



**Gulf Coast Ecosystem Restoration Council
Finding of No Significant Impact
Pensacola Bay Living Shoreline - Phase I
EAXX-586-00-000-1732187709
December 18, 2024**

The Gulf Coast Ecosystem Restoration Council (Council) hereby adopts the U.S. Army Corps of Engineers Environmental Assessment (EA) for the Clean Water Act Section 404 and Section 10 of the Rivers and Harbors Act permit SAJ- 2019-01849, October 9, 2024. The Council adopts the EA in order to address requirements of the *National Environmental Policy Act* (42 U.S.C. §§ 4321 et seq.) (NEPA) associated with the approval of funding for the Pensacola Bay Living Shoreline - Phase I Project (described below).

The Council has reviewed the EA and determined that it addresses the environmental effects of the activity to be funded. On November 12, 2024, the Council provided the public with a 15-day review period in which to comment on the Project and the associated environmental compliance documentation, including the EA. The Council received no public comments. The Council has determined that approval of funding for the Project would not result in a significant effect on the human environment. Following is a brief description of the Project, the EA and contact information pertaining to this action.

Funded Activity

The Council has approved \$1,564,636 in implementation and planning funding for the Pensacola Bay Living Shoreline - Phase 1 project, sponsored by FDEP. Most of this funding will be used by FDEP for implementation of this living shoreline project. Of this total, FDEP will use approximately \$43,800 to pay for the completion of planning activities necessary to move this project into the implementation phase. This funding comes from the RESTORE Act Council-Selected Restoration Component.

In 2015, the Council approved planning funds for this living shoreline project in Funded Priorities List (FPL) 1. These planning funds have been used by FDEP for engineering and design and permitting for the living shoreline project. FDEP is completing this planning work and is now in a position to initiate implementation of this project. The Pensacola Living Shoreline Phase I is a multi-phase living shoreline project that totals approximately 24,800 linear feet of rock and oyster reef breakwater and 205 acres of emergent marsh and submerged aquatic vegetation (SAV) habitat. This component of the project is for the implementation and construction, engineering and inspections services for the project.

The environmental benefits of this living shoreline project include improved water quality, new oyster reef habitat, new emergent marsh habitat, and new SAV habitat for fish, shrimp, crabs, birds, sea turtles and other estuarine species. The shorelines will be stabilized with vegetation, wave energy will be attenuated by the offshore oyster reef breakwater, and shoreline erosion will be reduced to provide shoreline protection. Water quality benefits include reduced turbidity and increased water clarity resulting in increased light penetration for photosynthesis. Increased fishery production and increased fishery economic opportunities will be provided by the new fishery habitat created. The improvements to water quality will be important for ecotourism and recreational opportunities for visitors and local citizens. Additionally, socio-economic benefits include increased recreation and commercial fisheries production, increased shoreline and infrastructure protection, including protection of military assets at Naval Air Station Pensacola, increased property values for protected properties, and utilization of local engineering and construction work forces. Escambia County has identified an additional \$32.4 million to construct the project. Once underway, construction is expected to take 10 to 12 months to complete.

More information on the RESTORE Act, FPL 1 and the Project can be found at www.restorethegulf.gov.

Environmental Assessment Adopted

The above referenced EA is hereby incorporated by reference into this Council finding, consistent with the Council's NEPA Procedures (80 FR 25680-25691 (May 5, 2015)). Prepared pursuant to NEPA, the EA includes an assessment of alternatives and associated environmental consequences of the project, including potential cumulative effects. The analysis of environmental consequences includes information pertaining to other potentially applicable environmental laws, including the *National Historic Preservation Act* and the *Endangered Species Act*.

Environmental Conditions

In addition to NEPA, the Council has an independent responsibility to comply with all other applicable Federal laws. The Council has received concurrence on the Finding of No Significant Impact (FONSI) set forth below and the associated FPL funding approval from the Federal agencies with responsibility for administering the laws applicable to this action. To ensure compliance with applicable laws, the Council's funding award for the Project will require that the sponsor adhere to all applicable permit conditions set forth in the U.S. Army Corps of Engineers permit SAJ- 2019-01849, October 9, 2024. Adherence to these conditions is nondiscretionary and serves to limit the environmental effects of an action to those that are insignificant, discountable or beneficial and never result in take or adverse effects to designated critical habitat. The sponsor is also responsible for ensuring that any contractors who may work on the Project are aware of and comply with all of these environmental compliance requirements.

Finding of No Significant Impact

Based on an independent review of the information and analysis provided in the subject EA, the Council hereby issues this FONSI for the Project. This determination is based on consideration of the Council on Environmental Quality's (CEQ) NEPA regulations (40 CFR Parts 1500 Through 1508), May 1, 2024. The Council has authorized the Executive Director of the Council to execute the FONSI on its behalf.

Determination by Responsible Official

I have determined that this proposed activity would not have a significant effect on the human environment.

Mary S. Walker
Executive Director, Gulf Coast Ecosystem Restoration Council

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WALKER

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For Further Information

For further information, please contact John Ettinger, Director of Policy and Environmental Compliance, Gulf Coast Ecosystem Restoration Council, at (504) 444-3522 or by e-mail at john.ettinger@restorethegulf.gov.

DEPARTMENT OF THE ARMY PERMIT

Permittee: UNITED STATES NAVY
NAVAL AIR STATION PENSACOLA
310 JOHN TOWER ROAD
PENSACOLA, FLORIDA 32508

Permit No: SAJ-2019-01849 (SP-MZH)

Issuing Office: U.S. Army Engineer District, Jacksonville

NOTE: The term "you" and its derivatives, as used in this permit, means the permittee or any future transferee. The term "this office" refers to the appropriate district or division office of the U.S. Army Corps of Engineers (Corps) having jurisdiction over the permitted activity or the appropriate official of that office acting under the authority of the commanding officer.

You are authorized to perform work in accordance with the terms and conditions specified below.

Project Description: Site A (White Island): Proposed work at Site A will include dredging an access channel, construction of breakwaters and rock piles, dredging to facilitate navigational access and to improve water circulation, restoration of White Island and creation of eight (8) marsh islands, construction of submerged reefs, installation of navigational aids, and planting native vegetation. A complex of low elevation breakwaters, rock piles, and submerged rock reefs will be constructed at Site A for wave attenuation and habitat protection for the intertidal marsh cells.

Approximately 3,458 cubic yards of rock will be placed over 1.3 acres of the bay for construction of five (5) breakwaters. Breakwaters will range from 259 to 366 feet in length by 34 to 38 feet in width at its base by 7 to 10 feet in height. Approximately 885 cubic yards of rock will be placed for construction of 14 rock piles over 0.33 acre of the bay. Two clusters of rock piles are proposed. One cluster will be comprised of nine (9) individual rock piles, each measuring 35 feet in length by 6 to 7 feet in height. There will be a minimum 13-foot gap between each rock pile to allow for passage of species and water circulation. The second cluster will be comprised of five (5) rock piles, each measuring 35 feet in length by 6 to 7 feet in height. There will be a minimum 38-foot gap between each pile. Approximately 371,693.69 cubic yards of sandy material will be dredged from 60.52 acres to a depth of -7.5 feet NAVD 88 (7.21 feet below Mean Low Water (MLW)). Of that, 57.42 acres (360,790.00 cubic yards) will be dredged from the main site, and 3.10 acres (10,903.69 cubic yards) will be dredged from the existing Bayou Grand access channel. All dredged slopes will be 4:1, except for the northern slope that will have a 10:1 slope adjacent to the shore. The access channel measures 1,350 feet in length and has a maximum top width of 100 feet and a maximum bottom width of 36 feet. Approximately 371,693 cubic yards of dredged, sandy material will be

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placed over 51.71 acres of Pensacola Bay for restoration of White Island and creation of eight marsh islands. Of that volume, approximately 188,205.00 cubic yards will be discharged below the Mean High Water Line (MHWL) of Pensacola Bay and approximately 183,488.69 cubic yards will be placed above the MHWL on the restored and newly created islands to establish design elevations. Tidal creeks will be established between the marsh islands. Approximately 6,347 cubic yards of rock will be placed over 2.38 acres of the bay to create five (5) submerged rock reefs. The submerged rock reefs will range from 276 to 438 feet in length by 22 to 50 feet in width at its base by 1 to 3 feet in height. Approximately 33.64 acres of marsh planting will occur, consisting of *Juncus roemerianus*, *Spartina alterniflora*, and *Spartina patens* on the created marsh islands. Eight (8) navigational aids, comprised of signage affixed to wooden piles (minimum of 10-inch diameter) will be installed at Site A.

Site B (Eastern Shore): Proposed work at Site B will include dredging a temporary access channel, construction of breakwaters, creation of marsh islands, construction of submerged reefs and rock piles, installation of navigational aids, and planting native vegetation. The project proposes hydraulically dredging 38,010 cubic yards of sandy material from 13.40 acres of the bay to an elevation of -5 feet NAVD 88 (4.71 feet below MLW) to create a temporary channel along the perimeter of the 500 foot exclusion zone to provide access for construction. The channel will have a bottom width of 33 feet and 4:1 side slopes. The dredged material will be side cast adjacent to the access channel and will be returned back to the temporary channel upon completion of the project at Site B. Approximately 6,712 cubic yards of rock will be discharged over 2.42 acres of the bay for construction of ten (10) breakwaters. The breakwaters will range in size from 256 to 372 feet in length by 32 feet in width at their base by 6 to 7 feet in height. Approximately 175,100 cubic yards of sand will be discharged over 32.76 acres of Pensacola Bay for creation of eleven (11) marsh islands. Of that, 134,264 cubic yards will be placed below the MHWL and 40,836 will be placed above the MHWL on the newly created islands. Sand will be obtained from Robertson Island. Tidal creeks will be established between the marsh islands. A complex of low elevation breakwaters, rock piles, and submerged rock reefs will be constructed along the eastern portion of Site B for wave attenuation and habitat protection for the intertidal marsh islands. Approximately 5,351 cubic yards of rock will be placed over 1.93 acres of the bay for construction of five (5) submerged reefs, each ranging 285 to 287 feet in length by 56 feet in width at its base by 1 to 2 feet in height. Approximately 2,630 cubic yards of rock will be placed over 0.95 acre of the bay for construction of 40 rock piles. Rock piles will be distributed in six (6) clusters with each cluster consisting of five to seven rock piles. Each individual rock pile will measure 35 feet in length by 6 to 7 feet in height. The gap between each pile will vary between 55 to 74 feet to allow for passage of species and water circulation. Four (4) navigational aids, comprised of signage affixed to wooden piles (minimum of 10-inch diameter) will be installed at Site B. Approximately 27.87

acres of marsh planting will occur, consisting of *Juncus roemerianus*, *Spartina alterniflora*, and *Spartina patens*, on the created marsh islands.

Site C (Sherman Inlet): Proposed work at Site C will include construction of breakwaters, placement of sand along the shore to restore the beach and intertidal zone, construction of submerged reefs, and installation of navigational aids. The proposed work at Site C will be located within exclusion zone along the shoreline of NAS Pensacola. Approximately 9,209 cubic yards of rock will be placed over 2.60 acres of the bay for construction of twelve (12) breakwaters, each ranging 140 to 409 feet in length by 34 to 38 feet in width at its base by 7 to 8 feet in height. Approximately 104,500 cubic yards of sand, collected from Robertson Island, will be deposited within the intertidal zone over 20.42 acres along the shoreline (49,450 cubic yards of sand deposited below the MHWL and 55,050 cubic yards of sand deposited above the MHWL). A channel will be maintained to allow for continued drainage of Sherman Inlet into the bay. Approximately 16,298.21 cubic yards of rock will be placed over 4.60 acres of the bay for construction of four (4) submerged rock reefs, each ranging from 583 to 1178 feet in length by 15 to 128 feet in width at its base by 2 to 4 feet in height. Five (5) navigational aids, comprised of signage affixed to wooden piles (minimum of 10-inch diameter) will be installed at Site C.

Robertson Island, located at Latitude: 30.329583 Longitude: -87.322567, is an upland Dredge Material Management Area (DMMA) utilized by the U.S. Army Corps of Engineers as a location for long term storage of dredged material collected from maintenance dredging the federal channels and Intracoastal Waterways in the local area. Removal of sediment on Robertson Island will be conducted via barge mounted excavators and equipment. The collected sediment will be transported via barge to the appropriate sites for discharge and creation of marsh islands and shoreline refinement described above.

Construction details: Construction of each site is expected to take two to three months for completion of the major construction components. Construction will be conducted during daylight hours. The system of breakwaters, rock piles, and submerged reefs are intended for wave attenuation and shore protection. Rock will be limestone or a superior quarried stone. Geotextile or geogrid underlayment will be installed prior to placement of rock to prevent vertical settlement of the rock. Piling for navigational aids will be installed via jetting. Floating turbidity curtains and/or booms are proposed during in-water work. Once the breakwaters are constructed, the system of breakwaters and turbidity curtains will be used to contain the placed sand until grading and planting are completed. Dredging is proposed to be accomplished by hydraulic or pipeline dredging. Construction barges and vessels will be utilized for construction of the project. Heavy

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and/or light construction equipment will be used for grading areas filled with sand (White Island, marsh islands, Site C shoreline).

Construction Sequence: Site A

Phase 1	Dredge access channel
Phase 2	Construct breakwaters and install rock piles
Phase 3	Dredge and place fill material for White Island and marsh islands
Phase 4	Grade White Island, marsh islands, and tidal creeks
Phase 5	Construct submerged reefs and install navigational aids
Phase 6	Plant native species

Construction Sequence: Site B

Phase 1	Dredge access channel
Phase 2	Construct breakwaters and place fill material for marsh islands
Phase 3	Grade marsh islands and tidal creeks
Phase 4	Construct submerged reefs and rock piles, install navigational aids
Phase 5	Plant native species

Construction Sequence: Site C

Phase 1	Construct breakwaters and place sand along the shoreline
Phase 2	Grade shoreline
Phase 3	Construct submerged reefs and install navigational aids

Summary of Impacts

Activity	Site A		Site B		Site C	
	Area of Impact (Acres)	Volume of Impact (Cubic Yards)	Area of Impact (Acres)	Volume of Impact (Cubic Yards)	Area of Impact (Acres)	Volume of Impact (Cubic Yards)
Dredging	60.52	371,693.69	13.40	38,010	N/A	N/A
Discharge of Sand (Below MHWL)	51.71	188,205	32.76	134,264	20.42	49,450
Planting	33.64	N/A	27.87	N/A	N/A	N/A
Breakwaters	1.30	3,458.54	2.42	6,712.68	2.60	9,209.79
Submerged Reefs	2.38	6,347.35	1.93	5,351.91	4.60	16,298.21
Rock Piles	0.33	885.11	0.95	2630.41	N/A	N/A
TOTAL	149.88	570,589.69	79.33	186,969	27.62	74,958.00

The work described above is to be completed in accordance with the 50 pages of drawings and 12 attachments affixed at the end of this permit instrument.

Project Location: The project will affect waters of the United States associated with Pensacola Bay in Escambia County, Florida. The project site is located at three sites adjacent to Naval Air Station (NAS) Pensacola. Site A, referred to as White Island, is located adjacent to the northeastern limits of the base, at the intersection of Pensacola Bay, Bayou Grande, and Davenport Bayou. Site B, referred to as Eastern Shore, is located along the eastern shore of the base, in Pensacola Bay. Site C, referred to as Sherman Inlet, is located along the southern shore of the west side of the base, in Pensacola Bay.

Approximate Central Coordinates:

Site	Latitude	Longitude
Site A: White Island	30.376117°	-87.268244°
Site B: Eastern Shore	30.368954°	-87.265273°
Site C: Sherman Inlet	30.336859°	-87.317587°

Permit Conditions

General Conditions:

1. The time limit for completing the work authorized ends on **9 October 2029**. If you find that you need more time to complete the authorized activity, submit your request for a time extension to this office for consideration at least one month before the above date is reached.
2. You must maintain the activity authorized by this permit in good condition and in conformance with the terms and conditions of this permit. You are not relieved of this requirement if you abandon the permitted activity, although you may make a good faith transfer to a third party in compliance with General Condition 4 below. Should you wish to cease to maintain the authorized activity, or should you desire to abandon it without a good faith transfer, you must obtain a modification of this permit from this office, which may require restoration of the area.
3. If you discover any previously unknown historic or archeological remains while accomplishing the activity authorized by this permit, you must immediately notify this office of what you have found. We will initiate the Federal and State coordination

required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

4. If you sell the property associated with this permit, you must obtain the signature and the mailing address of the new owner in the space provided and forward a copy of the permit to this office to validate the transfer of this authorization.
5. If a conditioned water quality certification has been issued for your project, you must comply with the conditions specified in the certification as special conditions to this permit. For your convenience, a copy of the certification is attached if it contains such conditions (Attachment 2).
6. You must allow representatives from this office to inspect the authorized activity at any time deemed necessary to ensure that it is being or has been accomplished in accordance with the terms and conditions of your permit.

Special Conditions:

1. **Reporting Address:** The Permittee shall submit all reports, notifications, documentation, and correspondence required by the general and special conditions of this permit to either (not both) of the following addresses:
 - a. For electronic mail (preferred): SAJ-RD-Enforcement@usace.army.mil (not to exceed 15 MB).
 - b. For standard mail: U.S. Army Corps of Engineers, Regulatory Division, Enforcement Section, P.O. Box 4970, Jacksonville, FL 32232-0019.
 - c. The Permittee shall reference this permit number, SAJ-2019-01849 (SP-MZH), on all submittals.
2. **Permit Conditions Prevail:** If information in the permit attachments conflict with the special conditions of this permit, the requirements of the permit special conditions shall prevail.
3. **Commencement Notification:** Within 10 days from the date of initiating the work authorized by this permit, the Permittee shall submit a completed "Commencement Notification" form (Attachment 3).
4. **Posting of Permit:** The Permittee shall have available and maintain for review a copy of this permit and approved plans at the construction site.

5. **Notice of Permit:** The Permittee shall complete and record the "Notice of Department of the Army Authorization" form (Attachment 4) with the Clerk of the County Court, Registrar of Deeds or other appropriate official charged with the responsibility of maintaining records of title to or interest in real property within the county of the authorized activity. No later than 90 days from the effective date of this permit, the Permittee shall provide a copy of the recorded Notice of Permit to the Corps clearly showing a stamp from the appropriate official indicating the book and page at which the Notice of Permit is recorded in the official records and the date of recording.
6. **Local Notice to Mariners:** The contractor is required to contact the United States Eighth Coast Guard District Marine Information office a minimum of 2 weeks prior to commencement and provide locations affected, equipment, hours of operation, and duration of the project so that the information can be published in the Local Notice to Mariners. Please contact the Eighth CG District – Marine Information office via email to: D8MarineInfo@uscg.mil or telephone: (504) 671-2116.
7. **Private Aids to Navigation:** The permittee must install and maintain, at the permittee's expense, any safety lights, signs and signals required by the U.S. Coast Guard, through regulations or otherwise, on the permittee's fixed structures. To receive a U.S. Coast Guard Private Aids to Navigation marking determination for your project, at no later than 120 days prior installation of any fixed structures in navigable waters and/or prior to installation of any floating private aids to navigation, you are required to contact the Eighth Coast Guard District (dpw), 500 Poydras St. Suite 1230, New Orleans, LA 70130, (504) 671-2330 or via email to: D8oanPATON@uscg.mil. For general information related to Private Aids to Navigation please visit the Eighth CG District web site at: <http://www.atlanticarea.uscg.mil/district-8/district-divisions/waterways/PATON>.
8. **As-Built Certification:** Within 60 days of completion of the work authorized by this permit, the Permittee shall submit as-built drawings of the authorized work and a completed "As-Built Certification by Professional Engineer or Surveyor" form (Attachment 5) to the Corps. The as-built drawings shall be signed and sealed by a registered professional engineer or surveyor and include the following:
 - a. A plan view drawing of the location of the authorized work footprint, as shown on the permit drawings, with an overlay of the work as constructed. The plan view drawing should show all existing water management structures and the completed structures, dredge/fill activities, and wetland impacts.

- b. A list of any deviations between the work authorized by this permit and the work as constructed. In the event that the completed work deviates, in any manner, from the authorized work, describe on the attached "As-Built Certification by Professional Engineer" form the deviations between the work authorized by this permit and the work as constructed. Clearly indicate on the as-built drawings any deviations that have been listed. Please note that the depiction and/or description of any deviations on the drawings and/or "As-Built Certification by Professional Engineer" form does not constitute approval of any deviations by the Corps.
- c. The Department of the Army permit number on all sheets submitted.

9. Cultural Resources/Historic Properties:

- a. No structure or work shall adversely affect, impact, or disturb properties listed in the National Register of Historic Places (NRHP), or those eligible for inclusion in the NRHP.
- b. If, during permitted activities, items that may have historic or archaeological origin are observed the Permittee shall immediately cease all activities adjacent to the discovery that may result in the destruction of these resources and shall prevent his/her employees from further removing, or otherwise damaging, such resources. The applicant shall notify both the Florida Department of State, Division of Historical Resources, Compliance and Review Section at (850) 245-6333, and the Corps, of the observations within the same business day (8 hours). Examples of submerged historical, archaeological or cultural resources include shipwrecks, shipwreck debris fields (such as steam engine parts, or wood planks and beams), anchors, ballast rock, concreted iron objects, concentrations of coal, prehistoric watercraft (such as log "dugouts"), and other evidence of human activity. The materials may be deeply buried in sediment, resting in shallow sediments or above them, or protruding into water. The Corps shall coordinate with the Florida State Historic Preservation Officer (SHPO) to assess the significance of the discovery and devise appropriate actions. Project activities shall not resume without verbal and/or written authorization from the Corps.
- c. Additional cultural resources assessments may be required of the permit area in the case of unanticipated discoveries as referenced in accordance with the above Special Condition and, if deemed necessary by the SHPO or Corps, in accordance with 36 CFR 800 or 33 CFR 325, Appendix C (5). Based on the

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circumstances of the discovery, equity to all parties, and considerations of the public interest, the Corps may modify, suspend, or revoke the permit in accordance with 33 CFR Part 325.7. Such activity shall not resume on non-federal lands without written authorization from the SHPO for finds under his or her jurisdiction, and from the Corps.

- d. In the unlikely event that unmarked human remains are identified on **non-federal** lands; they will be treated in accordance with Section 872.05 Florida Statutes. All work and ground disturbing activities within a 100-meter diameter of the unmarked human remains shall immediately cease and the Permittee shall immediately notify the medical examiner, Corps, and State Archaeologist within the same business day (8-hours). The Corps shall then notify the appropriate SHPO. Based on the circumstances of the discovery, equity to all parties, and considerations of the public interest, the Corps may modify, suspend, or revoke the permit in accordance with 33 CFR Part 325.7. Such activity shall not resume without written authorization from the SHPO and from the Corps.
- e. If the unlikely event that human remains are encountered on **federal or tribal** lands, or in situations where the Archaeological Resources Protection Act of 1979 or the Native American Graves Protection Repatriation Act of 1990 applies, all work and ground disturbing activities within a 100-meter diameter of the unmarked human remains shall immediately cease and the Permittee shall immediately notify the Corps, within the same business day (8-hours). The Corps shall then notify the appropriate THPO(s) and SHPO. Based on the circumstances of the discovery, equity to all parties, and considerations of the public interest, the Corps may modify, suspend, or revoke the permit in accordance with 33 CFR Part 325.7. After such notification, project activities on federal lands shall not resume without written authorization from the Corps, and/or appropriate THPO(s), SHPO, and federal manager. After such notification, project activities on tribal lands shall not resume without written authorization from the appropriate THPO(s) and the Corps.
- f. A professional archaeologist who meets the "Archaeology and Historic Preservation: Secretary of Interior's Standards and Guidelines" shall be onsite during the initial ground-disturbing activities. The professional archaeologist shall be responsible for monitoring the spoil and ground disturbance for significant archaeological deposits. Should potential significant archaeological deposits (which shall include, but not be limited to: pottery, modified shell, flora, fauna, human remains, ceramics, stone tools or metal implements, dugout canoes, evidence of structures or any other physical remains that could

be associated with Native American cultures or early colonial or American settlement) recovery be encountered, all work and ground disturbing activities must cease within a 100-meter diameter of the discovery to allow for proper assessment, recording, and recovery of the cultural deposits in a professional manner. The archaeologist on site shall notify the Permittee, SHPO, and the Corps the same business day (8-hours) to assess the significance of the discovery and devise appropriate actions, including salvage operations. Upon completion of the monitoring activities, an archaeological letter must be submitted to Florida's Division of Historical Resources, along with an updated Florida Master Site File form. The archaeologist shall submit notification of such action, in the form of the Cultural Resource Certification, to the Corps and RD-Archaeologist for inclusion in the administrative record.

- g. If prehistoric or historic artifacts such as pottery or ceramics, projectile points, dugout canoes, metal implements, historic building materials, or any other physical remains that could be associated with Native American, early European, or American settlement are encountered at any time within the project site area, the permitted project shall cease all activities involving subsurface disturbance in the vicinity of the discovery. The applicant shall contact the Florida Department of State, Division of Historical Resources, Compliance Review Section at (850)-245-6333. Project activities shall not resume without verbal and/or written authorization. In the event that unmarked human remains are encountered during permitted activities, all work shall stop immediately, and the proper authorities notified in accordance with Section 872.05, Florida Statutes.

10. Cultural Resource Avoidance Areas: The Permittee shall avoid ground disturbing activities, including dredging, excavating, anchoring, spudding, or discharge of rock materials on the seabed, in areas of cultural sensitivity, as depicted in Attachment 6. Location 2, depicted on Figure 1 of Attachment 6, designates an area where discharge of rock material is permitted, however, no dredging, anchoring, spudding, or similar ground disturbing activities are prohibited in Location 2. The filter fabric must be utilized and placed prior to rock deployment to act as a barrier between exposed cultural material and discharged rock at Location 2. The avoidance areas at Sites A, B, and C, as shown in Attachment 6, were avoided as a result of the consultation conducted between the Corps and Florida State Historic Preservation Office (SHPO) and the Seminole Tribe of Florida (STOF), in accordance with the Section 106 of the National Historic Preservation Act. Any proposed changes to the avoidance areas, including discharge of rock material or dredging activities where previously prohibited, would require re-evaluation for the Department of Army authorization.

- 11. Assurance of Navigation and Maintenance:** The Permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structures or work herein authorized, or if in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the Permittee will be required, upon due notice from the U.S. Army Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.
- 12. Federal Channel Setback:** The most waterward edge of the authorized project shall be constructed no closer than 75 feet from the near design edge of the federal channel as shown in Attachment 7.
- 13. Individual Section 408 Approval for Civil Works Projects with a Non-Federal Sponsor:** It has been determined that the activities authorized do not impair the usefulness of the Intracoastal Waterway (ICWW) and the Robertson Island Dredged Material Management Area (DMMA) and are not injurious to the public interest. The Permittee, and project partners operating on behalf of the Permittee, shall adhere to the conditions and limitations referenced in the "Agreement Between The United States Army Engineer District, Mobile and Escambia County Board of County Commissioners, Florida For Removal of Dredge Disposal Material" in Attachment 8 of this permit. For all questions related to the Section 408 approval, contact the Corps, Mobile District Engineering Division at Eubie.D.Trawick@usace.army.mil. Engineering Division is the appropriate authority to determine compliance with the terms and conditions of Section 408 approval.
- 14. Manatee Conditions:** The Permittee shall comply with the "Standard Manatee Conditions for In-Water Work – 2011" (Attachment 9). The most recent version of the Manatee Conditions must be utilized.
- 15. Protected Species Construction Conditions:** The Permittee shall comply with National Marine Fisheries Service's "Protected Species Construction Conditions, NOAA Fisheries Southeast Regional Office" dated May 2021 (Attachment 10).
- 16. Vessel Strike Avoidance Measures:** The Permittee shall comply with the "Vessel Strike Avoidance Measures and Reporting for Mariners", revised May 2021 (Attachment 11), for marine turtles and marine mammals.

- 17. Dredged Material Disposal:** The Permittee shall place all dredged material in designated areas as detailed in the attached drawings, on pages 5, 6, 11, 21-25, 28, 37-41, and 44 of 50. The Permittee shall maintain the disposal sites to prevent the discharge of dredged material and associated effluent into adjacent areas.
- 18. Pre-Construction Meeting:** The Permittee will schedule a pre-construction meeting with a member of the Corps' Jacksonville District Regulatory Division, Pensacola Permits Section, no later than 30 days prior to the start of work to review the special conditions of the permit. The Permittee shall not start work prior to the pre-construction meeting.
- 19. Turbidity Barriers:** Prior to the initiation of any of the work authorized by this permit, the Permittee shall install floating turbidity barriers with weighted skirts that extend within 1 foot of the bottom around all work areas that are in, or adjacent to, surface waters. The turbidity barriers shall remain in place and be maintained daily until the authorized work has been completed and turbidity within the construction area has returned to ambient levels. Turbidity barriers shall be removed upon stabilization of the work area.
- 20. Fill Material:** The Permittee shall use only clean fill material for this project. The fill material shall be free from items such as trash, debris, automotive parts, asphalt, construction materials, concrete block with exposed reinforcement bars, and soils contaminated with any toxic substance in toxic amounts, in accordance with Section 307 of the Clean Water Act.
- 21. Work Vessel Anchoring:** Drawings 19, 20, 35, 36 of 50 identify the locations of submerged aquatic vegetation documented at the project site. This permit does not authorize construction work vessels anchoring or spudding down in areas where submerged aquatic vegetation is present.
- 22. Monitoring and Adaptive Management Plan:** The permittee shall follow the Monitoring and Adaptive Management Plan as detailed in Attachment 12.

Further Information:

1. Congressional Authorities: You have been authorized to undertake the activity described above pursuant to:

PERMIT NUMBER: SAJ-2019-01849
PERMITTEE: NAS Pensacola
PAGE 13 of 17

- (X) Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403)
(X) Section 404 of the Clean Water Act (33 U.S.C. 1344)

() Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 (33 U.S.C. 1413)

() Section 14 of the Rivers and Harbors Act of 1899 (33 U.S.C. 408)

2. Limits of this authorization.

- a. This permit does not obviate the need to obtain other Federal, State, or local authorizations required by law.
- b. This permit does not grant any property rights or exclusive privileges.
- c. This permit does not authorize any injury to the property or rights of others.
- d. This permit does not authorize interference with any existing or proposed Federal projects.

3. Limits of Federal Liability. In issuing this permit, the Federal Government does not assume any liability for the following:

- a. Damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes.
- b. Damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the United States in the public interest.
- c. Damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit.
- d. Design or construction deficiencies associated with the permitted work.
- e. Damage claims associated with any future modification, suspension, or revocation of this permit.

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PERMITTEE: NAS Pensacola
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4. Reliance on Applicant's Data: The determination of this office that issuance of this permit is not contrary to the public interest was made in reliance on the information you provided.

5. Reevaluation of Permit Decision: This office may reevaluate its decision on this permit at any time the circumstances warrant. Circumstances that could require a reevaluation include, but are not limited to, the following:

- a. You fail to comply with the terms and conditions of this permit.
- b. The information provided by you in support of your permit application proves to have been false, incomplete, or inaccurate (see 4 above).
- c. Significant new information surfaces which this office did not consider in reaching the original public interest decision.

Such a reevaluation may result in a determination that it is appropriate to use the suspension, modification, and revocation procedures contained in 33 CFR 325.7 or enforcement procedures such as those contained in 33 CFR 326.4 and 326.5. The referenced enforcement procedures provide for the issuance of an administrative order requiring you comply with the terms and conditions of your permit and for the initiation of legal action where appropriate. You will be required to pay for any corrective measures ordered by this office, and if you fail to comply with such directive, this office may in certain situations (such as those specified in 33 CFR 209.170) accomplish the corrective measures by contract or otherwise and bill you for the cost.

6. Extensions: General Condition 1 establishes a time limit for the completion of the activity authorized by this permit. Unless there are circumstances requiring either a prompt completion of the authorized activity or a reevaluation of the public interest decision, the Corps will normally give favorable consideration to a request for an extension of this time limit.

PERMIT NUMBER: SAJ-2019-01849
PERMITTEE: NAS Pensacola
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Your signature below, as permittee, indicates that you accept and agree to comply with the terms and conditions of this permit.

(PERMITTEE)

(DATE)

(PERMITTEE NAME-PRINTED)

This permit becomes effective when the Federal official, designated to act for the Secretary of the Army, has signed below.

BRANDON L. BOWMAN
Colonel, U.S. Army
District Commander

(DATE)

PERMIT NUMBER: SAJ-2019-01849
PERMITTEE: NAS Pensacola
PAGE 16 of 17

PERMIT TRANSFER FORM

When the structures or work authorized by this permit are still in existence at the time the property is transferred, the terms and conditions of this permit will continue to be binding on the new owner(s) of the property. To validate the transfer of this permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below.

(TRANSFeree-SIGNATURE)

(DATE)

(NAME-PRINTED)

(ADDRESS)

(CITY, STATE, AND ZIP CODE)

PERMIT NUMBER: SAJ-2019-01849
PERMITTEE: NAS Pensacola
PAGE 17 of 17

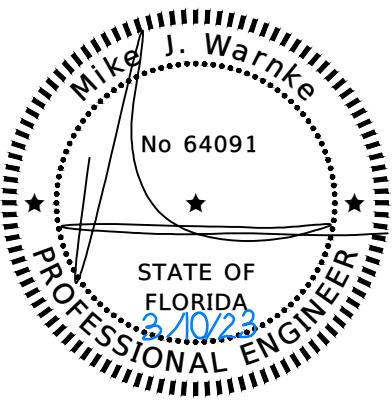
***Attachments to Department of the Army
Permit Number SAJ-2019-01849***

1. PERMIT DRAWINGS: 50 pages, dated March 2023
2. WATER QUALITY CERTIFICATION: Specific Conditions of the water quality permit/certification in accordance with General Condition number 5 on page 2 of this DA permit. 19 pages.
3. COMMENCEMENT NOTIFICATION FORM: 1 page
4. NOTICE OF PERMIT: 3 pages
5. AS-BUILT CERTIFICATION FORM: 2 pages
6. CULTURAL RESOURCE AVOIDANCE AREAS: 3 pages
7. FEDERAL CHANNEL SETBACK MAP, 1 page
8. AGREEMENT FOR REMOVAL OF DREDGE DISPOSAL MATERIAL: 4 pages, dated 26 April 2021
9. STANDARD MANATEE CONDITIONS FOR IN-WATER WORK: 2 pages
10. PROTECTED SPECIES CONSTRUCTION CONDITIONS: 2 pages
11. VESSEL STRIKE AVOIDANCE MEASURES AND REPORTING FOR MARINERS: 3 pages
12. MONITORING AND ADAPTIVE MANAGEMENT PLAN: 21 pages

INDEX OF PLANS

SHEET NO.	SHEET DESCRIPTION
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1	KEY SHEET
2	GENERAL NOTES
3	VICINITY MAP
4	SITE A WHITE ISLAND EXISTING CONDITIONS
5	SITE A WHITE ISLAND SITE PLAN
6	SITE A WHITE ISLAND DETAILED PLAN
7	SITE A WHITE ISLAND IMPACT SUMMARY
8	SITE A WHITE ISLAND BORING AND DREDGING PLAN
9	SITE A RESIDENTIAL DOCK PROXIMITY DETAIL A
10	SITE A RESIDENTIAL DOCK PROXIMITY DETAIL B
11	SITE A WHITE ISLAND AIDS TO NAVIGATION
12-14	SITE A WHITE ISLAND CROSS SECTIONS
15-18	SITE A WHITE ISLAND DETAILS
19-20	SITE B EASTERN SHORE EXISTING CONDITIONS
21-22	SITE B EASTERN SHORE SITE PLAN
23-25	SITE B EASTERN SHORE DETAILED PLAN
26	SITE B EASTERN SHORE IMPACT SUMMARY
27	SITE B EASTERN SHORE BORING AND DREDGING PLAN
28	SITE B EASTERN SHORE AIDS TO NAVIGATION
29-30	SITE B EASTERN SHORE CROSS SECTIONS
31-34	SITE B EASTERN SHORE DETAILS
35-36	SITE C SHERMAN INLET EXISTING CONDITIONS
37-38	SITE C SHERMAN INLET SITE PLAN
39-41	SITE C SHERMAN INLET DETAILED PLAN
42	SITE C SHERMAN INLET IMPACT SUMMARY
43	SITE C SHERMAN INLET BORING PLAN
44	SITE C SHERMAN INLET AIDS TO NAVIGATION
45-46	SITE C SHERMAN INLET CROSS SECTIONS
47-48	SITE C SHERMAN INLET DETAILS
49	AIDS TO NAVIGATION DETAILS
50	TURBIDITY CONTROL DETAILS



55 Pages

PROJECT MANAGER: TERRI BERRY	
SECTION / TOWNSHIP / RANGE:	DISTRICT: 1, 51 / 3S, 2S / 31W, 30W
PROJECT ENGINEER: MIKE WARNKE	REG FLA ENG NO: 64091
SIGNATURE:	DATE: MARCH 2023

PERMIT DOCUMENTS FOR PENSACOLA BAY LIVING SHORELINE PROJECT

PD 17-18.027/PO 191138
VOLKERT PROJECT #1033000.848



COMMISSIONERS

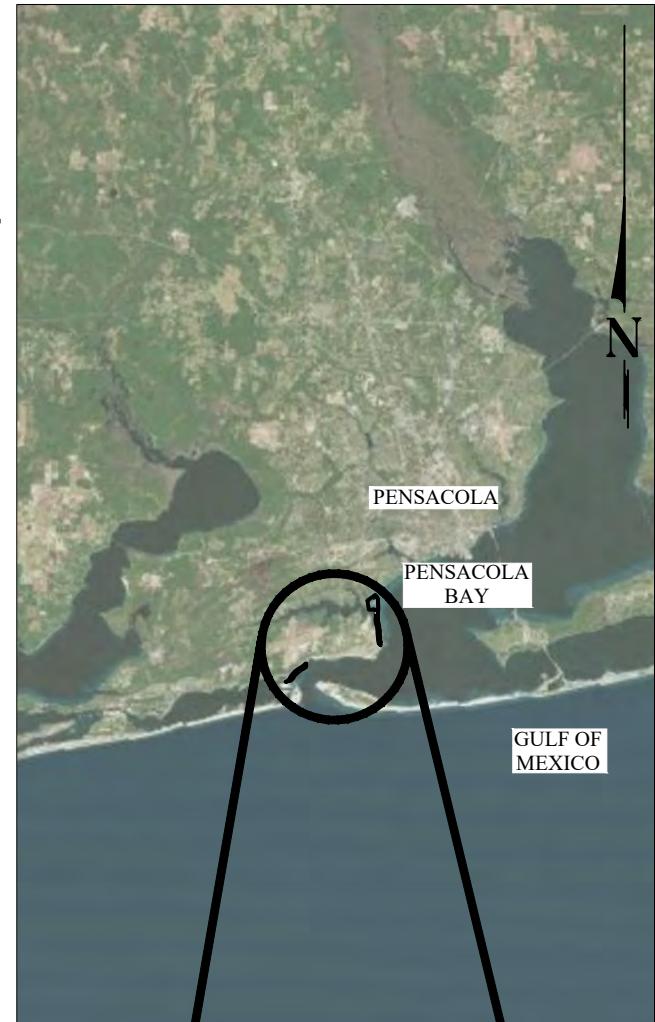
DISTRICT ONE JEFF BERGOSH
DISTRICT TWO MIKE KOHLER
DISTRICT THREE CHAIRMAN LUMON MAY
DISTRICT FOUR ROBERT BENDER
DISTRICT FIVE VICE CHAIRMAN STEVEN BARRY



PLANS PREPARED BY:

VOLKERT

Engineers • Surveyors • Planners
215 FAIRPOINT DR. SUITE B
GOLF BREEZE, FL 32561
Telephone (850) 512-8935
www.volkert.com



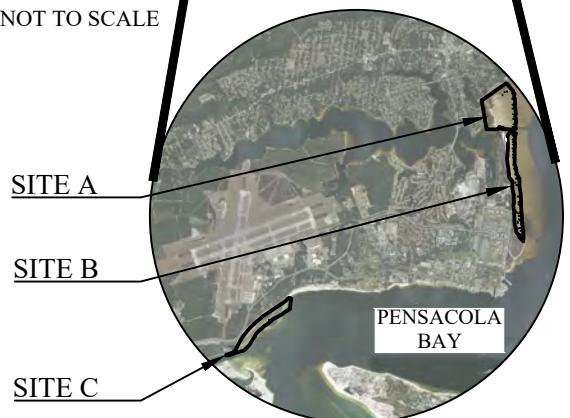
VICINITY MAP

NOT TO SCALE

SITE A

SITE B

SITE C



GENERAL NOTES:

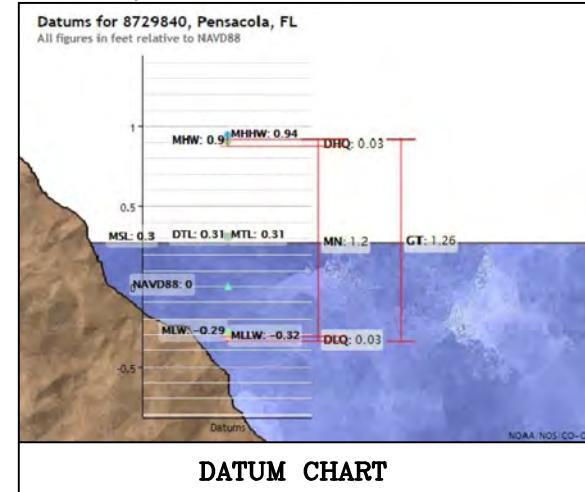
- IF ARCHAEOLOGICAL MATERIAL/PREHISTORIC ARTIFACTS SUCH AS POTTERY OR CERAMICS, STONE TOOLS OR METAL IMPLEMENTS, OR ANY OTHER PHYSICAL REMAINS THAT COULD BE ASSOCIATED WITH NATIVE AMERICAN CULTURES, OR EARLY COLONIAL OR AMERICAN SETTLEMENT ARE ENCOUNTERED AT ANY TIME, THE PROJECT SHOULD CEASE ALL ACTIVITIES INVOLVING SUBSURFACE DISTURBANCE IN THE IMMEDIATE VICINITY OF SUCH DISCOVERIES. THE APPLICANT/RECIPIENT, OR OTHER DESIGNEE, SHOULD CONTACT THE FLORIDA DEPARTMENT OF STATE, DIVISION OF HISTORICAL RESOURCES, THE STATE HISTORIC PRESERVATION OFFICER (SHPO) AND THE DSH/FEMA REGION IV ENVIRONMENTAL OFFICER AND FDEM STATE ENVIRONMENTAL LIAISON OFFICER FOR FURTHER GUIDANCE. PROJECT ACTIVITIES SHOULD NOT RESUME WITHOUT VERBAL AND/OR WRITTEN AUTHORIZATION FROM THE DIVISION OF HISTORICAL RESOURCES.
- IN THE EVENT THAT UNMARKED HUMAN REMAINS ARE ENCOUNTERED DURING PERMITTED ACTIVITIES, ALL WORK MUST STOP IMMEDIATELY AND THE PROPER AUTHORITIES NOTIFIED IN ACCORDANCE WITH F.S. 872.05.
- STORAGE, STOCKPILING OR ACCESS OF EQUIPMENT ON, IN, OVER OR THROUGH SAV, WETLANDS OR VEGETATED DUNES IS PROHIBITED. NO CONSTRUCTION ACTIVITY INCLUDING DREDGED MATERIAL DISPOSAL WILL BE CONDUCTED IN THE EXISTING WETLAND AREA AT ROCK ISLAND.
- ALL CONSTRUCTION PERSONNEL SHALL BE ADVISED THAT MIGRATORY BIRDS ARE PROTECTED BY THE FLORIDA ENDANGERED AND THREATENED SPECIES ACT OF 1977 (SECTION 372.072, FLORIDA STATUTES), AND THE U.S. FISH AND WILDLIFE SERVICE PURSUANT TO THE MIGRATORY BIRD TREATY ACT OF 1918 AND THE ENDANGERED AND THREATENED SPECIES ACT OF 1982, AS AMENDED. THE CONTRACTOR SHALL NOT HARM OR HARASS THE BIRDS, THEIR EGGS OR THEIR NESTS AS A RESULT OF THE CONSTRUCTION.
- IN-WATER WORK, INCLUDING DREDGING, FILLING, AND DEWATERING OPERATIONS MUST COMPLY WITH THE NATIONAL MARINE FISHERIES SERVICE (NMFS) "SEA TURTLE AND SMALLTOOTH SAWFISH CONSTRUCTION CONDITIONS, AND FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION (FWC) STANDARD MANATEE CONDITIONS FOR IN-WATER WORK, 2009" ITEMS A, B, D, AND E.

