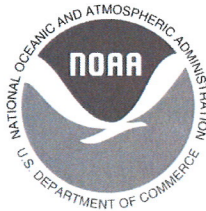


**BID DOCUMENTS
FOR
ROCKEFELLER REFUGE GULF
SHORELINE STABILIZATION (ME-18)**

CAMERON PARISH, LOUISIANA



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

APRIL 2017

PREPARED BY



HDR ENGINEERING, INC.
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Lafayette, LA 70508
Proj. No. 10019917



Brett L. Geesey 4/25/17

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3	SURVEY CONTROL PLAN
4	EXISTING SITE PLAN
5	PROJECT LAYOUT
6	ENLARGED PARTIAL PLAN I
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ADVERTISEMENT FOR BIDS

Sealed bids will be received for the State of Louisiana by the Coastal Protection and Restoration Authority, 150 Terrace Avenue, 4th Floor Conference Center, Baton Rouge, Louisiana 70802 until 2:00 P.M., **Wednesday, June 28, 2017.**

ANY PERSON REQUIRING SPECIAL ACCOMMODATIONS SHALL NOTIFY THE COASTAL PROTECTION AND RESTORATION AUTHORITY OF THE TYPE(S) OF ACCOMMODATION REQUIRED NOT LESS THAN SEVEN (7) DAYS BEFORE THE BID OPENING.

FOR: **Rockefeller Refuge Gulf Shoreline Stabilization Project
Cameron Parish, Louisiana**

PROJECT NUMBER: **ME-0018**

Complete Bid Documents for this project are available in electronic form. They may be obtained without charge and without deposit from <http://coastal.la.gov/resources/rfps-rsiqs-contracts/bids/>. Printed copies can also be obtained from:

COASTAL PROTECTION AND RESTORATION AUTHORITY (CPRA)
The Water Campus
150 Terrace Avenue
Baton Rouge, LA 70804
Attn: Renee McKee
E-mail: cpra.bidding@la.gov Phone: (225) 342-0811 Fax: (225) 800-5596

All bids shall be accompanied by bid security in an amount of five percent (5.0%) of the sum of the base bid and all alternates. The form of this security shall be as stated in the Instructions to Bidders included in the Bid Documents for this project.

The successful Bidder shall be required to furnish a Performance and Payment Bond written as described in the Instructions to Bidders included in the Bid Documents for this project.

A MANDATORY PRE-BID CONFERENCE WILL BE HELD
at 10:00 am on Tuesday, June 13, 2017 at CPRA, 150 Terrace Avenue, 4th Floor Conference Center (401), Baton Rouge, LA 70802

Bids shall be accepted only from those bidders who attend the Mandatory Pre-Bid Conference in its entirety. Contact Garvin Pittman at (225) 342-4744 if directions are needed to the Mandatory Pre-Bid Conference.

It is the responsibility of all potential bidders to visit the job site to assess the location, logistics, and site conditions prior to bidding. Bidders are encouraged to visit the project site(s), but no official site visit is planned.

Bids shall be accepted from Contractors who are licensed under LA. R.S. 37:2150-2192 for the classification of **Heavy Construction**. In accordance with LA. R.S. 37:2163(D), anyone objecting to the classification must send a certified letter to both the Louisiana State Licensing Board for Contractors and the CPRA at the address listed above. The letter must be received no later than ten (10) working days prior to the day on which bids are to be opened.

Bidder is required to comply with provisions and requirements of LA R.S.38:2212(B)(5). No bid may be withdrawn for a period of forty-five (45) calendar days after receipt of bids, except under the provisions of LA. R.S. 38:2214.

The Owner reserves the right to reject any and all bids for just cause. In accordance with La. R.S. 38:2212(B)(1), the provisions and requirements of this Section; and those stated in the bidding documents shall not be waived by any entity.

When this project is financed either partially or entirely with State Bonds or financed in whole or in part by federal or other funds which are not readily available at the time bids are received, the award of this Contract is contingent upon the granting of lines of credit, or the sale of bonds by the Bond Commission or the availability of federal or other funds. The State shall incur no obligation to the Contractor until the Contract between Owner and Contractor is fully executed.

Coastal Protection and Restoration Authority is a participant in the Small Entrepreneurship (SE) Program (the Hudson Initiative) and the Veteran-Owned and Service-Connected Disabled Veteran-Owned (LaVet) Small Entrepreneurships Program. Bidders are encouraged to consider participation. Information is available from Coastal Protection and Restoration Authority or on its website at <http://www.coastal.la.gov/>.

STATE OF LOUISIANA
COASTAL PROTECTION AND RESTORATION AUTHORITY
MICHAEL R. ELLIS, EXECUTIVE DIRECTOR

INSTRUCTIONS TO BIDDERS

COMPLETION TIME:

The Bidder shall agree to fully complete the contract within **Four Hundred Twenty (420)** consecutive calendar days for the Base Bid, an additional **One Hundred (100)** consecutive calendar days for Additive Alternate No. 1, an additional **Sixty (60)** consecutive calendar days for Additive Alternate No. 2, and an additional **Twenty (20)** consecutive calendar days for Additive Alternate No. 3 subject to such extensions as may be granted under Section GP-44 of the General Provisions and acknowledges that this construction time will start on or before the date specified in the written "Notice to Proceed" from the Owner.

LIQUIDATED DAMAGES:

The Bidder shall agree to pay as Liquidated Damages the amount of **Three Thousand Five Hundred Dollars (\$3,500.00)** for each consecutive calendar day for which the work is not complete, beginning with the first day beyond the contract completion date stated on the "Notice to Proceed" or as amended by change order.

ARTICLE 1

DEFINITIONS

1.1 The Bid Documents include the following:

Advertisement for Bids
Instructions to Bidders
Bid Form
Bid Bond
General Provisions
Special Provisions
Technical Specifications
Construction Drawings
Contract Between Owner and Contractor
and Performance and Payment Bond
Affidavit
User Agency Documents (if applicable)
Change Order Form
Recommendation of Acceptance
Other Documents (if applicable)
Addenda issued during the bid period and
acknowledged in the Bid Form

1.2 All definitions set forth in the General Provisions and the Special Provisions are applicable to the Bid Documents, unless otherwise specifically stated or written.

1.3 Addenda are written and/or graphic instruments issued by the Engineer prior to the

opening of bids
which modify or interpret the Bid Documents by additions, deletions, clarifications, corrections and prior approvals.

1.4 A bid is a complete and properly signed proposal to do the work or designated portion thereof for the sums stipulated therein supported by data called for by the Bid Documents.

1.5 Base bid is the sum stated in the bid for which the Bidder offers to perform the work described as the base, to which work may be added, or deleted for sums stated in alternate bids.

1.6 An alternate bid (or alternate) is an amount stated in the bid to be added to the amount of the base bid if the corresponding change in project scope or materials or methods of construction described in the Bid Documents is accepted.

1.7 A Bidder is one who submits a bid for a prime Contract with the Owner for the work described in the Bid Documents.

1.8 A Sub-bidder is one who submits a bid to a Bidder for materials and/or labor for a portion of the work.

1.9 Where the word "Engineer" is used in any of the documents, it shall refer to the Prime Designer of the project, regardless of discipline.

ARTICLE 2

PRE-BID CONFERENCE

2.1 A Pre-Bid Conference may be held at the time and location described in the Advertisement for Bids. The purpose of the Pre-Bid Conference is to familiarize Bidders with the requirements of the Project and the intent of the Bid Documents, and to receive comments and information from interested Bidders. If the Pre-Bid Conference and/or Job Site Visit is stated in the Advertisement for Bids to be a Mandatory Pre-Bid Conference and/or Mandatory Job Site Visit, bids shall be accepted only from those bidders who attend the Pre-Bid Conference and/or Job Site Visit. Contractors who are not in attendance for the entire Pre-Bid Conference and/or Job Site Visit will be considered to have not attended.

2.2 Any revision of the Bid Documents made as a result of the Pre-Bid Conference shall not be valid unless included in an addendum.

ARTICLE 3

BIDDER'S REPRESENTATION

3.1 Each Bidder by making his bid represents that:

3.1.1 He has read and understands the Bid Documents and his bid is made in accordance therewith.

3.1.2 He has visited the site and has familiarized himself with the local conditions under which the work is to be performed.

3.1.3 His bid is based solely upon the materials, systems and equipment described in the Bid Documents as advertised and as modified by addenda.

3.1.4 His bid is not based on any verbal instructions contrary to the Bid Documents and addenda.

3.1.5 He is familiar with the Code of Governmental Ethics requirement that prohibits

public servants and/or their immediate family members from bidding on or entering into contracts; he is aware that the Designer and its principal owners are considered Public Servants under the Code of Governmental Ethics for the limited purposes and scope of the Design Contract with the State on this Project (see Ethics Board Advisory Opinion, No. 2009-378 and 2010-128); and neither he nor any principal of the Bidder with a controlling interest therein has an immediate family relationship with the Designer or any principal within the Designer's firm. (see La. R.S. 42:1113). Any Bidder submitting a bid in violation of this clause shall be disqualified and any contract entered into in violation of this clause shall be null and void.

3.2 The Bidder must be fully qualified under any State or local licensing law for Contractors in effect at the time and at the location of the work before submitting his bid. In the State of Louisiana, Revised Statutes 37:2150, et seq. will be considered, if applicable.

The Contractor shall be responsible for determining that all of his Sub-bidders or prospective Subcontractors are duly licensed in accordance with law.

ARTICLE 4

BID DOCUMENTS

4.1 Copies

4.1.1 Bid Documents may be obtained from the Coastal Protection and Restoration Authority as stated in the Advertisement for Bids.

4.1.1.2 In addition to the availability of printed Bid Documents, the Coastal Protection and Restoration Authority will provide the Bid Documents in electronic format. They may be obtained without charge and without deposit as stated in the Advertisement for Bids.

4.1.1.2.2 Where electronic distribution is provided, all other plan holders are responsible for their own reproduction costs.

4.1.2 Complete sets of Bid Documents shall

be used in preparing bids; neither the Owner nor the Engineer assume any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bid Documents.

4.1.3 The Owner or Engineer in making copies of the Bid Documents available on the above terms, do so only for the purpose of obtaining bids on the work and do not confer a license or grant for any other use.

4.2 Interpretation or Correction of Bid Documents

4.2.1 Bidders shall promptly notify the Coastal Protection and Restoration Authority contact person listed in the Advertisement for Bids of any ambiguity, inconsistency or error which they may discover upon examination of the Bid Documents or of the site and local conditions.

4.2.2 Bidders requiring clarification or interpretation of the Bid Documents shall make a written request to the Coastal Protection and Restoration Authority contact person listed in the Advertisement for Bids, to reach him/her at least seven days prior to the date for receipt of bids.

4.2.3 Any interpretation, correction or change of the Bid Documents will be made by addendum. Interpretations, corrections or changes of the Bid Documents made in any other manner will not be binding and Bidders shall not rely upon such interpretations, corrections and changes.

4.3 Substitutions

4.3.1 The materials, products and equipment described in the Bid Documents establish a standard of required function, dimension, appearance and quality to be met by any proposed substitution. No substitutions shall be allowed after bids are received.

4.3.2 No substitution will be considered unless written request for approval has been submitted by the Proposer and has been received by the Engineer at least seven (7) working days prior to the opening of bids. (RS38:2295C) Each such request shall include the name of the material or equipment for which it is to be substituted and a complete description of the proposed substitute

including model numbers, drawings, cuts, performance and test data and any other information necessary for an evaluation. A statement setting forth any changes in other materials, equipment or work that incorporation of the substitute would require shall be included. It shall be the responsibility of the proposer to include in his proposal all changes required of the Bid Documents if the proposed product is used. Prior approval is given contingent upon supplier being responsible for any costs which may be necessary to modify the space or facilities needed to accommodate the materials and equipment approved.

4.3.3 If the Engineer approves any proposed substitution, such approval will be set forth in an addendum. Bidders shall not rely upon approvals made in any other manner.

4.4 Addenda

4.4.1 Addenda will be mailed or delivered to all who are known by the Coastal Protection and Restoration Authority to have received a complete set of Bid Documents.

4.4.2 Copies of addenda will be made available for inspection wherever Bid Documents are on file for that purpose.

4.4.3 Except as described herein, addenda shall not be issued within a period of seventy-two (72) hours prior to the advertised time for the opening of bids, excluding Saturdays, Sundays, and any other legal holidays. If the necessity arises of issuing an addendum modifying the Bid Documents within the seventy-two (72) hour period prior to the advertised time for the opening of bids, then the opening of bids shall be extended at least seven but no more than twenty-one (21) working days, without the requirement of re-advertising. The revised time and date for the opening of bids shall be stated in the addendum.

4.4.4 Each Bidder shall ascertain from the Coastal Protection and Restoration Authority prior to submitting his bid that he has received all addenda issued, and he shall acknowledge their receipt on the Bid Form.

4.4.5 The Owner shall have the right to extend the bid date by up to (30) thirty days without the requirement of re-advertising. Any such extension shall be made by addendum issued by the Coastal Protection and Restoration Authority.

ARTICLE 5

BID PROCEDURE

5.1 Form and Style of Bids

5.1.1 Bids shall be submitted on the Louisiana Uniform Public Work Bid Form provided by the Engineer.

5.1.2 All blanks on the Bid Form shall be filled in manually in ink or typewritten.

5.1.3 Bid sums shall be expressed in both words and figures, and in case of discrepancy between the two, the written words shall govern.

5.1.4 Any interlineation, alteration or erasure must be initialed by the signer of the bid or his authorized representative.

5.1.5 Bidders are cautioned to complete all alternates should such be required in the Bid Form. Failure to submit alternate prices will render the bid non responsive and shall cause its rejection.

5.1.6 Bidders are cautioned to complete all unit prices should such be required in the Bid Form. Unit prices represent a price proposal to do a specified quantity and quality of work.

5.1.7 Bidders are strongly cautioned to ensure that all blanks on the bid form are completely and accurately filled in.

5.1.8 Bidder shall make no additional stipulations on the Bid Form nor qualify his bid in any other manner.

5.1.9 The bid shall include the legal name of Bidder. Written evidence of the authority of the person signing the bid shall be submitted at the time of bidding.

The authority of the signature of the person submitting the bid shall be deemed sufficient and acceptable under any of the following conditions:

(a) Signature on bid is that of any corporate officer listed on the most current annual report on file with the Secretary of State, or the signature on the bid is that of any member of a partnership, limited liability company, limited liability partnership, or other legal entity listed in the most current business records on file with the Secretary of State.

(b) Signature on bid is that of authorized representative as documented by the legal entity certifying the authority of the person.

(c) Legal entity has filed in the appropriate records of the Secretary of State, an affidavit, resolution or other acknowledged or authentic document indicating the names of all parties authorized to submit bids for public contracts. Such document on file with the Secretary of State shall remain in effect and shall be binding upon the principal until specifically rescinded and canceled from the records of the office. A bid submitted by an agency shall have a current Power of Attorney attached certifying agent's authority to bind Bidder. The name and license number on the envelope shall be the same as the entity identified on the Bid Form.

5.1.10 On any bid in excess of fifty thousand dollars (\$50,000.00), the Contractor shall certify that he is licensed under R.S. 37: 2150-2173 and show his license number on the bid above his signature or his duly authorized representative.

5.2 Bid Security

5.2.1 No bid shall be considered or accepted unless the bid is accompanied by bid security in an amount of five percent (5.0%) of the base bid and all alternates.

The bid security shall be in the form of a certified check or cashier's check drawn on a bank insured by the Federal Deposit Insurance Corporation, or a Bid Bond written by a surety company licensed to do business in Louisiana and signed by the surety's agent or attorney-in-fact.

The Bid Bond shall be written on the Coastal Protection and Restoration Authority Bid Bond Form, and the surety for the bond must meet the qualifications stated thereon. The Bid Bond shall include the legal name of the bidder be in favor of the State of Louisiana, Coastal Protection and Restoration Authority, and shall be accompanied by appropriate power of attorney. The Bid Bond must be signed by both the bidder/principal and the surety in the space provided on the Coastal Protection and Restoration Authority Bid Bond Form. Failure by the bidder/principal or the surety to sign the bid bond shall result in the rejection of the bid.

Bid security furnished by the Contractor shall guarantee that the Contractor will, if awarded the work according to the terms of his proposal, enter into the Contract and furnish Performance and Payment Bonds as required by these Bid Documents, within ten (10) days after written notice that the instrument is ready for his signature.

Should the Bidder refuse to enter into such Contract or fail to furnish such bonds, the amount of the bid security shall be forfeited to the Owner as liquidated damages, not as penalty.

5.2.2 The Owner will have the right to retain the bid security of Bidders until either (a) the Contract has been executed and bonds have been furnished, or (b) the specified time has elapsed so that bids may be withdrawn, or (c) all bids have been rejected.

5.3 Submission of Bids

5.3.1 The Bid shall be sealed in an opaque envelope. The bid envelope shall be identified on the outside with the name of the project, and the name, address, and license number of the Bidder. The envelope shall contain **only one bid form** and will be received until the time specified and at the place specified in the Advertisement for Bids. It shall be the specific responsibility of the Bidder to deliver his sealed bid to the Coastal Protection and Restoration Authority at the appointed place and prior to the announced time for the opening of bids. Late delivery of a bid for any reason, including late delivery by United States Mail, or

express delivery, shall disqualify the bid.

If the bid is sent by mail, the sealed envelope shall be enclosed in a separate mailing envelope with the notation "Bid Enclosed" on the face thereof. Such bids shall be sent by Registered or Certified Mail, Return Receipt Requested, addressed to:

Coastal Protection and Restoration Authority
P. O. Box 44027
Baton Rouge, Louisiana, 70804-4027.

Bids sent by express delivery shall be delivered to:
Coastal Protection and Restoration Authority
150 Terrace Avenue
Suite 100
Baton Rouge, Louisiana 70802

5.3.2 Bids shall be deposited at the designated location prior to the time on the date for receipt of bids indicated in the Advertisement for Bids, or any extension thereof made by addendum. Bids received after the time and date for receipt of bids will be returned unopened.

5.3.3 Bidder shall assume full responsibility for timely delivery at location designated for receipt of bids.

5.3.4 Oral, telephonic or telegraphic bids are invalid and shall not receive consideration. Owner shall not consider notations written on outside of bid envelope which have the effect of amending the bid. Written modifications enclosed in the bid envelope, and signed or initialed by the Contractor or his representative, shall be accepted.

5.4 Modification or Withdrawal of Bid

5.4.1 A bid may not be modified, withdrawn or canceled by the Bidder during the time stipulated in the Advertisement for Bids, for the period following the time and bid date designated for the receipt of bids, and Bidder so agrees in submitting his bid, except in accordance with R.S. 38:2214 which states, in part, "Bids containing patently obvious mechanical, clerical or mathematical errors may be withdrawn by the Contractor if clear and convincing sworn, written evidence of such errors is furnished to the public entity within forty

eight hours of the Bid Opening excluding Saturdays, Sundays and legal holidays".

5.4.2 Prior to the time and date designated for receipt of bids, bids submitted early may be modified or withdrawn only by notice to the party receiving bids at the place and prior to the time designated for receipt of bids.

5.4.3 Withdrawn bids may be resubmitted up to the time designated for the receipt of bids provided that they are then fully in conformance with these Instructions to Bidders.

5.4.4 Bid Security shall be in an amount sufficient for the bid as modified or resubmitted.

ARTICLE 6

CONSIDERATION OF BIDS

6.1 Opening of Bids

6.1.1 The properly identified Bids received on time will be opened publicly and will be read aloud, and a tabulation abstract of the amounts of the base bids and alternates, if any, will be made available to Bidders.

6.2 Rejection of Bids

6.2.1 The Owner shall have the right to reject any or all bids and in particular to reject a bid not accompanied by any required bid security or data required by the Bid Documents or a bid in any way incomplete or irregular.

6.3 Acceptance of Bid

6.3.2 It is the intent of the Owner, if he accepts any alternates, to accept them in the order in which they are listed in the Bid Form. Determination of the Low Bidder shall be on the basis of the sum of the base bid and the alternates accepted. However, the Owner shall reserve the right to accept alternates in any order which does not affect determination of the Low Bidder.

ARTICLE 7

POST-BID INFORMATION

7.1 Submissions

7.1.1 The Contractor shall submit all required deliverables in conformance with Section SP-4 of the Special Provisions.

It is the preference of the Owner that, to the greatest extent possible or practical, the Contractor utilize Louisiana Subcontractors, manufacturers, suppliers and labor.

7.1.2 The Contractor will be required to establish to the satisfaction of the Engineer the reliability and responsibility of the proposed Subcontractors to furnish and perform the work described in the sections of the Specifications pertaining to such proposed Subcontractor's respective trades. The General Contractor shall be responsible for actions or inactions of Subcontractors and/or material suppliers.

The General Contractor is totally responsible for any lost time or extra expense incurred due to a Subcontractor's/or Material Supplier's failure to perform. Failure to perform includes, but is not limited to, a Subcontractor's financial failure, abandonment of the project, failure to make prompt delivery, or failure to do work up to standard. Under no circumstances shall the Owner mitigate the General Contractor's losses or reimburse the General Contractor for losses caused by these events.

7.1.3 Subcontractors and other persons and organizations selected by the Bidder must be used on the work for which they were proposed and shall not be changed except with the written approval of the Owner and the Engineer.

In accordance with La. R.S. 38:2227, LA. R.S. 38:2212.10 and LA. R.S. 23:1726(B) the low bidder on this project must submit the completed Attestations Affidavit (Past Criminal Convictions of Bidders, Verification of Employees and Certification Regarding Unpaid Workers Compensation Insurance) form found within this bid package. The Attestations Affidavit form shall be submitted to Coastal Protection and Restoration Authority contact person listed in the

Advertisement For Bids within 10 days after the opening of bids.

ARTICLE 8

PERFORMANCE AND PAYMENT BOND

8.1 Bond Required

8.1.1 The Contractor shall furnish and pay for a Performance and Payment Bond written by a company licensed to do business in Louisiana, which shall be signed by the surety's agent or attorney-in-fact, in an amount equal to 100% of the Contract amount. Surety must be listed currently on the U. S. Department of Treasury Financial Management Service List (Treasury List) as approved for an amount equal to or greater than the contract amount, or must be an insurance company domiciled in Louisiana or owned by Louisiana residents. If surety is qualified other than by listing on the Treasury list, the contract amount may not exceed fifteen percent of policyholders' surplus as shown by surety's most recent financial statements filed with the Louisiana Department of Insurance and may not exceed the amount of \$500,000. However, a Louisiana domiciled insurance company with at least an A-rating in the latest printing of the A. M. Best's Key Rating Guide shall not be subject to the \$500,000 limitation, provided that the contract amount does not exceed ten percent of policyholders' surplus as shown in the latest A. M. Best's Key Rating Guide nor fifteen percent of policyholders' surplus as shown by surety's most recent financial statements filed with the Louisiana Department of Insurance. The Bond shall be signed by the surety's agent or attorney-in-fact. The Bond shall be in favor of the Coastal Protection and Restoration Authority.

8.2 Time of Delivery and Form of Bond

8.2.1 The Bidder shall deliver the required bond to the Owner simultaneous with the execution of the Contract.

8.2.2 Bond shall be in the form furnished by the

Coastal Protection and Restoration Authority, entitled CONTRACT BETWEEN OWNER AND CONTRACTOR AND PERFORMANCE AND PAYMENT BOND, a copy of which is included in the Bid Documents.

8.2.3 The Bidder shall require the Attorney-in-Fact who executes the required bond on behalf of the surety to affix thereto a certified and current copy of his power of Attorney.

ARTICLE 9

FORM OF AGREEMENT BETWEEN OWNER AND CONTRACTOR

9.1 Form to be Used

9.1.1 Form of the Contract to be used shall be furnished by the Coastal Protection and Restoration Authority, an example of which is bound in the Bid Documents.

9.2 Award

9.2.1 Before award of the Contract, the successful Bidder shall furnish to the Owner a copy of a Disclosure of Ownership Affidavit stamped by the Secretary of State, a certified copy of the minutes of the corporation or partnership meeting which authorized the party executing the bid to sign on behalf of the Contractor.

9.2.2 In accordance with Louisiana Law, when the Contract is awarded, the successful Bidder shall, at the time of the signing of the Contract, execute the Non-Collusion Affidavit included in the Contract Documents

9.2.3 When this project is financed either partially or entirely with State Bonds, the award of this Contract is contingent upon the sale of bonds by the State Bond Commission. The State shall incur no obligation to the Contractor until the Contract between Owner and Contractor is duly executed.

LOUISIANA UNIFORM PUBLIC WORK BID FORM

TO: Coastal Protection and Restoration Authority
150 Terrace Avenue
Suite 100
Baton Rouge, LA 70802
(Owner to provide name and address of owner)

BID FOR: Rockefeller Refuge
Gulf Shoreline
Stabilization
ME-18

(Owner to provide name of project and other identifying information)

The undersigned bidder hereby declares and represents that she/he; a) has carefully examined and understands the Bidding Documents, b) has not received, relied on, or based his bid on any verbal instructions contrary to the Bidding Documents or any addenda, c) has personally inspected and is familiar with the project site, and hereby proposes to provide all labor, materials, tools, appliances and facilities as required to perform, in a workmanlike manner, all work and services for the construction and completion of the referenced project, all in strict accordance with the Bidding Documents prepared by: _____

HDR Engineering, Inc. and dated: April 25, 2017
(Owner to provide name of entity preparing bidding documents.)

Bidders must acknowledge all addenda. The Bidder acknowledges receipt of the following **ADDENDA:** (Enter the number the Designer has assigned to each of the addenda that the Bidder is acknowledging) _____ .

TOTAL BASE BID: For all work required by the Bidding Documents (including any and all unit prices designated "Base Bid" * but not alternates) the sum of:

_____ Dollars (\$ _____)

ALTERNATES: For any and all work required by the Bidding Documents for Alternates including any and all unit prices designated as alternates in the unit price description.

Alternate No. 1 *(Add Breakwater Alignment A25 - A13))* for the lump sum of:

_____ Dollars (\$ _____)

Alternate No. 2 *(Add Breakwater Alignment A13 - A2)* for the lump sum of:

_____ Dollars (\$ _____)

Alternate No. 3 *(Add Breakwater Alignment A2 - A1)* for the lump sum of:

_____ Dollars (\$ _____)

NAME OF BIDDER: _____

ADDRESS OF BIDDER: _____

LOUISIANA CONTRACTOR'S LICENSE NUMBER: _____

NAME OF AUTHORIZED SIGNATORY OF BIDDER: _____

TITLE OF AUTHORIZED SIGNATORY OF BIDDER: _____

SIGNATURE OF AUTHORIZED SIGNATORY OF BIDDER **: _____

DATE: _____

* The Unit Price Form shall be used if the contract includes unit prices. Otherwise it is not required and need not be included with the form. The number of unit prices that may be included is not limited and additional sheets may be included if needed.

** If someone other than a corporate officer signs for the Bidder/Contractor, a copy of a corporate resolution or other signature authorization shall be required for submission of bid. Failure to include a copy of the appropriate signature authorization, if required, may result in the rejection of the bid unless bidder has complied with La. R.S. 38:2212(B)(5).

BID SECURITY in the form of a bid bond, certified check or cashier's check as prescribed by LA RS 38:2218.A is attached to and made a part of this bid.

LOUISIANA UNIFORM PUBLIC WORK BID FORM

UNIT PRICE FORM

TO: Coastal Protection and Restoration Authority
150 Terrace Avenue
Suite 100
Baton Rouge, LA 70802
(Owner to provide name and address of owner)

BID FOR: Rockefeller Refuge
Gulf Shoreline
Stabilization
ME-18
(Owner to provide name of project and other identifying information)

UNIT PRICES: This form shall be used for any and all work required by the Bidding Documents and described as unit prices. Amounts shall be stated in figures and only in figures.

DESCRIPTION:	<input checked="" type="checkbox"/> Base Bid or <input type="checkbox"/> Alt.# ____	Mobilization and Demobilization		
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION (<i>Quantity times Unit Price</i>)
1.1	1	Lump Sum		

DESCRIPTION:	<input checked="" type="checkbox"/> Base Bid or <input type="checkbox"/> Alt.# ____	Topographic and Bathymetric Surveying		
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION (<i>Quantity times Unit Price</i>)
1.2	1	Lump Sum		

DESCRIPTION:	<input checked="" type="checkbox"/> Base Bid or <input type="checkbox"/> Alt.# ____	Pre-Construction Hazard Survey		
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION (<i>Quantity times Unit Price</i>)
1.3	1	Lump Sum		

DESCRIPTION:	<input checked="" type="checkbox"/> Base Bid or <input type="checkbox"/> Alt.# ____	Aerial Photography		
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION (<i>Quantity times Unit Price</i>)
1.4	1	Lump Sum		

DESCRIPTION:	<input checked="" type="checkbox"/> Base Bid or <input type="checkbox"/> Alt.# ____	Geotextile Composite		
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION (<i>Quantity times Unit Price</i>)
1.5	9,830	Linear Feet		

DESCRIPTION:	<input checked="" type="checkbox"/> Base Bid or <input type="checkbox"/> Alt.# ____	Bedding Layer Stone		
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION (<i>Quantity times Unit Price</i>)
1.6	18,700	Tons		

DESCRIPTION:	<input checked="" type="checkbox"/> Base Bid or <input type="checkbox"/> Alt.# ____	Armor Stone		
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION (<i>Quantity times Unit Price</i>)
1.7	122,500	Tons		

DESCRIPTION:	<input checked="" type="checkbox"/> Base Bid or <input type="checkbox"/> Alt.# ____	Encapsulated Lightweight Aggregate		
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION (<i>Quantity times Unit Price</i>)
1.8	27,700	Cubic Yards		

Wording for "DESCRIPTION" is to be provided by the Owner.

All quantities are estimated. The contractor will be paid based upon actual quantities as verified by the Owner

LOUISIANA UNIFORM PUBLIC WORK BID FORM

UNIT PRICE FORM

TO: Coastal Protection and Restoration Authority
150 Terrace Avenue
Suite 100
Baton Rouge, LA 70802

(Owner to provide name and address of owner)

BID FOR: Rockefeller Refuge
Gulf Shoreline
Stabilization
ME-18

(Owner to provide name of project and other identifying information)

UNIT PRICES: This form shall be used for any and all work required by the Bidding Documents and described as unit prices. Amounts shall be stated in figures and only in figures.

DESCRIPTION:	<input checked="" type="checkbox"/> Base Bid or <input type="checkbox"/> Alt.# <u> </u>	Settlement Plates		
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION (<i>Quantity times Unit Price</i>)
1.9	11	Each		

DESCRIPTION:	<input checked="" type="checkbox"/> Base Bid or <input type="checkbox"/> Alt.# <u> </u>	Lighted Daybeacons		
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION (<i>Quantity times Unit Price</i>)
1.10	6	Each		

DESCRIPTION:	<input type="checkbox"/> Base Bid or <input checked="" type="checkbox"/> Alt.# <u>1</u>	Additional Mobilization and Demobilization		
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION (<i>Quantity times Unit Price</i>)
2.1	1	Lump Sum		

DESCRIPTION:	<input type="checkbox"/> Base Bid or <input checked="" type="checkbox"/> Alt.# <u>1</u>	Additional Topographic and Bathymetric Surveying		
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION (<i>Quantity times Unit Price</i>)
2.2	1	Lump Sum		

DESCRIPTION:	<input type="checkbox"/> Base Bid or <input checked="" type="checkbox"/> Alt.# <u>1</u>	Additional Pre-Construction Hazard Survey		
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION (<i>Quantity times Unit Price</i>)
2.3	1	Lump Sum		

DESCRIPTION:	<input type="checkbox"/> Base Bid or <input checked="" type="checkbox"/> Alt.# <u>1</u>	Additional Aerial Photography		
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION (<i>Quantity times Unit Price</i>)
2.4	1	Lump Sum		

DESCRIPTION:	<input type="checkbox"/> Base Bid or <input checked="" type="checkbox"/> Alt.# <u>1</u>	Additional Geotextile Composite		
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION (<i>Quantity times Unit Price</i>)
2.5	2,720	Linear Feet		

DESCRIPTION:	<input type="checkbox"/> Base Bid or <input checked="" type="checkbox"/> Alt.# <u>1</u>	Additional Bedding Layer Stone		
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION (<i>Quantity times Unit Price</i>)
2.6	5,300	Tons		

Wording for "DESCRIPTION" is to be provided by the Owner.

All quantities are estimated. The contractor will be paid based upon actual quantities as verified by the Owner

LOUISIANA UNIFORM PUBLIC WORK BID FORM

UNIT PRICE FORM

TO: Coastal Protection and Restoration Authority
 150 Terrace Avenue
 Suite 100
 Baton Rouge, LA 70802

(Owner to provide name and address of owner)

BID FOR: Rockefeller Refuge
 Gulf Shoreline
 Stabilization
 ME-18

(Owner to provide name of project and other identifying information)

UNIT PRICES: This form shall be used for any and all work required by the Bidding Documents and described as unit prices. Amounts shall be stated in figures and only in figures.

DESCRIPTION:	<input type="checkbox"/> Base Bid or <input checked="" type="checkbox"/> Alt.# <u>1</u>	Additional Armor Stone		
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION (<i>Quantity times Unit Price</i>)
2.7	34,000	Tons		

DESCRIPTION:	<input type="checkbox"/> Base Bid or <input checked="" type="checkbox"/> Alt.# <u>1</u>	Additional Encapsulated Lightweight Aggregate		
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION (<i>Quantity times Unit Price</i>)
2.8	7,000	Cubic Yards		

DESCRIPTION:	<input type="checkbox"/> Base Bid or <input checked="" type="checkbox"/> Alt.# <u>1</u>	Additional Settlement Plates		
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION (<i>Quantity times Unit Price</i>)
2.9	3	Each		

DESCRIPTION:	<input type="checkbox"/> Base Bid or <input checked="" type="checkbox"/> Alt.# <u>1</u>	Additional Lighted Daybeacons		
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION (<i>Quantity times Unit Price</i>)
2.10	2	Each		

DESCRIPTION:	<input type="checkbox"/> Base Bid or <input checked="" type="checkbox"/> Alt.# <u>2</u>	Additional Mobilization and Demobilization		
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION (<i>Quantity times Unit Price</i>)
3.1	1	Lump Sum		

DESCRIPTION:	<input type="checkbox"/> Base Bid or <input checked="" type="checkbox"/> Alt.# <u>2</u>	Additional Topographic and Bathymetric Surveying		
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION (<i>Quantity times Unit Price</i>)
3.2	1	Lump Sum		

DESCRIPTION:	<input type="checkbox"/> Base Bid or <input checked="" type="checkbox"/> Alt.# <u>2</u>	Additional Pre-Construction Hazard Survey		
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION (<i>Quantity times Unit Price</i>)
3.3	1	Lump Sum		

DESCRIPTION:	<input type="checkbox"/> Base Bid or <input checked="" type="checkbox"/> Alt.# <u>2</u>	Additional Aerial Photography		
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION (<i>Quantity times Unit Price</i>)
3.4	1	Lump Sum		

Wording for "DESCRIPTION" is to be provided by the Owner.

All quantities are estimated. The contractor will be paid based upon actual quantities as verified by the Owner

LOUISIANA UNIFORM PUBLIC WORK BID FORM

UNIT PRICE FORM

TO: Coastal Protection and Restoration Authority
150 Terrace Avenue
Suite 100
Baton Rouge, LA 70802

(Owner to provide name and address of owner)

BID FOR: Rockefeller Refuge
Gulf Shoreline
Stabilization
ME-18

(Owner to provide name of project and other identifying information)

UNIT PRICES: This form shall be used for any and all work required by the Bidding Documents and described as unit prices. Amounts shall be stated in figures and only in figures.

DESCRIPTION:	<input type="checkbox"/> Base Bid or <input checked="" type="checkbox"/> Alt.# <u>2</u>	Additional Geotextile Composite		
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity times Unit Price)</i>
3.5	1,790	Linear Feet		

DESCRIPTION:	<input type="checkbox"/> Base Bid or <input checked="" type="checkbox"/> Alt.# <u>2</u>	Additional Bedding Layer Stone		
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity times Unit Price)</i>
3.6	3,400	Tons		

DESCRIPTION:	<input type="checkbox"/> Base Bid or <input checked="" type="checkbox"/> Alt.# <u>2</u>	Additional Armor Stone		
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity times Unit Price)</i>
3.7	22,300	Tons		

DESCRIPTION:	<input type="checkbox"/> Base Bid or <input checked="" type="checkbox"/> Alt.# <u>2</u>	Additional Encapsulated Lightweight Aggregate		
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity times Unit Price)</i>
3.8	3,200	Cubic Yards		

DESCRIPTION:	<input type="checkbox"/> Base Bid or <input checked="" type="checkbox"/> Alt.# <u>2</u>	Additional Settlement Plates		
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity times Unit Price)</i>
3.9	2	Each		

DESCRIPTION:	<input type="checkbox"/> Base Bid or <input checked="" type="checkbox"/> Alt.# <u>2</u>	Additional Lighted Daybeacons		
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity times Unit Price)</i>
3.10	1	Each		

DESCRIPTION:	<input type="checkbox"/> Base Bid or <input checked="" type="checkbox"/> Alt.# <u>3</u>	Additional Mobilization and Demobilization		
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity times Unit Price)</i>
4.1	1	Lump Sum		

DESCRIPTION:	<input type="checkbox"/> Base Bid or <input checked="" type="checkbox"/> Alt.# <u>3</u>	Additional Topographic and Bathymetric Surveying		
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity times Unit Price)</i>
4.2	1	Lump Sum		

Wording for "DESCRIPTION" is to be provided by the Owner.

All quantities are estimated. The contractor will be paid based upon actual quantities as verified by the Owner

LOUISIANA UNIFORM PUBLIC WORK BID FORM

UNIT PRICE FORM

TO: Coastal Protection and Restoration Authority
 150 Terrace Avenue
 Suite 100
 Baton Rouge, LA 70802

(Owner to provide name and address of owner)

BID FOR: Rockefeller Refuge
 Gulf Shoreline
 Stabilization
 ME-18

(Owner to provide name of project and other identifying information)

UNIT PRICES: This form shall be used for any and all work required by the Bidding Documents and described as unit prices. Amounts shall be stated in figures and only in figures.

DESCRIPTION:	<input type="checkbox"/> Base Bid or <input checked="" type="checkbox"/> Alt.# <u>3</u>	Additional Pre-Construction Hazard Survey		
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION (<i>Quantity times Unit Price</i>)
4.3	1	Lump Sum		

DESCRIPTION:	<input type="checkbox"/> Base Bid or <input checked="" type="checkbox"/> Alt.# <u>3</u>	Additional Aerial Photography		
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION (<i>Quantity times Unit Price</i>)
4.4	1	Lump Sum		

DESCRIPTION:	<input type="checkbox"/> Base Bid or <input checked="" type="checkbox"/> Alt.# <u>3</u>	Additional Geotextile Composite		
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION (<i>Quantity times Unit Price</i>)
4.5	350	Linear Feet		

DESCRIPTION:	<input type="checkbox"/> Base Bid or <input checked="" type="checkbox"/> Alt.# <u>3</u>	Additional Bedding Layer Stone		
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION (<i>Quantity times Unit Price</i>)
4.6	850	Tons		

DESCRIPTION:	<input type="checkbox"/> Base Bid or <input checked="" type="checkbox"/> Alt.# <u>3</u>	Additional Armor Stone		
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION (<i>Quantity times Unit Price</i>)
4.7	5,600	Tons		

DESCRIPTION:	<input type="checkbox"/> Base Bid or <input checked="" type="checkbox"/> Alt.# <u>3</u>	Additional Encapsulated Lightweight Aggregate		
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION (<i>Quantity times Unit Price</i>)
4.8	1,100	Cubic Yards		

DESCRIPTION:	<input type="checkbox"/> Base Bid or <input type="checkbox"/> Alt.# ____	N/A		
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION (<i>Quantity times Unit Price</i>)
N/A	N/A	N/A	N/A	N/A

DESCRIPTION:	<input type="checkbox"/> Base Bid or <input type="checkbox"/> Alt.# ____	N/A		
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION (<i>Quantity times Unit Price</i>)
N/A	N/A	N/A	N/A	N/A

Wording for "DESCRIPTION" is to be provided by the Owner.

All quantities are estimated. The contractor will be paid based upon actual quantities as verified by the Owner

BID BOND
FOR
COASTAL PROTECTION AND RESTORATION AUTHORITY PROJECTS

Date: _____

KNOW ALL MEN BY THESE PRESENTS:

That _____ of _____,
as Principal, and _____, as Surety,
are held and firmly bound unto the State of Louisiana, Coastal Protection and Restoration Authority (Obligee), in the full and just sum of five (5%) percent of the total amount of this proposal, including all alternates, lawful money of the United States, for payment of which sum, well and truly be made, we bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally firmly by these presents.

Surety represents that it is listed on the current U. S. Department of the Treasury Financial Management Service list of approved bonding companies as approved for an amount equal to or greater than the amount for which it obligates itself in this instrument or that it is a Louisiana domiciled insurance company with at least an A - rating in the latest printing of the A. M. Best's Key Rating Guide. If surety qualifies by virtue of its Best's listing, the Bond amount may not exceed ten percent of policyholders' surplus as shown in the latest A. M. Best's Key Rating Guide.

Surety further represents that it is licensed to do business in the State of Louisiana and that this Bond is signed by surety's agent or attorney-in-fact. This Bid Bond is accompanied by appropriate power of attorney.

THE CONDITION OF THIS OBLIGATION IS SUCH that, whereas said Principal is herewith submitting its proposal to the Obligee on a Contract for:

NOW, THEREFORE, if the said Contract be awarded to the Principal and the Principal shall, within such time as may be specified, enter into the Contract in writing and give a good and sufficient bond to secure the performance of the terms and conditions of the Contract with surety acceptable to the Obligee, then this obligation shall be void; otherwise this obligation shall become due and payable.

PRINCIPAL (BIDDER)

SURETY

BY: _____
AUTHORIZED OFFICER-OWNER-PARTNER

BY: _____
AGENT OR ATTORNEY-IN-FACT(SEAL)

ROCKEFELLER REFUGE GULF SHORELINE
STABILIZATION (ME-18)
Name of Project

ME-18
Project No.

STATE OF LOUISIANA

PARISH OF CAMERON

ATTESTATIONS AFFIDAVIT

Before me, the undersigned notary public, duly commissioned and qualified in and for the parish and state aforesaid, personally came and appeared Affiant, who after being duly sworn, attested as follows:

LA. R.S. 38:2227 PAST CRIMINAL CONVICTIONS OF BIDDERS

A. No sole proprietor or individual partner, incorporator, director, manager, officer, organizer, or member who has a minimum of a ten percent (10%) ownership in the bidding entity named below has been convicted of, or has entered a plea of guilty or nolo contendere to any of the following state crimes or equivalent federal crimes:

- | | |
|---------------------------------------|-----------------------------------|
| (a) Public bribery (R.S. 14:118) | (c) Extortion (R.S. 14:66) |
| (b) Corrupt influencing (R.S. 14:120) | (d) Money laundering (R.S. 14:23) |

B. Within the past five years from the project bid date, no sole proprietor or individual partner, incorporator, director, manager, officer, organizer, or member who has a minimum of a ten percent (10%) ownership in the bidding entity named below has been convicted of, or has entered a plea of guilty or nolo contendere to any of the following state crimes or equivalent federal crimes, during the solicitation or execution of a contract or bid awarded pursuant to the provisions of Chapter 10 of Title 38 of the Louisiana Revised Statutes:

- | | |
|---|--|
| (a) Theft (R.S. 14:67) | (f) Bank fraud (R.S. 14:71.1) |
| (b) Identity Theft (R.S. 14:67.16) | (g) Forgery (R.S. 14:72) |
| (c) Theft of a business record
(R.S. 14:67.20) | (h) Contractors; misapplication of
payments (R.S. 14:202) |
| (d) False accounting (R.S. 14:70) | (i) Malfeasance in office (R.S. 14:134) |
| (e) Issuing worthless checks
(R.S. 14:71) | |

LA. R.S. 38:2212.10 Verification of Employees

- A. At the time of bidding, Appearer is registered and participates in a status verification system to verify that all new employees in the state of Louisiana are legal citizens of the United States or are legal aliens.
- B. If awarded the contract, Appearer shall continue, during the term of the contract, to utilize a status verification system to verify the legal status of all new employees in the state of Louisiana.
- C. If awarded the contract, Appearer shall require all subcontractors to submit to it a sworn affidavit verifying compliance with Paragraphs (A) and (B) of this Subsection.

ROCKEFELLER REFUGE GULF SHORELINE
STABILIZATION (ME-18)
Name of Project

ME-18
Project No.

LA. R.S. 23:1726(B) Certification Regarding Unpaid Workers Compensation Insurance

- A. R.S. 23:1726 prohibits any entity against whom an assessment under Part X of Chapter 11 of Title 23 of the Louisiana Revised Statutes of 1950 (Alternative Collection Procedures & Assessments) is in effect, and whose right to appeal that assessment is exhausted, from submitting a bid or proposal for or obtaining any contract pursuant to Chapter 10 of Title 38 of the Louisiana Revised Statutes of 1950 and Chapters 16 and 17 of Title 39 of the Louisiana Revised Statutes of 1950.
- B. By signing this bid /proposal, Affiant certifies that no such assessment is in effect against the bidding / proposing entity.

NAME OF BIDDER

NAME OF AUTHORIZED SIGNATORY OF BIDDER

DATE

TITLE OF AUTHORIZED SIGNATORY OF BIDDER

**SIGNATURE OF AUTHORIZED
SIGNATORY OF BIDDER/AFFIANT**

Sworn to and subscribed before me by Affiant on the ____ day of _____, 20__ .

Notary Public

FOR INFORMATION ONLY

This document will be prepared by the Coastal Protection and Restoration Authority in the form appropriate for the project.

CONTRACT BETWEEN OWNER AND CONTRACTOR AND PERFORMANCE AND PAYMENT BOND

This agreement entered into this _____ day of _____, 2017, by (CONTRACTOR NAME) hereinafter called the "Contractor", whose business address is _____, and the State of Louisiana Coastal Protection and Restoration Authority, herein represented by its Executive Director executing this contract, and hereinafter called the "Owner".

Witnesseth that the Contractor and the Owner, in consideration of premises and the mutual covenants; consideration and agreement herein contained, agree as follows:

Statement of Work: The contractor shall furnish all labor and materials and perform all of the work required to build, construct and complete in a thorough and workmanlike manner:

Project No. _____
State ID No. _____ Site Code _____

in strict accordance with Contract Documents prepared by Owner.

