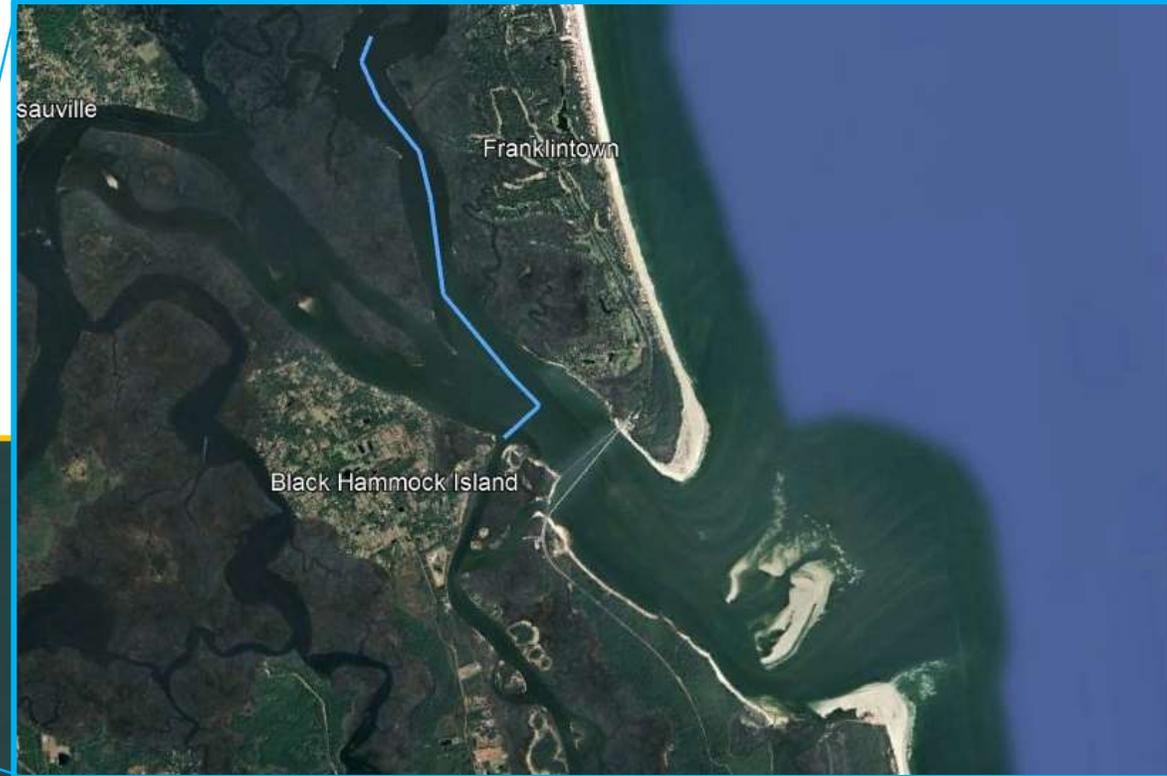
