



C. Earl Hunter, Commissioner

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

RECEIVED

MAR 24 2008

C.S.E., I'C

March 18, 2008

Dr. Timothy W. Kana
Coastal Science & Engineering
PO Box 8046
Columbia, SC 29202-8056

Re: 2007-02631-2IG-P
City of Isle of Palms

Dear Dr. Kana:

The SCDHEC Office of Ocean and Coastal Resource Management has reviewed your application to perform beach renourishment between 47th Ave. and Dewees Inlet, Isle of Palms, Charleston County, South Carolina and has issued a permit for this work. You should carefully read the description of the authorized project and any special conditions that have been placed on the permit, as these conditions may modify the permitted activity. In addition, there are a series of general conditions that should be reviewed. The original and one photocopy of the permit, as issued, are 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,

Curtis Joyner, Manager
Wetland Permitting and Certification

Enclosure

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



C. Earl Hunter, Commissioner

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

Notice of Appeal Procedure

The following procedures are in effect beginning July 1, 2006, pursuant to 2006 Act No. 387:

1. This decision of the S.C. Department of Health and Environmental Control (Department) becomes the final agency decision 15 days after notice of the decision has been mailed to the applicant or respondent, unless a written request for final review 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 written request for final review with the Clerk of the Board at the following address or by facsimile at 803-898-3393.

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

3. 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 how to handle the matter
 - c. a copy of the Department's decision or action under review
4. In order to be timely, a request for final review must be received by the Clerk of the Board within 15 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.
5. If a timely request for final review is filed with the Clerk of the Board, the Clerk will provide additional information regarding procedures.
6. The Board of Health and Environmental Control has 60 days from the date of receipt of a request for final review to conduct a final review conference. The conference may be conducted by the Board, its designee, or a committee of three members of the Board appointed by the chair.
7. If a final review conference is not conducted within 60 days, the Department decision becomes the final agency decision, and a party may request a contested case hearing before the Administrative Law Court within 30 days after the deadline for the final review conference.

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

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Ocean and Coastal Resource Management

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C. Earl Hunter, Commissioner

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CRITICAL AREA & WATER QUALITY CERTIFICATION PERMIT

Permittee: City of Isle of Palms

Permit Number: 2007-02631-2IG-P

Date of Issuance: March 18, 2008

Expiration Date: March 18, 2013

Location: On and adjacent to the Atlantic Ocean between 47th Ave. North and Dewees Inlet, Isle of Palms, Charleston County, South Carolina.

SEE SPECIAL
CONDITIONS(S)

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 plans submitted by you, attached hereto, show the work consists of beach nourishment. Up to 885,000 cubic yards of sand will be dredged from four offshore borrow sites and pumped via hydraulic pipeline to renourish 13,785 linear feet of beach. The purpose of the proposed activity is for beach restoration and erosion control.

CRITICAL AREA PERMIT SPECIAL CONDITIONS

1. Provided that the permittee must follow the Terms and Conditions for the protection of sea turtles listed in the Biological Opinion letter from the U.S. Fish and Wildlife Service dated February 28, 2008 (see Attachment A).
2. Provided that all work must be performed in accordance with the revised drawings submitted by the permittee on January 11, 2008 and revised and modified by the Department with respect to the fill taper area of the project. Department Staff have determined that the fill taper area will be reduced from a 6 block range to a 3 block range and will now extend from 53rd Ave. to 56th Ave. The reduced taper area is shown on page 7 of 20.
3. Provided that all sand bags must be removed from the beach concurrent with renourishment. No sand bags can be covered with renourishment sand.
4. Provided that dredging plans are designed to utilize the borrow sites with the lowest shell and gravel content, based on monitoring of fill material during construction. All fill material must be similar to the native beach sand in color and grain size and must not contain, on average, greater than 5% coarse gravel (excluding shell material) or greater than 10% fines (silt or clay passing the #200 sieve).
5. Provided that bathymetric surveys of the borrow sites are conducted immediately following dredging and again one year later, to document their initial post-project configuration and evaluate any significant infilling after one year.
6. 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.

WATER QUALITY SPECIAL CONDITIONS

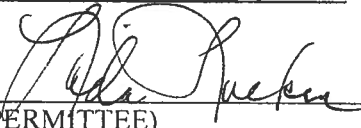
1. The applicant must implement best management practices that will minimize erosion and migration of sediments on and off the project site during and after construction. These practices should include the use of appropriate grading and sloping techniques, mulches, hay bales, silt fences, or other devices capable of preventing erosion, migration of sediments and bank failure.
2. Material used for beach nourishment must be at least 80 percent sand.
3. The excavated and/or dredged area must be sloped such that the rear is no deeper than the front and the front is no deeper than the adjacent waterbody to maintain water circulation.
4. All necessary measures must be taken to prevent oil, tar, trash, debris and other pollutants from entering the adjacent waters or wetlands.
5. Only clean sand free of all potential sources of pollution must be used for beach renourishment.
6. 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. Immediately after completion of the beach nourishment project and prior to the next three nesting seasons, beach compaction must be monitored and tilling must be conducted as required to reduce the likelihood of impacting sea turtle nesting and hatching activities.
8. Immediately after completion of the beach nourishment project and prior to the next three nesting seasons, monitoring must be conducted to determine if escarpments are present and must be leveled as required to reduce the likelihood of impacting sea turtle nesting and hatching activities.
9. 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.
10. 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.
11. No work will occur between August 1 and October 31, 2008, in order to minimize disrupting and/or disorienting hatchling sea turtles.
12. All existing sandbags must be removed. No sandbags will be covered with sand.
13. The project must be constructed and maintained according to the natural slope of the beach.

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.

2007-02631-2IG-P

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

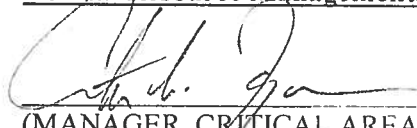


 (PERMITTEE)
 City of Isle of Palms

3/19/08

 (DATE)

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



 (MANAGER, CRITICAL AREA PERMITTING)
 Curtis M. Joyner
 or his Designee Other Authorized State Official

3/18/08

 (DATE)

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.

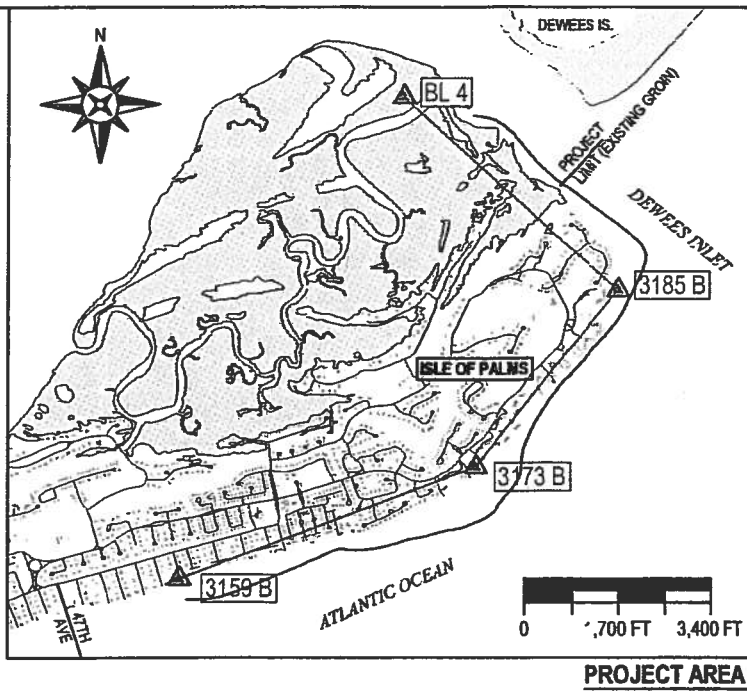
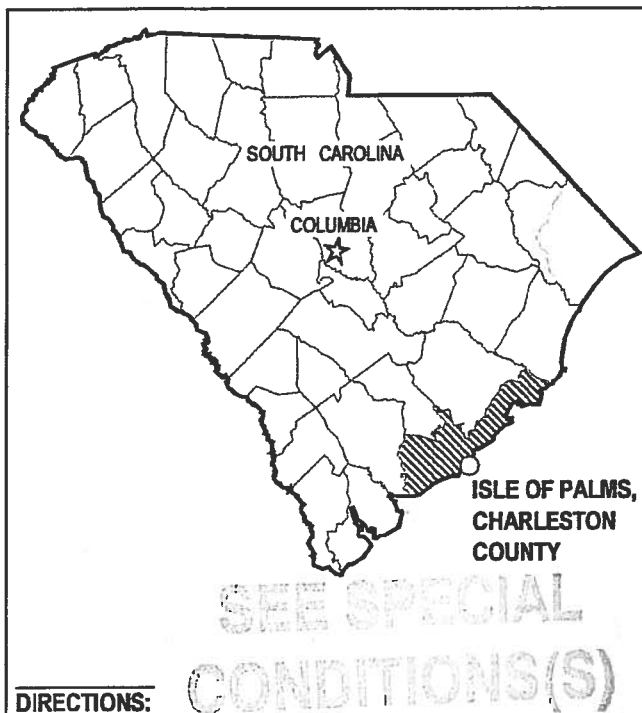
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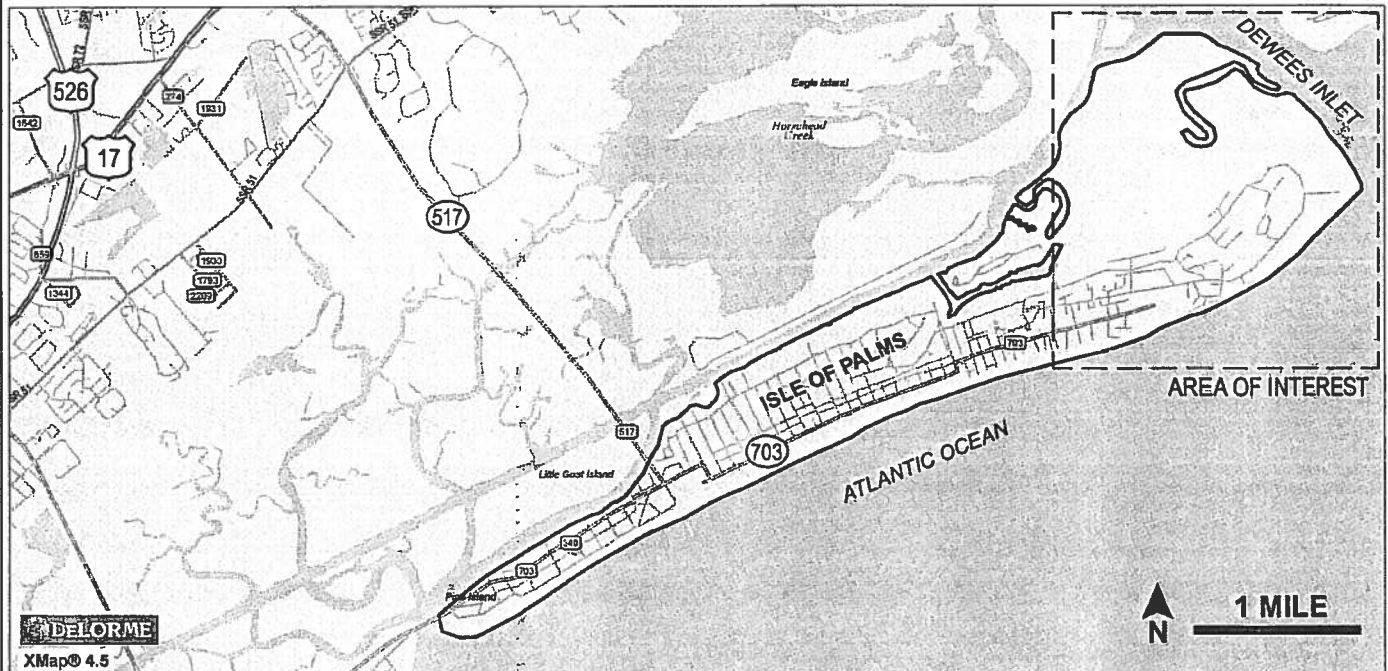
Clerk of the Board
SC DHEC
2600 Bull Street
Columbia, SC 29201
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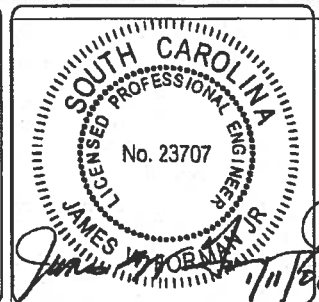
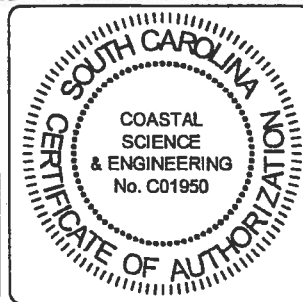
DIRECTIONS:

FROM CHARLESTON, TAKE US-17 NORTH. TURN RIGHT ONTO SC 517 (ISLE OF PALMS CONNECTOR). TURN LEFT ONTO PALM BLVD. SITE IS NORTHEAST OF 47TH 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

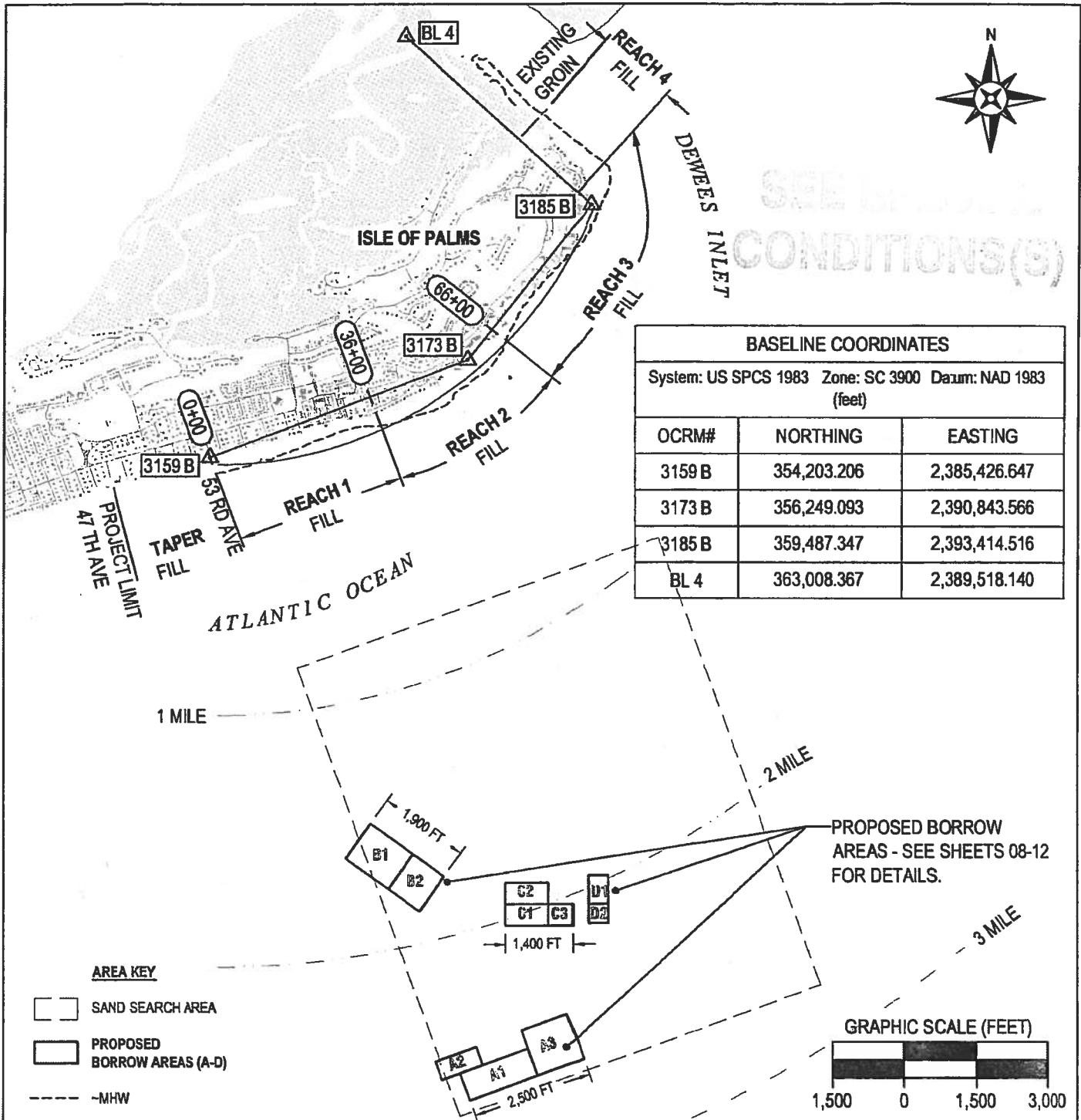
DRAWING TITLE:
VICINITY MAP



AGENT: P/N 2007-02631-2IG-P (REVISED)
COASTAL SCIENCE & ENGINEERING
PO BOX 8056
COLUMBIA, SC 29202

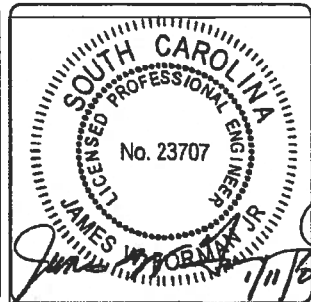
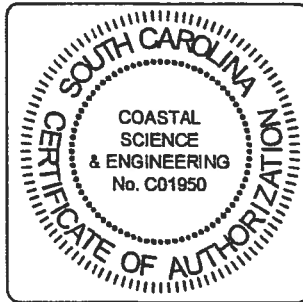
SCALE: AS SHOWN SHEET #:
DATE: JAN 2008
TMS# 604-11-00-211
PROJECT #: 2277 OF: 18
01

5 of 20



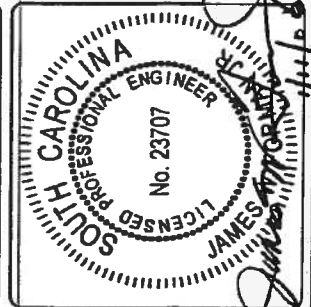
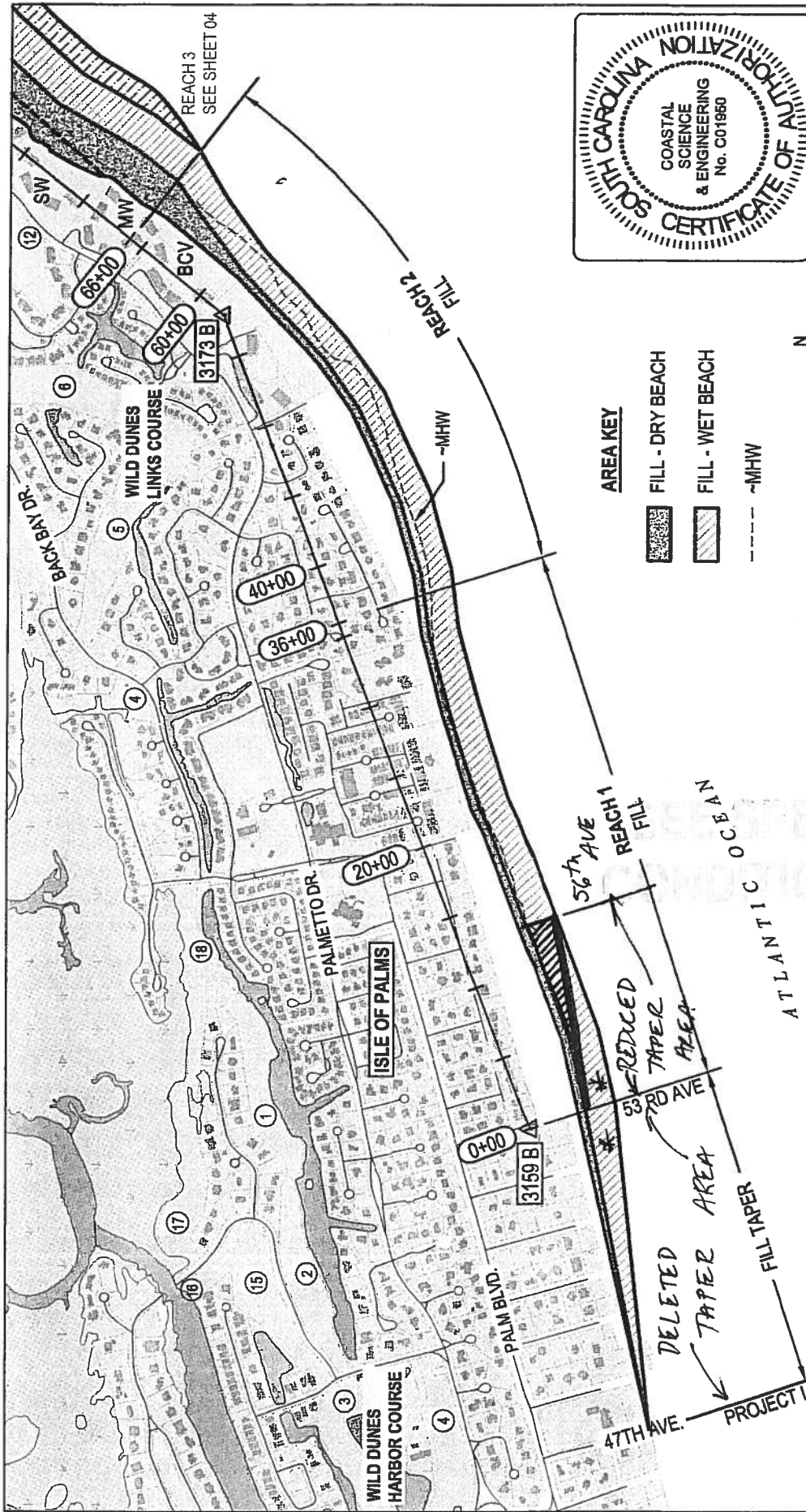
APPLICANT:
 CITY OF ISLE OF PALMS
 PO DRAWER 508
 ISLE OF PALMS SC 29451

