



DEPARTMENT OF THE ARMY  
SAVANNAH DISTRICT, CORPS OF ENGINEERS  
100 W. OGLETHORPE AVENUE  
SAVANNAH, GEORGIA 31401-3640

March 20, 2018

Regulatory Branch  
SAS-2015-00742

## ADDENDUM

### JOINT PUBLIC NOTICE Savannah District/State of Georgia

The Savannah District has received an addendum to an application for a Department of the Army Permit, pursuant to Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. § 403) and Section 404 of the Clean Water Act (33 U.S.C. § 1344), as follows:

Application Number: SAS-2015-00742

Applicant: William H. McHugh  
Sea Island Acquisition, LLC  
351 Sea Island Road  
Saint Simons Island, Georgia 31522

Agent: Mr. Dan Bucey  
Resource and Land Consultants  
41 Park of Commerce Way, Suite 303  
Savannah, Georgia 31405

Location of Proposed Work: The project area located along the intertidal beach of Sea Island, Glynn County, Georgia (Latitude: 31.1833, Longitude: 81.3310). A proposed 255-acre sand borrow area is located in the Atlantic Ocean, approximately 4 miles east/southeast of the Sea Island project area.

Description of Work Subject to the Jurisdiction of the U.S. Army Corps of Engineers: By public notice dated December 16, 2015, (enclosed), the original advertised application was for the construction of a new T-head groin, excavation of 120,000 cubic yards of sand from an area located north of the proposed groin, and discharge of this sand south of the new groin to create a dune ridge and 150' wide beach. The revised application includes the proposed new T-head groin, but not the proposed excavation and discharge of sand. The revised project includes dredging sand from an offshore area, and placement of this sand along approximately 15,000 linear feet (LF) of beach located between an existing north groin, and the proposed new T-head groin.

A hydraulic cutter-head dredge would pump between 1,315,000 to 2,500,000 cubic yards (CY) of sand from the offshore source, to various locations along the beach. Temporary sand-training dikes would be constructed on the beach, and used to contain

the discharge of sand and water, parallel to the shore. Once it is dewatered, bulldozers and other equipment would be used to move the sand up and down the beach, to shape the beach to the design template. Following completion of beach renourishment, sand fencing and/or native vegetation would be installed in strategic locations the dunes in accordance with a DNR-approved vegetation plan.

The project consists of the following four reaches: Reach 1 extends 1,200' south of the south groin (i.e. the Reserve project); Reach A extends 4,000 LF north of the south groin to approximately East 9<sup>th</sup> Street; Reach B extends 9,000 LF from East 9<sup>th</sup> Street to East 34<sup>th</sup> Street; and Reach C extends 3,500 LF from East 34<sup>th</sup> Street to the north groin.

Subsequent sand recycling activities would be accomplished with excavators, dump trucks, and other heavy equipment. Recycling activities would occur during/for the following times/reasons: (1) up to once per year outside of turtle nesting season to maintain the project; (2) at any time to correct unusual erosion rates or to correct damage caused by discrete events, upon notice to the Corps, Georgia Department of Natural Resource, Coastal Resources Division (Georgia CRD); and (3) in the event of an approaching storm, to shape dunes to raise low lying areas for upland protection, upon notice to the Corps and Georgia. Material for recycling activities would be obtained from any location above mean lower low water from Reach A or Reach C.

See attached plans and drawings provided by the applicant for additional project details, plans, maps and drawings.

## **BACKGROUND**

This Joint Public Notice announces a request for authorizations from both the U.S. Army Corps of Engineers and the State of Georgia. The applicant's proposed work may also require local governmental approval.

## **STATE OF GEORGIA**

Water Quality Certification: The Georgia Department of Natural Resources, Environmental Protection Division, intends to certify this project at the end of 30 days in accordance with the provisions of Section 401 of the Clean Water Act, which is required for a Federal Permit to conduct activity in, on, or adjacent to the waters of the State of Georgia. Copies of the application and supporting documents relative to a specific application will be available for review and copying at the office of the Georgia Department of Natural Resources, Environmental Protection Division, Watershed Protection Branch, 2 MLK Jr. Drive, Suite 418, Atlanta, Georgia 30334, during regular office hours. A copier machine is available for public use at a charge of 10 cents per page. All coastal projects are filed at our Brunswick office and will need to be requested from Mr. Bradley Smith at [Bradley.Smith@dnr.ga.gov](mailto:Bradley.Smith@dnr.ga.gov). Any person who desires to comment, object, or request a public hearing relative to State Water Quality Certification

must do so within 30 days of the State's receipt of application in writing and state the reasons or basis of objections or request for a hearing. The application can be reviewed in the Savannah District, U.S. Army Corps of Engineers, Regulatory Division, 100 W. Oglethorpe Avenue Savannah, Georgia 31401-3640.

State-owned Property and Resources: The applicant may also require assent from the State of Georgia, which may be in the form of a license, easement, lease, permit or other appropriate instrument.

Marshland Protection: This notice also serves as notification of a request to alter coastal marshlands (under the provision of the Coastal Marshlands Protection Act, Georgia Laws, 1970, p. 939 and as amended), if required. Comments concerning this action should be submitted to the Ecological Services Section, Coastal Resources Division, Georgia Department of Natural Resources, 1 Conservation Way, Brunswick, Georgia 31523-8600 (Telephone 912-264-7218).

Georgia Coastal Management Program: Prior to the Savannah District Corps of Engineers making a final permit decision on this application, the project must be certified by the Georgia Department of Natural Resources, Coastal Resources Division, to be consistent with applicable provisions of the State of Georgia Coastal Management Program (15 C.F.R. § 930). Anyone wishing to comment on Coastal Management Program certification of this project should submit comments in writing within 30 days of the date of this notice to the Federal Consistency Coordinator, Ecological Services Section, Coastal Resources Division, Georgia Department of Natural Resources, One Conservation Way, Brunswick, Georgia 31523-8600 (Telephone 912-264-7218).

### **U.S. ARMY CORPS OF ENGINEERS**

The Savannah District must consider the purpose and the impacts of the applicant's proposed work, prior to a decision on issuance of a Department of the Army Permit.

Cultural Resources Assessment: Review of the latest published version of the National Register of Historic Places indicates that no registered properties or properties listed as eligible for inclusion are located at the site or in the area affected by the proposed work. Presently unknown archaeological, scientific, prehistorical or historical data may be located at the site and could be affected by the proposed work.

Essential Fish Habitat (EFH): This notice initiates the EFH consultation requirements of the Magnuson-Stevens Fishery Conservation and Management Act. The applicant's proposal may result in the destruction or alteration of EFH utilized by various life stages of species comprising the red drum, shrimp, bluefish or snapper grouper management complexes. Our initial determination is that the proposed action would not have an individual or cumulatively substantial adverse impact on EFH or federally managed fisheries in the Atlantic Ocean. Our final determination relative to project impacts to

EFH and the need for mitigation measures are subject to review by and coordination with the NMFS and the South Atlantic Fisheries Management Council.

Endangered Species: A preliminary review the U.S. Fish and Wildlife Service (FWS) and the National Marine Fisheries Service's Protected Resource Divisions (NMFS-PRD)'s list of Endangered and Threatened Species indicates the following listed species may occur in the project area: Atlantic Sturgeon (*Acipenser oxyrinchus oxyrinchus*), Shortnose Sturgeon (*Acipenser brevirostrum*), North Atlantic Right Whale (*Eubalaena glacialis*), West Indian Manatee (*Trichechus manatus*), Eastern Indigo Snake (*Drymarchon corais couperi*), Green sea turtle (*Chelonia mydas*), Hawksbill sea turtle (*Eretmochelys imbricata*), Leatherback sea turtle (*Dermochelys coriacea*), Loggerhead sea turtle (*Caretta caretta*), and Kemp's Ridley sea turtle (*Lepidochelys kempii*), Piping Plover (*Charadrius melodus*), Red knot (*Calidris canutus rufa*), and Wood stork (*Mycteria americana*).

The Corps has determined that the proposed project may affect, but is not likely to adversely affect the Green sea turtle (*Chelonia mydas*), Hawksbill sea turtle (*Eretmochelys imbricata*), Leatherback sea turtle (*Dermochelys coriacea*), Loggerhead sea turtle (*Caretta caretta*), and Kemp's Ridley sea turtle (*Lepidochelys kempii*); Piping Plover (*Charadrius melodus*), Red knot (*Calidris canutus rufa*), Atlantic Sturgeon (*Acipenser oxyrinchus oxyrinchus*), Shortnose Sturgeon (*Acipenser brevirostrum*), West Indian Manatee (*Trichechus manatus*), and the North Atlantic Right Whale (*Eubalaena glacialis*). At time the Corps is requesting concurrence with the above effects determinations from the Services.

Pursuant to Section 7(c) of the Endangered Species Act of 1973, as amended (16 U.S.C. § 1531 et seq.), we request information from the U.S. Department of the Interior, Fish and Wildlife Service, the U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service; or, any other interested party, on whether any species listed or proposed for listing may be present in the area.

Public Interest Review: The decision whether to issue a permit will be based on an evaluation of the probable impact including cumulative impacts of the proposed activity on the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefit, which reasonably may be expected to accrue from the proposal, must be balanced against its reasonably foreseeable detriments. All factors, which may be relevant to the proposal will be considered including the cumulative effects thereof; among those are conservation, economics, aesthetics, general environmental concerns, wetlands, historic properties, fish and wildlife values, flood hazards, flood plain values, land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, considerations of property ownership and in general, the needs and welfare of the people.

Consideration of Public Comments: The U.S. Army Corps of Engineers is soliciting comments from the public; federal, state, and local agencies and officials; Native American Tribes; and other interested parties in order to consider and evaluate the impacts of this proposed activity. Any comments received will be considered by the U.S. Army Corps of Engineers to determine whether to issue, modify, condition or deny a permit for this proposal. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects, and the other public interest factors listed above. Comments are used in the preparation of an Environmental Assessment and/or an Environmental Impact Statement pursuant to the National Environmental Policy Act. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the proposed activity.

Application of Section 404(b)(1) Guidelines: The proposed activity involves the discharge of dredged or fill material into the waters of the United States. The Savannah District's evaluation of the impact of the activity on the public interest will include application of the guidelines promulgated by the Administrator, Environmental Protection Agency, under the authority of Section 404(b) of the Clean Water Act.

Public Hearing: Any person may request, in writing, within the comment period specified in this notice, that a public hearing be held to consider this application for a Department of the Army permit. Requests for public hearings shall state, with particularity, the reasons for requesting a public hearing. The decision whether to hold a public hearing is at the discretion of the District Engineer, or his designated appointee, based on the need for additional substantial information necessary in evaluating the proposed project.

Comment Period: Anyone wishing to comment on this application for a Department of the Army Permit should submit comments in writing to the Commander, U.S. Army Corps of Engineers, Savannah District, Attention: Sarah E. Wise, 100 W. Oglethorpe Avenue Savannah, Georgia 31401-3640, no later than 30 days from the date of this notice. Please refer to the applicant's name and the application number in your comments.

If you have any further questions concerning this matter, please contact Sarah E. Wise, Team Lead, Coastal Branch at (912) 652-5550.

\*\*Encls

1. Sea Island Shore Protection Project, 2018 Beach Nourishment, Supplemental Project Description March 6, 2018.
2. Project Drawings (Sheets 1-14)
3. October 16, 2015, Joint Public Notice

**Sea Island Shore Protection Project  
2018 Beach Nourishment  
Supplemental Project Description March 6, 2018**

**Introduction**

Sea Island Acquisition, LLC (applicant) is proposing a storm protection project consisting of beach nourishment activities utilizing an offshore borrow source to provide from 1,315,000 to 2,500,000 cubic yards (cy) of beach quality sediment to the Sea Island shoreline. The applicant anticipates a targeted volume equal to 1,315,000 cy. This proposal is a supplement to the previously submitted application for the Reserve at Sea Island, SAS-2015-00742.

Due to damage caused by named storms occurring in 2016 and 2017, the applicant retained Coastal Science and Engineering in Columbia, S.C. (CSE) to evaluate the Sea Island beach. After CSE conducted an extensive review and survey of the project area, they determined that the existing beach had been compromised at some locations and was no longer providing the level of storm protection applicant desires for the adjacent developed upland areas. Also, the current beach conditions provide less nesting habitat for sea turtles and offers reduced recreational value. As a result of these findings, CSE recommended a beach nourishment and sand recycling project, with a minimum of 1,315,000 cy of beach quality sediment obtained from an offshore borrow area and placed along the Sea Island shoreline between the existing groins. Upon completion of the proposed project, the applicant will improve the storm protection functions, increase wildlife habitat, and improve recreational values inherent to a healthy beach system to the Sea Island shoreline.

The overall project purpose is for shoreline protection through beach nourishment, which will restore the natural functions of the beach, including but not limited to the following:

- Provide a higher level of shoreline protection for adjacent upland properties.
- Restore a viable dry-sand beach to accommodate existing recreational uses.
- Replenish chronic erosion and sand losses since 1997 and provide sufficient material to manage and maintain the design beach.
- Provide a restored foredune.
- Provide additional environmental habitat for turtles, birds, and beach flora and fauna.
- Address the alongshore variations in erosion rates.
- Provide a reservoir of sand to recycle to erosional areas of the beach in the future.

## **Location of Proposed Work**

The project area is located along the intertidal beach from a location 1,200 feet south of the existing south groin to the north groin, on Sea Island, Glynn County, Georgia (GA) (Latitude: N 31.1833 / Longitude: W 81.3310). The offshore borrow area is located in State waters approximately 4 miles east/southeast of Sea Island situated on bathymetric high areas that are well removed from inlet shoals and the Brunswick entrance channel. The location of the beach and borrow areas are depicted on the attached exhibits prepared by CSE, dated January 2018 (Sheets 01, 02, and 11).

The activities proposed are located outside of the +/-80 acres area on the south end of the island that is protected in perpetuity by a conservation easement held by the St. Simons Land Trust. This conservation easement was given voluntarily by the applicant to insure that no additional development would occur south of the Reserve project authorized by SPC permit #438.

## **Present Beach Conditions & Project History**

During the past three years, Sea Island has been impacted by the hurricanes *Matthew* (2016), and *Irma* (2017), which resulted in significant damage to the Sea Island beach. These events have exacerbated erosion and eliminated the dry-sand beach along the center ~2 miles of shoreline. The applicant has established a survey control line and has measured profiles at 500-ft spacing along the island. These data were used by CSE to determine how much sand per unit length of shoreline is contained in a targeted healthy beach section (~125 cy/ft from the seawall to -7 ft NAVD) and to compare that value with the amount at each profile. The analysis, combined with the underlying erosion rates, provided a measure of scale of the project needed for beach restoration (see Fig 1).

Presently, over half of the Sea Island oceanfront lacks dunes for storm protection and recreational beach area at high tide, which leaves the rock revetments exposed and results in the absence of habitat for sea turtle nesting and other species (Fig 4—recent ground photos). Due to ongoing erosion and the lack of shoreline armoring for the area south of the south groin, there is an increased shoreline offset as measured from the nourished beach on the north side of the south groin landward to the unprotected beach. In 2015, the applicant obtained authorization from the Shore Protection Committee (SPC) to construct a 350' rock T-head groin and conduct nourishment in the 1,200' reach located south of the south groin to provide storm protection to the upland development known as the Reserve at Sea Island. The SPC authorized the project under SPC Permit #438 on December 15, 2015. The project was advertised on public notice by the Savannah District U.S. Army Corps of Engineers (USACE) on December 16, 2015, (SAS-2015-00742). Due to accelerated erosion caused by named storms, the applicant conducted extensive meetings and correspondence with USACE, and determined that the Reserve project should be expanded to include a full scale beach nourishment project for the Sea Island beach. The nourishment project will provide a minimum

of 1,315,000 cy of sand from an offshore borrow source for storm protection, wildlife habitat, and recreational functions of the Sea Island beach and the nourishment and groin at the Reserve will provide storm protection to the Reserve. The nourishment project will also provide a sand reservoir to allow for future sand recycling to address historic erosion patterns on the managed beach portion of the island. Sand obtained from a previously approved borrow area north of the south groin will provide an estimated average fill density of 150 cy/ft along Reach 1 and is anticipated to advance the shoreline ~250 ft, well beyond the estimated trapping capacity of the new groin. Excess sand is expected to bypass the new groin and shift to downcoast areas toward Gould's Inlet. The larger nourishment project, in conjunction with the Reserve groin and nourishment project, represents the least environmentally damaging practicable alternative (LEDPA).

### ***Sea Island Shore Protection History***

Sea Island has been developed as a premier resort and residential community since the 1920s. Like many US barrier islands, it has sustained erosion over time due to irregular wave patterns and sediment transport around the shoals of Hampton River Inlet and Brunswick Harbor entrance. Gould's Inlet, an unstable migrating channel at the downcoast end of the island, has also influenced the Sea Island shoreline. Sea-level rise of nearly 1 ft over the past century has also been a factor, but is less important to the shoreline dynamics at decadal time scales because of local influences of the tidal inlets. Large-scale changes in nearshore shoals at the ends of Sea Island modify the flow of sand along the island and cause irregular shoreline changes that complicate management of the beach.

In response to the dynamic changes along Sea Island, most of the shoreline was armored by the early 1980s. Sloping concrete seawalls and quarry-stone revetments were constructed along the back beach as erosion encroached on development. Much of the dry-sand beach along the island was lost to erosion in the 1980s. Since then, the applicant has completed three nourishment projects via hydraulic dredge as listed in Table 3. These projects total ~2,500,000 cy, with the majority of the sand obtained from the approved borrow area near the Hampton River Inlet. All projects were completed between 1986 and 1997.

In conjunction with the 1990 nourishment project, the applicant constructed two groins (near stations 95+00 and 260+00) for purposes of retaining a portion of the nourishment volume within Sea Island. The applicant implemented a sand-recycling program between 1993 and 2015 under the 1990 nourishment permit and periodically shifted sand from accumulation areas (groin "fillets") to the center of the island. Recycling was generally performed every other winter as needed based on beach monitoring surveys. This program was successful in maintaining a sand cover over most of the sloping concrete seawall most of the time and in providing a viable dry beach for recreation and turtle nesting along much of the island.



**Table 3.** Three nourishment projects via hydraulic dredge have been completed by the applicant since the 1980s. Proposed borrow area is within Georgia state waters but away from Hampton River Inlet, Gould’s Inlet and Brunswick navigation channel.

<b>Sea Island Beach Nourishment History</b>				
<b>Year</b>	<b>Funding Source</b>	<b>Status</b>	<b>Project Type</b>	<b>Volume (cy)</b>
1986	Sea Island Company	Completed	Black Banks River Borrow Area (BA) Dredging	~192,000
1990	Sea Island Company	Completed	Hampton River Inlet BA via Dredge	~2,000,000
1997	Sea Island Company	Completed	Hampton River Inlet BA via Dredge	~350,000
<b>2018–2019</b>	Sea Island Company	<b>Proposed</b>	<b>Offshore BA Dredging</b>	<b>Up to 2,500,000</b>

Surveys by Oertel (1993–2015) indicate that a total of ~1.3 million cubic yards were recycled along Sea Island between 1990 and 2015. A typical recycling volume has been ~150,000 cy per event. Using Oertel’s shoreline monitoring data, the applicant estimates the underlying erosion rates along the center of the island since 1990 have ranged from 3 cubic yards per foot per year (cy/ft/yr) to 8 cy/ft/yr, after factoring out the recycling impacts. Rates of this order are many times greater than the expected shoreline recession rate due to sea-level rise (<0.5 ft/yr). The applicant proposes to counteract erosion for at least 5–10 years via addition of a sand volume that exceeds the underlying erosion rates along Sea Island.

**Applicant’s Stated Project Purpose and Need: To restore the Sea Island (GA) beach to provide storm protection for adjacent uplands, restore wildlife habitat, restore recreational functions, and to provide a reservoir for sand recycling to address existing erosion patterns.**

**Basic Project Purpose**

The basic project purpose is to provide storm protection for developed shoreline through beach nourishment techniques.

**Water Dependency**

As defined at 40 CFR Section 230.10(a)(3):

“Where the activity associated with a discharge which is proposed for a special aquatic site (as defined in subpart E of the Guidelines) does not require access or proximity to or siting within the special aquatic site in question to fulfill its basic purpose (i.e., is not "water dependent"), practicable alternatives that do not involve special aquatic sites are presumed to be available, unless clearly demonstrated otherwise. In addition, where a discharge is proposed for a special aquatic site, all

practicable alternatives to the proposed discharge, which do not involve a discharge into a special aquatic site are presumed to have less adverse impact on the aquatic ecosystem, unless clearly demonstrated otherwise.”

Storm protection projects that require beach nourishment are water dependent activities. The discharge of sand dredged from an offshore borrow area must be placed in waters of the U.S. at the project site to provide a wider wet and dry sand beach profile and constructed dunes. Based upon the location and purpose of the project, alternatives that might avoid a discharge in special aquatic sites, such as additional revetments and seawalls seaward of the existing revetments, are not practicable alternatives, and may result in long-term adverse impacts on the aquatic ecosystem at the project area due to anticipated long-term loss of beach and dune habitat.

### **Overall Project Purpose**

The overall project purpose of the project is for shoreline protection on Sea Island, including the following:

- Provide a higher level of shoreline protection for adjacent upland properties.
- Restore a viable dry-sand beach to accommodate existing recreational uses.
- Replenish chronic erosion and sand losses since 1997 and provide sufficient material to manage and maintain the design beach.
- Provide a restored foredune.
- Provide additional environmental habitat for turtles, birds, and beach flora and fauna.
- Address the alongshore variations in erosion rates.
- Provide a reservoir of sand to recycle to erosional areas of the beach in the future.

**The overall project purpose is geographically limited to the restoration of the primary (storm protection) and secondary (wildlife habitat, recreation, and sand reservoir) functions of the sand sharing system at Sea Island. The overall project purpose cannot be satisfied at alternative locations. Therefore, the geographic area of review for the proposed project is limited to the Sea Island shoreline from a location 1,200’ south of the south groin to the north groin.**

### **Alternatives Considered**

The applicant has evaluated and implemented various shore-protection and beach-restoration alternatives since the 1970s. The applicant has evaluated this proposed action in accordance with 40 CFR Section 230 and determined that the preferred alternative represents the LEDPA. Although the overall project purpose for this project eliminates the need to evaluate alternative sites, the applicant has evaluated on-site alternatives that could satisfy the overall project purpose, both for the shoreline portion of the project and the sand source.

## **Shoreline Alternatives:**

### Preferred Alternative

The applicant's preferred alternative includes:

- Construction of a 350-ft T-head terminal groin at the western project limits in Reach 1;
- Dune construction and beach nourishment at The Reserve (Reach 1) by trucking sand from the south groin fillet;
- Placement via hydraulic (cutterhead) dredge and pipelines of an anticipated 1,315,000 (but no more than 2,500,000) cubic yards (cy) of beach-quality sediment from the identified borrow area along up to 17,700 lf of shoreline (Reaches 1, A, B, and C); and,
- Periodic recycling and management of the nourished beach, as appropriate.

The project encompasses work in Reach 1, south of the south groin; in Reach "A," which extends from the existing south groin on Sea Island 4,000 lf north to approximately East 9<sup>th</sup> Street; in Reach "B," which extends 9,000 lf from approximately East 9<sup>th</sup> Street to East 34<sup>th</sup> Street; in Reach "C," which extends 3,500 lf north from East 34<sup>th</sup> Street, (as shown on Sheets 02 to 06).

The preferred alternative will satisfy the overall project purpose and represents the LEDPA. Impacts to the beach and the offshore borrow site are temporary and minor and will fully recover in a short period of time. The preferred alternative will restore storm protection and will provide an additional ~92 acres of dry-sand beach, providing habitat for turtle nesting, shorebird roosting, and recreational use.

### **No-Action Alternative**

The no-action alternative would not satisfy the overall project purpose since it would fail to provide restoration of the sand sharing system, resulting in loss of storm protection, wildlife habitat, recreational values, and sand recycling. While no regulated impacts would occur under the No-Action alternative, ongoing adverse impacts would likely result to both private property, the sand-sharing system, and existing beach and dune wildlife habitat, due to the lack of storm protection and the continued erosional pressure on the beach.

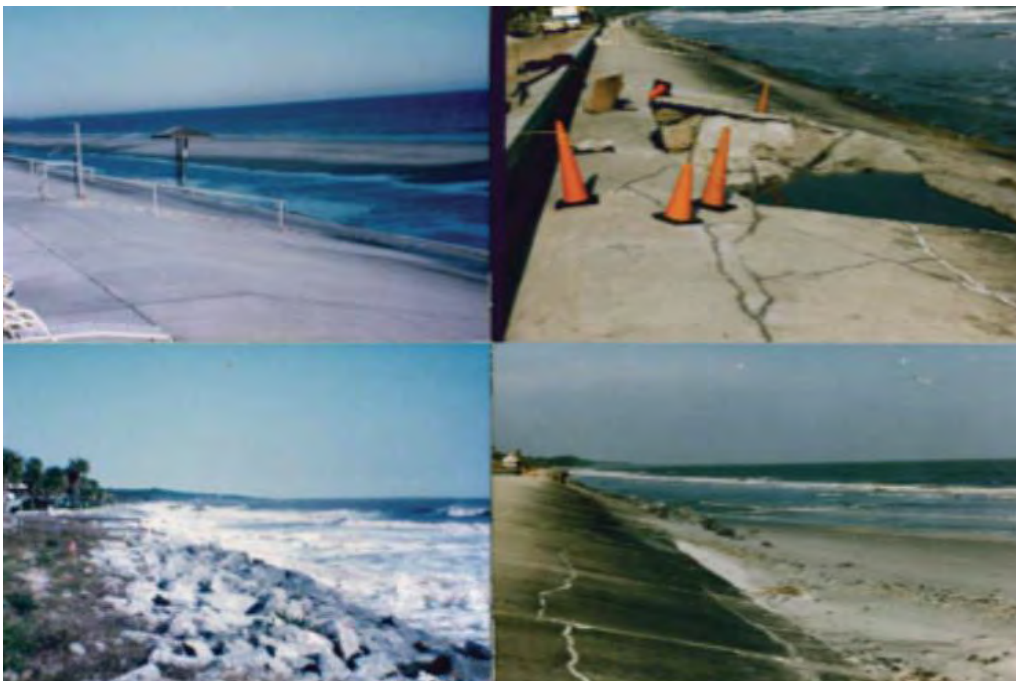
### **Alternative 1: Shoreline Armoring (Rock Revetments and Sea Walls)**

Shoreline armoring was implemented between 1979 and the early 1980s. Recent structural efforts have been limited to maintenance along the exposed sections of revetment in response to storm damages. Buried sections of revetment have required virtually no maintenance.

Armoring has been rejected as a long-term solution to beach erosion along Sea Island, because a wider beach will provide increased storm protection, expanded habitat area and better recreational opportunities. A continuous beach will absorb wave energy and will reduce wave runup and overtopping at the seawall or base of dunes (USACE 2008).<sup>1</sup> A wide berm will provide a sand supply for aeolian transport to build up a natural dune profile, further improving the aesthetic quality of the beach. During Hurricanes Matthew and Irma, exposed portions of the existing revetment sustained damage that required the applicant to expend considerable resources to rectify. Portions of the existing revetment protected by beach and dunes did not sustain damage, providing further evidence that shoreline armoring alone does not satisfy the overall project purpose.

Shoreline armoring without nourishment also leads to the eventual elimination of nesting habitat for sea turtles. Once the beach erodes and retreats back to the revetment, the sand source for littoral transport is eliminated by the rocks, leading to the long-term elimination of nesting habitat. This condition was present on Sea Island prior to the applicant conducting the previous nourishment projects in the early 1990's (Figure 7). Turtles cannot access areas behind the rocks even if suitable nesting habitat were available in those areas, but on Sea Island no such condition currently exists as all areas landward of the revetments have been developed.

This alternative does not represent the LEDPA that would meet the overall project purpose.



**Figure 4:** Pre-nourishment conditions on Sea Island shoreline

1. USACE. 2008. *Coastal Engineering Manual: Coastal Project Planning and Design*. EM 11102-1100, Part V, Chapter 4, Beach Fill Design. US Army Corps of Engineers, Washington, DC, pp V-4-1 to V-4-109.

## Alternative 2: Relocation of Existing South Groin to Proposed Reserve Groin Location

The applicant has consulted with Dr. David Basco to evaluate the alternative of relocating the existing south groin 1,200' south to the location of the 350' T-head groin permitted under SPC Permit #438. This alternative would result in only one groin on the south end of the project area as opposed to a tapered two-groin system as proposed (Figure 5).

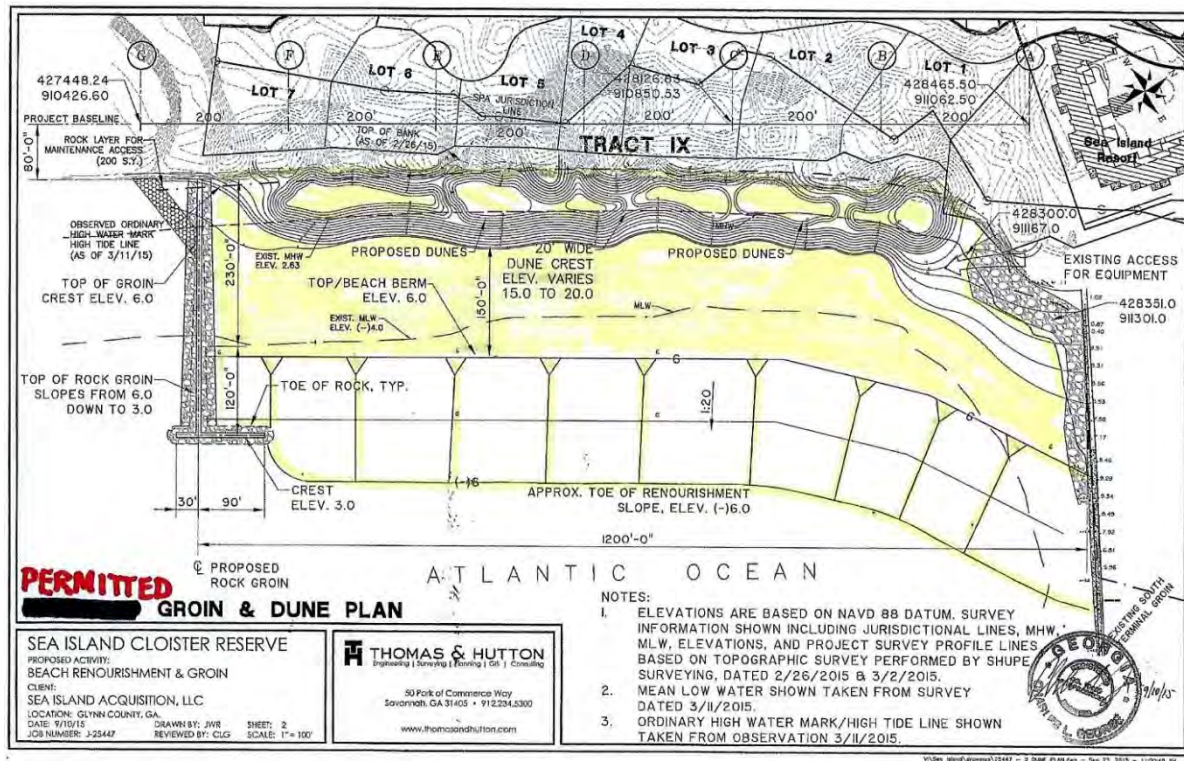


Figure 5. Permitted project (State of Georgia Permit Number 438, Dec 11, 2015)

The existing South-end groin was installed in 1991, over 25 years ago. It was constructed of Campbell modules shown in Figure 6 (left side) as patented April 8, 1975 by Herbert Campbell (US patent no. 3875750). Each module unit is 10-12 ft long weighing up to 17 tons. Relocation of groin components of this size would require substantially sized equipment and would likely cause significant disturbance to both the downdrift wet sand beach and the updrift dry sand beach.