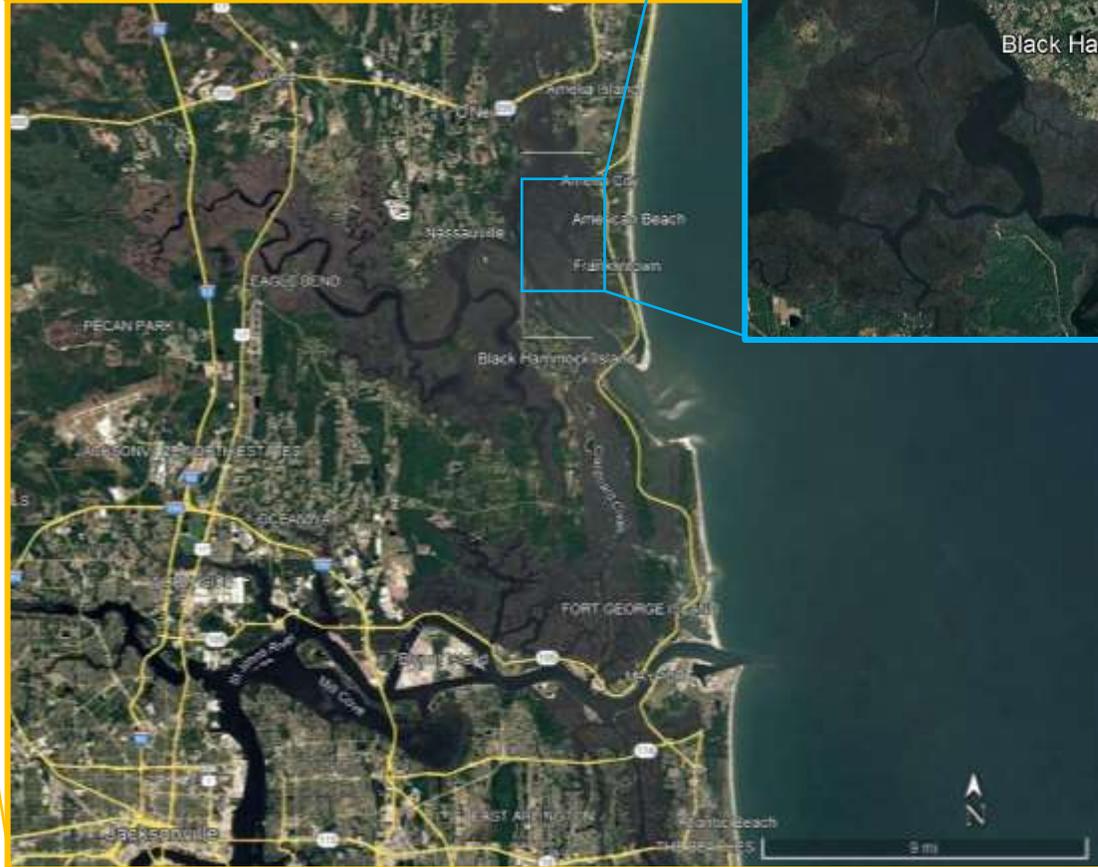