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 PROJECT PLAN MAP

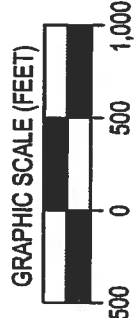


AGENT: P/N 2007-02631-2HG-P (REVISED)
 COASTAL SCIENCE & ENGINEERING
 PO BOX 8056
 COLUMBIA, SC 29202

SCALE: AS SHOWN **SHEET #:**
 DATE: JAN 2008 **02**
 TMS# 604-11-00-211
 PROJECT# 2277 OF: 16



- AREA KEY**
- FILL - DRY BEACH
 - FILL - WET BEACH
 - MHW



SCALE:	AS SHOWN
DATE:	JAN 2008
TMS#	604-11-00-211
PROJECT #	2277
SHEET #	03
OF: 16	

DRAWING TITLE:
FILL PLAN
 REACH 1 & 2

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

APPLICANT: P/N 2007-02631-2IG-P (REVISED)
 CITY OF ISLE OF PALMS
 PO DRAWER 508
 ISLE OF PALMS SC 29451

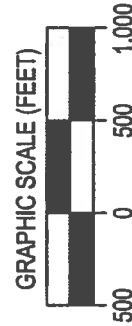
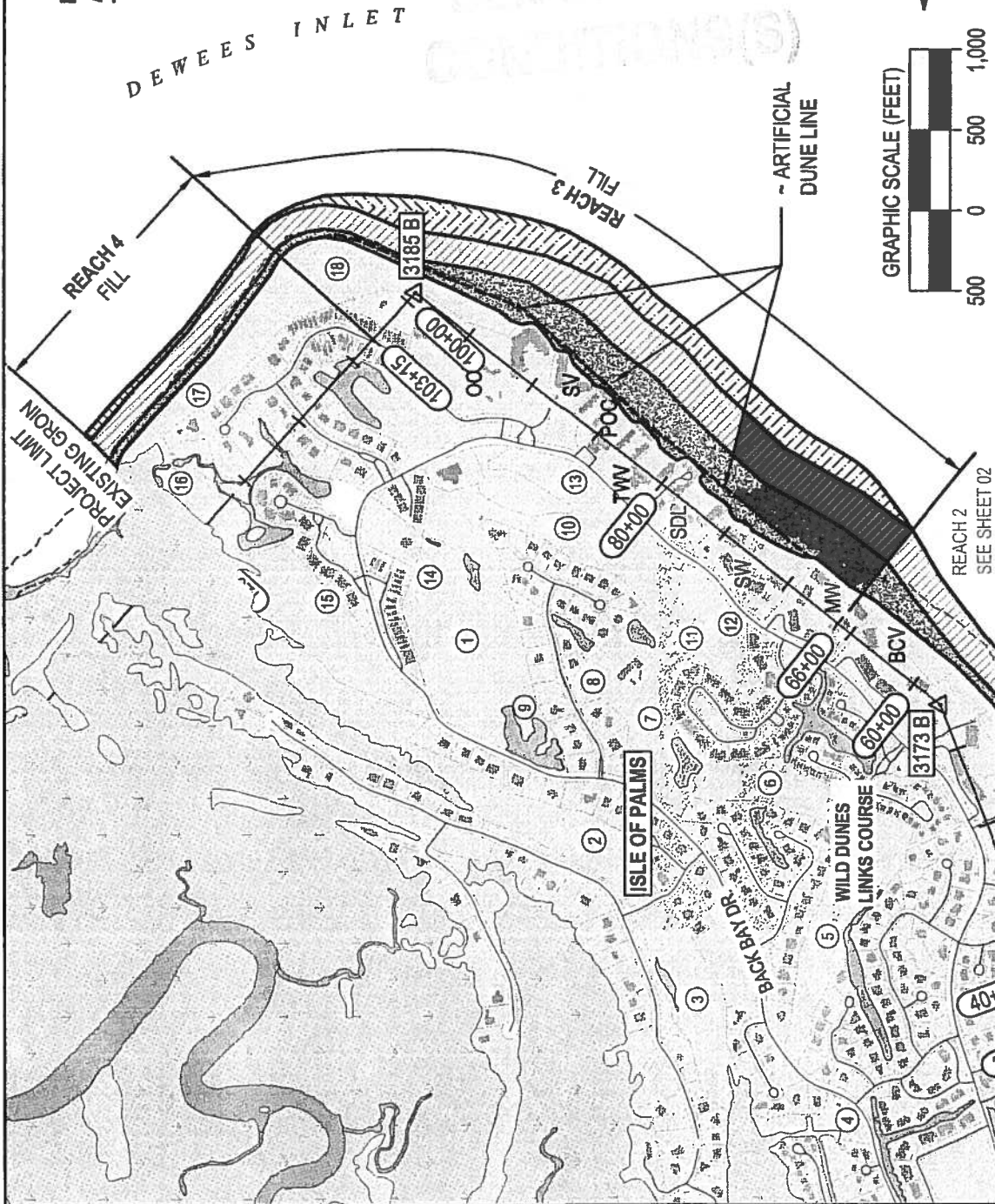
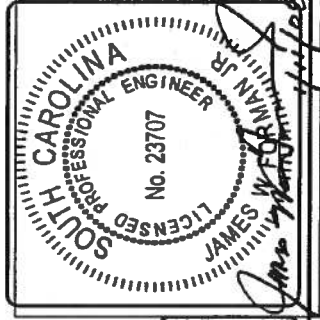
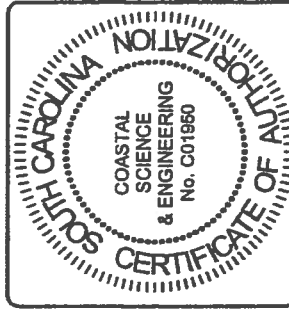
DELETED TAPER AREA
 TAPER AREA
 REAPER TILL TILL
 PROJECT LIMIT

** No SAND TO BE PLACED IN THESE AREAS*

NOTE: FILL SECTIONS MAY BE MODIFIED
ACCORDING TO CONDITIONS AT THE
TIME OF CONSTRUCTION.

AREA KEY

- ARTIFICIAL DUNE
- FILL - DRY BEACH
- FILL - WET BEACH
- UNDERWATER
- MHW



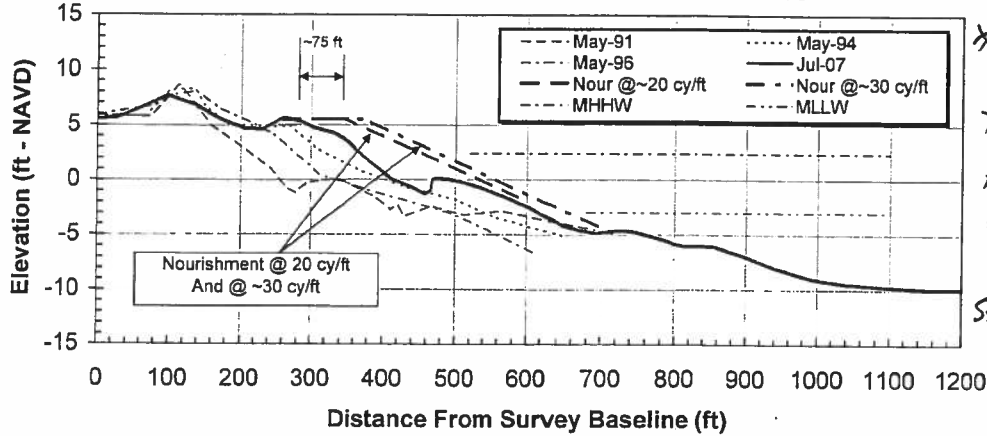
SHEET #:	04
SCALE:	AS SHOWN
DATE:	JAN 2008
TMS#:	604-11-00-211
PROJECT #:	2277

DRAWING TITLE:
**FILL PLAN
REACH 3 & 4**

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

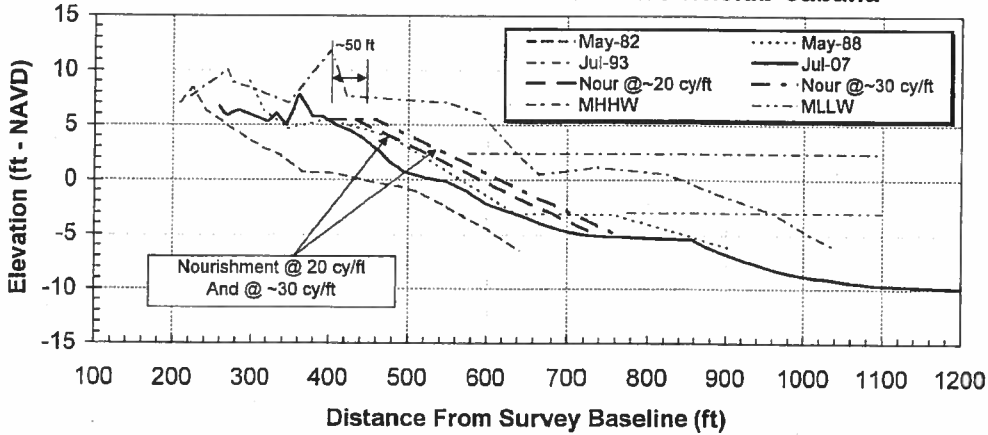
APPLICANT: **PN 2007-02631-2IG-P (REVISED)**
**CITY OF ISLE OF PALMS
PO DRAWER 508
ISLE OF PALMS SC 29451**

Reach 1 - Station: 0+00 - OCRM 3159 - 53rd Ave

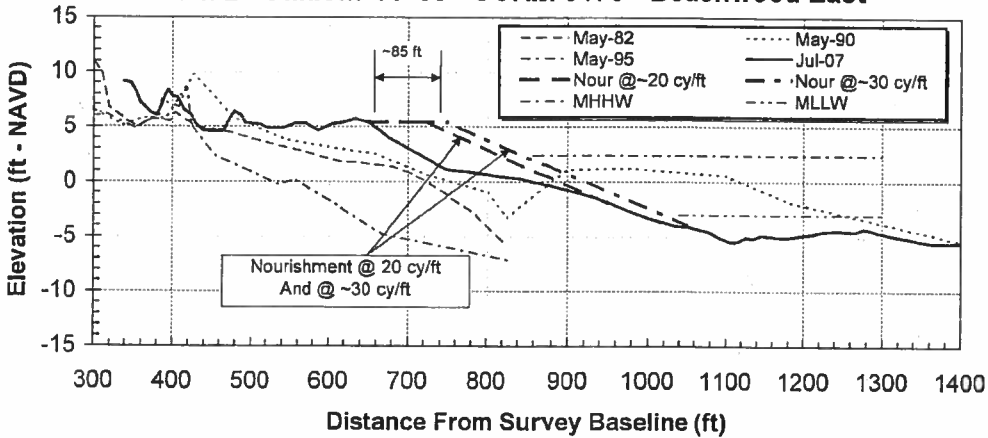


* NO SAND TO BE PLACED IN THIS AREA
SEE PAGE 7 of 20.

Reach 1 - Station: 20+00 - OCRM 3165 - Beachclub Cabana

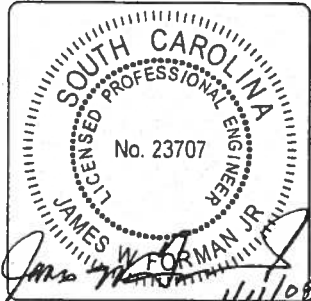
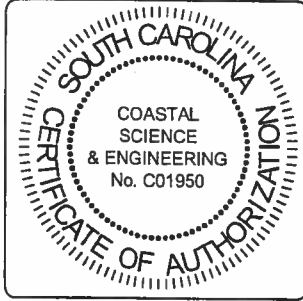


Reach 2 - Station: 44+00 - OCRM 3170 - Beachwood East



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

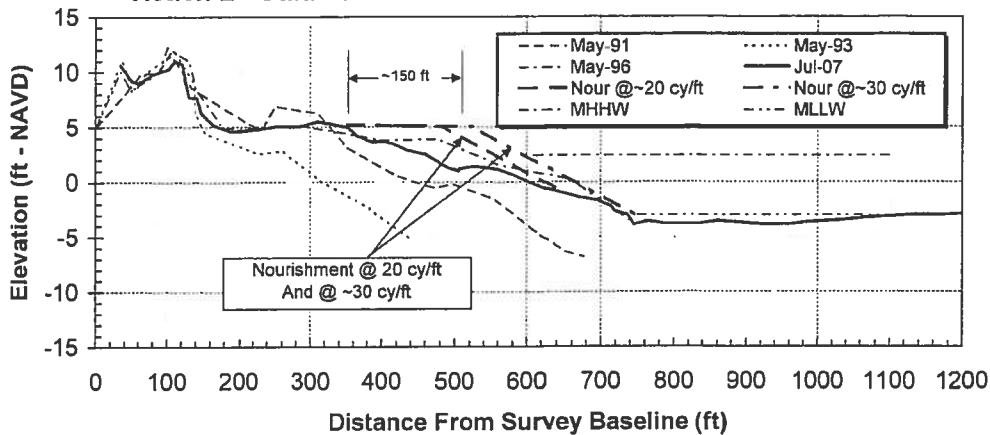
DRAWING TITLE:
FILL SECTIONS
STA 0+00 TO 44+00