It is recognized by the parties herein that said Contract Documents, including by way of example and not of limitation, the Plans, Specifications (including General Provisions, Special Provisions, and Technical Specifications), Any Addenda thereto, Instructions To Bidders, this Contract, Advertisement For Bids, Affidavit, Bid Form, Bonds (Bid, Performance, and Payment), any Submitted Post-Bid Documentation, Notice of Award, Notice to Proceed, Change Orders, and Claims, if any, impose duties and obligations upon the parties herein, and said parties thereby agree that they shall be bound by said duties and obligations. For these purposes, all of the provisions contained in the aforementioned Contract Documents are incorporated herein by reference with the same force and effect as though said Contract Documents were herein set out in full.

Time for Completion: The work shall be commenced on a date to be specified in a written order of the Owner and shall be completed within _____ consecutive calendar days from and after the said date.

Liquidated Damages: Contractor shall be assessed Liquidated Damages in the amount of \$ _____ per day for each consecutive calendar day which work is not complete beginning with the first day beyond the completion time.

Compensation to be paid to the Contractor: The Owner will pay and the Contractor will accept in full consideration for the performance of the contract the sum of _____ **Dollars (\$)** which sum represents the Contract Price.

Performance and Payment Bond: To these presents personally came and intervened _____, herein acting for _____, a corporation organized and existing under the laws of the State of _____, and duly authorized to transact business in the State of Louisiana, as surety, who declared that having taken cognizance of this contract and of the Construction Documents mentioned herein, he hereby in his capacity as its Attorney in Fact obligates his said company, as Surety for the said Contractor, unto the said Owner, up to the sum of _____ **Dollars (\$)**. By issuance of this bond, the surety acknowledges they are in compliance with R.S. 38:2219.

The condition of this performance and payment bond shall be that should the Contractor herein not perform the contract in accordance with the terms and conditions hereof, or should said Contractor not fully indemnify and save harmless the Owner, from all cost and damages which he may suffer by said Contractor's non-performance or should said Contractor not pay all persons who have and fulfill obligations to perform labor and/or furnish materials in the prosecution of the work provided for herein, including by way of example workmen, laborers, mechanics, and furnishers of materials, machinery, equipment and fixtures, then said Surety agrees and is bound to so perform the contract and make said payment(s).

Provided, that any alterations which may be made in the terms of the contract or in the work to be done under it, or the giving by the Owner of any extensions of time for the performance of the contract, or any other forbearance on the part of either the Owner or the Contractor to the other shall not in any way release the Contractor or the Surety from their liability hereunder, notice to the Surety of any such alterations, extensions or other forbearance being hereby waived.

The Contractor agrees to abide by the requirements of the following as applicable: Title VI and VII of the Civil Rights Act of 1964, as amended by the Equal Opportunity Act of 1972, Federal Executive Order 11246, the Federal Rehabilitation Act of 1973, as amended, the Vietnam Era Veteran's Readjustment Assistance Act of 1974, Title IX of the Education Amendments of 1972, the Age Act of 1972, and contractor agrees to abide by the requirements of the Americans with Disabilities Act of 1990.

Contractor agrees not to discriminate in its employment practices, and will render services under this contract without regard to race, color, sex, religion, national origin, genetic information, age or disabilities. Any act of discrimination committed by Contractor or failure to comply with these statutory obligations when applicable shall be grounds for termination of this contract.

In Witness whereof, the parties hereto on the day and year first above written have executed this agreement in eight (8) counterparts, each of which shall, without proof or accountancy for the other counterparts, be deemed an original thereof.

WITNESSES:

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

BY: _____
Michael Ellis, Executive Director

BY: _____

SURETY: _____

BY: _____
ATTORNEY IN FACT

ADDRESS

TELEPHONE NUMBER

STATE OF LOUISIANA
PARISH OF _____

PROJECT NO.

NAME

LOCATION:

A F F I D A V I T

Before me, the undersigned authority, duly commissioned and qualified within and for the State and Parish aforesaid, personally came and appeared _____ representing who, being by me first duly sworn deposed and said that he has read this affidavit and does hereby agree under oath to comply with all provisions herein as follows:

PART I.

Section 2224 of Part II of Chapter 10 of Title 38 of the Louisiana Revised Statutes, as amended.

(1) That affiant employed no person, corporation, firm, association, or other organization, either directly or indirectly, to secure the public contract under which he received payment, other than persons regularly employed by the affiant whose services in connection with the construction, alteration or demolition of the public building or project or in securing the public contract were in the regular course of their duties for affiant; and

(2) That no part of the Contract price received by affiant was paid or will be paid to any person, corporation, firm, association, or other organization for soliciting the Contract, other than the payment of their normal compensation to persons regularly employed by the affiant whose services in connection with the construction, alteration or demolition of the public building or project were in the regular course of their duties for affiant.

PART II.

Section 2190 of Part I of Chapter 10 of Title 38 of the Louisiana Revised Statutes, as amended.

That affiant, if an architect or engineer, or representative thereof, does not own a substantial financial interest, either directly or indirectly, in any corporation, firm, partnership, or other organization which supplies materials for the construction of a public work when the architect or engineer has performed architectural or engineering services, either directly or indirectly, in connection with the public work for which the materials are being supplied.

For the purposes of this Section, a "substantial financial interest" shall exclude any interest in stock being traded on the American Stock Exchange or the New York Stock Exchange.

That affiant, if subject to the provisions of this section, does hereby agree to be subject to the penalties involved for the violation of this section.

AFFIANT

SWORN TO AND SUBSCRIBED BEFORE ME THIS _____ DAY OF _____, 2017.

NOTARY

PART I GENERAL PROVISIONS

GP-1 DEFINITION OF TERMS

Whenever used in the Bidding Requirements or Contract Documents and printed with initial capital letters, the terms listed below will have the meanings indicated which are applicable to the singular or plural thereof. In addition to terms specifically defined, terms with initial capital letters in the Contract Documents include references to identified articles and paragraphs and the titles of other documents or forms.

Unless stated otherwise in the Contract Documents, words or phrases which have a well-known technical or construction industry or trade meaning are used in the Contract Documents in accordance with such recognized meaning.

- a. Acceptance: A written approval from the Engineer which certifies that specific items of work in the Contract have been completed and/or obligations have been fulfilled by Contractor.
- b. Addenda: Those written or graphic documents which are issued prior to opening of Bids in accordance with the Bidding Requirements and clarify or change the bidding requirements or the proposed Contract Documents.
- c. Application of Payment: That form which is used by Contractor to request partial and final payment and is deemed acceptable to the Owner. It shall be accompanied by any supporting documentation required by the Contract Documents.
- d. A.S.T.M.: American Society for Testing and Materials.
- e. Bid: An offer or proposal submitted on the prescribed form setting forth the prices for the Work.
- f. Bidder: The person, association of persons, firm, or corporation submitting a proposal for the Work.
- g. Bidding Requirements: The Advertisement for Bids, Instructions to Bidders, Form of Bid Security, if any, and Bid Form with any supplements.
- h. Change Order: A written order which is submitted to Contractor, signed by the Owner, and authorizes an addition, deletion, or revision in the Work, or an adjustment in the contract price or the contract time issued after the effective date of the Contract.
- i. Claim: A written demand or assertion by Owner or Contractor seeking an adjustment of Contract Price or Contract Times, or both or other relief with respect to the terms of the Contract.
- j. Contract: The written agreement between the Owner and the Contractor which defines the work to be completed and shall be understood to also include all Contract Documents.

- k. Contract Documents: The Contract, all addenda which pertain to the Contract Documents, Bid Documents and specified Attachments accompanying the Bid and any post-bid documentation submitted prior to the Notice of Award, Contractor's Bid when attached as an exhibit to the Agreement, the Bonds (Bid and Performance/Payment), General Provisions, Special Provisions, Technical Specifications, Plans, and all Field or Change Orders issued after the execution of the Agreement. Shop Drawings and other submittals by the Contractor are not Contract Documents.
- l. Contract Price: The moneys payable by the Owner to the Contractor for the Work in accordance with the Contract Documents as stated in the Contract.
- m. Contract Time: The number of calendar days specified in the Contract for completion of the Work, together with any extensions authorized through change orders.
- n. Contractor: The person, association of persons, firm, or corporation entering into the duly awarded Contract.
- o. Contracting Agency: The State of Louisiana, Coastal Protection and Restoration Authority (CPRA).
- p. Day: When any period of time is referred to in the Contract Documents using days, it will be computed to exclude the first day and include the last day of such period. If the last day of any such period falls on a Saturday, Sunday, or a legal holiday, that day will be omitted from the computation. A calendar day is measured as twenty-four (24) hour period starting at midnight and ending the following midnight.
- q. Design Report: A written report by the Engineer which provides the design methodology for the Work.
- r. Effective Date of the Contract: The date indicated in the Contract on which it becomes effective.
- s. Engineer: The State of Louisiana, Coastal Protection and Restoration Authority, or its designee.
- t. Equipment: All machinery, implements, and power-tools, in conjunction with the necessary supplies for the operation, upkeep, maintenance, and all other tools and apparatuses necessary for the proper construction and acceptable completion of the Work.
- u. Extension of Contract: Any extension of time for completion of Work beyond the Contract Time which is granted by the Owner, recommended by the Engineer and approved by the Coastal Protection and Restoration Authority in the form of a Change Order.
- v. Federal Sponsor: The federal agency which has been tasked, if applicable, to manage the implementation of the project.
- w. Field Order: A written order issued by the Engineer which requires minor changes in the Work but which does not involve a change in the Contract Price or Contract Time.

- x. Laboratory: The firm, company, or corporation which is used to test materials and is approved for use by the Engineer.
- y. Laws and Regulations; Laws or Regulations: Any and all applicable laws, rules, regulations, ordinances, codes, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.
- z. Materials: Any substance used in the Work to build structures, but does not include material used in false work or other temporary structures not incorporated in the Work.
- aa. Milestone: A principal event specified in the Contract Documents relating to an intermediated completion date or time prior to the Contract Times.
- bb. Notice of Award: A written notice to the successful Bidder stating that the Bid has been accepted by the Owner and that the successful Bidder is required to execute the Contract and furnish the Payment and Performance Bond and Non-Collusion Affidavit.
- cc. Notice to Proceed: The written notice to the Contractor by the Owner which provides the starting date for the Contract Time.
- dd. Owner: The Owner is the State of Louisiana (State) which acts through the Contracting Agency.
- ee. Performance and Payment Bond: The approved form of security furnished by the Contractor and Surety for the faithful performance of the Work, and the payment for all labor, materials, and/or obligations incurred by the Contractor in the prosecution thereof.
- ff. Plans: That part of the Contract Documents prepared or approved by the Engineer which graphically shows the scope, intent, and character of the Work to be completed by the Contractor.
- gg. Project Site: The location where the Work is to be performed as stated in the Contract Documents.
- hh. Resident Project Representative: An authorized representative of the Engineer who is responsible to inspect the Work and materials furnished by the Contractor.
- ii. Right-of-way: That entire area reserved for constructing, maintaining, and protecting the proposed improvement, structures, and appurtenances of the Work.
- jj. Samples: Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and which establish the standards by which such portions of the Work will be judged.
- kk. Shop Drawings: All drawings, diagrams, illustrations, schedules, and other data or information which are specifically prepared or assembled by or for the Contractor and submitted by the Contractor to illustrate some portion of the Work to be performed.

- ll. Specifications: That part of the Contract Documents consisting of written technical descriptions of materials, equipment, systems, standards, and workmanship as applied to the work to be performed and certain administrative details applicable thereto.
- mm. State: The State of Louisiana.
- nn. Structures: Bridges, plugs, weirs, bulkheads, berms, dams, levees, and other miscellaneous construction encountered during the Work and not otherwise classified herein.
- oo. Subcontractor: Any person, association of persons, firm, or corporation who contracts with the Contractor to perform any part of the project covered by the Contract.
- pp. Submittals: Certificates, samples, shop drawings, and all other project data which are submitted to the Engineer in order to verify that the correct products will be installed on the project.
- qq. Successful Bidder: The lowest responsible Bidder whom the Owner makes an award.
- rr. Special Provisions: That part of the Contract Documents which amends or supplements these General Provisions.
- ss. Surety: The corporate body, licensed to do business in Louisiana, bound with and for the Contractor's primary liability, and engages to be responsible for payment of all obligations pertaining to acceptable performance of the Work contracted.
- tt. Temporary Structures: Any non-permanent structure required while engaged in the prosecution of the Contract.
- uu. Work: All work specified herein or indicated on the Plans.
- vv. Work Plan: A written plan by the Contractor that details how the Work will be provided including layout drawings, projected schedule (Initial Progress Schedule), and a list of labor hours, materials, and equipment.

GP-2 BID REQUIREMENTS

The Contract and Bonds which govern the Work shall be performed in accordance with the Plans, Specifications, and the Louisiana Standard Specifications for Roads and Bridges, 2006 edition. The Bidder understands that all quantities for performing the Work have been estimated by the Engineer, and that the Bid shall be the sum of the quantities multiplied by their respective unit rates. The Contract shall be awarded by the Owner through a comparison of all bids. It is the responsibility of each Bidder before submitting a Bid to:

- 2.1. Examine the Bidding Documents including the Plans and Specifications and any Addenda or related data identified in the Bidding Documents;
- 2.2. Visit the Project Site to become familiar with the local conditions if they are believed to affect cost, progress, or the completion of the Work;

- 2.3. Become familiar and satisfied with all federal, state, and local Laws and Regulations that may affect cost, progress, or the completion of the Work;
- 2.4. Study and correlate all information known to the Bidder including observations obtained from Bidder's visits, if any, to the Project Site, with the Bidding Documents;
- 2.5. Submit a written notice to the Engineer within three (3) days regarding any conflicts, errors, ambiguities, or discrepancies discovered in the Bidding Documents and confirm that the written resolution thereof by the Engineer is acceptable to the Bidder; and
- 2.6. Determine that the Bidding Documents are generally sufficient to convey an understanding of all terms and conditions for completing the required Work.

The submission of a Bid will constitute an incontrovertible representation that the Bidder has complied with every requirement of these Specifications. The Bidder shall comply with all other requirements specified in the Advertisement For Bids and the Instruction To Bidders.

GP-3 AVAILABILITY OF PLANS AND SPECIFICATIONS

One (1) set of Plans and Specifications shall be furnished to each Bidder. Three (3) sets of the Plans and Specifications shall be furnished to the Contractor upon award of the Contract. Additional sets may be furnished to the Contractor upon request from the Coastal Protection and Restoration Authority, 150 Terrace Avenue, Suite 100, Baton Rouge, Louisiana 70802.

GP-4 LAWS, REGULATIONS, STANDARDS, SPECIFICATIONS, AND CODES

Bidders are required to become familiar and remain in compliance with all Federal, State, and local laws, ordinances, and regulations and all orders and decrees of bodies or tribunals having any jurisdiction or authority which may affect those employed for the execution of the Work or which may affect the conduct of the Work. The Contractor shall indemnify the Owner and its representatives against any claim or liability arising from all violations of any laws, bylaws, ordinances, codes, regulations, orders, or decrees, whether by the Contractor or by the Contractor's employees. The filing of a bid will be presumptive evidence that the Bidder has complied with this requirement. The Owner will not be responsible for any inaccurate interpretations or conclusions drawn by the Contractor from information and documentation provided by the Owner.

References to standards, specifications, manuals, or codes of any technical society, organization, or association, or to Laws and Regulations, whether such reference be specific or by implication, may not be in effect at the time of opening the Bids (or on the Effective Date of the Contract if there were no Bids), except as may be otherwise specifically stated in the Contract Documents. No provision of any such standard, specification, manual, or code, or any instruction of a supplier shall be effective to change the duties or responsibilities of the Owner or Engineer, or any of their Subcontractors, consultants, agents, or employees from those set forth in the Bid Documents. No such provision shall be effective to assign to the Owner or Engineer, or any of their consultants, agents, or employees any duty or authority to supervise or direct the performance of the Contractor's obligations or any duty or authority to undertake responsibility inconsistent with the provisions of the Contract Documents.

The obligations imposed by these specifications are in addition to and are not to be construed in any way as a limitation of any rights available to the Engineer or Owner which are otherwise imposed by any laws or regulations or other provisions within the Contract Documents.

The Contractor shall abide by laws set forth in the Davis-Bacon Act of 1931 which states that all laborers and mechanics employed by recipients, the recipient's contractors, or subcontractors on this project shall be paid wages at rates no less than those prevailing on projects of a character similar in the locality as determined by the Secretary of Labor in accordance with Subchapter IV of Chapter 31 of Title 40 United States Code. Additionally, with respect to the labor standards specified in this section, the Secretary of Labor shall have the authority and functions set forth in Reorganization Plan Number 14 of 1950 (64 Stat. 1267; 5 U.S.C. App.) and The Copeland Act of Title 40 (40 U.S.C. § 3145). Prevailing Wage Determination Schedules, as determined by the United States Department of Labor, are provided in the Appendix. Prevailing Wage Determination Schedules are subject to modification by the United States Department of Labor. The Contractor is responsible for utilizing the most current Prevailing Wage Determination Schedule. These documents can be downloaded from the following link: <http://www.wdol.gov/dba.aspx#3>. Modifications to Prevailing Wage Determination Schedules shall be effective if received (or posted) no less than 10 days prior to bid opening.

GP-5 PRE-BID CONFERENCE AND SITE VISIT

A Pre-Bid Conference will be held at the location and on the date provided in the Advertisement For Bids. If the Pre-Bid Conference is stated in the Advertisement for Bids to be a MANDATORY Pre-Bid Conference, bids shall be accepted only from those bidders who attend the Pre-Bid Conference in its entirety. Failure to attend a mandatory Pre-Bid Conference in its entirety will result in a null or void Bid.

A site visit may also be held at the Project Site as specified in the Advertisement For Bids or at the Pre-Bid conference. If held, bidders will be required to furnish their own transportation to the Project Site. Representatives of the Owner and Engineer will attend the Pre-Bid conference and site visit, if held, to discuss the Work.

All questions shall be in writing and faxed or emailed to the Coastal Protection and Restoration contact person listed in the Advertisement For Bids after the Pre-Bid Conference and by the due date announced at the Pre-Bid conference. In order to ensure adequate response time, all questions and/or requests for clarification or interpretation of the Bid Documents should be received by the Coastal Protection and Restoration Authority at least seven days prior to the date for receipt of bids. Oral statements will not be binding or legally effective. The Coastal Protection and Restoration Authority will issue addenda in response to all questions arising at the Pre-Bid Conference and site visit to all prospective Bidders on record. All prospective Bidders on record may contact the Coastal Protection and Restoration Authority contact person for any additional information.

GP-6 NOTICE OF AWARD

The Owner, or its designated bidding agent, shall provide written notice to the Successful Bidder stating that the Owner will sign and deliver the Contract upon compliance with the conditions enumerated therein and within the time specified.

GP-7 NOTICE TO PROCEED AND CONTRACT TIME

The Contractor shall start the Work and begin the Contract Time on the dates provided in the Notice to Proceed. The Work shall be conducted using sufficient labor, materials, and equipment as necessary to ensure completion within the Contract Time. The Contract Time for completion of the Base Bid for the Work is provided in the Instructions To Bidders, unless an extension is granted to the Contract Time as specified in GP-44. If the Bid contains an Alternate Bid(s), and the Alternate Bid(s) is awarded and included in the Contract, the Contract Time associated with the Alternate Bid(s) will be as provided in the Instructions To Bidders.

GP-8 WORK PLAN

The Contractor shall develop a written Work Plan which accounts for all of the construction activities required by the Contract Documents. The Work Plan shall include a list of the individual construction tasks to be completed and the estimated dates for beginning and completing the tasks. It shall also include all other items which are applicable to completing the Work such as, but not limited to, the following:

- a. Typical report form for the Bi-Weekly Progress Meeting;
- b. Typical form for Daily Progress Report;
- c. Hurricane and Severe Storm Plan;
- d. Site-specific Health and Safety Plan;
- e. The delivery method and source(s) of all construction materials (company or producer name, mailing and physical address, phone number, and name of contact person).
- f. The personnel, material, subcontractors, fabricators, suppliers, types of equipment, and equipment staging areas the Contractor proposes to use for construction;
- g. Shop drawings, test results, and sample submittals;
- h. Survey layout and stakeout;
- i. All supplemental items specified in the Special Provisions.

The Work Plan shall be submitted to the Engineer prior to the Pre-Construction Conference by the date provided in the Special Provisions. The Engineer shall review the Work Plan and have the Contractor make any necessary revisions prior to acceptance of the plan. **No payment for mobilization will be made until the Work Plan has been accepted by the Engineer.**

GP-9 PROGRESS SCHEDULE

The Contractor shall develop a written Progress Schedule which provides for an orderly progression of the Work, submittals, tests, and deliveries in order to complete the Work within the specified Milestones and Contract Time. All of the items listed in the Work Plan shall be integrated into the Progress Schedule. The format of the schedule shall be composed using Microsoft Project®, or any other software deemed acceptable by the Engineer. It shall be updated weekly by the Contractor, at a minimum. The Progress Schedule shall also include, but not be limited to the following:

- a. All of the elements in the Work Plan, including updates;
- b. A work order issued from Louisiana One Call ordering all their subscribers in the project area to mark their utilities;
- c. A telephone log verifying that all property owners and utilities have been contacted. This log should list the time, date, and names of the personnel representing the property owners, utilities, and Contractor;

The following table defines the monthly anticipated adverse weather days that are expected to occur during the Contract Time and will constitute the baseline monthly weather time for evaluations. The schedule is based upon National Oceanic and Atmospheric Administration (NOAA) or similar data for the regional geographic area.

Monthly Anticipated Adverse Weather Calendar Days											
Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
5	5	4	4	4	5	7	7	5	3	3	4

The Progress schedule must reflect these anticipated adverse weather delays on all weather dependent activities. Adverse weather days must prevent Work for fifty percent (50%) or more of the work day and delay work critical to the timely completion of the project. The number of actual adverse weather days shall be calculated chronologically from the first to the last day of each month.

The Progress Schedule shall be submitted to the Engineer prior to the Pre-Construction Conference by the date provided in the Special Provisions. The Engineer shall perform a review and have the Contractor make any necessary revisions prior to acceptance of the schedule. Acceptance will not impose responsibility on the Owner or Engineer for the sequencing, scheduling, or progression of the Work. The Contractor is fully responsible for progression of the Work in order to maintain the compliance with the Progress Schedule.

GP-10 DAILY PROGRESS REPORTS

The Contractor shall record the following daily information on Daily Progress Reports:

- a. Date and signature of the author of the report;

- b. Dollar amount of all bid items that are fabricated, installed, backfilled, pumped, constructed, damaged, replaced, etc. The amount of material shall be expressed in the units stated in the bid;
- c. Field notes of all surveys;
- d. Notes on all inspections;
- e. Details of Health and Safety meetings;
- f. A brief description of any Change Orders, Field Orders, Claims, Clarifications, or Amendments;
- g. Condition of all navigation aides (I.E., warning signs, lighted marker buoys) and any repairs performed on them;
- h. Weather conditions (adverse weather day, wind speed and direction, temperature, wave height, precipitation, etc.);
- i. The amount of time lost to severe weather or personnel injury, etc;
- j. Notes regarding compliance with the Progress Schedule;
- k. Visitor log (Instructions for format will be furnished by the Field Engineer).

The daily progress reports shall be submitted to the Engineer at the Bi-Weekly Progress Meetings specified in GP-13 in both hard copy and digital format (Adobe Acrobat® Format, or approved equal). The typical form for Daily Progress Reports shall be developed by the Contractor and incorporated into the Work Plan.

GP-11 HURRICANE AND SEVERE STORM PLAN

The Contractor shall develop and maintain a written Hurricane and Severe Storm Plan. The Plan shall include, but not be limited to, the following:

- a. What type of actions will be taken before storm strikes at the Project Site. The plan should specify what weather conditions or wave heights will require shutdown of the Work and removal of equipment, personnel, etc.
- b. Notes from continuous monitoring of NOAA marine weather broadcasts and other local commercial weather forecasts.
- c. Equipment list with details on their ability to handle adverse weather and wave conditions.
- d. List of safe harbors or ports and the distance and travel time required to transfer equipment from the Project Site.
- e. Hard copies of any written approvals or operations schedules associated with the use of the safe harbors or ports.

- f. Method of securing equipment at the safe harbors or ports.
- g. List of tug boats and work boats and their respective length, horsepower, etc. which will adequately transfer the equipment to safe harbor or port under adverse weather conditions.
- h. Methods which will be used to secure equipment left onsite during adverse weather conditions.
- i. Evacuation or immediate reaction plans to be taken by personnel for sudden storm occurrences.
- j. Operations procedures which will be used to secure critical dredging equipment such as spuds, swing wires, anchor wires, or tugs during adverse weather conditions.
- k. Communications protocol with local law enforcement and fire and rescue agencies.

The Contractor shall incorporate the Hurricane and Severe Storm Plan into the Work Plan. The Owner and Engineer are not responsible for the adequacy of this plan.

GP-12 HEALTH AND SAFETY PLAN AND INSPECTIONS

The Contractor shall develop and maintain a written Health and Safety Plan which allows the Work to be performed in compliance with all applicable laws, ordinances, rules, and regulations of any government agency having jurisdiction over the safety of personnel or property. This includes maintaining compliance with the Code of Federal Regulations, Title 29, Occupational Safety and Health Administration (OSHA) and all applicable Health and Safety Provisions of the State of Louisiana.

The Contractor shall institute a daily inspection program to assure that the requirements of the Health and Safety Plan are being fulfilled. Inspections shall include the nature of deficiencies observed, corrective action taken or to be taken, location of inspection, date, and signature of the person responsible for its contents. The results of the inspections shall be recorded on Daily Progress Reports and kept at the Project Site during the Work.

The Contractor shall incorporate the Health and Safety Plan into the Work Plan. The Owner and Engineer are not responsible for the adequacy of this plan.

GP-13 PROGRESS MEETINGS AND REPORTS

The Engineer shall schedule meetings to review the progress of the Work, coordinate future efforts, discuss compliance with the Progress Schedule and resolve miscellaneous problems. The Engineer or Resident Project Representative, Contractor, and all Subcontractors actively working at the Project Site shall attend each meeting. Representatives of suppliers, manufacturers, and other Subcontractors may also attend at the discretion of the Contractor. The Contractor shall record the details of each meeting in a Progress Report. The format of this report shall be developed by the Contractor, approved by the Engineer, and included in the Work Plan. The progress meetings and reports shall be scheduled according to the Special Provisions.

GP-14 PRE-CONSTRUCTION CONFERENCE

A Pre-Construction Conference shall be held by the Contractor, Owner, Engineer, local stakeholders, and other appropriate personnel prior to starting construction on the date specified in the Special Provisions. This conference shall serve to establish a mutual understanding of the Work to be performed, the elements of the Progress Schedule and Work Plan, expectations for bi-weekly progress meetings, the Plans and Specifications, processing Applications for Payment, and any other items of concern. If any subcontractors are not present, another pre-construction conference will be required.

GP-15 CONTRACT INTENT

The Bid Documents are complementary; what is called for by one is as binding as if called for by all. Clarifications and interpretations or notifications of minor variations and deviations of the Contract Documents will be issued by Engineer as provided in these Specifications. Any labor, documentation, services, materials, or equipment that may reasonably be inferred from the Bid Documents or from prevailing custom or trade usage as being required to produce the intended result will be provided at no additional cost to the Owner.

GP-16 ENGINEER AND AUTHORITY OF ENGINEER

The Engineer will be the designated representative of the Owner, the initial interpreter of the Contract Documents and the judge over acceptability of all the Work. Claims, disputes, and other matters relating to the acceptability of the Work, performance by the Contractor or the interpretation of the requirements of the Contract Documents must be submitted to the Engineer in writing. Upon written request from the Contractor, the Engineer shall issue written clarifications or interpretations which are consistent with the overall intent of the Contract Documents. Such written clarifications and interpretations will be binding on the Owner and the Contractor. Either the Owner or the Contractor may make a Claim if a written clarification or interpretation justifies an adjustment in the Contract Price or Contract Times.

The Engineer has the authority to suspend the Work in whole or in part due to failure of the Contractor to correct conditions unsafe for workmen or the general public, carry out provisions of the Contract, perform conformance work, or to carry out orders. The Engineer shall submit a written order to the Contractor for work which must be suspended or resumed. Nothing in this provision shall be construed as establishing responsibility on the part of the Engineer for safety which is the responsibility of the Contractor.

The Engineer or Resident Project Representative shall keep a daily record of weather and flood conditions and may suspend the Work as deemed necessary due to periods of unsuitable weather, conditions considered unsuitable for execution of the Work, or for any other condition or reason deemed to be in the public interest.

GP-17 CONFORMITY WITH PLANS AND SPECIFICATIONS

All work and materials involved with the Work shall conform with the lines, grades, cross sections, dimensions, and other requirements shown on the Plans or indicated in these Specifications unless otherwise approved by the Engineer.

GP-18 CLARIFICATIONS AND AMENDMENTS TO CONTRACT DOCUMENTS

The Contract Documents may be clarified or amended by the Engineer to account for additions, deletions, and revisions to the Work after the Effective Date of the Contract. The clarifications and amendments shall be addressed by either a Change Order or a written clarification by the Engineer. The Contractor shall not proceed with the Work until the Change Order or clarification has been issued by the Engineer. The Contractor shall not be liable to the Owner or Engineer for failure to report any such discrepancy unless the Contractor had reasonable knowledge.

The Contractor may request a clarification or amendment for the following:

- a. Any conflict, error, ambiguity, or discrepancy within the Contract Documents; or
- b. Any conflict, error, ambiguity, or discrepancy between the Bid Documents and the provision of any Law or Regulation applicable to the performance of the Bid; or
- c. Any standard, specification, manual, or code (whether or not specifically incorporated by reference in the Bid Documents); or
- d. Instructions by a supplier.

The official form for a written clarification is provided in Appendix B. This form shall be filled out appropriately by the Contractor and submitted to the Engineer. The Engineer shall clarify the issue in writing on either the clarification form, Field Order or a Change Order and submit it to the Contractor.

GP-19 SUBCONTRACTS

The Contractor shall provide the names of all Subcontractors to the Engineer in writing before awarding any Subcontracts. The Contractor shall be responsible for the coordination of the trades and Subcontractors engaged in the Work. The Contractor is fully responsible to the Owner for the acts and omissions of all the Subcontractors. The Owner and Engineer will not settle any differences between the Contractor and Subcontractors or between Subcontractors. The Contractor shall have appropriate provisions in all Subcontracts to bind Subcontractors to the Contractor by the terms of the General Provisions and other Contract Documents, as applicable to the Work of Subcontractors. The provisions should provide the Contractor the same power regarding termination of Subcontracts that the Owner may exercise over the Contractor under any provisions of the Contract Documents.

GP-20 WORKERS, METHODS, AND EQUIPMENT

The Contractor shall provide competent, qualified, and trained personnel to perform the Work. The Contractor shall not employ any person found objectionable by the Engineer. Any person employed by the Contractor or any Subcontractor who, in the opinion of the Engineer, does not perform the Work in a proper, skillful, and orderly manner shall be immediately removed upon receiving a written order by the Engineer. The Engineer may also suspend the Work until the Contractor removes the employee or provides a suitable replacement. Such an employee shall not be re-employed in any portion of the Work without written approval from the Engineer.

The on-site superintendent for the Contractor shall be competent, English-speaking, and qualified to receive orders, supervise, and coordinate all Work for the Contractor and any Subcontractors. The qualifications of the superintendent must be established and approved by the Engineer prior to commencement of the Work. The superintendent shall be furnished by the Contractor regardless of how much Work may be sublet. In the performance of the Work under this Contract, the Contractor shall conduct operations to avoid interference with any other Contractors.

All equipment, products, and material incorporated into the Work shall be as specified, or if not specified, shall be new, of good quality, and protected, assembled, used, connected, applied, cleaned, and conditioned in accordance with the manufacturer's instructions, except as otherwise may be provided in the Bid Documents. All equipment shall be of sufficient size and mechanical condition to meet the requirements of the Work and produce a satisfactory quality of work. Equipment shall not damage adjacent property throughout the performance of the Work. The Plant and Equipment Schedule should be completed by the Contractor.

The Contractor shall be solely responsible for the means, methods, techniques, sequences, and procedures used to complete the Work in conformance with the Contract Documents.

The Contractor shall obtain permission from the Engineer if a method or type of equipment other than specified in the Contract is desired. The request shall be in writing and shall include a full description of the methods, equipment proposed, and reasons for the modification. A proposed item of material or equipment may be considered by the Engineer to be functionally equal to an item specified in the Contract if:

- a. It is at least equal in quality, durability, appearance, strength, and design characteristics;
- b. There is no increase in any cost including capital, installation, or operating to the Owner;
- c. The proposed item will conform substantially, even with deviations, to the detailed requirements of the item named in the Bid Documents.

If, after trial use of the substituted methods or equipment, the Engineer determines that the Work produced does not meet Contract requirements, the Contractor shall discontinue use of the substituted methods or equipment and shall complete the Work with the specified methods and equipment. The Contractor shall remove the deficient Work and replace it with

Work of specified quality or take other corrective action as directed. No change will be made in basis of payment for construction items involved or in Contract Time as a result of authorizing a change in methods or equipment.

GP-21 ACCIDENT PREVENTION, INVESTIGATIONS, AND REPORTING

The Contractor shall be responsible to develop and maintain all safeguards and safety precautions necessary to prevent damage, injury, or loss throughout the performance of the Work. All accidents at the Project Site shall be investigated by the immediate supervisor of employee(s) involved and reported to the Engineer or Resident Project Representative within one (1) working day. A complete and accurate written report of the accident including estimated lost time days shall be submitted to the Engineer within four (4) calendar days. A follow-up report shall be submitted to the Engineer if the estimated lost time days differ from the actual lost time days.

GP-22 PRESERVATION AND RESTORATION OF PROPERTY, MONUMENTS, ETC.

The Contractor shall comply with all applicable laws, ordinances, rules, and regulations of any government agency having jurisdiction over the preservation and protection of public and private property. The Contractor shall install and maintain suitable safeguards and safety precautions during the Work as necessary to prevent damage, injury, or loss to property. This responsibility shall remain with the Contractor until the Work has been completed and accepted. Any damage, injury, or loss to property which is caused by the Contractor or Subcontractors shall be repaired or replaced at the expense of the Contractor.

The Contractor shall protect all land monuments, State and United States bench marks, geodetic and geological survey monuments, and property markers from disturbance or damage until an authorized agent has witnessed or otherwise referenced their location. The Contractor shall also provide protection for all public and private property including trees, utilities, pipes, conduits, structures, etc. These items shall not be removed unless directed by the Engineer.

The Contractor shall be responsible to completely repair all damages to public or private property due to any act, omission, neglect, or misconduct in the execution of the Work unless it is due to unforeseeable causes beyond the control of and without the fault or negligence of the Contractor, including but not restricted to acts of God, public enemies, or governmental authorities. The damage must be repaired at the expense of the Contractor before final acceptance of the Work can be granted by the Engineer. If the Contractor fails to repair the damage within forty-eight (48) hours, the Owner may independently proceed with the repairs at the expense of the Contractor by deducting the cost from the Contract. If the Contractor cannot provide for the cost of repairs, the Surety of the Contractor shall be held until all damages, suits, or claims have been settled.

GP-23 PROTECTION OF THE WORK, MATERIALS, AND EQUIPMENT

It shall be the responsibility of the Contractor to protect the Work, materials, and equipment from damages or delays due to inflows, tidal rise, and storm water runoff which may occur at the Project Site. The Owner shall not be held liable or responsible for these types of delays or damages.

GP-24 LAND RIGHTS

The Owner has been granted all of the temporary easements, servitudes, and right-of-way agreements from public and private landowners in order to perform the Work. A land rights memorandum which lists all known responsible contacts and required stipulations is provided in Appendix C. The Contractor is responsible to notify all of the contacts and abide by stipulations listed in that memorandum.

GP-25 UTILITIES

The Owner has been granted all of the temporary easements, servitudes, and right-of-way agreements from known public and private utilities in order to perform the Work. The utilities include, but are not limited to telephone, telegraph, power poles or lines, water or fire hydrants, water or gas mains and pipelines, sewers, conduits, and other accessories or appurtenances of a similar nature which are fixed or controlled by a city, public utility company or corporation.

The Contractor shall conduct the Work in such a manner as to cooperate and minimize inconveniences with utilities. Prior to commencement of the Work, the Contractor is responsible to notify all of the utilities and abide by stipulations required by the utility company(s). The Contractor shall also call Louisiana One Call at 1-800-272-3020 a minimum of 5 working days prior to construction to locate existing utilities at the Project Site.

Any damage to utilities that is caused by the Contractor within the Project Site shall be repaired at the expense of the Contractor. The Owner will not be responsible for any delay or damage incurred by the Contractor due to working around or joining the Work to utilities left in place or for making adjustments.

Any unidentified pipes or structures which may be discovered within the limits of the Project Site shall not be disturbed and shall be reported to the Engineer as soon as possible. Construction or excavation shall not be performed around unidentified utilities without prior approval from the Engineer.

GP-26 PERMITS

Federal and State permits that are required to perform the Work, such as the Department of the Army Permit, Coastal Use Permit, LDEQ Clean Water Permit, LDWF Fill Material License, and LADOTD highway crossing permit have been secured by the Owner. Permit conditions affecting the construction processes have been included in these Specifications. Copies of these permits will be provided to the Contractor at the pre-construction conference. These permits will not relieve the responsibility of the Contractor from obtaining any additional permits which may be needed to complete the Work. Copies of any special

permits that are obtained by the Contractor must be submitted to the Owner. The Contractor shall conform to the requirements therein and display copies of the permits in a public setting at the Project Site at all times.

GP-27 PROJECT SITE CLEAN-UP

The Contractor shall keep the Project Site free from accumulations of waste material or trash at all times. All trash and waste materials shall be removed by the Contractor and disposed off-site in an approved waste disposal facility. In addition, all equipment, tools, and non-conforming work shall also be removed prior to the Work being accepted. No materials shall be placed outside of the Project Site.

GP-28 OWNER INSPECTION

The Owner, Resident Project Representative, and Federal Sponsor shall have the right to perform reasonable inspections and testing of the Work at the Project Site. Access shall be granted to the entire Project Site including all materials intended for use in the Work. The Contractor shall allow reasonable time for these inspections and tests to be performed. The inspections shall not relieve the Contractor from any obligation in accordance with the requirements of the Contract.

The Owner shall notify the Contractor prior to all tests, inspections, and approvals of the Work which are to be conducted at the Project Site. The Owner shall also provide the Contractor with the written results of all inspections and tests. Inspections, tests, or Payments made by the Owner shall not constitute acceptance of non-conforming Work of prejudice the Owner's rights under the Contract.

GP-29 DUTIES OF RESIDENT PROJECT REPRESENTATIVE

A Resident Project Representative shall be assigned by the Engineer to the Project Site to observe the Contractor and monitor the progress and manner in which the Work is being performed. The Resident Project Representative will also report to the Engineer and Contractor whenever materials or Work fail to comply with the Contract. The Resident Project Representative is authorized to reject any materials or suspend work which does not comply with the Contract until the issue is resolved by the Engineer.

However, the Resident Project Representative is not authorized to revoke, alter, enlarge, relax, or release any requirements of the Contract, or to approve or accept any portion of the Work, or to issue instructions contrary to the Plans and Specifications. The Resident Project Representative shall not manage or perform duties for the Contractor.

GP-30 CONSTRUCTION STAKES, LINES, AND GRADES

The Engineer shall direct the Contractor to all control points necessary for setting stakes and establishing lines and grades as shown on the Plans. The Contractor shall be responsible for laying out all of the Work. All layouts shall be witnessed and verified by the Engineer or Resident Project Representative prior to beginning the Work. The Contractor shall be responsible for proper execution of the Work according to the layouts after receiving verification from the Engineer.

The Contractor shall be responsible for furnishing and maintaining stakes such that the Work can be verified for acceptance. The Engineer may suspend the Work at any time if it cannot be adequately verified due to the number, quality, or condition of the stakes.

GP-31 CONTRACTOR'S RESPONSIBILITY FOR WORK

The Contractor shall execute all items covered by the Contract, and shall furnish, unless otherwise definitely provided in the Contract, all materials, implements, machinery, equipment, tools, supplies, transportation, and labor necessary to complete the Work. The Contractor shall pay constant attention to the progress of the Work and shall cooperate with the Engineer in every way possible. The Contractor shall maintain a complete copy of the Contract at all times, including the Plans, Specifications, and any authorized modifications.

GP-32 ENVIRONMENTAL PROTECTION

The Contractor shall comply with and abide by all federal, state, and local laws and regulations controlling pollution of the environment, including air, water, and noise. The Contractor shall take precautions to prevent pollution of waters and wetlands with fuels, oils, bituminous materials, chemicals, sewage, or other harmful materials and contaminants, and to prevent pollution of the atmosphere from particulate and gaseous matter, in accordance with all terms and conditions of federal, state, and local air and water pollution control laws and programs and their rules and regulations, including the federal Clean Air Act and the federal Clean Water Act.

The Contractor shall adhere to the provisions which require compliance with all standards, orders, or requirements contained under Section 306 of the Clean Air Act and Section 508 of the Clean Water Act, which prohibit the use under non-exempt Federal contracts, grants, or loans, of facilities included on the Environmental Protection Agency (EPA) list of Violating Facilities.

Construction operations in rivers, streams, lakes, tidal or coastal waters, reservoirs, canals, wetlands, and any other impoundments shall be restricted to areas where it is necessary to accomplish the Work and performed in accordance with any applicable federal, state, and local laws, regulations, permit requirements, and guidelines, and the Contractor shall conduct the Work in a manner that will not cause damaging concentrations of silt or pollution to water.

Contractor shall maintain and operate equipment to minimize noise, dust, and vibration near noise, dust and vibration-sensitive areas such as churches, hospitals, schools, and residential areas, and assure that any activities conducted near such areas are not unduly disruptive. Contractor shall maintain all equipment with properly functioning mufflers.

The Contractor shall be responsible for determining and utilizing any erosion and pollution control features or methods that may be necessary to comply with all federal, state, and local laws and regulations.

GP-33 SANITARY PROVISION

The Contractor shall provide and maintain sanitary accommodations for use by all employees and Subcontractors. Facilities shall comply with the requirements of the Louisiana State Board of Health and Hospitals and other authorities having jurisdiction. Committing public nuisance on the Project Site is prohibited.

GP-34 PAYMENT OF TAXES

The Contractor shall be responsible for all taxes and duties that maybe levied under existing State, Federal, and local laws during the completion of the Work. The Owner will presume that the amount of such taxes is included in the unit prices bid by the Contractor and will not provide additional reimbursement.

GP-35 RADIO AND TELEPHONES

The Contractor shall furnish and maintain radio and telephone equipment throughout the Contract Time which will allow communication between the Contractor and the Engineer or Resident Project Representative.

GP-36 NAVIGATION

All marine vessels shall comply with the following Federal Laws and Regulations:

- a. The International Navigational Rules Act of 1977 (Public Law 95-75, 91 Stat. 308, or 33 U.S.C. 1601-1608); and
- b. The Inland Navigation Rules Act of 1980 (Public Law 96-591, 94 Stat. 3415, 33 U.S.C. 2001-2038).

These rules can be found on the Internet at:
<http://www.navcen.uscg.gov/?pageName=navRulesContent>.

All marine vessels shall display the lights and day shapes required by Part C- Lights and Shapes of the Inland Navigation Rules. The location, type, color, and size of the lights and day shape shall be in accordance with Annex I - Positioning and Technical Details of Lights and Shapes. Any vessel engaged in dredging is considered a "Vessel restricted in her ability to maneuver" and shall display all the lights and shapes required in Rule 27, "Vessel Not Under Control."

GP-37 OBSTRUCTION TO NAVIGATION

The Contractor shall minimize all obstructions to navigation in compliance with pertinent U. S. Coast Guard regulations while conducting the Work. The Contractor shall promptly move any floating equipment or marine vessels which obstruct safe passage of other marine vessels. Upon completion of the Work, the Contractor shall remove all marine vessels and other

floating equipment such as temporary ranges, buoys, piles, and other marks or objects that are not permanent features of the Work.

GP-38 MARINE VESSELS AND MARINE ACTIVITIES

All marine vessels regulated by the USCG shall have the required USCG documentation that is current before being placed in service. A copy of any USCG Form 835 issued to the vessel in the preceding year shall be made available to the Owner and Engineer and a copy shall be on board the vessel. All officers and crew shall possess valid USCG licenses as required by USCG regulations. These certificates, classifications, and licenses shall be posted in a public area on board each vessel.

All dredges and quarter boats not subject to USCG inspection and certification or not having a current ABS classification shall be inspected in the working mode annually by a marine surveyor accredited by the National Association of Marine Surveyors (NAMS) or the Society of Accredited Marine Surveyors (SAMS) and having at least 5 years' experience in commercial marine plant and equipment. The inspection certificate shall be posted in a public area on board each dredge and/or quarter boat.

All other plant and support vessels shall be inspected before being placed in service and at least annually by a qualified person. The inspection certificate shall be posted in a public area on board each plant and/or vessel.

GP-39 RECORD KEEPING

The Contractor shall maintain orderly records of the Progress Schedule, Daily Progress Reports, Progress Meetings, correspondence, submittals, reproductions of original Contract Documents, Change Orders, Field Orders, certificates, additional drawings issued subsequent to the executed Contract, clarifications and interpretations of the Contract Documents by the Engineer, and other related documents at the Project Site until all of the Work is accepted by the Engineer.

GP-40 CERTIFICATES OF COMPLIANCE

Any certificates required for demonstrating proof of compliance of materials with specification requirements shall be executed in three (3) copies. Each certificate shall be certified by an authorized agent of the supplying company and shall contain the name and address of the Contractor, the project name and location, and the quantity and date of shipment. Copies of laboratory test reports submitted with certificates shall contain the name and address of the testing laboratory and the testing date. The Contractor shall also certify that all materials and test reports conform to the requirements of the Contract. Certification shall not be construed as relieving the Contractor from furnishing satisfactory material if the material is tested and determined to be in nonconformance.

GP-41 SUBMITTALS

The Contractor shall review all Submittals for compliance with the requirements of the Contract prior to delivery to the Engineer. Each Submittal shall contain a signed statement by the Contractor that it complies with the Contract requirements with any exceptions explicitly listed. The Contractor shall comply with these requirements for Submittals from

Subcontractors, manufacturers, and suppliers.

All Submittals shall include sufficient data to demonstrate that the requirements of the Contract are met or exceeded. All submittals shall be legible and marked with the project title and clearly identify the item submitted. Each submittal package shall include an itemized list of the items submitted.

All Submittals will be reviewed within fourteen (14) days after being received by the Engineer. The Contractor shall allow the Engineer sufficient time for review, corrections, and resubmission of all Submittals prior to beginning the associated Work. The Contract Time shall not be extended based on incorrect or incomplete Submittals.

