JOINT
PUBLIC NOTICE

CHARLESTON DISTRICT, CORPS OF ENGINEERS
1949 INDUSTRIAL PARK ROAD, ROOM 140
CONWAY, SOUTH CAROLINA 29526
and
THE S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL
Office of Ocean and Coastal Resource Management
1362 McMillan Avenue, Suite 400
Charleston, South Carolina 29405

REGULATORY DIVISION
Refer to: P/N SAC-2017-00179 14 FEBRUARY 2017

Pursuant to Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403), Sections 401 and 404 of the Clean Water Act (33 U.S.C. 1344), and the South Carolina Coastal Zone Management Act (48-39-10 et.seq.), an application has been submitted to the Department of the Army and the S.C. Department of Health and Environmental Control by

Town of Pawleys Island
c/o Coastal Science & Engineering
P.O. Box 8056
Columbia, South Carolina 29202

for a permit for beach nourishment in the

ATLANTIC OCEAN

along a 2.7 mile (14,100 linear feet) section of Pawleys Island beach located southeast of Springs Avenue and Myrtle Avenue, in Pawleys Island, Georgetown County, South Carolina (Latitude: 33.4216°N, Longitude: -79.1249°W), Waverly Mills Quad.

In order to give all interested parties an opportunity to express their views

NOTICE

is hereby given that written statements regarding the proposed work will be received by the **Corps** and **SCDHEC** until

30 Days from the Date of this Notice

from those interested in the activity and whose interests may be affected by the proposed work.

The proposed activity is a beach nourishment project along the beaches of Pawleys Island, SC. In detail, the work will include the placement of up to 1,100,000 cubic yards (cy) of beach-quality sand along approximately 2.7 miles (14,100 linear feet) of shoreline. The project encompasses three reaches with the first extending from groin 1 (located south of the terminus of Springs Avenue) to groin 8 (Pritchard Street.), the second from groin 8 to groin 15 (750 ft. south of S. Causeway Road), and the third from groin 15 to just north of the existing pier (~400 ft. north of N. Causeway Road). Sand will be obtained from portions of offshore borrow areas ~1–3 miles from Pawleys Island beach. The proposed work will be accomplished by either

hydraulic (cutterhead) or hopper dredge and heavy machinery (bulldozers and loaders) shaping the fill on the beach.

Specific Project Details Provided by the Applicant:

Nourishment Plan

Beach Nourishment

The nourishment design is based on the present condition of the beach, historical erosion rates, impacts from recent hurricanes, desired levels of storm protection and recreation area, environmental considerations, and available budget. In evaluating the existing sand deficit, the beach volume seaward of the oceanfront structure line was used to compare eroded sections of the beach with an ideal beach profile. The ideal profile contains sufficient volume to hold a primary dune and recreational dry beach, as well as to withstand modest storm events. For Pawleys Island, healthy sections of the beach meeting these criteria were found to hold a minimum of 380 cubic yards per foot (cy/ft0 of sand in the profile. Each section of the beach was compared to this value to determine volume deficits. Advance nourishment was added to account for erosion occurring over the next 10 years.

The nourishment plan includes a dry-sand berm constructed at +6 ft NAVD and a sloped intertidal section constructed at 1 on 20 slope. In areas lacking protective dunes capable of withstanding a storm event with a return period of 5 years or less, a dune will be constructed no more than 6 ft above the berm height with a base width no greater than 20 ft. Fill density for full sections will range from ~30 cy/ft to ~140 cy/ft with the higher fill volumes being placed in the most eroded areas. The fill volumes generally decrease moving from south to north. Taper sections will extend ~500 ft on either side of the full sections to tie the nourishment into the native beach contours. The nourishment fill will be distributed as follows:

Area	***Length***	***Total Volume***	***Fill Density***
Reach 1 – County Park to Groin 8	*4,800 ft*	*575,000 cy*	*~120 cy/ft*
Reach 2 – Groin 8 to Groin 15	*4,300 ft*	*355,000 cy*	*83 cy/ft*
Reach 3 – Groin 15 to pier	*5,000 ft*	*170,000 cy*	*34 cy/ft*
Total	***14,100 ft***	***1,100,000 cy***	***78 cy/ft Avg***

The requested volume is the maximum the applicant intends to place on the beach during the project. If funding is insufficient to accomplish this, the volumes will be scaled back to match the available funds. Any reduction of volume would be applied fairly evenly across the fill unless the fill volume at a location would be lower than practical to place (typically ~25–30 cy/ft is the minimum dredge operators can place on the beach efficiently).

Nourishment will be accomplished by hydraulic (cutterhead) or hopper dredge and heavy machinery (bulldozers and loaders) shaping the fill on the beach. Temporary training dikes will be used to contain the slurry discharge parallel to the shore. Once the sand has been placed on the beach, bulldozers will shape the fill into the design template from the dune to the mean sea-level (MSL) contour. Sand below the MSL contour will be shaped to a natural profile by waves. Sand fencing and/or native vegetation will be installed in strategic locations along the

dune or adjacent to structures following the nourishment.

Borrow Area(s)

Two potential borrow areas were identified by the USACE in the 2004 feasibility study for a federal storm-damage-reduction project (Sheets 07 and 08). Borrow Area A is a 319-acre area approximately 1 mile offshore of the southern end of Pawleys Island. Geotechnical investigations used to define the geologic character of the area were completed by researchers from Coastal Carolina University (Wright et al 1999; in USACE 2004). The USACE used these data to define the area, which is an irregular polygon containing sand of variable thickness typically no more than 36 inches in depth. Sediment characteristics in Area A were also variable, ranging in average grain size values of 0.13 millimeter (mm) to 1.14 mm though the dominant size range was 0.20 mm to 0.75 mm (USACE 2004). Portions of Area A contained sand finer than that of the native beach, which is less than ideal for nourishment performance. Higher levels of shell material also resulted in coarse skewness of some samples. Overall, the USACE estimated that 1.1 million cubic yards of sand may be available in Borrow Area A.

USACE. 2004. Feasibility report for hurricane and storm damage reduction at Pawleys Island, South Carolina. USACE, Charleston District, South Carolina, PWI 010606, 55 pp + appendices A–I.

Due to the variability in the sediment characteristics in Borrow Area A, the Town of Pawleys Island sponsored additional geotechnical investigations. Athena Technologies obtained 31 additional borings in an area further seaward and south of Area A. Of these 31 samples, an area encompassing 9 of the borings was determined to have beach-compatible material. The USACE defined an 832-acre area containing an estimated 2.5 million cubic yards of sand. Sand deposits in this area were typically thicker than Area A, averaging 30–60 inches and sediment characteristics were more consistent. Median grain size ranged from 0.22 mm to 2.0 mm with the dominant sizes between 0.25 mm and 0.50 mm. There were significant concentrations of fine shell hash present in the area, contributing to the larger median grain size. The USACE determined that Borrow Site B contains up to 2.5 million cubic yards of sand.