SURVEY NOTES:

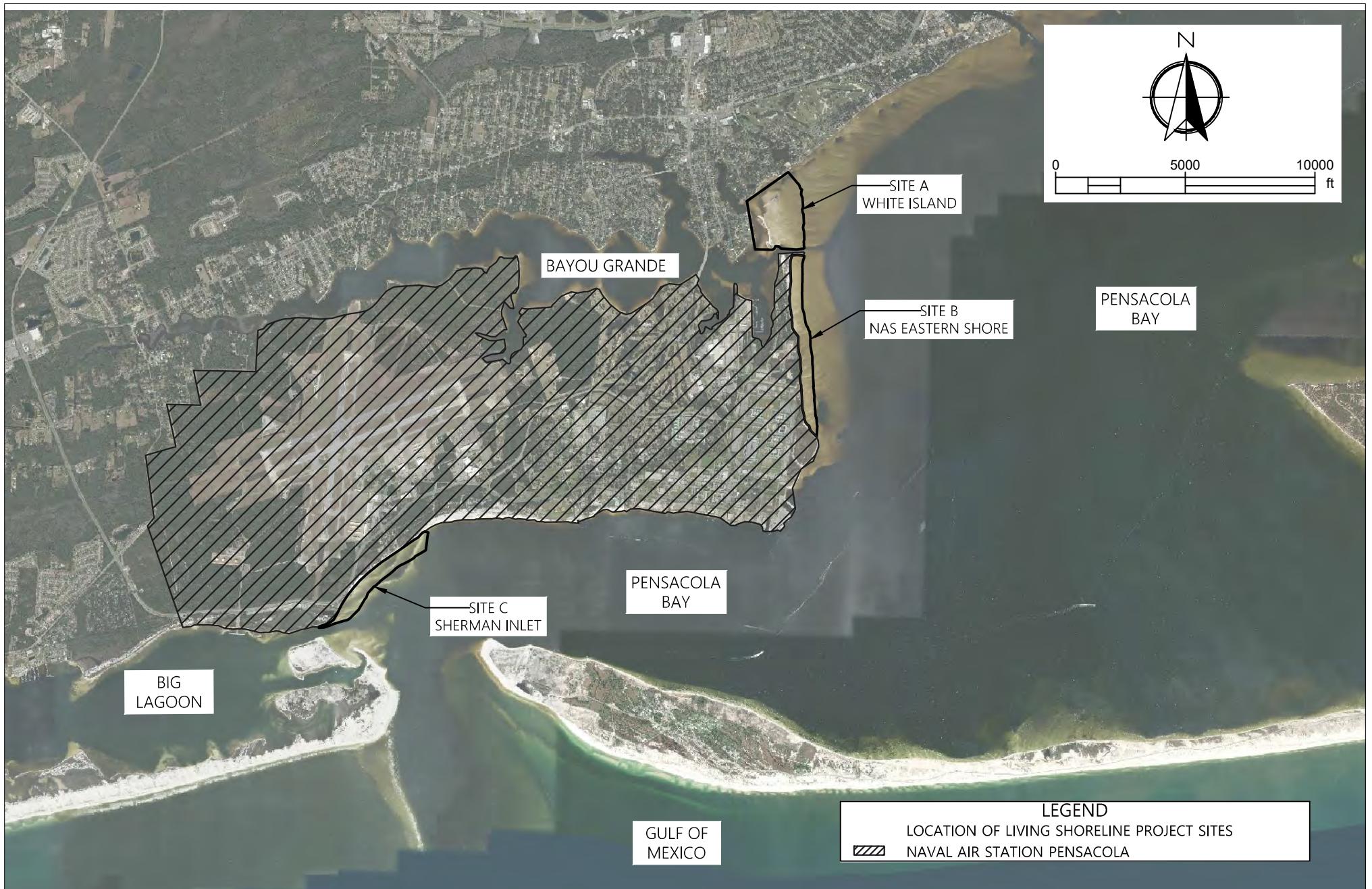
- TYPE OF SURVEY: TOPOGRAPHIC AND HYDROGRAPHIC
- HORIZONTAL INFORMATION ON THIS PLAT IS REFERENCED TO FLORIDA STATE PLANE COORDINATE SYSTEM NORTH ZONE.
- THIS SURVEY WAS ACCOMPLISHED UTILIZING AN AUTOMATED SOUNDING SYSTEM. THE DECIMAL POINT IN THE SOUNDING REPRESENTS THE LOCATION WHERE THE SOUNDING WAS ACQUIRED. ALL SOUNDINGS SHOWN WITH A "-" SIGN ARE DEPTHS BELOW ZERO NAVD 88 DATUM. ALL SOUNDINGS THAT APPEAR WITHOUT A "+" SIGN ARE ELEVATIONS ABOVE ZERO NAVD 88 DATUM. SOUNDINGS ARE IN FEET AND TENTHS.
- ELEVATIONS ARE REFERENCED TO NAVD 88 (USING GEODID 12B) ESTABLISHED BY RTK GPS UTILIZING FLDOT NETWORK AS A CONTINUOUSLY OPERATING REFERENCE STATION.
- DATE OF FIELD SURVEY: APRIL, MAY, 2020 AND MAY 2021.
- STANDARDS OF PRACTICE FOR SURVEYING REQUIRE THAT "THE HORIZONTAL POSITION OF PHYSICAL FEATURES MUST BE PLOTTED TO 1/100TH INCH OF FINAL MAP SCALE." DIMENSIONS "SNAPPED" FROM THE ELECTRONIC VERSION OF THIS MAP SHOULD BE CONSIDERED TO BE NO MORE ACCURATE THAN 1/100TH OF THE MAP SCALE NOTED. CRITICAL CLEARANCE DIMENSIONS MUST BE FIELD CHECKED.
- SOUNDINGS WERE ACQUIRED WITH A TELEDYNE ODOM ECHOTRAC CV100DF SOUNDER AND 208 KHZ TRANSDUCER.

TURBIDITY NOTES:

- THE CONTRACTOR SHALL IMPLEMENT THE EROSION AND TURBIDITY CONTROLS AS SHOWN IN THE PLANS, AS REQUIRED BY THE PERMIT AND AS DIRECTED BY THE ENVIRONMENTAL INSPECTOR. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THESE CONTROLS ARE PROPERLY INSTALLED, MAINTAINED AND FUNCTION PROPERLY TO PREVENT TURBID OR POLLUTED WATER FROM LEAVING THE PROJECT SITE. AS REQUIRED, THE CONTRACTOR WILL ADJUST THE EROSION AND TURBIDITY CONTROL TO ENSURE THE SITE MEETS ALL FEDERAL, STATE, AND LOCAL REGULATIONS. BEST MANAGEMENT PRACTICES (BMP) FOR EROSION AND SEDIMENTATION CONTROL AND DEWATERING OPERATIONS SHALL MEET OR EXCEED REGULATIONS AND STATUTORY REQUIREMENTS.
- TURBIDITY SCREENS SHALL BE SET A MINIMUM OF 3 FEET OFF THE EDGE OF THE SEA GRASSES UNLESS OTHERWISE DOCUMENTED IN THE PLANS AND OTHER CONSTRUCTION DOCUMENTS.
- THE CONTRACTOR SHALL PROPERLY ISOLATE THE DREDGING ACTIVITIES WITH TURBIDITY SCREENS TO PREVENT DREDGED MATERIAL (SPOIL), SEDIMENTS AND TURBID WATER FROM ENTERING ADJACENT WETLANDS OR WATERS OF THE STATE. ALL DREDGED MATERIAL PLACED AT TEMPORARY AND PERMANENT SPOIL SITES SHALL BE PROTECTED FROM EROSION BY PLACING BARRIERS (E.G. SILT FENCE, SAND BAGS, OR DIKES) AROUND THEIR PERIMETER TO PREVENT THE ESCAPE OF SEDIMENTS ONTO ADJACENT PROPERTY.
- A TURBIDITY SCREEN SHALL BE INSTALLED AROUND THE DREDGING VESSEL DURING DREDGING OPERATIONS.
- INSTALL ADDITIONAL TURBIDITY CURTAINS AS NEEDED TO PREVENT MIGRATION OF SEDIMENT TO OTHER PORTIONS OF THE BAY.
- THE TURBIDITY OF THE SURFACE WATER SHALL NOT EXCEED 29 NTU'S OVER THE BACKGROUND TURBIDITY. IN THE EVENT THAT THE TURBIDITY IS RAISED ABOVE THE ACCEPTABLE LIMIT, ALL DREDGING ACTIVITIES SHALL BE STOPPED, THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION SHALL BE NOTIFIED, AND THE CONTRACTOR SHALL WORK WITH THE FDEP TO REMEDIATE ANY DAMAGE THAT OCCURRED.
- THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING BEST MANAGEMENT PRACTICES FOR CONTROLLING RUNOFF AND TURBIDITY FROM DREDGING AND DREDGED MATERIAL DISPOSAL OPERATIONS BY UTILIZING MEASURES SUCH AS TURBIDITY BARRIERS AND CONTROL OF DREDGING OPERATIONS TO ASSURE DREDGED MATERIAL AND TURBIDITY DOES NOT IMPACT SUBMERGED AQUATIC VEGETATION LOCATED IN THE VICINITY OF THE PROJECT OR EXCEED WATER QUALITY STANDARDS AS SPECIFIED BY THE FDEP. TURBIDITY GENERATED BY THE PROJECT MUST NOT RESULT IN AN INCREASE OF MORE THAN 29 NEPHELOMETERIC TURBIDITY UNITS (NTU) ABOVE BACKGROUND LEVELS IN WATERS OUTSIDE OF A 150 METER MIXING ZONE FROM THE ACTIVITY OR AT THE EDGE OF SAV. TURBIDITY MONITORING AND REPORTING WILL BE CONDUCTED IN ACCORDANCE WITH FDEP REQUIREMENTS AS SET FORTH IN THE PROJECT PERMIT. THE CONTRACTOR WILL ADHERE TO THE FDEP PERMIT CONDITIONS FOR THE PROTECTION OF SUBMERGED AQUATIC VEGETATION



PROJECT NUMBER 1033000.848	NO.	REVISIONS	DATE	MIKE WARNKE FL PE 64091	VOLKERT <small>Engineers Surveyors • Planners</small>	215 FAIRPOINT DRIVE SUITE B GULF BREEZE, FL 32561 TELEPHONE: (850) 512-8935	PENSACOLA BAY LIVING SHORELINE PROJECT GENERAL NOTES	
							DRAWN BY SC/DP DESIGNED BY VARIES	CHECKED BY MIKE WARNKE
							SECTION/TOWNSHIP/RANGE	DISTRICT DATE MARCH 2023



PROJECT NUMBER 1033000.848	NO.	REVISIONS	DATE	MIKE WARNEKE FL PE 64091	215 FAIRPOINT DRIVE SUITE B GULF BREEZE, FL 32561 TELEPHONE: (850) 512-8935				PENSACOLA BAY LIVING SHORELINE PROJECT VICINITY MAP
					DRAWN BY SC/DP	DESIGNED BY VARIES	QA/QC MANAGER	CHECKED BY MIKE WARNEKE	
3 OF 50					SECTION/TOWNSHIP/RANGE	DISTRICT	DATE MARCH 2023		

LEGEND

APPROXIMATE
WATERS
EDGEAPPROXIMATE
WATERS
EDGE

BAYOU GRANDE

DAVENPORT
BAYOU
VOLKERT
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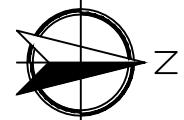
 DRAWN BY SC/DP
 DESIGNED BY VARIES

 QA/QC MANAGER
 CHECKED BY MIKE WARNKE

SECTION/TOWNSHIP/RANGE

DISTRICT

DATE MARCH 2023

 MIKE WARNKE
 FL PE 64091


0 500 1000 ft

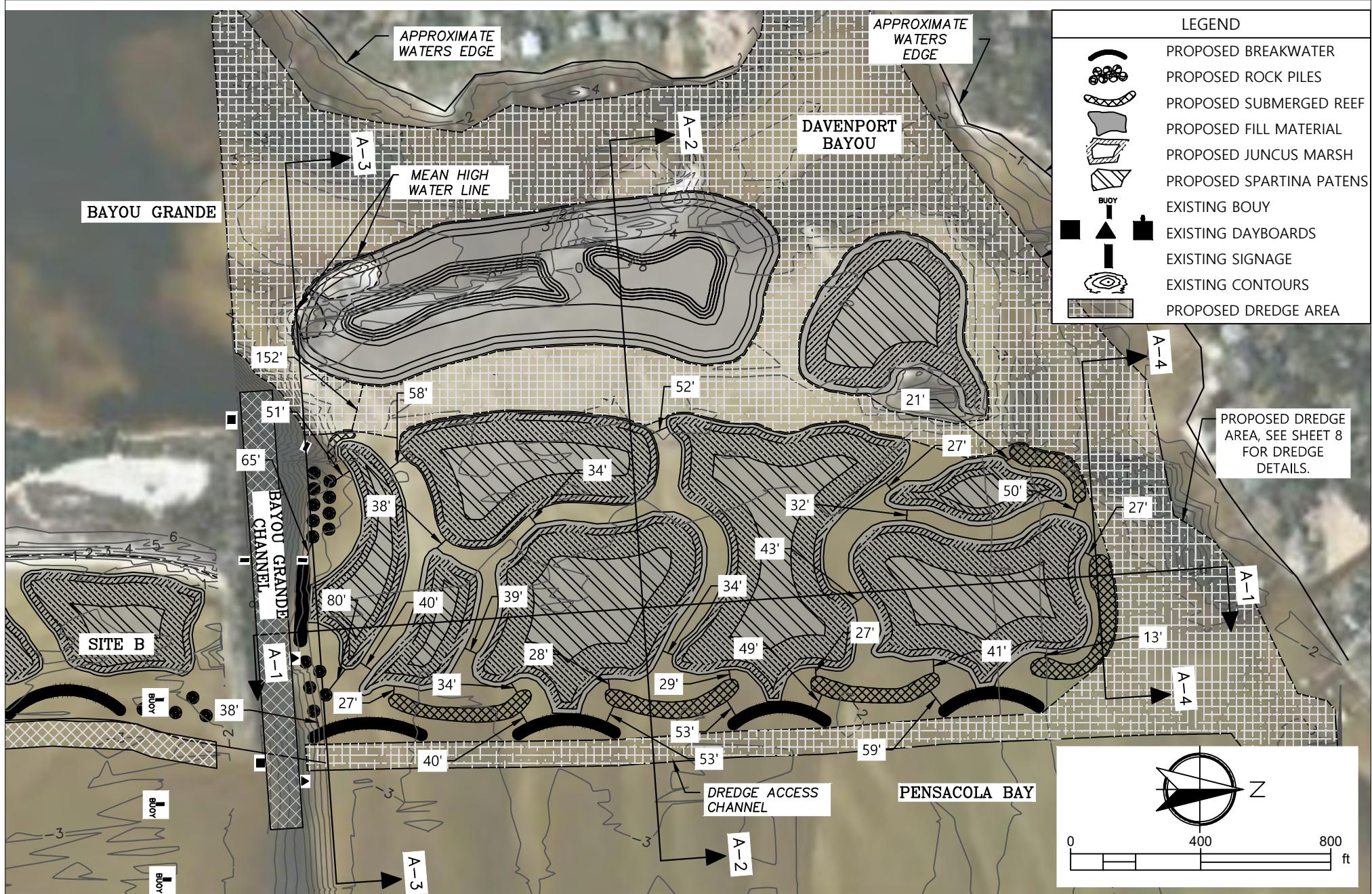
SITE B

BAYOU GRANDE CHANNEL

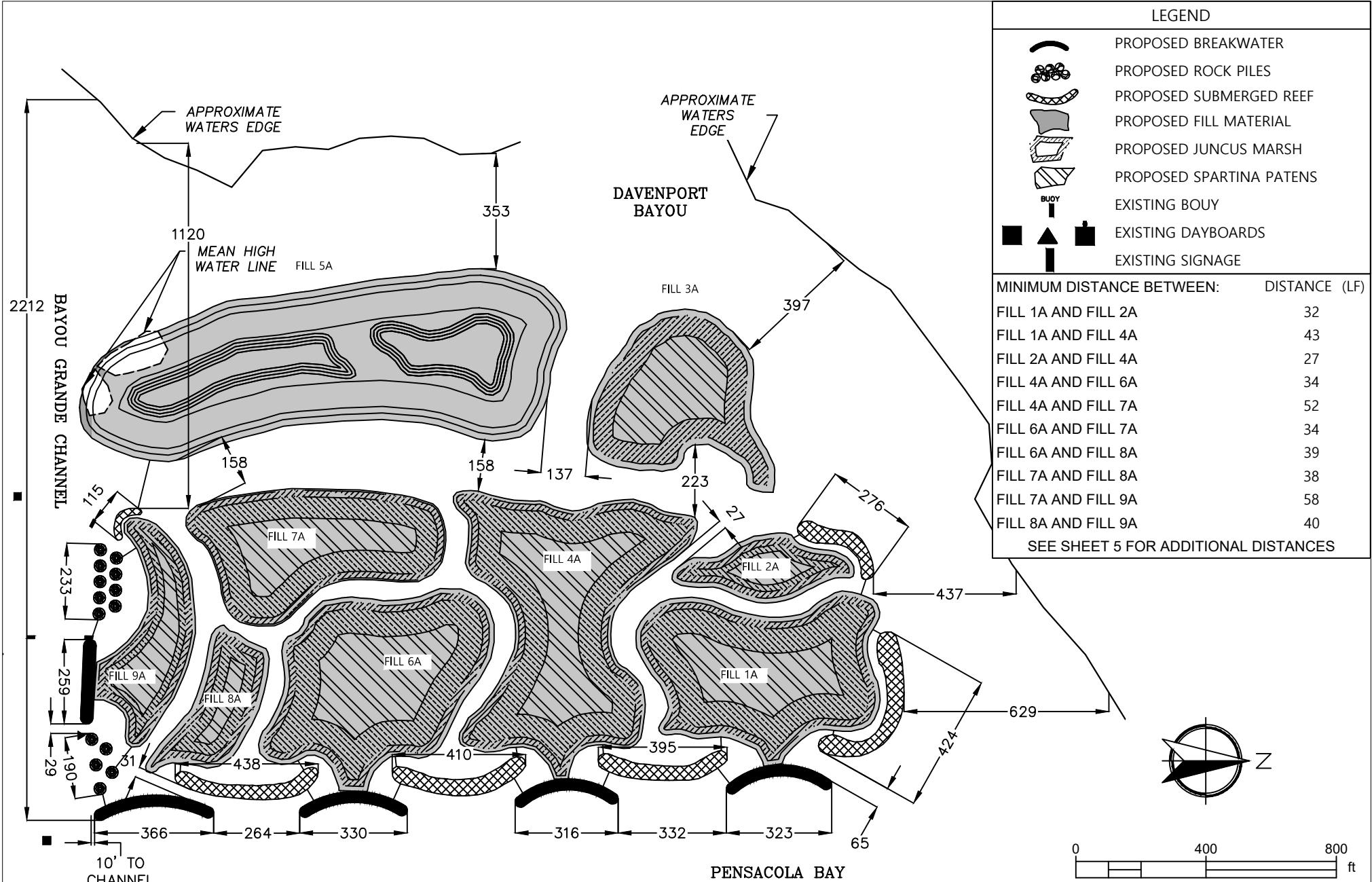
PENSACOLA BAY

 PROJECT NUMBER
 1033000.848
 SHEET
 4
 OF
 50

 PENSACOLA BAY LIVING SHORELINE PROJECT
 SITE A WHITE ISLAND
 EXISTING CONDITIONS



PROJECT NUMBER	NO.	REVISIONS	DATE	VOLKERT				PENSACOLA BAY LIVING SHORELINE PROJECT			
1033000.848				Engineers Surveyors • Planners				SITE A WHITE ISLAND SITE PLAN			
SHEET 5 OF 50				DRAWN BY SC/DP	DESIGNED BY VARIES	QA/QC MANAGER	CHECKED BY MIKE WARNKE				
MIKE WARNKE FL PE 64091				SECTION/TOWNSHIP/RANGE				DISTRICT	DATE MARCH 2023		



PROJECT NUMBER	NO.	REVISIONS	DATE
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SHEET			
6			
OF			
50			

VOLKERT
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MIKE WARNKE
FL PE 64091

215 FAIRPOINT DRIVE SUITE B
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QA/QC MANAGER
CHECKED BY MIKE WARNKE

SECTION/TOWNSHIP/RANGE
DISTRICT
DATE MARCH 2023

PENSACOLA BAY LIVING SHORELINE PROJECT
SITE A WHITE ISLAND
DETAILED PLAN

PROJECT WETLAND (WI) & OTHER SURFACE WATER (SW) & IMPACT SUMMARY

WL & SW ID	PERMANENT WL & SW (SQ.FT.)	IMPACT SIZE (ACRES)	DESCRIPTION
FILL 1A	283,218	6.50	MARSH
FILL 2A	71,966	1.65	MARSH
FILL 3A	207,278	4.76	MARSH
FILL 4A	377,579	8.67	MARSH
FILL 5A	584,298	13.41	ISLAND
FILL 6A	300,912	6.91	MARSH
FILL 7A	229,252	5.26	MARSH
FILL 8A	84,571	1.94	MARSH
FILL 9A	113,477	2.61	MARSH
TOTAL	2,252,551	51.71	

PROPOSED DREDGE		
AREA (SQ.FT.)	VOLUME (ACRES)	VOLUME (CU. YD.)
MAIN SITE		
2,501,314	57.42	360,790.00
PROPOSED CHANNEL DREDGE		
135,000	3.10	10,903.69
TOTAL		
2,636,314	60.52	371,693.69

MARSH PLANTING

MARSH PLANTING		
	AREA (SQ.FT.)	(ACRES)
1A MARSH	249,419	5.73
2A MARSH	53,749	1.23
3A MARSH	169,005	3.88
4A MARSH	346,045	7.94
6A MARSH	267,811	6.15
7A MARSH	219,109	5.03
8A MARSH	63,683	1.46
9A MARSH	96,371	2.21
TOTAL	1,465,192	33.64

CU. YD. ABOVE MHWL	CU. YD. BELOW MHWL
183,488.69	188,205.00

PROPOSED CONSTRUCTION

	AREA	
	(SQ.FT.)	(ACRES)
BREAK WATER	56,436	1.30
ROCK PILES	14,443	0.33
SUBMERGED REEF	103,563	2.38
TOTAL	174,442	4.01

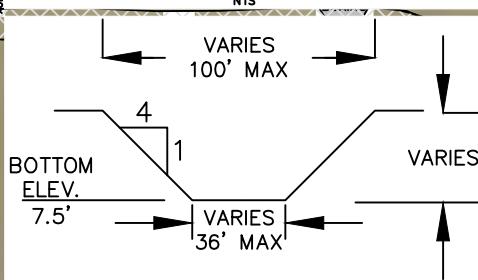
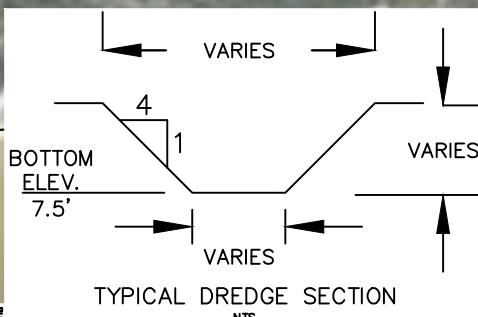
NOTE: SEE SITE PLAN, DETAIL PLAN AND MARSH DETAILS SHEET

PROJECT NUMBER 1033000.848	NO. 7 OF 50	REVISIONS DATE MIKE WARNKE FL PE 64091	 DRAWN BY SC/DP DESIGNED BY VARIES SECTION/TOWNSHIP/RANGE	215 FAIRPOINT DRIVE SUITE B GULF BREEZE, FL 32561 TELEPHONE: (850) 512-8935	PENSACOLA BAY LIVING SHORELINE PROJECT SITE A WHITE ISLAND IMPACT SUMMARY

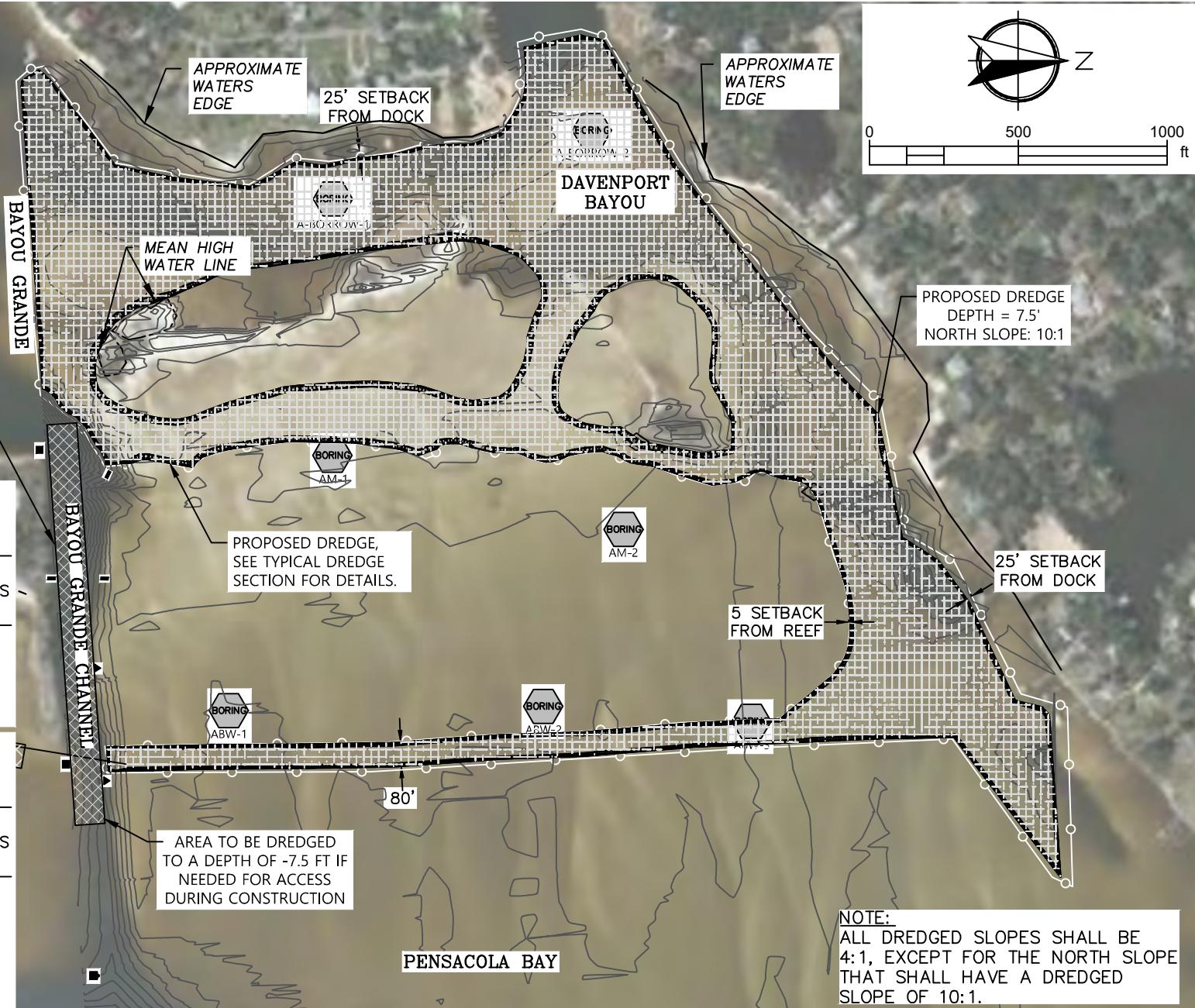
LEGEND

- EXISTING CONTOUR
- EXISTING BOUY
- EXISTING DAY BOARDS
- BORING LOCATION
- TURBIDITY CURTAIN

PROPOSED ACCESS CHANNEL HAS A LENGTH OF 1350' AND A MAXIMUM WIDTH OF 100', SEE PROPOSED ACCESS CHANNEL TYPICAL SECTION FOR DETAILS.



PROJECT NUMBER
1033000.848
SHEET
8
OF
50



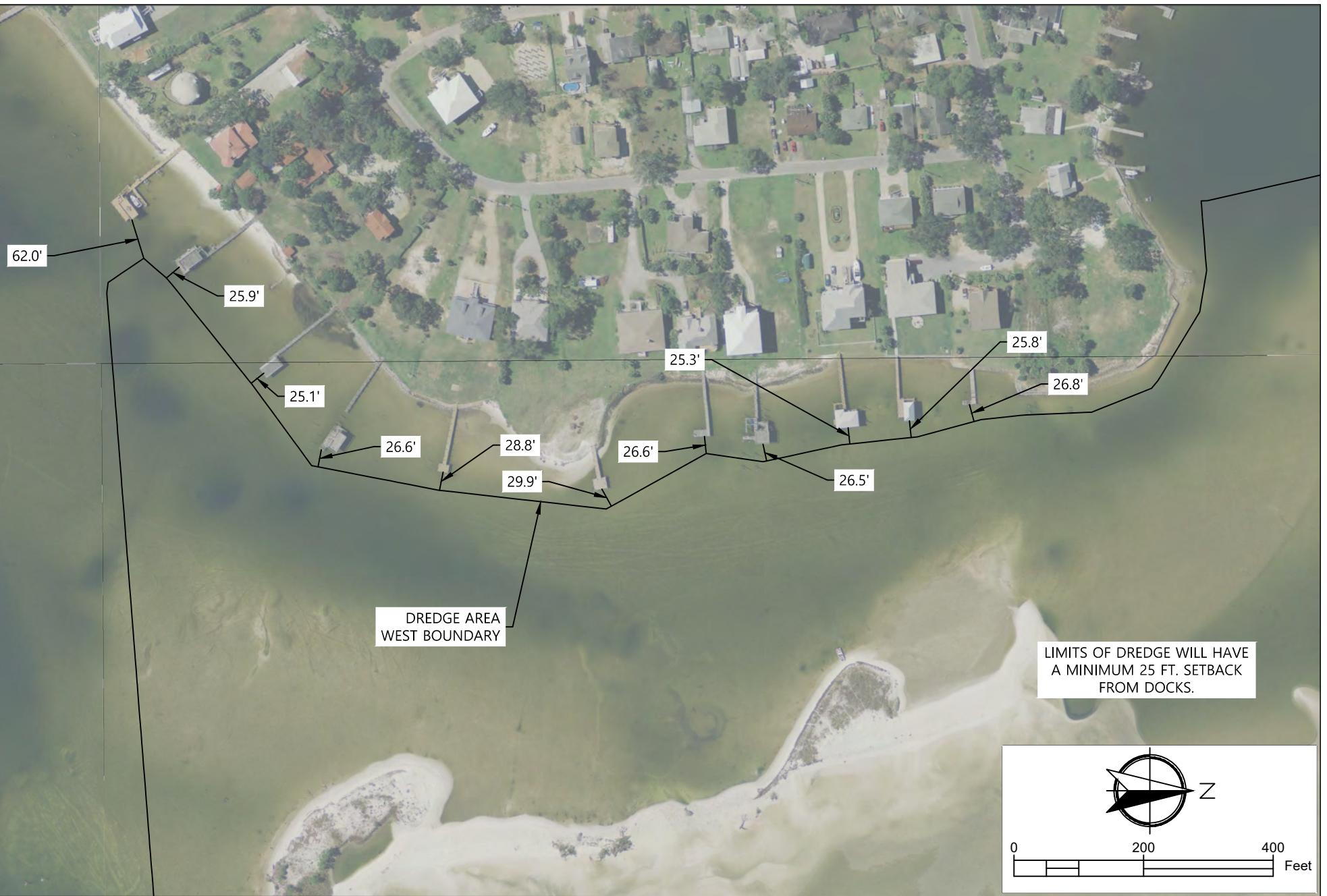
MIKE WARNKE
FL PE 64091

VOLKERT
Engineers Surveyors • Planners

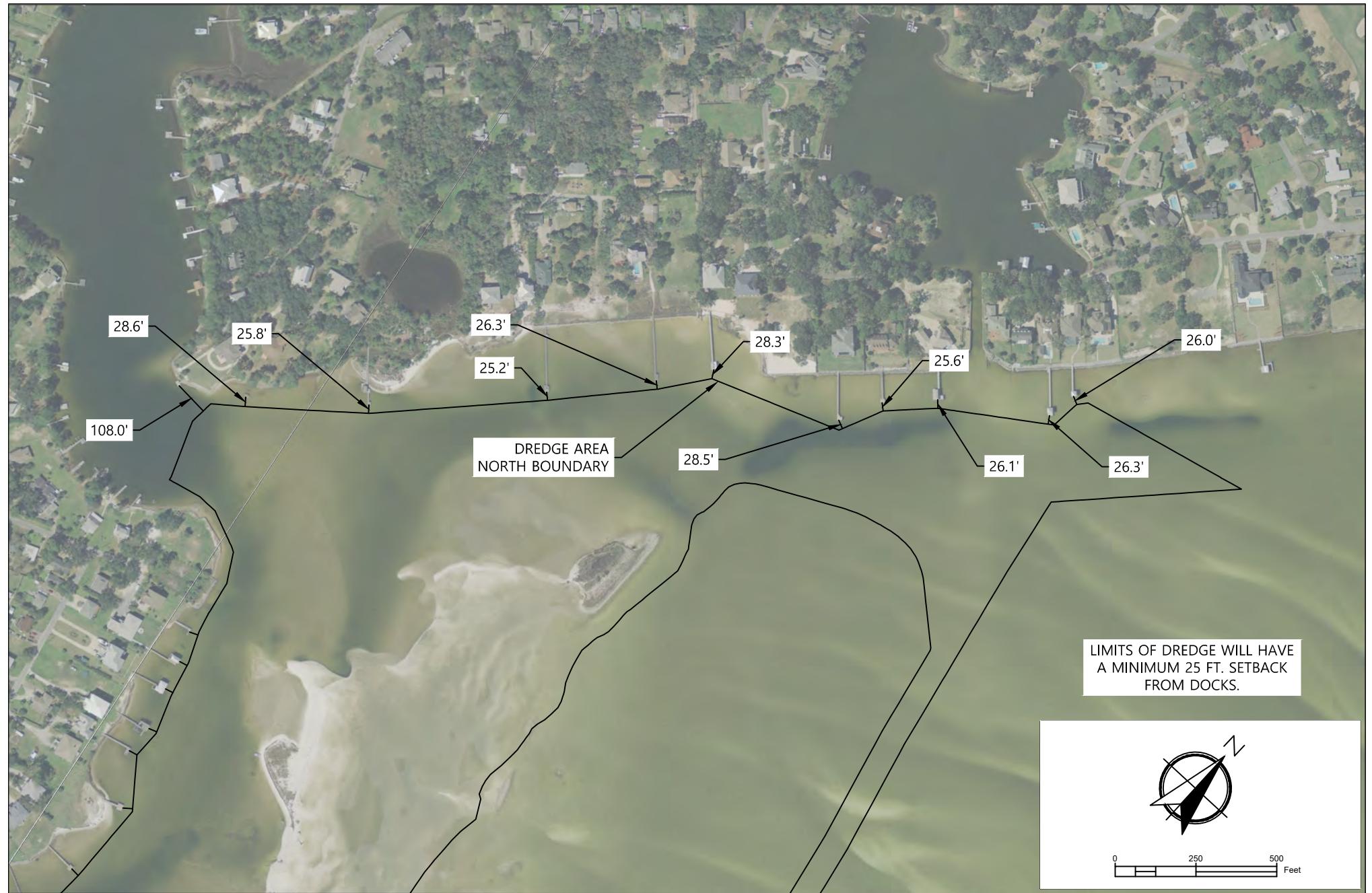
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GULF BREEZE, FL 32561
TELEPHONE: (850) 512-8935

DRAWN BY	DESIGNED BY	QA/QC MANAGER	CHECKED BY
SC/DP	VARIABLE	MIKE WARNKE	MIKE WARNKE
SECTION/TOWNSHIP/RANGE	DISTRICT	DATE	MARCH 2023

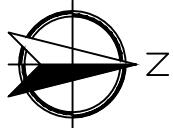
PENSACOLA BAY LIVING SHORELINE PROJECT
SITE A WHITE ISLAND
BORING & DREDGING PLAN



PROJECT NUMBER	NO.	REVISIONS	DATE	MIKE WARNEKE FL PE 64091	215 FAIRPOINT DRIVE SUITE B GULF BREEZE, FL 32561 TELEPHONE: (850) 512-8935				PENSACOLA BAY LIVING SHORELINE PROJECT SITE A RESIDENTIAL DOCK PROXIMITY DETAIL A	
1033000.848	SHEET 9 OF 50				DRAWN BY SC/DP	DESIGNED BY VARIES	QA/QC MANAGER	CHECKED BY MIKE WARNEKE	SECTION/TOWNSHIP/RANGE	DISTRICT



PROJECT NUMBER	NO.	REVISIONS	DATE	MIKE WARNEKE FL PE 64091	215 FAIRPOINT DRIVE SUITE B GULF BREEZE, FL 32561 TELEPHONE: (850) 512-8935				PENSACOLA BAY LIVING SHORELINE PROJECT SITE A RESIDENTIAL DOCK PROXIMITY DETAIL B
1033000.848	SHEET 10 OF 50				DRAWN BY SC/DP	DESIGNED BY VARIES	QA/QC MANAGER	CHECKED BY MIKE WARNEKE	
					SECTION/TOWNSHIP/RANGE		DISTRICT	DATE MARCH 2023	



0 400 800 ft

BAYOU GRANDE

APPROXIMATE
WATERS EDGE

APPROXIMATE
WATERS
EDGE

DAVENPORT
BAYOU

MEAN HIGH
WATER LINE

LEGEND	
	PROPOSED BREAKWATER
	PROPOSED ROCK PILES
	PROPOSED SUBMERGED REEF
	PROPOSED FILL MATERIAL
	PROPOSED MARSH AREA
	EXISTING BOUY
	EXISTING DAYBOARDS
	EXISTING SIGNAGE
	SIGN A
	SIGN B
	TURBIDITY CURTAIN



PENSACOLA BAY

NOTE:
LOCATION OF TURBIDITY CONTROLS TO BE DETERMINED BY
CONTRACTOR

PROJECT NUMBER	NO.	REVISIONS	DATE
1033000.848			
SHEET			
11			
OF			
50			

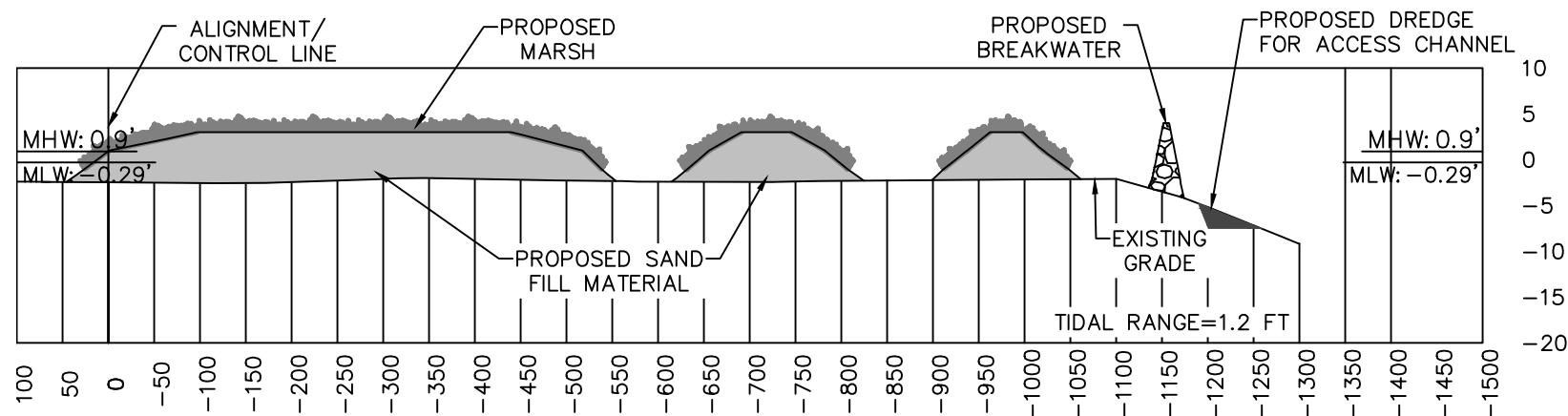
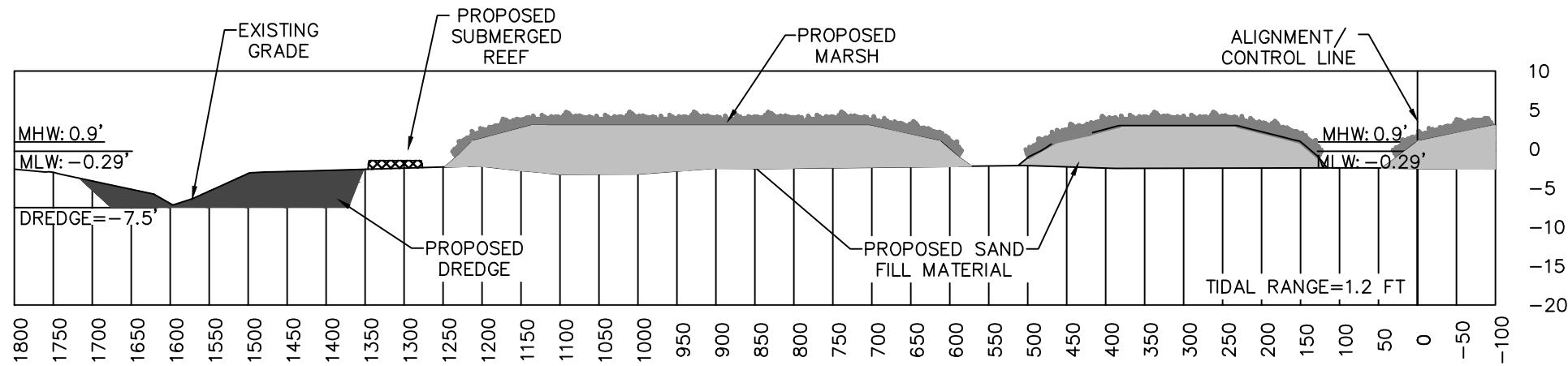
MIKE WARNKE
FL PE 64091

VOLKERT
Engineers Surveyors • Planners

215 FAIRPOINT DRIVE SUITE B
GULF BREEZE, FL 32561
TELEPHONE: (850) 512-8935

DRAWN BY SC/DP	DESIGNED BY VARIES	QA/QC MANAGER	CHECKED BY MIKE WARNKE
SECTION/TOWNSHIP/RANGE		DISTRICT	DATE MARCH 2023

PENSACOLA BAY LIVING SHORELINE PROJECT
SITE A WHITE ISLAND
AIDS TO NAVIGATION



SECTION A-1

HORIZONTAL

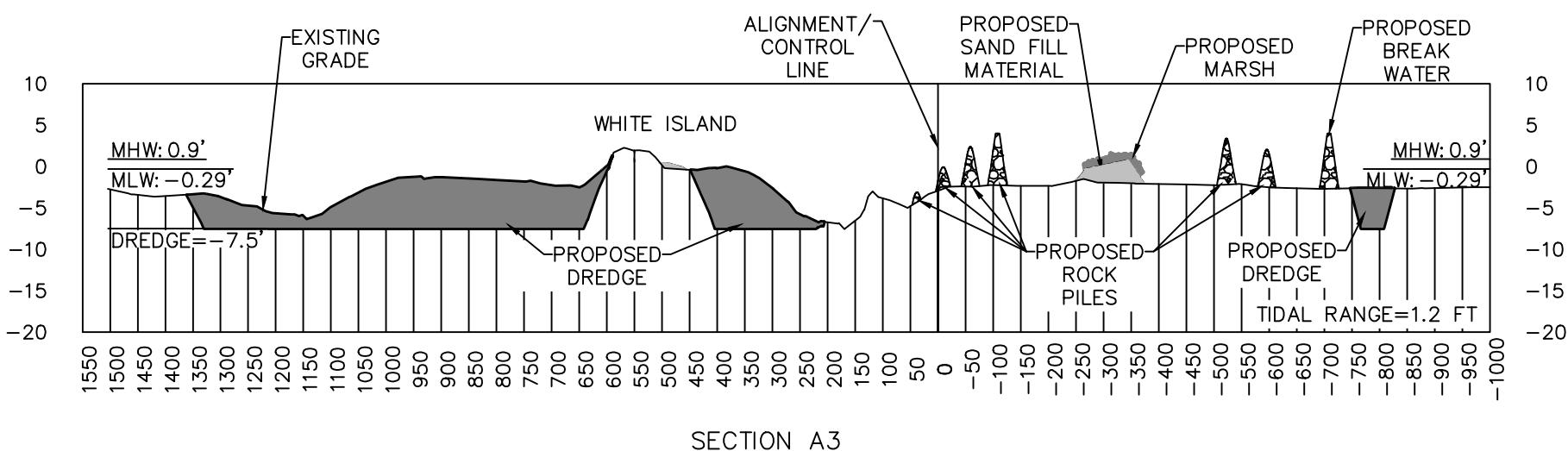
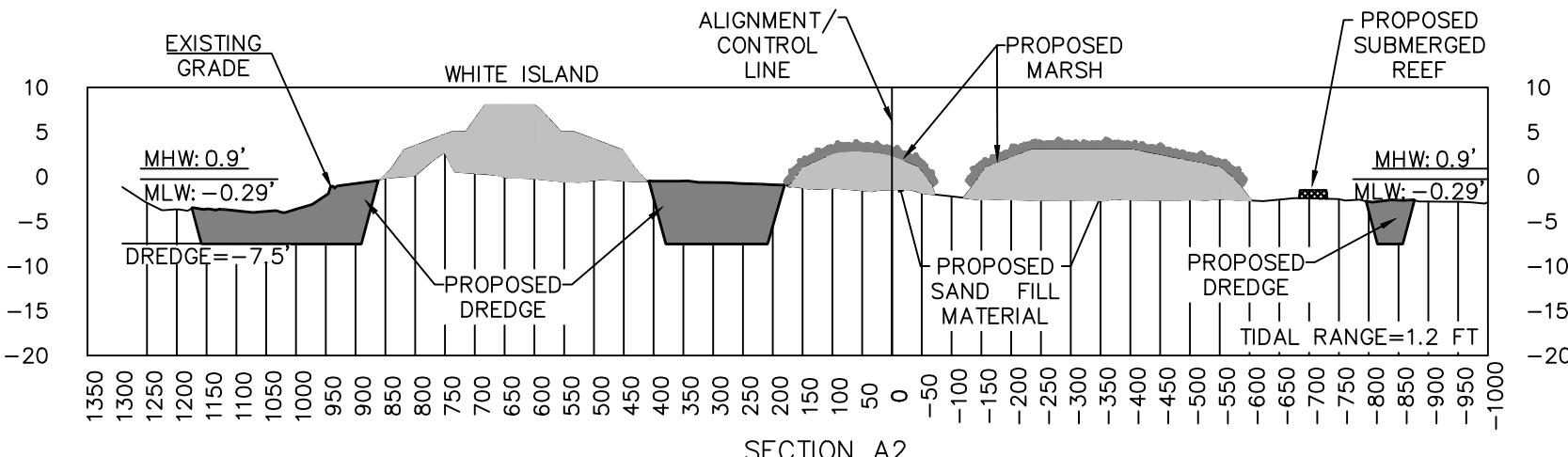
PROJECT NUMBER	NO.	REVISIONS	DATE
1033000.848			
SHEET			
12			
OF			
50			



MIKE WARNKE
FL PE 64091

215 FAIRPOINT DRIVE SUITE B
GULF BREEZE, FL 32561
TELEPHONE: (850) 512-8935

PENSACOLA BAY LIVING SHORELINE PROJECT
SITE A WHITE ISLAND
CROSS SECTIONS



The diagram illustrates a rectangular area with two dimensions. The vertical dimension is labeled "VERTICAL" and has tick marks at 0, 20, and 40 ft. The horizontal dimension is labeled "HORIZONTAL" and has tick marks at 0, 300, and 600 ft.

