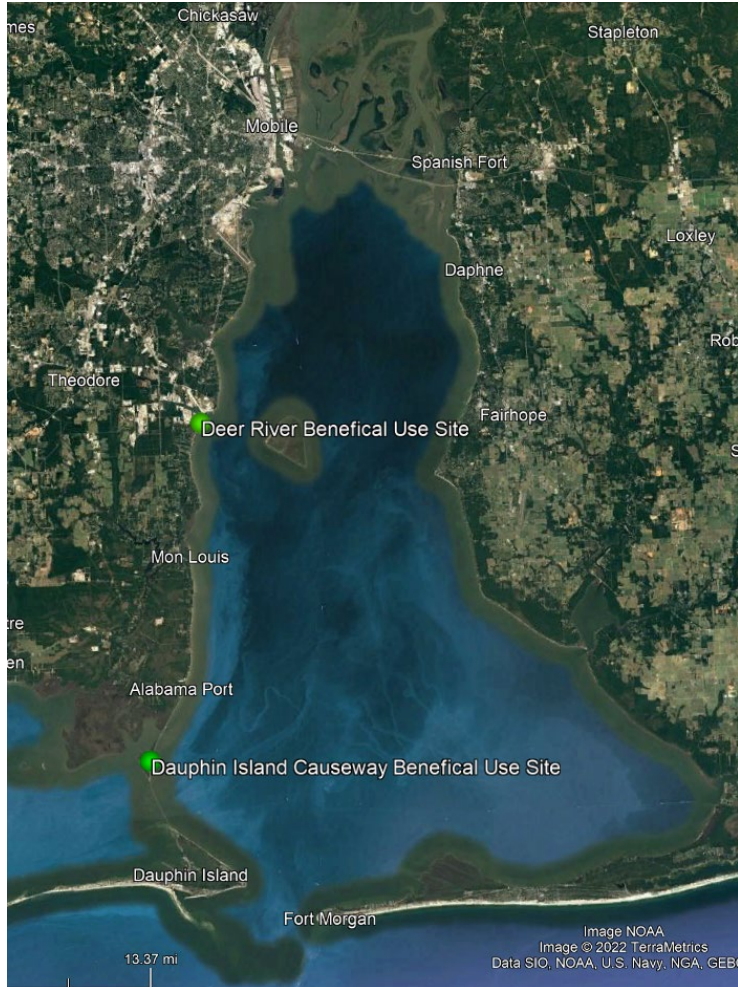
Notes:

- 1) Area A is located within the bounds of existing open water placement sites used for operation and maintenance material and was therefore not considered here for new work.
- 2) The volumes are computed based on a relative difference in surface area. These placement volumes do not reflect the available capacity based on the 3 foot tolerance.

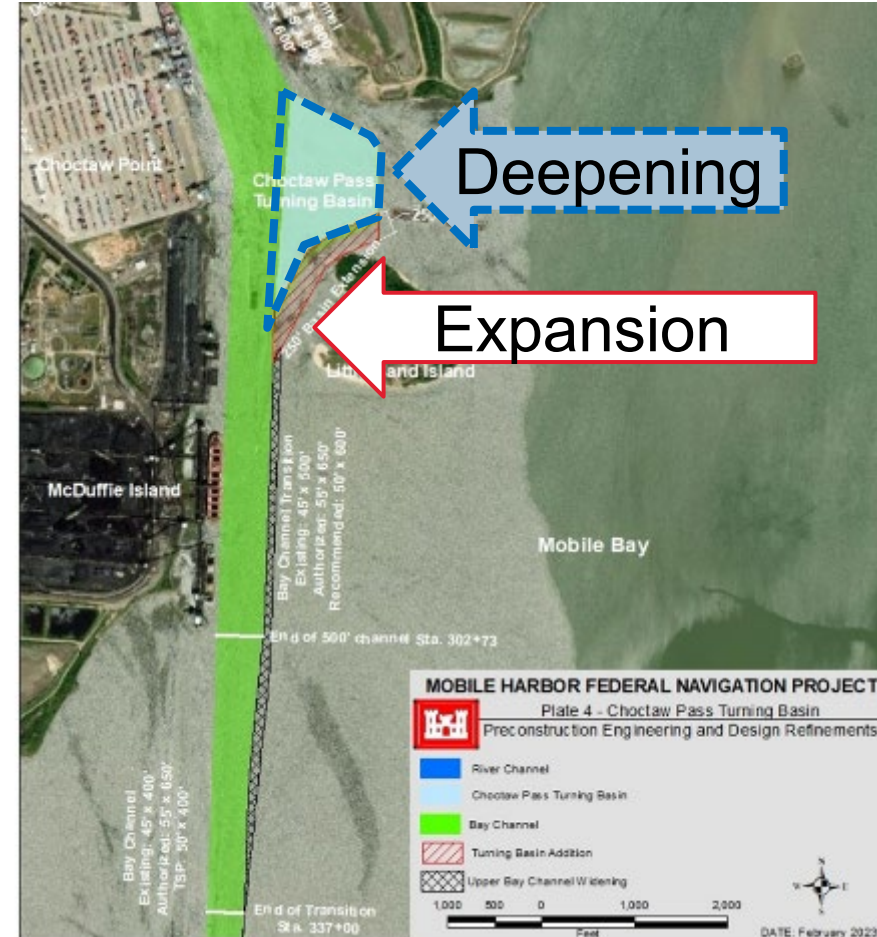
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Phase 6 Beneficial Use: Dauphin Island Causeway and Deer River