Due to the relatively thin deposit of sand identified in the potential borrow areas, hopper dredges are likely the most economical method for completing a dredging project. Hopper dredge operations require a minimum depth greater than that of cutterhead dredges (typically >25 ft MLLW). Since Area A is situated in depths of 20–25 ft, the area may not be feasible for use in a project constructed by hopper dredge. This limitation, plus the greater variability of sand quality and thinner deposits, results in Area A being included in the proposed project only as a conditional source of sand should there be insufficient sand or other disqualifying factors in Area B during construction. Area B will be the primary borrow source for the proposed project. The applicant will obtain additional geotechnical samples within the area to increase the resolution of samples in order to maximize the sediment compatibility and increase project efficiency. Should additional borings reveal a more suitable borrow area, the applicant will coordinate with permitting and resource agencies to modify the borrow area boundary while not increasing the overall footprint of the constructed project.

The proposed project is anticipated to be constructed between 1 November and 31 July to minimize potential impacts to sea turtles; however, the final project schedule will be determined in coordination with environmental agencies with appropriate conditions in place for varying windows (ie – turtle monitoring). No construction activities will take place during sea turtle hatching season (1 August to 31 October). Construction will take place over a ~60-day to ~90-day period, working 24 hours per day. Turbidity associated with the project will be localized

and short-term given the dominance of sand-sized material with ~8percent 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 ~150 acres of surficial benthic organisms in the borrow area. Filling operations will bury ~125 acres of shallow beach and inshore habitat (ocean shoreline), resulting in mortality and displacement of existing benthic populations. Nourishment will provide an additional ~60 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).

The proposed borrow areas are situated between 1 and 3 miles offshore where natural bottom depths vary from 22 ft to 32 ft (MLLW). The excavations will be of the order 3-7 ft ±1 ft, which is comparable to the natural depth variation in the area. Sediments in the area vary in grain size, shell content, and mud content. The applicant plans to obtain additional borings to further refine the boundaries of the proposed borrow area(s) and optimize sediment quality for the project. Any adjustments to the borrow areas will not increase the total area requested under this application. The applicant will update bathymetric maps and geotechnical data and provide these data to permitting and resource agencies for final approval.

The applicant will monitor the nourishment progress and sediment quality multiple times daily to ensure that suitable material is placed on the beach. Daily sand samples will be obtained and analyzed for grain size, shell content, and mud content. Should pockets of undesirable material be encountered, the dredge will be instructed to adjust the dredging depth or location until suitable material is found.

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 hatching season (August-October), and if practicable, outside of sea turtle nesting season (May-August). Should portions of the project overlap with turtle nesting season, standard protection and monitoring actions will be completed to minimize impacts to turtles. Action items 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.*

- *Tilling of the nourished beach and compaction monitoring for three years after nourishment.*
- *Escarpment monitoring and leveling for three years after nourishment.*

Sediment Quality

The applicant will define permitted borrow areas so as to reduce the amount of gravel and shell material placed on the beach. Specific monitoring will include:

1) *Collection of additional borings in Areas A and B; analysis of sediment quality; and preparation of maps of sediment grain size, percent mud, percent gravel, and percent shell material.*
2) *Review of borrow area geotechnical data with permitting agency officials and identification of priority subareas for excavation. The applicant (through its agent) will determine a dredging strategy to utilize the borrow areas in an efficient manner while maintaining sediment quality throughout the project.*
3) *Pre-construction, native-beach sand samples will be obtained at ~1,000-ft intervals along the project area (between groin 1 and 2nd St). At each location, samples will be taken at the toe of the dune, middle of the dry-sand berm, approximate mean sea level, and shallow subtidal zone (wading depth). Samples will be sieved at 0.25-phi intervals and acid-washed to determine shell content.*
4) *The applicant (through its agent) will have qualified personnel under the direction of a registered professional geologist monitoring sediment quality on the beach during construction and correlating it with the borrow area conditions.*
5) *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 weekly to USACE and SCDHEC-OCRM for review.*
6) *Additional sampling and frequent observation will be completed during the initial 4–6 hours of pumping when the dredge moves to a new borrow site until the 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.*
7) *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 OCRM in a comprehensive final report.*
8) *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 OCRM 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 nonshell 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.*

9) *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.*

10) *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 SCDHEC-OCRM following standard testing protocols.*

Monitoring Plan

The applicant will establish and complete the following monitoring plan as part of the proposed project. Some of these action items were mentioned previously, but are included here for completeness.

<u>Beach Surveys</u> – The applicant will conduct topographic and bathymetric beach surveys before and after the project, and for 3 years post project. Surveys will be conducted at profiles presently monitored by the applicant (3 per groin cell) and will encompass the beach between a point landward of the stable dune and extend to depths of -20 ft NAVD, or a distance of 3,000 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 SCDHEC-OCRM.

<u>Borrow Area Surveys</u> – The applicant will conduct pre-project, post-project, and out-year bathymetric surveys of the utilized dredge area. Surveys will encompass the boundaries of the dredge area and will include a minimum 400 ft buffer along the outside of each 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.

Benthic Infauna Monitoring - If dredging extends into the spring or summer season (1 April to 30 September), benthic monitoring of the beach and borrow area will be performed by the applicant. Monitoring will include collecting 10 random samples within the impact areas (borrow area and fill area) and 10 samples in surrounding control areas. For the borrow area, samples will be collected immediately before and after dredging, and 1 year and 3 years post dredging (during the same season as the immediate post-dredging survey). For the beach area, samples will be collected immediately before dredging, and then 1 month, 6 months and 1 year post dredging. The 1 year post sample will be collected during the same season as the pre-dredging survey. For the beach samples, the sampling design will follow procedures for recent similar studies in South Carolina with each site sampled over a 100 m area along transects spaced 10 m apart and samples collected at a random location along the transect between the MSL and MLW contours. Sediment samples will also be collected for grain-size analysis and shell content.

Sediment Monitoring

Beach – Pre and post nourishment beach sediment samples will be taken at stations spaced ~1,000 ft in the alongshore direction. 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 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 ~10cm in diameter and 10cm 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 SCDHEC-OCRM.

Lighting – The applicant will conduct one lighting survey of the beach in the first May following nourishment following guidelines prepared by USFWS. A summary report of the survey, including the methodology, map of lighting sources, and description of each source) will be submitted to USFWS within three months of the survey. Following submission of the survey results, the applicant will meet with USFWS to discuss the report.

Proposed Mitigation:

The applicant offered no compensatory mitigation for the proposed impacts.

Project Purpose:

The project purpose of the project is storm damage reduction.

NOTE: This public notice and associated plans are available on the Corps' website at: http://www.sac.usace.army.mil/Missions/Regulatory/PublicNotices .

The District Engineer has concluded that the discharges associated with this project, both direct and indirect, should be reviewed by the South Carolina Department of Health and

Environmental Control in accordance with provisions of Section 401 of the Clean Water Act. As such, this notice constitutes a request, on behalf of the applicant, for certification that this project will comply with applicable effluent limitations and water quality standards. The work shown on this application must also be certified as consistent with applicable provisions of the Coastal Zone Management Program (15 CFR 930). This activity may also require evaluation for compliance with the S. C. Construction in Navigable Waters Permit Program. State review, permitting and certification is conducted by the S. C. Department of Health and Environmental Control. The District Engineer will not process this application to a conclusion until such certifications are received. The applicant is hereby advised that supplemental information may be required by the State to facilitate the review.

