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PROMOTE PROTECT PROSPER

Interagency Meeting Request Form

If you wish to be on the agenda for an upcoming Interagency Meeting please complete the following form and return it, along with other required information, to Monica N. Taylor, SCDHEC, Bureau of Water, 2600 Bull Street, Columbia, SC 29201-1708 by the date indicated on the attached agenda (see 'Deadline for Submission of Request Form and Attachments). If you have not already contacted a project manager at the U.S. Army Corps of Engineers (COE) regarding your proposed project, you may want to discuss your project with them before submitting this form. You may contact the COE at (843) 329-8044 or toll free at 1-866-329-8187.

You will be contacted regarding the availability of space for the requested meeting date. Please print clearly, answer all questions on this form, and give as much detail as possible in the brief description (attach extra page if necessary). If you have any questions, please call Monica Taylor at (803) 898-4176, or e-mail him at taylormn@dhec.sc.gov.

Along with this completed form and fourteen (14) copies of the form, please submit fifteen (15) copies of a brief project narrative, location map, soils map, and drawings indicating the proposed activity. Receipt of this information is required prior to your being placed on the agenda.

12/06

Name: Steven Traynum **Agency/Company:** Coastal Science & Engineering

Phone #: _(____) 803 799 8949 **Fax #:** _(____) 803 799 9481

E-mail Address: straynum@coastalscience.com

Mailing Address: PO Box 8056 Columbia SC 29202-8056

Project Name: Isle of Palms Shoal Management

Brief Topic Description: Realignment of shoreline at the northeastern end of Isle of Palms (SC) to mitigate erosion associated with periodic shoal-bypass events

Wetland Acres Impacted: 70 **Type of wetlands impacted :** Beach

County: Charleston **Waterbody:** Atlantic Ocean

Local government with jurisdiction over project: City of Isle of Palms

Approximate time needed: 15 min **30 min** 45 min 1 hour

Preferred time: morning afternoon **does not matter**
(Not guaranteed)

Interagency Meeting date desired: 2 September 2010

COASTAL SCIENCE & ENGINEERING
COLUMBIA SC 29202 • TEL 803-799-8949 • FAX 803-799-9481 • EMAIL cse@coastalscience.com

MEMO

DATE: August 18, 2010

TO: Monica N Taylor
SCDHEC – Bureau of Water
2600 Bull Street
Columbia SC 29201-1708

FROM: Steven B Traynum
Coastal Science & Engineering (CSE)

RE: **Isle of Palms Inlet Shoal Management Plan**

CSE requests that the City of Isle of Palms (c/o CSE) be added to the interagency meeting agenda in September 2010 for purposes of discussing a proposed erosion-control project at Isle of Palms (SC). Rationale for the project, as well as a brief description, is given herein. It follows work completed by the City in 2008 and numerous studies of erosion in the area dating back to 1980. The proposed plan is consistent with the City of Isle of Palms Local Comprehensive Beach Management Plan (IOP 2008).

Proposed Project Description

The City of Isle of Palms is seeking a permit to periodically realign the beach in shoal-attachment areas as part of a long-term shoal management plan. The proposed plan calls for transfer of sand via land-based equipment from demonstrated accretion areas to eroded areas along the northeastern end of the Isle of Palms. All work would be performed during winter months unless otherwise specified by resource agencies.

Sand will be excavated from the wet beach in the shoal-attachment area and transferred to areas showing focused erosion (resulting from the shoal-attachment process). Up to 200,000 cubic yards (cy) may need to be transferred at a given time to sufficiently reduce the impact of an attaching shoal. The actual quantity of sand to be transferred will depend on the condition of the beach in both the fill and excavation areas, as well as the predicted impacts of future bypass events. The condition of the beach, as surveyed in March 2010, indicates up to 150,000 cy should be transferred from the accretion area to eroded areas to maintain the desired beach condition.

Excavations will be performed via hydraulic hoes or scraper pans, depending on contractor's preference, and will be located at the seawardmost accessible portion of the beach. Excavations in the shallow, underwater portion of the beach will allow for incoming sand to

rapidly fill any holes created. It will also limit the amount of dry beach utilized in the transfer. Excavation depths will be limited to a specified elevation, likely -6 ft NAVD, unless otherwise preferred by resource agencies.

A buffer distance from the existing building line would be established to ensure a sufficient volume of sand remains in the borrow area to provide habitat, recreational area, and storm protection. Analysis of beach profiles dating to the 1980s confirms that a 400-foot (ft) minimum buffer distance should be established. This would allow for approximately one-year's worth of the maximum observed erosion and would still leave sufficient volume for a healthy beach. It is highly unlikely that the maximum erosion rates assumed in the proposed plan would persist for longer periods of time in the shoal-attachment area.

Fill volume in areas receiving sand will vary depending on beach condition at the time of the project. In the area currently showing focused erosion (in the vicinity of Seascape and Beach Club Villas), the March 2010 condition showed ~40 cubic yards per foot (cy/ft) less volume than the March 2009 condition and ~80 cy/ft less volume than the July 2008 condition (post-nourishment). In the current configuration, the shoal-management project would restore the quantity of sand in these areas to near post-nourishment condition, which would align the beach in a more stable configuration. Fill will be placed in the form of a berm of variable width at the natural dry-sand beach level (approximately +6 ft NAVD). The seaward edge of the fill will be sloped in the offshore direction to no steeper than 10 percent grade (1 on 10 slope) to the existing beach. It is anticipated that each management event will be accomplished in less than two calendar months.

A project would only be undertaken if the beach condition reached a set "trigger." This trigger would be the distance from the high-tide swash line to the established building line. CSE recommends a trigger of 50-100 ft, but adjustments should be allowable based on expected future trends (ie – shoal nearing Stage 2 would indicate erosion would increase in certain areas). Yearly monitoring of the beach and offshore area in the project vicinity will be employed to verify sand volume remaining on the beach, to identify the position of the high-tide line relative to the building line, and to monitor the scale and movements of offshore shoals.

Overall Project Purpose

The overall objective of the management strategy is to maintain beach habitat, recreation area, and storm protection by redistributing incoming sand from inlet shoal-bypass events. Such redistribution is necessary to avoid significant localized erosion which accompanies these events. The specific goals of the project are to:

1) Reduce the potential for erosion to reach a point where no dry beach remains.
2) Eliminate the need for emergency sandbagging during shoal bypass events.
3) Maintain nesting habitat for turtles.

4) Facilitate dune growth improving habitat and storm protection.
5) Maintain recreational, dry-beach area during all stages of the tide.

Additional Information is provided herein for convenience. See CSE (2007) for details on the erosion history at the Isle of Palms.

Rationale

The effect of sediment bypassing at tidal inlets on receiving shorelines has been well documented (Williams and Kana 1987, Gaudiano 1998, Kana et al 1999). Shoals migrating onshore bring new sand to a beach; however, they usually cause dramatic changes to the shoreline during the process. Changes are generally temporary, but can cause significant problems when development is threatened. Large fluctuations in the shoreline position near inlets led to the SC DHEC-OCRM classification of Unstabilized Inlet Erosion Zones, which impose stricter setback criteria than standard zones away from inlets.

At Isle of Palms, aerial images dating to the 1940s confirm ongoing shoal-bypass events averaging one every 6.6 years (Gaudiano 1998). The addition of sand as a result of these events accounts for the accretion observed along the downcoast portion of the island, which has been gaining 2.6 cy/ft/yr since 1998 (CSE 2010). A bypass event occurring in the early 1980s was used by Williams and Kana (1987) to model the “shoal bypass cycle,” identifying three stages of evolution where the shoal:

1) Emerges offshore, usually as a circular-shaped, sub-aerial sand mound.
2) Migrates closer to shore, causing accretion in its lee and erosion of adjacent areas.
3) Fully attaches to the beach, allowing new sand to spread into previously eroded areas.

The shoal-bypass events act as natural nourishment to the Isle of Palms and contribute to the net accretion observed over the majority of the island over the past century. Two notable events occurred in the 1980s, followed by another in the mid-late 1990s, and again between 2004 and 2007. After the nourishment project in 2008, two smaller events have occurred, bringing more sand to the beach.

Figure 1 illustrates the extent of shoreline changes at the northeastern end of Isle of Palms during the past several decades along with landmarks referenced herein.

Prior to the 2008 nourishment project, CSE completed a feasibility report for the Wild Dunes Community Association outlining historical erosion trends along the northeastern end of the island and evaluating the potential for a two-part project involving offshore nourishment and emergency shoal management (CSE 2007).

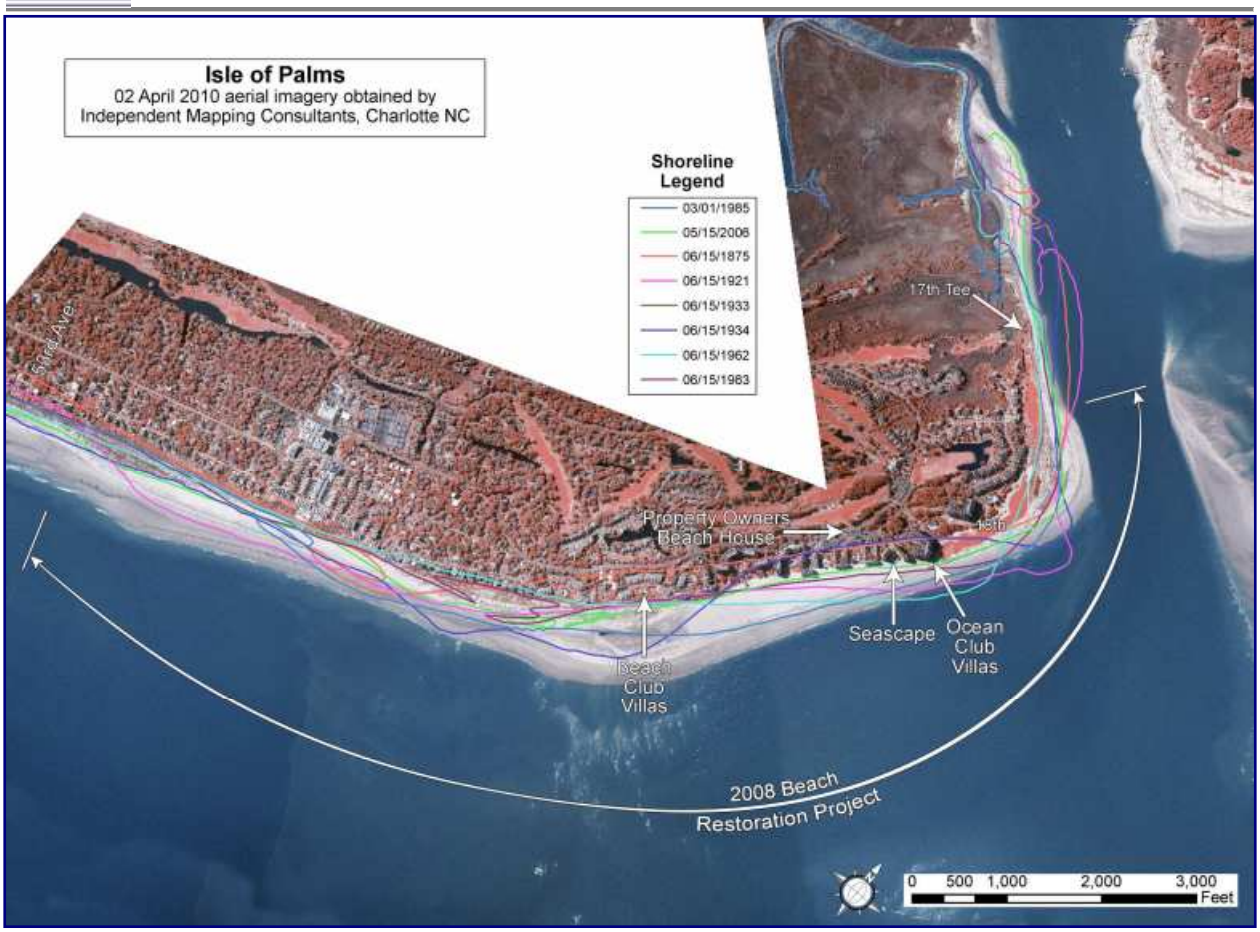

FIGURE 1. Historical shoreline positions at the northeast end of Isle of Palms. Shoreline data provided by SC DHEC OCRM.

The study, which included a review of earlier research at the island, found that the northeastern end had a net sand deficit of 20,000-30,000 cy per year (SCSGC 2001), despite volumes much larger than this being added to the beach every five years or so. This long-term deficit, coupled with temporary erosion associated with an ongoing shoal-bypass event, left the beach along portions of the northeastern end without any dry beach, forcing property owners to use sand-bags to protect buildings. Also noted was that sediment transport to downcoast areas is inter-rupted during Stage 2 of bypass events, as sand moves behind the incipient shoal instead of downcoast; therefore, it is in the greater interest of the community to accelerate Stage 2 and prolong Stage 3 of each bypass cycle.

As part of the nourishment project, and subsequent monitoring, CSE has collected compre-hensive surveys of the northeastern end of the island since 2007. These surveys verify the sediment transport patterns identified above, and for the first time, can fully identify shoal movement in the ebb-tidal delta of Dewees Inlet. The surveys show an extensive sand platform extending offshore in the vicinity of Beach Club Villas. The shoal present between 2004 and 2008 built from this platform, which is estimated to contain ~4.3 million cubic yards of sand

(CSE 2009). Following the nourishment, two additional shoals have built from this platform, the first attaching in April 2009, and the second presently close to attaching to the beach.

The rapidity of the recent bypass events may be due to larger scale processes occurring in the ebb-tidal delta of Dewees Inlet. A large shoal present on the seaward side of the main channel of Dewees Inlet has migrated to the southwest since July 2007, encroaching on the channel. This has caused the channel to infill with sediment and to migrate closer to the shore. At the same time, a secondary channel oriented parallel with Dewees Inlet has widened and deepened. These changes suggest that the main channel may be abandoned and the secondary channel may now be dominant. This channel switch would release a large volume of sand currently on the seaward side of the old channel, as well as sand currently in the shoal platform attached to the beach. The released sand would be pushed by waves toward the beach in the form of bypass events.

CSE believes these trends will produce an increased number of shoal-bypass events of a scale similar to previous events, or as less abundant but larger events. Regardless of the scale or frequency, these events are expected to produce major changes along the Isle of Palms shoreline as the shoals migrate onshore and attach to the beach.

Figure 2 presents digital models of the topography of the Dewees Inlet delta for July 2007 and March 2010 showing the configuration of offshore shoals. Movement of the offshore shoal is indicated by the black (lower) arrow. If the trend in shoal movement continues and the main channel switches to a more northerly position, the sand in the outer shoal will move onshore. Expansion of the secondary channel is identified by the blue (upper) arrow. Between March 2009 and March 2010, the outer shoal migrated ~700 ft to the southwest. If this rate continues, the shoal will begin to merge with the sand platform offshore of the Beach Club Villas area within the next two years. Based on past experience, significant erosion and accretion is likely, depending on where individual shoals attach. What is more uncertain is the scale of future bypass events.

Previous events have led to erosion significant enough to warrant remedial action (renourishment, scraping, sandbagging), but were not associated with an observed channel abandonment. With larger volumes of sand moving offshore with the channel avulsion, it is possible that the scale and duration of accretion and erosion may be increased.

An erosion analysis was performed using survey data dating to the 1980s to evaluate erosion rates in the unstabilized inlet erosion zone. The analysis shows that temporary erosion rates (generally calculated on yearly intervals) are highly variable in magnitude from year to year and from station to station, as would be expected around a tidal inlet. Temporary erosion rates (linear rates calculated using the 0-ft NAVD contour) ranged from 150 feet per year (ft/yr) to 335 ft/yr (Table 1). The highest erosion rates were located at the site of shoal attachment, following the attachment as the new sand spread from the site (Stage 3).

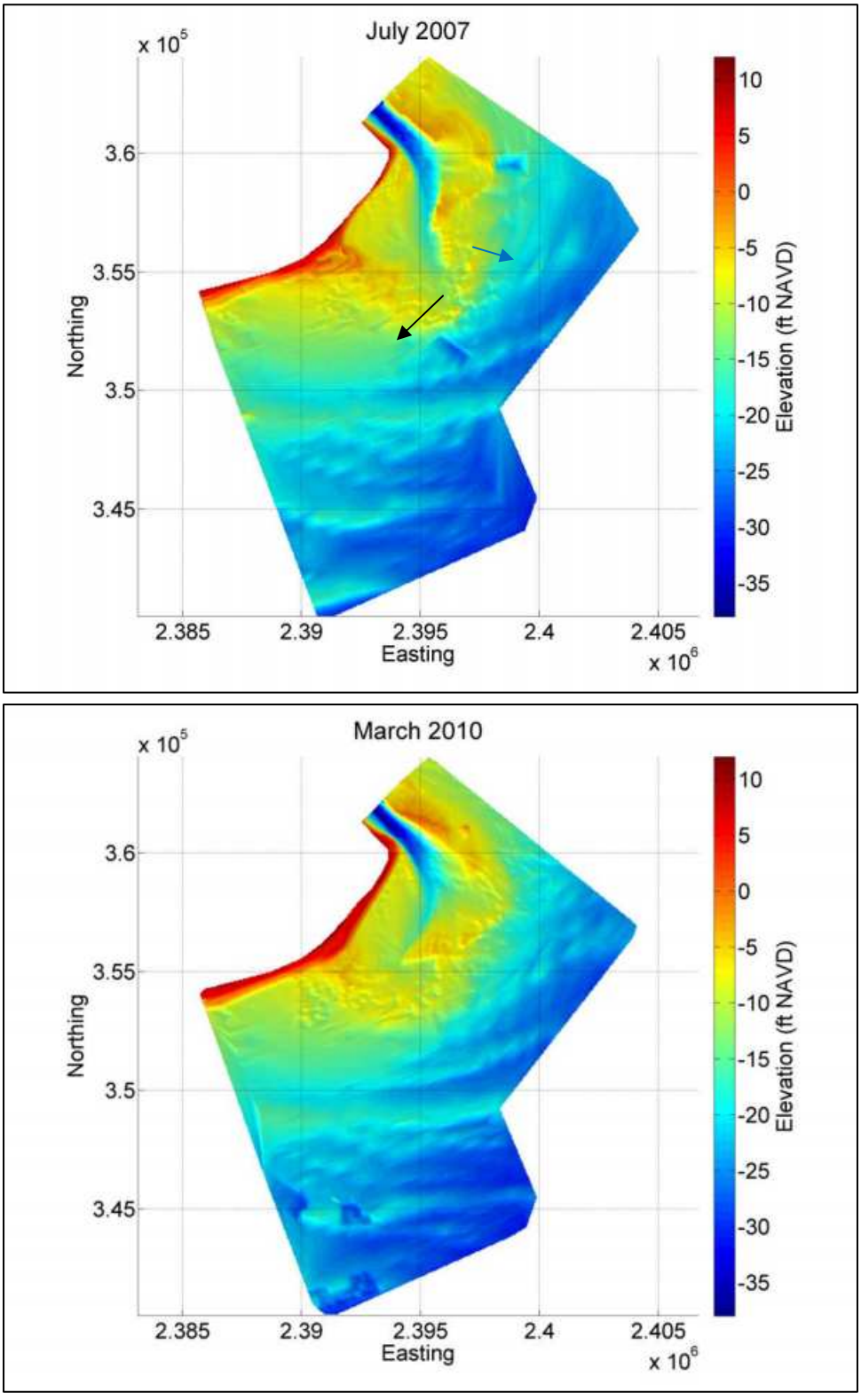

FIGURE 2. Digital elevation models of the Dewees Inlet ebb-tidal delta in July 2007 (upper) and March 2010 (lower). The blue (upper) arrow points to the seaward expansion of the secondary channel, while the black (lower) arrow highlights the southwest movement of a shoal on the seaward side of the original channel.

TABLE 1. Maximum and minimum short-term erosion rates (rate of change in the cross-shore direction of the 0 ft NAVD contour) at OCRM stations along the northeastern end of Isle of Palms.

OCRM Station	3159 – 53rd Avenue	3165 – 57th Avenue	3167 – W. Beach-wood East	3170 – E. Beach-wood East	3173 – Wild Dunes POBH	3175 – Mariners Walk	3178 – Summer House	3180 – Port O'Call	3183 – 18th Hole	3185 – 18th Fairway	3190 – 17th Tee
Max Linear Erosion Rate (ft/yr)	-250	-220	-177	-333	-335	-251	-167	-153	-178	-222	-39
Max Linear Accretion Rate (ft/yr)	285	181	247	242	638	378	304	186	110	160	23

Erosion rates in adjacent areas further away from the attachment site were between 150 ft/yr and 170 ft/yr, and occurred when shoals were in Stage 2 of the bypass cycle (prior to attachment). Temporary accretion rates were likewise variable (Table 1), ranging from 110 ft/yr to 638 ft/yr. Like the erosion observed, the highest accretion rates were observed in the area where the shoal attached (during Stage 2), then lessoned to either side (and occurred during Stage 3).

It is apparent from the above discussion that the shoreline at the northeastern end is dynamic; however, it is also somewhat predictable based on the stage of the shoal-bypass cycle. It is in the best interest of the City and State to maintain a healthy beach at all times—maintaining habitat for nesting turtles, recreational area, and storm protection from infrastructure. The City believes the most economical and least intru-sive manner to maintain a continuous dry beach is by redistributing shoal sand as it attaches to the beach. Stage 2 of the shoal-bypass cycle can be shortened, reducing the potential for severe erosion in adjacent areas.

Proposed Plan

To address the cyclical erosion associated with shoal-bypass events (and accompanying loss of beach habitat, storm protection, and recreational area), the City of Isle of Palms wishes to establish a long-term plan for managing shoals at the northeastern end of the island. The proposed plan attempts to accelerate the natural processes occurring during bypass events by reducing the length of the "Stage 2" portion of the bypass cycle. In general, sand which is attaching to the beach via a shoal would be relocated to eroded areas, simulating the "Stage 3" portion of the cycle where sand spreads from the shoal attachment area to those areas previously eroded.

In general, the area from which sand would be transferred would be located at the seawardmost accessible portion of the beach in accreted areas. (Figure 3 shows the beach condition in September 2007, prior to the nourishment project.) In the present configuration (as surveyed in March 2010 and determined by shoal-bypass events over the past decade), the borrow area would be located in the vicinity of the Wild Dunes Property Owners Beach House (Fig 4). Sand

from the shoal-attachment area would be moved by land-based equipment to areas critically threatened by erosion. The quantity of sand moved would be determined by the condition of the beach at both the attachment area and the eroded areas, and would need to be of sufficient volume to reduce the "bulge" at the attachment area and fill the erosional arc in the nourishment area. Table 2 lists the potential excavation volumes seaward of various buffer distances in the shoal accretion area in March 2010. The goal is to maintain a sufficient volume of sand in all parts of the beach to provide a stable dune, habitat area, and protection for structures.

FIGURE 3. Example excavation area from a 2007 beach condition scenario. (Note that the cross-shore limits are different from the proposed buffer lines in this example, taken from CSE 2007.) A potential fill area is shown in Figure 5.

TABLE 2. Potential volumes (cy) available for excavation (as of March 2010). Volumes are in cubic yards (cy) and calculated between the buffer line and the indicated elevation contour. Calculation area is between the beach access just west of the west Beach Club Villas Complex and the access just east of Mariners Walk Complex.

	Excavation Elevation (ft NAVD)			
Buffer (ft)	**-2 ft**	**-3 ft**	**-4 ft**	**-5 ft**
100	313,995	367,991	421,988	475,984
200	253,297	299,589	345,881	392,173
300	194,243	232,633	271,023	309,413
400	139,725	170,025	200,322	230,621
500	88,392	110,408	132,424	154,439
600	43,679	57,208	70,737	84,266
700	13,590	19,275	24,960	30,646
800	1,470	2,925	4,381	5,837

Past experience with sand-redistribution projects at Isle of Palms shows that small projects tend to be short-lived due to the continued presence of the shoal. The present plan calls for a project of sufficient quantity (on the order of 100,000–150,000 cy) to restore the beach to a shape more in equilibrium with the surrounding wave forces (ie – reduce the "bulge" in the shoreline).

A buffer distance from the existing building line would be established to ensure that a sufficient volume of sand remains in the borrow area to provide habitat, recreational area, and storm protection. The erosion analysis described herein confirms that a 400-ft minimum buffer distance should be set. This would allow for approximately one-year's worth of erosion at the maximum observed rate and still leave sufficient volume for a healthy beach. It is unlikely that the maximum erosion rates calculated herein would persist for prolonged periods of time in the shoal-attachment area. Aerial photos from 2010 are shown in Figures 4-5 and include offset lines from the building line at 50-ft (dashed) and 100-ft (solid) spacing.

The fill area in the present configuration would be between Seascape Villas and the 18th fairway (Figs 4–5). This area has experienced focused erosion following the 2008 nourishment project because of additional shoal-bypass events. As of March 2010, the most severely eroded profiles in this area contain ~40 cy/ft less volume than the March 2009 condition and ~80 cy/ft less volume than the immediate post-nourishment condition of July 2008.

FIGURE 4. March 2010 aerial image of the northeastern end of Isle of Palms. General location of the potential excavation and fill areas under the current beach condition are shown. Only portions of the northeastern fill area are currently eroded beyond the 100-ft trigger line.

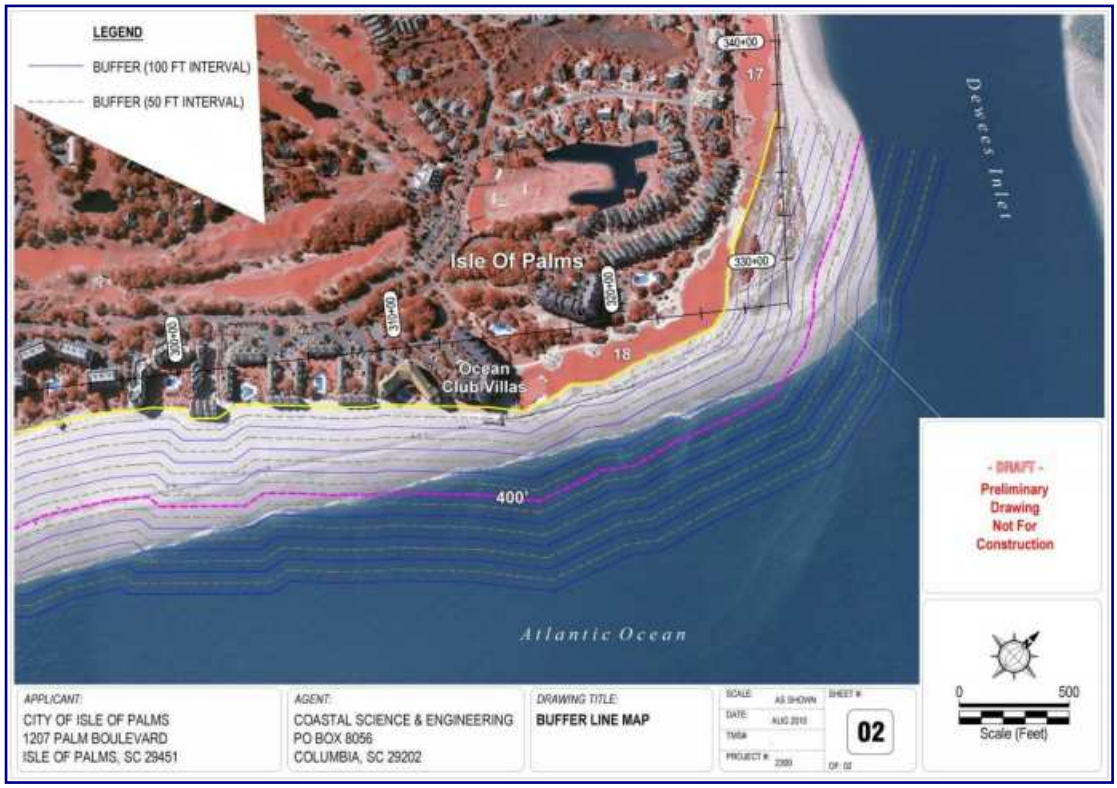

FIGURE 5. April 2010 aerial image of the northeastern end of Isle of Palms. Solid lines indicate 100-ft intervals from the building fronts. Dashed lines are 50-ft intervals. The beach near Ocean Club Villas and the 18th hole of the Links Course currently is eroded beyond the 100-ft trigger line.

Recommended Approach

1. Establish a minimum 400-ft buffer between the existing building line and any potential excavation.
    a. This maintains sufficient unit volumes for a healthy beach/dune system landward of potential borrow areas.
2. Excavate to no lower than -6 ft NAVD (normal low-tide wading depth)
    b. Avoid creating temporary "holes" which may accumulate mud (not likely) or pose a swimming hazard.
3. Treat seaward edge of 18th fairway as the "building line."
    a. Protects underground infrastructure which can be an environmental or safety hazard if exposed or broken.
    b. Maintains a straighter, more natural-shaped beach if this area is allowed to be included in the management area.
4. Establish a 50-100 ft trigger (distance from the building line to the high-tide swash line) trigger for management action in eroded areas.
    a. Should be based on existing conditions as well as the expected condition at the time of the next environmental construction window.
    b. Trigger should be relative to the normal high tide swash line.
5. Only implement borrowing if a shoal has recently attached, or is expected to attach, in the near future at the borrow area.
    a. Avoids the situation where the borrow area is left at the minimum buffer with no foreseeable renewing sand supply.
6. Volumes transferred will be determined by beach condition at the time of the project, but will likely be on the order of 50,000–150,000 cy per event to provide a viable project.
7. Project will be constructed using land-based equipment operating on the low-tide beach.
8. Project will likely be constructed in winter to avoid turtle nesting season; however, resource agencies may suggest other construction windows.
9. Establish project limits at 53rd Avenue and the groin near the 17th tee.
    a. The borrow area is likely to be in the vicinity of the Wild Dunes Property Owners Beach House, which has been the site of shoal attachment in recent years. Historical areas show shoals attaching further north and south of this area, however, and an appropriate management plan would allow the shoals to be managed wherever they may attach.
10. The City should establish a "hold the line" policy to prevent any future new construction seaward of the OCRM setback line in the project area.
    a. Proactive measure to demonstrate the City is discouraging future development seaward of the existing building line.

Other Alternatives

Offshore Dredging Project

Identify sand sources
Benthic Impacts
Large mobilization costs

Upland Sources

High costs per cubic yard
Impact to infrastructure, traffic
Sediment quality issues
No “wet excavation” required

Do Nothing

Fluctuation of beach width
Loss of habitat and recreational area
Sandbagging, emergency measures if structures are threatened
Possible exposure of revetments
Action by individuals or regimes

Questions for Agencies to Consider

1. What is the preferred construction window?
2. What monitoring requirements may be required (benthic, compaction, beach condition)?
3. Can the City establish this plan as a perpetual management strategy to avoid lengthy future permitting?
    a. If the project is successful and shows no major environmental impacts
    b. If the project is sufficiently monitored to show impacts to the beach at both the borrow and fill areas
    c. If subsequent management events are allowed to be altered based on lessons learned from prior events, at the request and review of both the City and resource agencies.

References Cited

CSE. 2007. Shoreline assessment and long-range plan for beach restoration along the northeast erosion zone, Isle of Palms, South Carolina. Feasibility Report for Wild Dunes Community Association, Isle of Palms, SC. Coastal Science & Engineering (CSE), Columbia, SC, 76 pp.

CSE. 2008. Isle of Palms beach restoration project. Final Report for City of Isle of Palms, South Carolina. CSE, Columbia, SC, 46 pp + appendices.

CSE. 2009. Beach restoration project (2008), Isle of Palms, South Carolina. Year 1 Monitoring Report, City of Isle of Palms, SC; CSE, Columbia, SC, 107 pp + appendices.

CSE. 2010. Beach restoration project (2008), Isle of Palms, South Carolina. Interim Monitoring Report – Year 2 (May 2010), City of Isle of Palms, SC; CSE, Columbia, SC, 24 pp + appendices.

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IOP. 2008. Local comprehensive beach management plan – City of Isle of Palms, South Carolina – 80 pgs.

Kana, TW, EJ Hayter, and PA. Work. 1999. Mesoscale sediment transport at southeastern U.S. tidal inlets: conceptual model applicable to mixed energy settings. Jour. Coastal Research, Vol 15(2), pp 303-313.

SCSGC. 2001. *Regional Beach Volume Changes for the Central South Carolina Coast* (TW Kana and DJ Gaudiano). Technical Report Grant R/CP-10, South Carolina Coastal Erosion Study. South Carolina Sea Grant Consortium, Charleston, 124 pp.

Williams, ML, and TW Kana. 1987. Inlet shoal attachment and erosion at Isle of Palms, South Carolina: a replay. In Proc Coastal Sediments '87, ASCE, New York, NY, pp 1174-1187.

Print Form

Joint Federal and State Application Form
For Activities Affecting Waters of the United States
Or Critical Areas of the State of South Carolina

This Space for Official Use Only
Application No. _____
Date Received _____
Project Manager _____
Watershed # _____

Authorities: 33 USC 401, 33 USC 403, 33 USC 407, 33 USC 408, 33 USC 1341, 33 USC 1344, 33 USC 1413 and Section 48-39-10 et. Seq of the South Carolina Code of Laws. These laws require permits for activities in, or affecting, navigable waters of the United States, the discharge of dredged or fill material into waters of the United States, and the transportation of dredged material for the purpose of dumping it into ocean waters. The Corps of Engineers and the State of South Carolina have established a joint application process for activities requiring both Federal and State review or approval. Under this joint process, you may use this form, together with the required drawings and supporting information, to apply for both the Federal and/or State permit(s).

Drawings and Supplemental Information Requirements: In addition to the information on this form, you must submit a set of drawings and, in some cases, additional information. A completed application form together with all required drawings and supplemental information is required before an application can be considered complete. See the attached instruction sheets for details regarding these requirements. You may attach additional sheets if necessary to provide complete information.

1. Applicant Last Name:		11. Agent Last Name (agent is not required): Traynum	
2. Applicant First Name:		12. Agent First Name: Steven	
3. Applicant Company Name: City of Isle of Palms		13. Agent Company Name: Coastal Science & Engineering	
4. Applicant Mailing Address: PO 508		14. Agent Mailing Address: PO 8056	
5. Applicant City: Isle of Palms		15. Agent City: Columbia	
6. Applicant State: SC	7. Applicant Zip: 29451	16. Agent State: SC	17. Agent Zip: 29202-8056
8. Applicant Area Code and Phone No.: 843-886-6428		18. Agent Area Code and Phone No.: 803-799-8949	
9. Applicant Fax No.: 843-886-8005		19. Agent Fax No.: 803-799-9481	
10. Applicant E-mail: ltucker@iop.net		20. Agent E-mail: straynum@coastalscience.com	

21. Project Name: Isle of Palms Shoal Management Project		22. Project Street Address: Palm Boulevard	
23. Project City: Isle of Palms	24. Project County: Charleston	25. Project Zip Code: 29451	25. Nearest Waterbody: Atlantic Ocean
26. Tax Parcel ID:	27. Property Size (acres):	28. Latitude: 32o 48' 20" N	29. Longitude: 79o 43' 37"W

30. Directions to Project Site (Include Street Numbers, Street Names, and Landmarks and attach additional sheet if necessary):
From US 17, Take 517 (IOP Connector) to the Isle of Palms. After crossing the bridge over the ICWW, turn left at the stoplight onto Palm Blvd (703). Follow Palm Blvd to 53rd Avenue. Turn right on 53rd Ave, and a beach access is at the end of the road. The project area begins at 53rd Ave and continues along the beach until the existing groin located along the 17th teebox of the Links Course.

31. Description of the Overall Project and of Each Activity in or Affecting U.S. Waters or State Critical Areas (attach additional sheets if needed)
See Attached

32. Overall Project Purpose and the Basic Purpose of Each Activity in or Affecting U.S. Waters (attach additional sheets if needed):
See Attached

33. Type and quantity of Materials to Be Discharged

Dirt or Topsoil:		☐ cubic yards
Clean Sand:	500,000	☑ cubic yards
Mud:	trace	☐ cubic yards
Clay:		☐ cubic yards
Gravel, Rock, or Stone:		☐ cubic yards
Concrete:		☐ cubic yards
Other (describe):	Minor Shell	☐ cubic yards
TOTAL:	500,000	cubic yards

34. Type and Quantity of Impacts to U.S. Waters (including wetlands).

Filling:	30	☑ acres	☐ sq.ft.	500,000	☑ cubic yards
Backfill & Bedding:		☐ acres	☐ sq.ft.		☐ cubic yards
Landclearing:		☐ acres	☐ sq.ft.		☐ cubic yards
Dredging:		☐ acres	☐ sq.ft.		☐ cubic yards
Flooding:		☐ acres	☐ sq.ft.		☐ cubic yards
Draining/Excavation:	60	☑ acres	☐ sq.ft.	500,000	☑ cubic yards
Shading:		☐ acres	☐ sq.ft.		☐ cubic yards
TOTALS:	90	acres		sq.ft. 500,000	cubic yards

35. Individually list wetland impacts including mechanized clearing, fill, excavation, flooding, draining, shading, etc. and attach a site map with location of each impact (attach additional sheets if needed).

Impact No.	Wetland Type	Distance to Receiving Water body (LF)	Purpose of Impact (road crossing, impoundment, flooding, etc)	Impact Size (acres)
			Total Wetland Impacts (acres)	0

36. Individually list all seasonal and perennial stream impacts and attach a site map with location of each impact (attach additional)

Impact No.	Seasonal or Perennial Flow	Average Stream Width (LF)	Impact Type (road crossing, impoundment, flooding, etc)	Impact Length (LF)
			Total Stream Impacts (Linear Feet)	0

37. Have you commenced work on the project site? ☐ YES ☑ NO If yes, describe all work that has occurred and provide dates.

38. Describe measures taken to avoid and minimize impacts to Waters of the United States:
Excavation and fill material will be clean beach sand already in the beach system. No material will be dredged from channels or offshore, which will reduce biological impacts and avoid high turbidity levels. Project is proposed to be constructed during winter to avoid turtle nesting season.

39. Provide a brief description of the proposed mitigation plan to compensate for impacts to aquatic resources or provide justification as to why mitigation should not be required (Attach a copy of the proposed mitigation plan for review).

See Attached

40. See the attached sheet to list the names and addresses of adjacent property owners.

41. List all Corps Permit Authorizations and other Federal , State, or Local Certifications, Approvals, Denials received for work described in this application.

Previous permits issued related to the proposed work include P/N 2007-02631-2IG-P (2008 Nourishment) and P/N OCRM-00-715-E, issued Feb 8, 2001 for a proposed scraping project. The 2001 permit was not utilized.

42. Authorization of Agent. I hereby authorize the agent whose name is given on page one of this application to act in my behalf in the processing of this application and to furnish supplemental information in support of this application. [1]

Applicant's Signature Date 10/1/2010

43. Certification. Application is hereby made for a permit or permits to authorize the work and uses of the work as described in this application. I certify that the information in this application is complete and accurate. I further certify that I possess the authority to undertake the work described herein or am acting as the duly authorized agent for the applicant. [1]

Applicant's Signature Date 10/1/2010

Agent's Signature Date

[1] **The application must be signed by the person who desires to undertake the proposed activity or it may be signed by a duly authorized agent if the authorization statement in blocks 11 and 42 have been completed and signed. 18 U.S.C. Section 1001 provides that: Whoever, in any manner within the jurisdiction of any department of the United States knowingly and willfully falsifies, conceals, or covers up any trick, scheme, or disguises a material fact or makes any false, fictitious or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statements or entry, shall be fined not more than $10,000 or imprisoned not more than five years or both.**

31. Proposed Project Description

The city of Isle of Palms is seeking a permit to periodically realign the beach in shoal-attachment areas as part of a long-term shoal management plan. The proposed plan calls for transfer of sand via land-based equipment from demonstrated accretion areas to eroded areas along the northeastern end of the Isle of Palms. All work would be performed during winter months unless otherwise specified by resource agencies.

Work Areas

Due to the dynamic nature of the northeast end of Isle of Palms, the specific locations of potential excavation and fill areas during any project will depend on the configuration of the beach and shoals at project commencement. However, the work area will be limited to the area between 53rd Avenue and an existing groin near the 17th tee of the Links Course, on the Dewees Inlet shoreline (upper right on Sheet 01). Sand will be excavated from the seaward portion of the accreted beach in the shoal-attachment area (see Sheets 02-05) and transferred to areas showing focused erosion (generally resulting from the shoal-attachment process, Sheets 02-04, 07).

Up to 300,000 cubic yards (cy) may need to be transferred during any given shoal management event, to sufficiently reduce the impact of an attaching shoal on adjacent areas. The actual shoal management event frequency and quantity of sand to be transferred will depend on the condition of the beach in both the fill and excavation areas, as well as the predicted impacts of developing bypass events.

The condition of the beach, as surveyed in March 2010 (Sheet 02), indicates up to 200,000 cy should be transferred from the accretion area to eroded areas to maintain the desired beach condition. This quantity, as well as the exact limits of the work, will be refined by another survey prior to commencement of the work, due to the rapidity of shoreline changes associated with shoal-bypass events.

Construction

Excavations will be performed via hydraulic hoes or scraper pans, depending on contractor's preference, and will begin at the seawardmost accessible portion of the beach. Excavation in the shallow, underwater portion of the beach will allow for incoming sand to rapidly fill any low areas created by the excavation. It will also limit the amount of dry beach utilized in the transfer. Excavation depths will be limited to a specified elevation, likely −6 ft NAVD (−3.0 ft MLLW), unless otherwise specified by resource agencies. Sand will be transferred by off-road trucks or equivalent, operating on the low-tide beach.

Fill volume in areas receiving sand will vary depending on beach condition at the time of the project. In the area currently showing focused erosion (in the vicinity of Seascape and Beach

Club Villas), the March 2010 condition showed ~40 cubic yards per foot (cy/ft) less volume than the March 2009 condition and ~80 cy/ft less volume than the July 2008 condition (post-nourishment). In the current configuration, the shoal-management project would restore the quantity of sand in these areas to near post-nourishment condition, which would align the beach in a more stable configuration by reducing the "bulge" currently present in the accretion area. Fill will be placed in the form of a berm of variable width at the natural dry-sand beach level (approximately +6 ft NAVD). The seaward edge of the fill will be sloped in the offshore direction generally on 1 on 20 slope to the existing beach. It is anticipated that each shoal management event will be accomplished in less than two calendar months.

Project Conditions

A buffer distance from the existing building line will be established to ensure a sufficient volume of sand remains landward of the borrow area to provide habitat, recreational area, and storm protection. Analysis of beach profiles dating to the 1980s confirms that a 400-ft buffer distance is appropriate for this region of Isle of Palms (Sheet 05). This buffer would allow for approximately one-year's worth of the maximum observed historical erosion, and would still leave sufficient beach volume for a healthy beach (ie – typical Isle of Palms beach width and volume in the absence of shoal attachment effects). It is unlikely that erosion in the shoal attachment area would exceed that which is predicted using the maximum historical erosion rate over any one-year period.

A project would only be undertaken if the beach condition reached a pre-established "trigger." This trigger would be the distance from the +5 ft NAVD contour (approximate normal high-tide swash line) to the building line (Sheet 07). The applicant proposes a trigger of 100 ft, with consideration given to the time of year, permitted construction window, and expected future shoreline trends (ie – the stage of the shoal attachment process which signals whether an increase in erosion would likely occur in the project area).

The city of Isle of Palms has established an ongoing beach monitoring program to document sand volumes along the entire beach. Pre- and post-project surveys of the beach and offshore area in the project vicinity will be performed to verify sand volumes, beach condition, shoreline change trends; to identify the position of the +5 ft contour relative to the building line; and to monitor the scale and anticipated movements of offshore and nearshore shoals.

32. Overall Project Purpose

The overall objective of the management strategy is to maintain beach habitat, recreation area, and storm protection by redistributing incoming sand from inlet shoal-bypass events. Such redistribution is necessary to mitigate significant localized erosion which accompanies these events. The specific goals of the project are to:

1) Reduce the potential for erosion to reach a point where no dry beach remains.
2) Reduce or eliminate the need for emergency sandbagging during shoal bypass events.
3) Maintain nesting habitat for turtles.
4) Facilitate dune growth improving habitat and storm protection.
5) Maintain recreational, dry-beach area during all stages of the tide.

Rationale

The effect of sediment bypassing at tidal inlets on receiving shorelines has been well documented (Williams and Kana 1987, Gaudiano 1998, Kana et al 1999). Shoals migrating onshore bring new sand to a beach; however, they usually cause large, rapid changes to the shoreline during the process. Changes are generally temporary, but can cause significant problems when development is threatened. Large fluctuations in the shoreline position near inlets led to the SC DHEC-OCRM classification of Unstabilized Inlet Erosion Zones, which impose stricter setback criteria than standard zones away from inlets.

At Isle of Palms, aerial images dating to the 1940s confirm ongoing shoal-bypass events averaging one every 6.6 years (Gaudiano 1998). The addition of sand as a result of these events accounts for the accretion observed along the downcoast portion of the island, which has been gaining 2.6 cubic yards per foot per year (cy/ft/yr) since 1998 (CSE 2010). A bypass event occurring in the early 1980s was used by Kana et al (1985) to model the "shoal-bypass cycle," identifying three stages of evolution where the shoal:

Stage 1) Emerges offshore, usually as a circular-shaped, sub-aerial sand mound.
Stage 2) Migrates closer to shore, often as a horseshoe-shaped bar, causing accretion in its lee and erosion of adjacent areas.
Stage 3) Fully attaches to the beach, allowing new sand to spread into previously eroded areas.

The shoal-bypass events act as natural nourishment to the Isle of Palms and contribute to the net accretion observed over the majority of the island over the past century. Two notable shoal-bypass events occurred in the 1980s, followed by another in the mid-late 1990s, and others between 2004 and 2007. After the nourishment project in 2008 (P/N 2007-02631-2IG-P), two smaller shoal-bypass events occurred, bringing more sand to the beach near Beach Club Villas and the Property Owners Beach House, but causing erosion near Seascape Villas, Ocean Club Villas, and the 18th hole of the Ocean Course (see Sheet 04 for property locations).

Figure 1 illustrates the extent of shoreline changes at the northeastern end of Isle of Palms during the past 135 years, along with landmarks referenced herein. Prior to the 2008 nourishment project, CSE completed a feasibility report for the Wild Dunes Community Association outlining historical erosion trends along the northeastern end of the island and evaluating the potential for a two-part project involving offshore nourishment and emergency shoal management (CSE 2007).

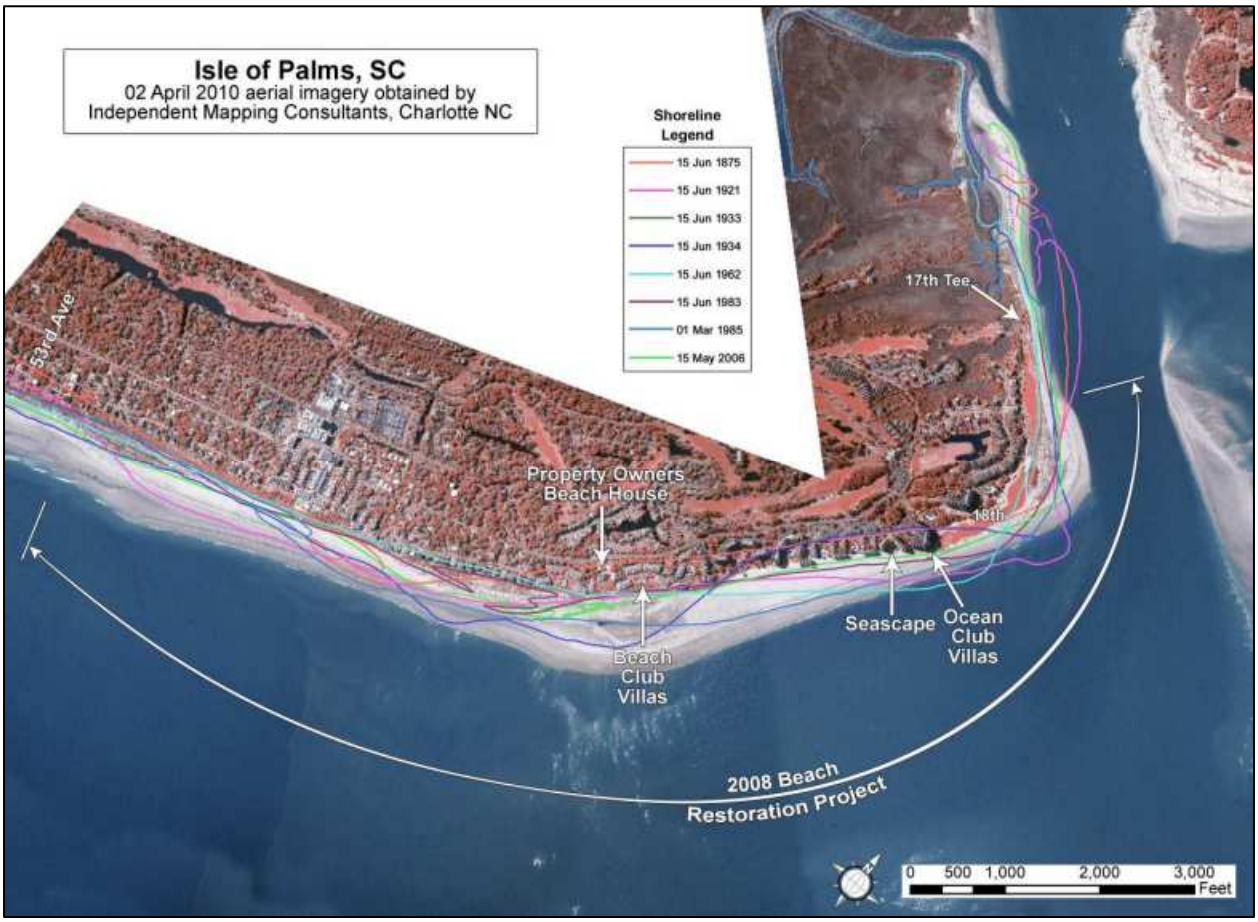

FIGURE 1. Historical shoreline positions at the northeast end of Isle of Palms. Shoreline data provided by SC DHEC OCRM.

The study, which included a review of earlier research at the island, found that the northeastern end had a net sand deficit of 20,000-30,000 cy/yr (SCSGC 2001), despite volumes much larger than this being added to the beach every five years or so. This long-term deficit, coupled with temporary erosion associated with an ongoing shoal-bypass event, left the beach along portions of the northeastern end without any dry beach, forcing property owners to use sand bags to protect buildings. Also noted was that sediment transport to downcoast areas is interrupted during Stage 2 of shoal-bypass events, as sand moves behind the incipient shoal instead of downcoast; therefore, it is in the greater interest of the entire Isle of Palms community to accelerate Stage 2 of each bypass cycle.

As part of the nourishment project, and subsequent monitoring, CSE has collected comprehensive surveys of the northeastern end of the island since 2007. These surveys verify the sediment transport patterns identified above, and for the first time, can fully identify shoal movement in the ebb-tidal delta of Dewees Inlet. The surveys show an extensive sand platform extending offshore in the vicinity of Beach Club Villas. The shoal present between 2004 and 2008 built from this platform, which is estimated to contain ~4.3 million cubic yards of sand (CSE 2009).

Following the 2008 nourishment project, two additional shoals have built from this platform, the first attaching in April 2009, and the second presently close to attaching to the beach.

The rapidity of the recent bypass events may be due to larger scale processes occurring in the ebb-tidal delta of Dewees Inlet. A large shoal present on the seaward side of the main channel of Dewees Inlet has migrated to the southwest since July 2007, encroaching on the main channel (Fig 2). This has caused the channel to infill with sediment and to migrate closer to the shore. At the same time, a secondary channel oriented parallel with Dewees Inlet has widened and deepened. These changes suggest that the main channel may be abandoned and the secondary channel may now be dominant. This channel switch is the process that releases a large volume of sand from one side of the inlet to the other, thereby triggering a new shoal-bypass event (cf – Hubbard et al 1977). The released sand accumulating on the shoal platform off the Wild Dunes Property Owners Beach House will be pushed by waves toward the beach in the form of several future shoal-bypass events.

CSE believes these trends of channel abandonment and shoal movement will produce an increased number of shoal-bypass events of large, but uncertain, scale similar to previous events. Regardless of the scale or frequency, these events are expected to produce major fluctuations along the Isle of Palms shoreline as the shoals migrate onshore and attach to the beach.

Figure 2 presents digital models of the topography of the Dewees Inlet ebb-tidal delta for July 2007 and March 2010, showing the configuration of offshore shoals. Expansion of the secondary channel is identified by Arrow A. Movement of the offshore shoal is indicated by Arrow B. If the trend in shoal movement continues and the main channel switches to a more northerly position, the sand in the outer shoal will move onshore, as it does presently over the shoal platform (Arrow C). Between March 2009 and March 2010, the outer shoal migrated ~700 ft to the southwest. If this rate continues, the shoal will begin to merge with the sand platform offshore of the Beach Club Villas area within the next two years. Based on past experience, significant erosion and accretion is likely, depending on where individual shoals attach. What is more uncertain is the scale of future bypass events.

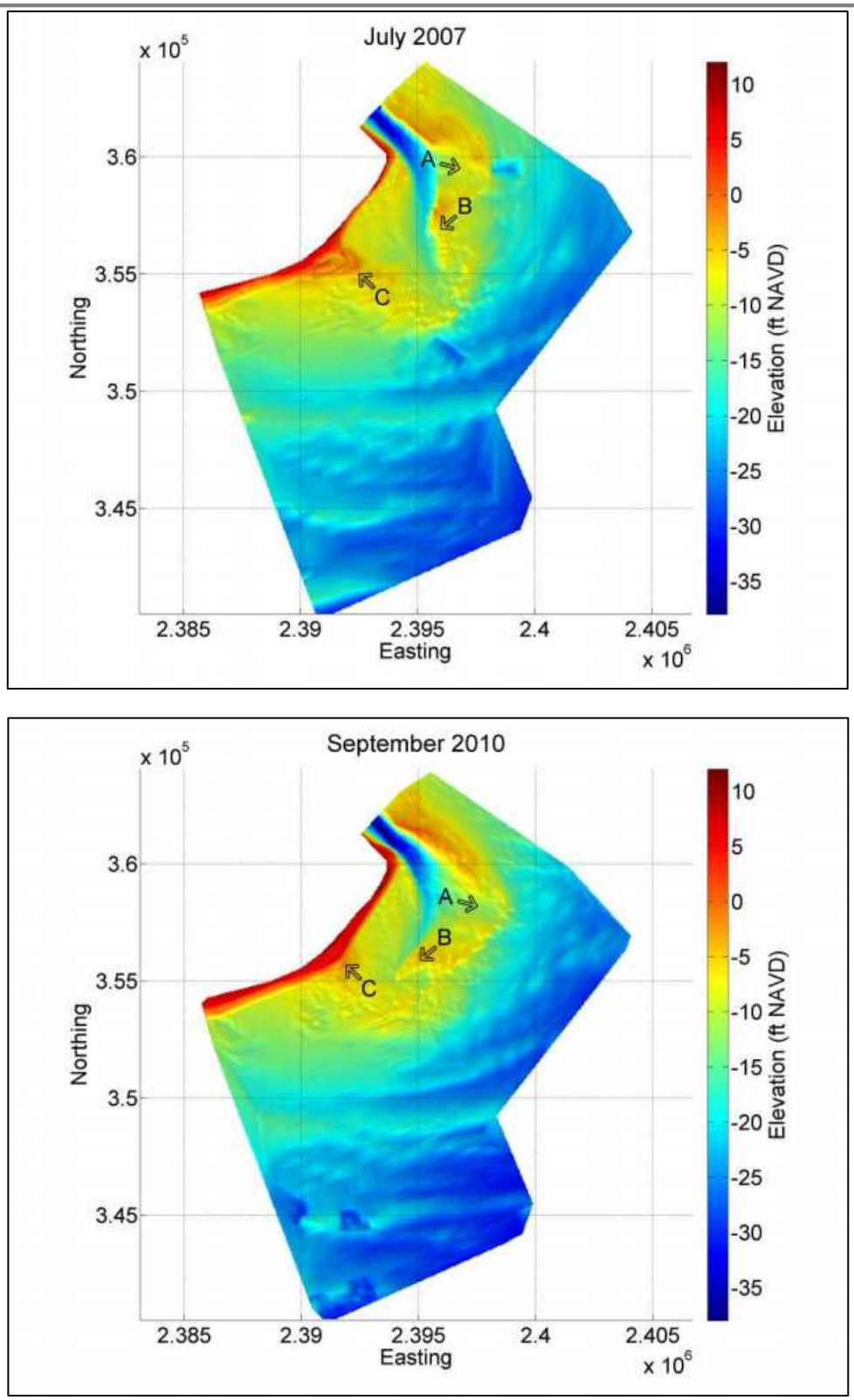

FIGURE 2. Digital elevation models of the Dewees Inlet ebb-tidal delta in July 2007 (upper) and September 2010 (lower). Arrow A points to the seaward expansion of the secondary channel, while Arrow B highlights the southwest movement of a shoal on the seaward side of the original channel. Arrow C shows the area where sand migrates onshore over a broad platform.

Previous events have led to erosion significant enough to warrant remedial action (renourishment, scraping, sandbagging), but were not associated with an observed channel abandonment. With larger volumes of sand moving offshore with the channel avulsion, it is possible that the scale and duration of accretion and erosion cycles may be increased.