GP-42 CLAIMS FOR EXTRA COST

The Contractor is expected to complete the Work according to the Contract Price specified in the Bid Documents. If the Contractor deems additional compensation is due for work, materials, delays or other additional costs/or expenses not covered in the Contract or not ordered as extra work, the Contractor shall give the Engineer written notice thereof within fourteen (14) calendar days after the receipt of such instructions and, in any event, before commencing the procedure. The Contractor shall justify the claim for extra cost by providing supporting data and calculations. The Engineer shall determine whether the Contractor is entitled to be compensated for such extra cost and shall make any required adjustments of the Contract in accordance with GP-43. If no written claim is made within this fourteen (14) calendar-day period, the Contractor will be deemed to have waived any claim for extra cost for such work.

Claim for damages or delays of the Work shall not be made by the Contractor for a relocation of the construction operation or portions thereof to other locations within the geographical scope of the project, when in the opinion of the Engineer, such relocation is necessary for the most effective prosecution of the Work and may be accomplished without undue hardship.

GP-43 ALTERATION OF THE CONTRACT AND COMPENSATION

Using Change Orders, Field Orders, or Written Amendments, the Owner may order extra work or make changes by altering the details of construction, add to or deduct from the Work. The requirements and stipulations of these documents shall be binding on the Owner and Contractor throughout the remainder of the Contract. Any claim for an extension of Contract Time caused thereby shall be adjusted at the time of ordering such change.

The value of any such extra work or change shall be determined in one or more of the following ways and in the following priority:

- a. By application of the unit prices in the Contract to the quantities of the items involved or subsequently agreed upon; or
- b. By mutual acceptance between the Owner and Contractor of a lump sum.

If none of the above methods is agreed upon, the Contractor, provided he is so ordered by the Owner in writing, shall proceed with the Work on a "force account" basis. In such a case, the Contractor shall keep and preserve in such form as the Engineer may direct, a correct

itemized account of the direct cost of labor, materials, equipment, together with vouchers bearing written certification by the Contractor. In any case, the Engineer shall certify to the amount, including an allowance of fifteen percent (15%) for jobsite and home office overhead indirect expenses and profit due to the Contractor. Where such change involves a subcontractor, an allowance of fifteen percent (15%) for overhead and profit shall be due the subcontractor and an allowance of ten percent (10%) shall be due the Contractor. Pending final determination of value, payments on account of changes shall be made on the Engineer's estimate and as approved in an executed Change Order.

If the Contractor is prevented from completing the Work according to the Contract Price due to the Owner, the Contractor may be entitled to any reasonable and necessary addition of cost as determined by the Engineer. Neither the Owner nor the Contractor shall be entitled to any damages arising from events or occurrences which are beyond their control, including but not limited to fires, floods, epidemics, abnormal weather conditions, acts of God, acts of war, and other like matters. The provisions of this section exclude recovery for damages caused by the Contractor and compensation for additional professional services by either party.

GP-44 EXTENSION OF CONTRACT TIME

The Contractor is expected to complete the Work within the Contract Time specified in the Bid Documents. A legitimate increase of the Contract time may be requested by the Contractor throughout the course of the Work. This Claim must be submitted to the Engineer in writing within fourteen (14) days of the event which caused the time delay to the Contractor. If an extension of Contract Time involves an increase in Contract Price, both claims shall be submitted together. The Contractor shall justify the increase of the Contract Time in the Claim using supporting data and calculations. The Engineer may deny the claim if there is insufficient information to make a determination. If the Claim is approved, the Engineer shall issue a Change Order within thirty (30) days of the Claim. The Contract Time shall be increased on a basis that is commensurate with the amount of additional or remaining Work. For example, the Contract Time can be increased where the number of actual adverse weather days exceeds the number of days estimated in the Contract.

GP-45 OWNER'S RIGHT TO TERMINATE CONTRACT FOR CAUSE OR CONVENIENCE

45.1 TERMINATION FOR CAUSE

The Owner shall submit a written notice to the Contractor and Surety which justifies placement of the Contractor in default if:

- a. The Work is not begun within the time specified in the Notice to Proceed; or
- b. The Work is performed with insufficient workmen, equipment, or materials to assure prompt completion; or
- c. The Contractor performs unsuitable, neglected or rejected work, refuses to remove materials; or
- d. The Work is discontinued; or
- e. The Work is not completed within the Contract Time or time extension; or

- f. Work is not resumed within a reasonable time after receiving a notice to continue;
or
- g. The Contractor becomes insolvent or is declared bankrupt, or commits any act of bankruptcy or insolvency; or
- h. The Contractor allows any final judgment to stand unsatisfied for a period of ten (10) days; or
- i. The Contractor makes an assignment for the benefit of creditors; or
- j. The Work is not performed in an acceptable manner.

If the Contractor or Surety does not remedy all conditions cited in the written notice within ten (10) days after receiving such a notice, the Contractor will be in default and the Owner shall remove the Contractor from the Work. If the Contractor is placed into default, the Owner may obtain the necessary labor, materials, and equipment or enter into a new Contract in order to complete the Work. All costs incurred by the Owner for completing the Work under the new Contract will be deducted from the payment due the Contractor. If the expense exceeds the sum payable under the Contract, the Contractor and Surety shall be liable to pay the Owner the difference.

45.2 TERMINATION FOR CONVENIENCE

Owner may, at any time, terminate this Contract or any portion thereof, for Owner's convenience, upon providing written notice to the Contractor. In such case, Contractor shall be paid for all work completed through the date notice was provided (less payments already received) and reasonable demobilization and restocking charges incurred and reasonable overhead and profit based upon industry standards on the work performed. In no event shall the Contractor be entitled to payment of overhead and profit on work not performed. In the event it is determined that the Contractor was wrongfully terminated for cause, pursuant to Section GP 45.1 above, such termination shall be automatically converted to a termination for convenience under and payment made as provided under this Section.

GP-46 TEMPORARY SUSPENSION OF WORK

The Engineer shall have the authority to temporarily suspend the Work in whole or in part. A Field Order shall be issued to the Contractor for any of the Work that is suspended for periods exceeding one (1) calendar day. The Field Order shall include the specific reasons and details for the suspension. The Contract Time shall not be extended if the Work is suspended due to failure by the Contractor to comply with a Field Order or with the Plans and Specifications. If the Work is suspended in the interest of the Owner, the Contractor shall make due allowances for the lost time.

GP-47 NON-CONFORMING AND UNAUTHORIZED WORK

Work not conforming to the Plans, Specifications, Field Orders, or Change Orders shall not be accepted for payment. Unacceptable or unauthorized work shall be removed and replaced in an acceptable manner at the expense of the Contractor in order to obtain final acceptance of the Work.

If the Contractor should neglect to prosecute the work properly or fail to perform any provision of this Contract, the Owner after seven (7) calendar days written notice to the Contractor, may correct such deficiencies itself or by use of other contractors without prejudice to any other remedy it may have, and may deduct the cost thereof from the payment then or thereafter due to the Contractor.

GP-48 CONTRACTOR'S RIGHT TO TERMINATE CONTRACT

The Contractor may terminate the Contract or Work and recover payment from the Owner for labor and materials if the Work is stopped through no act or fault of the Contractor for more than three (3) months. For example, such an occurrence could be caused by a court order or other public authority. In any case, the Contractor shall submit a written notice to the Engineer at the beginning of the occurrence, and a written Claim to the Owner at the end of the occurrence.

GP-49 BREACH OF CONTRACT

The Owner shall submit a written Claim to the Contractor regarding any breach of the Contract. The Contractor must provide a written response to the Owner regarding the breach of Contract within ten (10) days after the Claim. This response must provide either an admission to the Claim or a detailed denial based on relevant data and calculations. The failure of the Contractor to provide a proper response within ten (10) days shall result in justification of the Claim by default.

GP-50 NO WAIVER OF LEGAL RIGHTS

The Owner shall not be prevented from recovering costs from the Contractor, Surety, or both due to failure of the Contractor to fulfill all of the obligations under the Contract. If a waiver is provided to the Contractor for a breach of Contract by the Owner, it shall not apply to any other breach of Contract. Final acceptance of the Work shall not prevent the Owner from correcting any measurement, estimate, or certificate. The Contractor shall be liable to the Owner without prejudice to the terms of the Contract or any warranty for latent defects, fraud, or gross negligence.

GP-51 LIABILITY FOR DAMAGES AND INJURIES

To the fullest extent permitted by Laws and Regulations, the Contractor shall indemnify and hold harmless the Owner, Engineer, and their officers, employees, representatives, and/or agents from all suits, actions, claims, costs, losses, demands, and judgments (including but not limited to fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) brought because of injuries or damage sustained by a person or property due to the operations of Contractor; due to negligence in safeguarding the Work, or use of unacceptable materials in constructing the Work; or any negligent act, omission, or misconduct of the Contractor; or claims or amounts recovered under the Workmen's Compensation Act or other law, ordinance, order, or decree; any money due the Contractor as considered necessary by the Owner for such purpose may be retained for use of the State or in case no money is due, the performance and payment bond may be held until such suits, actions, claims for injuries or damages have been settled and suitable evidence to that effect furnished to the Owner; except that money due the Contractor will not be withheld when the Contractor produces satisfactory evidence that adequate Workman's Compensation, Public Liability, and Property Damage Insurance are in effect.

The indemnification obligations of the Contractor shall not extend to the liability of the Owner, Engineer, and their affiliates arising out of the preparation or approval of the Plans, Specifications, maps, opinions, reports, surveys, or Change Orders, or for providing directions or instructions which are the primary cause of the injury or damage.

Should the Owner or Contractor suffer from any injury or damage due to an error, omission, or act of the other party or their legally liable affiliates, a written Claim shall be submitted to the other party within ten (10) days. The Claim shall provide all details regarding the injury or damage, the results of any investigations, and the action to be taken to prevent any reoccurrence.

GP-52 LIABILITY FOR LOSSES BY ACTS OF THE GOVERNMENT

The Owner shall not be liable for any loss or damage suffered by the Contractor arising out of a cessation of Work under this Contract due to any act or order of any local, state, or federal government agency. If this cessation occurs, the Contractor may request an extension of the Contract Time according to the provisions in GP-44.

GP-53 SUBSTANTIAL COMPLETION

Upon notice from the Contractor that it believes the project has reached substantial completion, and before final acceptance, the Engineer will make an inspection of the Work. "Substantial Completion" is defined as the date on which the Work is complete in accordance with the Contract Documents in order that the Owner can occupy and use the project for its intended use. The date of Substantial Completion shall be specified in the Notice of Acceptance.

If the Owner or its representative determines the Project is substantially complete, the Owner will issue a Notice of Acceptance identifying the date the Project reached Substantial Completion and attach a punch list, if applicable, identifying the remaining items that must be completed before final payment. The Contractor shall then file the executed Notice of

Acceptance with the Clerk of Court in the Parish(s) where the work is performed and shall forward one complete copy of the recorded acceptance to the Owner and Engineer.

If the inspection discloses any work as being unsatisfactory or incomplete and such work generates a formal punch list, the Engineer will give the Contractor instructions for correction of same, and the Contractor shall immediately comply with such instructions. Upon satisfactory completion of the corrections, when a "Punch List" is generated, the Engineer shall prepare a "Recommendation of Acceptance" incorporating the punch list and submit to the Owner. Upon approval of the Recommendation of Acceptance, the Owner may issue a Notice of Acceptance of the Contract which shall establish the date of Substantial Completion.

Any punch list generated by the Engineer shall be accompanied by a cost estimate to correct the particular items of work the Engineer has developed. The cost estimate shall be developed based on mobilization, labor, material, and equipment costs of correcting each punch list item and shall be retained from monies owed to the Contractor, above and beyond the standard retainage. The Engineer shall retain his or her working papers used to determine the punch list items cost estimates should the matter be disputed later. The Owner shall not withhold from payment more than the value of the punch list. Punch list items completed shall be paid upon the expiration of the forty-five (45) day lien period. After that payment, none of the remaining funds shall be due the Contractor until all punch list items are completed and are accepted by the Engineer.

If the dollar value of the punch list exceeds the amount of funds, less retainage amount, in the remaining balance of the Contract, the Project shall not be accepted as Substantially Complete. If the funds remaining are less than required to complete the punch list work, the Contractor shall pay the difference. The provisions listed above shall not be subject to waiver.

Warranties required by the Contract Documents shall commence on the date of Substantial Completion of the Work/project as provided in the Notice of Acceptance, unless otherwise agreed to in writing by the Owner and Contractor. In the instance where the Owner has accepted the Work/project as substantially complete and issued a Notice of Acceptance, and the Contractor must remain on the premises to complete the "Punch List" or for whatever reason, the Contractor shall maintain Commercial General Liability insurance, Auto Liability insurance and Worker's Compensation insurance as set forth herein until the expiration of the forty-five (45) day lien period or upon the completion of the work/project, whichever is later. Builder's Risk insurance, if applicable, may be cancelled only with the written permission of the Owner or the Owner's representative at Substantial Completion.

If the punch list is not completed within forty-five (45) days, through no fault of Owner or Engineer, the Owner may, but is not required, to place the Contractor in default. Thereafter, the Owner shall notify the Surety. If the Surety has not completed the punch list within forty-five days of receipt of notification, the Owner may, but is not required to, complete the remaining punch list items. Any costs incurred shall be paid for first out of any remaining Contract funds. If the costs incurred exceed the remaining Contract funds, the Contractor and its Surety shall be liable for such costs.

Upon completion of the punch list, Contractor shall request Final Inspection.

GP-54 FINAL INSPECTION AND ACCEPTANCE

Whenever the work provided for, or contemplated by the contract, have been satisfactorily completed, all punch list items completed and the final cleaning up is performed, the Engineer shall be notified in writing that said work is completed and ready for final inspection. The Engineer shall, unless otherwise provided, make the final inspection within a reasonable length of time after the receipt of such notification.

If all construction provided for in the contract is found completed to the Engineer's satisfaction, that inspection shall constitute the final inspection and the Engineer will make recommendation to the Owner for final acceptance and notify the Contractor in writing of this recommendation of acceptance.

GP-55 AS-BUILT DRAWINGS

The Contractor shall submit all originals and copies of the As-Built Drawings to the Engineer for review and acceptance in accordance with the Special Provisions. The As-Built Drawings shall provide complete data for quantities, dimensions, specified performance and design criteria, and similar items which clearly represent the services, materials, and equipment the Contractor has provided. All revision sheets shall be clearly stamped with the words "As-Built".

GP-56 COMPLETION OF CONTRACT

Notwithstanding any other provision of this Contract and all applicable and necessary time delays under Louisiana law, completion of the Contract requires all of the Work to be complete, inspected by the Engineer, accepted by the Owner as recommended by the Engineer, and after final payment is made. After the Contract is complete, the Contractor will then be released from further obligation except as set forth in the Contract Bond and Contractor's Guarantee.

GP-57 CONTRACTOR'S GUARANTEE

The Contractor is obligated to provide a written guarantee to the Owner that all of the Work conforms to the Contract Documents. The Work shall be guaranteed to survive for a minimum period of 1 year after final acceptance, unless otherwise specified in the Technical Specifications.

a. The guarantee shall include:

- 57.a.1 A written warranty by the manufacturer for each piece of installed project equipment or apparatus furnished under the Contract.
- 57.a.2 Any necessary repair or replacement of the warranted equipment during the guarantee period at no cost to the Owner.
- 57.a.3 Satisfactory operation of installed equipment including, but not limited to, any mechanical and electrical systems furnished and constructed under the Contract during the guarantee period. The Contractor shall repair all equipment which fails due to defective materials or faulty workmanship

during the guarantee period. The Contractor shall also be liable for all other ancillary expenses incurred by the Owner due to the failure.

- b. The guarantee shall exclude defects or damage caused by:
 - 57.b.1 Abuse or improper modification, maintenance, or operation by anyone other than the Contractor; or
 - 57.b.2 Wear and tear under normal usage.
- c. This obligation by the Contractor shall be absolute. The following actions will not constitute acceptance of non-conformance Work or release the Contractor from obligation to furnish the Work in accordance with the Contract Documents:
 - 57.c.1 Observations by the Owner or Engineer; or
 - 57.c.2 Recommendations by the Engineer or payment by the Owner; or
 - 57.c.3 Use of the Work by the Owner; or
 - 57.c.4 Issuance of a notice of acceptance by the Owner pursuant to the provisions of GP-53, or failure to do so; or
 - 57.c.5 Any inspection, test, or approval by others; or
 - 57.c.6 Any correction to non-conforming work by the Owner.

GP-58 DISPUTE RESOLUTION

The parties shall use their best efforts to resolve all disputes in an amicable fashion. Prior to filing suit by either party with respect to any claims, or disputes arising between the parties, the disputes shall be submitted first to non-binding mediation. The mediation shall be conducted in accordance with the Construction Industry Mediation Rules of the American Arbitration Association. If the parties cannot agree to a private mediator, then the mediator shall be selected by the American Arbitration Association, upon the filing of a demand for mediation.

If the dispute is not resolved by mediation within 60 days from the request for mediation, then either party may institute legal proceedings. Any litigation involving the Owner and arising under or related to the Contract or the bidding or award thereof shall be instituted exclusively in the 19th Judicial District Court in and for the Parish of East Baton Rouge, State of Louisiana.

GP-59 PAYMENT

The Owner hereby agrees to pay to the Contractor as full compensation for all work performed under the contract, and/or supplemental agreements thereto, the monetary value of the actual quantities in the completed work according to the schedule of unit prices and/or lump sum prices set forth in attached bid proposal and/or duly authorized supplements thereto, and made a part of the Contract.

Partial payments under the Contract shall be made at the request of the Contractor not more than once each month, based upon partial estimates agreed to by the Contractor and Engineer and shall be furnished to the Engineer and approved by the Engineer prior to transmittal to the Owner for approval and payment.

A Subcontractor Report (Appendix K) should be submitted by the Contractor with each request for partial payment, to be used for informational purposes only by CPRA.

The partial estimates will be approximately stated, and all partial estimates and payments shall be subject to corrections in the estimate rendered following the discovery of any error in any previous estimates.

The payment of the partial estimate shall be taken as verification that the work has been performed and that its quality is satisfactory, however it will in no way serve as a release to the Contractor for the responsibility of any portions thereof. The work and any particulars relating thereto shall be subject to revision and adjustment by the Engineer and/or the Owner at any time prior to final payment, regardless of any previous action taken.

There shall be reserved from the payments provided for the Contract ten percent (10%) for contracts less than \$500,000 or five percent (5%) for contracts of \$500,000 or more, of the estimates submitted, said sum to constitute a trust fund for the protection of and payment to any person or persons, mechanic, subcontractor or materialmen who shall perform any labor upon such contract, or the doing of said work, and all persons who shall supply such person or persons or subcontractors with provisions and supplies for the carrying on of such work, and shall be withheld for a minimum of forty-five (45) calendar days after final acceptance of the completed contract.

After the expiration of the forty-five (45) calendar day period, the reserve in excess of a sum sufficient to discharge the claims of materialmen and laborers who have filed their claims, together with a sum sufficient to defray the cost of such action and to pay attorneys' fees, shall be paid to the Contractor.

The Contractor shall be responsible for obtaining and furnishing a clear lien and privilege certificate to the Owner at the expiration of the retainage period, and prior to payment of any reserve withheld.

GP-60 PAYMENTS WITHHELD

In addition to the percentage provided for in Section GP-58 of these General Provisions and in accordance with any other provision of this Contract, the Owner may withhold such amounts from any payment as may be necessary to protect himself from loss on account of:

- a) Defective work not remedied;
- b) Claims filed or reasonable evidence indicating probable filing of claims;
- c) Failure of the Contractor to make payments properly to subcontractors or for material or labor;

- d) Reasonable evidence that the Work will not be completed within the Contract time and that the unpaid balance would not be adequate to cover damages for the anticipated delay;
- e) A reasonable doubt that the contract can be completed within the time period remaining under the contract;
- f) Damage to another contractor;
- g) Failure to submit required reports; or
- h) Modifications of the contract which necessitate the execution of change orders prior to payment of funds.

Furthermore, nothing contained in this Section shall be deemed to limit the right of the Owner to withhold liquidated damages, as stated in the Instructions to Bidders, from any amounts which may be due and owed the Contractor for work performed under the contract.

GP-61 LIENS

Neither the final payment nor any part of the retained percentage shall come due until the Contractor shall deliver to the Owner a complete release of all liens arising out of this contract, or receipts in full in lieu thereof, and, if required by the Owner, an affidavit that so far as he has knowledge or information, the releases and receipts include all labor and material for which a lien could be filed; but if any subcontractor refuses to furnish a release or receipt in full, the Contractor may furnish a bond satisfactory to the Owner to indemnify the Owner against any lien, construction cost, or attorney's fees.

GP-62 EQUAL EMPLOYMENT OPPORTUNITY

The State of Louisiana is an equal opportunity employer, and looks to its Contractor, subcontractors, vendors and suppliers to take affirmative action to effect this commitment in its operations.

By submitting the bid proposal and executing the Contract, the Contractor agrees to abide by the requirements of the following as applicable: Title VI and VII of the Civil Rights Act of 1964, as amended by the Equal Opportunity Act of 1972, Federal Executive Order 11246, the Federal Rehabilitation Act of 1973, as amended, the Vietnam Era Veterans Readjustment Assistance Act of 1974, Title IX of the Education Amendments of 1972, and the Age Act of 1975, and the Contractor agrees to abide by the requirements of the Americans with Disabilities Act of 1990.

The Contractor agrees not to discriminate in its employment practices, and will render services the Contract, without regard to their race, age, color, religion, sex, national origin, veteran status, political affiliation or disabilities. Any act of discrimination committed by the Contractor, or failure to comply with these statutory obligations when applicable, shall be grounds for termination of the Contract.

GP-63 ANTI-KICKBACK CLAUSE

The Contractor agrees to adhere to the mandate dictated by the Copeland "Anti-Kickback"

Act which provides that each contractor or subcontractor shall be prohibited from inducing, by any means, any person employed in the completion of the work, to give up any part of the compensation to which he is otherwise entitled.

GP-64 SUSPENSION/DEBARMENT

Contractor certifies, by signing and submitting any bid, that their company, any subcontractors, or principals are not suspended or debarred by the General Services Administration (GSA) in accordance with the requirements in OMB Circular A-133. A list of parties who have been suspended or debarred can be viewed via the internet at www.epls.gov.

Contractor agrees to secure from any contractor(s) and subcontractor(s) for the captioned project, certification that such contractor(s) and subcontractor(s) are not suspended, debarred or declared ineligible from entering into contracts with any department or agency of the Federal Government or of the State of Louisiana, or in receipt of a notice of proposed debarment or suspension.

Contractor shall provide immediate notice to Owner in the event of it or its contractor(s) or any subcontractor(s) being suspended, debarred or declared ineligible by any department or agency of the Federal Government or of the State of Louisiana, or upon receipt of a notice of a proposed debarment or suspension, either prior to or after execution of this Contract.

Upon receipt of notice of suspension, debarment, or declaration that Contractor or its contractor(s) or any subcontractor(s) is/are ineligible to enter into contracts with any department or agency of the Federal Government or of the State of Louisiana, either prior to or after execution of this Contract, Owner reserves the right to review cause for said debarment, suspension, or declaration of ineligibility, and to terminate this Contract pursuant to the terms of GP-45 OWNER'S RIGHT TO TERMINATE CONTRACT FOR CAUSE OR CONVENIENCE, or take such other action it deems appropriate under this Contract.

GP-65 LOUISIANA FIRST HIRING ACT

Contractor shall comply with the Louisiana First Hiring Act (La. R.S. 39:2201-2204), which requires that within ten (10) days of executing the Contract, Contractor shall submit the following information to the Louisiana Workforce Commission:

65.a.1 The number and types of jobs anticipated for the Work.

65.a.2 The skill level of the jobs anticipated for the Work.

65.a.3 The wage or salary range for each job anticipated for the Work.

65.a.4 Methods, if any, that the Contractor will use to recruit unemployed persons or person employed in low wage jobs to fill job openings for the Work.

END OF PART I - GENERAL PROVISIONS

PART II SPECIAL PROVISIONS

SP-1 LOCATION OF WORK

The Work to be performed is located in Cameron Parish, Louisiana, in the Gulf of Mexico and along the Gulf shore at the Rockefeller State Wildlife Refuge west of Joseph Harbor Bayou. The site is accessible only by boat or airboat. The nearest boat launch is at Joseph Harbor Bayou off HWY 82. Directions to the boat launch are provided in Appendix F.

- 1.1 Use of Equipment – The equipment used for the Work shall be operated within the boundaries of the Project Limits. Equipment shall not be operated from land without prior written approval of Engineer. If Contractor damages any adjacent wetlands (outside the designated project construction limits) during the course of Work, Contractor shall restore wetlands to pre-existing conditions, and/or perform mitigation as may be deemed necessary by regulatory agencies, at no expense to Owner.

SP-2 WORK TO BE DONE

Contractor shall provide all labor, materials, and equipment necessary to perform the Work. The Work shall include, but not be limited to, mobilization and demobilization at or to the Project Site, construction surveying, pre-construction hazard surveying, dredging and backfilling of temporary flotation and access channels, construction of breakwater sections with settlement plates, and all other Work required in the Plans and Specifications. The Work shall be performed in accordance with these Specifications and in conformity to lines, grades, and elevations shown on the Plans or as directed by Engineer. Quantity calculations, layouts, shop drawings, and construction sequencing of these items shall be provided in the Work Plan. The major tasks associated with the Work are described as follows:

- 2.1 Mobilization and Demobilization – Mobilization and set-up, demobilization and cleanup. Includes excavation (mechanical dredging), stockpiling, and backfilling to construct optional access and flotation channel.
- 2.2 Topographic and Bathymetric Surveying – Initial, progress, and as-built topographic and bathymetric surveys shall be performed within and adjacent to the construction area.
- 2.3 Pre-Construction Hazard Survey – Prior to construction, Contractor shall perform a hazard survey over all areas to be excavated/dredged to locate and avoid pipelines, utilities, and/or obstructions.
- 2.4 Aerial Photography – Monthly oblique aerial photographs shall be submitted during months when breakwater is under construction. In addition, an acceptance aerial photograph shall be flown and submitted upon project completion.
- 2.5 Geotextile Composite – Procurement and installation of geotextile composite for breakwater including breakwater terminals and breakwater gaps.
- 2.6 Bedding Layer Stone – Procurement and installation of graded riprap for construction of the bedding stone layer of the breakwater including breakwater

terminals and breakwater gaps.

- 2.7 Armor Stone – Procurement and installation of graded riprap for construction of the Armor Stone layer of the breakwater including breakwater terminals and breakwater gaps.
- 2.8 Encapsulated Lightweight Aggregate – Procurement, encapsulation, and installation of the lightweight aggregate core of the breakwater.
- 2.9 Settlement Plates – Settlement plates shall be installed as shown in the Plans.
- 2.10 Lighted Daybeacons – Lighted daybeacons shall be installed as shown in the Plans.

SP-3 BID ITEMS AND CONTRACT DATES/TIME

MILESTONE	LOCATION OR RECIPIENT	DATE DUE
Advertisement for Bids	Publications	As Advertised
Mandatory Pre-Bid Conference	Provided in Advertisement for Bids	Provided in Advertisement for Bids
Questions on Bid Documents	Deliver to CPRA	As Stated in Instructions to Bidders
Effective Date of Contract	Contractor and Owner	As Stated in Contract Between Owner and Contractor
Start of Contract Time	Contractor and Owner	As Stated in Notice to Proceed
Work Plan	Submit to Engineer	At Least 14-days Prior to Pre-Construction Conference
Progress Schedule	Submit to Engineer	At Least 14-Days Prior to Starting Construction, Monthly Thereafter
Pre-Construction Conference	Contractor and Engineer	As Determined by the Engineer After the Notice to Proceed is Issued
Pre-Construction Survey Drawings	Submit to Engineer	As Determined by the Engineer After the Pre-Construction Conference and Prior to Construction
Progress Meetings and Reports	At Project Site	Bi-Weekly or as Determined at the Pre-Construction Conference (See GP-13, GP-39)
As-Built Drawings	Deliver to Engineer	Prior to Final Inspection as Scheduled by the Engineer
End of Contract Time After Notice to Proceed	At Project Site	Base Bid: 420-Calendar Days Additive Alternate No. 1: Additional 100-Calendar Days Additive Alternate No. 2: Additional 60-Calendar Days Additive Alternate No. 3: Additional 20-Calendar Days
Daily Progress Reports	Resident Project Representative	By Noon Daily

SP-4 DELIVERABLES

4.1 General

Owner/Engineer is not responsible for the accuracy of information prepared

and/or otherwise provided by Contractor in submittals. Owner/Engineer's review of submittals is only for general conformance with the design concept and the information given in the construction documents. Owner/Engineer's review and acceptance of submittals does not relieve Contractor from compliance with the requirements of the Contract Documents. Refer to individual technical specifications for Engineer's role in reviewing specific submittals.

Incomplete submittals and submittals with inadequate data will be rejected. All construction submittals shall be provided electronically via email or other method approved by Owner.

The following detailed instructions include various methods of material review that shall be followed in submitting requests for review. The Engineer will review and return submittal, appropriately stamped and signed, to the Contractor. Items returned stamped "No Exception Taken" or "Make Corrections Noted" shall be considered adequate to incorporate into the construction. Items returned stamped "Rejected" or "Revise and Resubmit" shall be considered not adequate to incorporate into the construction and shall have the appropriate modifications and corrections made by the Contractor and then resubmitted for review.

Submittals designated as "For Information Only" shall be submitted to the Engineer for informational purposes only. Engineer will file and distribute submittal as necessary.

4.2 Prior to Construction

4.2.1 The Contractor shall submit the following documents to the Engineer prior to the Pre-Construction Conference specified in GP-14:

4.2.1.1 Work Plan as specified in GP-8 and SP-6;

4.2.1.2 Progress Schedule as specified in GP-9;

4.2.1.3 Copy of Daily Progress Report Template as specified in GP-10.

4.2.1.4 Hurricane and Severe Storm Plan as specified in GP-11;

4.2.1.5 Health and Safety Plan as specified in GP-12.

4.2.2 The Contractor shall provide the following information to the Engineer at the Pre-Construction Conference specified in GP-14:

4.2.2.1 Updates to all plans, schedules, and templates based on comments from the Engineer;

4.2.2.2 Potential construction and access corridors (if needed, other than from what is provided) which may be approved on an as needed basis.

4.3 During Construction

The Contractor shall deliver copies of the following documents upon request by the Engineer, or as specified in these provisions:

- 4.3.1 Results of all surveys and calculations as specified in TS-5;
- 4.3.2 Progress Schedule as specified in GP-9;
- 4.3.3 Daily Progress Reports as specified in GP-10;
- 4.3.4 Copies of all inspection reports;
- 4.3.5 All Change Orders, Field Orders, Claims, Clarifications, and Amendments;
- 4.3.6 Results of any materials testing.

4.4 Administrative Records

4.4.1 Notice of Intent to Dredge

At least 30-days prior to commencement of Work on this Contract, the Contractor shall notify the U.S. Coast Guard, Sector New Orleans Command Center, at the address below, of his intended operations to dredge and request that it be published in the Local Notice to Mariners. This notification must be given in sufficient time so that it appears in the Notice to Mariners at least seven (7) days prior to the commencement of this dredging operation. A copy of the Department of the Army Permit and drawings shall be provided to the U.S. Coast Guard. A copy of the notification shall be provided to the Owner and Engineer.

U.S. Coast Guard
Sector New Orleans Command Center
201 Hammond Hwy
Metairie, LA 70005
Telephone: 504-846-5923

4.4.2 Relocation of Navigational Aids

Temporary removal of any navigation aids located within or near the areas required to be dredged or filled and material stockpile areas shall be coordinated by Contractor with the U.S. Coast Guard prior to removal. The Contractor shall not otherwise remove, change the location of, obstruct, willfully damage, make fast to, or interfere with any aid to navigation. The Contractor shall notify the Eighth U.S. Coast Guard District, New Orleans, Louisiana, in writing, with a copy to the Owner and Engineer, seven (7) days in advance of the time he plans to dredge or Work adjacent to any aids which require relocation to facilitate the Work. The Contractor shall contact the U.S. Coast Guard for information concerning the position to which the aids will be relocated.

4.4.3 Dredging Aids

The Contractor shall obtain approval for all dredging aids, including but not limited to temporary navigation aids, warning signs, buoys, and lights, he requires to conduct the Work specified in this Contract. The Contractor shall obtain a temporary permit from the U.S. Coast Guard for all buoys or dredging aid markers to be placed in the water prior to installation. The permit application shall state the position, color, and dates to be installed and removed for all dredging aid markers and be submitted to the U.S. Coast Guard. Dredging aid markers and lights shall not be colored or placed in a manner that they will obstruct or be confused with navigation aids. Copies of the application and permit shall be submitted to the Owner and Engineer seven (7) days prior to commencement of dredging operations.

4.4.4 Notification of Discovery of Historical or Cultural Sites

If during construction activities the Contractor observes items that may have prehistoric, historical, archeological, or cultural value, the Contractor shall immediately cease all activities that may result in the destruction of these resources and shall prevent his employees from trespassing on, removing, or otherwise damaging such resources. Such observations shall be reported immediately to the Owner and Engineer so that the appropriate authorities may be notified and a determination made as to their significance and what, if any, special dispositions of the finds should be made. The Contractor shall report any observed unauthorized removal or destruction of such resources by any person to the Owner and Engineer so the appropriate State of Louisiana authorities can be notified. The Contractor shall not resume Work at the site in question until State authorities have rendered judgment concerning the artifacts of interest.

4.5 Post Construction

The Contractor shall contact the Engineer, a minimum of five (5) working days prior to the anticipated completion of the Work in order to schedule the final inspection and gain Acceptance by the Engineer. The following documents shall also be submitted to the Engineer:

4.5.1 Copies of all delivery slips, which shall include the source of construction materials, date of delivery, exact quantity, and size of materials delivered with each shipment to the Project Site;

4.5.2 As-Built Drawings as specified in GP-55 and TS-5.

SP-5 ADDRESSES FOR DOCUMENT DELIVERY

Prior to Bid opening date, Contractor shall send all questions and requests for clarification or interpretation of the Bid Documents in writing to the attention of Renee

McKee of the Coastal Protection and Restoration Authority. The address and contact information is as follows:

Coastal Protection and Restoration Authority
150 Terrace Ave, Suite 100
Baton Rouge, LA 70802
Attn: Renee McKee
Phone: (225) 342-0811 / Fax : (225) 342-4674
E-mail : cpra.bidding@la.gov

After execution of the Contract between Owner and Contractor, the successful Contractor shall contact the Engineers concerning bid documentation or questions. The addresses and contact information for the Engineers are listed as follows:

Project Engineer Intern
Julia Wall
150 Terrace Avenue
Baton Rouge, LA 70802
Phone: 225-342-4485

Field Engineer
Dion Broussard
635 Cajundome Blvd.
Lafayette, LA 70506
Phone: 337-482-0686

Owner and Engineer will deliver all written Claims, Notices, Submittals, Drawings, and other documents to Contractor at the address indicated on the Bid.

SP-6 WORK PLAN

The intent of the Work Plan referenced in GP-8 is for Contractor to document his general plan for the Work. The Work Plan should include all major work items, the sequence of work, materials sampling and testing, shop drawings, and all other items pertinent to successful completion of the Work. Engineer's receipt of the Work Plan shall not be interpreted as approval or acceptance of Contractor's planned means and methods for construction. Construction means and methods are the sole responsibility of Contractor. The following items shall be included in the Work Plan in addition to those required in the General Provisions:

1. A materials inspection, sampling, and testing plan shall be submitted describing the proposed plan for each material required by these Contract Documents.
2. A mobilization/demobilization plan for all major equipment (i.e. cranes, barges, etc.) shall be submitted.
3. A survey plan shall be submitted that includes, at a minimum, the proposed plan for the items below. The survey plan shall include detailed on Contractor's plan to perform the initial survey as the project progresses and shall include adequate time for Engineer's review of surveys and alignment.
 - a. Initial survey
 - b. Pre-construction hazard survey
 - c. Breakwater alignment staking
 - d. Progress surveys
 - e. Settlement plate surveys

- f. As-built surveys
- 4. Shop drawings and submittals shall be submitted with the Work Plan as required by these Contract Documents. A summary of required submittals and shop drawings to be included in the Work Plan is shown below. The list below is not necessarily all inclusive; refer to individual Specification sections for detailed and/or additional submittal requirements.
 - a. Manufacturer's product data and installation instructions for geotextiles.
 - b. Certified test reports for geotextiles.
 - c. Geotextile sewn seam details and test reports.
 - d. Product samples for geotextiles.
 - e. Name and location of quarry to supply GRR.
 - f. Name and location of material source (LWA).
 - g. Description of LWA encapsulation method.
 - h. Description of geotextile shroud placement method.
 - 5. The Work Plan shall describe the sequence and intended methods of all construction activities including, but not limited to, the following:
 - a. Transportation of materials to the project site.
 - b. Surveying.
 - c. Access and flotation channel dredging.
 - d. Breakwater construction.
 - e. Backfilling.
 - 6. The Work Plan shall include the barge displacement table as required in SP-18.

Schedule for all items listed above shall be included in the Progress Schedule as specified in GP-9.

SP-7 FAILURE TO COMPLETE ON TIME

For each day the Work remains incomplete beyond the Contract Time, as specified in SP-3, or Extension of Contract Time, as specified in GP-44, the sum of thirty-five hundred dollars (\$3,500) per calendar day will be deducted from any money due to Contractor as liquidated damages. Contractor and Surety shall be liable for any liquidated damages that are in excess of the amount due Contractor.

SP-8 TRANSPORTATION

Contractor shall provide a safe and reasonable means of transportation to and from the dock, staging area, and Project Site for Engineer, Owner, and/or Engineer's/Owner's representative throughout the Work. The schedule and pickup location shall be arranged by Engineer and Contractor prior to mobilization. Upon request, overnight room and board shall be provided to these personnel by Contractor if adequate facilities are available. Contractor shall provide a boat and crew for the exclusive use of Engineer and/or Inspector to tour the Project Site during the Work. The boat shall be capable of

operating in marine conditions during which Contractor is able to work and have the following features:

1. An enclosed cabin space;
2. Capable of maintaining 25 knots (29 mph);
3. Six (6) passenger capacity;
4. Coast Guard certified;
5. Operable marine radio;
6. All safety equipment required by the Coast Guard for the size and type of that boat;
7. Draft of two feet (2') or less.

Contractor shall supply the fuel and maintain the boat. All mechanical malfunctions of the boat shall be repaired within twelve (12) hours. In the event that Contractor refuses, neglects, or delays compliance with the requirements of this provision, Owner may obtain and use other necessary boats at the expense of Contractor. The costs associated with providing the boats shall be included in the lump sum price for Bid Item No. 1.1, "Mobilization and Demobilization."

SP-9 CLEAN-UP

Contractor shall at all times keep the area free from accumulations of waste material or rubbish caused by Contractor's employees or by the Work. At the completion of the Work, Contractor shall remove all his trash, tools and surplus materials from the project site and dispose of properly.

SP-10 OFFICE FOR INSPECTOR

Contractor shall provide an office for Owner's/Engineer's Representative at the Project Site or staging area. This office shall be for the sole use of Representative, suitably sized, provided with lighting, heat, air conditioning, and internet connection. The office furnishings shall include a work table, drafting table, stool, and two chairs.

In addition, due to the work being performed at a remote location, Contractor shall provide daily meals to the Representative during working hours as part of and equal to the regular meals provided to the Contractor's work crew. Separate meals beyond those offered to the work crew, cash per diem, alcohol, credit ("gift") certificates, and other special allowances, benefits, or perks shall not be included.

In the event that Contractor refuses, neglects, or delays compliance with the requirements of this provision, Owner may obtain and use another necessary office for Representative at the expense of Contractor. The cost for providing and furnishing office shall be included in the contract lump sum price for Bid Item No. 1.1, "Mobilization and Demobilization."

SP-11 OYSTER LEASE RESTRICTIONS

There are no known existing oyster leases near or within the boundaries of the Project Site. Therefore, no oyster lease restrictions are provided for performing the Work within the boundaries of the Project Site.

SP-12 QUALITY ASSURANCE / QUALITY CONTROL

12.1 Construction Observation: Owner and Engineer will periodically observe the construction progress, procedures, and materials of Contractor. Contractor shall offer full cooperation to facilitate these observation activities, and shall be responsive to questions regarding methods, equipment, materials, and intentions in pursuing the Work or any particular thereof. Such observation by Owner and/or Engineer is for the express purpose of verifying compliance by Contractor with the Contract Documents and shall not be construed as construction supervision or indication of approval of the manner or location in which the Work is being performed as being a safe practice or place. The safety of the workers on the site is the responsibility of Contractor. By entering the site, Contractor and its employees relieve Owner and Engineer of any responsibility for their safety and accept complete responsibility for any unsafe acts or procedures which may cause them harm.

12.2 Rejection of Work: If Owner or Engineer rejects Work and/or materials incorporated into the Work, Contractor shall bear all expenses associated with testing to prove compliance with the Contract Documents, including but not limited to engineering expenses associated with such testing. Any and all such expenses that are paid directly by Owner will be deducted or withheld from subsequent payment(s) to Contractor.

12.3 Contractor's Quality Control Testing: Contractor shall perform all quality control testing necessary to assist him in his work and satisfy the submittal requirements listed under applicable Specification sections.

1. All samples for quality control testing shall be obtained by an independent testing laboratory retained by Contractor. Samples shall not be collected by Contractor and delivered to the laboratory.
2. The cost of all quality control testing shall be paid by Contractor.
3. Contractor shall not retain the same independent testing laboratory utilized by Owner for its quality assurance testing program.

12.4 Owner's Quality Assurance Testing: Owner may engage an independent laboratory to perform quality assurance testing on any aspect of the work. These tests are for the sole use of Owner.

1. Contractor shall cooperate with Owner's testing laboratory during collection of material samples at no additional expense to Owner.
2. The cost of all quality assurance re-testing that is performed due to failure of

materials to comply with Specification requirements shall be paid by Contractor. Refer to paragraph 12.2 above.

3. Quality assurance testing will not necessarily be limited to test/procedures listed in the applicable Specification sections. Contractor's participation may not always be required, although full cooperation is expected from Contractor with Owner's testing efforts.

SP-13 LANDOWNER AND PIPELINE REQUIREMENTS

Owner has obtained all temporary easement, servitude, and right-of-way agreements required for construction of the project (not including access to the project site). A copy of the landrights memorandum for this project is provided for informational purposes in Appendix C. The primary landowner for ME-18 is the Rockefeller Wildlife Refuge, operated by the Louisiana Department of Wildlife and Fisheries (LDWF). Prior to starting any work on/adjacent to the Rockefeller Wildlife Refuge property, Contractor shall contact the LDWF at:

Philip "Scooter" Trosclair
LA Department of Wildlife and Fisheries
5476 Grand Chenier Hwy
Grand Chenier, LA 70643-3100
Phone – (337) 538-2276
Fax – (337) 491-2595
Email – ptrosclair@wlf.la.gov

Contractor shall notify all pipeline companies at least ten (10) working days in advance of any construction work. All pipelines located within one hundred fifty feet (150') of the breakwater or flotation/access channels shall be probed and their locations marked prior to excavation, for the duration of construction activities. No excavation shall be permitted within one hundred feet (100') of any pipeline without coordination with and written approval from pipeline owner. Owners of pipelines identified in the vicinity of the project are listed below. Contractor shall notify and coordinate with these owners. Contractor is also responsible for identifying any other pipeline owners in the vicinity using the Louisiana One Call system (1-800-272-3020).

Dynegy (Targa Resources, Inc.)
Contact: Darrell Redd
Phone: 713-574-1000

SP-14 THREATENED AND ENDANGERED SPECIES

The Environmental Assessment for this project identifies manatees as threatened and endangered species which have the potential to exist within the boundaries of the Project Site. Contractor shall review and comply with the restrictions listed in Specification Section TS-3, "Environmental Protection Measures" regarding construction activities.

SP-15 ADVERSE WEATHER

Contractor shall submit the number of adverse weather days claimed during each period along with progress payments. Adverse weather days shall not be claimed for a period for which a progress payment has previously been authorized. The contract time takes into consideration adverse conditions associated with working along the Gulf shoreline. Refer to GP-9.

SP-16 INSURANCE AND BONDS

The Contractor shall purchase and maintain without interruption, for the duration of the contract, insurance against claims for injuries to persons or damages to property which may arise from or in connection with the performance of the Work hereunder by the Contractor, its agents, representatives, employees or subcontractors. The duration of the contract shall be from the inception of the contract until the date of final payment.

16.1 MINIMUM SCOPE AND LIMITS OF INSURANCE

16.1.1 WORKER'S COMPENSATION

Worker's Compensation insurance shall be in compliance with the Worker's Compensation law of the State of Louisiana. Employers Liability is included with a minimum limit of \$500,000 per accident/per disease/per employee. If Work is to be performed over water and involves maritime exposure, applicable LHWCA, Jones Act or other maritime law coverage shall be included and the Employers Liability limit increased to a minimum of \$1,000,000. A.M. Best's insurance company rating requirement may be waived for Worker's compensation coverage only.

16.1.2 COMMERCIAL GENERAL LIABILITY

Commercial General Liability insurance, including Personal and Advertising Injury Liability and Products and Completed Operations Liability, shall have a minimum limit per occurrence based on the project value. The Insurance Services Office (ISO) Commercial General Liability occurrence coverage form CG 00 01 (current form approved for use in Louisiana), or equivalent, is to be used in the policy. Claims-made form is unacceptable.

The aggregate loss limit must apply to each project. ISO form CG 25 03 (current form approved for use in Louisiana), or equivalent, shall also be submitted. The State project number, including part number, and project name shall be included on this endorsement.

COMBINED SINGLE LIMIT (CSL) PER OCCURRENCE

The required minimum combined single limit amount of insurance shall be as provided below:

<u>Initial Contract Amount</u>	<u>Minimum Insurance</u>
Up to \$1,000,000	\$1,000,000
From \$1,000,001 to \$2,000,000	\$2,000,000
Over \$2,000,000	\$5,000,000

16.1.3 AUTOMOBILE AND WATERCRAFT LIABILITY

Automobile Liability Insurance and Watercraft Liability Insurance shall have a minimum combined single limit per occurrence of \$1,000,000. ISO form number CA 00 01 (current form approved for use in Louisiana), or equivalent, is to be used in the policy. This insurance shall include third-party bodily injury and property damage liability for owned, hired and non-owned automobiles and/or watercraft. If any non-licensed motor vehicles and/or watercraft are engaged in operations within the terms of the contract on the site of the work to be performed thereunder, such insurance shall cover the use of any such vehicles.

NOTE: If the Contractor does not own an automobile and/or watercraft and such vehicles are utilized in the execution of the contract, then hired and non-owned coverage is acceptable. If an automobile and/or watercraft is not utilized in the execution of the contract, then automobile and/or watercraft coverage is not required.

16.1.4 Excess Umbrella

Excess Umbrella Insurance may be used to meet the minimum requirements for General Liability, Automobile Liability, and Watercraft Liability only.