This notice initiates the Essential Fish Habitat (EFH) consultation requirements of the Magnuson-Stevens Fishery Conservation and Management Act. Implementation of the proposed project would impact 110 acres of intertidal beaches and 200 acres of adjacent subtidal ocean bottom utilized by various life stages of species comprising the shrimp, and snapper-grouper management complexes. The District Engineer's initial determination is that the proposed action would not have a substantial individual or cumulative adverse impact on EFH or fisheries managed by the South Atlantic Fishery Management Council and the National Marine Fisheries Service (NMFS). The District Engineer's final determination relative to project impacts and the need for mitigation measures is subject to review by and coordination with the NMFS.

Pursuant to the Section 7 of the Endangered Species Act of 1973 (as amended), the Corps has reviewed the project area, examined all information provided by the applicant, and the District Engineer has determined that the project may affect, not likely to adversely affect any Federally endangered, threatened, or proposed species or result in the destruction or adverse modification of designated or proposed critical habitat. However, it has been determined that the project will have no effect on Shortnose Sturgeon (Acipenser brevirostrum) and/or the Atlantic sturgeon (Acipenser oxyrinchus) and will not result in the destruction or adverse modification of designated or proposed critical habitat. This public notice serves as a request for written concurrence from the U.S. Fish and Wildlife Service and/or the National Marine Fisheries Service on this determination.

Pursuant to Section 106 of the National Historic Preservation Act (NHPA), this public notice also constitutes a request to Indian Tribes to notify the District Engineer of any historic properties of religious and cultural significance to them that may be affected by the proposed undertaking.

In accordance with Section 106 of the NHPA, the District Engineer has consulted South Carolina ArchSite (GIS), for the presence or absence of historic properties (as defined in 36 C.F.R. 800.16)(*l*)(1)), and has initially determined that there are historic properties present, but they will not be affected; therefore, there will be no effect on historic properties. To ensure that other historic properties that the District Engineer is not aware of are not overlooked, this public notice also serves as a request to the State Historic Preservation Office and other interested parties to provide any information they may have with regard to historic properties. This public notice serves as a request for concurrence within 30 days from the SHPO (and/or Tribal Historic Preservation Officer).

The District Engineer's final eligibility and effect determination will be based upon coordination with the SHPO and/or THPO, as appropriate and required and with full consideration given to the proposed undertaking's potential direct and indirect effects on historic

properties within the Corps-identified permit area.

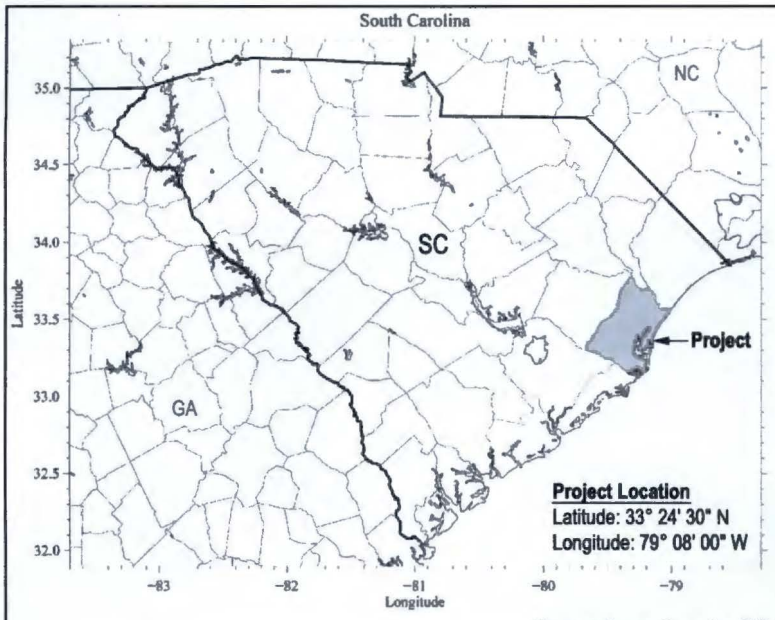
Any person may request, in writing, within the comment period specified in this notice, that a public hearing be held to consider this application. Requests for a public hearing shall state, with particularity, the reasons for holding a public hearing.

The decision whether to issue a permit will be based on an evaluation of the probable impact including cumulative impacts of the activity on the public interest and will include application of the guidelines promulgated by the Administrator, Environmental Protection Agency (EPA), under authority of Section 404(b) of the Clean Water Act and, as appropriate, the criteria established under authority of Section 102 of the Marine Protection, Research and Sanctuaries Act of 1972, as amended. 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 project must be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the project 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 and, in general, the needs and welfare of the people. A permit will be granted unless the District Engineer determines that it would be contrary to the public interest. In cases of conflicting property rights, the Corps cannot undertake to adjudicate rival claims.

The Corps is soliciting comments from the public; Federal, state, and local agencies and officials; Indian Tribes; and other interested parties in order to consider and evaluate the impacts of this activity. Any comments received will be considered by the Corps to determine whether to issue, modify, condition or deny a permit for this project. 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 activity. **Please submit comments in writing, identifying the project of interest by public notice number, to the following address:**

U.S. Army Corps of Engineers
ATTN: REGULATORY DIVISION
1949 INDUSTRIAL PARK ROAD, ROOM 140
CONWAY, SOUTH CAROLINA 29526

If there are any questions concerning this public notice, please contact Rob Huff, Watershed Manager, at (843) 365-4239.



Georgetown County, SC

DIRECTIONS From US-17:
southwest on US-17 S toward Algonquin Dr (2.1 mi).

Turn left onto N Causeway Dr/County Rd S-22-46/Waverly Rd (0.4 mi)

Turn left onto County Rd S-22-455/Myrtle Ave (0.4 mi)