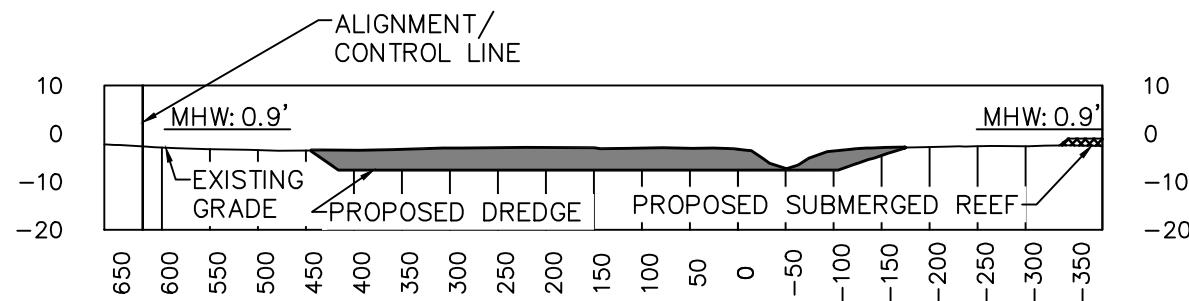
PROJECT NUMBER	NO.	REVISIONS	DATE
1033000.848			
SHEET			
13			
OF			
50			



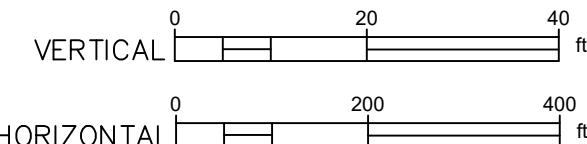
MIKE WARNKE
FL PE 64091

215 FAIRPOINT DRIVE SUITE B
GULF BREEZE, FL 32561
TELEPHONE: (850) 512-8935

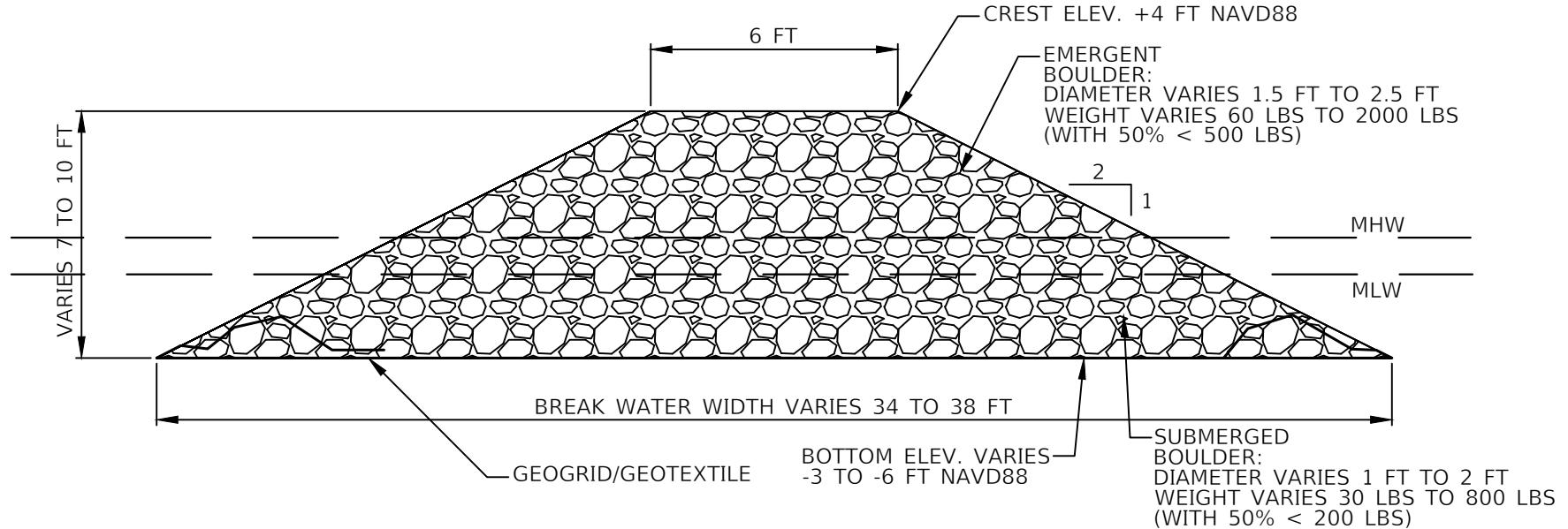
PENSACOLA BAY LIVING SHORELINE PROJECT
SITE A WHITE ISLAND
CROSS SECTIONS



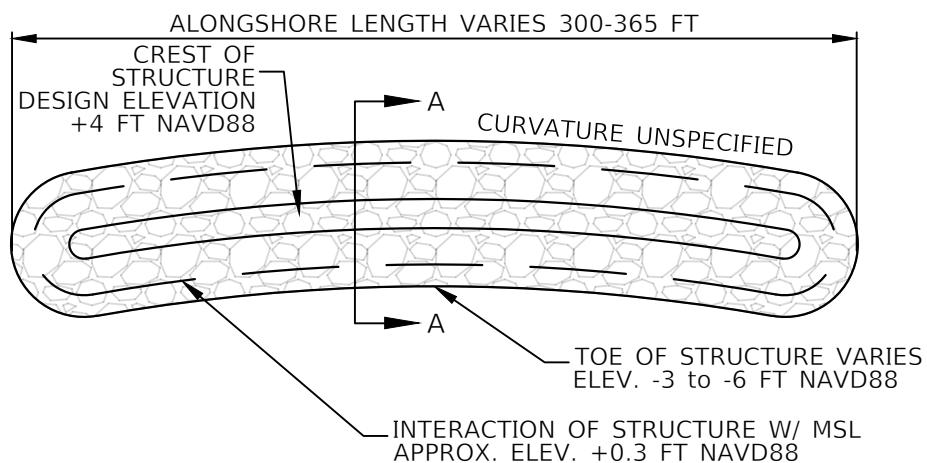
SECTION A-4



PROJECT NUMBER 1033000.848 SHEET 14 OF 50	NO.	REVISIONS	DATE	 MIKE WARNE FL PE 64091	215 FAIRPOINT DRIVE SUITE B GULF BREEZE, FL 32561 TELEPHONE: (850) 512-8935				PENSACOLA BAY LIVING SHORELINE PROJECT SITE A WHITE ISLAND CROSS SECTIONS
					DRAWN BY SC/DP	DESIGNED BY VARIES	QA/QC MANAGER	CHECKED BY MIKE WARNE	
					SECTION/TOWNSHIP/RANGE		DISTRICT	DATE MARCH 2023	



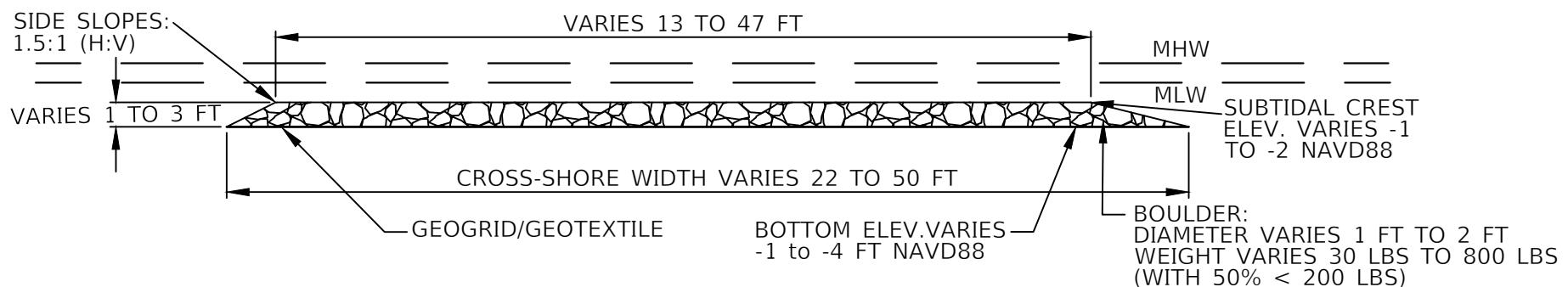
Section A-A



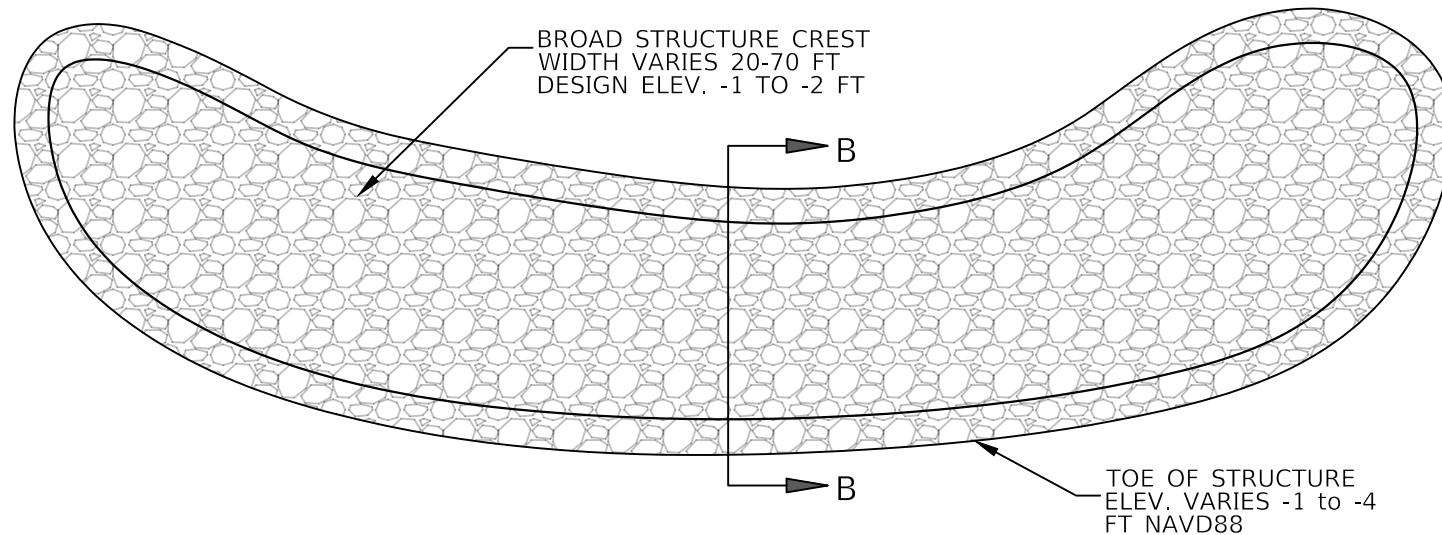
NOT TO SCALE

Plan View

PROJECT NUMBER 1033000.848	NO.	REVISIONS	DATE	VOLKERT <small>Engineers Surveyors • Planners</small>	215 FAIRPOINT DRIVE SUITE B GULF BREEZE, FL 32561 TELEPHONE: (850) 512-8935	PENSACOLA BAY LIVING SHORELINE PROJECT SITE A WHITE ISLAND BREAK WATER DETAILS	
SHEET 15 OF 50					DRAWN BY SC/DP DESIGNED BY VARIES SECTION/TOWNSHIP/RANGE	QA/QC MANAGER CHECKED BY MIKE WARNKE DISTRICT DATE MARCH 2023	
MIKE WARNKE FL PE 64091							



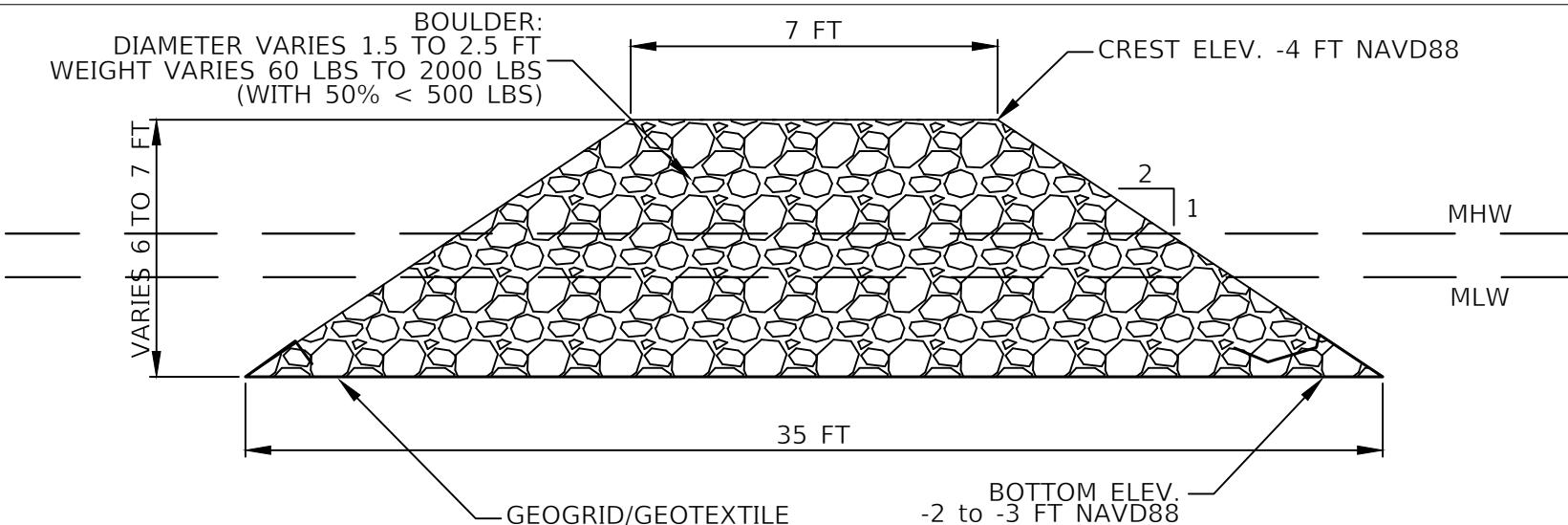
Section B-B



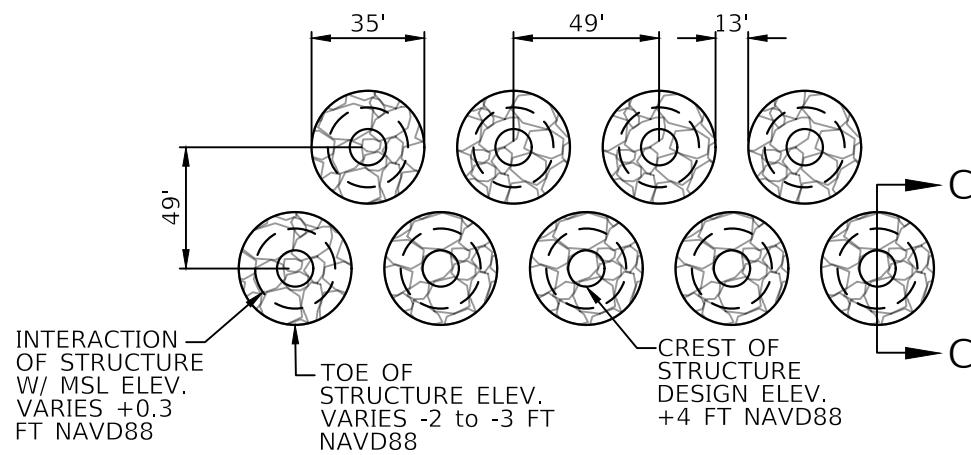
NOT TO SCALE

Plan View

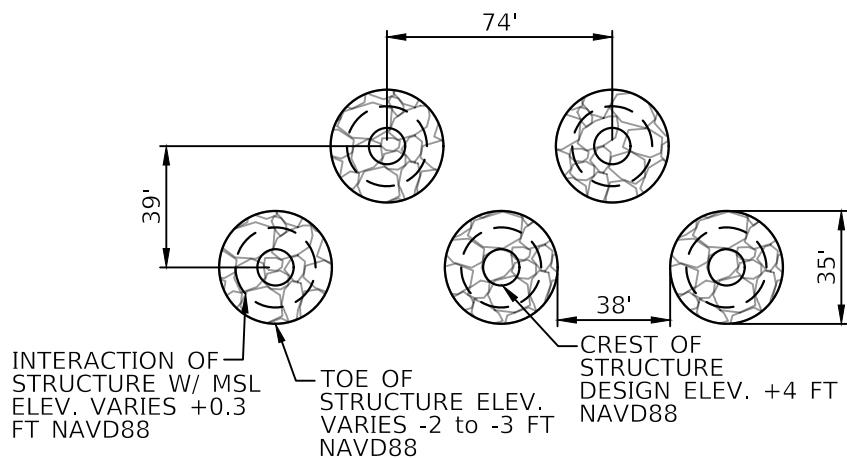
PROJECT NUMBER 1033000.848	NO.	REVISIONS	DATE	VOLKERT <small>Engineers Surveyors • Planners</small> MIKE WARNKE FL PE 64091	215 FAIRPOINT DRIVE SUITE B GULF BREEZE, FL 32561 TELEPHONE: (850) 512-8935	PENSACOLA BAY LIVING SHORELINE PROJECT SITE A WHITE ISLAND SUBTIDAL REEF DETAILS
SHEET 16 OF 50					DRAWN BY SC/DP DESIGNED BY VARIES QA/QC MANAGER CHECKED BY MIKE WARNKE SECTION/TOWNSHIP/RANGE DISTRICT DATE MARCH 2023	



Section C-C



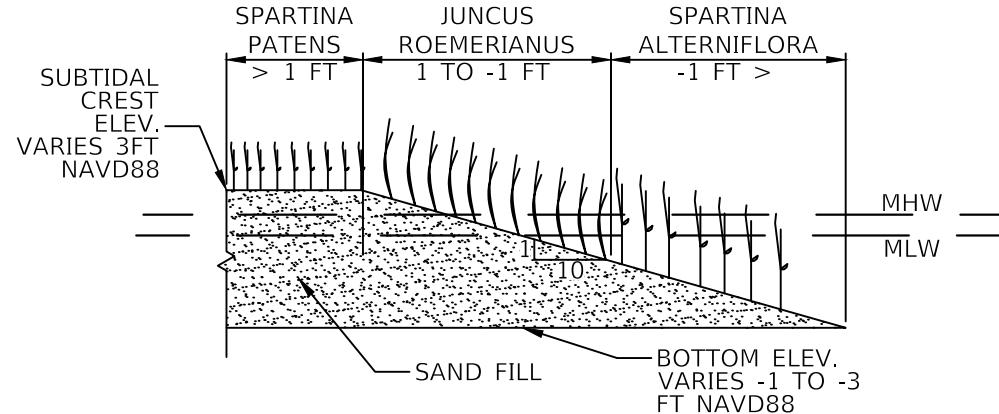
Plan View 1



Plan View 2

NOT TO SCALE

PROJECT NUMBER	NO.	REVISIONS	DATE	MIKE WARNE FL PE 64091	VOLKERT Engineers Surveyors • Planners	215 FAIRPOINT DRIVE SUITE B GULF BREEZE, FL 32561 TELEPHONE: (850) 512-8935	PENSACOLA BAY LIVING SHORELINE PROJECT SITE A WHITE ISLAND ROCK PILES DETAILS	
1033000.848								
SHEET 17 OF 50					DRAWN BY SC/DP	DESIGNED BY VARIES	QA/QC MANAGER	CHECKED BY MIKE WARNE
					SECTION/TOWNSHIP/RANGE	DISTRICT	DATE MARCH 2023	



Marsh Area Section View

MARSH AREA		
ZONE	PLANT	FREQUENCY
Bottom to -1	Spartina Alterniflora (Sporobolus Alterniflora)	18" on center
Elevation -1 to +1	Juncus Roemerianus (Needlegrass Rush)	18" on center
Above elevation +1	Spartina Patens (Saltmeadow Cordgrass)	24" on center

Marsh Details

NOT TO SCALE

PROJECT NUMBER 1033000.848	NO.	REVISIONS	DATE	MIKE WARNKE FL PE 64091	VOLKERT Engineers Surveyors • Planners	215 FAIRPOINT DRIVE SUITE B GULF BREEZE, FL 32561 TELEPHONE: (850) 512-8935	PENSACOLA BAY LIVING SHORELINE PROJECT SITE A WHITE ISLAND MARSH DETAILS	
SHEET 18 OF 50	DRAWN BY SC/DP	DESIGNED BY VARIES	QA/QC MANAGER	CHECKED BY MIKE WARNKE				
	SECTION/TOWNSHIP/RANGE		DISTRICT	DATE MARCH 2023				

LEGEND



EXISTING SAV



EXISTING CONTOUR

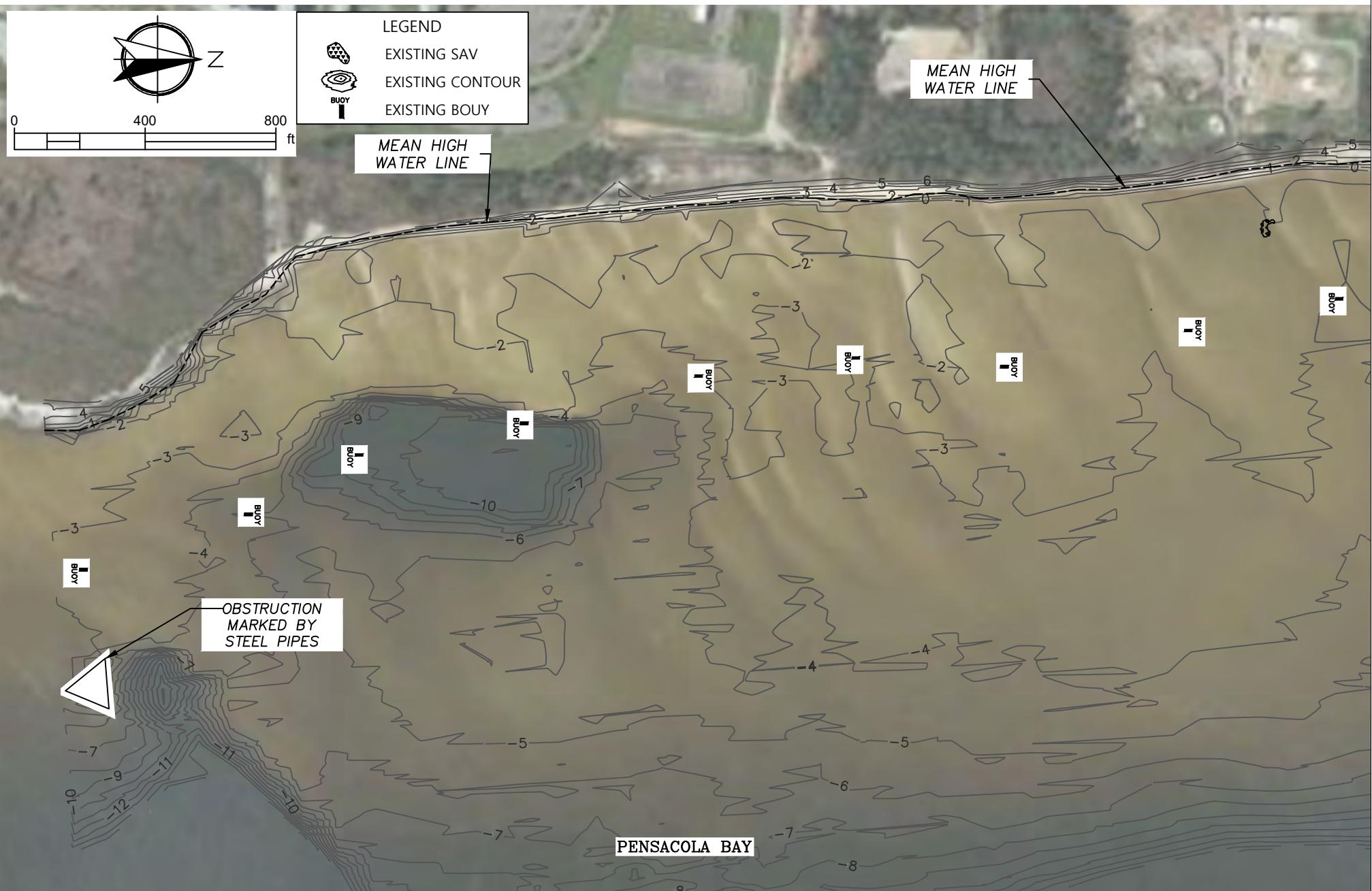


EXISTING BOUY

MEAN HIGH WATER LINE

BAYOU GRANDE
CHANNEL

PROJECT NUMBER 1033000.848	NO.	REVISIONS	DATE	VOLKERT <small>Engineers Surveyors • Planners</small> MIKE WARNKE FL PE 64091	215 FAIRPOINT DRIVE SUITE B GULF BREEZE, FL 32561 TELEPHONE: (850) 512-8935	PENSACOLA BAY LIVING SHORELINE PROJECT SITE B EASTERN SHORE EXISTING CONDITIONS	
SHEET 19 OF 50					DRAWN BY SC/DP DESIGNED BY VARIES SECTION/TOWNSHIP/RANGE	QA/QC MANAGER CHECKED BY MIKE WARNKE DISTRICT DATE MARCH 2023	



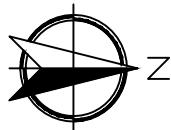
PROJECT NUMBER	NO.	REVISIONS	DATE
1033000.848			
SHEET			
20			
OF			
50			

VOLKERT
Engineers Surveyors • Planners
MIKE WARNKE
FL PE 64091

215 FAIRPOINT DRIVE SUITE B
GULF BREEZE, FL 32561
TELEPHONE: (850) 512-8935

DRAWN BY SC/DP	DESIGNED BY VARIES	QA/QC MANAGER	CHECKED BY MIKE WARNKE
SECTION/TOWNSHIP/RANGE		DISTRICT	DATE MARCH 2023

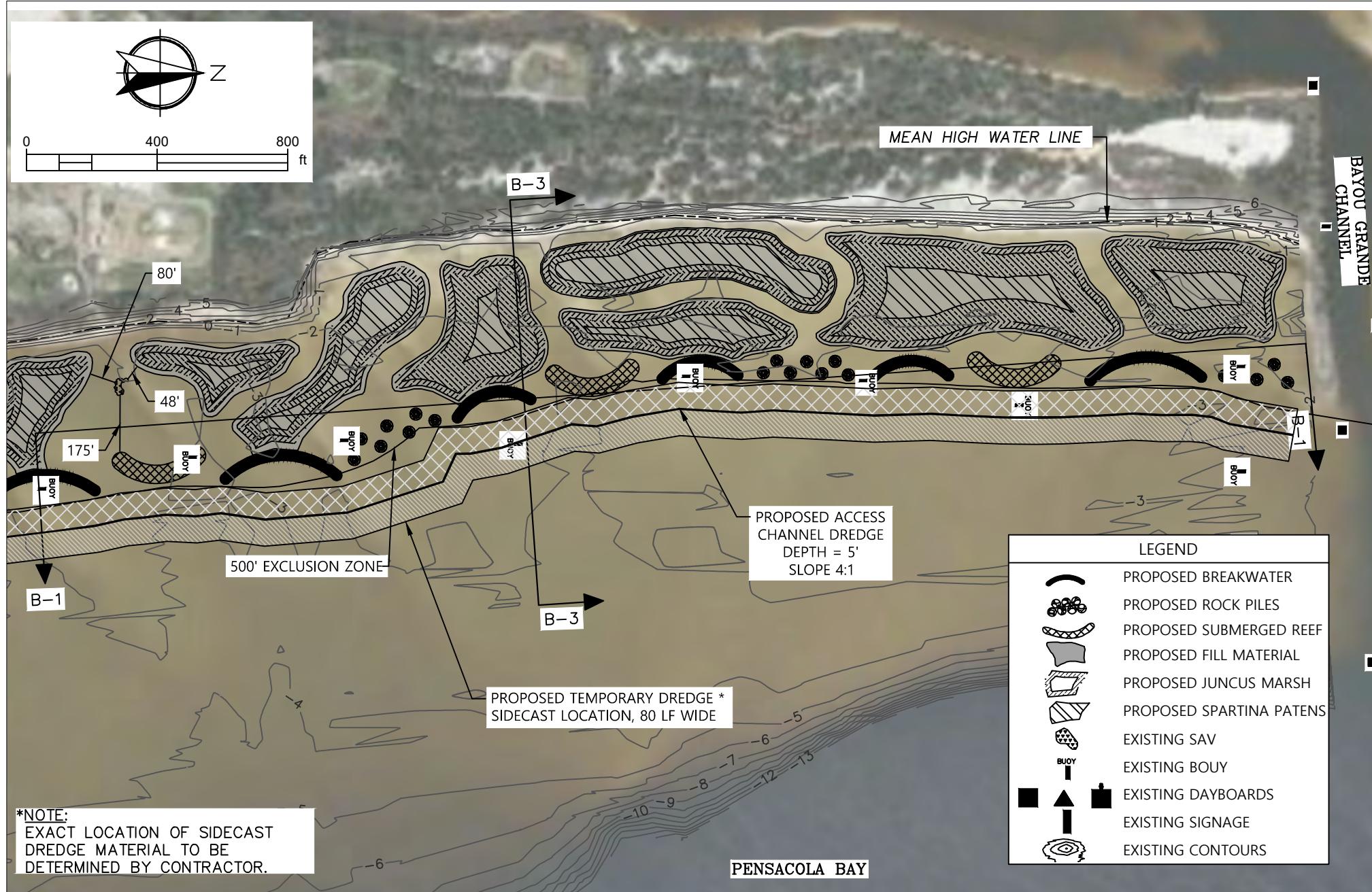
PENSACOLA BAY LIVING SHORELINE PROJECT
SITE B EASTERN SHORE
EXISTING CONDITIONS



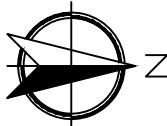
0 400 800 ft

MEAN HIGH WATER LINE

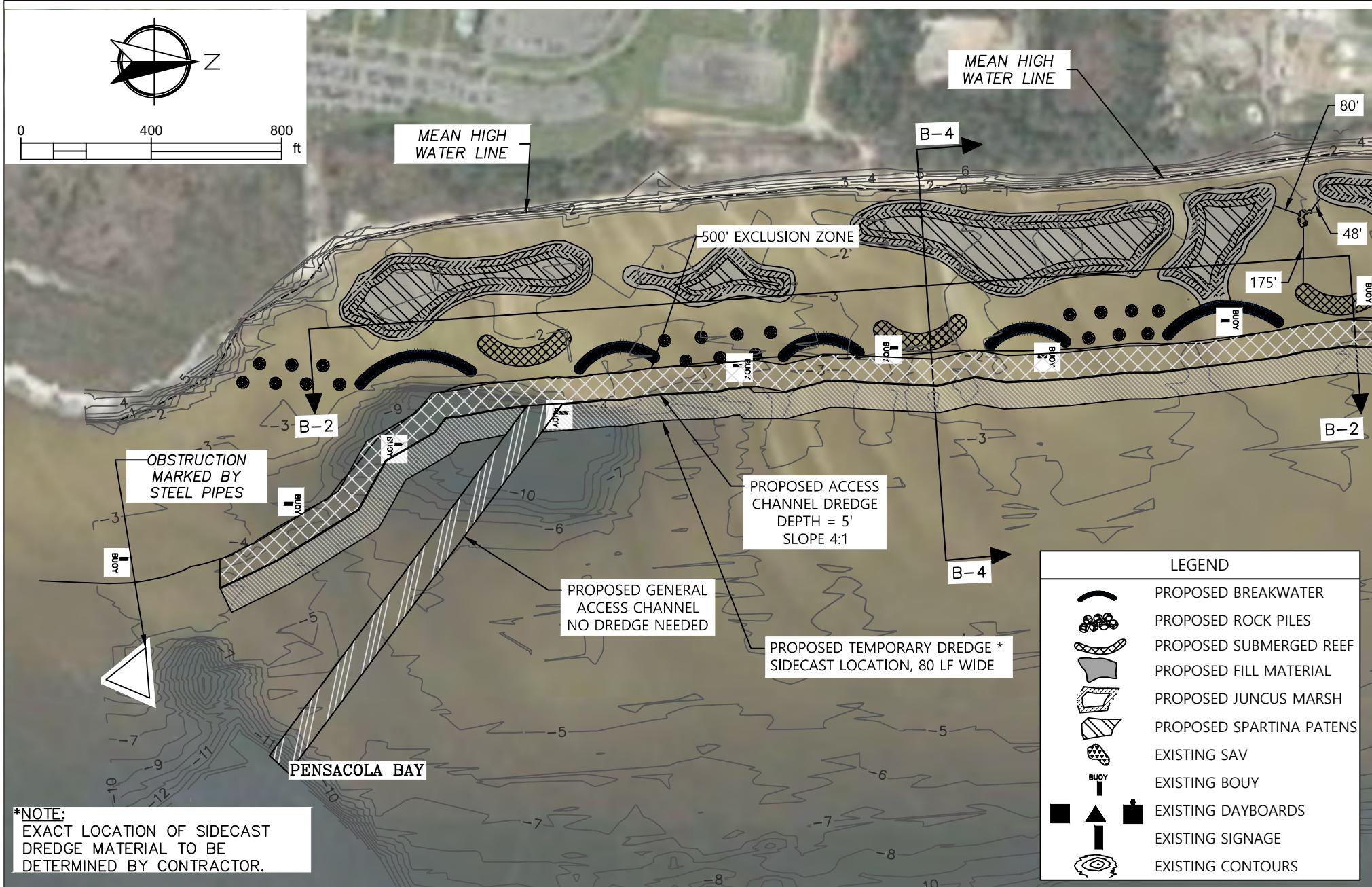
BAYOU GRANDE CHANNEL



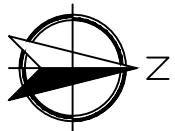
PROJECT NUMBER	NO.	REVISIONS	DATE	MIKE WARNKE FL PE 64091	215 FAIRPOINT DRIVE SUITE B GULF BREEZE, FL 32561 TELEPHONE: (850) 512-8935				PENSACOLA BAY LIVING SHORELINE PROJECT SITE B EASTERN SHORE SITE PLAN
SHEET	21	OF	50		DRAWN BY SC/DP	DESIGNED BY VARIES	QA/QC MANAGER	CHECKED BY MIKE WARNKE	
1033000.848					SECTION/TOWNSHIP/RANGE				DISTRICT DATE MARCH 2023



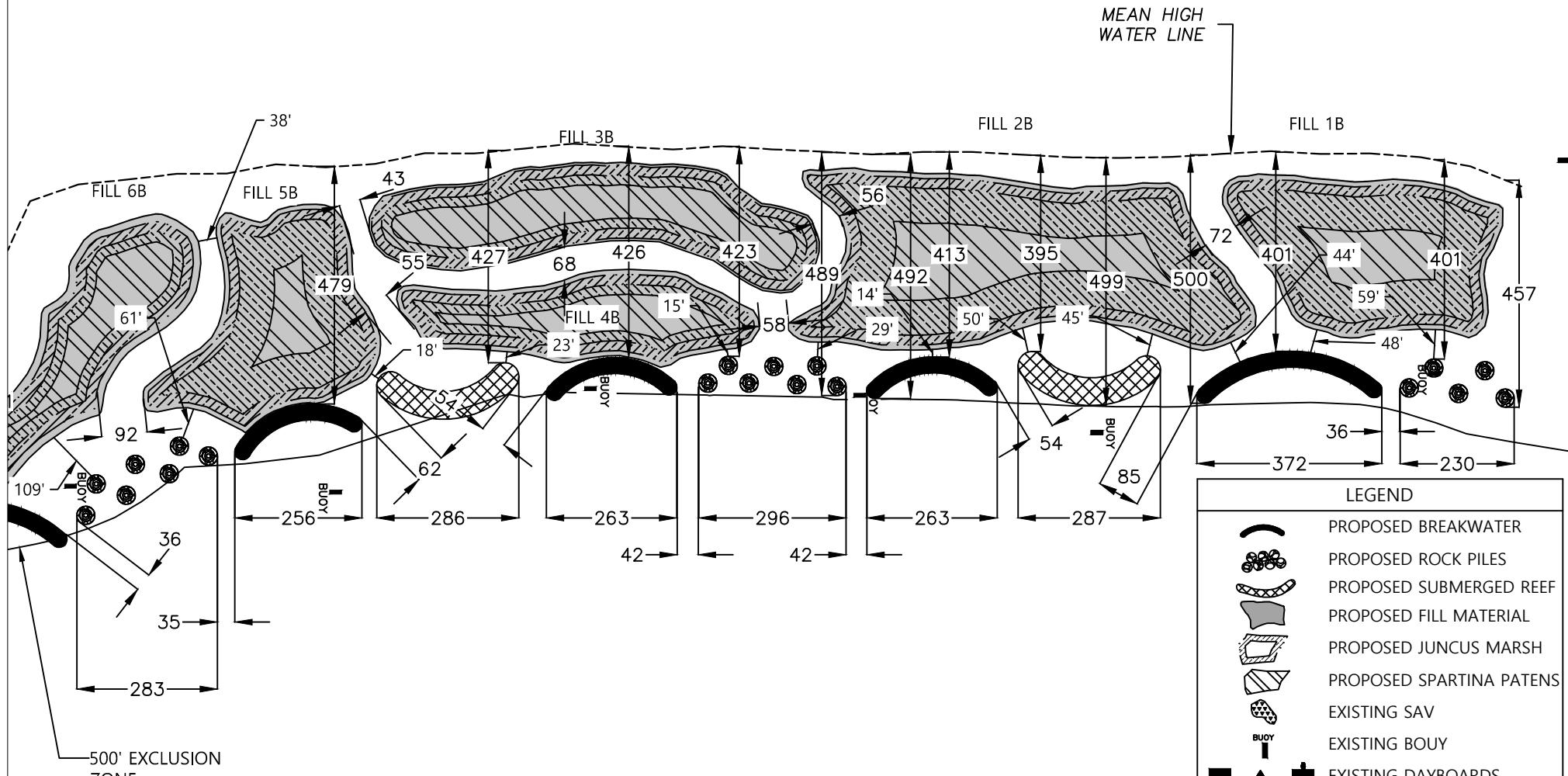
0 400 800 ft



PROJECT NUMBER	NO.	REVISIONS	DATE	MIKE WARNGE FL PE 64091	VOLKERT Engineers Surveyors • Planners				PENSACOLA BAY LIVING SHORELINE PROJECT SITE B EASTERN SHORE SITE PLAN
1033000.848	SHEET 22 OF 50				DRAWN BY SC/DP	DESIGNED BY VARIES	QA/QC MANAGER	CHECKED BY MIKE WARNGE	
SECTION/TOWNSHIP/RANGE				DISTRICT DATE MARCH 2023					



0 300 600 ft

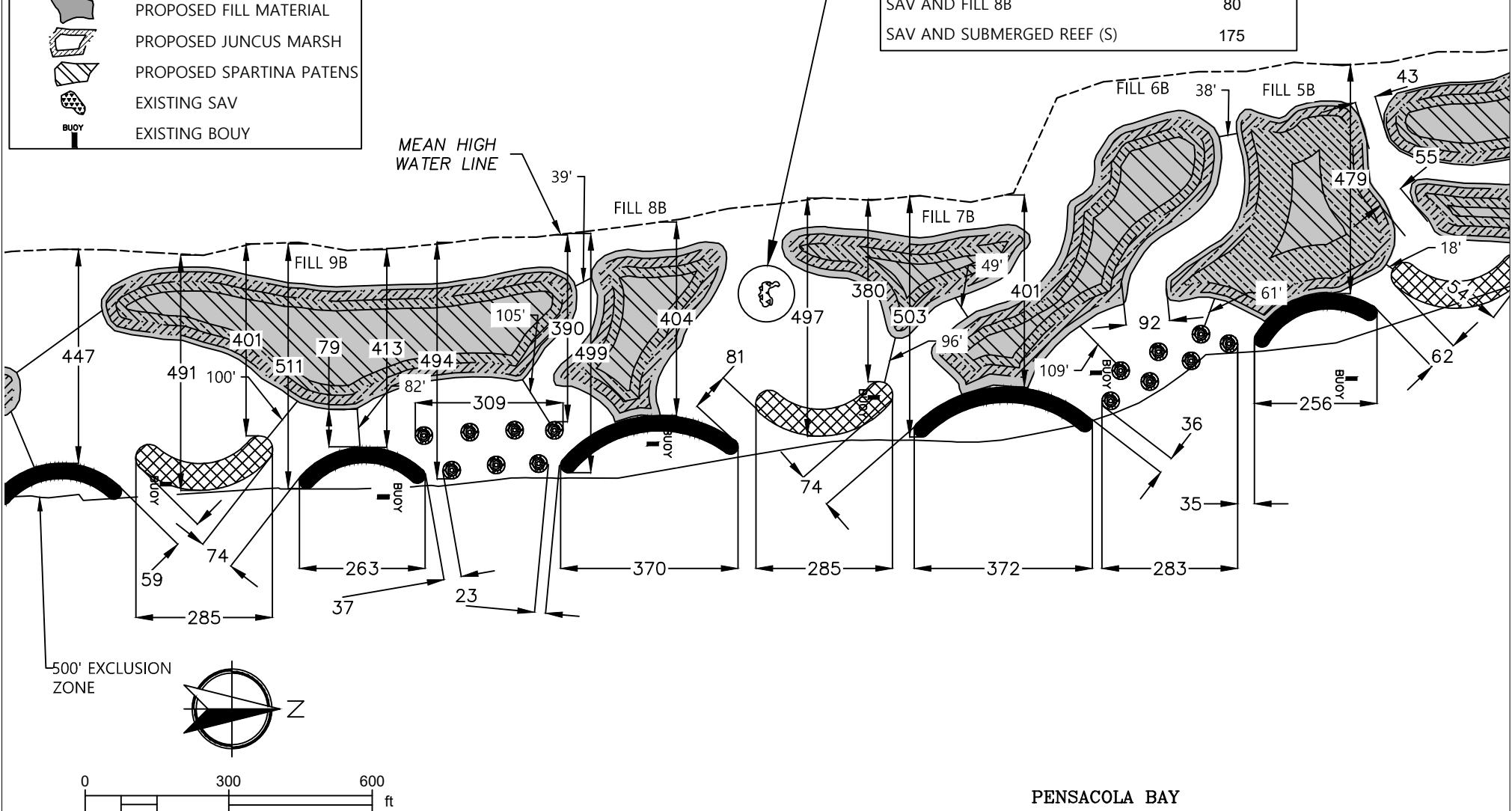


PROJECT NUMBER 1033000.848	NO.	REVISIONS	DATE	MIKE WARNKE FL PE 64091	215 FAIRPOINT DRIVE SUITE B GULF BREEZE, FL 32561 TELEPHONE: (850) 512-8935				PENSACOLA BAY LIVING SHORELINE PROJECT SITE B EASTERN SHORE DETAILED PLAN
SHEET 23 OF 50					DRAWN BY SC/DP	DESIGNED BY VARIES	QA/QC MANAGER	CHECKED BY MIKE WARNKE	
					SECTION/TOWNSHIP/RANGE		DISTRICT	DATE MARCH 2023	