Oyster Rake
Enhancement for
Breeding AMOY on
the S. Amelia River

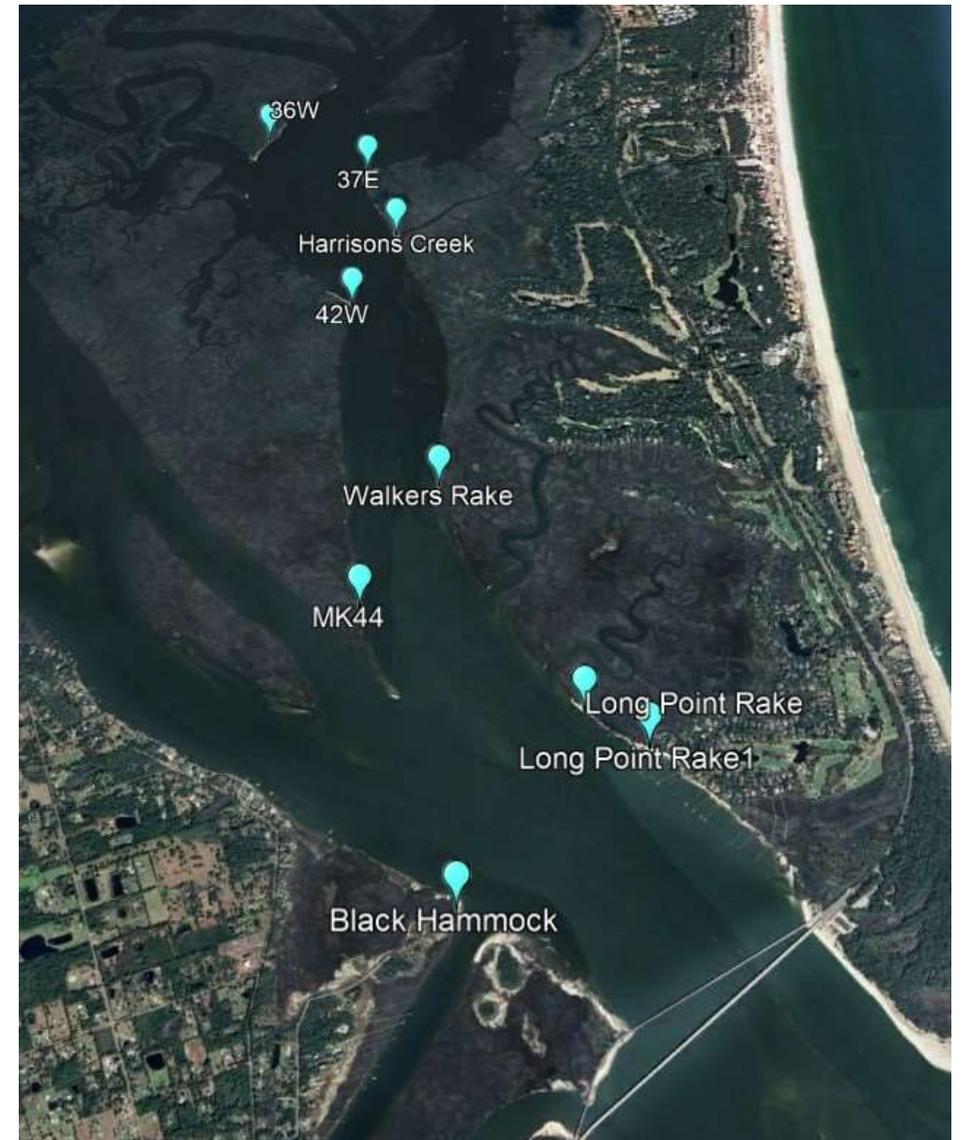
Background



W

Background

- Documented nesting since 2013.
- Statewide population estimate 518 breeding adults.
- Strong site fidelity.
- The S. Amelia River oyster rakes have been substantially reduced in elevation.



Conserve Wildlife Tag (CWT) Grant

- What is a CWT Grant?
- Grant Funds Received:
 - Shell (~45 cubic yards) = \$15,000
 - Dumpster rental (transport loose shell) = \$1,000
 - POSH module construction = \$2,800
 - Associated materials = \$1,000
 - Barge rental = \$8,400