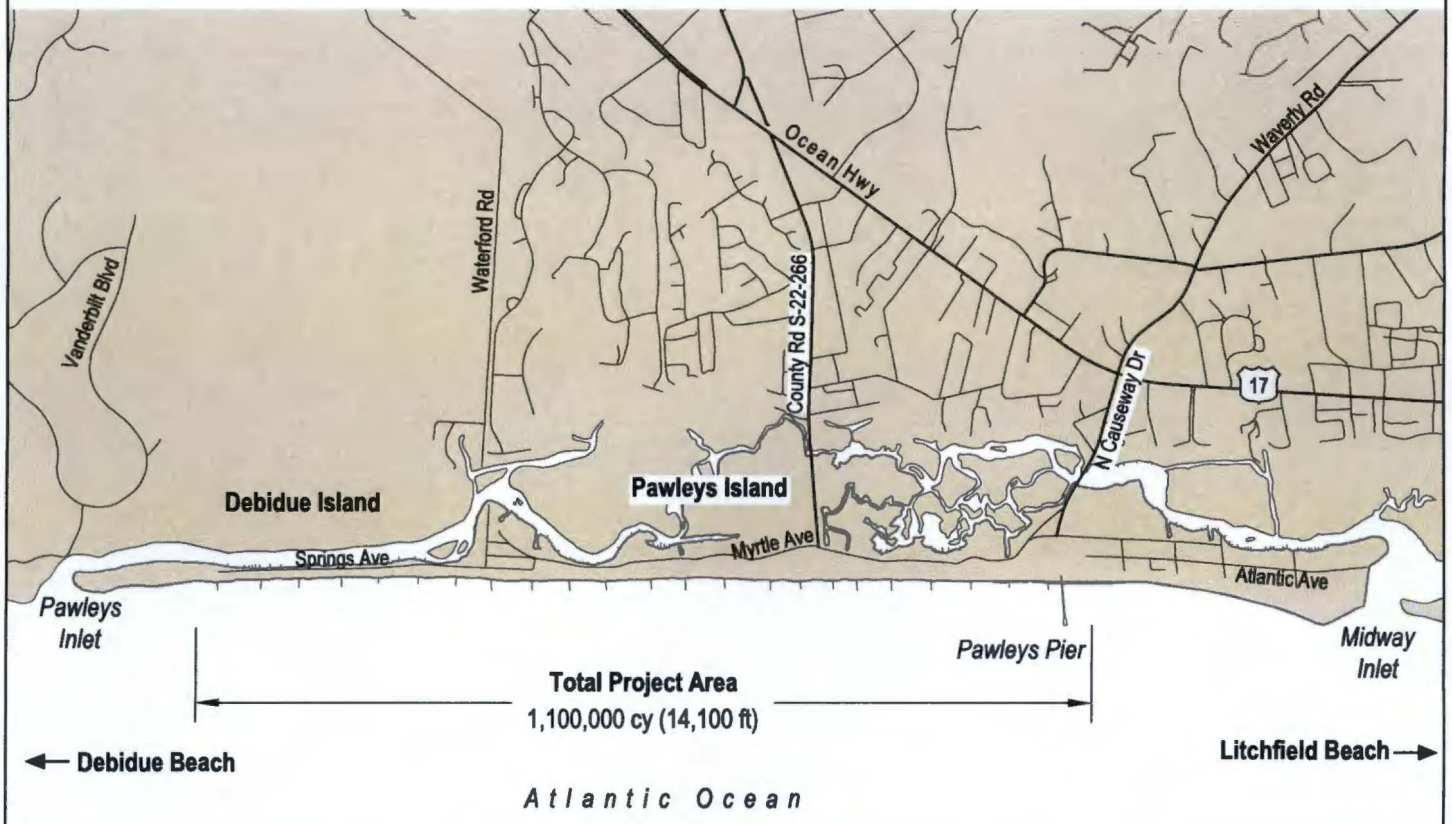
Turn right onto Pearce St

Turn right at the 1st cross street onto Atlantic Ave/County Rd S-22-462

Turn right at the 1st cross street onto County Rd S-22-10

Turn left onto County Rd S-22-455/Myrtle Ave

The Northern project limit is ~500 ft North of Pawleys Pier (at Pawleys Pier Village), extending South ~14,100 ft. The Southern Project limit is ~500 ft South of the last groin adjacent to Pawleys Inlet in the vicinity of the public beach access parking area.



APPLICANT:
Town of Pawleys Island
321 Myrtle Avenue
Pawleys Island, SC 29585

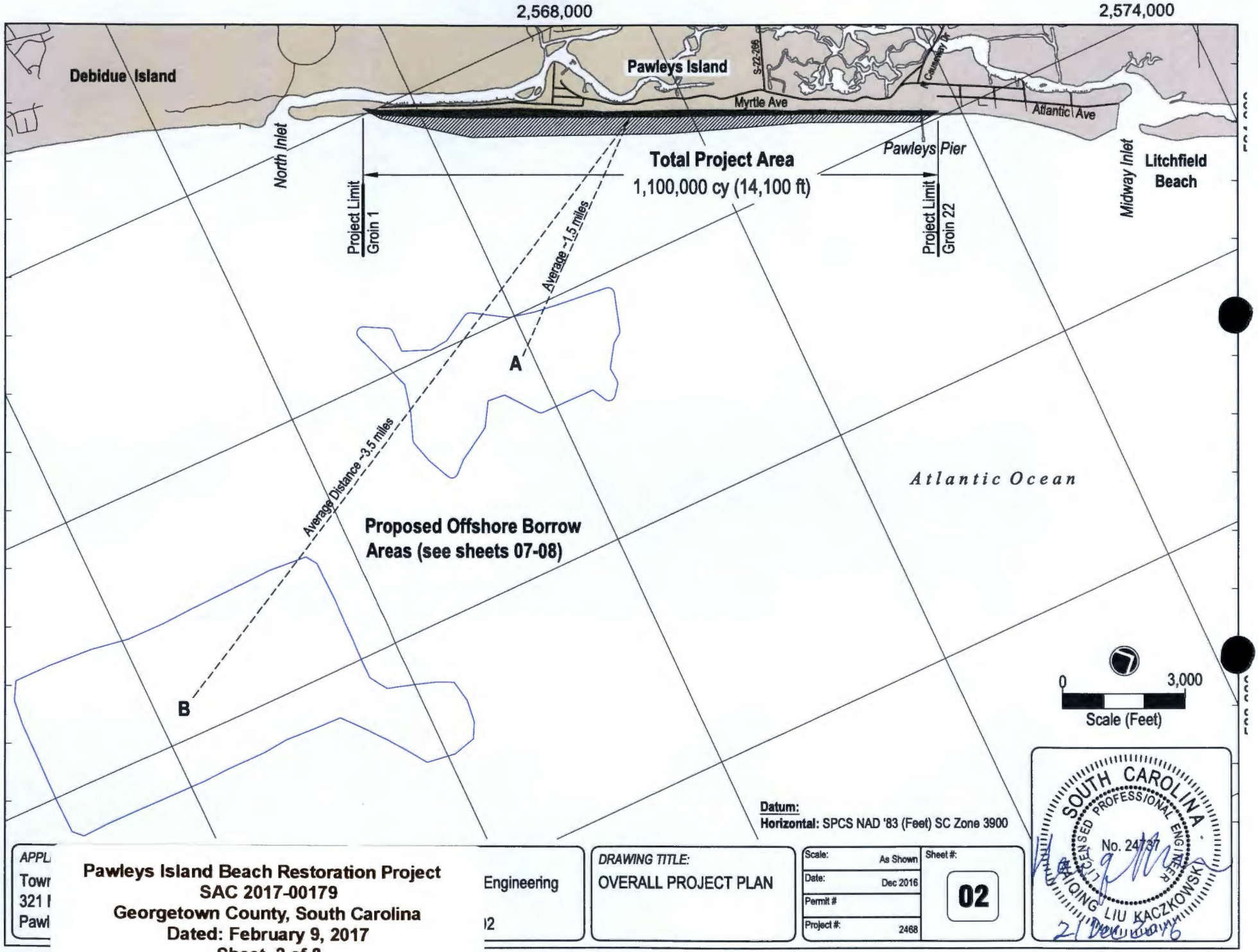
DRAWING TITLE:
VICINITY MAP

Pawleys Island Beach Restoration Project
SAC 2017-00179
Georgetown County, South Carolina
Dated: February 9, 2017
Sheet 1 of 8