Beneficial Use Site Locations



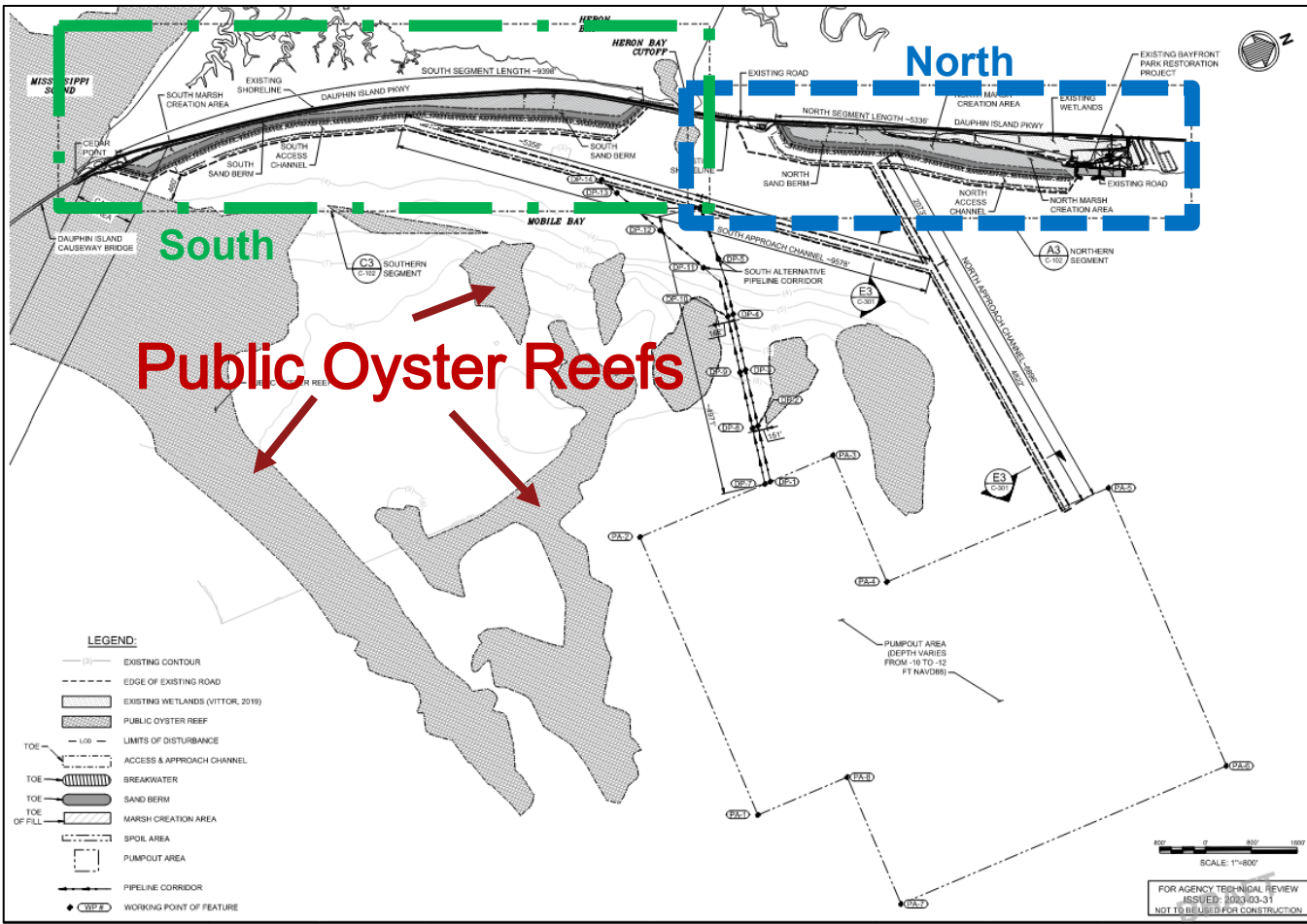
Turning Basin Modifications





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Phase 6 Beneficial Use: Dauphin Island Causeway Project