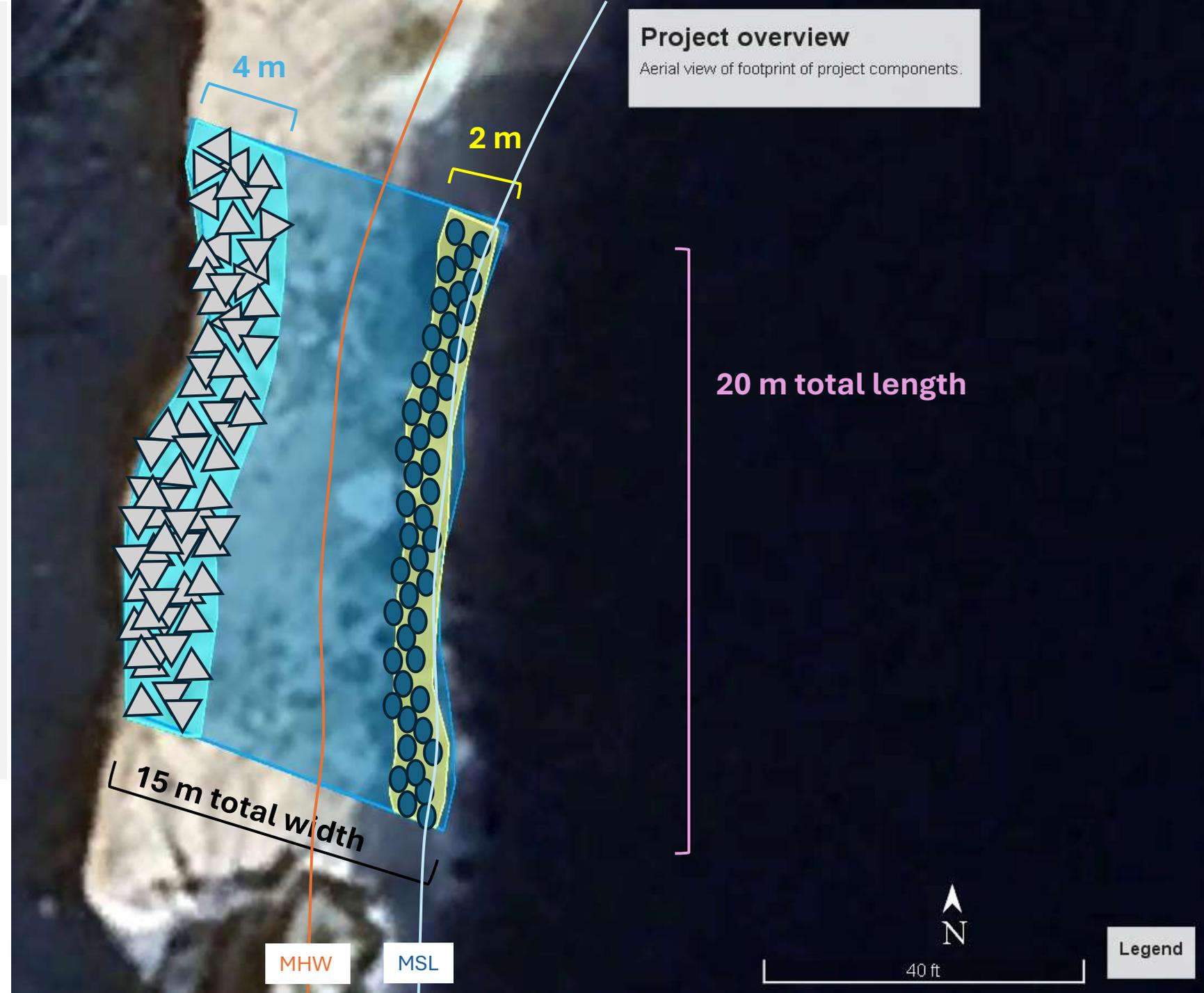
Methodology

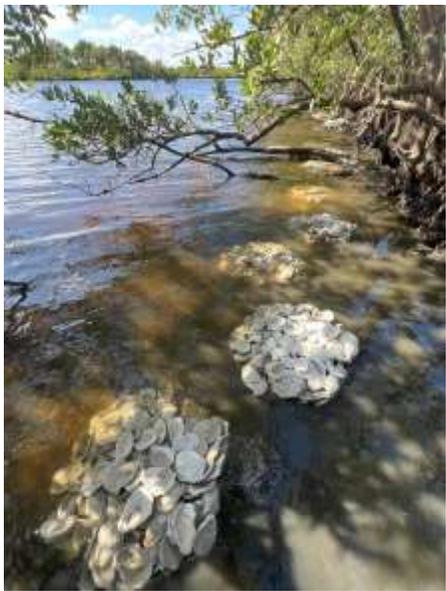
- Work will be targeted on MK36
- MK36W has supported the most nesting attempts since 2013
- Focus on restoring a portion of this rake
- Shell source
- Shell transportation



Project Design

- Base of shell rake: POSH modules along intertidal base of oyster rake.
- Crest of shell rake: Placement of a platform of shell along crest will provide primary nesting habitat for AMOY.
- No material will be placed between POSH and loose shell.