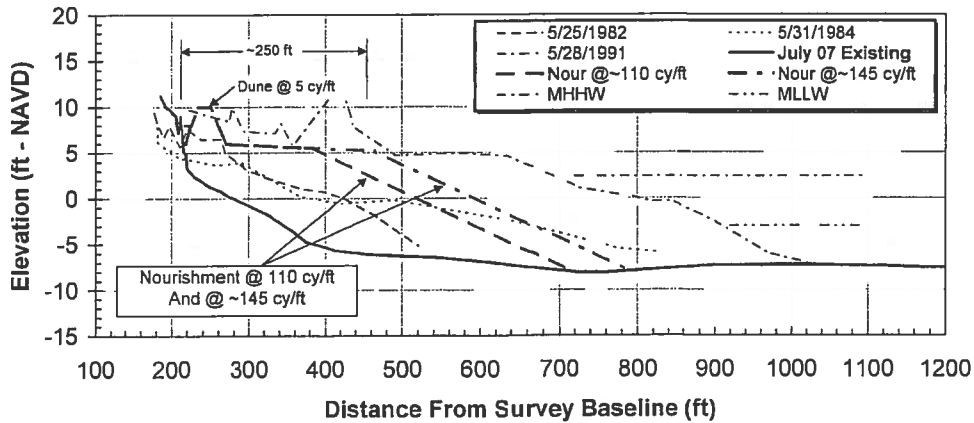
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PROJECT #: 2277 OF: 1612
05

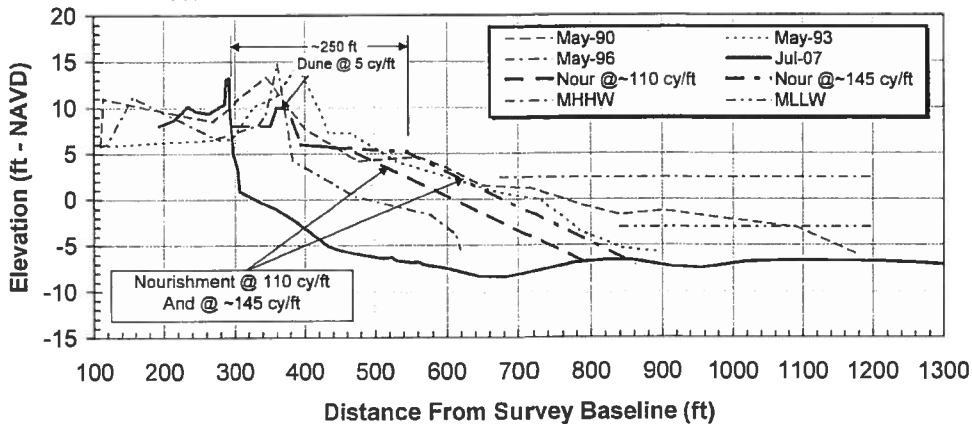
Reach 2 - Station: 58+00 - OCRM 3173 - Beach Club Villas



Reach 3 - Station: 84+00 - OCRM 3180 - Port O Call I



Reach 3 - Station: 94+00 - OCRM 3183 - 18th Green



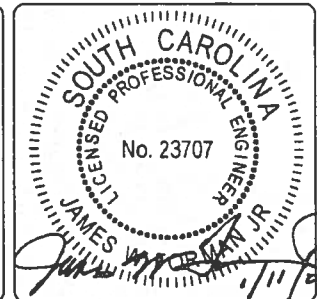
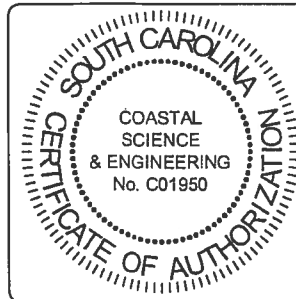
APPLICANT:
CITY OF ISLE OF PALMS
PO DRAWER 508
ISLE OF PALMS SC 29451

DRAWING TITLE:
FILL SECTIONS
STA 58+00 TO 94+00

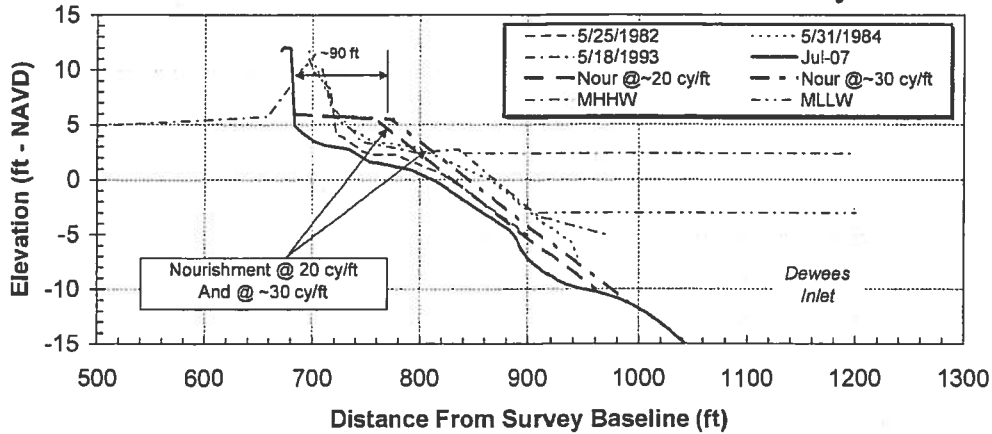
AGENT: *P/N 2007-02631-2IG-P (REVISED)*
COASTAL SCIENCE & ENGINEERING
PO BOX 8056
COLUMBIA, SC 29202

SCALE: AS SHOWN
DATE: JAN 2008
TMS# 604-11-00-211
PROJECT #: 2277

SHEET #: **06**
OF: 1612



Reach 4 - Station: 118+00 - OCRM 3190 - 17th Fairway



SEE SPECIAL
 OCCURRENCE(S)

NOTE: INDICATED FILL SECTIONS PROVIDE THE TYPICAL RANGE OF NOURISHMENT VOLUMES ANTICIPATED BASED ON EXISTING CONDITIONS (JULY 2007 SURVEY). SECTIONS WILL ALSO BE VARIED WITHIN EACH REACH SO AS TO CREATE SMOOTH TRANSITIONS FROM STATION TO STATION.

SOURCE DATA: COASTAL SCIENCE & ENGINEERING 1984-2007

OCRM 1988 TO PRESENT

RESEARCH PLANNING INSTITUTE 1982-1984

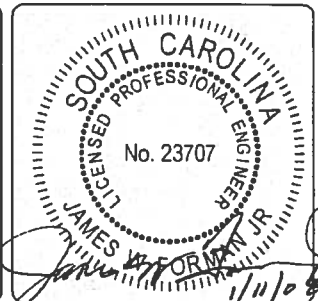
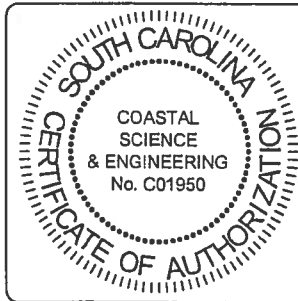
APPLICANT:
 CITY OF ISLE OF PALMS
 PO DRAWER 508
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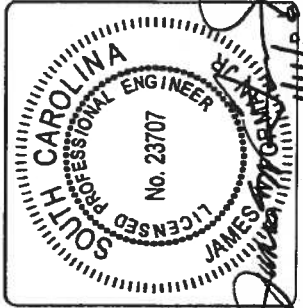
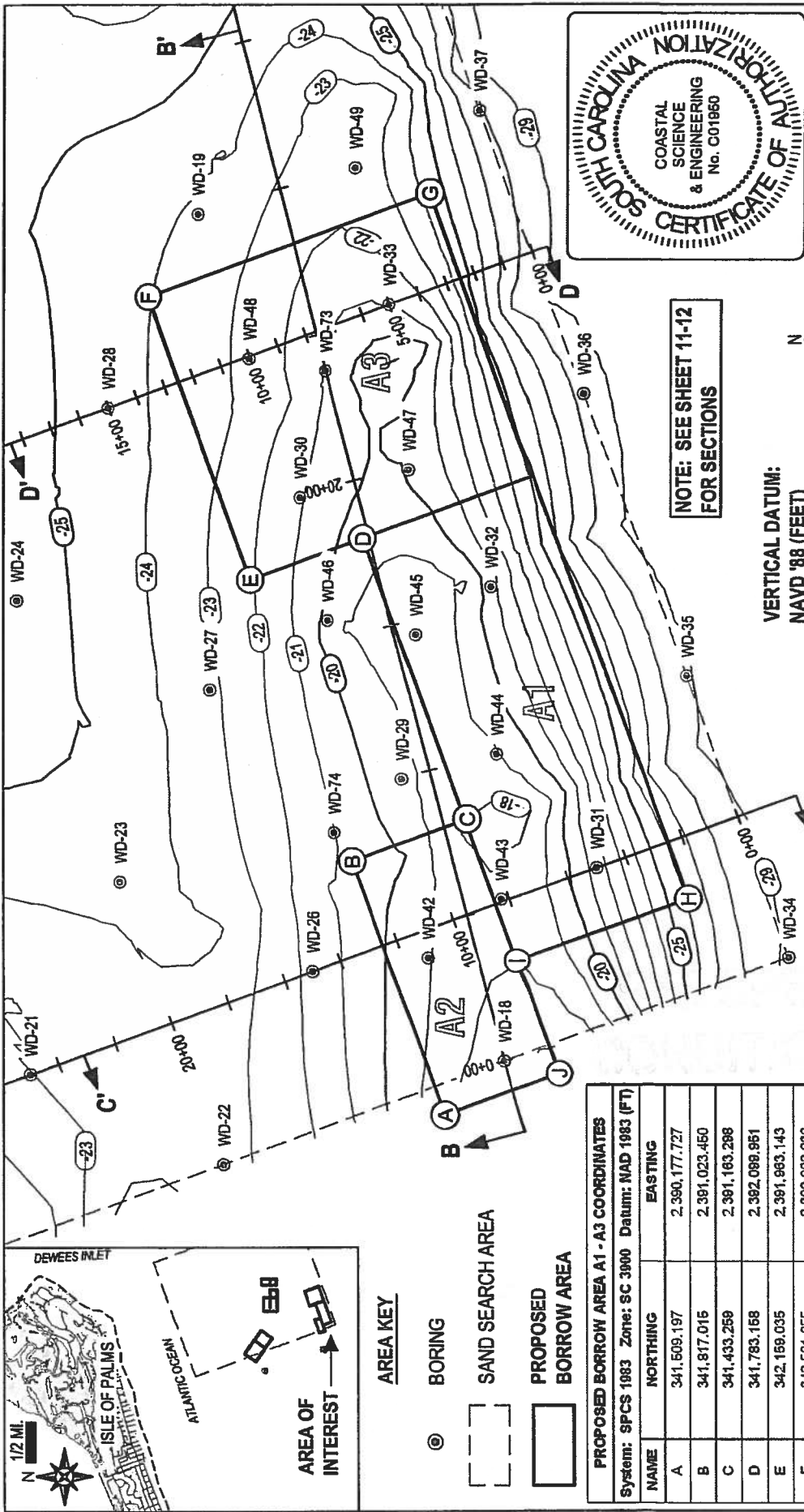
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FILL SECTIONS
 STA 118+00

AGENT: *P/N 2007-02631-2IG-P (REVISED)*
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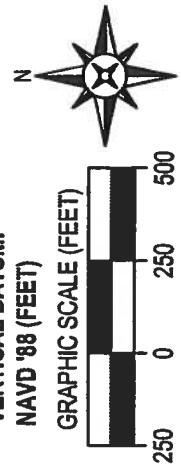
SCALE: AS SHOWN SHEET #:
 DATE: JAN 2008
 TMS# 604-11-00-211
 PROJECT #: 2277 OF: 1612

07





NOTE: SEE SHEET 11-12 FOR SECTIONS



VERTICAL DATUM:
NAVD '88 (FEET)

