

Fowl River Marsh and Shoreline Stabilization and Restoration



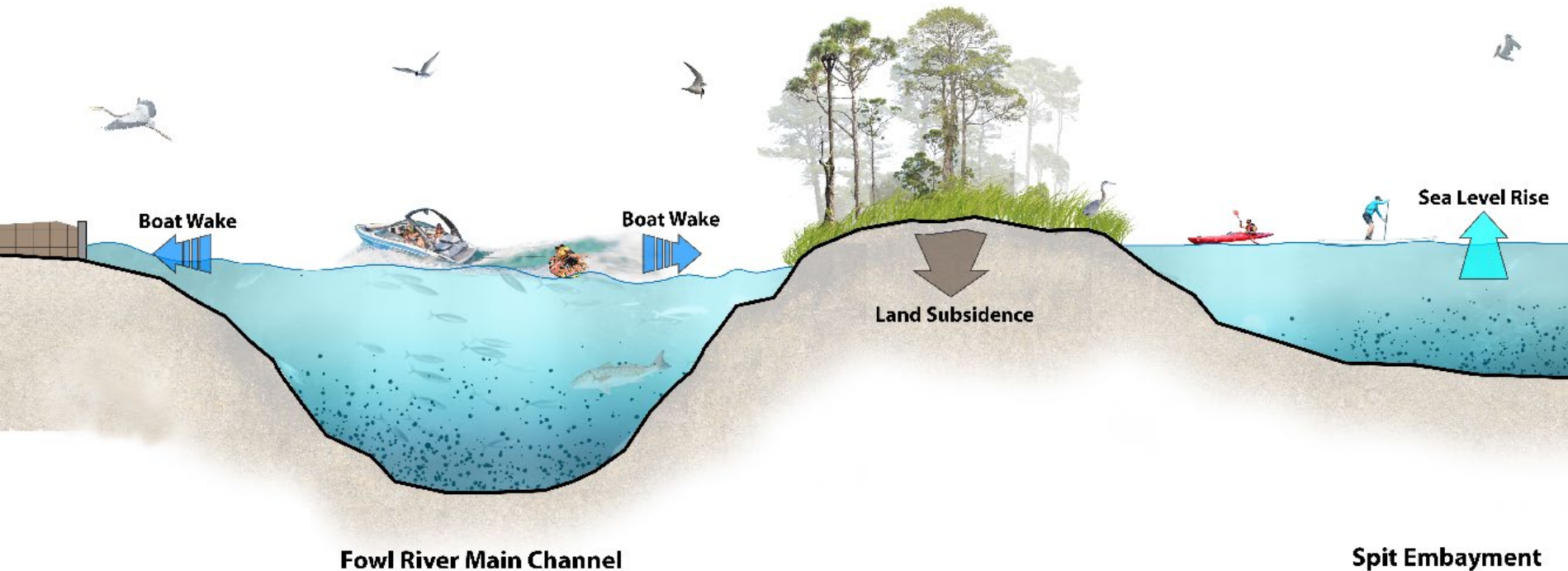
Design Alternatives

February 8, 2020



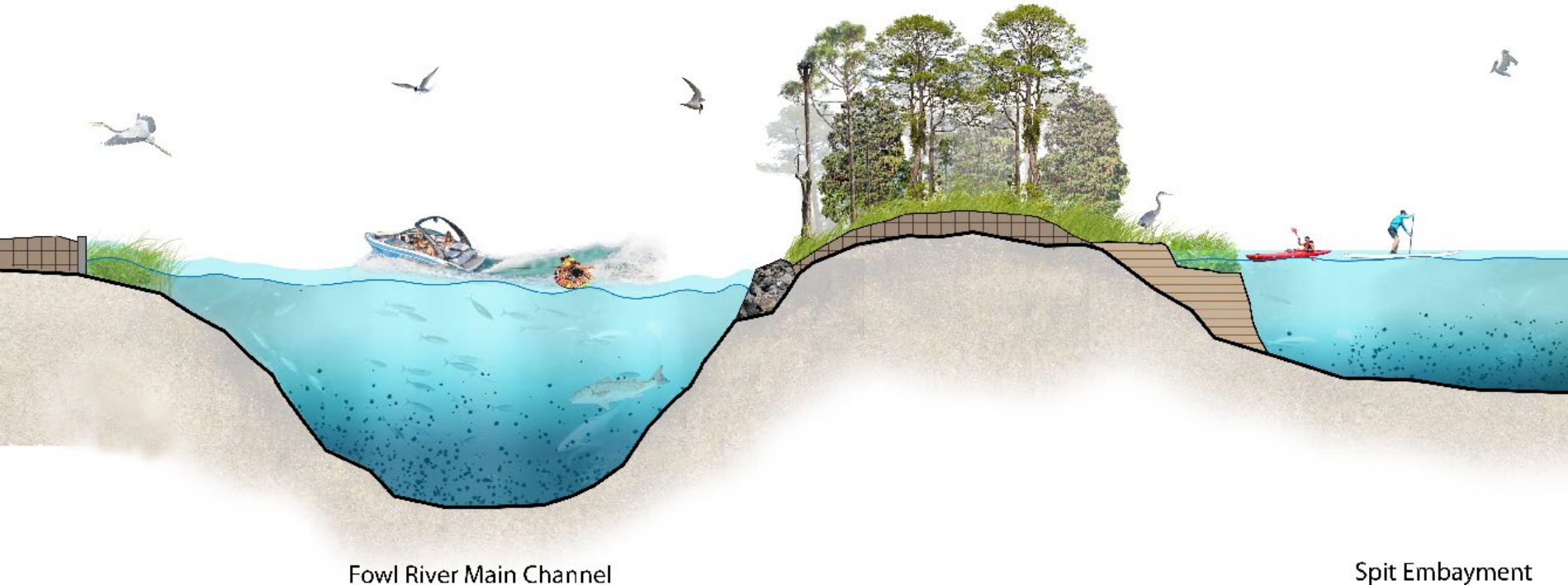
Understand the system to inform design

- Stressors/Issues
 - Sediment delivery—more coming from bay than upstream
 - Subsidence and sea level rise—marshes drowning in place
 - Salinity
 - Boat wakes
 - Existing bulkheads