An erosion analysis was performed using survey data dating to the 1980s to evaluate erosion rates in the unstabilized inlet erosion zone. The analysis shows that short-term erosion rates (generally calculated on yearly intervals) are highly variable in magnitude from year to year and from station to station, as would be expected around a tidal inlet. Short-term erosion rates (linear rates calculated using the 0-ft NAVD contour) ranged from −150 feet per year (ft/yr) to −335 ft/yr (Table 1). The highest erosion rate was the found at the site of shoal attachment, where recently accreted sand spread from the area (Stage 3).

Erosion rates in adjacent areas further away from the attachment site were between −150 ft/yr and −170 ft/yr, and occurred when shoals were in Stage 2 of the bypass cycle (prior to attachment). Short-term accretion rates were likewise variable (Table 1), ranging from 110 ft/yr to 638 ft/yr. Like the erosion observed, the highest accretion rates were observed in the area where the shoal attached (during Stage 2), then lessened to either side (and occurred during Stage 3).

TABLE 1. Maximum and minimum short-term erosion rates (rate of change in the cross-shore direction of the 0 ft NAVD contour) at OCRM stations along the northeastern end of Isle of Palms.

OCRM Station	3159 – 53rd Avenue	3165 – 57th Avenue	3167 – W. Beachwood East	3170 – E. Beachwood East	3173 – Beach Club Villas	3175 – Mariners Walk	3178 – Summer House	3180 – Port O'Call	3183 – 18th Hole	3185 – 18th Fairway	3190 – 17th Tee
Max Linear Erosion Rate (ft/yr)	-250	-220	-177	-333	-335	-251	-167	-153	-178	-222	-39
Max Linear Accretion Rate (ft/yr)	285	181	247	242	638	378	304	186	110	160	23

It is apparent from the above discussion that the shoreline at the northeastern end is dynamic; however, it is also somewhat predictable based on the stage of the shoal-bypass cycle. The applicant believes it is in the best interest of the City and State to maintain a healthy beach at all times—maintaining habitat for nesting turtles, recreational area, and storm protection. The City believes the most economical and least intrusive manner to maintain a continuous dry beach is by redistributing shoal sand as it attaches to the beach. Stage 2 of the shoal-bypass cycle can be shortened, reducing the potential for severe erosion in adjacent areas.

The proposed scale of each shoal management event is uncertain and will depend on the scale of the incoming volume along the accretion zone. It is the applicant's goal to perform such remedial sand redistribution as infrequently as practicable so as to leave the project area undisturbed as long as possible between events, while still maintaining habitat, protecting, and recreation area. During any given five-year period of the permit, it is anticipated that no more than 500,000 cubic yards would be transferred. It is the applicant's preference to do fewer large

scale transfers (eg – two events totaling up to ~250,000 cy each) rather than a series of small, annual events, (eg – four events totaling ~125,000 cy each). Further, the applicant desires to perform the work during winter when biological impacts are expected to be lessened. Sand redistribution events involving ~250,000 cy can be accomplished in less than two months. Previous experience indicates the beach profile in the borrow and fill areas equilibrates rapidly. Winter construction would also be timed for dune planting and turtle nesting season.

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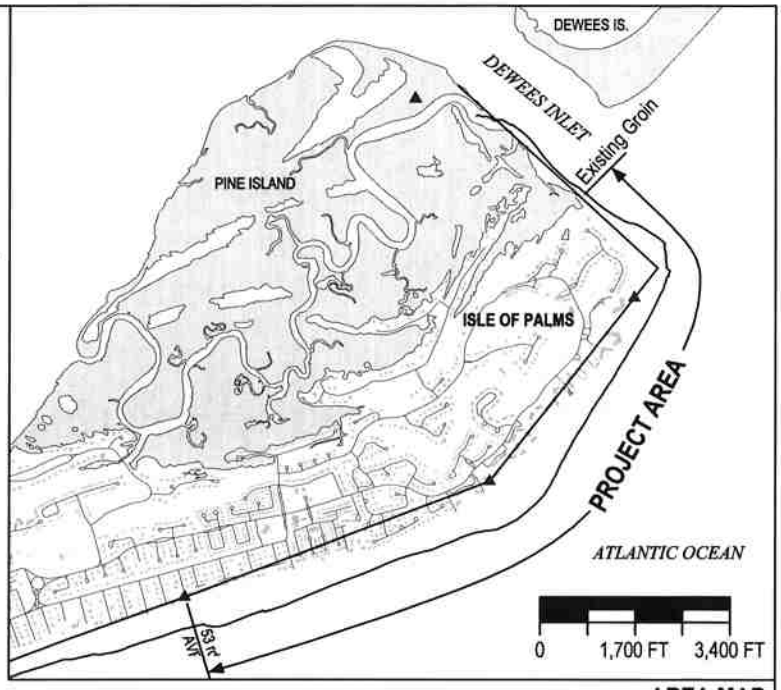
SCSGC. 2001. *Regional Beach Volume Changes for the Central South Carolina Coast* (TW Kana and DJ Gaudiano). Technical Report Grant R/CP-10, South Carolina Coastal Erosion Study. South Carolina Sea Grant Consortium, Charleston, 124 pp.

Williams, ML, and TW Kana. 1987. Inlet shoal attachment and erosion at Isle of Palms, South Carolina: a replay. In Proc Coastal Sediments '87, ASCE, New York, NY, pp 1174-1187.

39. Mitigation

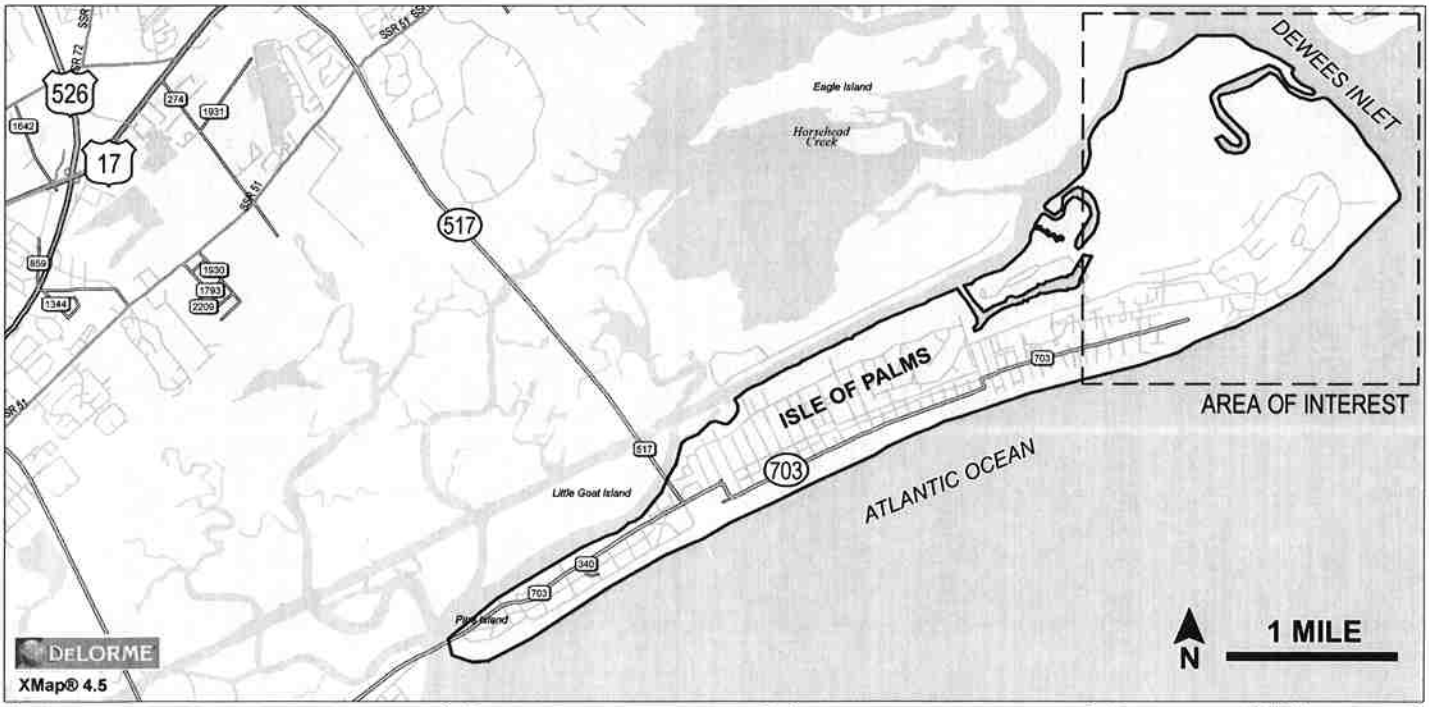
The project follows a 2008 beach renourishment project in the area, which added ~885,000 cy of sand to the beach. Following the project, sand fencing and vegetative plantings have contributed to significant dune growth seaward of the building line. The current project seeks to maintain the habitat created from that project and to avoid potential environmentally damaging conditions associated with severe erosion into a developed area. The project is thought to be sensitive in that it will expedite an already occurring natural process.



AREA MAP

DIRECTIONS:

FROM CHARLESTON, TAKE US-17 NORTH. TURN RIGHT ONTO SC 517 (ISLE OF PALMS CONNECTOR). TURN LEFT ONTO PALM BLVD. SITE IS NORTHEAST OF 57TH AVE EXTENDING ALONG TO DEWEES INLET ON THE NORTHEAST END OF ISLE OF PALMS.



APPLICANT:
CITY OF ISLE OF PALMS
PO DRAWER 508
ISLE OF PALMS SC 29451

DRAWING TITLE:
VICINITY MAP

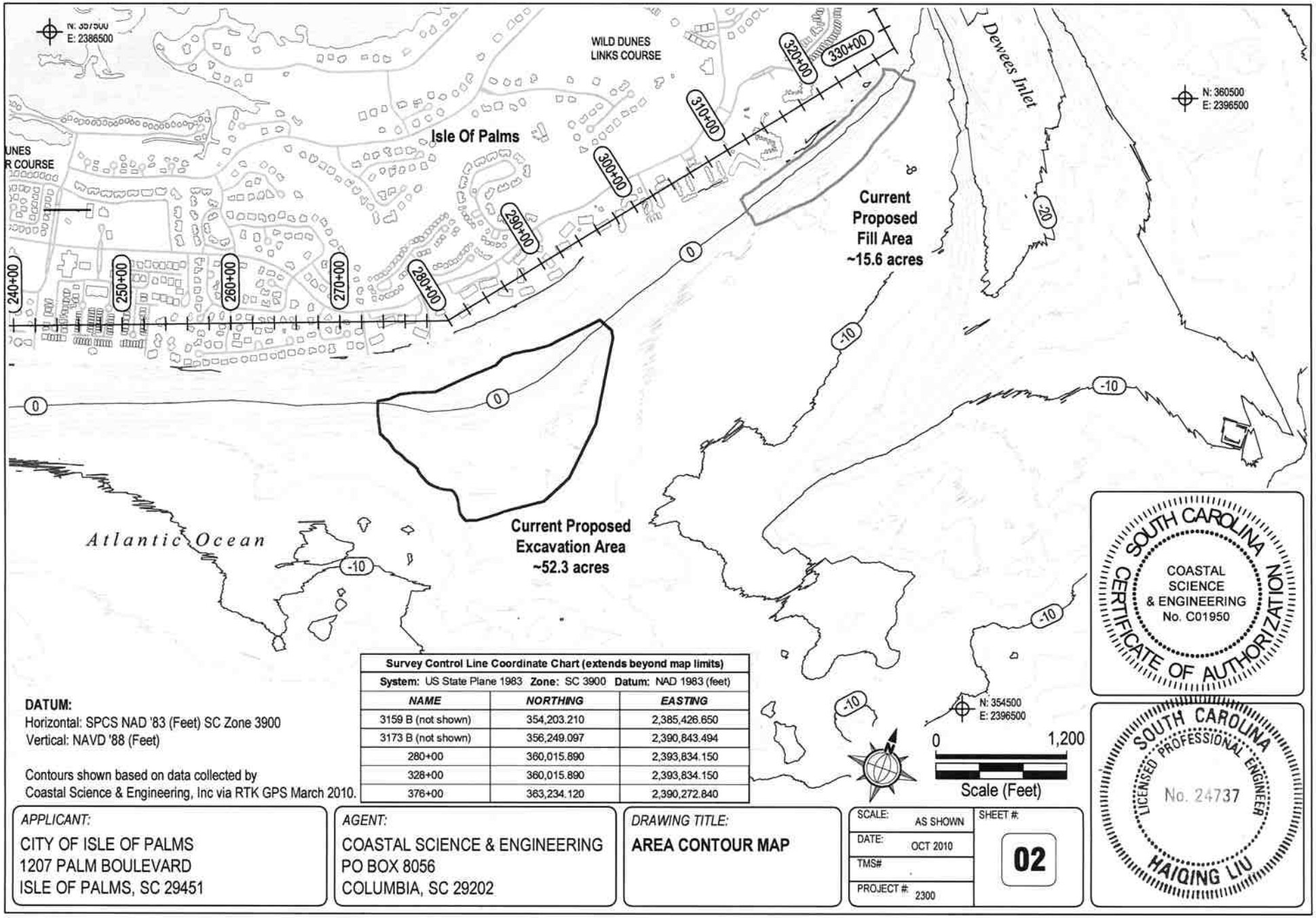
SOUTH CAROLINA
COASTAL SCIENCE & ENGINEERING
No. C01950
CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA
LICENSED PROFESSIONAL ENGINEER
No. 24737
HAIQING LIU

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

SCALE:	AS SHOWN
DATE:	OCT 2010
TMS#	
PROJECT #:	2300

SHEET #: **01**



Survey Control Line Coordinate Chart (extends beyond map limits)		
System: US State Plane 1983 Zone: SC 3900 Datum: NAD 1983 (feet)		
NAME	*NORTHING*	*EASTING*
3159 B (not shown)	354,203.210	2,385,426.650
3173 B (not shown)	356,249.097	2,390,843.494
280+00	360,015.890	2,393,834.150
328+00	360,015.890	2,393,834.150
376+00	363,234.120	2,390,272.840

DATUM:
Horizontal: SPCS NAD '83 (Feet) SC Zone 3900
Vertical: NAVD '88 (Feet)

Contours shown based on data collected by
Coastal Science & Engineering, Inc via RTK GPS March 2010.

SOUTH CAROLINA
COASTAL SCIENCE & ENGINEERING
No. C01950
CERTIFICATE OF AUTHORIZATION

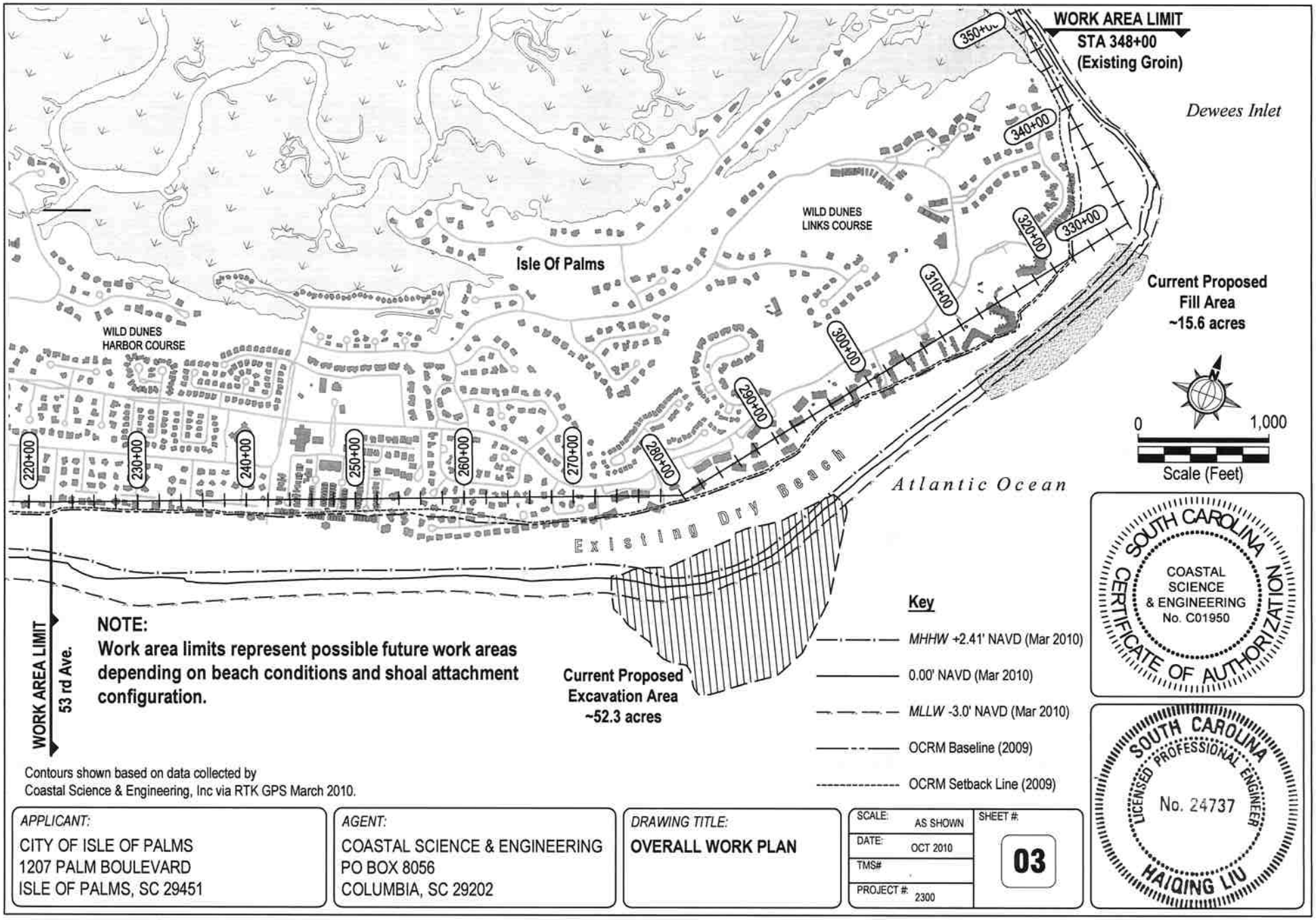
SOUTH CAROLINA
LICENSED PROFESSIONAL ENGINEER
No. 24737
HAIQING LIU

APPLICANT:
CITY OF ISLE OF PALMS
1207 PALM BOULEVARD
ISLE OF PALMS, SC 29451

AGENT:
COASTAL SCIENCE & ENGINEERING
PO BOX 8056
COLUMBIA, SC 29202

DRAWING TITLE:
AREA CONTOUR MAP

SCALE: AS SHOWN
DATE: OCT 2010
TMS#
PROJECT #: 2300
SHEET #: **02**



Contours shown based on data collected by
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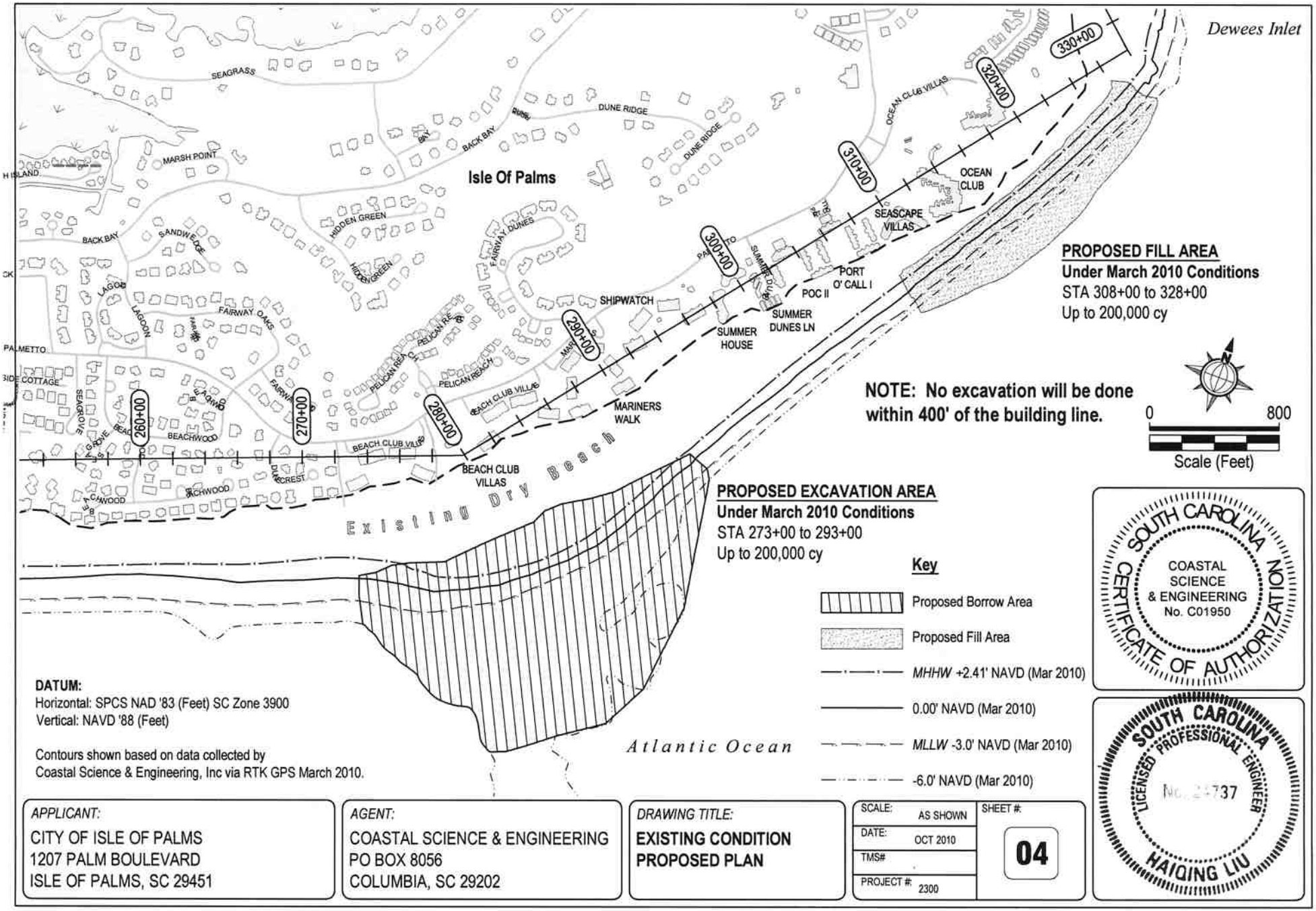
HAIQING LIU

APPLICANT:	AGENT:	DRAWING TITLE:	SCALE: AS SHOWN	SHEET #:
CITY OF ISLE OF PALMS 1207 PALM BOULEVARD ISLE OF PALMS, SC 29451	COASTAL SCIENCE & ENGINEERING PO BOX 8056 COLUMBIA, SC 29202	**OVERALL WORK PLAN**	DATE: OCT 2010 TMS# PROJECT #: 2300	**03**



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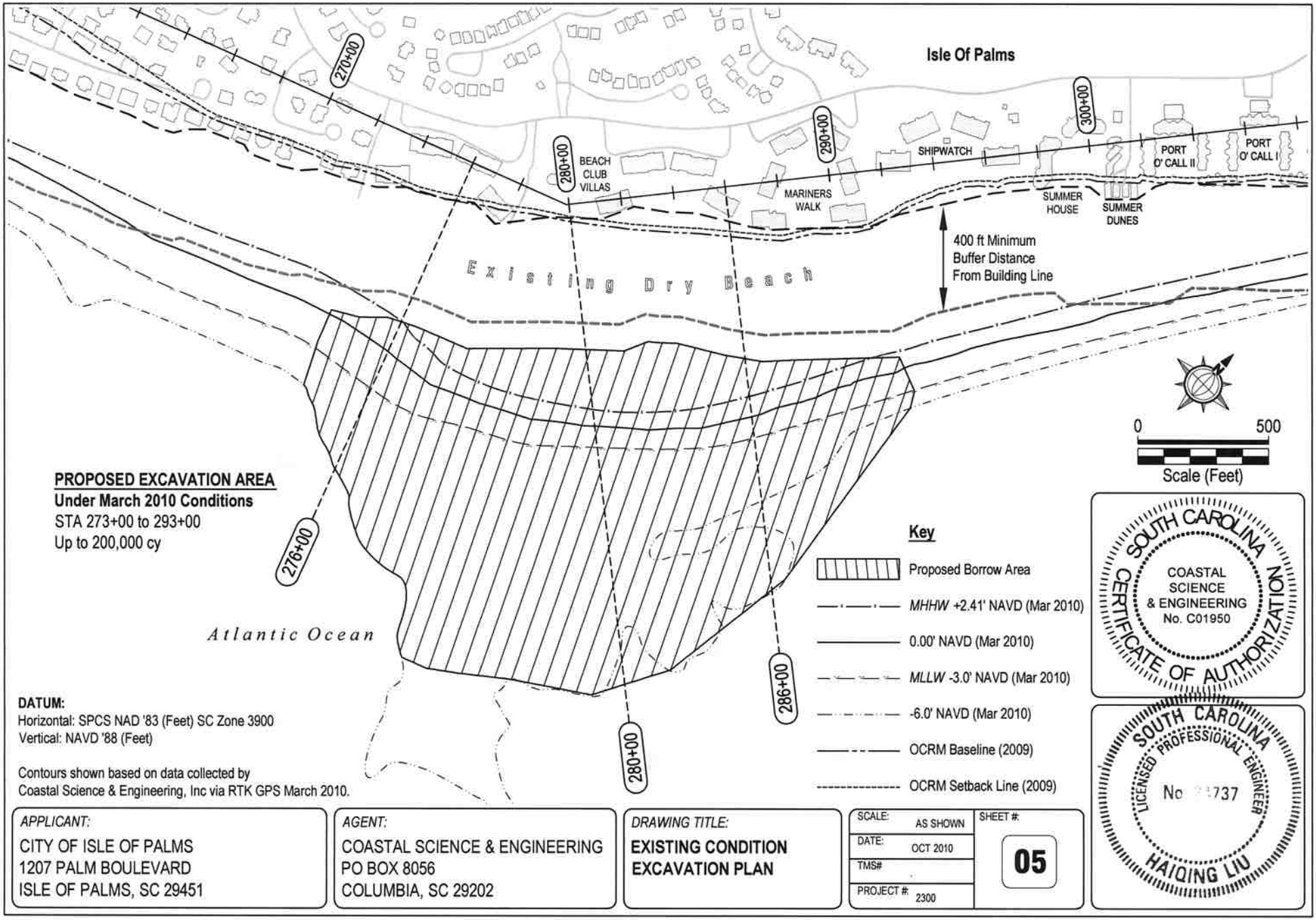
CITY OF ISLE OF PALMS 1207 PALM BOULEVARD ISLE OF PALMS, SC 29451	COASTAL SCIENCE & ENGINEERING PO BOX 8056 COLUMBIA, SC 29202	**EXISTING CONDITION PROPOSED PLAN**	DATE: OCT 2010 TMS# PROJECT #: 2300	04



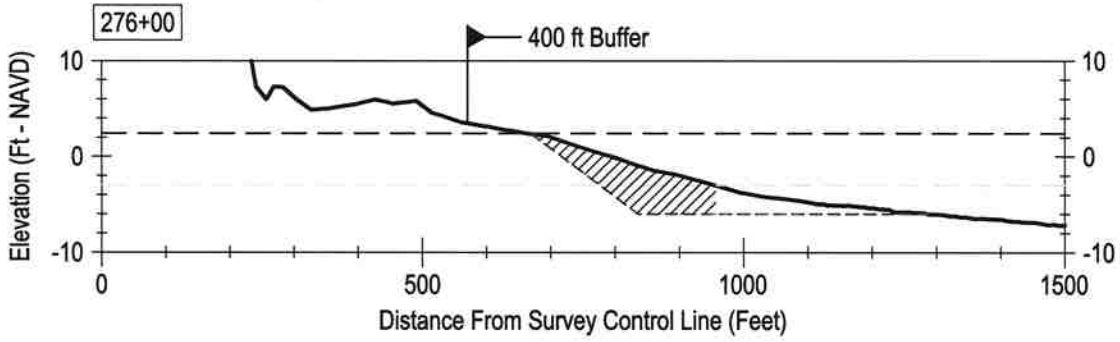
APPLICANT:
CITY OF ISLE OF PALMS
1207 PALM BOULEVARD
ISLE OF PALMS, SC 29451

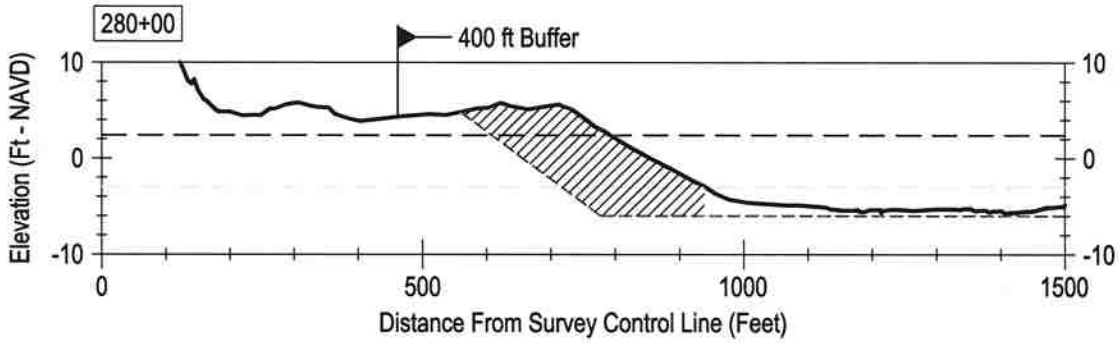
AGENT:
COASTAL SCIENCE & ENGINEERING
PO BOX 8056
COLUMBIA, SC 29202

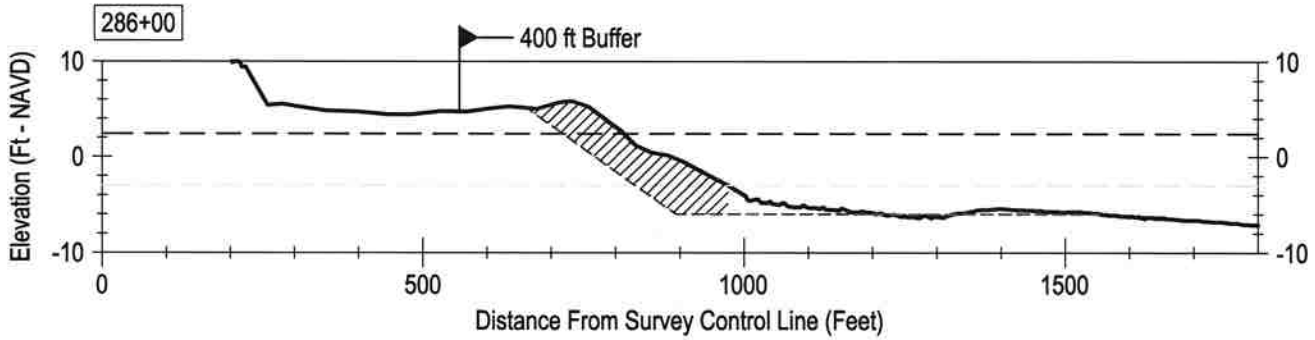
DRAWING TITLE:
EXISTING CONDITION EXCAVATION PLAN

SCALE:	AS SHOWN
DATE:	OCT 2010
TMS#	
PROJECT #:	2300

SHEET #: **05**







Key

- Existing Profile (March 2010)
- Proposed Excavation Profile
- *MHHW* +2.41' NAVD (Mar 2010)
- *MLLW* -3.0' NAVD (Mar 2010)

DATUM (feet):
Horizontal: SPCS NAD '83 SC Zone 3900
Vertical: NAVD '88 (Feet)
Vertical Exaggeration: 15

Finished Slope Will Be ~ 1 on 20

SOUTH CAROLINA
COASTAL SCIENCE & ENGINEERING
No. C01950
CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA
LICENSED PROFESSIONAL ENGINEER
No. 24737
HAIQING LIU

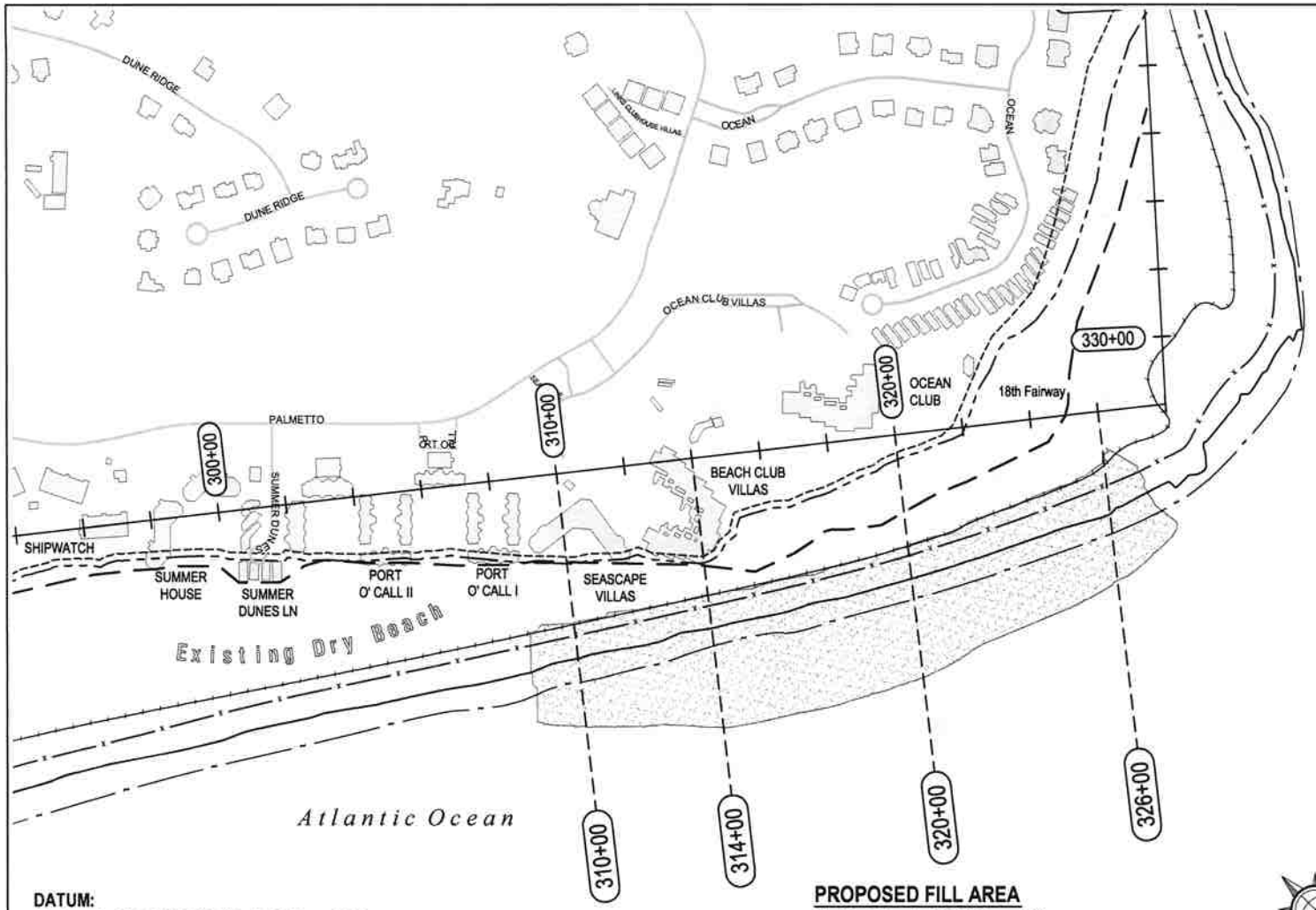
APPLICANT:
CITY OF ISLE OF PALMS
1207 PALM BOULEVARD
ISLE OF PALMS, SC 29451

AGENT:
COASTAL SCIENCE & ENGINEERING
PO BOX 8056
COLUMBIA, SC 29202

DRAWING TITLE:
EXCAVATION PLAN
TYPICAL SECTIONS

SCALE:	AS SHOWN
DATE:	OCT 2010
TMS#	
PROJECT #:	2300

SHEET #: **06**



Dewees Inlet

Key

- Proposed Fill Area
- OCRM Baseline (2009)
- OCRM Setback Line (2009)
- Building Line
- +5.0' NAVD (Mar 2010)
- *MHHW* +2.41' NAVD (Mar 2010)
- 0.00' NAVD (Mar 2010)
- *MLLW* -3.0' NAVD (Mar 2010)

DATUM:
Horizontal: SPCS NAD '83 (Feet) SC Zone 3900
Vertical: NAVD '88 (Feet)

Contours shown based on data collected by
Coastal Science & Engineering, Inc via RTK GPS March 2010.

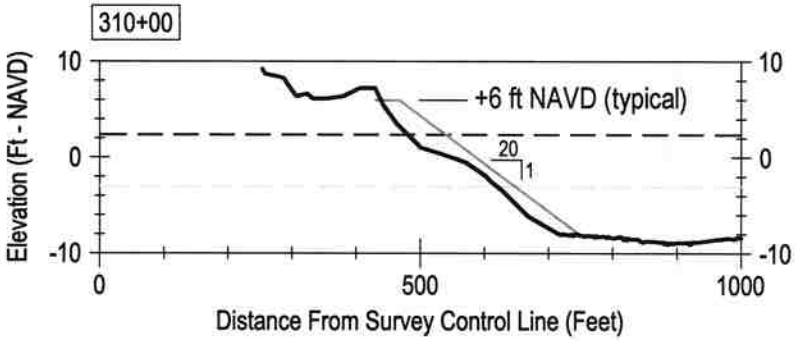
PROPOSED FILL AREA
Under March 2010 Conditions
STA 308+00 to 328+00
Up to 200,000 cy

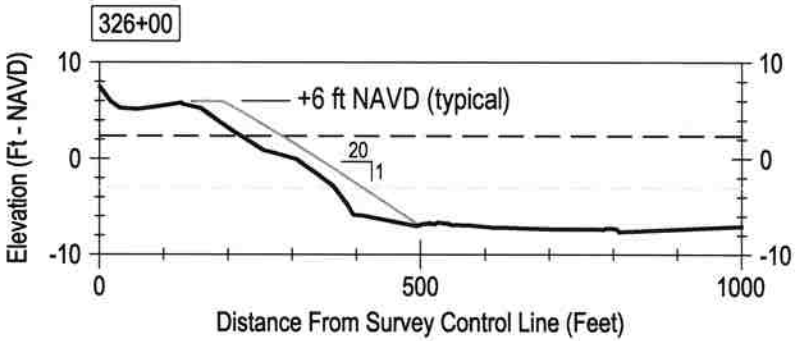
0 500
Scale (Feet)

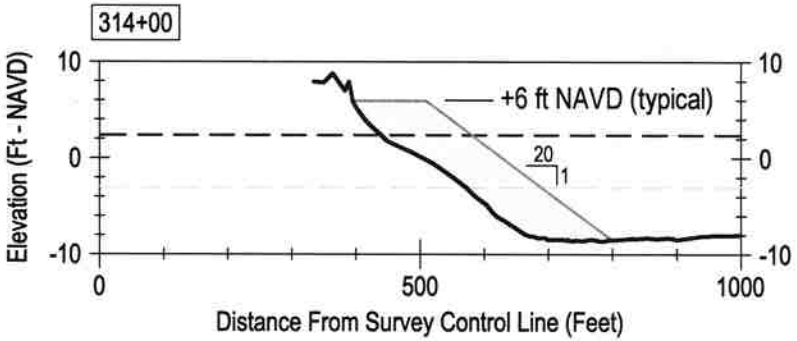
SOUTH CAROLINA
COASTAL SCIENCE & ENGINEERING
No. C01950
CERTIFICATE OF AUTHORIZATION

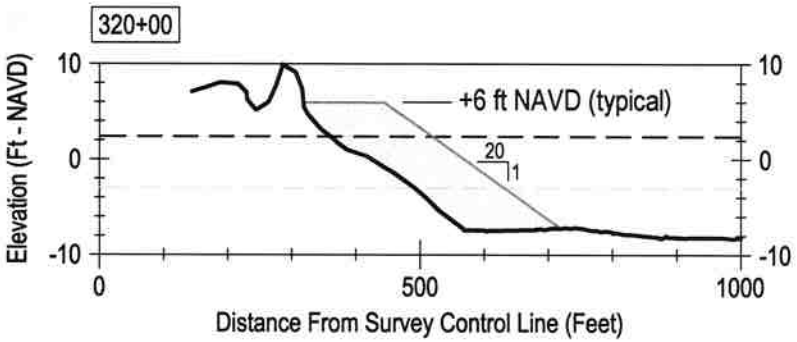
SOUTH CAROLINA
LICENSED PROFESSIONAL ENGINEER
No. 24737
HAIQING LIU

APPLICANT:	*AGENT:*	*DRAWING TITLE:*		
CITY OF ISLE OF PALMS 1207 PALM BOULEVARD ISLE OF PALMS, SC 29451	COASTAL SCIENCE & ENGINEERING PO BOX 8056 COLUMBIA, SC 29202	**FILL PLAN**	SCALE: AS SHOWN DATE: OCT 2010 TMS# PROJECT #: 2300	SHEET #: **07**









Note: Sections will vary according to conditions at the time of each beach management event.

Key

- Existing Profile (March 2010)
- Proposed Fill Profile
- *MHHW* +2.41' NAVD (Mar 2010)
- *MLLW* -3.0' NAVD (Mar 2010)

DATUM (feet):
Horizontal: SPCS NAD '83 SC Zone 3900
Vertical: NAVD '88 (Feet)
Vertical Exaggeration: 15
Finish slope 1 on 20

SOUTH CAROLINA
COASTAL SCIENCE & ENGINEERING
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APPLICANT:
CITY OF ISLE OF PALMS
1207 PALM BOULEVARD
ISLE OF PALMS, SC 29451

AGENT:
COASTAL SCIENCE & ENGINEERING
PO BOX 8056
COLUMBIA, SC 29202

DRAWING TITLE:
PROPOSED FILL TYPICAL SECTIONS

SCALE:	AS SHOWN
DATE:	OCT 2010
TMS#	
PROJECT #:	2300

SHEET #: **08**

D H E C
PROMOTE PROTECT PROSPER

AFFIDAVIT OF OWNERSHIP OR CONTROL

S. C. Department of Health and Environmental Control
Office of Ocean and Coastal Resource Management

Charleston	Beaufort	Myrtle Beach
953-0200	846-9400	238-4528
953-0201 (fax)	846-9810(fax)	238-4526(fax)

I hereby certify that I am the (check one):

- ☐ Record Owner
- ☐ Lessee
- ☐ Record Easement Holder
- ☐ Applicant To Record Owner For Easement
- ☐ Contract To Purchase Property

of the below described property situated in Charleston County, South Carolina; and that said property is all of that said property that is contiguous to and landward of the area in which the work proposed in the permit application is to be conducted. Furthermore, I certify that as record owner, lessee, or record easement holder, I have, or will have prior to undertaking the work, necessary approvals or permission from all other persons with a legal interest in said property to conduct the work proposed in the permit application.

WRITE LEGAL DESCRIPTION OF HIGHLAND (as described in deed, lease, etc.) BELOW OR WRITE "SEE ATTACHED" (in large bold letters) AND ATTACH A COPY OF THE DEED, LEASE, EASEMENT, OR MOST RECENT CERTIFIED PLAT OF THE PROPERTY. IF YOU ARE NOT THE RECORD OWNER, LESSEE OR EASEMENT HOLDER, YOU MUST ALSO SUBMIT WRITTEN PERMISSION FROM THE OWNER OF THE PROPERTY TO CARRY OUT THE PROPOSED ACTIVITY.

All property subject to control and jurisdiction of the City of Isle of Palms.

I also certify that the project as proposed does not cross any wetlands or areas below mean high water which is in the ownership of other private persons or public or private entities and that there is no disputed claim to the wetlands or areas below mean high water by private person or other entities due to a Kings Grant, State Grant, easement or conveyance or other legal document evidencing ownership of these areas.

Signature of Record Holder or Lessee

Sworn to and subscribed before me at 1207 Palm Boulevard Isle of Palms, SC 29451, Charleston County, South Carolina, this 5th day of October, 2010.

Notary Public

My commission expires: December 15, 2010

Laura A. McLellan
NOTARY PUBLIC FOR SOUTH CAROLINA
My commission expires December 15, 2016

JOINT
PUBLIC NOTICE

CHARLESTON DISTRICT, CORPS OF ENGINEERS
69A Hagood Avenue
Charleston, South Carolina 29403-5107
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-2010-1041-2IG 2 DECEMBER 2010

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

THE CITY OF THE ISLE OF PALMS
C/O STEVEN TRAYNUM
COASTAL SCIENCE AND ENGINEERING
POST OFFICE BOX 8056
COLUMBIA, SOUTH CAROLINA 29202-8056

for a permit to perform excavation and place fill material to realign the beach in shoal attachment areas in the

ATLANTIC OCEAN

at a location limited to the area between 53rd Avenue and an existing groin near the 17th tee of the Links Course, on the northeastern end of the Isle of Palms, Charleston County, South Carolina (the project area begins at approximately Latitude 32.79861°-Longitude -79.74670° and ends near Latitude 32.82000°- Longitude -79.72218°)

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

N O T I C E

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

15 Days from the Date of this Notice,

and **SCDHEC** will receive written statements regarding the proposed work 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 work consists of periodic realignment of the beach in shoal-attachment areas as part of a long-term shoal management plan. Up to 300,000 cubic yards (CY) may need to be transferred during any given shoal management event, to sufficiently reduce the impact of an attaching shoal on adjacent areas. The actual shoal management event frequency

quantity of sand to be transferred will depend on the condition of the beach in both the fill and excavation areas, as well as the predicted impacts of developing bypass events.

The condition of the beach, as surveyed in March 2010 (Sheet 02), indicates up to 200,000 CY should be transferred from the accretion area to eroded areas to maintain the desired beach condition. This quantity, as well as the exact limits of the work, will be refined by another survey prior to commencement of the work, due to the rapidity of shoreline changes associated with shoal-bypass events.

Excavations will be performed via hydraulic hoes or scraper pans, depending on contractor's preference, and will begin at the seaward most accessible portion of the beach. Excavation in the shallow, underwater portion of the beach will allow for incoming sand to rapidly fill any low areas created by the excavation. It will also limit the amount of dry beach utilized in the transfer. Excavation depths will be limited to a specified elevation, likely −6 ft NAVD (−3.0 ft MLLW), unless otherwise specified by resource agencies. Sand will be transferred by off-road trucks or equivalent, operating on the low-tide beach.

Fill volume in areas receiving sand will vary depending on beach condition at the time of the project. In the area currently showing focused erosion (in the vicinity of Seascape and Beach Club Villas), the March 2010 condition showed ~40 cubic yards per foot (cy/ft) less volume than the March 2009 condition and ~80 cy/ft less volume than the July 2008 condition (post-nourishment). In the current configuration, the shoal-management project would restore the quantity of sand in these areas to near post-nourishment condition, which would align the beach in a more stable configuration by reducing the "bulge" currently present in the accretion area. Fill will be placed in the form of a berm of variable width at the natural dry-sand beach level (approximately +6 ft NAVD). The seaward edge of the fill will be sloped in the offshore direction generally on 1 on 20 slope to the existing beach. It is anticipated that each shoal management event will be accomplished in less than two calendar months.

A buffer distance from the existing building line will be established to ensure a sufficient volume of sand remains landward of the borrow area to provide habitat, recreational area, and storm protection. Analysis of beach profiles dating to the 1980s confirms that a 400-ft buffer distance is appropriate for this region of Isle of Palms (Sheet 05). This buffer would allow for approximately one-year's worth of the maximum observed historical erosion, and would still leave sufficient beach volume for a healthy beach (i.e. – typical Isle of Palms beach width and volume in the absence of shoal attachment effects). It is unlikely that erosion in the shoal attachment area would exceed that which is predicted using the maximum historical erosion rate over any one-year period.

A project would only be undertaken if the beach condition reached a pre-established "trigger." This trigger would be the distance from the +5 ft NAVD contour (approximate normal high-tide swash line) to the building line (Sheet 07). The applicant proposes a trigger of 100 ft, with consideration given to the time of year, permitted construction window, and expected future shoreline trends (i.e. – the stage of the shoal attachment process which signals whether an increase in erosion would likely occur in the project area).

The City of the Isle of Palms has established an ongoing beach monitoring program to document sand volumes along the entire beach. Pre- and post-project surveys of the beach and offshore area in the project vicinity will be performed to verify sand volumes, beach condition, shoreline change trends; to identify the position of the +5 ft contour relative to the building line; and to monitor the scale and anticipated movements of offshore and near shore shoals.

The overall purpose of the proposed work is to maintain beach habitat, recreation area, and storm protection by redistributing incoming sand from inlet shoal-bypass events. Such redistribution is necessary to mitigate significant localized erosion which accompanies these events. The specific goals of the project are to:

1) Reduce the potential for erosion to reach a point where no dry beach remains.
2) Reduce or eliminate the need for emergency sandbagging during shoal bypass events.
3) Maintain nesting habitat for turtles.
4) Facilitate dune growth improving habitat and storm protection.
5) Maintain recreational, dry-beach area during all stages of the tide.

It is the applicant's goal to perform sand redistribution as infrequently as practicable so as to leave the project area undisturbed as long as possible between events, while still maintaining habitat, protecting, and recreation area. During any given five-year period of the permit, it is anticipated that no more than 500,000 cubic yards would be transferred. It is the applicant's preference to do fewer large scale transfers (egg – two events totaling up to ~250,000 cy each) rather than a series of small, annual events, (egg – four events totaling ~125,000 cy each). Further, the applicant desires to perform the work during winter when biological impacts are expected to be lessened. Sand redistribution events involving ~250,000 CY can be accomplished in less than two months. Previous experience indicates the beach profile in the borrow and fill areas equilibrates rapidly. Winter construction would also be timed for dune planting and to avoid turtle nesting season.

With regard to mitigation, the applicant states that "The proposed project follows a 2008 beach re-nourishment project in the area, which added ~885,000 CY of sand to the beach. The project restored ~ 10,200 linear ft of beach, much of which had little or no dry beach present. The condition of the beach was severe enough to lead resource agencies suggesting summer construction of the project. Nourishment created ~58.5 acres of dry beach habitat (CSE 2008). Following the project, the City and community of Wild Dunes arranged for sand fencing and vegetative plantings, which have contributed to significant dune growth seaward of the building line.

The current project seeks to maintain the habitat created from that project and to avoid potential environmentally damaging conditions associated with severe erosion into a developed area. The project is thought to be sensitive in that it will expedite an already occurring natural process. No estuarine or freshwater wetlands will be impacted during the project. Sand from shoals which are already attached to the beach and accessible by land based equipment (i.e., not offshore or emergent shoals) will be transferred from one area to another. By protecting dune and dry beach habitat, the City of Isle of Palms considers the proposed project beneficial to the natural resources present at the northeast end of the island, and feels further mitigation efforts are not warranted.

In addition, the City has committed to an extensive beach monitoring program as part of its long-term beach management plan. The monitoring plan involved detailed surveys of the beach condition, dune growth, inlet channels, ebb-tidal deltas, and sediment quality. The surveys of the ebb tidal deltas of Dewees Inlet and Breach Inlet represent some of the most detailed (temporarily and spatially) surveys of ebb-tidal deltas in South Carolina ever conducted. They show the movements of channels and shoals, and are currently being used to predict how they will impact the adjacent beach in the near future. The changes in the inlet delta shown by the surveys, and experience in similar events at Isle of Palms, are the justification of the proposed project. Without redistributing the sand as it attaches to the beach, significant dry beach and dune habitat will rapidly be lost, leading to a condition similar to what was present between 2004 and 2008 which led to the nourishment project."

REGULATORY DIVISION
Refer to: P/N #SAC-2010-1041-2IG 2 DECEMBER 2010

NOTE: Plans depicting the work described in this notice are available and will be provided, upon receipt of a written request, to anyone that is interested in obtaining a copy of the plans for the specific project. The request must identify the project of interest by public notice number and a self-addressed stamped envelope must also be provided for mailing the drawings to you. Your request for drawings should be addressed to the

U.S. Army Corps of Engineers
ATTN: REGULATORY DIVISION
69A Hagood Avenue
Charleston, South Carolina 29403-5107

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 the Coastal Zone Management Program (15 CFR 930). 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 approximately 90 acres of estuarine substrates utilized by various life stages of species comprising shrimp and snapper-grouper management complexes. Our 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). Our final determination relative to project impacts and the need for mitigation measures is subject to review by and coordination with the NMFS.

Pursuant to Section 7(c) of the Endangered Species Act of 1973 (as amended), the District Engineer has consulted the most recently available information and has determined that the project is 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. 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.

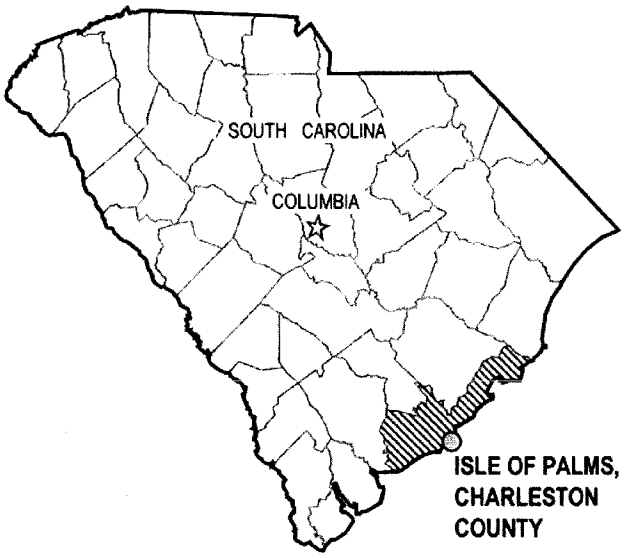
In accordance with the NHPA, the District Engineer has also consulted the latest published version of the National Register of Historic Places for the presence or absence of registered properties, or properties listed as being eligible for inclusion therein, and this worksite is not included as a registered property or property listed as being eligible for inclusion in the Register. To insure that other cultural resources 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 to provide any information it may have with regard to historic and cultural resources.

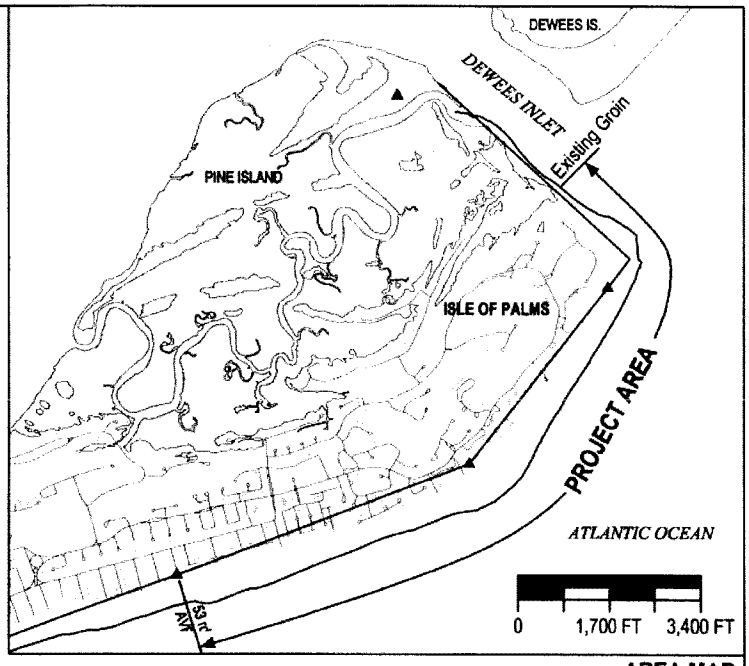
Any person may request, in writing, within the comment period specified in this notice, that a public hearing be held to consider this application. Requests for a public hearing shall state, with particularity, the reasons for holding a public hearing.

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 of Engineers cannot undertake to adjudicate rival claims.

The Corps of Engineers 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 of Engineers 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.

If there are any questions concerning this public notice, please contact Mary Hope Green at 843-329-8044 or toll free at 1-866-329-8187.