LEGEND

- PROPOSED BREAKWATER
- PROPOSED ROCK PILES
- PROPOSED SUBMERGED REEF
- PROPOSED FILL MATERIAL
- PROPOSED JUNCUS MARSH
- PROPOSED SPARTINA PATENS
- EXISTING SAV
- EXISTING BOUY

MINIMUM DISTANCE BETWEEN:	DISTANCE (LF)
SAV AND FILL 7B	48
SAV AND FILL 8B	80
SAV AND SUBMERGED REEF (S)	175



PENSACOLA BAY

PROJECT NUMBER
1033000.848
SHEET
24
OF
50

NO.	REVISIONS	DATE

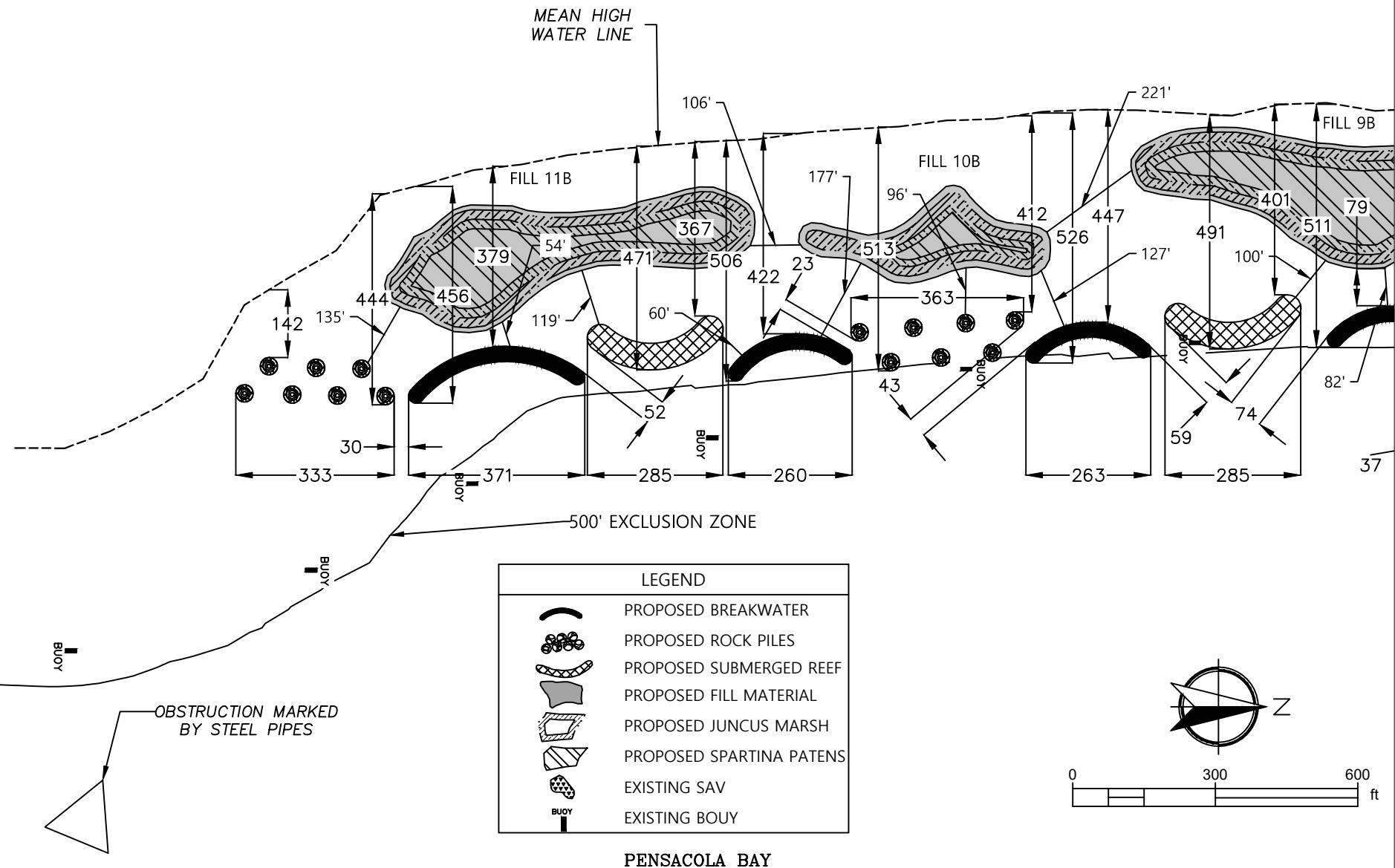
MIKE WARNE
FL PE 64091

VOLKERT
Engineers Surveyors • Planners

DRAWN BY SC/DP	DESIGNED BY VARIES	QA/QC MANAGER	CHECKED BY MIKE WARNE
SECTION/TOWNSHIP/RANGE		DISTRICT	DATE MARCH 2023

215 FAIRPOINT DRIVE SUITE B
GULF BREEZE, FL 32561
TELEPHONE: (850) 512-8935

PENSACOLA BAY LIVING SHORELINE PROJECT
SITE B EASTERN SHORE
DETAILED PLAN



PROJECT NUMBER	NO.	REVISIONS	DATE	MIKE WARNE FL PE 64091	215 FAIRPOINT DRIVE SUITE B GULF BREEZE, FL 32561 TELEPHONE: (850) 512-8935				PENSACOLA BAY LIVING SHORELINE PROJECT SITE B EASTERN SHORE DETAILED PLAN
1033000.848	SHEET	25 OF 50	DRAWN BY SC/DP	DESIGNED BY VARIES	QA/QC MANAGER	CHECKED BY MIKE WARNE	SECTION/TOWNSHIP/RANGE	DISTRICT	DATE MARCH 2023

PROJECT WETLAND (WI) & OTHER SURFACE
WATER (SW) & IMPACT SUMMARY

WL & SW ID	PERMANENT WL & SW IMPACT SIZE (SQ.FT.)	
	(ACRES)	
FILL 1B	142,013	3.26
FILL 2B	254,956	5.85
FILL 3B	147,555	3.39
FILL 4B	99,831	2.29
FILL 5B	128,951	2.96
FILL 6B	128,912	2.96
FILL 7B	74,541	1.71
FILL 8B	74,541	1.71
FILL 9B	190,730	4.38
FILL 10B	56,755	1.30
FILL 11B	128,094	2.94
TOTAL	1,426,879	32.76

PROPOSED CONSTRUCTION

	TOTAL AREA (SQ.FT.)	
	(ACRES)	
BREAK WATER	105,287	2.42
ROCK PILES	41,265	0.95
SUBMERGED REEF	83,945	1.93
TOTAL	230,497	5.30

CU. YD. ABOVE MHWL	CU. YD. BELOW MHWL
40,836	134,264

MARSH PLANTING

	PERMANENT WL & SW IMPACT SIZE (SQ.FT.)	
	(ACRES)	
1B MARSH	126,933	2.91
2B AMRSH	230,534	5.29
3B MARSH	137,303	3.15
4B MARSH	84,012	1.93
5B MARSH	113,551	2.61
6B MARSH	101,130	2.32
7B MARSH	46,072	1.06
8B MARSH	57,074	1.31
9B MARSH	168,563	3.87
10B MARSH	38,706	0.89
11B MARSH	110,244	2.53
TOTAL	1,214,122	27.87

PROPOSED ACCESS CHANNEL DREDGE

AREA (SQ.FT.)	VOLUME (CU. YD.)
(ACRES)	
583,665	38,010
13.40	

PROJECT
NUMBER
1033000.848
SHEET
26
OF
50

NO. REVISIONS DATE
MIKE WARNKE
FL PE 64091



DRAWN BY SC/DP
DESIGNED BY VARIES

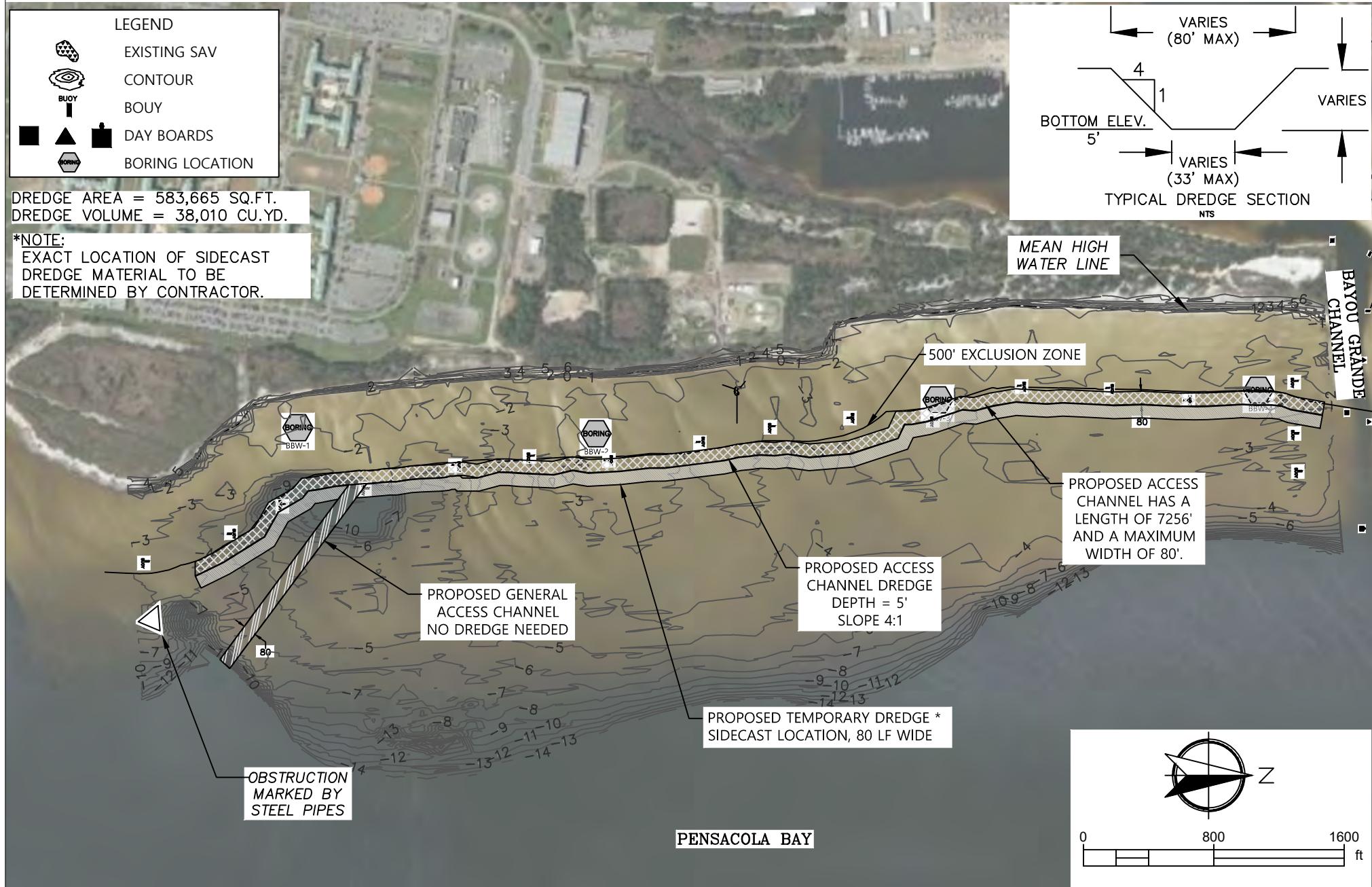
QA/QC MANAGER

215 FAIRPOINT DRIVE SUITE B
GULF BREEZE, FL 32561
TELEPHONE: (850) 512-8935

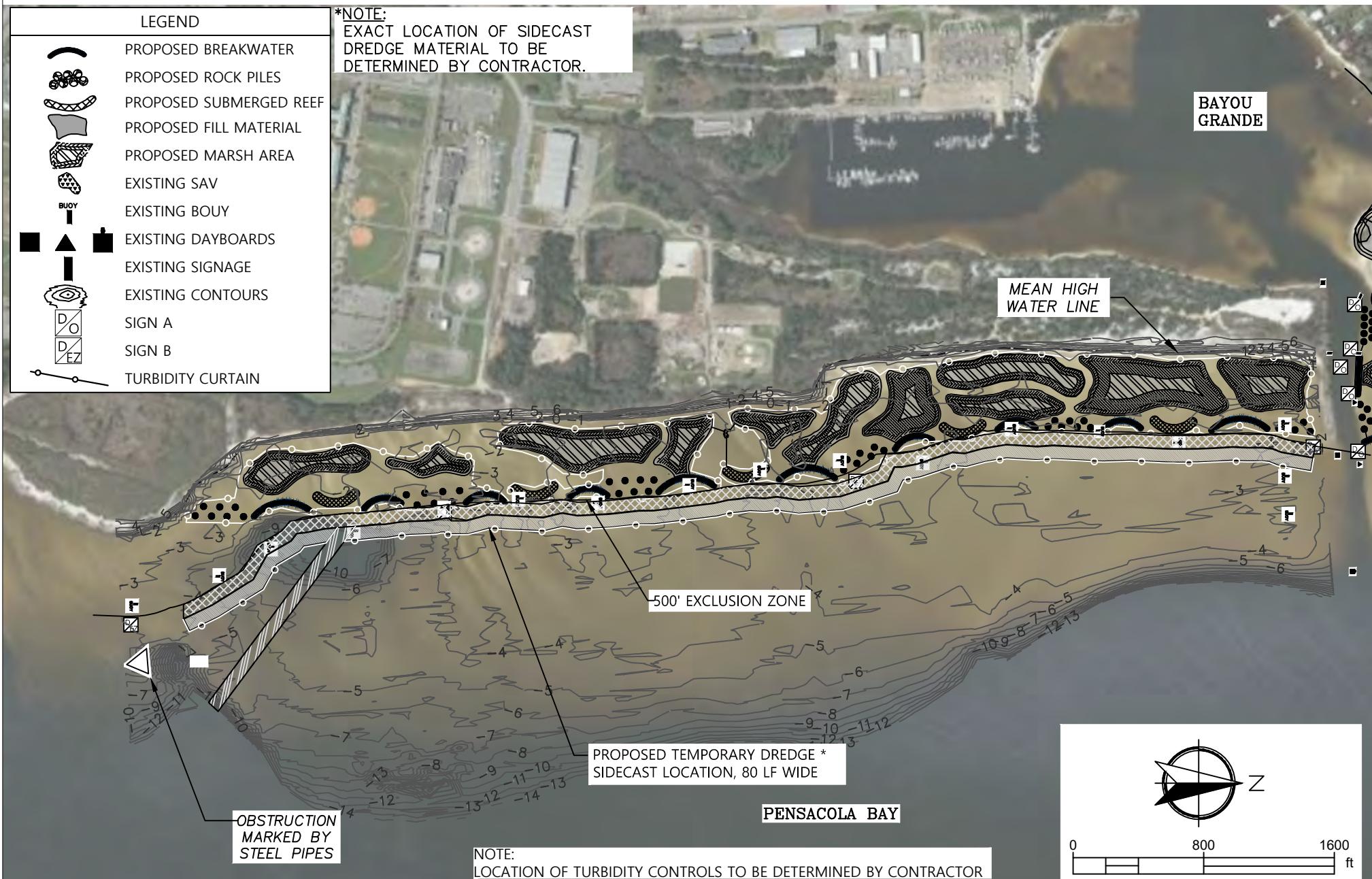
CHECKED BY MIKE WARNKE

SECTION/TOWNSHIP/RANGE DISTRICT DATE
MARCH 2023

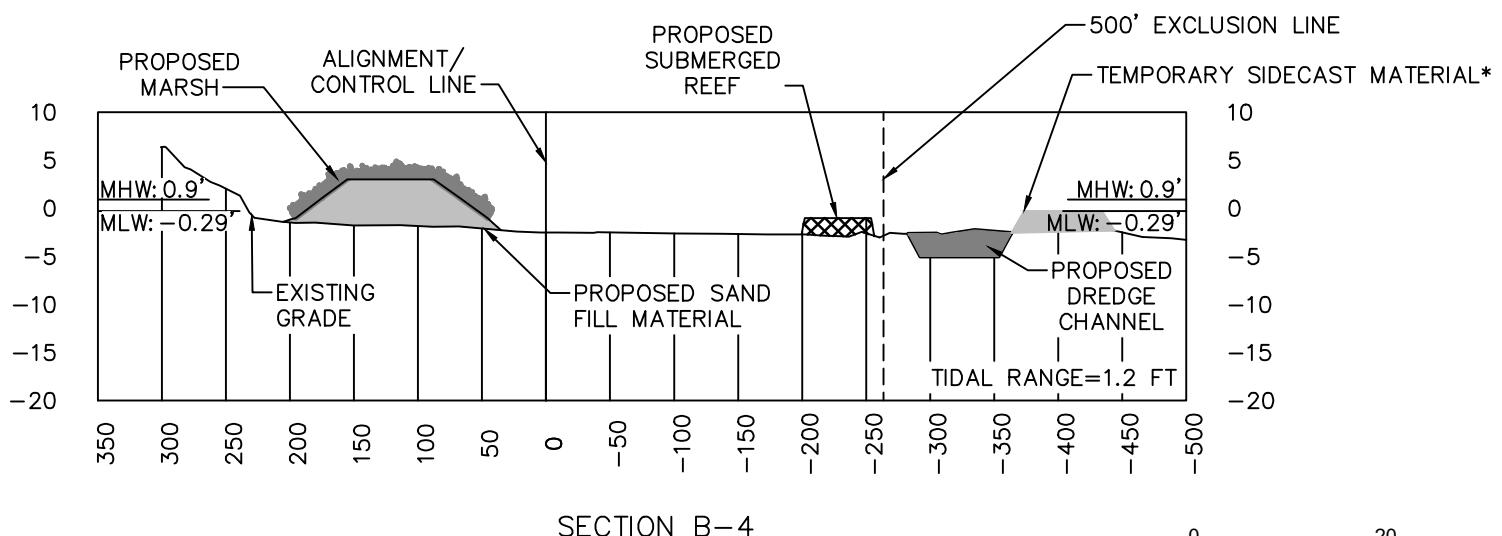
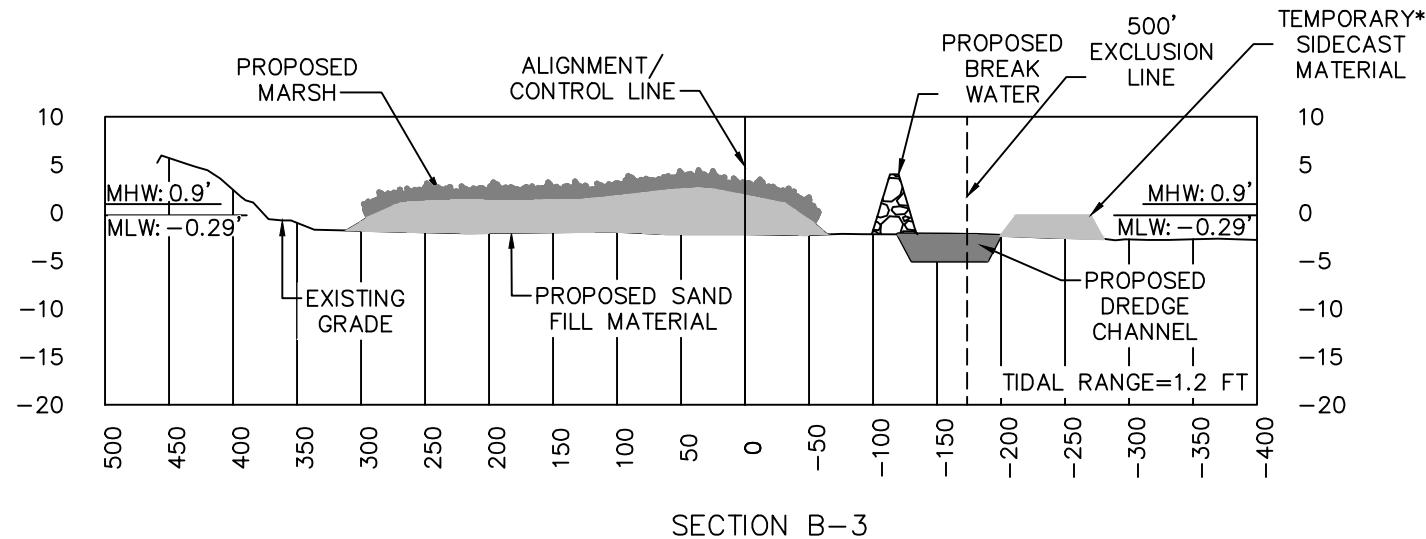
PENSACOLA BAY LIVING SHORELINE PROJECT
SITE B EASTERN SHORE
IMPACT SUMMARY



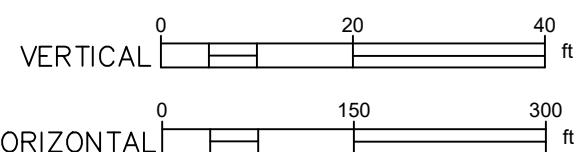
PROJECT NUMBER	NO.	REVISIONS	DATE	VOLKERT Engineers Surveyors • Planners				PENSACOLA BAY LIVING SHORELINE PROJECT SITE B EASTERN SHORE BORING & DREDGING PLAN	
1033000.848									
SHEET 27 OF 50									
MIKE WARNKE FL PE 64091				DRAWN BY SC/DP	DESIGNED BY VARIES	QA/QC MANAGER	CHECKED BY MIKE WARNKE		
				SECTION/TOWNSHIP/RANGE				DISTRICT	DATE MARCH 2023



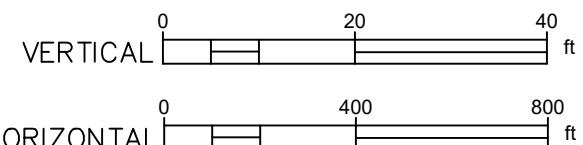
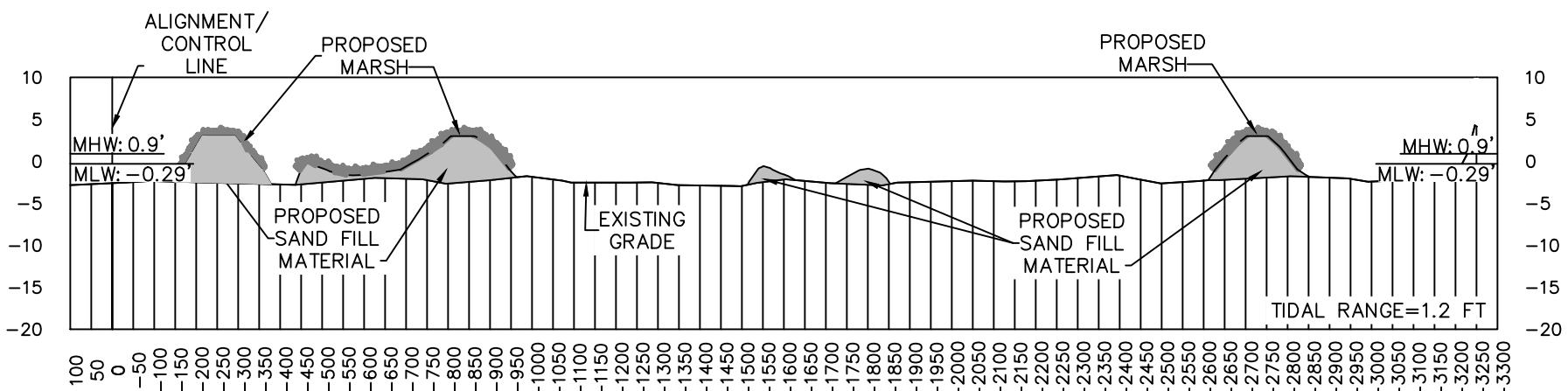
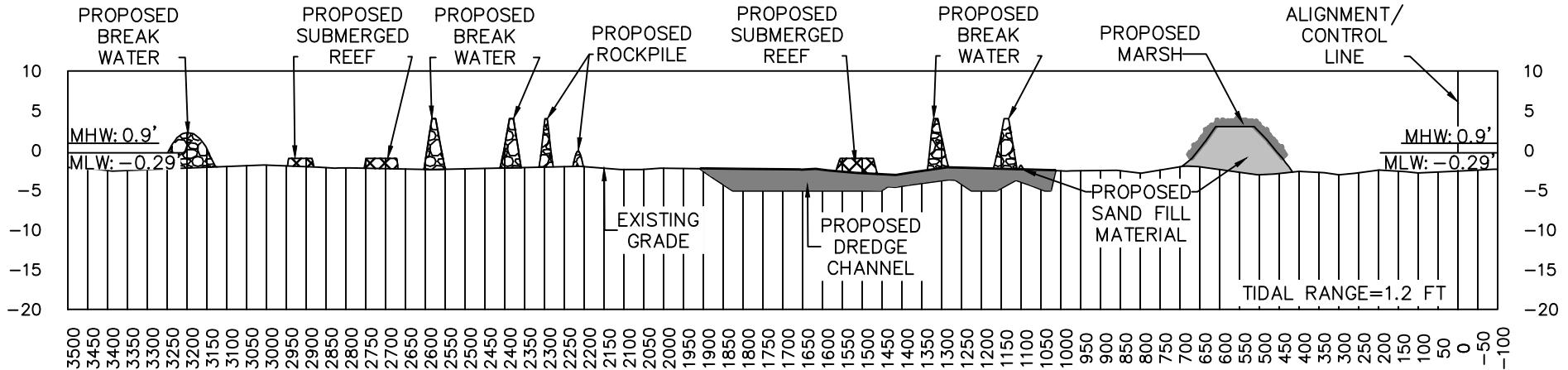
PROJECT NUMBER	NO.	REVISIONS	DATE	MIKE WARNKE FL PE 64091	215 FAIRPOINT DRIVE SUITE B GULF BREEZE, FL 32561 TELEPHONE: (850) 512-8935				PENSACOLA BAY LIVING SHORELINE PROJECT SITE B EASTERN SHORE AIDS TO NAVIGATION
1033000.848	SHEET 28 OF 50				DRAWN BY SC/DP	DESIGNED BY VARIES	QA/QC MANAGER	CHECKED BY MIKE WARNKE	
					SECTION/TOWNSHIP/RANGE				DISTRICT DATE MARCH 2023



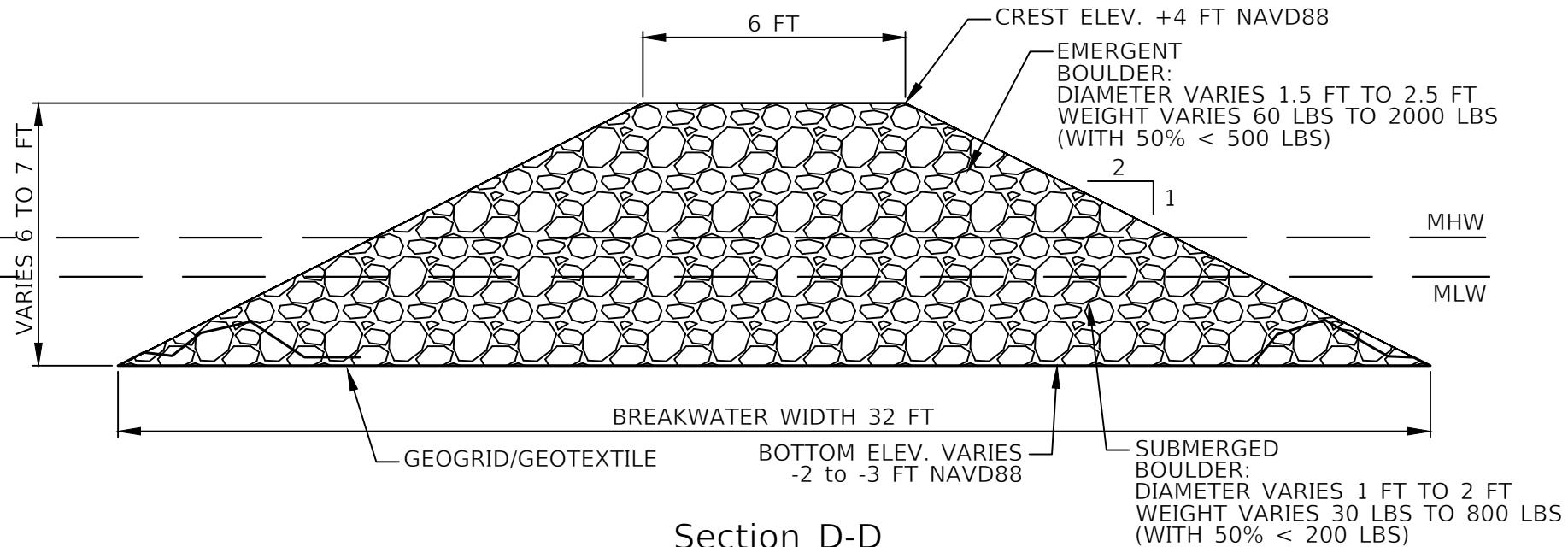
*NOTE:
REPRESENTATIONS OF SIDECAST MATERIAL IN CROSS SECTIONS
ARE FOR INFORMATIONAL PURPOSES ONLY. ELEVATION OF
SIDECAST MATERIAL NOT TO EXCEED MLW (-0.29')



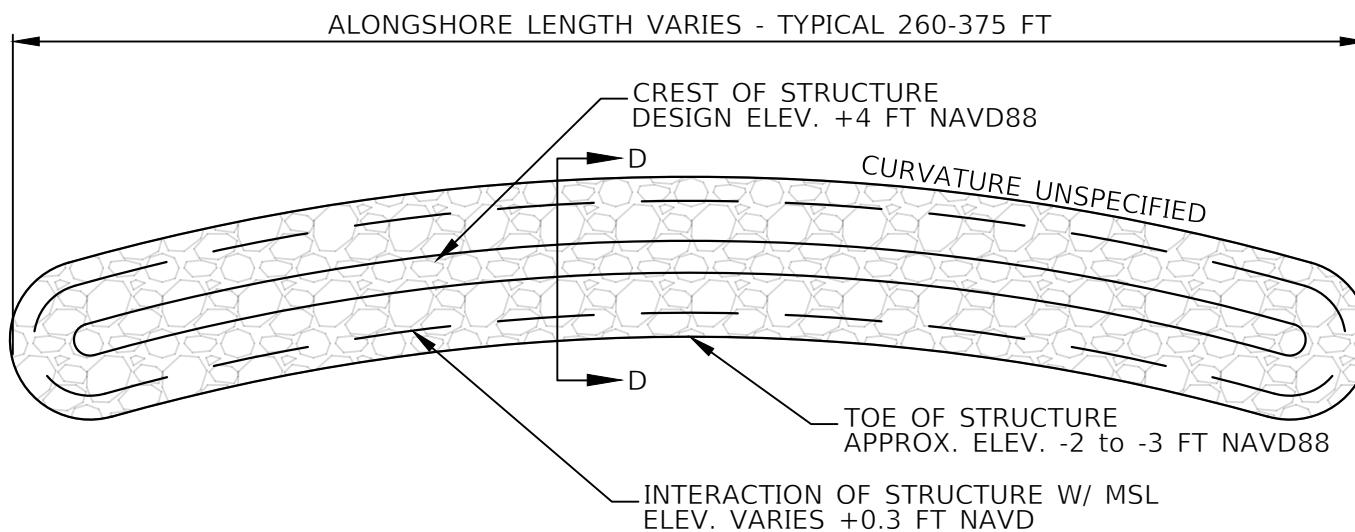
PROJECT NUMBER	NO.	REVISIONS	DATE	MIKE WARNE FL PE 64091	VOLKERT Engineers Surveyors • Planners	215 FAIRPOINT DRIVE SUITE B GULF BREEZE, FL 32561 TELEPHONE: (850) 512-8935	PENSACOLA BAY LIVING SHORELINE PROJECT SITE B EASTERN SHORE CROSS SECTIONS			
1033000.848	SHEET	29	OF							
29				DRAWN BY SC/DP			QA/QC MANAGER	CHECKED BY MIKE WARNE		
50				DESIGNED BY VARIES			DISTRICT	DATE MARCH 2023		
SECTION/TOWNSHIP/RANGE				SECTION/TOWNSHIP/RANGE						



PROJECT NUMBER 1033000.848	NO.	REVISIONS	DATE	MIKE WARNE FL PE 64091	VOLKERT Engineers Surveyors • Planners	215 FAIRPOINT DRIVE SUITE B GULF BREEZE, FL 32561 TELEPHONE: (850) 512-8935	PENSACOLA BAY LIVING SHORELINE PROJECT SITE B EASTERN SHORE CROSS SECTIONS
SHEET 30 OF 50							
				DRAWN BY SC/DP	DESIGNED BY VARIES	QA/QC MANAGER	CHECKED BY MIKE WARNE
				SECTION/TOWNSHIP/RANGE	DISTRICT	DATE MARCH 2023	



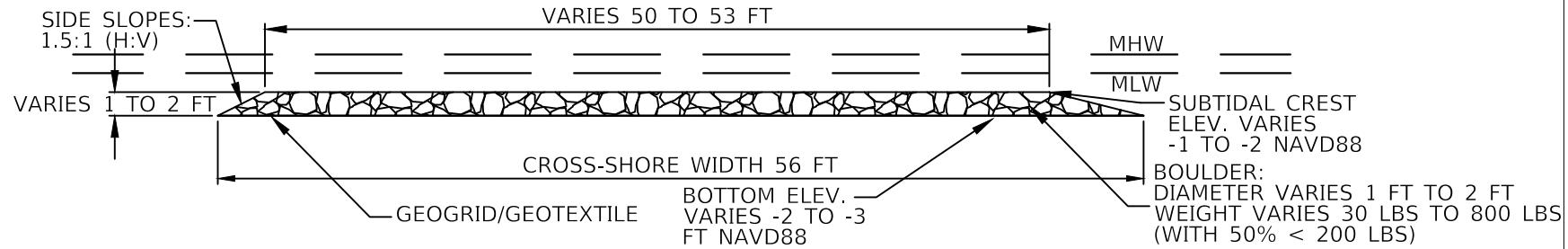
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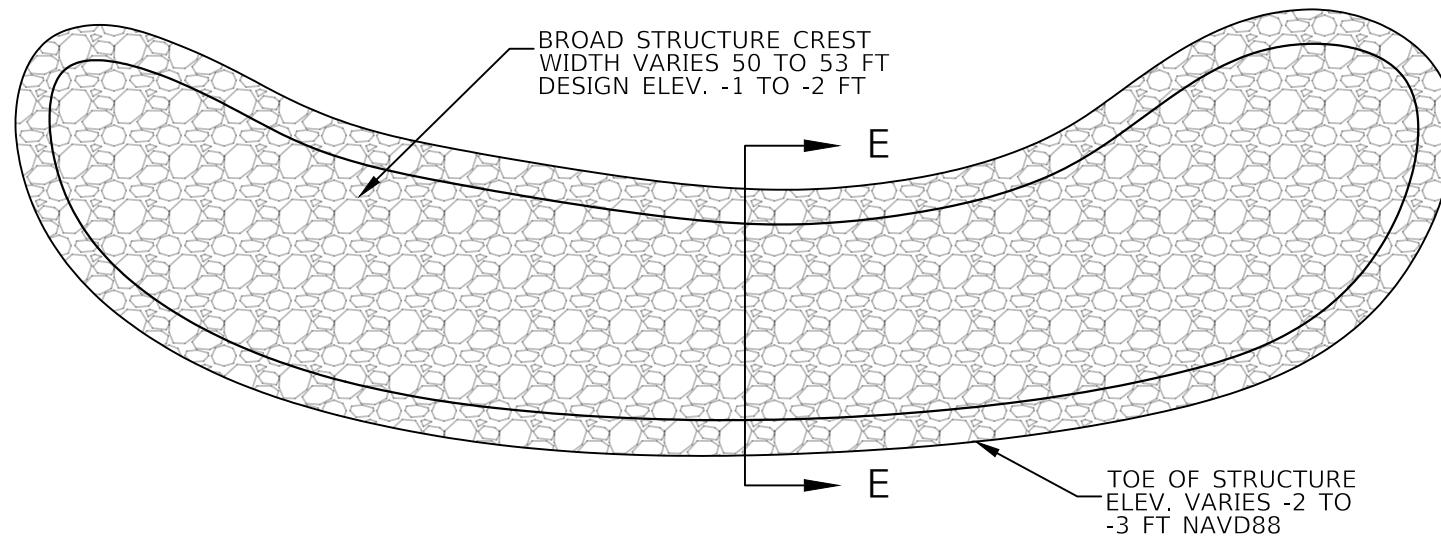
Plan View

NOT TO SCALE

PROJECT NUMBER 1033000.848	NO.	REVISIONS	DATE	MIKE WARNKE FL PE 64091	VOLKERT Engineers Surveyors & Planners	215 FAIRPOINT DRIVE SUITE B GULF BREEZE, FL 32561 TELEPHONE: (850) 512-8935	PENSACOLA BAY LIVING SHORELINE PROJECT		
							DRAWN BY SC/DP	DESIGNED BY VARIES	
SHEET 31 OF 50							QA/QC MANAGER	CHECKED BY MIKE WARNKE	SITE B EASTERN SHORE BREAK WATER DETAILS
							SECTION/TOWNSHIP/RANGE	DISTRICT	DATE MARCH 2023



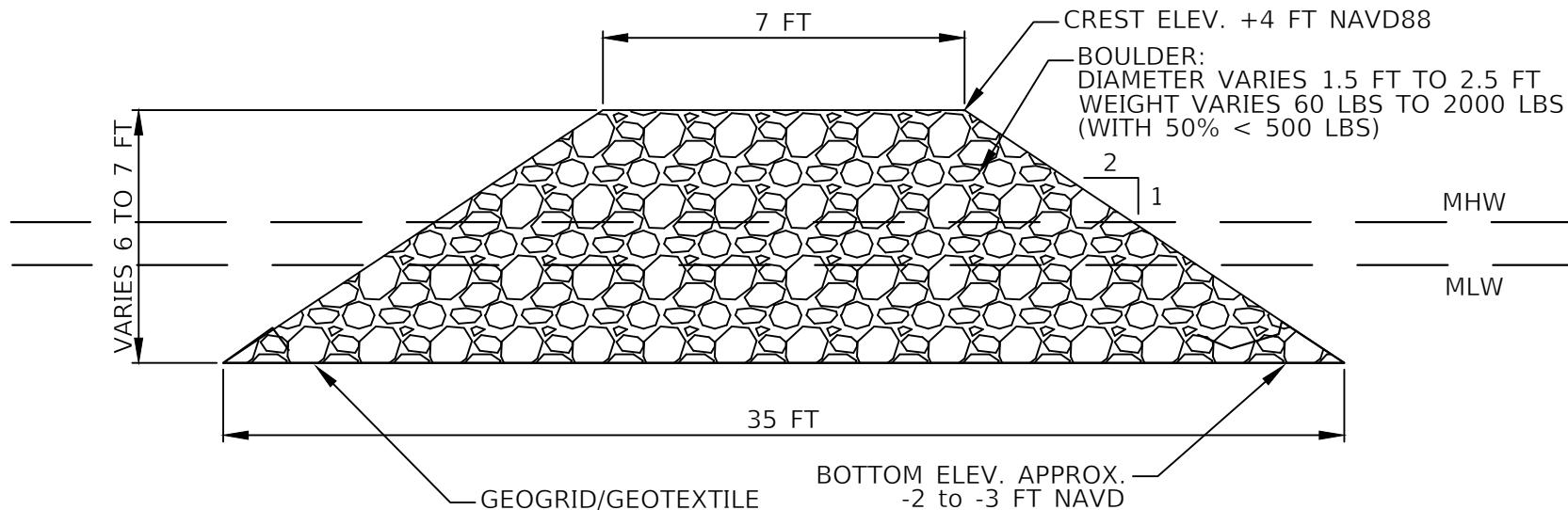
Section E-E



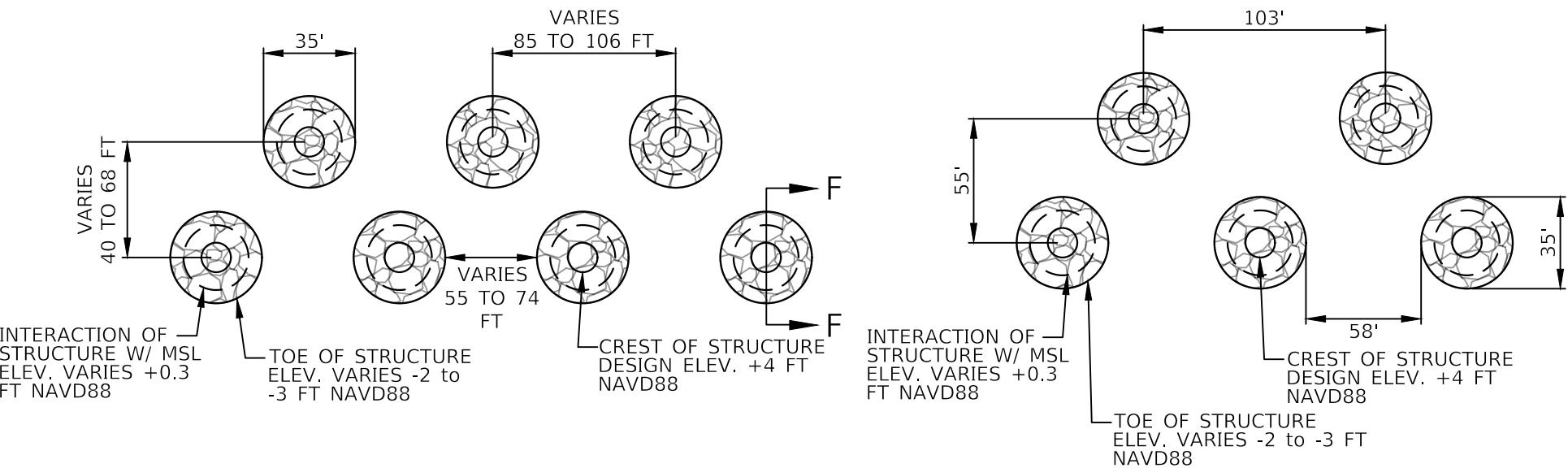
NOT TO SCALE

Plan View

PROJECT NUMBER 1033000.848	NO.	REVISIONS	DATE	VOLKERT <small>Engineers Surveyors • Planners</small>	215 FAIRPOINT DRIVE SUITE B GULF BREEZE, FL 32561 TELEPHONE: (850) 512-8935	PENSACOLA BAY LIVING SHORELINE PROJECT SITE B EASTERN SHORE SUBTIDAL REEF DETAILS	
SHEET 32 OF 50					DRAWN BY SC/DP DESIGNED BY VARIES SECTION/TOWNSHIP/RANGE	QA/QC MANAGER CHECKED BY MIKE WARNKE DISTRICT DATE MARCH 2023	
MIKE WARNKE FL PE 64091							