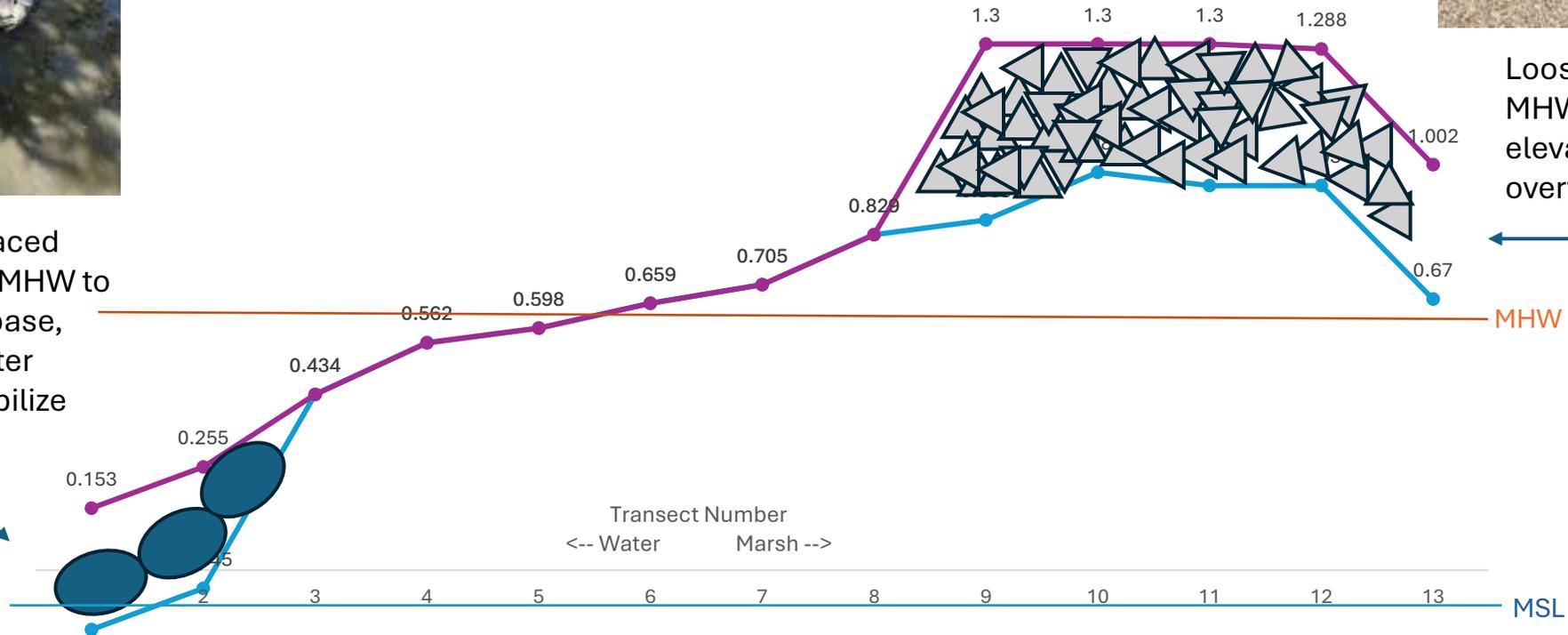


Transect 3 (South)
Elevation shown in NAVD88 (m)

Transect 3 (S) Target Elevation

POSH modules placed between MSL and MHW to raise elevation at base, provide stable oyster substrate, and stabilize base of rake

Loose oyster shell above MHW along crest to raise elevation beyond likely overwash threshold.



