

**APPENDIX I      SUPPLEMENTAL INFORMATION**

## **BID PROPOSAL ATTACHMENTS**

### **DREDGE DATA SHEET AND EQUIPMENT SCHEDULE**

NOTE: All Bids are to be accompanied by *Dredge Data Sheets* and *Equipment Schedule*. The Contractor shall complete the following data sheets for the Equipment proposed to perform the Work under this Contract. Separate *Dredge Data Sheets* for each dredge are required if the Contractor plans to utilize multiple dredges. The dredge data sheet Submittal shall constitute a certification that the described Equipment is available to, and under control of, the Contractor.

The Dredge Data Sheet is not mandatory. The Dredge Data Sheet is for informational purposes only and will not be used as a basis for award. The information submitted is pertinent to the evaluation of the proposed dredges and their capability to perform the Work as required and as agreed to by the Bidder through the submittal of a proposal. The Bidder may only omit data or information that he considers proprietary.

**SHELL ISLAND EAST BERM BARRIER ISLAND  
RESTORATION PROJECT (BA-110)**

**BID PROPOSAL ATTACHMENT A1 - EQUIPMENT SCHEDULE**

**EQUIPMENT CATEGORY:** \_\_\_\_\_

Type	Capacity	Manufacturer	Age & Condition	Location

**EQUIPMENT CATEGORY:** \_\_\_\_\_

Type	Capacity	Manufacturer	Age & Condition	Location

**EQUIPMENT CATEGORY:** \_\_\_\_\_

Type	Capacity	Manufacturer	Age & Condition	Location

**NOTE:** The Plant and Equipment Schedule is Mandatory. The Plant and Equipment Schedule is for information purposes only and will not be used as a basis for award. The information submitted is pertinent to the evaluation of the proposed dredges and their capability to perform the Work as required and as agreed to by the Bidder through the submittal of a Proposal. The Bidder may only omit information that he/she considers proprietary. Provide separate table for each category of equipment including mechanical dredging, excavating, material handling, pile driving, barges, loading, grading, earthworks, trucking, etc. Specify production rate of equipment. Use separate line for each major item. Use additional pages if necessary. Hydraulic cutterhead and hopper dredge equipment shall be listed on the Dredge Data Sheets.

**(THIS PAGE SHOULD BE COMPLETED AND RETURNED WITH CONTRACTOR BID)**

**ATTACHMENT A2 - DREDGE INFORMATION:**

Owned: \_\_\_\_\_ Leased: \_\_\_\_\_ Leased From: \_\_\_\_\_

Dredge name: \_\_\_\_\_

Minimum width of channel in which dredge can successfully operate and make a 180 degree turn: \_\_\_\_\_

Maximum draft of dredge: \_\_\_\_\_

Loaded freeboard: \_\_\_\_\_

Minimum depth in which the dredge can successfully operate: \_\_\_\_\_

Depth range to which dredge will dig:

Maximum: \_\_\_\_\_ Minimum: \_\_\_\_\_

Length and beam of dredge hull: \_\_\_\_\_

Inside diameter of pump discharge: \_\_\_\_\_

Inside diameter of pump suction inlet: \_\_\_\_\_

Suction lift (Elevation of main dredge pump relative to the water surface level): \_\_\_\_\_

Diameter of pump impeller eye: \_\_\_\_\_

Outside diameter of pump impeller: \_\_\_\_\_

Brake horsepower and corresponding engine RPMs (during dredging operations) applied to pump impeller at rated drive of the prime mover, during dredging operations: \_\_\_\_\_

Pump engine(s) horsepower and corresponding RPM: \_\_\_\_\_

Completion date of each dredge pump engine re-build: \_\_\_\_\_

Expected production rate for this project:

Beach and Dune Fill \_\_\_\_\_ cubic yards/day

Marsh Fill \_\_\_\_\_ cubic yards/day

**IF A CUTTERHEAD DREDGE IS USED:**

Maximum effective dredge swing, in degrees: \_\_\_\_\_

Length of dredge spuds: \_\_\_\_\_

Length of dredge ladder: \_\_\_\_\_

Cutterhead type and diameter: \_\_\_\_\_

Brake horsepower applied to cutterhead during dredging operations: \_\_\_\_\_

**IF A HOPPER DREDGE IS USED:**

Length of drag arms: \_\_\_\_\_

Sailing speed (unloaded): \_\_\_\_\_

Sailing speed (loaded): \_\_\_\_\_

Drafted of dredge (unloaded): \_\_\_\_\_

Drafted of dredge (loaded): \_\_\_\_\_  
Drag arm head type: \_\_\_\_\_  
Brake horsepower applied to drag arm head during dredging operations: \_\_\_\_\_

Will a booster pump be required to complete this work? If yes, please specify horsepower.

\_\_\_\_\_  
\_\_\_\_\_

Type(s) of production rate monitoring equipment on-board the dredge (measuring cy/hr of material dredged): \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**THE DREDGE MAY BE INSPECTED AT (List current location of equipment):**

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**DREDGE OWNER INFORMATION:**

Firm name: \_\_\_\_\_

Point of contact: \_\_\_\_\_

Title: \_\_\_\_\_

Business address:

Street: \_\_\_\_\_

City: \_\_\_\_\_

Parish/County: \_\_\_\_\_

State: \_\_\_\_\_ Zip+4: \_\_\_\_\_

Telephone no.: \_\_\_\_\_ Facsimile no.: \_\_\_\_\_

**APPENDIX II      DAILY PROGRESS REPORT**

**DAILY PROGRESS REPORT**

Date: \_\_\_\_\_ Report No. \_\_\_\_\_  
Report is due by 12:00 P.M. (Noon) of the following day

**PROJECT:** Shell Island West NRDA Restoration Project (BA-111)

**WEATHER:** (Clear) (P. Cloudy) (Cloudy) (Rain) **TEMPERATURE:** Min. \_\_\_\_\_  
Max. \_\_\_\_\_

**Wind Speed:** \_\_\_\_\_ mph **Direction** \_\_\_\_\_

**Wave Height:**

Borrow Site \_\_\_\_\_ feet  
Fill Area \_\_\_\_\_ feet  
Direction \_\_\_\_\_

**Borrow Site being dredged:** \_\_\_\_\_

**Borrow material (sand or marsh fill) being dredged:** \_\_\_\_\_

**Location of discharge:** Station \_\_\_\_\_

**Dredging operations complete:** Station \_\_\_\_\_

**Contractor/Subcontractor and area of responsibility:**

1. **Work Performed Today:** (Indicate location and description of work performed. Provide beach/dune or marsh fill advance over last twenty-four (24) hours. Attach dredge position printouts and plot to this report.)
  
2. **Results of Surveillance:** (Include satisfactory work completed or deficiencies with action to be taken.)
  
3. **Buoy Check:** Were submerged pipeline buoys checked today (Yes/No)? \_\_\_\_\_  
Did buoys require resetting (Yes/No)? \_\_\_\_\_

4. Water Quality Monitoring: Was water quality monitoring conducted today in compliance with project permit requirements of the Louisiana Department of Natural Resources Permit No. \_\_\_\_\_ and water quality protection laws, and the results provided to the Engineer (Yes/No)? \_\_\_\_\_
  
5. Verbal Instructions Received: (List any instructions given by the Owner or Engineer, construction deficiencies, retesting required, etc., with action to be taken.)
  
6. Remarks: (Cover delays and any conflicts in Plans, Specifications, or instructions.)
  
7. Safety Inspection: (Report violations noted; corrective instructions given; and corrective actions taken.)
  
8. Equipment Data: (Indicate items of construction equipment other than hand tools at job site and whether or not used and if 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 Plans (Yes/No)? \_\_\_\_\_. Also, do you certify that the borrow area has not been excavated below the limit as shown in the Plans (Yes/No)? \_\_\_\_\_



11. Daily Patrol for Protected Birds: (Describe number and extent of patrols and if any protected birds or protected bird nests were observed. If protected birds or protected bird nests were observed, identify type and location.)

12. Progress Summary:

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

Explanation of Downtime:

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 form must include continuous plots of dredge locations and depths.

## **APPENDIX III SURVEY DATA FORMATS**

## SURVEY DATA FORMATS

### Format 1:

**Louisiana Department of Natural Resources  
Strategic Online Natural Resources Information System  
SONRIS 2000**

**Coastal Restoration Division**

(See <http://www.savelawetlands.org/site/Descriptors.pdf>)

This format is an ASCII comma-delimited format. The arrangement of the columns is as follows:

Project Number: Alphanumeric value assigned to a project by LDNR used for identification purposes.

Station Number: Alphanumeric value assigned to a station by LDNR used for identification purposes. For survey data, the station is actually the center of the area where surveying occurs.

Group: A classification given to a group of stations that share a common characteristic. For this project, the Group name is the name of the profile line.

Status: Generally describes whether data were collected in the Pre- or Post-construction period.

Date (mm/dd/yyyy): Date the data were collected.

Time (hh:mm:ss): Time the data were collected.

Point Number: Identification number assigned to data point by survey team. In many cases data are collected at points along transects and a station might consist of several transects.

Easting utm83 (m): Horizontal coordinate.

Northing utm83 (m): Horizontal coordinate.

Elevation NAVD88 (m): Elevation relative to North American Vertical Datum of 1988.

### Example:

```
BA38-1,38-1, SG1,Post-cons.,06/01/2004,13:00,01,829997.02,3241533.14,-0.91
BA38-1,38-1, SG1,Post-cons.,06/01/2004,13:00,02,829991.87,3241512.72,-1.13
BA38-1,38-1, SG1,Post-cons.,06/01/2004,13:00,03,829991.52,3241511.46,-1.07
BA38-1,38-1, SG1,Post-cons.,06/01/2004,13:00,04,829988.26,3241498.42,-2.23
BA38-1,38-1, SG1,Post-cons.,06/01/2004,13:00,05,829985.45,3241487.40,-2.74
BA38-1,38-1, SG1,Post-cons.,06/01/2004,13:00,06,829985.16,3241486.17,-3.60
BA38-1,38-1, SG1,Post-cons.,06/01/2004,13:00,07,829985.02,3241485.56,-3.63
BA38-1,38-1, SG1,Post-cons.,06/01/2004,13:00,08,829982.27,3241474.66,-3.90
BA38-1,38-1, SG1,Post-cons.,06/01/2004,13:00,09,829982.18,3241474.51,-3.90
BA38-1,38-1, SG1,Post-cons.,06/01/2004,13:00,10,829980.30,3241467.10,-4.24
BA38-1,38-1, SG1,Post-cons.,06/01/2004,13:00,11,829979.81,3241465.17,-4.30
BA38-1,38-1, SG1,Post-cons.,06/01/2004,13:00,12,829978.51,3241459.81,-4.24
BA38-1,38-1, SG1,Post-cons.,06/01/2004,13:00,13,829976.63,3241452.34,-4.63
BA38-1,38-1, SG1,Post-cons.,06/01/2004,13:00,14,829976.34,3241451.27,-4.57
BA38-1,38-1, SG1,Post-cons.,06/01/2004,13:00,15,829974.89,3241445.75,-4.72
```

## Format 2:

### U.S. Army Corps of Engineers Beach Morphology Analysis Program - Free Format

This format is an ASCII format listing the profile line name, the number of points on each profile, and the distance and elevation values:

```
<Profile Name #1      Easting of Origin      Northing of Origin,      Azimuth of Origin      Date>
<Number of Points>
<Distance Value #1>  <Elevation Value #1>
<Distance Value #2>  <Elevation Value #2>
<Distance Value #3>  <Elevation Value #3>
(etc.)
<Profile Name #2      Easting of Origin      Northing of Origin,      Azimuth of Origin      Date>
<Number of Points>
<Distance Value #1>  <Elevation Value #1>
<Distance Value #2>  <Elevation Value #2>
<Distance Value #3>  <Elevation Value #3>
(etc.)
```

All of the above values are to be reported in State Plane NAD83 / NAVD88 feet. Meters or UTM coordinates are not acceptable. Distance values may be calculated according to the following formula:

$$\text{Distance Value} = \begin{aligned} &[(\text{Easting of Point}) - (\text{Easting of Origin})] \cdot \sin(\text{Azimuth of Origin}) + \\ &[(\text{Northing of Point}) - (\text{Northing of Origin})] \cdot \cos(\text{Azimuth of Origin}) \end{aligned}$$

Example:

```
SG01  3831677.3 278768.2 195.0 06-01-2004
6
-154.2 -1.1
-133.7 3.0
197.4 3.0
332.4 6.0
542.4 6.0
938.4 -2.8
SG02_P11 3832115.0 278650.1 195.0 06-01-2004
5
-553.1 3.0
113.9 3.0
248.9 6.0
458.9 6.0
936.5 -4.6
SG03  3832553.5 278531.7 195.0 06-01-2004
6
-454.4 1.5
-447.0 3.0
54.6 3.0
189.6 6.0
399.6 6.0
873.6 -4.5
```

### Format 3:

#### X, Y, Z, Profile Line Comma Delimited format

This format is an ASCII comma-delimited format. The arrangement of the columns is as follows

Easting (State Plane NAD83, feet)

Northing (State Plane NAD83, feet)

Elevation (Elevation relative to North American Vertical Datum of 1988 in feet)

Profile Line Name

#### Example:

3832117.8,	280412.5,	-3.0,	SG1
3832100.0,	280345.8,	-3.7,	SG1
3832098.8,	280341.7,	-3.5,	SG1
3832087.5,	280299.1,	-7.3,	SG1
3832077.8,	280263.1,	-9.0,	SG1
3832076.8,	280259.1,	-11.8,	SG1
3832076.3,	280257.1,	-11.9,	SG1
3832066.8,	280221.5,	-12.8,	SG1
3832066.5,	280221.0,	-12.8,	SG1
3832060.0,	280196.8,	-13.9,	SG1
3832058.3,	280190.5,	-14.1,	SG1
3832053.8,	280173.0,	-13.9,	SG1
3832047.3,	280148.6,	-15.2,	SG1
3832046.3,	280145.1,	-15.0,	SG1
3832041.3,	280127.1,	-15.5,	SG1

**APPENDIX IV      GEOTECHNICAL REPORTS**

***PROVIDED ELECTRONICALLY at the following link:***

<ftp://ftp.coastal.la.gov/BA-111/Appendices/>

**APPENDIX V USACE PROJECT PERMIT**

# DEPARTMENT OF THE ARMY PERMIT

Permittee: Coastal Protection and Restoration Authority

OCT 23 2012

Permit No. MVN-2012-0922-EFF

Issuing Office: New Orleans District

NOTE: The term "you" and its derivatives, as used in this permit, means the permittee or any future transferee. The term "this office" refers to the appropriate district or division office of the Corps of Engineers having jurisdiction over the permitted activity or the appropriate official of that office acting under the authority of the commanding officer.

You are authorized to perform work in accordance with the terms and conditions specified below.

Project Description: Excavate and deposit fill to construct the Shell Island Barrier Island Restoration Project (BA 110/111), in accordance with the drawings attached in sixty-three sheets dated February 1, 2012.

Project Location: In Plaquemines Parish, south of Highway 23, within Bastian Bay, at the Gulf of Mexico, near Empire, Louisiana.

## Permit Conditions:

### General Conditions:

1. The time limit for completing the work authorized ends on **OCT 31, 2017**. If you find that you need more time to complete the authorized activity, submit your request for a time extension to this office for consideration at least 1 month before the above date is reached.
2. You must maintain the activity authorized by this permit in good condition and in conformance with the terms and conditions of this permit. You are not relieved of this requirement if you abandon the permitted activity, although you may make a good faith transfer to a third party in compliance with General Condition 4 below. Should you wish to cease to maintain the authorized activity or should you desire to abandon it without a good faith transfer, you must obtain a modification of this permit from this office, which may require restoration of the area.
3. If you discover any previously unknown historic or archeological remains while accomplishing the activity authorized by this permit, you must immediately notify this office of what you have found. We will initiate the Federal and State coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.



4. If you sell the property associated with this permit, you must obtain the signature of the new owner in the space provided and forward a copy of the permit to this office to validate the transfer of this authorization.
5. If a conditioned water quality certification has been issued for your project, you must comply with the conditions specified in the certification as special conditions to this permit. For your convenience, a copy of the certification is attached if it contains such conditions.
6. You must allow representatives from this office to inspect the authorized activity at any time deemed necessary to ensure that it is being or has been accomplished in accordance with the terms and conditions of your permit.

**Special Conditions: See Attached.**

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 project.
3. Limits of Federal Liability. In issuing this permit, the Federal Government does not assume any liability for the following:
  - a. Damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes.
  - b. Damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the United States in the public interest.
  - c. Damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit.
  - d. Design or construction deficiencies associated with the permitted work.

- e. Damage claims associated with any future modification, suspension, or revocation of this permit.
- 4. Reliance on Applicant's Data: The determination of this office that issuance of this permit is not contrary to the public interest was made in reliance on the information you provided.
- 5. Reevaluation of Permit Decision. This office may reevaluate its decision on this permit at any time the circumstances warrant. Circumstances that could require a reevaluation include, but are not limited to, the following:
  - a. You fail to comply with the terms and conditions of this permit.
  - b. The information provided by you in support of your permit application proves to have been false, incomplete, or inaccurate (See 4 above).
  - c. Significant new information surfaces which this office did not consider in reaching the original public interest decision.

Such a reevaluation may result in a determination that it is appropriate to use the suspension, modification, and revocation procedures contained in 33 CFR 325.7 or enforcement procedures such as those contained in 33 CFR 326.4 and 326.5. The referenced enforcement procedures provide for the issuance of an administrative order requiring you to comply with the terms and conditions of your permit and for the initiation of legal action where appropriate. You will be required to pay for any corrective measures ordered by this office, and if you fail to comply with such directive, this office may in certain situations (such as those specified in 33 CFR 209.170) accomplish the corrective measures by contract or otherwise and bill you for the cost.

6. Extensions. General condition 1 establishes a time limit for the completion of the activity authorized by this permit. Unless there are circumstances requiring either a prompt completion of the authorized activity or a reevaluation of the public interest decision, the Corps will normally give favorable consideration to a request for an extension of this time limit.

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

X Chad M. C...  
 (PERMITTEE) CPRA Project Manager

X 10-11-2012  
 (DATE)

This permit becomes effective when the Federal official, designated to act for the Secretary of the Army, has signed below.

Michael V Farabee  
 Michael V Farabee, Chief Eastern Evaluation Section

October 23, 2012  
 (DATE)

for Edward R. Fleming, District Commander

When the structures or work authorized by this permit are still in existence at the time the property is transferred, the terms and conditions of this permit will continue to be binding on the new owner(s) of the property. To validate the transfer of this permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below.

\_\_\_\_\_  
 (TRANSFEEE)

\_\_\_\_\_  
 (DATE)

SPECIAL CONDITIONS: MVN-2012-0922-EFF

7. This authorization does not obviate the permittee from obtaining any necessary approvals from other pertinent federal, state, and/or local authorities.
8. Construction activities shall be confined to the proposed work areas shown on the attached drawings. Mechanized land clearing or filling in wetlands for access and/or project construction, unless expressly identified on the attached drawings, is not authorized. Any alterations or changes in scope of the proposed project not covered under this authorization would require a separate Department of the Army permit review and decision, prior to commencing that work.
9. The permittee shall assure that any contractors and/or workers associated with construction of the permitted project are equally aware of the conditions and restrictions associated with this approval.
10. The permittee is aware that future site visits and inspections may be conducted to the project area by this office and/or other resource agencies in order to assess project compliance with this authorization and requirements associated herewith.
11. The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.
12. Your use of the permitted activity must not interfere with the public's right to free navigation on all navigable waters of the United States. The proposed work shall be coordinated with the US Coast Guard, in order to address and potential navigation issues associated with project construction.
13. You must install and maintain, at your expense, any safety lights, signs and signals prescribed by the US Coast Guard, through regulations or otherwise, on your authorized facilities.
14. If the proposed project, or future maintenance work, involves the use of floating construction equipment (barge mounted cranes, barge mounted pile driving equipment, floating dredge equipment, dredge discharge pipelines, etc.) in the waterway, you are advised to notify the US Coast Guard so that a Notice to Mariners, if required, may be prepared. Notification, with a copy of your permit approval and drawings, should be mailed to the US Coast Guard, Sector New Orleans Command Center, 200 Hendee Street, New Orleans, Louisiana 70114, about 1 month before you plan to start work. Telephone inquiries can be directed to (504) 365-2281.

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15. The Chitimacha Tribe of Louisiana has stated that the project area is part of the aboriginal Chitimacha homelands. If during the course of work at the site, prehistoric and/or historic aboriginal cultural materials are discovered, the applicant will contact the Chitimacha Tribe of Louisiana at Post Office Box 661, Charenton, LA 70523, and the Army Corps of Engineers, New Orleans District (CEMVN) Regulatory Branch. CEMVN, Regulatory Branch will initiate the required federal, state, and tribal coordination to determine the significance of the cultural materials and the need, if applicable, for additional cultural resource investigations.
16. To the greatest extent, the permittee shall avoid negative impacts to existing vegetated wetlands at the site. Disturbance and/or rutting of existing vegetated wetlands during mobilization and/or construction activities shall be restored to pre-existing elevations at the earliest practicable time frame. The use of timber mats may be utilized where feasible, in order to avoid and minimize impacts to marsh.
17. To the greatest extent, the permittee shall avoid impacts to existing natural shorelines. Any rutting and/or ground disturbance in these areas must be restored immediately to pre-project conditions.
18. If archaeological materials and/or human remains are discovered during ground disturbing activities you shall cease and desist all activities in the project area and contact this office and Mr. Dennis Jones of the Louisiana Office of Cultural Development, Division of Archaeology at (225) 342-8160.
19. Our Real Estate Division has indicated that your project is located in an area over which the federal government holds real estate interest. No work may be performed under this permit until a real estate instrument is issued by our Real Estate Division. If you require further information regarding real estate matters, call (504) 862-1701. The real estate instrument will be initiated by our Real Estate Division without further action required on your part.
20. The permittee depicts excavation and stockpiling immediately adjacent to the Empire Waterway. Therefore, any effects to the waterway shall be restored to a minimum of pre-project conditions, upon completion of construction activities.
21. Any damage to the levees resulting from the applicant's activities will be repaired at the permittee's expense.
22. The proposed work shall not restrict the Levee District/Parish's maintenance operations or any potential flood fight activities at the levees, nor shall it obstruct or impede inspection access.
23. Earthen material placed on the levee slope shall be fertilized and seeded to promote new grass growth. In addition, all other disturbed areas on the levees resulting from the project must be restored to its original condition.

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24. Any materials placed onto the levees must be removed from the area upon completion of the project and the area must be returned to its original state of existence or better.
25. Should changes in the location or section of the existing levees and/or river, or in the generally prevailing conditions in the vicinity, be required in the future in the public interest, the permittee shall make changes in the project concerned, or in the arrangement thereof, as may be necessary to satisfactorily meet the situation and shall bear the cost thereof.
26. The proposed dredging work within the Mississippi River would be located within areas known to be inhabited by the Pallid sturgeon (Scaphirhynchus albus). The cutterhead shall remain completely buried in the bottom material during dredging operations. If pumping water through the cutterhead is necessary to dislodge material or to clean the pumps and/or cutterhead, etc., the pumping rate shall be reduced to the lowest possible until the cutterhead is at mid-depth, where the pumping rate can then be increased. During dredging, the pumping rates should be reduced to the slowest speed feasible while the cutterhead is descending to the channel bottom. The permittee shall contact this office (504-862-2766) and the US Fish and Wildlife Service (USFWS) Lafayette Field office (337-291-3100), with any further questions about the Pallid sturgeon or should a sturgeon be observed. The permittee shall cease work if a sturgeon is observed within the subject area and until consultation has been finalized with this office and the USFWS.
27. The proposed island restoration work would occur within areas that are known to be inhabited by the West Indian manatee (Trichechus manatus). The permittee shall adhere to the GUIDELINES FOR ACTIVITIES IN PROXIMITY TO MANATEE AND THEIR HABITAT, attached to this authorization as (**Attachment I**), during all phases of in-water work for the duration of the project as well as any future in-water maintenance work. The permittee shall contact this office (504-862-2766) and the USFWS Lafayette Field Office of Louisiana (337-291-3100), with any further questions about the West Indian manatee, the subject guidelines, or should a manatee be sighted. The permittee shall cease work if a manatee is observed within the subject area and until consultation has been finalized with this office and the USFWS.
28. The proposed project occurs within an area impacted by the Deepwater Horizon Oil Spill in the summer of 2010 and activities such as yours could potentially re-suspend oiled sediments that may be located in the area. It is also noted that cleanup crews associated with the US Coast Guard's Deepwater Horizon Response are potentially working in multiple sites located throughout the Louisiana coastal area. In order to coordinate and mitigate potential re-suspension of oiled sediments, adverse impacts to fish and wildlife species, and safety issues related to cleanup operations; the permittee shall contact and coordinate with LT David R. Simonson, US Coast Guard Deepwater Horizon Response (504-252-8748 or [david.r.simonson@uscg.mil](mailto:david.r.simonson@uscg.mil)) , prior to commencement of work.

## GUIDELINES FOR ACTIVITIES IN PROXIMITY TO MANATEES AND THEIR HABITAT

### I. General Guidance for In-water Work Activities

- A. All personnel associated with the project should be informed of the potential presence of manatees, manatee speed zones, and the need to avoid collisions with and injury to manatees. Such personnel instruction should also include a discussion of the civil and criminal penalties for harming, harassing, or killing manatees, which are protected under the Marine Mammal Protection Act of 1972 and the Endangered Species Act of 1973.
- B. All contract and/or construction personnel are responsible for observing water-related activities for the presence of manatee(s).
- C. Temporary signs should be posted prior to and during all construction/dredging activities to remind personnel to be observant for manatees during active construction/dredging operations or within vessel movement zones (i.e., work area), and at least one sign should be placed where it is visible to the vessel operator.
- D. Siltation barriers, if used, should be made of material in which manatees could not become entangled, and should be properly secured and regularly monitored. Barriers should not impede manatee movement.
- E. If a manatee is sighted within 100 yards of the active work zone, special operating conditions should be implemented, including: no operation of moving equipment within 50 feet of a manatee; all vessels should operate at no wake/idle speeds within 100 yards of the work area; and siltation barriers, if used, should be re-secured and monitored. Once the manatee has left the 100-yard buffer zone around the work area on its own accord, special operating conditions are no longer necessary, but careful observations would be resumed.
- F. Any manatee sighting should be immediately reported to the U.S. Fish and Wildlife Service's (Service) Lafayette, Louisiana, Field Office (337/291-3100) and the Louisiana Department of Wildlife and Fisheries (LDWF), Natural Heritage Program (225/765-2821).

### II. Guidelines to Minimize and/or Avoid Manatee Entrapment

- A. Pre-construction:

Water control structures, trash rakes, barriers and other devices that may entrap manatees (even temporarily) within a closed waterway could result in harm or death to the entrapped manatee. At least 90 days prior to installing a structure that may be a barrier or impediment to manatee movement, advanced consultation with the Service and the LDWF should occur. When a manatee-accessible waterway is proposed to be closed to manatees (exclusion area), aerial and ground surveys should be conducted to ensure that manatees are not entrapped in a closed system.
- 1. Aerial Survey:

Prior to installing the last section of any barriers (temporary or permanent) that could result in the entrapment of manatees within the waterway, the project proponent should contact the Service and LDWF to determine whether an aerial survey of the proposed exclusion area should be conducted. The extent of the survey area should be identified by the Service and LDWF. Both the Service and LDWF should be contacted to participate in any aerial surveys. It is recommended that the surveys be conducted by helicopter.

2. Waterway Closure:

If no manatees are sighted within the exclusion area, the waterway should be closed off immediately following that survey. If manatees are sighted within the exclusion area, they should be observed to see if they move beyond the proposed barrier. If they do not move out of the waterway within 10 days, the project proponent should consult with the Service and LDWF to determine if the barrier should be put in place. Manatees should not be herded, poked, prodded or harassed in any way to move them along the waterway.

B. Post-construction:

Once the barrier has been installed, the barrier and waterway should be monitored by land once daily for a period of one week to check for the presence of manatees. If manatees are sighted within the exclusion area, the Service (337/291-3100) and LDWF (225/765-2821) should be contacted for further guidance.

III. Guidance for Activities Related to Pipe or Culvert Installation

- A. For pipes and/or culverts installed in areas with potential manatee access, measures that minimize both project installation- and structure-related risks must be adopted to avoid or minimize their effects on manatees and any suitable habitat.
- B. Pursuant to the "General Guidance for In-Water Work Activities", all project-related personnel must be instructed about manatees and measures needed to ensure the manatees' protection during the installation of these structures.
- C. Structures with openings that exceed 8 feet in diameter at both ends and have average water depths of at least three feet, mean low water (MLW), generally do not pose a threat to manatees. Wherever possible, structures (such as box culverts) with these features should be used to reduce the risk of manatees drowning or becoming entrapped in these structures.
- D. Where pipes and culverts between 8 inches and 8 feet in diameter are required, bars or gratings spaced less than 8 inches apart in horizontal, diagonal, or vertical configurations should be placed over the openings to prevent adult manatees and calves from accessing these structures.
- E. Manatees can become stranded in culverts during periods of low tide. Therefore, when planning for new culverts in tidal waters, a minimum 3-foot depth of water in the culvert at low tide stage is recommended.

IV. Guidance for Docks or Other Structures Constructed in or over Submerged Aquatic Vegetation, Marsh, or Mangrove Habitat

- A. Submerged Aquatic Vegetation (SAV)
  - 1. Avoidance – the pier should be aligned so as to minimize the size of the footprint over SAV beds.
  - 2. The height of pier should be a minimum of 5 feet above MHW/OHW as measured from the top surface of the decking.
  - 3. The width of the pier should be limited to a maximum of 4 feet. A turnaround area is allowed for piers greater than 200 feet in length. The turnaround is limited to a section of the pier no more than 10 feet in length and no more than 6 feet in width. The turnaround should be located at the midpoint of the pier.

4. Over-SAV bed portions of the pier should be oriented in a north-south orientation to the maximum extent practicable.
5. If possible, terminal platforms should be placed in deep water, water-ward of SAV beds, or in an area devoid of SAV beds.
6. If a terminal platform is placed over SAV areas and constructed of grated decking, the total size of the platform should be limited to 160 square feet. The grated deck material should conform to the specifications stipulated below. The configuration of the platform should be a maximum of 8 feet by 20 feet. A minimum of 5 feet by 20 feet should conform to the 5-foot height requirement; a 3-foot by 20-foot section may be placed 3 feet above mean high water (MHW) to facilitate boat access. The long axis of the platform should be aligned in a north-south direction to the maximum extent that is practicable.
7. If the terminal platform is placed over SAV areas and constructed of planks, the total size of the platform should be limited to 120 square feet. The configuration of the platform should be a maximum of 6 feet by 20 feet of which a minimum 4-foot-wide by 20-foot-long section shall conform to the 5-foot height requirement. A section may be placed 3 feet above MHW to facilitate boat access. The 3 feet above MHW section should be cantilevered. The long axis of the platform should be aligned in a north-south direction to the maximum extent practicable. If the 3 feet above MHW section is constructed with grating material, it may be 3 feet wide.
8. One uncovered boat lift area is allowed. A narrow catwalk (2-feet-wide if planks are used, 3-feet-wide if grating is used) may be added to facilitate boat maintenance along the outboard side of the boat lift and a 4-foot-wide walkway may be added along the stern end of the boat lift, provided all such walkways are elevated 5 feet above MHW. The catwalk should be cantilevered from the outboard mooring pilings (spaced no closer than 10 feet apart).
9. Pilings should be installed in a manner which will not result in the formation of sedimentary deposits ("donuts" or "halos") around the newly installed pilings. Pile driving is the preferred method of installation, but jetting with a low pressure pump may be used.
10. The spacing of pilings through SAV beds should be a minimum of 10 feet on center.
11. The gaps between deck boards should be a minimum of ½ inch.

#### B. Marsh

1. The structure should be aligned so as to have the smallest over-marsh footprint as practicable.
2. The over-marsh portion of the dock should be elevated to at least 4 feet above the marsh floor.
3. The width of the dock should be limited to a maximum of 4 feet. Any exceptions to the width must be accompanied by an equal increase in height requirement.

#### C. Mangroves

1. The width of the dock should be limited to a maximum of 4 feet.
2. Mangrove clearing should be restricted to the width of the pier.
3. The location and alignment of the pier should be through the narrowest area of the mangrove fringe.



**APPENDIX VI LDNR COASTAL USE PERMIT**



**DEPARTMENT OF NATURAL RESOURCES  
OFFICE OF COASTAL MANAGEMENT**

P.O. BOX 44487  
BATON ROUGE, LOUISIANA 70804-4487  
(225)342-7591  
1-800-267-4019

**COASTAL USE PERMIT/CONSISTENCY DETERMINATION**

**C.U.P. No.:** P20120216

**C.O.E. No.:** MVN- 2011- 2935- EFF

**NAME:** **COASTAL PROTECTION AND RESTORATION AUTHORITY**  
450 LAUREL ST., SUITE 1200  
BATON ROUGE, LA 70801  
Attn: Chad Chauvin

**LOCATION:** **Plaquemines Parish, LA**  
Shell Island East (Pt. 250): Lat 29° 16' 38.24"N / Long -89° 37' 43.91"W; Shell Island West (Pt. 240): Lat 29° 17' 49.45"N / Long -89° 39' 51.73"W; Coordinates for Borrow Areas on permit plats; Section 39-41, T20S-R28E; Section 16-21,26-28,34,35,13, 24, T21S-R28E; West of Empire Waterway Bastian Bay area.

**DESCRIPTION:** Shell Island East Restoration Berm Enhancement Project and Shell Island West NRDA Restoration Project (BA-110/111) for the proposed creation of +/- 615 acres of beach/dune habitat and +/-343 acres of brackish marsh habitat along the Barataria Basin Barrier Shoreline. Project includes the dredging of +/-12.9 M c.y. of sediment from potential borrow areas MR-A, MR-B, MR-E, 35E, and 9 (MR-B and MR-E previously permitted under P20101416 -Scofield Island Restoration Project / BA-40). Conveyance of sediment within a submerged/buried 30" pipeline proposed from borrow sources MR-A, MR-B, and MR-E along an existing dredge pipeline corridor follows the Empire Waterway (previously permitted under P20101416) and from Areas 35E and 9 with estimated losses in sediment due to transfer anticipated. Proposed fill required for the creation of dune habitat is +/- 6.4M c.y. and +/- 1.8M c.y. for the creation of marsh habitat. Project also includes the excavation of +/- 467,900 c.y. for access channels and subsequent placement on both sides to a height conducive to marsh establishment, excavation of +/- 865,000 c.y. for the construction of the primary dikes for containment of marsh creation areas, the placement 250 c.y. of gravel for dredge pipeline levee crossings, and the excavation of +/- 21,400 c.y. for navigational crossings and booster pump locations.

In accordance with the rules and regulations of the Louisiana Coastal Resources Program and Louisiana R.S. 49, Sections 214.21 to 214.41, the State and Local Coastal Resources Management Act of 1978, as amended, the permittee agrees to:

1. Carry out, perform, and/or operate the use in accordance with the permit conditions, plans and specifications approved by the Department of Natural Resources.
2. Comply with any permit conditions imposed by the Department of Natural Resources.
3. Adjust, alter or remove any structure or other physical evidence of the permitted use if, in the opinion of the Department of Natural Resources, it proves to be beyond the scope of the use as approved or is abandoned.
4. Provide, if required by the Department of Natural Resources, an acceptable surety bond in an appropriate amount to ensure adjustment, alteration, or removal should the Department of Natural Resources determine it necessary.
5. Hold and save the State of Louisiana, the local government, the department, and their officers and employees harmless from any damage to persons or property which might result from the use, including the work, activity, or structure permitted.
6. Certify that the use has been completed in an acceptable and satisfactory manner and in accordance with the plans and specifications approved by the Department of Natural Resources. The Department of Natural Resources may, when appropriate, require such certification to be given by a registered professional engineer.
7. All terms of the permit shall be subject to all applicable federal and state laws and regulations.
8. This permit, or a copy thereof, shall be available for inspection at the site of work at all times during operations.
9. The applicant will notify the Office of Coastal Management of the date on which initiation of the permitted activity described under the "Coastal Use Description" began. The applicant shall notify the Office of Coastal Management by mailing the enclosed green initiation card on the date of initiation of the coastal use.
10. Unless specified elsewhere in this permit, this permit authorizes the initiation of the coastal use described under "Coastal Use Description" for two years from the date of the signature of the Secretary or his designee. If the coastal use is not initiated within this two year period, then this permit will expire and the applicant will be required to submit a new application. Initiation of the coastal use, for the purposes of this permit, means the actual physical beginning of the use of activity for which the permit is required. Initiation does not include preparatory activities, such as movement of equipment onto the coastal use site, expenditure of funds, contracting out of work, or performing activities which by themselves do not require a permit. In addition, the permittee must, in good faith, and with due diligence, reasonably progress toward completion of the project once the coastal use has been initiated.
11. The following special conditions must also be met in order for the use to meet the guidelines of the Coastal Resources Program:



- a. This permit does not convey any property rights, mineral rights, or exclusive privileges; nor does it authorize injury to property.
- b. Permittee shall, prior to commencement of the herein permitted activities, contact Rhonda Braud (phone: 225-342-4553, email: rhonda.braud@la.gov) to determine if a construction permit will be required from the local levee district.
- c. Submerged sediment/dredge pipeline must be marked/lighted in accordance with U. S. Coast Guard regulations.
- d. Permitted activities shall not interfere with navigation and project operations shall be coordinated with the USCG prior to initiation of activities permitted under this authorization.
- e. All logs, stumps and other debris encountered during dredging activities shall be removed from the site during or immediately after the activity and disposed of in accordance with all applicable laws and regulations.
- f. The following conditions have been provided by the Louisiana Dept. of Wildlife and Fisheries, LA Natural Heritage Program:

The piping plover (*Charadrius melodus*) may occur within one mile of the project area. This species is federally listed as threatened with its critical habitat designated along the Louisiana coast. Piping plovers winter in Louisiana feeding at intertidal beaches, mudflats, and sand flats with sparse emergent vegetation. Primary threats to this species are destruction and degradation of winter habitat, habitat alteration through shoreline erosion, woody species encroachment of lake shorelines and riverbanks, and human disturbance of foraging birds. For more information on piping plover critical habitat, visit the U.S. Fish and Wildlife website: <http://endangered.fws.gov>.

Our database indicates the presence of bird nesting colonies within one mile of this proposed project. Please be aware that entry into or disturbance of active breeding colonies is prohibited by the Louisiana Department of Wildlife and Fisheries (LDWF). In addition, LDWF prohibits work within a certain radius of an active nesting colony.

Nesting colonies can move from year to year and no current information is available on the status of these colonies. If work for the proposed project will commence during the nesting season, conduct a field visit to the worksite to look for evidence of nesting colonies. This field visit should take place no more than two weeks before the project begins. If no nesting colonies are found within 400 meters (700 meters for brown pelicans) of the proposed project, no further consultation with LDWF will be necessary. If active nesting colonies are found within the previously stated distances of the proposed project, further consultation with LDWF will be required. In addition, colonies should be surveyed by a qualified biologist to document species present and the extent of colonies. Provide LDWF with a survey report which is to include the following information:

1. qualifications of survey personnel;
2. survey methodology including dates, site characteristics, and size of survey area;
3. species of birds present, activity, estimates of number of nests present, and general vegetation type including digital photographs representing the site; and
4. topographic maps and ArcView shapefiles projected in UTM NAD83 Zone 15 to illustrate the location and extent of the colony.

Please mail survey reports on CD to:  
Louisiana Natural Heritage Program  
La. Dept. of Wildlife & Fisheries  
P.O. Box 98000  
Baton Rouge, LA 70898-9000

To minimize disturbance to colonial nesting birds, the following restrictions on activity should be observed:

- For colonies containing nesting wading birds (i.e., herons, egrets, night-herons, ibis, roseate spoonbills, anhingas,



and/or cormorants), all project activity occurring within 300 meters of an active nesting colony should be restricted to the non-nesting period (i.e., September 1 through February 15).

- For colonies containing nesting gulls, terns, and/or black skimmers, all project activity occurring within 400 meters (700 meters for brown pelicans) of an active nesting colony should be restricted to the non-nesting period (i.e., September 16 through April 1).

- g. No impacts to rare, threatened or endangered species or critical habitats are anticipated from the proposed project. No state or federal parks, wildlife refuges, wildlife management areas or scenic rivers are known at the specified site or within ¼ mile of the proposed project.

The Louisiana Natural Heritage Program (LNHP) has compiled data on rare, endangered, or otherwise significant plant and animal species, plant communities, and other natural features throughout the State of Louisiana. LNHP reports summarize the existing information known at the time of the request regarding the location in question. LNHP reports should not be considered final statements on the biological elements or areas being considered, nor should they be substituted for on-site surveys required for environmental assessments. If at any time LNHP tracked species are encountered within the project area, please contact our biologist at 225-765-2643.

- h. Project Teams for BA 110/111(Shell Island Barrier Island Enhancement Project) will continue monthly coordination with NOV Project Team for BA-67 (New Orleans to Venice) to monitor schedule progress to avoid potential conflicts.
- i. Permittee shall obtain a Water Quality Certification, should one be required, from the LA Department of Environmental Quality prior to initiation of any construction activities.
- j. All fill material shall be clean and free of contaminants and shall not contain hazardous materials such as asbestos or asbestos residue, shingles, tires, oil/grease residue, exposed rebar, protruding objects, etc.)
- k. The requirement for compensatory mitigation for impacts to marsh habitat resulting from the referenced project will be determined after one full growing season (March 1 to November 1) following the completion of the permitted activities. This assessment shall include both primary impacts and secondary impacts which may result from the permitted activities.

If OCM determines that compensatory mitigation is required, permittee shall submit a compensatory mitigation plan for approval within 30 days of notification of the compensatory mitigation requirements by OCM. All necessary approvals shall be obtained for the compensatory mitigation plan and the plan shall be implemented as directed by OCM. Permittee should be aware that compensatory mitigation projects may be required to be maintained for as many as 20 years for marsh mitigation projects and 50 years for forested wetland mitigation projects. A processing fee will be assessed for the determination of compensatory mitigation requirements and evaluation of the proposed compensatory mitigation plan in accordance with LAC Title 43, Part I, Chapter 7, §724.D. This fee shall apply regardless of which compensatory mitigation option is selected and does not include the cost incurred to implement the required compensatory mitigation.

- l. Permittee shall notify OCM Field Scientist, Frank Cole, at 225-280-4064 or frank.cole@la.gov no later than ten (10) days prior to initiation and following completion of activities permitted under this authorization.
- m. Permittee shall provide to OCM within 30 days following project completion as-built drawings and/or plats that include the actual borrow sources utilized for the completion of the permitted activity and the entire dredged material placement area.
- n. That permittee shall insure that all sanitary sewage and/or related domestic wastes generated during the subject



project activity and at the site, thereafter, as may become necessary shall receive the equivalent of secondary treatment (30 mg/l BOD5) with disinfection prior to discharge into any of the streams or adjacent waters of the area or, in the case of total containment, shall be disposed of in approved sewerage and sewage treatment facilities, as is required by the State Sanitary Code. Such opinion as may be served by those comments offered herein shall not be construed to suffice as any more formal approval(s) which may be required of possible sanitary details (i.e. provisions) scheduled to be associated with the subject activity. Such shall generally require that appropriate plans and specifications be submitted to the Department of Health and Hospitals for purpose of review and approval prior to any utilization of such provisions.

- o. All structures built under the authorization and conditions of this permit shall be removed from the site within 120 days of abandonment of the facilities for the herein permitted use, or when these structures fall into a state of disrepair such that they can no longer function as intended. This condition does not preclude the necessity for revising the current permit or obtaining a separate Coastal Use Permit, should one be required, for such removal activities.
- p. The area where the project is located is all part of the aboriginal homelands of the Chitimacha Tribe of Louisiana. As such, large villages, burial sites, and sacred sites were in place in that entire area. If at any time during the course of the work, any traditional cultural properties are discovered, Permittee shall immediately contact Kimberly S. Walden (Cultural Director) or Melanie Aymond (Research Coordinator) at (337) 923-9923 or (337) 923-4395. Office hours are Monday through Thursday from 7:30 A.M. - 5:00 P.M. and on Friday between 7:30 A.M. - 11:30 A.M. If traditional cultural properties are discovered on the weekend or after business hours, the notification shall be made the next business morning.
- q. Permittee is subject to all applicable state laws related to damages which are demonstrated to have been caused by this action.
- r. Permittee shall allow representatives of the Office of Coastal Management or authorized agents to make periodic, unannounced inspections to assure the activity being performed is in accordance with the conditions of this permit.
- s. Permittee shall comply with all applicable state laws regarding the need to contact the Louisiana One Call (LOC) system (1-800-272-3020) to locate any buried cables and pipelines.
- t. This permit authorizes the initiation of the Coastal Use described under "Coastal Use Description" for two (2) years from the date of the signature of the Secretary or his designee. Initiation of the Coastal Use, for purposes of this permit, means the actual physical beginning of the use or activity for which the permit is required. Initiation does not include preparatory activities, such as movement of equipment onto the Coastal Use site, expenditure of funds, contracting out of work, or performing activities which by themselves do not require a permit. In addition, Permittee must, in good faith and with due diligence, reasonably progress toward completion of the project once the Coastal Use has been initiated. If the Coastal Use is not initiated within this two (2) year period, an extension may be granted pursuant to the requirements contained in the Rules and Procedures for Coastal Use Permits (Title 43:I.723.D.). Please note that a request for permit extension MUST be made no sooner than one hundred eighty (180) days and no later than sixty (60) days prior to the expiration of the permit.

The expiration date of this permit is five (5) years from the date of the signature of the Secretary or his designee.

Upon expiration of this permit, a new Coastal Use Permit will be required for completion of any unfinished or uncommenced work items and for any maintenance activities involving dredging or fill that may become necessary. Other types of maintenance activities may also require a new Coastal Use Permit.

\*\*\*\*\* End of Conditions \*\*\*\*\*

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C.U.P. No.: P20120216  
C.O.E. No.: MVN- 2011- 2935- EFF



By accepting this permit the applicant agrees to its terms and conditions.  
I affix my signature and issue this permit this 23rd day of August, 2012.

THE DEPARTMENT OF NATURAL RESOURCES

Karl L. Morgan, Administrator  
Office of Coastal Management

This agreement becomes binding when signed by Administrator of  
the Office of Coastal Management Permits/Mitigation Division, Department of Natural Resources.

Attachments



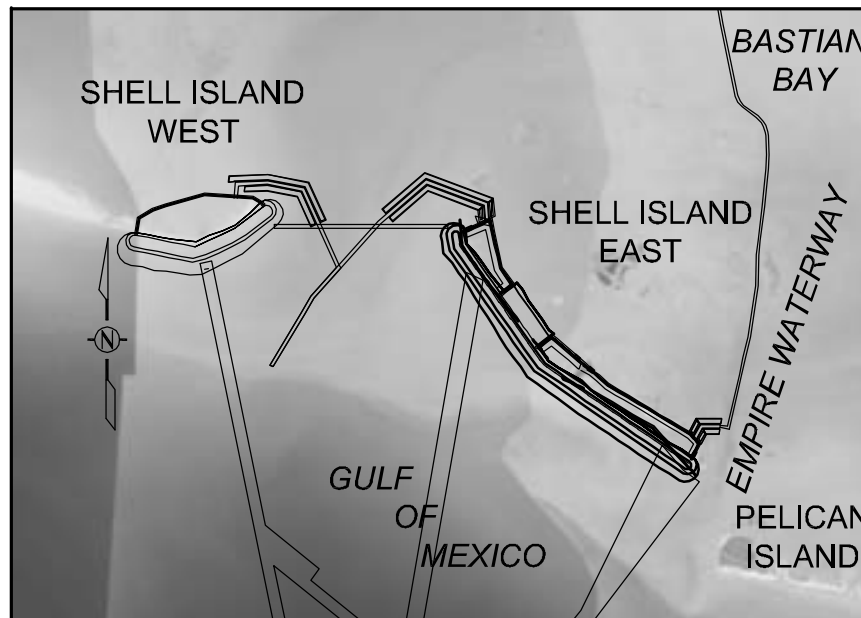
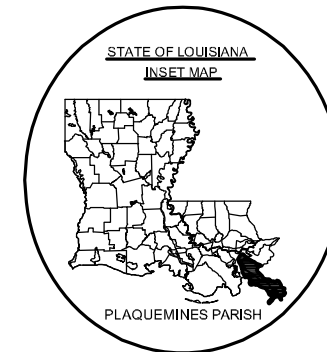
**Final Plats:**

- 1) P20120216 Final Plats 05/03/2012
- 2) P20120216 Final Plats 05/03/2012

cc: Pete Serio, COE w/attachments  
Dave Butler, LDWF w/attachments  
Jessica Diez, OCM w/attachments  
Frank Cole, OCM/FI w/attachments  
Plaquemines Parish w/attachments

**STATE OF LOUISIANA  
COASTAL PROTECTION AND RESTORATION AUTHORITY**

**SHELL ISLAND  
BARRIER ISLAND RESTORATION PROJECT  
BA-110/111  
PLAQUEMINES PARISH**



6000' 3000' 0' 6000' 12000'

GRAPHIC SCALE IN FEET



**COASTAL PLANNING & ENGINEERING, INC.**

2481 N.W. BOCA RATON BOULEVARD  
BOCA RATON, FLORIDA 33431

PH. (561) 391-8102  
FAX (561) 391-9116

C.O.A. FL. #4628  
C.O.A. LA. #2531

[www.CoastalPlanning.net](http://www.CoastalPlanning.net)

<p>APPLICATION BY: COASTAL PROTECTION AND RESTORATION AUTHORITY 450 LAUREL ST., SUITE 1200 BATON ROUGE, LOUISIANA 70801 PH: (225) 342-1477 FAX: (225) 342-6801</p>	<p align="center"><b>COASTAL PROTECTION &amp; RESTORATION AUTHORITY</b> 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801</p>	<p align="center">SHELL ISLAND BARRIER ISLAND RESTORATION PROJECT</p>	<p align="center">COVER SHEET</p>
<p>DRAWN BY: G KRYSYNIAK</p>	<p>DESIGNED BY: D SWIGLER</p>	<p>APPROVED BY: G THOMSON</p>	<p>STATE PROJECT NUMBER: BA-110/111 DATE: 2/1/12 SHEET 1 OF 61</p>



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37	BORROW AREA MR-A BATHYMETRY CONTOURS		
38	BORROW AREA MR-A VIBRACORES AND ANOMALIES		
39	BORROW AREA MR-A CROSS SECTION C-C'		
40	BORROW AREA MR-A CROSS SECTION D-D'	APPENDIX A	RIVERINE SAND MINING/SCOFIELD ISLAND RESTORATION PROJECT (BA-40) PREVIOUSLY PERMITTED APPLICABLE PERMIT PLATS



**COASTAL PLANNING & ENGINEERING, INC.**

2481 N.W. BOCA RATON BOULEVARD  
BOCA RATON, FLORIDA 33431

PH. (561) 391-8102  
FAX (561) 391-0116  
C.O.A. FL. #4028  
C.O.A. LA. #2531

[www.CoastalPlanning.net](http://www.CoastalPlanning.net)

APPLICATION BY: COASTAL PROTECTION AND RESTORATION AUTHORITY 450 LAUREL ST., SUITE 1200 BATON ROUGE, LOUISIANA 70801 PH: (225) 342-1477 FAX. (225) 342-6801	<b>COASTAL PROTECTION &amp; RESTORATION AUTHORITY</b> 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801	SHELL ISLAND BARRIER ISLAND RESTORATION PROJECT	SHEET INDEX
		STATE PROJECT NUMBER: BA-110/111	DATE: 2/1/12
DRAWN BY: G KRYSZYNIAK	DESIGNED BY: D SWIGLER	APPROVED BY: G THOMSON	SHEET 2 OF 61

RIVER DREDGING PROCEDURES NARRATIVE

1. INTRODUCTION

THE COASTAL PROTECTION AND RESTORATION AUTHORITY (CPRA) HAS APPLIED FOR A PERMIT TO CONSTRUCT THE SHELL ISLAND BARRIER ISLAND RESTORATION PROJECT (BA-110/111). THIS PROJECT INTENDS TO CREATE APPROXIMATELY 958 ACRES OF BARRIER ISLAND HABITAT ALONG THE BARATARIA BASIN BARRIER SHORELINE. DUE TO THE PROJECT'S CLOSE PROXIMITY TO THE MISSISSIPPI RIVER, IT IS INTENDED TO UTILIZE THE RENEWABLE SEDIMENT RESOURCE FROM THE MISSISSIPPI RIVER TO ACCOMPLISH THESE OBJECTIVES. IN THE SPRING OF 2010, MISSISSIPPI RIVER SEDIMENT WAS USED SUCCESSFULLY TO COMPLETE THE CONSTRUCTION OF THE COASTAL WETLANDS PLANNING, PROTECTION, AND RESTORATION ACT (CWPPRA) PROJECT, MISSISSIPPI RIVER SEDIMENT DELIVERY SYSTEM - BAYOU DUPONT (BA-39). THIS NARRATIVE WILL PRESENT THE PROPOSED PROTOCOLS FOR MINING THE SEDIMENT FROM THE PROPOSED MISSISSIPPI RIVER BORROW AREAS AND THE PROPOSED SEDIMENT DELIVERY SYSTEM TO THE PROJECT AREA.

2. BORROW AREA

MISSISSIPPI RIVER BORROW AREAS MR-A, MR-B, AND MR-E (APPROXIMATELY MISSISSIPPI RIVER MILES 33-34.5, 28-31, AND 22.5-24 ABOVE HEAD OF PASSES, RESPECTIVELY) WERE CHOSEN AS THE SEDIMENT SOURCE FOR THIS PROJECT AFTER YEARS OF STUDY AS PART OF THE LOUISIANA COASTAL AREA BARATARIA BASIN BARRIER SHORELINE PROJECT AND THE CWPPRA RIVERINE SAND MINING/SCOFIELD ISLAND RESTORATION (BA-40) PROJECTS. PERMIT DRAWING SHEETS 8, 37-41 AND 50-60 DEPICT THE HORIZONTAL DELINEATION AND THE TYPICAL SECTIONS OF BORROW AREAS MR-A, MR-B AND MR-E . THE WESTERN BOUNDARIES OF BORROW AREAS MR-A AND MR-E ARE GREATER THAN 750 FEET FROM THE CENTERLINE OF THE MISSISSIPPI RIVER AND TRIBUTARY LEVEE LOCATED ON THE RIGHT DESCENDING BANK. THE EASTERN BOUNDARY OF BORROW AREA MR-B IS GREATER THAN 750 FEET FROM THE CENTERLINE OF THE MISSISSIPPI RIVER LEVEE LOCATED ON THE LEFT DESCENDING BANK.

THE DIMENSIONS OF THE DESIGNATED BORROW AREAS ARE LISTED IN TABLE 1:

BORROW AREA:	APPROXIMATE LENGTH (FT.):	AVERAGE WIDTH (FT.):	MAXIMUM DEPTH OF EXCAVATION(FT. NAVD88):
MR-A	6,300	800 TO 1,500	-75 TO -80
MR-B	14,800	150 TO 600	-80
MR-E	8,900	300 TO 1,000	-80

TABLE 1. DIMENSIONS OF PROPOSED MISSISSIPPI RIVER BORROW AREAS

BORROW AREAS MR-B AND MR-E ARE PROPOSED TO BE DREDGED FOR THE RIVERINE SAND MINING/SCOFIELD ISLAND RESTORATION (BA-40) PROJECT AND HAVE BEEN PERMITTED PREVIOUSLY. ANY SEDIMENT REMAINING AFTER THE CONSTRUCTION OF BA-40 IS PROPOSED TO BE UTILIZED FOR THE SHELL ISLAND PROJECT. THE VOLUMES REFLECTED IN THE PERMIT APPLICATION INCLUDE TOTAL AVAILABLE VOLUMES PRIOR TO ANY DREDGING FOR THE BA-40 PROJECT.

a. DREDGING OPERATIONS

CPRA REQUESTS TO PERMIT APPROXIMATELY 13,674,000 CUBIC YARDS OF MISSISSIPPI RIVER SEDIMENT. 8,350,000 CUBIC YARDS OF THIS VOLUME IS PERMITTED FOR THE BA-40 PROJECT. THE SHELL ISLAND PROJECT PROPOSES TO EXCAVATE THE REMAINING VOLUME. THE MATERIAL WILL BE HYDRAULICALLY DREDGED USING A CUTTERHEAD OR HOPPER DREDGE IN MR-A, MR-B AND MR-E .

b. DREDGING SAFETY

i. FLOATING SEDIMENT PIPELINE. THE DREDGE PIPELINE WILL CONTAIN A FLOATING SEGMENT BETWEEN THE DREDGE AND THE SHORELINE PIPE. THE CONTRACTOR WILL BE REQUIRED TO PROVIDE THE LOCATION OF THE FLOATING SEDIMENT PIPELINE IN THE WORK PLAN, DAILY COMMUNICATION PLAN. SEGMENTS OF FLOATING SEDIMENT PIPELINE SHALL BE CLEARLY MARKED WITH DREDGING AIDS AND LIGHTS IN SUCH A WAY AS TO NOT OBSTRUCT OR CONFUSE NAVIGATION. ALL DREDGING AID MARKERS AND LIGHTS SHALL COMPLY WITH THE REGULATIONS SET FORTH IN COMMANDANT U.S. COAST GUARD (USCG) INSTRUCTION M16672.2, NAVIGATION RULES: INTERNATIONAL-INLAND (COMDTINST M16672.2), OR 33 CFR 81 APPENDIX A (INTERNATIONAL) AND 33 CFR 84 THROUGH 33 CFR 89 (INLAND) AS APPLICABLE.

ii. COMMUNICATION. THE CONTRACTOR WILL BE REQUIRED TO SUBMIT A DAILY COMMUNICATION PLAN TO THE OWNER, THE USACE, AND THE MARITIME NAVIGATION SAFETY ASSOCIATION (MNSA). THE DREDGE WILL COMMUNICATE WITH THE MAIN CONTROL STATIONS USING BRIDGE-TO-BRIDGE RADIOTELEPHONES CAPABLE OF TRANSMITTING AND RECEIVING ON THE FREQUENCIES WITHIN THE 156 TO 162 MEGAHERTZ BANK USING THE CLASS OF EMISSIONS DESIGNATED BY THE FEDERAL COMMUNICATIONS COMMISSION FOR THE EXCHANGE OF NAVIGATIONAL INFORMATION. DURING MOBILIZATION, CONSTRUCTION, AND DEMOBILIZATION, AN OFFICER SHALL BE REQUIRED TO BE PRESENT ON THE DREDGE. THE OFFICER SHALL BE REQUIRED TO IMPLEMENT OPERATIONAL SAFETY OF ALL VESSELS ASSOCIATED WITH THE PROJECT AND WILL BE REQUIRED TO MONITOR THE MARINE RADIO CHANNELS FOR VESSEL-TO-VESSEL COMMUNICATIONS.



**COASTAL PLANNING & ENGINEERING, INC.**  
 2481 N.W. BOCA RATON BOULEVARD  
 BOCA RATON, FLORIDA 33431  
 PH. (561) 391-8102  
 FAX (561) 391-9116  
 C.O.A. FL. #4028  
 C.O.A. LA. #2531  
[www.CoastalPlanning.net](http://www.CoastalPlanning.net)

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- iii. DREDGE LOCATION CONTROL. THE DREDGE SHALL BE REQUIRED TO OPERATE ELECTRONIC POSITIONING EQUIPMENT THAT SHALL SEND CLEAR AND FREQUENT DREDGE POSITION UPDATES SO AS TO ENSURE ACCURATE AND CONTINUOUS ACCESSIBILITY TO THE LOCATION OF THE DREDGE. THE CONTRACTOR'S DAILY COMMUNICATION PLAN SHALL INCLUDE THE DELINEATION OF THE DREDGE, ATTENDANT PLANT, ANCHORS, BUOYS, AND FLOATING PIPELINE.
- iv. INTERFERENCE WITH MISSISSIPPI RIVER TRAFFIC. BASED ON THE DELINEATION OF THE CUTTERHEAD DREDGE WORK AREA, THERE SHOULD BE NO INTERFERENCE WITH MISSISSIPPI RIVER TRAFFIC. THE BORROW AREA LIMIT IS GREATER THAN 150 FEET FROM THE BOUNDARY OF THE NAVIGATION CHANNEL. THE DREDGE SHALL BE REQUIRED TO ATTACH BUOYS TO ITS ANCHOR LINES TO ALERT RIVER TRAFFIC OF THE ANCHORS' LOCATIONS WITHIN THE DREDGE ANCHOR LIMITS SHOWN ON THE PERMIT DRAWINGS. THIS INFORMATION WILL BE PROVIDED DAILY TO THE MNSA.
- v. OBSTRUCTION OF NAVIGABLE WATERWAYS. IN ORDER TO KEEP THE MISSISSIPPI RIVER FREE OF OBSTRUCTIONS, ANY ITEM (MATERIAL, PLANT, MACHINERY, OR APPLIANCE) WHICH IS MISPLACED OVERBOARD SHALL BE PROMPTLY MARKED IN ACCORDANCE WITH USCG REGULATIONS. USCG - EIGHTH DISTRICT SHALL BE NOTIFIED IMMEDIATELY SO AS TO INCLUDE THE DESCRIPTION AND LOCATION IN THE "LOCAL NOTICE TO MARINERS" ISSUED WEEKLY. THE OBSTRUCTIONS SHALL THEN BE RECOVERED AND REMOVED AS QUICKLY AS POSSIBLE.
- vi. PIPELINE CROSSINGS. ALL PETROLEUM PIPELINES AT THIS LOCATION IN THE MISSISSIPPI RIVER ARE OUTSIDE OF THE CUTTERHEAD DREDGE WORK AREA. NO HYDRAULIC DREDGING WILL TAKE PLACE WITHIN 500 FEET OF ANY EXISTING PIPELINE OR SUBMERGED TRANSMISSION LINE.



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BOCA RATON, FLORIDA 33431

PH. (561) 391-8102  
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### SUMMARY OF ESTIMATED QUANTITIES

ITEM	DESCRIPTION	UNIT	ESTIMATED
1	MOBILIZATION AND DEMOBILIZATION	LUMP SUM	1
2	JACKED CASING PIPE	LINEAR FEET	440
3	EMPIRE CANAL CROSSING	EACH	1
4	NAVIGATIONAL CROSSINGS	EACH	7
5	BOOSTER PUMP LOCATIONS	LUMP SUM	1
6	BEACH AND DUNE FILL	CUBIC YARD	6,410,000
7	MARSH FILL	CUBIC YARD	1,728,000
8	PRIMARY CONTAINMENT DIKES	LINEAR FEET	19,950
9	SAND FENCING	LINEAR FEET	21,130
10	SHOAL/NAVIGATION SIGNS	EACH	84
11	SETTLEMENT PLATES	EACH	25
12	PRE-CONSTRUCTION SURVEYS	LUMP SUM	1
13	AS-BUILT SURVEYS	LUMP SUM	1
14	VEGETATIVE PLANTINGS	LUMP SUM	1

### BENCHMARK CONTROL POINT

MONUMENT	LATITUDE	LONGITUDE	ELEVATION
SCOFIELD 2	29°15'20.49302"	89°36'14.24868"	4.475

NOTE: MONUMENT IS LOCATED EAST OF EMPIRE WATERWAY AND NOT WITHIN THE PROJECT AREA SHOWN IN THE PLANS. LOCATIONS ARE REFERENCED TO GEOGRAPHIC, NAD 1983. ELEVATIONS ARE REFERENCED TO NAVD88, U.S. SURVEY FEET, GEOID 2009.

### TIDAL DATUMS AT GRAND ISLE, LOUISIANA

TIDAL DATUM	ELEVATION
MEAN HIGHER HIGH WATER (MHHW)	1.60
MEAN HIGH WATER (MHW)	1.60
MEAN SEA LEVEL (MSL)	1.08
MEAN TIDE LEVEL (MTL)	1.08
MEAN LOW WATER (MLW)	0.55
MEAN LOWER LOW WATER (MLLW)	0.54

SOURCE: NOAA (2003), <http://www.co-ops.nos.noaa.gov/benchmarks/8761724.html>. NOTE: ELEVATIONS ARE REFERENCED TO NAVD88, U.S. SURVEY FEET.



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 2481 N.W. BOCA RATON BOULEVARD  
 BOCA RATON, FLORIDA 33431  
 PH. (561) 391-8102  
 FAX (561) 391-9116  
 C.O.A. FL. #4628  
 C.O.A. LA. #2531  
[www.CoastalPlanning.net](http://www.CoastalPlanning.net)

### GENERAL NOTES

- ALL ELEVATIONS ARE GIVEN IN THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88) U.S. SURVEY FEET (FEET) REFERENCED TO GEOID 2009. ALL HORIZONTAL COORDINATES ARE GIVEN IN THE NORTH AMERICAN DATUM OF 1983 (NAD83), LOUISIANA STATE PLANE, SOUTH ZONE, U.S. FEET.
- THE BEACH FILL BORROW AREAS CONTAIN 16,572,000 CY OF BEACH FILL MATERIAL. IT IS ESTIMATED THAT 9,615,000 CY WILL NEED TO BE DREDGED TO CONSTRUCT THE 6,410,000 CY BEACH TEMPLATE. THE BORROW AREA VOLUME EXCEEDS THE CONSTRUCTION TEMPLATE VOLUME AND CPRA REQUESTS TO PERMIT THIS ENTIRE AREA TO ALLOW THE CONTRACTOR FLEXIBILITY IN CONSTRUCTION METHODOLOGY, TO ALLOW BUFFER FOR ANY UNEXPECTED ANOMALIES THAT MAY BE ENCOUNTERED, TO ALLOW FOR INCONSISTENCIES IN THE QUALITY OF MATERIAL, FOR LIMITATIONS OF THE CONTRACTOR'S EQUIPMENT, ETC.
- THE MARSH FILL BORROW AREAS CONTAIN 15,052,000 CY OF MATERIAL. IT IS ESTIMATED THAT 3,242,250 CY WILL NEED TO BE DREDGED TO CONSTRUCT THE 1,728,000 CY MARSH TEMPLATE AND BACKFILL THE FILL SOURCE FOR THE PRIMARY DIKE. THE BORROW AREA VOLUME EXCEEDS THE CONSTRUCTION TEMPLATE VOLUME AND CPRA REQUESTS TO PERMIT THIS ENTIRE AREA TO ALLOW THE CONTRACTOR FLEXIBILITY IN CONSTRUCTION METHODOLOGY, TO ALLOW BUFFER FOR ANY UNEXPECTED ANOMALIES THAT MAY BE ENCOUNTERED, TO ALLOW FOR INCONSISTENCIES IN THE QUALITY OF MATERIAL, FOR LIMITATIONS OF THE CONTRACTOR'S EQUIPMENT, ETC.
- THE PRIMARY DIKE FILL SOURCES CONTAIN 433,500 CY OF MATERIAL. IT IS ESTIMATED THAT 289,000 CY WILL NEED TO BE DREDGED TO CONSTRUCT THE PRIMARY DIKES. THE FILL SOURCE FOR PRIMARY DIKE EXCAVATION VOLUME EXCEEDS THE PRIMARY DIKE TEMPLATE VOLUME TO ALLOW THE CONTRACTOR FLEXIBILITY IN PRIMARY DIKE CONSTRUCTION METHODOLOGY. DUE TO WATER DEPTH DURING CONSTRUCTION OF THE PRIMARY DIKE, THE EXCAVATION BOTTOM ELEVATION AND WIDTH OF THE FILL SOURCE VARIES. FOR SHELL ISLAND EAST, STA. 86+22 THE FILL SOURCE HAS A BOTTOM ELEVATION OF -10.0 FEET NAVD88, AND WIDTH OF 225 FEET. EAST OF AND INCLUDING STATION 86+22, THE FILL SOURCE HAS A BOTTOM ELEVATION OF -7.0 FEET NAVD88, AND A WIDTH OF 150 FEET. CPRA REQUESTS TO PERMIT THIS VOLUME TO ACCOUNT FOR CONSOLIDATION OF THE PRIMARY DIKE AND TO ALLOW THE CONTRACTOR TO EXCAVATE MATERIAL BASED ON HIS EQUIPMENT OR UNFORESEEN INCONSISTENCIES IN THE QUALITY OF THE BORROW MATERIAL.
- UPON COMPLETION OF THE PROJECT, THE CONTRACTOR WILL BE REQUIRED TO GRADE MATERIAL PLACED IN THE REHANDLING AND DISPOSAL AREAS ADJACENT TO MARSH FILL TO AN ELEVATION NOT TO EXCEED +3.0 FEET NAVD88, WHICH IS CONDUCTIVE FOR WETLAND ESTABLISHMENT.
- UPON COMPLETION OF THE PROJECT THE CONTRACTOR WILL BE REQUIRED TO GRADE MATERIAL PLACED IN THE ACCESS CHANNEL SPOIL AREAS TO WITHIN 0.5 FEET OF THE EXISTING ELEVATION. THIS WILL BE COMPLETED FOR NAVIGATIONAL SAFETY.
- EXCAVATION IS NOT REQUIRED ALONG THE ENTIRE LENGTH OF ACCESS CHANNELS. SPOIL AREAS WERE NOT PROVIDED ALONG PORTIONS OF THE CHANNEL WHERE THE ELEVATION OF EXISTING BATHYMETRY IS BELOW -7.0 FEET NAVD88, AND EXCAVATION IS NOT REQUIRED.
- CPRA WILL PROVIDE AS-BUILT EXCAVATION AND PLACEMENT VOLUMES UPON THE COMPLETION OF CONSTRUCTION.
- PREVIOUSLY PERMITTED FEATURES FROM THE RIVERINE SAND MINING/SCOFIELD ISLAND RESTORATION PROJECT (BA-40) WILL BE USED DURING THE CONSTRUCTION OF THIS PROJECT. APPLICABLE SHEETS FROM THE BA-40 PERMIT ARE INCLUDED IN THIS PERMIT DRAWING SET.

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**CONSTRUCTION ASS CHANNEL COORDINATES**

	Point #	LATITUDE	LONGITUDE
West Construction Access Channel (centerline)	1E	29°16'42.00112" N	89°39'47.49686" W
	2E	29°17'10.10392" N	89°39'27.75135" W
	3E	29°17'10.10392" N	89°38'55.92539" W
	4E	29°17'56.95541" N	89°38'33.27269" W
	5E	29°17'43.67460" N	89°38'51.90038" W
	6E	29°17'47.34974" N	89°38'05.62650" W
	7E	29°17'41.17517" N	89°38'05.13230" W
East Construction Access Channel (centerline)	8E	29 16'14.32198" N	89°36'16.84290" W
	9E	29 16'14.46012" N	89°36'25.79507" W
	10E	29 16'09.86475" N	89°36'28.68569" W

**SETTLEMENT PLATE LOCATIONS**

STATION	RANGE	LOCATION
15+67	-12+28	CENTER LINE OF DIKE
15+67	-7+25	MARSH
15+67	0+55	BERM
35+54	-3+74	MARSH
35+54	1+00	BERM
45+54	-5+26	MARSH
60+54	-6+55	CENTER LINE OF DIKE
60+54	2+33	BERM
86+22	-3+76	MARSH
86+22	0+52	BERM
107+88	-6+31	CENTER LINE OF DIKE
107+88	-1+75	MARSH
107+88	2+55	BERM
133+49	-4+03	MARSH
133+49	1+07	BERM

**NOTES:**

- LOCATIONS ARE REFERENCED TO GEOGRAPHIC, NAD 1983.
- THE DEWATERING LOCATION EXTENDS 200 FEET ON EACH SIDE OF THE COORDINATE ALONG THE PRIMARY DIKE ALIGNMENT.



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 2481 N.W. BOCA RATON BOULEVARD  
 BOCA RATON, FLORIDA 33431  
 PH. (561) 391-8102  
 FAX (561) 391-9116  
 C.O.A. FL. #4028  
 C.O.A. LA. #2531  
[www.CoastalPlanning.net](http://www.CoastalPlanning.net)

**MARSH DEWATERING LOCATIONS**

LATITUDE	LONGITUDE
29°17'36.93688" N	89°38'14.75574" W
29°17'37.87423" N	89°38'12.14262" W
29°16'42.65143" N	89°37'22.72181" W
29°16'44.28800" N	89°37'24.83903" W
29°16'37.62583" N	89°37'16.21979" W
29°16'39.26345" N	89°37'18.33908" W
29°16'01.95231" N	89°36'30.12756" W
29°16'04.12041" N	89°36'28.76583" W

**SAND FENCE LAYOUT POINTS**

LATITUDE	LONGITUDE	LATITUDE	LONGITUDE	LATITUDE	LONGITUDE
29°17'35.46508" N	89°38'18.98778" W	29°16'56.74917" N	89°37'52.15542" W	29°16'25.72599" N	89°37'14.92298" W
29°17'31.08118" N	89°38'18.08140" W	29°16'53.06067" N	89°37'49.30542" W	29°16'23.16462" N	89°37'10.76480" W
29°17'31.35934" N	89°38'18.23031" W	29°16'53.35126" N	89°37'49.42020" W	29°16'23.27092" N	89°37'11.09385" W
29°17'30.17302" N	89°38'17.98491" W	29°16'49.66274" N	89°37'46.57025" W	29°16'20.70953" N	89°37'06.93686" W
29°17'27.48377" N	89°38'15.90698" W	29°16'49.86421" N	89°37'46.83561" W	29°16'20.94515" N	89°37'07.16207" W
29°17'27.77337" N	89°38'16.02181" W	29°16'49.04207" N	89°37'46.19907" W	29°16'18.38471" N	89°37'03.00511" W
29°17'24.08599" N	89°38'13.17131" W	29°16'46.21735" N	89°37'43.91725" W	29°16'18.49002" N	89°37'03.33417" W
29°17'24.28745" N	89°38'13.43670" W	29°16'46.50604" N	89°37'44.03770" W	29°16'15.92857" N	89°36'59.17729" W
29°17'20.59907" N	89°38'10.58627" W	29°16'42.87178" N	89°37'41.09999" W	29°16'16.16419" N	89°36'59.40249" W
29°17'20.88966" N	89°38'10.70108" W	29°16'43.06739" N	89°37'41.37108" W	29°16'13.60367" N	89°36'55.24451" W
29°17'17.20126" N	89°38'07.85069" W	29°16'40.78396" N	89°37'39.52508" W	29°16'13.70899" N	89°36'55.57357" W
29°17'17.40272" N	89°38'08.11608" W	29°16'39.83213" N	89°37'37.97945" W	29°16'11.14845" N	89°36'51.41677" W
29°17'13.71431" N	89°38'05.26576" W	29°16'40.06773" N	89°37'38.20469" W	29°16'11.38309" N	89°36'51.64198" W
29°17'14.00490" N	89°38'05.38056" W	29°16'37.50658" N	89°37'34.04731" W	29°16'08.82252" N	89°36'47.48525" W
29°17'10.31647" N	89°38'02.53028" W	29°16'37.61286" N	89°37'34.37638" W	29°16'08.92784" N	89°36'47.81429" W
29°17'10.51794" N	89°38'02.79566" W	29°16'35.28729" N	89°37'30.44429" W	29°16'06.36723" N	89°36'43.65761" W
29°17'06.83048" N	89°37'59.94543" W	29°16'35.72605" N	89°37'26.28590" W	29°16'06.60287" N	89°36'43.88280" W
29°17'07.12009" N	89°38'00.06024" W	29°16'32.83233" N	89°37'26.61496" W	29°16'04.04122" N	89°36'39.72506" W
29°17'03.43261" N	89°37'57.21006" W	29°16'30.27108" N	89°37'22.45774" W	29°16'04.14754" N	89°36'40.05408" W
29°17'03.63408" N	89°37'57.47543" W	29°16'30.50670" N	89°37'22.68297" W	29°16'01.58588" N	89°36'35.89753" W
29°16'59.94560" N	89°37'54.62532" W	29°16'27.94541" N	89°37'18.52581" W	29°16'01.82151" N	89°36'36.12271" W
29°17'00.23620" N	89°37'54.74011" W	29°16'28.05170" N	89°37'18.85487" W	29°15'59.37111" N	89°36'32.14722" W
29°16'56.54770" N	89°37'51.89005" W	29°16'25.49038" N	89°37'14.69776" W		

**PROFILES**

BASELINE STATION	LATITUDE	LONGITUDE	AZIMUTH
10+57	29°17'30.48261" N	89°38'17.12132" W	246.9
35+54	29°17'10.26977" N	89°38'00.91833" W	232.9
60+54	29°16'50.54811" N	89°37'43.85619" W	232.9
86+22	29°16'32.36095" N	89°37'24.41190" W	232.9
112+88	29°16'19.16257" N	89°36'58.38125" W	208.0
138+79	29°16'02.25100" N	89°36'36.78267" W	208.0

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 450 LAUREL ST., SUITE 1200  
 BATON ROUGE, LOUISIANA 70801  
 PH: (225) 342-1477  
 FAX. (225) 342-6801

**COASTAL PROTECTION & RESTORATION AUTHORITY**  
 450 LAUREL STREET  
 BATON ROUGE, LOUISIANA 70801

SHELL ISLAND BARRIER ISLAND RESTORATION PROJECT  
 STATE PROJECT NUMBER: BA-110/111

EAST PROJECT NOTES  
 DATE: 2/1/12  
 SHEET 6 OF 61

DRAWN BY: G KRYSYNIAK

DESIGNED BY: D SWIGLER

APPROVED BY: G THOMSON

**CONSTRUCTION ACCESS CHANNEL COORDINATES**

	POINT #	LATITUDE	LONGITUDE
Construction Access Channel (centerline)	1W	29°16'42.00112" N	89°39'47.49686" W
	2W	29°17'10.10392" N	89°39'27.75135" W
	3W	29°17'22.05162" N	89°39'15.21897" W
	4W	29°17'54.57580" N	89°39'31.45965" W
	5W	29°17'57.58087" N	89°39'48.11503" W
	6W	29°17'57.19148" N	89°40'02.60184" W
	7W	29°17'52.55365" N	89°40'03.04020" W

**SAND FENCE LAYOUT POINTS**

LATITUDE	LONGITUDE	LATITUDE	LONGITUDE	LATITUDE	LONGITUDE
29°17'35.73445" N	89°40'50.46659" W	29°17'31.38831" N	89°40'27.27414" W	29°17'37.14315" N	89°40'05.28587" W
29°17'34.81910" N	89°40'45.49292" W	29°17'30.47270" N	89°40'22.30059" W	29°17'37.52014" N	89°40'04.33540" W
				29°17'39.59721" N	89°40'01.06507" W
29°17'34.80273" N	89°40'45.84219" W	29°17'30.61133" N	89°40'22.61341" W		
29°17'33.88831" N	89°40'40.86853" W	29°17'30.50495" N	89°40'22.03351" W	29°17'39.35846" N	89°40'01.28702" W
		29°17'32.12618" N	89°40'17.94301" W	29°17'41.97222" N	89°39'57.17081" W
29°17'34.02692" N	89°40'41.18136" W				
29°17'33.11245" N	89°40'36.20772" W	29°17'31.93163" N	89°40'18.21504" W	29°17'41.86255" N	89°39'57.49905" W
		29°17'33.76773" N	89°40'13.58447" W	29°17'44.47629" N	89°39'53.38392" W
29°17'33.09511" N	89°40'36.55813" W				
29°17'32.18060" N	89°40'31.58451" W	29°17'33.71767" N	89°40'13.92977" W	29°17'44.23753" N	89°39'53.60474" W
		29°17'35.55273" N	89°40'09.29917" W	29°17'46.85124" N	89°39'49.48955" W
29°17'32.31921" N	89°40'31.89734" W				
29°17'31.40465" N	89°40'26.92375" W	29°17'35.35818" N	89°40'09.57120" W		
		29°17'37.19321" N	89°40'04.94056" W		

**SETTLEMENT PLATE LOCATIONS**

STATION	RANGE	LATITUDE	LONGITUDE
20+00	-11+72	29°17'48.87276" N	89°40'36.00763" W
20+00	-5+55	29°17'42.86511" N	89°40'37.34123" W
20+00	4+18	29°17'33.41279" N	89°40'39.43860" W
30+00	-7+53	29°17'42.90418" N	89°40'25.82456" W
30+00	4+33	29°17'31.37964" N	89°40'28.38564" W
40+00	4+43	29°17'33.15146" N	89°40'14.56146" W
50+00	-12+72	29°17'52.79262" N	89°40'13.87715" W
50+00	-5+20	29°17'46.25017" N	89°40'09.82447" W
50+00	5+16	29°17'37.24176" N	89°40'04.24402" W
60+00	3+87	29°17'43.08624" N	89°39'55.01311" W

**PROFILES**

BASELINE STATION	LATITUDE	LONGITUDE	AZIMUTH
20+00	29°17'37.47747" N	89°40'38.53693" W	190.2
35+00	29°17'34.64086" N	89°40'21.90866" W	190.2
50+00	29°17'41.72652" N	89°40'07.02267" W	150.7

**MARSH DEWATERING LOCATIONS**

LATITUDE	LONGITUDE
29°17'44.53711" N	89°40'47.25524" W
29°17'45.75947" N	89°40'44.79998" W
29°17'51.53657" N	89°39'56.65059" W
29°17'51.33135" N	89°39'53.83591" W

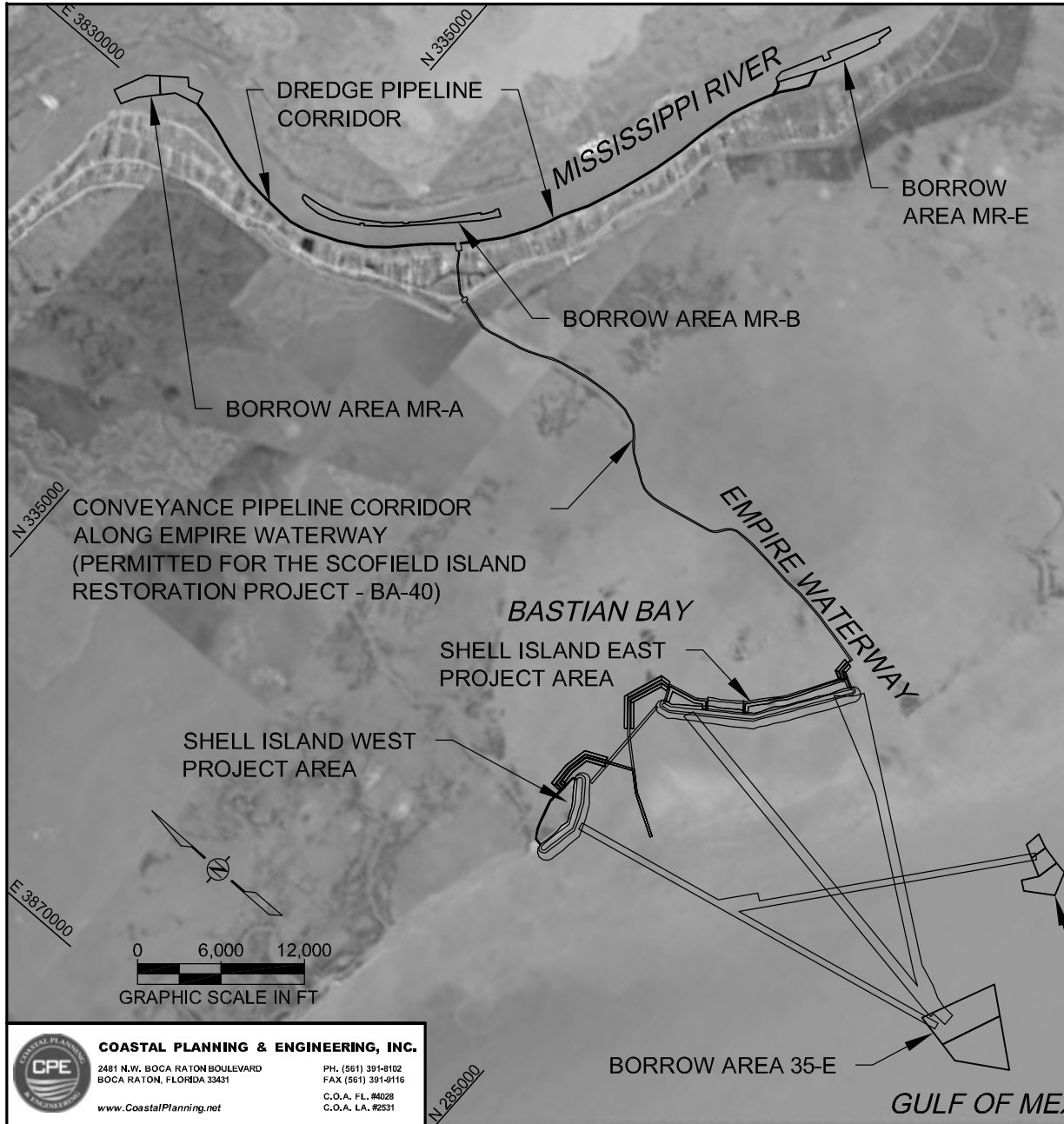
**NOTES:**

- LOCATIONS ARE REFERENCED TO GEOGRAPHIC, NAD 1983.
- THE DEWATERING LOCATION EXTENDS 200 FEET ON EACH SIDE OF THE COORDINATE ALONG THE PRIMARY DIKE ALIGNMENT.



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 BOCA RATON, FLORIDA 33431  
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 FAX (561) 391-9116  
 C.O.A. FL. #4028  
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APPLICATION BY: COASTAL PROTECTION AND RESTORATION AUTHORITY 450 LAUREL ST., SUITE 1200 BATON ROUGE, LOUISIANA 70801 PH: (225) 342-1477 FAX. (225) 342-6801	<b>COASTAL PROTECTION &amp; RESTORATION AUTHORITY</b> 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801	SHELL ISLAND BARRIER ISLAND RESTORATION PROJECT	WEST PROJECT NOTES
		STATE PROJECT NUMBER: BA-110/111	DATE: 2/1/12
DRAWN BY: G KRYSYNIK	DESIGNED BY: D SWIGLER	APPROVED BY: G THOMSON	SHEET 7 OF 61



**SHELL ISLAND EAST PROJECT FILL VOLUMES**

BEACH FILL VOLUME = 4.2M CY  
 MARSH FILL VOLUME = 1.0M CY  
 PRIMARY DIKE VOLUME = 0.2M CY

AREA OF FILL = 613 ACRES  
 AREA OF CONSTRUCTION ACCESS CHANNEL = 55 ACRES  
 AREA OF TEMPORARY SPOIL & REHANDLING = 79 ACRES

**SHELL ISLAND WEST PROJECT FILL VOLUMES**

BEACH FILL VOLUME = 2.2M CY  
 MARSH FILL VOLUME = 0.8M CY  
 PRIMARY DIKE VOLUME = 0.08M CY

AREA OF FILL = 345 ACRES  
 AREA OF CONSTRUCTION ACCESS CHANNEL = 44 ACRES  
 AREA OF TEMPORARY SPOIL & REHANDLING = 55 ACRES

**SHELL ISLAND PROJECT EXCAVATION VOLUMES**

**DELINEATED BORROW AREA VOLUMES**

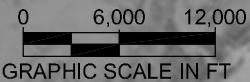
BORROW AREA MR-A VOLUME = 5,324,000 CY; 173 ACRES  
 BORROW AREA MR-B VOLUME = 3,961,000 CY; 130 ACRES  
 BORROW AREA MR-E VOLUME = 6,509,000 CY; 159 ACRES  
 BORROW AREA 35-E = 15,052,000 CY; 516 ACRES  
 BORROW AREA 9 = 778,000 CY; 163 ACRES

**SHELL ISLAND PROJECT EXCAVATION VOLUMES**

BEACH EXCAVATION VOLUME = 9.6M CY  
 MARSH EXCAVATION VOLUME = 3.3M CY  
 PRIMARY DIKE EXCAVATION VOLUME = 865,000 CY  
 ACCESS CHANNEL EXCAVATION VOLUME = 0.5M CY  
 ACCESS CHANNEL TEMPORARY SPOIL & REHANDLING VOLUME = 0.6M CY

**NOTES:**

1. EASTINGS AND NORTHINGS SHOWN ALONG DRAWING BOUNDARY FOR GRID REFERENCE.
2. SEE SHEETS 14-17 AND 19 OF APPENDIX A FOR DETAILS ON PREVIOUSLY PERMITTED CONVEYANCE CORRIDOR.
3. SEE SHEETS 25-37 OF APPENDIX A FOR DETAILS ON PREVIOUSLY PERMITTED MISSISSIPPI RIVER LEVEE CROSSING, HIGHWAY 11 CROSSING, EMPIRE HARBOR CANAL CROSSING, HIGHWAY 23 CROSSING, HURRICANE PROTECTION LEVEE CROSSING, EMPIRE WATERWAY NAVIGATIONAL CROSSING AND BOOSTER PUMP SITE LOCATION.



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SHELL ISLAND BARRIER ISLAND RESTORATION PROJECT  
 STATE PROJECT NUMBER: BA-110/111

PROJECT OVERVIEW MAP  
 DATE: 2/1/12  
 SHEET 8 OF 61

DRAWN BY: G KRYSYNIAK

DESIGNED BY: D SWIGLER

APPROVED BY: G THOMSON

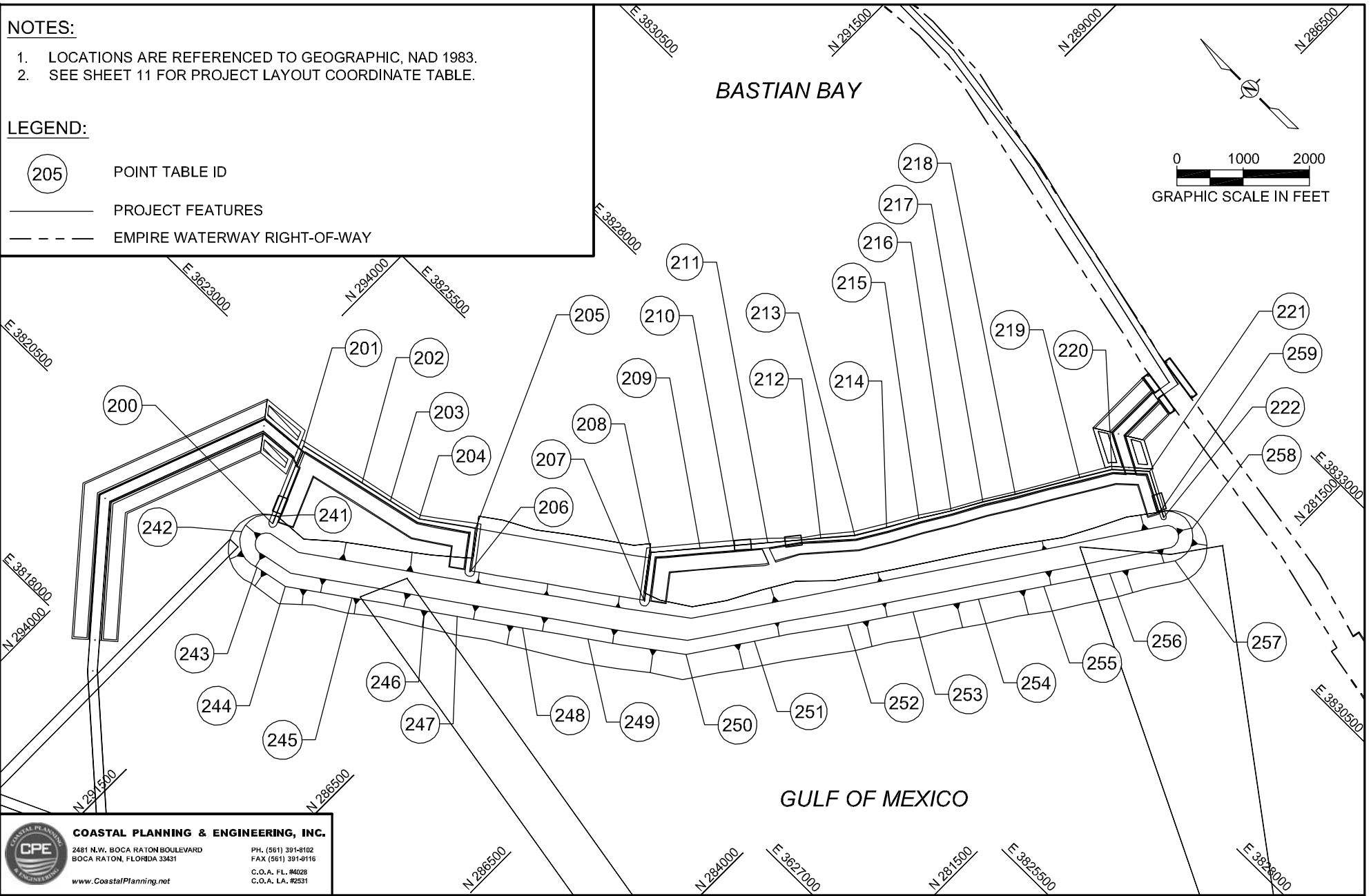


**NOTES:**

1. LOCATIONS ARE REFERENCED TO GEOGRAPHIC, NAD 1983.
2. SEE SHEET 11 FOR PROJECT LAYOUT COORDINATE TABLE.

**LEGEND:**

- 205 POINT TABLE ID
- PROJECT FEATURES
- - - EMPIRE WATERWAY RIGHT-OF-WAY



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SHELL ISLAND  
 BARRIER ISLAND RESTORATION PROJECT

STATE PROJECT NUMBER: BA-110/111

EAST  
 PROJECT LAYOUT  
 OVERVIEW

DATE: 2/1/12

DRAWN BY: G KRYSYNIAK

DESIGNED BY: D SWIGLER

APPROVED BY: G THOMSON

SHEET 9 OF 61

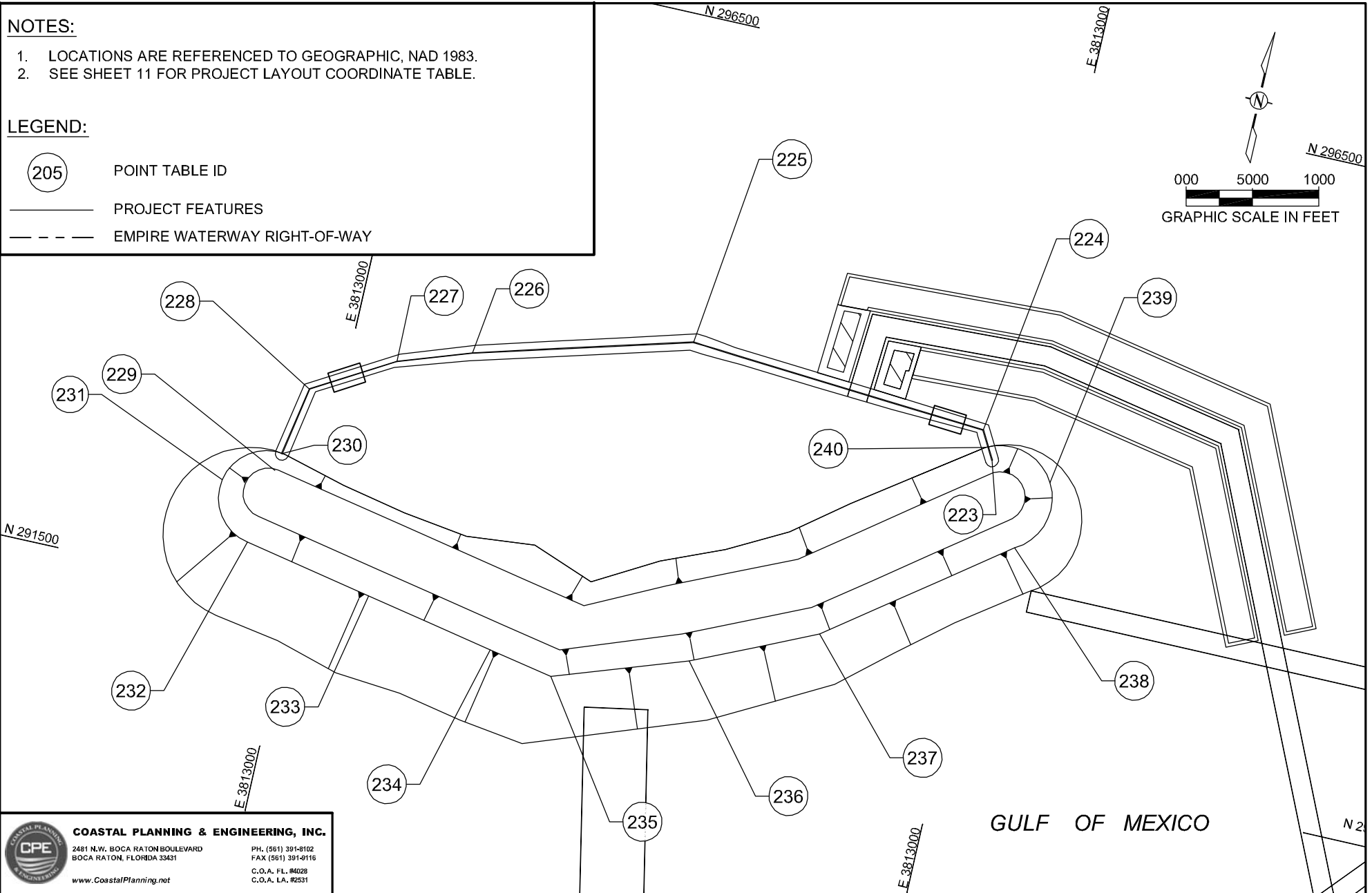


**NOTES:**

1. LOCATIONS ARE REFERENCED TO GEOGRAPHIC, NAD 1983.
2. SEE SHEET 11 FOR PROJECT LAYOUT COORDINATE TABLE.

**LEGEND:**

- 205 POINT TABLE ID
- PROJECT FEATURES
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 C.O.A. FL. #4628  
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SHELL ISLAND  
 BARRIER ISLAND RESTORATION PROJECT

STATE PROJECT NUMBER: BA-110/111

WEST  
 PROJECT LAYOUT  
 OVERVIEW

DATE: 2/1/12

DRAWN BY: G KRYSYNIK

DESIGNED BY: D SWIGLER

APPROVED BY: G THOMSON

SHEET 10 OF 61

FILL AREA EAST

POINT #	LATITUDE	LONGITUDE
241	29°17'36.53045" N	89°38'15.17485" W
242	29°17'38.77699" N	89°38'21.28795" W
243	29°17'33.41827" N	89°38'23.85068" W
244	29°17'28.43776" N	89°38'22.82216" W
245	29°17'20.06686" N	89°38'16.34277" W
246	29°17'10.92224" N	89°38'09.45211" W
247	29°17'06.82080" N	89°38'06.28355" W
248	29°16'58.61883" N	89°37'59.94549" W
249	29°16'50.41582" N	89°37'53.61000" W
250	29°16'38.23633" N	89°37'43.91263" W
251	29°16'32.23196" N	89°37'34.15954" W
252	29°16'23.89819" N	89°37'21.18746" W
253	29°16'18.17266" N	89°37'11.89560" W
254	29°16'12.44694" N	89°37'02.60403" W
255	29°16'06.72199" N	89°36'53.31048" W
256	29°16'00.99487" N	89°36'44.01613" W
257	29°15'55.26959" N	89°36'34.72543" W
258	29°15'56.76457" N	89°36'28.83332" W
259	29°16'01.93100" N	89°36'30.53827" W

CENTERLINE OF PRIMARY DIKE EAST

POINT #	LATITUDE	LONGITUDE
200	29°17'36.29381" N	89°38'16.62456" W
201	29°17'41.03051" N	89°38'03.41587" W
202	29°17'30.90040" N	89°38'01.06099" W
203	29°17'25.96577" N	89°37'59.91117" W
204	29°17'21.02635" N	89°37'58.76251" W
205	29°17'13.95025" N	89°37'53.23525" W
206	29°17'10.06369" N	89°37'59.28176" W
207	29°16'48.20474" N	89°37'42.29830" W
208	29°16'52.56580" N	89°37'35.51338" W
209	29°16'47.68747" N	89°37'29.19700" W
210	29°16'44.33680" N	89°37'24.86107" W
211	29°16'40.98614" N	89°37'20.52860" W
212	29°16'35.75677" N	89°37'13.74268" W
213	29°16'32.39284" N	89°37'09.40895" W
214	29°16'29.74862" N	89°37'04.62080" W
215	29°16'27.25110" N	89°36'59.74580" W
216	29°16'24.54528" N	89°36'55.00187" W
217	29°16'22.03571" N	89°36'50.12928" W
218	29°16'19.33581" N	89°36'45.38223" W
219	29°16'14.13870" N	89°36'35.75767" W
220	29°16'11.52202" N	89°36'30.96208" W
221	29°16'07.25763" N	89°36'26.76287" W
222	29°16'00.92276" N	89°36'30.74235" W

FILL AREA WEST

POINT #	LATITUDE	LONGITUDE
231	29°17'34.81775" N	89°40'55.01750" W
232	29°17'30.39862" N	89°40'51.61153" W
233	29°17'28.35792" N	89°40'40.56550" W
234	29°17'25.31598" N	89°40'23.97943" W
235	29°17'26.43767" N	89°40'17.97500" W
236	29°17'31.25772" N	89°40'05.40378" W
237	29°17'34.08730" N	89°39'59.03201" W
238	29°17'42.69223" N	89°39'45.94553" W
239	29°17'48.61050" N	89°39'44.98868" W
240	29°17'49.44907" N	89°39'51.72906" W

CENTERLINE OF PRIMARY DIKE WEST

POINT #	LATITUDE	LONGITUDE
223	29°17'49.14187" N	89°39'50.83242" W
224	29°17'51.20113" N	89°39'52.1086" W
225	29°17'53.10651" N	89°40'17.79293" W
226	29°17'48.87464" N	89°40'35.98895" W
227	29°17'47.07644" N	89°40'42.13921" W
228	29°17'43.70154" N	89°40'48.92082" W
229	29°17'37.20855" N	89°40'50.36189" W
230	29°17'38.54554" N	89°40'50.06516" W

NOTES:

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**COASTAL PROTECTION & RESTORATION AUTHORITY**

450 LAUREL STREET  
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SHELL ISLAND  
BARRIER ISLAND RESTORATION PROJECT

EAST AND WEST  
PROJECT LAYOUT  
COORDINATE TABLE

STATE PROJECT NUMBER: BA-110/111

DATE: 2/1/12


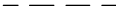


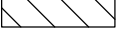

DRAWN BY: G KRYSYNIK

DESIGNED BY: D SWIGLER

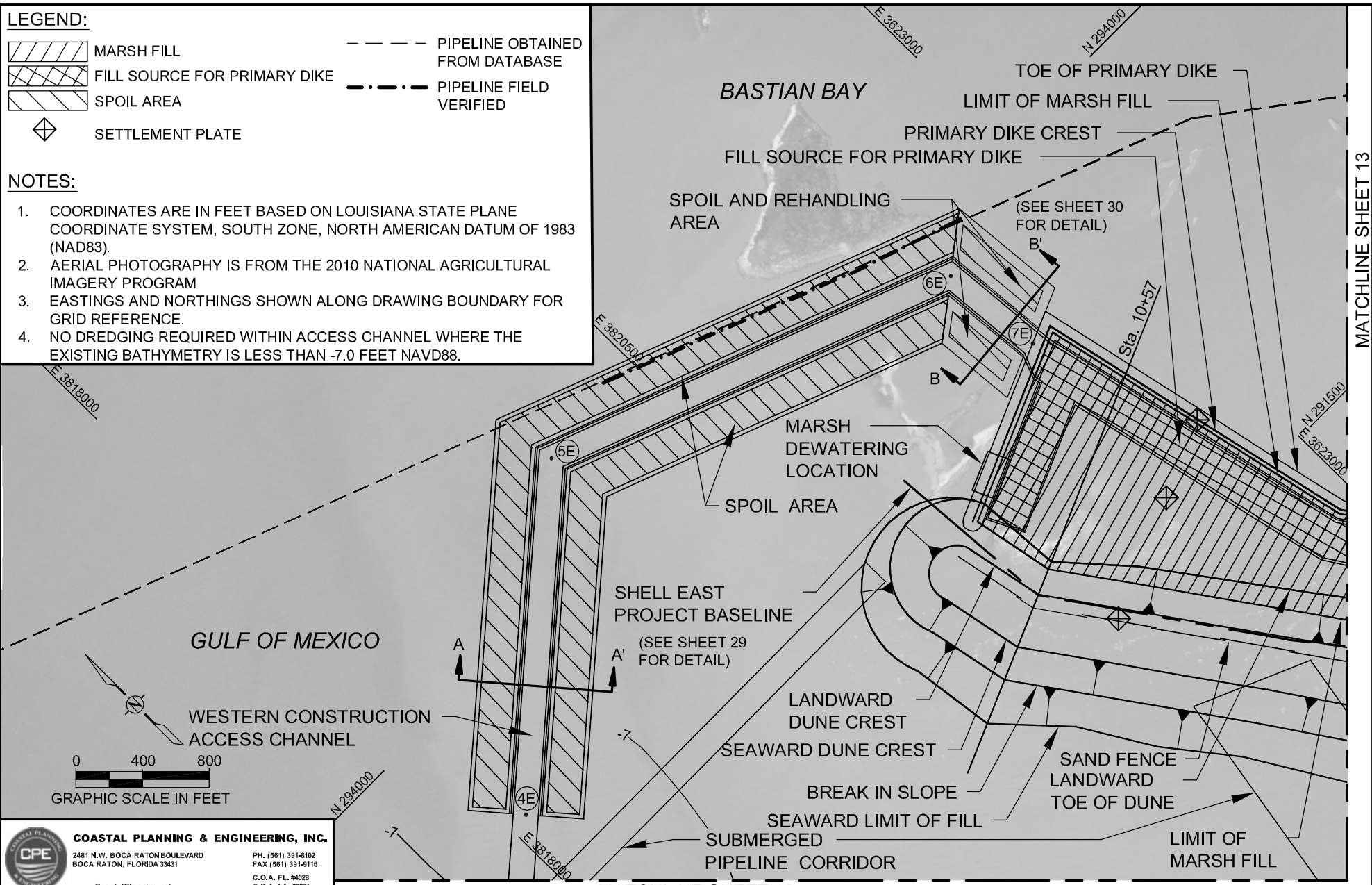
APPROVED BY: G THOMSON

SHEET 11 OF 61

**LEGEND:**

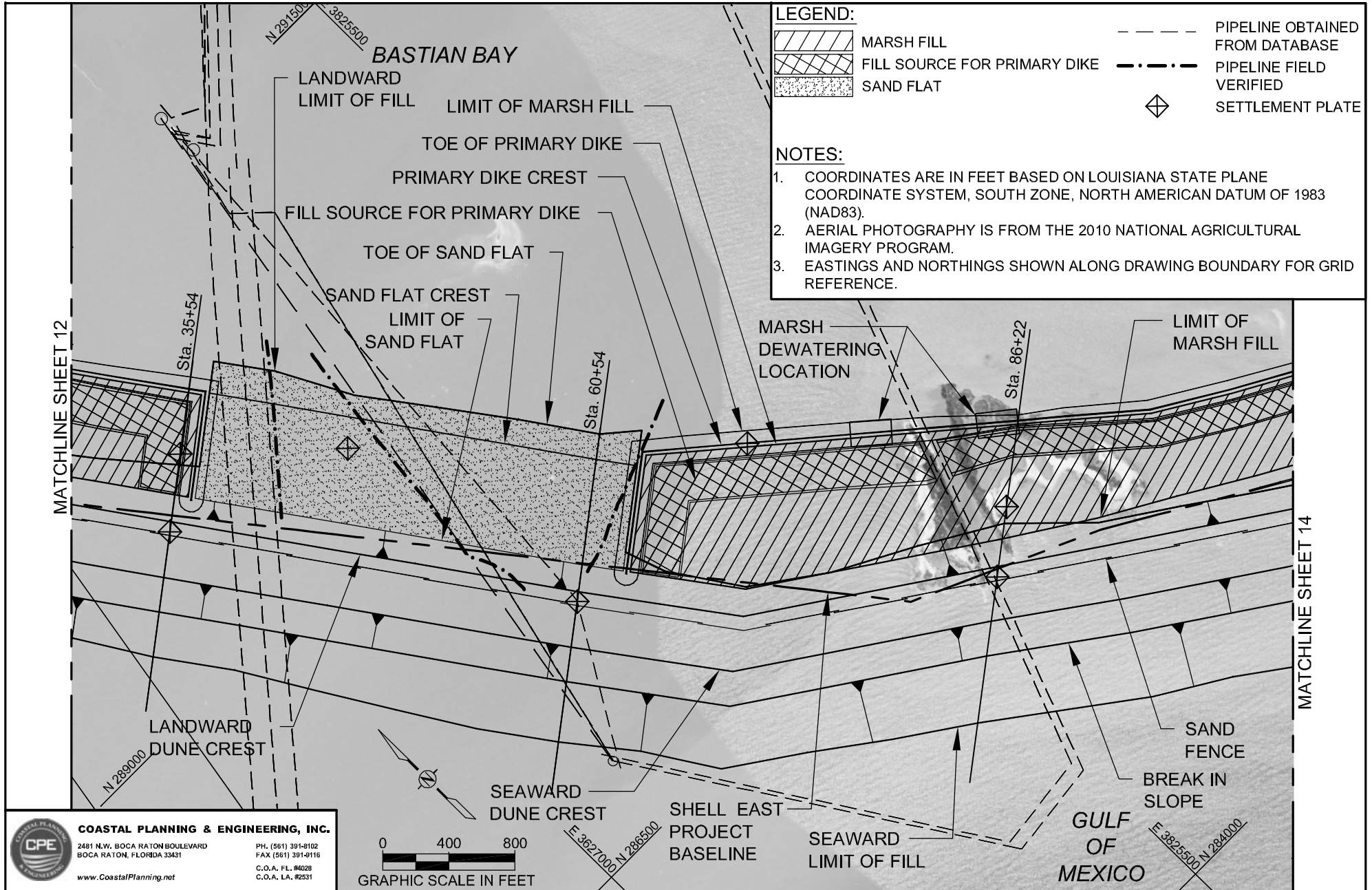
	MARSH FILL		PIPELINE OBTAINED FROM DATABASE
	FILL SOURCE FOR PRIMARY DIKE		PIPELINE FIELD VERIFIED
	SPOIL AREA		
	SETTLEMENT PLATE		

- NOTES:**
- COORDINATES ARE IN FEET BASED ON LOUISIANA STATE PLANE COORDINATE SYSTEM, SOUTH ZONE, NORTH AMERICAN DATUM OF 1983 (NAD83).
  - AERIAL PHOTOGRAPHY IS FROM THE 2010 NATIONAL AGRICULTURAL IMAGERY PROGRAM
  - EASTINGS AND NORTHINGS SHOWN ALONG DRAWING BOUNDARY FOR GRID REFERENCE.
  - NO DREDGING REQUIRED WITHIN ACCESS CHANNEL WHERE THE EXISTING BATHYMETRY IS LESS THAN -7.0 FEET NAVD88.