16.1.5 Pollution Liability (*required when asbestos or other hazardous material abatement is included in the contract*)

Pollution Liability insurance, including gradual release as well as sudden and accidental, shall have a minimum limit of not less than \$1,000,000 per claim. A claims-made form will be acceptable. A policy period inception date of no later than the first day of anticipated Work under this contract and an expiration date of no earlier than 30 days after anticipated completion of all Work under the contract shall be provided. There shall be an extended reporting period of at least 24 months, with full reinstatement of limits, from the expiration date of the policy. The policy shall not be cancelled for any reason, except non-payment of premium.

16.1.6 Deductibles and Self-Insured Retentions

Any deductibles or self-insured retentions must be declared to and accepted by the Owner. The Contractor shall be responsible for all deductibles and self-insured retentions.

16.2 OTHER INSURANCE PROVISIONS

The policies are to contain, or be endorsed to contain, the following provisions:

16.2.1 WORKER'S COMPENSATION AND EMPLOYERS LIABILITY COVERAGE

The insurer shall agree to waive all rights of subrogation against the Owner, its officers, agents, employees and volunteers for losses arising from Work performed by the Contractor for the Owner.

16.2.2 GENERAL LIABILITY COVERAGE

The Owner, its officers, agents, employees and volunteers are to be added as additional insureds as respects liability arising out of activities performed by or on behalf of the Contractor; products and completed operations of the Contractor, premises owned, occupied or used by the Contractor. ISO Form CG 20 10 (current form approved for use in Louisiana), or equivalent, is to be used.

The Contractor's insurance shall be primary as respects the Owner, its officers, agents, employees and volunteers. The coverage shall contain no special limitations on the scope of protection afforded to the Owner, its officers, officials, employees or volunteers. Any insurance or self-insurance maintained by the Owner shall be excess and non-contributory of the Contractor's insurance.

The Contractor's insurance shall apply separately to each insured against whom claim is made or suit is brought, except with respect to the policy limits.

16.2.3 ALL COVERAGES

Coverage shall not be canceled, suspended, or voided by either party (the Contractor or the insurer) or reduced in coverage or in limits except after 30 days written notice has been given to the Owner. Ten-day written notice of cancellation is acceptable for non-payment of premium. Notifications shall comply with the standard cancellation provisions in the Contractor's policy.

Neither the acceptance of the completed Work nor the payment thereof shall release the Contractor from the obligations of the insurance requirements or indemnification agreement.

The insurance companies issuing the policies shall have no recourse against the Owner for payment of premiums or for assessments under any form of the policies.

Any failure of the Contractor to comply with reporting provisions of the policy shall not affect coverage provided to the Owner, its officers, agents, employees and volunteers.

16.2.4 ACCEPTABILITY OF INSURERS

All required insurance shall be provided by a company or companies lawfully authorized to do business in the jurisdiction in which the Project is located. Insurance shall be placed with insurers with an A.M. Best's rating of **A-:VI or higher**. This rating requirement may be waived for Worker's compensation coverage only.

If at any time an insurer issuing any such policy does not meet the minimum A.M. Best rating, the Contractor shall obtain a policy with an insurer that meets the A.M. Best rating and shall submit another certificate of insurance as required in the contract.

16.2.5 VERIFICATION OF COVERAGE

Contractor shall furnish the Owner with Certificates of Insurance reflecting proof of required coverage. The Certificates for each insurance policy are to be signed by a person authorized by that insurer to bind coverage on its behalf. The Certificates are to be received and approved by the Owner before Work commences and upon any contract renewal thereafter.

The Certificate Holder must be listed as follows:

State of Louisiana
Coastal Protection and Restoration Authority
150 Terrace Avenue
Baton Rouge, LA 70802
Attn: Project# ME-18 (Rockefeller Refuge Gulf Shoreline Stabilization)

In addition to the Certificates, Contractor shall submit the declarations page and the cancellation provision endorsement for each insurance policy. The Owner reserves the right to request complete certified copies of all required insurance policies at any time.

Upon failure of the Contractor to furnish, deliver and maintain such insurance as above provided, this contract, at the election of the Owner, may be suspended, discontinued or terminated. Failure of the Contractor to purchase and/or maintain any required insurance shall not relieve the Contractor from any liability or indemnification under the contract.

If the Contractor does not meet the insurance requirements at policy renewal, at the option of the Owner, payment to the Contractor may be withheld until the requirements have been met, OR the Owner may pay the renewal premium and withhold such payment from any monies due the Contractor, OR the contract may be suspended or terminated for cause.

16.2.6 SUBCONTRACTORS

Contractor shall include all subcontractors as insureds under its policies OR shall be responsible for verifying and maintaining the certificates provided by each subcontractor. Subcontractors shall be subject to all of

the requirements stated herein. The Owner reserves the right to request copies of subcontractor's certificates at any time.

If Contractor does not verify subcontractors' insurance as described above, Owner has the right to withhold payments to the Contractor until the requirements have been met.

16.2.7 WORKER'S COMPENSATION INDEMNITY

In the event Contractor is not required to provide or elects not to provide Worker's compensation coverage, the parties hereby agree the Contractor, its Owners, agents and employees will have no cause of action against, and will not assert a claim against, the State of Louisiana, its departments, agencies, agents and employees as an employer, whether pursuant to the Louisiana Worker's Compensation Act or otherwise, under any circumstance. The parties also hereby agree that the State of Louisiana, its departments, agencies, agents and employees shall in no circumstance be, or considered as, the employer or statutory employer of Contractor, its Owners, agents and employees. The parties further agree that Contractor is a wholly independent Contractor and is exclusively responsible for its employees, Owners, and agents. Contractor hereby agrees to protect, defend, indemnify and hold the State of Louisiana, its departments, agencies, agents and employees harmless from any such assertion or claim that may arise from the performance of this contract.

16.2.8 INDEMNIFICATION/HOLD HARMLESS AGREEMENT

Contractor agrees to protect, defend, indemnify, save, and hold harmless, the State of Louisiana, all State Departments, Agencies, Boards and Commissions, its officers, agents, servants, employees and volunteers, from and against any and all claims, damages, expenses and liability arising out of injury or death to any person or the damage, loss or destruction of any property which may occur, or in any way grow out of, any act or omission of Contractor, its agents, servants and employees, or any and all costs, expenses and/or attorney fees incurred by Contractor as a result of any claims, demands, suits or causes of action, except those claims, demands, suits or causes of action arising out of the negligence of the State of Louisiana, all State Departments, Agencies, Boards, Commissions, its officers, agents, servants, employees and volunteers.

Contractor agrees to investigate, handle, respond to, provide defense for and defend any such claims, demands, suits or causes of action at its sole expense and agrees to bear all other costs and expenses related thereto, even if the claims, demands, suits, or causes of action are groundless, false or fraudulent.

16.3 PERFORMANCE AND PAYMENT BOND

Recordation of Contract and Bond [38:2241A(2)]

The Contractor shall record within thirty (30) days the Contract Between Owner and Contractor and Performance and Payment Bond with the Clerk of Court in the

Parish(s) in which the Work is to be performed. The Contractor shall obtain a Certificate of Recordation from the Clerk of Court and forward this Certificate immediately to the Coastal Protection and Restoration Authority contact person listed in the Advertisement for Bids. No requests for payment will be processed until receipt of the Certificate of Recordation.

SP-17 INCREASE OR DECREASE OF CONTRACT QUANTITIES

Where the quantity of Work with respect to any item is covered by a unit price, such quantities are estimated quantities to be used when comparing bids and the right is reserved by the Owner to increase/decrease such quantities as may be necessary to complete the Work and/or remain within the funding limits. In the event of material underruns/overruns, the unit costs will be used to determine payment to the Contractor as long as the underrun/overrun remains within 25% of the original contract quantity.

SP-18 BARGE DISPLACEMENT TABLE

Contractor shall develop a barge displacement table for measurement and payment of graded riprap and include it in the Work Plan. The table shall be approved by the Engineer. It shall show the name and/or number, dimensions, name of owner, and name of fabricator for each barge. Contractor shall furnish a dimensioned drawing or sketch of each barge that is sufficient to verify the barge displacement table. The drawings shall show, at a minimum, the length, width, and depth of the barge, and dimensions of rake(s). All new or modified barges shall be field checked for current dimensions by Contractor in the presence of Engineer or the Inspector. Each table shall contain the freeboard of the barge in feet and tenths from zero (0) to the full depth of the barge and the corresponding gross displacement to the nearest ton.

Each barge shall be suitably marked with two displacement gaging lines along each side of the barge. Each gaging line shall be painted perpendicular to the edge of the barge and be no less than four (4) inches wide and one (1) foot long on both the deck and side of the barge. Barges with rakes shall have the displacement gaging lines placed at each corner of the box section between the rakes. If a barge has a box end or ends, the gaging lines shall be placed approximately four (4) feet from the box end. The freeboard will be measured at the four (4) gaging locations and the displacement determined by the use of the "CELMV Standard Barge Tables" from the average of these measurements. The displacement shall be determined before and after the barge is unloaded and the difference between these values shall be the quantity delivered.

Barge displacement measurements shall be taken on final barge used to transport GRR to the project footprint. For example, if GRR is transported via barge to the project vicinity and then light-loaded onto a different barge before final placement of material in the project footprint, payment related measurements must be taken on the light-loaded barge. Measurements shall be taken when the barge has a minimum of one (1) foot clearance between the underside of the barge and the bay bottom.

If the barge tables were originally furnished for fresh water and the barge displacement measurements are being taken in salt water, the Contractor has the option to obtain water samples and determine the densities or unit weights of the water. Water sampling shall

be performed concurrently with the measurements of the barges, both when fully loaded (ie prior to placing material on site) and empty. Water samples shall be taken by Contractor and witnessed by Engineer. The water samples shall be taken in accordance with ASTM D 3370 (practice A-Grade Sample) at depths of four (4) and eight (8) feet in the area where measurements are made using a "Polypro" 2000 ml. water sampler, or approved equal.

Densities shall be tested and reported in writing according to ASTM D 1429 (Method D Hydrometer method). After review and approval of the test results by the Engineer, the average of the densities for each barge will be used to adjust the measurements. A unit weight of 62.45 pounds/cubic foot is standard for fresh water. If Contractor does not obtain water samples and densities, then no adjustments will be applied to the displacement table and graded riprap quantities.

END OF PART II – SPECIAL PROVISIONS

PART III TECHNICAL SPECIFICATIONS

TS-1 GENERAL REQUIREMENTS

- 1.1 **Scope:** Work covered under these Plans and Specifications includes all labor, materials, tools, equipment, plant, supplies, superintendence, insurance, incidentals, and services necessary or required to fully complete the work for “Rockefeller Refuge Shoreline Protection Project (ME-18)” in accordance with these Specifications and in conformity to the lines, grades, and elevations shown on the Plans. Major tasks associated with this Work include, but may not necessarily be limited to, the items described in paragraph SP-2 of the Special Provisions.
- 1.2 **References:** Publications listed below form a part of this Specification to the extent referenced. The publications are referred to in the text by the basic designation only.

Louisiana Department of Transportation and Development (DOTD) Publications
DOTD Louisiana Standard Specifications for Roads and Bridges (2016)

- 1.3 **Site Examination:** Bidders shall attend the pre-bid conference and be thoroughly familiar with job conditions, particularly the soft soils, shallow water, and exposed marine conditions, prior to submitting a bid. Failure to give proper consideration to these conditions when preparing bids shall not constitute grounds for additional compensation. Refer to paragraph GP-5, “Pre-Bid Conference and Site Visit,” of the General Provisions.
- 1.4 **Permits:** Refer to paragraph GP-26, “Permits,” of the General Provisions. Owner will provide the following permits (see Appendix G):
 - 1.4.1 LA Department of Natural Resources Coastal Use Permit
 - 1.4.2 U.S. Army Corps of Engineers (USACE) Permit
- 1.5 **Removal of Trash:** Contractor shall remove all debris, trash, and garbage from the site within 15 days after completion of the construction activities. Refer to paragraph SP-9, “Clean-Up,” of the Special Provisions.
- 1.6 **Placement of Dredged and/or Excavated Material:** Contractor shall not deposit dredged and/or excavated material into areas other than those shown on the Plans or stated in permits without prior written approval of Engineer.
- 1.7 **Navigation:** In addition to the requirements of paragraphs GP-36, GP-37, and GP-38 of the General Provisions, all operations in connection with the Work shall be in accordance with Subsection 107.09, “Navigable Waters and Wetlands,” of the Louisiana Standard Specification for Roads and Bridges, 2016. Failure of Contractor to familiarize himself with all terms, conditions, and provisions of the rules and regulations applicable to the Work shall not relieve him of his responsibility under the Contract. Navigable depths shall not be impaired except as specified and/or allowed by laws regulating navigation in the area.

1.8 Existing Features

1.8.1 Contractor shall be responsible for investigating, locating and protecting all existing facilities, structures, services, and pipelines on, above, or under the surface of the area where dredging, excavating, placement, spudding, and pile driving operations are to be performed. Owner will not be held responsible for damage to Contractor's equipment, employees, subcontractors, adjacent property owners, or anyone else connected with the project due to encountering objects underground, above and below the water line and/or seafloor.

1.8.2 Existing features, where indicated on the Plans, are shown only to the extent such information was made available to or discovered by Engineer during preparation of the Plans. There is no guarantee as to the accuracy or completeness of such information, and all responsibility for the accuracy and completeness is expressly disclaimed. If Contractor fails to discover an installation underground, above and below the water line and/or seafloor and damages the same, he shall be responsible for the cost of the repair.

1.9 Storage of Construction Materials: Construction materials unloaded from barges, trucks, and/or railroad cars that cannot be immediately used for construction shall be stored in approved storage areas. Storage areas shall be located reasonably near the job site and approved by Owner. The storage areas shall be prepared by Contractor and made relatively smooth in order that all of the stored material may later be recovered free from dirt or other foreign materials.

1.10 Geotechnical Data: Soil boring logs are provided in Appendix E. These data represent the most recent information available. However, variations may exist in the surface and subsurface conditions between sample locations. Contractor shall draw his own conclusions as to the character of the in-situ soil material.

1.10.1 Owner and Engineer disclaim any responsibility for the accuracy, true location and extent of the geotechnical investigation that has been prepared by others. They further disclaim responsibility for interpretation of that data by bidders. Soil boring logs are bound in this project manual for the bidders' convenience only and are not and shall not constitute part of the bidding and Contract Documents.

1.11 Daily Progress Reports: Contractor shall provide a daily record of activities starting on the notice to proceed date and ending on the date of final acceptance. Records shall document general quantity and locations of materials installed, percent project completion, and adverse weather or other problems that cause delays. Refer to General Provisions Paragraph GP-10, "Daily Progress Report."

TS-2 MEASUREMENT AND BASIS OF PAYMENT

- 2.1 General: The extended prices stated on the Bid Form will be considered maximum Contract prices with unit price provisions. The extended prices shall be full compensation for furnishing all labor, materials, tools, equipment, plant supplies, superintendent, insurance, incidentals, services, overhead and profit necessary to complete the construction of the various items of Work. It is not the intent to itemize each and every labor, material or incidental requirement. Any requirement, explicit or implied, as determined by Owner for project completion and not specifically listed on the Bid Form shall be included in items with which they are considered subsidiary. Any item not specifically identified as an additive alternate bid shall be considered as part of the base bid, unless specified otherwise.
- 2.2 Measurements and Quantities: All quantities of Work stated on the Bid Form are nominal estimates, computed by Engineer, based on the Contract Documents. Prior to bidding, Contractor shall verify these quantities by preparing his own estimates. In any case, prices stated shall reflect all Work required by the Contract Documents.
- 2.2.1 Barge Measurements: For Bid Item No. 1.6, "Bedding Layer Stone," Bid Items No. 2.6, 3.6, and 4.6 "Addt'l Bedding Layer Stone," Bid Item No. 1.7, "Armor Stone," and Bid Items No. 2.7, 3.7, and 4.7 "Addt'l Armor Stone," barge measurements shall be used for quantity computations (Tons). Refer to Special Provisions, paragraph SP-18, "Barge Displacement Table."
- 2.2.2 In-Place Measurements:
1. For Bid Item No. 1.5, "Geotextile Composite," and Bid Items No. 2.5, 3.5, and 4.5 "Addt'l Geotextile Composite," progress surveys shall be used for quantity computations (Linear Feet). The quantity shall be computed as the distance between breakwater alignment points and shall be inclusive of all materials required to meet the specified dimensions.
 2. For Bid Item No. 1.8, "Encapsulated Lightweight Aggregate Core," and Bid Items No. 2.8, 3.8 and 4.8 "Addt'l Encapsulated Lightweight Aggregate Core," initial and progress surveys shall be used for quantity computations (Cubic Yards). Refer to Section TS-5, "Construction Surveying."
- 2.2.3 Quantity Computations: The methodology for quantity computations shall be conventional mathematics using physical measurements, such as the known unit weight for water at the project site, and average-end-area method computation techniques based on actual surveying transects. Less precise, approximate quantity measurement methods, such as load size/counts and production rate/time shall not be valid measurement techniques.
- 2.2.4 Quantity Adjustments: Quantity deductions (reduction of the contract payment quantity) shall be made for work performed outside the specified lines, grades and tolerances shown by the Plans. For Bid Item No. 1.7, "Armor

Stone,” and Bid Items No. 2.7, 3.7 and 4.7, “Addt'l Armor Stone,” overbuilding the specified templates for these items could have detrimental effects on the stability of the overall breakwater structure due to the soft foundation soils at this project site. Quantity (cy) of excess graded riprap (GRR) placed for the breakwater structure shall be quantified by initial and progress surveys using average-end-area method computation techniques. GRR placed beyond the tolerances specified on the Plans shall be considered excess. Engineer will be the sole judge and make the final decision in determining if such quantities are considered excess. The conversion factor for these contract quantity deductions shall be 1.6 tons equals 1.0 cubic yards.

2.3 Basis of Payment:

2.3.1 Extended prices stated on the Bid Form shall be considered maximum Contract prices unless the quantities of Work are adjusted by an Owner-initiated change order. Progress payments will be based on unit prices stated on the Bid Form.

2.3.2 If quantities of Work are adjusted, the cost or credit to Owner shall be computed in accordance with the unit prices stated on the Bid Form.

2.3.3 Lump Sum Work items listed on the Bid Form Items will be paid for according to the estimated percentage of Work completed for each item. This amount shall be full compensation for completed in-place Work. Engineer will be the sole judge and make the final decision as to the percentage complete of each item and the monetary amount for progress payments to Contractor.

2.3.4 Engineer's review for progress payment will be based on review of Contractor's surveys and material submittals, as well as Engineer's field observations.

2.3.5 During the progress of the Work, completed Work items shall be maintained by Contractor until Owner/Engineer accepts the Work. Contractor shall repair, replace, or restore at his cost any and all damage and/or deficiencies to Work items for any reason. Damage and/or deficiencies include shoaling, erosion, fire, weather, vandalism, and loss of temporary stockpiles or partially installed items.

TS-3 ENVIRONMENTAL PROTECTION MEASURES

- 3.1 Description of Work: This section covers prevention of environmental pollution and damage as the result of construction operations under this Contract and for those measures set forth in other technical provisions of these Specifications. For the purpose of this Specification, environmental pollution and damage is defined as the presence of chemical, physical, or biological elements or agents which adversely affect human health or welfare, unfavorably alter ecological balances of importance to human life, affect other species of importance to man, or degrade the utility of the environment for aesthetic, cultural and/or historical purposes. The control of environmental pollution and damage requires consideration of air, water, and land, and includes management of visual aesthetics, noise, solid waste, radiant energy and radioactive materials, as well as other pollutants. The environment shall be protected and all natural resources shall be preserved during construction. All Federal, State, and Local laws and regulations shall be complied with during construction.
- 3.2 References: Publications listed below form a part of this Specification to the extent referenced. The publications are referred to in the text by the basic designation only.
- Code of Federal Regulations, Title 40 – Protection of Environment
40 CFR 261 Identification and Listing of Hazardous Waste
40 CFR 262 Standards Applicable to Generators of Hazardous Waste
- 3.3 Location of Field Offices, Storage and Other Contractor Facilities: Contractor's field offices, staging areas, stockpile storage, and temporary buildings shall be placed in areas approved by Owner. Temporary movement or relocation of Contractor facilities shall be made only on approval by Owner. Disposal areas shall not be located in any wetlands, water body, or stream bed. Fuel and lubricate equipment in a manner that protects against spills and evaporation. Provide a berm around fuel and liquid chemical storage tanks to contain the tank contents in the event of a leak or spill.
- 3.4 Quality Control: Contractor shall establish and maintain quality control for environmental protection of all items set forth herein. Contractor shall record on daily reports any problems in complying with laws, regulations and ordinances and corrective action taken. Any damage caused by Contractor during construction shall be repaired, replaced, or restored to the satisfaction of Engineer. Contractor shall maintain all erosion and sediment control devices in good working order. If a repair is necessary it will be done at the earliest date possible, but no later than seven (7) days after the surrounding exposed ground has dried sufficiently to minimize further damage from heavy equipment. Areas adjacent to creeks and drainage ways shall have priority.

- 3.5 Training of Contractor Personnel in Pollution Control: Contractor shall train his personnel in all phases of environmental protection. The training shall include methods of detecting and avoiding pollution, familiarization with pollution standards, both statutory and contractual, and installation and care of facilities (vegetative covers, and instruments required for monitoring purposes) to ensure adequate and continuous environmental pollution control.
- 3.6 Volatile Organic Compounds (VOC): Contractors are required to comply with the Local, State, and Federal VOC laws and regulations and shall have an acceptable VOC compliance plan. The plan shall demonstrate that the use of paints, solvents, adhesives, and cleaners comply with local VOC laws and regulations governing VOC materials, and that all required permits have been obtained or will be obtained prior to starting Work involving VOC's, in the air quality district in which Work is to be performed. An acceptable compliance plan shall contain, as a minimum, a listing of each materials subject to restrictions in the air quality management district in question, the rule governing its use, a description of the actions which Contractor will take, a description of the actions which Contractor will use to comply with the laws and regulations, and any changes in the status of compliance during the life of the Contract. Alternatively, if no materials are subject to the restrictions the air quality management district where the Work will be performed, or if there are no restrictions, the compliance plan shall so state.
- 3.7 Protection of Environmental Resources: The environmental resources within the project boundaries and those affected outside the limits of permanent work under this Contract shall be protected during the entire period of this Contract. Contractor shall confine his activities to areas defined by the Plans and Specifications.
- 3.8 Protection of Land Resources: Prior to the beginning of any construction, Contractor shall identify all land resources. Contractor shall not remove, cut, deface, injure, or destroy land resources including trees, shrubs, vines, grasses, topsoil, and land forms without special permission from Owner. No ropes, cables, or guys shall be fastened to or attached to any trees for anchorage unless specifically authorized. Where such special emergency use is permitted, Contractor shall provide effective protection for land and vegetation resources at all times.
- 3.9 Protection of Water Resources: Contractor shall keep construction activities under surveillance, management and control to avoid pollution of surface and ground waters. Special management techniques, as set out below, shall be implemented to control water pollution by the listed construction activities which are included in this contract. As soon as possible, Contractor shall clear all waterways of temporary embankments, temporary bridges, matting, falsework, debris, or other obstructions placed during construction operations that are not part of the finished Work. Contractor is responsible for maintaining area drainage during construction. Water shall not be allowed to pond on any roadway surface, and runoff from adjacent properties shall not be impeded by project Work.
- 3.10 Protection of Fish and Wildlife Resources: Contractor shall keep construction activities under surveillance, management and control to minimize interference with, disturbance to and damage of fish and wildlife. Prior to beginning of

construction operations, Contractor shall list species that require specific attention and describe measures for their protection. Threatened and endangered species which have the potential to exist within the boundaries of the Project Site include manatees. The Contractor shall review and comply with the restrictions listed below regarding construction activities.

3.10.1 All personnel associated with the project shall be instructed and aware of the potential presence of manatees, manatee speed zones, and the need to avoid collisions with, and injury to, manatee. All personnel shall be advised that there are 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 1972. Additionally, personnel shall be instructed not to attempt to feed or otherwise interact with the animal.

3.10.2 All on-site personnel are responsible for observing water-related activities for the presence of manatee(s). To minimize potential impacts to manatees in areas of their potential presence, personnel shall adhere to the following:

3.10.2.1 All work, equipment, and vessel operation shall cease if a manatee is spotted within a 50-foot radius (buffer zone) of the active work area. Once the manatee has left the buffer zone on its own accord (manatees must not be herded or harassed into leaving), or after 30 minutes have passed without additional sightings of manatee(s) in the buffer zone, in-water work can resume under careful observation for manatee(s).

3.10.2.2 If a manatee(s) is sighted in or near the project area, all vessels associated with the project shall operate at “no wake/idle” speeds within the construction area and at all times while in waters where the draft of the vessel provides less than a four-foot clearance from the bottom. Vessels shall follow routes of deep water whenever possible.

3.10.2.3 If used, siltation or turbidity barriers shall be properly secured, made of material in which manatees cannot become entangled, and be monitored to avoid manatee entrapment or impeding their movement.

3.10.2.4 Temporary signs concerning manatees shall be posted prior to and during all in-water project activities and removed upon completion. Each vessel involved in construction activities shall display at the vessel control station or in a prominent location, visible to all employees operating the vessel, a temporary sign at least 8.5” x 11” reading language similar to the following: “CAUTION BOATERS: MANATEE AREA/IDLE SPEED IS REQUIRED IN CONSTRUCTION AREA AND WHERE THERE IS LESS THAN FOUR FOOT BOTTOM CLEARANCE WHEN MANATEE IS PRESENT”. A second temporary sign measuring 8.5” x 11” shall be posted at a location prominently visible to all personnel engaged in water-related activities and shall read language similar to the following: “CAUTION: MANATEE AREA/ EQUIPMENT MUST

BE SHUTDOWN IMMEDIATELY IF A MANATEE COMES
WITHIN 50 FEET OF OPERATION”.

3.10.2.5 Collisions with, injury to, or sightings of manatees shall be immediately reported to the U.S. Fish and Wildlife Service’s, Louisiana Ecological Services Office (337/291-3100) and the Louisiana Department of Wildlife and Fisheries, Natural Heritage Program (225/765-2821). Provide the nature of the call (i.e., report of an incident, manatee sighting, etc.); time of incident/sighting; and the approximate location, including the latitude and longitude coordinates, if possible.

- 3.11 Protection of Air Resources: Contractor shall keep construction activities under surveillance, management and control to minimize pollution of air resources. All activities, equipment, processes, and work operated or performed by Contractor in accomplishing the specified construction shall be in strict accordance with all State and Federal emission and performance laws and standards. Ambient Air Quality Standards set by the Environmental Protection Agency shall be maintained for those construction operations and activities specified in this section. Special management techniques as set out in paragraph 3.12, Particulate Control, shall be implemented to control air pollution by the construction activities that are included in the contract.
- 3.12 Particulates Control: Contractor shall maintain all excavations, stockpiles, haul roads, permanent and temporary access roads, plant sites, excavated areas, borrow areas, demolition areas and all other work areas within or outside the project boundaries free from particulates which would cause the air pollution standards mentioned in paragraph 3.11 above to be exceeded or which would cause a hazard of a nuisance. Sprinkling, chemical treatment of an approved type, light bituminous treatment, baghouse, scrubbers, electrostatic precipitators or other methods will be permitted to control particulates in the work area. Sprinkling, to be efficient, must be repeated at such intervals as to keep the disturbed area damp at all times. Contractor must have sufficient competent equipment available to accomplish this task. Particulate control shall be performed as the work proceeds and whenever a particulate nuisance or hazard occurs. Sand blasting, provide tarp drop cloths and windscreens under and around blasting operations to confine and collect dust, sand, paint and other debris.
- 3.13 Control and Disposal of Hazardous Wastes: Hazardous wastes are defined in 40 CFR 261. Hazardous wastes that are produced as a result of performing Work under this Contract shall be handled, stored, transported, and disposed of according to 40 CFR 262, where applicable. Prevent hazardous wastes from entering the ground, drainage areas, and surface waters. Immediately notify Engineer of hazardous material spills.
- 3.14 Sanitary Waste: All sanitary waste shall be collected by a licensed sanitary waste management contractor from the portable units as necessary, or as required by local regulation.

- 3.15 Construction Debris: Contractor shall collect and properly dispose of all trash and construction debris in accordance with all Local and State solid waste management regulations and practices. No construction waste material shall be buried on the Work Site. Contractor shall store all waste materials in approved metal dumpsters, or other containers approved by Engineer. The dumpster shall be emptied as necessary or as required by Local and State regulation, and the contents hauled away for proper disposal. No construction waste material shall be buried within the project limits. Refer to paragraph SP-9, "Clean-Up," of the Special Provisions.
- 3.16 Restoration of Damage: Contractor shall restore all environmental features damaged or destroyed during construction operations outside the limits of the approved Work areas. Such restoration shall be in accordance with a plan submitted for approval by Owner. This work shall be accomplished at Contractor's expense without compensation.

TS-4 MOBILIZATION AND DEMOBILIZATION

- 4.1 Description: Mobilization and demobilization includes all costs necessary to transport personnel, equipment, supplies and incidentals to and from the Project Site, establish offices, buildings, and other facilities necessary for the Work, obtain bonds, required insurance, improve and maintain the staging area(s) as deemed necessary by Contractor (including coordination with property owner), excavation and backfill of optional temporary access and flotation channels, and any other pre-construction expenses necessary to perform the Work. Additional mobilization and demobilization bid items are included for any additional mobilization and demobilization related work required to perform the work for awarded bid alternates including additional costs to obtain bonds, required insurance, excavation and backfill of additional optional temporary access and flotation channels, and any other pre-construction expenses necessary to perform the Work. Additional mobilization and demobilization does not cover arbitrary mobilization by Contractor, see Paragraph 4.2 below. Material costs for items listed or subsidiary to the major work items listed on the Bid Form shall not be included under mobilization and demobilization.
- 4.2 Arbitrary Mobilization by Contractor: Owner will pay for only one mobilization and demobilization effort. Should Contractor choose to demobilize prior to completing the Work, subsequent remobilization shall be performed at no cost to Owner. Contractor shall not leave partially constructed breakwater cross-section exposed to waves for longer than ten (10) days.
- 4.3 Ratio of Mobilization and Demobilization Effort: Sixty percent (60%) of the mobilization/demobilization lump sum price will be paid to Contractor upon complete mobilization to the Project Site. Mobilization will be considered complete upon initiation of GRR placement for the breakwater. The remaining forty percent (40%) will be paid to Contractor upon final acceptance of the Work and removal of all equipment and unused materials.
- 4.4 Justification of Costs: In the event the unit cost does not bear a reasonable relation to the amount of work for mobilization and demobilization in the Contract, Engineer may require Contractor to produce cost data to justify the unit cost in the Bid. Failure to justify such cost to the satisfaction of Engineer will result in payment of actual mobilization costs, as determined by Engineer at the completion of mobilization, and actual demobilization cost at the completion of the demobilization, and payment of the remainder of this item in the final payment under this contract. The determination of Engineer is not subject to appeal.
- 4.5 Measurement and Payment: Refer to Specification Section TS-2, "Measurement and Basis of Payment." All costs associated with mobilization and demobilization shall be paid for at the Contract lump sum price for Bid Item No. 1.1, "Mobilization and Demobilization," Bid Item No. 2.1, "Additional Mobilization and Demobilization," Bid Item No. 3.1, "Additional Mobilization and Demobilization," and Bid Item No. 4.1, "Additional Mobilization and Demobilization" Payment shall constitute full compensation for transporting personnel, supplies and incidentals to and from the job site, improving and maintaining the staging area, equipment, and establishing offices, buildings and

other facilities for the work, excavation and backfill of optional temporary access and flotation channels, obtaining bonds, insurance and any other associated expenses.

TS-5 CONSTRUCTION SURVEYING

5.1 Scope: Contractor shall furnish all of the materials, labor and equipment necessary to perform pre-construction hazard, initial, progress, and as-built surveys of the transects, breakwater, settlement plates, and access and flotation channels as shown in the Plans. Contractor shall provide the details for the survey layout and stakeout in the Work Plan. All surveys shall be performed by personnel who are under the direct supervision of a professional land surveyor licensed in the State of Louisiana. Survey data shall reference the North American Datum of 1983 (NAD 83), Louisiana South Zone, U. S. Survey Feet for horizontal control, and the North American Vertical Datum of 1988 (NAVD 88) Geoid99, U. S. Survey Feet for vertical control. Horizontal and vertical control shall be established by using the monuments specified in the Plans.

5.2 References: Publications listed below form a part of this Specification to the extent referenced. The publications are referred to in the text by the basic designation only.

Federal Geographic Data Committee (FGDC) Publications

FGDC-STD-008-1999 Content Standard for Digital Orthoimagery

FGDC-STD-007.3-1998 National Standard for Spatial Data Accuracy

Coastal Protection and Restoration Authority (CPRA) Publication

A Contractor's Guide to the Standards of Practice For CPRA Contractors Performing GPS Surveys and Determining GPS Derived Orthometric Heights within the Louisiana Coastal Zone (2016)

5.3 Submittals: Submittals required under this section include the following:

1. Name and Affiliation of Professional Land Surveyor (For Information Only)
2. Pre-Construction Hazard Survey
3. Survey Notification (For Information Only)
4. Initial Survey Drawings
5. Progress Survey Drawings
6. Settlement Plate Time History
7. As-Built Survey Drawings
8. Aerial Photography

5.4 Prior to commencing surveying activities, Contractor shall provide name and affiliation of professional surveyor to be used on project. All survey submittals shall be signed and sealed by a professional land surveyor licensed in the State of Louisiana.

5.5 All surveys shall follow the recommendations and guidelines stated in *A Contractor's Guide to the Standards of Practice For CPRA Contractors Performing GPS Surveys and Determining GPS Derived Orthometric Heights within the Louisiana Coastal Zone* (CPRA, 2016).

- 5.6 Pre-Construction Hazard Survey: Due to the high erosion rates along the project shoreline, the pre-construction hazard survey shall be staged (i.e. multiple survey events and corresponding submittals) such that the breakwater alignment may be adjusted as the project progresses. Survey schedule for pre-construction hazard survey shall follow the same requirements as the initial survey in paragraph 5.8. A hazard survey (i.e. magnetometer or other supplemental method) shall be performed along the centerline of the access channels, flotation channels, and breakwater. In addition to centerline, perpendicular track lines shall be run at 500 foot (max) intervals and extend landward from 25 feet (min) beyond the seaward edge of each of the proposed features up to the current +1.0 ft NAVD88 contour. All pipelines or other obstructions shall be probed in coordination with pipeline/obstruction owner and appropriately marked throughout construction according to United States Coast Guard standards. Submittal for hazard survey shall clearly show all track lines, coordinates, amplitudes, signature types, and signature widths of all hits. The survey shall also show the coordinates, top elevation and ground cover for all pipelines. A report documenting the results of the hazard survey along with a summary of associated interpretations and recommendations shall be submitted to Engineer. In addition, all potential hazards or obstructions shall be plotted on the initial survey drawing submittal.
- 5.7 Survey Drawings: Plan-view and cross-section plots showing initial and progress/as-built lines and grades shall accompany monthly payment requisitions. Survey plots shall also be provided in a digital format approved by Engineer. All survey data shall be referenced to the project datums shown on the Plans. All plots shall contain title blocks and clearly display the following information:
1. Cover Sheet
 2. Project name
 3. State Agency Name and Project Number
 4. Professional Land Surveyor's seal, signature, and affiliation (All PDF copies shall include signed seal.)
 5. Date(s) surveys were performed
 6. Location and description of survey control
 7. Vertical and horizontal datums
 8. Sheet names and numbers
 9. Name of Contractor
 10. Graphic Scale Bar(s)
 11. Transducer frequency (as applicable)
 12. Description of submittal
- 5.7.1 Drawings shall be provided on 11" X 17" format. Digital copies shall be provided in AutoCAD (version 2012 or earlier) and Adobe PDF formats. Settlement plate time history submittal shall be provided in Excel format. Point files of the initial, progress, and as-built surveys shall be included in digital submittals and shall contain the following information:
1. Point number;
 2. Northing (NAD 83 US FT.);
 3. Easting (NAD 83 US FT.);

4. Elevation (NAVD 88 FT.);
5. Description.

5.7.2 Survey drawings shall meet the following minimum layout requirements:

1. Initial survey drawings shall show initial cross sections superimposed over survey data shown in the Plans and the design template(s).
2. Pre-Construction Hazard Survey data shall be plotted over the project layout sheets provided in the Plans.
3. Progress survey cross-sections shall be plotted over initial survey data, where available, and the design template(s).
4. A time history of settlement plate elevations shall be plotted for each settlement plate. Submittal shall include table of settlement plate elevation shots as well as plots of time history.
5. As-built survey plots shall show as-built cross-sections superimposed over progress and initial cross-sections. As-built survey submittal shall include plan views with as-built survey data plotted over georeferenced acceptance aerial photography required under section 5.11.2.

5.7.3 Survey Notification: Engineer shall be notified 5 days prior to all surveys performed by Contractor so that Engineer or Engineer's designee may accompany the survey crew and witness the Work.

5.8 Initial Survey: Due to the high erosion rates along the project shoreline, the initial survey shall be staged (i.e. multiple survey events and corresponding submittals) such that the breakwater alignment may be adjusted as the project progresses. Proposed schedule for staging initial survey shall be outlined in Contractor's Work Plan. Contractor's schedule shall allow adequate time for Engineer to review initial survey submittals, refer to GP-41. The breakwater shall be constructed along the length of shoreline covered by each initial survey submission within 3 months from the time the survey was performed. If the breakwater is not constructed within 3 months from the time the survey was performed, an additional survey may be required. Each initial survey submission shall be conducted within a single 7-day period. Drawings of the plan views and cross sections shall be developed from this survey by Contractor.

5.8.1 Transects: Survey transect locations shall reoccupy those shown in the Plans. Additional survey transects shall be included so that transect spacing is a maximum of 250 feet. Transects shall also be surveyed at the center of each breakwater gap and at each terminal. Location of western terminal shall be determined by the base bid and/or additives awarded. Survey transects should be perpendicular to breakwater centerline. At a minimum, transects shall extend from the current +1.0 ft NAVD88 contour to 350 feet seaward of the breakwater centerline. Survey shots along transects shall be taken at all significant grade breaks and a maximum horizontal spacing of 20 ft.

5.8.2 Existing Breakwaters: During the first initial survey performed, Contractor shall also survey transects at the existing breakwaters at the stations listed below as well as existing settlement plates within each of the existing breakwaters (3 in each Existing Breakwater I and II). Survey transects shall be oriented perpendicular to existing breakwater and shall extend from the current +1.0 ft NAVD88 contour to 200 feet seaward of the corresponding existing breakwater seaward toe. Survey shots along transects shall be taken at all significant grade breaks and a maximum horizontal spacing of 20 ft.

5.8.2.1 Existing Oyster Ring Breakwater

1. Station 379+00
2. Station 380+50
3. Station 382+50
4. Station 384+00
5. Station 386+00

5.8.2.2 Existing Breakwater I

1. Station 449+00
2. Station 450+00
3. Station 451+00
4. Station 455+00
5. Station 456+00
6. Station 457+00

5.8.2.3 Existing Breakwater II

1. Station 476+00
2. Station 477+00
3. Station 478+00
4. Station 482+00
5. Station 483+00
6. Station 484+00

5.9 Breakwater Alignment Review and Staking: Initial surveys will be reviewed by Engineer to update breakwater alignment based on erosion that has occurred since survey data shown in the Plans were collected. After Engineer's review of initial survey submittal, Engineer will provide Contractor updated Breakwater Alignment Point coordinates. Prior to commencement of breakwater construction, stakes shall be installed at each updated Breakwater Alignment Point in order to verify and adjust alignment of the breakwater if deemed necessary by Engineer. Stakes shall be installed along the centerline of the breakwater and approximate location of the breakwater toe. Stakes shall be labeled with the Breakwater Alignment Point No., e.g. "A1." After staking, Engineer will review staking and verify or adjust alignment. Any adjustments made in the field by Engineer shall be documented in Contractor's daily report and include coordinates of adjusted Breakwater Alignment Points.

Due to the high erosion rates along the project shoreline, staking shall be staged with actual progress of Work. Contractor's Work Plan (refer to paragraph SP-6 of the Special Provision) shall detail the proposed schedule for performing the initial

survey and subsequent breakwater staking. Contractor shall include adequate time to allow for Engineer's review of initial surveys and review of breakwater staking. Contractor shall not begin excavation of flotation/access channels or breakwater construction without written concurrence from Engineer of breakwater alignment. Contractor shall maintain the stakes until breakwater construction at alignment point begins.

5.10 Progress Surveys:

5.10.1 Progress surveys shall be performed to document the progression of Work and as substantiation for monthly payment. Progress surveys shall be performed to provide the following:

1. To verify excavation limits of flotation/access channels. Access and flotation channel progress surveys shall be reviewed by Engineer prior to initiating breakwater construction in the area of the dredged channel.
2. To document elevation of settlement plates immediately after: (1) installation of settlement plate, (2) placement of LWAC, (3) placement of Armor Stone, and (4) weekly thereafter for at least four weeks (28 days) after completion of constructed breakwater portion.
3. To verify limits, top elevation and thickness of Bedding Stone, Encapsulated LWA, and Armor Stone.
4. For interim acceptance of all other Work for progress payments.

5.10.2 Progress Survey Transects: Progress survey transects shall reoccupy all initial survey transect locations. Additional transects at each breakwater gap and breakwater terminal shall include typical sections shown on the Plans and extend 50 feet (min) beyond the respective outer toes of each breakwater segment. Progress survey plots shall show progress survey transects superimposed over initial survey transects. The following list describes transects for progress surveys.

1. Access and Flotation Channel: Perform after excavation of access and flotation channels. Flotation channel survey transects shall extend from the breakwater centerline to 50 feet (min) seaward of the temporary stockpile. Access channel survey transects shall be oriented perpendicular to the apparent access channel centerline and extend 250 feet (min) from the apparent access channel centerline in either direction. Survey shots along transects shall be taken at all significant grade breaks and a maximum horizontal spacing of 10 ft.
2. LWA Transects: Perform after placement of encapsulated LWA but prior to placement of Armor Stone. Survey transects shall extend from 50 feet (min) landward of the breakwater centerline to 50 feet (min) seaward of the breakwater centerline. Survey shots along transects shall be taken at all significant grade breaks and a maximum horizontal spacing of 5 ft. Survey shall denote seaward and landward limits of geotextile composite and encapsulated LWA.

3. GRR Transects: Perform after placement of GRR (both Bedding Stone and Armor Stone). Survey transects shall extend from 50 feet (min) landward of the breakwater centerline to 50 feet (min) seaward of the breakwater centerline. Survey shots along transects shall be taken at all significant grade breaks and a maximum horizontal spacing of 5 ft. Progress surveys for GRR shall be taken within 7 days of placement of material in each transect location.
 4. Settlement Plates: Perform immediately after: (1) installation of settlement plate (prior to placement of LWAC), (2) placement of LWAC (prior to placement of Armor Stone), (3) placement of Armor Stone, and (4) weekly thereafter for at least four weeks (28 days) after completion of constructed breakwater portion. Survey shots shall be taken at the top of pipe and grade elevation at the settlement plate.
- 5.11 As-built Survey: Upon project completion, an as-built survey shall be performed to document conditions of the completed Work and for verification of final backfilling of channels. The as-built survey shall be conducted within a single 14-day period. Data obtained during progress surveys shall not be considered part of the as-built survey unless otherwise approved by Engineer.
- 5.11.1 Transects: As-built survey transects shall reoccupy initial survey transects and progress access channel transects. In addition, a transect shall be surveyed along the breakwater centerline and the top elevation of each settlement plate shall be surveyed. Survey shots along transects shall be taken at all significant grade breaks and a maximum horizontal spacing of 10 ft. Survey shots shall also be taken at each of the installed settlement plates (top of pipe and grade elevation at the settlement plate).
- 5.12 Aerial Photography: Aerial photographs shall be submitted to verify the progress of work and for final acceptance.
- 5.12.1 Monthly photography (For Information Only): For each month during which breakwater construction is actively underway, oblique aerial photography shall be submitted that shows the progress of the work. Submittal shall include high-resolution aerial photograph(s) in digital (TIF or JPG) format. Each photograph submitted shall include metadata describing the horizontal limits displayed and date photo was taken.
- 5.12.2 Acceptance Aerial Photograph (For Information Only): Upon completion of all construction activities, a color vertical aerial photograph of the entire work area shall be provided. The photograph shall be professionally rectified and geo-referenced in compliance with the standards described in FGDC-STD-008-1999. The photograph shall be referenced to the project horizontal datum shown on the Plans. Root mean square error shall be calculated using the method described in FGDC-STD-007.3-1998, reported in the accompanying metadata and shall not exceed 2.0 ft. Submittal shall include a high-resolution aerial photograph in digital (TIF) format (with world file in ASCII format) and metadata specified in FGDC-STD-008-1999. Contractor shall provide notice to Engineer and name / contact

information for aerial photography subcontractor a minimum of one week prior to execution of aerial photograph.

- 5.13 Measurement and Payment: Refer to Specification Section TS-2, "Measurement and Basis of Payment." All costs associated with initial survey, progress survey, and as-built survey shall be paid for at the Contract lump sum prices stated on the Bid Form for the following bid items:

1. Bid Item No. 1.2, "Topographic and Bathymetric Surveying"
2. Bid Item No. 2.2, "Addt'l Topographic and Bathymetric Surveying"
3. Bid Item No. 3.2, "Addt'l Topographic and Bathymetric Surveying"
4. Bid Item No. 4.2, "Addt'l Topographic and Bathymetric Surveying"

All costs associated with the pre-construction hazard surveys shall be paid for at the Contract lump sum prices stated on the Bid Form for the following bid items:

1. Bid Item No. 1.3, "Pre-Construction Hazard Surveying"
2. Bid Item No. 2.3, "Addt'l Pre-Construction Hazard Survey"
3. Bid Item No. 3.3, "Addt'l Pre-Construction Hazard Survey"
4. Bid Item No. 4.3, "Addt'l Pre-Construction Hazard Survey"

All costs associated with aerial photography shall be paid for at the Contract lump sum prices stated on the Bid Form for the following bid items:

1. Bid Item No. 1.4, "Aerial Photography"
2. Bid Item No. 2.4, "Addt'l Aerial Photography"
3. Bid Item No. 3.4, "Addt'l Aerial Photography"
4. Bid Item No. 4.4, "Addt'l Aerial Photography"

- 5.13.1 Ratio of Payment: Payment for surveys shall be prorated across the entire project performance period. Maximum progress payment for initial surveys is 25% of the amounts stated under Bid Items No. 1.2, 2.2, and 3.2.