Vision

- A holistic, nature-based engineering approach to:
 - Stabilize coastal spits and shorelines
 - Restore and enhance habitat
 - Provide long-term sustainability of ecosystem services
 - Support estuarine living resources and the Fowl River Community



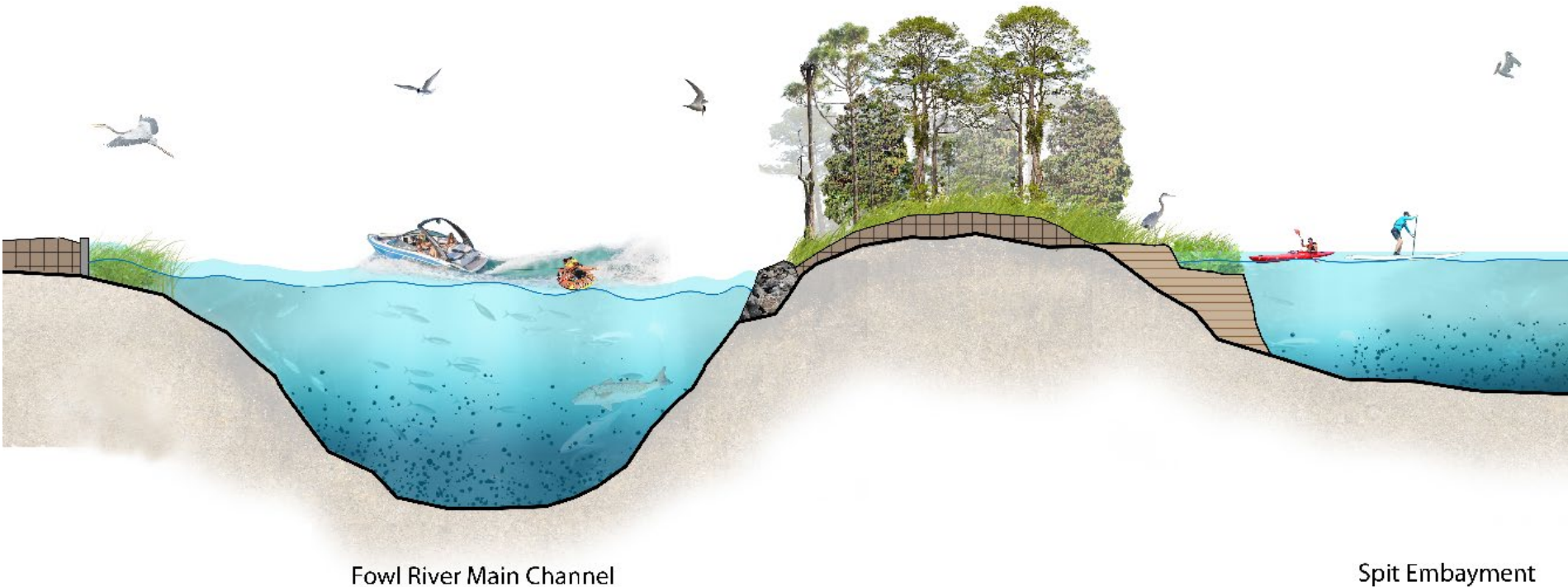
Project Schedule

- Data review
- Environmental assessment
 - Topographic and bathymetric surveys
 - Geotechnical investigations
 - Habitat assessments
- Permitting
- Engineering
 - 30% Design
 - Alternatives Analysis