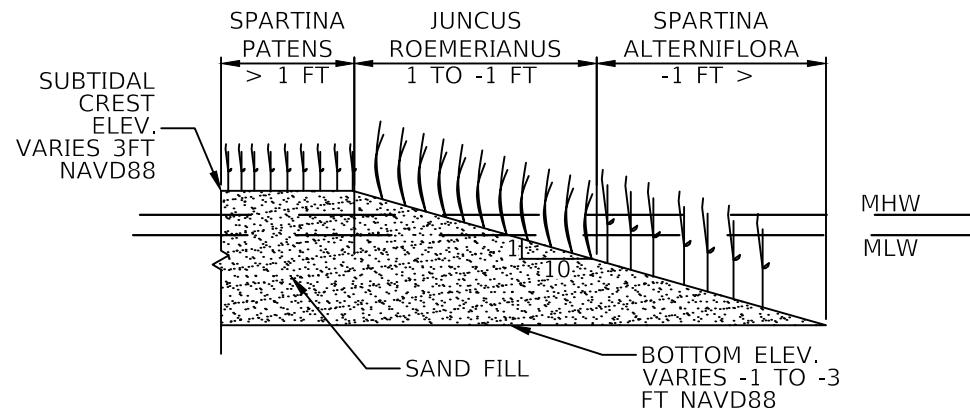
Section F-F



NOT TO SCALE

Plan View

PROJECT NUMBER	NO.	REVISIONS	DATE	MIKE WARNE FL PE 64091	VOLKERT Engineers Surveyors • Planners	215 FAIRPOINT DRIVE SUITE B GULF BREEZE, FL 32561 TELEPHONE: (850) 512-8935	PENSACOLA BAY LIVING SHORELINE PROJECT SITE B EASTERN SHORE ROCK PILES DETAILS
1033000.848							
SHEET 33 OF 50					DRAWN BY SC/DP DESIGNED BY VARIES	QA/QC MANAGER	CHECKED BY MIKE WARNE
					SECTION/TOWNSHIP/RANGE	DISTRICT	DATE MARCH 2023



Marsh Area Section View

MARSH AREA		
ZONE	PLANT	FREQUENCY
Bottom to -1	Spartina Alterniflora(Sporobolus Alterniflora)	18" on center
Elevation -1 to +1	Juncus Roemerianus(Needlegrass Rush)	18" on center
Above elevation +1	Spartina Patens(Saltmeadow Cordgrass)	24" on center

Marsh Details

NOT TO SCALE

PROJECT NUMBER 1033000.848	NO.	REVISIONS	DATE	VOLKERT <small>Engineers Surveyors • Planners</small> MIKE WARNKE FL PE 64091	215 FAIRPOINT DRIVE SUITE B GULF BREEZE, FL 32561 TELEPHONE: (850) 512-8935	DRAWN BY SC/DP DESIGNED BY VARIES QA/QC MANAGER CHECKED BY MIKE WARNKE SECTION/TOWNSHIP/RANGE DISTRICT DATE MARCH 2023		PENSACOLA BAY LIVING SHORELINE PROJECT SITE B EASTERN SHORE MARSH DETAILS
SHEET 34 OF 50								

LEGEND

-  EXISTING SAV
-  EXISTING CONTOUR
-  EXISTING BOUY
-  EXISTING RED NUN

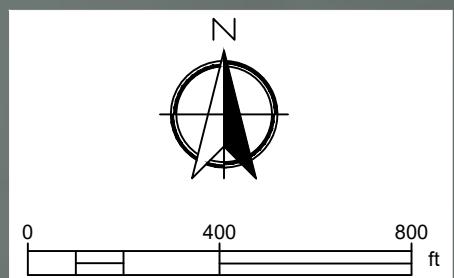
MEAN HIGH
WATER LINE

BUOY

BUOY

CENTER LINE CHANNEL RANGE
LIGHT AND BOARDS
(WOODEN STRUCTURE)

PENSACOLA BAY

SHERMAN
INLET

PROJECT
NUMBER
1033000.848
SHEET
35
OF
50

NO. REVISIONS DATE

MIKE WARNKE
FL PE 64091

VOLKERT
Engineers Surveyors • Planners

DRAWN BY
SC/DP

DESIGNED BY
VARIES

215 FAIRPOINT DRIVE SUITE B
GULF BREEZE, FL 32561
TELEPHONE: (850) 512-8935

QA/QC MANAGER
CHECKED BY
MIKE WARNKE

SECTION/TOWNSHIP/RANGE

DISTRICT

DATE
MARCH 2023

PENSACOLA BAY LIVING SHORELINE PROJECT
SITE C SHERMAN INLET
EXISTING CONDITIONS

LEGEND

-  EXISTING SAV
-  EXISTING CONTOUR
-  EXISTING BOUY
-  EXISTING RED NUN



0 400 800 ft

SHERMAN COVE

MEAN HIGH
WATER LINE

VOLKERT
Engineers Surveyors • Planners

MIKE WARNKE
FL PE 64091

215 FAIRPOINT DRIVE SUITE B
GULF BREEZE, FL 32561
TELEPHONE: (850) 512-8935

DRAWN BY SC/DP	DESIGNED BY VARIES	QA/QC MANAGER	CHECKED BY MIKE WARNKE
SECTION/TOWNSHIP/RANGE	DISTRICT	DATE MARCH 2023	

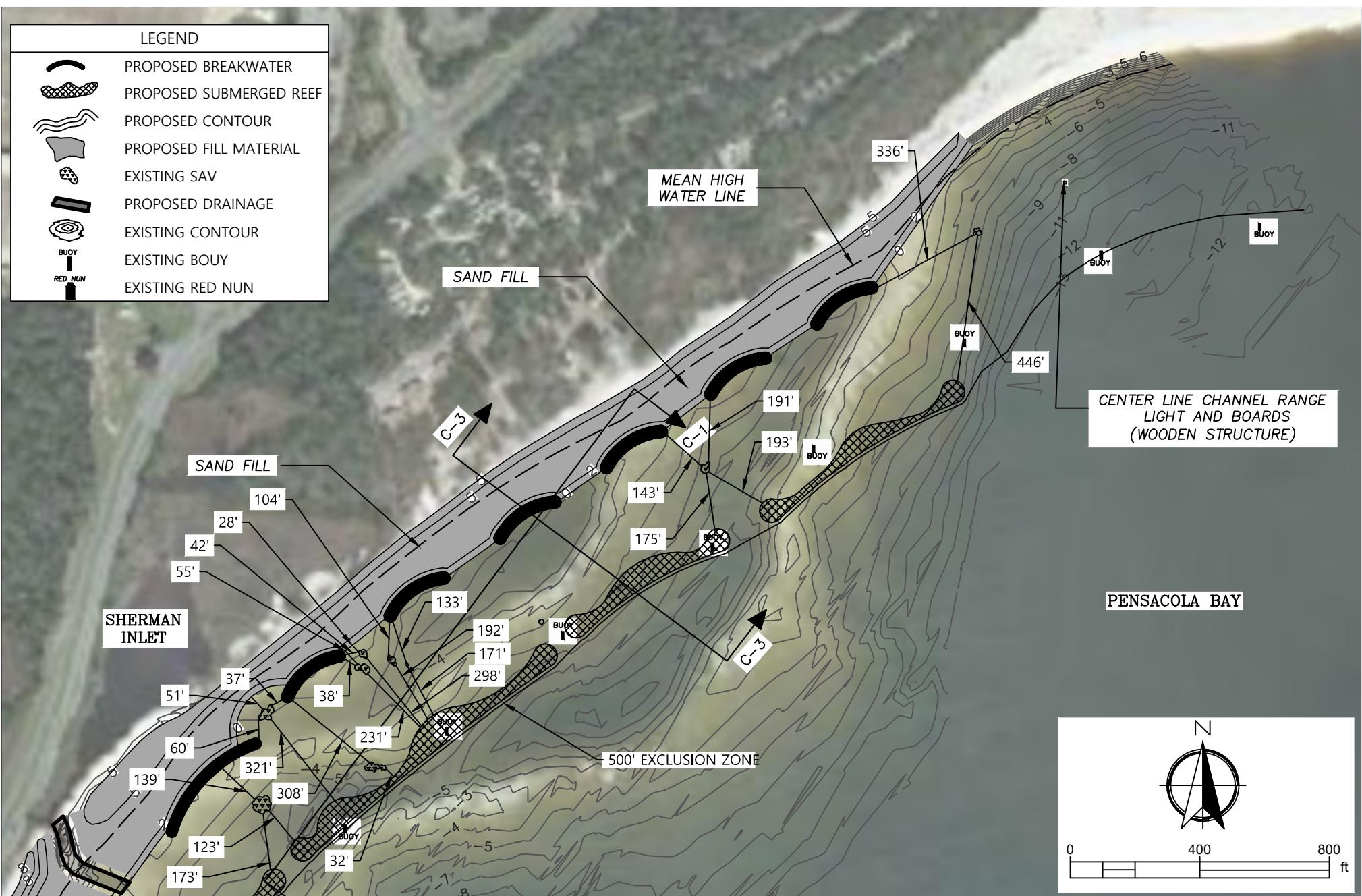
PROJECT
NUMBER
1033000.848

SHEET
36
OF
50

PENSACOLA BAY LIVING SHORELINE PROJECT
SITE C SHERMAN INLET
EXISTING CONDITIONS

LEGEND

-  PROPOSED BREAKWATER
-  PROPOSED SUBMERGED REEF
-  PROPOSED CONTOUR
-  PROPOSED FILL MATERIAL
-  EXISTING SAV
-  PROPOSED DRAINAGE
-  EXISTING CONTOUR
-  EXISTING BOUY
-  EXISTING RED NUN



PROJECT NUMBER
1033000.848
SHEET
37
OF
50

NO.	REVISIONS	DATE

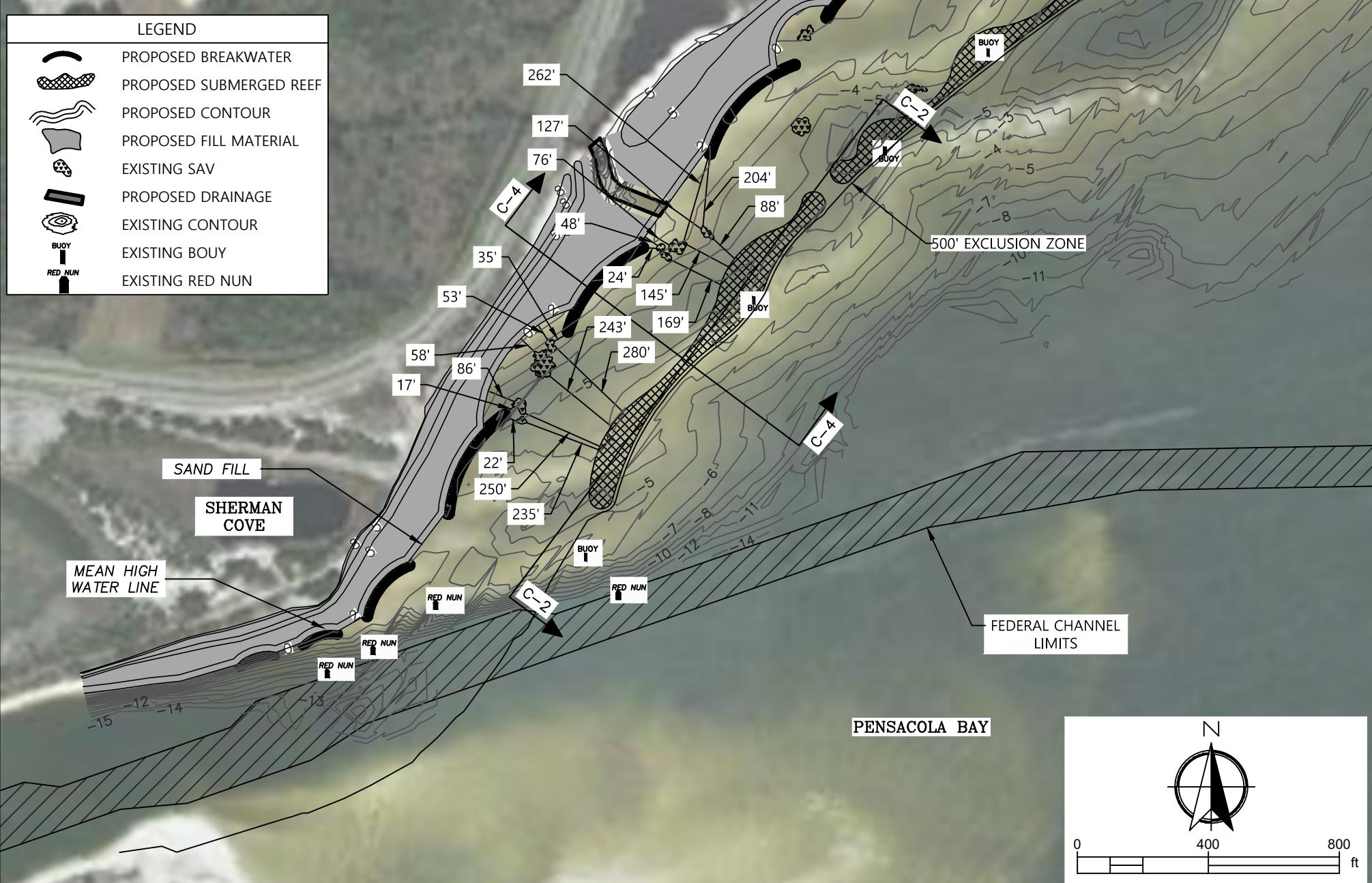
MIKE WARNE
FL PE 64091

VOLKERT
Engineers Surveyors • Planners

DRAWN BY SC/DP	DESIGNED BY VARIES	QA/QC MANAGER	CHECKED BY MIKE WARNE
SECTION/TOWNSHIP/RANGE	DISTRICT	DATE MARCH 2023	

215 FAIRPOINT DRIVE SUITE B
GULF BREEZE, FL 32561
TELEPHONE: (850) 512-8935

PENSACOLA BAY LIVING SHORELINE PROJECT
SITE C SHERMAN INLET
SITE PLAN



PROJECT
NUMBER
1033000.848
SHEET
38
OF
50

NO.	REVISIONS	DATE
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MIKE WARNKE
FL PE 64091

VOLKERT
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DRAWN BY SC/DP	DESIGNED BY VARIES	QA/QC MANAGER	CHECKED BY MIKE WARNKE
SECTION/TOWNSHIP/RANGE		DISTRICT	DATE MARCH 2023

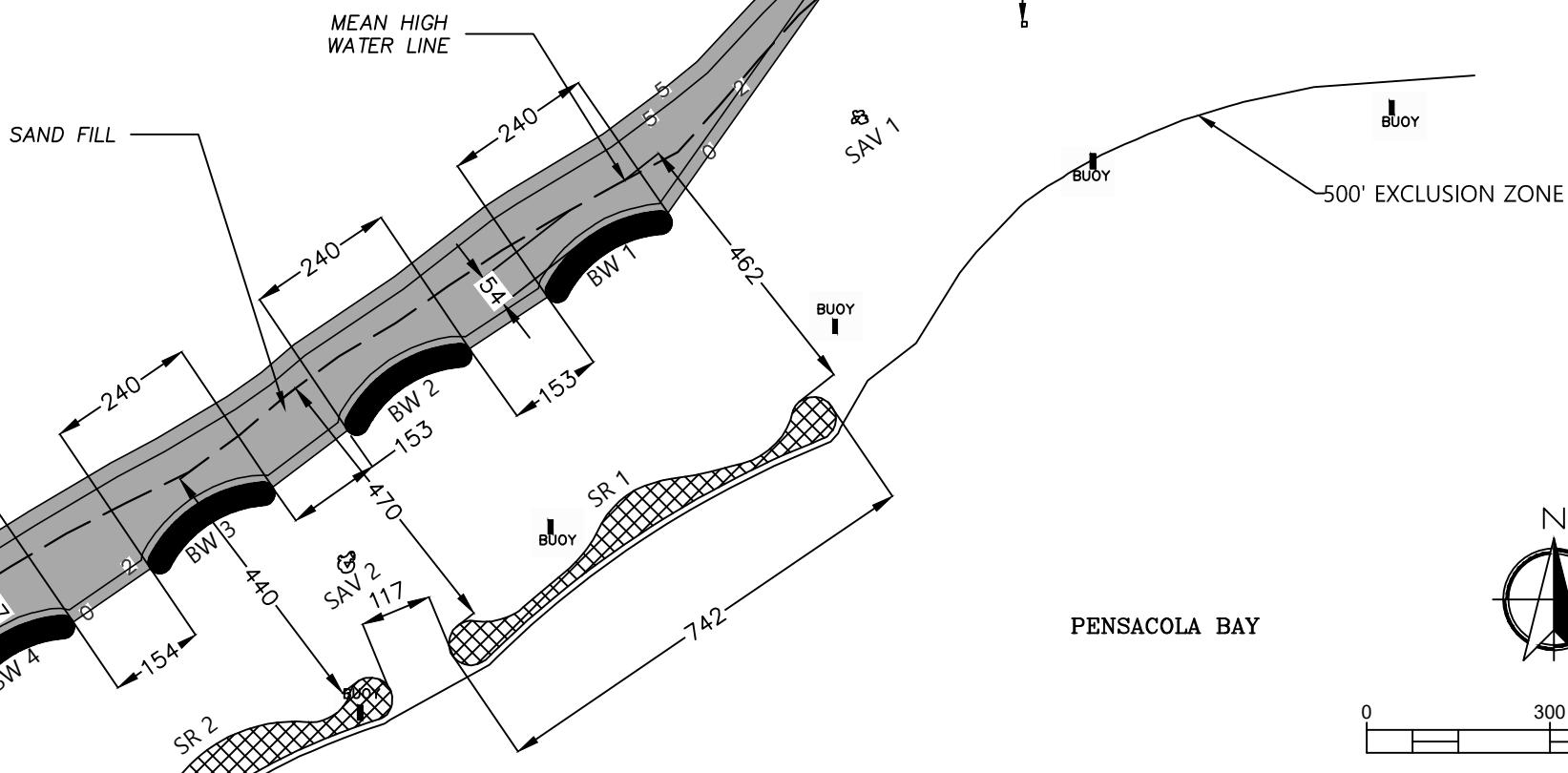
PENSACOLA BAY LIVING SHORELINE PROJECT
SITE C SHERMAN INLET
SITE PLAN

LEGEND	
	PROPOSED BREAKWATER
	PROPOSED SUBMERGED REEF
	PROPOSED CONTOUR
	PROPOSED FILL MATERIAL
	EXISTING SAV
	PROPOSED DRAINAGE
	EXISTING BOUY
	EXISTING RED NUN

CENTER LINE CHANNEL RANGE
LIGHT AND BOARDS
(WOODEN STRUCTURE)

Distance between:	Distance (LF)
SAV 1 and BW 1	336
SAV 1 and SR 1	446
SAV 2 and BW 2	191
SAV 2 and BW 3	143
SAV 2 and SR 1	193
SAV 2 and SR 2	175

SEE SHEETS 37 AND 38 FOR ADDITIONAL DISTANCES



PROJECT NUMBER
1033000.848
SHEET
39
OF
50

NO. REVISIONS DATE

MIKE WARNKE
FL PE 64091

VOLKERT
Engineers Surveyors • Planners

DRAWN BY SC/DP
DESIGNED BY VARIES

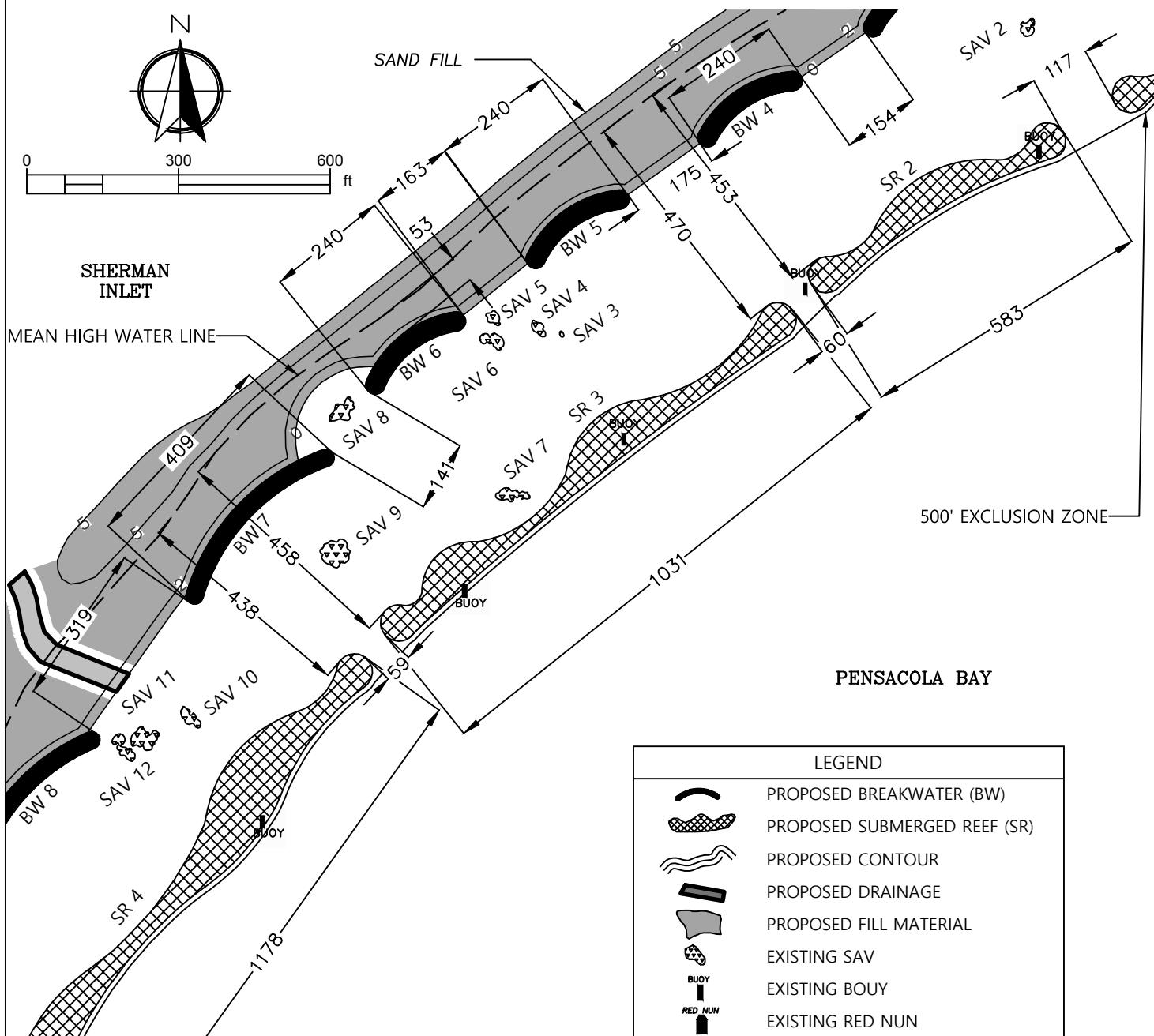
QA/QC MANAGER

215 FAIRPOINT DRIVE SUITE B
GULF BREEZE, FL 32561
TELEPHONE: (850) 512-8935

CHECKED BY
MIKE WARNKE

SECTION/TOWNSHIP/RANGE
DISTRICT
DATE
MARCH 2023

PENSACOLA BAY LIVING SHORELINE PROJECT
SITE C SHERMAN INLET
DETAILED PLAN



Distance between:	Distance (LF)
SAV 3 and BW 5	133
SAV 3 and SR 3	171
SAV 4 and BW 5	104
SAV 4 and SR 3	192
SAV 5 and BW 6	42
SAV 5 and Fill	28
SAV 5 and SR 3	298
SAV 6 and BW 6	38
SAV 6 and Fill	55
SAV 6 and SR 3	231
SAV 7 and BW 6	308
SAV 7 and SR 3	32
SAV 8 and BW 6	37
SAV 8 and Fill	51
SAV 8 and BW 7	60
SAV 8 and SR 3	321
SAV 9 and BW 7	139
SAV 9 and SR 3	123
SAV 9 and SR 4	173
SAV 10 and BW 7	204
SAV 10 and Fill	127
SAV 10 and SR 4	88
SAV 11 and BW 7	262
SAV 11 and SR 4	145
SAV 11 and Fill	76
SAV 12 and BW 8	24
SAV 12 and SR 4	169
SAV 12 and Fill	48

SEE SHEETS 37 AND 38 FOR ADDITIONAL DISTANCES

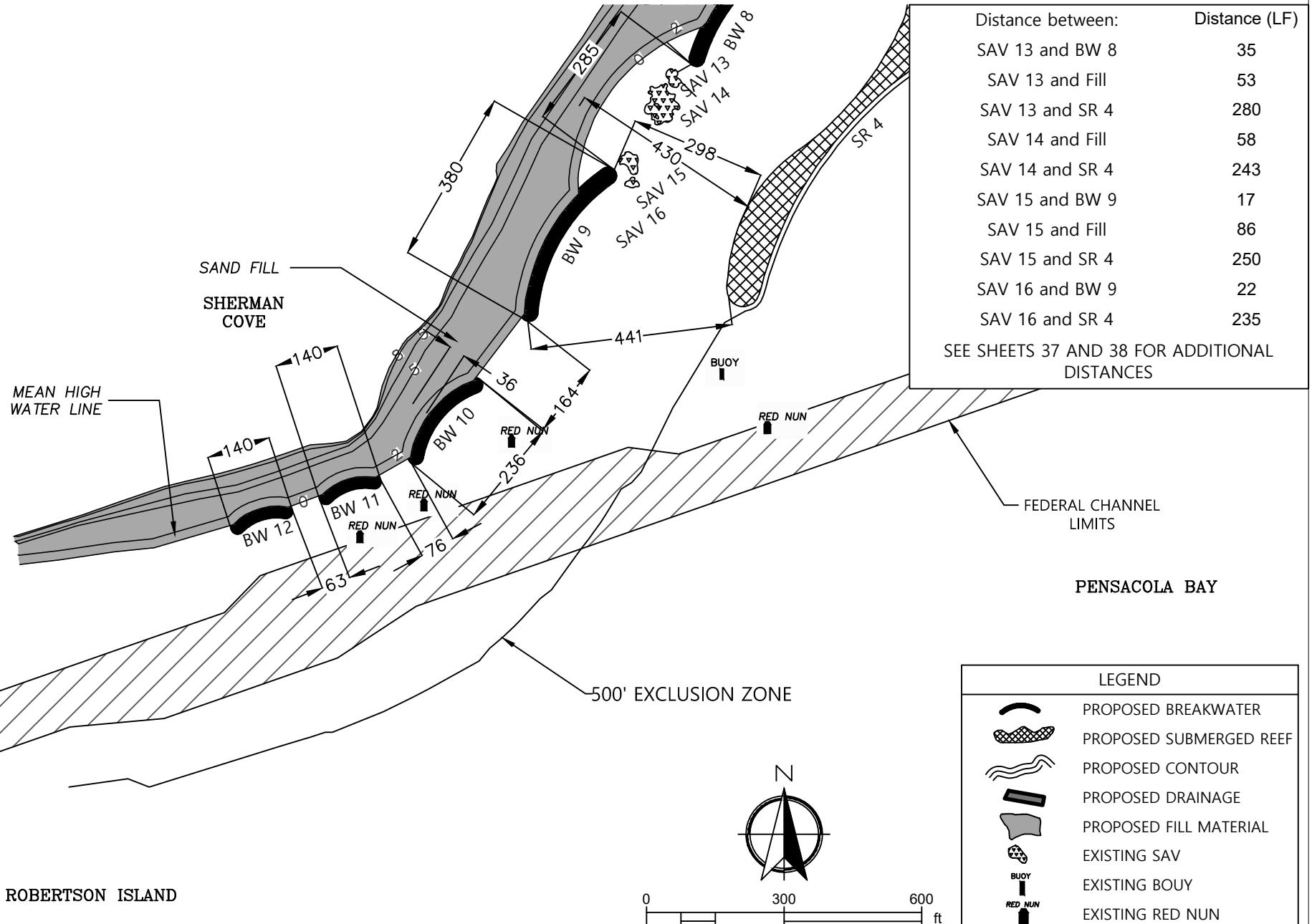
PROJECT NUMBER	NO.	REVISIONS	DATE
1033000.848			
SHEET			
40			
OF			
50			

MIKE WARNE
FL PE 64091

VOLKERT
Engineers Surveyors • Planners

DRAWN BY SC/DP
DESIGNED BY VARIES
QA/QC MANAGER
CHECKED BY MIKE WARNE
SECTION/TOWNSHIP/RANGE
DISTRICT DATE MARCH 2023

PENSACOLA BAY LIVING SHORELINE PROJECT
SITE C SHERMAN INLET
DETAILED PLAN



PROJECT NUMBER	NO.	REVISIONS	DATE
1033000.848			
SHEET			
41			
OF			
50			

VOLKERT
Engineers Surveyors • Planners
MIKE WARNE
FL PE 64091

215 FAIRPOINT DRIVE SUITE B
GULF BREEZE, FL 32561
TELEPHONE: (850) 512-8935

DRAWN BY SC/DP	DESIGNED BY VARIES	QA/QC MANAGER	CHECKED BY MIKE WARNE
SECTION/TOWNSHIP/RANGE		DISTRICT	DATE MARCH 2023

PENSACOLA BAY LIVING SHORELINE PROJECT
SITE C SHERMAN INLET
DETAILED PLAN

PROJECT WETLAND (WI) & OTHER SURFACE WATER (SW) & IMPACT SUMMARY

WL & SW ID	PERMANENT WL & SW IMPACT SIZE		
	(SQ.FT.)	(ACRES)	(CU. YD.)
LANDWARD OF MHWL	456,049	10.47	55,050
WATERWARD OF MHWL	433,514	9.95	49,450
TOTAL	889,564	20.42	104,500

PROPOSED CONSTRUCTION		
	TOTAL AREA	
	(SQ.FT.)	(ACRES)
BREAKWATER	113,185	2.60
SUBMERGED REEF	200,299	4.60
TOTAL	313,484	7.20

PROJECT NUMBER 1033000.848 SHEET 42 OF 50	NO.	REVISIONS	DATE	 VOLKERT <small>Engineers Surveyors • Planners</small> <p>MIKE WARNKE FL PE 64091</p>	215 FAIRPOINT DRIVE SUITE B GULF BREEZE, FL 32561 TELEPHONE: (850) 512-8935				PENSACOLA BAY LIVING SHORELINE PROJECT SITE C SHERMAN INLET IMPACT SUMMARY
					DRAWN BY	DESIGNED BY	QA/QC MANAGER	CHECKED BY	
					SC/DP	VARIES		MIKE WARNKE	
					SECTION/TOWNSHIP/RANGE		DISTRICT	DATE	
								MARCH 2023	

LEGEND

- EXISTING CONTOUR
- EXISTING BOUY
- EXISTING RED NUN
- BORING

CENTER LINE CHANNEL RANGE
LIGHT AND BOARDS
(WOODEN STRUCTURE)

MEAN HIGH
WATER LINE

BORING

CBW-3

BORING

CR-2

BORING

CR-1

BORING

CBW-1

500' EXCLUSION ZONE

SHERMAN
COVE

ROBERTSON
ISLAND

PENSACOLA BAY



0 800 1600 ft

PROJECT
NUMBER
1033000.848

SHEET
 43
 OF
 50

NO. REVISIONS DATE

MIKE WARNE
FL PE 64091

VOLKERT
Engineers Surveyors • Planners

DRAWN BY
SC/DP

DESIGNED BY
VARIES

215 FAIRPOINT DRIVE SUITE B
GULF BREEZE, FL 32561
TELEPHONE: (850) 512-8935

QA/QC MANAGER
CHECKED BY
MIKE WARNE

SECTION/TOWNSHIP/RANGE

DISTRICT

DATE
MARCH 2023

PENSACOLA BAY LIVING SHORELINE PROJECT
SITE C SHERMAN INLET
BORING PLAN

LEGEND

-  PROPOSED BREAKWATER
-  PROPOSED SUBMERGED REEF
-  PROPOSED CONTOUR
-  PROPOSED FILL MATERIAL
-  PROPOSED DRAINAGE
-  EXISTING SAV
-  EXISTING BOUY
-  EXISTING RED NUN
-  EXISTING CONTOURS
-  SIGN A
-  SIGN B
-  TURBIDITY CURTAIN

CENTER LINE CHANNEL RANGE
LIGHT AND BOARDS
(WOODEN STRUCTURE)

MEAN HIGH
WATER LINE

SAND
FILL

SHERMAN
INLET

SAND
FILL

SHERMAN
COVE

PENSACOLA BAY

500' EXCLUSION ZONE

ROBERTSON
ISLAND

NOTE:
LOCATION OF TURBIDITY CONTROLS TO BE DETERMINED BY CONTRACTOR



0 800 1600 ft

PROJECT
NUMBER
1033000.848

SHEET
 44
 OF
 50

NO. REVISIONS DATE

MIKE WARNKE
FL PE 64091

VOLKERT
Engineers Surveyors • Planners

215 FAIRPOINT DRIVE SUITE B
GULF BREEZE, FL 32561
TELEPHONE: (850) 512-8935

DRAWN BY SC/DP
DESIGNED BY VARIES

QA/QC MANAGER

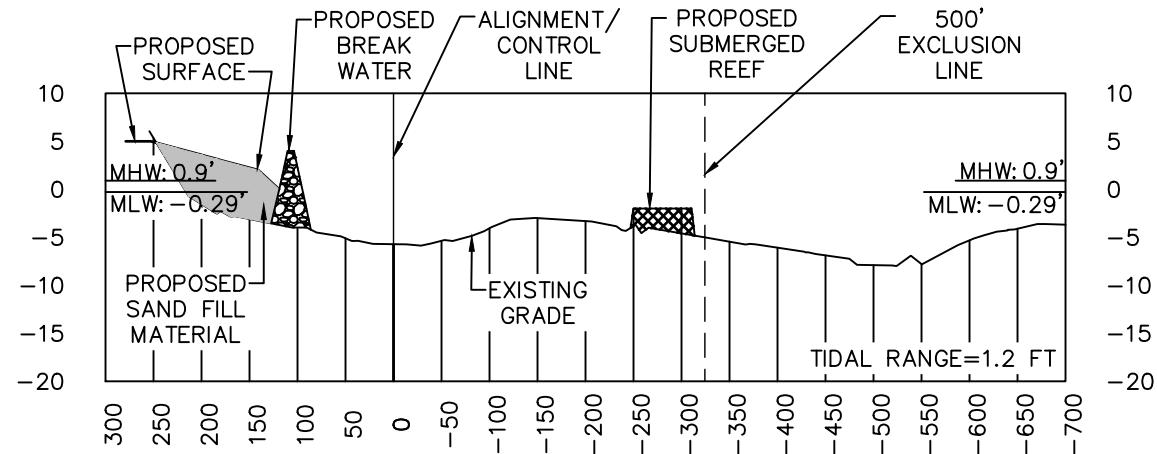
CHECKED BY
MIKE WARNKE

SECTION/TOWNSHIP/RANGE

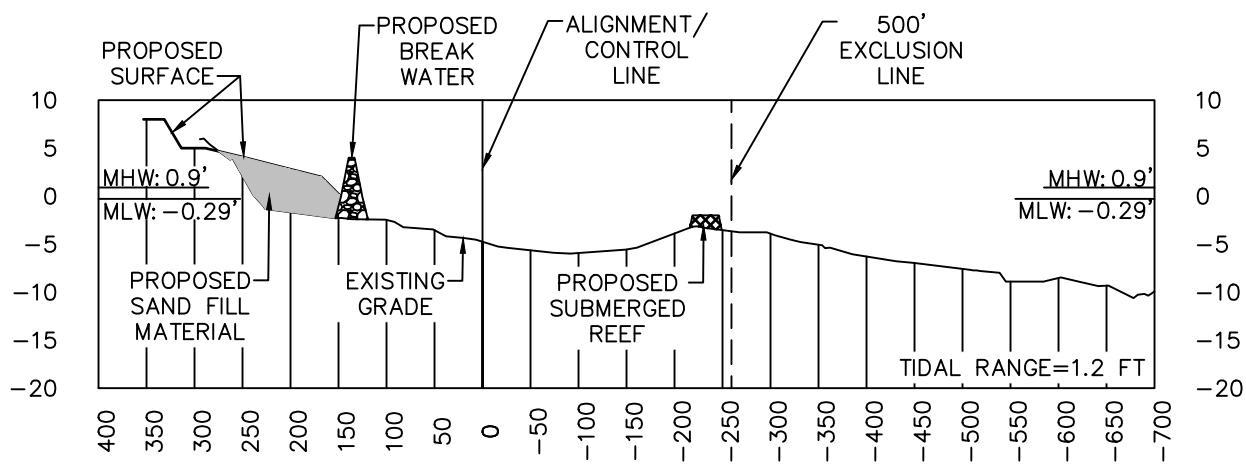
DISTRICT

DATE
MARCH 2023

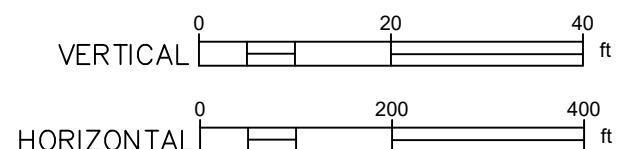
PENSACOLA BAY LIVING SHORELINE PROJECT
SITE C SHERMAN INLET
AIDS TO NAVIGATION



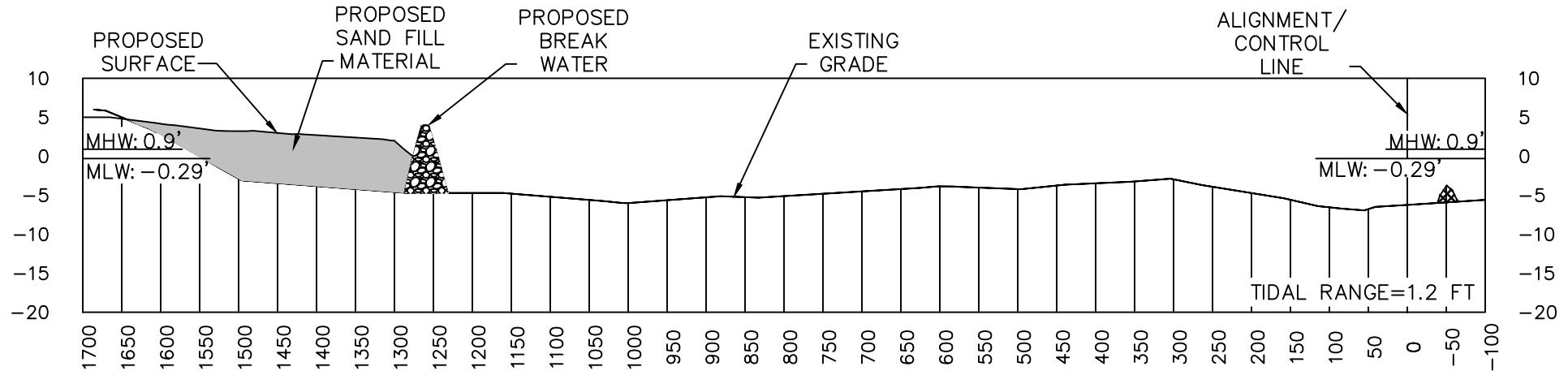
SECTION C-3



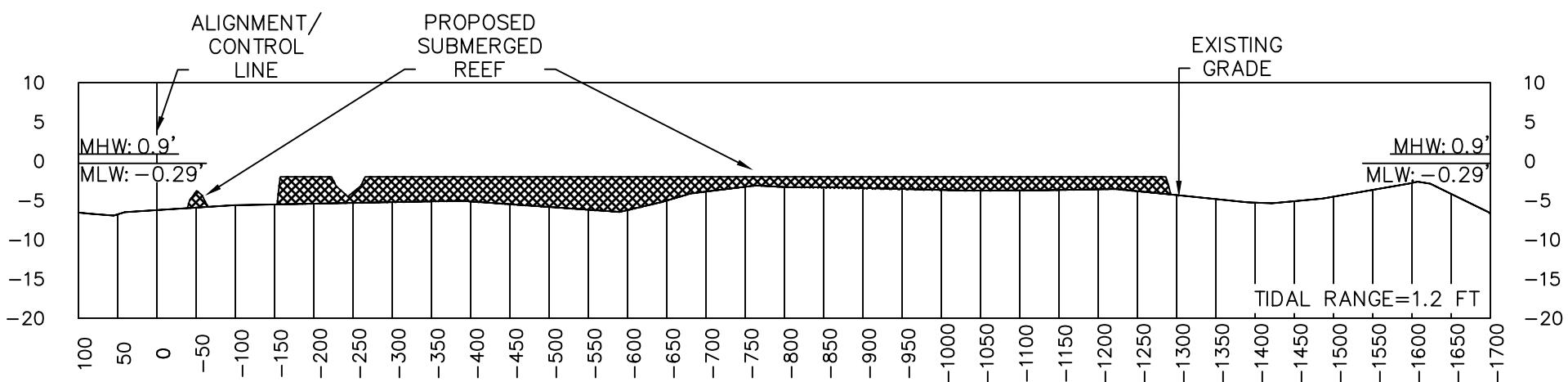
SECTION C-4



PROJECT NUMBER 1033000.848	NO.	REVISIONS	DATE	MIKE WARNKE FL PE 64091	VOLKERT Engineers Surveyors • Planners	215 FAIRPOINT DRIVE SUITE B GULF BREEZE, FL 32561 TELEPHONE: (850) 512-8935	PENSACOLA BAY LIVING SHORELINE PROJECT SITE C SHERMAN INLET CROSS SECTIONS
SHEET 45 OF 50							
DRAWN BY SC/DP	DESIGNED BY VARIES	QA/QC MANAGER	CHECKED BY MIKE WARNKE				
SECTION/TOWNSHIP/RANGE	DISTRICT	DATE MARCH 2023					



SECTION C-1



SECTION C-2

A horizontal scale bar with tick marks at 0, 250, and 500 ft. The word "HORIZONTAL" is written below the bar.