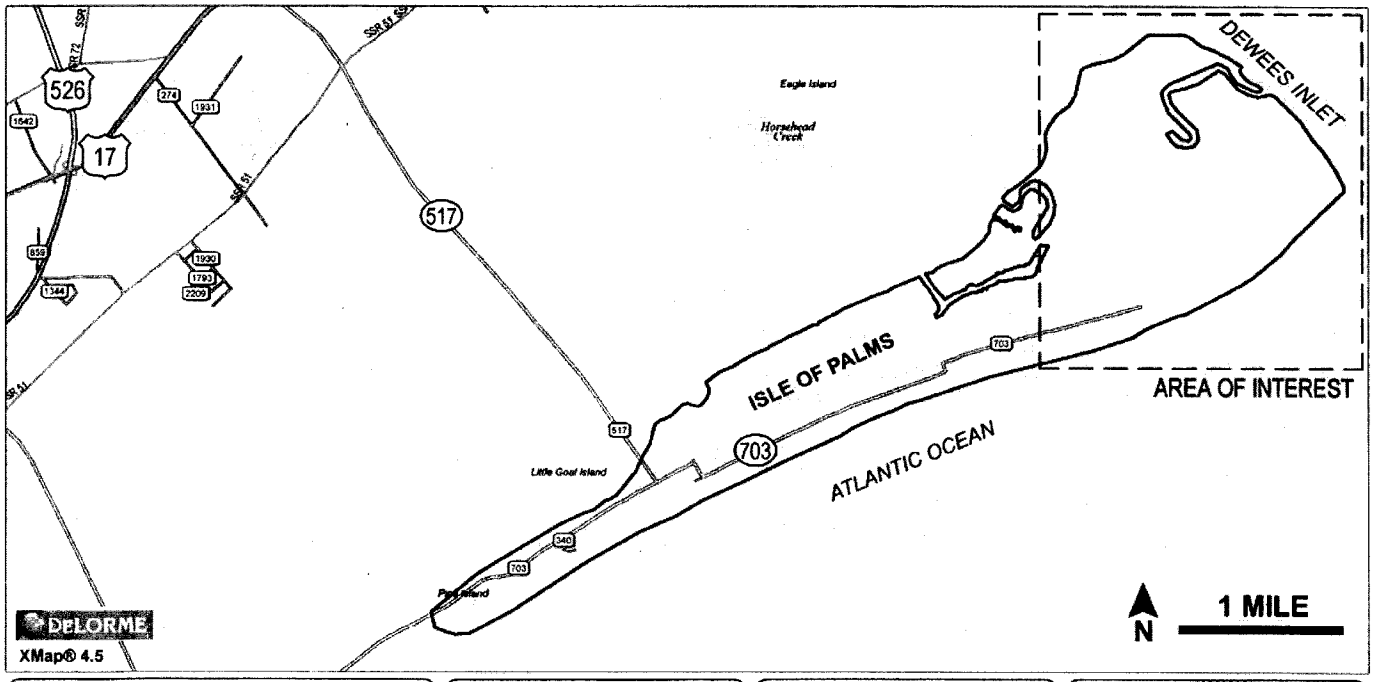




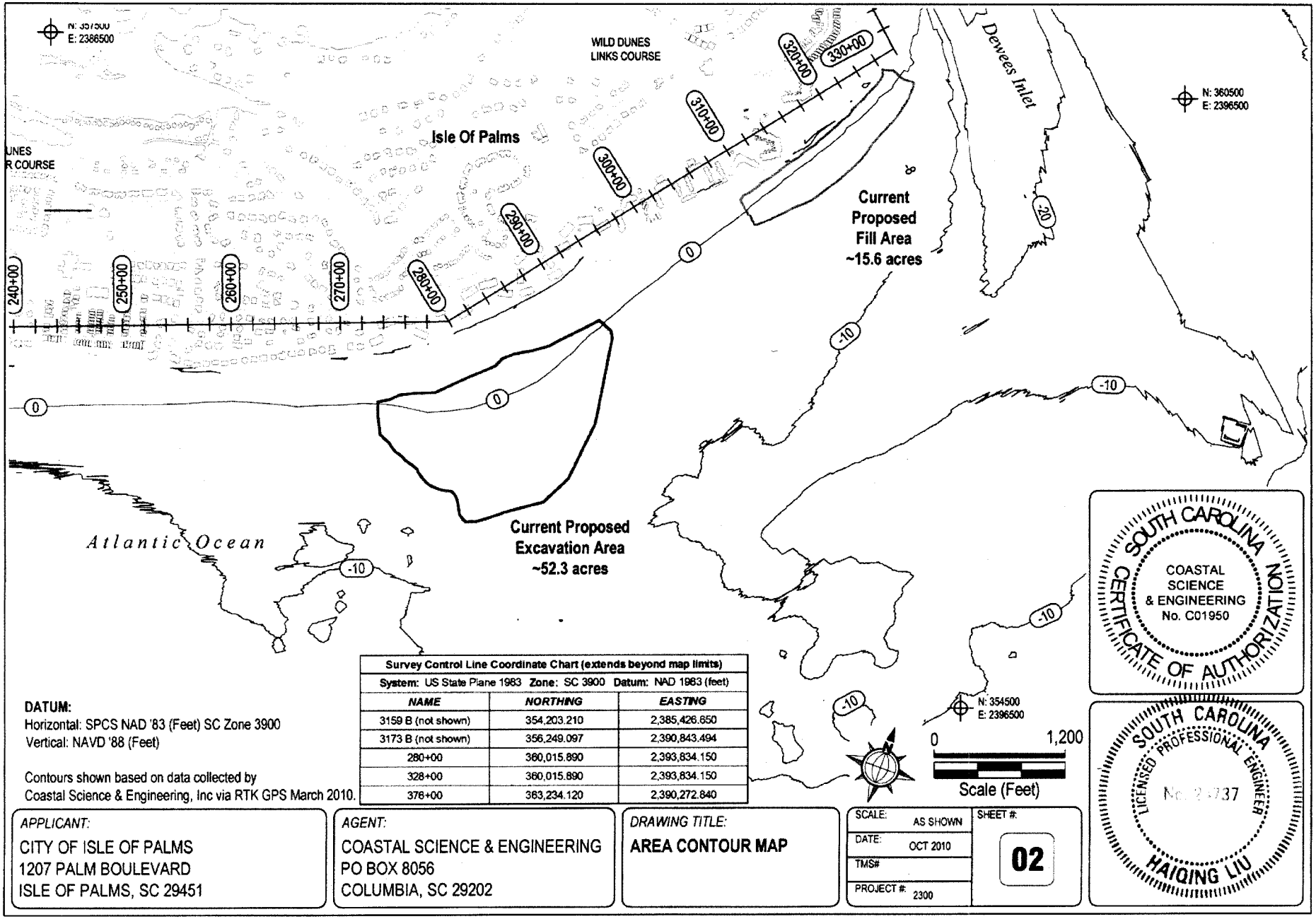
AREA MAP

DIRECTIONS:

FROM CHARLESTON, TAKE US-17 NORTH. TURN RIGHT ONTO SC 517 (ISLE OF PALMS CONNECTOR). TURN LEFT ONTO PALM BLVD. SITE IS NORTHEAST OF 57TH AVE EXTENDING ALONG TO DEWEES INLET ON THE NORTHEAST END OF ISLE OF PALMS.



APPLICANT: CITY OF ISLE OF PALMS PO DRAWER 508 ISLE OF PALMS SC 29451	*DRAWING TITLE:* **VICINITY MAP**	SOUTH CAROLINA COASTAL SCIENCE & ENGINEERING No. C01950 CERTIFICATE OF AUTHORIZATION	SOUTH CAROLINA LICENSED PROFESSIONAL ENGINEER No. 24737 HAIQING LIU
AGENT: ***P/N 2010...*** COASTAL SCIENCE & ENGINEERING PO BOX 8056 COLUMBIA, SC 29202	SCALE: AS SHOWN DATE: OCT 2010 TMS# PROJECT #: 2300 SHEET #: **01**		



Survey Control Line Coordinate Chart (extends beyond map limits)		
System: US State Plane 1983 Zone: SC 3900 Datum: NAD 1983 (feet)		
NAME	NORTHING	EASTING
3159 B (not shown)	354,203.210	2,385,426.650
3173 B (not shown)	356,249.097	2,390,843.494
280+00	360,015.890	2,393,834.150
328+00	360,015.890	2,393,834.150
376+00	363,234.120	2,390,272.840

DATUM:
Horizontal: SPCS NAD '83 (Feet) SC Zone 3900
Vertical: NAVD '88 (Feet)

Contours shown based on data collected by
Coastal Science & Engineering, Inc via RTK GPS March 2010.

SOUTH CAROLINA
COASTAL SCIENCE & ENGINEERING
No. C01950
CERTIFICATE OF AUTHORIZATION

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No. 23737
HAIQING LIU

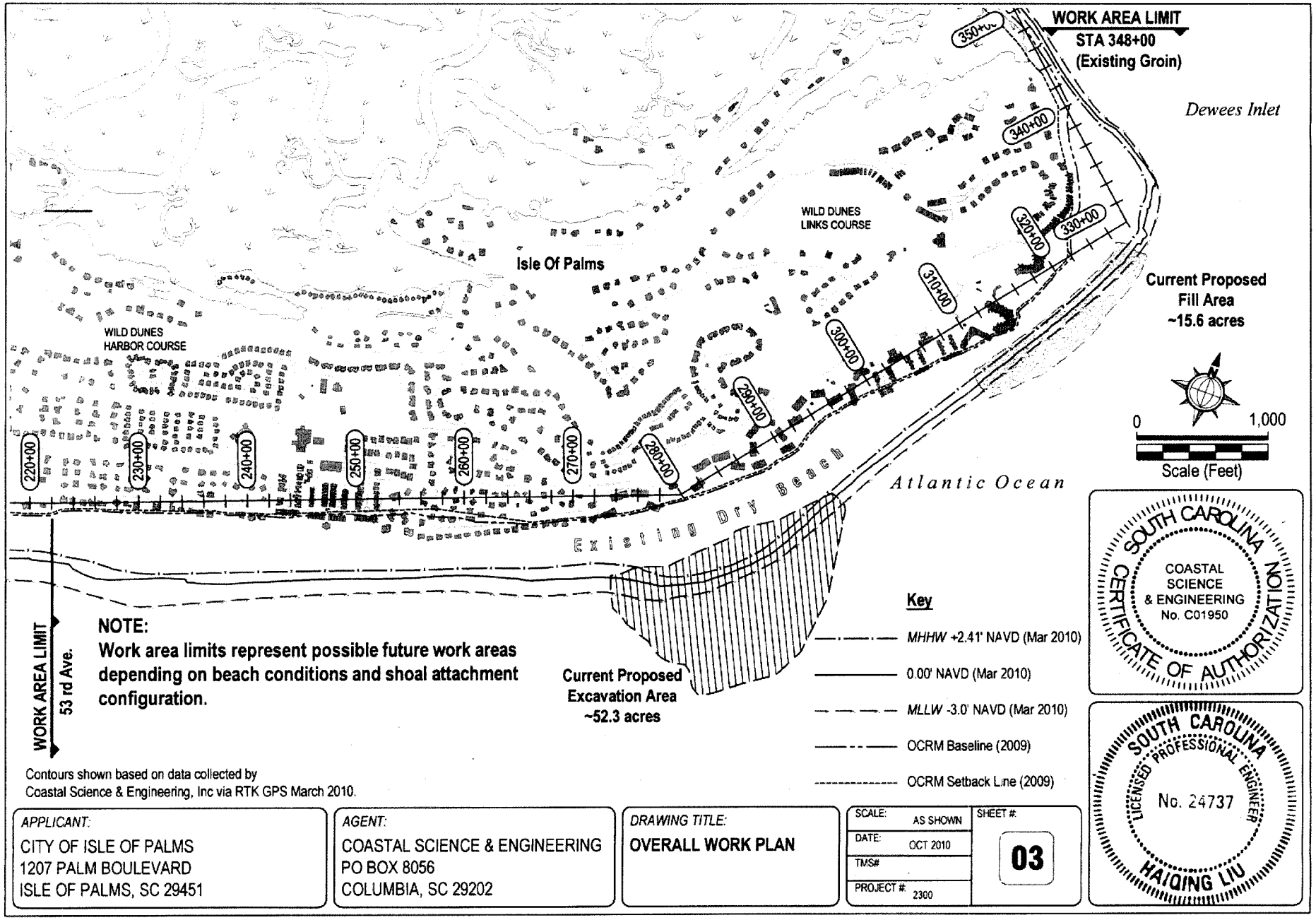
APPLICANT:
CITY OF ISLE OF PALMS
1207 PALM BOULEVARD
ISLE OF PALMS, SC 29451

AGENT:
COASTAL SCIENCE & ENGINEERING
PO BOX 8056
COLUMBIA, SC 29202

DRAWING TITLE:
AREA CONTOUR MAP

SCALE:	AS SHOWN
DATE:	OCT 2010
TMS#	
PROJECT #:	2300

SHEET #: **02**



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Coastal Science & Engineering, Inc via RTK GPS March 2010.

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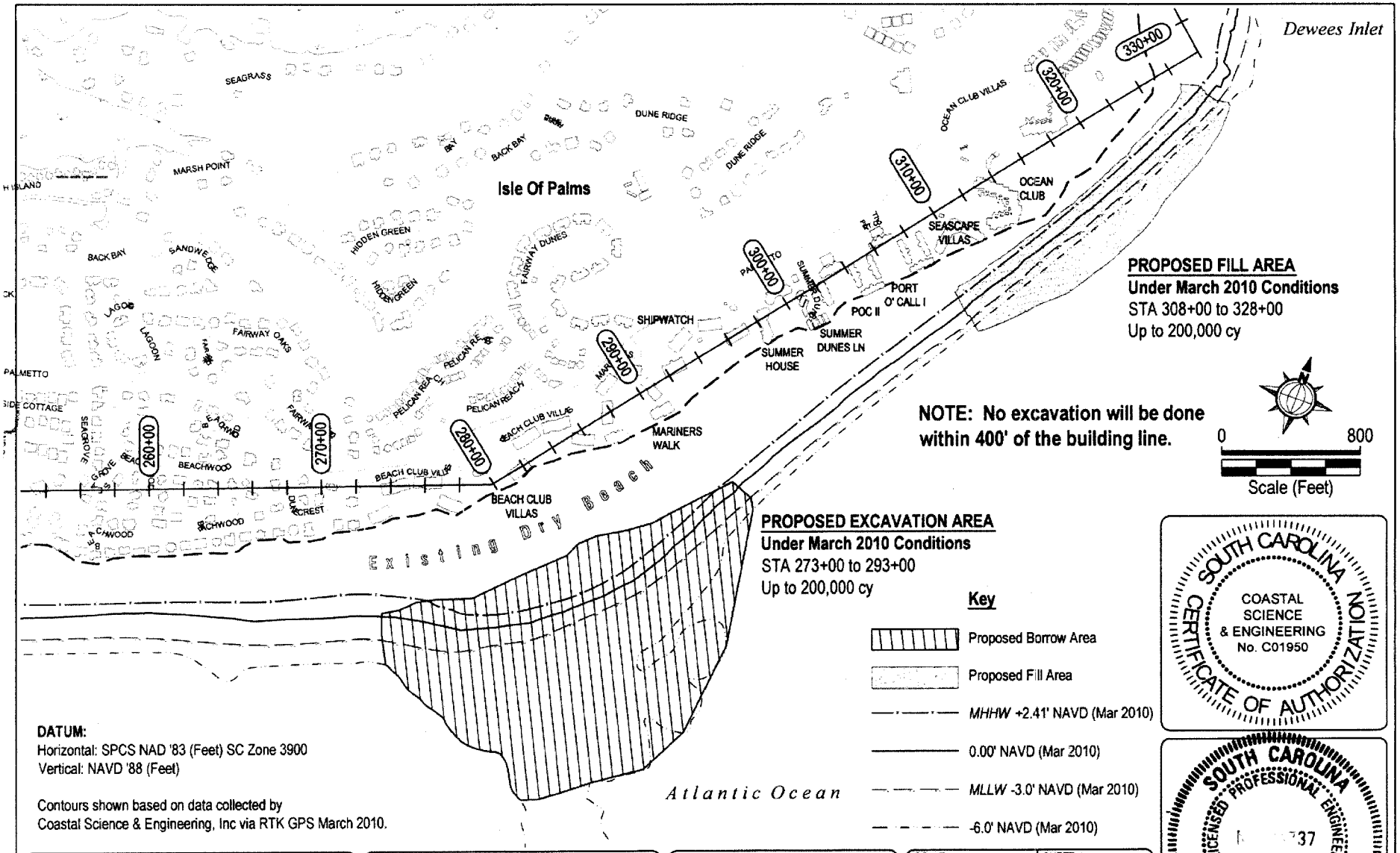
APPLICANT:	AGENT:	DRAWING TITLE:	SCALE: AS SHOWN	SHEET #:
CITY OF ISLE OF PALMS 1207 PALM BOULEVARD ISLE OF PALMS, SC 29451	COASTAL SCIENCE & ENGINEERING PO BOX 8056 COLUMBIA, SC 29202	**OVERALL WORK PLAN**	DATE: OCT 2010 TMS# PROJECT #: 2300	**03**



DATUM:
Horizontal: SPCS NAD '83 (Feet) SC Zone 3900
Vertical: NAVD '88 (Feet)

Contours shown based on data collected by
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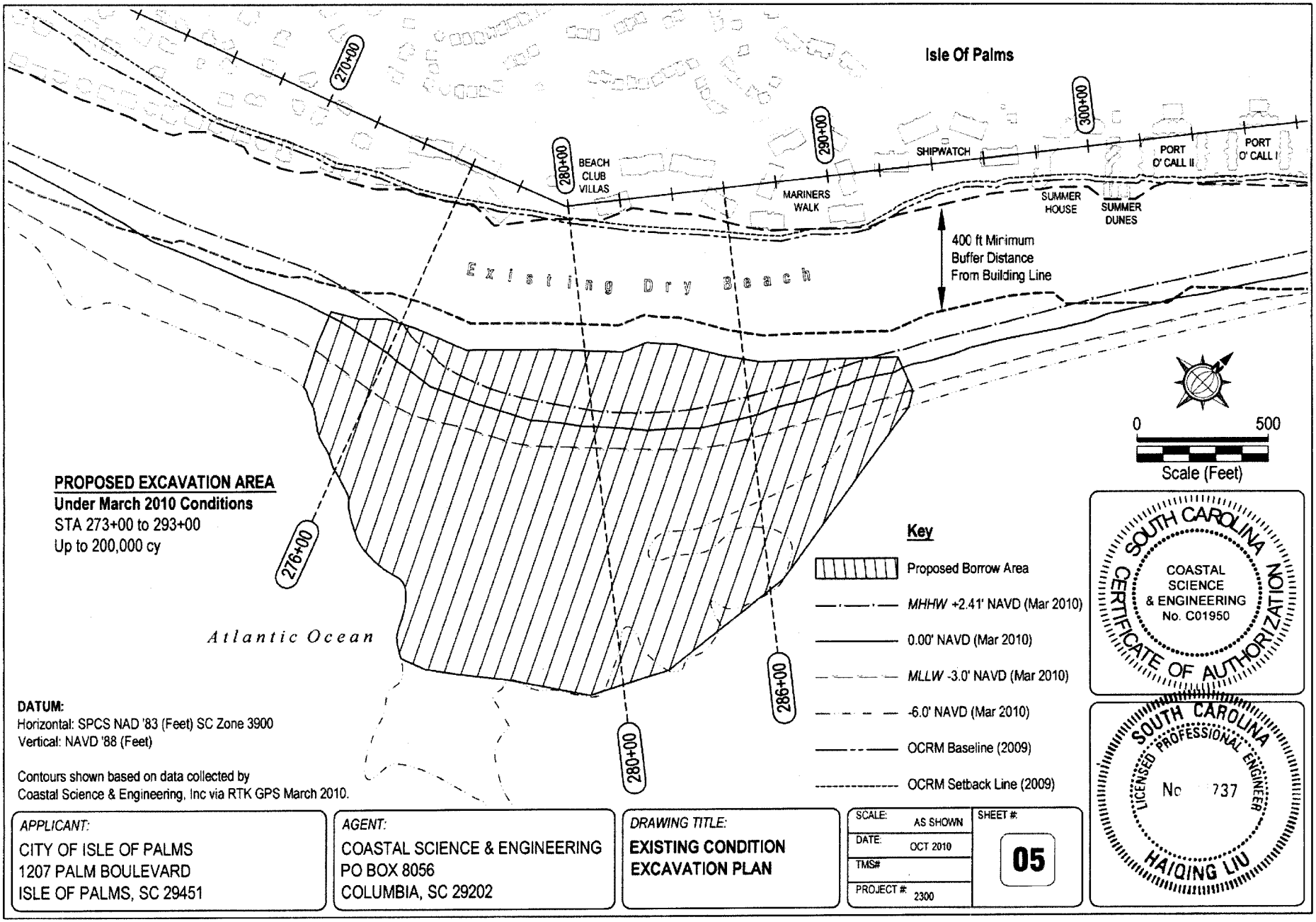
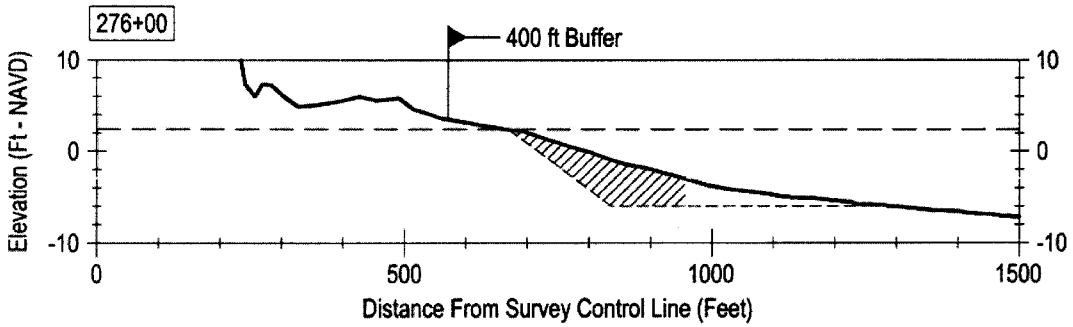
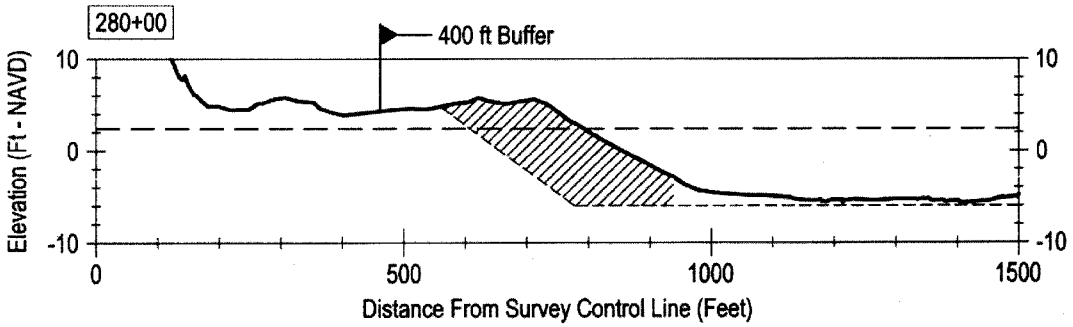
SOUTH CAROLINA
LICENSED PROFESSIONAL ENGINEER
[illegible]37
HAIQING LIU

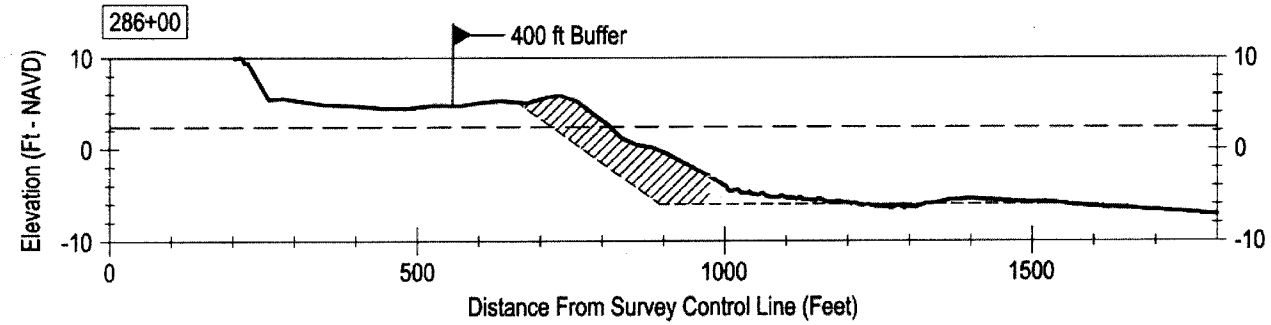
APPLICANT:	CITY OF ISLE OF PALMS 1207 PALM BOULEVARD ISLE OF PALMS, SC 29451
AGENT:	COASTAL SCIENCE & ENGINEERING PO BOX 8056 COLUMBIA, SC 29202
DRAWING TITLE:	**EXISTING CONDITION PROPOSED PLAN**
SCALE:	AS SHOWN
DATE:	OCT 2010
TMS#	
PROJECT #	2300
SHEET #:	04



APPLICANT: CITY OF ISLE OF PALMS 1207 PALM BOULEVARD ISLE OF PALMS, SC 29451	*AGENT:* COASTAL SCIENCE & ENGINEERING PO BOX 8056 COLUMBIA, SC 29202	*DRAWING TITLE:* **EXISTING CONDITION EXCAVATION PLAN**	SCALE: AS SHOWN DATE: OCT 2010 TMS# PROJECT #: 2300	SHEET #: **05**







Key

Existing Profile (March 2010)

Proposed Excavation Profile

MHHW +2.41' NAVD (Mar 2010)

MLLW -3.0' NAVD (Mar 2010)

DATUM (feet):
Horizontal: SPCS NAD '83 SC Zone 3900
Vertical: NAVD '88 (Feet)
Vertical Exaggeration: 15

Finished Slope Will Be ~ 1 on 20

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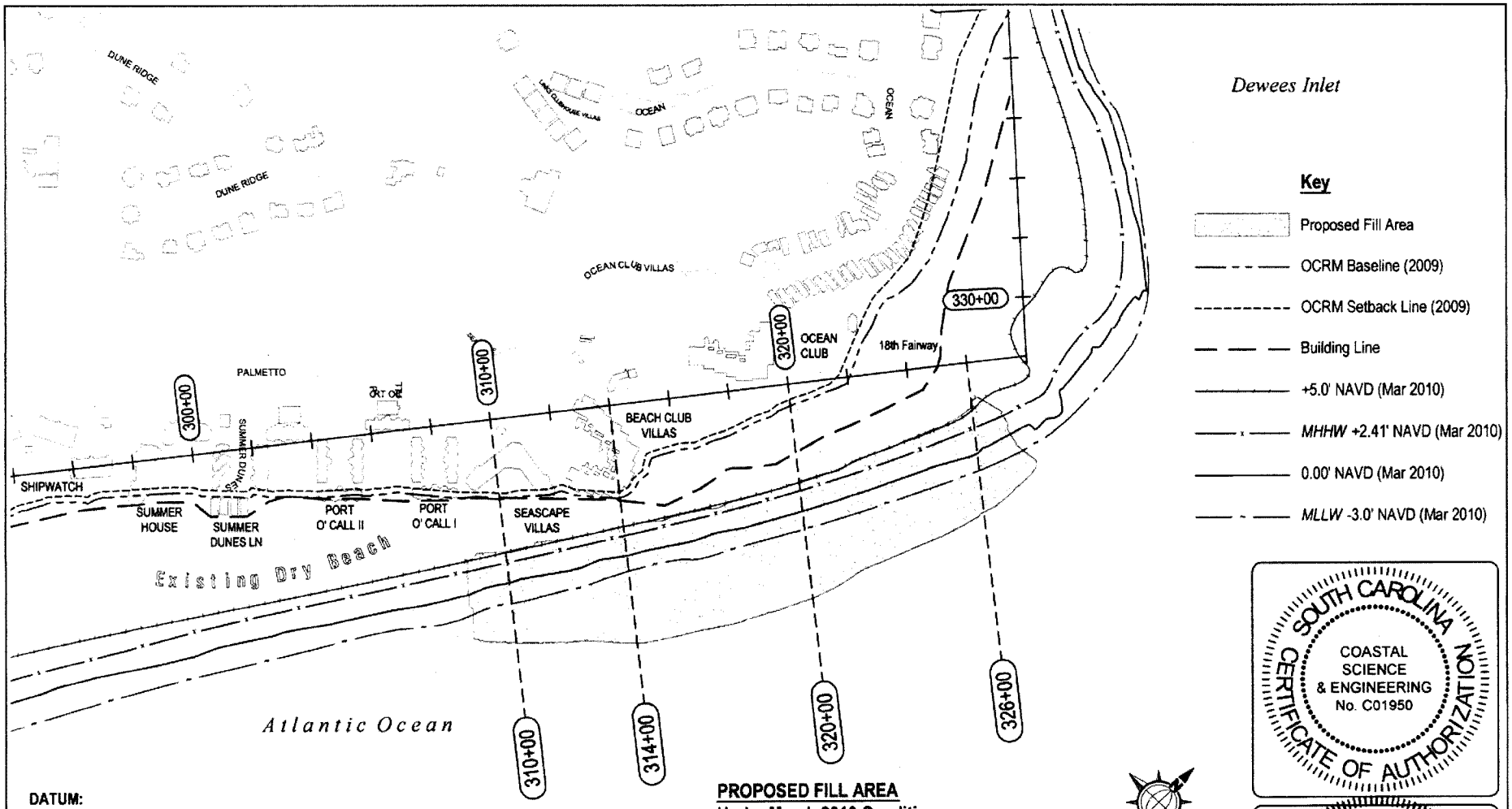
APPLICANT:
CITY OF ISLE OF PALMS
1207 PALM BOULEVARD
ISLE OF PALMS, SC 29451

AGENT:
COASTAL SCIENCE & ENGINEERING
PO BOX 8056
COLUMBIA, SC 29202

DRAWING TITLE:
EXCAVATION PLAN
TYPICAL SECTIONS

SCALE:	AS SHOWN
DATE:	OCT 2010
TMS#	
PROJECT #	2300

SHEET #: **06**



DATUM:
Horizontal: SPCS NAD '83 (Feet) SC Zone 3900
Vertical: NAVD '88 (Feet)

Contours shown based on data collected by
Coastal Science & Engineering, Inc via RTK GPS March 2010.

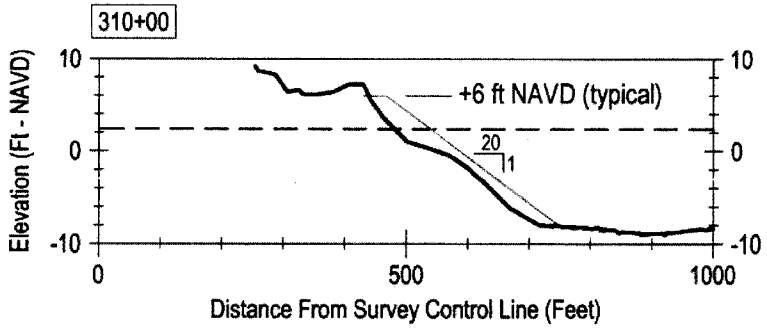
PROPOSED FILL AREA
Under March 2010 Conditions
STA 308+00 to 328+00
Up to 200,000 cy

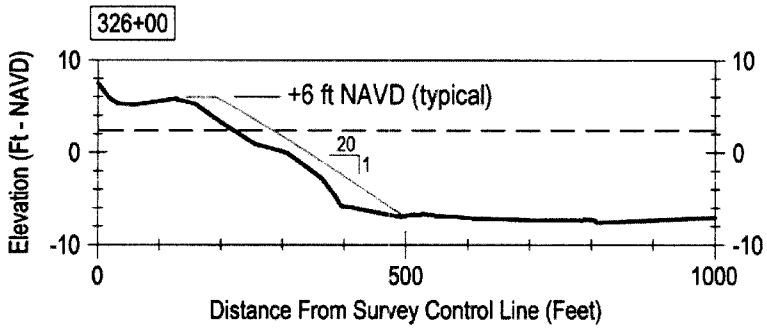
0 500
Scale (Feet)

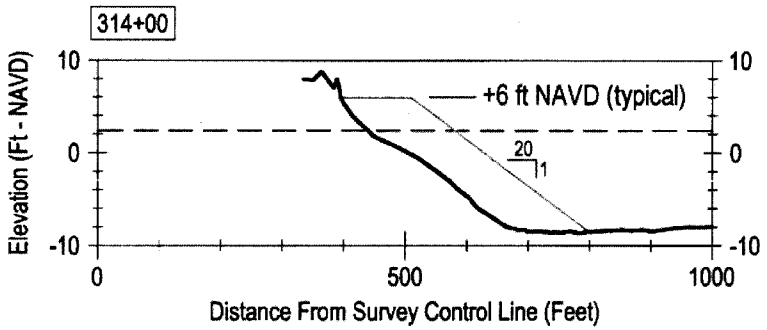
SOUTH CAROLINA
COASTAL SCIENCE & ENGINEERING
No. C01950
CERTIFICATE OF AUTHORIZATION

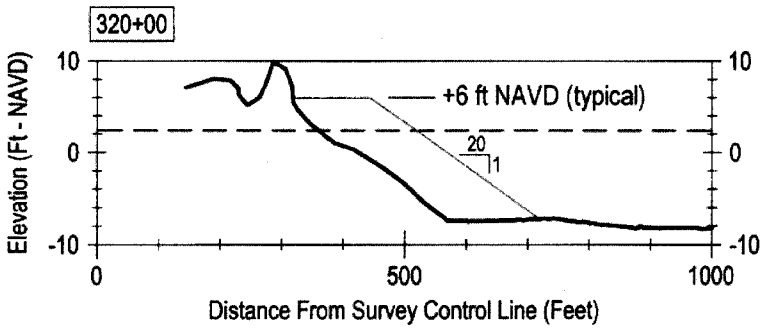
SOUTH CAROLINA
LICENSED PROFESSIONAL ENGINEER
No. 24737
HAIQING LIU

APPLICANT:	CITY OF ISLE OF PALMS 1207 PALM BOULEVARD ISLE OF PALMS, SC 29451
AGENT:	COASTAL SCIENCE & ENGINEERING PO BOX 8056 COLUMBIA, SC 29202
DRAWING TITLE:	**FILL PLAN**
SCALE:	AS SHOWN
DATE:	OCT 2010
TMS#	
PROJECT #:	2300
SHEET #:	07









Note: Sections will vary according to conditions at the time of each beach management event.

Key

Existing Profile (March 2010)

Proposed Fill Profile

MHHW +2.41' NAVD (Mar 2010)

MLLW -3.0' NAVD (Mar 2010)

DATUM (feet):
Horizontal: SPCS NAD '83 SC Zone 3900
Vertical: NAVD '88 (Feet)
Vertical Exaggeration: 15
Finish slope 1 on 20

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1207 PALM BOULEVARD
ISLE OF PALMS, SC 29451

AGENT:
COASTAL SCIENCE & ENGINEERING
PO BOX 8056
COLUMBIA, SC 29202

DRAWING TITLE:
PROPOSED FILL TYPICAL SECTIONS

SCALE: AS SHOWN
DATE: OCT 2010
TMS#
PROJECT #: 2300
SHEET #: **08**

5757 palm boulevard isle of palms, sc 29451
p: 843-886-6000 f: 843-886-2911 wildedunes.com

Wild Dunes
Charleston Island Resort

December 15, 2010

U.S. Army Corp of Engineers
Charleston District
69A Hagood Avenue
Charleston, SC 29403-5107

S.C. Department of Health and Environmental Control
Office of Ocean and Coastal Resources Management
1362 McMillan Avenue, Suite 400
Charleston, SC 29405

Dear Sirs:

The City of Isle of Palms has submitted a permit application (P/N #SAC-2010-1041-2IG) to your agencies for a permit to take action to realign the beach in shoal attachment areas in front of Wild Dunes.

Wild Dunes Resort, in partnership with the Isle of Palms community, is strongly in support of this project as it is vitally important in maintaining the long-term health of the beach in front of Wild Dunes and represents a pro-active beach management strategy for erosion control.

As history has shown, the resulting beach erosion due to the periodic attachment of sand shoals not only threatens beach habitat, but also impacts the recreational use of the beach. In addition, it also negatively affects the resort's and the community's commitment to be a first-class residential and resort beach destination.

Experts agree that a long-term shoal management strategy is essential to mitigating the erosion and maintaining an even distribution of sand in front of the community. Building upon the success of the 2008 renourishment, this permit would provide for future sand redistribution and beach realignment as these shoals attach to the beach.

We appreciate your agencies support in the past and look forward to another successful project in protecting the beaches on the Isle of Palms.

Sincerely

Frank Fredericks
Managing Director

cc: Linda Tucker, City Administrator
Dave Kynoski, General Manager, Wild Dunes Community Association

South Carolina Department of
Natural Resources

PO Box 12559
Charleston, SC 29422
843.953.9003 Office
843.953.9399 Fax
Daviss@dnr.sc.gov

John E. Frampton
Director
Robert D. Perry
Director, Office of
Environmental Programs

January 13, 1011

Ms. Mary Hope Green
U. S. Army Corps of Engineers
69-A Hagood Avenue
Charleston, SC 29403-5107

Re: P/N SAC-2010-1041-2IG, The City of the Isle of Palms, Charleston County

Dear Ms. Green:

Personnel with the South Carolina Department of Natural Resources have reviewed the above referenced project and offer the following comments.

The proposed work consists of periodic realignment of the beach in shoal attachment areas as part of a long-term shoal management plan. Up to 300,000 cubic yards (cy) of material may need to be transferred during each event, with the frequency of events dependent on the condition of the beach in both the fill and excavation areas. Excavations will be performed via hydraulic hoes or scraper pans. Excavation depths will be limited to a specified elevation, likely -6' NAVD. The overall purpose of the project is to maintain beach habitat, recreation area, and provide storm protection by redistributing incoming sand from inlet shoal-bypass events.

Our department has a number of concerns regarding the use of sands mined from the active beach and nearshore areas for use in beach nourishment projects. The proposed project involves the establishment of a long-term beach scraping program, consisting of the mining and transfer of sand from an accretional area of the Isle of Palms (IOP) to erosional portions of the beach. Of particular concern is the open-ended nature of the proposed plan and the uncertainty in both the frequency of events and the quantity of materials to be transferred. The frequency of events is dependent on the condition of the beach in both the fill and excavation areas as well as the predicted impacts of developing by-pass events. The movement of sand is proposed to be triggered when the distance from the high tide swash line comes to within 100 ft of the building line in the erosional area. The applicant suggests that fewer beach scrapings would be preferable to more frequent smaller scrapings, but notes that even if fewer events are required; this could result in transfers of up to 250,000 cy of sand twice during a five year period. These specifications are based on estimates and the need for more frequent events with larger volumes of material is possible if not likely in a dynamic beach environment.

Recent history illustrates the difficulty in estimating the effectiveness and life expectancy of beach nourishment projects. In 2008, the applicant obtained a permit to nourish this same beach

using approximately 885,000 cy of sediment from an offshore source with an estimated 10 year life at the time of that permit. Now, approximately two years later, much of the sand from the northeastern portion of the project (reach 3) has been lost, and presumably accumulated on the shoal proposed for mining in the current project. Since the applicant has been unable to accurately estimate the life of a beach fill project in the erosional area of the IOP, there is considerable uncertainty as to how effective the proposed approach will be and how frequent sand transfer events will be necessary.

The proposed project, especially if conducted on a frequent basis, will result in both short-term and long-term biological impacts. Even at a frequency of every other year, the beach system in both fill and excavation areas will be biologically altered for a period of time. While benthic macroinfauna generally appear to recover within a few months of impact in nourishment areas based on several studies conducted in South Carolina, recent studies have documented that some beach fauna, such as ghost crab populations, are likely to never fully recover to pre-project conditions in the sections of the beach to be filled at this frequency (Dixon, 2007, Bergquist et al. 2010). During the periods when benthic macroinfauna and other species are impacted, the use of those resources by birds, fish and other fauna will also be affected. Peterson et al. (2006) noted that a cold season beach fill project caused dramatic suppression of beach macroinvertebrates and demonstrably degraded habitat value for foraging shorebirds with suppressed shorebird densities being significantly lower than control areas for approximately 6 months. Additionally, impacts to the beach fauna in the intertidal zone to be mined are largely unknown and could result in a chronically destabilized beach system if mined frequently. Beach scraping may also result in some unintended consequences caused by increased beach profile slopes which could lead to unanticipated erosional losses of the dry beach in the area being excavated.

While the proposed beach scraping efforts are proposed to occur during the winter months to avoid conflicts with turtle nesting sites, the actual trigger is based on a loss of sand to a certain distance from the line of development. Given that trigger, it is unclear what the applicant proposes if the trigger occurs within non-winter months. Even then, it is well documented that filled beaches require a period of time to return to a stable beach profile. During this transition to a stable beach profile there is the potential to decrease nest success (ratio of nesting emergences to emergences not resulting in nest deposition) because of an unnatural slope and/or scarps and increase hatchling disorientations (Brock et al. 2009). No information is provided by the applicant to indicate how beach scarps or increased hatchling disorientations would be dealt with.

Recent recommendations by the Shoreline Advisory Committee (DHEC 2010) also recognize the potential problem of mining nearshore shoals. The following summary and recommendations provided in that report are fully supported by the SCDNR.

> *Since mining of nearshore sediments can potentially impact the future redistribution of sediments in the active littoral system, science-based evaluation criteria are provided to assure adjacent or "receiving" shorelines are not adversely impacted (e.g., physical and numerical modeling and impacts analysis for potential inlet relocations or dredging operations). Monitoring requirements consistent with other state permitting requirements (e.g., long-term monitoring of downdrift impacts) provide a safeguard to mitigate any adverse impacts discovered during the post-project monitoring period.*

Other nonstructural nearshore alterations such as beach scraping and inlet modifications can also negatively impact downdrift beaches by disrupting natural sediment transport pathways without adding new sand to the system. Furthermore, as engineering proposals for soft erosion control solutions grow in complexity, and as increasing numbers of stakeholders engage in the decision-making process, the current situation often leads to competing proposals and differing perceptions of the validity of environmental assessments.

C. NEW POLICY RECOMMENDATIONS
a) For nearshore alterations proposed to address beachfront erosion, excluding sand scraping or minor renourishment projects conducted under an approved Emergency Order (see Recommendation #9), DHEC-OCRM should establish a special review process with enhanced scrutiny for any projects affecting the beach, inlet systems, or submerged lands out to 1 (one) mile offshore.
Permit conditions should include:
1) The permittee or project sponsor should demonstrate an inability or hardship in using sand from areas beyond the 1-mile limit, aside from any expected and reasonable increases in associated project costs;
2) Project proposals should ensure no negative impacts to the maximum extent practicable by conducting a thorough analysis, peer review process, and/or expanded monitoring in areas where excavation is performed, as well as in areas susceptible to downdrift impacts;
3) Contingency plans should be developed in the event that adverse impacts are identified (see Recommendation #8).

In addition, recommendations provided by the National Research Council's Committee on Beach Nourishment and Protection (1999), which included several highly regarded coastal engineers and geologists, do not include use of sands mined from the active beach and nearshore areas except as an emergency source, or for sand-bypass operations. Excavating into the intertidal beach, steeping the profile of the active beach, and widening sloughs can greatly alter the dynamics of active inlets and result in rapid shoreline erosion. Removal of nearshore material for beach placement can increase wave energy reaching the beach by altering the nearshore bathymetry, defeating the purpose of an erosion control project and exacerbating the need for shoreline stabilization projects.

In summary, the SCDNR is generally opposed to the use of sands mined from the active beach and nearshore areas for use in beach nourishment projects and does not consider the project as proposed to represent an acceptable approach to long-term management of the beachfront at the IOP. The proposed project is especially troublesome and unprecedented relative to previous beach scraping requests since there is no clear end date and considerable uncertainty as to how frequently the beach (both excavated and filled) will be impacted. Frequent disruption of the natural resources inhabiting the beaches of IOP and elsewhere is not acceptable to the SCDNR. The IOP beach system is likely to continue to evolve producing different suites of physical settings and modifying local biological resource concerns through time. Permitting this as a long-term strategy would likely preclude resource agencies from formal commenting as conditions change, new information comes available and new natural resource concerns arise.

For the above reasons, we ask that the project as currently proposed not be permitted and that the applicant pursue less damaging alternatives for beach management. Alternatives that result in a net increase in sand to the system, such as the use of sands from offshore deposits should be given full consideration.

Sincerely,

Susan F. Davis

Susan F. Davis
Coastal Environmental Coordinator

Cc: OCRM/Eiser
USEPA/Lord
USFWS
NMFS

Bergquist, DC, SE Crowe, MV Levisen. 2010. The 2006-2007 Hilton Head Island renourishment project: response and recovery of beach sediment characteristics and indicator crab (*Ocypode quadrata*) populations. Final Report. Prepared for Olsen and Associates Inc and Town of Hilton Head.

Brock, KA, JS Reece, LM Ehrhart. 2009. The effects of artificial beach nourishment on marine turtles: differences between loggerhead and green turtles. *Journal of The Society for Ecological Restoration International*, Vol. 17, No. 2. pp. 297-307.

Dixon, C.E. 2007. The effects of summer beach nourishment to the Atlantic ghost crab populations on Folly Beach SC.

National Research Council (NRC). 1995. *Beach Nourishment and Protection.* National Academy Press. Washington, D.C. 334 pp.

Peterson, C.H., M.J. Bishop, G.A. Johnson, L.M. D'Anna, and L.M. Manning. 2006. Exploiting beach filling as an unaffordable experiment: benthic intertidal impacts propagating upwards to shorebirds. *Journal of Experimental Marine Biology and Ecology* 338: 205-221.

SCDHEC, 2010. *Adapting to Shoreline Change: A Foundation for Improved Management and Planning in South Carolina* - Final Report of the Shoreline Change Advisory Committee

United States Department of the Interior

FISH AND WILDLIFE SERVICE
176 Croghan Spur Road, Suite 200
Charleston, South Carolina 29407

January 13, 2011

Lt. Colonel Jason A. Kirk
District Engineer
U.S. Army Corps of Engineers
69A Hagood Avenue
Charleston, S.C. 29403-5107

Attn: Mary Hope Green

Re: P/N SAC–2010–1041–21G, The City of Isle of Palms
Charleston County, SC
FWS Log No. 2011-CPA-0035

Dear Colonel Kirk:

The U.S. Fish and Wildlife Service (Service) has reviewed the December 2, 2010, public notice. Our comments are submitted in accordance with provisions of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et.seq.) and the Endangered Species Act, as amended (16 U.S.C. 1531–1543). This report is also to serve as official comments to the South Carolina Department of Health and Environmental Control in their certification processes pursuant to the Coastal Zone Management Act and Section 401 of the Clean Water Act.

The proposed work consists of the periodic realignment of the beach in shoal-attachment areas along the shoreline. The applicant anticipates excavating no more than 500,000 cubic yards (cy) of material from the intertidal zone accessible by land during the life of the permit (five years). The applicant's preference is to do fewer large scale transfers (two events totaling up to 250,000 cy each) and complete the scraping and placement during the winter months.

Before 2008, the City of Isle of Palms did not have a beach management plan or a long-term approach to address shoreline erosion, which resulted in ineffective and problematic temporary efforts to address a longstanding erosion problem. In 2008, the applicant obtained a permit to nourish this same stretch of beach adding approximately 885,000 cy of sediment to the Dewees Inlet system from an offshore borrow area, which had an estimated life expectancy of ten years. In 2010, approximately two and a half years later, approximately 200,000+ cy of the sand from the northeastern portion of the project area has been lost.

Since the addition of sediment from an offshore borrow area only alleviated the erosion problem in certain areas of the project area for two and a half years, it is unlikely that excavating sediment from within the system and transferring it to erosional hotspots is a viable solution. In the interest of proactive long-term beach management, the applicant should already be planning another large-scale nourishment project to add sediment to the system instead of taking it from an accreting area within the system to temporarily alleviate localized erosion in other areas.

According to "Best Management Practices For Shoreline Stabilization To Avoid And Minimize Adverse Environmental Impacts" prepared by Rice (2009), "Nearshore areas including sandbars and tidal shoals should not be used as a sediment source for beach fill projects. Removal of nearshore material for beach placement can increase wave energy reaching the beach by altering the nearshore bathymetry, defeating the purpose of an 'erosion control project' and exacerbating the need for shoreline stabilization projects."

Additionally, recommendations provided by the National Research Council's Committee on Beach Nourishment and Protection (1995), which included several highly regarded coastal engineers and geologists, do not include use of sands mined from the active beach and nearshore areas except as an emergency source, or for sand-bypass operations. Excavating into the intertidal beach, steepening the profile of the active beach, and widening sloughs can greatly alter the dynamics of active inlets and result in rapid shoreline erosion. Removal of nearshore material for beach placement can increase wave energy reaching the beach by altering the nearshore bathymetry, defeating the purpose of an erosion control project and exacerbating the need for shoreline stabilization projects. Recent recommendations by the Shoreline Advisory Committee (DHEC 2010) also recognize the potential problem of mining nearshore shoals.

The Service is also concerned about impacts to threatened and endangered species, as well as trust resources. While the project is proposed to occur during the winter months in order to avoid impacts to nesting sea turtles, project timing is not the only concern since it is well documented that filled beaches require a period of time to return to a stable beach profile. During this transition to a stable beach profile there is the potential to decrease nest success (ratio of nesting emergences to emergences not resulting in nest deposition) because of an unnatural slope and/or scarps and increase hatchling disorientations (Brock *et al.* 2009). The applicant provided no information indicating how beach scarps or increased hatchling disorientations would be addressed. Additionally, the accreting shoals provide foraging habitat for shorebirds and loafing habitat for seabirds absent recreational disturbance. Also, Peterson *et al.* (2006) noted that a cold season beach fill project caused dramatic suppression of beach macroinvertebrates thereby degrading habitat value for foraging shorebirds for approximately six months, which may be exacerbated by frequent disruptions resulting in a chronically destabilized beach system.

At this time, we cannot concur with your determination that the proposed project is not likely to adversely affect any federally endangered, threatened, or proposed species since our concerns regarding impacts to loggerhead sea turtles and their nesting habitat have not been addressed.

Due to (1) the uncertainty of the frequency of perturbations to the system and resulting habitat impacts, (2) the uncertainty of the project's effectiveness, (3) the lack of mitigation, and (4) the lack of monitoring, the Service recommends that the proposed project not be permitted. We recommend that the applicant consider an alternative that result in a net increase to the system in the interest of long-term beach management.

We appreciate the opportunity to review and provide comments on the submitted permit. Your interest in protecting threatened and endangered species is appreciated. If you have any questions please contact Ms. Melissa Bimbi of my staff at (843) 727-4707, ext. 217.

Sincerely,

for Jay B. Herrington
Field Supervisor

JBH/MKB

cc: Ms. Jaclyn Daly, NMFS, Charleston, SC
Ms. Felicia Sanders, SCDNR, McClellanville, SC
Ms. DuBose Griffin, SCDNR, Charleston, SC
Ms. Susan Davis, SCDNR, Charleston, SC
Mr. Bill Eiser, SCDHEC-OCRM, Charleston, SC

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Sincerely,

for Jay B. Herrington
Field Supervisor

JBH/MKB

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D H E C

PROMOTE PROTECT PROSPER

Promoting and protecting the health of the public and the environment

December 10, 2010

Coastal Science and Engineering
P.O. Box 8056
Columbia, SC 29202

Re: 401 Certification Pursuant for Permit Number SAC 2010-1041-2IG
Applicant: The City of Isle of Palms
County: Charleston

Dear Steven Traynum:

The South Carolina Department of Health and Environmental Control (Department) is in receipt of your application for a Water Quality Certification pursuant to Section 401 of the Federal Clean Water Act. The project, as described in the application, falls under the category of projects for which the Department has determined that the 401 Water Quality Certification will be waived in accordance with the attached notice. Thus, the 401 Water Quality Certification for this project is waived and the Department will not take any action on this application.

Please do not hesitate to contact me at 803-898-0369, if you have any questions.

Sincerely,

Chuck Hightower
Water Quality Certification and Wetlands Section

Cc: Heather Preston
Tess Trumball OCRM

DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL

Notice

401 Water Quality Certification Resource Reductions

State budget cuts have impacted the level of services the Department of Health and Environmental Control (Department) can provide and have resulted in the need for the Department to re-evaluate its workloads and priorities. The 401 Water Quality Certification program has been identified as an area where resource reductions are necessary.

In accordance with S.C. Regulation 61-101, Water Quality Certification, the Department can issue, deny, or waive certification for Federal licenses or permits. If the Department fails to act on a certification within a reasonable period of time, not to exceed one year, the certification requirements are waived.

In light of recent budget cuts, the Department has determined that it can no longer certify all Federal licenses and permits for which it receives applications. Thus, the Department has identified categories of projects for which the 401 Water Quality Certification will be waived as follows:

- **Nationwide Permits as issued by the US Army Corps of Engineers (Corps)**
  Every five years, the Corps issues nationwide permits (NWP) for categories of activities that have been determined to have minimal individual and cumulative adverse effects on the aquatic environment. In a Federal Register notice published on March 12, 2007, the Corps reissued the NWP, and on May 11, 2007, the Department issued both a 401 Water Quality Certification and a Coastal Zone Consistency Certification in accordance with the S.C. Coastal Zone Management Program. At the time of the May 11, 2007 certification, the Department placed conditions on a number of the NWP that would necessitate an individual permit review for those projects. In light of the need to reduce staff resources, the Department will no longer issue individual certifications for these permits. By waiving these 401 certifications, the state will rely on the initial Corps determination of minimal impacts.

- **Groins and Beach Renourishment Projects**
  Groins and beach renourishment activities have very few water quality impacts. As a general rule, the concerns and comments that the Department receives during a 401 Water Quality Certification review for these activities are directed towards the issue of threatened or endangered species. These activities will still require comments from the US Fish and Wildlife Service and/or the National Marine Fisheries Service which have jurisdiction over threatened and endangered species before the Corps can issue their 404 permit. Therefore, the Department has a reasonable assurance that these concerns will be addressed. Further, the Department's OCRM office will still continue to issue direct permits for alteration of the critical area for these activities that also provide a means to address the threatened or endangered species concerns.

These waivers apply only to the 401 Water Quality Certification. Any Coastal Zone Consistency Certifications and the Critical Area Permits issued by the Department's OCRM office are not affected by this action. In light of continuing budget reductions, the Department will periodically evaluate our project workloads to determine if other changes are necessary.

January 8,2011

SCDHEC-OCRM
1362 McMillan Ave. Suite 400
Charleston, S. C. 29405

Attention: Steve Brooks- Project Manager

Please be informed by this notice that I request a public hearing as review of the proposed work described by P/N SAC-2101041-21G.

This proposal appears to me to be a continuation of ongoing adverse physical disturbance of a beach area that has been in progress since the dredging project called for and initiated by Research Planning Institute in the early 1980's. SCDHEC-OCRM might and should recall that the borrow area depicted in the above referenced P/N is, to a significant degree, residue of the massive sediment deposition piped from Morgan Creek in the above referenced time frame. This deposition has served as a magnet and blocking agent for additional sediments issued from Dewees inlet since deposition of the Morgan Creek sediments.

I oppose a continuation of never ending coastal engineering experiments in this proposed beach area. One experiment engenders another to the detriment of the physical qualities of the beach area; and I have no doubt that preservation of private property, improperly sited in a dangerous flood zone, is the paramount objective of the proposed project.

Louis C. Tisdale
1500 Heron Ave.
Mt. Pleasant, S.C. 29464 881-7876

Louis C. Tisdale

COMMUNITY ASSOCIATION, INC.
6200 Palmetto Drive • Isle of Palms, South Carolina 29451
(843) 886-8847 • Fax: (843) 886-3745 • Toll Free: (888) 254-5039
www.wilddunesowners.org

December 10, 2010

Dear Property Owner:

Recently you received a Joint Public Notice from the Department of the Army, U.S. Army Corp of Engineers, regarding a permit application from the City of Isle of Palms. The application seeks a permit to periodically re-align the beach in front of Wild Dunes by transferring sand from shoal attachment areas to areas undergoing erosion due to the migration of the shoals towards the shore.

As stated in the application, specific goals of the project include:

- Maintenance of a recreational, dry-beach area during all stages of the tide.
- Reduction or elimination of the need for emergency sandbagging during shoal by-pass events.
- Facilitation of dune growth; thereby improving wildlife habitat and storm protection.
- Maintenance of nesting habitat for turtles.

History has shown that the focused erosion of the beach due to the periodic attachment of sand shoals can be damaging to beach habitat, extremely disruptive to recreational use of the beach and very expensive for owners trying to protect their property from erosion damage. This permit application is a pro-active management plan for addressing the recurring erosion problem in front of the Wild Dunes Community, and maintaining the integrity of the highly successful 2008 IOP beach renourishment project.

Please take the time to convey your support of this very important permit application by writing to the U.S. Army Corp of Engineers and the S.C. Department of Health and Environmental Control – Office of Ocean and Coastal Resource Management.

Correspondence must be received as follows:

By December 17, 2010

Charleston District, Corp of Engineers
69A Hagood Avenue
Charleston SC 29403-5107

By January 1, 2011

S.C. Department of Health and
Environmental Control – Office of Ocean
and Coastal Resource Management
1362 McMillan Avenue, Suite 400
Charleston SC 29405

Please refer to P/N #SAC-2010-1041-2IG in your letter of support.

Thank you for your prompt attention to this matter. If you have any questions, please feel free to call me at 843-886-8847 or email davek@wilddunesowners.org.

Sincerely,

Dave Kynoski

Dave Kynoski, PCAM
General Manager

December 20, 2010

S.C. Department of Health and Environment Control
Office of Ocean and Coastal Resource Management
1362 McMillan Avenue, Suite 400
Charleston, S.C. 29405

Re: P/N #SAC-2010-1041-21G

To whom it may concern:

As a property owner at 9002 Palmetto Drive, Isle of Palms, I would urge you to support the application for the permit to transfer sand from shoal attachment areas to areas undergoing erosion due to the migration of shoals toward the shore. Several years ago in this area, I personally saw the severe problems caused by delaying such action.

As I understand, the purpose of the sand transfer is to maintain a recreational dry beach area during all stages of the tide, to reduce or eliminate the need for emergency sandbagging during shoal by-pass events, to facilitate dune growth which improves wildlife habitats and enhances storm protection, and to maintain nesting habitats for turtles.

Please do all that you can to insure that this permit is approved. I appreciate your help.