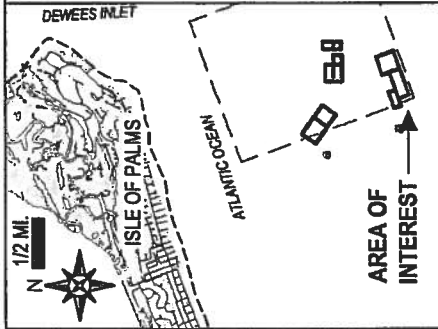
SHEET # **08** OF 16

SCALE: AS SHOWN
DATE: JAN 2008
TMS# 604-11-00-211
PROJECT #: 2277

DRAWING TITLE:
**PROPOSED OFFSHORE
BORROW AREAS A1-A3**

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

APPLICANT: PIN 2007-02831-2IG-P (REVISED)
CITY OF ISLE OF PALMS
PO DRAWER 508
ISLE OF PALMS SC 29451



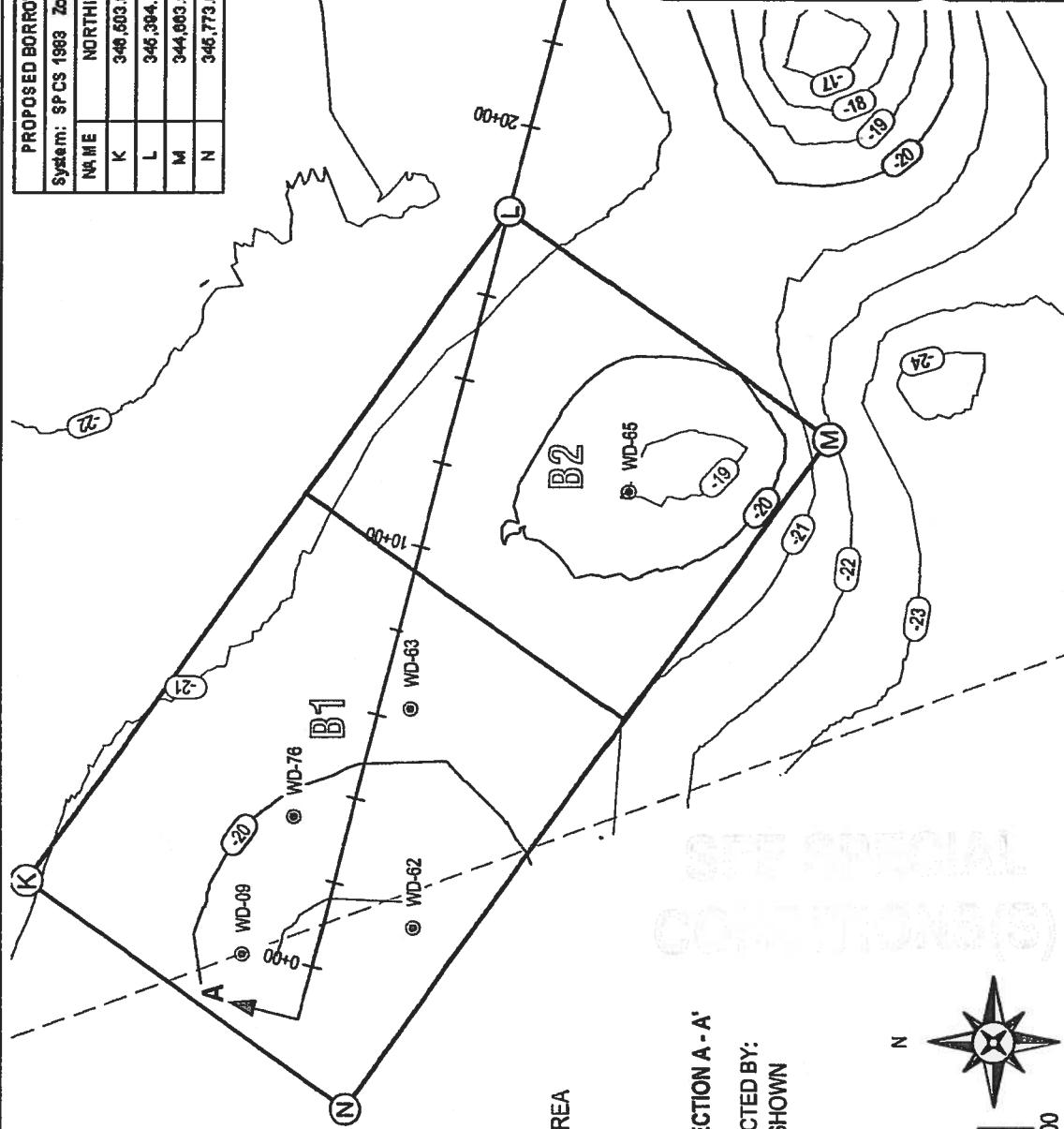
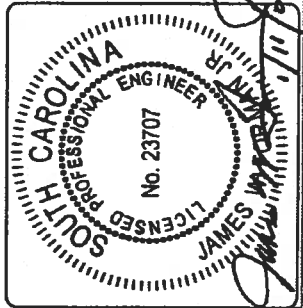
- AREA KEY**
- ⊙ BORING
 - SAND SEARCH AREA
 - ▭ PROPOSED BORROW AREA

PROPOSED BORROW AREA A1 - A3 COORDINATES		
System: SPCS 1983 Zone: SC 3800 Datum: NAD 1983 (FT)		
NAME	NORTHING	EASTING
A	341,509.197	2,390,177.727
B	341,817.015	2,391,023.450
C	341,433.259	2,391,163.288
D	341,783.158	2,392,099.951
E	342,159.035	2,391,993.143
F	342,501.055	2,392,902.836
G	341,561.362	2,393,244.856
H	340,706.312	2,390,695.624
I	341,270.128	2,390,680.412
J	341,133.320	2,390,314.535

PROPOSED BORROW AREA B1 - B2 COORDINATES

System: SPCS 1983 Zone: SC 9900 Datum: NAD 1983 (FT)

NAME	NORTHING	EASTING
K	346,603.077	2,386,816.280
L	346,394.130	2,390,366.060
M	344,063.534	2,386,833.085
N	346,773.080	2,386,290.714



SCALE: AS SHOWN

DATE: JAN 2008

TMS#: 604-11-00-211

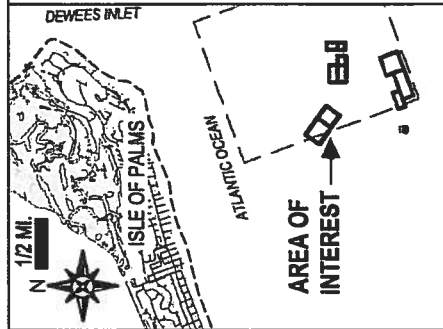
PROJECT #: 2277

SHEET #: **09**

OF: 16

DRAWING TITLE:
**PROPOSED OFFSHORE
BORROW AREAS B1-B2**

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

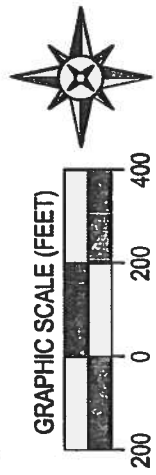


AREA KEY

- ⊙ BORING
- SAND SEARCH AREA
- ▭ PROPOSED BORROW AREA

NOTE: SEE SHEET 11 FOR SECTION A - A'
BATHYMETRY SHOWN COLLECTED BY:
CSE JULY 2007 - CONTOURS SHOWN
IN 1 AND 5 FT INTERVALS.

VERTICAL DATUM:
NAVD '88 (FEET)

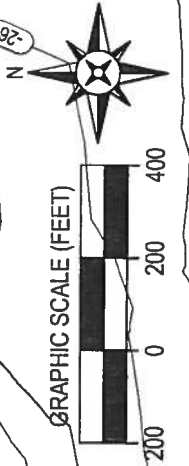
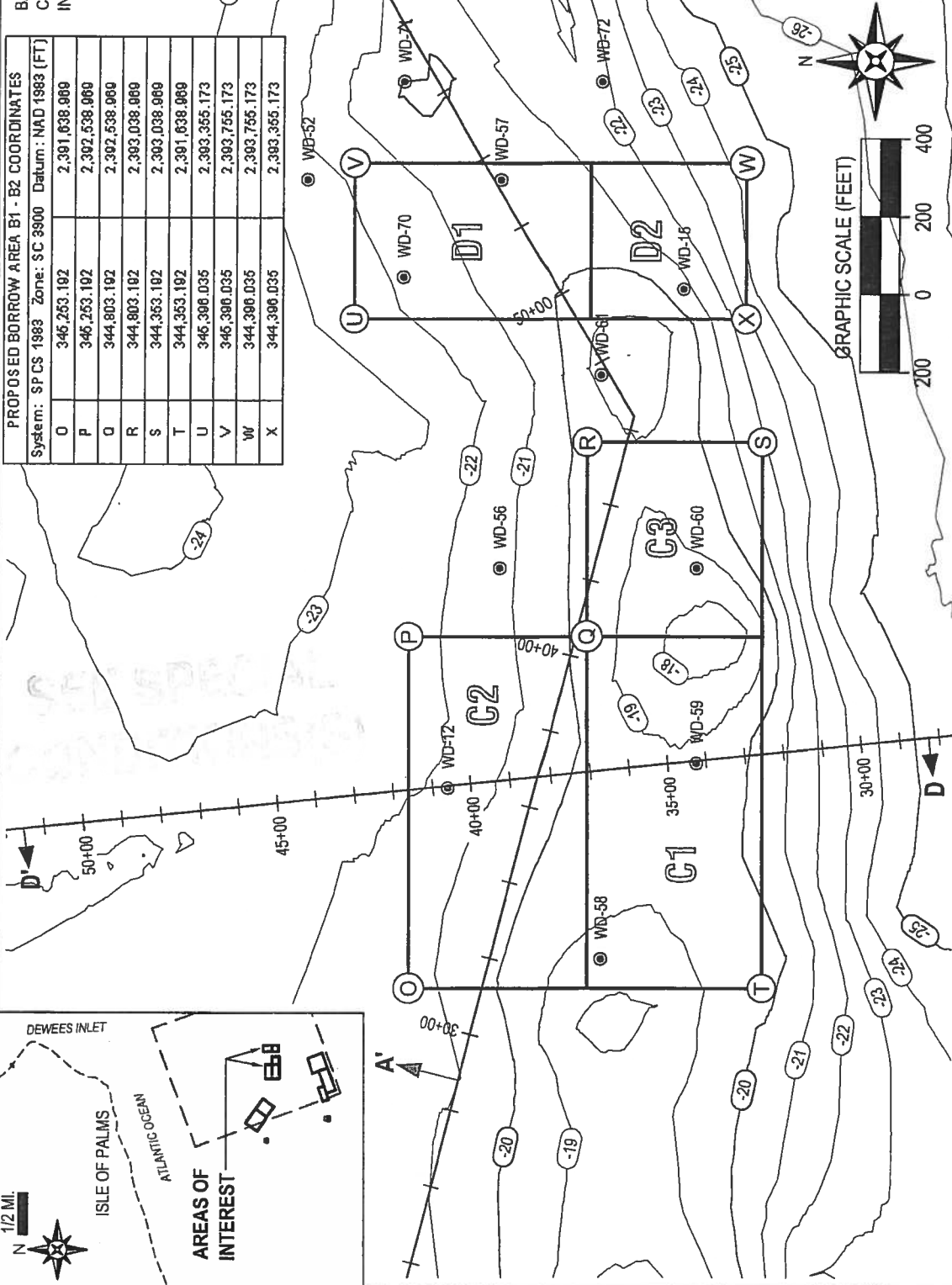
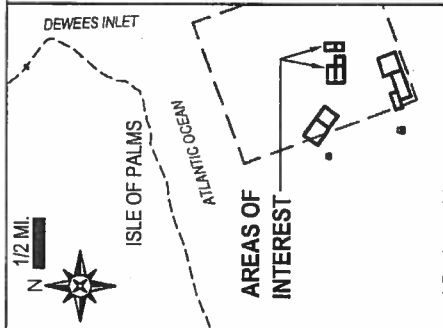
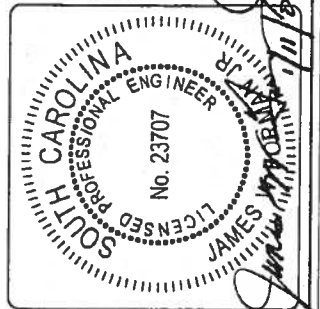
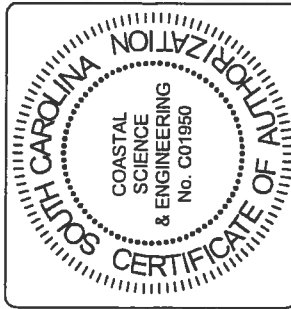


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BATHYMETRY SHOWN COLLECTED BY:
CSE JULY 2007 - CONTOURS SHOWN
IN 1 AND 5 FT INTERVALS.