There is no reinforcing steel within each Campbell module, and it is unknown whether or not each module unit can be lifted and transported without damage. On some units, the concrete has aged significantly in the salt water environment. In addition, the stones on the shoreward one-third would need to be removed first.





Figure 6 Original sketches of Campbell modules (left) from the patent and photos of the South-end groin (March 2014)

Removal, transport, and reconstruction of the south groin would not be practicable due to the uncertain integrity of the modules, the size of the equipment required for removal, and the amount of disturbance that would result from the removal of the groin, as Dr. Basco concluded.

Groins that are at the end of a groin field or located at the end of a property boundary are termed “terminal groins”. They produce a “transition” region where pre-groin, coastal sediment transport processes in the alongshore (both directions) and the on-off shore directions are felt by the presence of the terminal structure. Where one alongshore direction dominates, e.g. South direction as at the south-end of Sea Island, the transition region is south of the existing, South-end groin.

The sand on the north, updrift side (Figure 2, right side) is that which was deposited from the two-mile long, 1,800,000 cy beach nourishment project in the middle region of Sea Island that took place in 1990. This South-end sand deposition area became the sand reservoir for 10 subsequent sand recycling projects over the years to redistribute this sand to the middle region of Sea Island. (Oertel & Basco, 2015).

Sand moves around the seaward end, over the top, through the joints, and past the landward end of terminal groins. To mitigate shoreline changes in the transition region of terminal groins, the US Army, Corps of Engineers, Coastal Engineering Manual (2006, Part V, Section 3, Figure V-3-32) recommends installing

tapered (shorter length) groins on the down-drift side of terminal groins as shown in Figure 3. The proposed project, which incorporates the two-groin design authorized by SPC Permit #438, creates a tapered groin system extending from the existing South-end groin as shown in Figure 1. The tapered groin in the transition region permits nourished sand in the shorter groin fillet to immediately begin to migrate around the shorter end, to more quickly reach the down drift beach. The proposed design follows the recommendations found in the Corps of Engineers, Coastal Engineering Manual (2006), which suggests groins are acceptable when constructed in conjunction with nourishment:

***“Modern coastal engineering practice is to combine groin construction with beach nourishment to permit sand to immediately begin to bypass the groin field.”***

As noted in Figure 5, the Permitted Project combines beach nourishment with groin construction. The groin elevation on the subaerial portion of the beach, its slope seaward and its length all permit sand to immediately begin to bypass the groin. The beach fill template extends seaward of the end of the groin to insure sand bypassing of the new, tapered/transition region groin.

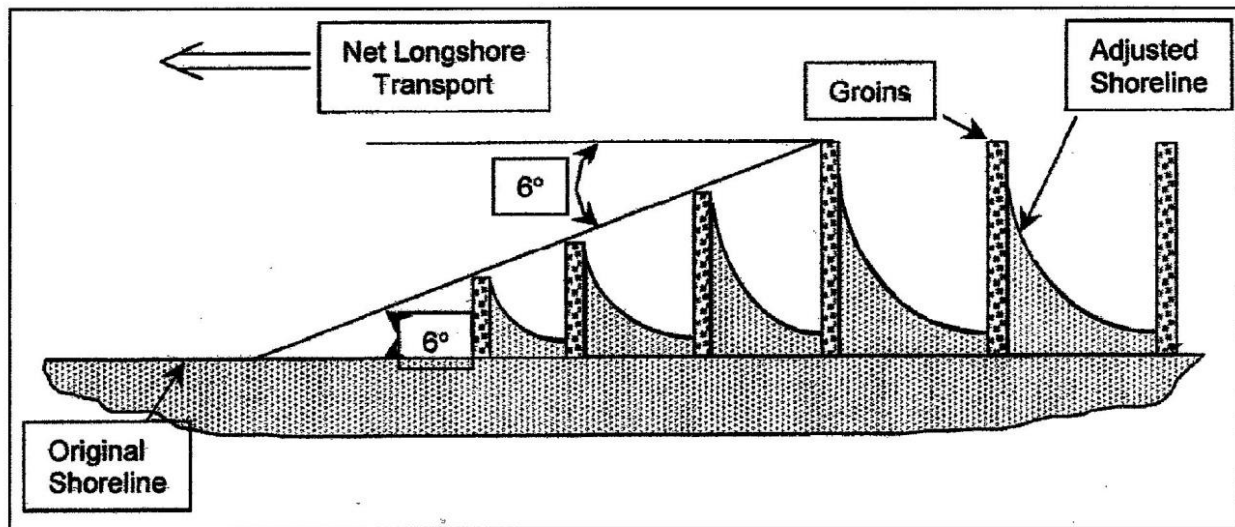


Figure 7. Empirical, 6° angle for end of groin field transition region “taper” geometry (Corps of Engineers, Coastal Engineering Manual, Vol V, 2006)

If a single groin was proposed in lieu of the two-groin tapered option, the single groin would need to be longer than the existing groin to maintain a minimum updrift beach width, and additional sand beyond what is proposed would be required. A single, longer groin would result in a wider transition region between the groin and the downdrift beach, causing bypassing sand to return to the beach further south than what is proposed with the transitional two-groin system. It is possible that a longer single groin could result in the jetting of bypassing sand offshore, with no return to the downdrift beach, potentially resulting in adverse

impacts to the south end of Sea Island, Gould's Inlet, and possibly St. Simons Island. This alternative does not represent the LEDPA that would meet the overall project purpose.

### **Alternative 3: Beach Nourishment Without Groins**

Removing the existing groins would significantly diminish the life expectancy of the project. The primary goal of the applicant's stated purpose and need is to provide storm protection for Sea Island property owners and valuable infrastructure. During the first nourishment attempts by the applicant in the 1990's, sand was placed on the beach prior to groin construction and it was washed away within a period of months. Given the existing erosion patterns on Sea Island, the life expectancy of the project without groins would be extremely short and unsustainable. Without the groins to slow the bypassing of nourished sand and provide catchment basins for sand recycling, the project would quickly diminish to a point where the overall project purpose would fail to be met. Additionally, the accelerated erosion of nourished sand without groins would result in the continued loss of sea turtle nesting habitat. This alternative does not represent the LEDPA that would meet the overall project purpose.

### **Sand Borrow Source & Retrieval Alternatives**

Several alternative sand sources were considered but rejected as borrow areas.

- Black Banks River Shoals (1986 borrow source) — This area was rejected because it does not contain sufficient volume to meet the goals and objectives of the proposed project.
- Hampton River Inlet Shoals (1990 and 1997 borrow source) — This area contains extensive beach-quality sands, which have accumulated as part of the ebb-tidal delta of the inlet. It also contains subaerial habitat of importance, Pelican Spit and Hupps Bar, in close proximity, which would require greater protection measures to avoid impacts.
- Brunswick Entrance Channel Shoals — This area was considered but rejected because it is further distant from most of the project area.
- Gould's Inlet Shoals — This area was rejected because the available volumes in the ebb-tidal delta are considered insufficient to achieve the goals and objectives of the applicant. Additionally, this location provides a significant habitat for shorebirds, and is located in designated Critical Habitat for piping plover (GA-14).
- Upland Sand Sources — Upland sand sources were rejected because of the scale of the project. An upland sand source of this magnitude is not readily identifiable. Further, inland sand sources would have to be loaded at the source, trucked to the beach over local roads, then spread by mechanical equipment along the beach. Volumes over 1 million cubic yards would require upward of 80,000 truckloads and would cause extensive damage to existing roads.



The applicant also evaluated an alternative dredging technique as follows.

- Excavations via Hopper Dredge — This alternative was considered but rejected based on discussions with US dredging companies that have ocean-certified dredges licensed to operate in offshore waters. Generally, ocean-certified hopper dredges require water depths of >25 ft at low tide. The hopper is pumped full and the vessel transits to a pumpout point relatively close to shore. Water depths over the proposed borrow area are less than 25 ft at low tide, limiting how large a load US hopper dredges could take on before hitting the bottom. Water depths between the proposed borrow area and the shore gradually shoal, which will prevent a feasible pumpout close to shore. A final consideration that is applicable in this case is the greater risk that hopper dredges pose to certain threatened and endangered marine mammals such as the right whale which is known to frequent the waters near the borrow area.

The applicant also considered a number of different fill configurations along the beach.

- Profile Nourishment Below Low Water — This alternative was rejected because it is more difficult to control the slurry and the lower shore face at Sea Island toes into the gently sloping platform off the island at depths of approximately -6 ft to -8 ft NAVD. Low wave energy along the Georgia coast limits the rate of bar movement as evidenced by the persistence of detached intertidal shoals off the northern end of Sea Island. Profile nourishment is sometimes feasible where there is a likelihood the deposits will quickly move onshore by natural processes and build up the visible beach. This would not be a viable alternative for achieving the goals and objectives of the applicant in the Sea Island setting.
- Placing All Nourishment on the Subaerial Beach and Existing Dunes — This alternative placement configuration was rejected because of the scale of the project and the excessive height of fill that would be required to accommodate the planned volumes. Any sand placement extending well above the normal dry-beach level becomes subject to scarping and chronic recession until sufficient material shifts downslope. Such scarps would inhibit recreation and turtle nesting while altering the character of the beach. Additionally, this alternative would result in the continuation of the exposure of over 1 mile of rock revetment, subjecting that portion of the project area to diminished storm protection and loss of sea turtle nesting habitat.
- Eliminating Dune Construction — This alternative was rejected by the applicant because natural dune growth tends to be relatively slow. This is generally related to the limited dry-beach widths found along the Georgia coast where high tide produces a much wider wet-sand beach. Georgia's temperate climate promotes rapid propagation of vegetation along sections of dry beach that become stable for a couple of years. As vegetation propagates toward the normal yearly uprush limit, the dry-sand area

narrows, reducing an aeolian supply to the dunes. These factors inhibit dune growth and would delay reaching the level of dune protection desired by the applicant. Therefore, the applicant proposes to construct a continuous foredune along Reach B where erosion encroaches daily on the existing rock revetments.

### **Summary of Alternatives**

While the No-action alternative would result in no direct immediate environmental impacts, the lack of action will result in both short and long-term loss of storm protection, wildlife habitat, and recreational use and would not satisfy the applicant's purpose and need. Conversely, the Preferred Alternative will result in only short-term impacts to the aquatic ecosystem while satisfying the applicant's purpose and need. The Preferred Alternative will provide beneficial restoration of storm protection functions, wildlife habitat, and recreational opportunities.

Alternatives that involve shoreline armoring without nourishment would provide a diminished level of storm protection without a beach and dune system seaward of such a structure. More importantly, this alternative would lead to long-term adverse impacts to sea turtle nesting habitat.

Relocation of the existing south groin in lieu of the preferred transitional two-groin design would result in the need for an increase in the length of the groin necessary to provide a suitable updrift beach width. Also, this alternative would require an increase in the amount of sand necessary to provide the updrift beach width and would increase the distance south of the groin before bypassing sand would return to the existing shoreline, and possibly even result in bypassing sand being jetted offshore.

Alternatives that include removal of existing groins would limit the effective life of the project, significantly reducing the storm protection value of the undertaking, and would result in accelerated loss of sea turtle nesting habitat and recreational area.

Therefore, the applicant has determined that the Preferred Alternative is the LEDPA that would meet the overall project purpose.

### **Applicant's Description of Work Subject to the Jurisdiction of the US Army Corps of Engineers:**

The proposed activity is a shoreline protection project utilizing beach nourishment along Sea Island, Georgia (GA) (Sheet 01). This work is proposed as an addendum to an existing permit application to the USACE (P/N SAS-2015-00742) for construction of a new T-head groin 1,200 linear feet (lf) south of the existing south groin, along with dune construction and beach nourishment south of the existing south groin (Reach 1). This initial project was considered and approved by the SPC on December 15, 2015 under SPC Permit #438.

The work proposed by the addendum will include placement via hydraulic (cutterhead) dredge of 1,315,000 cy to 2,500,000 cubic yards (cy) of beach-quality sediment along up to 15,000 lf of shoreline. The project encompasses four reaches with Reach “1” beginning 1,200’ south of the existing south groin (The Reserve, authorized under SPC Permit #438); Reach “A” extending from the south groin on Sea Island 4,000 lf north to approximately East 9<sup>th</sup> Street; Reach “B” will extend 9,000 lf from approximately East 9<sup>th</sup> Street to East 34<sup>th</sup> Street; and, Reach “C” will extend 3,500 lf north from East 34<sup>th</sup> Street to the north groin (Sheets 02 to 06).

Sand will be obtained from an offshore borrow area within Georgia state waters situated on bathymetric high areas that are well removed from inlet shoals or Brunswick entrance channel. The proposed borrow area is ~4 miles east/southeast of Sea Island with rough dimensions of 10,000 lf by 1,700 lf (~255 acres) (Sheets 11 and 12).

Nourishment sand will be pumped to the beach, shaped, and graded to slopes and elevations similar to the existing beach (Sheets 07 to 10). A protective dune will be constructed using nourishment sand along up to 10,000 lf of Sea Island. The majority of the nourishment volume will be placed along Reach “B” which has experienced severe erosion in recent years (Sheets 04, 05, 08 and 09). Due to losses resulting from recent hurricanes, sand would be placed in Reach A near the resort either by recycling from other portions of Reach A or Reach C prior to or during dredging (or both), or by direct deposit by dredge based upon the final construction schedule.

This addendum to SAS-2015-00742 also includes a plan to perform periodic sand transfers within the Sea Island beach project area. Plans call for nourishment to restore a continuous dry-sand beach between the existing groins and to supplement the volume with sufficient material to perform sand transfers (recycling) within the project area after hydraulic nourishment is complete. Sand transfers will be performed via land-based equipment and will include transfers as needed from Reach “A” and Reach “C” to affected portions of the project area to maintain the project purpose. This work would be consistent with previously authorized beach management recycling work performed by the applicant following the 1990 and 1997 nourishment projects. A quantity of sand necessary to carry out construction of the Reserve project is also included.

Maintenance and recycling would occur:

- Up to once per year outside of turtle nesting season to maintain overall project purpose of storm protection, wildlife habitat, and recreation, upon notice to Georgia Department of Natural Resources, Coastal Resources Division (CRD) and Savannah District U.S. Army Corps of Engineers (USACE);

- At any time to correct unusual erosion rates or to correct damage caused by discrete events, upon notice to CRD and USACE;
- In the event of an approaching storm, shaping of dunes to raise low-lying areas for upland protection, upon notice to CRD and USACE; and, Material for recycling would be obtained from any location above MLLW within Reach A and Reach C, and provided the material meets regulatory guidelines, could be placed within any Reach based upon site conditions and needs relevant to maintain the overall project purpose of shoreline protection, wildlife habitat, and recreational use.

All work would be performed outside the prescribed turtle nesting season (ie – construction between 1 November and 30 April), unless necessary due to emergencies caused by passing storms or for preventative measures for approaching storms. The timing and scale of non-emergency proposed sand transfers would depend on actual erosion rates and site-specific conditions. The applicant proposes to measure the rate of sand losses and gains by reach and to transfer sand according to the need to maintain the storm protection, wildlife habitat, and recreational values associated with the overall project purpose. The schedule and need for future sand transfers is expected to vary depending on the frequency and severity of erosion events.

## **Nourishment Plan**

### ***Beach Nourishment***

The nourishment design is based on the present condition of the beach, historical erosion rates, impacts from recent hurricanes, levels of storm protection requirements, appropriate levels for recreational use, environmental considerations, and available budget. Existing sand deficits by section along the beach were determined by comparing beach volumes seaward of shore-protection structures. A target minimum profile was defined in terms of a sand quantity per unit length of beach (cubic yards per foot—cy/ft) considered necessary to withstand normal seasonal changes in the profile while maintaining a continuous dry-sand beach. For Sea Island, healthy sections of beach which meet this criterion were found to contain ~125 cy/ft measured to -7 ft NAVD datum (CSE unpublished beach monitoring data 2017). Each section of the beach was compared to this value to determine volume deficits.

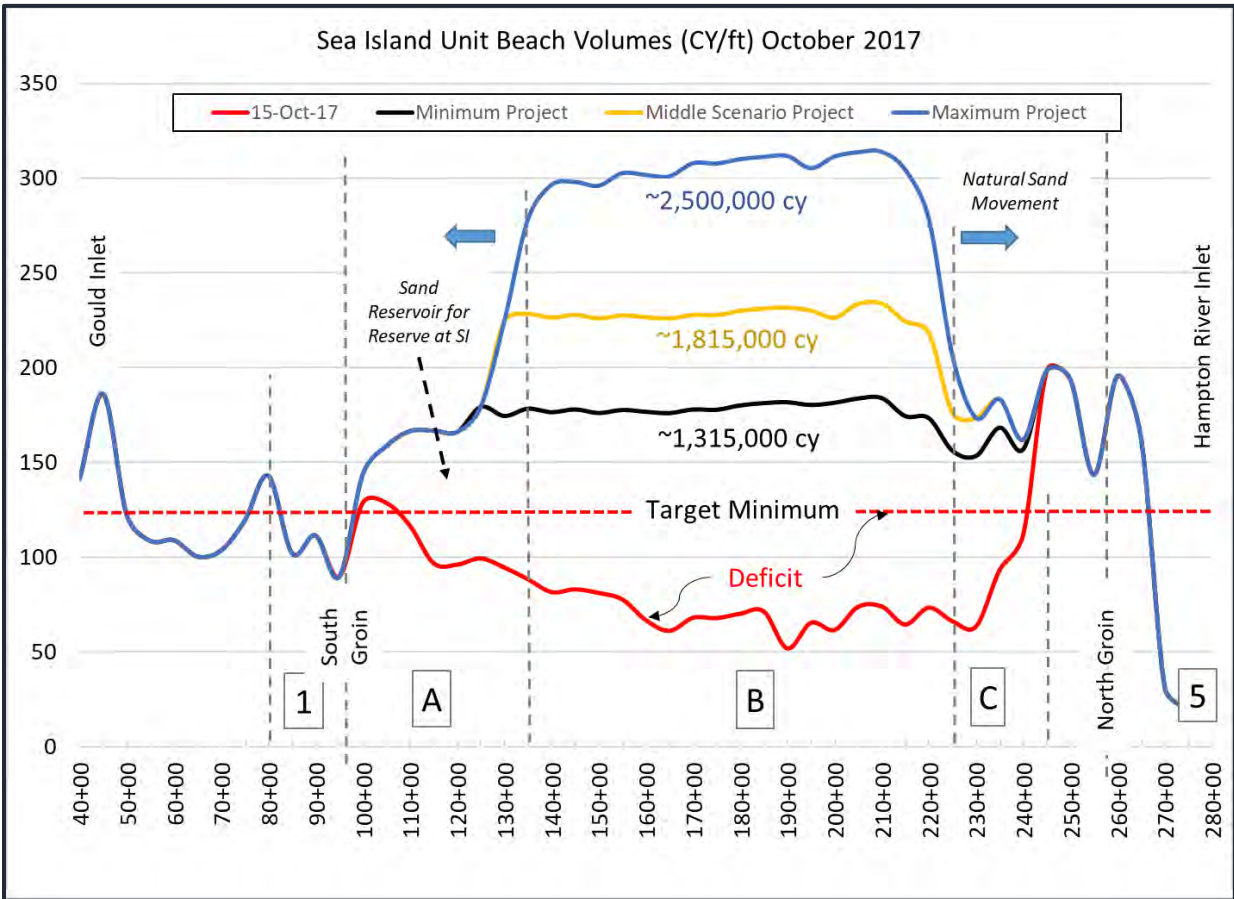
The nourishment plan includes sufficient volume to restore the deficit in the area between the existing groins, including the volume necessary to accommodate the Reserve project, plus advance nourishment to account for anticipated future erosion. The advance nourishment volume is designed to accommodate a minimum of five years of normal erosion to over ten years of erosion.. The final nourishment volume will depend on the bids for construction and the budget available. The minimum-scale project will be 1,315,000 cy and the maximum scale will be 2,500,000 cy. Table 1 lists the proposed fill lengths, volumes, and fill

density by reach. Adjustment in fill volumes will be made according to beach conditions at the time of construction, but with an effort to maintain approximately proportionate adjustments along all reaches from the minimum volumes listed in Table 1. The applicant anticipates the final project will be close to the minimum scale project, but future erosion events could require additional dredging operations over the life of the permit

**Table 1.** Proposed beach nourishment volumes by reach. \*[Applicant’s project baseline in feet (engineering nomenclature) extending from Gould’s Inlet (0+00) to Hampton River Inlet (285+00). \*\*Reach 1 is 1,200 lf extending from the south groin at station 95+00 and will be nourished via sand transfers from Reach A unless the timing of nourishment is contemporaneous with groin construction so that it may be nourished via hydraulic methods when Reaches A, B, and C are being completed. Volume for Reach 1 is included in the Reach A volumes].

Reach	Stationing*	Locality	Length (ft)	Minimum Volume (cy)	Maximum Volume (cy)	Fill Density Range (cy/ft)
1**	~83+00–95+00	The “Reserve”	~1,200	(120,000)**	N/A	N/A**
A	95+00-135+00	South groin to ~9 <sup>th</sup> Street	4,000	220,000	270,000	55–67.5
B	135+00–225+00	9 <sup>th</sup> Street to ~34 <sup>th</sup> Street	9,000	967,000	2,070,000	107.5–230
C	225+00–260+00	34 <sup>th</sup> Street to North Groin	3,500	127,500	160,000	36.4-45.7
<b>Total</b>	95+00-260+00	South Groin to North Groin	17,700	1,315,000	2,500,000	79.7-151.5

Figure 1 is a graph of the October 2017 beach volumes by station (500-ft intervals) along Sea Island (solid red line), the target minimum beach volume (dashed red line), the deficit volume by station (difference between the red lines), and the proposed nourishment volumes (range – black, yellow and blue lines). Historical studies confirm that sand tends to move from the center to the ends of Sea Island (Griffin & Henry 1984, Oertel 1993–2016, CSE unpublished data 2017). The nourishment plan takes this natural transport pattern and historical erosion rates into account by placing advance fill along Reach “B.”



**Figure 1.** Graph showing the October 2017 post storm beach volumes along Sea Island (red), the target minimum beach volume for a dry beach (measured to -7 ft NAVD), and the resulting unit volumes after nourishment under the proposed minimum volume (1,315,000 cy) and maximum volume (2,500,000 cy). Principal reaches are A, B, and C.

As stated previously, Reach A volumes include the quantities necessary to construct the activities authorized under SPC Permit #438 and repair recent hurricane damage. Depending upon the final construction schedule, the sand required for the Reserve project would be placed either directly by the dredge operation, or by mechanical transfer from Reach A.

Reach A would provide a sand reservoir for mechanical transfers to Reach 1 (“Reserve”) under the original permit application SAS 2015-00732. The addendum permit application also calls for periodic mechanical sand transfers from Reaches A and C to areas of the length of the project area (Reaches 1, A, B, and C), and Reach 5 as needed to fulfill the project purposes.

Nourishment will be accomplished by hydraulic dredge (cutterhead suction dredge), pipelines to the beach and heavy equipment (bulldozers and loaders) shaping the fill on the beach. Temporary sand-training dikes will be used to contain the slurry discharge parallel to the shore. Once the sand is pumped onto the beach, bulldozers will shape the fill into the design template from the backshore to the approximate mean sea-level

(MSL) contour. Sand below MSL will be shaped and redistributed to a natural profile by waves. Sand fencing and/or native vegetation will be installed in strategic locations along a proposed dune following nourishment, in accordance with a DNR-approved vegetation plan.

The principal nourishment sections will consist of a nearly horizontal berm at +7 ft NAVD (~4.4 ft above local mean high water). Berm widths will vary according to fill density. The seaward slope will be initially constructed at 1 on 25, then will adjust naturally to waves and tides. Sheets 03 to 06 illustrate the nourishment plan superimposed on a 2016 rectified, aerial orthophoto of Sea Island. The approximate limits of the berm and toe of fill are shown for the minimum and maximum proposed nourishment volumes. Sheets 07 to 10 illustrate representative nourishment sections for each reach. The aerial orthophoto used in Sheets 03 to 06 was obtained in spring 2016 before Hurricane *Matthew* (October 2016) and Hurricane *Irma* (2017). In general, the active dry-sand beach along Sea Island is situated between the +6-ft and the +8-ft NAVD elevations. During neap tides and low wave conditions, dry sand may be found at lower elevations. Native vegetation is generally limited to elevations above +7-ft NAVD at Sea Island (CSE unpublished data).

### ***Artificial Dune***

The nourishment plan incorporates an artificial dune along up to 10,000 lf between stations 135+00 and 235+00. The dune will toe into the seaward crest of the existing revetment and will be no higher than +12 ft NAVD with a crest width of 15–20 ft. The seaward dune slope will be 1 on 4 or gentler, merging with the constructed berm at +7 ft NAVD. Proposed dune and beach-fill sections are illustrated on Sheets 07 to 10. Sand fencing and/or native dune grasses will be installed along the artificial dune soon after completion of nourishment following GADNR specifications and guidance.

The alongshore limits of the dune will be determined based on conditions at the time of construction. The applicant's goal is to re-establish a continuous protective dune along Reaches A, B, and C, and to tie into the proposed dune along the "Reserve" tract (Reach 1) as proposed in the original permit application (SAS-2015-00732).

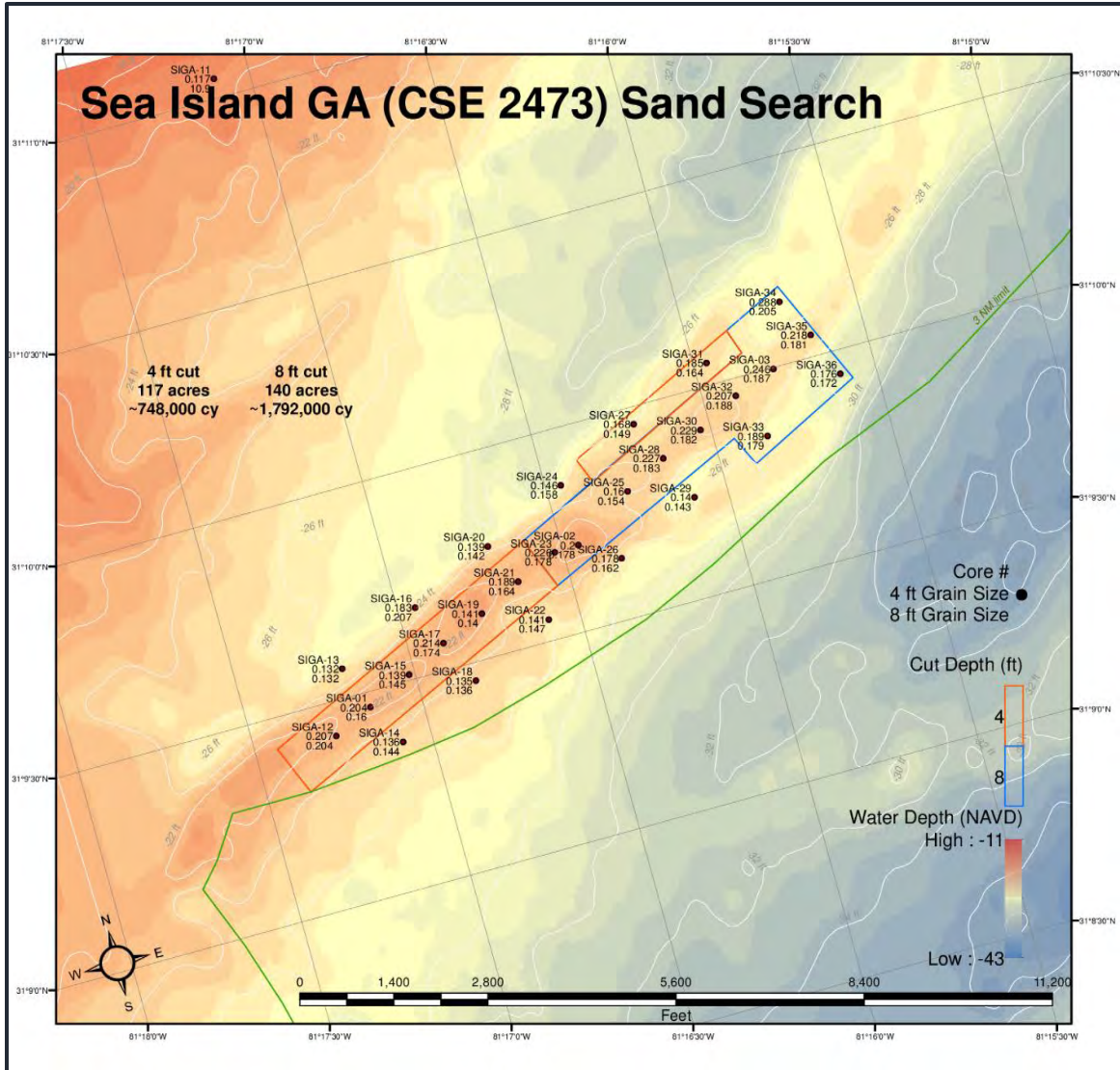
### ***Borrow Area***

The applicant, through its consultant CSE, completed a sand search and confirmation borings for the proposed offshore borrow area. Cores were initially obtained over portions of the Hampton River Inlet delta (seaward shoals) and a bathymetric high ~4 miles east/southeast of Sea Island. Following discussions with state experts (Dr. C. Alexander, Skidaway Institute, pers comm, March 2017), the applicant elected to focus the sand search on the bathymetric high. Twenty-five (25) additional borings were obtained within a grid ~2 miles long and 0.5 mile wide. CSE also collected detailed bathymetric data to map the area (see Sheet 12).