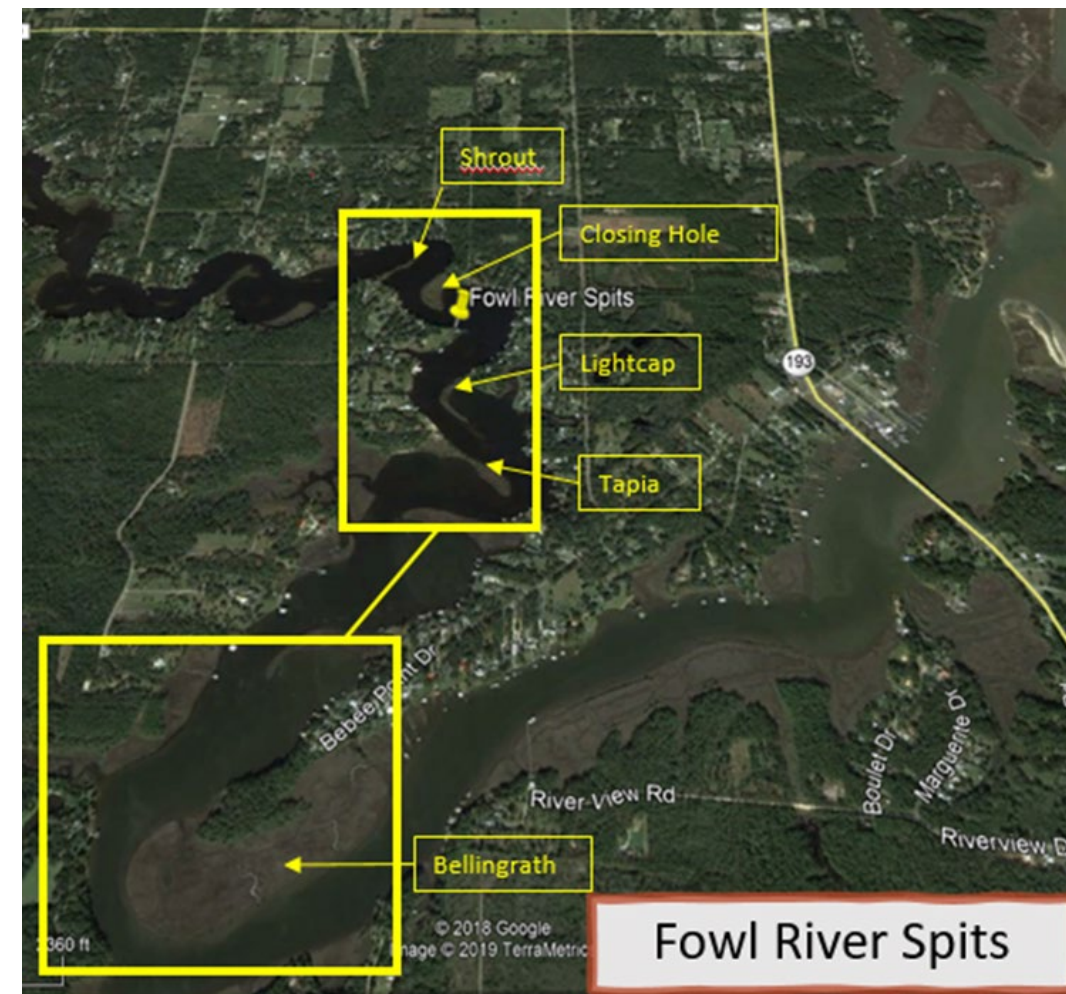
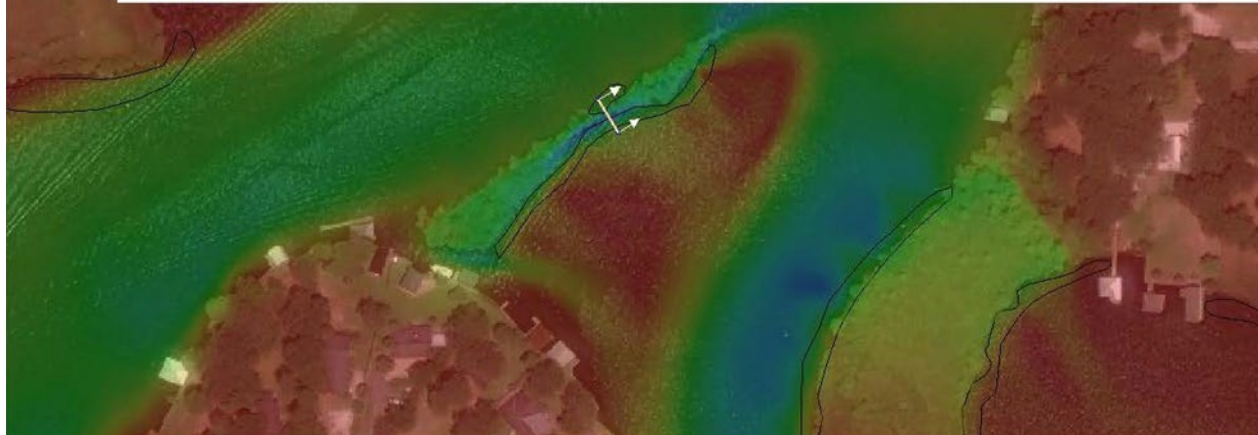
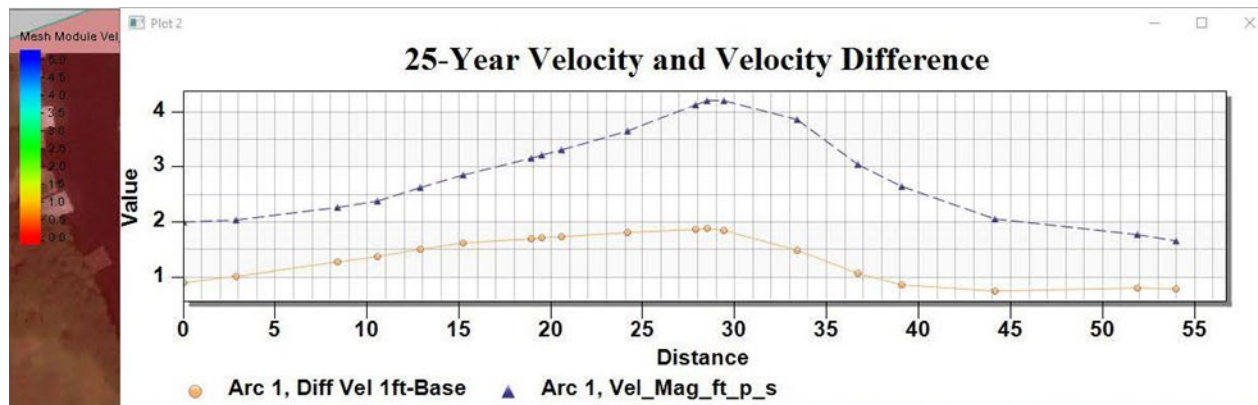
Challenges

- Extensive SAV footprint around priority spits
- Regulatory agencies concern over SAV impacts
- Geotechnical investigations revealed soft sediments
- Funding considerations