PROPOSED BORROW AREA B1 - B2 COORDINATES			
System: SPCS 1983	Zone: SC 3900	Datum: NAD 1983 (FT)	
O	345,253.192	2,391,638.969	
P	345,253.192	2,392,538.969	
Q	344,803.192	2,392,538.969	
R	344,803.192	2,393,038.969	
S	344,353.192	2,391,638.969	
T	344,353.192	2,393,355.173	
U	346,396.035	2,393,755.173	
V	344,396.035	2,393,355.173	
W	344,396.035	2,393,755.173	
X	344,396.035	2,393,355.173	

NOTE: SEE SHEETS
11-12 FOR SECTIONS
VERTICAL DATUM:
NAVD-88 (FEET)



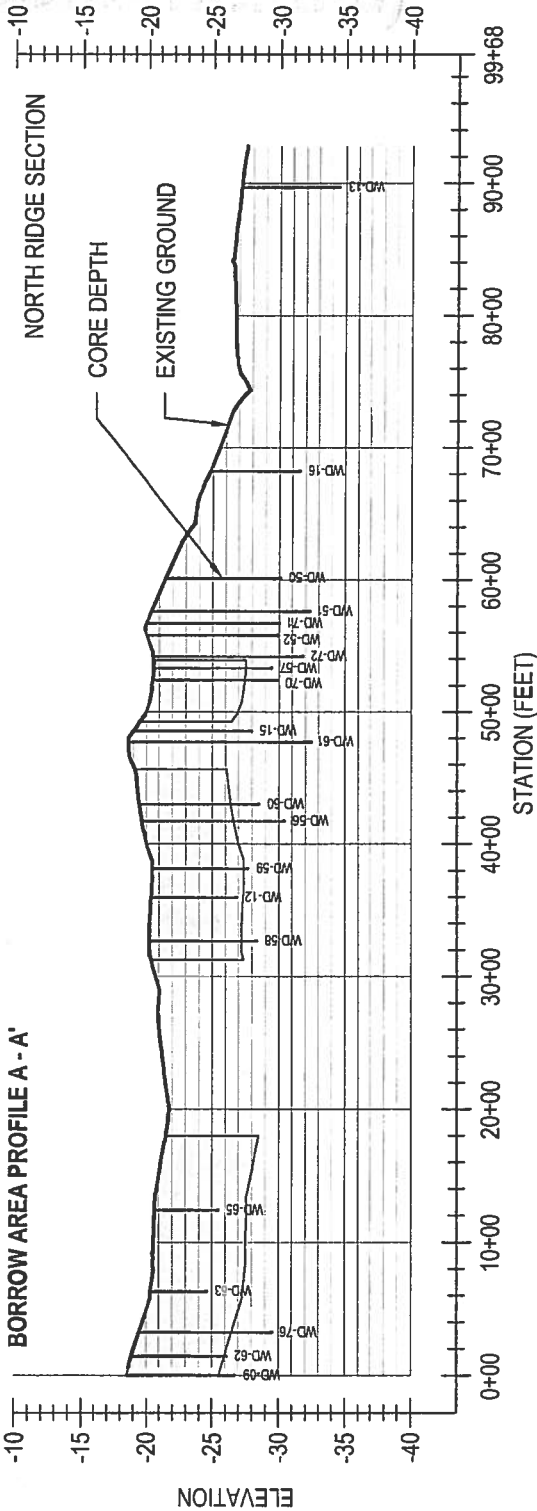
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DATE: JAN 2008	
TMS# 604-11-00-211	
PROJECT #: 2277	OF: 16

DRAWING TITLE:
**PROPOSED OFFSHORE
BORROW AREAS C1-C3
AND D1-D2**

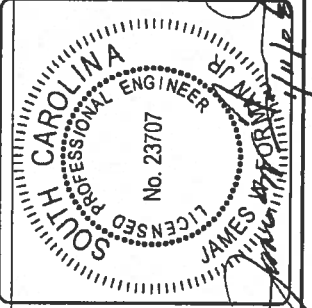
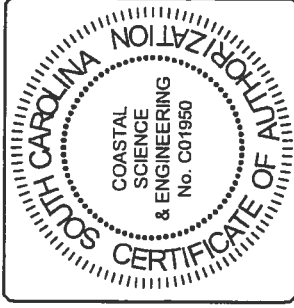
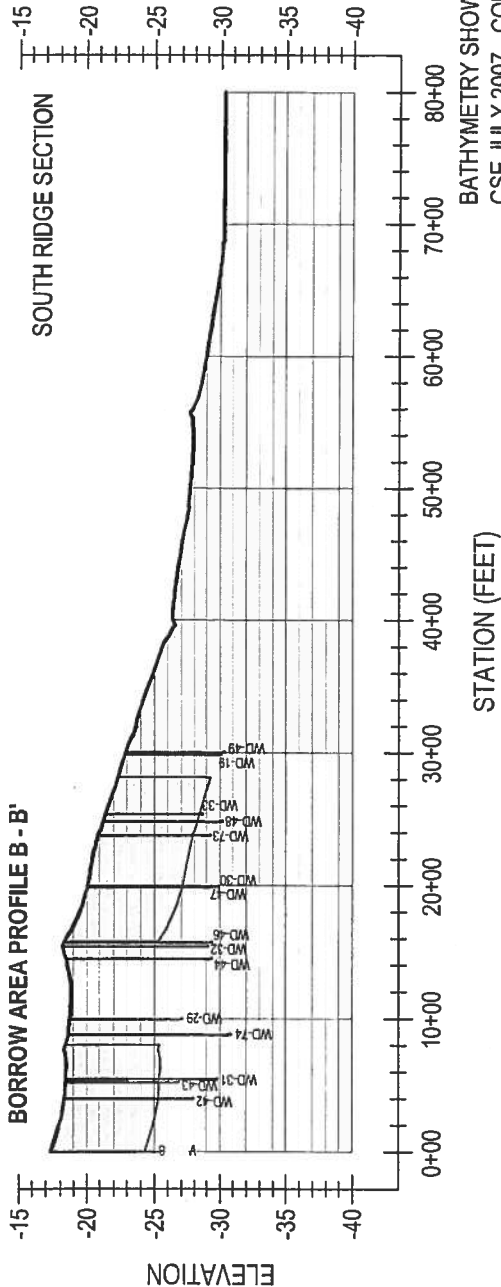
AGENT:
COASTAL SCIENCE & ENGINEERING
PO BOX 8056
COLUMBIA, SC 29202

APPLICANT: P/IN 2007-02631-2IG-P (REVISED)
CITY OF ISLE OF PALMS
PO DRAWER 508
ISLE OF PALMS SC 29451

BORROW AREA PROFILE A - A'



BORROW AREA PROFILE B - B'



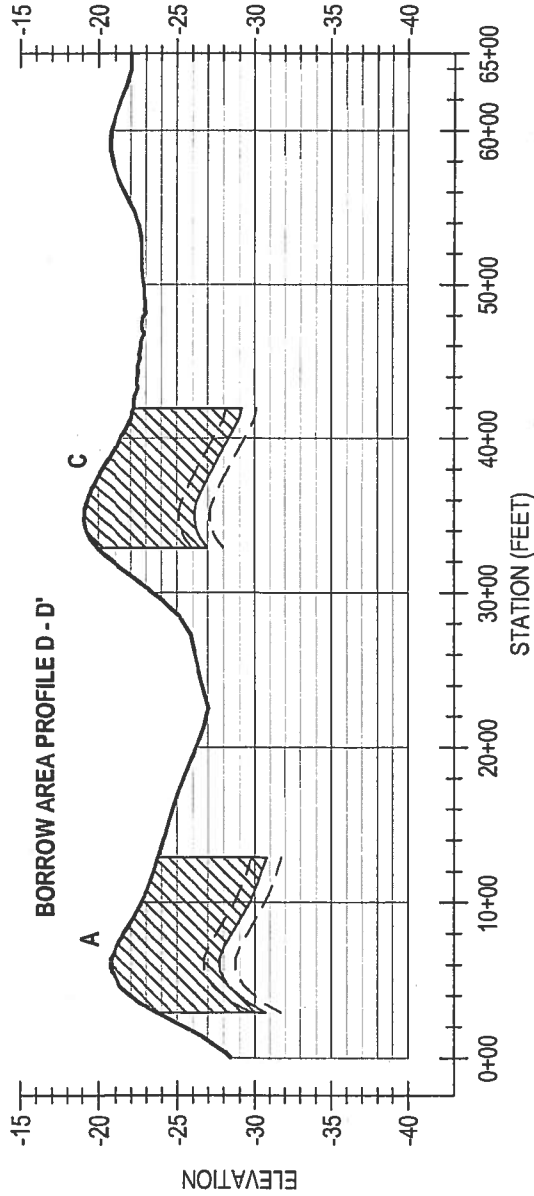
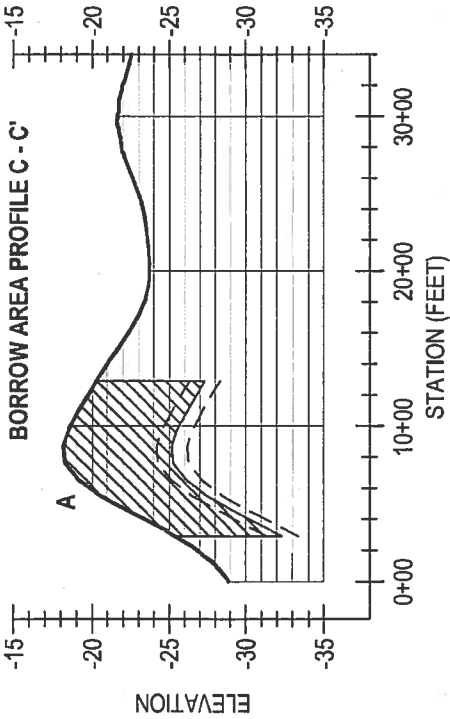
SCALE: AS SHOWN	SHEET #: 11
DATE: NOV 2007	OF: 16
TMS#: 604-11-00-211	
PROJECT #: 2277	

DRAWING TITLE:
**PROPOSED OFFSHORE
 BORROW AREA SECTIONS
 SECTIONS 1-2**

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

APPLICANT: P/N 2007-02631-2(G-P (REVISED))
 CITY OF ISLE OF PALMS
 PO DRAWER 508
 ISLE OF PALMS SC 29451

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LINE KEY

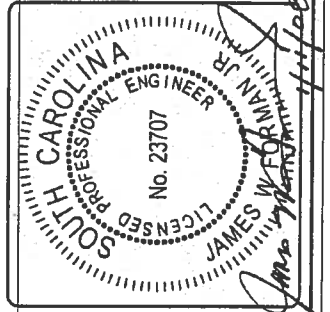
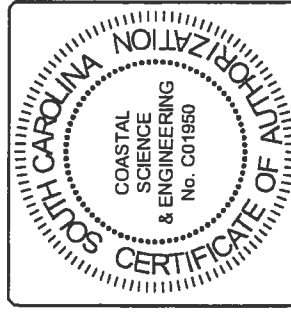
- EXISTING GROUND
- ▨ PROPOSED EXCAVATION
- - - EXCAVATION ±1 FT

SURVEY DATUM:

HORIZONTAL:
 SPCS NAD 83 FEET
 SC ZONE 3900

VERTICAL:
 NAVD 1988 FEET
 EXAGGERATION: 100

SEE SPECIAL
 CONDITIONS(S)



SCALE:	AS SHOWN
DATE:	NOV 2007
TMS#	604-1-00-211
PROJECT #	2277

DRAWING TITLE:
 PROPOSED OFFSHORE
 BORROW AREA SECTIONS
 SECTIONS 1-2

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

APPLICANT: P/N 2007-02631-2/G-P (REVISED)
 CITY OF ISLE OF PALMS
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SHEET #
 OF 16

SUMMARY SEDIMENT QUALITY MEASURES FOR THE RECOMMENDED OFFSHORE BORROW AREAS A1, A3, B1, C1 & D2		
PARAMETER	NATIVE BEACH SAMPLES (COMPOSITE)	BORROW AREA (COMPOSITES TO 8 FT)
MEAN GRAIN SIZE MM *	0.253 MM	0.408 MM
SORTING MM	0.523 MM	0.342 MM
PERCENT >2 MM	5	12.7
PERCENT SHELL >2 MM	~4.7	12.7
PERCENT SHELL <2 MM	~6.4	15.6
DOMINANT SHELL SPECIES	DONAX SP	DONAX SP
SEDIMENT DESCRIPTION	MEDIUM SAND	MEDIUM SAND

SOURCE: CSE. 2007. SHORELINE ASSESSMENT AND LONG-RANGE PLAN FOR BEACH RESTORATION ALONG THE NORTHEAST EROSION ZONE, ISLE OF PALMS, SOUTH CAROLINA. COASTAL SCIENCE & ENGINEERING, COLUMBIA, SC 74 PP. & CSE 2008, GEOTECHNICAL DATA REPORT, ISLE OF PALMS BEACH RESTORATION PROJECT, COASTAL SCIENCE & ENGINEERING, COLUMBIA, SC, IN PREPERATION.