A cultural resources study is underway (magnetometer, side-scan, and shallow seismic surveys) in accordance with GADNR standards for such surveys to identify the presence of obstructions, vessel remains, or other objects that would adversely impact dredging operations. Tidewater Atlantic Research Inc (TAR—Dr. Gordon Watts) is conducting the survey for the applicant and has coordinated the trackline spacing and related specifications for the investigation with Georgia State Historic Presentation Office (GASHPO). Results will be submitted as soon as they are available (anticipated March 2018).

A total of 28 confirmation borings averaging over 9 feet (ft) long were obtained by the applicant. These borings provide relatively close-spaced sediment samples for laboratory analysis. Accompanying this permit application addendum is a “*Geotechnical Data Analyses*” (CSE 2018) which provides details of the survey and sediment quality analysis. Sheets 11 and 12 show the bathymetry and core locations in and around the proposed borrow area. Based on the sediment grain size and low-percent mud in the sediments, the applicant delineated a 255-acre area inside the state 3-nautical-mile limit as shown in Figure 2. The area is directly represented by 19 borings and is flanked by another 9 borings just outside the selected area. Core density is ~13 cores per acres.





**Figure 2.** Proposed borrow area offshore of Sea Island within Georgia state waters. A total of 19 borings are within the borrow area.

Table 2 lists the composited grain-size statistics for the upper 4 ft and 8 ft of substrate based on weighting results of individual samples (see CSE 2018).

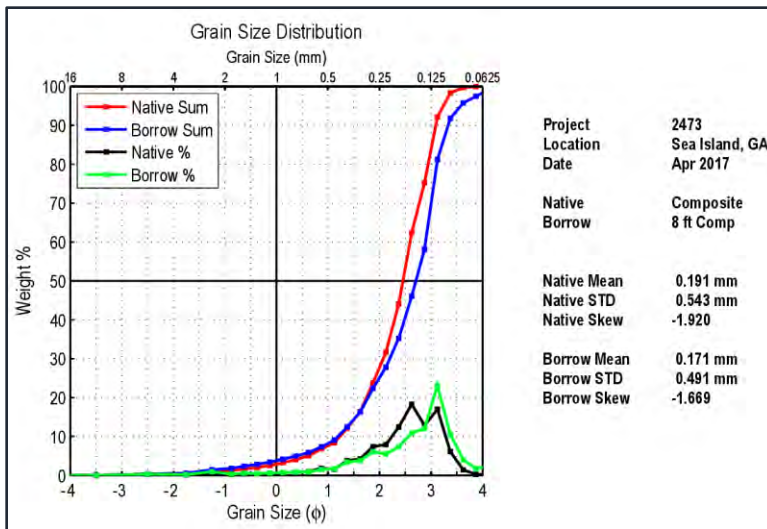
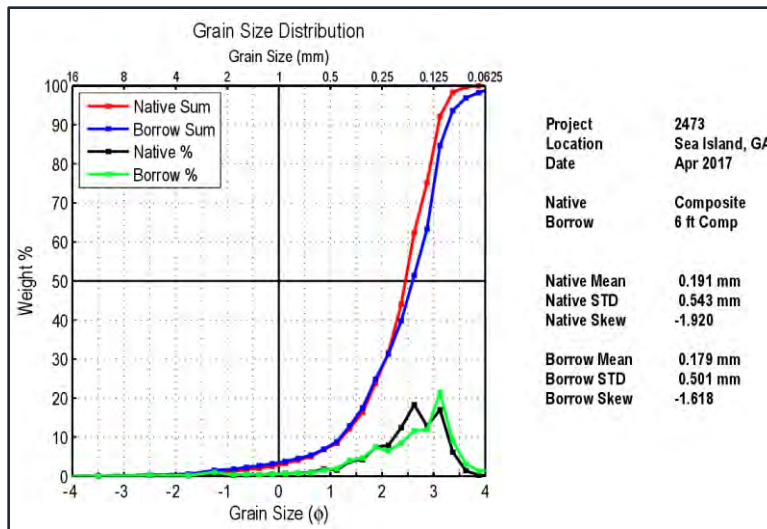
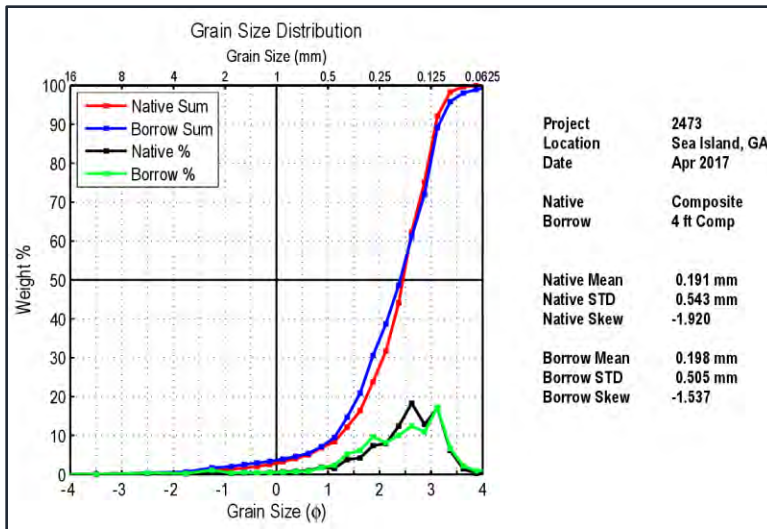
**Table 2.** Borrow area sediment statistics—weighted composites to the indicated substrate (“cut”) depth based on individual core samples (see CSE 2018—*Geotechnical Data Analyses* for details).

2473 Sea Island GA		Mean (mm)	STD (mm)	Shell (%)	Gravel (%)	Mud (%)	Ra	Munsell color
Sample	Cut Depth							
SIGA 1	4 ft	0.204	0.487	10.7	2.4	1.2	1.16	5Y-5/2
SIGA 12	4 ft	0.207	0.568	10.3	2.7	0.2	1.04	5Y-6/2
SIGA 15	4 ft	0.139	0.573	11.9	0.9	4.2	1.97	5Y-5/2
SIGA 17	4 ft	0.214	0.513	9.1	1.7	1.3	1.09	5Y-5/2
SIGA 19	4 ft	0.141	0.611	15.1	0.6	2.4	2.24	5Y-5/1
SIGA 21	4 ft	0.189	0.551	12.4	1.0	1.2	1.12	5Y-7/1
SIGA 25	4 ft	0.154	0.488	15.2	1.7	3.2	1.45	5Y-5/2
SIGA 27	4 ft	0.168	0.459	12.4	1.2	6.4	1.36	5Y-5/1
SIGA 31	4 ft	0.185	0.467	11.8	1.4	4.9	1.26	5Y-5/1
SIGA 2	8 ft	0.200	0.604	5.7	0.9	1.1	1.01	5Y-5/2
SIGA 3	8 ft	0.187	0.519	9.2	1.3	3.5	1.18	5Y-5/1
SIGA 23	8 ft	0.226	0.513	11.5	1.3	2.9	1.07	5Y-5/2
SIGA 28	8 ft	0.183	0.522	8.2	0.9	3.3	1.19	5Y-5/2
SIGA 30	8 ft	0.182	0.476	11.0	1.9	4.5	1.26	5Y-6/2
SIGA 32	8 ft	0.188	0.440	12.2	2.1	2.2	1.28	5Y-5/1
SIGA 33	8 ft	0.179	0.486	13.6	1.4	4.2	1.26	5Y-5/1
SIGA 34	8 ft	0.205	0.456	12.1	2.0	4.7	1.19	5Y-5/2
SIGA 35	8 ft	0.181	0.488	11.0	1.4	3.2	1.25	5Y-5/1
SIGA 36	8 ft	0.172	0.493	12.9	1.3	4.0	1.29	5Y-5/2
<b>TOTAL AVERAGE</b>		<b>0.184</b>	<b>0.511</b>	<b>11.4</b>	<b>1.5</b>	<b>3.1</b>	<b>1.30</b>	

The proposed borrow area was found to contain beach-quality sediments similar in texture and color to the beach sediments along Sea Island (CSE 2018). The northeastern half of the proposed borrow area is proposed for excavations to 8 ft of substrate. The southwestern half is proposed for 4–6 ft cuts. Mean sediment grain size within the proposed borrow area varies from 0.14 millimeter (mm) to 0.29 millimeter with composite means ranging from 0.17 mm to 0.20 mm, depending on the substrate depth (CSE 2018). As Table 2 shows, the overall mean grain size is 0.184 mm. Other composite parameters include shell content (11.4 percent), gravel content (1.5 percent), and mud content (~3 percent). Sheet 14 shows composite grain size distributions for the beach and three composite depths within the proposed borrow area. CSE (2018) computed the overfill factor ( $R_A$ ) for the applicable borings and cut depths using the existing beach grain size as the “native.” The resulting  $R_A$ ’s average 1.3, which suggests the borrow material will perform similarly as the existing sediments on Sea Island beach (CERC 1984). Sediment quality in the proposed borrow area is similar to the native size distribution (Fig 3).

The proposed borrow area is in water depths between 20 ft and 30 ft NAVD. These depths are considered too shallow for operations via ocean-certified hopper dredge. Therefore, the applicant anticipates that construction will be via cutterhead dredge anchored over the borrow area and positioned by tugs. Such

operations confine the daily movement to broad swings over ~300 ft widths of the borrow area as the cutterhead cuts a digging face and the pumps draw in a sediment-water slurry. Sheet 13 shows representative bathymetric sections through the borrow area and the anticipated excavation depth. The sand slurry will be pumped to shore via submerged pipeline for direct deposit on the beach. The small quantities of mud in the borrow area are expected to remain in suspension and mix with sediments in the water column. Care will be taken to avoid significant accumulations of muddy sediments on the beach. Should the dredge encounter significant layers of stiff clay which produce “mud rollers” on the beach, the dredge will be relocated to other areas within the permitted borrow area.



**Figure 3.** Frequency and cumulative frequency grain-size distributions (GSDs) for the Sea Island beach (“native”) and proposed borrow area (4 ft and 8 ft composites – “Comp”).

## Measures Taken to Avoid and Minimize Impacts

CSE has prepared a Supplementary Biological Assessment & Essential Fish Habitat Assessment of the potential effects of the project for species listed as threatened or endangered under the Endangered Species Act (Attachment A). The proposed project is unlikely to affect most listed species, and the most likely species to be found in the project area are sea turtles. However, the proposed project is anticipated to be constructed between 1 November and 30 April to minimize potential impacts to sea turtles. However, the final project schedule is expected to be determined in coordination with environmental agencies with appropriate conditions should an alternate window be prescribed (ie – turtle monitoring after 1 May). No construction activities will take place during sea turtle hatching season (1 August to 31 October). Construction will take place over an ~90-day to 120-day period, working 24 hours per day. Turbidity associated with the project is expected to be localized and short-term given the dominance of sand-sized material with ~3 percent mud in the deposits. Turbid plumes are expected to dissipate in minutes to hours within ~500 ft of the discharge point based on prior experience.

The proposed project will result in excavation and mortality of ~255 acres of surficial benthic organisms in the borrow area. Underlying sediments in the borrow area have similar textures and grain-size distributions (GSDs) as the overburden that will be excavated (see Fig 3)<sup>2</sup>. This will facilitate rapid recolonization of the borrow areas with a similar suite of benthic organisms. Filling operations will cover ~210 acres of shallow beach and inshore habitat (ocean shoreline), resulting in mortality and displacement of existing benthic populations. Nourishment will provide an additional ~92 acres of dry-sand beach (habitat for turtle nesting, shorebird roosting, and recreational area).

A wider dry beach will allow natural expansion of the foredune and its associated vegetation. The recreated wet-sand beach will be similar to or greater in area than the previous wet-sand beach buried by the fill. It is expected that these areas will recolonize naturally and rapidly with a similar suite of species (cf – Jutte et al 2002, CZR 2014)<sup>3</sup>. An estimated ~8 acres of back beach/revetment area will be converted to an artificial dune with crest elevations no greater than 5 ft above the natural beach elevation. In accordance with Georgia Shore Protection Committee guidance, the seaward dune slope will be 1 on 4 (or gentler) to provide a low slope negotiable by nesting sea turtles.

The proposed borrow areas are situated around a submarine ridge where natural bottom depths vary from 20 ft to 30 ft. The excavations will be of the order of 4–8 ft, which is comparable to the natural depth

2. CSE. 2018. Geotechnical data analyses. Draft report for Sea Island Company, Sea Island, GA. CSE, Columbia, SC, 45 pp + attachments.
3. Jutte, PC, RF Van Dolah, and PT Gayes. 2002. Recovery of benthic communities following offshore dredging, Myrtle Beach, South Carolina. *Jour Shore & Beach*, Vol 70(3), pp 25-30.

variation in the area. This will minimize creation of deep holes. Sediments in the available borings suggest the proposed borrow areas contain actively mobile sediments. Anaerobic conditions were generally not detected within the upper 8 ft of the substrate for the cores in the proposed borrow area. Small quantities of interstitial mud were detected in some samples. The highest single mud percentage measured in a composited core within the designated borrow area was 6.4 percent. The average of all samples tested was 3.1 percent. Isopach maps of key sediment parameters are given in the “*Geotechnical Data Analysis*” (CSE 2018). Sheet 12 lists key statistics at each boring location (Attachment B).

The Applicant (through its Agent) will provide all contractors associated with construction a copy of the permit and associated drawings. A copy of the permit will be kept at the construction site at all times.

### ***Sea Turtles***

The Applicant proposes to construct the project outside of sea turtle nesting and hatching season (May–October). Should portions of the project overlap with turtle nesting season, standard protection and monitoring actions will be completed to minimize impacts to turtles. For construction during non-nesting season, standard reasonable and prudent measures will be taken to minimize potential effects on sea turtles, including but not limited to the following:

- The applicant will perform tilling of the fill berm upon project completion as specified in the contract documents. Tilling will be accomplished to a depth of ~36 inches and will span the dry berm.
- Testing of sand compaction and tilling of nourished areas to a depth of 36” for any areas that exceed 500 cpu standards. Testing will be conducted in February and tilling if required will be completed prior to May 1.
- Visual surveys of escarpments after construction and during February of subsequent years during the monitoring period. Escarpments in excess of 18” extending for more than 100 feet will be mechanically leveled to natural beach contours prior to April 1.
- Visual surveys for escarpments along the beach fill area shall be made weekly, and after storm events, from April 1 to October 31. Escarpments that interfere with marine turtle nesting or that exceed 18” in height for a distance of 100 feet or more shall be graded to the natural beach contour with guidance from pertinent regulatory agencies.

Key action items should construction be required during nesting season would include:

- Daily early morning surveys for sea turtles.
- Nest relocation by qualified personnel for nests laid in areas where they may be impacted by construction activities.

- Equipment storage will be off the beach to the maximum extent practicable and as far landward as possible. Temporary fencing or other measures will be utilized to prevent turtles from being trapped by equipment.
- Direct night-time lighting of the beach will be limited to the immediate construction area and shielded according to USFWS recommendations. If any turtles are observed in the construction area, activities will cease until the turtle(s) returns to the water and any nest is marked.
- Notification of escarpment formations that hinder nesting
- Monitoring of hatchling success of the relocated nests.

### ***Sediment Quality***

The Applicant is proposing a borrow area which contains low percentages of gravel (>2 mm diameter) and shell material. While shell content (CaCO<sub>3</sub>) constitutes ~11 percent of the borrow sediments, only about 1.5 percent is gravel size. This means nearly all the shell material is in the form of sand-sized particles. Such material is beneficial for beach stability (Kana and Mohan 1998) and is similar to the native sand quality along the Georgia coast. The accompanying “*Geotechnical Data Analyses*” (CSE 2018) includes detailed comparisons between the native beach sediments and the proposed borrow sediments.

Specific monitoring during construction will include the following:

- 1) The Applicant (through its Agent) will have qualified personnel under the direction of a Georgia-registered professional engineer and a professional geologist monitoring sediment quality on the beach during construction and correlating it with the borrow area conditions.
- 2) During construction, samples of the beach fill will be obtained at ~200-ft intervals and compared to the native and borrow area samples. Samples along one shore-perpendicular transect will be combined into one physical composite and sent to the laboratory for grain-size analysis. Samples will be analyzed as soon as possible but will not exceed five (5) days after collection. Sediment test results will be submitted monthly to USACE and GADNR for review.
- 3) Additional sampling and frequent observation will be completed during the initial 4–6 hours of pumping when the dredge moves to a new section of the borrow area until the owner’s on-site technical representative (OTR) and contractor are satisfied with the quality of sand. The contractor will also have observers monitoring sediment quality 24 hours per day and will immediately report any significant changes in the discharge to the OTR so that decisions to move the dredge can be accomplished in a timely manner.

- 4) Upon completion of construction, the Applicant (through its Agent) will resample the project area and obtain representative samples of the beach fill using the same stations as the pre-project samples. Results will be compared with pre-project beach samples and borrow area sediment test results. Data will be submitted to the USACE and GADNR in a comprehensive final report.
- 5) Relocation of the dredge if unacceptable sediments are encountered. The contractor in consultation with the owner's on-site technical representative will notify the Applicant, USACE, and GADNR if significant non-compatible material is encountered in the borrow area. The dredge will be relocated to other subareas within the permitted borrow area if the following conditions are encountered:
  - a. Evidence of high concentrations of mud persisting for more than 30 minutes in the slurry based on visual observation at the discharge pipe and monitoring of specific gravity of the slurry at the dredge.
  - b. Evidence of high concentrations of non-shell gravel such as chunks of limestone, marl, or similar cemented sediments which persist for more than 30 minutes in the slurry based on visual observation at the discharge pipe and monitoring of specific gravity of the slurry at the dredge.
  - c. Evidence of high concentrations of coarse shell material exceeding pebble-sized clasts (eg – oyster shells, quahogs, etc) which persist for more than 30 minutes in the slurry based on visual observations at the discharge pipe and monitoring of specific gravity of the slurry at the dredge.
- 6) Accumulations of mud rollers and coarse gravel material (ie – rock fragments, large shells). Because of the lag time between excavations in the borrow area and pump-out onto the beach, accumulations of mud rollers and coarse gravel material may occur before the dredge can be relocated. If such accumulations exceed the equivalent of one 15-cy dump truck per 100 linear feet of beach, the Applicant will arrange to pick up the coarse material using hand labor or a beach-sweeping device as soon as practicable upon completion of the section or upon completion of the project. To the extent practicable, such accumulations will be raked into stockpiles above the high-tide mark and will be removed prior to completion of the project.
- 7) Beach compaction tilling –The Applicant will perform tilling of the fill berm upon project completion as specified in the contract documents. Tilling will be accomplished to a depth of ~36 inches and will span the dry berm. The Applicant (through its Agent) will perform post-tilling compaction tests at ~500-ft intervals along the project area and will report the results to USACE and GADNR following standard testing protocols.



- 8) Escarpment Leveling- Before May 1 of each year any escarpment in the beach nourishment area that is higher than 18 inches and more than 100 feet in length will be mechanically leveled to the then-existing beach contour.

### ***Monitoring Plan***

The Applicant will establish and complete the following monitoring plan as part of the proposed project.

Beach Surveys – The Applicant will conduct topographic and bathymetric beach surveys before and after the project, and five years post-project. Surveys will be conducted at profiles not to exceed 500 ft in spacing in the alongshore direction and will encompass the beach between a point landward of the stable dune and extending to depths of –10 ft NAVD, or a distance of 2,000 ft from the shoreline, whichever is closer. Post construction surveys will compare beach volumes and contour positions to before-and-after project conditions to document beach volume changes and identify any erosion hotspots. Annual reports will be submitted to USACE and GADNR.

Borrow Area Surveys – The Applicant will conduct pre-project, post-project, and out-year bi-annual bathymetric surveys of the utilized dredge area for five years post-project. And Surveys will encompass the boundaries of the dredge area and will include a minimum 400 ft buffer along the outside of the area. Surveys will be completed using track lines at a spacing not to exceed 100 ft. Out-year surveys will be completed in Years 1, 3, and 5 following construction. Data will be used to determine infilling rates and topographical changes to the seafloor. Results will be included in annual monitoring reports in conjunction with the beach surveys.

### **Sediment Monitoring**

*Beach* – Pre and post-nourishment beach sediment samples will be taken at the same stations sampled before construction (see “*Geotechnical Data Analyses*”—CSE 2018) for five years post-project. At each station, samples will be obtained using a push core at the toe of the dune, crest of the berm, mid beach face, and shallow underwater zone. Samples will be dried and tested for grain size distribution and shell content. Results will be included in a comprehensive project report.

*Borrow Area* – Pre-project, post-project, and out-year surficial sediment samples will be obtained in the dredge areas for five years post-project to evaluate possible changes to the sediment characteristics over time as new sediment infills the borrow area. Ten sediment samples will be collected at random locations within each borrow area using push cores ~10 centimeter (cm) in diameter and 10 cm deep. Samples will be analyzed for grain size, shell content, and mud content. Results can be used to infer recovery of the borrow area and what type of benthic community is likely present. Summaries of the findings will be submitted in annual reports to USACE and GADNR.

## **Compensatory Mitigation Plan**

The restorative nature of the project and the lack of impacts to freshwater or estuarine wetlands suggest that no mitigation for the action be required. The project will restore and preserve dry-sand and dune habitat used by shorebirds and endangered species. Impacts of beach nourishment projects are well understood and, when designed properly and the site allows, are limited to temporary impacts to the immediate beach and borrow area. The borrow area has been selected to minimize placement of silt-sized particles on the beach and to closely match the native grain size along the beach. It has been chosen to avoid excavations in Hampton River Inlet, Gould's Inlet, or Brunswick entrance shoals. The project is proposed to be constructed during periods of low biological activity to minimize impacts to benthic organisms and avoid impacts to sea turtles. The Applicant proposes that no mitigation should be required for the proposed project, as is the typical custom for beach nourishment activities.



**DIRECTIONS:**

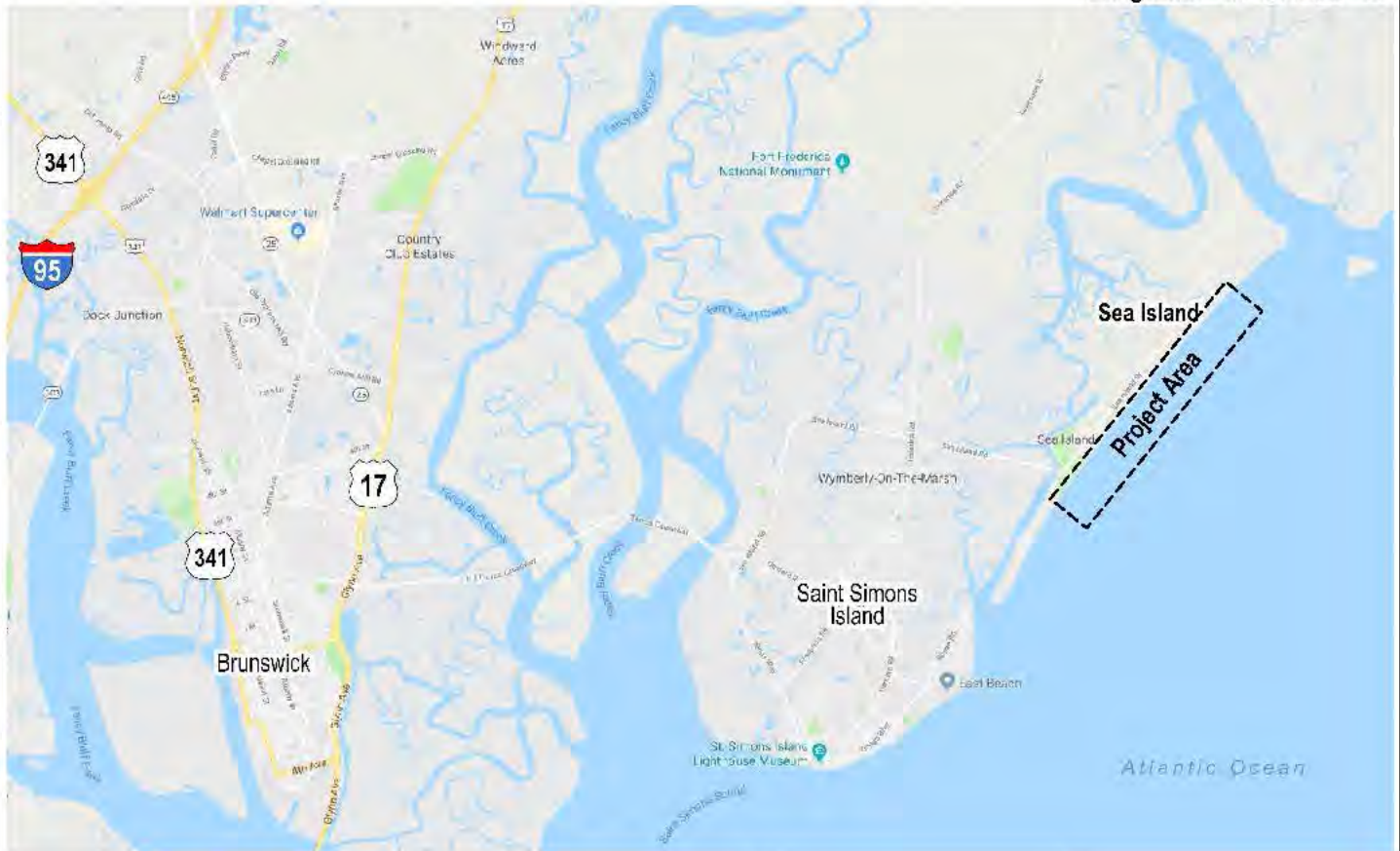
**From I-95 (Brunswick, GA 31523)**

- Take exit 36A to merge onto US-25 S/US-341 S toward Brunswick (5.2 mi)
- Slight right onto Bay St (0.2 mi)
- Continue onto Oglethorpe St (0.1 mi)
- Turn left onto Gloucester St (1.0 mi)
- Keep left to continue on Gloucester St/State Rte 25 Con
- Turn left onto Glynn Ave
- Turn right onto F J Torras Causeway (2.6 mi)
- Continue onto Torras Causeway (1.7 mi)
- Continue onto Kings Way
- Slight left onto Sea Island Rd (4.4 mi)
- Slight left onto Sea Island Dr
- Continue straight to stay on Sea Island Dr (0.3 mi)
- Turn right onto 1st St S
- Turn right toward Dune Ave
- Turn right onto Dune Ave (0.1 mi)

**Project Location**

Latitude: 31°11'14.0" N

Longitude: 81°20'20.0" W



**APPLICANT:**

Sea Island Acquisition, LLC  
 351 Sea Island Road  
 Saint Simons Island, Georgia 31522

**AGENT:**

Daniel H. Bucey - Resource & Land Consultants, LLC  
 41 Park of Commerce Way Suite 303  
 Savannah GA 31405

**DRAWING TITLE:**

**Vicinity Map**

**Not For  
 Construction**

SCALE: AS SHOWN

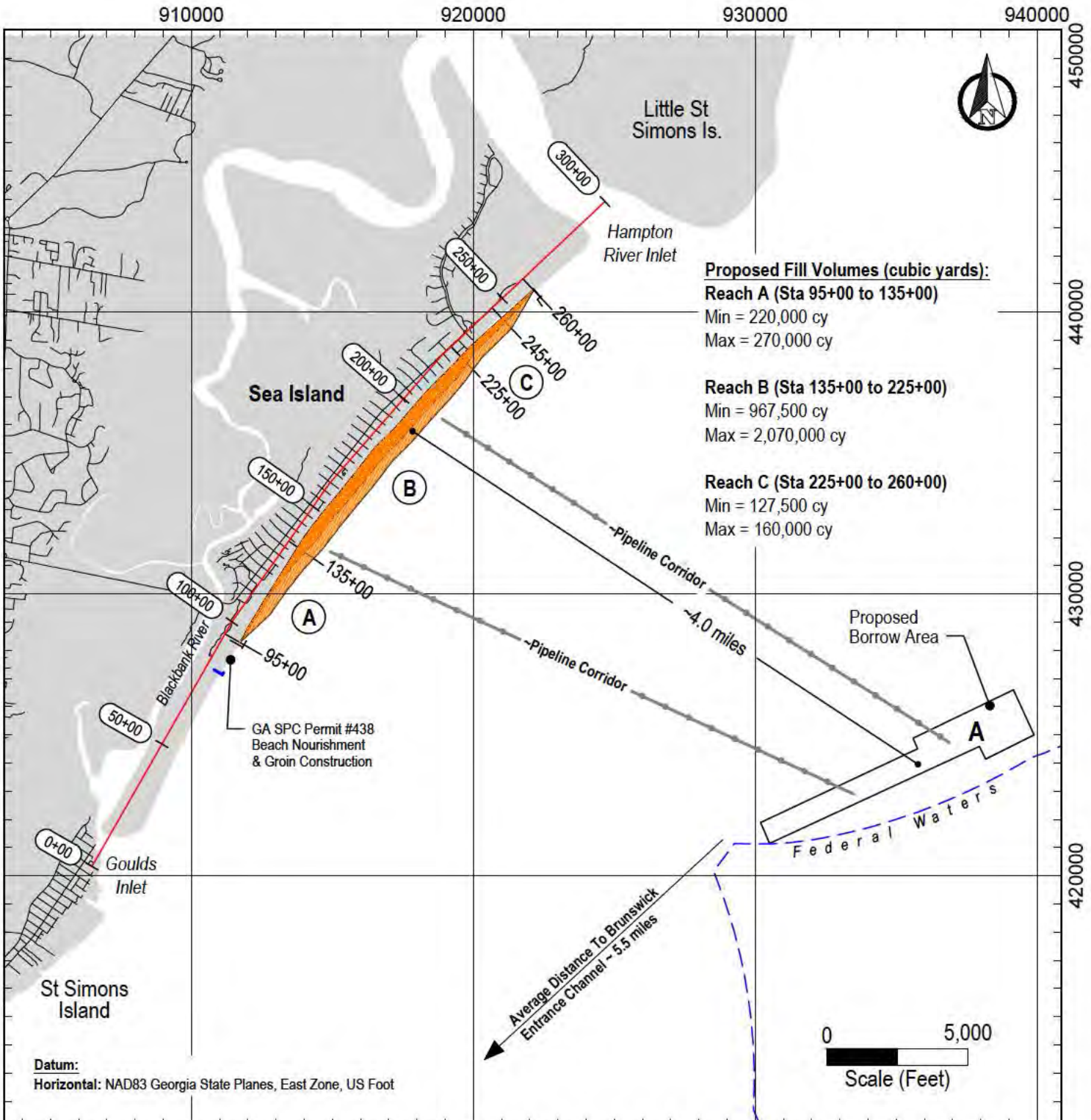
DATE: 2 Mar 2018

TMS#

PROJECT # 2473

SHEET #:

**01**



**APPLICANT:**  
 Sea Island Acquisition, LLC  
 351 Sea Island Road  
 Saint Simons Island, Georgia 31522

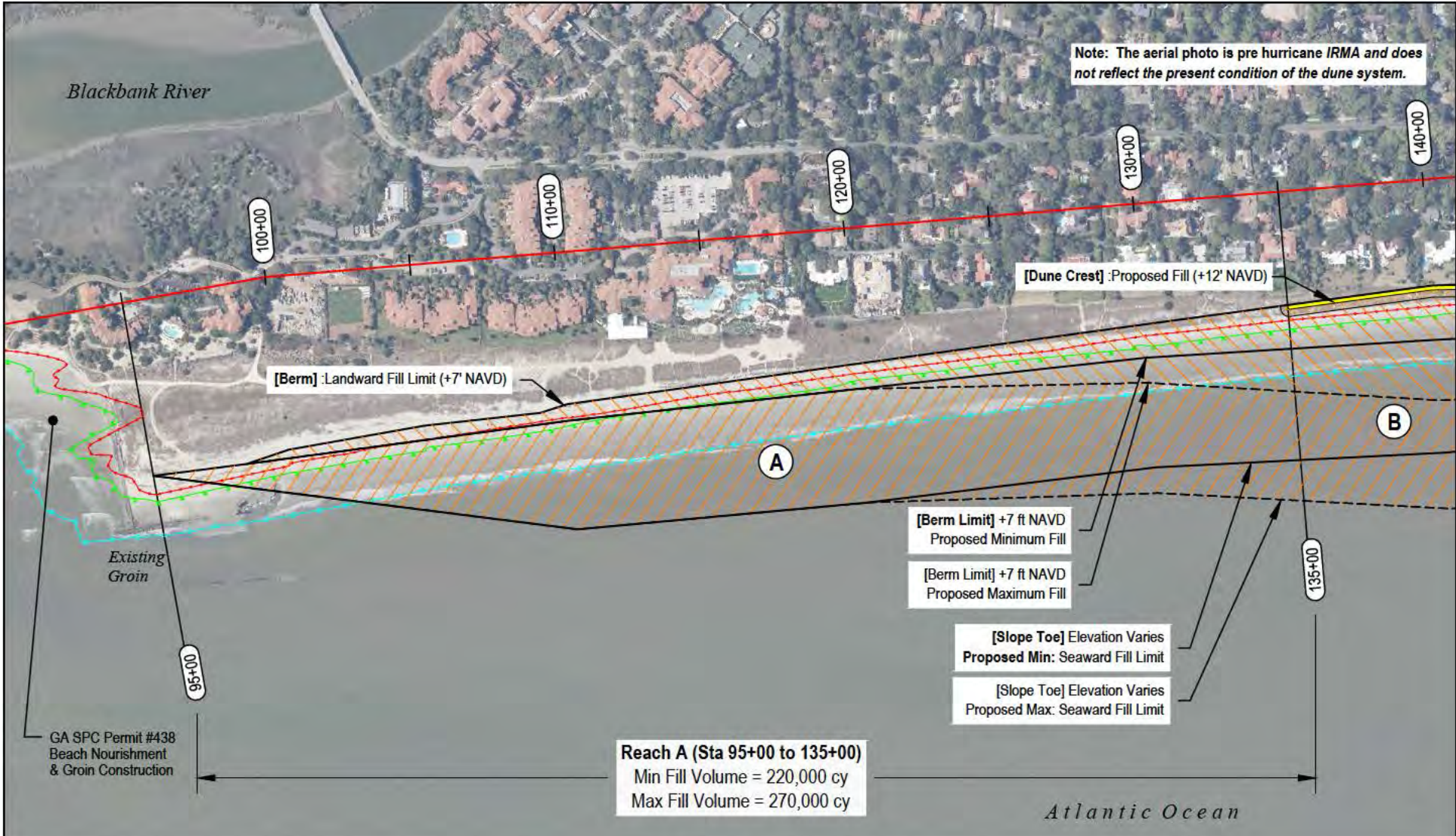
**AGENT:**  
 Daniel H. Bucey - Resource & Land Consultants, LLC  
 41 Park of Commerce Way Suite 303  
 Savannah GA 31405

Not For  
Construction

**DRAWING TITLE:**  
 Overall Project Map

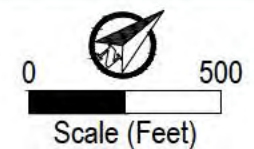
SCALE: AS SHOWN	SHEET #:
DATE: 2 Mar 2018	02
TMS#	
PROJECT #: 2473	





**Datum:**  
**Horizontal:** NAD83 Georgia State Planes, East Zone, US Foot  
**Verticle:** Feet NAVD  
**Data Source:** CSE Bathymetry collected via trimble RTK GPS April 2017  
**Photo Source:** Sea Island Spring 2016

- OHWM (+4.89 ft NAVD)
- MHHW (+2.97 ft NAVD)
- MLLW (-4.20 ft NAVD)
- Proposed Dune Fill (+12 ft NAVD)
- Proposed Berm Fill (+7 ft NAVD)
- Proposed Slope Fill (Slope 1on25)



Not For  
Construction

**APPLICANT:**  
 Sea Island Acquisition, LLC  
 351 Sea Island Road  
 Saint Simons Island, Georgia 31522

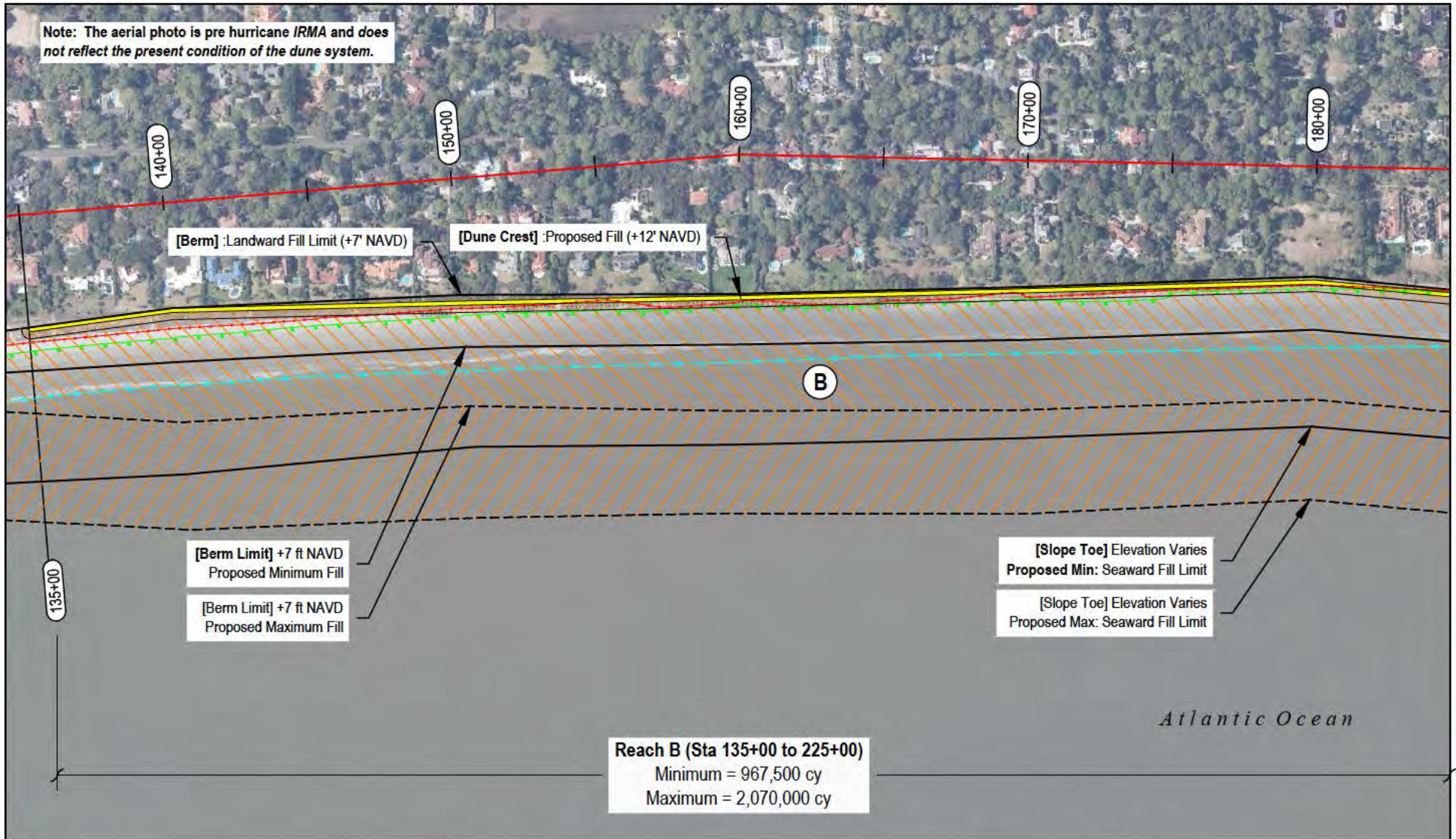
**AGENT:**  
 Daniel H. Bucey - Resource & Land Consultants, LLC  
 41 Park of Commerce Way Suite 303  
 Savannah GA 31405

**DRAWING TITLE:**  
 Project Plan  
**Reach A**  
 Sta 95+00 to 135+00

Scale:	As Shown	Sheet #:
Date:	2 Mar 2018	03
Permit #:		
Project #:	2473	



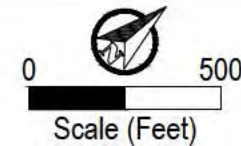
Note: The aerial photo is pre hurricane IRMA and does not reflect the present condition of the dune system.



**Datum:**  
**Horizontal:** NAD83 Georgia State Planes, East Zone, US Foot  
**Verticle:** Feet NAVD  
**Data Source:** CSE Bathymetry collected via trimble RTK GPS April 2017  
**Photo Source:** Sea Island Spring 2016

--- OHHW (+4.89 ft NAVD)  
 --- MHHW (+2.97 ft NAVD)  
 --- MLLW (-4.20 ft NAVD)

--- Proposed Dune Fill (+12 ft NAVD)  
 --- Proposed Berm Fill (+7 ft NAVD)  
 --- Proposed Slope Fill (Slope 1on25)



**APPLICANT:**  
 Sea Island Acquisition, LLC  
 351 Sea Island Road  
 Saint Simons Island, Georgia 31522

**AGENT:**  
 Daniel H. Bucey - Resource & Land Consultants, LLC  
 41 Park of Commerce Way Suite 303  
 Savannah GA 31405

**DRAWING TITLE:**  
 Project Plan  
**Reach B**  
 Sta 135+00 to 180+00

Scale: As Shown  
 Date: 2 Mar 2018  
 Permit #  
 Project #: 2473

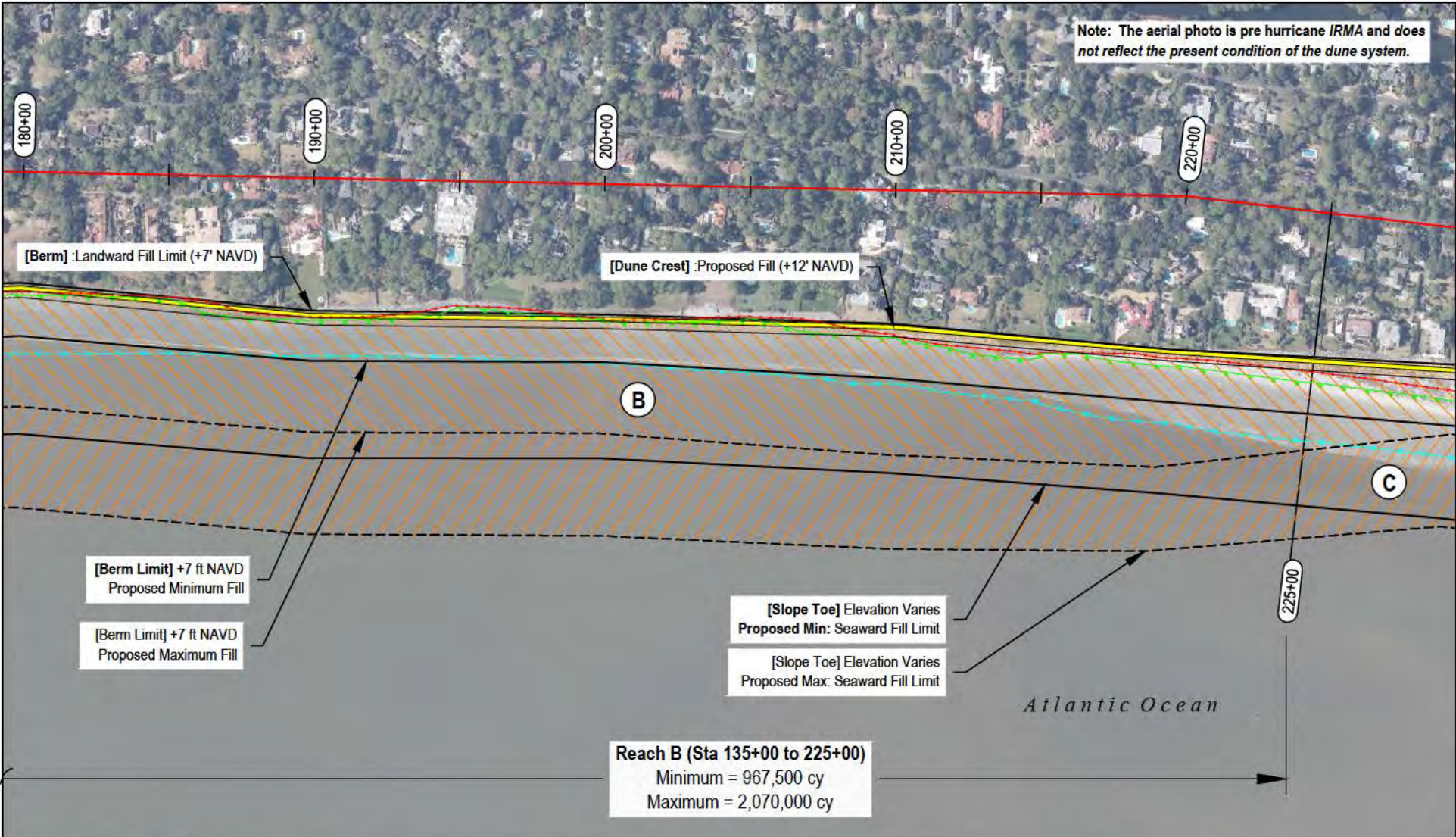
Sheet #:

04

Not For  
 Construction

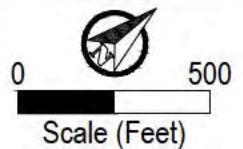


Note: The aerial photo is pre hurricane IRMA and does not reflect the present condition of the dune system.



**Datum:**  
**Horizontal:** NAD83 Georgia State Planes, East Zone, US Foot  
**Verticle:** Feet NAVD  
**Data Source:** CSE Bathymetry collected via trimble RTK GPS April 2017  
**Photo Source:** Sea Island Spring 2016

- - - - - OHHW (+4.89 ft NAVD)
- - - - - MHHW (+2.97 ft NAVD)
- - - - - MLLW (-4.20 ft NAVD)
- Proposed Dune Fill (+12 ft NAVD)
- Proposed Berm Fill (+7 ft NAVD)
- Proposed Slope Fill (Slope 1on25)



**APPLICANT:**  
 Sea Island Acquisition, LLC  
 351 Sea Island Road  
 Saint Simons Island, Georgia 31522

**AGENT:**  
 Daniel H. Bucey - Resource & Land Consultants, LLC  
 41 Park of Commerce Way Suite 303  
 Savannah GA 31405

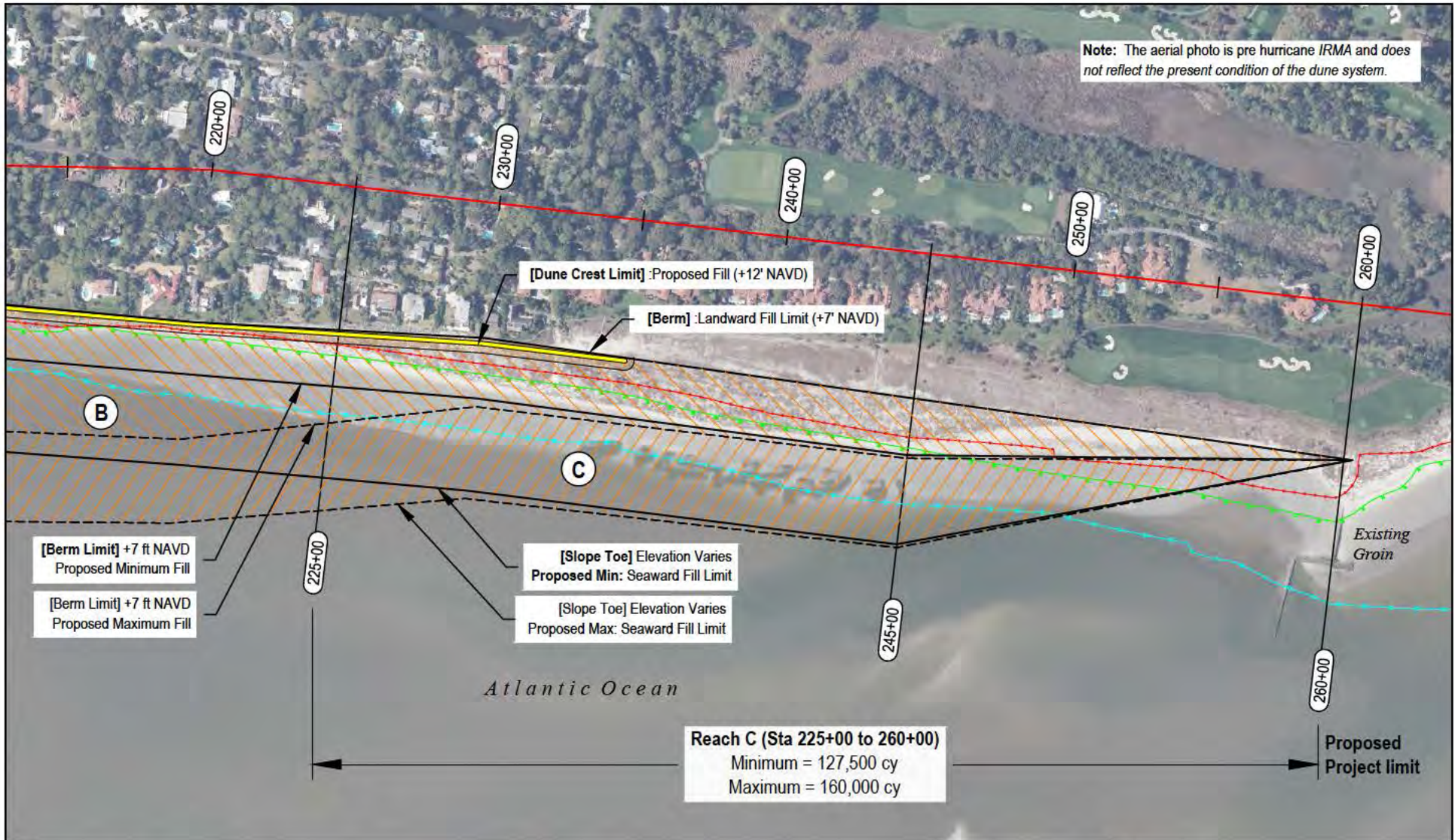
**DRAWING TITLE:**  
 Project Plan  
**Reach B**  
 Sta 180+00 to 225+00

Scale:	As Shown	Sheet #:
Date:	2 Mar 2018	<div style="border: 2px solid black; border-radius: 10px; width: 40px; height: 40px; display: flex; align-items: center; justify-content: center; margin: 0 auto;">05</div>
Permit #:		
Project #:	2473	

Not For  
Construction

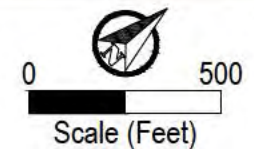


Note: The aerial photo is pre hurricane IRMA and does not reflect the present condition of the dune system.



**Datum:**  
**Horizontal:** NAD83 Georgia State Planes, East Zone, US Foot  
**Verticle:** Feet NAVD  
**Data Source:** CSE Bathymetry collected via trimble RTK GPS April 2017  
**Photo Source:** Sea Island Spring 2016

- - - - - OHHW (+4.89 ft NAVD)
- - - - - MHHW (+2.97 ft NAVD)
- - - - - MLLW (-4.20 ft NAVD)
- Proposed Dune Fill (+12 ft NAVD)
- Proposed Berm Fill (+7 ft NAVD)
- Proposed Slope Fill (Slope 1on25)



**APPLICANT:**  
 Sea Island Acquisition, LLC  
 351 Sea Island Road  
 Saint Simons Island, Georgia 31522

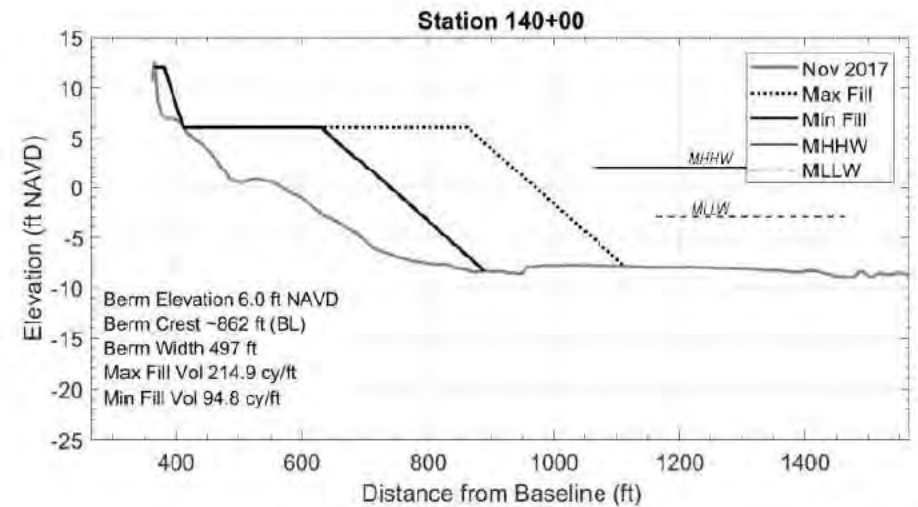
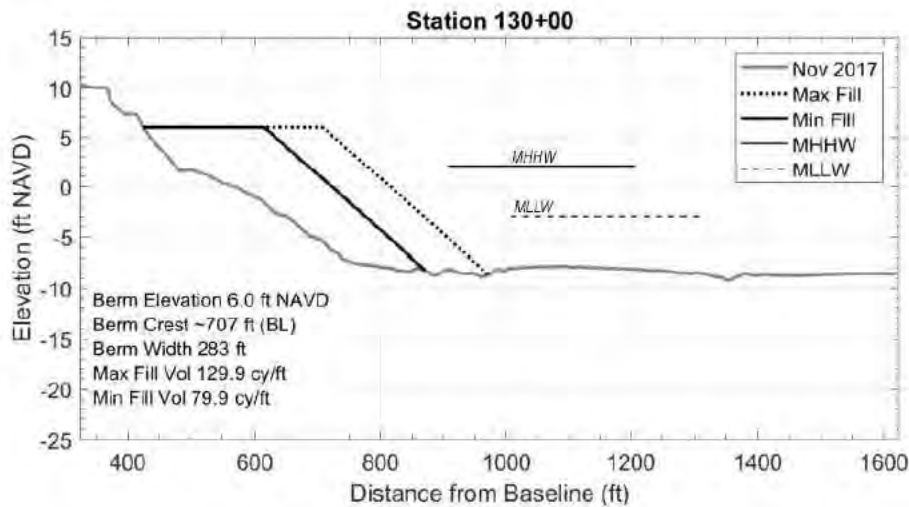
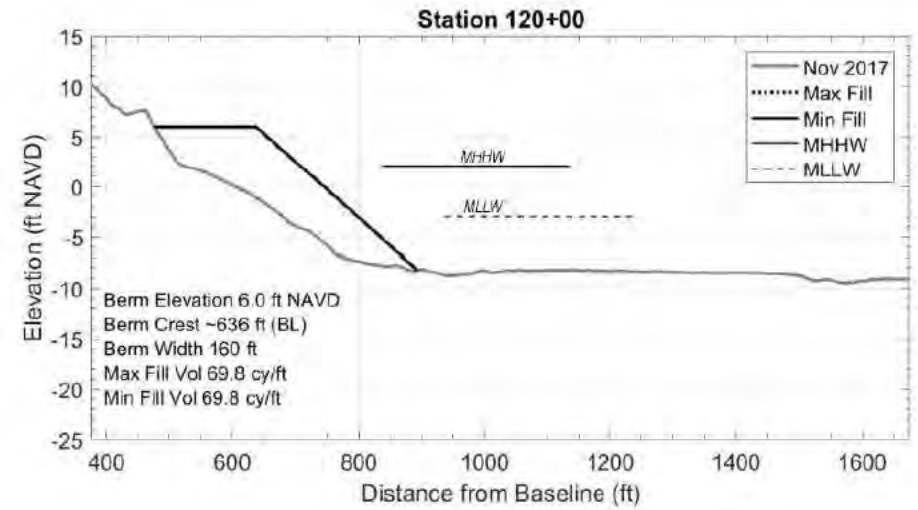
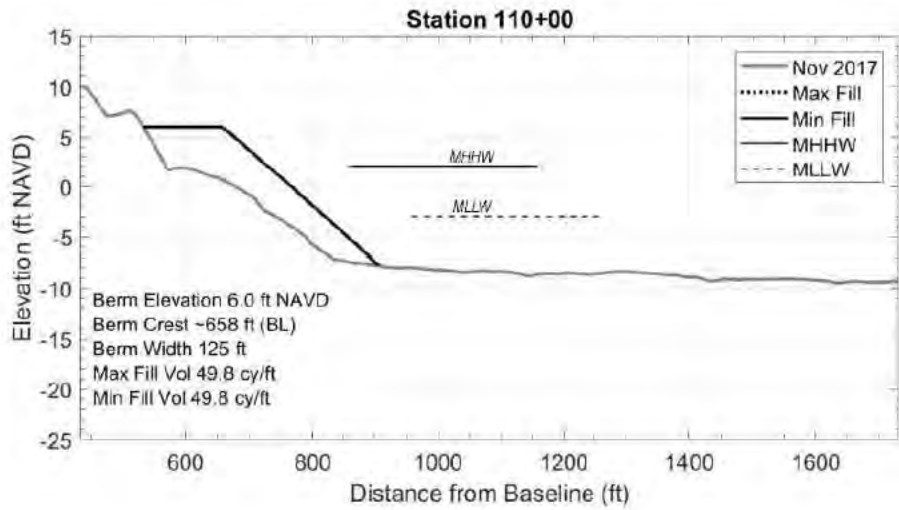
**AGENT:**  
 Daniel H. Bucey - Resource & Land Consultants, LLC  
 41 Park of Commerce Way Suite 303  
 Savannah GA 31405

**DRAWING TITLE:**  
 Project Plan  
**Reach C**  
 Sta 225+00 to 260+00

Scale:	As Shown	Sheet #:	06
Date:	2 Mar 2018		
Permit #			
Project #:	2473		

Not For Construction





**Datum:**  
**Verticle:** Feet NAVD  
**Data Source:** CSE Bathymetry collected via trimble RTK GPS April 2017

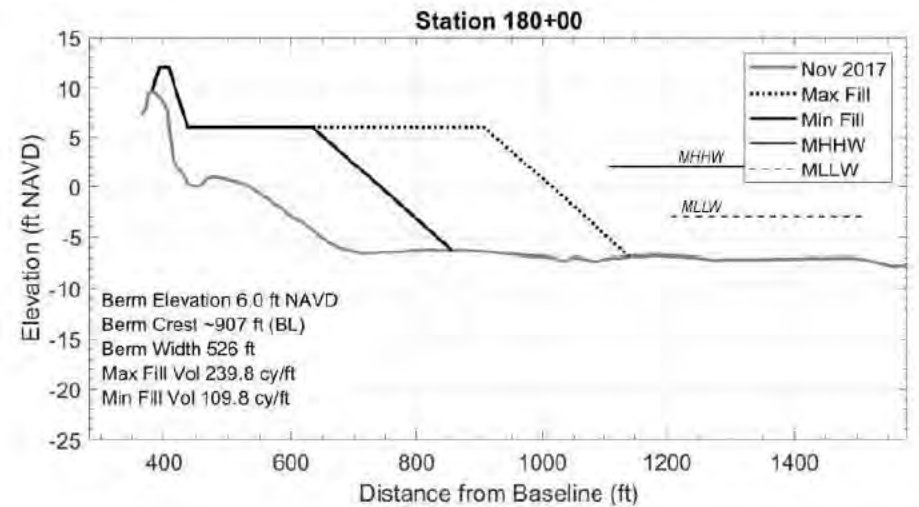
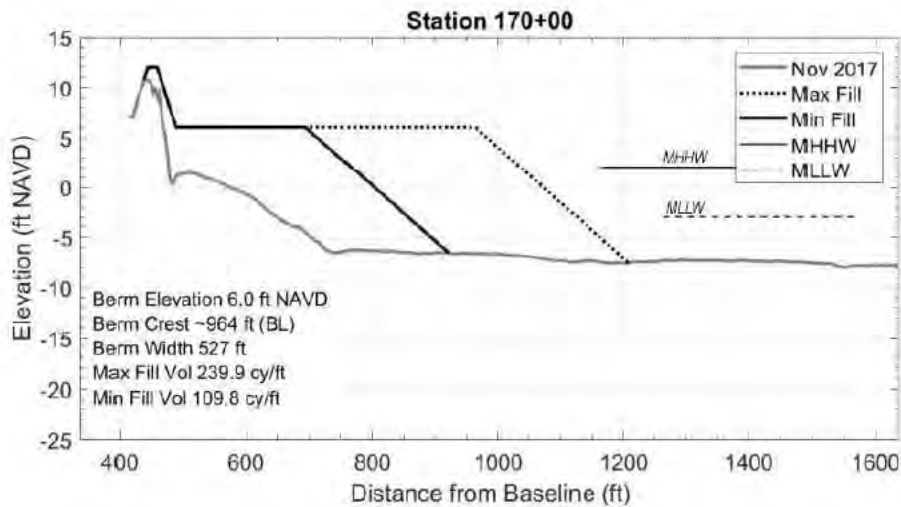
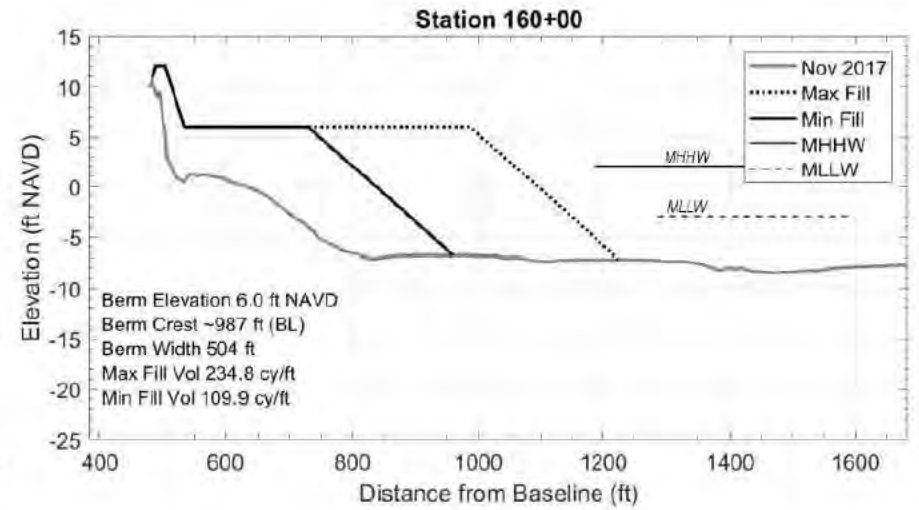
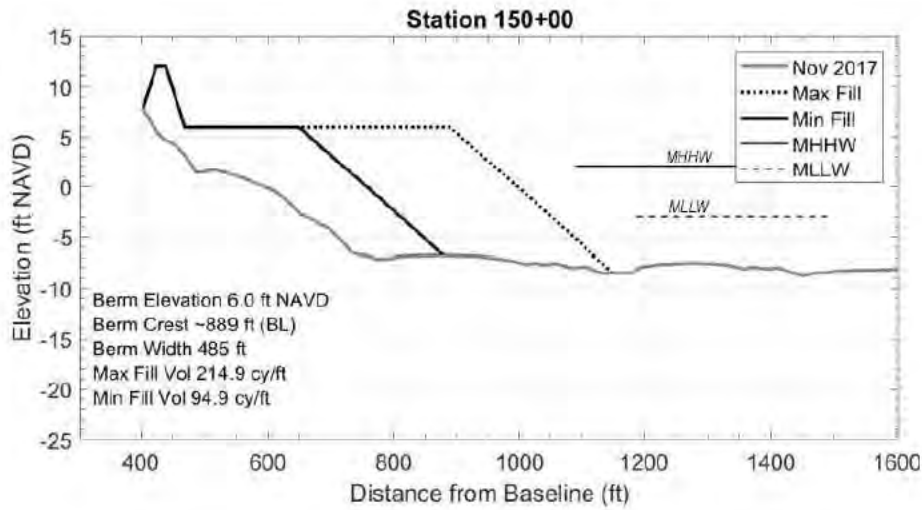
**APPLICANT:**  
 Sea Island Acquisition, LLC  
 351 Sea Island Road  
 Saint Simons Island, Georgia 31522