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DRAWN BY: G KRYSYNIAK		DESIGNED BY: D SWIGLER		APPROVED BY: G THOMSON		STATE PROJECT NUMBER: BA-110/111	
						DATE: 2/1/12	
						SHEET 12 OF 61	

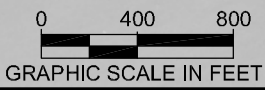


**LEGEND:**

	MARSH FILL		PIPELINE OBTAINED FROM DATABASE
	FILL SOURCE FOR PRIMARY DIKE		PIPELINE FIELD VERIFIED
	SAND FLAT		SETTLEMENT PLATE

- NOTES:**
- COORDINATES ARE IN FEET BASED ON LOUISIANA STATE PLANE COORDINATE SYSTEM, SOUTH ZONE, NORTH AMERICAN DATUM OF 1983 (NAD83).
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  - EASTINGS AND NORTHINGS SHOWN ALONG DRAWING BOUNDARY FOR GRID REFERENCE.

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SHELL ISLAND BARRIER ISLAND RESTORATION PROJECT  
 STATE PROJECT NUMBER: BA-110/111

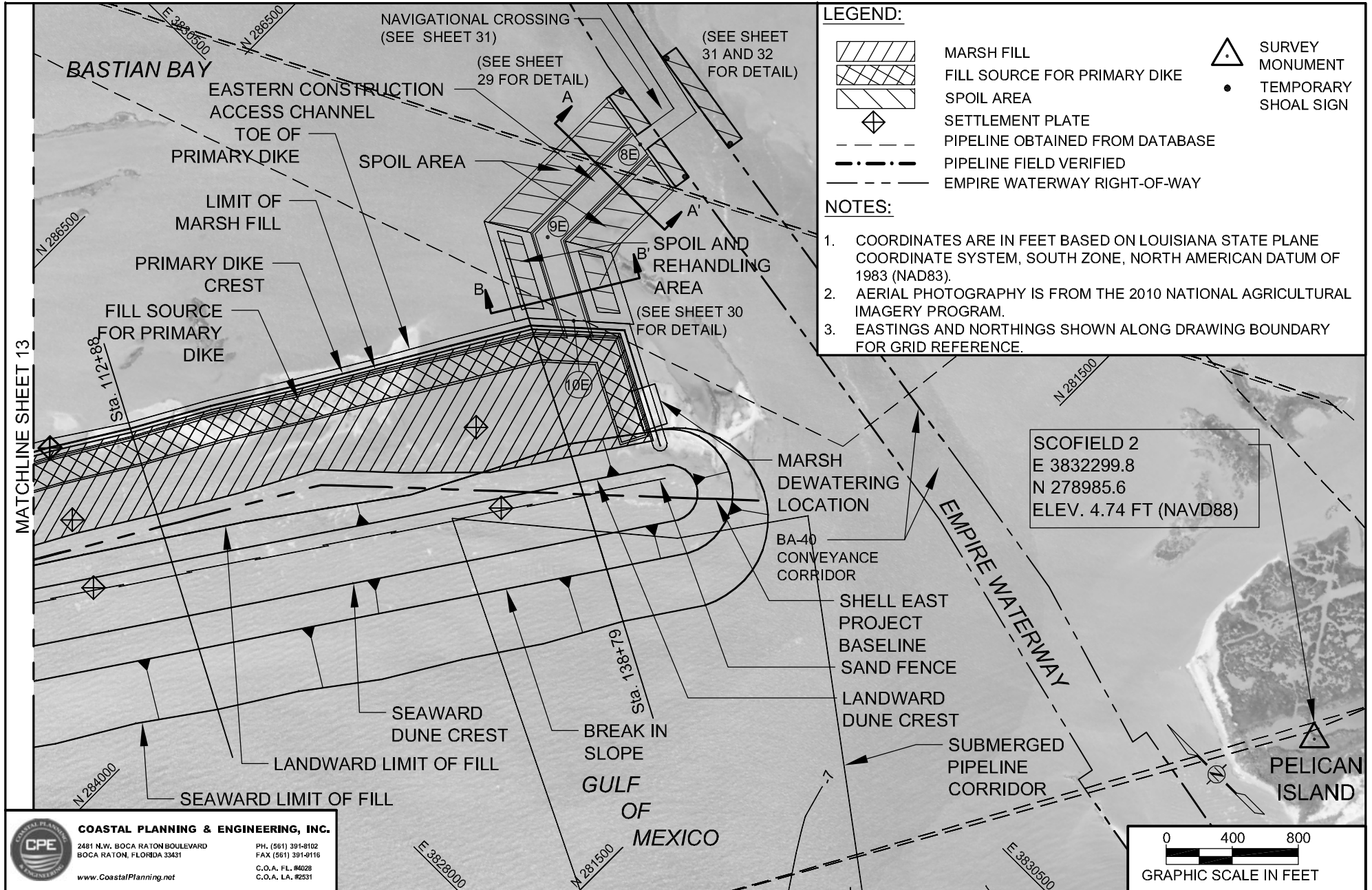
EAST PROJECT PLAN VIEW  
 DATE: 2/1/12

DRAWN BY: G KRYSYNIAK

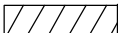

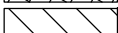

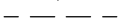

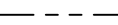


DESIGNED BY: D SWIGLER

APPROVED BY: G THOMSON

SHEET 13 OF 61



**LEGEND:**

-  MARSH FILL
-  FILL SOURCE FOR PRIMARY DIKE
-  SPOIL AREA
-  SETTLEMENT PLATE
-  PIPELINE OBTAINED FROM DATABASE
-  PIPELINE FIELD VERIFIED
-  EMPIRE WATERWAY RIGHT-OF-WAY
-  SURVEY MONUMENT
-  TEMPORARY SHOAL SIGN

**NOTES:**

1. COORDINATES ARE IN FEET BASED ON LOUISIANA STATE PLANE COORDINATE SYSTEM, SOUTH ZONE, NORTH AMERICAN DATUM OF 1983 (NAD83).
2. AERIAL PHOTOGRAPHY IS FROM THE 2010 NATIONAL AGRICULTURAL IMAGERY PROGRAM.
3. EASTINGS AND NORTHINGS SHOWN ALONG DRAWING BOUNDARY FOR GRID REFERENCE.

MATCHLINE SHEET 13

**COASTAL PLANNING & ENGINEERING, INC.**  
 2481 N.W. BOCA RATON BOULEVARD  
 BOCA RATON, FLORIDA 33431  
 PH. (561) 391-8102  
 FAX (561) 391-9116  
 C.O.A. FL. #4628  
 C.O.A. LA. #2631  
 www.CoastalPlanning.net

APPLICATION BY:  
 COASTAL PROTECTION AND RESTORATION AUTHORITY  
 450 LAUREL ST., SUITE 1200  
 BATON ROUGE, LOUISIANA 70801  
 PH: (225) 342-1477  
 FAX. (225) 342-6801

**COASTAL PROTECTION & RESTORATION AUTHORITY**  
 450 LAUREL STREET  
 BATON ROUGE, LOUISIANA 70801

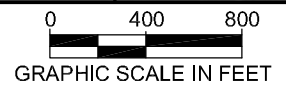
SHELL ISLAND BARRIER ISLAND RESTORATION PROJECT  
 STATE PROJECT NUMBER: BA-110/111

EAST PROJECT PLAN VIEW  
 DATE: 2/1/12  
 SHEET 14 OF 61

DRAWN BY: G KRYSYNIK

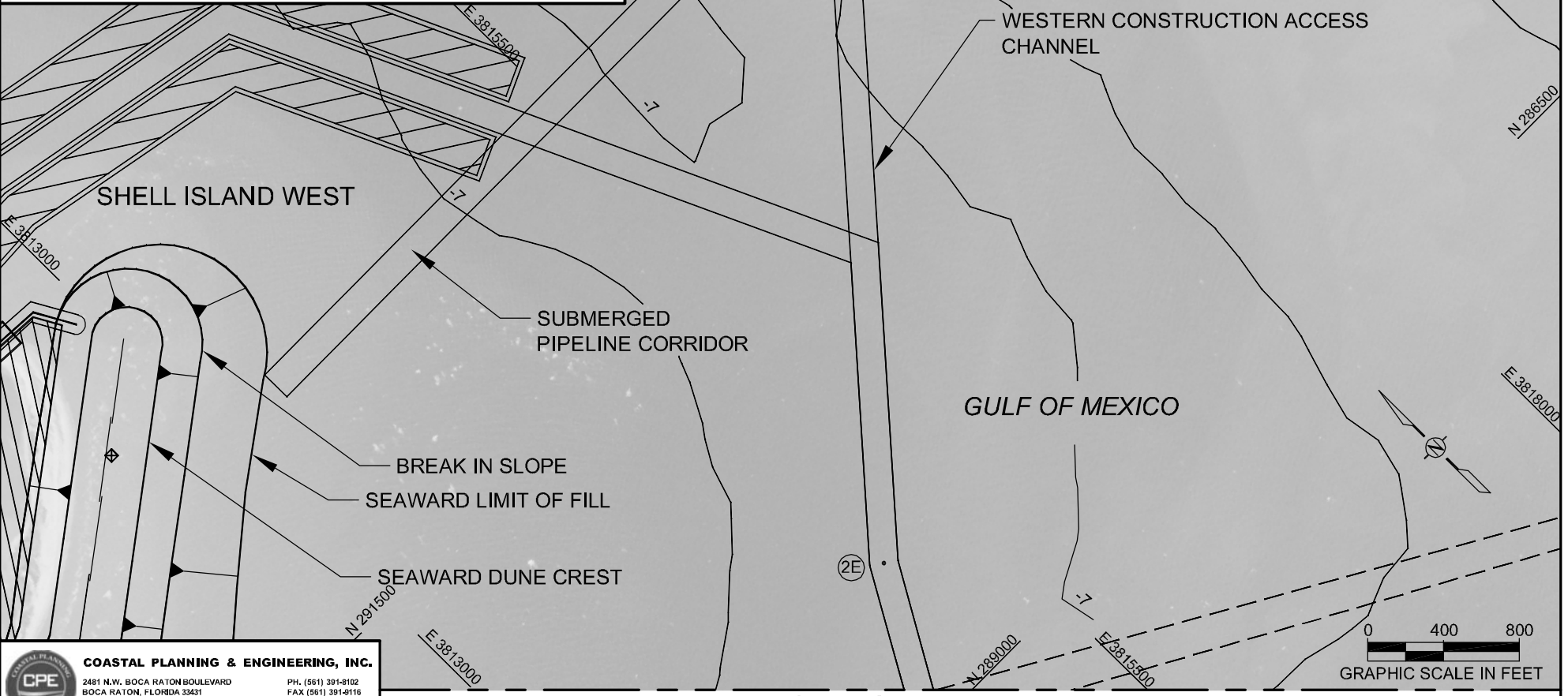
DESIGNED BY: D SWIGLER

APPROVED BY: G THOMSON



**LEGEND:**  MARSH  PIPELINE OBTAINED FROM DATABASE  
 FILL  PIPELINE FIELD VERIFIED  
**NOTES:**  SPOIL AREA

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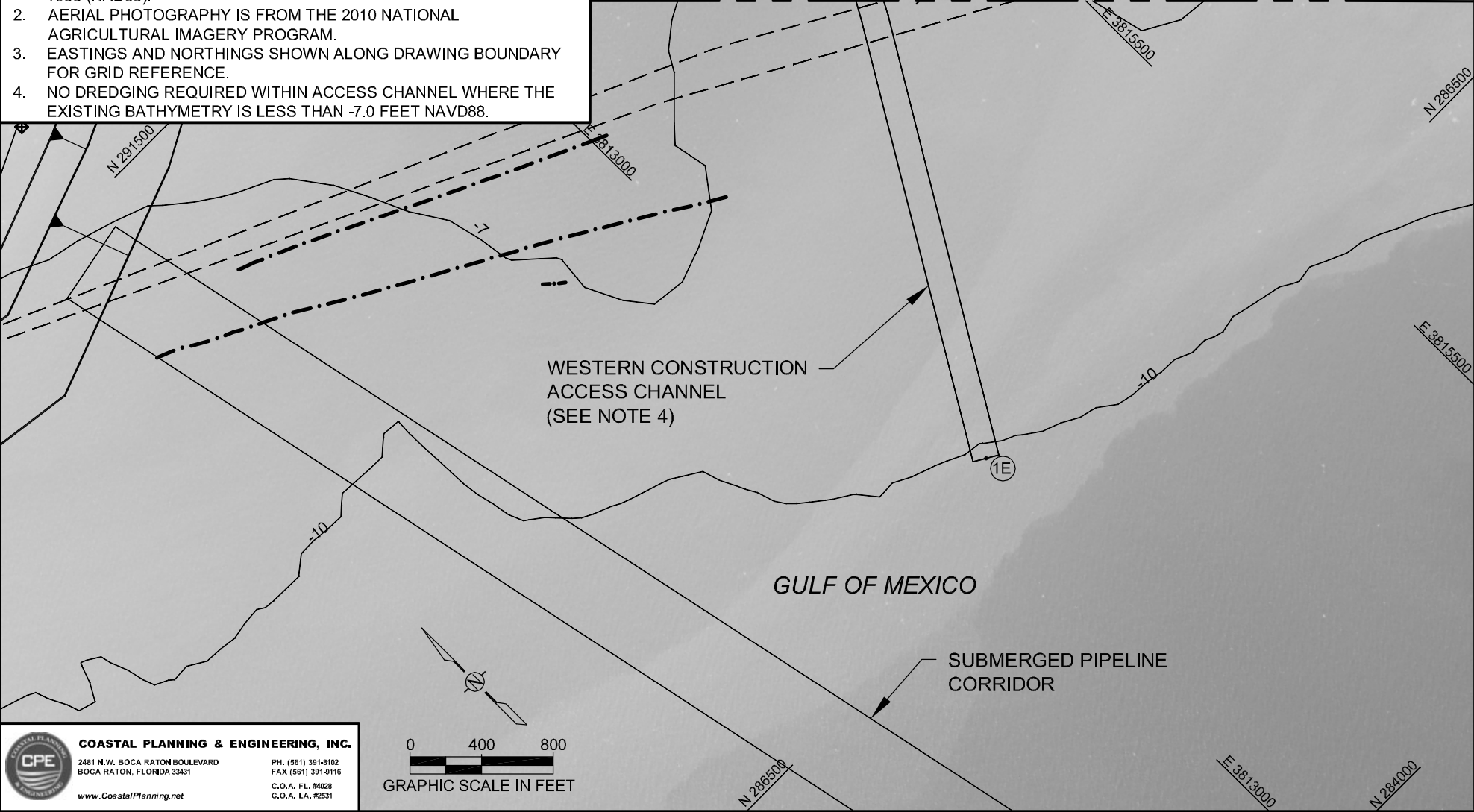
**COASTAL PLANNING & ENGINEERING, INC.**  
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APPLICATION BY: COASTAL PROTECTION AND RESTORATION AUTHORITY 450 LAUREL ST., SUITE 1200 BATON ROUGE, LOUISIANA 70801 PH: (225) 342-1477 FAX. (225) 342-6801		<b>COASTAL PROTECTION &amp; RESTORATION AUTHORITY</b> 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801		SHELL ISLAND BARRIER ISLAND RESTORATION PROJECT		EAST PROJECT PLAN VIEW	
DRAWN BY: G KRYSYNIAK		DESIGNED BY: D SWIGLER		APPROVED BY: G THOMSON		STATE PROJECT NUMBER: BA-110/111	
						DATE: 2/1/12	
						SHEET 15 OF 61	

**LEGEND:**  
 - - - - - PIPELINE OBTAINED FROM DATABASE  
 - · - · - · PIPELINE FIELD VERIFIED

**NOTES:**

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 450 LAUREL STREET  
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SHELL ISLAND BARRIER ISLAND RESTORATION PROJECT  
 STATE PROJECT NUMBER: BA-110/111

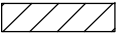


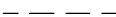

EAST PROJECT PLAN VIEW  
 DATE: 2/1/12  
 SHEET 16 OF 61

DRAWN BY: G KRYSYNIAK

DESIGNED BY: D SWIGLER

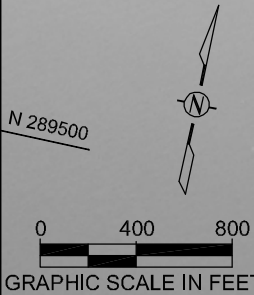
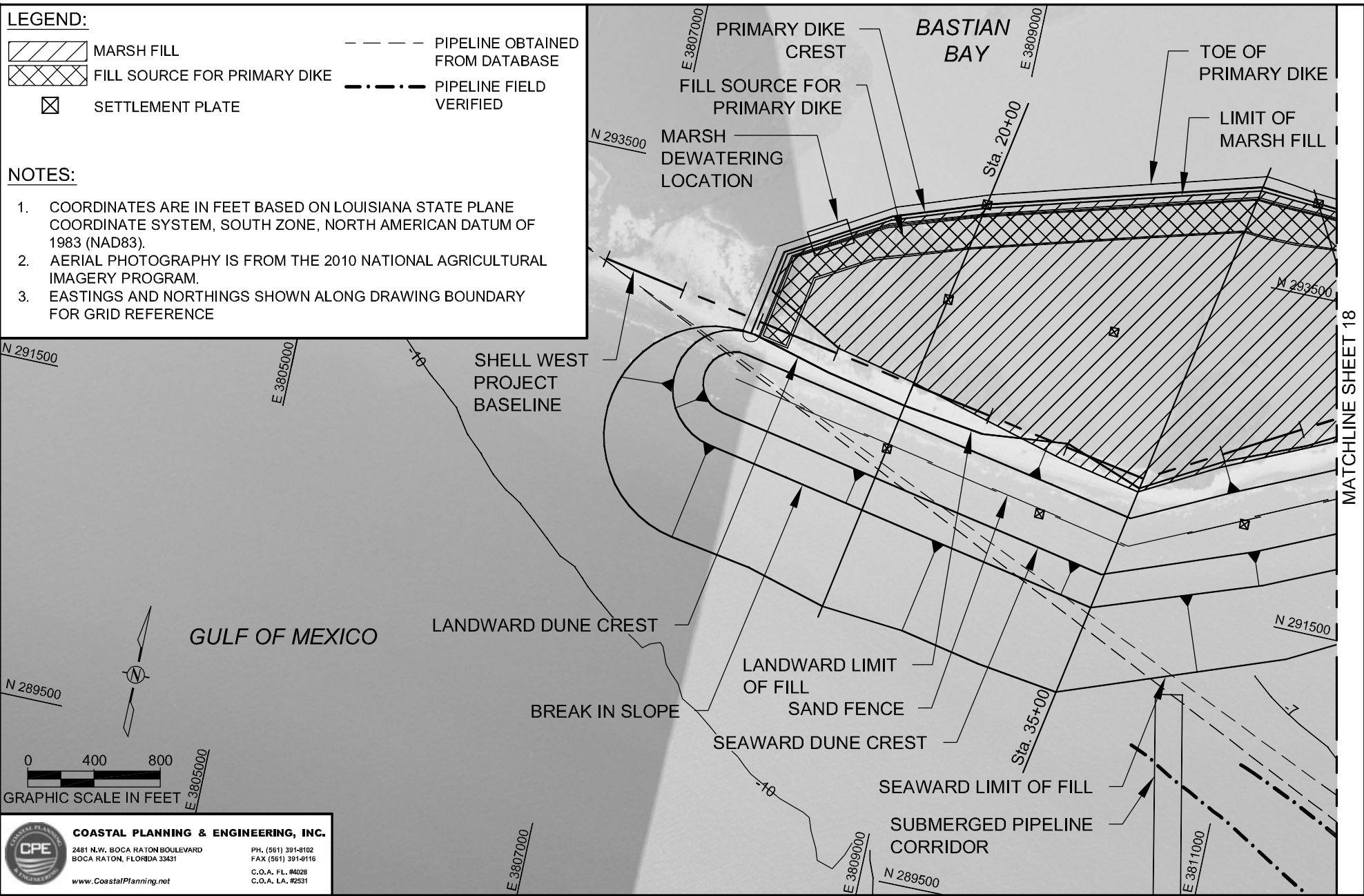
APPROVED BY: G THOMSON

**LEGEND:**

 MARSH FILL  
 FILL SOURCE FOR PRIMARY DIKE  
 SETTLEMENT PLATE  
 PIPELINE OBTAINED FROM DATABASE  
 PIPELINE FIELD VERIFIED

**NOTES:**

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SHELL ISLAND BARRIER ISLAND RESTORATION PROJECT  
 STATE PROJECT NUMBER: BA-110/111

WEST PROJECT PLAN VIEW  
 DATE: 2/1/12  
 SHEET 17 OF 61

DRAWN BY: G KRYSYNIAK

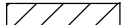



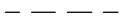

DESIGNED BY: D SWIGLER

APPROVED BY: G THOMSON

MATCHLINE SHEET 18

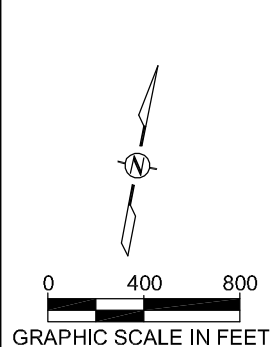


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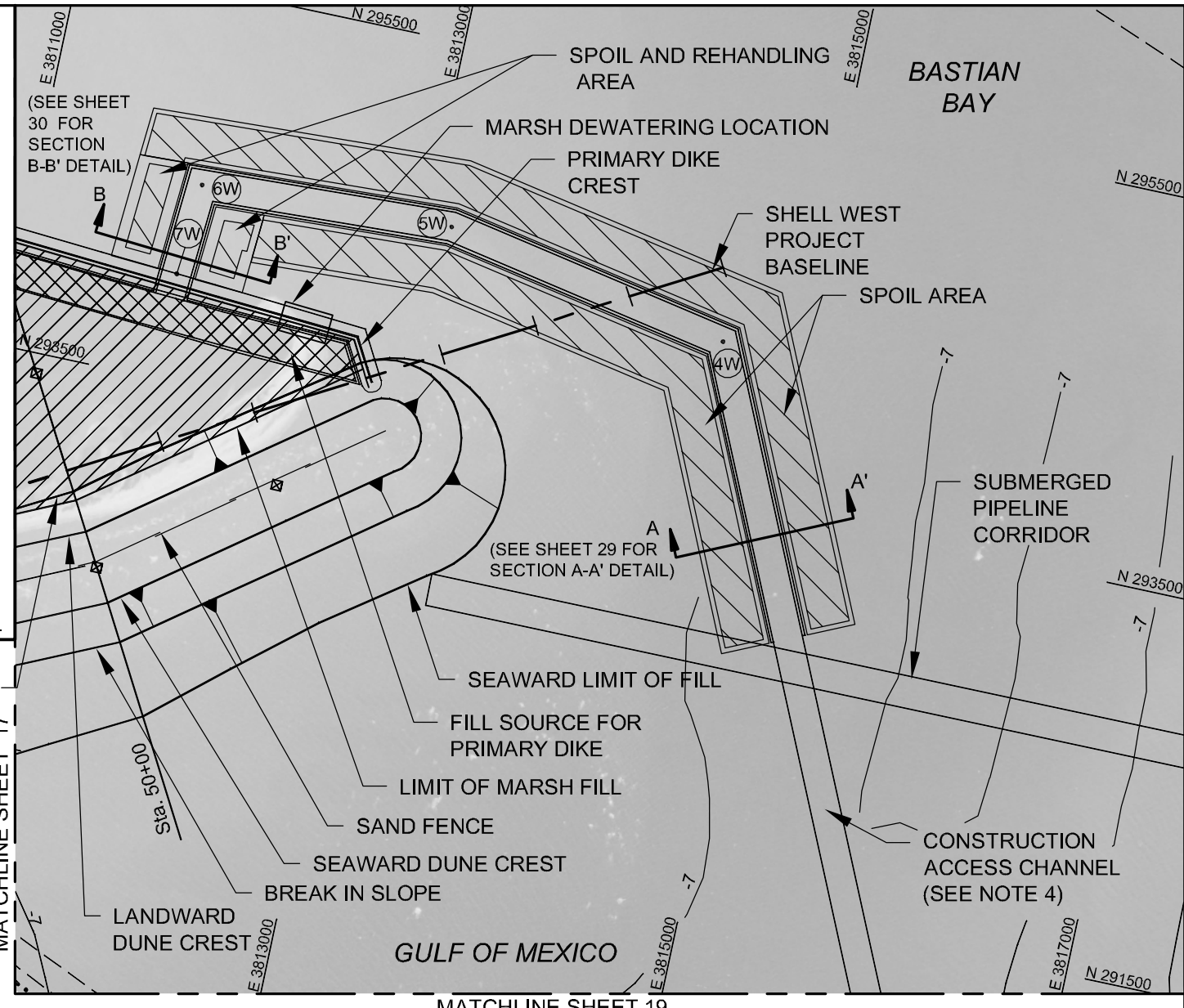
-  MARSH FILL
-  FILL SOURCE FOR PRIMARY DIKE
-  SPOIL AREA
-  SETTLEMENT PLATE
-  PIPELINE OBTAINED FROM DATABASE
-  PIPELINE FIELD VERIFIED

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APPLICATION BY: COASTAL PROTECTION AND RESTORATION AUTHORITY 450 LAUREL ST., SUITE 1200 BATON ROUGE, LOUISIANA 70801 PH: (225) 342-1477 FAX. (225) 342-6801	<b>COASTAL PROTECTION &amp; RESTORATION AUTHORITY</b> 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801	SHELL ISLAND BARRIER ISLAND RESTORATION PROJECT  STATE PROJECT NUMBER: BA-110/111	WEST PROJECT PLAN VIEW  DATE: 2/1/12
DRAWN BY: G KRYSYNYIAK	DESIGNED BY: D SWIGLER	APPROVED BY: G THOMSON	SHEET 18 OF 61

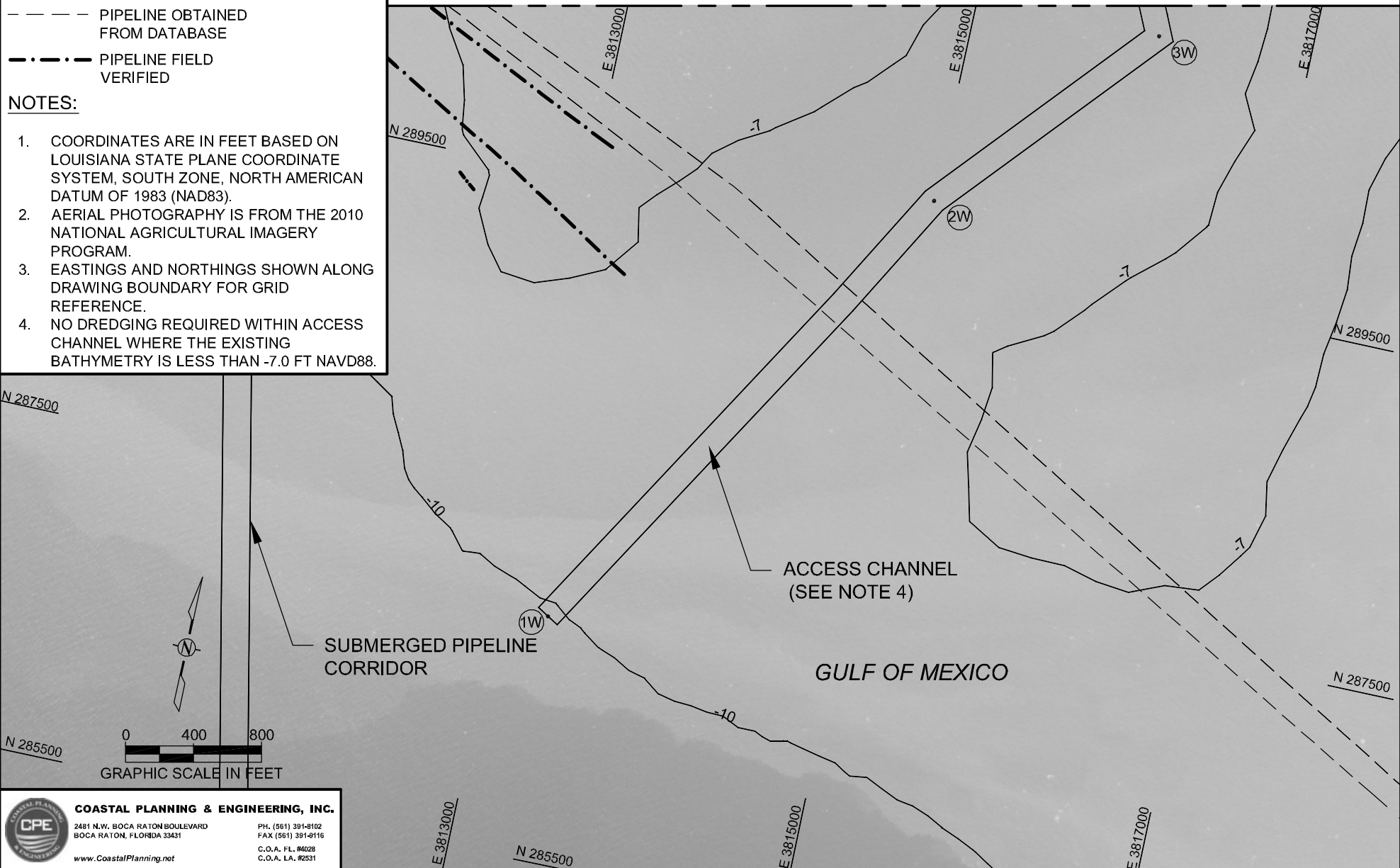
**LEGEND:**

- PIPELINE OBTAINED FROM DATABASE
- · - · - PIPELINE FIELD VERIFIED

**NOTES:**

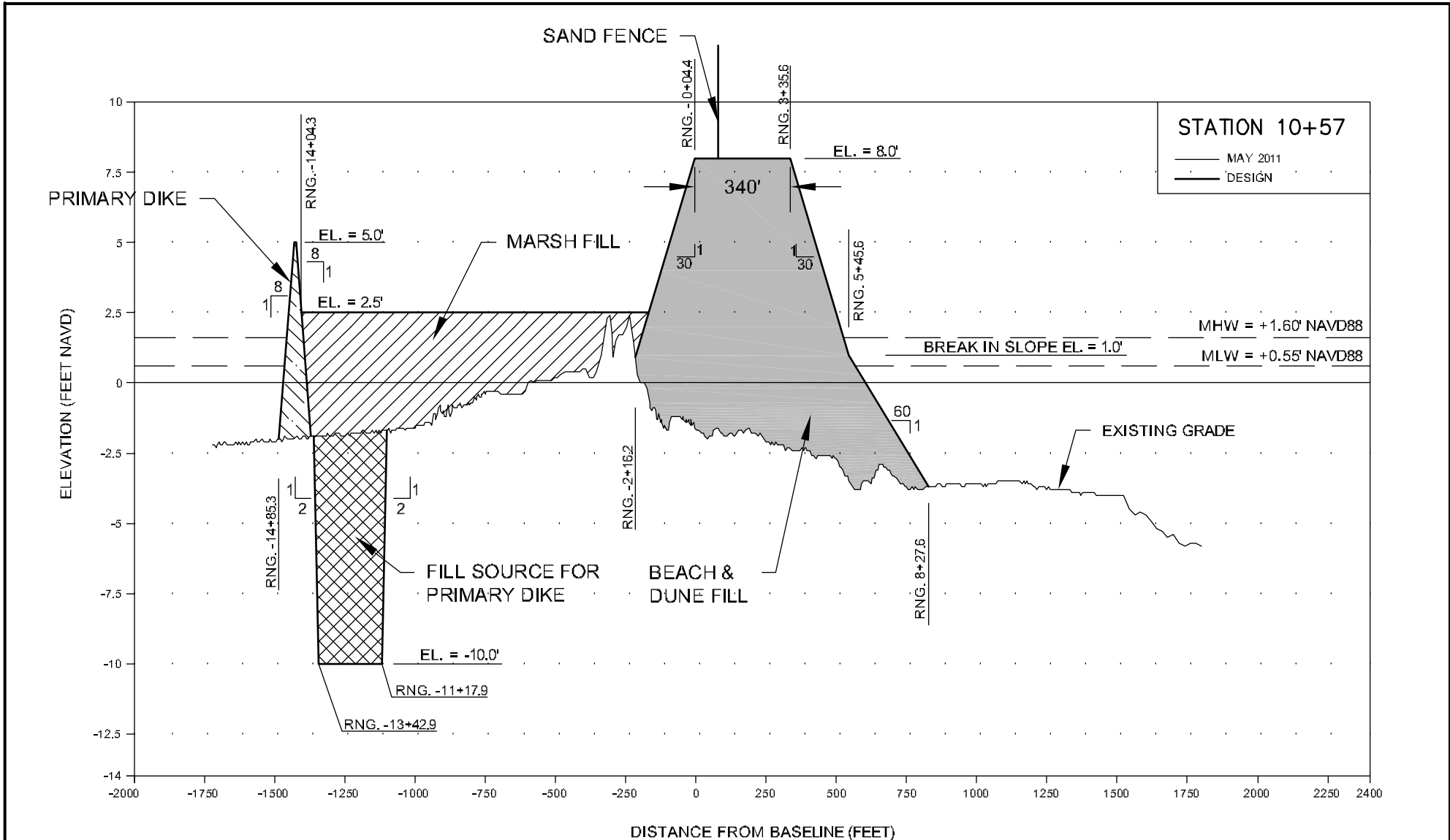
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MATCHLINE SHEET 18



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APPLICATION BY: COASTAL PROTECTION AND RESTORATION AUTHORITY 450 LAUREL ST., SUITE 1200 BATON ROUGE, LOUISIANA 70801 PH: (225) 342-1477 FAX. (225) 342-6801	<b>COASTAL PROTECTION &amp; RESTORATION AUTHORITY</b> 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801	SHELL ISLAND BARRIER ISLAND RESTORATION PROJECT  STATE PROJECT NUMBER: BA-110/111	WEST PROJECT PLAN VIEW  DATE: 2/1/12
DRAWN BY: G KRYSYNIAK	DESIGNED BY: D SWIGLER	APPROVED BY: G THOMSON	SHEET 19 OF 61



1. ELEVATIONS SHOWN HEREON ARE IN FEET BASED ON NAVD88. GEOID 2009.
2. LAYOUT ALL FILL AREAS BY CROSS-SECTION ELEVATIONS AND RANGES.
3. POSITIVE RANGES ARE SOUTH OF BASELINE. NEGATIVE RANGES ARE NORTH OF BASELINE.



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APPLICATION BY:  
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**COASTAL PROTECTION & RESTORATION AUTHORITY**  
 450 LAUREL STREET  
 BATON ROUGE, LOUISIANA 70801

DESIGNED BY: D SWIGLER  
 APPROVED BY: G THOMSON

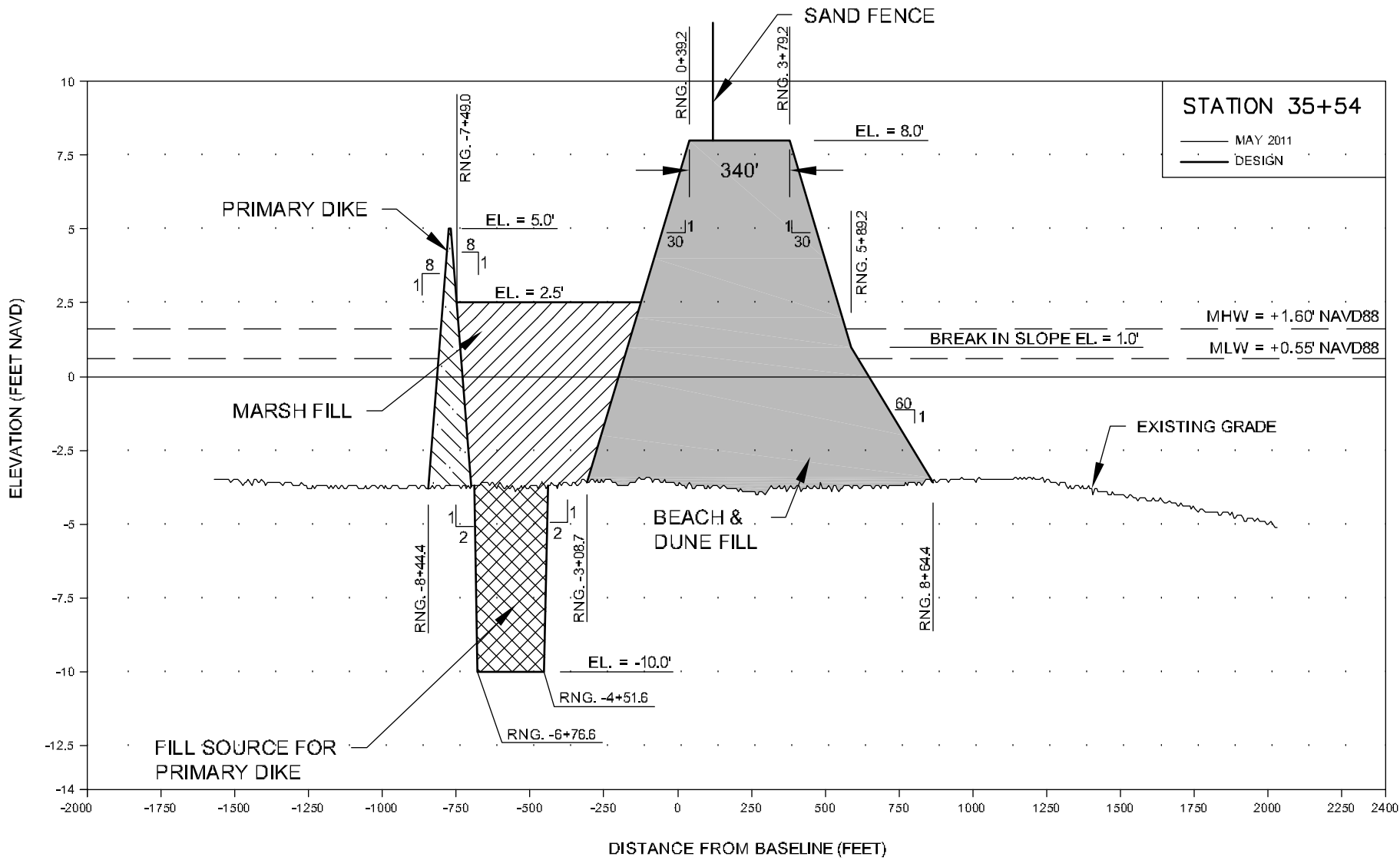
SHELL ISLAND  
 BARRIER ISLAND RESTORATION PROJECT

STATE PROJECT NUMBER: BA-110/111

**EAST PROJECT CONSTRUCTION PROFILE**

DATE: 2/1/12

SHEET 20 OF 61



**COASTAL PLANNING & ENGINEERING, INC.**  
 2491 N.W. BOCA RATON BOULEVARD  
 BOCA RATON, FLORIDA 33431  
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 C.O.A. FL. #4029  
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APPLICATION BY:  
 COASTAL PROTECTION AND RESTORATION AUTHORITY  
 450 LAUREL ST., SUITE 1200  
 BATON ROUGE, LOUISIANA 70801  
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DRAWN BY: H VOLLMER

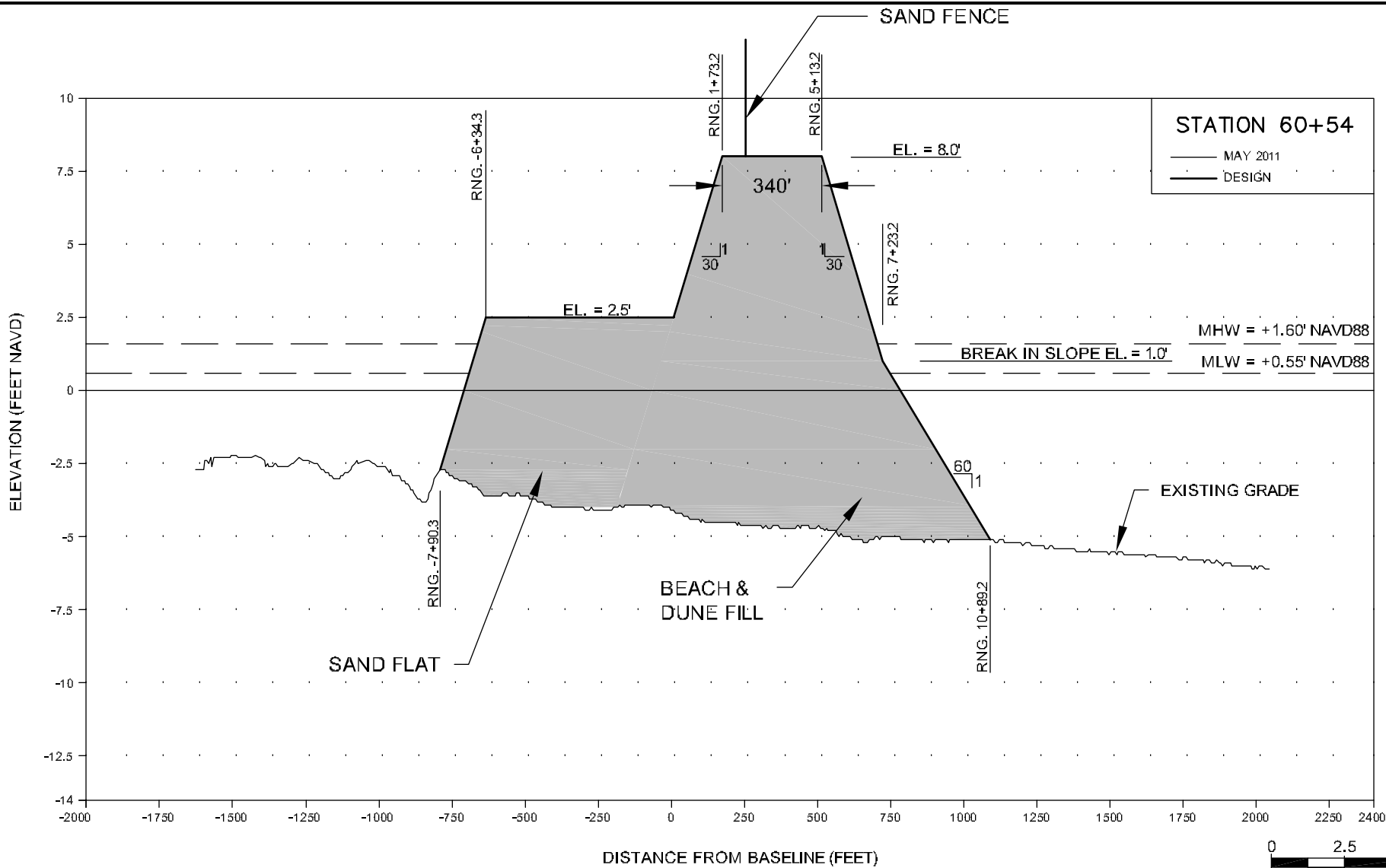
DESIGNED BY: D SWIGLER

APPROVED BY: G THOMSON

SHELL ISLAND  
 BARRIER ISLAND RESTORATION PROJECT  
 STATE PROJECT NUMBER: BA-110/111

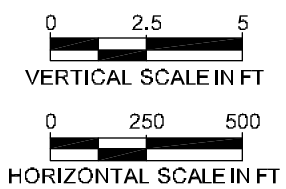
EAST PROJECT  
 CONSTRUCTION PROFILE  
 DATE: 2/1/12

SHEET 21 OF 61

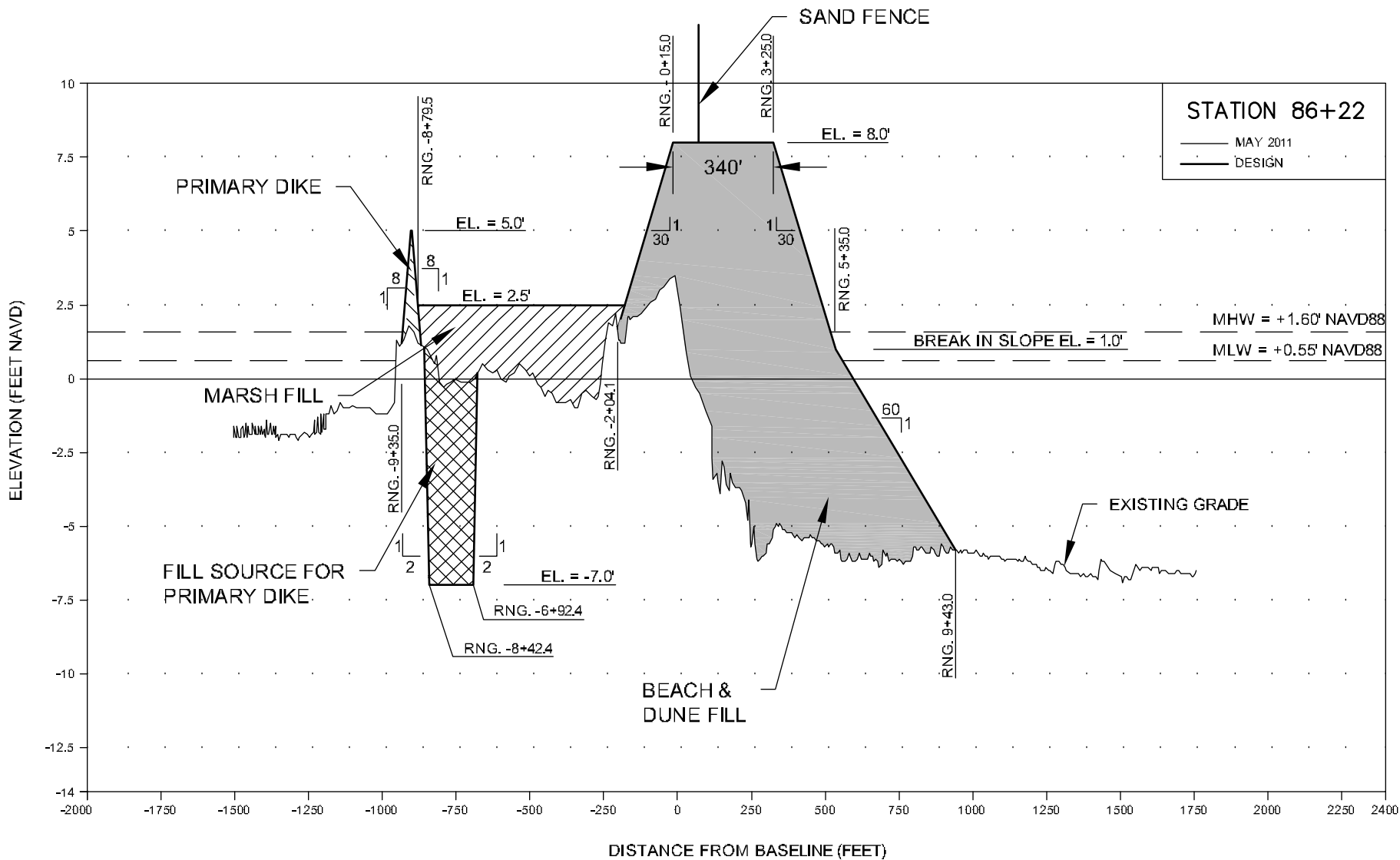


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3. POSITIVE RANGES ARE SOUTH OF BASELINE. NEGATIVE RANGES ARE NORTH OF BASELINE.
4. DUE TO EXISTING PIPELINES, ACCESS FOR PRIMARY DIKE CONSTRUCTION IS LIMITED. A SAND FLAT SHALL BE CREATED LANDWARD OF THE BEACH & DUNE FILL WITH NO LANDWARD CONTAINMENT DIKE.



APPLICATION BY: COASTAL PROTECTION AND RESTORATION AUTHORITY 450 LAUREL ST., SUITE 1200 BATON ROUGE, LOUISIANA 70801 PH: (225) 342-1477 FAX: (225) 342-6801		COASTAL PROTECTION & RESTORATION AUTHORITY 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801		SHELL ISLAND BARRIER ISLAND RESTORATION PROJECT		EAST PROJECT CONSTRUCTION PROFILE	
DRAWN BY: H VOLLMER		DESIGNED BY: D SWIGLER		APPROVED BY: G THOMSON		STATE PROJECT NUMBER: BA-110/111	
						DATE: 2/1/12	
						SHEET 22 OF 61	



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SHELL ISLAND  
 BARRIER ISLAND RESTORATION PROJECT  
 STATE PROJECT NUMBER: BA-110/111

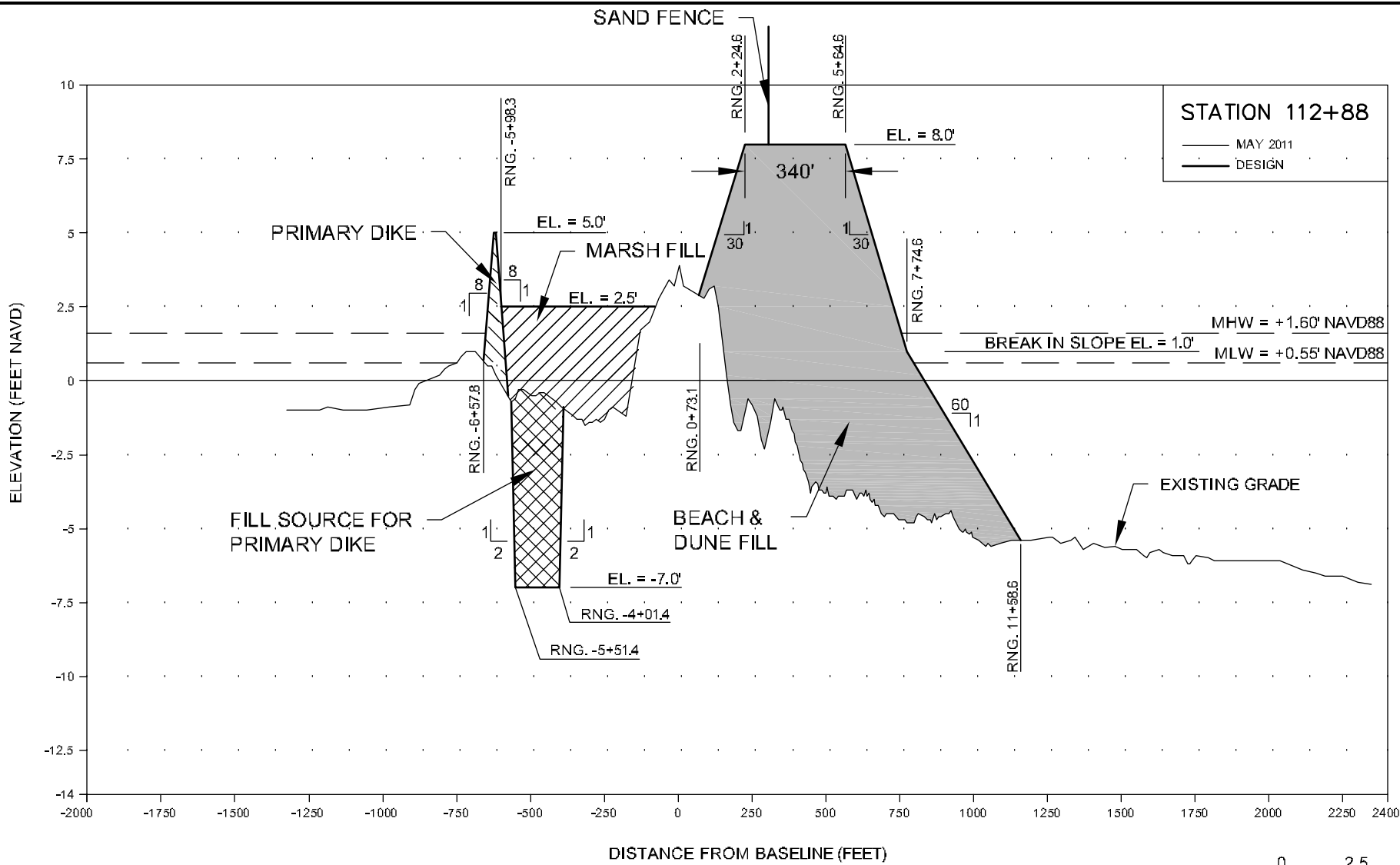
**EAST PROJECT CONSTRUCTION PROFILE**  
 DATE: 2/1/12

DRAWN BY: H VOLLMER

DESIGNED BY: D SWIGLER

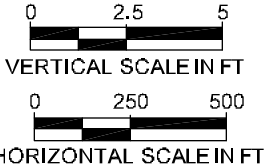
APPROVED BY: G THOMSON

SHEET 23 OF 61



**STATION 112+88**  
 — MAY 2011  
 — DESIGN

MHW = +1.60' NAVD88  
 MLW = +0.55' NAVD88



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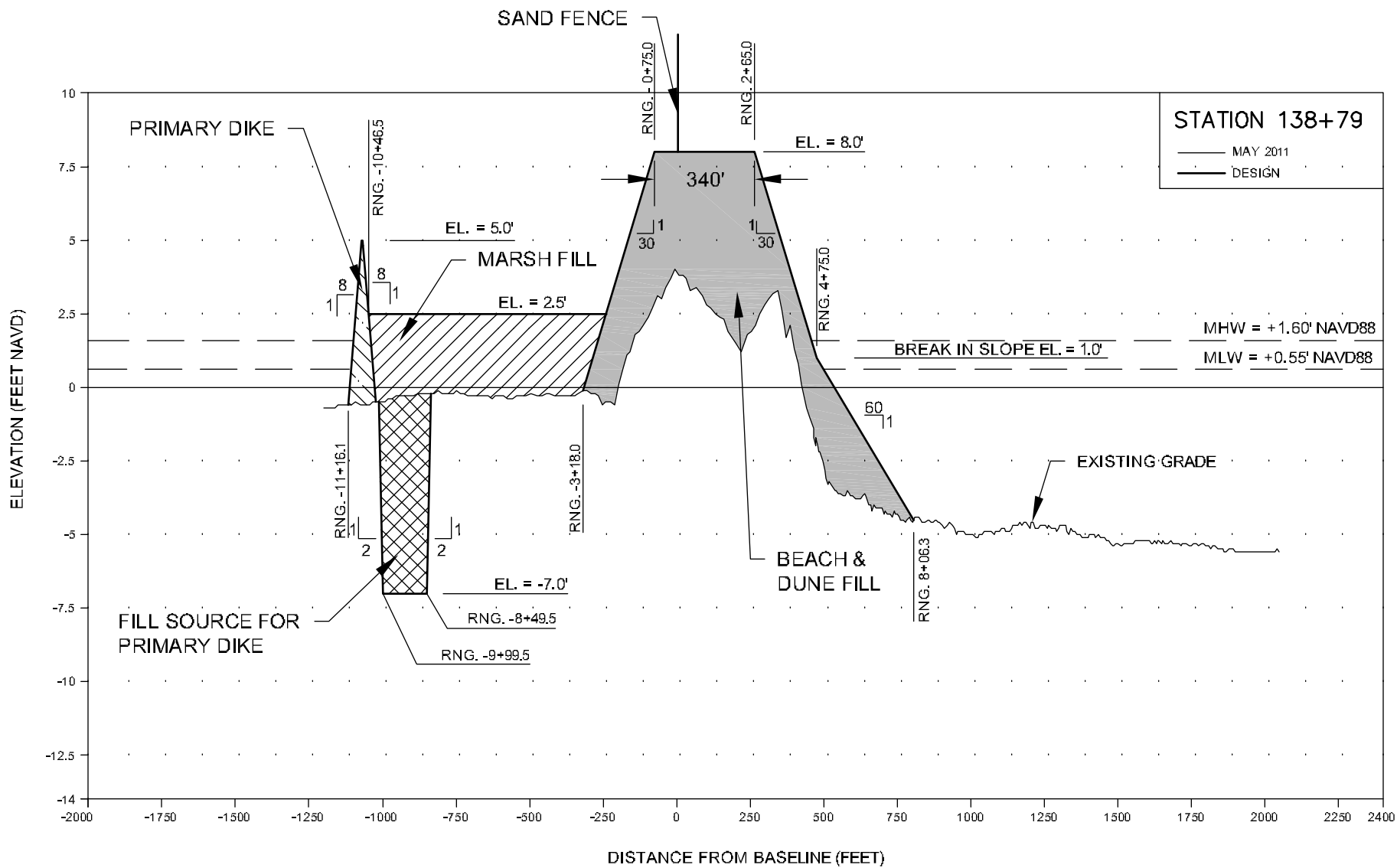
DESIGNED BY: D SWIGLER  
 APPROVED BY: G THOMSON

SHELL ISLAND  
 BARRIER ISLAND RESTORATION PROJECT

STATE PROJECT NUMBER: BA-110/111

**EAST PROJECT CONSTRUCTION PROFILE**

DATE: 2/1/12  
 SHEET 24 OF 61



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DESIGNED BY: D SWIGLER  
 APPROVED BY: G THOMSON

SHELL ISLAND  
 BARRIER ISLAND RESTORATION PROJECT

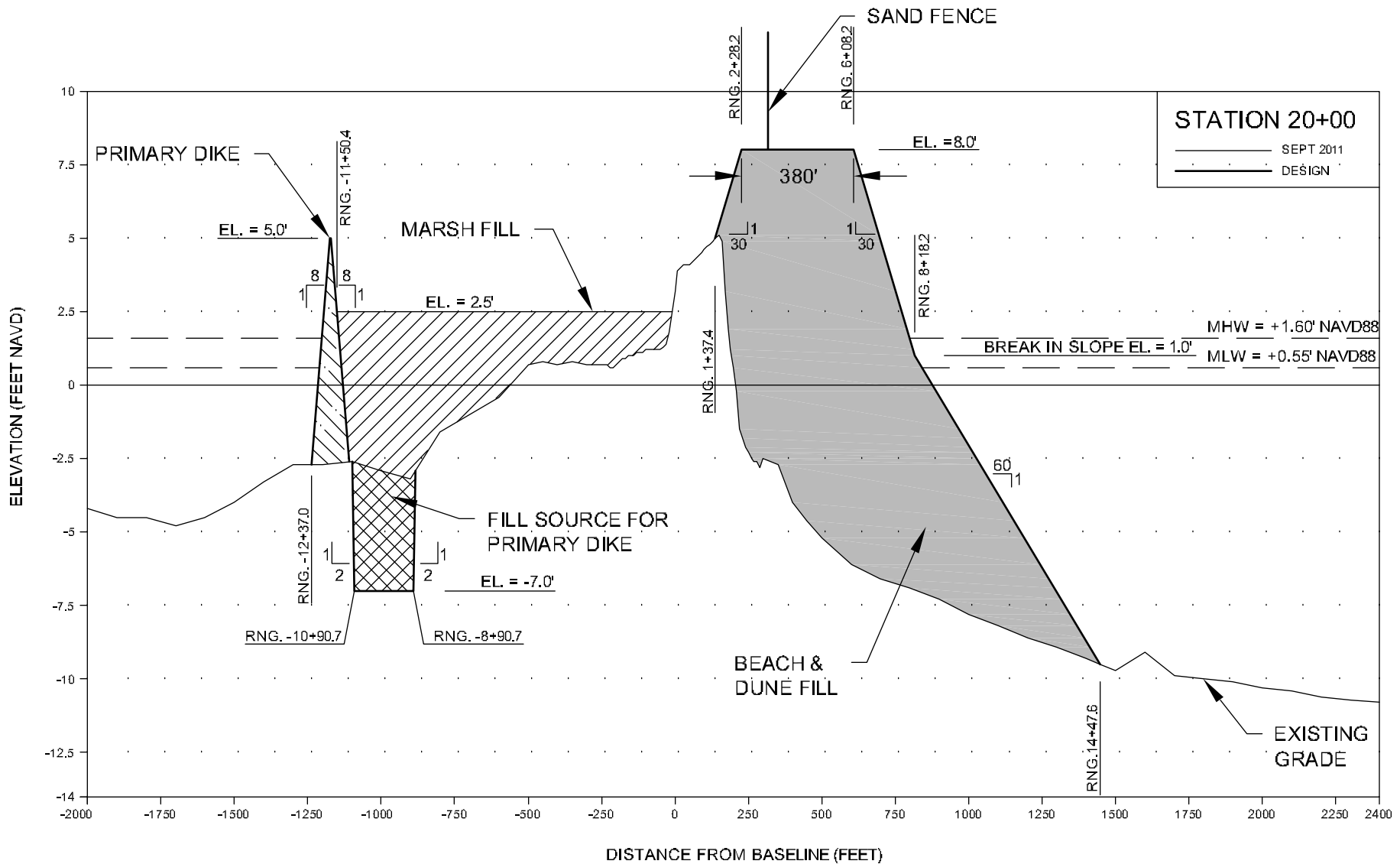
STATE PROJECT NUMBER: BA-110/111

**EAST PROJECT CONSTRUCTION PROFILE**

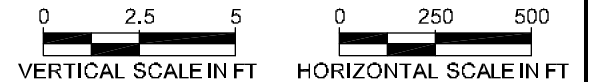
DATE: 2/1/12

SHEET 25 OF 61





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 450 LAUREL STREET  
 BATON ROUGE, LOUISIANA 70801

DESIGNED BY: D SWIGLER  
 APPROVED BY: G THOMSON

SHELL ISLAND  
 BARRIER ISLAND RESTORATION PROJECT

STATE PROJECT NUMBER: BA-110/111

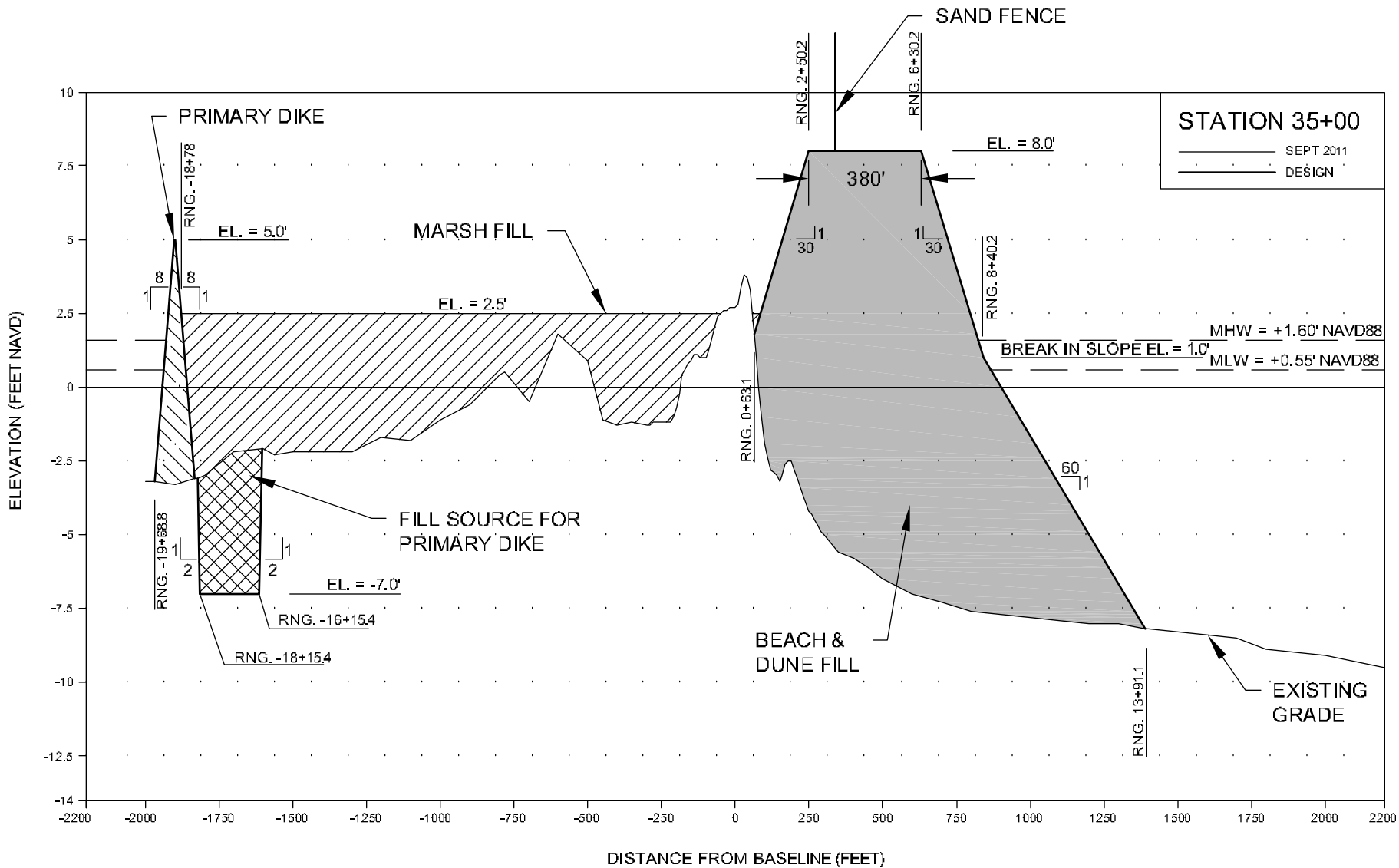
**WEST PROJECT CONSTRUCTION PROFILE**

DATE: 2/1/12

DRAWN BY: G KRYSZYNAK

APPROVED BY: G THOMSON

SHEET 26 OF 61



- ELEVATIONS SHOWN HEREON ARE IN FEET BASED ON NAVD88. GEOID 2009.
- LAYOUT ALL FILL AREAS BY CROSS-SECTION ELEVATIONS AND RANGES.
- POSITIVE RANGES ARE SOUTH OF BASELINE. NEGATIVE RANGES ARE NORTH OF BASELINE.



**COASTAL PLANNING & ENGINEERING, INC.**  
 2491 N.W. BOCA RATON BOULEVARD  
 BOCA RATON, FLORIDA 33431  
 PH: (561) 391-8102  
 FAX (561) 391-9116  
 C.O.A. FL. 404028  
 C.O.A. LA. 402531  
[www.CoastalPlanning.net](http://www.CoastalPlanning.net)

APPLICATION BY:  
 COASTAL PROTECTION AND RESTORATION AUTHORITY  
 450 LAUREL ST., SUITE 1200  
 BATON ROUGE, LOUISIANA 70801  
 PH: (225) 342-1477  
 FAX: (225) 342-6801

**COASTAL PROTECTION & RESTORATION AUTHORITY**  
 450 LAUREL STREET  
 BATON ROUGE, LOUISIANA 70801

DESIGNED BY: D SWIGLER  
 APPROVED BY: G THOMSON

SHELL ISLAND  
 BARRIER ISLAND RESTORATION PROJECT

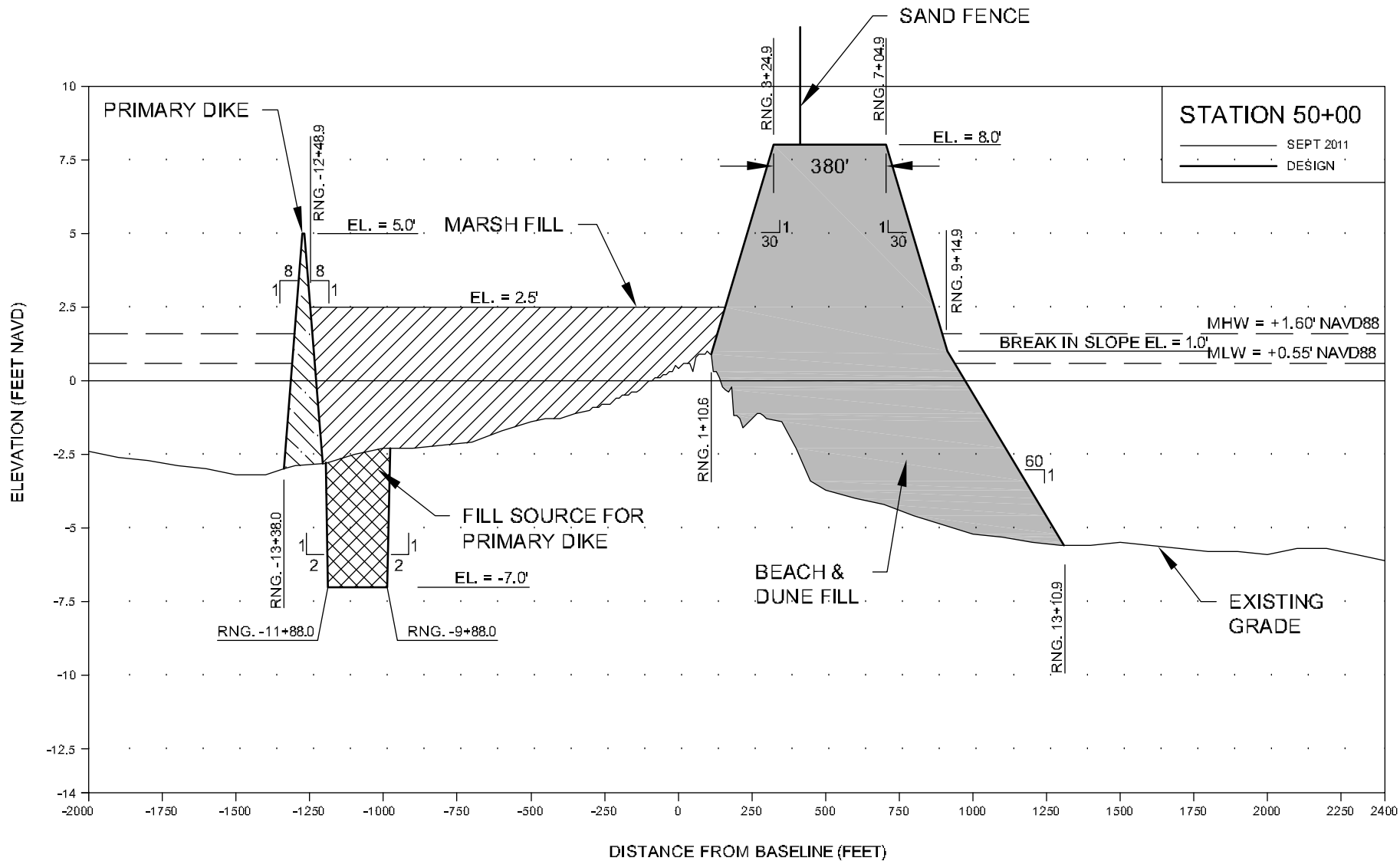
STATE PROJECT NUMBER: BA-110/111

**WEST PROJECT CONSTRUCTION PROFILE**

DATE: 2/1/12

SHEET 27 OF 61

DRAWN BY: G KRYSZYNAK



1. ELEVATIONS SHOWN HEREON ARE IN FEET BASED ON NAVD88. GEOID 2009.
2. LAYOUT ALL FILL AREAS BY CROSS-SECTION ELEVATIONS AND RANGES.
3. POSITIVE RANGES ARE SOUTH OF BASELINE. NEGATIVE RANGES ARE NORTH OF BASELINE.



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SHELL ISLAND  
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 STATE PROJECT NUMBER: BA-110/111

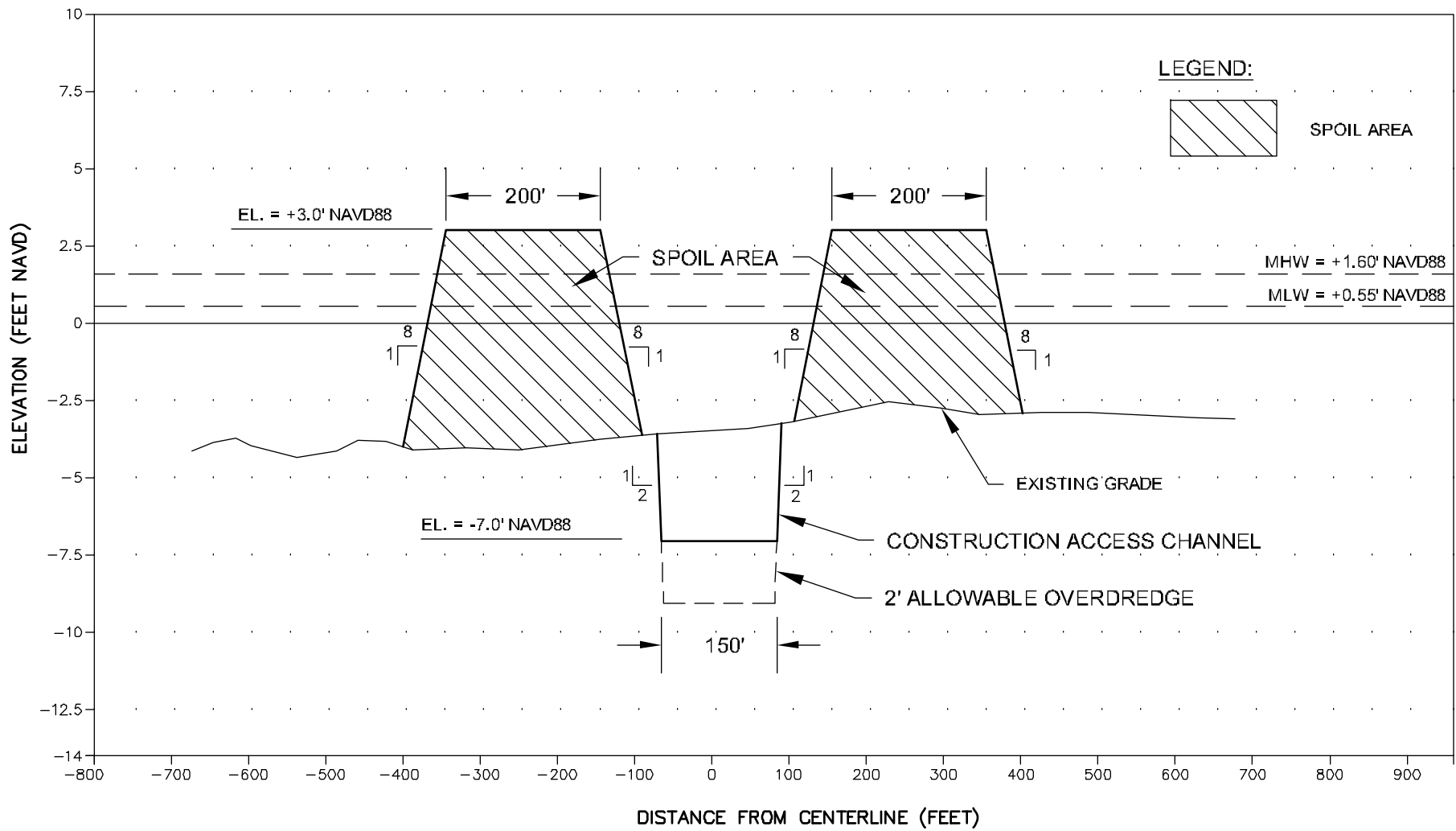
WEST PROJECT  
 CONSTRUCTION PROFILE  
 DATE: 2/1/12

DRAWN BY: G KRYSZYNAK

DESIGNED BY: D SWIGLER

APPROVED BY: G THOMSON

SHEET 28 OF 61



**NOTES:**

1. ELEVATIONS SHOWN HEREON ARE IN FEET BASED ON NAVD88. GEOID 2009.
2. SPOIL AREAS SHALL BE MARKED AS REQUIRED BY U.S. COAST GUARD, AS LONG AS THE GRADE ELEVATION IS MORE THAN 0.5' ABOVE THE PRE-CONSTRUCTION GRADE.



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 BOCA RATON, FLORIDA 33431  
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 C.O.A. FL. #4029  
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**COASTAL PROTECTION & RESTORATION AUTHORITY**  
 450 LAUREL STREET  
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DESIGNED BY: D SWIGLER  
 APPROVED BY: G THOMSON

SHELL ISLAND  
 BARRIER ISLAND RESTORATION PROJECT

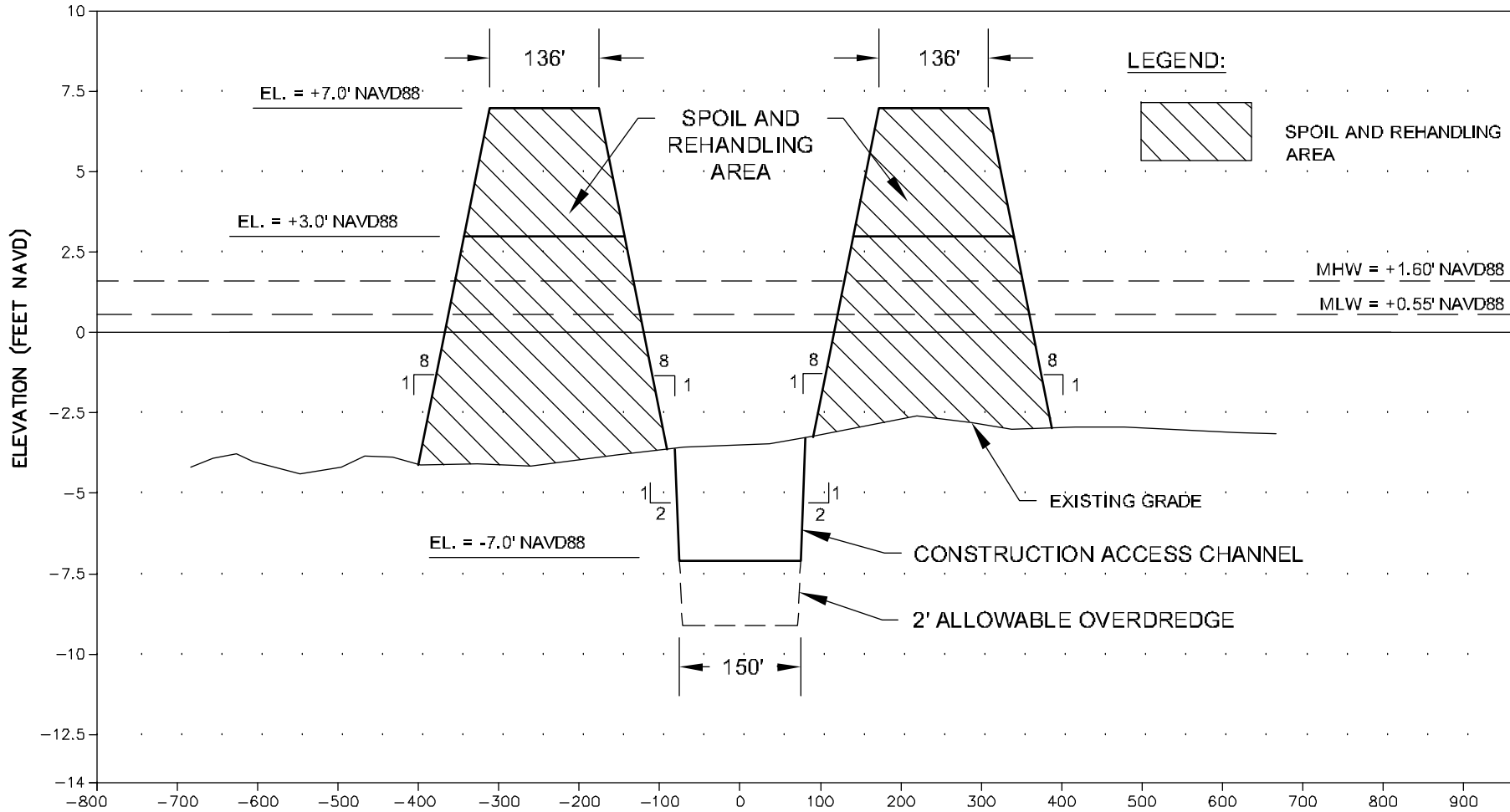
STATE PROJECT NUMBER: BA-110/111

**CONSTRUCTION ACCESS CHANNEL TYPICAL SECTION A-A'**

DATE: 2/1/12

DRAWN BY: G KRYSZTYNIAK

SHEET 29 OF 61



**NOTES:**

**DISTANCE FROM CENTERLINE (FEET)**

1. ELEVATIONS SHOWN HEREON ARE IN FEET BASED ON NAVD88, GEOID 2009.
2. SPOIL AND REHANDLING AREA SHALL BE GRADED TO AN ELEVATION NOT TO EXCEED +3.0 FEET NAVD88 UPON COMPLETION OF THE PROJECT.
3. SPOIL AREAS SHALL BE MARKED AS REQUIRED BY U.S. COAST GUARD, AS LONG AS THE GRADE ELEVATION IS MORE THAN 0.5' ABOVE THE PRE-CONSTRUCTION GRADE.



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**COASTAL PROTECTION & RESTORATION AUTHORITY**  
 450 LAUREL STREET  
 BATON ROUGE, LOUISIANA 70801

DESIGNED BY: D SWIGLER  
 APPROVED BY: G THOMSON

SHELL ISLAND  
 BARRIER ISLAND RESTORATION PROJECT



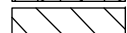




STATE PROJECT NUMBER: BA-110/111

CONSTRUCTION ACCESS CHANNEL TYPICAL SECTION B-B'

DATE: 2/1/12

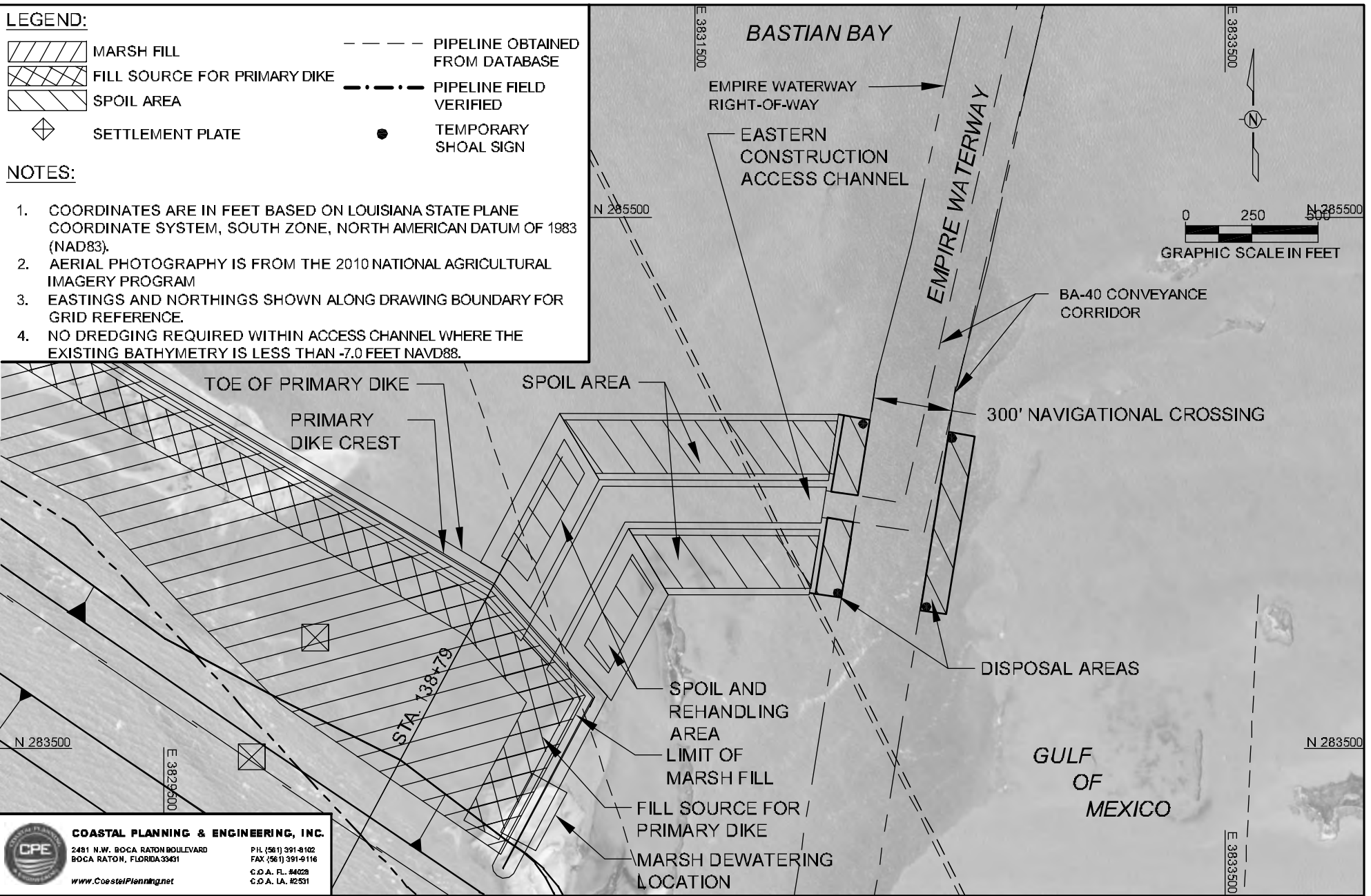
SHEET 30 OF 61

**LEGEND:**

-  MARSH FILL
-  FILL SOURCE FOR PRIMARY DIKE
-  SPOIL AREA
-  SETTLEMENT PLATE
-  PIPELINE OBTAINED FROM DATABASE
-  PIPELINE FIELD VERIFIED
-  TEMPORARY SHOAL SIGN

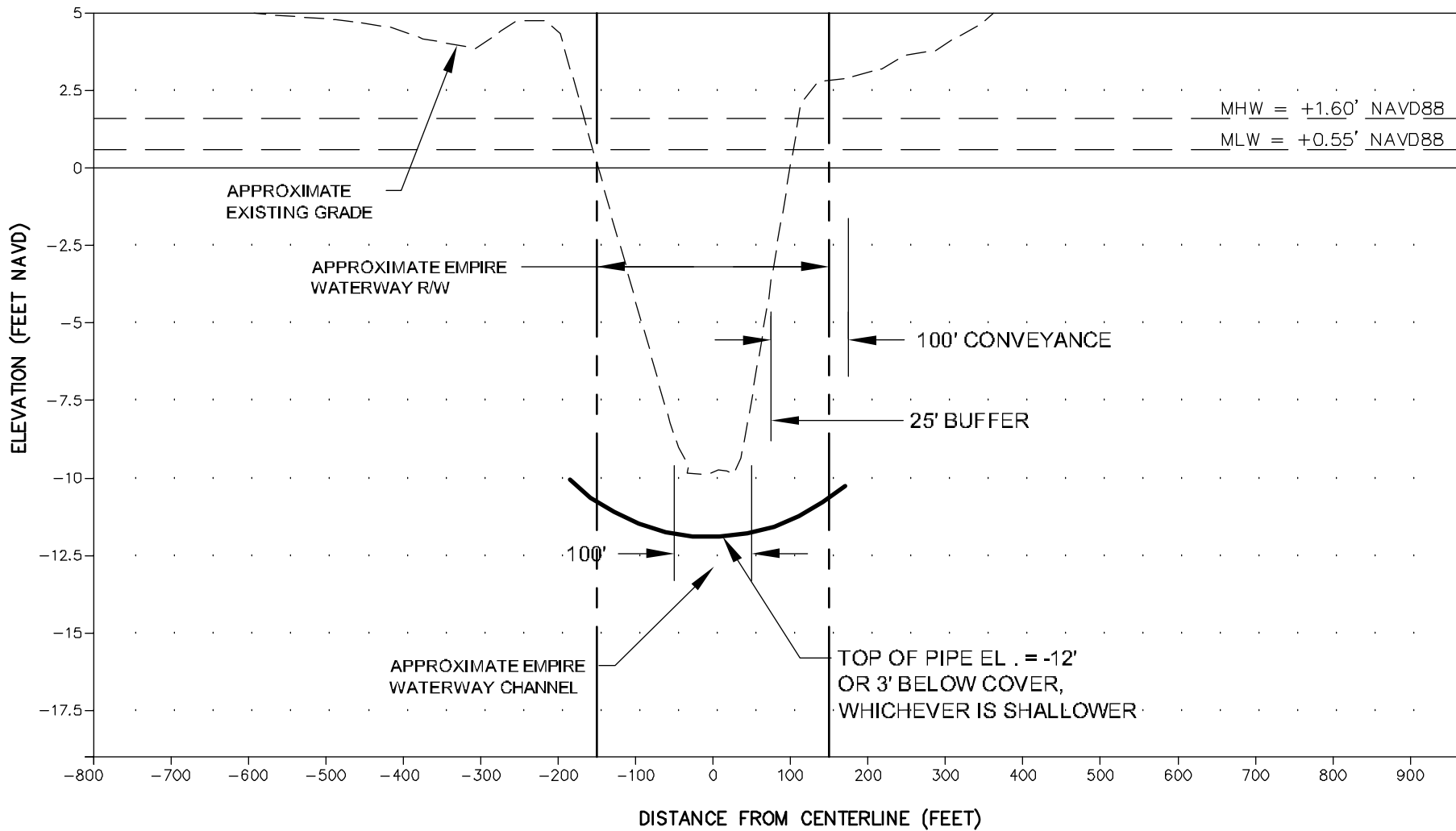
**NOTES:**

1. COORDINATES ARE IN FEET BASED ON LOUISIANA STATE PLANE COORDINATE SYSTEM, SOUTH ZONE, NORTH AMERICAN DATUM OF 1983 (NAD83).
2. AERIAL PHOTOGRAPHY IS FROM THE 2010 NATIONAL AGRICULTURAL IMAGERY PROGRAM
3. EASTINGS AND NORTHINGS SHOWN ALONG DRAWING BOUNDARY FOR GRID REFERENCE.
4. NO DREDGING REQUIRED WITHIN ACCESS CHANNEL WHERE THE EXISTING BATHYMETRY IS LESS THAN -7.0 FEET NAVD88.

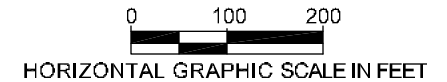


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APPLICATION BY: COASTAL PROTECTION AND RESTORATION AUTHORITY 450 LAUREL ST., SUITE 1200 BATON ROUGE, LOUISIANA 70801 PH: (225) 342-1477 FAX: (225) 342-6801	COASTAL PROTECTION & RESTORATION AUTHORITY 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801	SHELL ISLAND BARRIER ISLAND RESTORATION PROJECT STATE PROJECT NUMBER: BA-110/111	EMPIRE WATERWAY CROSSING DETAIL DATE: 2/1/12
DRAWN BY: G KRYSZYNAK	DESIGNED BY: D SWIGLER	APPROVED BY: G THOMSON	SHEET 31 OF 61



**COASTAL PLANNING & ENGINEERING, INC.**  
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SHELL ISLAND  
 BARRIER ISLAND RESTORATION PROJECT  
 STATE PROJECT NUMBER: BA-110/111

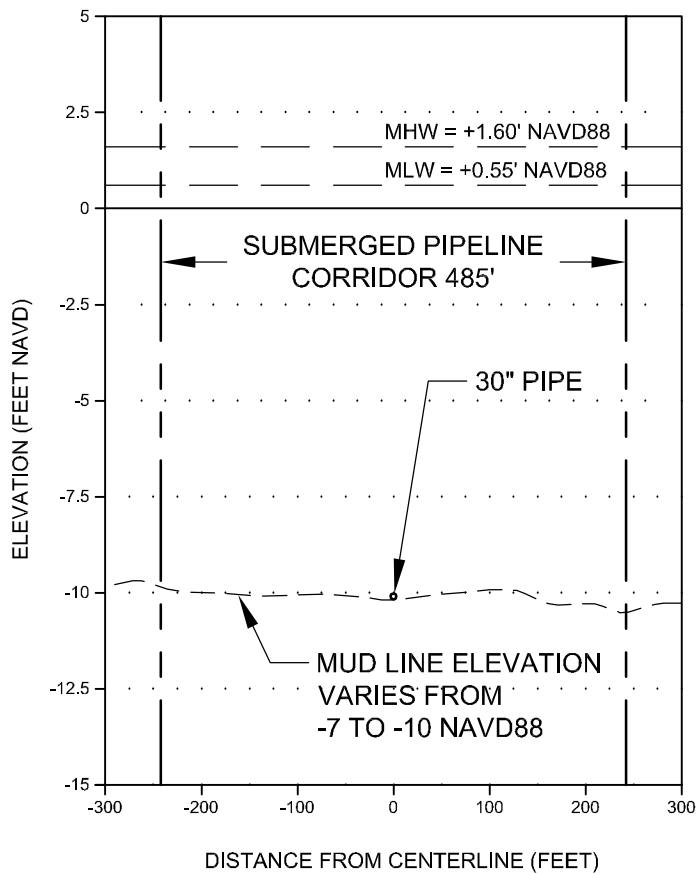
EMPIRE WATERWAY CROSSING  
 CROSS SECTION  
 DATE: 2/1/12

DRAWN BY: G KRYSZYNAK

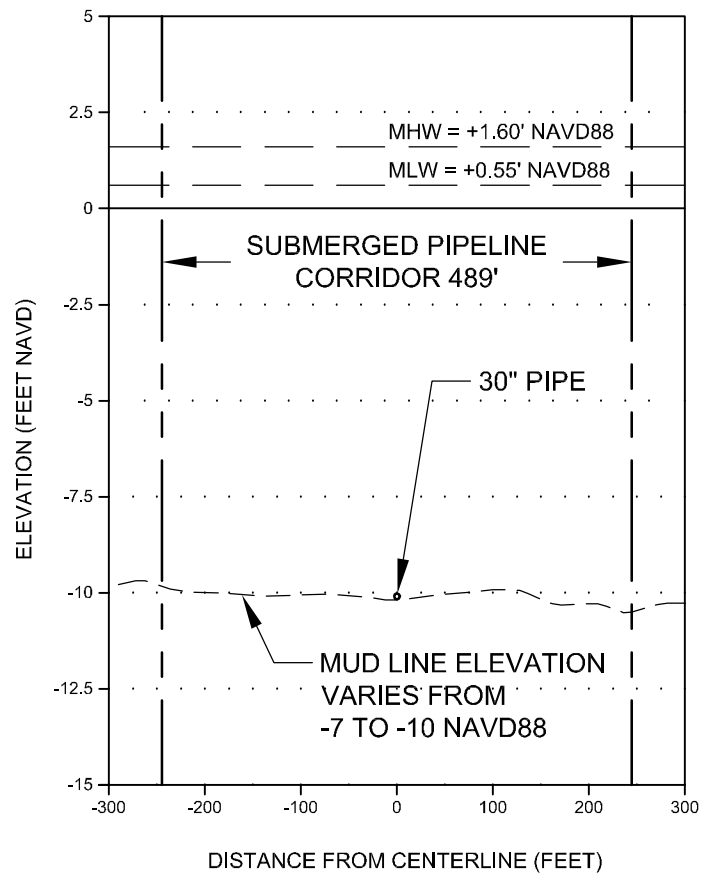
DESIGNED BY: D SWIGLER

APPROVED BY: G THOMSON

SHEET 32 OF 61



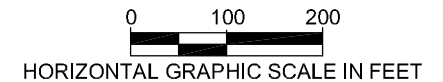
**TYPICAL SECTION O-O'**



**TYPICAL SECTION P-P'**

SEE SHEET 42 FOR LOCATIONS.