Yours truly,

Robert W. Lowry

Robert W. Lowry
414 SEASCAPE
9002 PALMETTO DR.
Isle of PALMS, S.C. 29451

SLOTCHIVER & SLOTCHIVER, L.L.P.
ATTORNEYS AT LAW

IRVIN J. SLOTCHIVER
DANIEL S. SLOTCHIVER
STEPHEN M. SLOTCHIVER

44 STATE STREET
CHARLESTON, SC 29401-2810

TELEPHONE (843) 577-6531
FACSIMILE (843) 577-0261

December 23, 2010

S.C. Department of Health and
Environmental Control – Office of
Ocean and Coastal Resource Management
1362 McMillan Avenue, Suite 400
Charleston, SC 29405

Re: Permit Application from the City of Isle of Palms To Periodically Re-align the Beach In Front of Wild Dunes By Transferring Sand From Shoal Attachment Areas to Areas Undergoing Erosion Due to the Migration of the Shoals Towards the Shore
P/N #SAC-2010-1041-21G

Dear Sir:

This letter is to convey our support to the above-referenced Permit Application.

Sincerely,

Irvin J. Slotchiver

IJS:sw

Cc: Dave Kynoski, PCAM, General Manager
Wild Dunes Community Association, Inc.

December 16, 2010

SC Department of Health and Environmental Control
Office of Ocean and Coastal Resource Management
1352 McMillan Avenue
Suite 400
Charleston, SC 29405

To Whom It May Concern:

As a property owner in Seascape on the Isle of Palms, I give my support to P/N #SAC=2010-1041-21G.

Thank you for your time and attention to this matter.

Karen Starbuck

311 Seascape

METAL PARTS & EQUIPMENT CO.
SALES AND SERVICE ENGINEERS

December 17, 2010

S.C. Department of Health and
Environmental Control
Office of Ocean & Coastal Resource Mgmt.
1362 McMillan Avenue, Suite 400
Charleston, SC 29405

REFERENCE: P/N #SAC-2010-1041-21G

Dear Sir / Madam:

We are an Ocean Club owner at Wild Dunes in the City of the Isle of Palms. We have been made aware that the City of the Isle of Palms has submitted a permit application to your organization and the U.S. Army Corp of Engineers. As a concerned homeowner, we very much support this pro-active management plan that addresses the recurring erosion problem in front of our Wild Dunes community, and to maintain the successful '08 Isle of Palm beach re-nourishment project.

Sincerely,

Dale R. Haase
President
METAL PARTS & EQUIPMENT CO.
Sales & Service Engineers

DRH:cls

425 HUEHL ROAD, BLDG. 10 • NORTHBROOK, ILLINOIS 60062 • (847) 272-9850 • FAX (847) 272-9807

December 16, 2010

SC Department of Health and Environmental Control

Office of Ocean and Coastal Resource Management

1362 McMillan Avenue, Suite 400

Charleston, SC 29405

RE: P/N #SAC-2010-1041-2IG

City of Isle of Palms Permit Application

To Whom It May Concern:

Please allow this letter to serve as our support for the above-referenced permit application from the City of the Isle of Palms. It is imperative that the recurring erosion problem in front of the Wild Dunes Community is pro-actively managed after the 2008 IOP beach renourishment project.

Thank you for your help.

Sincerely,

Christopher and Caroline Buck

210 Summer House Villas

8000 Palm Boulevard

Isle of Palms, SC 29451

Carl & Lollie Harper
9510 Palmetto Drive#4505
Isle of Palms, SC 29451
Phone 843=886-5287
candlharper@hotmail.com

December 15, 2010

S.C. Department of Health and Environmental Control
Office of Ocean and Coastal Resource Management
1362 McMillan Avenue, Suite 400
Charleston, SC 29405

Re: P/N #SAC-2010-1041-2IG

Gentlemen:

Recently the City of Isle of Palms submitted a permit application to your agency and U.S. Army Corps of Engineers, Charleston District for permission to periodically excavate and place fill material to realign the beach in shoal attachment areas in front of Wild Dunes.

This permit application is perhaps second only to the 2008 IOP Beach Re-nourishment permit in terms of importance to the long-term health of the beach in front of Wild Dunes and represents a sound, pro-active beach management strategy for erosion control. History has shown that the focused erosion of the beach due to the periodic attachment of sand shoals can be damaging to beach habitat, extremely disruptive to recreational use of the beach and very expensive for owners trying to protect their property from erosion damage. It can also be damaging to the community's reputation as a first-class residential and resort beach destination. Experts agree that a long-term shoal management strategy is essential to mitigating the erosion and maintaining an even distribution of sand in front of the community. Building upon the success of the 2008 re-nourishment, the permit would provide for sand redistribution and beach realignment in the future as shoals attach to the beach.

We live permanently at Ocean Club and we witnessed first-hand the "hot spot" erosion in front of our buildings prior to the 2008 re-nourishment

project. This was not a pleasant sight, as the 18th green of the Links Course began washing away and only large sand bags kept the ocean from washing under Ocean Club Building #1. We believe a "stitch in time" will prevent that from happening again. In front of Ocean Club we have lost about 50% of the sand put in during the 2008 re-nourishment project, but the beach is holding rather well at this point.

We greatly appreciate your positive consideration of the permit application and are grateful for your interest in protecting this valuable resource.

Very truly yours,

Carl Harper

Lollie Harper

Carl & Lollie Harper

Ravenel Associates

December 16, 2010

Dear Sirs:

I am the President of Port O' Call Condominiums located at 9000 Palmetto Dr. Wild Dunes, IOP SC 29451. I am referencing P/N # SAC -2010-1041-21G to offer my support and that of the condominium regarding the permit application and honor the specific goals of the project.

To reiterate Port O Call offers total support in the efforts to address the recurring erosion issues.

Very Truly Yours,

Mr. Art Viviani
President POC

Ravenel Associates, Inc.
Condominium and Homeowner's Association Management Services
3090 Highway 17 North, Mt. Pleasant, South Carolina 29466
Telephone 843-352-0300 Fax 843-352-0317

December 15, 2010

South Carolina Department of Health and Environmental Control
Office of Ocean and Coastal Resource Management
1362 McMillan Avenue, Suite 400
Charleston, SC 29405

Re: P/N #SAC-2010-1041-2IG

To Whom It May Concern:

Please accept this letter on behalf of the fifty property owners at Seascape Villas. I am the President of the Seascape Villas Horizontal Property Regime and we are very much in favor of the approval of this permit.

Thank you for your consideration.

Sincerely,

John O'Hare
Seacape Villas Board of Directors
c/o Property Management Services
1340 G Ben Sawyer Blvd.
Mt. Pleasant, SC 29464
(843) 881-5459

SC Department of Health and Environmental Control

Office of OCRM

1362 McMillian Ave, suite 400

Charleston, SC 29405

Application P/N#SAC-2010-1041-2IG

To Whom It May Concern,

My wife Merrie and I live in apartment # 1411 in Ocean Club. This is our primary residence and we thought that this request had already been approved when the renourishment was approved and done two years ago. The renourishment was done in accordance with the procedures required by the experts and your department in order to protect our home and the environment.

The recommendation was to allow scraping from the ecreated areas for the building up of eroding sections of the beach.

We support the application P/N#SAC-2010-1041-2IG and the spirit of what is being conveyed herein.

Ira & Merrie Zolin

IRA AND MERRIE ZOLIN

9510 Palmetto Drive Apt.1411

Isle of Palms, SC 29210

December 16, 2010

December 17, 2010

Mr. Blair Williams
SCDHEC
Office of Ocean and Coastal
Resource Management
1362 McMillan Avenue, Suite 400
Charleston, SC 29405

Dear Mr. Williams:

This is to advise the South Carolina State Ports Authority has no objections to the following named applications on which public notices have been received:

Dated: October 27, 2010

TNT & More, Inc. %H. Wayne Beam	2010-01243-3IH

Dated: November 08, 2010

Kiawah Resort Assoc., L.P.	2010-01271-2IY

Dated: November 22, 2010

Rial Fitch %John Wade	2002-12746 (originally #2002-1E-230 now modified)

Dated: December 02, 2010

City of Isle of Palms / Coastal Science & Engineering	-2010-1041-2IG

Dated: December 03, 2010

Harper R Woods III	OCRM-10-090-M
Margaret Seabrook % George A Z Johnson, Jr., Inc.	OCRM-10-162-E
James W Bregman %American Dock & Marine Construction, Inc.	OCRM-10-163-D
Johnthan Coleman %Atlantic Dock & Marine	OCRM-10-164-B
Charleston Commissioners of Public Works %AECOM	OCRM-10-165-D
Charleston Commissioners of Public Works %AECOM	OCRM-10-166-D
Terri L. Newman %Robert L. Frank	OCRM-10-167-M
Charleston County %Newkirk Environmental Inc.	OCRM-10-168-D
Charleston Water System %Hazen & Sawyer, PC	OCRM-10-169-D
NBSWV, LLC %DDS Engineers Inc.	OCRM-10-540-A
Marjorie B Nickel %Sea Island Dock Builders, LLC	OCRM-10-880-G
Robert I. Newman	OCRM-10-865-G
Curwood & Carol Sessoms %Atlantic Marine Construction Co., Inc.	OCRM-10-881-L

Dated: December 10, 2010

Frank V. Boulineau	OCRM-06-500
Charles Tipton %Cantrell Belcher – Santee Consulting Services, Inc.	OCRM-10-170-D
Rebecca & William Jackson %Anderson Consulting Engineers, LLC	OCRM-10-546-A
Patti K. Shelly %Ron Walker	OCRM-10-545-S

Dated: December 10, 2010 (cont)

Authur & Laura Dobbs	OCRM-10-547-A
James & Patsy Batson %Anderson Consulting Engineers, LLC	OCRM-10-548-A
Gary & Ila Kimbrell %Anderson Consulting Engineers, LLC	OCRM-10-549-A
Steve McLendon %Anderson Consulting Engineers, LLC	OCRM-10-550-A
Milton Fogleman %Tommie Nobles – ReMax Southern Shores	OCRM-10-551-A
Town of Port Royal %Applied Technology & Management	OCRM-10-882-G
Town of Port Royal %Van Willis, Town Manager	2010-1059-1IT

Sincerely,

Ben Morgan, P.E.
Staff Engineer

Charleston District, Corp of Engineers
69A Hagood Avenue
Charleston, SC 29403-5107

S.C. Department of Health and Environmental Control –
Office of Ocean and Coastal Resource Management
1362 McMillan Avenue, Suite 400
Charleston, SC 29405

December 16, 2010

Re: P/N #SAC-2010-1041-2IG

Ladies and Gentlemen:

We are homeowners in the Wild Dunes Resort and are writing in support of the permit application referenced above.

We purchased a unit in the Ocean Club condomium complex in 2007, but we have been vacationing at Wild Dunes for nearly 25 years. The reason that we kept coming back year after year and finally invested in property at Wild Dunes was because of the beautiful beach.

We contributed a large amount of money to the 2008 IOP beach renourishment project because we wanted to protect our investment and because we value the beachfront view we have in our condo unit. It would be a waste of our previous investment, as well as the investments of all other property owners who contributed to the renourishment project, to simply let that sand wash away.

Being proactive in addressing the recurring erosion problem is the best solution for everyone – the property owners, the tourists, the business owners who cater to tourists, and, yes, even the sea turtles. Please approve the permit application referenced above.

Sincerely yours,

Leigh Ann Dolan

Kevin P. Dolan

Kevin Dolan
4305 Ocean Club

S.C. Department of Health and Environmental Control

Office of Ocean and Coastal Resource Management

1362 McMillan Avenue, Suite 400

Charleston, Sc. 29405

We are owners of Ocean Club Villa 4309 in Wild Dunes on the Isle of Palms. We certainly hope that you will approve the permit asking permission to periodically transfer sand from shoal attachments to areas which are eroding on our beach – especially in front of the Ocean Club buildings. We have already spent millions to renourish our beach in 2008 and it is crucial that we maintain it. Protection from storms, property values, dune growth, and wildlife habitats depend on the integrity of our beach. Please approve the application. (P/N #SAC-2010-1041-2IG)

Thanks for your attention to this matter.

Dr. and Mrs. John G. Phillips, managing owners

ARTHUR J. & SAUNDRA T. VIVIANI
33-16 157TH STREET
FLUSHING, N.Y. 11354
718-762-3412

December 13, 2010

Corps of Engineers
Charleston District
69A Hagood Avenue
Charleston, SC 29403-5107

SC Dept. Of Health and Environmental
Control - Ocean and Coastal Management
1362 McMillan Avenue - Suite 400
Charleston, SC 29405

Re: P/N 2010-1041-21G

Dear Sirs:

My wife and I own unit B301 in the condo association of Port O'Call, Wild Dunes Resort, Isle of Palms.

We have received you public notice and we both support of your actions on the beach on the Isle of Palms as stated in your notice.

Sincerely yours,

Arthur J. Viviani

Charles N. Lord
4304 Ocean Club Villas
9510 Palmetto Blvd
Isle of Palms, SC 29451
(843) 886 8910
charles_lord @ Hotmail.com

December 16, 2010

SC Department of Health and Environmental Control
Office of Coastal and Resource Management
1362 McMillan Avenue, Suite 400
Charleston, SC 29405

Re: P/N # SAC 2010 – 1041 – 2IG

This letter is in support of an application you have received from the City of Isle of Palms seeking a permit to periodically realign the beach between the Wild Dunes Development and the Atlantic Ocean by transferring sand from shoal attachment areas to areas that are eroding as other shoals migrate toward the shore.

My wife and I are owners of a condominium unit in Ocean Club Villas in Wild Dunes; are members of the Wild Dunes Community Association; are citizens of the City or Isle of Palms; and are citizens of the State of South Carolina. Ocean Club Villas is existentially threatened by spot erosion. This threat of erosion can be remediated easily and quickly if the permits that are being sought by the City of Isle of Palms are granted in a timely manner.

Moreover, the 18th hole of The Links Golf Course lies between our condominium building, Building 4, and the ocean. If the permits for beach alignment are not allowed, or if permits are not granted in a timely manner, the existence of the signature 18th hole of the Wild Dunes signature golf course is put at unacceptable risk.

Approximately 350 members or member families belong to the Wild Dunes Golf Club, and each year thousands of guests, visitors to South Carolina, play the Links course. The members of the Golf Club (including my wife and myself); the owners of the Links course; the owners in our condominium regime (whose property values are significantly increased by the existence of the course and its signature 18th hole); and the larger community, including the City of Isle of Palms, will suffer irreparable financial harm if permitting to transfer sand to protect the 18th hole is not allowed.

Thus my wife and I would respectfully request that the City's permitting requests be acted on affirmatively, and with dispatch. Not only will a timely authorization to remediate spot erosion insure that the major investment we have made in our South Carolina home will not be needlessly lost (along with the loss of significant tax ratables for the city, county, and state), timely authorization will also protect and enlarge the nesting ground of sea turtles, and will stabilize and enhance the littoral environment in areas of spot erosion.

Respectfully,

Charles N. Lord / Sheila T. Lord

Wild Dunes
COMMUNITY ASSOCIATION, INC.
6200 Palmetto Drive • Isle of Palms, South Carolina 29451
(843) 886-8847 • Fax: (843) 886-3745 • Toll Free: (888) 254-5039
www.wilddunesowners.org

December 10, 2010

Dear Property Owner:

Recently you received a Joint Public Notice from the Department of the Army, U.S. Army Corp of Engineers, regarding a permit application from the City of Isle of Palms. The application seeks a permit to periodically re-align the beach in front of Wild Dunes by transferring sand from shoal attachment areas to areas undergoing erosion due to the migration of the shoals towards the shore.

As stated in the application, specific goals of the project include:

- Maintenance of a recreational, dry-beach area during all stages of the tide.
- Reduction or elimination of the need for emergency sandbagging during shoal by-pass events.
- Facilitation of dune growth; thereby improving wildlife habitat and storm protection.
- Maintenance of nesting habitat for turtles.

History has shown that the focused erosion of the beach due to the periodic attachment of sand shoals can be damaging to beach habitat, extremely disruptive to recreational use of the beach and very expensive for owners trying to protect their property from erosion damage. This permit application is a pro-active management plan for addressing the recurring erosion problem in front of the Wild Dunes Community, and maintaining the integrity of the highly successful 2008 IOP beach renourishment project.

Please take the time to convey your support of this very important permit application by writing to the U.S. Army Corp of Engineers and the S.C. Department of Health and Environmental Control – Office of Ocean and Coastal Resource Management.

Correspondence must be received as follows:

By December 17, 2010

Charleston District, Corp of Engineers
69A Hagood Avenue
Charleston SC 29403-5107

By January 1, 2011

S.C. Department of Health and
Environmental Control – Office of Ocean
and Coastal Resource Management
1362 McMillan Avenue, Suite 400
Charleston SC 29405

Please refer to P/N #SAC-2010-1041-2IG in your letter of support.

Thank you for your prompt attention to this matter. If you have any questions, please feel free to call me at 843-886-8847 or email davek@wilddunesowners.org.

Sincerely,

Dave Kynoski

Dave Kynoski, PCAM
General Manager

Indorse this letter

Dr. Charles R. Harmon
3609 Barefoot Trail
Anderson, SC 29621

, 2011

RECEIVED
DEC 20 2010
DHEC-OCRM
CHARLESTON OFFICE

Dr. William E. Plyler, Jr.
FAPWEP, LLC

467 Alexander Circle
Columbia, SC 29206

December 16, 2010

SC Dept.of Health and Environmental Control
Office of Coastal and Resource Management
1362 McMillan Avenue, Suite 400
Charleston, SC 29405

Dear Sir or Madam,

As the owner of the condominium unit, 315 Seascape in Wild Dunes, I am writing to convey my strong support of P/N #SAC-2010-1041-21G permit application to periodically realign the beach in front of Wild Dunes by transferring sand from shoal attachment to areas undergoing erosion due to the migration of the shoals towards the shore. This permit application is a proactive plan for addressing the recurring erosion problem in front of the Wild Dunes Community and for maintaining the integrity of the highly successful 2008 IOP Beach Renourishment Project

We thank you for your help.

Sincerely,

William E. Plyler, Jr.
FAPWEP, LLC
315 Seascape, Wild Dunes
Isle of Palms, SC

James L. Walden
9518 Palmetto Drive # 4507
Isle of Palms, SC 29451

December 16, 2010

S.C. Department of Health and Environmental Control – Office of Ocean and Coastal Resource Management
1362 McMillan Avenue, Suite 400
Charleston, SC 29405

Re: P/N #SAC-2010-1041-21G

Dear Sir:

I am writing to request your prompt approval of the above referenced permit application from the City of Isle of Palms. This application reflects a pro-active management plan which is essential to maintaining the integrity of our highly successful 2008 IOP beach renourishment project.

This plan seeks permission to periodically re-align the beach in front of Wild Dunes by transferring sand from shoal attachment areas to areas undergoing erosion due to the migration of the shoals toward the shore. This is important, as history has shown, because the periodic attachment of sand shoals can be damaging to our beach habitat, extremely disruptive to recreational beach use and very expensive for owners trying to protect their property from erosion damage.

As stated in the application, specific goals of the project include:

- Maintenance of a recreational, dry-beach area during all stages of the tide
- Reduction or elimination of the need for emergency sandbagging during shoal by-pass events
- Facilitation of dune growth improving wildlife habitat and storm protection
- Maintenance of nesting habitat for turtles

Thank you in advance for your positive consideration of this very important permit request.

Sincerely,

James L. Walden
IOP Property Owner

COMMUNITY ASSOCIATION, INC.
6200 Palmetto Drive • Isle of Palms, South Carolina 29451
(843) 886-8847 • Fax: (843) 886-3745 • Toll Free: (888) 254-5039
www.wilddunesowners.org

December 17, 2010

U.S. Army Corp of Engineers
Attn: Ms. Mary Hope Green
Charleston District
69A Hagood Avenue
Charleston, SC 29403-5107

S.C.D.H.E.C.
Attn: Mr. Steve Brooks
Office of Ocean and Coastal Resource Management
1362 McMillan Avenue, Suite 400
Charleston, SC 29405

RE: P/N #SAC-2010-1041-2IG

Dear Ms. Green and Mr. Brooks:

The Wild Dunes Community Association, Inc., through its Board of Directors, would like to go on record as supporting the City of Isle of Palms permit application to periodically re-align the beach on the northeast end of the island by transferring sand from shoal attachment areas to areas of the beach undergoing focused erosion.

The permit application by the City represents a pro-active and positive approach to addressing the recurring erosion problems in front of the Wild Dunes community and maintaining a healthy beach. Specifically, the project would maintain a recreational dry beach at all stages of the tide, reduce or eliminate the need for sandbagging and improve turtle nesting and wildlife habitat.

History has shown that the shoal by-passing and attachment process in front of Wild Dunes can be lengthy and extremely disruptive to the normal transport of sand along the beach. It is perfectly logical from a beach management and engineering perspective to manage this process by excavating sand in the attachment area, and moving it to eroded or sand deficit areas on the beach.

In 2008, with the assistance of your agencies, the Isle of Palms completed a highly successful off-shore beach renourishment project, which restored beach sand quantities to a more-optimal condition after several years of intense erosion. The Isle of Palms community has nurtured the restored beach with sand fencing and dune building activities. Going forward, it is important that the community have the necessary resources to protect and maintain its investment in a healthy beach in this area. This permit application is an essential part of the community's local beach management plan to achieve this goal.

Thank you for your consideration regarding P/N #SAC-2010-1041-2IG.

Sincerely,

Dave Kynoski

Dave Kynoski, PCAM
General Manager

December 17, 2010

Attention S.C. Department of Health and Environmental Control - Office of Ocean and Coastal Resource Management:

I am writing you to convey my support of the permit application **(P/N #SAC-2010-1041-2IG)** from the City of Isle of Palms. The application seeks a permit to periodically re-align the beach in front of Wild Dunes by transferring sand from shoal attachment areas to areas undergoing erosion due to the migration of the shoals towards the shore.

As stated in the application, specific goals of the project include:

- Maintenance of a recreational, dry-beach area during all stages of the tide.
- Reduction or elimination of the need for emergency sandbagging during shoal by-pass events.
- Facilitation of dune growth; thereby improving wildlife habitat and storm protection.

Maintenance of nesting habitat for turtles.

History has shown that the focused erosion of the beach due to the periodic attachment of sand shoals can be damaging to beach habitat, extremely disruptive to recreational use of the beach. This permit application is a pro-active management plan for addressing the recurring erosion problem in front of the Wild Dunes Community and maintaining the integrity of the highly successful 2008 IOP beach renourishment project.

Thank you for your attention to this matter.

Francine Weiner

Francine Weiner
Resident / Property Owner

Bob and Pat Hemphill
25 Beach Club Villa
Isle of Palms, SC 29451
December 14, 2010

S. C. Department of Health and Environmental Control
Office of Ocean and Coastal Resource Management
1362 McMillan Avenue, Suite 400
Charleston, SC 29405

RE: P/N #SAC-2010-1041-21G

Dear Sir or Madam:

We are beachfront property owners in the area of the proposed Project and we strongly support the subject permit application submitted by the city of Isle of Palms. We believe that this project will be part of a pro-active management plan for addressing the recurring erosion problem in front of the Wild Dunes Community, and will help maintain the integrity of the highly successful 2008 IOP beach renourishment project. We encourage you to approve this permit application.

Sincerely,

Robert B Hemphill Patricia R. Hemphill

Robert and Patricia Hemphill
25 Beach Club Villa
Isle of Palms, SC

December 17, 2010

S.C. Department of Health and
Environmental Control-Office of Ocean and
Coastal Resource Management
1362 McMillan Avenue, Suite 400
Charleston, S.C. 29405

P/N #SAC-2010-1041-21G

To: SC Department of Health & Environmental Control:

I would like to convey our support of the permit application from the City of Isle of Palms that seeks a permit to periodically re-align the beach in front of Wild Dunes.

History has shown that the focused erosion of the beach due to the periodic attachment of sand shoals can be damaging to beach habitat, extremely disruptive to recreational use of the beach and very expensive for owners trying to protect their property from erosion damage. This permit application is a pro-active management plan for addressing the recurring erosion problem in front of the Wild Dunes Community and maintaining the integrity of the highly successful 2008 IOP beach renourishment project.

We will appreciate the permit application from the City of Isle of Palms being granted.

Sincerely,

Rock & Kathleen Baty
1103 Ocean Club
Isle of Palms, SC.

9002 Palmetto Boulevard, Condominium 417
Isle of Palms, South Carolina
December 17, 2010

S.C. Department of Health and Environmental Control
Office of Ocean and Coastal Resource Management
1362 McMillan Avenue, Suite 400
Charleston, SC 29405

Subject: Approval Request for Permit Application #SAC-2010-1041-2IG

Dear Sir:

I am writing this letter to express my full support of the subject Permit Application from the City of Isle of Palms.

I have owned a condominium in the Seascape building since 1995, and I have watched the beach cycle of accretion and erosion several times. From experience I can assure you that being on the short end of an erosion cycle is terrifying. I was glad and thankful when the 2008 beach renourishment project was completed. It literally saved the entire Seascape building that contains 50 condominiums as well as nearby homes and many other condominiums in Port of Call and Ocean Club buildings.

Today there are areas where the beach is unnecessarily wide, and there are areas where it is not wide enough. To protect the investment in the 2008 project and to ensure its continued success, we must periodically maintain the entire beach by equalizing its width from beginning to end. The time to do that time has come. To do anything less risks enormous loss and unnecessary tragedy.

Thank you for your consideration of this important and essential maintenance project. I respectively urge you to approve the Permit Application.

Yours truly,

Lyman Jones.

KEENANSUGGS▪BOWERSELKINS, LLC
INSURANCE

The Meridian Building, 1320 Main Street, Suite 710, Columbia, SC 29201
Telephone: 803-799-8490 • Facsimile: 803-254-9968

Samuel M. Elkins, CLU

December 16, 2010

SC Department of Health and Environmental Control
Office of Ocean and Coastal Resource Management
1362 McMillan Ave., Suite 400
Charleston, SC 29405

To Whom It May Concern:

This is to advise that I am in full support of the permit which would allow the City of Isle of Palms to periodically re-align the beach in front of Wild Dunes by transferring sand from shoal attachment areas to areas undergoing erosion due to the migration of the shoals towards the shore.

Please give every consideration to the permit application taking into consideration the dire need for this remedy.

Warmest personal regards,

Sam Elkins, CLU

/gs

Date 12/16/2010

To: SC Department of Health and
Environmental Control- Office of Ocean
And Costal Resource Management
1362 McMillan Avenue, Suite 400
Charleston, SC 29405

REF: In support of P/N # SAC-2010-1041-21G

From; Charles & Lilian Funke
4502 Ocean Club
9510 Palmetto Drive
Isle of Palms, SC 219451

We strongly support this important permit application and hope you approve it. Thank you in advance.

Charles A Funke — Lilian M. Funke

CHARLES A. FUNKE LILIAN M. FUNKE

SCDEPT01
AG.CORRES

17 December 2010

S. C. Dept. of Health and Environmental Control
Office of Ocean and Costal Resource Management
1632 McMillan Ave., Suite 400
Charleston, SC 29405

Re: P/N #SAC-2010-1041-21G

Dear Sir/Madam:

This is in reference to a recent permit application from the City of Isle of Palms. The permit seeks to periodically re-align the beach in front of Wild Dunes. It is extremely important that this permit be granted. This will promote dune growth thereby improving wildlife habitat and storm protection. The granting of this permit will be a step in the right direction to improve the beach at the same time protecting our property from erosion damage. Thank you for your consideration.

Sincerely,

Mr. & Mrs. Andrew Guagenti
10 Beachwood East
Isle of Palms, SC 29451

119 Lansfair Way

Greenville, SC 29607

December 15, 2010

S.C. Department of Health and Environmental Control –

Office of Ocean and Coastal Resource Management

1362 McMillan Avenue, Suite 400

Charleston, SC 29405

Reference P/N #SAC-2010-1041-2IG

Dear Sirs:

As property owners at Wild Dunes, Summer House Associates, Unit 506 Summer House, 8000 Palmetto Blvd., Isle of Palms, SC 29451, we are in favor issuing the permit to the City of Isle of Palms to allow the continued ability to address and correct erosion of the beach in front of the Wild Dunes Community. This permit application is a pro-active management plan for addressing the reoccurring erosion problem in front of Wild Dunes Community, and maintaining the integrity of the highly successful 2008 IOP beach renourishment project.

Yours truly,

David Estes, Managing partner

Summer House Associates

17 December 10

Charleston District, Corps of Engineers

69A Hagood Avenue

Charleston, South Carolina 29403

S. C. Department of Health and Environmental Control

OCRM

1362 McMillan Avenue, Suite 400

Charleston, S. C. 29406

Please peruse my brief comments on the issuance of P/N #-2010-1041-21G. Analyses of beach profiles since the 1980s, first determined by the present beach-monitoring consultants retained by the City of the Isle of Palms, have revealed that the ineluctable dynamics of this ebb-tidal delta are beyond any beach management plan. There is no commentary on the ecological perturbations of this near shore habitat from which the sands will be mined except for the sea turtle habitat. The "foreseeable detriments" of the issuance of this permit are not described in any detail. These hundreds-of-thousands of cubic yards of sand that will be mined from the melding shoal are part of the res communes and should not be used to protect private property without compensation by the permittees. These sands do not belong to members of the City Council nor the mayor. Presently, the public does not have vehicular access to the stretch of the island that the mined materials will be placed on. I would like to request a Public Hearing on the issuance of this permit by the U. S. Corps of Engineers and DHEC-OCRM.

D. Reid Wiseman

2504 Waterway Boulevard

Isle of Palms. S. C. 29451

12/15/10

Dear Sir

Please do anything you can to save our beach in Wild Dunes.

Please call me if you have any questions.

Sincerely,

Andy Calhoun

864 276 5622

PS. I own a condo in Sunset House

MR. ANDREW B. CALHOUN, JR.
2244 Surfside Dr.
Anderson, SC 29625

December 16, 2010

S. C. Department of Health and
Environmental Control – Office of Ocean
And Coastal Resource Management
1362 McMillian Avenue, Suite 400
Charleston SC 29405

Dear Sir

As a property owner of ocean front propery in Wild Dunes I support the very important P/N #SAC-2010-1041-21G . Thank you in advance for your consideration of this matter.

Sincerely,

Larry A Friddle
208 Summer House
Wild Dunes Community
Isle of Palms, S C

DONALD H. BERNSTEIN & BARBARA K. BERNSTEIN
435 L'AMBIANCE DRIVE, UNIT 808
LONGBOAT KEY, FLORIDA 34228-3909

PHONE: 941 387 8833 **FAX: 941 387 8834**

December 16, 2010

S.C. Department of Health and
Environmental Control – Office of Ocean
And Coastal Resource Management
1362 McMillan Avenue, Suite 400
Charleston, SC 29405

Re: P/N #SAC-2010-1041-21G

Gentlemen:

I am writing as a property owner of Ocean Club in Isle of Palms. I have been an owner of the property since 1987.

We believe that the current request to re-align the beach front is important to maintain the values and tax values of the property cited. The beach is also an important asset to save because if provides for resident and tourist recreation. In the past, delaying the needed renourishment resulted in substantial extra expense of trying to save the property, beach, and golf course. Property values decreased substantially. Tourist activities decreased as well.

We are hopeful that you will approve the subject application as part of a regular and needed beach management plan.

Yours very truly,

Donald H. Bernstein

3410 Habersham Road, NW
Atlanta, GA 30305
December 15, 2010

Attention: Director
S.C. Department of Health and Environmental Control
Office of Ocean and Coastal Resource Management
1362 McMillan Avenue, Suite 400
Charleston, SC 29405

RE: Permit Application – City of Isle of Palms
P/N #SAC-2010-1041-21G

Dear Sir:

This letter is in support of the application seeking a permit to periodically re-align the beach in front of Wild Dunes by transferring sand from shoal attachment areas to areas undergoing erosion due to the migration of the shoals towards the shore. This permit application is a pro-active management plan for addressing the recurring erosion problem in front of the Wild Dunes Community and maintaining the integrity of the highly successful 2008 IOP beach renourishment project.

The specific goals of this project include:

- Maintenance of a recreational, dry-beach area during all stages of the tide.
- Reduction or elimination of the need for emergency sandbagging during shoal by-pass events.
- Facilitation of dune growth; thereby improving wildlife habitat and storm protection.
- Maintenance of nesting habitat for turtles.

Based on our personal experience, erosion of the beach is very expensive for owners trying to protect their property from erosion damage; it is disruptive to the recreational use of the beach; and most importantly, erosion is damaging to beach habitat.

If you would like to discuss my concerns with beach erosion and support of this application, please do not hesitate to contact me at 404-523-2921.

Sincerely,

Gail S. Glover

Gail S. Glover
Owner – Wild Dunes
53 Waterway Island Drive and
4206 Ocean Club, 9514 Palmetto Drive

8000 Palmetto Dr. Unit 501
Isle of Palms, SC 29451

SC Department of Health and Environmental Control

Office of Ocean and Coastal Resource Management

1362 McMillan Avenue

Suite 400

Charleston SC 29405

Subject SAC # 2010-1041-21G

Dear Sirs:

The Summer House Board of Direc5tors fully support the above application and urge That it be approved as soon as possible.

My wife and I also support said application and urge that it be approved as soon as Possible.

Summer House Board

William L. VonDohlen, President

Steve

From: Betty Poore <betty.poore@gmail.com>
To: <brookss@dhec.sc.gov>
Date: 12/16/2010 12:04 PM
Subject: P/N #SAC-2010-1041-2IG Permit Application submitted by the Isle of Palms

Hi Steve,

I don't know if you remember me or not, but over the years you have been very helpful to me, my family and many of my clients along the coast. I hope you are well.

I am writing to you about the Permit Number: P/N #SAC-2010-1041-2IG, submitted by the City of Isle of Palms to periodically realign the beach in shoal attachment areas in front of Wild Dunes.

I have lived on the Isle of Palms all my life and our beach is a critical part of my life. All of us want to do whatever we can to protect our beaches for the benefit of the wildlife, including our sea turtles, our recreational use and our property values.

Experts agree that a long-term shoal management program is essential in mitigating the erosion and maintaining even distribution of sand along our beachfront. I think the success of the 2008 beach renourishment, combined with this permit would provide us with long term stability as future shoals attach to our beach.

I do hope that the SC DHEC/OCRM and the US Army Corp of Engineers will grant this permit.

Thank you,
Betty Poore

From: Gordy McDonald <cat9351@aol.com>
To: <brookss@dhec.sc.gov>
Date: 12/15/2010 9:18 AM
Subject: #SAC-2010-1041-2IG

Dear Sir:

As a concerned lover of the beach at Isle of Palms I am in full support of the efforts to move sand for the purpose of slowing the erosion of the dunes. Please help us protect our beaches.

Gordon McDonald
21 Linkside Ct
IOP, SC 29451

From: "Donna Nicholson" <donnan@wilddunesowners.org>
To: <cesac-rd-mail@usace.army.mil>, <brookss@dhec.sc.gov>
Date: 12/17/2010 1:06 PM
Subject: P/N #SAC-2010-1041-2IG
Attachments: WDCA letter.pdf

Please see attached.

Donna Dee Nicholson, Paralegal

Community Services Coordinator

Wild Dunes Community Association, Inc.
6200 Palmetto Drive
Isle of Palms, SC 29451-3815
Tele: 843-886-8847
Tele: 888-254-5039
Fax: 843-886-3745
donnan@wilddunesowners.org
www.wilddunesowners.org

COASTAL SCIENCE & ENGINEERING
PO BOX 8056 COLUMBIA SC 29202 • TEL 803-799-8949 • FAX 803-799-9481 • EMAIL cse@coastalscience.com

MEMO

DATE: April 12, 2011

TO: Mary Hope Green (USACE)

cc: OCRM (Steve Brooks)
SCDNR (Susan Davis)
USFWS (Melissa Bimbi)\

FROM: Steven Traynum

RE: P/N SAC-2010-1041-2IG – City of Isle of Palms
Response to Comments [CSE 2300-02]

SCDNR Comment: "Of particular concern is the open-ended nature of the proposed plan and the uncertainty in both the frequency of events and the quantity of material to be transferred."

Response: The project frequency and scale have been based on a detailed, empirically-based understanding of the shoal migration and attachment process at Isle of Palms. Since shoal attachments are not periodic and uniform in size or location, precise predictions on transfer and frequency cannot be made. However, once a shoal emerges and begins its landward migration, the process is well-understood. By necessity, the frequency and quantity of shoal material transfer must be flexible, within overall project constraints and responsive to actual shoal attachment conditions.

SCDNR Comment: "These specifications are based on estimates and the need for more frequent events with larger volumes of material is possible if not likely in a dynamic beach environment."

Response: Given the uncertain size, location and timing of shoal attachments, we agree that the need for more frequent and/or larger transfers is possible – just as the need for less frequent and smaller transfers is possible. It is the applicant's goal to limit alterations of the beach as much as possible while still protecting the habitat and maintaining storm protection provided by the 2008 nourishment project.

SCDNR Comment: "Recent history illustrates the difficulty in estimating the effectiveness and life expectancy of beach nourishment projects. . . Now, approximately two years later much of the sand from the northeastern portion of the project (reach 3) *[applicant's note – project Reach B]* has been lost, and presumably accumulated on the shoal proposed for mining. . . Since the applicant has been unable to accurately estimate the life of a beach fill project in the erosional area of the

IOP, there is considerable uncertainty as to how effective the proposed approach will be and how frequent sand transfer events will be necessary."

Response: The nourishment project, as a whole, has performed well. As of September 2010 (2.2 years after the project), 78 percent of the volume placed during nourishment still remains in Reach B (the northern, oceanfront project area). This equates to a loss of 10 percent per year, **exactly** matching predictions based on a 10-year project life. As a whole, the project area retains ~72 percent of the fill volume, which is ~6 percent more erosion than an ideal 10-year design expectancy would estimate. However, initial loss of nourishment fill is generally higher due to end losses and adjustment of the nourishment profile (NRC 1995), so the current condition is not unexpected. To highlight this point, the project area lost ~18 percent of the fill by September 2009 (1.2 years after the project) and lost ~10 percent over the next year. This shows that the initial rate was high, but has slowed considerably after the project adjusted. Post-project monitoring has confirmed that much of the sand lost from the nourishment fill limits has accumulated in adjacent areas, including the area between Reaches B and C (the turn in the shoreline entering Dewees Inlet), the area between Reaches A and B (the shoal attachment area), and downcoast beyond 53rd Avenue. Sand is not lost from the system, and much remains in the vicinity of the project reaches.

The applicant assumed going in that project response would not be uniform across the entire project shoreline and anticipated the need for supplemental shoal management projects such as that proposed in the permit application. In fact, the likely need for such supplemental projects was anticipated before the 2008 beach nourishment project was constructed. A (now-expired) 2001 OCRM permit for a similar project was obtained. The City's Long-Term Beach Management Advisory Group agreed in 2007 that shoal management should be undertaken in addition to beach nourishment using offshore sediment sources.

The SCDNR writer presumes that sand lost from the project has accumulated on "the shoal proposed for mining." The shoal-bypass events, which ultimately add sand to the beach, originate from the ebb-tidal delta of Dewees Inlet and migrate onshore by wave action. There is no mechanism for sand from the beach to reach the shoal while it is offshore. Beach sand does accumulate in the lee of the shoal, forming a shoreline salient. The sand forming the salient originates from adjacent areas, causing the sometimes severe erosion observed. Beach sand does not contribute to the incoming shoal. Once the shoal merges with the beach, new sand (from the shoal) and old sand (from the salient) spread laterally, rebuilding areas which have been eroded.

It is important to note that the applicant only proposes to excavate sand that is accessible to land-based equipment and not to excavate shoals that are still offshore and separated from the

beach. An incipient shoal may or may not be present during excavations. Regardless, only sand that is currently part of the active beach and berm (the recreational beach) will be transferred.

SCDNR Comment: "Beach scraping may also result in some unintended consequences caused by increased beach profile slopes which could lead to unanticipated erosional losses of the dry beach in the area being excavated."

Response: The statement is a typical criticism of beach scraping used in its most common form —scraping sand from the low-tide to the high-tide beach on an eroding shoreline. Whether or not beach scraping on an eroded beach results in profile steepening is not relevant to this project, where excavation will be limited to accreting or accreted areas associated with inlet shoal attachment. The proposed excavation will be carried out in an area that protrudes seaward and, if left on its own, would move landward and spread sediment to adjacent beaches. The proposed project is necessary to speed the landward shoal movement and to mitigate adjacent shoal-induced erosion which threatens upland development and which can eliminate turtle-nesting habitat in the erosional arcs. Classic profile steepening and detrimental dry-beach erosion losses are not expected to result from the proposed project.

SCDNR Comment: "Given that trigger [based on distance from the line of development], it is unclear what the applicant proposes if the trigger occurs during non-winter months. . . No information is provided by the applicant to indicate how beach scarps or increased hatchling disorientations would be dealt with."

Response: The applicant assumes that permit conditions will restrict construction to the winter months to avoid the turtle-nesting season. The permit application states that all construction would be performed during winter months. If the trigger is reached during summer months (nesting season), no work will be performed until after nesting season, unless otherwise directed by resource agencies. [For example, federal and state agencies requested the 2008 nourishment project be completed during nesting season to expedite restoration of the beach. The original permit application prepared by CSE and the City of Isle of Palms requested permits for construction between 1 November and 15 May.]

The applicant suggests the same scarp and turtle permit conditions attached to the 2008 nourishment project would suffice; further, excavation on the low-tide beach has been proposed in such a way that scarp formation and hatchling disorientation are not expected. Beach profile and turtle-nesting data following the 2008 project indicate that continuing present scarp and turtle monitoring activities should be sufficient for the proposed project. In the event beach conditions anywhere on the island would present potential difficulty for emerging hatchlings, the

Island Turtle Team relocates those eggs to more suitable sites. This is true both inside and outside the proposed project area.

SCDNR Comment: SCDNR fully agrees with the Shoreline Change Advisory Committee summary and recommendation [regarding mining of nearshore sediments and beach scraping].

Response: The applicant agrees that monitoring along the shoreline is prudent and necessary. The applicant has instituted comprehensive beach and inlet monitoring along the entire ocean shoreline of Isle of Palms. This monitoring has documented the fact that natural shoal attachment processes can also negatively affect downdrift beaches by disrupting sediment transport pathways, even as new sand is added to the Isle of Palms. The eastern end of Isle of Palms receives an average of 84,000 cubic yards of "new" sand annually through shoal attachments at the eastern end (Kana and Gaudiano 2001). This sand stabilizes the center of the island's shoreline and leads to accretion at the Breach Inlet end of the island. Unfortunately, the natural shoal attachment process – in addition to causing localized erosion adjacent to the shoal attachment site – has led to temporary erosion and reversals of long-term trends along the center and southwestern portion of the island. The proposed activity works in concert with the natural shoal attachment process to mitigate and minimize adverse downdrift impacts of natural shoal attachments.

The Shoreline Change Advisory Committee assertion that sand placed on a beach should come from at least one mile offshore ignores the well-understood shoal attachment processes that occur at the eastern end of Isle of Palms and treats this section of shoreline as it would any sand-starved shoreline in the State. This is one of the few coastal locations fortunate to receive natural additions of new beach-quality sediment on a regular basis. Offshore sand can help to counteract large-scale erosion problems and sediment deficits, but is not required to address every local erosion event associated with an ongoing natural process (shoal attachment). Projects such as the one proposed are applicable along many shorelines where there is a positive sediment budget, a confirmed surplus of sand seaward of development, or where removal and transfer of material provides secondary benefits (eg – reduced channel shoaling, back-passing to updrift erosion areas, or bypassing across inlets).

SCDNR Comment: SCDNR states that recommendations of the National Research Council's (1995) report do not include sand mined from the active beach and nearshore area.

Response: The statement is technically correct; however, failure to include a particular item in the recommendations does not mean the Committee was opposed to the concept. The book focused on the design aspects of typical beach nourishment projects using typical borrow sites – located offshore, or associated with inlet navigation dredging or inlet sand bypassing projects.

A closer reading of the report (Table 4-2 Potential Sources of Beach Nourishment Sediment) shows an entry for "Accretional Beach Source." The table states it is "not generally suitable to mine sand (1) from most of the stable shorelines or from any eroding shoreline, (2) where there are insufficient surveys to define volumes, or (3) where sediment size and type vary markedly in the cross-shore direction." The proposed Isle of Palms shoal attachment borrow area is accretional, has detailed surveys with which to define volumes, and has sediment quality consistent with the beach. Finally, the National Academy of Sciences Committee on Beach Nourishment and Protection does not discourage or recommend against use of an accreting beach as a borrow site; in fact, it describes a case where sediment from an accreting beach (Sandy Hook, NJ) is used as a source for beach nourishment (Appendix F, page 269).

SCDNR Comment: SCDNR comments that permitting this as a long-term strategy would preclude resource agencies from formal commenting as conditions change.

Response: The applicant believes that shoal management will be an effective long-term management strategy; however, the applicant finds it appropriate and necessary to communicate results of the project and subsequent monitoring to resource agencies and solicit input on the results of the project from biological, physical, and economic perspectives. The applicant will submit post-project monitoring reports to agencies for review. If alterations to the design of subsequent mobilizations are warranted (during the anticipated 5-year permit duration), the applicant will seek to implement changes as appropriate, while maintaining the primary goals of the project.

SCDNR Comment: SCDNR asks that the permit be denied as proposed and that the applicant pursue less damaging alternatives that increase the volume of sand in the system (such as nourishment via offshore deposits).

Response: The applicant believes that the proposed methodology is a more sustainable alternative to nourishment using offshore sand deposits. Borrowing sand from the shoal attachment site reduces the wave refraction which causes erosion in adjacent areas. Nourishment from offshore deposits does not reduce the likelihood or rates of localized erosion. As with the 2008 nourishment project, if another shoal emerges shortly after completion of the project, a significant volume of sand can relocate in a short period of time. Studies have shown that shoals emerge every 6.6 years on average at the Isle of Palms (Gaudiano 1998). However, following the 2008 nourishment project, two shoals formed and have attached to the beach (one in 2009, and one in 2010). These are likely the result of a channel avulsion event occurring at the Isle of Palms, which is likely to release a very large quantity of sand to the island over the next few years [CSE 2009, 2011 (released April 2011)]. Having the ability to manage this sand as it

attaches to the beach, as necessary, is essential to preservation of beach habitat and storm protection.

The applicant also disagrees with SCDNR's opinion that nourishment via offshore sand deposits is a less environmentally damaging alternative. The proposed project essentially transfers beach sand from a site of accumulation to a site of erosion, following the same pathway as the natural shoal-bypass cycle. The only difference is that the transfer occurs quickly, shortening the Stage-2 period of the bypass cycle, which is the period when most erosion occurs. Since active beach sand is the fill material, sediment quality is a perfect match with no mud and a native shell content. This would suggest rapid recovery of benthic organisms. It is unclear whether benthic organisms being transferred by truck could survive relocation; however, impacts to beach benthics would be less under the current proposal than with nourishment via offshore deposits. The proposed project will not create offshore holes (typical of offshore dredging projects) that may infill with mud and change the community structure. Also, the environmental impacts associated with sand moved via dredge slurries are widely understood to be greater than sand moved a short distance in-the-dry via trucks.

As mentioned previously, the perception that beach projects should add sand to the system is correct for long, straight beaches that have a net sand deficit. Isle of Palms is historically accretional, due to sand inputs from shoal-bypass events. Erosion necessitating a management strategy is not a result of long-term losses, rather it results from temporary events associated with the incoming shoals. Even with nourishment via offshore sand deposits, the erosion cycles would continue, potentially resulting in the need for additional projects. The applicant fails to understand how repeated nourishment via offshore deposits would be a less damaging approach than the proposed project, which eliminates impacts to the offshore area, provides perfectly compatible sediment, and can be accomplished using less resources (time, fuel, labor).

NMFS Comment: "The proposed sand redistribution would reduce the amount and quality of available forage habitat at the excavation site, and potentially lead to the establishment of benthic communities that are less valuable as a food source to red drum and other fishery resources at both sites."

Response: Impacts to benthic invertebrates in the beach due to nourishment projects have been shown to be temporary, with recovery of the benthic community occurring within several months [USACE (Burlas et al) 2001, Van Dolah et al 1994]. The most important factor controlling recovery is the sediment quality of the fill material (grain size, mud, and shell content). In the case of the proposed project, fill material is local beach sand already in the active beach environment, eliminating potential incompatibility problems associated with

material imported from inland deposits or dredged from offshore. This should facilitate rapid recovery of the same benthic community currently present. Further, the areas of excavation are already dynamic and subject to rapid changes as a result of the shoal-bypass process. There is not expected to be a significant net gain or loss of surf zone intertidal and shallow subtidal habitats. Shoal-bypass events produce temporary accumulations of mud between the attaching shoal and the beach. Mud is not normal in the beach zone; however, its presence will tend to increase the diversity of species by temporarily allowing species that demand sheltered habitat to live in the lee of attaching shoals. But in almost every shoal-bypassing event, the incipient muddy lagoon habitat is short-lived and quickly buried by washover deposits and the accreting beach.

NMFS Comment: NMFS references the 1999 NRC's Committee on Beach Nourishment and Protection recommendations in a similar fashion as SCDNR.

Response: See response to SCDNR (page 4, above).

NMFS Comment: "The applicant should identify the potential impacts of the project on Isle of Palms in its entirety, including Cedar Creek."

Response: The project is designed to expedite a naturally occurring process. With or without a project, erosion would persist until the shoal sand had spread to adjacent areas. The project seeks to reduce impacts associated with severe, extended periods of erosion through sand relocation. Sediment transport to downcoast Isle of Palms has been shown to be interrupted during shoal-bypass events, as sand moves into the area leeward of the shoal instead of downcoast. "Downcoast" in the lee of the Dewees Inlet ebb-tidal delta with respect to bypassing shoals is actually in two directions—to the south, whereby new sand feeds the rest of Isle of Palms and ultimately Sullivan's Island; and to the north, whereby new sand migrates around the end of the island and along the Dewees Inlet shoreline of Isle of Palms (cf – Kana and Dinnel 1980, Kana et al 1999). The project would accelerate the natural flow of sand to both downcoast areas. The Cedar Creek area receives its sand from more seaward portions of the Dewees Inlet shoreline of Isle of Palms. The project is not expected to produce a measurable change in sediment supply to the spit. However, instead of cannibalizing the existing updrift beach, transport along the inlet will be fed by the project, thereby reducing dune/beach habitat loss north of the shoal-bypass point.

NMFS Comment: ". . . the 2008 re-nourishment project was not successful in terms of establishing or maintaining desired beach conditions. The oceanographic processes and engineering designs leading to the failure of that project should be identified."

Response: As discussed previously, the 2008 nourishment project overall has performed well, retaining ~72 percent of the nourishment volume after 2.2 years (only 6 percent higher than the design life estimate). Most of that erosion occurred within the first year and was due to adjustment of the project. Erosion concerns are local, and the permit application was submitted proactively in anticipation of future shoal-bypass events and with the intent to maintain a desired beach condition, consisting of stable dunes and a recreational (dry) beach. In nourishment Reach B (the most critically eroded area prior to the nourishment project), 78 percent of the nourishment fill remains, exactly matching the design-life estimate.

The project has performed well, despite two shoal-bypass events occurring since construction (one attaching in 2009 and one in 2010). This is compared to an average of one event every ~6 years at Isle of Palms (Gaudiano 1998). No developed property has been damaged by localized erosion since the project, and no sand bags have been required for emergency protection.

The coastal processes controlling the morphology of Isle of Palms are well understood. Any nourishment at the northeastern end will be affected by shoal-bypass events. It is currently impossible to predict with accuracy when an event will occur. The beach response will be determined by how large the event is, how long it takes to migrate and attach, and the attachment location. The applicant has committed to an extensive monitoring program which encompasses the entire Dewees Inlet delta. These efforts have produced data which confirm volumes of sand in separate shoal-bypass events and which track larger scale changes occurring in the delta. Data show that the main channel of the inlet is relocating to the north, which will release millions of cubic yards of sand to the island over the next several years. The applicant understands these processes, and believes that the proposed management strategy is the best practicable solution for preserving the shoreline.

The applicant understands and agrees the best scenario would be that the erosion threat would naturally be relieved as additional sand migrates onshore, and no action would be necessary; however, it is in the best interest of all parties to have a mechanism to redistribute sand in the event erosion reaches a point where it threatens the integrity of the beach.

CSE and the City of Isle of Palms have repeatedly discussed a two-part plan for the island:

1) The large-scale nourishment using an offshore (non-littoral) sand deposit whose primary purposes were to restore the sand deficit, restore a continuous dry-sand beach, provide advance nourishment, and address the focused erosion.

2) Periodic sand scraping from accretion zones to address localized erosion hot spots as they develop.

This plan was incorporated into a State-approved, long-term beach management plan which was developed from recommendations of a citizens' long-term, beach-management advisory group (Jones 2008).

Nourishment project along simpler straight coasts commonly have to deal with erosion hot spots after a project (NRC 1995). Expectations are unrealistic that such hot spots should be fully predictable in time and space prior to execution of a nourishment project, just as prediction of the weather is inherently unquantifiable months or years into the future.

NMFS Comment: "If events are allowed to occur multiple times over the course of 5 years, the beach community will succumb to long-term, adverse impacts."

Response: This is an overly general comment with little supporting evidence. Due to the perfect compatibility of the borrow material (native beach sand), recovery of benthic organisms is expected to occur rapidly (Burlas 2001, Van Dolah et al 1994). Also, the frequency of events will be determined by the condition of the beach in response to shoal-bypass events. These occur on average every 6.6 years (Gaudiano 1998). There is a high probability that management events would occur at a lower frequency than every two years; however, the applicant feels that flexibility in scheduling is needed due to the impossibility of predicting how often shoal-bypass events occur or how severe localized erosion may be. The permit application provided the maximum possible volume and frequency for a 5-year period. The applicant will pursue the minimum volume and frequency possible while still attaining the goals of the proposed project.

NMFS Comment: "However, the proposed project was not discussed in the public notice or inter-agency meetings for the 2008 project. Therefore, it is not appropriate to allocate mitigation already conducted for a previous project as mitigation for the adverse impacts that would occur during any given future re-nourishment event."

Response: The applicant, under its state-approved long-term beach management plan, has previously discussed this type of project with regulatory agencies, and a permit was issued (but not utilized) for a similar project at Isle of Palms in 2001.

The applicant believes that preservation of habitat (for shore birds and sea-turtle nesting) through sand redistribution is sufficient justification for the project. Beyond preservation, the applicant and local owners install sand fencing and plantings as the beach condition allows. The applicant regularly monitors escarpments and eliminates them as necessary during nesting season. Adverse impacts of the project are considered to be temporary until the beach benthic community recovers a few months after the project. No wetlands or marsh will be impacted by the project.

USFWS Comment: "Since the addition of sediment from an offshore borrow area only alleviated the erosion problem in certain areas of the project area for two and a half years, it is unlikely that excavating sediment from within the system and transferring it to erosional hotspots is a viable solution."

Response: See earlier comments regarding project performance and coastal processes at Isle of Palms. Erosion at Isle of Palms is caused by shoal-bypass events, not a long-term sand deficit (such as Myrtle Beach, Hunting Island, Edisto Beach). Adding sediment from outside of the system can benefit the beach, but it will not slow erosion associated with shoal bypass events because the forces driving sediment transport remain. Excavating the "bulge" in the shoreline created by attaching sand will reduce wave focusing and realign the shoreline into a more stable configuration, until the next shoal-bypass event occurs. Sand borrowing from accretion zones and transfer to erosion zones has mitigated local erosion events at Kiawah Island, Seabrook Island, and other sites without long-term adverse impacts at relatively low cost.

USFWS Comment: "Removal of nearshore material for beach placement can increase wave energy reaching the beach by altering the nearshore bathymetry, defeating the purpose of an 'erosion control project' and exacerbating the need for shoreline stabilization projects."

Response: This comment is cited from Rice (2009), a report for USFWS. The intention of the passage is to limit excavations from sandbars and tidal shoals, separate from the active beach (such as offshore bars in the delta). The proposed project will only excavate from the beach areas that are accessible to land-based equipment (ie – not an offshore shoal). Once a shoal attaches to the beach and is accessible at low tide, that material will be available for redistribution, if necessary. Since excavations will occur on the active beach, and not from offshore shoals, the amount of wave energy reaching the beach will not change. The comment suggests that this project will have a similar impact on waves as an offshore project which creates a large hole at the borrow site. This is not the case. Concerns such as this reflect generic comments made in other settings which do not have the large sand reservoirs in inlets. Shoal bypassing in many South Carolina inlets dwarfs the typical bypassing volumes of most East Coast and Gulf Coast inlets.

USFWS Comment: "Additionally, the accreting shoals provide foraging habitat for shorebirds and loafing habitat for seabirds absent recreational disturbance."

Response: While this statement is true, it is irrelevant to the proposed project. No offshore shoals will be excavated. Only areas of the beach accessible to land-based equipment (working in-the-dry at low tide) will be excavated. Once a shoal attaches (making it accessible to equipment), it is also accessible to humans and is part of the recreational beach. An extensive sub-

aerial shoal, which has been generally stable in recent years, exists on the northern side of Dewees Inlet. This alternate habitat is available to seabirds and is not ephemeral like the shoals attaching to Isle of Palms. It will not be impacted by the proposed project.

USFWS Comment: "Due to . . ., the lack of monitoring, the Service recommends that the proposed project not be permitted."

Response: The applicant has committed to an extensive monitoring program encompassing the entire island and adjacent inlet deltas, including surveys spaced at 200 feet extending up to three miles from the beach in the proposed project area. The applicant plans to continue to monitor the beach, and the results of that monitoring will be used to plan, design, and implement the proposed management strategy, as appropriate. In the event regulatory agencies require additional monitoring, the applicant will discuss and implement an appropriate strategy that satisfies all parties.

Public Comment – Louis C Tisdale: "This deposition has served as a magnet and blocking agent for additional sediment issued from Dewees inlet [sic] since deposition of the Morgan Creek sediments."