AGENT: *P/N 2010...*
COASTAL SCIENCE & ENGINEERING
PO BOX 8056
COLUMBIA, SC 29202

SCALE: AS SHOWN
DATE: Dec 2016
TMS#
PROJECT #: 2468
SHEET #: 0

21 December 2016



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Pawleys Island Beach Restoration Project
SAC 2017-00179
Georgetown County, South Carolina
Dated: February 9, 2017
Sheet 2 of 8

Engineering
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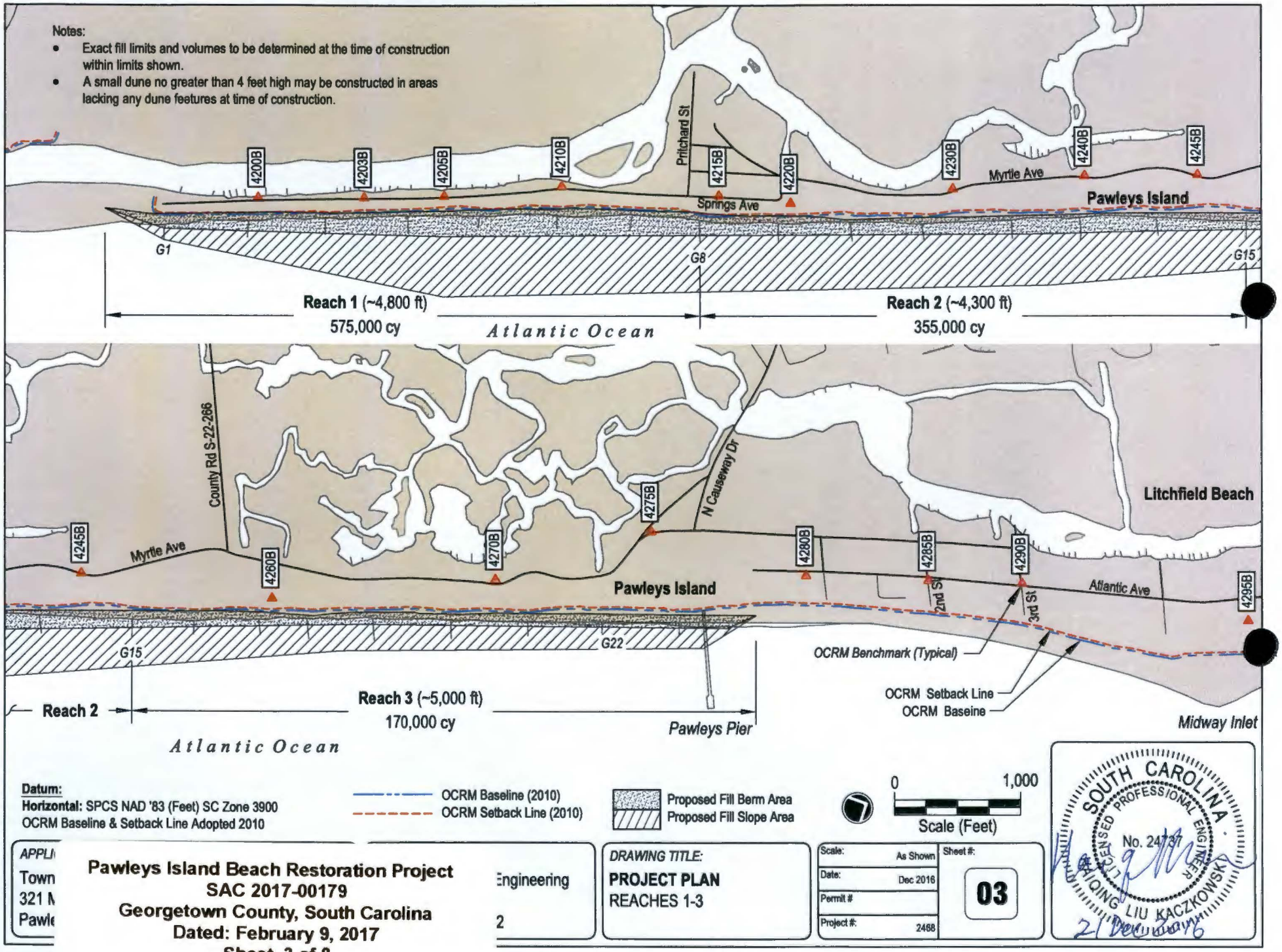
DRAWING TITLE:
OVERALL PROJECT PLAN

Scale:	As Shown
Date:	Dec 2016
Permit #	
Project #:	2468

Sheet #: **02**



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Pawleys Island Beach Restoration Project
SAC 2017-00179
Georgetown County, South Carolina
Dated: February 9, 2017
Sheet 3 of 8