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 2481 N.W. BOCA RATON BOULEVARD  
 BOCA RATON, FLORIDA 33431  
 PH. (561) 391-8102  
 FAX (561) 391-9116  
 C.O.A. FL. #4828  
 C.O.A. LA. #2631  
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DESIGNED BY: D SWIGLER  
 APPROVED BY: G THOMSON

SHELL ISLAND BARRIER ISLAND RESTORATION PROJECT

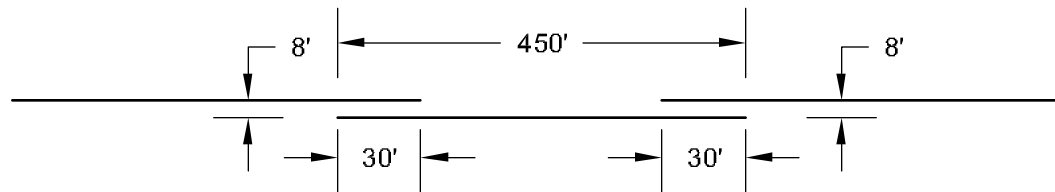
STATE PROJECT NUMBER: BA-110/111

SUBMERGED PIPELINE CORRIDOR TYPICAL CROSS SECTIONS

DATE: 2/1/12

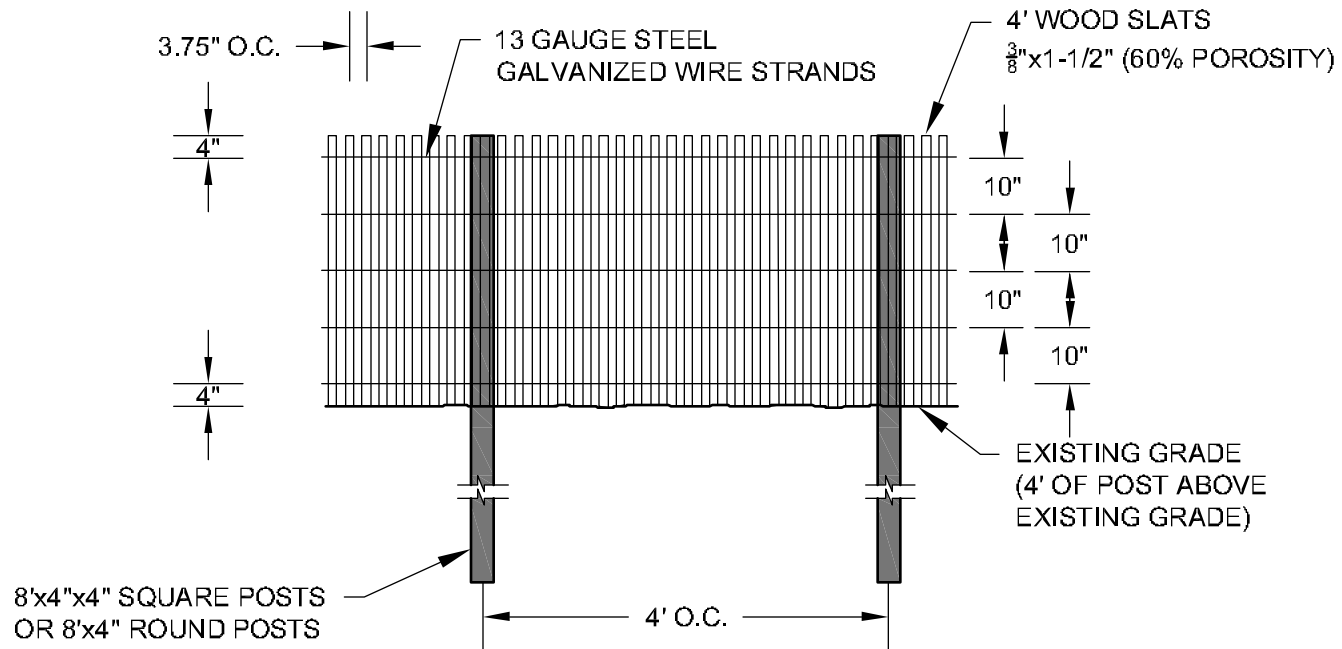
SHEET 33 OF 61





### FENCE PLAN VIEW GAPPING DETAIL

NOT TO SCALE



### FENCE ELEVATION DETAIL

NOT TO SCALE



**COASTAL PLANNING & ENGINEERING, INC.**

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FAX: (561) 391-9116

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RESTORATION AUTHORITY  
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**COASTAL PROTECTION & RESTORATION  
AUTHORITY**  
450 LAUREL STREET  
BATON ROUGE, LOUISIANA 70801

SHELL ISLAND  
BARRIER ISLAND RESTORATION PROJECT

**SAND FENCE  
DETAIL**

STATE PROJECT NUMBER: BA-110/111

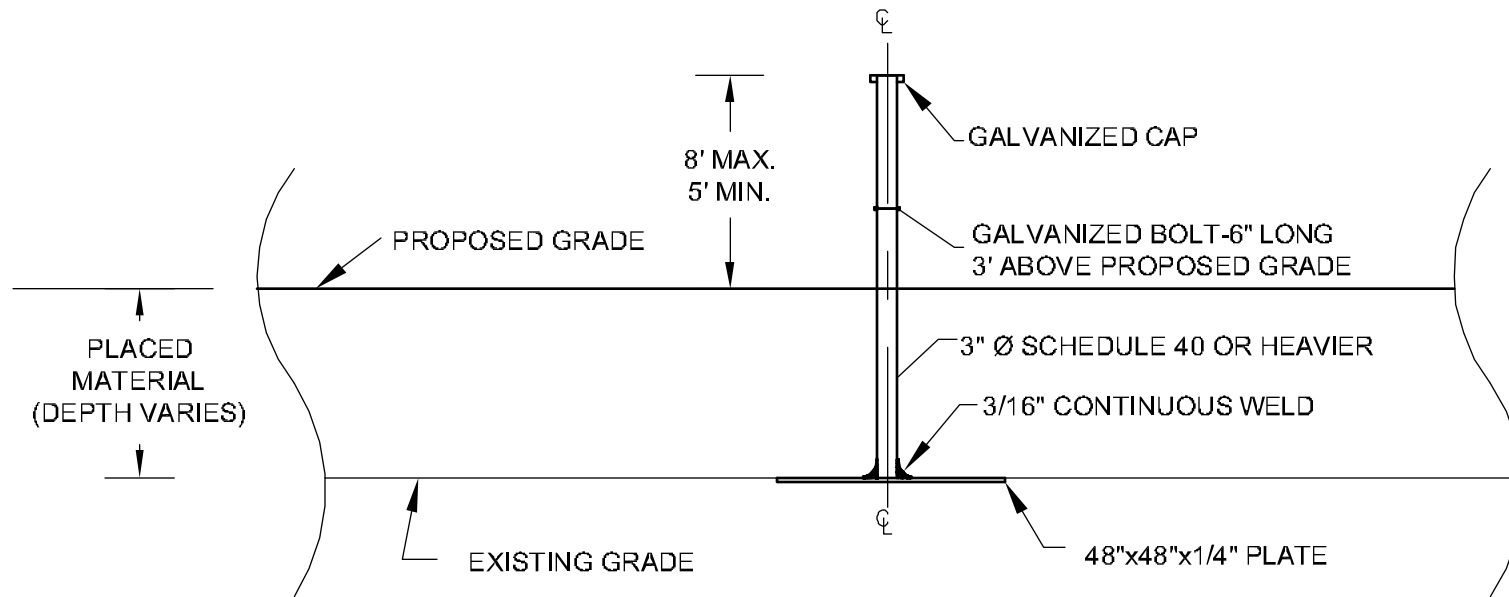
DATE: 2/1/12

DRAWN BY: G KRYSZYNAK

DESIGNED BY: D SWIGLER

APPROVED BY: G THOMSON

SHEET 34 OF 61



**SETTLEMENT PLATE DETAIL**  
NOT TO SCALE

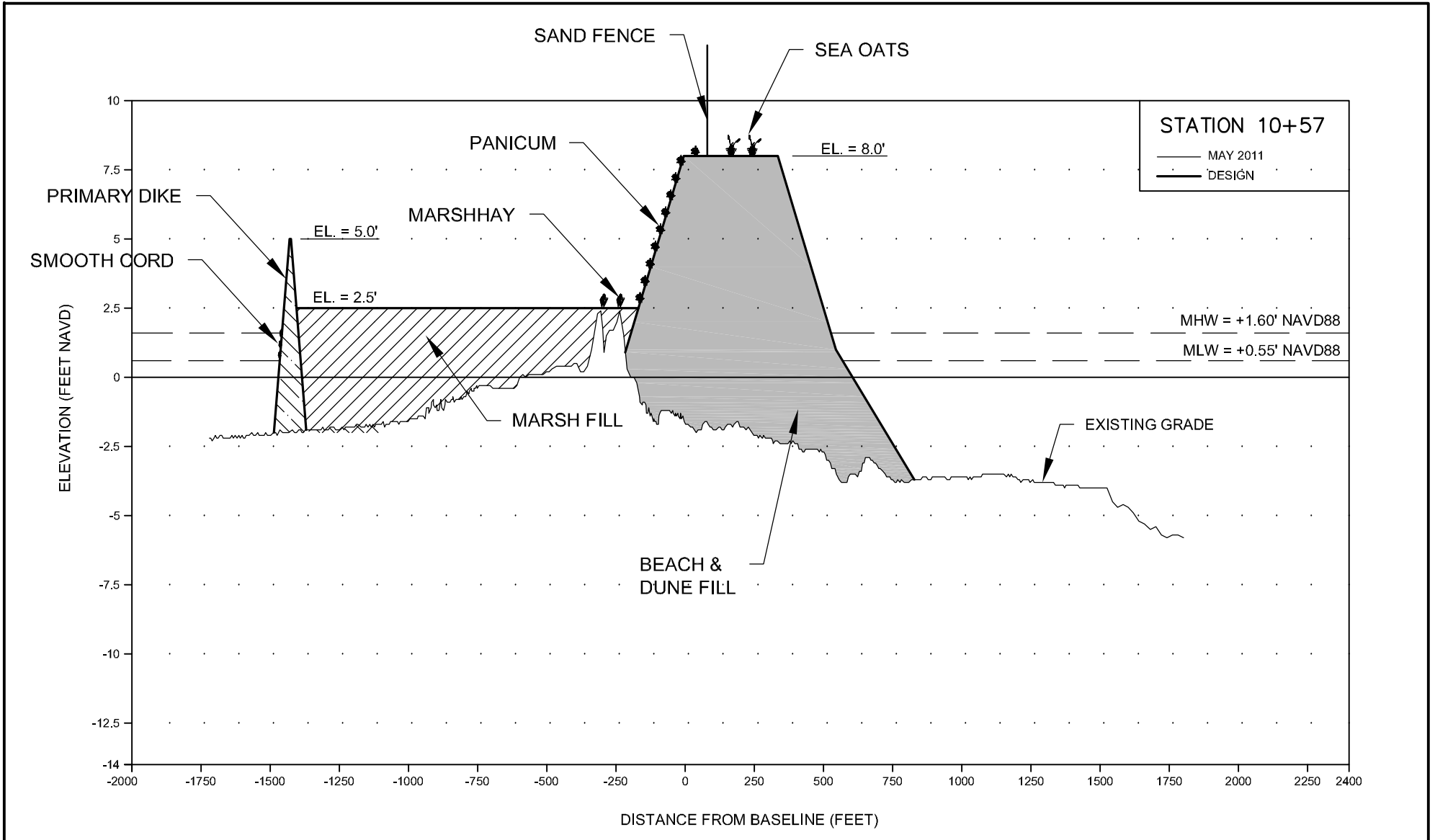
**NOTES:**

1. SETTLEMENT PLATES SHALL BE BUILT USING ASTM A36 STEEL AND HOT-DIPPED GALVANIZED AFTER FABRICATION.
2. A 6" LONG HHMB HOT-DIPPED GALVANIZED BOLT & WASHER SHALL BE INSTALLED 3' ABOVE PROPOSED GRADE.



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APPLICATION BY: COASTAL PROTECTION AND RESTORATION AUTHORITY 450 LAUREL ST., SUITE 1200 BATON ROUGE, LOUISIANA 70801 PH: (225) 342-1477 FAX: (225) 342-6801	<b>COASTAL PROTECTION &amp; RESTORATION AUTHORITY</b> 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801		SHELL ISLAND BARRIER ISLAND RESTORATION PROJECT	<b>SETTLEMENT PLATE DETAIL</b>
	DESIGNED BY: D SWIGLER		STATE PROJECT NUMBER: BA-110/111	
DRAWN BY: G KRYSZTYNAK	APPROVED BY: G THOMSON		DATE: 2/1/12	
			SHEET 35 OF 61	



1. ELEVATIONS SHOWN HEREON ARE IN FEET BASED ON NAVD88. GEOID 2009.
2. LAYOUT ALL FILL AREAS BY CROSS-SECTION ELEVATIONS AND RANGES.
3. POSITIVE RANGES ARE SOUTH OF BASELINE. NEGATIVE RANGES ARE NORTH OF BASELINE.



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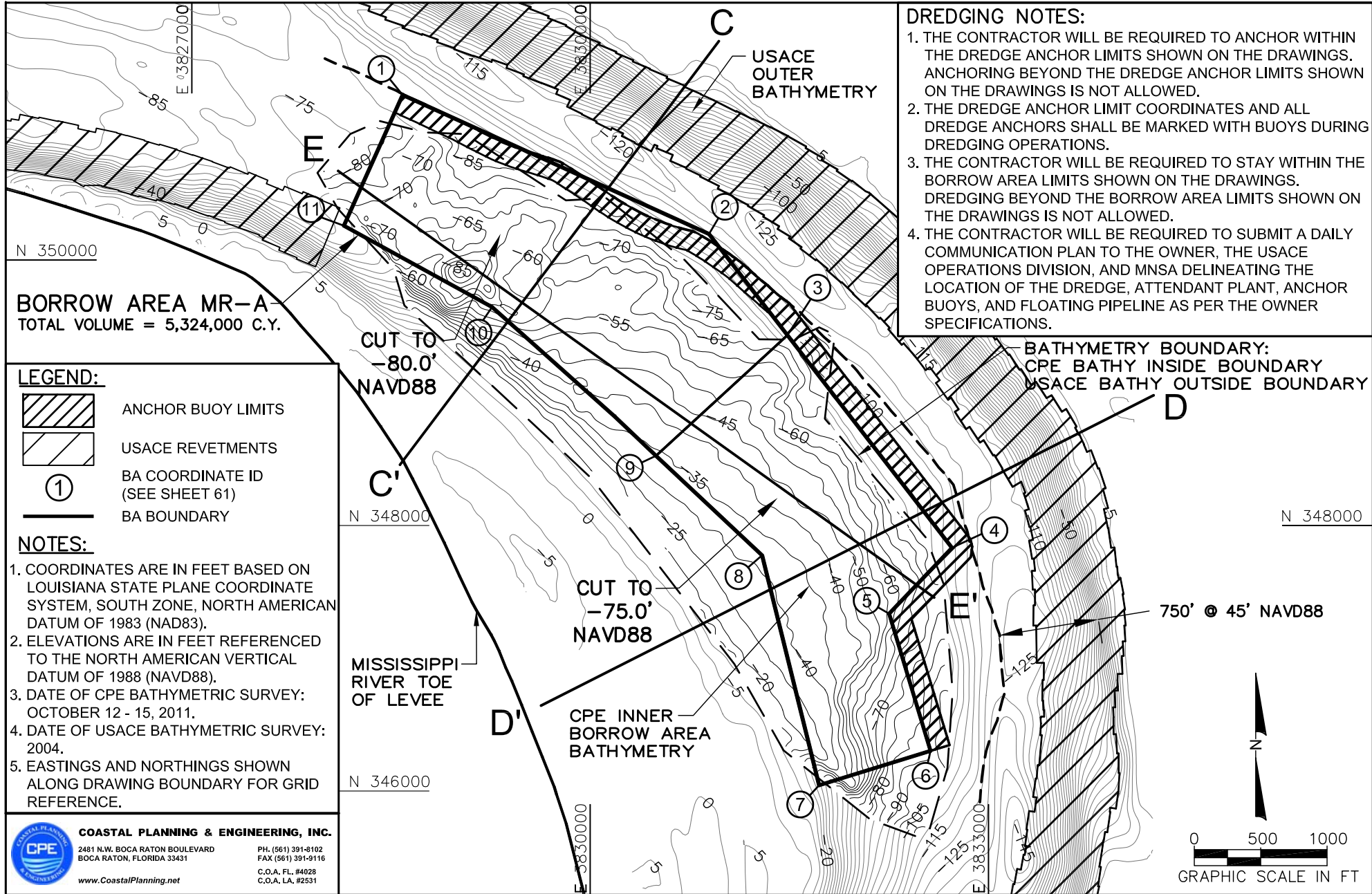
DESIGNED BY: D SWIGLER  
 APPROVED BY: G THOMSON

SHELL ISLAND  
 BARRIER ISLAND RESTORATION PROJECT

STATE PROJECT NUMBER: BA-110/111

VEGETATIVE PLANTINGS  
 DETAIL

DATE: 2/1/12  
 SHEET 36 OF 61


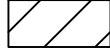

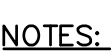


**DREDGING NOTES:**

1. THE CONTRACTOR WILL BE REQUIRED TO ANCHOR WITHIN THE DREDGE ANCHOR LIMITS SHOWN ON THE DRAWINGS. ANCHORING BEYOND THE DREDGE ANCHOR LIMITS SHOWN ON THE DRAWINGS IS NOT ALLOWED.
2. THE DREDGE ANCHOR LIMIT COORDINATES AND ALL DREDGE ANCHORS SHALL BE MARKED WITH BUOYS DURING DREDGING OPERATIONS.
3. THE CONTRACTOR WILL BE REQUIRED TO STAY WITHIN THE BORROW AREA LIMITS SHOWN ON THE DRAWINGS. DREDGING BEYOND THE BORROW AREA LIMITS SHOWN ON THE DRAWINGS IS NOT ALLOWED.
4. THE CONTRACTOR WILL BE REQUIRED TO SUBMIT A DAILY COMMUNICATION PLAN TO THE OWNER, THE USACE OPERATIONS DIVISION, AND MNSA DELINEATING THE LOCATION OF THE DREDGE, ATTENDANT PLANT, ANCHOR BUOYS, AND FLOATING PIPELINE AS PER THE OWNER SPECIFICATIONS.

**BORROW AREA MR-A**  
TOTAL VOLUME = 5,324,000 C.Y.

**LEGEND:**

-  ANCHOR BUOY LIMITS
-  USACE REVETMENTS
-  BA COORDINATE ID (SEE SHEET 61)
-  BA BOUNDARY

**NOTES:**

1. COORDINATES ARE IN FEET BASED ON LOUISIANA STATE PLANE COORDINATE SYSTEM, SOUTH ZONE, NORTH AMERICAN DATUM OF 1983 (NAD83).
2. ELEVATIONS ARE IN FEET REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
3. DATE OF CPE BATHYMETRIC SURVEY: OCTOBER 12 - 15, 2011.
4. DATE OF USACE BATHYMETRIC SURVEY: 2004.
5. EASTINGS AND NORTHINGS SHOWN ALONG DRAWING BOUNDARY FOR GRID REFERENCE.

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SHELL ISLAND BARRIER ISLAND RESTORATION PROJECT  
 STATE PROJECT NUMBER: BA-110/111

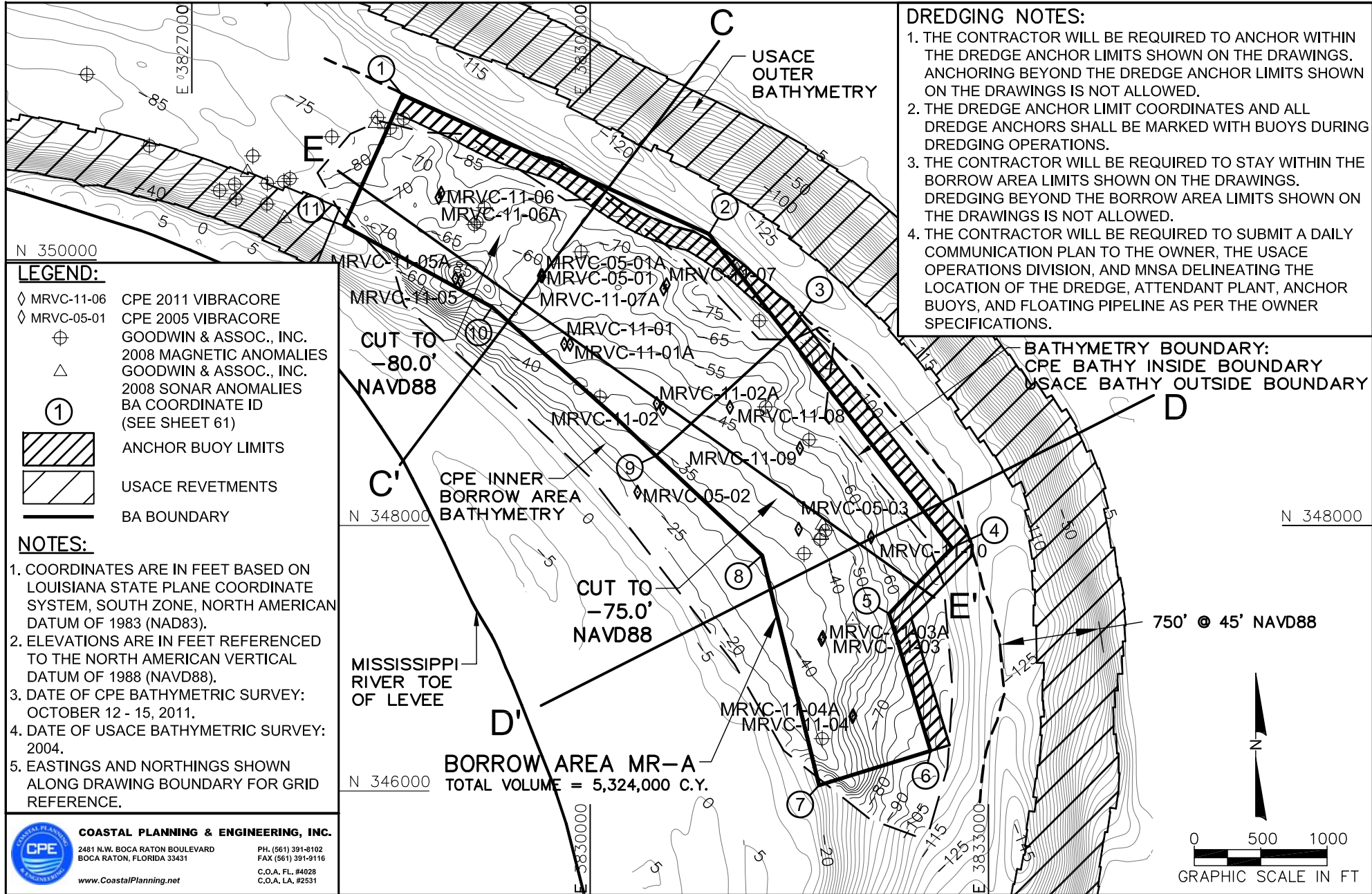
BORROW AREA MR-A BATHYMETRY CONTOURS  
 DATE: 02/01/12

DRAWN BY: KD

DESIGNED BY: ML

APPROVED BY: G. THOMSON

SHEET 37 OF 61



**DREDGING NOTES:**

1. THE CONTRACTOR WILL BE REQUIRED TO ANCHOR WITHIN THE DREDGE ANCHOR LIMITS SHOWN ON THE DRAWINGS. ANCHORING BEYOND THE DREDGE ANCHOR LIMITS SHOWN ON THE DRAWINGS IS NOT ALLOWED.
2. THE DREDGE ANCHOR LIMIT COORDINATES AND ALL DREDGE ANCHORS SHALL BE MARKED WITH BUOYS DURING DREDGING OPERATIONS.
3. THE CONTRACTOR WILL BE REQUIRED TO STAY WITHIN THE BORROW AREA LIMITS SHOWN ON THE DRAWINGS. DREDGING BEYOND THE BORROW AREA LIMITS SHOWN ON THE DRAWINGS IS NOT ALLOWED.
4. THE CONTRACTOR WILL BE REQUIRED TO SUBMIT A DAILY COMMUNICATION PLAN TO THE OWNER, THE USACE OPERATIONS DIVISION, AND MNSA DELINEATING THE LOCATION OF THE DREDGE, ATTENDANT PLANT, ANCHOR BUOYS, AND FLOATING PIPELINE AS PER THE OWNER SPECIFICATIONS.

**LEGEND:**

- ◇ MRVC-11-06 CPE 2011 VIBRACORE
- ◇ MRVC-05-01 CPE 2005 VIBRACORE
- ⊕ GOODWIN & ASSOC., INC. 2008 MAGNETIC ANOMALIES
- △ GOODWIN & ASSOC., INC. 2008 SONAR ANOMALIES
- ① BA COORDINATE ID (SEE SHEET 61)
- ANCHOR BUOY LIMITS
- USACE REVETMENTS
- BA BOUNDARY

**NOTES:**

1. COORDINATES ARE IN FEET BASED ON LOUISIANA STATE PLANE COORDINATE SYSTEM, SOUTH ZONE, NORTH AMERICAN DATUM OF 1983 (NAD83).
2. ELEVATIONS ARE IN FEET REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
3. DATE OF CPE BATHYMETRIC SURVEY: OCTOBER 12 - 15, 2011.
4. DATE OF USACE BATHYMETRIC SURVEY: 2004.
5. EASTINGS AND NORTHINGS SHOWN ALONG DRAWING BOUNDARY FOR GRID REFERENCE.

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SHELL ISLAND BARRIER ISLAND RESTORATION PROJECT  
 STATE PROJECT NUMBER: BA-110/111

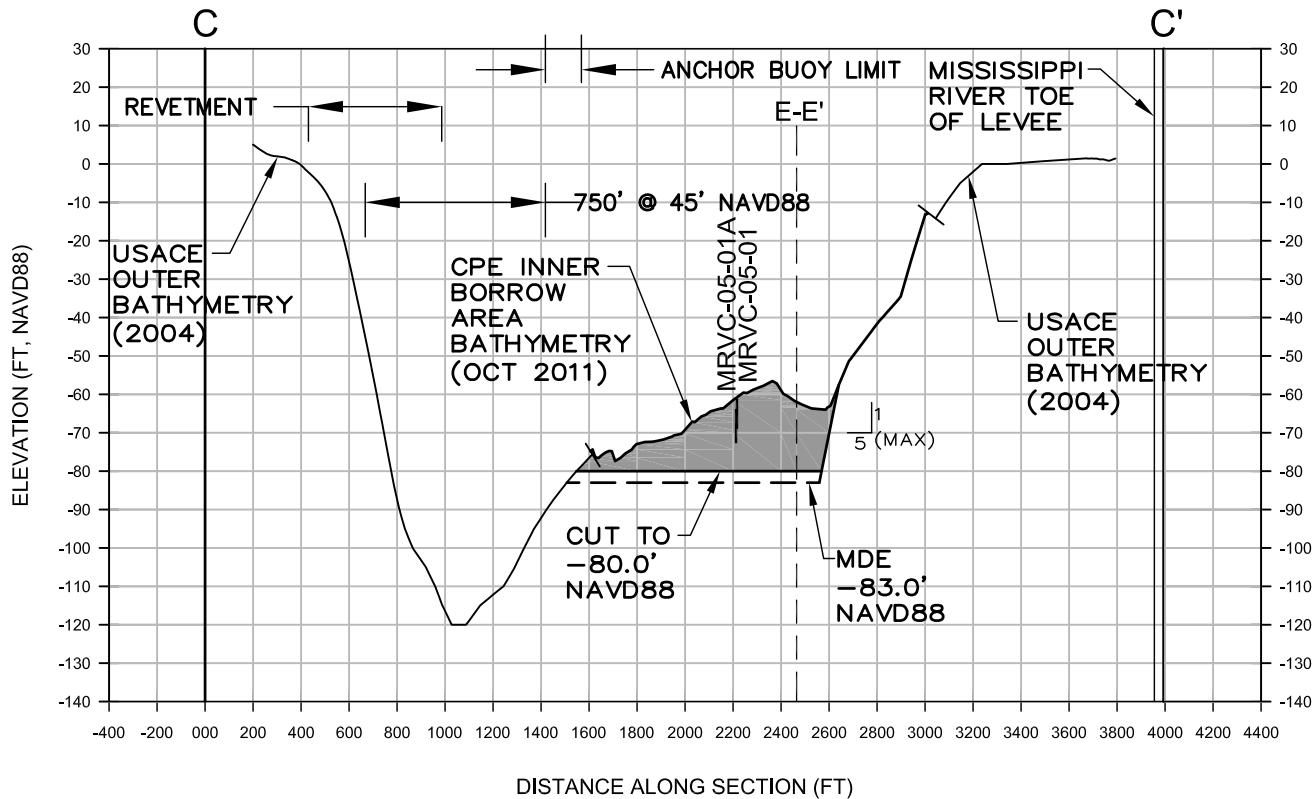
BORROW AREA MR-A VIBRACORES AND ANOMALIES  
 DATE: 02/01/12

DRAWN BY: KD

DESIGNED BY: ML

APPROVED BY: G. THOMSON

SHEET 38 OF 61

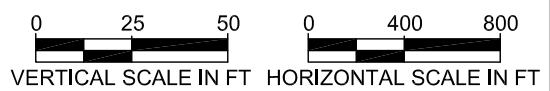


### BORROW AREA MR-A CROSS SECTION C-C'

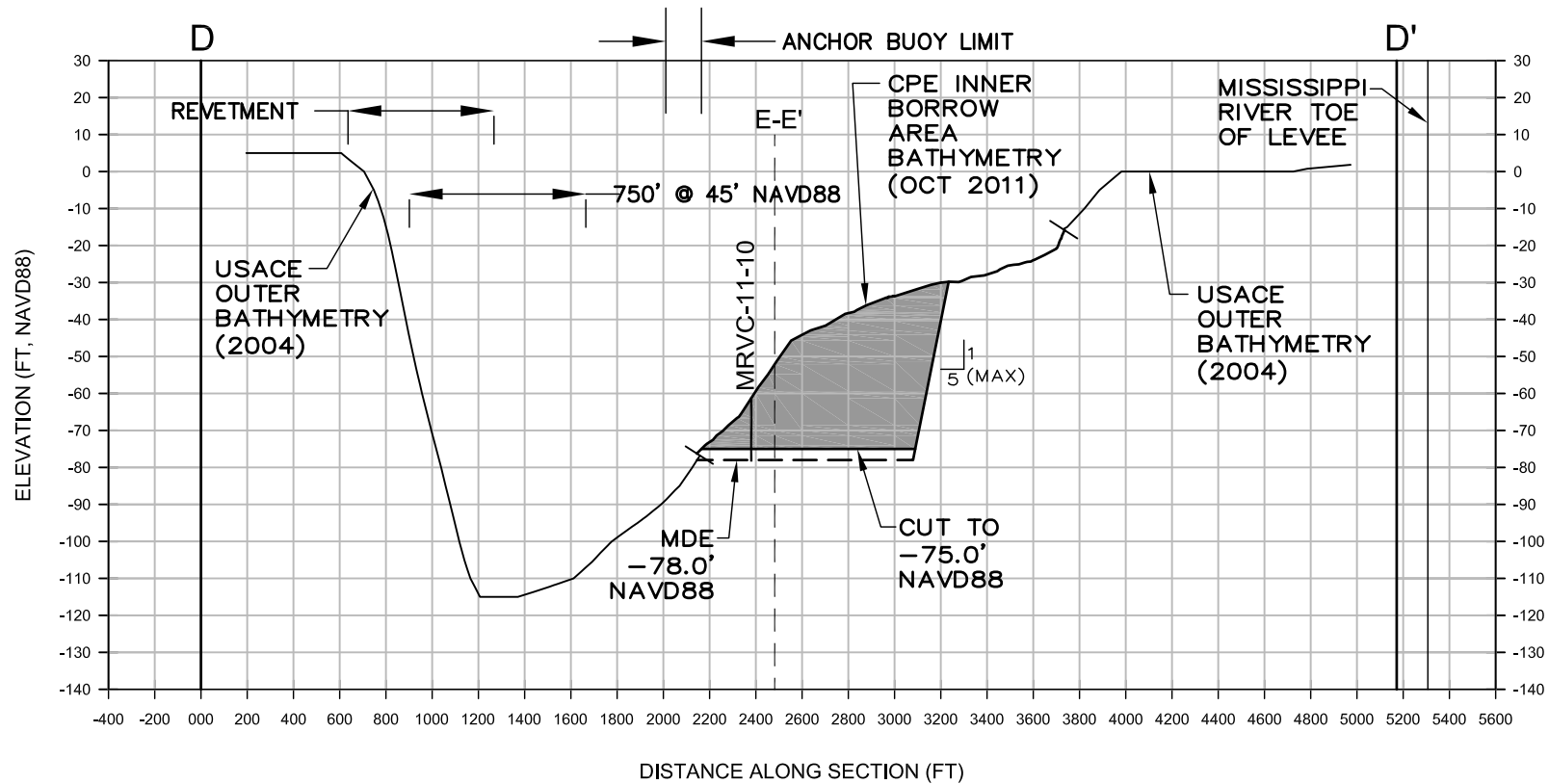
**NOTES:**

1. SEE SHEETS 37-38 FOR LOCATION OF CROSS SECTION LINE.
2. ELEVATIONS ARE IN FEET REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
3. CORES MAY NOT FALL DIRECTLY ON CROSS SECTION LINE, BUT ARE LOCATED SUFFICIENTLY CLOSE TO CONTAIN SIMILAR MATERIAL.
4. WIDTH OF LAYERS IS REPRESENTATIVE ONLY. ACTUAL MATERIAL MAY VARY.
5. MAXIMUM DEPTH OF EQUIPMENT (MDE) IS THREE FEET BELOW PERMITTED DEPTH.

**COASTAL PLANNING & ENGINEERING, INC.**  
 2481 N.W. BOCA RATON BOULEVARD  
 BOCA RATON, FLORIDA 33431  
 PH. (561) 391-8102  
 FAX (561) 391-9116  
 C.O.A. FL. #4028  
 C.O.A. LA. #2531  
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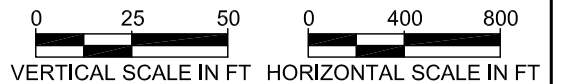
APPLICATION BY: COASTAL PROTECTION AND RESTORATION AUTHORITY 450 LAUREL STREET, SUITE 1200 BATON ROUGE, LOUISIANA 70801 PH. (225) 342-1477 FAX. (225) 342-6801	<b>COASTAL PROTECTION &amp; RESTORATION AUTHORITY</b> 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801	SHELL ISLAND BARRIER ISLAND RESTORATION PROJECT STATE PROJECT NUMBER: BA-110/111	BORROW AREA MR-A CROSS SECTION C-C' DATE: 02/01/12
DRAWN BY: KD	DESIGNED BY: ML	APPROVED BY: G. THOMSON	SHEET 39 OF 61



### BORROW AREA MR-A CROSS SECTION D-D'

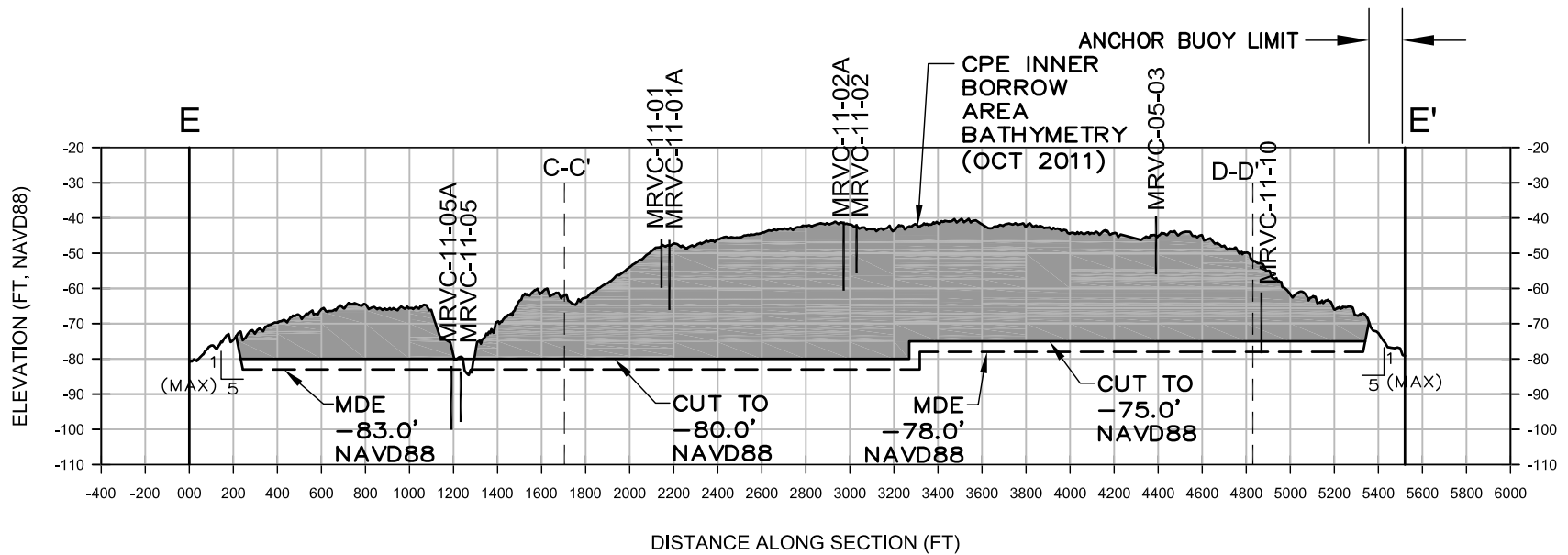
**NOTES:**

1. SEE SHEETS 37-38 FOR LOCATION OF CROSS SECTION LINE.
2. ELEVATIONS ARE IN FEET REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
3. CORES MAY NOT FALL DIRECTLY ON CROSS SECTION LINE, BUT ARE LOCATED SUFFICIENTLY CLOSE TO CONTAIN SIMILAR MATERIAL.
4. WIDTH OF LAYERS IS REPRESENTATIVE ONLY, ACTUAL MATERIAL MAY VARY.
5. MAXIMUM DEPTH OF EQUIPMENT (MDE) IS THREE FEET BELOW PERMITTED DEPTH.



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 2481 N.W. BOCA RATON BOULEVARD  
 BOCA RATON, FLORIDA 33431  
 PH. (561) 391-8102  
 FAX (561) 391-9116  
 C.O.A. FL. #4028  
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APPLICATION BY: COASTAL PROTECTION AND RESTORATION AUTHORITY 450 LAUREL STREET, SUITE 1200 BATON ROUGE, LOUISIANA 70801 PH. (225) 342-1477 FAX. (225) 342-6801	<b>COASTAL PROTECTION &amp; RESTORATION AUTHORITY</b> 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801		SHELL ISLAND BARRIER ISLAND RESTORATION PROJECT	BORROW AREA MR-A CROSS SECTION D-D'
	DESIGNED BY: ML		STATE PROJECT NUMBER: BA-110/111	DATE: 02/01/12
DRAWN BY: KD	APPROVED BY: G. THOMSON	SHEET 40 OF 61		

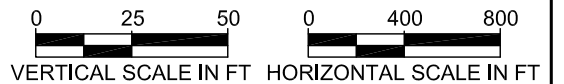


### BORROW AREA MR-A CROSS SECTION E-E'

**NOTES:**

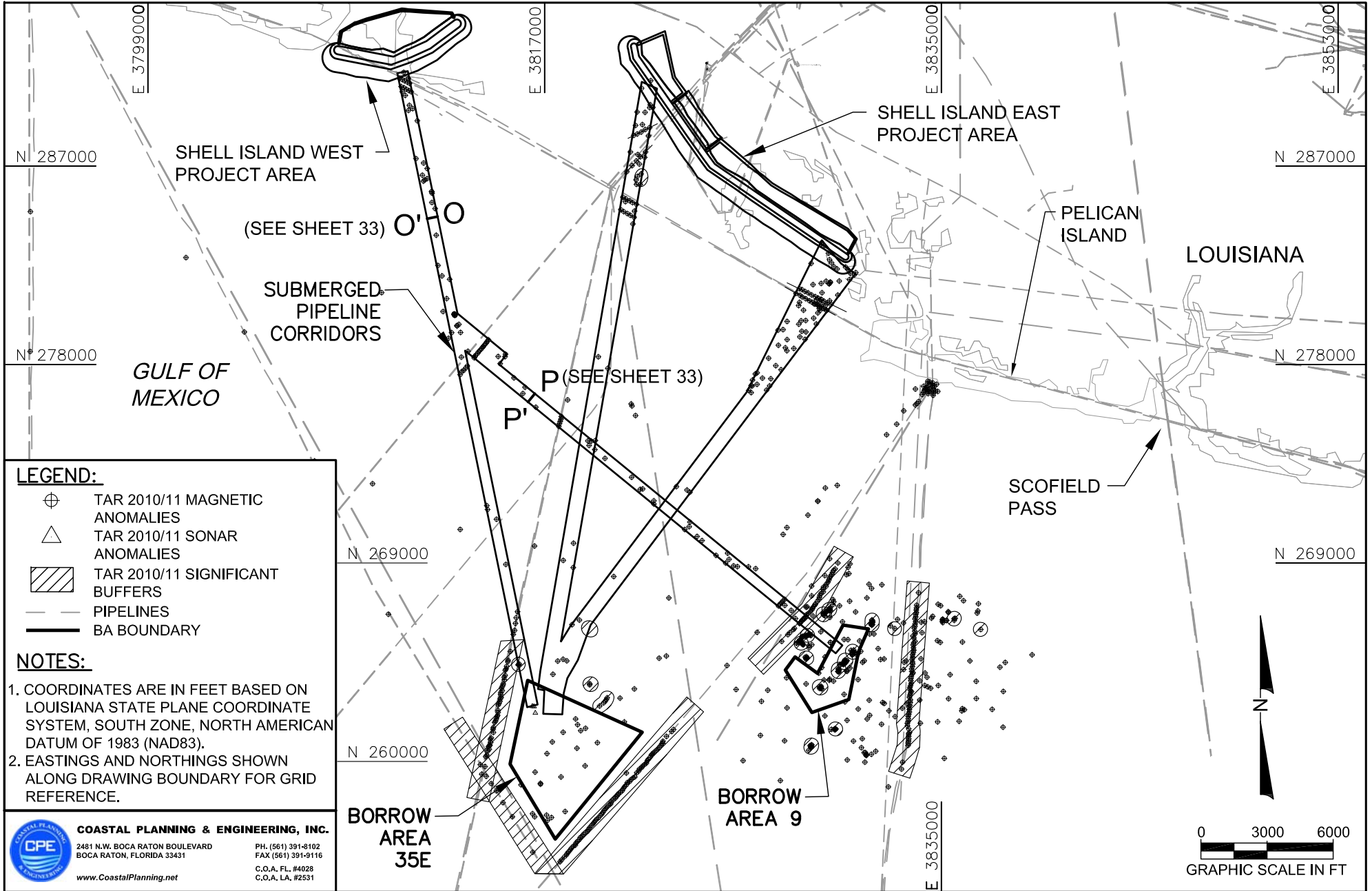
1. SEE SHEETS 37-38 FOR LOCATION OF CROSS SECTION LINE.
2. ELEVATIONS ARE IN FEET REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
3. CORES MAY NOT FALL DIRECTLY ON CROSS SECTION LINE, BUT ARE LOCATED SUFFICIENTLY CLOSE TO CONTAIN SIMILAR MATERIAL.
4. WIDTH OF LAYERS IS REPRESENTATIVE ONLY, ACTUAL MATERIAL MAY VARY.
5. MAXIMUM DEPTH OF EQUIPMENT (MDE) IS THREE FEET BELOW PERMITTED DEPTH.

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 2481 N.W. BOCA RATON BOULEVARD  
 BOCA RATON, FLORIDA 33431  
 PH. (561) 391-8102  
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 C.O.A. FL. #4028  
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APPLICATION BY: COASTAL PROTECTION AND RESTORATION AUTHORITY 450 LAUREL STREET, SUITE 1200 BATON ROUGE, LOUISIANA 70801 PH. (225) 342-1477 FAX. (225) 342-6801	<b>COASTAL PROTECTION &amp; RESTORATION AUTHORITY</b> 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801	SHELL ISLAND BARRIER ISLAND RESTORATION PROJECT STATE PROJECT NUMBER: BA-110/111	BORROW AREA MR-A CROSS SECTION E-E' DATE: 02/01/12
DRAWN BY: KD	DESIGNED BY: ML	APPROVED BY: G. THOMSON	SHEET 41 OF 61





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 2481 N.W. BOCA RATON BOULEVARD  
 BOCA RATON, FLORIDA 33431  
 PH. (561) 391-8102  
 FAX (561) 391-9116  
 C.O.A. FL. #4028  
 C.O.A. LA. #2531  
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APPLICATION BY:  
 COASTAL PROTECTION AND RESTORATION AUTHORITY  
 450 LAUREL STREET, SUITE 1200  
 BATON ROUGE, LOUISIANA 70801  
 PH. (225) 342-1477  
 FAX. (225) 342-6801

**COASTAL PROTECTION & RESTORATION AUTHORITY**  
 450 LAUREL STREET  
 BATON ROUGE, LOUISIANA 70801

SHELL ISLAND BARRIER ISLAND RESTORATION PROJECT  
 STATE PROJECT NUMBER: BA-110/111

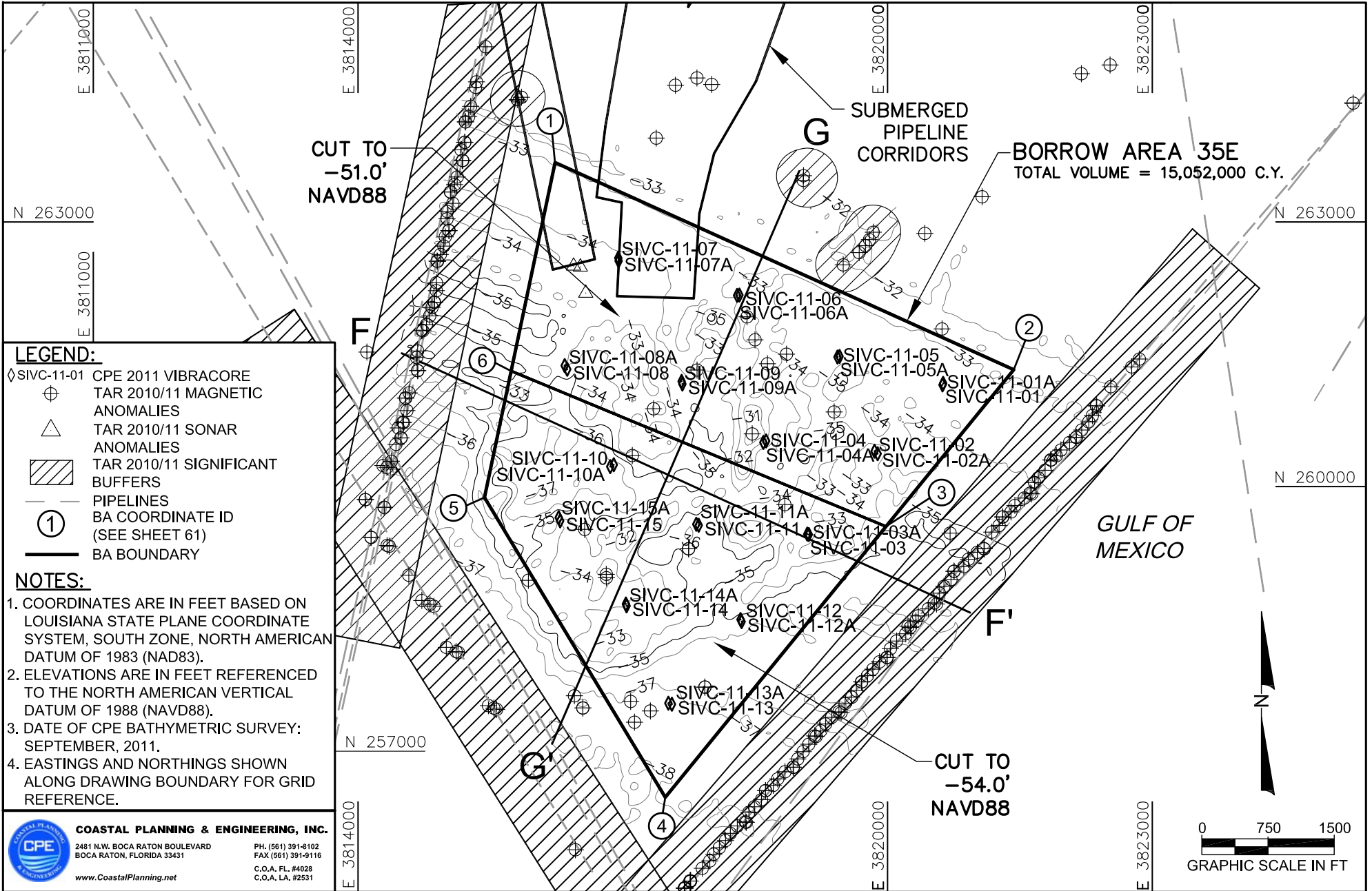
BORROW AREA 35E AND BORROW AREA 9 OVERVIEW  
 DATE: 02/01/12

DRAWN BY: KD

DESIGNED BY: ML

APPROVED BY: G. THOMSON

SHEET 42 OF 61



**LEGEND:**

- ◇ SIVC-11-01 CPE 2011 VIBRACORE
- ⊕ TAR 2010/11 MAGNETIC ANOMALIES
- △ TAR 2010/11 SONAR ANOMALIES
- ▨ TAR 2010/11 SIGNIFICANT BUFFERS
- PIPELINES
- ① BA COORDINATE ID (SEE SHEET 61)
- BA BOUNDARY

**NOTES:**

1. COORDINATES ARE IN FEET BASED ON LOUISIANA STATE PLANE COORDINATE SYSTEM, SOUTH ZONE, NORTH AMERICAN DATUM OF 1983 (NAD83).
2. ELEVATIONS ARE IN FEET REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
3. DATE OF CPE BATHYMETRIC SURVEY: SEPTEMBER, 2011.
4. EASTINGS AND NORTHINGS SHOWN ALONG DRAWING BOUNDARY FOR GRID REFERENCE.

**COASTAL PLANNING & ENGINEERING, INC.**  
 2481 N.W. BOCA RATON BOULEVARD  
 BOCA RATON, FLORIDA 33431  
 PH. (561) 391-8102  
 FAX (561) 391-9116  
 C.O.A. FL. #4028  
 C.O.A. LA. #2531  
 www.CoastalPlanning.net

APPLICATION BY:  
 COASTAL PROTECTION AND RESTORATION AUTHORITY  
 450 LAUREL STREET, SUITE 1200  
 BATON ROUGE, LOUISIANA 70801  
 PH. (225) 342-1477  
 FAX. (225) 342-6801

**COASTAL PROTECTION & RESTORATION AUTHORITY**  
 450 LAUREL STREET  
 BATON ROUGE, LOUISIANA 70801

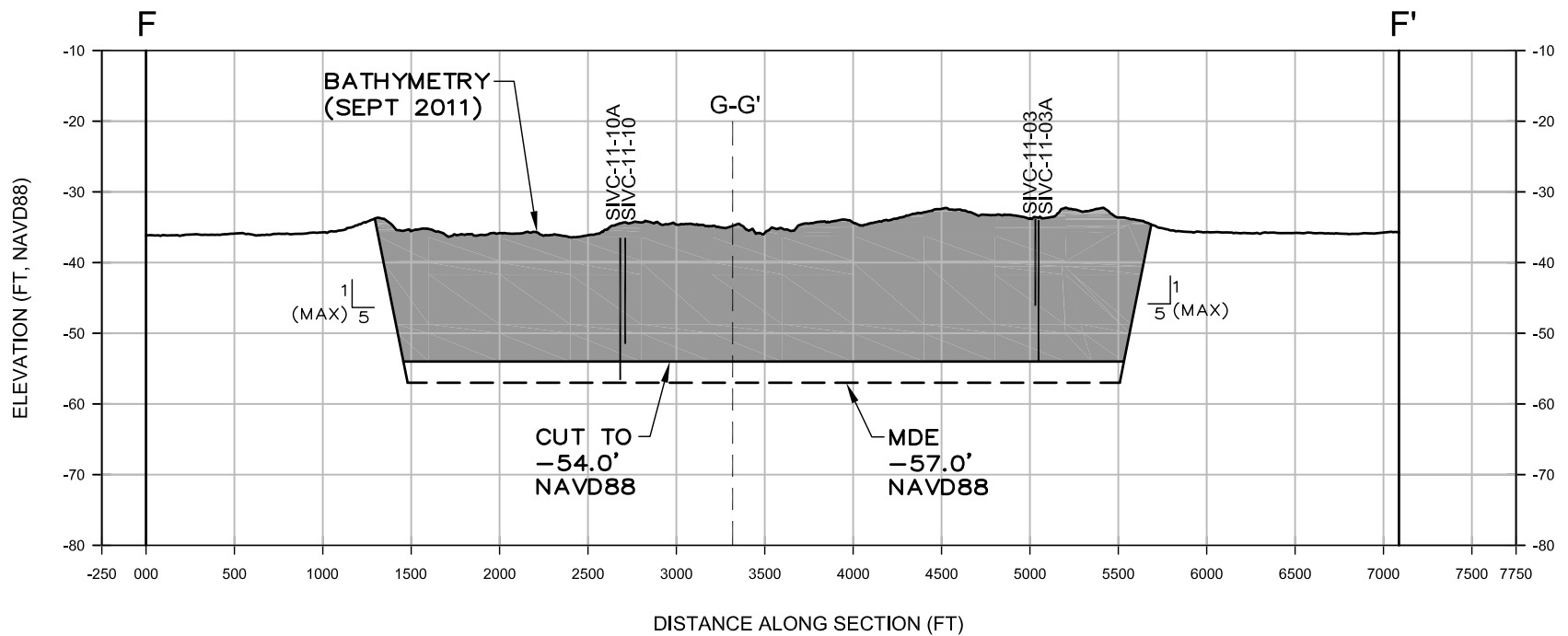
SHELL ISLAND BARRIER ISLAND RESTORATION PROJECT  
 STATE PROJECT NUMBER: BA-110/111

BORROW AREA 35E BATHYMETRY CONTOURS  
 DATE: 02/01/12  
 SHEET 43 OF 61

DRAWN BY: KD

DESIGNED BY: ML

APPROVED BY: G. THOMSON

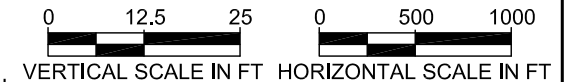


### BORROW AREA 35E CROSS SECTION F-F'

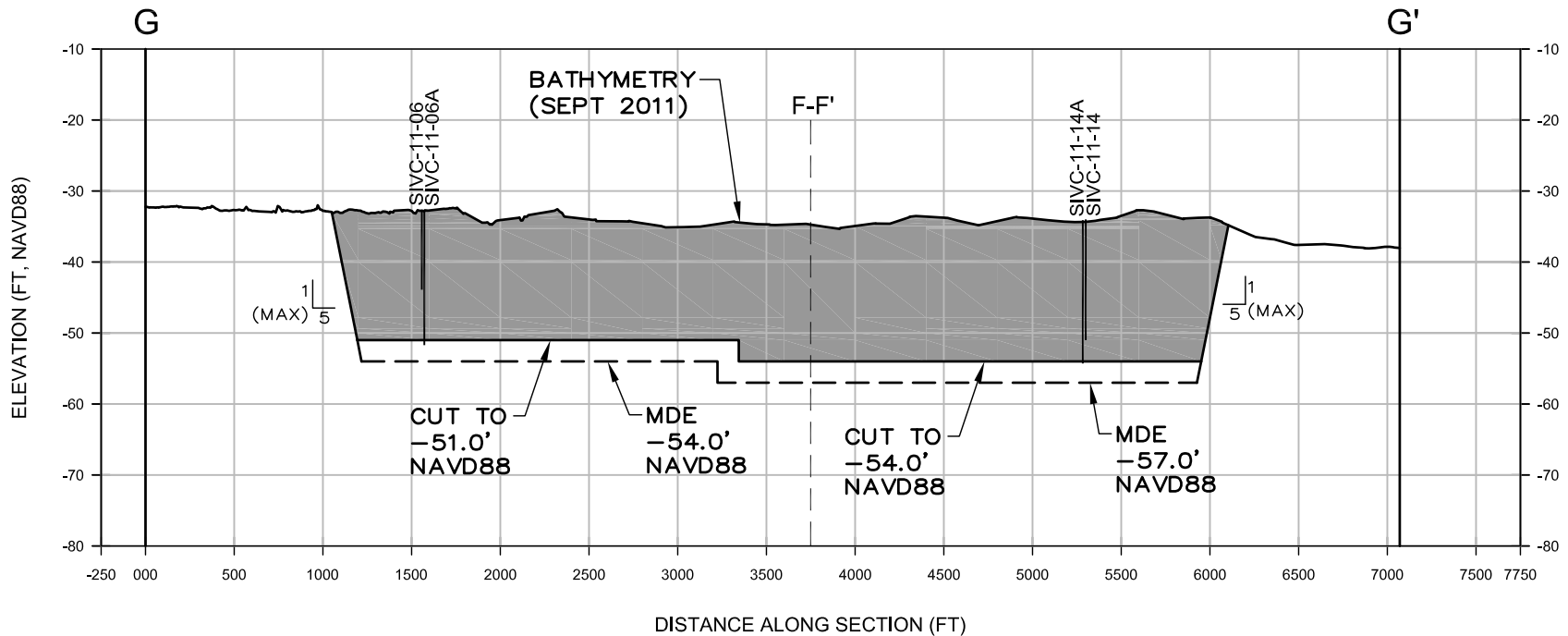
**NOTES:**

1. SEE SHEET 43 FOR LOCATION OF CROSS SECTION LINE.
2. ELEVATIONS ARE IN FEET REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
3. CORES MAY NOT FALL DIRECTLY ON CROSS SECTION LINE, BUT ARE LOCATED SUFFICIENTLY CLOSE TO CONTAIN SIMILAR MATERIAL.
4. WIDTH OF LAYERS IS REPRESENTATIVE ONLY. ACTUAL MATERIAL MAY VARY.
5. MAXIMUM DEPTH OF EQUIPMENT (MDE) IS THREE FEET BELOW PERMITTED DEPTH.

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 2481 N.W. BOCA RATON BOULEVARD  
 BOCA RATON, FLORIDA 33431  
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APPLICATION BY: COASTAL PROTECTION AND RESTORATION AUTHORITY 450 LAUREL STREET, SUITE 1200 BATON ROUGE, LOUISIANA 70801 PH. (225) 342-1477 FAX. (225) 342-6801	<b>COASTAL PROTECTION &amp; RESTORATION AUTHORITY</b> 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801	SHELL ISLAND BARRIER ISLAND RESTORATION PROJECT STATE PROJECT NUMBER: BA-110/111	BORROW AREA 35E CROSS SECTION F-F' DATE: 02/01/12
DRAWN BY: KD	DESIGNED BY: ML	APPROVED BY: G. THOMSON	SHEET 44 OF 61

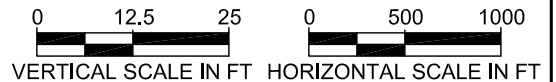


## BORROW AREA 35E CROSS SECTION G-G'

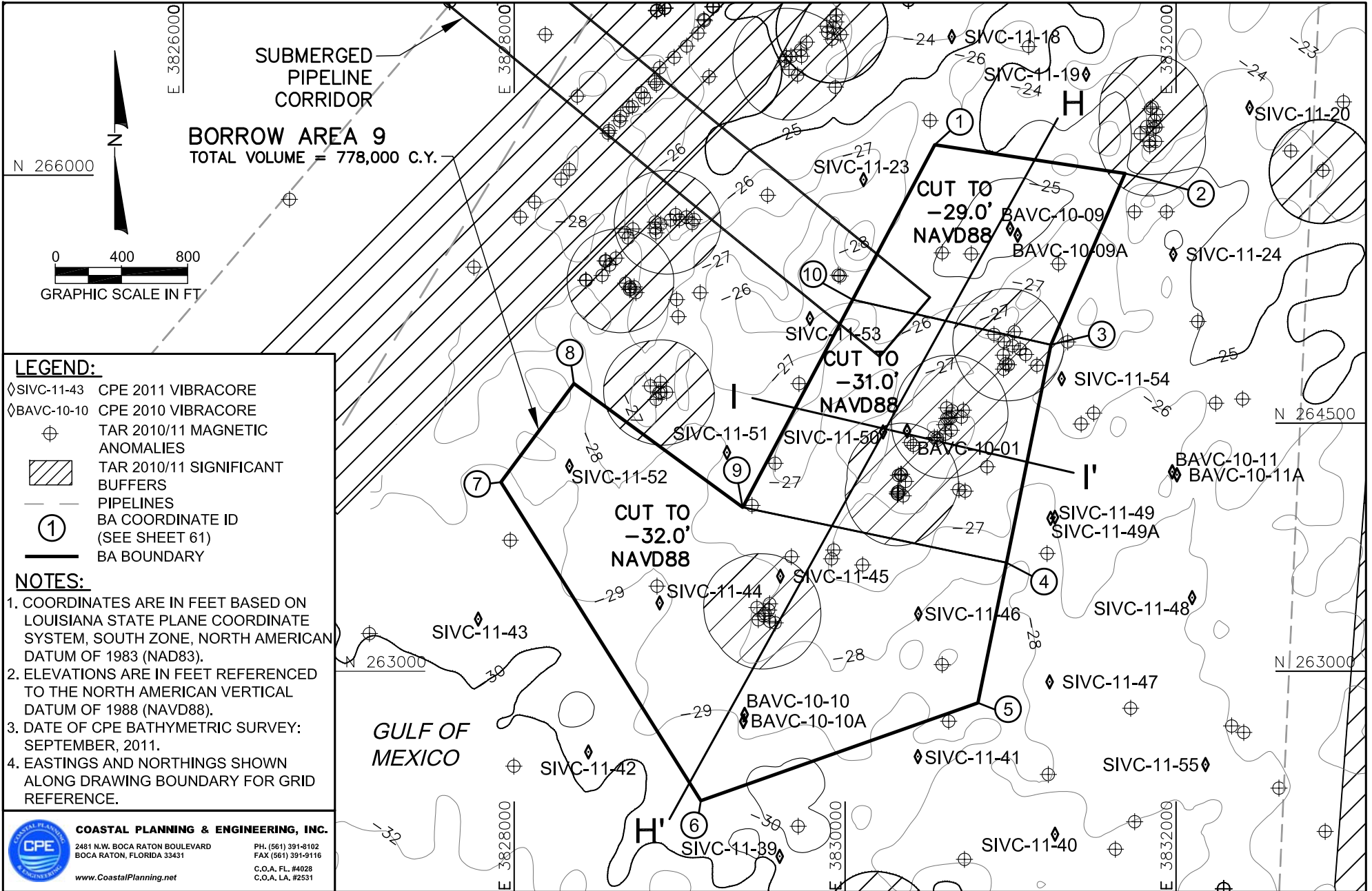
### NOTES:

1. SEE SHEET 43 FOR LOCATION OF CROSS SECTION LINE.
2. ELEVATIONS ARE IN FEET REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
3. CORES MAY NOT FALL DIRECTLY ON CROSS SECTION LINE, BUT ARE LOCATED SUFFICIENTLY CLOSE TO CONTAIN SIMILAR MATERIAL.
4. WIDTH OF LAYERS IS REPRESENTATIVE ONLY. ACTUAL MATERIAL MAY VARY.
5. MAXIMUM DEPTH OF EQUIPMENT (MDE) IS THREE FEET BELOW PERMITTED DEPTH.

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 2481 N.W. BOCA RATON BOULEVARD  
 BOCA RATON, FLORIDA 33431  
 PH. (561) 391-8102  
 FAX (561) 391-9116  
 C.O.A. FL. #4028  
 C.O.A. LA. #2531  
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APPLICATION BY: COASTAL PROTECTION AND RESTORATION AUTHORITY 450 LAUREL STREET, SUITE 1200 BATON ROUGE, LOUISIANA 70801 PH. (225) 342-1477 FAX. (225) 342-6801	<b>COASTAL PROTECTION &amp; RESTORATION AUTHORITY</b> 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801	SHELL ISLAND BARRIER ISLAND RESTORATION PROJECT STATE PROJECT NUMBER: BA-110/111	BORROW AREA 35E CROSS SECTION G-G' DATE: 02/01/12
DRAWN BY: KD	DESIGNED BY: ML	APPROVED BY: G. THOMSON	SHEET 45 OF 61



- LEGEND:**
- ◇ SIVC-11-43 CPE 2011 VIBRACORE
  - ◇ BAVC-10-10 CPE 2010 VIBRACORE
  - ⊕ TAR 2010/11 MAGNETIC ANOMALIES
  - ▨ TAR 2010/11 SIGNIFICANT BUFFERS
  - PIPELINES
  - ① BA COORDINATE ID (SEE SHEET 61)
  - BA BOUNDARY

- NOTES:**
1. COORDINATES ARE IN FEET BASED ON LOUISIANA STATE PLANE COORDINATE SYSTEM, SOUTH ZONE, NORTH AMERICAN DATUM OF 1983 (NAD83).
  2. ELEVATIONS ARE IN FEET REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
  3. DATE OF CPE BATHYMETRIC SURVEY: SEPTEMBER, 2011.
  4. EASTINGS AND NORTHINGS SHOWN ALONG DRAWING BOUNDARY FOR GRID REFERENCE.

**COASTAL PLANNING & ENGINEERING, INC.**  
 2481 N.W. BOCA RATON BOULEVARD  
 BOCA RATON, FLORIDA 33431  
 PH. (561) 391-8102  
 FAX (561) 391-9116  
 C.O.A. FL. #4029  
 C.O.A. LA. #2531  
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APPLICATION BY:  
 COASTAL PROTECTION AND RESTORATION AUTHORITY  
 450 LAUREL STREET, SUITE 1200  
 BATON ROUGE, LOUISIANA 70801  
 PH. (225) 342-1477  
 FAX. (225) 342-6801

**COASTAL PROTECTION & RESTORATION AUTHORITY**  
 450 LAUREL STREET  
 BATON ROUGE, LOUISIANA 70801

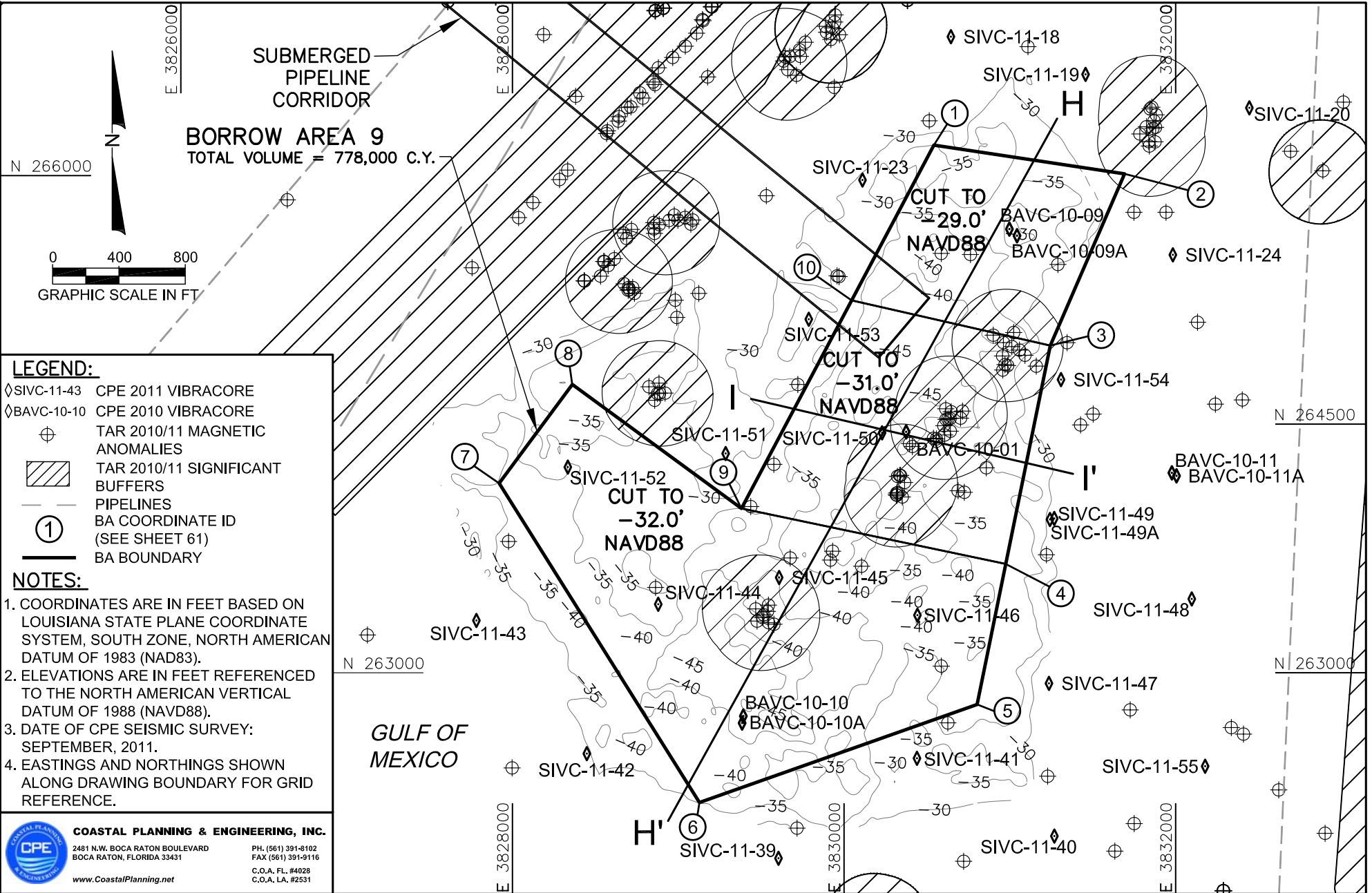
SHELL ISLAND BARRIER ISLAND RESTORATION PROJECT  
 STATE PROJECT NUMBER: BA-110/111

BORROW AREA 9 BATHYMETRY CONTOURS  
 DATE: 02/01/12  
 SHEET 46 OF 61

DRAWN BY: KD

DESIGNED BY: ML

APPROVED BY: G. THOMSON



- LEGEND:**
- ◇ SIVC-11-43 CPE 2011 VIBRACORE
  - ◇ BAVC-10-10 CPE 2010 VIBRACORE
  - ⊕ TAR 2010/11 MAGNETIC ANOMALIES
  - ▨ TAR 2010/11 SIGNIFICANT BUFFERS
  - PIPELINES
  - ① BA COORDINATE ID (SEE SHEET 61)
  - BA BOUNDARY

- NOTES:**
1. COORDINATES ARE IN FEET BASED ON LOUISIANA STATE PLANE COORDINATE SYSTEM, SOUTH ZONE, NORTH AMERICAN DATUM OF 1983 (NAD83).
  2. ELEVATIONS ARE IN FEET REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
  3. DATE OF CPE SEISMIC SURVEY: SEPTEMBER, 2011.
  4. EASTINGS AND NORTHINGS SHOWN ALONG DRAWING BOUNDARY FOR GRID REFERENCE.

**COASTAL PLANNING & ENGINEERING, INC.**  
 2481 N.W. BOCA RATON BOULEVARD  
 BOCA RATON, FLORIDA 33431  
 PH. (561) 391-8102  
 FAX (561) 391-9116  
 C.O.A. FL. #4028  
 C.O.A. LA. #2531  
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APPLICATION BY:  
 COASTAL PROTECTION AND RESTORATION AUTHORITY  
 450 LAUREL STREET, SUITE 1200  
 BATON ROUGE, LOUISIANA 70801  
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 FAX. (225) 342-6801

**COASTAL PROTECTION & RESTORATION AUTHORITY**  
 450 LAUREL STREET  
 BATON ROUGE, LOUISIANA 70801

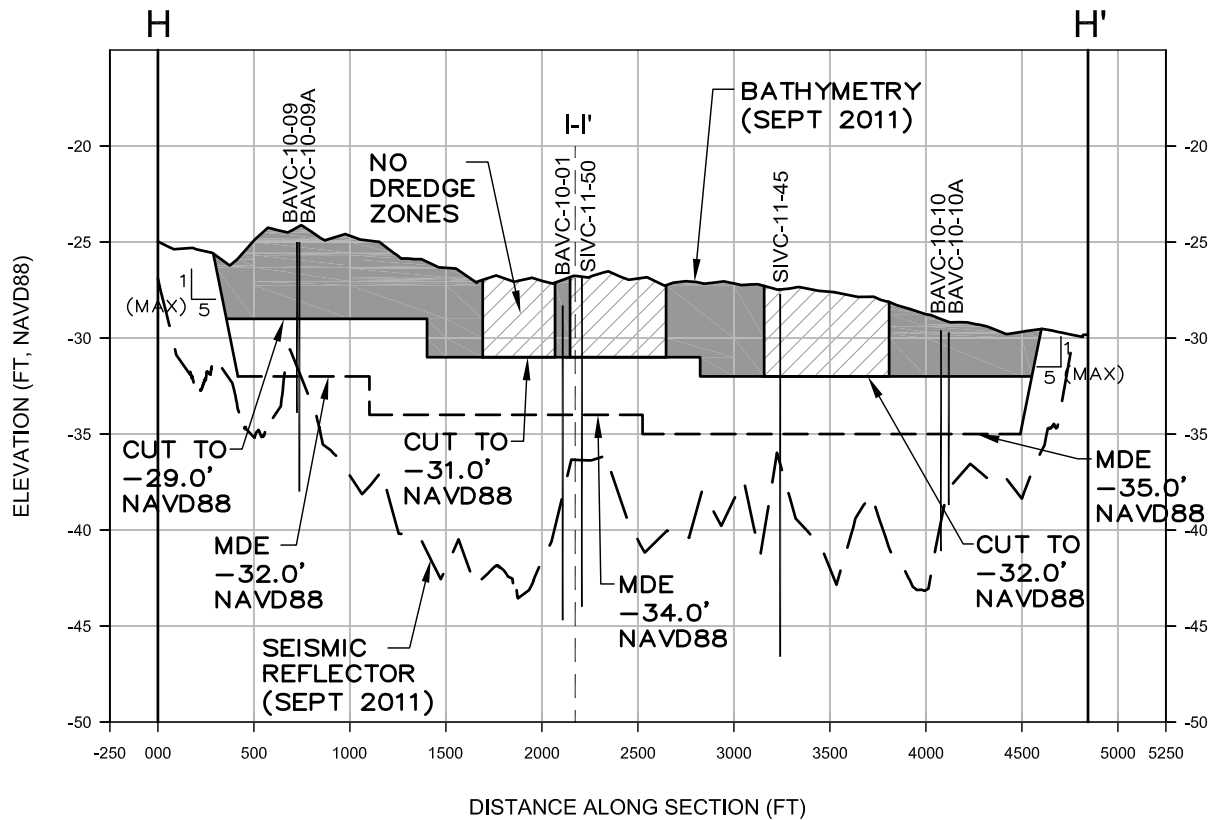
SHELL ISLAND BARRIER ISLAND RESTORATION PROJECT  
 STATE PROJECT NUMBER: BA-110/111

BORROW AREA 9 SEISMIC REFLECTOR CONTOURS  
 DATE: 02/01/12  
 SHEET 47 OF 61

DRAWN BY: KD

DESIGNED BY: ML

APPROVED BY: G. THOMSON

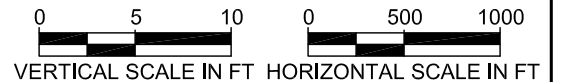


### BORROW AREA 9 CROSS SECTION H-H'

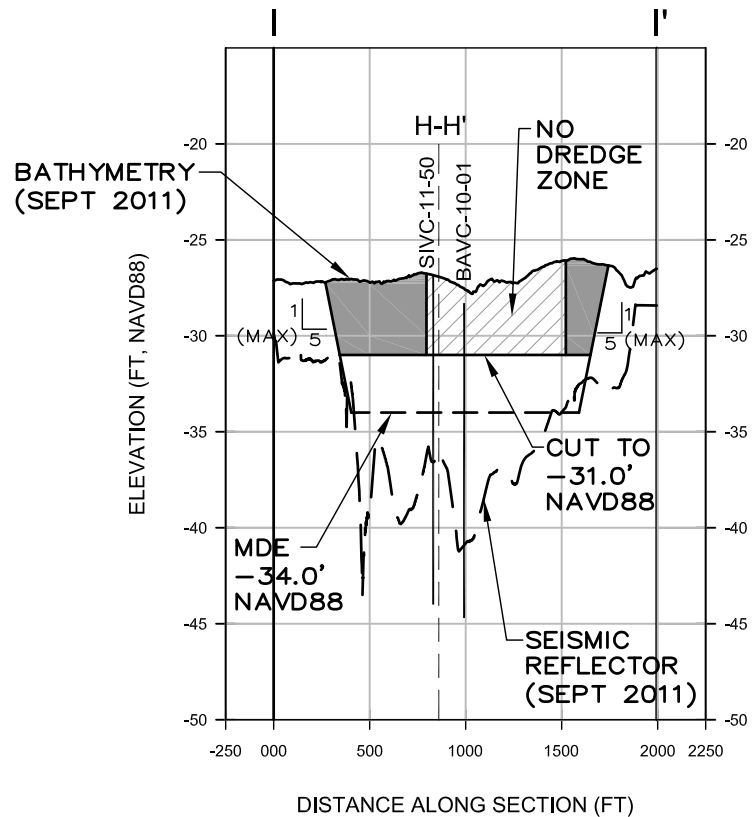
**NOTES:**

1. SEE SHEETS 46-47 FOR LOCATION OF CROSS SECTION LINE.
2. ELEVATIONS ARE IN FEET REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
3. CORES MAY NOT FALL DIRECTLY ON CROSS SECTION LINE, BUT ARE LOCATED SUFFICIENTLY CLOSE TO CONTAIN SIMILAR MATERIAL.
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5. MAXIMUM DEPTH OF EQUIPMENT (MDE) IS THREE FEET BELOW PERMITTED DEPTH.

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 PH. (561) 391-8102  
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APPLICATION BY: COASTAL PROTECTION AND RESTORATION AUTHORITY 450 LAUREL STREET, SUITE 1200 BATON ROUGE, LOUISIANA 70801 PH. (225) 342-1477 FAX. (225) 342-6801	<b>COASTAL PROTECTION &amp; RESTORATION AUTHORITY</b> 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801		SHELL ISLAND BARRIER ISLAND RESTORATION PROJECT	BORROW AREA 9 CROSS SECTION H-H'
	DESIGNED BY: ML		APPROVED BY: G. THOMSON	STATE PROJECT NUMBER: BA-110/111
DRAWN BY: KD			SHEET 48 OF 61	



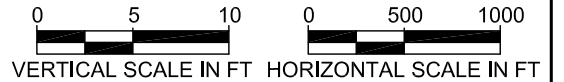
## BORROW AREA 9 CROSS SECTION I-I'

**NOTES:**

1. SEE SHEETS 46-47 FOR LOCATION OF CROSS SECTION LINE.
2. ELEVATIONS ARE IN FEET REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
3. CORES MAY NOT FALL DIRECTLY ON CROSS SECTION LINE, BUT ARE LOCATED SUFFICIENTLY CLOSE TO CONTAIN SIMILAR MATERIAL.
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5. MAXIMUM DEPTH OF EQUIPMENT (MDE) IS THREE FEET BELOW PERMITTED DEPTH.




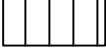


**COASTAL PLANNING & ENGINEERING, INC.**  
 2481 N.W. BOCA RATON BOULEVARD  
 BOCA RATON, FLORIDA 33431  
 PH. (561) 391-8102  
 FAX (561) 391-9116  
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APPLICATION BY: COASTAL PROTECTION AND RESTORATION AUTHORITY 450 LAUREL STREET, SUITE 1200 BATON ROUGE, LOUISIANA 70801 PH. (225) 342-1477 FAX. (225) 342-6801	<b>COASTAL PROTECTION &amp; RESTORATION AUTHORITY</b> 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801	SHELL ISLAND BARRIER ISLAND RESTORATION PROJECT  STATE PROJECT NUMBER: BA-110/111	BORROW AREA 9 CROSS SECTION I-I'  DATE: 02/01/12
DRAWN BY: KD	DESIGNED BY: ML	APPROVED BY: G. THOMSON	SHEET 49 OF 61

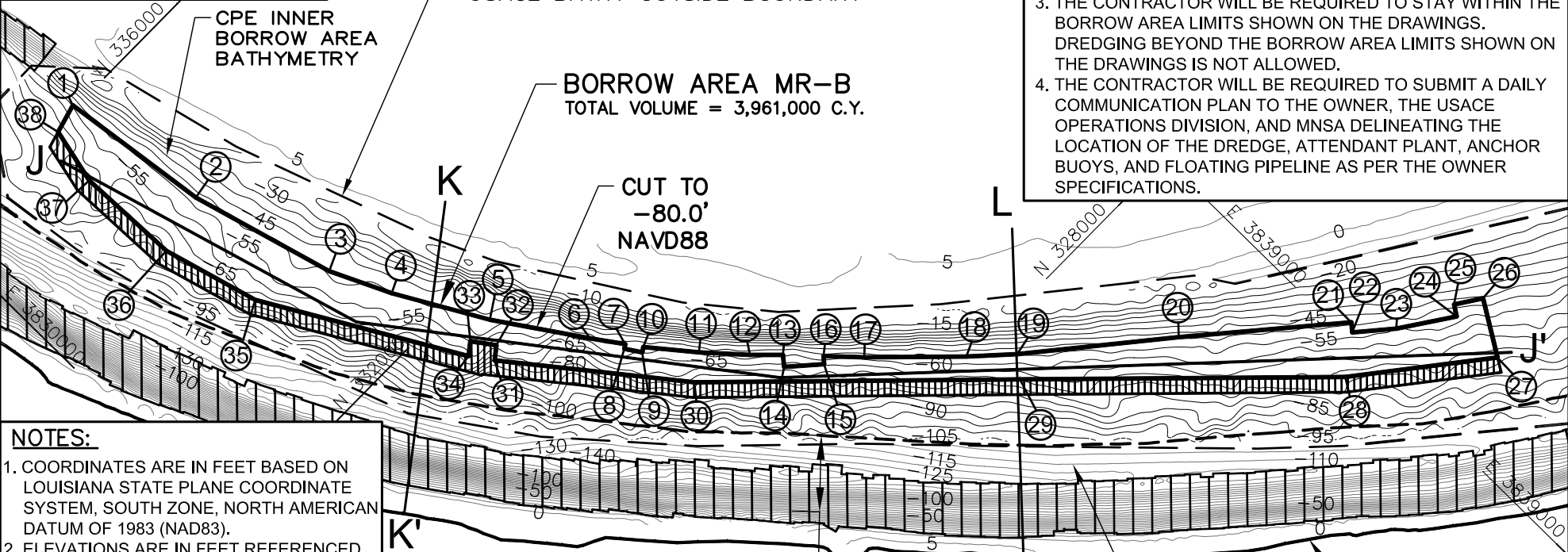


**LEGEND:**

-  ANCHOR BUOY LIMITS
-  USACE REVETMENTS
-  BA COORDINATE ID (SEE SHEET 61)
-  BA BOUNDARY

**DREDGING NOTES:**

1. THE CONTRACTOR WILL BE REQUIRED TO ANCHOR WITHIN THE DREDGE ANCHOR LIMITS SHOWN ON THE DRAWINGS. ANCHORING BEYOND THE DREDGE ANCHOR LIMITS SHOWN ON THE DRAWINGS IS NOT ALLOWED.
2. THE DREDGE ANCHOR LIMIT COORDINATES AND ALL DREDGE ANCHORS SHALL BE MARKED WITH BUOYS DURING DREDGING OPERATIONS.
3. THE CONTRACTOR WILL BE REQUIRED TO STAY WITHIN THE BORROW AREA LIMITS SHOWN ON THE DRAWINGS. DREDGING BEYOND THE BORROW AREA LIMITS SHOWN ON THE DRAWINGS IS NOT ALLOWED.
4. THE CONTRACTOR WILL BE REQUIRED TO SUBMIT A DAILY COMMUNICATION PLAN TO THE OWNER, THE USACE OPERATIONS DIVISION, AND MNSA DELINEATING THE LOCATION OF THE DREDGE, ATTENDANT PLANT, ANCHOR BUOYS, AND FLOATING PIPELINE AS PER THE OWNER SPECIFICATIONS.



**NOTES:**

1. COORDINATES ARE IN FEET BASED ON LOUISIANA STATE PLANE COORDINATE SYSTEM, SOUTH ZONE, NORTH AMERICAN DATUM OF 1983 (NAD83).
2. ELEVATIONS ARE IN FEET REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
3. DATE OF CPE BATHYMETRIC SURVEY: OCTOBER 12 - 15, 2011.
4. DATE OF USACE BATHYMETRIC SURVEY: 2004.
5. EASTINGS AND NORTHINGS SHOWN ALONG DRAWING BOUNDARY FOR GRID REFERENCE.

**COASTAL PLANNING & ENGINEERING, INC.**  
 2481 N.W. BOCA RATON BOULEVARD  
 BOCA RATON, FLORIDA 33431  
 PH. (561) 391-8102  
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 C.O.A. FL. #4028  
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 www.CoastalPlanning.net

APPLICATION BY:  
 COASTAL PROTECTION AND RESTORATION AUTHORITY  
 450 LAUREL STREET, SUITE 1200  
 BATON ROUGE, LOUISIANA 70801  
 PH. (225) 342-1477  
 FAX. (225) 342-6801

**COASTAL PROTECTION & RESTORATION AUTHORITY**  
 450 LAUREL STREET  
 BATON ROUGE, LOUISIANA 70801

SHELL ISLAND BARRIER ISLAND RESTORATION PROJECT  
 STATE PROJECT NUMBER: BA-110/111

BORROW AREA MR-B BATHYMETRY CONTOURS  
 DATE: 02/01/12  
 SHEET 50 OF 61

DRAWN BY: KD

DESIGNED BY: ML

APPROVED BY: G. THOMSON

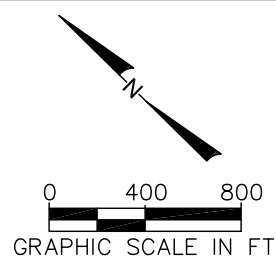
**LEGEND:**

- ◇ MRVC-11-11 CPE 2011 VIBRACORE
- ◇ MRVC-05-04 CPE 2005 VIBRACORE
- ⊕ GOODWIN & ASSOC., INC. 2008 MAGNETIC ANOMALIES
- △ GOODWIN & ASSOC., INC. 2008 SONAR ANOMALIES
- ① BA COORDINATE ID (SEE SHEET 61)

ANCHOR BUOY LIMITS

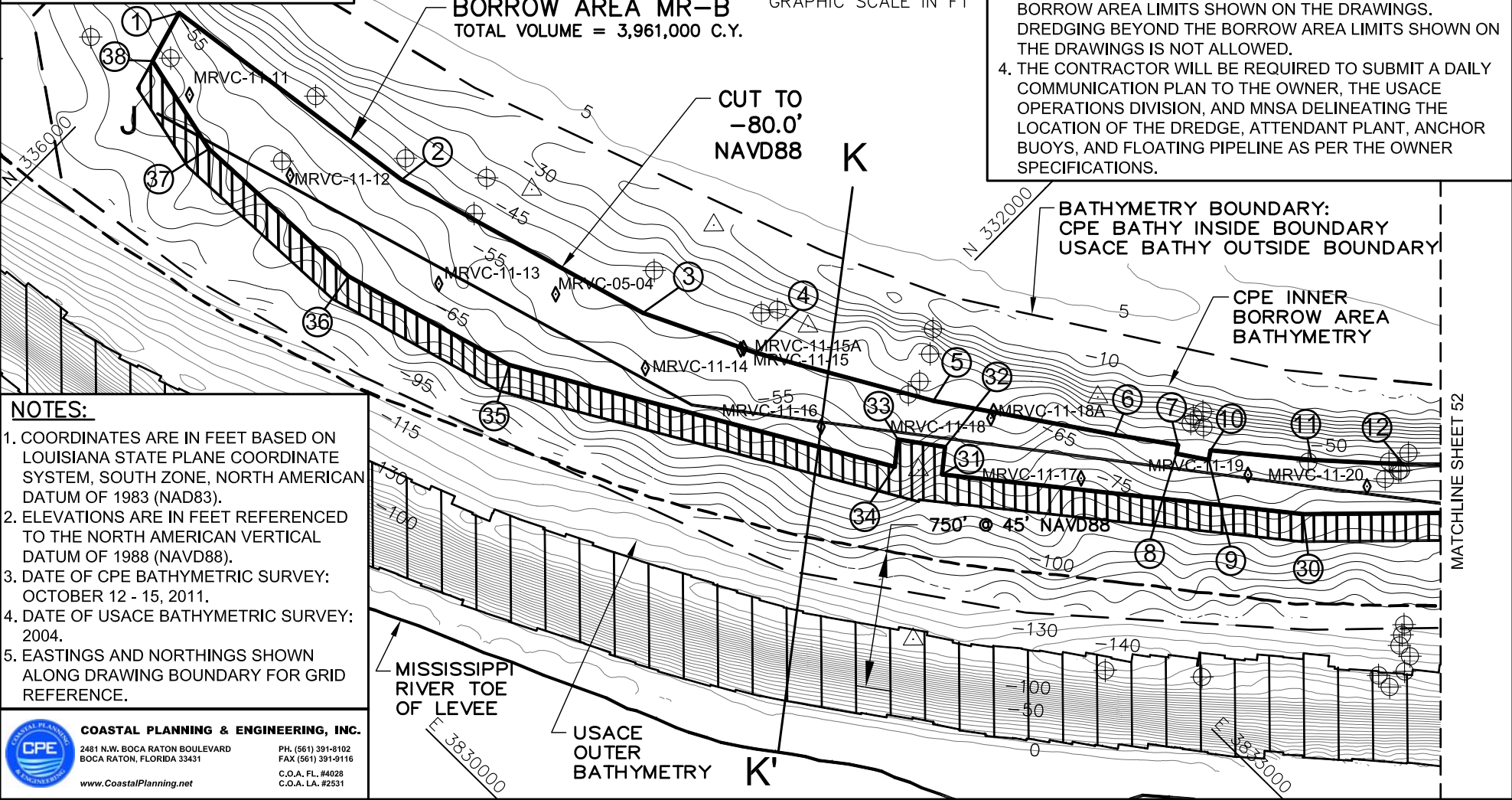
USACE REVETMENTS

BA BOUNDARY



**DREDGING NOTES:**

1. THE CONTRACTOR WILL BE REQUIRED TO ANCHOR WITHIN THE DREDGE ANCHOR LIMITS SHOWN ON THE DRAWINGS. ANCHORING BEYOND THE DREDGE ANCHOR LIMITS SHOWN ON THE DRAWINGS IS NOT ALLOWED.
2. THE DREDGE ANCHOR LIMIT COORDINATES AND ALL DREDGE ANCHORS SHALL BE MARKED WITH BUOYS DURING DREDGING OPERATIONS.
3. THE CONTRACTOR WILL BE REQUIRED TO STAY WITHIN THE BORROW AREA LIMITS SHOWN ON THE DRAWINGS. DREDGING BEYOND THE BORROW AREA LIMITS SHOWN ON THE DRAWINGS IS NOT ALLOWED.
4. THE CONTRACTOR WILL BE REQUIRED TO SUBMIT A DAILY COMMUNICATION PLAN TO THE OWNER, THE USACE OPERATIONS DIVISION, AND MNSA DELINEATING THE LOCATION OF THE DREDGE, ATTENDANT PLANT, ANCHOR BUOYS, AND FLOATING PIPELINE AS PER THE OWNER SPECIFICATIONS.



**NOTES:**

1. COORDINATES ARE IN FEET BASED ON LOUISIANA STATE PLANE COORDINATE SYSTEM, SOUTH ZONE, NORTH AMERICAN DATUM OF 1983 (NAD83).
2. ELEVATIONS ARE IN FEET REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
3. DATE OF CPE BATHYMETRIC SURVEY: OCTOBER 12 - 15, 2011.
4. DATE OF USACE BATHYMETRIC SURVEY: 2004.
5. EASTINGS AND NORTHINGS SHOWN ALONG DRAWING BOUNDARY FOR GRID REFERENCE.

**COASTAL PLANNING & ENGINEERING, INC.**

2481 N.W. BOCA RATON BOULEVARD  
BOCA RATON, FLORIDA 33431

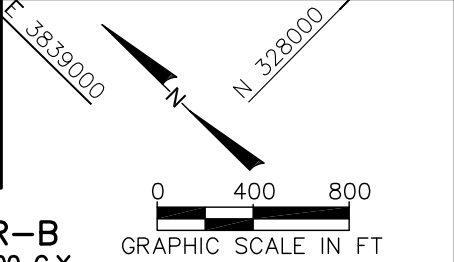
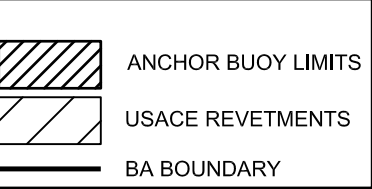
PH. (561) 391-8102  
FAX (561) 391-9116

C.O.A. FL. #4028  
C.O.A. LA. #2531

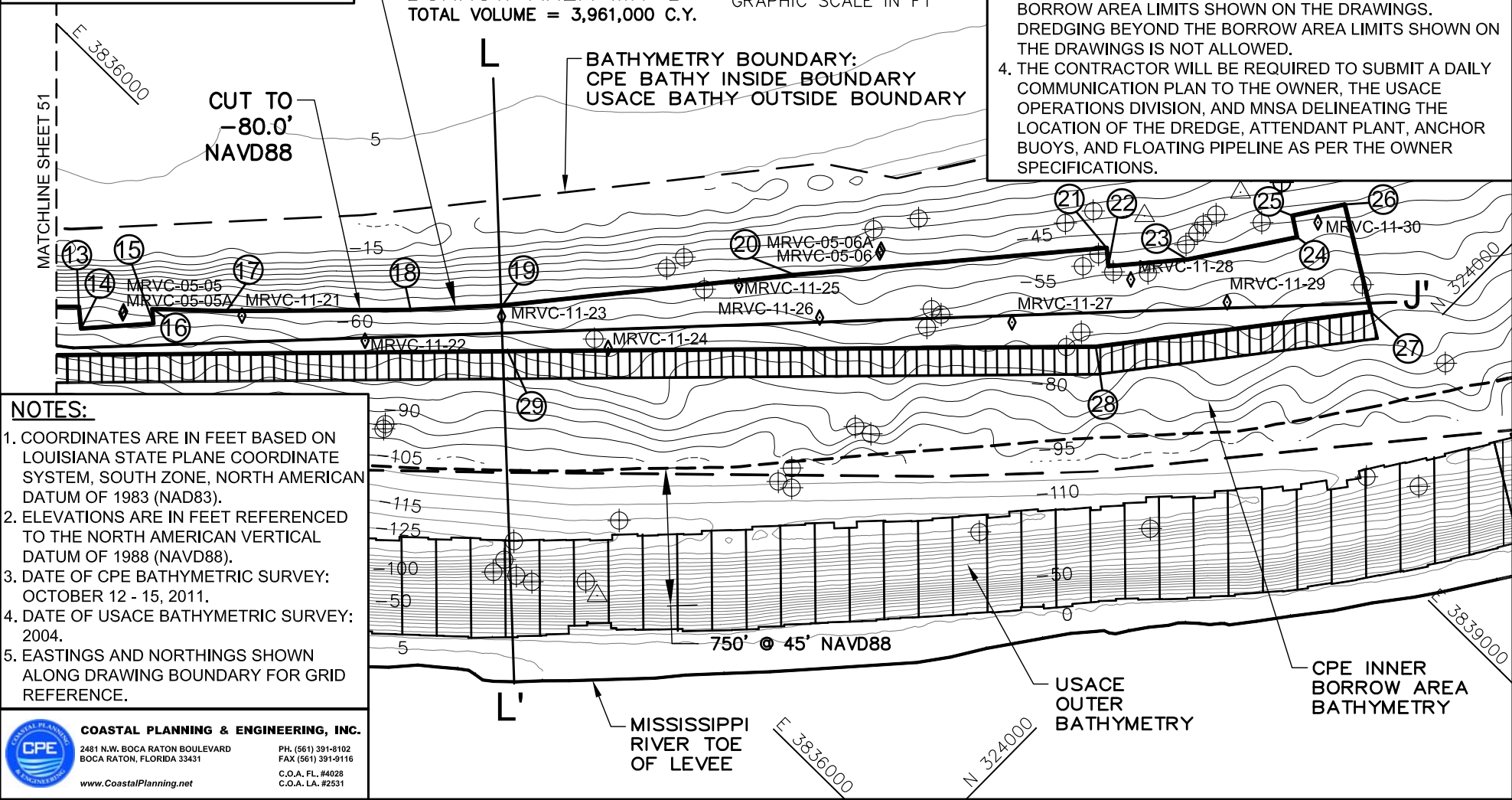
[www.CoastalPlanning.net](http://www.CoastalPlanning.net)

APPLICATION BY: COASTAL PROTECTION AND RESTORATION AUTHORITY 450 LAUREL STREET, SUITE 1200 BATON ROUGE, LOUISIANA 70801 PH. (225) 342-1477 FAX. (225) 342-6801	<b>COASTAL PROTECTION &amp; RESTORATION AUTHORITY</b> 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801	SHELL ISLAND BARRIER ISLAND RESTORATION PROJECT  STATE PROJECT NUMBER: BA-110/111	BORROW AREA MR-B VIBRACORES AND ANOMALIES  DATE: 02/01/12
DRAWN BY: KD	DESIGNED BY: ML	APPROVED BY: G. THOMSON	SHEET 51 OF 61

- LEGEND:**
- ◇ MRVC-11-11 CPE 2011 VIBRACORE
  - ◇ MRVC-05-04 CPE 2005 VIBRACORE
  - ⊕ GOODWIN & ASSOC., INC. 2008 MAGNETIC ANOMALIES
  - △ GOODWIN & ASSOC., INC. 2008 SONAR ANOMALIES
  - ① BA COORDINATE ID (SEE SHEET 61)



- DREDGING NOTES:**
1. THE CONTRACTOR WILL BE REQUIRED TO ANCHOR WITHIN THE DREDGE ANCHOR LIMITS SHOWN ON THE DRAWINGS. ANCHORING BEYOND THE DREDGE ANCHOR LIMITS SHOWN ON THE DRAWINGS IS NOT ALLOWED.
  2. THE DREDGE ANCHOR LIMIT COORDINATES AND ALL DREDGE ANCHORS SHALL BE MARKED WITH BUOYS DURING DREDGING OPERATIONS.
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- NOTES:**
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  2. ELEVATIONS ARE IN FEET REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
  3. DATE OF CPE BATHYMETRIC SURVEY: OCTOBER 12 - 15, 2011.
  4. DATE OF USACE BATHYMETRIC SURVEY: 2004.
  5. EASTINGS AND NORTHINGS SHOWN ALONG DRAWING BOUNDARY FOR GRID REFERENCE.

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 BOCA RATON, FLORIDA 33431  
 PH. (561) 391-8102  
 FAX (561) 391-9116  
 C.O.A. FL. #4028  
 C.O.A. LA. #2531  
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APPLICATION BY:  
 COASTAL PROTECTION AND RESTORATION AUTHORITY  
 450 LAUREL STREET, SUITE 1200  
 BATON ROUGE, LOUISIANA 70801  
 PH. (225) 342-1477  
 FAX. (225) 342-6801

**COASTAL PROTECTION & RESTORATION AUTHORITY**  
 450 LAUREL STREET  
 BATON ROUGE, LOUISIANA 70801

SHELL ISLAND BARRIER ISLAND RESTORATION PROJECT  
 STATE PROJECT NUMBER: BA-110/111

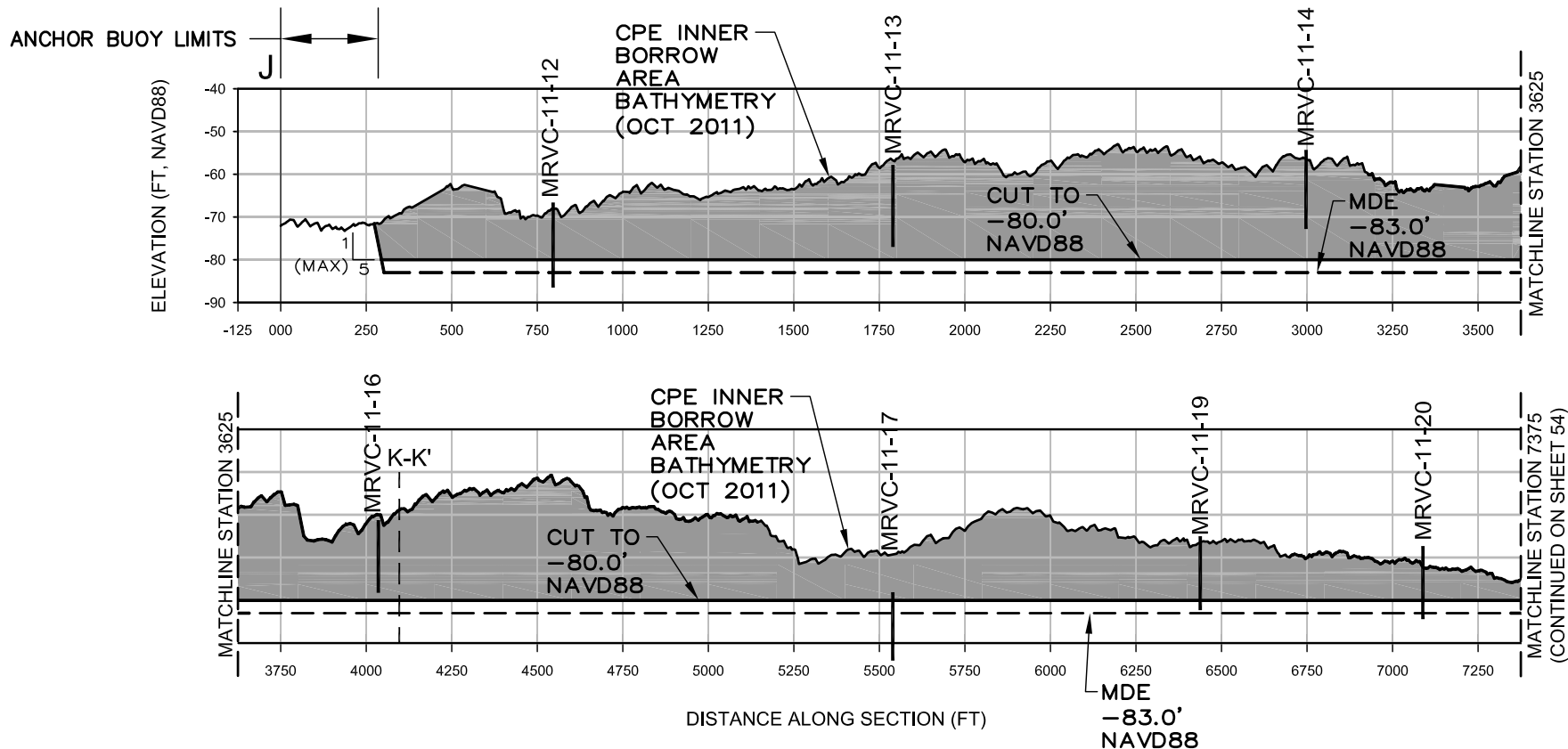
BORROW AREA MR-B VIBRACORES AND ANOMALIES  
 DATE: 02/01/12

DRAWN BY: KD

DESIGNED BY: ML

APPROVED BY: G. THOMSON

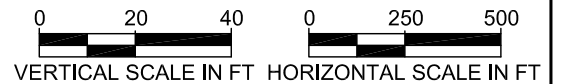
SHEET 52 OF 61



### BORROW AREA MR-B CROSS SECTION J-J' (1 OF 2)

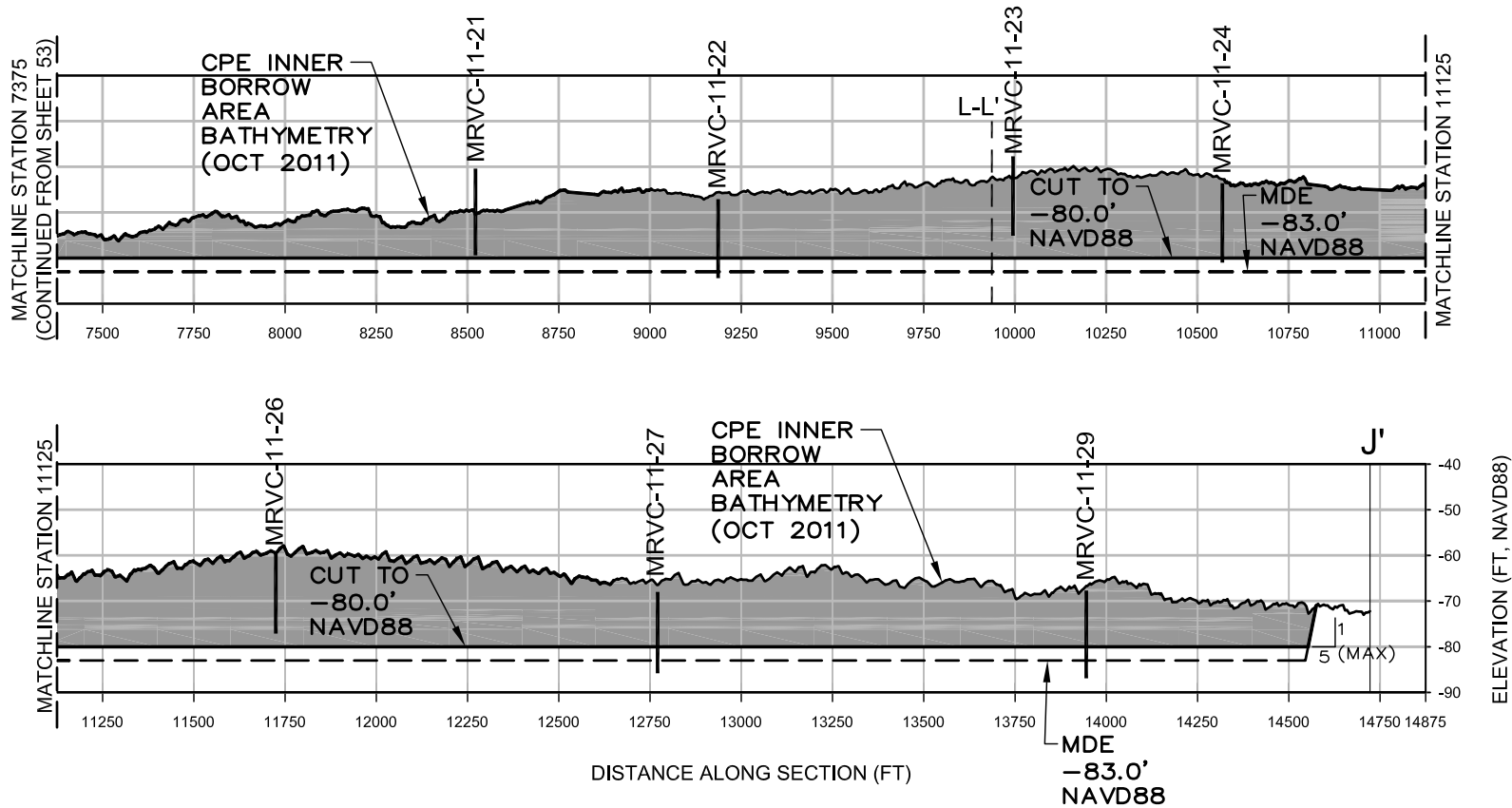
**NOTES:**

1. SEE SHEETS 50-52 FOR LOCATION OF CROSS SECTION LINE.
2. ELEVATIONS ARE IN FEET REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
3. CORES MAY NOT FALL DIRECTLY ON CROSS SECTION LINE, BUT ARE LOCATED SUFFICIENTLY CLOSE TO CONTAIN SIMILAR MATERIAL.
4. WIDTH OF LAYERS IS REPRESENTATIVE ONLY. ACTUAL MATERIAL MAY VARY.
5. MAXIMUM DEPTH OF EQUIPMENT (MDE) IS THREE FEET BELOW PERMITTED DEPTH.