Addressing Challenges

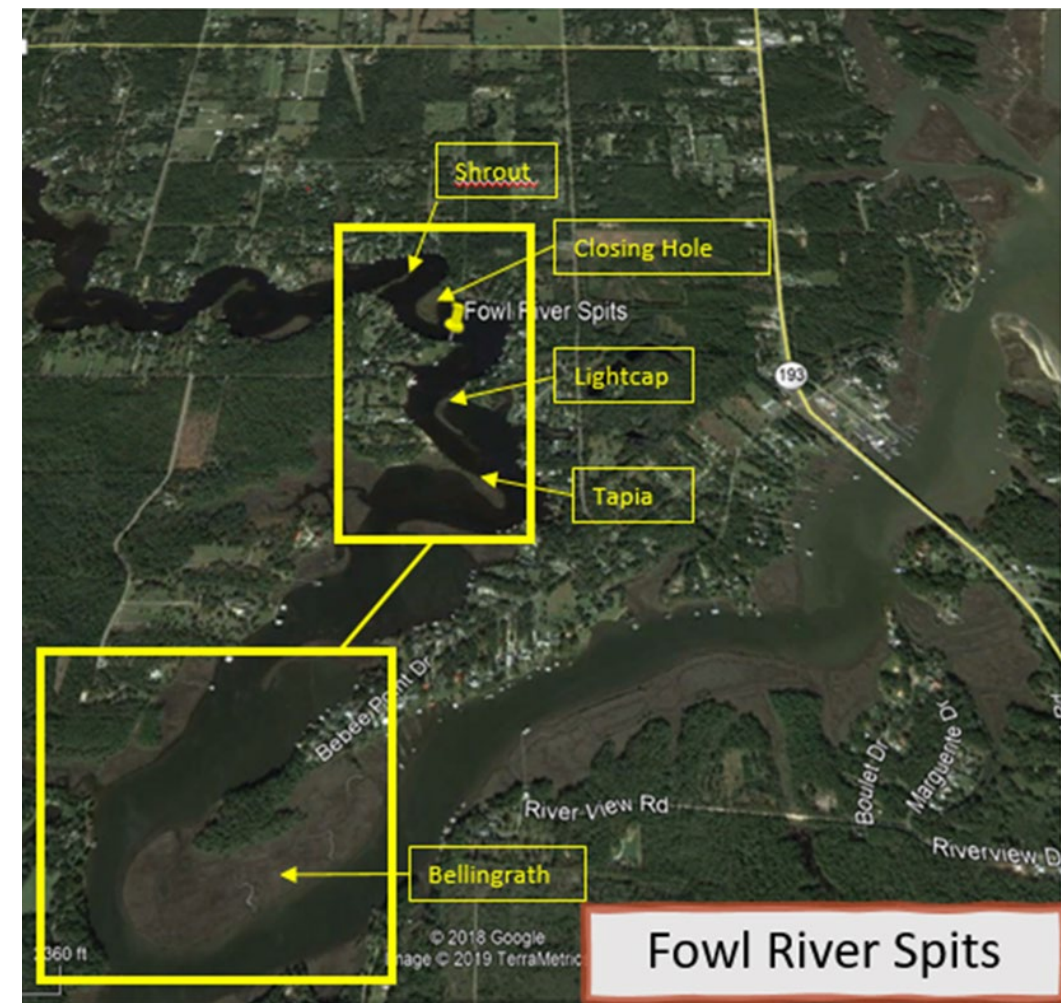
- Funding considerations
 - Original project footprint had high cost per acre construction fees
 - Modeling analysis to prioritize restoration locations



- Protect 7,600 12,600 feet of shoreline
- Restore and enhance 52 acres coastal marsh

Addressing Challenges

- Extensive SAV footprint around priority spits
 - Regulatory agencies concern over SAV impacts
 - Potential loss to SLR and increased velocities
- Geotechnical investigations revealed soft sediments
- Modeling Supported Decisions
 - Engineer with nature approach to assist marsh health
 - Stabilization structures only where needed
 - Phased and adaptive approach to construction



Proposed Solutions

- Phased Adaptive Approach
 - Thin layer sediment placement
 - Limited shoreline stabilization
 - Coir logs and hay bales
 - Timber wave screens
 - Riprap



Proposed Solutions

- Phased adaptive approach:
 - Construction Phase I
 - Initial treatment:
 - 6"-8" thin layer sediment placement at all spits
 - Rip rap and timber structures at Shrout
 - Partial timber structures at Lightcap, Tapia, and Bellingrath
 - Secondary treatment after monitoring:
 - 6"-8" of thin layer placement on all spits after 2 years
 - Additional structure installation is dependent upon monitoring results