**AGENT:**  
 Daniel H. Bucey - Resource & Land Consultants, LLC  
 41 Park of Commerce Way Suite 303  
 Savannah GA 31405

**DRAWING TITLE:**  
 Proposed Fill Sections  
 Sta 110+00 to 140+00

Scale:	As Shown	Sheet #:
Date:	2 Mar 2018	<b>07</b>
Permit #		
Project #:	2473	

Not For  
 Construction



**Datum:**  
**Verticle:** Feet NAVD  
**Data Source:** CSE Bathymetry collected via trimble RTK GPS April 2017

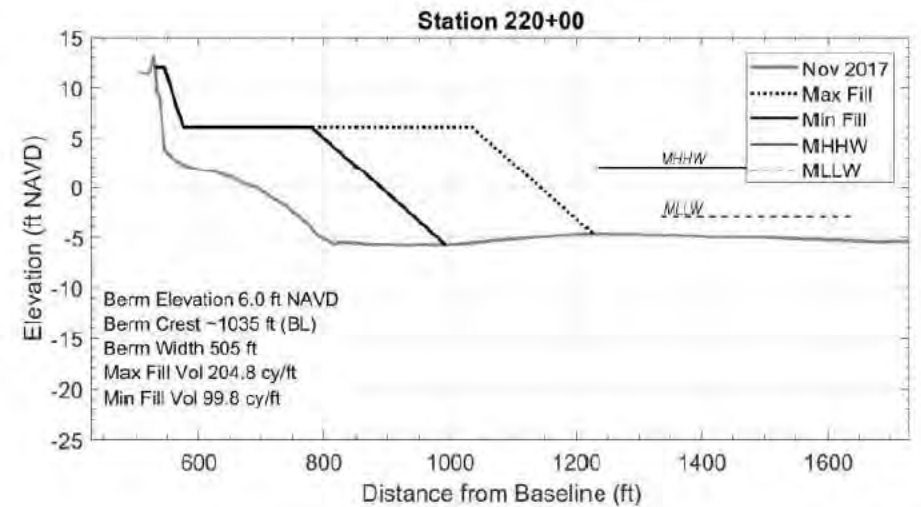
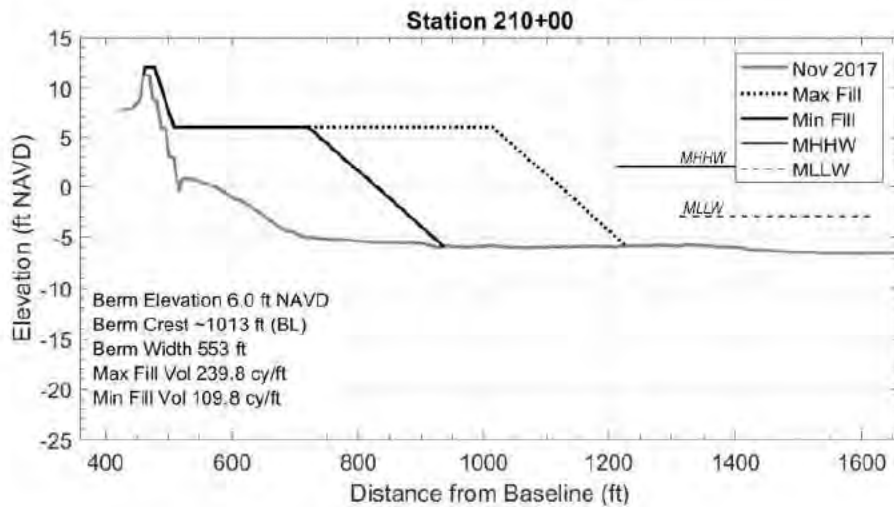
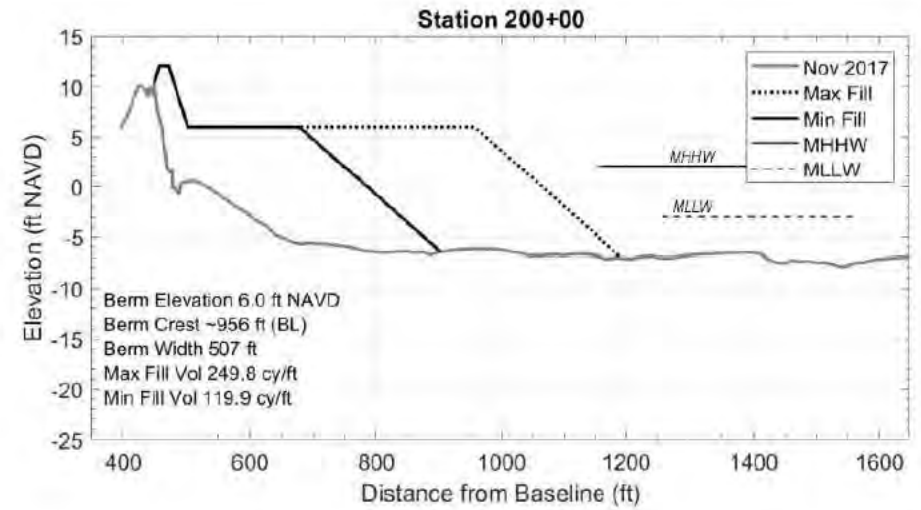
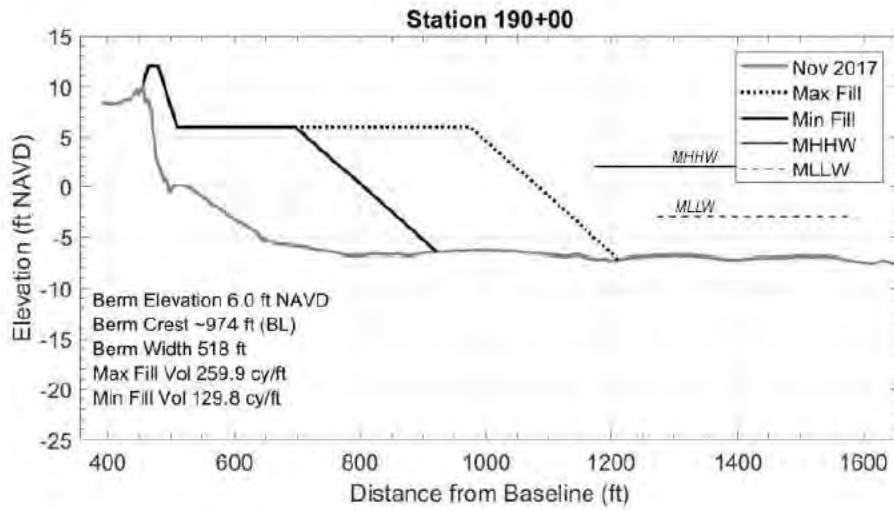
**APPLICANT:**  
 Sea Island Acquisition, LLC  
 351 Sea Island Road  
 Saint Simons Island, Georgia 31522

**AGENT:**  
 Daniel H. Bucey - Resource & Land Consultants, LLC  
 41 Park of Commerce Way Suite 303  
 Savannah GA 31405

**DRAWING TITLE:**  
 Proposed Fill Sections  
 Sta 150+00 to 180+00

Scale:	As Shown	Sheet #:	<b>08</b>
Date:	2 Mar 2018		
Permit #:			
Project #:	2473		

Not For  
Construction



**Datum:**  
**Verticle:** Feet NAVD  
**Data Source:** CSE Bathymetry collected via trimble RTK GPS April 2017

**APPLICANT:**  
 Sea Island Acquisition, LLC  
 351 Sea Island Road  
 Saint Simons Island, Georgia 31522

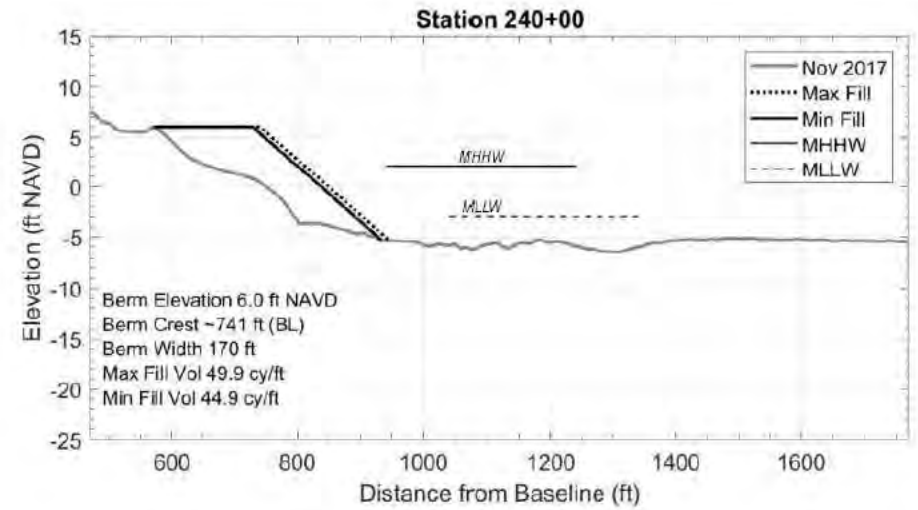
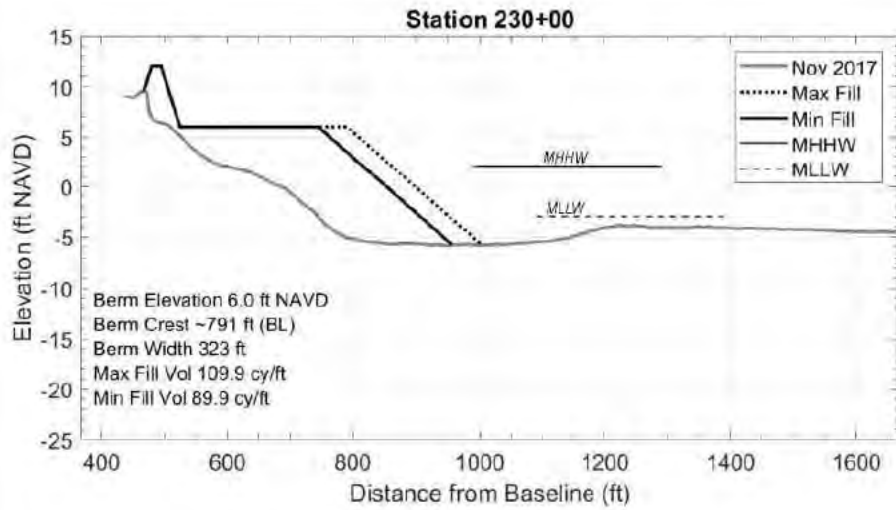
**AGENT:**  
 Daniel H. Bucey - Resource & Land Consultants, LLC  
 41 Park of Commerce Way Suite 303  
 Savannah GA 31405

**DRAWING TITLE:**  
 Proposed Fill Sections  
 Sta 190+00 to 220+00

Scale:	As Shown	Sheet #:	<b>09</b>
Date:	2 Mar 2018		
Permit #:			
Project #:	2473		

Not For  
 Construction





**Datum:**  
**Verticle:** Feet NAVD  
**Data Source:** CSE Bathymetry collected via trimble RTK GPS April 2017

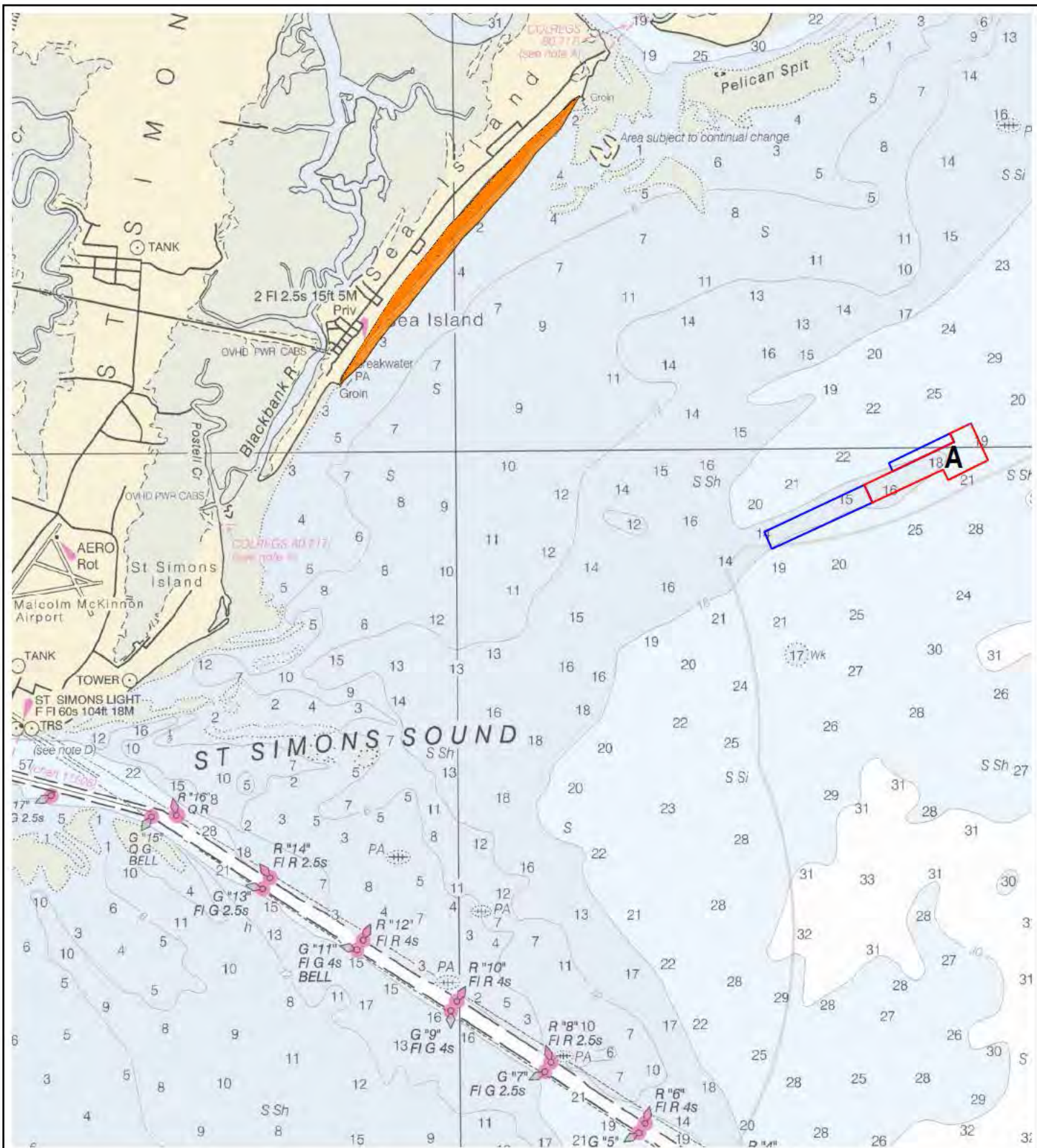
**APPLICANT:**  
 Sea Island Acquisition, LLC  
 351 Sea Island Road  
 Saint Simons Island, Georgia 31522

**AGENT:**  
 Daniel H. Bucey - Resource & Land Consultants, LLC  
 41 Park of Commerce Way Suite 303  
 Savannah GA 31405

**DRAWING TITLE:**  
 Proposed Fill Sections  
 Sta 230+00 to 240+00

Scale:	As Shown	Sheet #:
Date:	2 Mar 2018	<b>10</b>
Permit #		
Project #:	2473	

Not For  
Construction



**APPLICANT:**

Sea Island Acquisition, LLC  
 351 Sea Island Road  
 Saint Simons Island, Georgia 31522

**AGENT:**

Daniel H. Bucey - Resource & Land Consultants, LLC  
 41 Park of Commerce Way Suite 303  
 Savannah GA 31405

**Not For  
 Construction**

**DRAWING TITLE:**

**Area Bathymetry**  
 NOAA Map 11502

SCALE: AS SHOWN

DATE: 2 Mar 2018

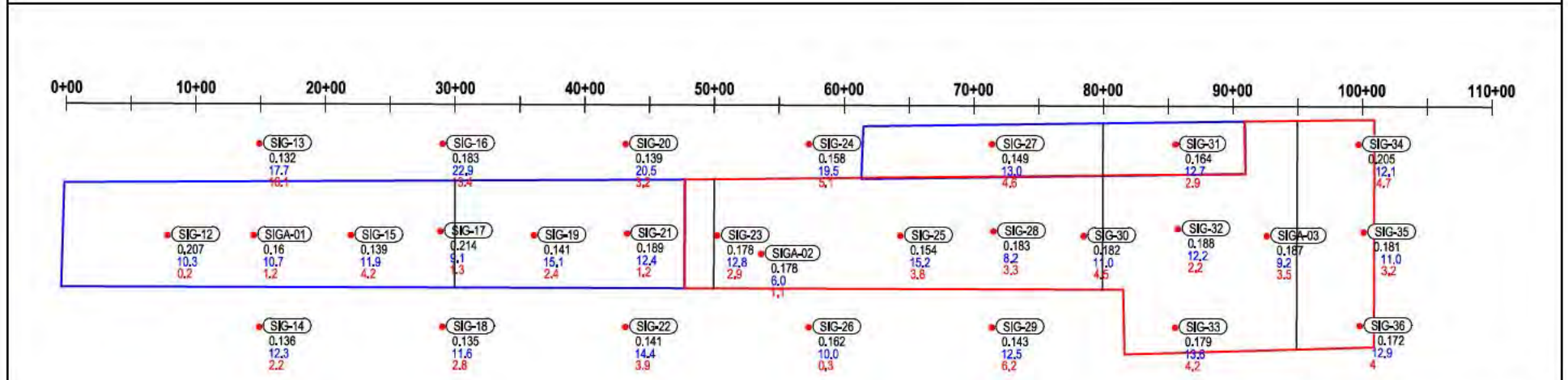
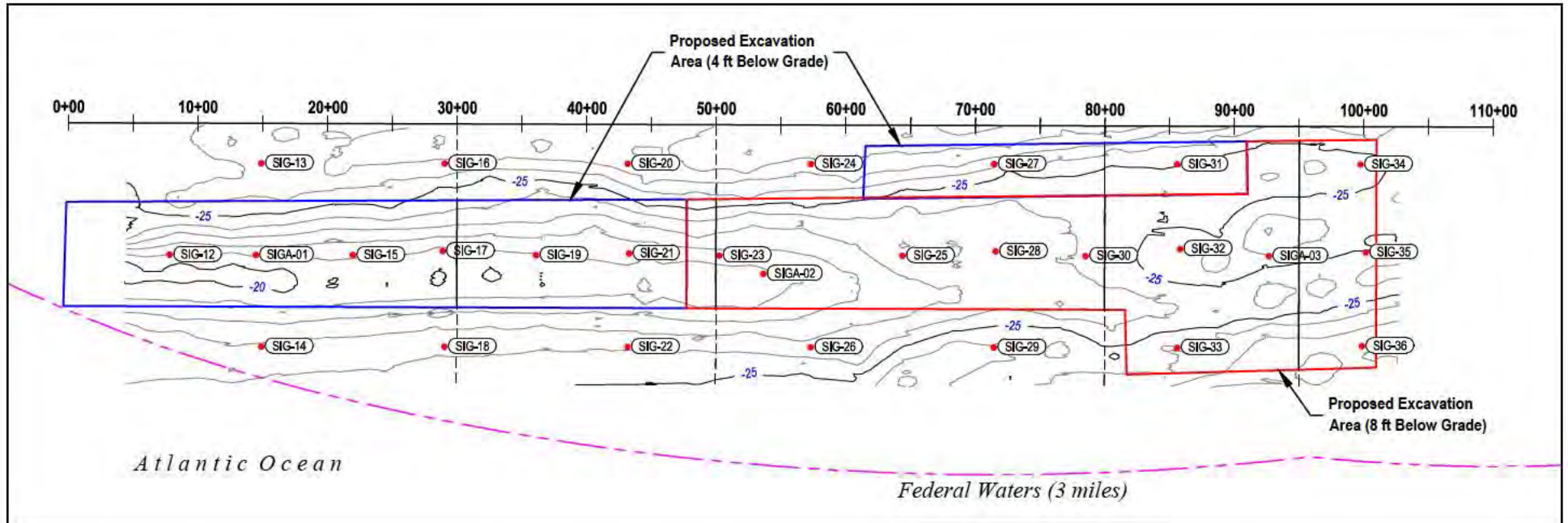
TMS#

PROJECT# 2473

SHEET #:

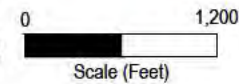
11





**Datum:**  
**Horizontal:** NAD83 Georgia State Planes, East Zone, US Foot  
**Vertical:** Feet NAVD  
**Data Source:** CSE Bathymetry collected via trimble RTK GPS April 2017

**Core Key**  
 Mean Grain Size (mm)  
 Percent Shell  
 Percent Mud



**APPLICANT:**  
 Sea Island Acquisition, LLC  
 351 Sea Island Road  
 Saint Simons Island, Georgia 31522

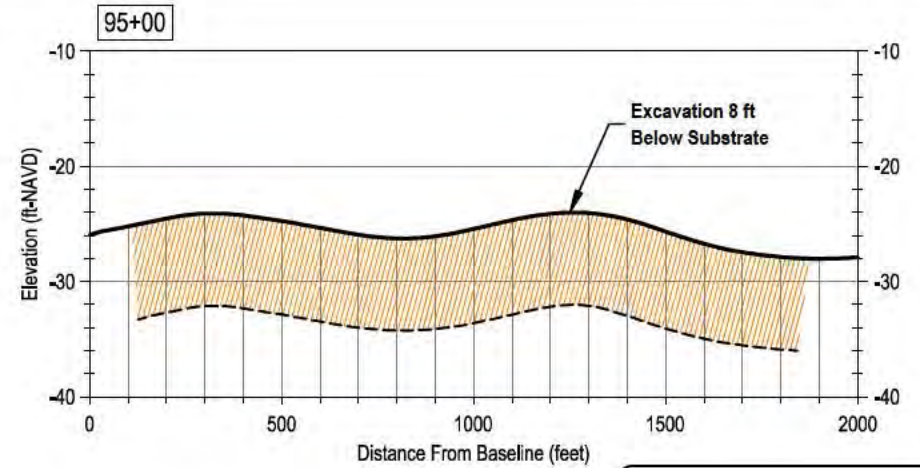
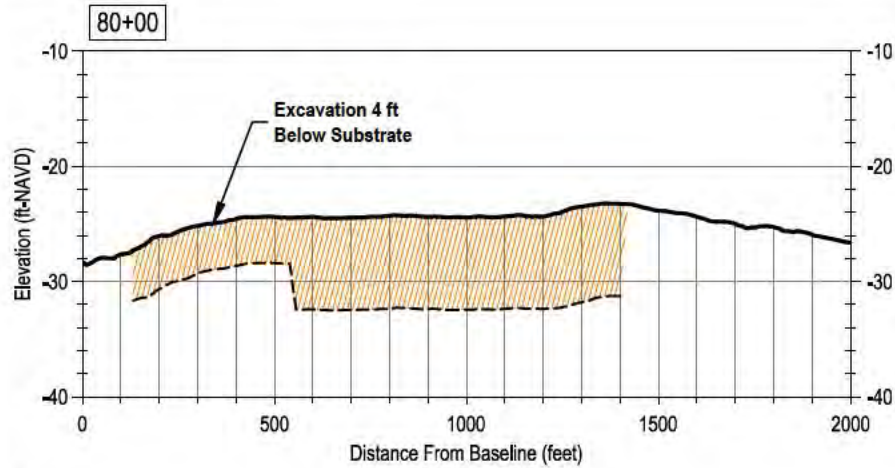
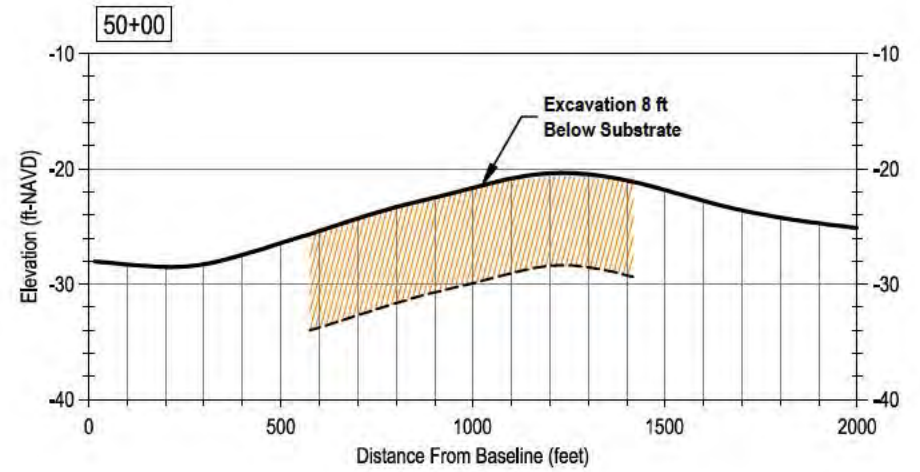
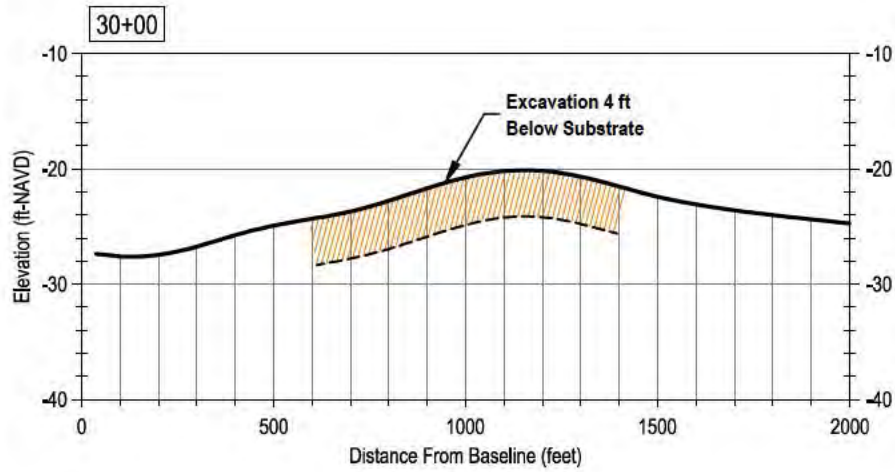
**AGENT:**  
 Daniel H. Bucey - Resource & Land Consultants, LLC  
 41 Park of Commerce Way Suite 303  
 Savannah GA 31405

**DRAWING TITLE:**  
 Borrow Area Bathymetry  
 & Geotechnical Data

Scale: As Shown  
 Date: 2 Mar 2018  
 Permit #  
 Project #: 2473

Sheet #:  
 12

Not For  
 Construction



**Datum:**  
**Horizontal:** NAD83 Georgia State Planes, East Zone, US Foot  
**Verticle:** Feet NAVD  
**Vertical Exaggeration:** 30  
**Data Source:** CSE Bathymetry collected via trimble RTK GPS April 2017

**APPLICANT:**  
 Sea Island Acquisition, LLC  
 351 Sea Island Road  
 Saint Simons Island, Georgia 31522

**AGENT:**  
 Daniel H. Bucey - Resource & Land Consultants, LLC  
 41 Park of Commerce Way Suite 303  
 Savannah GA 31405