Response: This comment suggests that nourishment in 1983 (via sediment from Morgan Creek) is responsible for continued problems in the proposed project area. The coastal processes controlling the morphology of the Isle of Palms are well understood and have been outlined in the permit application and in this document.

Public Comment – D. Reid Wiseman: " . . . the ineluctable dynamics of this ebb-tidal delta are beyond any beach management plan. There is no commentary on the ecological perturbations of this near shore habitat from which the sands will be mined except for the sea turtle habitat."

Response: The applicant understands the complexity of sediment transport in dynamic beach settings, but disagrees that they are beyond management. Comprehensive surveys of the entire delta have been completed since 2007, offering new details on sediment movement occurring offshore. The shoal-bypass cycle is well understood at Isle of Palms. The applicant believes that managing accreting sand is a viable option. The applicant also understands the importance of up-to-date condition surveys and detailed monitoring to ensure that all parts of the beach remain healthy. It is not in the applicant's interest to benefit one portion of the beach at the expense of another.

Regarding ecological perturbations, the applicant has submitted a formal Biological Assessment and a draft Essential Fish Habitat report on possible environmental impacts of the project.

These reports address a range of potential impacts to endangered species, benthic invertebrates, shorebirds, flora, etc. Appropriate precautions to minimize impacts to local species (such as winter construction, monitoring escarpments, etc) have been incorporated into the permit application or are continuing from permit conditions for the 2008 nourishment.

The ecology of the coast is indeed complex, and no one fully understands all linkages in detail. Yet repeatedly, the coast has been subjected to storms, construction of seawalls, beach nourishment, oil spills, fish kills, and other large-scale perturbations. Yet the environment of the beach has remained resilient. Displaced species have returned and have refilled niches whether the impact was due to hurricanes like *Hugo* or the 1984 nourishment project. The proposed project will not reduce the net beach habitat available at the northeastern end of the island. However, it will reduce the possibility that some section of Isle of Palms has to be armored once again with sand bags.

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DEPARTMENT OF THE ARMY
CHARLESTON DISTRICT, CORPS OF ENGINEERS
69-A HAGOOD AVENUE
CHARLESTON, SOUTH CAROLINA 29403-5107

REPLY TO
ATTENTION OF

June 17, 2011

Regulatory Division

Mr. Steven Traynum
Coastal Science and Engineering
Post Office Box 8056
Columbia, South Carolina 29202

Dear Mr. Traynum:

This is in response to your application for a Department of the Army permit (P/N SAC-2010-1041-2IG) to perform excavation and place fill material to realign the beach in shoal attachment areas adjacent to the Atlantic Ocean on the Isle of Palms at an area between 53rd Avenue and an existing groin near the 17th tee of the links course on the northeastern end of the Isle of Palms in Charleston County, South Carolina.

As you are aware, a public notice advertising this application was issued on December 2, 2010, wherein written comments of parties interested in or affected by this work were solicited. The purpose of this public notice was to gain the views of the various State and Federal agencies and affected parties so that the Corps could better determine whether to approve or deny the proposed project. In response to the public notice, comments were received from several of the resource agencies. You responded to the agency comments on April 12, 2011, and your response was forwarded to the agencies for review. The U. S. Fish and Wildlife Service, the National Marine Fisheries Service, and the South Carolina Department of Natural Resources offered comments and recommendations based on your response dated April 12, 2011. Copies of these letters are enclosed for your review and consideration.

After reviewing the above referenced letters, you should provide me with your views, so that they can be given full consideration in the decision-making process. If no response is received by **July 18, 2011**, I will conclude that you have either elected not to actively pursue this application or have elected to pursue the requisite State authorizations and certifications prior to requesting a sequential final decision by this office. In either event, your application will be placed in an inactive status. However, our Project Manager will retain your application for one (1) year to facilitate reinstatement of processing upon your request.

If you have any questions concerning this matter, please contact me at 843-329-8044 or toll free at 1-866-329-8187.

Respectfully,

Mary Hope Green
Project Manager

Enclosure

Copy furnished:

SCDHEC OCRM
1362 McMillan Avenue, Suite 400
Charleston, South Carolina 29405

United States Department of the Interior

FISH AND WILDLIFE SERVICE
176 Croghan Spur Road, Suite 200
Charleston, South Carolina 29407

May 26, 2011

Lt. Colonel Jason A. Kirk
District Engineer
U.S. Army Corps of Engineers
69A Hagood Avenue
Charleston, S.C. 29403-5107

Attn: Mary Hope Green

Re: P/N SAC-2010-1041-21G, The City of Isle of Palms
Charleston County, SC
FWS Log No. 2011-CPA-0035

Dear Colonel Kirk:

The U.S. Fish and Wildlife Service (Service) has reviewed the response to our January 13, 2011, comments and the Biological Assessment (BA) provided by Coastal Science & Engineering (CSE) on behalf of the City of Isle of Palms. Based on the responses to our comments, we continue to recommend that the project not be permitted as proposed.

According to CSE, "Sand borrowing from accretion zones and transfer to erosion zones has mitigated local erosion events at Kiawah Island, Seabrook Island, and other sites without long-term adverse impacts at a relatively low cost." We strongly disagree with this statement since we have data documenting the sharp annual decline of migrating and wintering piping plovers on the east end of Kiawah Island since the 2006 inlet relocation and renourishment project. We consider site abandonment of designated critical habitat on the east end of Kiawah, which has continued for five years, to be a long-term adverse impact. Although construction costs are low for these land-based projects, the cost to natural resources is high. We also disagree with CSE's response that our citation of Rice (2009) does not pertain to this project or any other project of this nature in South Carolina and we continue to object to taking sediment from an accreting area within the system to temporarily alleviate erosional hotspots.

In the event that this project is permitted, it should be modified to allow either one transfer event of 500,000 cubic yards (cy) of sediment or two transfer events of 250,000 cy each between November 1 and March 31, within a five year period. We also recommend that the applicant should not assume that the issuance of this permit is renewable upon expiration. Although CSE has proposed extensive physical monitoring, they have not included any biological monitoring to assess project impacts. The Service recommends that the following monitoring requirements be incorporated into the project to minimize impacts to nesting and hatchling sea turtles and their habitat:

1. The applicant, using standard survey techniques (see enclosure), shall conduct two surveys of all lighting visible from the project area during the nesting season before and the nesting season after project construction. The first survey shall be conducted between May 1 and May 15, and a brief summary will be provided to the Service and S.C. Department of Natural Resources (SCDNR). The second survey shall be conducted between July 15 and August 1. A summary report of the pre and post construction survey findings will be provided to the Service and SCDNR.

2. Sand compaction shall be monitored in the area of sand placement immediately after completion of the project and prior to May 1 for 3 subsequent years. Sand compaction monitoring results must be provided to the South Carolina Field Office. If tilling is needed, the area shall be tilled to a depth of 24 inches. Each pass of the tilling equipment shall be overlapped to allow more thorough and even tilling. All tilling activity shall be completed at least once prior to nesting season. An electronic copy of the results of the compaction monitoring shall be submitted to the Service's Field Office prior to any tilling actions being taken. The requirement for compaction monitoring can be eliminated if the decision is made to till regardless of post construction compaction levels. Additionally, out-year compaction monitoring and remediation are not required if placed material no longer remains on the dry beach.

    a. Compaction sampling stations shall be located at 500-foot intervals along the sand placement template. One station shall be at the seaward edge of the dune/bulkhead line (when material is placed in this area), and one station shall be midway between the dune line and the high water line (normal wrack line).

    b. At each station, the cone penetrometer shall be pushed to a depth of 6, 12, and 18 inches three times (three replicates). Material may be removed from the hole if necessary to ensure accurate readings of successive levels of sediment. The penetrometer may need to be reset between pushes, especially if sediment layering exists. Layers of highly compact material may lie over less compact layers. Replicates shall be located as close to each other as possible, without interacting with the previous hole or disturbed sediments. The three replicate compaction values for each depth shall be averaged to produce final values for each depth at each station. Reports will include all 18 values for each transect line, and the final six averaged compaction values.

    c. If the average value for any depth exceeds 500 pounds per square inch (psi) for any two or more adjacent stations, then that area shall be tilled immediately prior to the dates listed above.

    d. If values exceeding 500 psi are distributed throughout the project area but in no case do those values exist at two adjacent stations at the same depth, then consultation with the Service will be required to determine if tilling is required. If a few values exceeding 500 psi are present randomly within the project area, tilling will not be required.

e. Tilling shall occur landward of the wrack line and avoid all vegetated areas 3 square feet or greater with a 3 square foot buffer around the vegetated areas.

3. Visual surveys for escarpments along the project area shall be made immediately after completion of the sand placement and within 30 days prior to May 1 for 3 subsequent years if sand in the project area still remains on the dry beach. Escarpments that interfere with sea turtle nesting or that exceed 18 inches in height for a distance of 100 feet shall be leveled and the beach profile shall be reconfigured to minimize scarp formation by the dates listed above. Any escarpment removal shall be reported by location. If the project is completed during the early part of the sea turtle nesting and hatching season, escarpments may be required to be leveled immediately, while protecting nests that have been relocated or left in place. The Service shall be contacted immediately if subsequent reformation of escarpments that interfere with sea turtle nesting or that exceed 18 inches in height for a distance of 100 feet occurs during the nesting and hatching season to determine the appropriate action to be taken. If it is determined that escarpment leveling is required during the nesting or hatching season, the Service will provide a brief written authorization within 30 days that describes methods to be used to reduce the likelihood of impacting existing nests. An annual summary of escarpment surveys and actions taken shall be submitted to the Service's Field Office.

Additionally, the monitoring recommendations outlined by National Marine Fisheries Service and SCDNR should be incorporated into project as well if the permit is issued.

Along with the BA, we received your request to initiate consultation on the loggerhead sea turtle (*Caretta caretta*) and the green sea turtle (*Chelonia mydas*). However, as long as the construction window and monitoring recommendations outlined above are included as a condition of the permit, we can concur with your original determination in the public notice and the determination in the BA that this project is not likely to adversely affect any federally endangered, threatened, or proposed species.

We appreciate the opportunity to review and provide comments on this project. Your interest in protecting threatened and endangered species is appreciated. If you have any questions please contact Ms. Melissa Bimbi of my staff at (843) 727-4707, ext. 217.

Sincerely,

Joe Cockrell

FOR Jay B. Herrington
Field Supervisor

JBH/MKB

cc: Ms. Jaclyn Daly, NMFS, Charleston, SC
Ms. Felicia Sanders, SCDNR, McClellanville, SC
Ms. DuBose Griffin, SCDNR, Charleston, SC
Ms. Susan Davis, SCDNR, Charleston, SC
Mr. Bill Eiser, SCDHEC-OCRM, Charleston, SC

Literature Cited:

Rice, T.M. 2009. Best Management Practices For Shoreline Stabilization To Avoid And Minimize Adverse Environmental Impacts – Prepared for U.S. Fish and Wildlife Service

Enclosure: Discerning Problems Caused By Artificial Lighting

Discerning Problems Caused By Artificial Lighting

WHAT ARE LIGHTING INSPECTIONS?

During a lighting inspection, a complete census is made of the number, types, locations, and custodians of artificial light sources that emit light visible from the beach. The goal of lighting inspections is to locate lighting problems and to identify the property owner, manager, caretaker, or tenant who can modify the lighting or turn it off.

WHICH LIGHTS CAUSE PROBLEMS?

Although the attributes that can make a light source harmful to sea turtles are complex, a simple rule has proven to be useful in identifying problem lighting under a variety of conditions:

An artificial light source is likely to cause problems for sea turtles if light from the source can be seen by an observer standing anywhere on the nesting beach.

If light can be seen by an observer on the beach, then the light is reaching the beach and can affect sea turtles. If any glowing portion of a luminaire (including the lamp, globe, or reflector) is directly visible from the beach, then this source is likely to be a problem for sea turtles. But light may also reach the beach indirectly by reflecting off buildings or trees that are visible from the beach. Bright or numerous sources, especially those directed upward, will illuminate sea mist and low clouds, creating a distinct glow visible from the beach. This "urban skyglow" is common over brightly lighted areas. Although some indirect lighting may be perceived as nonpoint-source light pollution, contributing light sources can be readily identified and include sources that are poorly directed or are directed upward. Indirect lighting can originate far from the beach.

Although most of the light that sea turtles can detect can also be seen by humans, observers should realize that some sources, particularly those emitting near-ultraviolet and violet light (e.g., bug-zapper lights, white electric-discharge lighting) will appear brighter to sea turtles than to humans. A human is also considerably taller than a hatchling; however, an observer on the dry beach who crouches to the level of a hatchling may miss some lighting that will affect turtles. Because of the way that some lights are partially hidden by the dune, a standing observer is more likely to see light that is visible to hatchlings and nesting turtles in the swash zone.

HOW SHOULD LIGHTING INSPECTIONS BE CONDUCTED?

Lighting inspections to identify problem light sources may be conducted either under the purview of a lighting ordinance or independently. In either case, goals and methods should be similar.

GATHER BACKGROUND INFORMATION

Before walking the beach in search of lighting, it is important to identify the boundaries of the area to be inspected. For inspections that are part of lighting ordinance enforcement efforts, the jurisdictional boundaries of the sponsoring local government should be determined. It will help to have a list that includes the name, owner, and address of each property within inspection area so that custodians of I problem lighting can be identified. Plat maps or aerial photographs will help surveyors orient themselves on heavily developed beaches.

PRELIMINARY DAYTIME INSPECTIONS

An advantage to conducting lighting inspections during the day is that surveyors will be better able to judge their exact location than they would be able to at night. Preliminary daytime inspections are especially important on beaches that have restricted access at night. Property owners are also more likely to be available during the day than at night to discuss strategies for dealing with problem lighting at their sites.

A disadvantage to daytime inspections is that fixtures that are not directly visible from the beach will be difficult to identify as problems. Moreover, some light sources that can be seen from the beach in daylight may be kept off at night and thus present no problems. For these reasons, daytime inspections are not a substitute for nighttime inspections. I Descriptions of light sources identified during daytime inspections should be detailed enough so that anyone can locate the lighting. In addition to a general description of each luminaire (e.g., HPS floodlight directed seaward at top northeast corner of the building at 123 Ocean Street), photographs or sketches of the lighting may be necessary. Descriptions should also include an assessment of how the specific lighting problem can be resolved (e.g., needs turning off; should be redirected 90° to the east). These detailed descriptions will show property owners exactly which luminaires need what remedy.

NIGHTIME INSPECTIONS

Surveyors orienting themselves on the beach at night will benefit from notes made during daytime surveys. During nighttime lighting inspections, a surveyor walks the length of the nesting beach looking for light from artificial sources. There are two general categories of artificial lighting that observers are likely to detect:

1. Direct lighting. A luminaire is considered to be direct lighting if some glowing element of the luminaire (e.g., the globe, lamp [bulb], reflector) is visible to an observer on the beach. A source not visible from one location may be visible from another farther down the beach. When direct lighting is observed, notes should be made of the number, lamp type (discernable by color), style of fixture, mounting (pole, porch, etc.), and location (street address, apartment number, or pole identification number) of the luminaire(s). If exact locations of problem sources were not determined during preliminary daytime surveys, this should be done during daylight soon after the nighttime survey. Photographing light sources (using long exposure times) is often helpful.

2. Indirect lighting. A luminaire is considered to be indirect lighting if it is not visible from the beach but illuminates an object (e.g., building, wall, tree) that is visible from the beach. Any object on the dune that appears to glow is probably being lighted by an indirect source. When possible, notes should be made of the number, lamp type, fixture style, and mounting of an indirect-lighting source. Minimally, notes should be taken that would allow a surveyor to find the lighting during a follow-up daytime inspection (for instance, which building wall is illuminated and from what angle?).

WHEN SHOULD LIGHTING INSPECTIONS BE CONDUCTED?

Because problem lighting will be most visible on the darkest nights, lighting inspections are ideally conducted when there is no moon visible. Except for a few nights near the time of the full moon, each night of the month has periods when there is no moon visible. Early-evening lighting inspections (probably the time of night most convenient for inspectors) are best conducted during the period of 2-14 days following the full moon. Although most lighting problems will be visible on moonlit nights, some problems, especially those involving indirect lighting, will be difficult to detect on bright nights.

A set of daytime and nighttime lighting inspections before the nesting season and a minimum of three additional nighttime inspections during the nesting-hatching season are recommended. The first set of day and night inspections should take place just before nesting begins. The hope is that managers, tenants, and owners made aware of lighting problems will alter or replace lights before they can affect sea turtles. A follow-up nighttime lighting inspection should be made approximately two weeks after the first inspection so that remaining problems can be identified. During the nesting-hatching season, lighting problems that seemed to have been remedied may reappear because owners have been forgetful or because ownership has changed. For this reason, two midseason lighting inspections are recommended. The first of these should take place approximately two months after the beginning of the nesting season, which is about when hatchlings begin to emerge from nests. To verify that lighting problems have" been resolved, another follow-up inspection should be conducted approximately one week after the first midseason inspection.

WHO SHOULD CONDUCT LIGHTING INSPECTIONS?

Although no specific authority is required to conduct lighting inspections, property managers, tenants, and owners are more likely to be receptive if the individual making recommendations represent a recognized conservation group, research consultant, or government agency. When local ordinances regulate beach lighting, local government code-enforcement agents should conduct lighting inspections and contact the public about resolving problems.

WHAT SHOULD BE DONE WITH INFORMATION FROM LIGHTING INSPECTIONS?

Although lighting surveys serve as a way for conservationists to assess the extent of lighting problems on a particular nesting beach, the principal goal of those conducting lighting inspections should be to ensure that lighting problems are resolved. To resolve lighting problems, property managers, tenants, and owners should be give the information they need to

make proper alterations to light sources. This information should include details on the location and description of problem lights, as well as on how the lighting problem can be solved. One should also be prepared to discuss the details of how lighting affects sea turtles. Understanding the nature of the problem will motivate people more than simply being told what to do.

MONITORING SEA TURTLE BEHAVIOR

In part, the behavior of nesting sea turtles and their hatchlings on the beach can be monitored by studying the tracks they leave in the sand. This evidence can reveal how much and where nesting occurs and how well oriented hatchlings are as they attempt to find the sea from their nest. Monitoring this behavior is one way to assess problems caused by artificial lighting, but it is no substitute for a lighting inspection program as described above. Many lighting problems may affect sea turtles and cause mortality without their leaving conspicuous track evidence on the beach.

SEA TURTLE NESTING

On many beaches, sea turtle biologists make early morning surveys of tracks made the previous night in order to gather information on nesting. With training, one can determine the species of sea turtles nesting, the success of their nesting attempts, and where these attempts have occurred. These nesting surveys are one of the most common assessments made of sea turtle populations.

Because many factors affect nest-site choice in sea turtles, monitoring nesting is a not a very sensitive way to assess lighting problems. However, changes that are observed in the distribution or species composition of nesting can indicate serious lighting problems and should be followed with a program of lighting inspections if one is not already in place.

HATCHLING ORIENTATION

Although hatchlings are more sensitive to artificial lighting than are nesting turtles, the evidence they leave behind on the beach is less conspicuous. Evidence of disrupted sea-finding in hatchlings (hatchling disorientation) can vastly under represent the extent of a lighting problem; however, this evidence can be useful in locating specific problems between lighting inspections. There are two ways one can use hatchling-orientation evidence to help assess lighting problems:

HATCHLING-ORIENTATION SURVEYS

Of the two methods, hatchling-orientation surveys, which involve measuring the orientation of hatchling tracks at a sample of sites where hatchlings have emerged, provide the most accurate assessment. Because the jumble of hatchling tracks at most emergence sites is often too confused to allow individual tracks to be measured, simple measures of angular range (the width that the tracks disperse) and modal direction (the direction that most hatchlings seem to have gone) are substituted. If the sampling of hatchling emergence sites does not favor a specific stretch of beach or a particular time of the lunar cycle, data from these samples can be an accurate index of how well hatchlings are oriented (Witherington et al., 1996).

HATCHLING-DISORIENTATION REPORTS

Although many cases of hatchling disorientation go unnoticed, some are observed and reported. The evidence of such events includes numerous circling tracks, tracks that are directed away from the ocean, or the carcasses of hatchlings that have succumbed to dehydration and exhaustion. Because reporters often discover this evidence while conducting other activities, such as nesting surveys, the events reported often include only the most conspicuous cases. Although these reports have a distinct coverage bias, they can still yield valuable information.

Hatchling-disorientation reports can help researchers immediately identify light-pollution problems. Although not every hatchling that is misled by lighting may be observed and reported, each report constitutes a 'documented event. When reports are received by management agencies or conservation groups, action can be taken to correct the light-pollution problem at the specific site recorded in the report. To facilitate the gathering of this information, standardized report forms should be distributed to workers on the beach who may discover evidence of hatchling disorientation. The following is a list of information that should be included on a standardized hatchling-disorientation report form:

1. Date and time (night or morning) that evidence was discovered.
2. Observer's name, address, telephone number, and affiliation (if any). The reporter may need to be contacted so that information about the event can be verified and the site can be located.
3. Location of the event and the possible light sources responsible. Written directions to the locations should be detailed enough to guide a person unfamiliar with the site. The reporter should judge which lighting may have caused the sea-finding disruption, a decision that may involve knowledge about lighting that was on during the previous night and the direction(s) of the tracks on the beach. If possible, the type of lighting responsible should be identified (e.g. a high pressure sodium street light).
4. The number of hatchlings of each species involved in the event. Unless carcasses or live hatchlings are found, the species and numbers involved will be an estimate.
5. Additional notes about the event.

Excerpted from: Witherington, B.E., and R.E. Martin. 2003. Understanding, Assessing, and Resolving Light-Pollution Problems on Sea Turtle Nesting Beaches. 3rd ed. Rev. Florida Fish and Wildlife Research Institute. St Petersburg, FL.
http://research.myfwc.com/engine/download_redirection_process.asp?file=tr-2_3101.pdf&objid=2156&dltype=article

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE

Southeast Regional Office
263 13th Avenue South
St. Petersburg, Florida 33701-5505
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http://sero.nmfs.noaa.gov/

May 26, 2011 F/SER47:JD/pw

(Sent via Electronic Mail)

Lt. Colonel Jason A. Kirk, Commander
Charleston District Corps of Engineers
69A Hagood Avenue
Charleston, South Carolina 29403-5107

Attention: Mary Hope Green

Dear Lt. Colonel Kirk:

NOAA's National Marine Fisheries Service (NMFS) reviewed the response provided by Coastal Science and Engineering, on behalf of the City of Isle of Palms, to the concerns NMFS and other agencies expressed with application 2010-1041-2IG. The City requests authorization to excavate sand from the intertidal zone along the Isle of Palms and transfer this material to areas where a wider beach is preferred. The applicant intends to repeat the process several times over 5 years. On January 14, 2011, we advised the Charleston District that the application be denied due to the impacts to essential fish habitat (EFH), which would be exacerbated by the open-ended nature of the request. As an alternative, we recommended the applicant pursue a project that would increase the amount of sand in the littoral system, rather than redistribute sands within the system.

We have reviewed the response provided by Coastal Science and Engineering, and our conclusion remains the same: the project should not be authorized as proposed. The response from Coastal Science and Engineering reaffirms the dynamic nature of the shoreline and sands within the project area and the inability to accurately forecast the frequency and quantity of sand placement needed to effectively manage erosion along this shoreline. Coastal Science and Engineering cites two studies to support the claim that impacts to EFH will be minimal despite repeated physical disturbance over 5 years. In reality, neither of the cited studies addresses this issue and one study examined a beach ecosystem that differs so markedly from the Isle of Palms in terms of sediments quality, physical energy, and biogeographic region, its relevance to the proposed project is not clear.

If the Charleston District attempts to help the City move forward with an interim solution while seeking a long-term plan that is consistent with the resource protection goals and the recommendations of the National Research Council's Committee on Beach Nourishment and Protection and South Carolina's Shoreline Change Advisory Committee, we provide the following recommendations so that future applications may be more effectively reviewed. The permit should be limited to 2 beach scraping events and should not be valid for more than 5 years from date of issuance. The permit should be conditioned so that work may only take place from November 1 to March 31. These conditions may help lessen the impacts on benthic communities and associated foraging fishes. Long-term comprehensive monitoring should also be required (see plan guidance below). A committee comprised of permitting and resource agencies should be established by the District to evaluate the benefits and disadvantages of each management practice (offshore dredging vs. beach scraping) to better inform decisions on future beach nourishment permits. The applicant should not assume or expect that if the permit is issued, a similar permit would be re-issued upon expiration.

Monitoring Plan

The applicant should conduct a comprehensive monitoring study at the borrow and disposal sites using a Before-After-Control-Impact (BACI) design, similar to that used in Berquist et al. (2008)[1], in order to document the biological changes in the impact areas (borrow area and nourished beach) relative to un-impacted control (reference) areas. In consultation with the South Carolina Department of Resources and U.S. Fish and Wildlife Service, we have determined that monitoring should be conducted on a quarterly basis. The study should, at minimum, have the following objectives:

1) Based on statistical analysis, determine the change in abundance, biomass, density, and diversity of benthic and infaunal species at impact areas, including the beach areas susceptible to transportation traffic.
2) Based on statistical analysis, determine the rate of recovery of species typical of South Carolina beaches in areas of the beach impacted from excavation and transportation (e.g., coquina clams, polychaetes, ghost crabs, ghost shrimp).
3) Determine the accuracy of assumptions on efficacy of the management practice and changes to physical conditions (e.g., beach width, berm elevation, beach slope, fill volume, and surficial sediment characteristics) of the mined and disposal areas.

The monitoring plan should be approved by the resource agencies prior to permit issuance. Monitoring reports should be submitted to resource agencies on a quarterly basis after the initial and, if authorized, subsequent scraping event. Monitoring should continue until the ecosystem has restored to its pre-disturbance state. After such time, the applicant should submit a final report that summarizes findings of the entire study. Authorization of a second scraping event, if necessary, should be conditional upon the resource agencies accepting the analysis and conclusions contained with the monitoring reports and environmental impacts.

[1] Berquist, D.C., Crow, S.E., Levisen, M. and R. F. Van Dolah. 2008. Change and Recovery of Physical and Biological Characteristics at Beach and Borrow Areas Impacted by the 2005 Folly Beach Nourishment Project. Report submitted to the Army Corps of Engineers, Charleston District. Published by the South Carolina Department of Natural Resources Marine Resources Division. Technical Report 12. 117pp.

We appreciate the opportunity to provide these comments. Please direct related correspondence to the attention of Ms. Jaclyn Daly at our Charleston Area Office. She may be reached at (843) 762-8610 or by e-mail at Jaclyn.Daly@noaa.gov.

Sincerely,

/ for

Miles M. Croom
Assistant Regional Administrator
Habitat Conservation Division

cc:

COE, Mary.H.Green@usace.army.mil
DHEC, owenen@dhec.sc.gov;
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John E. Frampton
Director
Robert D. Perry
Director, Office of
Environmental Programs

May 25, 2011

Ms. Mary Hope Green
United States Army Corps of Engineers
69-A Hagood Avenue
Charleston, SC 29403-5107

REFERENCE: P/N SAC-2010-1041-2IG, City of the Isle of Palms, Charleston County

Dear Ms. Green,

Personnel with the South Carolina Department of Natural Resources (DNR) have reviewed the response to comments provided by the applicant (dated April 12, 2011) for the above referenced project, and we offer the following comments.

For a number of reasons outlined in previous comments submitted by this agency (dated January 13, 2011), DNR generally is opposed to the use of sands mined from the active beach and nearshore areas for use in beach nourishment projects and especially is concerned with the open-ended nature of the proposed project. As acknowledged by the applicant, it is difficult to predict with any accuracy the frequency of events and the quantity of materials needed to effectively manage erosion along this shoreline. In the original 2008 permit request for nourishment of the Isle of Palms, the applicant anticipated a loss of approximately 510,000 cu yds of sand from reaches 3 and 4 over a 10-year period, yet 2010 surveys in this area identified a loss of approximately 200,000 cu yds from this same area (mostly Reach 3 of the earlier project) after only two years. Thus, the project is not performing as anticipated in the original permit request requiring the assumption that approximately 200-250,000 cu yds would be needed every 2-3 years based on the applicant's objectives and current beach performance in this area. This will result in frequent disturbance of beachfront environments and associated short-term and long-term biological impacts both in the areas were the sands are proposed to be removed, in the area to be filled and along portions of the intermediate beach subject to heavy equipment traffic.

DNR does not consider the project, as proposed, to represent an acceptable approach to the long-term management of the beachfront at the Isle of Palms and continues to recommend that it not be permitted. In the event approval for this project is considered, we recommend that it be limited to one five-year permit to allow no more than two sand transfer events involving no more than 250,000 cu yds of material each. Any issued permit also should require physical and biological monitoring to demonstrate project effectiveness and to document biological impacts. DNR recommends the applicant not assume that if a permit is issued, a similar permit will be re-

issued upon expiration. Future permit actions should be based on the outcome of monitoring efforts.

We further recommend the following: All monitoring efforts should be designed and implemented using a standard set of monitoring study designs and field and lab procedures. The applicant should be required to submit a monitoring plan that incorporates the following recommendations. No monitoring work should be initiated until DNR has reviewed and approved this plan, which must include detailed descriptions of sampling locations, field methods, laboratory methods, data management and field/lab quality control/assurance protocols.

Monitoring Design and Analysis Recommendations

Study Design:

Recommendation 1: All beach and borrow monitoring programs should utilize a Before-After-Control-Impact (BACI) design. In the case of the proposed project, the benthic infauna should be monitored on a quarterly basis in the area to be excavated or impacted by heavy equipment, in the area to be impacted by sand deposits from the sand transfer and from an appropriate reference area, presumably located southwest of the impact site. Every attempt should be made to use a reference area with similar sand/shellhash composition as the areas to be impacted. At least 10 shore perpendicular transects of the beach from the upper limit of the intertidal impact zone to MLW, and from MLW to -1 m (or 1 m deeper than the authorized excavation depth, whichever is deeper) should be sampled via a method that will ensure randomized composited samples across the intertidal and subtidal beach widths (i.e., shore perpendicular) and random location of the transects (considered replicate samples) along the impacted areas (i.e., shore parallel) for adequate representation of the benthos in each section of the beach (i.e., sand removal area, sand deposit area, reference area of comparable size). We are presuming that the upper beach (i.e., above MHW) will not be impacted by heavy equipment movement. If that is not the case, then monitoring of ghost crab populations also should be required using an appropriate sampling protocol in the areas to be impacted, including the area of the beach between the sand removal and sand deposit locations. Quarterly sampling should continue until it can be demonstrated that there is no significant difference compared to before and appropriate reference conditions (i.e., full recovery has been achieved). At a minimum, the following biological parameters should be monitored/calculated in the impacted and reference areas: benthic infauna densities, number of infaunal species, identities and densities of individual species and densities of major taxonomic groups.

Recommendation 2: Preliminary data should be collected or historical data mined to determine efficacy of sampling protocols and to calculate minimum sample sizes through power analysis. If such analyses indicate that more than 10 transect of composite samples are required, the number of transects should be increased.

Recommendation 3: In addition to the biological monitoring, physical data on the changes in profiles of the beach and shoals should be done at a frequency sufficient to evaluate how the area mined for sand, and the area where sand is deposited are performing relative to expectations. DNR envisions this to be quarterly sampling at a minimum throughout the study area. At a minimum, the following physical environmental parameters should be monitored/calculated in the mined and nourished beach areas and the reference location: beach width, berm elevation, beach slope, fill volume and surficial sediment characteristics.

Data Analysis and Reporting:

Recommendation 4: Appropriate summary statistics (mean, median, standard deviations, sample sizes, etc.) should be calculated and shown in tables or figures to illustrate temporal changes in the impact and control locations. Appropriate inferential statistics should be used to determine the significance of any effect of dredging or nourishment on physical and biological characteristics of beach and borrow locations.

Recommendation 5: Quarterly progress reports showing findings from the previous sampling efforts (no more than 6 month lag from sampling effort to reporting of biological and physical findings) should be provided and final reports should be prepared after each beach mining and deposit effort once biological recovery has been found to occur. All reports should include clear interpretation of broad patterns and trends, including discussion of significant statistical results (or lack thereof) and relevant environmental, ecological, and/or geologic consequences. The reports should be peer-reviewed for accuracy and analytical approach and findings. Quarterly and final monitoring reports should be disseminated to relevant state and federal agencies as well as to the Isle of Palms. All sampling and reporting must be up-to-date before each nourishment event.

If you have any further questions regarding the recommendations contained herein, please contact Susan Davis at daviss@dnr.sc.gov or 843.953.9003.

Sincerely,

Bob Perry
Director, Office of Environmental Programs

c: Bill Eiser – DHEC-OCRM
Jay Herrington – USFWS
Bob Lord – USEPA
Pace Wilber – NOAA-NMFS

COASTAL SCIENCE & ENGINEERING
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MEMO

DATE: July 22, 2011

TO: Mary Hope Green, US Army Corps of Engineers, Charleston

FROM: Steven Traynum, Coastal Science & Engineering

RE: **Response to Comments** [CSE 2300-02]

In response to your letter dated 26 May 2011, we offer the following comments regarding the concerns and recommendations of USFWS, NMFS, and SCDNR.

Biological Monitoring

USFWS again references the 2006 Kiawah Island restoration project as having long-term impacts and degrading habitat. The reasoning for this determination they note is a "*sharp annual decline*" of piping plovers at the eastern end of the island. While we agree that numbers of plovers observed at the eastern end have decreased since the project, CSE feels that the reason for the decrease is more likely attributed to habitat evolution resulting from the large-scale shoal-bypass event which has been ongoing since the 1990s. Dune growth, marsh infilling, and landward beach-ridge migration have reduced preferred piping plover habitat area. This has been documented in annual reports to the Town of Kiawah Island and has been provided to USACE (CSE 2009, CSE 2011). Benthic invertebrate analysis of the project is currently being conducted by SCDNR, however, only limited results have been made available. What has been made available is a brief summary based on data collected pre-project (April 2006) and post-project (August 2006). From the preliminary data, it appears that the benthic community in the project area had reached some level of recovery within months of the project, with the beach containing a higher density of organisms in the post-project sample than in the pre-project sample. If indeed the benthic community recovered quickly or showed no noticeable impact from the project, it would further support the conclusion that decreasing numbers are a result of habitat changes associated with the shoal-bypassing and not directly project-related.

All resource agencies recommend extensive biological monitoring for the proposed project. This includes quarterly monitoring of benthic invertebrates until *"the ecosystem has restored to its pre-disturbance state."* The applicant feels that this requirement is excessive and would fail to contribute new information regarding impacts of beach projects. The applicant also feels that the setting and nature of the proposed project do not warrant such extensive monitoring. This is based on several factors, the main one being that impacts of beach nourishment projects have been well documented in South Carolina and along

the East Coast. Several studies have shown that the benthic communities in the intertidal and nearshore environment recover within ~6 months of a nourishment project. A study of a similar project showed recovery occurring within tidal cycles (Lankford et al 1988).

We include a brief annotated bibliography outlining some of the finding of several relevant studies. Some of the annotations are quoted from the documents.

Lankford, TW, BJ Baca, and CE Nation. 1988. Biological monitoring of beach scraping at Pawleys Island, South Carolina. Final Report to Town of Pawleys Island. CSE, Columbia, SC, 36 pp.

- Study performed in connection with a 53,000-cy scraping project at Pawleys Island, SC.
- Organism abundances increased following nourishment, except at MSL where minor (statistically insignificant) short-term reductions in abundance occurred.
- Biological recovery occurred rapidly in the borrow area on a time scale of tidal cycles rather than months.
- No impacts to the nourished areas were detected (abundance doubled following completion).

An executive summary of this report is provided as Attachment B.

Bergquist, DC, S Crowe, M Levisen, and R Van Dolah. 2008. Change and recovery of physical and biological characteristics at beach and borrow areas impacted by the 2005 Folly Beach renourishment project. Final Report to USACE, Charleston District, SC. SCDNR, Marine Resources Research Inst, Marine Resources Div, Charleston, SC, 114 pp.

- Sediment changes recovered within six months (offshore borrow source).
- Recovery [physical and biological] has historically been rapid (Van Dolah et al 1992; 1994; Jutte et al 1999b) including benthic invertebrates.
- Nourishment did not have a clear impact on ghost crab abundances. Linear densities increased in control and nourishment sites.
- Ghost shrimp showed no significant relationship to nourishment.
- "Nourishment had little effect on surficial sediment characteristics and burrowing macroinvertebrates on the beach."

Jutte, PC, RF Van Dolah, and MV Levisen. 1999a. An environmental monitoring study of the Myrtle Beach renourishment project: intertidal benthic community assessment. Phase 1 – Cherry Grove to North Myrtle Beach. Final Report, SC Dept Natural Resources, Charleston.

- Biological recovery occurred by the first post-nourishment sampling (two to three months after nourishment).

- Likely due to adult and juvenile recruitment and vertical migration.

Jutte, PC, RF Van Dolah, and MV Levisen. 1999b. An environmental monitoring study of the Myrtle Beach renourishment project: intertidal benthic community assessment. Phase II – Myrtle Beach. Final Report, SC Dept Natural Resources, Charleston, 38 pp + app.

- Beaches [benthic invertebrates] recovered within six months after nourishment and showed initial signs of recovery one week after nourishment.

Burton. 2004 (Versar for USACE). Year 2 Recovery from impacts of beach nourishment on surf zone and nearshore fish and benthic resources on Bald Head Island, Caswell Beach, Oak Island, and Holden Beach, North Carolina. Final Study Findings. Prepared for USACE Wilmington District.

- General recovery within one year, except at a beach which was nourished twice in one summer.

Robinson, DP, L Zepp, and HM Shoudly. 2001. The Distribution of Shore Protection Benefits: A Preliminary Examination. U.S. Army Engineer Institute for Water Resources. Alexandria, VA.

- "Animal life on sandy beaches is generally well adapted to the dynamic environment of a littoral area."

- "Overall, the studies reviewed found that beach nourishment may result in the short-term loss of burrowing species due to smothering or abandonment. However study results also show that these infaunal populations (i.e. organisms living in sediments on the ocean floor) recover over a relatively short period of time, ranging from a few weeks, to a few months (NRC. 1995)"

- "…the New Jersey study, the most comprehensive long-term study available, supports the general finding that there are no long-term impacts on infaunal populations. …" The results of the monitoring indicated that these infaunal assemblages incurred only short-term declines in abundance, biomass, and diversity. The period of recovery lasted from only 2 to 6.5 months. Recovery periods at the upper end of this range generally occurred when beach nourishment activities were completed at the low point in the seasonal cycle of infaunal abundance. The New Jersey study concludes that monitoring results show no significant long-term impacts of beach nourishment activities on intertidal infaunal species.

USACE (Burlas et al). 2001. The New York District's Biological Monitoring Program for the Atlantic Coast of New Jersey, Asbury Park to Manasquan Section Beach Erosion Control Project. Final Report, US Army Corps of Engineers, Waterways Experiment Station, Vicksburg, MS, 11 chapters.

- Beach nourishment resulted in short-term declines in abundance, biomass, and taxa richness. Recovery of intertidal assemblages was complete within 2-6.5 months of the conclusion of filling. Differences in the rate of recovery were most likely due to differences in when nourishment was complete. Recovery was the quickest when filling was completed before the low point in the seasonal cycle of infaunal abundance. Recovery rates are similar to those reported from other studies, particularly where the grain size of the fill material matched that of the beaches to be nourished.

NRC. 1995. Beach Nourishment and Protection. Committee on Beach Nourishment and Protection, Marine Board, Commission on Engineering and Technical Systems, National Research Council; National Academy Press, National Academy of Sciences, Washington, DC, 334 pp.

- Provides a review of several studies regarding intertidal and subtidal impacts, with most studies showing generally rapid recovery (a few weeks to a few months).

Van Dolah, RF, PH Wendt, RM Martore, MV Levisen, and W Roumillat. 1992. A physical and biological monitoring study of the Hilton Head beach nourishment project. Final Report submitted to the Town of Hilton Head Island and the South Carolina Coastal Council. South Carolina Wildlife and Marine Resources Department, Charleston, SC.

- Declines in abundance and diversity were of short duration and "No drastic changes were observed in species composition or the relative abundance of major taxa at any of the nourished sites."

The theme with these studies is that the intertidal and subtidal benthic communities recover rapidly, usually within six (6) months. The main caveat mentioned in several of the studies is that the sediment quality must match the native beach. Where recovery took longer than six (6) months, usually the sediment contained more fine-grained or coarse-grained material or was a significantly different color.

It follows reason that the proposed project would have an impact less than or equal to those mentioned above. The referenced studies were conducted on various methods of nourishment construction, though they generally included nourishment via dredge. The reliance on dredging from nearshore or offshore environments leads to a higher likelihood that the sediment quality will not exactly match the native beach. Still, impacts were short-lived. The proposed project calls for transferring beach sand, eliminating any potential issues with sediment quality, and increasing the likelihood for faster recovery. There is also the potential for infauna to survive the transfer from the excavation area to the fill area. The Lankford et al (1988) study of a sand-transfer project reported recovery within days of project completion.

The project will impact only limited sections of beach, with likely fill and nourishment sections spanning ~1,500-2,000 ft with an unaltered gap in between. With such a limited impact area, recruitment of benthic invertebrates will be rapid, especially compared to typical nourishment projects spanning several miles.

It is also important to note that the proposed project area contains no critical habitat for endangered species. Monitoring of the level suggested should be reserved to very specific cases where direct impacts to endangered species are identifiable and of concern, and should focus on lesser understood environmental processes or impacts. At the level recommended, biological monitoring alone could represent as much as 50 percent of the construction costs of the proposed project. This is an excessive cost for an effort which will not produce significant new understanding of environmental impacts for improving beach management. The applicant recommends this condition be excluded from permit conditions.

Physical Monitoring

The resource agencies recommend quarterly physical monitoring of sediment characteristics and beach morphology. Regarding sediment characteristics, since the material used for fill comes from the active beach, it is unclear what benefit the analysis would have (unless used in conjunction with benthic monitoring). Percentages of fine-grained material and shell will remain the same, though a period of natural sorting will be required to produce the normal cross-shore sediment size structure (coarse-grained material in the most energetic zones, fine-grained material in the subtidal area). Several of the studies mentioned above cite recovery of native sediment structure within six (6) months using offshore resources. It only follows that recovery with the proposed project would be even more rapid.

Regarding physical monitoring, the applicant understands the complexity of the area and the importance of monitoring the beach, nearshore, and offshore zones. The City of Isle of Palms has committed to annual monitoring (and has set aside funding) regardless of the proposed project.

Shoal attachment behavior is well-documented and understood in the general sense, but the exact spatial and temporal behavior of shoal attachments cannot be predicted with a high degree of certainty. Shoal management projects will be used on an as-needed basis (within permitted conditions) in response to shoal attachment-induced erosion, and project performance expectations are not readily quantified.

The general expectation has been stated already and remains unchanged – shoal excavation and fill placement will mitigate shoal-induced erosion and speed shoal attachment. Since every shoal attachment is different, detailed measures of beach and nearshore dimensions (while interesting) are not very useful for evaluation or predictive purposes.

This complexity is what led to the flexibility sought in the permit application regarding exact locations and volumes of sand to be transferred and filled. The applicant suggests modifying the physical monitoring requirement to include (only) a pre-project, post-project, ~6 month post, and 1 year post monitoring events. This would add up to three additional monitoring events to the current annual

monitoring schedule (the 6 month or 1 year event would likely be incorporated into the regular annual island-wide monitoring). Monitoring in the additional events would be limited to the project area between the dune and low-tide-wading depth. The applicant feels this level of monitoring would suffice to determine immediate project impacts and would transition into the annual monitoring schedule the applicant currently operates.

The applicant agrees with the USFWS recommendations 2 and 3 regarding sand compaction and escarpment monitoring/leveling. However, a condition should include a provision that if an escarpment is present in areas adjacent to the project area (ie – the majority of the natural beach contains an escarpment due to a storm event), then the escarpment will not be required to be leveled.

Lighting Survey

While the applicant fully understands the importance of eliminating lighting visible from the beach, it is unclear how this recommendation relates to the project. The project will have no effect on present or future development and associated lighting. The City currently has a lighting ordinance which it enforces (Attachment A) and feels that, lacking a connection to the project, lighting concerns should be addressed outside of the present permit. As a courtesy, the City will make available reports or findings from enforcement efforts.

Other Comments and Concerns

The applicant had no intention of suggesting the permit extend beyond five years, as seems to be the assumption by the resource agencies. The applicant refines the permit application language to state: "No more than two sand transfer events, with a combined total of 500,000 cy, shall be authorized during a five-year period commencing on the date of permit issuance. All construction work authorized by this permit shall take place between November 1 and March 31." This language permits up to two transfer events, but allows more flexibility by not limiting the size of an event to 250,000 cy. It preserves the volume cap at 500,000 cy over five years. It limits construction to the period outside turtle nesting season.

NMFS comments that two studies cited by CSE are not relevant to the proposed project. One study discussed impacts to Folly Beach (SC) following nourishment and the other discussed impacts to beaches of New Jersey following nourishment. They are relevant to the proposed project in that both studies (as well as several others mentioned previously) found that impacts to the benthic community following nourishment are short-term (on the order of weeks to a few months). If recovery of a beach following large-scale nourishment using offshore borrow sources (where sediment quality would be less of a match than the present project) occurred rapidly, then one would expect recovery to be even more rapid with a much smaller scale project using native beach sand. NMFS states that the applicant intends "to repeat the process several times over 5 years," which is untrue. The permit application stated that the applicant prefers to do as few projects as possible (up to two in a five year period), with the hope that no project would actually be needed (which is why triggers were established).

The applicant has stated previously that shoal management offers a preferable alternative to large-scale beach restoration projects. It is clear that the resource agencies do not agree as they continue to suggest obtaining sand from outside of the system. They do not, however, explain how performing multiple projects using offshore sources would have less of an environmental impact than the proposed project. Offshore projects add sand to the system, but do not address the underlying cause of erosion at the project area (shoal-bypass events). Frequent nourishment events would be required which would have a greater impact to the native beach (due to larger volumes, more equipment, and sediment quality), as well as to offshore resources (due to "holes" left by offshore dredging).

We hope these comments help the USACE in their consideration of the project. The applicant is committed to protecting the beach and the environment, and is willing to take the necessary steps to ensure that any project will not have long-term detrimental effects. It is important, however, that protection measures are appropriate and of benefit to the local community as well as the scientific community. It is our opinion that several of the recommendations by USFWS, NMFS, and SCDNR fail to provide information which would significantly broaden the current knowledge base which supports beach management at Isle of Palms or elsewhere.

Please contact me if you have any questions regarding the above comments. We look forward to working with the Corps on this project.

Sincerely,

Coastal Science & Engineering (CSE)

Steven Traynum, MS

Attachments

References

CSE. 2009. Survey Report No 2 – 2006 east end erosion and beach restoration project, Kiawah Island (SC). Town of Kiawah Island, SC; Coastal Science & Engineering, Columbia, South Carolina, 50 pp + appendices.

CSE. 2011. Survey Report No 4 – 2006 east end erosion and beach restoration project, Kiawah Island (SC). Town of Kiawah Island, SC; CSE, Columbia, SC, 75 pp + appendices.

Attachment A

Sec. 5-4-17. Sea turtle protection; outdoor lighting regulations.

(a) Definitions. The following words, terms and phrases, when used in this section, shall have the meanings ascribed to them in this subsection, except where the context clearly indicates a different meaning:

(1) Artificial light means any source of light emanating from a manmade device, including, but not limited to, incandescent, mercury vapor, metal halide, or sodium lamps, flashlights, spotlights, streetlights, vehicular lights, construction or security lights.

(2) Floodlight means reflector-type light fixture which is attached directly to a building and which is unshielded.

(3) Low profile luminary means a light fixture set on a base which raises the source of the light no higher than forty-eight inches (48") off the ground, and designed in such a way that light is directed downward from a hooded light source.

(4) Development means any existing structure for which a building permit has been duly issued and any new construction or remodeling of existing structures when such remodeling includes alteration of exterior lighting.

(5) Person means any individual, firm, association, joint venture, partnership, estate, trust, syndicate, fiduciary, corporation, group or unit, or Federal, State, County or municipal government.

(6) Pole lighting means a light fixture set on a base or pole which raises the source of the light higher than forty-eight inches (48") off the ground.

(b) Development. No artificial light shall illuminate any area of the beach other than in compliance with this section. Building and electrical plans for construction of single-family or multifamily dwellings, commercial or other structures, including electrical plans associated with parking lots, dune walkovers or other outdoor lighting for real property if lighting associated with such construction or development can be seen from the beach, shall be in compliance with the following:

(1) Floodlights shall be prohibited. Wall-mounted light fixtures shall be fitted with hoods so that no light illuminates the beach.

(2) Pole lighting shall be shielded in such a way that the point sources of light will not be visible from the beach. Outdoor lighting shall be held to the minimum necessary for security and convenience.

(3) Low-profile luminaries shall be used in parking lots and such lighting shall be positioned so that no light illuminates the beach.

(4) Dune crosswalks shall utilize low-profile shielded luminaries which shall be turned off from sunset to sunrise during the period of May 1 to October 31 of each year.

(5) Temporary security lights at construction sites shall not be mounted more than fifteen feet (15') above the ground. Illumination from the lights shall not spread beyond the boundary of the property being developed and in no case shall those lights illuminate the beach.

(c) Use of lighting. It is the policy of the City for both new and existing development to minimize artificial light illuminating any area of the beach. To adhere to this policy, lighting of structures which can be seen from the beach shall be in compliance with the following:

(1) Lights illuminating buildings or associate grounds for decorative or recreational purposes shall be shielded or screened such that they are not visible from the beach, or turned off from sunset to sunrise during the period of May 1 to October 31 of each year.

(2) Lights illuminating dune crosswalks of any area oceanward of the primary dune line shall be turned off from sunset to sunrise during the period of May 1 to October 31 of each year.

(3) Security lights shall be permitted throughout the night so long as low-profile luminaries are used and screened in such a way that those lights do not illuminate the beach.

(d) Publicly owned lighting. Streetlights and lighting at parks and other publicly owned beach areas shall be subject to the following:

(1) Streetlights shall be located so that most of their illumination will be directed away from the beach. These lights shall be equipped with low-pressure sodium bulbs and shades or shields that will prevent backlighting and render them not visible from the beach.

(2) Lights at parks or other public beach access points shall be shielded or shaded or shall not be utilized during the period of May 1 to October 31 of each year.

(e) Enforcement and penalty. Violation of any provision is hereby declared to be a misdemeanor, punishable and enforceable pursuant to the provisions of section 1-3-66.

(Code 1994, § 5-4-17)

ATTACHMENT B

FINAL REPORT

BIOLOGICAL MONITORING OF BEACH SCRAPING AT PAWLEYS ISLAND, SOUTH CAROLINA

Prepared for:

Town of Pawleys Island
P.O. Box 1818
Pawleys Island, SC 29585

Prepared by:

Thomas E. Lankford
Bart J. Baca
Charles E. Nation

Coastal Science & Engineering, Inc.
P.O. Box 8056
Columbia, SC 29202

[CSE'88-89 R-02]
November 1988

EXECUTIVE SUMMARY

This report was prepared in connection with a 53,000 cubic yard (yd^3) beach scraping/nourishment project completed at Pawleys Island, South Carolina, in March 1988 under permit P/N 87-3T-377-P. Nourishment was a response to erosion caused by the 1987 New Year's Day storm. The project involved scraping sand from intertidal shoals at Midway Inlet and Pawleys Inlet to a maximum depth of -1.5 feet mean sea level (ft MSL). Sand was transferred to the southern 1.2 miles (2 km) of developed shoreline and to a northern area between 1st and 3rd Streets. Construction was accomplished using scraper pans to excavate and transport sand which was placed as an artificial berm/low dune along the upper beach. Typical fill volumes were 5 yd^3/ft.

Conditions on the permit included (1) preparation of a biological monitoring study and (2) schedule limitations to avoid construction during biologically productive months. The present study was prepared in response to this monitoring requirement under contract to the Town of Pawleys Island.

Primary objectives were to assess possible impacts of beach scraping/nourishment to nearshore benthic macroinvertebrate communities. Biological samples were taken at borrow, nourished, and control stations at periods before, immediately after, and 3.5 months following completion of nourishment activity. Benthic communities were characterized in terms of composition, species richness and diversity to facilitate comparisons between treatment sites. These communities were found to be similar in structure and species abundance to those described for other South Carolina outer sand beaches, with dominant organisms being coquinas (*Donax variabilis*), amphipods (Haustoriidae), and polychaete worms (primarily *Scolelepis squamata*).

Benthic macroinvertebrate populations exhibited a high degree of seasonal variation at all stations from January to July. This variation represented natural patterns of increased diversity and abundance which occur from winter to summer within this habitat. These patterns were not interrupted significantly by construction activities; organism abundances increased following nourishment in most cases. Exceptions were at MSL elevations within the borrow area where minor (statistically insignificant), short term reductions in species abundance occurred. Short term impacts were anticipated at these stations since MSL elevations were most heavily scraped. Importantly, analyses of postscraping sample data from the borrow area indicate that biological recovery occurred rapidly. Recolonization by littoral drift from

adjacent areas occurred on a time scale of tidal cycles rather than weeks or months. No impacts to benthic macroinvertebrates inhabiting nourished areas were detected. In fact, species numbers in these areas doubled following completion of nourishment as compared with prenourishment samples.

The authors attribute the lack of nourishment impacts on benthic communities at Pawleys Island to highly compatible fill material, small project size, and seasonal scheduling of the project. The results obtained appear favorable for future, infrequent scraping projects performed in similar habitats. The authors caution, however, that these results should not be applied to large scale scraping projects as organism losses and recovery times may increase considerably. It is also recommended that beach monitoring surveys be performed which provide quantitative data on the movement of nourishment material into intertidal habitats. Such surveys would provide useful information for correlating biological data with physical disturbances.

PROMOTE PROTECT PROSPER

C. Earl Hunter, Commissioner

Promoting and protecting the health of the public and the environment.

August 31, 2011

City of Isle of Palms
C/o Linda Tucker
P.O. Box 508
Isle of Palms, SC 29451

SEE SPECIAL CONDITION(S)

Re: **2010-1041-2IG**
City of Isle of Palms

Dear Ms. Tucker:

The SCDHEC Office of Ocean and Coastal Resource Management has reviewed your application to realign the beach in a shoal-attachment area on and adjacent to the Atlantic Ocean at a location limited to the area between 53rd Avenue and an existing groin near the 17th tee of the Links Course, on the northeastern end of the Isle of Palms, Charleston County, South Carolina, and has issued a permit for this work. You should carefully read any special conditions that have been placed on the permit, as these conditions will modify the permitted activity. In addition, there are a series of general conditions that should be reviewed. A copy of the permit, as issued, is enclosed. After carefully reading the permit, if you wish to accept the permit as issued, sign and date in the signature block entitled "PERMITTEE" on the original version of the permit **and return it to this Department. Keep the photocopy for your records.**

PLEASE READ CAREFULLY: You are required to sign and return the original version of your permit to this Department. If this permit is not signed and returned within thirty (30) days of issuance, *OR* appealed within 15 days as described on the enclosed "Notice of Appeal Procedure", the Department reserves the right to cancel this permit. Please carefully review the enclosed "Notice of Appeal Procedure" for information and deadlines for appealing this permit.

We have also enclosed a "request for a construction placard" card. You must send in this card before the time you wish to start construction. At that time a construction placard will be sent to you to post at the construction site.

PLEASE NOTE: You are not authorized to commence work under the permit until we have received the original version of the entire permit signed and accepted by you, and a construction placard has been issued and posted at the construction site. The receipt of this permit does not relieve you of the responsibility of acquiring any other federal or local permits that may be required.

Sincerely,

William C. Eiser /for
Steven Brooks
Senior Regulatory Project Manager
Regulatory Programs Division

Enclosure

Cc: Blair Williams, Wetland Section Manager
Steven Straynum, Coastal Science and Engineering

D H E C

PROMOTE PROTECT PROSPER

C. Earl Hunter, Commissioner

Promoting and protecting the health of the public and the environment

SEE SPECIAL CONDITION(S)

Notice of Appeal Procedure
Pursuant to S.C. Code Section 44-1-60

1. This decision of the S.C. Department of Health and Environmental Control (Department) becomes the final agency decision 15 calendar days after notice of the decision has been mailed to the applicant or respondent, unless a written request for final review accompanied by a filing fee in the amount of $100 is filed with the Department by the applicant, permittee, licensee, or affected person.

2. An applicant, permittee, licensee, or affected person who wishes to appeal this decision must file a timely written request for final review with the Clerk of the Board at the following address or by facsimile at 803-898-3393. A filing fee in the amount of $100 made payable to SC DHEC must also be received by the Clerk within the time allowed for filing a request for final review. However, if a request for final review is filed by facsimile, the filing fee may be mailed to the Clerk of the Board if the envelope is postmarked within the time allowed for filing a request for final review.

   Clerk of the Board
   SC DHEC
   2600 Bull Street
   Columbia, SC 29201

3. In order to be timely, a request for final review must be received by the Clerk of the Board within 15 calendar days after notice of the decision has been mailed to the applicant or respondent. If the 15th day occurs on a weekend or State holiday, the request is due to be received by the Clerk of the Board on the next working day. The request for final review must be received by the Clerk of the Board by 5:00 p.m. on the date it is due. A request for final review will be returned to the requestor if the filing fee is not received on time as described above.