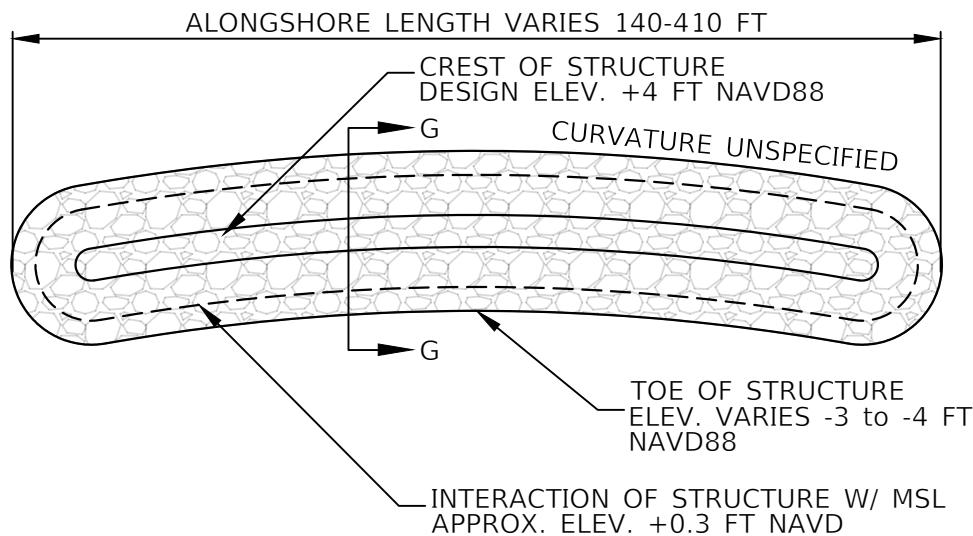
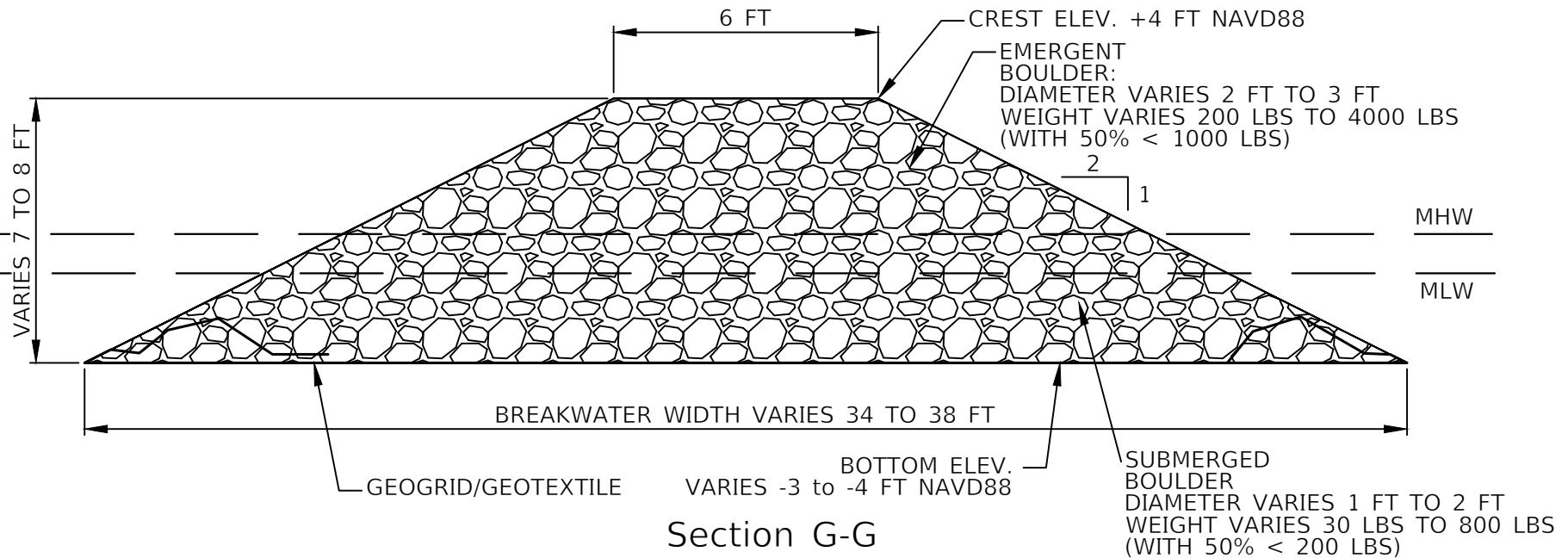
PROJECT NUMBER	NO.	REVISIONS	DATE
1033000.848			
SHEET			
46			
OF			
50			



Engineers Surveyors • Planners

215 FAIRPOINT DRIVE SUITE B
GULF BREEZE, FL 32561
TELEPHONE: (850) 512-8935

PENSACOLA BAY LIVING SHORELINE PROJECT
SITE C SHERMAN INLET
CROSS SECTIONS



NOT TO SCALE

Plan View

PROJECT NUMBER	NO.	REVISIONS	DATE		
1033000.848					
SHEET					
47					
OF					
50					

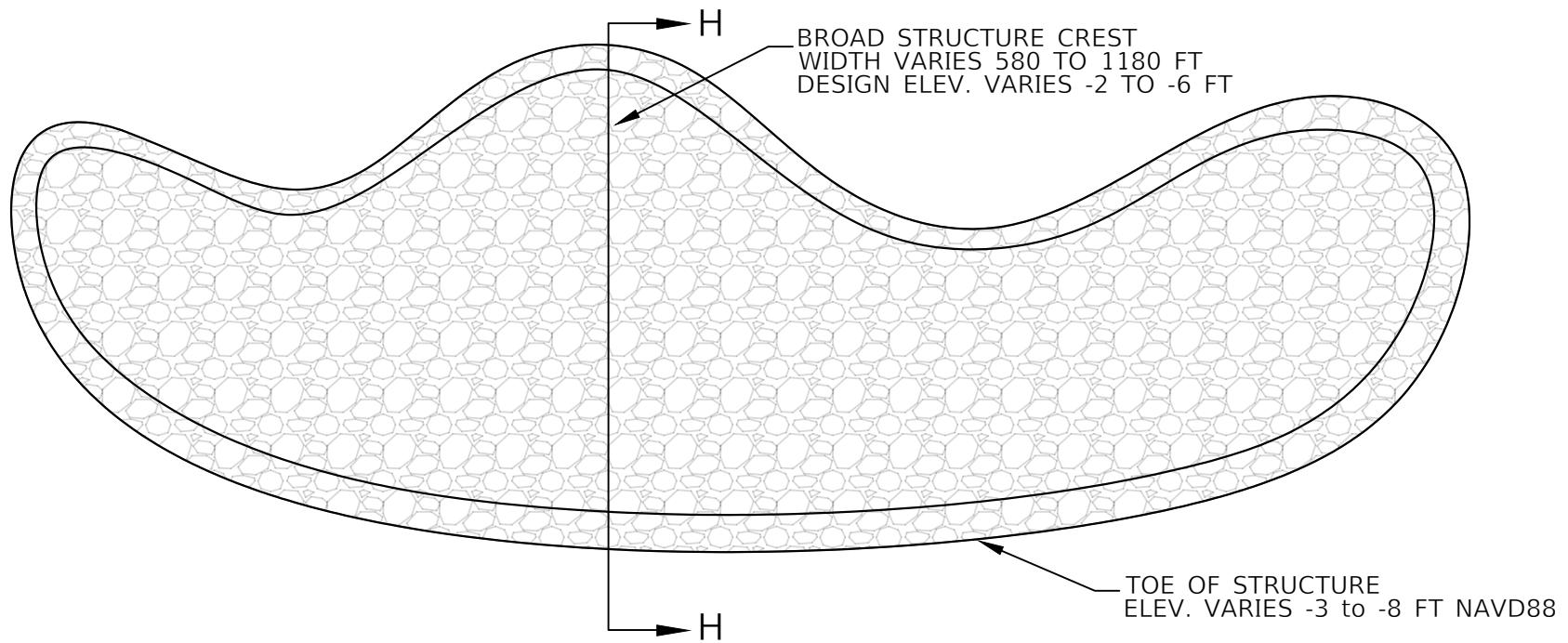
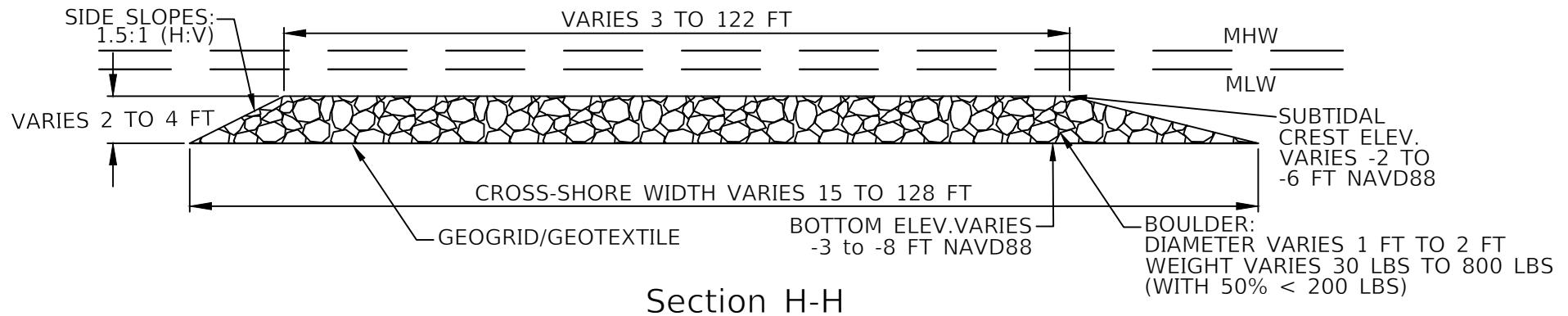
VOLKERT
Engineers Surveyors • Planners

215 FAIRPOINT DRIVE SUITE B
GULF BREEZE, FL 32561
TELEPHONE: (850) 512-8935

DRAWN BY SC/DP	DESIGNED BY VARIES	QA/QC MANAGER	CHECKED BY MIKE WARNKE
SECTION/TOWNSHIP/RANGE		DISTRICT	DATE MARCH 2023

MIKE WARNKE
FL PE 64091

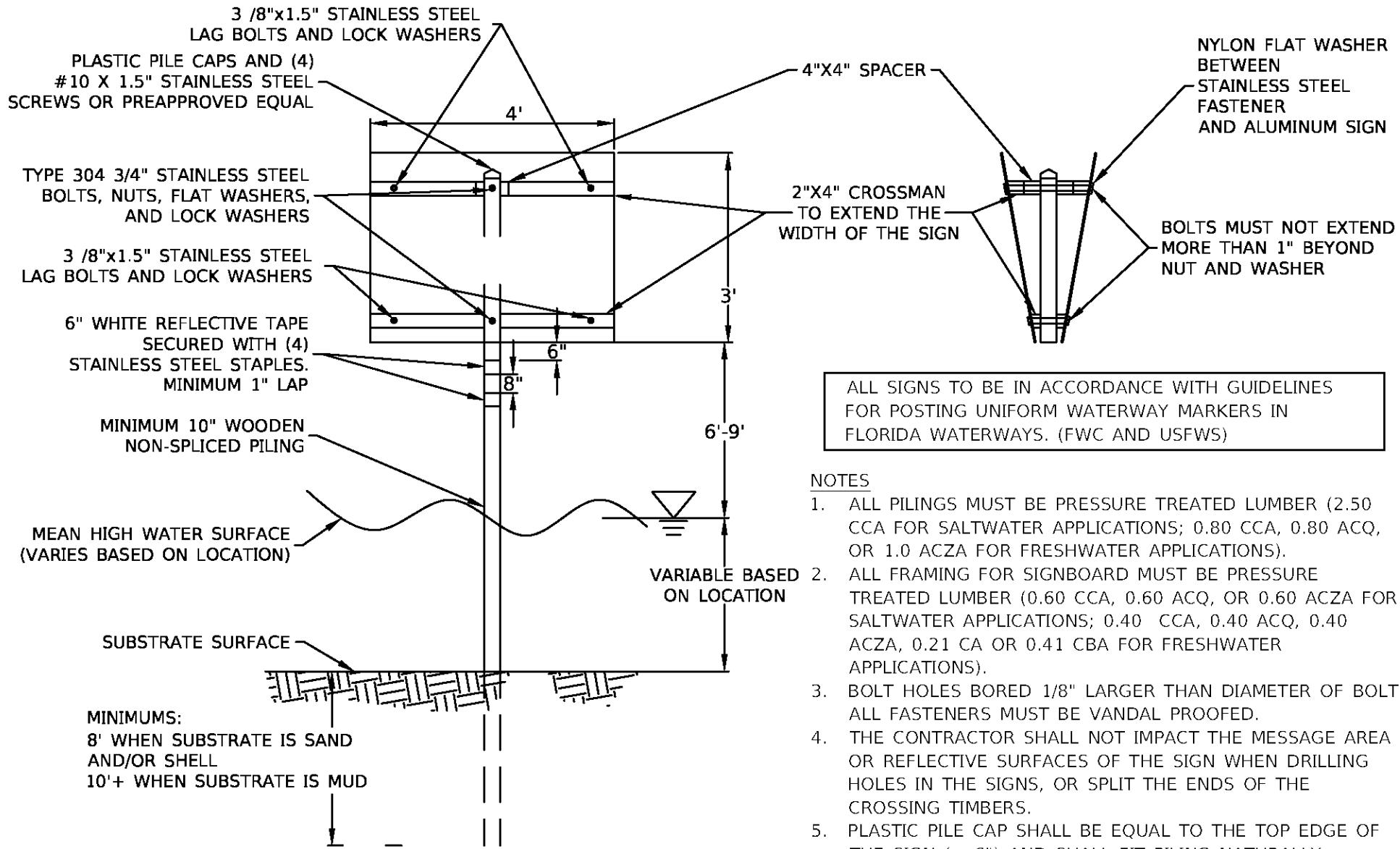
PENSACOLA BAY LIVING SHORELINE PROJECT
SITE C SHERMAN INLET
BREAK WATER DETAILS



NOT TO SCALE

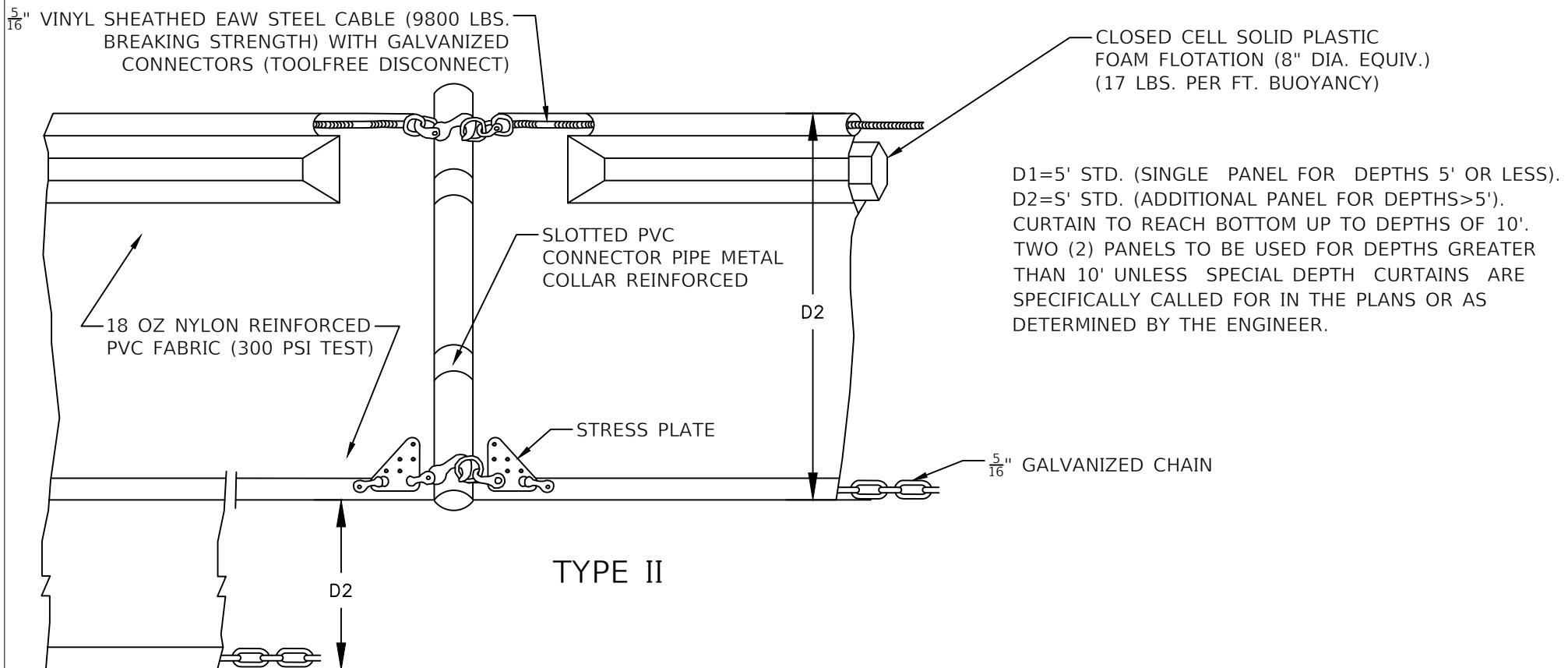
Plan View

PROJECT NUMBER	NO.	REVISIONS	DATE	MIKE WARNEKE FL PE 64091	215 FAIRPOINT DRIVE SUITE B GULF BREEZE, FL 32561 TELEPHONE: (850) 512-8935				PENSACOLA BAY LIVING SHORELINE PROJECT SITE C SHERMAN INLET SUBTIDAL REEF DETAILS
					DRAWN BY SC/DP	DESIGNED BY VARIES	QA/QC MANAGER	CHECKED BY MIKE WARNEKE	
1033000.848									
SHEET									
48									
OF									
50									
					SECTION/TOWNSHIP/RANGE	DISTRICT	DATE	MARCH 2023	



NOT TO SCALE

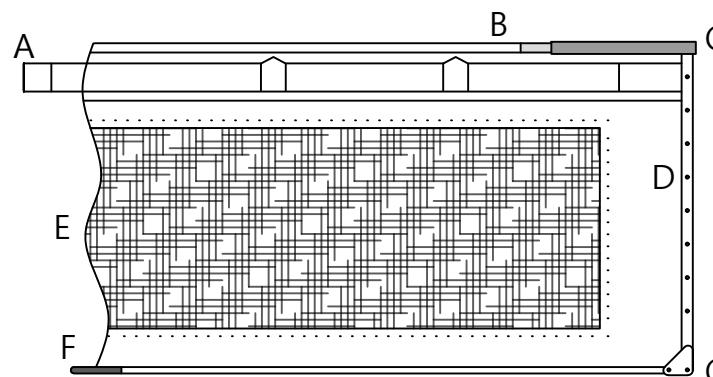
PROJECT NUMBER 1033000.848	NO. 49 OF 50	REVISIONS MIKE WARNKE FL PE 64091	DATE MIKE WARNKE FL PE 64091	VOLKERT Engineers Surveyors • Planners	215 FAIRPOINT DRIVE SUITE B GULF BREEZE, FL 32561 TELEPHONE: (850) 512-8935	PENSACOLA BAY LIVING SHORELINE PROJECT AIDS TO NAVIGATION DETAILS
				DRAWN BY SC/DP	DESIGNED BY VARIES	
				QA/QC MANAGER	CHECKED BY MIKE WARNKE	
				SECTION/TOWNSHIP/RANGE	DISTRICT	
					DATE MARCH 2023	



NOTE:

TURBIDITY CURTAIN TYPE WILL BE DETERMINED ACCORDING TO SITE AND WATER CONDITIONS

NOT TO SCALE



- A - 6" OR 8" CLOSED FOAM FLOAT
- B - 5/16" TENSION CABLE
- C - STEEL CONNECTOR
- D - REINFORCED GROMMETS
- E - PERMEABLE FABRIC
- F - 5/16" BOTTOM BALLAST CHAIN
- G - STRESS PLATE W/ SHACKLE CONNECTOR

PROJECT NUMBER 1033000.848	NO.	REVISIONS	DATE	MIKE WARNE FL PE 64091	215 FAIRPOINT DRIVE SUITE B GULF BREEZE, FL 32561 TELEPHONE: (850) 512-8935				PENSACOLA BAY LIVING SHORELINE PROJECT TURBIDITY CONTROL DETAILS
					DRAWN BY SC/DP	DESIGNED BY VARIES	QA/QC MANAGER	CHECKED BY MIKE WARNE	
					SECTION/TOWNSHIP/RANGE		DISTRICT	DATE MARCH 2023	



FLORIDA DEPARTMENT OF Environmental Protection

Ron DeSantis
Governor

Jeanette Nuñez
Lt. Governor

Shawn Hamilton
Secretary

Northwest District
160 W. Government Street, Suite 308
Pensacola, FL 32502-5794

Permittee/Authorized Entity:

Naval Air Station Pensacola
c/o Thomas Solether, P.E., Public Works Officer
310 John Tower Road
Pensacola, Florida 32508
Thomas.Solether@navy.mil

Escambia County BOCC

c/o J. Taylor Kirschenfeld, Deputy County Administrator and Director of Natural Resources Mgmt. Department
221 Palafox Place
Pensacola, Florida 32502
jtkirsche@myescambia.com

Pensacola Bay Living Shoreline

Authorized Agent:

Mike Warnke, Project Engineer
Volkert, Inc.
215 Fairpoint Drive, Suite B
Gulf Breeze, Florida 32561
Mike.Warnke@volkert.com

Environmental Resource Permit

State-owned Submerged Lands Authorization –Granted Pending Document Execution

U.S. Army Corps of Engineers Authorization – Separate Corps Authorization Required

Escambia County
Permit No.: 0418961-001-EI/17
Easement File No.: 170365951

Permit Issuance Date: April 17, 2024

Permit Construction Phase Expiration Date: April 17, 2029

Consolidated Environmental Resource Permit and Sovereignty Submerged Lands Authorization

**Permittee/Grantee: Naval Air Station Pensacola
Escambia County BOCC
Permit No: 0418961-001-EI/17**

PROJECT LOCATION

The activities authorized by this permit and sovereignty submerged lands authorization are located adjacent to Naval Air Station Pensacola, Pensacola, Florida 32507, Parcel ID 013S311000000000, Escambia County at three locations. Site A is located in Section 51, Township 2 South, Range 30 West at approximately 30°22'36.69" North Latitude, 87°16'4.84" West Longitude. Site B is located in Section 1, Township 3 South, Range 30 West from approximately 30°22'23.92" North Latitude, 87°15'53.87" West Longitude to 30°21'14.98" North Latitude, 87°15'41.23" West Longitude. Site C is located in Sections 16 & 17, Township 3 South, Range 31 West from approximately 30°20'37.03" North Latitude, 87°18'27.81" West Longitude to 30°20'00.49" North Latitude, 87°19'11.84" West Longitude. Fill material for Site B and Site C shall come from Robertson Island in Section 17, Township 3 South, Range 31 West at approximately 30°19'46.22" North Latitude, 87°19'21.88" West Longitude.

PROJECT DESCRIPTION

The permittee is authorized to install three living shorelines at three locations within Pensacola Bay, a Class II Florida Waterbody, Prohibited or Unclassified Shellfish Harvesting Areas. The project includes a total dredge volume of 409,703.7 cubic yards from Sites A and B, a total fill volume of 371,919 cubic yards below the MHWL, a total planting area of 61.51 acres, and a total area of 16.51 acres for breakwaters, rock piles, and reefs.

Site A shall consist of approximately 1.30 acres of breakwaters, 0.33 acres of rock piles, 2.38 acres of submerged reefs, 188,205 cubic yards of fill material below the MHWL, 183,488.69 cubic yards of fill material above the MHWL, 371,693.69 cubic yards of dredged material, and 33.64 acres of plantings. Material shall be dredged adjacent to the project area as shown on the project drawings and utilized as fill for the proposed planting area.

Site B shall consist of approximately 2.42 acres of breakwaters, 0.95 acres of rock piles, 1.93 acres of submerged reefs, 134,264 cubic yards of fill material below the MHWL, 40,836 cubic yards of fill material above the MHWL, 38,010 cubic yards of dredged material for a temporary access channel, and 27.87 acres of plantings.

Site C shall be comprised of approximately 2.60 acres of breakwaters, 4.60 acres of submerged reefs, and 49,450 cubic yards of fill material below the MHWL, and 55,050 cubic yards of fill material above the MHWL. Material utilized as fill for the proposed area shall originate from Robertson Island.

Those activities include the preemption of approximately 3,627,503 square feet or 83.28 acres of Sovereignty Submerged Lands at Site A, 38.06 acres at Site B, and 27.62 acres at Site C. Authorized activities are depicted on the attached exhibits.

AUTHORIZATIONS

Pensacola Bay Living Shoreline Environmental Resource Permit

The Department has determined that the activity qualifies for an Environmental Resource Permit. Therefore, the Environmental Resource Permit is hereby granted, pursuant to Part IV of Chapter 373, Florida Statutes (F.S.), and Chapter 62-330, Florida Administrative Code (F.A.C.).

Sovereignty Submerged Lands Authorization

Site A

The activity is located on sovereignty submerged lands owned by the State of Florida. It therefore also requires authorization from the Board of Trustees of the Internal Improvement Trust Fund (Board of Trustees), pursuant to Article X, Section 11 of the Florida Constitution, and Section 253.77, F.S. As staff to the Board of Trustees under Section 253.002, F.S., the Department has determined that the activity qualifies for and requires a public easement, as long as the work performed is located within the boundaries as described and is consistent with the terms and conditions herein.

The final documents required to execute the public easement will be sent to the permittee /grantee by the Department's Division of State Lands for execution. The Department intends to issue the public easement, upon satisfactory execution of those documents, including payment of required fees and compliance with the conditions in the previously issued Consolidated Intent to Issue public easement. **You may not begin construction of the activities described until you receive a copy of the executed public easement from the Department.**

Sites B & C

The activity is located on sovereignty submerged lands owned by the State of Florida. It therefore also requires authorization from the Board of Trustees of the Internal Improvement Trust Fund (Board of Trustees), pursuant to Article X, Section 11 of the Florida Constitution, and Section 253.77, F.S. As staff to the Board of Trustees of the Internal Improvement Trust Fund (Board of Trustees) under Sections 253.002, F.S., the Department has determined that the activity qualifies for and requires a Letter of Consent, as long as the work performed is located within the boundaries as described and is consistent with the terms and conditions herein.

During the term of this Letter of Consent you shall maintain satisfactory evidence of sufficient upland interest as required by paragraph 18-21.004(3)(b), F.A.C. If such interest is terminated or the Board of Trustees determines that such interest did not exist on the date of issuance of this Letter of Consent, this Letter of Consent may be terminated by the Board of Trustees at its sole option. If the Board of Trustees terminates this Letter of Consent, you agree not to assert a claim or defense against the Board of Trustees arising out of this Letter of Consent.

Federal Authorization

Your proposed activity as outlined on your application and attached drawings **does not qualify** for Federal authorization pursuant to the State Programmatic General Permit and a **SEPARATE permit** or authorization **shall be required** from the Corps. You must apply separately to the Corps using the Application for Department of the Army Permit (ENG 4345) or alternative as allowed by Corps regulations. More information on Corps permitting may be found online in the Jacksonville District Regulatory Division Sourcebook:

(<https://www.saj.usace.army.mil/Missions/Regulatory/Source-Book/>).

Authority for review - an agreement with the USACOE entitled "Coordination Agreement Between the U. S. Army Corps of Engineers (Jacksonville District) and the Florida Department of Environmental Protection (or Duly Authorized Designee), State Programmatic General Permit", Section 10 of the Rivers and Harbor Act of 1899, and Section 404 of the Clean Water Act.

Coastal Zone Management

Issuance of this authorization also constitutes a finding of consistency with Florida's Coastal Zone Management Program, as required by Section 307 of the Coastal Zone Management Act.

Water Quality Certification Granted

This permit also constitutes *a grant* of water quality certification under Section 401 of the Clean Water Act, 33 U.S.C. Section 1341. Pursuant to Rule 62-330.062, F.A.C. issuance of the individual or conceptual approval permit under this chapter shall constitute certification of compliance with water quality standards.

Other Authorizations

You are advised that authorizations or permits for this activity may be required by other federal, state, regional, or local entities including but not limited to local governments or municipalities. This permit does not relieve you from the requirements to obtain all other required permits or authorizations.

The activity described may be conducted only in accordance with the terms, conditions and attachments contained in this document. Issuance and granting of the permit and authorizations herein do not infer, nor guarantee, nor imply that future permits, authorizations, or modifications will be granted by the Department.

PERMIT / SOVEREIGNTY SUBMERGED LANDS CONDITIONS

The activities described must be conducted in accordance with:

- **The Specific Conditions**
- **The General Conditions**
- **The Special Consent Conditions**
- **The General Conditions for Sovereignty Submerged Lands Authorization**
- **The limits, conditions and locations of work shown in the attached drawings**
- **The term limits of this authorization**

You are advised to read and understand these conditions and drawings prior to beginning the authorized activities, and to ensure the work is conducted in conformance with all the terms, conditions, and drawings herein. If you are using a contractor, the contractor also should read and understand these conditions and drawings prior to beginning any activity. Failure to comply with these conditions, including any mitigation requirements, shall be grounds for the Department to revoke the permit and authorization and to take appropriate enforcement action. Operation of the facility is not authorized except when determined to be in conformance with all applicable rules and this permit and sovereignty submerged lands authorization, as described.

SPECIFIC CONDITIONS – ADMINISTRATIVE/EMERGENCIES

1. The construction phase expires at 11:59 p.m. on the date indicated on the cover page of this permit.
2. For emergencies involving a serious threat to the public health, safety, welfare, or environment, the emergency telephone contact number is (800) 320-0519 (State Warning Point). The Department telephone number for reporting non-threatening problems or system malfunctions is (850) 595-0663, day or night.
3. The mailing address for submittal of forms for the “Construction Commencement Notice”, “As-Built Certification …”, “Request for Conversion of Stormwater Management Permit Construction Phase to Operation and Maintenance Phase”, or other correspondence is FDEP, SLERP, 160 W Government Street, Suite 308, Pensacola, Florida 32502.

SPECIFIC CONDITIONS – PRIOR TO ANY CONSTRUCTION

4. Prior to installation of turbidity screens or initiation of construction activities, the permittee shall use PVC pipes to clearly delineate the extent of seagrass beds in the vicinity of the construction area. The PVC pipes shall be removed within 72 hours of construction completion and once turbidity has returned to background.
5. Prior to the initiation of any work authorized by this permit, floating turbidity screens with weighted skirts that extend to within 1 ft. of the bottom shall be placed around the active construction areas of the site. The screens shall be maintained and shall remain in place for the duration of the project construction to ensure that turbidity levels outside the construction area do not exceed 29 NTU's above background levels and not degrade the ambient water quality of Outstanding Florida Waters. The permittee shall be responsible for ensuring that turbidity control devices are inspected daily and maintained in good working order so that there are no violations of state water quality standards outside of the turbidity screens. Turbidity shall be monitored as described in the monitoring portion of this permit.
6. Best management practices for erosion control shall be implemented prior to construction commencement and shall be maintained at all times during construction to prevent siltation and turbid discharges in excess of State water quality standards pursuant to Chapter 62-302, F.A.C. Acceptable BMPs include, but are not limited to, the use of staked hay bales or filter cloth; sodding, seeding, and mulching; staged construction; and the installation of turbidity screens around the immediate project site.

7. The permittee is required to contact the United States Coast Guard office a minimum of 2 weeks prior to commencement and provide locations affected, equipment, hours of operation, and duration of the project so that the information can be published in the Local Notice to Mariners.

SPECIFIC CONDITIONS – CONSTRUCTION ACTIVITIES

8. This permit does not authorize the construction of any additional structures not illustrated on the permit drawings.

9. All wetland areas, waterbodies, and/or areas with submerged aquatic vegetation which are adjacent to the specific limits of construction authorized by this permit shall be protected from erosion, sedimentation, siltation, scouring, excess turbidity, or dewatering.

10. The permittee shall be responsible for ensuring that erosion control devices/procedures are inspected and maintained daily during all phases of construction authorized by this permit until all areas that were disturbed during construction are sufficiently stabilized to prevent erosion, siltation, and turbid discharges.

11. Any damage to wetlands outside of the authorized impact areas as a result of construction shall be immediately reported to the Department at (850)595-8300 and repaired by reestablishing the pre-construction elevations and replanting vegetation of the same species, size, and density as that in the adjacent areas. The restoration shall be completed within 30 days of completion of construction, and the Department shall be notified of its completion within that same 30-day period.

12. The following measures shall be taken by the permittee whenever turbidity levels within waters of the State surrounding the project site exceed 29 NTU's above background:

- a. Immediately cease all work contributing to the violation.
- b. Stabilize all exposed soils contributing to the violation. Modify the work procedures that were responsible for the violation and install more erosion, sedimentation, and turbidity control devices.
- c. Notify the Department within 24 hours of the time the violation occurred at (850)595-8300.

13. Construction equipment shall not be repaired or refueled in wetlands or elsewhere within waters of the state.

14. Storage or stockpiling of tools and materials (i.e., lumber, pilings, debris,) within wetlands, along the shoreline, within the littoral zone, or elsewhere within wetlands or other surface waters is prohibited. All vegetative material and debris shall be removed to a self-contained upland disposal area with no stockpiling of debris within wetland areas.

15. All watercraft associated with the construction of the permitted structure shall only operate within waters of sufficient depth so as to preclude bottom scouring and prop dredging.

16. All material used as fill for construction of the project shall be clean sand/shell material and shall not be contaminated with vegetation, garbage, trash, tires, hazardous, toxic waste or other materials that are not suitable for road construction within waters of the State as so determined by the Department.

SPECIFIC CONDITIONS – DREDGE & FILL CONSTRUCTION ACTIVITIES

17. No dredging or filling of submerged grassbeds or live bottom communities is authorized by this permit.

18. Areas to be dredged shall be dredged in accordance with the attached permit drawings and shall not exceed the areas and depths indicated on those drawings.

19. Dredging shall be limited to day light; no dredging activities are authorized to be conducted at night.

20. The dredge area shall be excavated hydraulically. All spoil material shall be properly contained during operation within the project area as well as during transportation to the spoil locations in a manner that prevents return of the spoil material to wetlands and other surface waters.

21. Material shall be brought to target grade and/or design specifications using mechanical methods.

22. Material dredged from Site B shall be temporarily sidecast adjacent to the construction access channel as shown on the attached project drawings. Once the construction access channel is no longer needed, the material shall be returned to the channel and the bottom restored to ambient depth.

23. Material placed for Site C along shoreline shall not exceed the limits or locations as shown on the project drawings.

SPECIFIC CONDITIONS – LIVING SHORELINE CONSTRUCTION ACTIVITIES

24. Breakwaters, rock piles, and reefs shall be placed in a manner to not substantially impede the tidal flow of water or create entrapments.

25. Breakwaters, rock piles, and reefs shall not be placed over or within 15 feet of seagrasses.

26. The breakwaters shall not be placed where or in a manner in which they present a hazard to navigation or public safety.

27. Plantings shall consist primarily of *Spartina patens*, *Juncus roemerianus*, and *Spartina alterniflora* at elevations and frequency shown on the project drawings.

28. The permittee shall submit to the Department the following information 14 days prior to planting:

- a. Name of the nurseries from which the plants shall be purchased and/or;
- b. The exact location from where the plants shall be harvested, shown on a vicinity map. The permittee shall provide, in writing, the permit number of the Department permit and/or a copy of the Northwest Florida Water Management District permit, and a copy of the DEP Aquatic Plant Harvesting permit authorizing the harvest when plants are harvested from natural areas.

29. Riprap for breakwaters and rock piles shall consist of limestone rock and shall be free of sediment, debris and any toxic or otherwise deleterious substance.

30. Riprap for breakwaters and rock piles at Site A and Site B shall have a diameter of 1.5 to 2.5 feet and 2 to 3 feet for Site C. Riprap for submerged reefs shall have a diameter of 1 to 2 feet for all sites.

31. The slope of the breakwaters shall be no steeper than 2:1 (Horizontal/Vertical).

SPECIFIC CONDITIONS – MANATEE

32. The [Standard Manatee Conditions for In-water Work](#) (2011) shall be followed for all in-water activity.

33. To reduce the risk of manatee entrapment landward of the wave break structures and living shorelines, gaps shall be placed at every 100 feet along the structure and maintained at a minimum of five (5) feet in width. For structures that do not have gaps due to a shorter length, the top of the structure shall be maintained at least two and a half (2.5) feet above Mean High Water and a minimum three (3) foot buffer shall be maintained between existing emergent and/or submerged vegetation and the structure.

SPECIFIC CONDITIONS – OTHER LISTED SPECIES

34. This permit does not authorize the permittee to cause any adverse impact to or “take” of state listed species and other regulated species of fish and wildlife. Compliance with state laws regulating the take of fish and wildlife is the responsibility of the owner or permittee associated with this project. Please refer to Chapter 68A-27 of the Florida Administrative Code for definitions of “take” and a list of fish and wildlife species. If listed species are observed onsite, Florida Fish and Wildlife Conservation Commission (FWC) staff are available to provide decision support information or assist in obtaining the appropriate FWC permits. Most marine endangered and threatened species are statutorily protected and a “take” permit cannot be issued. Requests for further information or review can be sent to ConservationPlanningServices@MyFWC.com.

35. If new information (e.g. listing of new species, new critical habitat, etc.) shows that the magnitude of impacts to federally listed species has the potential for adverse effects, the U.S. Fish and Wildlife Service (USFWS) will notify the Department. The Department will initiate coordination with the permittee and with the USFWS to determine what adverse impacts are likely and if additional minimization measures, reporting, or monitoring are required in order to be consistent with the Endangered Species Act, as deemed necessary by USFWS.

36. The Permittee shall report any injured, sick, or dead federally or state listed animal(s) discovered onsite to the Florida Fish and Wildlife Conservation Commission Wildlife Alert number at 888-404-FWCC (3922).

SPECIFIC CONDITIONS – TURBIDITY MONITORING AND REPORTING

37. Submittals required herein for compliance (e.g. mitigation reports, water quality monitoring reports, etc.) shall be submitted electronically (via e-mail, CD or DVD, or through a file transfer site) when practicable and shall include the permittee's name and permit number (0418961-001-EI/17). Email submittals shall be sent to Kenneth.Dickey@FloridaDEP.gov with a subject line of "Compliance: permit number 0418961-001-EI/17", or by mail to:

Department of Environmental Protection
Northwest District
ATTN: Compliance Assurance (ERP)
160 W Government St, Suite 308
Pensacola, Florida 32502

38. Water turbidity samples shall be taken every four hours, one foot above the bottom, mid-depth, and one-foot below the surface at monitoring stations located as follows:

- a. Approximately 100 feet up-current of the work sites and clearly outside the influence of construction activities. (This shall serve as the natural background sample against which other turbidity readings shall be compared.)
- b. Directly outside the turbidity curtains surrounding the work sites and within the densest portion of any visible turbidity plume. (This sample shall serve as the compliance sample.)

39. During dredging activities, the permittee or permittee's contractor shall collect the following turbidity monitoring data at the frequency and water depths directed by Specific Condition 38:

- a. Date and time of sampling event
- b. Turbidity sampling results (background NTUs, compliance NTUs, and the difference between them)
- c. Description of data collection methods
- d. An aerial map indicating the sampling locations
- e. Depth of sample(s)
- f. Weather conditions at times of sampling
- g. Tidal stage and direction of flow

Data shall be collected in a turbidity log and shall include a statement by the individual responsible for implementation of the sampling program attesting to the authenticity, precision, limits of detection, and accuracy of the data. The turbidity log shall be scanned and sent on a weekly basis to the Department's Environmental Resources Compliance Assurance Program Staff by email at Kenneth.Dickey@FloridaDEP.gov. The subject line of the email shall include the project name and permit number.

40. The following measures shall be taken immediately by the permittee when turbidity levels within waters of the State surrounding the project site exceed 29 NTUs above background:

- a. Immediately cease work contributing to the water quality violation.
- b. Stabilize exposed soils contributing to the violation. Modify the work procedures responsible for the violation, install additional turbidity containment devices and repair non-functioning turbidity containment devices.
- c. Increase monitoring frequency to every 2 hours until turbidity levels are less than 29 NTUs above background. Interim samples collected following the violation(s) shall be collected in the same manner and locations as the routine monitoring. Operations may not resume until the water quality standard for turbidity has returned to 29 NTUs above background.
- d. The violation(s) shall be immediately reported to the Department. The report shall include the description of the corrective actions being taken or proposed to be taken. The report shall be made to the Department as soon as normal business hours resume if violation(s) are noted after normal business hours, on holidays, or on weekends. A copy of the monitoring data sheets, which indicate violation(s), shall be forwarded immediately to the Department.

Failure to report violation(s) or to follow correct procedures before resuming work shall constitute grounds for permit revocation and may subject the permittee to formal enforcement action.

SPECIFIC CONDITIONS – CONSTRUCTION COMPLETION

41. Material dredged from Site B and temporarily sidecast adjacent to the construction access channel shall be returned to the channel and the bottom shall be restored to ambient depth once the construction access channel is no longer needed.

SPECIFIC CONDITIONS – OPERATION AND MAINTENANCE ACTIVITIES

42. All fill areas, fill slopes, and disturbed upland areas shall be stabilized at all times during and after construction so as to prevent any erosion, sedimentation, siltation, or scouring.

43. All structures authorized by this permit shall remain in operable condition and shall not be allowed to deteriorate or otherwise contribute to a water quality violation for the life of the sites.

44. Submerged vegetation onsite shall be maintained in a natural state. Removal of existing vegetation shall be avoided, with the exception of invasive exotic or nuisance species. For a more extensive list of invasive exotic and nuisance species, please go to:
www.fleppc.org/list/.htm.

45. The permittees shall adhere to the attached Monitoring and Adaptative Management Plan.

46. The permittees are responsible for any and all cleanup of the sites for the life of the sites which includes, but is not limited to, trash, debris, flotsam, and jetsam.

GENERAL CONDITIONS FOR INDIVIDUAL PERMITS

The following general conditions are binding on all individual permits issued under chapter 62-330, F.A.C., except where the conditions are not applicable to the authorized activity, or where the conditions must be modified to accommodate project-specific conditions.

1. All activities shall be implemented following the plans, specifications and performance criteria approved by this permit. Any deviations must be authorized in a permit modification in accordance with Rule 62-330.315, F.A.C. Any deviations that are not so authorized may subject the permittee to enforcement action and revocation of the permit under Chapter 373, F.S.
2. A complete copy of this permit shall be kept at the work site of the permitted activity during the construction phase, and shall be available for review at the work site upon request by the Agency staff. The permittee shall require the contractor to review the complete permit prior to beginning construction.
3. Activities shall be conducted in a manner that does not cause or contribute to violations of state water quality standards. Performance-based erosion and sediment control best management practices shall be installed immediately prior to, and be maintained during and after construction as needed, to prevent adverse impacts to the water resources and adjacent lands. Such practices shall be in accordance with the *State of Florida Erosion and Sediment Control Designer and Reviewer Manual* (Florida Department of Environmental Protection and Florida Department of Transportation June 2007), and the *Florida Stormwater Erosion and Sedimentation Control Inspector's Manual* (Florida Department of Environmental Protection, Nonpoint Source Management Section, Tallahassee, Florida, July 2008), which are both incorporated by reference in subparagraph 62-330.050(9)(b)5., F.A.C., unless a project-specific erosion and sediment control plan is approved or other water quality control measures are required as part of the permit.
4. At least 48 hours prior to beginning the authorized activities, the permittee shall submit to the Agency a fully executed Form 62-330.350(1), "Construction Commencement Notice," [October 1, 2013], which is incorporated by reference in paragraph 62-330.350(1)(d), F.A.C., indicating the expected start and completion dates. A copy of this form may be obtained from the Agency, as described in subsection 62-330.010(5), F.A.C. If available, an Agency website that fulfills this notification requirement may be used in lieu of the form.
5. Unless the permit is transferred under Rule 62-330.340, F.A.C., or transferred to an operating entity under Rule 62-330.310, F.A.C., the permittee is liable to comply with the plans, terms and conditions of the permit for the life of the project or activity.
6. Within 30 days after completing construction of the entire project, or any independent portion of the project, the permittee shall provide the following to the Agency, as applicable:
 - a. For an individual, private single-family residential dwelling unit, duplex, triplex, or quadruplex – "Construction Completion and Inspection Certification for Activities Associated With a Private Single-Family Dwelling Unit" [Form 62-330.310(3)]; or
 - b. For all other activities – "As-Built Certification and Request for Conversion to Operational Phase" [Form 62-330.310(1)].
 - c. If available, an Agency website that fulfills this certification requirement may be used in lieu of the form.

7. If the final operation and maintenance entity is a third party:
 - a. Prior to sales of any lot or unit served by the activity and within one year of permit issuance, or within 30 days of as-built certification, whichever comes first, the permittee shall submit, as applicable, a copy of the operation and maintenance documents (see sections 12.3 thru 12.3.3 of Volume I) as filed with the Department of State, Division of Corporations and a copy of any easement, plat, or deed restriction needed to operate or maintain the project, as recorded with the Clerk of the Court in the County in which the activity is located.
 - b. Within 30 days of submittal of the as-built certification, the permittee shall submit "Request for Transfer of Environmental Resource Permit to the Perpetual Operation Entity" [Form 62-330.310(2)] to transfer the permit to the operation and maintenance entity, along with the documentation requested in the form. If available, an Agency website that fulfills this transfer requirement may be used in lieu of the form.
8. The permittee shall notify the Agency in writing of changes required by any other regulatory agency that require changes to the permitted activity, and any required modification of this permit must be obtained prior to implementing the changes.
9. This permit does not:
 - a. Convey to the permittee any property rights or privileges, or any other rights or privileges other than those specified herein or in Chapter 62-330, F.A.C.;
 - b. Convey to the permittee or create in the permittee any interest in real property;
 - c. Relieve the permittee from the need to obtain and comply with any other required federal, state, and local authorization, law, rule, or ordinance; or
 - d. Authorize any entrance upon or work on property that is not owned, held in easement, or controlled by the permittee.
10. Prior to conducting any activities on state-owned submerged lands or other lands of the state, title to which is vested in the Board of Trustees of the Internal Improvement Trust Fund, the permittee must receive all necessary approvals and authorizations under Chapters 253 and 258, F.S. Written authorization that requires formal execution by the Board of Trustees of the Internal Improvement Trust Fund shall not be considered received until it has been fully executed.
11. The permittee shall hold and save the Agency harmless from any and all damages, claims, or liabilities that may arise by reason of the construction, alteration, operation, maintenance, removal, abandonment or use of any project authorized by the permit.
12. The permittee shall notify the Agency in writing:
 - a. Immediately if any previously submitted information is discovered to be inaccurate; and
 - b. Within 30 days of any conveyance or division of ownership or control of the property or the system, other than conveyance via a long-term lease, and the new owner shall request transfer of the permit in accordance with Rule 62-330.340, F.A.C. This does not apply to the sale of lots or units in residential or commercial subdivisions or condominiums where the stormwater management system has been completed and converted to the operation phase.

13. Upon reasonable notice to the permittee, Agency staff with proper identification shall have permission to enter, inspect, sample and test the project or activities to ensure conformity with the plans and specifications authorized in the permit.

14. If any prehistoric or historic artifacts, such as pottery or ceramics, stone tools or metal implements, dugout canoes, or any other physical remains that could be associated with Native American cultures, or early colonial or American settlement are encountered at any time within the project site area, work involving subsurface disturbance in the immediate vicinity of such discoveries shall cease. The permittee or other designee shall contact the Florida Department of State, Division of Historical Resources, Compliance and Review Section, at (850) 245-6333 or (800) 847-7278, as well as the appropriate permitting agency office. Such subsurface work shall not resume without verbal or written authorization from the Division of Historical Resources. If unmarked human remains are encountered, all work shall stop immediately and notification shall be provided in accordance with Section 872.05, F.S.