Engineering
2

DRAWING TITLE:
PROJECT PLAN
REACHES 1-3

Scale:	As Shown
Date:	Dec 2016
Permit #	
Project #:	2488

Sheet #: **03**

SOUTH CAROLINA
LICENSED PROFESSIONAL ENGINEER
No. 24737
QIQIONG LIU KACZKOWSKI
2 Dec 2016

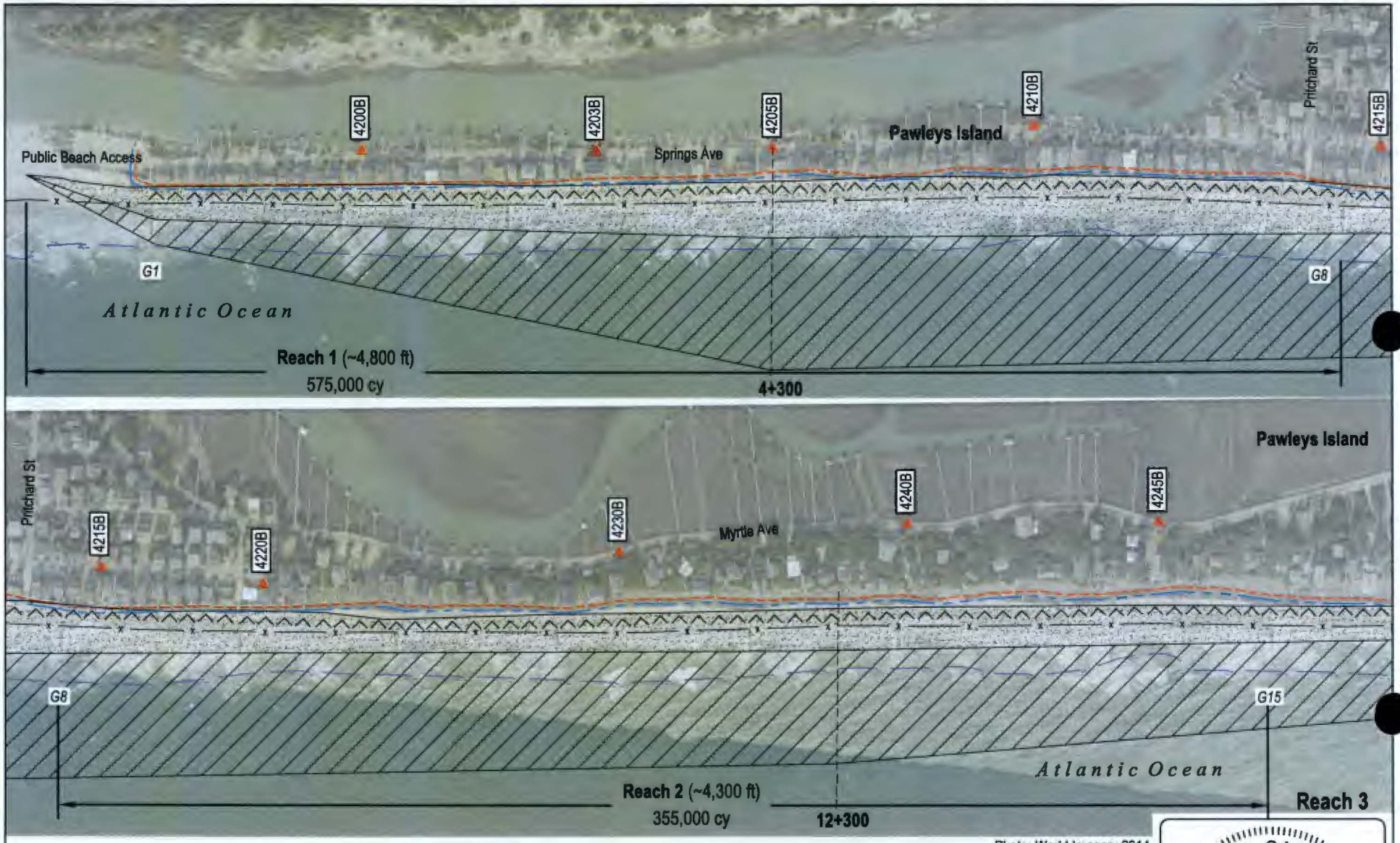

Photo: World Imagery 2014

Key

- *MHW* +2.05' NAVD (Oct 2016)
- *MLW* -2.97' NAVD (Oct 2016)
- Sand Fence / Vegetation
- OCRM Baseline (2010)
- OCRM Setback Line (2010)
- Proposed Fill Berm Area
- Proposed Fill Slope Area

0 500

Scale (Feet)

SOUTH CAROLINA PROFESSIONAL ENGINEER
No. 24737
QIQING LIU KACZKOWSKI

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Pawleys Island Beach Restoration Project
SAC 2017-00179
Georgetown County, South Carolina
Dated: February 9, 2017
Sheet 4 of 8

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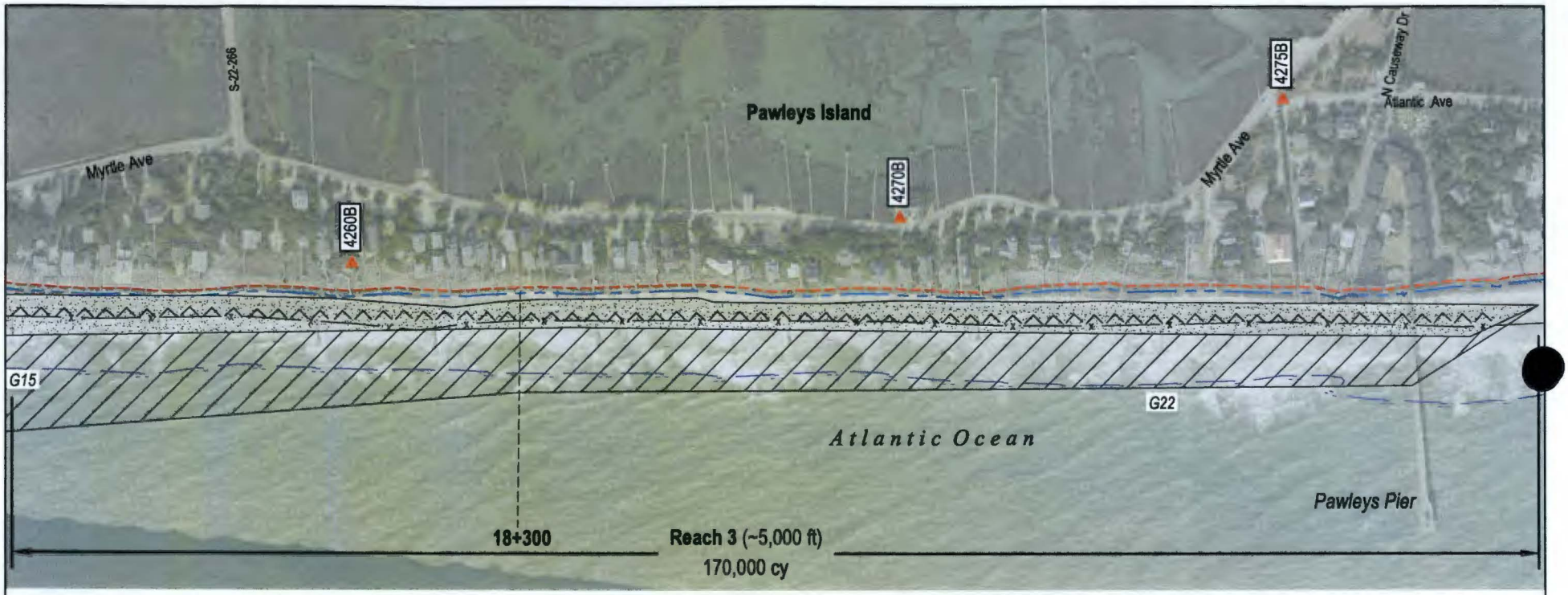
DRAWING TITLE:
FILL PLAN
REACH 1 - REACH 2

Scale:	As Shown
Date:	Dec 2016
Permit #	
Project #:	2468

Sheet #: **04**



Datum:
Horizontal: SPCS NAD '83 (Feet) SC Zone 3900
OCRM Baseline & Setback Line Adopted 2010
Photo: World Imagery 2014

Key

- *MHW* +2.05' NAVD (Oct 2016)
- *MLW* -2.97' NAVD (Oct 2016)
- Sand Fence / Vegetation
- OCRM Baseline (2010)
- OCRM Setback Line (2010)
- Proposed Fill Berm Area
- Proposed Fill Slope Area

0 500
Scale (Feet)

Pawleys Island Beach Restoration Project
SAC 2017-00179
Georgetown County, South Carolina
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DRAWING TITLE:
FILL PLAN
REACH 3