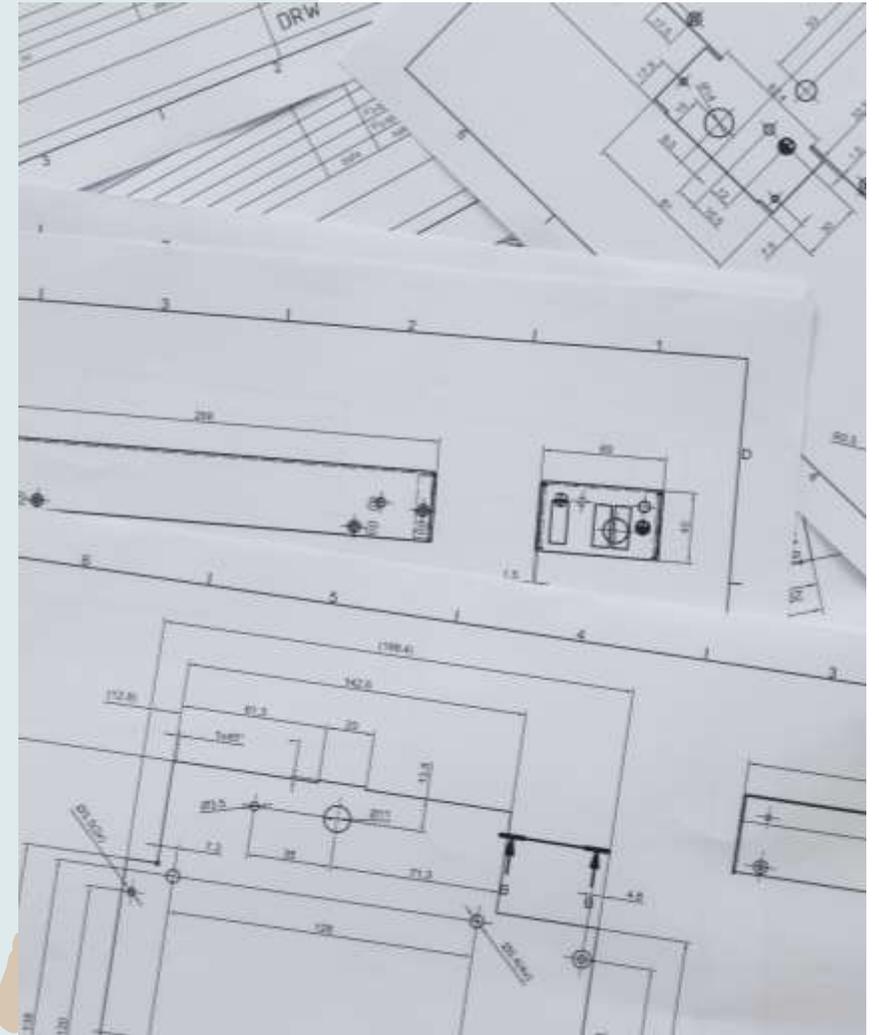
Project Design

- Total volume of shell needed: 40 cubic yards
- Total POSH modules: 120

| Transect # | Target | N current elevations | Difference | M current | Difference | S current | Difference | Ave Difference | |
|------------|--------|----------------------|------------|-----------|------------|-----------|------------|----------------|-----------------------------------|
| 11 | 1.3 | 0.975 | 0.325 | 0.772 | 0.528 | 0.865 | 0.435 | 0.429333 | |
| 12 | 1.3 | 0.773 | 0.527 | 0.825 | 0.475 | 0.983 | 0.317 | 0.439667 | |
| 13 | 1.3 | 0.835 | 0.465 | 0.865 | 0.435 | 0.95 | 0.35 | 0.416667 | |
| 14 | 1.188 | 0.833 | 0.355 | 0.881 | 0.307 | 0.95 | 0.238 | 0.3 | |
| 15 | 0.902 | 0.611 | 0.291 | 0.525 | 0.377 | 0.67 | 0.232 | 0.3 | |
| | | | | | | | | | 0.377133 TOTAL AVERAGE |
| | | | | | | | | | CUBIC METERS OF 30.17067 SHELL |
| | | | | | | | | | CUBIC YARDS OF 39.46323 SHELL |

Project Permitting

- Individual Environmental Resource Permit (ERP)
 - State 404 Program Permit
 - Use of sovereign submerged lands (SSL)
- U.S. Army Corp of Engineers Nationwide Permit (NWP)



Monitoring and Future Efforts

- Structural integrity of MK36
- American oystercatcher breeding
- If successful, future efforts could be expanded to additional rakes.