4. The request for final review should include the following:
   a. the grounds on which the Department's decision is challenged and the specific changes sought in the decision
   b. a statement of any significant issues or factors the Board should consider in deciding whether to conduct a final review conference
   c. a copy of the Department's decision for which review is requested

5. If a timely request for final review is filed with the Clerk of the Board, the Clerk will provide additional information regarding procedures. If the Board declines in writing to schedule a final review conference, the Department's decision becomes the final agency decision and an applicant, permittee, licensee, or affected person may request a contested case hearing before the Administrative Law Court within 30 calendar days after notice is mailed that the Board declined to hold a final review conference.

The above information is provided as a courtesy; parties are responsible for complying with all applicable legal requirements.

July 1, 2010

D H E C

PROMOTE PROTECT PROSPER

C. Earl Hunter, Commissioner

Promoting and protecting the health of the public and the environment.

CRITICAL AREA & WATER QUALITY CERTIFICATION PERMIT

Permittee: **City of Isle of Palms**

Permit Number: **2010-1041-2IG**

Date of Issuance: **August 31, 2011**

Expiration Date: **August 31, 2016**

SEE SPECIAL CONDITION(S)

Location: **On and adjacent to the Atlantic Ocean at a location limited to the area between 53rd Avenue and an existing groin near the 17th tee of the Links Course, on the northeastern end of the Isle of Palms, Charleston County, South Carolina**

This permit/certification is issued under the provisions of 25A S.C. Code Ann. Regs. 61-101 (Supp. 2005), *et seq.*, and 23A S.C. Code Ann. Regs. 30-1 through 30-18 (Supp. 2005). Additionally, as required by R.61-101, Department staff have reviewed plans for this project and determined there is a reasonable assurance the project will be conducted in a manner consistent with Certification requirements of Section 401 of the Clean Water Act. We also certify that this project, subject to the indicated conditions, is consistent with applicable provisions of Section 303 of the Clean Water Act, as amended, that there are no applicable effluent limitations under Sections 301(b) and 302, and that there are no applicable standards under Sections 306 and 307.

This permit contains required certification pursuant to Section 401 of the Clean Water Act. Work may not commence under this permit until thirty (30) days after final signature by an OCRM official. PLEASE CAREFULLY READ THE ENCLOSED "NOTICE OF APPEAL PROCEDURE."

Please carefully read the project description and any special conditions, which may appear on this permit/certification, as they will affect the work that is allowed. If there are no special conditions, then the work is authorized as described in the project description and as modified by general conditions. The general conditions are also a part of this permit/certification and should be read in their entirety. The S. C. Contractor's Licensing Act of 1999, enacted as Section 40-11-5 through 430, requires that all construction with a total cost of $5,000 or more be performed by a licensed contractor with a valid contractor's license for marine class construction, except for construction performed by a private landowner for strictly private purposes. Your signature on and acceptance of this permit denotes your understanding of the stated law regarding use of licensed contractors. **All listed special and general conditions will remain in effect for the life of the project if work commences during the life of the permit. This applies to permittee, future property owners, or permit assignees.**

DESCRIPTION OF THE PROJECT, AS AUTHORIZED

The proposed work consists of periodic realignment of the beach in shoal-attachment areas as part of a long-term shoal management plan. Up to 300,000 cubic yards (CY) may need to be transferred during any given shoal management event, to sufficiently reduce the impact of an attaching shoal on adjacent areas. The actual shoal management event frequency and quantity of sand to be transferred will depend on the condition of the beach in both the fill and excavation areas, as well as the predicted impacts of developing bypass events. The condition of the beach, as surveyed in March 2010, indicates up to 200,000 CY

should be transferred from the accretion area to eroded areas to maintain the desired beach condition. This quantity, as well as the exact limits of the work, will be refined by another survey prior to commencement of the work, due to the rapidity of shoreline changes associated with shoal-bypass events. Excavations will be performed via hydraulic hoes or scraper pans, depending on contractor's preference, and will begin at the seaward most accessible portion of the beach. Excavation in the shallow, underwater portion of the beach will allow for incoming sand to rapidly fill any low areas created by the excavation. it will also limit the amount of dry beach utilized in the transfer. Excavation depths will be limited to a specified elevation, likely -6 ft NAVD (-3.0 ft MLLW), unless otherwise specified by resource agencies. Sand will be transferred by off-road trucks or equivalent, operating on the low-tide beach. Fill volume in areas receiving sand will vary depending on beach condition at the time of the project. In the area currently showing focused erosion (in the vicinity of Seascape and Beach Club Villas), the March 2010 condition showed approx. 40 cubic yards per foot (cy/ft) less volume than the March 2009 condition and -80 cy/ft less volume than the July 2008 condition (post-nourishment). In the current configuration, the shoal-management project would restore the quantity of sand in these areas to near post-nourishment condition, which would align the beach in a more stable configuration by reducing the "bulge" currently present in the accretion area. Fill will be placed in the form of a berm of variable width at the natural dry-sand beach level (approximately +6 ft NAVD). The seaward edge of the fill will be sloped in the offshore direction generally on 1 on 20 slope to the existing beach. It is anticipated that each shoal management event will be accomplished in less than two calendar months. A buffer distance from the existing building line will be established to ensure a sufficient volume of sand remains landward of the borrow area to provide habitat, recreational area, and storm protection. Analysis of beach profiles dating to the 1980s confirms that a 400-ft buffer distance is appropriate for this region of Isle of Palms. This buffer would allow for approximately one-year's worth of the maximum observed historical erosion, and would still leave sufficient beach volume for a healthy beach (ie. - typical Isle of Palms beach width and volume in the absence of shoal attachment effects). It is unlikely that erosion in the shoal attachment area would exceed that which is predicted using the maximum historical erosion rate over any one-year period. A project would only be undertaken if the beach condition reached a pre-established "trigger." This trigger would be the distance from the +5 ft NAVD contour (approximate normal high-tide swash line) to the building line (Sheet 07). The applicant proposes a trigger of 100 ft, with consideration given to the time of year, permitted construction window, and expected future shoreline trends (i.e. - the stage of the shoal attachment process which signals whether an increase in erosion would likely occur in the project area). The City of the Isle of Palms has established an ongoing beach monitoring program to document sand volumes along the entire beach. Pre- and post-project surveys of the beach and offshore area in the project vicinity will be performed to verify sand volumes, beach condition, shoreline change trends; to identify the position of the +5 ft contour relative to the building line; and to monitor the scale and anticipated movements of offshore and near shore shoals.

The overall purpose of the proposed work is to maintain beach habitat, recreation area, and storm protection by redistributing incoming sand from inlet shoal-bypass events. Such redistribution is necessary to mitigate significant localized erosion which accompanies these events. The specific goals of the project are to:

1) Reduce the potential for erosion to reach a point where no dry beach remains.
2) Reduce or eliminate the need for emergency sandbagging during shoal bypass events.
3) Maintain nesting habitat for turtles.
4) Facilitate dune growth improving habitat and storm protection.
5) Maintain recreational, dry-beach area during all stages of the tide.

It is the applicant's goal to perform sand redistribution as infrequently as practicable so as to leave the project area undisturbed as long as possible between events, while still maintaining habitat, protecting, and recreation area. During any given five-year period of the permit, it is anticipated that no more than 500,000 cubic yards would be transferred. It is the applicant's preference to do fewer large scale transfers

(e.g. - two events totaling up to approx. 250,000 cy each) rather than a series of small, annual events, (e.g. - four events totaling approx. 125,000 cy each). Further, the applicant desires to perform the work during winter when biological impacts are expected to be lessened. Sand redistribution events involving - approx. 250,000 CY can be accomplished in less than two months. Previous experience indicates the beach profile in the borrow and fill areas equilibrates rapidly. Winter construction would also be timed for dune planting and to avoid turtle nesting season.

With regard to mitigation, the applicant states that "The proposed project follows a 2008 beach re-nourishment project in the area, which added approx. 885,000 CY of sand to the beach. The project restored - 10,200 linear ft of beach, much of which had little or no dry beach present. The condition of the beach was severe enough to lead resource agencies suggesting summer construction of the project. Nourishment created approx. 58.5 acres of dry beach habitat (CSE 2008). Following the project, the City and community of Wild Dunes arranged for sand fencing and vegetative plantings, which have contributed to significant dune growth seaward of the building line. The current project seeks to maintain the habitat created from that project and to avoid potential environmentally damaging conditions associated with severe erosion into a developed area. The project is thought to be sensitive in that it will expedite an already occurring natural process. No estuarine or freshwater wetlands will be impacted during the project. Sand from shoals which are already attached to the beach and accessible by land based equipment (i.e., not offshore or emergent shoals) will be transferred from one area to another. By protecting dune and dry beach habitat, the City of Isle of Palms considers the proposed project beneficial to the natural resources present at the northeast end of the island, and feels further mitigation efforts are not warranted. In addition, the City has committed to an extensive beach monitoring program as part of its long-term beach management plan. The monitoring plan involved detailed surveys of the beach condition, dune growth, inlet channels, ebb-tidal deltas, and sediment quality. The surveys of the ebb tidal deltas of Dewees Inlet and Breach Inlet represent some of the most detailed (temporarily and spatially) surveys of ebb-tidal deltas in South Carolina ever conducted. They show the movements of channels and shoals, and are currently being used to predict how they will impact the adjacent beach in the near future. The changes in the inlet delta shown by the surveys, and experience in similar events at Isle of Palms, are the justification of the proposed project. Without redistributing the sand as it attaches to the beach, significant dry beach and dune habitat will rapidly be lost, leading to a condition similar to what was present between 2004 and 2008 which led to the nourishment project."

CRITICAL AREA PERMIT SPECIAL CONDITIONS

1. Provided it is understood that the DHEC-Bureau of Water (BOW) 401 water quality certification is waived (see Attachment A).

2. Provided the permittee demonstrate by a stamped and signed survey and pictorial documentation that the building line is 100' or less away from the +5 ft NAVD contour line (approximate normal high tide swash line). This must be done before a construction placard can be issued.

3. Provided that surveys of the shoal borrow area are conducted immediately following excavation and again one year later, to document the initial post-project configuration and evaluate any significant change after one year.

4. Provided that no work can be performed during the i.e.-laying portion of turtle nesting season (May 1–August 15). Any work performed during the i.e.-hatching portion of turtle nesting season (August 16-October 31) must be coordinated with the local Isle of Palms turtle nest patrol, to avoid any impacts to turtle nests in the work area. No work can be performed at night during the August 16-October 31 time period.

SEE SPECIAL CONDITION(S)

5. Provided all necessary measures must be taken to prevent oil, tar, trash, debris, and other pollutants from entering the adjacent waters or wetlands.

6. Provided that in order to minimize the amount of fines settling in the area and hasten the overall recovery, excavation and/or dredging should be conducted in a manner to insure that the underlying mud bottoms are not disturbed.

7. Provided that during the turtle nesting season, construction equipment and materials must be stored in a manner that will minimize impacts to sea turtles to maximum extent possible.

8. Provided that during May, June, and July, lighting associated with project must be minimized to reduce the possibility of disrupting or disorienting nesting and/or hatchling sea turtles.

9. Provided the project must be constructed and maintained according to the natural slope of the beach.

10. Provided that in the event that archaeological or paleontological remains are found during the course of work, the applicant should notify the South Carolina Institute of Archaeology and Anthropology (Mr. James Spirek at 803-777-8170) pursuant to South Carolina Underwater Antiquities Act of 1991, (Article 5 Chapter 7, Title 54, Code of Laws of South Carolina, 1976). Archaeological remains consist of any materials made or altered by man, which remain from past historic or prehistoric times (ie, older than 50 years). Examples include old pottery fragments, metal, wood, arrowheads, stone implements or tools, human burials, historic docks, structures, or non-recent vessel remains. Paleontological remains consist of old animal remains, original or fossilized, such as teeth, tusks, bone, or entire skeletons.

SEE SPECIAL CONDITION(S)

PERMITTEE'S ATTENTION IS DIRECTED TO GENERAL CONDITIONS NUMBERS FOUR (4) AND (5), BY ACCEPTANCE OF THIS PERMIT, PERMITTEE IS PLACED ON NOTICE THAT THE STATE OF SOUTH CAROLINA, BY ISSUING THIS PERMIT, DOES NOT WAIVE ITS RIGHTS TO REQUIRE PAYMENT OF A REASONABLE FEE FOR USE OF STATE LANDS AT A FUTURE DATE IF SO DIRECTED BY STATUTE.

THE PERMITTEE, BY ACCEPTANCE OF THIS PERMIT, AGREES TO ABIDE BY THE TERMS AND CONDITIONS CONTAINED HEREIN AND TO PERFORM THE WORK IN STRICT ACCORDANCE WITH THE PLANS AND SPECIFICATIONS ATTACHED HERETO AND MADE A PART HEREOF. ANY DEVIATION FROM THESE CONDITIONS, TERMS, PLANS AND SPECIFICATIONS SHALL BE GROUNDS FOR REVOCATION, SUSPENSION OR MODIFICATION OF THIS PERMIT AND THE INSTITUTION OF SUCH LEGAL PROCEEDINGS AS THE DEPARTMENT MAY CONSIDER APPROPRIATE.

2010-1041-2IG

Your signature below, as permittee, indicates that you accept and agree to comply with the terms and conditions of this permit.

(PERMITTEE) City Administrator (DATE) 9/9/2011
City of Isle of Palms

This permit becomes effective when the State official, designated to act for the Office of Ocean and Coastal Resource Management, has signed below.

(WETLAND SECTION PROJECT MANAGER) (DATE) 8/31/2011
Steven Brooks
or his Designee Other Authorized State Official

SEE SPECIAL CONDITION(S)

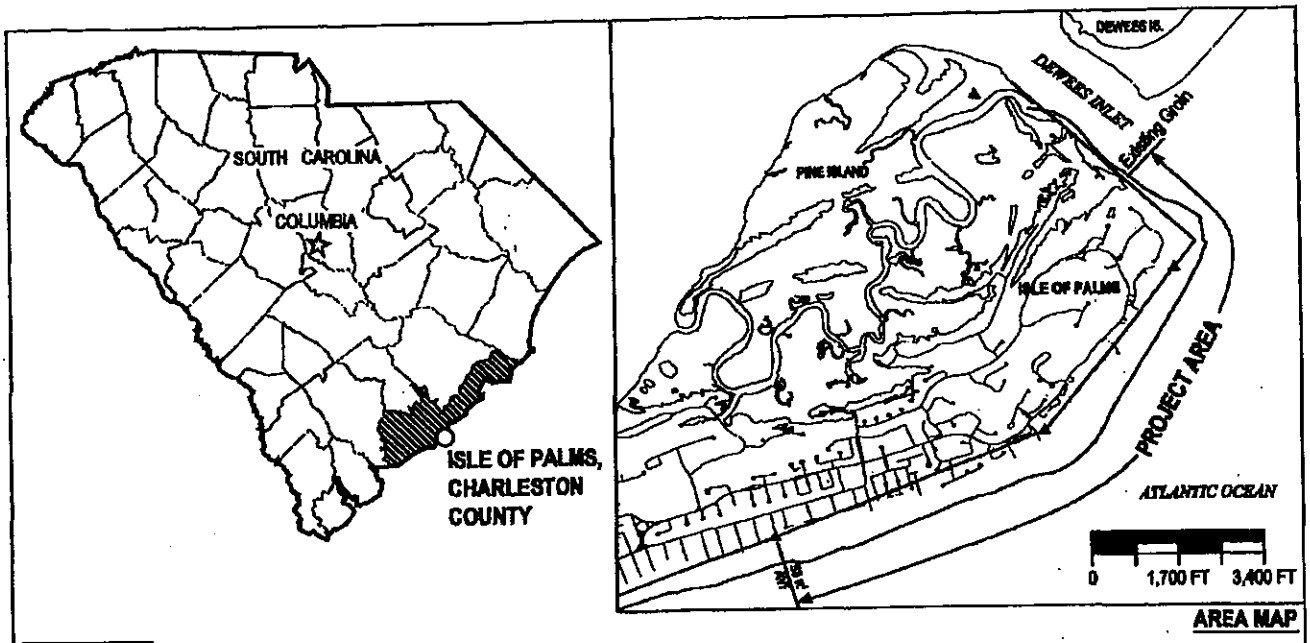
GENERAL CONDITIONS:

This construction and use permit is expressly contingent upon the following conditions which are binding on the permittee:

1. That the permittee, in accepting this permit, covenants and agrees to comply with and abide by the provisions and conditions herein and assumes all responsibility and liability and agrees to save OCRM and the State of South Carolina, its employees or representatives, harmless from all claims of damage arising out of operations conducted pursuant to this permit.
2. That if the activity authorized herein is not constructed or completed within five years of the date of issuance, this permit shall automatically expire. A request, in writing, for an extension of time shall be made not less than thirty days prior to the expiration date.
3. That all authorized work shall be conducted in a manner that minimizes any adverse impact on fish, wildlife and water quality.
4. That this permit does not relieve the permittee from the requirements of obtaining a permit from the U. S. Army Corps of Engineers or any other applicable federal agency, nor from the necessity of complying with all applicable local laws, ordinances, and zoning regulations. This permit is granted subject to the rights of the State of South Carolina in the navigable waters and shall be subject, further, to all rights held by the State of South Carolina under the public trust doctrine as well as any other right the State may have in the waters and submerged lands of the coast.
5. That this permit does not convey, expressly or impliedly, any property rights in real estate or material nor any exclusive privileges; nor does it authorize the permittee to alienate, diminish, infringe upon or otherwise restrict the property rights of any other person or the public; nor shall this permit be interpreted as appropriating public properties for private use.
6. That the permittee shall permit OCRM or its authorized agents or representatives to make periodic inspections at any time deemed necessary in order to ensure that the activity being performed is in accordance with the terms and conditions of this permit.
7. That any abandonment of the permitted activity will require restoration of the area to a satisfactory condition as determined by OCRM.
8. That this permit may not be transferred to a third party without prior written notice to OCRM, either by the transferee's written agreement to comply with all terms and conditions of this permit or by the transferee subscribing to this permit and thereby agreeing to comply.
9. That if the display of lights and signals on any structure or work authorized herein is not otherwise provided for by law, such lights and special signals as may be prescribed by the United States Coast Guard shall be installed and maintained by and at the expense of the permittee.
10. That the permit construction placard or a copy of the placard shall be posted in a conspicuous place at the project site during the entire period of work.
11. That the structure or work authorized herein shall be in accordance with the plans and drawing attached hereto, and shall be maintained in good condition. Failure to build in accordance with the plans and drawings attached hereto, or failure to maintain the structure in good condition, shall result in the revocation of this permit.
12. That the authorization for activities or structures herein constitutes a revocable license. OCRM may require the permittee to modify activities or remove structures authorized herein if it is determined by OCRM that such activity or structures violates the public's health, safety, or welfare, or if any activity is inconsistent with the public trust doctrine. Modification or removal under this condition shall be ordered only after reasonable notice stating the reasons therefore and provision to the permittee of the opportunity to respond in writing. When the Permittee is notified that OCRM intends to revoke the permit, Permittee agrees to immediately stop work pending resolution of the revocation.
13. That OCRM shall have the right to revoke, suspend, or modify this permit in the event it is determined the permitted structure (1) significantly impacts the public health, safety and welfare, and/or is violation of Section 48-39-150, (2) adversely impacts public rights, (3) that the information and data which the permittee or any other agencies have provided in connection with the permit application is either false, incomplete or inaccurate, or (4) that the activity is not in compliance with the drawings submitted by the applicant. That the permittee, upon receipt of OCRM's written intent to revoke, suspend, or modify the permit has the right to a hearing. Prior to revocation, suspension, or modification of this permit, OCRM shall provide written notification of intent to revoke to the permittee, and permittee can respond with a written explanation to OCRM. (South Carolina Code Section 1-023-370 shall govern the procedure for revocation, suspension or modification herein described).
14. That any modification, suspension or revocation of this permit shall not be the basis of any claim for damages against OCRM or the State of South Carolina or any employee, agent, or representative of OCRM or the State of South Carolina.
15. That all activities authorized herein shall, if they involve a discharge or deposit into navigable waters or ocean waters, be at all times consistent with all applicable water quality standards, effluent limitations and standards of performance, prohibitions, and pretreatment standards established pursuant to applicable federal, state and local laws.
16. That extreme care shall be exercised to prevent any adverse or undesirable effects from this work on the property of others. This permit authorizes no invasion of adjacent private property, and OCRM assumes no responsibility or liability from any claims of damage arising out of any operations conducted by the permittee pursuant to this permit.

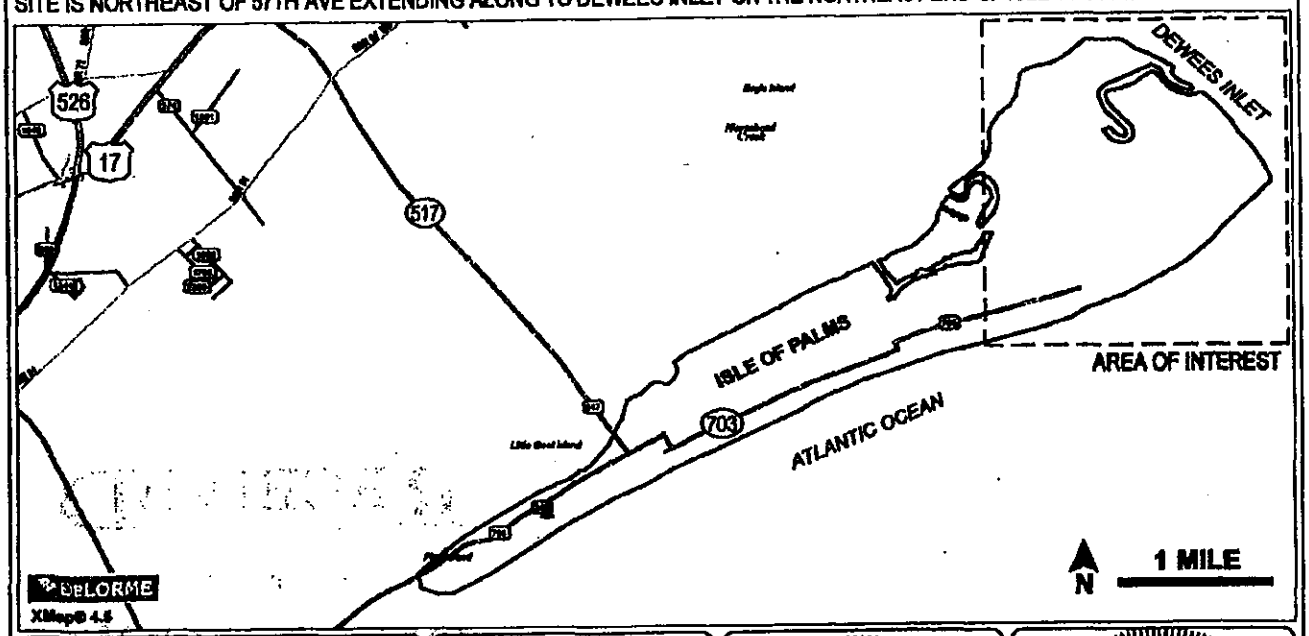
SEE SPECIAL CONDITION(S)

SEE SPECIAL CONDITION(S)



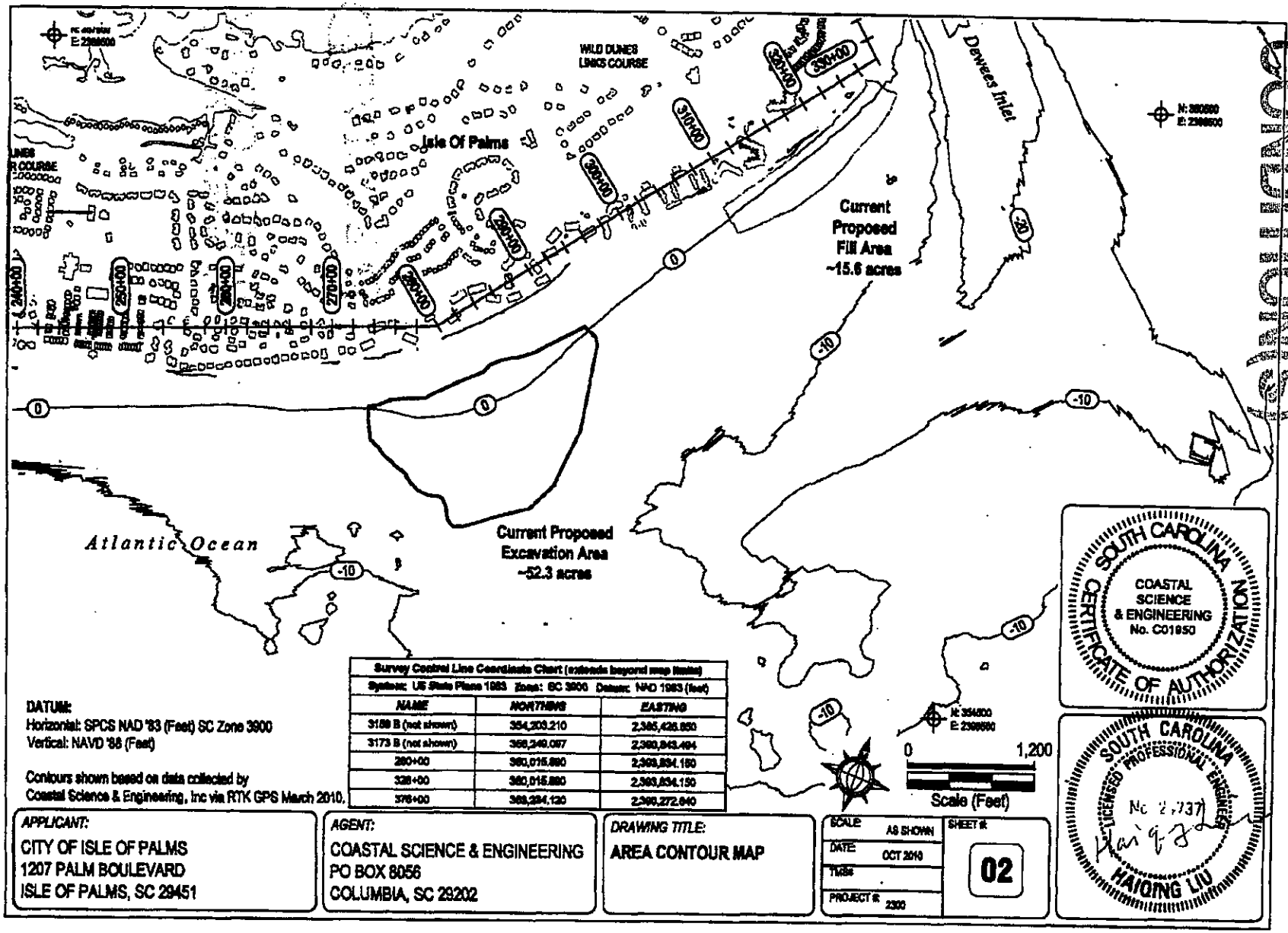
AREA MAP

DIRECTIONS:
FROM CHARLESTON, TAKE US-17 NORTH. TURN RIGHT ONTO SC 517 (ISLE OF PALMS CONNECTOR). TURN LEFT ONTO PALM BLVD. SITE IS NORTHEAST OF 57TH AVE EXTENDING ALONG TO DEWEES INLET ON THE NORTHEAST END OF ISLE OF PALMS.



APPLICANT: CITY OF ISLE OF PALMS PO DRAWER 508 ISLE OF PALMS SC 29451	DRAWING TITLE: VICINITY MAP	SOUTH CAROLINA COASTAL SCIENCE & ENGINEERING No. C01950 CERTIFICATE OF AUTHORIZATION	SOUTH CAROLINA PROFESSIONAL ENGINEER No. 24737 HAIQING LIU
AGENT: COASTAL SCIENCE & ENGINEERING PO BOX 8056 COLUMBIA, SC 29202	SCALE: AS SHOWN DATE: OCT 2010 TIME: PROJECT #: 2360 SHEET #: 01		

SEE SPECIAL CONDITIONS



Survey Control Line Coordinate Chart (extends beyond map limits)		
System: US State Plane 1983 Zone: SC 3900 Datum: NAD 1983 (feet)		
NAME	NORTHING	EASTING
3189 B (not shown)	354,203.210	2,385,426.850
3173 B (not shown)	358,240.057	2,380,843.464
260+00	360,015.880	2,383,834.150
328+00	360,015.880	2,383,834.150
376+00	369,284.120	2,390,272.640

DATUM:
Horizontal: SPCS NAD '83 (Feet) SC Zone 3900
Vertical: NAVD '88 (Feet)

Contours shown based on data collected by Coastal Science & Engineering, Inc via RTK GPS March 2010.

SOUTH CAROLINA COASTAL SCIENCE & ENGINEERING No. C01950 CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA PROFESSIONAL ENGINEER LICENSED No. 27737 HAIQING LIU

APPLICANT:	AGENT:	DRAWING TITLE:	SCALE: AS SHOWN	SHEET #:
CITY OF ISLE OF PALMS 1207 PALM BOULEVARD ISLE OF PALMS, SC 29451	COASTAL SCIENCE & ENGINEERING PO BOX 8056 COLUMBIA, SC 29202	AREA CONTOUR MAP	DATE: OCT 2010 TIME: PROJECT #: 2300	02

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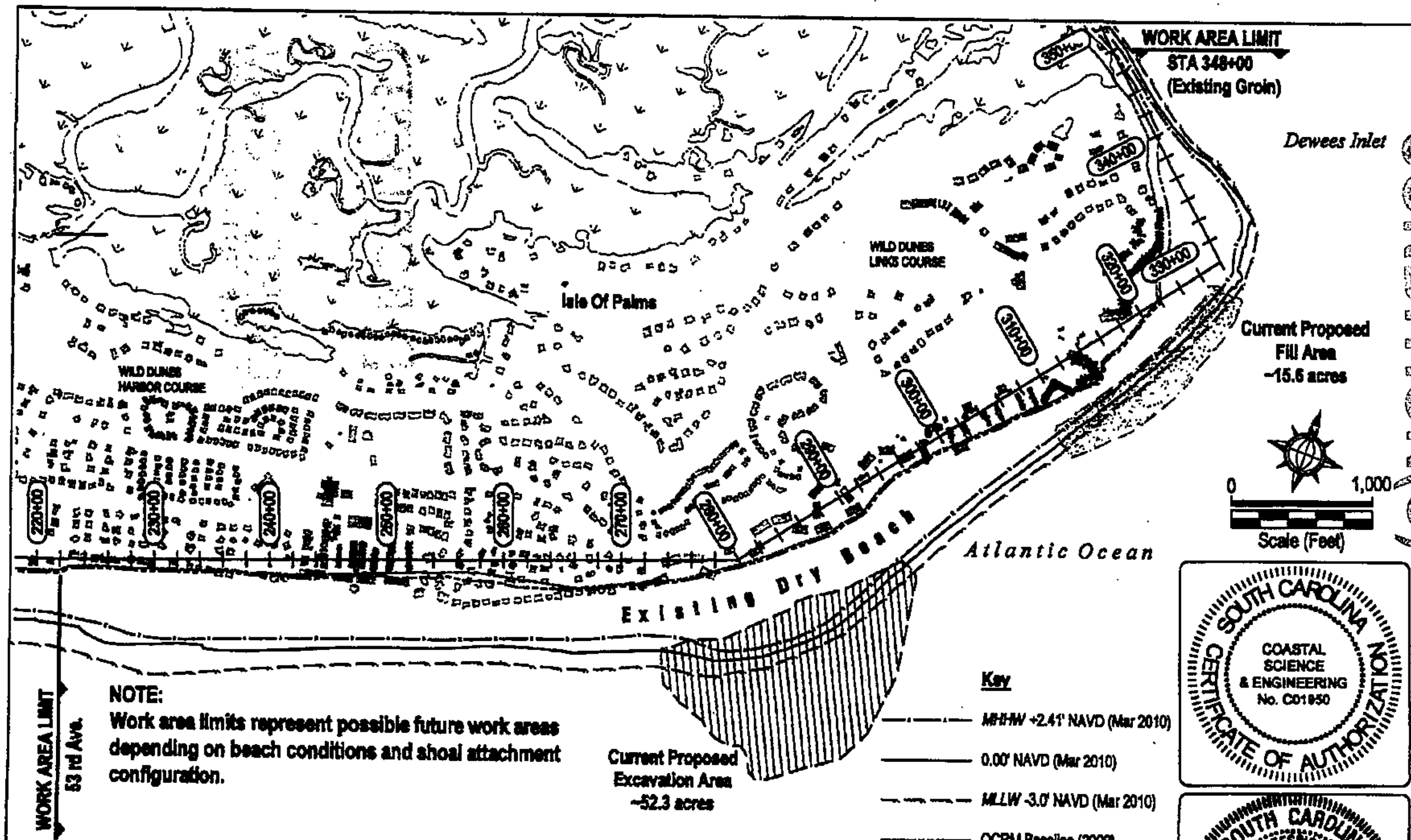
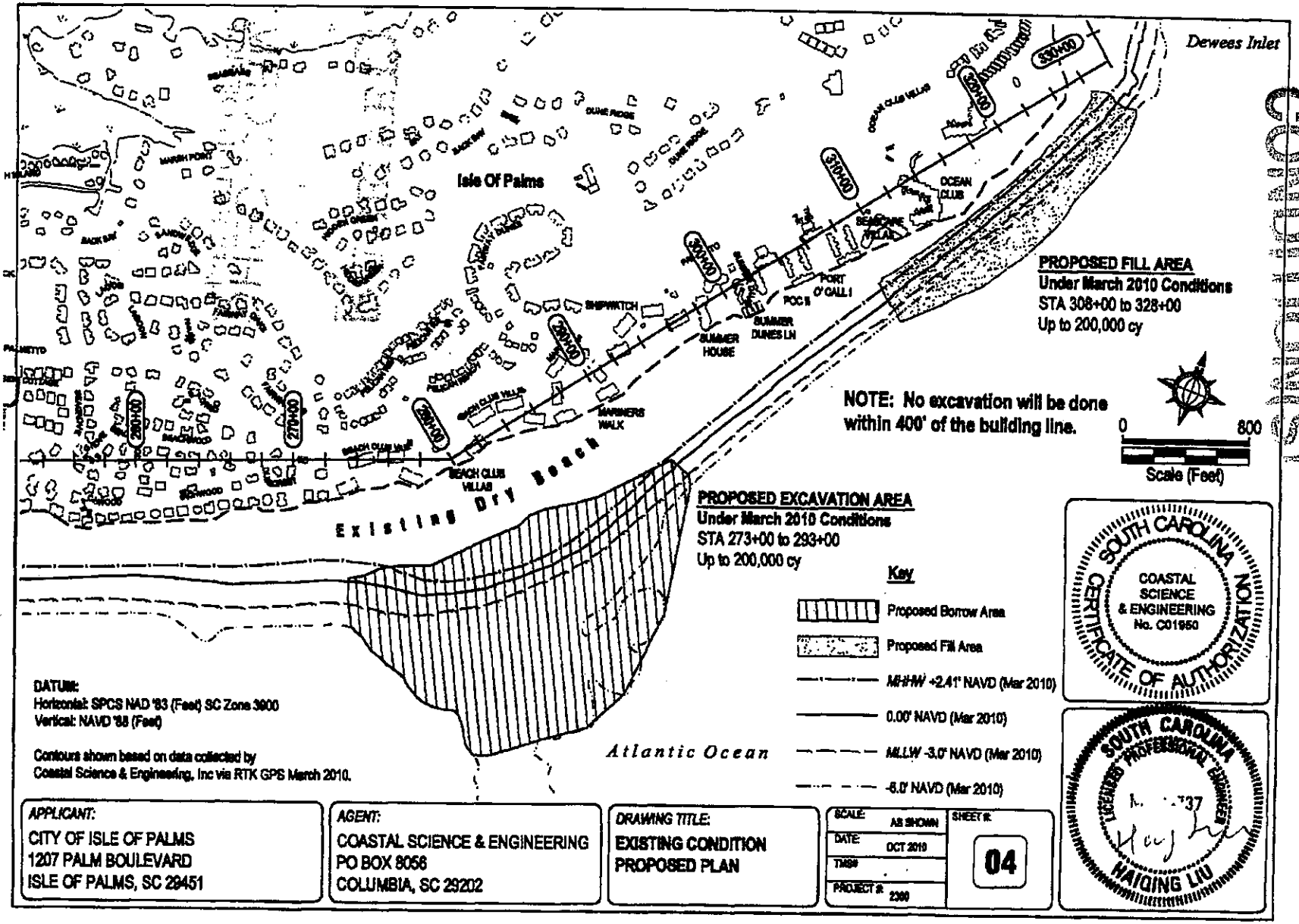
SEE SPECIAL CONDITION(S)



NOTE:
Work area limits represent possible future work areas depending on beach conditions and shoal attachment configuration.

Contours shown based on data collected by Coastal Science & Engineering, Inc via RTK GPS March 2010.

APPLICANT:	AGENT:	DRAWING TITLE:		
CITY OF ISLE OF PALMS 1207 PALM BOULEVARD ISLE OF PALMS, SC 29451	COASTAL SCIENCE & ENGINEERING PO BOX 8056 COLUMBIA, SC 29202	OVERALL WORK PLAN	SCALE: AS SHOWN DATE: OCT 2010 TMS#: PROJECT #: 2300	SHEET #: 03



SEE SPECIAL CONDITIONS

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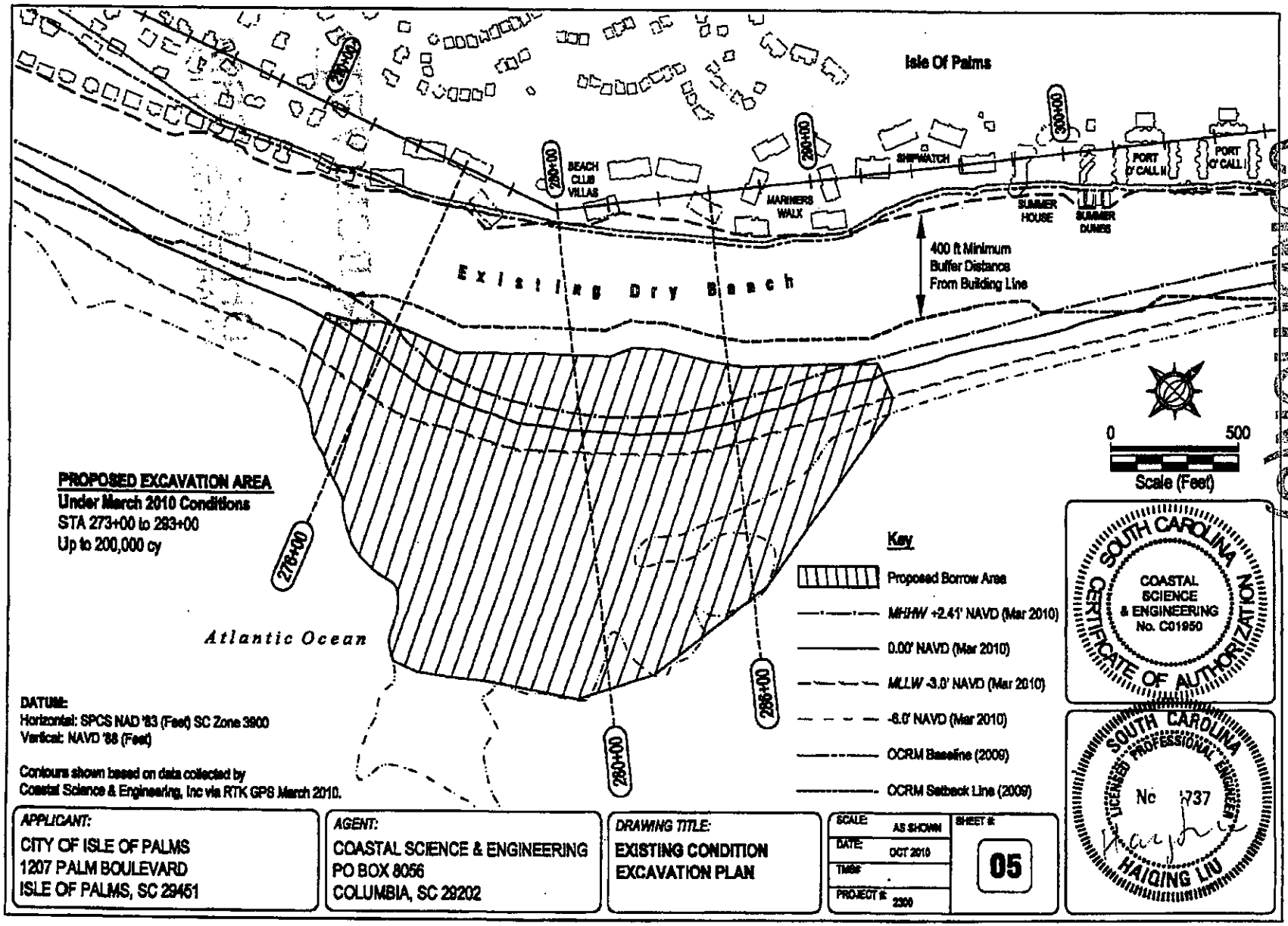
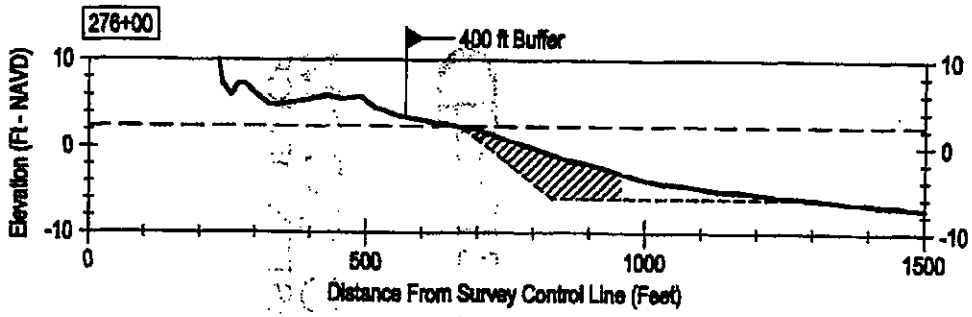
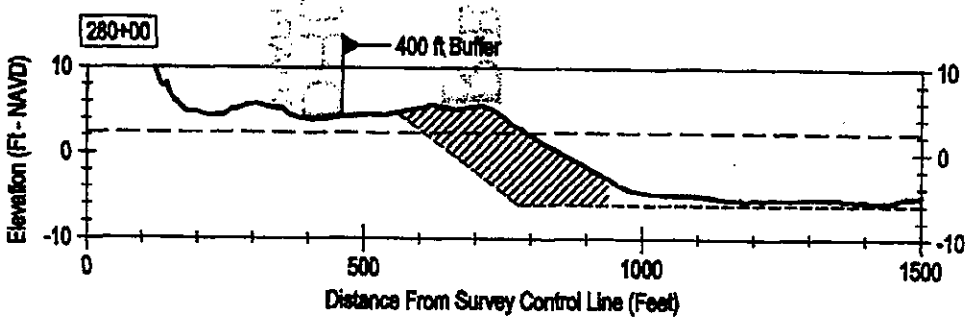


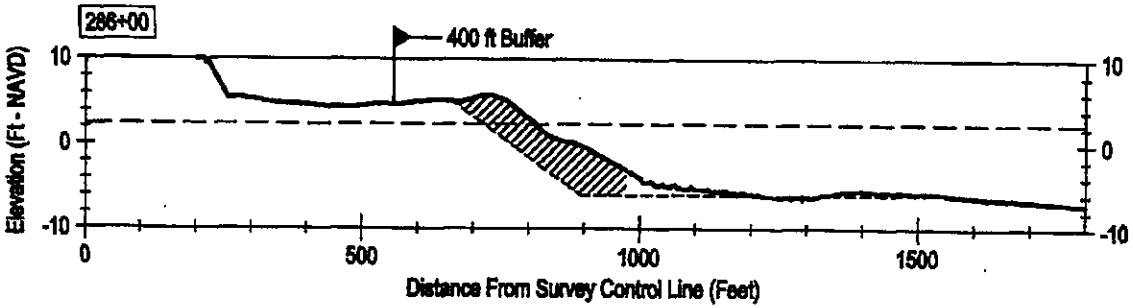
SEE SPECIAL CONDITIONS

11 of 14

SEE SPECIAL CONDITIONS







Key

- Existing Profile (March 2010)
- Proposed Excavation Profile
- *MHW* +2.41' NAVD (Mar 2010)
- *MLW* -3.0' NAVD (Mar 2010)

DATUM (feet):
Horizontal: SPCS NAD '83 SC Zone 3900
Vertical: NAVD '88 (Feet)
Vertical Exaggeration: 15

Finished Slope Will Be ~ 1 on 20

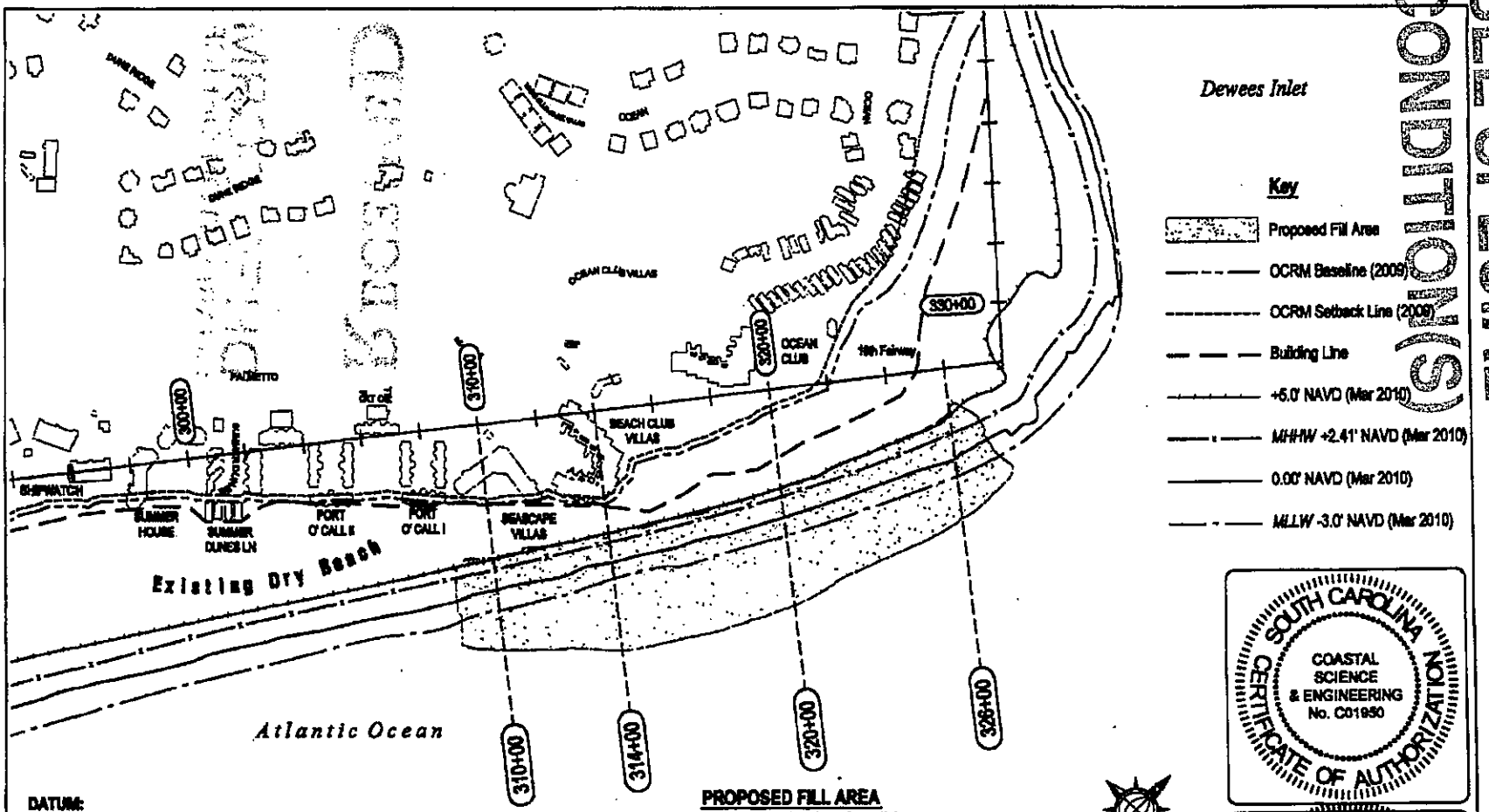
SOUTH CAROLINA COASTAL SCIENCE & ENGINEERING No. C01860 CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA LICENSED PROFESSIONAL ENGINEER No. 24737 HAIQING LIU

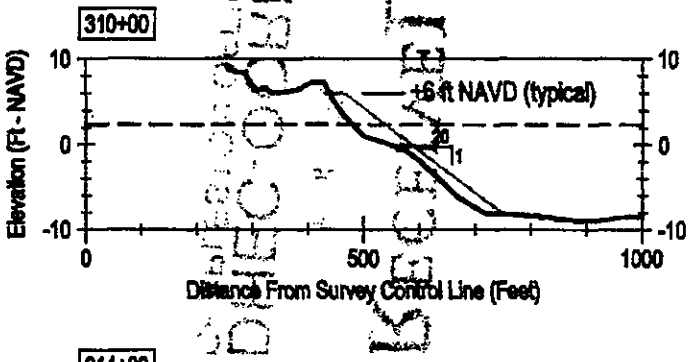
APPLICANT: CITY OF ISLE OF PALMS 1207 PALM BOULEVARD ISLE OF PALMS, SC 29451	*AGENT:* COASTAL SCIENCE & ENGINEERING PO BOX 8056 COLUMBIA, SC 29202	*DRAWING TITLE:* EXCAVATION PLAN TYPICAL SECTIONS	SCALE: AS SHOWN DATE: OCT 2010 TMB# PROJECT #: 2300	SHEET #: 06

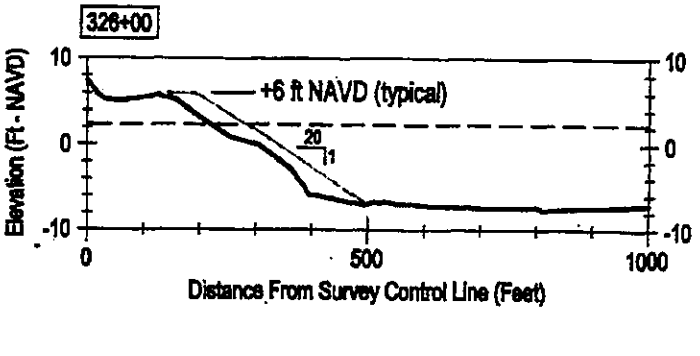
12 of 14

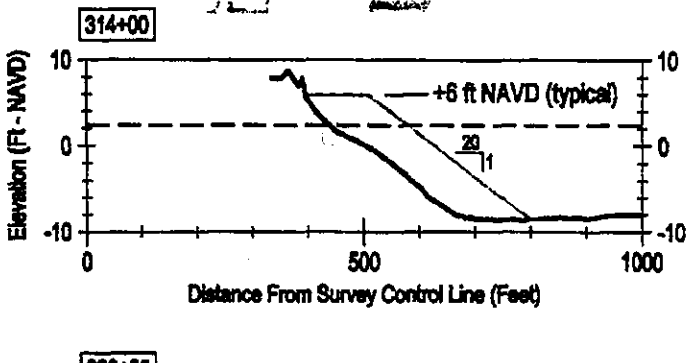
SEE SPECIAL CONDITIONS

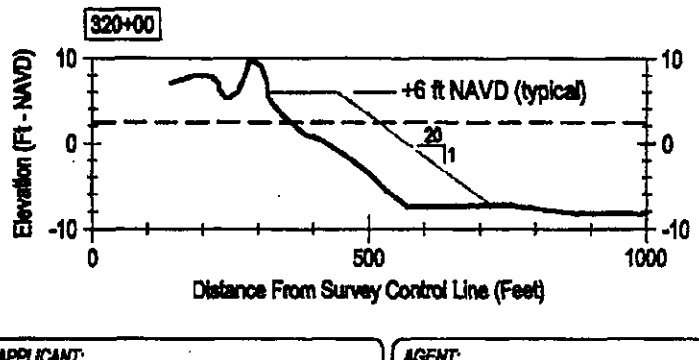


13 of 14









Note: Sections will vary according to conditions at the time of each beach management event.

Key

- Existing Profile (March 2010)
- Proposed Fill Profile
- *MHHW* +2.41' NAVD (Mar 2010)
- *MLLW* -3.0' NAVD (Mar 2010)

DATUM (feet):
Horizontal: SPCS NAD '83 SC Zone 3900
Vertical: NAVD '88 (Feet)
Vertical Exaggeration: 15
Finish slope 1 on 20

SOUTH CAROLINA COASTAL SCIENCE & ENGINEERING No. C01950 CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA LICENSED PROFESSIONAL ENGINEER No. 24737 HAIQING LIU

APPLICANT:	AGENT:	DRAWING TITLE:	SCALE: AS SHOWN	SHEET #:
CITY OF ISLE OF PALMS 1207 PALM BOULEVARD ISLE OF PALMS, SC 29451	COASTAL SCIENCE & ENGINEERING PO BOX 8056 COLUMBIA, SC 29202	PROPOSED FILL TYPICAL SECTIONS	DATE: OCT 2010 TIME: PROJECT #: 2308	08

SEE SPECIAL CONDITIONS

14 of 14

D H E C

PROMOTE PROTECT PROSPER

Promoting and protecting the health of the public and the environment

ATTACHMENT A

December 10, 2010

Coastal Science and Engineering
P.O. Box 8056
Columbia, SC 29202

Re: 401 Certification Pursuant for Permit Number SAC 2010-1041-2IG
Applicant: The City of Isle of Palms
County: Charleston

Dear Steven Traynum:

The South Carolina Department of Health and Environmental Control (Department) is in receipt of your application for a Water Quality Certification pursuant to Section 401 of the Federal Clean Water Act. The project, as described in the application, falls under the category of projects for which the Department has determined that the 401 Water Quality Certification will be waived in accordance with the attached notice. Thus, the 401 Water Quality Certification for this project is waived and the Department will not take any action on this application.

Please do not hesitate to contact me at 803-898-0369, if you have any questions.

Sincerely,

Chuck Hightower
Water Quality Certification and Wetlands Section

Cc: Heather Preston
Tess Trumball OCRM

ATTACHMENT A

DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL

Notice

401 Water Quality Certification Resource Reductions

State budget cuts have impacted the level of services the Department of Health and Environmental Control (Department) can provide and have resulted in the need for the Department to re-evaluate its workloads and priorities. The 401 Water Quality Certification program has been identified as an area where resource reductions are necessary.

In accordance with S.C. Regulation 61-101, Water Quality Certification, the Department can issue, deny, or waive certification for Federal licenses or permits. If the Department fails to act on a certification within a reasonable period of time, not to exceed one year, the certification requirements are waived.

In light of recent budget cuts, the Department has determined that it can no longer certify all Federal licenses and permits for which it receives applications. Thus, the Department has identified categories of projects for which the 401 Water Quality Certification will be waived as follows:

- **Nationwide Permits as issued by the US Army Corps of Engineers (Corps)**
  Every five years, the Corps issues nationwide permits (NWP) for categories of activities that have been determined to have minimal individual and cumulative adverse effects on the aquatic environment. In a Federal Register notice published on March 12, 2007, the Corps reissued the NWP, and on May 11, 2007, the Department issued both a 401 Water Quality Certification and a Coastal Zone Consistency Certification in accordance with the S.C. Coastal Zone Management Program. At the time of the May 11, 2007 certification, the Department placed conditions on a number of the NWP that would necessitate an individual permit review for those projects. In light of the need to reduce staff resources, the Department will no longer issue individual certifications for these permits. By waiving these 401 certifications, the state will rely on the initial Corps determination of minimal impacts.

- **Groins and Beach Renourishment Projects**
  Groins and beach renourishment activities have very few water quality impacts. As a general rule, the concerns and comments that the Department receives during a 401 Water Quality Certification review for these activities are directed towards the issue of threatened or endangered species. These activities will still require comments from the US Fish and Wildlife Service and/or the National Marine Fisheries Service which have jurisdiction over threatened and endangered species before the Corps can issue their 404 permit. Therefore, the Department has a reasonable assurance that these concerns will be addressed. Further, the Department's OCRM office will still continue to issue direct permits for alteration of the critical area for these activities that also provide a means to address the threatened or endangered species concerns.

These waivers apply only to the 401 Water Quality Certification. Any Coastal Zone Consistency Certifications and the Critical Area Permits issued by the Department's OCRM office are not affected by this action. In light of continuing budget reductions, the Department will periodically evaluate our project workloads to determine if other changes are necessary.

DEPARTMENT OF THE ARMY
CHARLESTON DISTRICT, CORPS OF ENGINEERS
69A Hagood Avenue
CHARLESTON, SOUTH CAROLINA 29403-5107

REPLY TO
ATTENTION OF

February 27, 2012

Regulatory Division

The City of the Isle of Palms
Ms. Linda Tucker
c/o Coastal Science & Engineering
Attn: Mr. Steven Traynum
P. O. Box 8056
Columbia, South Carolina 29202

Dear Ms. Tucker:

PLEASE READ THIS LETTER CAREFULLY AND COMPLY WITH ITS PROVISIONS

This is in response to your application dated October 1, 2010, requesting a Department of the Army permit.

This is to inform you that the public interest review has been completed and it has been determined that the proposed activity is not contrary to the public interest. As such, a permit can be issued under the provisions of the Federal laws for the protection and preservation of the navigable waters of the United States.