- Dauphin Island Causeway (Phase 6):**
- ❑ Material from Turning Basin:
 - Historical predominantly sandy/coarse grained materials (SP, SW, SP-SM, SM)
 - Boring logs provided
 - ❑ 2 placement areas
 - ❑ Oyster Habitat nearby
 - ❑ Water depths shallow (~ 2 to 10 ft deep)
 - ❑ Pump out area -10 to -12 ft elevation
 - ❑ Distance from turning basin down the channel ~ 25 miles
 - ❑ Channel to the placement areas ~6 miles

- Environmental:**
- ❑ Pre/Post Surveys
 - ❑ Turbidity Monitoring

Project Proponent:
Mobile County

Designer:
Moffatt & Nichol

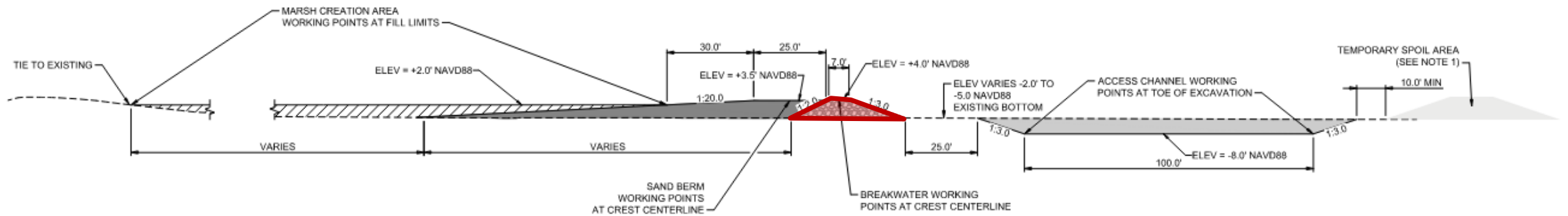




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Phase 6 Beneficial Use: Dauphin Island Causeway Project



