Lee County Board Of County Commissioners
Agenda Item Summary **Blue Sheet No. 20040724**

1. REQUESTED MOTION:

ACTION REQUESTED: Approve Change Order No. 1 to Contract 2675, Bonita Beach Renourishment Project, with Lake Michigan Contractors, Inc., in the amount of $3,364,416, for beach restoration efforts in Lovers Key State Park. Through grant agreement 99LE1, the Florida Department of Environmental Protection is providing 88% of construction costs with the balance being funded by Lee County. Funds are available.

WHY ACTION IS NECESSARY: Any expenditure in excess of $50,000 must be approved by the Board of County Commissioners.

WHAT ACTION ACCOMPLISHES: Authorizes the restoration of approximately 6,000 linear feet of shoreline at Lovers Key State Park. The restoration will provide an average of approximately 265 feet of new beach for recreation, storm protection and environmental enhancement. Approves Lake Michigan Contractors, Inc. to begin the restoration activities in accordance with the contract documents and permit authorizations.

2. DEPARTMENTAL CATEGORY:		**3. MEETING DATE:**
COMMISSION DISTRICT #: 3	08 - C8D	06-22-2004

4. AGENDA:	**5. REQUIREMENT/PURPOSE:** *(Specify)*		**6. REQUESTOR OF INFORMATION:**	
X CONSENT		STATUTE	A. COMMISSIONER	
ADMINISTRATIVE		ORDINANCE	B. DEPARTMENT	Public Works
APPEALS	X	ADMIN. CODE AC-4-4	C. DIVISION	Natural Resources
PUBLIC		OTHER	BY: Roland E. Ottolini, P.E.	
WALK ON				
TIME REQUIRED:				

7. BACKGROUND:

On November 18, 2003, the Board of County Commissioners awarded B-03-17, Bonita Beach Renourishment Project, to Lake Michigan Contractors, Inc. As part of the solicitation, Lee County included language that would allow the renourishment of Lovers Key to be completed under the same contract. The contractor has made adequate progress and staff recommends continuation of the existing contract to perform renourishment of Lovers Key. Approval of this change order provides timely project execution due to contractor's proximity to site as well as savings on mobilization costs.

In accordance with Florida Administrative Code (FAC) Chapter 62B-36, the Florida Department of Environmental Protection is providing funding assistance for 88% of the construction cost for Lovers Key. FDEP and Lee County initiated the design and permitting for this work in January 2000 under grant agreement DEP 99LE1.

The restoration will provide an eight (8) year design life with a 40- foot shoreline extension based on data collected in May 2003.

Funding is available in account nos. 20302430100, 20302430101 and 22302430100.

8. MANAGEMENT RECOMMENDATIONS:

9. RECOMMENDED APPROVAL:

A Department Director	B Purchasing or Contracts	C Human Resources	D Other	E County Attorney	F Budget Services				G County Manager
					OA	OM	Risk	GC	
6.7.04		NA			6.2.04	6/3/04	5/28/04	6/3/04	6.2.04

10. COMMISSION ACTION:

_____ APPROVED
_____ DENIED
_____ DEFERRED
_____ OTHER

RECEIVED BY COUNTY ADMIN: 6-2-04 4:15
COUNTY ADMIN FORWARDED TO: 6-3-04 3pm

LEE COUNTY CONSTRUCTION CONTRACT NO.: 1
CHANGE ORDER

(A Change Order Requires Approval by the Department Director for Expenditures Under $25,000 or Approval by the County Manager for Expenditures Between $25,000 and $50,000 or Approval by the Board of County Commissioners over $50,000

CONTRACT/PROJECT NAME: Bonita Beach Renourishment Project / Lovers Key Restoration

CONTRACTOR: Lake Michigan Contractors, Inc PROJECT NO.: 3039/3024 Account #: 20302430101
22302430100

CONTRACT NO.:2675 BID NO.: B-03-17

CHANGE REQUESTED BY: Robert Neal, P.E. DATE OF REQUEST: May 5, 2004

Description:

Contractor shall hydraulically place approximately 570,240 cyds of beach compatible material on the beach of Lovers Key State Park. The borrow area is located approximately 2-1/2 miles to the north off South Estero Island. The work shall include the removal of dead or dying Australian Pines, and other debris, from the fill area.

Upon the completion and execution of this Change Order by both parties to the Contract the Contractor is authorized to and shall proceed to make the following changes in the Contract Documents:

1. Incorporate the plans titled "Lovers Key. Beach Restoration Project, Lee County Florida" dated January 27, 2004 authored by Coastal Planning and Engineering of Boca Raton Florida sheets 1 thru 11 inclusive.
2. The following sections of the contract documents do not apply to work authorized by this Change Order: Part G. Supplementary Conditions, Part H. Technical Specifications, Appendix 1 - Geotechnical Data, Appendix 2 - FDEP Permit, Appendix 3 - USACE Permit, Appendix 4 - Submerged Lands Easement, Appendix 5 - Temp. Const. Easement Agreements, Appendix 6 - Contractors Daily QC Report, Appendix 7 - Turbidity Monitoring, Appendix 8 - On Dredge Sea Turtle Observer's Report, and Appendix 9 - Sediment Quality Assurance / Control. These sections of the contract documents shall govern the previously contracted work known as "Bonita Beach Renourishment Project".
3. The following additions to the contract documents shall apply to the work authorized by this Change Order #1 for the work referred to as "Lovers Key Restoration"; Supplemental General Conditions (Section SGC); Appendix S-I Quality Control; Appendix S-III Horizontal and Vertical Control with Azimuths and Perpendicular Distances; Part G Technical Provisions; Appendix G-I-C Borrow Area II Vibracore Logs; Appendix G-I-D Borrow Area Grain Size Distribution Curves; Part H Environmental Protection; Appendix H-I-A Florida Department of Environmental Protection JCP 0173059; Appendix H-I-B Corps of Engineers Permit No. 200003017 (IP-MN) with U.S. Fish and Wildlife Biological Opinion; Appendix H-II Sovereign Submerged Lands Easement for Borrow Area II; Appendix H-III- Land Use Agreement for Lovers Key State Park. Appendix H-IV Lovers Key Sea Turtle Observer's Report & Manatee Protection Plan; Appendix H-V Lovers Key Turbidity Report.
4. Delete all references to the Estero Island Beach Restoration Project. References to the physical location or condition of Estero Island shall remain in effect.
5. The Technical Specifications shall govern over the General Conditions in the case of a conflict.
6. Delete all references to Borrow Area I.
7. Delete all references to groin construction.
8. Delete all references to Reach A, B & C.
9. DEP as referred to herein shall mean The State of Florida Department of Environmental Protection Agency or other regulatory office having jurisdiction over coastal construction.
10. Consultant, Owners Representative, and Engineer as referred to herein shall mean Coastal Planning and Engineering, Inc of Boca Raton Florida, or other entity as defined in writing by the County.
11. Liquidated Damages shall be in the amount of $200 per consecutive calendar day as specified in the Contract Documents Part E, Lee County Construction Contract, Agreement Form paragraph 5.4.
12. The maximum pay volume for this Change Order shall be 570,240 cyds. The Contractor shall not be paid for any volume in excess of this quantity. The fill template, as shown on the plans, represents the maximum fill placement at the time of the survey.

(Continued on page 2 of 6)

(Continued from Page 1 of 6)

13. Tolerances for fill placement shall be 0.5 ft. below the template and 0.0 feet above. The Contractor shall not be paid for any fill placed above or outside the template, except as specified in Section G, Technical Provisions, Paragraph 6.10 Compensating Slope Adjustment.
14. The cost for all workmanship, labor, materials and monitoring as specified in the Contract Documents shall be incorporated in the unit cost for sand placement. No other payments shall be made other than for the unit cost of sand placement.
15. Park as referred to herein shall mean Lovers Key State Park.
16. The Following revisions refer to the Supplemental General Conditions (Section SGC). Only the text shown in this Change Order shall be revised. All other text shall remain unchanged and the meaning or intent shall be binding. Where conflicts appear, this Change Order shall govern. ~~Strikethrough~~ text shall be deleted, underlined text shall be added.
    - **Paragraph 5.2** - The northern bridge ~~can accommodate only very light traffic~~ beach access at Lovers Key State Park shall be limited to pedestrian traffic. No vehicular traffic shall be allowed on or across this bridge.
    - **Paragraph 5.2.1** - The Trucks are ~~only~~ allowed to haul sand and other repetitive large loads after the park has closed, from one hour after sunset until 7:00 am. Daytime deliveries shall be subject to approval from the Park Manager. All daytime deliveries shall be coordinated with the Park Manager. In evaluating the approval of daytime deliveries, public safety shall be of extreme priority.
    - **Paragraph 5.2.2** -The Contractor shall be responsible for ensuring the front entrance gate is closed and secured during nighttime operations. The Contractor shall close and lock the Park entrance gate after every entrance and exit. A lock will be provided to the Contractor with a key. The Contractor ~~will have~~ may elect to post a guard at the Park entrance gate to maintain security during nighttime operations.
    - **Paragraph 5.2.3** - ~~The Contractor will protect the brick paver blocks from the weight of the heavy trucks and construction equipment with a minimum ¾" plywood which will have to be picked up each day after use.~~ The Contractor shall be responsible for protecting the existing brick pavers within the Park. At a minimum the Contractor shall place ¾" plywood, or other Park approved material, over the pavers when heavy vehicular traffic travels across the pavers. The Park shall provide One (1) set of plywood to the Contractor. The Contractor, at the Contractors expense, as needed, shall obtain additional materials.
    - **Paragraph 11.6** - Once fill placement begins in an acceptance section, it must be completed before moving to the adjacent acceptance section, unless prior written authorization is provided to the Contractor from the Consultant or County.
    - **Paragraph 11.15** - The cost for tree removal shall be included in the unit cost for sand placement. No additional cost shall be made for tree removal.
    - **Paragraph 24.1** - ~~A Lee County dredge permit is required~~. Pursuant to the Lee County Land Development Code Section 26-76 contractors are exempt from the requirement to obtain a County dredging permit.
    - **Paragraph 28.4.1** - The Contractor shall submit a confined spaced entry plan as part of his written proposal for accident prevention, ~~as specified in the General Conditions, Section 37.6.~~
17. The following revisions refer to the Contract Documents, Part G, Technical Provisions. Only the text shown in this Change Order shall be revised. All other text shall remain unchanged and the meaning or intent shall be binding. Where conflicts appear, this Change Order shall govern. ~~Strikethrough~~ text shall be deleted, underlined text shall be added.
    - **Paragraph 3** - The Design fill volume for Lovers Key is 570,240 cyds.
    - **Delete Paragraph 6.3.8** - Borrow Area Survey
    - **Paragraph 4.1.4** - The borrow area for this change order contains approximately 800,000 cyds. The design fill volume is 570,240 cyds. The design fill volume is approximately 70% of the available volume from the borrow area.
    - **Delete Paragraph 6.3.3** - Permit-Required Beach and Hydrographic Surveys.
    - **Paragraph 6.3.4 -** Surveys for payment shall extend at a minimum from 20 feet landward of the landward toe of fill.
    - **Paragraph 6.3.7** - Tide measurements shall be recorded within 15-minute intervals.
    - **Paragraph 6.3.11** - Deliverables shall include processed survey data in xyz format referenced to the horizontal and vertical datum's shown on the plans. Cross Sectional views of each profile line shall also be provided with a listing of the cross sectional area of fill eligible for payment at each profile line.
    - **Paragraph 6.5.1** - The contractor will be responsible for any damage, caused by the actions of its employees or subcontractors, to park facilities, park property or personal property of park visitors. All damages occurring as a result of the Contractor's construction activities shall be restored, replaced or repaired to the satisfaction of the County, prior to the Contractor's Final Payment.

(Continued on Page 3 of 6)

(Continued from Page 2 of 6)

- **Paragraph 6.10** - ~~Below mean high water (1.4 NGVD),~~ Seaward of the top of berm, fill measured outside the template can be counted towards pay quantity to the extent that it compensates for any deficit under the construction template. This applies only to fill measured contiguous to the construction profile ~~below mean high water~~ seaward of the top of berm.
- **Paragraph 6.13** - Any and all stakes… shall be composed of metal conduit pipe or rod…
- **Paragraph 6.20** - The Contractor ~~will have~~ may elect to post a guard at the park entrance gate to maintain security during construction…
- **Paragraph 6.21.1** - …the Contractor shall remove from the site of work, all snags, fallen Australian Pines, in ground Australian Pines, uprooted dead mangroves, piles of dead trees, exotic driftwood, and similar debris as designated by the Engineer, County, or Park within the limits of the beach fill section. At a minimum, the Contractor shall remove these items from the fill area and stockpile them in an area not suitable for turtle nesting. The Engineer, Park, County or DEP shall define this area. The stockpile area will be within 3000' of the tree debris, unless otherwise agreed by the Contractor. The Contractor shall burn the materials upon written authorization from the County or Park. The Contractor shall be responsible for obtaining all necessary permits and authorizations for the burning.
- **Paragraph 6.21.2** - ~~Tree removal will be paid for as a unit cost by tree by category.~~ Cost for debris and tree removal shall be incorporated in the unit cost of sand placement. No additional cost shall be made for the debris or tree removal.
- **Paragraph 7.1** - This project includes the construction of a ~~small~~ dune ~~on Lovers Key~~ the length of the fill area. The flat top of the dune is 20 feet wide and 2 feet high. The landward slope ~~is 1:2~~ and the seaward slope ~~is 1:5~~ vary as shown on the plans.
- **Delete the remainder of Paragraph 7.** Dune plantings are not included in this Change Order.
- **Delete Section III** - Terminal Groin on Estero Island.

18. The time of completion for the work described herein shall be 180 calendar days from June 1, 2004 or the County's issuance of a Notice to Proceed, whichever is later.
19. The Completion time for the work described as Bonita Beach Renourishment Project shall not be altered as a result of this Change Order #1.
20. The Contractor shall submit a daily report of any sea turtle observed from on-dredge personnel. This report shall be part of the Contractor's daily Quality Control report submittal.
21. Acceptance section surveys must be conducted within 10 days of completion of an acceptance section. If acceptance surveys have not been conducted within the specified timeframe, the County may conduct the surveys for purpose of calculating pay volumes. The cost for conducting said surveys shall be deducted from the Contractors Final Payment. The County may conduct surveys to verify the Contractor's measurements for purpose's of calculating pay volume. The verification surveys shall be conducted within 48 hours of the Contractor's Acceptance surveys.
22. The County may conduct bathymetric surveys of the Borrow Area for purpose of determining if fill material has been excavated from beyond or outside the authorized limits of the Borrow Area. If it is determined material has been excavated from outside or beyond the authorized limits, the payment quantity may be reduced by the volume of unauthorized material dredged. The cost of said survey may also be deducted from the Contractors Final Payment. If it is not determined material was dredged from outside or beyond the borrow area limits, the cost of said surveys shall be solely placed on the County.
23. Survey tolerances shall be no more than 10 feet either side of the azimuth on offshore segments of the profile line and a tolerance of no more than 5 feet either side of the azimuth on the onshore (beach) segment of the profile line.
24. The offshore segment of profile surveys for payment shall overlap the on-shore section by a minimum of 50 feet.
25. Calculations of payment quantities shall be made by the County or Engineer and may be verified by the Contractor. All parties shall work to resolve any discrepancies in the calculating methods. In the case of a dispute, the results accepted by the County shall be final.
26. All deliverables and submittals shall be made to the Engineer and County.
27. The Contractor shall comply with all the requirements or the permits, easements, and conditions of this contract including the Florida Department of Environmental Protection (DEP) Permit (# 0173059) and Variance (0173059-002-EV), the U.S. Army Corps of Engineers (USACE) Permit (# 200003017 (IP-MN) with the U.S. Fish and Wildlife Biological Opinion, the State Sovereign Submerged Lands Easement (No. 30635), and the Land Use Agreement for Lovers Key State Park (No. U-0310) (Appendices H-I-A, H-I-B, H-II, H-III, and H-IV respectively). The Contractor shall conspicuously post copies of all permits on the job site. Any other licensed or approvals required for the execution of this work shall be secured and paid for by the Contractor, at the Contractors' expense.

(Continued on Page 4 of 6)

(Continued from Page 3 of 6)

28. The Contractor shall begin beach fill operations at the south beach access, (approx. R-218.5 as shown on the plans). This area will be the staging area and starting point for the project allowing the park's center beach access or northern bridge, to remain open to the public, as the project moves north from there and before it becomes necessary for the center access, or north bridge, to be closed the south beach area will be made safe and accessible to beach goers visiting the park. At that time need for south beach area closures will be coordinated with the park manager. Every attempt will be made by the contractor to reopen beach areas as sections of the project are complete and deemed safe for park visitors.
29. The Contractor shall not hinder the use of the boat ramp by park visitors.
30. Storage of employee vehicles and necessary equipment will be allowed only in locations approved by the park manager.
31. The Contractor may use one (1) of the Park's volunteer campsites to set up a temporary mobile office. The Contractor shall be responsible for furnishing temporary electric and phone service as needed, at the Contractor's expense. The Contractor may install a septic connection to an existing Park System. All utility installations, locations, and connections shall be subject to Park approval. The Contractor shall restore the campsite to preconstruction condition prior to the County's issuance of Final Payment. Restoration shall include removal of all temporary services and sanitary sewer connections. All costs associated with the installation, use, or removal of temporary services shall be paid by the Contractor at the Contractor's expense. Additional campsites may be available to the Contractor upon approval by the Park Manager.
32. Dredging of the Borrow Area in Section B and C shall require a separate written Notice to Proceed (NTP) from the County. No Dredging shall commence in this Section prior to the Contractor's receipt of a written NTP. It is anticipated this NTP will be furnished on or before June 10, 2004. The priority of dredging shall be as stipulated on the Plans and in the State permit.
33. The Contractor shall construct, maintain, and repair any and all structures the Contractor erects, builds, or places on Park property. This requirement shall not apply to accepted sections of the beach fill, as defined in the plans and contract documents.
34. The County will process pay estimates based on surveys spaced on 100 ft increments of pay profiles. In no case will the payment for fill material of a completed acceptance section be greater than the estimated amount from the Engineer. The processing of any partial pay estimate for an acceptance section shall not relieve the Contractor from maintaining and protecting the fill until the complete section is accepted by the County. Acceptance sections are defined as the fill area between Pay Profiles as referenced in the Technical Provisions paragraph 6.2.

END THIS CHANGE ORDER #1
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Purpose of Change Order:

To include the work for Lovers Key shoreline restoration in the Bonita Beach construction contract.

Shoreline restoration of Lovers Key State Park will provide storm protection to the existing structures and environmental habitats. It will also provide a recreational beach for park visitors.

Attachments (List documents supporting change)

- Supplemental General Conditions (Section SGC);
- Appendix S-I Quality Control;
- Appendix S-III Horizontal and Vertical Control with Azimuths and Perpendicular Distances;
- Part G Technical Provisions;
- Appendix G-I-C Borrow Area II Vibracore Logs;
- Appendix G-I-D Borrow Area Grain Size Distribution Curves;
- Part H Environmental Protection;
- Appendix H-I-A Florida Department of Environmental Protection Joint Coastal Permit;
- Appendix H-I-B Corps of Engineers Permit No. 200003017 (IP-MN) with U.S. Fish and Wildlife Biological Opinion;
- Appendix H-II Sovereign Submerged Lands Easement for Borrow Area II;
- Appendix H-III- Land Use Agreement for Lovers Key State Park;
- Appendix H-IV Lovers Key Sea Turtle Observer's Report & Manatee Protection Plan;
- Appendix H-V Lovers Key Turbidity Report.

Plans titled "Lovers Key Beach Restoration Project, Lee County, Florida" dated January 27, 2004

END THIS SECTION – REMAINDER OF THIS PAGE INTENTIONALLY LEFT BLANK

CHANGE IN CONTRACT PRICE:

Original Contract Price

$1,659,576

Previous Change Orders No. 0 to No.0

$n/a

Contract Price prior to this Change Order

$1,659,576

Net Increase (Decrease)
of this Change Order

$3,364,416

Contract Price with all
approved Change Orders

$5,023,992

CHANGE IN CONTRACT TIME:

Original Contract Time

250 days
Calendar Days

Net change from previous Change Orders

n/a
Calendar Days

Contract Time prior to this Change Order

250 days
Calendar Days

Net Increase (Decrease)
of this Change Order

180 days (Work authorized by this CO only)
Calendar Days

Contract Time with all
approved Change Orders

180 days (Work authorized by this CO only)
Calendar Days

It is understood and agreed that the acceptance of this modification by the CONTRACTOR constitutes an accord and satisfaction, and represents payment in full (both time and money) for all costs arising out of, or incidental to, the above mentioned change.

RECOMMENDED:

By:_____
Consultant (if applicable) Date

By:_____
Department Director Date

_____
Contracts Management Date

APPROVED:

_____
County Attorney's Office Date

ACCEPTED:

By:_____
Contractor

_____
(PRINT NAME)

Date Accepted: _____

Corporate Seal

COUNTY APPROVAL:

By:_____
Department Director
(Under $25,000)

Date Approved:_____

BY:_____
County Manager
(Under $50,000)

Date Approved:_____

By:_____
Chairman
Board of County Commissioners
(Over $50,000)

Date Approved: _____

CMO:011
09/25/01

ESTERO ISLAND AND LOVERS KEY, FLORIDA
BEACH RESTORATION PROJECT

SUPPLEMENTAL GENERAL CONDITIONS

ESTERO ISLAND AND LOVERS KEY, FLORIDA
BEACH RESTORATION PROJECT

SUPPLEMENTAL GENERAL CONDITIONS

TABLE OF CONTENTS

ESTERO ISLAND AND LOVERS KEY, FLORIDA
BEACH RESTORATION PROJECT

SUPPLEMENTAL GENERAL CONDITIONS

TABLE OF CONTENTS
(cont.)

APPENDICES

ESTERO ISLAND AND LOVERS KEY, FLORIDA
BEACH RESTORATION PROJECT

SUPPLEMENTAL GENERAL CONDITIONS

1. COMMENCEMENT, PROSECUTION, AND COMPLETION OF WORK.

The CONTRACTOR shall commence dredging under the contract within 60 days of notice to proceed, shall prosecute said work diligently and continuously, and shall complete the entire work ready for use within 180 days after notice to proceed. The time stated for completion shall include removal of pipe from the beach, grading, leveling of escarpments in the beach, tilling of the beach (if required), final clean-up of the premises and all repairs or restorations of facilities, structures, vegetation or any other item damaged by the CONTRACTOR or his/her SUBCONTRACTORS as a result of project construction activities. For each day of delay in commencing dredging beyond 60 days, the CONTRACTOR will forfeit a day of allowable delay (Article 12 of the General Conditions) beyond the date for the entire work to be complete and ready for use. Construction must be completed within 180 days of notice to proceed.

2. PROJECT AREA.

The project area is spread out on two islands. The northern island is Estero Island, which contains the Town of Fort Myers Beach. The southern island is Lovers Key, and is administered as Lovers Key State Park. Operations within the City or Park that are beyond the CONSULTANT'S responsibility shall be coordinated with the following points of contact:

Paul Rice	Park Manager of Lovers Key (941) 463-4588
John Gucciardo	Deputy Town Manager (941) 265-0202
Stephen J. Boutelle	Project Manager, Lee County (941) 479-8128

3. TIME FOR COMPLETION AND LIQUIDATED DAMAGES.

3.1 The date of beginning and the time for completion of the work are essential conditions of the Contract Documents and the work embraced shall be commenced on a date specified in the Notice to Proceed.

3.2 The CONTRACTOR will proceed with the work at such rate of progress to ensure full completion within the Contract time. It is expressly understood and agreed, by and between the CONTRACTOR and the COUNTY, that the Contract time for the completion of the work described herein is a reasonable time, taking into consideration the prevailing weather conditions in the locality of the work.

3.3 If the CONTRACTOR shall fail to complete the work within the Contract time, or extension of time granted by the COUNTY, then the CONTRACTOR will pay to the COUNTY the amount for liquidated damages of $2,000 for each consecutive calendar day after the final completion date.

3.3.1 The date of completion shall be that date that the COUNTY can receive beneficial use of the work completed. This date is also the date for figuring any liquidated damages. The completion date is when all tilling and escarpment leveling is completed.

3.4 The CONTRACTOR shall not be charged with liquidated damages or any excess cost when the delay in completion of the work is an allowable delay described in Part F and the CONTRACTOR has provided proper written notice and documentation of such delay to the ENGINEER.

4. PHYSICAL DATA AND PHYSICAL CONDITIONS.

4.1 Information and data furnished or referred to in the Contract Documents are furnished for the CONTRACTOR's information. However, it is expressly understood that the COUNTY and CONSULTANT will not be responsible for any interpretation or conclusion drawn therefrom by the CONTRACTOR. Likewise, the COUNTY and CONSULTANT will not be responsible for any information provided to the CONTRACTOR by any information agency or other party.

4.2 The physical conditions of the borrow area sand resources indicated on the drawings and in the specifications are the results of site investigations by remote sensing techniques, bathymetric surveys and vibracore sediment sampler. When the indicated physical conditions are the result of site investigations by vibracore sediment sampler, the sampling locations are shown on the drawings. While the COUNTY's remote sensing survey, bathymetric survey or vibracore sediment samples may be representative of subsurface conditions at their specific respective locations and vertical reaches, variations in the characteristic of the surface or subsurface materials are possible. Should any questions or discrepancies arise, the conditions should be independently confirmed by the CONTRACTOR. Vibracore samples are available for inspection at the CONSULTANT's office during normal working hours (Monday through Friday, 9:00 a.m. to 5:00 p.m.). A minimum two (2) day advance notice to the CONSULTANT is required to examine the vibracores.

4.3 Magnetic anomalies representing objects containing iron discovered during a magnetometer survey of the borrow areas are provided in the drawings for the convenience of the CONTRACTOR. The magnetic anomalies shown in the drawings may not represent all magnetic anomalies in the borrow area.

4.4 **Weather Conditions.** The project area may be affected by tropical storms and hurricanes primarily from June through November, and by stormy and/or rainy weather, including severe thunderstorms, during any time of the year. The CONTRACTOR shall be responsible for obtaining information concerning rain, wind and wave conditions that could influence safety, dredging and disposal operations prior to preparing and submitting a bid. A list of publications containing climatological and meteorological observations and data for the project area is provided. Other publications or information sources are available in addition to the following:

4.4.1 **Local Climatological Data-Monthly Summary** published by the National Oceanic and Atmospheric Administration (NOAA), Asheville, NC. Subscription price and ordering information available from the National Climatic Data Center, Federal Building, Asheville, NC 22801. This publication gives hourly wind speed and direction observations. The Annual Summary gives a summary of the observations for the period of record.

4.4.2. **Summary of Synoptic Meteorological Observations: North American Coastal Marine Areas Atlantic and Gulf Coasts**. Produced by Naval Weather Service, U.S. Department of Commerce. Distributed by National Technical Information Service, U.S. Department of Commerce.

4.4.3. **Wave hindcast data** is available from the "Coastal Engineering Data Retrieval System," produced by the U.S. Army Corps of Engineers, Waterways Experiment Station, Coastal Engineering Research Center.

5. LAND TRANSPORTATION.

5.1 Land access to Estero Island is by two bridges along Route 865 extending from the mainland to Estero Island, and continuing on Lovers Key before it crosses two more bridges on its return to the mainland at Bonita Springs. The CONTRACTOR is responsible for adhering to all weight and traffic regulations on all roadways.

5.2 Beach Access on Lovers Key is by two trolley bridges on the island or by rounding the north end of the island along the beach. The southern bridge meets DOT standards. The northern bridge can accommodate only very light traffic. For access to the park, the CONTRACTOR must abide by the following:

5.2.1 The trucks are only allowed to haul sand and other repetitive large loads after the park has closed, between one hour after sunset until 7:00 am.

5.2.2 The CONTRACTOR will have to post a guard at the park entrance gate to maintain security during night time operations.

5.2.3 The CONTRACTOR will protect the brick paver blocks from the weight of the heavy trucks and construction equipment with a minimum 3/4" plywood which will have to be picked up each day after use.

5.2.4 The dirt tram road will be filled and regraded at park managements request should the tram road become rutted, damaged or a hindrance to the operation of the tram.

5.2.5 Park management reserves the right to further restrict hauling times if pavilion is rented for an after-hours event.

5.2.6 Beach fill operations using a dredge are not restricted by the above rules, only the land support services.

6. BOAT TRAFFIC AND LOCAL INLETS.

Boat traffic in the near vicinity of the project area will consist primarily of pleasure and fishing boats. The waterway located to the north of Estero Island is part of the Ft. Myers Beach Harbor federal navigation project, and is also referred to as Matanzas Pass. The inlet between Estero Island and Lovers Key is Big Carlos Pass, and access is restricted through this inlet. South of Lovers Key are two small inlets, New Pass and Big Hickory Pass, which also have restricted access.

7. OBSTRUCTION TO NAVIGATION.

The CONTRACTOR will be required to operate in compliance with pertinent U.S. Coast Guard regulations and to conduct the work in such a manner as to minimize any obstruction to navigation. If the CONTRACTOR's dredge or other vessels so obstruct any navigation channel as to make navigation difficult or endanger the passage of vessels, said dredge or related equipment shall be promptly moved on the approach of any vessel to such an extent as may be necessary to afford a practicable passage. Upon completion of the work, the CONTRACTOR shall promptly remove his dredge, as well as ranges, buoys, piles and other marks or objects placed in navigable waters or on shore.

8. LOCAL PORTS.

Ft. Myers Harbor, located north and west of the project area, is a shallow draft maintained port in Ft. Myers Beach, Florida. The two borrow areas are located adjacent to the approach to the harbor and San Carlos Bay Entrance. All inlets and ports are used at the CONTRACTOR's own risk.

9. PAYMENT FOR MOBILIZATION AND DEMOBILIZATION.

9.1 All costs connected with the mobilization and demobilization of all the CONTRACTOR's equipment and personnel, including the dredge, if used, will be paid for at the contract lump sum price for this item. Sixty percent (60%) of the lump sum price will be paid to the CONTRACTOR after commencement of dredging and placement of a quantity of, at minimum, five thousand (5,000) cubic yards of material on the beach and within the beach fill template in a twenty-four (24) hour period (or less time). The remaining forty percent (40%) will be included in the final payment for work under this Contract. Payments will be subject to a ten percent (10%) retainage until final acceptance of the project.

9.2 In the event the CONSULTANT considers that the amount in this item (60%), which represents mobilization, does not bear a reasonable relation to the cost of the work in this contract, the CONSULTANT may require the CONTRACTOR to produce cost data to justify this portion of the bid. The CONSULTANT will utilize previously bid projects of a similar nature as a guideline to evaluate the mobilization/demobilization costs. Failure to justify such price to the satisfaction of the CONSULTANT will result in payment of estimated mobilization costs, as determined by the CONSULTANT at the completion of

mobilization, and payment of the remainder of this item in the final payment under this Contract.

9.3 The south Estero Island and Lovers Key segments are not supported by Federal funding. Any cost required to mobilize for construction of these segments within the project area shall be listed as a separate cost on the bid form. The remobilization cost for these segments will be paid using the criteria described in paragraph 9.1 above, but final payment will be paid at the completion of the segment.

9.4 The bid cost of Lovers Key and south Estero Island segments shall be bid as a stand-alone from the north Estero Island segment. The CONTRACTOR's bid price for these segments should be such that their elimination would have no impact on the price for the north Estero Island segment.

9.5 The cost for mobilization for groin construction is described in the technical specifications.

10. LAYOUT OF WORK FOR HYDRAULIC BEACH FILL PLACEMENT.

10.1 **Layout of Work.** The CONTRACTOR may use any control deemed necessary for the layout of work. The CONTRACTOR may establish any profile cross-sections deemed necessary for the layout of work. Nevertheless, only the beach profile lines specifically identified in the drawings, Supplemental General Conditions (Appendix III) and Technical Provisions will be used as the basis for payment. No other profiles will be considered for the purposes of determining placed beach fill volume for payment.

10.2 **Project Bidding.** For the purposes of bidding the beach renourishment project, fill templates in the drawings will be limited to established Florida Department of Environmental Protection (FDEP) beach monuments and intermediate lines identified with a decimal value. The project fill volume will remain approximately the same as the estimated volume for bidding purposes.

10.3 **Control.** Florida Department of Environmental Protection (formerly Department of Natural Resources) beach monuments may be used for control, once the CONTRACTOR has verified the location and elevation of each FDEP beach monument. The FDEP and intermediate monument location coordinates and elevations for the work site are indicated on the drawings and Appendix III, but shall be independently verified by the CONTRACTOR and his/her surveyor. The CONTRACTOR shall immediately contact the CONSULTANT if any discrepancies are discovered in any of the information presented concerning all beach monumentation, including FDEP or intermediate monuments. If the CONSULTANT is not contacted by the CONTRACTOR, it is understood that the CONTRACTOR agrees with all information presented in the drawings related to beach monumentation elevation and control information.

10.4 Utilizing the survey monuments, control data and elevations provided by the CONSULTANT and verified by the CONTRACTOR, the CONTRACTOR shall complete

the layout of the work and shall be responsible for all measurements that may be required for the execution of the layout of the work, subject to such modifications as the CONSULTANT may require to meet changed conditions or as a result of necessary modifications to the contract work. The CONTRACTOR will use a surveyor registered in the State of Florida. The licensed surveyor will be responsible for all survey work and will certify all work.

10.5 The CONTRACTOR shall furnish, at his own expense, such stakes, templates, platforms, equipment, tools and material, and all labor as may be required in laying out any part of the work from the survey monuments, control data and elevations provided by the CONSULTANT and verified by the CONTRACTOR, the cost of which is included in the unit cost for fill placement. It shall be the responsibility of the CONTRACTOR to maintain and preserve all stakes and other marks unless and until they are no longer needed to construct the beach renourishment project. All temporary marking stakes (including grade stakes) placed by the CONTRACTOR must be completely removed upon completion of the project.

10.6 **FDEP and Intermediate Beach Monumentation**. Permanent markers or monuments, such as FDEP or intermediate beach monuments for example, will not be disturbed, damaged or destroyed by the CONTRACTOR. Disturbed, damaged or destroyed monuments will be replaced by the CONSULTANT, at his discretion, and the expense of replacement will be deducted from any amounts due, or to become due to the CONTRACTOR.

11. ACCEPTANCE AND PAYMENT FOR HYDRAULIC BEACH FILL PLACEMENT.

11.1 **Payment.** Other than costs for mobilization and demobilization and beach tilling, all other costs associated with the beach renourishment project, included costs associated with, but not limited to, excavating, transporting, escarpment leveling, and constructing the hydraulic beach fill and all other materials and work shall be included in the contract unit price per cubic yard for Beach Fill Placement on the Bid Form, which payment shall also include all other items of overhead, profit, labor, material and any other costs incident to performing the Work. Payments will be subject to a ten percent (10%) retainage until final acceptance of the project.

11.2 **Basis of Volume Computation Measurement.** The basis of the payment volume computation will be the comparison of the measured as-filled profiles (post-construction) to the pre-construction profiles. The quantity (volume) of fill materials lying within the construction template, addressed in the contract documents and shown in the drawings, will be the basis for payment. The CONTRACTOR shall conduct the pre- and post-construction surveys and computations as are necessary and as indicated in the contract documents in order to determine the quantities placed within the fill sections between payment profile lines.

11.3 **Payment Profile Lines.** Profiles to be used for payment purposes are strictly limited to those of beach monument profile lines numbered R-174.5 to R-198, R-208 to R-210, and R-214.5 to R-220.5. The location of each pay profile monument is included on the plans for

the project and in Appendix III. All intermediate beach profile monuments may not be available prior to bidding; however, they will be established prior to the initiation of survey tasks required for this contract. The project volume will remain approximately the same. No other profile cross-sections will be used to compute pay quantities. Each payment profile line is to be surveyed on the azimuth indicated in the drawings.

11.4 Additional Profile Information. In addition to surveying the payment profile lines listed above, the CONTRACTOR will also conduct cross-section surveys on one hundred (100) foot intervals between pay profile lines. The cross-section profile surveys conducted on 100-foot intervals will not be used to compute payment volumes, but to demonstrate that the beach was constructed to the required berm elevation and beach width. These surveys will be provided to the CONSULTANT along with the pay profile line survey information for CONSULTANT verification that the beach fill was constructed as indicated by the drawings and Contract Documents. The 100-foot intervals will be measured from the lower numbered payment profile line within each acceptance segment and referenced to the lower numbered payment profile line (i.e., R-85+100).

11.5 Payment Surveys. Payments will be based on the result of the comparison of pre-construction and post-construction surveys. The CONSULTANT will verify the pay quantities provided by the CONTRACTOR based on post-construction surveys conducted by the CONTRACTOR and accepted by the CONSULTANT. Acceptance surveys shall be performed by a land surveyor employed by the CONTRACTOR. The CONTRACTOR shall notify the COUNTY and the CONSULTANT when the payment surveys will be conducted. The land surveyor employed by the CONTRACTOR will be registered in the State of Florida. The surveyor must be acceptable to the COUNTY and the CONSULTANT. The CONTRACTOR's surveyor shall certify all surveys submitted for payment, and the CONSULTANT must agree the survey is accurate for it to be used for payment purposes.

11.5.1 Pre-Construction Survey. Pre-construction surveys will be conducted by the CONTRACTOR under observation of the CONSULTANT within approximately three weeks of starting a project reach such as Reach A, B, C, South Estero and Lovers Key. The surveys will be used by the CONSULTANT to update the plans and prepare the final cross-sections for the drawings. The CONTRACTOR shall not commence construction until cross-sections, based upon the CONTRACTOR's pre-construction survey, have been incorporated into the drawings for the project, unless permission to proceed is provided in writing by the CONSULTANT.

11.5.2 Post-Construction Survey. If determined by the CONSULTANT to be an accurate representation of the post-construction fill placement, the CONTRACTOR's post-construction survey records will be used to compute the volume placed for payment purposes. The CONSULTANT, at his discretion, may verify the post-construction survey results of the CONTRACTOR. The CONSULTANT's survey will be used for payment purposes if, in the CONSULTANT's opinion, a significant difference is found between the CONTRACTOR's post-construction survey and the CONSULTANT's survey.

11.5.3 Survey Field Notes Submittal. The CONTRACTOR shall submit survey field notes to the CONSULTANT upon completion of each survey to expedite review of payment requests. All field notes, survey and volume computations, and the records used by the CONTRACTOR to compute the payment fill quantity shall be furnished to the CONSULTANT with the Application for Progress Payment and Final Application for Payment.

11.5.4 Survey Discrepancy. If there is a discrepancy between surveys conducted by the CONTRACTOR and the CONSULTANT, the respective surveyors will attempt to resolve the survey discrepancy. If the discrepancy cannot be resolved, the post-construction survey conducted by the CONSULTANT will be used to compute the fill volume for payment purposes.

11.5.5 Survey Observation. The CONTRACTOR will provide the CONSULTANT advance notice of all surveys. The CONSULTANT reserves the right to observe all surveys and the CONTRACTOR shall not schedule or start surveys without the CONSULTANT.

11.6 Acceptance Sections. Acceptance sections are defined as the segment of beach lying between two immediately adjacent pay profile lines, as indicated in the plans and as shown in Appendix III to this section. Once fill placement begins in an acceptance section, it must be completed before moving to the adjacent acceptance section.

11.7 Payment for Hydraulic Fill Placement. The CONTRACTOR may request payment for fill placement on a monthly basis. Payments shall be based on completed adjacent acceptance sections which have been approved by the CONSULTANT. The CONTRACTOR will be eligible for the initial progress payment when a minimum of two (2) adjacent beach fill sections have been filled to a minimum of 95% of the total beach fill section volume and meet the minimum berm tolerance at all points on the beach berm. The beach fill volume is the volume to completely fill the template for each fill acceptance section located between adjacent payment profile lines. The initial progress payment will be based on the two (2) consecutive sections being filled to meet specifications and surveyed and accepted for payment after the two (2) sections have been filled. The next monthly payment, and all future monthly payments may occur when additional adjacent sections have been hydraulically filled and accepted by the CONSULTANT. The CONTRACTOR shall submit to the COUNTY and the CONSULTANT for review, on a monthly basis, an Application for Progress Payment filled out and signed by CONTRACTOR covering the Work completed as required by the Contract Documents and accompanied by such supporting documentation as is required by the Contract Documents and also as the CONSULTANT may reasonably require. All payments will be subject to a ten percent (10%) retainage until final acceptance of the project.

11.8 Computation of Payment Volumes. Quantities of beach fill satisfactorily placed and meeting beach fill template requirements and volumes will be computed for payment by use of the average end-area method. The distance between each pay profile line to be used for fill computation is the perpendicular distance between each profile line, as shown in

Appendix III following this section. The CONTRACTOR shall account for this method of fill volume calculation when estimating his bid estimate. Only those profiles shown in the drawings and listed in Appendix III will be used for computation for payment purposes of the fill quantities placed. No other profile lines will be considered in computing pay volumes. The end profile in each segment will have no construction template, and represents the point of fill taper termination. Payment will be provided for fill contained within the payment profile construction templates and within the upper tolerance. The CONTRACTOR's bid shall account for any costs associated with the profile selection, the azimuth of profile lines, the profile measurement technique, or the payment volume calculation technique.

11.9 Tolerances. Payment will be for hydraulic fill placed within the construction template only, plus tolerances. The maximum vertical tolerance above and below the template is 0.5 feet. Hydraulic fill placement must at least meet the 0.5 foot tolerance below the template everywhere on the constructed beach berm, and the minimum fill volume requirement. The CONTRACTOR shall refill any deficient section of beach to at least meet the below template tolerance everywhere on the constructed beach berm, and to 95% of the fill volume for the acceptance section. The COUNTY will withhold payment for acceptance sections of beach (segments between pay profiles) which do not meet the minimum required hydraulic fill requirement until the required hydraulic fill placement and grading has been completed by the CONTRACTOR.

11.10 Compensatory Slope Adjustment. Fill placed outside the construction template will be credited under the following circumstance. Below mean high water (+1.4 ft NGVD), fill measured outside the template can be counted toward pay quantity to the extent that it compensates for any deficit under the construction template. This applies only to fill measured contiguous to the construction profile below mean high water and the quantity cannot exceed the deficit volume measured below mean high water. This provision is a second tolerance.

11.11 Unit Price Contract Items. No adjustment shall be made in the Contract Price for changes ordered by the COUNTY that cause a decrease in the amount of the Work (by volume of material placed within the construction templates) that is less than or equal to twenty-five percent (25%) of the estimated fill quantity set forth in the Contract Documents. An equitable adjustment may be made in the Contract Price for Unit Price Contracts if changes ordered by the COUNTY cause the applicable quantity set forth in the Contract Documents to be decreased by more than 25 percent (25%). Such adjustment may be made only for that portion of work that is less than seventy-five (75%) of the estimated quantity, and shall be supported by data provided by the CONTRACTOR to the COUNTY which demonstrates justification for the adjustment in Unit Price.

11.12 Maximum Pay Volume. The maximum pay volume for each reach will not exceed the volumes indicated on the bid form, unless modified by a change order. The tolerance described above should be used by the CONTRACTOR to avoid excessive fill placement, but shall not be the basis for pay volumes in excess of those indicated on the Bid Form. The

five reaches are A, B, C, South Estero Island and Lovers Key. The first three reaches are on northern Estero Island.

11.13 Approval of Final Payment. Final quantity calculations will be computed by the CONSULTANT using survey records and documents provided by the CONTRACTOR.

11.14 Partial Payment for the Terminal Groin. Partial payment will only be made for stone incorporated into the structure templates in accordance with the specifications. No partial payment will be made for stone stored at the site. No partial payment will be made for excavated stone and sand until acceptance of the seaward acceptance reach. Groin payments will be based on weight tickets of stone incorporated into the structure and confirmed by survey.

11.15 Payment for Tree Removal. The number of trees approved for payment will be based on a joint physical count of root systems with trunks made before the trees are chipped. The diameter of the trees will be measured at a point 4 feet above the top of the root.

12. PAYMENT FOR BEACH TILLING.

Payment for travel, mobilization, demobilization, labor, materials, equipment, fuel, oil, and all other applicable costs in connection with tilling of the renourished beach shall be paid for at the unit price of the bid times the length of beach tilled, subject to a ten percent (10%) retainage until final acceptance of the project.

13. BEACH ESCARPMENT LEVELING AT PROJECT CONSTRUCTION COMPLETION.

Prior to final acceptance, the CONTRACTOR will inspect the entire beach project areas for the formation of sand escarpments. Any escarpments in the entire project area, including all acceptance sections, exceeding 12 inches in height (on average), independent of the length, will be leveled or smoothed to eliminate the escarpment. The CONSULTANT will observe the beach after leveling of escarpments to ensure that the CONSULTANT agrees that all escarpments have been leveled in compliance with permits. The CONTRACTOR will level any escarpments found by the CONSULTANT or COUNTY, at their request. Payment for escarpment leveling will be included in the contract unit price for beach fill placement.

14. CONTRACTOR QUALITY CONTROL.

The CONTRACTOR is responsible for quality control and shall provide and maintain an effective quality control program. As a minimum, the QA program will have the following elements:

14.1 Quality Control Reports shall be provided to the CONSULTANT on a daily basis during mobilization, construction and demobilization without exception.

14.2 The CONTRACTOR shall establish a quality control system to perform sufficient inspections and tests of all items of work, including that of his subcontractors, and to insure conformance to applicable specifications and drawings with respect to the materials, workmanship, construction, finish, functional performance and identification. This control will be established for all construction except where the Technical Provisions of the contract provide for specific COUNTY or CONSULTANT control by inspections, tests or other means. The CONTRACTOR's control system will specifically include the surveillance and tests required in the Technical Provisions.

14.3 The CONTRACTOR's quality control system is the means by which the CONTRACTOR is assured that the construction complies with the requirements of the Contract Documents. The controls shall be adequate to cover all construction operations and shall be keyed to the proposed construction sequence.

14.4 The CONTRACTOR's job supervisory staff may be used for quality control, supplemented as necessary by additional personnel for surveillance, by special technicians, or by testing facilities to provide capability for the controls required by the Technical Provisions. An independent surveyor registered in the State of Florida will, however, conduct payment surveys.

14.5 The CONTRACTOR shall furnish to the COUNTY at least seven (7) days prior to the pre-construction conference, a written quality control plan which shall include the procedures, instructions, and reports to be used. This document will include as a minimum:

(a) The quality control organization.

(b) The number and qualifications of personnel to be used for this purpose.

(c) Authority and responsibility of quality control personnel.

(d) Methods of quality control including that for his subcontractor's work. The methods shall include items to be inspected, types of inspections, duties of personnel, and methods the CONTRACTOR proposes to use to assure quality work.

(e) Method of documenting quality control operations, inspection and testing.

(f) Written instructions to the CONTRACTOR's representative responsible for quality control outlining his duties and responsibilities and signed by a responsible officer of the firm.

(g) A copy of daily quality control report forms and other inspection documents that are to be furnished to the CONSULTANT daily. A sample "Daily Quality Control Report" is included as an Appendix to these Supplemental General Conditions (Appendix I). This report will be used by the CONTRACTOR as the Daily Quality Control Report to be provided to the CONSULTANT. A different report format may be substituted by the CONTRACTOR if: (1) it contains, at

minimum, the same information and (2) it is approved, in writing, by the CONSULTANT.

14.6 Unless specifically authorized by the CONSULTANT, no construction will be started until the CONTRACTOR's quality control plan is approved by the CONSULTANT.

14.7 All compliance inspections will be recorded on the Daily Quality Control Report, including, but not limited to, the specific items required in each technical section of the specifications. This form shall include records of corrective action taken and shall be furnished to the CONSULTANT daily by 2:00 p.m. the following day. The Daily Quality Control Report shall be filled out every day, regardless of whether work is accomplished, starting on the first day of mobilization and ending on the last day of demobilization and furnished to the CONSULTANT as required by the Contract Documents. Failure to provide Daily Quality Control Reports to the CONSULTANT shall result in delay in payments to the CONTRACTOR until the Daily Quality Control Reports are received and are acceptable to the CONSULTANT.

14.8 If reoccurring deficiencies in an item or items indicate that the quality control system is not adequate, or reports are not being provided in a timely manner, the CONTRACTOR shall undertake such corrective actions as directed by the CONSULTANT.

14.9 No separate payment will be made for CONTRACTOR quality control. It shall be subsidiary obligation or field overhead cost, in the same category as control supervision.

14.10 The daily quality control report shall include a plot of the dredge location and cutterhead depth as described in the technical specifications. Failure to provide this information may be grounds for stopping dredging until reporting is up to date.

15. WATER QUALITY MONITORING BY THE CONTRACTOR.

The CONTRACTOR shall be bound and obligated to maintain the quality of the State of Florida waters as stipulated in project permits and in the Florida Administrative Code Rule 62-3.121 as they pertain to the Class III waters of this work. The CONTRACTOR will be required to make inspections, measurements and observations required by those regulations and the FDEP permit in the vicinity of the dredge and at the spoil site (beach). This includes, but is not limited to, turbidity sampling with reports to the CONSULTANT, following procedures stated in FDEP Permit 0173059-001-JC (Appendix 1-A of the Environmental Protection Section). If it is determined that the quality of the State's waters is not being maintained, the CONTRACTOR will, without delay, follow the procedures provided in the FDEP permit which is included as an appendix to the Environmental Protection Section of the contract documents. The water quality monitoring and reporting costs will be incorporated into the lump sum cost of environmental monitoring in the bid documents and will not be a separate cost.

16. AMERICAN BUREAU OF SHIPPING (ABS) CERTIFIED DREDGE FOR BEACH FILL PLACEMENT.

16.1 Dredge. The CONTRACTOR agrees to keep on the job sufficient equipment, including the dredge, to meet the requirements of the work. The dredge shall be in satisfactory operating condition, shall be reliable in its performance and capable of safely and efficiently performing the work as set forth in the Contract Documents. The dredge shall be of sufficient size and capacity to complete the work in a timely manner, meeting or exceeding Contract Document requirements for the construction time period. The dredge listed in the bid documents is the minimum size and capacity which the CONTRACTOR agrees to place on the job unless a different size and/or capacity dredge is approved by the CONSULTANT in writing, and its listing thereon is not to be construed as an agreement on the part of the COUNTY that it is adequate for the performance of the work. In no event, however, does acceptance of an alternate dredge relieve the CONTRACTOR of the construction period time constraints of the Contract Documents and/or permits for the project.

16.2 A.B.S. Approval. The CONTRACTOR shall obtain any and all American Bureau of Shipping (A.B.S.) and U.S. Coast Guard dredge certifications and/or approvals required for the project described herein. A copy of the A.B.S. and/or U.S. Coast Guard certifications and approvals must be provided to the COUNTY and CONSULTANT at the time of bid, demonstrating that the dredge proposed for use on the project is licensed and certified to conduct work in the open waters of the Gulf of Mexico.

16.3 No Reduction in Dredge Capacity. No reduction in the capacity of the dredge employed on the work shall be made except by written permission of the CONSULTANT. The measure of the "capacity of the dredge" shall be its actual performance on the work to which these specifications apply. The CONSULTANT, at his discretion, may order a field test of the capacity of the dredge at the CONTRACTOR's expense. If the plant, in the CONSULTANT's opinion, is not of sufficient capacity to complete the work in the specified time period, the CONSULTANT may direct the CONTRACTOR to replace the dredge with a larger capacity dredge. In any event, any change in the dredge does not relieve the CONTRACTOR of the construction period time constraints of the Contract Documents or the project permits.

17. MISPLACED MATERIAL, PLANT MACHINERY, EQUIPMENT OR APPLIANCE.

Should the CONTRACTOR, during the progress of the work, lose, discard, throw overboard, sink, or misplace any material, plant, machinery, equipment, or appliance, which in the opinion of the CONSULTANT should be removed, the CONTRACTOR shall recover and remove the same with the utmost dispatch. The CONTRACTOR shall give immediate notice, with description and location of such material, plant, machinery, equipment, or appliance in the Gulf of Mexico, to the CONSULTANT or inspector. Should the CONSULTANT discover such material, plant, machinery, equipment, or appliance, the CONSULTANT may locate through electronic means or buoy the material, plant, machinery, equipment, or appliance, and may notify the CONTRACTOR of its location. Removal of the material, plant, machinery, equipment, or appliance, shall be the

responsibility of the CONTRACTOR and cost of the removal will be paid for by the CONTRACTOR. Should the CONTRACTOR refuse, neglect, or delay compliance with the above requirements, such material, plant, machinery, equipment, or appliance may be removed by the COUNTY, and the cost of such removal may be deducted from any money due or to become due to the CONTRACTOR or may be recovered under his bond. The liability of the CONTRACTOR for the removal of a vessel wrecked or sunk without fault or negligence shall be limited to that provided in Sections 15, 19, and 20 of the River and Harbor Act of March 3, 1899 (33-U.S.C. 410 et.seq.), or most recent version.

18. FINAL CLEAN-UP.

Final clean-up shall include the removal of the CONTRACTOR's dredge and all equipment or materials from the project area either for disposal or reuse. Dredge and/or equipment removal, or materials to be disposed of shall only be disposed of in a manner and at locations approved by the COUNTY. Unless otherwise approved in writing by the COUNTY, the CONTRACTOR is not permitted to abandon pipelines, cables, pipeline supports, pontoons, or other equipment or materials in the disposal area, pipeline access areas, water areas, underwater in the Gulf of Mexico or in any harbors, passes or inlets, or other areas adjacent to the work site. Any stakes or other markers placed by the CONTRACTOR must be removed as a part of the final clean-up. Grades stakes placed during the fill operation shall be completely removed and shall not be left buried in the fill.

19. RESTRICTION OF PUBLIC ACCESS.

The CONTRACTOR shall be required to erect, maintain, and move as necessary, a restrictive barrier around the discharge of his hydraulic pipeline (or other mechanical off loader), groin construction site, or any other active work which may present a safety hazard to the public. In the vicinity of the discharge, the barrier shall be constructed so as to prevent the public from approaching the discharge from any direction closer than 100 feet. The CONTRACTOR shall post signs in a conspicuous manner stating, **"DANGER - HIGH PRESSURE DISCHARGE FROM DREDGE."** The CONTRACTOR shall be required to prevent any public access to the end of the dredge discharge, and shall have a safety person on site at all times, whose sole responsibility is preventing the public from entering the work area (Technical Provisions, Section 24).

20. SIGNAL LIGHTS.

The CONTRACTOR shall display signal lights and conduct his operations in accordance with the General Regulations of the Department of the Army and of the U.S. Coast Guard governing lights and day signals to be displayed by towing vessels with tows on which no signals can be displayed, vessels working on wrecks, dredges and vessels engaged in laying cables or pipes or in submarine or bank protection operations, lights to be displayed on dredge pipeline and day signals to be displayed by vessels of more than 65 feet in length moored or anchored in a fairway or channel and the passing by other vessels or floating plant working navigable channels, as approved by the Secretary of the Army and Commandant, U.S. Coast Guard. (33 C.F.R. 80.18 - 8-31a: 33 C.F.R. 95.51 - 95.66; 33 C.F.R. 9.22 - 90.36; 33 C.F.R. 82 and C.G. Pub. 169, Navigation Rules, International-Inland dated May 1 1977) (DAR 7-603.33). Lighting minimization goals are indicated in the permits, and the CONTRACTOR should report on actions taken.

21. NOTICE TO MARINERS.

The CONTRACTOR shall issue a Notice to Mariners regarding the groin construction and dredging operations immediately after the Notice to Proceed has been received. A copy of the Notice to Mariners shall be provided to the CONSULTANT. This notice shall be updated as the CONTRACTOR's operation changes position.

Should the CONTRACTOR, during dredging operations, encounter any objects on the ocean bottom which could be a hazard to navigation, the CONTRACTOR will notify the U.S. Coast Guard, any other pertinent agencies and the CONSULTANT immediately as to the location of said object and any other pertinent information necessary for the CONTRACTOR to put out a Notice to Mariners.

22. FLOATING PIPELINE BARRICADE REQUIREMENTS.

Installation of a barricade is required on all floating pipelines 12 inches in diameter and larger where such floating pipeline encounters land. The purpose of the barrier is to prevent access onto the floating pipeline from the beach.

23. CRANE AND DRAGLINE SAFETY REQUIREMENTS.

All cranes used in performing the work set forth in these specifications shall be equipped with geared boom hoists which require the application of power to raise and lower the boom or shall be otherwise equipped with mechanisms which will prevent the booms from being lowered by gravity. Cranes that are equipped with booms that can be lowered by either gravity or by power shall have the mechanisms for operating the booms by gravity made inoperative so that the booms cannot be lowered by gravity. The booms of all cranes and draglines shall also be equipped with shock absorbing type backstops to prevent them from overtopping.

24. STATE AND FEDERAL PERMITS, EASEMENTS AND APPROVALS.

The COUNTY is in the process of obtaining from the Florida Department of Environmental Protection (FDEP) the appropriate permit, Erosion Control Line, and the Consent of Use Easement, and from the Federal government, the U.S. Army Corps of Engineers (USACE) permit. The "Notice to Proceed" will not be issued until all permits and approvals have been received by Lee County. Any other licenses or approvals required for the prosecution of the work shall be secured and paid for by the CONTRACTOR. The CONTRACTOR shall obtain any and all approvals required to conduct work in the Gulf of Mexico. A copy of all certifications or approvals must be provided to the COUNTY and CONSULTANT at the time of bid.

24.1 Local Permits and Licenses. The following licenses, easements or approvals are required by Lee County. A Lee County dredge permit is required. The cost of this permit is $100. The CONTRACTOR must apply for this permit in person at 1735 Hendry Street, Ft. Myers, Florida 33901. A list of required submittals and permit procedural information can be obtained from Lee County (941/335-2393). The CONTRACTOR must be licensed in Lee County. Licensing requirements can be obtained from Lee County (941/335-2205).

25. PUMPING OF BILGES.

CONTRACTORS are cautioned that pumping oil or bilge water containing oil into navigable water or into areas which would permit the oil to flow into such waters, is prohibited by Section 13 of the Rivers and Harbors Act of 1899 approved March 3, 1899 (30 Stat. 1152; 33 U.S.C. 407). Violation of this prohibition is subject to penalties provided for under the referenced acts.

26. ELECTRICITY.

All electric current required by the CONTRACTOR shall be furnished at his own expense.

27. FIRE EXTINGUISHER-MOBILE CONSTRUCTION EQUIPMENT.

The CONTRACTOR is specifically required to provide, at minimum, a fire extinguisher on all mobile construction equipment with at least a basic minimum extinguisher rating of 20-B:C; which is equivalent to a 10-15 pound dry chemical extinguisher, compatible to the hazard involved; combustible, flammable liquids and materials used in areas remote to other fire extinguisher equipment.

28. SAFETY REQUIREMENTS.

28.1 Diving Plan. The CONTRACTOR shall submit as part of his written plan for quality control, a diving plan if diving is included as a part of the planned operations, at least seven (7) days prior to the pre-construction conference. The intent of this requirement is to assure safe diving and particularly when emergencies, marine maintenance, or underwater problems occur which require diving. Additionally, the CONTRACTOR is to determine that placement of spuds, anchors, pipes, etc. will not impact hardbottom communities; a procedure which may require diving. All diving shall be conducted in accordance with the requirements of the most recent versions of the following documents:

(a) U.S. Navy Diving Manual, Volume I and II (NAVSEA 0994-LP-001-9010 and NAVSEA 0094-LP-001-9020).

(b) U.S. Army Corps of Engineers' Safety and Health Requirements Manual, EM 385-1-1. Section 30.

(c) U.S. Army Corps of Engineers, Jacksonville District Regulation CESAJR 385-1-1, Appendix P, "Contract Diving Operations."

(d) 29 CFR, Part 1910, Subpart T, OSHA Regulations.

The Dive Operations Plan is to include all the items specified in paragraph 30.A.13 of EM 385-1-1 identified in reference (c) above. This plan shall contain information specific to the diving operations to be performed. Submission of the plan does not constitute an endorsement on the part of the COUNTY or CONSULTANT that the CONTRACTOR's

diving procedures are safe. The plan is intended to provide a method by which the CONTRACTOR demonstrates an awareness of diving standards.

28.2 Hazard Communication. The CONTRACTOR shall comply with the requirements of the U.S. Army Corps of Engineers Safety and Health Requirements Manual, EM 385-1-1 and OSHA 1910.1200, the Hazard Communication Standard or the most recent version. General requirements are as follows:

(a) Provide a written program describing implementation method of the previously referenced standard. This shall be provided to the COUNTY within ten (10) days after the Notice of Award or three (3) days prior to the pre-construction conference, whichever is sooner.

(b) Ensure that the CONTRACTOR's personnel are informed about health and physical hazards associated with materials to be used.

(c) Ensure that a hazardous material inventory is available to the COUNTY upon request.

(d) Ensure proper labeling of hazardous material containers.

(e) Ensure Availability of a Material Safety Data Sheet on site.

28.3 Oil and Hazardous Material Spills and Containment. The CONTRACTOR shall ensure that all hazardous material spills are immediately reported to the proper authorities and to the COUNTY. All hazardous material spills shall be immediately cleaned up in accordance with the most recent version of the U.S. Army Corps of Engineers' Safety and Health Requirements Manual, EM 385-1-1. In accordance with EM 381-1-1, the CONTRACTOR shall use suitable methods such as dikes or curbs to prevent the spread of hazardous materials from above ground storage tanks and piping in case of leakage.

28.4 Confined Space Entry.

28.4.1 The CONTRACTOR shall submit a confined space entry plan as part of his written proposal for accident prevention, as specified in the General Conditions, Section 37.6. This plan shall satisfy the requirements specified in 29 CFR 1910.146, or its most recent version.

28.4.2 Confined space is any space having limited openings for entry and exit, not intended for continuous occupancy, and unfavorable natural ventilation which could contain or have produce dangerous concentrations of airborne contaminants or asphyxiants. Confined spaces may include but are not limited to storage tanks, holds of vessels, manholes, process vessels, bins, boilers, ventilation or exhaust ducts, sewers, underground utility vaults, tunnels, pipelines, trenches, vats, and open top spaces more than 4 feet in depth such as pits, tubs, vaults and vessels, or any place with limited ventilation.

28.4.3. Prior to entering a confined space, the work environment shall be tested by a competent person using properly calibrated approved equipment to determine the extent of potential hazards. If the atmosphere cannot be determined by testing, an immediately Dangerous to Life and Health situation shall be assumed (See 29 CFR 1910.146). The evaluation shall consider the potential for evolution of toxic substances as well as oxygen content. Testing for toxic substances shall be performed prior to each entry and on a continuous or frequent (as stipulated in the Confined Space Entry Procedure) basis while personnel are working in confined spaces.

28.5 Activity Hazard Analysis.

The CONTRACTOR is required to submit to the CONSULTANT as part of his written plan for quality control, an Activity Hazard Analysis. The Activity Hazard Analysis is outlined in EM 385-1-1, Section 01.A., Figure 1-1.

28.6 Hurricane and Severe Storm Plan.

The CONTRACTOR shall submit a Hurricane and Severe Storm Plan within ten (10) calendar days after the Notice of Award or three (3) days prior to the pre-construction conference whichever is sooner. This plan shall include but not be limited to the following:

a. Time intervals before storms strike the project area when action will be taken and details of the actions to be taken. The plan should be specific as to what weather/wave conditions will require work shutdown, removal of dredge, etc.

b. List of the equipment to be used on the job and its ability to handle adverse weather and wave conditions.

c. List of safe harbors or ports and the distance from the work area to these harbors and the time required to move the equipment to these harbors or ports. Copies of letters of approval for the use of these safe harbors or ports (local authorities, U.S. Coast Guard, etc.) where applicable.

d. Method of securing equipment in these safe harbors or ports.

e. List of equipment to be utilized to make this move to safe harbors or ports (tug boats, work boats, etc.), to include the name and horsepower of this equipment. The plan will include only equipment capable of making the move to safe harbors or ports in adverse weather or sea conditions.

f. Methods of securing equipment not moved; i.e., pipelines (floating or submerged), pumpout stations, etc.

g. Plan of evacuation to include interim measures; i.e., immediate reaction plans to be taken for all storm occurrences, particularly sudden/flash storms.

h. Operating procedures to be undertaken when critical dredge equipment fails during sudden and severe adverse weather conditions, to include breaking of spuds, swing wires, anchor wires, or other mooring equipment or facilities, or inability of tugs or similar vessels to secure the dredge.

The CONTRACTOR shall continually monitor the NOAA marine weather broadcasts, and avail themselves of such other local commercial weather forecasting services as may be available. Submission of a Hurricane and Severe Storm Plan does not constitute an endorsement on the part of the COUNTY or CONSULTANT as to the adequacy of the plan.

29. FEDERAL PROVISIONS

The northern Estero Island segment is part of the Federal project described in the following report: Lee County, Florida Shore Protection Project (Gasparilla and Estero Islands) General Reevaluation Report, August 1999. Some of the contract provisions included in this section are required by the Federal government as a criteria for receiving Federal funding for the project.

30. EQUAL OPPORTUNITY (FEB 1999).

(a) If, during any 12-month period (including the 12 months preceding the award of this contract), the Contractor has been or is awarded nonexempt Federal contracts and/or subcontracts that have an aggregate value in excess of $10,000, the Contractor shall comply with subparagraphs (b)(1) through (11) of this clause. Upon request, the Contractor shall provide information necessary to determine the applicability of this clause.

(b) During performing this contract, the Contractor agrees as follows:

(1) The Contractor shall not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. However, it shall not be a violation of this clause for the Contractor to extend a publicly announced preference in employment to Indians living on or near an Indian reservation, in connection with employment opportunities on or near an Indian reservation, as permitted by 41 CFR 60-1.5.

(2) The Contractor shall take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, religion, sex, or national origin. This shall include, but not be limited to

(i) Employment;
(ii) Upgrading;
(iii) Demotion;
(iv) Transfer;
(v) Recruitment or recruitment advertising;
(vi) Layoff or termination;
(vii) Rates of pay or other forms of compensation; and
(viii) Selection for training, including apprenticeship.

(3) The Contractor shall post in conspicuous places available to employees and applicants for employment the notices to be provided by the Contracting Officer that explain this clause.

(4) The Contractor shall, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, or national origin.

(5) The Contractor shall send, to each labor union or representative of workers with which it has a collective bargaining agreement or other contract or understanding, the notice to be provided by the Contracting Officer advising the labor union or workers' representative of the Contractor's commitments under this clause, and post copies of the notice in conspicuous places available to employees and applicants for employment.

(6) The Contractor shall comply with Executive Order 11246, as amended, and the rules, regulations, and orders of the Secretary of Labor.

(7) The Contractor shall furnish to the contracting agency all information required by Executive Order 11246, as amended, and by the rules, regulations, and orders of the Secretary of Labor. The Contractor shall also file Standard Form 100 (EEO-1), or any successor form, as prescribed in 41 CFR part 60-1. Unless the Contractor has filed within the 12 months preceding the date of contract award, the Contractor shall, within 30 days after contract award, apply to either the regional Office of Federal Contract Compliance Programs (OFCCP) or the local office of the Equal Employment Opportunity Commission for the necessary forms.

(8) The Contractor shall permit access to its premises, during normal business hours, by the contracting agency or the (OFCCP) for the purpose of conducting on-site compliance evaluations and complaint investigations. The Contractor shall permit the Government to inspect and copy any books, accounts, records (including computerized records), and other material that may be relevant to the matter under investigation and pertinent to compliance with Executive Order 11246, as amended, and rules and regulations that implement the Executive Order.

(9) If the OFCCP determines that the Contractor is not in compliance with this clause or any rule, regulation, or order of the Secretary of Labor, this contract may be canceled, terminated, or suspended in whole or in part and the Contractor may be declared ineligible for further Government contracts, under the procedures authorized in Executive Order 11246, as amended. In addition, sanctions may be imposed and remedies invoked against the Contractor as provided in Executive Order 11246, as amended, in the rules, regulations, and orders of the Secretary of Labor, or as otherwise provided by law.

(10) The Contractor shall include the terms and conditions of subparagraphs (b)(1) through (11) of this clause in every subcontract or purchase order that is not exempted by the rules, regulations, or orders of the Secretary of Labor issued under Executive Order 11246, as

amended, so that these terms and conditions will be binding upon each subcontractor or vendor.

(11) The Contractor shall take such action with respect to any subcontract or purchase order as the contracting officer may direct as a means of enforcing these terms and conditions, including sanctions for noncompliance; provided, that if the Contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of any direction, the Contractor may request the United States to enter into the litigation to protect the interests of the United States.

(c) Notwithstanding any other clause in this contract, disputes relative to this clause will be governed by the procedures in 41 CFR 60-1.1.

31. ANTI-KICKBACK PROCEDURES (JUL 1995)

(a) *Definitions.*

"Kickback," as used in this clause, means any money, fee, commission, credit, gift, gratuity, thing of value, or compensation of any kind which is provided, directly or indirectly, to any Contractor, Contractor employee, subcontractor, or subcontractor employee for the purpose of improperly obtaining or rewarding favorable treatment in connection with a contract or in connection with a subcontract relating to a contract.

"Person," as used in this clause, means a corporation, partnership, business association of any kind, trust, joint-stock company, or individual.

"Contract," as used in this clause, means a contract or contractual action entered into by a governmental agency for the purpose of obtaining supplies, materials, equipment, or services of any kind.

"Contractor" as used in this clause, means a person who has entered into a contract with a governmental agency.

"Contractor employee," as used in this clause, means any officer, partner, employee, or agent of a Contractor.

"Subcontract," as used in this clause, means a contract or contractual action entered into by a Contractor or subcontractor for the purpose of obtaining supplies, materials, equipment, or services of any kind under a contract.

"Subcontractor," as used in this clause,
(1) means any person, other than the Contractor, who offers to furnish or furnishes any supplies, materials, equipment, or services of any kind under a contract or a subcontract entered into in connection with such contract, and
(2) includes any person who offers to furnish or furnishes general supplies to the Contractor or a higher tier subcontractor.

"Subcontractor employee," as used in this clause, means any officer, partner, employee, or agent of a subcontractor.

(b) The Anti-Kickback Act of 1986 (41 U.S.C. 51-58) (the Act), prohibits any person from --

(1) Providing or attempting to provide or offering to provide any kickback;

(2) Soliciting, accepting, or attempting to accept any kickback; or

(3) Including, directly or indirectly, the amount of any kickback in the contract price charged by a Contractor to the United States or in the contract price charged by a subcontractor to a Contractor or higher tier subcontractor.

(c)

(1) The Contractor shall have in place and follow reasonable procedures designed to prevent and detect possible violations described in paragraph (b) of this clause in its own operations and direct business relationships.

(2) When the Contractor has reasonable grounds to believe that a violation described in paragraph (b) of this clause may have occurred, the Contractor shall promptly report in writing the possible violation. Such reports shall be made to the contracting agency, the head of the contracting agency if the agency does not have an inspector general, or the Department of Justice.

(3) The Contractor shall cooperate fully with any Federal agency investigating a possible violation described in paragraph (b) of this clause.

(4) The Contracting Officer may

(i) offset the amount of the kickback against any monies owed by the United States under the contract and/or

(ii) direct that the Contractor withhold from sums owed a subcontractor under the contract the amount of the kickback. The Contracting Officer may order that monies withheld under subdivision (c)(4)(ii) of this clause be paid over to the Government unless the Government has already offset those monies under subdivision (c)(4)(i) of this clause. In either case, the Contractor shall notify the Contracting Officer when the monies are withheld.

(5) The Contractor agrees to incorporate the substance of this clause, including subparagraph (c)(5) but excepting subparagraph (c)(1), in all subcontracts under this contract which exceed $100,000.

32. DAVIS-BACON ACT (FEB 1995)

(a) All laborers and mechanics employed or working upon the site of the work will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR Part 3), the full amount of wages and bona fide fringe

benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the Contractor and such laborers and mechanics. Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1 (b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph (d) of this clause; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such period. Such laborers and mechanics shall be paid not less than the appropriate wage rate and fringe benefits in the wage determination for the classification of work actually performed, without regard to skill, except as provided in the clause entitled Apprentices and Trainees. Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein; provided, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classifications and wage rates conformed under paragraph (b) of this clause) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the Contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

(b)

(1) The Contracting Officer shall require that any class of laborers or mechanics which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The Contracting Officer shall approve an additional classification and wage rate and fringe benefits therefor only when all the following criteria have been met:

(i) The work to be performed by the classification requested is not performed by a classification in the wage determination.

(ii) The classification is utilized in the area by the construction industry.

(iii) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(2) If the Contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the Contracting Officer agree on the classification and wage rate (including the amount designated for fringe benefits, where appropriate), a report of the action taken shall be sent by the Contracting Officer to the Administrator of the:

Wage and Hour Division
Employment Standards Administration
U.S. Department of Labor Washington, DC 20210

The Administrator or an authorized representative will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the Contracting Officer or will notify the Contracting Officer within the 30-day period that additional time is necessary.

(3) In the event the Contractor, the laborers or mechanics to be employed in the classification, or their representatives, and the Contracting Officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the Contracting Officer shall refer the questions, including the views of all interested parties and the recommendation of the Contracting Officer, to the Administrator of the Wage and Hour Division for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the Contracting Officer or will notify the Contracting Officer within the 30-day period that additional time is necessary.

(4) The wage rate (including fringe benefits, where appropriate) determined pursuant to subparagraphs (b)(2) and (b)(3) of this clause shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

(c) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the Contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

(d) If the Contractor does not make payments to a trustee or other third person, the Contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program; provided, That the Secretary of Labor has found, upon the written request of the Contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the Contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

33. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT – OVERTIME COMPENSATION (SEPT 2000)

(a) *Overtime requirements.* No Contractor or subcontractor employing laborers or mechanics (see Federal Acquisition Regulation 22.300) shall require or permit them to work over 40 hours in any workweek unless they are paid at least 1 and 1/2 times the basic rate of pay for each hour worked over 40 hours.

(b) *Payrolls and basic records.*

(1) The Contractor and its subcontractors shall maintain payrolls and basic payroll records for all laborers and mechanics working on the contract during the contract and shall make them available to the Government until 3 years after contract completion. The records shall contain the name and address of each employee, social security number, labor classifications, hourly rates of wages paid, daily and weekly number of hours worked, deductions made, and actual wages paid. The records need not duplicate those required for construction work by Department of Labor regulations at 29 CFR 5.5(a)(3) implementing the Davis-Bacon Act.

(2) The Contractor and its subcontractors shall allow authorized representatives of the Contracting Officer or the Department of Labor to inspect, copy, or transcribe records maintained under paragraph (d)(1) of this clause. The Contractor or subcontractor also shall allow authorized representatives of the Contracting Officer or Department of Labor to interview employees in the workplace during working hours.

(c) *Subcontracts.* The Contractor shall insert the provisions set forth in paragraphs (a) through (d) of this clause in subcontracts exceeding $100,000 and require subcontractors to include these provisions in any lower-tier subcontracts. The Contractor shall be responsible for compliance by any subcontractor or lower-tier subcontractor with the provisions set forth in paragraphs (a) through (d) of this clause.

34. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, PROPOSED DEBARMENT, AND OTHER RESPONSIBILITY MATTERS (APR 2001)

(a)

(1) The Offeror certifies, to the best of its knowledge and belief, that --
(i) The Offeror and/or any of its Principals

(A) Are * are not * presently debarred, suspended, proposed for debarment, or declared ineligible for the award of contracts by any Federal agency;

(B) Have * have not *, within the three-year period preceding this offer, been convicted of or had a civil judgment rendered against them for: commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, state, or local) contract or subcontract; violation of Federal or state antitrust statutes relating to the submission of offers; or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, tax evasion, or receiving stolen property;

(C) Are * are not * presently indicted for, or otherwise criminally or civilly charged by a governmental entity with, commission of any of the offenses enumerated in paragraph (a)(1)(i)(B) of this provision; and

(D) Have * have not * within a three-year period preceding this offer, been convicted of or had a civil judgment rendered against them for : commission of fraud or a criminal offense in conjunction with obtaining, attempting to obtain, or performing a public (Federal, state or local) contract or subcontract; violation of Federal or state antitrust statutes relating to the submission of offers; or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, tax evasion or receiving stolen property; and

(E) Are * are not * presently indicted for, or otherwise criminally or civilly charged by a governmental entity with, commission of any of the offenses enumerated in subdivision (a)(1)(i)(D) of this provision.

(ii)

(A) The offeror, aside from the offenses enumerated in paragraphs (a)(1)(i)(A), (B), and (C) of this provision, has * has not * within the past three-years, relative to tax, labor and employment, environmental, antitrust, or consumer protection laws-

(1) Been convicted of a Federal or State felony (or has any Federal or State felony indictments currently pending against them); or

(2) Had a Federal court judgment in a civil case brought by the United States rendered against them; or

(3) Had an adverse decision by a Federal administrative law judge, board, or commission indicating a willful violation of law.

(B) If the offeror has responded affirmatively, the offeror shall provide additional information if requested by the Contracting Officer; and

(iii) The Offeror has* has not*, within a three-year period preceding this offer, had one or more contracts terminated for default by any Federal agency.

(2) *"Principals,"* for the purposes of this certification, means officers; directors; owners; partners; and, persons having primary management or supervisory responsibilities within a business entity (e.g., general manager; plant manager; head of a subsidiary, division, or business segment, and similar positions).

This Certification Concerns a Matter Within the Jurisdiction of an Agency of the United States and the Making of a False, Fictitious, or Fraudulent Certification May Render the Maker Subject to Prosecution Under Section 1001, Title 18, United States Code.

(b) The Offeror shall provide immediate written notice to the Contracting Officer if, at any time prior to contract award, the Offeror learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

(c) A certification that any of the items in paragraph (a) of this provision exists will not necessarily result in withholding of an award under this solicitation. However, the certification will be considered in connection with a determination of the Offeror's responsibility. Failure of the Offeror to furnish a certification or provide such additional information as requested by the Contracting Officer may render the Offeror nonresponsible.

(d) Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render, in good faith, the certification required by paragraph (a) of this provision. The knowledge and information of an Offeror is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

(e) The certification in paragraph (a) of this provision is a material representation of fact upon which reliance was placed when making award. If it is later determined that the Offeror knowingly rendered an erroneous certification, in addition to other remedies available to the Government, the Contracting Officer may terminate the contract resulting from this solicitation for default.

35. MISCELLANEOUS PROVISIONS

35.1 The COUNTY shall furnish a maximum of five (5) sets of contract plans (drawings), maps, and specifications to the CONTRACTOR without charge, except for applicable publications incorporated into the Contract Documents by reference. Additional sets will be furnished, on request, at the cost of a maximum of one hundred dollars ($100) per set which shall be paid by the CONTRACTOR.

35.2 Pre-Construction Conference. After the Contract is awarded and before construction operations are started, the CONTRACTOR shall meet with the CONSULTANT and COUNTY at the COUNTY's office to discuss the beach restoration project, groin construction, water quality monitoring requirements, quality control requirements, the permits, and the contract. This shall be referred to as a pre-construction conference. The meeting shall develop mutual understanding relative to details of the system, including the forms to be used for recording the quality control operations, inspections, daily reports, administration of the system and the interrelationship of the CONTRACTOR, CONSULTANT, and COUNTY and their respective inspectors and other county contractors.

35.3 Definitions. "CONSULTANT" as defined in the General Conditions, Section 2, is Coastal Planning & Engineering, Inc.

35.4 Interpretation, Intent, Amending and Reuse of Contract Documents. If requests for clarification or interpretations are not submitted IN WRITING by the CONTRACTOR, there will be no obligation for response to the question.

35.5 Liens. Neither the final payment nor any part of the retained percentage shall become due until the CONTRACTOR has delivered to the COUNTY a complete release of all liens arising out of this Contract or receipts in full in lieu thereof and, if required in either case, an affidavit that so far as he has knowledge or information the release and receipts include all the labor and materials for which a lien could be filed; but the CONTRACTOR may, if any Subcontractor refuses to furnish a release or receipt in full, furnish a bond satisfactory to the COUNTY, to indemnify the COUNTY against any lien. If any lien remains unsatisfied after all payments are made, the CONTRACTOR shall refund to the COUNTY all monies that the latter may be compelled to pay in discharging such a lien, including all costs and reasonable attorney's fee.

35.6 Work Content. The CONTRACTOR shall perform on the site, and with his own organization, excluding subcontractors, work equivalent to at least sixty percent (60%) of the total amount of work to be performed under the contract by price. If during the progress of work hereunder, the CONTRACTOR requests in writing a reduction in such percentage, and the CONSULTANT determines that it would be to the COUNTY's advantage, the percentage of the work required to be performed by the CONTRACTOR may be reduced, provided written approval of such reduction is obtained by the CONTRACTOR from the CONSULTANT.

35.7 **Safety Personnel Requirement.** The CONTRACTOR shall employ at the project site a permanent Safety and Occupational Health person (Safety Officer) to manage the CONTRACTOR's accident prevention program. The Safety Officer shall be on duty during any work of a complex nature including, but not limited to, the relocation of utilities; work on or around structures; work on or around existing disposal area dikes; spoil placement on the beach; or when blasting or other potentially hazardous activities are occurring. The principal Safety Officer shall report to and work directly for the CONTRACTOR's superintendent or the corporate safety office. The Safety Officer shall have the authority to take immediate steps to correct unsafe or unhealthful conditions. The presence of the Safety Officer will not abrogate safety responsibilities of other personnel.

APPENDIX S-I

QUALITY CONTROL REPORT FORM

DAILY CONTRACTOR QUALITY CONTROL REPORT

Date: _____ Report No._____
(Report is due by 2:00 p.m. of the following day)

PROJECT: ESTERO ISLAND AND LOVERS KEY BEACH RESTORATION PROJECT

WEATHER: (Clear) (P. Cloudy) (Cloudy) TEMP. Min. Max.

Wind Speed _____ mph Direction _____
Wave Height at:
Borrow Site _____ feet
Beach disposal _____ feet
Wave Direction _____

LOCATION OF DISCHARGE: Y = (baseline station, monument plus a distance, or state plane coordinate)

DRESSING OPERATIONS COMPLETE TO: Y = (baseline station, monument plus a distance, or state plane coordinate)

CONTRACTOR/SUB-CONTRACTOR and area of responsibility:

1. Work Performed Today: (Indicate location and description of work performed. Provide beach fill advance over last 24 hours. Attach dredge position printouts and plot to this report. Report on removal of structures).

2. Results of Surveillance: (Include satisfactory work completed or deficiencies with action to be taken.)

3. Buoy Check: Were borrow area buoys checked today (Yes/No)?_____
Did borrow area buoys require resetting (Yes/No)?_____

4. Water Quality Monitoring: Was water quality monitoring conducted today in compliance with project permit requirements and water quality protection laws, and the results provided to the CONSULTANT (Yes/No)?_____

5. Verbal Instructions Received: (List any instructions given by the CONSULTANT, construction deficiencies, retesting required, etc., with action to be taken.)

6. Remarks: (Cover delays and any conflicts in drawings, specifications or instructions.)

7. Safety Inspection: (Report violations noted; corrective instructions given; and corrective actions taken.)

8. Equipment Data: (Indicate major items of construction equipment and vessels at job site and whether or not used or operable.)

9. Dredge Status: (Is the dredge working, not operating due to weather/sea state, or is it under repair?)

10. Avoidance of Overdredging: Do you certify that the dredge has excavated within the limits of the borrow areas, as shown in the drawings (Yes/No)? _____

11. Progress Summary:

	This Day	To Date
Worked Hours		
Downtime Hours (Explain Below)		
Length of Discharge Advance on Beach (Ft.)		
Volume Pumped (Estimated c.y.)		
Volume Pay (c.y. accepted sections only)		
Linear % Completed		

Explanation of Downtime:

12. Groin Progress Summary: Report quantity stored and placed, and location of work by station number.

CONTRACTOR's Verification: The above report is complete and correct and equipment used and work performed during this reporting period are in compliance with the contract drawings and specifications except as noted above.

_____

CONTRACTOR's Approved Authorized Representative

Note: This report is not complete without a continuous plot of dredge locations and depths.

APPENDIX S-III

HORIZONTAL AND VERTICAL CONTROL WITH AZIMUTHS AND PERPENDICULAR DISTANCES

APPENDIX III
ESTERO ISLAND AND LOVER'S KEY BEACH RESTORATION PROJECT
Horizontal and Vertical Control
North Estero Island Segment

PROFILE MONUMENT NAME	NORTHING	EASTING	STATION ELEV. (FT-NGVD)	GRID AZIMUTH	PERP DIST CENTERED ON MONUMENT (FT)	PERP DIST FROM LAST MONUMENT (FT)	LONGSHORE DISTANCE (FT)	MONUMENT DESCRIPTION
R-175 +300'N					150.00	0.00	0.00	GROIN LOCATION
R-175	774,428	667,127	16.45	245.0	334.1	300.0	300.0	FND DNR CM
R-175.5	773,878	666,819	3.68	245.0	387.0	368.3	668.3	SET CPE CM
R-176	773,671	667,336	3.92	245.0	419.2	405.8	1,074.1	FND DNR CM
R176.5	773,188	667,323	4.27	245.0	482.1	432.6	1,506.6	SET CPE CM
R-177	772,960	667,879	4.22	230.0	540.2	531.7	2,038.3	FND COE CM
R-177.5	772,346	668,001	5.99	230.0	555.1	548.7	2,587.0	SET CPE BRASS DISC
R-178	772,145	668,634	3.73	230.0	491.6	561.5	3,148.5	SET PK NAIL & WASHER IN DRIVEWAY
R-178.5	771,656	668,707	4.54	230.0	435.9	421.7	3,570.3	SET CPE CM
R-179	771,546	669,180	4.14	215.0	462.6	450.1	4,020.4	FND DNR CM
R179.5	771,068	669,425	4.74	215.0	544.4	475.2	4,495.5	SET CPE BRASS DISC
R-180	770,720	669,931	5.83	215.0	548.2	613.7	5,109.2	FND DNR CM
R-180.5	770,449	670,330	6.10	215.0	494.8	482.7	5,591.9	SET CPE BRASS DISC
R-181	770,199	670,773	9.06	205.0	507.4	507.0	6,098.9	FND DNR CM
R-181.5	769,922	671,204	5.26	205.0	498.6	507.8	6,606.7	SET CPE BRASS DISC
R-182	769,986	671,774	6.35	205.0	418.1	489.4	7,096.1	FND DNR CM
R-182.5	769,605	671,979	6.43	205.0	431.8	346.7	7,442.8	SET CPE CM
R-183	769,643	672,567	6.40	205.0	578.5	517.0	7,959.8	FND CM (NO DISC)
R-183.5	769,158	673,047	7.62	205.0	535.2	640.0	8,599.8	SET CPE SHINER
R-184	769,230	673,555	6.56	205.0	482.9	430.4	9,030.2	SET CPE PK NAIL AND WASHER
R-184.5	768,777	673,935	5.63	205.0	505.0	535.5	9,565.7	SET CPE CM
R-185	768,636	674,393	5.60	205.0	467.3	474.5	10,040.1	FND DNR CM
R-185.5	768,397	674,789	5.10	205.0	488.1	460.1	10,500.2	SET CPE CM
R-186	768,271	675,300	7.66	205.0	454.7	516.1	11,016.3	FND DNR CM
R-186.3	767,998	675,606	4.90	205.0	378.7	393.3	11,409.6	SET CPE CM
R-186A	767,953	675,987	6.69	205.0	506.6	364.2	11,773.8	FND DNR CM
R-187	767,761	676,614	5.73	205.0	550.6	649.0	12,422.8	FND COE CM
R-187.3	767,378	676,935	5.21	205.0	460.4	452.3	12,875.1	SET CPE CM
R-187A	767,237	677,394	7.32	210.0	422.9	468.5	13,343.6	FND CM (NO DISC)
R-187.8	766,946	677,662	4.98	210.0	353.7	377.2	13,720.8	SET CPE CM
R-188	766,966	678,054	5.51	210.0	440.0	330.1	14,050.9	FND DNR CM
R-188.5	766,503	678,422	4.32	210.0	515.6	550.0	14,600.9	SET CPE CM
R-189	766,467	678,957	5.16	210.0	483.8	481.3	15,082.2	FND DNR CM

North Estero Island Segment (Continued)

PROFILE MONUMENT NAME	NORTHING	EASTING	STATION ELEV. (FT-NGVD)	GRID AZIMUTH	PERP DIST CENTERED ON MONUMENT (FT)	PERP DIST FROM LAST MONUMENT (FT)	LONGSHORE DISTANCE (FT)	MONUMENT DESCRIPTION
R-189.5	766,010	679,254	4.56	210.0	502.7	486.2	15,568.4	SET CPE CM
R-190	765,887	679,783	5.37	210.0	504.8	519.1	16,087.5	FND DNR CM
R-190.5	765,461	680,103	3.69	210.0	444.5	490.6	16,578.1	SET CPE CM
R-191	765,383	680,518	5.95	210.0	479.9	398.5	16,976.6	FND DNR CM
R-191.5	764,951	680,917	6.31	210.0	527.2	561.4	17,537.9	SET CPE CM
R-192	764,695	681,338	6.82	210.0	470.7	493.0	18,030.9	SET CPE PK NAIL AND WASHER
R-192.5	764,328	681,644	5.81	210.0	422.6	448.4	18,479.3	SET CPE BRASS DISC
R-193	764,084	681,958	6.26	220.0	527.5	396.8	18,876.1	FND DNR DISC IN SEAWALL
R-193.5	763,669	682,469	6.32	220.0	650.8	658.1	19,534.2	SET CPE BRASS DISC
R-194	763,296	682,995	7.68	220.0	585.6	643.5	20,177.7	FND DNR CM
R-194.5	762,938	683,384	5.84	220.0	471.8	527.7	20,705.4	SET CPE BRASS DISC
R-195	762,622	683,662	6.26	220.0	448.4	415.9	21,121.3	FND COE CM
R-195.5	762,303	684,022	5.75	220.0	459.2	480.9	21,602.2	SET CPE BRASS DISC
R-196	762,037	684,375	5.99	225.0	465.7	437.4	22,039.6	FND DNR CM
R-196.5	761,672	684,708	4.89	225.0	540.0	494.0	22,533.7	SET CPE CM
R-197	761,207	685,072	6.40	225.0	594.2	586.0	23,119.7	FND DNR CM
R-197.5	760,772	685,489	4.19	225.0	470.3	602.3	23,722.0	SET CPE CM
R-198	760,663	685,858	5.60	225.0	169.1	338.2	24,060.2	FND DNR CM

Horizontal and Vertical Control
South Estero Island Segment

PROFILE MONUMENT NAME	NORTHING	EASTING	STATION ELEV. (FT-NGVD)	GRID AZIMUTH	PERP DIST CENTERED ON MONUMENT (FT)	PERP DIST FROM LAST MONUMENT (FT)	LONGSHORE DISTANCE (FT)	MONUMENT DESCRIPTION
R-208.5 +65'W					32.5	0.0	0.0	FND DNR CM
R-208.5	752,514	692,317	3.11	190.0	301.7	65.0	65.0	SET CPE CM
R-209	752,514	692,864	3.99	190.0	561.9	538.4	603.4	FND DNR CM
R-209.5	752,592	693,472	6.55	190.0	528.8	585.4	1,188.7	SET CPE BRASS DISC
R-210	752,758	693,981	7.89	190.0	486.1	472.2	1,660.9	FND DNR DISC IN CURB
R-210 +500'E					250.0	500.0	2,160.9	

Horizontal and Vertical Control
Lovers Key Segment

PROFILE MONUMENT NAME	NORTHING	EASTING	STATION ELEV. (FT-NGVD)	GRID AZIMUTH	PERP DIST CENTERED ON MONUMENT (FT)	PERP DIST FROM LAST MONUMENT (FT)	LONGSHORE DISTANCE (FT)	MONUMENT DESCRIPTION
R-214 +500'S					250	0.0	0.0	
R-215	748,719	694,485	4.23	225.0	516	500.0	500.0	SET CPE CM
R-215.5	748,311	694,831	7.25	225.0	539	533.3	1,033.3	SET CPE CM
R-216	747,922	695,215	6.02	225.0	509	546.4	1,579.8	SET CPE CM
R-216.5	747,580	695,541	7.33	225.0	485	472.3	2,052.0	SET CPE CM
R-217	747,255	695,920	4.89	225.0	504	497.7	2,549.7	SET CPE CM
R-217.5	746,897	696,285	6.16	225.0	490	511.6	3,061.3	SET CPE CM
R-218	746,576	696,629	4.27	225.0	531	469.9	3,531.2	SET CPE CM
R-218.5	746,132	697,024	5.46	225.0	536	593.3	4,124.6	SET CPE CM
R-219	745,756	697,325	4.87	225.0	474	478.9	4,603.4	SET CPE CM
R-219.5	745,385	697,617	6.08	225.0	443	469.3	5,072.7	SET CPE CM
R-220	745,055	697,880	4.64	225.0	459	418.4	5,491.2	FND DNR CM
R-220 +500'S					250	500.0	5,991.2	

NOTE: Horizontal Control ref. 1983 NAD, Vertical Control ref. 1929 NGVD.

PART G

ESTERO ISLAND AND LOVERS KEY, FLORIDA

BEACH RENOURISHMENT PROJECT

TECHNICAL PROVISIONS

PART G

ESTERO ISLAND AND LOVERS KEY, FLORIDA

BEACH RENOURISHMENT PROJECT

TECHNICAL PROVISIONS

Table of Contents

PART G

ESTERO ISLAND AND LOVERS KEY, FLORIDA

BEACH RENOURISHMENT PROJECT

TECHNICAL PROVISIONS

Table of Contents
(cont.)

LIST OF APPENDICES

PART G
ESTERO ISLAND AND LOVERS KEY, FLORIDA
BEACH RESTORATION PROJECT

TECHNICAL PROVISIONS

I. INTRODUCTION

1. ESTERO ISLAND BEACH RENOURISHMENT PROJECT

The beach nourishment project consists of the placement of a maximum volume of 1,415,000 c.y. of fill at three project segments on Estero Island and Lovers Key. The fill volume by reach consists of 1,010,000 cubic yards of fill along north Estero Island, 70,000 cubic yards of fill along south Estero Island, and 335,000 cubic yards of fill on Lovers Key. The project on north Estero extends from beach monument number R-175 +300N to R-198, a distance of about 4.6 miles, and on south Estero Island from R-208.5 to R-210, a distance of about 0.4 miles. On Lovers Key the project extends from R-215.5 to R-219.5, a distance of about 1.1 miles. On Lovers Key the project includes a small dune with vegetation.

This project includes the construction of a terminal groin on the north tip of Estero Island, 300 feet north of R-175. The terminal groin is 240 feet long at the crest by 61 feet wide at the base, and perpendicular to the shoreline with 150 feet seaward of the shoreline.

Two borrow areas have been identified for use in the project. Borrow Area I is located 1.6 miles west of Estero Island and will be used for north Estero Island. Borrow Area II is located ½ mile from the south tip of Estero Island.

2. SCOPE

The CONTRACTOR shall provide all plant, labor, equipment, supplies, and materials to perform all operations in connection with debris removal, groin construction, and for excavating, transporting, placing and grading (and possible tilling) beach fill on the beaches as indicated on the plan drawings and specified herein. The COUNTY is prepared to pay for a beach fill volume not to exceed 1,415,000 cubic yards measured on the beach. The CONTRACTOR will not be paid for any volume in excess of this quantity.

3. ORDER OF WORK AND PROJECT SCHEDULE

The beach fill project is divided into five (5) reaches as defined below and on the Bid Form. The maximum pay volume by reach shall not exceed the values listed below.

Reach	Inclusive Profile Lines	Alongshore Length (ft)	Design Fill Volume (cy)
A	R174.5 to R184	9,040	332,000
B	R184 to R192	8,996	355,000
C	R192 to R198	6.024	323,000
South Estero Is.	R205 to R210+500	2,161	70,000
Lovers Key	R214.5 to R220.5	5,991	335,000
	Total:	32,212	1,415,000

The order of work will be Lovers Key and the terminal groin being completed first. The order of work for the remainder of the project will be set at the pre-construction meeting.

Construction during marine turtle nesting season (May 1st – October 31st) is allowed and comes with special permit conditions described in the attached Federal and State permits. Construction can only occur on beaches cleared of marine turtle nests by the County's agent. Nest relocation activities must begin 65 days prior to project activities which occur within the nesting and hatching season. Only beaches surveyed for 65 consecutive days prior to project activities are eligible for construction. The CONTRACTOR will submit a construction schedule weekly, highlighting the 65-day construction zone. The marine turtle monitoring consultant will use the schedule to survey the beach daily and relocate turtle nests outside the 65-day construction zone.

As part of the bid, the CONTRACTOR shall provide an order of work outline and project schedule to the ENGINEER and COUNTY. The project schedule shall be updated weekly during construction and submitted with the Quality Control report each Tuesday so that commercial establishments and the turtle monitoring consultant can plan for the CONTRACTOR's activity. The project schedule shall indicate, at a minimum, start of work, tree removal, groin construction, beach fill in each of the five reaches, hydraulic fill placement completion date, beach tilling (if required) and completion of all work unless otherwise instructed. The CONTRACTOR shall propose the order in which the work will be performed incorporating the priorities mentioned above.

II. BEACH FILL PLACEMENT

4. EXCAVATION OF BEACH FILL

4.1 General. The characteristics of the materials in the borrow areas are as generally indicated by the vibracore logs and grain size distribution curves attached as appendices to this section. Nevertheless, the CONTRACTOR should be aware that it is possible for material of differing characteristics to be present in the borrow area. Excavation shall be by cutterhead suction, dustpan suction dredge, or method proposed by the CONTRACTOR and approved by the ENGINEER. All subsequent specifications referring to a "cutterhead" shall also be applicable to the dustpan of a dustpan dredge.

There are two offshore borrow areas numbered Roman numerals I and II. All sand fill material for this project must come from these two borrow areas. The CONTRACTOR is free to propose the order of dredging in the borrow areas except as noted in this section and the permits. Borrow Area I is positioned for all beach fill between the terminal groin and profile monument R-198, Borrow Area II is positioned for all beach fill between profile monuments R-208 to R-210 and R-214.5 to R-220.5.

4.1.1 All excavation shall be performed within the horizontal and vertical limits of the permitted borrow area shown in the drawings, in the areas as prioritized. Under no circumstances will excavation occur below the designated limit of cut as shown in project permits and construction documents. No dredging is permitted in excess of the dredge depth shown in the drawings, referenced to NGVD.

4.1.2 To the greatest extent practicable, all excavation shall be performed in a uniform and continuous manner so as to avoid creating multiple holes, valleys, or ridges within the section of the borrow area to be dredged. The borrow area shall be dredged in continuous segments to the depth allowed in order to achieve the greatest borrow area beach fill quantity.

4.1.3 If rock or clay are encountered in the borrow area, the CONTRACTOR shall immediately change the location of the dredging in order to avoid the placement of rock or clay in the beach fill. The location of unsuitable material encountered within the borrow area shall be noted on the Contractor's Daily Quality Control Report.

4.1.4. The borrow areas shown in the plans contain approximately twice as much sand as required on the beach. The cut depths vary from –12.5 feet NGVD to –15.5 feet NGVD. The estimated volume of material, including secondary and buffer regions, in each borrow area is a follows:

Borrow Area	Volume Estimate
I	1,841,700 c.y.
II	803,400 c.y.

4.1.5 Character of Material Within the Borrow Areas. Based on available core boring information, in general, the material found within the borrow area consists of moderately sorted, fine grained sand and trace shell hash. In many instances, the vibracores contained multiple layers of sediment composition, the differences based primarily on the percentage of shell hash versus fine grained sand and the percentage of silt. The best beach quality sand is located in Region A of the borrow areas, and the CONTRACTOR is instructed to dredge areas "A" first. Based upon core analysis information, the mean grain sizes for Borrow Area I and Borrow Area II are 0.15 mm and 0.16 mm and the silt/clay contents are 4.0% and 5.5%, respectively. The descriptions of the material are based on the site investigations and core borings

which are provided in the appendices and only describe the materials obtained from those investigations. The CONTRACTOR is solely responsible for any interpretation or conclusions drawn therefrom. The CONTRACTOR may visit the ENGINEER's office to view the core samples. The CONTRACTOR shall provide a two day notice to the ENGINEER of his visit.

4.1.6. The primary borrow area region (A) can only be reached by dredging through secondary regions and for Borrow Area II, a short region outside the borrow area. The sand dredged from this region shall be placed on the beach to fill the lower portion of the fill template below 0 feet NGVD. Only material dredged from Region A shall be used to fill the region above 0 ft. NGVD, unless the sand in the priority region is exhausted.

4.2 Encountering Rock, Rubble or Debris in the Borrow Area. Rocks larger than ¾ inch in diameter shall not be placed on the beach. There is no indication of rock this size within the borrow areas. The CONTRACTOR shall continuously monitor the fill material for the presence of rocks in the material. **If rock, rubble, or any other debris is encountered during dredging, the CONTRACTOR shall immediately cease operation and relocate to another portion of the borrow area to eliminate rock.** The CONTRACTOR shall immediately notify the ENGINEER verbally, and report the encounter with the rock, rubble or debris on the Quality Control form, providing location in State Plane Coordinates of the area of rock, rubble, or debris. Rock, rubble, or any other debris larger than ¾ inch in diameter which is excavated and placed on the beach will be removed from the beach fill by the CONTRACTOR, entirely at the CONTRACTOR's own cost. If the CONTRACTOR fails to remove the rock, rubble, or debris to the satisfaction of the ENGINEER, such material may be removed by the COUNTY and the cost of such removal may be deducted from any money due, or to become due, to the CONTRACTOR or may be recovered under his bond. The ENGINEER will have the authority to require the CONTRACTOR to avoid pockets of poor quality material in the borrow area, based on the ENGINEER's judgment of the material, should any poor quality material be encountered during the dredging of either borrow area. Nevertheless, this does not relieve the CONTRACTOR of responsibility for all placed material, including rock debris.

4.3 Dredge Location Control.

The CONTRACTOR is required to have in continuous operation on the dredge electronic positioning equipment that will accurately compute and plot the position of the dredge. A geographic positioning system, Differential Global Positioning System (DGPS), or equivalent, shall be used (as approved by the ENGINEER). Whenever dredging operations are underway, the location of the dredge shall be continuously monitored and fixes, in Florida State Plane Coordinates, shall be recorded at intervals not to exceed fifteen (15) minutes.

Permanent records shall be maintained of both the dredge cutterhead position and depth of cut, and shall always be available for inspection by the ENGINEER, the COUNTY or any

permitting agency. Plots shall also continuously record the deviation (with respect to NGVD) of the cutterhead and cut, as well as the cutterhead location. Such fixes, and the accompanying plots, shall be furnished to the ENGINEER daily as part of the Quality Control Reports. **The failure of the CONTRACTOR to turn in plots on time and as described in this paragraph may be grounds for stopping dredging by the ENGINEER until reports are caught up.** The Quality Control Reports will be provided to the ENGINEER the next day following each day's records of events, etc.

The electronic positioning equipment shall be installed on the dredge so as to monitor, as closely as possible, the actual location of the cutterhead. The electronic positioning equipment shall be calibrated, maintained and operated so that the maximum error for the fixes recorded do not exceed the tolerances in the horizontal position (±3 feet) or vertical position (±0.1 foot). The location on the dredge of the master antenna and the distance and direction from the master antenna to the cutterhead shall be reported in the Quality Control Reports.

No dredging will take place outside of the borrow area limits as shown on the drawings. No dredging will exceed the permitted depth of cut shown on the drawings. Either event may represent a violation of permits for the project. The CONTRACTOR will be required to compensate the COUNTY for any costs, fines or other expenses related to permit violations resulting from CONTRACTOR negligence in complying with permits for the project. **The sand volume excavated from outside the limits of the borrow areas shall be deducted from the pay volumes measured on the beach.** Compensation will be in the form of a deduction in payments due to the CONTRACTOR from the COUNTY, or may be recovered from the CONTRACTOR's bond.

The CONTRACTOR shall provide written details concerning the positioning system to be used on this project with the bid. Information to be submitted with the bid shall include written description of the equipment including applicable manufacturers' specifications and data, and documentation concerning previous jobs on which the equipment was used. The ability to adequately meet the requirements in this section shall be a consideration in the award of the bid. The CONTRACTOR will be required to utilize the equipment identified in the bid through the duration of this project.

4.4 Borrow Area Buoys. Prior to bringing dredge equipment to the project site, the CONTRACTOR is required to establish the lighted marker buoys along the perimeter of the borrow area. The CONTRACTOR shall establish lighted marker buoys which meet U.S. Coast Guard standards to delineate the limits of the borrow area. The buoys shall be set at the coordinates provided in the drawings. The lighted buoys shall be maintained by the CONTRACTOR in the proper location, floating, upright and with functioning lights throughout the project. Electronic positioning as described above shall be employed to set the buoys, and to check the positional integrity of the buoys on a daily basis. The results of these checks shall be reported daily in the quality control reports. If any of the buoys are not maintained, or in the proper location, the CONTRACTOR shall cease dredging until the buoys are maintained, replaced or repositioned as shown in the plans. Failure to maintain

buoys will result in a delay in payments to the CONTRACTOR until the buoys meet Coast Guard and contract requirements and are satisfactory to the ENGINEER.

4.5 Preservation of Historical, Archeological, and Cultural Resources. A cultural resource study has been conducted within the borrow areas. Those areas with significant clustered magnetic anomalies have been excluded from the borrow areas. Nevertheless, if during construction activities the CONTRACTOR observes items that may have historical or archeological value, the CONTRACTOR shall immediately cease all activities that may result in the destruction of these resources and shall prevent his employees and subcontractors from trespassing on, removing, or otherwise damaging such resources. Such observations shall be reported immediately to the ENGINEER so that the appropriate authorities may be notified and a determination made as to their significance and what, if any, special disposition of the finds should be made. The CONTRACTOR shall report any observed unauthorized removal or destruction of such resources by any person to the ENGINEER and appropriate State of Florida authorities.

4.6 Hardbottom Communities Protection. No known hardbottom communities exist offshore of Estero Island and Lovers Key. If hardbottom is encountered the CONTRACTOR should notify the ENGINEER immediately for instruction. The CONTRACTOR shall take note that the State of Florida has levied significant fines to dredge contractors who have damaged protected hardbottom communities. The CONTRACTOR will be responsible for any and all fines, or legal expenses, or hardbottom repairs or mitigation requirements incurred by the CONTRACTOR, the COUNTY and the ENGINEER in the event that the CONTRACTOR does encounter hardbottom and has damaged hardbottom communities.

4.7 Shoal Grass. The CONTRACTOR shall not anchor or lay pipeline on the shoal grass indicated in the plans. The shoal grass is located south of Borrow Area I.

4.8 Dredge Mobilization/Demobilization Notification.

The CONTRACTOR must notify the ENGINEER and COUNTY 5 days in advance of the date the dredge and other equipment will be mobilized and demobilized to and from the project area.

4.9 Vessel to Shore Transfers.

4.9.1 For shore to vessel and vessel to shore transfers, no boat ramp is provided. It is the responsibility of the CONTRACTOR to find docking facilities and to investigate for the presence of seagrasses, and no transfers or staging may occur in locations featuring seagrasses. It is the responsibility of the CONTRACTOR to acquire the required permission to use his selected docking sites. Furthermore, the CONTRACTOR shall be responsible for any damages caused by the use of any site for landing and transfers, and shall maintain navigation through all navigable waterways and boat ramps. The CONTRACTOR shall use any landing site, transfer area, or staging area at their own risk.

4.9.2 Mantanzas Pass (Ft. Myers Harbor channel) and Big Carlos Pass provide access to the Gulf of Mexico from Estero Bay for numerous boaters, but depths may be restrictive for dredges and larger boats. The CONTRACTOR will make every effort to maintain ingress and egress to boaters using Mantanzas Pass and/or Big Carlos Pass. Under no circumstances will the CONTRACTOR be allowed to block access to Mantanzas Pass or Big Carlos Pass.

5. TRANSPORT OF EXCAVATED MATERIALS

5.1 All fill will be placed hydraulically. The method of transporting the hydraulic fill from the borrow area to the hydraulic fill area shall be proposed by the CONTRACTOR at the time of the bid on the plant and equipment schedule. The method of transport will be a CONTRACTOR decision; however, it will have to comply with all permit, production, and environmental requirements.

5.2 If a pipeline is used to transport material, the pipeline seaward of the beach shall be submerged except at the dredge, monobuoy, and boosters. The proposed location(s) of the submerged pipeline must avoid shoal grass and the sand spit on Estero Island. Shoal grass limits are shown on the plans. The sand spit was named a Critical Wildlife Area by the Game & Fresh Water Fish Commission of the State of Florida on July 17, 1992. It is posted with signs in specific areas, closing these areas from April 1st to August 31st each year. **No construction can occur on the sand spit.**

5.3 The CONTRACTOR shall maintain a tight discharge pipeline at all times. The joints shall be so constructed as to preclude spillage and leakage. Leaks shall be promptly repaired and the dredge shall be shut down until complete repair has been made. The CONTRACTOR will transport the ENGINEER to the leak repair site for visual inspection if so requested by the ENGINEER. Failure to repair leaks or change the method of operation which is resulting in leakage that creates sedimentation over the hardbottoms or exceeds turbidity and water quality standards during transport to discharge site will result in suspension of dredging operations and require prompt repair or change of operation to prevent leakage as a prerequisite to the resumption of dredging. The location for the pipeline landing shall be away from residents, hotels, or businesses, at a spot selected by the CONTRACTOR and approved by the ENGINEER.

6. HYDRAULIC BEACH FILL

6.1 General. All sand excavated from the borrow area shall be transported to, and hydraulically deposited on, the beach within the lines, grades and cross sections shown on the drawings. The CONTRACTOR shall maintain and protect the fill in a satisfactory condition at all times until final completion and acceptance of the work. CONTRACTOR will receive no payment for any fill sand which is not contained within the limits of the hydraulic fill template shown in the drawings or on the profiles other than those identified in the plans and specifications for the project as the pay profiles. The CONTRACTOR must place a minimum of 95% of the design volume between pay profile lines in order to be

considered for payment of that segment, unless otherwise indicated by the ENGINEER in writing. The region between pay profile lines is an acceptance section.

6.2 Pay Profiles.

6.2.1 All pay profiles are contained in the plans and specifications for the project and in Appendix III of the Supplemental General Conditions. UNDER NO CIRCUMSTANCES WILL PROFILES, OTHER THAN THOSE PROVIDED IN THE PLANS AND SPECIFICATIONS, BE CONSIDERED FOR PAYMENT PURPOSES. The pay profile lines to be used for payment will be R-174.5, R-175, R-175.5, R-176, R-176.5, R-177, R-177.5, R-178, R-178.5, R-179, R-179.5, R-180, R-180.5, R-181, R-181.5, R-182, R-182.5, R-183, R-183.5, R-184, R-184.5, R-185, R-185.5, R-186, R-186.3, R-186A, R-187, R-187.3, R-187A, R-187.8, R-188, R-188.5, R-189, R-189.5, R-190, R-190.5, R-191, R-191.5, R-192, R-192.5, R-193, R-193.5, R-194, R-194.5, R-195, R-195.5, R-196, R-196.5, R-197, R-197.5, and R-198 in North Estero Island; R-208.5, R-209, R-209.5, and R-210 in South Estero Island; and R-214.5, R-215, R-215.5, R-216, R-216.5, R-217, R-217.5, R-218, R-218.5, R-219, R-219.5, R-220, and R-220.5 in Lovers Key. No fill is to be placed in the vicinity of the sand spit between profile lines R-198 to R-208. The ENGINEER and the COUNTY have designated the pay profiles, as shown in the plans and specifications, and will not review or consider any other profiles than those shown in the plans and specifications.

6.2.2 The filled beach between the pay profiles will be graded, dressed and uniform in dimension. Segments between pay profiles shall be filled to a minimum of 95% of the volume based on the fill templates shown in the plans. The constructed beach contour lines between pay profiles will be approximately parallel and straight line, indicating that the CONTRACTOR constructed a uniform (non-cuspate) beach between the profile lines. As described in the Supplemental General Conditions, surveys will be made at 100-foot intervals between pay profile lines to verify that the lines and grades between pay profile lines have been achieved.

6.3 Surveying Requirements.

6.3.1 The CONTRACTOR shall conduct, at his or her own expense, the pre-construction and post-construction (pay) surveys to determine payment volumes, and to meet DEP permit beach monitoring requirements. The CONTRACTOR will also conduct surveys between pay profile lines to verify uniformity of fill placement. The surveyor must be a registered land surveyor in the State of Florida, and shall certify all survey work. If the CONTRACTOR elects to use a subcontractor to conduct any or all of the surveying, the selection of subcontractor must be approved by the ENGINEER. The ENGINEER may supply the CONTRACTOR with a list of subcontractor surveyors located in the vicinity of the project area acceptable to the ENGINEER at the request of the CONTRACTOR.

6.3.2 Beach Fill Payment Surveys. Beach fill payment surveys shall be conducted on both the DEP (DNR) and intermediate monuments in the project area. The DEP and intermediate monuments to be surveyed are sited on the plans and in Appendix III. Surveys must extend at least 100 feet seaward of the toe of fill for intermediate lines.

6.3.3 Permit–Required Beach and Hydrographic Surveys. The CONTRACTOR, as part of the project, shall conduct pre-construction surveys to comply with project permit requirements. The surveys are included in the bid price for the project. The surveys will be conducted from the beach monument seaward, following the profile azimuth, to a depth of, at minimum, -12 feet (NGVD). The surveys are to be conducted on the whole number DEP monument survey lines between R-175 and R-222 on the two islands. Surveys conducted for payment and permit monitoring requirements may be the same pre-construction and post-construction surveys, as long as the monitoring requirements for the survey lines are met by the surveyor. For each profile line, onshore (land) and hydrographic (water) surveys will be conducted within the same week.

6.3.4 Onshore Survey Requirements. All "dry" beach profile surveys shall be conducted by differential leveling techniques from the profile monument across the profile to a minimum distance of 100 feet seaward of the design toe of fill for post-construction profiles. The CONTRACTOR shall close all level loops; the closure shall be less than 0.04 feet. All onshore points shall be within +/- 1 foot of the established profile line. For each profile line, data will be provided to the ENGINEER in a format mutually agreed upon or the State FDEP format.

6.3.5 Offshore Survey Requirements. These shall be conducted in accordance with project permits and approved monitoring plan, which require that offshore surveys extend to a minimum offshore depth of –12 feet (NGVD) on DEP profiles in LEE COUNTY. The ENGINEER may have a representative participate in the survey, on land or on the survey vessel. The CONTRACTOR shall utilize electronic positioning equipment which has a minimum accuracy of +/- 3 feet. If range-range positioning system is used, shore stations must be set to ensure cut angles are less than 150 degrees but greater than 30 degrees. All offshore data points shall be no less than +/- 30 feet from the established profile line. Hydrographic surveys must extend to the –12 foot depth (NGVD) offshore depth contour, and shall overlap the seaward end of the wading profile.

6.3.6 Offshore survey elevations shall be measured to the nearest 0.1 foot referenced to NGVD. To ensure this accuracy is maintained, the fathometer shall be calibrated at the start of each survey day, after every fifth profile line, at the end of each paper roll, and at the end of each day. Survey vessel settlement and squat must be determined at survey speeds and applied to correct the water depth measurements. Positioning equipment shall be interfaced with a computer system which provides navigation information to the helmsman and simultaneously stores the location and

depth data. Equipment and procedures must be approved by the ENGINEER prior to conducting the survey.

6.3.7 Tides shall be measured for offshore beach profile surveys. Tides shall be measured by tide staff readings using a stilling well while conducting the offshore bathymetric surveys. The stilling well shall be located on a nearby survey profile line (located within 5,000 feet of the profile line being surveyed) during the offshore survey.

6.3.8 Borrow Area Survey. The CONTRACTOR shall conduct a hydrographic survey of the borrow areas immediately after completion of dredging at 100-foot spacings. The results shall be contoured at 1-foot intervals based on the NGVD datum. The contour plot shall include the borrow area and sub-area boundaries as identified on the plans. The CONSULTANT shall be given prior notice of the time and place of the survey, and may accompany the survey boat. The CONTRACTOR shall provide the contour charts of the two borrow areas and the processed survey data (x,y,z coordinates) in text format in the same datum shown on the plans. The survey results shall be a prerequisite to final project payment.

6.3.9 General Survey Requirements. Profile line surveys shall be conducted along the azimuth indicated in the construction plans and Appendix III. Location of shore control stations for the beach profile must be approved by the ENGINEER prior to the beach profile surveys. A sufficient number of points shall be taken along each line to ensure adequate description of topographic features, and major breaks in slope, including dunes, seawalls, beach berms, foreshore, and bar and trough systems, with an elevation difference between adjacent points not to exceed 1 foot. Data points shall be taken at a spacing of not more than 20 feet. The design berm crest station shall be included. The product shall be a continuous line representing the beach and ocean bottom profile.

6.3.10 All survey work shall be documented in field books with copies supplied to the ENGINEER. The pre-construction and pay surveys shall be conducted in the presence of the ENGINEER or his representative. The CONTRACTOR shall provide 5 day advance notice to the ENGINEER prior to conducting pre-construction or pay surveys. The ENGINEER need not be present during survey control work intended to place beach fill.

6.3.11 Deliverables to the ENGINEER shall include processed survey data of range, station, and elevation from each of the profile baseline monuments in a hard copy form and on 3 ½" floppy disk in text format. Additional information to be provided the ENGINEER shall include tide curves and corrections, field notes, and a 1" = 200' plan view plot showing the profile lines and surveyed tracklines.

6.3.12 Profile Line Azimuths. Payment for beach fill shall be based on the results of the pay profile survey. The profiles to be used for pay (identified above) are

indicated in the plans, along with the location of the profile origins (the profile monuments). The plans also indicate the profile bearings or azimuths to be used in measurement. For each acceptance section, or section of beach lying between adjacent profiles indicated on the plans, the ENGINEER shall calculate pay volume based on the average fill density (i.e. cubic yards of fill per linear foot of beach) measured at the adjacent profiles. For example, one acceptance section lies between R-175 and R-175.5, which are adjacent profiles indicated on the plans. The volume shall be calculated by averaging the measured fill density at profiles R-175 and R-175.5, and then multiplying this average fill density by the perpendicular distance between the profile origins of R-175 and R-175.5. The perpendicular distances are shown in Appendix III of the Supplemental General Conditions. The CONTRACTOR's bid shall account for any costs associated with the profile selection, perpendicular distance, the profile measurement technique, or the volume calculation technique.

6.4 Removal of Pilings and Derelict Structures

6.4.1 In Reach B, in the vicinity of R-186A, there are ten (10) pilings in the surfzone. Prior to the placement of fill, the pilings are to be removed from the beach by the CONTRACTOR. On Lovers Key in the vicinity of R-219.5 there are the remains of picnic shelters which need to be removed from the beach by the CONTRACTOR prior to the placement of fill. There are four (4) posts with concrete, and four (4) benches. Other debris from recent storms may be uncovered during the construction period. To the degree that the amount is incidental, it shall be removed by the CONTRACTOR.

6.5 Protection of Existing Structures from Construction Activity

6.5.1 Damages to Existing Structures. The CONTRACTOR shall be responsible for determining and documenting the pre-construction condition of existing structures close to the project fill area, monitoring construction activities, and taking appropriate measures to prevent damage to any structures during construction, and for performing a post-construction inspection of those structures previously inspected. The CONTRACTOR shall assume all responsibility for damages to existing structures within and bordering the project boundaries as a result of construction activities. This includes but is not limited to damages as a result of equipment impact and vibration due to operation of equipment close to existing structures.

6.5.2 Pre- and Post-Construction Videos. Pre- and post-construction videos shall be made of the project site. The videos will document the pre- and post-project conditions for both beach work and structural inspections from the initial construction start until final acceptance. One complete video shall be made of the entire project before the start of construction and one video shall be made of the completed project. The costs for all video work shall be included in the mobilization

bid price. The video shall focus on the vegetation and structures within and adjacent to the project area.

6.6 Construction of Beach Fill

6.6.1 Debris Removal. Prior to the placement of fill, the CONTRACTOR shall remove from the site of the work, all snags, fallen Australian pines, in-ground Australian pines, uprooted dead mangroves, tree debris, exotics, driftwood, and similar debris lying within the limits of the beach fill section.

6.6.2 General. The excavated material shall be placed and brought to rest on the beach to the lines, grades, and cross-sections indicated on the drawings, unless otherwise provided for herein or directed by the ENGINEER. The beach is subject to changes and the elevations on the beach at the time the work is done may vary from the elevations shown on the drawings. This fact should be taken into consideration by the bidder. Nevertheless, the pay volume will remain a maximum of approximately 1.415 million cubic yards of beach fill. The CONTRACTOR is to place the hydraulic fill on the beach in such a manner as to establish a uniform beach between adjacent pay profile lines. Segments of beach located between pay profiles will not be underfilled.

6.6.3 The ENGINEER reserves the right to vary the width or grade of the berm from the lines and grades shown on the plans or observed at the project site in order to establish a uniform beach between adjacent pay profile lines or for the entire length of the project, as shown in the plans for the project. The hydraulic beach fill cross-sections shown on the drawings are for the purpose of estimating the amount of hydraulic fill needed and will be used by the ENGINEER in making any change in the lines and grades. The CONTRACTOR will not be required to dress the hydraulic fill below mean high water to the slope shown but will be required to dress the beach.

6.6.4 As indicated in the design profiles, the beach fill does not extend landward of the 4.1 ft. NGVD contour on the beach, except where dunes are built. The elevations of seawalls and retaining walls vary alongshore. The berm elevations shown on the design profiles are based on the adjacent structure being at least 4.1 ft NGVD in elevation. There is no intent in these plans and specifications to fill above the top or behind seawalls or similar structures. The CONTRACTOR will slope the landward 5 feet of fill to intercept any such structure approximately ¼ foot below its top elevation.

6.6.5 The fill shall extend landward to the existing elevation contour which matches the berm crest elevation unless buildings or bulkheads prohibit fill placement. Fill shall not be placed beneath buildings on pilings or other existing structures. If a bulkhead extends to the design berm elevation or above, the fill shall terminate at the bulkhead.

6.6.6 The CONTRACTOR shall make every attempt to retain placed fill within the beach fill template. Temporary longitudinal dikes, and spreader and pocket pipe shall be used as necessary to prevent gullying and erosion of the beach and hydraulic fill, to retain the hydraulic fill on the beach within the limits of the hydraulic fill template cross-section, and to control water turbidity. The pipeline discharge will be located no closer than 25 feet from any structure to avoid potentially undermining the structure. Additionally, the pipeline is not permitted to extend across the sand spit known as Little Estero Island (R-200 to R-208). Dikes or mounds shall be constructed along the waterline as necessary to direct the pipeline discharge longitudinally along the beach to avoid transverse gullying direct from the discharge point to the Gulf of Mexico, and to build the construction berm to the design grade. The ENGINEER may direct the CONTRACTOR to extend dikes, if necessary, to control turbidity or beach erosion. No undrained pockets shall be left in any hydraulic fill during or upon completion of the work. The CONTRACTOR shall not permit spoil water to flow landward of the fill section, or water to pond between the hydraulic fill and upland. The CONTRACTOR shall protect existing drainage and operations. Any material, permitted to flow into or restrict the flow of an existing ditch, canal, or drain pipe, shall be promptly removed. Structures within the fill section shall be protected by the CONTRACTOR to prevent damage thereof by the CONTRACTOR's operations.

6.6.7 The project on the southern segment of Estero Island will be constructed from east to west. The hydraulic dredge operation will position the discharge pipe facing towards the Gulf of Mexico, away from the Estero Bay Aquatic Preserve.

6.7 Construction Beach Slope. The plans and specifications for the project delineate a construction beach slope of one (1) foot vertical to fifteen (15) feet horizontal on the onshore portion, and an offshore slope of one (1) foot vertical to twenty (20) feet horizontal with the slope break elevation at zero (0) ft NGVD.