TS-6 ACCESS AND FLOTATION CHANNELS

- 6.1 Scope: Contractor shall furnish all materials, labor and equipment necessary to conduct the optional access and flotation channel excavation (mechanical dredging), stockpiling, and backfilling of soil. Contractor shall bear responsibility for maintaining channels in a useable configuration throughout the duration of the Work, as needed.
- 6.2 Excavation Limits: The limits of excavation shall conform to the lines, grades and slopes specified in the Plans. It shall be the responsibility of Contractor to obtain a permit modification and prior approval from Engineer in order to enlarge or relocate the channels. Contractor shall also obtain and submit to Engineer a letter of no objection from any pipeline company for the proposed excavation inside their right-of-way.
 - 6.2.1 Flotation Channel Alignment: Due to high rate of erosion along the project shoreline, the breakwater alignment location will be updated based on Engineer's review of Contractor's initial survey (refer to Section TS-5 "Construction Surveying"). Excavation of flotation channel shall not be performed until the adjacent breakwater alignment (based on results of initial survey) has been reviewed and approved by Engineer.
- 6.3 Material Stockpiles: The dredged material shall be temporarily deposited seaward of the flotation channels and adjacent to access channels and conform to the elevations, grades and lines specified in the Plans. Stockpiles shall be clearly marked with temporary warning signs as shown in the Plans. Upon completion of Work, dredged material shall be placed back into the channels as indicated on the Plans. The temporary disposal areas shall be reworked to within approximately 6" of the original bottom. Unauthorized placement areas shall be restored to pre-construction conditions at the expense of Contractor.
- 6.4 Backfilling: Excavations shall be backfilled with previously excavated/stockpiled material as promptly as the Work permits but not until required surveying has been performed and Engineer has accepted associated Breakwater. Backfill material shall be placed in uniform lifts to avoid unequal soil pressures. Contractor shall be aware that soft soil conditions exist and employ suitable placement. Final top surface of backfilled areas shall be relatively uniformly graded. Compaction of backfill will not be required; however, the top surface shall be manipulated so that it is reasonably smooth and free of voids and abrupt humps or depressions.
- 6.5 Unsatisfactory Dredged Material: Material such as rocks, cable, trees, tires, concrete, debris, etc. shall become the property of the Contractor and be removed from the project site and disposed of in accordance with all applicable laws and ordinances.
- 6.6 Surveying: Contractor shall provide initial, progress, and as-built surveys. Refer to Section TS-5, "Construction Surveying."
- 6.7 Acceptance: This work is considered complete when the access and flotation channels have been backfilled. Surveys shall be submitted to verify that excavated

areas have been backfilled.

- 6.8 Measurement and Payment: Refer to Specification Section TS-2, “Measurement and Basis of Payment.” All costs associated with the access and flotation channels, including costs associated with the installation and maintenance of temporary warning signs, shall be paid for within the Contract lump sum prices stated on the Bid Form for Bid Item No. 1.1, “Mobilization and Demobilization,” Bid Item No. 2.1, “Addt’l Mobilization and Demobilization,” Bid Item No. 3.1, “Addt’l Mobilization and Demobilization,” and Bid Item No. 4.1, “Addt’l Mobilization and Demobilization.”

TS-7 SETTLEMENT PLATES

- 7.1 Scope: Contractor shall furnish all of the materials, labor and equipment necessary to construct, install, survey and maintain the settlement plates in accordance with these Specifications and applicable Plans.
- 7.2 References: Publications listed below form a part of this Specification to the extent referenced. The publications are referred to in the text by the basic designation only.

American Society for Testing and Materials (ASTM) Publications

A 123 Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products

Louisiana Department of Transportation and Development (DOTD) Publications

DOTD Louisiana Standard Specifications for Roads and Bridges (2016)

- 7.3 Materials: Plates shall be fabricated with a four foot (4') by four foot (4') by one fourth inch (1/4") steel plate and a three inch (3") diameter galvanized steel Schedule 40 or heavier riser pipe welded to the center of the plate using a 3/16" continuous fillet. The pipe shall be a minimum ten feet (10') in length and the top closed with a galvanized cap tack welded to the pipe in at least three (3) locations equally spaced around the pipe perimeter. After fabrication, the plates shall be hot-dip galvanized.
- 7.4 Zinc Coating: Zinc coating shall be applied in a manner and thickness quality conforming to ASTM A 123. In any case where the zinc coating becomes damaged, the damaged area shall be re-galvanized with a suitable low-melting zinc base alloy as recommended by the American Hot-Dip Galvanizers Association. One coat of a vinyl wash primer followed by red top coat shall be applied over the zinc coat. All painting shall conform to the latest edition of the LA DOTD Standard Specification Section 811 and 1008, or approved equivalent.
- 7.5 Installation: The plates shall be installed at locations as shown on the Plans and approved by the Engineer. Locations will be updated based on updates to the breakwater alignment (refer to Section TS-5 for additional details). Settlement plates shall not be installed until updated breakwater alignments and updated settlement plate locations have been approved by Engineer. Contractor shall exercise care when performing work in the vicinity of the settlement plates to not damage the settlement plate. Leveling of the plate bed shall be accomplished by removing the minimum amount of earth or rock necessary to produce a level foundation.
- 7.6 Surveying: Refer to Section TS-5, "Construction Surveying."
- 7.7 Maintenance: Contractor shall maintain all settlement plates until Work is completed. Any damaged settlement plates shall be repaired or replaced by Contractor at no expense to Owner.

- 7.8 Measurement and Payment: Refer to Specification Section TS-2, “Measurement and Basis of Payment.” All costs associated with the settlement plates shall be paid for at the Contract unit prices stated on the Bid Form for the following bid items:
1. Bid Items No. 1.9, “Settlement Plates”
 2. Bid Items No. 2.9, “Addt’l Settlement Plates”
 3. Bid Items No. 3.9, “Addt’l Settlement Plates”

TS-8 GEOTEXTILES

- 8.1 Scope: The Work includes furnishing materials, labor, and equipment for the installation of geotextile composite materials (geotextile fabric and geogrid) beneath the graded riprap (GRR) and for the encapsulated lightweight aggregate core, including installation of geotextile shroud, in accordance with these Specifications and applicable Plans.
- 8.2 References: Publications listed below form a part of this Specification to the extent referenced. The publications are referred to in the text by the basic designation only.

American Society for Testing and Materials (ASTM) Publications

- D 1388 Standard Test Method for Stiffness of Fabrics
- D 3786 Standard Test Method for Hydraulic Bursting Strength of Knitted Goods and Nonwoven Fabrics - Diaphragm Bursting Strength Tester Method
- D 4354 Standard Practice for Sampling Geosynthetics for Testing
- D 4355 Standard Test Method for Deterioration of Geotextiles from Exposure to Ultraviolet Light (Xenon-Arc Type Apparatus)
- D 4533 Standard Test Method for Trapezoidal Tearing Strength of Geotextiles
- D 4595 Standard Test Method for Tensile Properties of Geotextiles by Wide-Width Strip Method
- D 4632 Standard Test Method for Grab Breaking Load and Elongation of Geotextiles
- D 4751 Standard Test Method for Determining Apparent Opening Size of a Geotextile
- D 4759 Standard Practice for Determining the Specification Conformance of Geosynthetics
- D 4833 Standard Test Method for Index Puncture Resistance of Geotextiles, Geomembranes, and Related Products
- D 4884 Standard Test Method for Seam Strength of Sewn Geotextiles
- D 5261 Standard Test Method for Measuring Mass per Unit Area of Geotextiles
- D 5818 Practice for Obtaining Samples of Geosynthetics from a Test Section for Assessment of Installation Damage.
- D 6637 Standard Test Method for Determining Tensile Properties of Geogrids by the Single or Multi-Rib Tensile Method

Geosynthetic Research Institute (GRI) Publications

- GRI-GG2-87 Standard Test for Geogrid Junction Strength

U.S. Army Corps of Engineers (USACE) Publications

- CW 02215 Civil Works Construction Guide, November 1977

U.S. Environmental Protection Agency (EPA) Publications

- EPA 9090 Compatibility Test for Wastes and Membrane Liners

- 8.3 Submittals: Submittals required under this section include the following:

1. Manufacturer's Product Data and Installation Instructions for Geotextile

- Fabric and Geogrid (For Information Only)
- 2. Certified Test Reports for Geotextile Fabric and Geogrid
- 3. Sewn Seam Details and Laboratory Test Reports
- 4. Geotextile samples (For Information Only)
- 5. Surveys (Section TS-5, "Construction Surveying")

8.4 Delivery, Storage and Handling of Materials: Materials delivered to the site shall be inspected for damage, unloaded, and stored with the minimum of handling. Materials shall not be stored directly on the ground without a fabric or plastic liner beneath and shall be kept free of dirt and debris.

8.5 Geotextile Fabric: Geotextile fabric shall be pervious sheets consisting of long-chain synthetic polymers composed of at least 85 percent by weight polyolefins, polyesters, polypropylenes, or polyamides. Sheets shall be formed into a stable network such that filaments or yarns retain their relative position to each other. Sheets shall be inert to chemicals commonly encountered in natural seawater and the soil conditions encountered at the site, and be UV stabilized. The edges of sheets shall be selvaged or otherwise finished to prevent outer filaments or yarns from pulling away from the sheet.

8.5.1 Physical Properties: Conformance of geotextile fabric shall be in accordance with ASTM D 4759. Fabric shall be sampled in accordance with ASTM D 4354 and tested to verify the following minimum physical properties and requirements:

Type I Geotextile Fabric			
Application: Placement Beneath Graded Riprap and/or Encapsulated LWA			
Physical Property	Unit	Test Method	Measure
Fabric Type	---	---	Non-woven
Apparent Opening Size (max.) ⁽¹⁾	U.S. Sieve	ASTM D 4751	#100
Grab Tensile Strength (min.)	lb	ASTM D 4632	250
Tensile Elongation (MARV) ⁽²⁾	%	ASTM D 4632	50
CBR Puncture (min.)	lb	ASTM D 6241	650
Trapezoid Tear Strength (min.)	lb	ASTM D 4533	100
Ultraviolet Resistance (500 Hours) (min.)	%	ASTM D 4355	70
Notes:			
1. Apparent opening size specified is maximum (actual opening) allowed.			
2. MARV is the Minimum Average Roll Value.			

Type II Geotextile Fabric Application: Encapsulation of Lightweight Aggregate			
Physical Property	Unit	Test Method	Measure
Fabric Type	---	---	Woven Polypropylene or Stable Woven/Non- woven Network
Apparent Opening Size (max.) ⁽¹⁾	U.S. Sieve	ASTM D 4751	#30
Wide-Width Tensile Strength (MD & CD) (min.)	lb/ft	ASTM D 4595	4,800
Wide-Width Tensile Elongation (MD & CD) (max.)	%	ASTM D 4595	15 (max.)
Seam Strength (min.)	lb/in	ASTM D 4884	250
Ultraviolet Resistance (500 Hours) (min.)	%	ASTM D 4355	70
Notes: 1. Apparent opening size specified is maximum (actual opening size) allowed.			

8.5.2 Certified Test Reports: Submit manufacturer's certified test results to Engineer showing actual test values of the geotextile fabric physical properties. The certificate shall contain the signer's title and affiliation, test date(s), the name and address of Contractor, the contract number, and project name and location. The mill certificate or affidavit shall list test results and attest that the materials meet the chemical, physical, and manufacturing requirements in this Specification. Accompanying the certificate/affidavit, Contractor shall submit a one (1) foot by one (1) foot sample to Engineer. Provide manufacturer's recommendations for installation and protection instructions for the project considering the foundation soil conditions.

8.5.3 Sewn Seams:

1. In addition to sewn seams required for LWA containers, Contractor may apply sewn seams or laps for Type I geotextile joints. Thread for seams shall be multi-ply polyester. Nylon thread shall not be used.
2. Written details and drawings shall be submitted for sewn seams. Details shall address, but not be limited to, thread type, thread tension (sewing device), stitch density and type, overlap, and number of rows and type of chainstitch. Also submit laboratory test reports evaluating the load-transfer capability of the proposed seams in accordance with ASTM D 4884.

- 8.6 **Geogrid:** Geogrid for placement beneath the graded riprap (GRR) and encapsulated lightweight aggregate core shall be an integrally formed grid structure manufactured of a stress-resistant polypropylene material, or Engineer approved alternate, and possess complete continuity of all properties throughout its structure. Geogrid shall accept applied force in use by positive mechanical interlock (i.e., by direct mechanical keying) with (a) compacted soil or fill materials, (b) contiguous sections of itself when overlapped and embedded in compacted soil or fill materials, and (c) rigid mechanical connectors such as bodkins, pins, or hooks.

- 8.6.1 **Physical Properties:** Conformance of geogrid shall be in accordance with ASTM D 4759. Geogrid shall be sampled in accordance with ASTM D 4354 and tested to verify the following minimum physical properties and requirements:

Physical Property	Unit	Test Method	Measure
Aperture Nominal Dimensions (MD & CD) (max.)	in	I.D. Callipered ⁽¹⁾	2.0
Junction Strength	lb/ft	GRI-GG2	1,700
Tensile Strength @2% Strain (MD & CD) (min.)	lb/ft	ASTM D 6637	580
Tensile Strength @5% Strain (MD & CD) (min.)	lb/ft	ASTM D 6637	1,200
Resistance to Installation Damage ⁽⁴⁾ (min.)	%GP	ASTM D 5818	70
Notes: 1. Maximum inside dimension in each principle direction measured by calipers. 2. Resistance to bending force measured via ASTM D 1388, Option A, using specimen dimensions of 864 mm in length by 1 aperture in width. 3. Resistance to loss of load capacity of structural integrity when subjected to mechanical stress in installation measured via ASTM D 5818 in crushed stone classified as poorly graded gravel with a maximum 2 inch particle size (GP).			

- 8.6.2 **Certified Test Reports:** Submit manufacturer's certified test results to Engineer showing actual test values of the geogrid physical properties. The certificate shall contain the signer's title and affiliation, test date(s), the name and address of Contractor, the contract number, and project name and location. The mill certificate or affidavit shall list test results and attest that the materials meet the chemical, physical, and manufacturing requirements in this Specification. Accompanying the certificate/affidavit, Contractor shall submit a one (1) foot by one (1) foot sample to Engineer. Provide manufacturer's recommendations for installation and protection instructions for the project considering the foundation soil conditions.

- 8.7 **Subgrade Preparation:** The surface to receive geotextiles shall be prepared as needed to provide a relatively smooth surface free of ruts and erosion rills, obstructions, abrupt depressions, and debris.

- 8.8 **Surveying:** Refer to Section TS-5, "Construction Surveying."

- 8.9 Protection: Materials shall be protected at all times to ensure the original chemical and physical properties. Work shall be sequenced so that geotextile materials are not exposed more than 7 days from the time materials are removed from their protective covering and sheets are fully covered by GRR and/or opaque temporary coverings. During periods of shipment and storage, geotextile materials shall be protected from direct sunlight, ultra-violet rays, and high temperatures and in accordance with any other instructions of the manufacturer. Unpackaged rolls and/or sheets shall be protected with temporary opaque coverings. Damaged materials shall be either removed and replaced or covered with a second layer of geotextiles extending three (3) feet in each direction from the damaged area. Any material that is rejected or damaged due to the fault or negligence of Contractor shall be repaired or replaced at no additional cost to Owner.
- 8.10 Placement Beneath GRR: Type I geotextile fabric and geogrid (geotextile composite) shall be placed in accordance with the manufacturer's instructions, but placement method shall meet, as a minimum, the following criteria:
1. Geotextile fabric may be placed simultaneously with the geogrid by pre-attaching or bonding the fabric to the bottom of each sheet of geogrid with provision for sufficient overlaps to form the geogrid composite. Pre-attaching or bonding geogrid to underlying geotextile fabric is at Contractor's option. Composite shall be placed with geotextile fabric beneath geogrid. Method of pre-attachment shall be provided for concurrence by Engineer. Care shall be taken to ensure that geogrid composite sections do not separate during construction.
 2. Geogrid composite shall be placed to completely cover subgrade at locations shown on Plans and shall be relatively free of wrinkles, creases and sags before overlying rock is placed.
 3. Adjacent sheets of geogrid composite shall overlap a minimum of 3 feet unless shown otherwise on the Plans.
 4. Sheets shall not be staked down to the extent that they are taut and subject to significant puncture or tearing during subsequent GRR placement.
 5. Method of GRR placement shall be such that sheets are not pulled apart at connections/ laps or significantly punctured or torn.
 6. Geogrid composite placed on a slope shall be oriented so that the strongest material axis bears the majority of the anticipated load.
 7. The geogrid composite shall be protected from damage during placement of stone. This shall be accomplished by limiting the height of drop to less than one (1) foot.
 8. Construction equipment and/or vehicles shall not operate directly on sheets unless otherwise permitted by Engineer.
 9. The Work shall be scheduled so that all installed geogrid composite is completely covered with a layer of rock by the end of each workday.
- 8.11 Encapsulation of LWA: Refer to Section TS-10, "Lightweight Aggregate"
- 8.12 Measurement and Payment: Refer to Section TS-2, "Measurement and Basis of Payment." All costs associated with the geotextile composite (Type I geotextile fabric and geogrid) shall be paid for at the Contract unit prices stated on the Bid Form for the following bid items:

1. Bid Item No. 1.5, "Geotextile Composite"
2. Bid Item No. 2.5, "Addt'l Geotextile Composite"
3. Bid Item No. 3.5, "Addt'l Geotextile Composite"
4. Bid Item No. 4.5, "Addt'l Geotextile Composite"

All costs associated with encapsulation of lightweight aggregate (Type II geotextile fabric) and geotextile shroud (Type I or Type II geotextile fabric) shall be subsidiary to the Contract unit prices stated on the Bid Form for the following bid items:

1. Bid Item No. 1.8, "Encapsulated Lightweight Aggregate"
2. Bid Item No. 2.8, "Addt'l Encapsulated Lightweight Aggregate"
3. Bid Item No. 3.8, "Addt'l Encapsulated Lightweight Aggregate"
4. Bid Item No. 4.8, "Addt'l Encapsulated Lightweight Aggregate"

TS-9 GRADED RIPRAP

- 9.1 Scope: The Work includes furnishing materials, labor, and equipment for construction of graded riprap (GRR) structures in accordance with these Specifications and applicable Plans. Contractor shall furnish all of the materials, labor and equipment necessary to construct the Breakwater to the lines, grades and thicknesses provided on the Plans and in these Specifications, or as directed by Engineer. Contractor shall determine the number of lifts required to meet the tolerances specified on the Plans and in these Specifications.
- 9.2 References: Publications listed below form a part of this Specification to the extent referenced. The publications are referred to in the text by the basic designation only.

American Society for Testing and Materials (ASTM) Publications

- C 535 Standard Test Method for Resistance to Degradation of Large-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine
- D 75 Standard Practice for Sampling Aggregates
- D 3740 Standard Practice for Minimum Requirements for Agencies Engaged in the Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction
- D 5519 Standard Test Method for Particle Size Analysis of Natural and Man-Made Riprap Materials
- D 6092 Standard Practice for Specifying Standard Sizes of Stone for Erosion Control
- D 6473 Standard Test Method For Specific Gravity And Absorption of Rock For Erosion Control
- E 329 Standard Specification for Agencies Engaged in the Testing and/or Inspection of Materials Used in Construction

Louisiana Department of Transportation and Development (DOTD) Publications

DOTD Louisiana Standard Specifications for Roads and Bridges (2016)

- 9.3 Submittals: Submittals required under this section include the following:

1. Name and Location of Quarry (For Information Only)
2. Daily Progress Reports (Section GP-10)
3. Barge Displacement Tables and Hydrometer (Water Density) Test Reports (Section TS-2, "Measurement and Basis of Payment")
4. GRR Quality Test Reports
5. GRR Gradation Test Reports
6. Surveys (Section TS-5, "Construction Surveying")

- 9.4 Materials Testing:

- 9.4.1 Contractor/Quarry shall provide all equipment and facilities for testing construction materials.

9.4.2 Prior to commencing GRR production (for both Armor Stone and Bedding Stone), Contractor shall provide the name and location of the quarry that will provide the GRR for the project. Suitable test reports and service records are required to determine the acceptability of the GRR from the proposed source. Reports shall be from new tests performed on actual GRR to be used on project. Acceptable GRR shall meet the quality acceptance criteria in paragraph 9.6.1 when tested in accordance with the procedures listed below:

1. Sampling of the GRR shall be performed in accordance with ASTM D 75.
2. The absorption of GRR shall be determined in accordance with ASTM D 6473.
3. The unit weight of GRR shall be provided based on the apparent specific gravity determined in accordance with ASTM D 6473.
4. The loss by abrasion of GRR shall be determined in accordance with ASTM C 535, processed and tested for No. 1 grading.
5. The gradation of the GRR shall be determined in accordance with ASTM D 5519, Test Method C.

9.4.3 Throughout the duration of the Work, Contractor/Quarry shall inspect, sample, and test construction materials for compliance with the specified requirements and record the inspection of all operations. All sampling and testing shall be performed by a qualified testing laboratory meeting the requirements of ASTM D 3740 and ASTM E 329. A copy of the records of inspection, as well as the records of corrective action taken, shall be provided to Engineer. Owner reserves the right to test additional samples to verify the submitted test records at Owner's expense. If the first test results indicate that the materials do not meet the specified requirements, the additional test will be at Contractor's expense. As a minimum, Contractor/Quarry shall perform quality control inspection and testing, for both Armor Stone and Bedding Stone, in accordance with the following:

1. Gradation and Quality Tests (Refer to Paragraph 9.6.1):
 - a. Testing Frequency: For each GRR type, one gradation and one quality test shall be submitted prior to construction and for every 5,000 LF of breakwater constructed thereafter.
 - b. Sample Size:
Armor Stone: At least 50 stones and 10 tons per test.
Bedding Stone: At least 100 stones and 1 ton per test.
2. Placement: Continuous inspection of placement to ensure proper thickness and that material is not segregated. Refer to paragraph 9.8.

9.5 Geotextiles: Refer to Section TS-8, "Geotextile."

9.6 Graded Riprap (GRR) Material:

- 9.6.1 Stone: All stone for GRR shall be durable natural stone. It shall be free from visible cracks, clay pockets, cavities (vugs), laminations, and other defects that would tend to increase unduly its deterioration from natural causes. Stone shall not include objectionable quantities of dirt, sand, clay, and/or rock fines. Stone shall have a solids unit weight (including the permeable and impermeable voids in the particles, but not including the voids between particles) of 155 PCF (min) and 165 PCF (max) (based on apparent specific gravity). Stone having a solids unit weight greater than 165 PCF may be submitted to Engineer for approval, but may require GRR layer thickness modification to reduce bearing pressure on soft soils. The absorption shall not exceed three percent (3%) and maximum loss by abrasion shall be 36 percent. The GRR shall be reasonably well graded and shall include essentially all stone sizes between the two extremes specified which will result in a dense, fairly well-graded material not having noticeable voids or a lack of the larger sizes. Armor stone size range (gradation) shall conform to the requirements of LA DOTD Standard Specification Section 711, "1,000 lb Riprap Class," as modified below. Bedding stone size range (gradation) shall conform to the requirements of LA DOTD Standard Specification Section 711, "10 lb Riprap Class," as specified below.

Armor Stone Gradation –1,000 LB Riprap

Stone Size (lbs.)	% of Stone Smaller
5,000	100
2,000	40-95
1,000	10-45
300	5-15

Bedding Stone Gradation – 10 LB Riprap

Stone Size (lbs.)	% of Stone Smaller
50	100
20	50-100
10	15-50
5	0-15

- 9.6.2 Stone Shape: The greatest dimension of each stone shall not be more than three times its least dimension. The faces of individual stones shall be roughly angular, not rounded, in shape.
- 9.7 Coordination with Quarry: Contractor shall be knowledgeable of the methods used at the quarry to produce the GRR gradations specified, especially the effects of repeated handling. Contractor shall coordinate with the quarry and use loading and unloading methods that ensure required gradations are provided for placement.

- 9.8 GRR Placement: GRR shall be placed over the prepared subgrade, geotextiles, encapsulated LWA, and bedding layer within the limits indicated on the Plans. The stone layer shall be constructed as indicated on the Plans, and include the following characteristics:
1. Contractor shall be aware that soft soil conditions exist and employ placement techniques as described on the Plans.
 2. Contact between individual stones shall be maximized on all sides. Each stone shall have at least three (minimum) points of contact with other stones.
 3. GRR shall be placed and spread in such a manner that the various stone sizes produce a relatively uniform surface and a completed layer that is a reasonably well-graded, compact mass of rock with minimal percentage of voids. Smaller stones and/or chips and fragments shall be placed as required to produce a relatively uniform finished outer surface.
 4. GRR shall be placed carefully onto the geogrid composite/encapsulated LWA by limiting the height of drop to less than one (1) foot.
- 9.9 Misplaced Materials: If any GRR is deposited elsewhere than in places designated or approved, Contractor may be required to remove such misplaced material and redeposit it where directed at his expense.
- 9.10 Surveying: Contractor shall provide initial, progress, and as-built surveys of GRR as well as time history plots showing weekly surveys of settlement plates. Refer to Specification Section TS-5, "Construction Surveying."
- 9.11 Acceptance: Acceptance of GRR will be based on Engineer's review of the gradation and quality tests, surveys, and the other requirements of the Plans and these Specifications. Layer thickness will be verified by comparison of surveys taken prior to and after rock placement and visually in the field.
- 9.12 Measurement and Payment: Refer to Section TS-2, "Measurement and Basis of Payment." All costs associated with Armor Stone shall be paid for at the Contract unit prices stated on the Bid Form for the following bid items:
1. Bid Item No. 1.7, "Armor Stone"
 2. Bid Item No. 2.7, "Add'l Armor Stone"
 3. Bid Item No. 3.7, "Add'l Armor Stone"
 4. Bid Item No. 4.7, "Add'l Armor Stone"

All costs associated with bedding stone shall be paid for at the Contract unit prices stated on the Bid Form for the following bid items:

1. Bid Item No. 1.6, "Bedding Layer Stone"
2. Bid Item No. 2.6, "Add'l Bedding Layer Stone"
3. Bid Item No. 3.6, "Add'l Bedding Layer Stone"
4. Bid Item No. 4.6, "Add'l Bedding Layer Stone"

TS-10 LIGHTWEIGHT AGGREGATE

- 10.1 Scope: The Work includes furnishing materials, labor, and equipment for construction of lightweight aggregate (LWA) core for the Breakwater in accordance with these Specifications and applicable Plans.
- 10.2 References: Publications listed below form a part of this Specification to the extent referenced. The publications are referred to in the text by the basic designation only.

American Society for Testing and Materials (ASTM) Publications

- C 29 Standard Test Method for Bulk Density (Unit Weight) and Voids in Aggregate
- C 88 Standard Test Method for Soundness of Aggregates by use of Sodium Sulfate or Magnesium Sulfate
- C 117 Standard Test Method for Materials Finer Than 75- μ m (No. 200) sieve in Mineral Aggregates by Washing
- C 131 Standard Test Method for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion in the Los Angeles Machine
- C 136 Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates
- C 330 Standard Specification for Lightweight Aggregates for Structural Concrete
- C 535 Standard Test Method for Resistance to Degradation of Large-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine
- C 702 Standard Practice for Reducing Samples of Aggregate to Testing Size
- D 75 Standard Practice for Sampling Aggregates
- D 4833 Standard Test Method for Index Puncture Resistance of Geotextiles, Geomembranes, and Related Products
- D 4884 Standard Test Method for Seam Strength of Sewn Geotextiles
- D 6473 Standard Test Method for Specific Gravity and Absorption of Rock for Erosion Control

- 10.3 Submittals: Submittals required under this section include the following:

1. Name, Location, and Owner of Material Source (For Information Only)
2. LWA Quality Test Reports
3. LWA Gradation Test Reports
4. Daily Progress Reports (Section GP-10)
5. LWAC Construction Plan
6. Surveys (Section TS-5, "Construction Surveying")

- 10.4 Materials Testing:

- 10.4.1 Contractor/Supplier shall provide all equipment and facilities for testing construction materials.

10.4.2 Prior to commencing LWA core production, Contractor shall provide the name, location, and owner of the LWA source for the project. Suitable test reports and service records are required to determine the acceptability of the LWA from the proposed source. Acceptable LWA shall meet the quality acceptance criteria in paragraph 10.6 when tested in accordance with the procedures listed below:

1. Sampling of the LWA shall be performed in accordance with ASTM D 75 and ASTM C 702.
2. The bulk density and void ratio of LWA shall be determined in accordance with ASTM C 29 based on a saturated surface dry condition and application of the shoveling procedure. Test report shall clearly state the measured value for bulk density and void ratio. Void ratio is for informational purposes only.
3. The soundness of the LWA shall be determined using a 5-cycle magnesium sulfate test in accordance with ASTM C 88. Test report shall clearly state the measured value for soundness.
4. The loss by abrasion of LWA shall be determined in accordance with ASTM C 535/ASTM C 131. Test report shall clearly state the measured value for the loss by abrasion.
5. The gradation of the LWA shall be determined in accordance with ASTM C 136 and ASTM C 117. Test report shall clearly state the measured gradation.

10.4.3 Throughout the duration of the Work, Contractor/supplier shall inspect, sample, and test construction materials for compliance with the specified requirements and record the inspection of all operations. All sampling and testing shall be performed by a qualified testing laboratory. A copy of the records of inspection, as well as the records of corrective action taken, shall be provided to Engineer. As a minimum, prior to construction and for every 2,500 LF of Breakwater constructed thereafter, Contractor/supplier shall perform and submit documentation of quality control inspection and testing to verify compliance with the gradation and quality requirements of paragraph 10.6.

10.5 Geotextiles: Refer to Section TS-8, "Geotextiles."

10.6 Lightweight Aggregate (LWA) Material: The LWA shall consist of expanded clay, shale, or slate produced using the rotary kiln method, or Engineer approved alternate. LWA shall satisfy the chemical composition and physical properties defined in ASTM C 330, unless specified otherwise herein. Waste materials and byproduct shall not be included. LWA shall have a maximum saturated surface dry bulk density of 65 lb/ft³, a maximum soundness of 12%, and a maximum loss by abrasion of 30%. LWA gradation shall conform to the requirements specified below.

<u>U.S. Sieve</u>	<u>Percent Passing</u>
4 inch	100
No. 4	0-40
No. 200	0-5

- 10.7 LWA Placement: Prior to placement, LWA shall be completely encapsulated within bags or containers fabricated from Type II geotextile fabric (refer to Section TS-8, "Geotextiles"). Bags/containers shall be limited to a fill volume of 5 cy (max.). Alternative materials or methods for LWA and/or LWA encapsulation may be utilized with prior written concurrence by Engineer. Alternative methods and/or container size may require higher strength geotextile material, subject to Engineer's concurrence. Sketches and a written description of the method of LWA encapsulation and placement as well as any proposed alternative encapsulation materials shall be provided in the Work Plan as scheduled in SP-3. Encapsulated LWA is susceptible to displacement from waves and other forces due to the lightweight nature of the material. Contractor shall cover encapsulated LWA with armor stone as soon as practicable once installed. Refer to the Plans for LWAC construction plan requirements.
- 10.8 Misplaced Materials: If any LWA is deposited elsewhere than in places designated or approved, Contractor may be required to remove such misplaced material and redeposit it where directed at his expense.
- 10.9 Surveying: Refer to Specification Section TS-5, "Construction Surveying."
- 10.10 Acceptance: Acceptance of Encapsulated LWA core shall be based on review of progress surveys and the requirements of paragraph 10.6.
- 10.11 Measurement and Payment: Refer to Section TS-2, "Measurement and Basis of Payment." All costs associated with LWA shall be subsidiary to the Contract unit prices stated on the Bid Form for the following bid items:
1. Bid Item No. 1.8, "Encapsulated Lightweight Aggregate"
 2. Bid Item No. 2.8, "Add'l Encapsulated Lightweight Aggregate"
 3. Bid Item No. 3.8, "Add'l Encapsulated Lightweight Aggregate"
 4. Bid Item No. 4.8, "Add'l Encapsulated Lightweight Aggregate"

TS-11 LIGHTED DAYBEACONS

- 11.1 Scope: The Work includes furnishing materials, labor, and equipment necessary to construct, install, survey and maintain the lighted daybeacons in accordance with these Specifications and applicable Plans.
- 11.2 Submittals: Submittals required under this paragraph include the following:
1. Surveys (Refer to TS-5)
 2. Material Certifications for Treated Timber Post, Aluminum Plate Signage, Hardware, Reflective Tape, and Signal Lights
 3. Shop Drawings
 4. Battery Housing Lock Combination and Instructions
- 11.3 Materials: Lighted daybeacons shall be constructed of the materials and to the dimensions required as shown in the plans. Post shall consist of ASTM D25 twelve (12) inch diameter by sixty (60) feet long treated timber post with six (6) inch minimum tip with a 2.5 CCA retention value. Sign shall be three (3) feet by three (3) feet and consist of 0.125 inch thick marine grade aluminum with white sheeting on one side. A two (2) inch orange reflective border shall be on the sign face. Hardware shall consist of three (3) 0.75 inch diameter A307 (HDG) dome head bolts with ogee washer and nut. Nuts shall be tack welded to bolts. Lettering and additional requirements are shown in the Plans. A white solar-powered LED marine Lantern, FL2.5 s (0.3 sec ON/2.2 sec OFF) shall be attached to the top of each permanent warning sign pile. Contractor shall submit certifications showing accordance with the material requirements for the treated timber post, aluminum plate signage, hardware, reflective tape, and signal lights prior to installation of the lighted daybeacons.
- 11.4 Installation: The lighted daybeacons shall be installed at locations as shown on the Plans and approved by the Engineer. Contractor shall exercise care when performing work in the vicinity of the lighted daybeacons. Contractor shall submit shop drawings detailing the method to be used to attach the marine Lantern to the timber post for review at least seven (7) days prior to installation of the lighted daybeacons. The Contractor shall maintain the warning lights, including locking the battery housing, until final acceptance. Prior to installing the battery housing lock, the contractor shall submit written instructions for changing the lock combination and shall submit the lock combination to be used.
- 11.5 Surveying: Contractor shall survey the adjacent grade, sign location, and sign elevation of the lighted daybeacons. Refer to Section TS-5, "Construction Surveying."
- 11.6 Maintenance: Contractor shall maintain all lighted daybeacons until Work is completed. Any damaged lighted daybeacons shall be repaired or replaced by Contractor at no expense to the Owner.

11.7 Measurement and Basis of Payment: Refer to Specification Section TS-2, "Measurement and Basis of Payment." All costs associated with the lighted daybeacons shall be paid for at the Contract unit prices stated on the Bid Form for the following bid items:

1. Bid Items No. 1.10, "Lighted Daybeacons"
2. Bid Items No. 2.10, "Addt'l Lighted Daybeacons"
3. Bid Items No. 3.10, "Addt'l Lighted Daybeacons"

END OF PART III – TECHNICAL SPECIFICATIONS

APPENDIX A:

Supplemental Information

**ROCKEFELLER REFUGE GULF
SHORELINE STABILIZATION
(ME-18)**

BID PROPOSAL ATTACHMENT A1 – STATEMENT OF EXPERIENCE

The Bidder is required to state below what work of similar magnitude is a judge of his/her experience, skill and business standing and of his/her ability to conduct the work as completely and as rapidly as required under the terms of the contract. Under Reference, please provide name, address, contact person, phone number, and email address.

PROJECT AND LOCATION	REFERENCE

NOTE: The Statement of Experience 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 equipment and their capability to perform the Work as required and as agreed to by the Bidder through the submittal of a Proposal.

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

APPENDIX B:

Clarification, Change Orders, and Acceptance

ATTACHMENT B1

**ROCKEFELLER REFUGE GULF SHORELINE
STABILIZATION (ME-18)**

Interpretation or Clarification by Engineer
Number (____)

DATE:

SUBJECT:

SUMMARY OF MATTER BY CONTRACTOR

INTERPRETATION OR CLARIFICATION OF MATTER BY ENGINEER

ATTACHMENT B2

CHANGE ORDER NO. __

OWNER: State of Louisiana, Coastal Protection & Restoration Authority
CONTRACTOR
PROJECT: _____
Rockefeller Refuge Gulf Shoreline Stabilization
(ME-18)
FILE NO: _____
SOLICITATION NO: _____
ENGINEER: _____

The following changes are hereby proposed to be made to the Contract Documents:

•

Description: See attached summary.

Attachments (list documents supporting change):

•

Change in Contract Price		Change in Contract Time	
Original Contract Price		Original Contract Time (calendar days)	
Net Increase /(Decrease) from previous Change Orders		Net Increase /Decrease from previous Change Orders (days)	
Contract Price prior to this Change Order		Contract Time prior to this Change Order (calendar days)	
Net Increase/(Decrease) of this Change Order		Net Increase (Decrease) of this Change Order (days)	
Contract Price with this Change Order		Contract Time with this Change Order (calendar days)	

RECOMMENDED:

By: _____
Engineer

Date: _____

RECOMMENDED:

By: _____
CPRA Construction Manager

Date: _____

ACCEPTED:

By: _____
Contractor

Date: _____

ATTACHMENT B3

ROCKEFELLER REFUGE GULF SHORELINE STABILIZATION (ME-18)

FILE NO: _____, PURCHASE ORDER NO: _____

SUMMARY OF CHANGE ORDER NO: _____

ITEM NO.	DESCRIPTION	UNIT	ORIGINAL QUANTITY	ADJUSTED QUANTITY	UNIT PRICE	AMOUNT OVERRUN	AMOUNT UNDERRUN
Net Increase of this Change Order							

Justification:

•

No additional contract time is requested to accomplish the work for the change order.

ATTACHMENT B4

❖ NOT FOR RECORDATION PURPOSES ❖

RECOMMENDATION OF ACCEPTANCE

TO: Coastal Protection and Restoration Authority
450 Laurel Street, Suite 1501
Baton Rouge, LA 70801

FROM: _____

Design Firm Name and Address

DATE: _____

PROJECT _____ NAME _____ & _____ NUMBER: _____

SITE CODE: _____ STATE ID: _____ CFMS: _____

CONTRACTOR: _____

ORIGINAL CONTRACT AMOUNT: \$ _____

FINAL CONTRACT AMOUNT: \$ _____

DATE OF ACCEPTANCE: _____

CONTRACT DATE OF

COMPLETION: _____

NUMBER OF DAYS (OVERRUN) (UNDERRUN) (As of Acceptance Date) _____

LIQUIDATED DAMAGES PER DAY STIPULATED IN CONTRACT \$ _____

VALUE OF PUNCH LIST \$ _____
(Attach punch list)

Signed: _____
DESIGNER

FOR USE OF PROJECT MANAGER:

Signed: _____
PROJECT MANAGER

❖ NOT FOR RECORDATION PURPOSES ❖

APPENDIX C:

Landowners, Utility Operator, and Pipeline Company Contact Information and Landrights
Memorandum

STATE OF LOUISIANA
DIVISION OF ADMINISTRATION
STATE LAND OFFICE

GRANT OF PARTICULAR USE and RIGHT OF ENTRY
FOR CONSTRUCTION OF THE
ROCKEFELLER REFUGE GULF SHORELINE STABILIZATION PROJECT ME-0018

Cameron Parish, Louisiana

STATE OF LOUISIANA §

PARISH OF CAMERON §

THE STATE OF LOUISIANA, acting through the State Land Office, Division of Administration (the "Owner"), hereby grants to The COASTAL PROTECTION AND RESTORATION AUTHORITY ("CPRA"), herein represented by and appearing through the Executive Director of CPRA, Michael Ellis, for the construction of the **Rockefeller Refuge Gulf Shoreline Stabilization Project – ME-0018** (the "Project") (the "Grantee") a Grant of Particular Use and Right and Authorization for Entry for Construction of the below-described State-owned seashore, State lands and State water bottoms, to the extent of any interest therein owned, claimed, or subject to claim by the State of Louisiana, upon the following terms and conditions:

1. The Owner hereby grants to Grantee an irrevocable right to enter and use, within the project limits, upon the State-owned seashore, State lands and State water bottoms within the areas described specifically in the attached Exhibit A.
2. This Grant of Particular Use is solely for the purposes of entry, construction (including, but not limited to, mining of dredge material), access, and survey work of the "Project", as particularly described within the project limits, and attached hereto as Exhibit A, including all appurtenances thereto and the underground appurtenances; reserving, however, to the Owner, its successors, and assigns all such rights and privileges as may be used without interfering with or abridging the rights herein granted; subject, however, to existing easements for public utilities, and pipelines.
3. This Grant of Particular Use includes the right of ingress and egress on other State-owned seashore, State lands and State water bottoms not described herein, provided such ingress and egress is necessary and not otherwise conveniently available to the Grantee, and provided that the Grantee gives sufficient notice to the Owner of the need for such ingress and egress.
4. All tools, equipment, and other property (excluding project features) taken upon or placed upon the State-owned seashore, State lands and State water bottoms by the Grantee or its contractor(s) shall remain the property of the Grantee or its contractor(s). All such tools, equipment, and other property shall be removed by the Grantee or its contractor(s) within sixty days of completion of the work.
5. The Grantee agrees to act in a reasonable manner in conducting its activities on the property covered by this Grant of Particular Use.
6. This Grant of Particular Use applies to officers and employees of the Grantee, and to its agents, representatives, and private contractors. This Grant of Particular Use obviates the necessity for the Grantee and/or its contractors, employees and assigns to acquire any other permits from the State Land Office in order to proceed with the work described herein. The Grantee agrees to include the following paragraph in its construction contracts to alert contractors that they must contact the State Land Office:

Pursuant to the Permits and Responsibilities clause, you are required to contact the Administrator of the State Land Office or his representative at (225) 342-4575, to notify the State Land Office when construction will commence on the State-owned seashore, State lands and/or State water bottoms.

7. The State of Louisiana may own or claim and specifically reserves the right to claim any of the seashore, land and water bottoms within all tracts shown on Exhibit A.

The land and water bottoms affected by this grant of particular use are further shown on Exhibit A.
8. The State-owned seashore, State land and State water bottom usage affected by this Grant of Particular Use is as follows:
 - A. The right to access, construct, and survey the Project named in Paragraph One (1) of this Grant of Particular Use.
 - B. The right to post signs or notices on or near appropriate project features on the State-owned seashore, State lands and State water bottoms, as may be necessary for reasons of public safety or identification.
 - C. The right to alter or remove structures and/or appurtenances constructed on the State-owned seashore, State lands and State water bottoms pursuant to the Project named in Paragraph One (1) of this Grant of Particular Use.
 - D. The right to patrol and police the State-owned seashore, State lands and State water bottoms during the period of this Grant of Particular Use.
9. The following restrictions apply:
 - A. CPRA agrees to act in a reasonable manner in conducting its activities on the property covered by this Grant of Particular Use.
 - B. To the extent required by and pursuant to La. R.S. 49:214.6.10, the State of Louisiana shall be held free and harmless from claims, for loss or damages to rights, arising as a consequence of this authorization from any diversions of freshwater or sediment, depositing of dredged or other materials, integrated coastal protection, or any other actions, taken for the purpose of management, preservation, enhancement, creation, protection, or restoration of coastal wetlands, water bottoms, or related renewable resources. This provision does not impose an indemnification obligation upon CPRA or its contractors.
 - C. CPRA shall include the language of the above two paragraphs, which are labeled "A" and "B", in any transfer or assignment of the right to use granted herein, and shall require the transferee or assignee to include and require said language in any subsequent transfer or assignment. Failure to do so shall not negate the protection provided the State of Louisiana and CPRA and all these entities' agents and employees in La. R.S. 49:214.6.10.
 - D. The restrictions in paragraphs A, B, and C above are not intended to contravene Louisiana law.
10. In the event of non-compliance with any of the above stipulations, the Owner shall notify the Grantees of any such non-compliance by certified mail directed to: Director, Coastal Protection and Restoration Authority, 150 Terrace Avenue, Baton Rouge, LA 70802. Thereafter, the Grantee shall have one hundred twenty (120) days from receipt of the certified mailing to achieve compliance. Should the Grantee fail to achieve compliance within those one hundred twenty days, this Grant of Particular Use shall become null and void.
11. This Grant of Particular Use may be transferred or assigned to the agents, employees, and contractors of Grantee for the same purposes and upon the same terms as with respect to the Grantee.

12. Nothing herein shall constitute a waiver of any interests, claims, rights, actions, remedies, or privileges otherwise available to Owner or Grantee.
13. Exercise of the rights of entry conveyed herein in any manner by CPRA and/or its agents, employees, and contractors constitutes acceptance of the rights granted by this Authorization and any and all terms, restrictions, and conditions set forth herein.

{The remainder of this page intentionally left blank}

IN WITNESS WHEREOF, OWNER has executed this agreement in the presence of the undersigned notary and witnesses on this 19th day of October, 2016:

WITNESSES:

STATE OF LOUISIANA

Laurence LePoussier (sign)
Laurence LePoussier (print)

By: Mark F. Gates
Print: Mark F. Gates
Public Lands Administrator
State Land Office
Division of Administration

Jonathan M. Robillard (sign)
Jonathan M. Robillard (print)

Sean Porter
LA Bar Roll #34961
Notary ID #134892

Sean Porter
Notary Public

(print)

Bar Roll/Notary ID No. _____

THUS DONE, PASSED, AND SIGNED on this 27th day of October, 2016, before the below-named notary and competent witnesses.