D1 BENEFICIAL USE PLACEMENT TYPICAL SECTION - NORTHERN SEGMENT
C-102 SCALE: 1" = 20' VERTICAL EXG.: 1:1

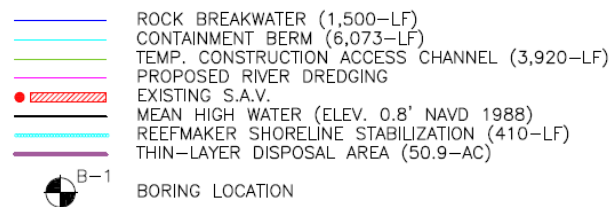
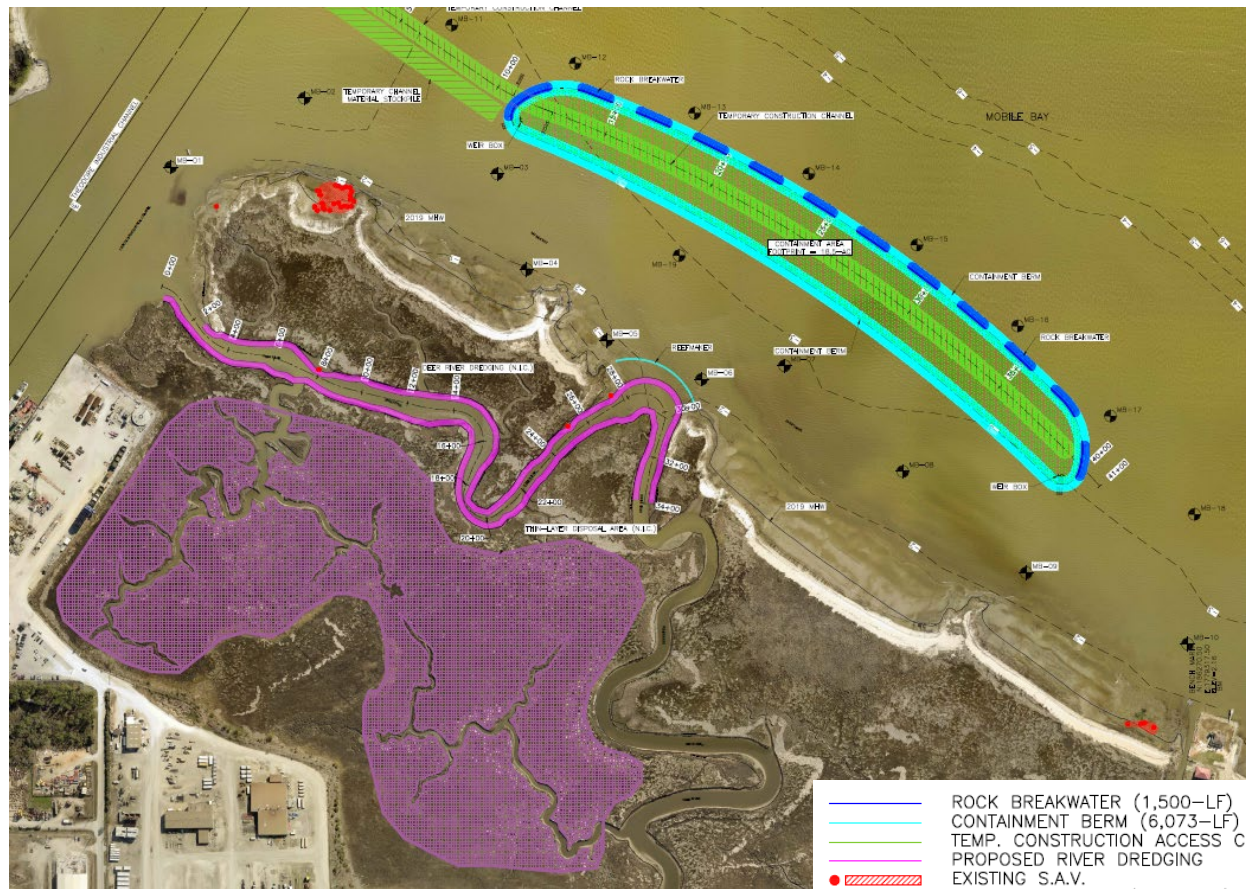
Dauphin Island Causeway (Phase 6):

- Breakwaters to be constructed by others
- Sand berm and marsh fill components
- Prioritize sand from Turning Basin to construct sand berm
- +/- 6-inch tolerance



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Phase 6 Beneficial Use: Deer River Project



Deer River (Phase 6):

- 1 placement site approximate 20 acres
- Submerged Aquatic Vegetation (SAV) nearby
- Water depths shallow (~ 2 to 10 ft deep)
- Distance from turning basin
 - down the channel ~ 15 miles
 - Theodore Ship Channel ~5 miles
- Material from Turning Basin:
 - Historical predominantly sandy/coarse grained materials (SP, SW, SP-SM, SM)
 - Boring logs provided

Environmental:

- Pre/Post Surveys
- Turbidity Monitoring

Project Proponent:
Mobile Bay National Estuary Program



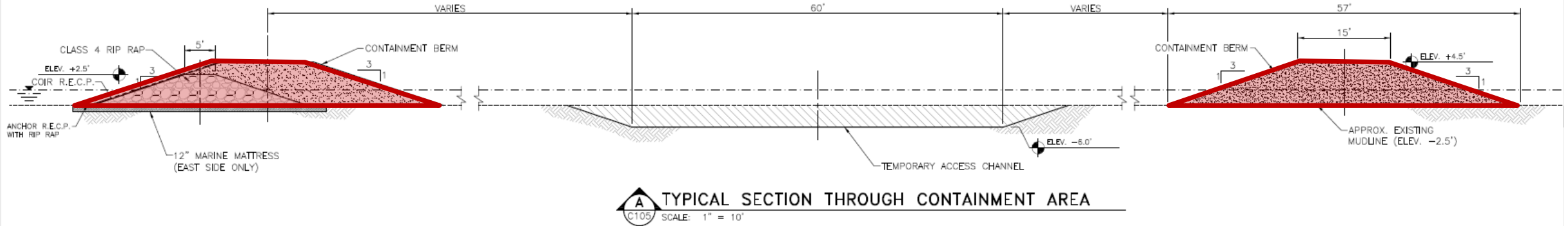
Designer: Thompson





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Phase 6 Beneficial Use: Deer River Project



Deer River (Phase 6):

- Containment berm to be constructed by others
- Approximately 210,000 yd³ from turning basin
- Material above approximately -30 feet in the turning basin expansion
- +/- 1.5 foot tolerance

Project Proponent:
Mobile Bay National Estuary Program



Designer: Thompson





Mobile Harbor