6.8 Dressing. Upon completion of all filling operations within an acceptance section, the fill shall be graded and dressed with a dragged pipe so as to eliminate any undrained pockets, ridges, and depressions in the hydraulic beach fill surfaces. The CONTRACTOR is to grade and dress the hydraulic fill on the beach in such a manner as to establish a uniform berm width and slope between adjacent pay profile lines. The bank or scarp caused by ocean wave erosion shall be graded down to a slope not steeper than one (1) foot vertical to ten (10) feet horizontal to the water's edge. The CONTRACTOR is responsible to grade down any and all beach scarps or sand cliffs in the entire restored beach until the CONTRACTOR has demobilized from the project site. The project site will not be considered complete, nor the CONTRACTOR eligible for final payment until all beach scarps/sand cliffs in the entire project area are graded. The beach shall be dressed after tilling.

6.9 Tolerances. PAYMENT WILL BE FOR HYDRAULIC FILL PLACED WITHIN THE CONSTRUCTION TEMPLATE ONLY, AS SHOWN IN THE PLANS PLUS TOLERANCES DESCRIBED HEREIN. Any material placed above the template may be

left in place at the discretion of the ENGINEER. The maximum vertical tolerance below the template is 0.5 feet and is 0.5 feet above the template. Unless approved by the ENGINEER, hydraulic fill placement must at least meet the 0.5 foot tolerance below the template. The CONTRACTOR shall refill any deficient section of beach to at least meet the below template tolerance, and to 95% of the fill volume for the acceptance section. The COUNTY will withhold payment for those sections of beach (segments between pay profiles) which do not meet the minimum hydraulic fill requirement until the appropriate hydraulic fill placement and grading has been completed by the CONTRACTOR.

6.10 Compensating Slope Adjustment. Fill placed outside the construction template will be credited under the following circumstance. Below mean high water (+1.4 ft NGVD), fill measured outside the template can be counted towards pay quantity to the extent that it compensates for any deficit under the construction template. This applies only to fill measured contiguous to the construction profile below mean high water and the quantity cannot exceed the deficit volume measured below mean high water. This provision is a tolerance in the measurement of fill provided to accommodate for construction inaccuracies and variability, but shall not be used to increase the pay volume.

6.11 Maximum Pay Volume. The maximum pay volume for the 5 reaches is the volume indicated on the bid form or modified by change order. The pay volume for a reach will not exceed this value, even though the tolerances would contain a larger volume. The tolerances are provided to allow the CONTRACTOR to account for inaccuracies in construction and control the placement of excessive volumes to meet specifications.

6.12 Misplaced Materials. If any material is deposited other than in places designated or approved, the CONTRACTOR may be required to remove such misplaced material and redeposit it where directed by the ENGINEER or COUNTY, at the CONTRACTOR's expense.

6.13 Grade Stakes. Grade stakes left in the beach after beach nourishment construction can present a safety hazard to beach visitors. All grade stakes the CONTRACTOR may use shall be completely removed after completion of the beach fill. Any and all stakes used in the beach fill area in surveying or any other component of the project shall be composed of metal conduit pipe to facilitate in the recovery of the stakes. Stakes consisting of wood, plastic, or other materials will not be acceptable. Upon completion of construction in an area, the CONTRACTOR shall conduct a search using a (sufficiently sensitive) metal detector in order to find each and every stake in the area. This search and removal of all the stakes shall be certified by the CONTRACTOR. Sections of beach upon which the search for, and removal of, stakes is complete shall be documented in the Quality Control Reports. Any grade stakes left in the beach will be the sole responsibility and liability of the CONTRACTOR. The CONTRACTOR is to remove all grade stakes from each completed section immediately after the section has been completed. The CONTRACTOR will not be eligible for payment until the CONTRACTOR certifies that all grade stakes in completed sections have been removed. Any injuries to people which may occur because grade stakes were left in the beach by the CONTRACTOR will be the responsibility and the liability of

the CONTRACTOR. If the CONTRACTOR fails to remove grade stakes in a timely manner, the COUNTY may have the stakes removed and deduct the cost from the CONTRACTOR's final payment. The CONTRACTOR is required to immediately remove any grade stakes found in completed sections of the beach by the COUNTY or ENGINEER.

6.14 Sand Ramps. The CONTRACTOR is required to build sand ramps at least 15 feet wide over the shore pipe at each pedestrian access point to the beach from a road, hotel or major apartment building. Sand ramps will also be required at a maximum spacing of 300 ft. Additional ramps shall be constructed in front of all lifeguard towers, stairways down to the beach and dune overwalks. After construction, the pipe will be removed and the beach in the area of the ramps leveled and dressed.

6.15 Work Area. The construction and borrow area limits available to the CONTRACTOR for accomplishing the work are shown on the drawings. Construction accesses are as shown in the drawings. There are six accesses to the north Estero Island project area, and one each for the other two segments. The CONTRACTOR shall accomplish the work in such a manner so as to minimize disruption to road traffic or into the public beach parks. The CONTRACTOR will be permitted to exclude the public for safety purposes from the work areas in the immediate vicinity of the hydraulic fill placement, grading and transporting operations. The CONTRACTOR will minimize the areas closed to the public. To minimize disruption to the beach area, temporary areas for storage and maintenance of construction equipment shall be restricted to specified areas proposed by the CONTRACTOR and approved by the ENGINEER or COUNTY. The storage areas shall be kept neat and orderly, and in a manner supporting the public safety.

6.16 Public Safety. The CONTRACTOR shall provide and maintain barricades, warning signals, and flag people as required by local, State or Federal regulations or as directed at the discharge site to ensure public safety. If the CONTRACTOR is not able to keep and maintain the public at a safe distance from construction activity, the CONTRACTOR is to notify the COUNTY or ENGINEER and request assistance in controlling public access to the active construction site. During construction of the groin, the CONTRACTOR shall put up a temporary chain link fence to exclude the public from the construction area.

6.17 Construction Accesses. The CONTRACTOR shall limit construction access to the beach to the location shown on the drawings or as approved by the COUNTY. Preparation and restoration work will be required at construction accesses. The CONTRACTOR shall include costs for earthwork, grading, sign and/or guard rail removal and reinstallation, removal and reinstallation of stairways and clearing, etc., in lump sum price for "Mobilization and Demobilization." The accesses must be restored upon contract completion. The CONTRACTOR shall exercise caution when accessing and driving on the beach with vehicles or equipment. Sections of the beach are heavily used by people during all periods of the year. In the event that damage is caused by the CONTRACTOR, the CONTRACTOR shall restore all damage to sidewalks, roads, inlet jetties, vegetation or any other structure or natural feature to pre-construction conditions or better. The

CONTRACTOR will not receive final payment until all damage is restored to the satisfaction of the COUNTY.

The construction access to the terminal groin shall be through the location identified in the plans. The CONTRACTOR may also deliver equipment, materials, and personnel by barge. If the CONTRACTOR elects to utilize a barge for access, the CONTRACTOR shall not leave the barge unattended, nor shall navigation in the adjacent pass be impeded.

6.18 Staging Areas. Beach staging areas are shown on the drawings and are located at public beaches. The CONTRACTOR shall cordon off and/or fence the staging areas to secure those areas from the public. Short-term staging can occur on the beach seaward of the landward limit of fill. The staging areas must be restored upon contract completion. If additional staging areas are needed, they shall be procured by and at the expense of the CONTRACTOR.

6.19 Damages. All damages to private or public property resulting from the CONTRACTOR's operations shall be repaired by the CONTRACTOR at the CONTRACTOR 's expense. The ENGINEER and COUNTY shall determine if repairs are required and the COUNTY or owner of the damaged property will determine if the property has been repaired to its previous condition, before the CONTRACTOR receives approval of repairs.

6.20 Access on Lovers Key. There are two bridges in the Park, a concrete bridge and a wooden bridge. The concrete bridge (which spans from the mainland to the beach pavilion) is highway rated, the wooden bridge is only rated for very light vehicles. The CONTRACTOR shall not use the wooden bridge for vehicle traffic. All vehicles entering the Lovers Key project area shall use the concrete bridge. The north beach may make a suitable access at low tide with some modifications. Vehicles cannot haul other vehicles when crossing the concrete bridge. Vehicles shall be permitted to use the bridge after the park has closed (one hour after sunset until 7:00 am) or by prior coordination. The CONTRACTOR will have to post a guard at the park entrance gate to maintain security during construction, especially during nighttime periods. The CONTRACTOR will protect the brick paver blocks from the weight of the heavy trucks and equipment with a minimum ¾" plywood which will have to be picked up each day before 7:00 am. At the park management's or ENGINEER's request, the dirt tram road will be filled and regraded by the CONTRACTOR should it become rutted, damaged or a hindrance to the operation of the tram. Park management also reserves the right to restrict hauling times if the pavilion is rented for an after hours event.

6.21 Tree and Vegetation Removal on Lovers Key.

6.21.1 Debris Removal. Prior to the placement of fill, the CONTRACTOR shall remove from the site of the work, all snags, fallen Australian pines, in-ground Australian pines, uprooted dead mangroves, piles of dead trees, exotics, driftwood, and similar debris lying within the limits of the beach fill section. On Lovers Key

additional Australian pines are marked for removal on the back shore within 50 ft of the landward limit of fill. These trees are included in the bid and shall be removed from the site prior to commencement of beach fill work. Due to erosion on Lovers Key, hundreds of trees need to be removed. The categories for removal include trees less than 6 inches in diameter, piles of trees (debris), Australian pines (greater than 6 inches in diameter), and uprooted and cutoff tree trunks lying within the limits of the beach fill section and on the upland dune. Additionally, some Australian pines in both size categories that are still in the ground need to be removed.

A tree is defined as a root system, the trunk or trunks associated with that system, and the associated branches. Trunks are normally 10 to 30 feet in length, and roots are 5 to 15 feet in diameter. The cutoff tree trunks are approximately 1 to 5 feet in height, and are defined as a root system and the cutoff trunk.

No sand may be disposed on the beach such that the fallen trees and debris are buried, creating unseen obstacles to turtle nesting and breach recreation. All materials removed shall be disposed of in an appropriate and legal manner and at the expense of the CONTRACTOR. Grading and other construction equipment will not be permitted outside the construction limits except for ingress or egress to and from the site. The CONTRACTOR will not be required to search for trees and debris completely buried in the sand.

6.21.2. Payment for Debris Removal. Tree removal will be paid for as a unit cost by tree by categories. The unit cost prices include all aspects of tree removal including excavation, cutting, transporting, chipping, removal and disposal outside the park for each of the following categories: small trees (less than 6 inches in diameter) both in the ground and uprooted, large trees (greater than 6 inches in diameter) both in the ground and uprooted, and cutoff tree trunks both in the ground and uprooted. The removal of the piles of tree debris will be considered part of the above categories and will be included in the unit price. The estimated number of trees in each category is indicated on the bid form.

All trees will be chipped by the CONTRACTOR, at a location approved by the ENGINEER. A chipping site will be identified on Lovers Key close to the work. A joint inspection will be made of the project area prior to the start of construction to identify and count trees for removal. A second count of trees will be made after they have been removed and brought to a central area for chipping and transport. The number of trees will be based on a count of root system. If trees are removed by the CONTRACTOR that were not identified for removal, an estimate of the wrongly removed trees will be made by the ENGINEER and be deducted from the pay quantity. The ENGINEER's decision will not be subject to change after his estimate is made. Trees wrongly removed may be in violation of other State and local rules. A small quantity of other types of debris exists on Lovers Key, and the CONTRACTOR as part of the tree removal bid item shall remove them at no additional cost.

7. DUNE AND DUNE VEGETATION

7.1 The project includes the construction of a small dune on Lovers Key. The flat top of the dune is 20 feet wide and 2 feet high. The landward slope is 1:2 and the seaward slope is 1:5, resulting in a total dune width of 34 feet. The dune does not extend along the entire beachfront on Lovers Key. The areas where the dune is present are indicated in the plan view drawings. These sections total approximately ½ of the beach fill in length. Sea oats will be planted on the dune by the CONTRACTOR.

7.2 The sea oats (*Uniola paniculata*) will be planted at 18-inch centers. The grass will be planted on the flat top of the dune, except at public access points. At each access point, a grass-free zone will be maintained.

7.3 Based on the area of the flat-top of dune, approximately 18,000 liner size plants will be required. The ENGINEER will provide plans for the layout of plants within 2 weeks after construction start for Lovers Key. The CONTRACTOR will determine the schedule and method of construction. All planting shall be completed within 30 days of the end of construction, unless the CONTRACTOR can demonstrate a delay to optimal planting season is beneficial.

7.4 Plant Materials. Plants used in the restoration project shall originate from the West Coast of Florida. All plants used in the project shall conform to Florida #1 grade as listed in *Grades and Standards for Nursery Plants*, published by the Division of Plant Industry as to health and vitality, condition of foliage, root system, and freedom from pest or mechanical damage. Plants used in the project shall have been grown in a manner consistent with the natural habitat of the specific species. Plants that do not meet the above criteria shall be rejected and shall not be incorporated into the work. Plants that have been rejected by the ENGINEER shall be removed from the site by the CONTRACTOR at no cost to the COUNTY.

7.5 Plants. For the purposes of this bid, the term "plant" refers to a hole into which at least 2 stems of an individual, viable, nursery grown plant of sea oats (*Uniola paniculata*) is installed. No other plant species will be accepted as substitutes under this bid.

7.6 Number of Seeds per Liner. The number of seeds placed in each liner will be determined through germination experiments by the CONTRACTOR such that deliverable, viable planting units with at least 2 emergent stems per liner are produced. Planting units with fewer than 2 viable stems will be rejected.

7.7 Plant Size. Planting units shall be no less than 8", and no more than 16", in height, as measured from the top of the root ball to the apical meristem. Any plants not meeting these size constraints will be rejected by the ENGINEER.

7.8 Plant Age. Deliverable planting units shall be 90 days to 120 days old, as measured from the approximate time of germination. Planting units younger or older than this specification will be rejected by the ENGINEER.

7.9 Planting Unit Depth. All planting units shall be installed at a minimum depth of 6", as measured from the top of the root ball to the sand surface. Plants not installed at or below this depth will be rejected by the ENGINEER.

7.10 Supervision of Planting. The CONTRACTOR shall provide at least one person who shall be present at all times during the installation of the dune vegetation, who shall be thoroughly familiar with the species being installed and the best methods for their installation, and who shall direct all work performed under this section.

7.11 Planting Methodology. The CONTRACTOR shall lay out the work in 21-foot sections to ensure that the proper number of plants are planted in each section. The CONTRACTOR may attempt to achieve a natural look by not planting in straight rows and by modifying the spacing requirements 6" for up to 20% of the plants in each zone.

7.12 The CONTRACTOR shall lay out the planting region for the sea oats subcontractor and provide for sufficient controls to distribute the plants effectively in the designated areas. Each planting region shall be protected by a temporary fence at the completion of planting. The temporary fencing shall consist of 2" x 2" fence post at 10-fot intervals connected by a high visibility line. The pedestrian approaches to each planted area shall have a warning sign stating, "KEEP OFF THE SEA OATS." The fence post shall stand 3 feet above ground. The post and line shall be highlighted with colored tape. The fence post shall be placed at least 2 feet outside the planted region.

7.13 Fertilization. Each plant used in the restoration project shall be fertilized at the time of planting with a controlled slow release granular type fertilizer such as Osmocote 14-14-14 or an equivalent approved by the ENGINEER. Application of the fertilizer shall be in accordance with the manufacturer's specifications. The fertilizer shall be incorporated and secured in the planting hole.

7.14 Irrigation. The CONTRACTOR shall supply adequate water for the establishment of all plantings. This establishment period shall commence at the initial planting/relocation of the vegetation and shall end 90 calendar days after acceptance of the vegetation work by the ENGINEER. The CONTRACTOR will be responsible for obtaining, paying for and applying all irrigation water used under this bid. Freshwater (potable only) shall be provided and applied to the planting zones using a non-scouring spray applicator.

7.15 Inspections and Approvals. The ENGINEER will conduct performance inspections of the dune plantings following the completion of the vegetation work in each reach and at the completion of the 90-day maintenance period. At the completion of the 90-day vegetation irrigation and maintenance period, the ENGINEER shall conduct final inspection and approval of the plantings. During the inspection, the ENGINEER shall verify that 95% of all

plantings are in a healthy growing condition. If the plantings do not meet this criteria, the CONTRACTOR shall be required to replace unhealthy or deceased plants as identified by the ENGINEER. Once the ENGINEER verifies that the final inspection criteria have been met, the ENGINEER will submit final written acceptance of the plantings to the CONTRACTOR.

7.16 Success Criteria and Replanting

7.16.1 Planting Unit Success Criteria. The success of the planting effort will be determined by the ENGINEER approximately 90 days from the end of the plant installation using two measures: reach survival rate and planting unit survival pattern. The planting effort shall be deemed a success if both of the described criteria are met at the 95% level.

7.16.2 Reach Survival Rate. A minimum survival rate of 95% of all plants installed over the reach as a whole shall be achieved. Plants will be considered to be surviving if they show clearly vigorous rhizomes and white, turgid roots, even in the absence of vital above-ground growth.

7.16.3 Survival Pattern. A minimum of 95% of the planting zone width perpendicular to the shoreline shall be occupied by surviving planting units at all locations. For the typical 20-foot planting zone width, a total of 253 surviving plants must be present within any 30-foot wide perpendicular transect through the planting zone out of a total of 267 initially planted. This success criteria may be waived, at the discretion of the ENGINEER, in areas where plant survival has been adversely impacted by unexpected pedestrian traffic.

7.16.4 Replanting of Planting Units. If any of the above success criteria are not met, as determined by the ENGINEER, the CONTRACTOR shall replant with viable, and within specification, planting units in all areas considered to be deficient according to the planting unit success criteria. The replanting of planting units will be the sole responsibility of the CONTRACTOR and be completed at no cost to the COUNTY. All warranty and survival provisions and requirements will apply to replanted planting units.

7.16.5 Initial Planting Unit Survival. Planting units that do not survive for a minimum of 10 days after installation will be rejected and not be considered eligible for payment. New, within-specification, planting units will be installed by the CONTRACTOR in the areas which do not survive for a minimum of 10 days. CONTRACTOR will be responsible for installing the new replacement planting units within 5 days of notification by the ENGINEER that an area of initial planting units did not survive for 10 days. The replacement planting units will be considered eligible for payment as "original" planting units only after they have survived a minimum of 10 days from installation.

7.17 Maintenance. The CONTRACTOR shall maintain and irrigate all plantings, starting at the time of plant installation or relocation, and continuing for 90 calendar days after the ENGINEER has provided written acceptance of the vegetation work. In addition to irrigation, maintenance shall include all weeding, cultivation, fertilization, spraying, adjustment of bracing, staking or pruning necessary to keep plants in a healthy and vigorous growing condition. At the end of the CONTRACTOR=s maintenance period, the CONTRACTOR shall provide the ENGINEER with written instructions as to the maintenance activities (i.e., irrigation, control of exotic/non-native plants) that will be required to maintain the plantings in a healthy growing condition.

III. TERMINAL GROIN ON ESTERO ISLAND

8. OVERVIEW

This section describes the 240-foot terminal groin to be constructed on the north end of Estero Island. The groin will be constructed of 145 pcf limestone in three sections (landward, transitional, seaward) with a vinyl sheet pile along the centerline. The landward section begins at Station 0-16 and extends to the approximate Mean High Water line (Station 0+90). The transitional section is 25 feet long and transitions to a larger rock size between Mean High Water and the approximate location of the Mean Tide Level (Station 0+90 and Station 1+15, respectively). The seaward section begins at Mean Tide Level (Station 1+15) and extends out to the seaward toe of the structure (Station 2+58).

9. EQUIPMENT AND MATERIALS STORAGE

The CONTRACTOR shall store equipment and materials within the area designated in the plans.

10. SURVEY PROCEDURES AND AS-BUILT SURVEYS

The CONTRACTOR shall exercise control of all construction to ensure all parts of the structure are placed at the proper elevation and location. The CONTRACTOR shall place survey stakes to identify the groin easement border and establish stationing for the construction of the structure. The structure shall be built within the bounds of the easement as illustrated in the plans. Upon substantial completion of the rock placement, the CONTRACTOR will provide the ENGINEER the final elevations of the top armor stone across the structure designated cross-sections of the completed terminal groin at 30-foot spacings and at the locations shown in the construction plans to the ENGINEER. The pre-construction survey shall consist of the excavated depth before stone and filter fabric placement at the centerline and outside edge at each cross-section. Surveys shall be performed by an independent professional surveyor registered in the State of Florida. All elevations shall be referenced to the National Geodetic Vertical Datum. All cross-sections shall reference the construction baseline. Elevations of any stone shall be determined by measuring the elevation of a point on the stone that represents the average elevation of the top of the stone (determined visually). Cross-sections shall consist of a series of points starting from the toe of the structure on the north

side of the groin to the toe of the structure on the south side of the groin with one point located on each stone encountered by the cross-section.

Because of sediment accumulation, the CONTRACTOR must schedule surveys to be conducted immediately following the stone placement in each section and/or be prepared to excavate the adjacent bed sufficiently to survey the buried stones. The cross sections shall verify that the stone templates are full without exceeding the tolerances by determining the location of the center of the top surface of each stone and the location of the toe of the structure. The elevation and location of the top of the sheet pile wall shall be included in each cross section. All cross sections submitted shall contain the design templates overlaid on the as-built surveys.

11. QUALITY OF STONE

All rock proposed for use in the structure is subject to approval by the ENGINEER. All rock for the terminal groin shall be hard dense, non-friable stone from sources proposed by the CONTRACTOR and approved by the ENGINEER. The rock shall be free from cracks, seams, drill holes, laminations, weak cleavages and similar defects and shall not fracture when dropped during the drop test (Section 5.2.). All stone shall be clean and free from earth, dust, or other refuse. The CONTRACTOR shall clean the stones as necessary to comply with the FDEP permit. The faces of individual pieces of stone shall be roughly angular, not rounded, in shape. The least dimension of each stone shall not be less than one-half (1/2) of the greatest dimension of that stone.

11.1. Stone Unit Weight. The CONTRACTOR shall provide certified results of laboratory testing conducted by an independent lab to determine the unit weight and specific gravity of the stone. The tests shall be conducted on a minimum of 10 samples randomly selected from the quarry proposed for use. The test shall be ASTM C127. The minimum unit weight and specific gravity of the armor stone is 145 pcf and 2.32, respectively. The minimum unit weight of the core and bedding stone is 140 pcf (saturated, surface dried) and the minimum specific gravity shall be 2.24. All 10 samples shall exceed these minimum standards. Failure of the test on the first set of 10 samples and a following set of 10 samples will be cause for rejection of the quarry and/or quarrying process. All stones that fail the test shall not be incorporated into the work. Payment for all stone testing will be included in the material testing bid item. The CONTRACTOR may not use more than one quarry without prior approval of the ENGINEER.

11.2. Drop Test. A drop test will be performed on a 10 stone sample of the armor stone at the rock quarry. The drop test will be performed by the CONTRACTOR in the presence of the ENGINEER. The CONTRACTOR shall give the ENGINEER a 1-week notice for the drop test. In the event of the non-availability of the ENGINEER, the CONTRACTOR may perform the test and certify to the ENGINEER in writing, that the stone complies with the contract specifications. The drop test will consist of dropping the armor stone from a height of five (5) feet onto an 8' x 8' (minimum dimensions) steel plate. The steel plate shall be a minimum of 1" thick and be placed on firm ground. Acceptable stone will not fracture when dropped. Approval of the quarry requires 9 of the 10 stones to pass the drop test. If the results of the test of the first 10 stones result in greater than 1 stone failing the test, the

ENGINEER can request additional stones be tested, or the ENGINEER can reject the quarry or quarrying method. Payment for the drop testing will be included in the material testing bid item.

Drop tests may be requested on individual stones at the construction site at any time by the ENGINEER to check stone quality. Stones that fail the drop test will be rejected. Rejected stone may not be incorporated into the terminal groin as armor stone. The ENGINEER will decide if the stone may be incorporated as core or bedding stone.

11.3. Armor Stone Size Check. The CONTRACTOR shall select 10 armor stones from the quarry and have each stone weighed. Each weighed stone shall be clearly marked with its weight. The stones shall represent the entire range of authorized sizes and weights. The weighed stones that meet the specifications shall be placed in a convenient location in the quarry and at the construction site where the CONTRACTOR can compare future selected armor stones for possible shipment to and use at the project site.

12. STONE HANDLING, PLACEMENT, SEGREGATION AND REWORKING

The equipment used in placing the materials shall be subject to approval. Stone of the quality and gradations specified shall be placed in such a manner as to produce a compact mass of stone. Stone shall be placed in its most stable orientation and each armor stone shall touch adjacent stones in at least 3 locations. Rearranging of individual stones by mechanical equipment or by hand will be required. The finished surface shall be relatively uniform and shall contain the maximum amount of stone as can be obtained by performing the work as specified. The terminal groin shall be constructed to the lines and grades shown on the drawings.

All stone shall be lowered to rest before releasing. Placing the stone by dumping into chutes or by similar methods likely to cause segregation of the various sizes of stone will not be permitted. The stone in place shall be a good mixture of various sizes of stone meeting the gradation specified. If the stone becomes segregated before being used in the work, the stone shall be thoroughly mixed to the gradation specified prior to placement in the structure. The CONTRACTOR may rework the stone in place only if such operation achieves the construction lines and grades. The CONTRACTOR shall maintain the terminal groin until accepted and any materials lost or displaced shall be replaced at his own expense to the lines and grades shown on the drawings.

13. STRUCTURE TOLERANCES

The CONTRACTOR shall fill the templates shown in the construction plans with the specified stone sizes. The vertical tolerance on the top surface of the terminal groin is ±0.5 feet. The horizontal tolerances in each segment of the groin are ±0.5 diameters of the average armor stone in that segment. Elevations of any stone shall be measured by selecting a point on the stone that represents the average elevation of the top of the stone (determined visually). Failure to achieve these tolerances will require that the out of tolerance sections be removed and be rebuilt to the lines and grades in the plans. The tolerances are provided to allow the CONTRACTOR to satisfactorily place

the stone in the design template. The constructed heights and widths shall average at the design template. Maximizing the template will not be acceptable.

While meeting tolerances, the CONTRACTOR must place four (4) boulders across the structure crest and two boulders in width to each side of the core stone. The groin slopes must be constructed as detailed in the plan drawings. However, the CONTRACTOR shall not overfill the template by placing more stone than is necessary to fill the template. All stone outside structure tolerances shall be removed and deducted from pay quantities.

14. ACCEPTANCE

The CONTRACTOR is responsible for all work until finally accepted by the COUNTY. The CONTRACTOR may request an inspection for acceptance of the terminal groin. By requesting the inspection, the CONTRACTOR indicates that all the quality control measures that he has performed indicate that the structure conforms to the plans and specifications. The ENGINEER may withhold recommendation of acceptance until review of the as-built surveys.

15. STONE WEIGHTS

Stone weights shall conform to the following requirements:

A. Landward Segment (Station 0-16 to Station 0+90):

1. Armor stone shall be 0.75 to 1.25 ton with 50% greater than 1 ton.
2. Core stone shall be 200 to 600 lb. stone with 50% greater than 400 lbs.
3. Bedding stone shall be 20 to 50 lb. stone.

B. Seaward Segment (Station 1+15 to Station 2+58)

1. Armor stone shall be 1.5 to 2.5 ton with 50% greater than 2 ton.
2. Core stone shall be 200 to 600 lb. stone with 50% greater than 400 lbs.
3. Bedding stone shall be 20 to 50 lb. stone.

A 25-foot transition of armor stone sizes exists between Station 0+90 and Station 1+15. The CONTRACTOR shall place armor stone such that the cross section midway though the transition (Station 1+02.5) represents the average of the two cross sections at either end of the transition (Station 0+90 and Station 1+15). The armor stone sizes in this section shall be selected such that a relatively smooth transition is constructed between the two segments identified above. Core stone and bedding stone shall be the same weight throughout the structure.

16. MISPLACED STONE

All stone misplaced during the prosecution of the work under this contract shall be recovered and used in the work, as specified herein, or removed from the site by and at the expense of the CONTRACTOR. Misplaced stone shall be all stone deposited outside the indicated cross sections or

limits of stone projections shown on the drawings. Excessive rock brought to the construction site will be removed at the CONTRACTOR's expense and deleted from pay quantities. The CONTRACTOR will not be permitted to "chink" the armor layer (place excess bedding or core stones in the voids of the armor layer).

17. STONE QUANTITIES PAYMENTS

The CONTRACTOR shall weigh each truckload of stone to verify pay quantities and shall submit copies of weight tickets to the ENGINEER. Weighing methods and documentation of weighing are subject to approval by the ENGINEER. All weight tickets will distinguish the type of rock (bedding, core, or armor) and which groin section the stone is intended for. All trucks to be used in this project shall be numbered. The numbers shall be printed and be plainly visible on the cab and trailer. The number and weight (empty) of each truck shall be provided to the ENGINEER prior to hauling and weighing any rock. Truck numbers shall be shown on each weight ticket. Rock quantities shall be determined by weight tickets and confirmed by average terminal groin cross sections. Failure to supply all the information requested herein on the weight tickets may be cause for non-payment for the quantity of stone shown thereon. Excess stone delivered to the site and not used will not be paid for. Such excess stone must be removed from the site and weighed by the CONTRACTOR. Weight tickets and a credit at the full amount of removed rock (contract unit price times tonnage removed) must appear on the invoice.

18. STONE QUANTITIES

The COUNTY reserves the right to increase or decrease rock quantities (without limit) as dictated by site conditions and rock type at the unit price bid. The ENGINEER's estimated quantity of stone shown in the Bidding Schedule is based on 145 pcf (saturated surface dry) assuming 90% solids (10% voids) in the rock structure and does not include rock tolerances. The volume contained within the limits of rock placed may be as low as 65% solids depending on the method of placement by the CONTRACTOR. Therefore, the actual volume of solid rock may be lower than the bid quantity.

Notwithstanding the ENGINEER's estimate, the CONTRACTOR shall make an estimate of the quantities required for his own use in preparing his bid. After the unit weight of the stone to be used has been determined by tests, this unit weight will be applied to the ENGINEER's estimated quantity shown in the Submitted Bid Form for the purpose of determining a new estimated quantity, which will be subject to variation in quantity at the unit price bid. All costs and reasonable profit associated with the rock work shall be included in the rock unit prices.

19. SAND EXCAVATION

Sand shall be excavated by the CONTRACTOR to the line and grade shown on the plans. Existing beach material excavated for construction of the terminal groin shall be placed south of the structure. Using the data in the plans, sand excavation quantities have been estimated to be 2,000 c.y. This amount is not exact and is expected to vary. Sediment transport in the vicinity of the project will occur along the beach and within the limits of the project and is predominantly northward. Normal wave and current action may result in the slumping of sand or sediment transport into the excavation

hole. These activities may significantly increase the amount of sand to be excavated. The CONTRACTOR shall estimate the required volume of sand to be excavated prior to making his bid. Sand excavation will be paid for as a lump sum portion of mobilization due to difficulty in accurately measuring the quantity during construction. Upon completion of the work, all excess sand shall be graded consistent with adjacent existing beach contours and approved by the ENGINEER.

20. ROCK STORAGE

No rock shall be stored either seaward of the Mean High Water Line or outside the work limits defined in the plans. Excess material delivered to the construction site shall be removed prior to final clean up at no cost to the COUNTY. Rock shall be stored according to size (armor, core, bedding) in separate areas to avoid mixing of the sizes.

21. SITE RESTORATION

CONTRACTOR shall restore the work site and the construction access to equal or better condition. This includes but is not limited to replacing curbing, sidewalk, asphalt, drainage pipes, vegetation, sprinkler systems and other utilities. All rock fragments greater than ¾ inch in any dimension shall be removed from the beach and construction access areas. All work will be paid for under the site restoration bid item. This includes damage to private and public property adjacent to the construction site if they are damaged by the CONTRACTOR.

22. TRAFFIC

The CONTRACTOR shall provide to the ENGINEER a traffic control (maintenance of traffic) plan at the pre-construction conference. The plan shall outline the methods the CONTRACTOR will use to minimize disturbance to normal vehicular traffic and pedestrian traffic flows in the project area and include all proposed traffic patterns from the northern Route-865 Bridge. The CONTRACTOR shall utilize flagmen when unloading materials and mobilizing and demobilizing equipment on public roads and parking areas. All work will be paid for under the mobilization bid item.

23. CONSTRUCTION ACCESS

The construction access to the terminal groin and staging areas shall be through the location identified in the plans at Bowditch Park. The CONTRACTOR may modify the access and staging area, but only with approval of ENGINEER. CONTRACTOR shall repair the access roads and staging areas to equal or better condition upon completion of the project.

The CONTRACTOR may also deliver equipment, materials, and personnel by barge. If the CONTRACTOR elects to utilize a barge for access, the CONTRACTOR shall not leave the barge unattended, nor shall navigation in the pass and in the pass channel be impeded.

There is Federally maintained channel adjacent to the project area north of the groin location in Matanzas Pass. The channel and areas outside the channel are subject to shoaling. Shoaling of the

channel and the adjacent areas should be considered as possible in planning the work. No dredging of the channel or of the adjacent areas will be permitted.

24. INSPECTOR

The CONTRACTOR shall provide to the COUNTY and CONSULTANT inspector unrestricted access to the construction site at all times.

25. SITE CONDITIONS

The CONTRACTOR shall note that the site can feature dangerous conditions such as waves, currents and lighting. The CONTRACTOR shall take necessary measures to adequately protect all people involved with the project.

26. PUBLIC SAFETY

The CONTRACTOR is responsible for public safety in the construction area. The CONTRACTOR shall exclude the public from the construction area by the construction of a temporary chain link fence surrounding the work area.

27. QUALITY CONTROL

The CONTRACTOR is responsible for quality control on the job site. For the duration of the terminal groin construction, the CONTRACTOR shall complete and submit daily the quality control reports. Submission procedures are discussed in other areas of these specifications.

28. NOTICE TO MARINERS

The CONTRACTOR shall, immediately upon receiving the Notice to Proceed, publish a Notice to Mariners warning boaters of the construction activities. Proof of publication shall be sent to the ENGINEER.

29. MOBILIZATION/DEMOBILIZATION PAYMENT

The CONTRACTOR will be paid 60% of Mobilization/ Demobilization cost upon the completion of 50 tons of rock placement in the construction template. The remaining 40% will be paid upon completion of all work including site restoration and removal of all equipment from the project site.

30. GEOTEXTILE

Geotextile shall be Mirafi Filterweave 700X or equivalent. The ENGINEER will determine equivalence of geotextiles by comparing strength and dimensional specifications provided by the manufacturer. The sheet of geotextile shall be attached at the factory or another approved location to form sections or panels not less than ten (10) feet wide and continuous lengths perpendicular to the

terminal groin centerline. A one-foot by one-foot sample shall be provided to the ENGINEER upon request.

The geotextile shall be placed by the CONTRACTOR at the locations shown on the drawings. At the time of installation, the geotextile shall be rejected if it has defects, rips, holes, flaws, deterioration or damage incurred during manufacture, transportation or storage. The surface to receive filter cloth shall be prepared to a relatively smooth condition free of obstructions, depressions, debris, and soft or low-density pockets of material. The cloth shall be laid loosely, not in a stretched condition but free of wrinkles, creases and folds. The cloth shall be placed with the long dimension (stronger principal direction) perpendicular to the terminal groin centerline and shall be laid smooth and loose to allow for possible settlement. The strips shall be placed to provide a minimum width of 5 feet of overlap for each joint.

The geotextile shall extend over the entire bottom of the structure between the sheet piles and the outside toe. The fabric shall be folded back over the bedding layer, and then be buried in bedding and cover stones to anchor the fabric. This fold shall occur at the structure toe and at pile. Payment for geotextile will be based on the plan view area of the structure bottom. No payment will be made for the overlap and fold areas.

The geotextile shall be protected at all times during construction and any geotextile damaged shall be removed and replaced with undamaged geotextile. Any damage to the geotextile during its installation or during placement of stone shall be replaced by the CONTRACTOR prior to final acceptance at no cost to the COUNTY.

The geotextile shall also be protected from damage due to the placement of stone. All core, bedding, and armor stone shall be placed (not dropped). Before placement of stone on the first piece of geotextile, the CONTRACTOR shall demonstrate to the ENGINEER that the stone placement technique will prevent damage to the geotextile.

31. SHEET PILING

Sheet piling shall be of new Shoreguard series 500 vinyl sheet pile or equivalent along the centerline between Station 0+00 and Station 2+40. Shoreguard is available from Materials International Inc. (1-800-256-8857). Northstar Series 3800 sheet pile is an example of an equivalent material and is available from Northstar Vinyl Products, LLC (1-800-558-6702). Sheet pile material is subject to approval by the ENGINEER and acceptance by the COUNTY.

Sheet piling shall be installed per the manufacturer's recommendations. The top elevation of the sheet pile shall be approximately level with the top of the armor layer. CONTRACTOR shall place stones next to the wall, but not lean against the wall. The sheet pile shall be installed, at a minimum, to the depths indicated in the plans. The CONTRACTOR may install larger sheet piles at his own expense. CONTRACTOR shall be liable for all damage to exposed sheet piling during construction.

32. SUBSURFACE EXPLORATIONS

The ENGINEER has performed three jet probe investigations to determine subsurface conditions, two immediately adjacent to the site. The locations of the jet probes are shown on the plans and contained in Appendix G-II to this section. If the CONTRACTOR believes that additional subsurface explorations are needed to bid the project, tests may be performed for his use at his cost. The CONTRACTOR shall submit a written request to the ENGINEER for access to the site to perform the tests.

33. SPECIFICATION CONFLICT

If these technical specifications conflict with or contradict any general condition, the technical specifications will govern.

34. WARNING SIGNS

A warning sign shall be constructed and installed on the groin at Station 2+00 on the centerline. The sign shall be 2 aluminum alloy plates, 3/16" thick, at least 1' x 2' in size, and installed at 10 feet NGVD. The sign's lettering will be "DANGER, KEEP OFF ROCK." The sign post will be a 2.5" diameter aluminum alloy column (1/8" wall thickness) embedded to –5 feet NGVD through the groin.

IV. ADDITIONAL PROVISIONS

35. NOISE CONTROL

35.1 Hauling and Excavating Equipment. All hauling and excavating equipment, including dredges, used on this work shall be equipped with satisfactory mufflers or other noise abatement devices. The CONTRACTOR shall conduct his operations so as to comply with all Federal, State, and local laws pertaining to noise. The use of horns, whistles, signals, and handling of dredge pipelines shall be held to the minimum necessary in order to ensure as quiet an operation as possible while maintaining safety on the job site.

35.2 Dredges and Booster Pumps. Dredges and booster pumps used on this work shall be equipped with satisfactory mufflers and/or other sound abatement devices to reduce engine noise. A sound barrier will be constructed landward of booster pumps in order to reflect noise waterward. The CONTRACTOR shall conduct his operations so as to comply with all Federal, State, and local laws pertaining to noise. The use of horns, whistles, signals, and handling of dredge pipelines shall be held to the minimum necessary in order to insure as quiet an operation as possible.

36. BEACH TILLING

36.1 The CONTRACTOR will till the beach at the discretion and only at written direction of the ENGINEER. The ENGINEER will base his decision regarding the need for tilling upon State and U.S. Fish and Wildlife Service requirements for beach fill compaction. If the CONTRACTOR is required to till the beach, he will be compensated by the unit cost indicated on the bid document for beach tilling. If tilling is not required, the amount of monies indicated as the tilling bid amount in the bid document will be deducted from the total money due the CONTRACTOR.

36.2 Following the completion of beach filling and dressing, the CONTRACTOR may be required to till the constructed portion of the beach to loosen the compaction of the placed material. The tilling shall be by use of a tracked vehicle (bulldozer, loader, or equivalent) by pulling (rear mount) or pushing (front mount) a rake with the tines modified to a length of 30 inches or more and spaced approximately 12 to 18 inches apart. The CONTRACTOR shall conduct additional tilling as necessary to ensure that all of the beach fill has a compaction of less than 500 cone penetrometer units, as determined by the ENGINEER. Tilling will be to a minimum depth of 24 inches throughout the newly placed beach seaward to the visible high water mark.

37. NIGHTTIME OPERATIONS

37.1 Nighttime is that period defined as from 6 p.m. at night until daylight. During nighttime operations, the CONTRACTOR shall utilize the minimum lighting that is necessary to accomplish the work and comply with all OSHA requirements. The CONTRACTOR shall shield or orient the lights to minimize the amount of light that reaches the upland area. The CONTRACTOR shall minimize noise so as not to disturb residents living along the beach in the project area. Beach dressing, grading and tilling will be limited to daylight hours only. Beach diking will be allowed at night on an as needed basis. The CONTRACTOR is strongly encouraged to conduct as much required beach work as possible during daylight hours only. Groin construction shall occur during daylight only.

37.2 The permit contains specific requirements for beach and dredge lighting during sea turtle nesting season. It is the responsibility of the CONTRACTOR to meet lighting requirements contained in the permits for the project, while also meeting OSHA lighting requirements and to ensure safety on the job site.

APPENDIX G-I-C

Borrow Area II Vibracore Logs

HOLE NO. EI-00-04

DRILLING LOG | DIVISION: South Atlantic | INSTALLATION: Jacksonville District | SHEET 1 of 1

1. PROJECT: ESTERO ISLAND BEACH RESTORATION	10. SIZE AND TYPE OF BIT: 3 5/8"
2. LOCATION (Coordinates or Station): X= 685189 Y= 751436	11. DATUM FOR ELEVATION SHOWN (TBM or MSL): NGVD
3. DRILLING AGENCY: Alpine Ocean Seismic Survey Inc.	12. MANUFACTURER'S DESIGNATION OF DRILL: ALPINE PNEUMATIC VIBRACORE
4. HOLE NO. (As shown on drawing title and file number): EI-00-04	13. TOT NO. OF OVERBURDEN SAMPLES TAKEN: Disturbed: 0.0 Undisturbed: 0.0
5. NAME OF DRILLER: MAURIZIO ROSSI	14. TOTAL NO. OF CORE BOXES
6. DIRECTION OF HOLE: VERTICAL	15. ELEVATION GROUND WATER
7. THICKNESS OF BURDEN: 0.0 FT	16. DATE HOLE Started: 8/5/00 Completed: 1317
8. DEPTH DRILLED INTO ROCK: N/A	17. ELEVATION TOP OF HOLE: -10.2 ft
9. TOTAL DEPTH OF HOLE: 19.9 ft	18. TOTAL CORE RECOVERY FOR BORING: 70%
	19. SIGNATURE OF GEOLOGIST: SYED KHALIL

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS
-10.2	0		SAND, fine-grained, little shell hash/shell fragments, Light gray (5Y-7/1) (SP)			
	1				1	Sample #1, Depth = 1' Mean (mm): 0.15, Phi Sorting: 0.62 Silt: 3.0%
-12.3	2		fine-grained, trace shell hash/shell fragments, Light gray (5Y-7/1) (SP) from -10.3' to -12.0'			
-13.7	3		fine-grained, trace shell hash/shell fragments, trace silt, Gray (5Y-6/1) (SP) from -12.0' to -13.4'			
	4		SILTY SAND, fine-grained, trace shell hash/shell fragments, Light gray (5Y-7/1) (SM)		2	Sample #2, Depth = 4.0' Mean (mm): 0.12, Phi Sorting: 0.62 Silt: 13.2%
-15.2	5					
	6					
	7					
	8		SILT, some clay, some shell fragments/shell hash/whole shell, Gray (5Y-5/1) (ML)			
	9					
	10					
-21.4	11					
	12		CARBONATE CLASTS, cobble to pebble size with calcareous/carbonate fines (GP)			
-23.8	13					
	14					
	15					
	16		NO RECOVERY			
	17					
	18					
	19					
-30.1	20		End of Boring			
	21		Note: 1) Soils are field visually classified in accordance with the Unified Soil Classification System.			LAT - LONG 26 26.479 N 81 58.259 W
	22					
	23					
	24					

PROJECT: Estero Beach Restoration | HOLE NUMBER:

HOLE NO. EI-00-10

DRILLING LOG | DIVISION: South Atlantic | INSTALLATION: Jacksonville District | SHEET 1 of 1

1. PROJECT: ESTERO ISLAND BEACH RESTORATION
2. LOCATION (Coordinates or Station): X= 686156 Y= 751368
3. DRILLING AGENCY: Alpine Ocean Seismic Survey Inc.
4. HOLE NO. (As shown on drawing title and file number): EI-00-10
5. NAME OF DRILLER: MAURIZIO ROSSI
6. DIRECTION OF HOLE: VERTICAL
7. THICKNESS OF BURDEN: 0.0 FT
8. DEPTH DRILLED INTO ROCK: N/A
9. TOTAL DEPTH OF HOLE: 19.8 ft
10. SIZE AND TYPE OF BIT: 3 5/8"
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): NGVD
12. MANUFACTURER'S DESIGNATION OF DRILL: ALPINE PNEUMATIC VIBRACORE
13. TOT NO. OF OVERBURDEN SAMPLES TAKEN: Disturbed: 0.0 Undisturbed: 0.0
14. TOTAL NO. OF CORE BOXES:
15. ELEVATION GROUND WATER:
16. DATE HOLE: Started 8/5/00 Completed 1540
17. ELEVATION TOP OF HOLE: -9.2 ft
18. TOTAL CORE RECOVERY FOR BORING: 69%
19. SIGNATURE OF GEOLOGIST: SYED KHALIL

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS
-9.2	0					
	1		SAND, fine to medium-grained, some shell hash/shell fragments, White (5Y-8/1) to Light gray (5Y-7/1) (SP)		1	Sample #1, Depth = 1.0' Mean (mm): 0.24, Phi Sorting: 1.56 Silt: 2.7%
-10.9	2					
	3		fine-grained, trace silt, trace shell hash/shell fragments, Gray (5Y-6/1) (SP) from -9.2' to -10.9'		2	Sample #2, Depth = 4.0' Mean (mm): 0.13, Phi Sorting: 0.67 Silt: 5.0%
-14.2	4					
	5					
	6		SAND, fine-grained, trace shell hash/shell fragments, trace silt, Gray (5Y-5/1) (SP-SM)		3	Sample #3, Depth = 5.8' Mean (mm): 0.15, Phi Sorting: 1.18 Silt: 11.9%
-15.9	7					
	8		SILTY CLAY, some shell hash/fragments/whole shell, partially fluidized between 18.6' & 19.2', Gray (5Y-5/1) (ML-CL)			
	9					
-19.2	10					
	11		CARBONATE CLAST, limestone cobbles/pebble/gravels, fines of lime (GP)			
	12					
-22.8	13					
	14					
	15		NO RECOVERY			
	16					
	17					
	18					
-29	19					
	20		End of Boring			
	21		Note: 1) Soils are field visually classified in accordance with the Unified Soil Classification System.			LAT - LONG 26 24.053 N 81 54.503 W
	22					
	23					
	24					

PROJECT: Estero Beach Restoration | HOLE NUMBER:

DRILLING LOG

DIVISION: South Atlantic

INSTALLATION: Jacksonville District

SHEET 1 of 1

1. PROJECT: ESTERO ISLAND BEACH RESTORATION

2. LOCATION (Coordinates or Station): X= 685444 Y= 750561

3. DRILLING AGENCY: Alpine Ocean Seismic Survey Inc.

4. HOLE NO. (As shown on drawing title and file number): EI-00-11

5. NAME OF DRILLER: MAURIZIO ROSSI

6. DIRECTION OF HOLE: VERTICAL

7. THICKNESS OF BURDEN: 0.0 FT

8. DEPTH DRILLED INTO ROCK: N/A

9. TOTAL DEPTH OF HOLE: 18.1 ft

10. SIZE AND TYPE OF BIT: 3 5/8"

11. DATUM FOR ELEVATION SHOWN (TBM or MSL): NGVD

12. MANUFACTURER'S DESIGNATION OF DRILL: ALPINE PNEUMATIC VIBRACORE

13. TOT NO. OF OVERBURDEN SAMPLES TAKEN: Disturbed: 0.0 Undisturbed: 0.0

14. TOTAL NO. OF CORE BOXES:

15. ELEVATION GROUND WATER:

16. DATE HOLE: Started 8/5/00 Completed 1559

17. ELEVATION TOP OF HOLE: -10.2 ft

18. TOTAL CORE RECOVERY FOR BORING: 75%

19. SIGNATURE OF GEOLOGIST: SYED KHALIL

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS
-10.2	0					
	1		SAND, fine-grained, trace silt, little shell hash/shell fragments between -9.0 '& -9.2', Light gray (5Y-7/1) (SP-SM)		1	Sample #1, Depth = 1.0' Mean (mm): 0.14, Phi Sorting: 0.60 Silt: 5.4%
-12.4	2					
	3		SILTY SAND, fine-grained, some shell hash/shell fragments/whole shell, Gray (5Y-5/1) (SM)		3	Sample #3, Depth = 3.0' Mean (mm): 0.30, Phi Sorting: 2.26 Silt: 13.0%
-14						
-14.6	4		SAND, fine-grained, Light gray (5Y-7/1) (SP)		2	Sample #2, Depth = 4.0' Mean (mm): 0.13, Phi Sorting: 0.42 Silt: 3.5%
	5					
	6		SILT, some clay, some shell hash/shell fragments, some sand, fluidized between 15.9'-16.7', Gray (5Y-5/1) (ML)			
	7					
-18.3	8					
-19.3	9		SILTY CLAY, some shell hash/shell fragments/whole shell up to 3", Dark gray (5Y-4/1) (ML-CL)			
	10					
	11		CARBONATE CLAST, limestone cobbles/pebble/gravels, calcareous/carbonate fines (GP)			
	12					
-23.6	13					
	14					
	15		NO RECOVERY			
	16					
	17					
-28.3	18					
			End of Boring			
	19					
	20					
	21		Note: 1) Soils are field visually classified in accordance with the Unified Soil Classification System.			LAT - LONG 26 23.914 N 81 54.627 W
	22					
	23					
	24					

PROJECT: Estero Beach Restoration | HOLE NUMBER:

HOLE NO. EI-00-14

DRILLING LOG | DIVISION: South Atlantic | INSTALLATION: Jacksonville District | SHEET 1 of 1

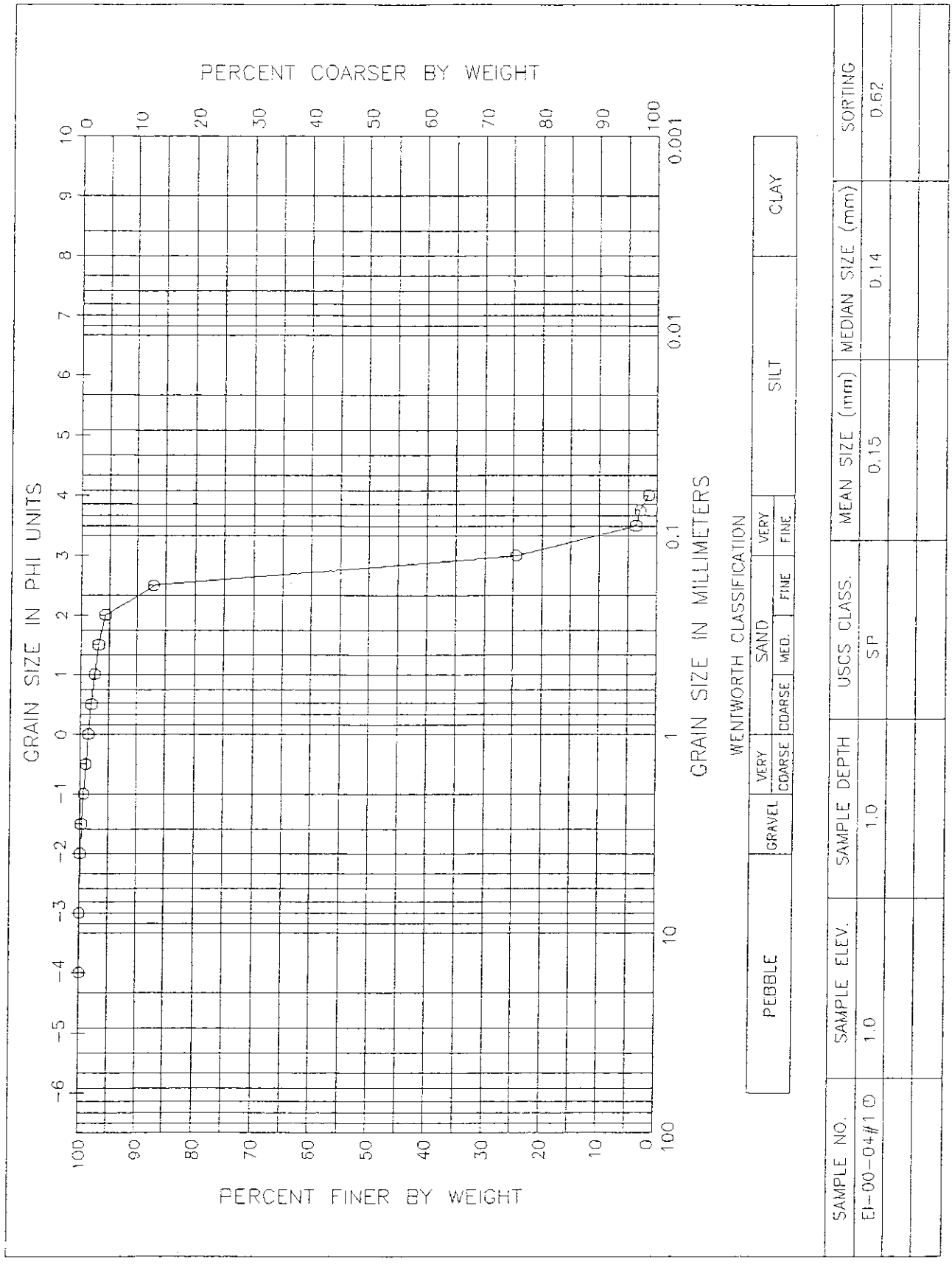
1. PROJECT: ESTERO ISLAND BEACH RESTORATION	10. SIZE AND TYPE OF BIT: 3 5/8"
2. LOCATION (Coordinates or Station): X= 686439 Y= 752508	11. DATUM FOR ELEVATION SHOWN (TBM or MSL): NGVD
3. DRILLING AGENCY: Alpine Ocean Seismic Survey Inc.	12. MANUFACTURER'S DESIGNATION OF DRILL: ALPINE PNEUMATIC VIBRACORE
4. HOLE NO. (As shown on drawing title and file number): EI-00-14	13. TOT NO. OF OVERBURDEN SAMPLES TAKEN: Disturbed: 0.0 Undisturbed: 0.0
5. NAME OF DRILLER: MAURIZIO ROSSI	14. TOTAL NO. OF CORE BOXES
6. DIRECTION OF HOLE: VERTICAL	15. ELEVATION GROUND WATER
7. THICKNESS OF BURDEN: 0.0 FT	16. DATE HOLE Started: 8/6/00 Completed: 1511
8. DEPTH DRILLED INTO ROCK: N/A	17. ELEVATION TOP OF HOLE: -8.3 ft
9. TOTAL DEPTH OF HOLE: 18.7 ft	18. TOTAL CORE RECOVERY FOR BORING: 96%
	19. SIGNATURE OF GEOLOGIST: SYED KHALIL

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS
-8.3	0					
	1		SAND, fine-grained, trace shell hash/shell fragments, trace silt from 11.2' - 12.5', Light gray (5Y-7/1) (SP)		1	Sample #1, Depth = 1.0' Mean (mm): 0.21, Phi Sorting: 1.42 Silt: 3.9%
	2					
	3					
	4				2	Sample #2, Depth = 4.0' Mean (mm): 0.15, Phi Sorting: 0 67 Silt: 2.7%
-13.4						
-13.9	5		shell, zone of whole shell/shell hash/shell fragments, trace of fine sand, (SP) from -13.4' to -13.9'			
-14.7	6		fine-grained, trace shell hash/shell fragments, Gray (5Y-5/1) (SP) from -13.9' to -14.7'			
	7		shell, zone of whole shell/shell hash/shell fragments, trace of fine sand, (SP) from -14.7' to 15.1'		3	Sample #3, Depth = 7.0' Mean (mm): 0.14, Phi Sorting: 1.08 Silt: 11.2%
-17	8		SAND, fine-grained, trace shell hash/shell fragments, trace silt, Gray (5Y-5/1) (SP-SM)			
-18.5	9		SILT, some clay, some shell hash/shell fragments & whole shell, Gray (5Y-5/1) (ML)			
	10					
	11					
	12					
	13		CARBONATE CLAST, limestone cobbles/pebble/gravels, calcareous/carbonate fines, Light gray (5Y-7/1) to White (5Y-8/1) (GP)			
	14					
	15					
	16					
	17					
-27.1	18					
-27.6			NO RECOVERY			
	19		End of Boring			
	20					
	21		Note: 1) Soils are field visually classified in accordance with the Unified Soil Classification System.			LAT - LONG 26 24.237 N 81 54.453 W
	22					
	23					
	24					

PROJECT: Estero Beach Restoration | HOLE NUMBER:

APPENDIX G-I-D

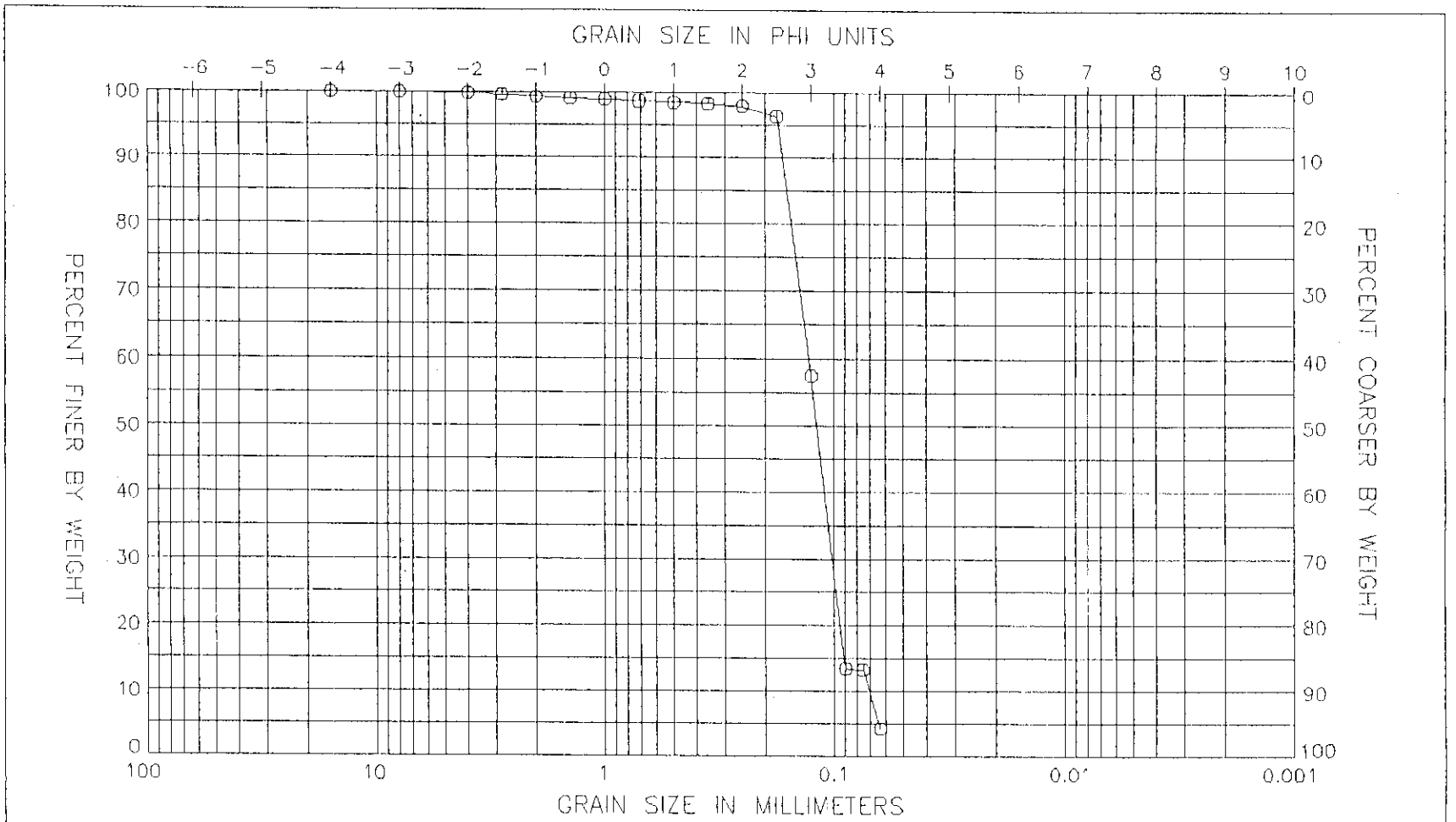
Borrow Area II Grain Size Distribution Curves



SAMPLE NO.	SAMPLE ELEV.	SAMPLE DEPTH	USCS CLASS.	MEAN SIZE (mm)	MEDIAN SIZE (mm)	SORTING
EI-00-04#10	1.0	1.0	SP	0.15	0.14	0.62

GRAIN SIZE DISTRIBUTION CURVE
ESTERO VC 2000

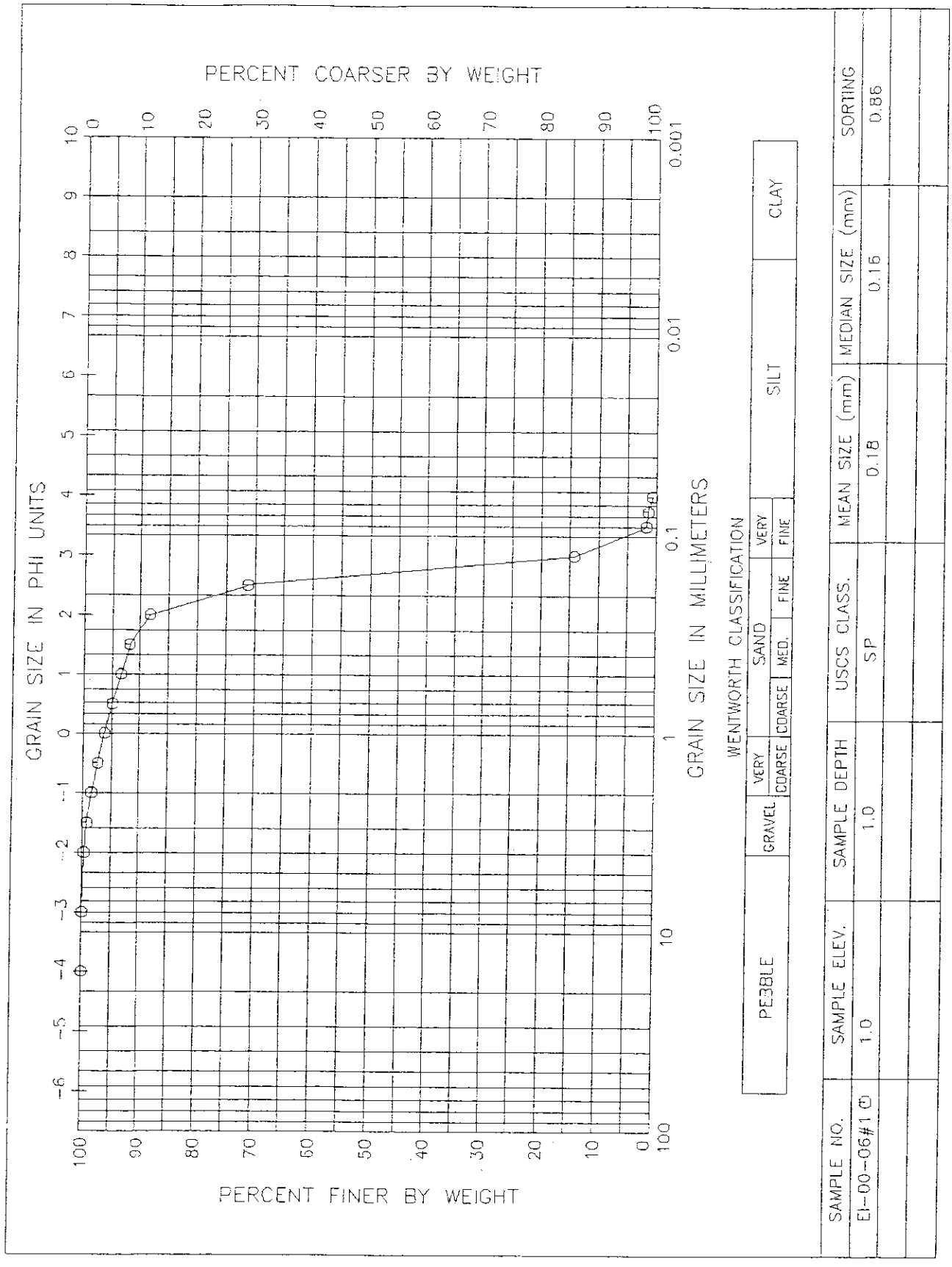
GRAIN SIZE DISTRIBUTION CURVE
ESTERO VC 2000



WENTWORTH CLASSIFICATION

PEBBLE	GRAVEL	VERY COARSE	SAND			VERY FINE	SILT	CLAY
			COARSE	MED.	FINE			

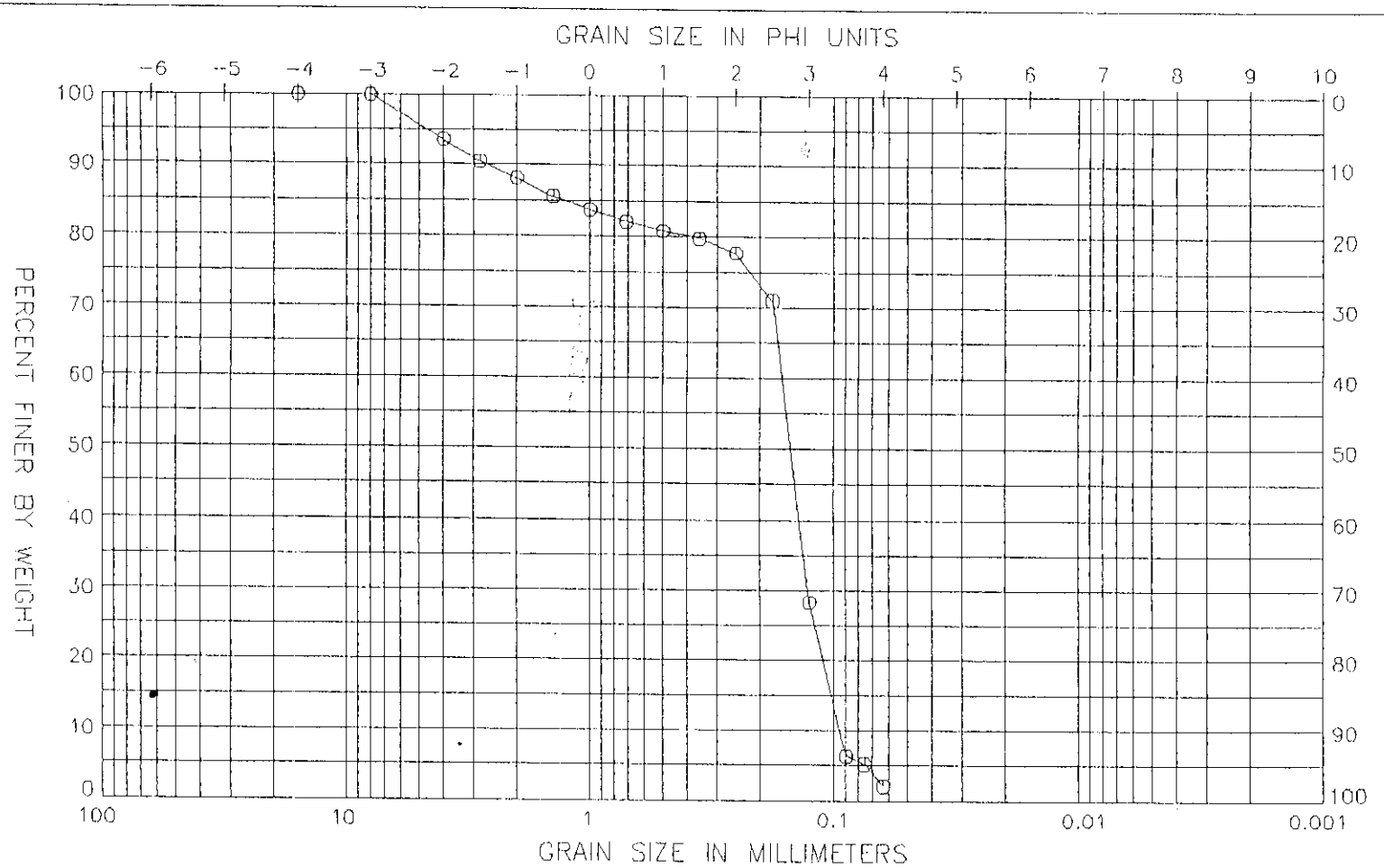
SAMPLE NO.	SAMPLE ELEV.	SAMPLE DEPTH	USCS CLASS.	MEAN SIZE (mm)	MEDIAN SIZE (mm)	SORTING
EI-00-04#2 D	4.0	4.0	SP-SM	0.12	0.12	0.62



SAMPLE NO.	SAMPLE ELEV.	SAMPLE DEPTH	USCS CLASS.	MEAN SIZE (mm)	MEDIAN SIZE (mm)	SORTING
EI-00-06#1①	1.0	1.0	SP	0.18	0.16	0.86

GRAIN SIZE DISTRIBUTION CURVE
ESTERO VC 2000

GRAIN SIZE DISTRIBUTION CURVE
ESTERO VC 2000

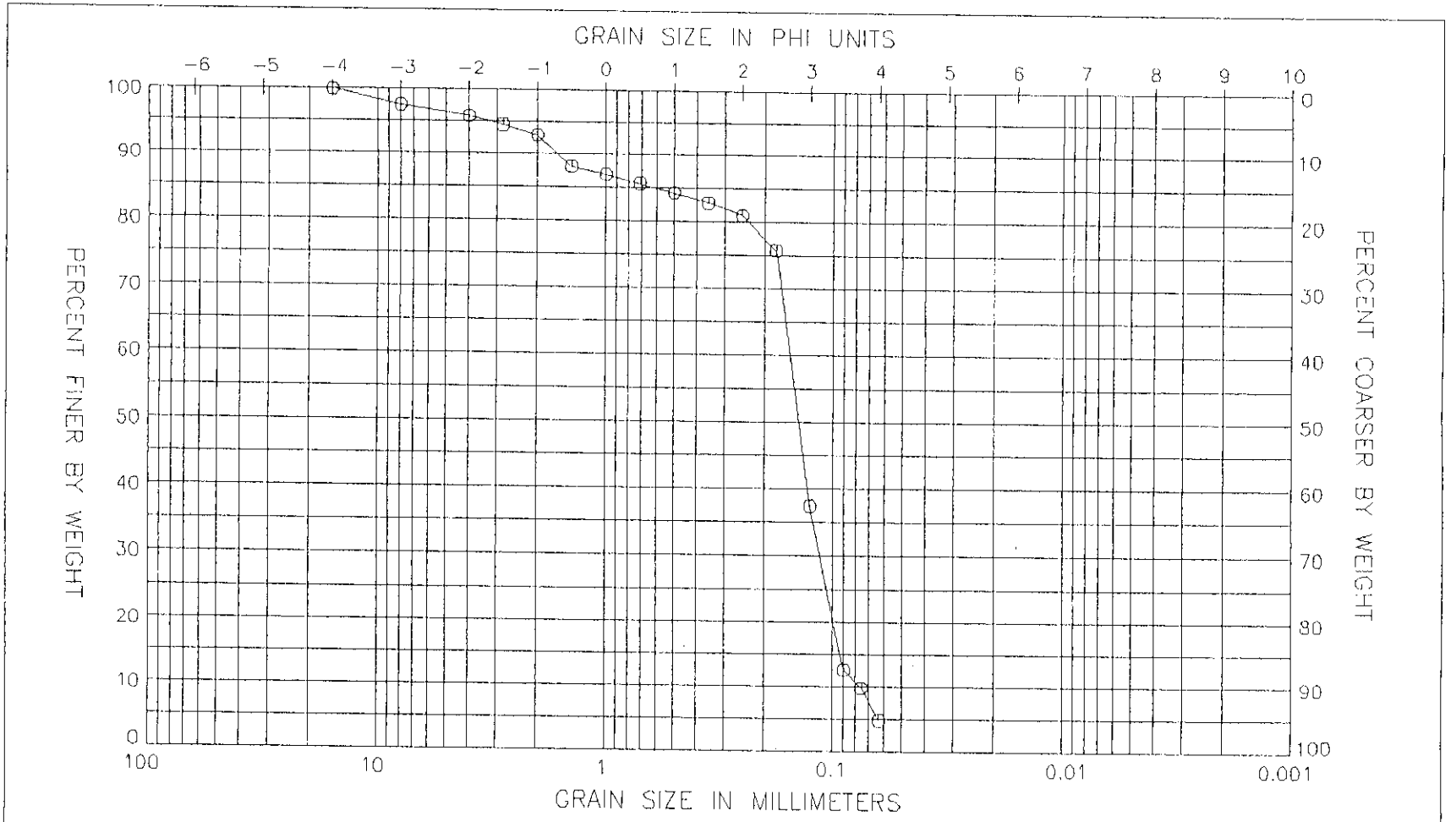


WENTWORTH CLASSIFICATION

PEBBLE	GRAVEL	VERY COARSE	SAND			VERY FINE	SILT	CLAY
			COARSE	MED.	FINE			

SAMPLE NO.	SAMPLE ELEV.	SAMPLE DEPTH	USCS CLASS.	MEAN SIZE (mm)	MEDIAN SIZE (mm)	SORTING
EI-00-6#2 ①	3.0	3.0	SP-SM	0.24	0.15	1.77

GRAIN SIZE DISTRIBUTION CURVE
ESTERO VC 2000

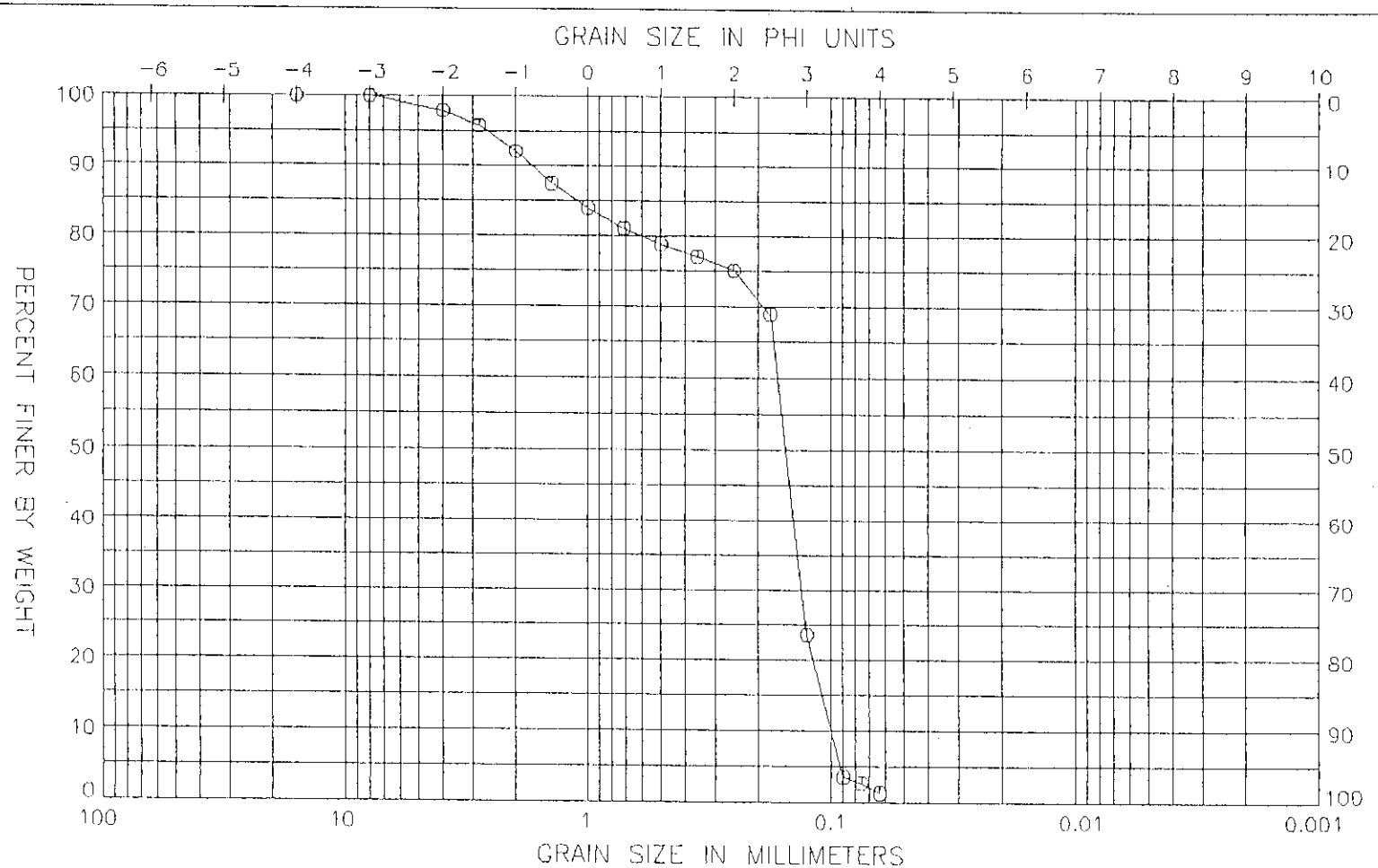


WENTWORTH CLASSIFICATION

PEBBLE	GRAVEL	VERY COARSE	SAND COARSE	SAND MED.	SAND FINE	VERY FINE	SILT	CLAY

SAMPLE NO.	SAMPLE ELEV.	SAMPLE DEPTH	USCS CLASS.	MEAN SIZE (mm)	MEDIAN SIZE (mm)	SORTING
EI-00-06#3 ⏲	4.0	4.0	SP-SM	0.21	0.14	1.70

GRAIN SIZE DISTRIBUTION CURVE
ESTERO VC 2000

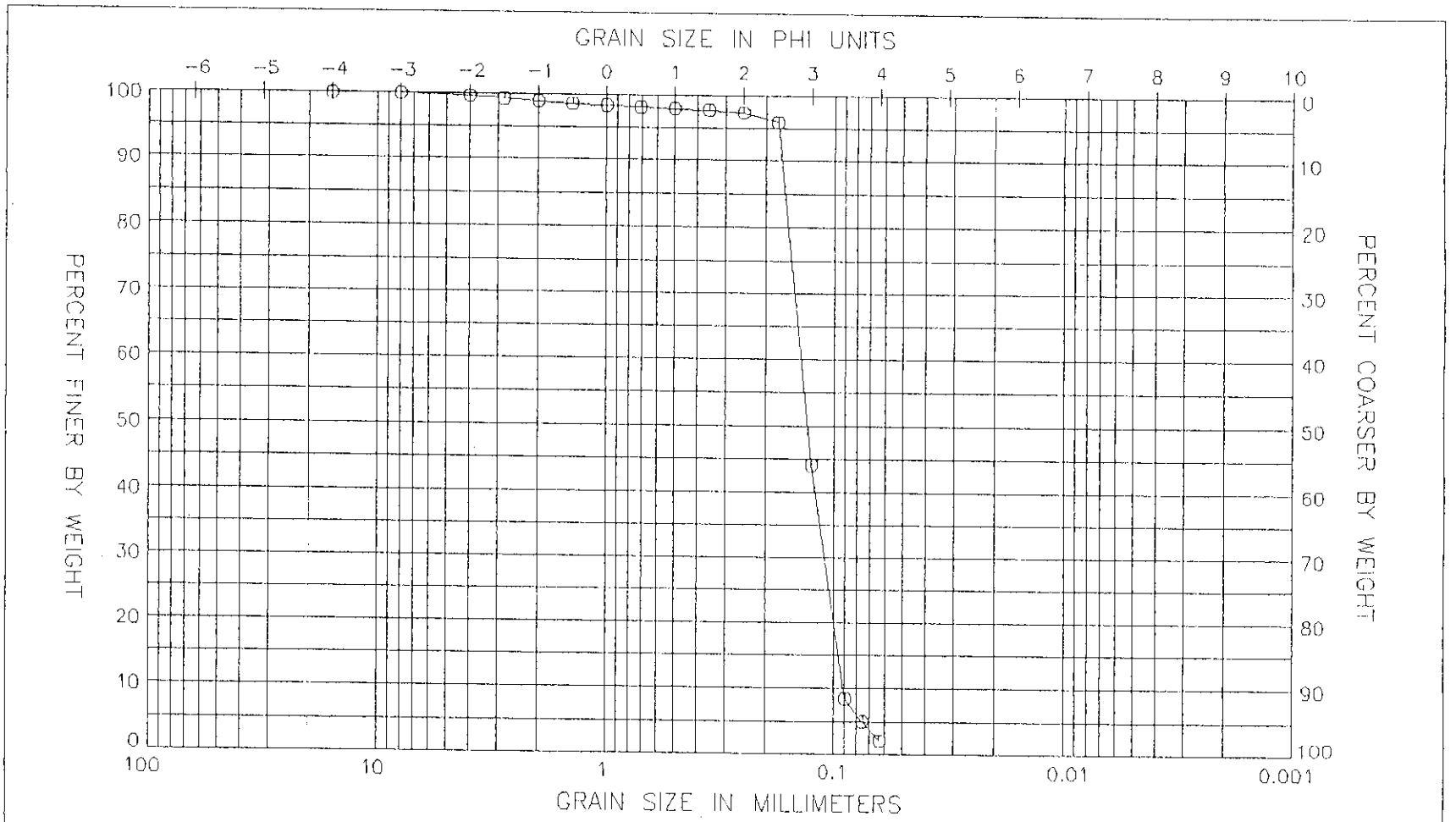


WENTWORTH CLASSIFICATION

PEBELE	GRAVEL	VERY COARSE	SAND COARSE	SAND MED.	SAND FINE	VERY FINE	SILT	CLAY

SAMPLE NO.	SAMPLE ELEV.	SAMPLE DEPTH	USCS CLASS.	MEAN SIZE (mm)	MEDIAN SIZE (mm)	SORTING
EI-00-10#1 Ⓓ	1.0	1.0	SP	0.24	0.15	1.56

GRAIN SIZE DISTRIBUTION CURVE
ESTERO VC 2000

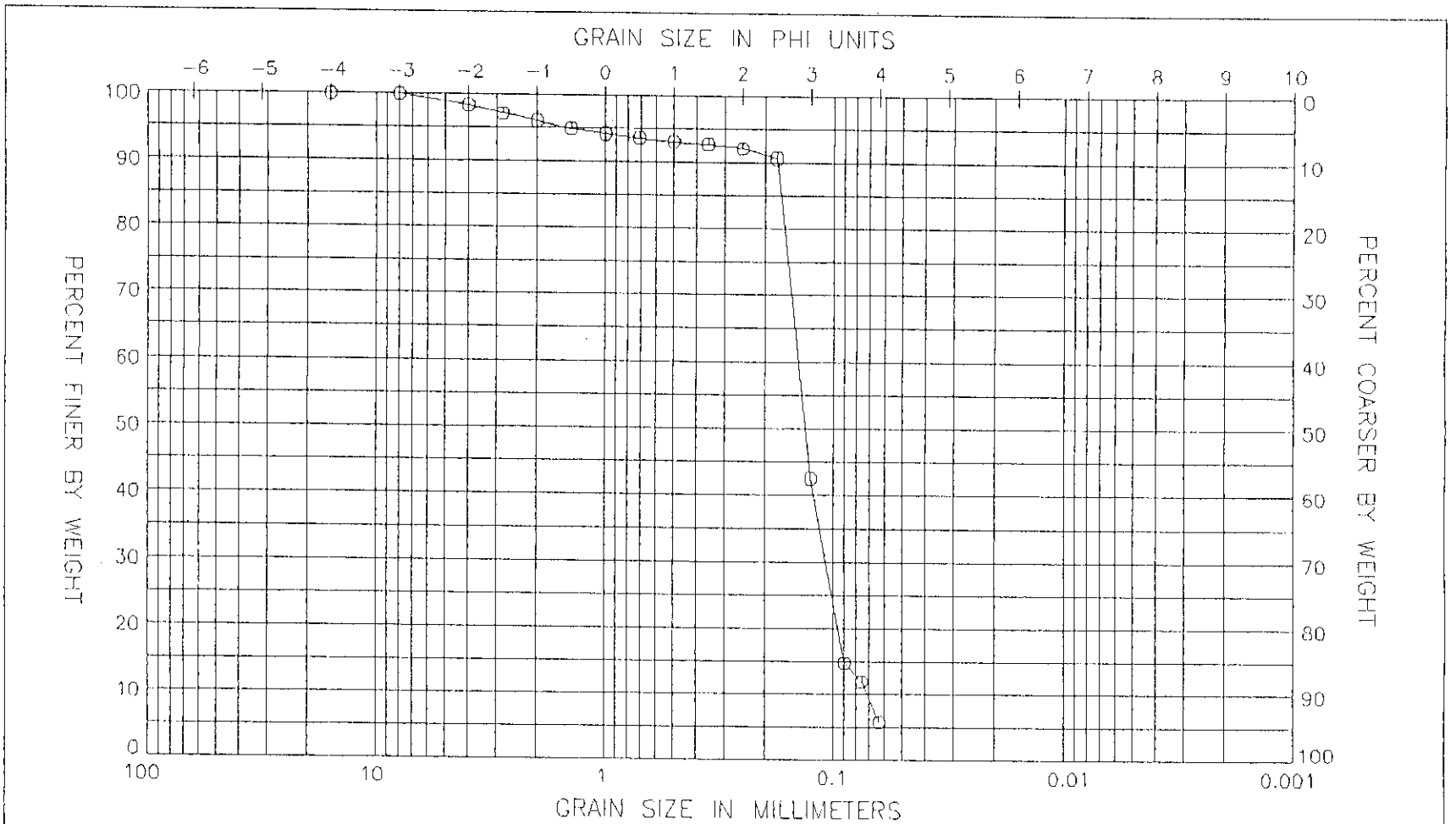


WENTWORTH CLASSIFICATION

PEBBLE	GRAVEL	VERY COARSE	SAND COARSE	SAND MED.	SAND FINE	VERY FINE	SILT	CLAY

SAMPLE NO.	SAMPLE ELEV.	SAMPLE DEPTH	USCS CLASS.	MEAN SIZE (mm)	MEDIAN SIZE (mm)	SORTING
EI-00-10#2 ⊙	4.0	4.0	SP-SM	0.13	0.13	0.67

GRAIN SIZE DISTRIBUTION CURVE
ESTERO VC 2000

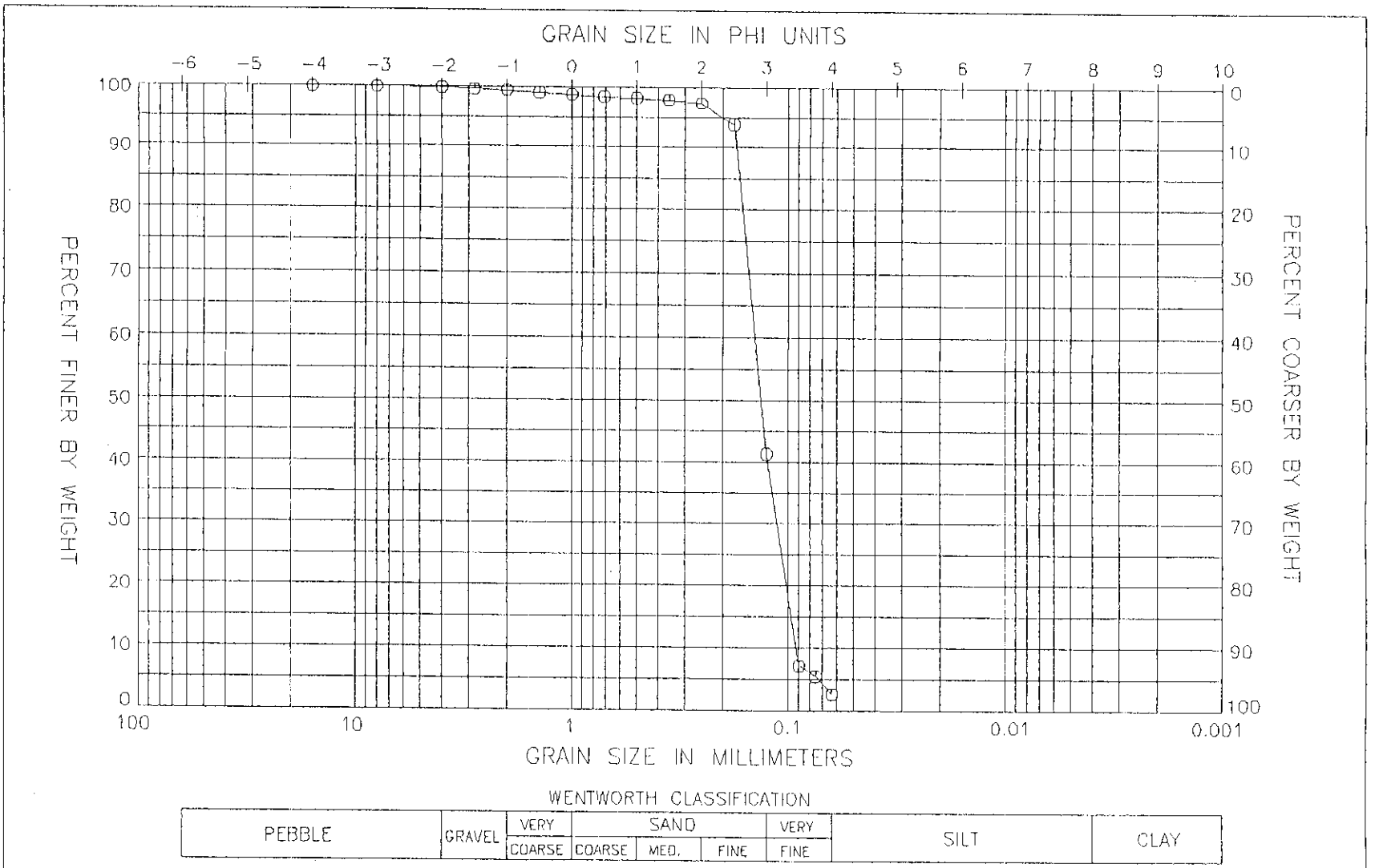


WENTWORTH CLASSIFICATION

PEBBLE	GRAVEL	VERY COARSE	SAND			VERY FINE	SILT	CLAY
			COARSE	MED.	FINE			

SAMPLE NO.	SAMPLE ELEV.	SAMPLE DEPTH	USCS CLASS.	MEAN SIZE (mm)	MEDIAN SIZE (mm)	SORTING
EI-00-10#3 ⊙	5.8	5.8	SP-SM	0.15	0.13	1.18

GRAIN SIZE DISTRIBUTION CURVE
ESTERO VC 2000

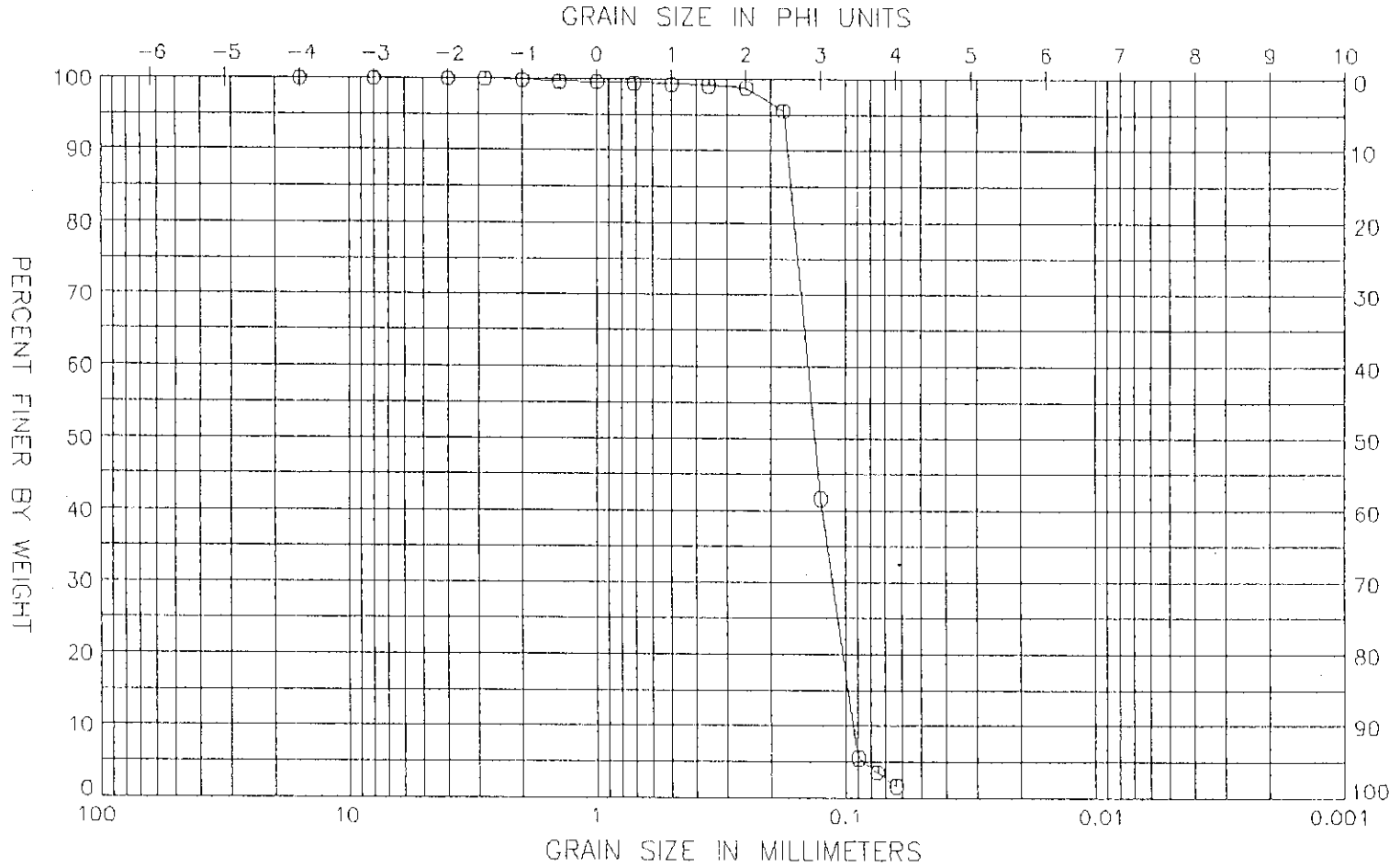


WENTWORTH CLASSIFICATION

PEBBLE	GRAVEL	VERY COARSE	SAND COARSE	SAND MED.	SAND FINE	VERY FINE	SILT	CLAY

SAMPLE NO.	SAMPLE ELEV.	SAMPLE DEPTH	USCS CLASS.	MEAN SIZE (mm)	MEDIAN SIZE (mm)	SORTING
EI-00-11#1 ①	1.0	1.0	SP-SM	0.14	0.13	0.60

GRAIN SIZE DISTRIBUTION CURVE
ESTERO VC 2000

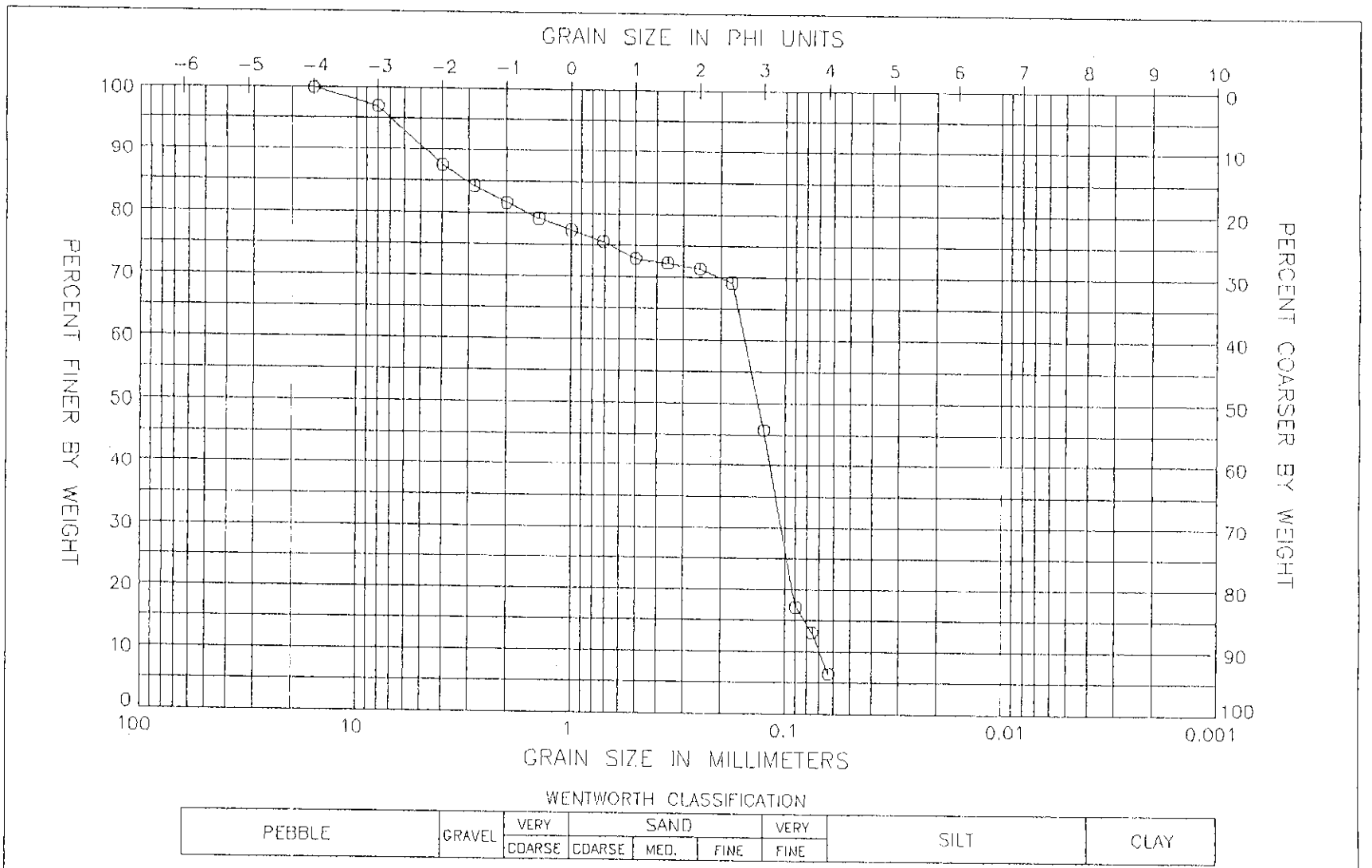


WENTWORTH CLASSIFICATION

PEBBLE	GRAVEL	VERY COARSE	SAND			VERY FINE	SILT	CLAY
			COARSE	MED.	FINE			

SAMPLE NO.	SAMPLE ELEV.	SAMPLE DEPTH	USCS CLASS.	MEAN SIZE (mm)	MEDIAN SIZE (mm)	SORTING
EI-00-11#2 O	4.0	4.0	SP	0.13	0.13	0.42

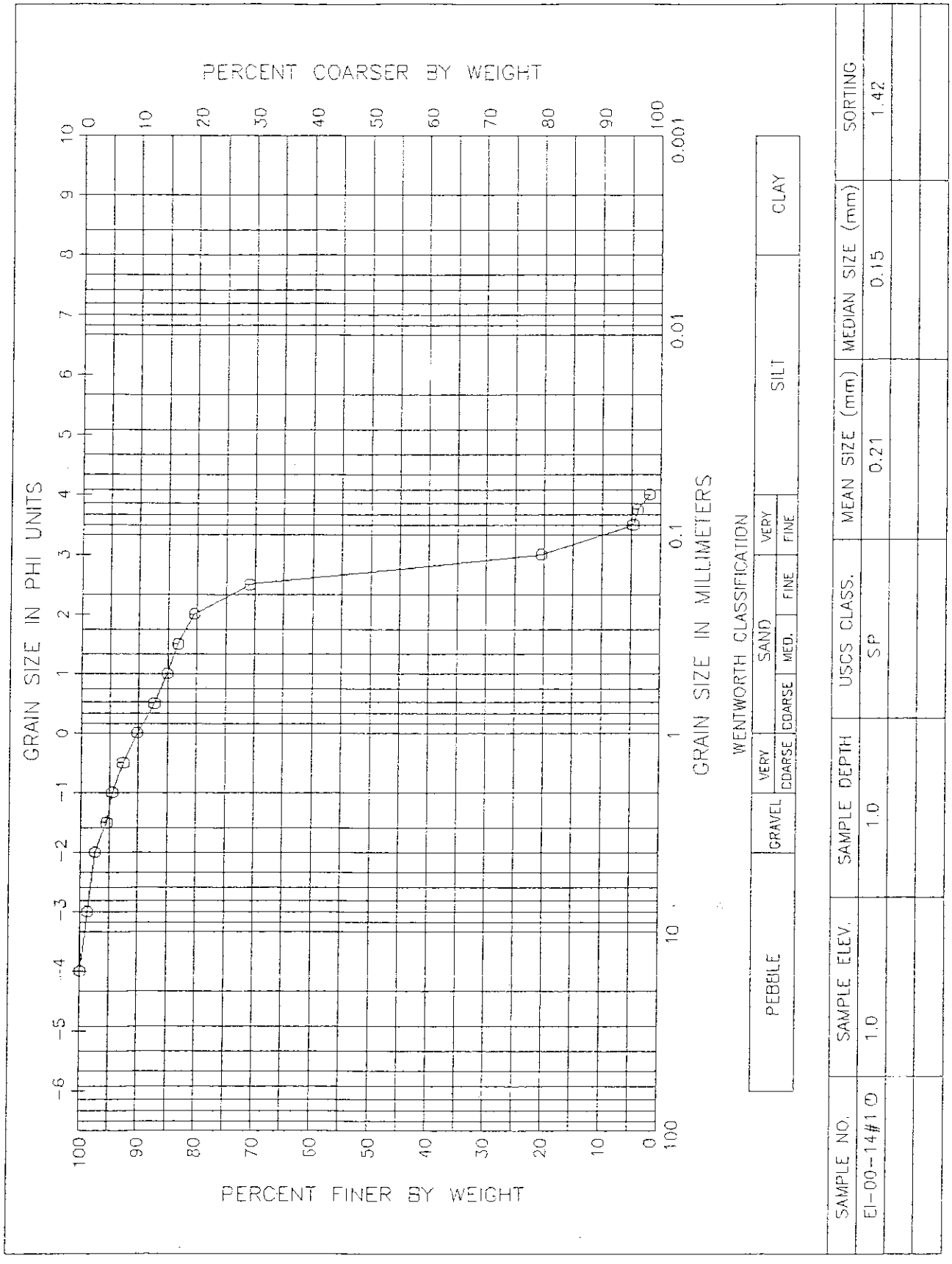
GRAIN SIZE DISTRIBUTION CURVE
ESTERO VC 2000



WENTWORTH CLASSIFICATION

PEBBLE	GRAVEL	VERY COARSE	SAND			VERY FINE	SILT	CLAY
			COARSE	MED.	FINE			

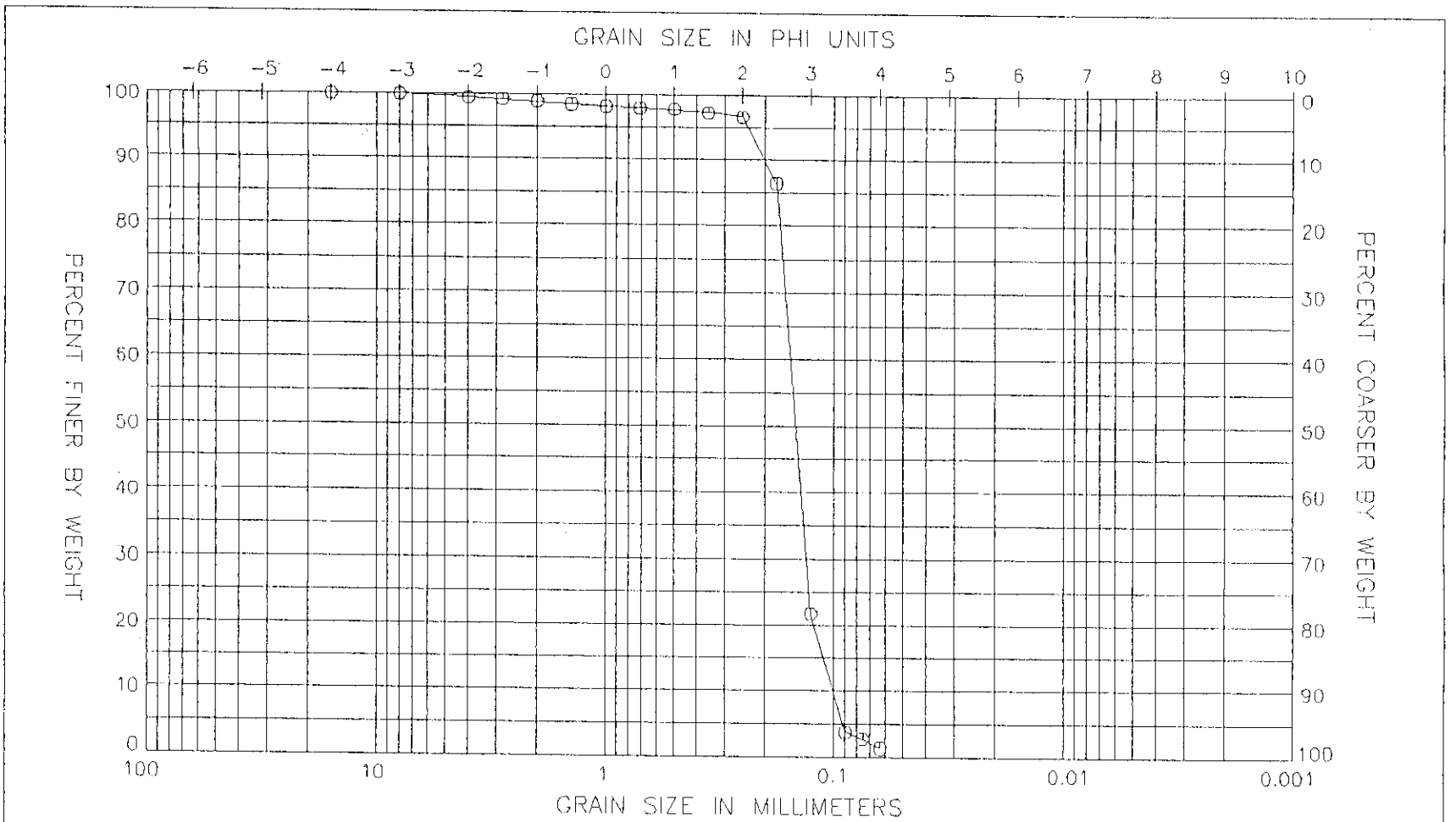
SAMPLE NO.	SAMPLE ELEV.	SAMPLE DEPTH	USCS CLASS.	MEAN SIZE (mm)	MEDIAN SIZE (mm)	SORTING
EI-00-11#3 ⏲	3.0	3.0	SP-SM	0.30	0.13	2.26



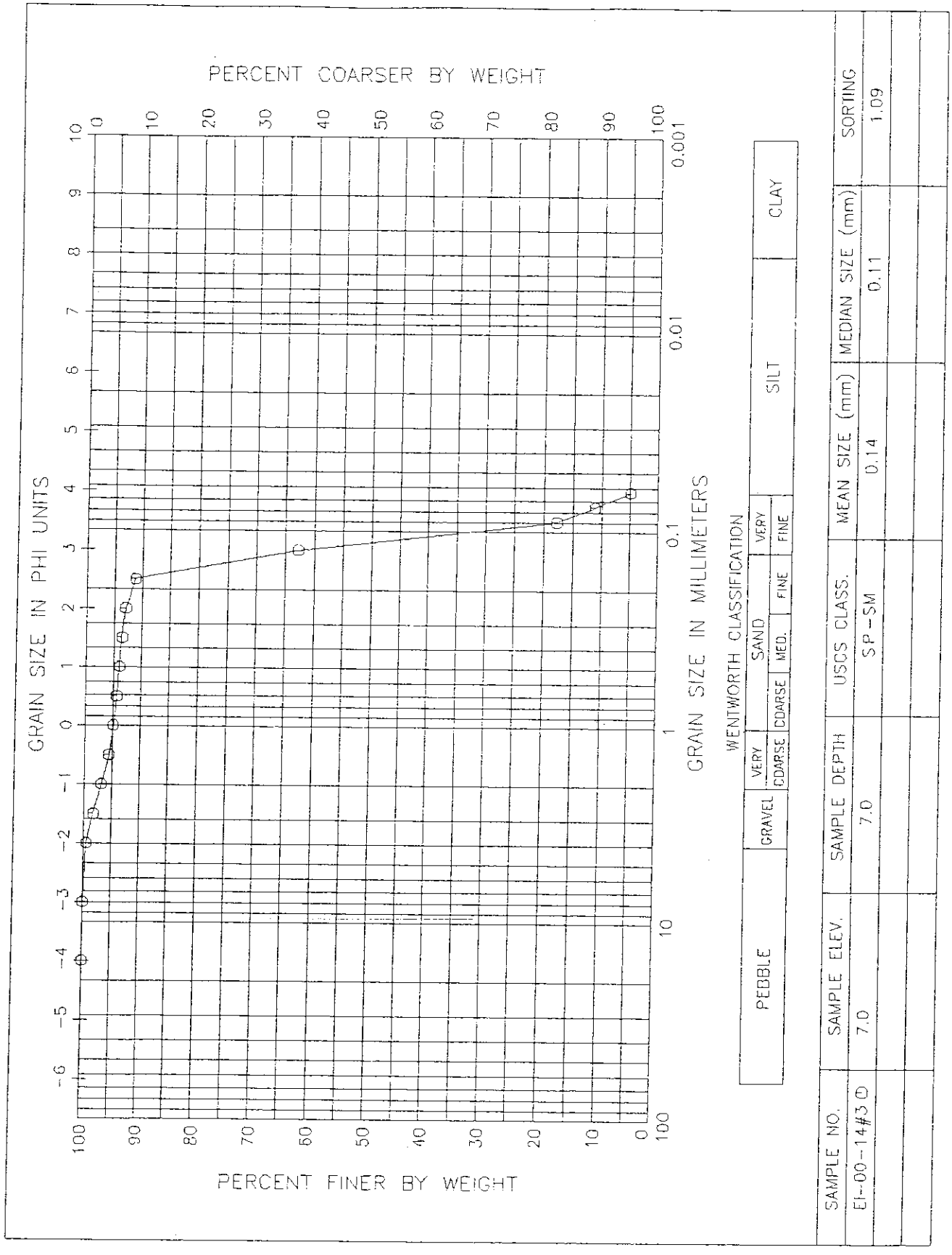
SAMPLE NO.	SAMPLE ELEV.	SAMPLE DEPTH	USCS CLASS.	MEAN SIZE (mm)	MEDIAN SIZE (mm)	SORTING
EI-00-14#10	1.0	1.0	SP	0.21	0.15	1.42

GRAIN SIZE DISTRIBUTION CURVE
ESTERO VC 2000

GRAIN SIZE DISTRIBUTION CURVE
ESTERO VC 2000



SAMPLE NO.	SAMPLE ELEV.	SAMPLE DEPTH	USCS CLASS.	MEAN SIZE (mm)	MEDIAN SIZE (mm)	SORTING
EI-00-14#2 D	4.0	4.0	SP	0.15	0.15	0.67



SAMPLE NO.	SAMPLE ELEV.	SAMPLE DEPTH	USCS CLASS.	MEAN SIZE (mm)	MEDIAN SIZE (mm)	SORTING
EI-00-14#3 D	7.0	7.0	SP-SM	0.14	0.11	1.09

GRAIN SIZE DISTRIBUTION CURVE
ESTERO VC 2000

PART H

LEE COUNTY, FLORIDA
ESTERO ISLAND

BEACH RENOURISHMENT PROJECT

ENVIRONMENTAL PROTECTION

PART H
ENVIRONMENTAL PROTECTION

TABLE OF CONTENTS

Appendices

PART H
ENVIRONMENTAL PROTECTION

1. SCOPE

This section addresses the prevention of pollution and other environmental damage as the result of construction operations under this contract and for those measures set forth in the Technical Provisions. For the purpose of this specification, pollution and other environmental damage are defined as the presence of chemical, physical, or biological elements or agents which adversely affect human health or welfare; unfavorably alter ecological balances of importance to human life; affect other species of importance to man; or degrade the utility of the environment for aesthetic, cultural, and/or historical purposes, or damage/destroy hardbottom habitats such as reef formations. The control of pollution and damage requires consideration of air, water, land and the marine environment and includes management of construction activities, visual aesthetics, noise, solid waste, radiant energy, and radioactive materials, as well as other pollutants. The CONTRACTOR shall fulfill these specifications at the CONTRACTOR's expense.

2. QUALITY CONTROL

The CONTRACTOR shall establish and maintain quality control for environmental protection for all items set forth herein. The CONTRACTOR shall record on Daily Quality Control reports any problems in complying with laws, regulations and ordinances, as well as project permits, and corrective action taken.

3. PERMITS

The CONTRACTOR shall comply with all requirements under the terms and conditions set out in all permits applicable to the work. Project permit copies are provided as appendices to this section of the contract. Specifically, the CONTRACTOR will familiarize himself with specific conditions contained in the Department of Environmental Protection (DEP) and U.S. Army Corps of Engineers (USACE) permits and other State approvals for the project. Any other licenses, easements or approvals required, including, but not limited to those which may be required by LEE COUNTY, shall be secured and paid for by the CONTRACTOR. A copy of each permit and approval is provided in the appendices, and are a part of the contract documents.

4. SUBCONTRACTORS

Assurance of compliance with all sections of the contract by subcontractors will be the responsibility of the CONTRACTOR, including compliance with all environmental and permit requirements.

5. NOTIFICATION

The ENGINEER will notify the CONTRACTOR and the COUNTY of any observed noncompliance with the aforementioned Federal, State, or local laws or regulations, permits and other elements of

the CONTRACTOR's environmental protection plan. The COUNTY will determine what action will be taken and such response will be transmitted to the CONTRACTOR by the ENGINEER which may include stopping construction of the project until the CONTRACTOR complies with the environmental protection plan. Nevertheless, it remains the sole responsibility of the CONTRACTOR to comply with all applicable Federal, State or Local laws or regulations, permits and all elements of the environmental protection plan. It will also be the CONTRACTOR's responsibility to advise all subcontractors to comply with all applicable laws, regulations, permit requirements and all elements of the environmental protection plan.

6. TURBIDITY CONTROL AND WATER QUALITY MONITORING

6.1 The CONTRACTOR shall be bound and obligated to maintain the quality of the State's waters as stipulated in Chapter 17-3 of the Florida Administrative Code. The CONTRACTOR will conduct water quality monitoring procedures as defined in the permits for the project. Water quality monitoring will be included in the project construction bid as a portion of the lump sum cost for environmental monitoring. The CONTRACTOR will also provide the ENGINEER with daily water quality monitoring reports immediately after completion of the water quality analysis.

6.2 The DEP permit for the project requires water quality monitoring to occur twice daily at the beach and once daily at the borrow area during project construction. Water quality samples are to be analyzed immediately after collection. Water samples shall be tested using a HACH 16800, 2100A, 2100N, 2100AN or 2100P turbidity meter or equivalent as approved by the ENGINEER. The turbidity meter shall be calibrated by the manufacturer within one year prior to the beginning of the project. Written documentation shall be submitted to the ENGINEER. The meter shall be calibrated with standards prior to each use. Reports, including all information required by the FDEP permit, shall be provided to the ENGINEER on a daily basis. Under no circumstances will more than two (2) hours lapse between collection and analysis of the samples. If a water quality violation is recorded, the CONTRACTOR is required to immediately cease construction activities and contact the ENGINEER with the results of the water quality analysis.

6.3 The CONTRACTOR is to follow all requirements concerning water quality as provided by permits for the project. In the event of a turbidity violation, the CONTRACTOR will take immediate corrective action indicated in project permits which could include stopping work, changing construction or environmental protection methods, relocation of the dredge in the borrow area or other action. Construction activities may not resume until water quality has returned to within standards (as provided by the DEP - Wetland Resources permit). Additionally, when construction is occurring in the Big Carlos Pass area at the south Estero Island segment, the CONTRACTOR shall construct the beach from east to west and the hydraulic dredge operation will position the discharge pipe facing west towards the Gulf of Mexico.

6.4 Water quality monitoring will be performed by the CONTRACTOR, as stated in Section 6 and provided for by Department of Environmental Protection permit no. 0173059-001-JC.

The permit is provided in Appendix H-I-A of this section. All reporting to the Department of Environmental Protection will be provided by the ENGINEER.

6.5 Estero Bay Aquatic Preserve

Turbidity requirements for the preserve are more restrictive than for other waters in the project area. Any turbidity above background may warrant stopping dredging. The preserve begins in the vicinity of the bridge across Big Carlos Pass.

7. PROTECTION OF ENVIRONMENTAL RESOURCES

The environmental resources within the project boundaries and those affected outside the limits of permanent work under this contract shall be protected during the entire period of this contract. The CONTRACTOR shall confine his/her activities to areas defined by the drawings and specifications. Environmental protection shall be as stated in the following subparagraphs.

7.1 Protection of Land Resources

Prior to the beginning of any construction, the ENGINEER shall identify all land resources to be preserved within the CONTRACTOR's work area, which is defined as the beach seaward of the vegetation line. The CONTRACTOR shall not remove, cut, deface, injure, or destroy land resources including sand dune or berm vegetation, trees, shrubs, vines, grasses, top soil, and land forms without direct written permission from COUNTY. No ropes, cables, or guys shall be fastened to or attached to any trees for anchorage unless specifically authorized. Where such special emergency use is allowed, the CONTRACTOR shall provide effective protection for land and vegetation resources at all times as defined in the following paragraphs. The CONTRACTOR will be responsible for the replacement of any damaged or destroyed vegetation, to the satisfaction of the COUNTY or ENGINEER. Failure to replace damaged or destroyed vegetation by the CONTRACTOR will result in replacement by the COUNTY; cost of replacement will be deducted from monies due to the CONTRACTOR, or from monies which will be due to the CONTRACTOR by the COUNTY.

7.1.1 Work Area Limits. Isolated areas (if any) within the work area which are to be saved and protected shall also be identified by the ENGINEER or COUNTY and marked or fenced by the CONTRACTOR. All monuments and markers shall be protected before construction operations commence. Where construction operations are to be conducted during darkness, the marks shall be visible. The CONTRACTOR shall convey to all subcontractors and personnel the purpose of marking and/or protection for all necessary objects.

7.1.2 Protection of Landscape. Trees, shrubs, vines, grasses, land forms, and other landscape features within the work area to be preserved shall be identified by the ENGINEER or COUNTY, and clearly delineated by the CONTRACTOR, by marking, fencing, or wrapping with boards, or any other techniques approved by the

ENGINEER. Unless otherwise approved by the ENGINEER or COUNTY, no trees, shrubs, vines, grasses or other vegetation will be harmed or destroyed by the CONTRACTOR for any purpose. The CONTRACTOR is to avoid all vegetation located above the vegetation line. The CONTRACTOR shall relocate any sea oats that may be affected by construction activities. Relocation shall be done on public land immediately adjacent to the disturbed areas.

7.1.3. Hydraulic Fill Placement. To avoid damage, no hydraulic fill will be placed within 25 feet of dunes, seawalls, structures, or vegetation by direct pipeline discharge. Mechanical or manual means shall be used to place such material.

7.1.4. Critical Wildlife Area. No construction can occur on the sand spit (R-200 to R-208), known as Little Estero Island. All pipeline routes will avoid this area. The sand spit is a significant nesting area for snowy plovers, willet, least terns, and black skimmers, and is a wintering area for 68 species of shore and wading birds. It is listed as one of the largest shorebird colonies in southwestern Florida. The shoal was named a Critical Wildlife area by the Florida Game & Fresh Water Fish Commission on July 17, 1992 (H & M). It is posted with signs, closing specific areas to pedestrian traffic from April 1 to August 31 each year.

7.1.5. Retardation and Control of Runoff. Runoff from the construction site shall be controlled by construction of diversion ditches, benches and berms to retard and divert runoff to protected drainage courses, and any measures required by areawide plans approved under paragraph 208 of the Clean Water Act. Dikes will be constructed above the mean high water line and maintained in continuous repair to allow partial settling of fine materials from dredging, or as required by permit documents. The ENGINEER can require the CONTRACTOR to extend dikes up to 500 feet in length if it is deemed necessary for retardation and control of runoff. The extension of dikes, if required, will be provided by the CONTRACTOR at no additional cost.

7.1.6 Temporary Excavations. Embankments for plant and/or work areas shall be controlled to protect adjacent areas from despoilment.

7.1.7 Disposal of Solid Wastes. Solid wastes (including clearing debris) shall be placed in containers provided by the CONTRACTOR which are emptied on a regular schedule. The CONTRACTOR will empty containers when three-quarters full and will avoid overflow conditions. All handling and disposal shall be conducted to prevent contamination. No steel, cables, wire, pipe, drums OR ANY OTHER DEBRIS shall be permitted to be disposed overboard into the waters of the Gulf of Mexico or any other water body. Disposal of solid wastes or debris in the Gulf of Mexico is a violation of State and Federal laws. If such debris is found, the debris shall be removed by the CONTRACTOR at his own cost, or the cost of removal deducted from the CONTRACTOR's final payment.

7.1.8 Disposal of Chemical Waste. Chemical waste shall be stored in corrosion resistant containers, removed from the work area and disposed of in accordance with Federal, State, and Local regulations. The CONTRACTOR shall perform all maintenance of equipment, including but not limited to refueling, filter changes, and replacement of hydraulic lines in a manner so as not to contaminate soils, ground or surface waters, or any other natural resources.

7.1.9 Disposal of Discarded Materials. Discarded materials other than those which can be included in the solid waste category will be handled by the CONTRACTOR as directed by the ENGINEER or COUNTY.

7.2 Protection of Fish and Wildlife Resources. The CONTRACTOR shall keep construction activities under continued surveillance, management, and control to minimize interference with, disturbance to, and damage of fish and wildlife. Species that require specific consideration, as well as measures for their protection, will be addressed in the CONTRACTOR's Environmental Protection Plan prior to the beginning of project construction. If project construction occurs during a portion of the sea turtle nesting season (May 1 to October 31), construction pipes shall be placed parallel to shore whenever possible, and as far landward as possible without impacting the dune system, structures, or access points. To minimize adverse effects to sea turtles, nighttime lighting will comply with permit conditions for the project and include screening and shielding lights where possible. All temporary storage of pipes or equipment shall be off the beach whenever possible, or as far landward as possible without impacting the dune system, structures or access points. The CONTRACTOR shall comply with permit requirements regarding beach lighting and dates of construction.

7.2.1 Manatee Protection. In order to ensure that manatees are not adversely affected by construction activities, the CONTRACTOR shall adhere to the following conditions:

7.2.1.1 The CONTRACTOR will instruct all personnel associated with the project of the potential presence of manatees and the need to avoid collisions with manatees. All construction personnel are responsible for observing water-related activities for the presence of manatee(s), and shall implement appropriate precautions to ensure protection of the manatee(s).

7.2.1.2 All construction personnel will be advised by the CONTRACTOR that there are civil and criminal penalties for harming, harassing or killing manatees which are protected under the Marine Mammal Protection Act of 1972, the Endangered Species Act of 1973, and the Florida Manatee Sanctuary Act. The CONTRACTOR may be held responsible for any manatee harmed, harassed, or killed as a result of construction activities.

7.2.1.3 Prior to commencement of construction, the CONTRACTOR shall construct and display at least two temporary signs (placards) concerning

manatees. For all vessels, a temporary sign (at least 8½" x 11") reading "Manatee Habitat/Idle Speed In Construction Area" will be placed in a prominent location visible to employees operating the vessels. In the absence of a vessel, a temporary sign (at least 3' x 4') reading "Caution: Manatee Area" will be posted in a location prominently visible to land based, water-related construction crews.