15. Any delineation of the extent of a wetland or other surface water submitted as part of the permit application, including plans or other supporting documentation, shall not be considered binding unless a specific condition of this permit or a formal determination under Rule 62-330.201, F.A.C., provides otherwise.

16. The permittee shall provide routine maintenance of all components of the stormwater management system to remove trapped sediments and debris. Removed materials shall be disposed of in a landfill or other uplands in a manner that does not require a permit under Chapter 62-330, F.A.C., or cause violations of state water quality standards.

17. This permit is issued based on the applicant's submitted information that reasonably demonstrates that adverse water resource-related impacts will not be caused by the completed permit activity. If any adverse impacts result, the Agency will require the permittee to eliminate the cause, obtain any necessary permit modification, and take any necessary corrective actions to resolve the adverse impacts.

18. A Recorded Notice of Environmental Resource Permit may be recorded in the county public records in accordance with subsection 62-330.090(7), F.A.C. Such notice is not an encumbrance upon the property.

19. In addition to those general conditions in subsection (1), above, the Agency shall impose any additional project-specific special conditions necessary to assure the permitted activities will not be harmful to the water resources, as set forth in rules 62-330.301 and 62-330.302, F.A.C., Volumes I and II, as applicable, and the rules incorporated by reference in this chapter.

SPECIAL CONSENT CONDITIONS

1. The applicant agrees to indemnify, defend and hold harmless the Board of Trustees and the State of Florida from all claims, actions, lawsuits and demands in any form arising out of the authorization to use sovereignty submerged lands or the applicant's use and construction of structures on sovereignty submerged lands. This duty to indemnify and hold harmless will

include any and all liabilities that are associated with the structure or activity including special assessments or taxes that are now or in the future assessed against the structure or activity during the period of the authorization.

2. Failure by the Board of Trustees to enforce any violation of a provision of the authorization or waiver by the Board of Trustees of any provision of the authorization will not invalidate the provision not enforced or waived, nor will the failure to enforce or a waiver prevent the Board of Trustees from enforcing the unenforced or waived provision in the event of a violation of that provision.
3. Applicant binds itself and its successors and assigns to abide by the provisions and conditions set forth in the authorization. If the applicant or its successors or assigns fails or refuses to comply with the provisions and conditions of the authorization, the authorization may be terminated by the Board of Trustees after written notice to the applicant or its successors or assigns. Upon receipt of such notice, the applicant or its successors or assigns will have thirty (30) days in which to correct the violations. Failure to correct the violations within this period will result in the automatic revocation of this authorization.
4. All costs incurred by the Board of Trustees in enforcing the terms and conditions of the authorization will be paid by the applicant. Any notice required by law will be made by certified mail at the address shown on page one of the authorization. The applicant will notify the Board of Trustees in writing of any change of address at least ten days before the change becomes effective.
5. This authorization does not allow any activity prohibited in a conservation easement or restrictive covenant that prohibits the activity.

GENERAL CONDITIONS FOR SOVEREIGNTY SUBMERGED LANDS AUTHORIZATION

Any use of sovereignty submerged lands is subject to the following general conditions, which are binding upon the applicant and are enforceable under Chapter 253, F.S.

1. Sovereignty submerged lands may be used only for the specified activity or use. Any unauthorized deviation from the specified activity or use and the conditions for undertaking that activity or use will constitute a violation. Violation of the authorization will result in suspension or revocation of the applicant's use of the sovereignty submerged lands unless cured to the satisfaction of the Board of Trustees.
2. Authorization under Rule 18-21.005, F.A.C., conveys no title to sovereignty submerged lands or water column, nor does it constitute recognition or acknowledgment of any other person's title to such land or water.
3. Authorizations under Rule 18-21.005, F.A.C., may be modified, suspended or revoked in accordance with its terms or the remedies provided in Sections 253.04, F.S. and Chapter 18-14, F.A.C.

4. Structures or activities will be constructed and used to avoid or minimize adverse impacts to resources.
5. Construction, use, or operation of the structure or activity will not adversely affect any species which is endangered, threatened or of special concern, as listed in Rules 68A-27.003, 68A-27.004, and 68A-27.005, F.A.C.
6. Structures or activities will not unreasonably interfere with riparian rights. When a court of competent jurisdiction determines that riparian rights have been unlawfully affected, the structure or activity will be modified in accordance with the court's decision.
7. Structures or activities will not create a navigational hazard.
8. Activities shall not interfere with the public easement for traditional uses of the sandy beaches provided in section 161.141, F.S.
9. Structures shall be maintained in a functional condition and shall be repaired or removed if they become dilapidated to such an extent that they are no longer functional. This shall not be construed to prohibit the repair or replacement subject to the provisions of rule 18-21.005, F.A.C., within one year, of a structure damaged in a discrete event such as a storm, flood, accident, or fire.
10. Structures or activities shall be constructed, operated, and maintained solely for water dependent purposes, or for non-water dependent activities authorized under paragraph 18-21.004(1)(g), F.A.C., or any other applicable law.
11. The applicant agrees to indemnify, defend and hold harmless the Board of Trustees and the State of Florida from all claims, actions, lawsuits and demands in any form arising out of the authorization to use sovereignty submerged lands or the applicant's use and construction of structures on sovereignty submerged lands. This duty to indemnify and hold harmless will include any and all liabilities that are associated with the structure or activity including special assessments or taxes that are now or in the future assessed against the structure or activity during the period of the authorization.
12. Failure by the Board of Trustees to enforce any violation of a provision of the authorization or waiver by the Board of Trustees of any provision of the authorization will not invalidate the provision not enforced or waived, nor will the failure to enforce or a waiver prevent the Board of Trustees from enforcing the unenforced or waived provision in the event of a violation of that provision.
13. Applicant binds itself and its successors and assigns to abide by the provisions and conditions set forth in the authorization. If the applicant or its successors or assigns fails or refuses to comply with the provisions and conditions of the authorization, the authorization may be terminated by the Board of Trustees after written notice to the applicant or its successors or assigns. Upon receipt of such notice, the applicant or its successors or assigns will have thirty

(30) days in which to correct the violations. Failure to correct the violations within this period will result in the automatic revocation of this authorization.

14. All costs incurred by the Board of Trustees in enforcing the terms and conditions of the authorization will be paid by the applicant. Any notice required by law will be made by certified mail at the address shown on page one of the authorization. The applicant will notify the Board of Trustees in writing of any change of address at least ten days before the change becomes effective.

15. This authorization does not allow any activity prohibited in a conservation easement or restrictive covenant that prohibits the activity.

NOTICE OF RIGHTS

This action is final and effective on the date filed with the Clerk of the Department unless a petition for an administrative hearing is timely filed under Sections 120.569 and 120.57, F.S., before the deadline for filing a petition. On the filing of a timely and sufficient petition, this action will not be final and effective until a subsequent order of the Department. Because the administrative hearing process is designed to formulate final agency action, the subsequent order may modify or take a different position than this action.

Petition for Administrative Hearing

A person whose substantial interests are affected by the Department's action may petition for an administrative proceeding (hearing) under Sections 120.569 and 120.57, F.S. Pursuant to Rules 28-106.201 and 28-106.301, F.A.C., a petition for an administrative hearing must contain the following information:

- (a) The name and address of each agency affected and each agency's file or identification number, if known;
- (b) The name, address, and telephone number of the petitioner; the name, address, and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial interests are or will be affected by the agency determination;
- (c) A statement of when and how the petitioner received notice of the agency decision;
- (d) A statement of all disputed issues of material fact. If there are none, the petition must so indicate;
- (e) A concise statement of the ultimate facts alleged, including the specific facts that the petitioner contends warrant reversal or modification of the agency's proposed action;
- (f) A statement of the specific rules or statutes that the petitioner contends require reversal or modification of the agency's proposed action, including an explanation of how the alleged facts relate to the specific rules or statutes; and
- (g) A statement of the relief sought by the petitioner, stating precisely the action that the petitioner wishes the agency to take with respect to the agency's proposed action.

The petition must be filed (received by the Clerk) in the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station 35, Tallahassee, Florida 32399-

3000, or via electronic correspondence at Agency_Clerk@FloridaDEP.gov. Also, a copy of the petition shall be mailed to the applicant at the address indicated above at the time of filing.

Time Period for Filing a Petition

In accordance with Rule 62-110.106(3), F.A.C., petitions for an administrative hearing by the applicant and persons entitled to written notice under Section 120.60(3), F.S., must be filed within 14 days of receipt of this written notice. Petitions filed by any persons other than the applicant, and other than those entitled to written notice under Section 120.60(3), F.S., must be filed within 14 days of publication of the notice or within 14 days of receipt of the written notice, whichever occurs first. You cannot justifiably rely on the finality of this decision unless notice of this decision and the right of substantially affected persons to challenge this decision has been duly published or otherwise provided to all persons substantially affected by the decision. While you are not required to publish notice of this action, you may elect to do so pursuant to Rule 62-110.106(10)(a).

The failure to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57, F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention (in a proceeding initiated by another party) will be only at the discretion of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205, F.A.C. If you do not publish notice of this action, this waiver will not apply to persons who have not received written notice of this action.

Extension of Time

Under Rule 62-110.106(4), F.A.C., a person whose substantial interests are affected by the Department's action may also request an extension of time to file a petition for an administrative hearing. The Department may, for good cause shown, grant the request for an extension of time. Requests for extension of time must be filed with the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station 35, Tallahassee, Florida 32399-3000, or via electronic correspondence at Agency_Clerk@FloridaDEP.gov, before the deadline for filing a petition for an administrative hearing. A timely request for extension of time shall toll the running of the time period for filing a petition until the request is acted upon.

Mediation

Mediation is not available in this proceeding.

FLAWAC Review

The applicant, or any party within the meaning of Section 373.114(1)(a) or 373.4275, F.S., may also seek appellate review of this order before the Land and Water Adjudicatory Commission under Section 373.114(1) or 373.4275, F.S. Requests for review before the Land and Water Adjudicatory Commission must be filed with the Secretary of the Commission and served on the Department within 20 days from the date when this order is filed with the Clerk of the Department.

Judicial Review

Once this decision becomes final, any party to this action has the right to seek judicial review pursuant to Section 120.68, F.S. by filing a Notice of Appeal pursuant to Florida Rules of Appellate Procedure 9.110 and 9.190 with the Clerk of the Department in the Office of General Counsel (Station #35, 3900 Commonwealth Boulevard, Tallahassee, Florida 32399-3000) and by filing a copy of the Notice of Appeal accompanied by the applicable filing fees with the appropriate district court of appeal. The notice must be filed within 30 days from the date this action is filed with the Clerk of the Department.

EXECUTION AND CLERKING
Executed in Pensacola, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL PROTECTION

Elizabeth Mullins Orr

Elizabeth Mullins Orr
Northwest District Director

EMO:wb

Attachments:

Standard Manatee Construction Conditions 2011, 2 pages
Project Drawings and Design Specs., 50 pages
Monitoring and Adaptive Management Plan, 23 pages

Copies furnished to:

FDEP, Elizabeth.Orr@FloridaDEP.gov, Kim.Allen@FloridaDEP.gov,
Russell.Sullivan@FloridaDEP.gov, Whitney.Bretana@FloridaDEP.gov,
Zachary.Schang@FloridaDEP.gov
FWC, Imperiled Species Management Section, ImperiledSpecies@MyFWC.com,
Tyler.Turner@MyFWC.com
U.S. Army Corps of Engineers, Maria.D.Zarbo@usace.army.mil,
Stephen.W.Andrews@usace.army.mil, Terry.S.Hayes@usace.army.mil,
Holly.M.Millsap@usace.army.mil, franceella.h.b.martin@usace.army.mil
Escambia County, jkirsche@myescambia.com, bdschneider@myescambia.com,
trday@myescambia.com
Volkert, Inc, Malies.Warren@Volkert.com

CERTIFICATE OF SERVICE

The undersigned hereby certifies that this permit and authorization to use sovereignty submerged lands, including all copies, were mailed before the close of business on April 17, 2024, to the above listed persons.

FILING AND ACKNOWLEDGMENT

FILED, on this date, under 120.52(7) of the Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.

Susan L. Clancy

Clerk

April 17, 2024
Date

COMMENCEMENT NOTIFICATION

*Within ten (10) days of initiating the authorized work, submit this form to via electronic mail to saj-rd-enforcement@usace.army.mil (preferred, not to exceed 15 MB) **or** by standard mail to U.S. Army Corps of Engineers, Enforcement Section, P.O. Box 4970, Jacksonville, FL 32232-0019.*

1. Department of the Army Permit Number: SAJ2019-01849 (SP-MZH)

2. Permittee Information:

Name: _____

Email: _____

Address: _____

Phone: _____

3. Construction Start Date: _____

4. Contact to Schedule Inspection:

Name: _____

Email: _____

Phone: _____

Signature of Permittee

Printed Name of Permittee

Date

Prepared by:

Permittee: _____

Address: _____

Phone: _____

NOTICE OF DEPARTMENT OF THE ARMY PERMIT

TAKE NOTICE the United States Army Corps of Engineers (Corps) has issued a permit or verification SAJ-2019-01849 to Naval Air Station Pensacola (Permittee) on October 9, 2024, authorizing work in navigable waters of the United States in accordance with Section 10 of the Rivers and Harbors Act of 1899 (33 USC 403) and Section 404 of the Clean Water Act (33 USC 1344) on a parcel of land known as Folio/Parcel ID: 552S301000000000, located at, in Section 55, Township 2 South, Range 30 West, Pensacola, Escambia County, Florida.

Within 30 days of any transfer of interest or control of said property, the Permittee must notify the Corps in writing of the property transfer by submitting the completed permit transfer page included with the issued permit or verification. Notification of the transfer does not by itself constitute a permit transfer. Therefore, purchasers of that portion of the premises containing the area authorized to be filled (or any portion thereof) are notified that it is unlawful for any person to construct, alter, operate, maintain, remove or abandon any works, including dredging or filling, or any other work within, over, or under waters of the United States (including wetlands) without first having obtained a permit from the Corps in the purchaser's name.

The subject Permit concerns only that portion of the property determined to fall within the jurisdiction of the Corps and this notice is applicable only to those portions of the subject property containing areas authorized to be filled subject to the Permit.

Conditions of the Permit/Verification: The permit or verification is subject to General Conditions and Special Conditions which may affect the use of the work authorized in Pensacola Bay. Accordingly, interested parties should closely examine the entire permit or verification, all associated applications, and any subsequent modifications.

To obtain a copy of the authorization in its entirety submit a written request to:
U.S. Army Corps of Engineers
Regulatory Division - Special Projects & Enforcement Branch
Post Office Box 4970
Jacksonville, Florida 32232-0019

Questions regarding compliance with these conditions should be directed to:
U.S. Army Corps of Engineers
Enforcement Section
Post Office Box 4970
Jacksonville, Florida 32232-0019

Conflict Between Notice and Permit

This Notice of Authorization is not a complete summary of the issued permit or verification. Provisions in this Notice of Permit shall not be used in interpreting the permit or verification provisions. In the event of conflict between this Notice of Permit and the permit or verification, the permit or verification shall control.

This Notice is Not an Encumbrance

This Notice is for informational purposes only. It is not intended to be a lien, encumbrance, or cloud on the title of the premises.

Release

This Notice may not be released or removed from the public records without the prior written consent of the Corps.

This Notice of Authorization is executed on this _____ day of
_____, _____. This document is being submitted for recordation
in the Public Records of Escambia County, Florida as part of the requirement imposed
by the authorization SAJ-2019-01849 issued by Corps.

Permittee:

Address:

Phone: _____

STATE OF FLORIDA
COUNTY OF _____

The foregoing instrument was acknowledged before me this _____ day of
_____, 20____, by _____, who is personally known to
me or has produced _____ as identification.

Notary Public

(seal)

Print

My Commission Expires_____

AS-BUILT CERTIFICATION BY PROFESSIONAL ENGINEER

Submit this form and one set of as-built engineering drawings to the U.S. Army Corps of Engineers, Enforcement Section, P.O. Box 4970, Jacksonville, FL 32232-0019. For electronic mail saj-rd-enforcement@usace.army.mil (not to exceed 15 MB).

1. Department of the Army Permit Number: SAJ-2019-01849 (SP-MZH)

2. Permittee Information:

Name: _____

Address: _____

3. Project Site Identification (physical location/address):

4. As-Built Certification: I hereby certify that the authorized work, including any mitigation required by Special Conditions to the permit, has been accomplished in accordance with the Department of the Army permit with any deviations noted below. This determination is based upon on-site observation, scheduled, and conducted by me or by a project representative under my direct supervision. I have enclosed one set of as-built engineering drawings.

Signature of Engineer

Name (Please type)

(FL, PR, or VI) Reg. Number

Company Name

City

State

ZIP

(Affix Seal)

Date

Telephone Number

Date Work Started: _____ Date Work Completed: _____

Identify any deviations from the approved permit drawings and/or special conditions (attach additional pages if necessary):



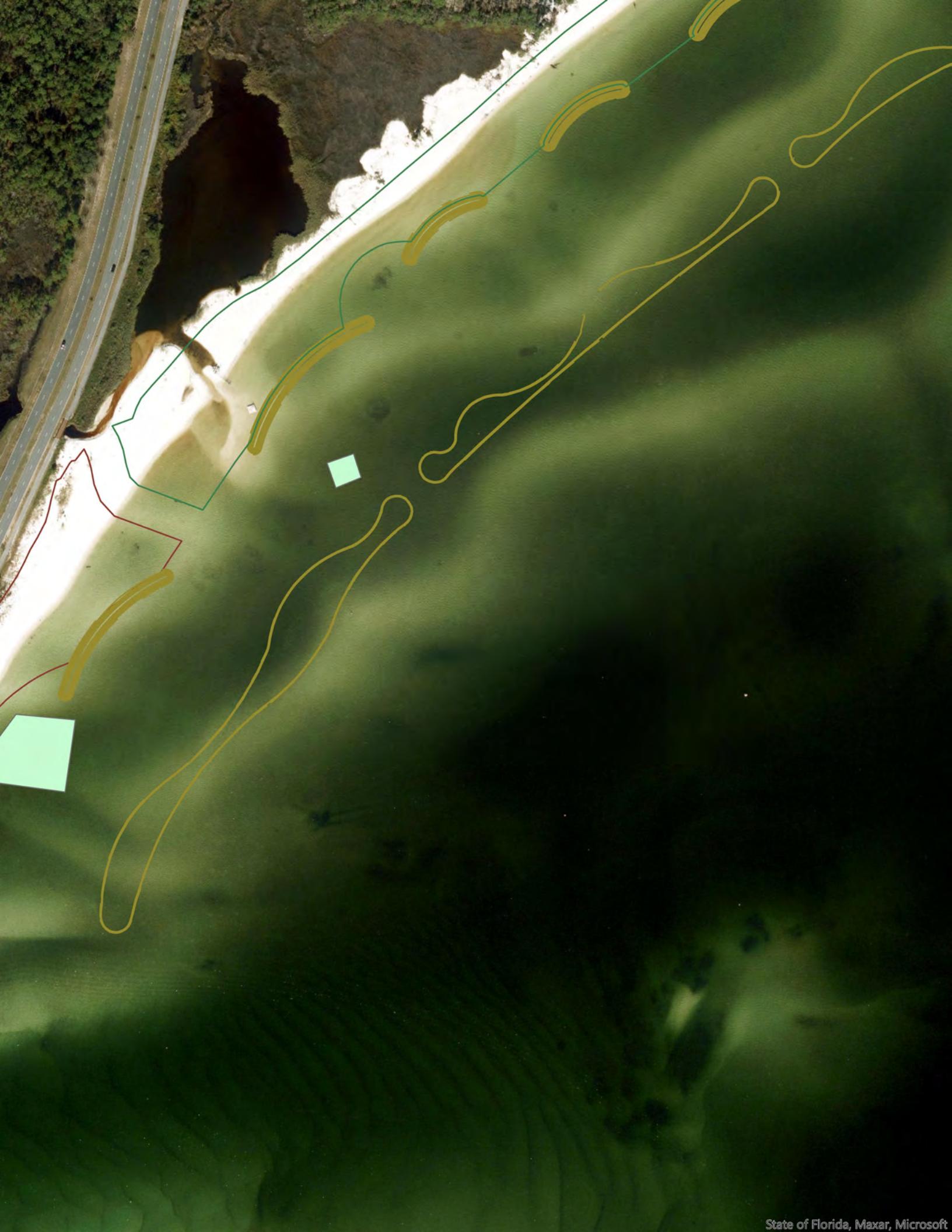
Figure 1. Area A Avoidance Areas. Location 2 is the only location where reef/rocks may be placed but no dredging or anchoring/spudding.



Figure 2. Area B Avoidance Areas



US Army Corps
of Engineers®
Jacksonville District





VOLKERT

0 100 200
Feet
1 inch = 200 feet



Pensacola Bay Living Shoreline Project
Escambia County, Florida
Site C Proximity to IWW Map

**AGREEMENT BETWEEN
THE UNITED STATES ARMY ENGINEER DISTRICT, MOBILE
AND
ESCAMBIA COUNTY BOARD OF COUNTY COMMISSIONERS, FLORIDA
FOR REMOVAL OF DREDGE DISPOSAL MATERIAL**

THIS AGREEMENT, as set forth below, between the **United States Army Engineer District, Mobile**, hereinafter the “**Mobile District**,” whose address is P.O. Box 2288, Mobile, Alabama 36628, acting on behalf of the **United States of America**, and the **Escambia County Board of County Commissioners, Florida**, whose address is 221 Palafox Place, Pensacola, FL 32502, is premised upon the following conditions.

WHEREAS, the **Mobile District**, in operating and maintaining the navigable waterways of the United States for which the **Mobile District** has responsibility, requires periodic removal of dredge disposal material (hereinafter “material”) from its diked dredge disposal areas located adjacent to said navigable waterways to ensure adequate material capacity for continued use of these areas; and

WHEREAS, the **Escambia County** is hereby willing to accept a nonexclusive right to remove and use material from the **Mobile District’s** dredge material disposal area at Disposal Area Site “DA 45 Robinson Island”, located on the Intracoastal Waterway in the County of Escambia, State of Florida.

NOW THEREFORE, in consideration of the foregoing premises and other good and valuable consideration, the receipt of which is hereby acknowledged, the **Mobile District** and **Escambia County** do hereby agree as follows:

1. The purpose of this agreement is to evidence the respective commitments of the **Mobile District** and **Escambia County** to the premises set forth above, to-wit:

(a). The **Mobile District** agrees to provide material from its “DA 45 Robinson Island” disposal area to **Escambia County**. It is expressly understood by **Escambia County** that before removal and transport of material from the “DA 45 Robinson Island” disposal area, all necessary environmental approval and regulatory clearances, as may be necessary, shall be obtained from the **Mobile District** or other state or Federal agencies for the removal, transport, or storage of the material.

(b). **Escambia County** agrees to remove the material, without reservation as to the type or character of the material being removed, from the “DA 45 Robinson Island” disposal area. It is estimated that 600,000 CY of total material is available from this disposal area, but not guaranteed, for removal from the “DA 45 Robinson Island” disposal area. The removal of material by **Escambia County** will begin during calendar year 2021 and will extend for a five-year period from the execution date of this agreement, unless otherwise extended in writing by the parties hereto. The **Mobile District** retains the absolute right to cancel this agreement before the above-stated period expires if **Escambia County** has not begun to expeditiously prosecute removal of material from the “DA 45 Robinson Island” disposal area within six months of the

execution date of this Agreement, or if **Escambia County** ceases to expeditiously prosecute removal of material from the “DA 45 Robinson Island” disposal area at anytime during the above-stated period, or if the **Mobile District** determines it is in its best interest to terminate said agreement for any reason. The execution date of this Agreement is the date the District Engineer for the **Mobile District** signs the Agreement. Failure to notify **Escambia County** or to exercise such right by the Government at the end of said six-month period shall not constitute a waiver of the Government’s right to cancel at a later date.

(c). **Escambia County** affirms that he has the financial capability, equipment, and expertise to remove the material to meet the terms of the schedule of removal as set forth above.

2. **Escambia County** will be responsible, at his sole cost and expense, for the loading of all material at the “DA 45 Robinson Island” disposal area. Further, if Government provided access is not available or cannot be made available to “DA 45 Robinson Island” disposal area, **Escambia County** will be responsible for obtaining its own access.

3. **Escambia County** understands that his work and/or equipment in the “DA 45 Robinson Island” disposal area may be subjected to a Mine Safety and Health Administration (hereinafter “MSHA”) safety inspection. In the event MSHA performs a safety inspection of the “DA 45 Robinson Island” disposal area, **Escambia County** will be responsible, at his sole cost and expense, to comply with MSHA regulations, and for all fines or penalties that may be imposed as a result thereof.

4. **Escambia County** shall notify the **Mobile District** in writing thirty (30) days prior to initiation of his removal of the material from the “DA 45 Robinson Island” disposal area of the beginning date of removal and loading in order that the **Mobile District** may coordinate the material removal with **Escambia County**.

5. The **Mobile District** for the **United States of America**, under the terms of this agreement, shall be not held responsible for damages to property or injuries to persons which may arise from or be incident to the exercise of the conditions agreed to herein, or for damages to the property of **Escambia County** or injuries to the person of its officers, agents, or employees or others who may be on the “DA 45 Robinson Island” disposal area at their invitation or the invitation of any one of them, and **Escambia County**, shall hold harmless and indemnify the **Mobile District** from any and all claims, but not including damages due to the fault or negligence of the **Mobile District** or its contractors. Further, these same terms and conditions set forth herein shall apply to the use of any Government-provided access by **Escambia County**. **Escambia County** also agrees to restore any damage to “DA 45 Robinson Island” disposal area, including, but not limited to, any confinement diking, fencing, access roads/gates, or other property.

6. The **Mobile District** assumes no responsibility of the suitability for use or for the character of the material to be removed from the “DA 45 Robinson Island” disposal area. The conditions set forth in paragraph 5 above shall also apply to this paragraph.

7. The **Mobile District** reserves the right of principal use of the “DA 45 Robinson Island” disposal area, and **Escambia County** agrees that should “DA 45 Robinson Island” disposal area be required for disposal of material by virtue of the **Mobile District’s** dredging program, it will defer to any **Mobile District** management decision on material removal and capacity of the “DA 45 Robinson Island” disposal area while removing material under the terms of this Agreement.

8. **Escambia County** agrees that the nonexclusive right to remove material from the “DA 45 Robinson Island” disposal area is non-transferable and non-assignable to any other party, unless approval is obtained by the **Mobile District**.

IN WITNESS WHEREOF, the parties hereto, the **Mobile District** and the **County**, by the authority of the undersigned signatories, have set their hands and seals this _____ day of _____, 2021.

**UNITED STATES ARMY ENGINEER
DISTRICT, MOBILE**

**Jeremy J. Chapman, P.E.
Colonel, U.S. Army
District Commander**

Witness: _____

Escambia County Board of County Commissioners,
Florida

Jeff Bergosh, Chairman

Date Executed

4/7/2022

Witness: _____



**STATE OF FLORIDA
COUNTY OF ESCAMBIA**

I, _____, a notary public, in and for said County in said State, hereby certify _____ is signed to the foregoing Agreement and who is known to me, acknowledged before me on this day that, being informed of the contents of the Agreement, he, in his capacity, and with full authority, executed the same voluntarily for and as the act of said limited corporation.

Given under my hand this _____ day of _____, 20 ____.

Notary Public

My commission expires _____

STANDARD MANATEE CONDITIONS FOR IN-WATER WORK

2011

The permittee shall comply with the following conditions intended to protect manatees from direct project effects:

- a. All personnel associated with the project shall be instructed about the presence of manatees and manatee speed zones, and the need to avoid collisions with and injury to manatees. The permittee shall advise all construction personnel that there are civil and criminal penalties for harming, harassing, or killing manatees which are protected under the Marine Mammal Protection Act, the Endangered Species Act, and the Florida Manatee Sanctuary Act.
- b. All vessels associated with the construction project shall operate at "Idle Speed/No Wake" at all times while in the immediate area and while in water where the draft of the vessel provides less than a four-foot clearance from the bottom. All vessels will follow routes of deep water whenever possible.
- c. Siltation or turbidity barriers shall be made of material in which manatees cannot become entangled, shall be properly secured, and shall be regularly monitored to avoid manatee entanglement or entrapment. Barriers must not impede manatee movement.
- d. All on-site project personnel are responsible for observing water-related activities for the presence of manatee(s). All in-water operations, including vessels, must be shutdown if a manatee(s) comes within 50 feet of the operation. Activities will not resume until the manatee(s) has moved beyond the 50-foot radius of the project operation, or until 30 minutes elapses if the manatee(s) has not reappeared within 50 feet of the operation. Animals must not be herded away or harassed into leaving.
- e. Any collision with or injury to a manatee shall be reported immediately to the Florida Fish and Wildlife Conservation Commission (FWC) Hotline at 1-888-404-3922. Collision and/or injury should also be reported to the U.S. Fish and Wildlife Service in Jacksonville (1-904-731-3336) for north Florida or Vero Beach (1-772-562-3909) for south Florida, and to FWC at ImperiledSpecies@myFWC.com
- f. Temporary signs concerning manatees shall be posted prior to and during all in-water project activities. All signs are to be removed by the permittee upon completion of the project. Temporary signs that have already been approved for this use by the FWC must be used. One sign which reads *Caution: Boaters* must be posted. A second sign measuring at least 8 ½" by 11" explaining the requirements for "Idle Speed/No Wake" and the shut down of in-water operations must be posted in a location prominently visible to all personnel engaged in water-related activities. These signs can be viewed at MyFWC.com/manatee. Questions concerning these signs can be sent to the email address listed above.

CAUTION: MANATEE HABITAT

All project vessels

IDLE SPEED / NO WAKE

When a manatee is within 50 feet of work
all in-water activities must

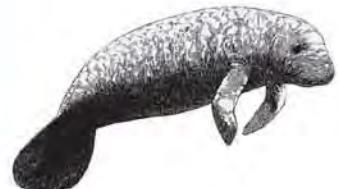
SHUT DOWN

Report any collision with or injury to a manatee:

Wildlife Alert:

1-888-404-FWCC(3922)

cell *FWC or #FWC





PROTECTED SPECIES CONSTRUCTION CONDITIONS, NOAA FISHERIES SOUTHEAST REGIONAL OFFICE

The action agency and any permittee shall comply with the following construction conditions for protected species under the jurisdiction of NOAA Fisheries Southeast Regional Office (SERO) Protected Resources Division (PRD):¹

Protected Species Sightings—The action agency and any permittee shall ensure that all personnel associated with the project are instructed about the potential presence of species protected under the Endangered Species Act (ESA) and the Marine Mammal Protection Act (MMPA). All on-site project personnel are responsible for observing water-related activities for the presence of protected species. All personnel shall be advised that there are civil and criminal penalties for harming, harassing, or killing listed species and all marine mammals. To determine which protected species and critical habitat may be found in the transit area, please review the relevant [marine mammal](#) and [ESA-listed species](#) at Find A Species (<https://www.fisheries.noaa.gov/find-species>) and the consultation documents that have been completed for the project.

1. **Equipment**—Turbidity curtains, if used, shall be made of material in which protected species cannot become entangled and be regularly monitored to avoid protected species entrapment. All turbidity curtains and other in-water equipment shall be properly secured with materials that reduce the risk of protected species entanglement and entrapment.
 - a. In-water lines (rope, chain, and cable, including the lines to secure turbidity curtains) shall be stiff, taut, and non-looping. Examples of such lines are heavy metal chains or heavy cables that do not readily loop and tangle. Flexible in-water lines, such as nylon rope or any lines that could loop or tangle, shall be enclosed in a plastic or rubber sleeve/tube to add rigidity and prevent the line from looping and tangling. In all instances, no excess line shall be allowed in the water. All anchoring shall be in areas free from hardbottom and seagrass.
 - b. Turbidity curtains and other in-water equipment shall be placed in a manner that does not entrap protected species within the project area and minimizes the extent and duration of their exclusion from the project area.
 - c. Turbidity barriers shall be positioned in a way that minimizes the extent and duration of protected species exclusion from important habitat (e.g. critical habitat, hardbottom, seagrass) in the project area.
2. **Operations**—For construction work that is generally stationary (e.g., barge-mounted equipment dredging a berth or section of river, or shore-based equipment extending into the water):
 - a. Operations of moving equipment shall cease if a protected species is observed within 150 feet of operations.

¹ Manatees are managed under the jurisdiction of the U.S. Fish and Wildlife Service.

- b. Activities shall not resume until the protected species has departed the project area of its own volition (e.g., species was observed departing or 20 minutes have passed since the animal was last seen in the area).
3. **Vessels**—For projects requiring vessels, the action agency, and any permittee shall ensure conditions in the [Vessel Strike Avoidance Measures](#) are implemented as part of the project/permit issuance (<https://www.fisheries.noaa.gov/southeast/consultations/regulations-policies-and-guidance>).
4. **Consultation Reporting Requirements**—Any interaction with a protected species shall be reported immediately to NOAA Fisheries SERO PRD and the local authorized stranding/rescue organization.

To report to NOAA Fisheries SERO PRD, send an email to takereport.nmfsser@noaa.gov. Please include the species involved, the circumstances of the interaction, the fate and disposition of the species involved, photos (if available), and contact information for the person who can provide additional details if requested. Please include the project's Environmental Consultation Organizer (ECO) number and project title in the subject line of email reports.

To report the interaction to the local stranding/rescue organization, please see the following website for the most up to date information for reporting sick, injured, or dead protected species:

Reporting Violations—To report an ESA or MMPA violation, call the NOAA Fisheries Enforcement Hotline. This hotline is available 24 hours a day, 7 days week for anyone in the United States.

NOAA Fisheries Enforcement Hotline (800) 853-1964

5. **Additional Conditions**—Any special construction conditions, required of your specific project, outside these general conditions, if applicable, will be addressed in the project consultation and must also be complied with.

For additional information, please contact NOAA Fisheries SERO PRD at:

NOAA Fisheries Service
Southeast Regional Office
263 13th Avenue South
St. Petersburg, Florida 33701
Tel: (727) 824-5312

Visit us on the web at [Protected Marine Life in the Southeast](#)
(<https://www.fisheries.noaa.gov/region/southeast#protected-marine-life>)

Revised: May 2021



VESSEL STRIKE AVOIDANCE MEASURES, NOAA FISHERIES SOUTHEAST REGIONAL OFFICE

Background

Vessel strikes can injure or kill species protected under the Endangered Species Act (ESA) and the Marine Mammal Protection Act (MMPA). NOAA Fisheries Southeast Regional Office (SERO) Protected Resources Division (PRD) recommends implementing the following identification and avoidance measures to reduce the risk of vessel strikes and disturbance from vessels to protected species under our jurisdiction.¹

Protected Species Sightings

All vessel operators and crews should be informed about the potential presence of species protected under the ESA and the MMPA and any critical habitat in a vessel transit area. All vessels should have personnel onboard responsible for observing for the presence of protected species. All personnel should be advised that there are civil and criminal penalties for harming, harassing, or killing listed species and all marine mammals. To determine which protected species and critical habitat may be found in the transit area, please review the relevant [marine mammal](#) and [ESA-listed species](#) at Find A Species (<https://www.fisheries.noaa.gov/find-species>) and any ESA Section 7 consultation documents if applicable.

Vessel Strike Avoidance

The following measures should be taken when they are consistent with safe navigation to avoid causing injury or death of a protected species:

1. Operate at the minimum safe speed when transiting and maintain a vigilant watch for protected species to avoid striking them. Even with a vigilant watch, most marine protected species are extremely difficult to see from a boat or ship, and you cannot rely on detecting them visually and then taking evasive action. The most effective way to avoid vessel strikes is to travel at a slow, safe speed. Whenever possible, assign a designated individual to observe for protected species and limit vessel operation to only daylight hours.
2. Follow deep-water routes (e.g., marked channels) whenever possible.
3. Operate at “Idle/No Wake” speeds in the following circumstances:
 - a. while in any project construction areas
 - b. while in water depths where the draft of the vessel provides less than four feet of clearance from the bottom, or
 - c. in all depths after a protected species has been observed in and has recently departed the area.

¹ Manatees are managed under the jurisdiction of the U.S. Fish and Wildlife Service.

4. When a protected species is sighted, attempt to maintain a distance of 150 feet or greater between the animal and the vessel. Reduce speed and avoid abrupt changes in direction until the animal(s) has left the area.
5. When dolphins are bow- or wake-riding, maintain course and speed as long as it is safe to do so or until the animal(s) leave the vicinity of the vessel.
6. If a whale is sighted in the vessel's path or within 300 feet from the vessel, reduce speed and shift the engine to neutral. Do not engage the engines until the animals are clear of the area. *Please see below for additional requirements for North Atlantic right whales.*
7. If a whale is sighted farther than 300 feet from the vessel, maintain a distance of 300 feet or greater between the whale and the vessel and reduce speed to 10 knots or less. *Please see below for additional requirements for North Atlantic right whales.*

Injured or Dead Protected Species Reporting

Vessel crews should report sightings of any injured or dead protected species immediately regardless of whether the injury or death is caused by your vessel. Please see [How to Report a Stranded or Injured Marine Animal](#) (<https://www.fisheries.noaa.gov/report>) for the most up to date information for reporting injured or dead protected species.

If the injury or death is caused by your vessel, also report the interaction to NOAA Fisheries SERO PRD at takereport.nmfsser@noaa.gov. Please include the species involved, the circumstances of the interaction, the fate and disposition of the animal involved, photos (if available), and contact information for the person who can provide additional details if requested. Please include the project's Environmental Consultation Organizer (ECO) number and project title in the subject line of email reports if a consultation has been completed.

Reporting Violations

To report any suspected ESA or MMPA violation, call the NOAA Fisheries Enforcement Hotline. This hotline is available 24 hours a day, 7 days week for anyone in the United States.

NOAA Fisheries Enforcement Hotline: (800) 853-1964

Additional Transit and Reporting Requirements for North Atlantic Right Whales

1. Federal regulation prohibits approaching or remaining within 500 yards of a North Atlantic right whale (50 CFR 224.103 (c)). All whales sighted within North Atlantic right whale critical habitat should be assumed to be right whales. Please be aware and follow restrictions for all Seasonal Management Areas along the U.S. east coast. These areas have vessel speed restrictions to reduce vessel strikes risks to migrating or feeding whales. More information can be found at [Reducing Vessel Strikes to North Atlantic Right Whales](#) (<https://www.fisheries.noaa.gov/national/endangered-species-conservation/reducing-vessel-strikes-north-atlantic-right-whales>).
2. Ships greater than 300 gross tons entering the WHALESOUTH reporting area are required to report to a shore-based station. For more information on reporting procedures consult 33 CFR Part 169, the Coast Pilot, or at [Reducing Vessel Strikes to North Atlantic](#)

[Right Whales](https://www.fisheries.noaa.gov/national/endangered-species-conservation/reducing-vessel-strikes-north-atlantic-right-whales) (<https://www.fisheries.noaa.gov/national/endangered-species-conservation/reducing-vessel-strikes-north-atlantic-right-whales>).

3. From November through April, vessels approaching/departing Florida ports of Jacksonville and Fernandina Beach as well as Brunswick Harbor, Georgia are STRONGLY RECOMMENDED to use Two-Way Routes displayed on nautical charts. More information on [Compliance with the Right Whale Ship Strike Reduction Rule](#) can be found at (https://media.fisheries.noaa.gov/2021-06/compliance_guide_for_right_whale_ship_strike_reduction.pdf)
4. Mariners shall check with various communication media for general information regarding avoiding vessel strikes and specific information regarding North Atlantic right whale sighting locations. These include NOAA weather radio, U.S. Coast Guard Broadcast to Mariners, Local Notice to Mariners, and NAVTEX. Commercial mariners calling on United States ports should view the most recent version of the NOAA/USCG produced training CD entitled “A Prudent Mariner’s Guide to Right Whale Protection” (contact the NOAA Fisheries SERO, Protected Resources Division for more information regarding the CD).
5. Injured, dead, or entangled right whales should be immediately reported to the U.S. Coast Guard via VHF Channel 16 and the NOAA Fisheries Southeast Marine Mammal Stranding Hotline at (877) WHALE HELP (877-942-5343).

For additional information, please contact NOAA Fisheries SERO PRD at:

NOAA Fisheries Service
Southeast Regional Office
263 13th Avenue South
St. Petersburg, Florida 33701

Visit us on the web at [Protected Marine Life in the Southeast](#)
(<https://www.fisheries.noaa.gov/region/southeast#protected-marine-life>)

Revised: May 2021



Board of County Commissioners • Escambia County, Florida

Monitoring and Adaptive Management Plan

For

Pensacola Bay Living Shoreline Project

Escambia County, Florida

Prepared by:

Escambia County, Natural Resources Management Department
Water Quality & Land Management Division

December 18, 2023

V1.0

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my escambia

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Appendices

- Appendix 1: Pensacola Bay Living Shoreline 100% Construction Plans
- Appendix 2: Pensacola Bay Living Shoreline – Phase I: Observational Data Plan

2.0 Document Version Control

Version	Date	Notes
V0.1	September 25, 2023	Initial draft MAM released by Escambia County Water Quality & Land Management Division for review by Escambia County team members.
V0.2	October 4, 2023	Initial draft MAM released by Escambia County Water Quality & Land Management Division for review by project partners and regulatory agencies.
V0.3	December 15, 2023	Draft MAM revised to address comments received from NFWF GEBF regarding requirements for performance criteria for metrics and descriptions of data storage.
V1.0	December 18, 2023	MAM released to project partners.

3.0 Introduction

The contributing watershed for the Pensacola Bay system encompasses approximately 4.3 million acres in northwest Florida and across southeastern Alabama. The lower bay system is comprised of multiple interconnected estuarine embayments including Escambia Bay, Blackwater Bay, East Bay, Santa Rosa Sound, and Pensacola Bay. Pensacola Bay supports diverse fish and wildlife populations and provides other essential watershed services. Many important coastal habitats within the system are in historical decline. Continued loss of coastal habitat threatens populations of environmentally, commercially, and recreationally important species.

Pensacola Bay has served as a deep-water harbor for European settlers starting in the mid-1500s and an established port of call since at least the mid-1700s. The Pensacola Navy Yard began operation in west Pensacola north of Pensacola Pass before the onset of the Civil War. After the turn of the century, the site became the location of Naval Air Station Pensacola. NAS Pensacola has since become the premier initial training facility for all U.S. Navy, Marine Corps, and Coast Guard Aviators, Naval Flight Officers, and U.S. Air Force Combat System Officers. It is also the homebase for the U.S. Navy Flight Demonstration Squadron, the Blue Angels. NAS Pensacola supports 126 commands that employ more than 17,700 military personnel and 7,400 civilian employees. The base also hosts the National Naval Aviation Museum, Fort Barrancas National Cemetery, Pensacola Lighthouse, and Historic Fort Barrancas. NAS Pensacola is the largest economic engine in the area generating over 43% of local Gross Domestic Product.

Environmental damages resulting from the 2010 Deep Water Horizon Gulf Oil Spill spurred creation of numerous federal and state-level programs focused mitigating effects caused by the spill. Additional programs have also been concurrently developed with a focus on resilience of both the natural and built environments. Numerous partners have come together through these programs in an effort to recover important coastal habitats historically found within the lower Pensacola Bay system and enhance community resiliency by protecting the local military mission of NAS Pensacola. The project has been designed to accomplish these goals through implementation of nature-based solutions.