Enclosed are two copies of Permit 2010-1041-2IG which have been prepared for the District Engineer's signature. Please review all of the conditions to which this permit is subject and, if acceptable to you, sign each copy and return all copies to this office in the enclosed self-addressed envelope. Upon receipt of these properly signed permits, the District Engineer or his designee will sign each copy and return one copy to you. As you review the permit documents, be especially mindful that

IT SHALL NOT BE LAWFUL TO DEVIATE FROM THE PLANS EITHER BEFORE OR AFTER COMPLETION OF THE WORK,

unless a plan reflecting the modification has previously been submitted to and approved by the Department of Army.

In addition, please note that the permit not only authorizes the work but also its intended use. No use other than that specified in this document can be made of permitted work or structures.

Compliance with all conditions of the permit is essential. Failure to do so will tend to invalidate the permit and may result in its revocation.

Respectfully,

Tina B. Hadden
Chief, Regulatory Division

Date: February 23, 2012

File No.: 2010-1041-2IG

NOTIFICATION OF APPLICANT OPTIONS (NAO)
FOR PARTIES ISSUED A DEPARTMENT OF THE ARMY INDIVIDUAL PERMIT

You are hereby advised that the following options are available to you in your evaluation of the enclosed permit:

1) You may sign the permit, and return it to the district engineer for final authorization. Your signature on the permit means that you accept the permit in its entirety, and waive all rights to appeal the permit, or its terms and conditions.

2) You may decline to sign the permit because you object to certain terms and conditions therein, and you may request that the permit be modified accordingly. You must outline your objections to the terms and conditions of the permit in a letter to the district engineer. Your objections must be received by the district engineer within 60 days of the date of this NAO, or you will forfeit your right to request changes to the terms and conditions of the permit. Upon receipt of your letter, the district engineer will evaluate your objections, and may: (a) modify the permit to address all of your concerns, or (b) modify the permit to address some of your objections, or (c) not modify the permit, having determined that the permit should be issued as previously written. In any of these three cases, the district engineer will send you a final permit for your reconsideration, as well as a notification of appeal (NAP) form and a request for appeal (RFA) form. Should you decline the final proffered permit, you can appeal the declined permit under the Corps of Engineers Administrative Appeal Process by submitting the completed RFA form to the division engineer. The RFA must be received by the division engineer within 60 days of the date of the NAP that was transmitted with the second proffered permit.

DEPARTMENT OF THE ARMY
CHARLESTON DISTRICT, CORPS OF ENGINEERS
69A Hagood Avenue
CHARLESTON, SOUTH CAROLINA 29403-5107

REPLY TO
ATTENTION OF

March 6, 2012

Regulatory Division

The City of the Isle of Palms
Ms. Linda Tucker
c/o Coastal Science & Engineering
Attn: Mr. Steven Traynum
P. O. Box 8056
Columbia, South Carolina 29202

Dear Ms. Tucker:

This is in response to your application requesting a Department of the Army permit.

Enclosed is your Department of the Army permit 2010-1041-2IG. It authorizes you to perform the work specified on the attached drawings. This permit is issued under the provisions of the Federal laws for the protection and preservation of the navigable waters of the United States.

Please notify this office promptly, in writing, when you start and complete the work. The enclosed cards may be used for that purpose. You should also be aware that a special condition has been included in this permit which requires that a copy of the permit and drawings must be available at the work site during the entire time of construction.

Respectfully,

Tina B. Hadden
Chief, Regulatory Division

Enclosures

DEPARTMENT OF THE ARMY PERMIT

Permittee: THE CITY OF THE ISLE OF PALMS
C/O LINDA TUCKER

P. O. BOX 508
ISLE OF PALMS, SC 29451

Permit No: 2010-1041-2IG

Issuing Office: CHARLESTON DISTRICT

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

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

Project Description:
The proposed work consists of the excavation and transfer of a total of 500,000 cubic yards of sand material from an accreting shoal by land based equipment and placement of the material on approximately 30 acres of beach for shoreline protection. The applicant is limited to two events of up to 250,000 cubic yards and a total of 500,000 cubic yards of material in five years in accordance with the attached drawings entitled: Applicant: City of Isle of Palms, P O Drawer 508, Isle of Palms, SC 29451. Sheets 1 thru 8 of 8 dated October 2010.

Project Location:
The project site is located in waters of the Atlantic Ocean along the shoreline of the northeastern end of the Isle of Palms between 53rd Avenue and the existing groin near the 17th tee of The Links golf course, Charleston County, South.

Permit Conditions:

General Conditions:

1. The time limit for completing the work authorized ends on **31 March 2017.** If you find that you need more time to complete the authorized activity, submit your request for a time extension to this office for consideration at least one month before the above date is reached.

2. You must maintain the activity authorized by this permit in good condition and in conformance with the terms and conditions of this permit. You are not relieved of this requirement if you abandon the permitted activity, although you may make a good faith transfer to a third party in compliance with General Condition 4 below. Should you wish to cease to maintain the authorized activity or should you desire to abandon it without a good faith transfer, you must obtain a modification of this permit from this office, which may require restoration of the area.

3. If you discover any previously unknown historic or archeological remains while accomplishing the activity authorized by this permit, you must immediately notify this office of what you have found. We will initiate the Federal and state coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

4. If you sell the property associated with this permit, you must obtain the signature of the new owner in the space provided and forward a copy of the permit to this office to validate the transfer of this authorization.

5. If a conditioned water quality certification has been issued for your project, you must comply with the conditions specified in the certification as special conditions to this permit. For your convenience, a copy of the certification is attached if it contains such conditions.

6. You must allow representatives from this office to inspect the authorized activity at any time deemed necessary to ensure that it is being or has been accomplished in accordance with the terms and conditions of your permit.

Special Conditions:

SEE PAGES 4, 5 & 6.

Further Information:

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

☒ Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403).

☒ Section 404 of the Clean Water Act (33 U.S.C. 1344).

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

2. Limits of this authorization.

a. This permit does not obviate the need to obtain other Federal, state, or local authorizations required by law.

b. This permit does not grant any property rights or exclusive privileges.

c. This permit does not authorize any injury to the property or rights of others.

d. This permit does not authorize interference with any existing or proposed Federal project.

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

a. Damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes.

b. Damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the United States in the public interest.

c. Damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit.

d. Design or construction deficiencies associated with the permitted work.

e. Damage claims associated with any future modification, suspension, or revocation of this permit.

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

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

a. You fail to comply with the terms and conditions of this permit.

b. The information provided by you in support of your permit application proves to have been false, incomplete, or inaccurate (See 4 above).

c. Significant new information surfaces which this office did not consider in reaching the original public interest decision.

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

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

Your signature below, as permittee, indicates that you accept and agree to comply with the terms and conditions of this permit.

Linda Tucker _____ 3/5/2012

(PERMITTEE) **(DATE)**

THE CITY OF THE ISLE OF PALMS
C/O LINDA TUCKER

Linda Tucker

PRINT NAME

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

Tina B. Hadden _____ MAR - 6 2012

(DISTRICT ENGINEER) **(DATE)**

EDWARD P. CHAMBERLAYNE, P.E.
or his Designee
Tina B. Hadden
Chief, Regulatory Division

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

_____ _____

(TRANSFEREE) **(DATE)**

SPECIAL CONDITIONS FOR PERMIT #: 2010-1041-2IG

a. That the permittee agrees to provide all contractors associated with construction of the authorized activity a copy of the permit and drawings. A copy of the permit will be available at the construction site at all times.

b. That the permittee shall submit a signed compliance certification to the Corps within 60 days following completion of the authorized work and any required mitigation. The certification will include:
   1. A copy of this permit;
   2. A statement that the authorized work was done in accordance with the Corps authorization, including any general or specific conditions;
   3. A statement that any required mitigation was completed in accordance with the permit conditions;
   4. The signature of the permittee certifying the completion of the work and mitigation.

c. The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

d. That the permittee recognizes that its commitment to perform and implement the following conditions was a deciding factor towards the favorable and timely decision on this permit and that the permittee recognizes that a failure on its part to both actively pursue and implement these conditions may be grounds for modification, suspension or revocation of this Department of the Army authorization:

   1. The applicant, using standard survey techniques (see enclosure), shall conduct two surveys of all lighting visible from the project area during the nesting season before and the nesting season after project construction. The first survey shall be conducted between May 1 and May 15, and a brief summary will be provided to the Corps, U. S. Fish and Wildlife Service (USFWS) and S.C. Department of Natural Resources (SCDNR). The second survey shall be conducted between July 15 and August 1. A summary report of the pre and post construction survey findings will be provided to the Corps, the USFWS and SCDNR.

   2. Sand compaction shall be monitored in the area of sand placement immediately after completion of the project and prior to May 1 for 3 subsequent years. Sand compaction monitoring results must be provided to the Corps and the USFWS. If tilling is needed, the area shall be tilled to a depth of 24 inches. Each pass of the tilling equipment shall be overlapped to allow more thorough and even tilling. All tilling activity shall be completed at least once prior to nesting season. An electronic copy of the results of the compaction monitoring shall be submitted to the Corps and USFWS prior to any tilling actions being taken. The requirement for compaction monitoring can be eliminated if the decision is made to till regardless of post construction compaction levels. Additionally, out-year compaction monitoring and remediation are not required if placed material no longer remains on the dry beach.

      a. Compaction sampling stations shall be located at 500-foot intervals along the sand placement template. One station shall be at the seaward edge of the dune/bulkhead line (when material is placed in this area), and one station shall be midway between the dune line and the high water line (normal wrack line).

b. At each station, the cone penetrometer shall be pushed to a depth of 6, 12, and 18 inches three times (three replicates). Material may be removed from the hole if necessary to ensure accurate readings of successive levels of sediment. The penetrometer may need to be reset between pushes, especially if sediment layering exists. Layers of highly compact material may lie over less compact layers. Replicates shall be located as close to each other as possible, without interacting with the previous hole or disturbed sediments. The three replicate compaction values for each depth shall be averaged to produce final values for each depth at each station. Reports will include all 18 values for each transect line, and the final six averaged compaction values.

c. If the average value for any depth exceeds 500 pounds per square inch (psi) for any two or more adjacent stations, then that area shall be tilled immediately prior to the dates listed above.

d. If values exceeding 500 psi are distributed throughout the project area but in no case do those values exist at two adjacent stations at the same depth, then consultation with the USFWS will be required to determine if tilling is required. If a few values exceeding 500 psi are present randomly within the project area, tilling will not be required.

e. Tilling shall occur landward of the wrack line and avoid all vegetated areas 3 square feet or greater with a 3 square foot buffer around the vegetated areas.

3. Visual surveys for escarpments along the project area shall be made immediately after completion of the sand placement and within 30 days prior to May 1 for 3 subsequent years if sand in the project area still remains on the dry beach. Escarpments that interfere with sea turtle nesting or that exceed 18 inches in height for a distance of 100 feet shall be leveled and the beach profile shall be reconfigured to minimize scarp formation by the dates listed above. Any escarpment removal shall be reported by location. If the project is completed during the early part of the sea turtle nesting and hatching season, escarpments may be required to be leveled immediately, while protecting nests that have been relocated or left in place. The Corps and the USFWS shall be contacted immediately if subsequent reformation of escarpments that interfere with sea turtle nesting or that exceed 18 inches in height for a distance of 100 feet occurs during the nesting and hatching season to determine the appropriate action to be taken. If it is determined that escarpment leveling is required during the nesting or hatching season, the Service will provide a brief written authorization within 30 days that describes methods to be used to reduce the likelihood of impacting existing nests. An annual summary of escarpment surveys and actions taken shall be submitted to the Corps and the USFWS.

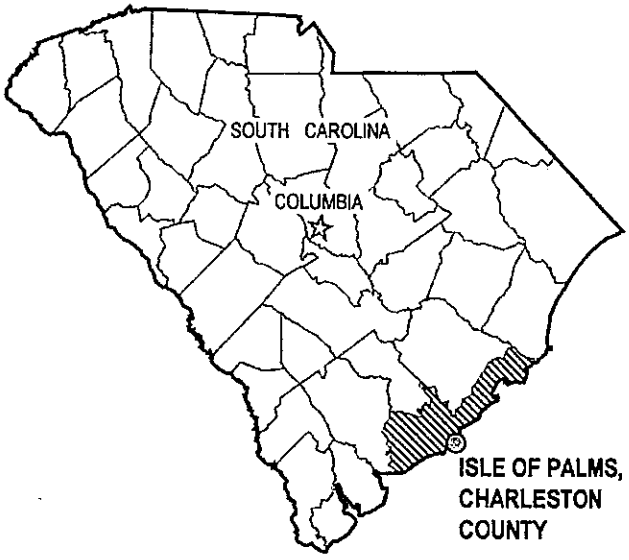
4. That the permittee agrees that the project is limited to two beach scraping events of up to 250,00 cubic yards each, with a combined total of 500,000 cubic yards of material to be transferred during the life of the permit.

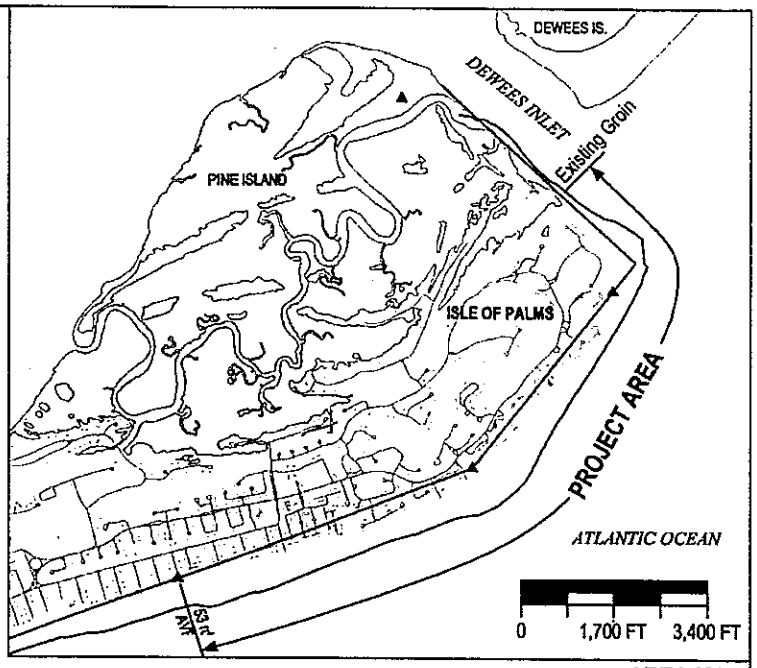
5. That the permittee agrees that the permit will only be valid for five years from the date of issuance.

6. That the permittee agrees that the proposed work may only take place in the winter months from November 1 to March 31.

7. That the permittee agrees that the proposed work will only take place when the existing building line is 100' or less from the +5 ft NAVD contour line (approximate normal high tide swash line). The permittee must demonstrate this by providing the Corps a stamped and signed survey and pictures to document this condition before the work may begin.

8. That the permittee agrees that in addition to the current annual monitoring, the permittee agrees to conduct additional monitoring to include surveys immediately post-project and one year post-project. The additional monitoring will be limited to the project area between the dune line (or equivalent) and the low-tide wading depth (-6 Feet NAVD). Monitoring reports must be submitted to the Corps after each monitoring event.

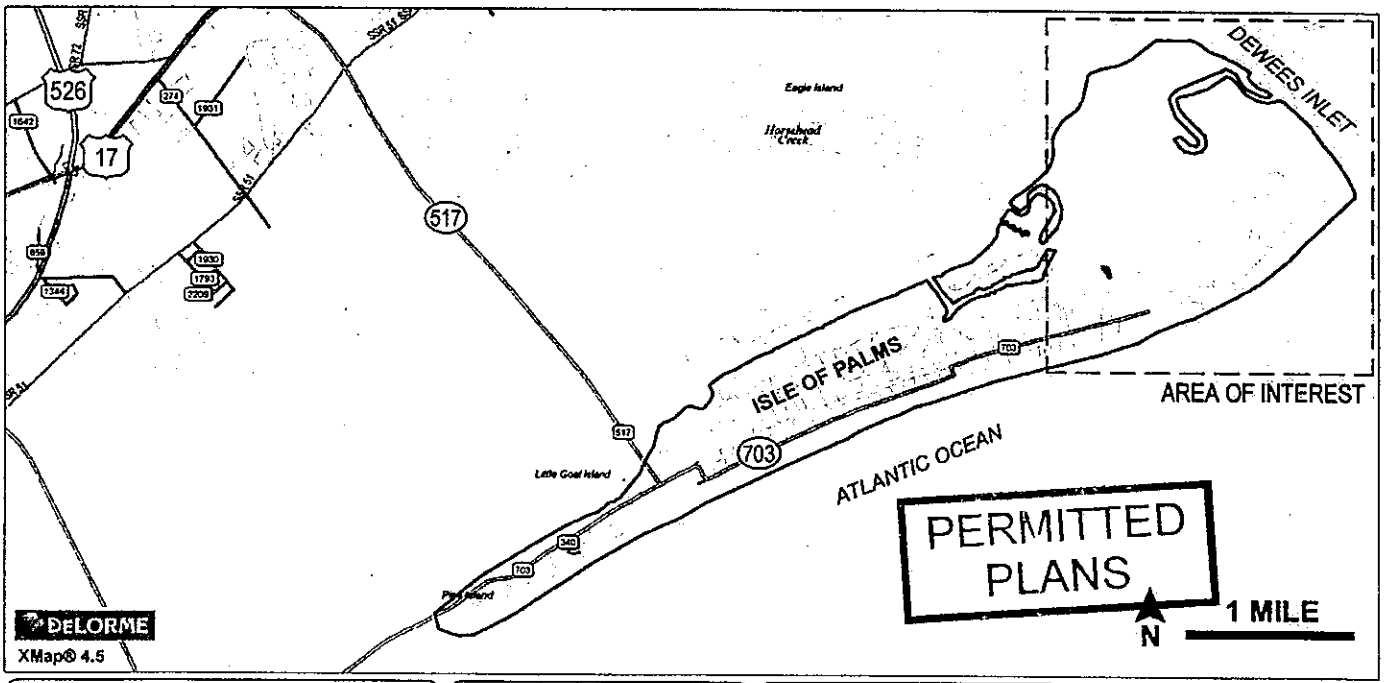




AREA MAP

DIRECTIONS:

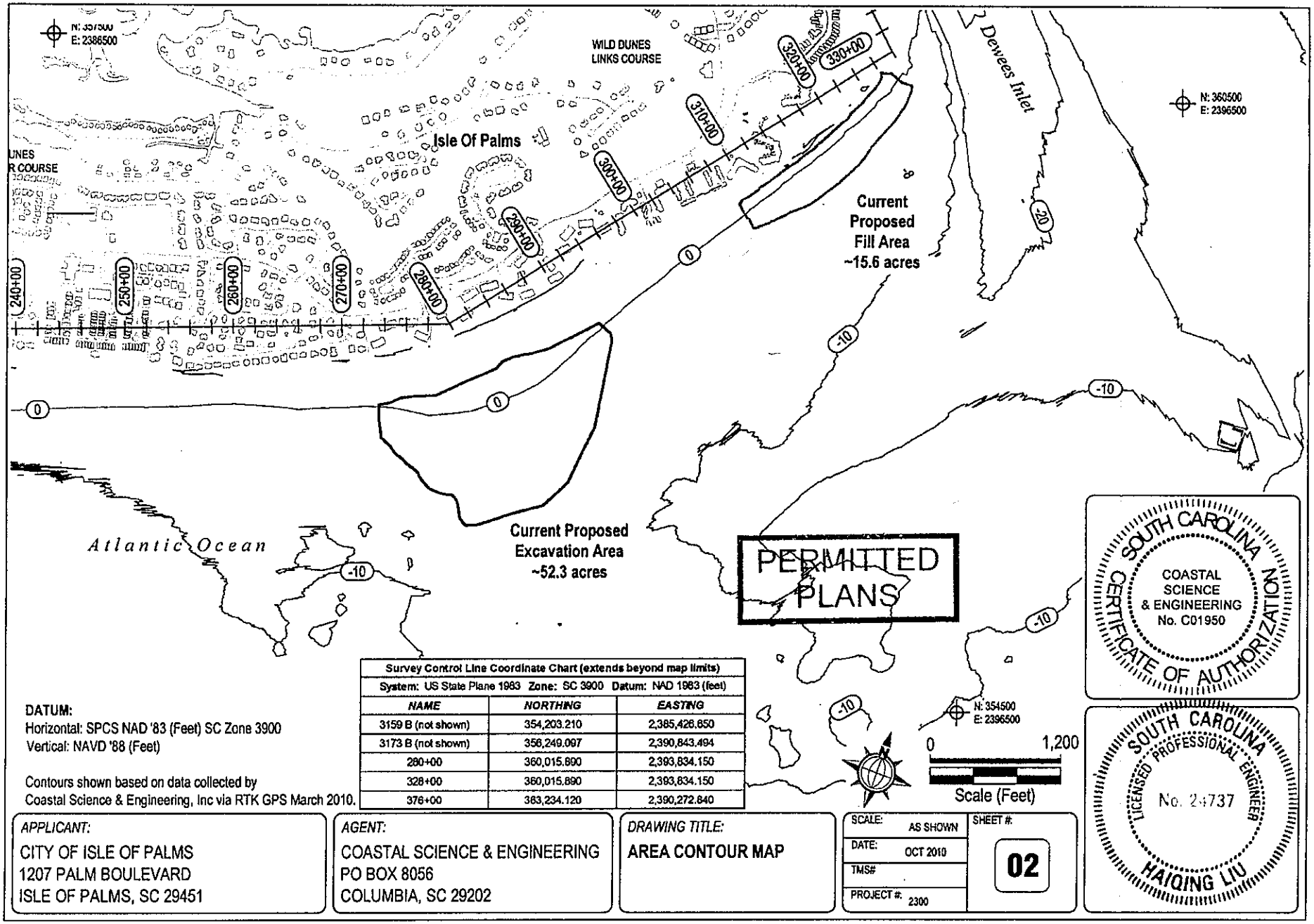
FROM CHARLESTON, TAKE US-17 NORTH. TURN RIGHT ONTO SC 517 (ISLE OF PALMS CONNECTOR). TURN LEFT ONTO PALM BLVD. SITE IS NORTHEAST OF 57TH AVE EXTENDING ALONG TO DEWEES INLET ON THE NORTHEAST END OF ISLE OF PALMS.



APPLICANT: CITY OF ISLE OF PALMS PO DRAWER 508 ISLE OF PALMS SC 29451	*DRAWING TITLE:* VICINITY MAP
AGENT: *P/N 2010...* COASTAL SCIENCE & ENGINEERING PO BOX 8056 COLUMBIA, SC 29202	SCALE: AS SHOWN DATE: OCT 2010 TMS# PROJECT #: 2300 SHEET #: 01

SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION
COASTAL SCIENCE & ENGINEERING
No. C01950

SOUTH CAROLINA LICENSED PROFESSIONAL ENGINEER
No. 24737
HAIQING LIU



Survey Control Line Coordinate Chart (extends beyond map limits)		
System: US State Plane 1983 Zone: SC 3900 Datum: NAD 1983 (feet)		
NAME	*NORTHING*	*EASTING*
3159 B (not shown)	354,203.210	2,385,426.650
3173 B (not shown)	356,249.097	2,390,843.494
280+00	360,015.890	2,393,834.150
328+00	360,015.890	2,393,834.150
376+00	383,234.120	2,390,272.840

DATUM:
Horizontal: SPCS NAD '83 (Feet) SC Zone 3900
Vertical: NAVD '88 (Feet)

Contours shown based on data collected by
Coastal Science & Engineering, Inc via RTK GPS March 2010.

SOUTH CAROLINA
COASTAL SCIENCE & ENGINEERING
No. C01950
CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA
LICENSED PROFESSIONAL ENGINEER
No. 24737
HAIQING LIU

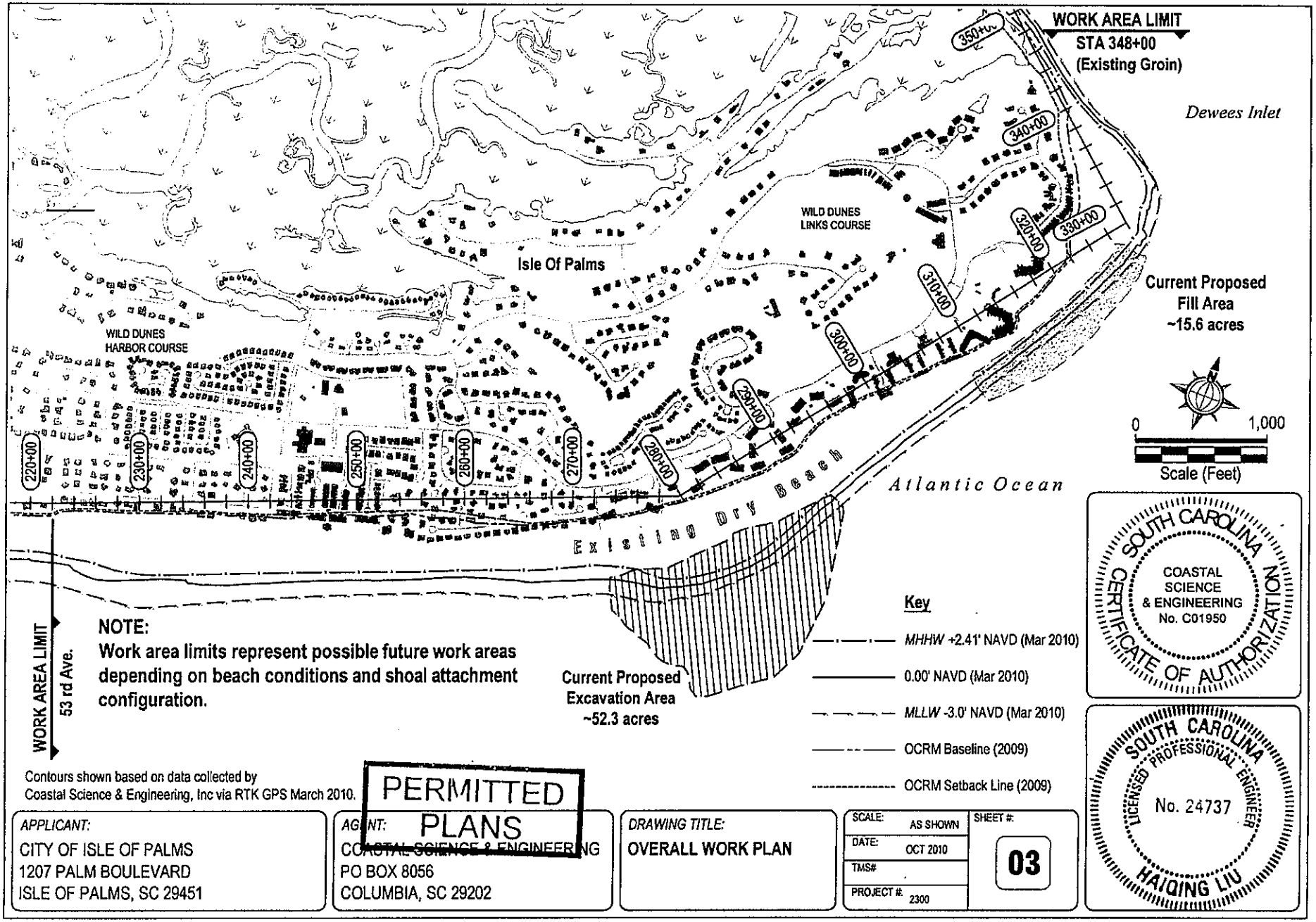
APPLICANT:
CITY OF ISLE OF PALMS
1207 PALM BOULEVARD
ISLE OF PALMS, SC 29451

AGENT:
COASTAL SCIENCE & ENGINEERING
PO BOX 8056
COLUMBIA, SC 29202

DRAWING TITLE:
AREA CONTOUR MAP

SCALE:	AS SHOWN
DATE:	OCT 2010
TMS#	
PROJECT #:	2300

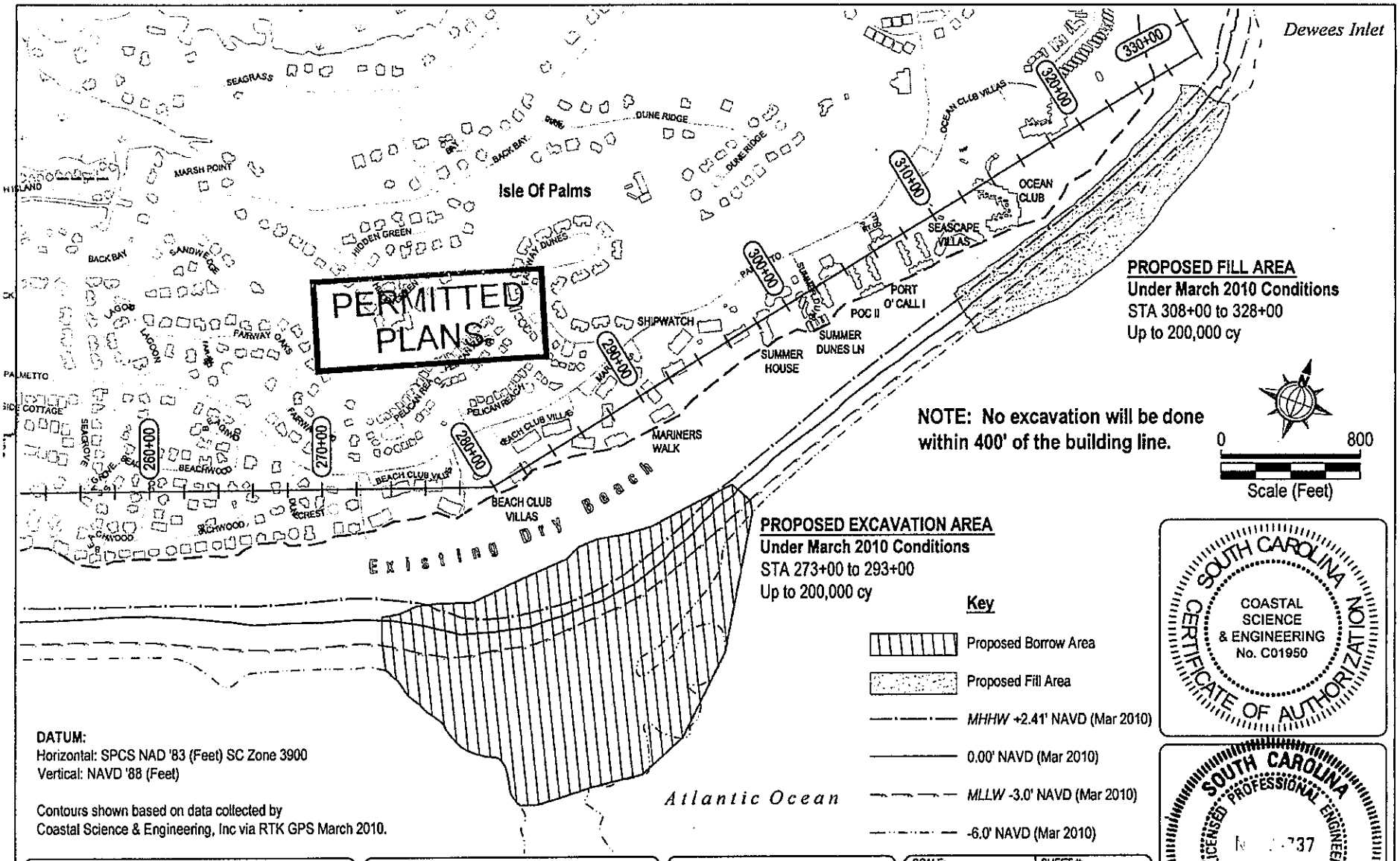
SHEET #: **02**



Contours shown based on data collected by Coastal Science & Engineering, Inc via RTK GPS March 2010.

PERMITTED PLANS

APPLICANT: CITY OF ISLE OF PALMS 1207 PALM BOULEVARD ISLE OF PALMS, SC 29451	*AGENT:* COASTAL SCIENCE & ENGINEERING PO BOX 8056 COLUMBIA, SC 29202	*DRAWING TITLE:* OVERALL WORK PLAN	SCALE: AS SHOWN DATE: OCT 2010 TMS# PROJECT #: 2300 SHEET #: 03



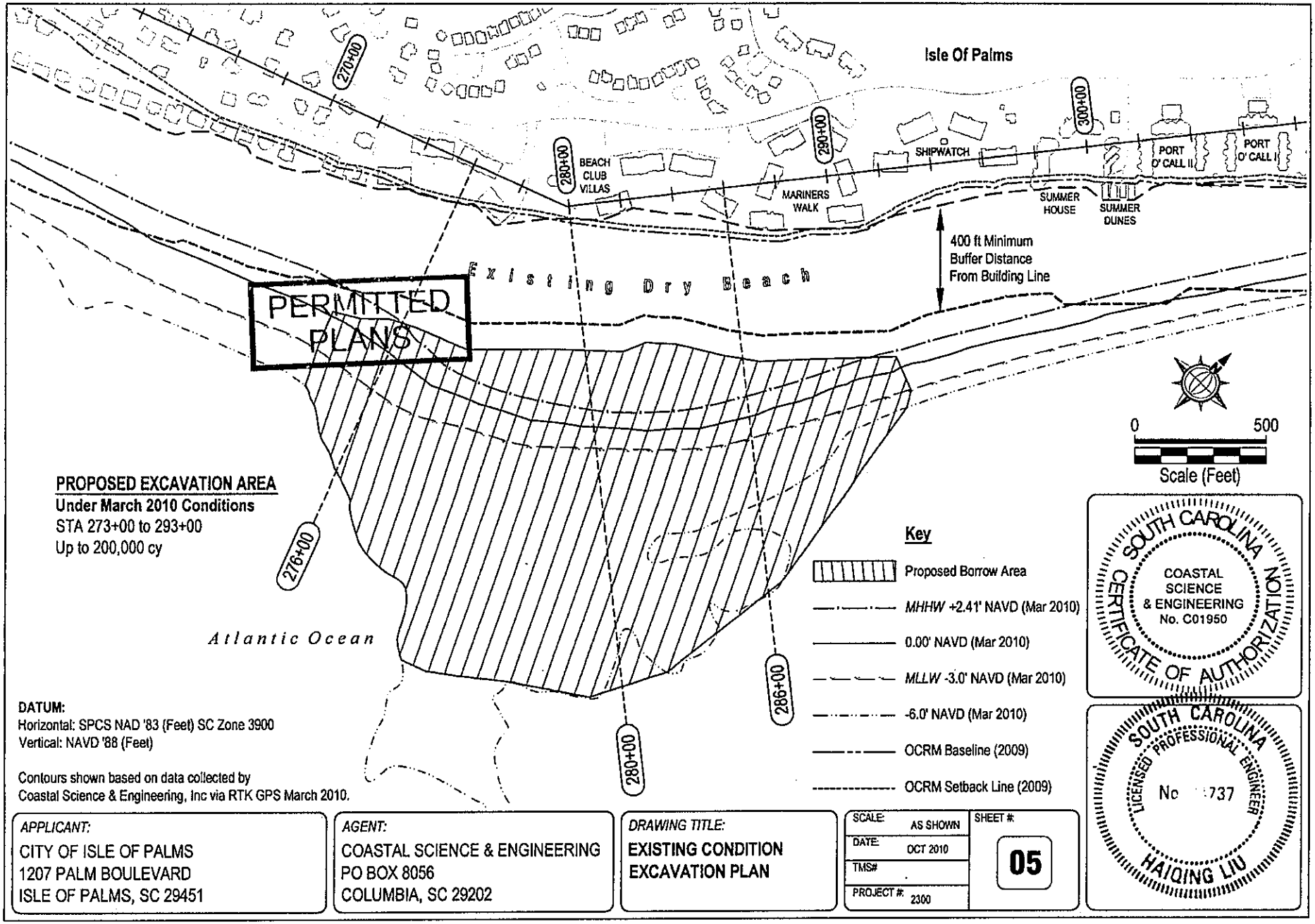
DATUM:
Horizontal: SPCS NAD '83 (Feet) SC Zone 3900
Vertical: NAVD '88 (Feet)

Contours shown based on data collected by
Coastal Science & Engineering, Inc via RTK GPS March 2010.

SOUTH CAROLINA
COASTAL SCIENCE & ENGINEERING
No. C01950
CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA
LICENSED PROFESSIONAL ENGINEER
No. [illegible]737
HAIQING LIU

APPLICANT:	AGENT:	DRAWING TITLE:	SCALE: AS SHOWN	SHEET #:
CITY OF ISLE OF PALMS 1207 PALM BOULEVARD ISLE OF PALMS, SC 29451	COASTAL SCIENCE & ENGINEERING PO BOX 8056 COLUMBIA, SC 29202	EXISTING CONDITION PROPOSED PLAN	DATE: OCT 2010 TMS# PROJECT #: 2300	04



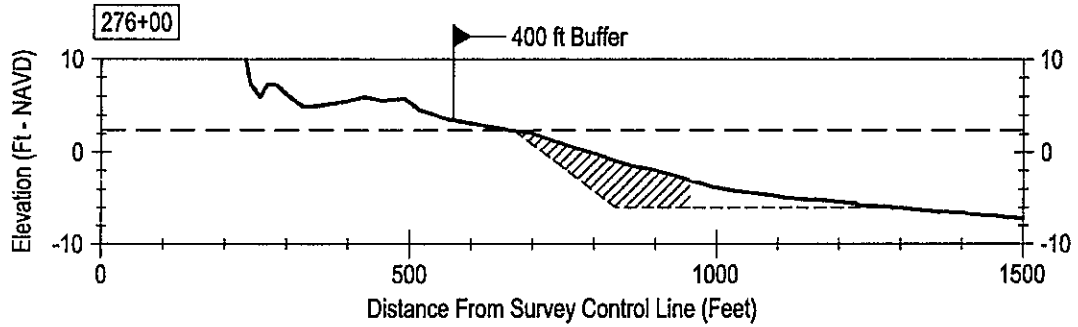
APPLICANT:
CITY OF ISLE OF PALMS
1207 PALM BOULEVARD
ISLE OF PALMS, SC 29451

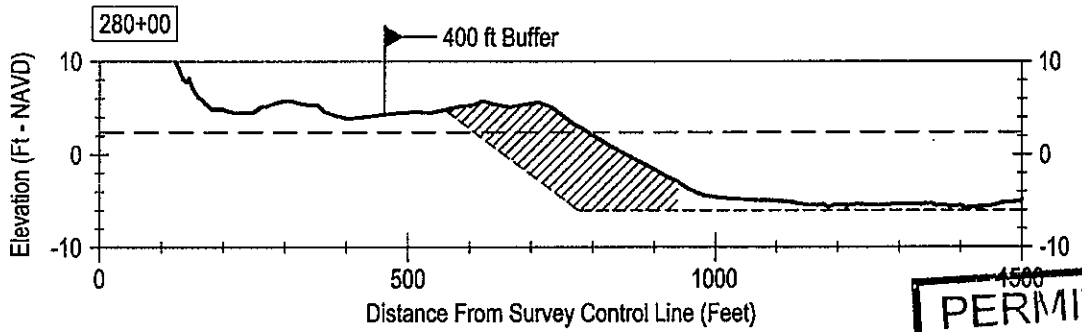
AGENT:
COASTAL SCIENCE & ENGINEERING
PO BOX 8056
COLUMBIA, SC 29202

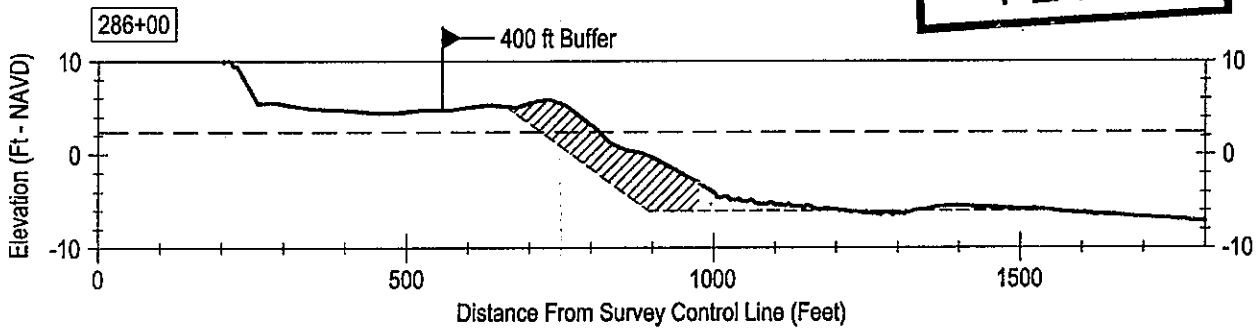
DRAWING TITLE:
EXISTING CONDITION EXCAVATION PLAN

SCALE:	AS SHOWN
DATE:	OCT 2010
TMS#	
PROJECT #:	2300

SHEET #: **05**







Key

Existing Profile (March 2010)

Proposed Excavation Profile

MHHW +2.41' NAVD (Mar 2010)

MLLW -3.0' NAVD (Mar 2010)

DATUM (feet):
Horizontal: SPCS NAD '83 SC Zone 3900
Vertical: NAVD '88 (Feet)
Vertical Exaggeration: 15

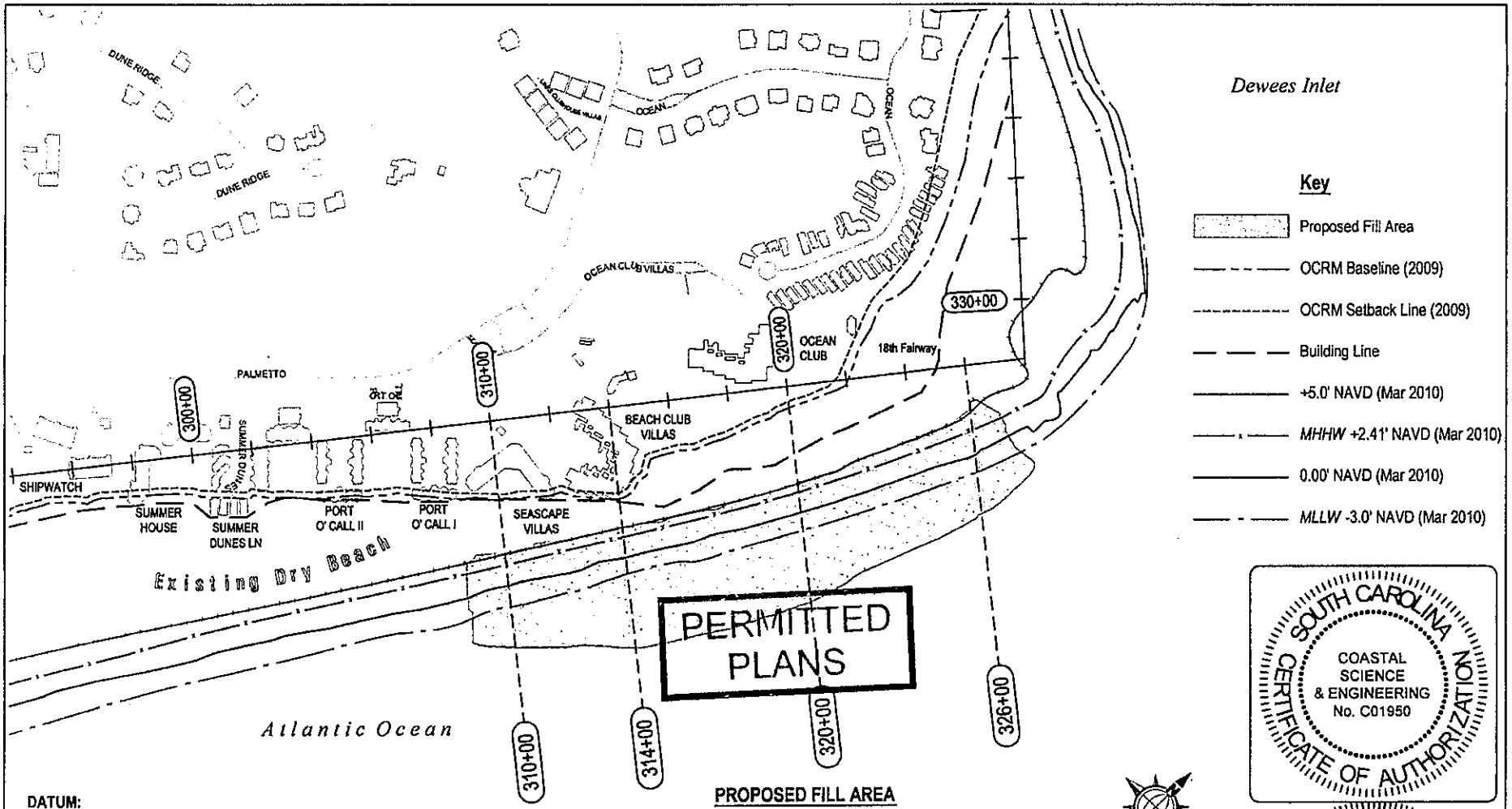
Finished Slope Will Be ~ 1 on 20

PERMITTED PLANS

SOUTH CAROLINA
COASTAL SCIENCE & ENGINEERING
No. C01950
CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA
LICENSED PROFESSIONAL ENGINEER
No. 24737
HAIQING LIU

APPLICANT:	AGENT:	DRAWING TITLE:	SCALE: AS SHOWN	SHEET #:
CITY OF ISLE OF PALMS 1207 PALM BOULEVARD ISLE OF PALMS, SC 29451	COASTAL SCIENCE & ENGINEERING PO BOX 8056 COLUMBIA, SC 29202	**EXCAVATION PLAN** **TYPICAL SECTIONS**	DATE: OCT 2010 TMS# PROJECT #: 2300	**06**



DATUM:
Horizontal: SPCS NAD '83 (Feet) SC Zone 3900
Vertical: NAVD '88 (Feet)

Contours shown based on data collected by
Coastal Science & Engineering, Inc via RTK GPS March 2010.

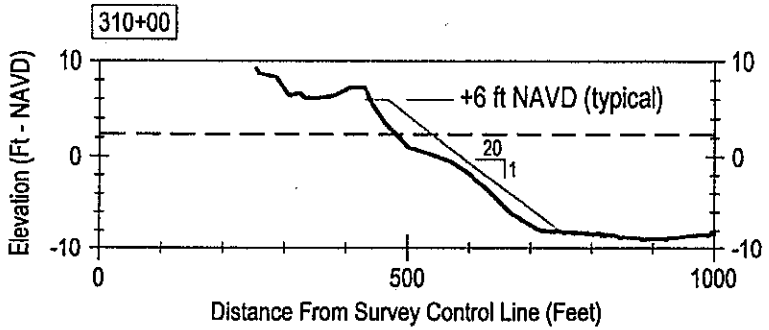
PROPOSED FILL AREA
Under March 2010 Conditions
STA 308+00 to 328+00
Up to 200,000 cy

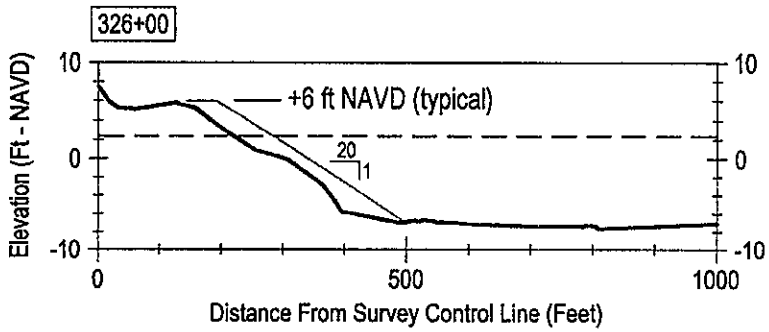
0 500
Scale (Feet)

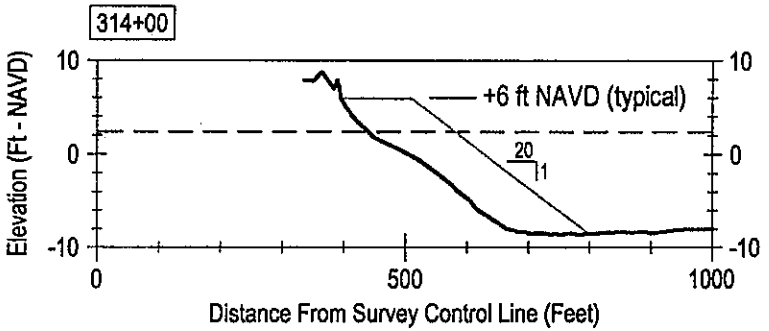
SOUTH CAROLINA
COASTAL SCIENCE & ENGINEERING
No. C01950
CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA
LICENSED PROFESSIONAL ENGINEER
No. 24737
HAIQING LIU

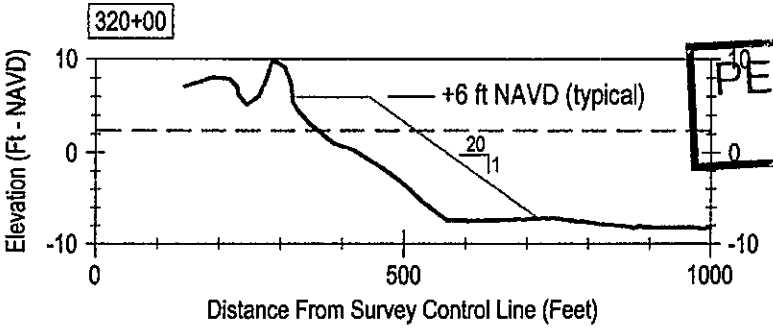
APPLICANT:	AGENT:	DRAWING TITLE:	SCALE: AS SHOWN	SHEET #:
CITY OF ISLE OF PALMS 1207 PALM BOULEVARD ISLE OF PALMS, SC 29451	COASTAL SCIENCE & ENGINEERING PO BOX 8056 COLUMBIA, SC 29202	FILL PLAN	DATE: OCT 2010 TMS# PROJECT #: 2300	07







Note: Sections will vary according to conditions at the time of each beach management event.



PERMITTED PLANS

Key

- Existing Profile (March 2010)
- Proposed Fill Profile
- *MHHW* +2.41' NAVD (Mar 2010)
- *MLLW* -3.0' NAVD (Mar 2010)

DATUM (feet):
Horizontal: SPCS NAD '83 SC Zone 3900
Vertical: NAVD '88 (Feet)
Vertical Exaggeration: 15
Finish slope 1 on 20

SOUTH CAROLINA
COASTAL SCIENCE & ENGINEERING
No. C01950
CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA
LICENSED PROFESSIONAL ENGINEER
No. 24737
HAIQING LIU

APPLICANT: CITY OF ISLE OF PALMS 1207 PALM BOULEVARD ISLE OF PALMS, SC 29451	*AGENT:* COASTAL SCIENCE & ENGINEERING PO BOX 8056 COLUMBIA, SC 29202	*DRAWING TITLE:* **PROPOSED FILL TYPICAL SECTIONS**	SCALE: AS SHOWN DATE: OCT 2010 TMS# PROJECT #: 2300	SHEET #: **08**

PROMOTE PROTECT PROSPER

C. Earl Hunter, Commissioner

Promoting and protecting the health of the public and the environment.

SEP 14 2011

August 31, 2011

City of Isle of Palms
C/o Linda Tucker
P.O. Box 508
Isle of Palms, SC 29451

SEE SPECIAL CONDITION(S)

Re: **2010-1041-2IG**
City of Isle of Palms

Dear Ms. Tucker:

The SCDHEC Office of Ocean and Coastal Resource Management has reviewed your application to realign the beach in a shoal-attachment area on and adjacent to the Atlantic Ocean at a location limited to the area between 53rd Avenue and an existing groin near the 17th tee of the Links Course, on the northeastern end of the Isle of Palms, Charleston County, South Carolina, and has issued a permit for this work. You should carefully read any special conditions that have been placed on the permit, as these conditions will modify the permitted activity. In addition, there are a series of general conditions that should be reviewed. A copy of the permit, as issued, is enclosed. After carefully reading the permit, if you wish to accept the permit as issued, sign and date in the signature block entitled "PERMITTEE" on the original version of the permit **and return it to this Department. Keep the photocopy for your records.**

PLEASE READ CAREFULLY: You are required to sign and return the original version of your permit to this Department. If this permit is not signed and returned within thirty (30) days of issuance, *OR* appealed within 15 days as described on the enclosed "Notice of Appeal Procedure", the Department reserves the right to cancel this permit. Please carefully review the enclosed "Notice of Appeal Procedure" for information and deadlines for appealing this permit.

We have also enclosed a "request for a construction placard" card. You must send in this card before the time you wish to start construction. At that time a construction placard will be sent to you to post at the construction site.

PLEASE NOTE: You are not authorized to commence work under the permit until we have received the original version of the entire permit signed and accepted by you, and a construction placard has been issued and posted at the construction site. The receipt of this permit does not relieve you of the responsibility of acquiring any other federal or local permits that may be required.

Sincerely,

William C. Eaier /for

Steven Brooks
Senior Regulatory Project Manager
Regulatory Programs Division

Enclosure

Cc: Blair Williams, Wetland Section Manager
Steven Straynum, Coastal Science and Engineering

SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL
Ocean and Coastal Resource Management
Charleston Office · 1362 McMillan Avenue, Suite 400 · Charleston, SC 29405
Phone: 843-953-0200 · Fax: 843-953-0201 · www.scdhec.gov

D H E C

PROMOTE PROTECT PROSPER

C. Earl Hunter, Commissioner

Promoting and protecting the health of the public and the environment

SEE SPECIAL CONDITION(S)

Notice of Appeal Procedure
Pursuant to S.C. Code Section 44-1-60

1. This decision of the S.C. Department of Health and Environmental Control (Department) becomes the final agency decision 15 calendar days after notice of the decision has been mailed to the applicant or respondent, unless a written request for final review accompanied by a filing fee in the amount of $100 is filed with the Department by the applicant, permittee, licensee, or affected person.

2. An applicant, permittee, licensee, or affected person who wishes to appeal this decision must file a timely written request for final review with the Clerk of the Board at the following address or by facsimile at 803-898-3393. A filing fee in the amount of $100 made payable to SC DHEC must also be received by the Clerk within the time allowed for filing a request for final review. However, if a request for final review is filed by facsimile, the filing fee may be mailed to the Clerk of the Board if the envelope is postmarked within the time allowed for filing a request for final review.

   Clerk of the Board
   SC DHEC
   2600 Bull Street
   Columbia, SC 29201

3. In order to be timely, a request for final review must be received by the Clerk of the Board within 15 calendar days after notice of the decision has been mailed to the applicant or respondent. If the 15th day occurs on a weekend or State holiday, the request is due to be received by the Clerk of the Board on the next working day. The request for final review must be received by the Clerk of the Board by 5:00 p.m. on the date it is due. A request for final review will be returned to the requestor if the filing fee is not received on time as described above.

4. The request for final review should include the following:
   a. the grounds on which the Department's decision is challenged and the specific changes sought in the decision
   b. a statement of any significant issues or factors the Board should consider in deciding whether to conduct a final review conference
   c. a copy of the Department's decision for which review is requested

5. If a timely request for final review is filed with the Clerk of the Board, the Clerk will provide additional information regarding procedures. If the Board declines in writing to schedule a final review conference, the Department's decision becomes the final agency decision and an applicant, permittee, licensee, or affected person may request a contested case hearing before the Administrative Law Court within 30 calendar days after notice is mailed that the Board declined to hold a final review conference.

The above information is provided as a courtesy; parties are responsible for complying with all applicable legal requirements.

July 1, 2010

D H E C

PROMOTE PROTECT PROSPER

C. Earl Hunter, Commissioner

Promoting and protecting the health of the public and the environment.

CRITICAL AREA & WATER QUALITY CERTIFICATION PERMIT

Permittee: City of Isle of Palms

Permit Number: 2010-1041-2IG

Date of Issuance: August 31, 2011

Expiration Date: August 31, 2016

SEE SPECIAL CONDITION(S)

Location: **On and adjacent to the Atlantic Ocean at a location limited to the area between 53rd Avenue and an existing groin near the 17th tee of the Links Course, on the northeastern end of the Isle of Palms, Charleston County, South Carolina**

This permit/certification is issued under the provisions of 25A S.C. Code Ann. Regs. 61-101 (Supp. 2005), *et seq.*, and 23A S.C. Code Ann. Regs. 30-1 through 30-18 (Supp. 2005). Additionally, as required by R.61-101, Department staff have reviewed plans for this project and determined there is a reasonable assurance the project will be conducted in a manner consistent with Certification requirements of Section 401 of the Clean Water Act. We also certify that this project, subject to the indicated conditions, is consistent with applicable provisions of Section 303 of the Clean Water Act, as amended, that there are no applicable effluent limitations under Sections 301(b) and 302, and that there are no applicable standards under Sections 306 and 307.

This permit contains required certification pursuant to Section 401 of the Clean Water Act. Work may not commence under this permit until thirty (30) days after final signature by an OCRM official. PLEASE CAREFULLY READ THE ENCLOSED "NOTICE OF APPEAL PROCEDURE."