7.2.1.4 A second temporary sign (at least 8½" x 11") reading "Caution: Manatee Habitat. Idle speed is required if operating a vessel in the construction area. All equipment must be shut down if a manatee comes within 50 feet of operation. Any collision with and/or injury to a manatee shall be reported immediately to the Florida Marine Patrol at 1-800 DIAL-FMP (1-800-342-5367). The U.S. Fish and Wildlife Services should also be contacted in Jacksonville (1-904-232-2580) for North Florida or in Vero Beach (1-407-562-3909) in South Florida." will be located prominently adjacent to the displayed issued construction permit. Temporary notices are to be removed upon completion of construction.

7.2.1.5 All vessels associated with the project shall operate at "idle speed/no wake" at all times while in the construction area and while in water where the draft of the vessel provides less than a four foot clearance from the bottom. All vessels will follow routes of deep water whenever possible.

7.2.1.6 If manatees are seen within 100 yards of the active daily construction/dredging operation, all appropriate precautions shall be implemented to ensure protection of the manatee(s). These precautions shall include the operation of all moving equipment no closer than 50 feet of a manatee. Operation of any equipment closer than 50 feet to a manatee shall necessitate immediate shutdown of that equipment. A "spotter" will visually follow the manatee to ensure that the manatee has left the construction area before equipment operation resumes.

7.2.1.7 Siltation barriers, if used, must be properly secured so that manatees cannot become entangled, and are monitored at least hourly to avoid manatee entrapment. Barriers must not block manatee entry to or exit from essential habitat.

7.2.1.8 The CONTRACTOR will maintain a log detailing sightings, collisions, or injuries to manatees should they occur during the contract period. The CONTRACTOR will also report to the ENGINEER any sightings, collisions or injuries in the Daily Quality Control Reports.

7.2.1.9 Any collision with and/or injury to a manatee shall be reported immediately to the Florida Marine Patrol (1-800-DIAL-FMP), to the Office of Protected Species Management (904) 922-4330 and to the ENGINEER.

7.2.2 Sea Turtle Monitoring. Construction can occur during the main part of the nesting and hatching season for sea turtles (April 15 to October 31). During beach disposal of dredged material if work is done during the sea turtle nesting season, the COUNTY and their representative will be conducting continual visual inspections.

Sea turtle nest monitoring, marking and relocation will be conducted by an agent of Lee County or Lovers Key park personnel. Daily sweeps of the beach during nesting season will be conducted by these personnel. A relocation site is located within the north Estero Island segment, and its location will be provided to the CONTRACTOR at the pre-construction meeting. The CONTRACTOR shall avoid this site.

Any signs of turtle activity observed by the CONTRACTOR shall be reported immediately to the COUNTY or Park's sea turtle monitoring agent. No construction activity shall occur in the vicinity of nesting turtles, turtle nests or hatching turtles until the nests have been satisfactorily relocated by the COUNTY's agent or the nesting or hatching turtles protected during construction. The CONTRACTOR shall not begin work in a new area of the project without coordinating with the sea turtle monitoring agent first. Work or movement into a new area cannot occur until after the morning beach inspection by the agent. The CONTRACTOR shall instruct all personnel associated with the construction of the project, including subcontractors, about the presence of sea turtles and sea turtle nests in the area, stressing the need to avoid disturbance of nesting sea turtles, nests or hatchlings.

7.3 Protection of Air Resources. The CONTRACTOR shall keep construction activities under surveillance, management, and control to minimize pollution of air resources. All activities, equipment, processes, and work operated or performed by the CONTRACTOR in accomplishing the specified construction shall be in strict accordance with the applicable air pollution standards of the State of Florida (Florida Statute, Chapter 403 and others) and all Federal emission and performance laws and standards.

7.4 Protection of Sound Intrusions. The CONTRACTOR shall keep construction activities under surveillance, and control to minimize damage to the environment by noise. If booster pumps are used on the beach, the CONTRACTOR shall provide adequate muffler systems and erect a sound barrier to deflect noise in the waterward direction and away from buildings. Booster pumps shall be located away from residences and hotels in regions approved by the ENGINEER.

7.5 Dispensing of Fuel. Secondary containment, which is capable of holding 110% of the tank contents, must be provided by the CONTRACTOR for each fuel storage tank. Fuel dispensers shall have a 4-foot square, 16-gauge metal pan with borders banded up and welded at corners right below the bibb. Edges of the pans shall be 8-inch minimum in depth to ascertain that no contamination of the ground takes place. Pans shall be cleaned by an approved method immediately after every dispensing of fuel and wastes disposed of offsite in an approved area. Should any spilling of fuel occur, the CONTRACTOR shall

immediately contain the spill and contact the appropriate local authorities. The CONTRACTOR will be solely responsible for any fines, penalties or other legal activities related to fuel spills.

7.6 Temporary Sanitary Facility. The CONTRACTOR shall supply and maintain, at minimum, one (1) temporary sanitary facility for the use of land based employees and subcontractors at each work site. The facility shall be conveniently located in the vicinity of the beach disposal operation or groin construction area, but away from residential buildings along the coastline. The facility shall be removed at the end of the project.

7.7 Storage of Lubricants. All lubricants and other potential liquid pollutants shall be stored in sealed, non-corrosive containers. Individual containers shall be stored in metal pans with borders banded up and welded at the corners right below the bibb. Pans shall be deep enough to prevent contamination of the ground. Pans shall be kept clean of all spillage or leakage.

8. POST CONSTRUCTION CLEAN-UP

The CONTRACTOR shall clean-up any area used for construction to the satisfaction of the ENGINEER and COUNTY.

9. RESTORATION OF LANDSCAPE DAMAGE

The CONTRACTOR shall restore all landscape features damaged or destroyed during construction operations outside the limits of the approved work areas. Such restoration shall be in accordance with a plan submitted for approval by the ENGINEER. This work will be accomplished at the CONTRACTOR's expense. Final payment to the CONTRACTOR shall not occur until the ENGINEER and the COUNTY are satisfied with the CONTRACTOR's effort to restore landscape or any other damage caused by the CONTRACTOR or his subcontractors.

10. MAINTENANCE OF POLLUTION CONTROL FACILITIES

The CONTRACTOR shall maintain constructed facilities and portable pollution control devices for the duration of the contract or for that length of time construction activities create the particular pollutant.

11. TRAINING OF CONTRACTOR PERSONNEL IN POLLUTION CONTROL AND ENVIRONMENTAL PROTECTION

The CONTRACTOR shall train all subcontractors and personnel in all phases of environmental protection. All personnel and subcontractors will be familiar with permit requirements, and with the necessity of protection of all habitats, including offshore hardbottom communities. The training shall include methods of detecting and avoiding pollution, familiarization with pollution standards, both statutory and contractual, and installation and care of facilities to insure adequate and continuous environmental pollution control. Quality Control and supervisory personnel shall be

thoroughly trained in the proper use of monitoring devices and abatement equipment, and shall be thoroughly knowledgeable of Federal, State, and local laws, regulations, and permits as listed in the Environmental Protection Plan submitted by the CONTRACTOR. Quality Control personnel will be identified in the Quality Control Plan submitted in accordance with the General Conditions.

12. FUEL OIL TRANSFER OPERATIONS

In accordance with the U.S. Coast Guard regulations (33 CFR 156.120), couplings used in fuel oil transfer operations on any vessel with a capacity of 250 or more barrels of oil (or fuel) shall be either a bolted or full-threaded connection; or a quick-connect coupling approved by the Commandant; or an automatic back-pressure shutoff nozzle used to fuel the vessel. An executed fuel oil transfer (Declaration) form signed by the tanker man shall be completed for each refueling operation. The U.S. Coast Guard shall also be notified prior to any refueling.

13. ENVIRONMENTAL PROTECTION PLAN

Within 20 calendar days after the date of Notice of Award and prior to the Notice to Proceed to the CONTRACTOR, the CONTRACTOR shall submit in writing an Environmental Protection Plan to the ENGINEER. The Notice to Proceed will not be issued until the Environmental Protection Plan is reviewed and approved by the ENGINEER. Approval of the CONTRACTOR'S plan will not relieve the CONTRACTOR of his responsibility for adequate and continuing control of pollutants and other environmental protection measures. The Environmental Protection Plan shall include but not be limited to the following:

(a) Methods for protection of features and habitats to be preserved within authorized work areas. The CONTRACTOR shall prepare a listing of methods to protect resources needing protection, i.e. all vegetation, trees, shrubs, vines, grasses and ground cover, landscape features, air and water quality, fish and wildlife, soil, historical, archeological and cultural resources, manatees, and the marine habitat.

(b) Procedures to be implemented to provide the required environmental protection and to comply with the applicable permits, laws and regulations. The CONTRACTOR shall provide written assurance that immediate corrective action will be taken to correct pollution of the environment due to accident, natural causes or failure to follow the procedures set out in accordance with the Environmental Protection Plan.

(c) A list of Federal, State, and local laws, regulations, and permits concerning environmental protection, pollution control, and abatement that are applicable to the CONTRACTOR'S proposed operations and the requirements imposed by those laws, regulations, and permits.

(d) Methods for protection of features and habitats to be preserved within authorized work areas. The CONTRACTOR shall prepare a listing of methods to protect resources needing protection, i.e. all vegetation, trees, shrubs, vines, grasses and ground cover, landscape features, air and water quality, fish and wildlife, soil, historical, archeological and

cultural resources, hardbottoms, manatees and all marine hardbottom areas.

(e) Procedures to be implemented to provide the required environmental protection and to comply with the applicable permits, laws and regulations. The CONTRACTOR shall provide written assurance that immediate corrective action will be taken to correct pollution of the environment due to accident, natural causes or failure to follow the procedures set out in accordance with the Environmental Protection Plan.

(f) Drawings showing locations of any proposed temporary excavations or embankments for haul roads, material storage areas, structures, sanitary facilities, and stockpiles of excess or spoil materials.

(g) Environmental monitoring plans for the jobsite, including land, water, air and noise monitoring.

(h) Oil spill prevention.

(i) Oil spill contingency plan.

(j) A marine (sea) turtle protection plan.

(k) A manatee protection plan.

(l) Work area plan showing the proposed activity in each portion of the area and identifying the areas of limited use or nonuse. Plan should include measures for marking the limits of use areas.

(m) The location of the solid disposal area.

(n) A statement as to the person who will be responsible for implementation of the Environmental Protection Plan. The CONTRACTOR personnel responsible shall report directly to the CONTRACTOR'S top management and shall have the authority to act for the CONTRACTOR in all environmental protection matters.

(o) A statement acknowledging that the CONTRACTOR is responsible for environmental protection, including all of the CONTRACTOR's personnel and subcontractors.

(p) The Environmental Protection Plan will be dated and endorsed by the individual of top management in charge of the construction.

Department of Environmental Protection

Jeb Bush
Governor

Marjory Stoneman Douglas Building
3900 Commonwealth Boulevard
Tallahassee, Florida 32399-3000

Colleen Castille
Secretary

CERTIFIED - RETURN RECEIPT REQUESTED

April 26, 2004

Mr. Robert Neal, P.E.
Lee County Natural Resources Division
1500 Monroe Street
Fort Myers, FL 33902

Permit Modification No. 0173059-003-JC
Permit No. 0173059-001-JC, Lee County
Estero Island and Lovers Key Beach Restoration Project

Dear Mr. Neal:

Your request to modify permit no. 0173059-001-JC has been received and reviewed by Department staff. The proposed permit modification is to increase the fill placement in Reach 3 to account for recent shoreline erosion; to revise the foreshore slopes for constructability purposes; and to incorporate the requirements mandated by the Bonita Beach Contingency Plan (JCP Permit No. 0200803-001-JC, Lee County) into the above referenced permit for the Estero Island/Lovers Key Beach Restoration Project.

On July 14, 2003, Lee County was authorized to construct the Bonita Beach Nourishment Project via issuance of Joint Coastal Permit No. 0200803-001-JC. Given the close proximity of the Bonita Beach borrow area to Borrow Area II for the Estero Island/Lover's Key project, Specific Condition 4 of the Bonita Beach Nourishment Project permit required Lee County to provide a single, comprehensive contingency plan for construction of both the Estero Island/Lover's Key project and the Bonita Beach project. The Department approved the united contingency plan on October 21, 2003, and Specific Condition 4 of the Bonita Beach permit mandated that Lee County seek a permit modification to integrate the requirements of the united contingency plan into the Estero Island/Lover's Key permit.

Estero Island and the adjacent beaches provide significant shorebird habitat, including a state-designated Critical Wildlife Area (CWA), as well as federally designated critical habitat for the endangered piping plover. Therefore, FWC recommended addition of specific conditions for protection of shorebirds in the requested permit modification. This includes a prohibition of access into the CWA from April 1 through October 31 (s. 68A-19.005, Florida Administrative Code). Lee County has agreed that, should the County elect to construct the authorized Reach 2

segment, no construction activities would be conducted within the CWA on Little Estero Island between April 1 and October 31. FWC also recommended that Lee County develop and implement a shorebird management plan for the project area prior to construction of the Estero Island segments (Reaches 1 and 2), particularly if any work is to be conducted adjacent to the CWA; and that the County work with the FWC to post signs to indicate the boundary of the CWA prior to commencement of construction activities in Reaches 1 and 2.

Permit Modification Need for Lovers Key Design Update:

The Lovers Key project area (Reach 3) extends from R-215.5 to R-219.5. This reach protects the most important park features along approximately 4,000 feet of beach. Tapers to the north and south align the fill section with the existing beach at the limits of the ECL, bringing the total project length to 5,900 feet. The recommended project calls for a 40-ft added design width and 8-years of advanced nourishment. Based on conditions in 2000, the beach required 88,823 cubic yards for the design template and 129,400 cubic yards of advanced nourishment. Considering the grain size of the fill material and the anticipated spreading losses, additional volumes for overfill (49,000 cubic yards) and diffusion (84,700 cubic yards) were added to bring the total volume to 335,000 cubic yards.

Surveys performed in May 2003 indicated that the project area had lost an average of 75 feet of beach width in the previous three years, increasing the erosion rate from -9 feet/year to -15 feet/year since 1995. Volumetric losses measured during this same time indicated an average annual change rate of -22,890 cubic yards/year. Based on this erosion rate, the advanced nourishment was increased to 183,100 cubic yards in order to maintain the beach for 8 years. The measured loss over these three years is 90,560 cubic yards and shall be replaced to return the beach to the conditions in 2000. The incremental volumes used to develop project alternatives are shown by profile in Table 1. Accounting for the increased erosion rates and additional loss of beach, a total fill placement of 570,240 cubic yards is necessary to restore the beach at the original design intent. This placement volume represents a seventy (70%) percent increase from the authorized 335,000 cubic yards.

TABLE 1
PROJECT VOLUME UPDATE

PROFILE NUMBER	EFFECTIVE DISTANCE (FT)	REPLACE LOSSES 2000-2003 (CY)	40-FT DESIGN VOLUME (CY)	OVERFILL VOLUME (CY)	DIFFUSION VOLUME (CY)	8-YRS ADV. NOUR. (CY)	TOTAL VOLUME (CY)
N. TAPER	990	1,572	8,873	6,049	10,455	22,590	49,539
R216	974	3,092	17,460	11,902	20,573	44,450	97,478
R217	994	33,292	17,818	12,146	20,995	45,310	129,562
R218	1,050	18,633	18,822	12,830	22,178	49,274	121,739
R219	992	23,370	17,783	12,122	20,953	44,045	118,272
S. TAPER	900	10,601	8,067	5,499	9,505	19,980	53,652
PROJECT AREA	4,010	78,387	71,883	49,000	84,700	183,079	467,049
TOTAL	**5,900**	**90,560**	**88,823**	**60,547**	**104,660**	**225,649**	**570,240**

Tapers extend project to limits of existing ECL.

In order to incorporate the additional 96,249 cubic yards of beach fill, the seaward location of the construction berm has been extended at DEP monuments R-217, R-218, and R-219 by an average of 33.8 feet. However, the seaward extension of the berm had receded an average of 18.7 feet along these three profile lines; therefore, the total seaward extension of the construction berm in this area averages 7.5 feet. The modification request also includes revision of the foreshore slopes from 10:1 to 15:1 above the NGVD datum, and from 15:1 to 20:1 below the NGVD datum.

There are no seagrass communities, shellfish beds, or exposed hardbottom in the vicinity of the project area. Therefore, the proposed seaward extension of the berm in Reach 3 shall not directly bury or indirectly affect these sensitive natural communities through increases in turbidity and sedimentation associated with fill placement and equilibration. Department staff consider the proposed modification to be a minor modification since it will not result in substantially different environmental impacts from the authorized project.

Considering the justification provided by the permittee, the request for modification to increase the placement volume from the previously authorized 335,00 cubic yards to 570,240 cubic yards; revision of the foreshore slopes to 15:1 above the NGVD datum and 20:1 below the NGVD datum; and incorporation of the Department mandated joint contingency plan for Estero Island/Lover's Key and Bonita Beach is approved.

Please note that no work shall be conducted under this permit until the permittee has received a written notice to proceed from the Department. Specific Condition 5 requires Department approval of a physical monitoring plan prior to issuance of a notice to proceed with construction. The permittee is advised that the physical monitoring plan must meet the Bureau's survey technical specifications and all monitoring data must reference the correct vertical datum. Specific Condition 4 requires that the permittee conduct a pre-construction conference with all the contractors, engineer of record, the FWC, the marine turtle permit holder, and a staff representative of the Bureau of Beaches & Coastal Systems at least 30 days prior to construction activities. This meeting will provide the opportunity for explanation and/or clarification of the sea turtle protection measures.

The project description shall be revised as follows (~~strikethroughs~~ are deletions, underlines are additions):

PROJECT DESCRIPTION:

Reach 1 is located in north Estero Island, extends approximately 4.6 miles and begins 300 feet north of R-175 and continues south to R-198. This project includes the construction of a terminal groin on Estero Island 300 feet north of R-175. The proposed terminal groin is 240 feet long (crest) by 60.8 feet wide (base), situated perpendicular to the shoreline with 90 feet landward of the 2000 MHW and 150 feet seaward of the 2000 MHW shoreline. Reach 1 of the project consists of a 4.1 feet NGVD berm, with a 40-foot shoreline extension from the April 2000 MHW location. The project design calls for the placement of 1,010,000 cubic yards of compatible beach quality sand on Reach 1.

Reach 2 is located at the southern tip of Estero Island and extends approximately 0.51 miles beginning at R-208 adjacent to the sand spit (Little Estero Island) and extending south to a point 500 feet east of R-210. No sand will be placed within the sand spit region. The project also consists of a 4.1 feet NGVD berm, with a 40-foot shoreline extension from the April 2000 MHW location. Reach 2 is designed to receive 70,000 cubic yards of sand.

Reach 3 is located on Lovers' Key, and extends approximately 1.1 miles commencing 500 feet north of R-215 and proceeding to a point 500 feet south of R-220. The project calls for the placement of ~~335,000~~ 570,240 cubic yards in Reach 3. In Reach 3, the project consists of a 4.1 foot NGVD berm, with a 40 foot shoreline extension from the April 2000 MHW location.

Specific Condition 7 shall be revised as follows (~~strikethroughs~~ are deletions, underlines are additions):

7. Prior to issuance of a Notice to Proceed, the permittee shall submit a Contingency Plan to remediate any adverse impacts to the shoreline resulting from the construction of the proposed terminal groin or the dredging in Borrow Area II. This Plan shall be subject to review and approval by the Department. The approved Contingency Plan can be revised at any later time by written request of the permittee and with the written approval of the Department. As guidance for obtaining Departmental approval, the Plan shall acknowledge that there is a potential for adjacent shoreline erosion occurring as a result of the construction of the proposed terminal groin on the north end of Estero Island and as a result of dredging in Borrow Area II along the south end of Estero Island. The Plan shall confirm that these areas will be specifically monitored, analyzed, and reported on as part of the approved Monitoring Plan required in Permit Condition 6.

Given the close proximity of the Big Carlos Pass ebb shoal borrow area for the Bonita Beach Nourishment Project (DEP Permit No. 0200803-001-JC) to Borrow Area II, it may be not be possible to determine which borrow area excavation resulted in adverse impacts to the shoreline if the monitoring reveals erosion effects. Therefore, the permittee for both projects, Lee County, shall be required to provide a single, comprehensive contingency plan for construction of both the Estero Island/Lover's Key project and the Bonita Beach nourishment project.

~~The Plan shall confirm that these areas will be specifically monitored, analyzed, and reported on as part of the approved Monitoring Plan required in Permit Condition 6. The Contingency Plan shall provide that any erosional problems that develop north (downdrift) of the groin, or landward of Borrow Area II on southern Estero Island or northern Lover's Key, will be specifically addressed and appropriate remedial solutions developed and implemented.~~

~~Remedial solutions to be considered shall include the placement of beach fill material and/or adjustment of the terminal groin to alleviate adjacent shoreline erosional problems, as applicable. Once approved by the Department, the permittee shall request a modification to this permit to incorporate the remedial action(s) and submit all supporting information that will be necessary for approval.~~

The Joint Contingency Plan shall provide assurance that any erosional problems that develop landward of the Big Carlos Pass borrow area on southern Estero Island or northern Lover's Key, will be specifically addressed and appropriate remedial solutions developed and implemented. The detailed contingency plan shall identify and remediate any erosion impacts to the Estero Island and Lover's

Key shorelines and on the inlet littoral system resulting from excavation of both borrow areas (Borrow Area II and the Big Carlos Pass ebb shoal borrow area). Remedial solutions to be considered shall include the placement of beach fill material and/or adjustment of the terminal groin to alleviate adjacent shoreline erosional problems, as applicable. Once approved by the Department, the proposed remedial action plan shall become an enforceable requirement of this permit.

Specific Conditions addressing the protection of marine turtles have been revised as follows to reflect the Terms and Conditions of the U.S. Fish and Wildlife Biological Opinion for this project (~~strikethroughs~~ are deletions, underlines are additions):

10. Construction-related activities are authorized to occur on the nesting beach (seaward of existing coastal armoring structures or the dune crest) during the nesting season under the following conditions.

    a. A daily marine turtle nest survey of the nesting beach in the vicinity of the project (including areas of beach access) shall be conducted starting April ~~15~~ 1 and continue until October 31. Nesting surveys must continue through September 30. Surveys to verify hatch success (and any missed nests that hatch out) shall be conducted through October 31. Only those nests that may be affected by construction activities shall be relocated. Nests requiring relocation shall 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 shall cease when construction activities no longer threaten nests. Nests shall not be relocated for groin construction unless beach nourishment activities are in progress or will be starting within 65 days. Nests deposited within areas where construction activities have ceased or will not occur for 65 days shall be marked and left in place unless other factors threaten the success of the nest. Such nests will be marked and the actual location of the clutch determined. A circle with a radius of ten (10) feet, centered at the clutch, shall be marked by stake and survey tape or string. No construction activities shall enter this circle and no adjacent construction shall be allowed which might directly or indirectly disturb the area within the staked circle.

    b. No construction activity may commence until completion of the marine turtle survey each day.

c. It is the responsibility of the permittee to ensure that the project area and access sites are surveyed for marine turtle nesting activity. All nesting surveys, nest relocations screening or caging activities etc. shall be conducted only by persons with prior experience and training in these activities and who is duly authorized to conduct such activities through a valid permit issued by the Fish and Wildlife Conservation Commission (FWC), pursuant to Florida Administrative Code 68E-1.

11. From April 15 through October 31, staging areas for construction equipment shall be located off the beach. Nighttime storage of construction equipment not in use shall be off the beach to minimize disturbance to sea turtle nesting and hatching activities. Temporary storage of pipes must be off the beach to the maximum extent practicable.

12. Immediately after completion of the beach fill placement event and prior to ~~April 15~~ May 1 for 3 subsequent years if placed sand still remains on the beach, the beach shall be tilled as described below. During the 3 years following each fill placement event, the permittee may measure sand compaction in the area of restoration in accordance with a protocol agreed to by the FWC, the Department, the U.S. Fish & Wildlife Service, and the applicant to determine if tilling is necessary. Sand compaction monitoring shall be performed prior to April 15. At a minimum, the protocol provided under a and b below shall be followed. If required, the area shall be tilled to a depth of 24 inches. All tilling activity must be completed prior to May 1. If the project is completed during the nesting season, tilling shall not occur in areas where nests have been left in place or relocated unless authorized by the U.S. Fish and Wildlife Service in an Incidental Take Statement. A report on the results of compaction monitoring shall be submitted to the FWC prior to any tilling actions being taken. An annual summary of compaction surveys and the actions taken shall be submitted to the FWC. This condition shall be evaluated annually and may be modified if necessary to address sand compaction problems identified during the previous year.

a. Compaction monitoring can be waived if the beach is tilled. Out-year compaction monitoring and remediation are not required if placed sand no longer remains on the beach.

~~a.~~b. Compaction sampling stations shall be located at 500-foot intervals along the project area. 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.~~c. 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 lay over less compact layers. Replicates shall 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 shall be averaged to produce final values for each depth at each station. Reports shall include all 18 values for each transect line, and the final 6 averaged compaction values.

~~c.~~d. If the average value for any depth exceeds 500 psi for any two or more adjacent stations, then that area shall be tilled prior to ~~April 15~~ 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 FWC shall be required to determine if tilling is required. If a few values exceeding 500 psi are present randomly within the project area, tilling shall not be required.

13. During marine turtle nesting season (May 1st to October 31st), weekly visual surveys for escarpment formation shall be conducted within the project area. These surveys shall be conducted for two nesting seasons following beach nourishment. An annual summary of these surveys and any action taken shall be submitted to the Department. Weekly surveys shall include:

a. The number of escarpments and their location relative to DNR-DEP reference monuments shall be recorded. Notations on the height of any escarpments shall be included (0 to 18 inches, 18 inches to 4 feet, 4 feet or higher) as well as the maximum height of all escarpments.

b. Escarpments that exceed 18 inches in height for a distance of 100 feet shall be reported in writing to the Department within 3 days of the survey. This report shall include the number and location of nests in the vicinity of the escarpment. Upon written notification, the permittee shall level escarpments in accordance with mechanical methods prescribed by the Department.

c. Any escarpments that exceed 18 inches in height for a distance of 100 feet shall be leveled to the natural beach contour by ~~March 1.~~ May 1. If weekly surveys during the marine turtle nesting season document subsequent reformation of escarpments that exceed 18 inches in height for a distance of 100 feet, then the Department shall be contacted immediately to determine the

appropriate action to be taken. Upon written notification, the permittee shall level escarpments in accordance with mechanical methods prescribed by the Department.

15. Reports on all nesting activity shall be provided for the initial nesting season and for a minimum of three additional nesting seasons shall be provided for the nourished and adjacent beaches on Estero Island and Lovers Key. Monitoring of nesting activity shall include daily surveys and any additional measures authorized by the FWC. Reports submitted shall include daily report sheets noting all activity, nesting success rates, hatching success of all relocated nests, hatching success of a representative sampling of nests left in place (if any), dates of construction and names of all personnel involved in nest surveys and relocation activities. Data shall be reported separately for filled areas and non-filled areas in accordance with the attached Table. All reports shall be submitted in electronic format (Excel spreadsheets) by January 15 of the following year.

19. The groin must be removed if it is determined not to be effective or to be causing significant adverse impact to the beach and dune system or to marine turtles.

The following Specific Conditions shall be added to the permit for the protection of nesting shorebirds (underlines are additions):

The following conditions are required to minimize impacts to nesting shorebirds:

20. If beach nourishment activities are conducted on Little Estero Island adjacent to and/or within the Critical Wildlife Area (CWA), the work shall be started after August 31 and be completed before April 1. During the April 1 through August 31 period, no construction equipment or pipes shall be stored on the beach within and adjacent to the CWA, and parking of vehicles shall not be allowed within the CWA.

21. **Shorebird Surveys.** Shorebird surveys should be conducted on all project beaches by trained, dedicated individuals using accepted, appropriate ecological survey procedures (for example, see "*Breeding Season Population Census Techniques for Seabirds and Colonial Waterbirds Throughout North America*" at URL: http://www.mp2-pwrc.usgs.gov/cwb/manual/). The shorebird nesting season generally is 1 April – 1 September, but some nesting may occur through September. In addition, the imperiled snowy plover (*Charadrius alexandrinus*) may nest as early as February along the west coast and panhandle of Florida.

a. Nesting season surveys shall begin February 1 or 45 days prior to construction commencement, whichever is later, and be conducted daily throughout the construction period or through September if no shorebird nesting activity is observed. If construction of Reach 3 (Lover's Key) shall occur during the 2004 shorebird nesting season, nesting season surveys shall begin 30 days prior to construction commencement.
b. For projects conducted in piping plover habitat, surveys to detect piping plovers or concentrations of other wintering or migratory shorebirds should begin 14 days prior to construction commencement and be conducted once every 2 weeks.
c. Each shorebird species observed, a rough estimate of numbers of each species, the location of the birds, and their activity (e.g., foraging, resting, nesting, courtship behavior) should be logged and reported to the FWC Regional Wildlife Diversity Conservation Biologist monthly.

22. **Buffer Zones and Travel Corridors**. Within the project area, the permittee shall establish a 300 ft-wide buffer zone around any location where shorebirds have been engaged in courtship or nesting behavior, or around areas where piping plovers occur or winter migrants congregate in significant numbers. Any and all construction activities, including movement of vehicles, should be prohibited in the buffer zone.

a. The width of the buffer zone shall be increased if birds appear agitated or disturbed by construction or other activities in adjacent areas.
b. Site-specific buffers may be implemented upon approval by FWC as needed.
c. Designated buffer zones must be posted with clearly marked signs around the perimeter. These markings shall be maintained until nesting is completed or terminated, the chicks fledge, or piping plovers or winter migrants depart.
d. No construction activities or stockpiling of equipment shall be allowed within the buffer area.
e. FWC-approved travel corridors should be designated and marked outside the buffer areas. Heavy equipment, other vehicles, or pedestrians may transit past nesting areas in these corridors. However, other activities such as stopping or turning shall be prohibited within the designated travel corridors adjacent to the nesting site.
f. Where such a travel corridor must be established within the project area it should avoid critical areas for shorebirds (known nesting sites, wintering grounds, FWC-designated Critical Wildlife Areas, and USFWS-designated critical piping plover habitat) as much as possible, and be marked with signs clearly delineating the travel corridor from the shorebird buffer areas described above.

g. To the degree possible, the permittee should maintain some activity within these corridors on a daily basis, without directly disturbing any shorebirds documented on site or interfering with sea turtle nesting, especially when those corridors are established prior to commencement of construction. Passive methods to modify nesting site suitability must be approved by the FWC Wildlife Diversity Conservation Biologist for that region.

23. **Notification.** If shorebird nesting occurs within the project area, a bulletin board will be placed and maintained in the construction area with the location map of the construction site showing the bird nesting areas and a warning, clearly visible, stating that "BIRD NESTING AREAS ARE PROTECTED BY THE FLORIDA THREATENED AND ENDANGERED SPECIES ACT AND THE FEDERAL MIGRATORY BIRD ACT."

24. **Beach Contours.** All tilling and scarp removal should be done outside the shorebird nesting season and prior to February 1. If necessary, contractors should contact the FWC Regional Wildlife Diversity Conservation Biologist (Attachment 6) to obtain data on known shorebird nesting areas. It is the responsibility of the contractors to avoid tilling or scarp removal in areas where nesting birds are present.

a. A relatively even surface, with no deep ruts or furrows, shall be created during tilling. To do this, chain-linked fencing or other material shall be dragged over those areas as necessary after tilling.
b. The slope between the mean high water line and the mean low water line must be maintained in such a manner as to approximate natural slopes.

25. **Placement of Equipment and Sand.** If it will be necessary to extend construction pipes past a known shorebird nesting site or over-wintering area for piping plovers, then whenever possible those pipes should be placed landward of the site before birds are active in that area. No sand shall be placed seaward of a known shorebird nesting site during the shorebird nesting season.

26. **Mitigation For Loss or Degradation of Habitat.** Where beach nourishment or dredging operations result in significant degradation or effective loss of shorebird habitats, activities shall be undertaken to mitigate those impacts.

After thorough review the staff has determined that the proposed alteration does not increase the potential for adverse impact on the coastal system, public beach access seaward of the mean high water line or nesting sea turtles and hatchlings and their habitat, and that the proposed alteration does not reduce the design adequacy of the project. Staff also finds that the proposed

modification is not expected to adversely affect water quality or be contrary to the public interest. Since the proposed modification is not expected to result in any adverse environmental impact or water quality degradation and is expected to be of environmental benefit, the **permit is hereby modified** as stated above. By copy of this letter and the attached drawings, we are notifying all necessary parties of the modification(s).

This letter of approval does not alter the **March 5, 2012** expiration date, other Specific or General Conditions, or other monitoring requirements of the permit. This letter and the accompanying drawings must be attached to the original permit.

This permit is hereby modified unless a sufficient petition for an administrative hearing is timely filed under sections 120.569 and 120.57, Florida Statutes, as provided below. The procedures for petitioning for a hearing are set forth below. Mediation under Section 120.573, F.S., is not available for this proceeding.

A person whose substantial interests are affected by the Department's action may petition for an administrative proceeding (hearing) under sections 120.569 and 120.57, F.S. The petition must contain the information set forth below and must be filed (received by the clerk) in the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station 35, Tallahassee, Florida 32399-3000.

Because the administrative hearing process is designed to redetermine final agency action on the application, the filing of a petition for an administrative hearing may result in further modification of the permit or even a denial of the application. If a sufficient petition for an administrative hearing or request for an extension of time to file a petition is timely filed, this permit modification automatically becomes only proposed agency action on the application subject to the result of the administrative review process. Accordingly, the applicant is advised not to commence construction or other activities under this permit modification until the deadlines noted below for filing a petition for an administrative hearing or request for an extension of time has expired.

Under rule 62-110.106(4), Florida Administrative Code, a person whose substantial interests are affected by the Department's action may also request an extension of time to file a petition for an administrative hearing. The Department may, for good cause shown, grant the request for an extension of time. Requests for extension of time must be filed with the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station 35, Tallahassee, Florida 32399-3000, before the applicable deadline. A timely request for extension of time shall toll the running of the time period for filing a petition until the request is acted upon. If a request is filed late, the Department may still grant it upon a motion by the requesting party showing that the failure to file a request for an extension of time before the deadline was the result of excusable neglect.

In the event that a timely and sufficient petition for an administrative hearing is filed, other persons whose substantial interests will be affected by the outcome of the administrative process have the right to petition to intervene in the proceeding. Any intervention will be only at the discretion of the presiding judge upon the filing of a motion in compliance with rule 28-106.205, F.A.C.

In accordance with rules 28-106.111(2) and 62-110.106(3)(a)(1), F.A.C., petitions for an administrative hearing by the applicant must be filed within 14 days of receipt of this written notice. Petitions filed by any persons other than the applicant, and other than those entitled to written notice under section 120.60(3), F.S., must be filed within 14 days of publication of the notice or within 14 days of receipt of the written notice, whichever occurs first.

Under section 120.60(3), F.S., however, any person who has asked the Department for notice of agency action may file a petition within 14 days of receipt of such notice, regardless of the date of publication.

The petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. The failure of any person to file a petition for an administrative hearing within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under sections 120.569 and 120.57, F.S.

In accordance with rule 28-106.201, F.A.C., a petition that disputes the material facts on which the Department's action is based must contain the following information:

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

(g) A statement of the relief sought by the petitioner, stating precisely the action that the petitioner wishes the agency to take with respect to the agency's proposed action.

A petition that does not dispute the material facts on which the Department's action is based shall state that no such facts are in dispute and otherwise shall contain the same information as set forth above, as required by rule 28-106.301, F.A.C. Under sections 120.569(2)(c) and (d), F.S., a petition for administrative hearing must be dismissed by the agency if the petition does not substantially comply with the above requirements or is untimely filed.

This action is final and effective on the date filed with the Clerk of the Department unless a petition is filed in accordance with the above. Upon the timely filing of a petition this order will not be effective until further order of the Department.

This permit modification constitutes an order of the Department. The applicant has the right to seek judicial review of the order under section 120.68, F.S., by the filing of a notice of appeal under rule 9.110 of the Florida Rules of Appellate Procedure with the Clerk of the Department in the Office of General Counsel, 3900 Commonwealth Boulevard, Mail Station 35, Tallahassee, Florida 32399-3000; and by filing a copy of the notice of appeal accompanied by the applicable filing fees with the appropriate district court of appeal. The notice of appeal must be filed within 30 days from the date when the final order is filed with the Clerk of the Department.

When there has been no publication of notice of agency action or notice of proposed agency action as prescribed in rule 62-110.106, F.A.C., a person may request a copy of the agency action. The Department shall upon receipt of such a request, if agency action has occurred, promptly provide the person with notice. The Department does not require notice of this agency action to be published. However, the applicant may elect to publish notice as prescribed in rule 62-110.106, F.A.C., which constitutes notice to the public and establishes a time period for submittal of any petition.

If you have any questions regarding this matter, please contact me at the letterhead address or by telephone at (850) 487-4471, ext. 104.

Sincerely,

Martin K. Seeling
Environmental Administrator
Bureau of Beaches and Coastal Systems

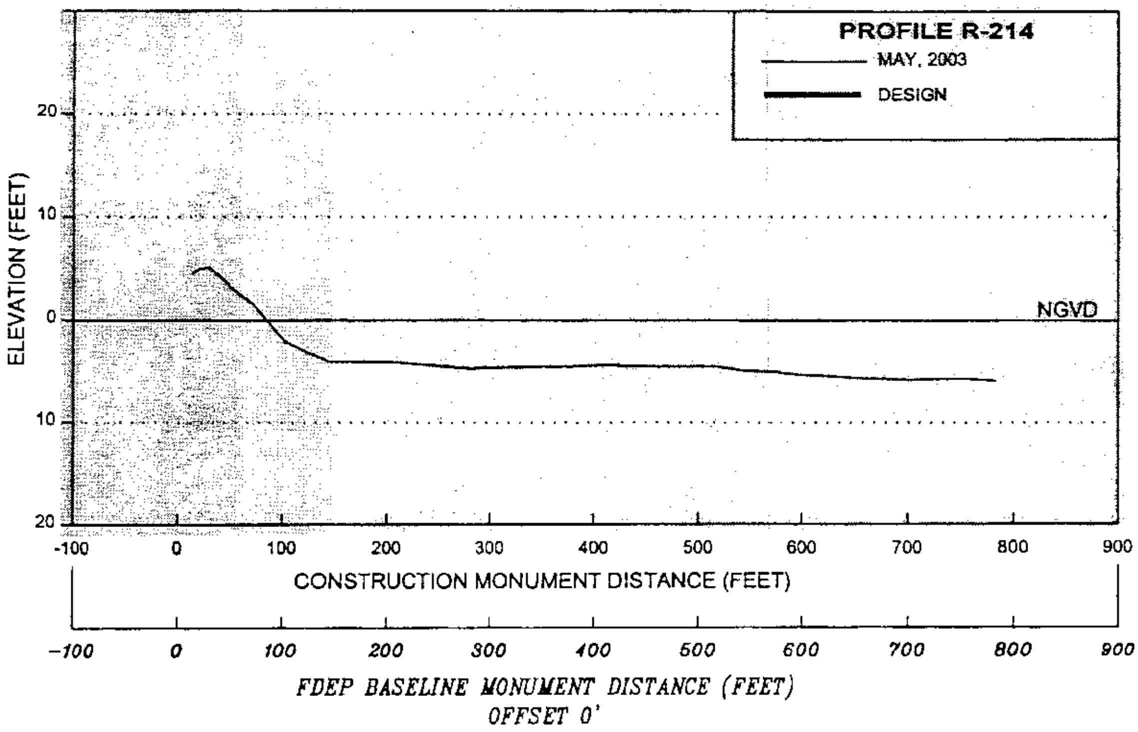
MKS/clm

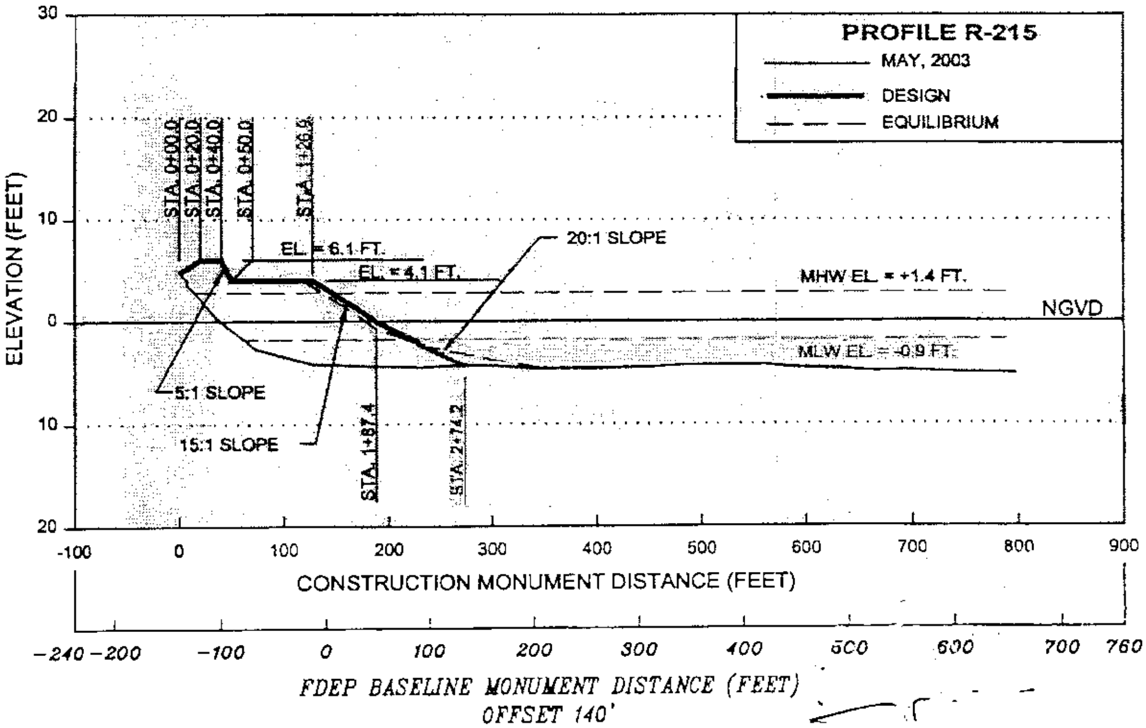
cc:
Steve Boutelle, Lee County
Stephen Keehn, Coastal Planning & Engineering, Inc.
Lucy Blair, DEP, South District, Ft. Myers
Dr. Robbin Trindell, FWC
Michael Barnett, P.E., Bureau Chief, BBCS
Jennie Cowart, DEP, South District, Ft. Myers
Phil Flood, BBCS
Rebecca Roland, BBCS
Harry W. Bergmann - CESAJ-RD-WF, USACE, Ft. Myers
Michael Nowicki, USACE
Trish Adams, USFWS

FILING AND ACKNOWLEDGMENT

FILED, on this date, pursuant to Section 120.52, Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.

Sandra K. Powell 4/26/04





PERMIT #1730590003

3-11-04

TITLE: ESTERO ISLAND CROSS SECTIONS LEE COUNTY, FLORIDA

2481 N.W. BOCA RATON BLVD. BOCA RATON, FL. 33431

COASTAL PLANNING & ENGINEERING INC.

DATE: 7/21/00

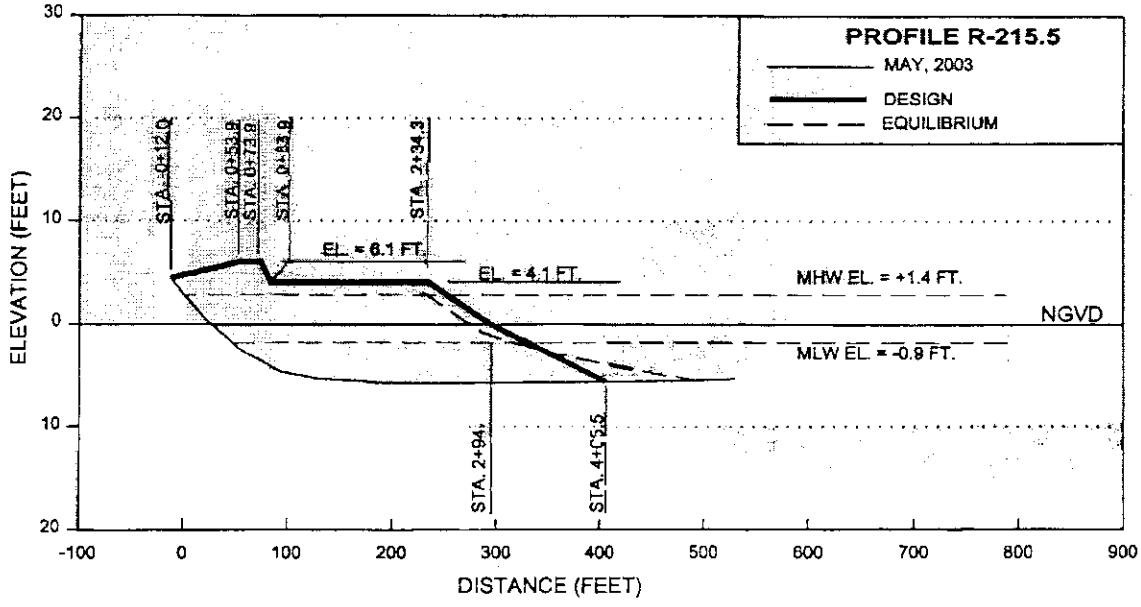
BY: JRC

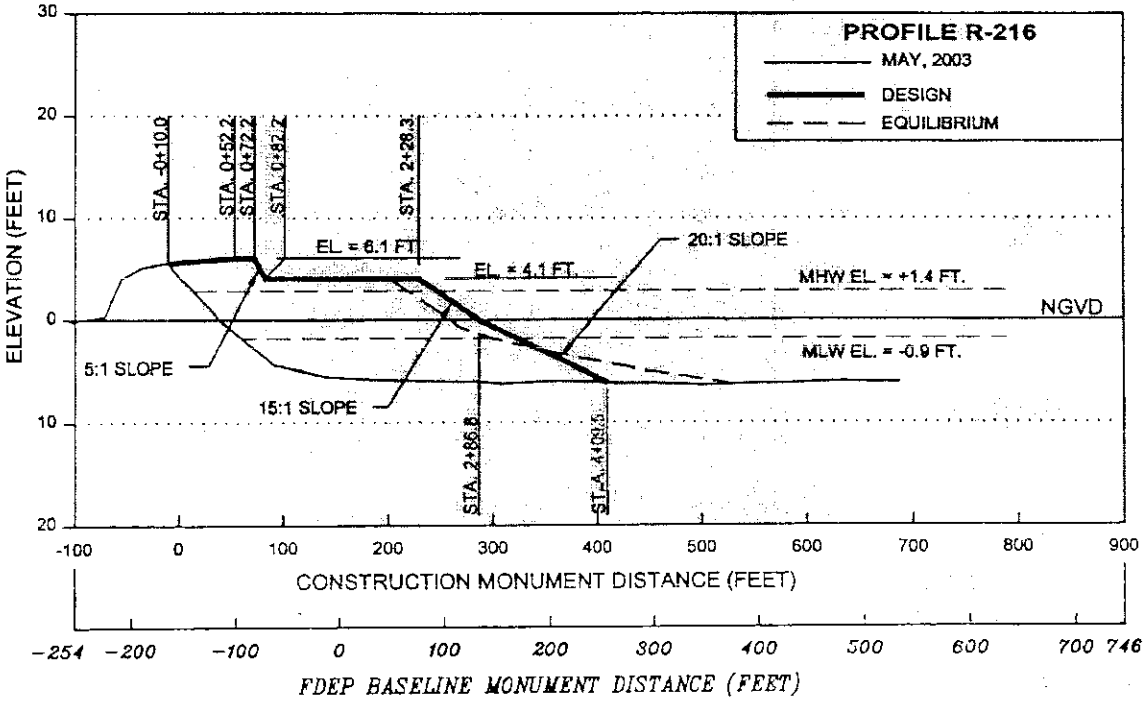
COMM. NO. 8410.02

SHEET: 33 OF 38

REV. 03/09/04 REV. 05/18/01 REV. 02/04/04

PERMIT # 1730590003





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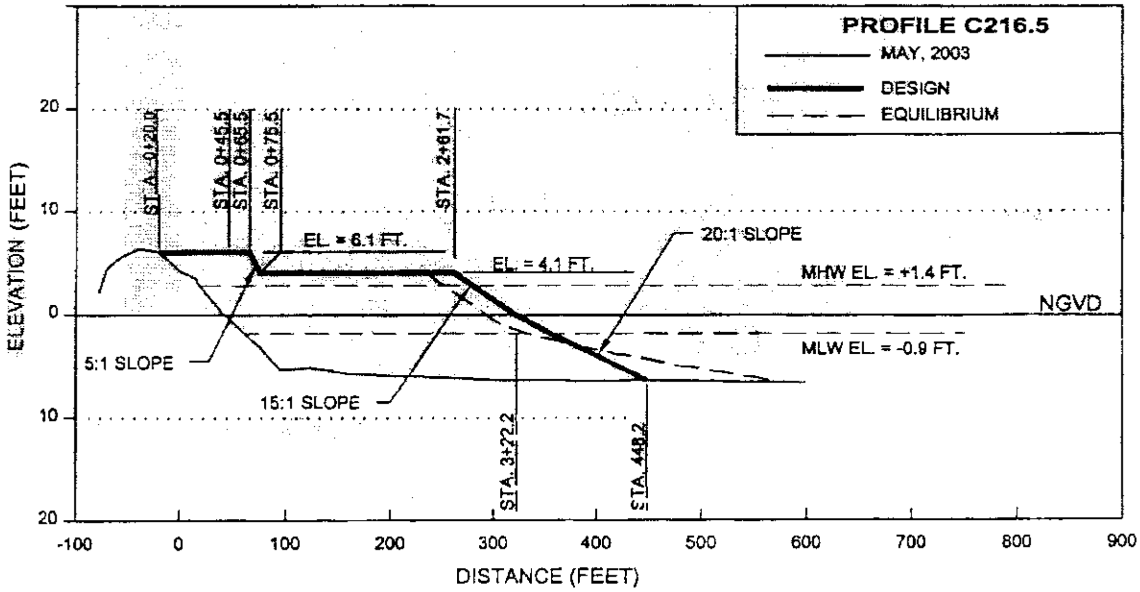
ESTERO ISLAND
CROSS SECTIONS
LEE COUNTY, FLORIDA

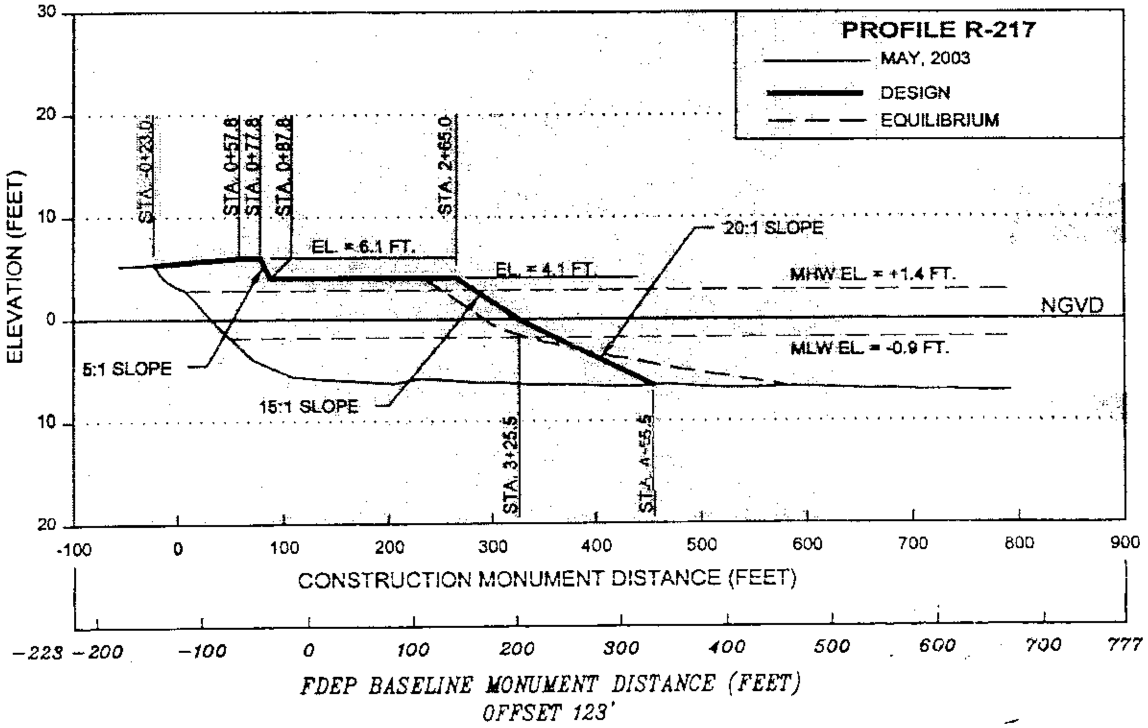
TITLE

2481 N.W. BOCA RATON BLVD.
BOCA RATON, FL. 33431

COASTAL PLANNING & ENGINEERING, INC.

DATE: 7/21/00
BY: JRC
COMM. NO.: 841.002
SHEET: 34 OF 38





PERMIT # 1730 59003

TITLE: ESTERO ISLAND CROSS SECTIONS LEE COUNTY, FLORIDA

2481 N.W. BOCA RATON BLVD. BOCA RATON, FL. 33431

COASTAL PLANNING & ENGINEERING, INC.

DATE: 7/21/00

BY: JRC

COMM. NO. 8410.02

SHEET: 35 OF 38

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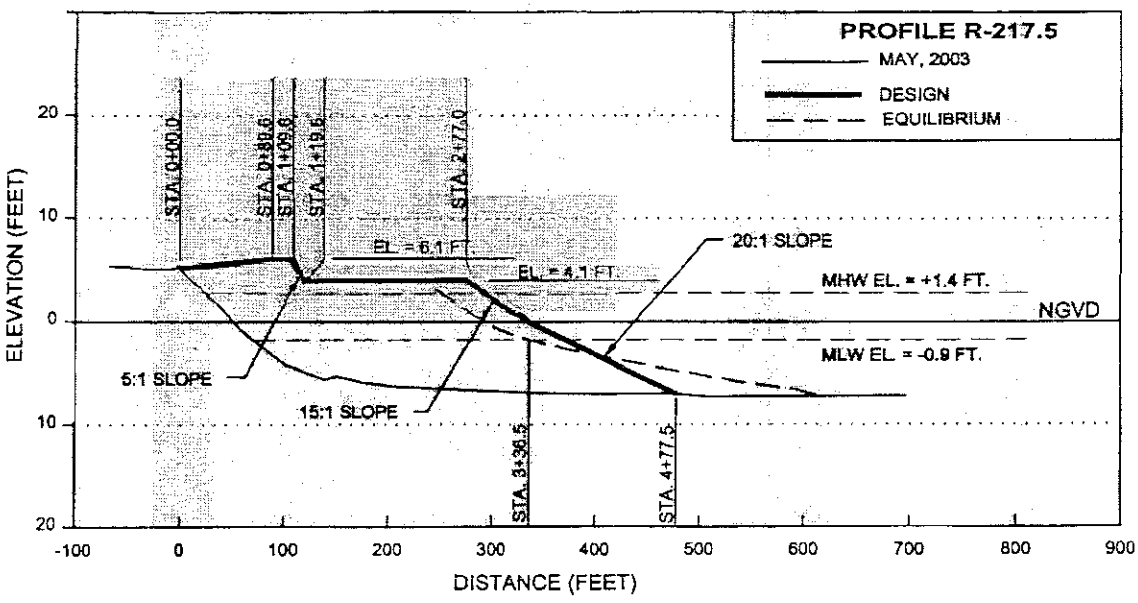

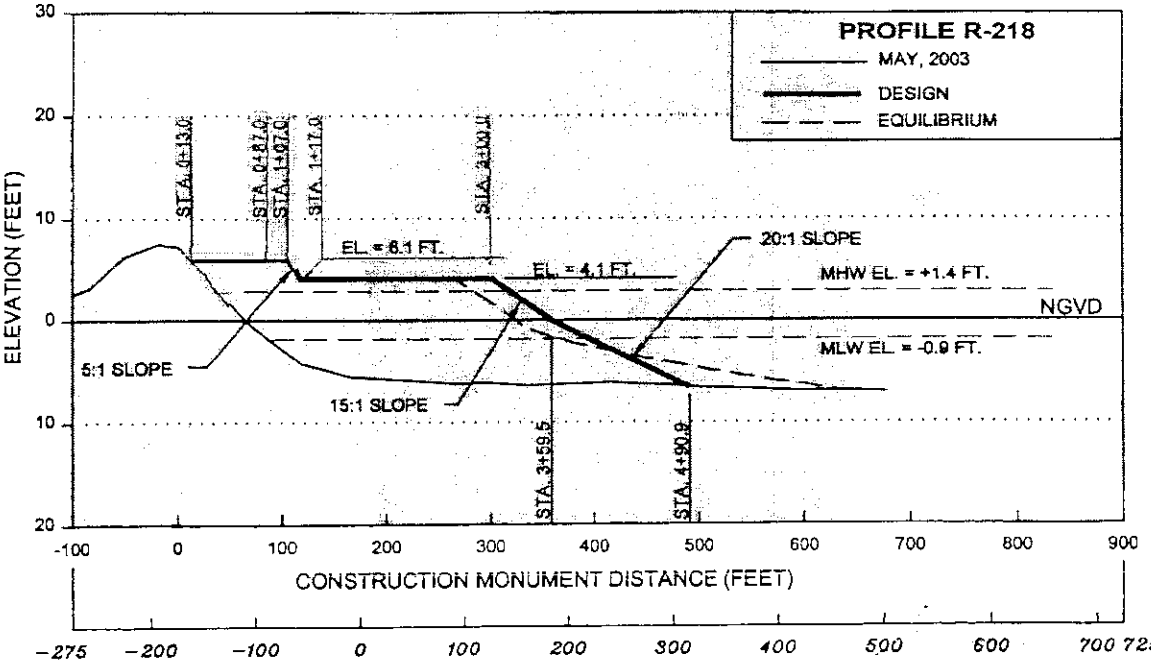

FDEP BASELINE MONUMENT DISTANCE (FEET)
OFFSET 175'

ESTERO ISLAND
GROSS SECTIONS
LEE COUNTY, FLORIDA

TITLE:

2481 N.W. BOCA RATON BLVD.
BOCA RATON, FL. 33431

COASTAL PLANNING & ENGINEERING, INC.

DATE: 7/21/00
BY: JRC
COMM. NO. 8410.02
SHEET: 35a OF 38

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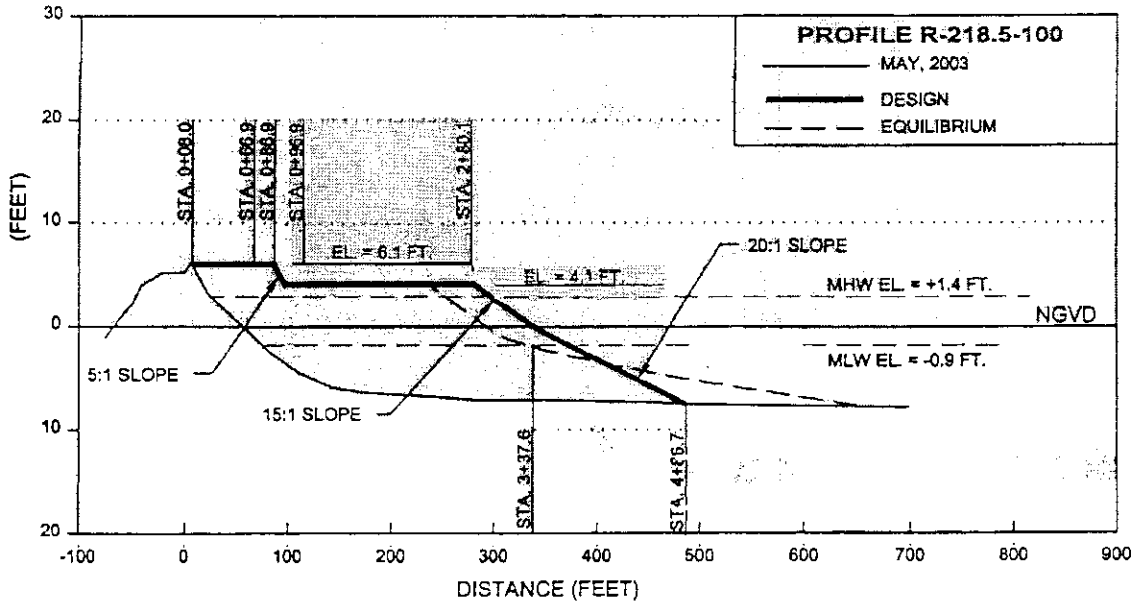

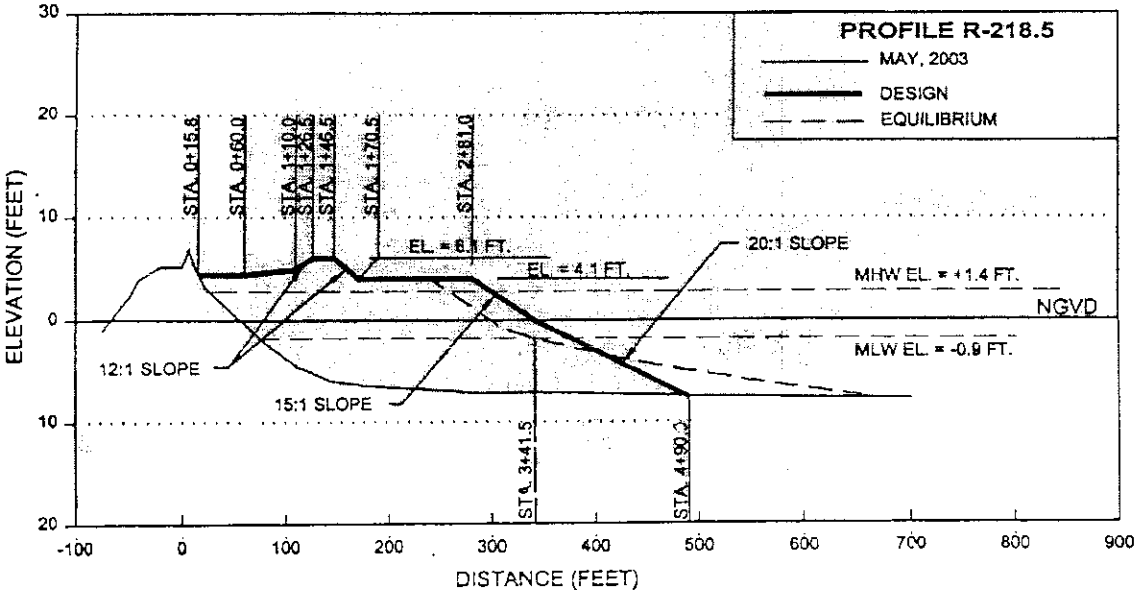

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ESTERO ISLAND
CROSS SECTIONS
LEE COUNTY, FLORIDA

TITLE

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BOCA RATON, FL. 33431

COASTAL PLANNING & ENGINEERING, INC.

DATE: 7/21/00
BY: JRC
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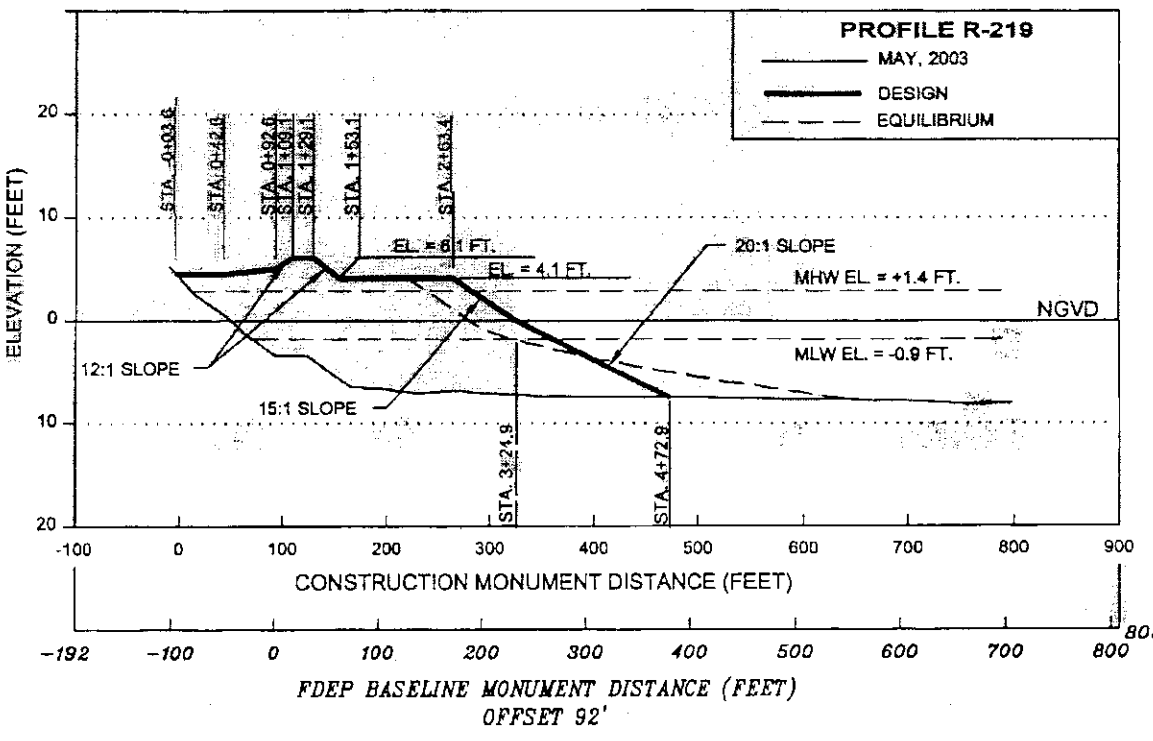

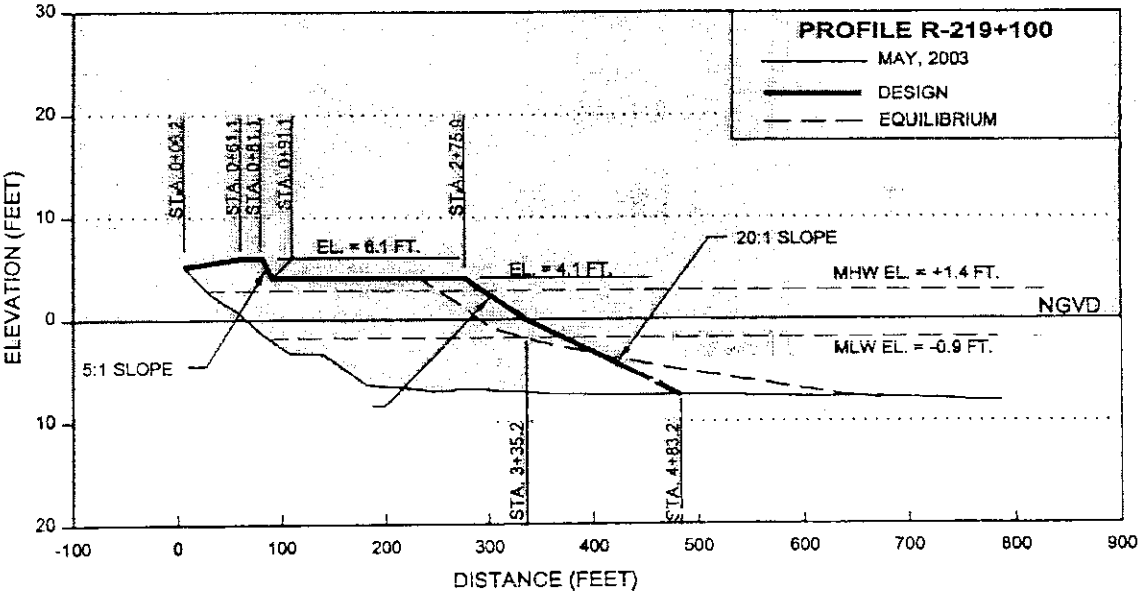

ESTERO ISLAND
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LEE COUNTY, FLORIDA

TITLE

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BOCA RATON, FL 33431

COASTAL PLANNING & ENG.

DATE: 7/21/00

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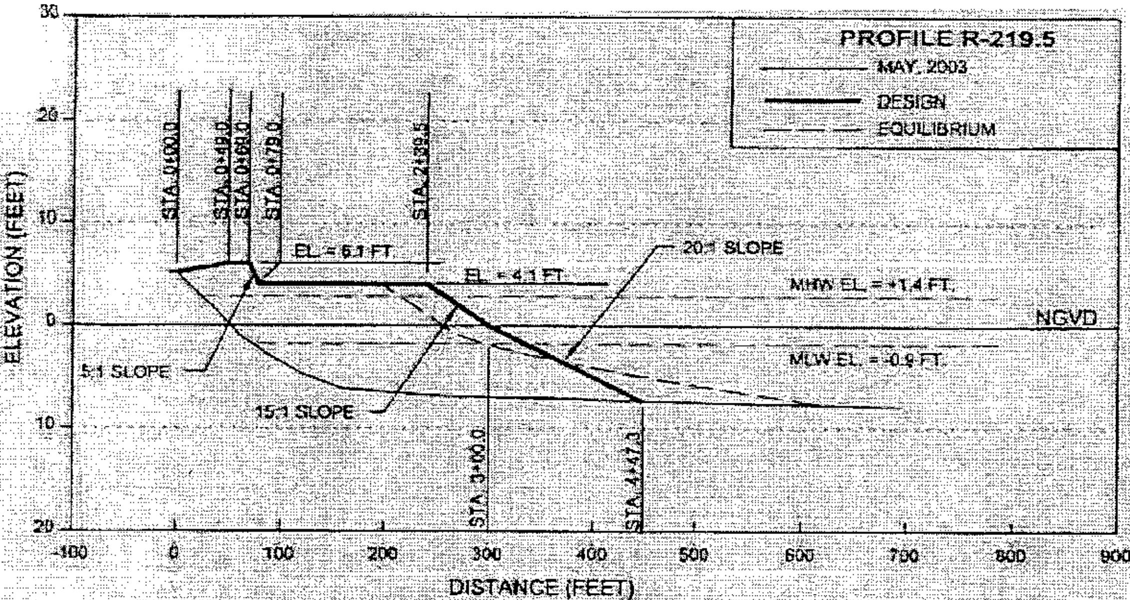

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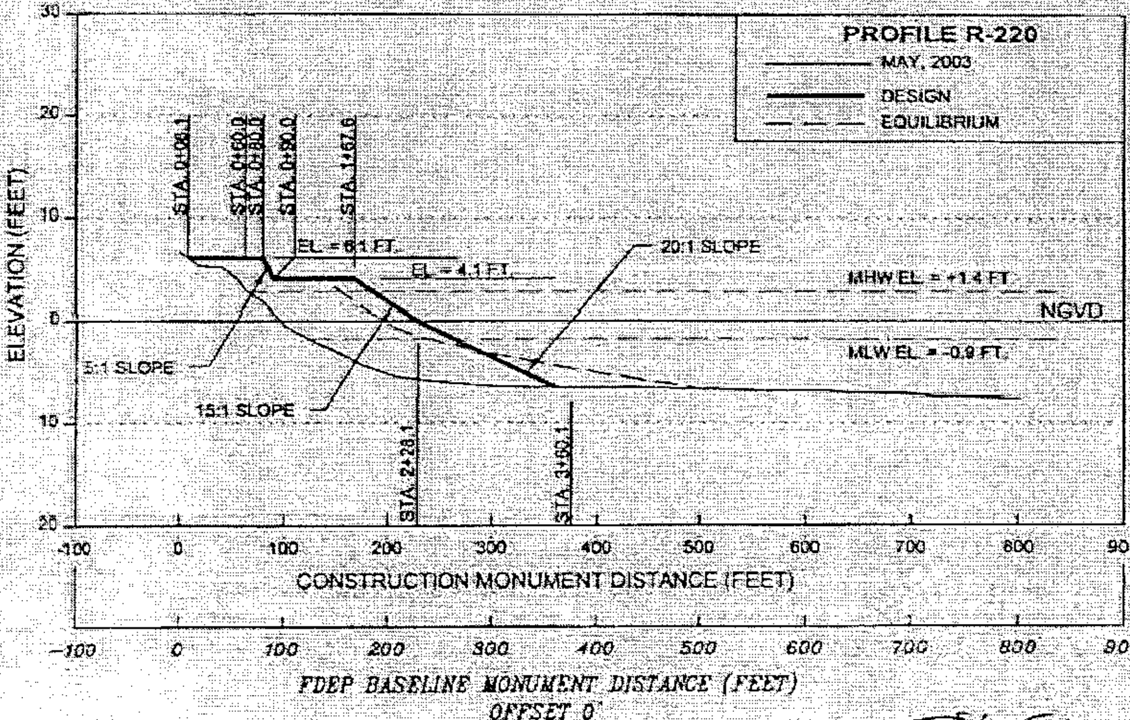

PERMIT # 1730059003

ESTERO ISLAND
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LEE COUNTY, FLORIDA

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BY:	JRC
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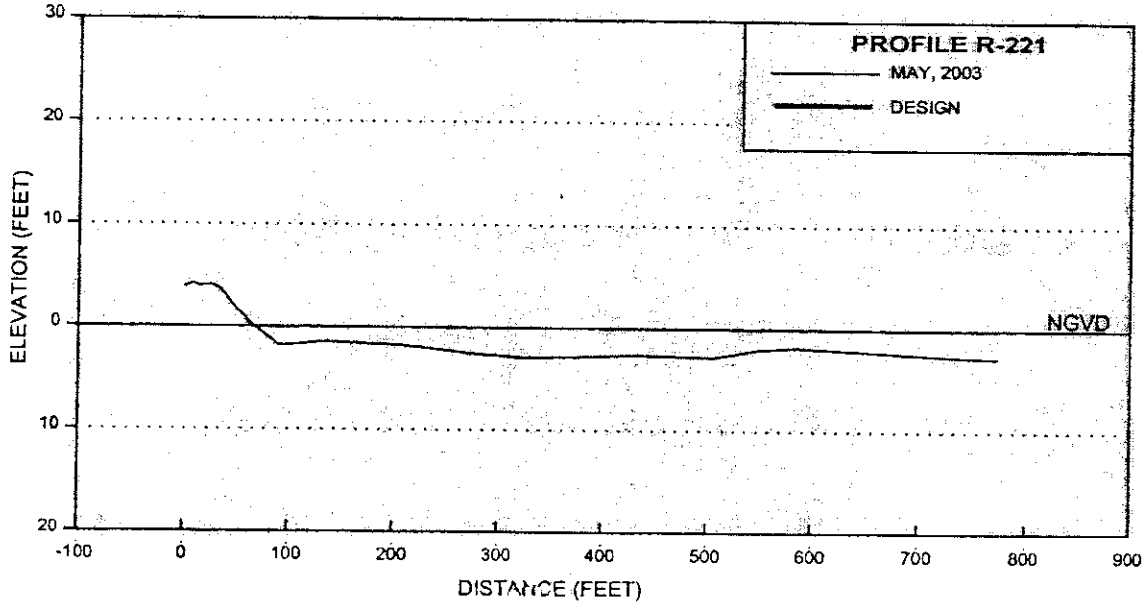

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ESTERO ISLAND
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LEE COUNTY, FLORIDA

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BOCA RATON, FL. 33431

COASTAL PLANNING & ENGINEERING, INC.

DATE: 7/21/00
BY: JRC
COMM. NO. 8410.02
SHEET: 36 OF 38

REV. 05/18/01
REV. 02/04/04

34857
3-11-04

Department of Environmental Protection

Jeb Bush
Governor

Marjory Stoneman Douglas Building
3900 Commonwealth Boulevard
Tallahassee, Florida 32399-3000

David B. Struhs
Secretary

CERTIFIED - RETURN RECEIPT REQUESTED

April, 5 2002

Mr. Stephen J. Boutelle
Lee County Natural Resources Division
1500 Monroe Street
Fort Myers, FL 33902

Permit Modification No. 0173059-002-JC
Permit No. 0173059-001-JC, Lee County
Estero Island and Lovers Key Beach Restoration Project

Dear Mr. Boutelle:

Your request to modify permit no. 0173059-001-JC has been received and reviewed by Department staff. The proposed permit modification is to allow for the one time placement of 2,600 cubic yards of sand to be trucked in from an approved upland source and placed over a shoreline distance of 570 feet along Lovers Key. The fill will cover 0.31 acres of critically eroded shoreline. Three hundred cubic yards of the fill volume will be used to construct a protective dune to an elevation of 6.5 feet (relative to MHW). The width of the dune will be either 15 or 30 feet, depending on available space. The dune will be placed around the pavilion and in front of the remaining beach facility. All fill will be placed landward of the existing mean high water (MHW) position. The placed seaward slope of the fill will be 1:1. The landward slope will be 1:1 for the 15 foot wide dune sections and 1:2 for the 30 foot wide dune sections. Additional fill is needed, but there is no room to place it along the Gulf shoreline.

A roughly 30 foot by 30 foot section of vegetation adjacent to the pavilion will be removed. The vegetation consists of Australian pine, white mangrove (*Laguncularia racemosa*), black mangrove (*Avicennia germinans*) and buttonwood. The high rate of erosion has resulted in the advance of the shoreline into this vegetation. The vegetation is either dead or dying. The trees will not survive under current conditions and must be removed to provide construction access and an area for fill placement. One "near dead" black mangrove will be removed. Other mangroves in the project area will be trimmed, only to an extent that is necessary, to allow for heavy equipment access and operation.

APR 10 2002

Background:
The Lovers Key State Park beach has experienced chronic erosion over the past decade, which has accelerated in the last 2 years. The beach segment adjacent to the south beach pavilion complex has experienced over 50 feet of shoreline recession since August 2000. This loss has required the removal of the concession pavilion, boardwalk, tram turn-around and restroom drain field (rendering the restroom and tram facility inoperable). The mean high water contour is currently underneath the park pavilion. A general lowering of the upper beach has occurred, allowing for increased wave and water impact to the park facility and public beach. A breach of the island formed to the immediate north of the south pavilion area due to storm activity. This breach resulted in significant modification of the island including the loss of existing well-established vegetation. At present, the breach has filled in with sand, though the general width and height of the island is narrow and provides essentially no storm protection.

Permit Modification Need:
Given existing conditions, imminent damage to the pavilion and other park infrastructure is likely due to normal storm conditions. The foundation of the structure has been compromised due to erosion and the structure is subject to direct wave attack. A re-initiation of the island breach to the north of the pavilion would likely threaten both the pavilion and the bridge connecting the facility to the mainland. Due to the generally low elevation of the island, damage to the restroom facility may also be incurred. While a major beach restoration project is currently planned for the area, the chronic nature of current conditions requires immediate remedial action. A single storm event may be sufficient to destroy the pavilion and re-initiate the island breach. The proposed emergency action will increase storm protection to the beach facility. The project will provide sufficient protection to warrant the repair and replacement of the tram turn-around. Tram access to the area provides the primary public access to less mobile members of the public. The tram is currently inoperable due to existing conditions.

Tree Removal Plan:
The plan requires the clearing of a roughly 30 foot by 30 foot section of vegetation adjacent to the pavilion. The vegetation consists of Australian pine, white mangrove (*Laguncularia racemosa*), black mangrove (*Avicennia germinans*) and buttonwood. The high rate of erosion has resulted in the advance of the shoreline into this vegetation. These trees would not survive under current conditions and must be removed to provide construction access and an area for fill placement. Placement of fill in this region is necessary to protect the pavilion and provide additional protection from breaching. Office staff have determined that the removal of one black mangrove and the trimming of other mangroves in the project area is consistent with the Mangrove Trimming and Preservation Act (403.9323 (2)), which allows for alteration of mangroves to enhance public use of, or access, to conservation areas. Re-vegetation of the area is planned in conjunction with the major beach restoration project due for construction later this

year. The major restoration project will provide sufficient storm protection to warrant replanting of affected areas including the area adjacent to the pavilion and breach area.

Sand Characteristics:
Native sand grain size has been estimated as 0.20 mm (2.31 phi), with a sorting coefficient of 0.87 and silt content of 2.48%. Fill for this project will come from upland sand sources and will be consistent with FDEP guidelines for acceptable beach quality material. Mean grain size will be equal or greater than the native material, with a sorting no greater than 1.5. The proposed sand sources is E.R. Jahna Industries, Inc.

The project description shall be revised as follows (~~strikethroughs~~ are deletions, underlines are additions):

PROJECT DESCRIPTION:

The Estero Island and Lovers' Key Beach Restoration project is to be divided into three reaches. Reach 1 is located in north Estero Island and extends approximately 4.6 miles and begins 300 feet north of R-175 and continues south to R-198. This project includes the construction of a terminal groin on Estero Island 300 feet north of R-175 to prevent losses of beach sand into Mantanzas Pass, which is a Federal navigation project. Reach 2 is located at the southern tip of Estero Island and extends approximately 0.51 miles beginning at R-208 adjacent to the sand spit (Little Estero Island) and extending south to a point 500 feet east of R-210. No sand will be placed within the sand spit region. Reach 3 is located on Lovers' Key, and extends approximately 1.1 miles commencing 500 feet north of R-215 and proceeding to a point 500 feet south of R-220. Borrow Site I is located 1.6 miles offshore of Estero Island. Borrow Site II is located 0.5 miles southwest of south Estero Island. Approximately 2, 600 cubic yards of upland, beach quality material from the E.R. Jahna Industries, Inc. site may be placed on Lovers' Key as an emergency interim measure, prior to the beach restoration project. A roughly 30 foot by 30 foot section of vegetation, composed of primarily Australian pine, will be trimmed. Mangroves will be trimmed according to Chapter 403.9326. One black mangrove will be removed from an area adjacent to the pavilion.

After thorough review the staff has determined that the proposed alteration does not increase the potential for adverse impact on the coastal system, public beach access seaward of the mean high water line or nesting sea turtles and hatchlings and their habitat, and that the proposed alteration does not reduce the design adequacy of the project. Since the proposed modification is not expected to result in any adverse environmental impact or water quality degradation and is expected to be of environmental benefit, the **permit is hereby modified** as requested and as stated above. By copy of this letter and the attached drawings, we are notifying all necessary parties of the modification(s).

This letter of approval does not alter the **March 5, 2012** expiration date, other Specific or General Conditions, or monitoring requirements of the permit. This letter and the accompanying drawings must be attached to the original permit.

This permit is hereby modified unless a sufficient petition for an administrative hearing is timely filed under sections 120.569 and 120.57, Florida Statutes, as provided below. The procedures for petitioning for a hearing are set forth below. Mediation under Section 120.573, F.S., is not available for this proceeding.

A person whose substantial interests are affected by the Department's action may petition for an administrative proceeding (hearing) under sections 120.569 and 120.57, F.S. The petition must contain the information set forth below and must be filed (received by the clerk) in the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station 35, Tallahassee, Florida 32399-3000.

Because the administrative hearing process is designed to redetermine final agency action on the application, the filing of a petition for an administrative hearing may result in further modification of the permit or even a denial of the application. If a sufficient petition for an administrative hearing or request for an extension of time to file a petition is timely filed, this permit modification automatically becomes only proposed agency action on the application subject to the result of the administrative review process. Accordingly, the applicant is advised not to commence construction or other activities under this permit modification until the deadlines noted below for filing a petition for an administrative hearing or request for an extension of time has expired.

Under rule 62-110.106(4), Florida Administrative Code, a person whose substantial interests are affected by the Department's action may also request an extension of time to file a petition for an administrative hearing. The Department may, for good cause shown, grant the request for an extension of time. Requests for extension of time must be filed with the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station 35, Tallahassee, Florida 32399-3000, before the applicable deadline. A timely request for extension of time shall toll the running of the time period for filing a petition until the request is acted upon. If a request is filed late, the Department may still grant it upon a motion by the requesting party showing that the failure to file a request for an extension of time before the deadline was the result of excusable neglect.

In the event that a timely and sufficient petition for an administrative hearing is filed, other persons whose substantial interests will be affected by the outcome of the administrative process have the right to petition to intervene in the proceeding. Any intervention will be only at the

discretion of the presiding judge upon the filing of a motion in compliance with rule 28-106.205, F.A.C.

In accordance with rules 28-106.111(2) and 62-110.106(3)(a)(1), F.A.C., petitions for an administrative hearing by the applicant must be filed within 14 days of receipt of this written notice. Petitions filed by any persons other than the applicant, and other than those entitled to written notice under section 120.60(3), F.S., must be filed within 14 days of publication of the notice or within 14 days of receipt of the written notice, whichever occurs first.

Under section 120.60(3), F.S., however, any person who has asked the Department for notice of agency action may file a petition within 14 days of receipt of such notice, regardless of the date of publication.

The petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. The failure of any person to file a petition for an administrative hearing within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under sections 120.569 and 120.57, F.S.

In accordance with rule 28-106.201, F.A.C., a petition that disputes the material facts on which the Department's action is based must contain the following information:

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

A petition that does not dispute the material facts on which the Department's action is based shall state that no such facts are in dispute and otherwise shall contain the same information as set forth above, as required by rule 28-106.301, F.A.C. Under sections 120.569(2)(c) and (d), F.S., a petition for administrative hearing must be dismissed by the agency if the petition does not substantially comply with the above requirements or is untimely filed.

This action is final and effective on the date filed with the Clerk of the Department unless a petition is filed in accordance with the above. Upon the timely filing of a petition this order will not be effective until further order of the Department.

This permit modification constitutes an order of the Department. The applicant has the right to seek judicial review of the order under section 120.68, F.S., by the filing of a notice of appeal under rule 9.110 of the Florida Rules of Appellate Procedure with the Clerk of the Department in the Office of General Counsel, 3900 Commonwealth Boulevard, Mail Station 35, Tallahassee, Florida 32399-3000; and by filing a copy of the notice of appeal accompanied by the applicable filing fees with the appropriate district court of appeal. The notice of appeal must be filed within 30 days from the date when the final order is filed with the Clerk of the Department.

When there has been no publication of notice of agency action or notice of proposed agency action as prescribed in rule 62-110.106, F.A.C., a person may request a copy of the agency action. The Department shall upon receipt of such a request, if agency action has occurred, promptly provide the person with notice. The Department does not require notice of this agency action to be published. However, the applicant may elect to publish notice as prescribed in rule 62-110.106, F.A.C., which constitutes notice to the public and establishes a time period for submittal of any petition.

If you have any questions regarding this matter, please contact me at the letterhead address or by telephone at (850) 487-4471, ext. 104.

Sincerely,

Martin K. Seeling
Environmental Administrator
Office of Beaches and Coastal Systems

MKS/mcc

cc:
Stephen Keehn, Coastal Planning & Engineering, Inc.
Lucy Blair, DEP, South District, Ft. Myers
Karen Moody, FWCC, BPSM
Jennie Cowart, DEP, South District, Ft. Myers
Lynda Charles, OBCS
Phil Flood, OBCS
Harry W. Bergmann - CESAJ-RD-WF, U. S. Army Corps of Engineers, Ft. Myers
OBCS File

FILING AND ACKNOWLEDGMENT

FILED, on this date, pursuant to Section 120.52, Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.

Deputy Clerk 4/5/02
Date

403.9326 Exemptions.
(1) The following activities are exempt from the permitting requirements of ss. 403.9321-403.9333 and any other provision of law if no herbicide or other chemical is used to remove mangrove foliage:
(a) Mangrove trimming in riparian mangrove fringe areas that meet the following criteria:
1. The riparian mangrove fringe must be located on lands owned or controlled by the person who will supervise or conduct the trimming activities or on sovereign submerged lands immediately waterward and perpendicular to the lands.
2. The mangroves that are the subject of the trimming activity may not exceed 10 feet in pretrimmed height as measured from the substrate and may not be trimmed so that the overall height of any mangrove is reduced to less than 6 feet as measured from the substrate. This exemption applies to property with a shoreline of 150 feet or less. Owners of property with a shoreline of more than 150 feet may not trim, under an exemption, more than 65 percent of the mangroves along the shoreline.
(b) Mangrove trimming supervised or conducted exclusively by a professional mangrove trimmer, as defined in s. 403.9325, in riparian mangrove fringe areas that meet the following criteria:
1. The riparian mangrove fringe must be located on lands owned or controlled by the professional mangrove trimmer or by the person contracting with the professional mangrove trimmer to
perform the trimming activities, or on sovereign submerged lands immediately waterward and perpendicular to such lands.
2. The mangroves that are the subject of the trimming activity may not exceed 24 feet in pretrimmed height and may not be trimmed so that the overall height of any mangrove is reduced toless than 6 feet as measured from the substrate.
3. The trimming of mangroves that are 16 feet or greater in pretrimmed height must be conducted in stages so that no more than 25 percent of the foliage is removed annually.
4. A professional mangrove trimmer that is trimming red mangroves for the first time under the exemption provided by this paragraph must notify the department or delegated local government in writing at least 10 days before commencing the trimming activities. This exemption applies to property with a shoreline of 150 feet or less. Owners of property with a shoreline of more than 150 feet may not trim, under an exemption, more than 65 percent of the mangroves along the shoreline.
(c) Mangrove trimming in riparian mangrove fringe areas which is designed to reestablish or maintain a previous mangrove configuration if the mangroves to be trimmed do not exceed 24 feet in pretrimmed height. The reestablishment of a previous mangrove configuration must not result in the destruction, defoliation, or removal of mangroves. Documentation of a previous mangrove configuration may be established by affidavit of a person with personal knowledge of such configuration, through current or past permits from the state or local government, or by photographs of the mangrove configuration. Trimming activities conducted under the exemption provided by this paragraph shall be conducted by a

professional mangrove trimmer when the mangroves that are the subject of the trimming activity have a pretrimmed height which exceeds 10 feet as measured from the substrate. A person trimming red mangroves for the first time under the exemption provided by this paragraph must notify the department or delegated local government in writing at least 10 days before commencing the trimming activities.

(d) The maintenance trimming of mangroves that have been previously trimmed in accordance with an exemption or government authorization, including those mangroves that naturally recruited into the area and any mangrove growth that has expanded from the area subsequent to the authorization, if the maintenance trimming does not exceed the height and configuration previously established. Historically established maintenance trimming is grandfathered in all respects, notwithstanding any other provisions of law. Documentation of established mangrove configuration may be verified by affidavit of a person with personal knowledge of the configuration or by photographs of the mangrove configuration.

(e) The trimming of mangrove trees by a state-licensed surveyor in the performance of his duties, if the trimming is limited to a swath of 3 feet or less in width.

(f) The trimming of mangrove trees by a duly constituted communications, water, sewerage, electrical, or other utility company, or by a federal, state, county, or municipal agency, or by an engineer or a surveyor and mapper working under a contract with such utility company or agency, when the trimming is done as a governmental function of the agency.

(g) The trimming of mangrove trees by a duly constituted communications, water, sewerage, electrical, or other utility company in or adjacent to a public or private easement or right-of-way, if the trimming is limited to those areas where it is necessary for the maintenance of existing lines orfacilities or for the construction of new lines or facilities in furtherance of providing utility service to its customers and if work is conducted so as to avoid any unnecessary trimming of mangrove trees.

(h) The trimming of mangrove trees by a duly constituted communications, water, sewerage, or electrical utility company on the grounds of a water treatment plant, sewerage treatment plant, or electric power plant or substation in furtherance of providing utility service to its customers, if work is conducted so as to avoid any unnecessary trimming of mangrove trees.

(2) Any rule, regulation, or other provision of law must be strictly construed so as not to limit directly or indirectly the exemptions provided by this section for trimming in riparian mangrove fringe areas except as provided in s. 403.9329(7)(b). Any rule or policy of the department, or local government regulation, that directly or indirectly serves as a limitation on the exemptions provided by this section for
trimming in riparian mangrove fringe areas is invalid.

(3) The designation of riparian mangrove fringe areas as aquatic preserves or Outstanding Florida Waters shall not affect the use of the exemptions provided by this section.

403.9327 General permits.--
(1)(a) The following general permits are created for the trimming of mangroves that do not qualify for an exemption provided by s. 403.9326:
(b) A general permit to trim mangroves for riparian property owners, if:
1. The trimming is conducted in an area where the department has not delegated the authority to regulate mangroves to a local government;
2. The trimming is supervised or conducted exclusively by a professional mangrove trimmer;
3. The mangroves subject to trimming under the permit do not extend more than 500 feet waterward as measured from the trunk of the most landward mangrove tree in a direction perpendicular to the shoreline;
4. No more than 65 percent of the mangroves along the shoreline which exceed 6 feet in pretrimmed height as measured from the substrate will be trimmed, and no mangrove will be trimmed so that the overall height of any mangrove is reduced to less than 6 feet as measured from the substrate; and
5. No herbicide or other chemical will be used for the purpose of removing leaves of a mangrove.
(c) A general permit for the limited trimming of mangroves within existing navigational channels, basins, or canals to provide clearance for navigation of watercraft, if:
1. The trimming is conducted in an area where the department has not delegated the authority to regulate mangroves to a local government;
2. The trimming is supervised or conducted exclusively by a professional mangrove trimmer;
3. The mangroves are located on lands owned or controlled by the professional mangrove trimmer or by the person contracting with the professional mangrove trimmer to perform the trimming activities, or on sovereign submerged lands immediately waterward and perpendicular to such lands;
4. The trimming is limited to those portions of branches or trunks of mangroves which extend into the navigation channel beyond a vertical plane of the most waterward prop root or root system; and
5. No herbicide or other chemical will be used for the purpose of removing leaves of a mangrove.
(2) The department may establish additional general permits for mangrove trimming.
(3) The general permits under this section are subject to the following conditions:
(a) A general permit may be used only once on any parcel of property to achieve a mangrove height of no less than 6 feet;
(b) Trimming must be conducted in stages so that no more than 25 percent of the foliage is removed annually; and The height and configuration of mangroves trimmed under these general
permits may be maintained under s. 403.9326(1)(d).
(4) Notice of intent to use a general permit must be made in writing to the department and must contain sufficient information to enable the department to determine the scope of the proposed trimming and whether the activity will comply with the conditions of this section.

(5) The department shall grant or deny in writing each request for a general permit within 30 days after receipt, unless the applicant agrees to an extension. If the applicant does not agree to an extension and the department fails to act on the request within the 30-day period, the request is approved. The department's denial of a request for a general permit is subject to review under chapter 120. The department's action may not receive a presumption of validity in any administrative or judicial proceeding for review.
(6) Trimming that does not qualify for an exemption under s. 403.9326 or a general permit under this section requires a permit as provided in s. 403.9328.
(7) If a local government receives delegation of the department's authority to regulate mangroves, the delegated local government shall issue permits for mangrove trimming in lieu of a general permit from the department, but the local government may not directly or indirectly limit the use of the exemptions in s. 403.9326. A delegated local government may impose stricter substantive standards than those of the department for the issuance of a permit authorized by this section; however, such regulations may not prohibit all mangrove trimming.

Department of Environmental Protection

Jeb Bush
Governor

Marjory Stoneman Douglas Building
3900 Commonwealth Boulevard
Tallahassee, Florida 32399-3000

David B. Struhs
Secretary

CONSOLIDATED JOINT COASTAL PERMIT AND INTENT TO GRANT SOVEREIGN SUBMERGED LANDS AUTHORIZATION

PERMITTEE/AUTHORIZED ENTITY:
Lee County
c/o Mr. Stephen J. Boutelle
Lee County Natural Resources Division
1500 Monroe Street
Fort Myers, FL 33902

Permit/Authorization No.: 0173059-001-JC
Date of Issue: March 5, 2002
Expiration Date/
Construction Phase: March 5, 2012
County: Lee
Project: Estero Island and Lovers Key Beach Restoration Project

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This permit is issued under the authority of Chapter 161 and Part IV of Chapter 373, Florida Statutes (F.S.), and Title 62 and 40, Florida Administrative Code (F.A.C.). Pursuant to Operating Agreements executed between the Department and the water management districts, as referenced in Chapter 62-113, F.A.C., the Department is responsible for reviewing and taking final agency action on this activity.

ACTIVITY DESCRIPTION:

The Estero Island and Lovers' Key Beach Restoration project is to be divided into three reaches. Reach 1 is located in north Estero Island and extends approximately 4.6 miles and begins 300 feet north of R-175 and continues south to R-198. This project includes the construction of a terminal groin on Estero Island 300 feet north of R-175 to prevent losses of beach sand into Mantanzas Pass, which is a Federal navigation project. Reach 2 is located at the southern tip of Estero Island and extends approximately 0.51 miles beginning at R-208 adjacent to the sand spit (Little Estero Island) and extending south to a point 500 feet east of R-210. No sand will be placed within the sand spit region. Reach 3 is located on Lovers' Key, and extends approximately 1.1 miles commencing 500 feet north of R-215 and proceeding to a point 500 feet south of R-220. Borrow Site I is located 1.6 miles offshore of Estero Island. Borrow Site II is located 0.5 miles southwest of south Estero Island.

Reach 1 is located in north Estero Island, extends approximately 4.6 miles and begins 300 feet north of R-175 and continues south to R-198. This project includes the construction of a terminal groin on Estero Island 300 feet north of R-175. The proposed terminal groin is 240 feet long (crest) by 60.8 feet wide (base), situated perpendicular to the shoreline with 90 feet landward of the 2000 MHW and 150 feet seaward of the 2000 MHW shoreline. Reach 1 of the project consists of a 4.1 feet NGVD berm, with a 40-foot shoreline extension from the April

2000 MHW location. The project design calls for the placement of 1,010,000 cubic yards of compatible beach quality sand on Reach 1.

Reach 2 is located at the southern tip of Estero Island and extends approximately 0.51 miles beginning at R-208 adjacent to the sand spit (Little Estero Island) and extending south to a point 500 feet east of R-210. No sand will be placed within the sand spit region. The project also consists of a 4.1 feet NGVD berm, with a 40-foot shoreline extension from the April 2000 MHW location. Reach 2 is designed to receive 70,000 cubic yards of sand.

Reach 3 is located on Lovers' Key, and extends approximately 1.1 miles commencing 500 feet north of R-215 and proceeding to a point 500 feet south of R-220. The project calls for the placement of 335,000 cubic yards in Reach 3. In Reach 3, the project consists of a 4.1 foot NGVD berm, with a 40 foot shoreline extension from the April 2000 MHW location.

The activity includes consideration of an application for a 10-year sovereign submerged lands public easement (BOT File No. 360223529, Instrument No. 30635) containing ~188.43 acres or 8,208,229 square feet, more or less for Borrow Area I and 103.12 acres or 4,492,119.22 square feet, more or less for Borrow Area II. Borrow Area I is located 1.6 miles offshore from DNR reference monument R-178. Borrow Area II is located 0.5 miles southwest from DNR reference monument R-205. The terminal structure will contain ~0.29 acres or 12,661.29 sq. feet.

The applicant has also requested a variance (File No. 0173059-002-EV) from Rule 62-4.244(5)(c), F.A.C., to establish a temporary mixing zone of 300 meters offshore and up to 4,500 meters along shore from the point of sand discharge onto the beach disposal area.

ACTIVITY LOCATION:
The activity is located along Estero Island and Lovers' Key, Lee County, fronting the Gulf Of Mexico, Class III Waters, adjacent to Outstanding Florida Waters.

Latitude/Longitude

(Reach 1)	N. Project Limit = Lat 26 27 54.82784/ Long 81 58 05.76430
	S. Project Limit = Lat 26 25 34.83753/ Long 81 54 33.37939
(Reach 2)	N. Project Limit = Lat 26 24 14.69500/ Long 81 53 27.50000
	S. Project Limit = Lat 26 24 14.70200/ Long 81 52 58.60240
(Reach 3)	N. Project Limit = Lat 26 23 40.04500/ Long 81 53 02.27900
	S. Project Limit = Lat 26 22 55.48445/ Long 81 52 18.81936

State Plane Coordinates: *All 3 Project Areas in NAD 1983*

(Reach 1)	N. Project Limit = 774787.7N / 666547.7E
	S. Project Limit = 760662.6N / 685857.9E
(Reach 2)	N. Project Limit = 752572.6N / 691853.9E
	S. Project Limit = 752578.6N / 694480.9E

(Reach 3) N. Project Limit = 749079.1N / 694149.8E
S. Project Limit = 744583.8N / 698106.0E

DNR Reference Monuments:
(Reach 1) N. Project Limit 300ft north of R-175; S. Project Limit R-198.

(Reach 2) N. Project Limit R-208; S. Project Limit = 500ft east of R-210

(Reach 3) N. Project Limit 500ft north of R-215; S. Project Limit = 500ft south of R-220

This permit constitutes a finding of consistency with Florida's Coastal Zone Management Program, as required by Section 307 of the Coastal Zone Management Act. This permit also constitutes certification of compliance with state water quality standards pursuant to Section 401 of the Clean Water Act, 33 U.S.C. 1341. The Department has determined, pursuant to Section 380.0651(3)(e), F.S., that the project is located so that it will not adversely impact Outstanding Florida Waters or Class II waters, and will not contribute to boat traffic in a manner that will adversely impact the manatee.

This activity also requires a proprietary authorization, as the activity is located on sovereign submerged lands owned by the Board of Trustees of the Internal Improvement Trust Fund, pursuant to Article X, Section 11 of the Florida Constitution, and Sections 253.002 and 253.77, F.S. The activity is not exempt from the need to obtain a proprietary authorization. The Department has the responsibility to review and take final action on this request for proprietary authorization in accordance with Section 18-21.0051, F.A.C., and the Operating Agreements executed between the Department and the water management districts, as referenced in Chapter 62-113, F.A.C. In addition to the above, this proprietary authorization has been reviewed in accordance with Chapter 253 and the policies of the Board of Trustees.

As staff to the Board of Trustees, the Department has reviewed the activity described above, and has determined that the beach fill areas qualify for a consent to use sovereign, submerged lands, as long as the work performed is located within the boundaries as described herein and is consistent with the terms and conditions herein. Therefore, consent is hereby granted, pursuant to Chapter 253.77, F.S., to perform the activity on the specified sovereign submerged lands.

As staff to the Board of Trustees, the Department has reviewed the activity described above, and has determined that the borrow area and erosion control structure requires a **Public Easement** for the use of those lands, pursuant to Chapter 253.77, F.S. The Department intends to issue the public easement, subject to the conditions in the previously issued Consolidated Intent to Issue Joint Coastal Permit, Authorization to Use Sovereign Submerged Lands, and Variance.

The final documents required to execute the Public Easement have been sent to the Division of State Lands. The Department intends to issue the Public Easement, upon satisfactory execution of those documents. **You may not begin construction of this activity on state-owned, sovereign submerged lands until the Public Easement has been executed to the satisfaction of the Department.**

A copy of this authorization has been sent to the U. S. Army Corps of Engineers (USACOE) for review. The USACOE may require a separate permit. Failure to obtain this authorization prior to construction could subject you to enforcement action by that agency. You are hereby advised that authorizations also may be required by other federal, state, and local entities. This authorization does not relieve you of the requirements to obtain all other required permits and authorizations.

The above named permittee is hereby authorized to construct the work shown on the application and approved drawings, plans, and other documents attached hereto or on file with the Department and made a part hereof. **This permit and authorization to use sovereign submerged lands is subject to the limits, conditions, and locations of work shown in the attached drawings, and is also subject to the General Conditions and Specific Conditions, which are a binding part of this permit and authorization.** You are advised to read and understand these drawings and conditions prior to commencing the authorized activities, and to ensure the work is conducted in conformance with all the terms, conditions, and drawings. If you are utilizing a contractor, the contractor also should read and understand these drawings and conditions prior to commencing the authorized activities.

GENERAL CONDITIONS:

1. All activities authorized by this permit shall be implemented as set forth in the plans and specification approved as a part of this permit, and all conditions and requirements of this permit. The permittee shall notify the Department in writing of any anticipated deviation from the permit prior to implementation so that the Department can determine whether a modification of the permit is required pursuant to section 62B-49.008, Florida Administrative Code.

2. If, for any reason, the permittee does not comply with any condition or limitation specified in this permit, the permittee shall immediately provide the Office of Beaches and Coastal Systems and the appropriate District office of the Department with a written report containing the following information: a description of and cause of noncompliance; and the period of noncompliance, including dates and times; or, if not corrected, the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the noncompliance.

3. This permit does not eliminate the necessity to obtain any other applicable licenses or permits which may be required by federal, state, local, special district laws and regulations. This

permit is not a waiver or approval of any other Department permit or authorization that may be required for other aspects of the total project which are not addressed in this permit.

4. This permit conveys no title to land or water, does not constitute State recognition or acknowledgment of title, and does not constitute authority for the use of sovereignty land of Florida seaward of the mean high-water line, or, if established, the erosion control line, unless herein provided and the necessary title, lease, easement, or other form of consent authorizing the proposed use has been obtained from the State. The permittee is responsible for obtaining any necessary authorizations from the Board of Trustees of the Internal Improvement Trust Fund prior to commencing activity on sovereign lands or other state-owned lands.

5. Any delineation of the extent of a wetland or other surface water submitted as part of the permit application, including plans or other supporting documentation, shall not be considered specifically approved unless a specific condition of this permit or a formal determination under section 373.421(2), F.S., provides otherwise.

6. This permit does not convey to the permittee or create in the permittee any property right, or any interest in real property, nor does it authorize any entrance upon or activities on property which is not owned or controlled by the permittee. The issuance of this permit does not convey any vested rights or any exclusive privileges.

7. This permit or a copy thereof, complete with all conditions, attachments, plans and specifications, modifications, and time extensions shall be kept at the work site of the permitted activity. The permittee shall require the contractor to review the complete permit prior to commencement of the activity authorized by this permit.

8. The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel with proper identification and at reasonable times, access to the premises where the permitted activity is located or conducted for the purpose of ascertaining compliance with the terms of the permit and with the rules of the Department and to have access to and copy any records that must be kept under conditions of the permit; to inspect the facility, equipment, practices, or operations regulated or required under this permit; and to sample or monitor any substances or parameters at any location reasonably necessary to assure compliance with this permit or Department rules. Reasonable time may depend on the nature of the concern being investigated.

9. At least forty-eight (48) hours prior to commencement of activity authorized by this permit, the permittee shall submit to the Office of Beaches and Coastal Systems and the appropriate District office of the Department a written notice of commencement of construction indicating the actual start date and the expected completion date and an affirmative statement that the permittee and the contractor, if one is to be used, have read the general an specific conditions of the permit and understand them.

10. If historical or archaeological artifacts are discovered at any time on the project site, the permittee shall immediately notify the State Historic Preservation Officer and the Office of Beaches and Coastal Systems.

11. Within 30 days after completion of construction or completion of an subsequent maintenance event authorized by this permit, the permittee shall submit to the Office of Beaches and Coastal Systems and the appropriate District office of the Department a written statement of completion and certification by a registered professional engineer. This certification shall state that all locations and elevations specified by the permit have been verified; the activities authorized by the permit have been performed in compliance with the plans and specifications approved as a part of the permit, and all conditions of the permit; or shall describe any deviations from the plans and specification, and all conditions of the permit. When the completed activity differs substantially from the permitted plans, any substantial deviations shall be noted and explained on two copies of as-built drawings submitted to the Department.

12. The Department shall require additional permit conditions based on sites specific circumstances to insure compliance with the provision of this Chapter. Any such additional conditions will be specified in the Intent to Issue.

SPECIFIC CONDITIONS:

1. The terms, conditions, and provisions of the required public easement shall be met. Construction of this activity shall not commence on sovereign submerged lands, title to which is held by the Board of Trustees of the Internal Improvement Trust Fund, until all public easement documents have been executed to the satisfaction of the Department.

2. No work shall be conducted under this permit for the initial dredging or subsequent dredging events until the permittee has received a written notice to proceed from the Department. Prior to the issuance of the notice to proceed, the permittee shall submit two copies of detailed final construction plans and specifications for all authorized activities, certified by an engineer duly registered pursuant to Chapter 471, Florida Statutes, or other appropriate individual. The plans shall include details of construction, including general construction procedures and equipment to be used.

3. Prior to construction of the beach restoration project, the permittee shall establish an erosion control line as follows. The line of mean high water for the area to be restored shall be determined, to the standards of the Department's Division of State Lands, to establish the boundary line between sovereignty lands of the state bordering on the Gulf of Mexico and the upland property. Within ninety (90) days from being notified of its acceptability by the Department's Division of State Lands, this mean high water

determination shall be recorded in the public records of Lee County, Florida. A copy of the recorded mean high water determination shall be sent to the Department within 5 days of recording.

4. The permittee shall conduct a pre-construction conference with all contractors, the engineer of record, the FWC, the marine turtle permit holder, and a staff representative of the Department to establish an understanding among the parties as to the items specified in the special and standard conditions of the permit. The pre-construction conference will be held at least 30 days prior to construction activities. The permittee shall provide a minimum of 10 days advance written notification to the following offices advising of the date, time and location of the pre-construction conference:

DEP, Office of Beaches and Coastal Systems
Mail Station 300
3900 Commonwealth Boulevard
Tallahassee, Florida 32399-3000
phone: (850) 487-4471
fax: (850) 488-5257

DEP, South District Office
2295 Victoria Ave, #364
Ft. Myers, Florida 33901-3881
(941) 332-6975

FWCC, Bureau of Protected Species Management
620 South Meridian Street
Tallahassee, Florida 32399-1600
phone: (850) 922-4330

5. The permittee shall conduct a monitoring program to include specific monitoring to assess the effects of the excavation of the borrow areas and construction of the terminal groin structure on erosion and accretion patterns within the fill placement area and adjacent shorelines and on the inlet littoral system in order to identify any adverse impacts attributable to the project authorized by this permit. This monitoring shall be described in a detailed project monitoring plan, which is subject to review and approval, by the Department, prior to issuance of a notice to proceed. The approved monitoring plan can be revised at any later time by written request of the permittee and with the written approval of the Department. A bathymetric survey of Borrow Area I shall be obtained immediately following completion of dredging in that borrow site. Bathymetric surveys of Borrow Area II shall be obtained immediately following construction and then 2, 5, and 7 years following construction.

6. The approved monitoring plan required in Condition 5 above shall specify aerial photography and the collection of topographic and bathymetric survey data sufficient to calculate annual shoreline position and volumetric changes in the project area and along the adjacent shorelines fronting the north end of Lovers Key.

Beach and offshore profile surveys shall be obtained at established DEP survey markers, using DEP survey specifications as applicable, for pre-construction, post-construction within two months of construction completion, and at annual intervals for three years thereafter, taken preferably in the spring or summer months, and every two years thereafter until the next nourishment event or upon completion of the 7- year post-construction survey, whichever comes first. Survey data must be submitted to the Department in standard DEP approved digital formats, with a survey control information listing, and photocopies of the field book beach profile data pages. Aerial photography shall be conducted concurrently with each survey. The permittee shall submit a monitoring report within 100 days of completion of each post-construction survey.

7. Prior to issuance of a Notice to Proceed, the permittee shall submit a Contingency Plan to remediate any adverse impacts to the shoreline resulting from the construction of the proposed terminal groin or the dredging in Borrow Area II. This Plan shall be subject to review and approval by the Department. The approved Contingency Plan can be revised at any later time by written request of the permittee and with the written approval of the Department. As guidance for obtaining Departmental approval, the Plan shall acknowledge that there is a potential for adjacent shoreline erosion occurring as a result of the construction of the proposed terminal groin on the north end of Estero Island and as a result of dredging in Borrow Area II along the south end of Estero Island.

   The Plan shall confirm that these areas will be specifically monitored, analyzed, and reported on as part of the approved Monitoring Plan required in Permit Condition 6. The Contingency Plan shall provide that any erosional problems that develop north (downdrift) of the groin, or landward of Borrow Area II on southern Estero Island or northern Lover's Key, will be specifically addressed and appropriate remedial solutions developed and implemented.

   Remedial solutions to be considered shall include the placement of beach fill material and/or adjustment of the terminal groin to alleviate adjacent shoreline erosional problems, as applicable. Once approved by the Department, the permittee shall request a modification to this permit to incorporate the remedial action(s) and submit all supporting information that will be necessary for approval.

8. Prior to initiating dredging activities in Borrow Area II Section C, notice will be given to the Department. Written justification for such action will be provided to the Department and a Notice to Proceed will be requested. Final plans submitted to the Department as outlined in Specific Condition 2 shall divide both borrow areas into primary and secondary regions with the primary region containing the best quality fill material. Initiation of dredging of secondary regions shall be upon written notification and acceptance by the Department.

9. During all dredging operations the permittee shall require the dredging contractor to have electronic positioning equipment that continuously measures the vertical and horizontal location of the cutterhead, at all times during operations. The horizontal positioning equipment shall be installed on the dredge so as to monitor the actual location of the dredge equipment and be interfaced with the depth monitoring device. This equipment shall provide a permanent record of the equipment's position referenced to State Plane Coordinates and NGVD. As a part of the final report the permittee shall provide a daily record of the position of the dredge equipment which includes the dredge area limits with actual and maximum authorized dredge depth referenced to state plane coordinates and NGVD. Vertical and horizontal accuracy of the positioning equipment shall also be reported.

The following conditions are required to minimize impacts to marine turtles:

10. Construction-related activities are authorized to occur on the nesting beach (seaward of existing coastal armoring structures or the dune crest) during the nesting season under the following conditions.

    a. A daily marine turtle nest survey of the nesting beach in the vicinity of the project (including areas of beach access) shall be conducted starting April 15 and continue until October 31. Only those nests that may be affected by construction activities shall be relocated. Nests requiring relocation shall 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 shall cease when construction activities no longer threaten nests. Nests deposited within areas where construction activities have ceased or will not occur for 65 days shall be marked and left in place unless other factors threaten the success of the nest. Such nests will be marked and the actual location of the clutch determined. A circle with a radius of ten (10) feet, centered at the clutch, shall be marked by stake and survey tape or string. No construction activities shall enter this circle and no adjacent construction shall be allowed which might directly or indirectly disturb the area within the staked circle.

    b. No construction activity may commence until completion of the marine turtle survey each day.

    c. It is the responsibility of the permittee to ensure that the project area and access sites are surveyed for marine turtle nesting activity. All nesting surveys, nest relocations screening or caging activities etc. shall be conducted only by persons with prior experience and training in these activities and who is duly authorized to conduct such

activities through a valid permit issued by the Fish and Wildlife Conservation Commission (FWC), pursuant to Florida Administrative Code 68E-1.

11. From April 15 through October 31, staging areas for construction equipment shall be located off the beach. Nighttime storage of construction equipment not in use shall be off the beach to minimize disturbance to sea turtle nesting and hatching activities.

12. Immediately after completion of the beach fill placement event and prior to April 15 for 3 subsequent years if placed sand still remains on the beach, the beach shall be tilled as described below. During the 3 years following each fill placement event, the permittee may measure sand compaction in the area of restoration in accordance with a protocol agreed to by the FWC, the Department, the U.S. Fish & Wildlife Service, and the applicant to determine if tilling is necessary. At a minimum, the protocol provided under a and b below shall be followed. If required, the area shall be tilled to a depth of 24 inches. All tilling activity must be completed prior to May 1. An annual summary of compaction surveys and the actions taken shall be submitted to the FWC. If the project is completed during the nesting season, tilling shall not occur in areas where nests have been left in place or relocated unless authorized by the U.S. Fish and Wildlife Service in an Incidental Take Statement. A report on the results of compaction monitoring shall be submitted to the FWC prior to any tilling actions being taken. An annual summary of compaction surveys and the actions taken shall be submitted to the FWC. This condition shall be evaluated annually and may be modified if necessary to address sand compaction problems identified during the previous year.

    a. Compaction sampling stations shall be located at 500-foot intervals along the project area. 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 lay over less compact layers. Replicates shall 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 shall be averaged to produce final values for each depth at each station. Reports shall include all 18 values for each transect line, and the final 6 averaged compaction values.

    c. If the average value for any depth exceeds 500 psi for any two or more adjacent stations, then that area shall be tilled prior to April 15. 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 FWC shall be required to determine if tilling is required. If a few values exceeding 500 psi are present randomly within the project area, tilling shall not be required.

13. During marine turtle nesting season (May 1st to October 31st), weekly visual surveys for escarpment formation shall be conducted within the project area. These surveys shall be conducted for two nesting seasons following beach nourishment. An annual summary of these surveys and any action taken shall be submitted to the Department. Weekly surveys shall include:

    a. The number of escarpments and their location relative to DNR-DEP reference monuments shall be recorded. Notations on the height of any escarpments shall be included (0 to 18 inches, 18 inches to 4 feet, 4 feet or higher) as well as the maximum height of all escarpments.

    b. Escarpments that exceed 18 inches in height for a distance of 100 feet shall be reported in writing to the Department within 3 days of the survey. This report shall include the number and location of nests in the vicinity of the escarpment. Upon written notification, the permittee shall level escarpments in accordance with mechanical methods prescribed by the Department.

    c. Any escarpments that exceed 18 inches in height for a distance of 100 feet shall be leveled to the natural beach contour by March 1. If weekly surveys during the marine turtle nesting season document subsequent reformation of escarpments that exceed 18 inches in height for a distance of 100 feet, then the Department shall be contacted immediately to determine the appropriate action to be taken. Upon written notification, the permittee shall level escarpments in accordance with mechanical methods prescribed by the Department.

14. From April 15 through October 31, all project lighting shall be limited to the immediate area of active construction only and shall be the minimal lighting necessary to comply with U.S. Coast Guard and/or OSHA requirements (Figure 1). Stationary lighting on the beach and all lighting on the dredge shall be minimized through reduction, shielding, lowering, and appropriate placement of lights to minimize illumination of the nesting beach and water. Lighting on offshore equipment shall be minimized through reduction, shielding lowering, and appropriate placement of lights to avoid excessive illumination of the water, while meeting all U.S. Coast Guard and OSHA requirements.

15. Reports on all nesting activity shall be provided for the initial nesting season and for a minimum of three additional nesting seasons shall be provided for the nourished and adjacent beaches on Estero Island and Lovers Key. Monitoring of nesting activity shall

include daily surveys and any additional measures authorized by the FWC. Reports submitted shall include daily report sheets noting all activity, nesting success rates, hatching success of all relocated nests, hatching success of a representative sampling of nests left in place (if any), dates of construction and names of all personnel involved in nest surveys and relocation activities. Data shall be reported separately for filled areas and nonfilled areas in accordance with the attached Table. All reports shall be submitted by January 15 of the following year.

16. In the event a sea turtle nest is excavated during construction activities, all work shall cease in that area immediately and the permitted person responsible for egg relocation for the project shall be notified so the eggs can be moved to a suitable relocation site.

17. Upon locating a dead, injured, or sick endangered or threatened sea turtle specimen, initial notification must be made to the FWC at 1-888-404-FWCC. Care shall be taken in handling sick or injured specimens to ensure effective treatment and care and in handling dead specimens to preserve biological materials in the best possible state for later analysis of cause of death. In conjunction with the care of sick or injured endangered or threatened species or preservation of biological materials from a dead animal, the finder has the responsibility to ensure that evidence intrinsic to the specimen is not unnecessarily disturbed.

18. A lighting survey shall be conducted from the renourished berm prior to April 15 of the first nesting season following nourishment and action taken to ensure that no lights or light sources are visible from any dry portion of the newly elevated beach. A report summarizing all lights visible, using standard survey techniques for such surveys, shall be submitted to FWC by April 15 and documenting all compliance and enforcement action. Additional lighting surveys shall be conducted monthly through August and results reported by the 15th of each month.

Table 1
Marine Turtle Monitoring for Beach Restoration Projects
The following marine turtle monitoring is required for beach restoration projects by the Florida Fish and Wildlife Conservation Commission, Bureau of Protected Species Management. Reports summarizing the nesting should be submitted to the Tequesta office with a copy to the Tallahassee office by January 15 of the subsequent year. Data for nesting activity on filled and nonfilled areas should be reported separately, and should include numbers of nests lost to erosion or washed out.

Characteristic	Parameter	Measurement	Variable
Nesting Success	False crawls - number	Visual assessment of all false crawls	Number and location of false crawls in fill areas, groin areas, and nonfill areas: any interaction of the turtle with obstructions, such as groins,

			seawalls, or scarps, should be noted.
	False crawl - type	Categorization of the stage at which nesting was abandoned	Number in each of the following categories: emergence-no digging, preliminary body pit, abandoned egg chamber
	Nests	Number	The number of marine turtle nests in filled and nonfilled areas should be noted. If possible, the location of all marine turtle nests shall be marked on map of project, and approximate distance to the groins, sea walls or scarps measured using a meter tape (optional). Any abnormal cavity morphologies should be reported as well as whether turtle touched groins, seawalls, or scarps during nest excavation or beach ascent
		Lost Nests	The number of nests lost to inundation, erosion or the number with lost markers that could not be found
Reproductive Success	Emergence & hatching success	Standard survey protocol	Numbers of the following: unhatched eggs, depredated nests and eggs, live pipped eggs, dead pipped eggs, live hatchlings in nest, dead hatchlings in nest, hatchlings emerged, disoriented hatchlings, depredated hatchlings

MONITORING REQUIRED:

Parameter: Turbidity – Nephelometric Turbidity Units (NTUs)

Borrow Site:

Frequency: Once a day, midway through the dredging operation.

Background: At least 500 meters from the dredge in the opposite direction of the prevailing current flow, clearly outside the influence of any turbid plume. Samples shall be collected 1 meter above the bottom.

Compliance: No more than 150 meters from the dredge or at the boundary of the Aquatic Preserve (whichever is closer to the point of discharge) down current from the dredge, in the densest portion of any visible turbidity plume. Samples shall be collected from 1 meter above the bottom.

Beach Fill Site:

Frequency: Twice daily (at least 4 hours apart) while the hydraulic dredge discharges on the beach or upland sand is placed/graded on the beach within the surf zone.

Background: At least 500 meters up current from the point where discharge water is re-entering waters of the State (discharge point) or where upland sand is placed/graded into the surf zone, clearly outside of the influence of any turbid plume. Samples shall be collected 1 meter above the bottom, at the same distance offshore as the compliance station.

Compliance: No more than 4,500 meters down current and no more than 300 meters off shore, or at the boundary of the Aquatic Preserve, whichever is closer to the point of discharge, down current from the discharge point or where upland sand is placed/graded into the surf zone, in the densest portion of any visible turbidity plume. The sample shall be collected from 1 meter above the bottom.

The compliance locations given above shall be considered the limits of the mixing zone for turbidity allowed during construction. If monitoring reveals turbidity levels at the compliance sites to be greater than 29 NTUs (or if a turbidity plume from this project extends into the Aquatic Preserve, causing turbidity to be elevated) above the associated background turbidity levels, construction activities shall cease immediately and not resume until corrective measures have been taken and turbidity has returned to acceptable levels.

Copies of all reports shall be submitted to the Office of Beaches and Coastal Systems in Tallahassee on a weekly basis within seven days of collection. The data shall be submitted under a cover letter containing the following information: (1) permit number; (2) a statement describing the methods used in collection, handling, storage and analysis of the samples; (3) a map indicating the sampling locations; and (4) a statement by the individual responsible for implementation of the sampling program concerning the authenticity, precision, limits of detection and accuracy of the data. Monitoring reports shall also include the following information for each sample that is taken: a) time of day samples taken; b) depth of water body; c) depth of sample; d) antecedent weather conditions; e) tidal stage and direction of flow; f) wind directions and velocity, and g) wave height.