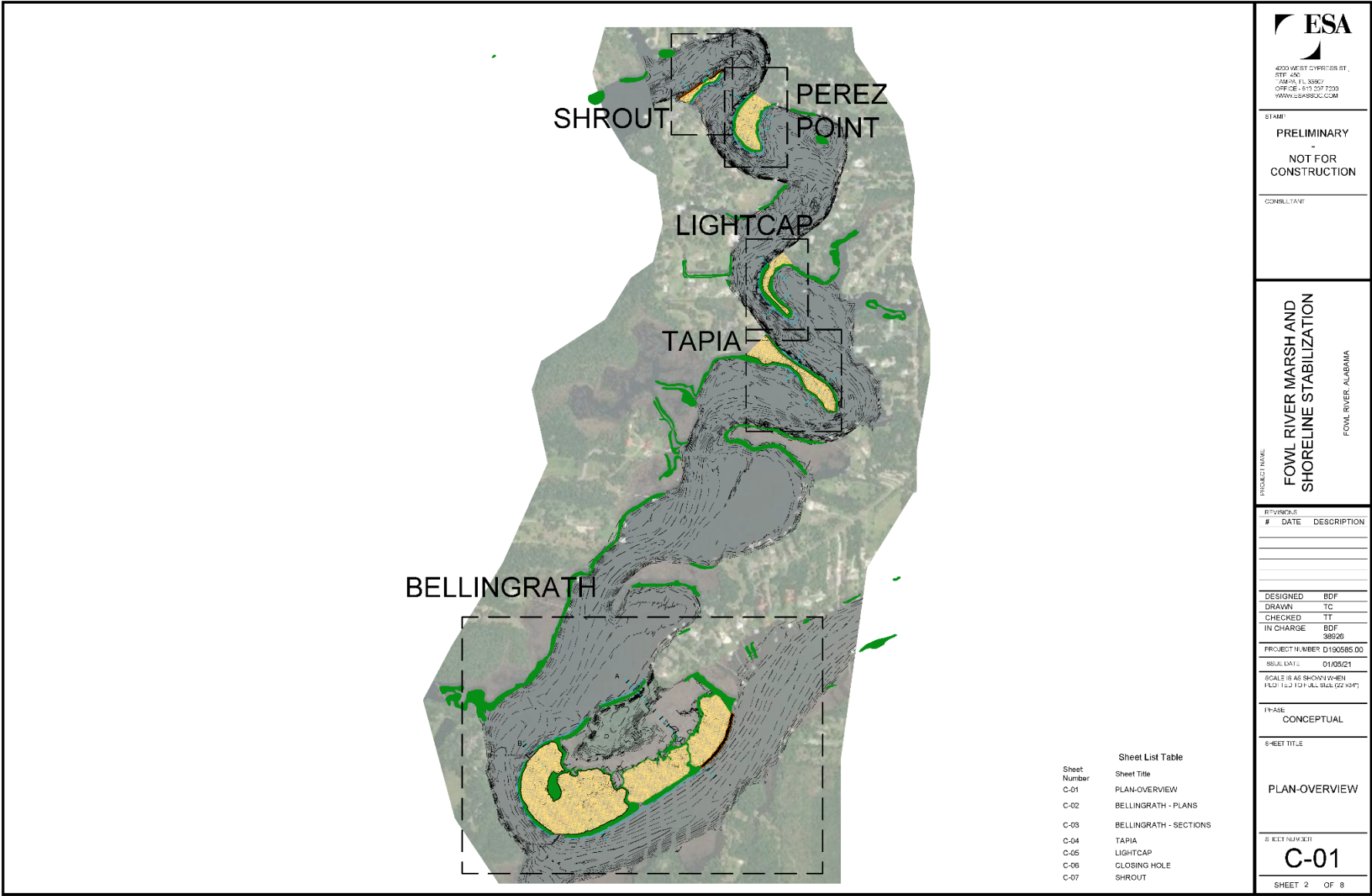


Proposed Solutions

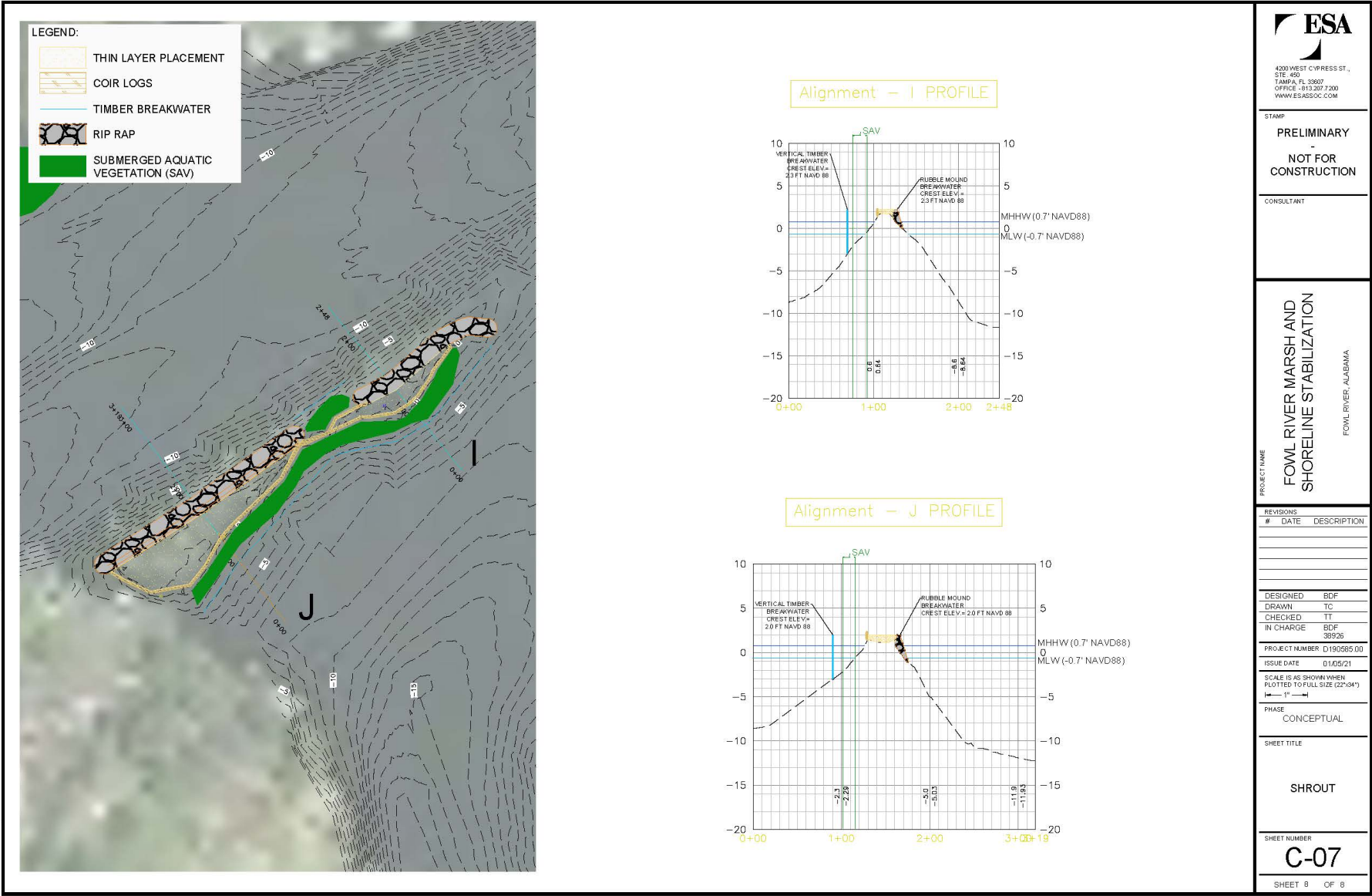
- Phased adaptive approach:
 - Construction Phase II – Adaptive Management
 - Third treatment:
 - 6"-8" of thin layer placement on all spits 1-2 years after second treatment is complete
 - Additional structure installation is dependent upon monitoring results
 - Fourth treatment:
 - If necessary, thin layer placement on select spits 1-2 years after third treatment is complete.
 - Additional structure installation is dependent upon monitoring results