**DRAWING TITLE:**  
 Proposed Borrow Area  
 Excavation Sections

Scale: As Shown  
 Date: 2 Mar 2018  
 Permit #  
 Project #: 2473

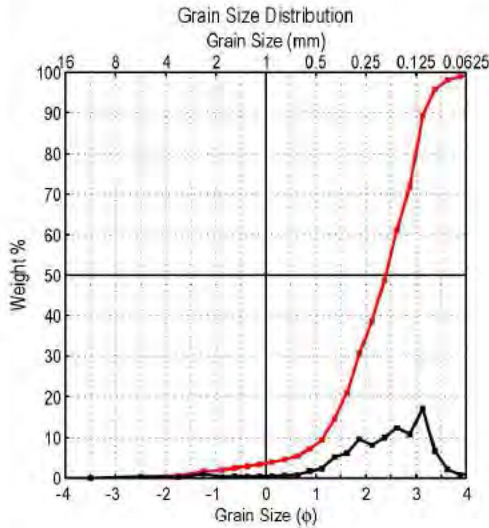
Sheet #:

13

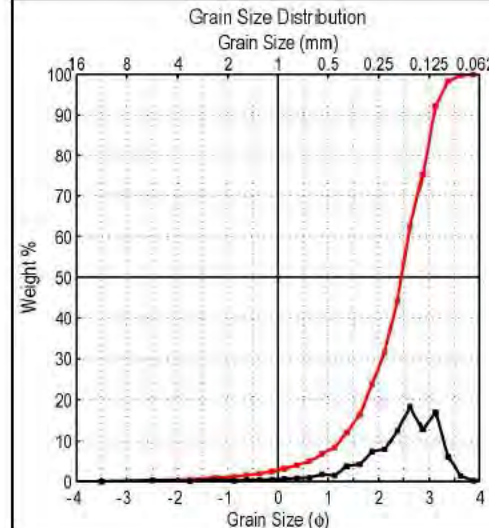
Not For  
 Construction



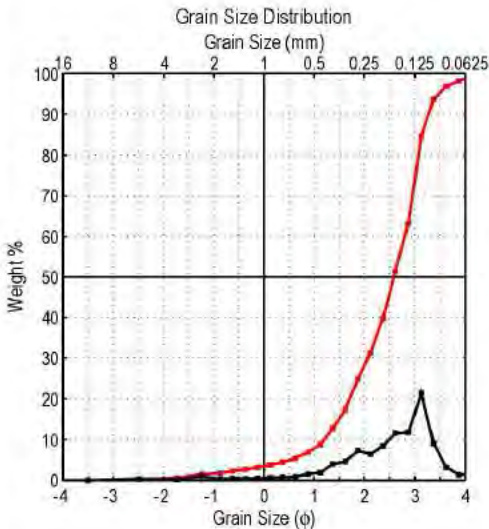
**Native Beach Composite**



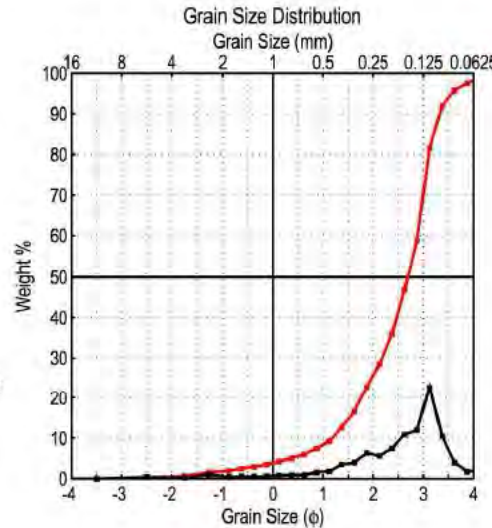
**Project** 2473  
**Location** Sea Island, GA  
**Date** Apr 2017  
  
**Station** 4 ft Comp  
**Interval (ft)** 0-4  
  
**Mean** 0.198 mm  
**STD** 0.505 mm  
**Skewness** -1.537  
  
**USCS** Wentworth  
 SP Fine Sand  
 Fine Sand Moderately Sorted  
 Poorly Graded Strongly Coarse Skewed  
 Leptokurtic  
  
 Total weight (gram) 2217.69  
 % finer than 0.0625 mm 1.11  
 % coarser than 2.00 mm 1.68  
 CaCO3 0.0



**Project** 2473  
**Location** Sea Island, GA  
**Date** Mar 2017  
  
**Station** Composite  
**Interval (ft)** All Beach  
  
**Mean** 0.191 mm  
**STD** 0.543 mm  
**Skewness** -1.920  
  
**USCS** Wentworth  
 SP Fine Sand  
 Fine Sand Moderately Sorted  
 Poorly Graded Strongly Coarse Skewed  
 Very Leptokurtic  
  
 Total weight (gram) 116.67  
 % finer than 0.0625 mm 0.07  
 % coarser than 2.00 mm 1.00  
 CaCO3 0.0



**Project** 2473  
**Location** Sea Island, GA  
**Date** Apr 2017  
  
**Station** 6 ft Comp  
**Interval (ft)** 0-6  
  
**Mean** 0.179 mm  
**STD** 0.501 mm  
**Skewness** -1.618  
  
**USCS** Wentworth  
 SP Fine Sand  
 Fine Sand Moderately Sorted  
 Poorly Graded Strongly Coarse Skewed  
 Leptokurtic  
  
 Total weight (gram) 2216.26  
 % finer than 0.0625 mm 1.82  
 % coarser than 2.00 mm 1.48  
 CaCO3 0.0



**Project** 2473  
**Location** Sea Island, GA  
**Date** Apr 2017  
  
**Station** 8 ft Comp  
**Interval (ft)** 0-8  
  
**Mean** 0.172 mm  
**STD** 0.489 mm  
**Skewness** -1.660  
  
**USCS** Wentworth  
 SP Fine Sand  
 Fine Sand Poorly Sorted  
 Poorly Graded Strongly Coarse Skewed  
 Leptokurtic  
  
 Total weight (gram) 2215.18  
 % finer than 0.0625 mm 2.46  
 % coarser than 2.00 mm 1.52  
 CaCO3 0.0

**APPLICANT:**  
 Sea Island Acquisition, LLC  
 351 Sea Island Road  
 Saint Simons Island, Georgia 31522

**AGENT:**  
 Daniel H. Bucey - Resource & Land Consultants, LLC  
 41 Park of Commerce Way Suite 303  
 Savannah GA 31405

**DRAWING TITLE:**  
 Geotechnical Data  
 Grain Size Distributions

Scale: As Shown  
 Date: 2 Mar 2018  
 Permit #  
 Project #: 2473

Sheet #:

14

Not For Construction





DEPARTMENT OF THE ARMY  
SAVANNAH DISTRICT, CORPS OF ENGINEERS

REPLY TO  
ATTENTION OF:

Regulatory Division  
SAS-2015-00742

DECEMBER 18 2015

**JOINT PUBLIC NOTICE**  
**Savannah District/State of Georgia**

The Savannah District has received an application for a Department of the Army Permit, pursuant to Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403) and Section 404 of the Clean Water Act (33 U.S.C. 1344), as follows:

Application Number: SAS-2015-00742

Applicant: Mr. James Gilbert, Jr.  
Sea Island Acquisition, LLC  
351 Sea Island Road  
Saint Simons Island, Georgia 31522

Agent: Mr. Daniel H. Bucey  
Resource & Land Consultants, LLC  
41 Park of Commerce Way, Suite 303  
Savannah, Georgia 31405

Location of Proposed Work: The project is located in the Atlantic Ocean along 2,703 linear feet of intertidal beach, north of Gould's Inlet on Sea Island, in Glynn County Georgia (Latitude 31.173925, Longitude -81.351301).

Applicant's Stated Project Purpose: To stabilize the eroding beach south of the existing south groin, and to provide storm protection to the adjacent upland.

Applicant's Description of Work Subject to the Jurisdiction of the U.S. Army Corps of Engineers: To discharge fill in 14,400 square feet of waters of the U.S. for the construction of a new T-head groin. Construction would be accomplished with heavy equipment from the beach. After construction, any incidental disturbance to areas outside of the actual construction would be returned to pre-construction conditions. A 200 square foot layer of rock would be placed at the landward end of the groin on the south side to allow access to the south end of Sea Island for safety purposes, sea turtle monitoring, and for maintenance of the groin.

The applicant is also requesting to excavate 120,000 cubic yards of sand from 275,400 square feet of waters of the U.S. north of an existing groin. The excavation

would be conducted between tidal cycles over a 3 month period and the sand would be dredged by excavator and moved in trucks on the existing approved motorized vehicle beach access route to the construction site where it would be discharged to create a constructed dune ridge and a 150 foot wide beach. Dune quality vegetation and snow fencing would be installed to facilitate the dune development and stability. No equipment would be operated in vegetated dunes.

Compensatory Mitigation: The applicant has provided the following explanation why compensatory mitigation should not be required: The proposed project will result in a net increase in high tide beach and dune areas. These habitats will provide erosion protection to adjacent upland habitats, and will provide additional habitat for nesting sea turtles that currently does not exist in the project footprint. The sand for the project will come from an existing catchment basin that was constructed for the sole purpose of retaining sand for the restoration and maintenance (recycling) of the Sea Island beach. The displacement of open water inter and sub-tidal habitat will be compensated for by the creation of sea turtle nesting habitat and a dune system that will increase wildlife habitat.

## **BACKGROUND**

This Joint Public Notice announces a request for authorizations from both the U.S. Army Corps of Engineers and the State of Georgia. The applicant's proposed work may also require local governmental approval.

## **STATE OF GEORGIA**

Water Quality Certification: The Georgia Department of Natural Resources, Environmental Protection Division, intends to certify this project at the end of 30 days in accordance with the provisions of Section 401 of the Clean Water Act, which is required for a Federal Permit to conduct activity in, on, or adjacent to the waters of the State of Georgia. Copies of the application and supporting documents relative to a specific application will be available for review and copying at the office of the Georgia Department of Natural Resources, Environmental Protection Division, Watershed Protection Branch, 2 MLK Jr. Drive, Suite 418, Atlanta, Georgia 30334, during regular office hours. A copier machine is available for public use at a charge of 10 cents per page. All coastal projects are filed at our Brunswick office and will need to be requested from Mr. Bradley Smith at [Bradley.Smith@dnr.ga.gov](mailto:Bradley.Smith@dnr.ga.gov). Any person who desires to comment, object, or request a public hearing relative to State Water Quality Certification must do so within 30 days of the State's receipt of application in writing and state the reasons or basis of objections or request for a hearing. The application can be reviewed in the Savannah District, U.S. Army Corps of Engineers, Regulatory Division, Coastal Branch.

Georgia Coastal Management Program: Prior to the Savannah District Corps of Engineers making a final permit decision on this application, the project must be certified by the Georgia Department of Natural Resources, Coastal Resources Division, to be consistent with applicable provisions of the State of Georgia Coastal Management Program (15 CFR 930). Anyone wishing to comment on Coastal Management Program certification of this project should submit comments in writing within 30 days of the date of this notice to the Federal Consistency Coordinator, Ecological Services Section, Coastal Resources Division, Georgia Department of Natural Resources, One Conservation Way, Brunswick, Georgia 31523-8600 (Telephone 912-264-7218).

## **U.S. ARMY CORPS OF ENGINEERS**

The Savannah District must consider the purpose and the impacts of the applicant's proposed work, prior to a decision on issuance of a Department of the Army Permit.

Cultural Resources Assessment: Review of the latest published version of the National Register of Historic Places indicates that no registered properties or properties listed as eligible for inclusion are located at the site or in the area affected by the proposed work. Presently unknown archaeological, scientific, prehistorical or historical data may be located at the site and could be affected by the proposed work.

Essential Fish Habitat (EFH): This notice initiates the EFH consultation requirements of the Magnuson-Stevens Fishery Conservation and Management Act. The applicant's proposal may result in the destruction or alteration of EFH utilized by various life stages of species comprising the red drum, shrimp, bluefish or snapper grouper management complexes. Our initial determination is that the proposed action may have an adverse impact on EFH or federally managed fisheries in the Atlantic Ocean. Our final determination relative to project impacts to EFH and the need for mitigation measures are subject to review by and coordination with the NMFS and the South Atlantic Fisheries Management Council.

Endangered Species: A preliminary review the U.S. Fish and Wildlife Service (FWS) and the National Marine Fisheries Service's Protected Resource Divisions (NMFS-PRD)'s list of Endangered and Threatened Species indicates the following listed species may occur in the project area: Atlantic Sturgeon (*Acipenser oxyrinchus oxyrinchus*), Shortnose Sturgeon (*Acipenser brevirostrum*), North Atlantic Right Whale (*Eubalaena glacialis*), West Indian Manatee (*Trichechus manatus*), Eastern Indigo Snake (*Drymarchon corais couperi*), Green sea turtle (*Chelonia mydas*), Hawksbill sea turtle (*Eretmochelys imbricata*), Leatherback sea turtle (*Dermochelys coriacea*), Loggerhead sea turtle (*Caretta caretta*), and Kemp's Ridley sea turtle (*Lepidochelys kempii*), Piping Plover (*Charadrius melodius*), Red knot (*Calidris canutus rufa*), and Wood stork (*Mycteria americana*). Pursuant to Section 7(c) of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.), we request information from the

U.S. Department of the Interior, Fish and Wildlife Service, the U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service; or, any other interested party, on whether any species listed or proposed for listing may be present in the area.

Public Interest Review: The decision whether to issue a permit will be based on an evaluation of the probable impact including cumulative impacts of the proposed activity on the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefit, which reasonably may be expected to accrue from the proposal, must be balanced against its reasonably foreseeable detriments. All factors, which may be relevant to the proposal will be considered including the cumulative effects thereof; among those are conservation, economics, aesthetics, general environmental concerns, wetlands, historic properties, fish and wildlife values, flood hazards, flood plain values, land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, considerations of property ownership and in general, the needs and welfare of the people.

Consideration of Public Comments: The U.S. Army Corps of Engineers is soliciting comments from the public; federal, state, and local agencies and officials; Native American Tribes; and other interested parties in order to consider and evaluate the impacts of this proposed activity. Any comments received will be considered by the U.S. Army Corps of Engineers to determine whether to issue, modify, condition or deny a permit for this proposal. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects, and the other public interest factors listed above. Comments are used in the preparation of an Environmental Assessment and/or an Environmental Impact Statement pursuant to the National Environmental Policy Act. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the proposed activity.

Application of Section 404(b)(1) Guidelines: The proposed activity involves the discharge of dredged or fill material into the waters of the United States. The Savannah District's evaluation of the impact of the activity on the public interest will include application of the guidelines promulgated by the Administrator, Environmental Protection Agency, under the authority of Section 404(b) of the Clean Water Act.

Public Hearing: Any person may request, in writing, within the comment period specified in this notice, that a public hearing be held to consider this application for a Department of the Army permit. Requests for public hearings shall state, with particularity, the reasons for requesting a public hearing. The decision whether to hold a public hearing is at the discretion of the District Engineer, or his designated appointee, based on the need for additional substantial information necessary in evaluating the proposed project.

Comment Period: Anyone wishing to comment on this application for a Department of the Army Permit should submit comments in writing to the Commander, U.S. Army Corps of Engineers, Savannah District, Attention: SAS-2015-00742, no later than 30 days from the date of this notice. Please refer to the applicant's name and the application number in your comments.

If you have any further questions concerning this matter, please contact Meredith Allen at 912-652-5503 or by email at [Meredith.A.Allen@usace.army.mil](mailto:Meredith.A.Allen@usace.army.mil).

Enclosure

1. Project Drawings
2. Project Description





USGS COLOR ORTHOPHOTO; 2013  
GLYNN COUNTY, GEORGIA

DATE: OCTOBER 1, 2015

MAP SCALE: 1 INCH = 2000 FEET

FIGURE 1; VICINITY MAP

RLC PROJECT NO. 13-075.2

**THE RESERVE AT SEA ISLAND  
GLYNN COUNTY, GEORGIA**

PREPARED FOR:  
SEA ISLAND ACQUISITION, LLC



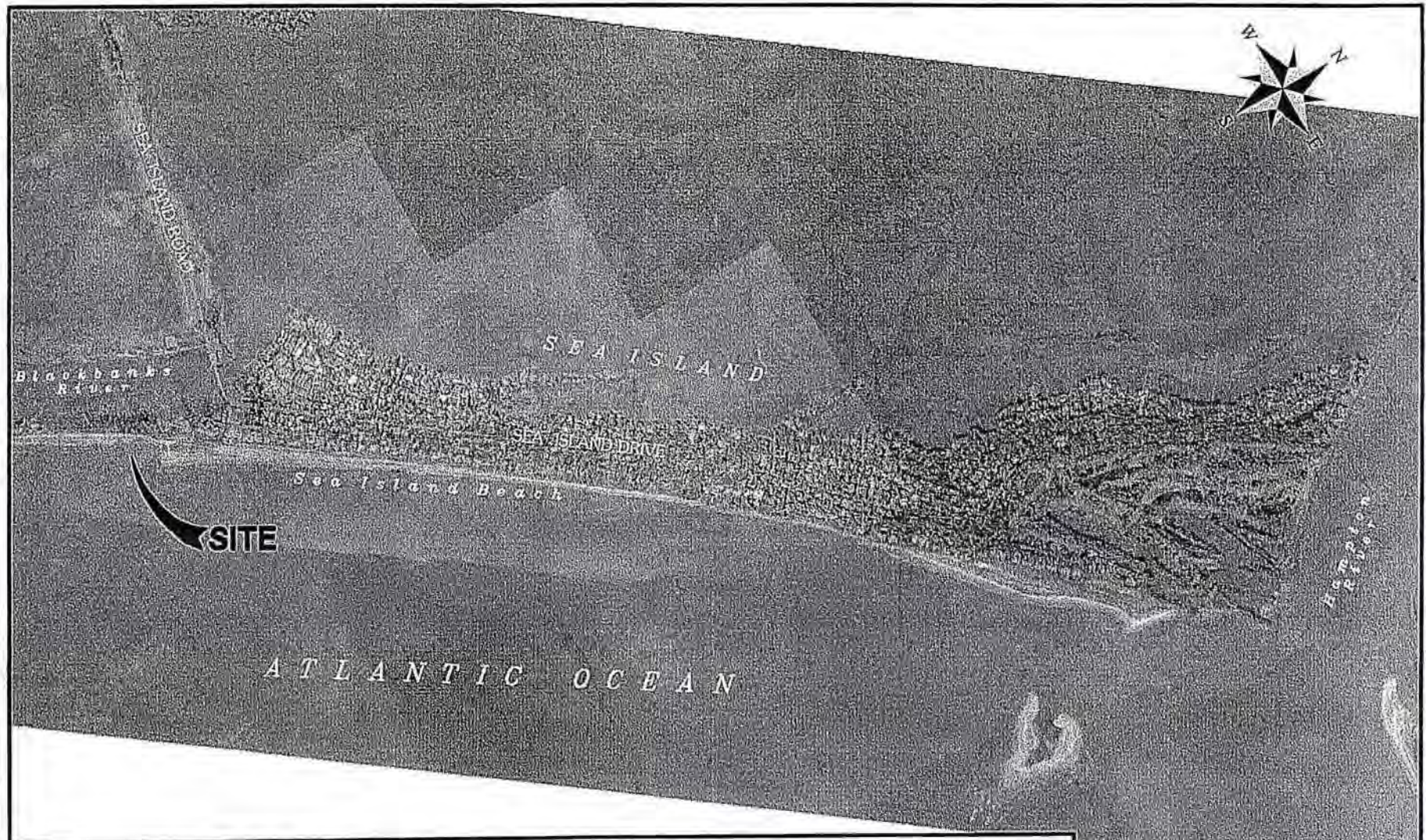
0 1,000 2,000 4,000  
Feet

**RLC**

**RESOURCE+LAND  
CONSULTANTS**

41 Park of Commerce Way, Ste. 303  
Savannah, Georgia 31405  
912.443.5896 www.rlandc.com





## RESERVE AT SEA ISLAND

PROPOSED ACTIVITY:  
 BEACH RENOURISHMENT & GROIN  
 CLIENT:  
 SEA ISLAND ACQUISITION, LLC  
 LOCATION: GLYNN COUNTY, GA.  
 DATE: 9/10/15  
 JOB NUMBER: J-25447

DRAWN BY: JWR SHEET: 1  
 REVIEWED BY: CLG SCALE: 1" = 2400'

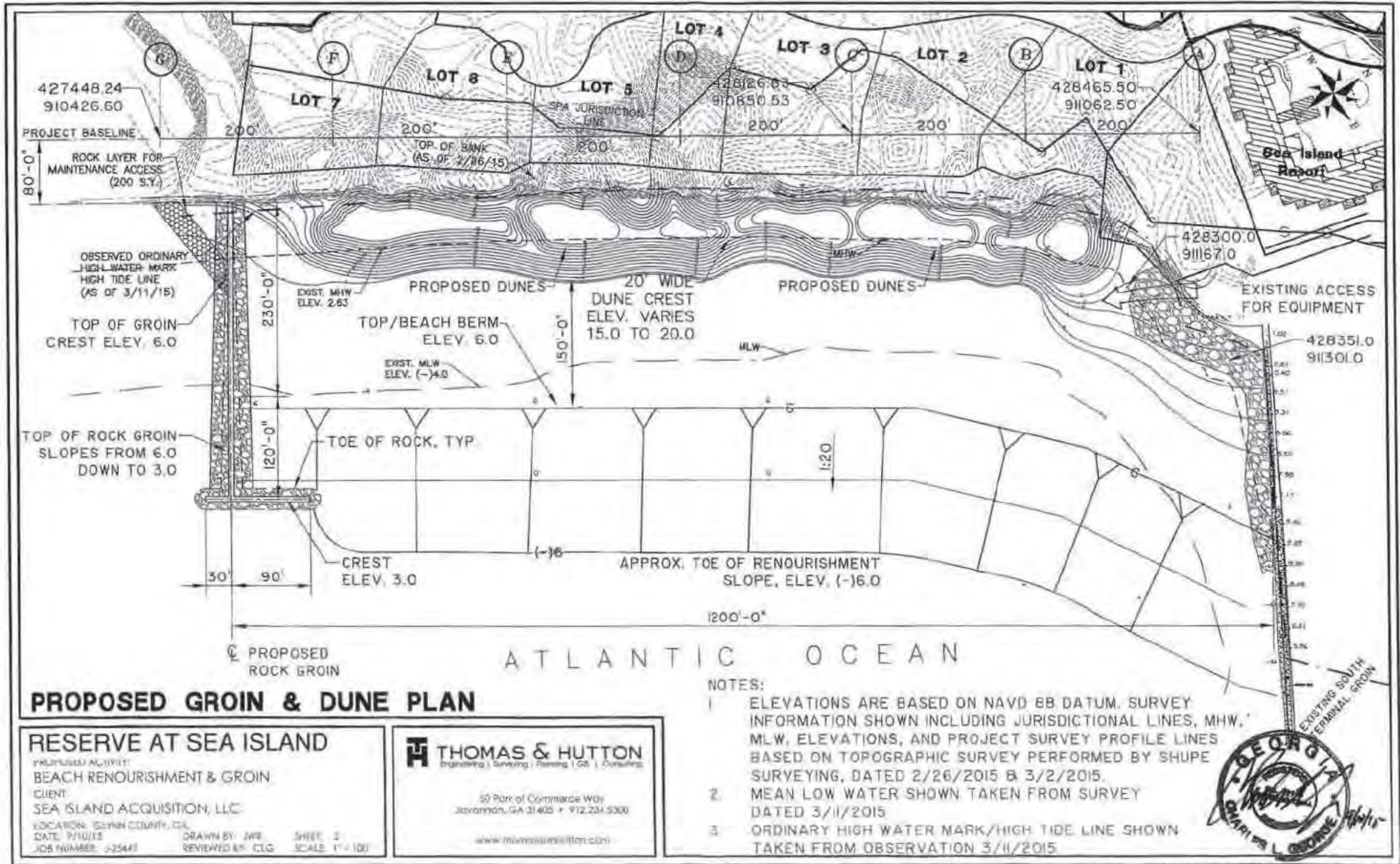
**TH** **THOMAS & HUTTON**  
 Engineering | Surveying | Planning | GIS | Consulting

50 Park of Commerce Way  
 Savannah, GA 31405 • 912.234.5300

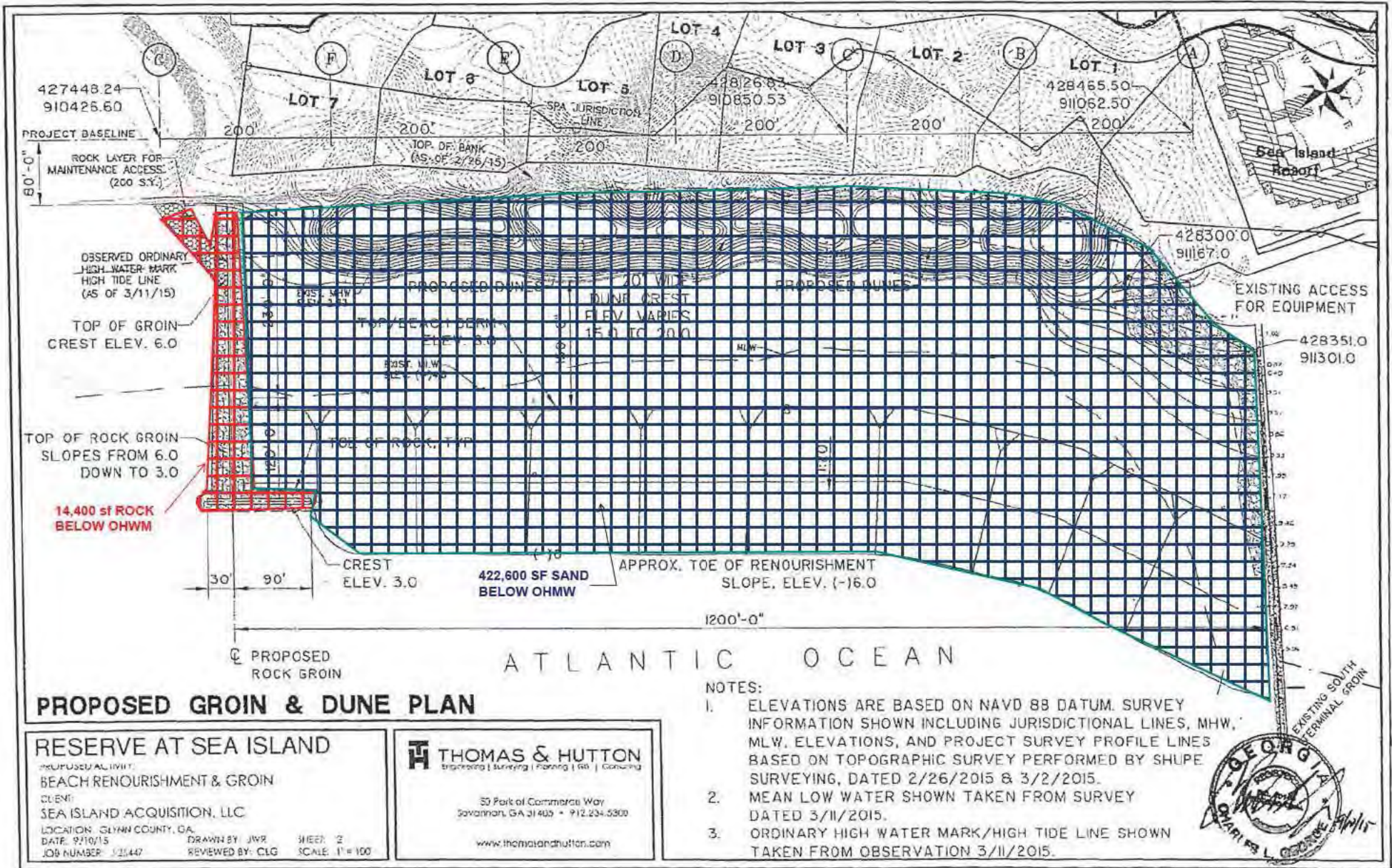
[www.thomasandhutton.com](http://www.thomasandhutton.com)











**PROPOSED GROIN & DUNE PLAN**

**RESERVE AT SEA ISLAND**

PROPOSED ACTIVITY:  
 BEACH RENOURISHMENT & GROIN  
 CLIENT:  
 SEA ISLAND ACQUISITION, LLC  
 LOCATION: GLYNN COUNTY, GA.  
 DATE: 9/10/15  
 JOB NUMBER: 121447

DRAWN BY: JWR  
 REVIEWED BY: CLG  
 SHEET: 2  
 SCALE: 1" = 100'

**THOMAS & HUTTON**  
 Engineering | Surveying | Planning | GIS | Consulting

30 Park of Commerce Way  
 Savannah, GA 31405 • 912.234.5300

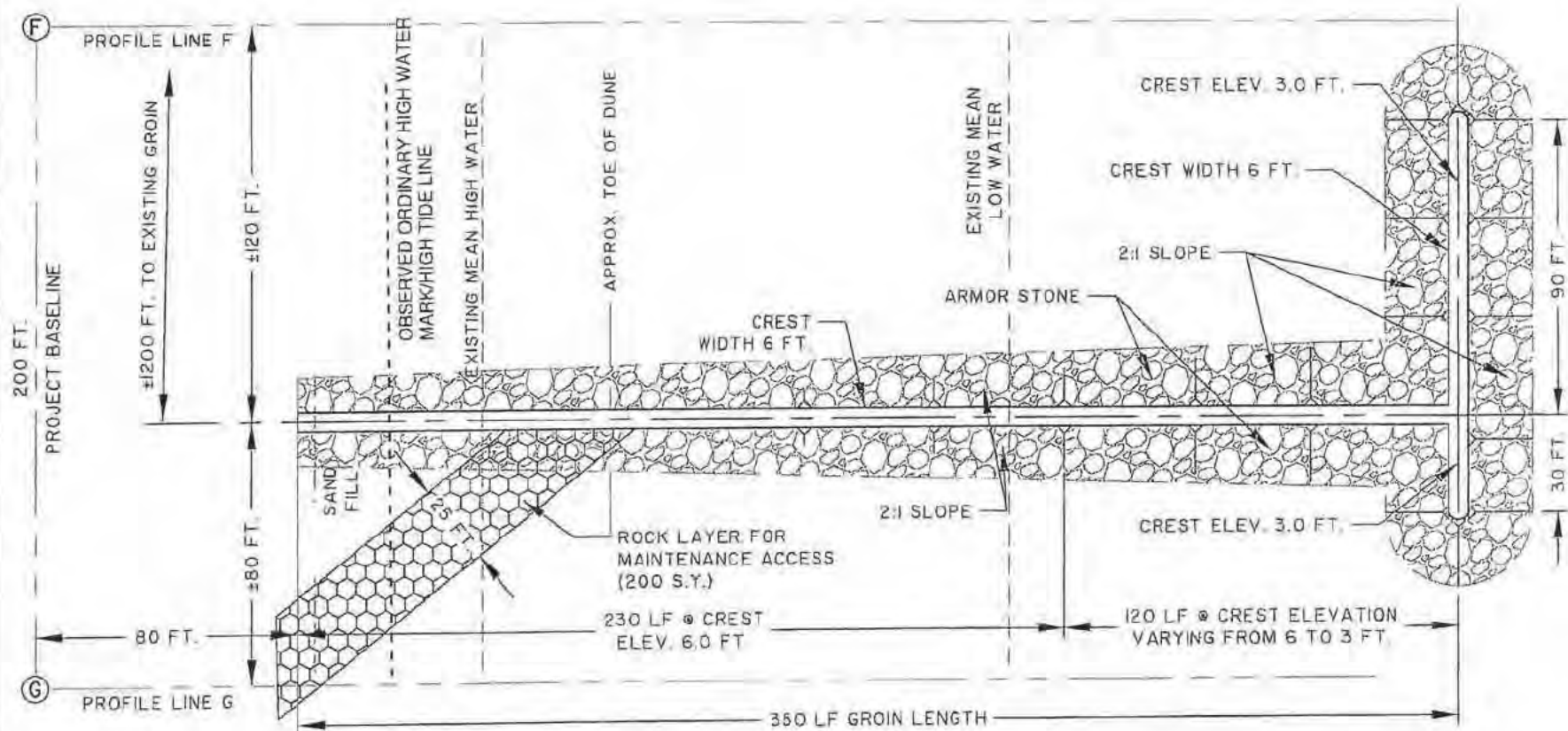
www.thomasthutton.com

**NOTES:**

- ELEVATIONS ARE BASED ON NAVD 88 DATUM. SURVEY INFORMATION SHOWN INCLUDING JURISDICTIONAL LINES, MHW, MLW, ELEVATIONS, AND PROJECT SURVEY PROFILE LINES BASED ON TOPOGRAPHIC SURVEY PERFORMED BY SHUPE SURVEYING, DATED 2/26/2015 & 3/2/2015.
- MEAN LOW WATER SHOWN TAKEN FROM SURVEY DATED 3/11/2015.
- ORDINARY HIGH WATER MARK/HIGH TIDE LINE SHOWN TAKEN FROM OBSERVATION 3/11/2015.