Executed in Tallahassee, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL PROTECTION

Michael W. Sole, Director
Office of Beaches and Coastal Systems

FILING AND ACKNOWLEDGMENT

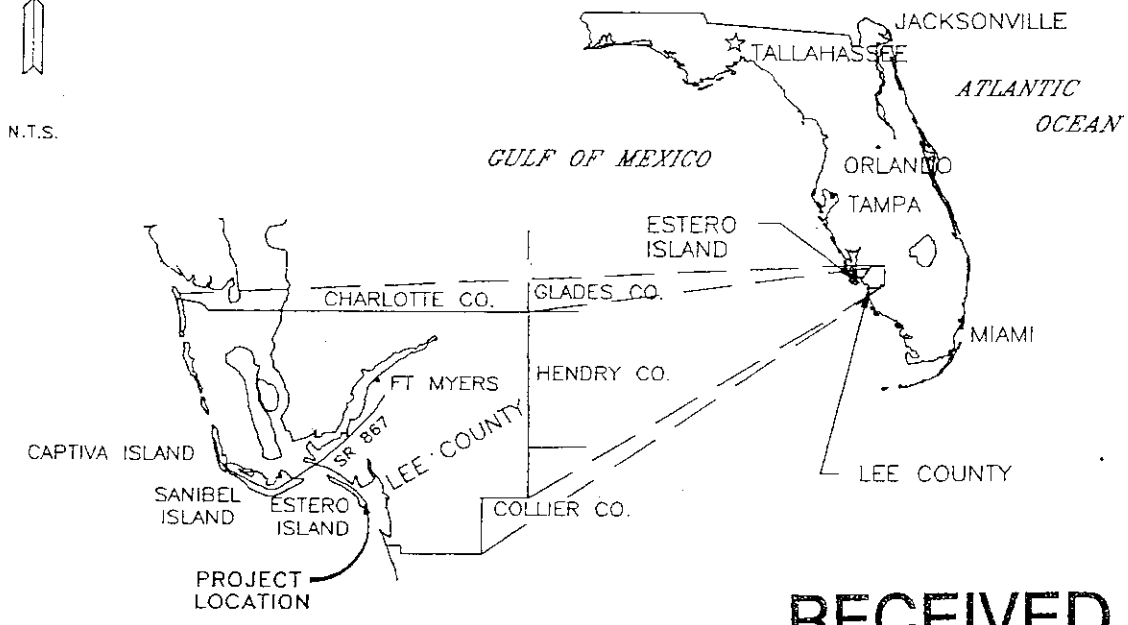
FILED, on this date, pursuant to Section 120.52, Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.

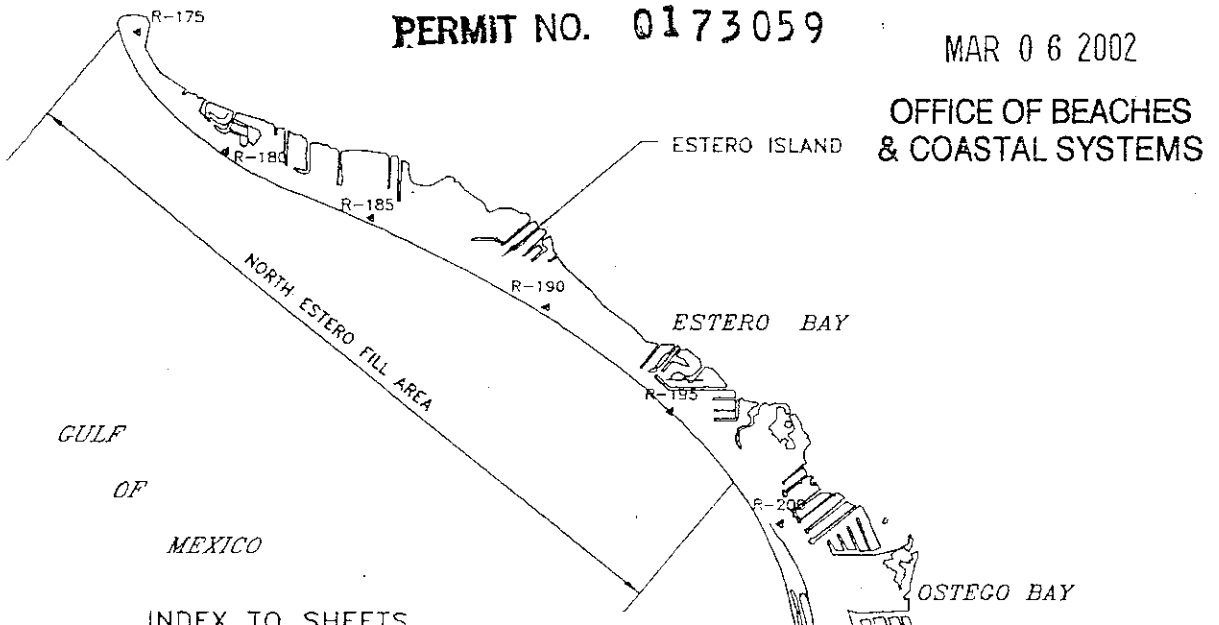
Deputy Clerk 3/5/02
Date

Prepared by Michael C. Corrigan.

ESTERO ISLAND
BEACH RESTORATION

LEE COUNTY, FLORIDA





INDEX TO SHEETS

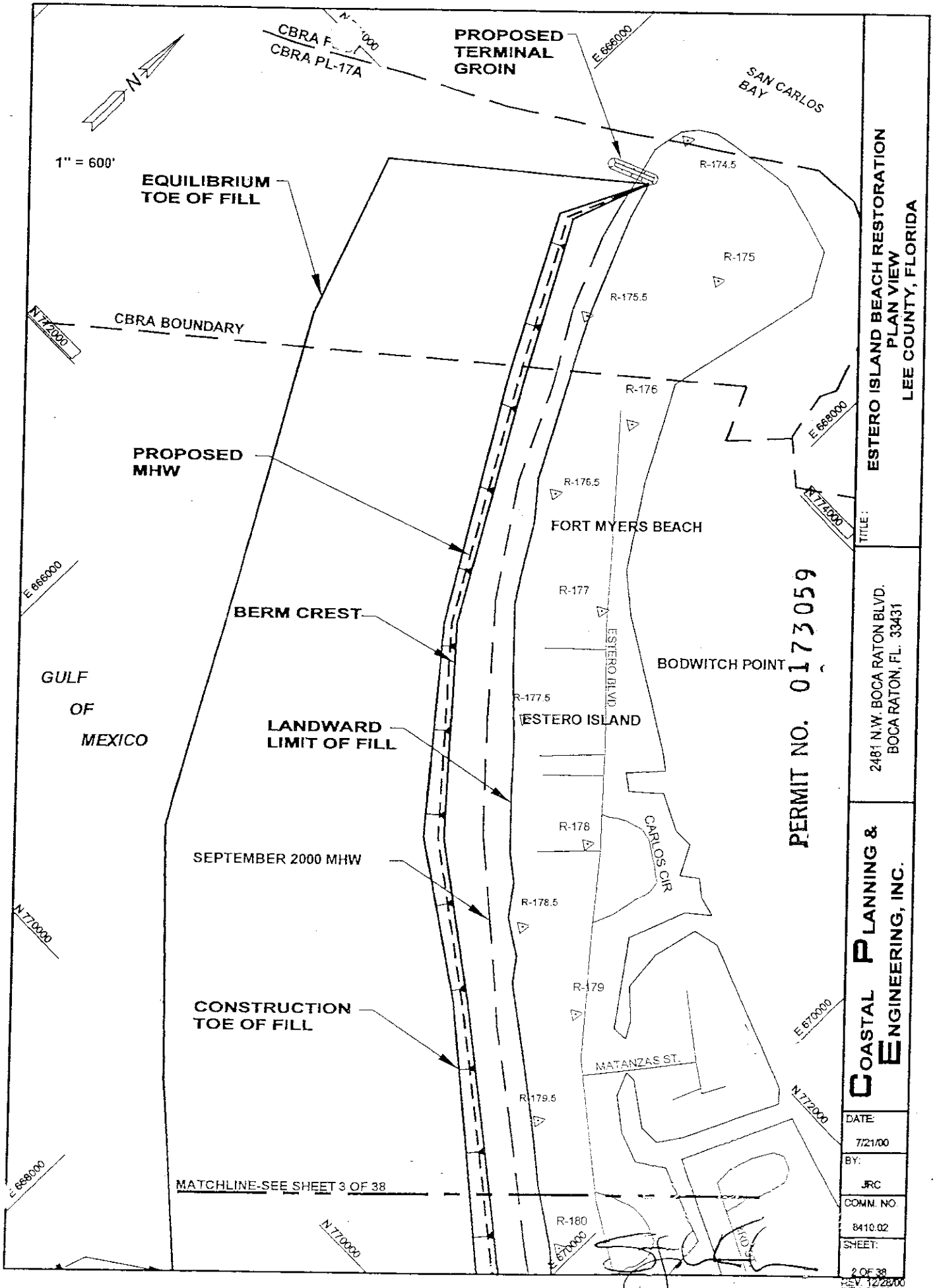
34857 3/5/02

TITLE : ESTERO ISLAND
PROJECT LOCATION MAP
LEE COUNTY, FLORIDA

2481 N.W. BOCA RATON BLVD.
BOCA RATON, FL. 33431

COASTAL PLANNING & ENGINEERING, INC.

DATE: 7/21/00
BY: JRC
COMM. NO. 8410.02
SHEET: 1 OF 38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PROPOSED TERMINAL GROIN
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CBRA BOUNDARY
PROPOSED MHW
BERM CREST
GULF OF MEXICO
LANDWARD LIMIT OF FILL
SEPTEMBER 2000 MHW
CONSTRUCTION TOE OF FILL
MATCHLINE-SEE SHEET 3 OF 38
FORT MYERS BEACH
ESTERO ISLAND
BODWITCH POINT
ESTERO BLVD
CARLOS CIR
MATANZAS ST.
R-174.5
R-175
R-175.5
R-176
R-176.5
R-177
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R-178
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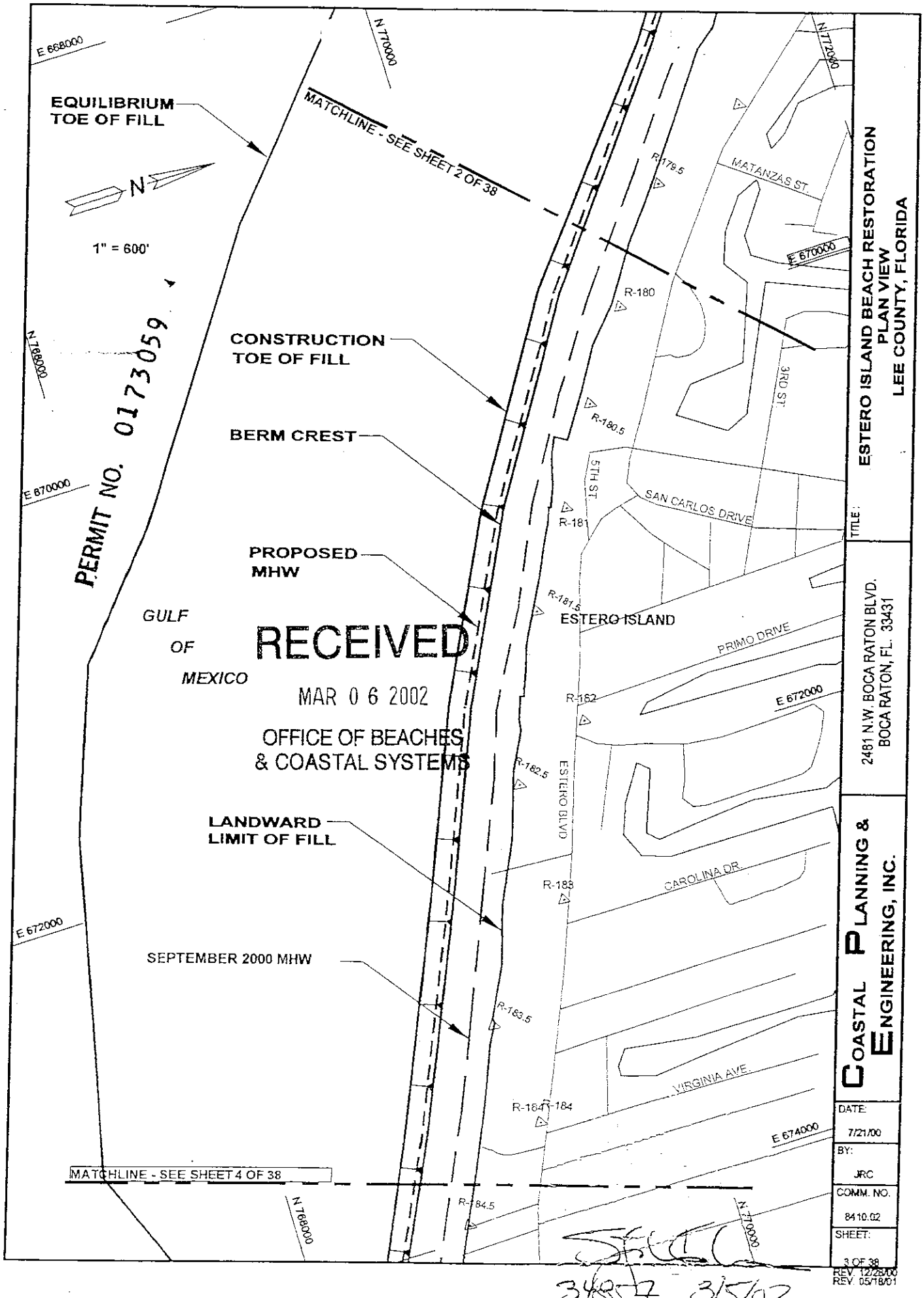
N 772000
N 770000
N 774000
PERMIT NO. 0173059
ESTERO ISLAND BEACH RESTORATION
PLAN VIEW
LEE COUNTY, FLORIDA
TITLE:
2481 N.W. BOCA RATON BLVD.
BOCA RATON, FL. 33431
COASTAL PLANNING & ENGINEERING, INC.
DATE: 7/21/00
BY: JRC
COMM. NO. 8410.02
SHEET: 2 OF 38
REV. 12/28/00
REV. 05/18/01

3/857 3/5/02



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TITLE:

2481 N.W. BOCA RATON BLVD.
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DATE: 7/21/00
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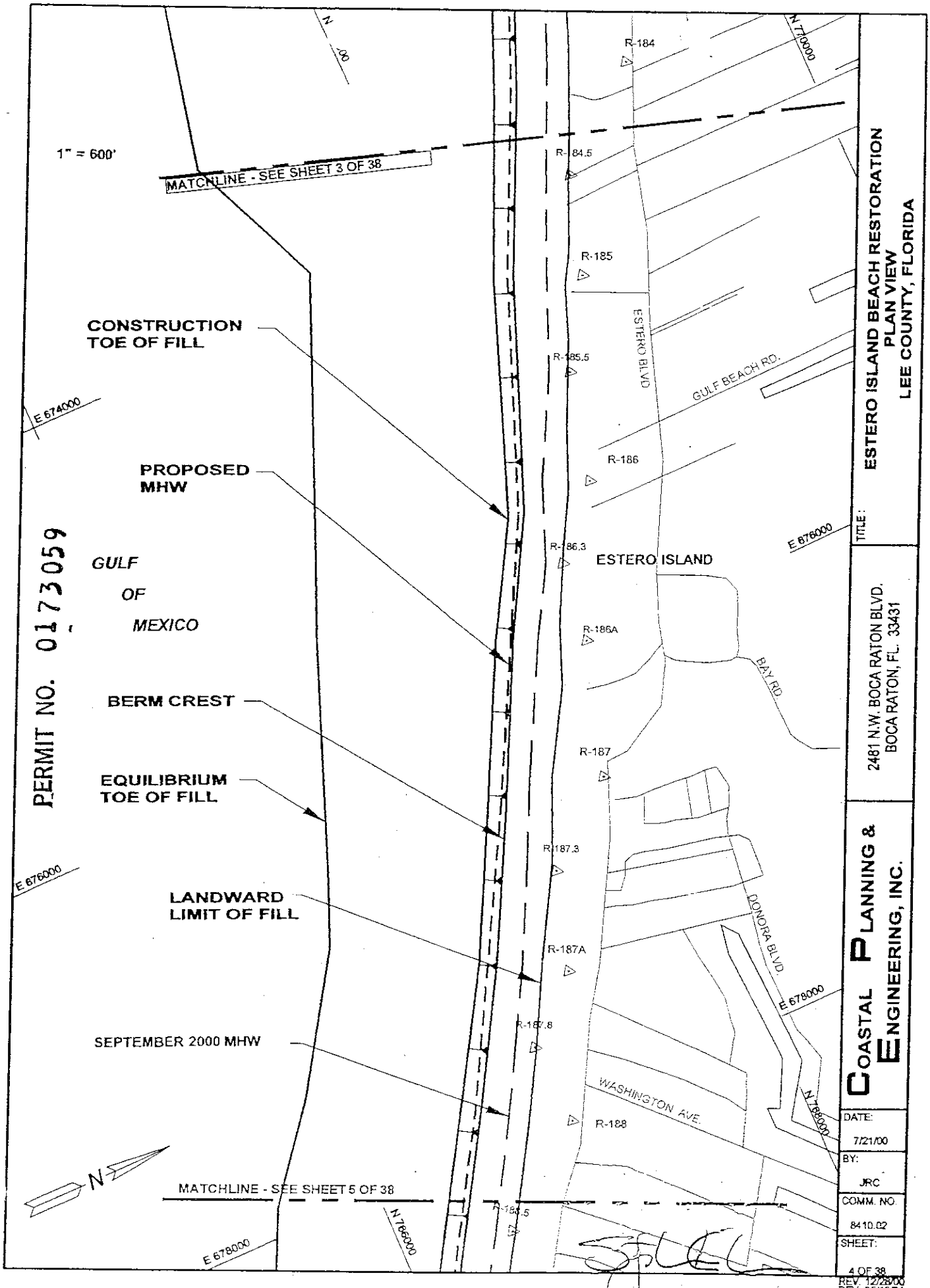
COMM. NO. 8410.02
SHEET: 3 OF 38
REV. 12/28/00
REV. 05/18/01

3487 3/5/02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BERM CREST
EQUILIBRIUM TOE OF FILL
LANDWARD LIMIT OF FILL
SEPTEMBER 2000 MHW
MATCHLINE - SEE SHEET 5 OF 38
PERMIT NO. 0173059
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N 770000
N 788000
R-184
R-184.5
R-185
R-185.5
R-186
R-186.3
R-186A
R-187
R-187.3
R-187A
R-187.8
R-188
R-188.5
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GULF BEACH RD.
BAY RD.
DONORA BLVD.
WASHINGTON AVE.
ESTERO ISLAND
TITLE:
ESTERO ISLAND BEACH RESTORATION
PLAN VIEW
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BOCA RATON, FL. 33431
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DATE: 7/21/00
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COMM. NO. 8410.02
SHEET: 4 OF 38
REV: 12/28/00
REV: 05/18/01

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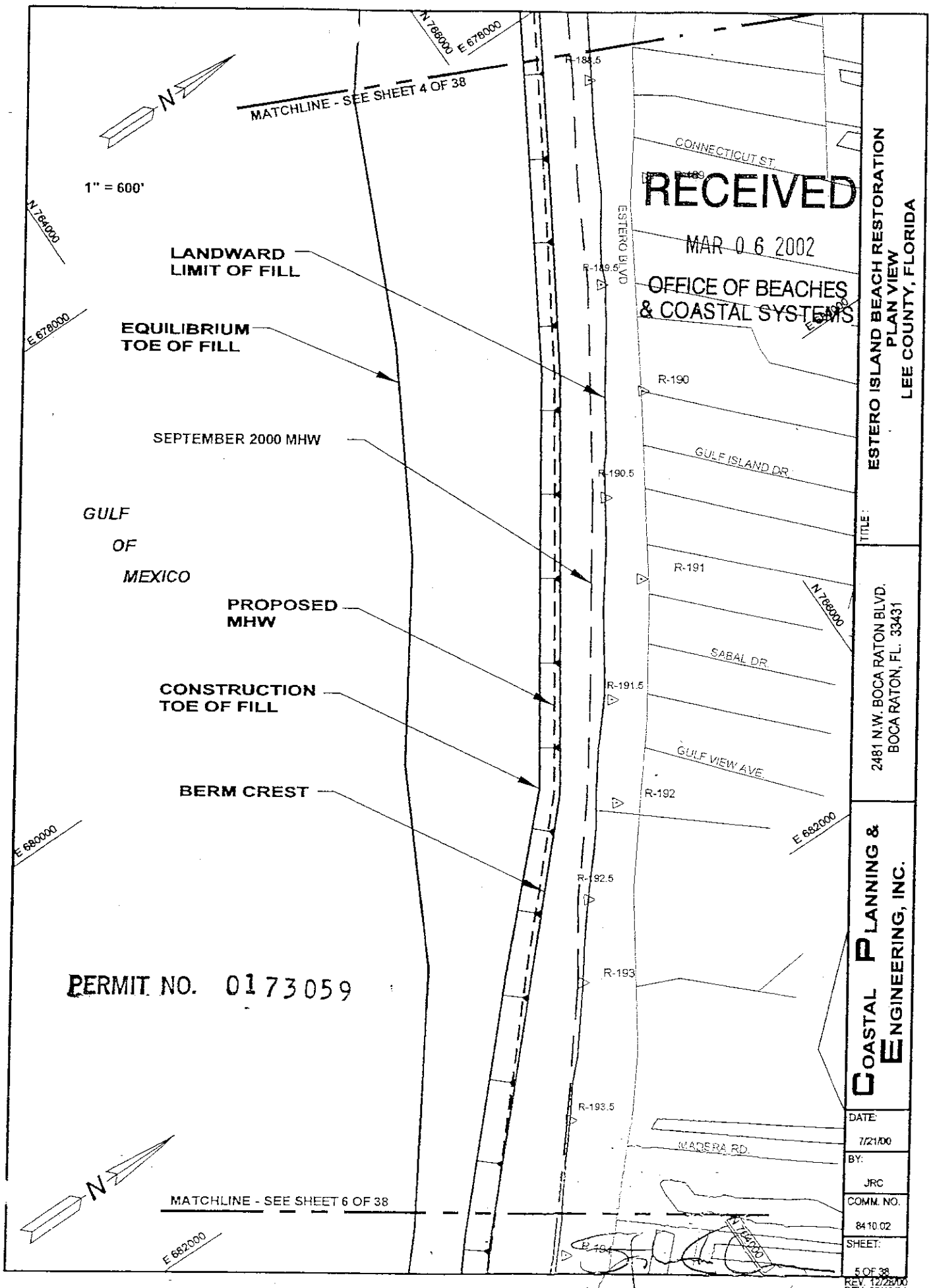

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OFFICE OF BEACHES & COASTAL SYSTEMS

PERMIT NO. 0173059

ESTERO ISLAND BEACH RESTORATION
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LEE COUNTY, FLORIDA

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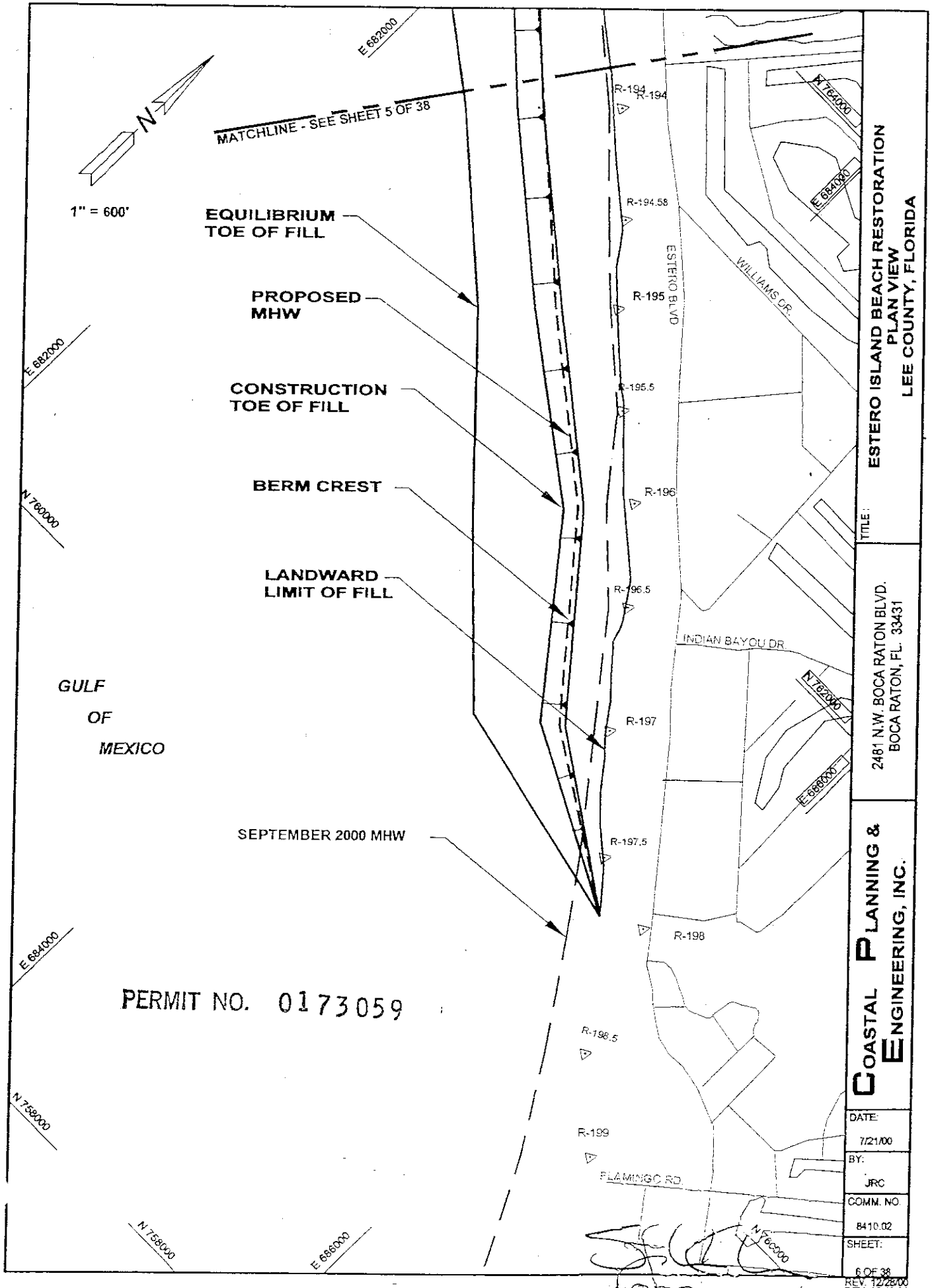
SHEET: 5 OF 38
REV. 12/28/00
REV. 05/18/01

34887 3/5/02



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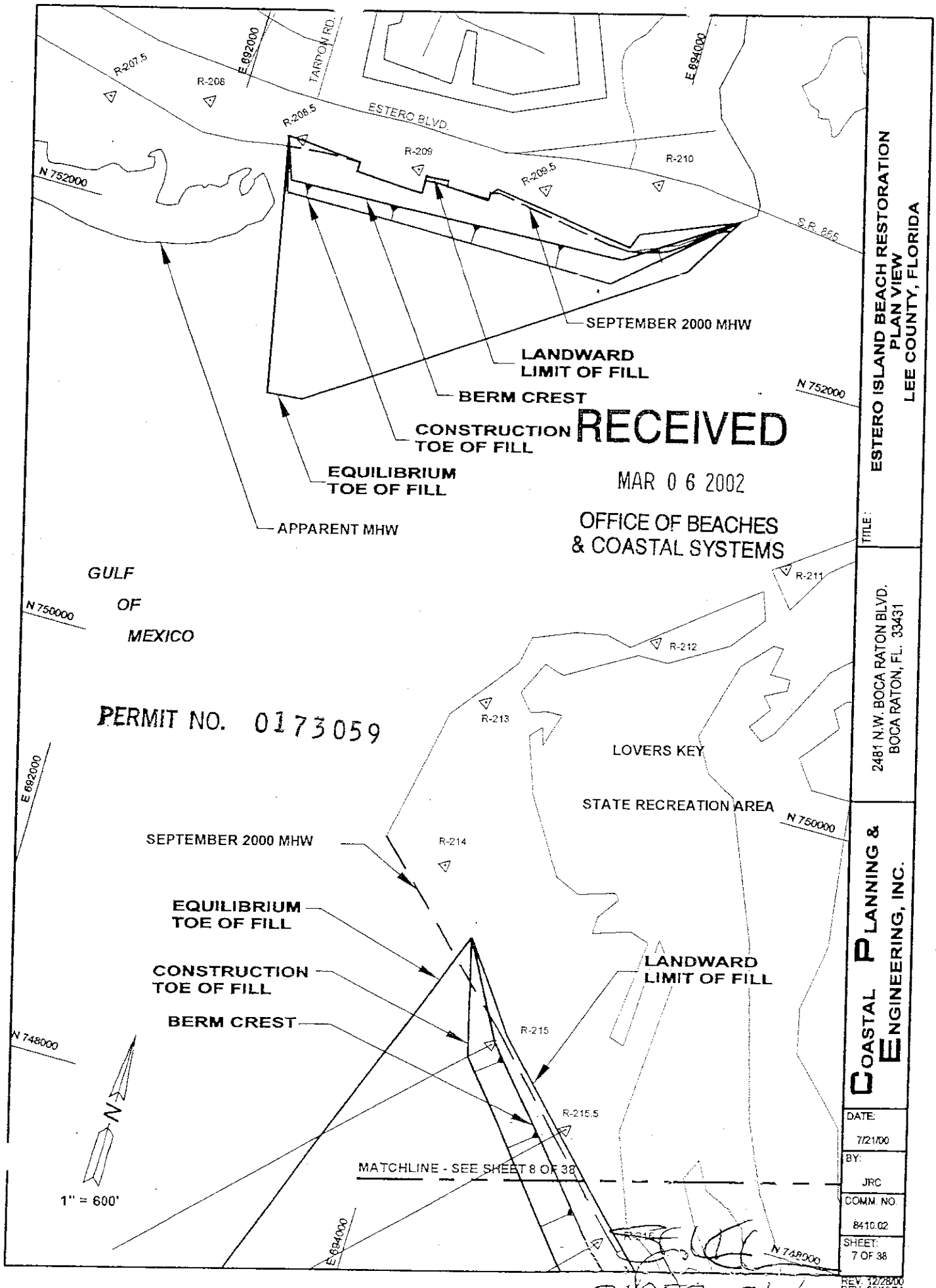
SHEET: 6 OF 38
REV. 12/28/00
REV. 05/18/01

34857 3/5/02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SEPTEMBER 2000 MHW
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BERM CREST
CONSTRUCTION TOE OF FILL
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PERMIT NO. 0173059
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BERM CREST
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1" = 600'
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N 748000
ESTERO ISLAND BEACH RESTORATION
PLAN VIEW
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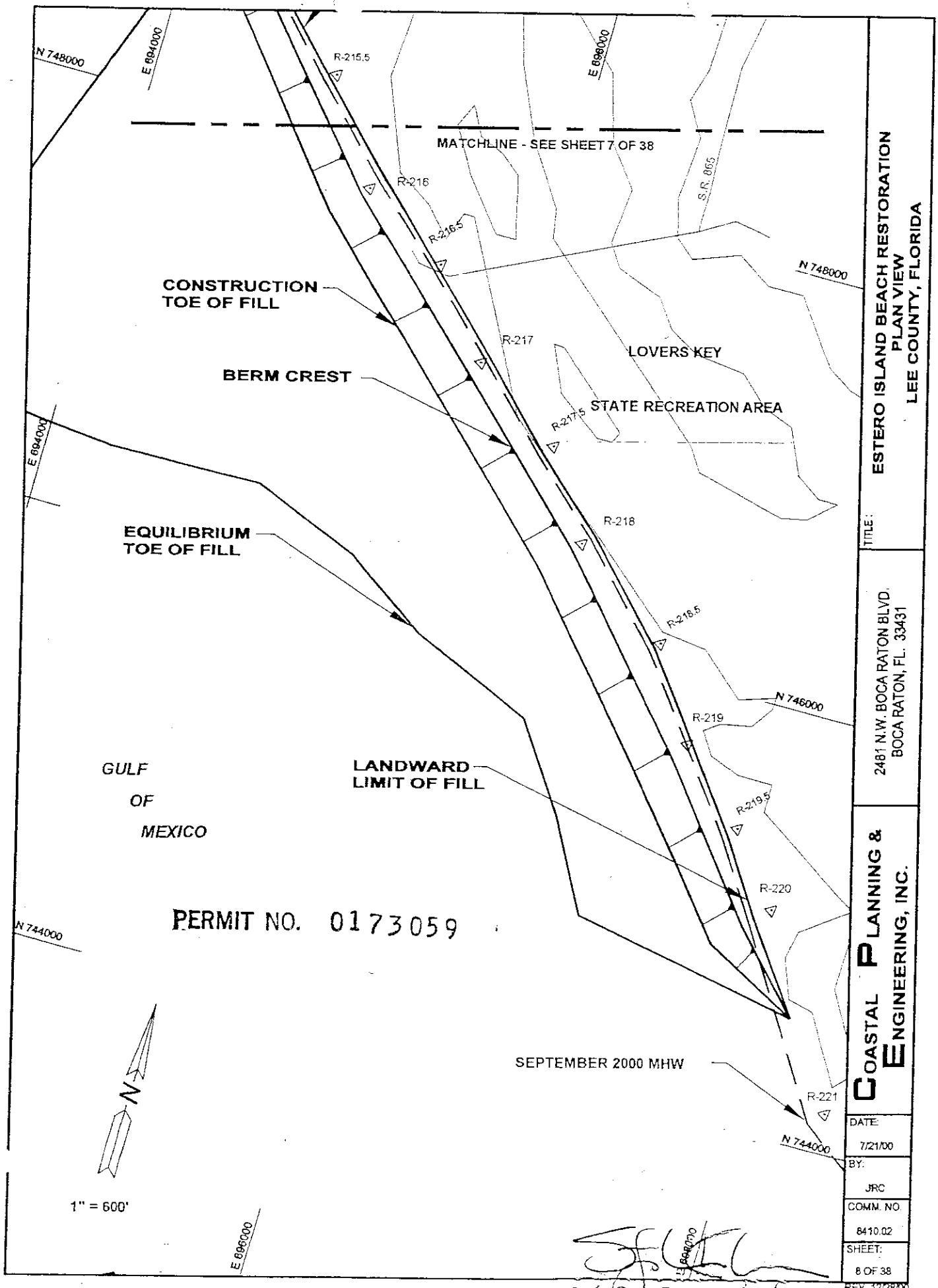
SHEET: 7 OF 38
REV. 12/28/00
REV. 05/18/01
34857 3/5/02



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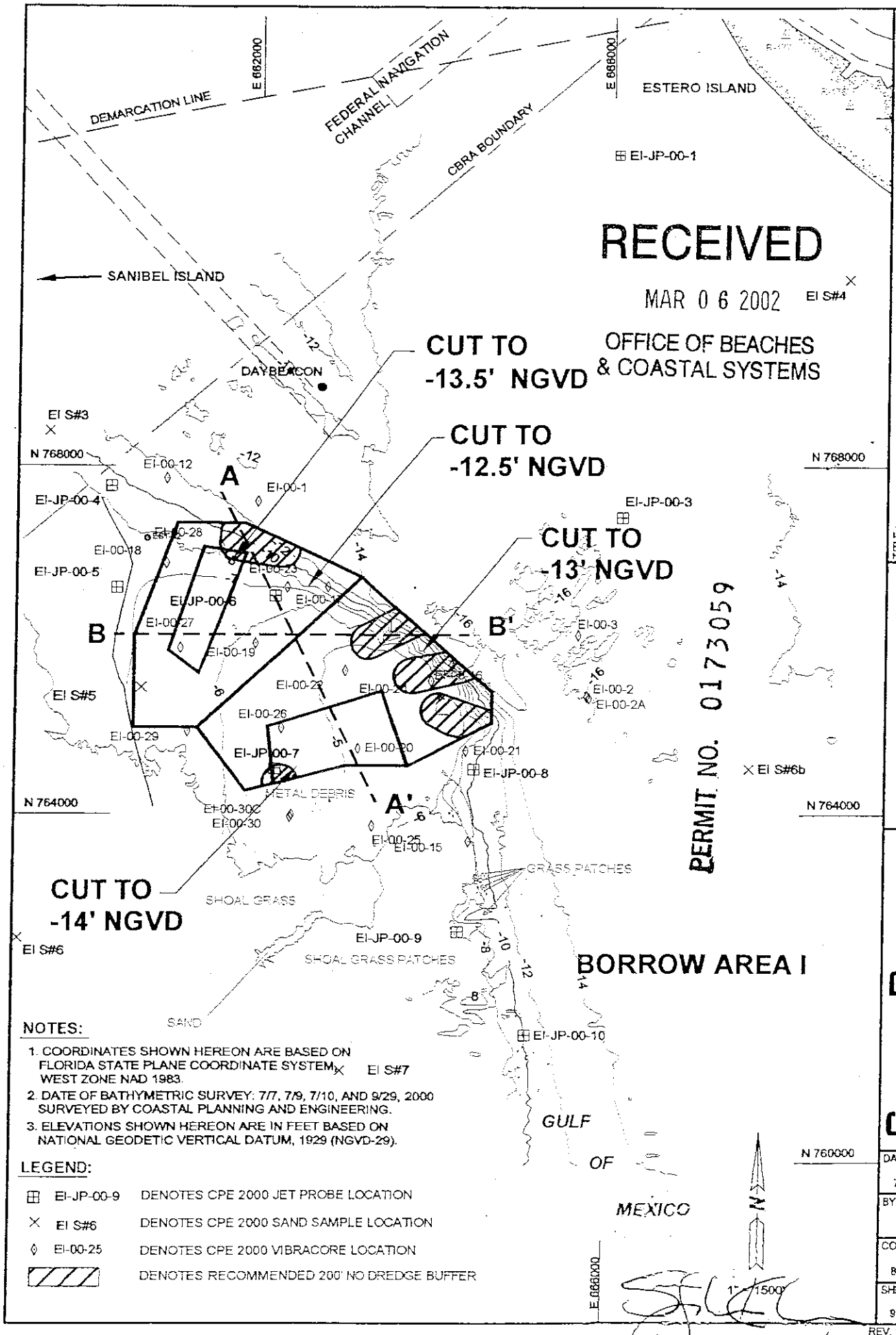
SHEET: 8 OF 38
REV. 12/28/00
REV. 05/18/01

34887 3/5/02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E 666000
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EI-JP-00-1
SANIBEL ISLAND
EI S#4
DAYBEACON
EI S#3
N 768000
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EI-00-1
EI-JP-00-4
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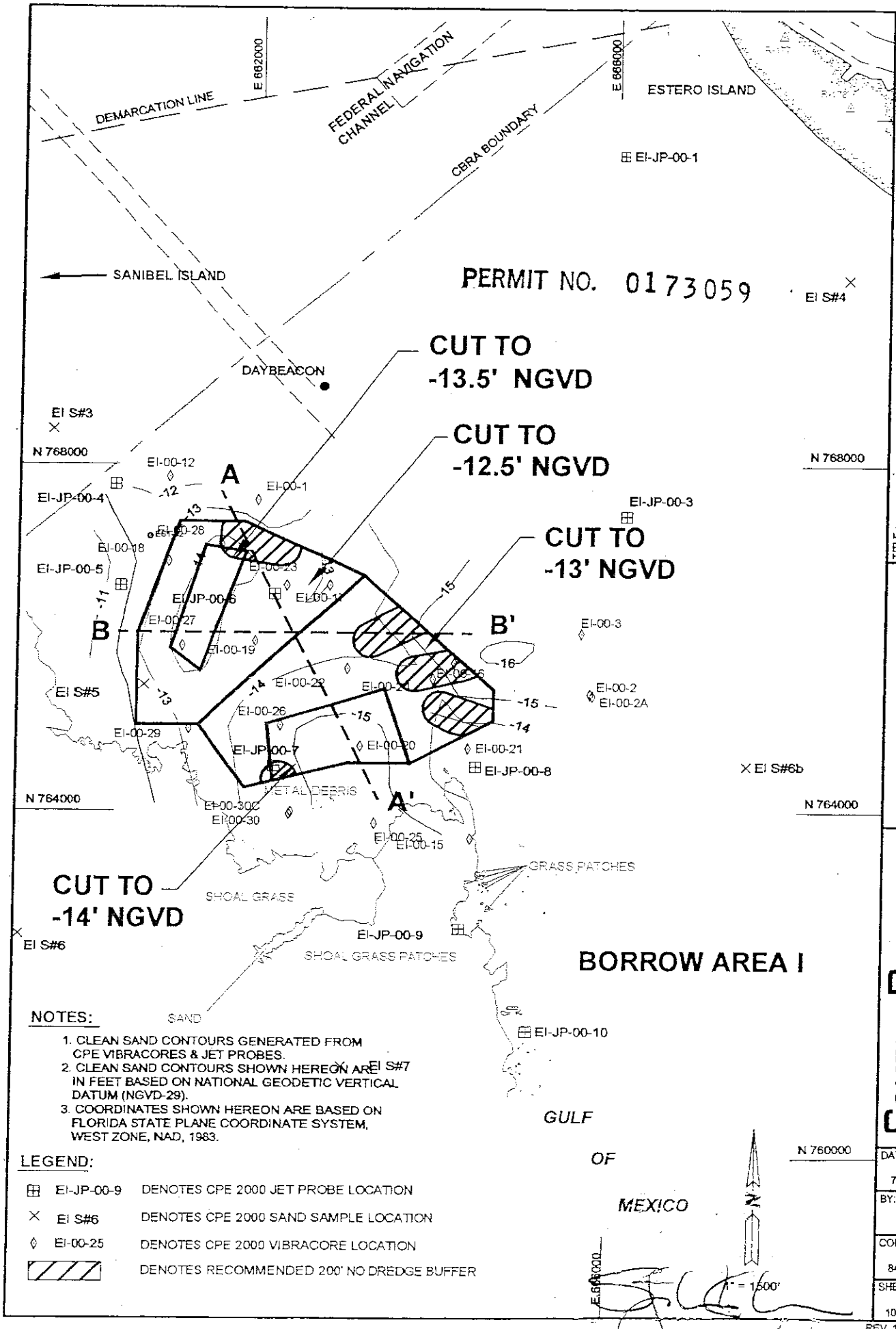
BORROW AREA I
RECEIVED
MAR 0 6 2002
OFFICE OF BEACHES & COASTAL SYSTEMS
PERMIT NO. 0173059
NOTES:
1. COORDINATES SHOWN HEREON ARE BASED ON FLORIDA STATE PLANE COORDINATE SYSTEM, WEST ZONE NAD 1983.
2. DATE OF BATHYMETRIC SURVEY: 7/7, 7/9, 7/10, AND 9/29, 2000 SURVEYED BY COASTAL PLANNING AND ENGINEERING.
3. ELEVATIONS SHOWN HEREON ARE IN FEET BASED ON NATIONAL GEODETIC VERTICAL DATUM, 1929 (NGVD-29).
LEGEND:
EI-JP-00-9 DENOTES CPE 2000 JET PROBE LOCATION
EI S#6 DENOTES CPE 2000 SAND SAMPLE LOCATION
EI-00-25 DENOTES CPE 2000 VIBRACORE LOCATION
DENOTES RECOMMENDED 200' NO DREDGE BUFFER
N
1" = 1500'
TITLE:
ESTERO ISLAND
BORROW AREA I BATHYMETRY
LEE COUNTY, FLORIDA
2481 N.W. BOCA RATON BLVD.
BOCA RATON, FL. 33431
COASTAL PLANNING & ENGINEERING, INC.
DATE: 7/21/00
BY: JRC
COMM. NO. 8410.02
SHEET: 9 OF 38
REV. 12/27/00
REV. 5/18/01
3485 7 3/5/02



NOTES:

1. CLEAN SAND CONTOURS GENERATED FROM CPE VIBRACORES & JET PROBES.
2. CLEAN SAND CONTOURS SHOWN HEREON ARE IN FEET BASED ON NATIONAL GEODETIC VERTICAL DATUM (NGVD-29).
3. COORDINATES SHOWN HEREON ARE BASED ON FLORIDA STATE PLANE COORDINATE SYSTEM, WEST ZONE, NAD, 1983.

LEGEND:

EI-JP-00-9	DENOTES CPE 2000 JET PROBE LOCATION
EI S#6	DENOTES CPE 2000 SAND SAMPLE LOCATION
EI-00-25	DENOTES CPE 2000 VIBRACORE LOCATION
	DENOTES RECOMMENDED 200' NO DREDGE BUFFER

TITLE:
ESTERO ISLAND
BORROW AREA I CLEAN SAND CONTOURS
LEE COUNTY, FLORIDA

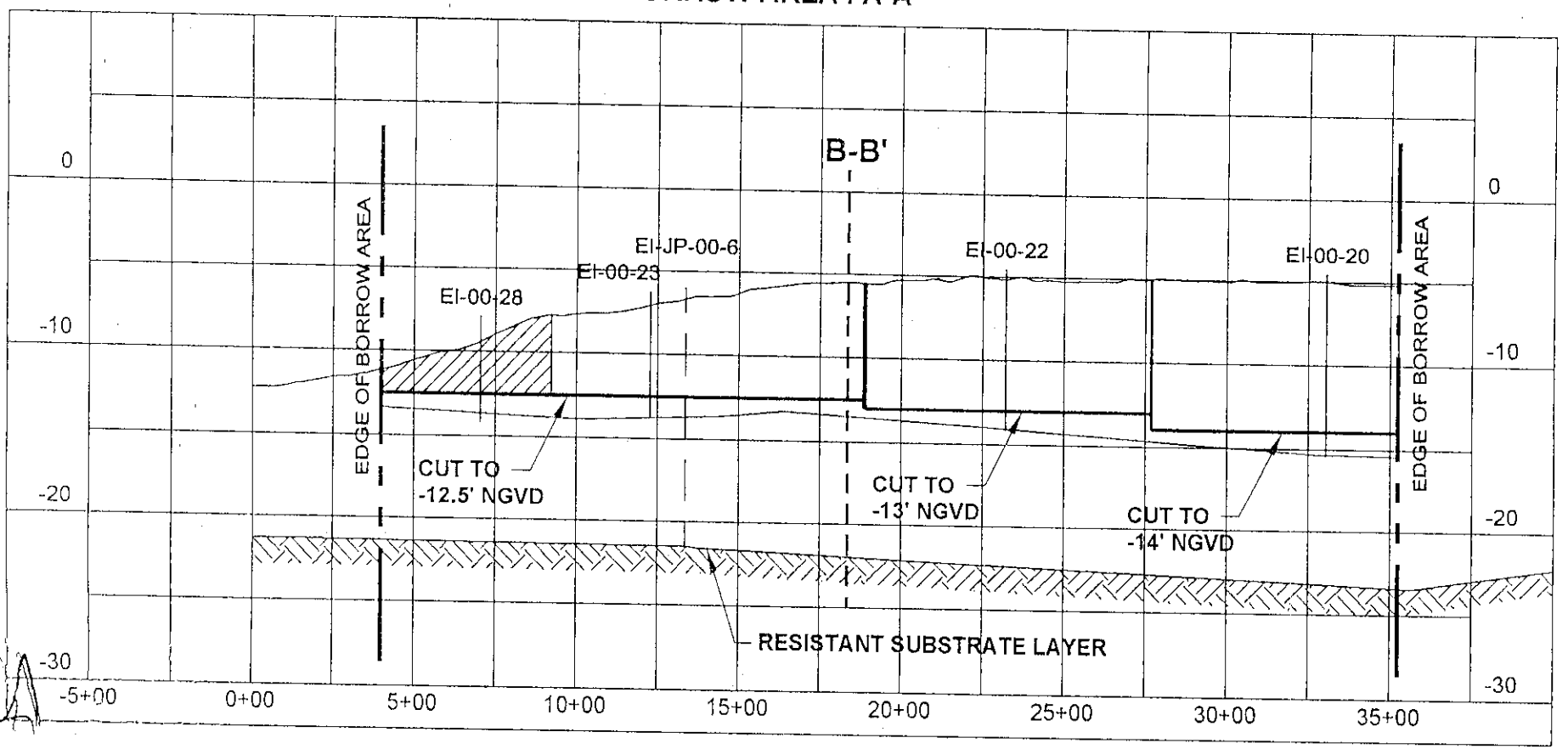
COASTAL PLANNING & ENGINEERING, INC.
2481 N.W. BOCA RATON BLVD.
BOCA RATON, FL. 33431

DATE:	7/21/00
BY:	JRC
COMM. NO.	8410.02
SHEET:	10 OF 38

REV. 12/27/00
REV. 5/18/01

34857 3/5/02

BORROW AREA I A-A'



NOTES:

1. PROBES MAY NOT FALL DIRECTLY ON CROSS SECTION LINE, BUT ARE LOCATED SUFFICIENTLY CLOSE TO REPRESENT SIMILAR MATERIAL.
2. WIDTH OF LAYERS IS REPRESENTATIVE ONLY. ACTUAL MATERIAL MAY VARY.
3. SEE PAGE 9 & 10 OF 38 FOR LOCATION OF CROSS SECTION LINE.

LEGEND:

DENOTES RECOMMENDED 200' NO DREDGE BUFFER

PERMIT NO. 0173059

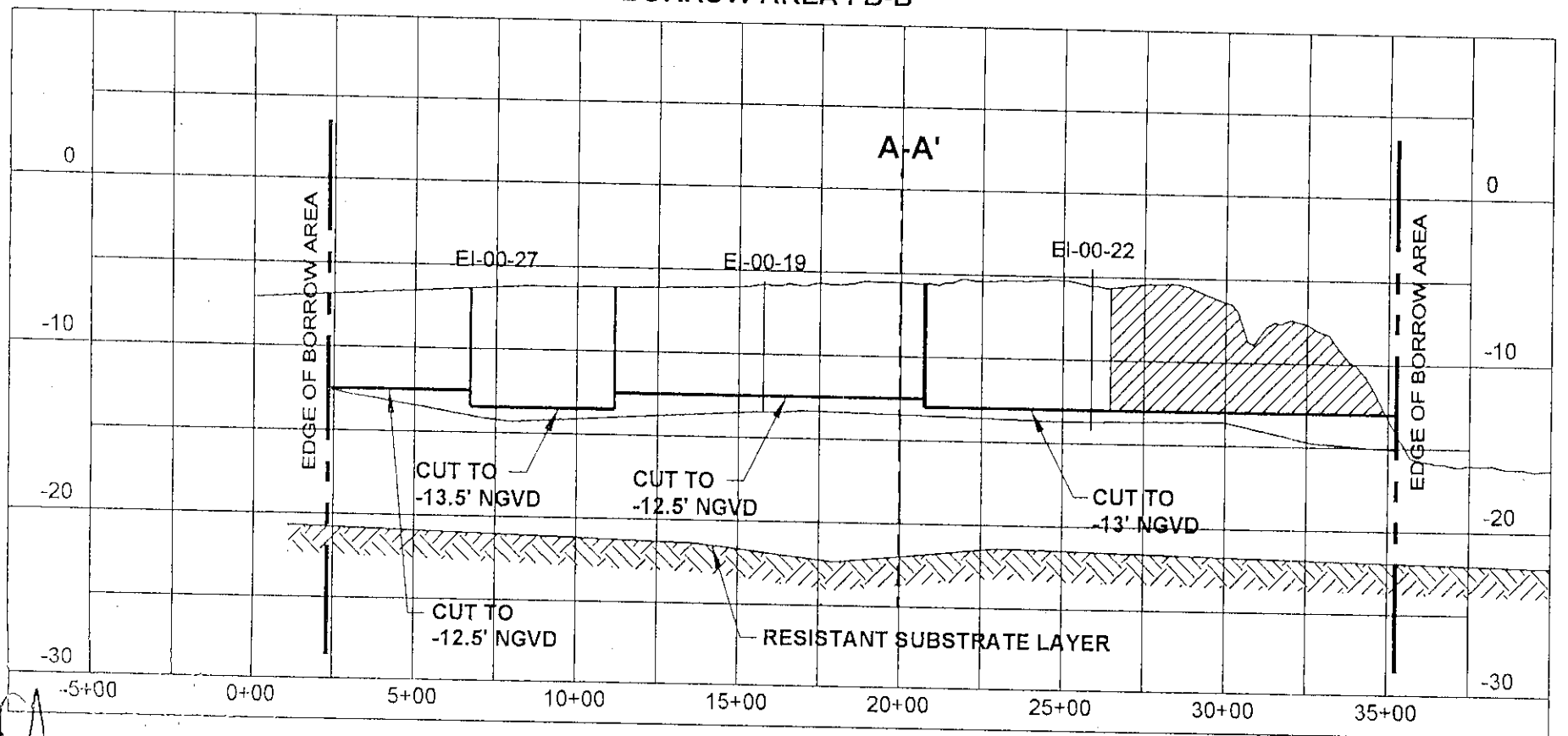
SCALE: 1" = 500' HOR.
1" = 10' VERT.

REV 12/27/00	SHEET: 11 OF 38	COMM. NO. 8410.02	BY: JRC	DATE: 7/21/00	COASTAL PLANNING & ENGINEERING, INC.

2481 N.W. BOCA RATON BLVD.
BOCA RATON, FL. 33431

TITLE:
ESTERO ISLAND
BORROW AREA I
CROSS SECTION A-A'

BORROW AREA I B-B'



NOTES:

1. PROBES MAY NOT FALL DIRECTLY ON CROSS SECTION LINE, BUT ARE LOCATED SUFFICIENTLY CLOSE TO REPRESENT SIMILAR MATERIAL.
2. WIDTH OF LAYERS IS REPRESENTATIVE ONLY. ACTUAL MATERIAL MAY VARY.
3. SEE PAGE 9 & 10 OF 38 FOR LOCATION OF CROSS SECTION LINE.

LEGEND:

DENOTES RECOMMENDED 200' NO DREDGE BUFFER

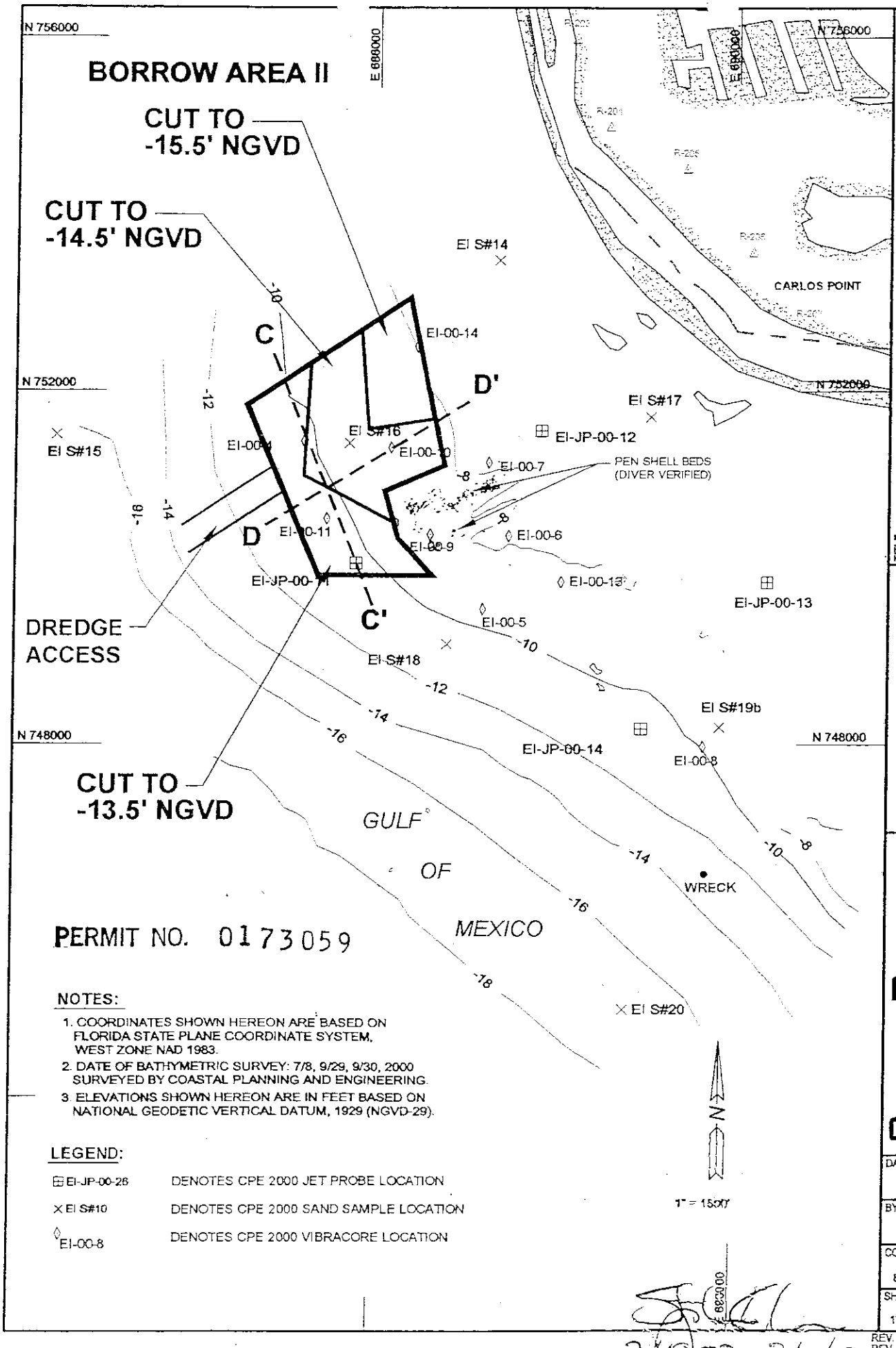
PERMIT NO. 0173059

RECEIVED
MAR 06 2002
OFFICE OF BEACHES & COASTAL SYSTEMS

SCALE: 1" = 500' HOR.
1" = 10' VERT.

SHEET: 12 OF 38 REV: 12/27/00	COMM. NO. 8410.02	BY: JRC	DATE: 7/21/00	COASTAL PLANNING & ENGINEERING, INC.	2481 N.W. BOCA RATON BLVD. BOCA RATON, FL. 33431

TITLE:
ESTERO ISLAND
BORROW AREA I
CROSS SECTION B-B'



PERMIT NO. 0173059

NOTES:

1. COORDINATES SHOWN HEREON ARE BASED ON FLORIDA STATE PLANE COORDINATE SYSTEM, WEST ZONE NAD 1983.
2. DATE OF BATHYMETRIC SURVEY: 7/8, 9/29, 9/30, 2000 SURVEYED BY COASTAL PLANNING AND ENGINEERING.
3. ELEVATIONS SHOWN HEREON ARE IN FEET BASED ON NATIONAL GEODETIC VERTICAL DATUM, 1929 (NGVD-29).

LEGEND:

⊞ EI-JP-00-26	DENOTES CPE 2000 JET PROBE LOCATION
× EI S#10	DENOTES CPE 2000 SAND SAMPLE LOCATION
◊ EI-00-8	DENOTES CPE 2000 VIBRACORE LOCATION

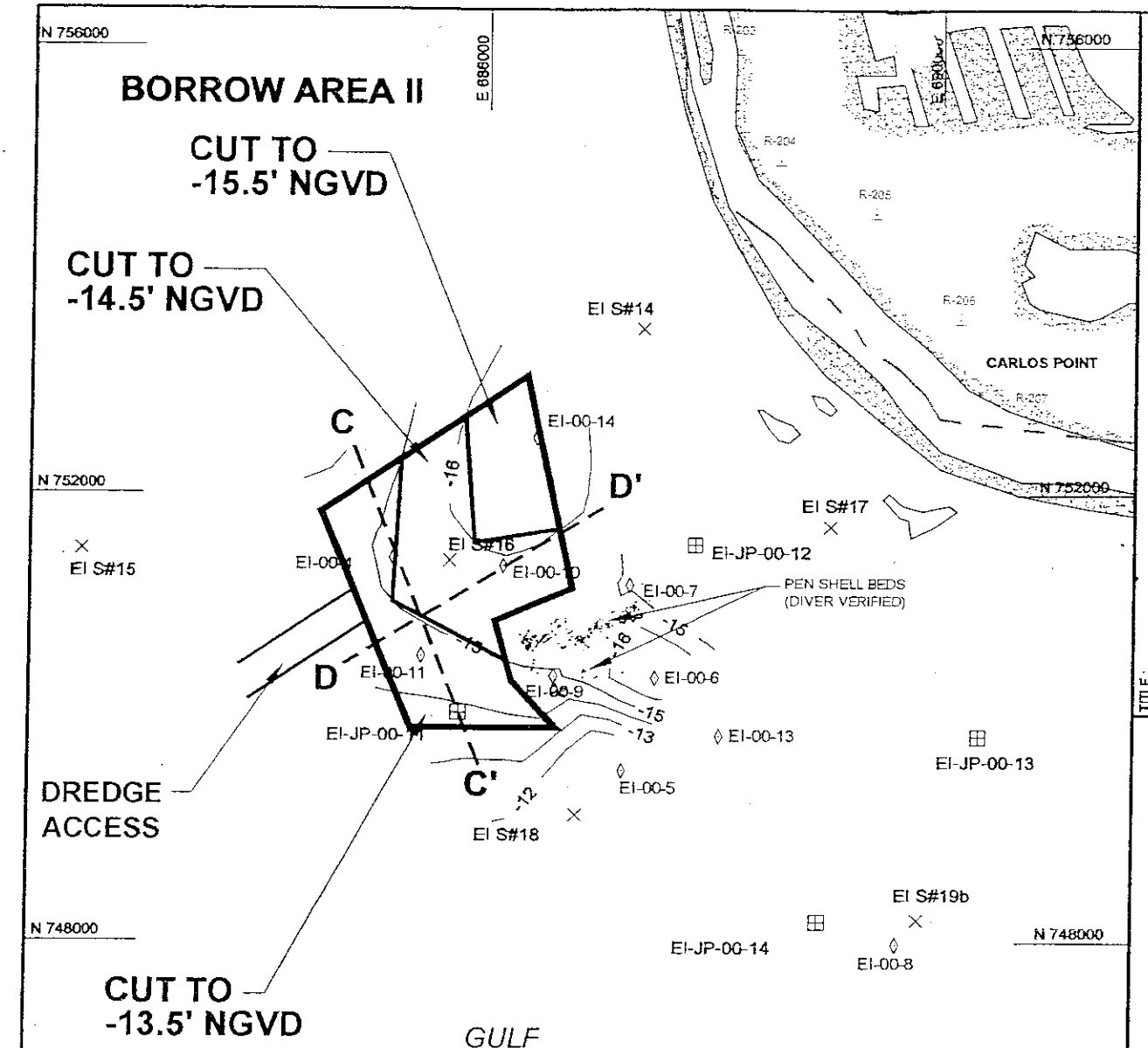
TITLE:
ESTERO ISLAND
BORROW AREA II BATHYMETRY
LEE COUNTY, FLORIDA

COASTAL PLANNING & ENGINEERING, INC.
2481 N.W. BOCA RATON BLVD.
BOCA RATON, FL. 33431

DATE: 7/13/00
BY: JRC
COMM. NO. 8410.02
SHEET: 13 OF 38

REV. 12/27/00
REV. 5/10/01

34857 3/5/02



PERMIT NO. 0173059

RECEIVED
MAR 0 6 2002
OFFICE OF BEACHES & COASTAL SYSTEMS

NOTES:

1. CLEAN SAND CONTOURS GENERATED FROM CPE VIBRACORES & JET PROBES.
2. CLEAN SAND CONTOURS SHOWN HEREON ARE IN FEET BASED ON NATIONAL GEODETIC VERTICAL DATUM (NGVD-29).
3. COORDINATES SHOWN HEREON ARE BASED ON FLORIDA STATE PLANE COORDINATE SYSTEM, WEST ZONE, NAD, 1983.

LEGEND:

⊞EI-JP-00-26	DENOTES CPE 2000 JET PROBE LOCATION
×EI S#10	DENOTES CPE 2000 SAND SAMPLE LOCATION
◊EI-00-8	DENOTES CPE 2000 VIBRACORE LOCATION

N

1" = 1500'

TITLE: ESTERO ISLAND BORROW AREA II CLEAN SAND CONTOURS LEE COUNTY, FLORIDA

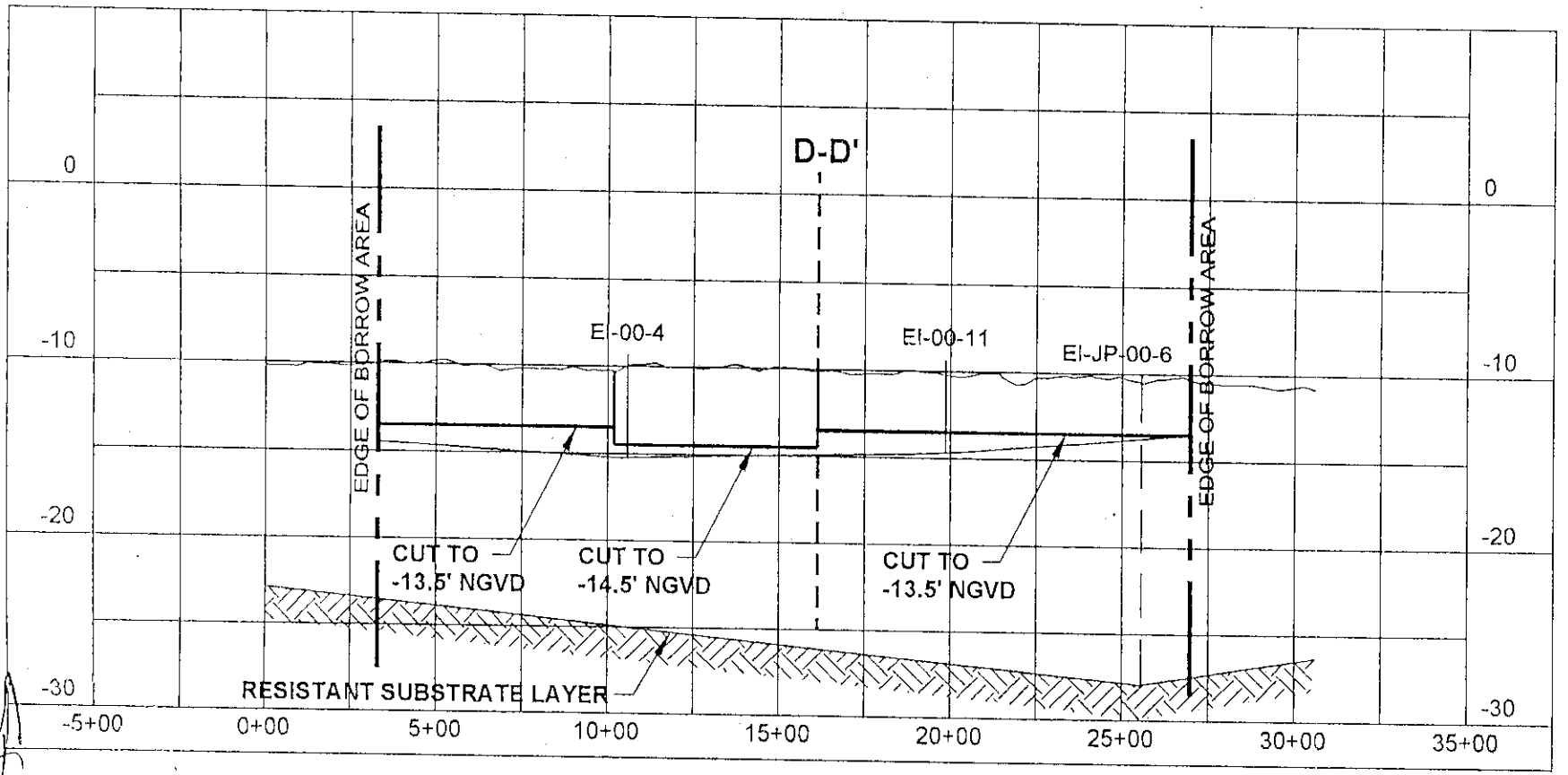
COASTAL PLANNING & ENGINEERING, INC.
2481 N.W. BOCA RATON BLVD.
BOCA RATON, FL. 33431

DATE: 7/13/00
BY: JRC
COMM. NO. 8410.02
SHEET: 14 OF 38

REV. 12/27/00
REV. 5/10/01

3857 3/5/02

BORROW AREA II C-C'



NOTES:

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2. WIDTH OF LAYERS IS REPRESENTATIVE ONLY. ACTUAL MATERIAL MAY VARY.
3. SEE PAGE 13 & 14 OF 38 FOR LOCATION OF CROSS SECTION LINE.

PERMIT NO. 0173059

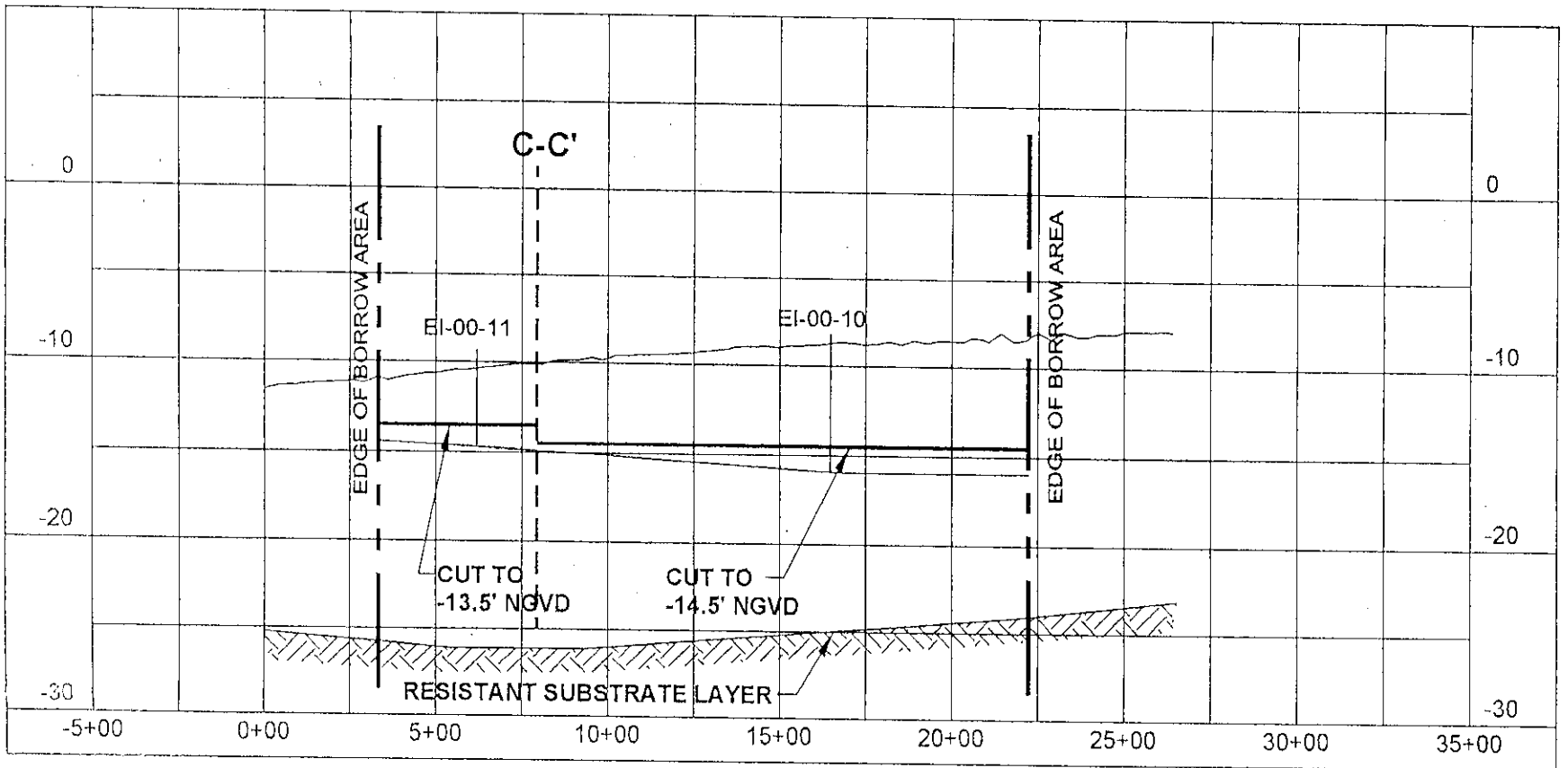
SCALE: 1" = 500' HOR.
1" = 10' VERT.

REV: 12/27/00	SHEET: 15 OF 38	COMM. NO. 8410.02	BY: JRC	DATE: 7/21/00	COASTAL PLANNING & ENGINEERING, INC.

2481 N.W. BOCA RATON BLVD.
BOCA RATON, FL. 33431

TITLE:
ESTERO ISLAND
BORROW AREA II
CROSS SECTION C-C'

BORROW AREA II D-D'



NOTES:

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2. WIDTH OF LAYERS IS REPRESENTATIVE ONLY. ACTUAL MATERIAL MAY VARY.
3. SEE PAGE 13 & 14 OF 38 FOR LOCATION OF CROSS SECTION LINE.

PERMIT NO. 0173059

SCALE: 1" = 500' HOR.
1" = 10' VERT.

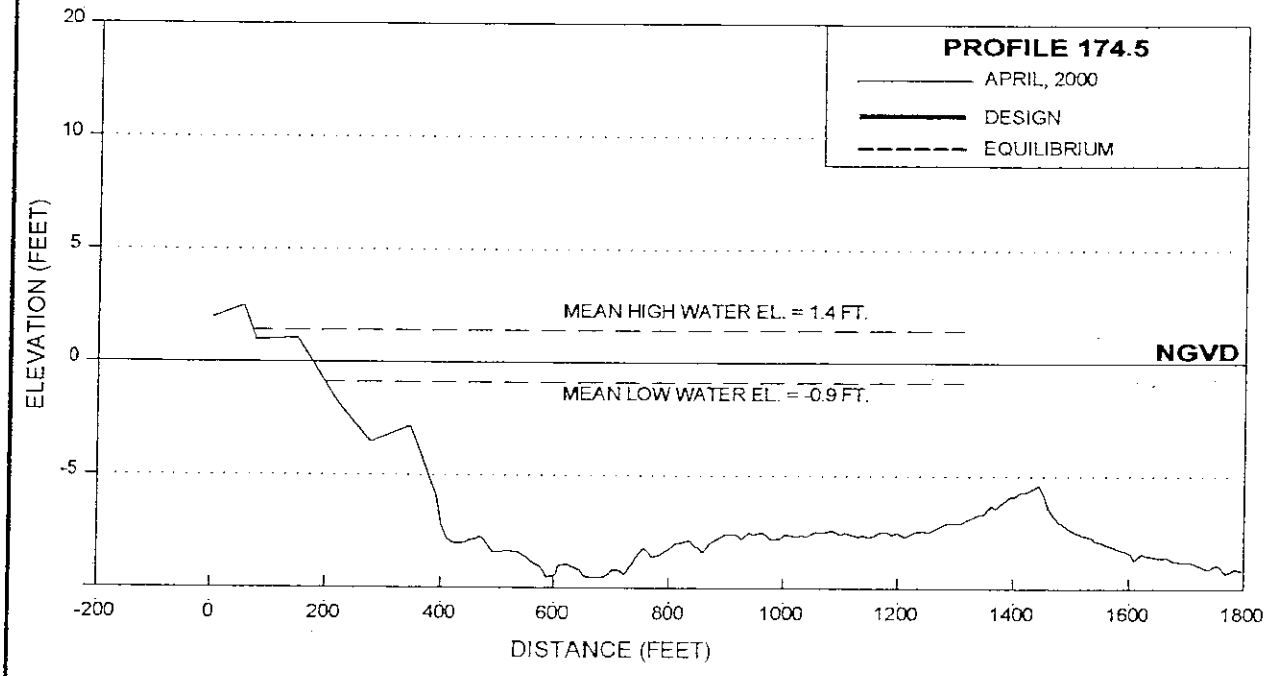
SHEET:	COMM. NO.	BY:	DATE:
16 OF 38	8410.02	JRC	7/21/00

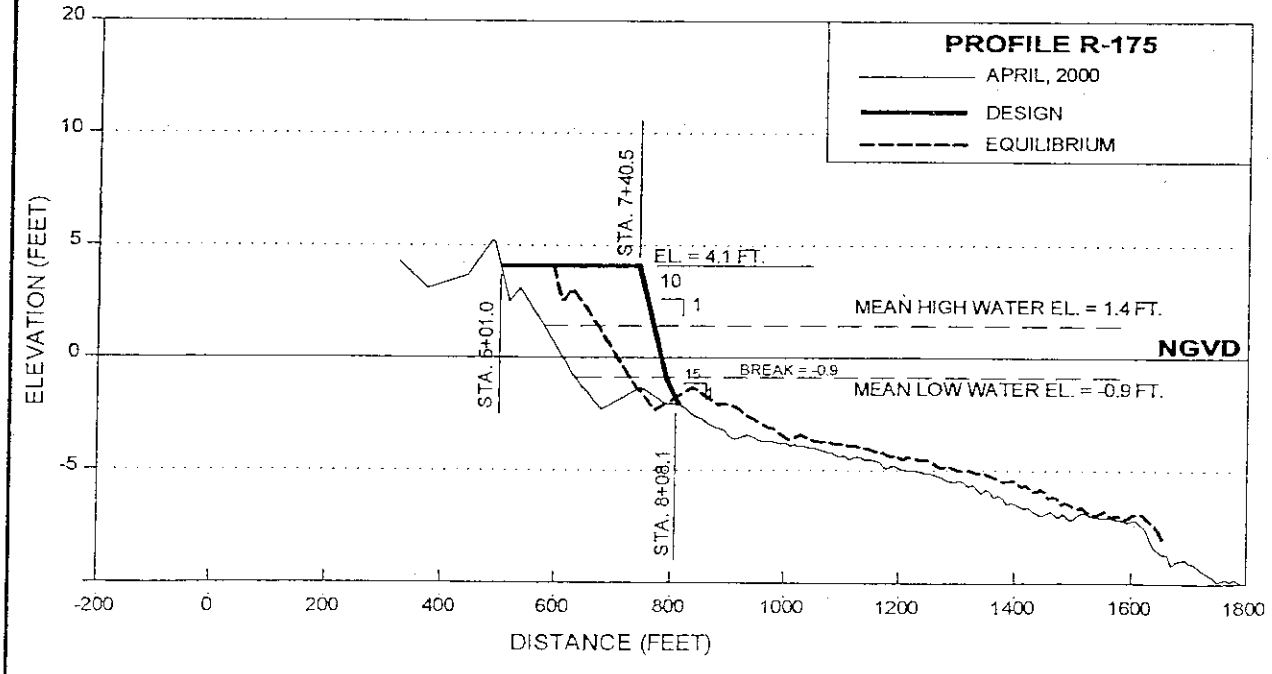
COASTAL PLANNING & ENGINEERING, INC.
2481 N.W. BOCA RATON BLVD.
BOCA RATON, FL. 33431

TITLE:
ESTERO ISLAND
BORROW AREA II
CROSS SECTION D-D'

REV: 12/27/00

PERMIT NO. 0173059





ESTERO ISLAND
CROSS SECTIONS
LEE COUNTY, FLORIDA

TITLE:

2481 N.W. BOCA RATON BLVD.
BOCA RATON, FL. 33431

COASTAL PLANNING & ENGINEERING, INC.

DATE: 7/21/00
BY: JRC
COMM. NO. 8410.02
SHEET: 17 OF 38
REV. 05/18/01

3487 3/5/02

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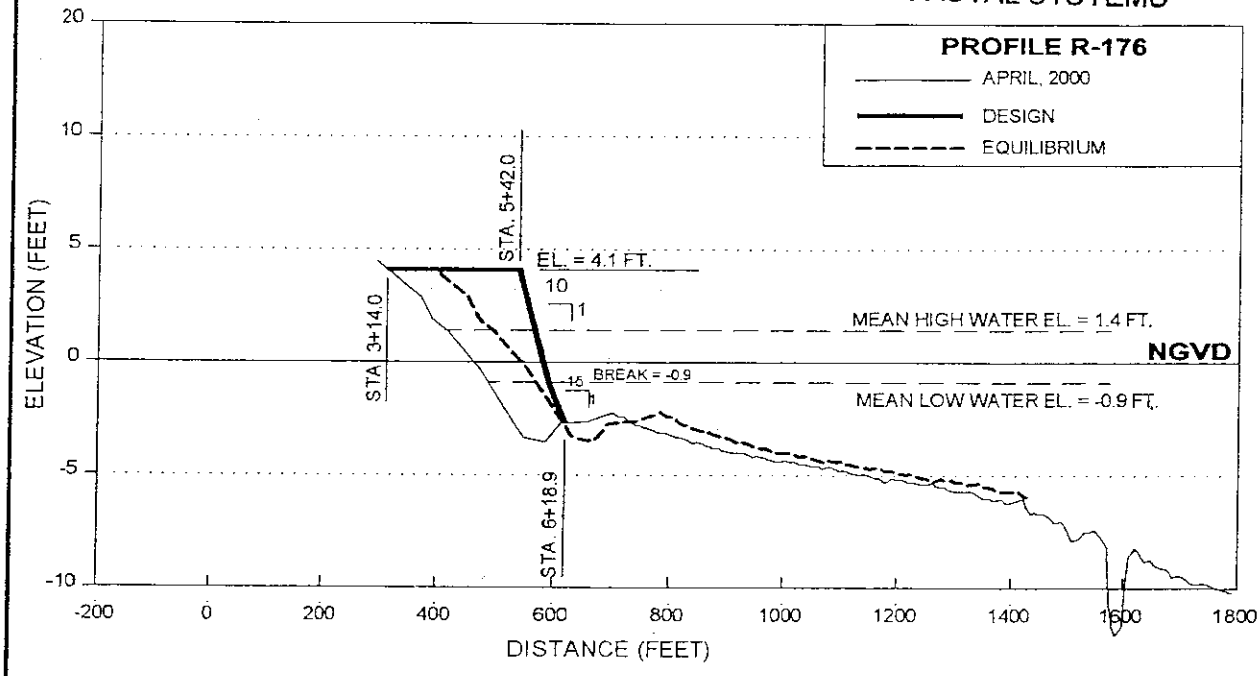
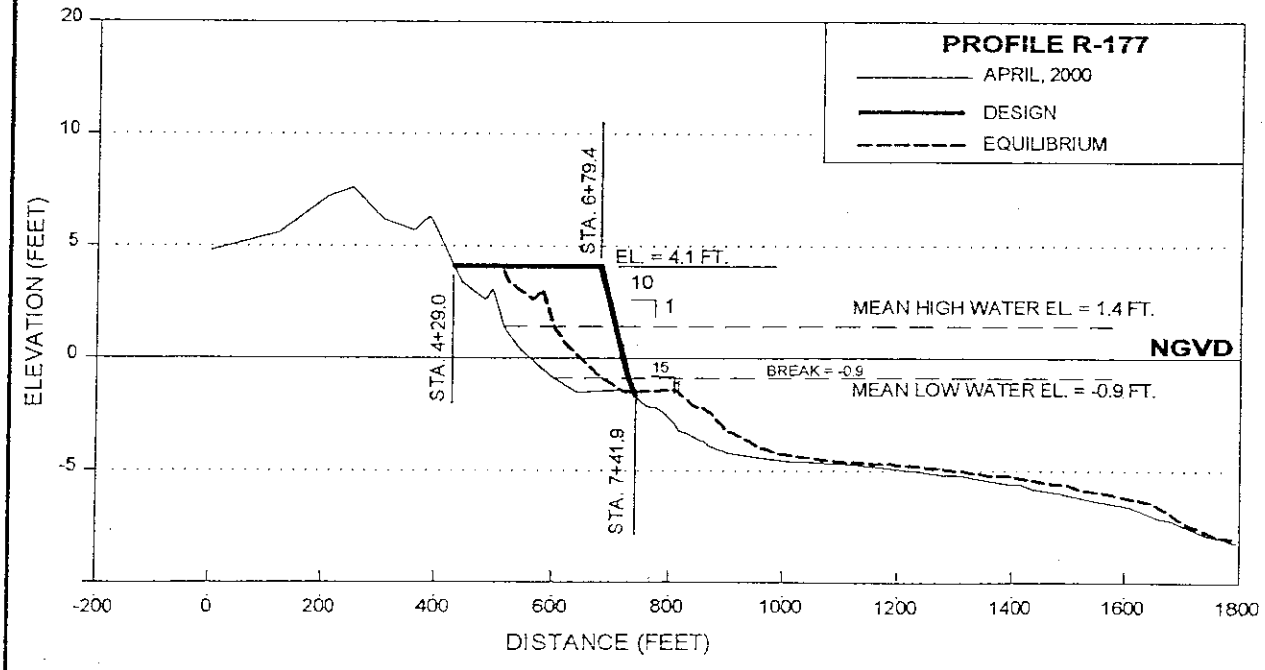
OFFICE OF BEACHES & COASTAL SYSTEMS

PERMIT NO. 0173059





TITLE:
ESTERO ISLAND
CROSS SECTIONS
LEE COUNTY, FLORIDA

2481 N.W. BOCA RATON BLVD.
BOCA RATON, FL. 33431

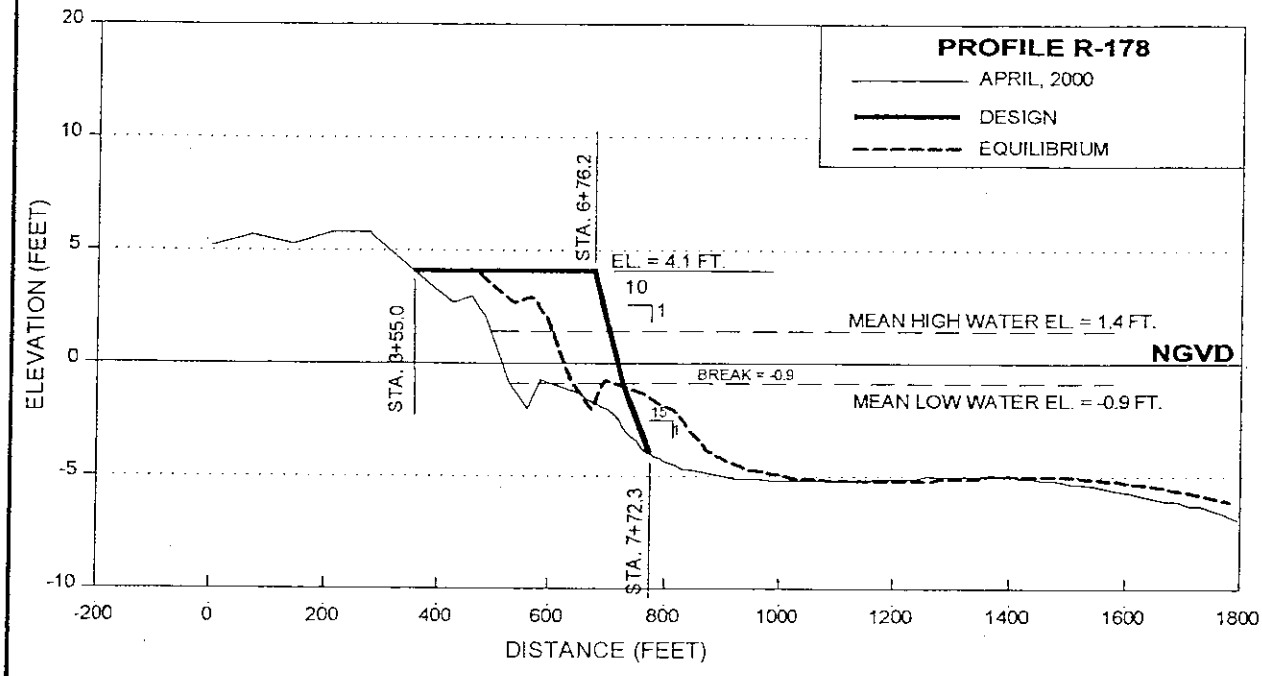
COASTAL PLANNING & ENGINEERING, INC.

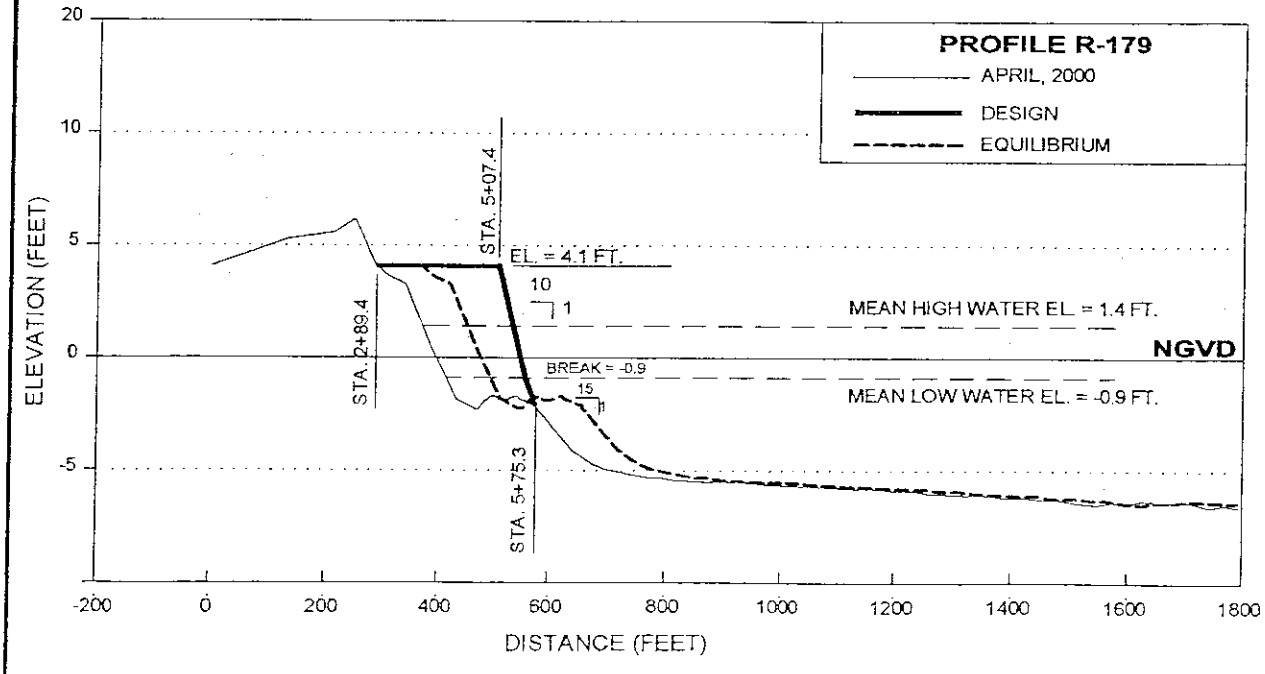
DATE:	7/21/00
BY:	JRC
COMM. NO.	8410.02
SHEET:	18 OF 38

REV: 05/18/01

3/5/02

PERMIT NO. 0173059





ESTERO ISLAND
CROSS SECTIONS
LEE COUNTY, FLORIDA

TITLE:

2481 N.W. BOCA RATON BLVD.
BOCA RATON, FL. 33431

COASTAL PLANNING & ENGINEERING, INC.

DATE: 7/21/00
BY: JRC
COMM. NO. 8410.02
SHEET: 19 OF 38
REV. 05/18/01

31857 3/5/02

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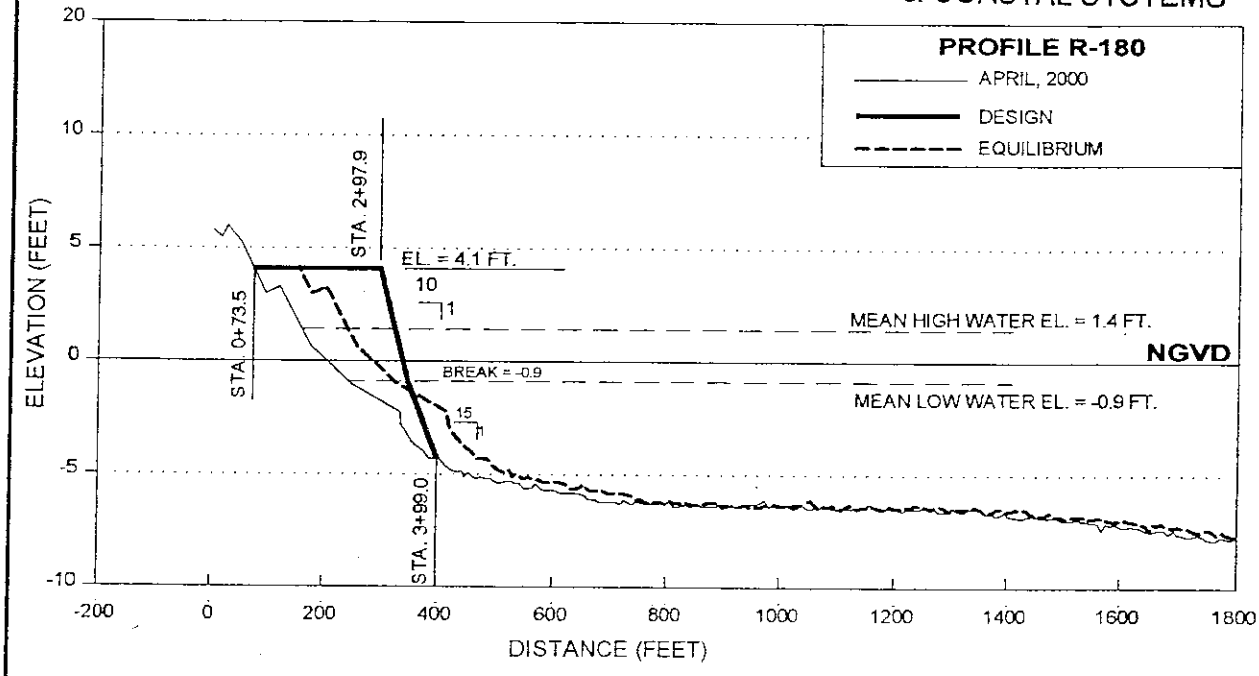
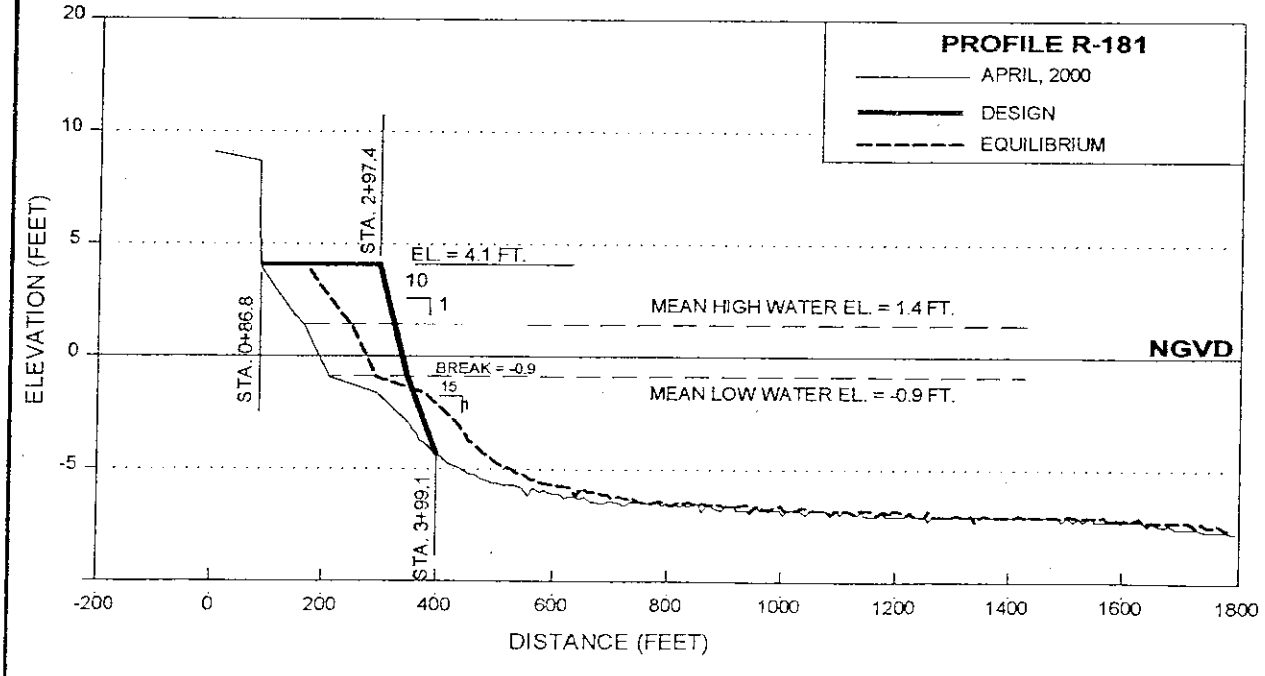
MAR 0 6 2002

OFFICE OF BEACHES & COASTAL SYSTEMS

PERMIT NO. 0173059





ESTERO ISLAND
CROSS SECTIONS
LEE COUNTY, FLORIDA

TITLE:

2481 N.W. BOCA RATON BLVD.
BOCA RATON, FL. 33431

COASTAL PLANNING & ENGINEERING, INC.

DATE: 7/21/00

BY: JRC

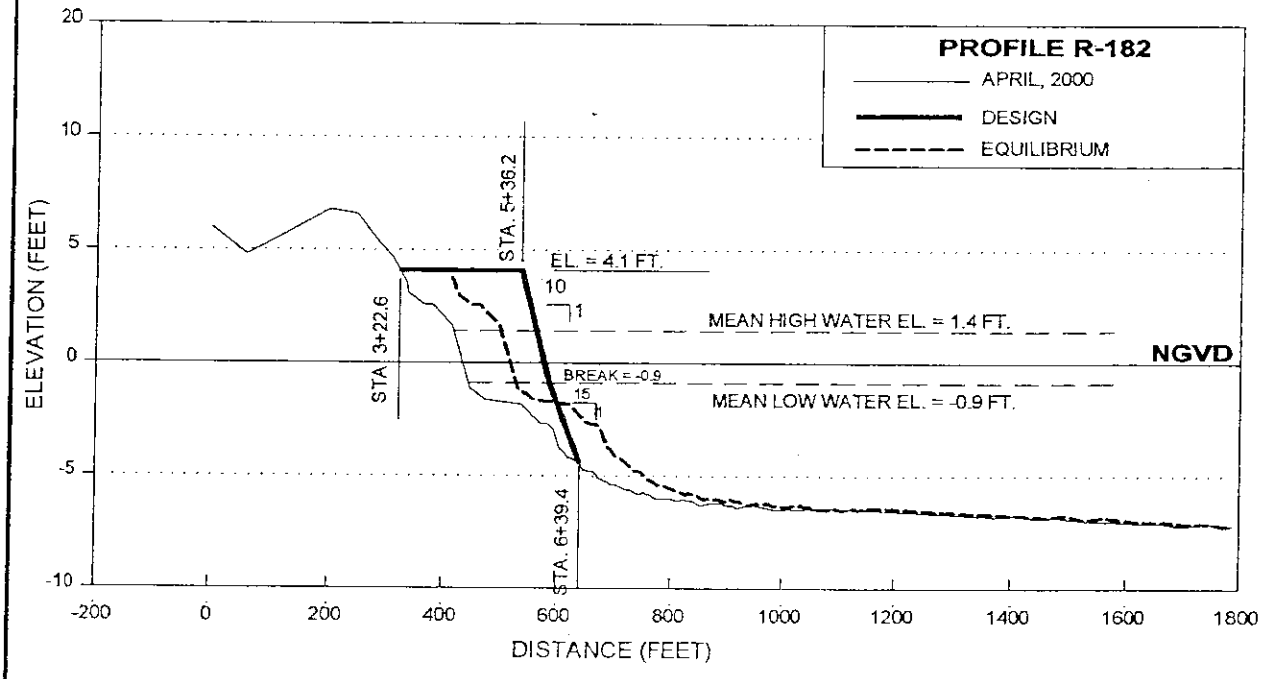
COMM. NO. 8410.02

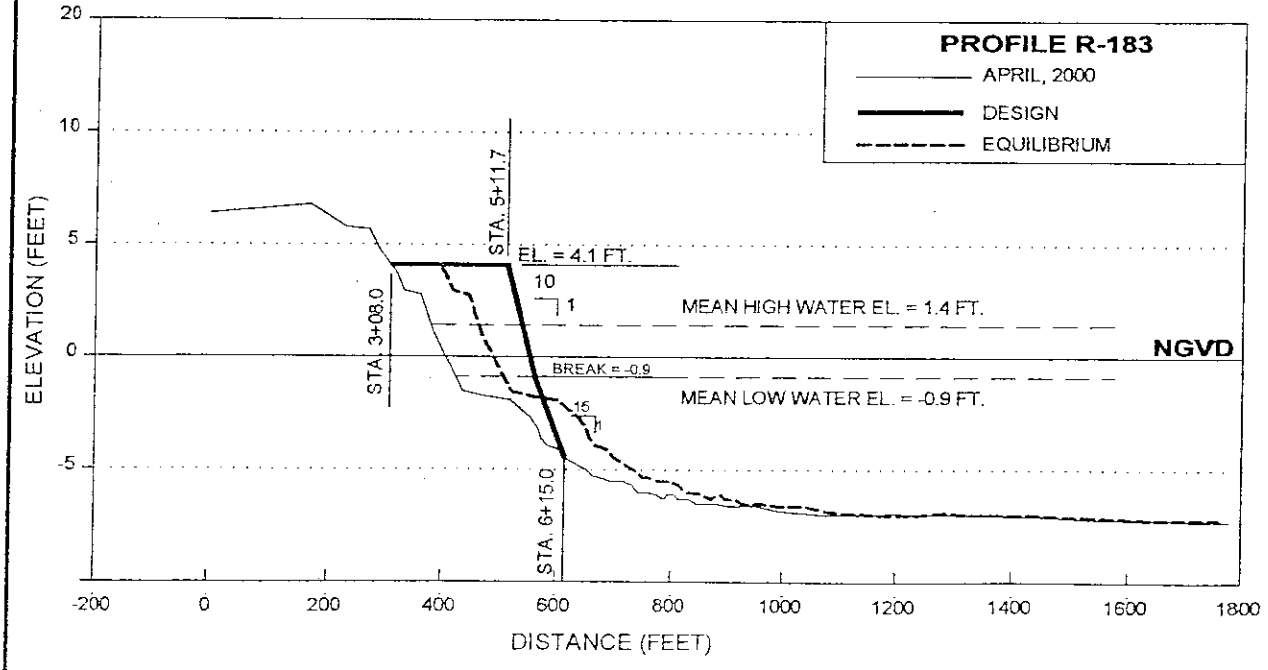
SHEET: 20 OF 38

REV. 05/18/01

34857 3/5/02

PERMIT NO. 0173059





ESTERO ISLAND
CROSS SECTIONS
LEE COUNTY, FLORIDA

TITLE:

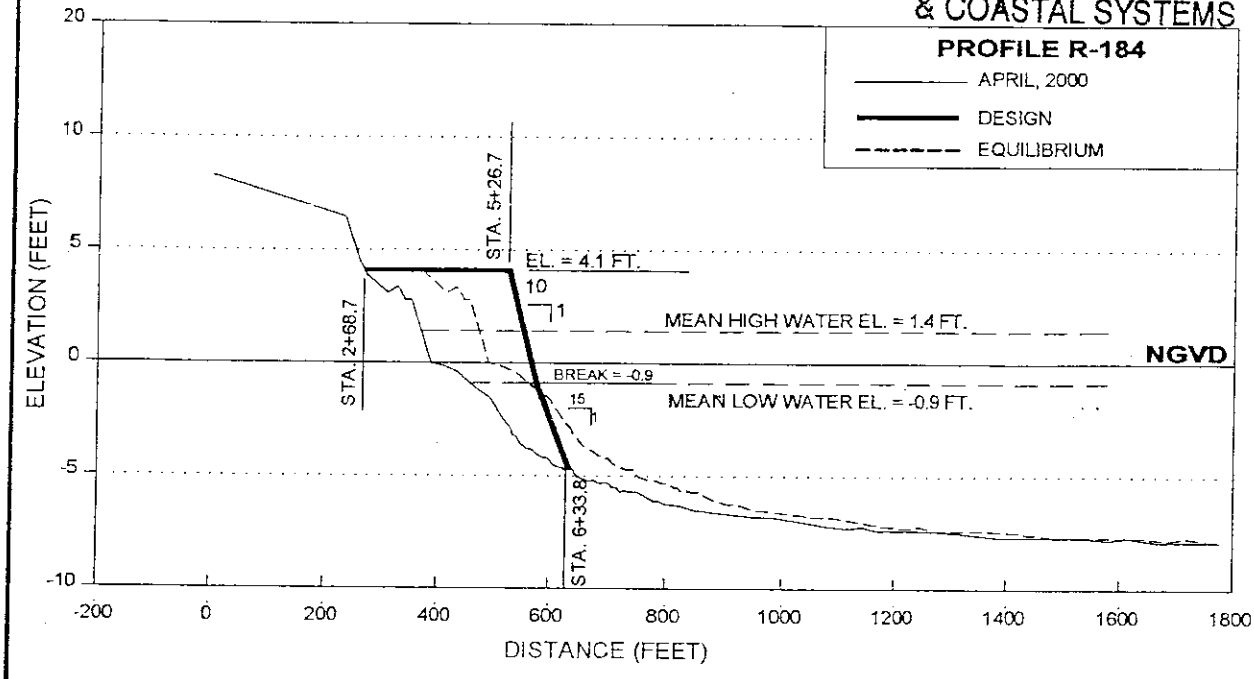
2481 N.W. BOCA RATON BLVD.
BOCA RATON, FL. 33431

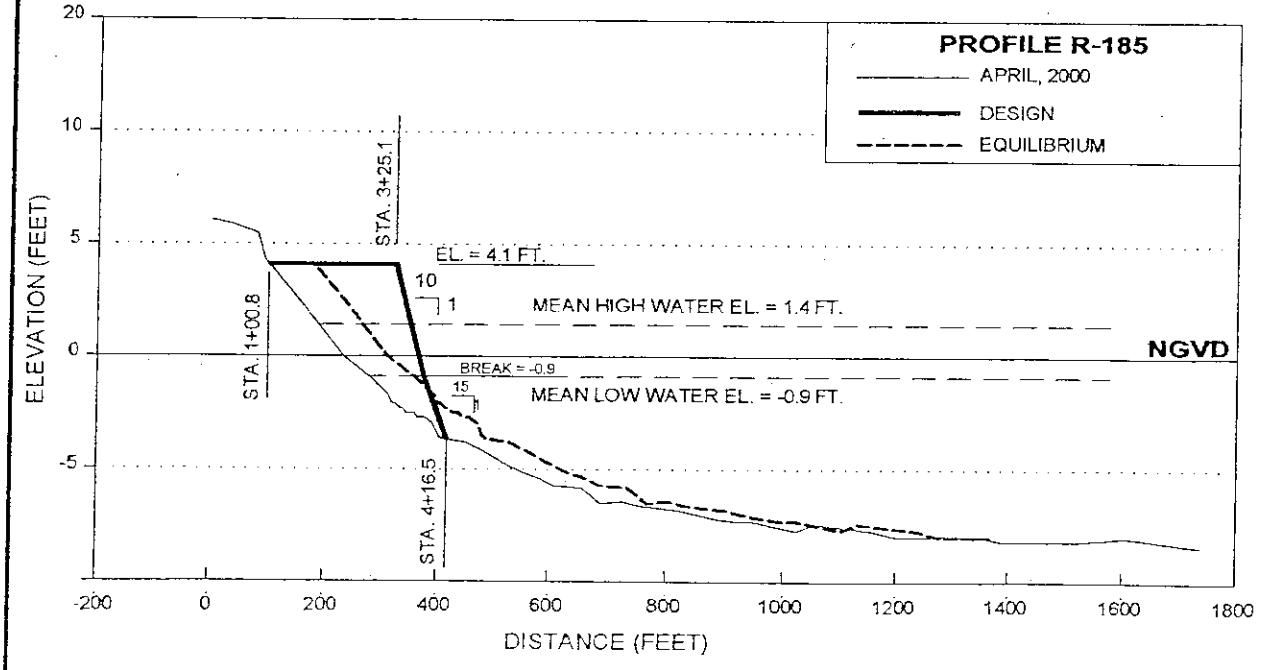
COASTAL PLANNING & ENGINEERING, INC.

DATE: 7/21/00
BY: JRC
COMM. NO. 8410.02
SHEET: 21 OF 38
REV. 05/18/01

34857 3/5/02

PERMIT NO. 0173059





ESTERO ISLAND
CROSS SECTIONS
LEE COUNTY, FLORIDA

TITLE:

2481 N.W. BOCA RATON BLVD.
BOCA RATON, FL. 33431

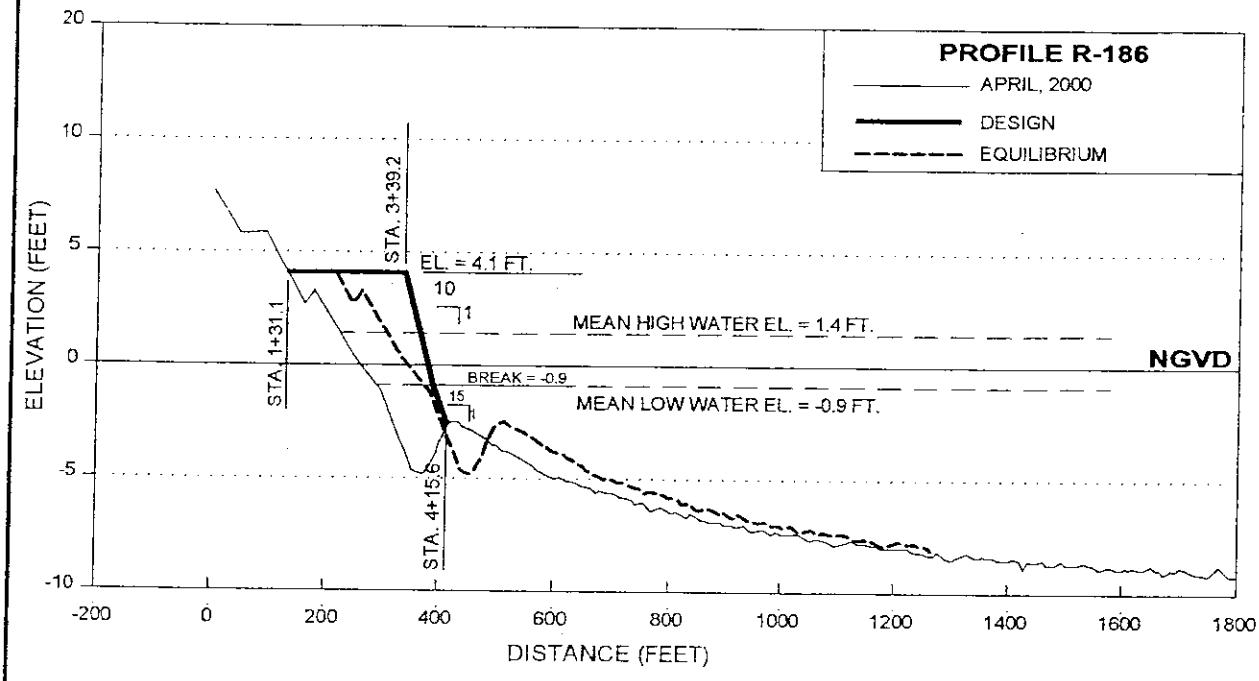
COASTAL PLANNING & ENGINEERING, INC.

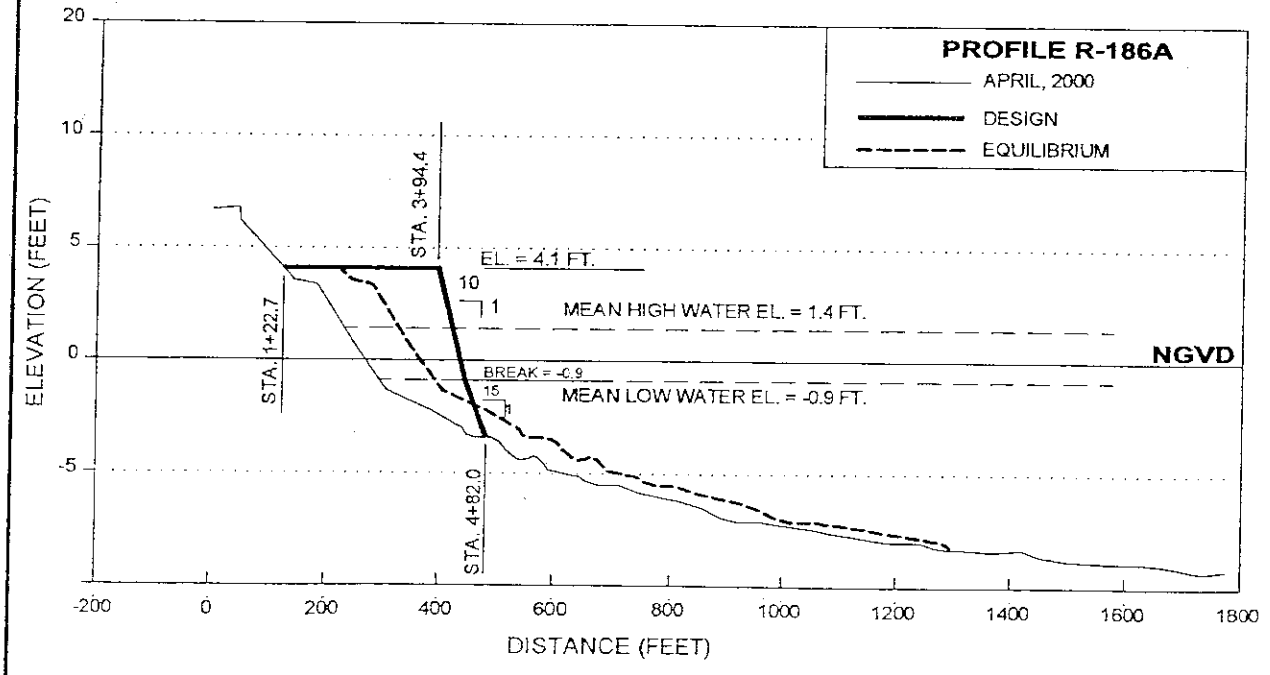
DATE:	7/21/00
BY:	JRC
COMM. NO.	8410.02
SHEET:	22 OF 38

REV. 05/18/01

3487 3/5/02

PERMIT NO. 0173059





ESTERO ISLAND
CROSS SECTIONS
LEE COUNTY, FLORIDA

TITLE:

2481 N.W. BOCA RATON BLVD.
BOCA RATON, FL. 33431

COASTAL PLANNING & ENGINEERING, INC.

DATE:	7/21/00
BY:	JRC
COMM. NO.	8410.02
SHEET:	23 OF 38

REV. 05/18/01

34857 3/5/02

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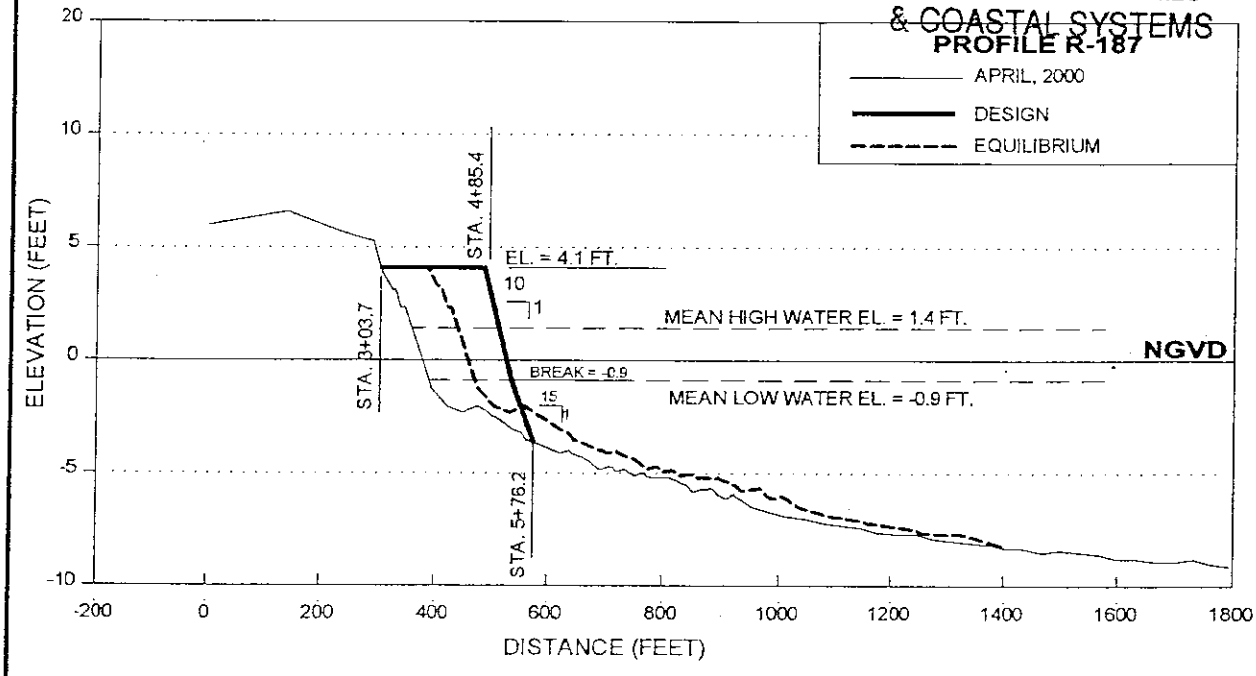
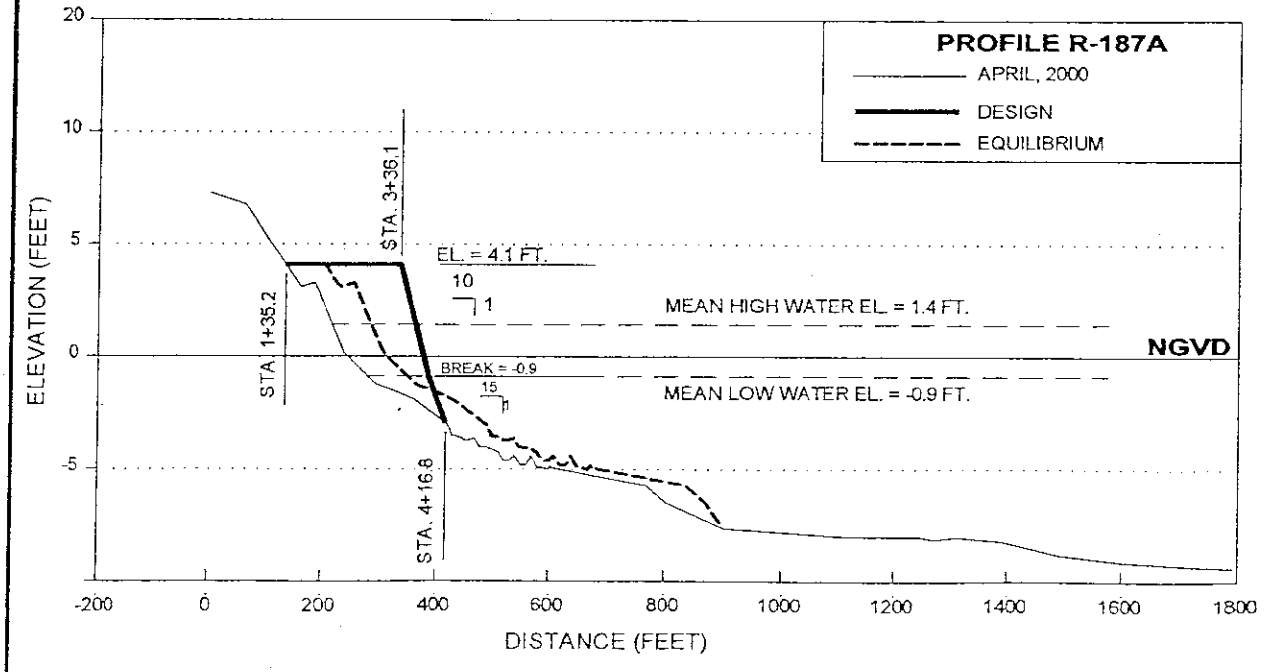
OFFICE OF BEACHES
& COASTAL SYSTEMS

PERMIT NO. 0173059





TITLE:
ESTERO ISLAND
CROSS SECTIONS
LEE COUNTY, FLORIDA

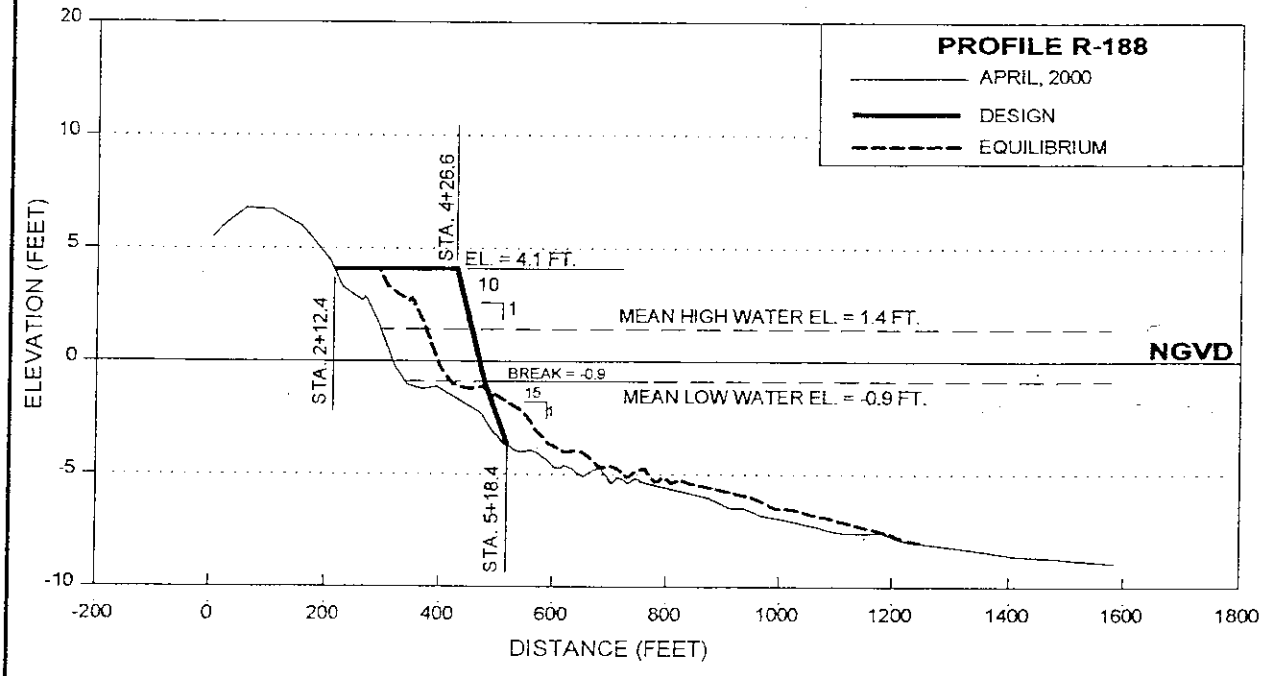
2481 N.W. BOCA RATON BLVD.
BOCA RATON, FL. 33431

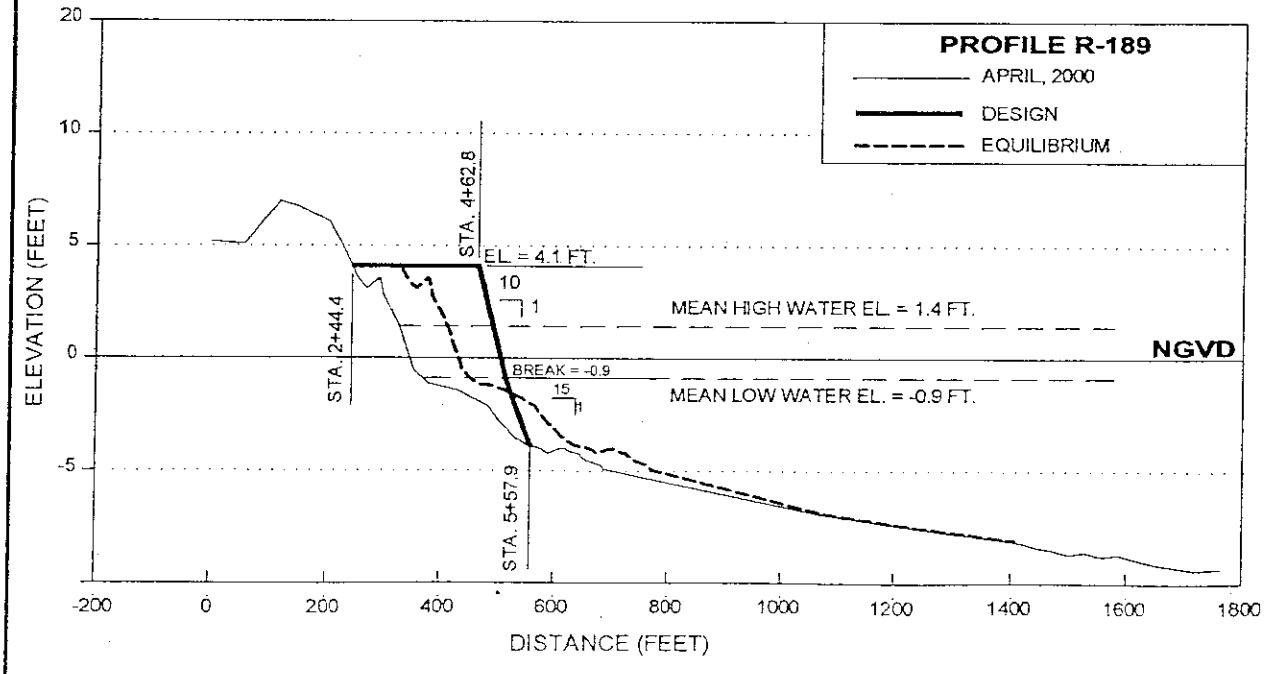
COASTAL PLANNING & ENGINEERING, INC.