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APPLICATION BY: COASTAL PROTECTION AND RESTORATION AUTHORITY 450 LAUREL STREET, SUITE 1200 BATON ROUGE, LOUISIANA 70801 PH. (225) 342-1477 FAX. (225) 342-6801	<b>COASTAL PROTECTION &amp; RESTORATION AUTHORITY</b> 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801		SHELL ISLAND BARRIER ISLAND RESTORATION PROJECT	BORROW AREA MR-B CROSS SECTION J-J' (1 OF 2)
	DESIGNED BY: ML		STATE PROJECT NUMBER: BA-110/111	
DRAWN BY: KD	APPROVED BY: G. THOMSON		DATE: 02/01/12 SHEET 53 OF 61	



### BORROW AREA MR-B CROSS SECTION J-J' (2 OF 2)

**NOTES:**

1. SEE SHEETS 50-52 FOR LOCATION OF CROSS SECTION LINE.
2. ELEVATIONS ARE IN FEET REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
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 BOCA RATON, FLORIDA 33431  
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APPLICATION BY:  
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 450 LAUREL STREET, SUITE 1200  
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**COASTAL PROTECTION & RESTORATION AUTHORITY**  
 450 LAUREL STREET  
 BATON ROUGE, LOUISIANA 70801

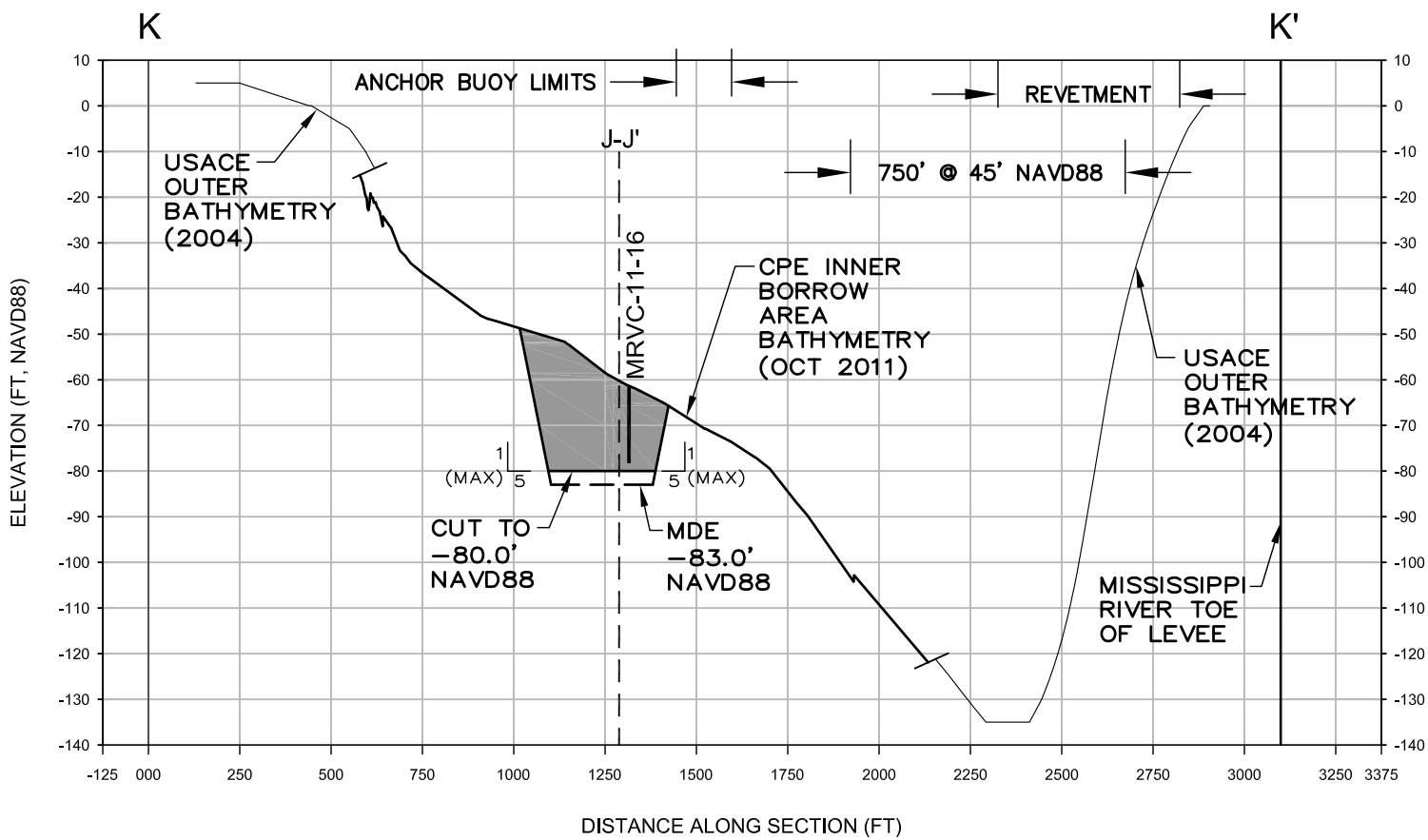
SHELL ISLAND BARRIER ISLAND RESTORATION PROJECT  
 STATE PROJECT NUMBER: BA-110/111

BORROW AREA MR-B CROSS SECTION J-J' (2 OF 2)  
 DATE: 02/01/12  
 SHEET 54 OF 61

DRAWN BY: KD

DESIGNED BY: ML

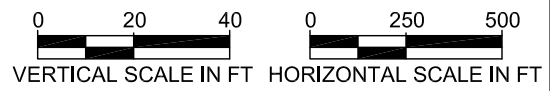
APPROVED BY: G. THOMSON



### BORROW AREA MR-B CROSS SECTION K-K'

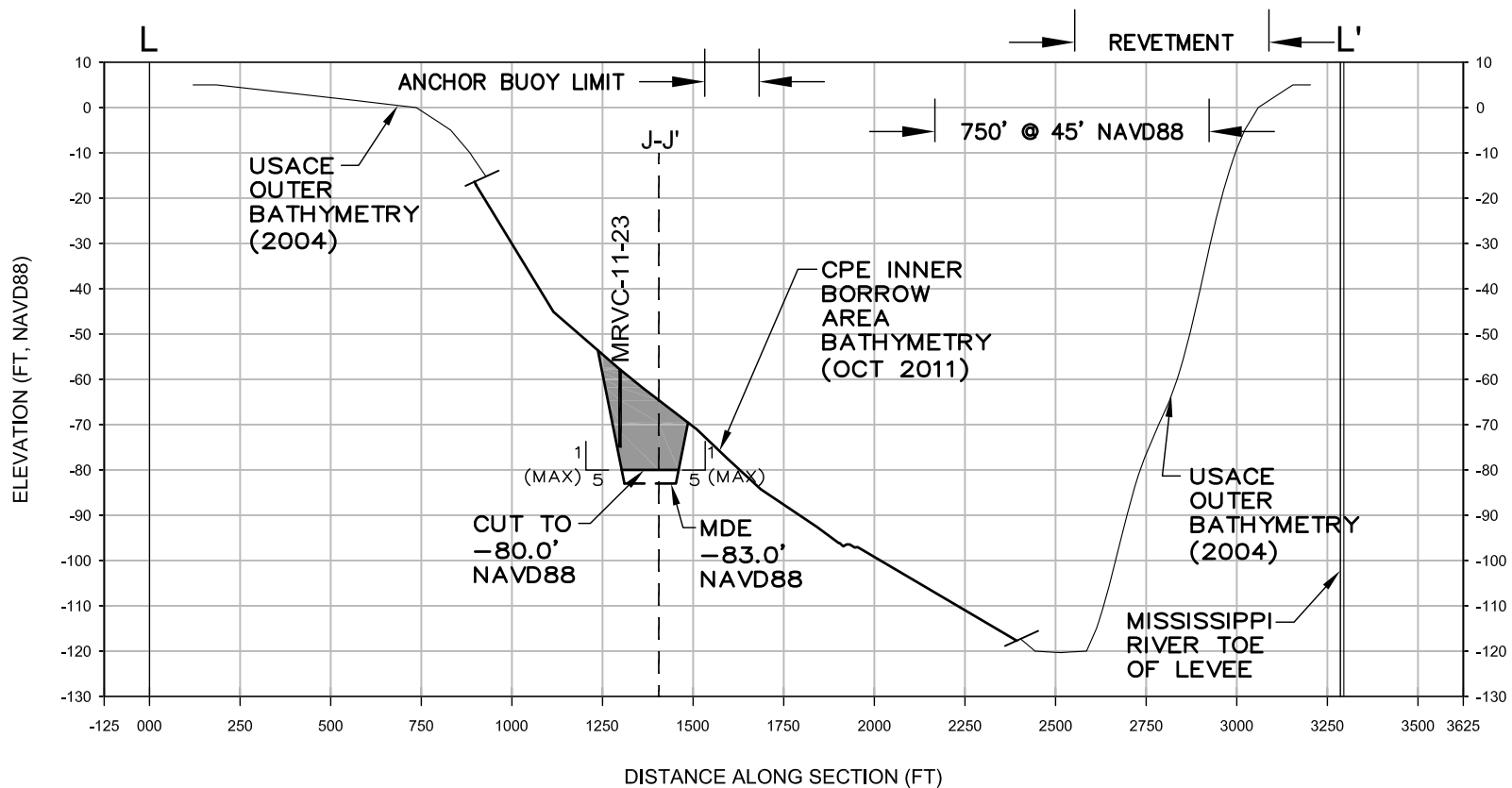
**NOTES:**

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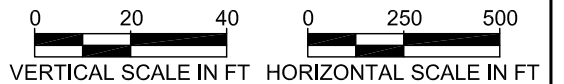
APPLICATION BY: COASTAL PROTECTION AND RESTORATION AUTHORITY 450 LAUREL STREET, SUITE 1200 BATON ROUGE, LOUISIANA 70801 PH. (225) 342-1477 FAX. (225) 342-6801	<b>COASTAL PROTECTION &amp; RESTORATION AUTHORITY</b> 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801	SHELL ISLAND BARRIER ISLAND RESTORATION PROJECT STATE PROJECT NUMBER: BA-110/111	BORROW AREA MR-B CROSS SECTION K-K' DATE: 02/01/12
DRAWN BY: KD	DESIGNED BY: ML	APPROVED BY: G. THOMSON	SHEET 55 OF 61



### BORROW AREA MR-B CROSS SECTION L-L'

**NOTES:**

1. SEE SHEETS 50-52 FOR LOCATION OF CROSS SECTION LINE.
2. ELEVATIONS ARE IN FEET REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
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APPLICATION BY:  
 COASTAL PROTECTION AND RESTORATION AUTHORITY  
 450 LAUREL STREET, SUITE 1200  
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**COASTAL PROTECTION & RESTORATION AUTHORITY**  
 450 LAUREL STREET  
 BATON ROUGE, LOUISIANA 70801

SHELL ISLAND  
 BARRIER ISLAND RESTORATION PROJECT

STATE PROJECT NUMBER: BA-110/111

BORROW AREA MR-B  
 CROSS SECTION L-L'

DATE: 02/01/12


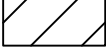


DRAWN BY: KD

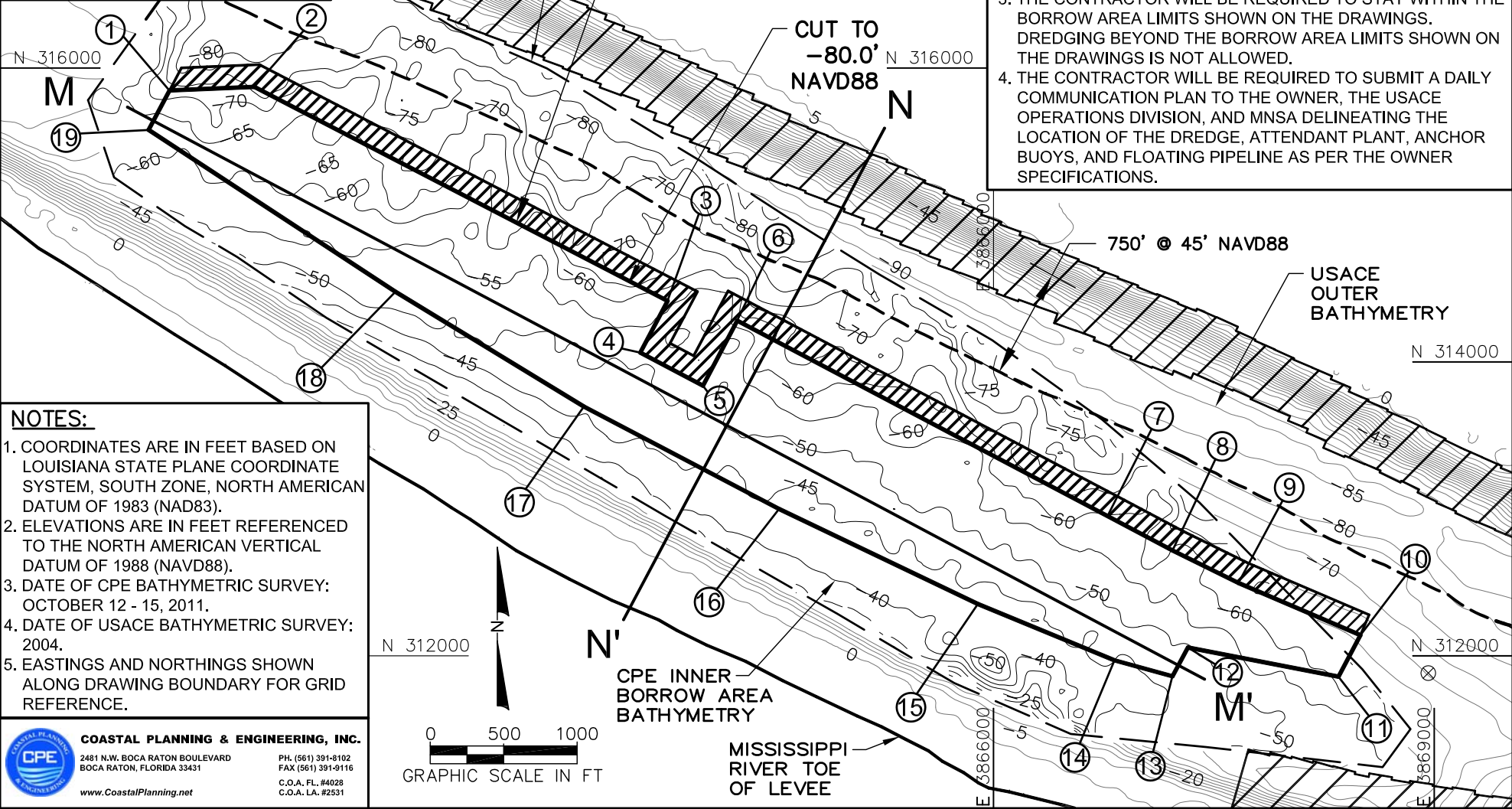
DESIGNED BY: ML

APPROVED BY: G. THOMSON

SHEET 56 OF 61

**LEGEND:**

-  ANCHOR BUOY LIMITS
-  USACE REVETMENTS
-  BA COORDINATE ID (SEE SHEET 61)
-  BA BOUNDARY



**DREDGING NOTES:**

1. THE CONTRACTOR WILL BE REQUIRED TO ANCHOR WITHIN THE DREDGE ANCHOR LIMITS SHOWN ON THE DRAWINGS. ANCHORING BEYOND THE DREDGE ANCHOR LIMITS SHOWN ON THE DRAWINGS IS NOT ALLOWED.
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APPLICATION BY:  
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 450 LAUREL STREET, SUITE 1200  
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 FAX. (225) 342-6801

**COASTAL PROTECTION & RESTORATION AUTHORITY**  
 450 LAUREL STREET  
 BATON ROUGE, LOUISIANA 70801

SHELL ISLAND BARRIER ISLAND RESTORATION PROJECT  
 STATE PROJECT NUMBER: BA-110/111

BORROW AREA MR-E BATHYMETRY CONTOURS  
 DATE: 02/01/12

DRAWN BY: KD


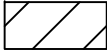

DESIGNED BY: ML

APPROVED BY: G. THOMSON

SHEET 57 OF 61

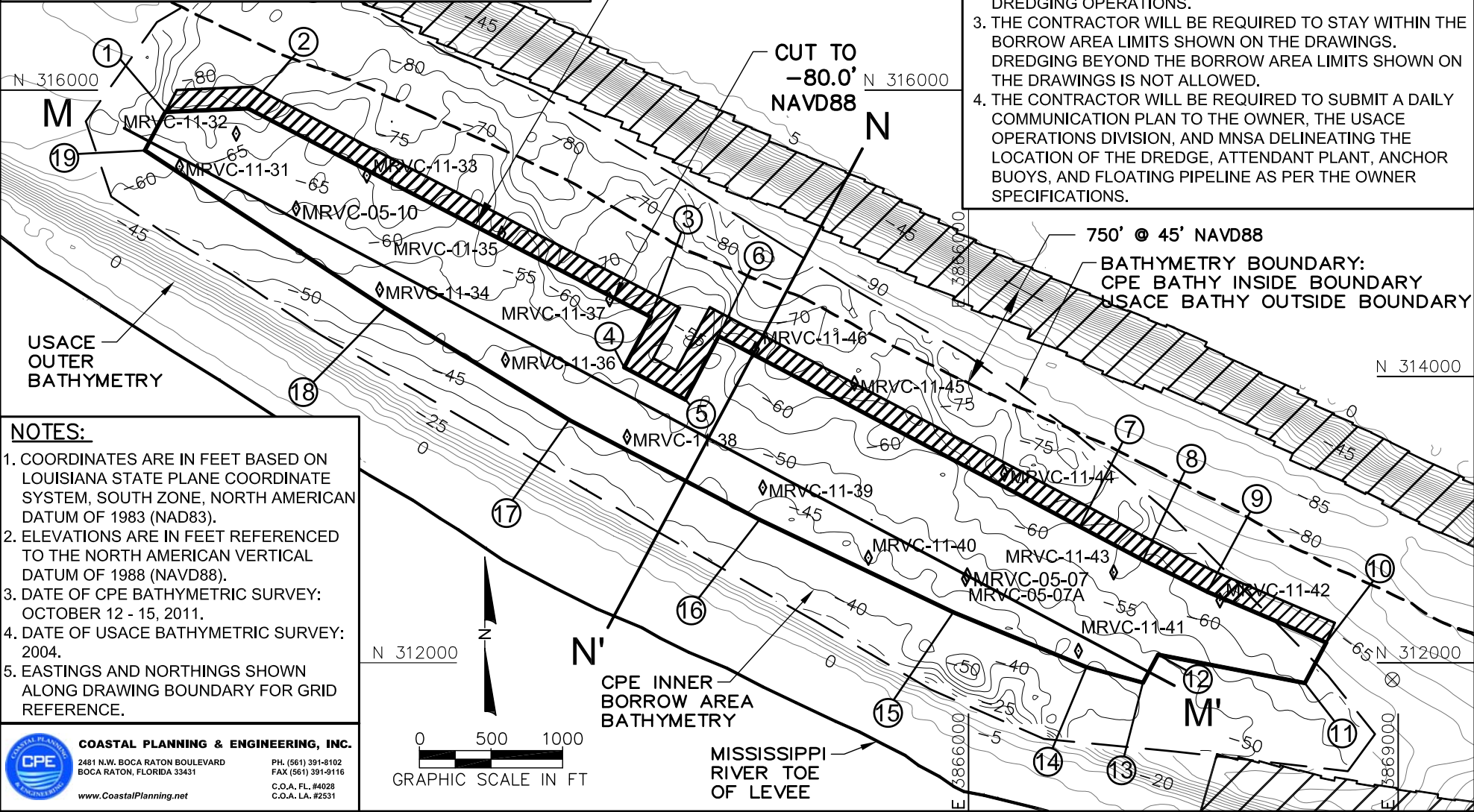


**LEGEND:**

- ◇ MRVC-11-32 CPE 2011 VIBRACORE
- ◇ MRVC-05-10 CPE 2005 VIBRACORE
- ⊗ ALLEN R. SALTUS 1984 ANOMALY
- ① BA COORDINATE ID (SEE SHEET 61)
-  ANCHOR BUOY LIMITS
-  USACE REVETMENTS
-  BA BOUNDARY

**DREDGING NOTES:**

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**COASTAL PROTECTION & RESTORATION AUTHORITY**  
 450 LAUREL STREET  
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SHELL ISLAND BARRIER ISLAND RESTORATION PROJECT  
 STATE PROJECT NUMBER: BA-110/111

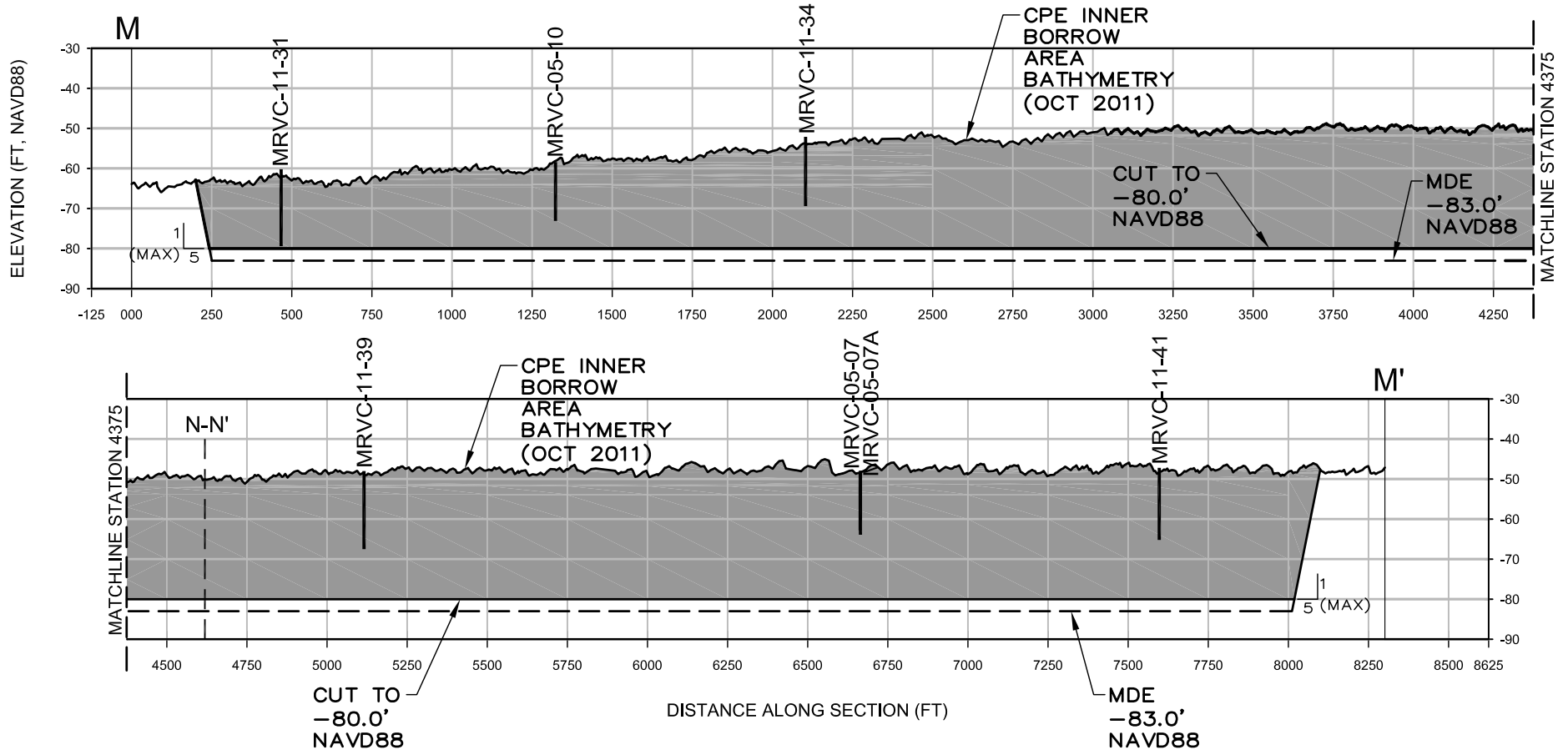
BORROW AREA MR-E VIBRACORES AND ANOMALIES  
 DATE: 02/01/12

DRAWN BY: KD

DESIGNED BY: ML

APPROVED BY: G. THOMSON

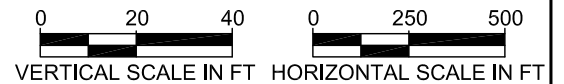
SHEET 58 OF 61



### BORROW AREA MR-E CROSS SECTION M-M'

**NOTES:**

1. SEE SHEETS 57-58 FOR LOCATION OF CROSS SECTION LINE.
2. ELEVATIONS ARE IN FEET REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
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APPLICATION BY:  
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SHELL ISLAND  
 BARRIER ISLAND RESTORATION PROJECT

STATE PROJECT NUMBER: BA-110/111

BORROW AREA MR-E  
 CROSS SECTION M-M'

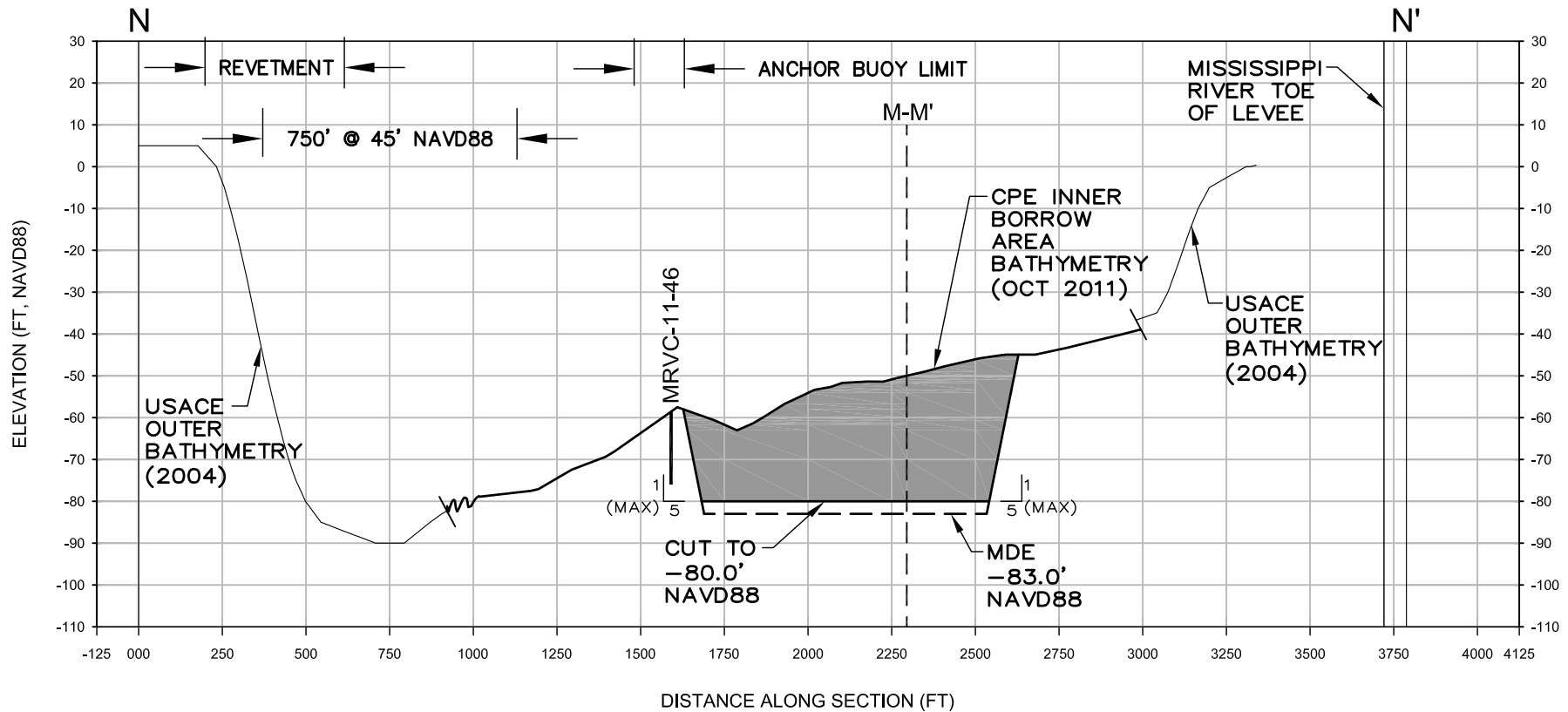
DATE: 02/01/12

DRAWN BY: KD

DESIGNED BY: ML

APPROVED BY: G. THOMSON

SHEET 59 OF 61



## BORROW AREA MR-E CROSS SECTION N-N'

### NOTES:

1. SEE SHEETS 57-58 FOR LOCATION OF CROSS SECTION LINE.
2. ELEVATIONS ARE IN FEET REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
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APPLICATION BY: COASTAL PROTECTION AND RESTORATION AUTHORITY 450 LAUREL STREET, SUITE 1200 BATON ROUGE, LOUISIANA 70801 PH. (225) 342-1477 FAX. (225) 342-6801	<b>COASTAL PROTECTION &amp; RESTORATION AUTHORITY</b> 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801	SHELL ISLAND BARRIER ISLAND RESTORATION PROJECT  STATE PROJECT NUMBER: BA-110/111	BORROW AREA MR-E CROSS SECTION N-N'  DATE: 02/01/12
DRAWN BY: KD	DESIGNED BY: ML	APPROVED BY: G. THOMSON	SHEET 60 OF 61

BORROW AREA MR-A

NODE_ID	LATITUDE	LONGITUDE
1	29° 27' 16.29385"	89° 36' 43.90200"
2	29° 27' 05.57974"	89° 36' 17.98147"
3	29° 26' 57.93892"	89° 36' 11.43294"
4	29° 26' 41.90373"	89° 35' 57.69121"
5	29° 26' 37.06227"	89° 36' 03.13292"
6	29° 26' 26.78518"	89° 35' 59.78130"
7	29° 26' 24.34923"	89° 36' 09.31437"
8	29° 26' 41.55548"	89° 36' 13.87789"
9	29° 26' 49.10027"	89° 36' 22.78346"
10	29° 27' 00.36693"	89° 36' 36.55099"
11	29° 27' 06.60324"	89° 36' 49.07314"

BORROW AREA MR-B

NODE_ID	LATITUDE	LONGITUDE
1	29° 24' 44.48534"	89° 36' 13.02940"
2	29° 24' 39.01769"	89° 36' 14.54064"
3	29° 24' 28.83943"	89° 36' 14.28312"
4	29° 24' 19.26657"	89° 36' 11.40187"
5	29° 24' 00.43851"	89° 35' 59.54497"
6	29° 24' 01.34031"	89° 35' 58.19499"
7	29° 23' 59.22003"	89° 35' 56.53531"
8	29° 23' 58.31814"	89° 35' 57.88529"
9	29° 23' 42.75439"	89° 35' 44.29737"
10	29° 23' 19.99267"	89° 35' 19.05133"
11	29° 22' 57.20984"	89° 34' 53.85595"
12	29° 22' 47.79447"	89° 34' 40.60569"
13	29° 22' 52.79624"	89° 34' 36.95243"
14	29° 22' 54.42283"	89° 34' 39.67266"
15	29° 22' 53.44172"	89° 34' 40.43739"
16	29° 22' 56.86996"	89° 34' 46.05334"
17	29° 22' 59.72467"	89° 34' 49.74723"
18	29° 23' 00.46691"	89° 34' 48.99934"
19	29° 23' 11.63330"	89° 35' 03.44895"
20	29° 23' 21.88822"	89° 35' 17.22748"
21	29° 23' 25.31092"	89° 35' 21.32532"
22	29° 23' 32.46132"	89° 35' 29.22763"
23	29° 23' 35.41604"	89° 35' 32.26384"
24	29° 23' 34.83382"	89° 35' 32.87020"
25	29° 23' 37.46653"	89° 35' 36.16620"
26	29° 23' 38.35876"	89° 35' 35.28560"
27	29° 23' 40.68416"	89° 35' 37.81658"
28	29° 23' 44.45085"	89° 35' 41.52853"
29	29° 23' 48.74008"	89° 35' 45.38945"
30	29° 23' 48.45205"	89° 35' 45.90321"
31	29° 23' 49.95048"	89° 35' 46.98788"
32	29° 23' 50.20199"	89° 35' 46.53467"
33	29° 23' 53.05547"	89° 35' 48.77005"
34	29° 24' 01.39145"	89° 35' 54.97252"
35	29° 24' 10.08857"	89° 36' 00.37811"
36	29° 24' 15.99385"	89° 36' 03.40181"
37	29° 24' 30.35316"	89° 36' 07.72345"
38	29° 24' 45.24216"	89° 36' 09.74937"

BORROW AREA MR-E

NODE_ID	LATITUDE	LONGITUDE
1	29° 21' 20.86445"	89° 30' 56.48747"
2	29° 21' 21.21456"	89° 30' 44.02540"
3	29° 21' 06.34993"	89° 30' 12.51006"
4	29° 21' 02.90046"	89° 30' 14.66931"
5	29° 21' 00.60613"	89° 30' 09.89380"
6	29° 21' 04.94570"	89° 30' 07.17730"
7	29° 20' 51.37955"	89° 29' 38.93445"
8	29° 20' 48.99444"	89° 29' 33.98198"
9	29° 20' 46.73651"	89° 29' 28.95197"
10	29° 20' 43.09076"	89° 29' 19.63579"
11	29° 20' 40.31626"	89° 29' 21.37291"
12	29° 20' 42.43968"	89° 29' 32.92351"
13	29° 20' 40.52430"	89° 29' 34.14394"
14	29° 20' 41.65743"	89° 29' 38.57534"
15	29° 20' 45.60157"	89° 29' 49.00972"
16	29° 20' 52.21230"	89° 30' 04.18581"
17	29° 20' 59.32314"	89° 30' 19.06539"
18	29° 21' 07.25653"	89° 30' 33.43052"
19	29° 21' 18.42615"	89° 30' 52.21417"

BORROW AREA 9

NODE_ID	LATITUDE	LONGITUDE
1	29° 13' 14.03901"	89° 36' 36.26354"
2	29° 13' 12.14530"	89° 36' 23.31677"
3	29° 13' 01.95731"	89° 36' 28.54791"
4	29° 12' 48.96114"	89° 36' 31.80681"
5	29° 12' 40.59288"	89° 36' 33.89144"
6	29° 12' 34.98208"	89° 36' 52.89025"
7	29° 12' 54.22566"	89° 37' 06.19438"
8	29° 13' 00.06968"	89° 37' 01.11759"
9	29° 12' 52.51425"	89° 36' 49.73522"
10	29° 13' 04.83796"	89° 36' 42.01917"

BORROW AREA 35E

NODE_ID	LATITUDE	LONGITUDE
1	29° 12' 51.30419"	89° 39' 18.15210"
2	29° 12' 27.29571"	89° 38' 19.89747"
3	29° 12' 09.91043"	89° 38' 36.52848"
4	29° 11' 39.88492"	89° 39' 05.24628"
5	29° 12' 13.82222"	89° 39' 27.80140"
6	29° 12' 27.96682"	89° 39' 24.16027"

NOTES:

- LOCATIONS ARE REFERENCED TO GEOGRAPHIC, NAD 1983.



**COASTAL PLANNING & ENGINEERING, INC.**  
 2481 N.W. BOCA RATON BOULEVARD  
 BOCA RATON, FLORIDA 33431  
 PH. (561) 391-8102  
 FAX (561) 391-9116  
 C.O.A. FL. #4028  
 C.O.A. LA. #2531  
[www.CoastalPlanning.net](http://www.CoastalPlanning.net)

APPLICATION BY: COASTAL PROTECTION AND RESTORATION AUTHORITY 450 LAUREL STREET, SUITE 1200 BATON ROUGE, LOUISIANA 70801 PH. (225) 342-1477 FAX. (225) 342-6801	<b>COASTAL PROTECTION &amp; RESTORATION AUTHORITY</b> 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801		SHELL ISLAND BARRIER ISLAND RESTORATION PROJECT	BORROW AREA COORDINATES
	STATE PROJECT NUMBER: BA-110/111			DATE: 02/01/12
DRAWN BY: KD	DESIGNED BY: ML	APPROVED BY: G. THOMSON		SHEET 61 OF 61

## **Shell Island Project Information**

### **Shell Island East**

Beach/Dune Excavation Volume = 6.3 M cy

Beach/Dune Fill Volume = 4.2 M cy

Beach/Dune Area = 415 acres

Marsh Excavation Volume = 1.8 M cy

Marsh Fill Volume = 1.0 M cy

Marsh Area = 175 acres

### **Shell Island West**

Beach/Dune Excavation Volume = 3.3 M cy

Beach/Dune Fill Volume = 2.2 M cy

Beach/Dune Area = 200 acres

Marsh Excavation Volume = 1.5 M cy

Marsh Fill Volume = 0.8 M cy

Marsh Area = 135 acres

### **Shell Island Restoration Project Total Excavation Volumes**

Beach/Dune Excavation Volume = 9.6 M cy

Marsh Excavation Volume = 3.3 M cy

Access Channel Excavation Volume = 467,900 cy

Primary Dike Excavation = 865,000 cy

Pipeline Conveyance Corridor Excavation = 21,400 cy

Total Excavation Volumes = 14.3 M cy

### **Shell Island Restoration Project Total Fill Volumes**

Beach/Dune Fill Volume = 6.4 M cy

Marsh Fill Volume = 1.8 M cy

Primary Dike Fill Volume = 289,000 cy

Temporary Spoil and Rehandling Volume = 639,000 cy

Temporary Fill for Pipeline Conveyance Corridor = 250 cy

Total Fill Volumes = 9.1 M cy

### **Shell Island Restoration Project Total Areas**

Beach/Dune Total Area = 615 acres

Marsh Total Area = 343 acres

### **Shell Island Restoration Project Delineated Borrow Areas**

Total Delineated Beach/Dune Borrow Area Volume = 16.6 M cy  
(includes MR-A, MR-B, MR-E, and Area 9)

Total Delineated Marsh Borrow Area Volume = 15.1 M cy  
(includes 35-E)

## Shell Island Project Information

The volume that will be excavated for beach/dune fill will be approximately 9.6 million cubic yards, with 6.4 millions to be placed within the beach/dune fill templates. The total excavation for the marsh material is approximately 3.3 million cubic yards, and the total to be placed within the marsh fill template is approximately 1.8 million cubic yards. The difference in excavation volume and fill volume is an estimate of losses that occur during the hydraulic dredging process and conveyance of material in a slurry pipeline. The total excavation volume includes the volumes to be excavated for beach/dune and marsh fill, as well as the excavations for primary dike construction, access channels, and the pipeline conveyance corridor from Mississippi River to the project area.

The volumes that will be excavated for the marsh fill will be excavated from the one (1) borrow area delineated for marsh fill material, Borrow Area 35-E. The total delineated volume for the marsh fill is based on the volume that is within the area that was previously delineated and used as a rehandling site during the Emergency Barrier Berm construction. The beach/dune fill will be excavated from one (1) or a combination of multiple borrow areas. The beach/dune borrow areas are delineated as MR-A, MR-B, and MR-E located within the Mississippi River, and Area 9 located offshore of the project fill area. The delineation of a borrow area defines the borrow area boundaries determined to avoid pipelines and cultural resources or other debris and to include the best quality material for the type of fill needed. The delineated borrow area volumes exceed the total amount to be excavated to allow construction method options for the contractor, which will in turn allow the state a more competitive bid process and more economical bid to be received, as well as to allow the contractor to avoid areas with inconsistent material for the specified type of fill, and allow avoidance of any anomalies that may be encountered. The total fill volume includes beach/dune, marsh, temporary spoil and rehandling, and primary dike volumes.

The area to be excavated to construct the primary dike will be filled with marsh fill material during the project construction. Therefore any existing marsh that may be impacted due to construction of the primary dike will be replaced with new marsh fill before construction is complete. The areas of the spoil and rehandling from access dredging will temporarily impact approximately 1 acre of existing wetlands, but this material will be placed at +3.0 feet NAVD or be graded to an elevation of +3.0 feet NAVD88 at the end of construction. It has been determined that this elevation is conducive to wetland establishment.

**APPENDIX VII LDEQ WATER PERMIT**

BOBBY JINDAL  
GOVERNOR



PEGGY M. HATCH  
SECRETARY

State of Louisiana  
DEPARTMENT OF ENVIRONMENTAL QUALITY  
ENVIRONMENTAL SERVICES

JUN 15 2012

Coastal Protection and Restoration Authority  
450 Laurel Street, Suite 1200  
Baton Rouge, LA 70801

Attention: Chad Chauvin

RE: Water Quality Certification (WQC 120410-01/AI 181424/CER 20120001)  
Corps of Engineers Permit (MVN-2011-2935-EFF)  
Coastal Management Permit (P20120216)  
Plaquemines Parish

Dear Mr. Chauvin:

The Louisiana Department of Environmental Quality (the Department) has reviewed your application to dredge waterbottoms and place spoil material for the restoration of barrier islands (Shell Island East and West), approximately 8.5 miles south of Empire, Louisiana.

Based on the information provided in the application, the Department made a determination that the requirements for a Water Quality Certification have been met and concludes that the placement of the fill material will not violate water quality standards of Louisiana as provided for in LAC 33:IX.Chapter 11. Therefore, the Department hereby issues a Water Quality Certification to Coastal Protection and Restoration Authority.

If you have any questions, please call Jamie Phillippe at 225-219-3225.

Sincerely,

A handwritten signature in black ink, appearing to read "Melvin C. Mitchell, Sr.", written over a horizontal line.

Melvin C. Mitchell, Sr.  
Administrator  
Water Permits Division

MCM/jjp

c: Corps of Engineers- New Orleans District  
Coastal Management Division

RECEIVED  
2012 JUN 21 P 3:35  
CPRA



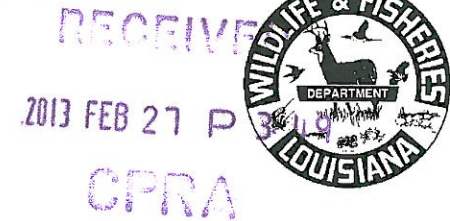
**APPENDIX VIII LDWF FILL MATERIAL PERMIT**



LOUISIANA DEPARTMENT OF WILDLIFE AND FISHERIES

FILL MATERIAL LICENSE

LICENSE NO. WLF201331



*In consideration of a royalty paid to the Department by the applicant, this license for the removal of fill material from water bottoms of the State of Louisiana is issued to:*

*Licensee Name and Address: Louisiana Coastal Protection & Restoration Authority  
P.O. Box 44027, Capitol Station  
Baton Rouge, LA 70804*

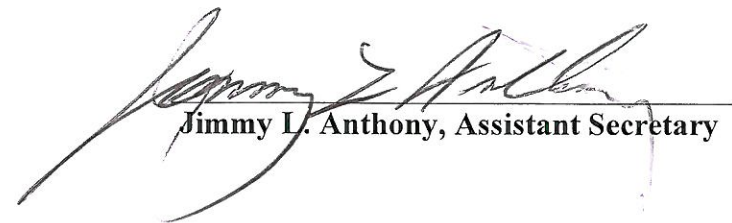
*License Site Location: (1) Mississippi River; Lat. 29° 23' 40.7"; Long. 89° 35' 37.8"; Plaquemines Parish  
(2) Gulf of Mexico; Lat. 29.205742°; Long. 89.649384°; Plaquemines Parish*

*Project Description: approximately 16,276,000 cubic yards of fill material and/or fill sand will be dredged from the Mississippi River to re-establish and maintain the functional barrier island ecosystem at Shell Island. Marsh fill will be dredged from the Gulf of Mexico.*

*The rights and privileges shall begin on the 22nd day of February 2013 and expires on the 31st day of December 2013 or until you reach the amount applied for.*

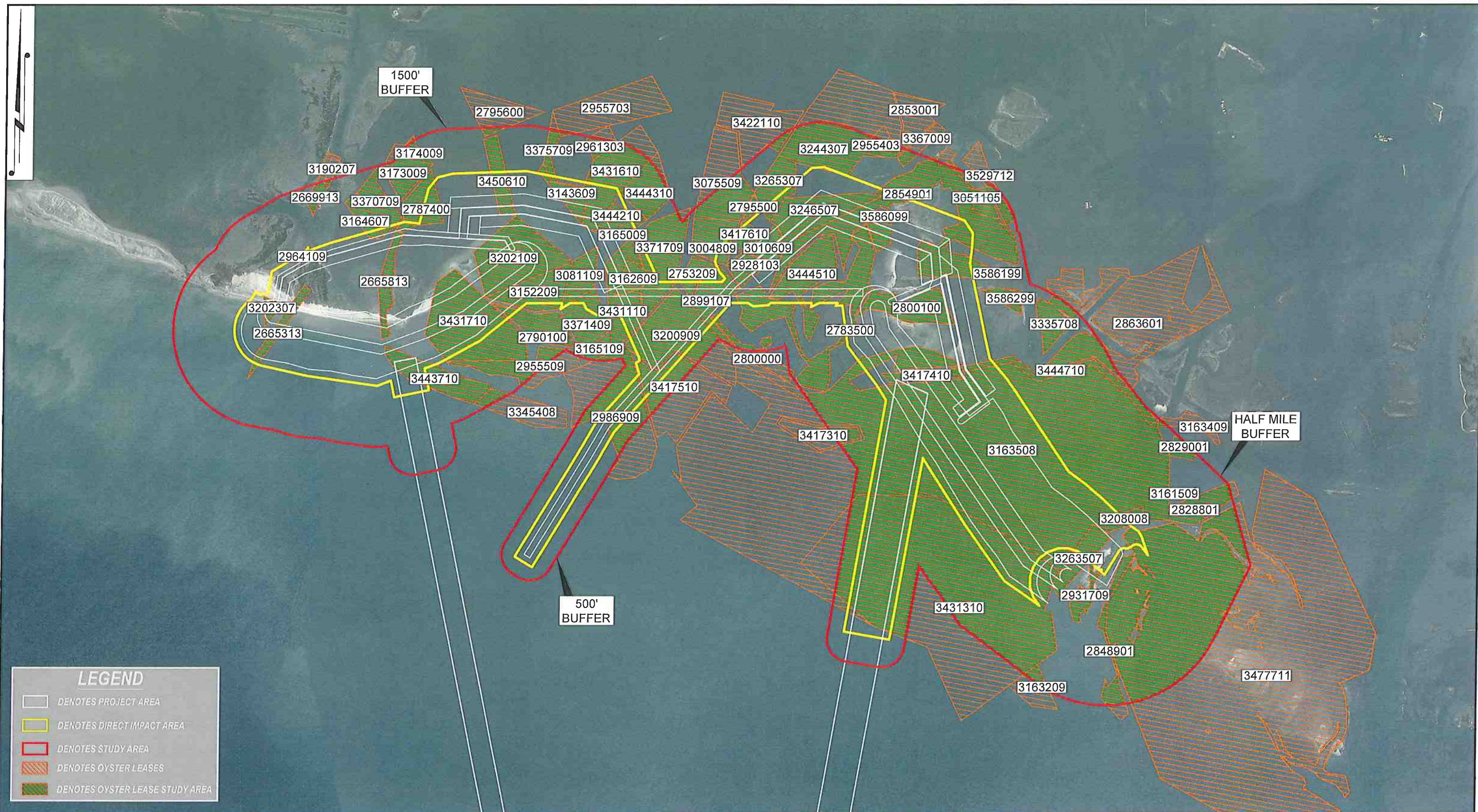
*The use of the fill material authorized for removal by this license is subject to the following restrictions:*

- 1. The Department of Wildlife and Fisheries shall be notified prior to removal of the material and again be notified upon completion of the project.*
- 2. All provisions of the Fill Material License shall be adhered to.*
- 3. This Certificate shall be posted in a conspicuous place at the project site during the activities authorized.*

  
Jimmy L. Anthony, Assistant Secretary

**APPENDIX IX OYSTER LEASE MAP**

5/30/2013 - P:\Y-2013\2013.0191\DWG\REPORT DRAWINGS\13.019103- BASEMAP.DWG



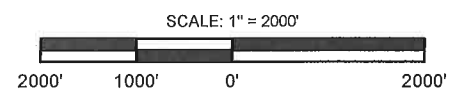
**LEGEND**

- DENOTES PROJECT AREA
- DENOTES DIRECT IMPACT AREA
- DENOTES STUDY AREA
- DENOTES OYSTER LEASES
- DENOTES OYSTER LEASE STUDY AREA

NOTES: 2008 AERIAL PHOTOGRAPHY



**T. BAKER SMITH** 1913  
**A CENTURY OF SOLUTIONS** 2013  
 412 South Van Ave, Houma, LA 70363  
 (985)868-1050 - tbsmith.com



REV. NO: 00	REV. DATE: --/--	REV. BY: --
REVISION DESCRIPTION:		
--		

DRAWN BY: SPM	APPROVED BY: RWD
DATE: 05/30/2013	JOB NO: 2013.0191
DRAWING NAME: 13.019103- BASEMAP.DWG	
PROJECTION: PROJECTION	
GEO. DATUM: NAD83   VERT. DATUM: NAVD88	
GRID UNITS: US SURVEY FEET	
SHEET NO: 3	

**OYSTER RESOURCE SURVEY**

COASTAL PROTECTION AND RESTORATION AUTHORITY OF LOUISIANA

SHELL ISLAND WEST NRDA BA-111  
 BARRIER ISLAND RESTORATION PROJECT  
 PLAQUEMINES PARISH, LOUISIANA

**APPENDIX X      PREVAILING WAGE DETERMINATION SCHEDULE**



First cook..... \$ 7.25  
Handyman..... \$ 7.25  
Janitor, cabin person..... \$ 7.25  
Second cook..... \$ 7.25

Marsh Buggy Dragline, Oiler..... \$ 7.25

Marsh Buggy Dragline, Operator... \$ 7.25

Self-Propelled Hopper Dredge,  
Drag Tender..... \$ 9.70 3.45+a

FOOTNOTE: Fourteen paid vacation days and eight paid holidays: New Year's Day, Good Friday, Memorial Day, Independence Day, Labor Day, Veterans' Day, Thanksgiving Day & Christmas Day provided the employee has one year of service.

-----

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

=====

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

-----

In the listing above, the "SU" designation means that rates listed under the identifier do not reflect collectively bargained wage and fringe benefit rates. Other designations indicate unions whose rates have been determined to be prevailing.

-----

#### WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- \* an existing published wage determination
- \* a survey underlying a wage determination
- \* a Wage and Hour Division letter setting forth a position on a wage determination matter
- \* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the

response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations  
Wage and Hour Division  
U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator  
U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board  
U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

=====

END OF GENERAL DECISION



**APPENDIX XI    FIELD ADJUSTMENT REPORT**

**Field Adjustment Report**Field Adjustment  
Number:

Contractor:

Date:

**Shell Island West NRDA Restoration Project (BA-111)**

Specification and/or Drawing Number:

Reference (Shop Drawing):

*Description of Work Affected:**Reason for Adjustment:***\*\* THIS FIELD ADJUSTMENT SHALL NOT RESULT IN A CHANGE IN CONTRACT PRICE OR THE TIME FOR COMPLETION \*\******Recommended By:******CONTRACTOR  
Agreement:******CPRA  
Agreement:***

Signature

Date

Agreed (Y/N):

Approved (Y/N):

CPRA

Engineer

Contractor

Signature/Title/Date:

Signature/Title/Date:

**APPENDIX XII REQUEST FOR INTERPRETATION**



**APPENDIX XIII LAND RIGHTS APPENDIX**

The Contractor shall give reasonable notice to GRANTOR prior to initiation of access to the said Lands for the purpose of implementing, constructing, operating, modifying, monitoring, and maintaining the Project.

**Tract 1:**

The Louisiana Land and Exploration Company LLC  
Conoco Phillips  
Attention: Jeff DeBlieux  
806 Bayou Black Drive  
Houma, LA 70361

**Tract 2:**

Kevin C. Schoenberger  
1740 Bordeaux St.  
New Orleans, LA 70115  
504-525-1143

Clifford Philip Bein  
957 Rue Chinon  
Mandeville, LA 70471

Christian Schoenberger Bein  
517 Rio Vista Avenue  
Jefferson, LA70121

Martin J. Schoenberger  
1812 Palmer Avenue  
New Orleans, LA 70118

Mary Ellen Schoenberger Willkomm  
1370 Curlew Avenue  
Naples, FL 34102

Leander H. Perez, III  
11422 Hwy 23  
Belle Chasse, LA 70037  
(504) 214-4003 (mobile)  
(504) 656-2323 (home)

Paula A. Perez Landrem  
401 Bellaire Dr.  
New Orleans, LA 70124  
(504) 309-3836 (home)  
(504) 453-8352 (cell)

Margaret Perez Barton  
452 Cornell Ave.  
Baton Rouge, LA 70808  
(225) 766-6713 (home)

Catherine Perez Alford  
1320 Octavia St.  
New Orleans, LA 70115  
(504) 899-1007 (home)

Estate of Chalin O. Perez  
Attention: Chalyn David Perez  
4881 Hwy 39  
Braithwaite, LA 70040-2121  
(504) 682-2467

Chalin O. Perez, Jr.  
39 Papworth Ave.  
Metairie, LA 70005  
(504) 451-7035 (home)

Natalie Riley  
101 S. Jefferson Ave.  
Cookeville, TN 38501

Gladys Cook Zibilich  
11180 Irving Dr. Apt 205  
Westchester, CO 80031

George Zibilich, Jr.  
1930 Henderson St.  
Eureka, CA 95501  
707-616-8877

Debbie Zibilich Yakash  
14571 Williams St.  
Brighton, CO 80602  
303-465-0360 home  
303-641-8875 cell

Gloria J. Zibilich  
776 Woodland Bigler Hwy  
Woodland, PA 16881  
814-857-5244 home  
814-558-6322 cell

Leo H. Zibilich  
Nottingham Regional Nursing Home  
2828 Westfork Dr.  
Baton Rouge, LA 70816

Frederick Andrew Kron  
3833 Riverwood Dr.  
Provo, Utah 84604  
801-372-2110 cell  
801-607-2600 home

Ellen Kron  
7817 South Claiborne Ave  
New Orleans, LA 70125  
850-261-3577

Judy Kron  
6551 South Claiborne Ave. Unit 648  
New Orleans, LA 70125  
302-545-2578

Susan Kron  
1049 Rockledge Dr. Unit 405B  
Rockledge, FL 32955  
321-848-0551

Dawn Muldrey Taliencich  
71 Oaklawn Dr.  
Metairie, LA 70005  
504-888-5189 home  
504-256-0969 cell

Barrie John Muldrey  
4608 Page Dr.  
Metairie, LA 70778  
504-432-0678

Margaret M. Muldrey Kane  
1935 Audubon Street  
New Orleans, LA 70118  
504-455-4954 home  
504-237-4954 cell

Kathleen Ellen Muldrey Hannigan  
3706 Upperline St.  
New Orleans, LA 70125  
504-821-0375 home  
504-782-1436 cell

Patricia Ann Muldrey Poynot  
16161 Tiger Bend Rd. Apt 17  
Baton Rouge, LA 70817  
225-756-6635 home  
985-237-5977

Kenneth Deamore  
2417 W. Pearl Dr.  
Marrero, LA 70072  
504-340-9889  
504-566-5271



**Tract 3:**

United States of America - Bureau of Land Management  
Attention: Victoria Craft  
411 Briarwood Dr. Suite 404  
Jackson, MS 39206  
601-977-5435  
VCraft@BLM.GOV

**Tract 4:**

St. Paul's Episcopal Church  
Attention: Robert Courtney  
6249 Canal Blvd.  
New Orleans, LA 70124

**Tract 5:**

Cecile Airey Dinkens Ellis  
4 Greenbriar Dr.  
Covington, LA 70433  
985-893-5455

Joyce Ludwig Ellis Spruiell  
215 Iona St.  
Metairie, LA 70005  
504-833-4048

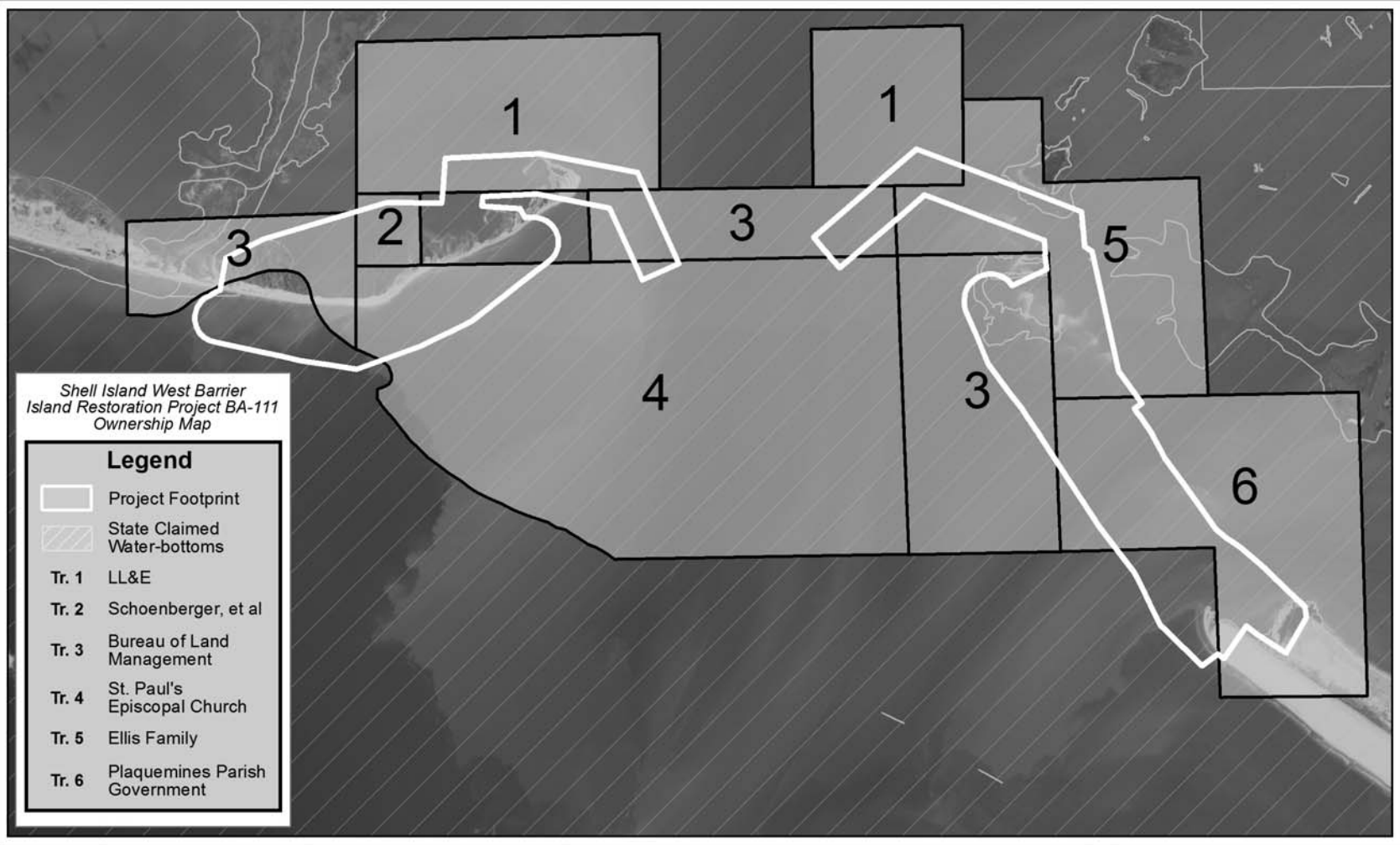
John Matson Ellis, Jr.  
36 Dennis Rd.  
Longmeadow, MA 01106  
413-567-8643

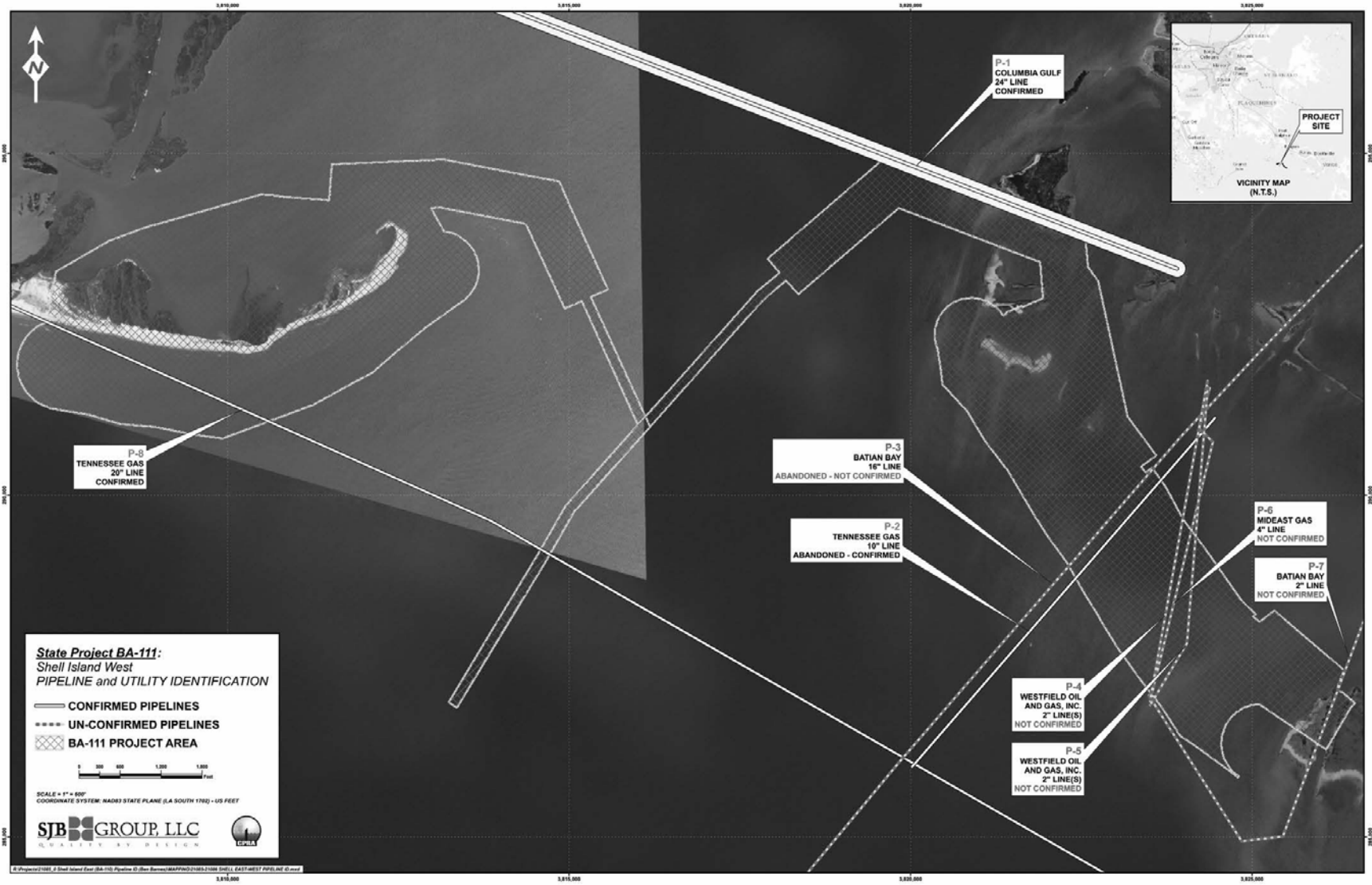
Sidney Elder Ellis Reavy  
36 Dennis Rd.  
Longmeadow, MA 01106  
413-567-8643

Catherine Moore Ellis  
36 Dennis Rd.  
Longmeadow, MA 01106  
413-567-8643

**Tract 6:**

Plaquemines Parish Government  
Attention: Vincent Frelich  
8056 Hwy. 23, Ste. 200  
Belle Chasse, LA 70037





**State Project BA-111:**  
 Shell Island West  
 PIPELINE and UTILITY IDENTIFICATION

CONFIRMED PIPELINES  
 UN-CONFIRMED PIPELINES  
 BA-111 PROJECT AREA

0 500 1,000 1,500  
 Feet

SCALE = 1" = 500'  
 COORDINATE SYSTEM: NAD83 STATE PLANE (LA SOUTH 1100) - US FEET

**SJB GROUP, LLC**  
 QUALITY BY DESIGN

**EPRI**

© Proprietary and Confidential. All Rights Reserved. Shell Island West (BA-111) Pipeline ID (Rev. 08/2018) (SJB) - E&I and I&I P&ID, INC. 01/2019

Shell Island West (BA-111)  
 Plaquemines Parish  
 Pipeline Ownership Report

Company Name	Pipe Size	Product Transmitted	Depth of Cover	Active or Abandoned	Public Imp. Clause	Contact Person, Address and Telephone Number
P-1	Columbia Gulf Transmission (Nisource)	24"	Natural Gas	Minimum 4'	Active	Darren Duhon (m) 337.266.4673
201 Energy Parkway, Suite 100 Lafayette, LA 70508						
P-2	Tennessee Gas Pipeline (El Paso Pipeline Company)	10"	Natural Gas	Minimum 10'	Abandoned	Pat Adams PH-(985)223-6139
224 Aviation Road Houma, LA 70363						
P-3	OGS Pipeline, LLC	2"	Natural Gas	Minimum 3-5"	Abandoned	Tim Van Ackeren - Executive Vice President (O) (512) 610.5100
P-4	Westfield Oil and Gas, Inc.	2"	Natural Gas	Minimum 3"	N/A	Ernie F. Gouge
Please send Correspondence to: Westfield Oil and Gas, Inc. 1315 Reddleshire Lane Houston, TX 77043						

Shell Island West (BA-111)  
 Plaquemines Parish  
 Pipeline Ownership Report

Company Name		Pipe Size	Product Transmitted	Depth of Cover	Active or Abandoned	Public Imp. Clause	Contact Person, Address and Telephone Number
P-5	Westfield Oil and Gas, Inc.	2"	Natural Gas	Minimum 3"	N/A		Ernie F. Gouge
							Please send Correspondence to: Westfield Oil and Gas, Inc. 1315 Reddleshire Lane Houston, TX 77043
P-6	Mideast Gas System, Inc. (C/O K-J Company)	4"		Minimum 8"	N/A		Jo Beth Taylor
							(O) (281) 872-3100 Please send Correspondence to: ATTN: Jo Beth Taylor 512 Puju Street Lake Charles, LA 70505
P-7	OGS Pipeline, LLC	2"	Natural Gas	Minimum 3-5"	N/A		Tim Van Ackeren - Executive Vice President
							(O) (512) 610.5100
P-8	Tennessee Gas Pipeline (El Paso Pipeline Company)	20"	Natural Gas	Minimum 10'	Active		Pat Adams
							PH-(985)223-6139 224 Aviation Road, Houma, LA 70363 This line is running east to west



Coastal Protection and  
Restoration Authority of Louisiana

# State of Louisiana

**BOBBY JINDAL**  
GOVERNOR

February 27, 2015

## Memorandum

To: Chris Allen, CPRA Project Manager  
From: Ben Barnes, CPRA Land Division  
RE: Landrights Completion Memorandum  
Shell Island West Barrier Island Restoration Project BA-111  
Plaquemines Parish, Louisiana

The CPRA Land Division has completed the necessary landrights to proceed to construction contracting on the above-referenced project. The below information is being provided to you.

- |   |  |
|---|--|
| <input checked="" type="checkbox"/> <i>Servitude Agreement(s)</i>                   | <input type="checkbox"/> <i>Mineral Operations Agreement(s)</i>          |
| <input type="checkbox"/> <i>Servitude Amendment (Integrated Coastal Protection)</i> | <input checked="" type="checkbox"/> <i>Grant of Particular Use</i>       |
| <input checked="" type="checkbox"/> <i>Pipeline Notices of Construction</i>         | <input type="checkbox"/> <i>State Land Office Letter of No Objection</i> |
| <input type="checkbox"/> <i>Oil/Gas Operator Agreement(s)</i>                       | <input type="checkbox"/> <i>Assignment of Rights to Federal Sponsor</i>  |
| <input checked="" type="checkbox"/> <i>Memorandum(s) of Agreements</i>              | <input type="checkbox"/> <i>Landrights Certification Letter</i>          |
| <input type="checkbox"/> <i>CWPPRA Section 303(e) approval</i>                      | <input type="checkbox"/> <i>Other: Corp of Engineers Consent</i>         |
| <input checked="" type="checkbox"/> <i>Right(s) of Entry for Construction</i>       | <input type="checkbox"/> <i>Other:</i>                                   |

Ben Barnes, CPRA Land Division

cc: Jacques Boudreaux

## **APPENDIX XIV SURVEY MONUMENTS**



**VICINITY MAP** Scale: 1" = 2000'  
**Station Name: "BA-40 SM01"**

Reproduced from USC&GS "BURAS" Quadrangle

**Location:** In Plaquemines parish, From the bridge crossing Doullut canal on La. Hwy 23 in Empire proceed south on La. Hwy 23 approximately 4.5 miles to the station on the left. The station is located in the north east quadrant of the intersection of La. Hwy 23 and Cazezu Drive. The mark is 160.5 feet north of a large flag pole, 73.3 feet east of a carsonite witness post and 96.7 feet north of the north edge of Cazezu drive.

**Monument Description:** NGS style floating sleeve monument; datum point set on 9/16" stainless steel sectional rods driven 92 feet to refusal, set in sand filled 6" PVC pipe with access cover set in concrete, flush with ground.

**Stamping:** BA-40 SM01

**Installation Date:** JUNE 07 **Date of Survey:**

**Monument Established By:** SJB GROUP

**For:** Louisiana Department of Natural Resources, CED

**Adjusted NAD 83 Geodetic Position**

Lat. 29°21' 20.02525" N  
 Long. 89°32' 02.21589" W

**Adjusted NAD 83 Datum LSZ (1702) Feet**

N= 315642.604  
 E= 3854052.363

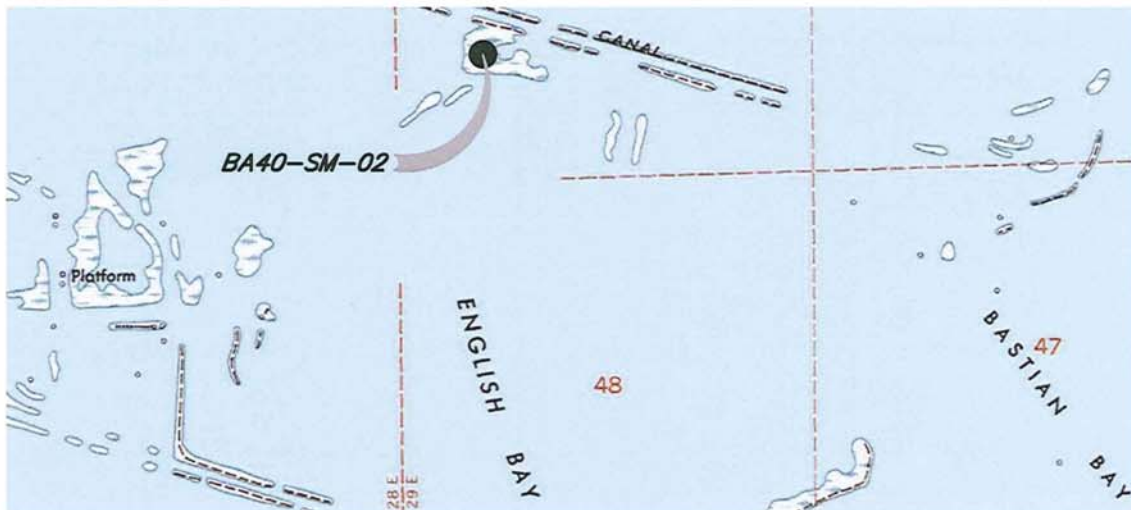
**Adjusted NAVD88 Height**

Elevation = -1.856 feet (-0.566 mtrs)  
 Geoid03 Height = -24.134 mtrs.  
 Ellipsoid Height = -24.699 mtrs.



*Adjusted Position Established for Louisiana Department of Natural Resources, Coastal Engineering Division*





**VICINITY MAP** Scale: 1" = 2000'

Reproduced from USC&GS "BURAS" Quadrangle

**Station Name: "BA-40 SM02"**

**Location:** The station is located in Plaquemines parish. To reach the mark from Joshua's marina proceed south west 2.9 miles to a small island and the mark is located in center of the island.

**Monument Description:** NGS style floating sleeve monument; datum point set on 9/16" stainless steel sectional rods driven 92 feet to refusal, set in sand filled 6" PVC pipe with access cover set in concrete, 1 foot above ground level.

**Stamping:** BA-40 SM02

**Installation Date:** JUNE 07 **Date of Survey:**

**Monument Established By:** SJB GROUP

**For:** Louisiana Department of Natural Resources, CED

**Adjusted NAD 83 Geodetic Position**

Lat. 29°19' 07.36642" N  
 Long. 89°34' 12.43669" W

**Adjusted NAD 83 Datum LSZ (1702) Feet**

N= 302064.704  
 E= 3842736.232

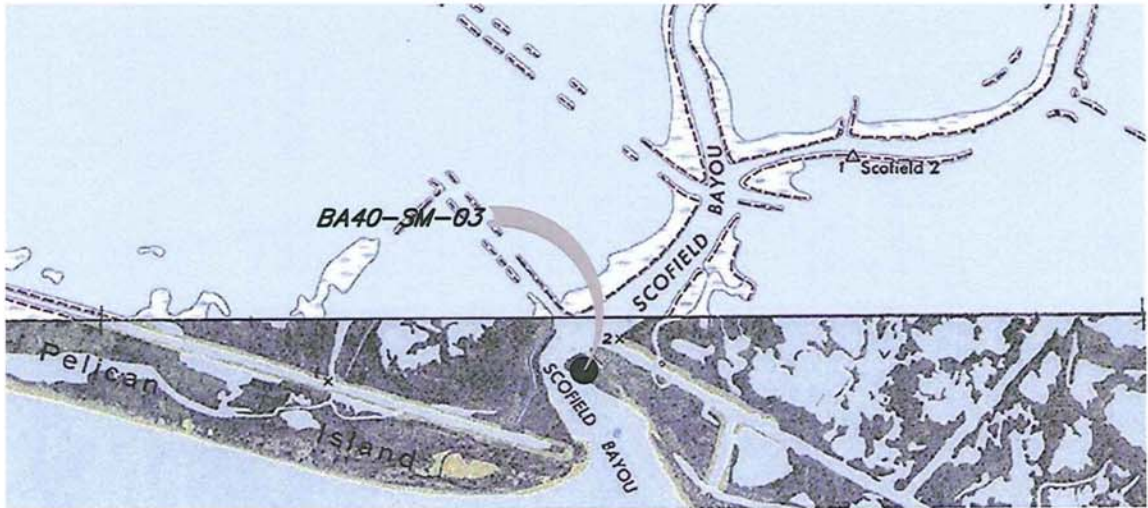
**Adjusted NAVD88 Height**

Elevation = 2.02 feet (0.616 mtrs)

Geoid03 Height = -24.044 mtrs.  
 Ellipsoid Height = -23.428 mtrs.



*Adjusted Position Established for Louisiana Department of Natural Resources, Coastal Engineering Division*



**VICINITY MAP** Scale: 1" = 2000' Reproduced from USC&GS "BURAS" & "BAY COQUETTE" Quadrangles

**Station Name: "BA-40 SM03"**

**Location:** The station is located in Plaquemines parish. To reach the mark from Joshua's marina proceed south-west 7.5 miles to the mark set on the west side of Scofield island ,east of Scofield bayou.

**Monument Description:** NGS style floating sleeve monument; datum point set on 9/16" stainless steel sectional rods driven 92 feet to refusal, set in sand filled 6" PVC pipe with access cover set in concrete, 1 foot above ground level.

**Stamping:** BA-40 SM03

**Installation Date:** JUNE 07 **Date of Survey:**

**Monument Established By:** SJB GROUP

**For:** Louisiana Department of Natural Resources, CED

**Adjusted NAD 83 Geodetic Position**

Lat. 29°14' 55.92325" N  
 Long. 89°33' 49.99311" W

**Adjusted NAD 83 Datum LSZ (1702) Feet**

N= 276699.079  
 E= 3845115.032

**Adjusted NAVD88 Height**

Elevation = 3.63 feet (1.107 mtrs)

Geoid03 Height = -23.894 mtrs.  
 Ellipsoid Height = -22.786 mtrs.



*Adjusted Position Established for Louisiana Department of Natural Resources, Coastal Engineering Division*



**VICINITY MAP** Not to Scale

Reproduced from Louisiana 2005 DOQQ

**Station Name: "BA-SCOFIELD 2"**

**Location:** The Station is located by boat approximately 9 miles due south of Empire, Louisiana, on the south spoil bank of a pipeline canal on Pelican Island in Section 35, T21S-R28E, Plaquemines Parish, Louisiana. It is located approximately 17 feet south of the waters edge of the Canal and is 15 feet south from an orange carsonite witness post.

**Monument Description:** The station is a stainless steel spherical datum point attached to a 9/16" stainless steel rod driven 68 feet to refusal set within a floating sleeve and 6" PVC pipe filled with sand set in concrete with an access cover.

**Stamping:** SCOFIELD 2

**Installation Date:** 2007 **Date of Survey:** August 2007

**Monument Established By:** JCLS

**For:** JCLS

**Adjusted NAD83 Geodetic Position (NSRS2007)**

Lat. 29°15'20.49271" N  
Long. 089°36'14.24887" W

**Adjusted NAD83 Datum LSZ (1702) Ft (NSRS2007)**

N= 278,985.57  
E= 3,832,299.78

**Adjusted NAVD88 Height (2006.81)**

Elevation = 4.53 feet (1.382 mtrs)

*Ellipsoid Height = -22.523 mtrs.  
Geoid03 Height = -23.905 mtrs. (2004.65)*



*Adjusted Position Established John Chance Land Surveys, Inc. for the Coastal Protection & Restoration Authority of Louisiana, OCPR*

**APPENDIX XV U.S. COAST GUARD NOTICE OF INTENT TO DREDGE  
INFORMATION REQUIREMENTS**



8<sup>TH</sup> COAST GUARD DISTRICT MARINE INFORMATION SECTION OF THE  
AIDS TO NAVIGATION BRANCH. (504) 671-2327

FAX: (504) 671-2137

E-MAIL: [d8marineinfo@uscg.mil](mailto:d8marineinfo@uscg.mil)

SECTOR OFFICES:

MOBILE: (251) 441-5999

NEW ORLEANS: (504) 365-2200

GLAVESTON: (713) 678-9055

CORPUS CHRISTI: (361) 939-6393

UPPER MISSISSIPPI: (314) 269-2610

LOWER MISSISSIPPI: (866) 777-2784

OHIO VALLEY: (502) 779-5422

TIME LINE: PROVIDE THE REQUESTED INFORMATION IDEALLY 7 TO 10 DAYS  
PRIOR TO THE ACTIVITY.

INFORMATION REQUESTED:

ANY DREDGING OR OTHER OPERATIONAL ACTIVITY THAT IMPACTS THE SAFE  
NAVIGATION ON FEDERAL WATERWAYS.

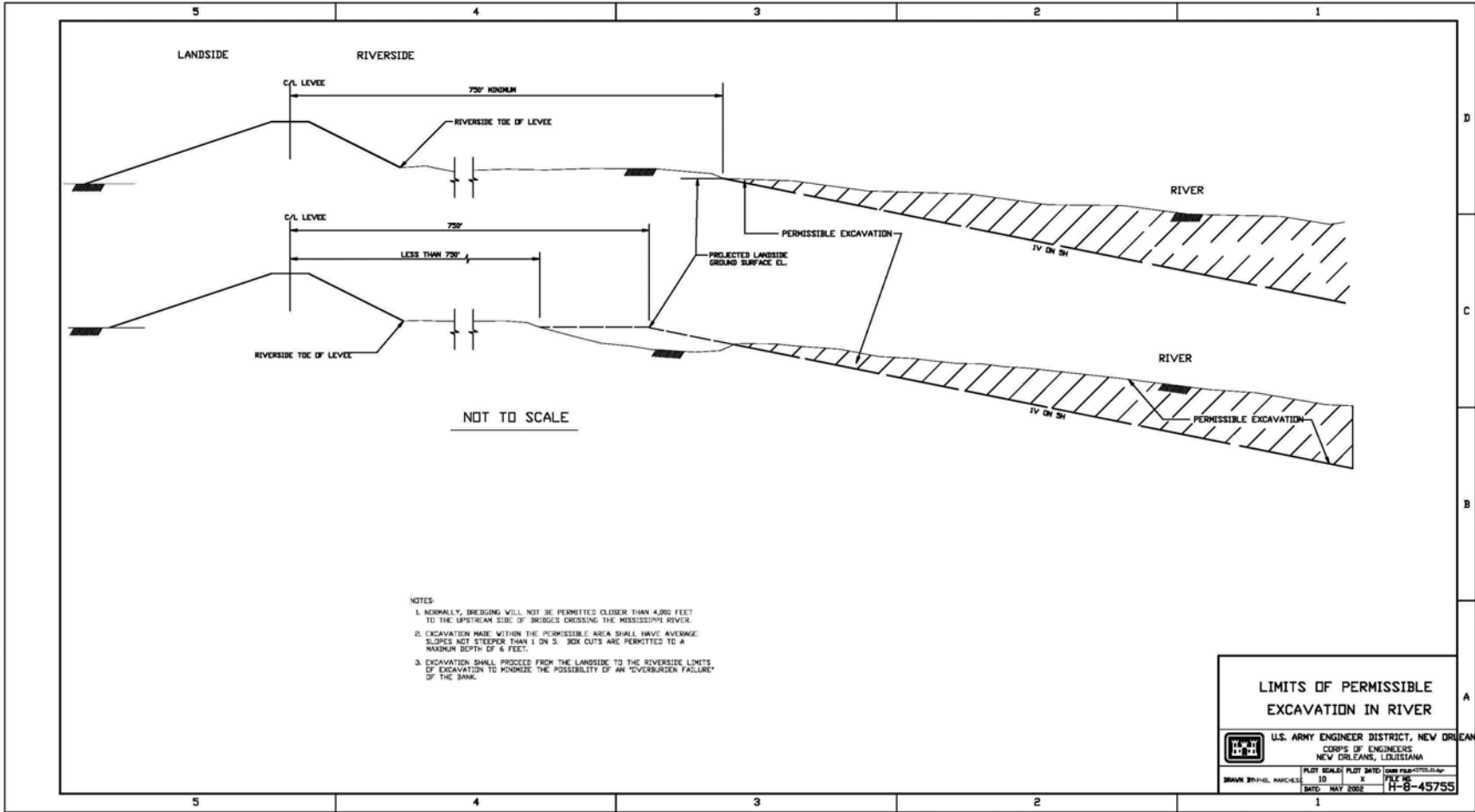
1. DATES (INCLUSIVE) OF OPERATION.
2. HOURS OF OPERATION (24 HOURS/DAYLIGHT HOURS ONLY).
3. NAMES OF THE INVOLVED VESSEL(S).
4. WORKING AND STANDBY FREQUENCIES.
5. SPECIFIC LOCATION (MILE MARKER/BANK).
6. ANY SPECIFIC INSTRUCTIONS OR CONCERNS THAT WOULD BE PERTINENT TO THE MARINER.

NOTE: WE CAN ONLY PROVIDE INFORMATION. WE CANNOT DIRECT THE MOVEMENTS OF VESSELS. WE URGE THE MARINER TO ADHERE TO THE REQUESTED ACTIONS.

ACTION: THE COAST GUARD WILL ISSUE A BROADCAST NOTICE TO MARINERS AND/OR INCLUDE THE INFORMATION INTO THE APPROPRIATE LOCAL NOTICE TO MARINERS.

IF THE SITUATION DICTATES (LAST MINUTE CHANGES OR NOTIFICATION), A CALL TO MY OFFICE AND THE BROADCAST NOTICE TO MARINERS CAN BE ISSUED/CHANGED/MODIFIED.

**APPENDIX XVI USACE LIMITS OF PERMISSIBLE EXCAVATION IN  
RIVER**



- NOTES
1. NORMALLY, BRIDGING WILL NOT BE PERMITTED CLOSER THAN 4,000 FEET TO THE UPSTREAM SIDE OF BRIDGES CROSSING THE MISSISSIPPI RIVER.
  2. EXCAVATION MADE WITHIN THE PERMISSIBLE AREA SHALL HAVE AVERAGE SLOPES NOT STEEPER THAN 1 ON 5. SOX CUTS ARE PERMITTED TO A MAXIMUM DEPTH OF 6 FEET.
  3. EXCAVATION SHALL PROCEED FROM THE LANDSIDE TO THE RIVERSIDE LIMITS OF EXCAVATION TO MINIMIZE THE POSSIBILITY OF AN OVERBURDEN FAILURE OF THE BANK.

**LIMITS OF PERMISSIBLE EXCAVATION IN RIVER**

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS  
CORPS OF ENGINEERS  
NEW ORLEANS, LOUISIANA

DRAWN BY: JEL	SCALE: 1" = 50'	PLOT DATE: 10/1/00	PLOT BY: JEL	DATE: MAY 2000	PROJECT NO: H-8-45755
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**APPENDIX XVII 2012 CONVEYANCE CORRIDOR SURVEYS**

***PROVIDED ELECTRONICALLY at the following link:***

<ftp://ftp.coastal.la.gov/BA-111/Appendices/>

**APPENDIX XVIII 2008 CONVEYANCE CORRIDOR UPLAND SEGMENT  
SURVEY**

*PROVIDED ELECTRONICALLY at the following link:*

<ftp://ftp.coastal.la.gov/BA-111/Appendices/>

**APPENDIX XIX SCOFIELD ISLAND CONSTRUCTION PERMITS**



**DEPARTMENT OF NATURAL RESOURCES  
OFFICE OF COASTAL MANAGEMENT**

P.O. BOX 44487  
BATON ROUGE, LOUISIANA 70804-4487  
(225)342-7591  
1-800-267-4019

**COASTAL USE PERMIT/CONSISTENCY DETERMINATION**

**C.U.P. No.:** P20101416

**C.O.E. No.:** MVN- 2008- 03033- ETT

**NAME:** LOUISIANA OFFICE OF COASTAL PROTECTION AND RESTORATION  
P.O. BOX 44027  
BATON ROUGE, LA 70804  
Attn: Kristi Cantu

**LOCATION:** **Plaquemines Parish, LA**  
Scofield Island - Lat. 29° 14' 19.55"N, Long. -89° 32' 31.08"W. MR-E-09 Borrow Area in Mississippi River - Lat. 29° 21' 02.90"N, Long. -89° 30' 14.67"W. MR-B-09 Borrow Area in Mississippi River - Lat. 29° 23' 37.47"N, Long. -89° 35' 136.17"W. Offshore Borrow Area - Lat. 29° 12' 01.44"N, Long. -89° 31' 51.25"W. A full table of coordinates is included with the plats.

**DESCRIPTION:** Proposed riverine sand mining and Scofield Island restoration to be carried out as part of OCPR Project No. BA-40. Both MR-B-09 and MR-E-09 have been identified as sources for sand material. MR-B-09 measures 14,700' long with widths between 360' and 800' with a depth of 24', MR-E-09 measures 9,500' long by 1,100' wide with a depth of 25". An additional offshore borrow area will measure 2,800' x 1900' with an average depth of 21'. A temporary 30" sediment diversion pipeline will be installed to convey dredged material to Scofield Island. Articulated concrete mats will be used for bankline stabilization at the Empire Harbor Canal crossing. Two permanent pipe casings will be directionally drilled under roadways and capped upon completion of work. Approximately 3,961 cubic yards of hauled-in soil and 231 cubic yards of gravel will be required for two levee crossings. A 19,825' x 100' floatation channel will be created at Scofield Island. Approximately 13.4 million cubic yards of material will be excavated. After dewatering, approximately 6.5 million cubic yards of material will be used as fill for marsh and dune creation and sediment pipeline installment. No additional dredge or fill is required.

In accordance with the rules and regulations of the Louisiana Coastal Resources Program and Louisiana R.S. 49, Sections 214.21 to 214.41, the State and Local Coastal Resources Management Act of 1978, as amended, the permittee agrees to:

1. Carry out, perform, and/or operate the use in accordance with the permit conditions, plans and specifications approved by the Department of Natural Resources.
2. Comply with any permit conditions imposed by the Department of Natural Resources.
3. Adjust, alter or remove any structure or other physical evidence of the permitted use if, in the opinion of the Department of Natural Resources, it proves to be beyond the scope of the use as approved or is abandoned.
4. Provide, if required by the Department of Natural Resources, an acceptable surety bond in an appropriate amount to ensure adjustment, alteration, or removal should the Department of Natural Resources determine it necessary.
5. Hold and save the State of Louisiana, the local government, the department, and their officers and employees harmless from any damage to persons or property which might result from the use, including the work, activity, or structure permitted.
6. Certify that the use has been completed in an acceptable and satisfactory manner and in accordance with the plans and specifications approved by the Department of Natural Resources. The Department of Natural Resources may, when appropriate, require such certification to be given by a registered professional engineer.
7. All terms of the permit shall be subject to all applicable federal and state laws and regulations.
8. This permit, or a copy thereof, shall be available for inspection at the site of work at all times during operations.
9. The applicant will notify the Office of Coastal Management of the date on which initiation of the permitted activity described under the "Coastal Use Description" began. The applicant shall notify the Office of Coastal Management by mailing the enclosed green initiation card on the date of initiation of the coastal use.
10. Unless specified elsewhere in this permit, this permit authorizes the initiation of the coastal use described under "Coastal Use Description" for two years from the date of the signature of the Secretary or his designee. If the coastal use is not initiated within this two year period, then this permit will expire and the applicant will be required to submit a new application. Initiation of the coastal use, for the purposes of this permit, means the actual physical beginning of the use of activity for which the permit is required. Initiation does not include preparatory activities, such as movement of equipment onto the coastal use site, expenditure of funds, contracting out of work, or performing activities which by themselves do not require a permit. In addition, the permittee must, in good faith, and with due diligence, reasonably progress toward completion of the project once the coastal use has been initiated.
11. The following special conditions must also be met in order for the use to meet the guidelines of the Coastal Resources Program:



- a. Permittee shall, prior to commencement of the herein permitted activities, contact Allison Richard (phone: 225-342-1293, email: allison.richard@la.gov) to determine if a construction permit will be required from the local levee district.
- b. The water bottom shall not be disturbed during access to the proposed work location, or by the authorized activities whether it be by dredging, wheel washing, propwashing, jetting, mucking, plowing, bull dozing or any other means of moving bottom material, except as depicted on the plats. Powered vessels shall be operated so as not to disturb the water bottom by propeller or jet action.
- c. All logs, stumps and other debris unearthed during dredging shall be removed to an approved disposal site on land.
- d. That permittee shall insure that all sanitary sewage and/or related domestic wastes generated during the subject project activity and at the site, thereafter, as may become necessary shall receive the equivalent of secondary treatment (30 mg/l BOD5) with disinfection prior to discharge into any of the streams or adjacent waters of the area or, in the case of total containment, shall be disposed of in approved sewerage and sewage treatment facilities, as is required by the State Sanitary Code. Such opinion as may be served by those comments offered herein shall not be construed to suffice as any more formal approval(s) which may be required of possible sanitary details (i.e. provisions) scheduled to be associated with the subject activity. Such shall generally require that appropriate plans and specifications be submitted to the Department of Health and Hospitals for purpose of review and approval prior to any utilization of such provisions.
- e. Permittee shall obtain a Water Quality Certification, should one be required, from the LA Department of Environmental Quality prior to initiation of any construction activities.
- f. The area where the project is located is all part of the aboriginal homelands of the Chitimacha Tribe of Louisiana. As such, large villages, burial sites, and sacred sites were in place in that entire area. If at any time during the course of the work, any traditional cultural properties are discovered, Permittee shall immediately contact Kimberly S. Walden (Cultural Director) or Melanie Aymond (Research Coordinator) at (337) 923-9923 or (337) 923-4395. Office hours are Monday through Thursday from 7:30 A.M. - 5:00 P.M. and on Friday between 7:30 A.M. - 11:30 A.M. If traditional cultural properties are discovered on the weekend or after business hours, the notification shall be made the next business morning.
- g. All structures built under the authorization and conditions of this permit shall be removed from the site within 120 days of abandonment of the facilities for the herein permitted use, or when these structures fall into a state of disrepair such that they can no longer function as intended. This condition does not preclude the necessity for revising the current permit or obtaining a separate Coastal Use Permit, should one be required, for such removal activities.
- h. As-built drawings shall be submitted within 30 days of completion of this project to the Louisiana Department of Natural Resources, Office of Coastal Management, PO Box 44487, Baton Rouge, LA 70804-4487.
- i. Structures must be marked/lighted in accordance with U. S. Coast Guard regulations.
- j. Applicant shall not discharge any drilling and/or workover effluent except for flocculated filtered water.

Applicant shall not discharge any human waste which does not meet or exceed the requirements of the Department of Health and Hospitals.

Applicant shall not discharge any produced waters.

Applicant is subject to all applicable state laws related to damages which are demonstrated to have been caused by



this proposed action.

Applicant shall use any dredged material beneficially to create/restore emergent wetlands or place the material in open water in such a manner not to decrease the water depth greater than six inches.

Applicant shall provide to the LDWF a water bottom assessment (unless waived by LDWF) that meets LDWF protocol prior to commencement of the activity. A waiver request must be submitted to LDWF in writing and must state the justification for the request. Applicant may, at the request of LDWF and prior written approval of OCM, be required to modify the project if the proposed location unnecessarily impacts oyster reefs.

- k. The following conditions have been included to address concrete mats permitted as temporary pipeline stabilization in the Mississippi River and as permanent bankline stabilization at the Empire Harbor Canal.
1. The permittee must provide notification of the project to the U.S. Coast Guard and the DNR Underwater Obstruction Program within 30 days of installation. The notification must include the GPS coordinates of the mat installation site and the ID number of each mat.
  2. Mats must be marked/lighted in accordance with U. S. Coast Guard regulations. These markers/lights, if required, must be maintained at the site until such time as the mats are removed. A description of the condition of the markers/lights must be included in the monitoring report submitted to OCM/DNR.
  3. The permittee must agree to maintain liability for any damages resulting from the mats' presence on the waterbottom for as long as the mat installation remains on the waterbottom.
  4. The permittee must agree to hold and save the State of Louisiana, its agencies and political subdivisions and their officers and employees harmless from any damage to persons or property arising from the installation, presence or subsequent removal of mats as authorized in this General Permit.
  5. If multiple mats are required, the mats must be permanently joined together during installation to form a single unit. The unit must be maintained as a singular structure throughout its project life.
  6. The permittee must affix a permanent, unique identifier to each mat. The identifier and the methods of marking and attachment (e.g., embossing the permit number in the concrete or attaching a type of tag) must be approved by OCM/DNR prior to authorization.
  7. Should changes in the location or the section of the existing waterways, or in the generally prevailing conditions in the vicinity be required in the future, in the public interest (e.g., to allow for successful construction, implementation, maintenance, etc. of features contained in the Integrated Ecosystem Restoration and Hurricane Protection: Louisiana's Comprehensive Master Plan for a Sustainable Coast), permittee shall make such changes in the project concerned or in the arrangement thereof as may be necessary to satisfactorily meet the situation and shall bear the cost thereof. This condition does not preclude the necessity for revising the current permit or obtaining a separate Coastal Use Permit, should one be required, for project modifications.
- l. This permit does not convey any property rights, mineral rights, or exclusive privileges; nor does it authorize injury to property.
- m. No impacts to rare, threatened or endangered species or critical habitats are anticipated from the proposed project. No state or federal parks, wildlife refuges, wildlife management areas or scenic rivers are known at the specified site or within ¼ mile of the proposed project.

The Louisiana Natural Heritage Program (LNHP) has compiled data on rare, endangered, or otherwise significant plant and animal species, plant communities, and other natural features throughout the State of Louisiana. LNHP reports summarize the existing information known at the time of the request regarding the location in question. LNHP reports should not be considered final statements on the biological elements or areas being considered, nor should they be



substituted for on-site surveys required for environmental assessments. If at any time LNHP tracked species are encountered within the project area, please contact our biologist at 225-765-2643.

- n. All fill material shall be clean and free of contaminants and shall not contain hazardous materials such as asbestos or asbestos residue, shingles, tires, oil/grease residue, exposed rebar, protruding objects, etc.)
- o. Permittee shall, prior to commencement of the herein permitted activities, contact P.J. Hahn with the Buras Levee District (504)-297-5629 to determine if a construction permit will be required from the local levee district.
- p. Permittee is subject to all applicable state laws related to damages which are demonstrated to have been caused by this action.
- q. Permittee shall allow representatives of the Office of Coastal Management or authorized agents to make periodic, unannounced inspections to assure the activity being performed is in accordance with the conditions of this permit.
- r. Permittee shall comply with all applicable state laws regarding the need to contact the Louisiana One Call (LOC) system (1-800-272-3020) to locate any buried cables and pipelines.
- s. This permit authorizes the initiation of the Coastal Use described under "Coastal Use Description" for two (2) years from the date of the signature of the Secretary or his designee. Initiation of the Coastal Use, for purposes of this permit, means the actual physical beginning of the use or activity for which the permit is required. Initiation does not include preparatory activities, such as movement of equipment onto the Coastal Use site, expenditure of funds, contracting out of work, or performing activities which by themselves do not require a permit. In addition, Permittee must, in good faith and with due diligence, reasonably progress toward completion of the project once the Coastal Use has been initiated. If the Coastal Use is not initiated within this two (2) year period, an extension may be granted pursuant to the requirements contained in the Rules and Procedures for Coastal Use Permits (Title 43:I.723.D.). Please note that a request for permit extension MUST be made no sooner than one hundred eighty (180) days and no later than sixty (60) days prior to the expiration of the permit.

The expiration date of this permit is five (5) years from the date of the signature of the Secretary or his designee.

Upon expiration of this permit, a new Coastal Use Permit will be required for completion of any unfinished or uncommenced work items and for any maintenance activities involving dredging or fill that may become necessary. Other types of maintenance activities may also require a new Coastal Use Permit.

\*\*\*\*\* End of Conditions \*\*\*\*\*

Page: 5 of 6  
C.U.P. No.: P20101416  
C.O.E. No.: MVN- 2008- 03033- ETT



By accepting this permit the applicant agrees to its terms and conditions.

I affix my signature and issue this permit this 9th day of June, 2011.

THE DEPARTMENT OF NATURAL RESOURCES

Karl L. Morgan, Acting Administrator  
Office of Coastal Management

This agreement becomes binding when signed by Administrator of  
the Office of Coastal Management Permits/Mitigation Division, Department of Natural Resources.

Attachments



Page: 6 of 6  
C.U.P. No.: P20101416  
C.O.E. No.: MVN- 2008- 03033- ETT



**Final Plats:**

1) P20101416 Final Plats 06/07/2011

cc: Pete Serio, COE w/attachments  
Dave Butler, LDWF w/attachments  
Jamie Phillippe, DEQ w/attachments  
Peggy Rooney, OCM w/attachments  
Frank Cole, OCM/FI w/attachments  
Plaquemines Parish w/attachments

# DEPARTMENT OF THE ARMY PERMIT

JUL 25 2011

Permittee: Louisiana Office of Coastal Protection and Restoration

Permit No. MVN-2008-03033-ETT

Issuing Office: New Orleans District

NOTE: The term "you" and its derivatives, as used in this permit, means the permittee or any future transferee. The term "this office" refers to the appropriate district or division office of the Corps of Engineers having jurisdiction over the permitted activity or the appropriate official of that office acting under the authority of the commanding officer.

You are authorized to perform work in accordance with the terms and conditions specified below.

Project Description: Dredge in the Mississippi River and Gulf of Mexico for sediment materials to be delivered via pipelines for the purpose of restoring Scofield Island, in accordance with drawings attached in thirty-eight sheets dated November 2010, and attachment (A.) with three sheets undated: "Guidelines for activities in proximity to manatee and their habitat".

Project Location: In the Mississippi River along the left descending bank from a point just north of mile 31 downstream to north of mile 28 above the "Head of Passes" and along the right descending bank from a point just north of mile 29 downstream to north of mile 22 above the "Head of Passes". Also in Barataria Bay, and Gulf of Mexico, all within Sections 04 and 05, Township 22 South, Range 29 East, Plaquemines Parish, Louisiana.

Permit Conditions:

General Conditions:

1. The time limit for completing the work authorized ends on **July 31 2016**. 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 1 month before the above date is reached.
2. You must maintain the activity authorized by this permit in good condition and in conformance with the terms and conditions of this permit. You are not relieved of this requirement if you abandon the permitted activity, although you may make a good faith transfer to a third party in compliance with General Condition 4 below. Should you wish to cease to maintain the authorized activity or should you desire to abandon it without a good faith transfer, you must obtain a modification of this permit from this office, which may require restoration of the area.
3. If you discover any previously unknown historic or archeological remains while accomplishing the activity authorized by this permit, you must immediately notify this office of what you have found. We will initiate the Federal and State coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

4. If you sell the property associated with this permit, you must obtain the signature of the new owner in the space provided and forward a copy of the permit to this office to validate the transfer of this authorization.
5. If a conditioned water quality certification has been issued for your project, you must comply with the conditions specified in the certification as special conditions to this permit. For your convenience, a copy of the certification is attached if it contains such conditions.
6. You must allow representatives from this office to inspect the authorized activity at any time deemed necessary to ensure that it is being or has been accomplished in accordance with the terms and conditions of your permit.

**Special Conditions: See Attached.**

Further Information:

1. Congressional Authorities: You have been authorized to undertake the activity described above pursuant to:

- Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403).
- Section 404 of the Clean Water Act (33 U.S.C. 1344).
- Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 (33 U.S.C. 1413).

2. Limits of this authorization.

- a. This permit does not obviate the need to obtain other Federal, State, or local authorizations required by law.
- b. This permit does not grant any property rights or exclusive privileges.
- c. This permit does not authorize any injury to the property or rights of others.
- d. This permit does not authorize interference with any existing or proposed Federal project.

3. Limits of Federal Liability. In issuing this permit, the Federal Government does not assume any liability for the following:

- a. Damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes.
- b. Damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the United States in the public interest.
- c. Damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit.
- d. Design or construction deficiencies associated with the permitted work.

- e. Damage claims associated with any future modification, suspension, or revocation of this permit.
4. Reliance on Applicant's Data: The determination of this office that issuance of this permit is not contrary to the public interest was made in reliance on the information you provided.
5. Reevaluation of Permit Decision. This office may reevaluate its decision on this permit at any time the circumstances warrant. Circumstances that could require a reevaluation include, but are not limited to, the following:
- a. You fail to comply with the terms and conditions of this permit.
  - b. The information provided by you in support of your permit application proves to have been false, incomplete, or inaccurate (See 4 above).
  - c. Significant new information surfaces which this office did not consider in reaching the original public interest decision.

Such a reevaluation may result in a determination that it is appropriate to use the suspension, modification, and revocation procedures contained in 33 CFR 325.7 or enforcement procedures such as those contained in 33 CFR 326.4 and 326.5. The referenced enforcement procedures provide for the issuance of an administrative order requiring you to comply with the terms and conditions of your permit and for the initiation of legal action where appropriate. You will be required to pay for any corrective measures ordered by this office, and if you fail to comply with such directive, this office may in certain situations (such as those specified in 33 CFR 209.170) accomplish the corrective measures by contract or otherwise and bill you for the cost.

6. Extensions. General condition 1 establishes a time limit for the completion of the activity authorized by this permit. Unless there are circumstances requiring either a prompt completion of the authorized activity or a reevaluation of the public interest decision, the Corps will normally give favorable consideration to a request for an extension of this time limit.

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

X Kristi Carter X 7/18/11  
 (PERMITTEE) (DATE)

This permit becomes effective when the Federal official, designated to act for the Secretary of the Army, has signed below.

Michael V. Farabee July 25, 2011  
 Michael V. Farabee, Chief Eastern Evaluation Section (DATE)

for Edward R. Fleming, District Commander

When the structures or work authorized by this permit are still in existence at the time the property is transferred, the terms and conditions of this permit will continue to be binding on the new owner(s) of the property. To validate the transfer of this permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below.