* UNWEIGHTED

GEE OFFICIAL
CONDITIONS(S)

Proposed Dredging Sub-Areas (7 ft Dredge Depth)							
Sub-Area	Volume (cy)	Mz (mm)	% Mud	% Shell	% > 2 mm	% Shell < 2 mm	Core Density (acres/core)
A1	235,000	0.373	1.9	26.5	12.4	14.1	4.1
A3	260,000	0.464	2.7	34.6	14.4	20.2	5.7
B1	255,000	0.409	3	21.1	10.1	11	4.7
C1	105,000	0.419	1.2	33.8	15.4	18.4	4.6
D2	40,000	0.289	2.9	32.6	11.9	20.7	3.7
Total (weighted by volume)	895,000	0.411	2.4	28.4	12.65	15.6	4.75

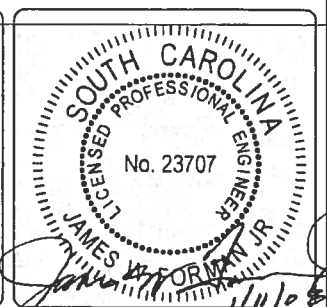
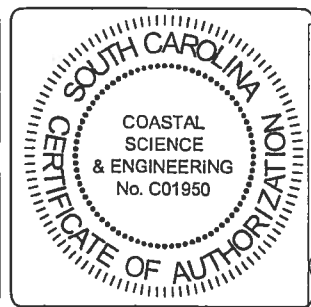
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ISLE OF PALMS SC 29451

DRAWING TITLE:
SEDIMENT CHARACTERISTICS

AGENT: *P/N 2007-02631-2IG-P (REVISED)*
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COLUMBIA, SC 29202

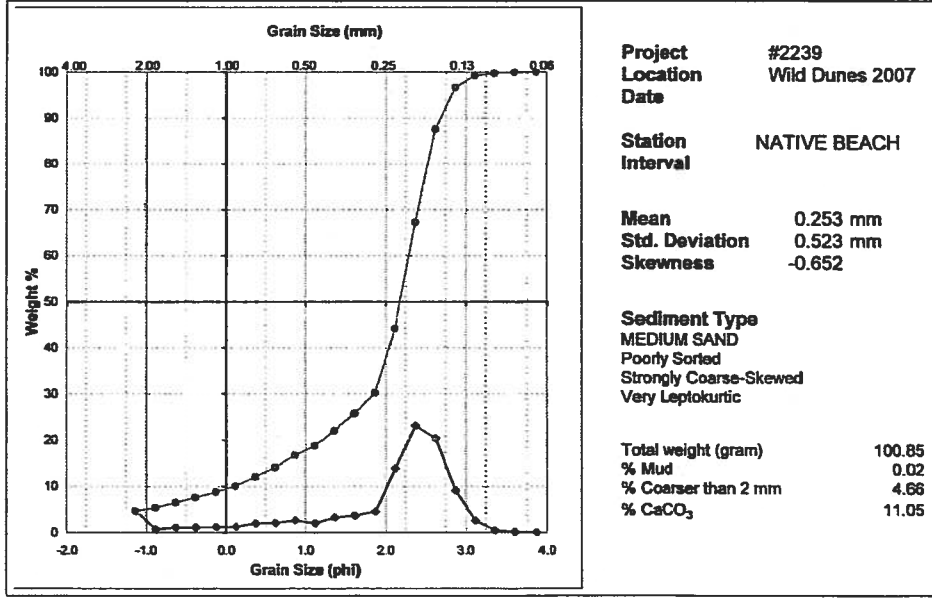
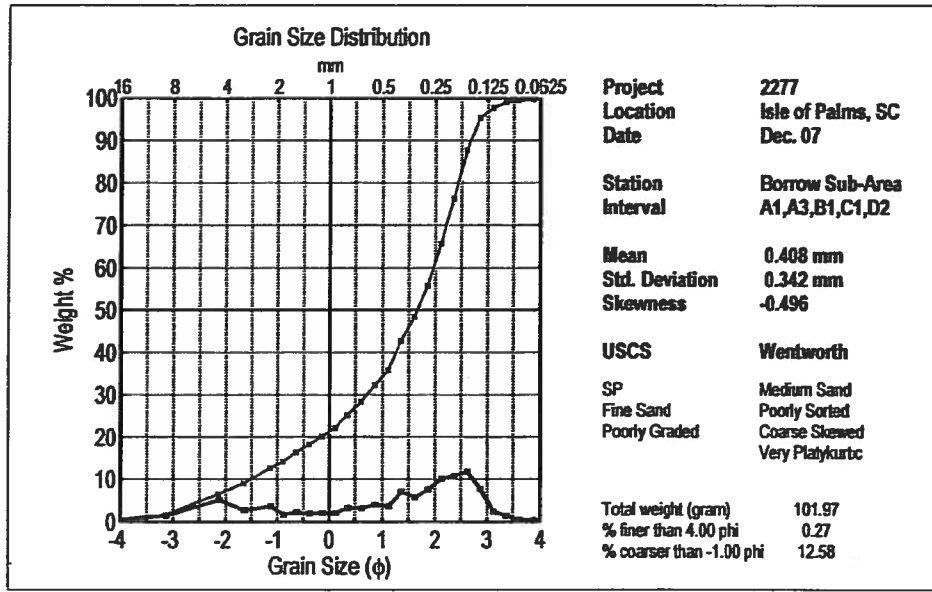
SCALE: AS SHOWN SHEET #:
DATE: JAN 2008
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SEE SPECIAL
CONDITIONS (S)



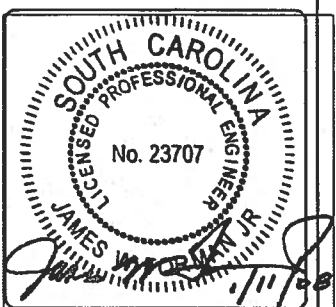
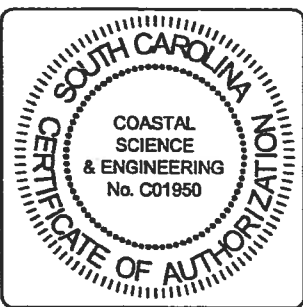
SEDIMENT GRAIN-SIZE DISTRIBUTION FOR THE PROPOSED OFFSHORE BORROW SUB AREAS BASED ON A COMPOSITE SIZE DISTRIBUTION FROM SIX CORES TO A TARGET EXCAVATION THICKNESS OF ~8 FT. LOWER GRAPH SHOWS A REPRESENTATIVE NATIVE BEACH COMPOSITE FOR REACHES 2 AND 3 AT WILD DUNES.

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ISLE OF PALMS SC 29451

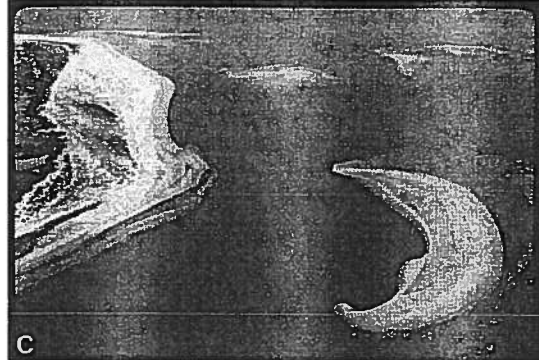
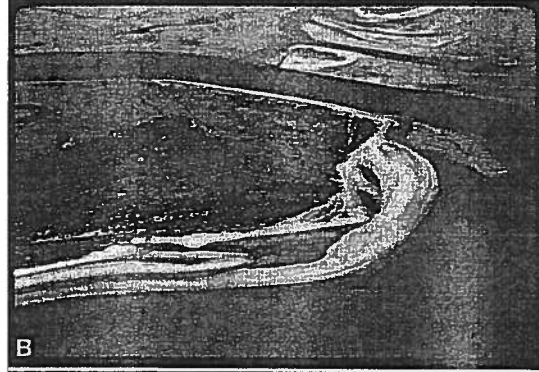
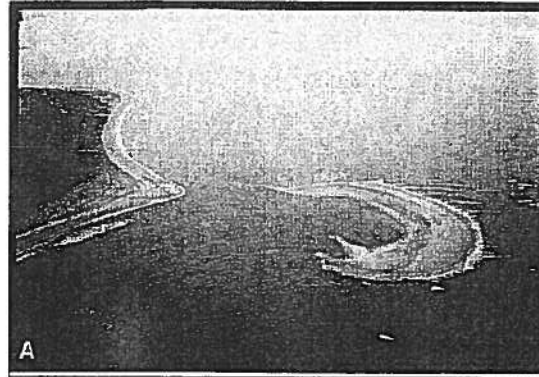
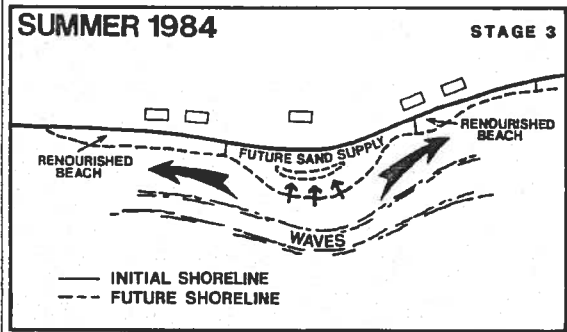
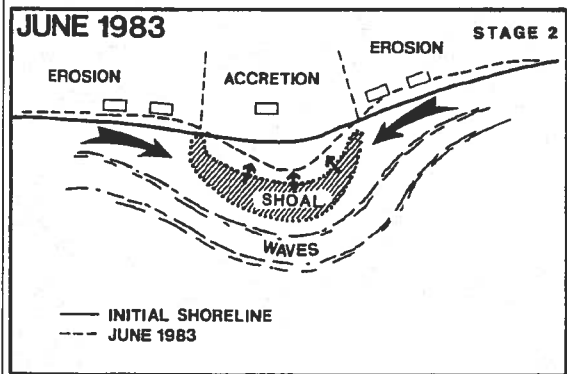
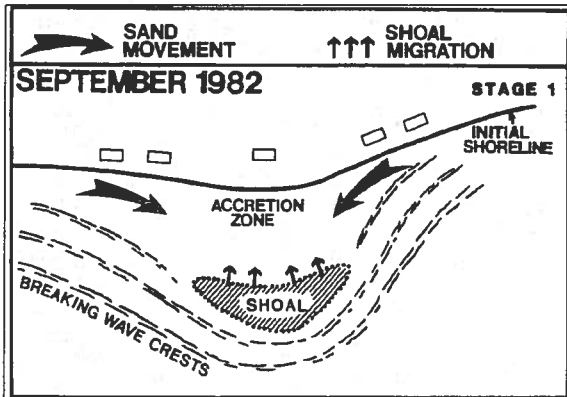
DRAWING TITLE:
SEDIMENT
CHARACTERISTICS