DATE: 7/21/00
BY: JRC
COMM. NO. 8410.02
SHEET: 24 OF 38
REV. 05/18/01

34857 3/5/02

PERMIT NO. 0173059





ESTERO ISLAND
CROSS SECTIONS
LEE COUNTY, FLORIDA

TITLE:

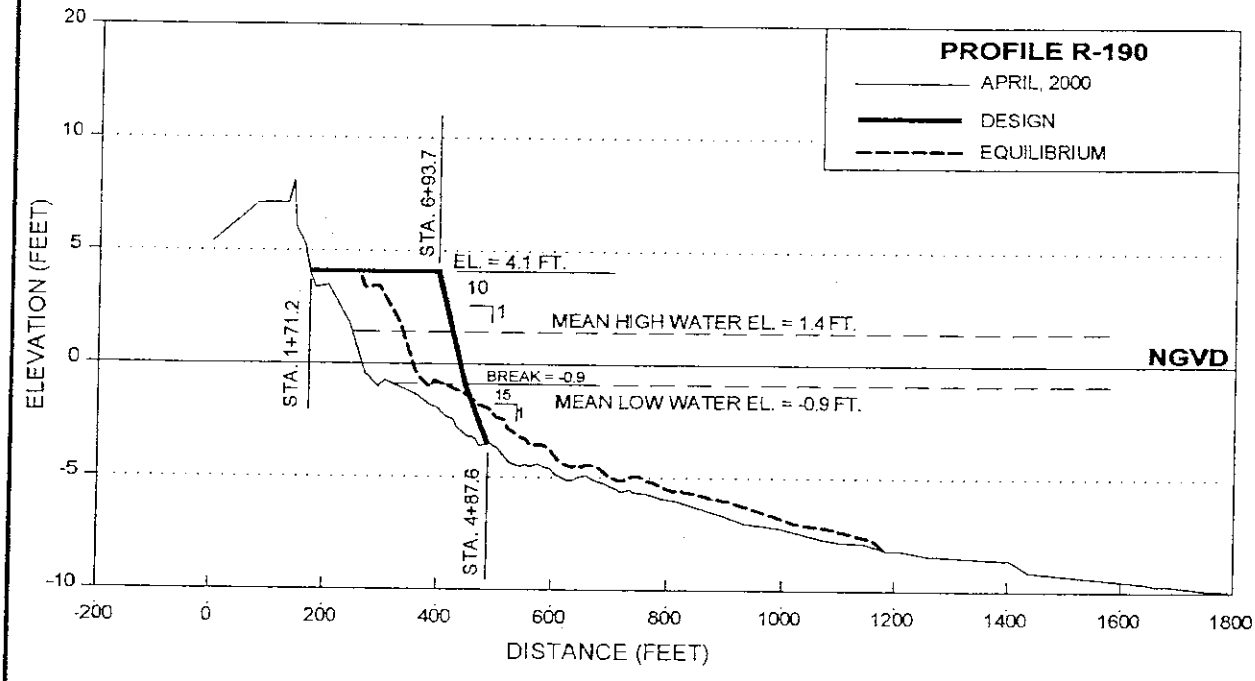
2481 N.W. BOCA RATON BLVD.
BOCA RATON, FL. 33431

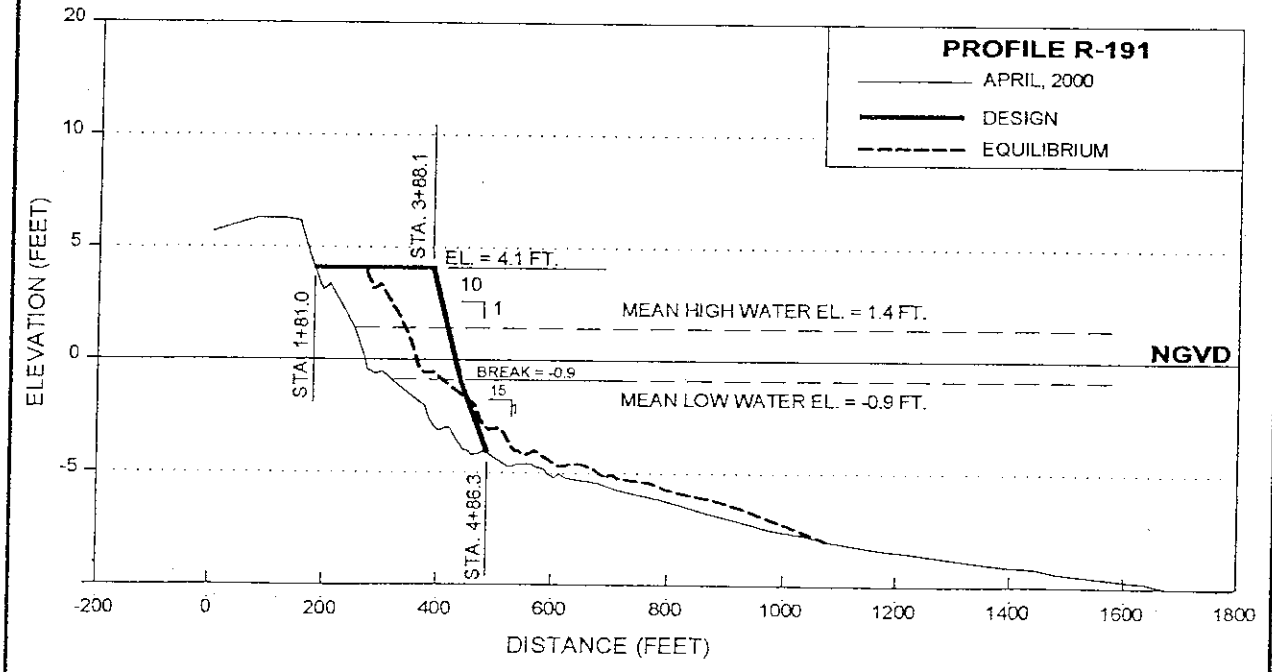
COASTAL PLANNING & ENGINEERING, INC.

DATE: 7/21/00
BY: JRC
COMM. NO. 8410.02
SHEET: 25 OF 38
REV. 05/16/01

3487 3/5/02

PERMIT NO. 0173059





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MAR 0 6 2002

OFFICE OF BEACHES
& COASTAL SYSTEMS

ESTERO ISLAND
CROSS SECTIONS
LEE COUNTY, FLORIDA

TITLE:

2481 N.W. BOCA RATON BLVD.
BOCA RATON, FL. 33431

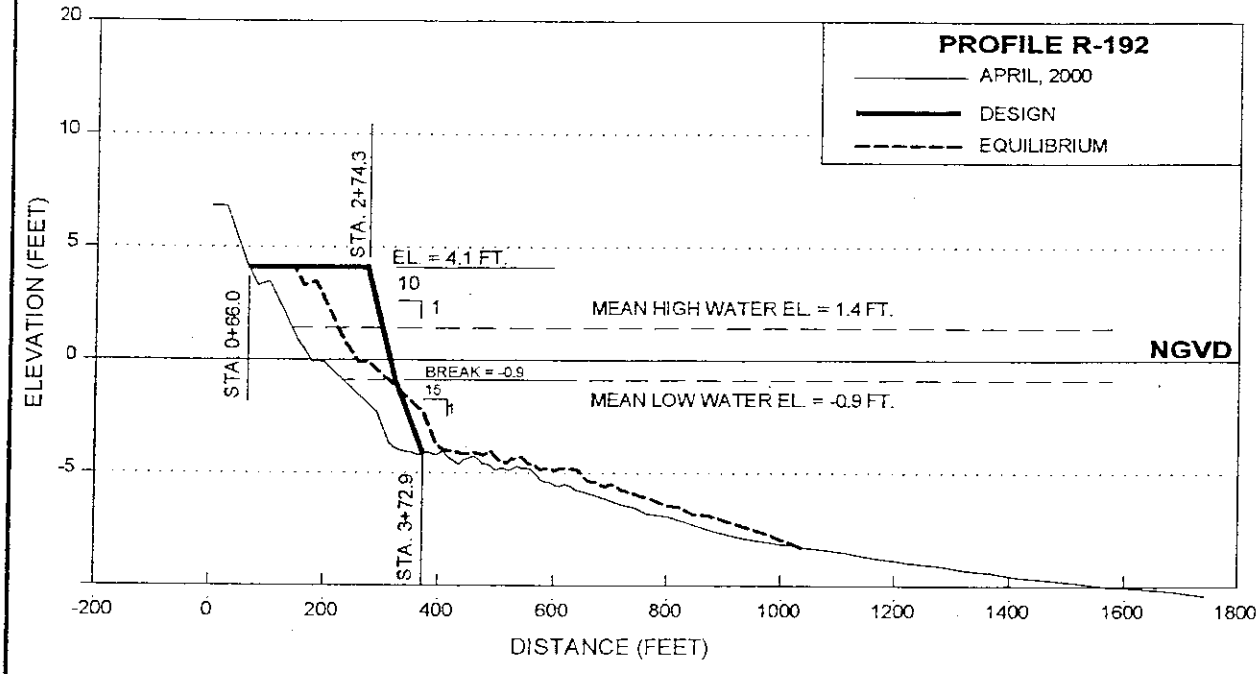
COASTAL PLANNING & ENGINEERING, INC.

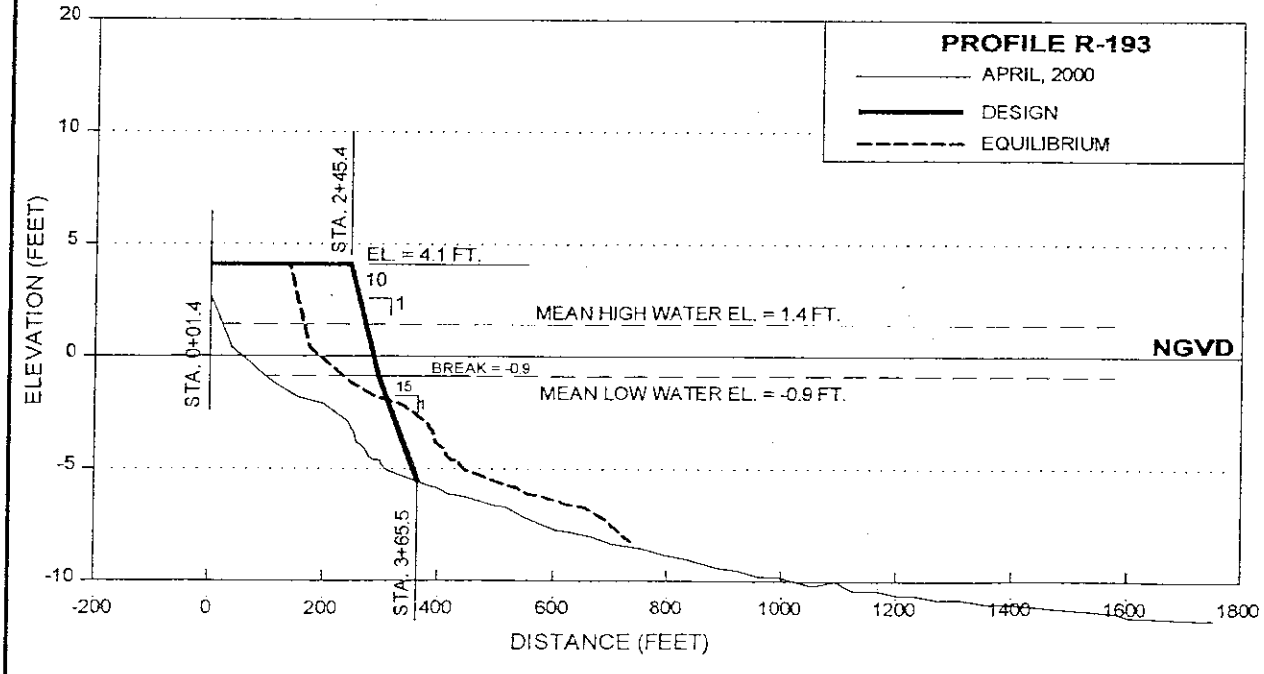
DATE: 7/21/00
BY: JRC
COMM. NO. 8410.02
SHEET: 26 OF 38
REV. 05/18/01

SCALE

3487 3/5/02

PERMIT NO. 0173059





ESTERO ISLAND
CROSS SECTIONS
LEE COUNTY, FLORIDA

TITLE:

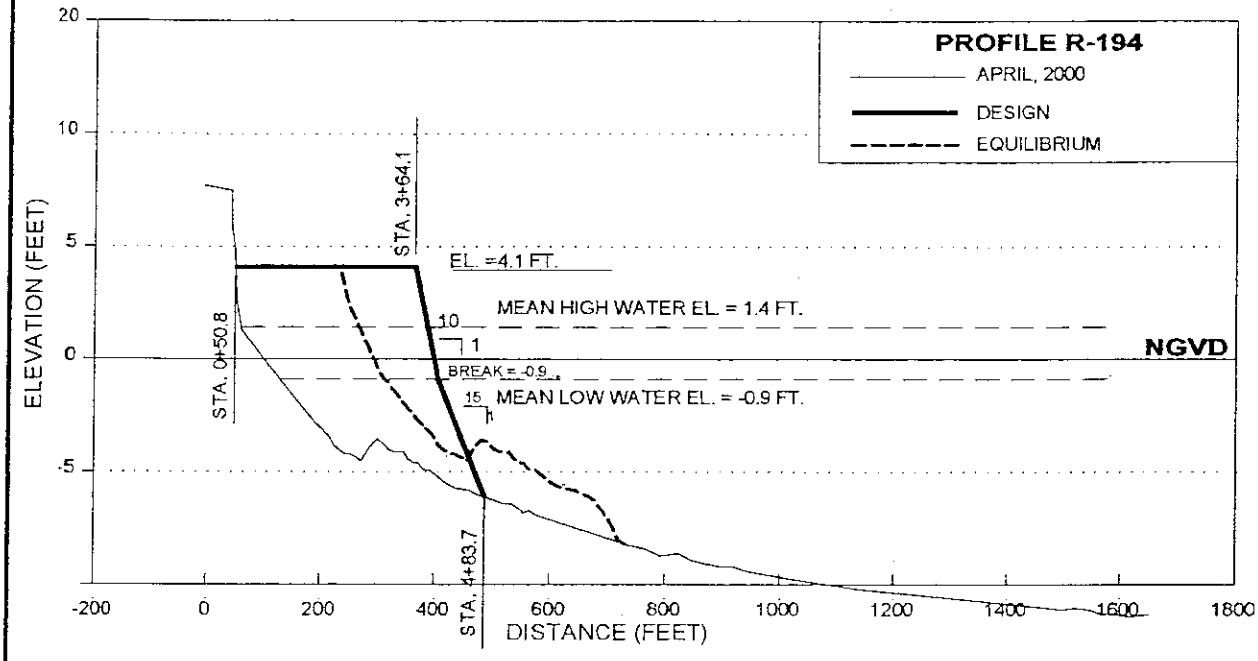
2481 N.W. BOCA RATON BLVD.
BOCA RATON, FL. 33431

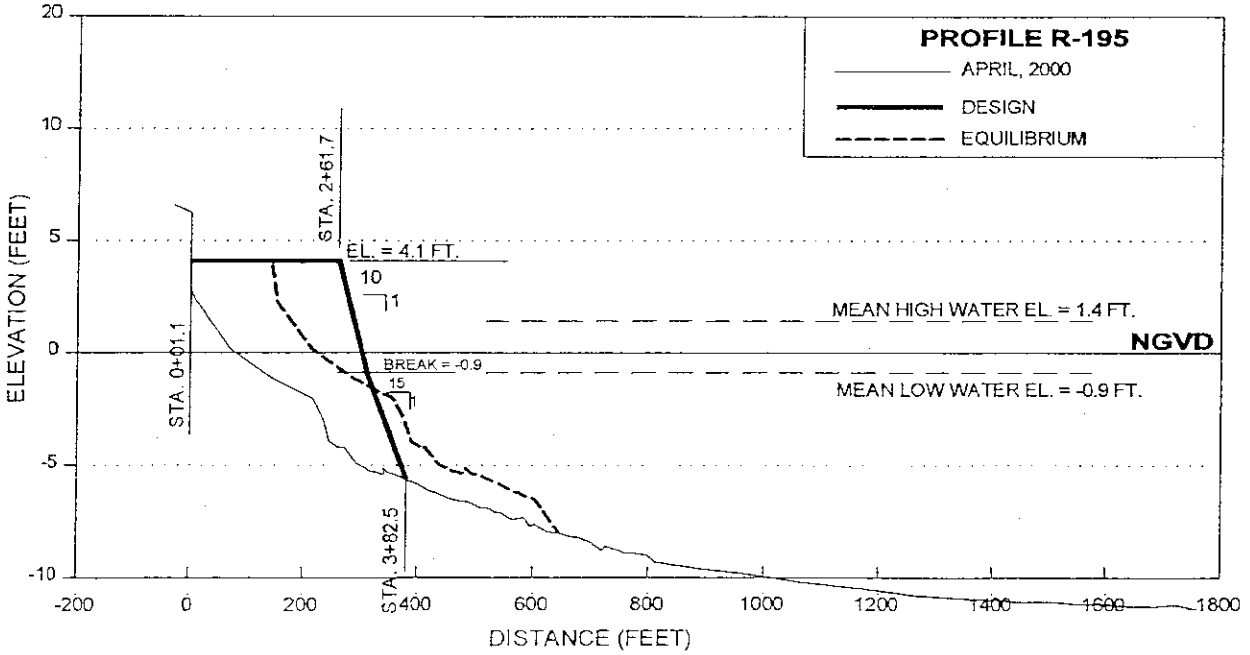
COASTAL PLANNING & ENGINEERING, INC.

DATE: 7/21/00
BY: JRC
COMM. NO. 8410.02
SHEET: 27 OF 38
REV. 05/18/01

34857 3/5/02

PERMIT NO. 0173059





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MAR 0 6 2002

OFFICE OF BEACHES
& COASTAL SYSTEMS

ESTERO ISLAND
CROSS SECTIONS
LEE COUNTY, FLORIDA

TITLE:

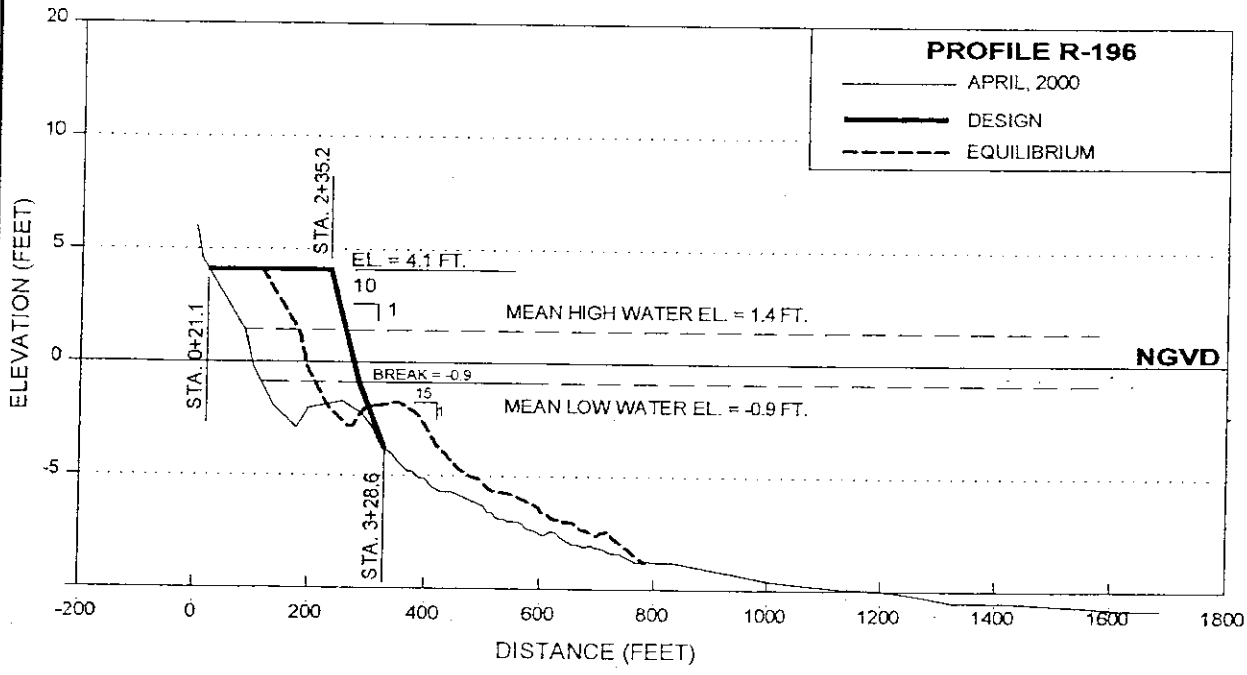
2481 N.W. BOCA RATON BLVD.
BOCA RATON, FL. 33431

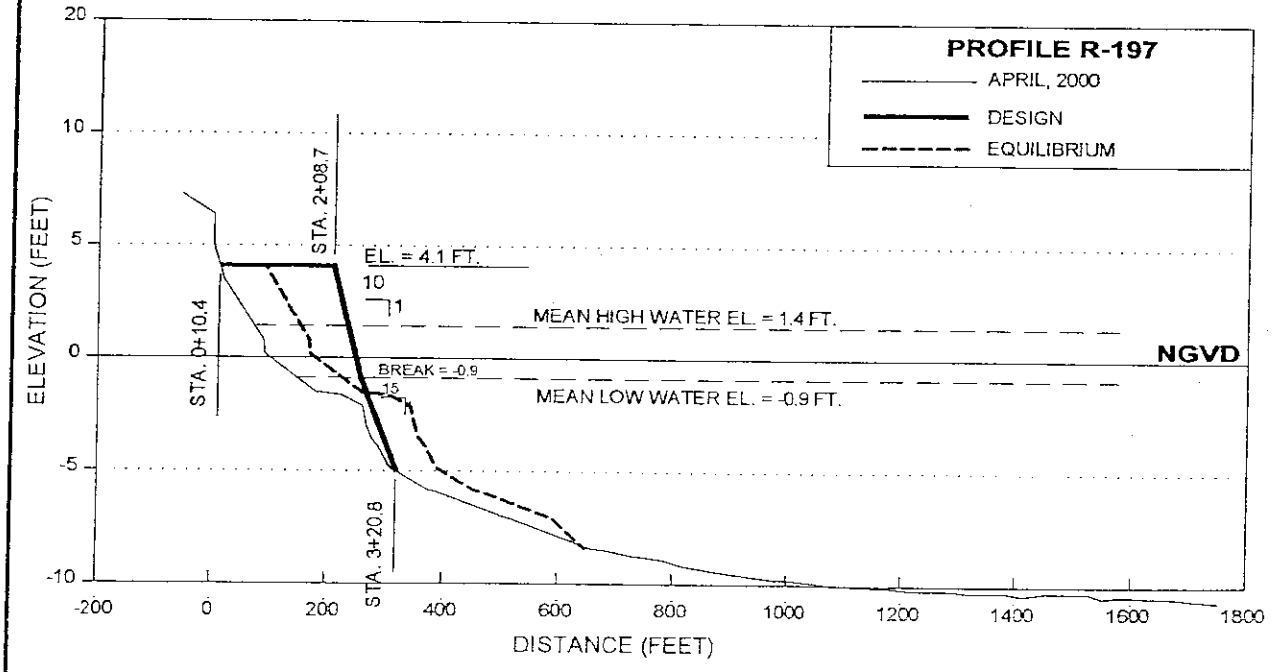
COASTAL PLANNING & ENGINEERING, INC.

DATE: 7/21/00
BY: JRC
COMM. NO. 8410.02
SHEET: 28 OF 38
REV. 05/18/01

3/5/02

PERMIT NO. 0173059





ESTERO ISLAND
CROSS SECTIONS
LEE COUNTY, FLORIDA

TITLE:

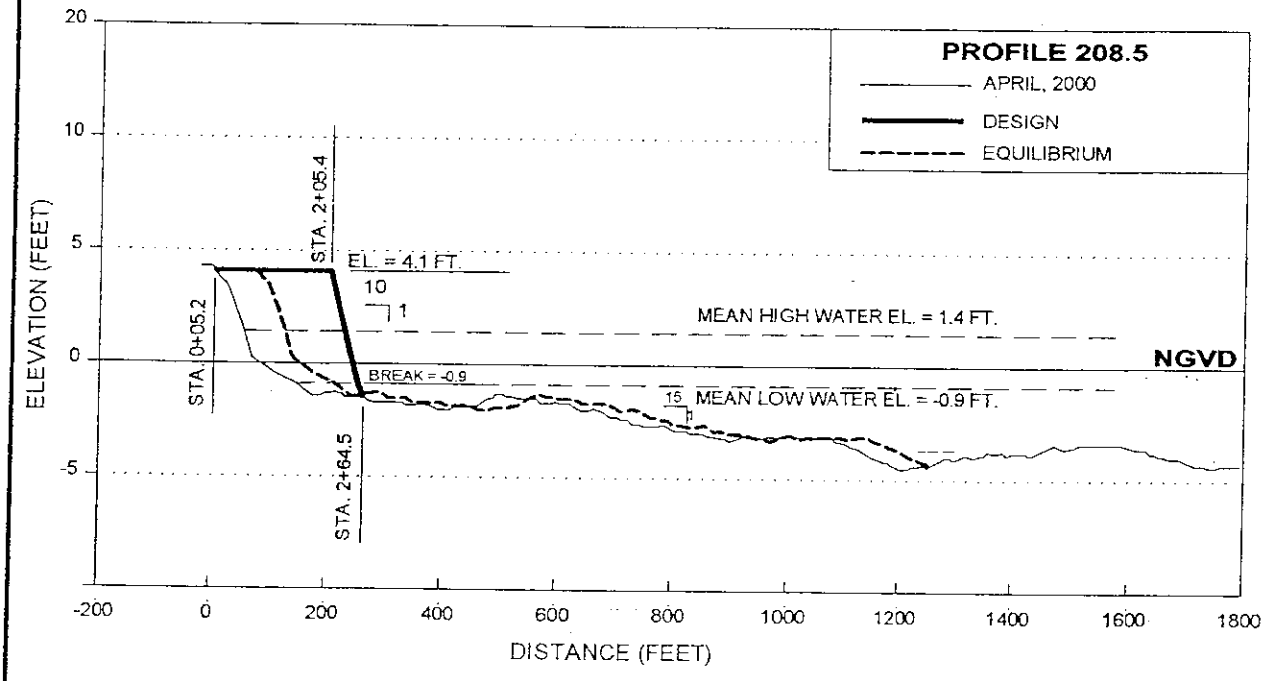
2481 N.W. BOCA RATON BLVD.
BOCA RATON, FL. 33431

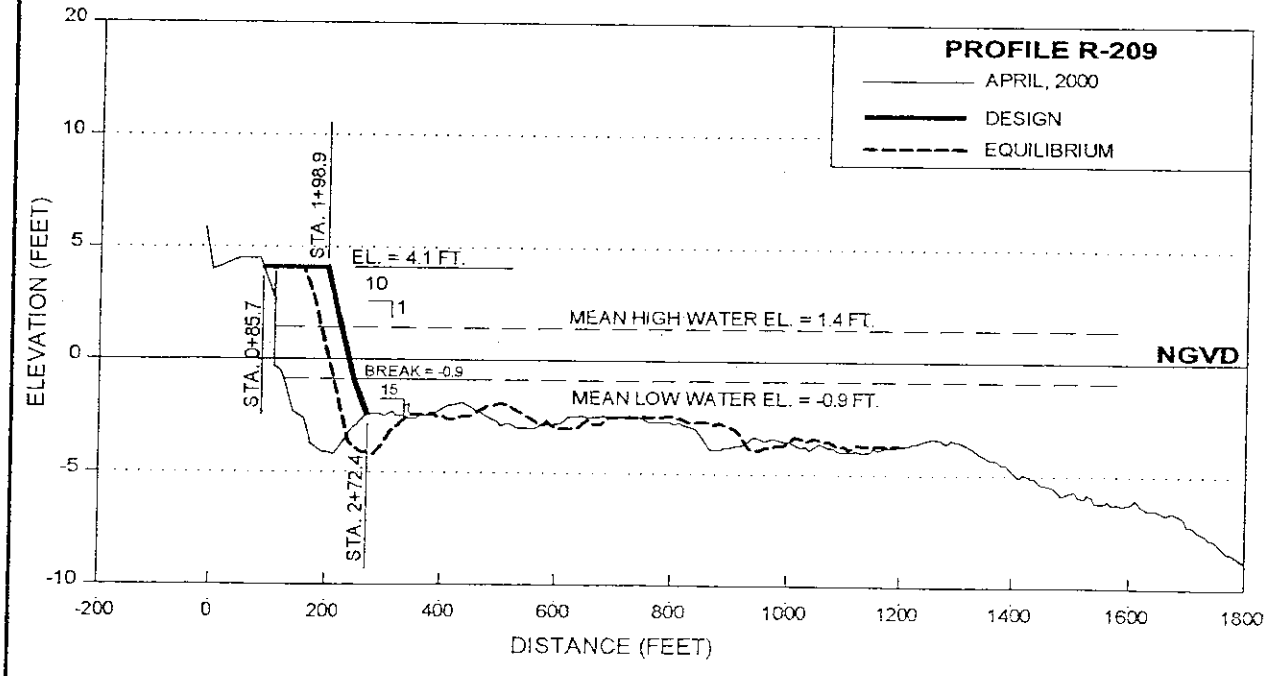
COASTAL PLANNING & ENGINEERING, INC.

DATE: 7/21/00
BY: JRC
COMM. NO. 8410.02
SHEET: 29 OF 38
REV. 05/18/01

34857 3/5/02

PERMIT NO. 0173059





ESTERO ISLAND
CROSS SECTIONS
LEE COUNTY, FLORIDA

TITLE:

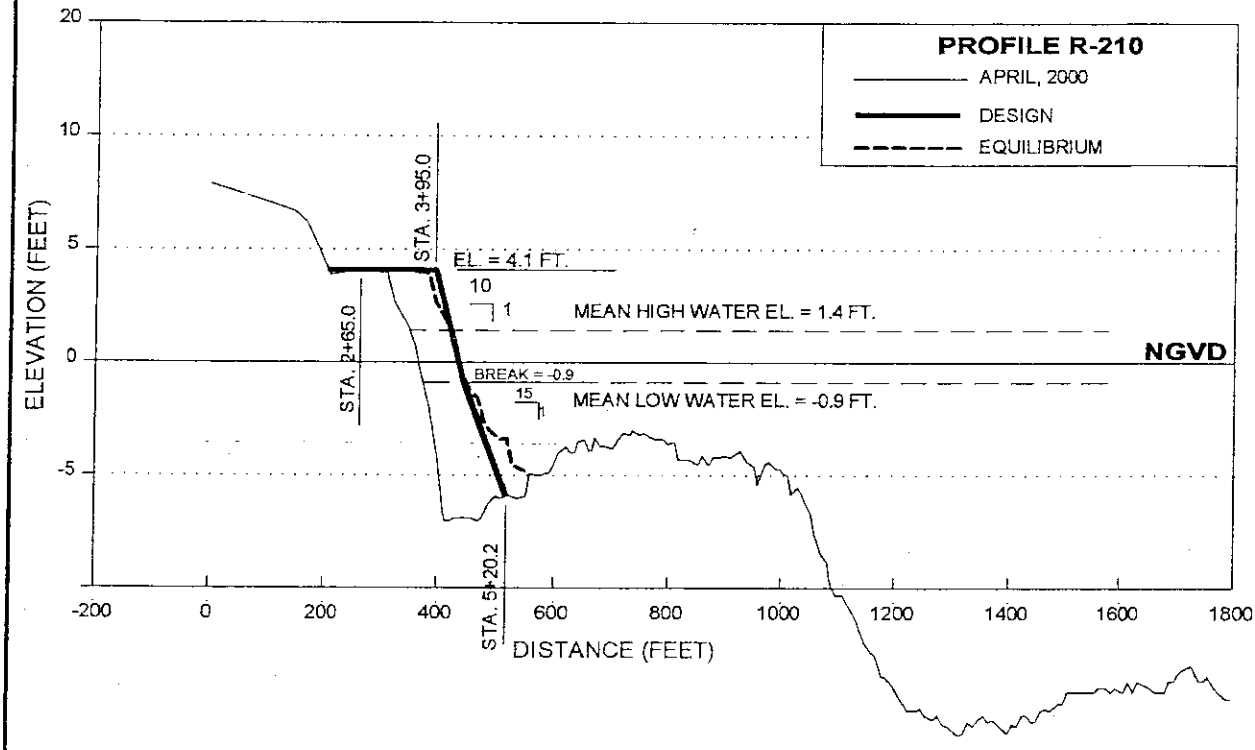
2481 N.W. BOCA RATON BLVD.
BOCA RATON, FL. 33431

COASTAL PLANNING & ENGINEERING, INC.

DATE: 7/21/00
BY: JRC
COMM. NO. 8410.02
SHEET: 31 OF 38
REV. 05/18/01

34857 3/5/02

PERMIT NO. 0173059



ESTERO ISLAND
CROSS SECTIONS
LEE COUNTY, FLORIDA

TITLE:

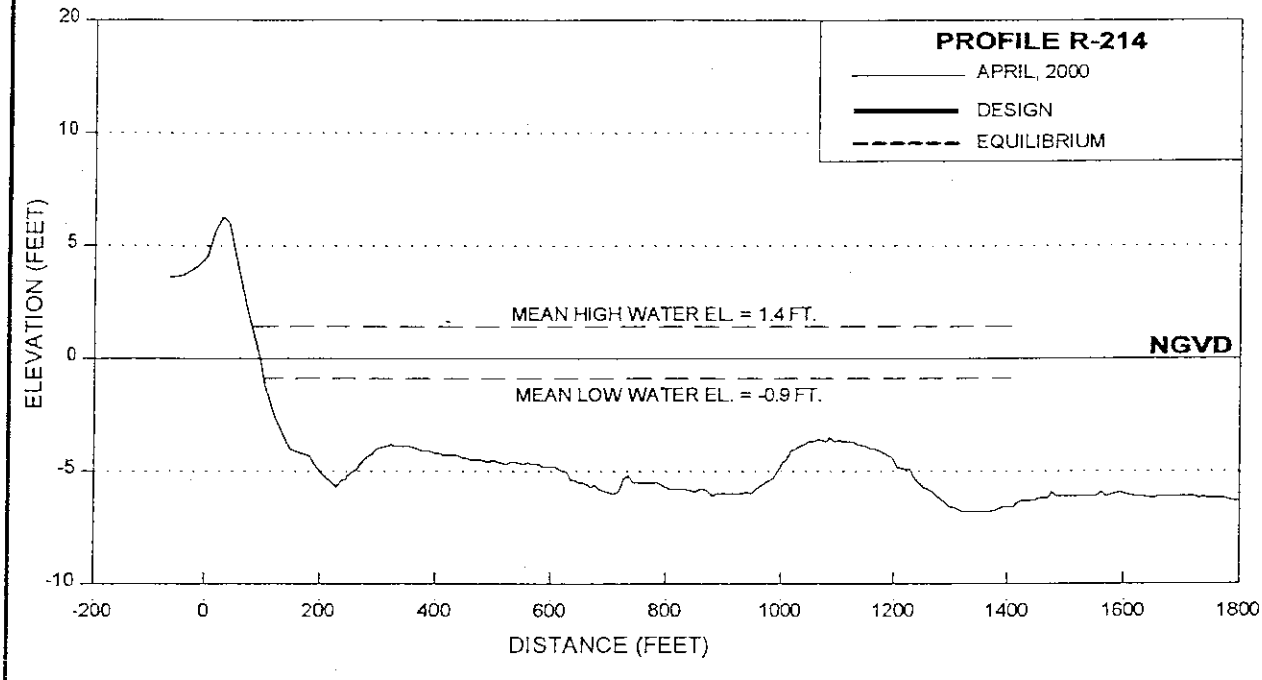
2481 N.W. BOCA RATON BLVD.
BOCA RATON, FL. 33431

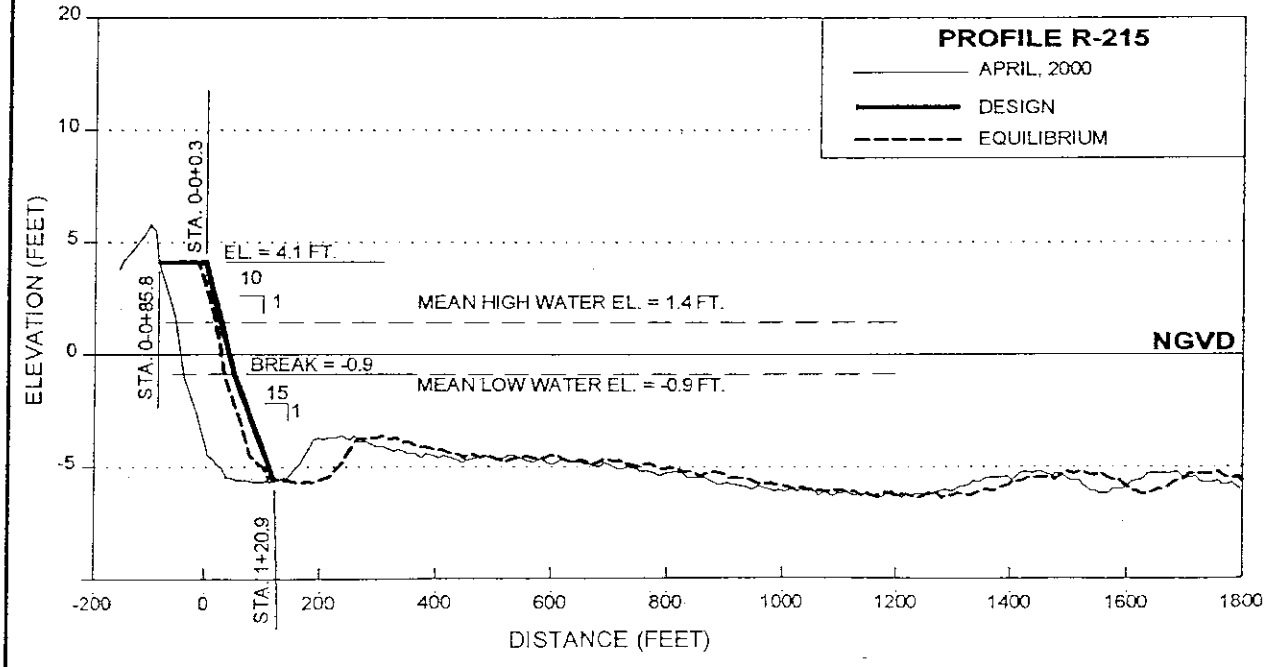
COASTAL PLANNING & ENGINEERING, INC.

DATE: 7/21/00
BY: JRC
COMM. NO. 8410.02
SHEET: 32 OF 38
REV. 05/18/01

34057 3/5/02

PERMIT NO. 0173059





ESTERO ISLAND
CROSS SECTIONS
LEE COUNTY, FLORIDA

TITLE:

2481 N.W. BOCA RATON BLVD.
BOCA RATON, FL. 33431

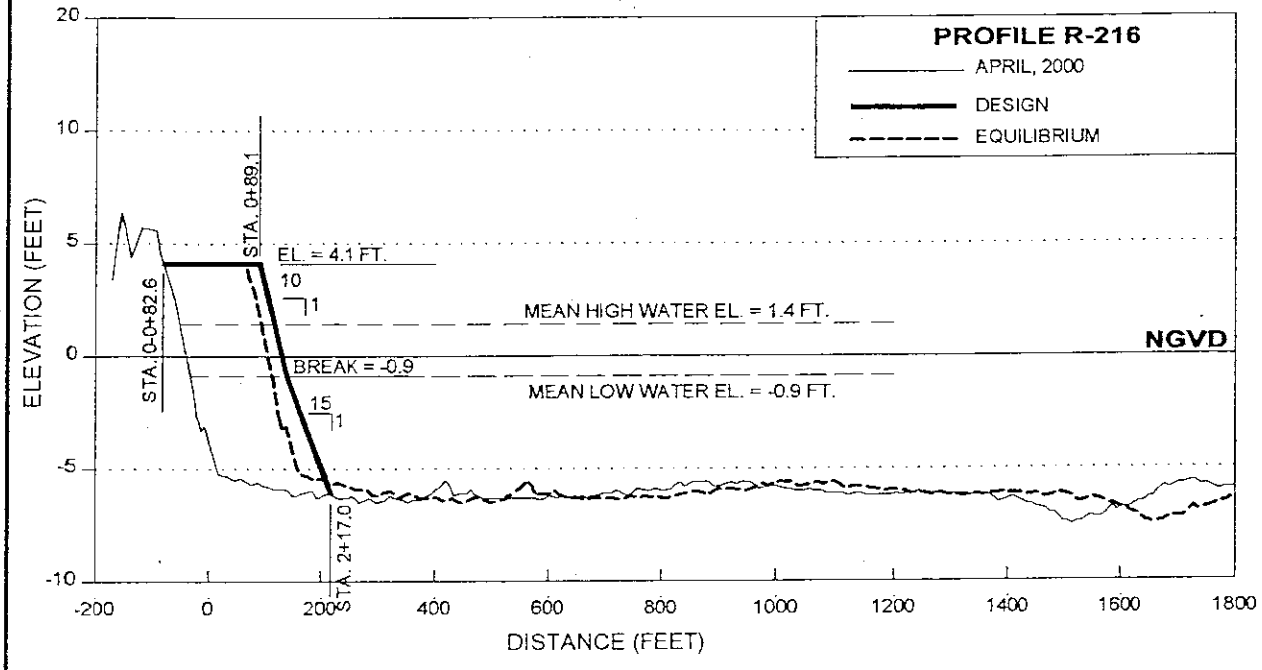
COASTAL PLANNING & ENGINEERING, INC.

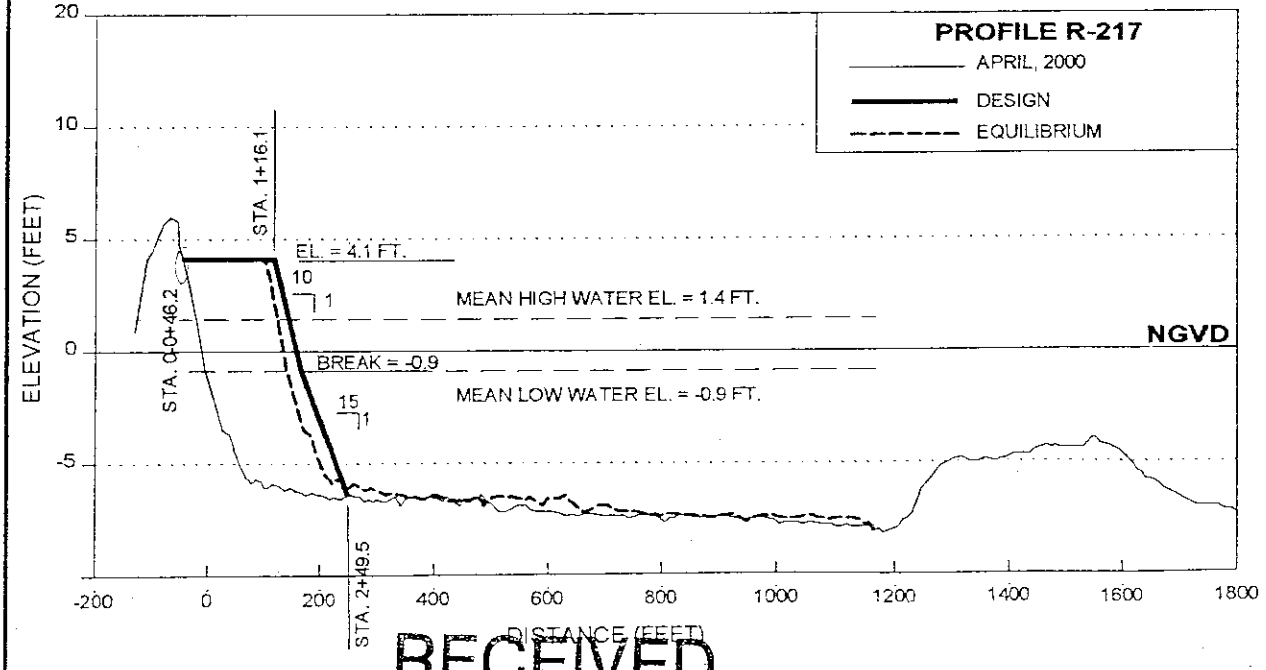
DATE:	7/21/00
BY:	JRC
COMM. NO.	8410.02
SHEET:	33 OF 38

REV. 05/18/01

34957 3/5/02

PERMIT NO. 0173059





ESTERO ISLAND
CROSS SECTIONS
LEE COUNTY, FLORIDA

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2481 N.W. BOCA RATON BLVD.
BOCA RATON, FL. 33431

COASTAL PLANNING & ENGINEERING, INC.

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SHEET: 34 OF 38
REV: 05/18/01

3/5/02

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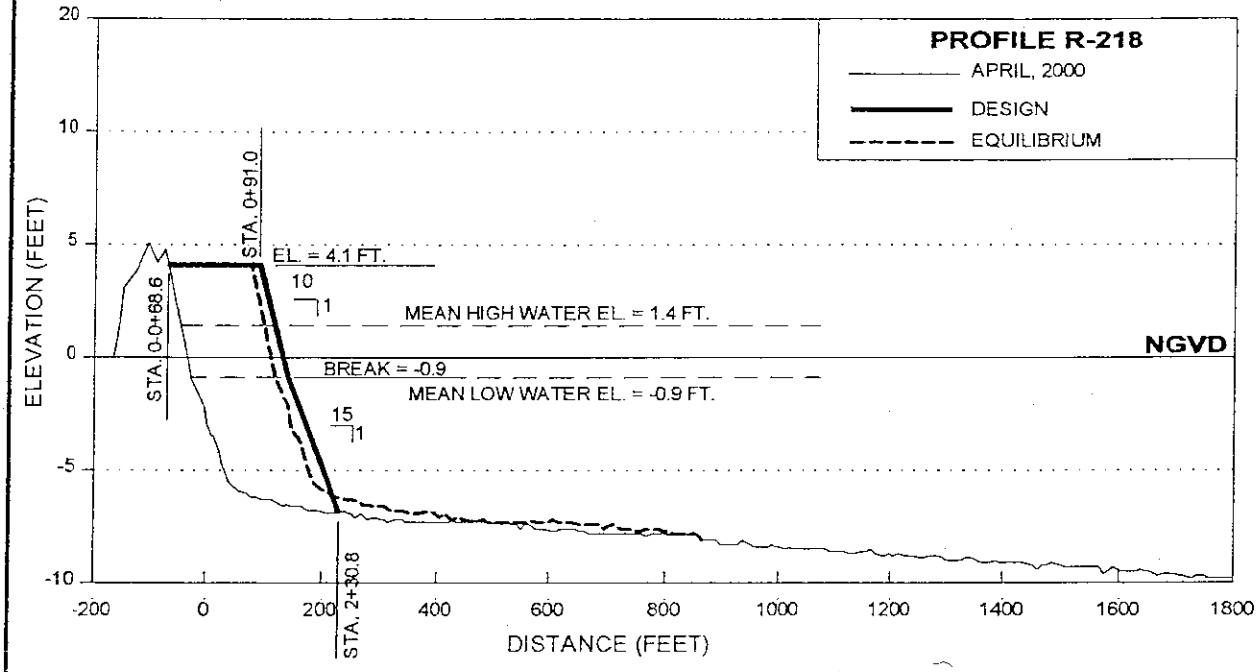

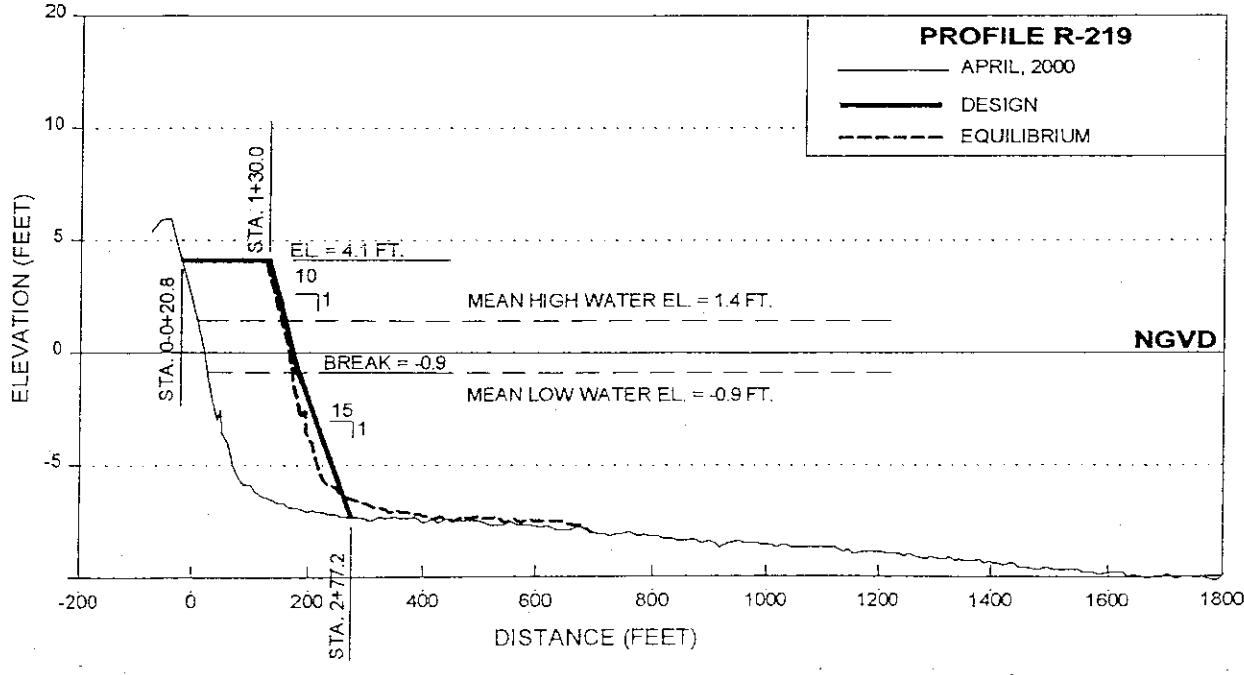

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LEE COUNTY, FLORIDA

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SHEET: 35 OF 38
REV. 05/18/01

3/5/02

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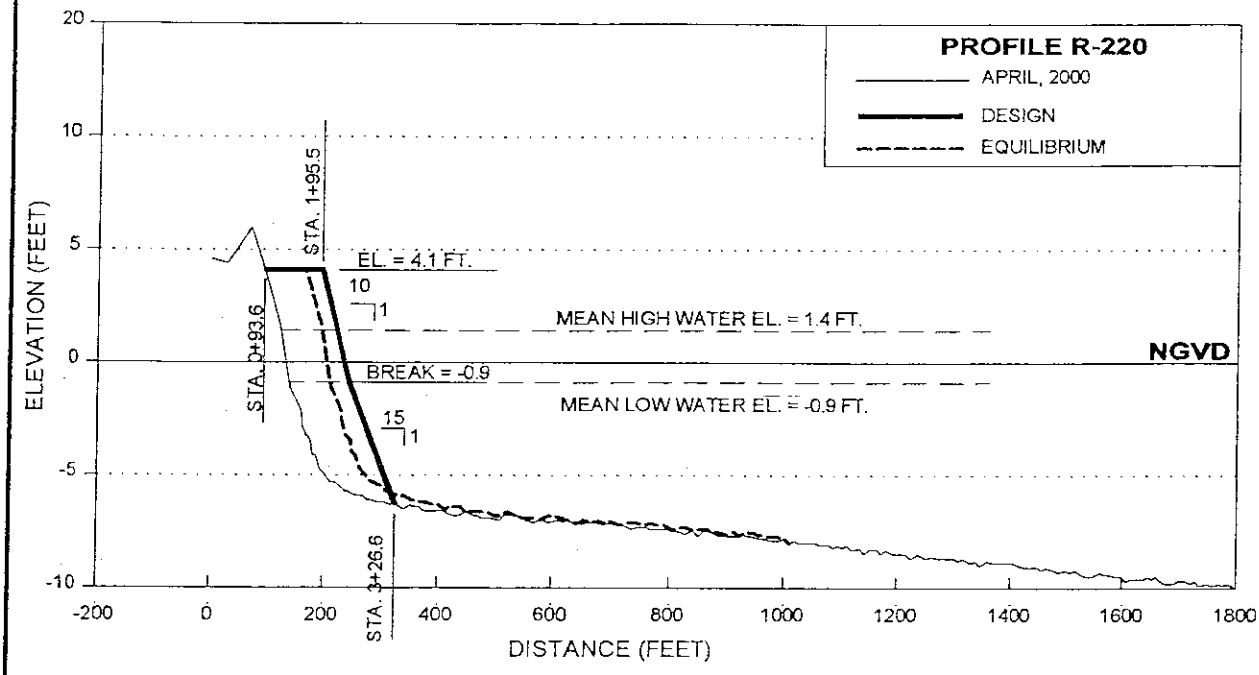

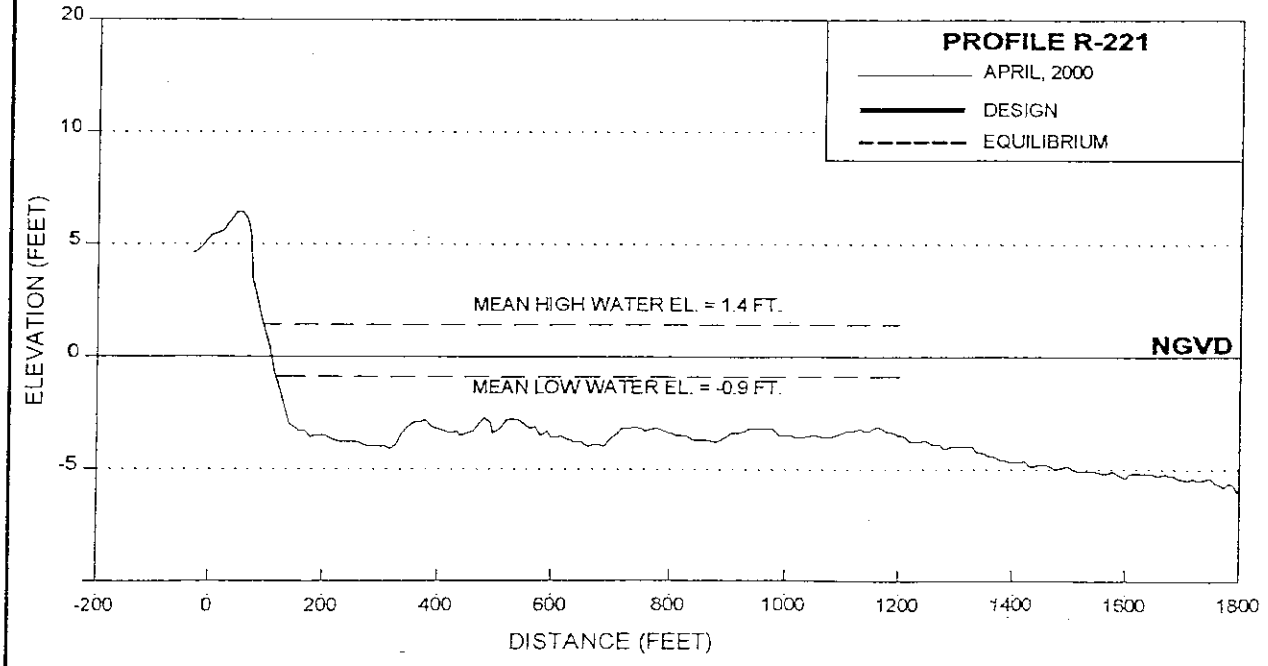

RECEIVED

MAR 0 6 2002

OFFICE OF BEACHES
& COASTAL SYSTEMS

3/5/02

ESTERO ISLAND
CROSS SECTIONS
LEE COUNTY, FLORIDA

TITLE:

2481 N.W. BOCA RATON BLVD.
BOCA RATON, FL. 33431

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DATE: 7/21/00
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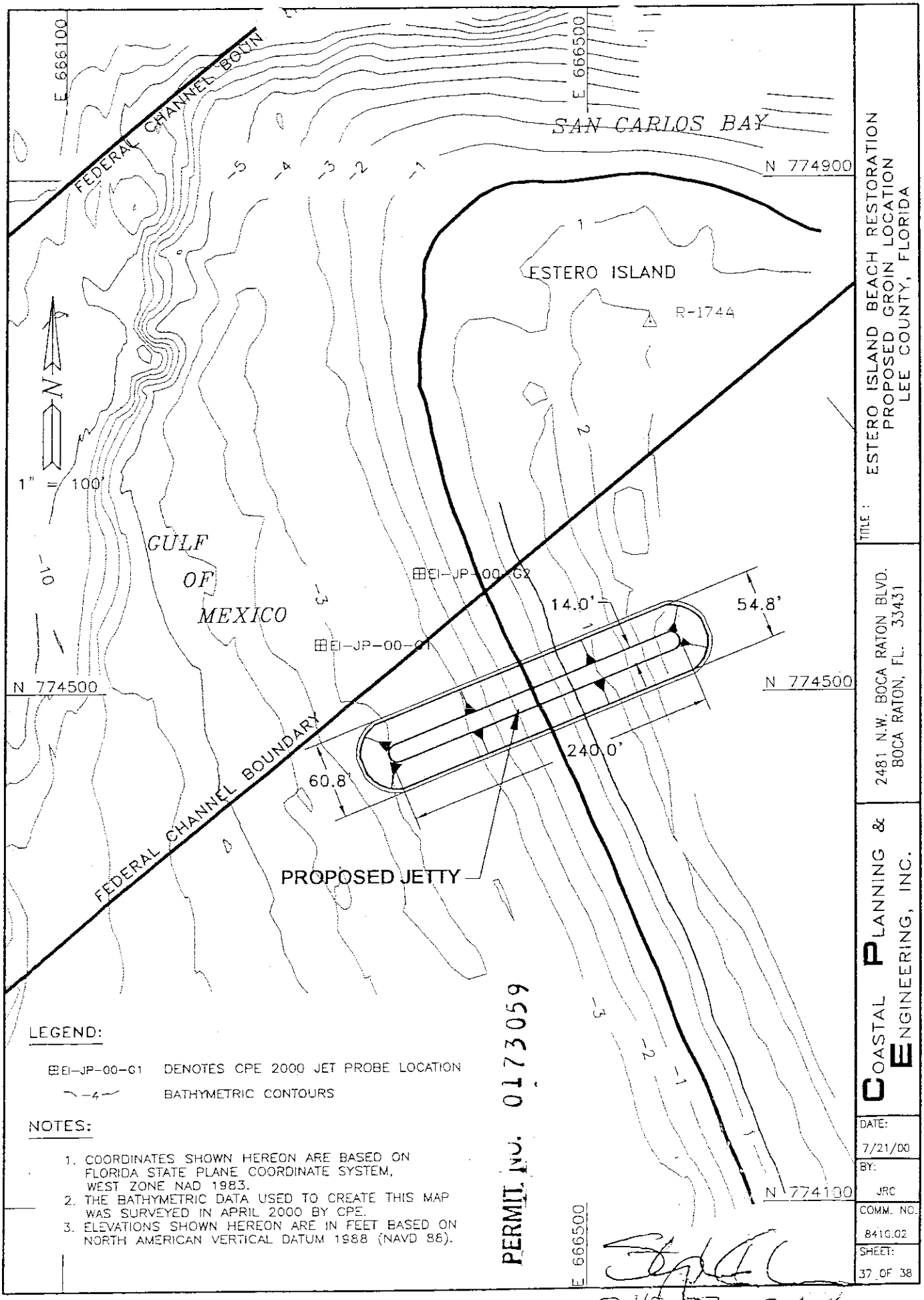
SHEET: 38 OF 38



LEGEND:

⊞EI-JP-00-G1 DENOTES CPE 2000 JET PROBE LOCATION

~4~ BATHYMETRIC CONTOURS

NOTES:

1. COORDINATES SHOWN HEREON ARE BASED ON FLORIDA STATE PLANE COORDINATE SYSTEM, WEST ZONE NAD 1983.
2. THE BATHYMETRIC DATA USED TO CREATE THIS MAP WAS SURVEYED IN APRIL 2000 BY CPE.
3. ELEVATIONS SHOWN HEREON ARE IN FEET BASED ON NORTH AMERICAN VERTICAL DATUM 1988 (NAVD 88).

PERMIT NO. 0173059

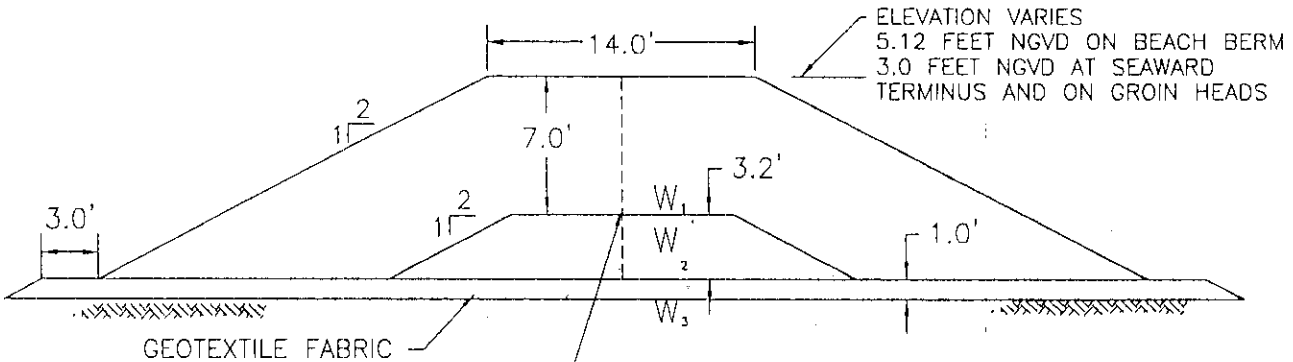
TITLE: ESTERO ISLAND BEACH RESTORATION
PROPOSED GROIN LOCATION
LEE COUNTY, FLORIDA

COASTAL PLANNING & ENGINEERING, INC.
2481 N.W. BOCA RATON BLVD.
BOCA RATON, FL. 33431

DATE: 7/21/00
BY: JRC
COMM. NO.: 8416.02
SHEET: 37 OF 38

34857 3/5/02

PERMIT NO. 0173059



NOTES:

1. FILTER CLOTH WILL BE PLACED UNDER BEDDING LAYER.
2. ALL ARMOR STONE 145 PCF MINIMUM.
3. STONE SIZES AS FOLLOWS:
   W_1 = 2 TO 4 TONS
   W_2 = 600 LBS
   W_3 = 75 LBS

SCALE: 1" = 10'

SHEET: 38 OF 38	COMM. NO. 8410.02	BY: JRC	DATE: 7/21/00	COASTAL PLANNING & ENGINEERING, INC.	2481 N.W. BOCA RATON BLVD. BOCA RATON, FL. 33431

TITLE :
ESTERO ISLAND
TERMINAL GROIN CROSS SECTON

Department of Environmental Protection

Jeb Bush
Governor

Majory Stoneman Douglas Building
3900 Commonwealth Boulevard
Tallahassee, Florida 32399-3000

David B. Struhs
Secretary

In re:
Petition

APPLICANT:
Mr. Stephen J. Boutelle
Lee County Natural Resources Division
1500 Monroe Street
Fort Myers, FL 33902

PROJECT NAME:
Estero Island and Lovers Key Beach Restoration Project

File No. 0173059-001-JC, Manatee County
Variance No. 0173059-002-EV

FINAL ORDER

BY THE DEPARTMENT:

The Department received from the Lee County Natural Resources Division a Petition for Variance, pursuant to Section 403.201(1), Florida Statutes (F.S.), and Section 62-110.104, Florida Administrative Code (F.A.C.). The Petitioner requested relief from Rule 62-4.244(5)(c), F.A.C., to establish a temporary mixing zone greater than 150 meters within an area of Class III Waters of the Gulf of Mexico. Specifically, the Petitioner has requested a temporary mixing zone for turbidity at the beach nourishment site extending 300 meters offshore and up to 4,500 meters along shore from the point of sand discharge onto a beach disposal area or at the boundary of the Aquatic Preserve, whichever is less.

After reviewing the Petition for Variance, the Department staff concluded that it satisfied the requirements and criteria set forth in Section 403.201, F.S. Specifically, the applicant has demonstrated that there is no practicable means known or available to control turbidity in this situation.

The Consolidated Notice of Intent to Issue Joint Coastal Permit, Authorization to Use Sovereign Submerged Lands, and Variance notified the Petitioner of the Department's proposed agency action and advised it of its right to a hearing pursuant to Sections 120.569 and 120.57, F.S. On November 27, 2001, notice was given in the Ft. Myers News Press and on December 7, 2001, in the Florida Administrative Weekly informing the public of the Department's intended action and offering an opportunity for hearing pursuant to Sections 120.569 and 120.57, F.S. A copy of the notice is attached as Exhibit A.

The Petitioner and interested parties having been advised of their rights under Chapter 120, F.S., and having failed or declined to file a Petition pursuant to Sections 120.569 and 120.57, F.S., are hereby deemed to have waived those rights. Acceptance of the variance constitutes notice and agreement that the Department will periodically review this variance for

compliance, including site inspections where applicable, and may initiate enforcement action for violation of the conditions and requirements thereof. It is therefore:

ORDERED by the State of Florida, Department of Environmental Protection, that the Petition of Lee County requesting a variance be and is hereby granted, subject to the conditions specified by Department staff in Permit No. 0173059-001-JC.

Any Party to this Order has the right to seek judicial review of the Order Pursuant to Section 120.68, F.S., by the filing of a Notice of Appeal pursuant to Rule 9.110, Florida Rules of the Appellate Procedure, with the clerk of the Department in the Office of General Counsel, 3900 Commonwealth Boulevard, Mail Station 35, Tallahassee, Florida 32399-3000; and by filing a copy of the Notice of Appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The Notice of Appeal must be filed within 30 days from the date this Order is filed with the clerk of the Department.

DONE AND ORDERED this 5th day of March, 2001, in Tallahassee, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL PROTECTION

Michael W. Sole, Bureau Chief

Copies furnished to:
Stephen Keehn, Coastal Planning & Engineering, Inc.
Lucy Blair, DEP, South District, Ft. Myers
Karen Moody, FWCC, BPSM
Jim Beever, FWCC
Jennie Cowart, DEP, South District, Ft. Myers
Heather Staford, Estero Bay Aquatic Preserve
Lynda Charles, OBCS
Echo Gates, OBCS
Phil Flood, OBCS
The Conservancy of Southwest Florida, nicoler@conservancy.org
Harry W. Bergmann - CESAJ-RD-WF, U. S. Army Corps of Engineers, Ft. Myers
OBCS Permit Information Center

FILING AND ACKNOWLEDGMENT

FILED, on this date, pursuant to Section 120.52, Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.

Della Kilmer 3/5/02

Deputy Clerk Date

APPENDIX H-I-B

Corps of Engineers Permit No. 200003017 (IP-MN)
with U.S. Fish & Wildlife Service Biological Opinion
~~(Pending)~~

DEPARTMENT OF THE ARMY PERMIT

Permittee: LEE COUNTY BCC

Permit No. SAJ-2000-3017(IP-MN)

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

NOTE: The term "you" and its derivatives, as used in this permit, means the permittee or any future transferee. The term "this office" refers to the appropriate district or division office of the 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 applicant proposes to nourish North and South Estero Island and Lover's Key as follows: **Reach 1:** North end of Estero Island for a distance of 4.6 miles from marker R-175 to R-198 involving 1,010,000 cubic yards (cy) of beach compatible sand. A terminal groin 60.8' wide by 240' long would be constructed near marker R-175. The native beach grain size is 0.14mm with a silt content of 1.9%. **Reach 2:** South end of Estero Island for a distance of 0.51 miles from R-208 to R-210 involving 70,000 cy of sand. Native beach grain size is 0.19mm with a silt content of 2.58%. **Reach 3:** A distance of 1.1 miles on Lover's Key from R-215 to R-220 involving 570,000 cy of sand. Native beach grain size is 0.23mm with a silt content of 2.3%. The project would use two offshore sites. Borrow site I is 1.6 miles offshore of Estero Island and has a composite grain size of 0.19 mm with a 5% silt content. Borrow site II is 0.5 miles SW of south Estero Island and has a composite grain size of 0.21mm with a silt content of 3.7%. All work is to be completed in accordance with the attached plans numbered SAJ-2000-3017(IP-MN) in 2 sheets dated 7/21/2000, 2 sheets dated revised 5/10/2001, 27 sheets dated revised 5/18/2001, and 11 sheets dated revised 2/4/2004.

Project Location: In the Gulf of Mexico along the north and south end of Estero Island and along Lover's Key, Sections 3,10,11,14,19,24, 28-30,33 and 34, Township 46 South, Range 23 East, Estero Island and Lover's Key, Lee County, Florida.

Permit Conditions:

General Conditions:

1. The time limit for completing the work authorized ends on **Feb242009**. If you find that you need more time to complete the authorized activity, submit your request for a time extension to this office for consideration at least one month before the above date is reached.

2. You must maintain the activity authorized by this permit in good condition and in conformance with the terms and conditions of this permit. You are not relieved of this requirement if you abandon the permitted activity, although you may make a good faith transfer to a third party in compliance with General Condition 4 below. Should you wish to cease to maintain the authorized activity or should you desire to abandon it without a good faith transfer, you must obtain a modification of this permit from this office, which may require restoration of the area.

3. If you discover any previously unknown historic or archeological remains while accomplishing the activity authorized by this permit, you must immediately notify this office of what you have found. We will initiate the Federal and state coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

4. If you sell the property associated with this permit, you must obtain the signature **and mailing address** of the new owner in the space provided and forward a copy of the permit to this office to validate the transfer of this authorization.

5. If a conditioned water 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:

1. The attached Specific Conditions of Water Quality Certification/Permit number 0173059-001-JC issued by the Florida Department of Environmental Protection (FDEP) on March 5,2002, address most of the conditions that the District Engineer (DE) has determined are necessary to satisfy legal and public interest requirements for issuance of this permit. Therefore, all of the FDEP permit specific conditions are hereby incorporated into this Department of the Army (DA) permit.

2. The permittee shall adhere to the attached FWS BO for nesting sea turtles dated March 12, 2002 that includes an incidental take statement, reasonable and prudent measures, and terms and conditions.

Further Information:

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

(X) Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403).

(X) Section 404 of the Clean Water Act (33 U.S.C. 1344).

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

2. Limits of this authorization.

a. This permit does not obviate the need to obtain other Federal, state, or local authorizations required by law.

b. This permit does not grant any property rights or exclusive privileges.

c. This permit does not authorize any injury to the property or rights of others.

d. This permit does not authorize interference with any existing or proposed Federal projects.

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

a. Damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes.

b. Damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the United States in the public interest.

c. Damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit.

d. Design or construction deficiencies associated with the permitted work.

e. Damage claims associated with any future modification, suspension, or revocation of this permit.

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

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

a. You fail to comply with the terms and conditions of this permit.

b. The information provided by you in support of your permit application proves to have been false, incomplete, or inaccurate (see 4 above).

c. Significant new information surfaces which this office did not consider in reaching the original public interest decision.

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

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

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

_____ _____

(PERMITTEE) **(DATE)**

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

_____ _____

(DISTRICT ENGINEER) **(DATE)**
Robert M. Carpenter
Colonel, U.S. Army

DEPARTMENT OF THE ARMY PERMIT TRANSFER REQUEST

PERMIT NUMBER: SAJ-2000-3017IP-MN)

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. Although the construction period for works authorized by Department of the Army permits is finite, the permit itself, with its limitations, does not expire.

To validate the transfer of this permit and the responsibilities associated with compliance with its terms and conditions, have the transferee sign and date below and mail to the U.S. Army Corps of Engineers, Regulatory Division, Post Office Box 4970, Jacksonville, Florida, 32232-0019.

_____ _____

TRANSFEREE-SIGNATURE DATE

_____ _____

(NAME-PRINTED) (NAME OF SUBDIVISION)

_____ _____ _____

(ADDRESS) (Lot #) (Block #)

_____

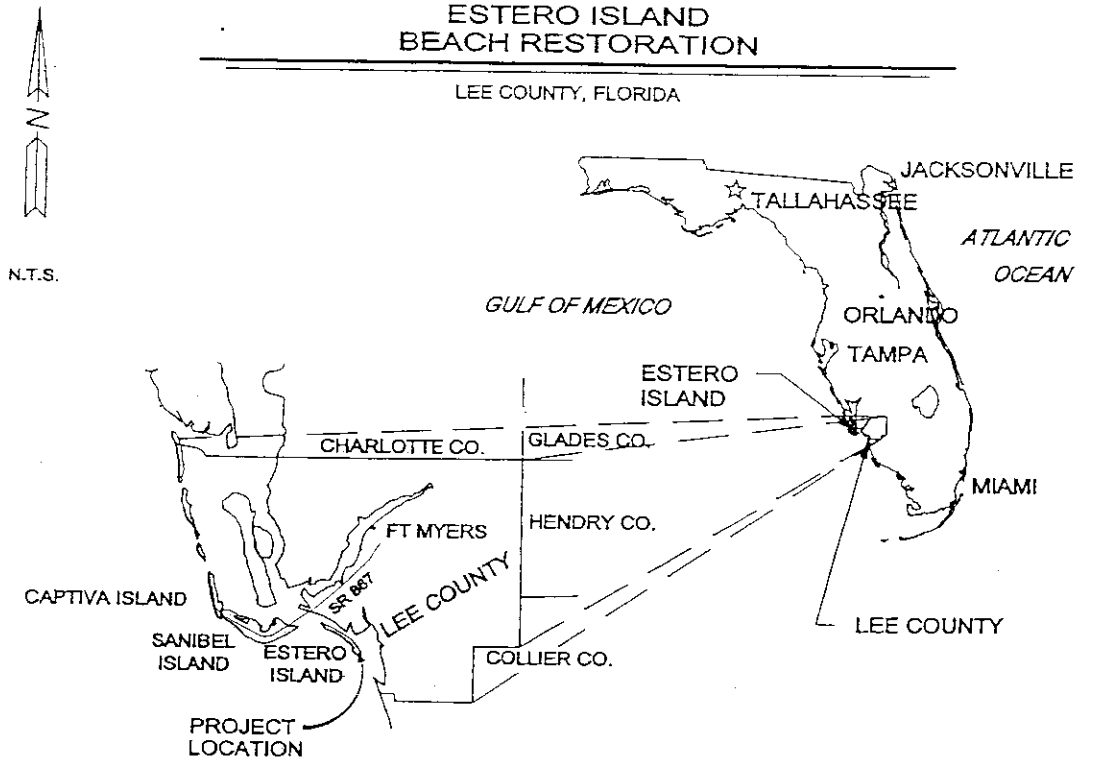
(CITY, STATE, AND ZIP CODE)

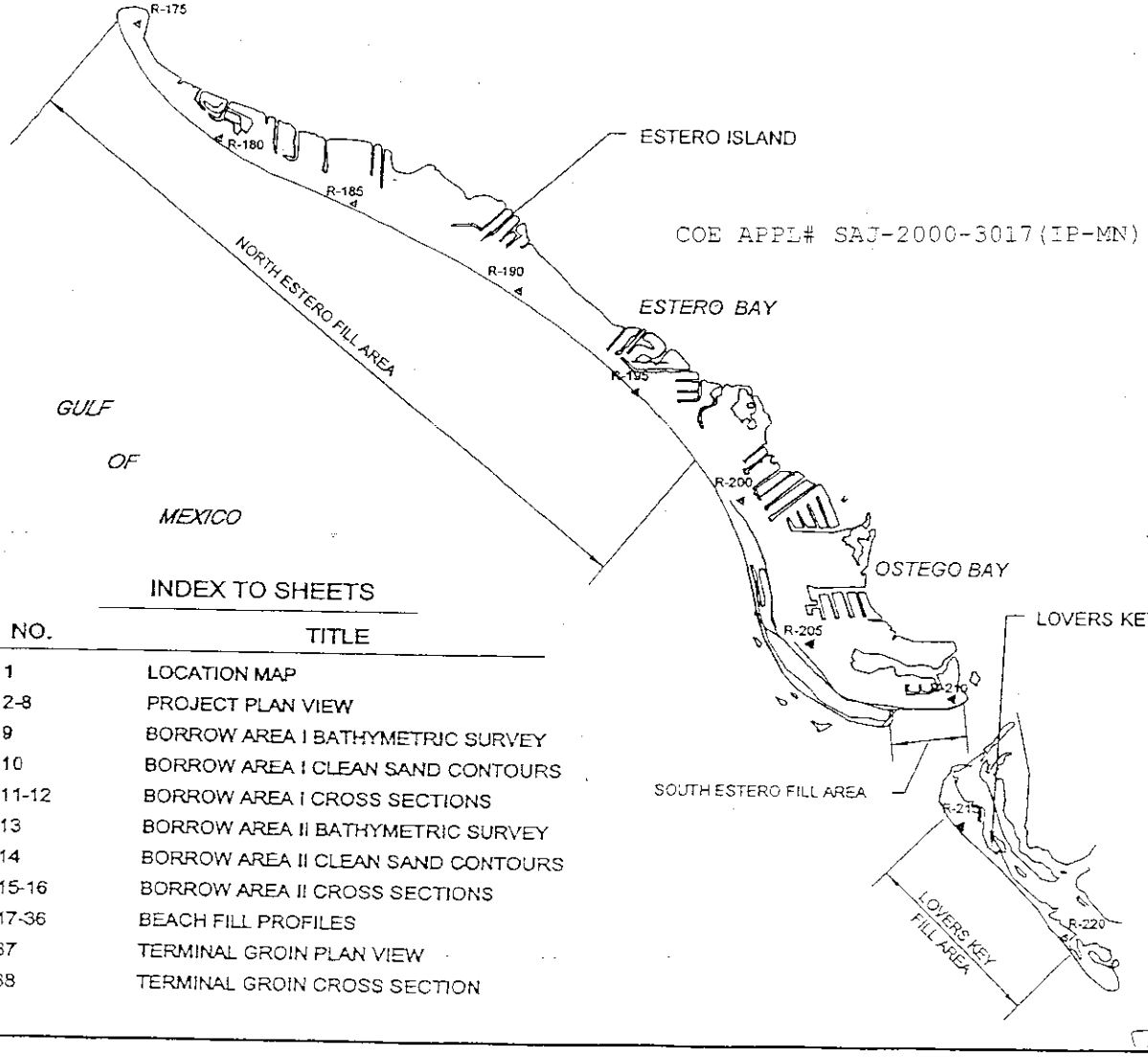
_____

(TELEPHONE NUMBER W/AREA CODE)

ESTERO ISLAND
BEACH RESTORATION

LEE COUNTY, FLORIDA





COE APPL# SAJ-2000-3017(IP-MN)

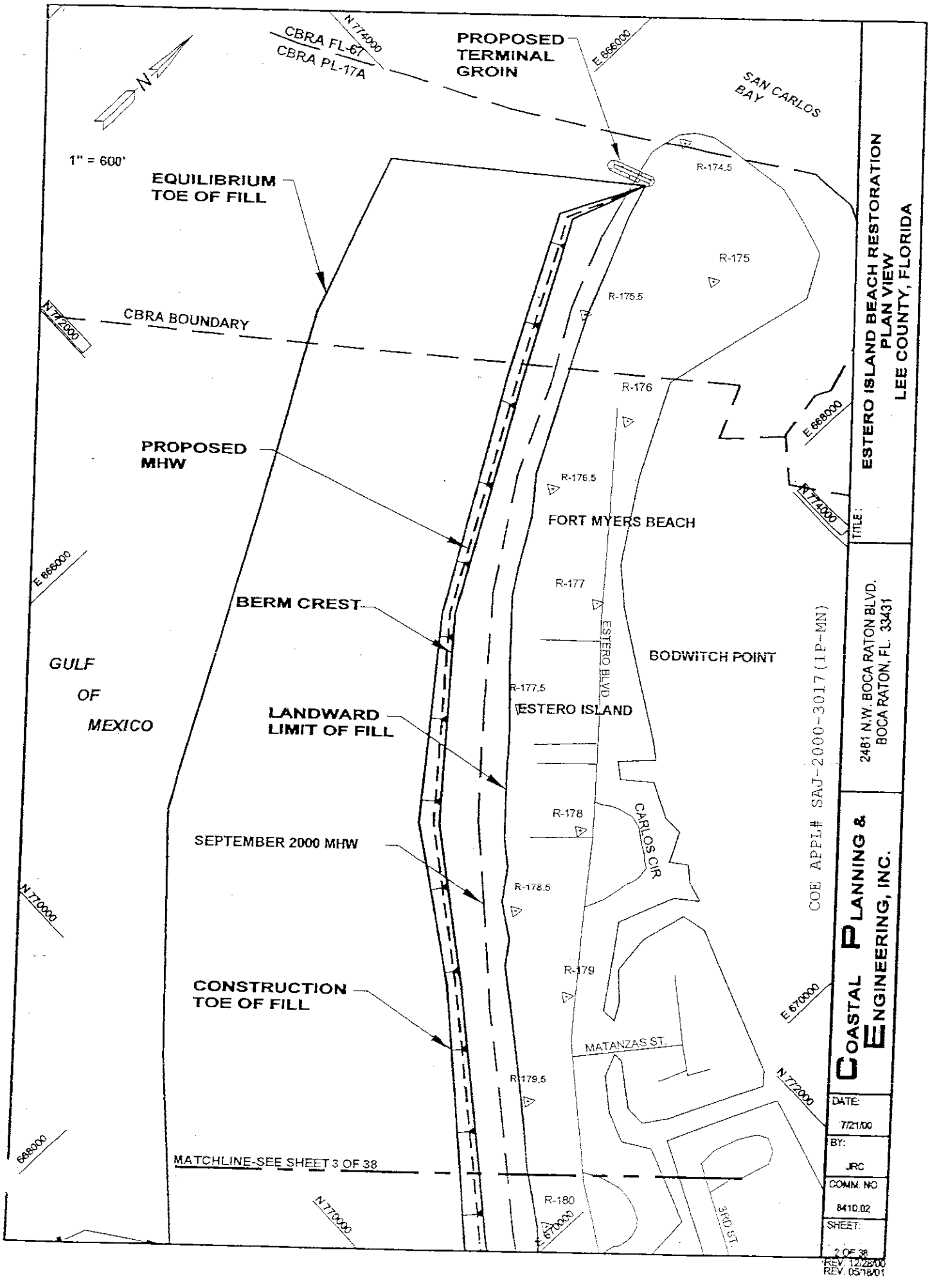
INDEX TO SHEETS

TITLE:
ESTERO ISLAND
PROJECT LOCATION MAP
LEE COUNTY, FLORIDA

2481 N.W. BOCA RATON BLVD.
BOCA RATON, FL. 33431

COASTAL PLANNING & ENGINEERING, INC.

DATE: 7/21/00
BY: JRC
COMM. NO. 8410.02
SHEET: 1 OF 38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1" = 600'
CBRA FL-67
CBRA PL-17A
N 774000
PROPOSED TERMINAL GROIN
E 686000
SAN CARLOS BAY
EQUILIBRIUM TOE OF FILL
R-174.5
R-175
R-175.5
CBRA BOUNDARY
N 772000
R-176
E 678000
PROPOSED MHW
R-176.5
FORT MYERS BEACH
N 774000
E 666000
R-177
BERM CREST
ESTERO BLVD
BODWITCH POINT
GULF OF MEXICO
R-177.5
ESTERO ISLAND
LANDWARD LIMIT OF FILL
R-178
CARLOS CIR
SEPTEMBER 2000 MHW
R-178.5
N 770000
R-179
CONSTRUCTION TOE OF FILL
E 670000
MATANZAS ST.
R-179.5
N 772000
E 668000
MATCHLINE-SEE SHEET 3 OF 38
R-180
N 770000
3RD ST.
COE APPL# SAJ-2000-3017 (IP-MN)
ESTERO ISLAND BEACH RESTORATION
PLAN VIEW
LEE COUNTY, FLORIDA
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2481 N.W. BOCA RATON BLVD.
BOCA RATON, FL. 33431
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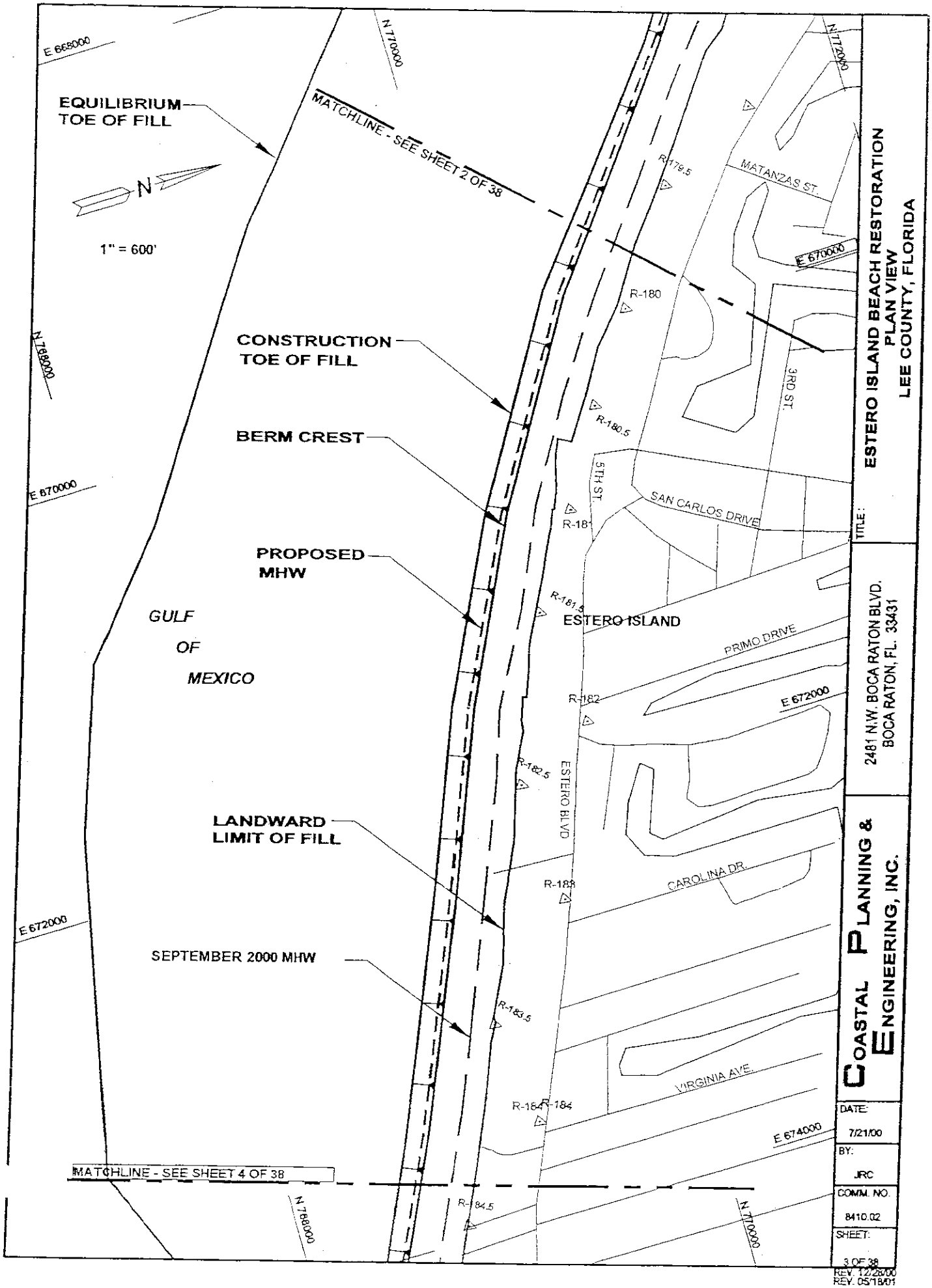

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PLAN VIEW
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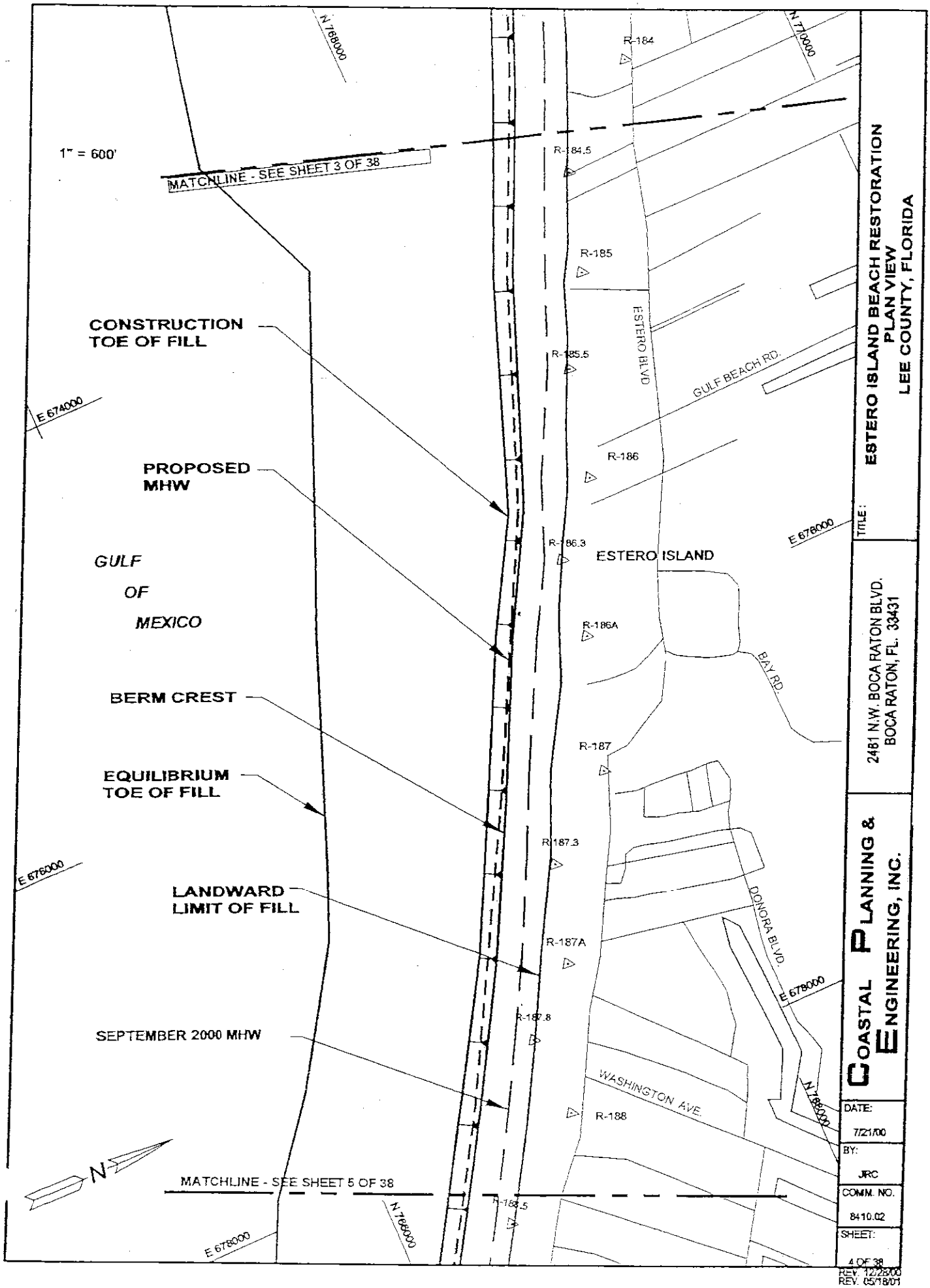


ESTERO ISLAND BEACH RESTORATION
PLAN VIEW
LEE COUNTY, FLORIDA

TITLE:

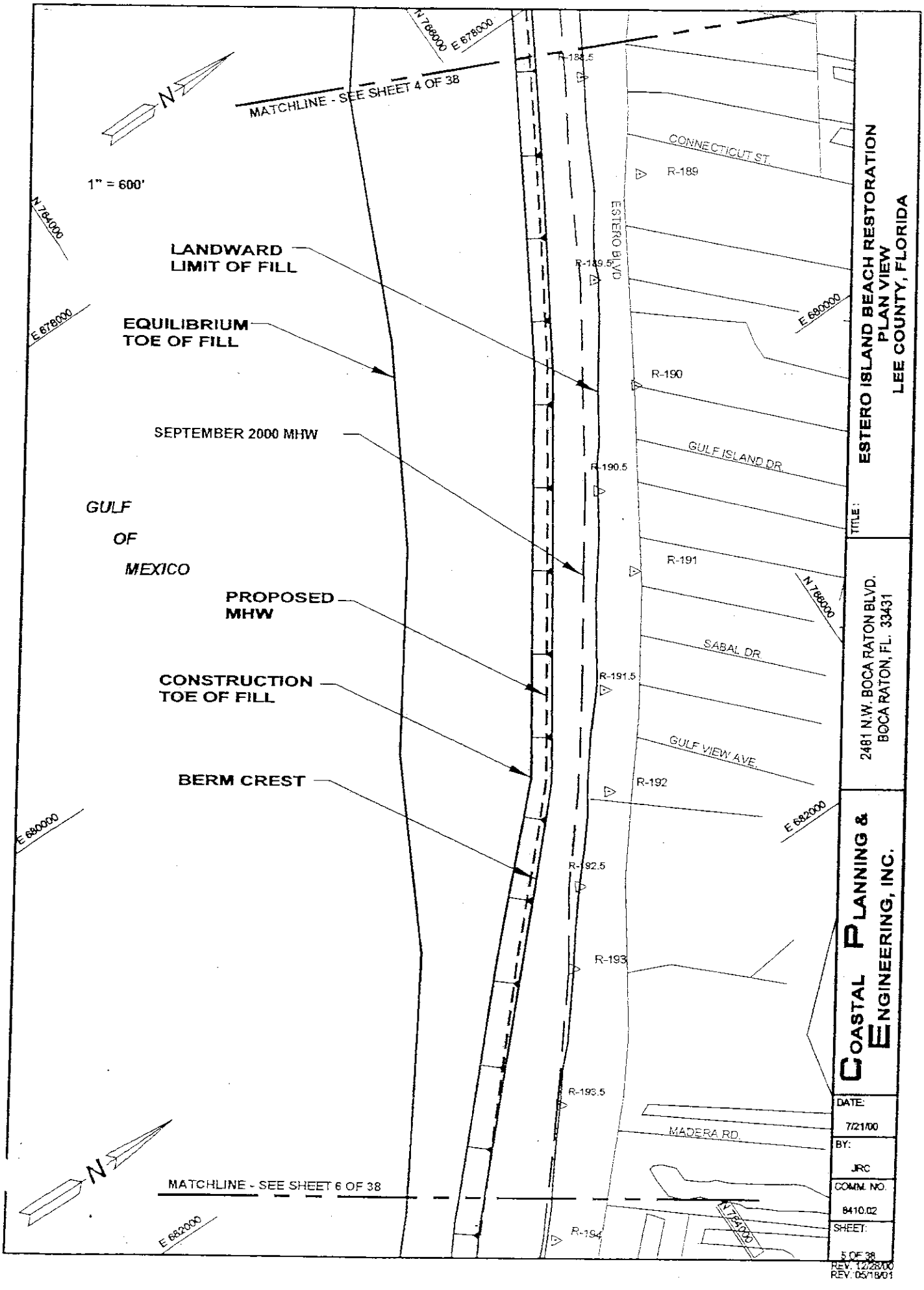
2481 N.W. BOCA RATON BLVD.
BOCA RATON, FL. 33431

COASTAL PLANNING & ENGINEERING, INC.

DATE:	7/21/00
BY:	JRC
COMM. NO.	8410.02
SHEET:	4 OF 38

REV. 12/28/00
REV. 05/18/01

COE APPL# SAJ-2000-3017(IP-MN)



ESTERO ISLAND BEACH RESTORATION
PLAN VIEW
LEE COUNTY, FLORIDA

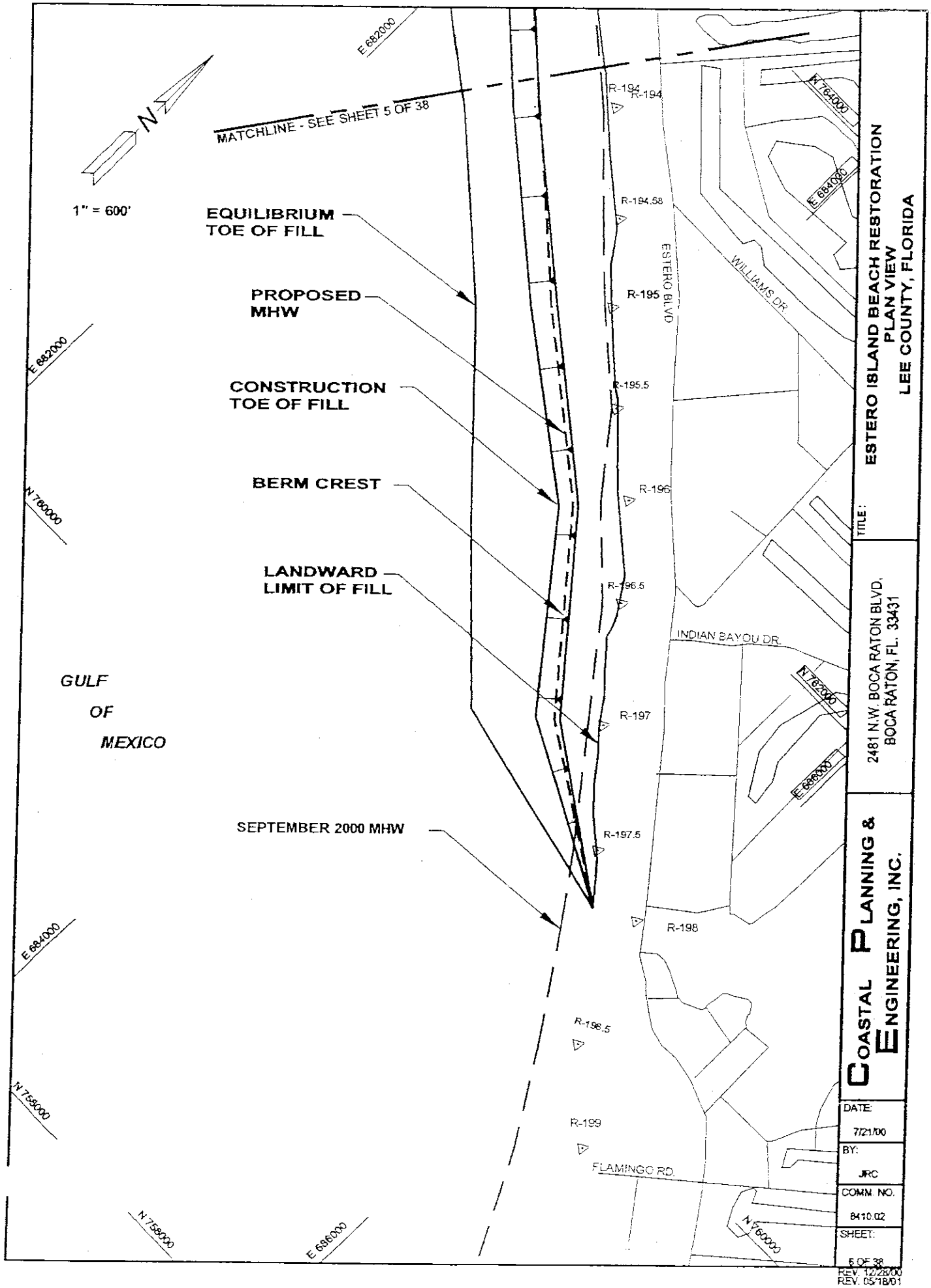
TITLE:

2481 N.W. BOCA RATON BLVD.
BOCA RATON, FL. 33431

COASTAL PLANNING & ENGINEERING, INC.

DATE: 7/21/00
BY: JRC
COMM. NO. 8410.02
SHEET: 5 OF 38
REV: 12/28/00
REV: 05/18/01

COE APPL# SAJ-2000-3017(IP-MN)



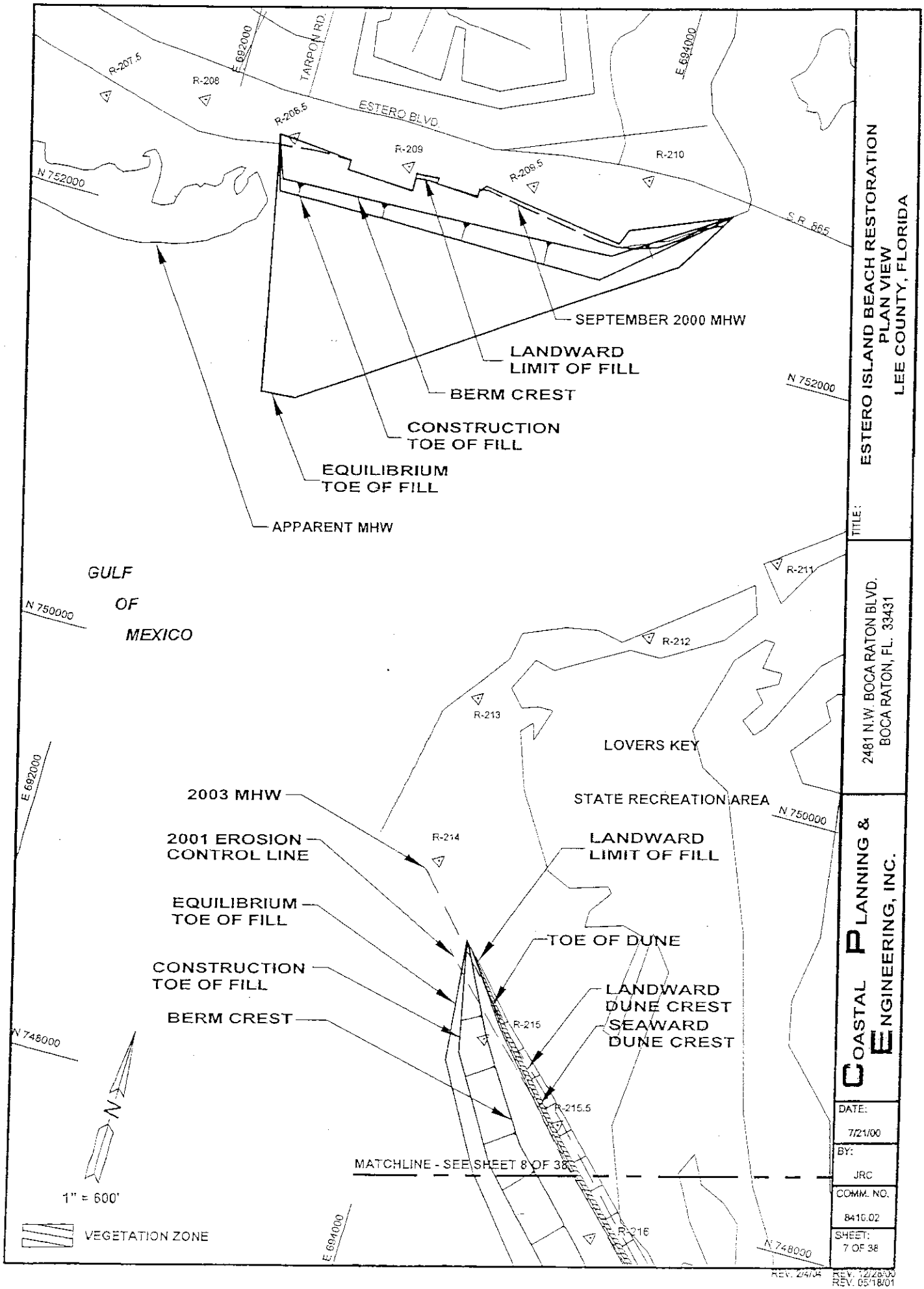
TITLE: ESTERO ISLAND BEACH RESTORATION
PLAN VIEW
LEE COUNTY, FLORIDA

2481 N.W. BOCA RATON BLVD.
BOCA RATON, FL. 33431

COASTAL PLANNING & ENGINEERING, INC.

DATE: 7/21/00
BY: JRC
COMM. NO. 8410.02
SHEET: 5 OF 38
REV. 12/28/00
REV. 05/18/01

COE APPL# SAJ-2000-3017(IP-MN)



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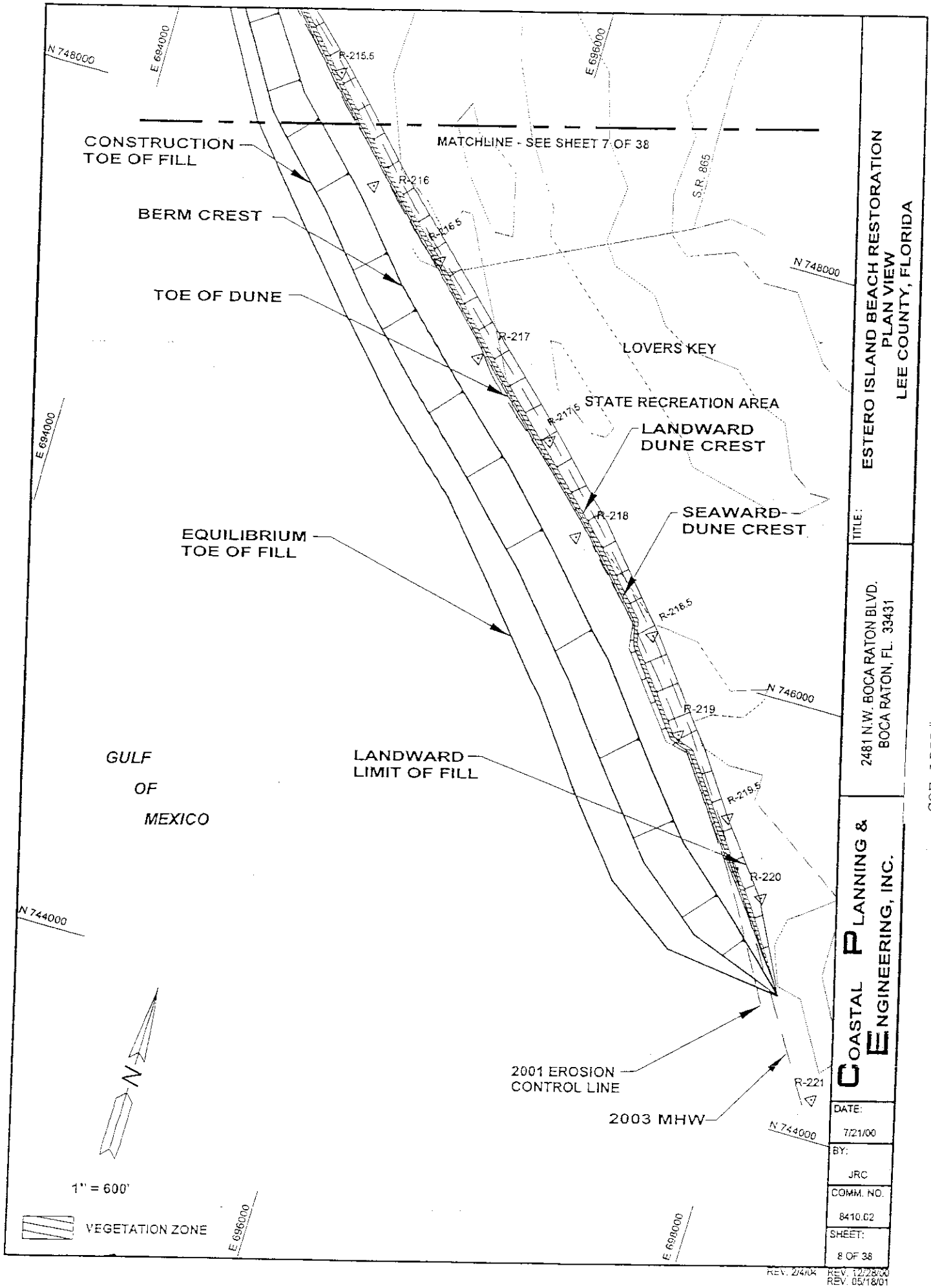


ESTERO ISLAND BEACH RESTORATION
PLAN VIEW
LEE COUNTY, FLORIDA

TITLE:

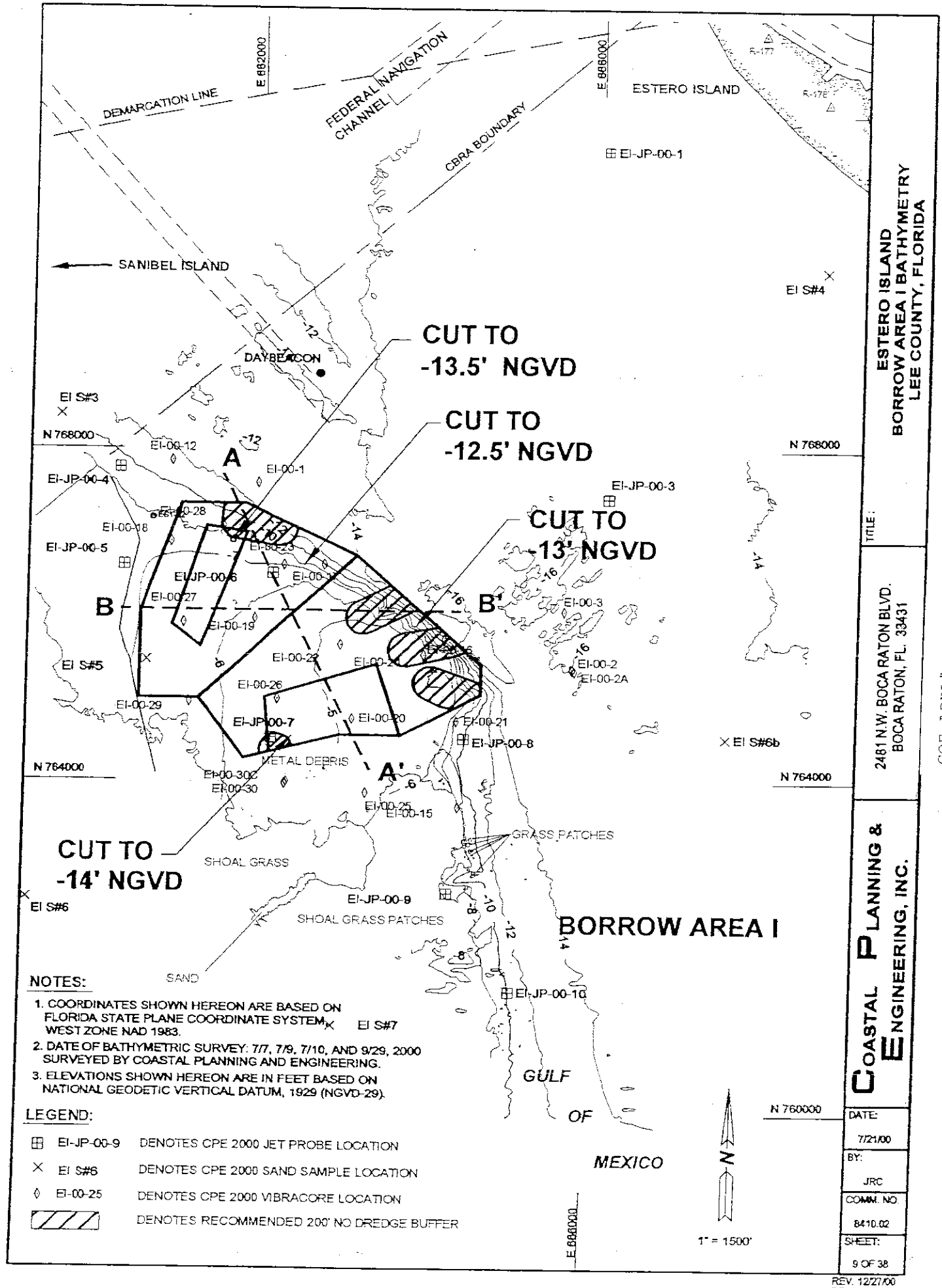
2481 N.W. BOCA RATON BLVD.
BOCA RATON, FL. 33431

COASTAL PLANNING & ENGINEERING, INC.

DATE: 7/21/00
BY: JRC
COMM. NO. 8410.02
SHEET: 8 OF 38

REV. 2/4/04 REV. 12/28/00 REV. 05/18/01

COE APPL# SAJ-2000-3017(IP-MN)



NOTES:

1. COORDINATES SHOWN HEREON ARE BASED ON FLORIDA STATE PLANE COORDINATE SYSTEM, WEST ZONE NAD 1983.
2. DATE OF BATHYMETRIC SURVEY: 7/7, 7/9, 7/10, AND 9/29, 2000 SURVEYED BY COASTAL PLANNING AND ENGINEERING.
3. ELEVATIONS SHOWN HEREON ARE IN FEET BASED ON NATIONAL GEODETIC VERTICAL DATUM, 1929 (NGVD-29).

LEGEND:

EI-JP-00-9	DENOTES CPE 2000 JET PROBE LOCATION
EI S#6	DENOTES CPE 2000 SAND SAMPLE LOCATION
EI-00-25	DENOTES CPE 2000 VIBRACORE LOCATION
	DENOTES RECOMMENDED 200' NO DREDGE BUFFER

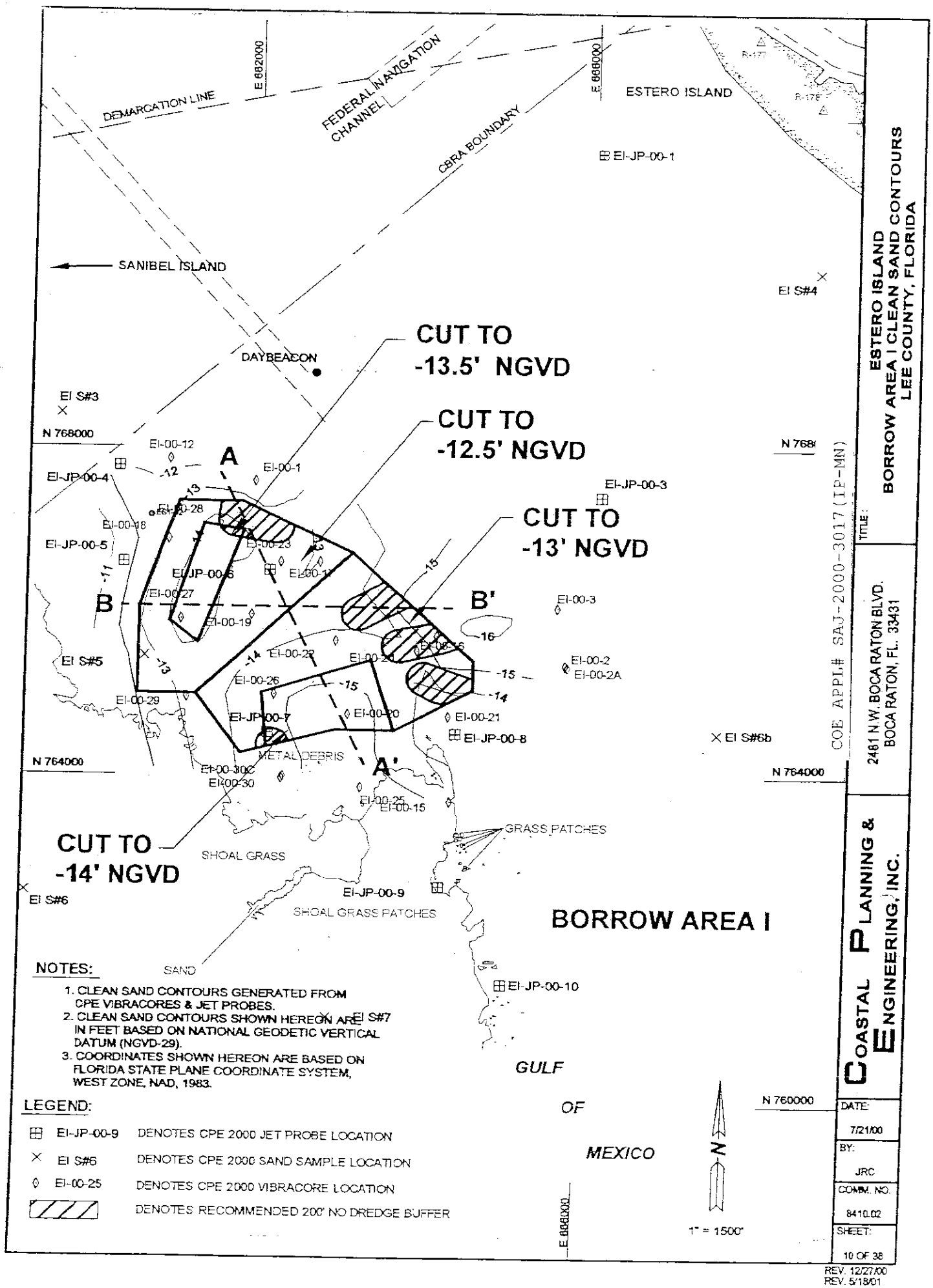
TITLE:
ESTERO ISLAND
BORROW AREA I BATHYMETRY
LEE COUNTY, FLORIDA

COASTAL PLANNING & ENGINEERING, INC.
2481 N.W. BOCA RATON BLVD.
BOCA RATON, FL. 33431

DATE: 7/21/00
BY: JRC
COMM. NO. 8410.02
SHEET: 9 OF 38

REV. 12/27/00
REV. 5/18/01

COE APPL# SAJ-2000-3017(IP-MN)



NOTES:

1. CLEAN SAND CONTOURS GENERATED FROM CPE VIBRACORES & JET PROBES.
2. CLEAN SAND CONTOURS SHOWN HEREON ARE IN FEET BASED ON NATIONAL GEODETIC VERTICAL DATUM (NGVD-29).
3. COORDINATES SHOWN HEREON ARE BASED ON FLORIDA STATE PLANE COORDINATE SYSTEM, WEST ZONE, NAD, 1983.

LEGEND:

EI-JP-00-9	DENOTES CPE 2000 JET PROBE LOCATION
EI S#6	DENOTES CPE 2000 SAND SAMPLE LOCATION
EI-00-25	DENOTES CPE 2000 VIBRACORE LOCATION
	DENOTES RECOMMENDED 200' NO DREDGE BUFFER

TITLE:
ESTERO ISLAND
BORROW AREA I CLEAN SAND CONTOURS
LEE COUNTY, FLORIDA

COE APPL# SAJ-2000-3017 (IP-MN)

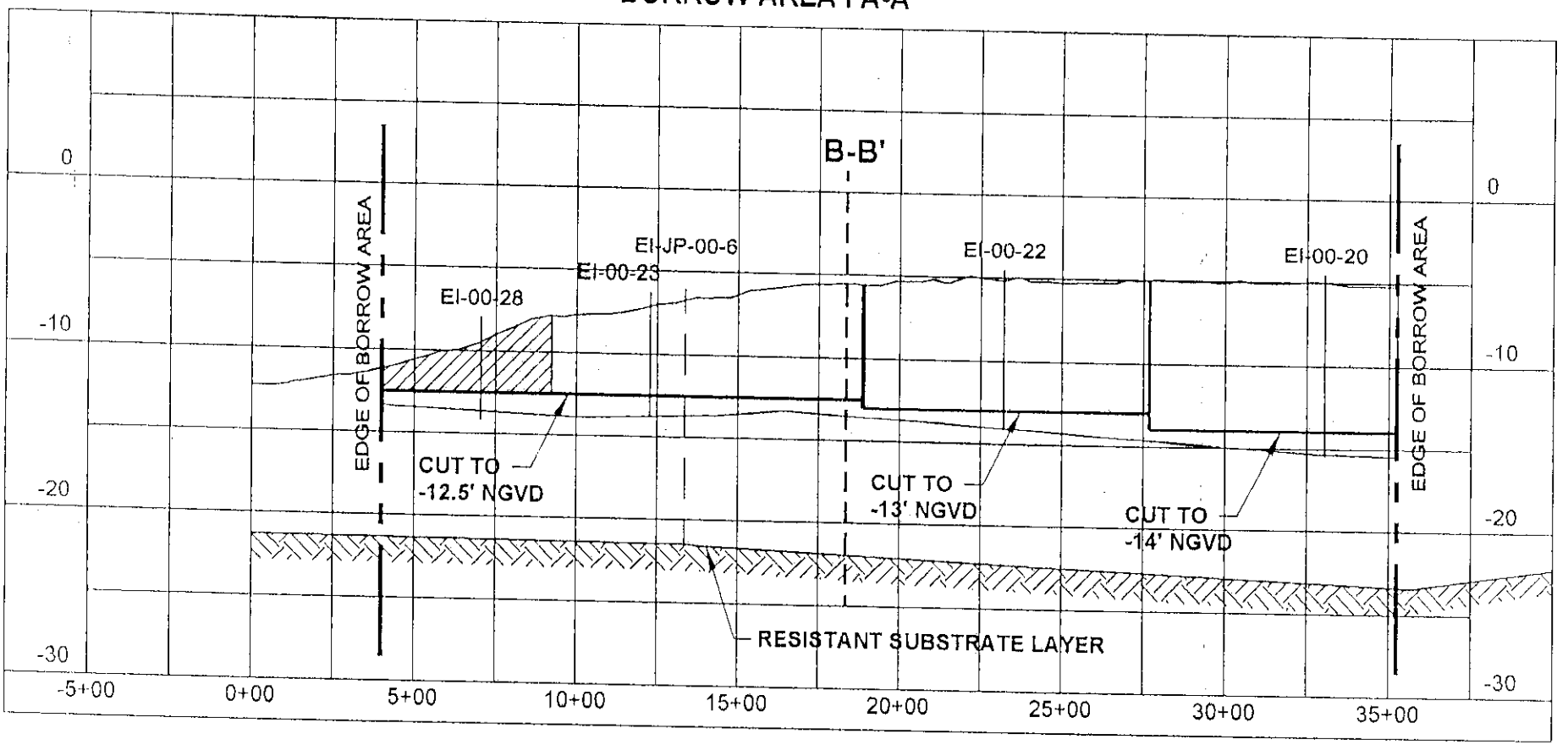
2461 N.W. BOCA RATON BLVD.
BOCA RATON, FL. 33431

COASTAL PLANNING & ENGINEERING, INC.

DATE: 7/21/00
BY: JRC
COMM. NO. 8410.02
SHEET: 10 OF 38

REV. 12/27/00
REV. 5/18/01

BORROW AREA I A-A'



NOTES:

1. PROBES MAY NOT FALL DIRECTLY ON CROSS SECTION LINE, BUT ARE LOCATED SUFFICIENTLY CLOSE TO REPRESENT SIMILAR MATERIAL.
2. WIDTH OF LAYERS IS REPRESENTATIVE ONLY. ACTUAL MATERIAL MAY VARY.
3. SEE PAGE 9 & 10 OF 38 FOR LOCATION OF CROSS SECTION LINE.

LEGEND:

DENOTES RECOMMENDED 200' NO DREDGE BUFFER

COE APPL# SAJ-2000-3017(IP-MN)

SCALE: 1" = 500' HOR.
1" = 10' VERT.