**ROCK T-HEAD GROIN PLAN**  
SCALE: 1" = 50'



**RESERVE AT SEA ISLAND**

PROPOSED ACTIVITY:  
BEACH RENOURISHMENT & GROIN

CLIENT:  
SEA ISLAND ACQUISITION, LLC

LOCATION: GLYNN COUNTY, GEORGIA  
DATE: 9/10/15  
JOB NUMBER: J-25447

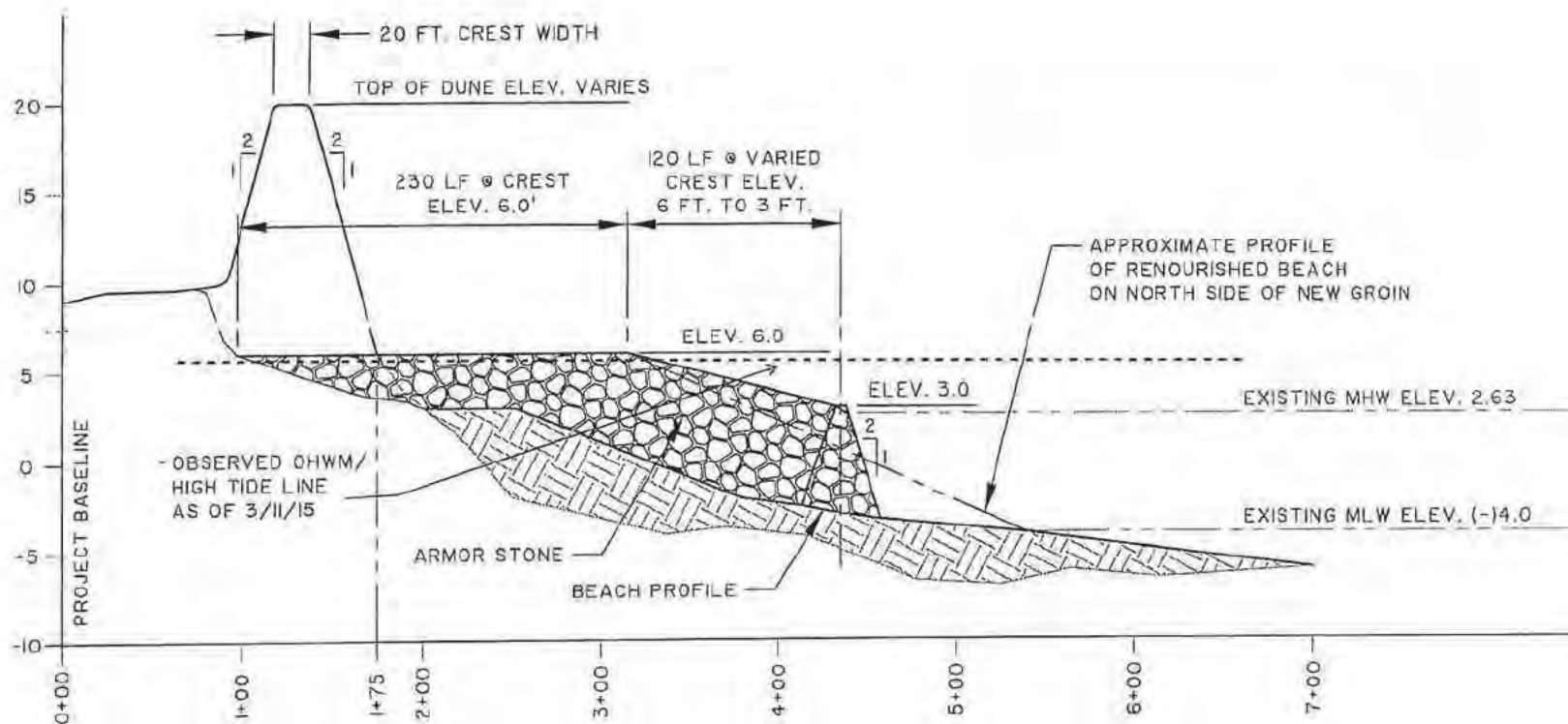
DRAWN BY: CLH  
REVIEWED BY: CLG

SHEET: 3  
SCALE: 1" = 50'

**THOMAS & HUTTON**  
Engineering | Surveying | Planning | GIS | Consulting

50 Park of Commerce Way  
Savannah, GA 31405 • 912.234.5300

www.thomasandhutton.com



ELEVATIONS SHOWN  
BASED ON NAVD88 DATUM

**SIDE VIEW THRU ROCK GROIN**

HORIZONTAL SCALE: 1" = 100'  
VERTICAL SCALE: 1" = 10'



**RESERVE AT SEA ISLAND**

PROPOSED ACTIVITY:  
BEACH RENOURISHMENT & GROIN

CLIENT:  
SEA ISLAND ACQUISITION, LLC

LOCATION: GLYNN COUNTY, GEORGIA  
DATE: 9/10/15  
JOB NUMBER: J-25447

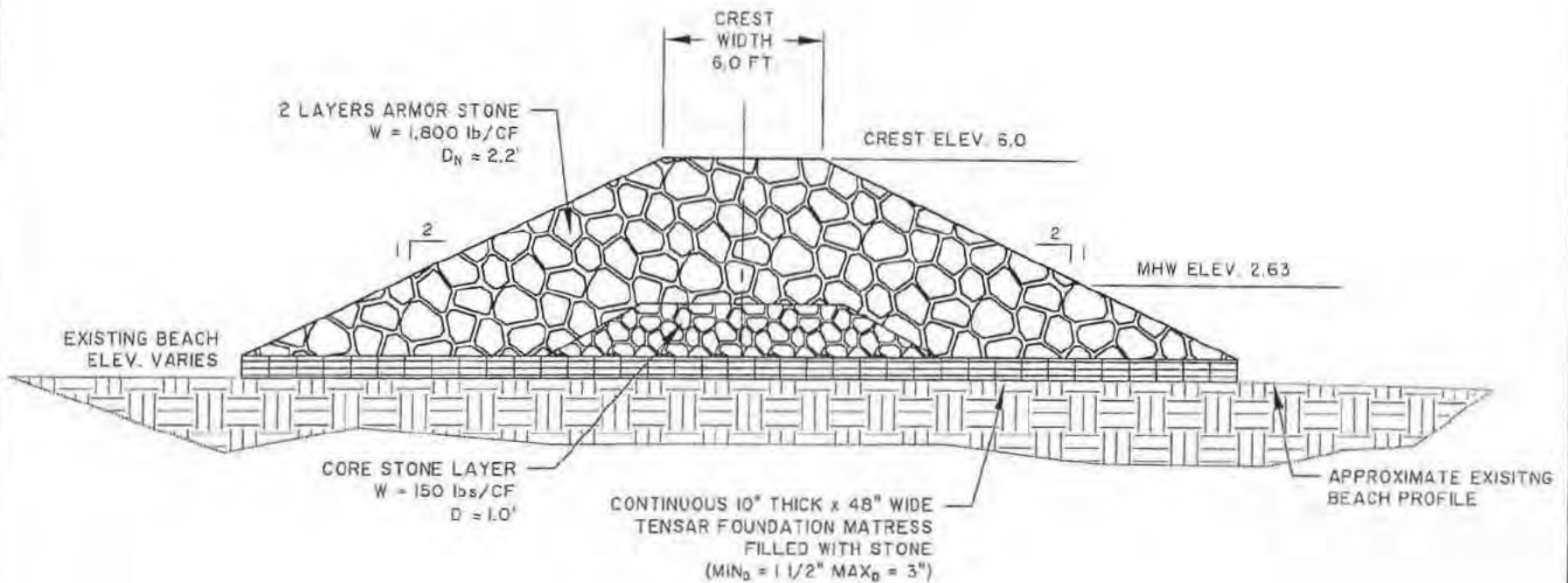
DRAWN BY: CLH  
REVIEWED BY: CLG

SHEET: 4  
SCALE: AS SHOWN

**THOMAS & HUTTON**  
Engineering | Surveying | Planning | GIS | Consulting

50 Park of Commerce Way  
Savannah, GA 31405 • 912.234.5300

www.thomasandhutton.com



**TYPICAL SECTION GROIN STEM**  
**CREST 6.0**  
 NOT TO SCALE



## RESERVE AT SEA ISLAND

PROPOSED ACTIVITY:  
 BEACH RENOURISHMENT & GROIN

CLIENT:  
 SEA ISLAND ACQUISITION, LLC

LOCATION: GLYNN COUNTY, GEORGIA

DATE: 9/10/15

JOB NUMBER: J-25447

DRAWN BY: CLH

REVIEWED BY: CLG

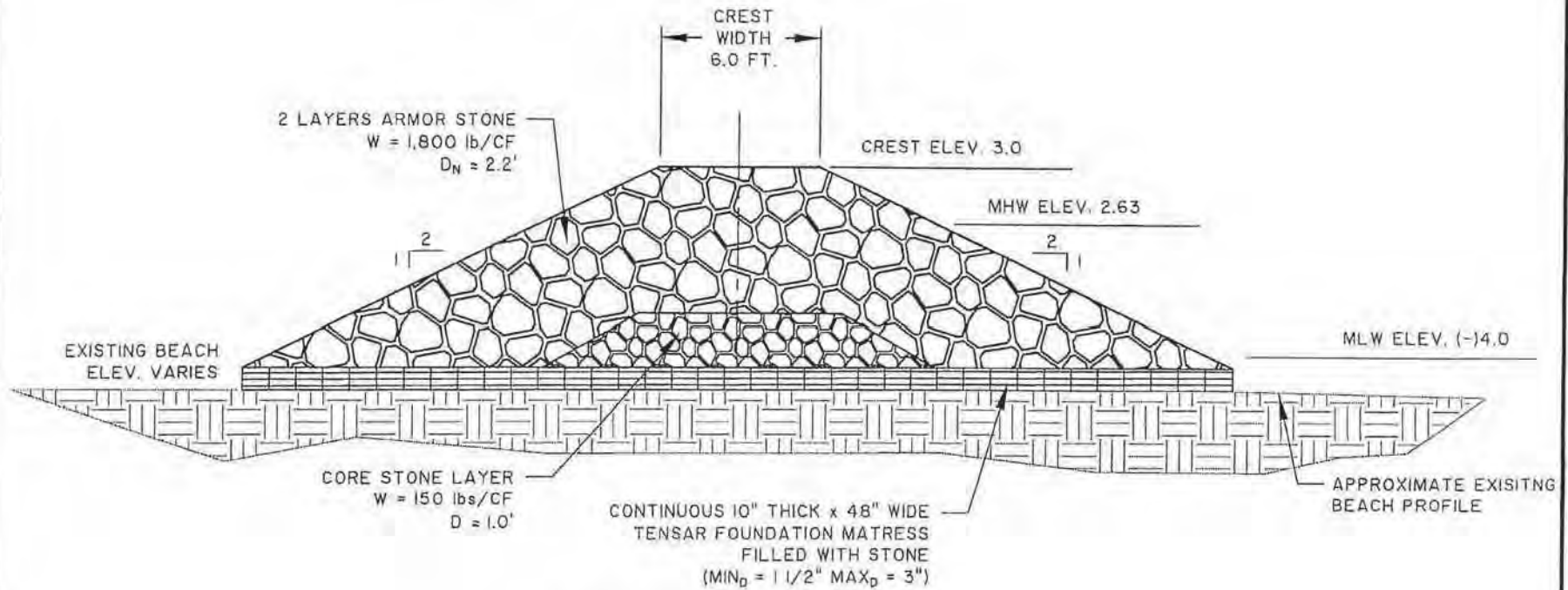
SHEET: 5

SCALE: NTS

**THOMAS & HUTTON**  
 Engineering | Surveying | Planning | GIS | Consulting

50 Park of Commerce Way  
 Savannah, GA 31405 • 912.234.5300

[www.thomasandhutton.com](http://www.thomasandhutton.com)



**TYPICAL SECTION GROIN STEM**  
**CREST 3.0**  
 NOT TO SCALE



## RESERVE AT SEA ISLAND

PROPOSED ACTIVITY:  
 BEACH RENOURISHMENT & GROIN

CLIENT:  
 SEA ISLAND ACQUISITION, LLC

LOCATION: GLYNN COUNTY, GEORGIA

DATE: 9/10/15

DRAWN BY: CLH

SHEET: 6

JOB NUMBER: J-25447

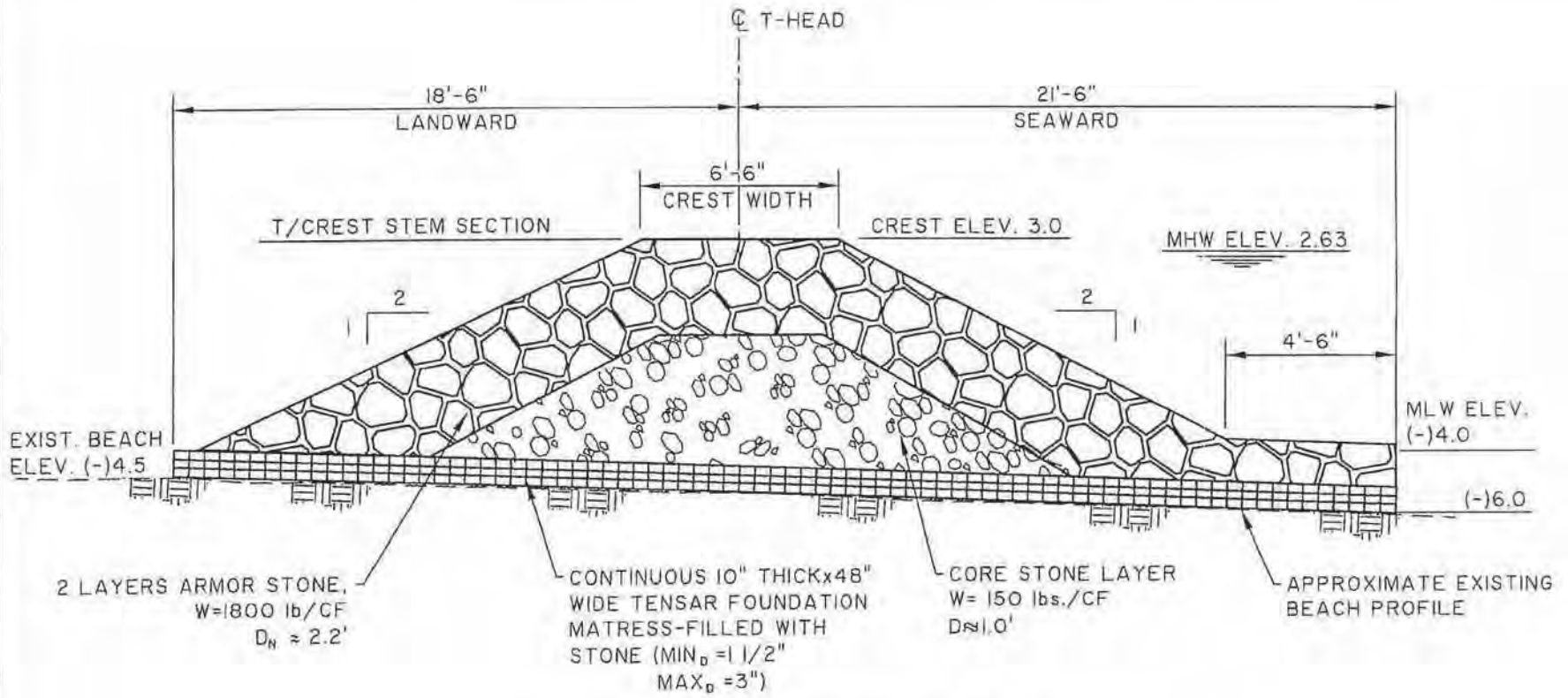
REVIEWED BY: CLG

SCALE: NTS

**THOMAS & HUTTON**  
 Engineering | Surveying | Planning | GIS | Consulting

50 Park of Commerce Way  
 Savannah, GA 31405 • 912.234.5300

[www.thomasandhutton.com](http://www.thomasandhutton.com)



**TYPICAL SECTION GROIN T-HEAD**

SCALE: 3/16" = 1'-0"

**RESERVE AT SEA ISLAND**

PROPOSED ACTIVITY:  
 BEACH RENOURISHMENT & GROIN  
 CLIENT:  
 SEA ISLAND ACQUISITION, LLC  
 LOCATION: GLYNN COUNTY, GA.  
 DATE: 9/10/15  
 JOB NUMBER: J-25447

DRAWN BY: JWR  
 REVIEWED BY: CLG  
 SHEET: 7  
 SCALE: 3/16"=1'-0"

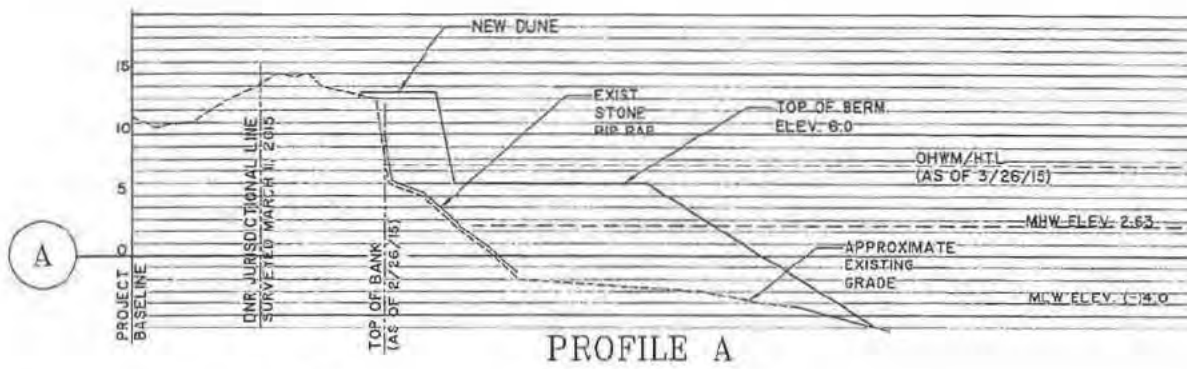
**THOMAS & HUTTON**  
 Engineering | Surveying | Planning | GIS | Consulting

50 Park of Commerce Way  
 Savannah, GA 31405 • 912.234.5300

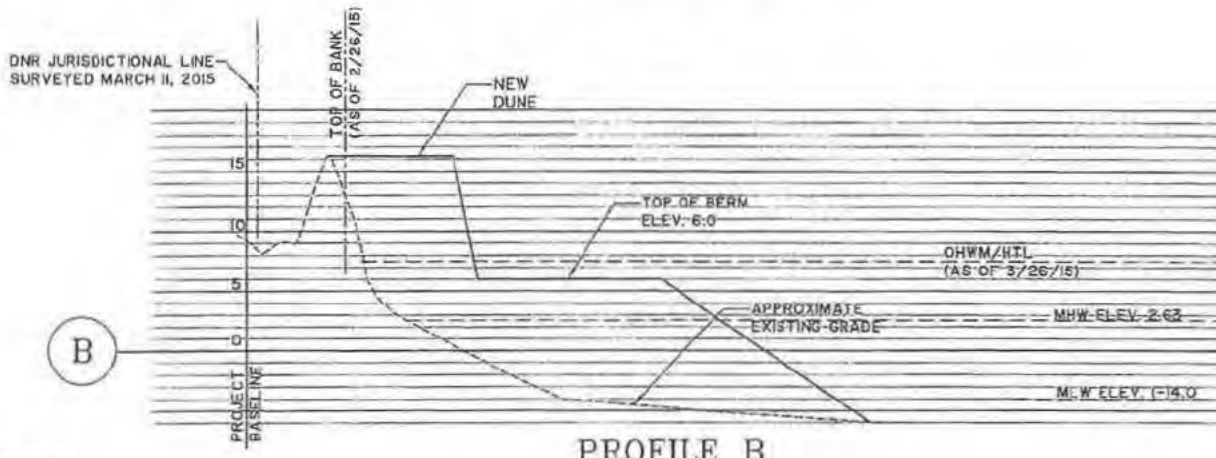
www.thomasandhutton.com







PROFILE A



PROFILE B

**BEACH PROFILES**

SCALE: 1"=100'-0" HORIZ. / 1"=10'-0" VERT.

**RESERVE AT SEA ISLAND**

PROPOSED ACTIVITY:  
 BEACH RENOURISHMENT & GROIN  
 CLIENT:  
 SEA ISLAND ACQUISITION, LLC  
 LOCATION: GLYNN COUNTY, GA.  
 DATE: 9/10/15  
 JOS NUMBER: J-25447

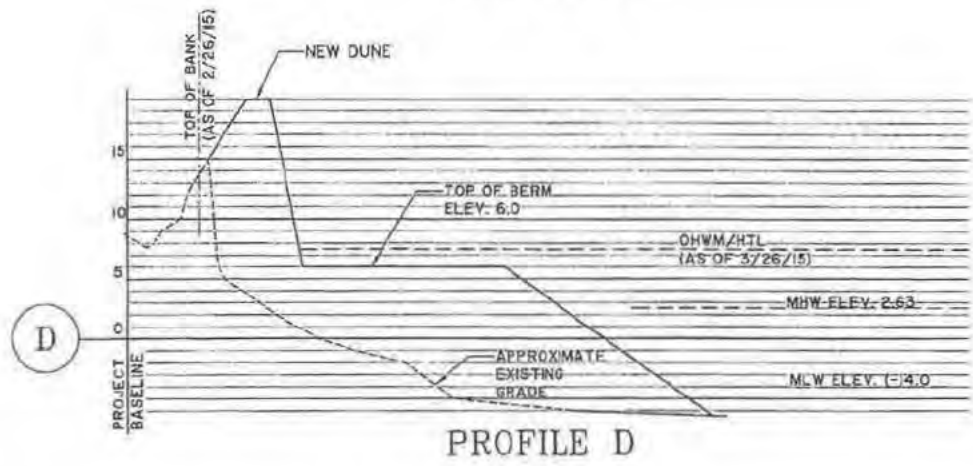
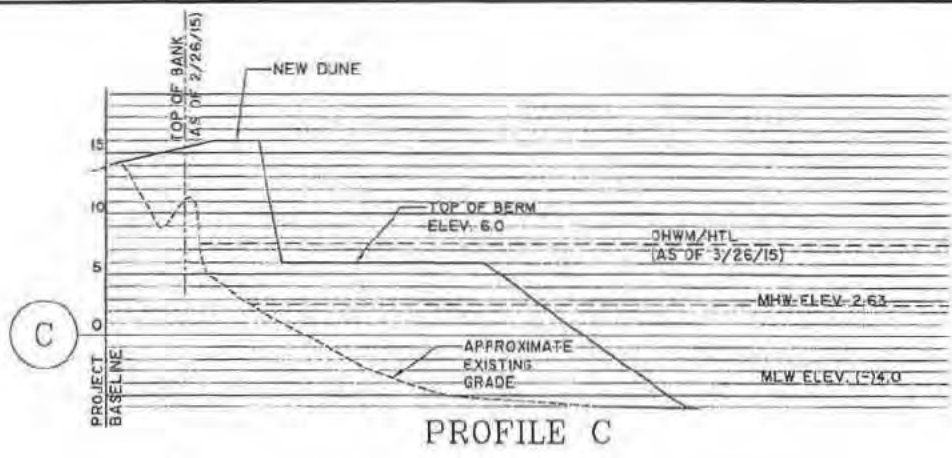
DRAWN BY: JWR  
 REVIEWED BY: CLG  
 SHEET: 8  
 SCALE: AS SHOWN



50 Park of Commerce Way  
 Savannah, GA 31405 • 912.234.5300

www.thomasandhutton.com





**BEACH PROFILES**

SCALE: 1"=100'-0" HORIZ. / 1"=10'-0" VERT.

**RESERVE AT SEA ISLAND**  
 PROPOSED ALTERNATE:  
**BEACH RENOURISHMENT & GROIN**  
 CLIENT:  
**SEA ISLAND ACQUISITION, LLC**  
 LOCATION: GLYNN COUNTY, GA.  
 DATE: 9/10/15  
 JOB NUMBER: J-25447

DRAWN BY: JWR  
 REVIEWED BY: CLG

SHEET: 9  
 SCALE: AS SHOWN

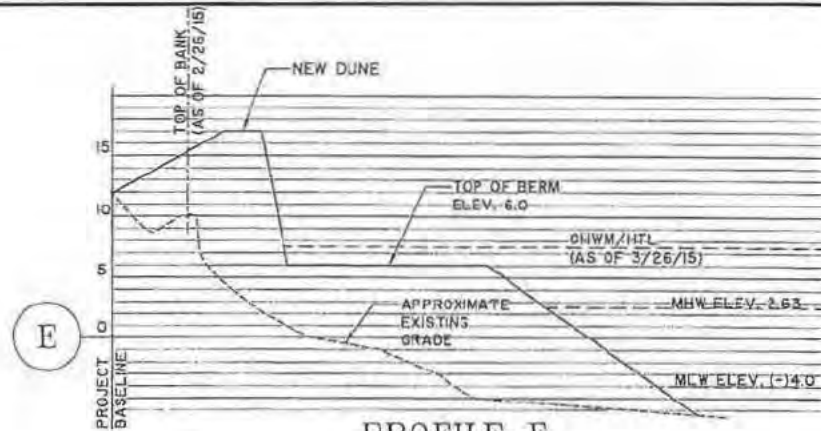
**THOMAS & HUTTON**  
 Engineering | Surveying | Planning | CG | Consulting

50 Park of Commerce Way  
 Savannah, GA 31405 • 912.234.5300

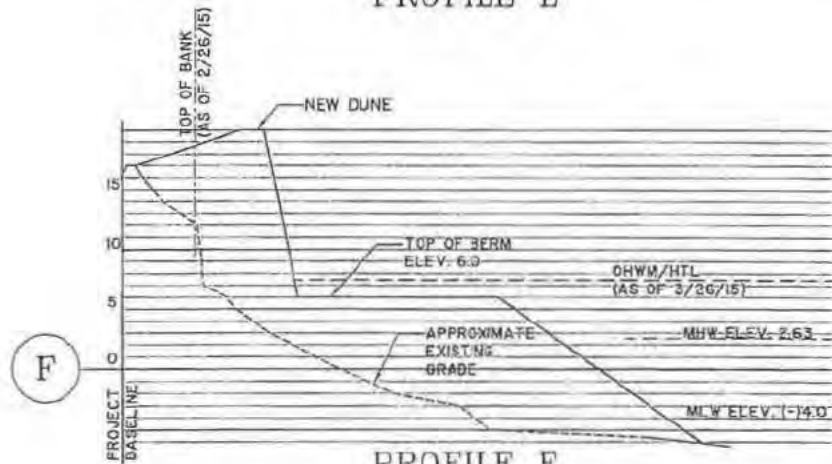
www.thomasandhutton.com







PROFILE E



PROFILE F

**BEACH PROFILES**

SCALE: 1"=100'-0" HORIZ. / 1"=10'-0" VERT.

**RESERVE AT SEA ISLAND**

PROPOSED ALIQUIT:  
**BEACH RENOURISHMENT & GROIN**  
 CLIENT:  
**SEA ISLAND ACQUISITION, LLC**  
 LOCATION: GLYNN COUNTY, GA.  
 DATE: 9/10/15  
 JOB NUMBER: J-25447

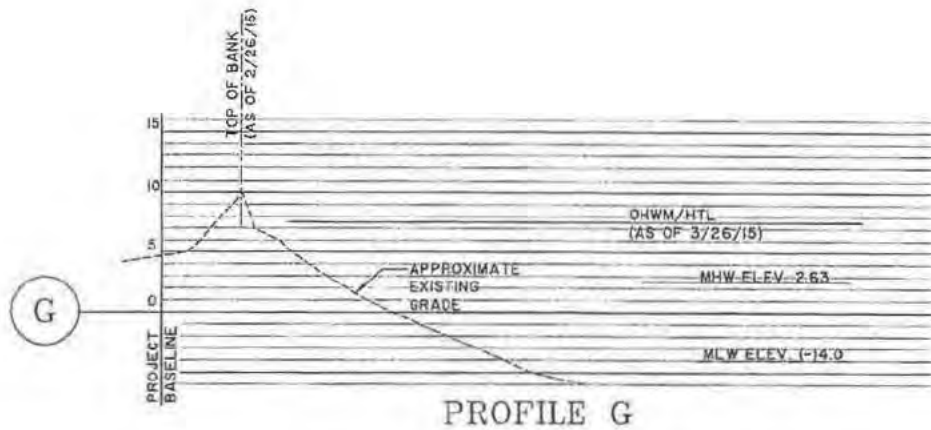
DRAWN BY: JWR  
 REVIEWED BY: CLG  
 SHEET: 10  
 SCALE: AS SHOWN

**THOMAS & HUTTON**  
 Engineering | Surveying | Planning | GIS | Consulting

50 Park of Commerce Way  
 Savannah, GA 31405 • 912.234.5300

www.thomasandhutton.com





**BEACH PROFILES**

SCALE: 1"=100'-0" HORIZ. / 1"=10'-0" VERT.