Scale:	As Shown
Date:	Dec 2016
Permit #	
Project #:	2468

Sheet #: **05**

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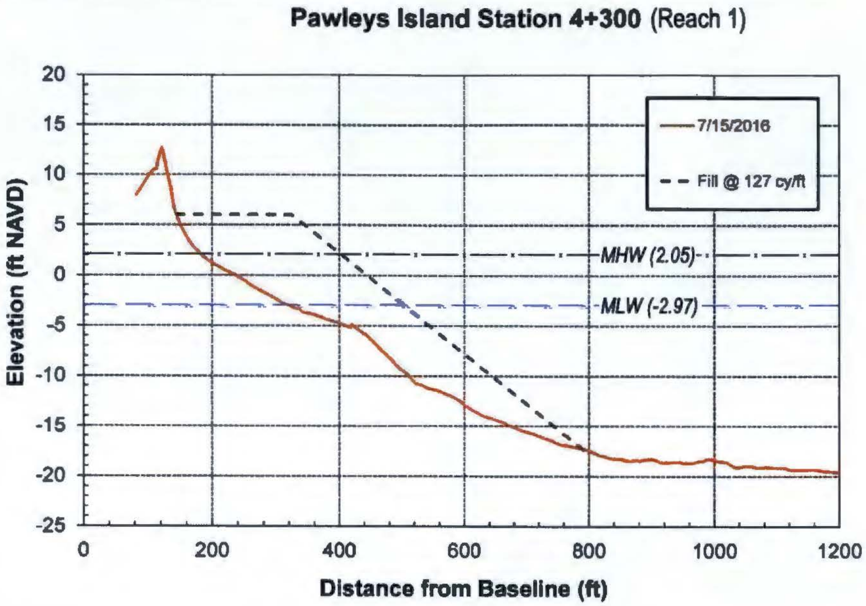
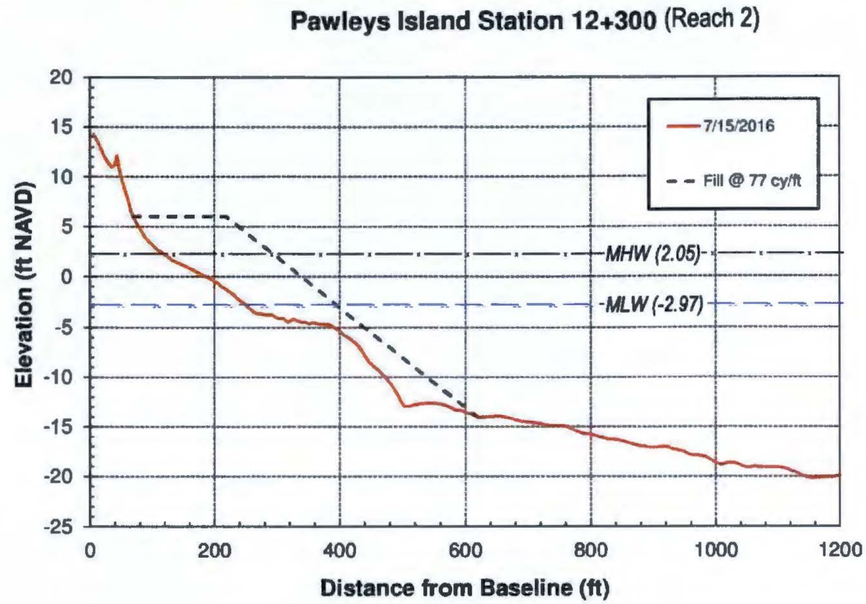
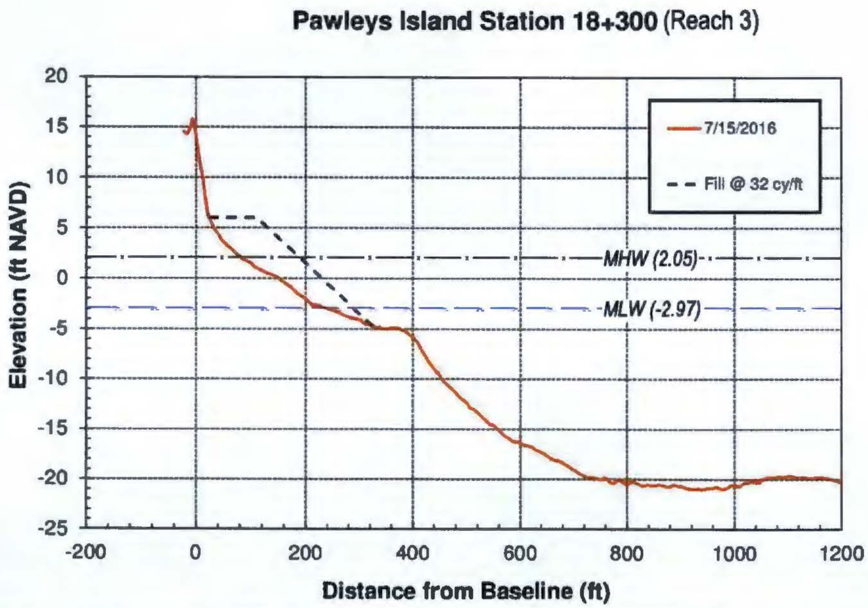
No. 24737
TAIQING LIU KACZKOWSKI
21 Dec 2016







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Pawleys Island Beach Restoration Project
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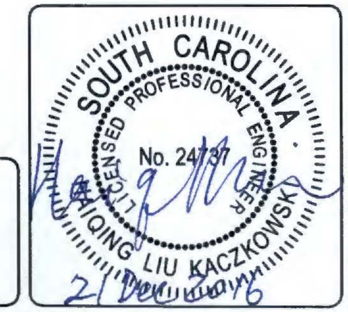
DRAWING TITLE:

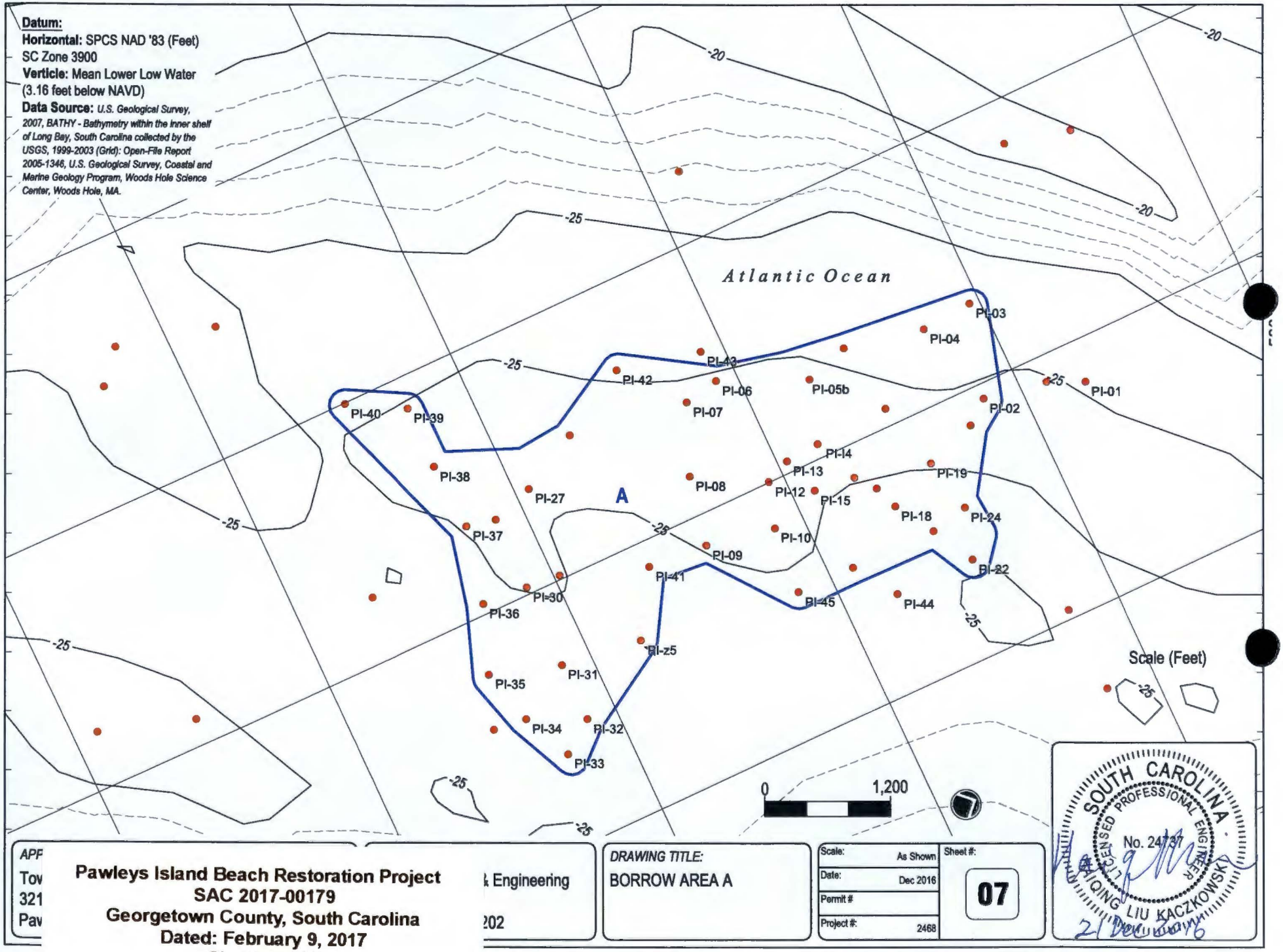
FILL SECTIONS
REACH 1 - REACH3

Scale:	As Shown	Sheet #: 06
Date:	Dec 2016	
Permit #		
Project #:	2468	



38,000 2,570,400 2,572,800

Datum:
Horizontal: SPCS NAD '83 (Feet) SC Zone 3900
Verticle: Mean Lower Low Water (3.16 feet below NAVD)
Data Source: *U.S. Geological Survey, 2007, BATHY - Bathymetry within the inner shelf of Long Bay, South Carolina collected by the USGS, 1999-2003 (Grid): Open-File Report 2005-1346, U.S. Geological Survey, Coastal and Marine Geology Program, Woods Hole Science Center, Woods Hole, MA.*



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Georgetown County, South Carolina
Dated: February 9, 2017
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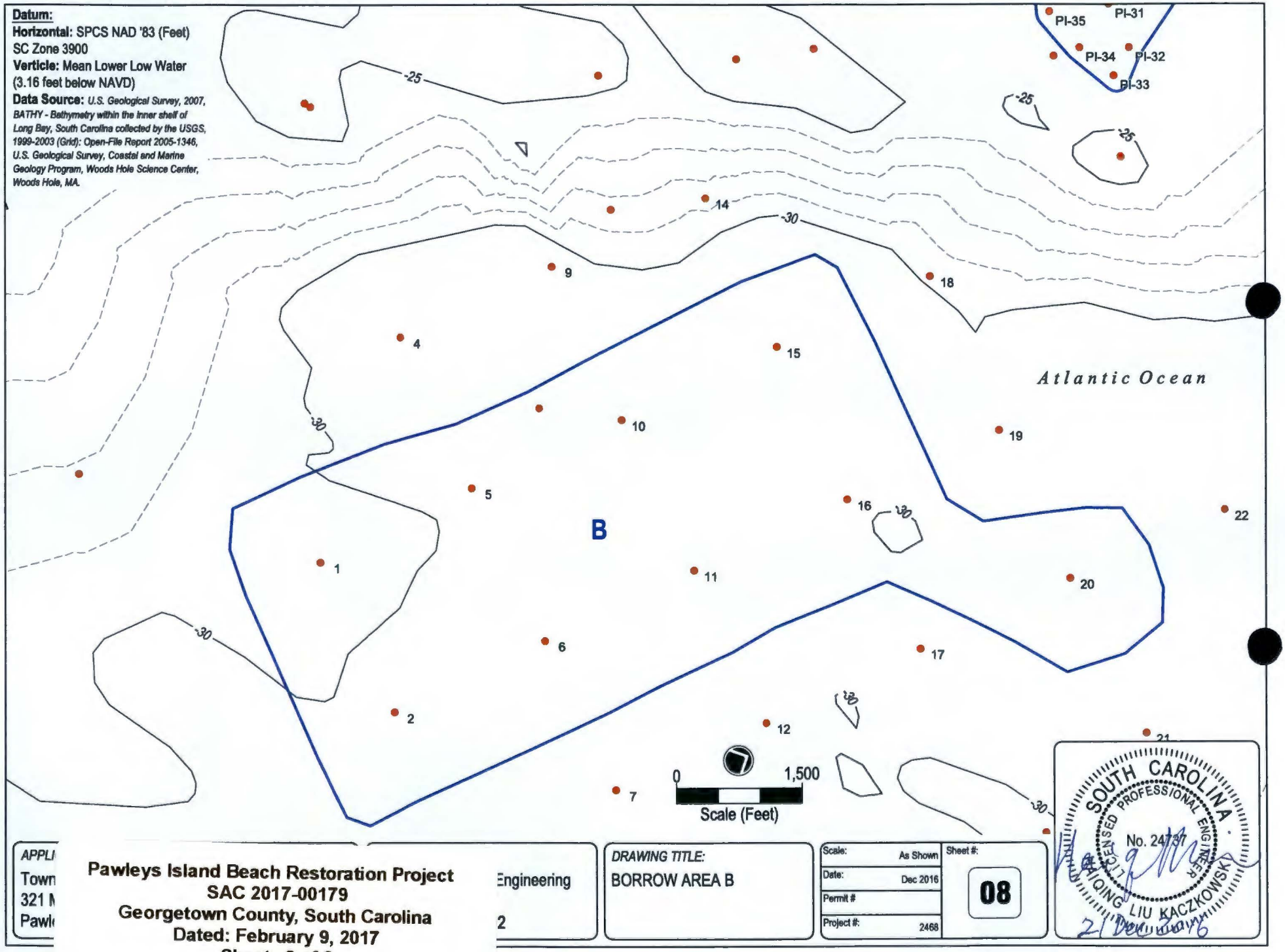
DRAWING TITLE:
BORROW AREA A

Scale:	As Shown
Date:	Dec 2016
Permit #	
Project #:	2468

Sheet #: **07**



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DRAWING TITLE:
BORROW AREA B

Scale:	As Shown
Date:	Dec 2016
Permit #	
Project #:	2468

Sheet #: 08

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No. 24737
LIU KACZKOWSKA