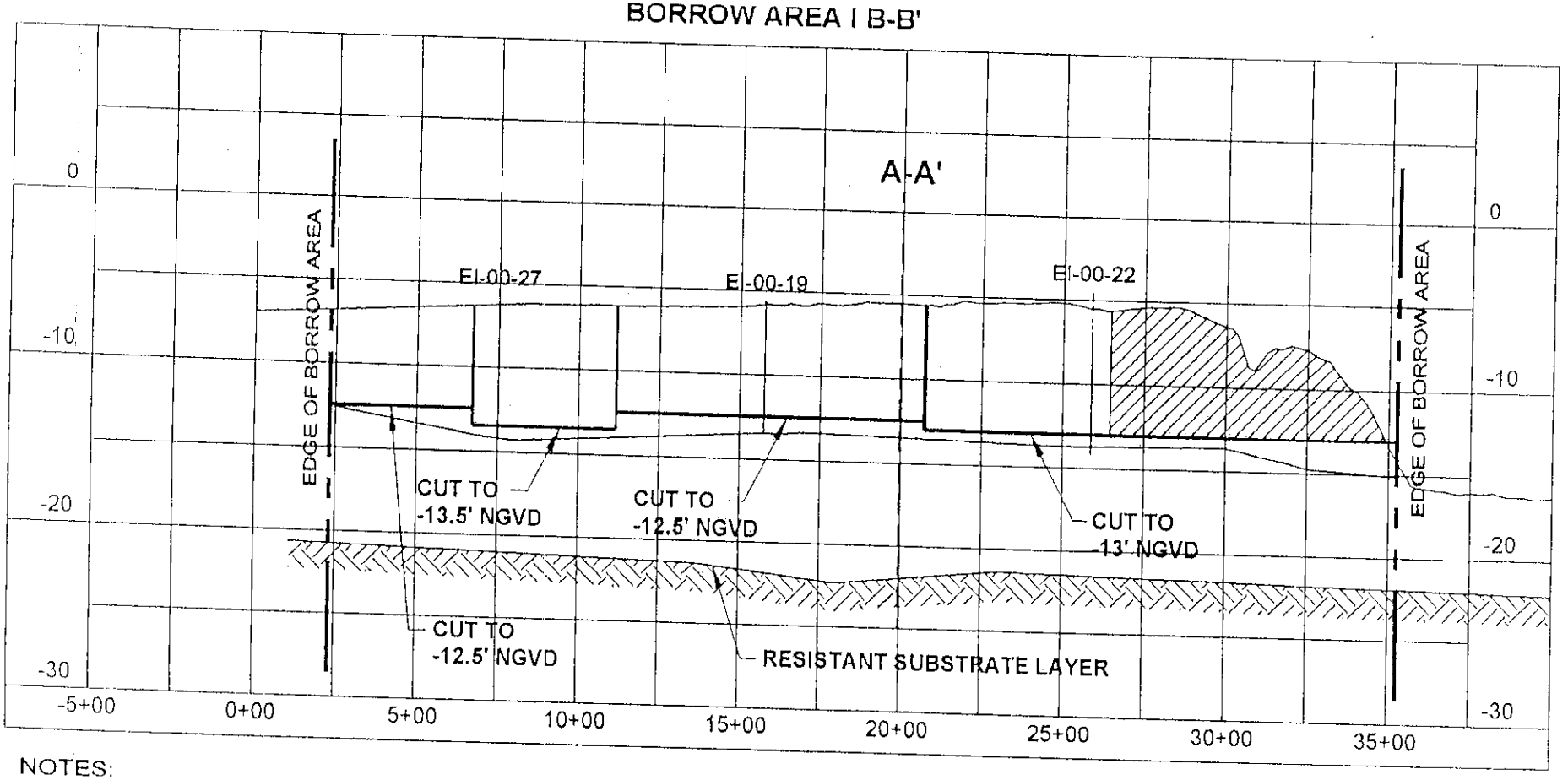
SHEET: 11 OF 38
COMM. NO.: 8410.02
BY: JRC
DATE: 7/21/00

COASTAL PLANNING & ENGINEERING, INC.

2481 N.W. BOCA RATON BLVD.
BOCA RATON, FL. 33431

TITLE:
ESTERO ISLAND
BORROW AREA I
CROSS SECTION A-A'

BORROW AREA I B-B'



NOTES:

1. PROBES MAY NOT FALL DIRECTLY ON CROSS SECTION LINE, BUT ARE LOCATED SUFFICIENTLY CLOSE TO REPRESENT SIMILAR MATERIAL.
2. WIDTH OF LAYERS IS REPRESENTATIVE ONLY. ACTUAL MATERIAL MAY VARY.
3. SEE PAGE 9 & 10 OF 38 FOR LOCATION OF CROSS SECTION LINE.

LEGEND:

DENOTES RECOMMENDED 200' NO DREDGE BUFFER

COE APPL# SAJ-2000-3017(IP-MN)

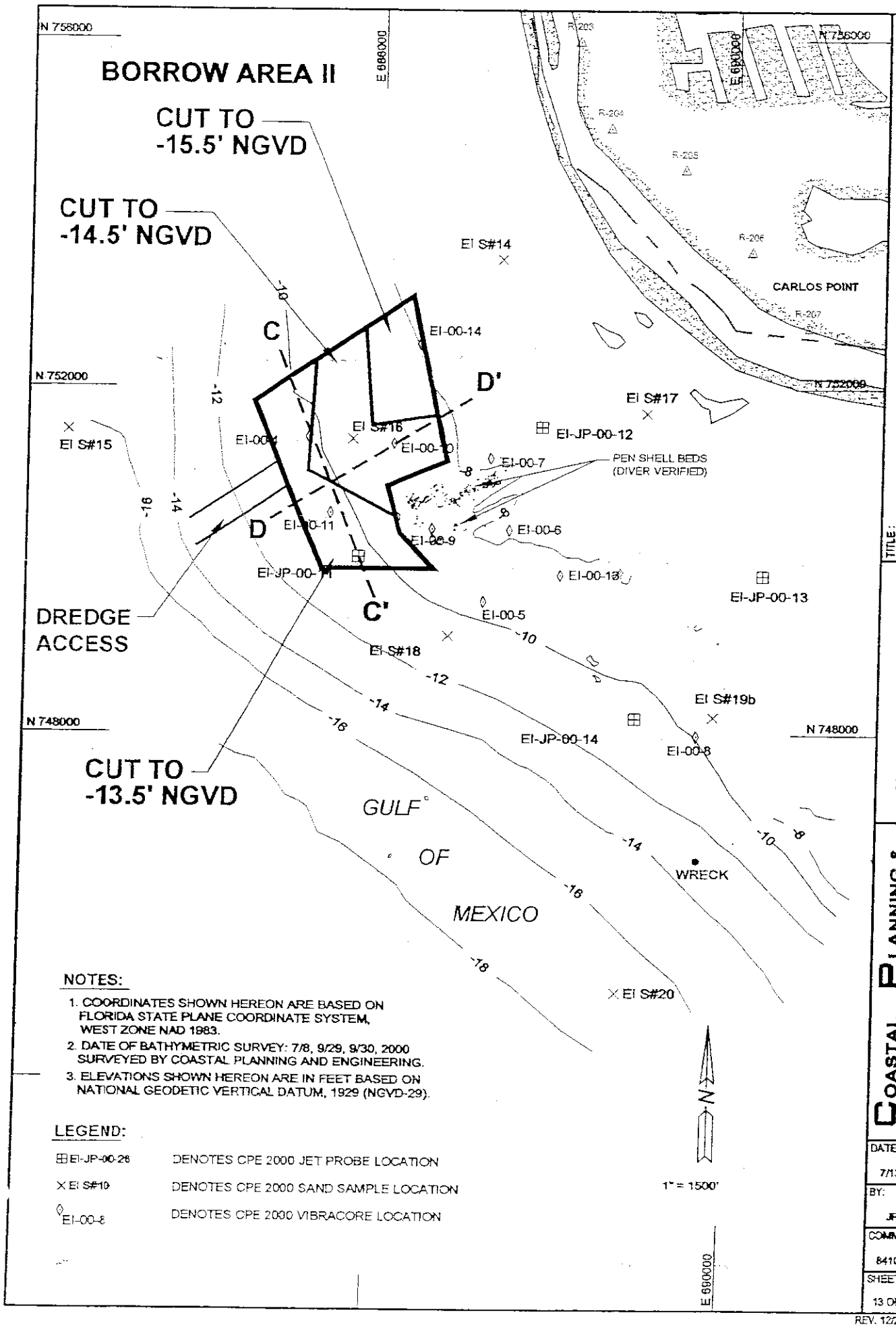
SCALE: 1" = 500' HOR.
1" = 10' VERT.

SHEET: 12 OF 38
COMM. NO. 8410.02
BY: JRC
DATE: 7/21/00

COASTAL PLANNING & ENGINEERING, INC.

2481 N.W. BOCA RATON BLVD.
BOCA RATON, FL. 33431

TITLE:
ESTERO ISLAND
BORROW AREA I
CROSS SECTION B-B'



NOTES:

1. COORDINATES SHOWN HEREON ARE BASED ON FLORIDA STATE PLANE COORDINATE SYSTEM, WEST ZONE NAD 1983.
2. DATE OF BATHYMETRIC SURVEY: 7/8, 9/29, 9/30, 2000 SURVEYED BY COASTAL PLANNING AND ENGINEERING.
3. ELEVATIONS SHOWN HEREON ARE IN FEET BASED ON NATIONAL GEODETIC VERTICAL DATUM, 1929 (NGVD-29).

LEGEND:

⊞ EI-JP-00-26	DENOTES CPE 2000 JET PROBE LOCATION
× EI S#19	DENOTES CPE 2000 SAND SAMPLE LOCATION
◊ EI-00-8	DENOTES CPE 2000 VIBRACORE LOCATION

TITLE:
ESTERO ISLAND
BORROW AREA II BATHYMETRY
LEE COUNTY, FLORIDA

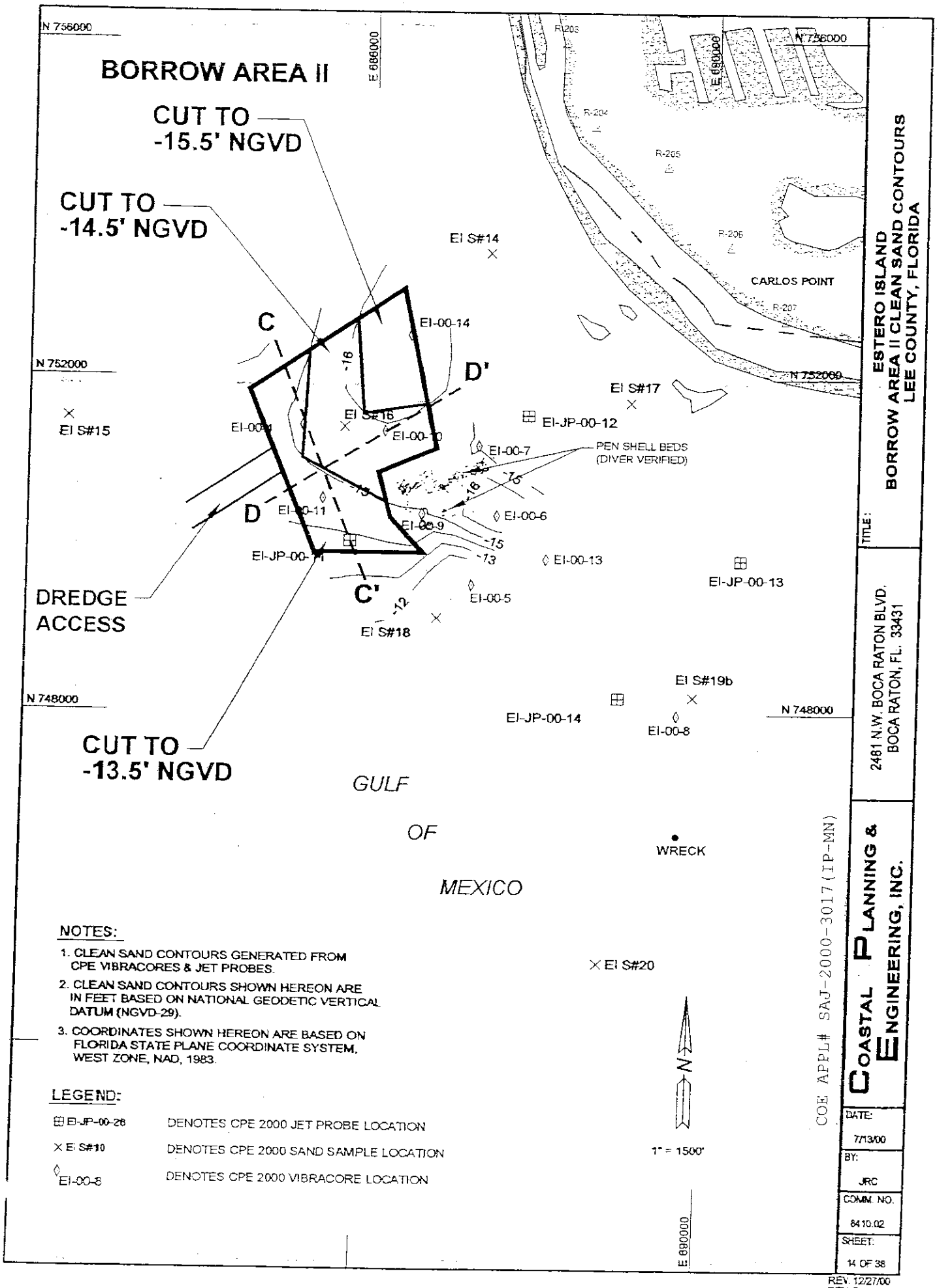
2481 N.W. BOCA RATON BLVD.
BOCA RATON, FL. 33431

COASTAL PLANNING & ENGINEERING, INC.

DATE: 7/13/00
BY: JRC
COMM. NO. 8410.02
SHEET: 13 OF 38

REV. 12/27/00
REV. 5/10/01

COE APPL# SAJ-2000-3017(IP-MN)



NOTES:

1. CLEAN SAND CONTOURS GENERATED FROM CPE VIBRACORES & JET PROBES.
2. CLEAN SAND CONTOURS SHOWN HEREON ARE IN FEET BASED ON NATIONAL GEODETIC VERTICAL DATUM (NGVD-29).
3. COORDINATES SHOWN HEREON ARE BASED ON FLORIDA STATE PLANE COORDINATE SYSTEM, WEST ZONE, NAD, 1983.

LEGEND:

⊞ EI-JP-00-26	DENOTES CPE 2000 JET PROBE LOCATION
× EI S#10	DENOTES CPE 2000 SAND SAMPLE LOCATION
◊ EI-00-8	DENOTES CPE 2000 VIBRACORE LOCATION

TITLE:
ESTERO ISLAND
BORROW AREA II CLEAN SAND CONTOURS
LEE COUNTY, FLORIDA

2481 N.W. BOCA RATON BLVD.
BOCA RATON, FL. 33431

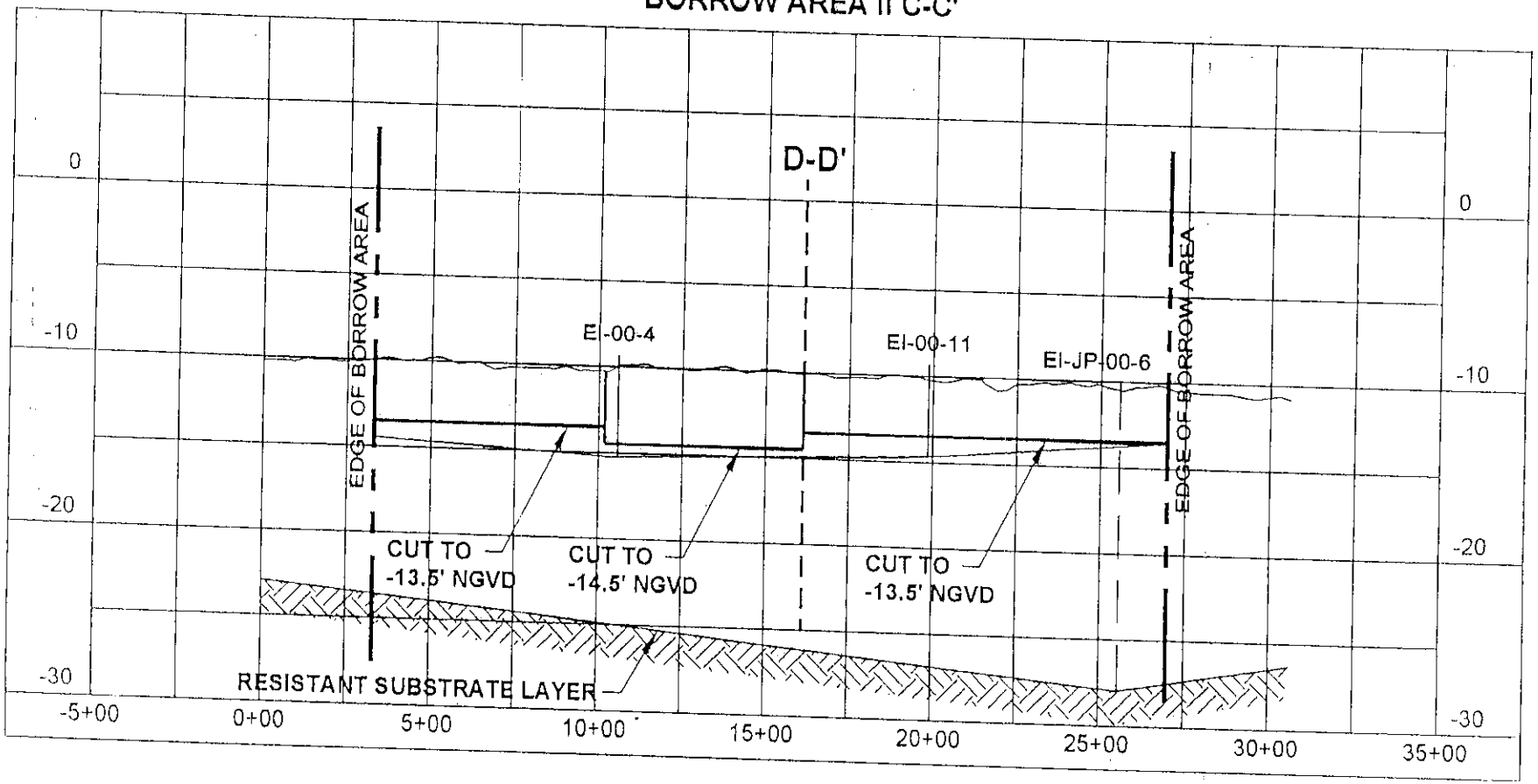
COASTAL PLANNING & ENGINEERING, INC.

COE APPL# SAJ-2000-3017(IP-MN)

DATE: 7/13/00
BY: JRC
COMM. NO. 8410.02
SHEET: 14 OF 38

REV: 12/27/00
REV: 5/10/01

BORROW AREA II C-C'



NOTES:

1. PROBES MAY NOT FALL DIRECTLY ON CROSS SECTION LINE, BUT ARE LOCATED SUFFICIENTLY CLOSE TO REPRESENT SIMILAR MATERIAL.
2. WIDTH OF LAYERS IS REPRESENTATIVE ONLY. ACTUAL MATERIAL MAY VARY.
3. SEE PAGE 13 & 14 OF 38 FOR LOCATION OF CROSS SECTION LINE.

COE APPL# SAJ-2000-3017(IP-MN)

SCALE: 1" = 500' HOR.
1" = 10' VERT.

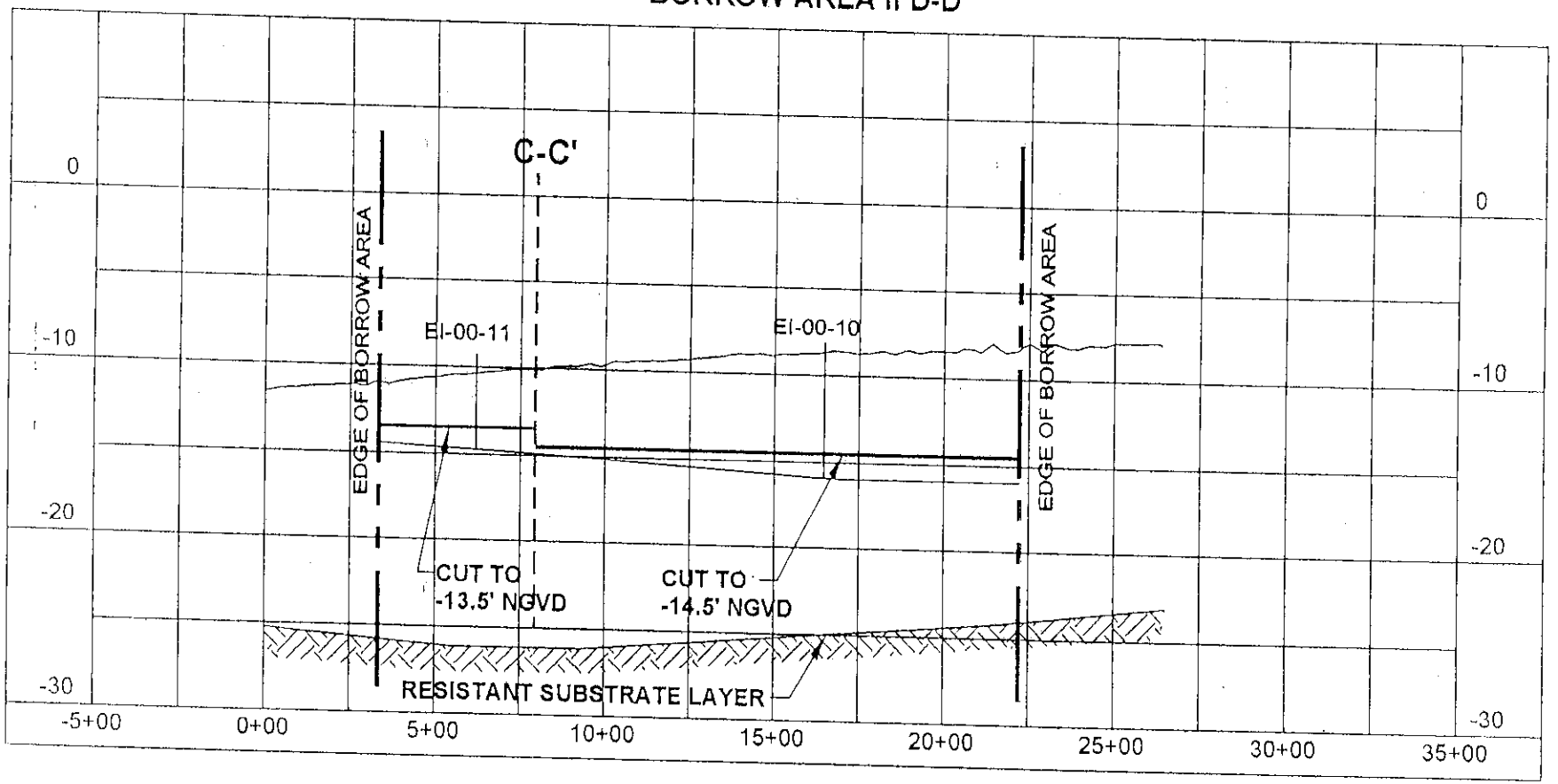
SHEET: 15 OF 38
COMM. NO. 8410.02
BY: JRC
DATE: 7/21/00

COASTAL PLANNING & ENGINEERING, INC.

2481 N.W. BOCA RATON BLVD.
BOCA RATON, FL. 33431

TITLE:
ESTERO ISLAND
BORROW AREA II
CROSS SECTION C-C'

BORROW AREA II D-D'



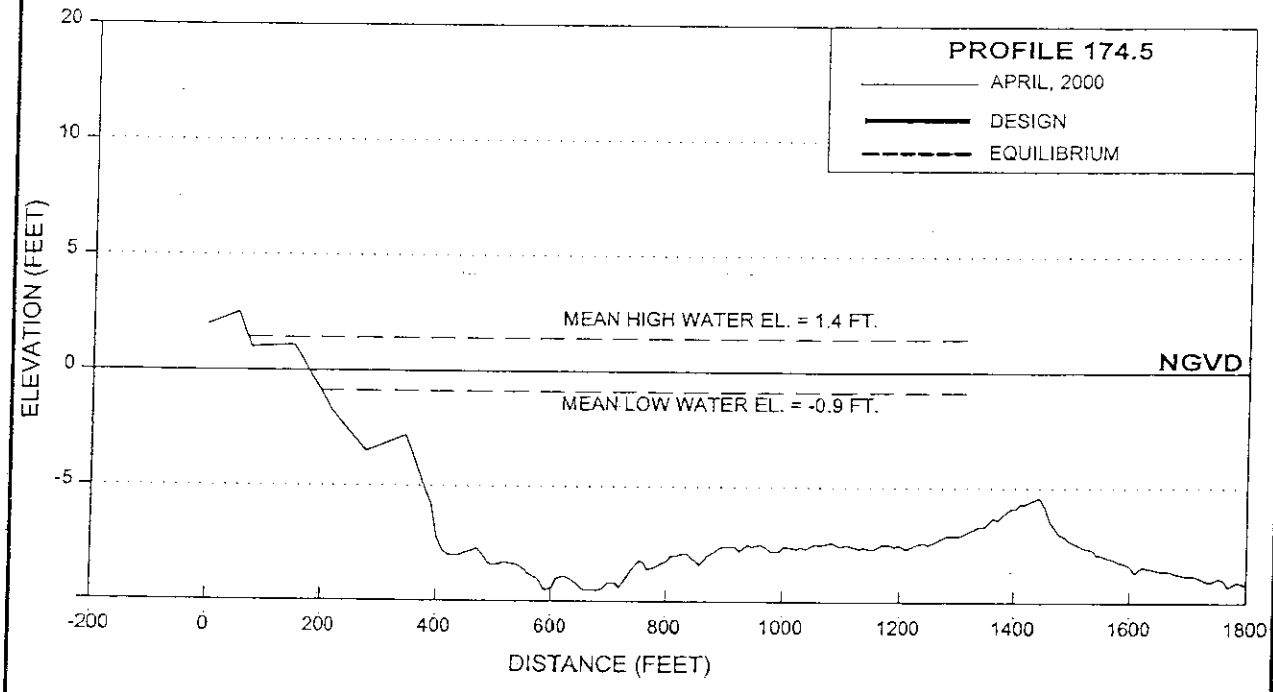
NOTES:

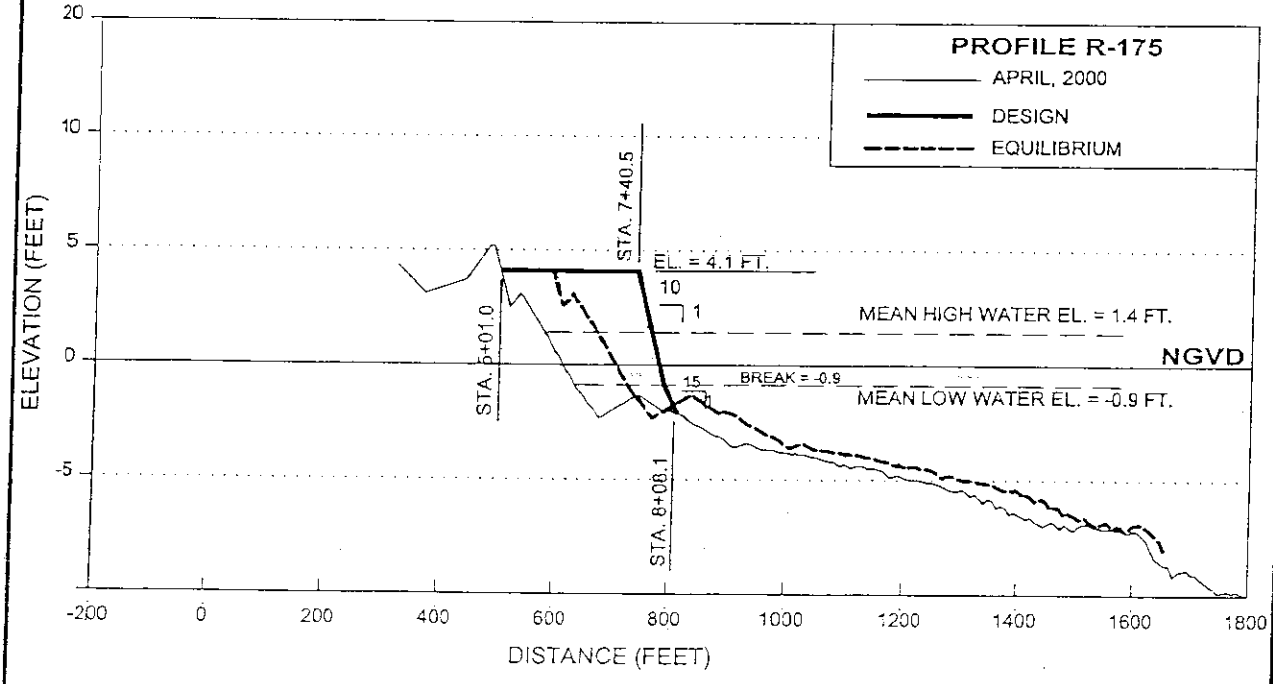
1. PROBES MAY NOT FALL DIRECTLY ON CROSS SECTION LINE, BUT ARE LOCATED SUFFICIENTLY CLOSE TO REPRESENT SIMILAR MATERIAL.
2. WIDTH OF LAYERS IS REPRESENTATIVE ONLY. ACTUAL MATERIAL MAY VARY.
3. SEE PAGE 13 & 14 OF 38 FOR LOCATION OF CROSS SECTION LINE.

COE APPL# SAJ-2000-3017(IP-MN)

SCALE: 1" = 500' HOR.
1" = 10' VERT.

SHEET:	COMM. NO.	BY:	DATE:	COASTAL PLANNING & ENGINEERING, INC.	2481 N.W. BOCA RATON BLVD. BOCA RATON, FL. 33431	TITLE: ESTERO ISLAND BORROW AREA II CROSS SECTION D-D'
16 OF 38	8410.02	JRC	7/21/00			





COE APPL# SAJ-2000-3017(IP-MN)

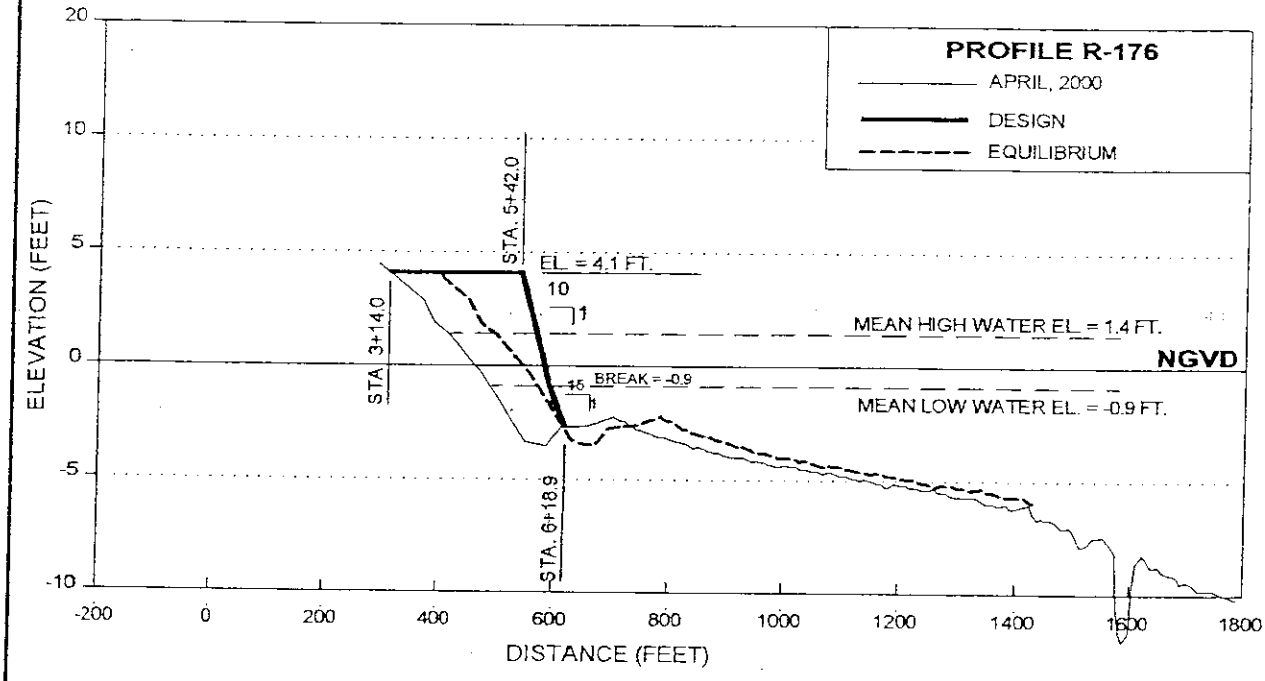
TITLE:
ESTERO ISLAND
CROSS SECTIONS
LEE COUNTY, FLORIDA

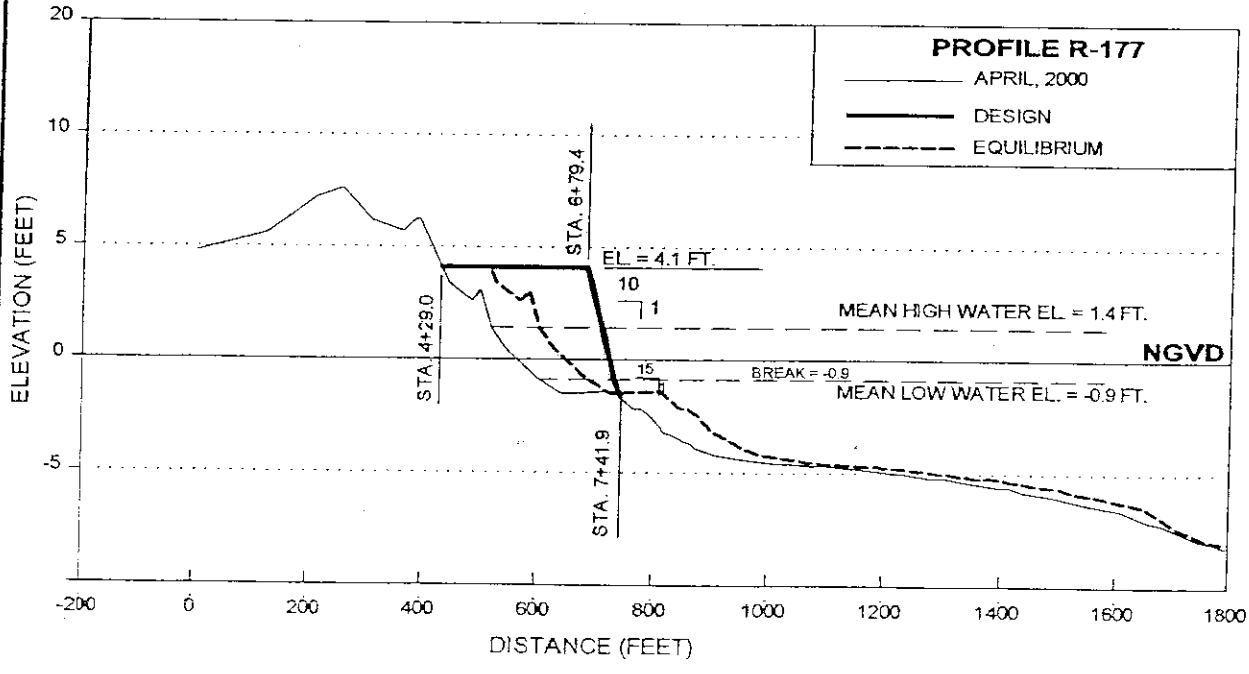
2481 N.W. BOCA RATON BLVD.
BOCA RATON, FL. 33431

COASTAL PLANNING & ENGINEERING, INC.

DATE: 7/21/00
BY: JRC
COMM. NO. 8410.02
SHEET: 17 OF 38

REV. 05/18/01





COE APPL# SAJ-2000-3017(IP-MN)

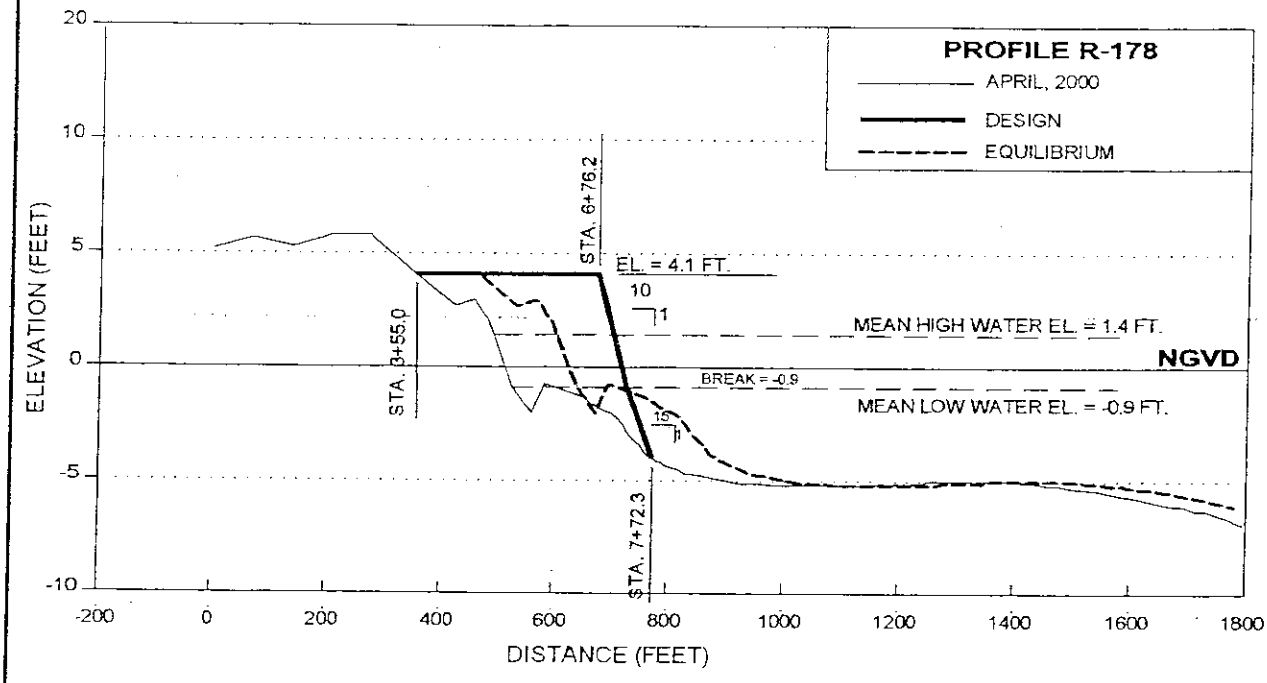
ESTERO ISLAND
CROSS SECTIONS
LEE COUNTY, FLORIDA

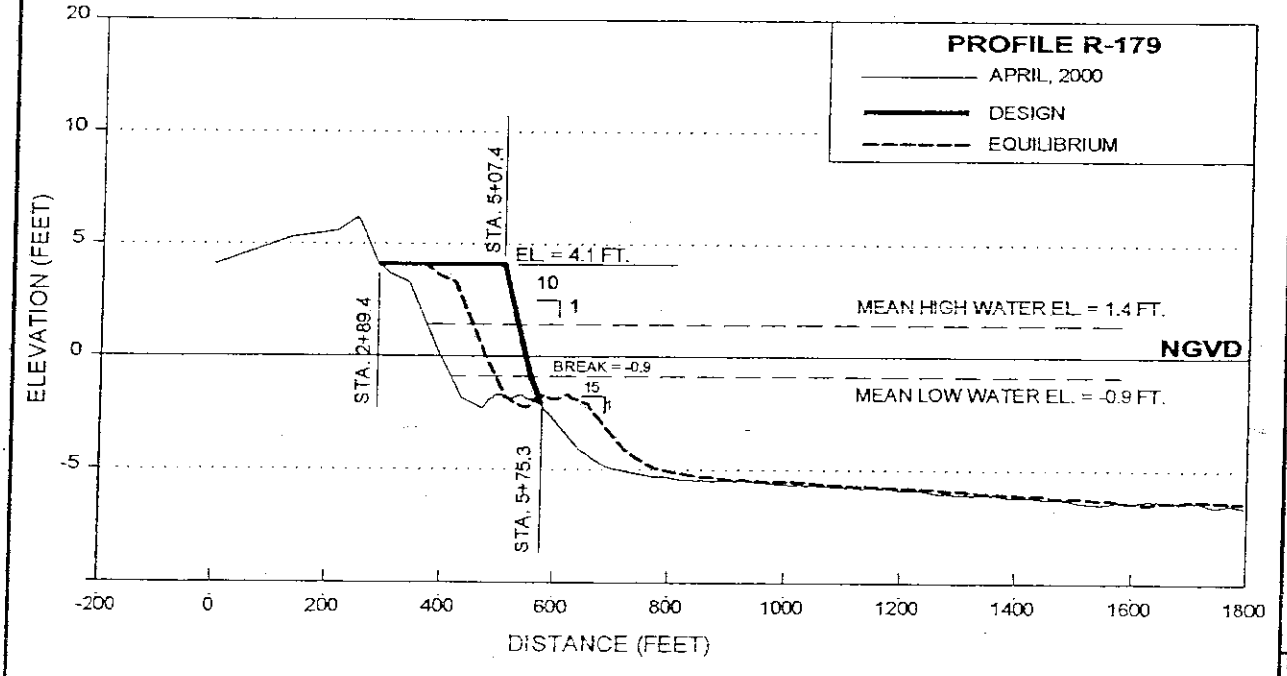
TITLE:

2481 N.W. BOCA RATON BLVD.
BOCA RATON, FL. 33431

COASTAL PLANNING & ENGINEERING, INC.

DATE: 7/21/00
BY: JRC
COMM. NO. 8410.02
SHEET: 18 OF 38
REV. 05/18/01





COE APPL# SAJ-2000-3017(IP-MN)

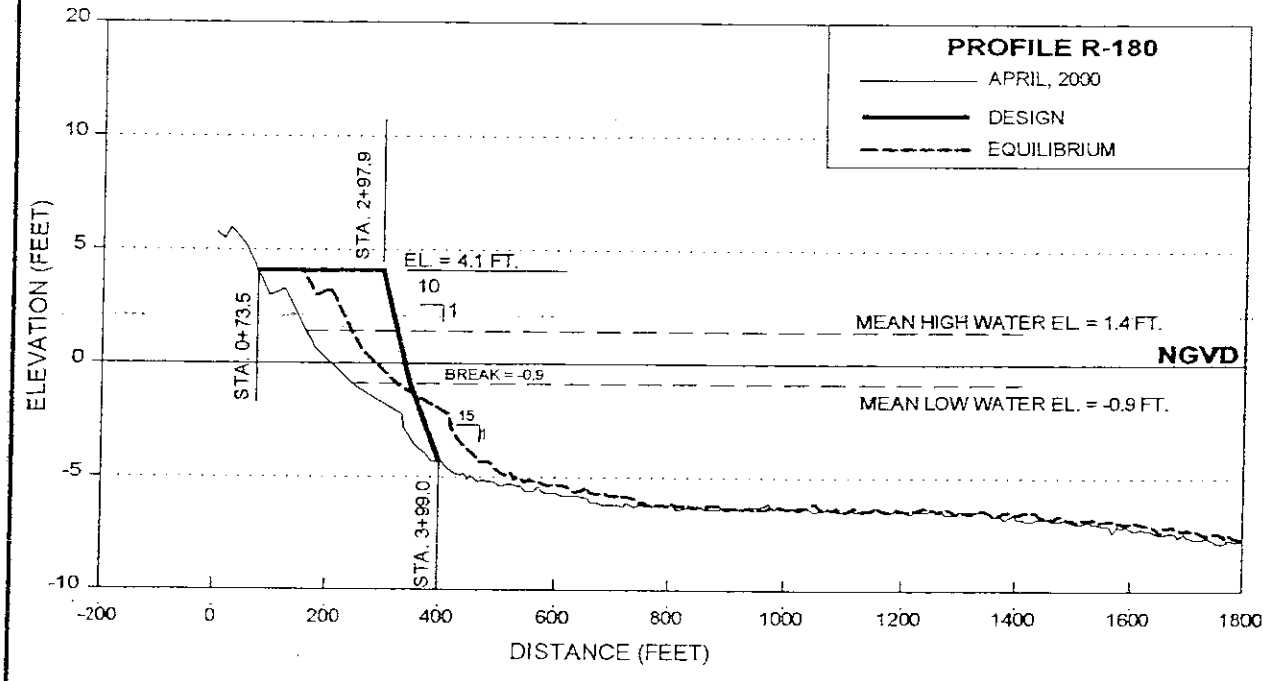
ESTERO ISLAND
CROSS SECTIONS
LEE COUNTY, FLORIDA

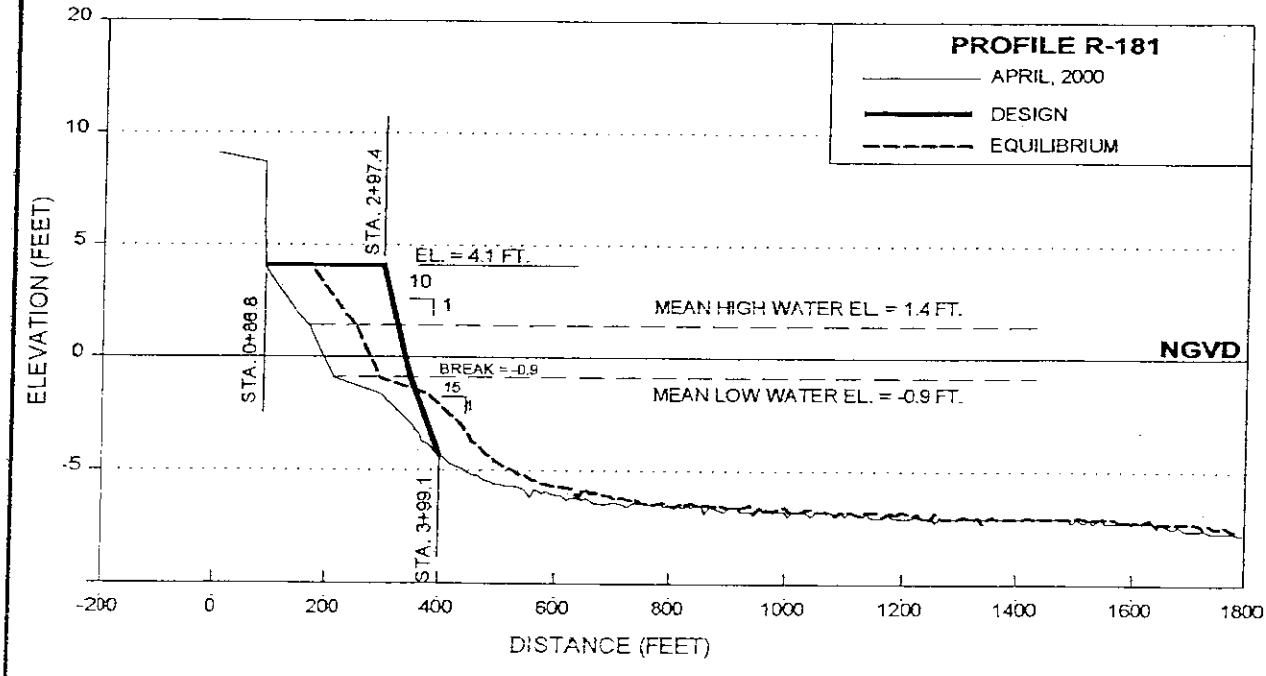
TITLE:

2481 N.W. BOCA RATON BLVD.
BOCA RATON, FL. 33431

COASTAL PLANNING & ENGINEERING, INC.

DATE: 7/21/00
BY: JRC
COMM. NO. 8410.02
SHEET: 19 OF 38
REV. 05/18/01





COE APPL# SAJ-2000-3017(IP-MN)

ESTERO ISLAND
CROSS SECTIONS
LEE COUNTY, FLORIDA

TITLE:

2481 N.W. BOCA RATON BLVD.
BOCA RATON, FL. 33431

COASTAL PLANNING & ENGINEERING, INC.

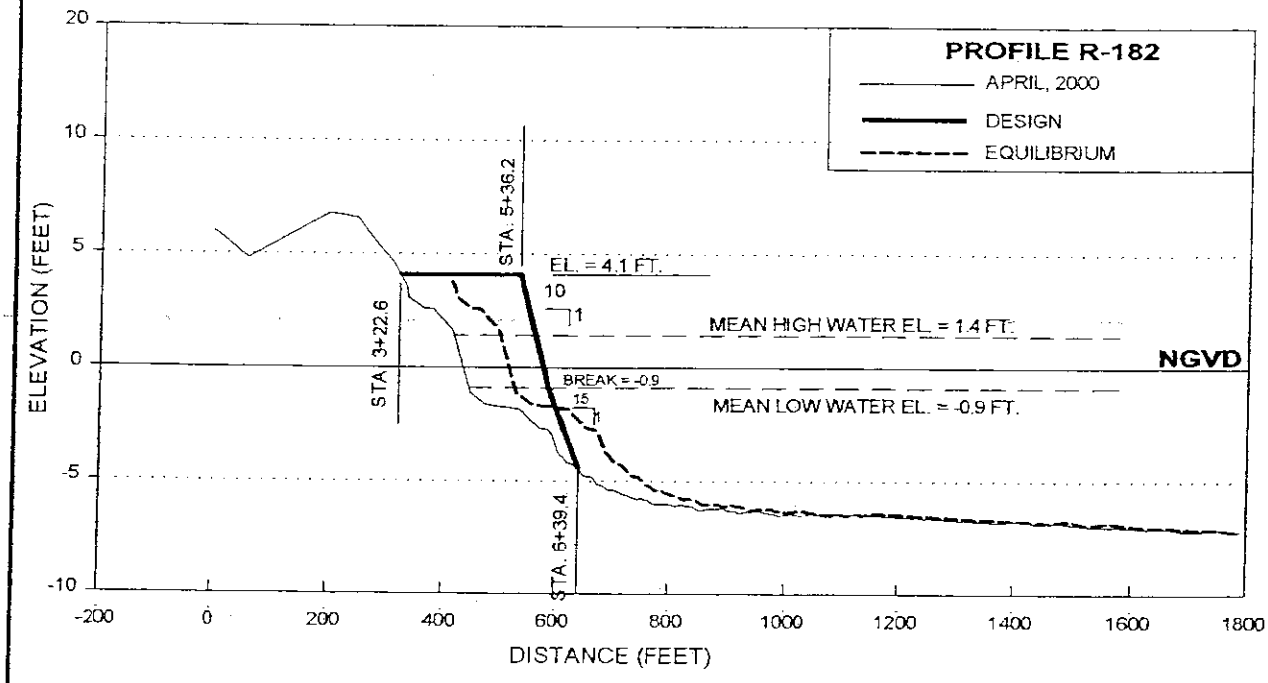
DATE: 7/21/00

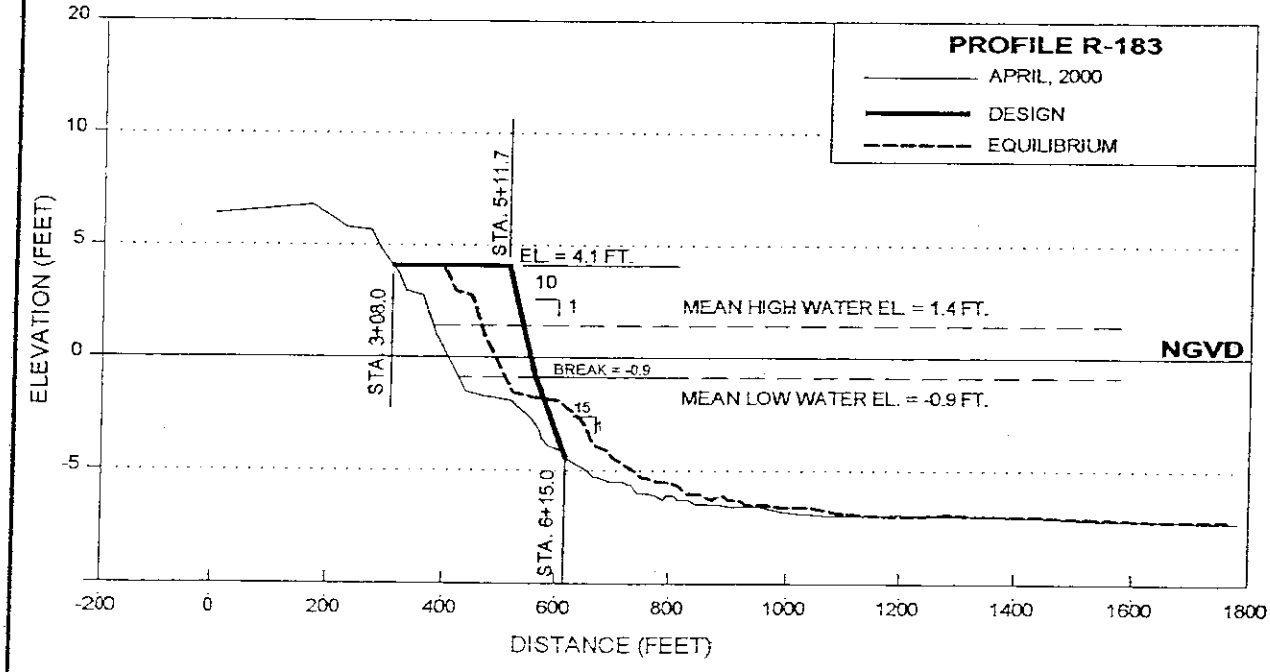
BY: JRC

COMM. NO. 8410.02

SHEET: 20 OF 38

REV. 05/18/01





COE APPL# SAJ-2000-3017(IP-MN)

ESTERO ISLAND
CROSS SECTIONS
LEE COUNTY, FLORIDA

TITLE:

2481 N.W. BOCA RATON BLVD.
BOCA RATON, FL. 33431

COASTAL PLANNING & ENGINEERING, INC.

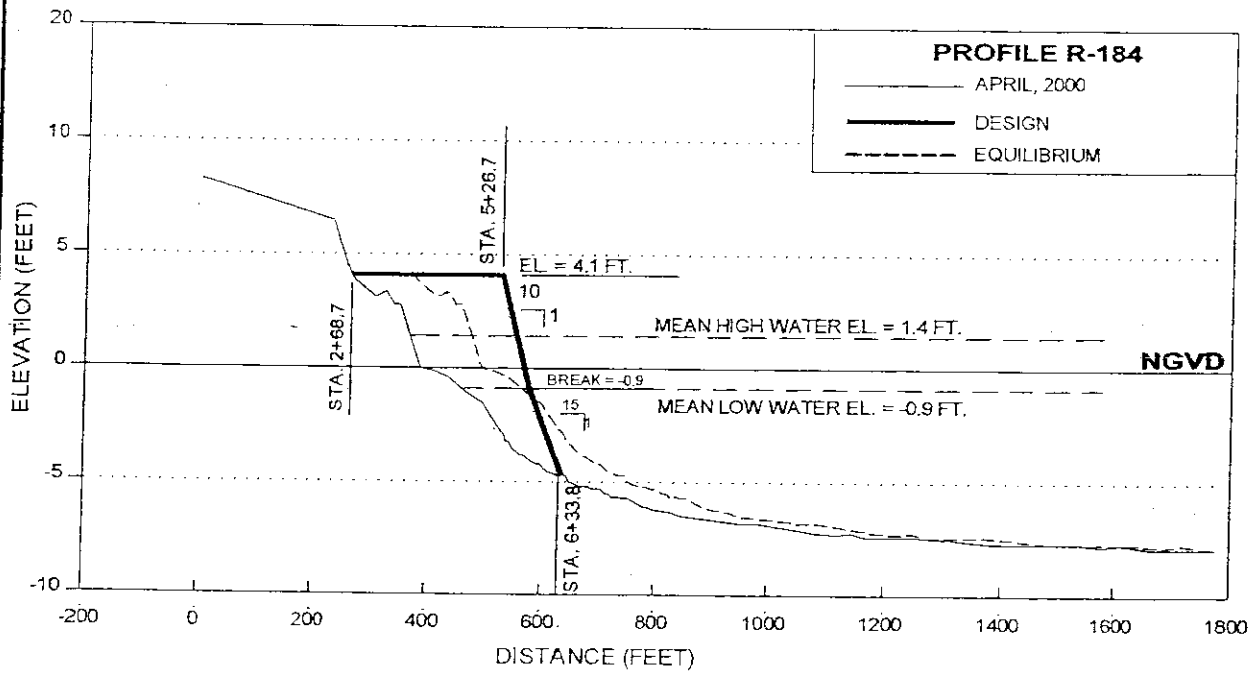
DATE: 7/21/00

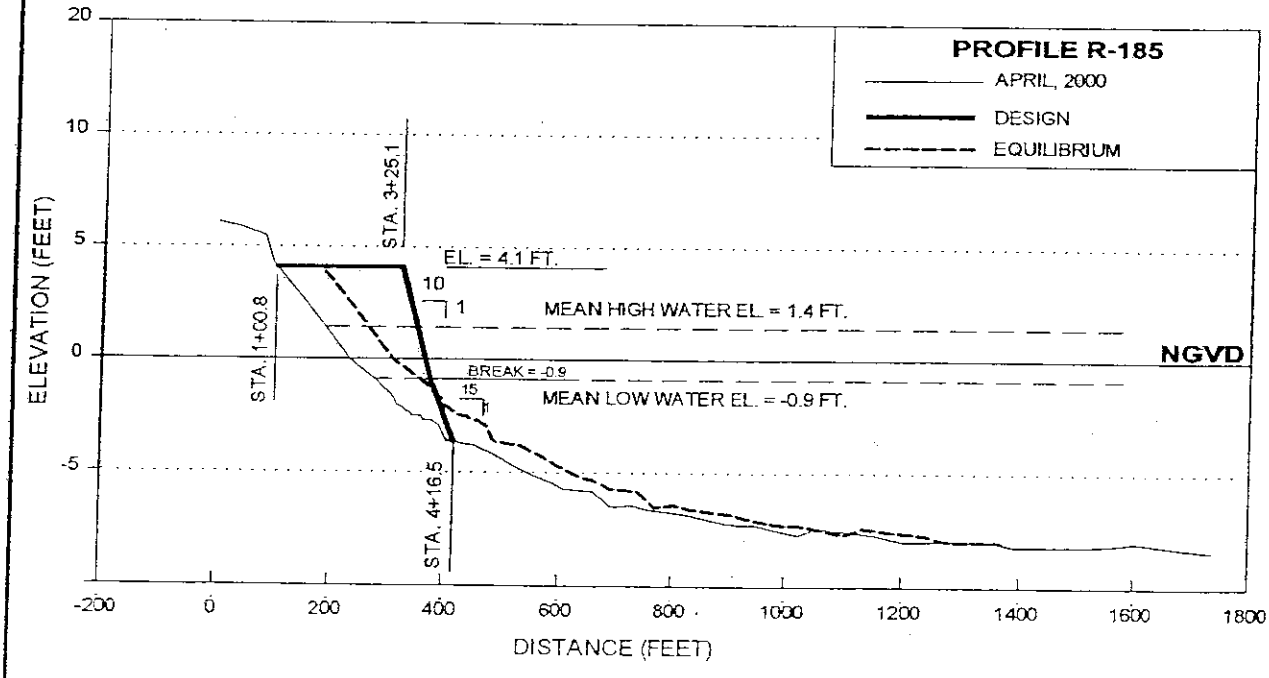
BY: JRC

COMM. NO. 8410.02

SHEET: 21 OF 38

REV: 05/18/01





COE APPL# SAJ-2000-3017(IP-MN)

ESTERO ISLAND
CROSS SECTIONS
LEE COUNTY, FLORIDA

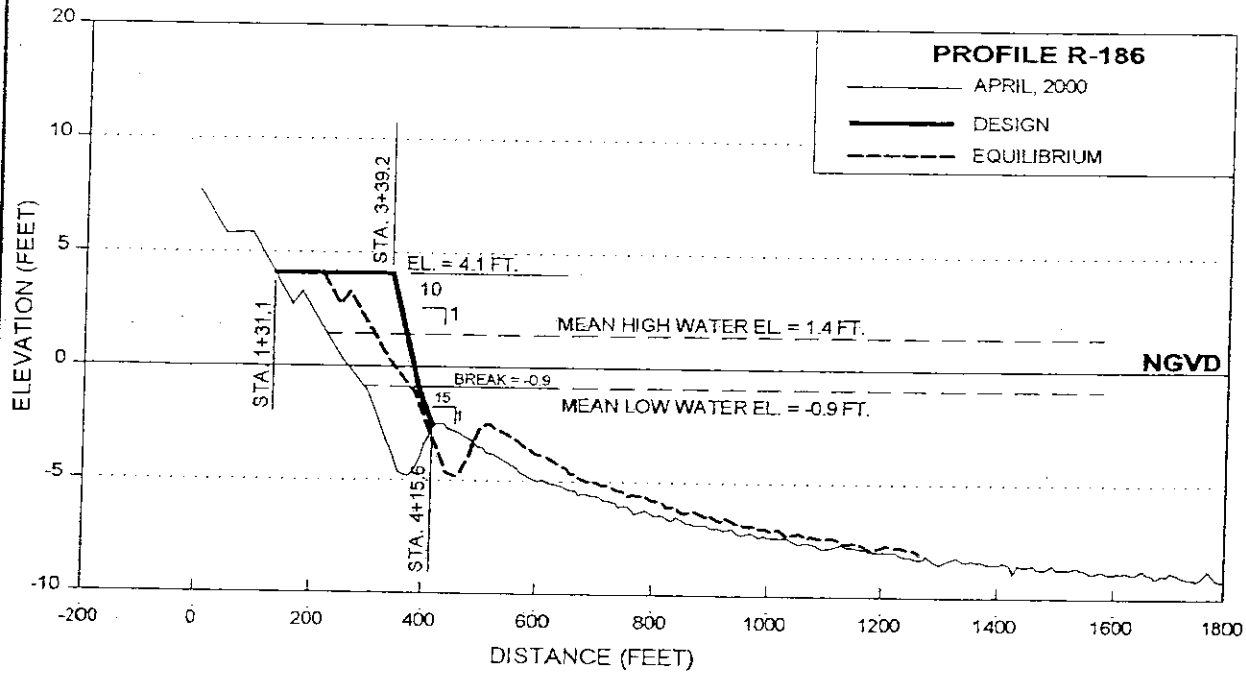
TITLE:

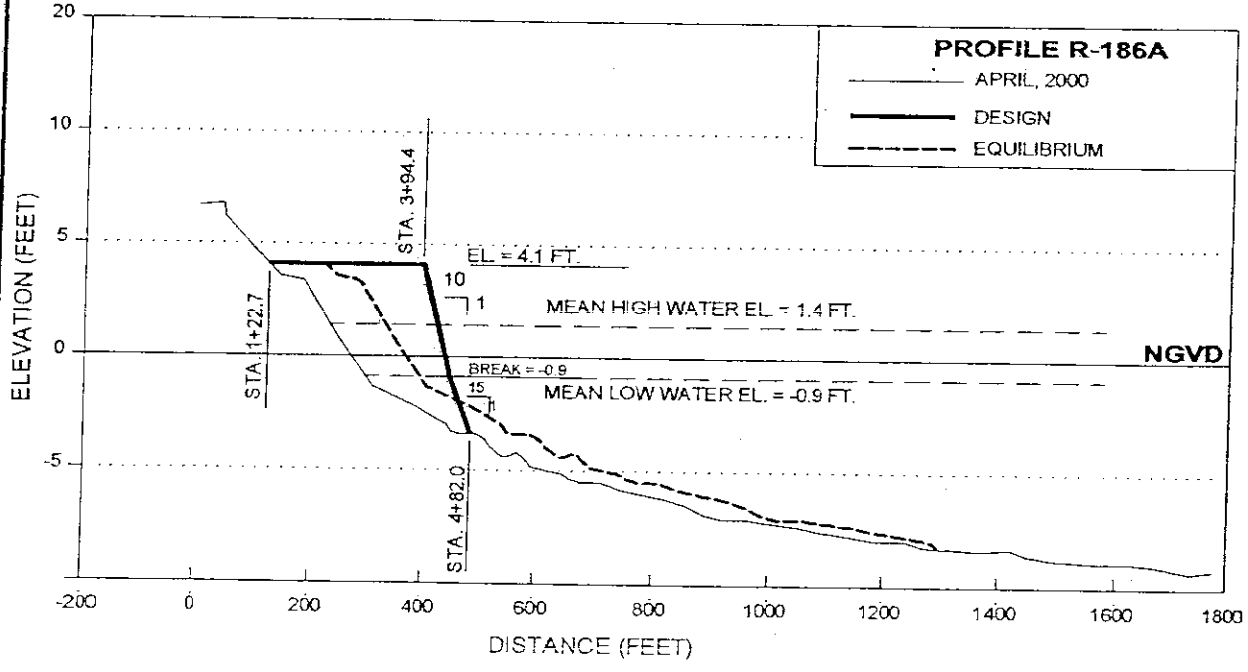
2481 N.W. BOCA RATON BLVD.
BOCA RATON, FL. 33431

COASTAL PLANNING & ENGINEERING, INC.

DATE:	7/21/00
BY:	JRC
COMM. NO.	8410.02
SHEET:	22 OF 38

REV. 05/18/01





COE APPL# SAJ-2000-3017(IP-MN)

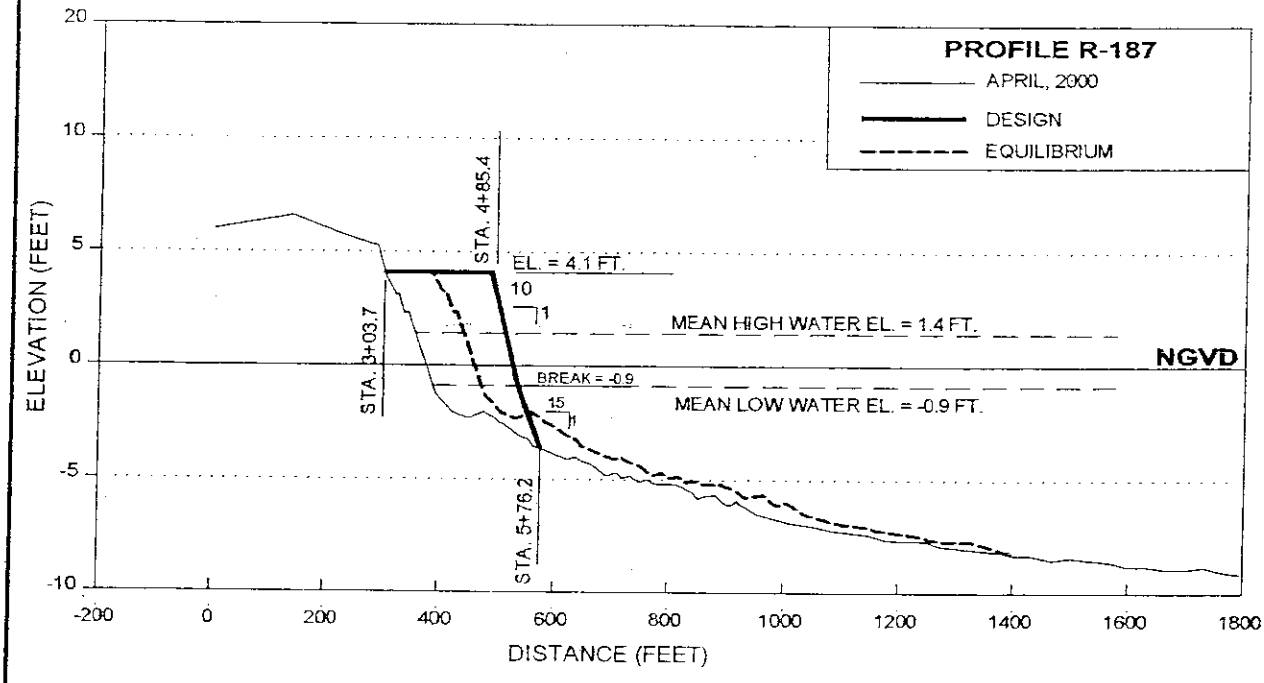
ESTERO ISLAND
CROSS SECTIONS
LEE COUNTY, FLORIDA

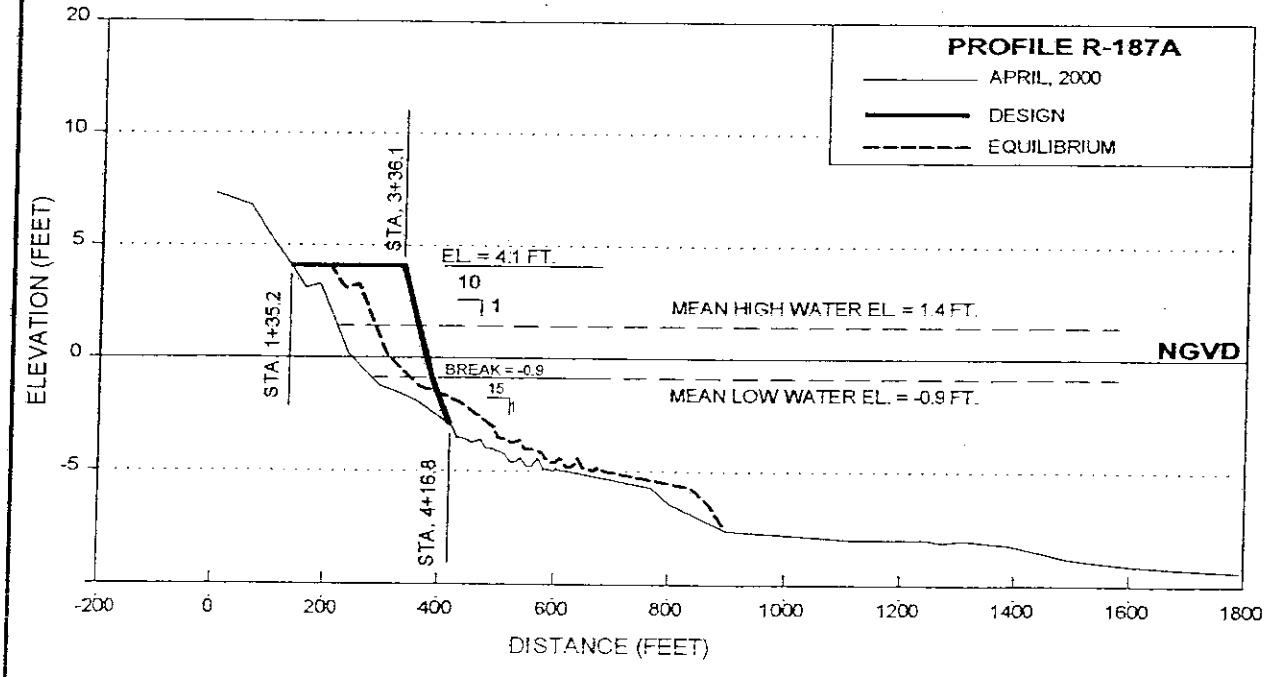
TITLE:

2481 N.W. BOCA RATON BLVD.
BOCA RATON, FL. 33431

COASTAL PLANNING & ENGINEERING, INC.

DATE: 7/21/00
BY: JRC
COMM. NO. 8410.02
SHEET: 23 OF 38
REV. 05/18/01





COE APPL# SAJ-2000-3017(IP-MN)

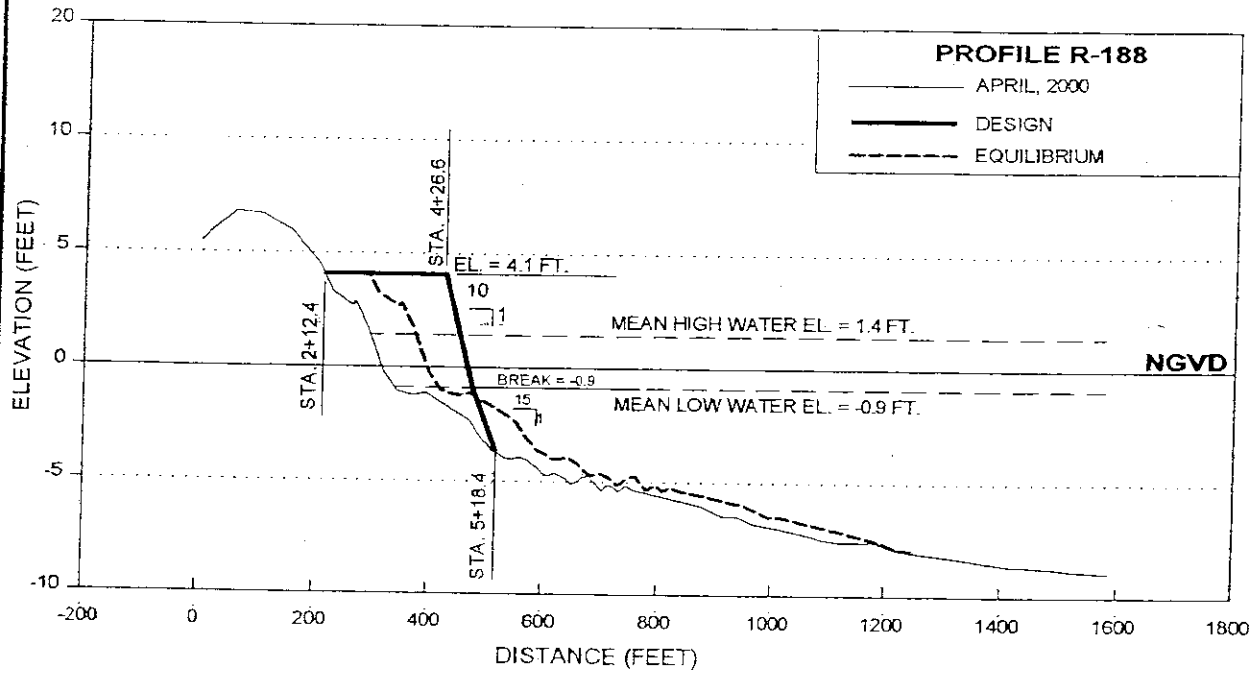
ESTERO ISLAND
CROSS SECTIONS
LEE COUNTY, FLORIDA

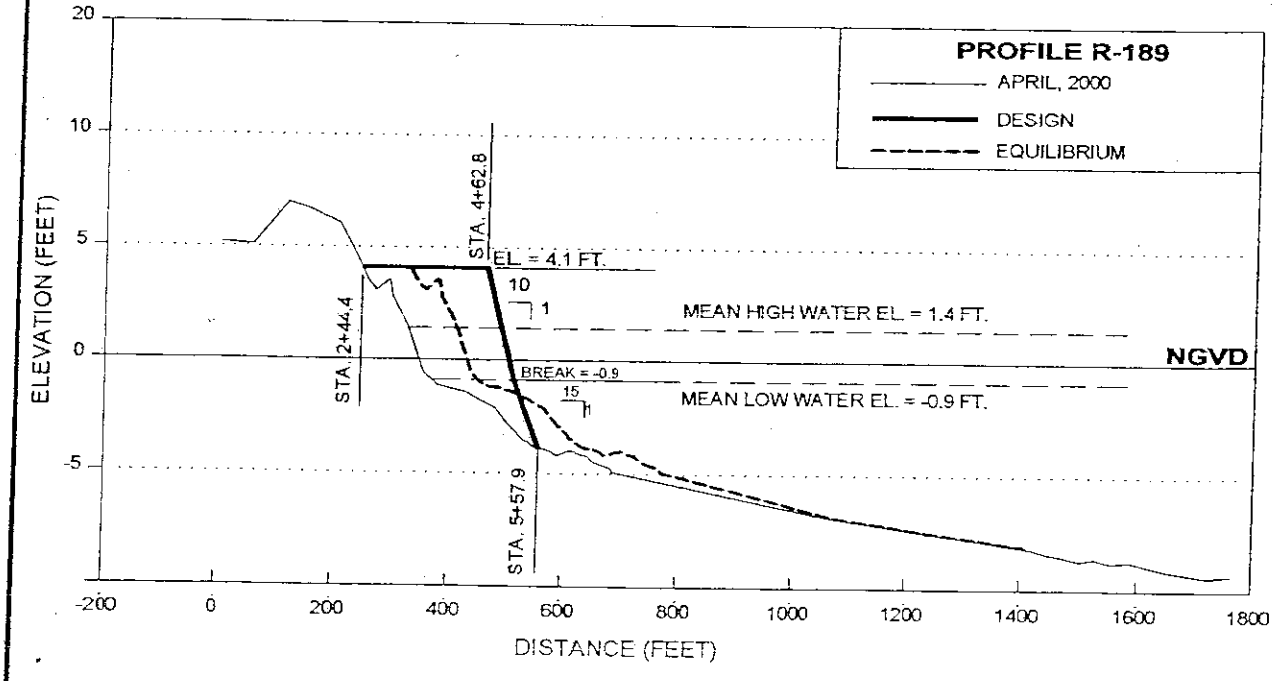
TITLE:

2481 N.W. BOCA RATON BLVD.
BOCA RATON, FL. 33431

COASTAL PLANNING & ENGINEERING, INC.

DATE: 7/21/00
BY: JRC
COMM. NO. 8410.02
SHEET: 24 OF 38
REV. 05/18/01





COE APPL# SAJ-2000-3017(IP-MN)

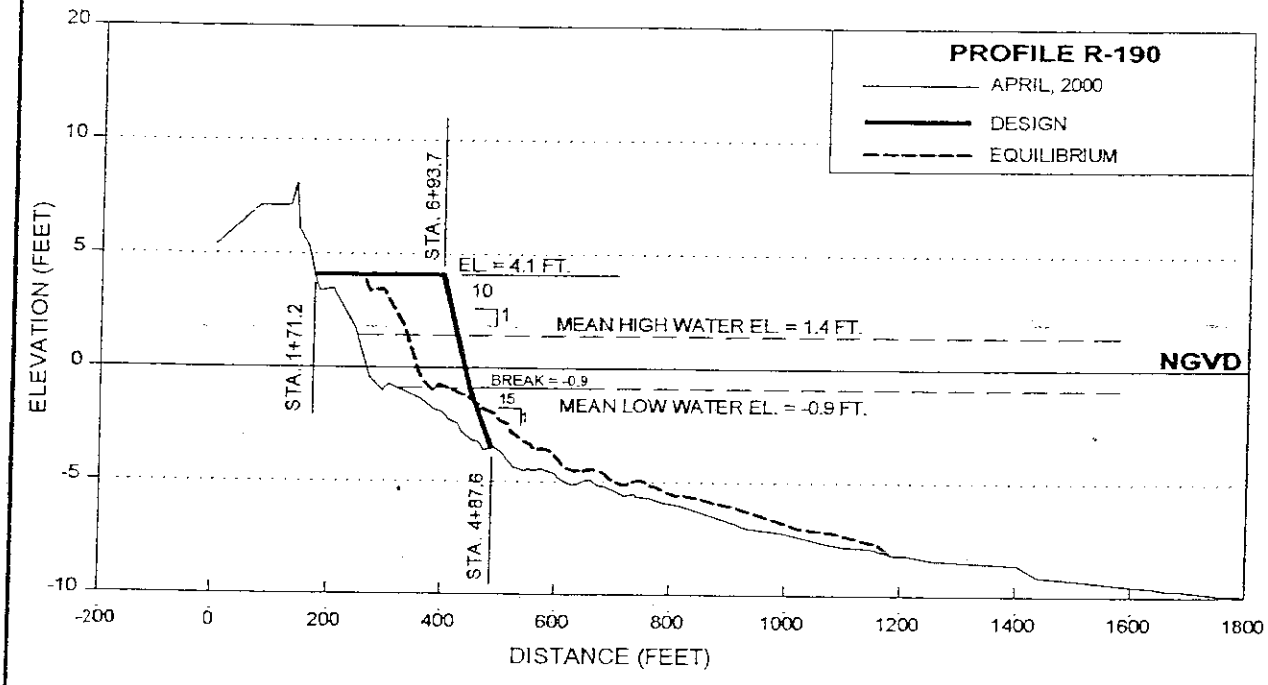
ESTERO ISLAND
CROSS SECTIONS
LEE COUNTY, FLORIDA

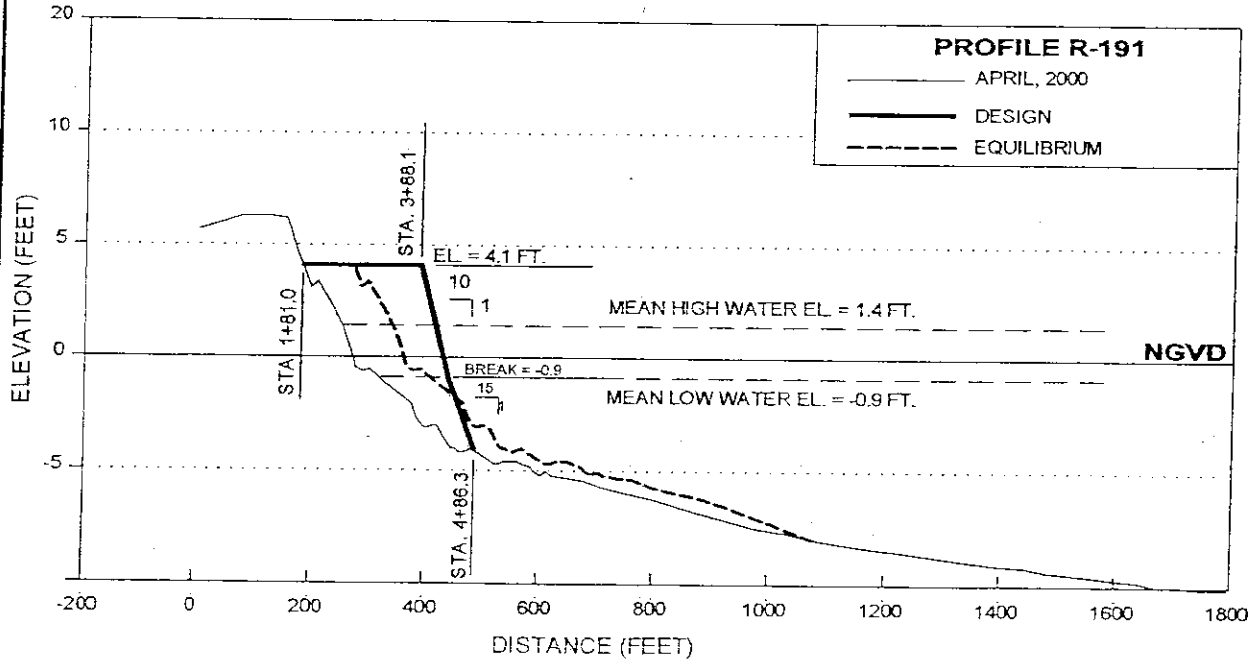
TITLE:

2481 N.W. BOCA RATON BLVD.
BOCA RATON, FL. 33431

COASTAL PLANNING & ENGINEERING, INC.

DATE: 7/21/00
BY: JRC
COMM. NO. 8410.02
SHEET: 25 OF 38
REV: 05/18/01





COE APPL# SAJ-2000-3017(IP-MN)

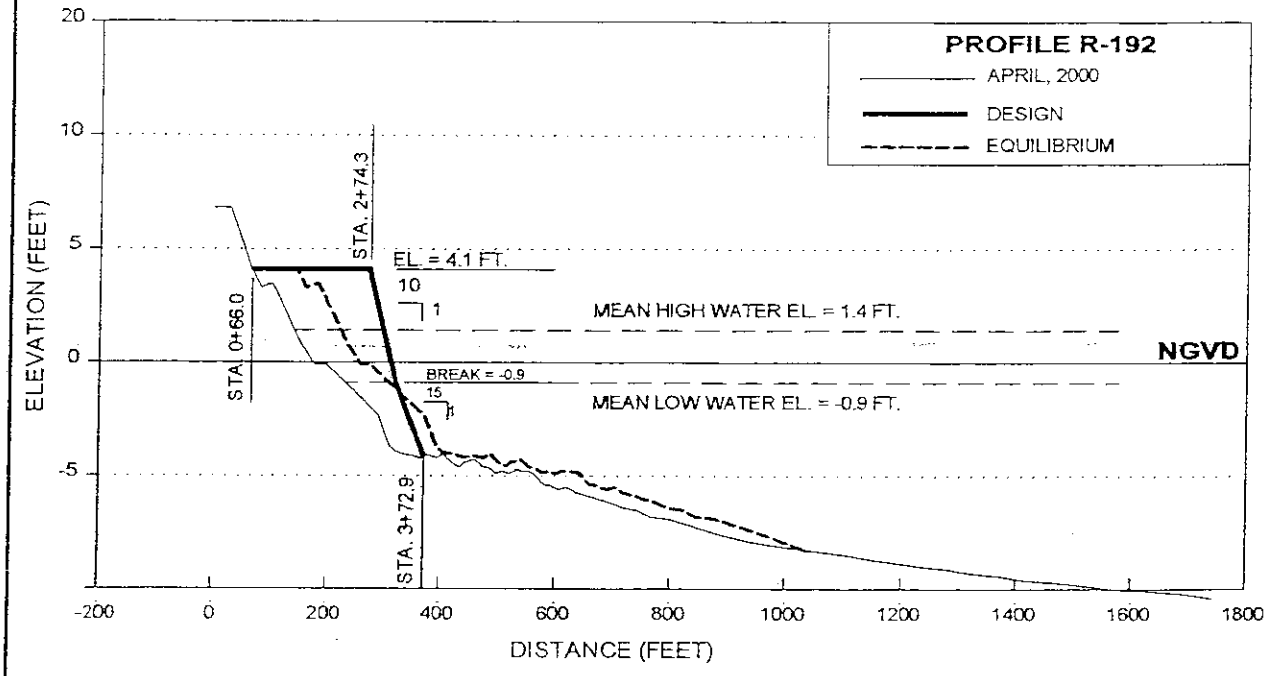
ESTERO ISLAND
CROSS SECTIONS
LEE COUNTY, FLORIDA

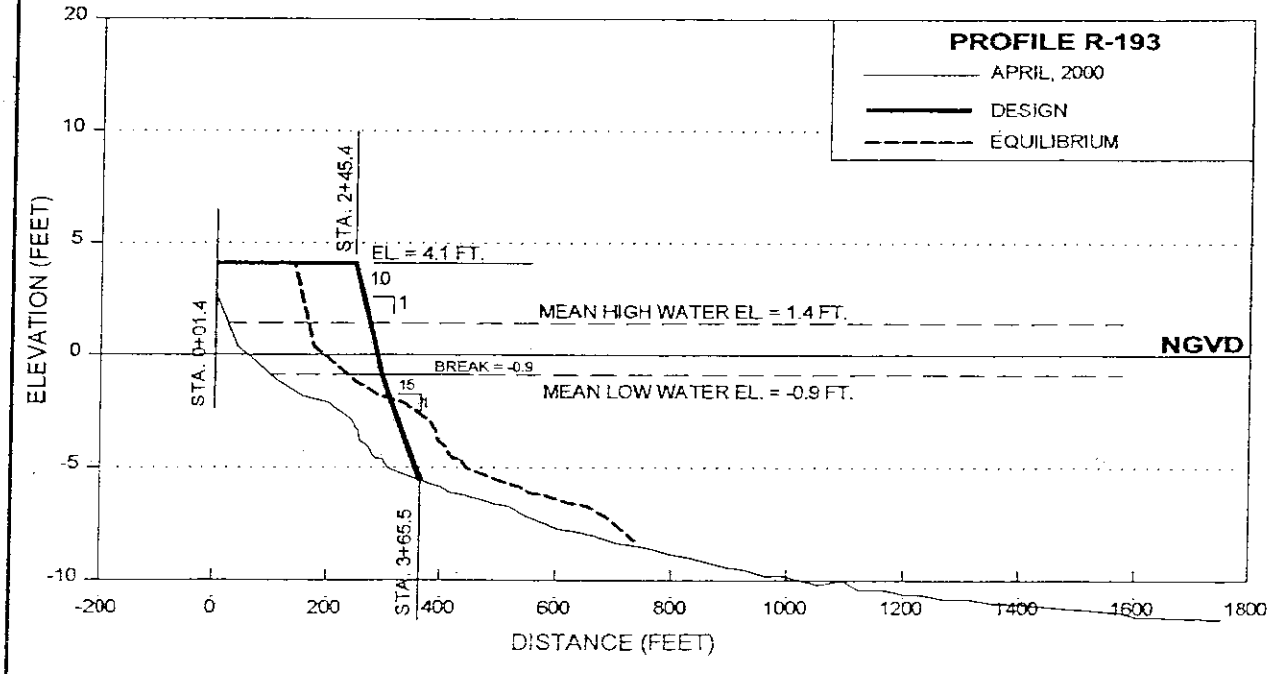
TITLE:

2481 N.W. BOCA RATON BLVD.
BOCA RATON, FL. 33431

COASTAL PLANNING & ENGINEERING, INC.

DATE: 7/21/00
BY: JRC
COMM. NO. 8410.02
SHEET: 26 OF 38
REV. 05/18/01





COE APPL# SAJ-2000-3017(IP-MN)

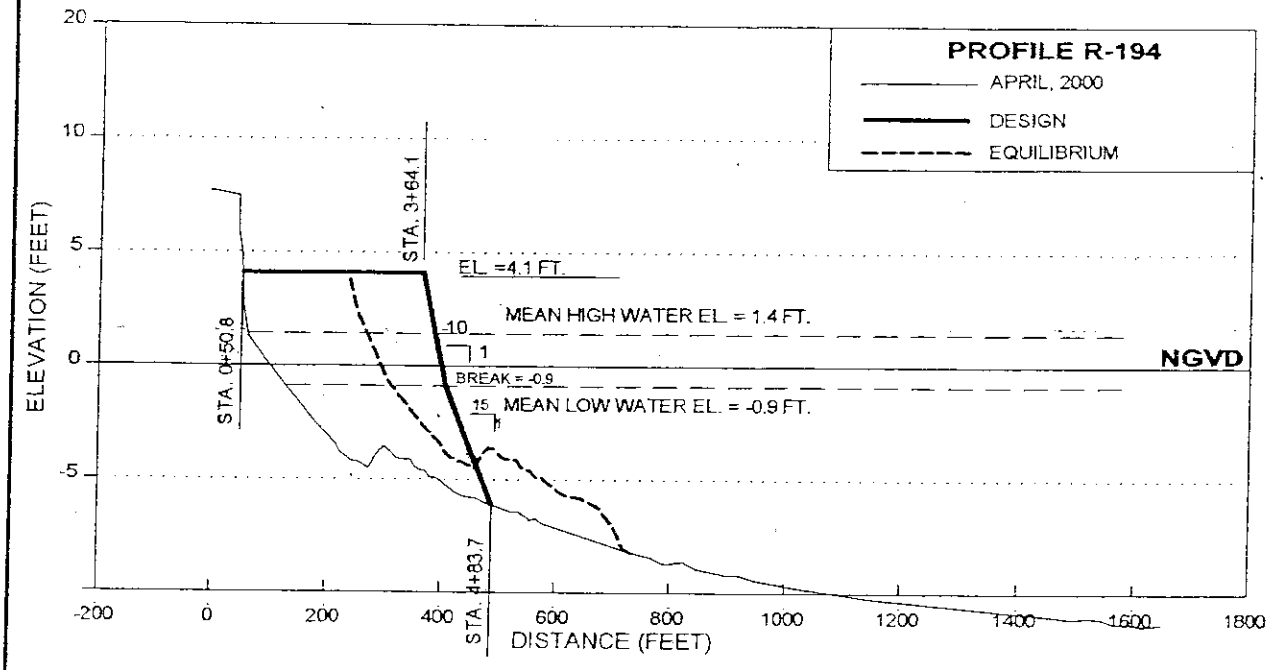
ESTERO ISLAND
CROSS SECTIONS
LEE COUNTY, FLORIDA

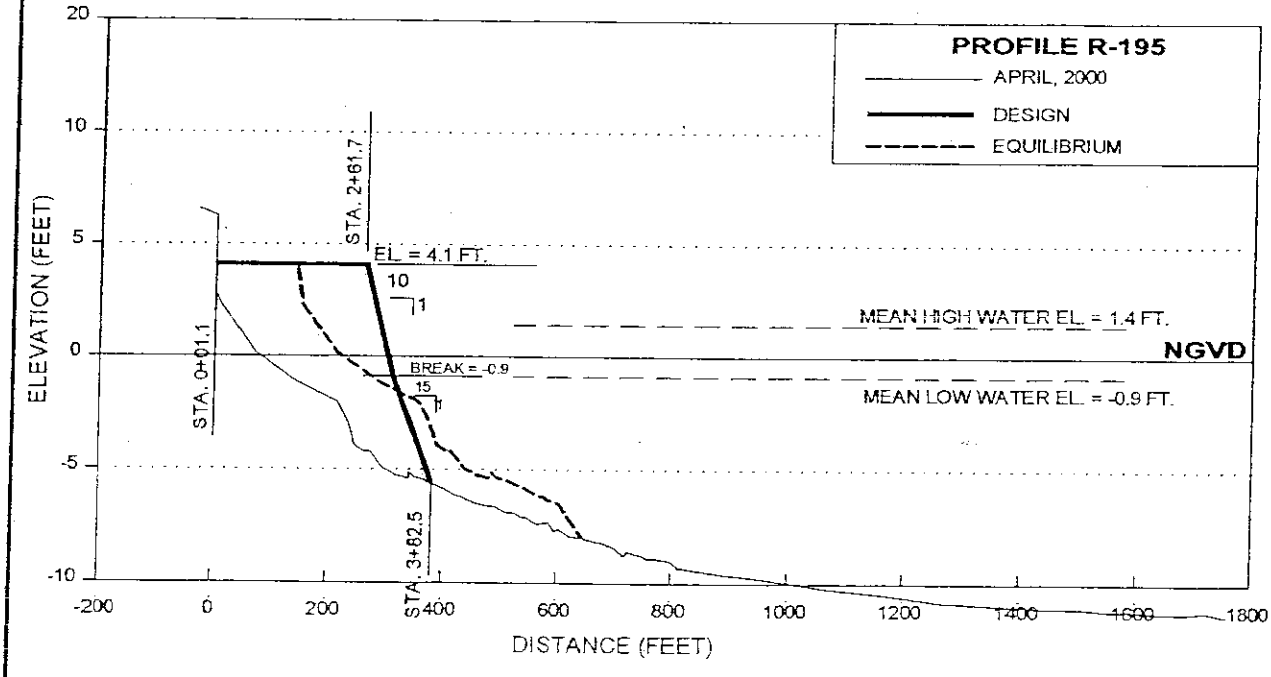
TITLE:

2461 N.W. BOCA RATON BLVD.
BOCA RATON, FL. 33431

COASTAL PLANNING & ENGINEERING, INC.

DATE: 7/21/00
BY: JRC
COMM. NO. 8410.02
SHEET: 27 OF 38
REV. 05/18/01





COE APPL# SAJ-2000-3017(IP-MN)

ESTERO ISLAND
CROSS SECTIONS
LEE COUNTY, FLORIDA

TITLE:

2481 N.W. BOCA RATON BLVD.
BOCA RATON, FL. 33431

COASTAL PLANNING & ENGINEERING, INC.

DATE: 7/21/00
BY: JRC
COMM. NO. 8410.02
SHEET: 28 OF 38
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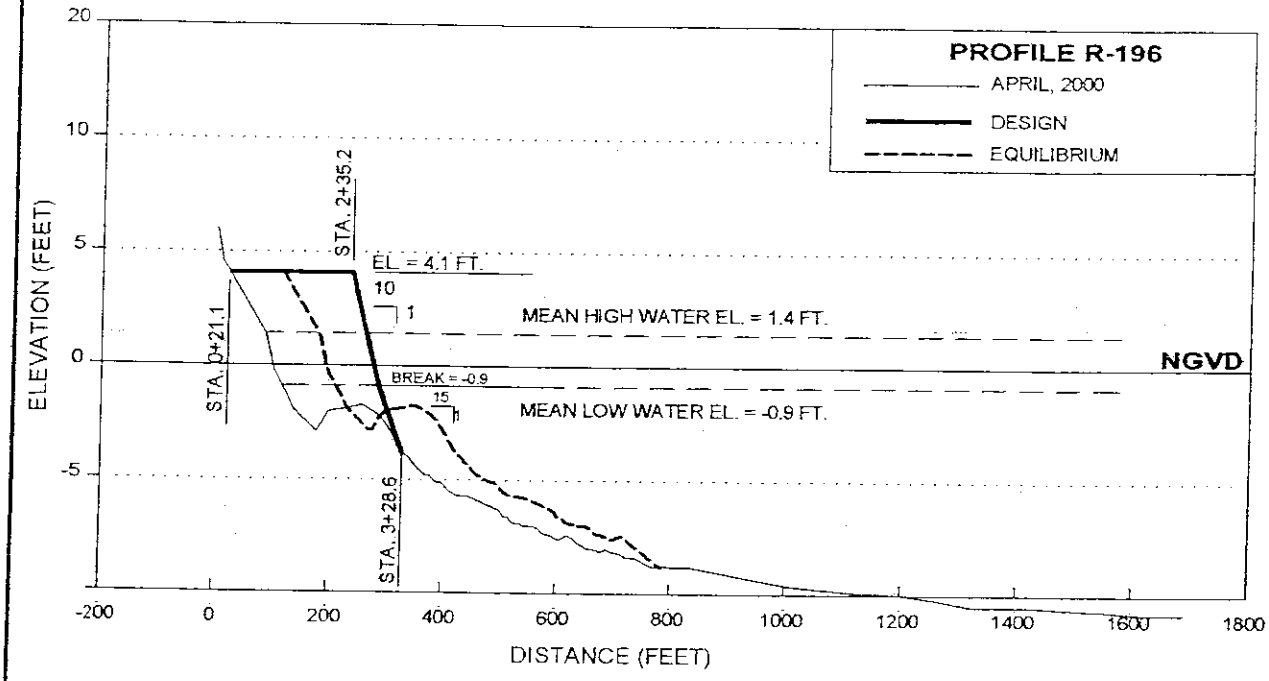

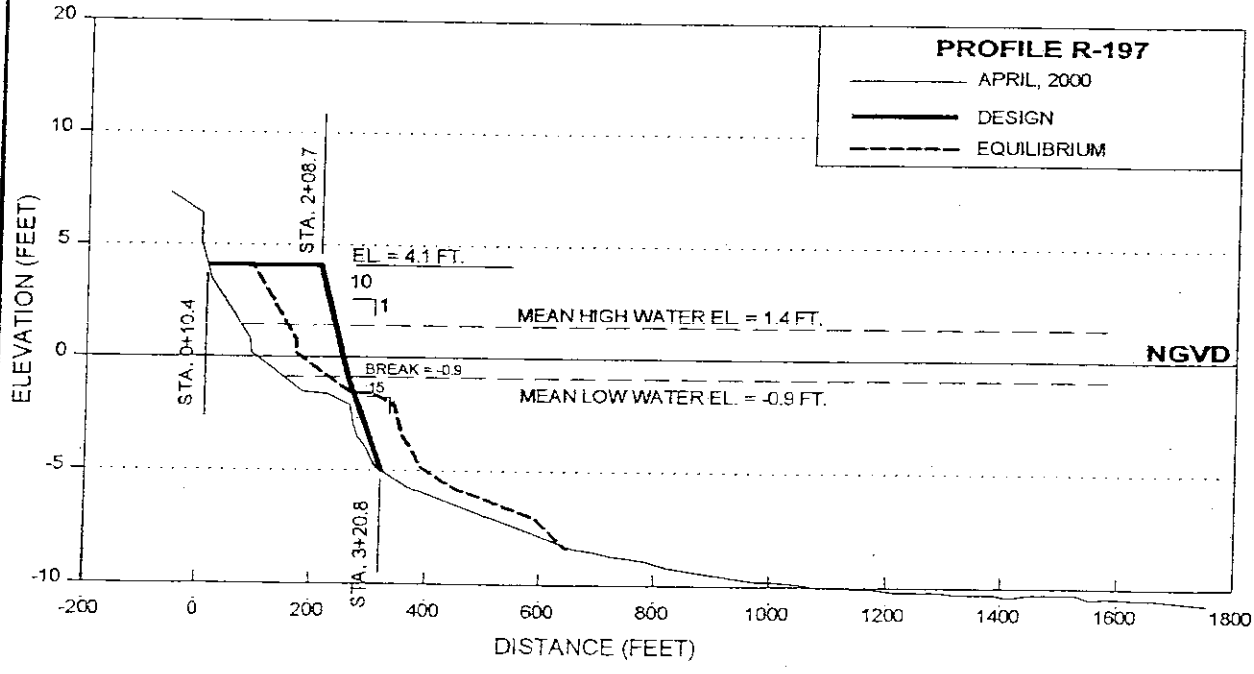

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SHEET: 29 OF 38

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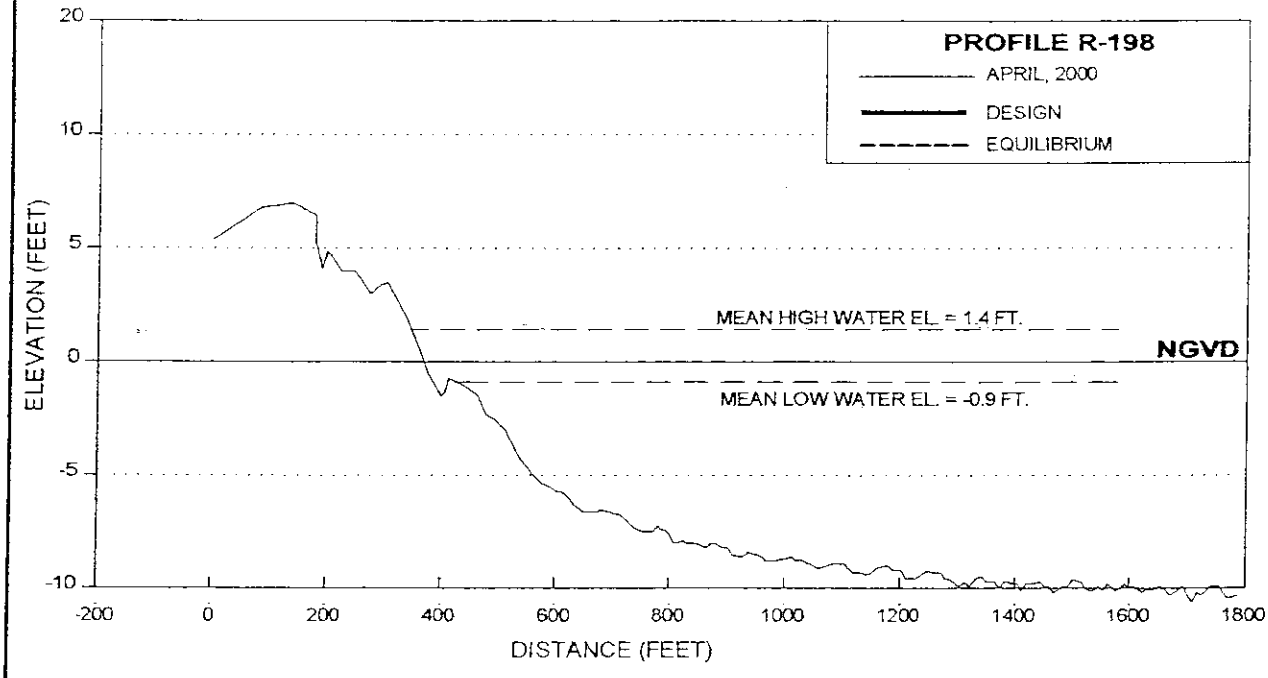

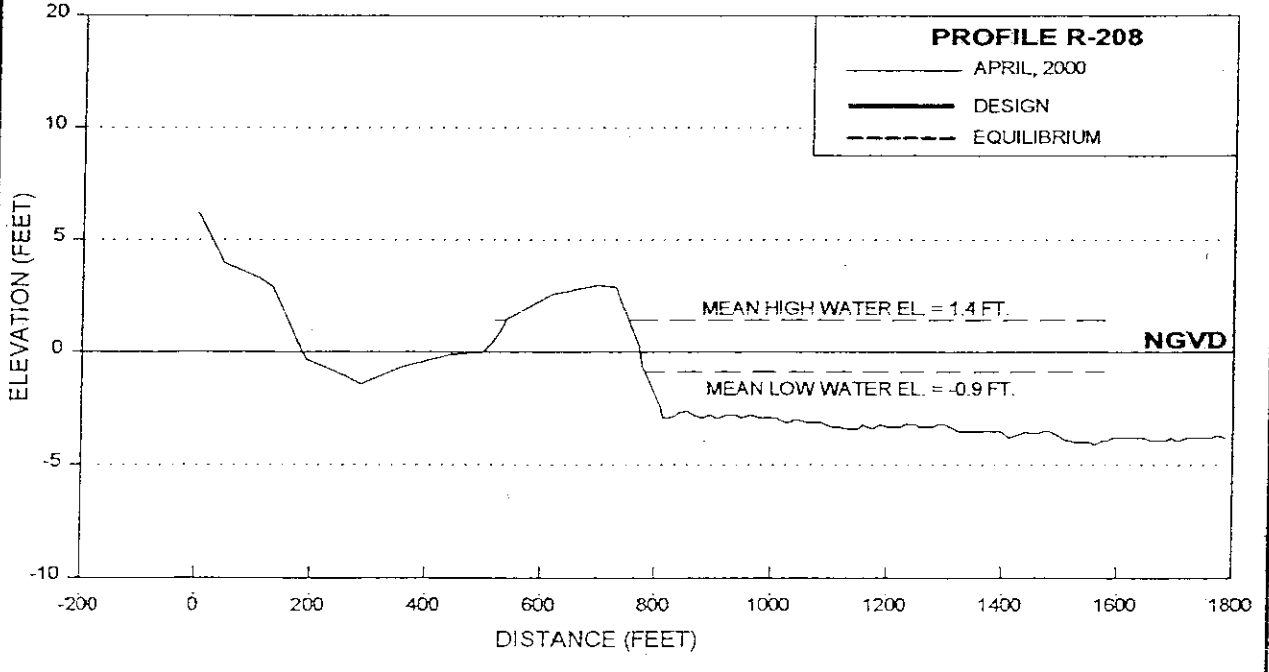

COE APPL# SAJ-2000-3017(IP-MN)

ESTERO ISLAND
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2461 N.W. BOCA RATON BLVD.
BOCA RATON, FL. 33431

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DATE: 7/21/00

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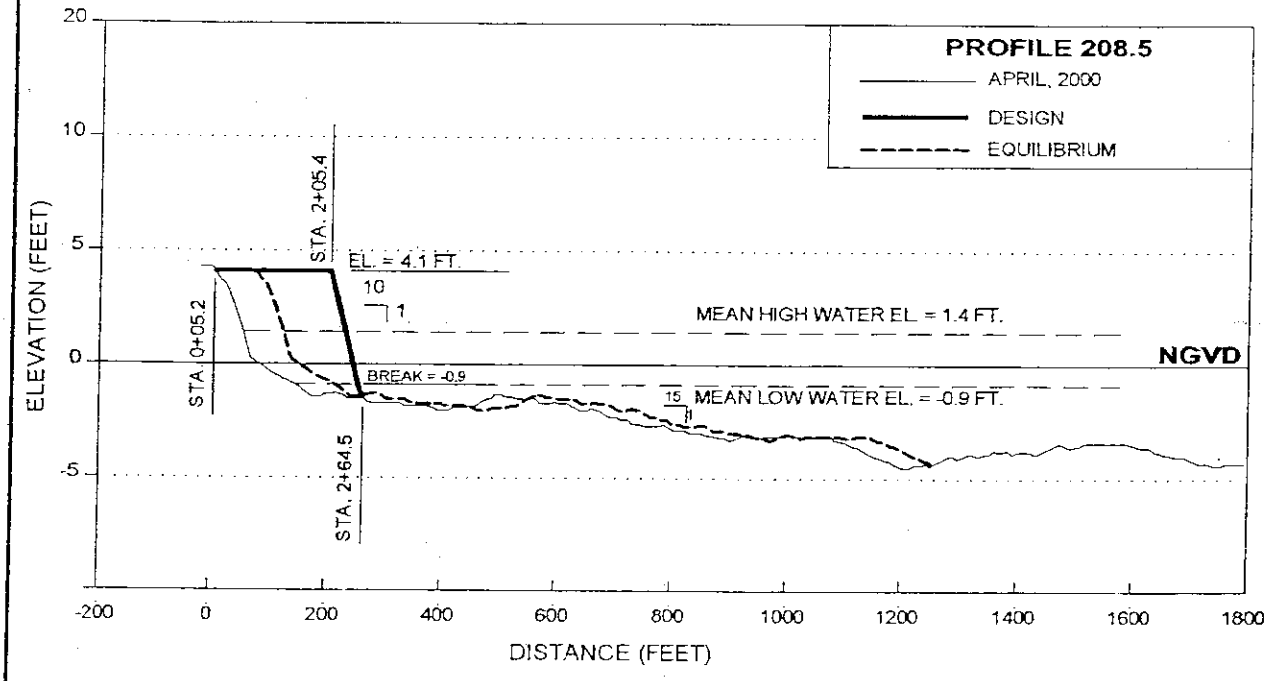
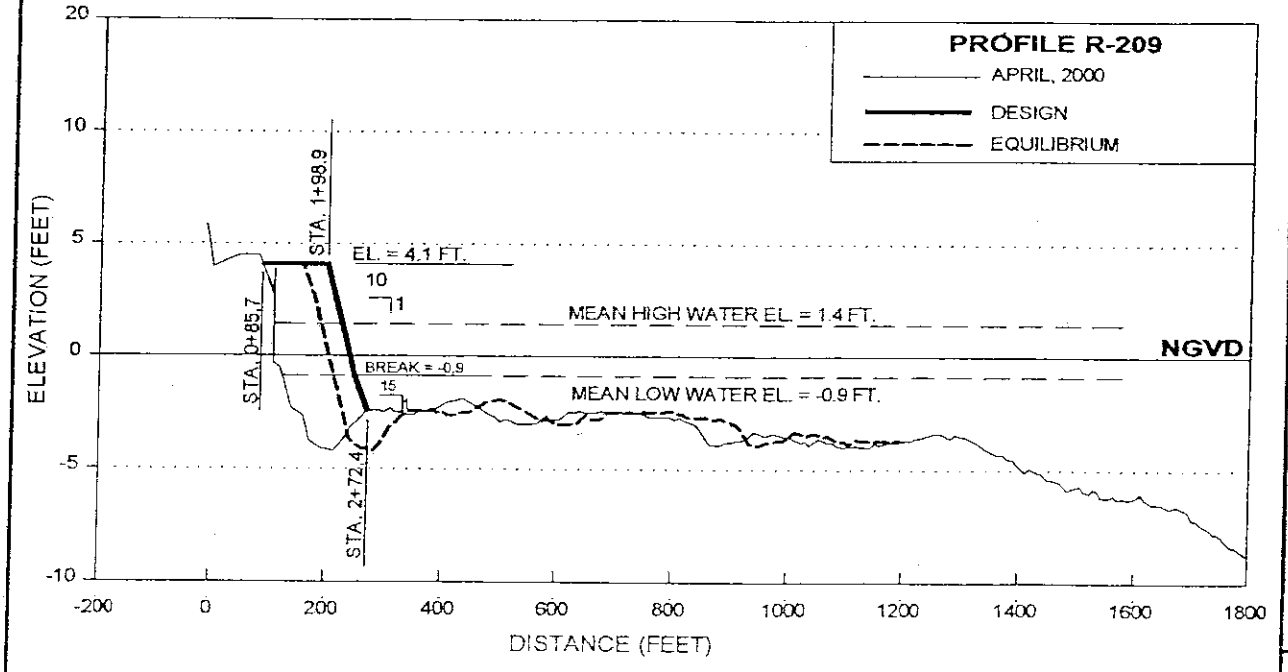
COMM. NO. 8410.02

SHEET: 30 OF 38

REV. 05/18/01





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ESTERO ISLAND
CROSS SECTIONS
LEE COUNTY, FLORIDA

TITLE:

2481 N.W. BOCA RATON BLVD.
BOCA RATON, FL. 33431

COASTAL PLANNING & ENGINEERING, INC.

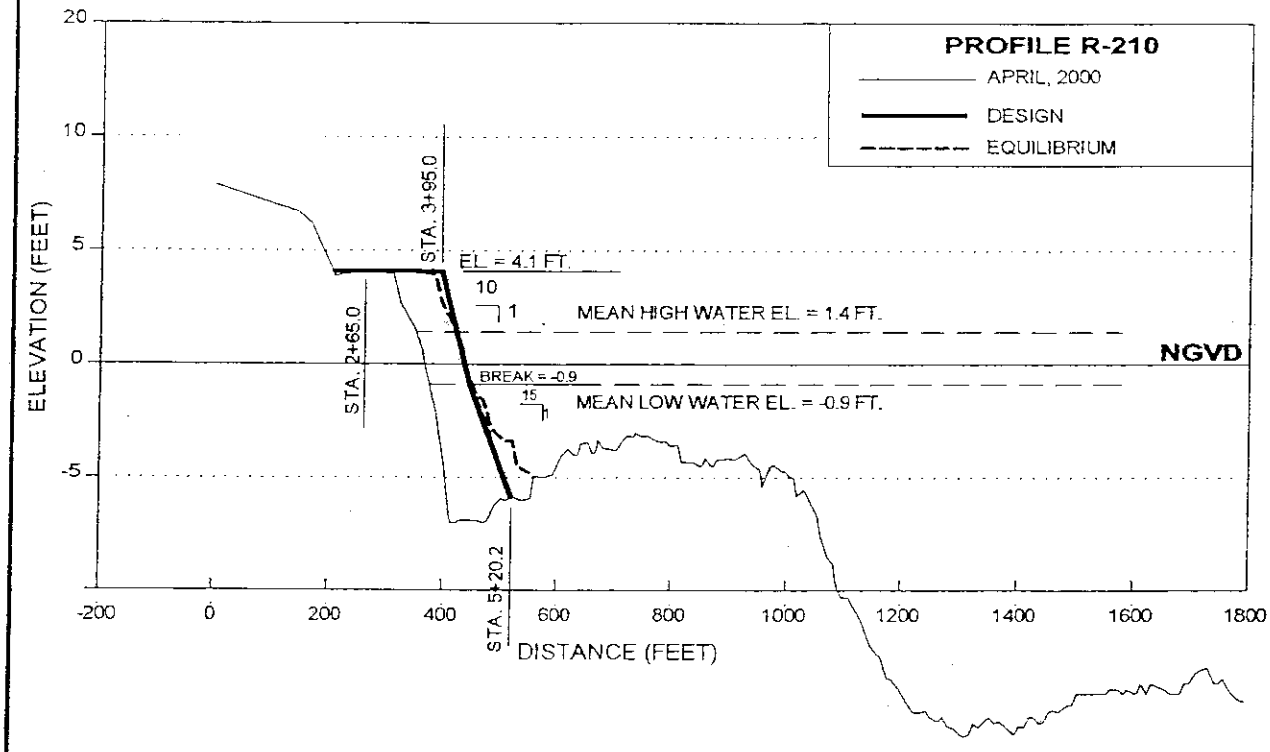
DATE: 7/21/00

BY: JRC

COMM. NO. 8410.02

SHEET: 31 OF 38

REV. 05/18/01



COE APPL# SAJ-2000-3017(IP-MN)

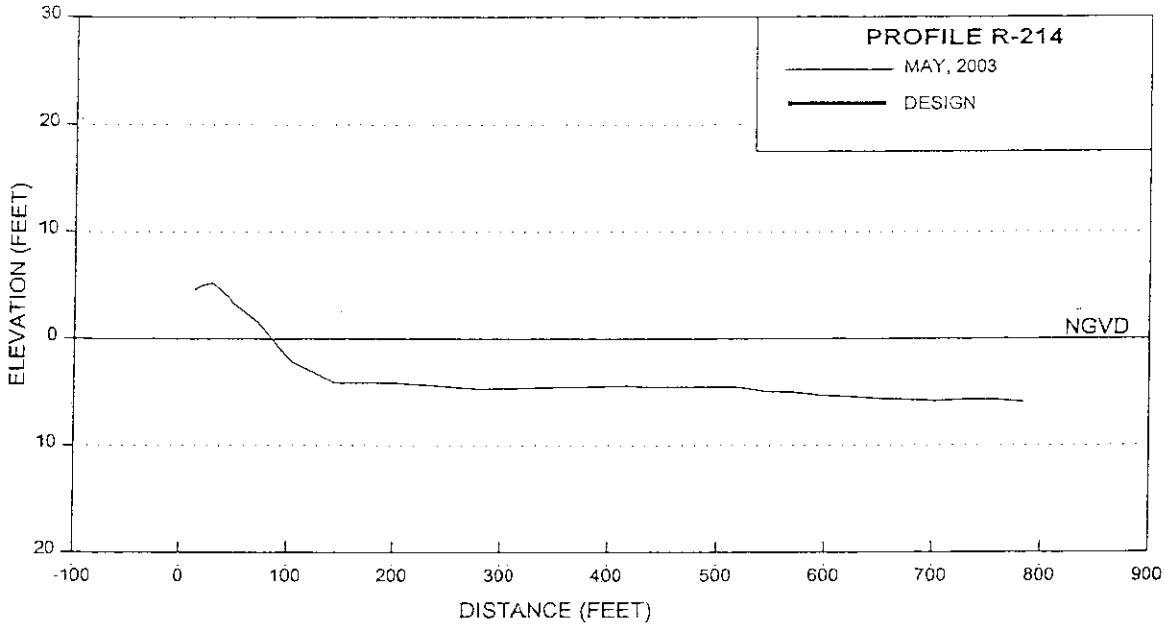
ESTERO ISLAND
CROSS SECTIONS
LEE COUNTY, FLORIDA

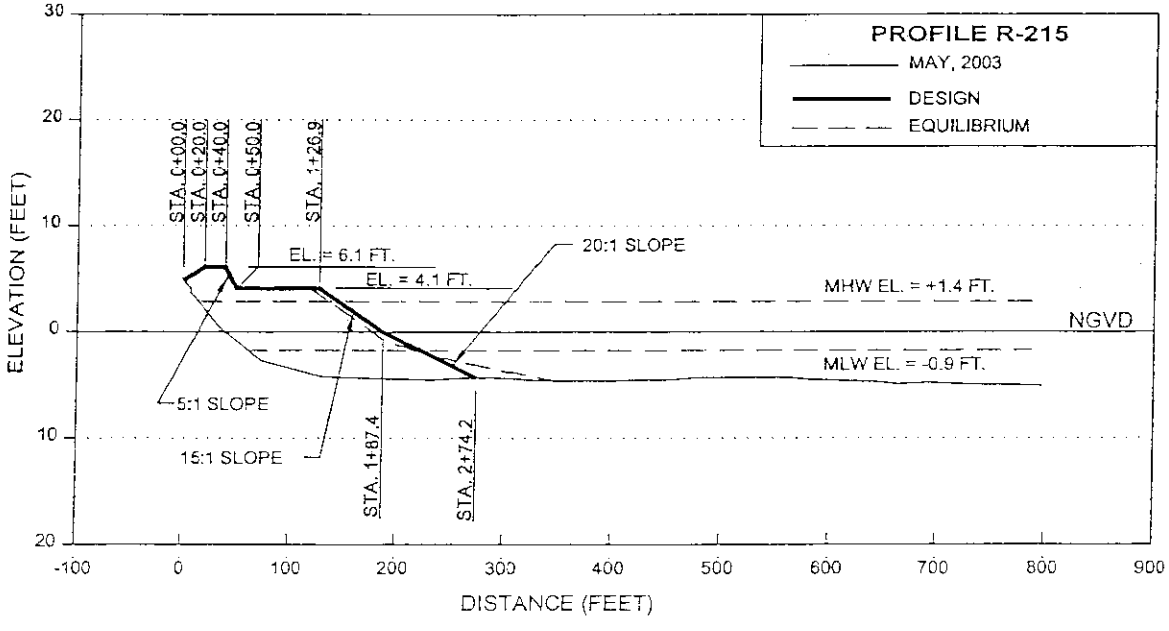
TITLE:

2481 N.W. BOCA RATON BLVD.
BOCA RATON, FL. 33431

COASTAL PLANNING & ENGINEERING, INC.

DATE: 7/21/00
BY: JRC
COMM. NO. 8410.02
SHEET: 32 OF 38
REV. 05/18/01





COE APPL# SAJ-2000-3017(IP-MN)

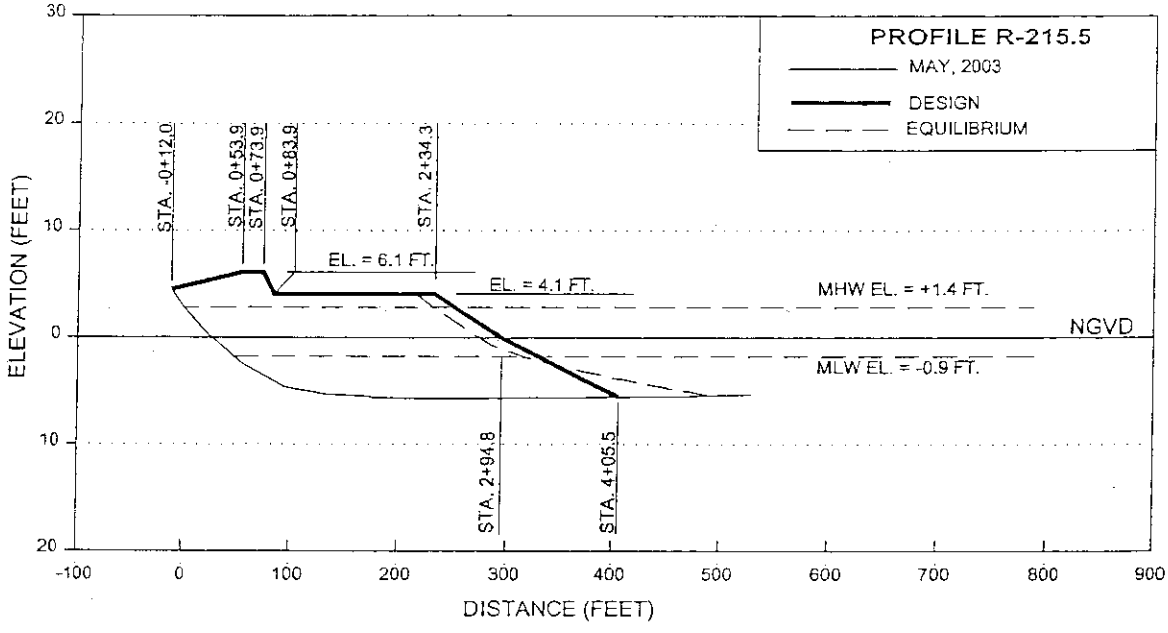
ESTERO ISLAND
CROSS SECTIONS
LEE COUNTY, FLORIDA

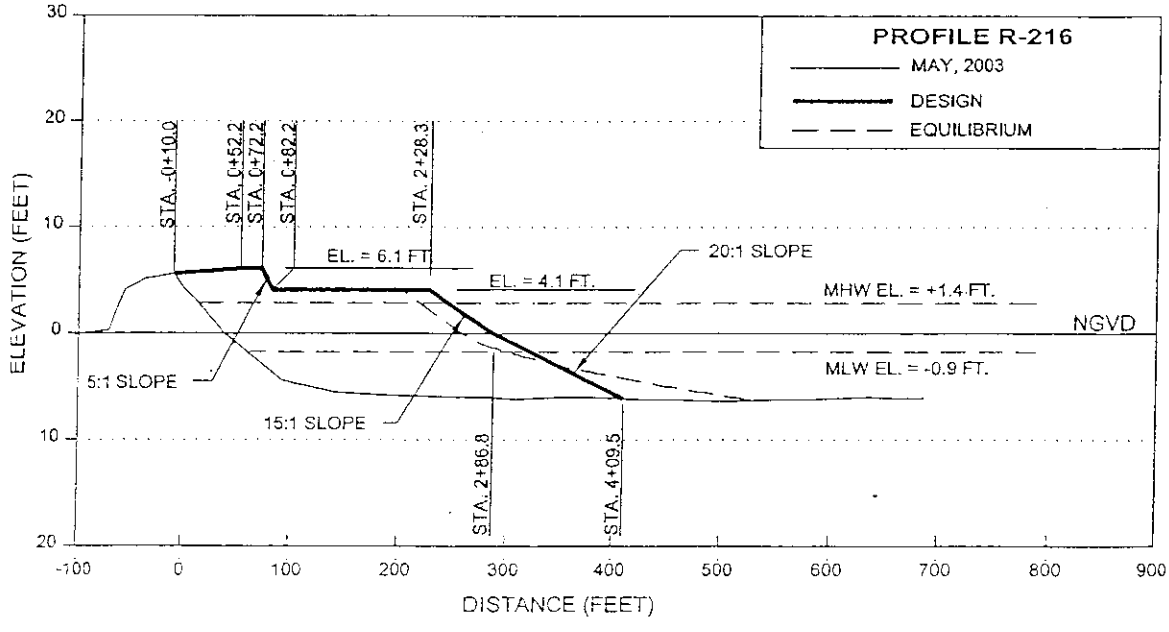
TITLE:

2481 N.W. BOCA RATON BLVD.
BOCA RATON, FL. 33431

COASTAL PLANNING & ENGINEERING, INC.