WITNESSES:

STATE OF LOUISIANA
COASTAL PROTECTION AND
RESTORATION AUTHORITY

Joann D. Hicks (sign)

Joann D. Hicks (print)

Shirley T. Long (sign)

Shirley T. Long (print)

By: Michael Ellis
Print: Michael Ellis
Executive Director

David A. Peterson
Notary Public

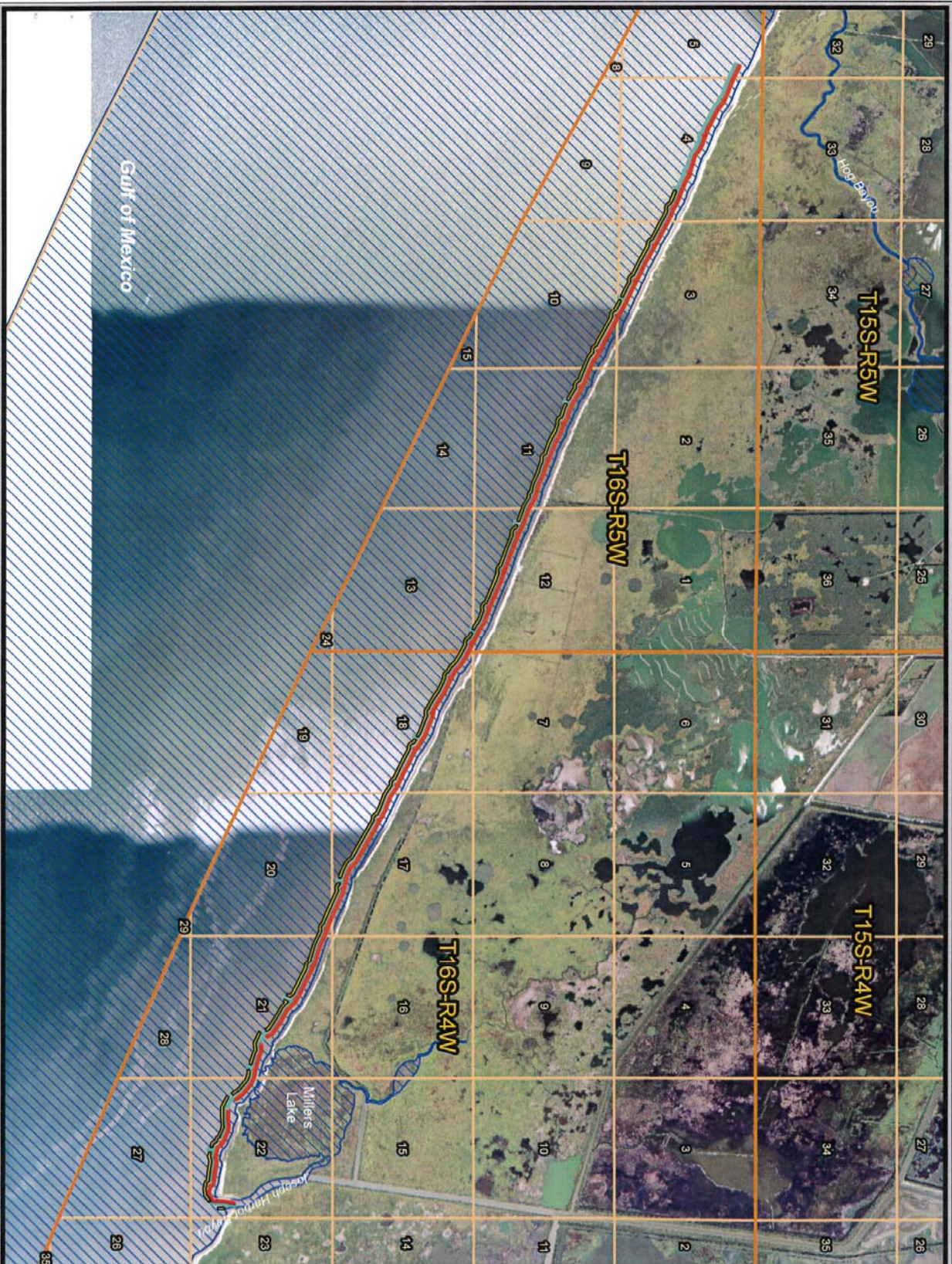
David A. Peterson (print)

Bar Roll/Notary ID No. 22591



OFFICIAL SEAL
David A. Peterson
BAR ROLL #22591
STATE OF LOUISIANA
My Commission is for Life

Exhibit A **Rockefeller Refuge Gulf** **Shoreline Stabilization** **Project ME-0018** **Cameron Parish, La**



Legend

Project Limits:

- Breakwater
- Temporary Flotation Channel
- Temporary Dredge
- Spoil Placement

Owner

- State-claimed Waterbottoms

Section Lines

Township/Range

All project features are graphical representations only, are subject to change, and may not reflect true location or dimension

1:52,399

0 0.4 0.8 1.6 Kilometers

0 0.4 0.8 1.6 Miles

CPRA COASTAL PROTECTION AND RESTORATION AUTHORITY

Sources:
 Coastal Protection and Restoration Authority of Louisiana
 Imagery: 2015 NAIP DOQQ
 Map Date: October 11, 2016
 I/2017040019

State of Louisiana \$ Office of Cameron Parish
\$ Clerk of Court

Parish of Cameron \$ 38th Judicial Dist. Court

I hereby certify that the attached document is a
true and correct copy of the 12-8 bearing

File No. 340121 recorded in:

Conveyance Book ✓ page _____

Mortgage Book _____ page _____

Blk. _____ page _____

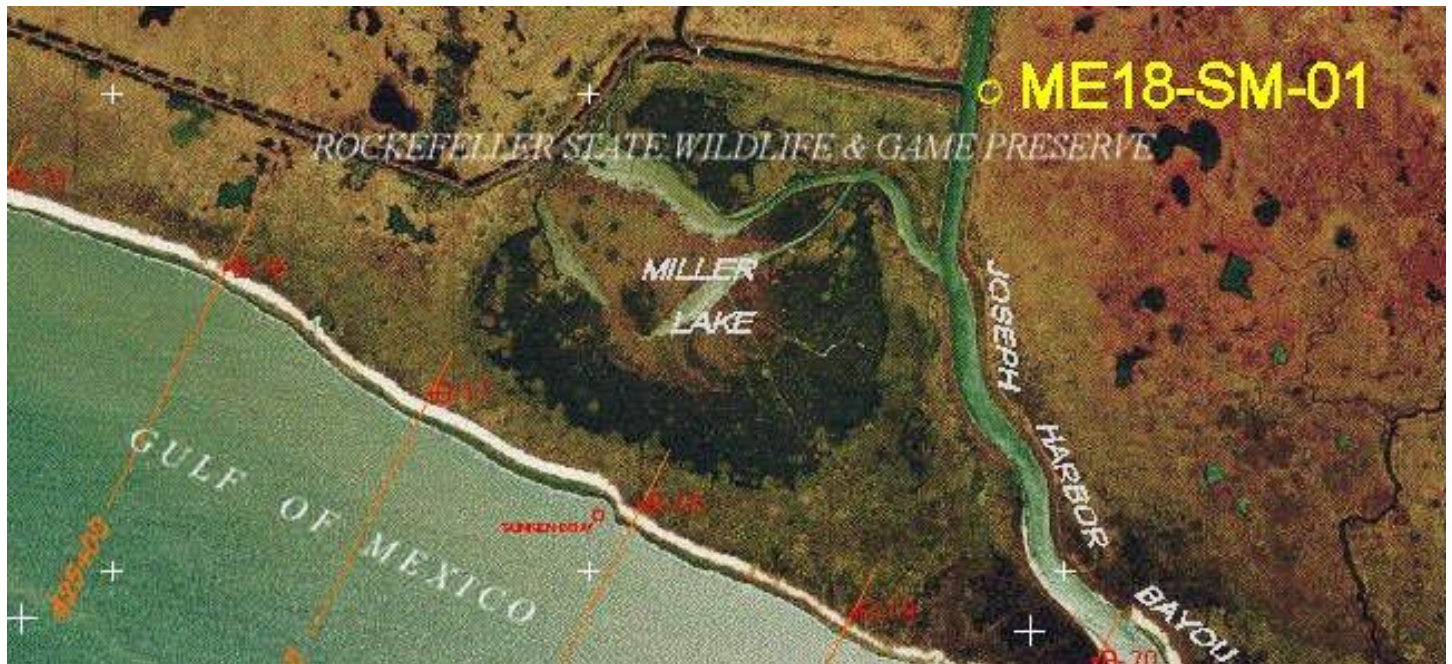
In testimony whereof, witness my official seal
on 12-8 9/14

By: Samantha Hunt
Deputy Clerk of Court



APPENDIX D:

Survey Control Monuments



VICINITY MAP Scale: 1" = 2000'

Photo Reproduced from DOQQ "COW ISLAND" Quadrangle

Station Name: "ME18-SM-01"

Monument Location: From the Rockefeller State Wildlife Refuge Headquarters near Grand Chenier, La., proceed easterly on State Hwy. 82 for 3.2 miles to a public boat launch on the right at Joseph Harbor Bayou. Then by boat, proceed southerly in Joseph Harbor Bayou for approximately 5.0 miles to a canal heading westerly and the monument on the east spoil bank of the canal intersection.

Monument Description: NGS Style Floating Sleeve Monument; datum point set on 9/16" stainless steel rods driven 56 feet to refusal, set in sand filled 6" PVC pipe with access cover and set in concrete flush with ground.

Stamping: "ME 18-01"

Date: June 2002

Monument Established By: John Chance Land Surveys, Inc

For: Louisiana Department of Natural Resources, CRD

Adjusted NAD 83 Geodetic Position (1992)

Lat. 29° 38' 56.597733" N

Long. 92° 46' 06.777093" W

Adjusted NAD 83 Datum LSZ (1702) Ft

N= 420,724.78

E= 2,824,955.19

Adjusted NAVD88 Elevation

6.44 feet / 1.963 mtrs.

Ellipsoid Height: -23.931 mtrs.

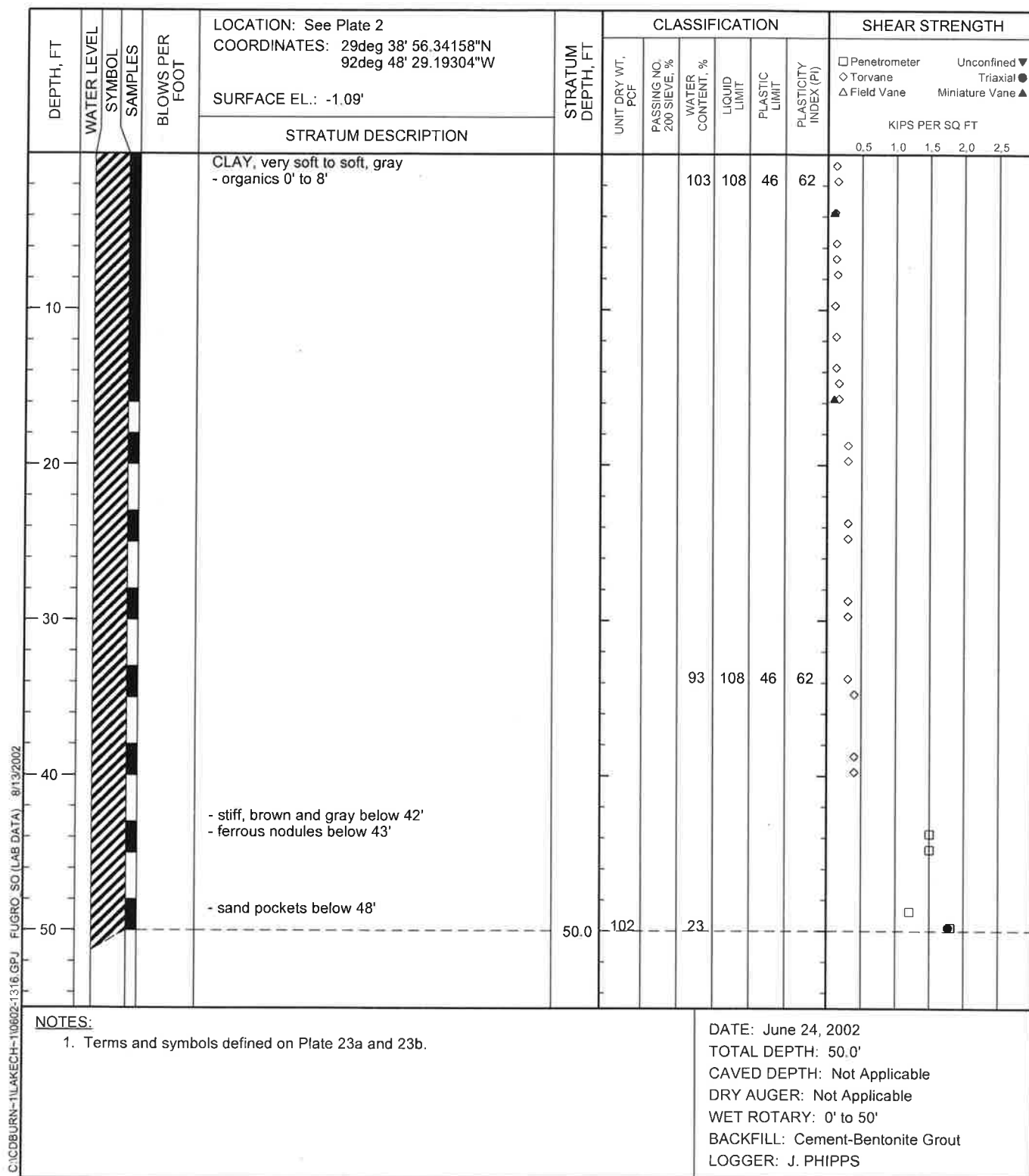
Geoid99 Height: -25.894 mtrs.



Adjusted Position Established by John Chance Land Surveys, Inc. for Louisiana Department of Natural Resources, CRD

APPENDIX E:

Soil Boring Logs



LOG OF BORING NO. B-14
GULF SHORELINE STABILIZATION PROJECT
ROCKEFELLER REFUGE
CAMERON PARISH, LOUISIANA

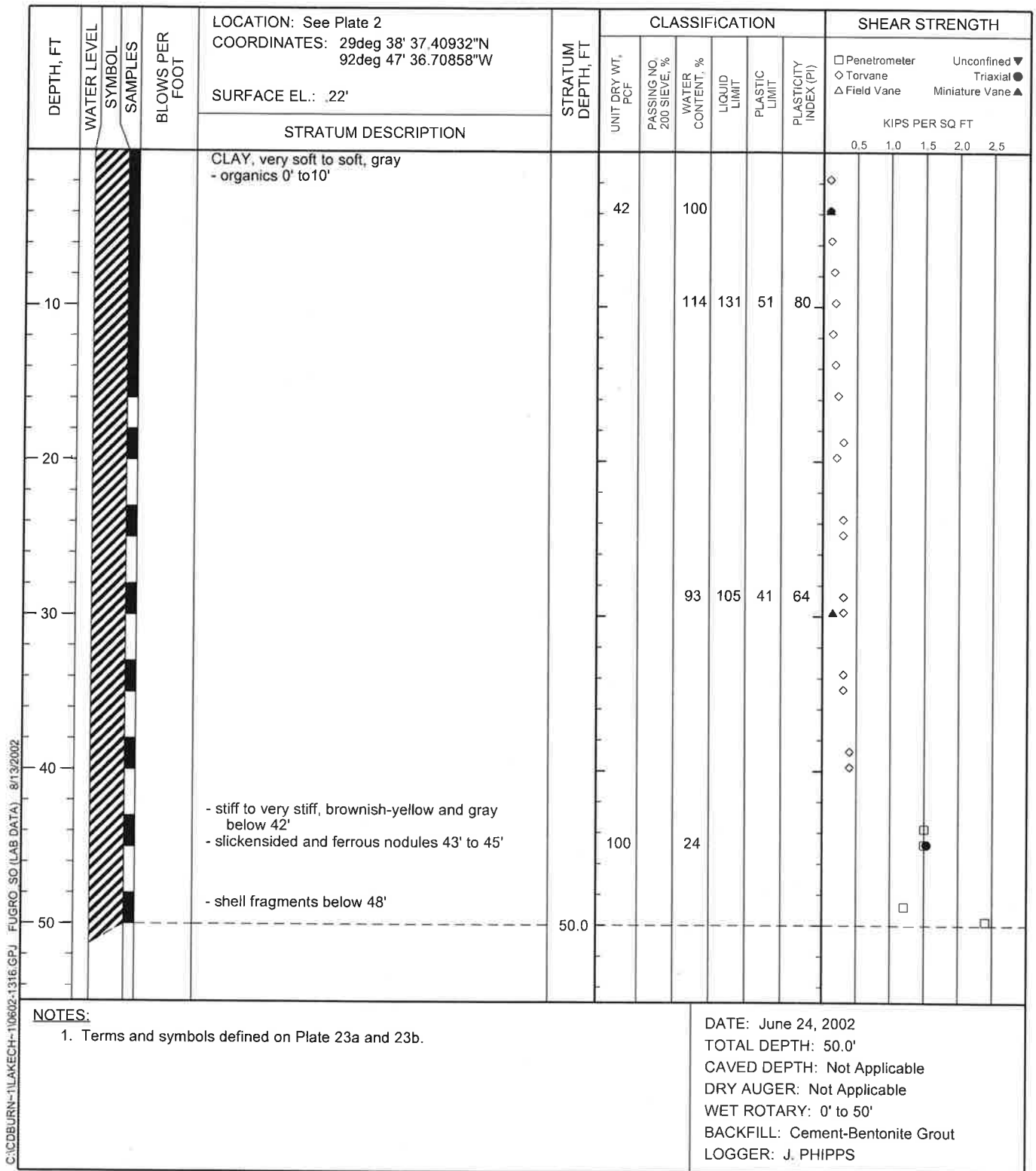
DEPTH, FT	WATER LEVEL	SYMBOL SAMPLES	BLOWS PER FOOT	LOCATION: See Plate 2 COORDINATES: 29deg 38' 46.34746"N 92deg 48' 03.09055"W SURFACE EL.: 3.93'	STRATUM DEPTH, FT	CLASSIFICATION						SHEAR STRENGTH				
				STRATUM DESCRIPTION		UNIT DRY WT, PCF	PASSING NO. 200 SIEVE, %	WATER CONTENT, %	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX (PI)	KIPS PER SQ FT				
			12 9 5	SHELL, medium-dense, brown - organics 0' to 10'			3									
				CLAY, very soft to soft, gray	6.0	43		102								
10																
20																
25.0					25.0			103	116	32	84					
30																
40																
50																

NOTES:

1. Terms and symbols defined on Plate 23a and 23b.

DATE: June 24, 2002
TOTAL DEPTH: 25.0'
CAVED DEPTH: Not Applicable
DRY AUGER: Not Applicable
WET ROTARY: 0' to 25'
BACKFILL: Cement-Bentonite Grout
LOGGER: J. PHIPPS

LOG OF BORING NO. B-15
GULF SHORELINE STABILIZATION PROJECT
ROCKEFELLER REFUGE
CAMERON PARISH, LOUISIANA



LOG OF BORING NO. B-16
GULF SHORELINE STABILIZATION PROJECT
ROCKEFELLER REFUGE
CAMERON PARISH, LOUISIANA

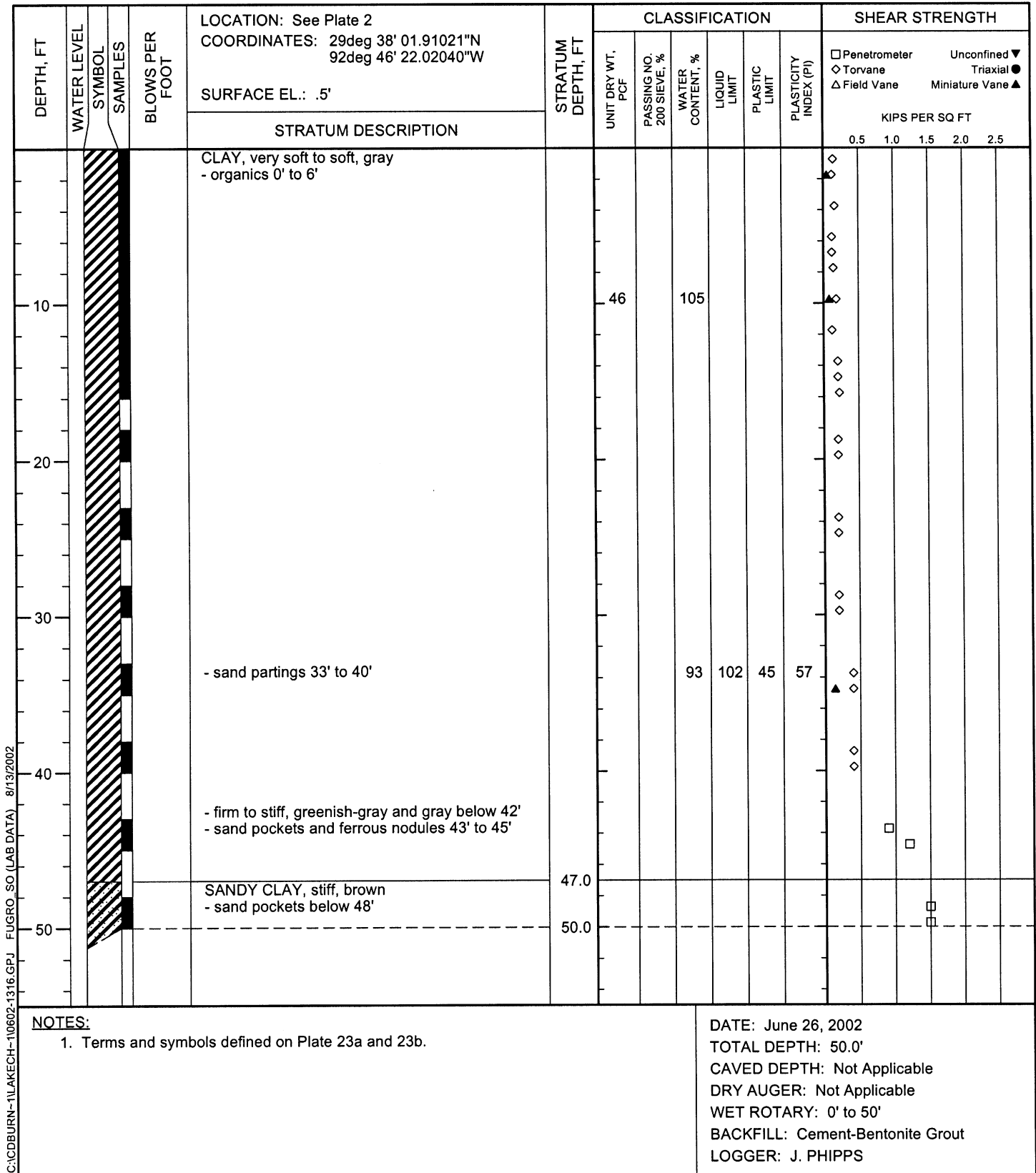
DEPTH, FT	WATER LEVEL	SYMBOL	SAMPLES	BLOWS PER FOOT	LOCATION: See Plate 2 COORDINATES: 29deg 38' 24.67592"N 92deg 47' 12.24649"W	STRATUM DEPTH, FT	CLASSIFICATION						SHEAR STRENGTH					
					UNIT DRY WT, PCF		PASSING NO. 200 SIEVE, %	WATER CONTENT, %	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX (PI)	KIPS PER SQ FT						
												0.5	1.0	1.5	2.0	2.5		
				12	SHELL, medium-dense, brown - organics 0' to 10' - loose below 2'													
				9	CLAY, very soft, gray	4.0		3										
10							29		165									
20					- sand pockets 18' to 20'				99	76	34	42						
						25.0												
30																		
40																		
50																		
NOTES: 1. Terms and symbols defined on Plate 23a and 23b.							DATE: June 26, 2002 TOTAL DEPTH: 25.0' CAVED DEPTH: Not Applicable DRY AUGER: Not Applicable WET ROTARY: 0' to 25' BACKFILL: Cement-Bentonite Grout LOGGER: J. PHIPPS											

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LOG OF BORING NO. B-17
GULF SHORELINE STABILIZATION PROJECT
ROCKEFELLER REFUGE
CAMERON PARISH, LOUISIANA

LOG OF BORING NO. B-18
GULF SHORELINE STABILIZATION PROJECT
ROCKEFELLER REFUGE
CAMERON PARISH, LOUISIANA

LOG OF BORING NO. B-18
GULF SHORELINE STABILIZATION PROJECT
ROCKEFELLER REFUGE
CAMERON PARISH, LOUISIANA



LOG OF BORING NO. B-19
GULF SHORELINE STABILIZATION PROJECT
ROCKEFELLER REFUGE
CAMERON PARISH, LOUISIANA

LOG OF BORING NO. B-20
GULF SHORELINE STABILIZATION PROJECT
ROCKEFELLER REFUGE
CAMERON PARISH, LOUISIANA



DEPTH, FT	WATER LEVEL SYMBOL	SAMPLES	BLOWS PER FOOT	LOCATION: See Plate 2 COORDINATES: N 29°38'3.4" W 92°46'23.1" SURFACE EL.: Not Available	STRATUM DEPTH, FT	CLASSIFICATION						SHEAR STRENGTH				
						UNIT DRY WT, PCF	PASSING NO. 200 SIEVE, %	WATER CONTENT, %	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX (PI)	KIPS PER SQ FT				
				CLAY, very soft to firm, gray - with organic material to 16'				139	128	43	85					
5					35			141								
10					36			136								
15																
20								101	110	33	77					
25					42			108								
30								109								
35																
								91	106	36	70					

NOTES:

1. Water level was not measured during drilling as 5 ft of standing water was encountered at the boring locations.
2. Terms and symbols defined on Plate A-10.

DATE: June 18, 2004

TOTAL DEPTH: 45'

CAVED DEPTH: Not Applicable

DRY AUGER: Not Applicable

WET ROTARY: 0 to 45'

BACKFILL: Cement-Bentonite Grout

LOGGER: J. Phipps

LOG OF BORING NO. TS-1
TEST SECTIONS – ROCKEFELLER REFUGE
GULF SHORELINE STABILIZATION PROJECT
CAMERON PARISH, LOUISIANA



DEPTH, FT	WATER LEVEL SYMBOL	SAMPLES	BLOWS PER FOOT	LOCATION: See Plate 2 COORDINATES: N 29°38'3.4" W 92°46'23.1" SURFACE EL.: Not Available	STRATUM DEPTH, FT	CLASSIFICATION						SHEAR STRENGTH				
				STRATUM DESCRIPTION		UNIT DRY WT, PCF	PASSING NO. 200 SIEVE, %	WATER CONTENT, %	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX (PI)	KIPS PER SQ FT				
				CLAY, very soft to firm, gray				88				0.5	1.0	1.5	2.0	2.5
45					45.0											
50																
55																
60																
65																
70																
75																
NOTES: 1. Water level was not measured during drilling as 5 ft of standing water was encountered at the boring locations. 2. Terms and symbols defined on Plate A-10.						DATE: June 18, 2004 TOTAL DEPTH: 45' CAVED DEPTH: Not Applicable DRY AUGER: Not Applicable WET ROTARY: 0 to 45' BACKFILL: Cement-Bentonite Grout LOGGER: J. Phipps										

R:\LAKECH-1\0604\0604-1-1\DRAWING\0604-1370.GPJ FUGRO_SO (LAB DATA) 8/16/2004

LOG OF BORING NO. TS-1
TEST SECTIONS – ROCKEFELLER REFUGE
GULF SHORELINE STABILIZATION PROJECT
CAMERON PARISH, LOUISIANA



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DEPTH, FT	WATER LEVEL SYMBOL	SAMPLES	BLOWS PER FOOT	LOCATION: See Plate 2 COORDINATES: N 29°38'4.8" W 92°46'27.7" SURFACE EL.: Not Available	STRATUM DEPTH, FT	CLASSIFICATION						SHEAR STRENGTH				
				STRATUM DESCRIPTION		UNIT DRY WT, PCF	PASSING NO. 200 SIEVE, %	WATER CONTENT, %	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX (PI)	KIPS PER SQ FT				
				CLAY, soft to very soft, gray								0.5	1.0	1.5	2.0	2.5
45				- stiff, brown and gray below 43'	45.0			28								
50																
55																
60																
65																
70																
75																

NOTES:

1. Water level was not measured during drilling as 5 ft of standing water was encountered at the boring locations.
2. Terms and symbols defined on Plate A-10.

DATE: June 18, 2004
TOTAL DEPTH: 45'
CAVED DEPTH: Not Applicable
DRY AUGER: Not Applicable
WET ROTARY: 0 to 45'
BACKFILL: Cement-Bentonite Grout
LOGGER: J. Phipps

LOG OF BORING NO. TS-2
TEST SECTIONS – ROCKEFELLER REFUGE
GULF SHORELINE STABILIZATION PROJECT
CAMERON PARISH, LOUISIANA





DEPTH, FT	WATER LEVEL SYMBOL	SAMPLES	BLOWS PER FOOT	LOCATION: See Plate 2 COORDINATES: N 29°38'7.2" W 92°46'34.4" SURFACE EL.: Not Available	STRATUM DEPTH, FT	CLASSIFICATION						SHEAR STRENGTH				
				STRATUM DESCRIPTION		UNIT DRY WT, PCF	PASSING NO. 200 SIEVE, %	WATER CONTENT, %	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX (PI)	KIPS PER SQ FT				
				CLAY, gray, very soft to firm - with organic material to 16'				131	127	35	92					
5																
10								128								
15						40		121								
20																
25						42		116 108	121	39	82					
30																
35				- with silt pockets, 33' to 40'				89	98	35	63					
						43		106								

NOTES:

1. Water level was not measured during drilling as 5 ft of standing water was encountered at the boring locations.
2. Terms and symbols defined on Plate A-10.

DATE: June 18, 2004
TOTAL DEPTH: 45'
CAVED DEPTH: Not Applicable
DRY AUGER: Not Applicable
WET ROTARY: 0 to 45'
BACKFILL: Cement-Bentonite Grout
LOGGER: J. Phipps

LOG OF BORING NO. TS-3
TEST SECTIONS – ROCKEFELLER REFUGE
GULF SHORELINE STABILIZATION PROJECT
CAMERON PARISH, LOUISIANA



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DEPTH, FT	WATER LEVEL SYMBOL	SAMPLES	BLOWS PER FOOT	LOCATION: See Plate 2 COORDINATES: N 29°38'11" W 92°46'38.3" SURFACE EL.: Not Available	STRATUM DEPTH, FT	CLASSIFICATION						SHEAR STRENGTH				
				STRATUM DESCRIPTION		UNIT DRY WT, PCF	PASSING NO. 200 SIEVE, %	WATER CONTENT, %	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX (PI)	KIPS PER SQ FT				
				CLAY, very soft to soft, gray - with organic material to 16'				131				0.5	1.0	1.5	2.0	2.5
5								122	131	39	92					
10								124	129	38	91					
15						37		127								
20						49		107								
25																
30						50		87								
35																
NOTES: 1. Water level was not measured during drilling as 5 ft of standing water was encountered at the boring locations. 2. Terms and symbols defined on Plate A-10.						DATE: June 18, 2004 TOTAL DEPTH: 45' CAVED DEPTH: Not Applicable DRY AUGER: Not Applicable WET ROTARY: 0 to 45' BACKFILL: Cement-Bentonite Grout LOGGER: J. Phipps										

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LOG OF BORING NO. TS-4
 TEST SECTIONS – ROCKEFELLER REFUGE
 GULF SHORELINE STABILIZATION PROJECT
 CAMERON PARISH, LOUISIANA





DEPTH, FT	WATER LEVEL SYMBOL	SAMPLES	BLOWS PER FOOT	LOCATION: See Plate 2 COORDINATES: N 29°38'11" W 92°46'38.3" SURFACE EL.: Not Available	STRATUM DEPTH, FT	CLASSIFICATION						SHEAR STRENGTH				
				STRATUM DESCRIPTION		UNIT DRY WT, PCF	PASSING NO. 200 SIEVE, %	WATER CONTENT, %	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX (PI)	KIPS PER SQ FT				
				CLAY, very soft to soft, gray - firm, brown and gray below 42' - with ferrous nodules, 43' to 45'								0.5	1.0	1.5	2.0	2.5
45					45.0			34	90	24	66					
50																
55																
60																
65																
70																
75																
NOTES: 1. Water level was not measured during drilling as 5 ft of standing water was encountered at the boring locations. 2. Terms and symbols defined on Plate A-10.						DATE: June 18, 2004 TOTAL DEPTH: 45' CAVED DEPTH: Not Applicable DRY AUGER: Not Applicable WET ROTARY: 0 to 45' BACKFILL: Cement-Bentonite Grout LOGGER: J. Phipps										

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LOG OF BORING NO. TS-4
TEST SECTIONS – ROCKEFELLER REFUGE
GULF SHORELINE STABILIZATION PROJECT
CAMERON PARISH, LOUISIANA





DEPTH, FT	WATER LEVEL SYMBOL	SAMPLES	BLOWS PER FOOT	LOCATION: See Plate 2 COORDINATES: N 29°38'9.6" W 92°46'41.2" SURFACE EL.: Not Available	STRATUM DEPTH, FT	CLASSIFICATION						SHEAR STRENGTH				
						UNIT DRY WT, PCF	PASSING NO. 200 SIEVE, %	WATER CONTENT, %	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX (PI)	KIPS PER SQ FT				
				CLAY, very soft to soft, gray - with organic material to 16'				141	124	35	89					
5					36			136								
10					38			131								
15								106	104	34	70					
20								85								
25					44			103								
30								110	116	37	79					
35																
								98								

NOTES: 1. Water level was not measured during drilling as 5 ft of standing water was encountered at the boring locations. 2. Terms and symbols defined on Plate A-10.								DATE: June 18, 2004 TOTAL DEPTH: 45' CAVED DEPTH: Not Applicable DRY AUGER: Not Applicable WET ROTARY: 0 to 45' BACKFILL: Cement-Bentonite Grout LOGGER: J. Phipps							
--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

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LOG OF BORING NO. TS-5
TEST SECTIONS – ROCKEFELLER REFUGE
GULF SHORELINE STABILIZATION PROJECT
CAMERON PARISH, LOUISIANA



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DEPTH, FT	WATER LEVEL SYMBOL	SAMPLES	BLOWS PER FOOT	LOCATION: See Plate 2 COORDINATES: N 29°38'12.5" W 92°46'44.5" SURFACE EL.: Not Available	STRATUM DEPTH, FT	CLASSIFICATION						SHEAR STRENGTH				
				STRATUM DESCRIPTION		UNIT DRY WT, PCF	PASSING NO. 200 SIEVE, %	WATER CONTENT, %	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX (PI)	KIPS PER SQ FT				
				CLAY, very soft to soft, gray	41.0											
				SANDY CLAY, firm to stiff, brown and gray												
				- slickensided, 43' to 45'				29								
45					45.0											
50																
55																
60																
65																
70																
75																
NOTES:						DATE: June 17, 2004 TOTAL DEPTH: 45' CAVED DEPTH: Not Applicable DRY AUGER: Not Applicable WET ROTARY: 0 to 45' BACKFILL: Cement-Bentonite Grout LOGGER: J. Phipps										
1. Water level was not measured during drilling as 5 ft of standing water was encountered at the boring locations.																
2. Terms and symbols defined on Plate A-10.																

LOG OF BORING NO. TS-6
TEST SECTIONS – ROCKEFELLER REFUGE
GULF SHORELINE STABILIZATION PROJECT
CAMERON PARISH, LOUISIANA



DEPTH, FT	WATER LEVEL SYMBOL	SAMPLES	BLOWS PER FOOT	LOCATION: See Plate 2 COORDINATES: N 29°38'15.6" W 92°46'48" SURFACE EL.: Not Available	STRATUM DEPTH, FT	CLASSIFICATION						SHEAR STRENGTH				
				STRATUM DESCRIPTION		UNIT DRY WT, PCF	PASSING NO. 200 SIEVE, %	WATER CONTENT, %	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX (PI)	KIPS PER SQ FT				
				CLAY, very soft, gray - with organic material below 0.5'				109								
5								177	182	55	127					
10																
15					45			102								
20								121	110	35	75					
25																
30					42			113 107	120	43	77					
35																
				- with silt pockets, 38' to 40'		47		89								
NOTES: 1. Water level was not measured during drilling as 5 ft of standing water was encountered at the boring locations. 2. Terms and symbols defined on Plate A-10.						DATE: June 17, 2004 TOTAL DEPTH: 45' CAVED DEPTH: Not Applicable DRY AUGER: Not Applicable WET ROTARY: 0 to 45' BACKFILL: Cement-Bentonite Grout LOGGER: J. Phipps										

LOG OF BORING NO. TS-7
TEST SECTIONS – ROCKEFELLER REFUGE
GULF SHORELINE STABILIZATION PROJECT
CAMERON PARISH, LOUISIANA



DEPTH, FT	WATER LEVEL SYMBOL	SAMPLES	BLOWS PER FOOT	LOCATION: See Plate 2 COORDINATES: N 29°38'15.6" W 92°46'48" SURFACE EL.: Not Available	STRATUM DEPTH, FT	CLASSIFICATION						SHEAR STRENGTH				
				STRATUM DESCRIPTION		UNIT DRY WT, PCF	PASSING NO. 200 SIEVE, %	WATER CONTENT, %	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX (PI)	KIPS PER SQ FT				
				CLAY, firm, gray - with silt pockets, 40' to 45' - with shell fragments, 43' to 45'				82								
45					45.0											
50																
55																
60																
65																
70																
75																

NOTES:

1. Water level was not measured during drilling as 5 ft of standing water was encountered at the boring locations.
2. Terms and symbols defined on Plate A-10.

DATE: June 17, 2004
TOTAL DEPTH: 45'
CAVED DEPTH: Not Applicable
DRY AUGER: Not Applicable
WET ROTARY: 0 to 45'
BACKFILL: Cement-Bentonite Grout
LOGGER: J. Phipps

R:\LAKECH-1\0604\0604-1-1\DRAWING\0604-1370.GPJ FUGRO_SO (LAB DATA) 8/16/2004

LOG OF BORING NO. TS-7
TEST SECTIONS – ROCKEFELLER REFUGE
GULF SHORELINE STABILIZATION PROJECT
CAMERON PARISH, LOUISIANA





DEPTH, FT	WATER LEVEL SYMBOL	SAMPLES	BLOWS PER FOOT	LOCATION: See Plate 2 COORDINATES: N 29°38'7.2" W 92°46'31.4" SURFACE EL.: Not Available	STRATUM DEPTH, FT	CLASSIFICATION						SHEAR STRENGTH				
						UNIT DRY WT, PCF	PASSING NO. 200 SIEVE, %	WATER CONTENT, %	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX (PI)	KIPS PER SQ FT				
				CLAY, very soft to soft, gray - with organic material below 0.5'												
5					38			126								
10								122	126	41	85					
15								130								
20									106							
25					43			105	111	32	79					
30								110								
35																
								96	101	35	66					

NOTES:

1. Water level was not measured during drilling as 5 ft of standing water was encountered at the boring locations.
2. Terms and symbols defined on Plate A-10.

DATE: June 19, 2004

TOTAL DEPTH: 45'

CAVED DEPTH: Not Applicable

DRY AUGER: Not Applicable

WET ROTARY: 0 to 45'

BACKFILL: Cement-Bentonite Grout

LOGGER: J. Phipps

LOG OF BORING NO. TS-8
TEST SECTIONS – ROCKEFELLER REFUGE
GULF SHORELINE STABILIZATION PROJECT
CAMERON PARISH, LOUISIANA



DEPTH, FT	WATER LEVEL SYMBOL	SAMPLES	BLOWS PER FOOT	LOCATION: See Plate 2 COORDINATES: N 29°38'7.2" W 92°46'31.4" SURFACE EL.: Not Available	STRATUM DEPTH, FT	CLASSIFICATION						SHEAR STRENGTH				
				STRATUM DESCRIPTION		UNIT DRY WT, PCF	PASSING NO. 200 SIEVE, %	WATER CONTENT, %	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX (PI)	KIPS PER SQ FT				
				CLAY, very soft to soft, gray	41.0											
				SANDY CLAY, firm, gray				76								
45					45.0											
50																
55																
60																
65																
70																
75																
NOTES: 1. Water level was not measured during drilling as 5 ft of standing water was encountered at the boring locations. 2. Terms and symbols defined on Plate A-10.						DATE: June 19, 2004 TOTAL DEPTH: 45' CAVED DEPTH: Not Applicable DRY AUGER: Not Applicable WET ROTARY: 0 to 45' BACKFILL: Cement-Bentonite Grout LOGGER: J. Phipps										

R:\LAKECH-1\0604\0604-1-1\DRAWING\0604-1370.GPJ FUGRO_SO (LAB DATA) 8/16/2004

LOG OF BORING NO. TS-8
TEST SECTIONS – ROCKEFELLER REFUGE
GULF SHORELINE STABILIZATION PROJECT
CAMERON PARISH, LOUISIANA





DEPTH, FT	WATER LEVEL SYMBOL SAMPLES	BLOWS PER FOOT	LOCATION: See Plate 2 COORDINATES: N 29°38'14.2" W 92°46'46.2" SURFACE EL.: Not Available	STRATUM DEPTH, FT	CLASSIFICATION						SHEAR STRENGTH				
					UNIT DRY WT, PCF	PASSING NO. 200 SIEVE, %	WATER CONTENT, %	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX (PI)	KIPS PER SQ FT				
			CLAY, very soft to soft, gray - with organic material to 16'								0.5	1.0	1.5	2.0	2.5
5				40			121								
10							108	121	38	83					
15															
20				41			116								
25							105	110	35	75					
30				41			103								
35															
							103	114	38	76					

NOTES:

1. Water level was not measured during drilling as 5 ft of standing water was encountered at the boring locations.
2. Terms and symbols defined on Plate A-10.

DATE: June 19, 2004

TOTAL DEPTH: 45'

CAVED DEPTH: Not Applicable

DRY AUGER: Not Applicable

WET ROTARY: 0 to 45'

BACKFILL: Cement-Bentonite Grout

LOGGER: J. Phipps

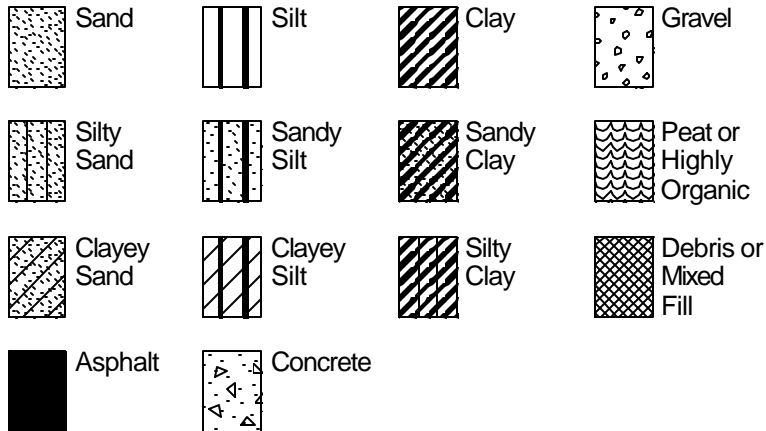
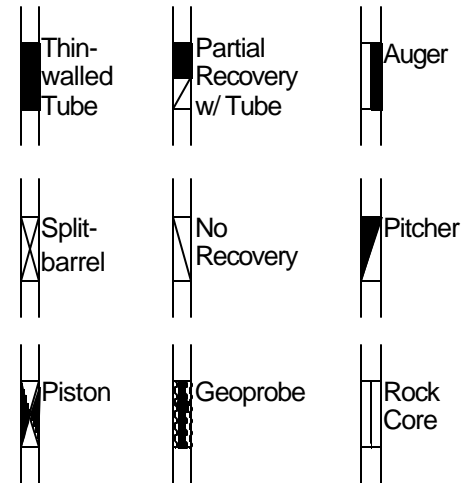
LOG OF BORING NO. TS-9
TEST SECTIONS – ROCKEFELLER REFUGE
GULF SHORELINE STABILIZATION PROJECT
CAMERON PARISH, LOUISIANA



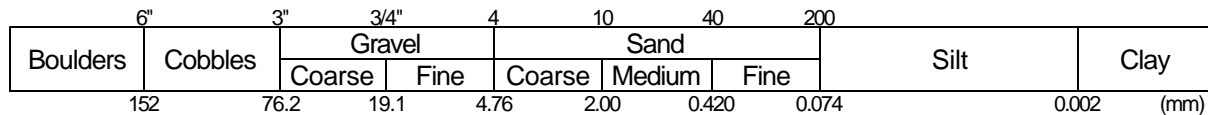
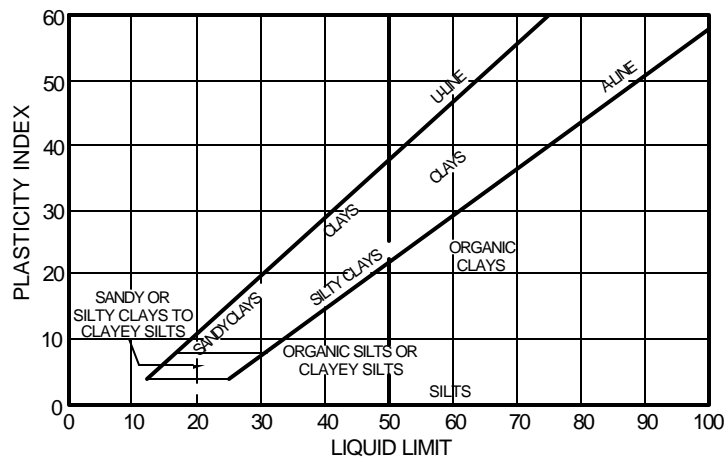
DEPTH, FT	WATER LEVEL SYMBOL	SAMPLES	BLOWS PER FOOT	LOCATION: See Plate 2 COORDINATES: N 29°38'14.2" W 92°46'46.2" SURFACE EL.: Not Available	STRATUM DEPTH, FT	CLASSIFICATION						SHEAR STRENGTH				
				STRATUM DESCRIPTION		UNIT DRY WT, PCF	PASSING NO. 200 SIEVE, %	WATER CONTENT, %	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX (PI)	KIPS PER SQ FT				
				CLAY, very soft to soft, gray	41.0											
				SANDY CLAY, firm to stiff, brown and gray				28								
45					45.0											
50																
55																
60																
65																
70																
75																
NOTES: 1. Water level was not measured during drilling as 5 ft of standing water was encountered at the boring locations. 2. Terms and symbols defined on Plate A-10.						DATE: June 19, 2004 TOTAL DEPTH: 45' CAVED DEPTH: Not Applicable DRY AUGER: Not Applicable WET ROTARY: 0 to 45' BACKFILL: Cement-Bentonite Grout LOGGER: J. Phipps										

LOG OF BORING NO. TS-9
TEST SECTIONS – ROCKEFELLER REFUGE
GULF SHORELINE STABILIZATION PROJECT
CAMERON PARISH, LOUISIANA



SOIL TYPES**SAMPLER TYPES****SOIL GRAIN SIZE**

U.S. Standard Sieve

**PLASTICITY CHART****SOIL STRUCTURE**

Slickensided	.....	Having planes of weakness that appear slick and glossy.
Fissured	.....	Containing shrinkage or relief cracks, often filled with fine sand or silt; usually more or less vertical.
Pocket	.....	Inclusion of material of different texture that is smaller than the diameter of the sample.
Parting	.....	Inclusion less than 1/8 inch thick extending through the sample.
Seam	.....	Inclusion 1/8 inch to 3 inches thick extending through the sample.
Layer	.....	Inclusion greater than 3 inches thick extending through the sample.
Laminated	.....	Soil sample composed of alternating partings or seams of different soil type.
Interlayered	.....	Soil sample composed of alternating layers of different soil type.
Intermixed	.....	Soil sample composed of pockets of different soil type and layered or laminated structure is not evident.
Calcareous	.....	Having appreciable quantities of carbonate.
Carbonate	.....	Having more than 50% carbonate content.

TERMS AND SYMBOLS USED ON BORING LOGS**SOIL CLASSIFICATION (1 of 2)**

STANDARD PENETRATION TEST (SPT)

A 2-in.-OD, 1-3/8-ID split spoon sampler is driven 1.5 ft into undisturbed soil with a 140-pound hammer free falling 30 in. After the sampler is seated 6 in. into undisturbed soil, the number of blows required to drive the sampler the last 12 in. is the Standard Penetration Resistance or "N" value, which is recorded as blows per foot as described below.