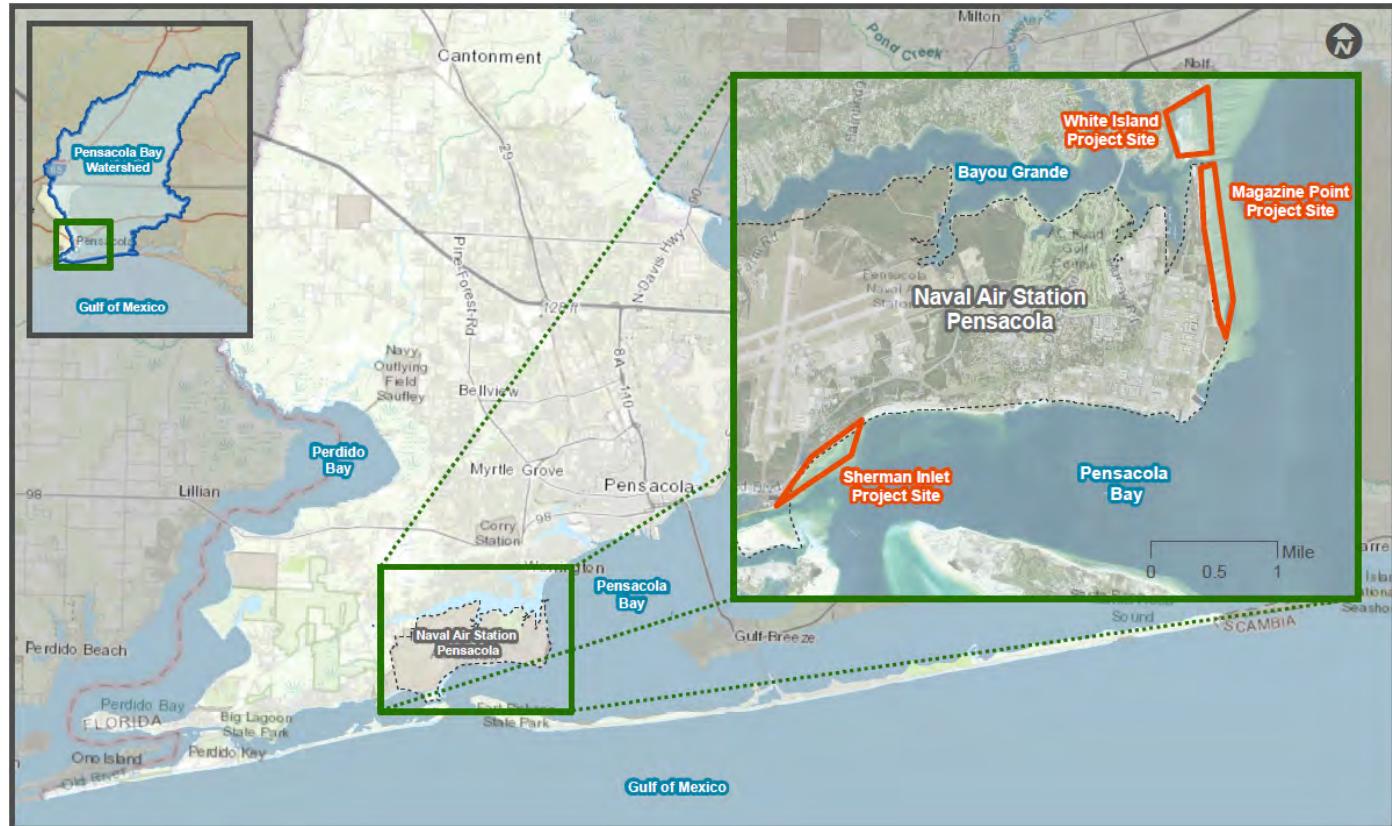
3.1 Project Overview

Project will construct a multipart, large-scale living shoreline within the lower Pensacola Bay system along exposed shorelines around NAS Pensacola. Construction will occur at three main project locations surrounding the naval installation (i.e. White Island, Magazine Point, and Sherman Inlet). The White Island project site is located at the entrance to Bayou Grande near Davenport Bayou and Star Lake. The Magazine Point project site is located along the eastern shore of NAS Pensacola from the Bayou Grande entrance channel south approximately 6,900 linear feet toward Alleghany Pier and the Pickens Channel Turning Basin. The Sherman Inlet project site is located along the southern shore of NAS Pensacola north of Pensacola Pass from Lake Fredric north approximately 6,600 linear feet toward the Pensacola Lighthouse. Project locations are shown in Figure 1.

The overall project will construct a combination of emergent and submerged breakwaters designed to provide fish and wildlife habitat, attenuate wave energy, enhance navy base force protection, and protect erodible shorelines and marsh platforms. Marsh platforms will be constructed landward of breakwaters at White Island and Magazine Point. Marsh platforms will be planted with appropriate native species. White Island will continue to provide managed public access. Emergent marsh will provide fish and wildlife habitat for locally important species including finfish, mollusks, crustaceans, and birds. All breakwaters at Sherman

Inlet will be submerged, with a focus on submerged aquatic vegetation (SAV) recruitment rather than marsh creation, to minimize potential bird aircraft strike hazards due to the proximity to the NAS Pensacola north-south runway. Construction at Sherman Inlet and Magazine Point will be located landward of the existing vessel exclusion zone associated with the navy base. Sand substrate for construction at Sherman Inlet and Magazine Point will come from the U.S. Army Corps of Engineers dredge material disposal area DA45 Robertsons Island. Sand substrate for construction at White Island will be sourced onsite. All sites will include appropriate waterway markers.

Figure 1: Project Location Map



3.2 Restoration Goals and Project Objectives

This project will restore and conserve important coastal and nearshore habitats historically found throughout the lower Pensacola Bay system. Additionally, this project will protect the military mission of NAS Pensacola by making the base more resilient. Project goals will be achieved by constructing submerged and emergent rock breakwaters to attenuate wave energy, installing marsh platforms planted with native coastal vegetation, stabilizing erodible shorelines, designing for anticipated impacts of sea level rise, improving force protection around NAS Pensacola, creating conditions likely to result in long-term recruitment of SAV, and by providing areas for managed public access.

3.3 Adaptive Management

Project design may require adjustment during implementation due to unforeseen conditions discovered in the field (e.g. discovery of historic / archeological resources, unsuitable materials found, etc.). Certain elements of the project may also need to be adjusted after construction bids have been received due to

budgetary limitations. Significant weather events (e.g. impacts from tropical systems, etc.) may affect construction means and methods or even the overall timing of project implementation. Vegetative plantings may need to be postponed to allow for more favorable conditions. Monitoring locations and/or strategies may also need to be modified due to uncertainty (e.g. safety concerns, unexpected results, etc.). Corrective actions may be necessary to prevent these potential issues from impacting the overall project goals. If necessary, modifications to the design during implementation will be made after evaluation by the Engineer of Record and receiving concurrence from the riparian landowner, regulatory agencies, and applicable project partners. Any updates will be documented under the change control section of this plan. Any future modifications to design and/or monitoring will be subject to budget availability.

3.4 Conceptual Model

The conceptual model for this project outlined in the Table 1 includes a summary of the restoration activities and the desired project outcomes.

Table 1: Restoration Activities and Desired Project Outcomes

Activity	Output	Short-Term Outcome	Long-term Outcome
Construction of submerged and emergent rock breakwaters	Installation of approximately 24,000, 33,000, and 57,000 tons of rock breakwaters at White Island, Magazine Point, and Sherman Inlet, respectively	<ul style="list-style-type: none"> Reduction in shoreline instability Attenuate wave energy reaching shoreline Allow marsh platforms to become established Creation of conditions likely to support recruitment of SAV Creation of conditions capable of supporting recruitment of oysters and other bivalves 	<ul style="list-style-type: none"> Stable natural shorelines around NAS Pensacola protecting natural and built environments including key naval infrastructure Breakwaters delineate waterward edge of existing vessel exclusion area increasing force protection for NAS Pensacola Significant SAV recruitment Oyster recruitment in areas capable of supporting oysters and other bivalves
Creation of marsh platforms, beach dunes, and coastal grasslands planted with native vegetation	<ul style="list-style-type: none"> Installation of approximately 372,000, 175,000, and 105,000 cubic yards of sand substrate for marsh platforms and coastal dunes at White Island, Magazine Point, and Sherman Inlet, respectively Installation of approximately 741,000 and 629,000 plants at White Island and Magazine Point, respectively 	<ul style="list-style-type: none"> Reestablish costal habitats in lower Pensacola Bay system including salt marsh, beach dunes, and coastal grasslands Creation of additional capacity at U.S. Army Corps of Engineers dredge disposal area at DA45 Robertsons Island Maintain managed public access within the system where appropriate 	<ul style="list-style-type: none"> Creation of stable marsh habitat capable of adapting to conditions resulting from anticipated sea level rise Provide enhanced / expanded habitat for locally important target species Extend usable lifespan of U.S. Army Corps of Engineers dredge disposal area at DA45 Robertsons Island Reach balance between restoration of natural resources and public enjoyment of those resources where appropriate
Placement of waterway markers	<ul style="list-style-type: none"> Installation of 7, 4, and 5 waterway markers along waterward project boundaries at White Island, Magazine Point, and Sherman Inlet, respectively 	<ul style="list-style-type: none"> Clearly delineate location of new marine obstructions Reduce risk to public from potential navigational hazards 	<ul style="list-style-type: none"> Assure new obstructions clearly shown on corresponding navigational charts Waterway markers delineate waterward edge of existing vessel exclusion area increasing force protection for NAS Pensacola Maintenance of waterway markers as necessary

3.5 Monitoring Evaluation Questions

Monitoring results will be used to determine the effectiveness of the project. This MAM is intended to address the following monitoring questions for each objective.

Objective A: Construct submerged and emergent breakwaters in accordance with approved design and regulatory permits to maintain structural stability, attenuate wave energy, and reduce shoreline instability.

- Were the submerged and emergent breakwaters constructed according to the approved design and regulatory permits?
- Has the geometry of the breakwaters remained intact and free of significant damage?
- Do the submerged and emergent breakwaters attenuate wave energy under typical conditions?
- Did the construction of the submerged and emergent breakwaters create conditions likely to support natural recruitment of SAV?
- Did the construction of the submerged and emergent breakwaters create conditions capable of supporting recruitment of oysters and other bivalves, where appropriate?
- How many acres of coastal and nearshore habitats were constructed or enhanced?

Objective B: Construct marsh platforms, beach dunes, and coastal grasslands in accordance with approved design and regulatory permits to support appropriate native coastal vegetation.

- Were the marsh platforms constructed according to the approved design and regulatory permits?
- Are the constructed marsh platforms and enhanced shorelines stable?
- Is native coastal vegetation becoming established?
- Is non-native vegetation becoming established?
- How many acres of coastal and nearshore habitats were constructed or enhanced?
- Has the project extended the usable lifespan of U.S. Army Corps of Engineers dredge disposal area at DA45 Robertsons Island?

Objective C: Install waterway markers in accordance with approved design and regulatory permits.

- Were the waterway markers installed according to the approved design and regulatory permits?
- Do waterway markers require more or less maintenance than expected?

3.6 Roles, Responsibilities, and Partnerships

Escambia County will oversee construction and monitoring of the Pensacola Bay Living Shoreline Project. Project plans and specifications were developed by Volkert, Inc. with support from South Coast Engineers. One or more construction contracts will be awarded according to established state and local procurement rules and regulations. Construction contracts will contain mandatory insurance requirements and workmanship warranty provisions. Certain aspects of the planned monitoring may be conducted by or in conjunction with other project partners. Monitoring partners assisting with the monitoring will be provided a copy of this Monitoring and Adaptive Management (MAM) Plan prior to commencement of the associated work. Other aspects of the monitoring may also be contracted. Monitoring contracts, if any, will incorporate

this MAM. If necessary, modifications to this plan will be made by Escambia County after receiving concurrence from regulatory agencies and project partners with monitoring requirements required under the terms of existing funding agreements. Any updates will be documented under the change control section of this plan. Existing project partnerships are as outlined in Table 2.

Table 2: Key Project Partners

Partner	Project Support Provided
Gulf Coast Ecosystem Restoration Council	Funding agreement with Florida Department of Environmental Protection for design and permitting of White Island, Magazine Point, and Sherman Inlet; pending funding agreement with FDEP for construction of White Island, Magazine Point, and Sherman Inlet; coordination of interagency working group
Florida Department of Economic Opportunity, Defense Infrastructure Grant Program	Funding agreement for design and permitting White Island, Magazine Point, and Sherman Inlet (#S0114)
Florida Department of Environmental Protection, Division of Water Restoration Assistance	Funding agreement for design and permitting of White Island, Magazine Point, and Sherman Inlet (#G0448); pending funding agreement for construction of White Island, Magazine Point, and Sherman Inlet
Florida Department of Environmental Protection, Northwest Florida Aquatic Preserves	Monitoring support (assistance with pre-implementation SAV surveys)
Florida Department of Environmental Protection, Office of Resilience and Coastal Protection	Funding agreement for construction at White Island and Sherman Inlet (#24SRP05)
National Fish and Wildlife Foundation, Gulf Environmental Benefit Fund	Funding agreement for construction of White Island (#70175)
National Fish and Wildlife Foundation, National Coastal Resiliency Fund	Funding agreement for construction at Magazine Point (#76084) and Sherman Inlet (#69239)
Naval Air Station Pensacola	Riparian property owner; site access and support
Pensacola and Perdido Bays Estuary Program	Technical and monitoring support
U.S. Army Corps of Engineers, Mobile District	Sand substrate to be used for construction at Magazine Point and Sherman Inlet
U.S. Department of Defense, Defense Community Infrastructure Pilot Program	Funding agreement for construction at Sherman Inlet (#CIP1932-21-01)

4.0 Project Monitoring

Project monitoring will be conducted prior to construction (pre-implementation), immediately following completion of construction (as-built), and for a minimum of three years following completion of construction (post-implementation years 1-3). Specific monitoring locations for post-implementation years 1-3 will be selected based on conditions observed during as-built monitoring. Metrics have been selected based on regulatory requirements and terms of existing funding agreements. An attempt was also made while drafting this MAM to mirror some aspects of the monitoring plan adopted for the Phase III Deepwater Horizon early restoration project also known as the Pensacola Bay Living Shoreline project. Both projects are large-scale living shorelines located in the lower Pensacola Bay system. The early restoration project is located approximately five miles northwest of Magazine Point west of Muscogee Wharf at Project GreenShores Site II. In addition, both the National Fish and Wildlife Foundation National Coastal Resilience Fund and

Deepwater Horizon Natural Resource Damage Assessment Cross-Trustee Implementation Group Monitoring and Adaptive Management work group have development objective-specific performance monitoring parameters and associated methods. These references have also been strongly considered in the development of this MAM.

Monitoring efforts below are organized by project objective as listed in Section 3.5. Each identified monitoring metric includes methods, special extent, timing and frequency, sample size, initial sites, and units.

Objective A: Construct submerged and emergent breakwaters in accordance with approved design and regulatory permits to maintain structural stability, attenuate wave energy, and reduce shoreline instability.

Metric A1: Coastal Topography and Bathymetry

Methodology: Surveys shall conform with current State of Florida Standards of Practice and Minimum Technical Standards as set forth by the Board of Professional Surveyors and Mappers. Spacing of transects shall be adequate to accurately capture site conditions. All surveys shall be subject to review and acceptance by the Escambia County Surveyor.

Spatial Extent: White Island, Magazine Point, and Sherman Inlet; surveys will cover limits of construction

Timing and Frequency: pre-implementation and as-built

Sample Size: once per project site per event

Units: Projection will be High Precision Geodetic Network (HPGN)/State Plane Florida North FIPS 0903.

Horizontal reference will be Florida North Zone State Plane Coordinate System, North American Datum of 1983 (NAD83(2011)). Vertical reference will be North American Vertical Datum of 1988 (NAVD88).

Performance Criteria: Pre-implementation and as-built surveys completed in accordance with State of Florida Standards of Practice and Minimum Technical Standards.

Metric A2: Shoreline Position

Methodology: Shoreline position can be measured using traditional survey methods, light detection and ranging (lidar), high-resolution, near-vertical aerial imagery, RTK GPS survey data, or by measuring shoreline locations along established transects. Comparing shoreline position over time provides information on shoreline change. Any shoreline measurement may be tied to a relevant tidal datum [e.g., mean sea level (MSL), mean high water (MHW), mean low water (MLW)]. Shoreline change should be calculated between shorelines tied to the same tidal datum. Methods 1, 2, and 4 would benefit from installation of surveyed horizontal and vertical benchmarks. Consideration should be given if practical. Methods 3 and 5 require installation of surveyed horizontal and vertical benchmarks.

Method 1: Surveys based on traditional methods shall conform with current State of Florida Standards of Practice and Minimum Technical Standards as set forth by the Board of Professional Surveyors and Mappers. Spacing of transects shall be adequate to accurately capture site conditions. All surveys shall be subject to review and acceptance by the Escambia County Surveyor.

Method 2: Shoreline vectors can be derived from lidar data referenced to vertical and horizontal datums so accurate positional measurements can be made using spatial software. Lidar data should be collected in conjunction with high-resolution, near-vertical aerial imagery.

Method 3: Delineate shoreline based on orthophotography collected by aerial survey. Aerial surveying is a method of collecting geomatics or other imagery by using airplanes, helicopters, UAS, or other aerial methods. Imagery acquired should be orthorectified (i.e. free from distortions related to sensor optics, sensor tilt, and differences in elevation). For guidance on collecting aerial orthoimagery please see Rufe (2014). Orthoimagery for monitoring shoreline change should have a spatial resolution of at least 1 m. Additional guidance on using aerial imagery can also be found in Anders and Byrnes (1991), Crowell et al. (1991), Morton (1991), and FLDEP (2014).

Method 4: RTK GPS ground surveys can be used for smaller projects to measure spatial extent or land elevation. Walk the shoreline while taking continuous measurements using an RTK GPS. Import the spatial information into ArcGIS and map the shoreline position. If the location of mean high water cannot accurately be estimated, the shoreline will be defined as the lower/seaward extent of the emergent marsh vegetation. Import and analyze the data using spatial analysis software. Determine the shoreline loss/gain in meters per year. See Steyer and Llewellyn (2000) for more information on this method.

Method 5: Establish permanent base stakes along the length of the shoreline at least 10 m inward of the marsh edge and determine the GPS coordinates of each base stake. Measure the linear distance from the base stake to the marsh edge along an established compass direction. The marsh edge is defined as the lower/seaward extent of the emergent marsh vegetation. Import and analyze the data using spatial analysis software. Determine the shoreline loss/gain in meters per year. See Steyer and Llewellyn (2000) for more information on this method.

Spatial Extent: White Island, Magazine Point, and Sherman Inlet

Timing and Frequency: pre-implementation, as-built, post-implementation years 1-3; if possible, monitoring should be scheduled annually during the same time of year, preferably June – September.

Sample Size: once per project site per event

Units: Projection will be High Precision Geodetic Network (HPGN)/State Plane Florida North FIPS 0903. Horizontal reference will be Florida North Zone State Plane Coordinate System, North American Datum of 1983 [NAD83(2011)]. Vertical reference will be North American Vertical Datum of 1988 (NAVD88).

Performance Criteria: Post-implementation median shoreline loss less than or equal to 0 meters.

Metric A3: Breakwater Position and Area

Methodology: Position of submerged and emergent breakwaters can be measured using a similar methodology implemented for shoreline position including using traditional survey methods, high-resolution, near-vertical aerial imagery or RTK GPS survey data. Less than ideal environmental conditions (e.g. low water clarity, increased wave action, excessive glare) may necessitate the use of in-water methods of evaluating breakwater position, especially position of submerged breakwaters. Significant changes in breakwater position or condition are not expected year-to-year over the course of the planned monitoring. Changes in breakwater position may require need for adaptive management. Any breakwater measurement may be tied to a relevant tidal datum [e.g., mean sea level (MSL), mean high water (MHW), mean low water (MLW)]. Shoreline change should be calculated between shorelines tied to the same tidal datum. Methods 1 and 3 would benefit from installation of surveyed horizontal and vertical benchmarks. Consideration should be given if practical. Method 2 will require installation of surveyed horizontal and vertical benchmarks.

Method 1: Surveys based on traditional methods shall conform with current State of Florida Standards of Practice and Minimum Technical Standards as set forth by the Board of Professional Surveyors and Mappers. Spacing of transects shall be adequate to accurately capture site conditions. All surveys shall be subject to review and acceptance by the Escambia County Surveyor.

Method 2: Delineate the spatial extent of breakwaters based on orthophotography collected by aerial survey. Aerial surveying is a method of collecting geomatics or other imagery by using airplanes, helicopters, UAS, or other aerial methods. Imagery acquired should be orthorectified (i.e., free from distortions related to sensor optics, sensor tilt, and differences in elevation). For guidance on collecting aerial orthoimagery please see Rufe (2014). Orthoimagery for monitoring shoreline change should have a spatial resolution of at least 1 m. Additional guidance on using aerial imagery can also be found in Anders and Byrnes (1991), Crowell et al. (1991), Morton (1991), and FLDEP (2014).

Method 3: RTK GPS ground surveys can be used for smaller projects to measure spatial extent or elevation. Walk the breakwaters while taking continuous measurements using an RTK GPS. Import the spatial information into ArcGIS and map the breakwater position. If the location of mean high water cannot accurately be estimated, the shoreline will be defined as the lower/seaward extent of the emergent marsh vegetation. Import and analyze the data using spatial analysis software. Determine the shoreline loss/gain in meters per year. See Steyer and Llewellyn (2000) for more information on this method.

Spatial Extent: White Island, Magazine Point, and Sherman Inlet

Timing and Frequency: as-built and post-implementation years 1 and 3

Sample Size: once per project site per event

Units: Projection will be High Precision Geodetic Network (HPGN)/State Plane Florida North FIPS 0903.

Horizontal reference will be Florida North Zone State Plane Coordinate System, North American Datum of 1983 [NAD83(2011)]. Vertical reference will be North American Vertical Datum of 1988 (NAVD88).

Performance Criteria: Acreage of breakwaters installed according to final design plans and regulatory permits. Post-implementation median breakwater horizontal migration less than or equal to 0 meters.

Metric A4: Breakwater Observation (Emergent Breakwaters)

Methodology: Condition of emergent breakwaters can be evaluated by conducting visual observations. Observations will be photo documented in-water, from boat, shoreline, or during aerial survey. Permanent photograph stations will be established for each sampling point. Location of photograph stations will be determined in-field at the time of as-built monitoring. Photographs will be taken in the same direction at these stations each monitoring event. Resolution of digital photographs will be adequate to generally evaluate condition of emergent breakwaters. Digital photographs should be geotagged.

Spatial Extent: White Island and Magazine Point

Timing and Frequency: as-built, post-implementation years 1-3

Sample Size: once per emergent breakwater per event

Units: Projection for photograph stations will be High Precision Geodetic Network (HPGN)/State Plane Florida North FIPS 0903. Horizontal reference will be Florida North Zone State Plane Coordinate System, North American Datum of 1983 [NAD83(2011)]. Photographs shall be captured as TIFFS (.tif), JPEGs (.jpg), or PNGs (.png).

Performance Criteria: No noticeable deviation in breakwater condition contributing to failure to meet other project performance criteria.

Metric A5: Presence of Oysters or other Bivalves

Methodology: Presence of oyster or other bivalves will be determined by visual inspection during breakwater surveys. Presence of oysters and other bivalves will be documented with digital photographs. Resolution of digital photographs will be adequate to document presence of oysters or other bivalves and provide positive species identification when possible. Digital photographs should be geotagged. Quantitative monitoring methods may need to be considered as adaptive management if significant colonization is observed. Resources to be considered include the 2014 *Oyster Habitat Restoration Monitoring and Assessment Handbook* or the 2021 Florida Fish and Wildlife Conservation Commission Fish and Wildlife Research Institute Oyster Monitoring Procedures.

Spatial Extent: White Island, Magazine Point, and Sherman Inlet

Timing and Frequency: post-implementation years 1 and 3

Sample Size: representative sample of emergent and submerged breakwaters per site per event

Units: Photographs shall be captured as TIFFS (.tif), JPEGs (.jpg), or PNGs (.png).

Performance Criteria: Colonization of oysters and other bivalves will be monitored but will not be used to determine project success.

Metric A6: Wave Attenuation

Methodology: Wave generation in inland or sheltered coastal water bodies are generated by wind speed, duration, and available fetch. Wave attenuation will be evaluated by comparing measurements collected waterward and landward of breakwaters. Field-based measurements of wave heights can be collected using a number of instruments including pressure gauges and acoustic wave gauges. Low-cost, DIY options have been shown by Mississippi State University Coastal Research & Extension Center to also be viable options for this monitoring application. Instrumentation will be determined based on project needs and available budget. Instrumentation will be installed on fixed structures (e.g. waterway markers) where possible. Instrumentation shall be checked for biofouling approximately every 30 days during deployment. Anti-fouling strategies should be implemented as practical. Monitoring locations used to evaluate wave attenuation will be determined in-field at the time of initial monitoring. Associated meteorological data (e.g. wind direction, wind speed, gust speed, air pressure) shall be taken from the weather station located at Naval Air Station Pensacola Forrest Sherman Field (Network ID: 03855).

Spatial Extent: White Island, Magazine Point, and Sherman Inlet

Timing and Frequency: as-built, post-implementation years 1-3

Sample Size: two monitoring stations (one waterward and one landward of breakwaters) at each project site during each event; target sampling duration is 14 to 30 consecutive days per event with longer durations are preferred; target sampling frequency is every 5 to 15 minutes.

Units: Wave heights shall be measured in meters (m). Meteorological data will be reported as collected.

Performance Criteria: Amplitude of waves leeward of breakwaters less than amplitude of waves windward of corresponding breakwaters.

Objective B: Construct marsh platforms, beach dunes, and coastal grasslands in accordance with approved design and regulatory permits to support appropriate native coastal vegetation.

Metric B1: Shoreline Position and Elevation (Marsh Platforms)

Methodology: Position of marsh platforms can be measured using traditional survey methods, light detection and ranging (lidar), high-resolution, near-vertical aerial imagery, RTK GPS survey data, or by measuring shoreline locations along established transects. Comparing marsh platform position over time provides information on overall project stability. Any shoreline measurement may be tied to a relevant tidal datum [e.g., mean sea level (MSL), mean high water (MHW), mean low water (MLW)]. Shoreline change should be calculated between shorelines tied to the same tidal datum. Methods 1, 2, and 4 would benefit from installation of surveyed horizontal and vertical benchmarks. Consideration should be given if practical. Methods 3 and 5 require installation of surveyed horizontal and vertical benchmarks.

Method 1: Surveys based on traditional methods shall conform with current State of Florida Standards of Practice and Minimum Technical Standards as set forth by the Board of Professional Surveyors and Mappers. Spacing of transects shall be adequate to accurately capture site conditions. All surveys shall be subject to review and acceptance by the Escambia County Surveyor.

Method 2: Marsh Platform vectors can be derived from lidar data referenced to vertical and horizontal datums so accurate positional measurements can be made using spatial software. Lidar data should be collected in conjunction with high-resolution, near-vertical aerial imagery.

Method 3: Delineate marsh platforms based on orthophotography collected by aerial survey. Aerial surveying is a method of collecting geomatics or other imagery by using airplanes, helicopters, UAS, or other aerial methods. Imagery acquired should be orthorectified (i.e. free from distortions related to sensor optics, sensor tilt, and differences in elevation). For guidance on collecting aerial orthoimagery please see Rufe (2014). Orthoimagery for monitoring shoreline change should have a spatial resolution of at least 1 m. Additional guidance on using aerial imagery can also be found in Anders and Byrnes (1991), Crowell et al. (1991), Morton (1991), and FLDEP (2014).

Method 4: RTK GPS ground surveys can be used for smaller projects to measure spatial extent or land elevation. Walk the shoreline while taking continuous measurements using an RTK GPS. Import the spatial information into ArcGIS and map the shoreline position. If the location of mean high water cannot accurately be estimated, the shoreline will be defined as the lower/seaward extent of the emergent marsh vegetation. Import and analyze the data using spatial analysis software. Determine the shoreline loss/gain in meters per year. See Steyer and Llewellyn (2000) for more information on this method.

Method 5: Establish permanent base stakes along the length of the shoreline at least 10 m inward of the marsh edge and determine the GPS coordinates of each base stake. Measure the linear distance from the base stake to the marsh edge along an established compass direction. The marsh edge is defined as the lower/seaward extent of the emergent marsh vegetation. Import and analyze the data using spatial analysis software. Determine the shoreline loss/gain in meters per year. See Steyer and Llewellyn (2000) for more information on this method.

Spatial Extent: White Island and Magazine Point

Timing and Frequency: as-built, post-implementation years 1-3; if possible, monitoring should be scheduled annually during the same time of year, preferably June – September.

Sample Size: once per project site per event

Units: Projection will be High Precision Geodetic Network (HPGN)/State Plane Florida North FIPS 0903.

Horizontal reference will be Florida North Zone State Plane Coordinate System, North American Datum of 1983 [NAD83(2011)]. Vertical reference will be North American Vertical Datum of 1988 (NAVD88).

Performance Criteria: Post-implementation median marsh platform horizontal migration less than or equal to 0 meters. Post-implementation median marsh platform elevation ± 0.2 meters of median as-built elevation.

Metric B2: Salt Marsh, Beach Dune, and Coastal Grasslands Spatial Extent

Methodology: Extent of habitat by type will be delineated with areas calculated using spatial analysis software. Boundaries can be measured using traditional survey methods, high-resolution, near-vertical aerial imagery or RTK GPS survey data. In some cases, boundaries between habitat types may require in-field confirmation of existing plant communities. In these cases, spatial extent of habitat types will be informed by in-field data collected for Metric B3.

Method 1: Surveys based on traditional methods shall conform with current State of Florida Standards of Practice and Minimum Technical Standards as set forth by the Board of Professional Surveyors and Mappers. Spacing of transects shall be adequate to accurately capture site conditions. All surveys shall be subject to review and acceptance by the Escambia County Surveyor.

Method 2: Delineate marsh platforms based on orthophotography collected by aerial survey. Aerial surveying is a method of collecting geomatics or other imagery by using airplanes, helicopters, UAS, or other aerial methods. Imagery acquired should be orthorectified (i.e. free from distortions related to sensor optics, sensor tilt, and differences in elevation). For guidance on collecting aerial orthoimagery please see Rufe (2014). Orthoimagery for monitoring shoreline change should have a spatial resolution of at least 1 m. Additional guidance on using aerial imagery can also be found in Anders and Byrnes (1991), Crowell et al. (1991), Morton (1991), and FLDEP (2014).

Method 3: RTK GPS ground surveys can be used for smaller projects to measure spatial extent or land elevation. Walk the shoreline while taking continuous measurements using an RTK GPS. Import the spatial information into ArcGIS and map the shoreline position. If the location of mean high water cannot accurately be estimated, the shoreline will be defined as the lower/seaward extent of the emergent marsh vegetation. Import and analyze the data using spatial analysis software. Determine the shoreline loss/gain in meters per year. See Steyer and Llewellyn (2000) for more information on this method.

Spatial Extent: White Island and Magazine Point

Timing and Frequency: as-built, post-implementation years 1-3; if possible, monitoring should be scheduled annually during the same time of year, preferably June – September.

Sample Size: once per project site per event

Units: Habitat area to be quantified as acres (ac) and square meters (m^2). Projection will be High Precision Geodetic Network (HPGN)/State Plane Florida North FIPS 0903. Horizontal reference will be Florida North Zone State Plane Coordinate System, North American Datum of 1983 [NAD83(2011)]. Vertical reference will be North American Vertical Datum of 1988 (NAVD88).

Performance Criteria: Acreage of marsh platforms installed according to final design plans and regulatory permits.

Metric B3: Salt Marsh, Beach Dune, and Coastal Grasslands Vegetative Species Composition, Percent Cover, Density, and Height

Methodology: Vegetative species composition, percent cover, and plant height will be determined by conducting in-field surveys. Permanent transects perpendicular to the associated shoreline will be developed. All transects will be set randomly relative to a predetermined permanent baseline. Transects should capture the seaward edge and significant transitions in elevation or vegetative communities. Plots shall be distributed along transects using a stratified random design. Permanent plots are preferred, if practical. All plant species will be identified within each plot, if possible. Percent cover by species will be estimated by category according to NCVS categories (#1: solitary/few/small, #2: 0.1-1%, #3: 1-2%, #4: 2-5%, #5: 5-10%, #6: 10-25%, #7: 25-50%, #8: 50-75%, and #9: 75-95%). Density will be estimated for dominate species and other species of interest, if any. The height of the dominate species will be measured. Photographs will be taken of all plots. Resolution of digital photographs will be adequate to document current conditions. Digital photographs should be geotagged.

Spatial Extent: White Island, Magazine Point, and Sherman Inlet

Timing and Frequency: as-built, post-implementation years 1-3; if possible, monitoring should be scheduled annually during the same time of year, preferably June – September.

Sample Size: representative sample (approximately 25-50 1m² plots) of marsh platforms, dunes, and shorelines per site per event

Units: Height will be measured in centimeters (cm). Percent cover will be measured by determining corresponding NCVS category. Density will be measured as individuals per square meter (m²). Photographs shall be captured as TIFFS (.tif), JPEGs (.jpg), or PNGs (.png).

Performance Criteria: Post-implementation vegetative cover greater than or equal to 75% within planted areas.

Metric B4: Presence of Undesirable Plant Species

Methodology: Presence of undesirable plant species will be determined by visual inspection during vegetative surveys. Presence of undesirable plant species will be documented with digital photographs. Resolution of digital photographs will be adequate to document presence of undesirable plant species and provide positive species identification when possible. Digital photographs should be geotagged.

Spatial Extent: White Island, Magazine Point, and Sherman Inlet

Timing and Frequency: as-built, post-implementation years 1-3; if possible, monitoring should be scheduled annually during the same time of year, preferably June – September.

Sample Size: representative sample (approximately 25-50 1m² plots) of marsh platforms, dunes, and shorelines per site per event

Units: Photographs shall be captured as TIFFS (.tif), JPEGs (.jpg), or PNGs (.png).

Performance Criteria: Post-implementation presence of undesirable plant species less than 5% of overall restoration area.

Metric B5: Water Level

Methodology: Field-based measurements of water level can be collected in conjunction with Metric A6 using a number of instruments including pressure gauges. Instrumentation will be determined based on project needs and available budget. Instrumentation will be installed on fixed structures (e.g. project waterway markers) where possible. Instrumentation shall be checked for biofouling approximately every 30 days during deployment. Anti-fouling strategies should be implemented as

practical. Monitoring locations used to evaluate water level will be determined in-field at the time of initial monitoring. Associated meteorological data (e.g. air pressure) shall be taken from the weather station located at Naval Air Station Pensacola Forrest Sherman Field (Network ID: 03855).

Spatial Extent: White Island, Magazine Point, and Sherman Inlet

Timing and Frequency: as-built, post-implementation years 1-3

Sample Size: a minimum of one monitoring station at each project site during each event; target sampling duration is 14 to 30 consecutive days per event with longer durations are preferred; target sampling frequency is every 5 to 15 minutes.

Units: Vertical reference will be North American Vertical Datum of 1988 (NAVD88). Meteorological data will be reported as collected.

Performance Criteria: Water level will be monitored but will not be used to determine project success.

Metric B6: Beach and Dune Conditions

Methodology: Beach and dune conditions will include measurements of shoreline position, beach width, elevation, volume, shoreface, backshore width, dune width, dune height, dune volume, and grain size. All beach and dune conditions, except for grainsize, can be measured using traditional survey methods, light detection and ranging (lidar), high-resolution, near-vertical aerial imagery, RTK GPS survey data, or by measuring shoreline locations along established transects. Any shoreline measurement may be tied to a relevant tidal datum [e.g., mean sea level (MSL), mean high water (MHW), mean low water (MLW)]. Shoreline change should be calculated between shorelines tied to the same tidal datum. Methods 1, 2, and 4 would benefit from installation of surveyed horizontal and vertical benchmarks. Consideration should be given if practical. Methods 3 and 5 require installation of surveyed horizontal and vertical benchmarks. Grain size will be measured using sieve analysis according to ASTM D-422, or an equivalent method. Moisture content will be determined according to ASTM D-2216, or an equivalent method.

Method 1: Surveys based on traditional methods shall conform with current State of Florida Standards of Practice and Minimum Technical Standards as set forth by the Board of Professional Surveyors and Mappers. Spacing of transects shall be adequate to accurately capture site conditions. All surveys shall be subject to review and acceptance by the Escambia County Surveyor.

Method 2: Beach and Dune vectors can be derived from lidar data referenced to vertical and horizontal datums so accurate positional measurements can be made using spatial software. Lidar data should be collected in conjunction with high-resolution, near-vertical aerial imagery.

Method 3: Delineate beach and dune based on orthophotography collected by aerial survey. Aerial surveying is a method of collecting geomatics or other imagery by using airplanes, helicopters, UAS, or other aerial methods. Imagery acquired should be orthorectified (i.e. free from distortions related to sensor optics, sensor tilt, and differences in elevation). For guidance on collecting aerial orthoimagery please see Rufe (2014). Orthoimagery for monitoring shoreline change should have a spatial resolution of at least 1 m. Additional guidance on using aerial imagery can also be found in Anders and Byrnes (1991), Crowell et al. (1991), Morton (1991), and FLDEP (2014).

Method 4: RTK GPS ground surveys can be used for smaller projects to measure spatial extent or land elevation. Walk the shoreline while taking continuous measurements using an RTK GPS. Import the spatial information into ArcGIS and map the shoreline position. If the location of mean high water cannot accurately be estimated, the shoreline will be defined

as the lower/seaward extent of the emergent marsh vegetation. Import and analyze the data using spatial analysis software. Determine the shoreline loss/gain in meters per year. See Steyer and Llewellyn (2000) for more information on this method.

Method 5: Establish permanent base stakes along the length of the shoreline at least 10 m inward of the marsh edge and determine the GPS coordinates of each base stake. Measure the linear distance from the base stake to the marsh edge along an established compass direction. The marsh edge is defined as the lower/seaward extent of the emergent marsh vegetation. Import and analyze the data using spatial analysis software. Determine the shoreline loss/gain in meters per year. See Steyer and Llewellyn (2000) for more information on this method.

Spatial Extent: White Island and Sherman Inlet

Timing and Frequency: as-built, post-implementation years 1-3; if possible, monitoring should be scheduled annually during the same time of year, preferably June – September.

Sample Size: once per project site per event

Units: Beach width, shoreface, backshore width, dune width, and dune height will be measured in meters (m). Beach volume and dune volume will be measured in cubic meters (m^3). Projection will be High Precision Geodetic Network (HPGN)/State Plane Florida North FIPS 0903. Horizontal reference will be Florida North Zone State Plane Coordinate System, North American Datum of 1983 [NAD83(2011)]. Vertical reference will be North American Vertical Datum of 1988 (NAVD88).

Performance Criteria: Acreage of beach and dunes installed according to final design plans and regulatory permits. Post-implementation median beach and dune horizontal migration less than or equal to 0 meters. Post-implementation median beach and dune elevation ± 0.2 meters of median as-built elevation.

Metric B7: SAV Spatial Extent

Methodology: Extent of SAV will be delineated by conducting in-field surveys with areas calculated using spatial analysis software. Methodology will generally follow the mapping procedure identified in the 2020 *Guidance on Surveys for Potential Impacts to Submerged Aquatic Vegetation* released by the Florida Department of Environmental Protection. Instrumentation used will be determined based on project needs and available budget.

Spatial Extent: White Island, Magazine Point, and Sherman Inlet

Timing and Frequency: pre-implementation, as-built, post-implementation years 1-3; if possible, monitoring should be scheduled annually during the same time of year, preferably June – September.

Sample Size: once per project site per event

Units: Habitat area to be quantified as acres (ac) and square meters (m^2).

Performance Criteria: Post-implementation spatial extent of SAV habitat exceeds pre-implementation SAV spatial extent.

Metric B8: SAV Characterization

Methodology: Characterization of SAV will be determined by conducting in-field surveys. Methodology will generally follow the characterization procedure identified in the 2019 *Monitoring Seagrass in National Parks of the Gulf Coast Network* protocol narrative published by the National Parks Services or 2020 *Guidance on Surveys for Potential Impacts to Submerged Aquatic Vegetation* released by the Florida Department of Environmental Protection. Field parameters to be measured include water depth, secchi depth, pH, water temperature, conductivity, salinity, dissolved oxygen, dissolved

oxygen saturation, and photosynthetic active radiation. In addition, SAV will be evaluated based on species, abundance, canopy height, epiphyte density, and sediment type. Instrumentation used will be determined based on project needs and available budget.

Spatial Extent: White Island, Magazine Point, and Sherman Inlet

Timing and Frequency: pre-implementation, as-built, post-implementation years 1-3; if possible, monitoring should be scheduled annually during the same time of year, preferably June – September.

Sample Size: Sample size for SAV characterization will be based on the number and size of unique SAV patches. At a minimum, 1 m² will be evaluated per 100 m² of SAV. Evaluating up to 5 m² per patch is preferred, when practical. Sample size for field parameters will be once per parameter per patch.

Units: Water depth and secchi depth will be measured in meters (m). pH will be measured in standard units (SU). Water temperature will be measured in degrees centigrade (C°). Conductivity will be measured in microSiemens per centimeter (μS/cm). Salinity will be measured in parts per thousand (PPTH). Dissolved oxygen will be measured in milligrams per liter (mg/L). Dissolved oxygen saturation will be measured as a percentage. Photosynthetic active radiation will be measured in micromoles (μmol). Canopy height will be measured in millimeters (mm). Abundance will be measured as a percentage.

Performance Criteria: Comparison of SAV habitat condition similar or showing signs of improvement based on statistical comparison of relevant parameters (i.e. abundance, canopy height, etc.).

Objective C: Install waterway markers in accordance with approved design and regulatory permits.

Metric C1: Waterway Markers

Methodology: Installation and condition of waterway markers will be evaluated by in-field visual observations. Observations will be photo documented in-water, from boat, shoreline, and/or during aerial survey. Resolution of digital photographs will be adequate to generally evaluate condition of waterway markers. Digital photographs should be geotagged.

Spatial Extent: White Island, Magazine Point, and Sherman Inlet

Timing and Frequency: as-built, post-implementation years 1-3

Sample Size: once per waterway marker per event

Units: Projection for photograph stations will be High Precision Geodetic Network (HPGN)/State Plane Florida North FIPS 0903. Horizontal reference will be Florida North Zone State Plane Coordinate System, North American Datum of 1983 [NAD83(2011)]. Photographs shall be captured as TIFFS (.tif), JPEGs (.jpg), or PNGs (.png).

Performance Criteria: Number and location of waterway markers installed and maintained according to final design plans and regulatory permits.

4.1 Monitoring Schedule

A summary and of monitoring activities and anticipated monitoring schedule is presented in Table 3. Pre-implementation monitoring is not required for many metrics since conditions do not currently support the presence of associated habitat types.

Table 3: Summary of Monitoring Metrics and Schedule

Metric	Pre-Implementation	Post-Implementation			
		As-Built	Year 1	Year 2	Year 3
A1: Coastal Topography and Bathymetry	X	X			
A2: Shoreline Position	X	X	X	X	X
A3: Breakwater Position and Area		X	X		X
A4: Breakwater Observation (Emergent Breakwaters)		X	X	X	X
A5: Presence of Oysters or other Bivalves			X		X
A6: Wave Attenuation		X	X	X	X
B1: Shoreline Position and Elevation (Marsh Platforms)		X	X	X	X
B2: Salt Marsh, Beach Dune, and Coastal Grasslands Spatial Extent		X	X	X	X
B3: Salt Marsh, Beach Dune, and Coastal Grasslands Vegetative Species Composition, Percent Cover, Density, and Height		X	X	X	X
B4: Presence of Undesirable Plant Species		X	X	X	X
B5: Water Level		X	X	X	X
B6: Beach and Dune Conditions		X	X	X	X
B7: SAV Spatial Extent	X	X	X	X	X
B8: SAV Characterization	X	X	X	X	X
C1: Waterway Markers		X	X	X	X

4.2 Reporting and Data Requirements

The majority of data collected during this project will be field observations of environmental conditions. To the extent possible, all data generated during monitoring activities will be documented using standardized field datasheets. Documentation for field activities for this project will meet applicable requirements of the Florida Department of Environmental Protection (FDEP) QA Rules (Chapter 62-160, Florida Administrative Code) and applicable FDEP SOPs including FD1000. Unless otherwise stipulated, Field operations will also adhere to the Escambia County Water Quality & Land Management Division Field Quality Manual (current version). Data will be qualified with appropriate codes identified in the FDEP QA Rules. The FDEP document “Process for Assessing Data Usability” (DEP-EA-001/07) will be used as guidance to help determine the quality and usability of data generated for this project.

Annual progress reports will be developed as required in the terms and conditions of applicable funding agreements. Reports should include a summary of the previous report, current monitoring results, comparison verses any performance criteria, and a summary of problems encounter and any corresponding solutions implemented. All data will be reviewed by Escambia County for completeness and accuracy before reported. A final report summarizing all data collected for the project will be compiled after post-implementation year 3. Reports should include raw data.

Monitoring data collected for this project will be made freely available to the public and archived in an appropriate location for future use. During project implementation, monitoring data will be stored on Escambia County’s secure servers with copies backed up in the cloud. The list of project data available upon

request will be maintained on Escambia County website under the corresponding project page. Escambia County project information is available online at <https://myescambia.com/open-government/projects>.

Datasets collected under this MAM shall including the information:

- Dataset Name
- Summary scope of data collection (parameters being collected, frequency and duration of data collection, geographic coverage, and temporal resolution)
- Data storage format (e.g. .xlx, .csv, .geoTIFF, etc.)
- Units of measure
- Horizontal and vertical datums (if applicable)
- QA/QC procedures
- Responsible entity for the dataset (i.e. the entity that is collecting the data, ensuring its quality, and making it available to the public).
- Dataset access restrictions, if any (e.g. embargoed for research or litigation)
- Point of contract for questions and data requests (name, mailing address, electronic mailing address, and phone number)

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