DATE: 7/21/00
BY: JRC
COMM. NO. 8410.02
SHEET: 33 OF 38
REV. 05/18/01





COE APPL# SAJ-2000-3017(IP-MN)

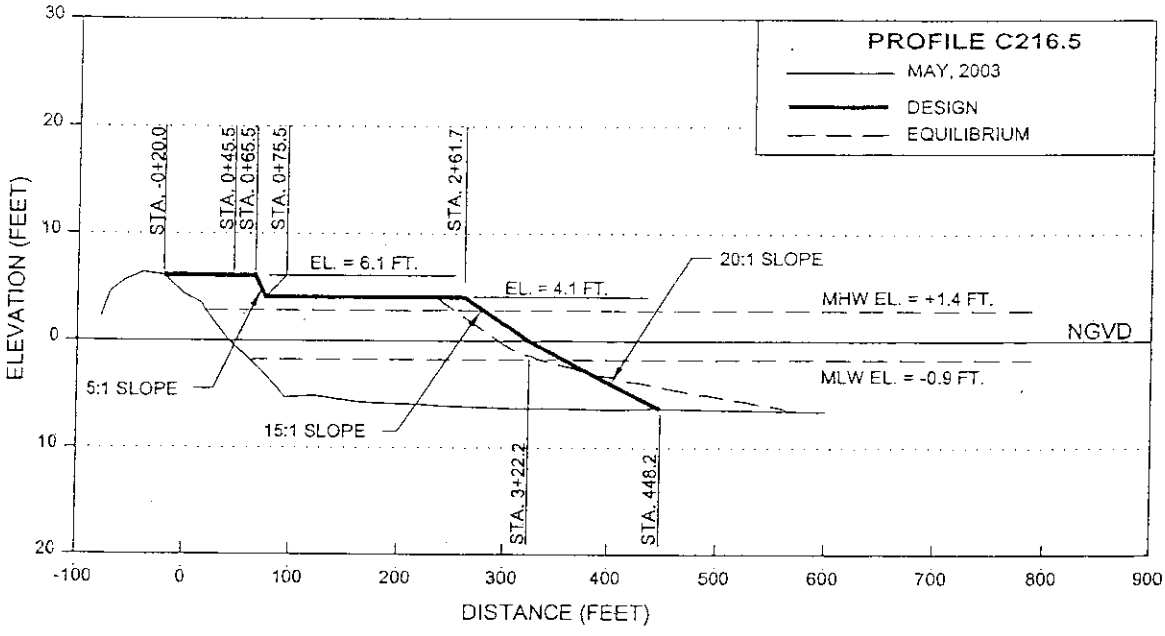
ESTERO ISLAND
CROSS SECTIONS
LEE COUNTY, FLORIDA

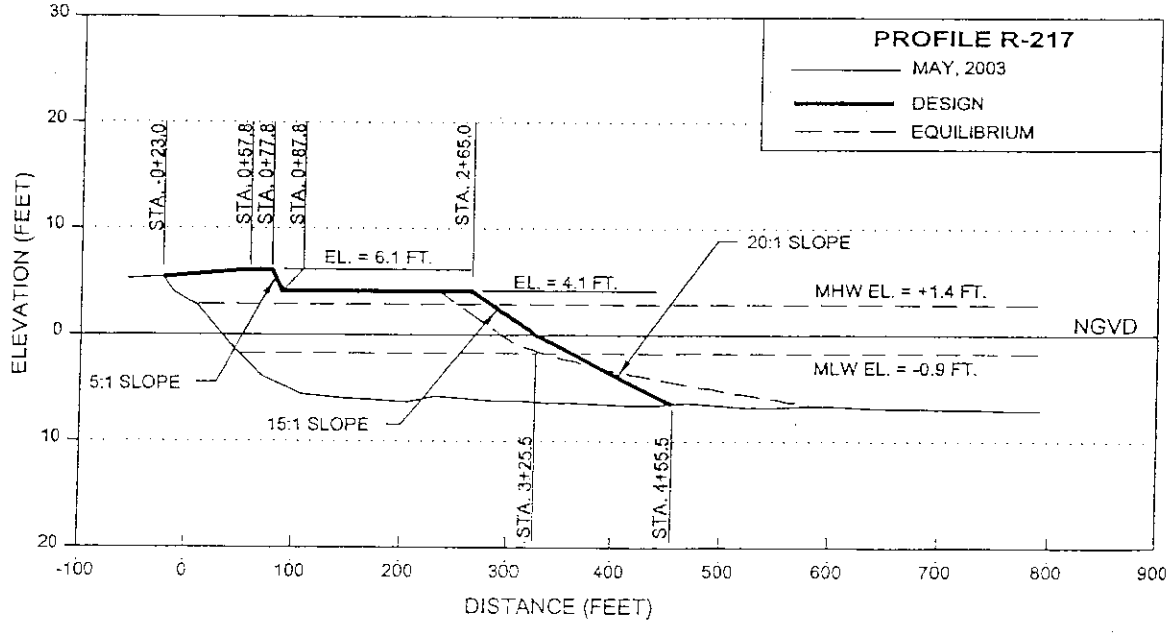
TITLE:

2481 N.W. BOCA RATON BLVD.
BOCA RATON, FL. 33431

COASTAL PLANNING & ENGINEERING, INC.

DATE: 7/21/00
BY: JRC
COMM. NO. 8410.02
SHEET: 34 OF 38
REV: 05/18/01





COE APPL# SAJ-2000-3017(IP-MN)

ESTERO ISLAND
CROSS SECTIONS
LEE COUNTY, FLORIDA

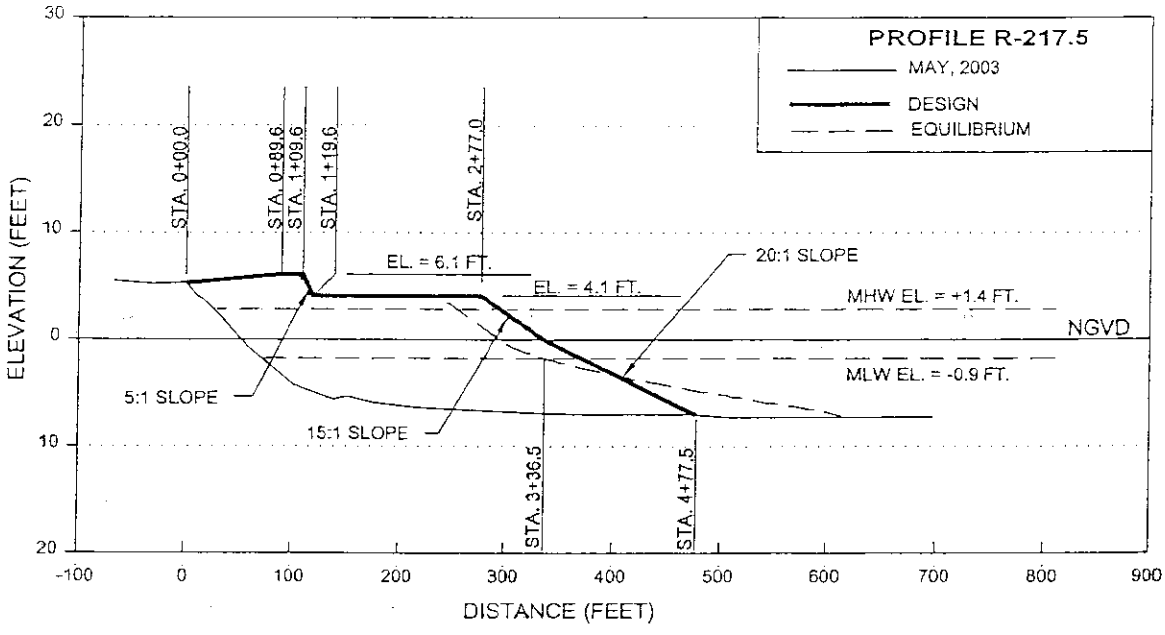
TITLE:

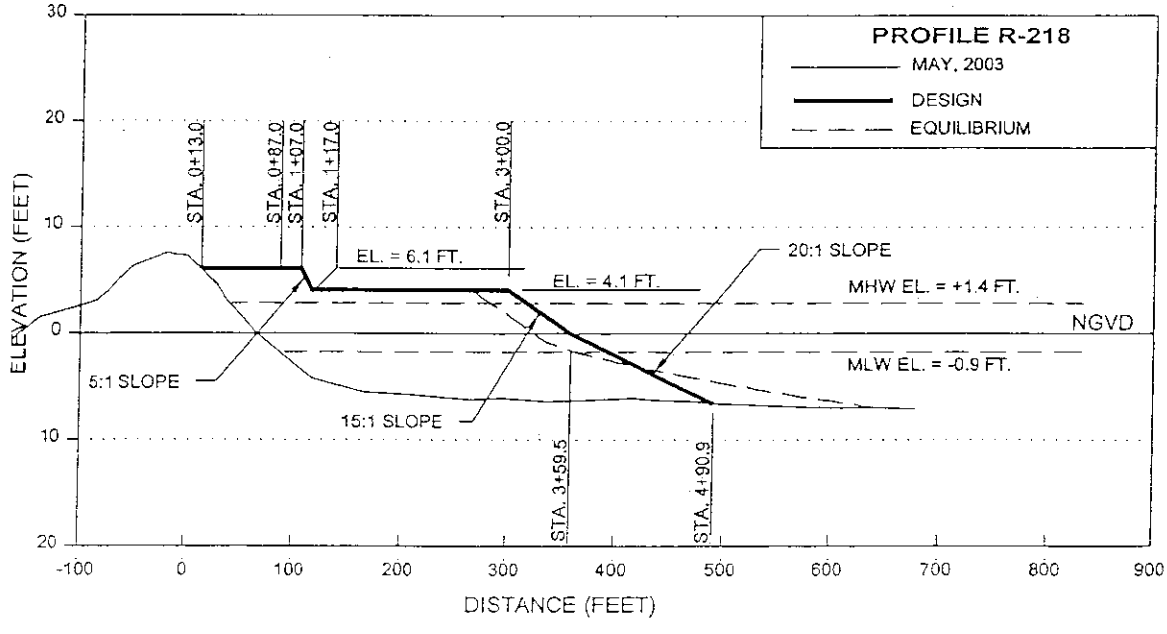
2481 N.W. BOCA RATON BLVD.
BOCA RATON, FL. 33431

COASTAL PLANNING & ENGINEERING, INC.

DATE: 7/21/00
BY: JRC
COMM. NO. 8410.02
SHEET: 35 OF 38

REV. 05/18/01





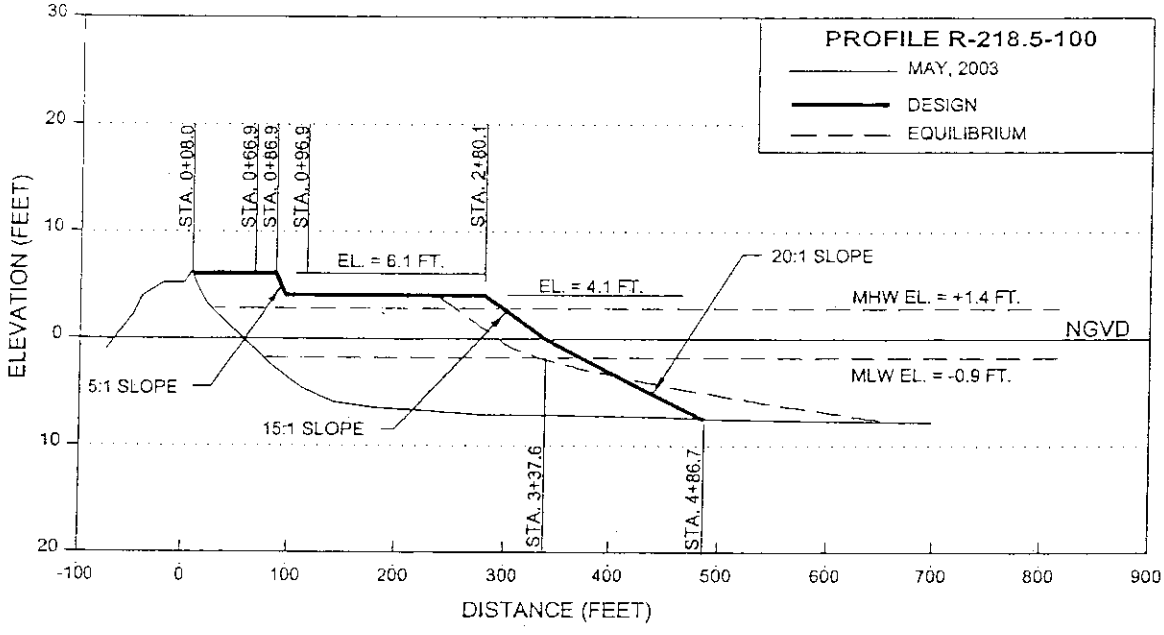
COE APPL# SAJ-2000-3017(IP-MN)

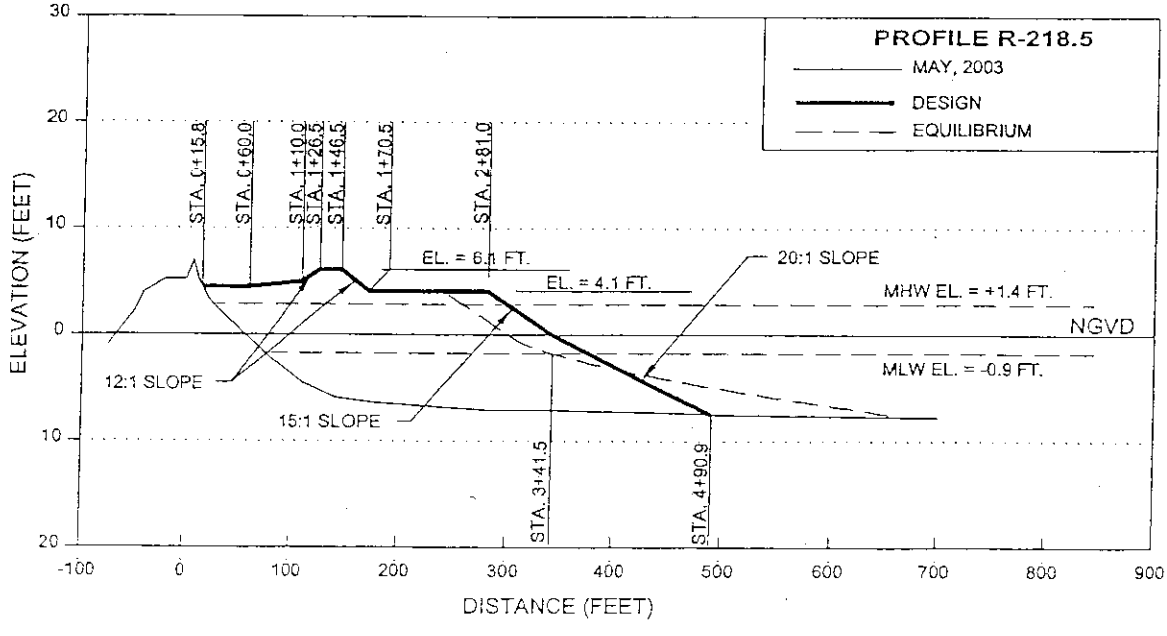
TITLE:
ESTERO ISLAND
CROSS SECTIONS
LEE COUNTY, FLORIDA

2481 N.W. BOCA RATON BLVD.
BOCA RATON, FL. 33431

COASTAL PLANNING & ENGINEERING, INC.

DATE: 7/21/00
BY: JRC
COMM. NO. 8410.02
SHEET: 35a OF 38
REV. 05/18/01





COE APPL# SAJ-2000-3017(IP-MN)

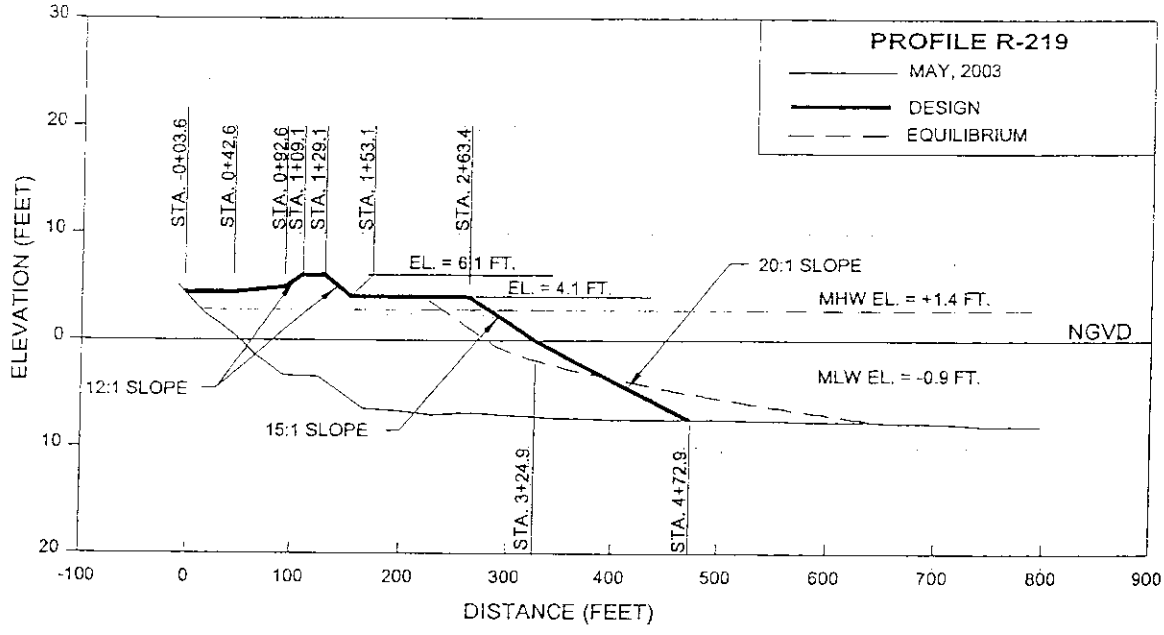
ESTERO ISLAND
CROSS SECTIONS
LEE COUNTY, FLORIDA

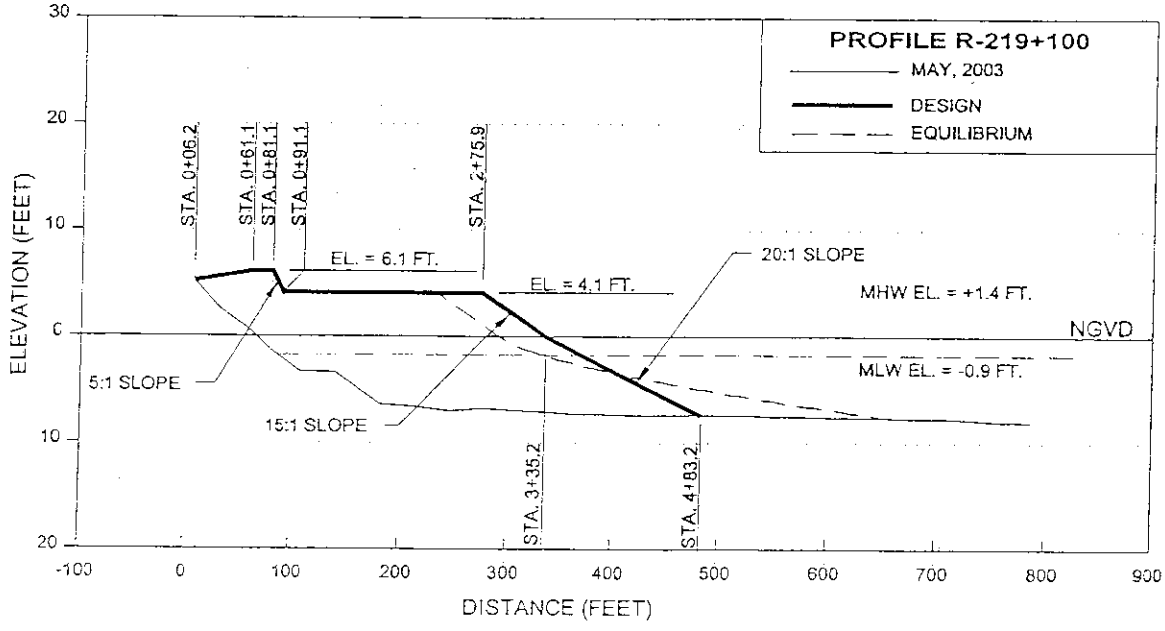
TITLE:

2481 N.W. BOCA RATON BLVD.
BOCA RATON, FL. 33431

COASTAL PLANNING & ENGINEERING, INC.

DATE: 7/21/00
BY: JRC
COMM. NO. 8410.02
SHEET: 35b OF 38





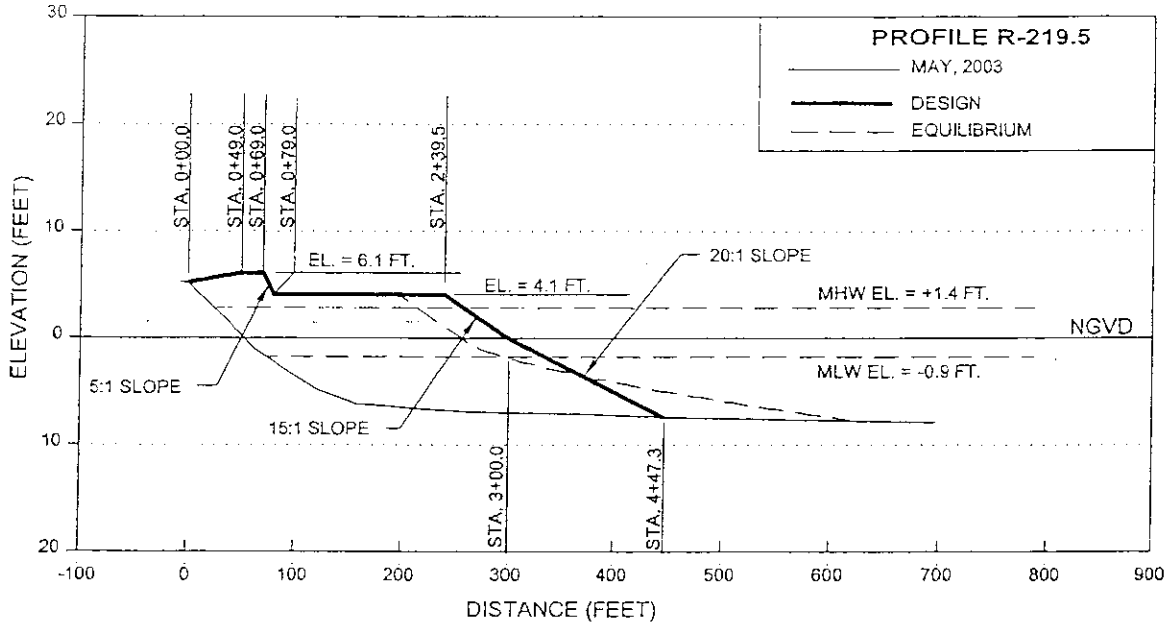
COE APPL# SAC-2000-3017(IP-MN)

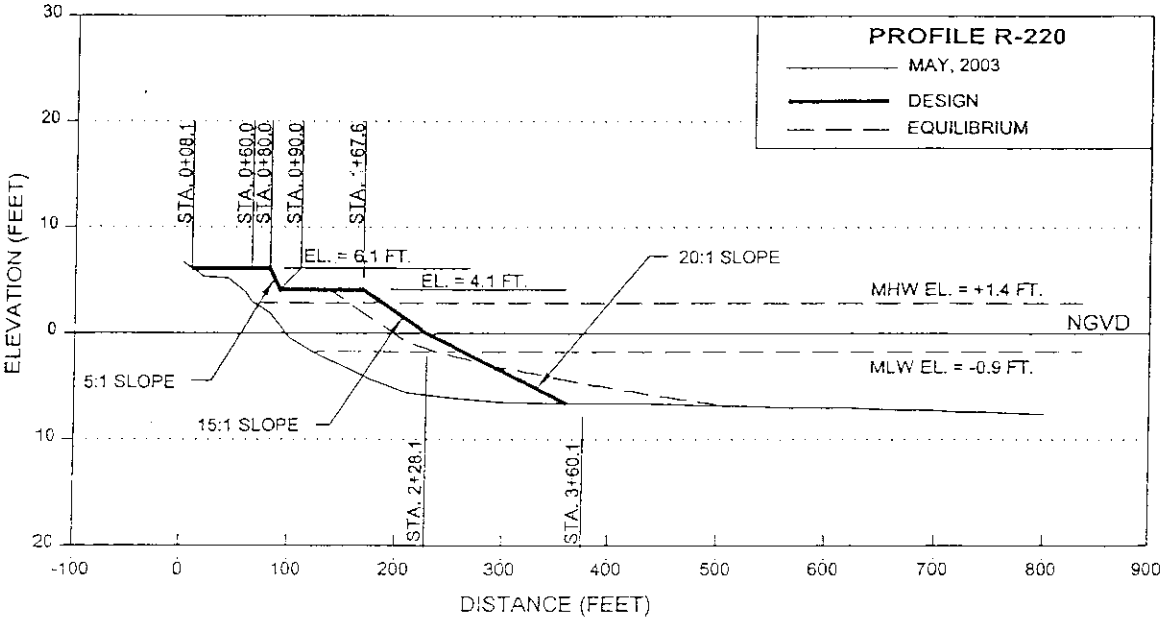
ESTERO ISLAND
CROSS SECTIONS
LEE COUNTY, FLORIDA

TITLE:

COASTAL PLANNING & ENGINEERING, INC.
2481 N.W. BOCA RATON BLVD.
BOCA RATON, FL. 33431

DATE:	7/21/00
BY:	JRC
COMM. NO.	8410.02
SHEET:	35c OF 38





COE APPL# SAC-2000-3017(IP-MN)

ESTERO ISLAND
CROSS SECTIONS
LEE COUNTY, FLORIDA

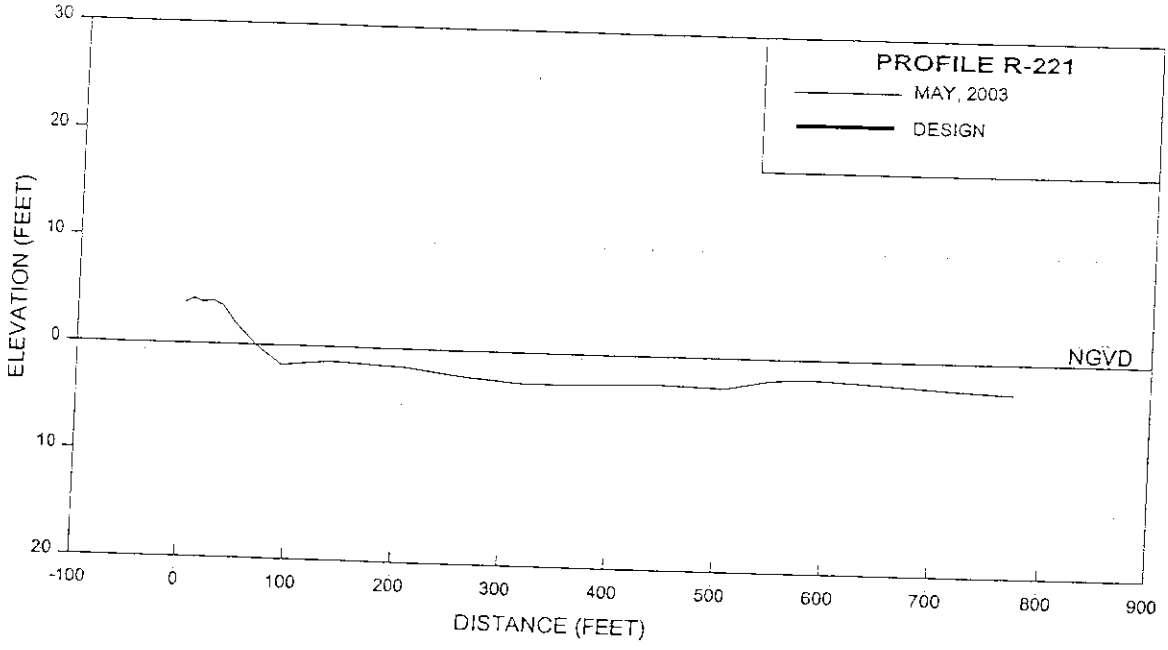
TITLE:

2481 N.W. BOCA RATON BLVD.
BOCA RATON, FL. 33431

COASTAL PLANNING & ENGINEERING, INC.

DATE: 7/21/00
BY: JRC
COMM. NO. 8410.02
SHEET: 35d OF 38

REV 05/16/01



COE APPL# SAJ-2000-3017(IP-MN)

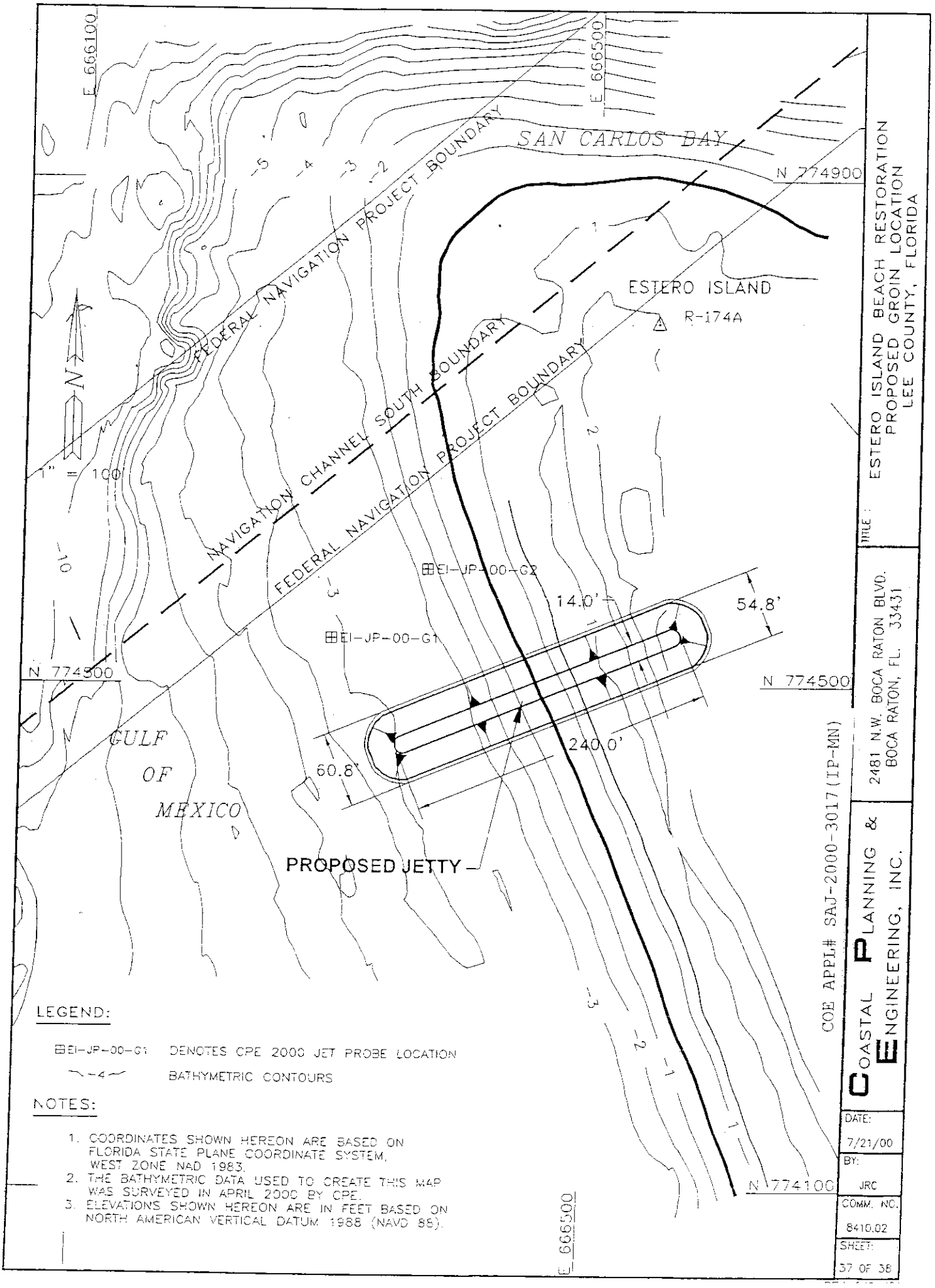
ESTERO ISLAND
CROSS SECTIONS
LEE COUNTY, FLORIDA

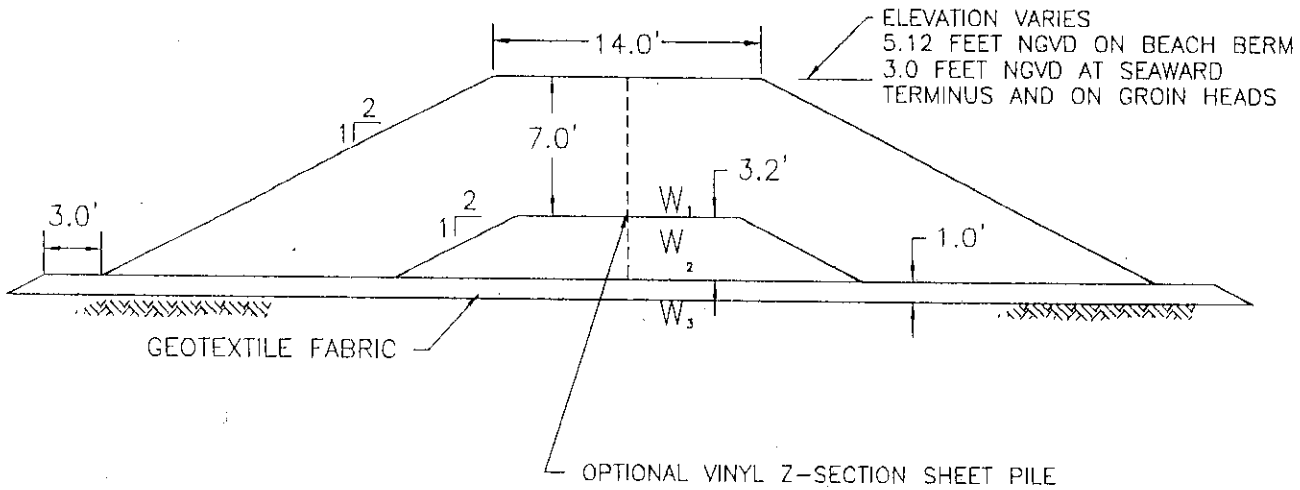
TITLE:

2481 N.W. BOCA RATON BLVD.
BOCA RATON, FL. 33431

COASTAL PLANNING & ENGINEERING, INC.

DATE: 7/21/00
BY: JRC
COMM. NO. 8410.02
SHEET: 36 OF 36
REV: 05/07/01


E 666100
E 666500
SAN CARLOS BAY
N 774900
FEDERAL NAVIGATION PROJECT BOUNDARY
ESTERO ISLAND
R-174A
NAVIGATION CHANNEL SOUTH BOUNDARY
FEDERAL NAVIGATION PROJECT BOUNDARY
1" = 100'
EI-JP-00-G2
EI-JP-00-G1
14.0'
54.8'
N 774500
240.0'
60.8'
GULF OF MEXICO
PROPOSED JETTY
N 774100
E 666500
LEGEND:
EI-JP-00-G1 DENOTES CPE 2000 JET PROBE LOCATION
-4- BATHYMETRIC CONTOURS
NOTES:
1. COORDINATES SHOWN HEREON ARE BASED ON FLORIDA STATE PLANE COORDINATE SYSTEM, WEST ZONE NAD 1983.
2. THE BATHYMETRIC DATA USED TO CREATE THIS MAP WAS SURVEYED IN APRIL 2000 BY CPE.
3. ELEVATIONS SHOWN HEREON ARE IN FEET BASED ON NORTH AMERICAN VERTICAL DATUM 1988 (NAVD 88).
COE APPL# SAJ-2000-3017(IP-MN)
COASTAL PLANNING & ENGINEERING, INC.
2481 N.W. BOCA RATON BLVD.
BOCA RATON, FL. 33431
TITLE:
ESTERO ISLAND BEACH RESTORATION
PROPOSED GROIN LOCATION
LEE COUNTY, FLORIDA
DATE: 7/21/00
BY: JRC
COMM. NO. 8410.02
SHEET: 37 OF 38



NOTES:

1. FILTER CLOTH WILL BE PLACED UNDER BEDDING LAYER.
2. ALL ARMOR STONE 145 PCF MINIMUM.
3. STONE SIZES AS FOLLOWS:
   W_1 = 2 TO 4 TONS
   W_2 = 600 LBS
   W_3 = 75 LBS

COE APPL# SAJ-2000-3017(IP-MN)

SCALE: 1" = 10'

SHEET: 38 OF 38	COMM. NO. 8410.02	BY: JRC	DATE: 7/21/00	COASTAL PLANNING & ENGINEERING, INC.	2481 N.W. BOCA RATON BLVD. BOCA RATON, FL. 33431

TITLE :
ESTERO ISLAND
TERMINAL GROIN CROSS SECTON

United States Department of the Interior

FISH AND WILDLIFE SERVICE
South Florida Ecological Services Office
1339 20th Street
Vero Beach, Florida 32960

March 12, 2002

Mr. Mike Nowicki
U.S. Army Corps of Engineers
Jacksonville District
Post Office Box 4970
Jacksonville, Florida 32232-0019

Log No.: 4-1-01-I-133
Application No.: 200003017 (IP-MN)
Applicant: Lee County Board of
County Commissioners
County: Lee County

Dear Mr. Nowicki:

This document is the Fish and Wildlife Service's (Service) Biological Opinion based on our review of the proposed Estero Island and Lovers Key Shoreline Protection Project in Lee County, Florida, and its effects on the loggerhead sea turtle (*Caretta caretta*), green sea turtle (*Chelonia mydas*), leatherback sea turtle (*Dermochelys coriacea*), and hawksbill sea turtle (*Eretmochelys imbricata*) in accordance with section 7 of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 *et seq.*). Although the Kemps ridley (*Lepiochelys kempii*) and leatherback sea turtles have been documented nesting on Florida's west coast, the likelihood that either species will nest within the project area is low. In addition, no hawksbill sea turtles have ever been documented as nesting in Lee County. Therefore, this biological opinion pertains only to the loggerhead and green sea turtles that are the two species which predictably and regularly nest in Lee County.

This Biological Opinion is based on information provided in the Public Notice dated August 24, 2000 for the proposed project, field investigations, meetings, letter correspondence, email correspondence, and phone conversations with the U.S Army Corps of Engineers (Corps); Lee County and their consultants, Coastal Planning and Engineering (CP&E); the Florida Fish and Wildlife Conservation Commission (FWC); Florida Department of Environmental Protection (DEP), Office of Beaches and Coastal Systems; and other sources of information. A complete administrative record of this consultation is on file at the South Florida Ecological Services Office in Vero Beach, Florida.

CONSULTATION HISTORY

- April 1999: In a letter and biological assessment, the Corps determined the actions of the proposed project will not affect the manatee, but may affect the loggerhead and green sea turtles. Consequently, the Corps requested initiation of formal consultation with the Service concerning those species.

- September 1999: The Service concurred with the Corps determinations and submitted its Biological Opinion, FWS log number: 4-1-99-F-812, for the Lee County Shoreline Protection Project (Gasparilla and Estero Islands). The proposed terminal groin on north Estero Island was included in the federal project as authorized in 1970. However, possible adverse effects of the groin on listed sea turtles was not addressed in the Service's 1999 Biological Opinion.

- March 2000: The Service submitted a final Fish and Wildlife Coordination Act report in accordance with the provisions of the Fish and Wildlife Coordination Act of 1958 (48 Stat. 401, as amended; 16 U.S.C. 661 *et seq.*).

- August 2000: In a Public Notice, the Corps states that the applicant (Lee County) proposes to modify the original Estero Island portion of the federal project through the addition of the Lover's Key segment and selection of two new borrow sites. Based on these modifications, the Corps requested reinitiation of formal consultation regarding sea turtles and the West Indian manatee (*Trichechus manatus*).

- February through March 2001: Through correspondence with the Corps via phone and email, the Service concluded that a new biological opinion would be required to address our concerns regarding the borrow site changes and the addition of Lovers' Key to the project on listed sea turtles. However, no additional consultation is required regarding the effects of the modified project on the manatee since the Corps has agreed to implement the *Standard Manatee Protection Construction Conditions*. Therefore, the Service's 1999 Biological Opinion remains valid for the manatee.

- August 14, 2001: The Service hosted a meeting with Lee County and CP&E to discuss the project and provide information necessary for the preparation of the biological opinion.

- September 25, 2001: The Service participated in a site visit with Lee County staff to observe the shoreline changes within the project area as a result of the recent tropical storm activity.

BIOLOGICAL OPINION

DESCRIPTION OF THE PROPOSED ACTION

The project is located on Florida's southwest coast in the Gulf of Mexico along the shoreline of Estero Island and Lovers' Key, Sections 3, 10, 11, 14, 19, 24, 28-30, and 34, Township 46 South, Range 23 East, Lee County, Florida. These areas are described as critically eroded, as defined by the State of Florida, and unable to provide sufficient storm protection for upland properties and infrastructure. The Estero Island and Lovers' Key Beach Restoration Project is divided into three reaches, as follows:

Reach 1- North Estero Island: The Corps proposes to place approximately 900,000 cubic yards (cy) of beach compatible material along approximately 4.6 miles (7.4 km) of shoreline between monuments R-175 and R-198 and construct a terminal groin approximately 300 feet north of monument R-175. The terminal groin is proposed to be constructed of limestone boulders to a length of 240 feet and a base width of 60.8 feet situated perpendicular to the shoreline with 90 feet landward of the April 2000 mean high water (MHW) and 150 feet seaward of the April 2000 MHW shoreline. The proposed beach renourishment project consists of constructing a 4.1 feet NGVD berm and a 40 foot shoreline extension from the April 2000 MHW location. The existing beach has a 0.14 mm composite mean grain size with a silt content of 1.9 percent. In addition, removal remnants of derelict erosion control structures will be included in the project.

Reach 2- South Estero Island: This segment includes placement of approximately 90,000 cy of material along approximately 0.51 mile of the mainland shoreline. The northern limit of the segment is located in the vicinity of monument R-208 which is adjacent to the relatively stable emergent shoal known as Little Estero Island and extending south to a point 500 feet east of R-210. No sand will be placed on Little Estero Island nor will the salt-water pond that separates Little Estero Island from the mainland become isolated from the Gulf of Mexico as a result of the project. The existing beach has a 0.19 mm grain size with a silt content of 2.58 percent. The proposed project consists of a 4.1 feet NGVD berm and a 40 foot shoreline extension from the April 2000 MHW location.

Conditions on south Estero Island, particularly within the sand-spit region of Little Estero Island, have changed significantly since 2000. As a result of these natural storm driven changes, the project description may be modified to reflect the variability within Reach 2. The following modifications were proposed in the October 31, 2001, letter from CP&E to the DEP:

1. No construction may be required, if sand continues to move along the outside spit area and fill the beach to the desired width.
2. Use heavy equipment to reconnect the salt pond to the Gulf, if the salt pond remains isolated then relocate a portion of the sand spit within the proposed fill area.
3. Stock pile borrow material in the vicinity of monument R-198 during the construction of Reach 1 (North Estero Island segment) then transfer the material by truck-haul and place within the fill area through an upland access point.
4. Hydraulically dredge material from Borrow Site II as originally proposed, but is likely the fill

volume will be reduced. However due to the expansion of the spit, the pipeline corridor would likely cross the southern portion of the spit.

Reach 3- Lovers Key: This segment includes placement of approximately 290,000 cy of material along 1.1 miles of the Lovers Key State Recreational Area shoreline beginning 500 feet north of monument R-215 and proceeding to a point 500 feet south of monument R-220. The proposed project also consists of constructing a 4.1 feet NGVD berm and a 40 foot shoreline extension from the April 2000 MHW location. The existing beach has a 0.23mm grain size with a silt content of 2.3 percent. In addition, the project description includes dune restoration, the removal of standing and fallen Australian pine along the berm, and the removal of derelict structures.

As a result of the storm damage and additional erosion of the Lovers Key shoreline in 2001, the following project modifications were also proposed in the October 31, 2001, letter from CP&E to the DEP. It is stated alternatives one through three are considered temporary until the proposed renourishment occurs.

1. Close the breach by using the existing sand that was relocated into the adjacent lagoon by the storm surge and removing sand from the northern accretioned spit .
2. Close the breach by installing sand-filled tubes six feet high by 12 feet wide across and constructing pedestrian access by piling sand approximately 12 feet wide behind the sand tubes. This sand will be obtained from the same areas as proposed above.
3. Close the breach by installing temporary sheet pile across the breach and backfill with a 12 foot wide section of sand to be used for pedestrian access. This sand will be obtained from the same areas as proposed above.
4. Due to the 2001 shoreline erosion, it is estimated an additional 25,000 cy of material will likely be required to complete the project.

In total, the project area (Reaches 1, 2, and 3) consists of the renourishment of approximately 6.2 miles of the Lee County Shoreline.

The Corps proposes to extract sand with a hydraulic cutterhead dredge from two borrow sites located offshore of the project sites. Borrow site I is located 1.6 miles offshore of Estero Island and has a composite mean grain size of 0.19 mm with a composite silt content of 5.0 percent. Borrow site II is located 0.5 mile southwest of south Estero Island, and has a composite mean grain size of 0.21 mm with a composite silt content of 3.7 percent. A comparison of the borrow site material and the existing material within the project locations are shown on the following table provided by CP&E.

Item	North Estero Island	South Estero Island	Lovers Key
Existing Beach Sand			
Mean (mm)	0.13	0.20	0.20
Mean (phi)	2.9	2.35	2.31
Sorting (phi)	0.47	1.04	0.87
Silt (%)	6.39%	2.46%	2.48%
Color	5Y-8/1 to -6/1	5Y-8/1 to -7/1	5Y-8/1 to -7/1
Segment Volume (c.y.)	1,010,000	70,000	335,000
Total Volume (c.y.)	1,415,000		
Fill Material	**Borrow Area I**	**Borrow Area II** Total Borrow Area	Coarse Portion*
Mean (mm)	0.15	0.16	0.17
Mean (phi)	2.73	2.60	2.58
Sorting (phi)	0.97	1.12	1.11
Silt (%)	4.04%	5.49%	4.16%
Insitu color	5Y-7/1 to -5/1	5Y-7/1 to -5/1	5Y-7/1 to -5/1
Washed color	5Y-8/1 to -6/1	5Y-8/1 to -7/1	5Y-8/1 to -7/1
Volume available (c.y.)	1,841,700	803,400	384,500
Total available volume	2,645,100 c.y.		

* Instruction will be given to the contractor to dredge cores EI-00-10 and EI-00-14 first to obtain coarse material.

Since a construction time frame for this activity has not been finalized, construction may possibly coincide with sea turtle nesting season (April 1-November 30). If construction occurs during the sea turtle nesting season, the Corps has incorporated the following sea turtle protection measures into the project design: (1) relocation of all detected sea turtle eggs 65 days prior to deposition of sand on the beach or by May 1, which ever is later, (2) measuring of compaction of the deposited fill with a cone penetrometer, (3) tilling of the beach if the average cone penetrometer index exceeds 500 cone penetrometer units (cpu), and (4) leveling of any escarpments which exceed 18 inches in height and extend more than 100 feet in length which exceed 18 inches in height and extend more than 100 feet in length.

STATUS OF THE SPECIES/CRITICAL HABITAT

Species/critical habitat description

Loggerhead Sea Turtle

The loggerhead sea turtle (*Caretta caretta*), listed as a threatened species on July 28, 1978 (43 FR 32800), inhabits the continental shelves and estuarine environments along the margins of the Atlantic, Pacific, and Indian Oceans. Loggerhead sea turtles nest within the continental U.S. from Louisiana to Virginia. Major nesting concentrations in the U.S. are found on the coastal islands of North Carolina, South Carolina, and Georgia, and on the Atlantic and Gulf coasts of Florida (Hopkins and Richardson 1984).

No critical habitat has been designated for the loggerhead sea turtle.

Green Sea Turtle

The green sea turtle (*Chelonia mydas*) was federally listed as a protected species on July 28, 1978 (43 FR 32800). Breeding populations of the green turtle in Florida and along the Pacific Coast of Mexico are listed as endangered; all other populations are listed as threatened. The green turtle has a worldwide distribution in tropical and subtropical waters. Major green turtle nesting colonies in the Atlantic occur on Ascension Island, Aves Island, Costa Rica, and Surinam. Within the U.S., green turtles nest in small numbers in the U.S. Virgin Islands and Puerto Rico, and in larger numbers along the east coast of Florida, particularly in Brevard, Indian River, St. Lucie, Martin, Palm Beach, and Broward Counties (National Marine Fisheries Service and U.S. Fish and Wildlife Service 1991a). Nesting also has been documented along the Gulf coast of Florida on Santa Rosa Island (Okaloosa and Escambia Counties) and from Pinellas County through Collier County (Florida Department of Environmental Protection, unpublished data). Green turtles have been known to nest in Georgia, but only on rare occasions (Georgia Department of Natural Resources, unpublished data). The green turtle also nests sporadically in North Carolina and South Carolina (North Carolina Wildlife Resources Commission, unpublished data; South Carolina Department of Natural Resources, unpublished data). Unconfirmed nesting of green turtles in Alabama has also been reported (Bon Secour National Wildlife Refuge, unpublished data).

Critical habitat for the green sea turtle has been designated for the waters surrounding Culebra Island, Puerto Rico, and its outlying keys.

Life history

Loggerhead Sea Turtle

Loggerheads are known to nest from one to seven times within a nesting season (Talbert *et al.* 1980, Richardson and Richardson 1982, Lenarz *et al.* 1981, among others); the mean is approximately 4.1 (Murphy and Hopkins 1984). The interval between nesting events within a season varies around a mean of about 14 days (Dodd 1988). Mean clutch size varies from about 100 to 126 along the southeastern United States coast (National Marine Fisheries Service and U.S. Fish and Wildlife Service 1991b). Nesting migration intervals of 2 to 3 years are most common in loggerheads, but the number can vary from 1 to 7 years (Dodd 1988). Age at sexual maturity is believed to be about 20 to 30 years (Turtle Expert Working Group 1998).

Green Sea Turtle

Green turtles deposit from one to nine clutches within a nesting season, but the overall average is about 3.3. The interval between nesting events within a season varies around a mean of about 13 days (Hirth 1997). Mean clutch size varies widely among populations. Average clutch size reported for Florida was 136 eggs in 130 clutches (Witherington and Ehrhart 1989). Only occasionally do females produce clutches in successive years. Usually 2, 3, 4, or more years intervene between breeding seasons (National Marine Fisheries Service and U.S. Fish and

Wildlife Service 1991a). Age at sexual maturity is believed to be 20 to 50 years (Hirth 1977).

Population dynamics

Loggerhead Sea Turtle

Total estimated nesting in the Southeast is approximately 50,000 to 70,000 nests per year (National Marine Fisheries Service and U.S. Fish and Wildlife Service 1991b). In 1998, there were over 80,000 nests in Florida alone. From a global perspective, the southeastern U.S. nesting aggregation is of paramount importance to the survival of the species and is second in size only to that which nests on islands in the Arabian Sea off Oman (Ross 1982, Ehrhart 1989, National Marine Fisheries Service and U.S. Fish and Wildlife Service 1991b). The status of the Oman colony has not been evaluated recently, but its location in a part of the world that is vulnerable to disruptive events (e.g., political upheavals, wars, catastrophic oil spills) is cause for considerable concern (Meylan *et al.* 1995). The loggerhead nesting aggregations in Oman, the southeastern U.S., and Australia account for about 88 percent of nesting worldwide (National Marine Fisheries Service and U.S. Fish and Wildlife Service 1991b). About 80 percent of loggerhead nesting in the southeastern U.S. occurs in six Florida counties (Brevard, Indian River, St. Lucie, Martin, Palm Beach, and Broward Counties) (National Marine Fisheries Service and U.S. Fish and Wildlife Service 1991b).

Green Sea Turtle

About 200 to 1,100 females are estimated to nest on beaches in the continental U.S. In the U.S. Pacific, over 90 percent of nesting throughout the Hawaiian archipelago occurs at the French Frigate Shoals, where about 200 to 700 females nest each year. Elsewhere in the U.S. Pacific, nesting takes place at scattered locations in the Commonwealth of the Northern Marianas, Guam, and American Samoa. In the western Pacific, the largest green turtle nesting aggregation in the world occurs on Raine Island, Australia, where thousands of females nest nightly in an average nesting season. In the Indian Ocean, major nesting beaches occur in Oman where 6,000 to 20,000 females are reported to nest annually.

Status and distribution

Loggerhead Sea Turtle

Genetic research (mtDNA) has identified four loggerhead nesting subpopulations in the western North Atlantic: (1) the Northern Subpopulation occurring from North Carolina to around Cape Canaveral, Florida (about 29° N.); (2) South Florida Subpopulation occurring from about 29°N. on Florida's east coast to Sarasota on Florida's west coast; (3) Northwest Florida Subpopulation occurring at Eglin Air Force Base and the beaches near Panama City; and (4) Yucatán Subpopulation occurring on the eastern Yucatán Peninsula, Mexico (Bowen 1994, 1995; Bowen *et al.* 1993; Encalada *et al.* 1998). These data indicate that gene flow between these four regions is very low. If nesting females are extirpated from one of these regions, regional dispersal will not be sufficient to replenish the depleted nesting subpopulation. The Northern Subpopulation has declined substantially since the early 1970s, but most of that decline occurred prior to 1979.

No significant trend has been detected in recent years (Turtle Expert Working Group 1998, 2000). Adult loggerheads of the South Florida Subpopulation have shown significant increases over the last 25 years, indicating that the population is recovering, although a trend could not be detected from the State of Florida's Index Nesting Beach Survey program from 1989 to 1998. Nesting surveys in the Northwest Florida and Yucatán Subpopulations have been too irregular to date to allow for a meaningful trend analysis (Turtle Expert Working Group 1998, 2000).

Threats include incidental take from channel dredging and commercial trawling, longline, and gill net fisheries; loss or degradation of nesting habitat from coastal development and beach armoring; disorientation of hatchlings by beachfront lighting; excessive nest predation by native and non-native predators; degradation of foraging habitat; marine pollution and debris; watercraft strikes; and disease. There is particular concern about the extensive incidental take of juvenile loggerheads in the eastern Atlantic by longline fishing vessels from several countries.

Green Sea Turtle

Total population estimates for the green turtle are unavailable, and trends based on nesting data are difficult to assess because of large annual fluctuations in numbers of nesting females. For instance, in Florida, where the majority of green turtle nesting in the southeastern U.S. occurs, estimates range from 200 to 1,100 females nesting annually. Populations in Surinam, and Tortuguero, Costa Rica, may be stable, but there is insufficient data for other areas to confirm a trend.

A major factor contributing to the green turtle's decline worldwide is commercial harvest for eggs and food. Fibropapillomatosis, a disease of sea turtles characterized by the development of multiple tumors on the skin and internal organs, is also a mortality factor and has seriously impacted green turtle populations in Florida, Hawaii, and other parts of the world. The tumors interfere with swimming, eating, breathing, vision, and reproduction, and turtles with heavy tumor burdens may die. Other threats include loss or degradation of nesting habitat from coastal development and beach armoring; disorientation of hatchlings by beachfront lighting; excessive nest predation by native and non-native predators; degradation of foraging habitat; marine pollution and debris; watercraft strikes; and incidental take from channel dredging and commercial fishing operations.

Analysis of the species/critical habitat likely to be affected

The proposed action has the potential to adversely affect nesting females, nests, and hatchlings within the proposed project area. The effects of the proposed action on sea turtles will be considered further in the remaining sections of this biological opinion. Potential effects include destruction of nests deposited within the boundaries of the proposed project, harassment in the form of disturbing or interfering with female turtles attempting to nest within the construction area or on adjacent beaches as a result of construction activities, harm to nesting females and hatchlings by heavy equipment, entrapment of nesting females and hatchlings by groins, disorientation of hatchling turtles on beaches adjacent to the construction area as they emerge from the nest and crawl to the water as a result of project lighting, increased hatchling predation due to predator concentration at the groins, and behavior modification of nesting females due to

escarpment formation within the project area during a nesting season resulting in false crawls or situations where they choose marginal or unsuitable nesting areas to deposit eggs. The quality of the placed sand could affect the ability of female turtles to nest, the suitability of the nest incubation environment, and the ability of hatchlings to emerge from the nest.

Critical habitat has not been designated in the continental United States; therefore, the proposed action would not result in an adverse modification.

ENVIRONMENTAL BASELINE

Status of the species within the action-area

The distribution of sea turtle nesting activity on Florida's Southwest Gulf Coast (Sarasota, Charlotte, Lee, and Collier counties) is understood less than that of the East Coast epicenter of sea turtle nesting between Brevard and Palm Beach counties (Addison *et al.* 2000). Ten to twelve percent of the total nesting activity on Florida's beaches occurs on Florida's Gulf Coast (Addison *et al.* 2000). During the 1994 to 1999 nesting seasons, Sarasota, Charlotte, Collier, and Lee Counties have accounted for 41, 14, 15, and 8 percent of the overall nesting in the southern Gulf coast region, respectively. During the 2000 nesting season, of the 41.4 miles (66.9 km) of Lee County shoreline surveyed, data show a total of 1,968 sea turtle emergences (940 nests and 1028 false crawls) according to the FWC's Statewide Sea Turtle Nesting Survey Data, 2000.

Loggerhead Sea Turtle

The loggerhead sea turtle nesting and hatching season for Southern Gulf of Mexico beaches (includes Pinellas through Monroe Counties in Florida) extends from April 1 through November 30. Incubation ranges from about 45 to 95 days.

The following table shows the nesting activity of the loggerhead sea turtle within the project area between 1991 and 2000.

Table 1. Loggerhead sea turtle nesting activity, including false crawls for North Estero (Reach 1), South Estero (Reach 2), and Lovers Key (Reach 3).

Year	North Estero				South Estero				Lovers Key			
Year	*FC	Nests	Total	Nest/mi	FC	Nests	Total	Nest/mi	FC	Nests	Total	Nests/mi
1991	29	12	41	2.6	7	1	8	0.5	15	33	48	13.6
1992	25	13	38	2.8	11	5	16	2.5	23	30	53	12.4
1993	33	18	51	3.9	7	2	9	1.0	9	13	22	5.4
1994	20	23	43	5.0	5	4	9	2.0	25	60	85	21.8
1995	29	38	67	8.5	6	8	14	4.0	32	30	62	19.4
1996	39	23	62	5.0	14	7	21	3.5	56	56	112	22.1
1997	39	19	58	4.2	29	9	38	4.5	38	31	69	12.8
1998	61	47	108	10.5	28	14	42	7	13	15	28	6.2
1999	27	26	53	5.7	15	16	31	8	24	12	36	8.0
2000	43	39	82	8.5	37	16	53	8	36	38	74	15.7
Total	345	258	603		159	82	241		271	318	589	

* FC = false crawls

Green Sea Turtle

The green sea turtle nesting and hatching season for Southern Florida Gulf of Mexico beaches (includes Pinellas through Monroe Counties) extends from May 15 through October 31. Incubation ranges from about 45 to 75 days. No green sea turtles nests have been documented within the project area between 1991 and 2000.

Factors affecting the species environment within the action area

Estero Island, also known as Fort Meyers Beach, is separated from Sanibel Island by Mantanzas pass and Lovers Key by Big Carlos Pass to the north and south, respectively. Access to San Carlos Bay from the Gulf of Mexico through Mantanzas Pass is obtained by the Fort Meyers Beach Harbor Channel, a federal navigation channel. The northern portion of Estero Island includes an undeveloped portion of county-owned land that is managed as Botwitch Point County Park located between monuments R-176 and R-175.

Typically along the Gulf Coast, the long-shore current flows from the north to the south. However, the long-shore current along north Estero Island exhibits a northerly flow due to hydrological factors that focus wave energy in between monuments R-190 and R-197. As a result, the northern most portion of Estero Island accretes sand naturally and has extended

approximately 2,800 feet since 1860, but the focused wave energy creates a nodal point of erosion at a rate of approximately five feet per-year between monuments R-190 and R-197. Under normal circumstances the accretion of sand is a desirable effect; however, this fluxuation has caused a navigation hazard and has increased the maintenance dredging frequency of the Fort Myers Beach Harbor Channel. For instance, a portion of dry beach in the area north of monument R-175 was removed during maintenance dredging activities in 2000 because of the encroachment of the sand spit into the channel. However, beach compatible material obtained during this activity was placed on other portions of north Estero Island. To address these issues, a short terminal groin is proposed to slow the movement of sand into Mantanzas Pass while allowing some sand to by-pass and accrete down-drift of the groin (Figures 1 and 2).

In general, Estero Island's shoreline is highly developed with commercially and privately owned homes, condominiums, and businesses. For instance within Reach 1, the shoreline is comprised of 37% multi-family/commercial structures, 16 percent hotel/motel establishments, and 13 percent public parks and beach access. The remaining 34 percent of the shoreline within Reach 1 is comprised of single family homes and undeveloped parcels. Much of the shoreline is armored with seawalls and contains scattered remnants of derelict erosion control structures. For instance, a 400 foot seawall exists in the vicinity of monument R-181 and the remnants of a failed rock groin is visible at monument R-186. These structures limit the suitable nesting habitat available to sea turtles. In addition to these issues, it has been reported that compliance with local sea turtle lighting ordinances is limited and disorientation of adults and hatchlings is problematic.

Similar to the north portion of Estero Island, the area between monuments R-199 to R-210 on south Estero Island is an area of accretion where a stable emergent shoal persists. The shoal (Little Estero Island) is separated from the mainland by a saltwater pond that has historically maintained open access to the Gulf of Mexico and features a highly dynamic sand spit. In 1992, Little Estero Island was designated as a Critical Wildlife Area (CWA) by the FWC and its boundaries include the saltwater pond, shoal, and sand spit. The CWA is important nesting, wintering, loafing and foraging habitat for several state-listed shorebird species (Figures 3 and 4).

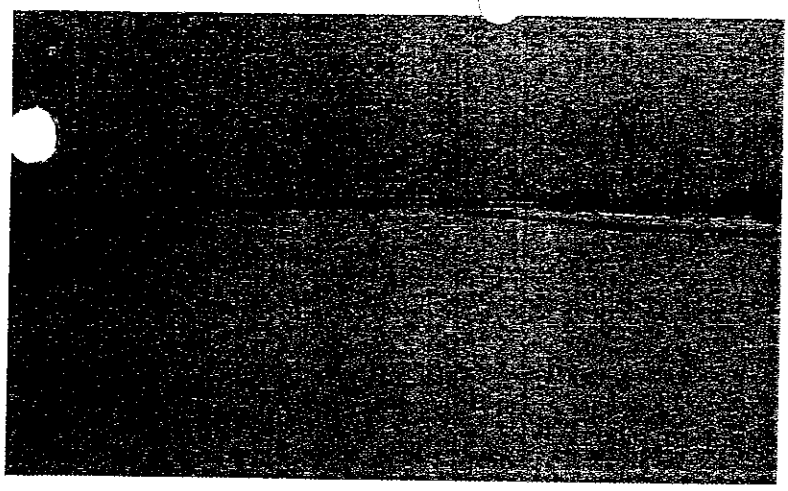


Figure 1. Reach 1- Northerly view of north Estero Island (Botwitch Point), near R-175 and proposed groin location.

Figure 2. Reach 1- Approximate groin location, view west; note navigation channel location.

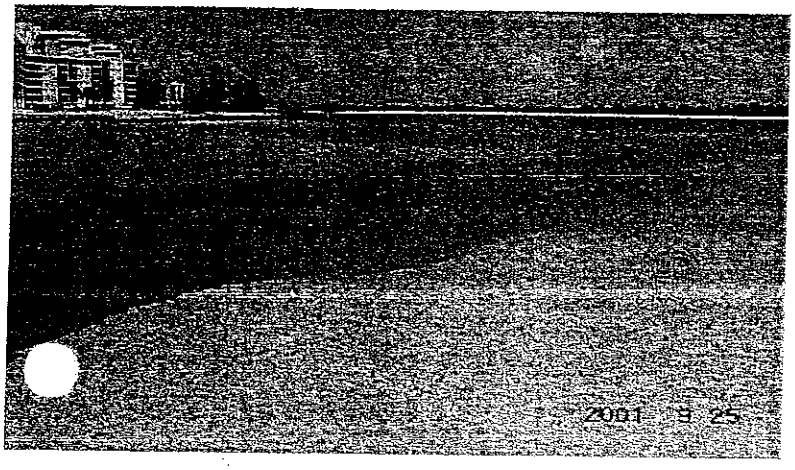


Figure 3. Reach 2 (South Estero Island): southerly view from Little Estero Island's sand spit of the south Estero Island mainland in the vicinity of R-209 and the salt-pond opening.

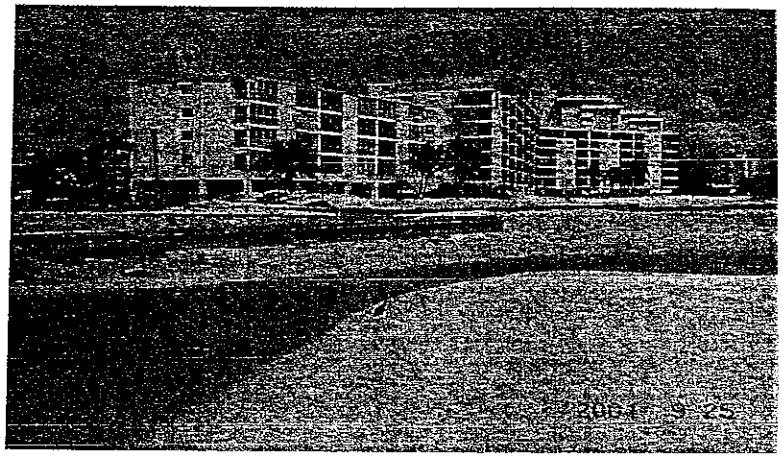


Figure 4. Reach 2: View south accreted sand on the south Estero Island mainland in front of the seawalls at R-209. Note: The salt-pond opening pictured closed in October 2001 in this area due to the natural migration of the Little Estero Island sand spit (lower right).

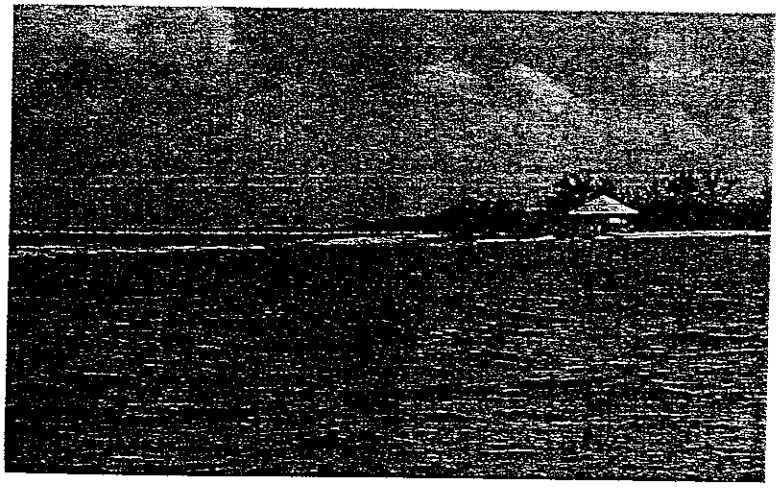


Fig 5. Reach 3 (Lovers Key): Southeast view of Lovers Key shoreline, breach and damaged pavilion after Tropical Storm Gabrielle (9/01).

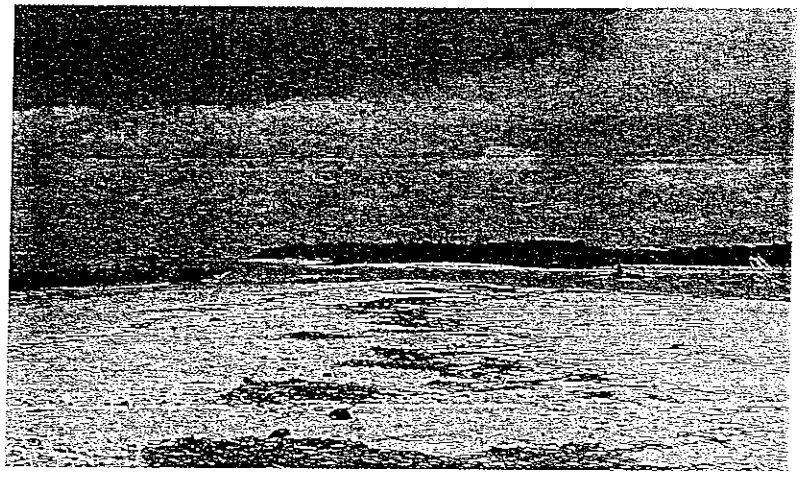


Figure 6. Reach 3: View to north of the breach located in the vicinity of R-218. (All photos provided by Lee County.)

In a letter dated October 31, 2001, CP&E reported to the DEP that the sand spit located at the southern tip of Little Estero Island had extended approximately 2,000 feet since early 2000, and has connected with the mainland in the vicinity of monument R-209, thereby, closing the saltwater pond opening to the Gulf. Though, this closure is not anticipated to be permanent, it remains closed to date. Another element of change in the area occurred in relation to the passage of several tropical systems, particularly the storm surge associated with of tropical storm Gabrielle in September 2001, that damaged several residential structures and caused additional shoreline erosion in the area between monuments R-209 and R-210.

Lovers Key:

Lovers Key is a State Recreational Area comprised of five islands which total 751 acres. Three islands are connected to the mainland by a bridge that allows easy beach access to Lovers Key via a park-operated tram or visitors may walk. In general, Lovers Key is undeveloped and contains three main structures, a pavilion, restroom facility, and concession stand. Of these structures, the pavilion is located closest to the shoreline and is at greatest risk of loss or damage during storm events. Prior to the 2001 hurricane season, a protective berm was constructed water-ward of the pavilion in the vicinity of monument R-218.5.

Historically, the islands were altered during dredge and fill activities that created conditions conducive for the establishment of invasive exotic vegetation. As a result, much of Lovers Key's shoreline, including the berm, is dominated by the Australian pine (*Casuarina sp.*). Frequently undermined by wave action, the shallow root system of the Australian pine growing in the berm are not adequate to prevent the trees from toppling into the surf zone. The presence of the fallen Australian pines not only exacerbate the erosion along the shoreline, but they also adversely affect sea turtles by obstructing and possibly trapping nesting females and/or hatchlings. As a result of these shoreline issues, sea turtle nests are frequently relocated to other areas of Lovers Key due to the threat of inundation. Over the last decade, the Lovers Key shoreline has retreated as much as nine feet per year and exhibits significant scarping along much of the shoreline. The center of the island in the vicinity of monument R-218 is a nodal point of erosion with the littoral drift moving sand away from the island to the north and the south ends of the island where spits are accreting sand.

The effects of tropical storm systems have altered Lovers Key shoreline over the past decade. For instance, several storms altered the shoreline during the 2001 hurricane season by eroding nearly 30 feet of shoreline and removing the pavilion's protective berm constructed in 2001. The most significant alteration occurred as the storm surge associated with tropical storm Gabrielle in September 2001 created a stable 150 foot wide breach (near monument R-218) north of the pavilion where the nodal point of erosion was identified. In addition, several structures (pavilion, restroom, and concession stand) were damaged and/or undermined during the storm. In an October 31, 2001, letter to the DEP, the applicant proposed several alternatives to modify the current project description to address the recent shoreline alterations (Figures 5 and 6).

EFFECTS OF THE ACTION

Analyses for effects of the action

Beneficial Effects

The placement of sand on a beach with reduced dry fore-dune habitat may increase sea turtle nesting habitat if the placed sand is highly compatible (i.e., grain size, shape, color, etc.) with naturally occurring beach sediments in the area, if the beach and foredune have the correct profiles, and compaction and escarpment remediation measures are incorporated into the project. In addition, a nourished beach that is designed and constructed to mimic a natural beach system may be more stable than the eroding one it replaces, thereby benefitting sea turtles.

The removal of failed structures and fallen Australian pine from the berm will benefit sea turtles by reducing the likelihood of entrapment or obstruction of hatchlings and/or nesting females, as well as, improving nesting habitat over-all.

Direct Effects

Placement of sand on a beach in and of itself may not provide suitable nesting habitat for sea turtles. Although beach nourishment may increase the potential nesting area, significant negative impacts to sea turtles may result if protective measures are not incorporated during project construction. Nourishment and groin construction during the nesting season, particularly on or near high density nesting beaches, can cause increased loss of eggs and hatchlings and, along with other mortality sources, may significantly impact the long-term survival of the species. For instance, projects conducted during the nesting and hatching season could result in the loss of sea turtles through disruption of adult nesting activity and by burial or crushing of nests or hatchlings. While a nest monitoring and egg relocation program or a nest mark and avoidance program would reduce these impacts, nests may be inadvertently missed (when crawls are obscured by rainfall, wind, and/or tides) or misidentified as false crawls during daily patrols. In addition, nests may be destroyed by operations at night prior to beach patrols being performed. Even under the best of conditions, about seven percent of the nests can be misidentified as false crawls by experienced sea turtle nest surveyors (Schroeder 1994).

Potential adverse impacts during the project construction phase include disturbance of existing nests which may have been missed, disturbance of females attempting to nest, and disorientation of emerging hatchlings. Heavy equipment will be required to install the groins, and this equipment will have to traverse the sandy beach to the project site, which could result in harm to nesting females, nests, and emerging hatchlings. Since a large trench will be excavated on the beach and be present during the night for some portion of the construction, a potential threat to nesting females and emerging hatchlings will exist.

1. Nest relocation

Besides the potential for missing nests during a nest relocation program, there is a potential for eggs to be damaged by their movement, particularly if eggs are not relocated within 12 hours of deposition (Limpus *et al.* 1979). Nest relocation can have adverse impacts on incubation temperature (and hence sex ratios), gas exchange parameters, hydric environment of nests, hatching success, and hatchling emergence (Limpus *et al.* 1979, Ackerman 1980, Parmenter 1980, Spotila *et al.* 1983, McGehee 1990). Relocating nests into sands deficient in oxygen or moisture can result in mortality, morbidity, and reduced behavioral competence of hatchlings. Water availability is known to influence the incubation environment of the embryos and hatchlings of turtles with flexible-shelled eggs, which has been shown to affect nitrogen excretion (Packard *et al.* 1984), mobilization of calcium (Packard and Packard 1986), mobilization of yolk nutrients (Packard *et al.* 1985), hatchling size (Packard *et al.* 1981, McGehee 1990), energy reserves in the yolk at hatching (Packard *et al.* 1988), and locomotory ability of hatchlings (Miller *et al.* 1987).

Comparisons of hatching success between relocated and *in situ* nests have noted significant variation ranging from a 21 percent decrease to a 9 percent increase for relocated nests (DEP, unpublished data). Comparisons of emergence success between relocated and *in situ* nests have also noted significant variation ranging from a 23 percent decrease to a 5 percent increase for relocated nests (DEP, unpublished data). A 1994 DEP study of hatching and emergence success of *in situ* and relocated nests at seven sites in Florida found that hatching success was lower for relocated nests in five of seven cases with an average decrease for all seven sites of 5.01 percent (range = 7.19 percent increase to 16.31 percent decrease). Emergence success was lower for relocated nests in all seven cases by an average of 11.67 percent (range = 3.6 to 23.36 percent) (Meylan 1995).

2. Equipment

The placement of pipelines, groin materials, and the use of heavy machinery on the beach during a construction project may also have adverse effects on sea turtles. They can create barriers to nesting females emerging from the surf and crawling up the beach, causing a higher incidence of false crawls and unnecessary energy expenditure. The equipment can also create impediments to hatchling sea turtles as they crawl to the ocean.

3. Artificial lighting

Visual cues are the primary sea-finding mechanism for hatchling sea turtles (Mrosovsky and Carr 1967, Mrosovsky and Shettleworth 1968, Dickerson and Nelson 1989, Witherington and Bjorndal 1991). When artificial lighting is present on or near the beach, it can misdirect hatchlings once they emerge from their nests and prevent them from reaching the ocean (Philbosian 1976; Mann 1977; DEP, unpublished data). In addition, a significant reduction in sea turtle nesting activity has been documented on beaches illuminated with artificial lights (Witherington 1992). Therefore, construction lights along a project beach and on the dredging vessel may deter females from coming ashore to nest, misdirect females trying to return to the surf after a nesting event, and misdirect emergent hatchlings from adjacent non-project beaches.

Any source of bright lighting can profoundly affect the orientation of hatchlings, both during the crawl from the beach to the ocean and once they begin swimming offshore. Hatchlings attracted to light sources on dredging barges may not only suffer from interference in migration, but may also experience higher probabilities of predation to predatory fishes that are also attracted to the barge lights. This impact could be reduced by using the minimum amount of light necessary (may require shielding) or low pressure sodium lighting during project construction.

4. Entrapment/physical obstruction
Adult females approaching the nesting beach may encounter the groin structures and either go around them, abort nesting for that night, and/or move to another section of beach to nest. The groins will act as barriers between beach segments and also prevent nesting on the groin alignment.

5. Predator concentration
The presence of groins has the potential attract and concentrate predatory fishes, resulting in higher probabilities of hatchling predation as hatchlings enter the ocean.

Indirect Effects

Many of the direct effects of beach nourishment and groin construction may persist over time and become indirect impacts. These indirect effects include increased susceptibility of relocated nests to catastrophic events, the consequences of potential increased beachfront development, changes in the physical characteristics of the beach, the formation of escarpments, future sand migration, accelerated downdrift erosion, and the impacts of debris on the beach from groin breakdown.

1. Increased susceptibility to catastrophic events
Nest relocation may concentrate eggs in an area making them more susceptible to catastrophic events. Hatchlings released from concentrated areas also may be subject to greater predation rates from both land and marine predators, because the predators learn where to concentrate their efforts (Glenn 1998, Wyneken *et al.* 1998).

2. Increased beachfront development
Pilkey and Dixon (1996) state that beach replenishment frequently leads to more development in greater density within shorefront communities that are then left with a future of further replenishment or more drastic stabilization measures. Dean (1999) also notes that the very existence of a beach nourishment project can encourage more development in coastal areas. Following completion of a beach nourishment project in Miami during 1982, investment in new and updated facilities substantially increased tourism there (National Research Council 1995). Increased building density immediately adjacent to the beach often resulted as older buildings were replaced by much larger ones that accommodated more beach users. Overall, shoreline management creates an upward spiral of initial protective measures resulting in more expensive development which leads to the need for more and larger protective measures. Increased

shoreline development may adversely affect sea turtle nesting success. Greater development may support larger populations of mammalian predators, such as foxes and raccoons, than undeveloped areas (National Research Council 1990a), and can also result in greater adverse effects due to artificial lighting, as discussed above.

3. Changes in the physical environment

Beach nourishment may result in changes in sand density (compaction), beach shear resistance (hardness), beach moisture content, beach slope, sand color, sand grain size, sand grain shape, and sand grain mineral content if the placed sand is dissimilar from the original beach sand (Nelson and Dickerson 1988a). These changes could result in adverse impacts on nest site selection, digging behavior, clutch viability, and emergence by hatchlings (Nelson and Dickerson 1987, Nelson 1988).

Beach compaction and unnatural beach profiles that may result from beach nourishment activities could negatively impact sea turtles regardless of the timing of projects. Very fine sand and/or the use of heavy machinery can cause sand compaction on nourished beaches (Nelson *et al.* 1987, Nelson and Dickerson 1988a). Significant reductions in nesting success (i.e., false crawls occurred more frequently) have been documented on severely compacted nourished beaches (Fletemeyer 1980, Raymond 1984, Nelson and Dickerson 1987, Nelson *et al.* 1987), and increased false crawls may result in increased physiological stress to nesting females. Sand compaction may increase the length of time required for female sea turtles to excavate nests and also cause increased physiological stress to the animals (Nelson and Dickerson 1988c). Nelson and Dickerson (1988b) concluded that, in general, beaches nourished from offshore borrow sites are harder than natural beaches, and while some may soften over time through erosion and accretion of sand, others may remain hard for 10 years or more.

These impacts can be minimized by using suitable sand and by tilling compacted sand after project completion. The level of compaction of a beach can be assessed by measuring sand compaction using a cone penetrometer (Nelson 1987). Tilling of a nourished beach with a root rake may reduce the sand compaction to levels comparable to unnourished beaches. However, a pilot study by Nelson and Dickerson (1988c) showed that a tilled nourished beach will remain uncompacted for up to 1 year. Therefore, the Service requires multi-year beach compaction monitoring and, if necessary, tilling to ensure that project impacts on sea turtles are minimized.

A change in sediment color on a beach could change the natural incubation temperatures of nests in an area, which, in turn, could alter natural sex ratios. To provide the most suitable sediment for nesting sea turtles, the color of the nourished sediments must resemble the natural beach sand in the area. Natural reworking of sediments and bleaching from exposure to the sun would help to lighten dark nourishment sediments; however, the time frame for sediment mixing and bleaching to occur could be critical to a successful sea turtle nesting season.

4. Escarpment formation

On nourished beaches, steep escarpments may develop along their water line interface as they adjust from an unnatural construction profile to a more natural beach profile (Coastal Engineering Research Center 1984, Nelson et al. 1987). In addition, escarpments may develop on the crenulate beaches located between groins as the beaches equilibrate to their final positions. These escarpments can hamper or prevent access to nesting sites (Nelson and Blihovde 1998). Researchers have shown that female turtles coming ashore to nest can be discouraged by the formation of an escarpment, leading to situations where they choose marginal or unsuitable nesting areas to deposit eggs (e.g., in front of the escarpments, which often results in failure of nests due to prolonged tidal inundation). This impact can be minimized by leveling any escarpments prior to the nesting season.

5. Downdrift erosion.
Groins, in conjunction with beach nourishment, can help stabilize U.S. East Coast barrier island beaches (Leonard *et al.* 1990). However, groins and breakwaters often result in accelerated beach erosion downdrift of the structures (Komar 1983, National Research Council 1987, U.S. Army Corps of Engineers 1992) and corresponding degradation of suitable sea turtle nesting habitat (National Marine Fisheries Service and U.S. Fish and Wildlife Service 1991a, 1991b, 1992). Impacts first are noted and greatest changes are observed close to the structures, but effects eventually may extend great distances along the coast (Komar 1983). Beach nourishment only partly alleviates impacts of groin construction on downdrift beaches (Komar 1983).

Groins operate by blocking the natural littoral drift of sand (Kaufman and Pilkey 1979, Komar 1983). Once sand fills the updrift groin area, some littoral drift and sand deposition on adjacent downdrift beaches occurs due to spillover. But, groins often force the river of sand into deeper offshore water, and sand that previously would have been deposited on downdrift beaches is lost from the system (Kaufman and Pilkey 1979). However, these effects are expected to be minimal at North Estero Island due in part to the groin design and nature of the sand transport dynamics in the area. This is described in more detail in the following "Species' response the proposed action" section of this document.

6. Groin breakdown
As the groin structures fail and break apart, they spread debris on the beach, which may further impede nesting females from accessing suitable nesting sites (resulting in a higher incidence of false crawls) and trap hatchlings and nesting turtles (U.S. Fish and Wildlife Service 1991a, 1991b, 1992, 1993).

Species' response to the proposed action

Reach 1- North Estero Island- In a July 6, 2001, letter, the FWC expressed their concern to the DEP regarding the effects of the proposed groin on sea turtle nesting habitat downdrift of the structure. Sea turtle nesting data indicates a total of 22 sea turtles nests and 43 false crawls were

documented between monuments R-175 and R-181.5 from 1989 through 2001. Within the 1.2 miles of available nesting habitat, nesting density averaged only 1.4 nests per mile from 1989 to 2001. Sea turtles have not been documented as nesting north of monument R-175 (the sand-spit). However, as shown in the table below, four out of the ten nests that were deposited in 2000 between monuments R-175 and R-178, within approximately 3,000 feet south of the proposed groin location. This may suggest an increased nesting trend in this area. The closest nest deposited in the vicinity of the proposed groin was documented in 2000 and located approximately 300 feet to the south. Though nesting density is currently low in this area, it does not preclude the potential for possible future adverse affects to sea turtles as a result of the groin, if nesting density increases in this area.

Location	1996	1997	1998	1999	2000	Total
North of R-175	0	0	0	0	0	0
R-175 to R-176	0	0	1	0	3	4
R-176 to R-177	0	1	1	1	1	4
R-177 to R-178	1	0	0	1	0	2

After construction, previously obstructed lights may be visible from the beach. Therefore, there may be an increase in sea turtle disorientation as a result of the increased berm height within the project area. This phenomenon was documented in Brevard County after portions of its shoreline was renourished in 2001 (R. Trindell, personal communication, 2001). This issue may be exacerbated in the areas where disorientation has been previously problematic, such as within the vicinity of monument R-181.

As an alternative to pumping sand directly onto south Estero Island (Reach 2), it was suggested to stockpile material dredged during construction of Reach 1(in the vicinity of monument R-198) then transfer the material via truck-haul to south Estero Island for placement on the shoreline through an upland access point. This activity may adversely affect sea turtles if, the material is stockpiled for long periods of time during the nesting season.

Reach 2- South Estero Island: As a result of shoreline conditions within Reaches 2 and 3, the applicant suggested several alternatives to modify the current project description in a letter October 31, 2001. The alternatives include: no construction and allow sand to accrete naturally, use trucks to transport and place sand stockpiled during construction of the North Estero Reach within the project footprint of Reach 2, or dredge sand as proposed, but with reduced volume and the pipeline corridor will likely cross Little Estero Island. Of these alternatives, the no construction and upland transport and placement of stockpiled sand are likely to be the least impacting to fish and wildlife resources, provided the upland access point selected does not affect sand dunes or native coastal vegetation. Placement of the pipeline corridor to avoid Little Estero Island is unlikely due to the expansion of the sand spit and the location of the borrow site in relation to the project. Since Little Estero Island is heavily utilized by state protected bird

species, placement and removal of the pipeline across the southern spit area may temporarily adversely effect these species.

Reach 3- Lovers Key: As mentioned above, several project modifications were proposed to address the beach that occurred as a result of the storm surge associated with tropical storm Gabrielle. In general, each alternative included closure of the breach and recovering "lost" sand from inside the lagoon at the breach, harvesting sand from the spits located at the north and south ends of the island, and construction of a pedestrian access route across the breached area once its closed. These measures are considered temporary until the proposed beach renourishment project is constructed.

It is the opinion of the Service that closure of the breach, which occurred naturally, is unnecessary since Lovers Key is an undeveloped barrier island. It is well documented that the breached area is a historic nodal point of erosion on the island. It is likely erosion will continue to be problematic in the area after closure despite construction of the proposed project. Public access to the northern portion of Lovers Key can be provided without closure of the breach by the construction of walk-over. If dune restoration (the eradication of invasive exotic vegetation and the establishment of the natural coastal plant communities) is implemented along with sand placement, storm protection for the few structures located on the island will likely be achieved. In addition, dune restoration will not only provide benefits for the patrons of the recreation area, but will benefit fish and wildlife resources, especially sea turtles by providing suitable sea turtle nesting habitat and possibly extending the period between renourishment events.

Ernest and Martin (1999) conducted a comprehensive study to assess the effects of beach nourishment on loggerhead sea turtle nesting and reproductive success. The following findings illustrate sea turtle responses to and recovery from a nourishment project. A significantly larger proportion of turtles emerging on nourished beaches abandoned their nesting attempts than turtles emerging on Control or pre-nourished beaches. This reduction in nesting success was most pronounced during the first year following project construction and is most likely the result of changes in physical beach characteristics associated with the nourishment project (e.g., beach profile, sediment grain size, beach compaction, frequency and extent of escarpments). During the first post-construction year, the time required for turtles to excavate an egg chamber on the untilled, hard-packed sands of one treatment area increased significantly relative to Control and background conditions. However, in another treatment area, tilling was effective in reducing sediment compaction to levels that did not significantly prolong digging times. As natural processes reduced compaction levels on nourished beaches during the second post-construction year, digging times returned to background levels.

During the first post-construction year, nests on the nourished beaches were deposited significantly farther from both the toe of the dune and the tide line than nests on Control beaches. Furthermore, nests were distributed throughout all available habitat and were not clustered near the dune as they were in the Control. As the width of nourished beaches decreased during the second year, among-treatment differences in nest placement diminished. More nests were washed

out on the wide, flat beaches of the nourished treatments than on the narrower steeply sloped beaches of the Control. This phenomenon persisted through the second post-construction year monitoring and resulted from the placement of nests near the seaward edge of the beach berm where dramatic profile changes, caused by erosion and scarping, occurred as the beach equilibrated to a more natural contour.

As with other beach nourishment projects, Ernest and Martin (1999) found that the principal effect of nourishment on sea turtle reproduction was a reduction in nesting success during the first year following project construction. Although most studies have attributed this phenomenon to an increase in beach compaction and escarpment formation, Ernest and Martin indicate that changes in beach profile may be more important. Regardless, as a nourished beach is reworked by natural processes in subsequent years and adjusts from an unnatural construction profile to a more natural beach profile, beach compaction and the frequency of escarpment formation decline, and nesting and nesting success return to levels found on natural beaches.

CUMULATIVE EFFECTS

Cumulative effects include the effects of future State, tribal, local, or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act. The Service is not aware of any cumulative effects in the project area.

CONCLUSION

After reviewing the current status of the loggerhead and green sea turtles, the environmental baseline for the action area, the effects of the proposed groin construction, and the cumulative effects, it is the Service's biological opinion that the groin construction project, as proposed, is not likely to jeopardize the continued existence of the loggerhead and green sea turtles and is not likely to destroy or adversely modify designated critical habitat. No critical habitat has been designated for the loggerhead and green sea turtles in the continental United States; therefore, none will be affected.

The proposed project will affect only 6.2 miles of the approximately 1,400 miles of available sea turtle nesting habitat in the southeastern United States. Research has shown that the principal effect of beach nourishment on sea turtle reproduction is a reduction in nesting success, and this reduction is most often limited to the first year following project construction. Research has also shown that the impacts of a nourishment project on sea turtle nesting habitat are typically short-term because a nourished beach will be reworked by natural processes in subsequent years, and beach compaction and the frequency of escarpment formation will decline. Although a variety of factors, including some that cannot be controlled, can influence how a beach renourishment or groin construction project will perform from an engineering perspective, measures can be implemented to minimize impacts to sea turtles.

INCIDENTAL TAKE STATEMENT

Section 9 of the Act and Federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered or threatened species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harm is further defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. Harass is defined by the Service as intentional or negligent actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, carrying out an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited under the Act provided that such taking is in compliance with the terms and conditions of this incidental take statement.

The measures described below are non-discretionary, and must be implemented by the Corps so that they become binding conditions of any grant or permit issued to the applicant, as appropriate, for the exemption in section 7(o)(2) to apply. The Corps has a continuing duty to regulate the activity covered by this incidental take statement. If the Corps (1) fails to assume and implement the terms and conditions or (2) fails to require the applicant to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, the protective coverage of section 7(o)(2) may lapse. In order to monitor the impact of incidental take, the Corps must report the progress of the action and its impacts on the species to the Service as specified in the incidental take statement [50 CFR §402.14(i)(3)].

AMOUNT OR EXTENT OF TAKE

The Service anticipates 6.2 miles of nesting beach habitat could be taken as a result of this proposed action. The take is expected to be in the form of: (1) destruction of all nests that may be constructed and eggs that may be deposited and missed by a nest survey and marking program within the boundaries of the proposed project; (2) destruction of all nests deposited during the period when a nest survey and marking program is not required to be in place within the boundaries of the proposed project; (3) reduced hatching success due to egg mortality during relocation and adverse conditions at the relocation site; (4) harassment in the form of disturbing or interfering with female turtles attempting to nest within the construction area or on adjacent beaches as a result of construction activities; (5) behavior modification of nesting females or hatchlings due to the presence of the groins which may act as barriers to movement; (6) behavior modification of nesting females if they dig into shallowly buried groins, resulting in false crawls or situations where they choose marginal or unsuitable nesting areas to deposit eggs; (7) misdirection of hatchling turtles on beaches adjacent to the construction area as they emerge from the nest and crawl to the water as a result of project lighting; (8) behavior modification of nesting

females due to escarpment formation within the project area during a nesting season, resulting in false crawls or situations where they choose marginal or unsuitable nesting areas to deposit eggs; and (9) destruction of nests from escarpment leveling within a nesting season when such leveling has been approved by the Fish and Wildlife Service.

Incidental take is anticipated for only the 6.2 miles of beach that have been identified for beach renourishment and/or groin construction. The Service anticipates incidental take of sea turtles will be difficult to detect for the following reasons: (1) the turtles nest primarily at night and all nests are not found because [a] natural factors, such as rainfall, wind, and tides may obscure crawls and [b] human-caused factors, such as pedestrian and vehicular traffic, may obscure crawls, and result in nests being destroyed because they were missed during a nesting survey and egg relocation program; (2) the total number of hatchlings per undiscovered nest is unknown; (3) the reduction in percent hatching and emerging success per relocated nest over the natural nest site is unknown; (4) an unknown number of females may avoid the project beach and be forced to nest in a less than optimal area; (5) lights may misdirect an unknown number of hatchlings and cause death; and (6) escarpments may form and cause an unknown number of females from accessing a suitable nesting site. However, the level of take of these species can be anticipated by the disturbance of renourishment and groin construction activity on suitable turtle nesting beach habitat because: (1) turtles nest within the project site; (2) beach renourishment and groin construction will likely occur during a portion of the nesting season; (3) groin construction will modify beach profile and width and is likely to increase the presence of escarpments; (4) beach renourishment will modify the incubation substrate, beach slope, and sand compaction; and (5) artificial lighting will deter and/or misdirect nesting females and hatchlings.

EFFECT OF THE TAKE

In the accompanying biological opinion, the Service determined that this level of anticipated take is not likely to result in jeopardy to the species. Critical habitat has not been designated in the project area; therefore, the project will not result in destruction or adverse modification of critical habitat.

REASONABLE AND PRUDENT MEASURES

The Service believes the following reasonable and prudent measures are necessary and appropriate to minimize take of loggerhead and green sea turtles.

1. Beach quality sand suitable for sea turtle nesting, successful incubation, and hatchling emergence must be used on the project site.

2. If the beach nourishment project will be conducted during the sea turtle nesting season, surveys for nesting sea turtles must be conducted. If nests are constructed in the area of beach nourishment, the eggs must be relocated.

3. 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.

4. If the groin construction project will be conducted during the sea turtle nesting season, sea turtle protection measures must be employed to minimize the likelihood of take.

5. Immediately after completion of the construction project and prior to the next three nesting seasons, monitoring must be conducted to determine if escarpments are present and escarpments must be leveled as required to reduce the likelihood of impacting sea turtle nesting and hatching activities.

6. The applicant must ensure that contractors conducting the beach renourishment and groin construction work fully understand the sea turtle protection measures detailed in this incidental take statement.

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

8. During the sea turtle nesting season, lighting associated with the project must be minimized to reduce the possibility of disrupting and misdirecting nesting and/or hatchling sea turtles.

TERMS AND CONDITIONS

In order to be exempt from the prohibitions of section 9 of the Act, the Corps must comply with the following terms and conditions, which implement the reasonable and prudent measures described above and outline required reporting/monitoring requirements. These terms and conditions are non-discretionary.

1. In accordance with the 2001 rule change under subsection 62B-41.007, F.A.C. of the Florida Statutes, all fill material placed on the beach must be analogous to that which naturally occurs within the project location or vicinity in quartz to carbonate ratio, color, median grain size and median sorting. Specifically, such material shall be predominately of carbonate, quartz or similar material with a particle size distribution ranging between 0.62 mm and 4.76 mm (classified as sand by either the Unified Soil Classification System or the Wentworth classification). The material shall be similar in color and grain size distribution (sand grain frequency, mean and median grain size, and sorting coefficient) to the material in the existing coastal system at the disposal site and shall not contain:

- greater than five percent, by weight, silt, clay, or colloids passing the #230 sieve;
- greater than five percent, by weight, fine gravel retained on the #4 sieve;
- coarse gravel, cobbles, or material retained on the 3/4 inch sieve in a percentage or size

greater than found on the native beach;

- construction debris, toxic material, or other foreign matter; and
- not result in cementation of the beach.

These standards must not be exceeded in any 1000 square foot section, extending through the depth of the renourished beach. If the natural beach exceeds any of the limiting parameters listed above, then the fill material must not exceed the naturally occurring level for that parameter.

2. Daily early morning surveys for sea turtle nests will be required if any portion of the beach renourishment and/or groin construction project occurs during the period from April 1 through November 30 Nesting surveys must be initiated 65 days prior to beach nourishment and/or groin construction activities or by April 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 renourishment and/or groin construction activities, eggs must be relocated per the following requirements.

2a. Nesting surveys and egg relocations will only be conducted by personnel with prior experience and training in nesting survey and egg relocation procedures. Surveyors must have a valid Florida Fish and Wildlife Conservation Commission permit. Nesting surveys must be conducted daily between sunrise and 9 a.m. Surveys must be performed in such a manner so as to ensure that beach renourishment 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 beach renourishment 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 beach renourishement activities must cease when construction activities no longer threaten nests.

2c. Nests will not be relocated for groin construction purposes unless beach nourishment activities are in progress or will be starting within 65 days. Nests deposited within areas where beach nourishment activities have ceased or will not occur for 65 days must be marked and left in place unless other factors threaten the success of the nest. Any nests left in the groin construction area must be clearly marked. Nests will be marked and the actual location of the clutch determined. A circle with a radius of 10 feet, centered at the clutch, will be marked by stake and survey tape or string. No construction activities will enter this circle and no adjacent construction that might directly or indirectly disturb the area within the staked circle will be allowed.

3. Immediately after completion of the beach nourishment project and prior to April 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 April 1. 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. An annual summary of compaction surveys and the actions taken must be submitted to the Service. (NOTE: The requirement for compaction monitoring can be eliminated if the decision is made to till regardless of post-construction compaction levels. Also, 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 April 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 April 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 April 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

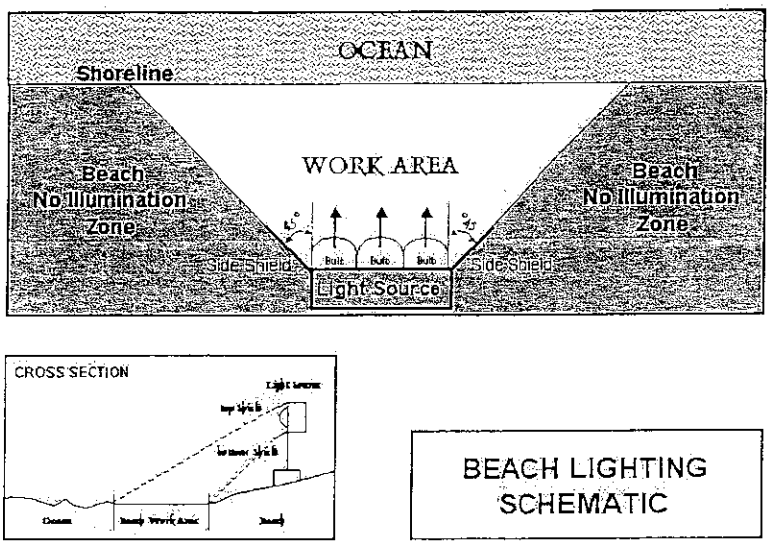
brief written authorization that describes methods to be used to reduce the likelihood of impacting existing nests. An annual summary of escarpment surveys and actions taken must be submitted to the Service. (NOTE: Out-year escarpment monitoring and remediation are not required if placed material no longer remains on the beach.)

5. The applicant must arrange a meeting between representatives of the contractor, the Service, the FWC, and the permitted person responsible for nest marking and/or 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 April 1 through November 30, 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. During groin construction, no temporary lighting of the groin construction area is authorized at anytime during the sea turtle nesting season from April 1 through November 30 with the following exception. Lighting will be allowed if safety lighting is required at any excavated trenches that must remain on the beach at night. This lighting must be limited to the immediate construction area only and must be the minimal lighting necessary to comply with safety requirements.

8. During sand placement, from April 1 through November 30, 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 mis-direct 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 figure below).



BEACH LIGHTING SCHEMATIC

9. Non-compliance of the Town of Fort Myers Beach Lighting Ordinance on private, commercial, and public property must be monitored, evaluated and violations addressed, and if possible, remediated prior to construction.

10. No permanent exterior lighting will be installed in association with this construction project.

11. A report describing the actions taken to implement the terms and conditions of this incidental take statement must be submitted to the South Florida Ecological Services Office 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, marking, and relocation activities; descriptions and locations of self-release beach sites; nest survey, marking, and relocation results; and hatching and emerging success of nests.

12. In the event a sea turtle nest is excavated during construction activities, the permitted person responsible for nest marking and/or egg relocation for the project must be notified so the eggs can be moved to a suitable relocation site.

13. Upon locating a sea turtle adult, hatchling, or egg harmed or destroyed as a direct or indirect result of the project, notification must be made to the FWC, Tequesta Field Office located in Tequesta at (561) 575-5407 or the Bureau of Marine Enforcement (formerly the Florida Marine Patrol) at 800-342-5367. 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.

14. In the event a groin structure fails or begins to disintegrate, all debris and structural material must be removed from the nesting beach area and deposited off-beach immediately. If maintenance of a groin structure is required during the period from April 1 to November 30, no work will be initiated without prior coordination with the South Florida Ecological Services Office.

15 . The terminal groin must be removed if it is determined to not be effective or to be causing a significant adverse impact to the beach and dune system.

The Service believes that incidental take will be limited to the 6.2 miles of beach that have been identified as the project area which includes sand placement on Reaches 1, 2 and 3, as well as, construction of one terminal groin in Reach 1. The reasonable and prudent measures, with their implementing terms and conditions, are designed to minimize the impact of incidental take that might otherwise result from the proposed action. The Service believes that no more than the following types of incidental take will result from the proposed action: (1) destruction of all nests that may be constructed and eggs that may be deposited and missed by a nest survey and marking program within the boundaries of the proposed project; (2) destruction of all nests deposited during the period when a nest survey and marking program is not required to be in place within the boundaries of the proposed project; (3) reduced hatching success due to egg mortality during relocation and adverse conditions at the location site; (4) harassment in the form of disturbing or interfering with female turtles attempting to nest within the project construction area or on adjacent beaches as a result of construction activities and/or groin presence;(5) behavior modification of nesting females or hatchlings due to the presence of the groins which may act as barriers to movement; (6) behavior modification of nesting females if they dig into shallowly buried groins, resulting in false crawls or situations where they choose marginal or unsuitable nesting areas to deposit eggs; (7) misdirection of hatchling turtles on beaches adjacent to the construction area as they emerge from the nest and crawl to the water as a result of project

lighting; (8) behavior modification of nesting females due to escarpment formation within the project area during a nesting season, resulting in false crawls or situations where they choose marginal or unsuitable nesting areas to deposit eggs; and (9) destruction of nests from escarpment leveling within a nesting season when such leveling has been approved by the Fish and Wildlife Service. The amount or extent of incidental take for sea turtles will be considered exceeded if the project results in more than a one time placement of sand on the 6.2 miles of Lee County shoreline proposed for beach renourishment and/or groin construction. If, during the course of the action, this level of incidental take is exceeded, such incidental take represents new information requiring reinitiation of consultation and review of the reasonable and prudent measures provided. The Corps must immediately provide an explanation of the causes of the taking and review with the Service the need for possible modification of the reasonable and prudent measures.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information.

1. Construction activities for this project and similar future projects should be planned to take place outside the sea turtle nesting and hatching season (November through March).
2. Appropriate native salt-resistant dune vegetation should be established on the restored dunes. The DEP, Office of Beaches and Coastal Systems can provide technical assistance on the specifications for design and implementation.
3. Surveys for nesting success of sea turtles should be continued for a minimum of 3 years following project construction to determine whether sea turtle nesting success has been adversely impacted.
4. More in-depth research should be conducted to assess the potential of the groin structures to impact nesting sea turtles, nest incubation, and movement of hatchlings from the nest to the ocean.
5. Educational signs should be placed where appropriate at beach access points explaining the importance of the area to sea turtles and the life history of the species that nest in the area.

In addition, the Service strongly recommends the following:

Reach 1- North Estero Island:

1. Diligent compliance and enforcement of the Town of Fort Myers Beach Lighting Ordinance should occur prior to and continue through the sea turtle nesting season, April 1 through November 30.
2. If project construction occurs outside of nesting season, stockpiled sand should be removed prior to April 1.

Reach 2: South Estero Island

1. Allow the existing coastal processes within the area shape the conditions on Little Estero Island and allow the saltwater pond to close or re-open naturally.
2. If the pipeline corridor is expected to cross the Little Estero Island sand spit, consult with the FWC to establish a shorebird protection plan.
3. If stockpiled sand from Reach 1 is to be utilized, sand placement should occur outside of nesting season.

Reach 3: Lido Key

1. Allow the storm-generated breach to remain open until a thorough evaluation of the long-term effects of the breach on the shoreline and estuarine areas are conducted.
2. Allow the natural coastal processes within the area shape the conditions on the undeveloped shoreline of the Lovers Key State Recreational Area.
3. Seek additional funds (e.g., the Service's South Florida Ecosystems Restoration Program or the Corps'1135 fund) to eradicate the remaining Australian pine from Lovers Key and re-establish the native barrier island plant communities.
4. To reduce the likelihood of emergency sand placement between renourishment intervals and possible adverse effects to sea turtles, exercise shoreline retreat by relocating threatened structures, such as the pavilion, away from the nodal erosion points on the island.

In order for the Service to be kept informed of actions minimizing or avoiding adverse effects or benefitting listed species or their habitats, the Service requests notification of the implementation of any conservation recommendations.

REINITIATION - CLOSING STATEMENT

This concludes formal consultation on the action outlined in the request. As provided in 50 CFR §402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

Should you have additional questions or require additional clarification regarding this matter, please contact Ms. Trish Adams at (561) 562-3909, extension 232.

Sincerely yours,

for James J. Slack
Field Supervisor
South Florida Ecological Services Office

cc:
Service, Ecological Services-Jacksonville, Florida (Sandy MacPherson)
Lee County Natural Resources Division, Fort Myers, Florida (Steve Boutelle)
FWC, Office of Protected Species Management, Tallahassee, Florida (Robbin Trindell)
FWC, Office of Environmental Services, Punta Gorda, Florida (Jim Beever)
DEP, Division of Beaches and Coastal Systems, Tallahassee, Florida
NMFS, Habitat Conservation Division, St. Petersburg, Florida
NMFS, Protected Resources Division, St. Petersburg, Florida
EPA, West Palm Beach, Florida

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10. If historical or archaeological artifacts are discovered at any time on the project site, the permittee shall immediately notify the State Historic Preservation Officer and the Office of Beaches and Coastal Systems.

11. Within 30 days after completion of construction or completion of an subsequent maintenance event authorized by this permit, the permittee shall submit to the Office of Beaches and Coastal Systems and the appropriate District office of the Department a written statement of completion and certification by a registered professional engineer. This certification shall state that all locations and elevations specified by the permit have been verified; the activities authorized by the permit have been performed in compliance with the plans and specifications approved as a part of the permit, and all conditions of the permit; or shall describe any deviations from the plans and specification, and all conditions of the permit. When the completed activity differs substantially from the permitted plans, any substantial deviations shall be noted and explained on two copies of as-built drawings submitted to the Department.

12. The Department shall require additional permit conditions based on sites specific circumstances to insure compliance with the provision of this Chapter. Any such additional conditions will be specified in the Intent to Issue.

SPECIFIC CONDITIONS:

1. The terms, conditions, and provisions of the required public easement shall be met. Construction of this activity shall not commence on sovereign submerged lands, title to which is held by the Board of Trustees of the Internal Improvement Trust Fund, until all public easement documents have been executed to the satisfaction of the Department.

2. No work shall be conducted under this permit for the initial dredging or subsequent dredging events until the permittee has received a written notice to proceed from the Department. Prior to the issuance of the notice to proceed, the permittee shall submit two copies of detailed final construction plans and specifications for all authorized activities, certified by an engineer duly registered pursuant to Chapter 471, Florida Statutes, or other appropriate individual. The plans shall include details of construction, including general construction procedures and equipment to be used.

3. Prior to construction of the beach restoration project, the permittee shall establish an erosion control line as follows. The line of mean high water for the area to be restored shall be determined, to the standards of the Department's Division of State Lands, to establish the boundary line between sovereignty lands of the state bordering on the Gulf of Mexico and the upland property. Within ninety (90) days from being notified of its acceptability by the Department's Division of State Lands, this mean high water determination shall be recorded in the public records of Lee County, Florida. A copy of

the recorded mean high water determination shall be sent to the Department within 5 days of recording.

4. The permittee shall conduct a pre-construction conference with all contractors, the engineer of record, the FWC, the marine turtle permit holder, and a staff representative of the Department to establish an understanding among the parties as to the items specified in the special and standard conditions of the permit. The pre-construction conference will be held at least 30 days prior to construction activities. The permittee shall provide a minimum of 10 days advance written notification to the following offices advising of the date, time and location of the pre-construction conference:

DEP, Office of Beaches and Coastal Systems
Mail Station 300
3900 Commonwealth Boulevard
Tallahassee, Florida 32399-3000
phone: (850) 487-4471
fax: (850) 488-5257

DEP, South District Office
2295 Victoria Ave, #364
Ft. Myers, Florida 33901-3881
(941) 332-6975

FWCC, Bureau of Protected Species Management
620 South Meridian Street
Tallahassee, Florida 32399-1600
phone: (850) 922-4330

5. The permittee shall conduct a monitoring program to include specific monitoring to assess the effects of the excavation of the borrow areas and construction of the terminal groin structure on erosion and accretion patterns within the fill placement area and adjacent shorelines and on the inlet littoral system in order to identify any adverse impacts attributable to the project authorized by this permit. This monitoring shall be described in a detailed project monitoring plan, which is subject to review and approval, by the Department, prior to issuance of a notice to proceed. The approved monitoring plan can be revised at any later time by written request of the permittee and with the written approval of the Department. A bathymetric survey of Borrow Area I shall be obtained immediately following completion of dredging in that borrow site. Bathymetric surveys of Borrow Area II shall be obtained immediately following construction and then 2, 5, and 7 years following construction.

6. The approved monitoring plan required in Condition 5 above shall specify aerial photography and the collection of topographic and bathymetric survey data sufficient to calculate annual shoreline position and volumetric changes in the project area and along the adjacent shorelines fronting the north end of Lovers Key.

Beach and offshore profile surveys shall be obtained at established DEP survey markers, using DEP survey specifications as applicable, for pre-construction, post-construction within two months of construction completion, and at annual intervals for three years thereafter, taken preferably in the spring or summer months, and every two years thereafter until the next nourishment event or upon completion of the 7- year post-construction survey, whichever comes first. Survey data must be submitted to the Department in standard DEP approved digital formats, with a survey control information listing, and photocopies of the field book beach profile data pages. Aerial photography shall be conducted concurrently with each survey. The permittee shall submit a monitoring report within 100 days of completion of each post-construction survey.

7. Prior to issuance of a Notice to Proceed, the permittee shall submit a Contingency Plan to remediate any adverse impacts to the shoreline resulting from the construction of the proposed terminal groin or the dredging in Borrow Area II. This Plan shall be subject to review and approval by the Department. The approved Contingency Plan can be revised at any later time by written request of the permittee and with the written approval of the Department. As guidance for obtaining Departmental approval, the Plan shall acknowledge that there is a potential for adjacent shoreline erosion occurring as a result of the construction of the proposed terminal groin on the north end of Estero Island and as a result of dredging in Borrow Area II along the south end of Estero Island.

   The Plan shall confirm that these areas will be specifically monitored, analyzed, and reported on as part of the approved Monitoring Plan required in Permit Condition 6. The Contingency Plan shall provide that any erosional problems that develop north (downdrift) of the groin, or landward of Borrow Area II on southern Estero Island or northern Lover's Key, will be specifically addressed and appropriate remedial solutions developed and implemented.

   Remedial solutions to be considered shall include the placement of beach fill material and/or adjustment of the terminal groin to alleviate adjacent shoreline erosional problems, as applicable. Once approved by the Department, the permittee shall request a modification to this permit to incorporate the remedial action(s) and submit all supporting information that will be necessary for approval.

8. Prior to initiating dredging activities in Borrow Area II Section C, notice will be given to the Department. Written justification for such action will be provided to the Department and a Notice to Proceed will be requested. Final plans submitted to the Department as outlined in Specific Condition 2 shall divide both borrow areas into primary and secondary regions with the primary region containing the best quality fill material. Initiation of dredging of secondary regions shall be upon written notification and acceptance by the Department.

9. During all dredging operations the permittee shall require the dredging contractor to have

electronic positioning equipment that continuously measures the vertical and horizontal location of the cutterhead, at all times during operations. The horizontal positioning equipment shall be installed on the dredge so as to monitor the actual location of the dredge equipment and be interfaced with the depth monitoring device. This equipment shall provide a permanent record of the equipment's position referenced to State Plane Coordinates and NGVD. As a part of the final report the permittee shall provide a daily record of the position of the dredge equipment which includes the dredge area limits with actual and maximum authorized dredge depth referenced to state plane coordinates and NGVD. Vertical and horizontal accuracy of the positioning equipment shall also be reported.

The following conditions are required to minimize impacts to marine turtles:

10. Construction-related activities are authorized to occur on the nesting beach (seaward of existing coastal armoring structures or the dune crest) during the nesting season under the following conditions.

    a. A daily marine turtle nest survey of the nesting beach in the vicinity of the project (including areas of beach access) shall be conducted starting April 15 and continue until October 31. Only those nests that may be affected by construction activities shall be relocated. Nests requiring relocation shall 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 shall cease when construction activities no longer threaten nests. Nests deposited within areas where construction activities have ceased or will not occur for 65 days shall be marked and left in place unless other factors threaten the success of the nest. Such nests will be marked and the actual location of the clutch determined. A circle with a radius of ten (10) feet, centered at the clutch, shall be marked by stake and survey tape or string. No construction activities shall enter this circle and no adjacent construction shall be allowed which might directly or indirectly disturb the area within the staked circle.

    b. No construction activity may commence until completion of the marine turtle survey each day.

    c. It is the responsibility of the permittee to ensure that the project area and access sites are surveyed for marine turtle nesting activity. All nesting surveys, nest relocations screening or caging activities etc. shall be conducted only by persons with prior experience and training in these activities and who is duly authorized to conduct such activities through a valid permit issued by the Fish and Wildlife Conservation Commission (FWC), pursuant to Florida Administrative Code 68E-1.

11. From April 15 through October 31, staging areas for construction equipment shall be located off the beach. Nighttime storage of construction equipment not in use shall be off the beach to minimize disturbance to sea turtle nesting and hatching activities.

12. Immediately after completion of the beach fill placement event and prior to April 15 for 3 subsequent years if placed sand still remains on the beach, the beach shall be tilled as described below. During the 3 years following each fill placement event, the permittee may measure sand compaction in the area of restoration in accordance with a protocol agreed to by the FWC, the Department, the U.S. Fish & Wildlife Service, and the applicant to determine if tilling is necessary. At a minimum, the protocol provided under a and b below shall be followed. If required, the area shall be tilled to a depth of 24 inches. All tilling activity must be completed prior to May 1. An annual summary of compaction surveys and the actions taken shall be submitted to the FWC. If the project is completed during the nesting season, tilling shall not occur in areas where nests have been left in place or relocated unless authorized by the U.S. Fish and Wildlife Service in an Incidental Take Statement. A report on the results of compaction monitoring shall be submitted to the FWC prior to any tilling actions being taken. An annual summary of compaction surveys and the actions taken shall be submitted to the FWC. This condition shall be evaluated annually and may be modified if necessary to address sand compaction problems identified during the previous year.

    a. Compaction sampling stations shall be located at 500-foot intervals along the project area. 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 lay over less compact layers. Replicates shall 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 shall be averaged to produce final values for each depth at each station. Reports shall include all 18 values for each transect line, and the final 6 averaged compaction values.

    c. If the average value for any depth exceeds 500 psi for any two or more adjacent stations, then that area shall be tilled prior to April 15. 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 FWC shall be required to determine if tilling is required. If a few values exceeding 500 psi are present randomly within the project area, tilling shall not be required.

13. During marine turtle nesting season (May 1st to October 31st), weekly visual surveys for escarpment formation shall be conducted within the project area. These surveys shall be conducted for two nesting seasons following beach nourishment. An annual summary of these surveys and any action taken shall be submitted to the Department. Weekly surveys shall include:

    a. The number of escarpments and their location relative to DNR-DEP reference monuments shall be recorded. Notations on the height of any escarpments shall be included (0 to 18 inches, 18 inches to 4 feet, 4 feet or higher) as well as the maximum height of all escarpments.

    b. Escarpments that exceed 18 inches in height for a distance of 100 feet shall be reported in writing to the Department within 3 days of the survey. This report shall include the number and location of nests in the vicinity of the escarpment. Upon written notification, the permittee shall level escarpments in accordance with mechanical methods prescribed by the Department.

    c. Any escarpments that exceed 18 inches in height for a distance of 100 feet shall be leveled to the natural beach contour by March 1. If weekly surveys during the marine turtle nesting season document subsequent reformation of escarpments that exceed 18 inches in height for a distance of 100 feet, then the Department shall be contacted immediately to determine the appropriate action to be taken. Upon written notification, the permittee shall level escarpments in accordance with mechanical methods prescribed by the Department.

14. From April 15 through October 31, all project lighting shall be limited to the immediate area of active construction only and shall be the minimal lighting necessary to comply with U.S. Coast Guard and/or OSHA requirements (Figure 1). Stationary lighting on the beach and all lighting on the dredge shall be minimized through reduction, shielding, lowering, and appropriate placement of lights to minimize illumination of the nesting beach and water. Lighting on offshore equipment shall be minimized through reduction, shielding lowering, and appropriate placement of lights to avoid excessive illumination of the water, while meeting all U.S. Coast Guard and OSHA requirements.

15. Reports on all nesting activity shall be provided for the initial nesting season and for a minimum of three additional nesting seasons shall be provided for the nourished and adjacent beaches on Estero Island and Lovers Key. Monitoring of nesting activity shall include daily surveys and any additional measures authorized by the FWC. Reports submitted shall include daily report sheets noting all activity, nesting success rates, hatching success of all relocated nests, hatching success of a representative sampling of nests left in place (if any), dates of construction and names of all personnel involved in nest surveys and relocation activities. Data shall be reported separately for filled areas

and nonfilled areas in accordance with the attached Table. All reports shall be submitted by January 15 of the following year.

16. In the event a sea turtle nest is excavated during construction activities, all work shall cease in that area immediately and the permitted person responsible for egg relocation for the project shall be notified so the eggs can be moved to a suitable relocation site.

17. Upon locating a dead, injured, or sick endangered or threatened sea turtle specimen, initial notification must be made to the FWC at 1-888-404-FWCC. Care shall be taken in handling sick or injured specimens to ensure effective treatment and care and in handling dead specimens to preserve biological materials in the best possible state for later analysis of cause of death. In conjunction with the care of sick or injured endangered or threatened species or preservation of biological materials from a dead animal, the finder has the responsibility to ensure that evidence intrinsic to the specimen is not unnecessarily disturbed.

18. A lighting survey shall be conducted from the renourished berm prior to April 15 of the first nesting season following nourishment and action taken to ensure that no lights or light sources are visible from any dry portion of the newly elevated beach. A report summarizing all lights visible, using standard survey techniques for such surveys, shall be submitted to FWC by April 15 and documenting all compliance and enforcement action. Additional lighting surveys shall be conducted monthly through August and results reported by the 15th of each month.

Table 1
Marine Turtle Monitoring for Beach Restoration Projects
The following marine turtle monitoring is required for beach restoration projects by the Florida Fish and Wildlife Conservation Commission, Bureau of Protected Species Management. Reports summarizing the nesting should be submitted to the Tequesta office with a copy to the Tallahassee office by January 15 of the subsequent year. Data for nesting activity on filled and nonfilled areas should be reported separately, and should include numbers of nests lost to erosion or washed out.

Characteristic	Parameter	Measurement	Variable
Nesting Success	False crawls - number	Visual assessment of all false crawls	Number and location of false crawls in fill areas, groin areas, and nonfill areas: any interaction of the turtle with obstructions, such as groins, seawalls, or scarps, should be noted.
	False crawl - type	Categorization of the stage at which nesting was abandoned	Number in each of the following categories: emergence-no digging, preliminary body pit, abandoned egg chamber

	Nests	Number	The number of marine turtle nests in filled and nonfilled areas should be noted. If possible, the location of all marine turtle nests shall be marked on map of project, and approximate distance to the groins, sea walls or scarps measured using a meter tape (optional). Any abnormal cavity morphologies should be reported as well as whether turtle touched groins, seawalls, or scarps during nest excavation or beach ascent
		Lost Nests	The number of nests lost to inundation, erosion or the number with lost markers that could not be found
Reproductive Success	Emergence & hatching success	Standard survey protocol	Numbers of the following: unhatched eggs, depredated nests and eggs, live pipped eggs, dead pipped eggs, live hatchlings in nest, dead hatchlings in nest, hatchlings emerged, disoriented hatchlings, depredated hatchlings

MONITORING REQUIRED:

Parameter: Turbidity – Nephelometric Turbidity Units (NTUs)

Borrow Site:

Frequency: Once a day, midway through the dredging operation.

Background: At least 500 meters from the dredge in the opposite direction of the prevailing current flow, clearly outside the influence of any turbid plume. Samples shall be collected 1 meter above the bottom.

Compliance: No more than 150 meters from the dredge or at the boundary of the Aquatic Preserve (whichever is closer to the point of discharge) down current from the dredge, in the densest portion of any visible turbidity plume. Samples shall be collected from 1 meter above the bottom.

Beach Fill Site:

Frequency: Twice daily (at least 4 hours apart) while the hydraulic dredge discharges on the beach or upland sand is placed/graded on the beach within the surf zone.

Background: At least 500 meters up current from the point where discharge water is re-entering waters of the State (discharge point) or where upland sand is placed/graded into the surf zone, clearly outside of the influence of any turbid plume. Samples shall be collected 1-meter above the bottom, at the same distance offshore as the compliance station.

Compliance: No more than 4,500 meters down current and no more than 300 meters off shore, or at the boundary of the Aquatic Preserve, whichever is closer to the point of discharge, down current from the discharge point or where upland sand is placed/graded into the surf zone, in the densest portion of any visible turbidity plume. The sample shall be collected from 1 meter above the bottom.

The compliance locations given above shall be considered the limits of the mixing zone for turbidity allowed during construction. If monitoring reveals turbidity levels at the compliance sites to be greater than 29 NTUs (or if a turbidity plume from this project extends into the Aquatic Preserve, causing turbidity to be elevated) above the associated background turbidity levels, construction activities shall cease immediately and not resume until corrective measures have been taken and turbidity has returned to acceptable levels.