\_\_\_\_\_  
 (TRANSFEE) (DATE)

SPECIAL CONDITIONS: MVN-2008-03033-ETT

7. This authorization allows for minor deviations in construction designs and project implementation. The permittee shall coordinate with this office prior to the initiation of any changes, such as alterations or changes in scope of the proposed project, which would have unwarranted impacts to jurisdictional waters and/or wetland areas not considered under this authorization. Such alterations may require a permit modification or a separate Department of the Army permit review, prior to commencing that work. If minor deviations in project plans and/or design are allowed during construction, the applicant shall submit as-built drawings within 30-days of project completion.
8. The permittee shall provide this office with a copy of *any* generated post construction surveys, monitoring reports, post-ground photography, and/or post aerial photography, obtained after project completion.
9. In accordance with the permit drawings, dredge material deposited into existing vegetative wetland areas and/or tidal marsh shall be placed in a manner conducive to the re-establishment, nourishment, and/or enhancement of that habitat.
10. You shall notify this office in writing within five working days after construction has been completed.
11. The permittee shall assure that contractors, foremen, and/or workers associated with project implementation are equally cognizant of the conditions and restrictions associated with this approval.
12. The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.
13. The permitted activity must not interfere with the public's right to free navigation on all navigable waters of the United States.
14. You must install and maintain, at your expense, any safety lights, signs and signals prescribed by the US Coast Guard, through regulations or otherwise, on your authorized facilities.
15. The proposed project, and any future maintenance work, involving the use of floating construction equipment (barge mounted cranes, barge mounted pile driving equipment, floating dredge equipment, dredge discharge pipelines, etc.) in federal waters, requires that you notify the US Coast Guard so that a Notice to Mariners, if required, may be prepared. Notification, with a copy of your permit approval and drawings, should be mailed to the US Coast Guard, Sector New Orleans Command Center, 201 Hammond Highway, Metairie, Louisiana 70005, about 1 month before you plan to start work. Telephone inquiries can be directed to (504) 846-5923.

SPECIAL CONDITIONS: MVN-2008-03033-ETT

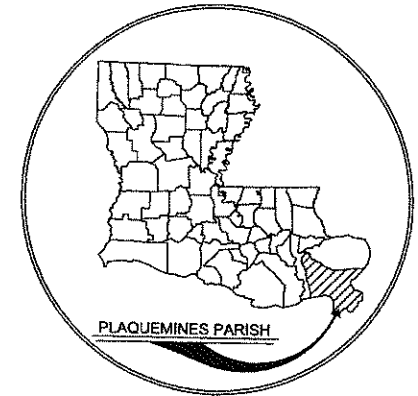
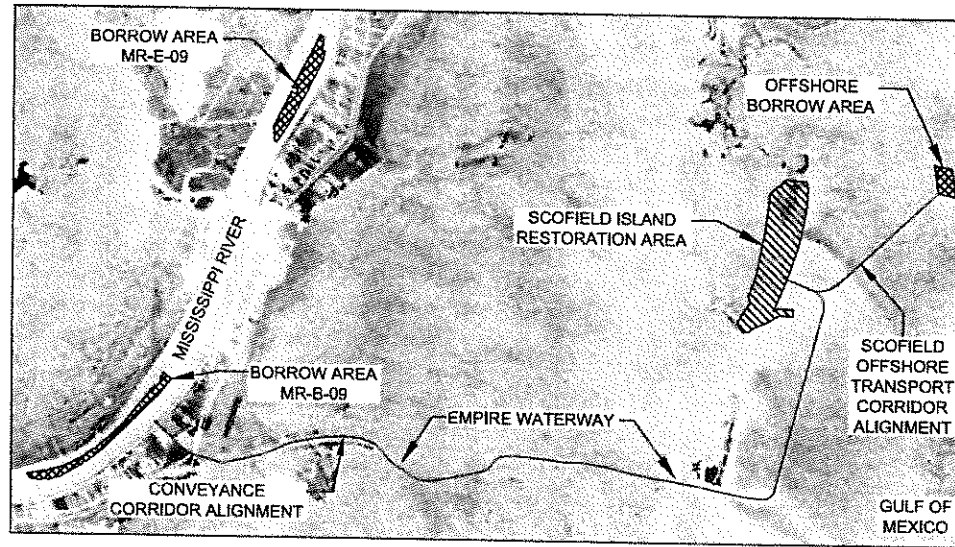
16. Any damage to the levee, batture, and/or bank resulting from the permittee's activities shall be repaired at the permittee's expense.
17. The proposed work shall not restrict the Levee District/Parish's maintenance operations or any potential flood flight activities at the levees, nor shall it obstruct or impede inspection access.
18. The earthen material placed on the levee slope shall be fertilized and seeded to promote new grass growth. Additionally all disturbed areas on the levee resulting from ramp construction shall be restored to the original condition and to the satisfaction of the West Bank Levee District.
19. The installation of the fill material used to construct the earthen levee access ramps shall not impede drainage and cause water to pond against the levee for prolonged periods of time. If drainage becomes a problem, the permittee shall make modifications to improve the drainage to ensure that water does not pond against the levee.
20. Should changes in the location or section of the existing levees and/or river, or in the generally prevailing conditions in the vicinity, be required in the future in the public interest, the permittee shall make changes in the project concerned, or in the arrangement thereof, as may be necessary to satisfactorily meet the situation and shall bear the cost thereof.
21. The permittee shall assure that work does not impede or interfere with navigation on the Mississippi River and shall maintain ongoing coordination with the River Pilots Association and the United States Coast Guard.
22. The Chitimacha Tribe of Louisiana has stated that the project area is part of the aboriginal Chitimacha homelands. If during the course of work at the site, prehistoric and/or historic aboriginal cultural materials are discovered, the applicant will contact the Chitimacha Tribe of Louisiana at Post Office Box 661, Charenton, LA 70523, and the Army Corps of Engineers, New Orleans District (CEMVN) Regulatory Branch. CEMVN, Regulatory Branch will initiate the required Federal, State, and Tribal coordination to determine the significance of the cultural materials and the need, if applicable, for additional cultural resource investigations.
23. Our Real Estate Division has indicated that your project is located in an area over which the federal government holds real estate interest. **No work may be performed under this permit until a real estate instrument is issued by our Real Estate Division.** If you require further information regarding real estate matters, call (504) 862-1701. The real estate instrument will be initiated by our Real Estate Division without further action required on your part.
24. The permittee shall adhere to the *GUIDELINES FOR ACTIVITIES IN PROXIMITY TO MANATEE AND THEIR HABITAT*, attached to this document (Attachment A), during all phases of in-water work for the duration of the project as well as any future in-water maintenance work. The US Fish and Wildlife Service (FWS) is the appropriate authority to determine compliance with those guidelines. If you have any further questions about the manatee, the manatee guidelines or should a manatee be sighted you shall contact the FWS Lafayette, Louisiana, Field Office (337) 291-3100.

STATE OF LOUISIANA  
OFFICE OF COASTAL PROTECTION & RESTORATION  
RESTORATION DIVISION

RIVERINE SAND MINING / SCOFIELD ISLAND RESTORATION  
STATE PROJECT NO. BA-40  
PLAQUEMINES PARISH, LOUISIANA  
PERMIT (MVN2008-3033-EFF)

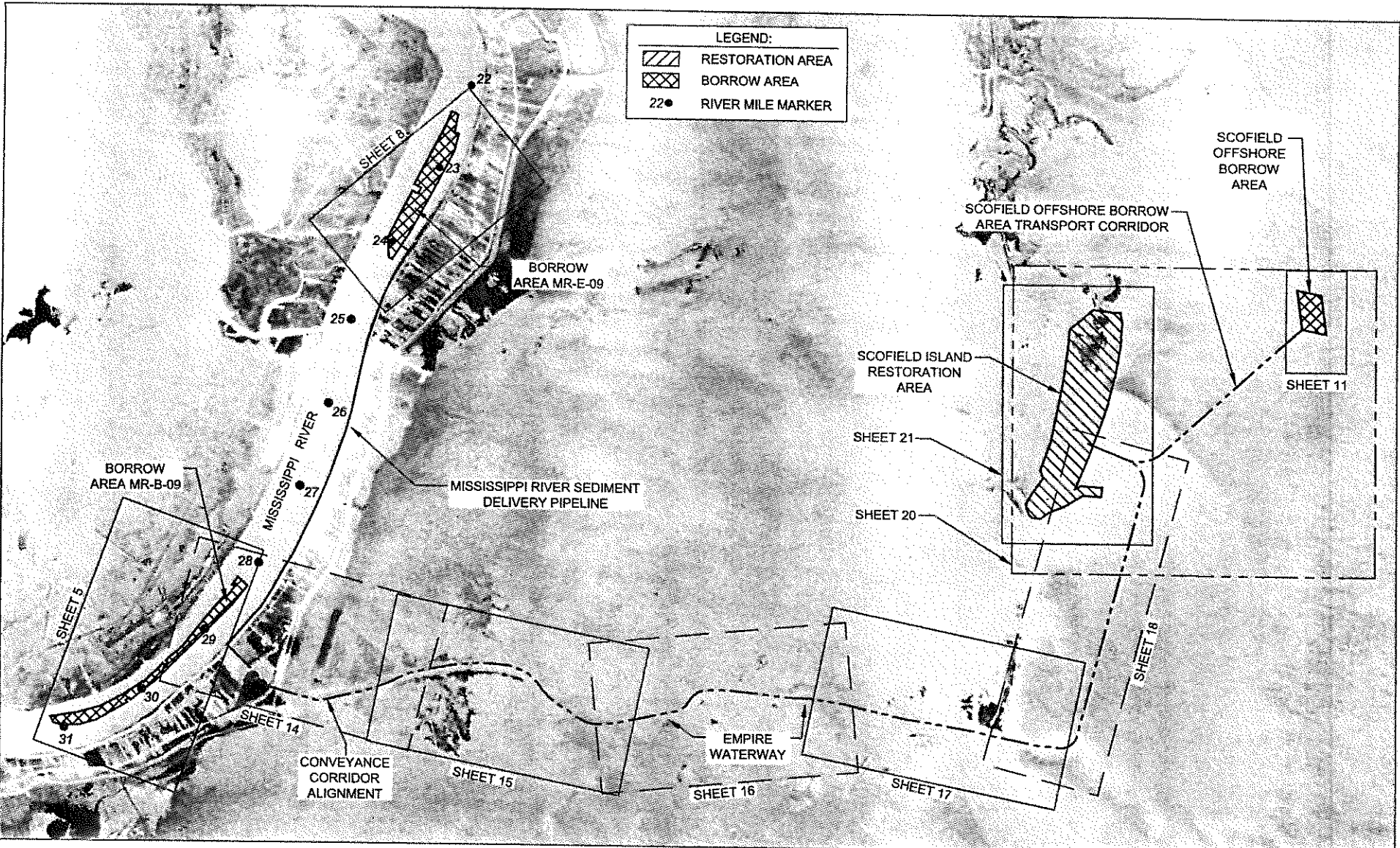
INDEX TO SHEETS

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**THIS DRAWING SET IS FOR PERMITTING PURPOSES ONLY AND NOT TO BE USED FOR CONSTRUCTION.**

BY	DESCRIPTION	DATE	COASTAL ENGINEERING CONSULTANTS, INC		OFFICE OF COASTAL PROTECTION & RESTORATION RESTORATION DIVISION	RIVERINE SAND MINING / SCOFIELD ISLAND RESTORATION	TITLE SHEET
MTP	CMD/USACE/STAKEHOLDER COMMENT RESPONSE	02/10 2011			450 LAUREL STREET BATON ROUGE, LOUISIANA 70801	STATE PROJECT NUMBER: BA-40	DATE: NOVEMBER, 2010
MTP	LEVEE CROSSINGS, PAGE NUMBERS	05/06 2011					FEDERAL PROJECT NUMBER: BA-40
DRAWN BY: DARTEZ \ ZWERNEMAN			DESIGNED BY: MICHAEL T. POFF, P.E.		APPROVED BY: MAURY CHATELLIER, P.E.		



**NOTES:**  
 1. AERIAL IMAGE FROM U.S. DEPARTMENT OF AGRICULTURE, NOVEMBER 2007.



BY	DESCRIPTION	DATE		OFFICE OF COASTAL PROTECTION & RESTORATION RESTORATION DIVISION 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801	RIVERINE SAND MINING / SCOFIELD ISLAND RESTORATION	PROJECT LAYOUT
MTP	CMD/USACE/STAKEHOLDER COMMENT RESPONSE	02/10 2011				
MTP	LEVEE CROSSINGS, PAGE NUMBERS	05/06 2011				
DRAWN BY: DARTEZ \ ZWERNEMAN			DESIGNED BY: MICHAEL T. POFF, P.E.	APPROVED BY: MAURY CHATELLIER, P.E.	STATE PROJECT NUMBER: BA-40	DATE: NOVEMBER, 2010
					FEDERAL PROJECT NUMBER: BA-40	SHEET 2 OF 38



MR-B-09 BORROW AREA BOUNDARY

POINT NUMBER	NORTHING	EASTING	LATITUDE	LONGITUDE
01	336,032.52	3,831,836.76	29°24'45.2422" N	89°36'09.7494" W
02	334,531.41	3,832,038.64	29°24'30.3532" N	89°36'07.7235" W
03	333,086.87	3,832,442.76	29°24'15.9939" N	89°36'03.4018" W
04	332,494.47	3,832,719.20	29°24'10.0886" N	89°36'00.3781" W
05	331,623.28	3,833,210.58	29°24'01.3915" N	89°35'54.9725" W
06	330,789.64	3,833,771.91	29°23'53.0555" N	89°35'48.7701" W
07	330,504.43	3,833,973.99	29°23'50.2020" N	89°35'46.5347" W
08	330,478.42	3,833,934.29	29°23'49.9505" N	89°35'46.9879" W
09	330,328.53	3,834,032.52	29°23'48.4521" N	89°35'45.9032" W
10	330,358.31	3,834,077.52	29°23'48.7401" N	89°35'45.3895" W
11	329,930.27	3,834,425.58	29°23'44.4509" N	89°35'41.5285" W
12	329,554.81	3,834,759.67	29°23'40.6842" N	89°35'37.8166" W
13	329,323.34	3,834,987.10	29°23'38.3588" N	89°35'35.2856" W
14	329,232.04	3,834,910.58	29°23'37.4665" N	89°35'36.1662" W
15	328,970.56	3,835,206.15	29°23'34.8338" N	89°35'32.8702" W
16	329,030.18	3,835,258.89	29°23'35.4160" N	89°35'32.2638" W
17	328,735.83	3,835,531.98	29°23'32.4613" N	89°35'29.2276" W
18	328,024.26	3,836,241.94	29°23'25.3109" N	89°35'21.3263" W
19	327,684.08	3,836,609.67	29°23'21.8882" N	89°35'17.2275" W
20	326,666.90	3,837,844.24	29°23'11.6333" N	89°35'03.4490" W
21	325,558.61	3,839,139.65	29°23'00.4669" N	89°34'48.9993" W
22	325,482.63	3,839,074.64	29°22'59.7247" N	89°34'49.7472" W
23	325,199.30	3,839,405.81	29°22'56.8700" N	89°34'46.0533" W
24	324,860.65	3,839,907.90	29°22'53.4417" N	89°34'40.4374" W
25	324,960.78	3,839,974.03	29°22'54.4228" N	89°34'39.6727" W
26	324,800.18	3,840,217.18	29°22'52.7962" N	89°34'36.9524" W
27	324,290.04	3,839,901.75	29°22'47.7945" N	89°34'40.6057" W
28	325,223.07	3,838,715.07	29°22'57.2098" N	89°34'53.8560" W
29	327,490.17	3,836,451.26	29°23'19.9927" N	89°35'19.0513" W
30	329,755.21	3,834,183.28	29°23'42.7544" N	89°35'44.2974" W
31	331,308.97	3,832,957.66	29°23'58.3181" N	89°35'57.8853" W
32	331,401.87	3,833,075.68	29°23'59.2200" N	89°35'56.5353" W
33	331,613.80	3,832,925.65	29°24'01.3403" N	89°35'58.1950" W
34	331,520.91	3,832,807.63	29°24'00.4385" N	89°35'59.5450" W
35	333,406.73	3,831,730.24	29°24'19.2666" N	89°36'11.4019" W
36	334,369.76	3,831,460.83	29°24'28.8394" N	89°36'14.2831" W
37	335,397.44	3,831,422.54	29°24'39.0177" N	89°36'14.5406" W
38	335,951.70	3,831,547.85	29°24'44.4853" N	89°36'13.0294" W

MR-E-09 BORROW AREA BOUNDARY



POINT NUMBER	NORTHING	EASTING	LATITUDE	LONGITUDE
01	315,819.16	3,859,866.84	29°21'20.8645" N	89°30'56.4875" W
02	315,872.03	3,860,966.95	29°21'21.2146" N	89°30'44.0254" W
03	314,415.12	3,863,781.47	29°21'06.3499" N	89°30'12.5101" W
04	314,063.67	3,863,595.97	29°21'02.9005" N	89°30'14.6693" W
05	313,838.69	3,864,022.24	29°21'00.6061" N	89°30'09.8938" W
06	314,280.83	3,864,255.61	29°21'04.9547" N	89°30'07.1773" W
07	312,950.67	3,866,776.70	29°20'51.3796" N	89°29'38.9345" W
08	312,716.81	3,867,218.81	29°20'48.9944" N	89°29'33.9820" W
09	312,495.91	3,867,667.58	29°20'46.7365" N	89°29'28.9520" W
10	312,140.95	3,868,497.90	29°20'43.0908" N	89°29'19.6358" W
11	311,858.25	3,868,348.69	29°20'40.3163" N	89°29'21.3729" W
12	312,056.28	3,867,323.11	29°20'42.4396" N	89°29'32.9235" W
13	311,861.09	3,867,218.22	29°20'40.5243" N	89°29'34.1439" W
14	311,969.24	3,866,824.24	29°20'41.6575" N	89°29'38.5754" W
15	312,352.79	3,865,894.50	29°20'45.6016" N	89°29'49.0097" W
16	312,998.98	3,864,540.88	29°20'52.2123" N	89°30'04.1658" W
17	313,696.15	3,863,212.74	29°20'59.3231" N	89°30'19.0654" W
18	314,477.17	3,861,928.85	29°21'07.2565" N	89°30'33.4305" W
19	315,578.89	3,860,248.86	29°21'18.4262" N	89°30'52.2142" W

OFFSHORE BORROW AREA BOUNDARY

PT NO.	LATITUDE	LONGITUDE
1	29°12'01.4418" N	89°31'51.2472" W
2	29°12'15.7557" N	89°31'47.5434" W
3	29°12'18.4314" N	89°31'20.8025" W
4	29°12'04.1188" N	89°31'24.5073" W

GENERAL NOTES:

1. ALL AERIAL IMAGERY FROM U.S. DEPARTMENT OF AGRICULTURE, NOVEMBER 2007.
2. COORDINATES ARE NAD83, LOUISIANA STATE PLANE, SOUTHERN ZONE, U.S. SURVEY FEET.
3. ALL ELEVATIONS ARE IN NAVD88, U.S. SURVEY FEET.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING PIPELINE AND UTILITY OPERATORS AT TIME OF CONSTRUCTION. ALL PIPELINES AND UNDERGROUND UTILITIES SHALL BE FIELD LOCATED AND MARKED.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING PIPELINE AND UTILITY OPERATORS 72 HOURS PRIOR TO ANY EXCAVATION.
6. NO CONSTRUCTION EQUIPMENT OR ACTIVITIES MAY OPERATE, TRANSIT, STAGE, OR STORE OUTSIDE THE CONVEYANCE CORRIDOR ALONG THE EMPIRE WATERWAY FROM THE MISSISSIPPI RIVER TO THE GULF OF MEXICO.
7. THIS DRAWING SET IS FOR PERMITTING PURPOSES ONLY AND IS NOT TO BE USED FOR CONSTRUCTION.

BY	DESCRIPTION	DATE	 	OFFICE OF COASTAL PROTECTION & RESTORATION RESTORATION DIVISION 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801	RIVERINE SAND MINING / SCOFIELD ISLAND RESTORATION	ALIGNMENT TABLES AND GENERAL NOTES
MTP	CMD/USACE/STAKEHOLDER COMMENT RESPONSE	02/10 2011				
MTP	LEVEE CROSSINGS, PAGE NUMBERS	05/06 2011				
DRAWN BY: DARTEZ I ZWERNEMAN			DESIGNED BY: MICHAEL T. POFF, P.E.	APPROVED BY: MAURY CHATELLIER, P.E.	STATE PROJECT NUMBER: BA-40	DATE: NOVEMBER, 2010
					FEDERAL PROJECT NUMBER: BA-40	SHEET 3 OF 38

CONVEYANCE CORRIDOR ALIGNMENT

EARTHEN CONTAINMENT  
DIKE ALIGNMENT

STATION	LATITUDE	LONGITUDE	STATION	LATITUDE	LONGITUDE	STATION	LATITUDE	LONGITUDE	STATION	LATITUDE	LONGITUDE
000+00	29°22'58.7511" N	89°35'19.6272" W	270+00	29°18'59.6538" N	89°36'13.3325" W	530+00	29°14'50.9387" N	89°36'31.4444" W	665+00	29°14'01.9447" N	89°34'22.1047" W
010+00	29°22'52.1264" N	89°35'27.9441" W	280+00	29°18'49.9385" N	89°36'11.1830" W	535+00	29°14'46.0171" N	89°36'32.0462" W	670+00	29°14'00.6097" N	89°34'16.6706" W
020+00	29°22'46.1528" N	89°35'36.8804" W	290+00	29°18'40.2198" N	89°36'09.0329" W	540+00	29°14'41.0863" N	89°36'32.5280" W	675+00	29°13'59.2747" N	89°34'11.2365" W
030+00	29°22'39.0758" N	89°35'44.7640" W	300+00	29°18'30.4979" N	89°36'06.8822" W	545+00	29°14'36.3912" N	89°36'30.9343" W	680+00	29°13'57.9396" N	89°34'05.8024" W
040+00	29°22'31.0274" N	89°35'50.7693" W	310+00	29°18'23.2624" N	89°35'59.5454" W	550+00	29°14'32.9411" N	89°36'26.9690" W	685+00	29°13'56.6044" N	89°34'00.3684" W
050+00	29°22'21.5221" N	89°35'53.9276" W	320+00	29°18'15.5040" N	89°35'53.0454" W	555+00	29°14'31.2981" N	89°36'21.6663" W	690+00	29°13'55.2692" N	89°33'54.9344" W
060+00	29°22'12.0168" N	89°35'57.0858" W	330+00	29°18'05.6179" N	89°35'52.7294" W	560+00	29°14'24.8141" N	89°36'21.1980" W	695+00	29°13'53.9339" N	89°33'49.5004" W
070+00	29°22'02.3642" N	89°35'58.2315" W	340+00	29°17'55.7533" N	89°35'53.6010" W	565+00	29°14'20.6309" N	89°36'10.7963" W	700+00	29°13'52.6966" N	89°33'44.0665" W
080+00	29°21'52.6698" N	89°35'55.9907" W	350+00	29°17'45.9178" N	89°35'54.8850" W	570+00	29°14'27.2972" N	89°36'05.3613" W	705+00	29°13'51.2632" N	89°33'38.6326" W
090+00	29°21'43.0032" N	89°35'53.5542" W	360+00	29°17'36.1063" N	89°35'56.4002" W	575+00	29°14'25.9634" N	89°35'59.9264" W	710+00	29°13'50.3340" N	89°33'33.1030" W
100+00	29°21'33.3939" N	89°35'50.8804" W	370+00	29°17'26.2981" N	89°35'57.9232" W	580+00	29°14'24.6296" N	89°35'54.4915" W	715+00	29°13'50.9551" N	89°33'27.5271" W
110+00	29°21'24.0816" N	89°35'47.0577" W	380+00	29°17'16.4162" N	89°35'58.4649" W	585+00	29°14'23.2957" N	89°35'49.0567" W	720+00	29°13'53.1534" N	89°33'22.4903" W
120+00	29°21'15.0438" N	89°35'42.4590" W	390+00	29°17'06.5917" N	89°35'59.6439" W	590+00	29°14'21.9617" N	89°35'43.6219" W	725+00	29°13'56.6800" N	89°33'18.5512" W
130+00	29°21'05.5763" N	89°35'39.2574" W	400+00	29°16'56.8243" N	89°36'01.4832" W	595+00	29°14'19.2936" N	89°35'38.1871" W	730+00	29°14'01.1131" N	89°33'16.0479" W
140+00	29°20'55.8215" N	89°35'37.3316" W	410+00	29°16'47.1322" N	89°36'03.7265" W	600+00	29°14'17.9594" N	89°35'27.3177" W	735+00	29°14'05.6857" N	89°33'13.8871" W
150+00	29°20'46.0495" N	89°35'35.5453" W	420+00	29°16'37.5224" N	89°36'06.4349" W	605+00	29°14'17.9594" N	89°35'27.3177" W	740+00	29°14'10.2583" N	89°33'11.7263" W
160+00	29°20'36.1935" N	89°35'34.5421" W	430+00	29°16'27.9019" N	89°36'09.0975" W	610+00	29°14'16.6252" N	89°35'21.8831" W	745+00	29°14'14.8427" N	89°33'09.5981" W
170+00	29°20'26.3015" N	89°35'34.3180" W	440+00	29°16'18.2872" N	89°36'11.7867" W	615+00	29°14'15.2909" N	89°35'16.4485" W	750+00	29°14'19.4161" N	89°33'07.4395" W
180+00	29°20'16.4413" N	89°35'35.2308" W	450+00	29°16'08.5886" N	89°36'13.9973" W	620+00	29°14'13.9566" N	89°35'11.0138" W	755+00	29°14'23.9859" N	89°33'05.2809" W
190+00	29°20'06.8939" N	89°35'37.8701" W	460+00	29°15'58.8043" N	89°36'15.7170" W	625+00	29°14'12.6222" N	89°35'05.5794" W			
200+00	29°19'58.3517" N	89°35'43.2516" W	470+00	29°15'49.0734" N	89°36'17.7924" W	630+00	29°14'11.2877" N	89°35'00.1449" W			
210+00	29°19'51.8830" N	89°35'51.7833" W	480+00	29°15'39.3407" N	89°36'19.8571" W	635+00	29°14'09.9532" N	89°34'54.7105" W			
220+00	29°19'45.0247" N	89°35'59.8186" W	490+00	29°15'29.6674" N	89°36'22.2272" W	640+00	29°14'08.6186" N	89°34'49.2761" W			
230+00	29°19'36.7821" N	89°36'06.0428" W	500+00	29°15'20.0433" N	89°36'24.8483" W	645+00	29°14'07.2835" N	89°34'43.8418" W			
240+00	29°19'28.6648" N	89°36'12.4979" W	510+00	29°15'10.3615" N	89°36'27.1973" W	650+00	29°14'05.9492" N	89°34'38.4074" W			
250+00	29°19'19.3099" N	89°36'15.7284" W	520+00	29°15'00.6940" N	89°36'29.6278" W	655+00	29°14'04.6144" N	89°34'32.9732" W			
260+00	29°19'09.4375" N	89°36'15.0531" W	525+00	29°14'55.8603" N	89°36'30.8427" W	660+00	29°14'03.2796" N	89°34'27.5389" W			


POINT NO.	LATITUDE	LONGITUDE
01	29°14'48.4746" N	89°33'43.3224" W
02	29°14'52.9330" N	89°33'39.8532" W
03	29°14'50.5848" N	89°33'34.8530" W
04	29°14'48.5601" N	89°33'30.6524" W
05	29°14'39.5060" N	89°33'34.0191" W
06	29°14'36.2954" N	89°33'35.2905" W
07	29°14'36.3339" N	89°33'31.4171" W
08	29°14'38.7819" N	89°33'31.0494" W
09	29°14'47.8887" N	89°33'28.5450" W
10	29°14'49.2956" N	89°33'23.2019" W
11	29°14'47.5329" N	89°33'17.9254" W
12	29°14'45.7299" N	89°33'12.6689" W
13	29°14'44.8808" N	89°33'10.2611" W
14	29°14'43.0972" N	89°33'04.9552" W
15	29°14'42.0532" N	89°32'59.4342" W
16	29°14'40.9672" N	89°32'53.9255" W
17	29°14'39.9281" N	89°32'48.4031" W
18	29°14'38.8405" N	89°32'42.8948" W
19	29°14'37.89251" N	89°32'37.3896" W
20	29°14'36.8688" N	89°32'31.8628" W
21	29°14'35.7746" N	89°32'26.3565" W
22	29°14'34.7293" N	89°32'20.8360" W
23	29°14'34.0312" N	89°32'15.2145" W
24	29°14'33.3259" N	89°32'09.5951" W
25	29°14'32.5855" N	89°32'03.9859" W
26	29°14'31.8717" N	89°31'58.3690" W
27	29°14'31.1760" N	89°31'48.6378" W
28	29°14'19.1227" N	89°31'37.3441" W
29	29°14'08.0183" N	89°31'39.1399" W

PROBABLE  
BOOSTER PUMP LOCATIONS

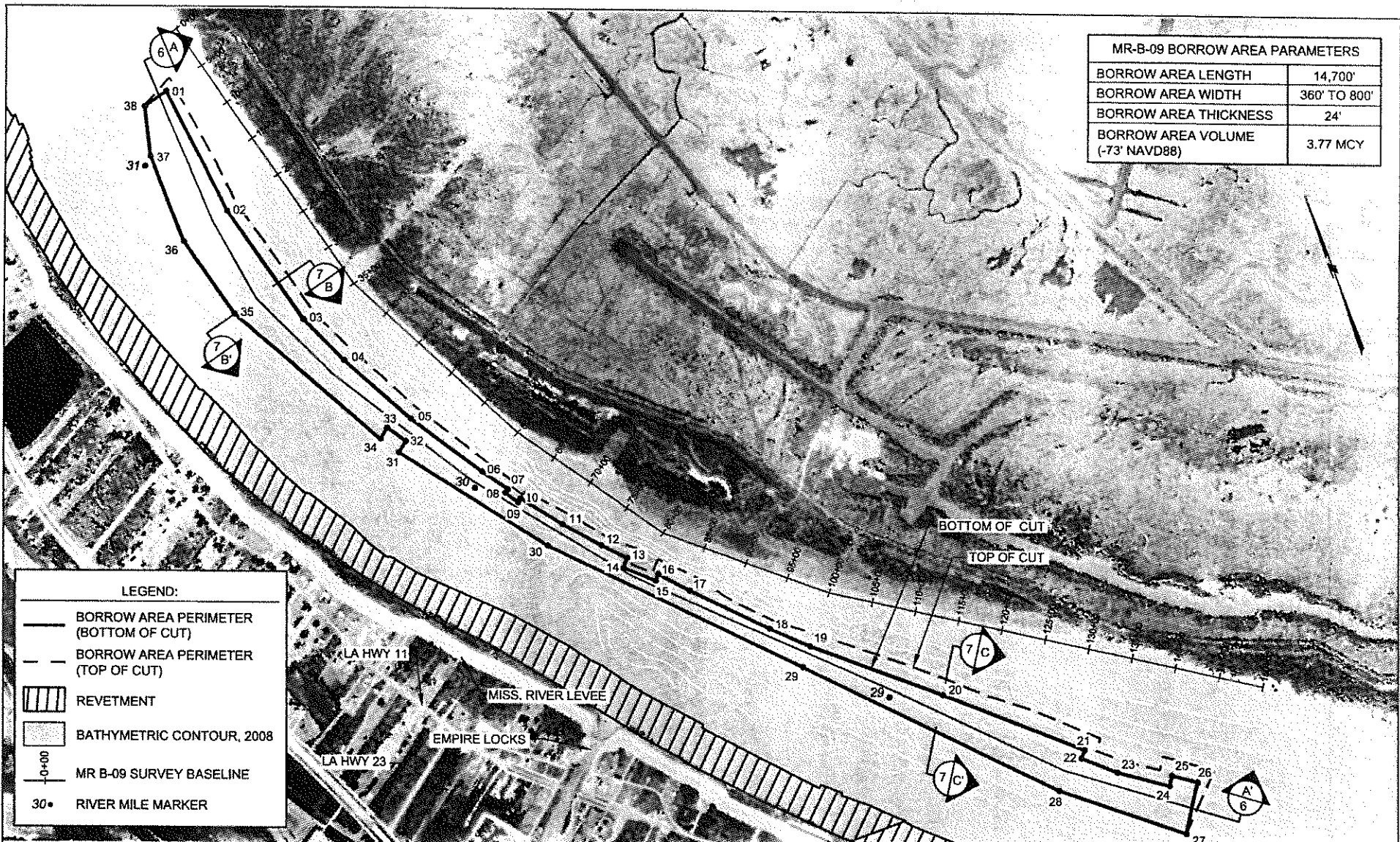
BOOSTER	LATITUDE	LONGITUDE
NO. 1	29°22'00.4216" N	89°35'57.7521" W
NO. 2	29°21'45.3690" N	89°35'54.1330" W
NO. 3	29°21'00.1155" N	89°35'36.1793" W
NO. 4	29°19'32.9358" N	89°36'09.1849" W
NO. 5	29°18'19.4324" N	89°35'54.8845" W
NO. 6	29°16'10.7988" N	89°36'13.6053" W
NO. 7	29°15'42.3009" N	89°36'19.2305" W

NAVIGATION CROSSINGS

BOOSTER	LATITUDE	LONGITUDE
NC-1	29°21'12.3540" N	89°35'41.2901" W
NC-2	29°20'16.2645" N	89°35'35.2511" W
NC-3	29°18'00.9327" N	89°35'52.9824" W
NC-4	29°16'50.8808" N	89°36'02.6113" W
NC-5	29°16'01.4430" N	89°36'15.2594" W
NC-6	29°15'32.0311" N	89°36'21.5317" W

BY	DESCRIPTION	DATE	 <b>COASTAL ENGINEERING CONSULTANTS, INC.</b> SIB GROUP, LLC QUALITY BY DESIGN	OFFICE OF COASTAL PROTECTION & RESTORATION RESTORATION DIVISION 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801	RIVERINE SAND MINING / SCOFIELD ISLAND RESTORATION	ALIGNMENT TABLES AND GENERAL NOTES
MTP	CMD/USACE/STAKEHOLDER COMMENT RESPONSE	02/10 2011				
MTP	LEVEE CROSSINGS, PAGE NUMBERS	05/06 2011				
DRAWN BY: DARTEZ I ZWERNEMAN			DESIGNED BY: MICHAEL T. POFF, P.E.	APPROVED BY: MAURY CHATELLIER, P.E.	STATE PROJECT NUMBER: BA-40	DATE: NOVEMBER, 2010
					FEDERAL PROJECT NUMBER: BA-40	SHEET 4 OF 38

MR-B-09 BORROW AREA PARAMETERS	
BORROW AREA LENGTH	14,700'
BORROW AREA WIDTH	360' TO 800'
BORROW AREA THICKNESS	24'
BORROW AREA VOLUME (-73' NAVD88)	3.77 MCY






LEGEND:	
	BORROW AREA PERIMETER (BOTTOM OF CUT)
	BORROW AREA PERIMETER (TOP OF CUT)
	REVTMENT
	BATHYMETRIC CONTOUR, 2008
	MR B-09 SURVEY BASELINE
	RIVER MILE MARKER

- NOTES:**
1. SEE SHEETS 6 & 7 FOR TYPICAL DESIGN CROSS SECTIONS. SEE SHEET 3 FOR PERIMETER POINTS OF INFLECTION.
  2. BATHYMETRIC SURVEYS PERFORMED BY ALPINE OCEAN SEISMIC SURVEY, INC., 2008.
  3. REQUEST PERMIT FOR BOTH MISSISSIPPI RIVER BORROW AREAS, MR-B-09 AND MR-E-09, TO PROMOTE COMPETITIVE CONSTRUCTION CONTRACT BIDS BASED ON AVAILABLE DREDGE EQUIPMENT. SHALL ONLY EXCAVATE VOLUME REQUIRED TO COMPLETE PROJECT.
  4. EXCAVATION OF BORROW AREA MR-B-09 SHALL BE RESTRICTED TO HOPPER DREDGE ONLY.

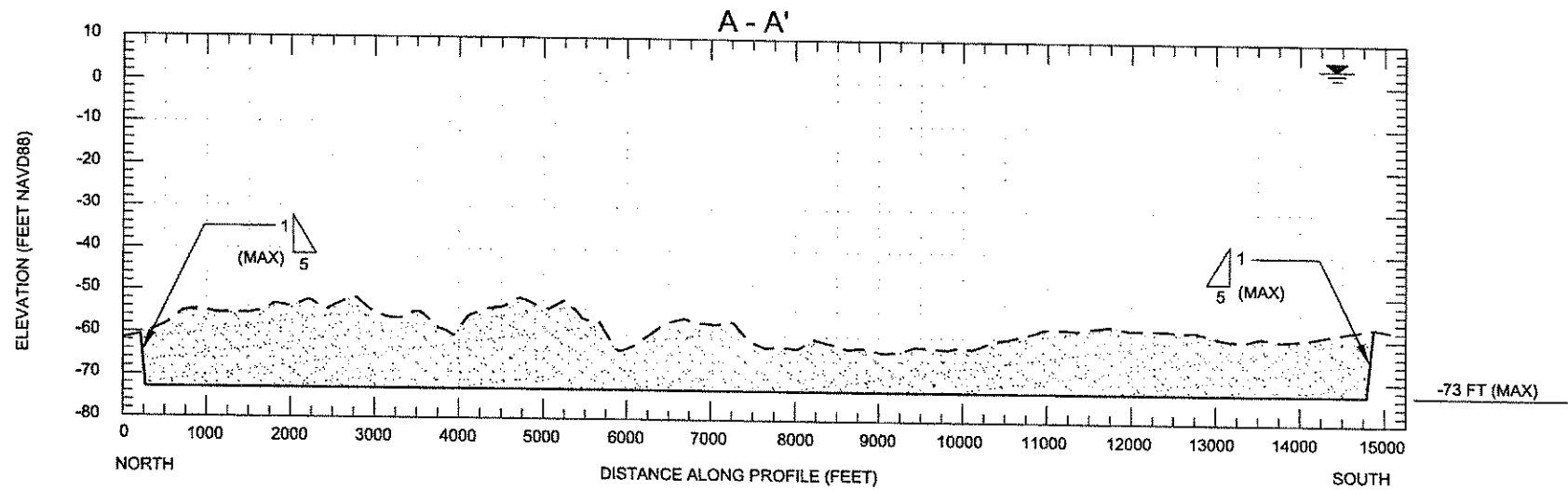


BY	DESCRIPTION	DATE	 <b>COASTAL ENGINEERING CONSULTANTS, INC.</b>  <b>STB GROUP, LLC</b> <small>QUALITY BY DESIGN</small>	OFFICE OF COASTAL PROTECTION & RESTORATION RESTORATION DIVISION 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801	RIVERINE SAND MINING / SCOFIELD ISLAND RESTORATION	BORROW AREA MR-B-09 PLAN VIEW
MTP	CMD/USACE/STAKEHOLDER COMMENT RESPONSE	02/10 2011				
MTP	LEVEE CROSSINGS, PAGE NUMBERS	05/06 2011				
DRAWN BY: DARTEZ I ZWERNEMAN			DESIGNED BY: MICHAEL T. POFF, P.E.	APPROVED BY: MAURY CHATELLIER, P.E.	STATE PROJECT NUMBER: BA-40	DATE: NOVEMBER, 2010
					FEDERAL PROJECT NUMBER: BA-40	SHEET 5 OF 38

LEGEND:



-  BEACH/DUNE FILL CUT
-  NOVEMBER 2008
-  DESIGN

SCALE:  
H: 1" = 2000'  
V: 1" = 40'







NOTES:

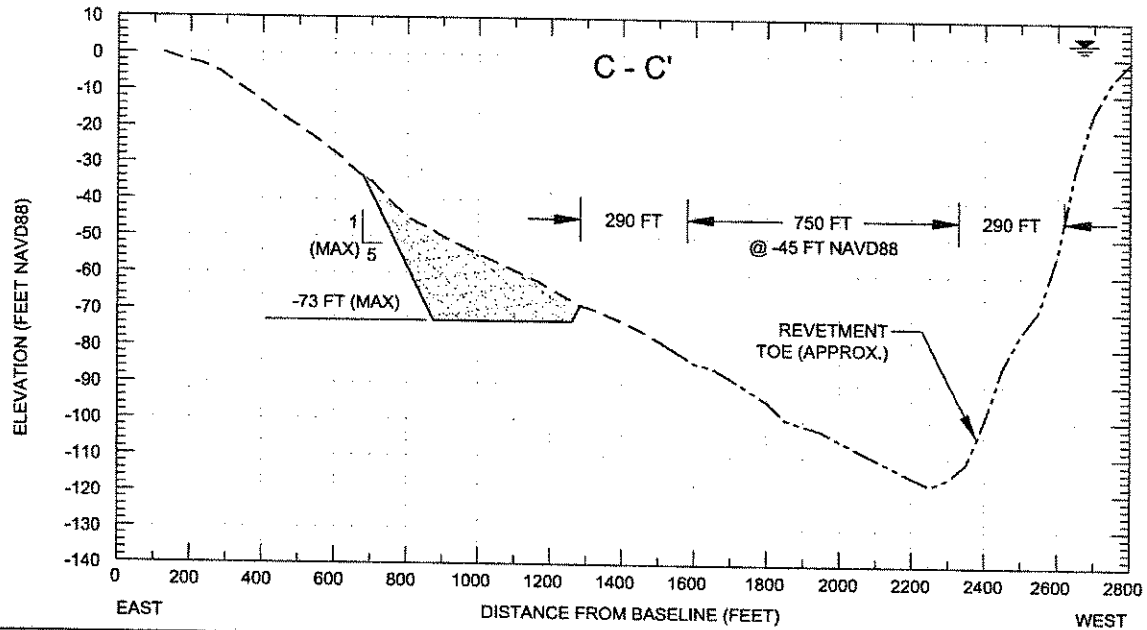
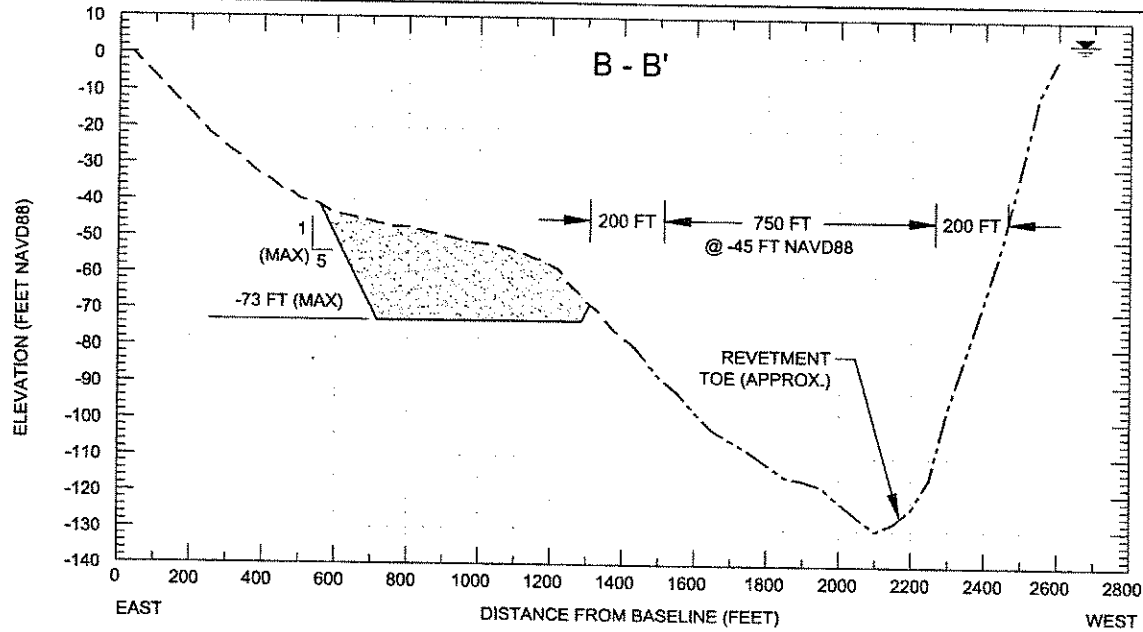
1. BATHYMETRIC SURVEYS PERFORMED BY ALPINE OCEAN SEISMIC SURVEY, INC., 2008.

BY	DESCRIPTION	DATE	 <b>COASTAL ENGINEERING CONSULTANTS, INC</b>  <b>STB GROUP, LLC</b> <small>QUALITY BY DESIGN</small>	OFFICE OF COASTAL PROTECTION & RESTORATION RESTORATION DIVISION 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801	RIVERINE SAND MINING / SCOFIELD ISLAND RESTORATION	BORROW AREA MR-B-09 DESIGN SECTION	
MTP	CMD/USACE/STAKEHOLDER COMMENT RESPONSE	02/10 2011				STATE PROJECT NUMBER: BA-40	DATE: NOVEMBER, 2010
MTP	LEVEE CROSSINGS, PAGE NUMBERS	05/06 2011				FEDERAL PROJECT NUMBER: BA-40	SHEET 6 OF 38
DRAWN BY: DARTEZ \ ZWERNEMAN			DESIGNED BY: MICHAEL T. POFF, P.E.	APPROVED BY: MAURY CHATELLIER, P.E.			

LEGEND:

-  BEACH/DUNE FILL CUT
-  NOVEMBER 2008
-  USACE 2004 HYDROGRAPHIC SURVEY
-  DESIGN

SCALE:  
H: 1" = 500'  
V: 1" = 50'



NOTES:  
1. BATHYMETRIC SURVEYS PERFORMED BY ALPINE OCEAN SEISMIC SURVEY, INC., 2008 & USACE, 2004

BY	DESCRIPTION	DATE
MTP	CMD/USACE/STAKEHOLDER COMMENT RESPONSE	02/10 2011
MTP	LEVEE CROSSINGS, PAGE NUMBERS	05/06 2011
DRAWN BY: DARTEZ \ ZWERNEMAN		

**COASTAL ENGINEERING CONSULTANTS, INC**  
**SIB GROUP, LLC**  
QUALITY BY DESIGN

DESIGNED BY: MICHAEL T. POFF, P.E.

OFFICE OF COASTAL PROTECTION & RESTORATION  
RESTORATION DIVISION  
450 LAUREL STREET  
BATON ROUGE, LOUISIANA 70801

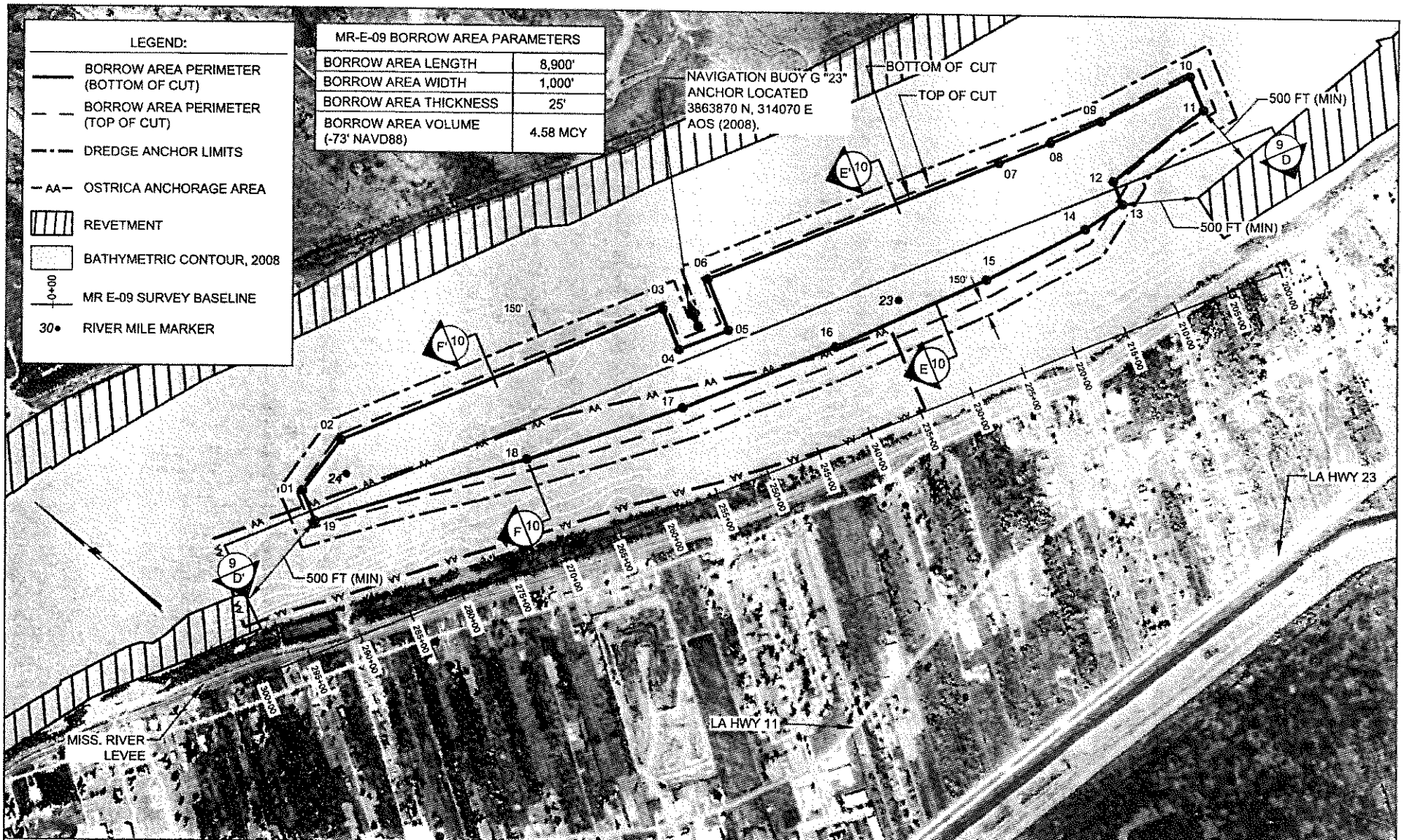
APPROVED BY: MAURY CHATELLIER, P.E.

RIVERINE SAND MINING / SCOFIELD ISLAND RESTORATION

STATE PROJECT NUMBER: BA-40  
FEDERAL PROJECT NUMBER: BA-40

BORROW AREA MR-B-09  
DESIGN SECTIONS

DATE: NOVEMBER, 2010  
SHEET 7 OF 38







- NOTES:**
1. SEE SHEETS 9 & 10 FOR TYPICAL DESIGN CROSS SECTIONS, SEE SHEET 3 FOR PERIMETER POINTS OF INFLECTION.
  2. BATHYMETRIC SURVEYS PERFORMED BY ALPINE OCEAN SEISMIC SURVEY, INC., 2008.
  3. REQUEST PERMIT FOR BOTH MISSISSIPPI RIVER BORROW AREAS, MR-B-09 AND MR-E-09, TO PROMOTE COMPETITIVE CONSTRUCTION CONTRACT BIDS BASED ON AVAILABLE DREDGE EQUIPMENT. SHALL ONLY EXCAVATE VOLUME REQUIRED TO COMPLETE PROJECT.
  4. HOPPER OR CUTTERHEAD DREDGE MAY BE UTILIZED TO EXCAVATE BORROW AREA MR-E-09.



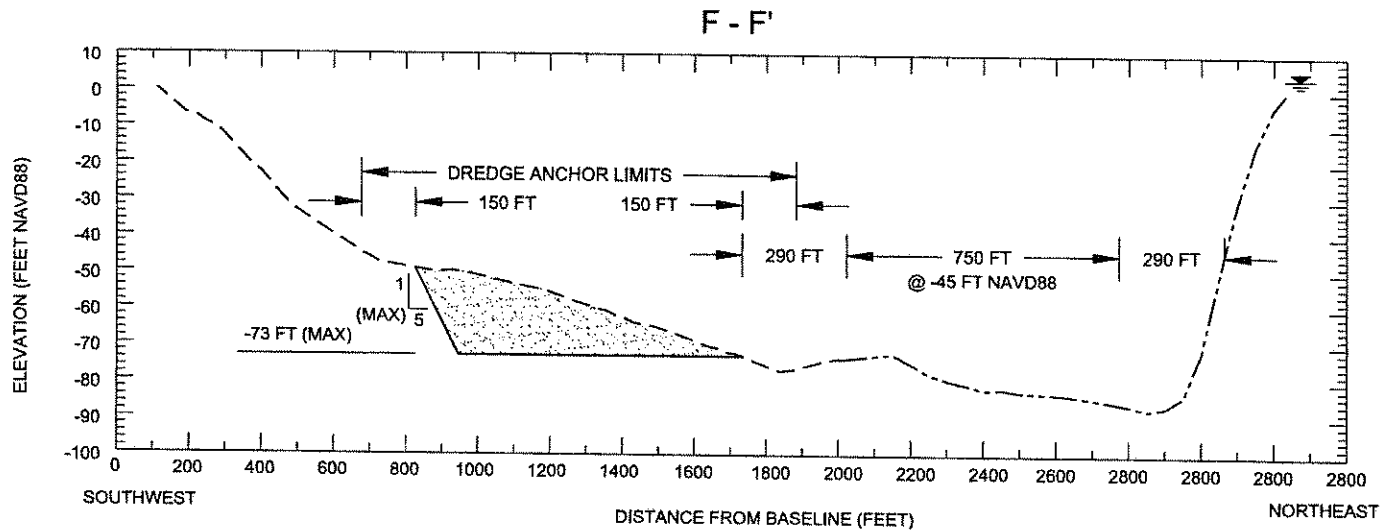
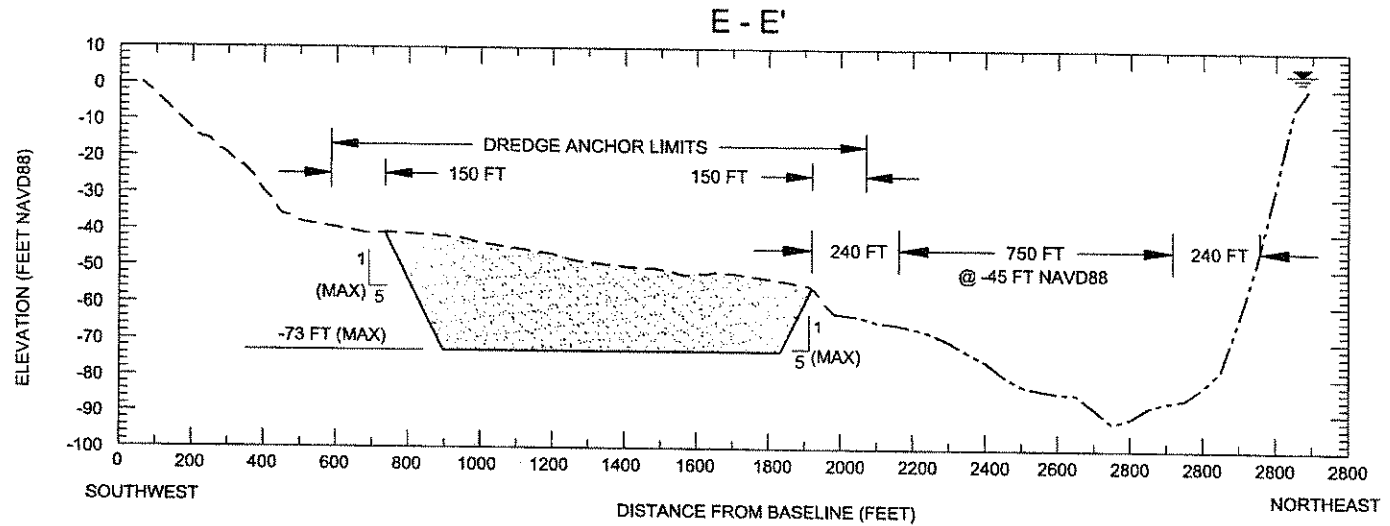
BY	DESCRIPTION	DATE	 	OFFICE OF COASTAL PROTECTION & RESTORATION RESTORATION DIVISION 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801	RIVERINE SAND MINING / SCOFIELD ISLAND RESTORATION	BORROW AREA MR-E-09 PLAN VIEW
MTP	CMD/USACE/STAKEHOLDER COMMENT RESPONSE	02/10 2011				
MTP	LEVEE CROSSINGS, PAGE NUMBERS	05/06 2011				
DRAWN BY: DARTEZ ZWERNEMAN			DESIGNED BY: MICHAEL T. POFF, P.E.	APPROVED BY: MAURY CHATELLIER, P.E.	STATE PROJECT NUMBER: BA-40	DATE: NOVEMBER, 2010
					FEDERAL PROJECT NUMBER: BA-40	SHEET 8 OF 38



**LEGEND:**



-  BEACH/DUNE FILL CUT
-  NOVEMBER 2008
-  USACE 2004 HYDROGRAPHIC SURVEY
-  DESIGN

**SCALE:**  
 H: 1" = 500'  
 V: 1" = 50'





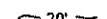

**NOTES:**

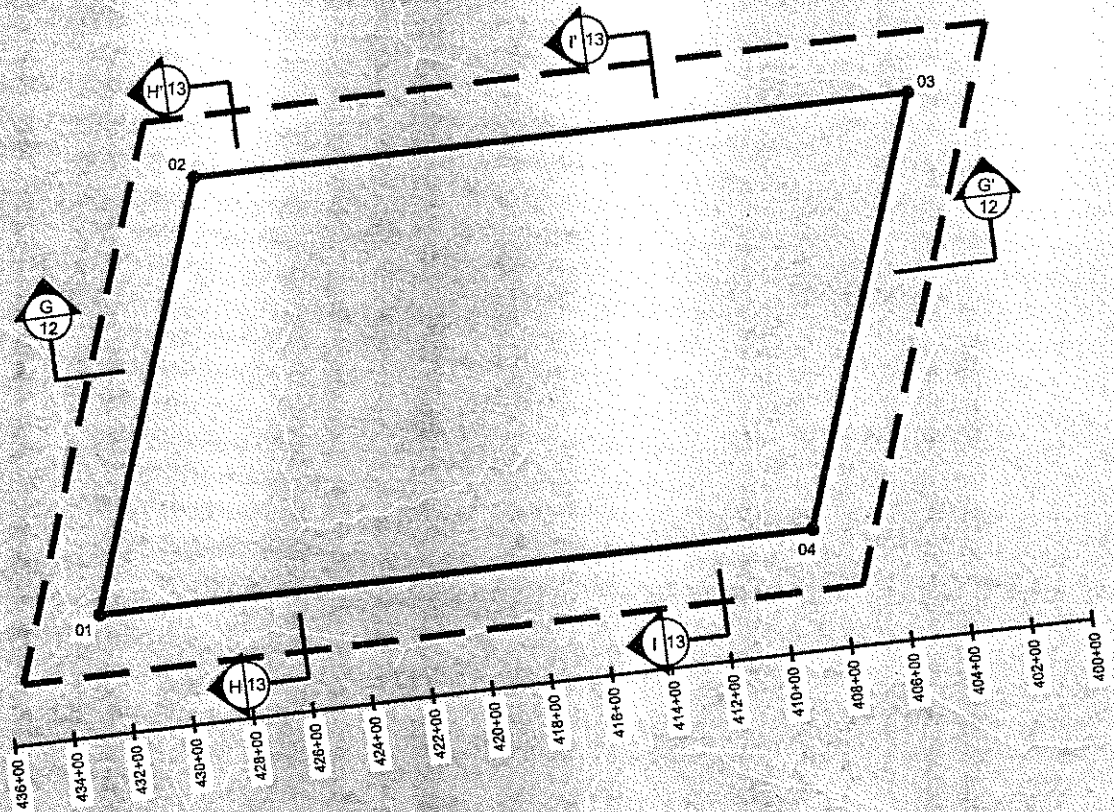
1. BATHYMETRIC SURVEYS PERFORMED BY ALPINE OCEAN SEISMIC SURVEY, INC., 2008 & USACE, 2004

BY	DESCRIPTION	DATE	 <b>COASTAL ENGINEERING CONSULTANTS, INC.</b>  <b>SJB GROUP, LLC</b> <small>QUALITY BY DESIGN</small>	OFFICE OF COASTAL PROTECTION & RESTORATION RESTORATION DIVISION 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801	RIVERINE SAND MINING / SCOFIELD ISLAND RESTORATION	BORROW AREA MR-E-09 DESIGN SECTIONS
MTP	CMD/USACE/STAKEHOLDER COMMENT RESPONSE	02/10 2011				
MTP	LEVEE CROSSINGS, PAGE NUMBERS	05/06 2011				
DRAWN BY: DARTEZ \ ZWERNEMAN			DESIGNED BY: MICHAEL T. POFF, P.E.	APPROVED BY: MAURY CHATELLIER, P.E.	STATE PROJECT NUMBER: BA-40	DATE: NOVEMBER, 2010
					FEDERAL PROJECT NUMBER: BA-40	SHEET 10 OF 38



OFFSHORE BORROW AREA PARAMETERS	
BORROW AREA LENGTH	2,800'
BORROW AREA WIDTH	1,900'
BORROW AREA THICKNESS	20' TO 22'
BORROW AREA VOLUME (-40' NAVD88)	3.30 MCY



LEGEND:	
	BORROW AREA PERIMETER (BOTTOM OF CUT)
	BORROW AREA PERIMETER (TOP OF CUT)
	BATHYMETRIC CONTOURS, FT NAVD88 (CP&E, 2003)
	OFFSHORE BORROW AREA SURVEY BASELINE






**NOTES:**

- SEE SHEETS 12 & 13 FOR SECTIONS. SEE SHEET 3 FOR PERIMETER POINTS OF INFLECTION.
- BATHYMETRY DATA FROM BARATARIA/PLAQUEMINES BARRIER SHORELINE RESTORATION, (CP&E, 2003).

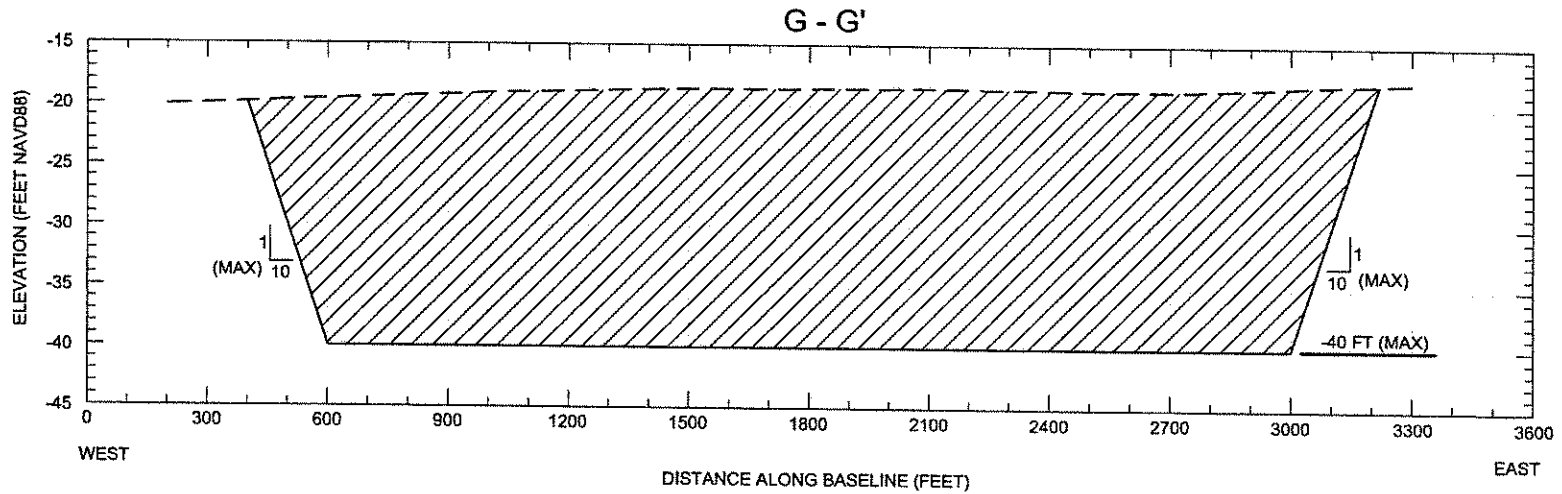


BY	DESCRIPTION	DATE	 	OFFICE OF COASTAL PROTECTION & RESTORATION RESTORATION DIVISION 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801	RIVERINE SAND MINING / SCOFIELD ISLAND RESTORATION	OFFSHORE BORROW AREA PLAN VIEW
MTP	CMD/USACE/STAKEHOLDER COMMENT RESPONSE	02/10 2011				
MTP	LEVEE CROSSINGS, PAGE NUMBERS	05/06 2011				
DRAWN BY: DARTEZ I ZWERNEMAN			DESIGNED BY: MICHAEL T. POFF, P.E.	APPROVED BY: MAURY CHATELLIER, P.E.	STATE PROJECT NUMBER: BA-40	DATE: NOVEMBER, 2010
					FEDERAL PROJECT NUMBER: BA-40	SHEET 11 OF 38

LEGEND:



-  MARSH FILL CUT
-  JULY 2003
-  DESIGN

SCALE:  
 H: 1" = 450'  
 V: 1" = 15'






NOTES:

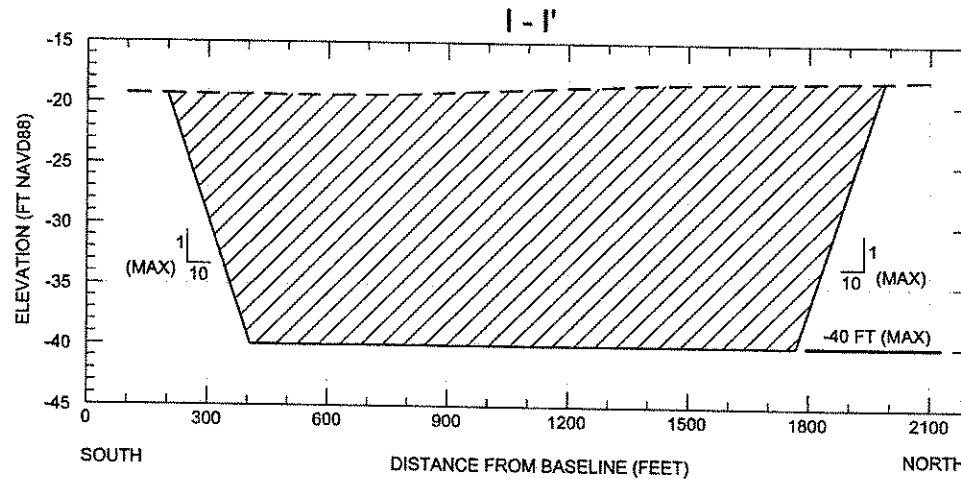
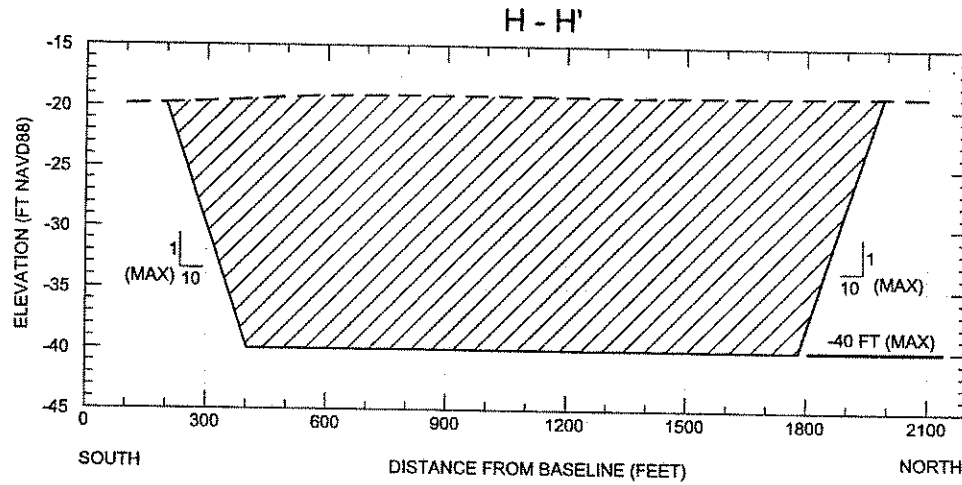
1. BATHYMETRY DATA FROM BARATARIA/PLAQUEMINES BARRIER SHORELINE RESTORATION, (CP&E, 2003).
2. MHW = 1.60 FT NAVD88, MLW = 0.55 FT NAVD88

BY	DESCRIPTION	DATE	 <b>COASTAL ENGINEERING CONSULTANTS, INC</b>   <b>SIB GROUP, LLC</b> <small>QUALITY BY DESIGN</small>	OFFICE OF COASTAL PROTECTION & RESTORATION RESTORATION DIVISION 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801	RIVERINE SAND MINING / SCOFIELD ISLAND RESTORATION	OFFSHORE BORROW AREA DESIGN SECTION
MTP	CMD/USACE/STAKEHOLDER COMMENT RESPONSE	02/10 2011				
MTP	LEVEE CROSSINGS, PAGE NUMBERS	05/06 2011				
DRAWN BY: DARTEZ I ZWERNEMAN			DESIGNED BY: MICHAEL T. POFF, P.E.	APPROVED BY: MAURY CHATELLIER, P.E.	STATE PROJECT NUMBER: BA-40	DATE: NOVEMBER, 2010
					FEDERAL PROJECT NUMBER: BA-40	SHEET 12 OF 38

LEGEND:



-  MARSH FILL CUT
-  JULY 2003
-  DESIGN

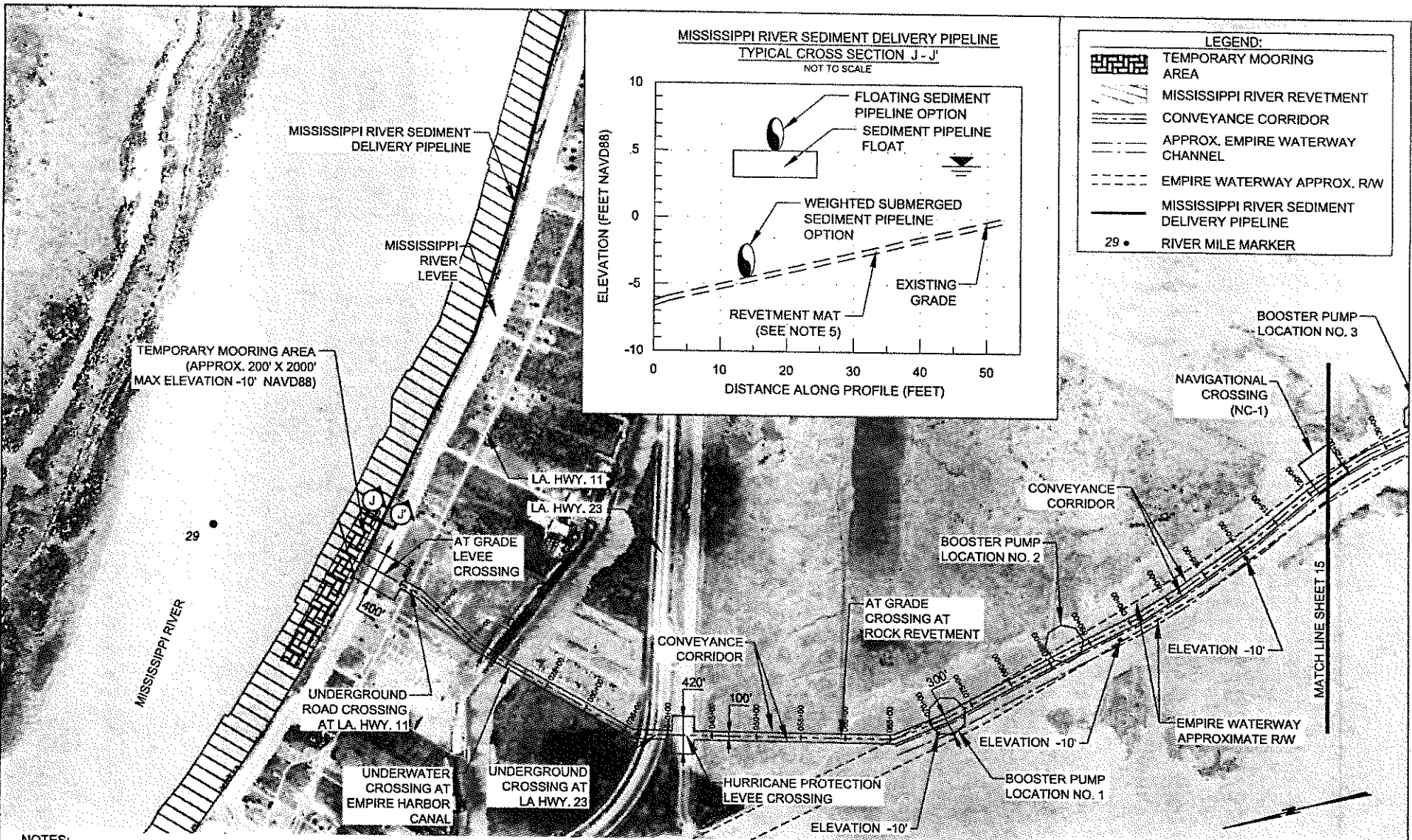
SCALE:  
H: 1" = 450'  
V: 1" = 15'



NOTES:

1. BATHYMETRY DATA FROM BARATARIA/PLAQUEMINES BARRIER SHORELINE RESTORATION, (CP&E, 2003).
2. MHW = 1.60 FT NAVD88, MLW = 0.55 FT NAVD88

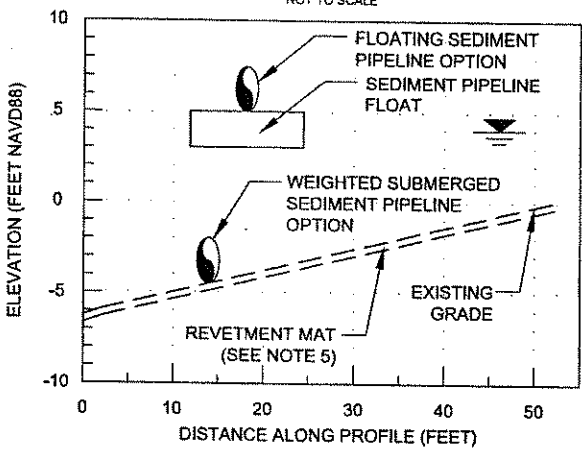
BY	DESCRIPTION	DATE	 <b>COASTAL ENGINEERING CONSULTANTS, INC</b>   <b>STB GROUP LLC</b> <small>QUALITY BY DESIGN</small>	<b>OFFICE OF COASTAL PROTECTION &amp; RESTORATION</b> <b>RESTORATION DIVISION</b> 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801	<b>RIVERINE SAND MINING / SCOFIELD ISLAND RESTORATION</b>	<b>OFFSHORE BORROW AREA DESIGN SECTIONS</b>		
MTP	CMD/USACE/STAKEHOLDER COMMENT RESPONSE	02/10 2011					STATE PROJECT NUMBER: BA-40	DATE: NOVEMBER, 2010
MTP	LEVEE CROSSINGS, PAGE NUMBERS	05/06 2011					FEDERAL PROJECT NUMBER: BA-40	SHEET 13 OF 38
DRAWN BY: DARTEZ \ ZWERNEMAN			DESIGNED BY: MICHAEL T. POFF, P.E.	APPROVED BY: MAURY CHATELLIER, P.E.				



**MISSISSIPPI RIVER SEDIMENT DELIVERY PIPELINE**

**TYPICAL CROSS SECTION J-J'**

NOT TO SCALE



**LEGEND:**

	TEMPORARY MOORING AREA
	MISSISSIPPI RIVER REVTMENT
	CONVEYANCE CORRIDOR
	APPROX. EMPIRE WATERWAY CHANNEL
	EMPIRE WATERWAY APPROX. R/W
	MISSISSIPPI RIVER SEDIMENT DELIVERY PIPELINE
	29 • RIVER MILE MARKER

**NOTES:**

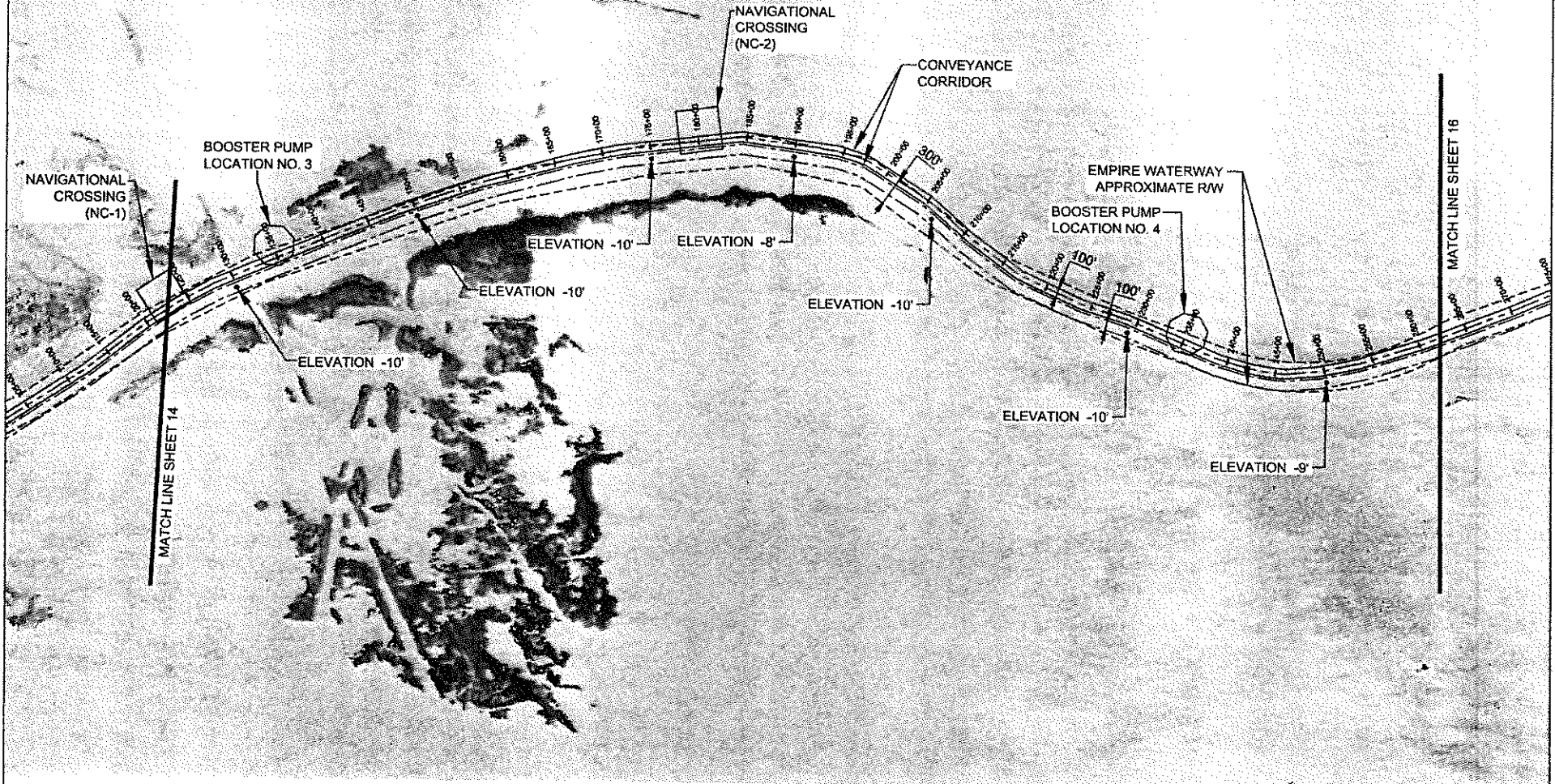
1. SEE SHEET 25 - 36 FOR LEVEE CROSSINGS, HIGHWAY CROSSINGS, HARBOR CANAL CROSSING, MARSH AND ROCK REVTMENT CROSSING, NAVIGATION CROSSINGS, AND BOOSTER SITE DETAILS.
2. CONVEYANCE CORRIDOR CONSTRUCTION EQUIPMENT RIGHT OF WAY IS TO THE LIMITS OF THE CONVEYANCE CORRIDOR.
3. SURVEYS CONDUCTED BY SJB GROUP, LLC & C.H. FENSTERMAKER & ASSOC., INC, JULY 2008.
4. SEDIMENT PIPELINE SHALL BE LIGHTED AND MARKED IN ACCORDANCE WITH U.S. COAST GUARD REGULATIONS.
5. ANY DAMAGE TO THE MISSISSIPPI RIVER REVTMENT CAUSED BY THE USE OF A SUBMERGED PIPELINE SHALL BE REPAIRED BY THE APPLICANT.



BY	DESCRIPTION	DATE	 <b>COASTAL ENGINEERING CONSULTANTS, INC</b>  <b>STB GROUP, LLC</b> <small>QUALITY BY DESIGN</small>	OFFICE OF COASTAL PROTECTION & RESTORATION RESTORATION DIVISION 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801	RIVERINE SAND MINING / SCOFIELD ISLAND RESTORATION	CONVEYANCE CORRIDOR LAYOUT	
MTP	CMD/USACE/STAKEHOLDER COMMENT RESPONSE	02/10 2011				STATE PROJECT NUMBER: BA-40	DATE: NOVEMBER, 2010
MTP	LEVEE CROSSINGS, PAGE NUMBERS	05/06 2011				FEDERAL PROJECT NUMBER: BA-40	SHEET 14 OF 38
DRAWN BY: DARTEZ \ ZWERNEMAN			DESIGNED BY: MICHAEL T. POFF, P.E.	APPROVED BY: MAURY CHATELLIER, P.E.			

**LEGEND:**

- ==== CONVEYANCE CORRIDOR
- APPROX. EMPIRE WATERWAY CHANNEL
- EMPIRE WATERWAY APPROX. RW



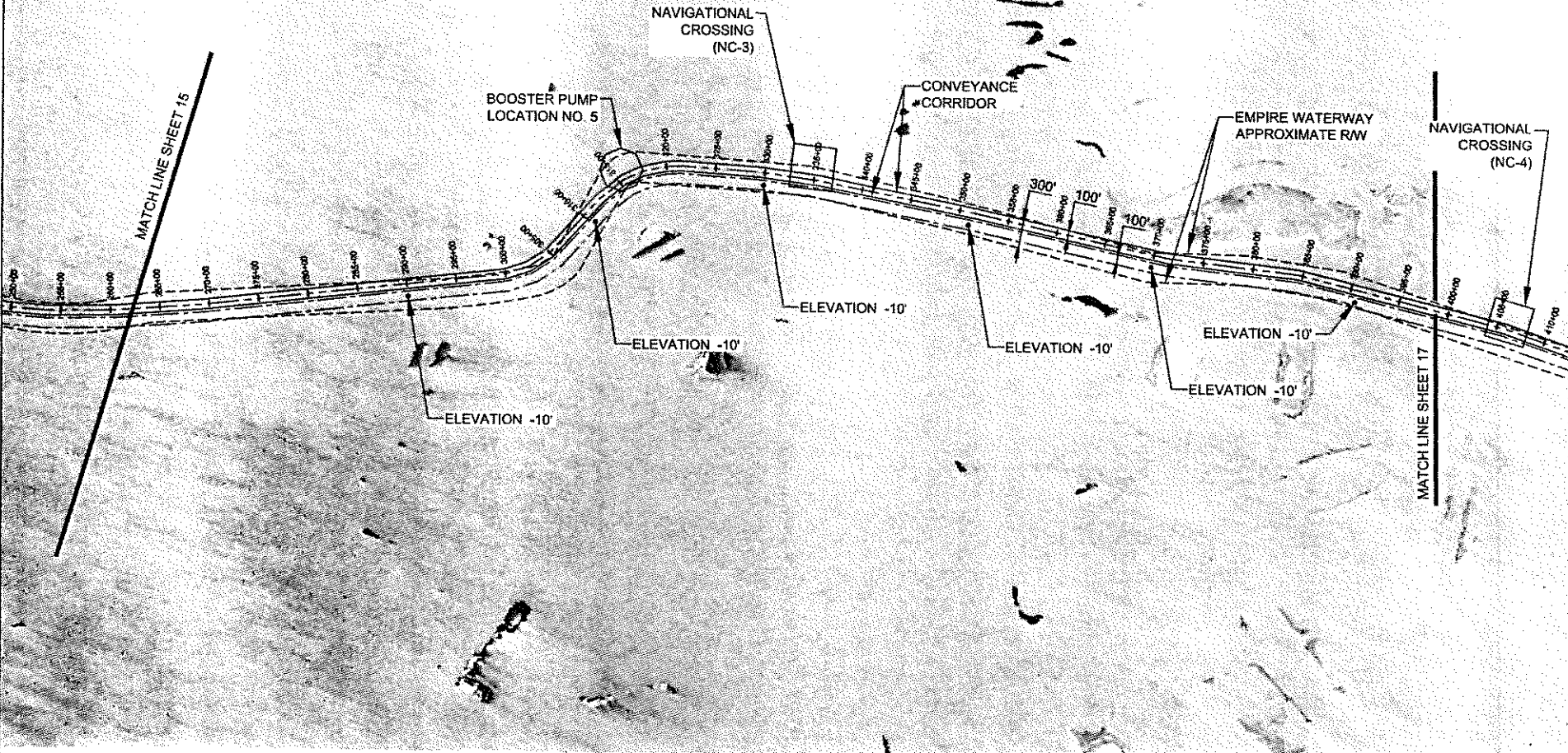
**NOTES:**

1. SEE SHEET 35 & 36 FOR NAVIGATION CROSSING AND BOOSTER SITE DETAILS.
2. SURVEY CONDUCTED BY C.H. FENSTERMAKER & ASSOC., INC, JULY 2008.
3. SEDIMENT PIPELINE SHALL BE LIGHTED AND MARKED IN ACCORDANCE WITH U.S. COAST GUARD REGULATIONS.



<b>BY</b>	<b>DESCRIPTION</b>	<b>DATE</b>	<p><b>COASTAL ENGINEERING CONSULTANTS, INC</b> <b>STB GROUP, LLC</b> <small>QUALITY BY DESIGN</small></p>	<p><b>OFFICE OF COASTAL PROTECTION &amp; RESTORATION</b> <b>RESTORATION DIVISION</b> 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801</p>	<p><b>RIVERINE SAND MINING / SCOFIELD ISLAND RESTORATION</b></p>	<p><b>CONVEYANCE CORRIDOR LAYOUT</b></p>		
MTP	CMD/USACE/STAKEHOLDER COMMENT RESPONSE	02/10 2011					STATE PROJECT NUMBER: BA-40	DATE: NOVEMBER, 2010
MTP	LEVEE CROSSINGS, PAGE NUMBERS	05/06 2011					FEDERAL PROJECT NUMBER: BA-40	SHEET 15 OF 38
DRAWN BY: DARTEZ \ ZWERNEMAN			DESIGNED BY: MICHAEL T. POFF, P.E.	APPROVED BY: MAURY CHATELLIER, P.E.				

LEGEND:	
	CONVEYANCE CORRIDOR
	APPROX. EMPIRE WATERWAY CHANNEL
	EMPIRE WATERWAY APPROX. RW

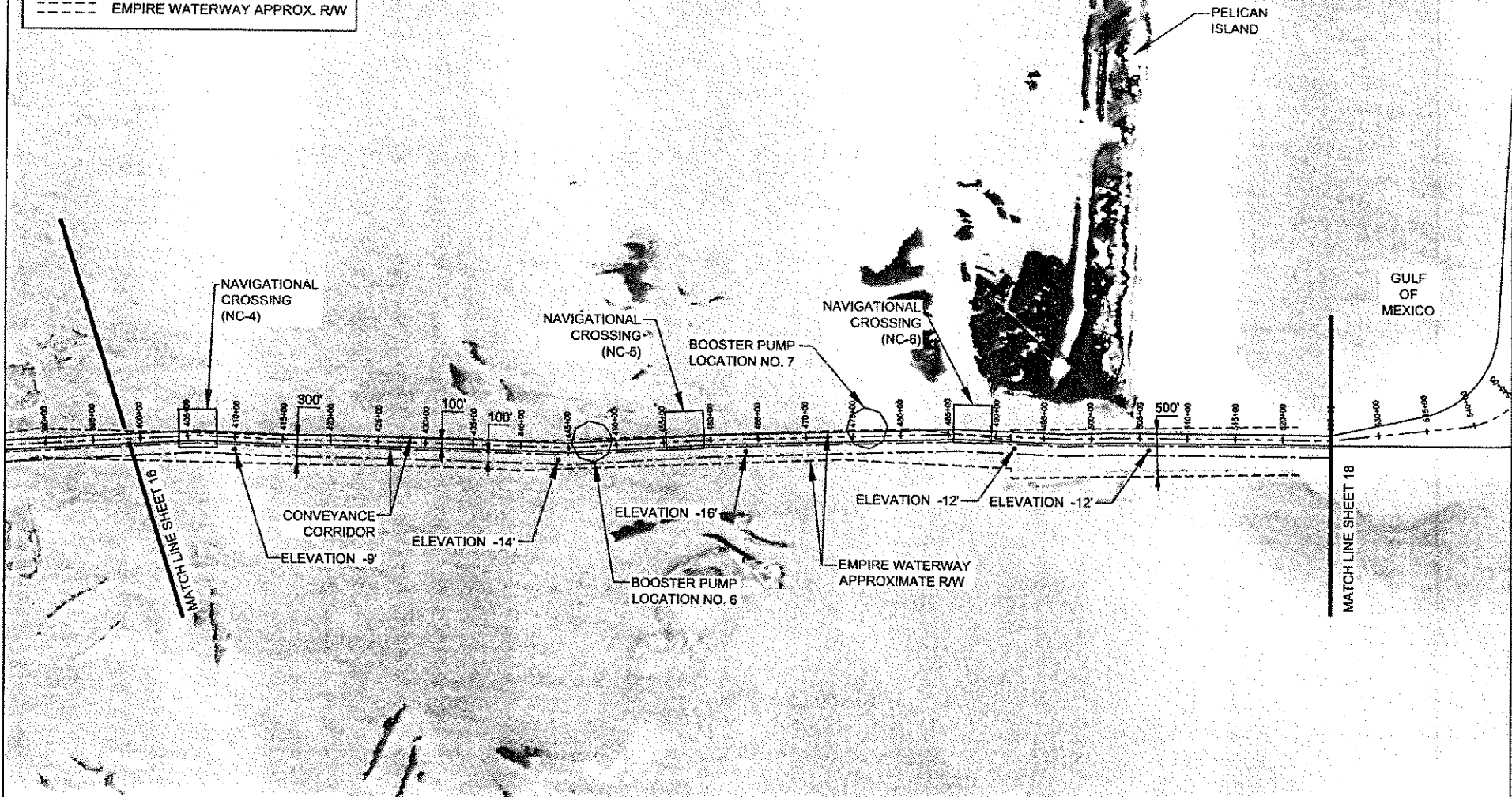


- NOTES:**
1. SEE SHEET 35 & 36 FOR NAVIGATION CROSSING AND BOOSTER SITE DETAILS.
  2. SURVEY CONDUCTED BY C.H. FENSTERMAKER & ASSOC., INC, JULY 2008.
  3. SEDIMENT PIPELINE SHALL BE LIGHTED AND MARKED IN ACCORDANCE WITH U.S. COAST GUARD REGULATIONS.



BY	DESCRIPTION	DATE	 	OFFICE OF COASTAL PROTECTION & RESTORATION RESTORATION DIVISION 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801	RIVERINE SAND MINING / SCOFIELD ISLAND RESTORATION	CONVEYANCE CORRIDOR LAYOUT
MTP	CMD/USACE/STAKEHOLDER COMMENT RESPONSE	02/10 2011				
MTP	LEVEE CROSSINGS, PAGE NUMBERS	05/06 2011				
DRAWN BY: DARTEZ \ ZWERNEMAN			DESIGNED BY: MICHAEL T. POFF, P.E.	APPROVED BY: MAURY CHATELLIER, P.E.	STATE PROJECT NUMBER: BA-40	DATE: NOVEMBER, 2010
					FEDERAL PROJECT NUMBER: BA-40	SHEET 16 OF 38

LEGEND:	
	CONVEYANCE CORRIDOR
	APPROX. EMPIRE WATERWAY CHANNEL
	EMPIRE WATERWAY APPROX. R/W



- NOTES:**
1. SEE SHEET 35 & 36 FOR NAVIGATION CROSSING AND BOOSTER SITE DETAILS.
  2. SURVEY CONDUCTED BY C.H. FENSTERMAKER & ASSOC., INC, JULY 2008.
  3. SEDIMENT PIPELINE SHALL BE LIGHTED AND MARKED IN ACCORDANCE WITH U.S. COAST GUARD REGULATIONS.



BY	DESCRIPTION	DATE
MTP	CMD/USACE/STAKEHOLDER COMMENT RESPONSE	02/10 2011
MTP	LEVEE CROSSINGS, PAGE NUMBERS	05/06 2011

**COASTAL ENGINEERING CONSULTANTS, INC**

**SJB GROUP, LLC**  
QUALITY BY DESIGN

OFFICE OF COASTAL PROTECTION & RESTORATION  
RESTORATION DIVISION  
450 LAUREL STREET  
BATON ROUGE, LOUISIANA 70801

RIVERINE SAND MINING / SCOFIELD ISLAND RESTORATION

STATE PROJECT NUMBER: BA-40

CONVEYANCE CORRIDOR LAYOUT

DATE: NOVEMBER, 2010

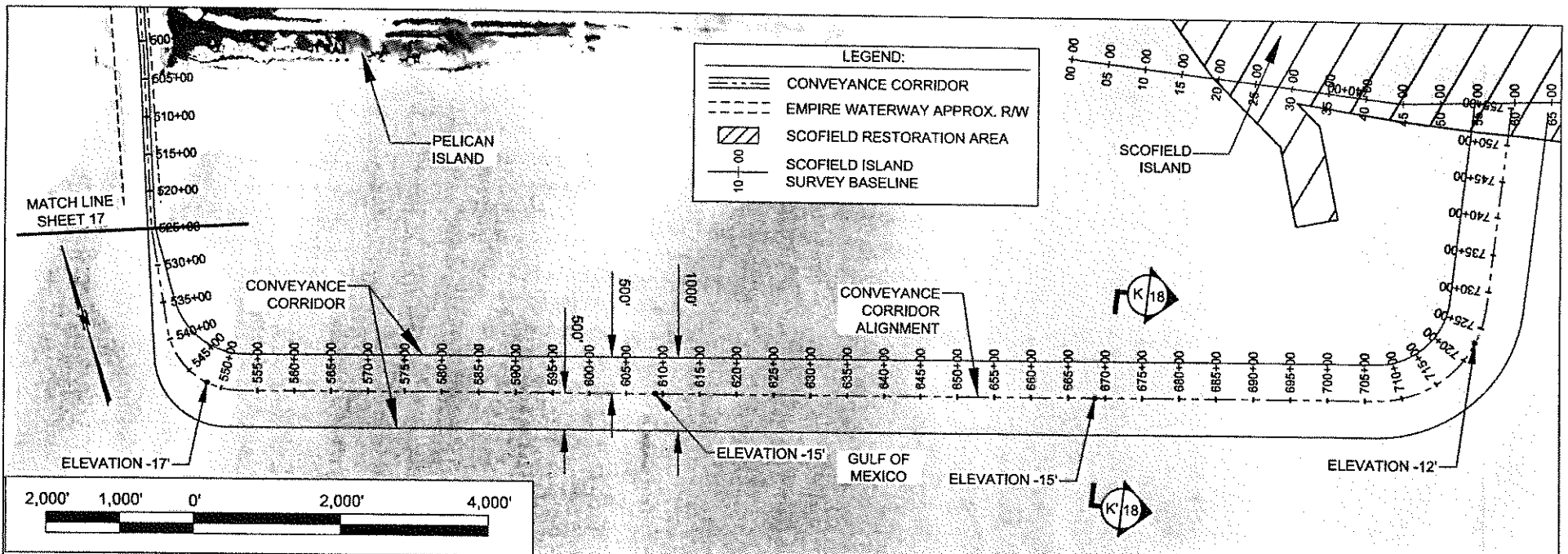
DRAWN BY: DARTEZ I ZWERNEMAN

DESIGNED BY: MICHAEL T. POFF, P.E.

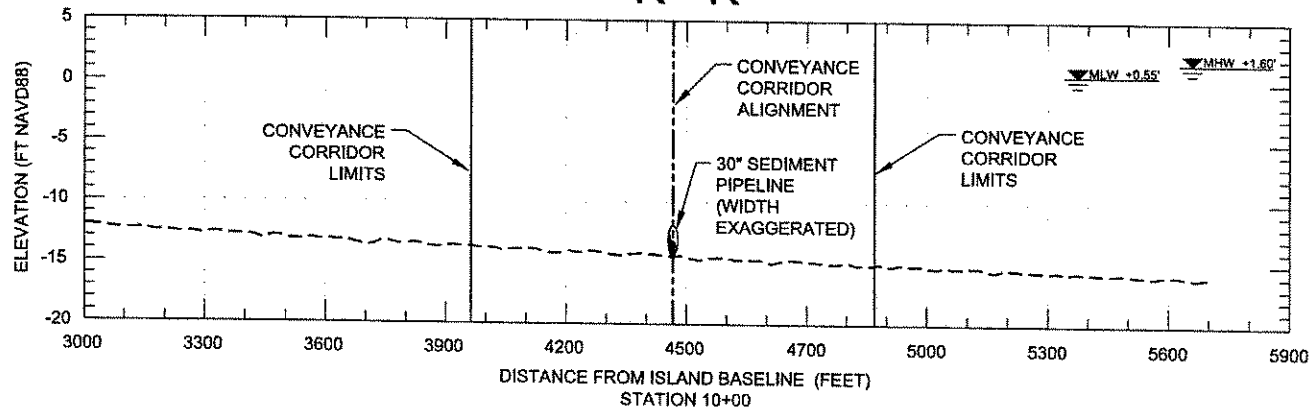
APPROVED BY: MAURY CHATELLIER, P.E.

FEDERAL PROJECT NUMBER: BA-40

SHEET 17 OF 38



K - K'



SCALE:  
H: 1" = 450'  
V: 1" = 15'

NOTES:

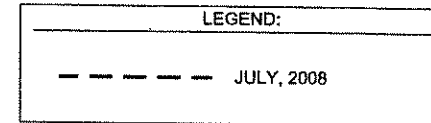
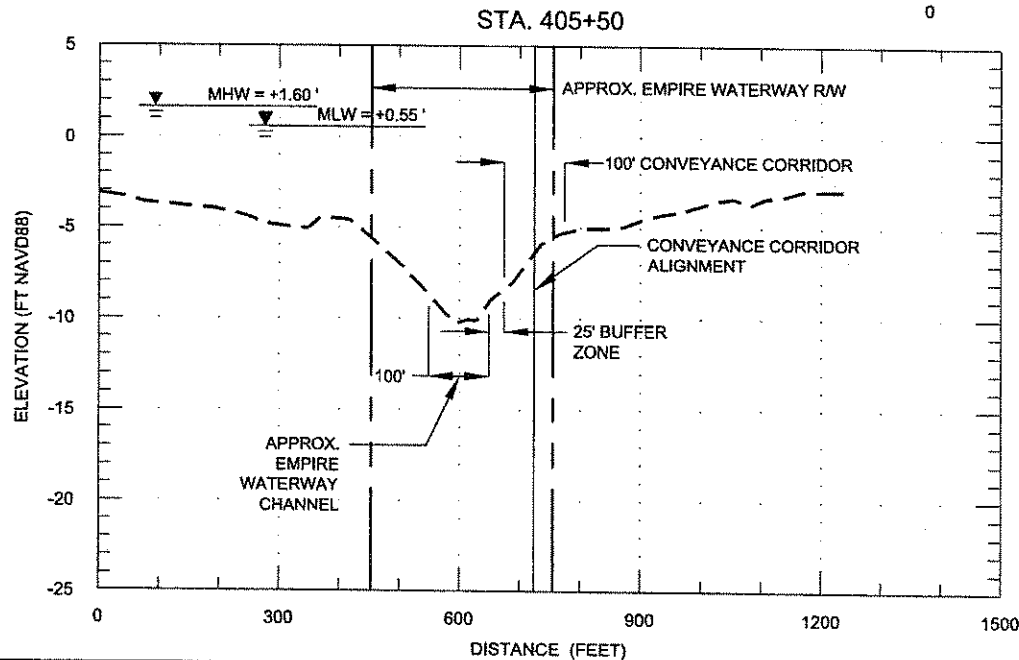
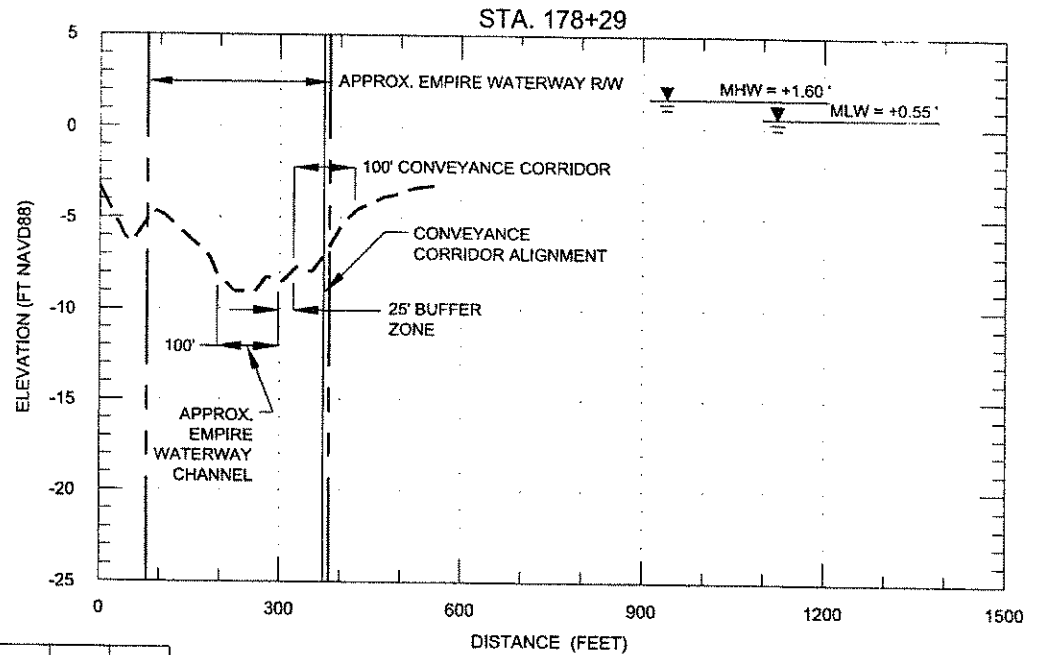
1. SURVEY PROVIDED BY SHAW, JULY 2010 (FILENAME: W-10\_DATA TO DATE\_7-29-10\_COMPLETE\_CORRECTED.CSV).
2. NO EXCAVATIONS OR FILLS ARE REQUIRED FOR THE CONVEYANCE CORRIDOR FROM THE EMPIRE JETTIES TO SCOFIELD ISLAND.
3. A MINIMUM 12 FOOT OF WATER IS ABOVE THE SEDIMENT PIPELINE IN THE GULF OF MEXICO SECTION OF THE CONVEYANCE CORRIDOR UNTIL APPROACH OF THE FILL TEMPLATE.
4. SEDIMENT PIPELINE SHALL BE LIGHTED AND MARKED IN ACCORDANCE WITH U.S. COAST GUARD REGULATIONS.

BY	DESCRIPTION	DATE	 	OFFICE OF COASTAL PROTECTION & RESTORATION RESTORATION DIVISION 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801	RIVERINE SAND MINING / SCOFIELD ISLAND RESTORATION	CONVEYANCE CORRIDOR LAYOUT (GULF OF MEXICO)
MTP	CMD/USACE/STAKEHOLDER COMMENT RESPONSE	02/10 2011				
MTP	LEVEE CROSSINGS, PAGE NUMBERS	05/06 2011			FEDERAL PROJECT NUMBER: BA-40	SHEET 18 OF 38
DRAWN BY: DARTEZ \ ZWERNEMAN			DESIGNED BY: MICHAEL T. POFF, P.E.	APPROVED BY: MAURY CHATELLIER, P.E.		