**RESERVE AT SEA ISLAND**

PROPOSED ACTIVITY:  
BEACH RENOURISHMENT & GROIN

CLIENT:  
SEA ISLAND ACQUISITION, LLC

LOCATION: GLYNN COUNTY, GA.  
DATE: 9/10/15 DRAWN BY: JWR SHEET: 11  
JOB NUMBER: J-25447 REVIEWED BY: CLG SCALE: AS SHOWN

**THOMAS & HUTTON**  
Engineering | Surveying | Planning | GIS | Consulting

50 Park of Commerce Way  
Savannah, GA 31405 • 912.234.5300

www.thomasandhutton.com







**BEACH RENOURISHMENT BORROW AREA**

**RESERVE AT SEA ISLAND**  
 PROJECT # 14-19111  
 BEACH RENOURISHMENT & GROIN  
 CLIENT:  
 SEA ISLAND ACQUISITION, LLC  
 LOCATION: GLYNN COUNTY, GA  
 DATE: 9/10/19  
 JOB NUMBER: 125447  
 DRAWN BY: JWR  
 REVIEWED BY: CJD  
 SHEET: 12  
 SCALE: 1/8"

**THOMAS & HUTTON**  
 Engineering | Surveying | Planning | GIS | Consulting  
 30 Park of Commerce Way  
 Savannah, GA 31405 • 912.234.5300  
 www.thomashutton.com



EXCAVATION WILL ADJUST TO AVOID ANY EXISTING VEGETATION  
 MAX. LIMIT OF BORROW AREA (120,000 CY TOTAL) EXCAVATION WILL OCCUR OVER 3 MONTHS TO OBTAIN 120,000 CY QUANTITY



BEACH RENOURISHMENT & GROIN IMPACTS:

SECTION 404 (USACOE)

QTY STONE BELOW OHWM: 4200 CY  
QTY SAND BELOW OHWM: 106,000 CY

DNR SHORE PROTECTION ACT:

QTY STONE ABOVE OHWM: 600 SF (55 CY)  
QTY SAND ABOVE OHWM: 42,000 SF (14,000 CY)

QTY STONE BELOW OHWM: 4200 CY  
QTY SAND BELOW OHWM: 106,000 CY



**RESERVE AT SEA ISLAND**

PROPOSED ACTIVITY:  
BEACH RENOURISHMENT & GROIN

CLIENT:  
SEA ISLAND ACQUISITION, LLC

LOCATION: GLYNN COUNTY, GEORGIA  
DATE: 9/10/15      DRAWN BY: CLH      SHEET: 13  
JOB NUMBER: J-25447      REVIEWED BY: CLG      SCALE: NTS

**THOMAS & HUTTON**  
Engineering | Surveying | Planning | GIS | Consulting

50 Park of Commerce Way  
Savannah, GA 31405 • 912.234.5300

[www.thomasandhutton.com](http://www.thomasandhutton.com)



## 1.0 Introduction

The project consists of the construction and maintenance of a beach renourishment project on Sea Island, Georgia, which will extend the existing beach renourishment project approximately 1,200 feet further to the south (Attachment C, Sheets 1, 2). The purpose of the project is to stabilize the eroding beach south of the existing south groin and to provide storm protection to the adjacent upland. This will be accomplished by constructing a rock groin perpendicular to the beach and creating sand dunes and renourished beach between the existing south groin and the proposed shorter beach groin. The project will taper the shoreline between the existing south groin and the proximal end of Black Banks Spit. (Attachment B, Figure 1). The project will be funded entirely by the applicant.

The project area, not protected by any shoreline engineering measures, has continued to shift landward, while the Sea Island beach to the north has been stabilized and enlarged by previously permitted projects, all privately funded. In the mid 1980's, the retreat of the entire Sea Island shoreline was arrested by the installation of sea walls and revetments. This shoreline protection stabilized the beachfront with the exception of the northern tip and southern end, both of which continued to retrograde. In 1990 additional protection was provided with the installation of a renourished beach, flanked by the north and south groins. A fuller discussion of the history of erosion control measures at Sea Island, as well as the context of the shoreline dynamics of this particular area, is set forth in a technical report entitled "Sea Island Beaches: Shoreline Dynamics and Erosion-control Projects," by George F. Oertel, PhD and David Basco, PhD, PE, dated July 2015 (Attachment D).

As explained in more detail below, the sand for the beach renourishment and dune construction will be taken from the sand catchment area just north of the existing south groin, within the existing renourished Sea Island beach. No borrow material will be dredged or otherwise taken from areas below low water. The sand will be excavated from the beach and transported by truck to the project site, using the existing approved motorized vehicle beach access route.

The project is of limited size—1,200 feet in length, a maximum of 120,000 yd<sup>3</sup> of sand—and is an extension southward of the existing successful beach stabilization and renourishment project. It is designed to minimize storm-wave damage and erosion at the project location and will not adversely affect the ability of the existing sand-sharing system to minimize storm-wave damage and erosion at other shoreline locations.

The project site does not currently provide good shorebird habitat, because there is little or no beach above the high tide mark and because of human activity in the area. As a result, the project is not likely to adversely affect piping plovers or red knot or any critical habitat. Construction of the project will occur outside of sea turtle nesting season, avoiding impacts to nesting or hatching turtles, and the completed project will provide habitat for nesting sea turtles where none currently exists.

## 2.0 Existing Conditions

The proposed project area is located within an area approximately 1,200' south of the existing south groin on Sea Island. The area consists of natural beach and dune habitats. Due to long-term natural erosion, little to no beach is exposed at high tide. An escarpment has formed at the base of the existing dune system from recession of the beach front due to natural beach system dynamics.

The limits of jurisdiction have been delineated under the Shore Protection Act (SPA) and 33 CFR Part 328.4(b). The limits of jurisdiction under the SPA have been verified by staff of the Georgia Department of Natural Resources, Coastal Resource Division. A Request for Jurisdictional Determination for U.S. Army Corps of Engineers jurisdiction limits has been submitted to the Savannah District (Attachment N).

## 3.0 Project Description

The project will consist of a rock T-head groin perpendicular to the shoreline, constructed sand dunes, and a renourished beach (Attachment C, Sheet 2, 3). Upon completion, the project will result in the placement of approximately 600 ft<sup>2</sup> (55 yd<sup>3</sup>) of rock and 42,000 ft<sup>2</sup> (14,000 yd<sup>3</sup>) of sand in SPA jurisdiction above the ordinary high water mark / high tide line (OHWM/HTL), and 4,200 yd<sup>3</sup> of stone and 106,000 yd<sup>3</sup> of sand below the OHWM/HTL. Prior to installation of the groin, constructed dune, and renourished beach, the applicant will provide a pre-construction survey to the regulatory agencies. A post-construction survey will also be provided.

**3.1 Rock T-Head Groin.** The proposed groin will be located perpendicular to the shoreline approximately 1,200 feet south of the existing south groin and will be approximately 350 feet in crest length with a "T" head section, parallel to the shoreline, of 120 feet in crest length (Attachment C, Sheet 3, 4). The top of the groin will be established at Elevation 6.0 ft<sup>1</sup> and slope downward to Elevation 3.0 ft at the "T" head (Attachment C, Sheet 3, 4). Construction of the groin will consist of the placement of a geogrid stone-filled mattress, a core stone layer, and outer layer of armor stone (Attachment C, Sheet 5, 6). The width at the crest of the groin will be approximately 6 feet with side slopes of 2:1 (Attachment C, Sheet 5, 6). Construction will be accomplished with heavy equipment from the beach. After construction, any incidental disturbance to areas outside of the actual construction will be returned to pre-construction conditions. A 200 ft<sup>2</sup> layer of rock will be placed at the landward end of the groin on the south side to allow access to the south end of Sea Island for safety purposes, sea turtle monitoring, and for maintenance of the groin.

The applicant proposes to construct the groin of stone, rather than of the Campbell units (poured concrete modules) that were used to construct the existing groins at Sea Island. Campbell units were used for the existing beach renourishment

---

<sup>1</sup> All elevations are with reference to the vertical datum of NAVD88.

project because it was a test project, to determine whether the concept of a T-head groin at each end of the renourished Sea Island beach would hold the renourished sand. If the project had failed to function as designed, the Campbell units could have been removed using the heavy equipment with which they were installed. Campbell units are no longer commercially available and special arrangements would be required to secure and fabricate the molds and other equipment. The Campbell units are extremely large (10 feet by 8 feet by 5 feet, weighing 14 tons each), and a very large lift crane, plus elaborate equipment to form the units, would be required for installation.

Rather than using Campbell units, the applicant proposes to follow the very successful plan previously demonstrated to work—a perpendicular T-head groin with the intervening beach filled with sand—by using very large armor stone, laid on rock mattresses. This is state of the art technology for such groins. The proposed rock groin is less expensive and also more practical. It can be installed using an excavator or track-hoe, any required maintenance can be performed utilizing smaller, less intrusive and more readily available equipment, and any additional materials, if required, are readily obtainable.

**3.2 Beach Renourishment and Dune Creation.** Approximately 120,000 cubic yards of beach quality sand will be excavated from the existing previously authorized catchment area located immediately north of the existing south groin (Attachment C, Sheet 12) and will be placed in the constructed area between the existing south groin and the proposed groin, to create a constructed dune ridge and a 150 foot wide beach profile beginning at elevation 6.0 ft and tapering to elevation -6.0 ft (Attachment C, Sheets 2, 8-11). The renourished beach will transition at a 20:1 slope to existing grade. The dune ridge will be constructed to an elevation of between 15.0 ft and 20.0 ft with a width of approximately 20 feet at the crest (Attachment C, Sheet 5, 8-11). The sand will be excavated with an excavator and placed in trucks that will transport it on the existing approved motorized vehicle beach access route to the construction site. No equipment will be operated in vegetated dunes. Dune quality vegetation and snow fencing will be installed to facilitate the dune development and stability (Attachment O).

### **3.3 Borrow Area**

The sand for the proposed beach renourishment and dune creation will be taken from the existing catchment area immediately north of the existing south groin (Attachment C, Sheet 12). No borrow material will be dredged or otherwise taken from areas below low water. This area has been previously utilized as a borrow area for the periodic authorized recycling of sand to the area between 20<sup>th</sup> Street and 36<sup>th</sup> Street. The removal of this material is not expected to have any impact on the beaches on Sea Island, as the amount of sand is similar in size to what has previously been recycled within the existing beach renourishment project.

The excavation will occur between approximate elevations 3.0 ft down to approximately -4.0 ft and will be adjusted as necessary to avoid vegetated dunes. The excavation will be conducted utilizing heavy equipment between tidal cycles,

over a 3 month period. As material is removed during a tidal cycle, new sand replenishes the newly excavated area daily, which prevents the development of a large depression in the borrow area when stretched out over an extended work period as proposed. Transport trucks will utilize the existing approved motorized vehicle beach access route to carry the excavated material to the construction site.

### **3.4 Monitoring**

In order to insure that the proposed project performs as proposed, the applicant will monitor the site in accordance with the following conditions:

1. The Permittee will monitor the beach profiles annually, from the borrow area to the southern end of Sea Island, for 5 years after renourishment.
2. After renourishment, the permittee will confer with DNR as to whether the renourished beach should be tilled to reduce compaction. If DNR recommends tilling, the permittee will till the renourished beach as recommended.
3. Before May 1 of each year any escarpment in the beach renourishment area that is higher than 18 inches and more than 100 feet in length will be mechanically leveled to the then-existing beach contour.

### **3.5 Dune Revegetation Plan**

Upon completion of construction of the new dune, the applicant proposes to install sand fencing in accordance with CRD guidelines to promote accumulation of wind-driven sand. Additionally, the applicant will plant native dune species to include sea oats (*Uniola paniculata*), seashore paspalum (*Panicum vaginatum*), beach sunflower (*Helianthus debilis*), and railroad vine (*Ipomoea pes-caprae*). A revegetation plan is included at Attachment O.

## **4.0 Shoreline Dynamics**

Due to the existing natural dynamics of the sand sharing system of Sea Island and the relatively small scale of the proposed project, the project will minimize storm-wave damage and erosion at the project location and will not adversely affect the ability of the existing sand-sharing system to minimize storm-wave damage and erosion at other shoreline locations.

The existing south groin has allowed some sand bypassing, as the south catchment area has generally been at or above capacity. Nevertheless, the area south of the existing south groin, not anchored by a rock revetment or any other shoreline engineering measures, has continued to shift landward at historic rates, and an offset has developed between the shorelines north and south of the existing south groin. Based upon aerial photography dating from 1988 to 2014, it appears that the seaward edge of the vegetated dune immediately south of the existing groin has receded an average of approximately 61 feet over 26 years, or +/- 2.3' per year in the project area (Attachment E, Photographs 1, 2). Analysis by Oertel in 2012 of beach profiles for the south end of Sea Island for the 18



year period between 1990 and 2008 revealed MHW and MLW recession rates of about -9.6 ft/yr and -3.3 ft/yr respectively. When sand bypasses around the existing groin, it is offset approximately 500 feet seaward of the southern shoreline, with the result that much of that material makes its way back onto the beach further south.

The proposed project will include a new area of constructed sand dune and renourished beach and a new groin approximately half the length of the existing groin. The constructed sand dune and renourished pocket beach will fill up the area between the existing south groin and the new shorter groin. The renourished beach will extend seaward beyond the new groin, facilitating the bypass of sand south of the new groin to the beach to the south. Being shorter, the new groin will provide a more gradual transition to the shoreline, and the shorter groin will allow more sand bypassing. The project will thereby provide a transition from the south groin catchment area to the shoreline and enhance sand movement along a tapered shoreline, around the proposed groin toward Black Banks Spit.

The tapered groin field is generally consistent with the Corps of Engineers' recommendation for a tapered transition from a groin field to a natural beach. U.S. Army Corps of Engineers, Coastal Engineering Manual, 2006, Part V, Section 3, figure V-3-32. (see Attachment D, Figure 10, page 19).

The area of Sea Island south of the south groin has experienced periods of both erosion and accretion over the past 150 years. The rates of erosion and accretion have varied considerably depending on the time interval reviewed. However, the long-term trend of erosion at Black Banks Spit is natural, long-term and systematic. See the technical report entitled "*Sea Island Beaches: Shoreline Dynamics and Erosion-control Projects*," by George F. Oertel, PhD and David Basco, PhD, PE, which is submitted with the application, for a discussion of shoreline dynamics specific to this area (Attachment D). As explained therein, recession of the shoreline is expected to continue, likely related to sea-level rise and wave refraction patterns. However, it is not anticipated that the proposed project will have any significant impact on erosion on Sea Island south of the project or at Black Banks Spit.

Long-term shifts in the Georgia coastline are influenced primarily by sea level rise. For decades, sea level has been documented as rising and the Georgia coastline slowly retreating landward. However, the impacts vary widely from one location to another, and there are locations along the Georgia coast that have in recent years, and some that are today, experiencing considerable accretion. On Sea Island itself, the areas at the north and south groin experience accretion, partly as a result of sand from the renourished beach moving from the center of the island to both ends.

East Beach, on the south side of Gould's Inlet across from Sea Island, is currently experiencing significant accretion. Accretion and erosion at East Beach is affected by the position of the ebb and flood channels and sand bars in Gould's Inlet. The tidal delta at Gould's Inlet contains millions of cubic yards of sand in its sand shoals and sand bars.

The relatively small scale of the proposed project is such that it is not anticipated to have any significant impact on East Beach, other shoreline areas on St. Simons Island, or Gould's Inlet.

## 5.0 Alternatives Analysis

Structural and non-structural alternatives are available for mitigating the damaging effects of elevated sea level and high waves in coastal storm events. The proposed project is designed to protect the Reserve at Sea Island subdivision property but also to mitigate any adverse impacts to the sand-sharing system and its functioning at other locations. A number of alternatives were considered in the process of developing this application. Alternatives located outside of state and federal jurisdiction were considered that would not require state or federal approval, as well as numerous alternatives that would be located in jurisdiction and be subject to state and federal review, including the following:

### 5.1 Alternative Considered Outside the DNR and Corps Jurisdiction

- A vertical seawall landward of the SPA Jurisdictional Line was initially considered but not pursued, as the preferred alternative was determined to be more beneficial both environmentally and aesthetically. Additionally, this option would provide no protection for the existing beach and dune system that is located seaward of the current SPA jurisdiction line at the project site.

### 5.2 Shoreline Engineering Alternatives Requiring State and Federal Permits

Several structural alternatives and combinations of alternatives that require permits from the Shore Protection Committee and the Army Corps of Engineers were considered, including the following:

- **Rock Revetment:** this alternative was not pursued since it would not provide for the reestablishment of a dry-sand beach and dune system, which will be beneficial for wildlife and recreational use.
- **New Groin with Beach Renourishment:** This alternative was not pursued since it did not provide for dune creation, resulting in the loss of potential wildlife habitat and storm protection that would be provided by the constructed dune.
- **New Groin with Beach Renourishment and Rock Revetment:** This alternative was also not pursued because it did not provide for dune creation.
- **New Groin with Beach Renourishment, Sand Dune, and buried rock revetment:** this alternative was not pursued since the preferred design provides for the creation of a dune system that will provide for storm protection, and the buried rock revetment would be an unnecessary cost.
- **Remove existing south groin:** This alternative was not pursued since it would likely result in the loss of the existing beach north of the groin, and a gradual return of the entire Sea Island shoreline to pre-renourishment conditions where no high-tide beach is present.

- **Move existing south groin approximately 1,200 feet to the south:** This alternative was not pursued due to the potential loss of existing beach north of the existing groin. Additionally, the preferred alternative design, with a new tapered groin, provides for more efficient bypassing of sand to the natural beach.
- **No action alternative:** The “no action alternative” was determined not feasible, because of the short-term and long-term trend of erosion at this site, and the extremely valuable real property that warrants protection. Shoreline stabilization is appropriate at this location.
- **New Groin with Beach Renourishment and Sand Dune Creation (Preferred Alternative)**

After review of the various alternatives it was determined that the best solution is a new groin with beach renourishment and sand dune creation. The preferred alternative represents the most environmentally, scientifically, and technically effective solution and is consistent with the objectives of the Shore Protection Act found at O.C.G.A. § 12-5-239(c)(3)(c):

*In the event that shoreline stabilization is necessary, either low-sloping porous rock structures or other techniques which maximize the dissipation of wave energy and minimize shoreline erosion shall be used. Permits may be granted for shoreline stabilization activities when the applicant has demonstrated that no reasonable or viable alternative exists; provided, however, that beach restoration and renourishment techniques are preferable to the construction of shoreline stabilization activities....”*

The preferred alternative provides the best balance between cost, storm protection, maintenance, aesthetics, wildlife protection and habitat creation, and minimization of effects on the dynamic dune system both at the project site and at other shoreline locations. The preferred alternative will replicate the success of the existing project, while providing for more efficient sand bypassing to the Black Banks Spit through a tapered groin design.

#### **6.0 Landfill / Hazardous Waste**

According to the Hazardous Site Index for Georgia, the subject property is not located over a landfill or hazardous waste site and is otherwise suitable for the proposed project.

#### **7.0 Requirements and Restrictions Regarding Issuance of Permit**

As discussed below, the proposed project meets the requirements under which a permit should be granted:

O.C.G.A. § 12-5-239(c) states:

*(c) No permit shall be issued except in accordance with the following provisions:  
 (1) A permit for a structure or land alteration, including , but not limited to, private residences, motels, hotels, condominiums, and other commercial structures, in the dynamic dune field may be issued only when:*

***(A) The proposed project shall occupy the landward area of the subject parcel and, if feasible, the area landward of the sand dunes;***

The proposed project does not include residences, motels, hotels, condominiums, or other commercial structures or land alterations in the dynamic dune field, and therefore is not subject to regulation under this subsection.

***(B) At least a reasonable percentage, not less than one-third, of the subject parcel shall be retained in its naturally vegetated and topographical condition;***

The proposed project is not subject to the requirements of this subsection. However, the proposed project will result in not only the retention of 100% of the natural area within jurisdiction, but will also create and restore a substantial amount of dunes and dry beach, creating important habitat for wildlife while providing protection to valuable upland property.

***(C) The proposed project is designed according to applicable hurricane resistant standards;***

The proposed project is not subject to regulation under this subsection. However, the project will comply with the most current applicable hurricane standards.

***(D) The activities associated with the construction of the proposed project are kept to a minimum, are temporary in nature, and, upon project completion, restore the natural topography and vegetation to at least its former condition, using the best available technology;***

The proposed project is not subject to regulation under this subsection. However, the proposed project will result in the creation and restoration of a substantial dune and dry beach system, creating important wildlife habitat while providing storm protection to valuable upland property.

***(E) The proposed project will maintain the normal functions of the sand-sharing mechanisms in minimizing storm-wave damage and erosion, both to the unaltered section of the subject parcel and at other shoreline locations.***

The proposed project is not subject to regulation under this subsection. However, due to the existing natural dynamics of the sand sharing system of Sea Island and the relatively small scale of the proposed project, the project will minimize storm-wave damage and erosion at the project location and will not adversely affect the ability of the existing sand-sharing system to minimize storm-wave damage and erosion at other shoreline locations.

The proposed project is a small extension, approximately 1,200 feet, of the existing very successful beach renourishment project on more than 3 miles of the beach at Sea Island, representing an additional 7% increase to the existing previously authorized project. The project will add a new, shorter terminal groin on the south, which will provide a taper between the existing renourishment project and the natural beach of Black Banks Spit. The constructed sand dune and renourished pocket beach will fill up the area between the existing south groin and the new shorter groin. The renourished beach will extend seaward beyond the new groin, facilitating the bypass of sand south of the new groin to the beach to the south.

The shoreline at the project area, as well as the shoreline to the south of the proposed groin, is currently retreating at a rates consistent with historical data . The project will halt the shoreline retreat at the Reserve at Sea Island, thereby protecting this valuable real



estate. Retreat of the shoreline to the south is expected to continue, but with the new terminal groin and sand that will drift around the seaward end of the new groin, adverse impacts to the shoreline to the south have been minimized.

Sea Island owns all the land south of the project area. In 2015 Sea Island conveyed to the St. Simons Land Trust a perpetual Conservation Easement over all land south of the Reserve at Sea Island development. The Conservation Easement prohibits any development, except for shoreline engineering projects that extend no more than 160 feet south of the northern boundary of the Conservation Easement area. As a result of the Conservation Easement, the land to the south does not have development potential, but it does have value as open space and wildlife habitat. The project is designed to reduce down-current erosion and therefore should have minimal impact on the quality of shorebird habitat in the Conservation Easement.

***(2) No permits shall be issued for a structure on beaches, eroding sand dune areas, and submerged lands; provided, however, that a permit for a pier, boardwalk, or crosswalk in such an area may be issued, provided that:***

***(A) The activities associated with the construction of the proposed land alterations are kept to a minimum, are temporary in nature, and, upon project completion, the natural topography and vegetation shall be restored to at least their former condition, using the best available technology,***

No structures as defined by the Act under O.C.G.A. § 12-5-232(19) are proposed as part of this project, and no piers, boardwalks, or crosswalks are proposed at this time.

***(B) The proposed project maintains the normal functions of the sand-sharing mechanisms in minimizing storm-wave damage and erosion, both to the unaltered section of the subject parcel and at other shoreline locations.***

The proposed project is not subject to regulation under this subsection. However, the proposed project will maintain the normal functions of the sand-sharing mechanisms in minimizing storm-wave damage and erosion, both to the unaltered section of the subject parcel and at other shoreline locations. Due to the existing natural dynamics of the sand sharing system of Sea Island and the relatively small scale of the proposed project, the project will minimize storm-wave damage and erosion at the project location and will not adversely affect the ability of the existing sand-sharing system to minimize storm-wave damage and erosion at other shoreline locations.

The proposed project is a small extension, approximately 1,200 feet, of the existing very successful beach renourishment project on more than 3 miles of the beach at Sea Island, representing an additional 7% increase to the existing previously authorized project. The project will add a new, shorter terminal groin on the south, which will provide a taper between the existing renourishment project and the natural beach of Black Banks Spit. The constructed sand dune and renourished pocket beach will fill up the area between the existing south groin and the new shorter groin. The renourished beach will extend seaward beyond the new groin, facilitating the bypass of sand south of the new groin to the beach to the south.

The shoreline at the project area, as well as the shoreline to the south of the proposed groin, is currently retreating at a rate consistent with historical data. The project will halt the shoreline retreat at the Reserve at Sea Island, thereby protecting this valuable real estate. Retreat of the shoreline to the south is expected to continue, but with the new terminal groin and sand that bypasses beyond the seaward end of the new groin, adverse impacts to the shoreline to the south have been minimized.

Sea Island owns all the land south of the project area. In 2015 Sea Island conveyed to the St. Simons Land Trust a perpetual Conservation Easement over all land south of the Reserve at Sea Island development. The Conservation Easement prohibits any development, except for shoreline engineering projects that extend no more than 160 feet south of the northern boundary of the Conservation Easement area. As a result of the Conservation Easement, the land to the south does not have development potential, but it does have value as open space and wildlife habitat. The project is designed to reduce down-current erosion and therefore should have minimal impact on the quality of shorebird habitat in the Conservation Easement.

#### **8.0 Public Interest Statement**

O.C.G.A. § 12-5-239(i) states:

*(i) In passing upon the application for a permit, the permit-issuing authority shall consider the public interest which for the purposes of this part shall be deemed to be the following considerations:*

*(1) Whether or not unreasonably harmful, increased alteration of the dynamic dune field or submerged lands, or function of the sand-sharing system will be created;*

Due to the existing natural dynamics of the sand sharing system of Sea Island and the relatively small scale of the proposed project, the project will minimize storm-wave damage and erosion at the project location and will not adversely affect the ability of the existing sand-sharing system to minimize storm-wave damage and erosion at other shoreline locations.

The proposed project is a small extension, approximately 1,200 feet, of the existing very successful beach renourishment project on more than 3 miles of the beach at Sea Island, representing an additional 7% increase to the existing previously authorized project. The project will add a new, shorter terminal groin on the south, which will provide a taper between the existing renourishment project and the natural beach of Black Banks Spit. The constructed sand dune and renourished pocket beach will fill up the area between the existing south groin and the new shorter groin. The renourished beach will extend seaward beyond the new groin, facilitating the bypass of sand south of the new groin to the beach to the south.

The shoreline at the project area, as well as the shoreline to the south of the proposed groin, is currently retreating at a rate consistent with historical data. The project will halt the shoreline retreat at the Reserve at Sea Island, thereby protecting this valuable real estate. Retreat of the shoreline to the south is expected to continue at existing natural

rates, but with the new terminal groin and sand that bypasses beyond the seaward end of the new groin, adverse impacts to the shoreline to the south have been minimized.

Sea Island owns all the land south of the project area. In 2015 Sea Island conveyed to the St. Simons Land Trust a perpetual Conservation Easement over all land south of the Reserve at Sea Island development. The Conservation Easement prohibits any development, except for shoreline engineering projects that extend no more than 160 feet south of the northern boundary of the Conservation Easement area. As a result of the Conservation Easement, the land to the south does not have development potential, but it does have value as open space and wildlife habitat. The project is designed to reduce down-current erosion and therefore should have minimal impact on the quality of shorebird habitat in the Conservation Easement.

***(2) Whether or not the granting of a permit and the completion of the applicant's proposal will unreasonably interfere with the conservation of marine life, wildlife, or other resources;***

The applicant's proposed project will not unreasonably interfere with the conservation of marine life, wildlife, or other resources. The applicant has conducted extensive studies of shorebirds and sea turtles in the project area, and has been actively involved with regulatory agencies in the monitoring and management of sea turtles since the original renourishment project. Studies in turtle nesting areas have demonstrated that renourished beaches increase the number of turtle nests (Broadwell 1991; Nelson et al. 1987).

No negative impacts are expected for sea turtles during the proposed project. Nesting data collected on Sea Island indicates that the work window from November 1 to April 30 will not overlap with the nesting season for loggerhead sea turtles, green sea turtles, or leatherback turtles on Sea Island. Upon completion, the proposed project will result in the creation of valuable sea turtle nesting habitat that does not currently exist at the project site. A Biological Assessment of the potential effects on threatened and endangered species has been prepared and is included at Attachment F.

The project vicinity also provides valuable habitat for shorebirds, including the federally protected Piping Plover (*Charadrius melodus*) and Red Knot (*Calidris canutus rufa*). A shorebird survey was conducted in the winter-spring of 2015 by Normandeau Associates, Inc. (Attachment G). Potential effects on shorebirds have been evaluated and are included in the Biological Assessment (Attachment F). While the proposed project has the potential to affect piping plover critical habitat Unit GA-14, as well as overwintering and migrating plovers and red knots within the proposed project area, the project is not likely to adversely affect piping plovers, red knots, or piping plover designated critical habitat areas due to the low suitability of the project area for the plovers and red knots for the following reasons:

- The project site is currently close to a beach access point, with high levels of disturbance
- The site currently has no little to no beach above the high tide mark

- The site has a narrow beach backed by high vegetation-covered dunes immediately above the high tide mark and, as such, is less favored by the plovers than more open beach (Nichols and Baldassarre 1990)

An Essential Fish Habitat Assessment has also been prepared, and is included as Attachment H.

*(3) Whether or not the granting of a permit and the completion of the applicant's proposal will unreasonably interfere with reasonable access by and recreational use and enjoyment of public properties impacted by the project.* The proposed project is to be constructed on private property where residents and guests are already granted access. The project will not interfere with access to or use and enjoyment of public properties.

#### **9.0 Warranty Deed**

The warranty deed conveying the subject property (Tract No. 1, Parcel 5; Tract No. IV, Parcel 5; Tract No. IX, Parcel 5; and Parcel 56) from Sea Island Company to Sea Island Acquisition, LLC, recorded in Deed Book 2808, page 498-770, on December 16, 2010 is included as Attachment I.

#### **10.0 Vicinity Map**

A map of the subject property is included as Attachment B.

#### **11.0 Adjoining Property Owners**

The adjoining property owners are depicted in Attachment J.

#### **12.0 Zoning Certification**

Zoning certification has been requested from Glynn County Planning & Development. A copy of the request is included as Attachment K.

#### **13.0 Hurricane Certification**

A letter certifying that the project has been designed and will be constructed in accordance with applicable hurricane resistant standards is included as Attachment L.

#### **14.0 Permit Drawings**

Drawings titled *The Reserve at Sea Island*, dated September 10, 2015 are included as Attachment C.

#### **15.0 Application Fee**

A check for the application fee of \$500.00 is included as Attachment M.