SPLIT-BARREL SAMPLER DRIVING RECORD

Blows Per Foot	Description
25	25 blows drove sampler 12 inches, after initial 6 inches of seating.
50/7"	50 blows drove sampler 7 inches, after initial 6 inches of seating.
Ref/3"	50 blows drove sampler 3 inches during initial 6-inch seating interval.

NOTE: To avoid damage to sampling tools, driving is limited to 50 blows during or after seating interval.

DENSITY OF GRANULAR SOILS

Descriptive Term	*Relative Density, %	**Blows Per Foot (SPT)
Very Loose	< 15	0 to 4
Loose	15 to 35	5 to 10
Medium Dense	35 to 65	11 to 30
Dense	65 to 85	31 to 50
Very Dense	> 85	> 50

*Estimated from sampler driving record.

**Requires correction for depth, groundwater level, and grain size.

STRENGTH OF COHESIVE SOILS

Term	Undrained Shear Strength, ksf	Blows Per Foot (SPT) (approximate)
Very Soft	< 0.25	0 to 2
Soft	0.25 to 0.50	2 to 4
Firm	0.50 to 1.00	4 to 8
Stiff	1.00 to 2.00	8 to 16
Very Stiff	2.00 to 4.00	16 to 32
Hard	> 4.00	> 32

SHEAR STRENGTH TEST METHOD

U - Unconfined Q = Unconsolidated - Undrained Triaxial

P = Pocket Penetrometer T = Torvane V = Miniature Vane F = Field Vane

HAND PENETROMETER CORRECTION

Our experience has shown that the hand penetrometer generally overestimates the in-situ undrained shear strength of over consolidated Pleistocene Gulf Coast clays. These strengths are partially controlled by the presence of macroscopic soil defects such as slickensides, which generally do not influence smaller scale tests like the hand penetrometer. Based on our experience, we have adjusted these field estimates of the undrained shear strength of natural, overconsolidated Pleistocene Gulf Coast soils by multiplying the measured penetrometer reading by a factor of 0.6. These adjusted strength estimates are recorded in the "Shear Strength" column on the boring logs. Except as described in the text, we have not adjusted estimates of the undrained shear strength for projects located outside of the Pleistocene Gulf Coast formations.

Information on each boring log is a compilation of subsurface conditions and soil or rock classifications obtained from the field as well as from laboratory testing of samples. Strata have been interpreted by commonly accepted procedures. The stratum lines on the logs may be transitional and approximate in nature. Water level measurements refer only to those observed at the time and places indicated, and can vary with time, geologic condition, or construction activity.

TERMS AND SYMBOLS USED ON BORING LOGS

SOIL CLASSIFICATION (2 of 2)

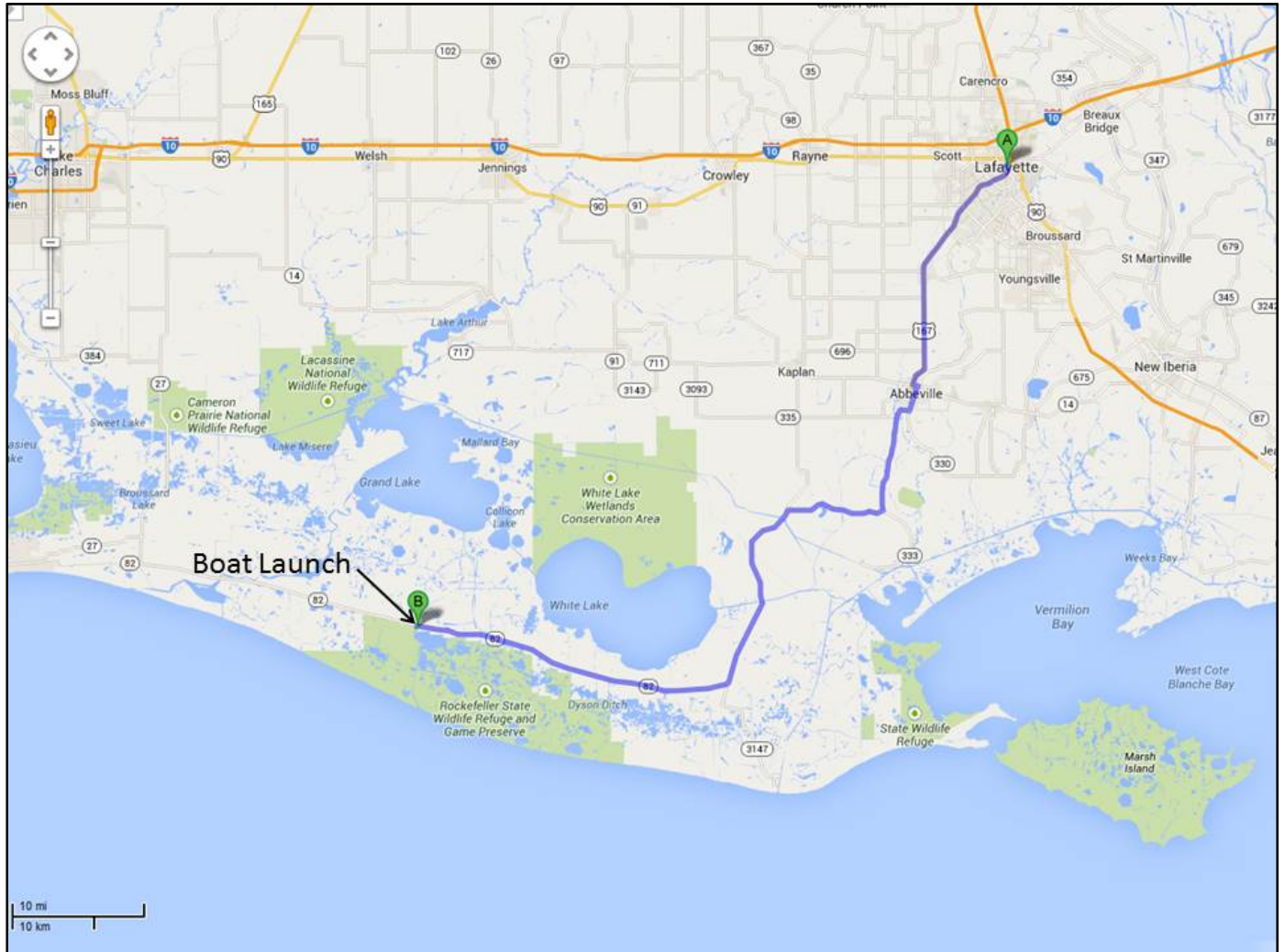


APPENDIX F:

Directions to Boat Launch

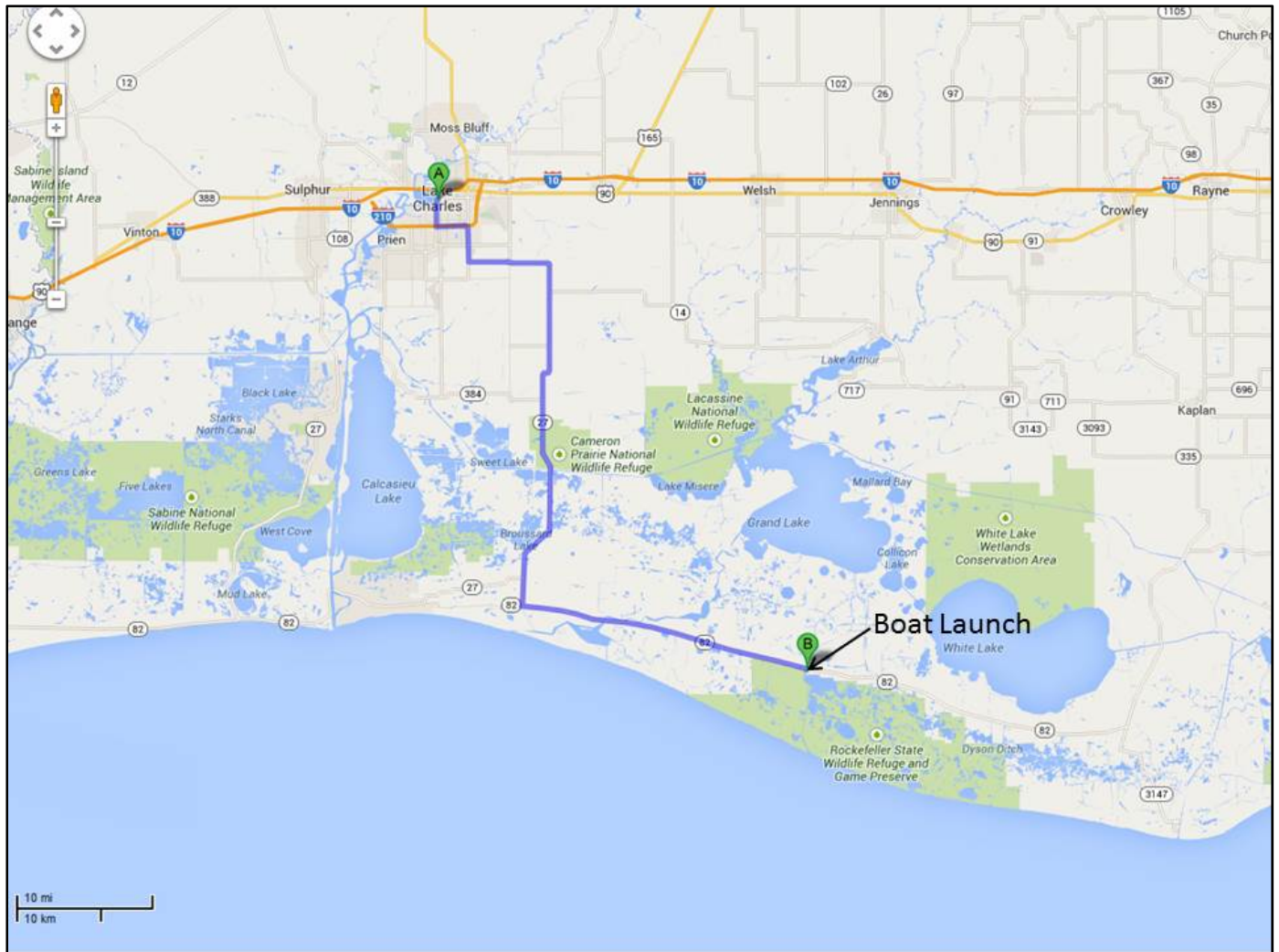
Directions to Joseph Harbor Boat Launch from Lafayette, LA

From US-167 S, turn left onto Veterans Memorial Dr. after approximately 20 miles. After approximately 0.5 miles turn right onto LA-82 W/N State St., and follow signs for LA-82 W for approximately 60 miles. The boat launch will be on the left hand side.

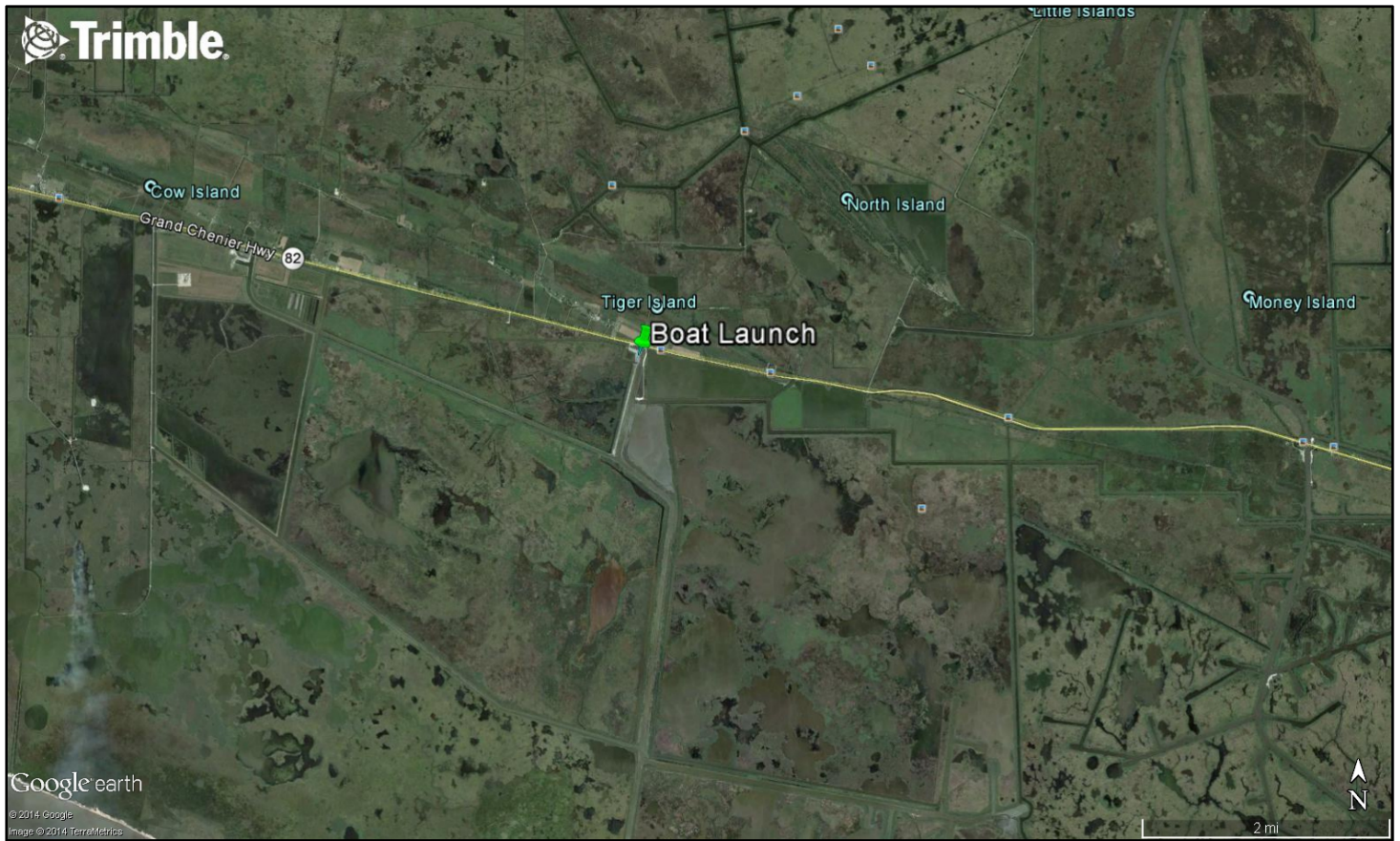


Directions to Joseph Harbor Boat Launch from Lake Charles, LA

From I-210 E take exit 8 for LA-14 toward Cameron. Follow signs for LA-14 E for approximately 10.7 miles, then continue onto LA-27 N. After approximately 22.7 miles continue straight onto LA-82 E and follow for approximately 23.7 miles. The boat launch will be on the right hand side.



Joseph Harbor Boat Launch Location



APPENDIX G:

Owner Obtained Permits



State of Louisiana
DEPARTMENT OF NATURAL RESOURCES
OFFICE OF COASTAL MANAGEMENT

May 19, 2016

John D. Foret, Ph.D.
NOAA Fisheries Service/SEFSC
Estuarine Habitats and Coastal Fisheries Center
646 Cajundome Boulevard, Room 175
Lafayette, LA 70506

Via e-mail: john.foret@noaa.gov

Re: **C20160054 Coastal Zone Consistency**
National Marine Fisheries Service
Direct Federal Action
Rockefeller Refuge Gulf Shoreline Stabilization CWPPRA Project ME-18, **Cameron Parish**

Dear Dr. Foret

The above referenced project has been reviewed for consistency with the approved Louisiana Coastal Resource Program (LCRP) as required by Section 307 of the Coastal Zone Management Act of 1972, as amended. The project, as proposed in the application, is consistent with the LCRP.

If you should have any questions on this matter, please contact Jeff Harris of the Consistency Section at (225) 342-7949.

Sincerely yours,

/S/ Don Haydel
Acting Administrator
Interagency Affairs/Field Services Division

DH/SK/jdh

cc: Sydney Dobson, CPRA
Bobby.D.Quebedeaux, COE-NOD
Rod Peirce, OCM/FI
Kara Bonsall, Cameron Parish
Dave Butler, LDWF



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, NEW ORLEANS DISTRICT
7400 LEAKE AVENUE
NEW ORLEANS, LOUISIANA 70118

SEP 28 2016

RECEIVED

16 OCT 13 P 9:48

CPRA

Operations Division
Western Evaluation Section

BASEFILE: MVN-2016-0580-WJJ

Louisiana Department of Wildlife & Fisheries
Attn: Randy Myers
2000 Quail Drive
Baton Rouge, Louisiana 70808

Dear Mr. Myers:

The work to construct an offshore breakwater at Rockefeller Wildlife Refuge to protect the rapidly eroding shoreline, located in the Gulf of Mexico at Grand Chenier, Louisiana, in Cameron Parish (29.63635, -92.77806), is authorized under **Category II** of the **Programmatic General Permit** provided that all general conditions of the permit and the following special conditions are met:

1. The (attached) Standard Manatee Conditions for In-Water Activities are hereby made a part of this authorization.
2. If during the course of work at the site, prehistoric and/or historic aboriginal cultural materials are discovered, all work must be ceased immediately and the permittee shall contact the U. S. Army Corps of Engineers, New Orleans District (CEMVN) Regulatory Branch and the Louisiana State Historic Preservation Office. 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.

Prior to commencing work on your project, you must obtain approvals from state and local agencies as required by law and by terms of this permit. These approvals include, but are not limited to, a permit, consistency determination, or determination of "no direct or significant impact (NDSI) on coastal waters" from the Louisiana Department of Natural Resources, Office of Coastal Management and a water quality certification from the Louisiana Department of Environmental Quality.

This approval to perform work is valid for 5 years from the date of this letter.

Permittee is aware that this office may re-evaluate its decision on this permit at any time the circumstances warrant.

Should you have any further questions concerning this matter, please contact Bobby Quebedeaux of this office at (504) 862-2224.

Enclosures

Sincerely,

Danell S. Barboro
for: Martin S. Mayer
Chief, Regulatory Branch

STANDARD MANATEE CONDITIONS FOR IN-WATER ACTIVITIES

During in-water work in areas that potentially support manatees, all personnel associated with the project shall be instructed and aware of the potential presence of manatees, manatee speed zones, and the need to avoid collisions with, and injury to, manatee. All personnel shall be advised that there are 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. Additionally, personnel shall be instructed not to attempt to feed or otherwise interact with the animal.

All on-site personnel are responsible for observing water-related activities for the presence of manatee(s). To minimize potential impacts to manatees in areas of their potential presence, the permittee shall insure the following are adhered to:

- All work, equipment, and vessel operation shall cease if a manatee is spotted within a 50-foot radius (buffer zone) of the active work area. Once the manatee has left the buffer zone on its own accord (manatees must not be herded or harassed into leaving), or after 30 minutes have passed without additional sightings of manatee(s) in the buffer zone, in-water work can resume under careful observation for manatee(s).
- If a manatee(s) is sighted in or near the project area, all vessels associated with the project shall operate at "no wake/idle" speeds within the construction area and at all times while in waters where the draft of the vessel provides less than a four-foot clearance from the bottom. Vessels shall follow routes of deep water whenever possible.
- If used, siltation or turbidity barriers shall be properly secured, made of material in which manatees cannot become entangled, and be monitored to avoid manatee entrapment or impeding their movement.
- Temporary signs concerning manatees shall be posted prior to and during all in-water project activities and removed upon completion. Each vessel involved in construction activities shall display at the vessel control station or in a prominent location, visible to all employees operating the vessel, a temporary sign at least 8½" X 11" reading language similar to the following: "CAUTION BOATERS: MANATEE AREA/ IDLE SPEED IS REQUIRED IN CONSTRUCTION AREA AND WHERE THERE IS LESS THAN FOUR FOOT BOTTOM CLEARANCE WHEN MANATEE IS PRESENT". A second temporary sign measuring 8½" X 11" shall be posted at a location prominently visible to all personnel engaged in water-related activities and shall read language similar to the following: "CAUTION: MANATEE AREA/ EQUIPMENT MUST BE SHUTDOWN IMMEDIATELY IF A MANATEE COMES WITHIN 50 FEET OF OPERATION".
- Collisions with, injury to, or sightings of manatees shall be immediately reported to the U.S. Fish and Wildlife Service's, Louisiana Ecological Services Office (337/291-3100) and the Louisiana Department of Wildlife and Fisheries, Natural Heritage Program (225/765-2821). Please provide the nature of the call (i.e., report of an incident, manatee sighting, etc.); time of incident/sighting; and the approximate location, including the latitude and longitude coordinates, if possible.

1. Activities authorized under this general permit shall not be used for piecemeal work and shall be applied to single and complete projects. All components of a single and complete project shall be treated together as constituting one single and complete project. All planned phases of multi-phased projects shall be treated together as constituting one single and complete project. This general permit shall not be used for any activity that is part of an overall project for which an individual permit is required.
2. No activity is authorized under this general permit which may adversely affect significant cultural resources listed or eligible for listing in the National Register of Historic Places until the requirements for Section 106 of the National Historic Preservation Act are met. Upon discovery of the presence of previously unknown historic and/or prehistoric cultural resources, all work must cease and the permittee must notify the State Historic Preservation Office and the Corps of Engineers. The authorization is suspended until it is determined whether or not the activity will have an adverse effect on cultural resources. The authorization may be reactivated or modified through specific conditions if necessary, if it is determined that the activity will have no adverse effect on cultural resources. The CEMVN-PGP authorization will be revoked if it is determined that cultural resources would be adversely affected, and an individual permit may be necessary.
3. There shall be no unreasonable interference with navigation by the existence or use of the activity authorized herein. The permittee will, at his or her expense, install and maintain any safety lights, signals, and signs prescribed by the United States Coast Guard, through regulations or otherwise, on authorized facilities or on equipment used in performing work under the authorization.
4. No activity may substantially disrupt the movement of those species of aquatic life indigenous to the water body, including those species which normally migrate through the area, unless the activity's primary purpose is to block or impound water.
5. If the proposed activity involves the installation of aerial transmission lines, submerged cable, or submerged pipelines across navigable waters of the United States the following is applicable:

The National Ocean Service (NOS) has been notified of this authorization. You must notify NOS and this office in writing, at least two weeks before you begin work and upon completion of the activity authorized by this permit. Your notification of completion must include a drawing which certifies the location and configuration of the completed activity (a certified permit drawing may be used). Notification to NOS will be sent to the following address: National Ocean Service, Office of Coast Survey, N/CS261, 1315 East West Highway, Silver Springs, Maryland 20910-3282.

6. For pipelines under an anchorage or a designated fairway in the Gulf of Mexico the following is applicable: The NOS has been notified of this authorization. You must notify NOS and this office in writing, at least two weeks before you begin work and upon completion of the activity authorized by this permit. Within 30 days of completion of the pipeline, 'as built' drawings certified by a professional engineer registered in Louisiana or by a registered surveyor shall be furnished to this office, the Commander (dpw), Eighth Coast Guard District, Hale Boggs Federal Building, 500 Poydras Street, Room 1230, New Orleans, Louisiana 70130, and to the Director, National Ocean Service, Office of Coast Survey, N/CS261, 1315 East West Highway, Silver Springs, Maryland 20910-3282. The plans must include the location, configuration and actual burial depth of the completed pipeline project.

7. 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 Eighth Coast Guard District 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 Commander (dpw), Eighth Coast Guard District, Hale Boggs Federal Building, 500 Poydras Street, Room 1230, New Orleans, Louisiana 70130, about 1 month before you plan to start work. Telephone inquiries can be directed to the Eighth Coast Guard District, Waterways Management at (504) 671-2107.

8. All activities authorized herein shall, if they involve, during their construction or operation, any discharge of pollutants into waters of the United States, be at all times consistent with applicable water quality standards, effluent limitations and standards of performance, prohibitions, pretreatment standards and management practices established pursuant to the Clean Water Act (PL 92-500:86 Stat 816), or pursuant to applicable state and local laws.

9. Substantive changes to the Louisiana Coastal Resources Program may require immediate suspension and revocation of this permit in accordance with 33 CFR 325.7.

10. Irrespective of whether a project meets the other conditions of this permit, the Corps of Engineers retains discretionary authority to require an individual Department of the Army permit when circumstances of the proposal warrant this requirement.

11. Any individual authorization granted under this permit may be modified, suspended, or revoked in whole or in part if the Secretary of the Army or his authorized representative determines that there has been a violation of any of the terms or conditions of this permit or that such action would otherwise be in the public interest.

12. The Corps of Engineers may suspend, modify, or revoke this general permit if it is found in the public interest to do so.

13. Activities proposed for authorization under the PGP must comply with all other necessary federal, state, and/or local permits, licenses, or approvals. Failure to do so would result in a violation of the terms and conditions of CEMVN-PGP.

14. The permittee shall permit the District Commander or his authorized representative(s) or designee(s) to make periodic inspections of the project site(s) and disposal site(s) if different from the project site(s) at any time deemed necessary in order to assure that the activity being performed under authority of this permit is in accordance with the terms and conditions prescribed herein.

15. This general permit does not convey any property rights, either in real estate or material, or any exclusive privileges; and it does not authorize any injury to property or invasion of rights or any infringement of federal, state, or local laws or regulations nor does it obviate the requirements to obtain state or local assent required by law for the activity authorized herein.

16. In issuing authorizations under this permit, the federal government will rely upon information and data supplied by the applicant. If, subsequent to the issuance of an authorization, such information and data prove to be false, incomplete, or inaccurate, the authorization may be modified, suspended, or revoked, in whole or in part.

17. For activities resulting in sewage generation at the project site, such sewage shall be processed through a municipal sewage treatment system or, in areas where tie-in to a municipal system is not practical, the on-site sewerage system must be approved by the local parish sanitarian before construction.

18. Any modification, suspension, or revocation of CEMVN-PGP, or any individual authorization granted under this permit, will not be the basis for any claim for damages against the United States.

19. Additional conditions deemed necessary to protect the public interest may be added to the general permit by the District Commander at any time. If additional conditions are added, the public will be advised by public notice. Individual authorizations under CEMVN-PGP may include special conditions deemed necessary to ensure minimal impact and compliance with CEMVN-PGP.

20. CEMVN-PGP is subject to periodic formal review by CEMVN and OCM in coordination with the Environmental Protection Agency, US Fish and Wildlife Service, the National Marine Fisheries Service, and the Louisiana Department of Wildlife and Fisheries. Comments from reviewing agencies will be considered in determination as to whether modifications to the general permit are needed. Should the District Commander make a determination not to incorporate a change proposed by a reviewing agency, after normal negotiations between the respective agencies, the District Commander will explain in writing to the reviewing agency the basis and rationale for his decision.

21. CEMVN retains discretion to review CEMVN-PGP, its terms, conditions, and processing procedures, and decide whether to modify, reissue, or revoke the permit. If CEMVN-PGP is not modified or reissued within 5 years of its effective date, it automatically expires and becomes null and void.

22. 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.

23. 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 as described in Special Condition 25 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.

24. 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.

25. If you sell the property associated with this permit, you must provide this office with a copy of the permit and a letter noting your agreement to transfer the permit to the new owner and the new owner's agreement to accept the permit and abide by all conditions of the permit. This letter must be signed by both parties.

26. 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.

27. Many local governing bodies have instituted laws and/or ordinances in order to regulate dredge and/or fill activities in floodplains to assure maintenance of floodwater storage capacity and avoid disruption of drainage patterns that may affect surrounding properties. Your project involves dredging and/or placement of fill; therefore, you must contact the local municipal and/or parish governing body regarding potential impacts to floodplains and compliance of your proposed activities with local floodplain ordinances, regulations or permits.

28. In issuing authorizations under this permit, the federal government does not assume any liability for: damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes; 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; damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit, and; design or construction deficiencies associated with the permitted work.

INDEX TO SHEETS

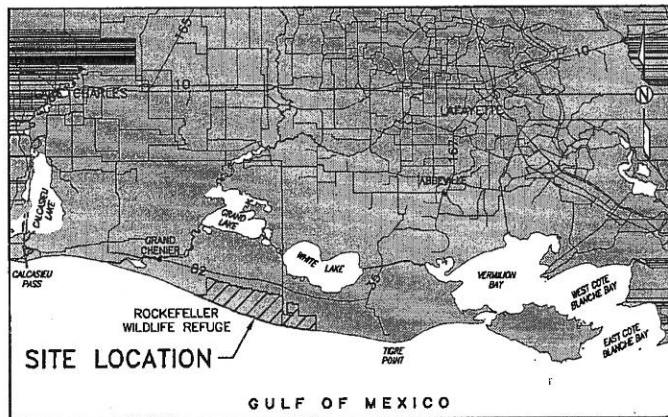
SHEET NO. DESCRIPTION

1	TITLE SHEET
2	SITE PLAN
2A	SITE PLAN
3 - 7	ENLARGED SITE PLANS I - V
8	TYPICAL SECTIONS I
9	TYPICAL SECTIONS II
10	WARNING SIGN DETAILS

STATE OF LOUISIANA COASTAL PROTECTION & RESTORATION AUTHORITY

ROCKEFELLER REFUGE GULF SHORELINE STABILIZATION PROJECT

ME-18
CAMERON PARISH, LOUISIANA



PRELIMINARY

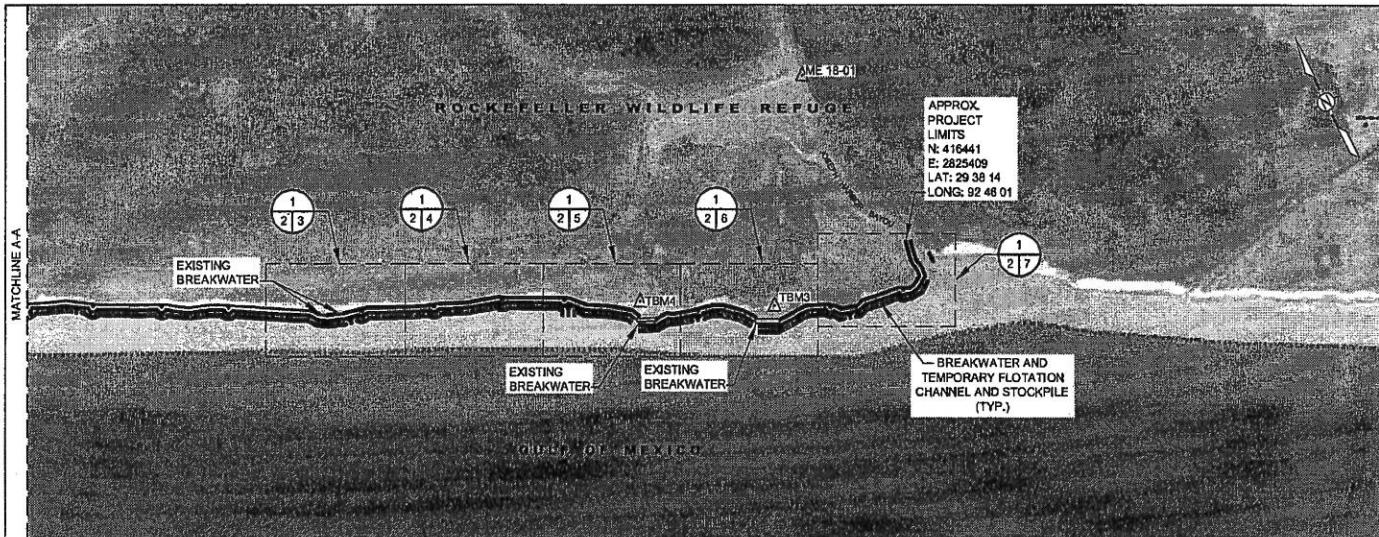
THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF INTERIM REVIEW AND IS NOT INTENDED TO BE USED FOR CONSTRUCTION OR BIDDING PURPOSES.

ENGINEER: BRETT L. GEESEY

LICENSE NO.: 35172

DATE: 03/11/2016

	APPLICATION BY: STATE OF LOUISIANA DEPARTMENT OF WILDLIFE AND FISHERIES	COASTAL PROTECTION AND RESTORATION AUTHORITY ENGINEERING DIVISION 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801	ROCKEFELLER REFUGE GULF SHORELINE STABILIZATION PROJECT	TITLE SHEET
			STATE PROJECT NUMBER: ME-18	DATE: MARCH 2016
DRAWN BY: E. CONTRERAS	DESIGNED BY: E. ROONEY, P.E.	APPROVED BY: B. GEESEY, P.E.	FEDERAL PROJECT NUMBER: ME-18	SHEET 1 OF 10



NOTES:

1. PROJECT SITE IS NOT ACCESSIBLE BY LAND. ACCESS TO THE PROJECT SITE WILL BE THROUGH THE GULF OF MEXICO.
2. AERIAL IMAGE ON THIS SHEET OBTAINED FROM BING MAPS AERIAL IMAGING WEB MAPPING SERVICE VIA ESRI'S ARC GIS SOFTWARE (VERSION 9.3.1) AND GLOBEXPLORER IMAGECONNECT EXTENSION (VERSION 3.1.0) DATED DECEMBER 12, 2013. AERIAL IMAGES SHOWN ON SHEETS 4 THRU 10 WERE OBTAINED FROM TOBY ARMSTRONG PHOTOGRAPHY, DATED DECEMBER 30, 2013.
3. THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF PERMITTING AND IS NOT INTENDED TO BE USED FOR BIDDING OR CONSTRUCTION.

LEGEND:

△ TBM3 - TEMPORARY BENCH MARK

PRELIMINARY

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ENGINEER: BRETT L. GEESEY

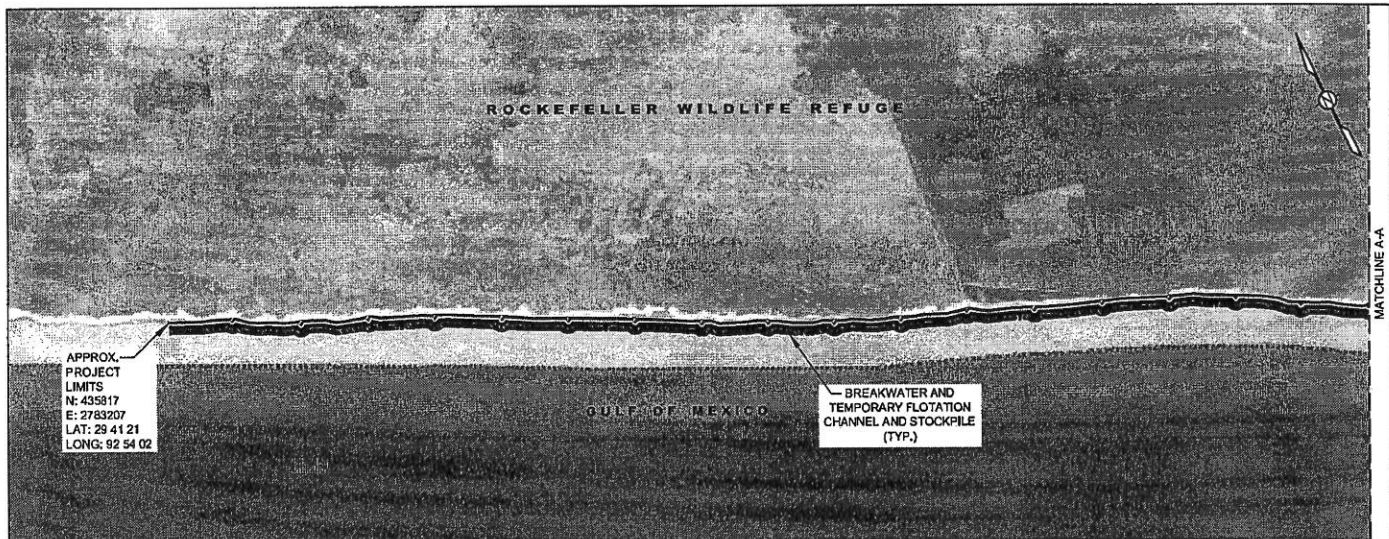
LICENSE NO.: 35172

DATE: 03/11/2016

TYPE	APPROX. AREA (AC.)	APPROX. VOLUME (CY.)	APPROX. LENGTH (FT.)
BREAKWATER (FILL)	53	542,557	48,014
TEMPORARY ACCESS/FLOTATION CHANNEL (EXCAVATION/FILL)	93	98,917	51,009

3,000' 1,500' 0' 3,000' 6,000'

	APPLICATION BY: STATE OF LOUISIANA DEPARTMENT OF WILDLIFE AND FISHERIES	COASTAL PROTECTION AND RESTORATION AUTHORITY ENGINEERING DIVISION 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801	ROCKEFELLER REFUGE GULF SHORELINE STABILIZATION PROJECT	SITE PLAN
			STATE PROJECT NUMBER: ME-18	DATE: MARCH 2016
DRAWN BY: E. CONTRERAS	DESIGNED BY: E. ROONEY, P.E.	APPROVED BY: B. GEESEY, P.E.	FEDERAL PROJECT NUMBER: ME-18	SHEET 2 OF 10



NOTES:

1. SEE NOTES ON SHEET 2.

PRELIMINARY

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ENGINEER: BRETT L. GEESEY

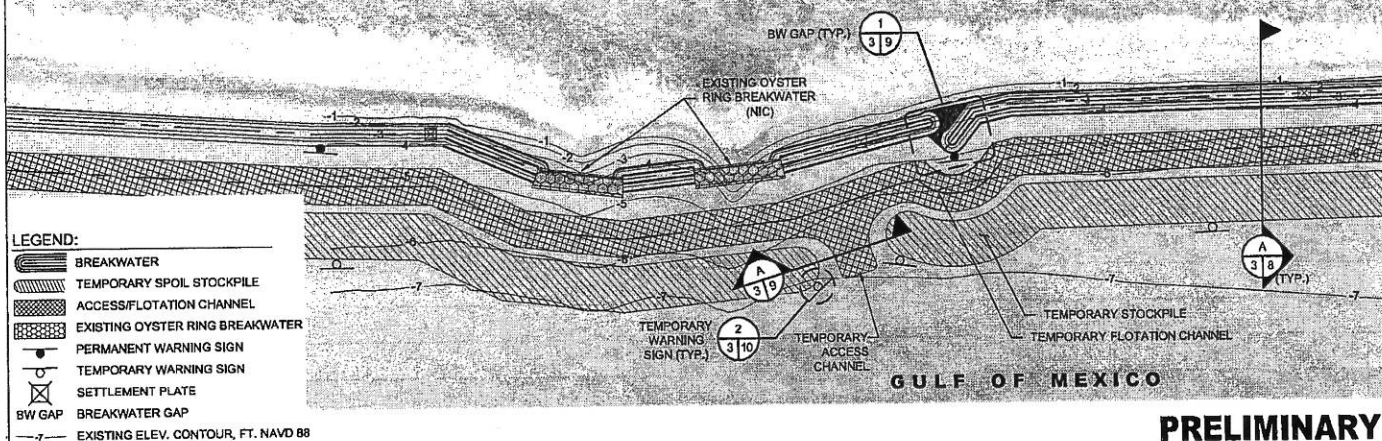
LICENSE NO.: 35172

DATE: 03/11/2016

3,000' 1,500' 0' 3,000' 6,000'

	APPLICATION BY: STATE OF LOUISIANA DEPARTMENT OF WILDLIFE AND FISHERIES	COASTAL PROTECTION AND RESTORATION AUTHORITY ENGINEERING DIVISION 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801	ROCKEFELLER REFUGE GULF SHORELINE STABILIZATION PROJECT	SITE PLAN
			STATE PROJECT NUMBER: ME-18	DATE: MARCH 2016
DRAWN BY: E. CONTRERAS	DESIGNED BY: E. ROONEY, P.E.	APPROVED BY: B. GEESEY, P.E.	FEDERAL PROJECT NUMBER: ME-18	SHEET 2A OF 10

ROCKEFELLER WILDLIFE REFUGE



LEGEND:

- BREAKWATER
- TEMPORARY SPOIL STOCKPILE
- ACCESS/FLOTATION CHANNEL
- EXISTING OYSTER RING BREAKWATER
- PERMANENT WARNING SIGN
- TEMPORARY WARNING SIGN
- SETTLEMENT PLATE
- BW GAP
- BREAKWATER GAP
- EXISTING ELEV. CONTOUR, FT. NAVD 88

NOTES:

1. SEE NOTES ON SHEET 2.
2. THE TEMPORARY STOCKPILE IS TO BE BACKFILLED INTO THE FLOTATION CHANNEL AT THE COMPLETION OF THE PROJECT.
3. SEE SHEET 9 FOR BREAKWATER GAP DETAILS.
4. PERMANENT WARNING SIGNS AND BREAKWATER GAPS WILL BE SPACED AT MAXIMUM 1,500' INTERVALS.