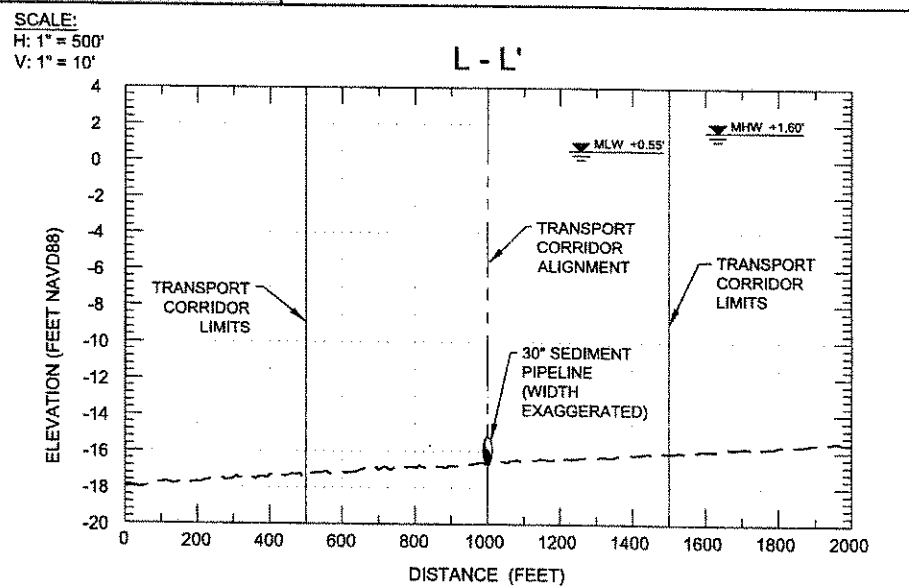
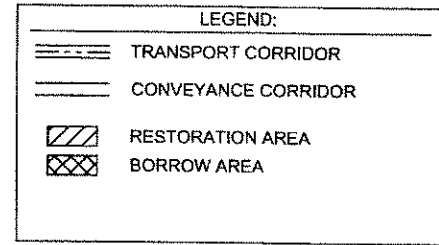
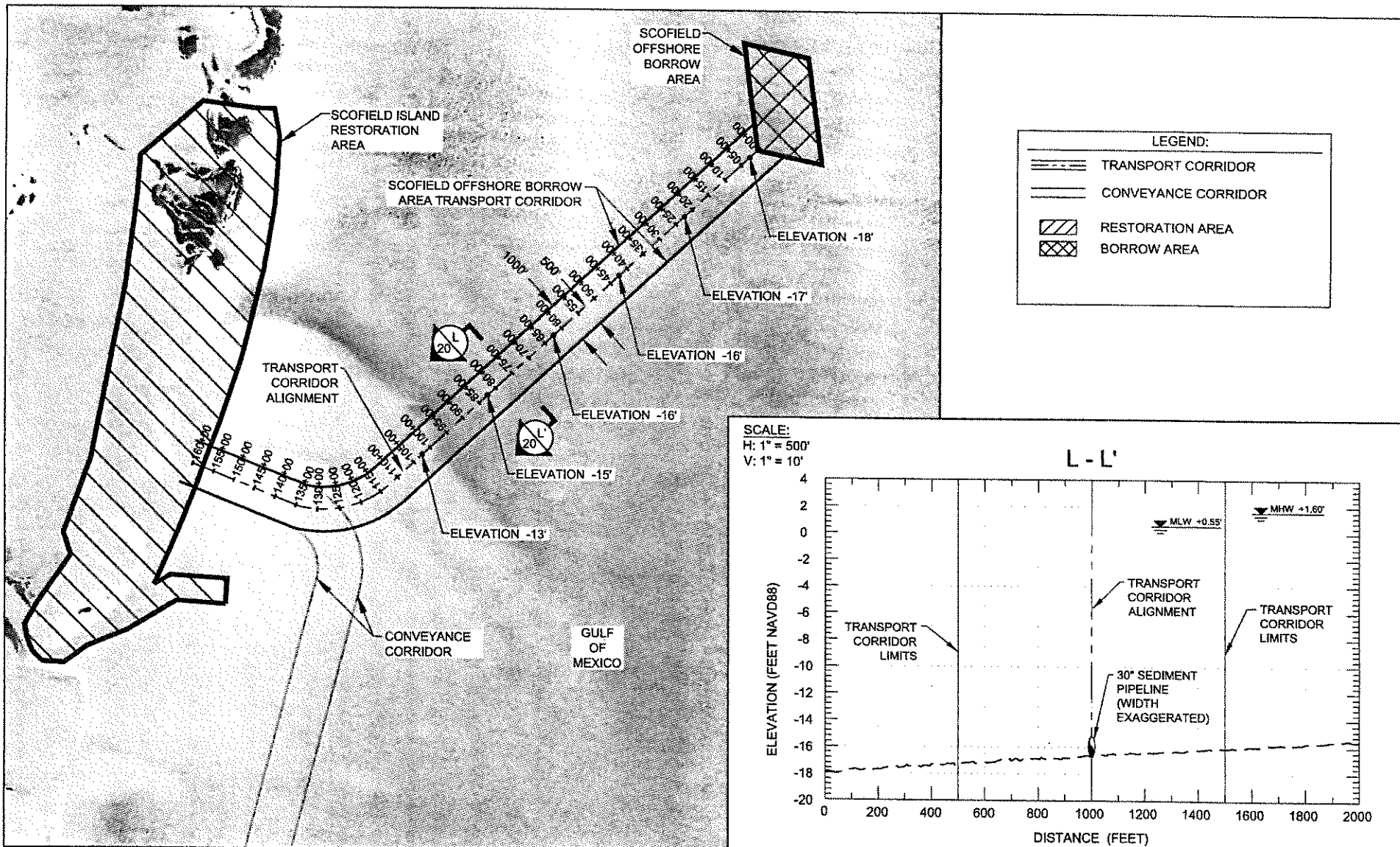
**NOTES:**

1. APPROXIMATE EMPIRE WATERWAY RIGHT OF WAY (R/W) DIGITIZED FROM WATERWAY FROM EMPIRE, LA TO THE GULF OF MEXICO, R/W AND SPOIL DISPOSAL AREAS MAPS, (USACE, 1948).
2. SURVEY CONDUCTED BY C.H. FENSTERMAKER & ASSOC., INC., JULY 2008.

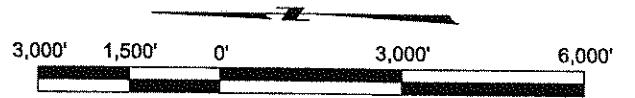


SCALE  
H: 1" = 300'  
V: 1" = 10'

BY	DESCRIPTION	DATE	 	OFFICE OF COASTAL PROTECTION & RESTORATION RESTORATION DIVISION 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801	RIVERINE SAND MINING / SCOFIELD ISLAND RESTORATION	CONVEYANCE CORRIDOR TYPICAL CROSS SECTIONS
MTP	CMD/USACE/STAKEHOLDER COMMENT RESPONSE	02/10 2011				
MTP	LEVEE CROSSINGS, PAGE NUMBERS	05/06 2011				
DRAWN BY: DARTEZ \ ZWERNEMAN			DESIGNED BY: MICHAEL T. POFF, P.E.	APPROVED BY: MAURY CHATELLIER, P.E.	STATE PROJECT NUMBER: BA-40	DATE: NOVEMBER, 2010
					FEDERAL PROJECT NUMBER: BA-40	SHEET 19 OF 38












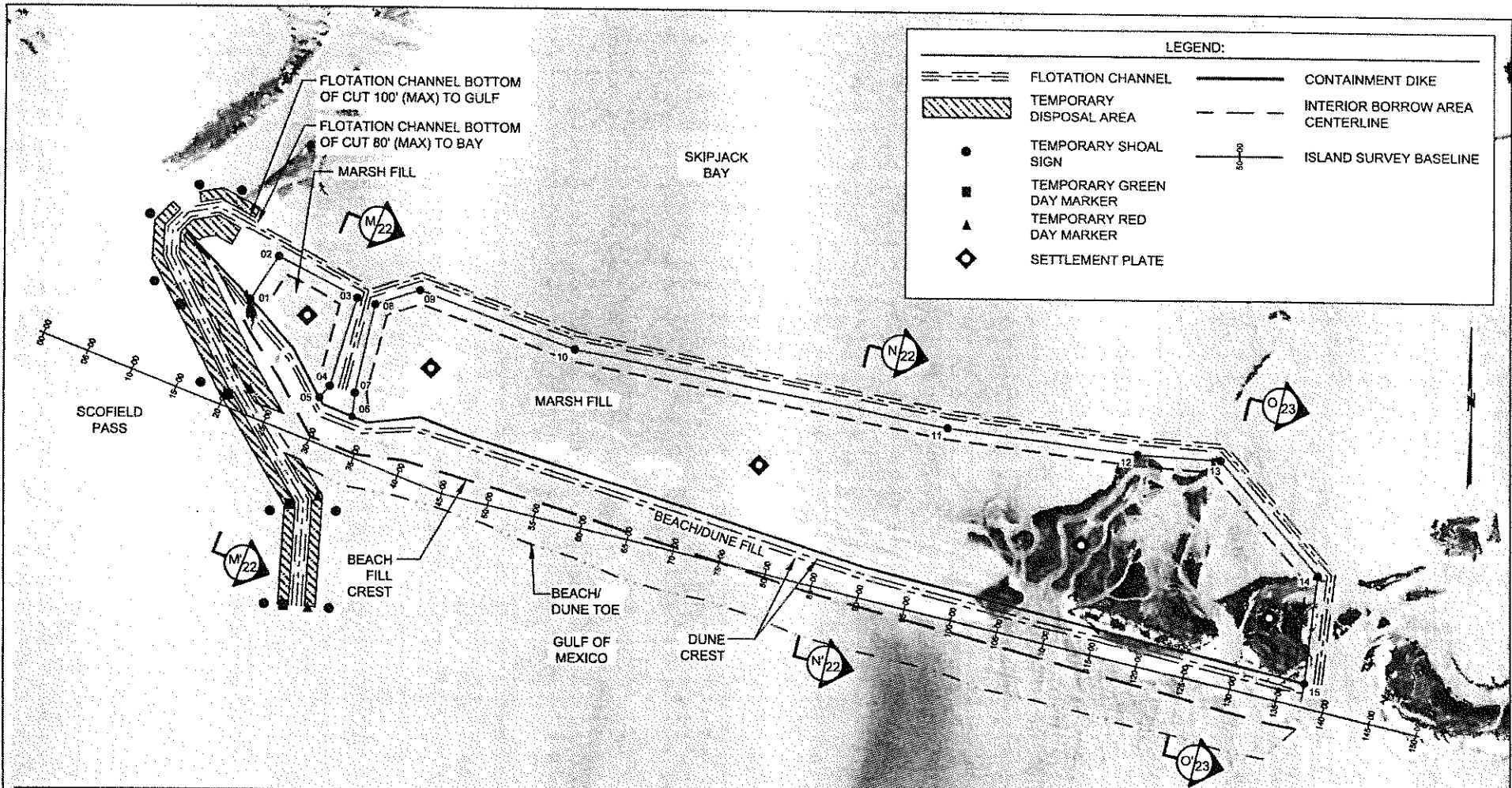
- NOTES:**
1. SURVEY PROVIDED BY SHAW, JULY 2010 (FILENAME: W-10\_DATA TO DATE 7-29-10\_COMPLETE\_CORRECTED.CSV).
  2. NO EXCAVATIONS OR FILLS ARE REQUIRED FOR THE TRANSPORT CORRIDOR FROM THE OFFSHORE BORROW AREA TO SCOFIELD ISLAND.
  3. A MINIMUM 12 FOOT OF WATER IS ABOVE THE SEDIMENT PIPELINE IN THE CORRIDOR UNTIL APPROACH OF THE FILL TEMPLATE.
  4. SEDIMENT PIPELINE SHALL BE LIGHTED AND MARKED IN ACCORDANCE WITH U.S. COAST GUARD REGULATIONS.



BY	DESCRIPTION	DATE	 	OFFICE OF COASTAL PROTECTION & RESTORATION RESTORATION DIVISION 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801	RIVERINE SAND MINING / SCOFIELD ISLAND RESTORATION	SCOFIELD OFFSHORE BORROW AREA TRANSPORT CORRIDOR ALIGNMENT
MTP	CMD/USACE/STAKEHOLDER COMMENT RESPONSE	02/10 2011				
MTP	LEVEE CROSSINGS, PAGE NUMBERS	05/06 2011				
DRAWN BY: DARTEZ I ZWERNEMAN			DESIGNED BY: MICHAEL T. POFF, P.E.	APPROVED BY: MAURY CHATELLIER, P.E.	STATE PROJECT NUMBER: BA-40	DATE: NOVEMBER, 2010
					FEDERAL PROJECT NUMBER: BA-40	SHEET 20 OF 38

**LEGEND:**

	FLOTATION CHANNEL		CONTAINMENT DIKE
	TEMPORARY DISPOSAL AREA		INTERIOR BORROW AREA CENTERLINE
	TEMPORARY SHOAL SIGN		ISLAND SURVEY BASELINE
	TEMPORARY GREEN DAY MARKER		
	TEMPORARY RED DAY MARKER		
	SETTLEMENT PLATE		




ISLAND SURVEY BASELINE INFLECTION POINTS		
POINT NO.	NORTHING	EASTING
00+00	275598.21	3843545.11
45+00	273943.02	3847726.17
150+00	271506.42	3857942.90

**NOTES:**








1. SEE SHEETS 22 & 23 FOR TYPICAL SECTIONS. SEE SHEET 4 FOR PERIMETER POINTS OF INFLECTION.
2. FLOTATION CHANNEL TOTAL LENGTH EQUALS 19,825'.
3. REQUEST PERMIT FOR BOTH MISSISSIPPI RIVER BORROW AREAS, MR-B-09 AND MR-E-09, TO PROMOTE COMPETITIVE CONSTRUCTION CONTRACT BIDS BASED ON AVAILABLE DREDGE EQUIPMENT. SHALL ONLY EXCAVATE VOLUME REQUIRED TO COMPLETE PROJECT.

SCOFIELD ISLAND VOLUME REQUIREMENTS	DUNE	MARSH
REQUIRED FILL VOLUME	1.83 MCY	1.76 MCY
CUT-TO-FILL RATIO	1.3	1.6
REQUIRED EXCAVATION VOLUME	2.12 MCY	2.82 MCY



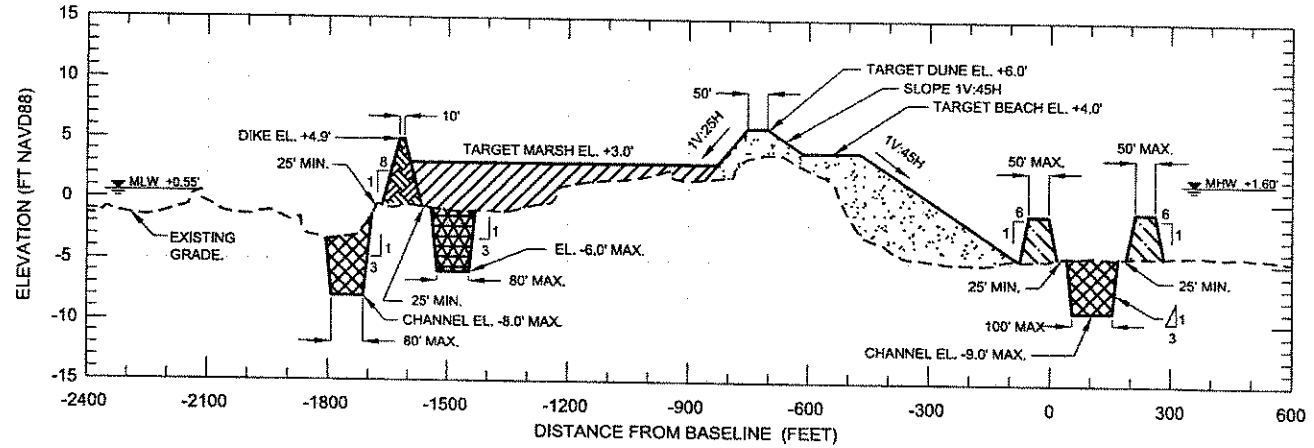
BY: MTP DESCRIPTION: CMD/USACE/STAKEHOLDER COMMENT RESPONSE DATE: 02/10 2011		 <b>COASTAL ENGINEERING CONSULTANTS, INC</b> STB GROUP, LLC QUALITY BY DESIGN	OFFICE OF COASTAL PROTECTION & RESTORATION RESTORATION DIVISION 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801	RIVERINE SAND MINING / SCOFIELD ISLAND RESTORATION	ISLAND RESTORATION PLAN VIEW
BY: MTP DESCRIPTION: LEVEE CROSSINGS, PAGE NUMBERS DATE: 05/06 2011					STATE PROJECT NUMBER: BA-40
DRAWN BY: DARTEZ		DESIGNED BY: MICHAEL T. POFF, P.E.	APPROVED BY: MAURY CHATELLIER, P.E.	FEDERAL PROJECT NUMBER: BA-40	SHEET 21 OF 38

LEGEND:

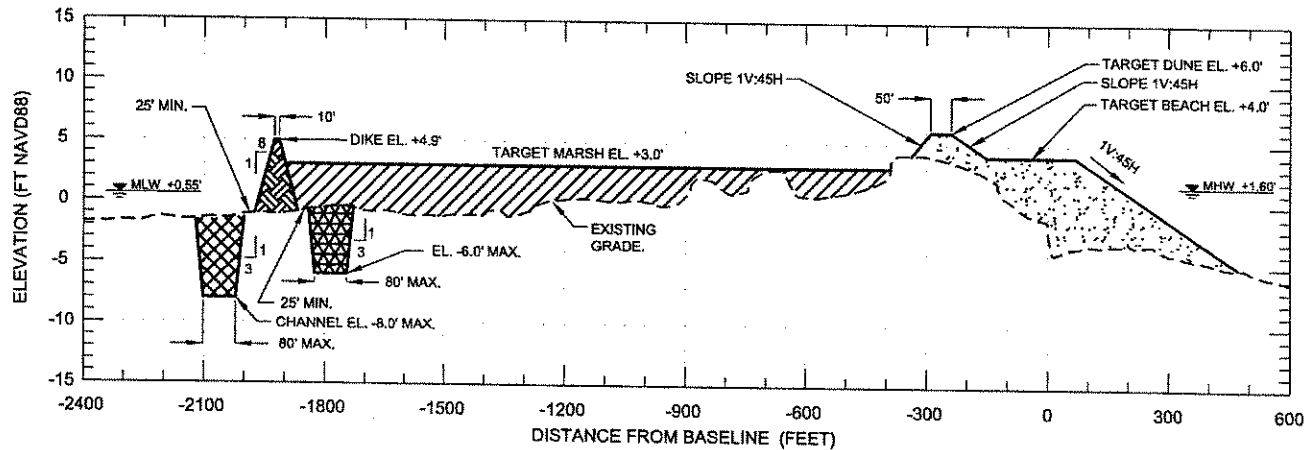
-  BEACH / DUNE FILL
-  MARSH FILL
-  CONTAINMENT DIKE
-  CONTAINMENT DIKE INTERIOR BORROW AREA
-  FLOTATION CHANNEL / CONTAINMENT DIKE BORROW AREA
-  TEMPORARY DISPOSAL AREA
-  2010 SURVEY
-  DESIGN

SCALE:  
H: 1" = 450'  
V: 1" = 15'

M - M'





N - N'











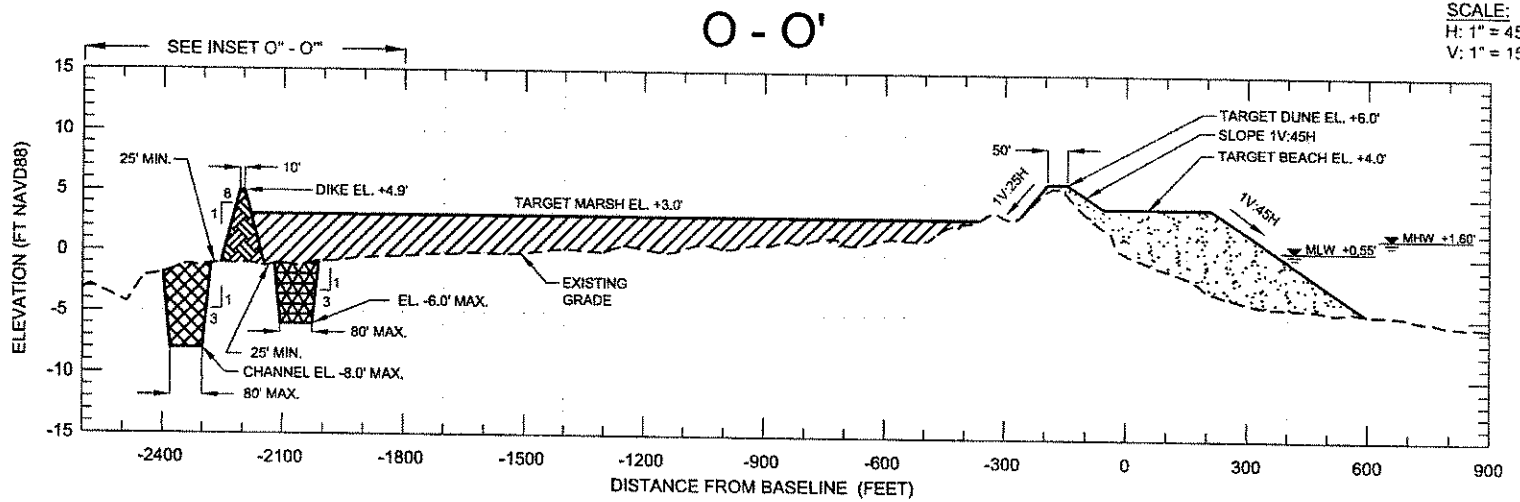
NOTES:

1. SECTIONS ARE VIEWED AS LOOKING EAST.
2. BEACH, DUNE AND MARSH FILL TOLERANCE = ±0.5 FEET.
3. SEE SHEET 23 & 24 FOR MAXIMUM FOOTPRINTS OF FLOTATION CHANNEL, CONTAINMENT DIKES AND INTERIOR BORROW AREA.
4. SURVEY PROVIDED BY OCPR, 2010 (W10 AS-BUILT).

BY	DESCRIPTION	DATE	 <b>COASTAL ENGINEERING CONSULTANTS, INC</b>  <b>SJB GROUP, LLC</b> <small>QUALITY BY DESIGN</small>	OFFICE OF COASTAL PROTECTION & RESTORATION RESTORATION DIVISION 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801	RIVERINE SAND MINING / SCOFIELD ISLAND RESTORATION	ISLAND RESTORATION DESIGN SECTIONS
MTP	CMD/USACE/STAKEHOLDER COMMENT RESPONSE	02/10 2011				
MTP	LEVEE CROSSINGS, PAGE NUMBERS	05/06 2011				
DRAWN BY: DARTEZ			DESIGNED BY: MICHAEL T. POFF, P.E.	APPROVED BY: MAURY CHATELLIER, P.E.	STATE PROJECT NUMBER: BA-40	DATE: NOVEMBER, 2010
					FEDERAL PROJECT NUMBER: BA-40	SHEET 22 OF 38

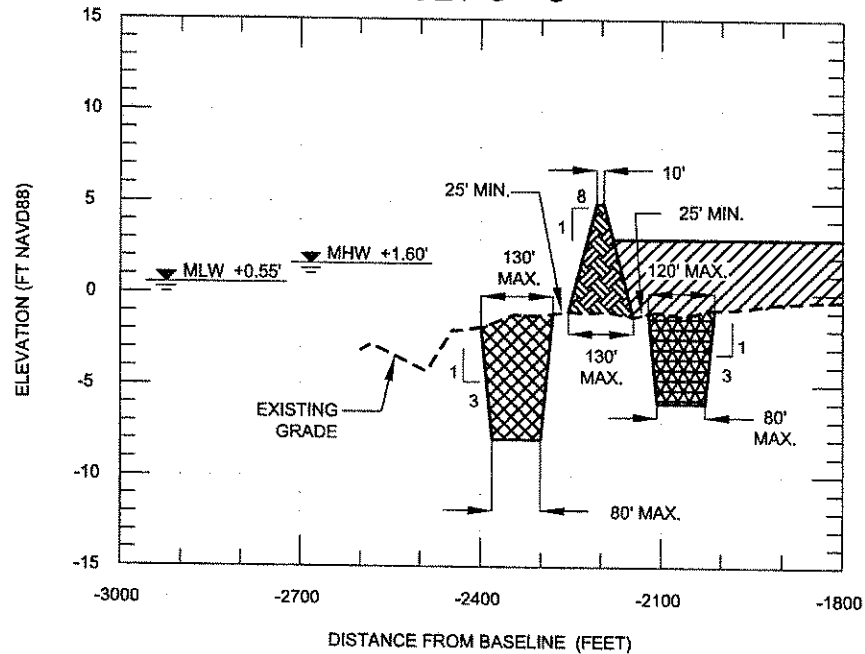
LEGEND:

-  BEACH / DUNE FILL
-  MARSH FILL
-  CONTAINMENT DIKE
-  CONTAINMENT DIKE INTERIOR BORROW AREA
-  FLOTATION CHANNEL / CONTAINMENT DIKE BORROW AREA
-  TEMPORARY DISPOSAL AREA
-  2010 SURVEY
-  DESIGN



SCALE:  
H: 1" = 450'  
V: 1" = 15'



INSET 0" -0"

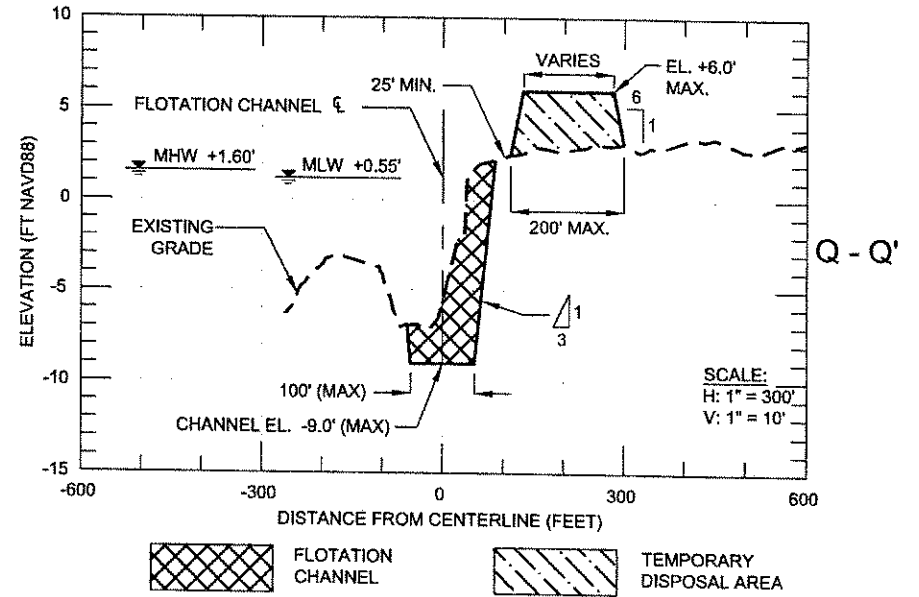
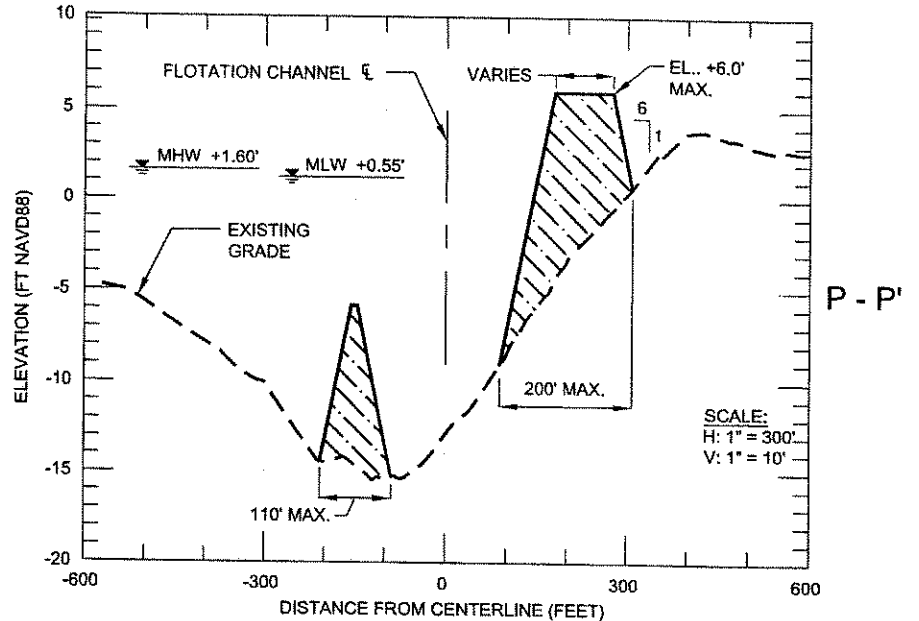
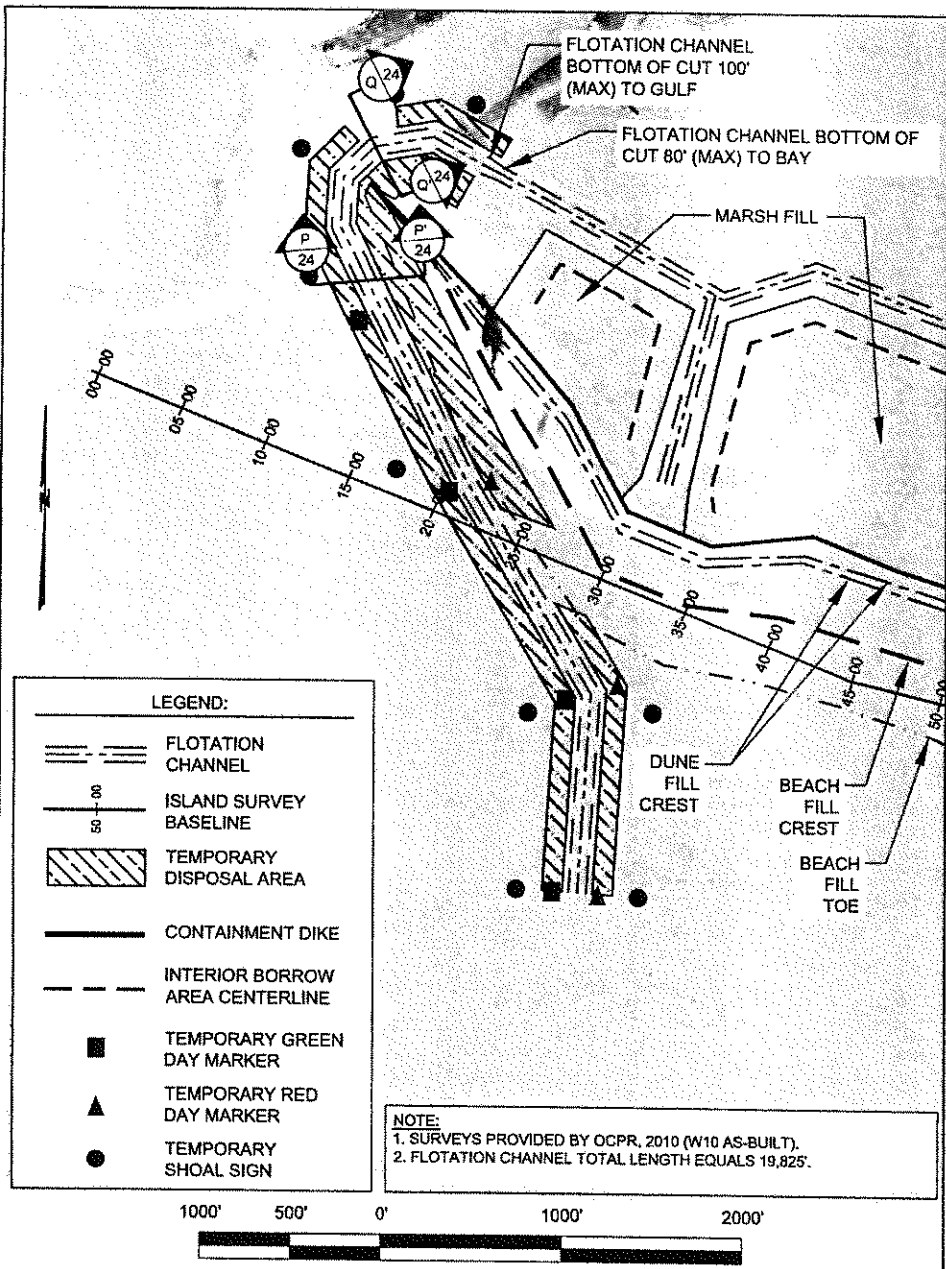


SCALE:  
H: 1" = 300'  
V: 1" = 10'

MAXIMUM FOOTPRINT OF FLOTATION CHANNEL, CONTAINMENT DIKE, INTERIOR BORROW AREA

- NOTES:
1. SECTIONS ARE VIEWED AS LOOKING EAST.
  2. BEACH, DUNE AND MARSH FILL TOLERANCE = ±0.5 FEET.
  3. SURVEY PROVIDED BY OCPD, 2010 (W10 AS-BUILT).

BY	DESCRIPTION	DATE	 	OFFICE OF COASTAL PROTECTION & RESTORATION RESTORATION DIVISION 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801	RIVERINE SAND MINING / SCOFIELD ISLAND RESTORATION	ISLAND RESTORATION DESIGN SECTION
MTP	CMD/USACE/STAKEHOLDER COMMENT RESPONSE	02/10 2011				
MTP	LEVEE CROSSINGS, PAGE NUMBERS	05/06 2011				
DRAWN BY: DARTEZ			DESIGNED BY: MICHAEL T. POFF, P.E.	APPROVED BY: MAURY CHATELLIER, P.E.	STATE PROJECT NUMBER: BA-40	DATE: NOVEMBER, 2010
					FEDERAL PROJECT NUMBER: BA-40	SHEET 23 OF 38



BY	DESCRIPTION	DATE
MTP	CMD/USACE/STAKEHOLDER COMMENT RESPONSE	02/10 2011
MTP	LEVEE CROSSINGS, PAGE NUMBERS	05/06 2011

**COASTAL ENGINEERING CONSULTANTS, INC**  
**SIB GROUP, LLC**  
 QUALITY BY DESIGN

OFFICE OF COASTAL PROTECTION & RESTORATION  
 RESTORATION DIVISION  
 450 LAUREL STREET  
 BATON ROUGE, LOUISIANA 70801

RIVERINE SAND MINING / SCOFIELD ISLAND RESTORATION

FLOTATION CHANNEL GULF APPROACH PLAN VIEW AND DESIGN SECTIONS

DRAWN BY: DARTEZ

DESIGNED BY: MICHAEL T. POFF, P.E.

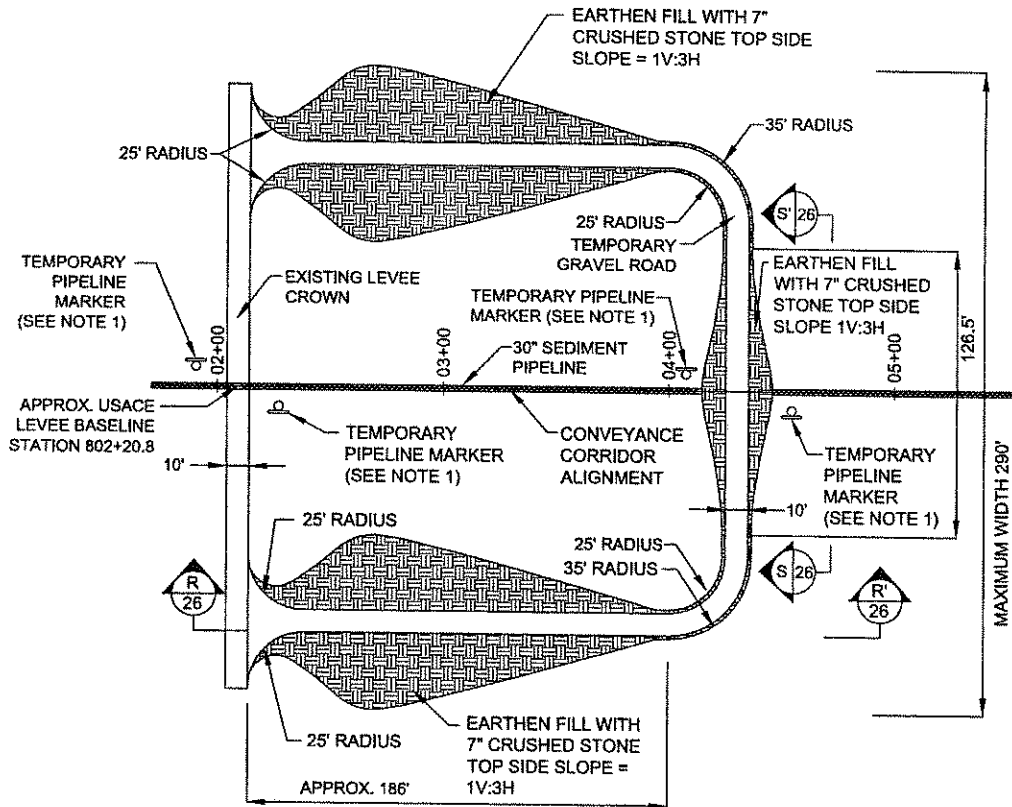
APPROVED BY: MAURY CHATELLIER, P.E.

STATE PROJECT NUMBER: BA-40  
 FEDERAL PROJECT NUMBER: BA-40

DATE: NOVEMBER, 2010  
 SHEET 24 OF 38

SCALE:  
1" = 80'

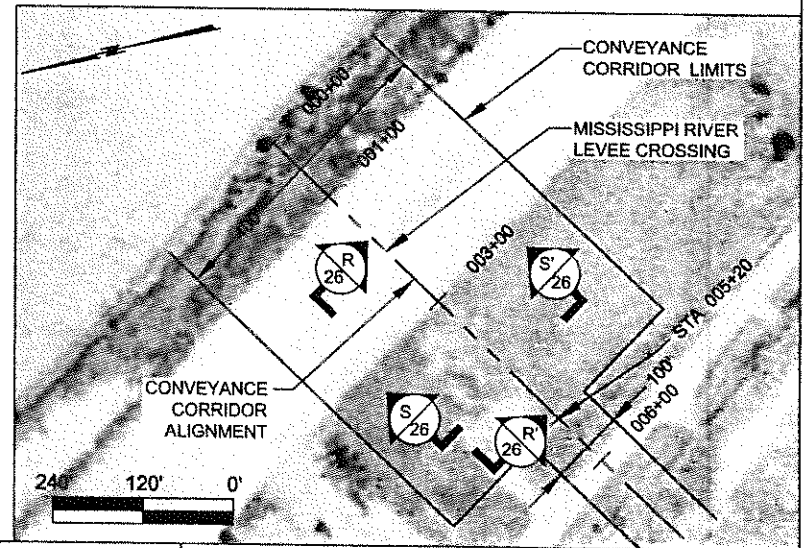
← MISSISSIPPI RIVER



**MISSISSIPPI RIVER LEVEE UP/DOWN RAMP  
AND PIPELINE CROSSING PLAN VIEW**

**NOTES:**

1. TEMPORARY PIPELINE MARKERS INDICATING OWNER, CONTENTS, AND ADDRESS FOR CONTACTING OWNER SHALL BE PLACED AND MAINTAINED AT EACH TOE OF EACH INFRASTRUCTURE CROSSING BY THE SEDIMENT PIPELINE.
2. SEE SHEETS 14 - 18 FOR CONVEYANCE CORRIDOR ALIGNMENT.
3. THE CONTRACTOR IS RESPONSIBLE FOR PREPARATION AND RESTORATION OF THE ACCESS AREAS. DISPOSAL OF ANY CLEARED VEGETATION, DEBRIS AND RUBBISH SHALL BE IN A MANNER ACCEPTABLE TO THE OWNER AND ENGINEER.



BY	DESCRIPTION	DATE
MTP	CMD/USACE/STAKEHOLDER COMMENT RESPONSE	02/10 2011
MTP	LEVEE CROSSINGS, PAGE NUMBERS	05/06 2011
DRAWN BY: DARTEZ   ZWERNEMAN		

**COASTAL ENGINEERING CONSULTANTS, INC**

**STB GROUP, LLC**  
QUALITY BY DESIGN

DESIGNED BY: MICHAEL T. POFF, P.E.

OFFICE OF COASTAL PROTECTION & RESTORATION  
RESTORATION DIVISION

450 LAUREL STREET  
BATON ROUGE, LOUISIANA 70801

APPROVED BY: MAURY CHATELLIER, P.E.

RIVERINE SAND MINING / SCOFIELD ISLAND RESTORATION

STATE PROJECT NUMBER: BA-40

FEDERAL PROJECT NUMBER: BA-40

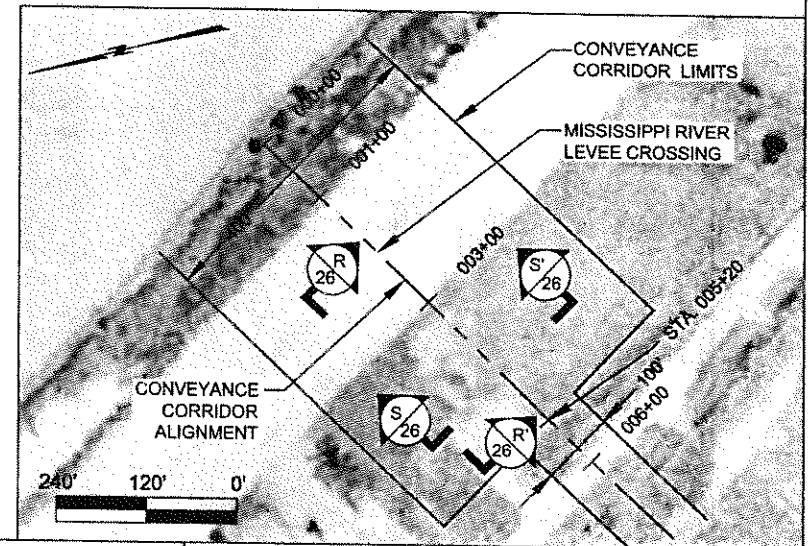
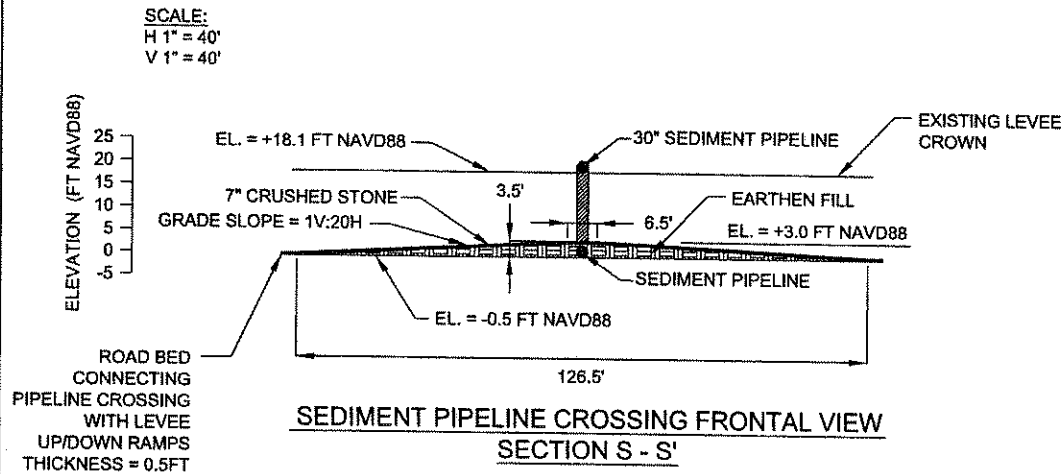
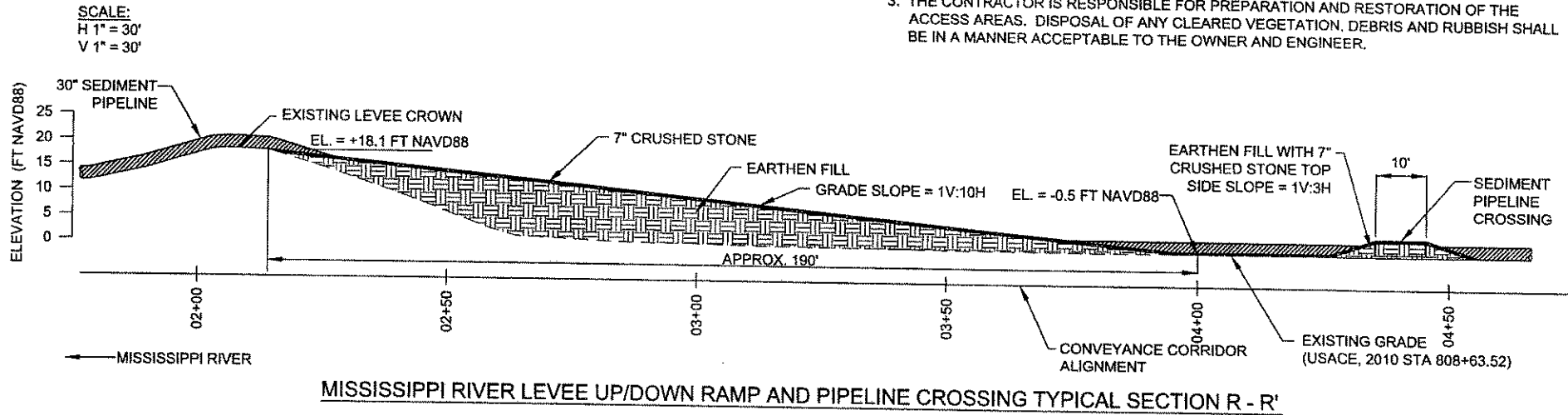
MISSISSIPPI RIVER LEVEE CROSSING PLAN VIEW

DATE: NOVEMBER, 2010

SHEET 25 OF 38

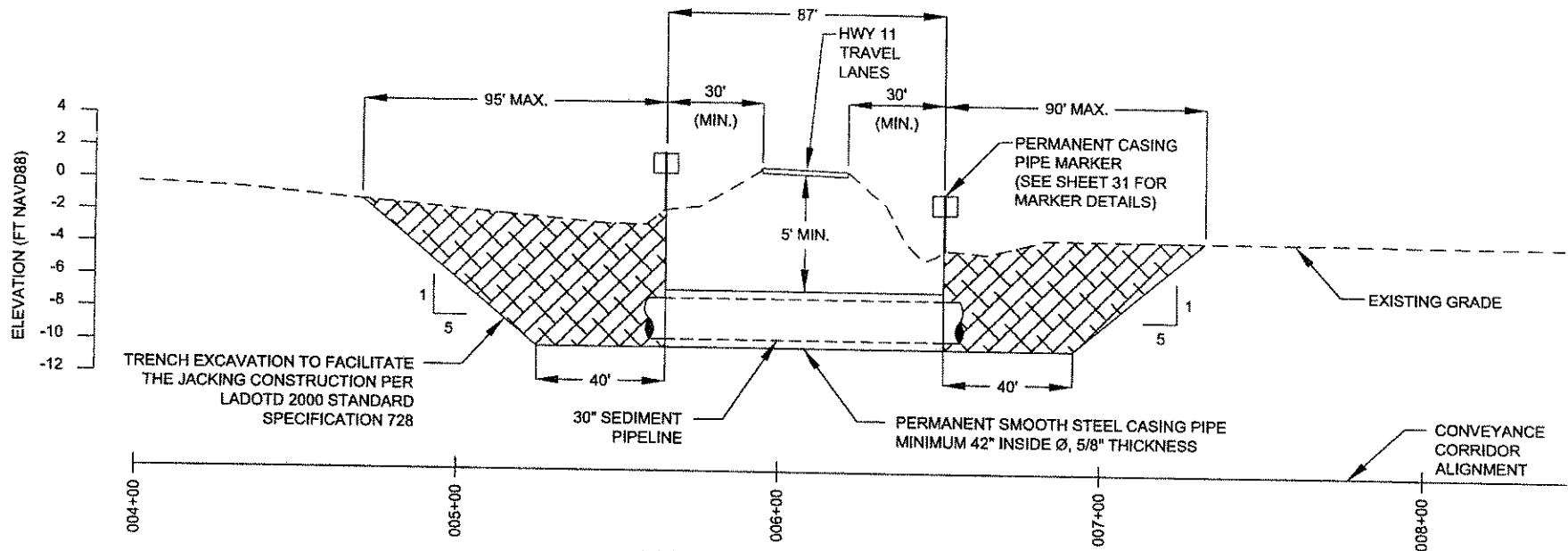
**NOTES:**

1. TEMPORARY PIPELINE MARKERS INDICATING OWNER, CONTENTS, AND ADDRESS FOR CONTACTING OWNER SHALL BE PLACED AND MAINTAINED AT EACH TOE OF EACH INFRASTRUCTURE CROSSING BY THE SEDIMENT PIPELINE.
2. SURVEYS CONDUCTED BY USACE, 2010, (CHECKED X-SECTION.DGN, 04/27/2011)
3. SEE SHEETS 14 - 18 FOR CONVEYANCE CORRIDOR ALIGNMENT.
4. MINIMUM FILL COVER OVER SEDIMENT PIPELINE AT CROSSING IS 1 FT.
5. THE CONTRACTOR IS RESPONSIBLE FOR PREPARATION AND RESTORATION OF THE ACCESS AREAS. DISPOSAL OF ANY CLEARED VEGETATION, DEBRIS AND RUBBISH SHALL BE IN A MANNER ACCEPTABLE TO THE OWNER AND ENGINEER.



BY	DESCRIPTION	DATE		OFFICE OF COASTAL PROTECTION & RESTORATION RESTORATION DIVISION 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801	RIVERINE SAND MINING / SCOFIELD ISLAND RESTORATION	MISSISSIPPI RIVER LEVEE CROSSING SECTIONS
MTP	CMD/USACE/STAKEHOLDER COMMENT RESPONSE	02/10 2011				
MTP	LEVEE CROSSINGS, PAGE NUMBERS	05/06 2011				
DRAWN BY: DARTEZ \ ZWERNEMAN			DESIGNED BY: MICHAEL T. POFF, P.E.	APPROVED BY: MAURY CHATELLIER, P.E.	STATE PROJECT NUMBER: BA-40	DATE: NOVEMBER, 2010
					FEDERAL PROJECT NUMBER: BA-40	SHEET 26 OF 38

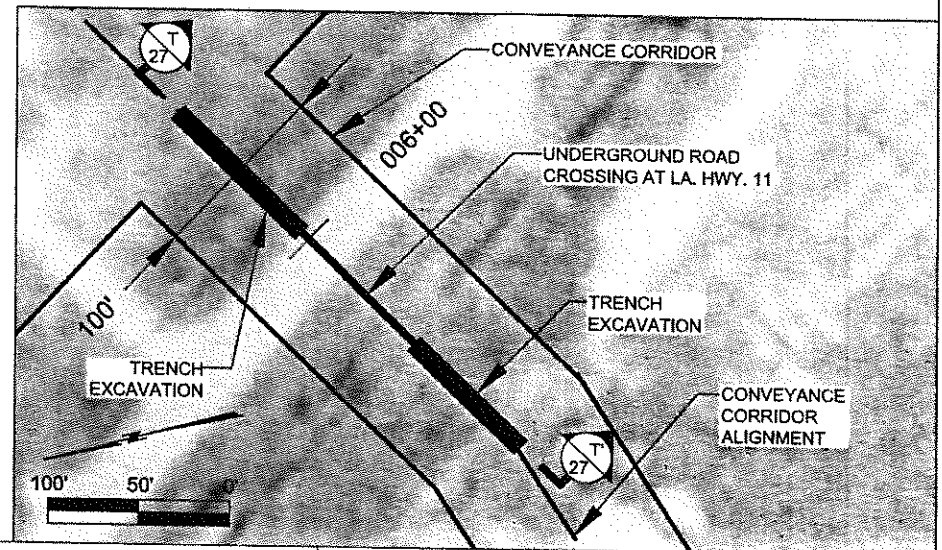




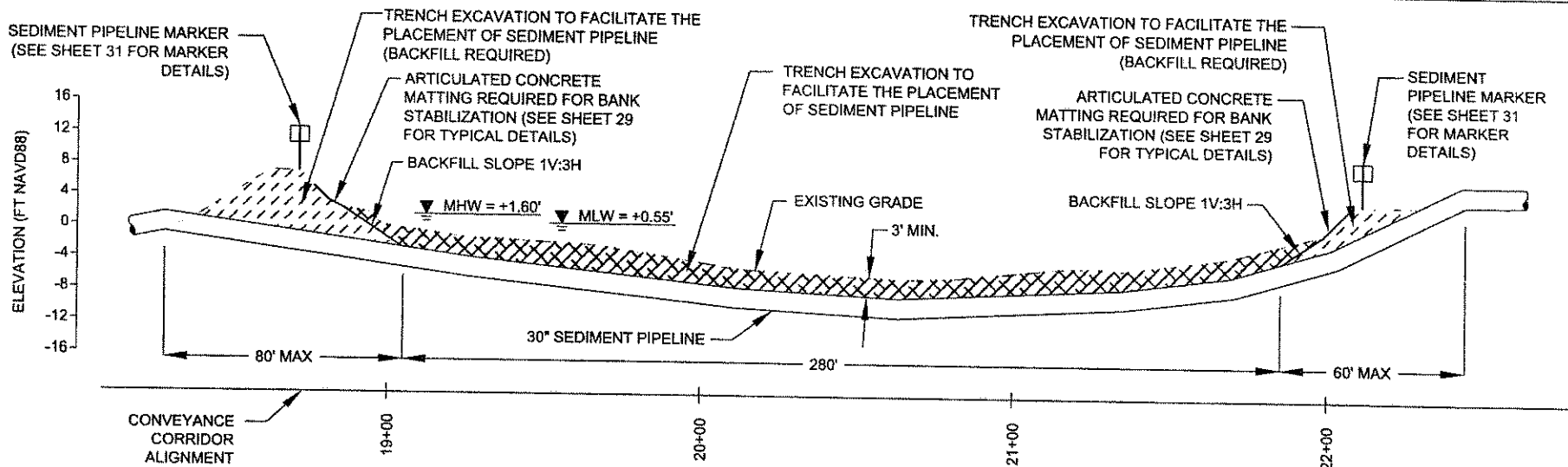
**HIGHWAY 11 CROSSING DETAIL  
SECTION T - T'**

**NOTES:**

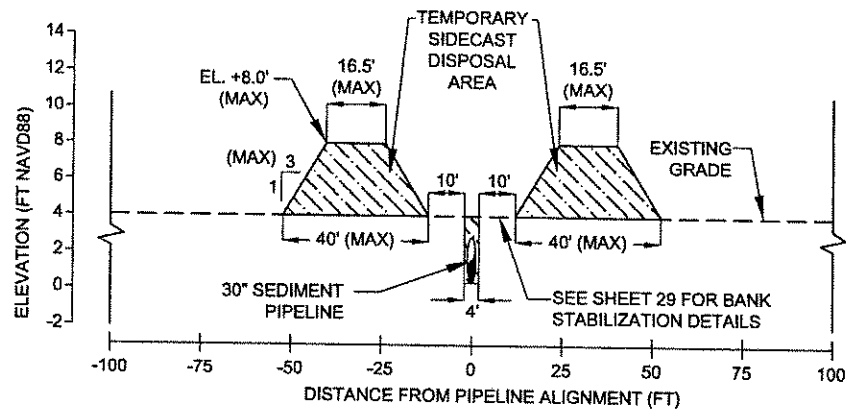
1. THE CONTRACTOR SHALL JACK THE MINIMUM 42" STEEL CASING PIPE UNDER THE TRAVEL LANES OF LOUISIANA HIGHWAY 11 IN ACCORDANCE WITH LADOTD 2000 STANDARD SPECIFICATION 728. CASING PIPE DIAMETER SHALL BE NO GREATER THAN 48".
2. THE CASING PIPE SHALL BE MADE OF SMOOTH STEEL, ASTM A 139 GRADE B, WITH MINIMUM YIELD STRENGTH OF 35,000 PSI AND SHALL BE COATED WITH COAL TAR EPOXY-POLYAMIDE PAINT, IN ACCORDANCE WITH THE LADOTD 2000 STANDARD SPECIFICATION 1008.04.
3. THE 40' MINIMUM JACK PIT DISTANCE SHOWN IS BASED ON THE PROPOSED ALIGNMENT AND THE STANDARD HIGHWAY SPECIFICATIONS WHICH WILL BE INCLUDED IN THE PROJECT SPECIFICATIONS.
4. TRENCH EXCAVATION SIDE SLOPES ARE SHOWN FOR INFORMATIONAL PURPOSES ONLY.
5. SURVEYS CONDUCTED BY SJB GROUP LLC., JULY 2008.
6. SEE SHEETS 14 - 18 FOR CONVEYANCE CORRIDOR ALIGNMENT.



BY	DESCRIPTION	DATE	 	OFFICE OF COASTAL PROTECTION & RESTORATION RESTORATION DIVISION 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801	RIVERINE SAND MINING / SCOFIELD ISLAND RESTORATION	HIGHWAY 11 CROSSING DETAIL
MTP	CMD/USACE/STAKEHOLDER COMMENT RESPONSE	02/10 2011				
MTP	LEVEE CROSSINGS, PAGE NUMBERS	05/06 2011				
DRAWN BY: DARTEZ \ ZWERNEMAN			DESIGNED BY: MICHAEL T. POFF, P.E.	APPROVED BY: MAURY CHATELLIER, P.E.	STATE PROJECT NUMBER: BA-40	DATE: NOVEMBER, 2010
					FEDERAL PROJECT NUMBER: BA-40	SHEET 27 OF 38

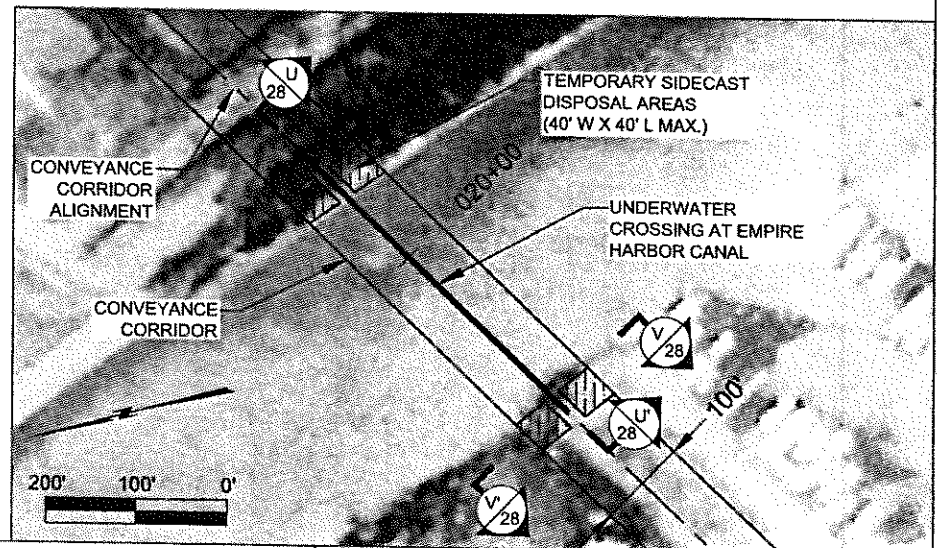


EMPIRE HARBOR CANAL CROSSING PROFILE DETAIL  
SECTION U - U'



EMPIRE HARBOR CANAL CROSSING SECTION DETAIL  
SECTION V - V'

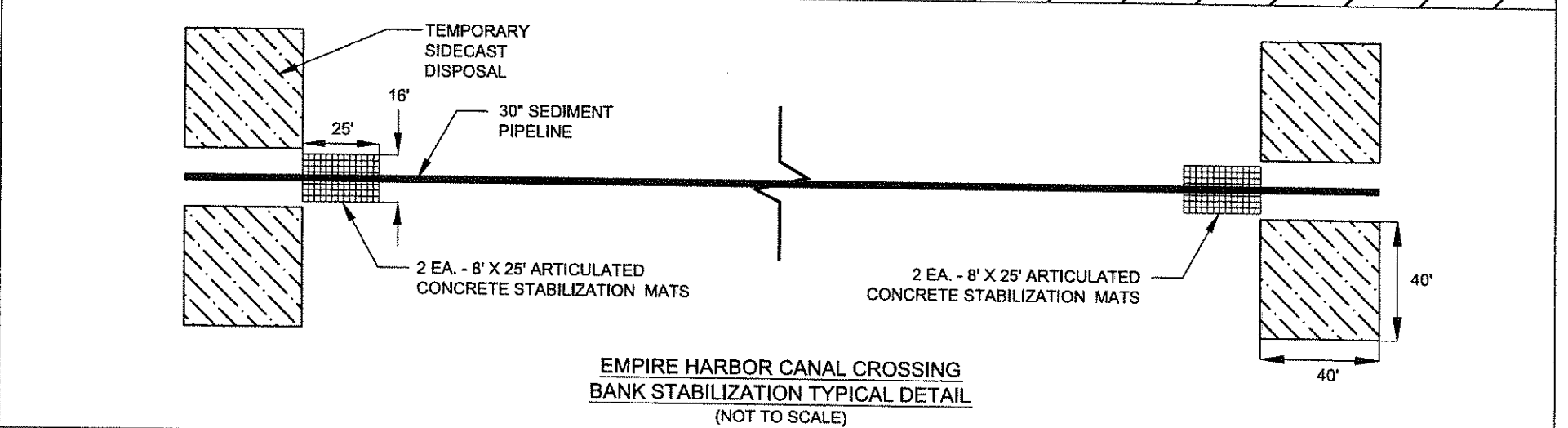
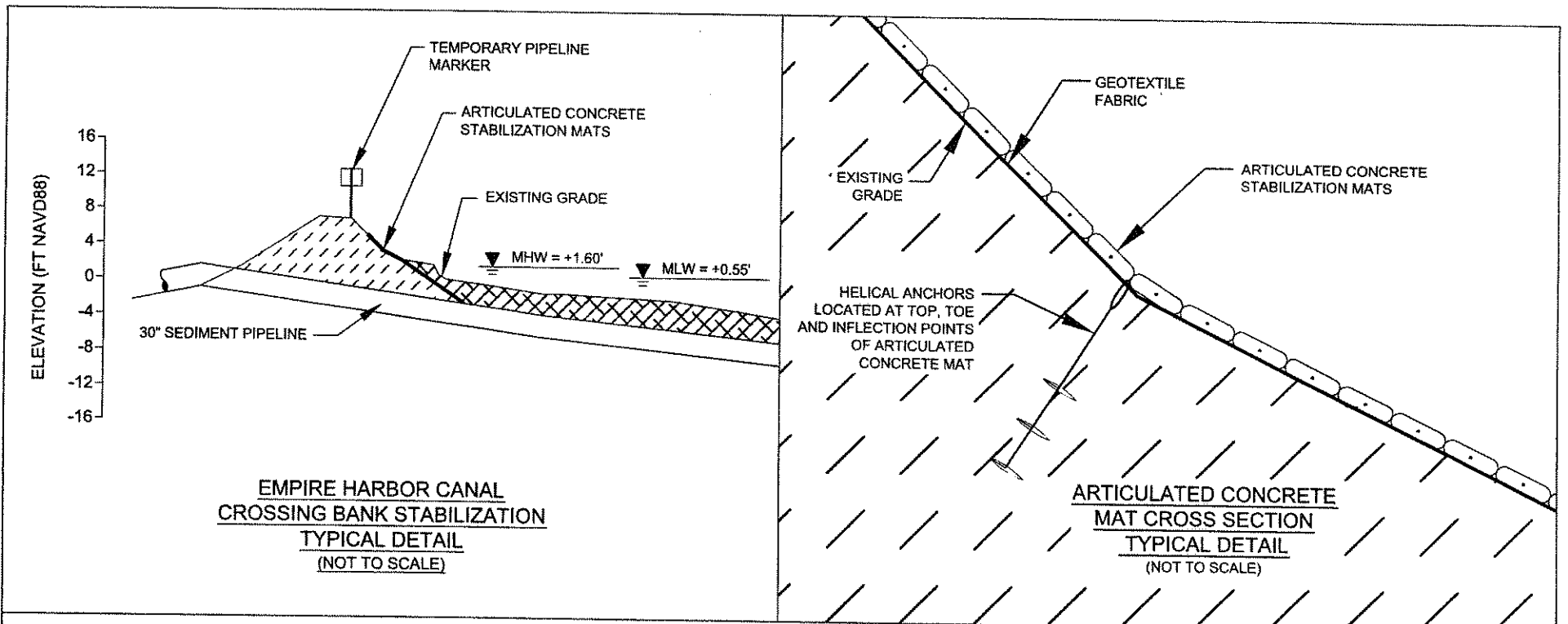
- CANAL BOTTOM TRENCH EXCAVATION (240 CUBIC YARDS)
- CANAL BANK TRENCH EXCAVATION (110 CUBIC YARDS)



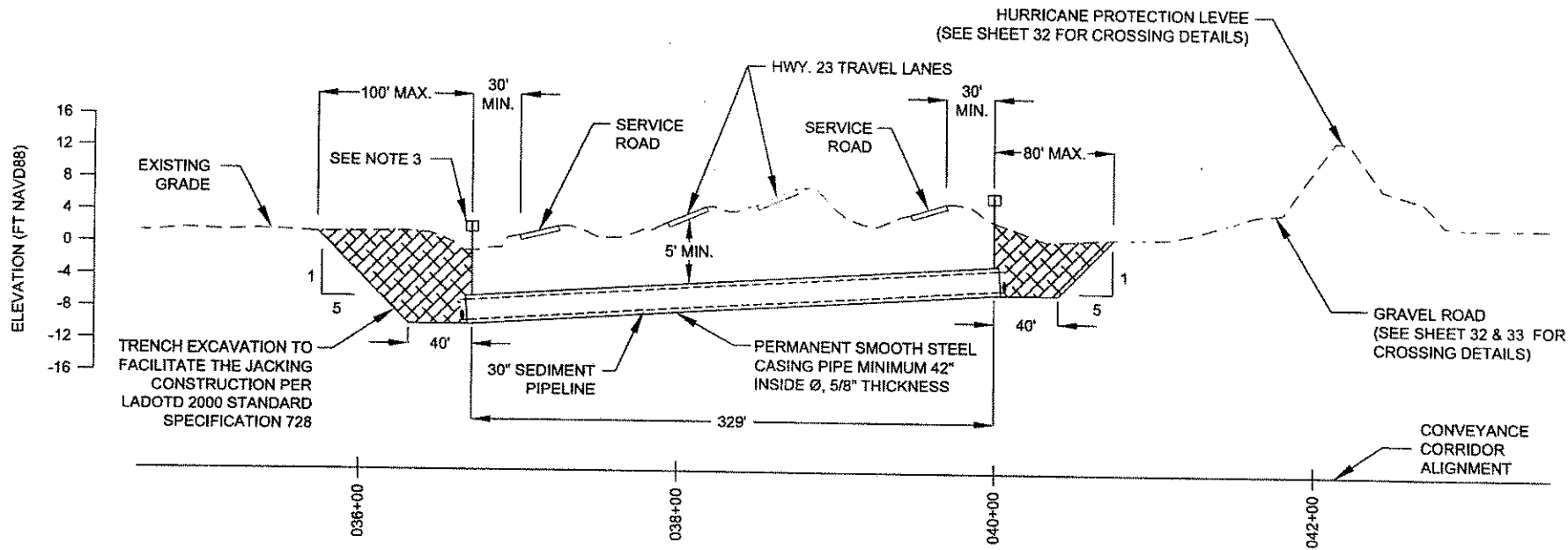
**NOTES:**

1. BACKFILLING OF CANAL BANKS OF THE EMPIRE HARBOR CANAL IS REQUIRED FOLLOWING INSTALLATION AND REMOVAL OF SEDIMENT PIPELINE.
2. SURVEYS CONDUCTED BY SJB GROUP LLC., JULY 2008.
3. SEE SHEETS 14 - 18 FOR CONVEYANCE CORRIDOR ALIGNMENT.

BY	DESCRIPTION	DATE	 <b>COASTAL ENGINEERING CONSULTANTS, INC</b>  <b>SJB GROUP, LLC</b> <small>QUALITY BY DESIGN</small>	OFFICE OF COASTAL PROTECTION & RESTORATION RESTORATION DIVISION 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801	RIVERINE SAND MINING / SCOFIELD ISLAND RESTORATION	EMPIRE HARBOR CANAL CROSSING DETAIL
MTP	CMD/USACE/STAKEHOLDER COMMENT RESPONSE	02/10 2011				
MTP	LEVEE CROSSINGS, PAGE NUMBERS	05/06 2011				
DRAWN BY: DARTEZ \ ZWERNEMAN			DESIGNED BY: MICHAEL T. POFF, P.E.	APPROVED BY: MAURY CHATELLIER, P.E.	STATE PROJECT NUMBER: BA-40	DATE: NOVEMBER, 2010
					FEDERAL PROJECT NUMBER: BA-40	SHEET 28 OF 38



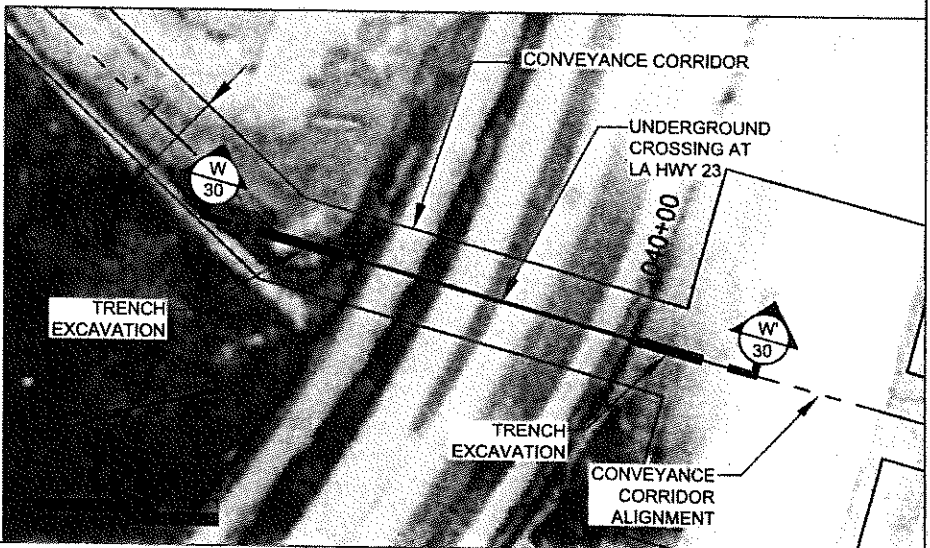
BY	DESCRIPTION	DATE	 	OFFICE OF COASTAL PROTECTION & RESTORATION RESTORATION DIVISION 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801	RIVERINE SAND MINING / SCOFIELD ISLAND RESTORATION	BANK STABILIZATION TYPICAL DETAIL
MTP	CMD/USACE/STAKEHOLDER COMMENT RESPONSE	02/10 2011				
MTP	LEVEE CROSSINGS, PAGE NUMBERS	05/06 2011				
DRAWN BY: DARTEZ \ ZWERNEMAN			DESIGNED BY: MICHAEL T. POFF, P.E.	APPROVED BY: MAURY CHATELLIER, P.E.	STATE PROJECT NUMBER: BA-40	DATE: NOVEMBER, 2010
					FEDERAL PROJECT NUMBER: BA-40	SHEET 29 OF 38



**HIGHWAY 23 CROSSING DETAIL**  
**SECTION W - W'**

**NOTES:**

1. THE CONTRACTOR SHALL JACK THE MINIMUM 42" STEEL CASING PIPE UNDER THE TRAVEL LANES OF LOUISIANA HIGHWAY 23 IN ACCORDANCE WITH LADOTD 2000, STANDARD SPECIFICATION 728. CASING PIPE DIAMETER SHALL BE NO GREATER THAN 48".
2. THE CASING PIPE SHALL BE MADE OF SMOOTH STEEL, ASTM A 139 GRADE B, WITH MINIMUM YIELD STRENGTH OF 35,000 PSI AND SHALL BE COATED WITH COAL TAR EPOXY-POLYAMIDE PAINT, IN ACCORDANCE WITH THE LADOTD 2000 STANDARD SPECIFICATION 1008.04.
3. SEE SHEET 31 FOR PERMANENT CASING PIPE MARKER CONSTRUCTION DETAILS.
4. THE 40' MINIMUM JACK PIT DISTANCE SHOWN IS BASED ON THE PROPOSED ALIGNMENT AND THE STANDARD HIGHWAY SPECIFICATIONS WHICH ARE INCLUDED IN THE PROJECT SPECIFICATIONS.
5. TRENCH EXCAVATION SIDE SLOPES ARE SHOWN FOR INFORMATIONAL PURPOSES ONLY.
6. SURVEYS CONDUCTED BY SJB GROUP, LLC., JULY 2008.
7. SEE SHEETS 14 - 18 FOR CONVEYANCE CORRIDOR ALIGNMENT.



BY	DESCRIPTION	DATE
MTP	CMD/USACE/STAKEHOLDER COMMENT RESPONSE	02/10 2011
MTP	LEVEE CROSSINGS, PAGE NUMBERS	05/06 2011

**COASTAL ENGINEERING CONSULTANTS, INC**  
**STB GROUP, LLC**  
QUALITY BY DESIGN

OFFICE OF COASTAL PROTECTION & RESTORATION  
RESTORATION DIVISION  
450 LAUREL STREET  
BATON ROUGE, LOUISIANA 70801

RIVERINE SAND MINING / SCOFIELD ISLAND RESTORATION	HIGHWAY 23 CROSSING DETAIL
STATE PROJECT NUMBER: BA-40	DATE: NOVEMBER, 2010
FEDERAL PROJECT NUMBER: BA-40	SHEET 30 OF 38

DRAWN BY: DARTEZ \ ZWERNEMAN

DESIGNED BY: MICHAEL T. POFF, P.E.

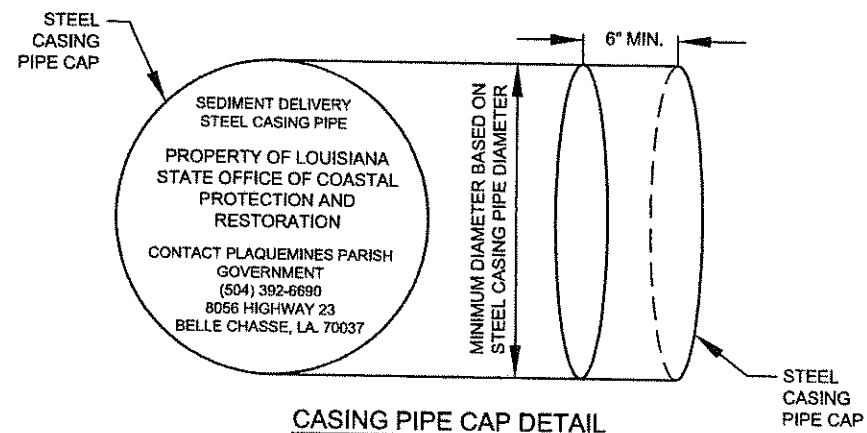
APPROVED BY: MAURY CHATELLIER, P.E.

**WARNING**  
**DO NOT ANCHOR**  
**OR DREDGE**  
**SEDIMENT**  
**DELIVERY PIPELINE**

CONTACT PLAQUEMINES  
 PARISH GOVERNMENT  
 (504) 392-6690  
 8056 HIGHWAY 23  
 BELLE CHASSE, LA. 70037

42 INCH SEDIMENT DELIVERY  
 STEEL CASING PIPE  
 PROPERTY OF LOUISIANA  
 STATE OFFICE OF  
 COASTAL PROTECTION  
 AND RESTORATION

CONTACT PLAQUEMINES  
 PARISH GOVERNMENT  
 (504) 392-6690  
 8056 HIGHWAY 23  
 BELLE CHASSE, LA. 70037



**CASING PIPE CAP DETAIL**  
 NOT TO SCALE

**CANAL CROSSING PIPE  
 MARKER DETAIL**  
 NOT TO SCALE

**CASING PIPE MARKER  
 DETAIL**  
 NOT TO SCALE

- NOTES:**
- ONE MARKER SHALL BE PLACED ON EACH SIDE OF THE EMPIRE HARBOR CANAL CROSSING.
  - MARKERS SHALL BE CONSTRUCTED AND INSTALLED IN ACCORDANCE WITH LADOTD 2000 STANDARD SPECIFICATION 729.
  - A PROPOSED DRAWING SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL IN THE WORK PLAN PRIOR TO CONSTRUCTION.
  - MARKERS SHALL BE PLACED SUBSEQUENT TO SEDIMENT PIPELINE INSTALLATION AND REMOVED FOLLOWING TO SEDIMENT PIPELINE REMOVAL.

- NOTES:**
- STEEL CASING PIPE CAPS SHALL BE 1/2" THICK AND SHALL BE COATED WITH COAL TAR EPOXY POLYAMIDE PAINT, IN ACCORDANCE WITH THE LADOTD 2000 STANDARD SPECIFICATION 1008.04.
  - CAPS SHALL BE INSTALLED IN ACCORDANCE WITH CONSTRUCTION SPECIFICATIONS AFTER DREDGING OPERATIONS ARE COMPLETE, FILL ELEVATIONS HAS BEEN ACCEPTED, AND SEDIMENT PIPELINE HAS BEEN REMOVED. CAPS SHALL BE WELDED TO CASING PIPE AND SHALL BE WATER TIGHT.

- NOTES:**
- ONE MARKER SHALL BE PLACED ON EACH SIDE OF LOUISIANA HIGHWAYS 23 & 11 AND AT EACH END OF THE CASING PIPES.
  - MARKERS SHALL BE CONSTRUCTED AND INSTALLED IN ACCORDANCE WITH LADOTD 2000 STANDARD SPECIFICATION 729.
  - A PROPOSED DRAWING SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL IN THE WORK PLAN PRIOR TO CONSTRUCTION.
  - MARKERS SHALL BE PLACED SUBSEQUENT TO BACKFILLING THE JACKING PIT AND PRIOR TO DEMOBILIZATION.

BY	DESCRIPTION	DATE
MTP	CMD/USACE/STAKEHOLDER COMMENT RESPONSE	02/10 2011
MTP	LEVEE CROSSINGS, PAGE NUMBERS	05/06 2011

**COASTAL ENGINEERING CONSULTANTS, INC**

**STB GROUP, LLC**  
 QUALITY BY DESIGN

OFFICE OF COASTAL PROTECTION & RESTORATION  
 RESTORATION DIVISION  
 450 LAUREL STREET  
 BATON ROUGE, LOUISIANA 70801

RIVERINE SAND MINING / SCOFIELD ISLAND RESTORATION	SEDIMENT PIPELINE CASING CAP AND MARKER DETAIL
STATE PROJECT NUMBER: BA-40	DATE: NOVEMBER, 2010

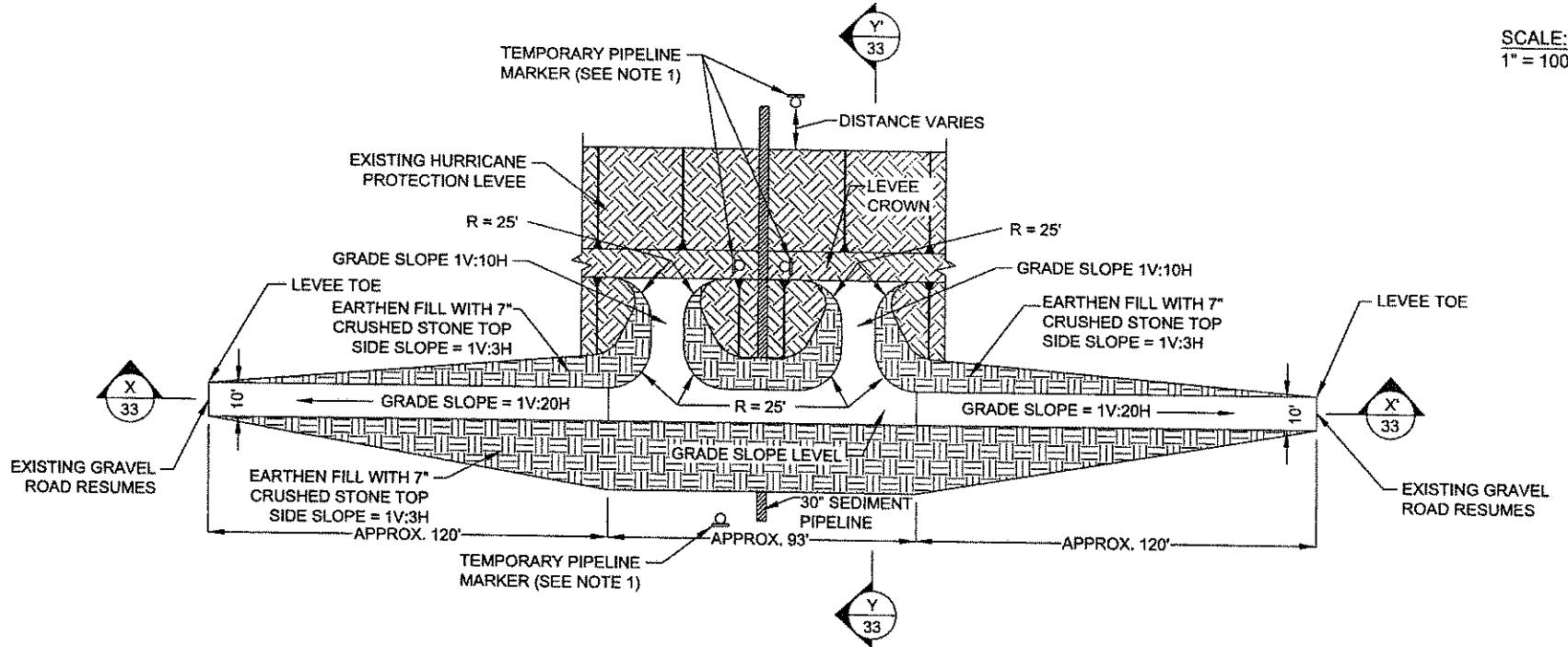
DRAWN BY: DARTEZ I ZWERNEMAN

DESIGNED BY: MICHAEL T. POFF, P.E.

APPROVED BY: MAURY CHATELLIER, P.E.

FEDERAL PROJECT NUMBER: BA-40	SHEET 31 OF 38
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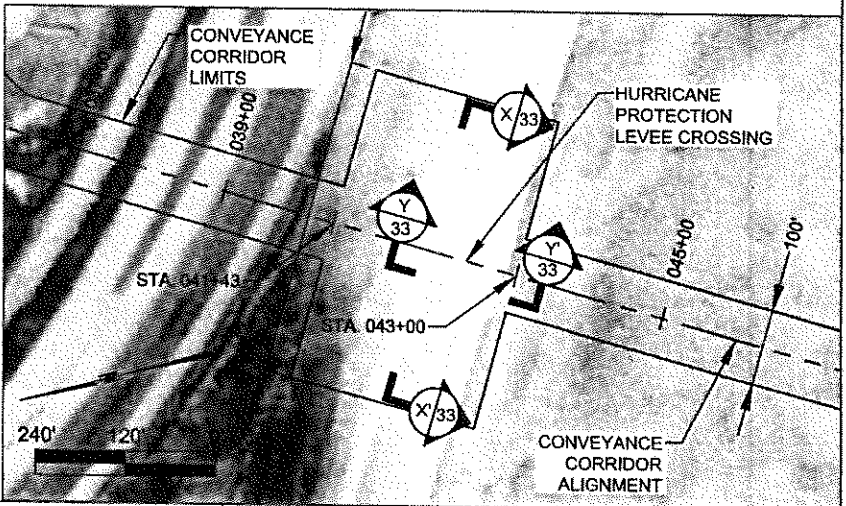
SCALE:  
1" = 100'



HURRICANE PROTECTION LEVEE UP/DOWN RAMP AND PIPELINE CROSSING PLAN VIEW

NOTES:

1. TEMPORARY PIPELINE MARKERS INDICATING OWNER, CONTENTS, AND ADDRESS FOR CONTACTING OWNER SHALL BE PLACED AND MAINTAINED AT EACH TOE OF EACH INFRASTRUCTURE CROSSING BY THE SEDIMENT PIPELINE.
2. SEE SHEETS 14 - 18 FOR CONVEYANCE CORRIDOR ALIGNMENT.
3. SURVEYS CONDUCTED BY SJB GROUP, LLC., JULY 2008.
4. THE CONTRACTOR IS RESPONSIBLE FOR PREPARATION AND RESTORATION OF THE ACCESS AREAS. DISPOSAL OF ANY CLEARED VEGETATION, DEBRIS AND RUBBISH SHALL BE IN A MANNER ACCEPTABLE TO THE OWNER AND ENGINEER.



BY	DESCRIPTION	DATE
MTP	CMD/USACE/STAKEHOLDER COMMENT RESPONSE	02/10 2011
MTP	LEVEE CROSSINGS, PAGE NUMBERS	05/06 2011
DRAWN BY: DARTEZ \ ZWERNEMAN		

**COASTAL ENGINEERING CONSULTANTS, INC**  
**SJB GROUP, LLC**  
QUALITY BY DESIGN

DESIGNED BY: MICHAEL T. POFF, P.E.

OFFICE OF COASTAL PROTECTION & RESTORATION  
 RESTORATION DIVISION  
 450 LAUREL STREET  
 BATON ROUGE, LOUISIANA 70801

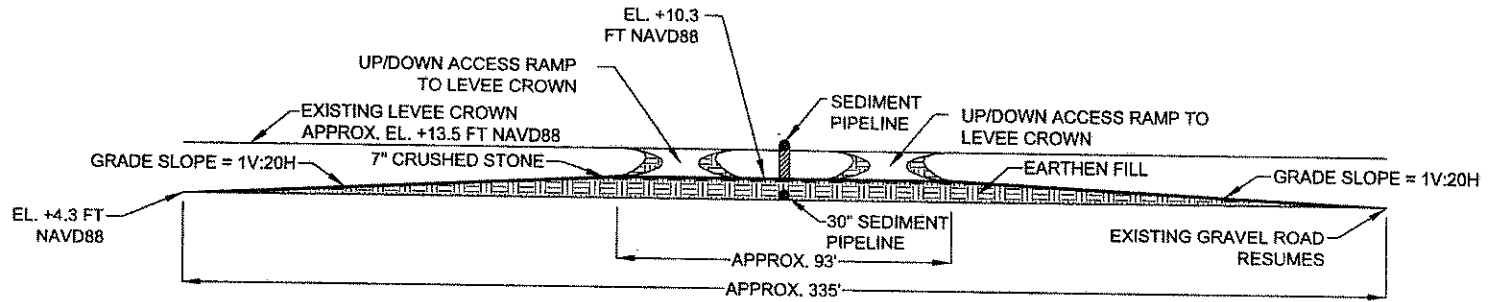
APPROVED BY: MAURY CHATELLIER, P.E.

RIVERINE SAND MINING / SCOFIELD ISLAND RESTORATION	HURRICANE PROTECTION LEVEE CROSSING PLAN VIEW
STATE PROJECT NUMBER: BA-40	DATE: NOVEMBER, 2010
FEDERAL PROJECT NUMBER: BA-40	SHEET 32 OF 38

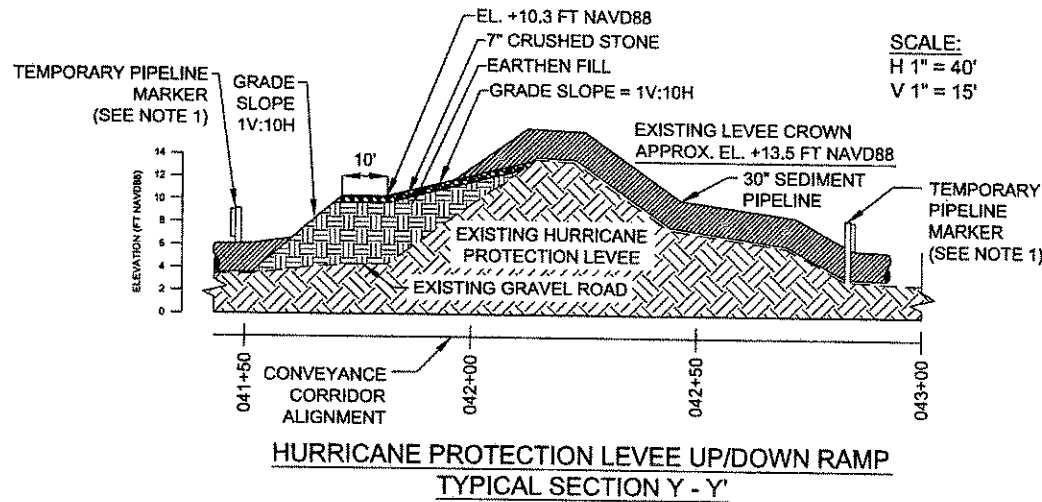
**NOTES:**

1. TEMPORARY PIPELINE MARKERS INDICATING OWNER, CONTENTS, AND ADDRESS FOR CONTACTING OWNER SHALL BE PLACED AND MAINTAINED AT EACH TOE OF EACH INFRASTRUCTURE CROSSING BY THE SEDIMENT PIPELINE.
2. SEE SHEETS 14 - 18 FOR CONVEYANCE CORRIDOR ALIGNMENT.
3. SURVEYS CONDUCTED BY SJB GROUP, LLC., JULY 2008.
4. MINIMUM FILL COVER OVER SEDIMENT PIPELINE AT CROSSING IS 1 FT.

**SCALE:**  
1" = 100'

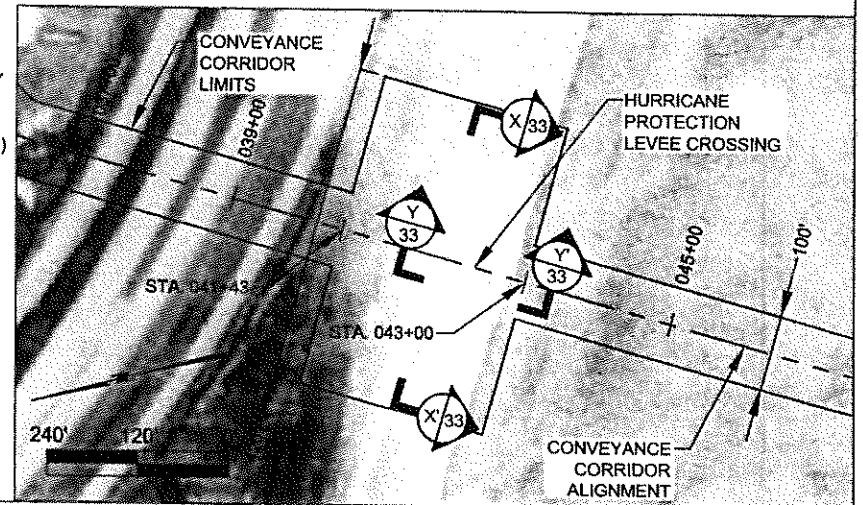


**HURRICANE PROTECTION LEVEE UP/DOWN RAMP AND PIPELINE CROSSING FRONTAL VIEW SECTION X - X'**



**SCALE:**  
H 1" = 40'  
V 1" = 15'

**HURRICANE PROTECTION LEVEE UP/DOWN RAMP TYPICAL SECTION Y - Y'**



BY	DESCRIPTION	DATE
MTP	CMD/USACE/STAKEHOLDER COMMENT RESPONSE	02/10 2011
MTP	LEVEE CROSSINGS, PAGE NUMBERS	05/06 2011
DRAWN BY: DARTEZ I ZWERNEMAN		

**COASTAL ENGINEERING CONSULTANTS, INC**  
**SJB GROUP, LLC**  
QUALITY BY DESIGN

DESIGNED BY: MICHAEL T. POFF, P.E.

OFFICE OF COASTAL PROTECTION & RESTORATION  
RESTORATION DIVISION

450 LAUREL STREET  
BATON ROUGE, LOUISIANA 70801

APPROVED BY: MAURY CHATELLIER, P.E.

RIVERINE SAND MINING / SCOFIELD ISLAND RESTORATION

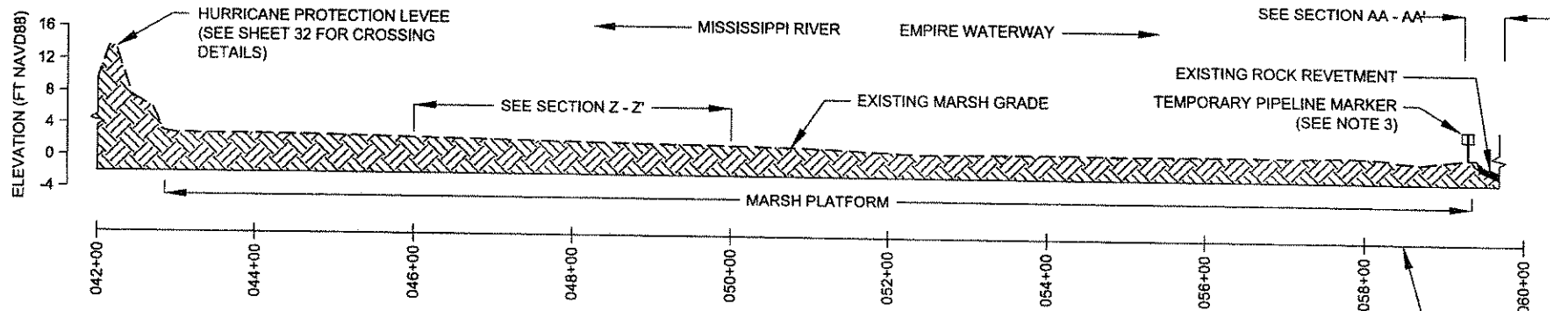
STATE PROJECT NUMBER: BA-40

FEDERAL PROJECT NUMBER: BA-40

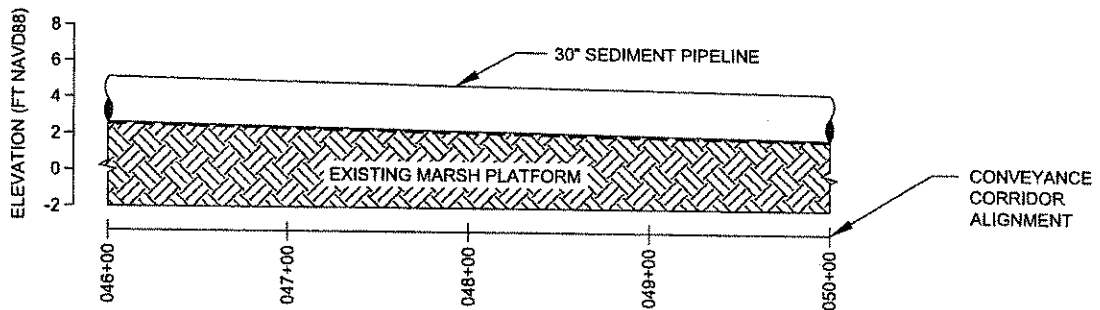
HURRICANE PROTECTION LEVEE CROSSING SECTIONS

DATE: NOVEMBER, 2010

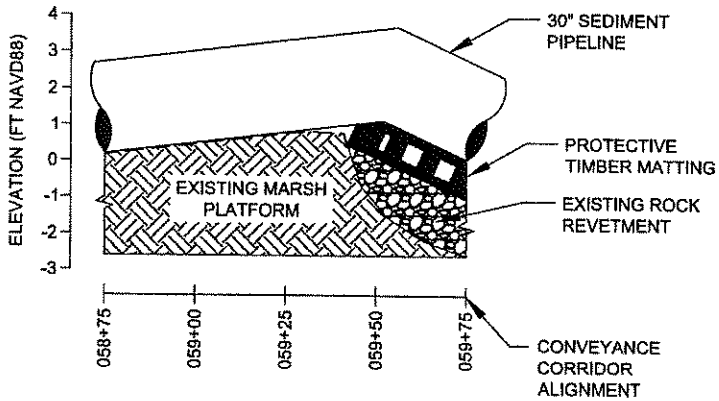
SHEET 33 OF 38



MARSH PROFILE

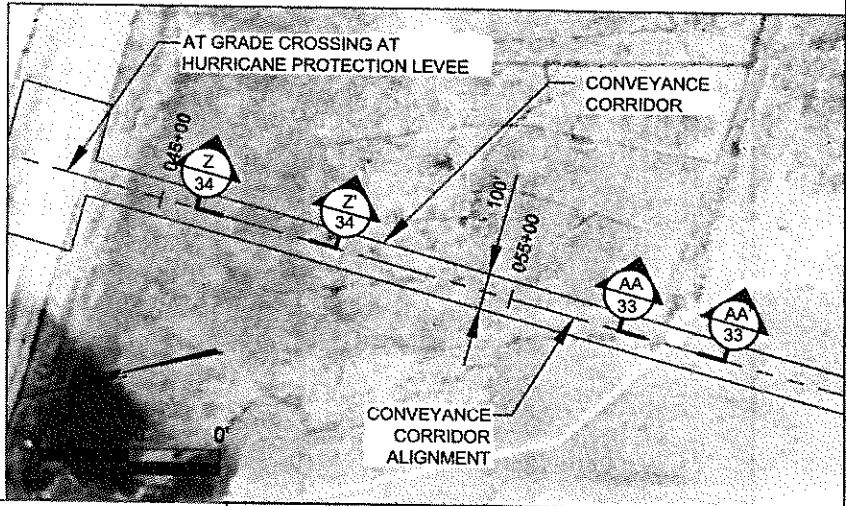


SECTION Z - Z'



SECTION AA - AA'

- NOTES:**
1. SURVEYS CONDUCTED BY SJB GROUP, LLC., JULY 2008.
  2. SEE SHEETS 14 - 18 FOR CONVEYANCE CORRIDOR ALIGNMENT.
  3. TEMPORARY PIPELINE MARKERS INDICATING OWNER, CONTENTS AND ADDRESS FOR CONTACTING OWNER SHALL BE PLACED AND MAINTAINED AT EACH TOE OF EACH INFRASTRUCTURE CROSSING BY THE SEDIMENT PIPELINE



BY	DESCRIPTION	DATE
MTP	CMD/USACE/STAKEHOLDER COMMENT RESPONSE	02/10 2011
MTP	LEVEE CROSSINGS, PAGE NUMBERS	05/08 2011

**COASTAL ENGINEERING CONSULTANTS, INC**

**STB GROUP, LLC**  
QUALITY BY DESIGN

OFFICE OF COASTAL PROTECTION & RESTORATION  
RESTORATION DIVISION  
450 LAUREL STREET  
BATON ROUGE, LOUISIANA 70801

RIVERINE SAND MINING / SCOFIELD ISLAND RESTORATION	EMPIRE MARSH & ROCK REVETMENT CROSSING DETAIL
STATE PROJECT NUMBER: 8A-40	DATE: NOVEMBER, 2010

DRAWN BY: DARTEZ \ ZWERNEMAN

DESIGNED BY: MICHAEL T. POFF, P.E.

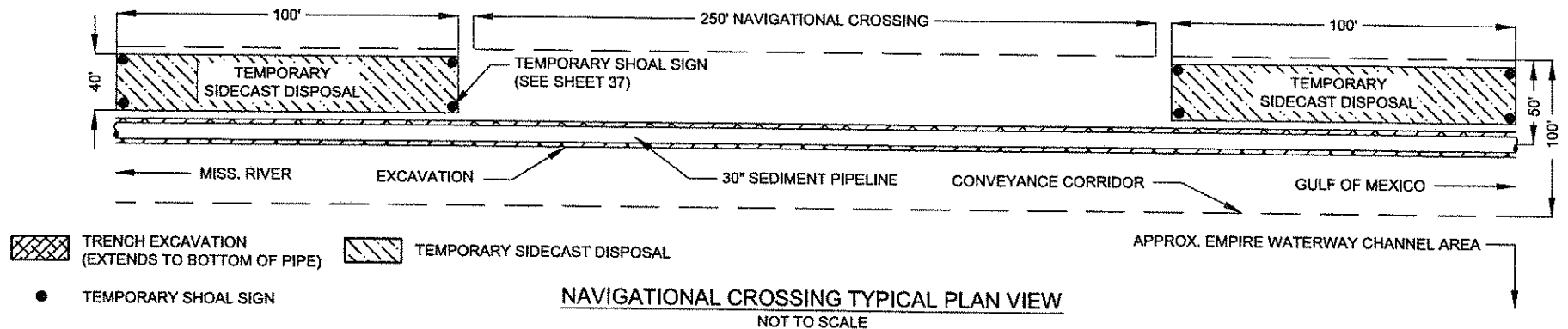
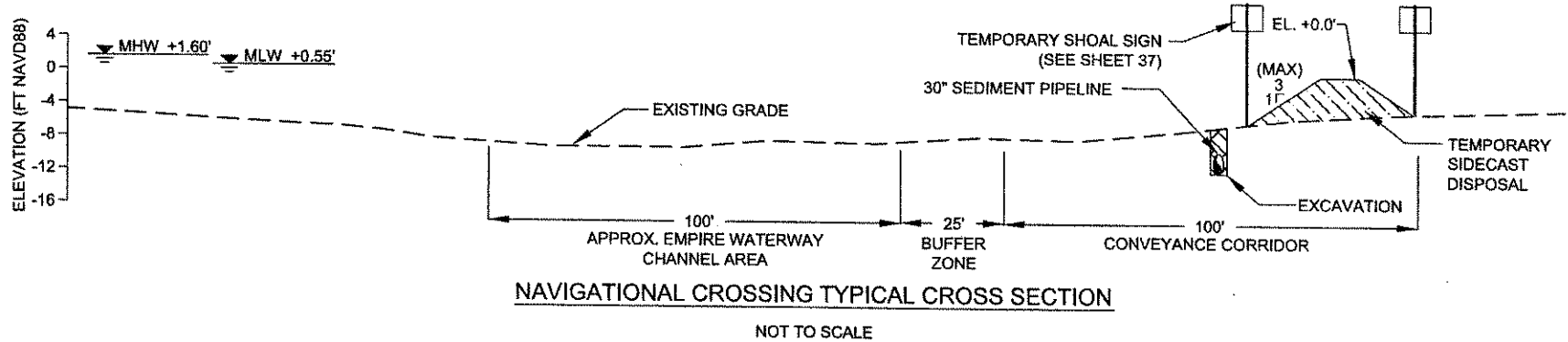
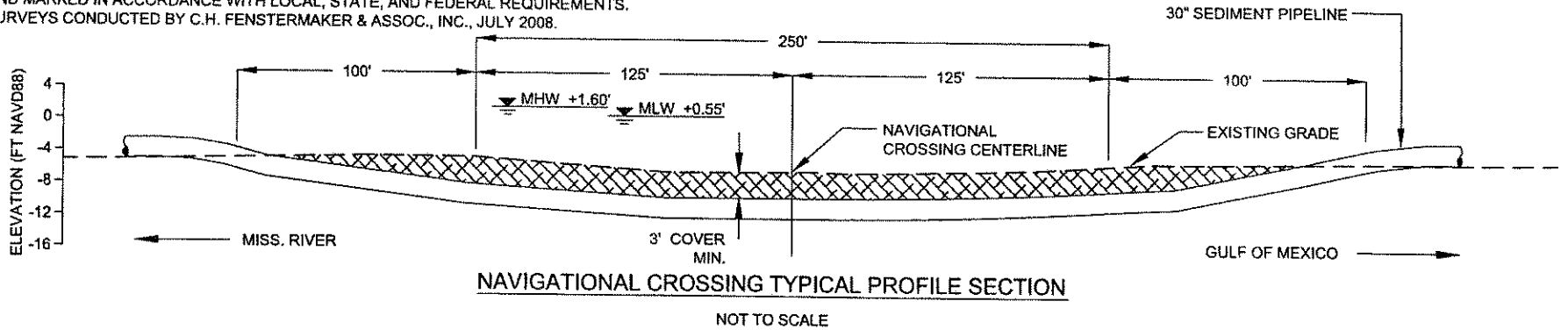
APPROVED BY: MAURY CHATELLIER, P.E.

FEDERAL PROJECT NUMBER: 8A-40 SHEET 34 OF 38



**NOTES:**

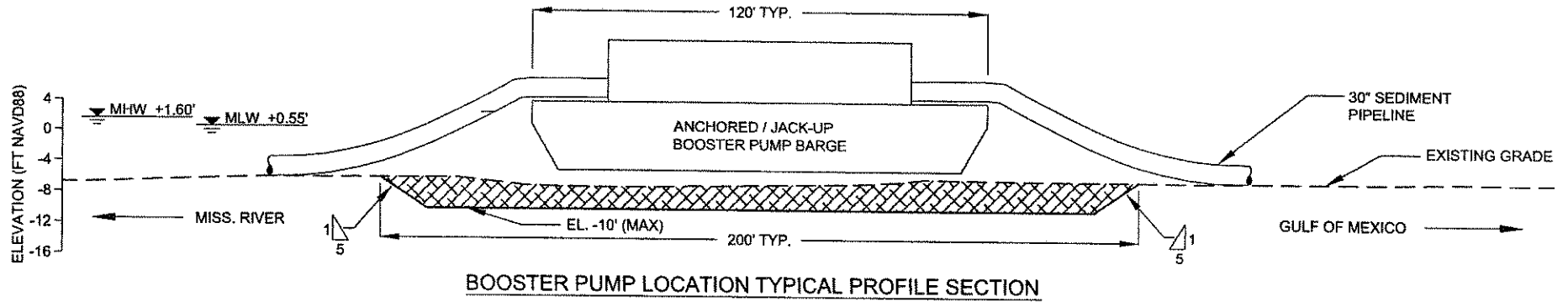
1. SEDIMENT PIPELINE SHALL BE PLACED A MINIMUM OF 3 FEET BELOW EXISTING GRADE AT NAVIGATIONAL CROSSINGS.
2. PLACEMENT BELOW GRADE SHALL BE FOR A DISTANCE OF 250 FEET ACROSS NAVIGATIONAL CROSSING AND MARKED IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REQUIREMENTS.
3. SURVEYS CONDUCTED BY C.H. FENSTERMAKER & ASSOC., INC., JULY 2008.