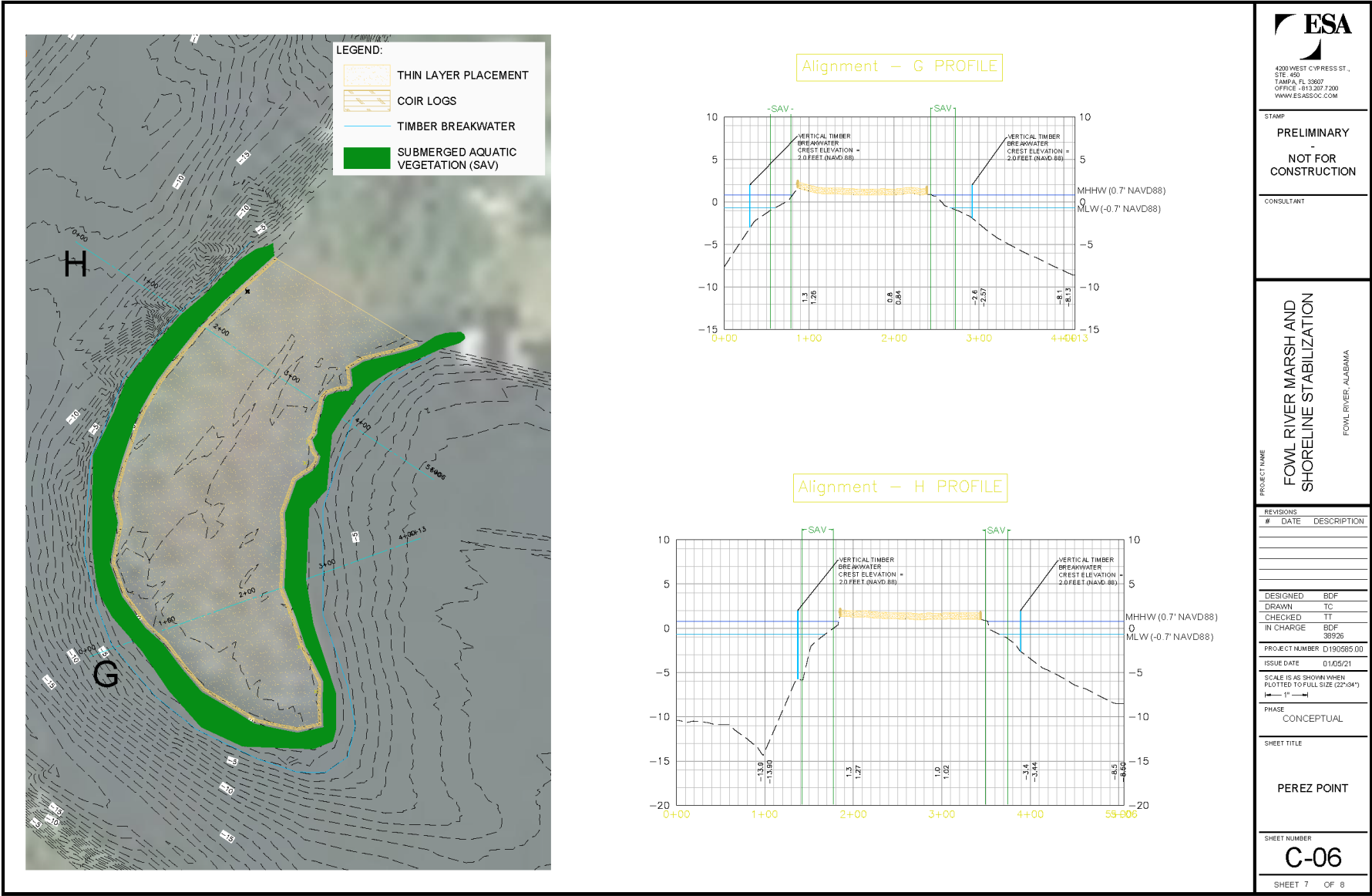
Proposed Solutions - Overview



Proposed Solutions - Shrout



Proposed Solutions – Perez Point



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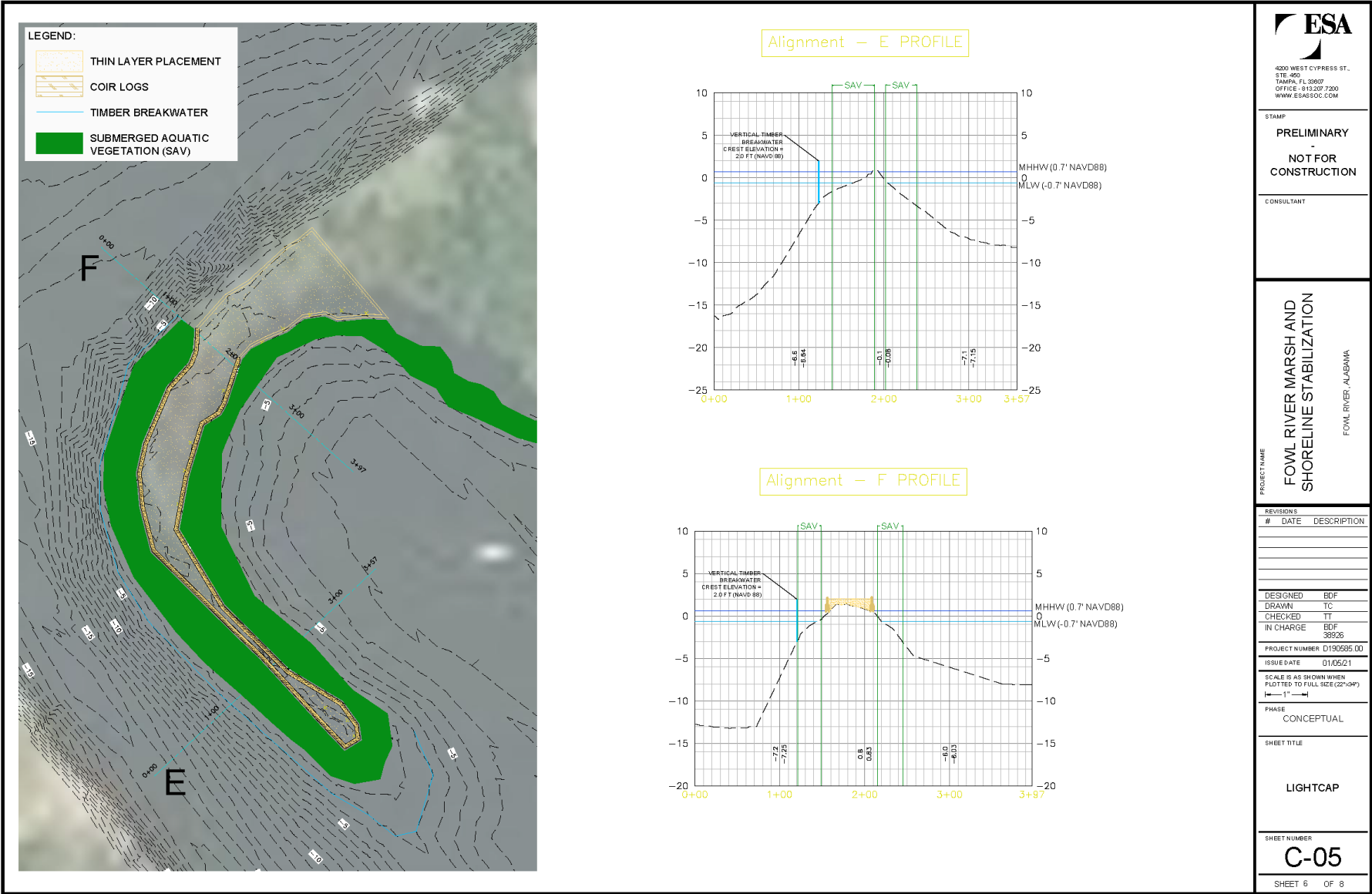
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CONSULTANT

PROJECT NAME
FOWL RIVER MARSH AND
SHORELINE STABILIZATION
FOWL RIVER, ALABAMA

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DESIGNED	BDF		
DRAWN	TC		
CHECKED	TT		
IN CHARGE	BDF		
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PROJECT NUMBER	D190585.00		
ISSUE DATE	01/05/21		
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1" =			
PHASE	CONCEPTUAL		
SHEET TITLE			
Perez Point			
SHEET NUMBER	C-06		
SHEET 7 OF 8			