Please carefully read the project description and any special conditions, which may appear on this permit/certification, as they will affect the work that is allowed. If there are no special conditions, then the work is authorized as described in the project description and as modified by general conditions. The general conditions are also a part of this permit/certification and should be read in their entirety. The S. C. Contractor's Licensing Act of 1999, enacted as Section 40-11-5 through 430, requires that all construction with a total cost of $5,000 or more be performed by a licensed contractor with a valid contractor's license for marine class construction, except for construction performed by a private landowner for strictly private purposes. Your signature on and acceptance of this permit denotes your understanding of the stated law regarding use of licensed contractors. **All listed special and general conditions will remain in effect for the life of the project if work commences during the life of the permit. This applies to permittee, future property owners, or permit assignees.**

DESCRIPTION OF THE PROJECT, AS AUTHORIZED

The proposed work consists of periodic realignment of the beach in shoal-attachment areas as part of a long-term shoal management plan. Up to 300,000 cubic yards (CY) may need to be transferred during any given shoal management event, to sufficiently reduce the impact of an attaching shoal on adjacent areas. The actual shoal management event frequency and quantity of sand to be transferred will depend on the condition of the beach in both the fill and excavation areas, as well as the predicted impacts of developing bypass events. The condition of the beach, as surveyed in March 2010, indicates up to 200,000 CY

should be transferred from the accretion area to eroded areas to maintain the desired beach condition. This quantity, as well as the exact limits of the work, will be refined by another survey prior to commencement of the work, due to the rapidity of shoreline changes associated with shoal-bypass events. Excavations will be performed via hydraulic hoes or scraper pans, depending on contractor's preference, and will begin at the seaward most accessible portion of the beach. Excavation in the shallow, underwater portion of the beach will allow for incoming sand to rapidly fill any low areas created by the excavation. it will also limit the amount of dry beach utilized in the transfer. Excavation depths will be limited to a specified elevation, likely -6 ft NAVD (-3.0 ft MLLW), unless otherwise specified by resource agencies. Sand will be transferred by off-road trucks or equivalent, operating on the low-tide beach. Fill volume in areas receiving sand will vary depending on beach condition at the time of the project. In the area currently showing focused erosion (in the vicinity of Seascape and Beach Club Villas), the March 2010 condition showed approx. 40 cubic yards per foot (cy/ft) less volume than the March 2009 condition and -80 cy/ft less volume than the July 2008 condition (post-nourishment). In the current configuration, the shoal-management project would restore the quantity of sand in these areas to near post-nourishment condition, which would align the beach in a more stable configuration by reducing the "bulge" currently present in the accretion area. Fill will be placed in the form of a berm of variable width at the natural dry-sand beach level (approximately +6 ft NAVD). The seaward edge of the fill will be sloped in the offshore direction generally on 1 on 20 slope to the existing beach. It is anticipated that each shoal management event will be accomplished in less than two calendar months. A buffer distance from the existing building line will be established to ensure a sufficient volume of sand remains landward of the borrow area to provide habitat, recreational area, and storm protection. Analysis of beach profiles dating to the 1980s confirms that a 400-ft buffer distance is appropriate for this region of Isle of Palms. This buffer would allow for approximately one-year's worth of the maximum observed historical erosion, and would still leave sufficient beach volume for a healthy beach (ie. - typical Isle of Palms beach width and volume in the absence of shoal attachment effects). It is unlikely that erosion in the shoal attachment area would exceed that which is predicted using the maximum historical erosion rate over any one-year period. A project would only be undertaken if the beach condition reached a pre-established "trigger." This trigger would be the distance from the +5 ft NAVD contour (approximate normal high-tide swash line) to the building line (Sheet 07). The applicant proposes a trigger of 100 ft, with consideration given to the time of year, permitted construction window, and expected future shoreline trends (i.e. - the stage of the shoal attachment process which signals whether an increase in erosion would likely occur in the project area). The City of the Isle of Palms has established an ongoing beach monitoring program to document sand volumes along the entire beach. Pre- and post-project surveys of the beach and offshore area in the project vicinity will be performed to verify sand volumes, beach condition, shoreline change trends; to identify the position of the +5 ft contour relative to the building line; and to monitor the scale and anticipated movements of offshore and near shore shoals.

The overall purpose of the proposed work is to maintain beach habitat, recreation area, and storm protection by redistributing incoming sand from inlet shoal-bypass events. Such redistribution is necessary to mitigate significant localized erosion which accompanies these events. The specific goals of the project are to:

1) Reduce the potential for erosion to reach a point where no dry beach remains.
2) Reduce or eliminate the need for emergency sandbagging during shoal bypass events.
3) Maintain nesting habitat for turtles.
4) Facilitate dune growth improving habitat and storm protection.
5) Maintain recreational, dry-beach area during all stages of the tide.

SEE SPECIAL CONDITION(S)

It is the applicant's goal to perform sand redistribution as infrequently as practicable so as to leave the project area undisturbed as long as possible between events, while still maintaining habitat, protecting, and recreation area. During any given five-year period of the permit, it is anticipated that no more than 500,000 cubic yards would be transferred. It is the applicant's preference to do fewer large scale transfers

(e.g. - two events totaling up to approx. 250,000 cy each) rather than a series of small, annual events, (e.g. - four events totaling approx. 125,000 cy each). Further, the applicant desires to perform the work during winter when biological impacts are expected to be lessened. Sand redistribution events involving - approx. 250,000 CY can be accomplished in less than two months. Previous experience indicates the beach profile in the borrow and fill areas equilibrates rapidly. Winter construction would also be timed for dune planting and to avoid turtle nesting season.

With regard to mitigation, the applicant states that "The proposed project follows a 2008 beach re-nourishment project in the area, which added approx. 885,000 CY of sand to the beach. The project restored - 10,200 linear ft of beach, much of which had little or no dry beach present. The condition of the beach was severe enough to lead resource agencies suggesting summer construction of the project. Nourishment created approx. 58.5 acres of dry beach habitat (CSE 2008). Following the project, the City and community of Wild Dunes arranged for sand fencing and vegetative plantings, which have contributed to significant dune growth seaward of the building line. The current project seeks to maintain the habitat created from that project and to avoid potential environmentally damaging conditions associated with severe erosion into a developed area. The project is thought to be sensitive in that it will expedite an already occurring natural process. No estuarine or freshwater wetlands will be impacted during the project. Sand from shoals which are already attached to the beach and accessible by land based equipment (i.e., not offshore or emergent shoals) will be transferred from one area to another. By protecting dune and dry beach habitat, the City of Isle of Palms considers the proposed project beneficial to the natural resources present at the northeast end of the island, and feels further mitigation efforts are not warranted. In addition, the City has committed to an extensive beach monitoring program as part of its long-term beach management plan. The monitoring plan involved detailed surveys of the beach condition, dune growth, inlet channels, ebb-tidal deltas, and sediment quality. The surveys of the ebb tidal deltas of Dewees Inlet and Breach Inlet represent some of the most detailed (temporarily and spatially) surveys of ebb-tidal deltas in South Carolina ever conducted. They show the movements of channels and shoals, and are currently being used to predict how they will impact the adjacent beach in the near future. The changes in the inlet delta shown by the surveys, and experience in similar events at Isle of Palms, are the justification of the proposed project. Without redistributing the sand as it attaches to the beach, significant dry beach and dune habitat will rapidly be lost, leading to a condition similar to what was present between 2004 and 2008 which led to the nourishment project."

CRITICAL AREA PERMIT SPECIAL CONDITIONS

1. Provided it is understood that the DHEC-Bureau of Water (BOW) 401 water quality certification is waived (see Attachment A).

2. Provided the permittee demonstrate by a stamped and signed survey and pictorial documentation that the building line is 100' or less away from the +5 ft NAVD contour line (approximate normal high tide swash line). This must be done before a construction placard can be issued.

3. Provided that surveys of the shoal borrow area are conducted immediately following excavation and again one year later, to document the initial post-project configuration and evaluate any significant change after one year.

4. Provided that no work can be performed during the i.e.-laying portion of turtle nesting season (May 1–August 15). Any work performed during the i.e.-hatching portion of turtle nesting season (August 16-October 31) must be coordinated with the local Isle of Palms turtle nest patrol, to avoid any impacts to turtle nests in the work area. No work can be performed at night during the August 16-October 31 time period.

SEE SPECIAL CONDITION(S)

5. Provided all necessary measures must be taken to prevent oil, tar, trash, debris, and other pollutants from entering the adjacent waters or wetlands.

6. Provided that in order to minimize the amount of fines settling in the area and hasten the overall recovery, excavation and/or dredging should be conducted in a manner to insure that the underlying mud bottoms are not disturbed.

7. Provided that during the turtle nesting season, construction equipment and materials must be stored in a manner that will minimize impacts to sea turtles to maximum extent possible.

8. Provided that during May, June, and July, lighting associated with project must be minimized to reduce the possibility of disrupting or disorienting nesting and/or hatchling sea turtles.

9. Provided the project must be constructed and maintained according to the natural slope of the beach.

10. Provided that in the event that archaeological or paleontological remains are found during the course of work, the applicant should notify the South Carolina Institute of Archaeology and Anthropology (Mr. James Spirek at 803-777-8170) pursuant to South Carolina Underwater Antiquities Act of 1991, (Article 5 Chapter 7, Title 54, Code of Laws of South Carolina, 1976). Archaeological remains consist of any materials made or altered by man, which remain from past historic or prehistoric times (ie, older than 50 years). Examples include old pottery fragments, metal, wood, arrowheads, stone implements or tools, human burials, historic docks, structures, or non-recent vessel remains. Paleontological remains consist of old animal remains, original or fossilized, such as teeth, tusks, bone, or entire skeletons.

SEE SPECIAL CONDITION(S)

PERMITTEE'S ATTENTION IS DIRECTED TO GENERAL CONDITIONS NUMBERS FOUR (4) AND (5), BY ACCEPTANCE OF THIS PERMIT, PERMITTEE IS PLACED ON NOTICE THAT THE STATE OF SOUTH CAROLINA, BY ISSUING THIS PERMIT, DOES NOT WAIVE ITS RIGHTS TO REQUIRE PAYMENT OF A REASONABLE FEE FOR USE OF STATE LANDS AT A FUTURE DATE IF SO DIRECTED BY STATUTE.

THE PERMITTEE, BY ACCEPTANCE OF THIS PERMIT, AGREES TO ABIDE BY THE TERMS AND CONDITIONS CONTAINED HEREIN AND TO PERFORM THE WORK IN STRICT ACCORDANCE WITH THE PLANS AND SPECIFICATIONS ATTACHED HERETO AND MADE A PART HEREOF. ANY DEVIATION FROM THESE CONDITIONS, TERMS, PLANS AND SPECIFICATIONS SHALL BE GROUNDS FOR REVOCATION, SUSPENSION OR MODIFICATION OF THIS PERMIT AND THE INSTITUTION OF SUCH LEGAL PROCEEDINGS AS THE DEPARTMENT MAY CONSIDER APPROPRIATE.

2010-1041-2IG

Your signature below, as permittee, indicates that you accept and agree to comply with the terms and conditions of this permit.

(PERMITTEE) City Administrator (DATE) 9/9/2011

City of Isle of Palms

This permit becomes effective when the State official, designated to act for the Office of Ocean and Coastal Resource Management, has signed below.

(WETLAND SECTION PROJECT MANAGER) (DATE) 8/31/2011

Steven Brooks
or his Designee Other Authorized State Official

SEE SPECIAL CONDITION(S)

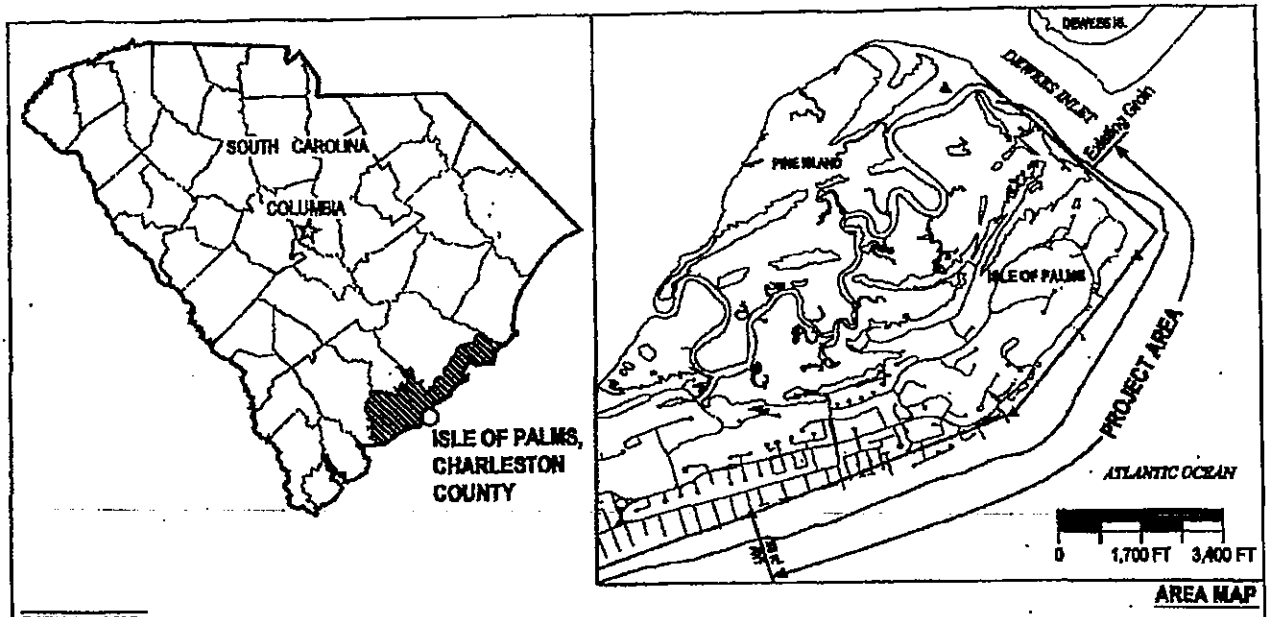
GENERAL CONDITIONS:

This construction and use permit is expressly contingent upon the following conditions which are binding on the permittee:

1. That the permittee, in accepting this permit, covenants and agrees to comply with and abide by the provisions and conditions herein and assumes all responsibility and liability and agrees to save OCRM and the State of South Carolina, its employees or representatives, harmless from all claims of damage arising out of operations conducted pursuant to this permit.
2. That if the activity authorized herein is not constructed or completed within five years of the date of issuance, this permit shall automatically expire. A request, in writing, for an extension of time shall be made not less than thirty days prior to the expiration date.
3. That all authorized work shall be conducted in a manner that minimizes any adverse impact on fish, wildlife and water quality.
4. That this permit does not relieve the permittee from the requirements of obtaining a permit from the U. S. Army Corps of Engineers or any other applicable federal agency, nor from the necessity of complying with all applicable local laws, ordinances, and zoning regulations. This permit is granted subject to the rights of the State of South Carolina in the navigable waters and shall be subject, further, to all rights held by the State of South Carolina under the public trust doctrine as well as any other right the State may have in the waters and submerged lands of the coast.
5. That this permit does not convey, expressly or impliedly, any property rights in real estate or material nor any exclusive privileges; nor does it authorize the permittee to alienate, diminish, infringe upon or otherwise restrict the property rights of any other person or the public; nor shall this permit be interpreted as appropriating public properties for private use.
6. That the permittee shall permit OCRM or its authorized agents or representatives to make periodic inspections at any time deemed necessary in order to ensure that the activity being performed is in accordance with the terms and conditions of this permit.
7. That any abandonment of the permitted activity will require restoration of the area to a satisfactory condition as determined by OCRM.
8. That this permit may not be transferred to a third party without prior written notice to OCRM, either by the transferee's written agreement to comply with all terms and conditions of this permit or by the transferee subscribing to this permit and thereby agreeing to comply.
9. That if the display of lights and signals on any structure or work authorized herein is not otherwise provided for by law, such lights and special signals as may be prescribed by the United States Coast Guard shall be installed and maintained by and at the expense of the permittee.
10. That the permit construction placard or a copy of the placard shall be posted in a conspicuous place at the project site during the entire period of work.
11. That the structure or work authorized herein shall be in accordance with the plans and drawing attached hereto, and shall be maintained in good condition. Failure to build in accordance with the plans and drawings attached hereto, or failure to maintain the structure in good condition, shall result in the revocation of this permit.
12. That the authorization for activities or structures herein constitutes a revocable license. OCRM may require the permittee to modify activities or remove structures authorized herein if it is determined by OCRM that such activity or structures violates the public's health, safety, or welfare, or if any activity is inconsistent with the public trust doctrine. Modification or removal under this condition shall be ordered only after reasonable notice stating the reasons therefore and provision to the permittee of the opportunity to respond in writing. When the Permittee is notified that OCRM intends to revoke the permit, Permittee agrees to immediately stop work pending resolution of the revocation.
13. That OCRM shall have the right to revoke, suspend, or modify this permit in the event it is determined the permitted structure (1) significantly impacts the public health, safety and welfare, and/or is violation of Section 48-39-150, (2) adversely impacts public rights, (3) that the information and data which the permittee or any other agencies have provided in connection with the permit application is either false, incomplete or inaccurate, or (4) that the activity is not in compliance with the drawings submitted by the applicant. That the permittee, upon receipt of OCRM's written intent to revoke, suspend, or modify the permit has the right to a hearing. Prior to revocation, suspension, or modification of this permit, OCRM shall provide written notification of intent to revoke to the permittee, and permittee can respond with a written explanation to OCRM. (South Carolina Code Section 1-023-370 shall govern the procedure for revocation, suspension or modification herein described).
14. That any modification, suspension or revocation of this permit shall not be the basis of any claim for damages against OCRM or the State of South Carolina or any employee, agent, or representative of OCRM or the State of South Carolina.
15. That all activities authorized herein shall, if they involve a discharge or deposit into navigable waters or ocean waters, be at all times consistent with all applicable water quality standards, effluent limitations and standards of performance, prohibitions, and pretreatment standards established pursuant to applicable federal, state and local laws.
16. That extreme care shall be exercised to prevent any adverse or undesirable effects from this work on the property of others. This permit authorizes no invasion of adjacent private property, and OCRM assumes no responsibility or liability from any claims of damage arising out of any operations conducted by the permittee pursuant to this permit.

SEE SPECIAL CONDITION(S)

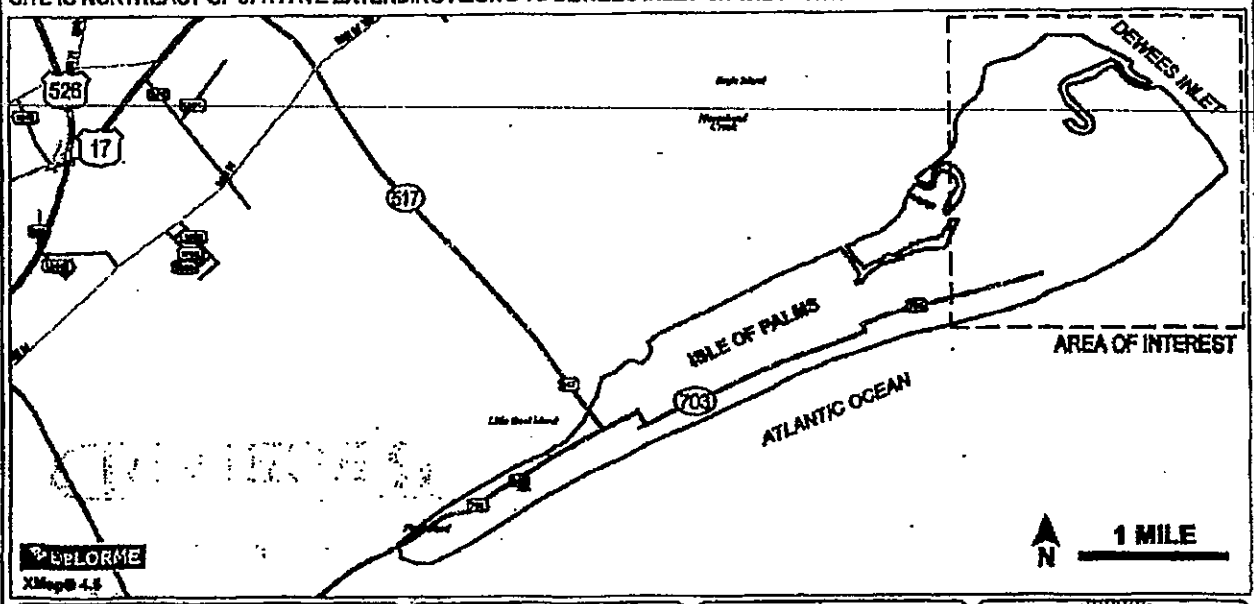
SEE SPECIAL CONDITION(S)



AREA MAP

DIRECTIONS:

FROM CHARLESTON, TAKE US-17 NORTH. TURN RIGHT ONTO SC 517 (ISLE OF PALMS CONNECTOR). TURN LEFT ONTO PALM BLVD. SITE IS NORTHEAST OF 57TH AVE EXTENDING ALONG TO DEWEES INLET ON THE NORTHEAST END OF ISLE OF PALMS.

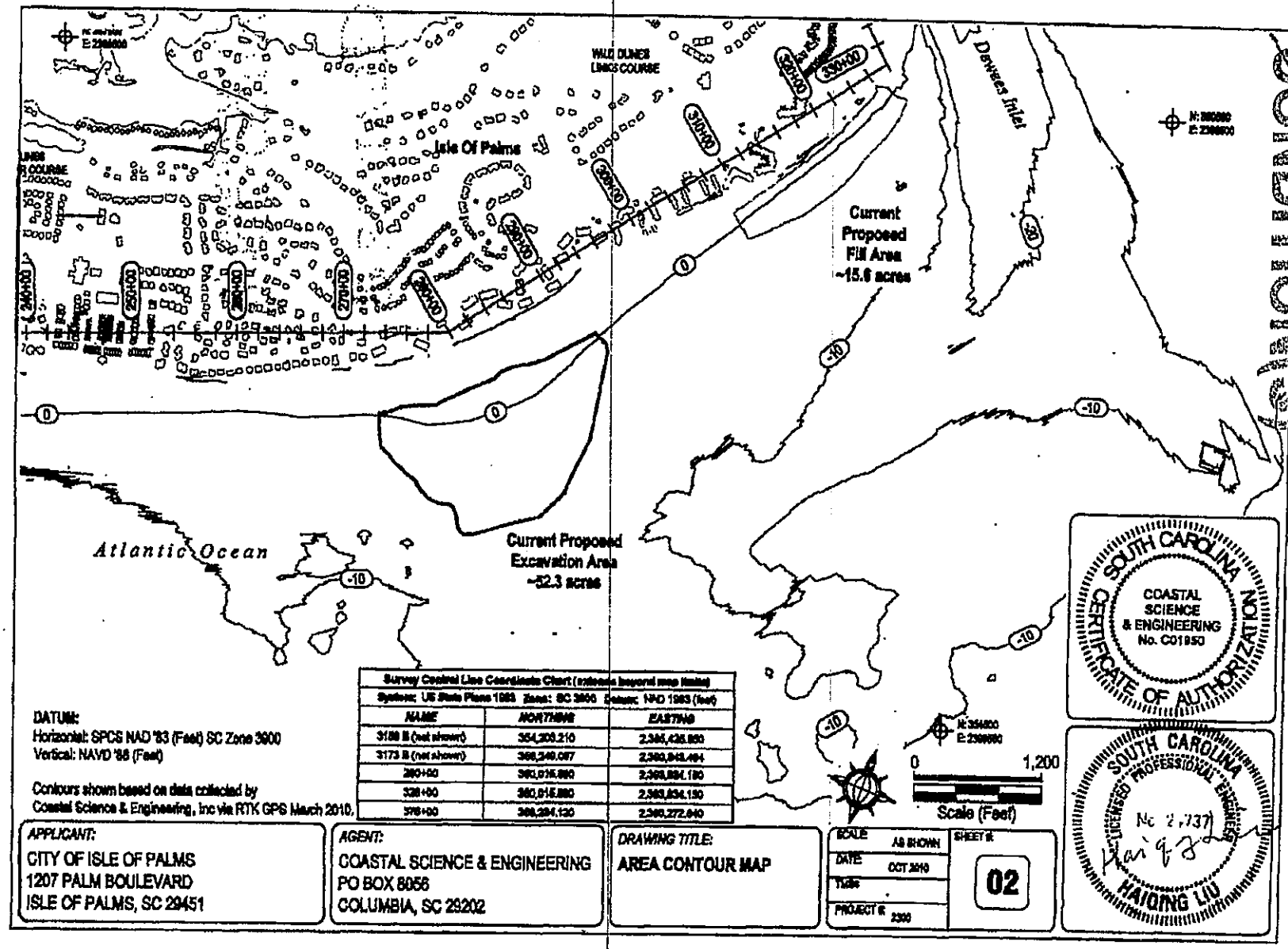


APPLICANT: CITY OF ISLE OF PALMS PO DRAWER 508 ISLE OF PALMS SC 29451	DRAWING TITLE: VICINITY MAP
AGENT: COASTAL SCIENCE & ENGINEERING PO BOX 8056 COLUMBIA, SC 29202	SCALE: AS SHOWN DATE: OCT 2010 TIME: PROJECT #: 2360 SHEET #: 01

SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION COASTAL SCIENCE & ENGINEERING No. C01950

SOUTH CAROLINA PROFESSIONAL ENGINEER No. 24737 HAIQING LIU

SPECIAL



Survey Control Line Coordinate Chart (stations beyond area limits)		
System: US State Plane 1983 Zone: SC 3900 Datum: NAD 1983 (feet)		
NAME	NORTHING	EASTING
3188 B (not shown)	354,209.210	2,346,426.850
3173 B (not shown)	356,249.087	2,360,845.494
280+00	360,016.880	2,369,894.180
328+00	360,016.880	2,369,894.180
376+00	360,284.120	2,369,272.640

DATUM:
Horizontal: SPCS NAD '83 (Feet) SC Zone 3900
Vertical: NAVD '88 (Feet)

Contours shown based on data collected by Coastal Science & Engineering, Inc via RTK GPS March 2010.

APPLICANT:
CITY OF ISLE OF PALMS
1207 PALM BOULEVARD
ISLE OF PALMS, SC 29451

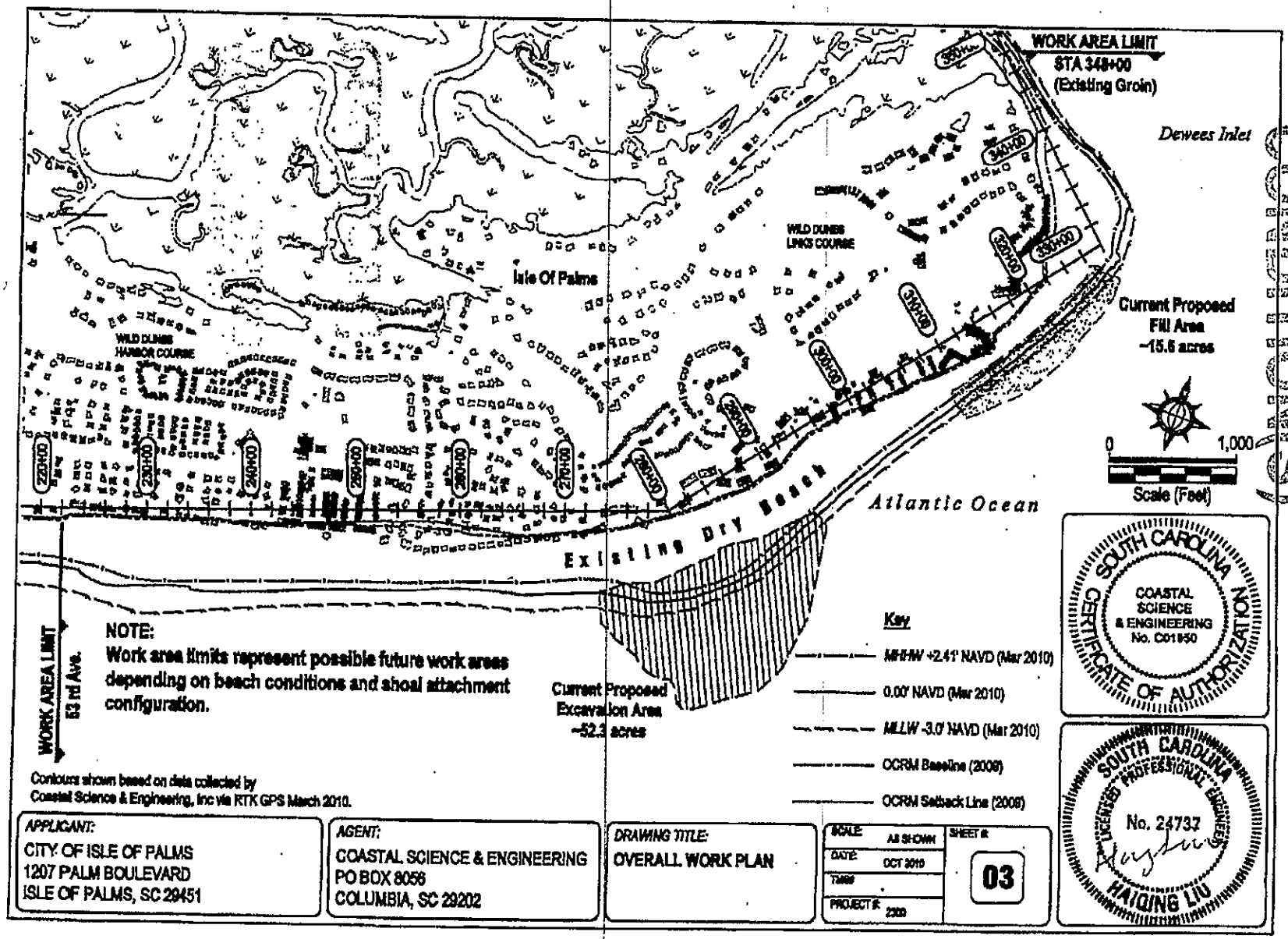
AGENT:
COASTAL SCIENCE & ENGINEERING
PO BOX 8056
COLUMBIA, SC 29202

DRAWING TITLE:
AREA CONTOUR MAP

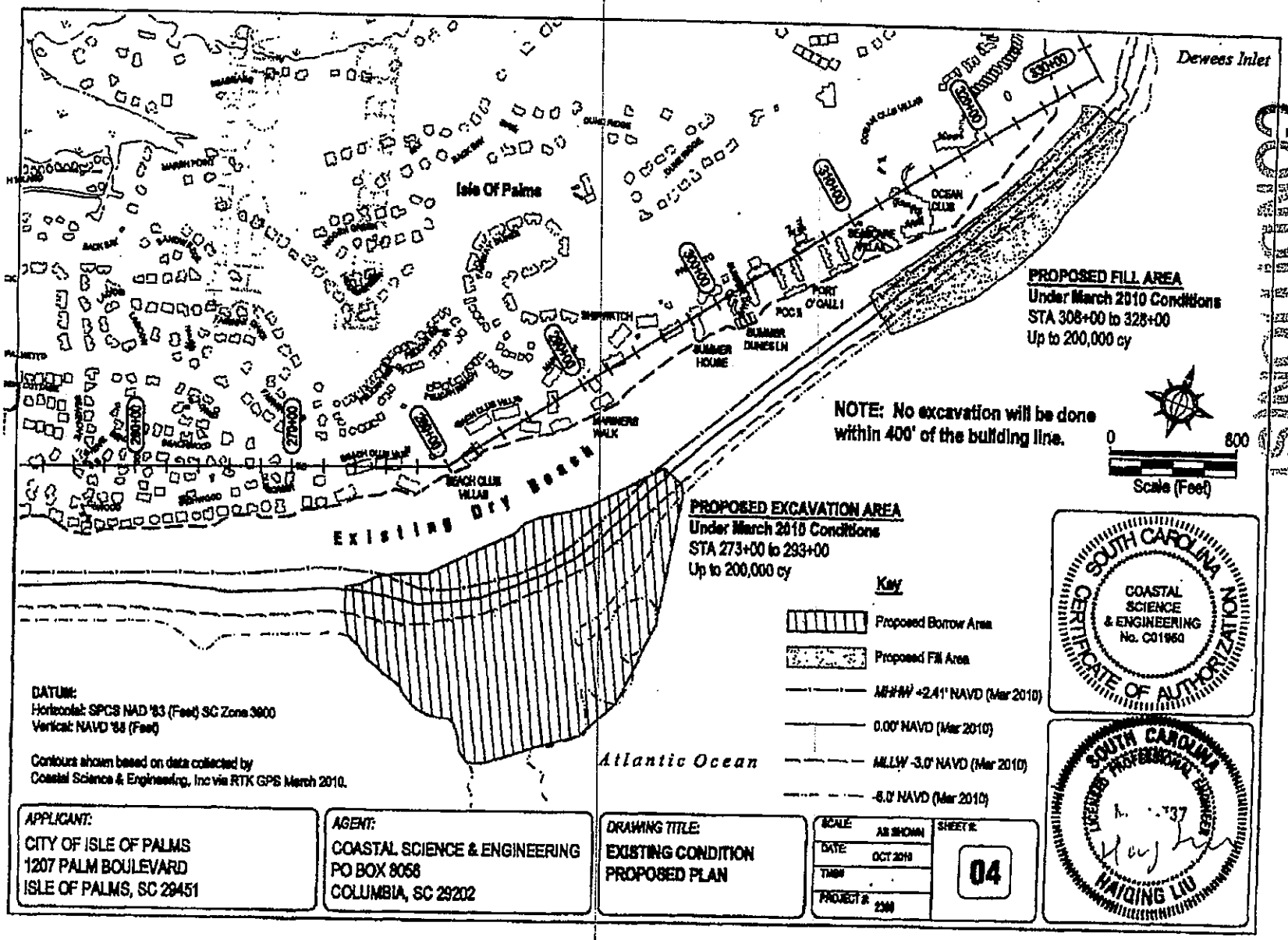
SCALE: AS SHOWN
DATE: OCT 2010
TIME:
PROJECT #: 2300

SHEET #: 02

4 of 4

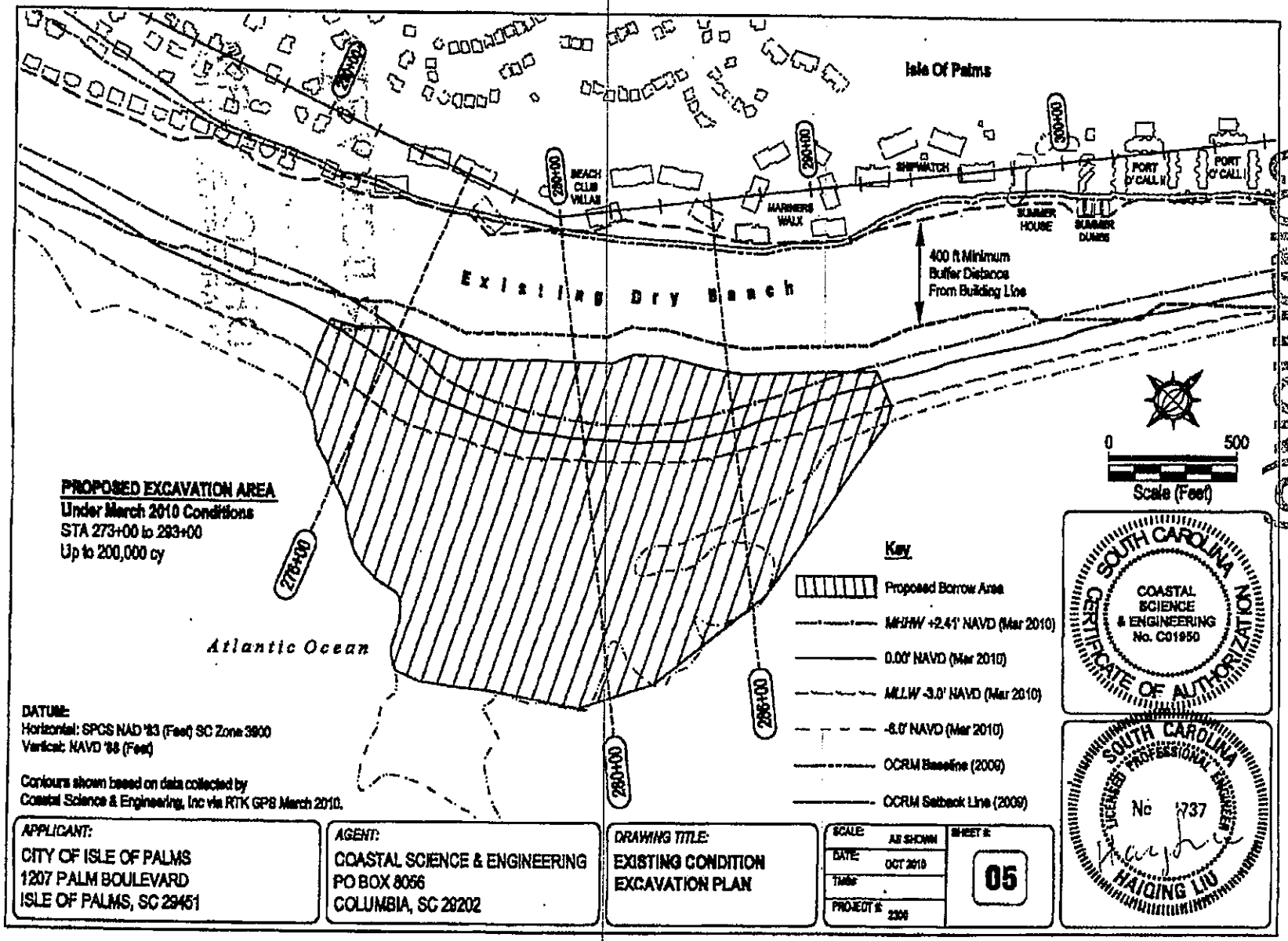


SE SPECIAL CONDITIONS

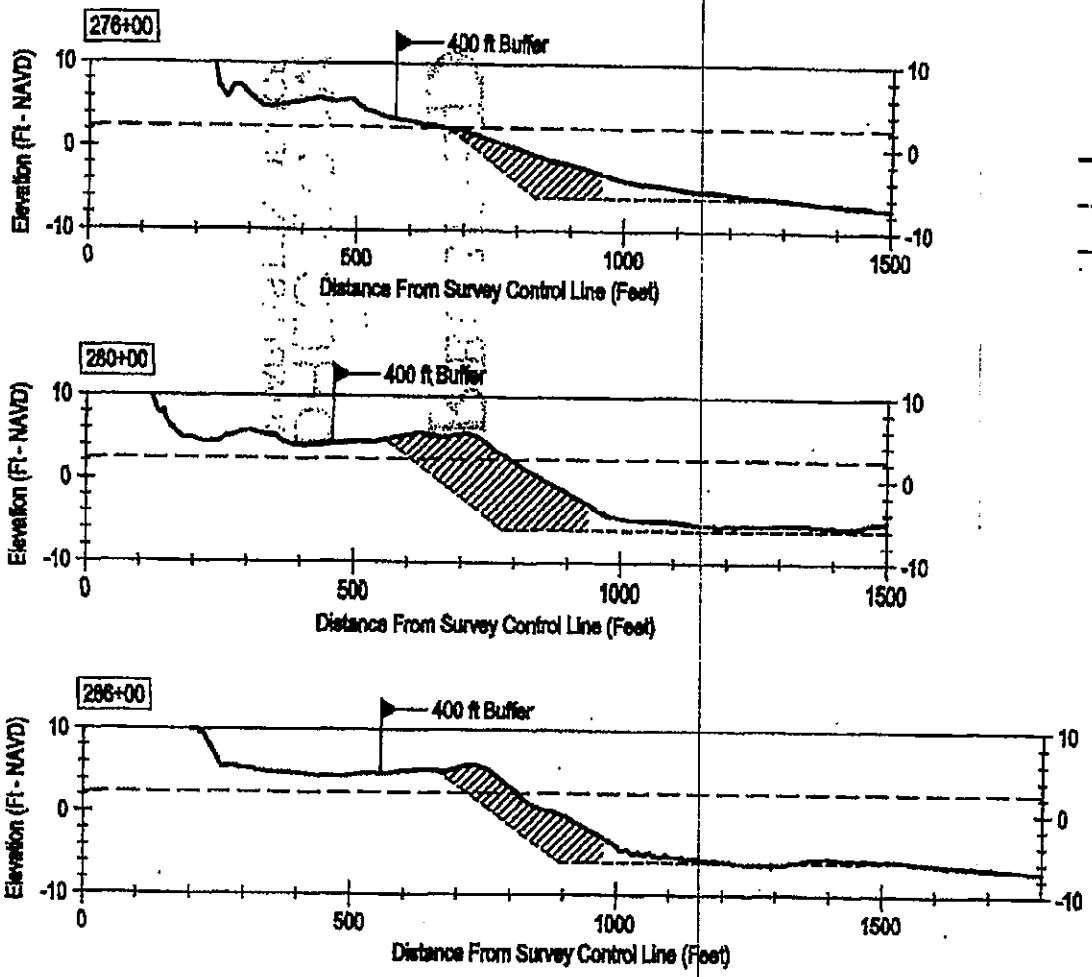


SEE SPECIAL CONDITIONS

10 of 14



SEE SPECIAL CONDITIONS



Key

- Existing Profile (March 2010)
- Proposed Excavation Profile
- *MHW* +2.41' NAVD (Mar 2010)
- *MLW* -3.0' NAVD (Mar 2010)

DATUM (feet):
Horizontal: SPCS NAD '83 SC Zone 3900
Vertical: NAVD '88 (Feet)
Vertical Exaggeration: 15

Finished Slope Will Be ~ 1 on 20

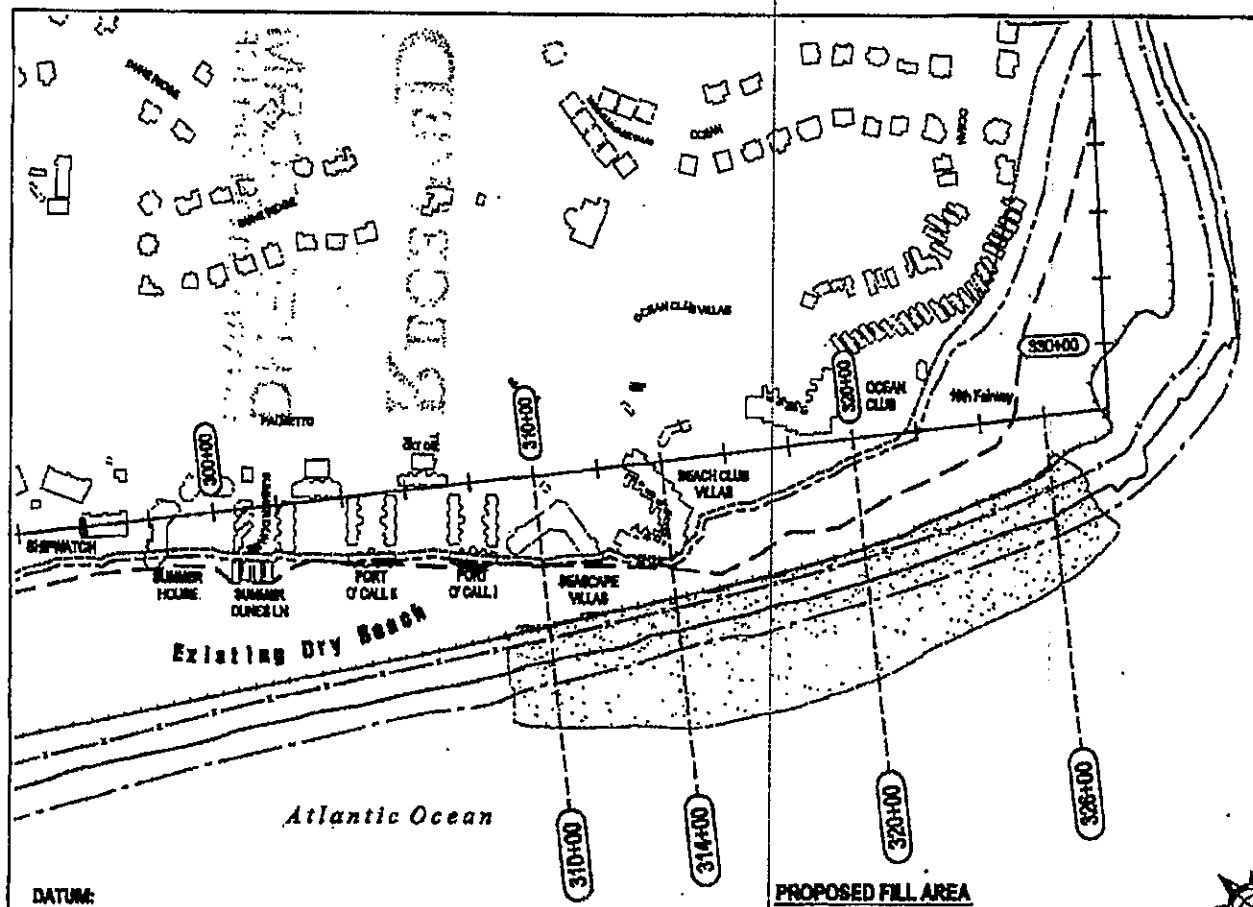
SOUTH CAROLINA NOTICE OF CERTIFICATE OF AUTHORIZATION
COASTAL SCIENCE & ENGINEERING No. C01650

SOUTH CAROLINA PROFESSIONAL ENGINEER
LICENSED
No. 24737
HAIQING LIU

APPLICANT: CITY OF ISLE OF PALMS 1207 PALM BOULEVARD ISLE OF PALMS, SC 29451	*AGENT:* COASTAL SCIENCE & ENGINEERING PO BOX 8056 COLUMBIA, SC 29202	*DRAWING TITLE:* EXCAVATION PLAN TYPICAL SECTIONS	SCALE: AS SHOWN DATE: OCT 2010 PROJECT #: 2300 SHEET #: 06

12 of 14

SEE SPECIAL CONDITIONS



DATUM:
Horizontal: SPCS NAD '83 (Feet) SC Zone 3900
Vertical: NAVD '88 (Feet)

Contours shown based on data collected by Coastal Science & Engineering, Inc via RTK GPS March 2010.

PROPOSED FILL AREA
Under March 2010 Conditions
STA 308+00 to 328+00
Up to 200,000 cy

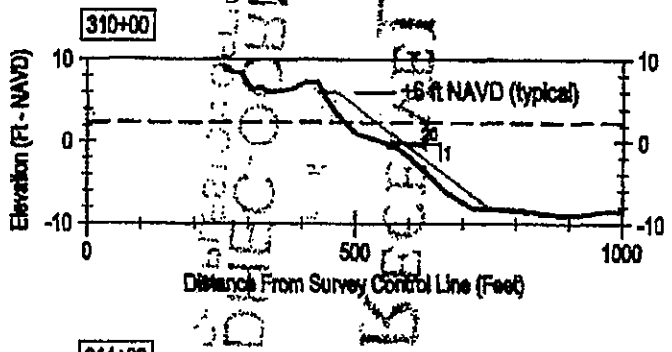
0 500
Scale (Feet)

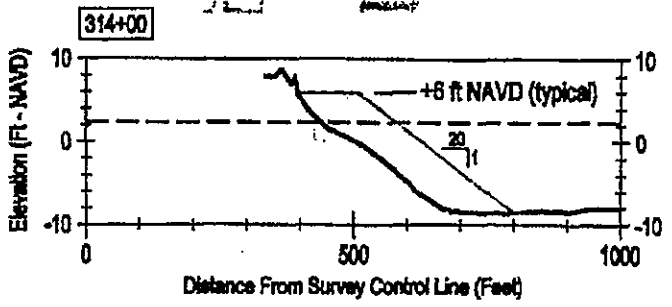
SOUTH CAROLINA COASTAL SCIENCE & ENGINEERING No. C01950 CERTIFICATE OF AUTHORIZATION

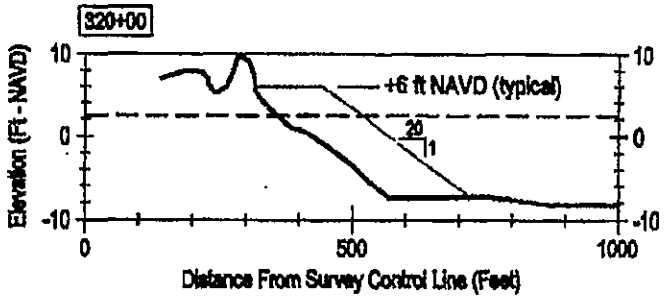
SOUTH CAROLINA PROFESSIONAL ENGINEER No. 24737 HAIQING LIU

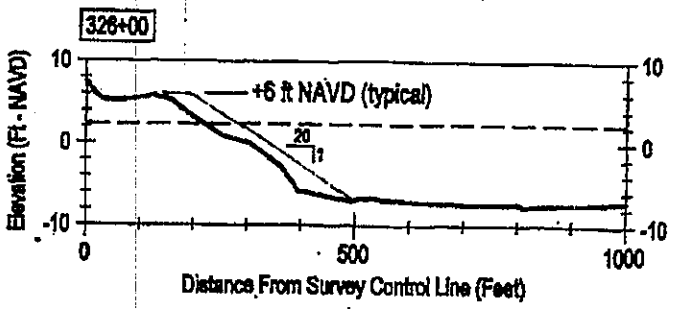
APPLICANT:	AGENT:	DRAWING TITLE:	SCALE: AS SHOWN	SHEET #:
CITY OF ISLE OF PALMS 1207 PALM BOULEVARD ISLE OF PALMS, SC 29451	COASTAL SCIENCE & ENGINEERING PO BOX 8056 COLUMBIA, SC 29202	FILL PLAN	DATE: OCT 2010 TIME: PROJECT #: 2980	07

13 of 14









Note: Sections will vary according to conditions at the time of each beach management event.

Key

- Existing Profile (March 2010)
- Proposed Fill Profile
- MHHW +2.41' NAVD (Mar 2010)

MLW -3.0' NAVD (Mar 2010)

DATUM (feet):
Horizontal: SPCS NAD '83 SC Zone 3900
Vertical: NAVD '88 (Feet)
Vertical Exaggeration: 15
Finish slope 1 on 20

SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION
COASTAL SCIENCE & ENGINEERING No. C01960

SOUTH CAROLINA PROFESSIONAL ENGINEER
No. 24737
HAIDING LIU

APPLICANT:	AGENT:	DRAWING TITLE:	SCALE: AS SHOWN	SHEET #
CITY OF ISLE OF PALMS 1207 PALM BOULEVARD ISLE OF PALMS, SC 29451	COASTAL SCIENCE & ENGINEERING PO BOX 8056 COLUMBIA, SC 29202	PROPOSED FILL TYPICAL SECTIONS	DATE: OCT 2010 TIME: PROJECT #: 2508	08

CONDITIONS

SEE SPECIAL

D H E C

PROMOTE PROTECT PROSPER

Promoting and protecting the health of the public and the environment

ATTACHMENT A

December 10, 2010

Coastal Science and Engineering
P.O. Box 8056
Columbia, SC 29202

Re: 401 Certification Pursuant for Permit Number SAC 2010-1041-2IG
Applicant: The City of Isle of Palms
County: Charleston

Dear Steven Traynum:–

The South Carolina Department of Health and Environmental Control (Department) is in receipt of your application for a Water Quality Certification pursuant to Section 401 of the Federal Clean Water Act. The project, as described in the application, falls under the category of projects for which the Department has determined that the 401 Water Quality Certification will be waived in accordance with the attached notice. Thus, the 401 Water Quality Certification for this project is waived and the Department will not take any action on this application.

Please do not hesitate to contact me at 803-898-0369, if you have any questions.

Sincerely,

Chuck Hightower
Water Quality Certification and Wetlands Section

Cc: Heather Preston
Tess Trumball OCRM

RECEIVED

JAN 19 2011

DHEC-OCRM
CHARLESTON OFFICE

ATTACHMENT A

DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL

Notice

401 Water Quality Certification Resource Reductions

State budget cuts have impacted the level of services the Department of Health and Environmental Control (Department) can provide and have resulted in the need for the Department to re-evaluate its workloads and priorities. The 401 Water Quality Certification program has been identified as an area where resource reductions are necessary.

In accordance with S.C. Regulation 61-101, Water Quality Certification, the Department can issue, deny, or waive certification for Federal licenses or permits. If the Department fails to act on a certification within a reasonable period of time, not to exceed one year, the certification requirements are waived.

In light of recent budget cuts, the Department has determined that it can no longer certify all Federal licenses and permits for which it receives applications. Thus, the Department has identified categories of projects for which the 401 Water Quality Certification will be waived as follows:

- **Nationwide Permits as issued by the US Army Corps of Engineers (Corps)**
  Every five years, the Corps issues nationwide permits (NWP) for categories of activities that have been determined to have minimal individual and cumulative adverse effects on the aquatic environment. In a Federal Register notice published on March 12, 2007, the Corps reissued the NWP, and on May 11, 2007, the Department issued both a 401 Water Quality Certification and a Coastal Zone Consistency Certification in accordance with the S.C. Coastal Zone Management Program. At the time of the May 11, 2007 certification, the Department placed conditions on a number of the NWP that would necessitate an individual permit review for those projects. In light of the need to reduce staff resources, the Department will no longer issue individual certifications for these permits. By waiving these 401 certifications, the state will rely on the initial Corps determination of minimal impacts.

- **Groins and Beach Renourishment Projects**
  Groins and beach renourishment activities have very few water quality impacts. As a general rule, the concerns and comments that the Department receives during a 401 Water Quality Certification review for these activities are directed towards the issue of threatened or endangered species. These activities will still require comments from the US Fish and Wildlife Service and/or the National Marine Fisheries Service which have jurisdiction over threatened and endangered species before the Corps can issue their 404 permit. Therefore, the Department has a reasonable assurance that these concerns will be addressed. Further, the Department's OCRM office will still continue to issue direct permits for alteration of the critical area for these activities that also provide a means to address the threatened or endangered species concerns.

These waivers apply only to the 401 Water Quality Certification. Any Coastal Zone Consistency Certifications and the Critical Area Permits issued by the Department's OCRM office are not affected by this action. In light of continuing budget reductions, the Department will periodically evaluate our project workloads to determine if other changes are necessary.

DEPARTMENT OF THE ARMY
CHARLESTON DISTRICT, CORPS OF ENGINEERS
69 A Hagood Avenue
CHARLESTON, SOUTH CAROLINA 29403-5107

REPLY TO
ATTENTION OF

REGULATORY DIVISION

TO WHOM IT MAY CONCERN:

In issuing this permit, this office has acted with reliance on the plans which you submitted. As you proceed with your project, please exercise every caution to ensure the work is performed exactly as shown on the approved plans and specifications, as deviations of any nature are expressly prohibited without the **prior** authorization of this office.

With this in mind, you will find this office cooperative in authorizing minor deviations if they are clearly within the scope of the original permit; however, you are place on any "**unauthorized**" deviation from the approved plans will be constructed as a violation of Federal law and, at a minimum, you will be required to submit as-built plans of any deviations. These as-built plans will have to be prepared by a registered land surveyor. You will not be required to submit as-built drawings unless an "**unauthorized**" deviation is detected by this office or such submittals are required by a special condition in the permit (i.e., certified as-built plans are commonly required for utility crossings and structures adjacent to Federal channels.) If, upon demand, you fail to provide this office with such drawings in the requisite format, this office will request the U.S. Attorney to seek appropriate civil or criminal sanctions in order to maintain the integrity of the Department of the Army permit program.

Please be assured that you will find the Corps of Engineers receptive to minor deviations from the approved plans as long as such deviations are approved **prior** to commencement of work.

OF WORK AUTHORIZED BY PERMIT

_____
DATE

WORK AUTHORIZED BY DEPARTMENT OF THE ARMY PERMIT 2010-1041-216

DATED _____

PERFORM WORK IN _____
(WATERBODY NAME)

WAS COMMENCED
ON _____
WAS COMPLETED (DATE)

(check appropriate box)

_____
SIGNATURE

FL 130
5 MAR. 79

- -

NOTICE OF COMMENCEMENT OR COMPLETION
OF WORK AUTHORIZED BY PERMIT

_____
DATE

WORK AUTHORIZED BY DEPARTMENT OF THE ARMY PERMIT 2010-1041-216

DATED _____

PERFORM WORK IN _____
(WATERBODY NAME)

WAS COMMENCED
ON _____
WAS COMPLETED (DATE)

(check appropriate box)

_____
SIGNATURE

FL 130
5 MAR. 79

DEPARTMENT OF THE ARMY
CHARLESTON DISTRICT, CORPS OF ENGINEERS
69-A HAGOOD AVENUE
CHARLESTON, SOUTH CAROLINA 29403-5107

REPLY TO
ATTENTION OF

March 9, 2012

Regulatory Division

The City of the Isle of Palms
Ms. Linda Tucker
c/o Coastal Science & Engineering
Attn: Mr. Steven Traynum
P. O. Box 8056
Columbia, South Carolina 29202

Dear Ms. Tucker:

This is in response to your letter dated March 8, 2012, requesting that your permit numbered SAC-2010-1041-2IG issued on March 6, 2012, be modified to reflect the changes in the attached special conditions. These changes include modifications to two special conditions in the Federal permit to allow the permittee to perform the baseline lighting survey in March and work until April 30 so as to complete the work before turtle nesting season. The permittee wishes to begin work immediately due to the erosion at the project site.

This is to inform you that your request for modification is granted. Please attach this letter with the modified conditions to the original permit. All of the conditions to which the work is made subject remain in full force and effect. In that this work appears subject to the jurisdiction of the South Carolina Department of Health and Environmental Control, Office of Ocean and Coastal Resource Management, it is highly recommended that you contact that agency to ascertain their requirements in this matter.

Sincerely,

for: Edward P. Chamberlayne, P.E.
Lieutenant Colonel, U.S. Army
Commander and District Engineer

Tina B. Hadden
Chief, Regulatory Division

Enclosure

Special condition d.1. is modified to allow the permittee to perform the preconstruction lighting survey in March, rather than May, in order to complete the authorized construction prior to turtle nesting season. This permit condition is modified to state:

"That the permittee agrees that the preconstruction lighting survey shall be conducted in March."

Special condition d.5. is modified to allow the work to be performed until April 30 to be consistent with the State permit. This permit condition shall now state:

"That the permittee agrees that the proposed work may only take place in the winter months from November 1 to April 30."