AGENT: P/N 2007-02631-2IG-P (REVISED)
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PO BOX 8056
COLUMBIA, SC 29202

SCALE: AS SHOWN
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TMS#: 604-11-00-211
PROJECT #: 2277
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SEE SPECIAL
CONTENTS



[LEFT] THE THREE STAGES OF SHOAL BYPASSING BASED ON A CASE STUDY AT DEWEES INLET/ISLE OF PALMS (AFTER KANA ET AL 1985). [RIGHT] SHOAL-BYPASS EVENT INVOLVING ~1 MILLION CUBIC YARDS OF SAND AT STONO INLET/KIAWAH ISLAND BETWEEN 1977(A) AND 1983 (B). A SUCCESSIVE EVENT BEGAN AROUND 1986 (C), CULMINATING IN ATTACHMENT AROUND 1990. VIEWS ARE LOOKING NORTH AT LOW TIDE. NOTE MAJOR CHANGES IN THE ADJACENT SHORELINE. SUCH LARGE SWINGS IN SHORELINE POSITION ARE COMMON AROUND ALL SOUTH CAROLINA INLETS. [FROM KANA ET AL 1999, FIG 6]

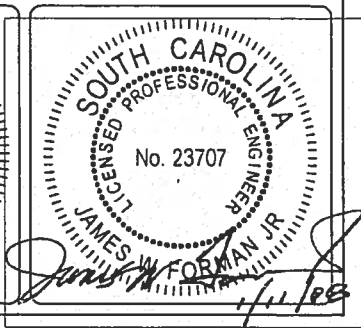
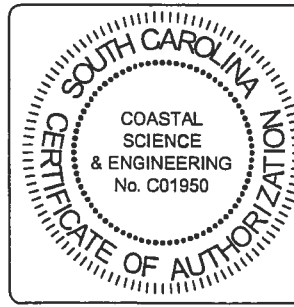
APPLICANT:
CITY OF ISLE OF PALMS
PO DRAWER 508
ISLE OF PALMS SC 29451

DRAWING TITLE:
SHOAL BYPASSING
STAGES

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

SCALE: AS SHOWN
DATE: JAN 2008
TMS# 604-11-00-211
PROJECT #: 2277

SHEET #:
16
OF: 16



Protection of sea turtles

1. All fill material placed on beaches will be sand that is similar to that already existing at the beach site in both coloration and grain size distribution. All such fill material must be free of construction debris, rocks, organic materials, or other foreign matter and will generally not contain, on average, greater than ten percent fines (i.e., silt and clay; passing the # 200 sieve) and must not contain, on average, greater than five percent coarse gravel or cobble, exclusive of shell material (retained by the # 4 sieve). Based on the borrow site for the project, the dredge depth is not to exceed 7 feet below grade.
2. Daily early morning surveys for sea turtle nests will be required if any portion of the beach nourishment project occurs during the period from May 1 to September 30. Nesting surveys must be initiated 75 days prior to nourishment activities or by May 1, whichever is later. Nesting surveys must continue through the end of the project or through September 30, whichever is earlier. If nests are constructed in areas where they may be affected by construction activities, eggs must be relocated per the following requirements.
 - 2a. Nesting surveys and egg relocations will only be conducted by hired personnel with prior experience and training in nesting survey and egg relocation procedures. Surveyors must be trained by qualified personnel and have a valid SCDNR permit. Nesting surveys must be conducted daily between sunrise and 9 am (this is for all time zones). The contractor must not initiate work until daily notice has been received from the sea turtle permit holder that the morning survey has been completed. Surveys must be performed in such a manner so as to ensure that construction activity does not occur in any location prior to completion of the necessary sea turtle protection measures.
 - 2b. Only those nests that may be affected by construction activities will be relocated. Nests requiring relocation must be moved no later than 9 a.m. the morning following deposition to a nearby self-release beach site in a secure setting where artificial lighting will not interfere with hatchling orientation. Nest relocations in association with construction activities must cease when construction activities no longer threaten nests. Nests deposited within areas where construction activities have ceased or will not occur for 75 days must be marked and left in place unless other factors threaten the success of the nest. Any nests left in the active construction zone must be clearly marked, and all mechanical equipment must avoid nests by at least 10 feet.
 - 2c. Nests deposited within areas where restoration activities have ceased or will not occur for 75 days must be marked and left *in situ* unless other factors threaten the success of the nest. The turtle permit holder must install an on-beach marker at the nest site and a secondary marker at a point landward as possible to assure that

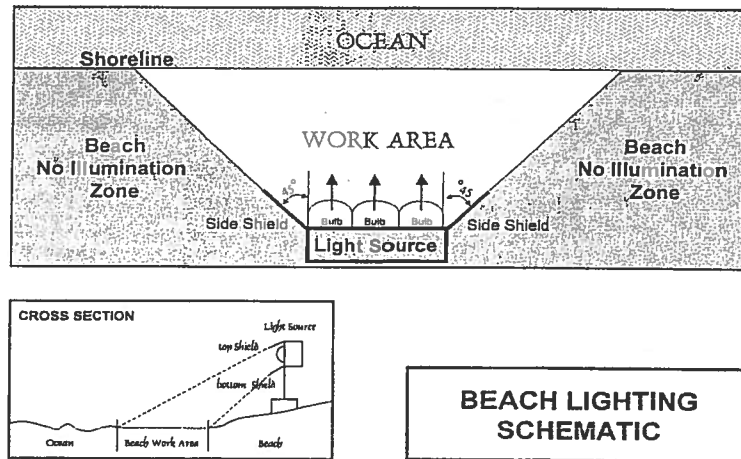
- future location of the nest will be possible should the on-beach marker be lost. A series of stakes and highly visible survey ribbon or string must be installed to establish an area of 10 feet radius surrounding the nest. No activity will occur within this area nor will any activity occur which could result in impacts to the nest. Nest sites must be inspected daily to assure nest markers remain in place and the nest has not been disturbed by the restoration activity and all nest sites will continue to be monitored through the nest inventories.
- 2d. The applicant will hire nighttime monitors with sea turtle experience to patrol the length of the pipeline and the beach adjacent to operating construction equipment for sea turtles attempting to nest. Two monitors will work the beach nightly from 9 pm until 6 am and coordinate with the daytime monitors about any nests laid the previous night.
- 2e. The nighttime monitors will ensure that a 100 foot buffer remains around any sea turtle attempting to nest in the action area and all construction equipment excluding the dredge must be shut down until the turtle returns to the ocean.
3. Immediately after completion of the beach nourishment project and prior to May 1 for 3 subsequent years, sand compaction must be monitored in the area of restoration in accordance with a protocol agreed to by the Service, the State regulatory agency, and the applicant. At a minimum, the protocol provided under 3a and 3b below must be followed. If required, the area must be tilled to a depth of 36 inches. All tilling activity must be completed prior to May 1. Each pass of the tilling equipment must be overlapped to allow more thorough and even tilling. If the project is completed during the nesting season, tilling will not be performed in areas where nests have been left in place or relocated. A report on the results of the compaction monitoring shall be submitted to the Service prior to any tilling actions being taken. (NOTE: 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.)
- 3a. Compaction sampling stations must be located at 500-foot intervals along the project area. One station must be at the seaward edge of the dune/bulkhead line (when material is placed in this area), and one station must be midway between the dune line and the high water line (normal wrack line).
- At each station, the cone penetrometer will 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 lay over less compact layers. Replicates will be located as close to each other as possible, without

interacting with the previous hole and/or disturbed sediments. The three replicate compaction values for each depth will 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 6 averaged compaction values.

- 3b. If the average value for any depth exceeds 500 pounds per square inch (psi) for any two or more adjacent stations, then that area must be tilled immediately prior to May 1. 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.
4. Visual surveys for escarpments along the project area must be made immediately after completion of the beach nourishment project and prior to May 1 for 3 subsequent years. Escarpments that interfere with sea turtle nesting or that exceed 18 inches in height for a distance of 100 feet must be leveled to the natural beach contour by May 1. If the project is completed during 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 must 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 that describes methods to be used to reduce the likelihood of impacting existing nests. An annual summary of escarpment surveys and actions taken must be submitted to the Service. To ensure compliance with this condition, turtle nesting surveys must be conducted for 3 years following beach restoration. (NOTE: Out-year escarpment monitoring and remediation are not required if placed material no longer remains on the beach.)
5. The applicant must arrange a meeting between representatives of the contractor, the Service, the SCDNR, the night monitors, and the permitted people responsible for egg relocation at least 30 days prior to the commencement of work on this project. At least 10 days advance notice must be provided prior to conducting this meeting. This will provide an opportunity for explanation and/or clarification of the sea turtle protection measures.
6. From May 1 to July 31, staging areas for construction equipment must be located off the beach to the maximum extent practicable. Nighttime storage of construction equipment not in use must be off the beach to minimize disturbance to sea turtle nesting and hatching activities. In addition, all construction pipes that are placed on the beach must be located as far landward as possible without compromising the integrity of the existing or reconstructed dune system. Temporary storage of pipes

must be off the beach to the maximum extent possible. Temporary storage of pipes on the beach must be in such a manner so as to impact the least amount of nesting habitat and must likewise not compromise the integrity of the dune systems (placement of pipes perpendicular to the shoreline is recommended as the method of storage).

7. From May 1 to July 31, direct lighting of the beach and near shore waters must be limited to the immediate construction area and must comply with safety requirements. Lighting on offshore or onshore equipment must be minimized through reduction, shielding, lowering, and appropriate placement to avoid excessive illumination of the waters surface and nesting beach while meeting all Coast Guard, EM 385-1-1, and OSHA requirements. Light intensity of lighting plants must be reduced to the minimum standard required by OSHA for General Construction areas, in order not to misdirect sea turtles. Shields must be affixed to the light housing and be large enough to block light from all lamps from being transmitted outside the construction area (see below schematic).



8. All pipeline and heavy equipment will be removed from the beach prior to August 1, 2008. No tilling or escarpment removal needed will occur between August 1, 2008 and October 31, 2008. If the project is not completed prior to August 1, 2008, project construction cannot start again until November 1, 2008.
9. All sandbags will be removed during project construction. The length and width of the beach where sandbags were placed must be probed in order to locate any buried bags or remnants. If sandbags are to be cut open and the material is left in the project area, it must be beach compatible. Any incompatible material will be removed and disposed of offsite. The applicant will hire an inspector responsible for ensuring sandbag removal and disposal offsite.

ATTACHMENT A

10. All dune vegetation must be native to South Carolina. Sand fencing must be installed correctly and spaced ten feet apart outside of the nesting season.
11. Immediately after completion of the beach nourishment project and prior to May 1 for 3 subsequent years, beach slope must be monitored in the area of restoration in accordance with a protocol agreed to by the Service, the State regulatory agency, and the applicant.

Reporting

1. A report describing the actions taken to implement the terms and conditions of this incidental take statement must be submitted to the Service within 60 days of completion of the proposed work for each year when the activity has occurred. This report will include the dates of actual construction activities, names and qualifications of personnel involved in nest surveys and relocation activities, descriptions and locations of self-release beach sites, nest survey and relocation results, and hatching success of nests.
2. In the event a sea turtle nest is excavated during construction activities, the permitted person responsible for egg relocation for the project must be notified so the eggs can be moved to a suitable relocation site.
3. Upon locating a sea turtle adult, hatchling, or egg harmed or destroyed as a direct or indirect result of the project, initial notification must be made to the Service Law Enforcement Office at (843) 727-4707 ext. 210 or 211 or (843) 514-3260 or (843) 297-9829. Additional notification must also be made to Melissa Bimbi of the Charleston Field Office at (843) 727-4707 ext. 217 and DuBose Griffin of the SCDNR at (843) 870-3667. Care should be taken in handling injured turtles or eggs to ensure effective treatment or disposition, and in handling dead specimens to preserve biological materials in the best possible state for later analysis.