BY	DESCRIPTION	DATE	 	OFFICE OF COASTAL PROTECTION & RESTORATION RESTORATION DIVISION 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801	RIVERINE SAND MINING / SCOFIELD ISLAND RESTORATION	EMPIRE WATERWAY NAVIGATIONAL CROSSING TYPICAL DETAIL
MTP	CMD/USACE/STAKEHOLDER COMMENT RESPONSE	02/10 2011				
MTP	LEVEE CROSSINGS, PAGE NUMBERS	05/06 2011			FEDERAL PROJECT NUMBER: BA-40	SHEET 35 OF 38
DRAWN BY: DARTEZ \ ZWERNEMAN			DESIGNED BY: MICHAEL T. POFF, P.E.	APPROVED BY: MAURY CHATELIER, P.E.		

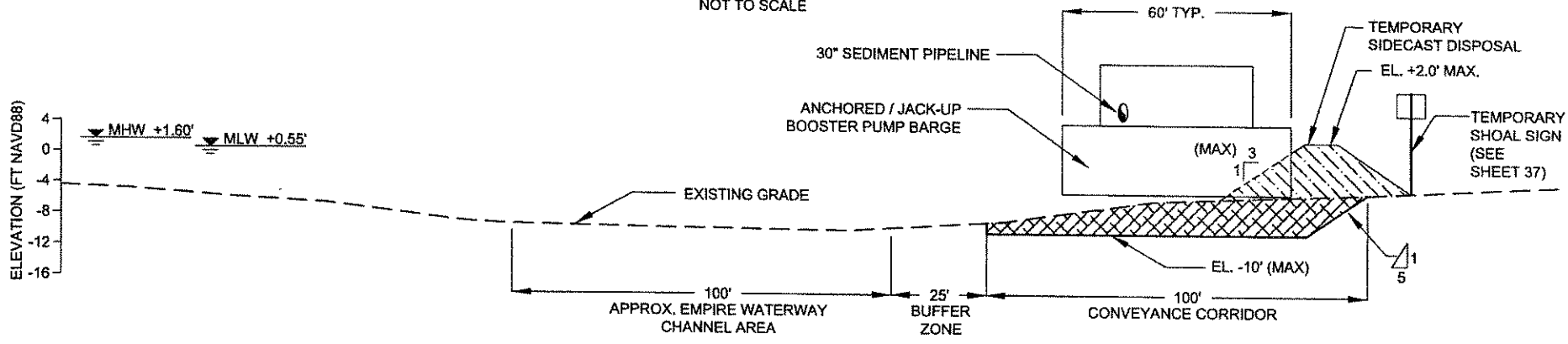
**NOTES:**

1. BARGE ANCHORS OR JACK-UP LEGS SHALL NOT BE PLACED WITHIN 50' OF ANY EXISTING PIPELINES OR UTILITIES.
2. SURVEYS CONDUCTED BY C.H. FENSTERMAKER, JULY 2008.



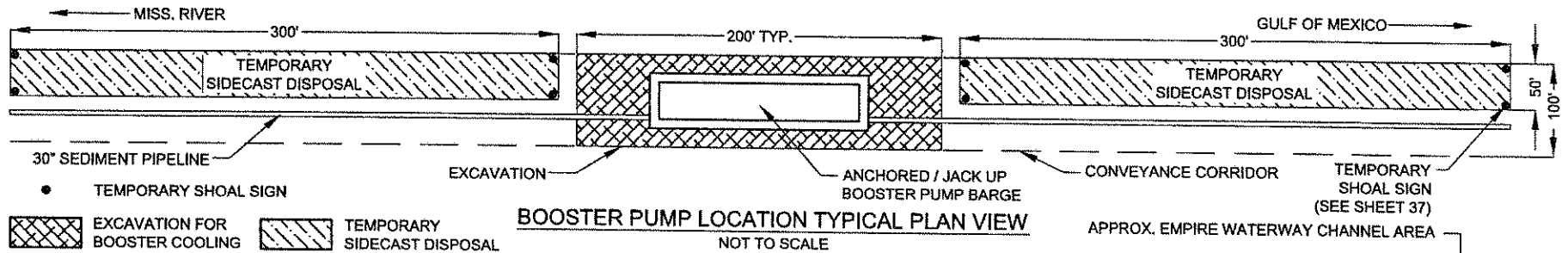
**BOOSTER PUMP LOCATION TYPICAL PROFILE SECTION**

NOT TO SCALE



**BOOSTER PUMP LOCATION TYPICAL CROSS SECTION**

NOT TO SCALE



**BOOSTER PUMP LOCATION TYPICAL PLAN VIEW**

NOT TO SCALE

- TEMPORARY SHOAL SIGN
- ▨ EXCAVATION FOR BOOSTER COOLING
- ▨ TEMPORARY SIDECAST DISPOSAL

BY	DESCRIPTION	DATE
MTP	CMD/USACE/STAKEHOLDER COMMENT RESPONSE	02/10 2011
MTP	LEEVE CROSSINGS, PAGE NUMBERS	05/06 2011

**COASTAL ENGINEERING CONSULTANTS, INC**  
 STB GROUP, LLC  
 QUALITY BY DESIGN

OFFICE OF COASTAL PROTECTION & RESTORATION  
 RESTORATION DIVISION  
 450 LAUREL STREET  
 BATON ROUGE, LOUISIANA 70801

RIVERINE SAND MINING / SCOFIELD ISLAND RESTORATION

BOOSTER PUMP SITE TYPICAL DETAIL

STATE PROJECT NUMBER: BA-40

DATE: NOVEMBER, 2010

DRAWN BY: DARTEZ \ ZWERNEMAN

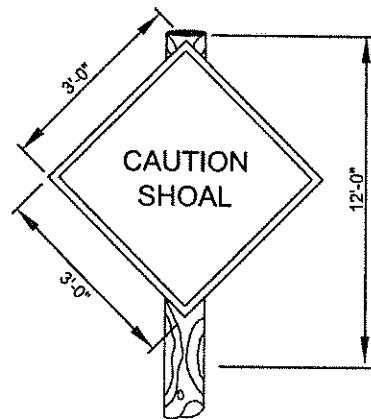
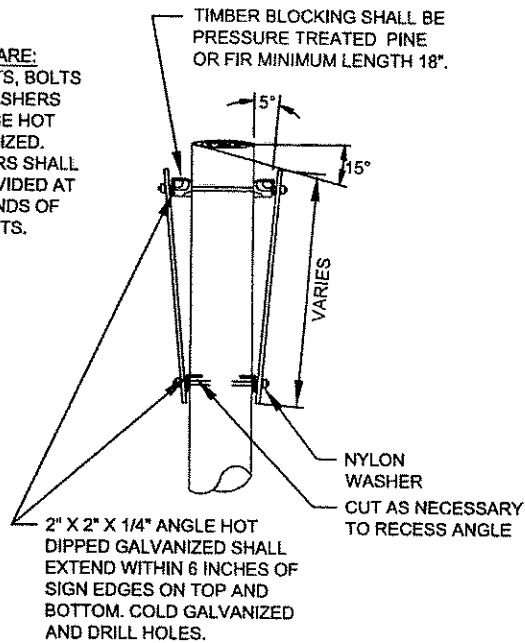
DESIGNED BY: MICHAEL T. POFF, P.E.

APPROVED BY: MAURY CHATELLIER, P.E.

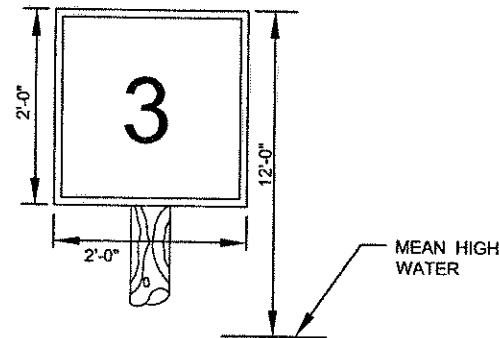
FEDERAL PROJECT NUMBER: BA-40

SHEET 36 OF 38

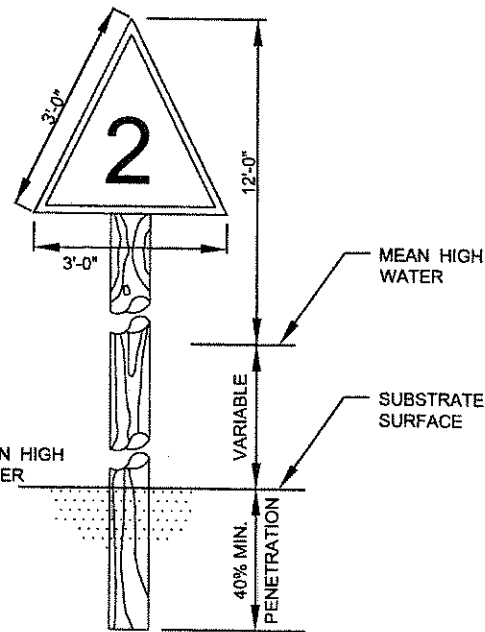
**HARDWARE:**  
ALL NUTS, BOLTS  
AND WASHERS  
SHALL BE HOT  
GALVANIZED.  
WASHERS SHALL  
BE PROVIDED AT  
BOTH ENDS OF  
ALL BOLTS.



**SHOAL SIGN (S)**  
NOT TO SCALE





**GREEN DAY MARKER (G)**  
NOT TO SCALE

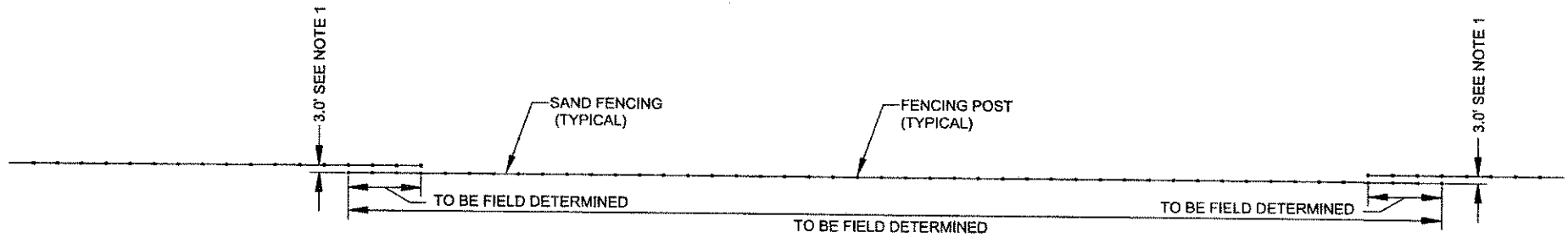


**RED DAY MARKER (R)**  
NOT TO SCALE

**NOTES:**

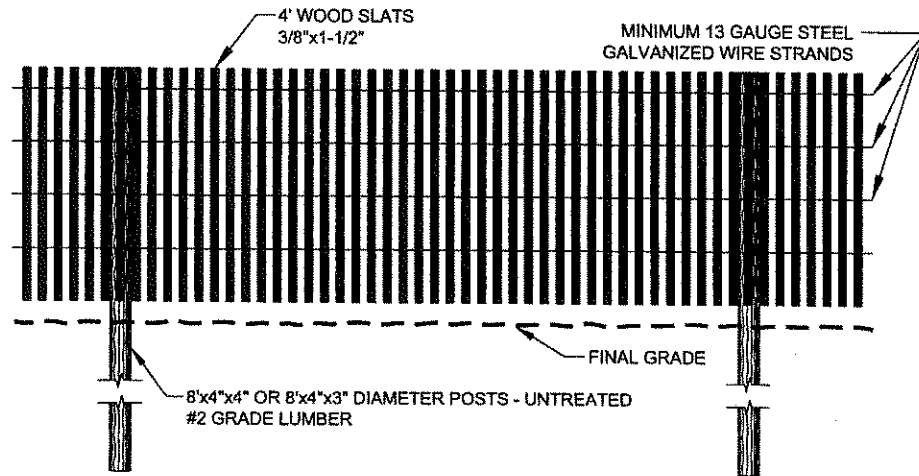
1. SIGNS SHALL BE INSTALLED AT LOCATIONS SHOWN ON SHEETS 21, 35 & 36.
2. ALL SIGNS MUST MEET U.S. COAST GUARD STANDARDS IN ACCORDANCE WITH 33 CFR 330.4 (a) (1).
3. THE SIGNS SHALL HAVE THE DIMENSIONS AND MESSAGES SHOWN. THERE ARE TWO SIGNS PER PILE.
4. THE SHOAL SIGNS SHALL BE CONSTRUCTED WITH 125 GAUGE 61TS ALUMINUM, COVERED WITH WHITE, ENGINEER GRADE, REFLECTIVE SHEETING; BLACK SCREENED LETTERING AND DESIGN; AND ORANGE, ENGINEER GRADE, REFLECTIVE BORDER.
5. NAVIGATION DAY MARKERS SHALL BE CONSTRUCTED OF 125 GAUGE 61TS ALUMINUM, COVERED WITH THE APPROPRIATE RED OR GREEN SHEETING; BLACK SCREENED LETTERING AND DESIGN; AND APPROPRIATE DARKER RED OR GREEN, ENGINEER GRADE, REFLECTIVE BORDER.
6. TIMBER PILING SHALL BE 40-FEET IN LENGTH WITH A NOMINAL 12-INCH DIAMETER BUTT AND 7-INCH MINIMUM DIAMETER AT THE TIP.
7. HARDWARE FOR TIMBER CONNECTIONS SHALL BE HOT DIPPED GALVANIZED IN ACCORDANCE WITH SECTION 811.5 OF THE LOUISIANA STANDARD SPECIFICATIONS FOR ROADS AND BRIDGES, AS PUBLISHED BY THE LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT, LATEST EDITION.
8. THE CONTRACTOR HAS THE OPTION OF USING TEMPORARY BUOYS IN LIEU OF TIMBER PILES. BUOYS MUST BE APPROVED BY THE OWNER AND ENGINEER PRIOR TO MOBILIZATION AND U.S. COAST GUARD STANDARDS.
9. SIGNS AND SUPPORTS SHALL BE REMOVED AND PROPERLY DISPOSED OF PRIOR TO DEMOBILIZATION. IF PILES CANNOT BE REMOVED COMPLETELY, THEY MUST BE REMOVED TO 10 FEET BELOW THE EXISTING MUDLINE.

BY	DESCRIPTION	DATE	 <b>COASTAL ENGINEERING CONSULTANTS, INC</b>   <b>STB GROUP, LLC</b> <small>QUALITY BY DESIGN</small>	OFFICE OF COASTAL PROTECTION & RESTORATION RESTORATION DIVISION 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801	RIVERINE SAND MINING / SCOFIELD ISLAND RESTORATION	NAVIGATION AND SHOAL SIGN DETAIL	
MTP	CMD/USACE/STAKEHOLDER COMMENT RESPONSE	02/10 2011					STATE PROJECT NUMBER: BA-40
MTP	LEVEE CROSSINGS, PAGE NUMBERS	05/06 2011			DRAWN BY: DARTEZ / ZWERNEMAN	DESIGNED BY: MICHAEL T. POFF, P.E.	APPROVED BY: MAURY CHATELLIER, P.E.

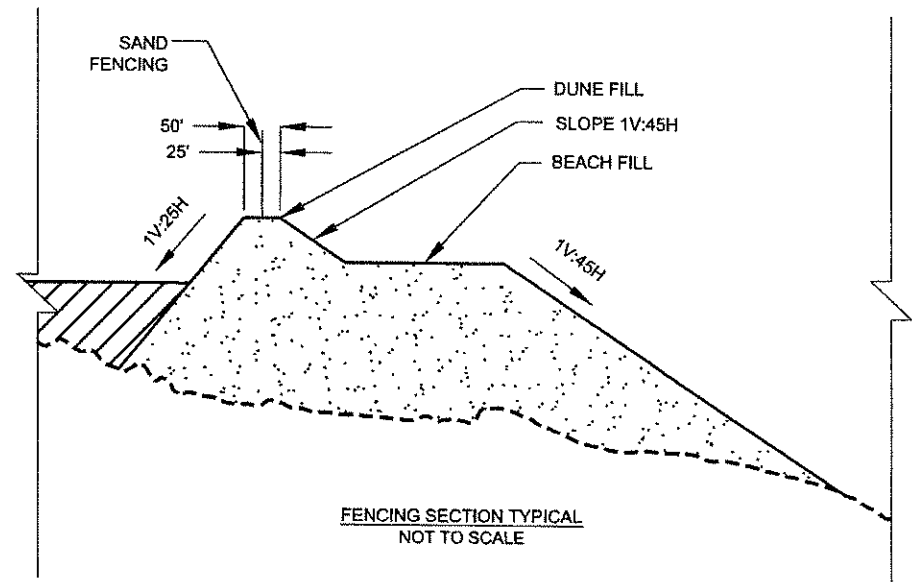


**NOTES:**  
 1. THE DISTANCE BETWEEN FENCES SHALL BE INCREASED FROM 3.0' TO 6.0' AT EVERY FIFTH GAP TO ALLOW ALL-TERRAIN VEHICLE ACCESS.


**FENCING GAPPING DIMENSIONS**  
 NOT TO SCALE



**FENCING DETAIL**  
 NOT TO SCALE



**FENCING SECTION TYPICAL**  
 NOT TO SCALE

BY	DESCRIPTION	DATE	 <b>COASTAL ENGINEERING CONSULTANTS, INC</b> <b>STB GROUP, LLC</b> <small>QUALITY BY DESIGN</small>	OFFICE OF COASTAL PROTECTION & RESTORATION RESTORATION DIVISION 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801	RIVERINE SAND MINING / SCOFIELD ISLAND RESTORATION	SAND FENCING DETAIL
MTP	CMD/AUSACE/STAKEHOLDER COMMENT RESPONSE	02/10 2011				
MTP	LEVEE CROSSINGS, PAGE NUMBERS	05/06 2011				
DRAWN BY: DARTEZ / ZWERNEMAN			DESIGNED BY: MICHAEL T. POFF, P.E.	APPROVED BY: MAURY CHATELLIER, P.E.	STATE PROJECT NUMBER: BA-40	DATE: NOVEMBER, 2010
					FEDERAL PROJECT NUMBER: BA-40	SHEET 36 OF 38

MVN-2008-03033-ETT  
Scofield Island Restoration

## ATTACHMENT A:

### *GUIDELINES FOR ACTIVITIES IN PROXIMITY TO MANATEE AND THEIR HABITAT*

(3 pages)

## **GUIDELINES FOR ACTIVITIES IN PROXIMITY TO MANATEES AND THEIR HABITAT**

### **I. General Guidance for In-water Work Activities**

- A. All personnel associated with the project should be informed of the potential presence of manatees, manatee speed zones, and the need to avoid collisions with and injury to manatees. Such personnel instruction should also include a discussion of the civil and criminal penalties for harming, harassing, or killing manatees, which are protected under the Marine Mammal Protection Act of 1972 and the Endangered Species Act of 1973.
- B. All contract and/or construction personnel are responsible for observing water-related activities for the presence of manatee(s).
- C. Temporary signs should be posted prior to and during all construction/dredging activities to remind personnel to be observant for manatees during active construction/dredging operations or within vessel movement zones (i.e., work area), and at least one sign should be placed where it is visible to the vessel operator.
- D. Siltation barriers, if used, should be made of material in which manatees could not become entangled, and should be properly secured and regularly monitored. Barriers should not impede manatee movement.
- E. If a manatee is sighted within 100 yards of the active work zone, special operating conditions should be implemented, including: no operation of moving equipment within 50 feet of a manatee; all vessels should operate at no wake/idle speeds within 100 yards of the work area; and siltation barriers, if used, should be re-secured and monitored. Once the manatee has left the 100-yard buffer zone around the work area on its own accord, special operating conditions are no longer necessary, but careful observations would be resumed.
- F. Any manatee sighting should be immediately reported to the U.S. Fish and Wildlife Service's (Service) Lafayette, Louisiana, Field Office (337/291-3100) and the Louisiana Department of Wildlife and Fisheries (LDWF), Natural Heritage Program (225/765-2821).

### **II. Guidelines to Minimize and/or Avoid Manatee Entrapment**

#### **A. Pre-construction:**

Water control structures, trash rakes, barriers and other devices that may entrap manatees (even temporarily) within a closed waterway could result in harm or death to the entrapped manatee. At least 90 days prior to installing a structure that may be a barrier or impediment to manatee movement, advanced consultation with the Service and the LDWF should occur. When a manatee-accessible waterway is proposed to be closed to manatees (exclusion area), aerial and ground surveys should be conducted to ensure that manatees are not entrapped in a closed system.

#### **1. Aerial Survey:**

Prior to installing the last section of any barriers (temporary or permanent) that could result in the entrapment of manatees within the waterway, the project proponent should contact the Service and LDWF to determine whether an aerial survey of the proposed exclusion area should be conducted. The extent of the survey area should be identified by the Service and LDWF. Both the Service and LDWF should be contacted to participate in any aerial surveys. It is recommended that the surveys be conducted by helicopter.

2. Waterway Closure:

If no manatees are sighted within the exclusion area, the waterway should be closed off immediately following that survey. If manatees are sighted within the exclusion area, they should be observed to see if they move beyond the proposed barrier. If they do not move out of the waterway within 10 days, the project proponent should consult with the Service and LDWF to determine if the barrier should be put in place. Manatees should not be herded, poked, prodded or harassed in any way to move them along the waterway.

B. Post-construction:

Once the barrier has been installed, the barrier and waterway should be monitored by land once daily for a period of one week to check for the presence of manatees. If manatees are sighted within the exclusion area, the Service (337/291-3100) and LDWF (225/765-2821) should be contacted for further guidance.

III. Guidance for Activities Related to Pipe or Culvert Installation

- A. For pipes and/or culverts installed in areas with potential manatee access, measures that minimize both project installation- and structure-related risks must be adopted to avoid or minimize their effects on manatees and any suitable habitat.
- B. Pursuant to the "General Guidance for In-Water Work Activities", all project-related personnel must be instructed about manatees and measures needed to ensure the manatees' protection during the installation of these structures.
- C. Structures with openings that exceed 8 feet in diameter at both ends and have average water depths of at least three feet, mean low water (MLW), generally do not pose a threat to manatees. Wherever possible, structures (such as box culverts) with these features should be used to reduce the risk of manatees drowning or becoming entrapped in these structures.
- D. Where pipes and culverts between 8 inches and 8 feet in diameter are required, bars or gratings spaced less than 8 inches apart in horizontal, diagonal, or vertical configurations should be placed over the openings to prevent adult manatees and calves from accessing these structures.
- E. Manatees can become stranded in culverts during periods of low tide. Therefore, when planning for new culverts in tidal waters, a minimum 3-foot depth of water in the culvert at low tide stage is recommended.

IV. Guidance for Docks or Other Structures Constructed in or over Submerged Aquatic Vegetation, Marsh, or Mangrove Habitat

A. Submerged Aquatic Vegetation (SAV)

- 1. Avoidance – the pier should be aligned so as to minimize the size of the footprint over SAV beds.
- 2. The height of pier should be a minimum of 5 feet above MHW/OHW as measured from the top surface of the decking.
- 3. The width of the pier should be limited to a maximum of 4 feet. A turnaround area is allowed for piers greater than 200 feet in length. The turnaround is limited to a section of the pier no more than 10 feet in length and no more than 6 feet in width. The turnaround should be located at the midpoint of the pier.

4. Over-SAV bed portions of the pier should be oriented in a north-south orientation to the maximum extent practicable.
5. If possible, terminal platforms should be placed in deep water, water-ward of SAV beds, or in an area devoid of SAV beds.
6. If a terminal platform is placed over SAV areas and constructed of grated decking, the total size of the platform should be limited to 160 square feet. The grated deck material should conform to the specifications stipulated below. The configuration of the platform should be a maximum of 8 feet by 20 feet. A minimum of 5 feet by 20 feet should conform to the 5-foot height requirement; a 3-foot by 20-foot section may be placed 3 feet above mean high water (MHW) to facilitate boat access. The long axis of the platform should be aligned in a north-south direction to the maximum extent that is practicable.
7. If the terminal platform is placed over SAV areas and constructed of planks, the total size of the platform should be limited to 120 square feet. The configuration of the platform should be a maximum of 6 feet by 20 feet of which a minimum 4-foot-wide by 20-foot-long section shall conform to the 5-foot height requirement. A section may be placed 3 feet above MHW to facilitate boat access. The 3 feet above MHW section should be cantilevered. The long axis of the platform should be aligned in a north-south direction to the maximum extent practicable. If the 3 feet above MHW section is constructed with grating material, it may be 3 feet wide.
8. One uncovered boat lift area is allowed. A narrow catwalk (2-foot-wide if planks are used, 3-foot-wide if grating is used) may be added to facilitate boat maintenance along the outboard side of the boat lift and a 4-foot-wide walkway may be added along the stern end of the boat lift, provided all such walkways are elevated 5 feet above MHW. The catwalk should be cantilevered from the outboard mooring pilings (spaced no closer than 10 feet apart).
9. Pilings should be installed in a manner which will not result in the formation of sedimentary deposits ("donuts" or "halos") around the newly installed pilings. Pile driving is the preferred method of installation, but jetting with a low pressure pump may be used.
10. The spacing of pilings through SAV beds should be a minimum of 10 feet on center.
11. The gaps between deck boards should be a minimum of ½ inch.

#### B. Marsh

1. The structure should be aligned so as to have the smallest over-marsh footprint as practicable.
2. The over-marsh portion of the dock should be elevated to at least 4 feet above the marsh floor.
3. The width of the dock should be limited to a maximum of 4 feet. Any exceptions to the width must be accompanied by an equal increase in height requirement.

#### C. Mangroves

1. The width of the dock should be limited to a maximum of 4 feet.
2. Mangrove clearing should be restricted to the width of the pier.
3. The location and alignment of the pier should be through the narrowest area of the mangrove fringe.





BOBBY JINDAL  
GOVERNOR

STATE OF LOUISIANA  
DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT  
District Design, Water Resources and Development Section  
7252 Lakeshore Drive  
New Orleans, Louisiana 70124



SHERRI H. LEBAS, P.E.  
SECRETARY

July 13, 2011

Mr. Billy Nungesser, Parish President  
Plaquemines Parish Government  
Buras Levee District  
106 Avenue G, Suite C  
Belle Chasse, Louisiana 70037

Attention: Ms. Valarie J. Ragas

**PERMIT REQUEST**  
**FORM OF NO OBJECTION**

This Letter of No Objection is not a regulatory permit and does not authorize the implementation of any project without documented approval from all appropriate regulatory authorities.

**Permit Applicant:** Office of Coastal Protection and Restoration

**Date of Request:** 02-10-2011

**Date of Revised Request:** 05-06-2011

**Applicant's Request:** Permission to dredge sand from the Mississippi River, and install a pipeline across the river levee, also install a pipeline across the New Orleans to Venice, Hurricane Protection Levee.

**Project Location:** Work is in the Mississippi River and across the right descending Mississippi River levee, vicinity of second order levee station 802+00, also across the New Orleans to Venice, Hurricane Protection Levee, Reach B-1 (Empire to Fort Jackson), vicinity of levee station 955+00, at Empire, Louisiana, in Plaquemines Parish

The above referenced request has been examined by the District 02 Design, Water Resources and Development Section for the Department of Transportation and Development, and no objection is proffered for this request, provided:

1. This Letter of No Objection is only for stated work within or adjacent to the Levee District right-of-way, and must be accomplished in accordance with the details set forth in the applicant's request and the conditions contained herein. Any changes to the limits or scope of the proposed work must be submitted for additional review. The Levee District must be contacted in writing prior to commencement and at the end of activities. The applicant is responsible for obtaining and providing copies of any permits or lease agreements necessary from the U.S. Army Corps of Engineers, the State Land Office, the Parish Government, and/or any other applicable agencies, as well as documented approval from the area landowner(s) prior to the initiation of the work. The applicant is responsible for adhering to the provisions of any existing permits.

2. The proposed work must not restrict the Levee District's maintenance operations, or any potential flood fight activities at the levee, nor shall it obstruct or impede drainage, or create areas of standing water on the levee batture. The applicant must employ and maintain at the project site suitable erosion protection measures to the satisfaction of the Levee Board. The applicant or owner must immediately notify the Levee Board of any seepage or sand boils that occur during high water conditions.
3. All materials associated with the proposed work must be removed from the area upon completion of the project and the area must be returned to its original state of existence or better. Any damage done to the levee, floodwall or other flood control structure, revetment, or surrounding project area, resulting from the proposed work must be repaired or replaced by the applicant. Finally, should any change in the location of the existing levee, river, floodwall, drainage canal, waterway, or general prevailing conditions in the vicinity, or should any changes in the area be required in the future, in the public interest, the applicant at his own expense shall make such changes in the project as necessary.
4. That no excavation is performed when the Mississippi River attains or exceeds + 11.0 ft. NGVD, at the Carrollton gage at New Orleans, without prior documented approval to the contrary from the U.S. Army Corps of Engineers-New Orleans District.
5. That there is no penetration, excavation, disturbance, or placement of structures within the theoretical levee design section.
6. That no equipment, cars, or materials of any kind are parked or stored on the levee or on its slopes.
7. That all activities must be coordinated and performed with the approval and monitoring of the U.S. Army Corps of Engineers.
8. That the excavation is performed in accordance with Limits of Permissible Excavation, H-18-24849, prepared by the U.S. Army Corps of Engineers - New Orleans District.
9. That the work and/or installation pose no hazard to area navigation.
10. That the applicant obtains any required documented approval for crossing of a Parish Road from the appropriate Parish Government.
11. That no excavation of the levee or berm is undertaken during hurricane season unless the applicant submits plans found acceptable by the Levee District.
12. That the applicant is responsible for maintaining the existing level of flood protection at all times to the satisfaction of the Levee Board.

Special Notes:

That prior to commencement of any proposed work or construction, the applicant shall apply for, and obtain, any required permits from the appropriate city and/or Parish agencies.

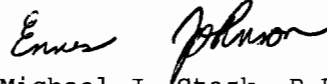
That the proposed work is performed in strict accordance with all of the conditions set forth in the permit applicant's request and supporting drawings and documentations.

Please be advised that the applicant must strictly adhere to all of the provisions cited by the New Orleans District U.S. Army Corps of Engineers, in their letter of recommendation, #11-119, dated July 1, 2011.

That the applicant must strictly adhere to all of the provisions cited by the Louisiana Department of Transportation and Development, in our Project Permits, #02012402, dated November 29, 2010, for restrictions and limited for directional drilling under LA. Highway 23.

This letter of no objection is offered with no opinion or approval to the design or engineering feasibility of the work. If we can be of further assistance, please contact Michael Celestine at (504) 816-7307.

Yours very truly,



Michael J. Stack, P.E., P.L.S.  
District Administrator

fo!

210779/ms/mc

cc:

Mr. James Altman, OCPD  
U. S. Army Corps of Engineers  
Mr. Blair Rittiner, Land Manager PPG  
Ms. Kristi Cantu, Office of Coastal Protection and Restoration

RECEIVED  
2011 AUG 18 AM 10:14  
LA-OCPR

NO. DACW29-9-11-103

**DEPARTMENT OF THE ARMY  
CONSENT TO CROSS U. S. GOVERNMENT EASEMENT  
AT  
EMPIRE TO GULF WATERWAY PROJECT  
PLAQUEMINES PARISH, LOUISIANA**

**KNOW ALL MEN BY THESE PRESENTS:**

That the consent of the United States is hereby granted to **State of Louisiana Office of Coastal Protection and Restoration**, hereinafter designated as grantee, **not-to-exceed five (5) years** to dredge material from the Mississippi River to convey (via pipeline) down the Empire Waterway, herein referred to as "structure", across, over and under the lands where the United States has acquired a perpetual dredging and spoil disposal easements, identified as Tract No. 2, COB 142, Page 1, April 6, 1948; Tract No. 3, COB 142, Page 9, March 25, 1949; Tract No. 4, COB 142, Page 16, April 6, 1948; Tract No. 5, COB 142, Page 23, April 6, 1948; Tract No. 6, COB 187, Page 835, January 12, 1956; Tract No. 7, COB 142, Page 320, July 12, 1948; Tract No. 8, COB 142, Page 37, March 20, 1948; Tract No. 9, COB 142, Page 44, March 25, 1948; Tract No. 10, COB 142, Page 51, July 23, 1948; Tract No. 11, COB 142, Page 58, March 20, 1948; Tract No. 12, COB 142, Page 65, March 25, 1948; Tract No. 13, COB 142, Page 72, April 6, 1948; Tract No. 14, COB 142, Page 79, April 6, 1948; Tract No. 15, COB 142, Page 86, April 6, 1948; Tract No. 16, COB 193, Page 488, September 5, 1956; Tract No. 17, COB 142, Page 93, March 20, 1948; Tract No. 18, COB 142, Page 107, March 25, 1948; Tract No. 19, COB 142, Page 107, March 25, 1948; Tract No. 20, COB 188, Page 976, March 1, 1956; Tract No. 21, COB 142, Page 114, April 6, 1948; Tract No. 22, COB 142, Page 121, April 26, 1948; Tract No. 23, COB 142, Page 128, June 25, 1948; Tract No. 25, COB 150, Page 506, January 15, 1951; Tract No. 26, COB 142, Page 135, March 25, 1948; Tract No. 27, COB 142, Page 147, April 5, 1948; Tract No. 28, COB 142, Page 155, March 24, 1948; Tract No. 29, COB 142, Page 165, March 25, 1948; Tract No. 30, COB 142, Page 165, March 25, 1948; Tract No. 31, COB 142, Page 147, April 5, 1948; Tract No. 31, COB 142, Page 155, March 24, 1948, in the records of Plaquemines Parish, Louisiana. The approximate right-of-way for said activity for the purpose of this consent is specifically identified as Parcels **highlighted in green**, located as shown on Exhibit "A" attached hereto and made a part hereof and described as follows:

**A portion of Tract Nos. 2-23 & 25, Sections 1, 9, 20, 22, 31, 34 and 43, Township 20 South, Range 28 East and Tract Nos. 27-32, Sections 43, 23, 26 and 35, Township 21 South, Range 28 East, Plaquemines Parish, Louisiana.**

This consent is granted subject to the following conditions:

1. That it is understood that this consent is effective only insofar as the property rights of the United States in the land to be occupied are concerned, and that it does not relieve the grantee from the necessity of obtaining grants from the owners of the fee and/or other interests therein.
2. That the proposed construction authorized herein shall not be commenced until appropriate rights shall have been obtained by the grantee from the record owners and encumbrancers of the fee title to the lands involved.
3. That the exercise of the privileges hereby consented to shall be without cost or expense to the Department of the Army, under the general supervision and subject to the approval of the officer having immediate jurisdiction over the property, hereinafter referred to as "said officer," and subject to such regulations as may be prescribed by the District Commander, New Orleans District, from time to time, including, but not limited to, the specific conditions, requirements and specifications set forth in Exhibit "B" attached hereto and made a part hereof.
4. That the grantee shall supervise and maintain the said structure and cause it to be inspected at reasonable intervals, and shall immediately repair any damage found therein as a result of such inspection, or when requested by said officer to repair any defects. Upon completion of the installation of said structure or the making of any repairs thereto, the premises shall be restored immediately by the grantee, at the grantee's own expense, to the same condition as that in which they existed prior to the commencement of such work, to the satisfaction of said officer.
5. That any property of the United States damaged or destroyed by the grantee incident to the exercise of the privileges herein granted shall be promptly repaired or replaced by the grantee to the satisfaction of the said officer, or in lieu of such repair or replacement, the grantee shall, if so required by the said officer and at his option, pay to the United States money in an amount sufficient to compensate for the loss sustained by the United States by reason of damage to or destruction of Government property.
6. That the United States shall not be responsible for damages to property or injuries to persons which may arise from or be incident to the exercise of the privileges herein granted, or for damages to the property of the grantee, or for damages to the property or injuries to the person of the grantee, or the persons of grantee's officers, agents, servants, or employees or others who may be on said premises at their invitation or the invitation of one of them arising from governmental activities on or in the vicinity of the said premises, and the grantee shall hold the United States harmless from any and all such claims.
7. That this consent is effective only as to the following rights of the United States in the lands hereinabove described.
8. That the United States shall in no case be liable for any damage or injury to the construction herein authorized which may be caused by any action of the Government, under the rights obtained in its easements, either hidden or known, or that may result from future operations under taken by the Government, and no claim or right to compensation shall accrue from such damage or injury, and if further operations of the United States require the alteration or removal

of the structure herein authorized, the grantee shall, upon due notice from the Chief of Engineers, Department of Army, alter or remove said structure without expense to the Government and subject to the supervision and approval of the officer having jurisdiction over the property and no claim for damages shall be made against the United States on account of such alterations or removal.

9. That construction and/or operation maintenance and use of said structure incident to the exercise of the privileges hereby granted shall be in such a manner as not to conflict with the rights of the Government, nor to interfere with the operations by the Government under such rights, nor to endanger lives and safety of the public.

10. That this consent may be terminated by the Secretary of the Army upon reasonable notice to the grantee if the Secretary of the Army shall determine that installation to which consent is hereby granted interferes with the use of said land or any part thereof by the United States, and this consent may be annulled and forfeited by the declaration of the Secretary of the Army for failure to comply with any and all of the provisions and conditions of this consent, or for nonuse for a period of two years, or for abandonment.

11. That upon the relinquishment, termination, revocation, forfeiture or annulment of the consent herein granted, the grantee shall vacate the premises, remove all property of the grantee therefrom, and restore the premises to a condition satisfactory to the officers having immediate jurisdiction over the property. If the grantee shall fail or neglect to remove said property and so restore the premises, then, at the option of the Secretary of the Army, the said property shall either become the property of the United States without compensation therefor, or the Secretary of the Army may cause it to be removed and the premises to be so restored at the expense of the grantee, and no claim for damages against the United States, or its officers or agents, shall be created by or made on account of such removal and restoration.

12. That the terms and conditions of this consent shall extend to and be binding upon the heirs, successors and assigns of the grantee. **Without prior written approval by said District Commander, the grantee of this Consent shall neither transfer nor assign the rights granted herein, or any part thereof.**

13. That the grantee within the limits of his respective legal powers shall comply with all Federal, interstate, state and/or local governmental regulations, conditions or instructions for the protection of the environment and all other matters as they relate to real property interests granted herein.

14. That the grantee shall not remove or disturb, or cause or permit to be removed or disturbed, any historical, archeological, architectural or other cultural artifacts, relics, vestiges, remains or objects of antiquity. In the event such items are discovered on the premises, the grantee shall immediately notify the District Commander, New Orleans District, and the site and the material shall be protected by the grantee from further disturbance until a professional examination of them can be made or until clearance to proceed is authorized by the District Commander.

15. Except as otherwise specifically provided, any reference herein to "Secretary", "District Commander", "Installation Commander", or "said officer" shall include their duly authorized representatives. Any reference to "grantee" shall include assignees, transferees and their duly authorized representatives.

16. Merger clause. Prior to the execution of this consent, the following conditions were deleted: none; changed: none; or added: none.

This consent is not subject to Title 10, U.S.C., Section 2662.

In Witness Whereof, I have hereunto set my hand, by authority of the Secretary of the Army this 15<sup>th</sup> day of August, 2011.

Shirley B. Mills  
Witness

Shirley B. Mills  
Printed Name

Mary C. Johnson  
Witness

MARY C. JOHNSON  
Printed Name

Janet R. Cuzzi  
**LINDA C. LABURE**  
Chief, Real Estate Division  
U.S. Army Corps of Engineers  
New Orleans District

THIS CONSENT is also executed by the grantee this 9th day of August, 2011.

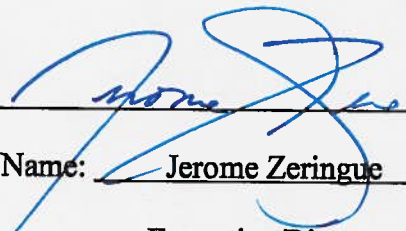
**STATE OF LOUISIANA  
OFFICE OF COASTAL PROTECTION AND RESTORATION**

Patricia Perd  
Witness

PATRICIA PERD  
Printed Name

Adrienne Landry  
Witness

Adrienne Landry  
Printed Name

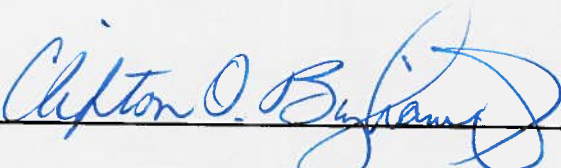
  
Typed Name: Jerome Zeringue  
Title: Executive Director



**CERTIFICATE OF AUTHORITY**

I, Clifton O. Bingham, Jr., do hereby certify that I am the principle legal officer of the State of Louisiana, Office of Coastal Protection and Restoration (OCPR), that the OCPR is a legally constituted public body with full authority and legal capability to adhere and comply with the terms and conditions for Consent to Cross U.S. Government Easement No. DACW29-9-11-103, and subsequent amendments thereto, use of a dredge pipeline in the Empire to Gulf Waterway, in connection with the Empire to Gulf Waterway Project, and that the persons who executed Consent to Cross U.S. Government Easement No. DACW29-9-11-103 on behalf of the OCPR has acted within their statutory authority.

IN WITNESS WHEREOF, I have made and executed this certification on this 9th day of August, 2011.

Signed: 

Printed name: Clifton O. Bingham, Jr.

Title: General Counsel, OCPR

**ACKNOWLEDGMENT**

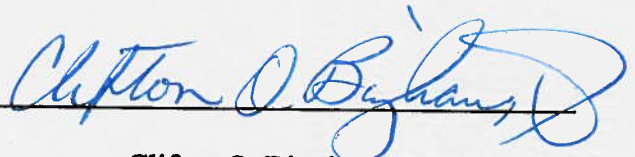
STATE OF LOUISIANA

PARISH OF EAST BATON ROUGE

On this 9th day of August, 2011, before me appeared Jerome Zeringue, to me personally known, who, being by me duly sworn, did say that he is the Executive Director of the State of Louisiana, Office of Coastal Protection and Restoration (OCPR) and that the consent was signed in behalf of OCPR, by authority duly and legally granted and bestowed upon him, and that Jerome Zeringue acknowledged the consent to be the free act and deed of OCPR and the OCPR has no seal.

**IN WITNESS WHEREOF**, I have hereunto set my hand and official seal.

Signed: \_\_\_\_\_



Printed Name: Clifton O. Bingham, Jr.  
Notary Public  
State of Louisiana  
Parish of East Baton Rouge

My Commission Expires: with life

Bar Association Number: 03052

TRACT REGISTER OF ACQUISITION AFTER 1 JAN 1943 (CIVIL)

TRACT No.	LAND OWNER	ACRES (EXACT)	REMARKS
1	Walter J. ...	...	...
2	...	...	...
3	...	...	...
4	...	...	...
5	...	...	...
6	...	...	...
7	...	...	...
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10	...	...	...
11	...	...	...
12	...	...	...
13	...	...	...
14	...	...	...
15	...	...	...
16	...	...	...
17	...	...	...
18	...	...	...
19	...	...	...
20	...	...	...
21	...	...	...
22	...	...	...
23	...	...	...
24	...	...	...
25	...	...	...
26	...	...	...
27	...	...	...
28	...	...	...
29	...	...	...
30	...	...	...
31	...	...	...
32	...	...	...
33	...	...	...
34	...	...	...
35	...	...	...

FINAL PROJECT MAP

AGENCY: DEPARTMENT OF THE ARMY

STATE: LOUISIANA  
 COUNTY: PLAQUEMINES  
 DISTRICT: NEW ORLEANS

LOCATION OF PROJECT

MILES OF AT. EMPIRE  
 MILES OF ...

TRANSPORTATION FACILITIES

RAILROADS: M.V. (M & O)  
 STATE ROADS: HIGHWAY 81  
 FEDERAL ROADS  
 AIR LINES

ACQUISITION

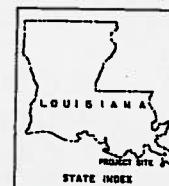
TOTAL ACRES ACQUIRED: 3,681.00  
 ACRES FEE  
 ACRES TRANSFERRED  
 ACRES LEASED  
 ACRES LEASE INTERESTS: 3,681.00

DISPOSAL

TOTAL ACRES DISPOSED OF  
 ACRES BUILT  
 ACRES TRANSFERRED  
 ACRES LEASE TERMINATED  
 ACRES LEASE INT. TERM. RATED  
 ACRES RE-ASSIGNED  
 ACRES TO

LEGEND

RESERVATION LINE  
 TRAIL BLAZED-LAWY LINE  
 TRAIL M&O-SEA  
 VIGILANCE EASEMENT  
 COTTON LINE  
 DISPOSAL

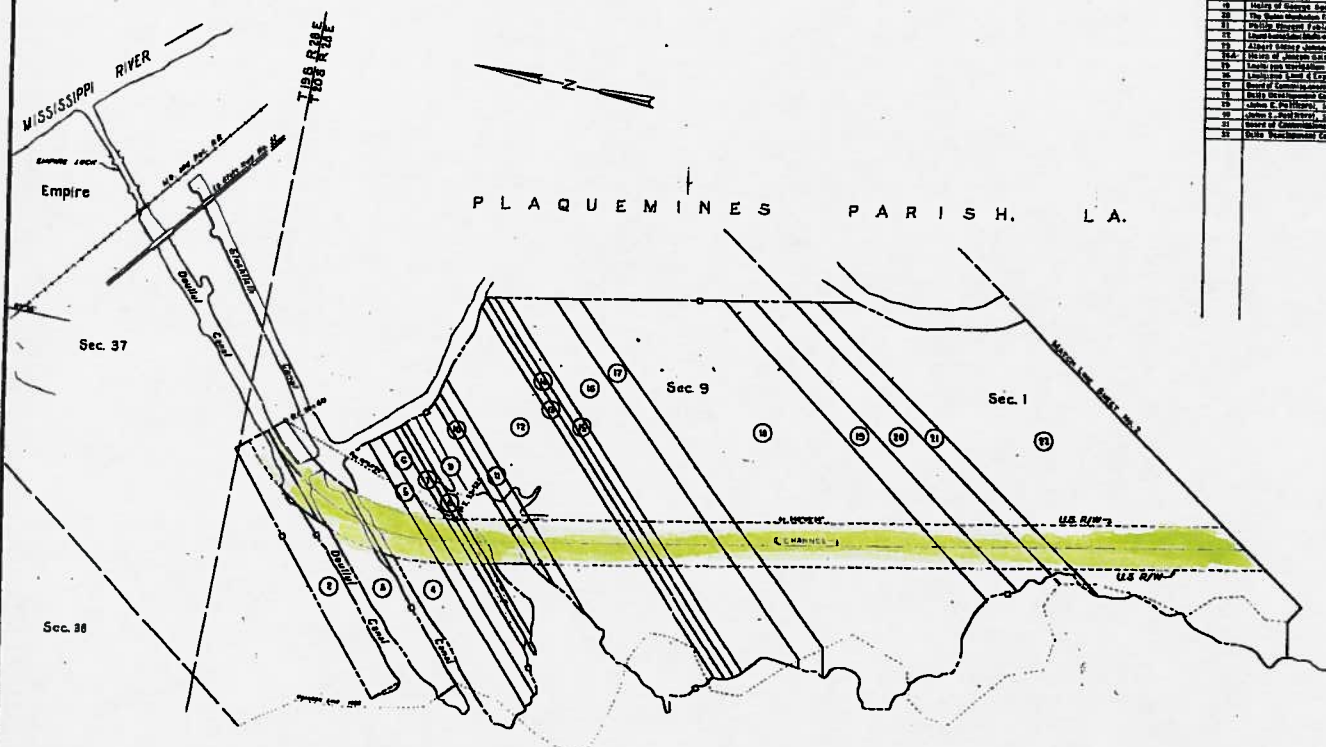


ACQUISITION AUTHORIZATION  
 Public Law No. 515, 74 July, 1946  
 Telegram: OCE to LMVD dated 14 May, 1946.

DEPARTMENT OF THE ARMY  
 OFFICE OF THE NEW ORLEANS DISTRICT ENGINEER  
 LOWER MISSISSIPPI VALLEY DIVISION

REAL ESTATE  
**EMPIRE TO GULF WATERWAY**

DATE: November 21, 1949  
 AUDITED  
 C-7855



EMPIRE TO GULF WATERWAY PROJECT  
 TRACTS 2-23 & 25-26 SECTIONS 1, 9, 20, 22, 31, 34 & 43  
 TOWNSHIP 20 SOUTH, RANGE 28 EAST  
 TRACTS 27-32, SECTIONS 43, 23, 26 & 35  
 TOWNSHIP 21 SOUTH, RANGE 28 EAST

PLAQUEMINES PARISH, LOUISIANA  
 EXHIBIT A PAGE 1 OF 6

Note: The boundary of this institution was compiled from school surveys and deed descriptions.

DATE	BY	REVISION

FINAL  
PROJECT MAP

AGENCY: DEPARTMENT OF THE ARMY  
 STATE: LOUISIANA  
 COUNTY: PLAQUEMINES  
 DIVISION: LOWER MISSISSIPPI VALLEY  
 DISTRICT: NEW ORLEANS

LOCATION OF PROJECT

TOWNSHIP: 20 SOUTH  
 RANGE: 28 EAST

TRANSPORTATION FACILITIES

RAILROADS: No. Pac. (RD 6 & C 1)  
 STATE ROADS: HIGHWAY 31  
 FEDERAL ROAD:  
 AIR LINE:

ACQUISITION

TOTAL ACRES ACQUIRED: 1,000.00  
 ACRES FEE  
 ACRES TRANSFERRED  
 ACRES LEASED  
 ACRES LEASED & INTEREST

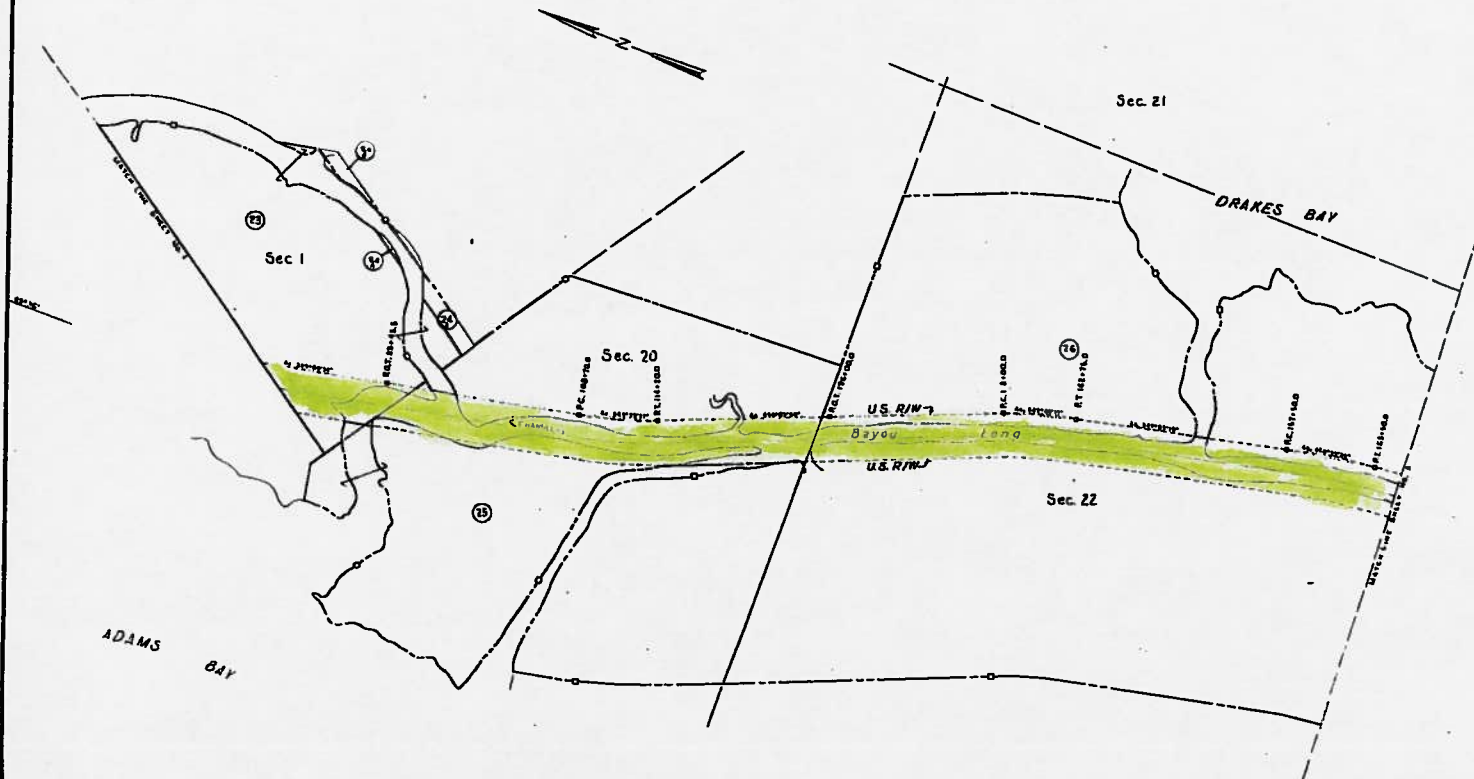
DISPOSAL

TOTAL ACRES DISPOSED OF  
 ACRES FEE  
 ACRES TRANSFERRED  
 ACRES LEASED & INTEREST  
 ACRES LEASED  
 ACRES FEE

LEGEND

PROPERTY OF THE ARMY  
 PROPERTY OF OTHERS  
 RIGHT OF WAY  
 EASEMENT  
 FLOOD PLAIN  
 ADJACENT LANDS  
 STATE OF LOUISIANA  
 DEPARTMENT OF THE ARMY  
 C. E. B. 100  
 1000

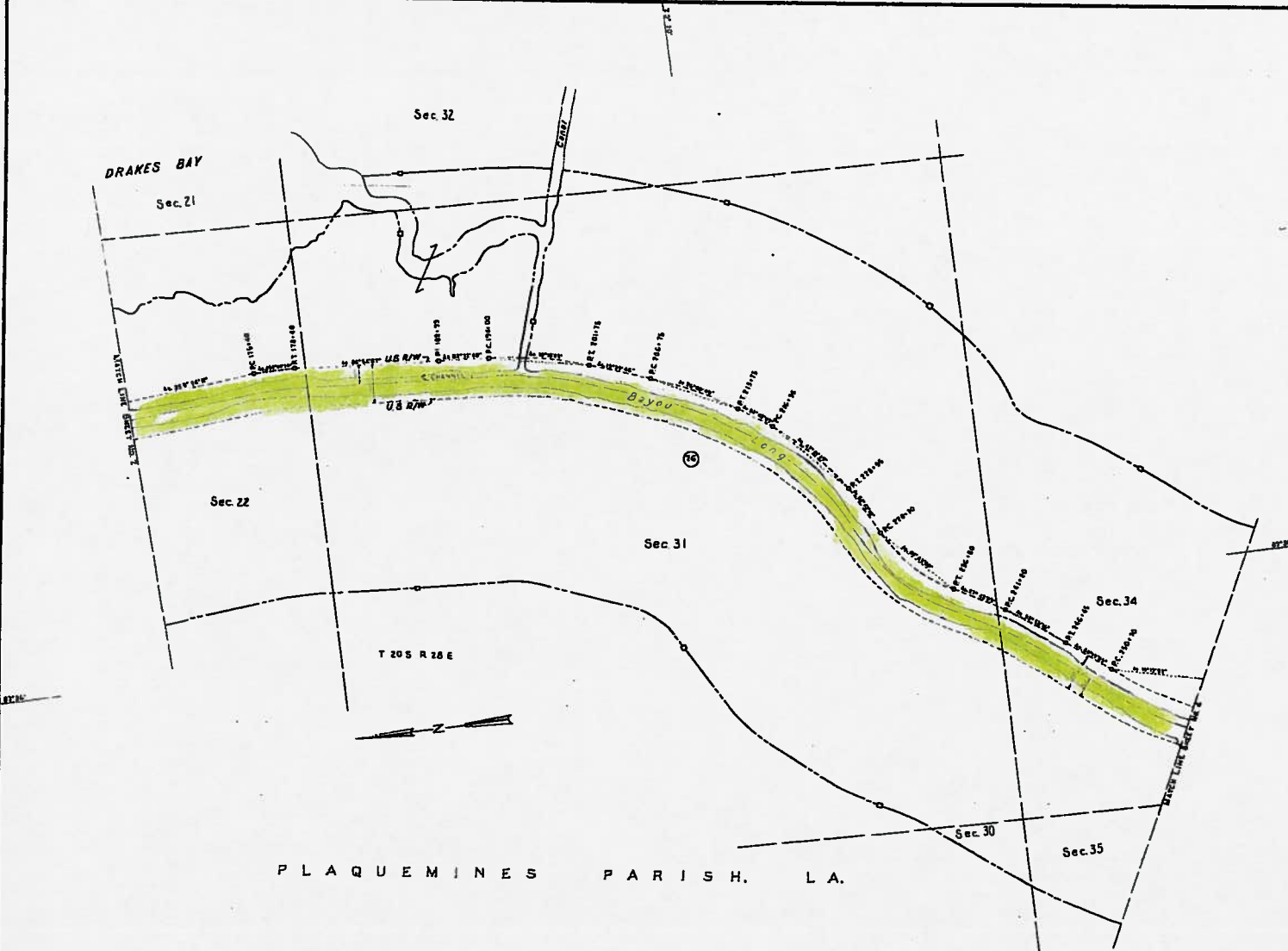
PLAQUEMINES PARISH, L.A.



EMPIRE TO GULF WATERWAY PROJECT  
 TRACTS 2-23 & 25-26 SECTIONS 1, 9, 20, 22, 31, 34 & 43  
 TOWNSHIP 20 SOUTH, RANGE 28 EAST  
 TRACTS 27-32, SECTIONS 43, 23, 26 & 35  
 TOWNSHIP 21 SOUTH, RANGE 28 EAST

PLAQUEMINES PARISH, LOUISIANA  
 EXHIBIT A PAGE 2 OF 6

DEPARTMENT OF THE ARMY OFFICE OF THE NEW ORLEANS DISTRICT ENGINEER LOWER MISSISSIPPI VALLEY DIVISION	
PREPARED BY: W. C. B. 100 CHECKED BY: F. L. 100 DESIGNED BY: F. L. 100 DRAWN BY: F. L. 100 REVISIONS: 100	REAL ESTATE EMPIRE TO GULF WATERWAY 100
OFFICE OF THE DISTRICT ENGINEER NEW ORLEANS, LOUISIANA 100	100



**FINAL PROJECT MAP**

AGENCY, DEPARTMENT OF THE ARMY  
 STATE, LOUISIANA  
 COUNTY, PLAQUEMINES  
 DIVISION, LOWER MISSISSIPPI VALLEY  
 DISTRICT, NEW ORLEANS  
 ARMY AREA

**LOCATION OF PROJECT**  
 MILES OF BY EMPIRE  
 MILES

**TRANSPORTATION FACILITIES**  
 BARROADS, M. P. (IND. & C.)  
 STATE ROADS, HIGHWAY 81  
 FEDERAL PROJECTS  
 AIR LINES

**ACQUISITION**  
 TOTAL ACRES ACQUIRED  
 ACRES FEE  
 ACRES TRANSFERRED  
 ACRES LEASED  
 ACRES LEASE INTERESTS

**DISPOSAL**  
 TOTAL ACRES DISPOSED OF  
 ACRES FEE  
 ACRES TRANSFERRED  
 ACRES LEASE TRANSFERRED  
 ACRES LEASED TO FEDERAL GOVT.  
 ACRES TO STATE  
 ACRES TO

**LEGEND**  
 EMPIRE TO GULF WATERWAY (SHOWN IN GREEN)  
 RESERVATION E.P.C.  
 TRACT BOUNDARY E.P.C.  
 TRACT E.P.C.  
 DEPT. OF THE ARMY  
 NOVEMBER 21, 1945

**EMPIRE TO GULF WATERWAY PROJECT**  
 TRACTS 2-23 & 25-26 SECTIONS 1, 9, 20, 22, 31, 34 & 43  
 TOWNSHIP 20 SOUTH, RANGE 28 EAST  
 TRACTS 27-32, SECTIONS 43, 23, 26 & 35  
 TOWNSHIP 21 SOUTH, RANGE 28 EAST

PLAQUEMINES PARISH, LOUISIANA  
 EXHIBIT A PAGE 3 OF 6

DEPARTMENT OF THE ARMY  
 OFFICE OF THE NEW ORLEANS DISTRICT ENGINEER  
 LOWER MISSISSIPPI VALLEY DIVISION  
 REAL ESTATE  
**EMPIRE TO GULF WATERWAY**  
 Approved by: *[Signature]*  
 SPECIAL AGENT IN CHARGE  
 NOVEMBER 21, 1945  
**AUDITED**  
 NOVEMBER 21, 1945  
 C-1835

PLAQUEMINES PARISH, LA.

FINAL  
PROJECT MAP

AGENCY, DEPARTMENT OF THE ARMY  
STATE LOUISIANA  
COUNTY PLAQUEMINES  
DIVISION LOWER MISSISSIPPI VALLEY  
DISTRICT NEW ORLEANS

LOCATION OF PROJECT

MILES OF AT EMPIRE  
MILES OF

TRANSPORTATION FACILITIES

RAILROADS M.R. OLD & L.G.  
STATE ROADS HIGHWAY 31  
FEDERAL ROADS  
AIR LINES

ACQUISITION

TOTAL ACRES ACQUIRED See Sheet 1  
ACRES FEE  
ACRES TRANSFERRED  
ACRES LEASED  
ACRES LEASES TERMINATED

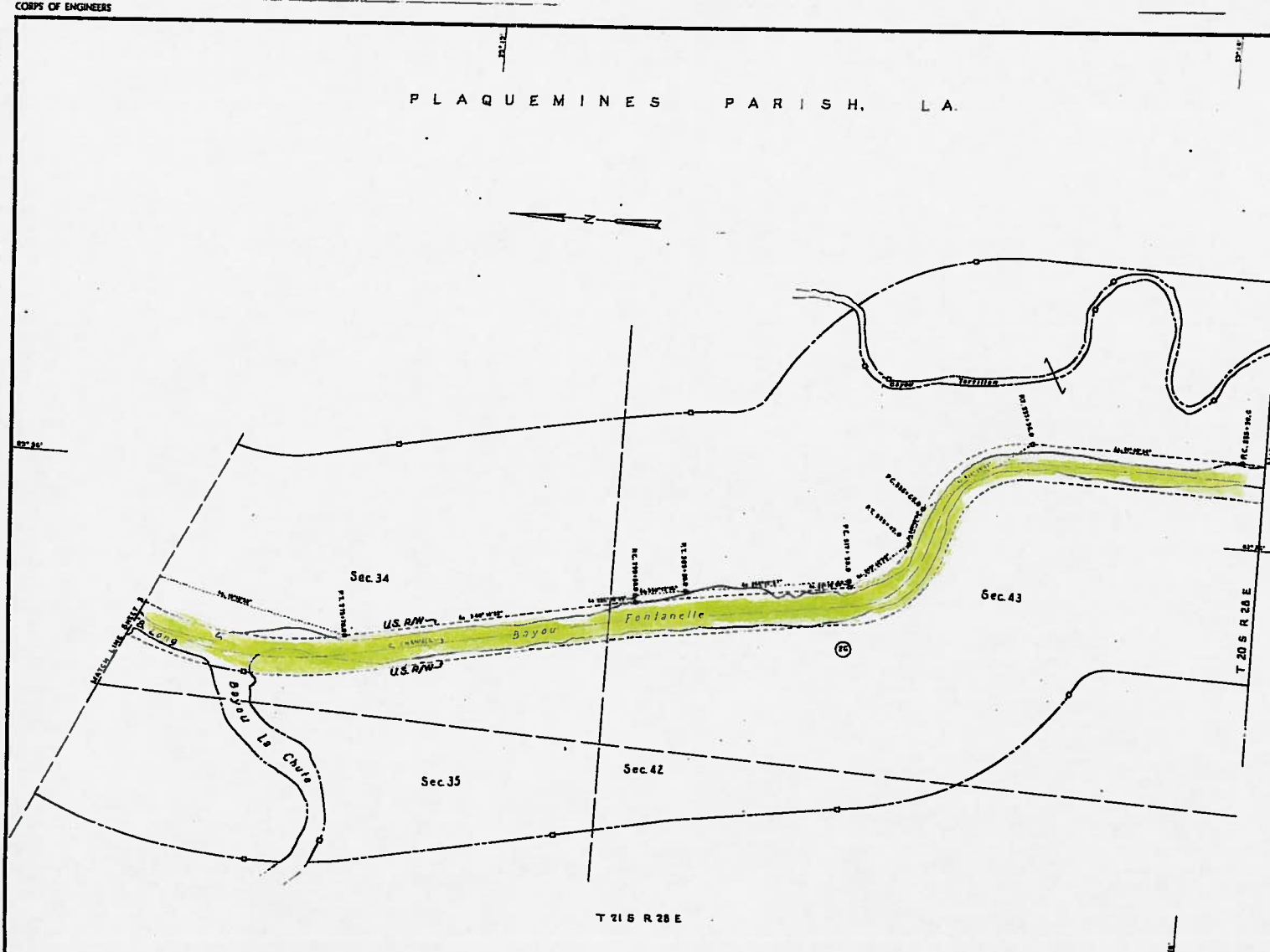
DISPOSAL

TOTAL ACRES DISPOSED OF  
ACRES SOLD  
ACRES TRANSFERRED  
ACRES LEASES TERMINATED  
ACRES LEASES W/TS TERMINATED  
ACRES REACQUIRED  
ACRES TO

LEGEND

EXCEPT FOR THE SPECIAL SYMBOLS SHOWN BELOW MAP SYMBOLS ARE STANDARD BY ARMY MAP SERVICE TECHNICAL MANUAL NO. 51

RESERVATION LINE  
RESERVATION LINE (shaded)  
TRACT BOUNDARY LINE  
TRACT NUMBER  
AVIGATION EASEMENT  
CO TOWN LINE  
DISPOSAL

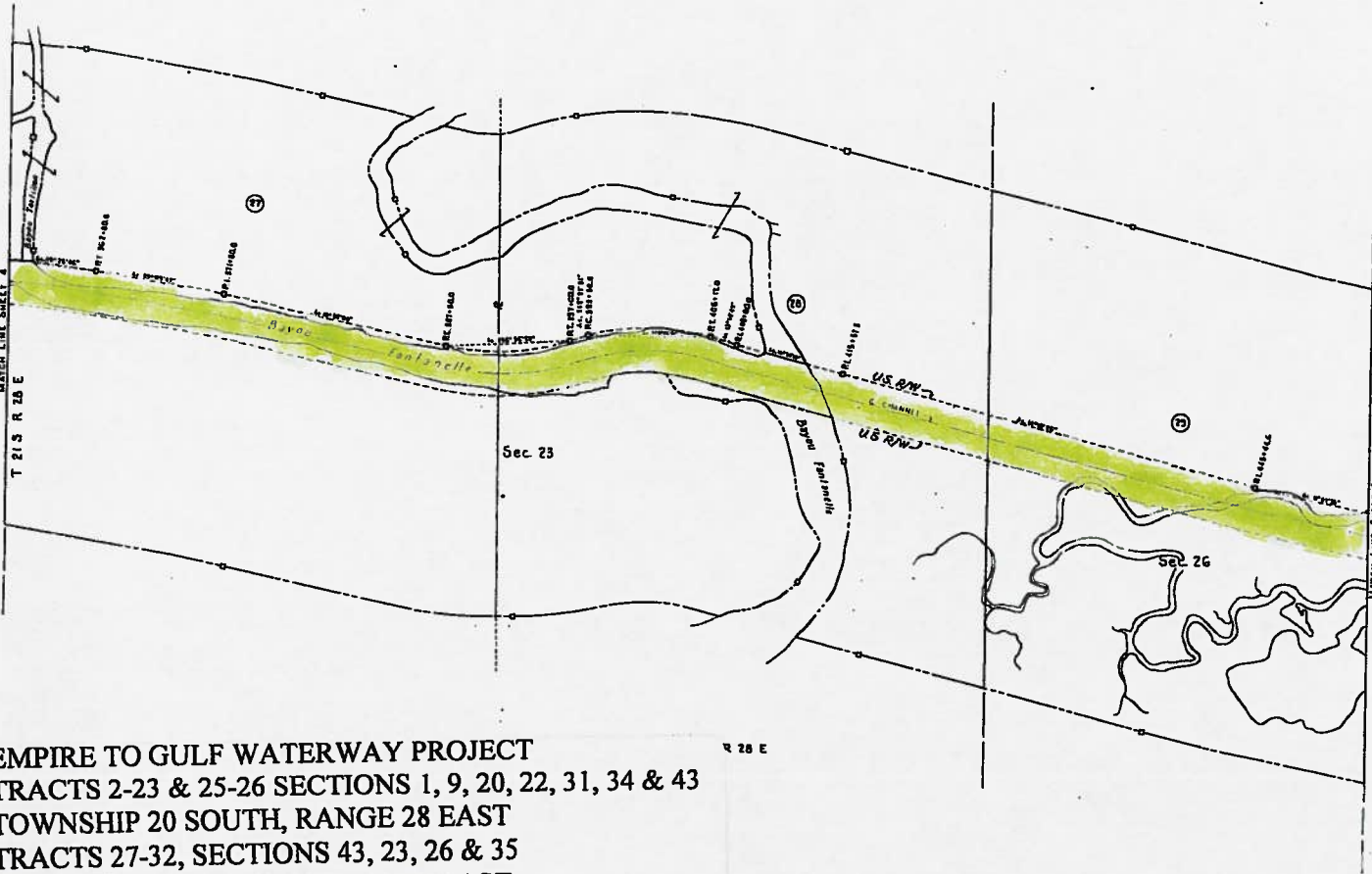
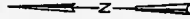


EMPIRE TO GULF WATERWAY PROJECT  
TRACTS 2-23 & 25-26 SECTIONS 1, 9, 20, 22, 31, 34 & 43  
TOWNSHIP 20 SOUTH, RANGE 28 EAST  
TRACTS 27-32, SECTIONS 43, 23, 26 & 35  
TOWNSHIP 21 SOUTH, RANGE 28 EAST

PLAQUEMINES PARISH, LOUISIANA  
EXHIBIT A PAGE 4 OF 6

DEPARTMENT OF THE ARMY OFFICE OF THE NEW ORLEANS DISTRICT ENGINEER LOWER MISSISSIPPI VALLEY DIVISION	
REAL ESTATE EMPIRE TO GULF WATERWAY	
DRAWN BY: M.C.S. CHECKED BY: F.S. APPROVED BY: [Signature] SPECIAL AGENT IN CHARGE PLANNING & CONTROL BRANCH	DATE: NOVEMBER 21, 1955 SCALE: AS SHOWN AUTHORITY: [Signature] DISTRICT ENGINEER, WASHINGTON, D.C.
AUDITED C-1835 PREPARED BY: [Signature] DATE: [ ]	

PLAQUEMINES PARISH, L. A.



EMPIRE TO GULF WATERWAY PROJECT  
 TRACTS 2-23 & 25-26 SECTIONS 1, 9, 20, 22, 31, 34 & 43  
 TOWNSHIP 20 SOUTH, RANGE 28 EAST  
 TRACTS 27-32, SECTIONS 43, 23, 26 & 35  
 TOWNSHIP 21 SOUTH, RANGE 28 EAST

PLAQUEMINES PARISH, LOUISIANA  
 EXHIBIT A PAGE 5 OF 6

FINAL  
**PROJECT MAP**

AGENCY: DEPARTMENT OF THE ARMY  
 STATE: LOUISIANA  
 COUNTY: PLAQUEMINES  
 DIVISION: LOWER MISSISSIPPI VALLEY  
 DISTRICT: NEW ORLEANS  
 ARMY AREA:

LOCATION OF PROJECT  
 MILES OF AT. EMPIRE  
 MILES OF

TRANSPORTATION FACILITIES  
 RAILROADS: M.P. OR A. & L.O.  
 STATE ROADS: NUMBER 21  
 FEDERAL ROADS  
 AIR LINES

ACQUISITION  
 TOTAL ACRES ACQUIRED: 200,000 /  
 ACRES FEE  
 ACRES TRANSFERRED  
 ACRES LEASED  
 ACRES LESSER INTERESTS

DISPOSAL  
 TOTAL ACRES DISPOSED OF  
 ACRES SOLD  
 ACRES TRANSFERRED  
 ACRES LEASES TERMINATED  
 ACRES LINE INTX. TERMINATED  
 ACRES REASSIGNED  
 ACRES TO

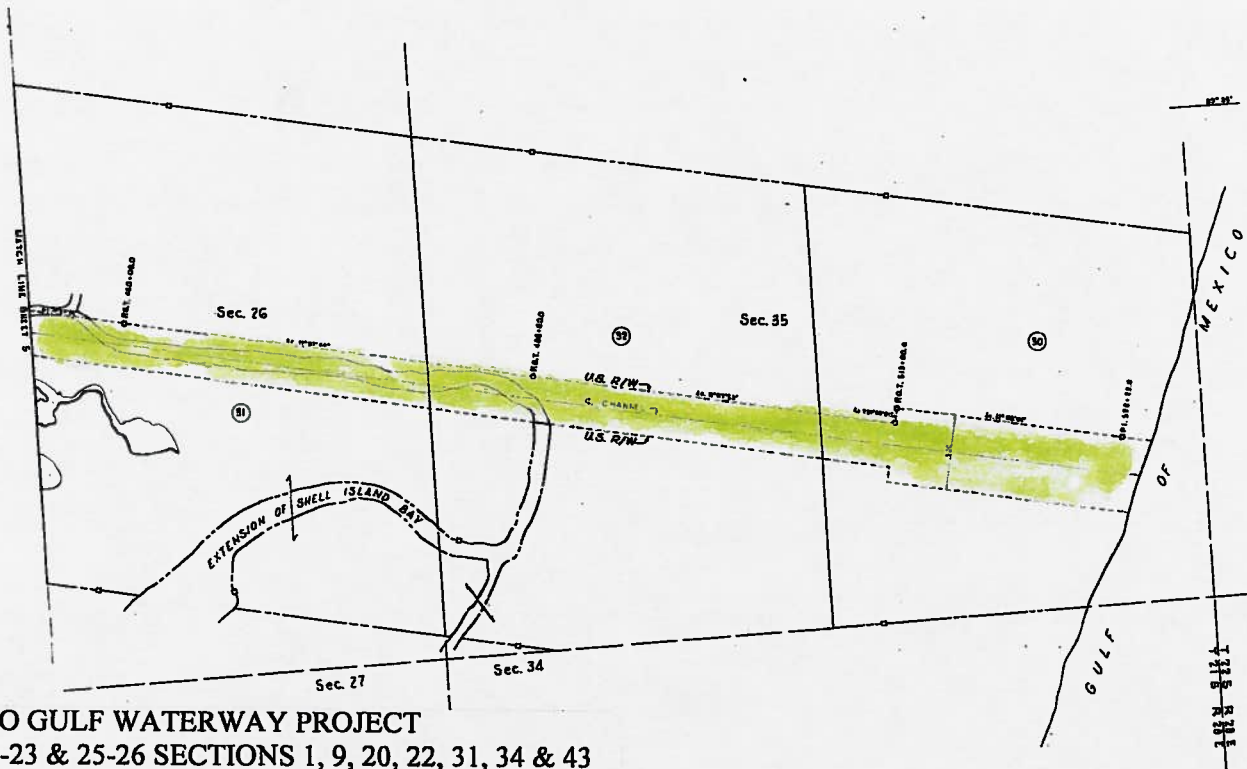
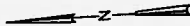
LEGEND

- EXCERPTS FOR THE SPECIAL SYMBOLS SHOWN BELOW, MAP SYMBOLS ARE STANDARD IN ARMY MAP SERVICE TECHNICAL MANUAL NO. 21.
- RESERVATION LINE
  - RESERVATION LINE (Partial Section)
  - TRACT BOUNDARY LINE
  - TRACT NUMBER
  - AVIGATION EASEMENT
  - CONTIGUOUS LINE
  - DISPOSAL

DEPARTMENT OF THE ARMY OFFICE OF THE NEW ORLEANS DISTRICT ENGINEER LOWER MISSISSIPPI VALLEY DIVISION	
DESIGNED BY: M.C.B. MADE BY: M.C.B. CHECKED BY: F.L.	REAL ESTATE
<b>EMPIRE TO GULF WATERWAY</b>	
APPROVED BY: <i>[Signature]</i> SPECIAL AGENT IN CHARGE	DATE: September 21, 1955
CHECK ONE OF DIVISIONS: <input type="checkbox"/> CIVIL ENGINEERING <input type="checkbox"/> ELECTRICAL ENGINEERING <input type="checkbox"/> MECHANICAL ENGINEERING <input type="checkbox"/> METEOROLOGICAL ENGINEERING <input type="checkbox"/> SURVEYING <input type="checkbox"/> WATERWAY ENGINEERING	SCALE IN FEET: 1" = 1000'
<b>AUDITED</b> C-1835	DATE: 9-21-55

DATE	REVISION

PLAQUEMINES PARISH, L.A.



EMPIRE TO GULF WATERWAY PROJECT  
 TRACTS 2-23 & 25-26 SECTIONS 1, 9, 20, 22, 31, 34 & 43  
 TOWNSHIP 20 SOUTH, RANGE 28 EAST  
 TRACTS 27-32, SECTIONS 43, 23, 26 & 35  
 TOWNSHIP 21 SOUTH, RANGE 28 EAST

PLAQUEMINES PARISH, LOUISIANA  
 EXHIBIT A PAGE 6 OF 6

**FINAL PROJECT MAP**

AGENCY: DEPARTMENT OF THE ARMY  
 STATE: LOUISIANA  
 COUNTY: PLAQUEMINES  
 DIVISION: LOWER MISSISSIPPI VALLEY  
 DISTRICT: NEW ORLEANS

ARMY AREA  
 LOCATION OF PROJECT

MILES OF AT. EMPIRE  
 MILES OF

**TRANSPORTATION FACILITIES**

RAILROADS: M.P. (M, G, B, L, C)  
 STATE ROADS: HIGHWAY 31  
 FEDERAL ROADS  
 AIR LINES

**ACQUISITION**

TOTAL ACRES ACQUIRED: 1,000.00  
 ACRES FOR  
 ACRES TRANSFERRED  
 ACRES LEASED  
 ACRES LEASE INTEREST

**DISPOSAL**

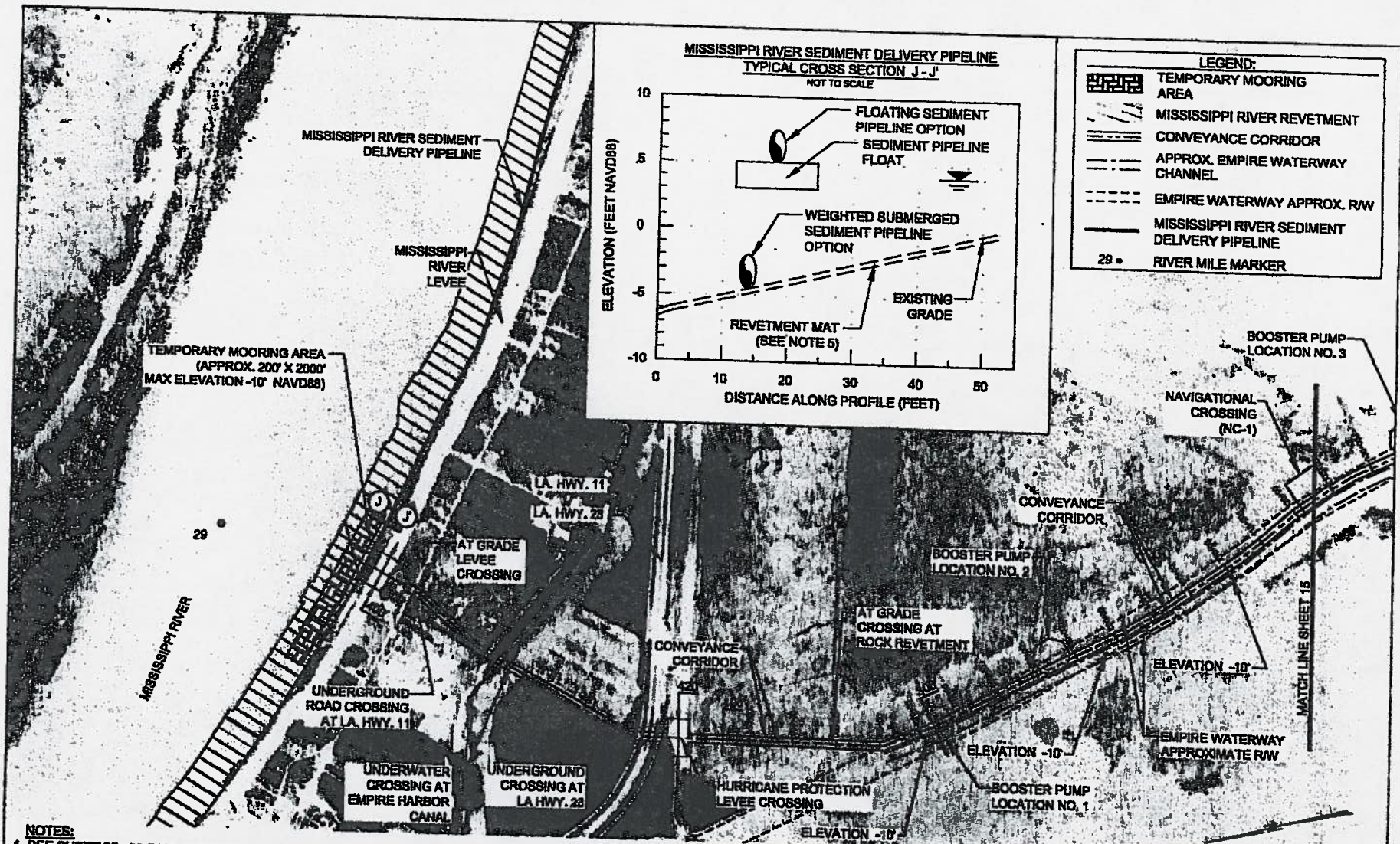
TOTAL ACRES DISPOSED OF  
 ACRES SOLD  
 ACRES TRANSFERRED  
 ACRES LEASES TERMINATED  
 ACRES LEASE INTERESTS TERMINATED  
 ACRES REASSIGNED  
 ACRES TO

**LEGEND**

- RESERVATION LINE
- RESERVATION LINE (Small Scale)
- TRACT BOUNDARY LINE
- TRACT NUMBER
- AVOIDANCE: EASEMENT
- CO. R/W LINE
- DISPOSAL

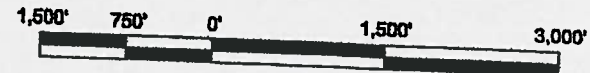
DEPARTMENT OF THE ARMY OFFICE OF THE NEW ORLEANS DISTRICT ENGINEER LOWER MISSISSIPPI VALLEY DIVISION	
DRAWN BY: M. S. S. CHECKED BY: M. S. S. DESIGNED BY: M. S. S. PREPARED BY: M. S. S. RECOMMENDED BY: M. S. S.	REAL ESTATE <b>EMPIRE TO GULF WATERWAY</b>
DATED: 10/15/54 BY: M. S. S.	DATE: November 15, 1954 BY: M. S. S.
OFFICE OF THE DISTRICT ENGINEER, WASHINGTON, D. C.	FIELD OFFICE
AUDITED C-1885	DATE: 6-22-55





**NOTES:**

- SEE SHEET 25 - 36 FOR LEVEE CROSSINGS, HIGHWAY CROSSINGS, HARBOR CANAL CROSSING, MARSH AND ROCK REVETMENT CROSSING, NAVIGATION CROSSINGS, AND BOOSTER SITE DETAILS.
- CONVEYANCE CORRIDOR CONSTRUCTION EQUIPMENT RIGHT OF WAY IS TO THE LIMITS OF THE CONVEYANCE CORRIDOR.
- SURVEYS CONDUCTED BY SJB GROUP, LLC & C.H. FENSTERMAKER & ASSOC., INC, JULY 2008.
- SEDIMENT PIPELINE SHALL BE LIGHTED AND MARKED IN ACCORDANCE WITH U.S. COAST GUARD REGULATIONS.
- ANY DAMAGE TO THE MISSISSIPPI RIVER REVETMENT CAUSED BY THE USE OF A SUBMERGED PIPELINE SHALL BE REPAIRED BY THE APPLICANT.



BY	DESCRIPTION	DATE
MTP	CMR/USACE STAKEHOLDER COMMENT RESPONSE	02/10 2011
MTP	LEVEE CROSSINGS, PAGE NUMBERS	05/08 2011

**COASTAL ENGINEERING CONSULTANTS, INC**

**SJB GROUP LLC**  
QUALITY BY DESIGN

OFFICE OF COASTAL PROTECTION & RESTORATION  
RESTORATION DIVISION  
450 LAUREL STREET  
BATON ROUGE, LOUISIANA 70801

RIVERINE SAND MINING / SCOFIELD ISLAND RESTORATION

CONVEYANCE CORRIDOR LAYOUT

DRAWN BY: DARTEZ I. ZWERNEMAN

DESIGNED BY: MICHAEL T. POFF, P.E.

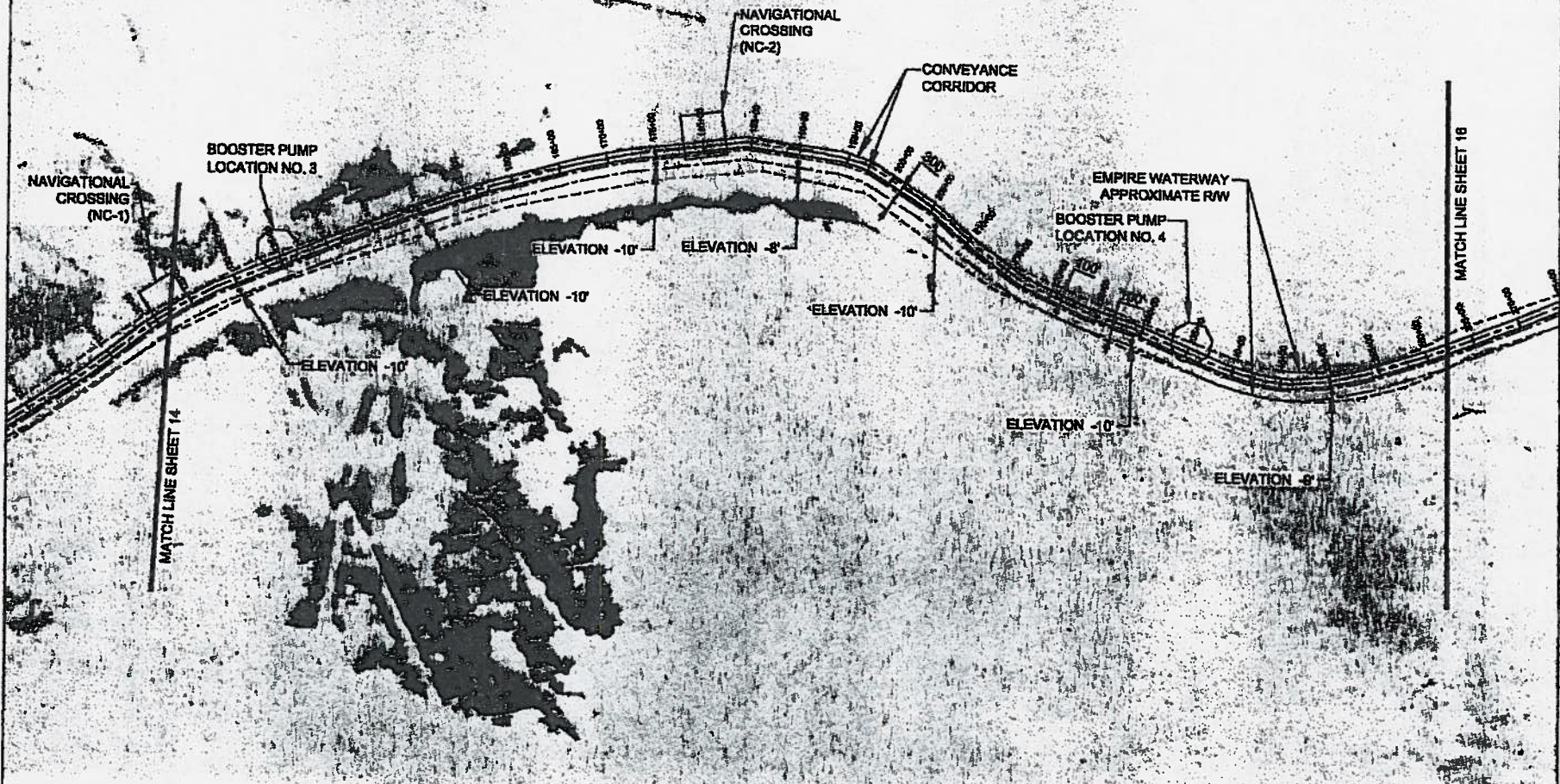
APPROVED BY: MAURY CHATELIER, P.E.

STATE PROJECT NUMBER: BA-40

DATE: NOVEMBER, 2010

CONSENT NO. DACW29-9-11-103  
EXHIBIT B  
PAGE 1 OF 4

LEGEND:	
	CONVEYANCE CORRIDOR
	APPROX. EMPIRE WATERWAY CHANNEL
	EMPIRE WATERWAY APPROX. R/W



- NOTES:**
1. SEE SHEET 35 & 36 FOR NAVIGATION CROSSING AND BOOSTER SITE DETAILS.
  2. SURVEY CONDUCTED BY C.H. FENSTERMAKER & ASSOC., INC, JULY 2008.
  3. SEDIMENT PIPELINE SHALL BE LIGHTED AND MARKED IN ACCORDANCE WITH U.S. COAST GUARD REGULATIONS.



BY	DESCRIPTION	DATE
MTP	CMD/USACE/STAKEHOLDER COMMENT RESPONSE	02/10 2011
MTP	LEVEE CROSSINGS, PAGE NUMBERS	05/06 2011

**COASTAL ENGINEERING CONSULTANTS, INC**

**SIB GROUP LLC**  
QUALITY BY DESIGN

OFFICE OF COASTAL PROTECTION & RESTORATION  
RESTORATION DIVISION  
450 LAUREL STREET  
BATON ROUGE, LOUISIANA 70801

RIVERINE SAND MINING / SCOFIELD ISLAND RESTORATION

CONVEYANCE CORRIDOR LAYOUT

DRAWN BY: DARTEZ IZWERNEMAN

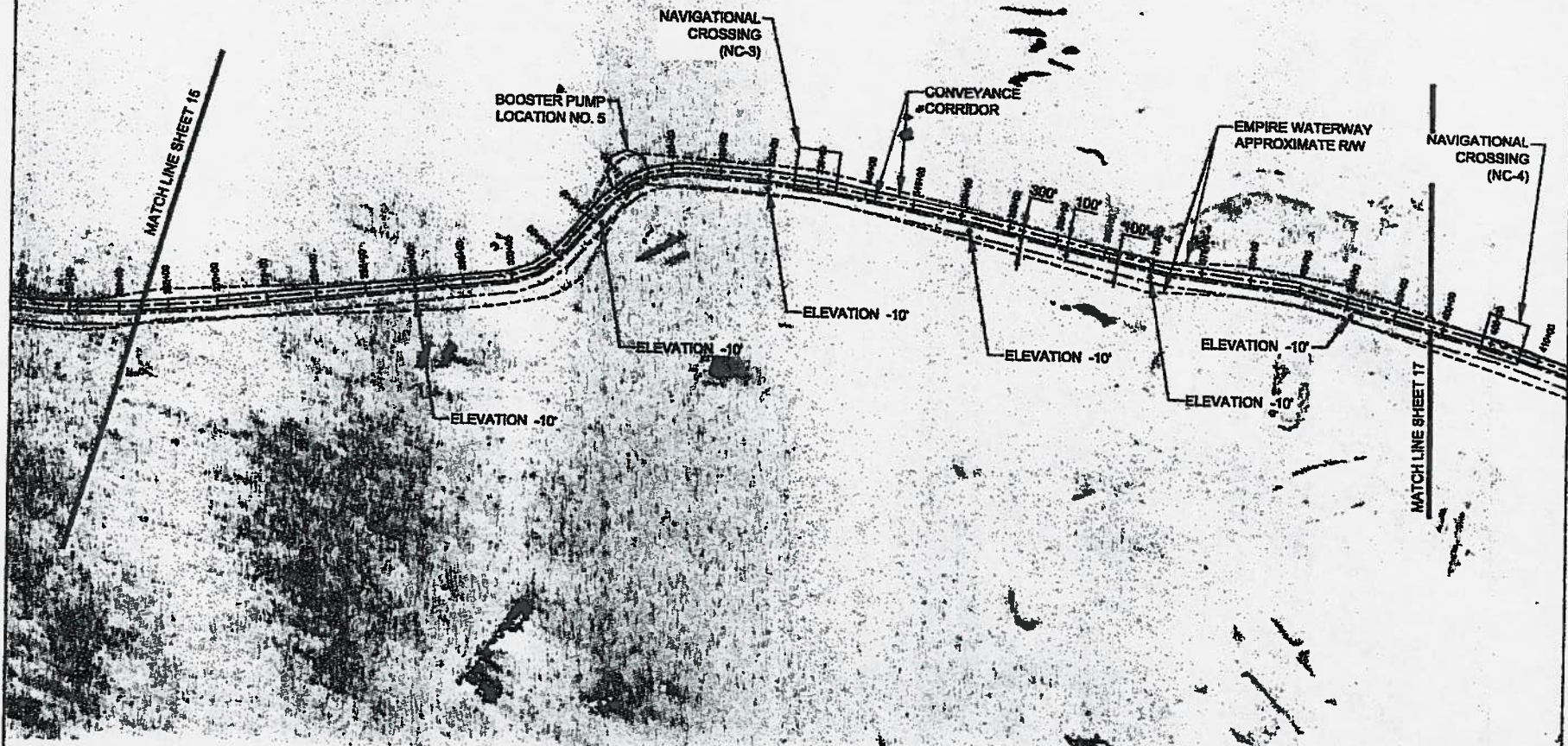
DESIGNED BY: MICHAEL T. POFF, P.E.

APPROVED BY: MAURY CHATELLIER, P.E.

STATE PROJECT NUMBER: BA-40

DATE: NOVEMBER, 2010

LEGEND:	
	CONVEYANCE CORRIDOR
	APPROX. EMPIRE WATERWAY CHANNEL
	EMPIRE WATERWAY APPROX. R/W



- NOTES:**
1. SEE SHEET 35 & 36 FOR NAVIGATION CROSSING AND BOOSTER SITE DETAILS.
  2. SURVEY CONDUCTED BY C.H. FENSTERMAKER & ASSOC., INC, JULY 2008.
  3. SEDIMENT PIPELINE SHALL BE LIGHTED AND MARKED IN ACCORDANCE WITH U.S. COAST GUARD REGULATIONS.



BY	DESCRIPTION	DATE
MTP	CMC/USACE STAKEHOLDER COMMENT RESPONSE	02/10 2011
MTP	LEVEE CROSSINGS, PAGE NUMBERS	05/06 2011

**COASTAL ENGINEERING CONSULTANTS, INC**  
**SIB GROUP, LLC**  
 QUALITY BY DESIGN

OFFICE OF COASTAL PROTECTION & RESTORATION  
 RESTORATION DIVISION  
 450 LAUREL STREET  
 BATON ROUGE, LOUISIANA 70801

RIVERINE SAND MINING / SCOFIELD ISLAND RESTORATION

CONVEYANCE CORRIDOR LAYOUT

STATE PROJECT NUMBER: BA-40

DATE: NOVEMBER, 2010




DRAWN BY: DARTEZ I ZWERNEMAN

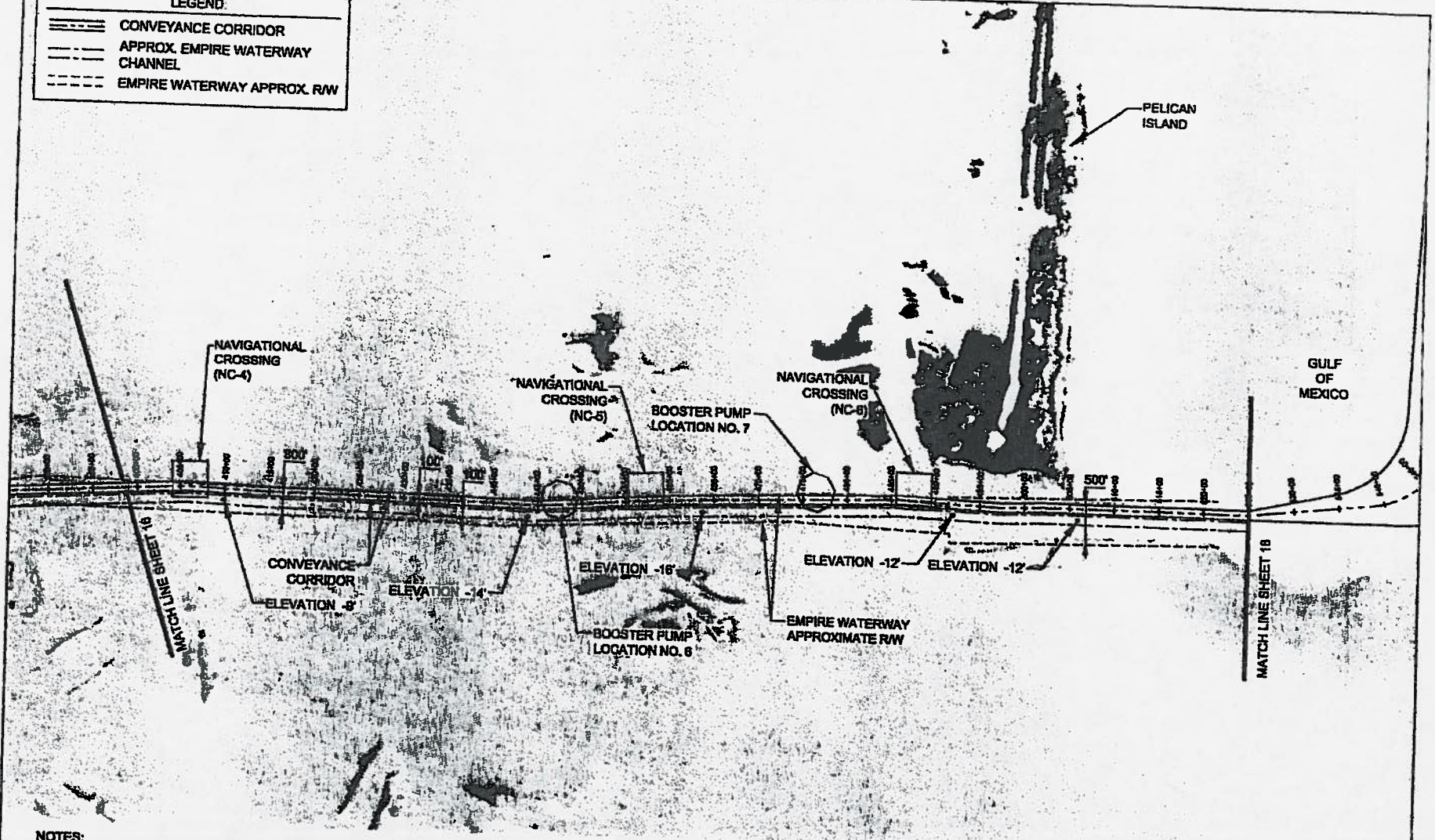
DESIGNED BY: MICHAEL T. POFF, P.E.

APPROVED BY: MAURY CHATELIER, P.E.

CONSENT NO. DACW29-9-11-103  
 EXHIBIT B  
 PAGE 3 OF 4

**LEGEND.**

-  CONVEYANCE CORRIDOR
-  APPROX. EMPIRE WATERWAY CHANNEL
-  EMPIRE WATERWAY APPROX. RW



**NOTES:**

1. SEE SHEET 35 & 36 FOR NAVIGATION CROSSING AND BOOSTER SITE DETAILS.
2. SURVEY CONDUCTED BY C.H. FENSTERMAKER & ASSOC., INC, JULY 2008.
3. SEDIMENT PIPELINE SHALL BE LIGHTED AND MARKED IN ACCORDANCE WITH U.S. COAST GUARD REGULATIONS.



BY	DESCRIPTION	DATE
MTP	CMO/USACE/STAKEHOLDER COMMENT RESPONSE	02/10 2011
MTP	LEVEE CROSSINGS, PAGE NUMBERS	05/06 2011

**COASTAL ENGINEERING CONSULTANTS, INC**  
  
**STB GROUP LLC**  
 QUALITY BY DESIGN

OFFICE OF COASTAL PROTECTION & RESTORATION  
 RESTORATION DIVISION  
 480 LAUREL STREET  
 BATON ROUGE, LOUISIANA 70801

RIVERINE SAND MINING / SCOFIELD ISLAND RESTORATION

CONVEYANCE CORRIDOR LAYOUT

STATE PROJECT NUMBER: BA-40

DATE: NOVEMBER, 2010

DRAWN BY: DARTEZ \ ZWERNEMAN

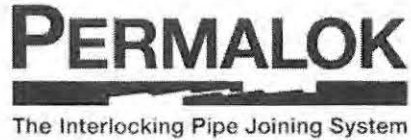
DESIGNED BY: MICHAEL T. POFF, P.E.

APPROVED BY: MAURY CHATELLIER, P.E.

CONSENT NO. DACW29-9-11-103

EXHIBIT B  
 PAGE 4 OF 4

**APPENDIX XX SPECIFICATIONS FOR EXISTING CASING PIPE  
MATERIALS**



## STANDARD SPECIFICATION FOR PERMALOK STEEL CASING PIPE

**SCOPE:** This specification is intended for steel pipe utilizing an integral press-fit connection method proprietary to Permalok Corporation of St. Louis, MO, for use as encasement pipe for carrier lines of water, sewer, gas or other products. Permalok steel pipe for use as the actual product carrier is covered by a separate specification and not included here.

### PART 1 MATERIAL

- 1.1 All steel used in the manufacture of Permalok steel pipe shall conform to the requirements of ASTM A-36, ASTM A515, grade 60 or ASTM A572, grade 42.
- 1.2 Steel used in the manufacture of Permalok connections shall conform to ASTM A-36 as a minimum and be machinable.

### PART 2 DIMENSIONAL TOLERANCES

#### 2.1 ROUNDNESS

The pipe diameter as measured along any single plane shall not vary more than 1% from the specified diameter.

#### 2.2 CIRCUMFERENCE

The outside circumference shall not vary more than  $\pm 1\%$  from the nominal circumference based on the specified diameter, or  $\pm \frac{3}{4}$ " maximum.

#### 2.3 WALL THICKNESS

The actual wall thickness of the steel pipe sections shall not vary more than 5% under the nominal wall thickness specified.

#### 2.4 STRAIGHTNESS

The maximum straightness deviation in any 10' length shall be 1/8". The maximum straightness deviation in fabricated sections up to 40' shall be 3/8".

### **PART 3 MANUFACTURING**

- 3.1 Permalok steel pipe 24" and under shall be either ERW or seamless at the option of the manufacturer.
- 3.2 Permalok steel pipe 30" in diameter and over shall be manufactured by the rolled and welded cylinder method utilizing the DSAW process in sections of not less than 8' long, except as needed to achieve the final finished length of pipe.
- 3.3 Permalok connectors shall be full penetration butt-welded square to the ends of pipe sections, or profiled directly on the finished sections, at the option of the manufacturer.
- 3.4 Spiral welded pipe will be permitted only at the request and/or approval of the purchaser.

### **PART 4 QUALITY CONTROL**

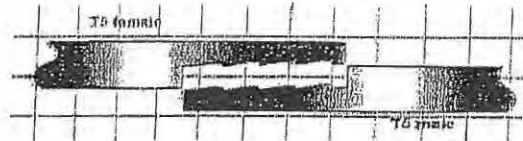
- 4.1 All welding shall be performed by qualified welding operators in accordance with the requirements of ANSI/AWS D1.1.
- 4.2 All welding procedures shall be either pre-qualified in accordance with ANSI/AWS D 1.1 for full penetration welds, or qualified by testing, as required.
- 4.3 One reduced section tension test specimen shall be evaluated for each lot of 1000' of each size and wall thickness, and shall show a tensile strength of not less than 95% of the minimum strength specified for the grade of steel used, unless waived by the purchaser.
- 4.4 Hydrostatic testing is not required.
- 4.5 All Permalok connections shall be examined at time of shipment and shall be free of injurious defects or that section shall be rejected and repaired prior to shipping.
- 4.6 All Permalok pipe shall be clearly marked with the manufacturer's name, manufacturer's job number, customer name, OD, wall thickness, and weight per foot.