Proposed Solutions – Lightcap



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SHEET TITLE

LIGHTCAP

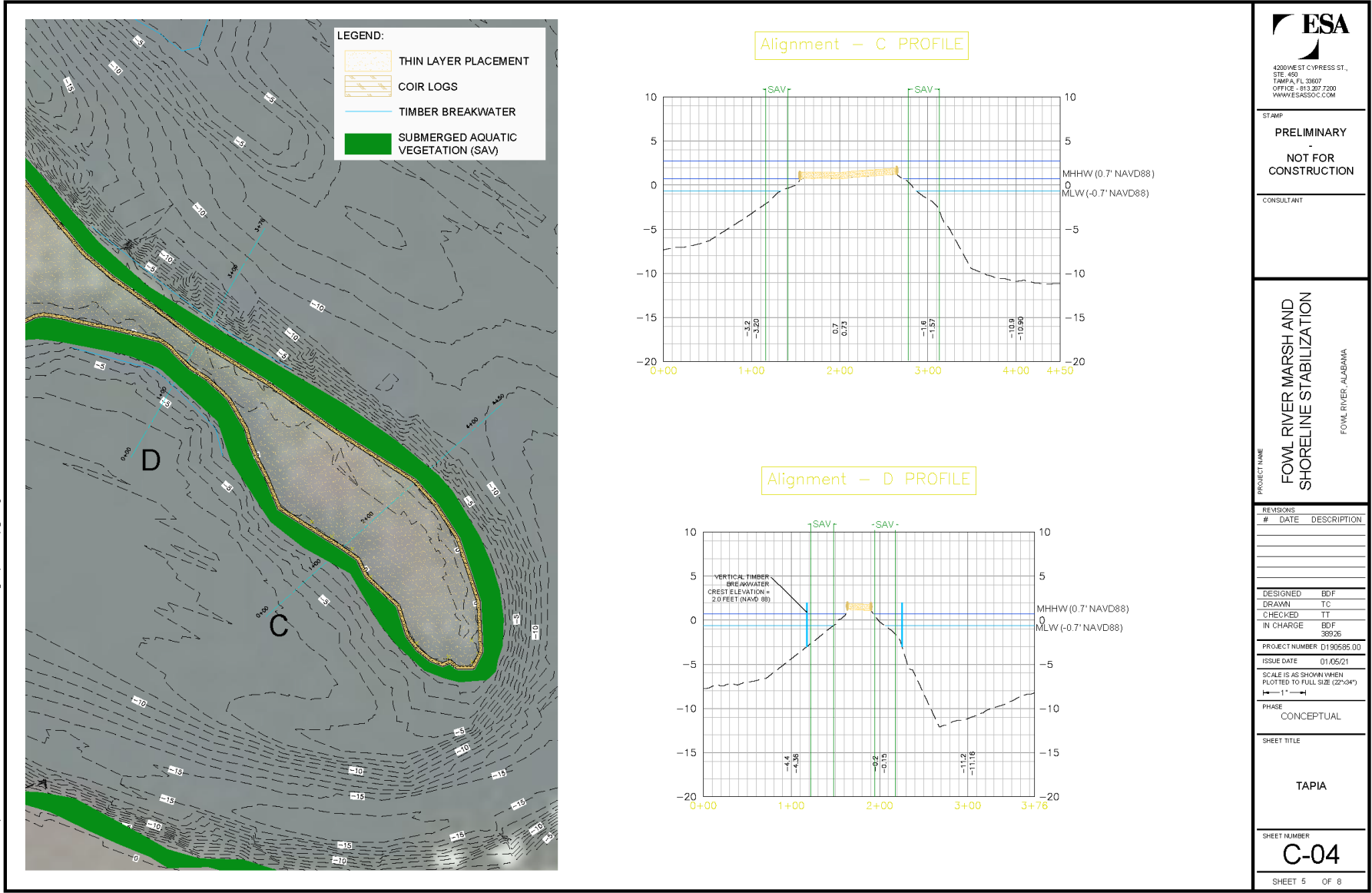
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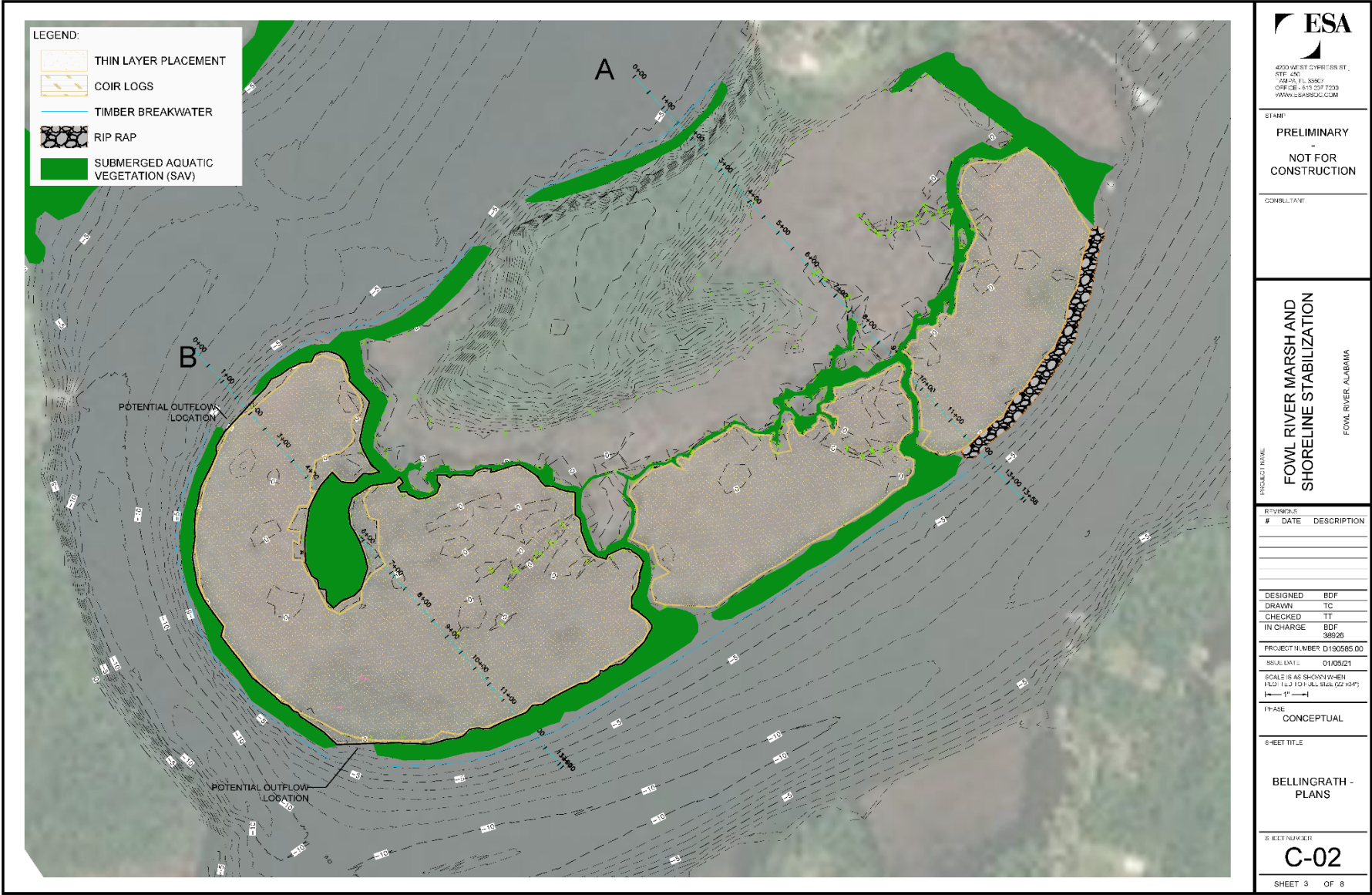
SHEET 6 OF 8



Proposed Solutions – Tapia



Proposed Solutions



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SECTIONS

QUESTIONS

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SHEET 4 OF 8



Next Steps

- Submit permit application
- Move to 60% and 100% design