Copies of all reports shall be submitted to the Office of Beaches and Coastal Systems in Tallahassee on a weekly basis within seven days of collection. The data shall be submitted under a cover letter containing the following information: (1) permit number; (2) a statement describing the methods used in collection, handling, storage and analysis of the samples; (3) a map indicating the sampling locations; and (4) a statement by the individual responsible for implementation of the sampling program concerning the authenticity, precision, limits of detection and accuracy of the data. Monitoring reports shall also include the following information for each sample that is taken: a) time of day samples taken; b) depth of water body; c) depth of sample; d) antecedent weather conditions; e) tidal stage and direction of flow; f) wind directions and velocity, and g) wave height.

This Instrument Prepared By:
M. Sue Jones
Recurring Revenue Section
Bureau of Public Land Administration
3900 Commonwealth Boulevard
Mail Station No. 125
Tallahassee, Florida 32399

BOARD OF TRUSTEES OF THE INTERNAL IMPROVEMENT TRUST FUND
OF THE STATE OF FLORIDA

SOVEREIGN SUBMERGED LANDS EASEMENT

NO. 30635
BOT FILE NO. 360223529
PA NO. 0173059-001-JC

THIS EASEMENT is hereby granted by the Board of Trustees of the Internal Improvement Trust Fund of the State of Florida, hereinafter referred to as the Grantor.

WITNESSETH: That for the faithful and timely performance of and compliance with the terms and conditions stated herein, the Grantor does hereby grant to Lee County, Florida, hereinafter referred to as the Grantee, a nonexclusive easement on, under and across the sovereign lands, if any, contained in the following legal description:

A parcel of submerged land in Section 09,
Township 47 South, Range 24 East, in Gulf of Mexico,
Lee County, as is more particularly described
and shown on Attachment A, dated December 15, 2000.

TO HAVE THE USE OF the hereinabove described premises from March 5, 2002, the effective date of this easement. The terms and conditions of and for which this easement is granted are as follows:

1. USE OF PROPERTY: The above described parcel of land shall be used solely for two borrow areas and one terminal groin and Grantee shall not engage in any activity except as described in the Department of Environmental Protection, Consolidated Joint Coastal Permit No. 0173059-001-JC, dated March 5, 2002, incorporated herein and made a part of this easement by reference. All of the foregoing subject to the remaining conditions of this Easement.

2. EASEMENT CONSIDERATION: In the event the Grantor amends its rules related to fees and the amended rules provide the Grantee will be charged a fee or an increased fee for this activity, the Grantee agrees to pay all charges required by such amended rules within 90 days of the date the amended rules become effective or by a date provided by an invoice from the Department, whichever is later. All fees charged under this provision shall be prospective in nature; i.e. they shall begin to accrue on the date that the amended rules become effective.

3. WARRANTY OF TITLE/GUARANTEE OF SUITABILITY OF USE OF LAND: Grantor neither warrants title to the lands described herein nor guarantees the suitability of any of the lands for any particular use.

4. RIGHTS GRANTED: The rights hereby granted shall be subject to any and all prior rights of the United States and any and all prior grants by the Grantor in and to the submerged lands situated within the limits of this easement.

5. DAMAGE TO EASEMENT PROPERTY AND INTERFERENCE WITH PUBLIC AND PRIVATE RIGHTS: Grantee shall not damage the easement lands or unduly interfere with public or private rights therein.

6. GRANTOR'S RIGHT TO GRANT COMPATIBLE USES OF THE EASEMENT PROPERTY: This easement is nonexclusive, and the Grantor, or its duly authorized agent, shall retain the right to enter the property or to engage in management activities not inconsistent with the use herein provided for and shall retain the right to grant compatible uses of the property to third parties during the term of this easement.

7. RIGHT TO INSPECT: Grantor, or its duly authorized agent, shall have the right at any time to inspect the works and operations of the Grantee in any matter pertaining to this easement.

8. INDEMNIFICATION/INVESTIGATION OF ALL CLAIMS: The Grantee shall investigate all claims of every nature at its expense. Each party is responsible for all personal injury and property damage attributable to the negligent acts or omissions of that party and the officers, employees and agents thereof. Nothing herein shall be construed as an indemnity or a waiver of sovereign immunity enjoyed by any party hereto, as provided in Section 768.28, Florida Statutes, as amended from time to time, or any other law providing limitations on claims.

9. VENUE: Grantee waives venue as to any litigation arising from matters relating to this easement and any such litigation between Grantor and Grantee shall be initiated and maintained only in Leon County, Florida.

10. ASSIGNMENT OF EASEMENT: This easement shall not be assigned or otherwise transferred without prior written consent of the Grantor or its duly authorized agent. Any assignment or other transfer without prior written consent of the Grantor shall be null and void and without legal effect.

11. TERMINATION: The Grantee, by acceptance of this easement, binds itself, its successors and assigns, to abide by the provisions and conditions herein set forth, and said provisions and conditions shall be deemed covenants of the Grantee, its successors and assigns. In the event the Grantee fails or refuses to comply with the provisions and conditions herein set forth or in the event the Grantee violates any of the provisions and conditions herein, this easement may be terminated by the Grantor upon 30 days written notice to Grantee. If terminated, all of the above-described parcel of land shall revert to the Grantor. All costs, including attorneys' fees, incurred by the Grantor to enforce the provisions of this easement shall be paid by the Grantee. All notices required to be given to Grantee by this easement or applicable law or administrative rules shall be sufficient if sent by U.S. Mail to the following address:

Lee County Natural Resources Division
1500 Monroe Street
Fort Myers, Florida 33902

The Grantee agrees to notify the Grantor by certified mail of any changes to this address at least ten (10) days before the change is effective.

12. TAXES AND ASSESSMENTS: The Grantee shall assume all responsibility for liabilities that accrue to the subject property or to the improvements thereon, including any and all drainage or special assessments or taxes of every kind and description which are now or may be hereafter lawfully assessed and levied against the subject property during the effective period of this easement which result from the grant of this easement or the activities of Grantee hereunder.

13. REMOVAL OF STRUCTURES/ADMINISTRATIVE FINES: If the Grantee does not remove said structures and equipment occupying and erected upon the premises after expiration or cancellation of this easement, such structures and equipment will be deemed forfeited to the Grantor, and the Grantor may authorize removal and may sell such forfeited structures and equipment after ten (10) days written notice by certified mail addressed to the Grantee at the address specified in Item 11 or at such address on record as provided to the Grantor by the Grantee. However, such remedy shall be in addition to all other remedies available to Grantor under applicable laws, rules and regulations including the right to compel removal of all structures and the right to impose administrative fines.

14. ENFORCEMENT OF PROVISIONS: No failure, or successive failures, on the part of the Grantor to enforce any provision, nor any waiver or successive waivers on its part of any provision herein, shall operate as a discharge thereof or render the same inoperative or impair the right of the Grantor to enforce the same upon any renewal thereof or in the event of subsequent breach or breaches.

15. RECORDATION OF EASEMENT: The Grantee, at its own expense, shall record this fully executed easement in its entirety in the public records of the county within which the easement site is located within fourteen (14) days after receipt, and shall provide to the Grantor within ten (10) days following the recordation a copy of the recorded easement in its entirety which contains the O.R. Book and pages at which the easement is recorded.

16. AMENDMENTS/ MODIFICATIONS: This easement is the entire and only agreement between the parties. Its provisions are not severable. Any amendment or modification to this easement must be in writing and must be accepted, acknowledged and executed by the Grantee and Grantor.

17. ACOE AUTHORIZATION: Prior to commencement of construction and/or activities authorized herein, the Grantee shall obtain the U.S. Army Corps of Engineers (COE) permit if it is required by the COE. Any modifications to the construction and/or activities authorized herein that may be required by the COE shall require consideration by and the prior written approval of the Grantor prior to the commencement of construction and/or any activities on sovereign, submerged lands.

18. ADDITIONAL STRUCTURES OR ACTIVITIES/EMERGENCY STRUCTURAL REPAIRS: No additional tructures shall be erected and/or activities undertaken, including but not limited to, dredging, relocation/realignment or major repairs or renovations made to authorized structures, on, in or over sovereignty, submerged lands without the prior written consent of the Grantor, with the exception of emergency repairs. Unless specifically authorized in writing by the Grantor, such activities or structures shall be considered unauthorized and a violation of Chapter 253, Florida Statutes, and shall subject the Grantee to administrative fines under Chapter 18-14, Florida Administrative Code. If emergency repairs are required to be undertaken in the interests of public health, safety or welfare, the Grantee shall notify the Grantor of such repairs as quickly as is practicable; provided, however, that such emergency activities shall not exceed the activities authorized by this easement.

19. UPLAND RIPARIAN PROPERTY INTEREST: During the term of this easement, Grantee, pursuant to section 18-21.009, Florida Administrative Code, must either be the record owner of the riparian upland property or have the written consent of the riparian upland property owner(s) to conduct the activity described in this easement. If at any time during the term of this easement, Grantee fails to comply with this requirement, this easement shall terminate and title to this easement shall revert to and vest in the Grantor immediately and automatically.

20. ACCRETION INTEREST: In further consideration of the issuance of this easement by the Grantor, Grantee consents to the construction and maintenance of the structures authorized hereunder and expressly waives any right, title or interest in and to any accretions or additions to Grantee's shoreline resulting from any activity approved herein.

WITNESSES:

Original Signature

Print/Type Name of Witness

Original Signature

Print/Type Name of Witness

BOARD OF TRUSTEES OF THE INTERNAL IMPROVEMENT TRUST FUND OF THE STATE OF FLORIDA

(SEAL)

BY: _____

Acey L. Stinson, Operations and Management Consultant Manager, Bureau of Public Land Administration, Division of State Lands, Department of Environmental Protection, as agent for and on behalf of the Board of Trustees of the Internal Improvement Trust Fund of the State of Florida

STATE OF FLORIDA
COUNTY OF LEON

"GRANTOR"

The foregoing instrument was acknowledged before me this _____ day of _____, 20___, by Acey L. Stinson, Operations and Management Consultant Manager, Bureau of Public Land Administration, Division of State Lands, Department of Environmental Protection, as agent for and on behalf of the Board of Trustees of the Internal Improvement Trust Fund of the State of Florida. He is personally known to me.

APPROVED AS TO FORM AND LEGALITY:

DEP Attorney

Notary Public, State of Florida

Printed, Typed or Stamped Name

My Commission Expires:

Commission/Serial No.

OFFICE OF COUNTY ATTORNEY
Kristie L. Kroslack

WITNESSES:

Original Signature

Margaret D. Summerall

Typed/Printed Name of Witness

Bruce D. Loucks

Original Signature

Typed/Printed Name of Witness

Lee County, Florida
By its Board of County Commissioners

BY: _____
Original Signature of Executing Authority

Bob Janes
Typed/Printed Name of Executing Authority

Chairman
Title of Executing Authority

SIGN HERE

"GRANTEE"

STATE OF Florida

COUNTY OF Lee

The foregoing instrument was acknowledged before me this 26th day of March, 2002, by Bob Janes as Chairman, for and on behalf of the Board of County Commissioners of Lee County, Florida. He is personally known to me or who has produced _____, as identification.

Commission Expires:
2-24-06

Commission/Serial No. DD094849

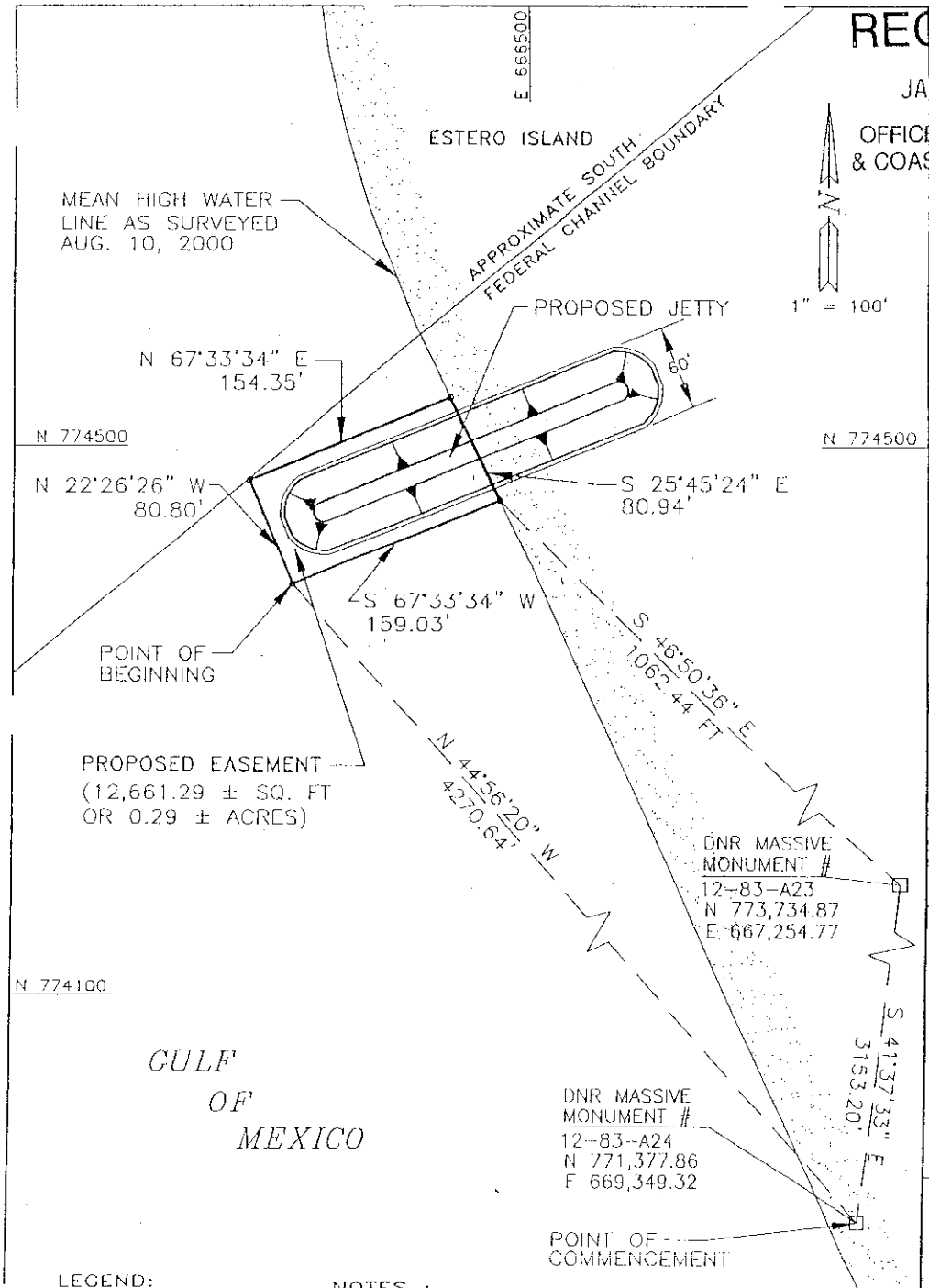
Notary Public, State of Florida

Mary E. Frisby

Printed, Typed or Stamped Name

Mary E Frisby
My Commission DD094849
Expires February 24, 2006

RECEIVED
JAN 19 2001
OFFICE OF BEACHES
& COASTAL SYSTEMS



ESTERO ISLAND
NOURISHMENT PROJECT
JETTY CONSTRUCTION EASEMENT

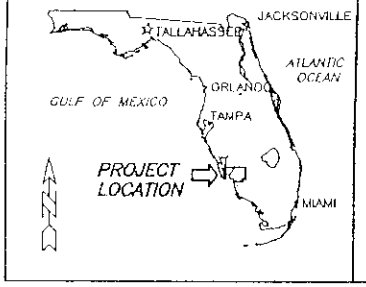
LEGEND:

☐ 2ND ORDER STATIONS

NOTES :

1. THIS DOCUMENT HAS NOT BEEN ABSTRACTED FOR EASEMENTS, OWNERSHIP, OR RIGHTS-OF-WAY.
2. THIS IS NOT A FIELD SURVEY; TO ACCOMPANY LEGAL DESCRIPTION ONLY.
3. THE COORDINATES AND BEARINGS SHOWN HEREON ARE BASED ON THE FLORIDA STATE PLANE COORDINATE SYSTEM, WEST ZONE, NORTH AMERICAN DATUM, 1983.
4. THIS DOCUMENT IS NOT VALID UNLESS SEALED WITH AN EMBOSSED SURVEYORS SEAL.

Attachment A
Page 11 of 11 Pages
Easement No. 30635



CERTIFICATION :

I HEREBY CERTIFY THAT THE ATTACHED SKETCH OF DESCRIPTION OF THE HEREON DESCRIBED PROPERTY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AS DELINEATED UNDER MY DIRECTION. I FURTHER CERTIFY THAT THIS SKETCH OF DESCRIPTION MEETS THE MINIMUM TECHNICAL STANDARDS SET FORTH IN RULE 21HH-6, ADOPTED BY THE FLORIDA BOARD OF PROFESSIONAL SURVEYORS AND MAPPERS, PERSUANT TO FLORIDA STATUTE 472.027.

COASTAL PLANNING & ENGINEERING, INC.

Earl Soeder

EARL SOEDER, P.S.M.
FLORIDA REGISTERED SURVEYOR # 5865

01/05/01
DATE

COASTAL PLANNING & ENGINEERING, INC.
2481 N.W. BOCA RATON BLVD.
BOCA RATON, FL. 33431

TITLE:	
DATE:	12/11/00
BY:	RI
COMM. NO.	8410.04
SHEET:	1 OF 2

LEGAL DESCRIPTION :

A PARCEL OF SUBMERGED LAND LYING IN SECTION 24, TOWNSHIP 46 SOUTH, RANGE 23 EAST, ESTERO ISLAND, LEE COUNTY, FLORIDA, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

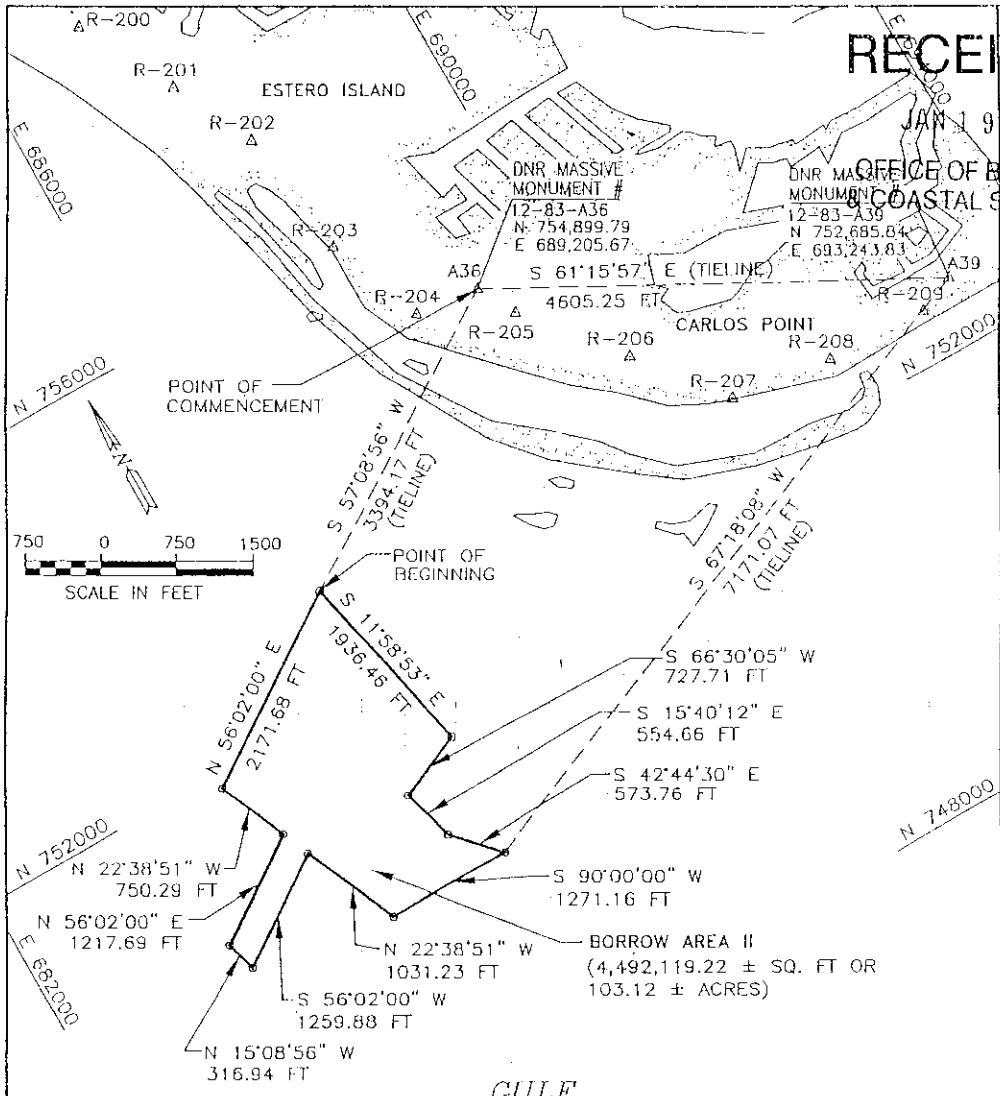
COMMENCING AT FLORIDA DEPARTMENT OF NATURAL RESOURCES (DNR) MASSIVE MONUMENT 12-83--A24, HAVING FOR ITS COORDINATES N 771377.86, E 669349.32 IN THE FLORIDA STATE PLANE COORDINATE SYSTEM, WEST ZONE; THENCE NORTH 44 DEGREES 56 MINUTES 20 SECONDS WEST, (BEARINGS ARE BASED ON A BEARING OF SOUTH 41 DEGREES 37 MINUTES 33 SECONDS EAST BETWEEN DNR MASSIVE MONUMENTS 12-83-A24 AND 12-83-A23 PER COORDINATE LISTING BY DNR FOR LEE COUNTY), A DISTANCE OF 4270.64 FEET TO THE POINT OF BEGINNING, HAVING FOR ITS COORDINATES N 774400.87 E 666332.74;
THENCE NORTH 22 DEGREES 26 MINUTES 26 SECONDS WEST, A DISTANCE OF 80.80 FEET TO A POINT;
THENCE NORTH 67 DEGREES 33 MINUTES 34 SECONDS EAST, A DISTANCE OF 154.35 FEET TO A POINT;
THENCE SOUTH 25 DEGREES 45 MINUTES 24 SECONDS EAST, ALONG MEAN HIGH WATER LINE AS SURVEYED AUGUST 10, 2000, A DISTANCE OF 80.94 FEET TO A POINT;
SAID POINT IS FURTHER DESCRIBED, AS BEING SOUTH 46 DEGREES 50 MINUTES AND 36 SECONDS EAST, A DISTANCE OF 1062.44 FEET FROM AFORE MENTIONED DNR MASSIVE MONUMENT 12-83-A23 HAVING FOR ITS COORDINATES N 773734.87, E 667254.77 IN THE FLORIDA STATE PLAN COORDINATE SYSTEM, WEST ZONE;
THENCE SOUTH 67 DEGREES 33 MINUTES 34 SECONDS WEST, A DISTANCE OF 159.03 FEET TO THE POINT OF BEGINNING;

CONTAINING 12,661.29 SQUARE FEET OR 0.29 ACRES MORE OR LESS.

TITLE:
ESTERO ISLAND
NOURISHMENT PROJECT
JETTY CONSTRUCTION EASEMENT

COASTAL PLANNING & ENGINEERING, INC.
2481 N.W. BOCA RATON BLVD.
BOCA RATON, FL. 33431

DATE: 12/11/00
BY: RI
COMM. NO. 8410.04
SHEET: 2 OF 2



LEGEND:

AR 38 DEP MONUMENTS

NOTES :

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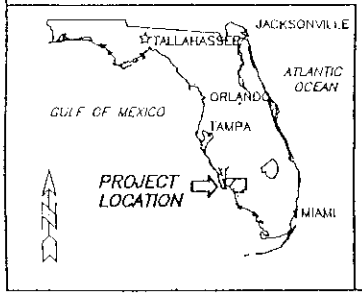
Attachment A
Page 9 of 11 Pages
Easement No. 30635



CERTIFICATION :

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COASTAL PLANNING & ENGINEERING, INC.

Earl Soeder 01/05/01

EARL SOEDER, P.S.M. DATE
FLORIDA REGISTERED SURVEYOR # 5865

ESTERO ISLAND
NOURISHMENT PROJECT
BORROW AREA II LEGAL DESCRIPTION

TITLE :

2481 N.W. BOCA RATON BLVD.
BOCA RATON, FL. 33431

COASTAL PLANNING & ENGINEERING, INC.

DATE: 12/11/00
BY: RI
COMM. NO. 8410.04
SHEET: 1 OF 2

RECEIVED
JAN 1 9 2001
OFFICE OF BEACHES
& COASTAL SYSTEMS

LEGAL DESCRIPTION :

A PARCEL OF SUBMERGED LAND LYING APPROXIMATELY 0.7 MILES OFF-SHORE FROM SECTION 9, TOWNSHIP 47 SOUTH, RANGE 24 EAST, ESTERO ISLAND, LEE COUNTY, FLORIDA, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT FLORIDA DEPARTMENT OF NATURAL RESOURCES (DNR) MASSIVE MONUMENT 12-83-A36, HAVING FOR ITS COORDINATES N 754899.79, E 689205.67 IN THE FLORIDA STATE PLANE COORDINATE SYSTEM, WEST ZONE; THENCE SOUTH 57 DEGREES 08 MINUTES 56 SECONDS WEST, (BEARINGS ARE BASED ON A BEARING OF SOUTH 61 DEGREES 15 MINUTES 57 SECONDS EAST BETWEEN DNR MASSIVE MONUMENTS 12-83-A39 AND 12-83-A36 PER COORD-INATE LISTING BY DNR FOR LEE COUNTY), A DISTANCE OF 3394.17 FEET TO THE POINT OF BEGINNING, HAVING FOR ITS COORDINATES N 753058.60 E 686354.28;

THENCE SOUTH 11 DEGREES 58 MINUTES 53 SECONDS EAST, A DISTANCE OF 1936.46 FEET TO A POINT;
THENCE SOUTH 66 DEGREES 30 MINUTES 05 SECONDS WEST, A DISTANCE OF 727.71 FEET TO A POINT;
THENCE SOUTH 15 DEGREES 40 MINUTES 12 SECONDS EAST, A DISTANCE OF 554.66 FEET TO A POINT;
THENCE SOUTH 42 DEGREES 44 MINUTES 30 SECONDS EAST, A DISTANCE OF 573.76 FEET TO A POINT;
SAID POINT IS FURTHER DESCRIBED, AS BEING SOUTH 67 DEGREES 18 MINUTES AND 08 SECONDS WEST, A DISTANCE OF 7171.07 FEET FROM AFORE MENTIONED DNR MASSIVE MONUMENT #12-83-A39 HAVING FOR ITS COORDINATES N 752685.84, E 693243.83 IN THE FLORIDA STATE PLAN COORDINATE SYSTEM, WEST ZONE;
THENCE SOUTH 90 DEGREES 00 MINUTES 00 SECONDS WEST, A DISTANCE OF 1271.16 FEET TO A POINT;
THENCE NORTH 22 DEGREES 38 MINUTES 51 SECONDS WEST, A DISTANCE OF 1031.23 FEET TO A POINT.
THENCE SOUTH 56 DEGREES 02 MINUTES 00 SECONDS WEST, A DISTANCE OF 1259.88 FEET TO A POINT;
THENCE NORTH 15 DEGREES 08 MINUTES 56 SECONDS WEST, A DISTANCE OF 316.94 FEET TO A POINT.
THENCE NORTH 56 DEGREES 02 MINUTES 00 SECONDS EAST, A DISTANCE OF 1217.69 FEET TO A POINT;
THENCE NORTH 22 DEGREES 38 MINUTES 51 SECONDS WEST, A DISTANCE OF 750.29 FEET TO A POINT;
THENCE NORTH 56 DEGREES 02 MINUTES 00 SECONDS EAST, A DISTANCE OF 2171.68 FEET TO THE POINT OF BEGINNING.

CONTAINING 4,492,119.22 SQUARE FEET OR 103.12 ACRES MORE OR LESS.

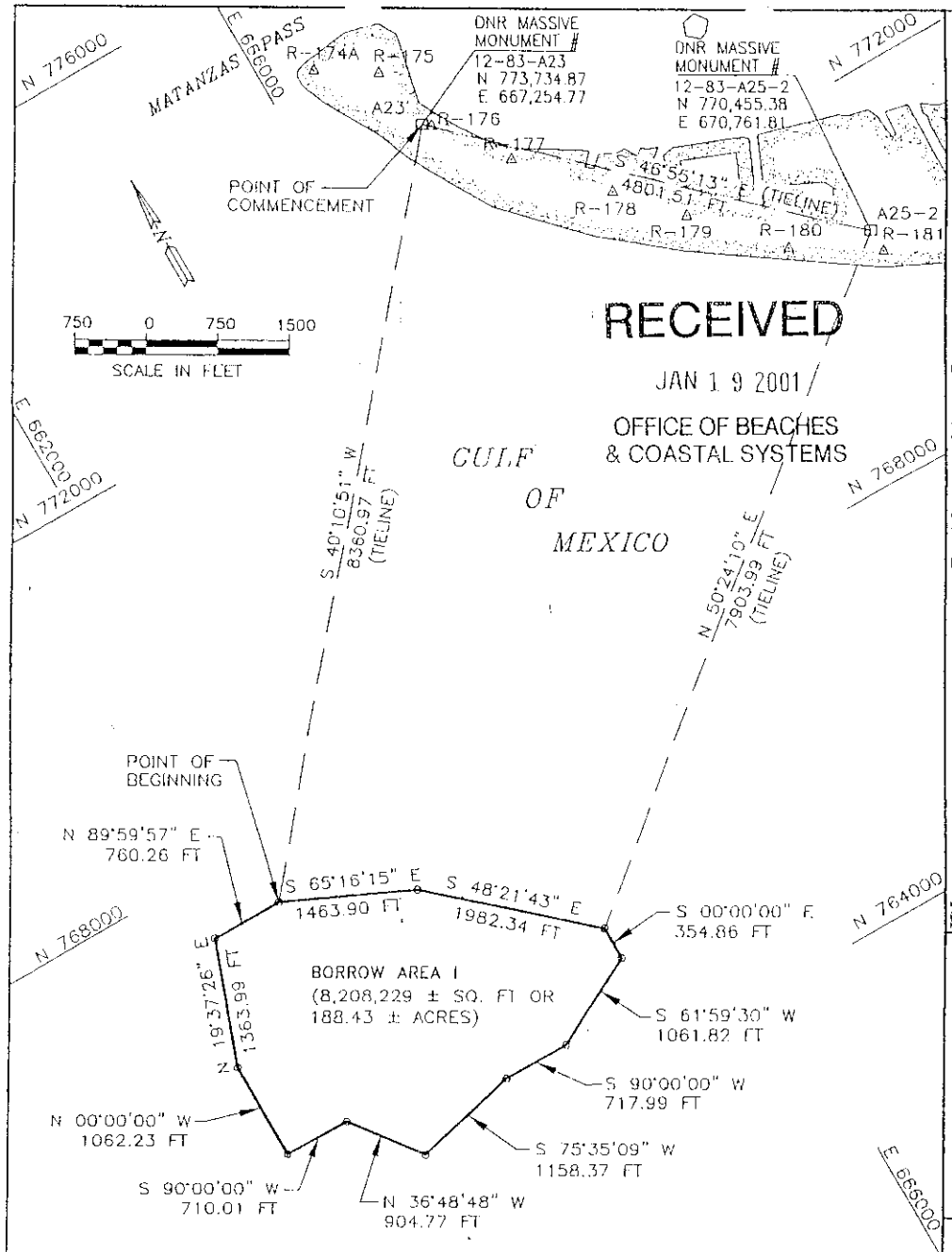
ESTERO ISLAND
NOURISHMENT PROJECT
BORROW AREA II LEGAL DESCRIPTION

TITLE :

2481 N.W. BOCA RATON BLVD.
BOCA RATON, FL 33431

COASTAL PLANNING & ENGINEERING, INC.

DATE: 12/11/00
BY: RI
COMM. NO. 8410.04
SHEET: 2 OF 2



RECEIVED

JAN 19 2001

OFFICE OF BEACHES & COASTAL SYSTEMS

ESTERO ISLAND NOURISHMENT PROJECT
BORROW AREA I LEGAL DESCRIPTION

TITLE :

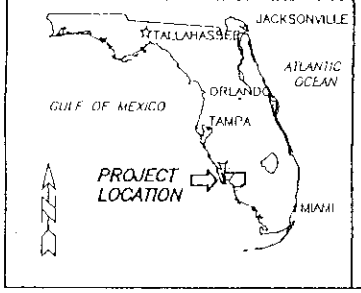
NOTES :

1. THIS DOCUMENT HAS NOT BEEN ABSTRACTED FOR EASEMENTS, OWNERSHIP, OR RIGHTS-OF-WAY.
2. THIS IS NOT A FIELD SURVEY; TO ACCOMPANY LEGAL DESCRIPTION ONLY.
3. THE COORDINATES AND BEARINGS SHOWN HEREON ARE BASED ON THE FLORIDA STATE PLANE COORDINATE SYSTEM, WEST ZONE, NORTH AMERICAN DATUM, 1983.
4. THIS DOCUMENT IS NOT VALID UNLESS SEALED WITH AN EMBOSSED SURVEYORS SEAL.

LEGEND:

△R 38 DEP MONUMENTS

Attachment A
Page 7 of 11 Pages
Easement No. 30635



CERTIFICATION :

I HEREBY CERTIFY THAT THE ATTACHED SKETCH OF DESCRIPTION OF THE HEREON DESCRIBED PROPERTY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AS DELINEATED UNDER MY DIRECTION. I FURTHER CERTIFY THAT THIS SKETCH OF DESCRIPTION MEETS THE MINIMUM TECHNICAL STANDARDS SET FORTH IN RULE 21HH-6, ADOPTED BY THE FLORIDA BOARD OF PROFESSIONAL SURVEYORS AND MAPPERS, PERSUANT TO FLORIDA STATUTE 472.027.

COASTAL PLANNING & ENGINEERING, INC.

Earle Soeder

EARLE SOEDER, P.S.M.
FLORIDA REGISTERED SURVEYOR # 5865

12/15/00
DATE

COASTAL PLANNING & ENGINEERING, INC.
2481 N.W. BOCA RATON BLVD.
BOCA RATON, FL. 33431

DATE: 12/11/00
BY: RI
COMM. NO. 8410.04
SHEET: 1 OF 2

LEGAL DESCRIPTION :

A PARCEL OF SUBMERGED LAND LYING APPROXIMATELY 0.7 MILES OFF-SHORE FROM SECTION 24, TOWNSHIP 46 SOUTH, RANGE 23 EAST, ESTERO ISLAND, LEE COUNTY, FLORIDA, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT FLORIDA DEPARTMENT OF NATURAL RESOURCES (DNR) MASSIVE MONUMENT 12-83-A23, HAVING FOR ITS COORDINATES N 773734.87, E 667254.77 IN THE FLORIDA STATE PLANE COORDINATE SYSTEM, WEST ZONE; THENCE SOUTH 40 DEGREES 10 MINUTES 51 SECONDS WEST, (BEARINGS ARE BASED ON A BEARING OF SOUTH 46 DEGREES 55 MINUTES 13 SECONDS EAST BETWEEN DNR MASSIVE MONUMENTS 12-83-A25-2 AND 12-83-A23 PER COORDINATE LISTING BY DNR FOR LEE COUNTY), A DISTANCE OF 8360.97 FEET TO THE POINT OF BEGINNING, HAVING FOR ITS COORDINATES N 767346.99 E 661860.26;

THENCE SOUTH 65 DEGREES 16 MINUTES 15 SECONDS EAST, A DISTANCE OF 1463.90 FEET TO A POINT;
THENCE SOUTH 48 DEGREES 21 MINUTES 43 SECONDS EAST, A DISTANCE OF 1982.34 FEET TO A POINT;
SAID POINT IS FURTHER DESCRIBED, AS BEING SOUTH 50 DEGREES 24 MINUTES AND 10 SECONDS WEST, A DISTANCE OF 7903.99 FEET FROM AFORE MENTIONED DNR MASSIVE MONUMENT #12-83-A25-2 HAVING FOR ITS COORDINATES N 770455.38, E 670761.81 IN THE FLORIDA STATE PLAN COORDINATE SYSTEM, WEST ZONE;
THENCE SOUTH 00 DEGREES 00 MINUTES 00 SECONDS EAST, A DISTANCE OF 354.86 FEET TO A POINT;
THENCE SOUTH 61 DEGREES 59 MINUTES 30 SECONDS WEST, A DISTANCE OF 1061.82 FEET TO A POINT;
THENCE SOUTH 90 DEGREES 00 MINUTES 00 SECONDS WEST, A DISTANCE OF 717.99 FEET TO A POINT;
THENCE SOUTH 75 DEGREES 35 MINUTES 09 SECONDS WEST, A DISTANCE OF 1158.37 FEET TO A POINT;
THENCE NORTH 36 DEGREES 48 MINUTES 48 SECONDS WEST, A DISTANCE OF 904.77 FEET TO A POINT;
THENCE SOUTH 90 DEGREES 00 MINUTES 00 SECONDS WEST, A DISTANCE OF 710.01 FEET TO A POINT.
THENCE NORTH 00 DEGREES 00 MINUTES 00 SECONDS WEST, A DISTANCE OF 1062.23 FEET TO A POINT;
THENCE NORTH 19 DEGREES 37 MINUTES 26 SECONDS EAST, A DISTANCE OF 1363.99 FEET TO THE POINT OF BEGINNING.
THENCE NORTH 89 DEGREES 59 MINUTES 57 SECONDS EAST, A DISTANCE OF 760.26 FEET TO THE POINT OF BEGINNING.

CONTAINING 8,208,229 SQUARE FEET OR 188.43 ACRES MORE OR LESS.

ESTERO ISLAND
NOURISHMENT PROJECT
BORROW AREA I LEGAL DESCRIPTION

TITLE :

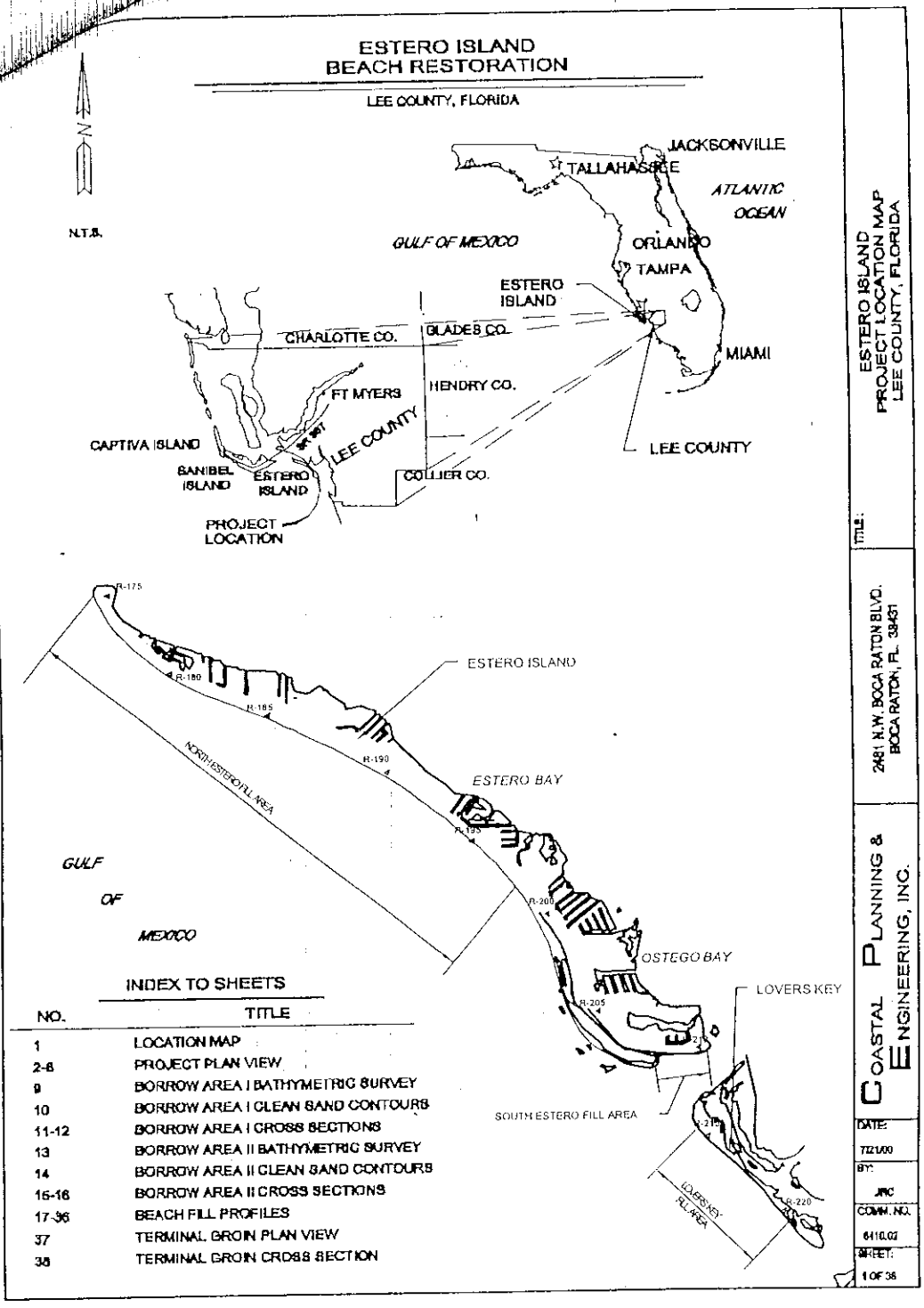
2481 N.W. BOCA RATON BLVD.
BOCA RATON, FL. 33431

COASTAL PLANNING & ENGINEERING, INC.

DATE: 12/11/00
BY: RI
COMM. NO. 8410.04
SHEET: 2 OF 2

ESTERO ISLAND
BEACH RESTORATION

LEE COUNTY, FLORIDA



INDEX TO SHEETS

NO.	TITLE
1	LOCATION MAP
2-8	PROJECT PLAN VIEW
9	BORROW AREA I BATHYMETRIC SURVEY
10	BORROW AREA I CLEAN SAND CONTOURS
11-12	BORROW AREA I CROSS SECTIONS
13	BORROW AREA II BATHYMETRIC SURVEY
14	BORROW AREA II CLEAN SAND CONTOURS
15-16	BORROW AREA II CROSS SECTIONS
17-36	BEACH FILL PROFILES
37	TERMINAL GROIN PLAN VIEW
38	TERMINAL GROIN CROSS SECTION

TITLE:
ESTERO ISLAND
PROJECT LOCATION MAP
LEE COUNTY, FLORIDA

COASTAL PLANNING & ENGINEERING, INC.
2481 N.W. BOCA RATON BLVD.
BOCA RATON, FL. 33431

DATE: 7/21/00
BY: JRC
COMM. NO. 6410.02
SHEET: 1 OF 38

INSTR # 5817942
Official Records BK 03929 PG 2463
RECORDED 05/12/2003 11:56:59 AM
CHARLIE GREEN, CLERK OF COURT
LEE COUNTY
RECORDING FEE 51.00
DEPUTY CLERK L Patent

BOARD OF TRUSTEES OF THE
INTERNAL IMPROVEMENT
TRUST FUND OF THE STATE OF FLORIDA

BEACH RENOURISHMENT USE AGREEMENT
LEE COUNTY

MAY 2 3 2003

RECEIVED

Use Agreement No. U-0310

THIS USE AGREEMENT is hereby made and entered into by and between the BOARD OF TRUSTEES OF THE INTERNAL IMPROVEMENT TRUST FUND OF THE STATE OF FLORIDA, hereinafter referred to as the "GRANTOR", and LEE COUNTY, FLORIDA, hereinafter referred to as the "GRANTEE", on this 24th day of April, 2003.

WITNESSETH

WHEREAS, LEE COUNTY is embarking upon a shore protection project ("project") in the vicinity of Lovers Key State Park, which is managed by the Florida Department of Environmental Protection, Division of Recreation and Parks, under Lease No. 3340.

WHEREAS, in undertaking the shore protection project, GRANTEE desires to temporarily place and maintain pipeline and equipment on GRANTOR'S property and to place dredged materials upon GRANTOR'S property.

NOW THEREFORE, in consideration of the faithful and timely performance of and compliance with all the terms and conditions stated herein, the GRANTOR does hereby grant to GRANTEE, the right to use the following described state-owned lands (the "premises"), to wit:

(SEE ATTACHED EXHIBIT "A")

subject to the following terms and conditions:

1. DELEGATIONS OF AUTHORITY: GRANTOR'S responsibilities and obligations herein shall be exercised by the Division of State Lands, Department of Environmental Protection, pursuant to Chapter 18-2, Florida Administrative Code, and applicable delegations of authority.

2. COMMENCEMENT: This use agreement shall commence on April 24, 2003, and end on April 23, 2008, unless sooner

terminated by GRANTOR or otherwise extended in writing by both parties to this use agreement.

3. EXTENT OF AGREEMENT: This use agreement covers the use of the premises for the purposes of construction, operation and maintenance of a sand transmission pipeline and spoiling of dredged materials, and no other use or activity shall be allowed. All such activities shall be consistent with the water quality certification issued by the Department of Environmental Protection in effect at the time of any dredging activity.

4. UNDUE WASTE: GRANTEE shall not commit undue waste to the premises. Existing beach/dune vegetation shall be disturbed only to the minimum extent necessary for construction, construction access, and other permitted activities as determined at the preconstruction meeting. GRANTEE shall restore landscape features and coastal vegetation damaged during construction to the satisfaction of the manager of Lovers Key State Park. Vegetation shall be replaced with plants of the same species or, by authorization of the park manager, with other indigenous salt resistant vegetation suitable for beach and dune stabilization.

5. COORDINATION WITH PARK MANAGER: All activities of the GRANTEE under this use agreement shall be coordinated with the park manager through an on-site preconstruction meeting and through communication with GRANTEE and GRANTEE's contracting officer or representative to ensure visitor safety and protection of natural resources. Project specifics, including but not limited to the number and location of ramps and starting dates, shall be identified at the preconstruction meeting.

6. RIGHT OF INSPECTION: GRANTOR or its duly authorized agent shall have the right at any time to inspect the works and operation of GRANTEE pertaining to this use agreement.

7. PROPERTY RIGHTS: This use agreement constitutes permissive use only, and the placing of temporary or permanent facilities or related structures upon public property pursuant to this use

agreement is prohibited. GRANTEE agrees that it does not and shall not claim at any time any interest or estate of any kind or extent whatsoever in the premises, by virtue of this use agreement or its occupancy or use hereunder.

8. USE OF PROPERTY: This use agreement shall be non-exclusive. GRANTOR, or its duly authorized agent, shall retain the right to enter the premises covered by this use agreement or to engage in management activities not inconsistent with the use herein provided for, and GRANTOR shall retain the right to grant compatible uses of the premises subject to this use agreement to third parties during the term of this use agreement.

9. LIABILITY: Each party is responsible for all personal injury and property damage attributable to the negligent acts or omissions of that party and the officers, employees and agents thereof. Nothing herein shall be construed as an indemnity or a waiver of sovereign immunity enjoyed by any party hereto, as provided in Section 768.28, Florida Statutes, as amended from time to time, or any other law providing limitations on claims.

10. ASSIGNMENT: This use agreement is personal to GRANTEE and may not be transferred or assigned without the prior written approval of the GRANTOR; however, the GRANTOR and GRANTEE recognize and agree that some or all of the activities permitted under this use agreement may be performed by GRANTEE or its contractor under separate agreement with the GRANTEE. Such performance by GRANTEE does not create or impose any duty or responsibility between the GRANTOR and the GRANTEE, nor does it relieve the GRANTEE of any duty, responsibility, or liability under this use agreement.

11. REMOVAL OF DEBRIS: GRANTEE shall clear, remove and pick up all of the Army Corps of Engineers' and its contractor's debris including but not limited to mud containers, oil containers, papers, discarded tools and trash foreign to the work locations

and dispose of the same offsite in such a manner as to leave work locations clean and free of any such debris on a daily basis.

12. ARCHAEOLOGICAL AND HISTORIC SITES: Execution of this use agreement in no way affects either of the parties' obligations pursuant to Chapter 267, Florida Statutes. The collection of artifacts or the disturbance of archaeological and historic sites on state-owned lands is prohibited unless prior authorization has been obtained from the Division of Historical Resources of the Department of State.

13. COMPLIANCE WITH LAWS: This use agreement is contingent upon and subject to the GRANTEE obtaining all applicable permits and complying with all applicable permits, regulations, ordinances, rules, and laws of the State of Florida, the United States or of any political subdivision or agency thereof.

14. RESPONSIBILITY FOR COMPLIANCE: The parties hereto contemplate the performance of all or a part of the activities authorized herein by the GRANTEE. Notwithstanding the foregoing, GRANTEE shall bear the full and ultimate responsibility and liability to GRANTOR for the faithful and timely compliance with the terms and conditions set forth herein.

15. TITLE: GRANTOR neither warrants title to the premises nor guarantees the suitability of the premises for any particular use.

16. DAMAGE: GRANTEE shall not damage the premises, or unduly interfere with public or private rights therein.

17. VENUE: GRANTEE waives venue as to any litigation arising from matters relating to this use agreement and any such litigation between GRANTOR and GRANTEE shall be initiated and maintained only in Leon County, Florida.

18. TERMINATION: The GRANTEE by acceptance of this use agreement, binds itself, its successors and assigns, to abide by the provisions and conditions herein set forth, and said provisions and conditions shall be deemed covenants of the

GRANTEE, its successors and assigns. In the event the GRANTEE fails or refuses to comply with the provisions and conditions herein set forth or in the event the GRANTEE violates any of the provisions and conditions herein, the GRANTOR, through its Office of the Secretary, Department of Environmental Protection, shall give notice to the GRANTEE that curative action must be completed within thirty days. In the event that the matter is not resolved within the thirty day curative period, GRANTOR may elect to terminate this use agreement by means of a letter of termination from its Office of the Secretary, Department of Environmental Protection, notifying GRANTEE that the use agreement is terminated. In the event that this use agreement is terminated by the GRANTOR, all rights inuring to the GRANTEE or its successors shall cease upon the effective date of the letter of termination with the exception of those activities necessary to demobilize and remove personnel and equipment, but GRANTEE'S obligations and responsibilities under paragraphs 9, 20 and 21 of this use agreement shall survive termination.

19. NOTICE: All notices required to be given by GRANTOR to GRANTEE by this use agreement or applicable law or administrative rules shall be sufficient if sent by U.S. Mail to the following address:

Lee County Department of Public Works
Post Office Box 398
Fort Myers, Florida 33902-0398

Department of Environmental
Protection
Division of State Lands
Bureau of Public Land Administration, MS 130
3800 Commonwealth Boulevard
Tallahassee, Florida 32399-3000

The GRANTEE and its successors shall notify the GRANTOR by certified mail of any changes to the above address at least ten days before the change is effective.

20. TAXES AND ASSESSMENTS: The GRANTEE shall assume all responsibility for liabilities that accrue to the premises or to

the improvements thereon, including any and all drainage or special assessments or taxes of every kind and description which are now or may be hereafter lawfully assessed and levied against the premises during the effective period of this use agreement which result from the grant of this use agreement or the activities of GRANTEE hereunder.

21. REMOVAL OF EQUIPMENT: If the GRANTEE does not remove any equipment occupying the premises after expiration or cancellation of this use agreement, within sixty days of the date of expiration or effective date of the letter of termination referenced in paragraph 18, above, such equipment will be deemed forfeited to the GRANTOR, and the GRANTOR may authorize removal and may sell such forfeited equipment. However, such remedy shall be in addition to all other remedies available to GRANTOR under applicable laws, rules and regulations including the right to compel removal and the right to impose administrative fines.

22. ENFORCEMENT OF PROVISIONS: No failure, or successive failures, on the part of the GRANTOR to enforce any provision nor any waiver or successive waivers on its part of any provision herein, shall operate as a discharge thereof or render the same inoperative or impair the right to the GRANTOR to enforce the same upon any renewal thereof or in the event of subsequent breach or breaches.

23. AGREEMENT: This use agreement is the entire and only agreement between the parties. Any amendment or modification to this use agreement must be in writing and must be accepted, acknowledged and executed by the GRANTEE and GRANTOR.

24. SOVEREIGNTY SUBMERGED LANDS: This use agreement does not authorize the use of any lands located waterward of the mean or ordinary high water line of any lake, river, stream, creek, bay, estuary, or other water body or the waters or the air space above.

25. PROHIBITIONS AGAINST LIENS OR OTHER ENCUMBRANCES: Fee title to the premises is held by the GRANTOR. GRANTEE shall not do or permit anything to be done which purports to create a lien or encumbrance of any nature against the real property contained in the premises including, but not limited to, mortgages or construction liens against the premises or against any interest of the GRANTOR therein.

26. GOVERNING LAW: This use agreement shall be governed by and interpreted according to the laws of the State of Florida.

27. PARTIAL INVALIDITY: If any term, covenant, condition or provision of this use agreement shall be ruled by a court of competent jurisdiction to be invalid, void, or unenforceable, the remainder shall remain in full force and effect and shall in no way be affected, impaired or invalidated.

28. SPECIAL CONDITION: GRANTEE shall pay reasonable maintenance, repair or replacement costs incurred by the Division of Recreation and Parks (DRP) if such costs are determined by DRP to be a result of the GRANTEE'S activities related to this use agreement.

IN WITNESS WHEREOF, the parties have caused this use agreement to be executed on the day and year first above written.

BOARD OF TRUSTEES OF THE INTERNAL IMPROVEMENT TRUST FUND OF THE STATE OF FLORIDA

Judy Woodard
Witness

Judy Woodard
Print/Type Name

Theresa Davis
Witness

Florence Davis
Print/Type Name

By: Gloria C. Nelson (SEAL)
GLORIA C. NELSON, OPERATIONS AND MANAGEMENT CONSULTANT MANAGER, BUREAU OF PUBLIC LAND ADMINISTRATOR, DIVISION OF STATE LANDS, DEPARTMENT OF ENVIRONMENTAL PROTECTION

STATE OF FLORIDA
COUNTY OF LEON

The foregoing instrument was acknowledged before me this 24 day of April, 2003, by Gloria C. Nelson, Operations and Management Consultant Manager, Bureau of Public Land Administration, Division of State Lands, Department of Environmental Protection, as agent for and on behalf of the Board of Trustees of the Internal Improvement Trust Fund of the State of Florida. She is personally known to me.

Theresa M. Brady
Notary Public, State of Florida

Print/Type Notary

Theresa M. Brady
Commission # DD081826
Expires Jun. 2, 2006
Bonded Thru
Atlantic Bonding Co., Inc.

Commission Number:

Commission Expires:

Approved as to Form
and Legality

By: Sarah Nelson
DEP Attorney

LEE COUNTY, FLORIDA
BY ITS BOARD OF COUNTY
COMMISSIONERS

Shirley Carney
Witness
Shirley Carney
Print/Type Name

By: Ray Judah (SEAL)
Ray Judah
Print/Type Name

Michele G. Cooper
Witness
Michele G. Cooper
Print/Type Name

Title: Chairman

APPROVED AS TO FORM
OFFICE OF COUNTY ATTORNEY

ATTEST: Clerk of the Circuit Court
by: Michele G Cooper
Original Signature Deputy Clerk
Michele G. Cooper
Print/Type Name
"GRANTEE"

STATE OF FLORIDA

COUNTY OF Lee

The foregoing instrument was acknowledged before me this 18 day of March, 2003, by Ray Judah and Michele Cooper, as Chairman and Deputy Clerk, respectively, on behalf of the Board of County Commissioners of Lee County, Florida. They are personally known to me.

GEORGIA SEKULSKI
MY COMMISSION # DD 055585
EXPIRES: September 9, 2005
Bonded Thru Notary Public Underwriters

Georgia Sekulski
Notary Public, State of Florida
GEORGIA SEKULSKI
Print/Type Notary Name

Commission Number:

Commission Expires:

EXHIBIT "A"

All that portion of lands described in those certain deeds recorded in Official Records Book 1740, page 3899; Official Records Book 1685, page 1627 of the public records of Lee County, Florida, and that certain Lease Agreement dated June 12, 2001, between Lee County and the Department of Environmental Protection, Division of Recreation and Parks, for Dog Beach.

EXHIBIT "A"
PAGE 11 OF 11 PAGES
USE AGREEMENT NO. U-0310

SCANNER'S MEMO
Best Image Available

Lovers Key Restoration
On-Dredge Sea Turtle Observer's Report

Time: _____ **Date:** _____

Weather

Seas	_____	Temp	_____
Wind	_____	Skies	_____
Wind Direction	_____	Tide Stage	_____
Current	_____	Current Velocity	_____

Were any dead, sick, injured or endangered sea turtles observed Yes No
If yes explain below giving number & length of time observed.

_____
_____
_____
_____
_____

Actions taken to avoid observed turtles:

_____
_____
_____
_____
_____

Misc. Notes

_____
_____
_____
_____
_____

Any Observation of dead, injured, sick or endangered sea turtles shall be reported immediately to Lee County at 239.479.8109/10 and to the FWC at 888.404.FWCC.

_____
Signature of Sea Turtle Observer Date

_____
Printed Name of Sea Turtle Observer Date

Copies of daily observation reports shall be submitted daily with the Contractor's Daily Quality Control Report

Lovers Key Restoration
Manatee Protection Plan

In order to ensure that manatees are not adversely affected by the construction activities authorized by this permit, the Contactor shall adhere to the following manatee protection conditions:

a. The contractor shall instruct all personnel associated with the project of the potential presence of manatees and the need to avoid collisions with manatees. All construction personnel are responsible for observing water-related activities for the presence of manatee(s).

b. The contractor shall advise all construction personnel that there are civil and criminal penalties for harming, harassing, or killing manatees, which are protected under the Marine Mammal Protection Act of 1972, the Endangered Species Act of 1973, and the Florida Manatee Sanctuary Act of 1978.

c. Siltation barriers shall be made of material in which manatees cannot become entangled, are properly secured, and are regularly monitored to avoid manatee entrapment. Barriers must not block manatee entry to or exit from essential habitat.

d. All vessels associated with the project operate at "no wake/idle speed" at all times while in the construction area and while in water where the draft of the vessel provides less than a four foot clearance from the bottom. All vessels will follow routes of deep water whenever possible.

e. If manatee(s) are seen within 100 yards of the active daily construction/dredging operation, all appropriate precautions shall be implemented to ensure protection of the manatee These precautions shall include the operation of all moving equipment no closer than 50 feet of a manatee. Operation of any equipment closer than 50 feet to a manatee shall necessitate immediate shutdown of that equipment. Activities shall not resume until the manatee(s) has departed the project area of its own volition.

f. Any collision with and/or injury to a manatee shall be reported immediately to the "FWC Hotline" at 1-888-404-FWCC. Collision and /or injury should also be reported to the U.S. Fish and Wildlife Service in Jacksonville (1-904-232-2580) for north Florida or Vero Beach (1-772-562-3909) for south Florida.

g. Temporary signs concerning manatees shall be posted prior to and during all construction/dredging activities. All signs are to be removed by the Contractor upon completion of the project. A sign measuring at least 3 ft by 4 ft, which reads "Caution Manatee Area", will be posted in a location prominently visible to water related construction crews. A second sign should be posted if vessels are associated with the construction and should be placed visible to the vessel operator. The second sign should be at least 8-1/2" x 11", which reads Caution: Manatee Habitat. Idle speed is required if operating in the construction area. All equipment must be shutdown if a manatee comes within 50 feet of operation. Any collision with and/or injury to a manatee shall be reported immediately to the FWC Hotline at 1-888-404-FWCC. The U.S. Fish and Wildlife Service should also be contacted in Jacksonville (1-904-232-2580) for north Florida or in Vero Beach (1-772-562-3909) for south Florida.

h. The Contractor shall keep a log of all manatees sighted during the project. The log shall be available at the work site, for inspection during construction activities. The log shall be submitted to the County upon project completion.

Lovers Key Restoration Project
Manatee Sighting Form

Contractor shall keep a log of all manatee sightings. This log shall be available for inspection at the work site, during construction activities. The log shall be submitted to Lee County upon project completion.

Date	Time	Location	Distance to Manatee	Condition of Manatee (Healthy , Injured, Incapacitated)	Collision or Injury (Yes or No)	Action Taken

Contractor shall immediately report any collision with and, or, injury to a manatee to Lee County and the Florida Marine Patrol "Manatee Hotline" 1-800-342-5367 as well as the U.S. Fish and Wildlife Service, Vero Beach Field Office at 772-562-3909

Lovers Key Restoration
Water Quality Sampling Form
Borrow Site

Date: _____ **Permit Number:** JCP 0173059

Frequency: Once a day, midway through the dredging operation.

Sample # _____

Weather:	Temp. (°F)	Wave Height (ft.)	Wind Speed & Direction	Skies	Current Velocity and Direction	Tidal Stage (Incoming, Outgoing, High, Low, Slack)
Compliance						
Background						

Sample Information	Time of Sample Collection	Depth of Water Body (ft.)	Depth of Sample Collection (ft.)	Time of Sample Testing	Sample Results
Compliance					
Background					
				Difference	

Background Sampling shall be at least 500 meters from the dredge in the opposite direction of the prevailing current flow, clearly outside the influence of any turbid plume. Samples shall be collected one (1) meter from the bottom.

Compliance Sampling will be no more than 150 meters from the dredge or at the boundary of the Aquatic Preserve (whichever is closer to the point of discharge) down current from the dredge, in the densest portion of any visible plume, 1 Meter above the bottom.

If monitoring reveals turbidity samples at the compliance sites greater than 29 NTU's (or if the turbidity plume from this project extends into the Aquatic Preserve, causing turbidity to be elevated) above the associated background turbidity levels, construction activities shall cease immediately and not resume until corrective measures have been taken and turbidity has returned to acceptable levels.

Describe the methods used to collect, handle, store, and analyze the samples.

_____

_____

_____

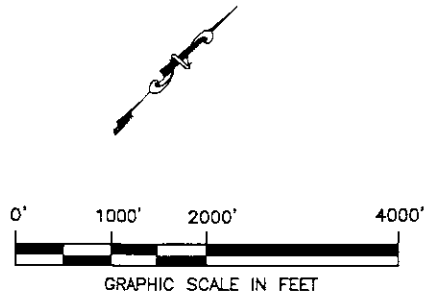
_____

I hereby certify the information contained herein is accurate and authentic to the best of my knowledge. The precision and limits of detection for the sampling equipment are as prescribed by the manufacturer and as reported herein. Weather conditions have been estimated from visual observations during the collection process. Time of collection and water depths have been measured and field verified by the collector, to the best of their ability.

All copies of reports shall be submitted daily as part of the Contractors Daily Quality Control Report. Weekly summaries shall be submitted to the Office of Beaches and Coastal Systems within seven (7) days of sample collection.

_____
Signature of Quality Control Manager Date

_____
Printed Name of Quality Control Manager Date



BORROW AREA

ESTERO ISLAND

GULF OF MEXICO

BIG CARLOS PASS

LOVERS KEY

BEACH FILL TEMPLATE

DNR 213
DNR 212
CP&E 214
CP&E 215
CP&E 216
CP&E 217
CP&E 218

NOTES:

CONTRACTOR SHALL MARK THE LOCATIONS OF THE COMPLIANCE AND BACKGROUND SAMPLING COLLECTIONS. A MAP WITH EACH SAMPLE LOCATIONS WILL BE SUBMITTED DAILY WITH THE CONTRACTOR'S QC REPORT.

TITLE:
LOVERS KEY RESTORATION
WATER QUALITY SAMPLING MAP
BORROW SITE

NATURAL RESOURCES DIV
1500 Monroe St. Fort Myers, Florida 33901
Ph. (239) 479-8109/10 Fax. (239) 479-8108

LEE COUNTY
SOUTHWEST FLORIDA

FILE: S:\NATRES\MARINE\BEACHMANAGEMENT\ESTERO\DRAWINGS\WQ MAP.dwg
DESIGN:
DRAWN:
APPROVED:

SCALE: 1"=2000'

SHEET: 01 OF 01

Lovers Key Restoration
Water Quality Sampling Form
Beach Fill Site

Date: _____ **Permit Number:** JCP 0173059

Frequency: Twice Daily (at least 4 hours apart) while the hydraulic dredge discharges on the beach or upland sand is placed/graded on the beach withing the surf zone

Sample # _____

Weather:	Temp. (°F)	Wave Height (ft.)	Wind Speed & Direction	Skies	Current Velocity and Direction	Tidal Stage (Incoming, Outgoing, High, Low, Slack)
Compliance						
Background						

Sample Information	Time of Sample Collection	Depth of Water Body (ft.)	Depth of Sample Collection (ft.)	Time of Sample Testing	Sample Results
Compliance					
Background					
				Difference	

Background Sampling shall be at least 500 meters up current from the point where discharge water is re-entering waters of the State (discharge point) or where upland sand is placed/graded into the surf zone, clearly outside of the influence of any turbid plume. Samples shall be collected 1 meter above the bottom, at the same distance offshore as the compliance station.

Compliance Sampling shall be no more than 4,500 meters down current and no more than 300 meters off shore, or at the boundary of the Aquatic Preserve, whichever is closer to the point of discharge, down current from the point of discharge point or where upland sand is place/graded into the surf zone, in the densest portions of any visible turbidity plume., The sample shall be collected from 1 meter above the bottom.

If monitoring reveals turbidity samples at the compliance sites greater than 29 NTU's (or if the turbidity plume from this project extends into the Aquatic Preserve, causing turbidity to be elevated) above the associated background turbidity levels, construction activities shall cease immediately and not resume until corrective measures have been taken and turbidity has returned to acceptable levels.

Describe the methods used to collect, handle, store, and analyze the samples.

_____

_____

_____

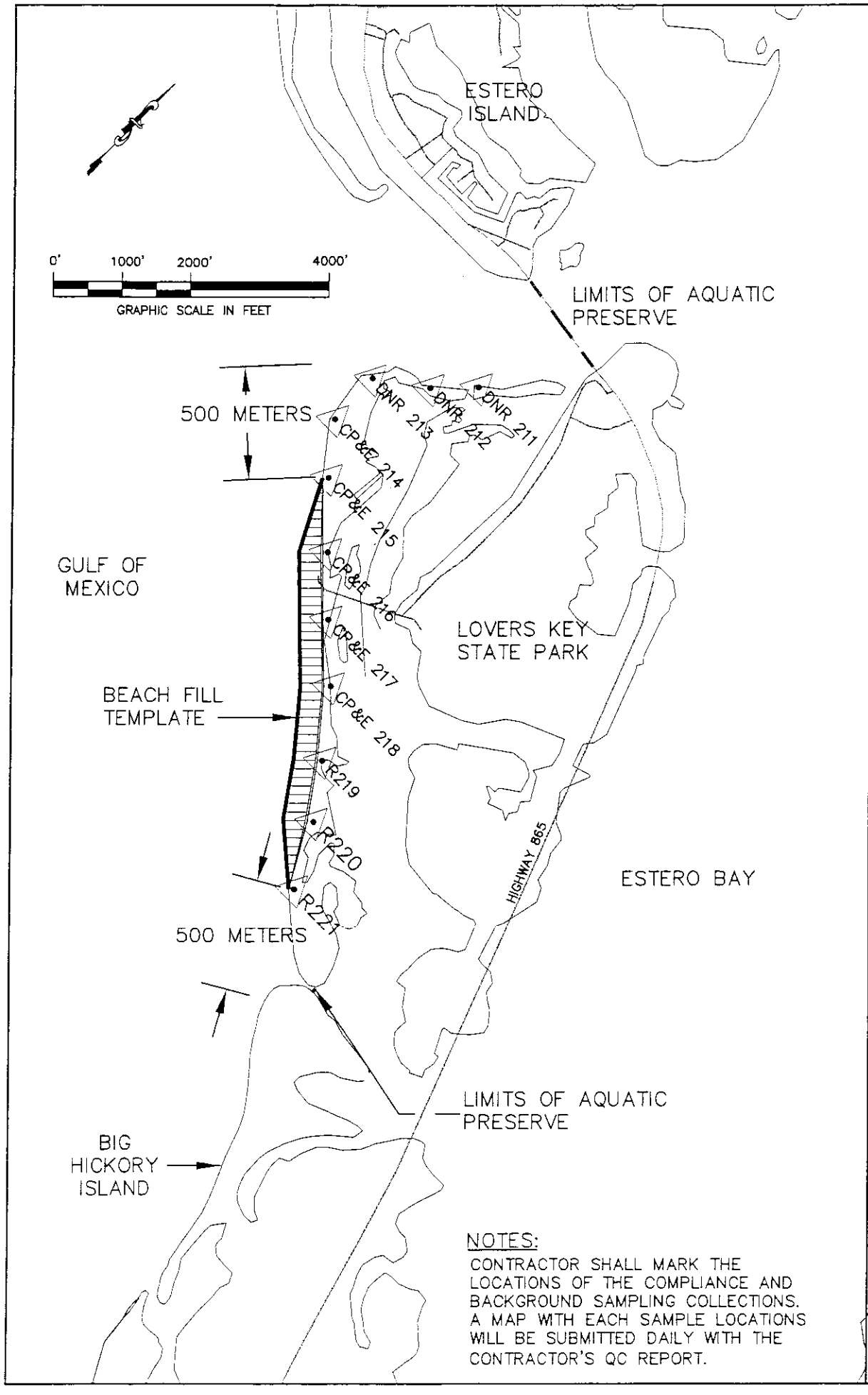
_____

I hereby certify the information contained herein is accurate and authentic to the best of my knowledge. The precision and limits of detection for the sampling equipment are as prescribed by the manufacturer and as reported herein. Weather conditions have been estimated from visual observations during the collection process. Time of collection and water depths have been measured and field verified by the collector, to the best of their ability.

All copies of reports shall be submitted daily as part of the Contractors Daily Quality Control Report. Weekly summaries shall be submitted to the Office of Beaches and Coastal Systems within seven (7) days of sample collection.

_____
Signature of Quality Control Manager Date

_____
Printed Name of Quality Control Manager Date



NOTES:

CONTRACTOR SHALL MARK THE LOCATIONS OF THE COMPLIANCE AND BACKGROUND SAMPLING COLLECTIONS. A MAP WITH EACH SAMPLE LOCATIONS WILL BE SUBMITTED DAILY WITH THE CONTRACTOR'S QC REPORT.

TITLE: LOVERS KEY RESTORATION
WATER QUALITY SAMPLING MAP
BEACH FILL

NATURAL RESOURCES DIV
1500 Monroe St. Fort Myers, Florida 33901
Ph. (239) 479-8109/10 Fax. (239) 479-8106

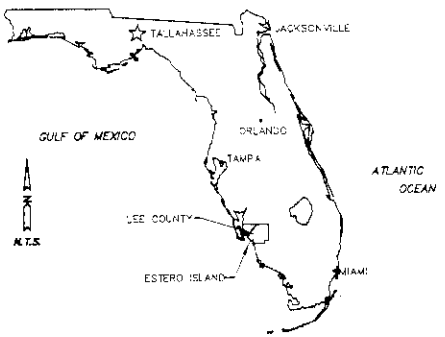
LEE COUNTY
SOUTHWEST FLORIDA

FILE: S:\NATRES\MARINE\BEACHMANAGEMENT\ESTERO\DRAWINGS\WQ MAP.dwg
DESIGN:
DRAWN:
APPROVED:

SCALE: 1"=2000'

SHEET: 01 OF 01

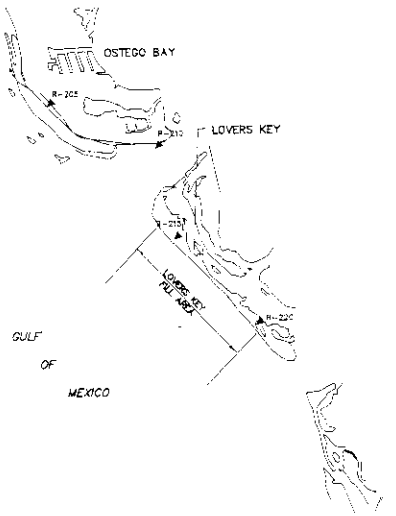
LOVERS KEY
BEACH RESTORATION PROJECT
LEE COUNTY, FLORIDA

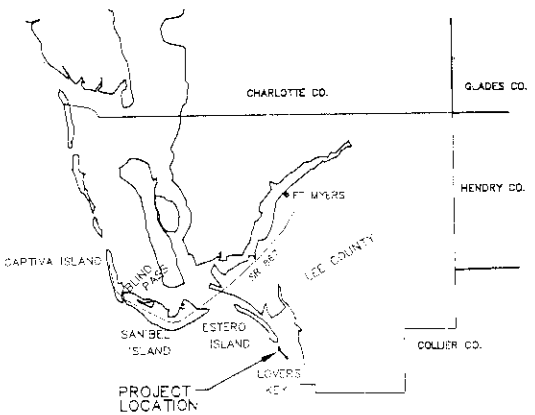


BOARD OF LEE COUNTY COMMISSIONERS

JOHN ALBION, CHAIRMAN
DOUG ST. CERNY, VICE-CHAIRMAN
BOB JANES
RAY JUDAH
ANDY COY

INDEX TO SHEETS





I CERTIFY THAT THESE PLANS ARE IN COMPLIANCE WITH THE APPLICABLE SECTIONS OF 62B-41, F.A.C.

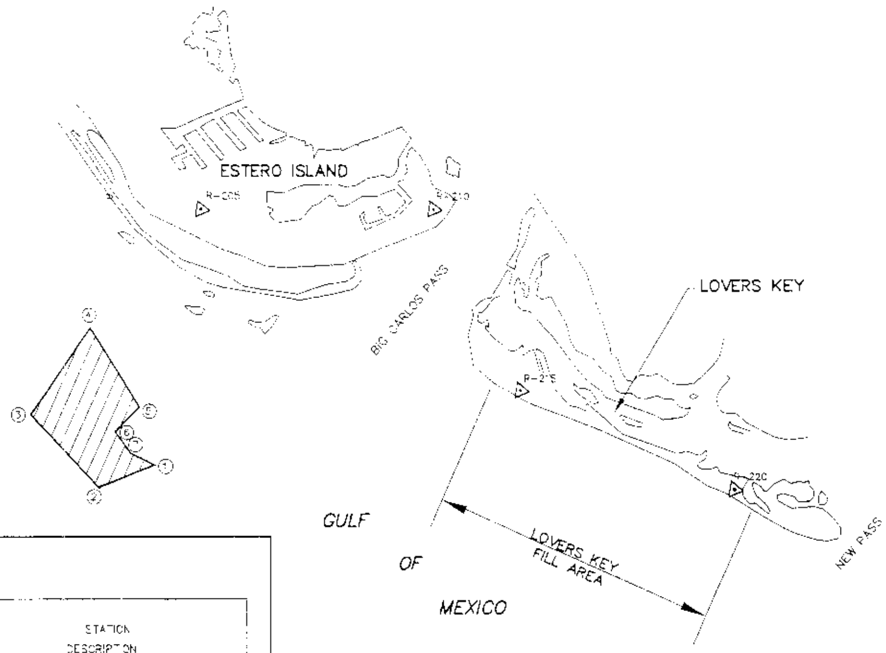
STEPHEN KEEHN, P.E. — DATE

COASTAL PLANNING & ENGINEERING, INC.
7481 N.W. BOCA RATON BOULEVARD
BOCA RATON, FLORIDA 33431
PH. (561) 391-8102
FAX (561) 391-9116
FLA. #C5781

LOVERS KEY
BEACH RESTORATION PROJECT
COVER SHEET

DRAWING NO.
CS-1
SHEET 1 OF 11

SURVEY CONTROL SHEET



BORROW AREA II

NUMBER	NORTHING	EASTING
1	749916.75	686628.14
2	749918.75	685356.97
3	751645.26	684553.17
4	753058.60	686354.28
5	751164.33	686756.28
6	750874.17	686088.92
7	750340.13	686238.73

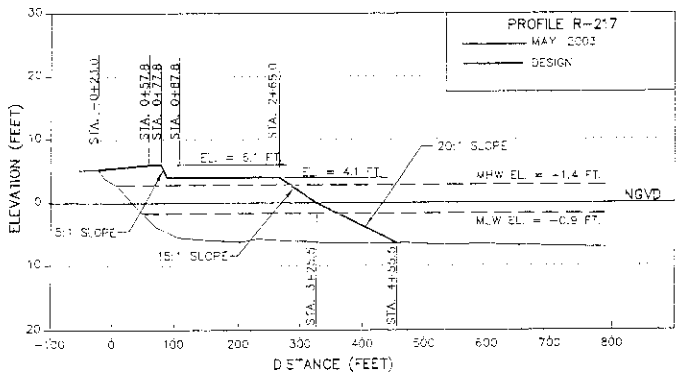
LOCATION: ESTERO ISLAND, FLORIDA
DATE: 05/21/03

MONUMENT NAME	0+00 NORTHING	0+00 EASTING	0+00 STATION EL. (NGVD)	STATION DESCRIPTION
R214	749376.50	693933.36	4.82	SET IRON ROD/CAP 0+00
R215	748713.76	694475.87	4.71	SET OPE CM @ STA. O/L +1+40
C215.5	748335.99	694856.32	3.5	SET IRON ROD/CAP −0+36
R216	747946.34	695239.43	3.89	SET IRON ROD/CAP −1+54
C216.5	747614.48	695575.32	4.13	SET IRON ROD/CAP −0+46
R217	747279.99	695935.56	3.18	SET IRON ROD/CAP +1+23
C217.5	746934.54	696322.56	5.2	SET IRON ROD/CAP −0+53
R218	746611.58	696664.45	7.21	SET IRON ROD/CAP −1+75
C218.5	746163.02	697054.91	5.17	SET IRON ROD/CAP +0+44
R219	745767.89	697337.07	4.11	SET IRON ROD/CAP −0+92
C219.5	745384.46	697617.06	5.35	SET IRON ROD/CAP 0+00
R220	745055.45	697879.87	6.48	SET IRON ROD/CAP 0+00
R221	744173.07	698375.67	3.81	SET IRON ROD/CAP 0+15

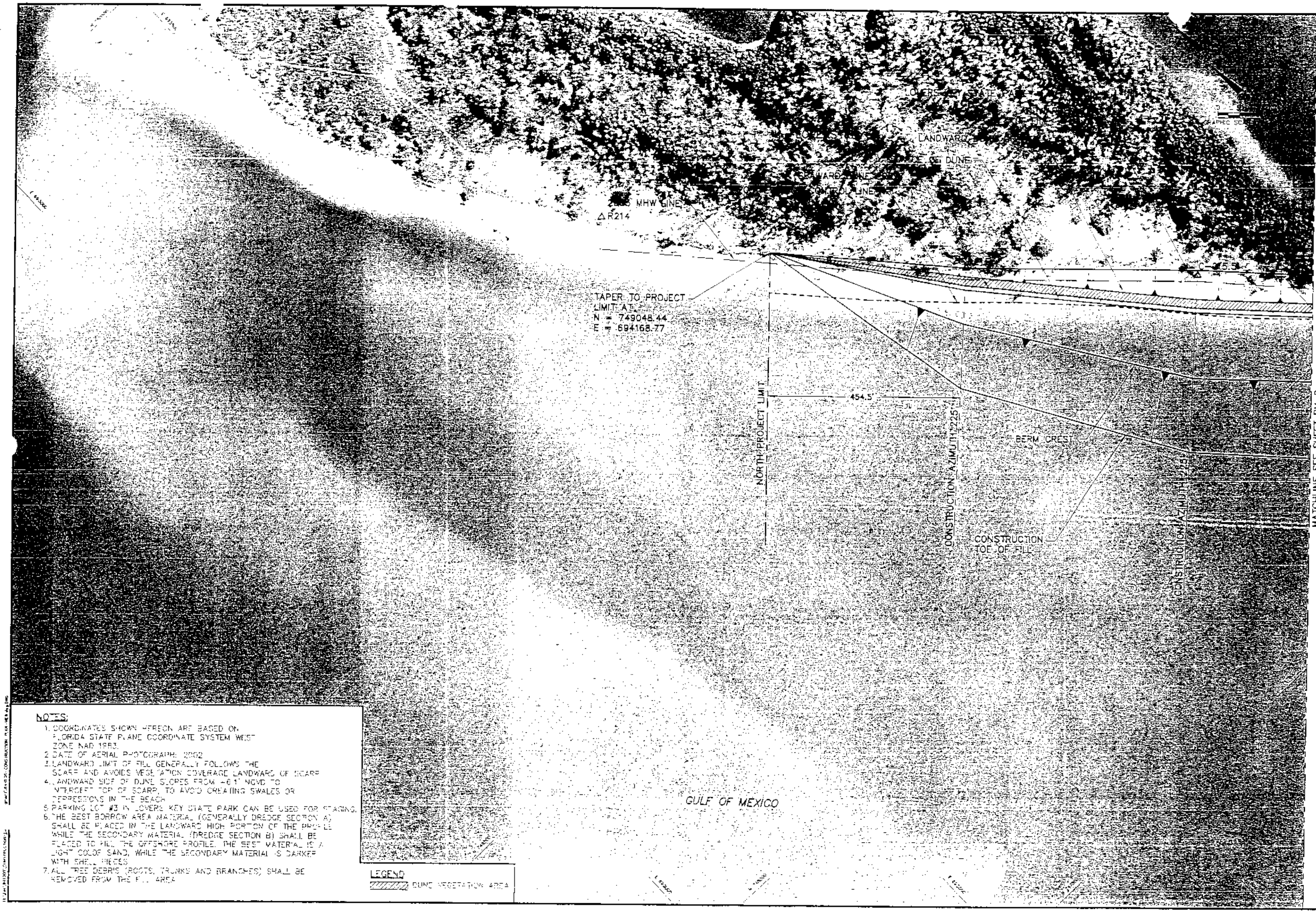
TEMPORARY CONSTRUCTION POINT NAME	0+00 NORTHING	0+00 EASTING	STATION EL. (NGVD)	DESCRIPTION
NORTH TAPER	749046.44	694158.77		MAP SPOT
C218.5−100	746233.70	696984.20		MAP SPOT
R219.5+100	745697.20	697407.80		MAP SPOT
SOUTH TAPER	744525.83	698090.52		MAP SPOT

Horizontal Datum NAD 1983 Florida West Zone
Vertical Datum NGVD 1929

TYPICAL CROSS SECTION



COASTAL PLANNING & ENGINEERING, INC.	2481 N.W. BOCA RATON BOULEVARD, BOCA RATON, FLORIDA 33431 · PH: (561) 391-8102 · FAX (561) 391-9116 · FLA. #C78775
Designed by: SK	Checked by: AMJ
Drawn by: DR	Reviewed by: AMB
Date: 01/27/04	Submitted by: SK
Plot Scale: N.T.S.	Comm. No. 8410.05
Project	LOVERS KEY BEACH RESTORATION PROJECT — SURVEY CONTROL SHEET — LEE COUNTY, FLORIDA
DRAWING NO.	SC−1
SHEET	2 OF 11



NOTES:

1. COORDINATES SHOWN HEREON ARE BASED ON FLORIDA STATE PLANE COORDINATE SYSTEM WEST ZONE NAD 1983.
2. DATE OF AERIAL PHOTOGRAPH: 2002
3. LANDWARD LIMIT OF FILL GENERALLY FOLLOWS THE SCARP AND AVOIDS VEGETATION COVERAGE LANDWARD OF SCARP
4. LANDWARD SIDE OF DUNE SLOPES FROM +6.1' NGVD TO INTERCEPT TOP OF SCARP, TO AVOID CREATING SWALES OR DEPRESSIONS IN THE BEACH
5. PARKING LOT #3 IN LOVERS KEY STATE PARK CAN BE USED FOR STAGING.
6. THE BEST BORROW AREA MATERIAL (GENERALLY DREDGE SECTION A) SHALL BE PLACED IN THE LANDWARD HIGH PORTION OF THE PROFILE WHILE THE SECONDARY MATERIAL (DREDGE SECTION B) SHALL BE PLACED TO FILL THE OFFSHORE PROFILE. THE BEST MATERIAL IS A LIGHT COLOR SAND, WHILE THE SECONDARY MATERIAL IS DARKER WITH SHELL PIECES
7. ALL TREE DEBRIS (ROOTS, TRUNKS AND BRANCHES) SHALL BE REMOVED FROM THE FILL AREA

LEGEND

DUNE VEGETATION AREA

COASTAL PLANNING & ENGINEERING, INC.
2481 N.W. BOCA RATON BOULEVARD
BOCA RATON, FLORIDA 33431
PH. (561) 391 8102
FAX (561) 391 9116
FLA #C/8775

Designed by: SK	Checked by: AMB
Drawn by: JRC	Reviewed by: AMB
Date: 01/27/04	Submitted by: SK
Plot Scale: AS NOTED	Contr. No. 8410.05

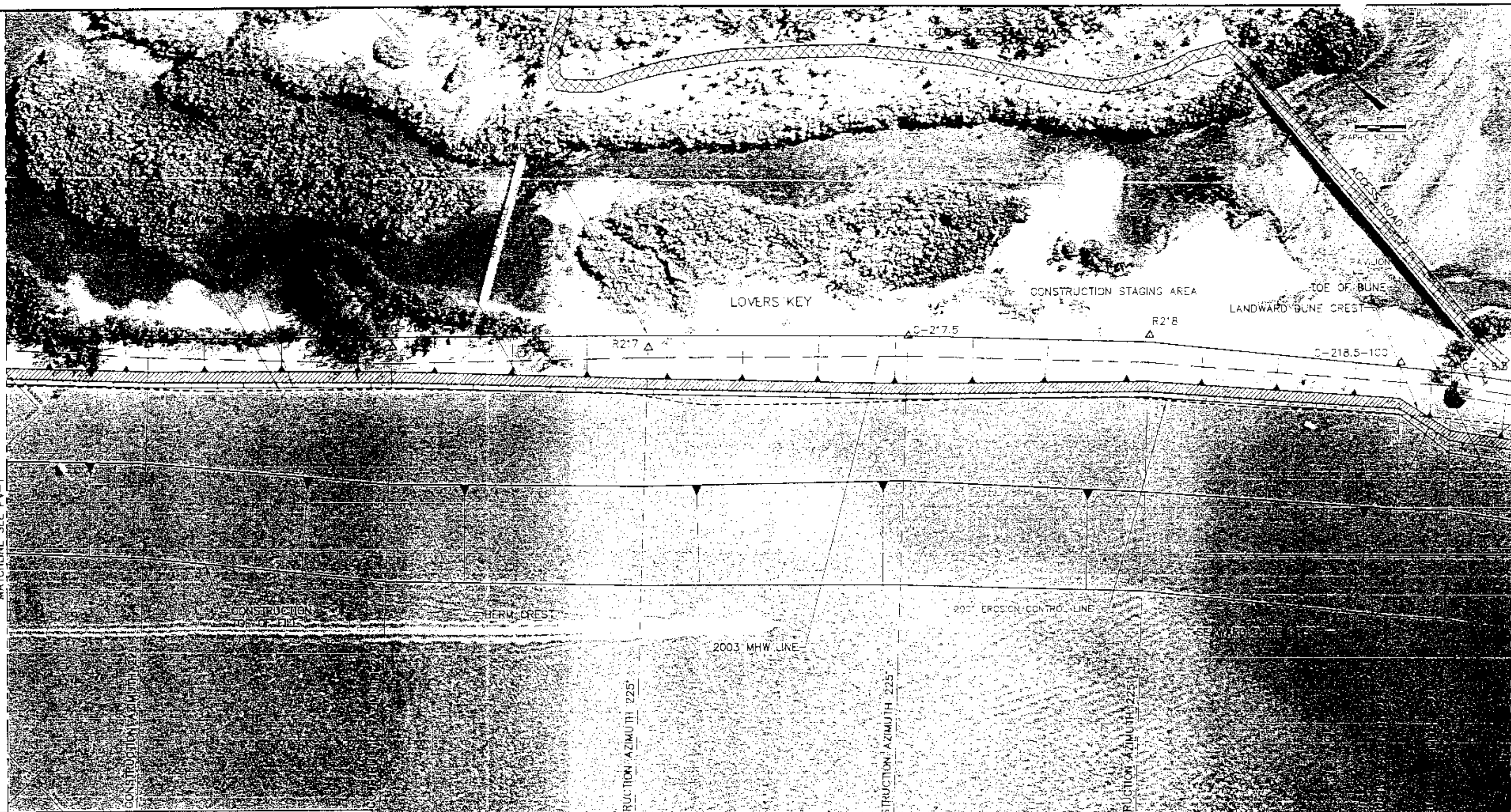
LOVERS KEY
BEACH RESTORATION PROJECT

PLAN VIEW

DRAWING NO.

PV-1

SHEET 3 OF 11



NOTES:

1. COORDINATES SHOWN HEREON ARE BASED ON FLORIDA STATE PLANE COORDINATE SYSTEM WEST ZONE NAD 1983.
2. DATE OF AERIAL PHOTOGRAPH: 2002
3. LANDWARD LIMIT OF FILL GENERALLY FOLLOWS THE SCARP AND AVOIDS VEGETATION COVERAGE LANDWARD OF SCARP.
4. LANDWARD SIDE OF DUNE SLOPES FROM +5.1' NGVD TO INTERCEPT TOP OF SCARP TO AVOID CREATING SWALES OR DEPRESSIONS IN THE BEACH.
5. PARKING LOT #2 IN LOVERS KEY STATE PARK CAN BE USED FOR STAGING
6. THE BEST BORROW AREA MATERIAL (GENERALLY DREDGE SECTION A) SHALL BE PLACED IN THE LANDWARD HIGH PORTION OF THE PROFILE, WHILE THE SECONDARY MATERIAL (DREDGE SECTION B) SHALL BE PLACED TO FILL THE OFFSHORE PROFILE. THE BEST MATERIAL IS A LIGHT COLOR SAND, WHILE THE SECONDARY MATERIAL IS DARKER WITH SHELL PIECES.
7. A DRAINAGE SWALE FOR THE TROLLEY SHELTER WILL BE BUILT BY THE CONTRACTOR. ITS LOCATION WILL BE IDENTIFIED AT THE TIME OF CONSTRUCTION.
8. ALL TREE DEBRIS (ROOTS, TRUNKS AND BRANCHES) SHALL BE REMOVED FROM THE FILL AREA.

LEGEND
DUNE VEGETATION AREA
ACCESS ROAD

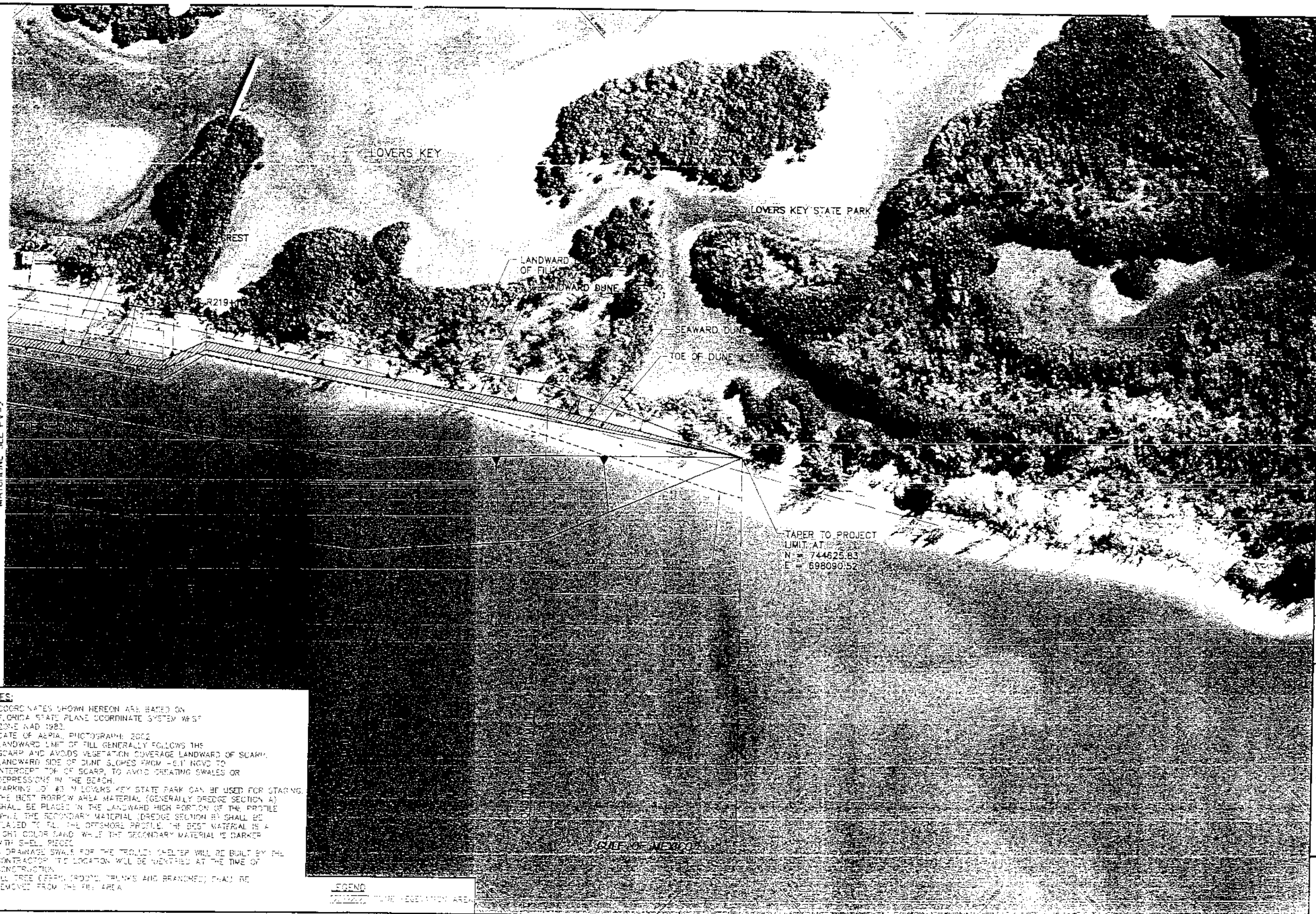
COASTAL PLANNING & ENGINEERING, INC.
2481 N.W. BOCA RATON BOULEVARD
BOCA RATON, FLORIDA 33431
PH. (561) 391 8102
FAX (561) 391 9116
FL A #C78775

Designed by: SK
Drawn by: JHE
Date: 01/27/04
Plot Scale: AS NOTED
Checked by: AMB
Reviewed by: AMB
Submitted by: SK
Comm. No.: 5412.05

LOVERS KEY
BEACH RESTORATION PROJECT
PLAN VIEW

DRAWING NO.
PV-2

SHEET 4 OF 15



NOTES:

1. COORDINATES SHOWN HEREON ARE BASED ON FLORIDA STATE PLANE COORDINATE SYSTEM WEST ZONE NAD 1983.
2. DATE OF AERIAL PHOTOGRAPH: 2002
3. LANDWARD LIMIT OF FILL GENERALLY FOLLOWS THE SCARP AND AVOIDS VEGETATION COVERAGE LANDWARD OF SCARP.
4. LANDWARD SIDE OF DUNE SLOPES FROM +6.1' NGVD TO INTERCEPT TOP OF SCARP, TO AVOID CREATING SWALES OR DEPRESSIONS IN THE BEACH.
5. PARKING LOT #3 IN LOVERS KEY STATE PARK CAN BE USED FOR STAGING.
6. THE BEST BORROW AREA MATERIAL (GENERALLY DREDGE SECTION A) SHALL BE PLACED IN THE LANDWARD HIGH PORTION OF THE PROFILE WHILE THE SECONDARY MATERIAL (DREDGE SECTION B) SHALL BE PLACED TO FILL THE OFFSHORE PROFILE. THE BEST MATERIAL IS A LIGHT COLOR SAND, WHILE THE SECONDARY MATERIAL IS DARKER WITH SHELL PIECES.
7. A DRAINAGE SWALE FOR THE TROLLEY SHELTER WILL BE BUILT BY THE CONTRACTOR. ITS LOCATION WILL BE IDENTIFIED AT THE TIME OF CONSTRUCTION.
8. ALL TREE DEBRIS (ROOTS, TRUNKS AND BRANCHES) SHALL BE REMOVED FROM THE FILL AREA.

LEGEND

DUNE VEGETATION AREA

Designed by: SK	Checked by: AMB	
Drawn by: JRC	Reviewed by: AMB	
Date: 01/27/04	Submitted by: SK	
Plot Scale: AS NOTED	Drawing No.: 8417.05	

No. | Date | Description

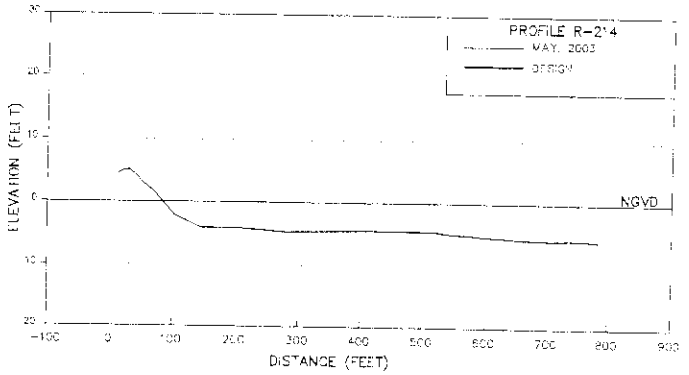
COASTAL PLANNING & ENGINEERING, INC.
2481 N.W. BOCA RATON BOULEVARD
BOCA RATON, FLORIDA 33431
PH (561) 391-8102
FAX (561) 391-9116
FLA. #C78775

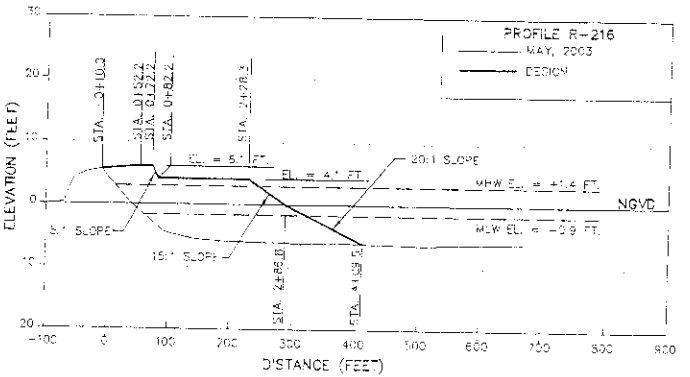
LOVERS KEY
BEACH RESTORATION PROJECT

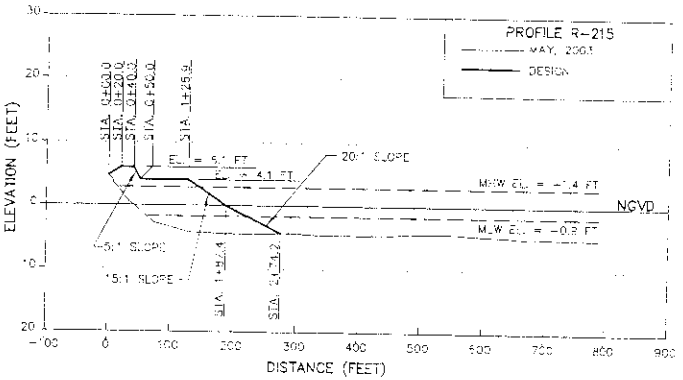
PLAN VIEW

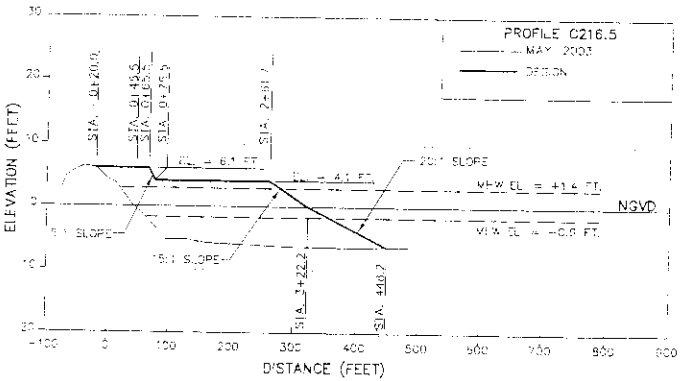
DRAWING NO.

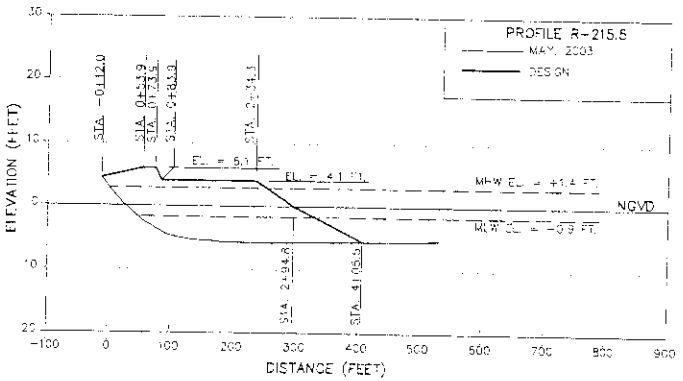
PV-3

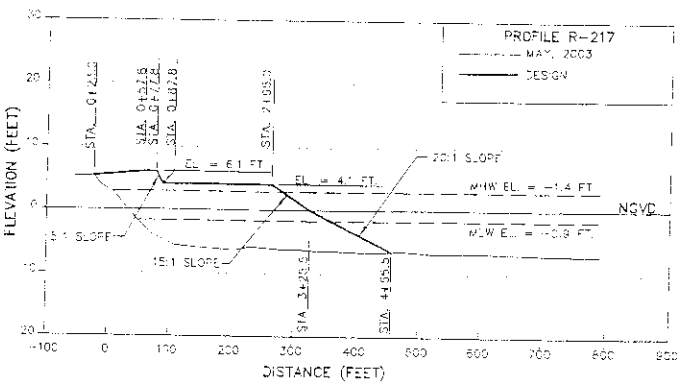








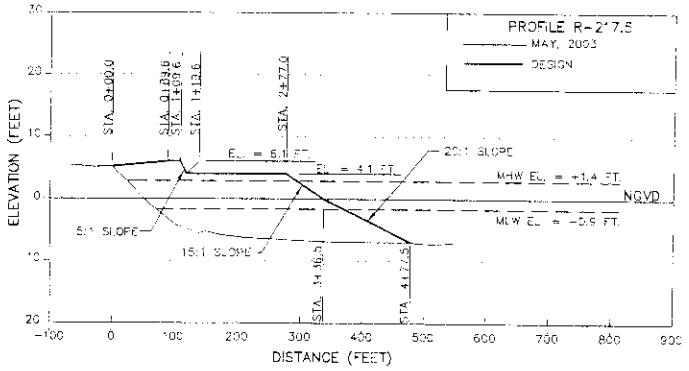


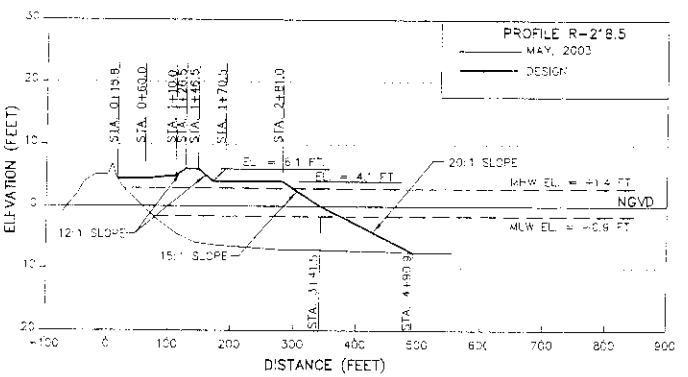


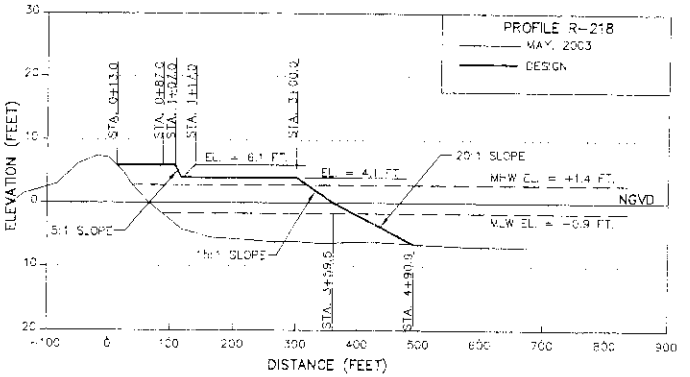
COASTAL PLANNING & ENGINEERING, INC.
2481 N.W. BOCA RATON BLVD
BOCA RATON, FLORIDA 33431
PH (561) 391-8102
FAX (561) 391-9116
FLA. REG. #CA 7775

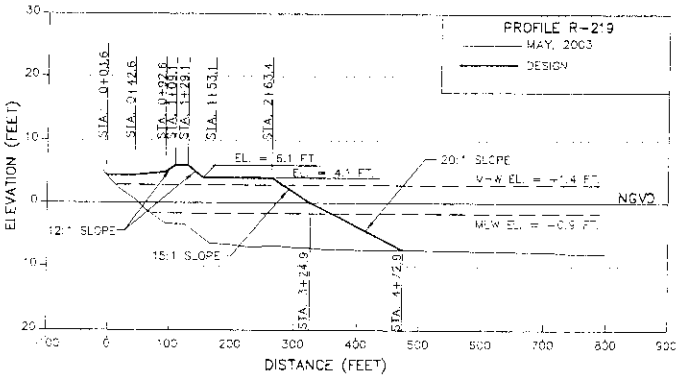
LOWER KEY
BEACH RESTORATION PROJECT
LOWER KEY
FILL PLACEMENT
CROSS SECTIONS

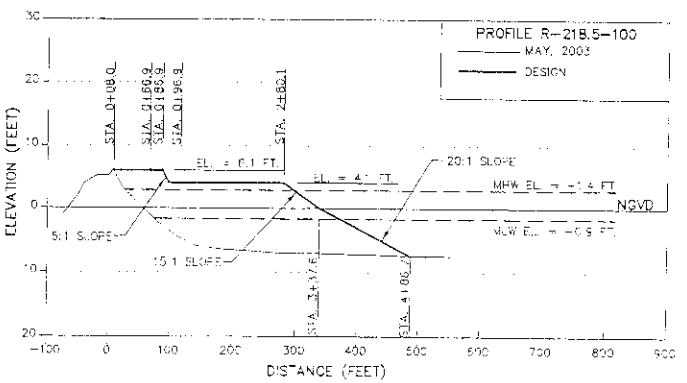
DRAWING NO.
XS-1
SHEET 8 OF 11

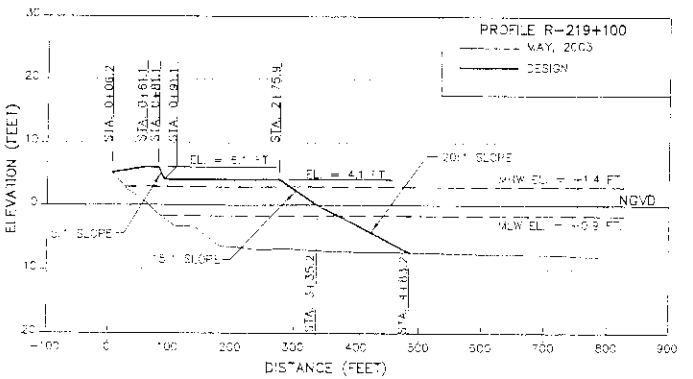








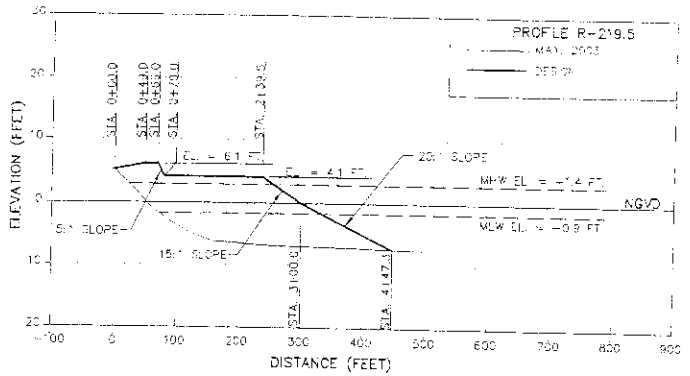


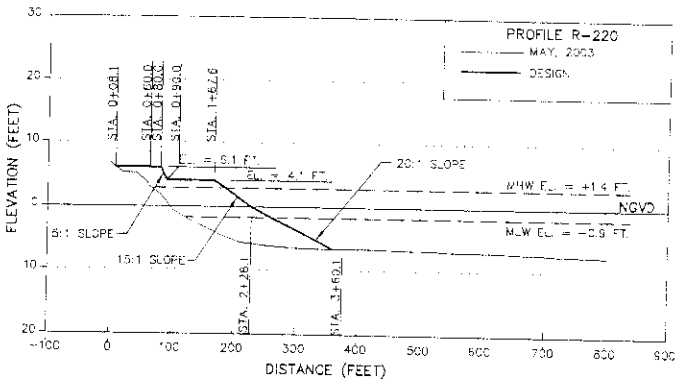


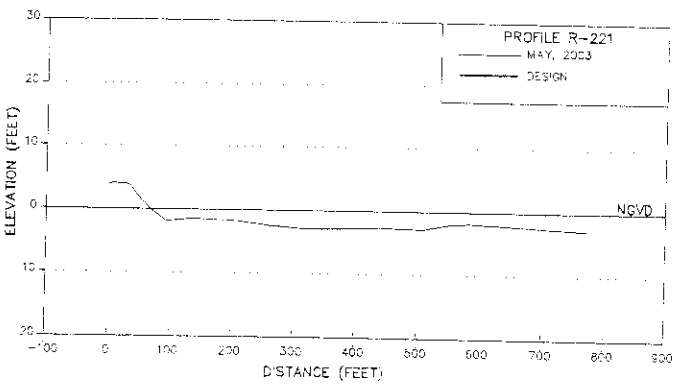
COASTAL PLANNING & ENGINEERING, INC.
2481 NW BOCA RATON BOULEVARD
BOCA RATON, FLORIDA 33431
PH (561) 391 9102
FAX (561) 391 9116
FLA. #0170775

LOWERS KEY
BEACH RESTORATION PROJECT
LOWERS KEY
FILL PLACEMENT
CROSS SECTIONS

DRAWING NO.
XS-2





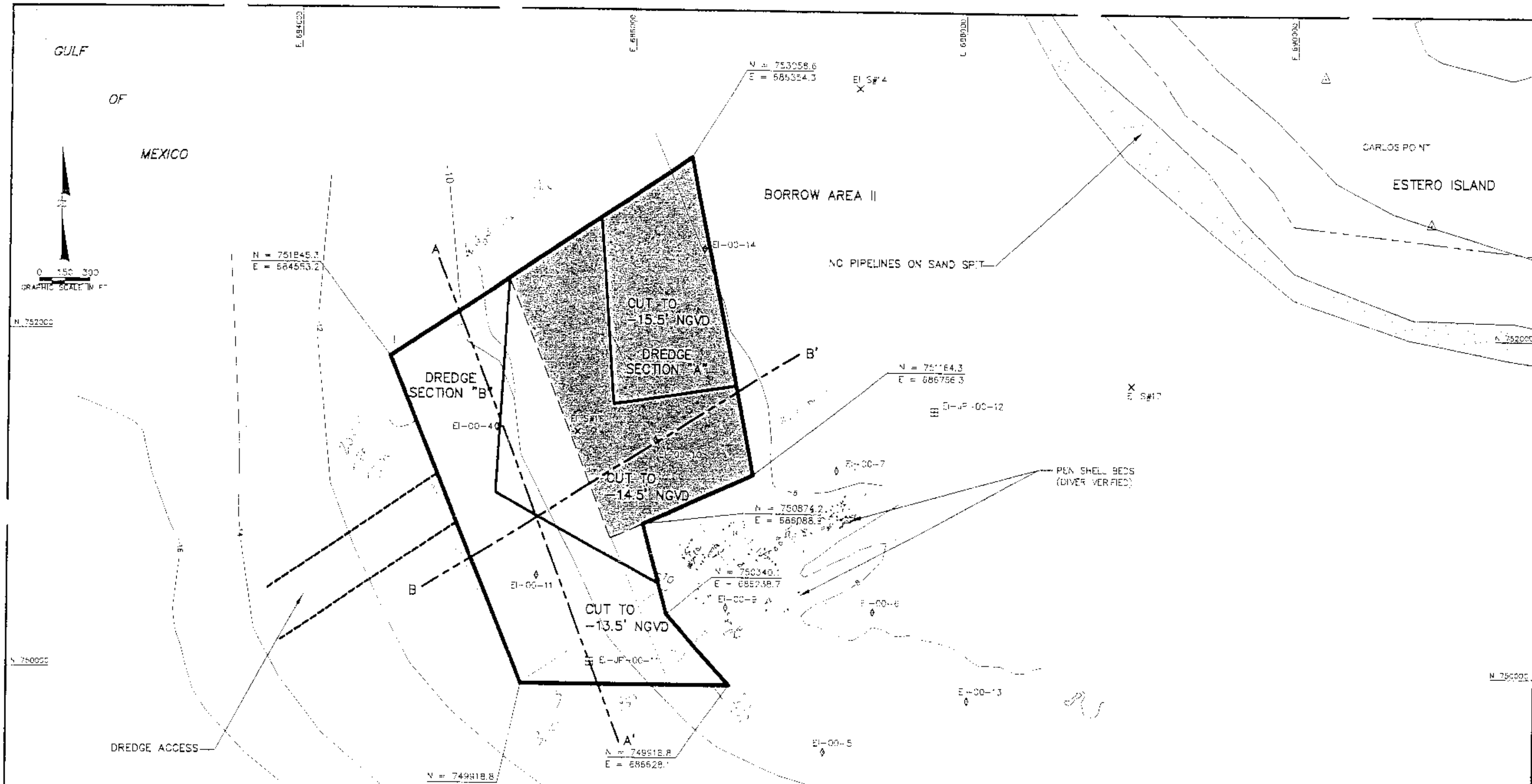


COASTAL PLANNING & ENGINEERING, INC.
2481 N.W. BOCA RATON BOULEVARD
BOCA RATON, FLORIDA 33431
PH: (561) 391-8102
FAX: (561) 391-9116
FLA. #0178775

LOWER KEY
BEACH RESTORATION PROJECT

LOWER KEY
FILL PLACEMENT
CROSS SECTIONS

DRAWING NO.
XS-3



NOTES:

1. COORDINATES SHOWN HEREON ARE BASED ON FLORIDA STATE PLANE COORDINATE SYSTEM, WEST ZONE NAD 1983
2. BATHYMETRIC SURVEY CONDUCTED BY COASTAL PLANNING & ENGINEERING, INC. 7/8/00, 9/29/00, & 9/30/00.
3. ELEVATIONS SHOWN HEREON ARE BASED ON NATIONAL GEODETIC VERTICAL DATUM, 1929 (NGVD-29).
4. PRIORITY OF DREDGING SHALL GO TO DREDGE SECTION "A" (SECTION "A" IS THE SHADED AREA). PRIORITY OF PLACEMENT SHALL BE PER NOTE 6, SHEETS PV-1 TO PV-3
5. A SINGLE ACCESS CHANNEL CAN BE DREDGED TO AND THROUGH DREDGE SECTION "B" TO REACH SECTION "A", LOCATION AS SHOWN ABOVE.

LEGEND:

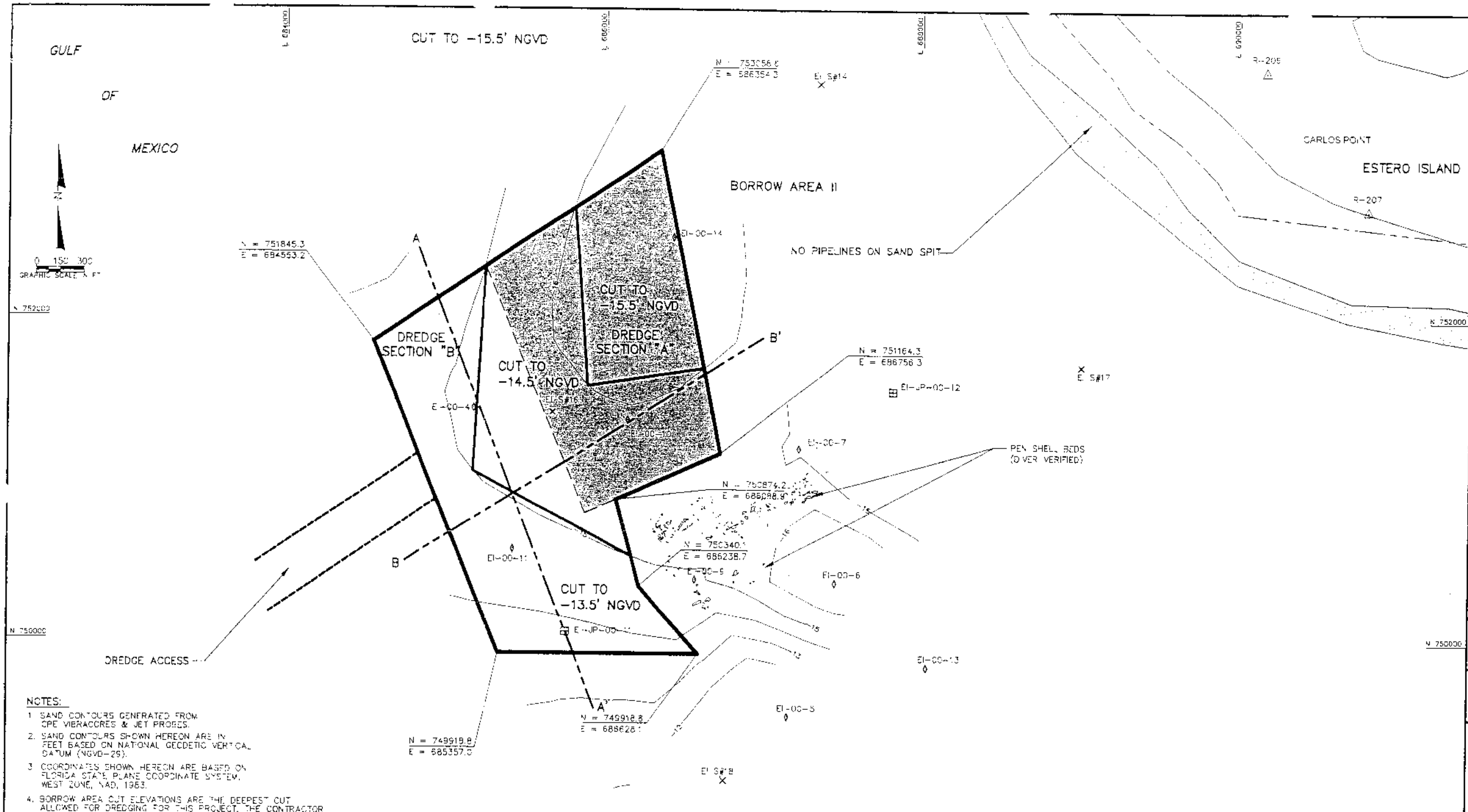
⊞E-JP-00-26	DENOTES CPE 2000 JET PROBE LOCATION
✕EI S#19	DENOTES CPE 2000 SAND SAMPLE LOCATION
◊E-00-5	DENOTES CPE 2000 VIBRACORE LOCATION

COASTAL PLANNING & ENGINEERING, INC.
2481 N.W. BOCA RATON BOULEVARD
BOCA RATON, FLORIDA 33431
PH. (561) 391-8102
FAX (561) 391-9116
FLA. #G78/75

Computed by: SK
Checked by: AUH
Drawn by: DHP
Reviewed by: AUG
Date: 01/27/04
Submitted by: SK
Plot Scale: AS NOTED
Drawing No.: 8105

LOVERS KEY
BEACH RESTORATION PROJECT
BORROW AREA II
BATHYMETRIC SURVEY

DRAWING NO.
BA-1



NOTES:
1. SAND CONTOURS GENERATED FROM CPE VIBRACORES & JET PROBES.
2. SAND CONTOURS SHOWN HEREON ARE IN FEET BASED ON NATIONAL GEODETIC VERTICAL DATUM (NGVD-29).
3. COORDINATES SHOWN HEREON ARE BASED ON FLORIDA STATE PLANE COORDINATE SYSTEM, WEST ZONE, NAD, 1983.
4. BORROW AREA CUT ELEVATIONS ARE THE DEEPEST CUT ALLOWED FOR DREDGING FOR THIS PROJECT. THE CONTRACTOR WILL PLAN HIS CUTS SO THAT NO SAND IS REMOVED FROM BELOW THIS ELEVATION.
5. PRIORITY OF DREDGING SHALL GO TO DREDGE SECTION "A" (SECTION "A" IS THE SHADED AREA). PRIORITY OF PLACEMENT SHALL BE PER NOTE 6, SHEETS PV-1 TO PV-3.
6. A SINGLE ACCESS CHANNEL CAN BE DREDGED TO AND THROUGH DREDGE SECTION "B" TO REACH SECTION "A", LOCATION AS SHOWN ABOVE.

LEGEND:
EI-JP-00-26 DENOTES CPE 2000 JET PROBE LOCATION
EI S#10 DENOTES CPE 2000 SAND SAMPLE LOCATION
EI-00-5 DENOTES CPE 2000 VIBRACORE LOCATION

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2481 N.W. BOCA RATON BOULEVARD
BOCA RATON, FLORIDA 33431
PH. (561) 391-8102
FAX (561) 391-9116
FLA #G78775

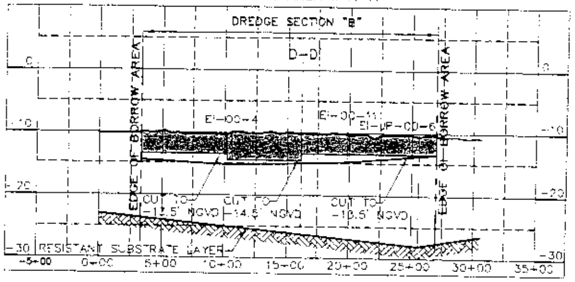
Designed by: SK
Drawn by: DNR
Date: 01/27/04
Plot Scale: AS NOTED
Checked by: AMB
Reviewed by: AMB
Submitted by: SK
Comm. No.: 8410.05

LOVERS KEY
BEACH RESTORATION PROJECT

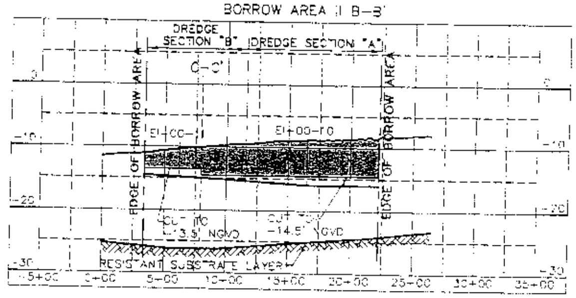
BORROW AREA II
BEACH COMPATIBLE
SAND CONTOURS

DRAWING NO.
BA-2

BORROW AREA II A–A'



BORROW AREA II B–B'



LEGEND

BEACH COMPATIBLE MATERIAL

NOTES:

1. VIBRACORES MAY NOT FALL DIRECTLY ON CROSS SECTION LINE, BUT ARE LOCATED SUFFICIENTLY CLOSE TO REPRESENT SIMILAR MATERIAL.
2. WIDTH OF LAYERS IS REPRESENTATIVE ONLY. ACTUAL MATERIAL MAY VARY.
3. SEE PAGE 5 & 10 FOR LOCATION OF CROSS SECTION LINES.

SCALE: 1" = 500' HOR.
1" = 10' VERT.

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PH. (561) 391-8102
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FLA. #G78775

Designed by	Checked by
SK	AHR
Drawn by	Reviewed by
JRC	AHR
Date	Supplied by
07/27/04	SK
Plot Scale	Comm. No.
AS NOTED	8410.05

LOVERS KEY
BEACH RESTORATION PROJECT
BORROW AREA II
CROSS SECTIONS

DRAWING NO.
BA–3