**PERMALOK** The Interlocking Pipe Joining System

Technical > T5 Pipe Joining Profile

Department of Civil  
Engineering  
University of Illinois  
at Urbana-Champaign

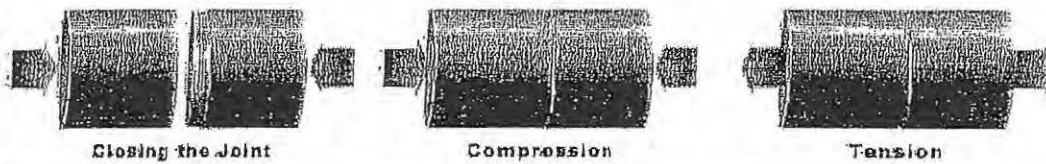
David A. Pecknold  
Rami M. Hajj  
September 1995



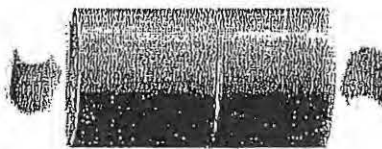
Structural Analysis of the Permalok Steel Pipe Joining System for 10-inch, 36-inch and 60-inch diameter steel pipe

Pipe Chart  
Report of Analysis #5-30"

Loading Conditions



Loading Cond.	10-Inch ID 0.375 - WT			36 - Inch OD 0.5 - inch WT			60 - Inch OD 0.75 - inch WT		
	Axial Force (kips)	Axial Stress (ksi)	$\sigma_p/\sigma_y$	Axial Force (kips)	Axial Stress (ksi)	$\sigma_p/\sigma_y$	Axial Force (kips)	Axial Stress (ksi)	$\sigma_p/\sigma_y$
Closure	32	2.62	0.073	21	0.38	0.011	68	0.49	0.014
Comp.	440	36	1.0	1967	35.3	0.98	5025	36	1.0
Tension	257	21	0.58	956	17	0.48	1675	12	0.33



Bending

Loading Cond.	Bend. Mom. <sup>2</sup> (psi)	Axial Force (ksi)	$M/M_p^3$	Bend. Mom. <sup>2</sup> (psi)	Axial Force (ksi)	$M/M_p^3$	Bend. Mom. <sup>2</sup> (psi)	Axial Force (ksi)	$M/M_p^3$
InL. Press.	2650	35.3	0.98	1012	35.4	0.98	910	35.5	0.99

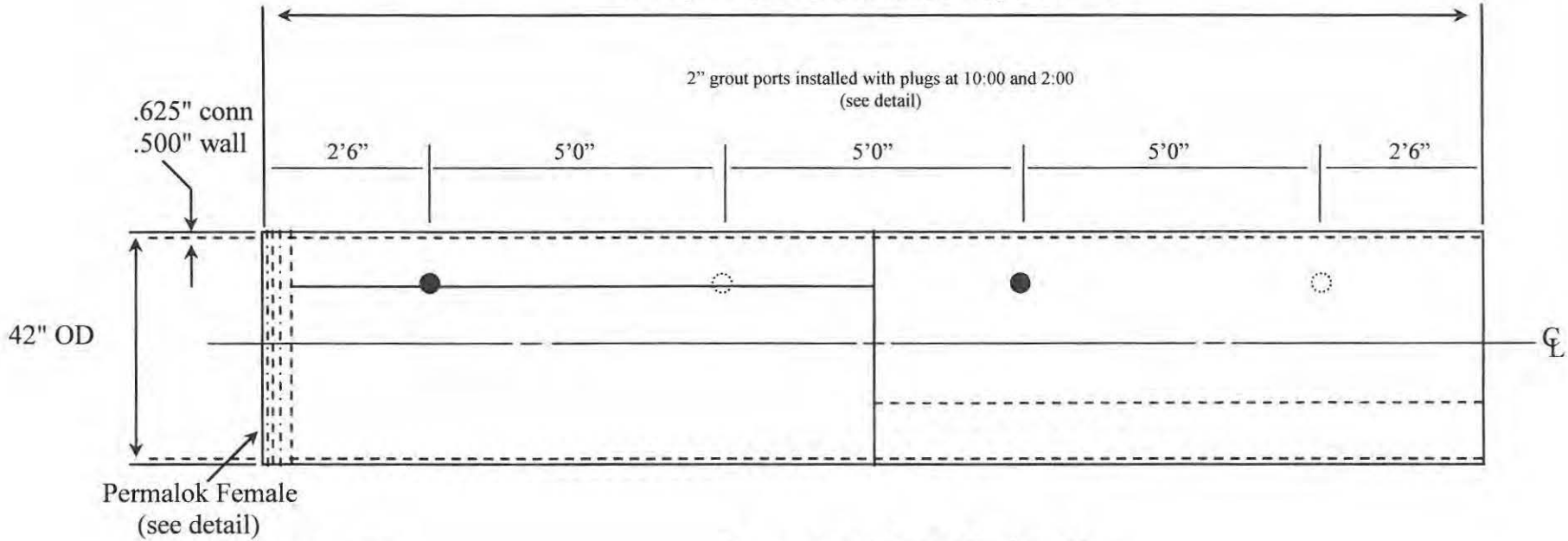
<sup>1</sup> Hoop stress  $\sigma_x = pD_i/2t$ , where  $p$  = internal pressure,  $D_i$  = inside diameter, and  $t$  = wall thickness  
<sup>2</sup> Limiting (maximum) bending moment

<sup>3</sup> The plastic moment  $M_p$  is calculated from  $M_p = \sqrt{D_o^3 - D_i^3} / \sigma_y$ , where  $D_i$  is the pipe ID,  $D_o$  is the pipe OD, and  $\sigma_y$  is the yield stress (36 ksi).

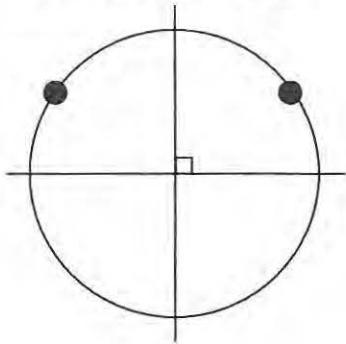


RE: Royal Lakes Force Main

1 Lead piece(s) required at 20'0" Sq. x Female



**Port/Orientation Detail**



**Permalok® Steel Casing Pipe**

Specifications: Permalok Standard (no hydro)

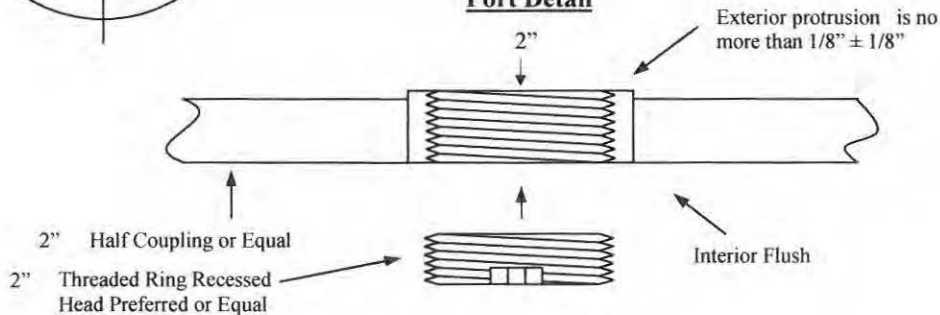
Interior: bare

Exterior: black

Weight: 221 #/ft

Recommended Jacking Load Limit SF-2: 577.3 Tons

**Port Detail**



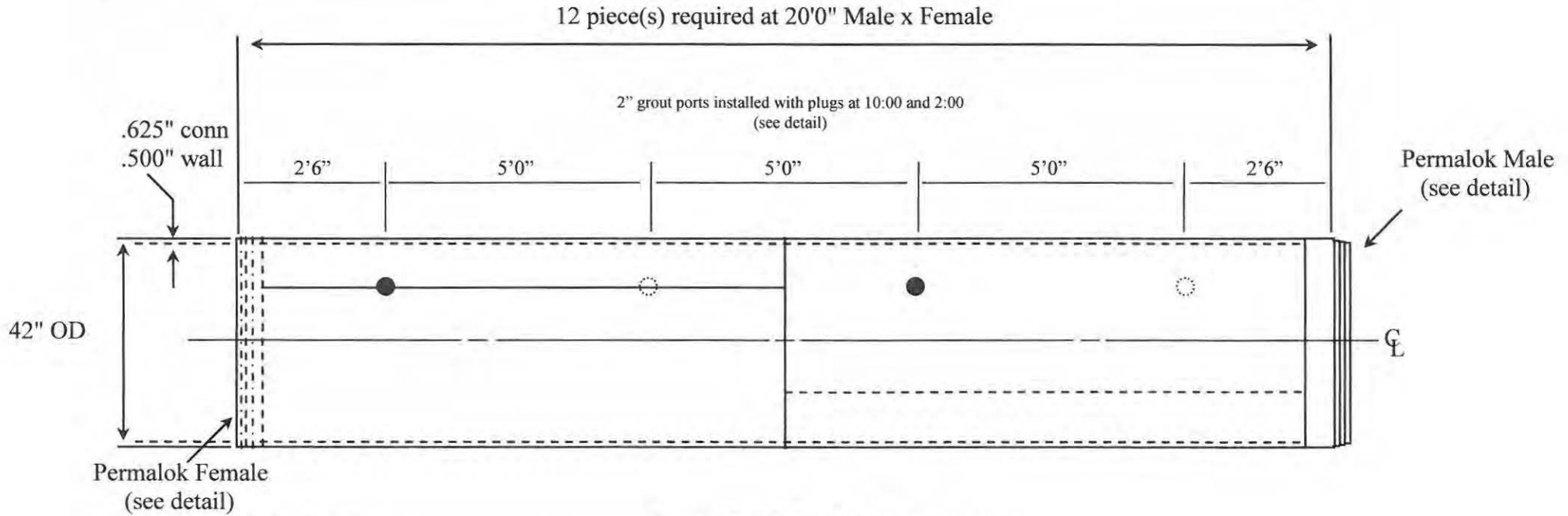
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**PERMALOK**  
The Interlocking Pipe Joining System

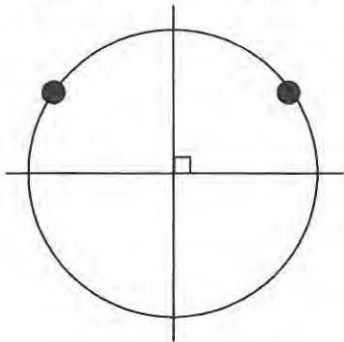
**PERMALOK CORPORATION**  
472 Paul Avenue St. Louis, MO 63135  
Mailing Address: P.O. Box 10970 St. Louis, MO 63135

BY	EG	SCALE	none	MATERIAL	35 ksi min yield
CKD		DATE	7/22/11	DRAWING NO	
TRACED	APFD				S00305-01
	Stl Fab				

RE: Royal Lakes Force Main



**Port/Orientation Detail**



**Permalok®Steel Casing Pipe**

Specifications: Permalok Standard (no hydro)

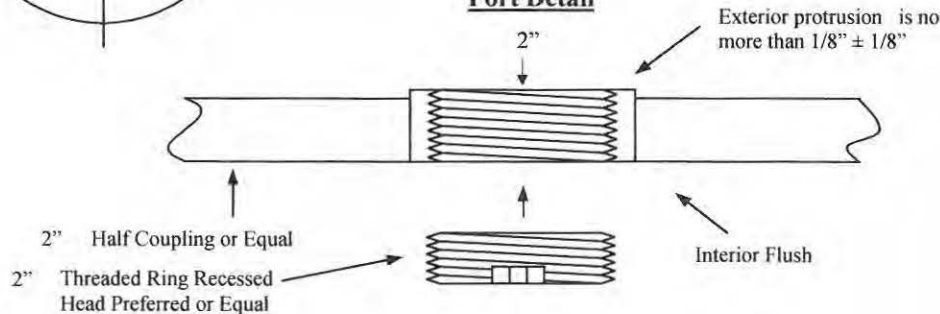
Interior: bare

Exterior: black

Weight: 221 #/ft

Recommended Jacking Load Limit SF-2: 577.3 Tons

**Port Detail**



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**PERMALOK**

The Interlocking Pipe Joining System

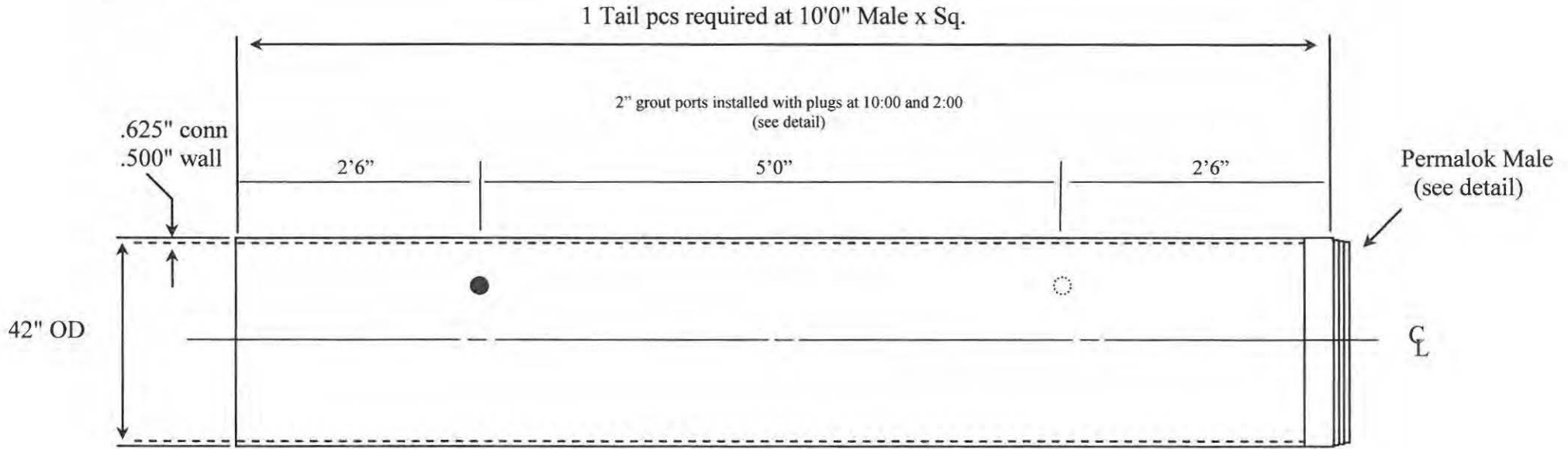
**PERMALOK CORPORATION**

472 Paul Avenue St. Louis, MO 63135

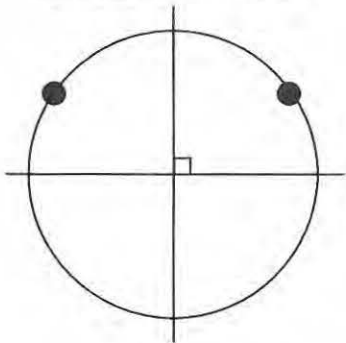
Mailing Address: P.O. Box 10970 St. Louis, MO 63135

BY	EG	SCALE	none	MATERIAL	35 ksi min yield
CKD		DATE	7/22/11	DRAWING NO	
TRACED		APP'D			
Stl Fab					S00305-02

RE: Royal Lakes Force Main



**Port/Orientation Detail**



**Permalok® Steel Casing Pipe**

Specifications: Permalok Standard (no hydro)

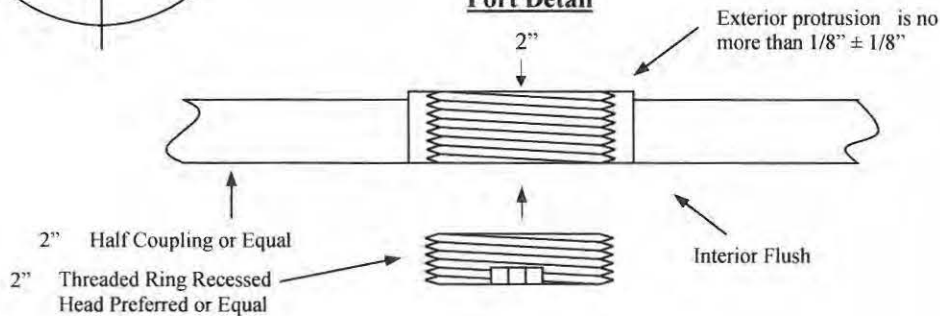
Interior: bare

Exterior: black

Weight: 221 #/ft

Recommended Jacking Load Limit SF-2: 577.3 Tons

**Port Detail**



**PERMALOK**

The Interlocking Pipe Joining System

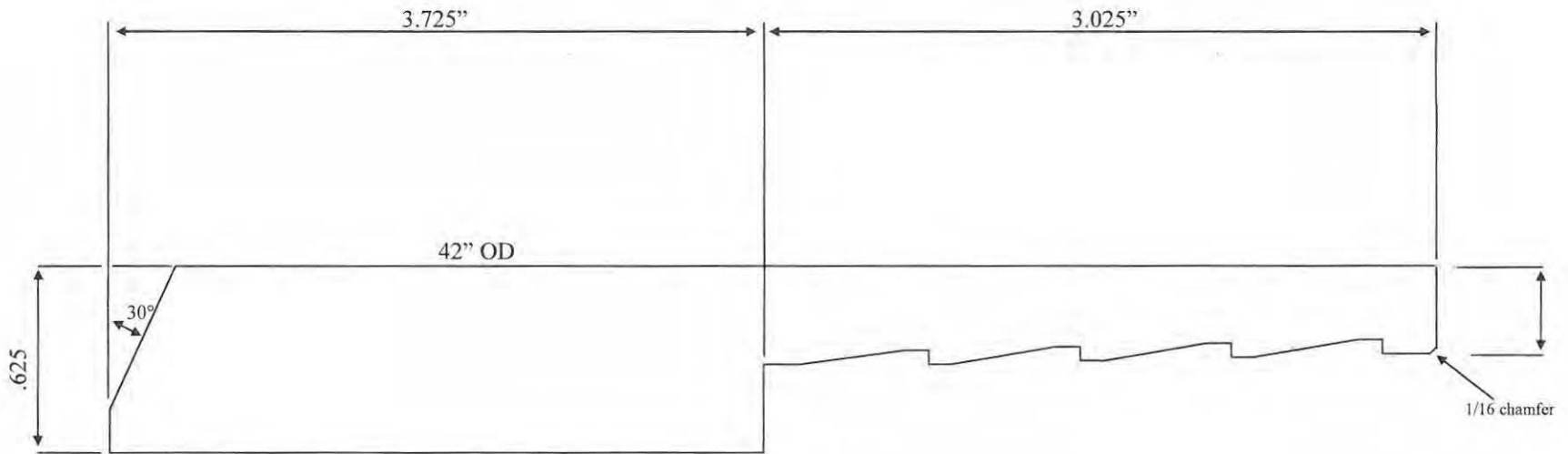
**PERMALOK CORPORATION**

472 Paul Avenue St. Louis, MO 63135

Mailing Address: P.O. Box 10970 St. Louis, MO 63135

REVISIONS		
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BY	EG	SCALE	none	MATERIAL	35 ksi min yield
CKD		DATE	7/22/11	DRAWING NO	
TRACED		APPROVED			
Stl Fab					S00305-03




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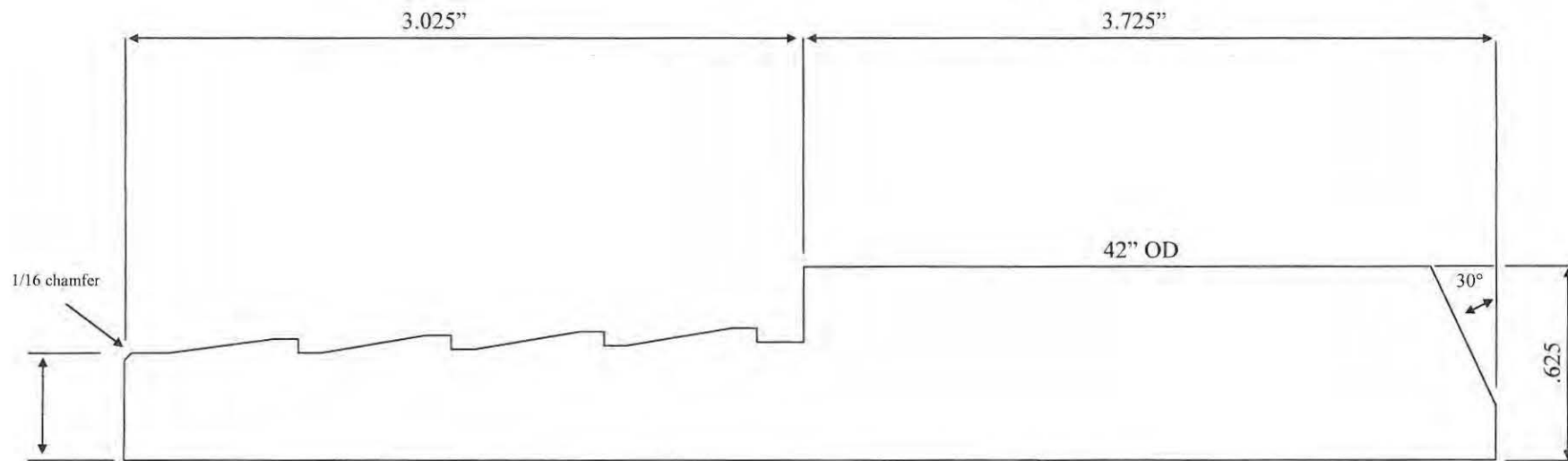
**PERMALOK**

The Interlocking Pipe Joining System

**PERMALOK CORPORATION**

472 Paul Avenue St. Louis, MO 63135  
 Mailing Address: P.O. Box 10970 St. Louis, MO

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NO	DATE	BY			
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3			DM	NTS	A-36
4			DM	DATE 3/4/02	DRAWING NO
5			TRACED	APP'D 	42625F



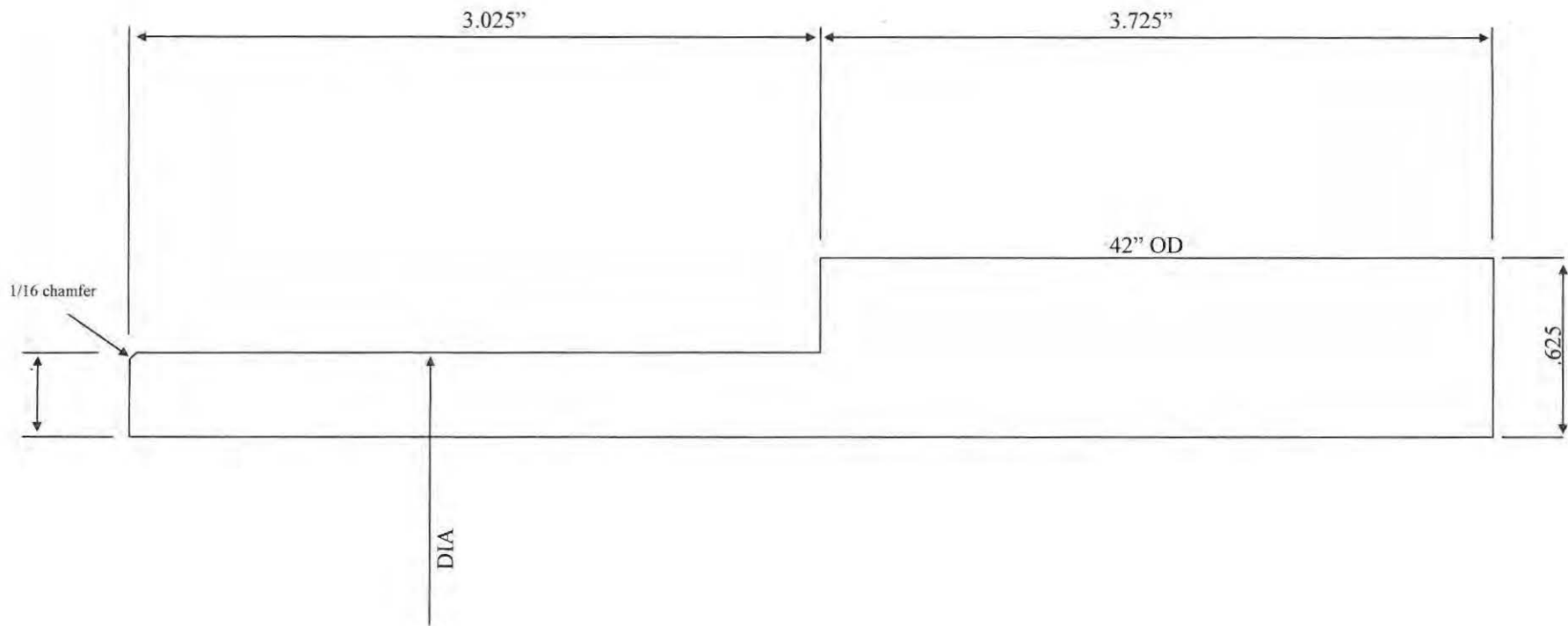
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 The Interlocking Pipe Joining System

**PERMALOK CORPORATION**  
 472 Paul Avenue St. Louis, MO 63135  
 Mailing Address: P.O. Box 10970 St. Louis, MO

BY	SCALE	MATERIAL
DM	NTS	A-36
CKD	DATE	DRAWING NO
DM	3/4/02	42625M
TRACED	APP'D	
	<i>[Signature]</i>	



J042.00x0625T05P

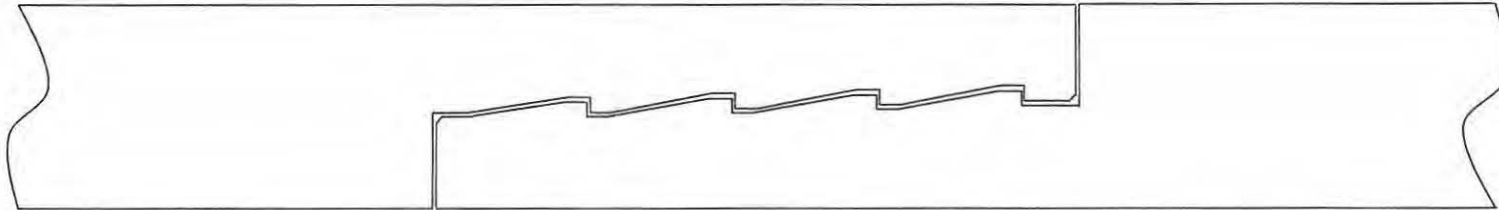
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**PERMALOK**  
 The Interlocking Pipe Joining System

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 472 Paul Avenue St. Louis, MO 63135  
 Mailing Address: P.O. Box 10970 St. Louis, MO

BY	SCALE	MATERIAL
DM	NTS	A-36
CKD	DATE	DRAWING NO
DM	3/4/02	42625P
TRACED	APP'D	

Permalok Joint Detail




REVISIONS		
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**PERMALOK**

The Interlocking Pipe Joining System

**PERMALOK CORPORATION**  
 472 Paul Avenue St. Louis, MO 63135  
 Mailing Address: P.O. Box 10970 St. Louis, MO 63135

BY	JC	SCALE	NTS	MATERIAL	A-36
CKD	JC	DAT	2/23/10	DRAWING NO	PCjointdetail
TRACED		APP'D			

**APPENDIX XXI USACE TURF ESTABLISHMENT AND MAINTENANCE  
SPECIFICATIONS**



TURF ESTABLISHMENT AND MAINTENANCE

SECTION 02922 – TURF ESTABLISHMENT AND MAINTENANCE

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## **PART 1 GENERAL**

### **1.1 SCOPE**

The work provided herein consists of furnishing all plant, labor, equipment, and materials, as well as performing all operations necessary for establishing turf including fertilization, seeding, mulching and soil amendments on areas as specified herein and as indicated on the drawings. Turf establishment of the embankment shall be performed upon completion of embankment construction (in minimum lengths of 1000-feet).

### **1.2 RESERVED**

### **1.3 MEASUREMENT**

Measurement for fertilizing, soil amendments, seeding, and mulching will be made by the acre. Acreage will be determined from surface areas computed from the theoretical gross cross section of embankment fertilized, amended, seeded and mulched. Measurement will be to the nearest foot and units computed to the nearest one-hundredth of an acre. No separate measurement will be made for placement of material required for any necessary repairs as described in paragraph 2.1.3. The acreage will be used with the rate of application recommended by Soil Testing Laboratory to determine the weight of materials required.

### **1.4 PAYMENT**

Payment for fertilizing, soil amendments, seeding, and mulch measured as described in paragraph 1.3 and other incidental work, except disposal of debris, will be made at the contract (lump sum) price per acre for "Fertilizing, Soil Amendments, Seeding, and Mulching". Prices and payments shall constitute full compensation for furnishing all plant, labor, materials and equipment and performing the work, including any necessary repairs, in accordance with these specifications.

### **1.5 SUBMITTALS**

The Contractor shall submit the following items in accordance with the Section 01330, "SUBMITTAL PROCEDURES".

#### **1.5.1 Herbicide Application Plan**

Approved herbicides may be used on areas requiring new turf establishment. At least 30 days prior to application of any herbicide, the Contractor shall furnish an herbicide application plan for review by the Contracting Officer. The Contractor shall ensure that the plan for herbicide applications complies with all applicable local, state, and federal requirements. The plan shall include the following items, as a minimum:

- proposed herbicides and application rates
- copies of herbicide manufacturer's labels and material safety data sheets
- any state-imposed conditions, copies of commercial and/or restricted use herbicide applicators' certificates from the states in which the work is to be performed
- an activity hazard analysis
- environmental protection procedures

## TURF ESTABLISHMENT AND MAINTENANCE

- spill containment procedures
- residue and container disposal procedures
- noncompliance reporting and response procedures

### **1.5.2 Turf Establishment Plan**

At least 30 days prior to initiating grass establishment, the contractor shall furnish a Turf Establishment Plan to the Contracting Officer for review and approval. The plan shall include recommendations for fertilizer and/or soil amendment application based upon soil testing results by a certified agronomist. Recommendations based on soil testing results can be from the testing laboratory, state agricultural extension services, or private consultant.

The contractor shall provide the name of the certified agronomy testing laboratory in addition to copies of the levee/embankment material soil analyses as part of the turf establishment plan. Soil analyses will include soil pH, phosphorus, potassium, calcium, magnesium, sodium, sulfur, copper, zinc, chloride, total dissolved salts, conductivity, and sodium absorption ratio.

The contractor shall also provide the name of the certified water analysis laboratory as well as copies of the findings for all proposed water sources, other than municipal water sources, earmarked for grass establishment and irrigation. Water analyses will include pH, alkalinity, calcium, chloride, iron, magnesium, manganese, potassium, sodium, sulfur, total dissolved salts, conductivity, and sodium absorption ratio.

In addition to the soil amendment and fertilization plan, the turf establishment plan will describe procedures and specific equipment used for ground surface preparation, seeding or alternative establishment methods, and mulching. Unless the approved turf establishment plan contains a variation, the minimum requirements for ground surface preparation, seeding or alternative establishment methods, and mulching contained in this specification will be controlling.

### **1.5.3 Seed**

The Contracting Officer's Representative shall be furnished duplicate signed copies of statements certifying that each container of seed delivered is labeled in accordance with the Federal Seed Act and any Louisiana Department of Agriculture regulations and is at least equal to the requirements specified in paragraph 2.1.3. This certification shall be obtained from the supplier and shall be furnished on or with all copies of seed invoices.

### **1.5.4 Alternative Turf Establishment Methods**

Certification of sod and sprig material from the original supplier/source will be furnished. Material that is rejected by the Contracting Officer will be removed from the job site by the contractor at no cost to the Government..

## **1.6 QUALITY CONTROL**

### **1.6.1 General**

The Contractor shall establish and maintain quality control for all materials and operations performed during the levee/embankment turf establishment. The Contracting Officer will provide quality control records that shall include, but not be limited to, the following:

## TURF ESTABLISHMENT AND MAINTENANCE

- (1) Soil and Water Analyses. Soil and water analysis reports from a certified agronomic laboratory. Water used for irrigation subsequent to establishment shall be tested a minimum of once every 30 days. Soil samples will be taken in according to paragraph 3.1.1 and the test results used to determine weights of fertilizer and soil amendments required.
- (2) Preparation of Ground Surface. Location and quality of finished dressing, including necessary clearing, filling, or dressing out of washes, smoothness and uniformity of surfaces, and time of year.
- (3) Herbicides. Manufacturer's label, MSDS, date of application, rate of application, location and area of application, environmental conditions during herbicide application (e.g. temperature), valid applicator licensing, pesticide safety plan.
- (4) Fertilizing. Quality of fertilizer materials used. Areas fertilized, quantity applied, and method of application. Certificate of analysis and certificate of delivery shall be furnished to verify quality and quantity as specified in paragraph 1.5.2 . The rate of application will be checked daily to insure conformance to soil testing laboratory recommendations.
- (5) Seeding. Seed species and cultivar, seed label, area covered, quantity of seed applied, and method of seed distribution. All bags of seed furnished will have an analysis tag having all information required by the Louisiana Seed Law. Seed furnished shall be from the previous season's crop and the date of analysis shown on each tag shall be within 5 months of time of delivery. Rate of application will be checked daily to insure that the rate confirms to paragraph 3.4.1.
- (6) Mulching. Quality and type of mulch material applied, area covered by the mulch, quantity applied, and method of mulch application. Certificate of delivery showing weight of material delivered for either vegetative or fiber mulch will be furnished to verify rate of application according to paragraph 3.5.1 or 3.5.2.
- (7) Maintenance and Repair. Location and type of maintenance problems and remedial treatment performed according to paragraph 2.1.3 and 3.4.5.
- (8) Water/Irrigation. Water analysis report, area where water was obtained, area where water was applied, purpose of water application (irrigation or used during establishment), quantity applied, and method of application.
- (9) Alternative Turf Establishment Methods. Type of alternative turf establishment method used, certification of vegetative material quality, source of material, quantity of material applied, placing, spacing, covering, and compaction

### **1.6.2 Reporting**

The Contractor shall furnish the original and two copies of the inspection and test records, as

well as “corrective action taken” records, to the Government daily. Format of the report shall be as prescribed in Section 01451, "CONTRACTOR QUALITY CONTROL".

### **1.7 AREAS TO BE TREATED**

Fertilizing, soil amendment, seeding, and mulching shall be performed on all disturbed areas within the construction limits and on all newly constructed embankments as indicated on the drawings except as specified in\_\_ .

### **1.8 COMMENCEMENT, PROSECUTION, AND COMPLETION**

#### **1.8.1 General**

Preparation of the ground surface, fertilizing, adding soil amendments, seeding and mulching operations shall be accomplished during the applicable growing season as specified herein.

#### **1.8.2 Sequence of Work**

The sequence of operations for work prescribed in this section, except mowing, shall be as follows:

- (1) Soil and Water Analyses
- (2) Preparation of Ground Surface
- (3) Fertilization and Soil Amendments
- (4) Seeding or Alternative Establishment Method
- (5) Mulching
- (6) Irrigation
- (7) Mowing

Fertilizing and seeding operations shall commence upon completion of embankment construction at a length of 1000 feet of embankment. At no time shall such fertilizing, soil amending, seeding, and mulching operations be more than \_14 days behind completed portions of embankment unless approved by the Contracting Officer.

## **PART 2 PRODUCTS**

### **2.1 MATERIALS**

#### **2.1.1 Herbicides**

Herbicide shall be delivered to the mixing site in original, un-opened containers bearing legible labels indicating the EPA registration numbers and product label. All operations associated with herbicide applications shall be in strict compliance with manufacturer's label, approved herbicide application plan and all local, state, and federal regulations. The Government shall be informed as to the exact date, location and time of herbicide application prior to herbicide use.

#### **2.1.2 Fertilizers and Soil Amendments**

Fertilizers and soil amendments in accordance with the approved turf establishment plan (Sec 1.5.2.) shall be of commercial grade, uniform in composition, free flowing and suitable for contractor's application method. Materials shall be delivered in bulk or labeled containers and shall conform to current Louisiana Department of Agriculture requirements for commercial fertilizers and soil amendments. Federal and state government conforming labels that indicate producer's name, type, analysis, weight, and warranty of producer shall accompany each delivery of fertilizer. The Contractor shall provide duplicate signed copies of invoices from suppliers of fertilizer and/or soil amendments showing quantity, grade, and fertilizer analysis indicating percentages of nitrogen (soluble and insoluble), phosphorus, and potassium.

In accordance with the approved turf establishment plan, pulverized or palletized agricultural lime source will be applied prior to planting and incorporated into the top 4 inches of soil. Seventy-five percent will pass a No. 100 sieve and 100 percent will pass a No. 8 sieve. Dolomitic lime may be substituted for lime if magnesium levels are insufficient based on the soil test results.

#### **2.1.3 Soil for Repairs**

In areas not suitable for turf establishment due to undulations or rills in the soil surface, these areas shall be repaired using soil that is in accordance with Section 02318 "Excavation" and Section 02332, "Embankment".

#### **2.1.4 Seed**

For turf establishment, the Contractor shall furnish and apply *pure live seed in accordance the example of how to calculate PLS in paragraph 3.4.1 and* ~~certified (blue-tag) seed~~ in accordance with regulations from the U.S. Department of Agriculture (under the Federal Seed Act) and the Louisiana Department of Agriculture. Seed must be in sealed or unopened containers prior to initiation of application. Seed that is wet, moldy or otherwise non-viable due to damage in transit or storage will not be accepted. Seed that is older than one year past label germination tests will not be accepted.

#### **2.1.5 Alternate Turf Establishment Methods (Sprigs or Sod)**

Sprigs – Bermuda grass/Seashore paspalum sprigs must be healthy viable rhizomes and stolons

that shall be obtained from a certified grower under the regulations of the Louisiana Department of Agriculture. Sprigs should be from a local source (less than 200 miles from the site of work) or other source approved by the Government. Sprigs shall be weed- and disease-free.

Sod – Bermuda grass/Seashore paspalum sod must be healthy and stable and shall be obtained from a certified grower under the regulations of the Louisiana Department of Agriculture. Sod should be from a local source (less than 200 miles) or other source approved by the Government. Sod shall be weed- and disease-free.

### **2.1.6 Mulch (For use in rural areas only)**

Mulch options include threshed straw from a cereal grain such as oats, wheat, barley, rye, or rice; bagasse; grass hay with vegetative overspray ; or wood fiber that shall be furnished and applied by the Contractor. Materials that contain noxious grass or weed seeds that might be detrimental to the seed establishment or turf growth or to adjacent areas will not be acceptable.

#### **2.1.6.1 Wood Cellulose Fiber or Recycled Wood Pulp Mulch (Vegetative Overspray)**

If the recycled wood cellulose fiber option is used for capping the mulch, the overspray shall consist of recycled or by-product material made from printer's scrap paper that contains wood cellulose and kaolin clay. The mulch shall be free of substances that reduce seed germination or limits plant growth. In addition, the mulch must have an indicator dye to gauge proper application of the material on the levee/embankment surface. The mulch material shall be supplied in packages having a net weight not in excess of 100 pounds. The wood cellulose mulch fiber shall contain not in excess of 10 percent moisture, air dry weight basis. The wood-cellulose mulch fiber shall be manufactured so that, after addition and agitation with water and any other additives, the fibers in the material are uniformly suspended to form homogeneous slurry. When hydraulically sprayed on the ground, the material will form a blotter-like ground cover, which, after application, allows moisture absorption and rainfall or mechanical watering to percolate to the underlying soil.. The Contractor shall be prepared to submit, on request, certification from the supplier that laboratory and field-testing of the product has been accomplished, and that the product meets the foregoing requirements.

### **2.1.7 Water Source**

Water, applied during establishment and irrigation of grass on the embankment from a water source other than municipal water supply shall be analyzed by a certified water analysis laboratory. The water source shall be tested every 30 days or until operations cease use of water source for irrigation purposes.

In addition to the agronomic tests to determine irrigation water suitability, the contractor should not apply water as irrigation that may contain any substance toxic to plants or that limits plant growth (e.g. oil, acid, alkali, salt, etc.)



## **PART 3 EXECUTION**

### **3.1 SOIL AND WATER ANALYSIS**

#### **3.1.1 Soil Analysis**

Soil samples will be collected every 500 linear feet of completed embankment. Soil shall be a composite sample from no less than six random areas to a depth of four inches on the levee/embankment surface. Collected soil shall be mixed within a clean, non-metallic container. All organic matter from existing vegetation shall be removed from the soil sample prior to submission to the testing laboratory.

#### **3.1.2 Water Source Analysis (only if using non-potable water source)**

Water samples from borrow canals or similar sites should be collected in duplicate in the volume of one liter (per sample) in a clean plastic container for analysis by a certified agronomic water analysis laboratory. Debris such as sediment and algae must be limited within the sample.

### **3.2 PREPARATION OF GROUND SURFACE**

#### **3.2.1 General**

Equipment, in good condition, shall be provided for the proper ground preparation and for handling and placing all materials. The Contracting Officer shall inspect and approve equipment before work is initiated as part of the turf establishment plan.

#### **3.2.2 Vegetative and Debris Removal**

Prior to soil preparation, existing vegetation shall be removed. Vegetation removal may be accomplished through mowing (scalping) or herbicide application. Any debris or material (e.g. clippings) that may hinder seed germination or limit plant growth should be removed as specified in Section 31 11 00.0012, paragraph Disposal of Debris. If an herbicide is to be applied, an herbicide plan shall be submitted and approved by the Contracting Officer prior to herbicide application (paragraph 1.5.1).

#### **3.2.3 Grading**

Previously established levee/embankment grades and slopes shall be maintained in a true and even condition on the areas to be established with turf. Necessary repairs to previously graded areas with undulations or irregularities in the surface shall be accomplished with material as described in paragraph 2.1.3 (Soil for Repairs). The material shall be placed and compacted in accordance with Section 31 24 00.00 12, paragraph Embankment (and Berm) Construction. Where grades have not been established, the areas shall be graded as shown, or as directed by the Contracting Officer, and all surfaces shall be left in a true and even condition. The Contracting Officer's Representative shall conduct a Pre-Turfing inspection prior to turfing operation commencing.

### **3.2.4 Soil Preparation**

Soil shall be tilled to a depth of 4 inches by plowing, disking, harrowing, or other approved method in the turf establishment plan in order to provide an acceptable seed bed. The soil preparation shall be performed only during periods acceptable for turf establishment, in the opinion of the Contracting Officer's Representative. Environmental conditions that may constitute unacceptable periods for soil preparation include, but are not limited to, drought, high winds, excessive moisture, etc. The work shall cease until conditions are more favorable for turf establishment. Any additional soil repair must be completed prior to turf establishment.

## **3.3 APPLICATION OF FERTILIZER AND SOIL AMENDMENTS**

Adjustment of soil nutrient levels will be in accordance with the approved turf establishment plan as outlined in section 1.5.2 (Turf Establishment Plan). Unless otherwise specified in the approved plan, initial fertilizers and soil amendments applications will be incorporated into the top four inches of soil prior to seeding, sprigging or sodding.

### **3.3.2 Nitrogen**

In accordance with the approved turf establishment plan, nitrogen shall be incorporated to a depth of 4 inches prior to seeding. Nitrogen shall be applied at 45 lbs per acre in a slow-release form.

### **3.3.2 Soil pH**

Soil pH shall be between 5.5 and 8.0. If the soil pH is outside of this range, one of the following amendments shall be added to adjust the soil pH.

#### **3.3.2.1 Increasing Soil pH**

A pulverized or palletized agricultural lime source shall be applied prior to planting and incorporated into the top 4 inches of soil. The rate of lime application shall be as specified in the approved turf establishment plan. Dolomitic lime may be substituted for lime if magnesium levels are insufficient per the soil test results.

#### **3.3.2.2 Reduce Soil pH**

Agricultural grade elemental sulfur shall be applied, as specified in the approved turf establishment plan, prior to planting. Elemental sulfur shall be incorporated into the top four inches of soil.

## **3.4 SEEDING**

### **3.4.1 General**

The applicable seed shall be sown at the rate and time as indicated in the table below, unless otherwise specified in the approved turf establishment plan. A satisfactory method of sowing shall be employed; using approved mechanical power-drawn seeders, mechanical hand- seeders, broadcast-seeders, or other approved methods. When delays in operations extend the work beyond the most favorable planting season for the species designated, or when conditions are such by reason of drought, high winds, excessive moisture, or other factors that satisfactory results are not likely to be obtained, work shall be stopped as directed by the Contracting

## TURF ESTABLISHMENT AND MAINTENANCE

Officer's Representative and resumed only when conditions are favorable for turf establishment or when approved alternative or corrective measures and procedures have been completed. If inspection during or after seeding operations indicates that areas have been left unplanted or other areas have not been adequately addressed, additional seed shall be applied if so directed by the Contracting Officer's Representative.

Rates and timings of seed application will be in accordance with the guidelines below:

March 1 to September 1 - hulled common bermuda grass – 65 lbs (min) of PLS / acre

OR

seashore paspalum – 65 lbs (min) of PLS / acre

September 1 to March 1 - unhulled common bermuda grass – 65 lbs (min) of PLS / acre

annual, intermediate or perennial ryegrass–70 lbs (min) of PLS / acre

Hulled bermuda grass may be planted in the month of February if soil temperatures are in excess of 65 F for a minimum of 7 consecutive days.

PLS (Pure Live Seed) = (label germination rate x label purity) x 100

Example of how to calculate PLS:

PLS = (0.95 germination rate x 0.85 purity) x 100

PLS = 81 %

Therefore to plant 1 lb PLS you will need 1.19 lbs of seed

### 3.4.2 Broadcast Seeding

If the broadcast method of seeding is used, seed shall be broadcast with approved sowing equipment and distributed uniformly over designated areas at the appropriate seeding rates. After broadcast seeding, seed shall be covered to an average depth of 1/4-inch using a brush, harrow, spike-tooth harrow, chain harrow, cultipacker, or other approved device. Seed shall not be broadcast during windy or inclement weather.

### 3.4.3 Hydro-Seeding

If the hydro-seeding method is used, seeds shall be combined with mulch and applied uniformly with approved equipment. Mulch guidelines (paragraph 3.5.) shall be followed with greater than 85% of the ground covered.

### 3.4.4 Alternate Turf Establishment Methods

#### 3.4.4.1 Sprigs

Certified sprigs should be planted at a rate of 150 bushels per acre. Sprigs should be tilled, sliced, or disked into the upper 3 inches of soil. No mulching is required.

#### 3.4.4.2 Sod

Certified Sod should be planted in rows parallel to the levee centerline with perpendicular seams

staggered (e.g. brick-like pattern). Stabilizing aids such as staples may be used to prevent sod sloughing. No mulching is required.

### **3.4.5 Damage to Established Seeding Area**

The Contractor shall be fully responsible for any damage to the establishment areas caused by his/her operations. Areas that become damaged as a result of poor workmanship or failure to meet the requirements of the specifications shall be ordered repaired and reseeded to specification requirements, without any additional cost to the Government.

## **3.5 APPLYING AND ANCHORING MULCH**

Application of mulch will follow these guidelines unless otherwise specified in the approved turf establishment plan.

### **3.5.1 Applying Mulch**

The mulch shall be vegetative non-asphalt mulch consisting of grain straw (oats, wheat, or rice) or grass hay. Mulch, as specified in paragraph 2.1.6, shall be applied uniformly on the soil surface at the rate of 2 tons (approximately 80 bales) per acre. Mulching shall be done immediately after seeding. Mulch shall be tacked by spraying with emulsified tackifier conforming to paragraph 2.1.6.1 at the rate of 150 gallons per ton of mulch. The mulch shall be applied by means of approved equipment.

### **3.5.2 Wood Cellulose Fiber Mulch or Recycled Wood Pulp**

Wood cellulose fiber or recycled wood pulp mulch, as specified in paragraph 2.1.6 (Mulch), shall be applied uniformly on the soil at the rate of 2200 to 2500 pounds per acre during the seeding operation with approved equipment.

## **3.6 Irrigation Application During Turf Establishment**

Unless the Contracting Officer's Representative concurs that acceptable levels from precipitation have occurred to support grass establishment, irrigation will be applied one to two days after seeding or other turf establishment method used. Irrigation shall be applied at least 2 times per week for a period of 28 days unless otherwise directed by the Contracting Officer's Representative based upon natural rainfall. The application of water must sufficiently moisten at least the top 2 inches of soil with each irrigation event. The application of water in excess, so that surface runoff occurs, is prohibited.

## **3.7 MOWING**

### **3.7.1 New Turf Establishment Areas**

Turf areas established under this contract shall be mowed with approved mowing equipment to a height of 3 to 4-inches whenever the height of the vegetation is in excess of 12 inches. Debris created from mowing (e.g. clippings) that will be detrimental to turf growth or inhibit turf establishment shall be removed. The Contractor shall perform periodic and final grass mowing within the limits of work until the contract final inspection is held with the sponsor and they accept the levee as suitable.

### **3.7.2 Existing Turf Maintenance**

For the duration of the contract, the Contractor shall maintain existing turf within the limits of work where new embankment is not required, and where new embankment is required but has not yet been placed. Same requirements as paragraph 3.7.1 above.

### **3.8 Inspections and Reports**

After initial planting, the Contractor shall inspect newly turfed areas at least once every two weeks. For each inspection conducted, the Contractor shall prepare a report summarizing the scope of the inspection, names of personnel making the inspection, inspection date, height of vegetation, observations and conclusions, maintenance performed, and corrective actions, if required. The report shall be furnished to the Contracting Officer's Representative within 24 hours of the inspection as a part of the Contractor's daily QC Report.

### **3.9 Replanting**

Approximately one month after initial planting, the Contractor shall restore any eroded areas and perform soil preparation, fertilize, replant and mulch all bare spots larger than 100 square feet in accordance with the requirements of this specification, all at no additional cost to the Government.

### **3.10 Post-planting Fertilizer Application**

For those areas that do not require replanting, approximately one month after the initial planting, fertilizer shall be applied at the minimum rate of 45 lbs per acre of a slow-release nitrogen shall be applied with irrigation or rainfall occurring within 24 hours.

### **3.11 Establishment**

Turf will be considered established and completed when the areas to be turfed have produced the required grass species over a minimum of 75 percent of the entire area as determined by the Contracting Officer's Representative by random sampling. Seventy-five percent coverage shall be confirmed by the use a 1 meter square constructed from PVC with 100 blocks of 100cm<sup>2</sup> (10 cm grid). In order for the method to be non-bias, measurements using the apparatus should be conducted on random areas selected prior to grass establishment. Measurements should be made on both sides of the levee every 100 to 250 feet. If 25 squares are not filled with the desired intended vegetative species; that section of the levee would be deemed unacceptable

### **3.12 Inspection and Acceptance**

Acceptance inspections of the entire turfed area shall be performed by the Contracting Officer's Representative by random sampling and supplemented by visual inspections. Bare areas with diameters larger than 24 inches are to be considered unacceptable. This measurement would supersede the first criteria for vegetative acceptance. These areas should be noted for repairs. If inspection determines that turf establishment is not complete, the Contractor shall meet with the Contracting Officer's Representative at the job site to identify bare spots, eroded areas and rutting damage and to discuss the Contractor's plan of operation for completing new turf establishment.

## TURF ESTABLISHMENT AND MAINTENANCE

Prior to acceptance of turfed areas by the Contracting Officer's Representative, the contractor shall restore any damaged areas resulting from the contractor's operations or by natural forces at no additional cost to the Government. Partial reaches will not be accepted unless determined by the Contracting Officer's Representative to be in the best interest of the Government.

**APPENDIX XXII LANDOWNERS, UTILITY OPERATOR, AND PIPELINE  
COMPANY CONTACT INFORMATION MEMORANDUM – CONVEYANCE  
CORRIDOR**

## **LANDOWNERS AND CONTACT MEMORANDUM AND INFORMATION**

### **STIPULATIONS:**

**The Contractor shall ensure that the Grantors below are listed as additional insured on any policies carried by the Contractor, including completed operations coverage.**

The Contractor shall be responsible for repair in like manner of any fences, bridges, roads, and other similar facilities and appurtenances located in the Work Area which may be damaged or destroyed by the Contractor, or its designees while in the Work Area, but such repair shall be to that condition which existed immediately prior to the Contractor's activities. The Contractor shall remove or dispose of all debris associated with construction, operation and maintenance of the Project.

### **PLAQUEMINES PARISH GOVERNMENT**

P.J. Hahn  
8056 Hwy. 23, Suite 200  
Belle Chasse, LA 70037  
(504) 297-5000

### **NATHANIEL PHILLIPS**

Nathaniel P. Phillips, Jr  
826 Union Street, Suite 200  
New Orleans, LA 70112  
Phone: (504) 525-2985

### **DEVITT ET AL**

Matthew Bourdon Devitt, Jr.  
Independent Administrator  
6747 Line Road  
Ethel, LA 70730  
Phone: (225) 634-5591

### **STATE LAND OFFICE**

John Lavin, Public Lands Administrator  
State Land Office  
Division of Administration  
P.O. Box 44124  
Baton Rouge, LA 70804  
Phone: (225) 342-4575

### **ROBINSON INTERESTS, LLC ET AL**

Warren Doyle  
880 Commerce Road West, Suite 104  
New Orleans, LA 70123  
Phone: (504) 620-5051



**TENNESSEE GAS PIPELINE**

Kurt Cheramie  
158 Regal Row  
Houma, LA 70360  
Phone: (985) 223-6417

**JOHNSON PROPERTY**

Philip H. Simmons, Jr.  
P. O. Box 3 Empire, LA 70050-003  
Phone: (504) 657-5707

Margaret Ann Simmons Bondi  
P. O. Box 397  
Empire, LA 70050-0397  
Phone: None

First Equity, Inc.  
c/o George Pivach, II  
P. O. Box 97  
Belle Chasse, LA 70037  
Phone: (504) 394-1870

Larry A. Johnson  
210 Brasseur Rd.  
Carencro, LA 70520  
Phone: (337) 896-9895

James R. Stockfleth  
2608 Lynnwood Street  
Pascagoula, MS 39567  
Phone: (228) 762-4545

Sharon Kay Stockfleth Dickinson  
Route 1, Box 53  
Jonesville, LA 71343  
Phone: None

Mary Lou Johnson Pennison  
318 S. Concord Rd, Apt. D  
Belle Chase, LA 70037  
Phone: None

## PIPELINE AND UTILITY COMPANIES AND CONTACT INFORMATION

NOTE: Special care and extremely close coordination by the Contractor with the pipeline and utility companies will be crucial in order to avoid impacting the pipelines and/or utilities within or near the Work Area.

Due to the extensive numbers of oil and gas lines in the area, and the limited time available to obtain landrights coverage for same, the Contractor(s) will need to acquire any permission for crossings of lines outside of those that may not have been previously found / covered. It is recommended that confirmation in the field, including, but not limited to, use of a magnetometer survey(s) be a requirement of the Contractor(s) to ensure that any lines in the area are identified and will not be impacted. Verification of pipelines, their depths and draft of the equipment to be used will be essential. The assumption resulting from current investigations does not include oil and gas operations that might commence in the future.

	<b>Pipeline Owner</b>	<b>Contact</b>	<b>Phone Number</b>	<b>Email Address</b>
1	<b>Gulf South Pipeline, a/k/a United Gas Pipeline, a/k/a Koch Gateway</b> 520 Alliance Street Kenner, LA 469-5903	Gerald Roser	(504) 469-5903	Gerald.Roser@BWPMLP.com
2	<b>Tennessee Gas Pipeline &amp; Southern Natural Gas</b> 158 Regal Row Houma, LA 70360	Kurt Cheramie	(985) 223-6417	Kurt.Cheramie@ElPaso.com
3	<b>Chevron Pipeline</b> 4800 Fournace Place Bellaire, TX 77401	Thomas August, Jr. 4800 Fournace Bellaire, TX 77401	(713) 432-3594	Thomas.August@Chevron
4	<b>Exxon-Mobile Pipeline</b> 108 Business Park Ave. Suite E Denham Springs, LA 70726	Jack Reitzell  Paul Saltaformaggio	(225) 271-3913  (225) 921-2628/Cell (225) 271-3912/Work	jack.reitzell@exxonmobil.com

5	<b>Exxon Mobile Production</b> 396 W. Greens Rd. CORP-WGR-336 Houston, TX 77067	Mike McNulty  Shelbi McKee	(713) 431-2153  (713) 431-1994	m.michael.mcnulty@exxonmobil.com  shelbi.m.mckee@exxonmobil.com
6	<b>Cross-Tex</b> 311 Patterson Street Lafayette, LA 70501	Chris Greneaux	(337) 354-1707/Office (337) 237-2554/Fax (337) 962-1275/Cell	Chris.Greneaux@CrosstexEnergy.com
7	<b>Shell Pipeline</b> 1617 Coteau Road Houma, LA 70369	Kevin Arceneaux Terri Howell Shane Degruise	(985) 873-3429 (504) 728-4821 (985) 856-7572/Cell (985) 873-3417/Office	Kevin.Arceneaux@Shell.com terri.p.howell@shell.com Shane.degruise@Shell.com
8	<b>Texas Eastern Gas Pipeline, a/k/a Spectra Entergy</b> PO Box 640 Bourg, LA 70343	Jerome Snyder  Stan Johnson	(985) 876-6761 ext. 6851  (713) 627-4482	JKSNYDER@SPECTRAENERGY.COM  STJohnson1@spectraenergy.com
9	<b>Promix Pipeline</b> 6225 Hwy. 986 Belrose, LA 70341  <b>Promix Pipeline</b> 47333 Texaco Road PO Box 337 Sorrento, LA 70778	Tony Russell  Justin Chauvin	(985) 369-5017 Direct (985) 369-5012 Company Line  (225) 675-2510	Trussell@elpaso.com  JECHAUVIN@EPROD.COM
10	<b>Conoco Phillips</b> PO Box 7097 Houma, LA 70361-7907	Jeff Deblieux	(985) 853-3009	jeff.d.deblieux@conocophillips.com
11	<b>Columbia Gulf Transmission</b> c/o NiSource Transmission & Storage PO Box 4293 Houma, LA 70361-4293	Eric Theriot	(985) 879-3301	Etheriot@Nisource.com
12	<b>Atmos Energy, a/k/a Delta Gas Pipeline</b> 2550 Belle Chasse Hwy.	Brian Blum	(504) 362-5258	brian.blum@atmosenergy.com

	Suite 120 Gretna, LA 70053			
13	<b>Plains All-American Pipeline Co.</b> 333 Clay Street Suite 1600 Houston, TX 77002	Terry Calk	(713) 646-4660/Office (713) 646-4146 fax	tlcalk@paalp.com
14	<b>Clayton Williams Energy, Inc.</b> 700 Rockmead Suite 159 Kingwood, TX 4024	Cheryl Strickland	(281) 359-5511 ext. 4024	cheryl.strickland@cwland.com
16	<b>Plaquemine's Parish Government</b> Water & Sewerage Lines 106 Avenue G Belle Chasse, LA 70037	Robert Spears	(504) 392-6690	
17	<b>Hilcorp Energy</b> 1201 Louisiana Suite 1247 Houston, TX 77002	Sean Golden	(713) 209-2493	
18	<b>Plains Exploration</b>	Connie Conques	(337) 354-5023	
19	<b>Enterprise Products (Pipeline Company)</b> 2727 North Loop West, Office 642 Houston, TX	David Eguia	(713) 803-7808	
20	<b>Severn Trent Environmental (now ADS)</b>  <b>ADS (From Severn Trent Receptionist)</b>	Kevin Enfinger	(215) 646-9201  (256) 430-6552/Direct (800) 633-7246/Main Office	

21	<b>Entergy</b> 100 Alpha Dr. Suite 100 Destrehan, LA 70047	Shana Markey  Dan Reagan Asst. to Shana	(888) 413-3188	smarkey@entergy.com  draegan@entergy.com
22	<b>Devon Energy Corporation</b>	Stephen McReynolds	(713) 265-6258/Office (985) 519-1300/Cell	
23	<b>Anglo-Suisse Offshore Partners, LLC</b> 1111 Bagby St. Suite 4800 Houston, TX 77002	Troy Bourgeois Toni Kelly	(985) 380-1031 (713) 275-7700	
24	<b>EnergyQuest, LLC</b>	Rory Aaronson	(281) 875-6200	
25	<b>CMA Cablevision</b> 8618 Hwy. 23 Belle Chasse, LA 70037	John Clair	(504) 392-4060	John.Clair@CMACorporate.com
26	<b>Texas Petroleum Investment Company</b> Steve Sandlin 5858 San Felipe St. Houston, TX 77057 or Chris Sanfilippo P. O. Box 218 Pepper Field Road Avery Island, LA 70513	Steve Sandlin  Chris Sanfilippo	(713) 789-9225  (337) 560-1016 Direct (337) 577-8465 Cell	ssandlin@txpetinv.com  csanfilippo@txpetinv.com
27	<b>McMoran Exploration</b>	Jill Lirette ?	(504) 582-4000	
28	<b>AT&amp;T</b> 1010 Hancocks Gretna, LA 70053	Loyd Massey Mike Waguespack	(504) 364-6801 (504) 368-0843	gw2397@att.com
29	<b>U.S. Army Corps of Engineers</b>	Mark A. Selquist	(504) 862-1525	Mark.A.Selquist@usace.army.mil

30	<b>LA DOTD</b> PO Box 9180 Bridge City, LA 70096	Glenn Richard (Permits for LA 23)  Donna Painter (Utility Coordinator) LA District 02	(504) 437-3130  (504) 437-3129	
31	<b>Plaquemine's Parish Permit Office</b> 102 Avenue G Suite C Belle Chasse, LA 70037	Mr. Robert Spears  Ms. Valarie Ragas (Permits for LA 11)	(504) 297-5445	
32	<b>Targa Resources</b>	Perry Bertholet Marc Beritling	(504) 732-8156 (713) 584-1000 ext. 1409	
33	<b>Anadarko Petroleum</b>	Lori Maldonado	(832) 636-1000	
34	<b>Enbridge Pipeline Company Inc.</b> 1100 Louisiana, Suite 3300 Houston, TX 77002	Gary Worone  Bobbie Crawford	(713) 821-2278  (713) 821-2278	bobbie.crawford@enbridge.com
35	<b>Noble Energy</b> 100 Glenborough Dr. Suite 100 Houston, TX 77067	Pipeline Dept. Lee Ferguson	(281) 812-3100 (281) 874-6026	
36	<b>Energy Partners Limited</b> 201 St. Charles Ave. Suite 3400 New Orleans, LA 70170-3400	Ms. Sherry Michael Francis Brian Bowling	(504) 569-1875 (504) 799-4810 (504) 799-1945	Mfrancis@eplweb.com
37	<b>Plaquemines Parish Govt. Mineral Office</b> 8056 Hwy 23 Suite 309 Belle Chasse, LA 70037	Margaret A. Bonneval		

38	<b>L.V. Cooley, IV</b> Special Assistant Parish Attorney- Plaquemines		(985) 639-9024 (985) 445-3292 (cell)	lcooleyiv@msn.com
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**APPENDIX XXIII      USACE REPAIR PROCEDURES REQUIRED WHEN  
PENETRATING REVETMENTS WITH PILES, CAISSONS, AND/OR PILE  
CLUSTERS**





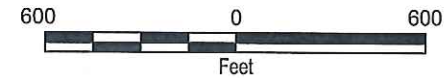
**APPENDIX XXIV**

**BA-40 CPT BORINGS**



**Legend**

-  CPT-1      CPT Location
-                       Alignment



**Notes:**

1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. can not guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.

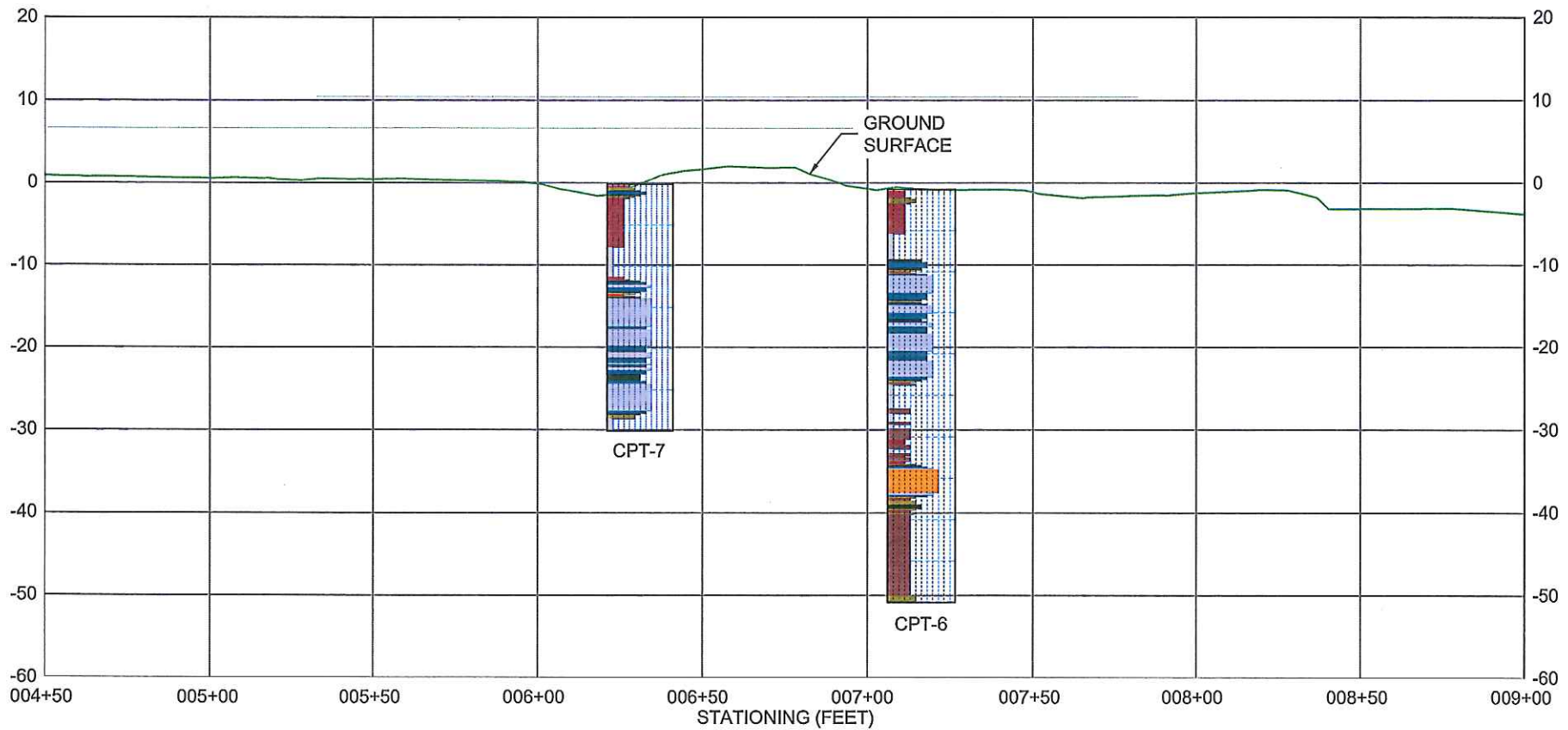
- Reference: 1. Aerial image was taken from Google Earth Pro., Licensed to GeoEngineers Inc., Imagery Dated 4/15/2011  
 2. Alignment was taken from Coastal Engineering Consultants, Inc., Conveyance Corridor Layout, Sheet 12, Dated August 2011

**BORING LOCATION PLAN**

Scofield Island Restoration (BA-40)  
Empire, Louisiana



**Figure 1**



**Legend**

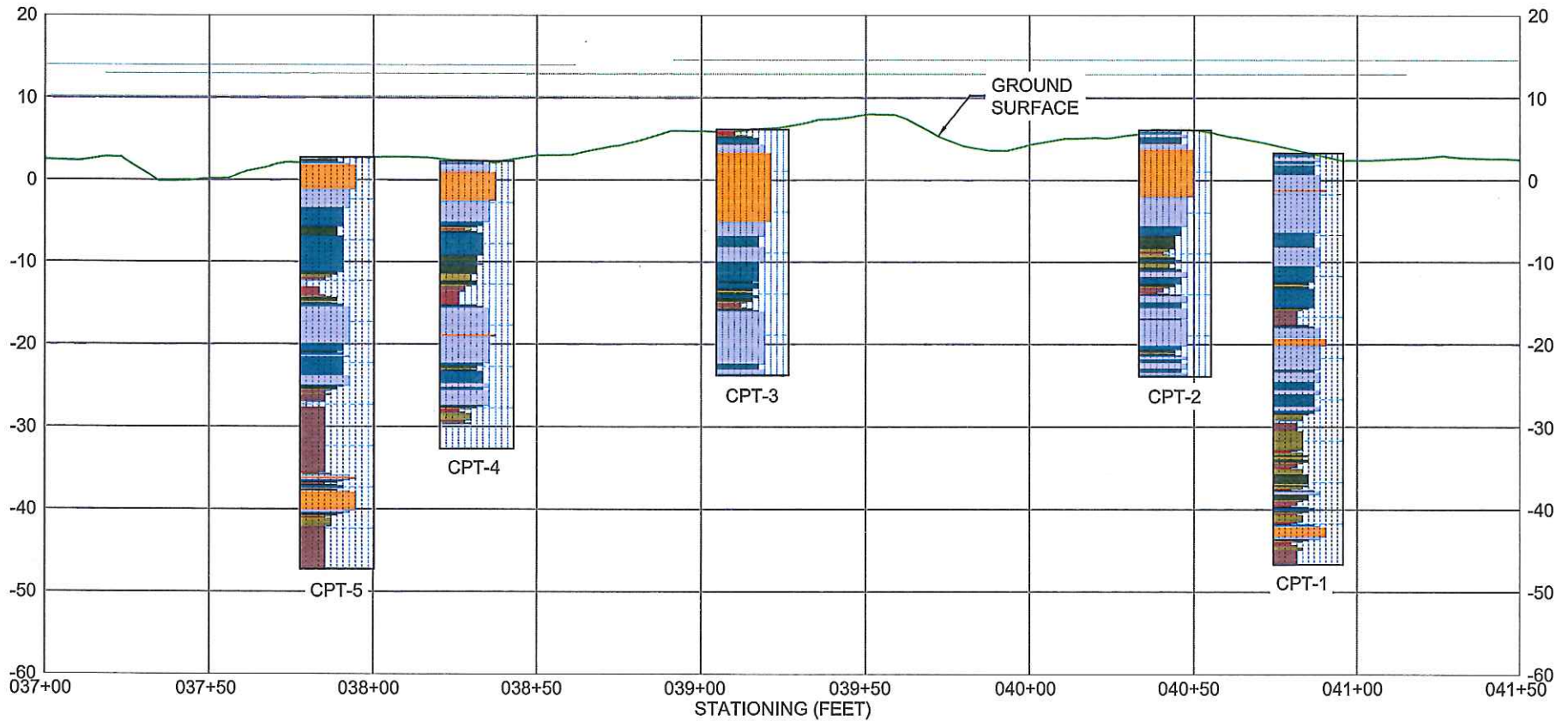
1 sensitive fine grained	4 silty clay to clay	7 silty sand to sandy silt	10 gravelly sand to sand
2 organic material	5 clayey silt to silty clay	8 sand to silty sand	11 very stiff fine grained (*)
3 clay	6 sandy silt to clayey silt	9 sand	12 sand to clayey sand (*)

**Notes:**

1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. can not guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.

- Reference: 1. Lidar data was taken from LSU Atlas, SW Quadrant of Empire Quadrangle, Dated 3/2003  
 2. Stationing was taken from Coastal Engineering Consultants, Inc., Conveyance Corridor Layout, Sheet 12, Dated August 2011

<b>SUBSURFACE PROFILE STATION 004+50 - 009+00</b>	
Scofield Island Restoration (BA-40) Empire, Louisiana	
<b>GEOENGINEERS</b> 	<b>Figure 2</b>



**Legend**

1 sensitive fine grained	4 silty clay to clay	7 silty sand to sandy silt	10 gravelly sand to sand
2 organic material	5 clayey silt to silty clay	8 sand to silty sand	11 very stiff fine grained (*)
3 clay	6 sandy silt to clayey silt	9 sand	12 sand to clayey sand (*)

**Notes:**

1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. can not guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.

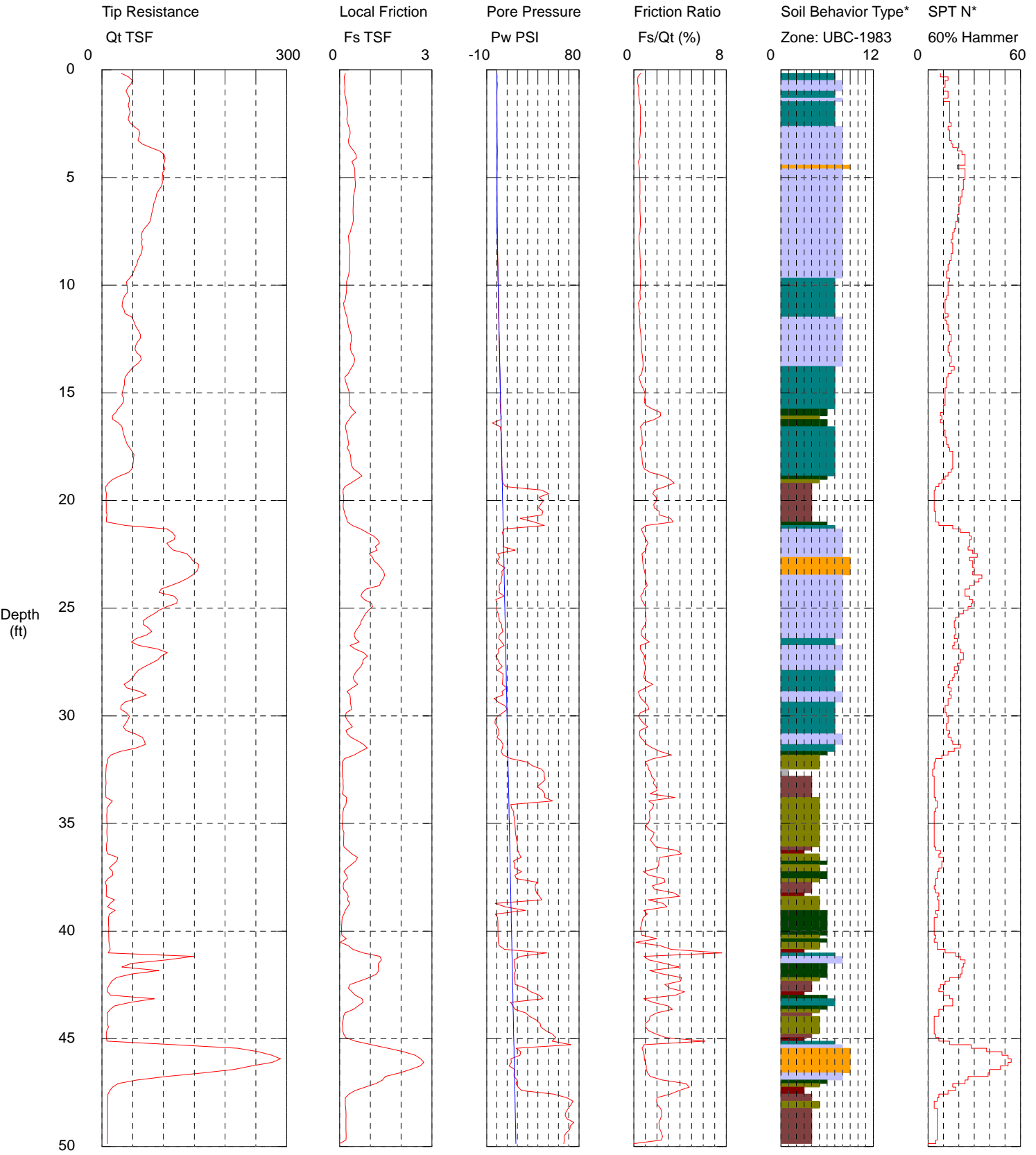
- Reference: 1. Lidar data was taken from LSU Atlas, SW Quadrant of Empire Quadrangle, Dated 3/2003  
 2. Stationing was taken from Coastal Engineering Consultants, Inc., Conveyance Corridor Layout, Sheet 12, Dated August 2011

<b>SUBSURFACE PROFILE STATION 037+00 - 041+50</b>	
Scofield Island Restoration (BA-40) Empire, Louisiana	
<b>GEOENGINEERS</b> 	<b>Figure 3</b>

# Southern Earth Sciences

Operator: Mike Wright  
 Sounding: CPT-1  
 Cone Used: DDG1182

CPT Date/Time: 10/12/2012 12:26:54 PM  
 Location: CPRA  
 Job Number: 12-355



Maximum Depth = 50.03 feet

Depth Increment = 0.164 feet

- |                          |                             |                            |                                |
|--------------------------|-----------------------------|----------------------------|--------------------------------|
| 1 sensitive fine grained | 4 silty clay to clay        | 7 silty sand to sandy silt | 10 gravelly sand to sand       |
| 2 organic material       | 5 clayey silt to silty clay | 8 sand to silty sand       | 11 very stiff fine grained (*) |
| 3 clay                   | 6 sandy silt to clayey silt | 9 sand                     | 12 sand to clayey sand (*)     |

Groundwater measured at 7.1 ft.

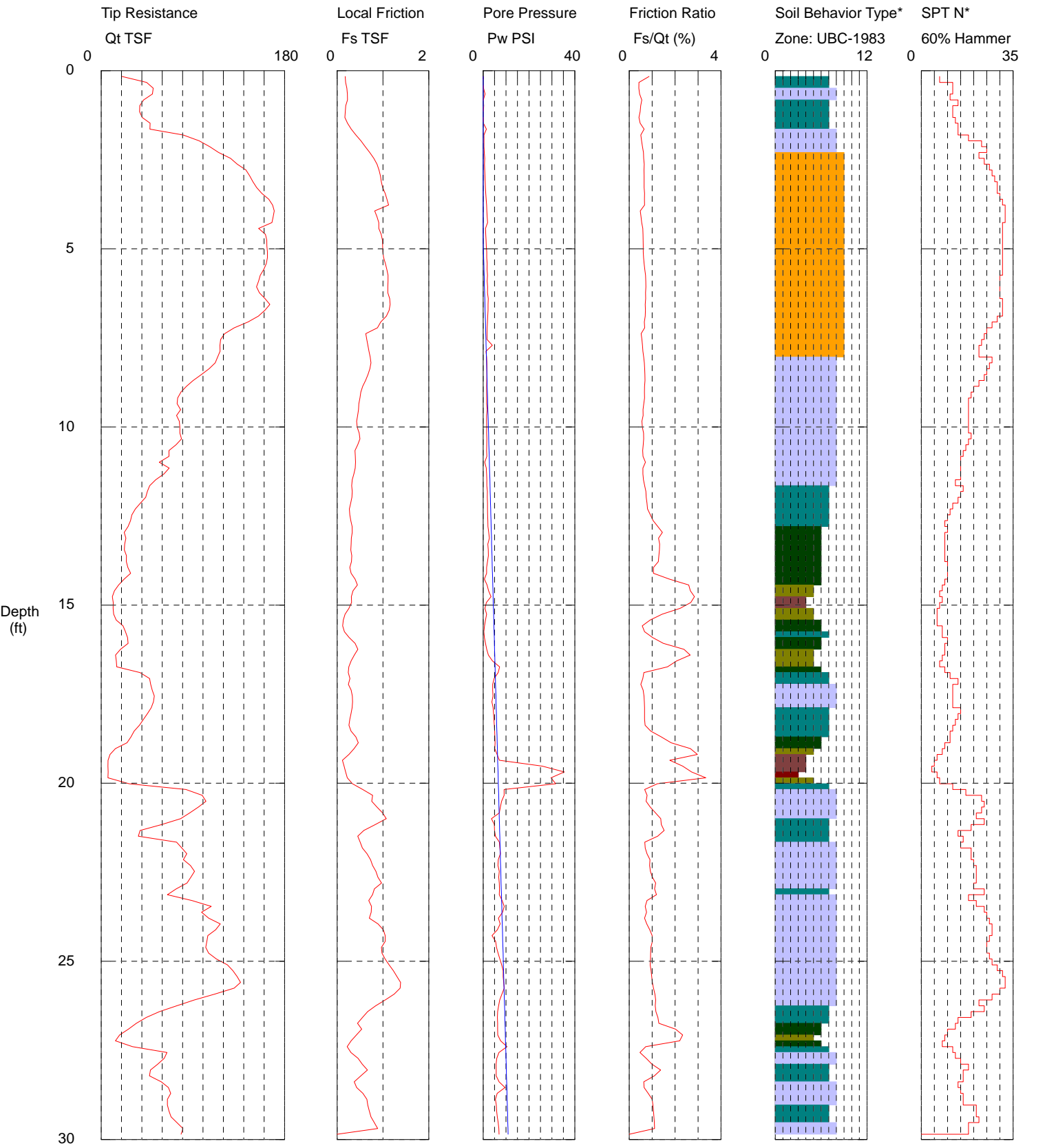
N29.37540 W89.59752

\*Soil behavior type and SPT based on data from UBC-1983

# Southern Earth Sciences

Operator: Mike Wright  
 Sounding: CPT-2  
 Cone Used: DDG1182

CPT Date/Time: 10/12/2012 12:55:34 PM  
 Location: CPRA  
 Job Number: 12-355



Maximum Depth = 30.02 feet

Depth Increment = 0.164 feet

- |                          |                             |                            |                                |
|--------------------------|-----------------------------|----------------------------|--------------------------------|
| 1 sensitive fine grained | 4 silty clay to clay        | 7 silty sand to sandy silt | 10 gravelly sand to sand       |
| 2 organic material       | 5 clayey silt to silty clay | 8 sand to silty sand       | 11 very stiff fine grained (*) |
| 3 clay                   | 6 sandy silt to clayey silt | 9 sand                     | 12 sand to clayey sand (*)     |

Sounding caved at 4.4 ft.

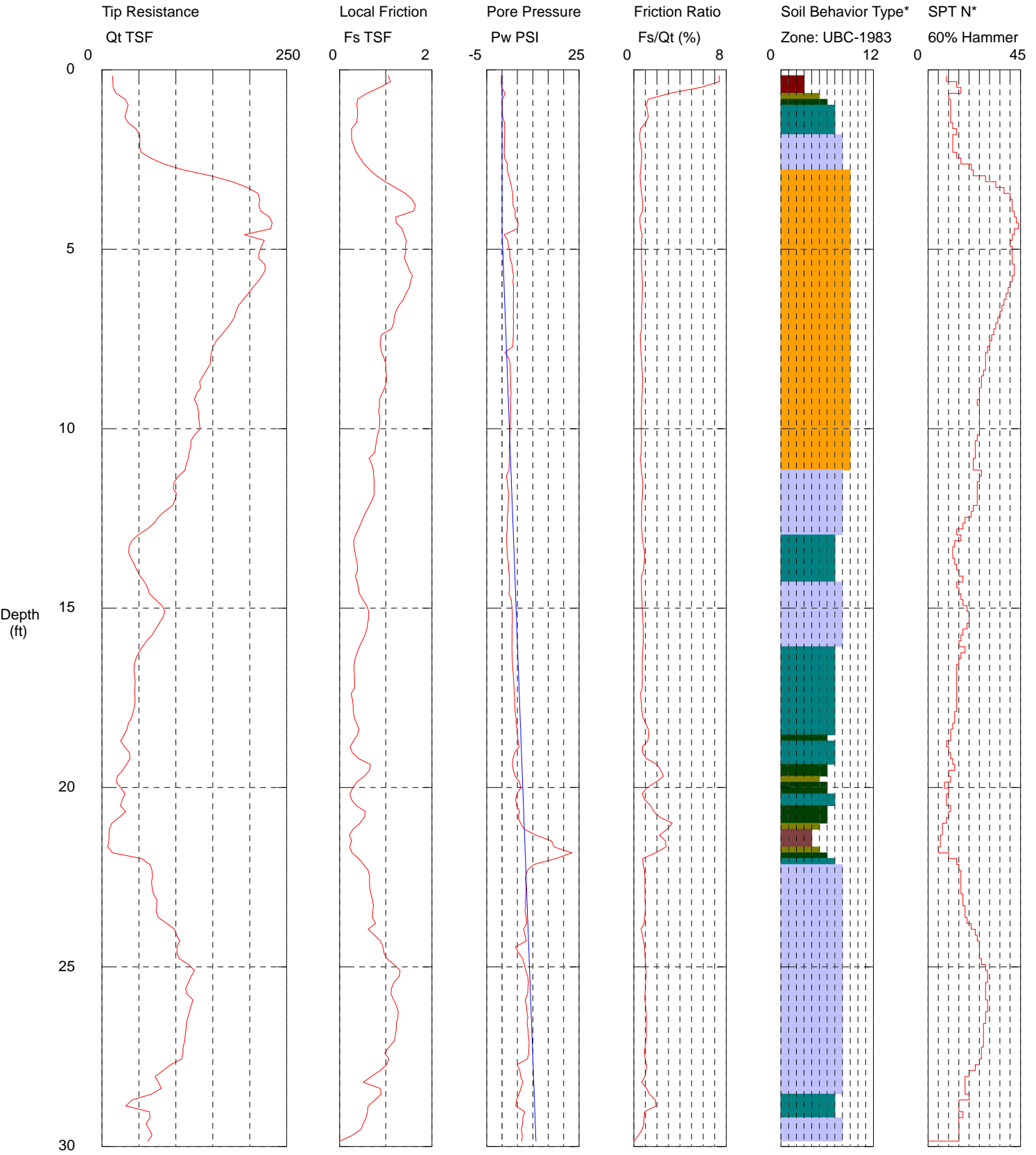
N29.37540 W89.59729

\*Soil behavior type and SPT based on data from UBC-1983

# Southern Earth Sciences

Operator: Mike Wright  
 Sounding: CPT-3  
 Cone Used: DDG1182

CPT Date/Time: 10/12/2012 1:22:16 PM  
 Location: CPRA  
 Job Number: 12-355



Maximum Depth = 30.02 feet

Depth Increment = 0.164 feet

1 sensitive fine grained  
 2 organic material  
 3 clay  
 Sounding caved at 4.5 ft.

4 silty clay to clay  
 5 clayey silt to silty clay  
 6 sandy silt to clayey silt

7 silty sand to sandy silt  
 8 sand to silty sand  
 9 sand

10 gravelly sand to sand  
 11 very stiff fine grained (\*)  
 12 sand to clayey sand (\*)

N29.37579 W89.59745

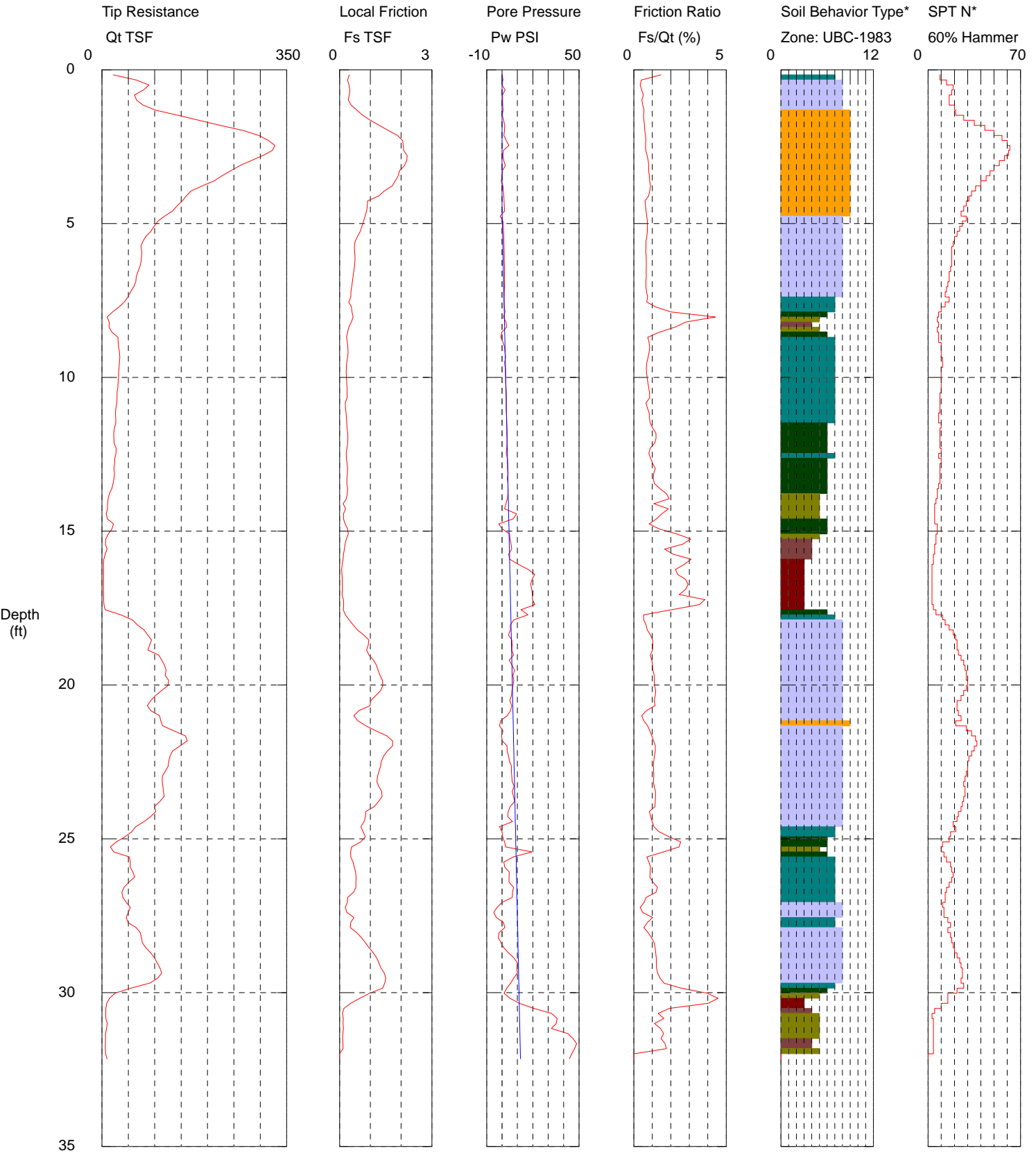
\*Soil behavior type and SPT based on data from UBC-1983



# Southern Earth Sciences

Operator: Mike Wright  
 Sounding: CPT-4  
 Cone Used: DDG1182

CPT Date/Time: 10/12/2012 2:06:43 PM  
 Location: CPRA  
 Job Number: 12-355



Maximum Depth = 32.15 feet

Depth Increment = 0.164 feet

- |                          |                             |                            |                                |
|--------------------------|-----------------------------|----------------------------|--------------------------------|
| 1 sensitive fine grained | 4 silty clay to clay        | 7 silty sand to sandy silt | 10 gravelly sand to sand       |
| 2 organic material       | 5 clayey silt to silty clay | 8 sand to silty sand       | 11 very stiff fine grained (*) |
| 3 clay                   | 6 sandy silt to clayey silt | 9 sand                     | 12 sand to clayey sand (*)     |

Caved at 2.3 ft.

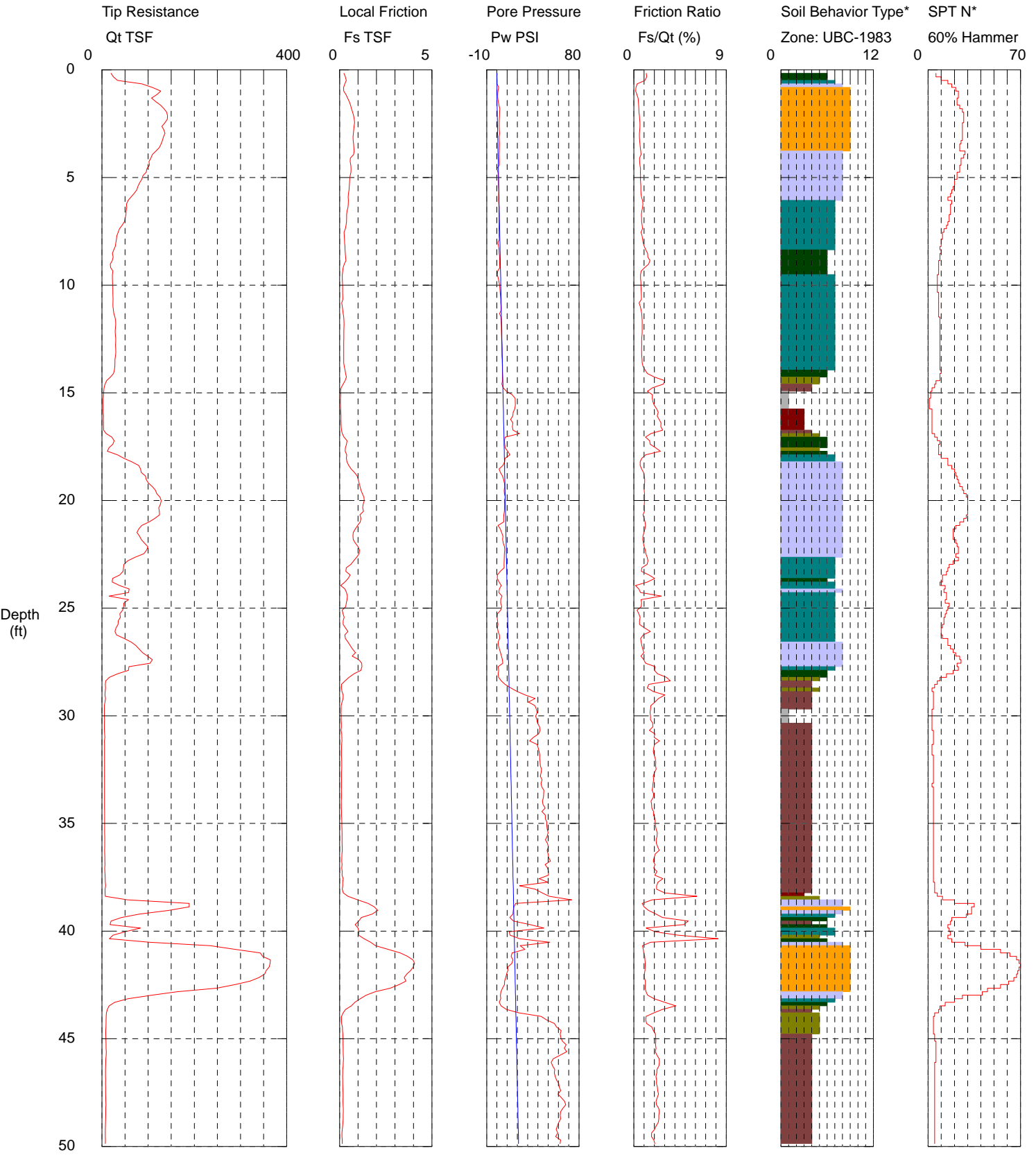
N29.37589 W89.59700

\*Soil behavior type and SPT based on data from UBC-1983

# Southern Earth Sciences

Operator: Mike Wright  
 Sounding: CPT-5  
 Cone Used: DDG1182

CPT Date/Time: 10/12/2012 2:26:41 PM  
 Location: CPRA  
 Job Number: 12-355



Maximum Depth = 50.20 feet

Depth Increment = 0.164 feet

- |                          |                             |                            |                                |
|--------------------------|-----------------------------|----------------------------|--------------------------------|
| 1 sensitive fine grained | 4 silty clay to clay        | 7 silty sand to sandy silt | 10 gravelly sand to sand       |
| 2 organic material       | 5 clayey silt to silty clay | 8 sand to silty sand       | 11 very stiff fine grained (*) |
| 3 clay                   | 6 sandy silt to clayey silt | 9 sand                     | 12 sand to clayey sand (*)     |

Groundwater measured at 1.2 ft.

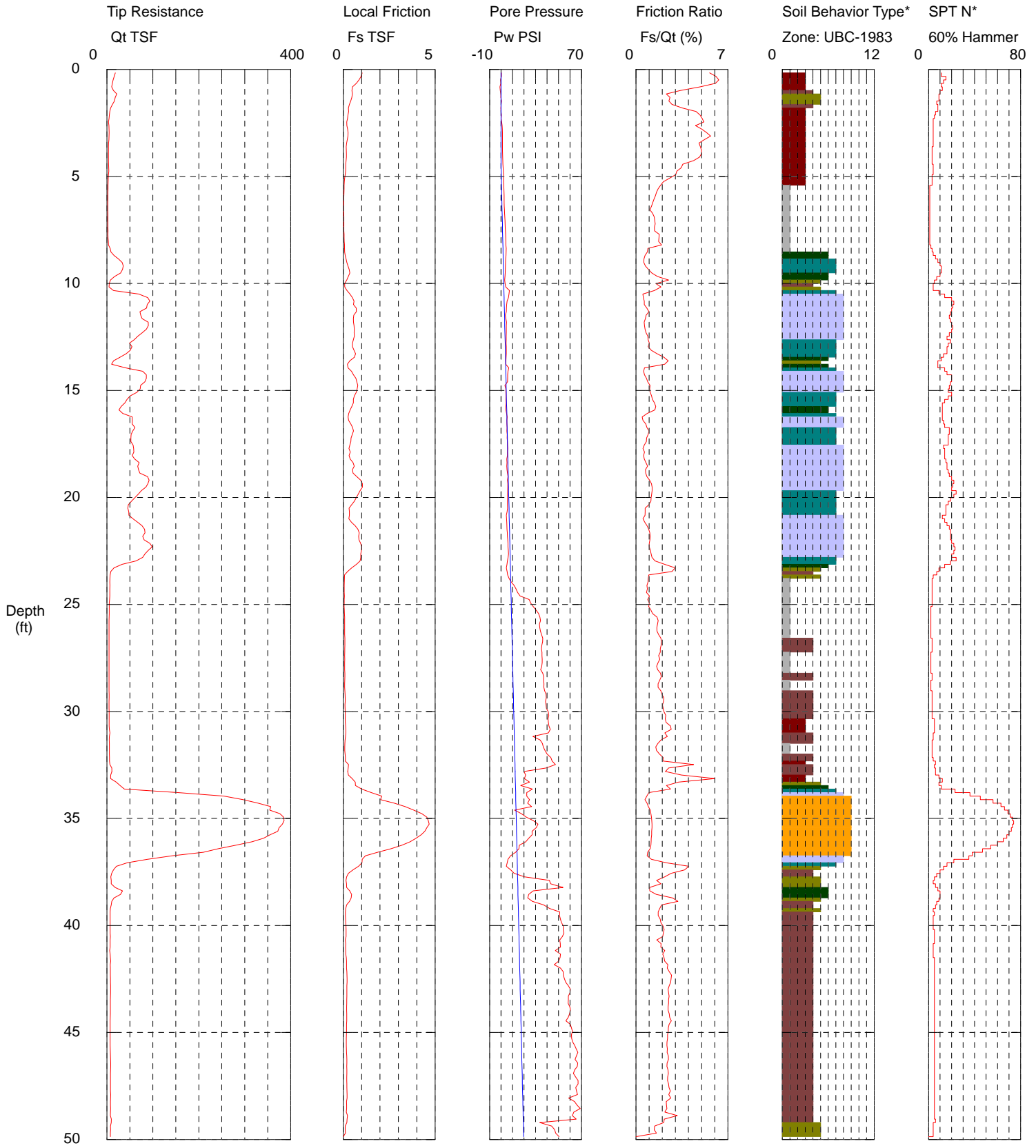
N29.37612 W89.59728

\*Soil behavior type and SPT based on data from UBC-1983

# Southern Earth Sciences

Operator: Mike Wright  
 Sounding: CPT-6  
 Cone Used: DDG1182

CPT Date/Time: 10/12/2012 3:17:38 PM  
 Location: CPRA  
 Job Number: 12-355



Maximum Depth = 50.03 feet

Depth Increment = 0.164 feet

- |                          |                             |                            |                                |
|--------------------------|-----------------------------|----------------------------|--------------------------------|
| 1 sensitive fine grained | 4 silty clay to clay        | 7 silty sand to sandy silt | 10 gravelly sand to sand       |
| 2 organic material       | 5 clayey silt to silty clay | 8 sand to silty sand       | 11 very stiff fine grained (*) |
| 3 clay                   | 6 sandy silt to clayey silt | 9 sand                     | 12 sand to clayey sand (*)     |

Groundwater measured at 4.6 ft.

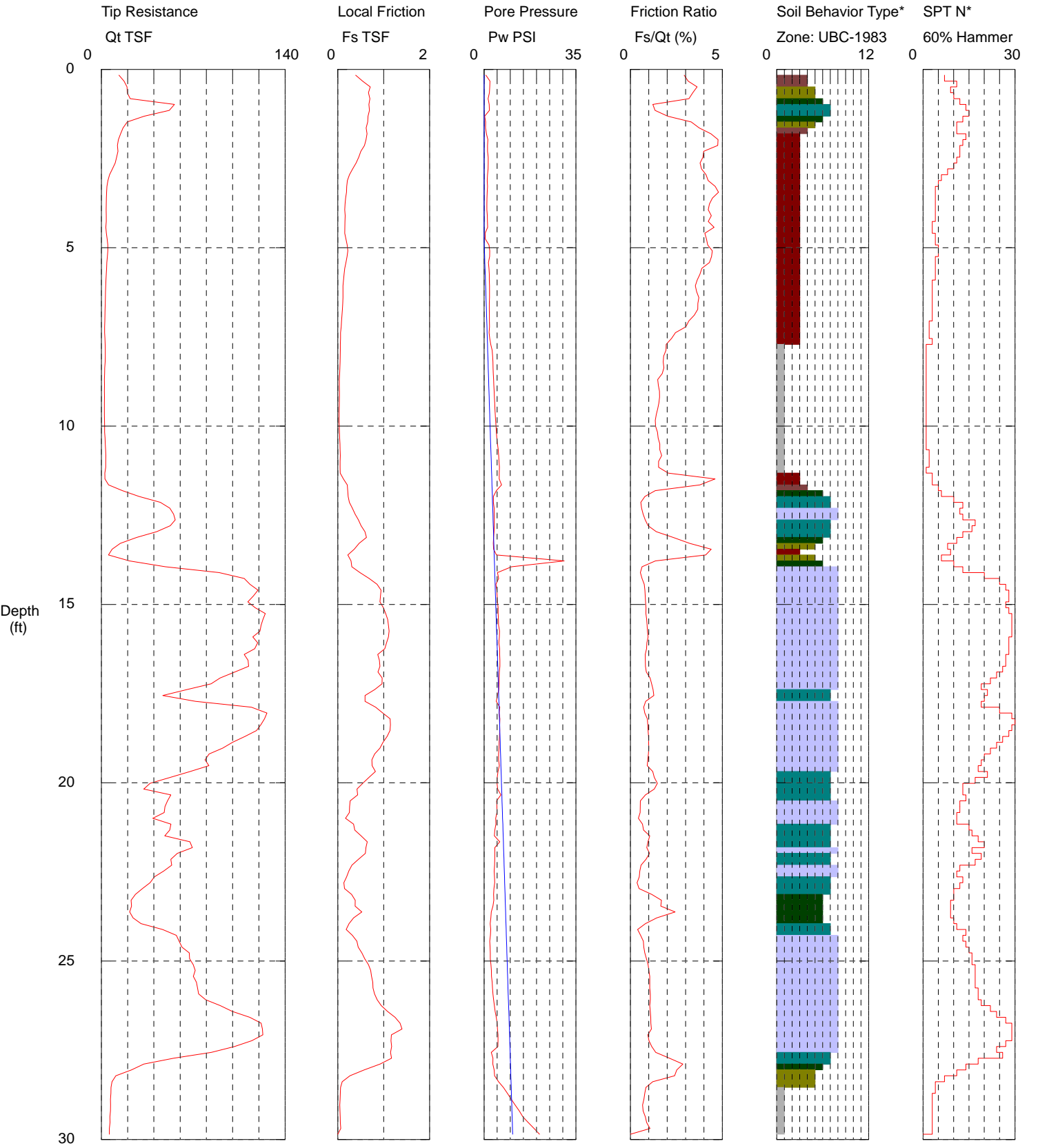
N29.38165 W89.59015

\*Soil behavior type and SPT based on data from UBC-1983

# Southern Earth Sciences

Operator: Mike Wright  
 Sounding: CPT-7  
 Cone Used: DDG1182

CPT Date/Time: 10/12/2012 3:44:46 PM  
 Location: CPRA  
 Job Number: 12-355



Maximum Depth = 30.02 feet

Depth Increment = 0.164 feet

- |                          |                             |                            |                                |
|--------------------------|-----------------------------|----------------------------|--------------------------------|
| 1 sensitive fine grained | 4 silty clay to clay        | 7 silty sand to sandy silt | 10 gravelly sand to sand       |
| 2 organic material       | 5 clayey silt to silty clay | 8 sand to silty sand       | 11 very stiff fine grained (*) |
| 3 clay                   | 6 sandy silt to clayey silt | 9 sand                     | 12 sand to clayey sand (*)     |

Groundwater measured at 4.7 ft.

N29.38189 W89.59011

\*Soil behavior type and SPT based on data from UBC-1983