ENLARGED PARTIAL PLAN I

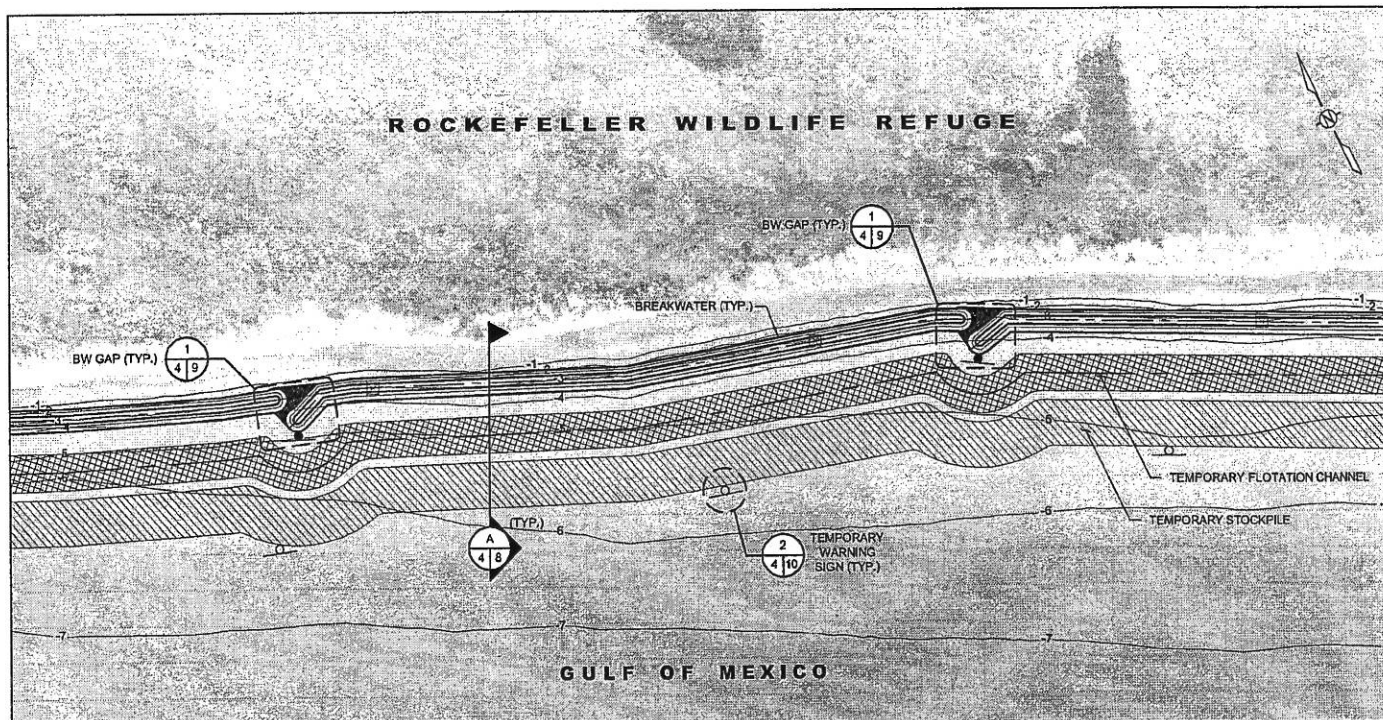
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






ENGINEER: BRETT L. GEESEY
 LICENSE NO.: 35172
 DATE: 03/11/2016



	APPLICATION BY: STATE OF LOUISIANA DEPARTMENT OF WILDLIFE AND FISHERIES	COASTAL PROTECTION AND RESTORATION AUTHORITY ENGINEERING DIVISION 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801	ROCKEFELLER REFUGE GULF SHORELINE STABILIZATION PROJECT	ENLARGED SITE PLAN I
			STATE PROJECT NUMBER: ME-18	DATE: MARCH 2016
DRAWN BY: E. CONTRERAS	DESIGNED BY: E. ROONEY, P.E.	APPROVED BY: B. GEESEY, P.E.	FEDERAL PROJECT NUMBER: ME-18	SHEET 3 OF 10



LEGEND:

-  BREAKWATER
-  TEMPORARY SPOIL STOCKPILE
-  ACCESS/FLOTATION CHANNEL
-  PERMANENT WARNING SIGN
-  TEMPORARY WARNING SIGN
-  SETTLEMENT PLATE
-  BW GAP
-  EXISTING ELEV. CONTOUR, FT. NAVD 88

1
2/4

ENLARGED PARTIAL PLAN II

PRELIMINARY


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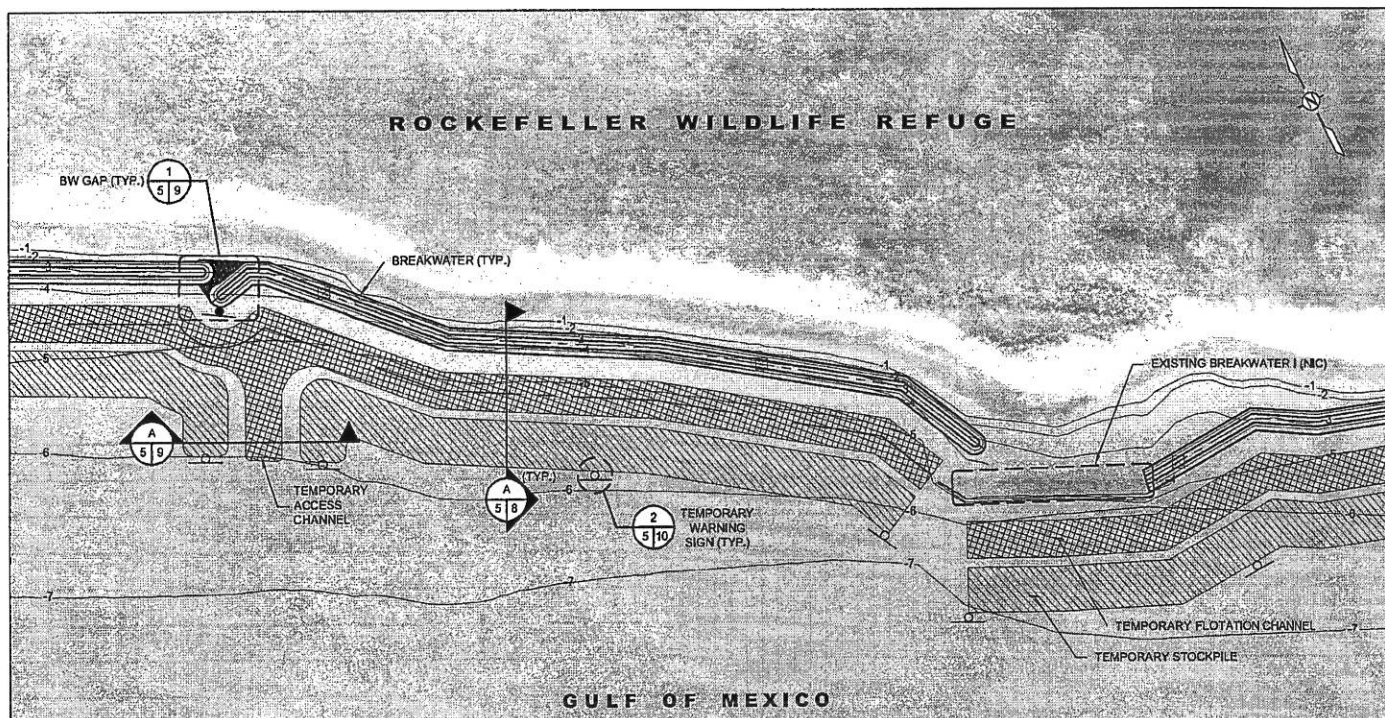
ENGINEER: BRETT L. GEESEY
LICENSE NO.: 35172
DATE: 03/11/2016

NOTES:









1. SEE NOTES ON SHEET 3.



	<p>APPLICATION BY: STATE OF LOUISIANA DEPARTMENT OF WILDLIFE AND FISHERIES</p>	<p>COASTAL PROTECTION AND RESTORATION AUTHORITY ENGINEERING DIVISION 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801</p>	<p>ROCKEFELLER REFUGE GULF SHORELINE STABILIZATION PROJECT</p>	<p>ENLARGED SITE PLAN II</p>
	DRAWN BY: E. CONTRERAS	DESIGNED BY: E. ROONEY, P.E.	APPROVED BY: B. GEESEY, P.E.	STATE PROJECT NUMBER: ME-18
				FEDERAL PROJECT NUMBER: ME-18
				DATE: MARCH 2016
				SHEET 4 OF 10



LEGEND:

-  BREAKWATER
-  TEMPORARY SPOIL STOCKPILE
-  ACCESS/FLOTATION CHANNEL
-  PERMANENT WARNING SIGN
-  TEMPORARY WARNING SIGN
-  SETTLEMENT PLATE
-  BW GAP
-  EXISTING ELEV. CONTOUR, FT. NAVD 88

1 2/5 ENLARGED PARTIAL PLAN III

PRELIMINARY


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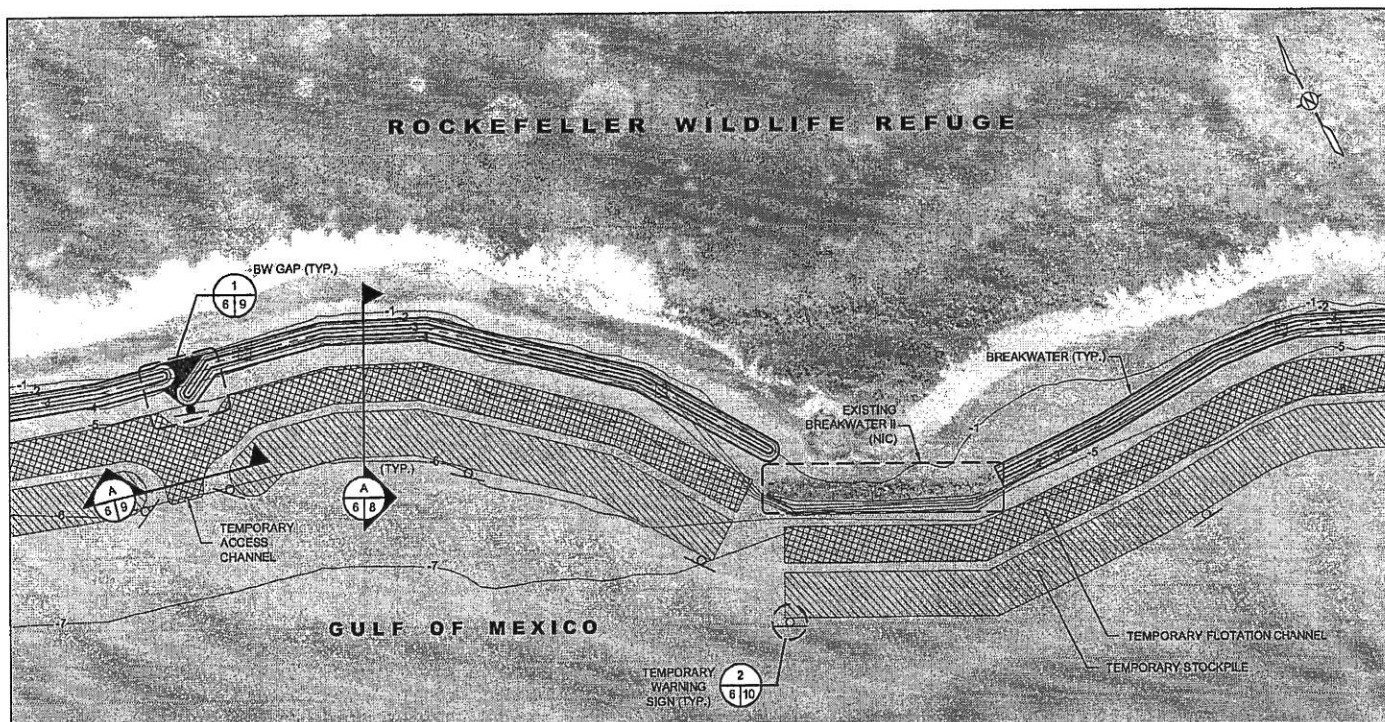
ENGINEER: BRETT L. GEESEY
LICENSE NO.: 35172
DATE: 03/11/2016

NOTES:

1. SEE NOTES ON SHEET 3.



	<p>APPLICATION BY: STATE OF LOUISIANA DEPARTMENT OF WILDLIFE AND FISHERIES</p>	<p>COASTAL PROTECTION AND RESTORATION AUTHORITY ENGINEERING DIVISION 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801</p>	<p>ROCKEFELLER REFUGE GULF SHORELINE STABILIZATION PROJECT</p>	<p>ENLARGED SITE PLAN III</p>
DRAWN BY: E. CONTRERAS	DESIGNED BY: E. ROONEY, P.E.	APPROVED BY: B. GEESEY, P.E.	STATE PROJECT NUMBER: ME-18	DATE: MARCH 2016
			FEDERAL PROJECT NUMBER: ME-18	SHEET 5 OF 10



LEGEND:

- BREAKWATER
- TEMPORARY SPOIL STOCKPILE
- ACCESS/FLOTATION CHANNEL
- PERMANENT WARNING SIGN
- TEMPORARY WARNING SIGN
- SETTLEMENT PLATE
- BW GAP
- BREAKWATER GAP
- EXISTING ELEV. CONTOUR, FT. NAVD 88

1
2/8

ENLARGED PARTIAL PLAN IV

PRELIMINARY

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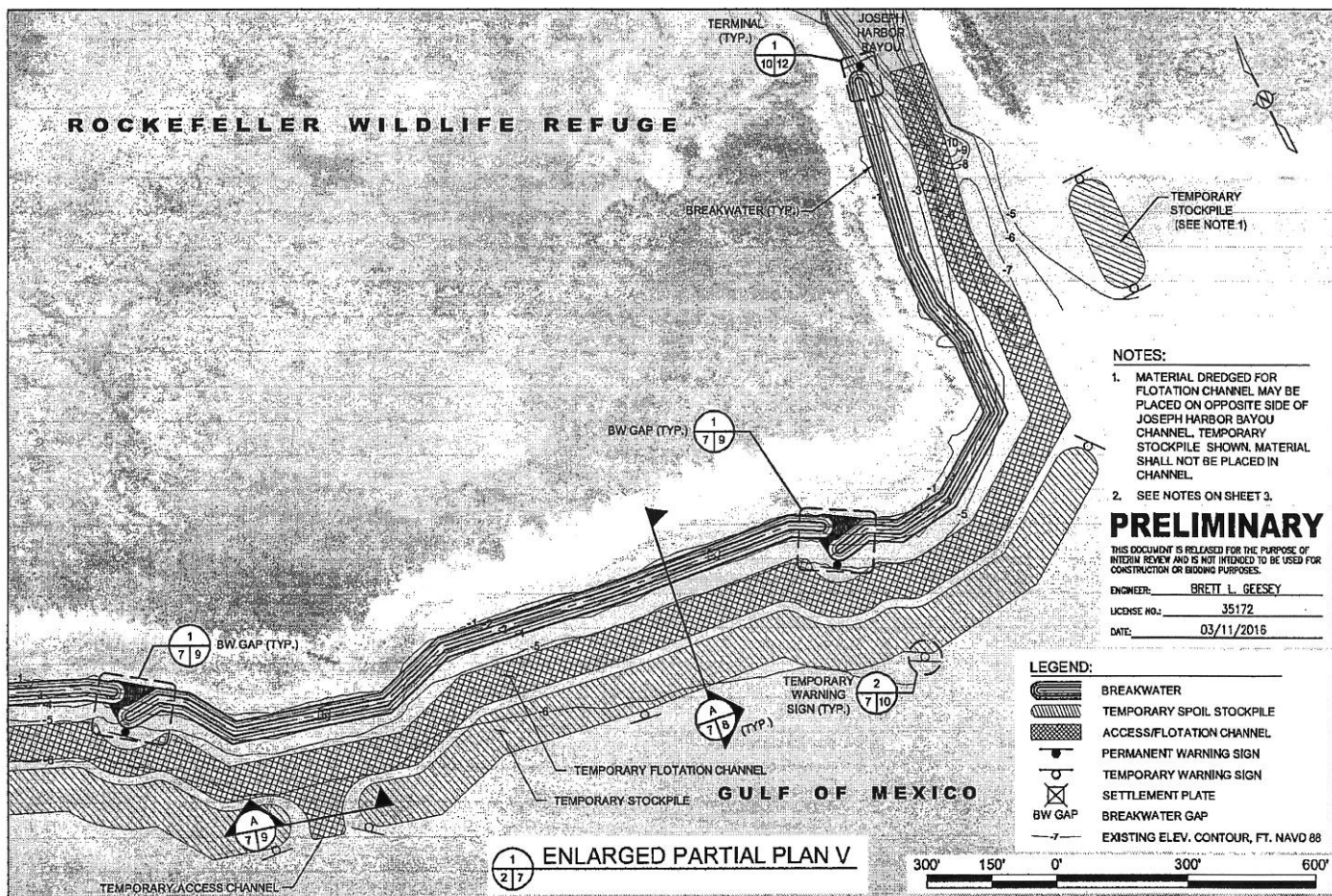
ENGINEER: BRETT L. GEESEY
LICENSE NO.: 35172
DATE: 03/11/2016

NOTES:

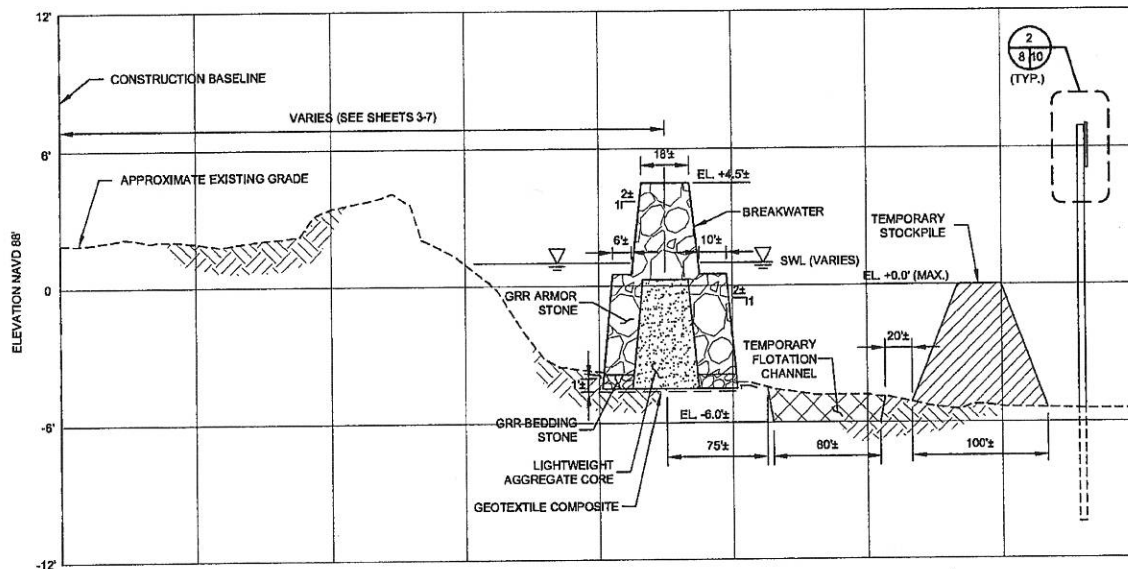
1. SEE NOTES ON SHEET 3.

300' 150' 0' 300' 600'

	APPLICATION BY: STATE OF LOUISIANA DEPARTMENT OF WILDLIFE AND FISHERIES	COASTAL PROTECTION AND RESTORATION AUTHORITY ENGINEERING DIVISION 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801	ROCKEFELLER REFUGE GULF SHORELINE STABILIZATION PROJECT	ENLARGED SITE PLAN IV
DRAWN BY: E. CONTRERAS	DESIGNED BY: E. ROONEY, P.E.	APPROVED BY: B. GEESEY, P.E.	STATE PROJECT NUMBER: ME-18	DATE: MARCH 2016
			FEDERAL PROJECT NUMBER: ME-18	SHEET 6 OF 10



	APPLICATION BY: STATE OF LOUISIANA DEPARTMENT OF WILDLIFE AND FISHERIES	COASTAL PROTECTION AND RESTORATION AUTHORITY ENGINEERING DIVISION 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801	ROCKEFELLER REFUGE GULF SHORELINE STABILIZATION PROJECT STATE PROJECT NUMBER: ME-18 FEDERAL PROJECT NUMBER: ME-18	ENLARGED SITE PLAN V DATE: MARCH 2016 SHEET 7 OF 10
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TYPICAL SECTION - BREAKWATER
 SCALE: N.T.S.

NOTES:

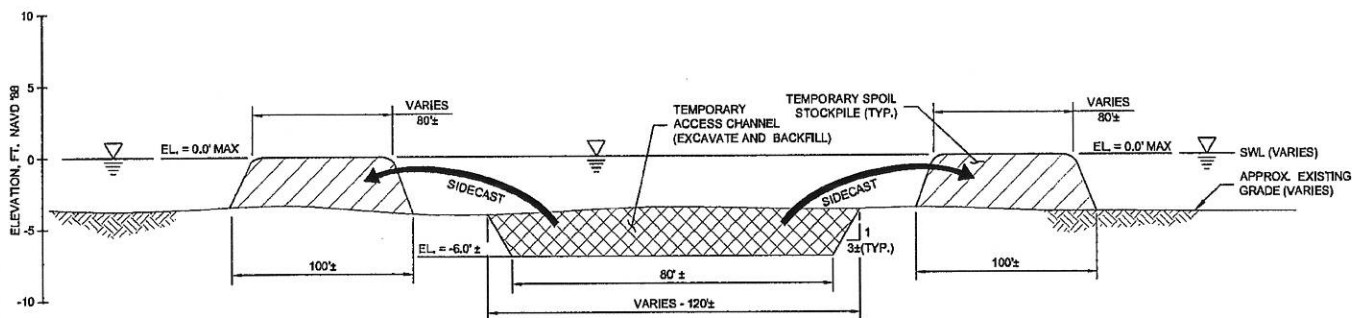
1. GEOTEXTILE COMPOSITE WILL CONSIST OF GEOTEXTILE FABRIC AND/OR GEOGRID.
2. THE LWAC BREAKWATER WILL BE CONSTRUCTED ALONG THE APPROXIMATE -3.5' NAVD CONTOUR. NO CONSTRUCTION WILL BE PERFORMED ON EMERGENT LANDS.
3. LIGHT WEIGHT AGGREGATE CORE WILL BE ENCAPSULATED WITH GEOTEXTILE.

PRELIMINARY

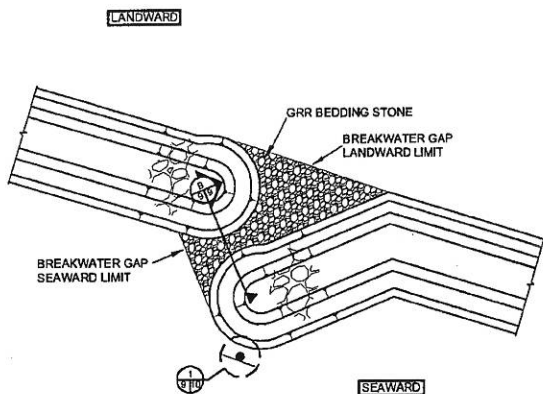
THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF INTERIM REVIEW AND IS NOT INTENDED TO BE USED FOR CONSTRUCTION OR BIDDING PURPOSES.

ENGINEER: BRETT L. GEESEY
 LICENSE NO.: 35172
 DATE: 03/11/2016

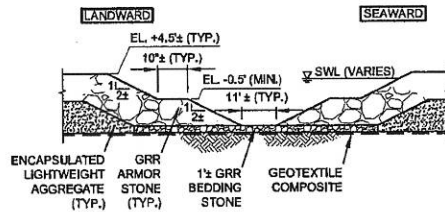
	APPLICATION BY: STATE OF LOUISIANA DEPARTMENT OF WILDLIFE AND FISHERIES	COASTAL PROTECTION AND RESTORATION AUTHORITY ENGINEERING DIVISION 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801	ROCKEFELLER REFUGE GULF SHORELINE STABILIZATION PROJECT STATE PROJECT NUMBER: ME-18 FEDERAL PROJECT NUMBER: ME-18	TYPICAL SECTIONS I DATE: MARCH 2016 SHEET 8 OF 10
DRAWN BY: E. CONTRERAS	DESIGNED BY: E. ROONEY, P.E.	APPROVED BY: B. GEESEY, P.E.		



A TYPICAL SECTION - ACCESS CHANNEL
3 | 9 NOT TO SCALE
5-7



1 TYPICAL PLAN - BREAKWATER GAP
3 | 9 NOT TO SCALE
4-7



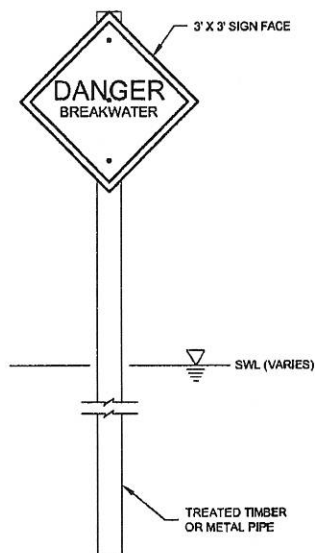
B TYPICAL SECTION - BREAKWATER GAP
9 | 9 NOT TO SCALE

PRELIMINARY

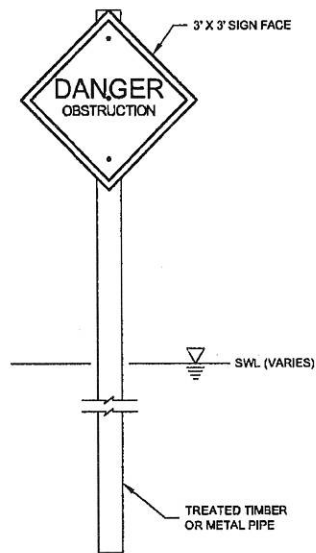
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ENGINEER: BRETT L. GEESEY
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DRAWN BY: E. CONTRERAS	DESIGNED BY: E. ROONEY, P.E.	APPROVED BY: B. GEESEY, P.E.		



1
3 10
4-9
DETAIL - PERMANENT WARNING SIGN
NOT TO SCALE



2
3 10
4-8
DETAIL - TEMPORARY WARNING SIGN
NOT TO SCALE

NOTES:

- PERMANENT WARNING SIGN MAY INCLUDE LIGHTED BEACON.

PRELIMINARY

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ENGINEER: BRETT L. GEESEY

LICENSE NO.: 35172

DATE: 03/11/2016

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			STATE PROJECT NUMBER: ME-18	DATE: MARCH 2016
DRAWN BY: E. CONTRERAS	DESIGNED BY: E. ROONEY, P.E.	APPROVED BY: B. GEESEY, P.E.	FEDERAL PROJECT NUMBER: ME-18	SHEET 10 OF 10

APPENDIX H:

Rockefeller Wildlife Refuge Rules and Regulations

ROCKEFELLER WILDLIFE REFUGE

5476 Grand Chenier Highway
Grand Chenier, Louisiana 70643
Phone: 337-491-2593

Contractor Work Regulations

Refuge property connects to Highway 82 in three sites i.e. Price Lake Road at the western boundary, Headquarters, and East Locks Road. Other land access is through neighboring properties which the Department has servitudes/agreements with landowners for routine refuge activities from Highway 82. Contractors seeking entrance are to contact these landowners.

Joseph Harbor Boat Launch and Bulkhead if access is needed to they are to contact Mr. Richard Sturlese (337-278-0119 / 337-993-0962).

Superior Canal Boat Launch access is to be obtained from Mr. Chad Courville, Land Manager for Miami Corporation (337-264-1695 / 337-344-4252). There is a locked gate and with Mr. Courville's permission the LDWF Rockefeller Refuge Program Manager can provide a key. Also, at this site boat access to the refuge is through Miami Corporation and Marilyn Miller Properties. Permission to cross the Miller Properties is to be obtained from Mr. J. C. Theriot (979-798-4699 / 979-299-2488).

Rockefeller Management Unit 14 Area and the **Eastern Property Line Canal Area** entrance is across private property managed by Mr. David Richard (337-433-1055 ext. 119). With Mr. Richard's permission the Rockefeller Refuge Program Manager will issue a key for passage.

Rockefeller East Property Line Road to access along is through Mr. Martin Richard's property (504-887-2143) and with Mr. Richard's permission the program manager can provide access.

Rollover Canal and the eastern portion of the Refuge a Private Boat Launch at Pecan Island, Soustan's landing may be used to access.

Boat access from the **Gulf** is through Rollover Canal and Joseph Harbor. Entrance from the **Intracoastal Waterway** is through Grand Lake and Superior Canal. Contact will need to be with Mr. Chad Courville (337-264-1695 / 337-344-4252) and J. C. Theriot (979-798-4699 / 979-299-2788) regarding the Superior Canal as it crosses Miami Corporation and Marilyn Miller Properties. LA DOTD (337-538-2551) needs to be contacted for passage through the Highway 82 swing bridge.

Contractors are to comply with all rules and regulations of the Louisiana Department of Wildlife and Fisheries and Rockefeller Wildlife Refuge including the following:

- Normally work can begin at any time during the year and there are no Refuge closures that would stop work due to waterfowl migration onto the Refuge. Work could be delayed due to Parish closures caused by Tropical Storms or Hurricanes, or periodic refuge research or management activities. Contractors are to confirm with the Rockefeller Program Manager.
- The contractor must notify the Program Manager at least 7 days in advance of the project start date and schedule a meeting to discuss the project and Refuge Rules and Regulations.
- Work can normally be conducted on the Refuge 24 hours per day/seven days per week. There are no restrictions on work time for this project. Contractor must provide adequate safety measures to protect recreational boaters. Employees must have proper identification in possession while on the refuge and be prepared to display same as requested.
- Project work sites will be temporarily closed to the public to assure public safety if necessary.
- Equipment and supplies may be loaded from several landings on the Refuge. Boat access onto the Refuge and loading will be coordinated through the Program Manager.
- Large work boats and crew boats will be required to idle to and from job sites. **The entire area is a NO WAKE ZONE.** LDWF encourages the use of small boats to reduce levee erosion.
- Bringing firearms, bows and arrows, liquor and controlled dangerous substances (drugs) onto the Refuge is prohibited.
- Personnel are not permitted to fish, crab, shrimp, etc. while working on the project.
- All trash, debris, or hazardous materials generated during the project must be disposed offsite following all federal, state, and local regulations.
- The Program Manager is to be notified immediately of any accidents, injuries, spills, etc. (see attached emergency contact list).

**ROCKEFELLER WILDLIFE REFUGE
EMERGENCY LISTINGS**

**Rockefeller Wildlife Refuge, 5476 Grand Chenier Highway, Grand Chenier, Louisiana 70643
Office Phone: 337-491-2593 Office Fax: 337-491-2595**

EMERGENCY

**Air Med-----1-800-259-1234
Ambulance Service, Cameron -----337-775-5111 or 911
Cameron Parish Volunteer Fire Department-----337-775-5111 or 911
Cameron Parish Sheriff’s Department-----337-775-5111 or 911
Sheriff Ron Johnson -----337-775-5714
P. O. Box 1250, Cameron, LA 70631**

ROCKEFELLER WILDLIFE REFUGE VISITOR REGULATIONS

1. The visiting season on the Rockefeller Wildlife Refuge will extend from March 1st to December 1st throughout the Refuge except those restricted areas designated to prohibit interference with research and management activities. Use of Humble Canal; Joseph Harbor Bayou; Headquarters Canal; East End Road and Locks; Union Producing Canal; Deep Lake; East End Boundary Canal; and Rollover Bayou shall be year round. In addition to this access, sport fishermen shall be permitted to enter the Refuge from the Gulf side in Pigeon Bayou, Big Constance Bayou, and Little Constance Bayou. Access through these bayous will be permitted only as far inland as the existing water control structures. The remainder of the Refuge shall be restricted during the winter months end will be closed to all trespassing.

2. Use of the Refuge will be allowed from official sunrise until official sunset. This includes access routes through the Refuge.

3. Overnight camping is prohibited.

4. Hunting, pursuing, killing, molesting or intentionally disturbing any type of wildlife by the public is prohibited.

This does not prohibit the Louisiana Department of Wildlife and Fisheries from carrying out harvest programs for certain types of wildlife as specified in the Deed of Donation and/or Memorandum of Agreement.

5. Trawling on the Refuge is prohibited. Trotlines, jug lines, trammel and gill nets and traps are prohibited. All commercial fishing and use of any commercial fishing gear on the Refuge is prohibited. Twenty-five pounds of shrimp (heads on) per boat or vehicle per day is allowed during the inside open shrimp season as established by the Louisiana Wildlife and Fisheries Commission. Ten (10) pounds of shrimp (heads on) for bait purposes may be caught during the closed season. Shrimp may be harvested only by cast net on the Refuge and only for sport fishing or home consumption use.

6. Crawfish may be harvested from the open portion of the Refuge and one-hundred (100) pounds per boat or vehicle is allowed per day. Set nets may be used but must be attended and removed from the Refuge daily. No commercial harvest is allowed.

7. Crabs may be harvested from the open portion of the Refuge and twelve (12) dozen crabs are allowed per boat or vehicle per day.

8. Oysters may be harvested by tonging (properly licensed) or by hand collection from the natural reefs. One (1) gallon per boat or vehicle per day is allowed and oysters must be opened at the reef and the shells returned to the reef. Taking of oysters on the reef is dependent upon Department of Health and Human Resources approval and may be closed at any time by the Louisiana Department of Wildlife and Fisheries.

9. The burning of the marsh by the public is prohibited. Water control structures shall not be tampered with or altered by anyone other than employees of the Louisiana Department of Wildlife and Fisheries.

10. Bringing firearms, bows and arrows, liquor and controlled dangerous substances (drugs) onto the Refuge is prohibited. All boats and vehicles are subject to search by all authorized employees of the Louisiana Department of Wildlife and Fisheries at anytime.

11. Speed boat racing and water skiing is prohibited. All boat traffic shall honor no wake zones and shall keep wave wash to a minimum. Pulling boats over or around levees, dams or water control structures is prohibited.

12. No littering is allowed. Visitors must remove their litter or place litter in appropriate litter disposal sites. Damage to or removal of trees, shrubs and wild plants without prior approval is prohibited.

13. Commercial fishing gear or trawls shall not be permitted in possession while participating in sports fishing on Refuge. Commercial fishing gear may be in possession for non-stop access directly across refuge or for safe harbor only.

APPENDIX I:

Survey Reports



SURVEY SERVICES METHODOLOGY REPORT

**Prepared for
The Coastal Protection and Restoration Authority
In Support of
Rockefeller Gulf Shoreline Stabilization Project (ME-18)**

CPRA Contract No. 2503-11-65 – Task No. 2502/1901AF1/02

November 2013

Project Description

The purpose of the project is to address shoreline retreat that averages approximately 39 feet/year with a subsequent direct loss of emergent saline marsh. The project is sponsored by the Coastal Protection and Restoration Authority (CPRA) and is funded under the Coastal Wetlands Planning, Protection, and Restoration Act (CWPPRA).

The purpose of this Scope of Services is to provide survey data to assist in the design of approximately 2 miles of a nearshore breakwater. A demonstration project was previously constructed within the project area. This Scope of Services also includes surveying portions of the demonstration project.

Scope of Services

Surveying

The surveying firm, hereafter referred to as "Contracting Party", shall perform all surveying necessary to complete the Rockefeller Refuge Gulf Shoreline Stabilization Project (ME-18) as outlined in the following subsections. The surveying will consist of topographic and bathymetric surveys, measurement of settlement with settlement plates within the demonstration project area, and aerial photography.

Aerial Photography

Aerial photography will be collected along the western boundary of Rockefeller Refuge from just east of St. Joseph's Harbor to the west. The photographs will be geo-referenced using visible targets placed on the ground at pre-determined control points and will be collected concurrent with topographic and hydrographic surveys. Aerial photography will provide a view of the effectiveness of the different alternatives and a comparison of the erosion rates of the Refuge beyond the control section. Although less accurate than surveys, the aerial photography will provide a larger-scale evaluation of the test sections.

Settlement Plates

The extremely soft soils offshore of the Refuge will consolidate over time. Predictions were made on the settlement rate for each alternative. The measured settlements will be used to refine the design template and determine if design modifications are necessary.

Settlement plates will be installed to measure the magnitude and rate of settlement of each structure. The settlement plates will be installed during construction and surveyed by the contractor. Settlement of the plates will be measured during each monitoring survey over the one year period following the construction completion. Locations for the settlement plates are shown in Figures A3 and A4. Approximately 16 settlement plates will be installed by the construction contractor (details are provided in the plans and specifications).

Preplanning of Survey

Prior to commencement of the survey, the monitoring site was plotted in Google earth along with existing GPS reference control monuments and all accessible boat marinas for scheduling site surveys and logistics. Upon receiving access permission from the Rockefeller Refuge, hydrographic and topographic survey crews travelled to the project site by way of Joseph Harbor Bayou.

Commencement of Monitoring Survey - Static GPS Survey

The initial part of this survey required that an existing deep rod monument called "ME18-SM-01" be used as reference control for the surveys. Once the survey crew travelled and located the reference monument on the east bank of Joseph Harbor Bayou, a GPS base unit was installed on the monument and initialized to transmit corrections. Static GPS observations were performed concurrently with RTK survey of topographic features along pre-planned survey transects. A two-meter fixed height tripod was used to eliminate human error that could have been introduced by miss-measurement of the GPS antenna heights. Information about the static GPS session was referenced on a GPS Logsheet and made a part of this report. Additionally, static GPS was performed at monument "ME18-SM-01" while a survey crew collected topographic measurements at transects along the limits of the project area.

During each GPS session, a raw data file was created on the GPS receiver. The monument name, Julian date, session number and antenna height was keyed into the receiver. The survey technician completed a GPS log sheet, while in the field, to document information about the survey as well as other pertinent monument details. Information on the log sheets included the monument stamping, reference sketch and reference measurements, actual survey start and stop times, the GPS antenna height measurements, weather conditions, satellite information as well as any problems that may be encountered during the survey. The log sheets also serve as a quality control check for the data processor when the data is downloaded from the GPS receiver, confirming that the monument names and antennas heights were keyed in correctly.



GPS Data Downloading, Processing & Adjustments

Upon completing the static GPS survey, GPS log sheets were checked and compared to the data files on the receivers. The daily GPS raw data files were downloaded into the project created in Trimble Business Center (TBC) software and converted to RINEX format for uploading to the NGS Online Positioning User Service (OPUS) Program¹. The OPUS solutions were combined in a spreadsheet and averaged to determine the final benchmark position and elevation as a quality control check. The final resulting position and elevation for monument "ME18-SM-01" from the OPUS Solution was used to compare to subsequent survey events, as a check. However, it should be noted that the scope of this project required that the original CPRA published positions for "ME18-SM-01" be used to post-process the RTK and Hydro data.

The published horizontal datum for OPUS is based on the Continuously Operating Reference Stations (CORS) which is CORS96, 2002.00 epoch. The vertical datum is North American Vertical Datum of 1988 (NAVD88), also published in CORS 96, 2002.00 epoch.

¹ The National Geodetic Survey operates the On-line Positioning User Service (OPUS) as a means to provide GPS users easier access to the National Spatial Reference System (NSRS). OPUS allows users to submit their GPS data files to NGS, where the data will be processed to determine a position using NGS computers and software. Each data file that is submitted will be processed with respect to 3 CORS sites.

RTK Survey of Topographic Features at Pre-planned Transects

On September 25, 2013, topographic features at pre-planned transect lines were performed by the survey crew utilizing Real-time Kinematic (RTK) surveys. Upon arriving at the monument location by boat, the RTK Base unit was installed at monument "ME18-SM-01". Once all necessary equipment is installed, the base unit will be initialized with its coordinates and elevation. A quality control shot was measured near the base monument with the roving unit to verify that the system was operational and delivering corrected positions. The base unit was then activated to begin additional static data collection while simultaneously transmitting DGPS corrections to the RTK rover. The crew then navigated to pre-plotted transect locations to survey the topographic features.

The topographic surveying tasks that were performed along each transect consisted collecting existing natural ground features, shoreline scarp, water bottoms, rock breakwaters, settlement plates, and temporary benchmarks. Limits of the transects along the existing gulf shoreline began at Station 375+00 an extended to Station 512+50 with varied intervals. A total of 18 pre-planned transects were surveyed with lengths varying from 100 feet to 1250 feet.

Transects were navigated to and topographic features surveyed using the RTK system. Pre-plotted transects were navigated to and surveyed across the rock breakwaters to the required survey limits. Upon completion of the topographic survey, the data logger was downloaded and the information checked.

While topographic surveying was being at each transect, ground photography was captured at the shoreline and transect intersection. Upon arriving at the shoreline edge and recording the position with RTK, a photograph was recorded in each cardinal direction, north, east, south, and west. Photo numbers were recorded in the field notebook along with the transect number. Back at the office, each photo was encoded with the date, transect station and photo number.



In addition to the topographic features surveys, settlement plates were located and RTK shots acquired at the plate reference point which consisted of a galvanized pipe cap attached to the top of a 2 inch galvanized pipe. Of the 16 settlement plates installed by the contractor during construction, only 6 settlement plates remained in place, 3 located on the reef breakwater and 3 located on the LWA breakwater. All results of the settlement plate survey were tabulated to include date of survey, elevation and difference of elevation for each survey event compared to the initial elevation.

For quality assurance, existing temporary benchmarks located at the north transect limits and adjacent to the rock breakwaters were measured and recorded. Results were tabulated and are provided in this Survey Report.

GPS and RTK Survey Equipment

The equipment used for the static GPS survey consisted of Trimble® Navigation's dual-frequency R8 GNSS MOD-3 GPS Receiver. Two meter fixed height tripods were used to eliminate human error that could be introduced by miss-measurement of the GPS antenna heights. The GPS data was downloaded, processed



and adjusted using Trimble® Business Center (TBC) software. Geoid99 model was used to determine the geoid separation and applied to the ellipsoid heights for elevation determination.

The Real-time Kinematic (RTK) survey consists of two Trimble® Navigation's dual-frequency R8 GNSS MOD-3 GPS receivers (base and rover) along with an ADL Vantage Pro radio link to transmit corrections to the rover from the base setup. A two-meter fixed height tripod was used at the base and a two meter fixed height rod at the rover, except for shots taken in deeper water which required an extended pole. Geoid99 was used to determine the geoid separation and applied to the ellipsoid heights for elevation determination. The data was collected and stored on a Trimble® TSC3 datalogger using Trimble Access and downloaded using Trimble® Business Center (TBC) software, version 2.81.

Single Beam Hydrographic Survey of Water Bottoms

Single-beam hydrographic survey to locate water bottoms along pre-planned transects was performed by keying-in the transect end point coordinates to generate the pre-plot transect line into the onboard navigation program integrated with a single beam Hydrotrak system integrated with RTK receiving real-time corrections from the Base Station at monument ME18-SM-01. Water surface shots were taken periodically using RTK to obtain the elevation relative to NAVD88.



Back at the office, all the raw data was exported from Starfix.nav program, which included the raw bathymetry data file. The RTK topographic shots that overlapped the hydrographic data was used to compare water bottom elevations as a quality check. The final adjusted and edited file was exported in ascii format.

Bathymetric Survey Equipment

Horizontal positioning was logged real-time using a Trimble AG332 GPS Receiver integrated with RTK for DGPS corrections. The 24-foot marine vessel was equipped with a Hydrotrak portable echo sounder. Using Hypak, all data was digitally logged real-time, while Hydrotrak simultaneously charted the water depths digitally and on a paper scroll.


FINAL NOTE

Please be advised that the data which was collected during the survey of this project represents an epoch, a snapshot at the time that the survey was performed. Due to the effects of crustal motion, subsidence, upheaval, drought and other conditions which influence the physical position and stability of surface monuments, topographic features, and other structures within the Louisiana Coastal Zone, it is recommended that GPS monuments used for this project be re-observed and reprocessed on future surveys using the same reference control, if possible, for the purpose of updating the three dimensional position of the reference monuments.

The GPS/RTK Survey protocols performed in support of this project was in accordance with the Coastal Protection & Restoration Authority of Louisiana, Office of Coastal Protection & Restoration requirements (Formerly the Louisiana Department of Natural Resources, Coastal Engineering Division) described in "A Contractor's Guide to Minimum Standards Required by Louisiana Department of Natural Resources, Coastal Restoration Division for Contractor's Performing GPS Surveys and Establishing GPS Derived Orthometric Heights Within the Louisiana Coastal Zone Primary GPS Network" dated May 2007. All Static GPS was adjusted using NGS OPUS program for with multiple observations being averaged to determine the reference control monument positions as a quality check.



JOHN CHANCE LAND SURVEYS, INC.


Ricardo M. Johnson, PLS LA Reg. 4767
Sr. Project Manager of Government Services



SURVEY SERVICES METHODOLOGY REPORT

**Prepared for
The Coastal Protection and Restoration Authority
Supplemental Surveys In Support of
Rockefeller Gulf Shoreline Stabilization Project (ME-18)**

CPRA Contract No. 2503-11-65

June 2014

Project Description

The purpose of the project is to address shoreline retreat that averages approximately 39 feet/year with a subsequent direct loss of emergent saline marsh. The project is sponsored by the Coastal Protection and Restoration Authority (CPRA) and is funded under the Coastal Wetlands Planning, Protection, and Restoration Act (CWPPRA).

The purpose of this Scope of Services is to provide supplemental survey data to assist in the design of approximately 2 miles of a near shore breakwater. A demonstration project was previously constructed within the project area. This Scope of Services also includes surveying portions of the demonstration project.

Scope of Services

Surveying

Sub-consultant shall perform topographic and bathymetric surveys along each transect shown in Figures 1 and 2 of the Scope of Services. Surveys include seven (7) transects within the mouth of Joseph Harbor Bayou and four (4) transects delineating two existing oyster ring breakwaters. Survey shots along transects shall be taken at all significant grade breaks and a maximum horizontal spacing of 20 feet. Within the mouth of Joseph Harbor Bayou, transects shall extend landward of the shoreline, where shown, a minimum of 100 feet. Special attention and detail shall be provided to delineate features along the shoreline.

Settlement Plates

The extremely soft soils offshore of the Refuge will consolidate over time. Predictions were made on the settlement rate for each alternative. The measured settlements will be used to refine the design template and determine if design modifications are necessary.

Settlement plates were installed to measure the magnitude and rate of settlement of each structure. The settlement plates were installed during construction and surveyed by the contractor. The settlement of the plates was measured during each monitoring survey over the one year period following the construction completion. A total of 6 settlement plates will be surveyed and elevations compared to previous measurements.

Preplanning of Survey

Prior to commencement of the survey, the monitoring site was plotted in Google earth along with existing GPS reference control monuments and all accessible boat marinas for scheduling site surveys and logistics. Upon receiving access permission from the Rockefeller Refuge, hydrographic and topographic survey crews traveled to the project site by way of Joseph Harbor Bayou.

Static GPS Survey

The initial part of this survey required that an existing deep rod monument called "ME18-SM-01" be used as reference control for the surveys. Once the survey crew traveled and located the reference monument on the east bank of Joseph Harbor Bayou, a GPS base unit was installed on the monument and initialized to transmit corrections. Static GPS observations were performed concurrently with RTK survey of topographic features along pre-planned survey transects. A two-meter fixed height tripod was used to eliminate human error that could have been introduced by miss-measurement of the GPS antenna heights. Information about the static GPS session was referenced on a GPS Logsheet and made a part of this report. Additionally, static GPS was performed at monument "ME18-SM-01" while a survey crew collected topographic measurements at transects along the limits of the project area.

During each GPS session, a raw data file was created on the GPS receiver. The monument name, Julian date, session number and antenna height was keyed into the receiver. The survey technician completed a GPS log sheet, while in the field, to document information about the survey as well as other pertinent monument details. Information on the log sheets included the monument stamping, reference sketch and reference measurements, actual survey start and stop times, the GPS antenna height measurements, weather conditions, satellite information as well as any problems that may be encountered during the survey. The log sheets also serve as a quality control check for the data processor when the data is downloaded from the GPS receiver, confirming that the monument names and antennas heights were keyed in correctly.



GPS Data Downloading, Processing & Adjustments

Upon completing the static GPS survey, GPS log sheets were checked and compared to the data files on the receivers. The daily GPS raw data files were downloaded into the project created in Trimble Business Center (TBC) software and converted to RINEX format for uploading to the NGS Online Positioning User Service (OPUS) Program¹. The OPUS solutions were combined in a spreadsheet and averaged to determine the final benchmark position and elevation as a quality control check. The final resulting position and elevation for monument "ME18-SM-01" from the OPUS Solution was used to compare to subsequent survey events, as a check. However, it should be noted that the scope of this project required that the original CPRA published positions for "ME18-SM-01" be used to post-process the RTK and Hydro data.

The published horizontal datum for OPUS is based on the Continuously Operating Reference Stations (CORS) which is CORS96, 2002.00 epoch. The vertical datum is North American Vertical Datum of 1988 (NAVD88), also published in CORS 96, 2002.00 epoch.

RTK Survey of Topographic Features at Pre-planned Transects

On April 26, 2014, topographic features at pre-planned transect lines were performed by the survey crew utilizing Real-time Kinematic (RTK) surveys. Upon arriving at the monument location by boat, the RTK Base unit was installed at monument "ME18-SM-01". Once all necessary equipment is installed, the base unit will be initialized with its coordinates and elevation. A quality control shot was measured near the base monument

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with the roving unit to verify that the system was operational and delivering corrected positions. The base unit was then activated to begin additional static data collection while simultaneously transmitting DGPS corrections to the RTK rover. The crew then navigated to pre-plotted transect locations to survey the topographic features.

The topographic surveying tasks that were performed along the transects consisted of collecting existing natural ground features, shoreline scarp, water bottoms, profiles on oyster rings, and settlement plates. A total of 7 pre-planned transects were surveyed at the mouth of Joseph Harbor Bayou and profiles and transects at 2 existing concrete oyster ring breakwaters.

Transects were navigated to and topographic features surveyed using the RTK system. Pre-plotted transects were navigated to and surveyed across the rock breakwaters to the required survey limits. Upon completion of the topographic survey, the data logger was downloaded and the information checked.

In addition to the topographic features surveys, settlement plates were located and RTK shots acquired at the plate reference point which consisted of a galvanized pipe cap attached to the top of a 2 inch galvanized pipe. Of the 16 settlement plates installed by the contractor during construction, only 6 settlement plates remained in place, 3 located on the reef breakwater and 3 located on the LWA breakwater. All results of the settlement plate survey were tabulated to include date of survey, elevation and difference of elevation for each survey event compared to the initial elevation.



GPS and RTK Survey Equipment

The equipment used for the static GPS survey consisted of Trimble® Navigation's dual-frequency R8 GNSS MOD-3 GPS Receiver. Two meter fixed height tripods were used to eliminate human error that could be introduced by miss-measurement of the GPS antenna heights. The GPS data was downloaded, processed and adjusted using Trimble® Business Center (TBC) software. Geoid99 model was used to determine the geoid separation and applied to the ellipsoid heights for elevation determination.

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Back at the office, all the raw data was exported from Starfix.nav program, which included the raw bathymetry data file. The RTK topographic shots that overlapped the hydrographic data was used to compare water bottom elevations as a quality check. The final adjusted and edited file was exported in ascii format.

Bathymetric Survey Equipment

Horizontal positioning was logged real-time using a Trimble AG332 GPS Receiver integrated with RTK for DGPS corrections. The 24-foot marine vessel was equipped with a Hydrotrac portable echo sounder. Using Hypak, all data was digitally logged real-time, while Hydrotrac simultaneously charted the water depths digitally and on a paper scroll.



FINAL NOTE

Please be advised that the data which was collected during the survey of this project represents an epoch, a snapshot at the time that the survey was performed. Due to the effects of crustal motion, subsidence, upheaval, drought and other conditions which influence the physical position and stability of surface monuments, topographic features, and other structures within the Louisiana Coastal Zone, it is recommended that GPS monuments used for this project be re-observed and reprocessed on future surveys using the same reference control, if possible, for the purpose of updating the three dimensional position of the reference monuments.

The GPS/RTK Survey protocols performed in support of this project was in accordance with the Coastal Protection & Restoration Authority of Louisiana, Office of Coastal Protection & Restoration requirements (Formerly the Louisiana Department of Natural Resources, Coastal Engineering Division) described in "A Contractor's Guide to Minimum Standards Required by Louisiana Department of Natural Resources, Coastal Restoration Division for Contractor's Performing GPS Surveys and Establishing GPS Derived Orthometric Heights Within the Louisiana Coastal Zone Primary GPS Network" dated May 2007. All Static GPS was adjusted using NGS OPUS program for with multiple observations being averaged to determine the reference control monument positions as a quality check.



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APPENDIX J:

Magnetic Anomalies

Existing Magnetometer Anomalies											
2002 Survey											
Horizontal Datum NAD83 (1992) LOUISIANA SOUTH ZONE											
Line Num	Date	Rec Shot	Cor Shot	Gamma	Duration	Type	Depth	Description	Northing	Easting	Ref Gamma
1	37441	10.3	10.9	26	48	Dipole	5	Debris (Line 1)	437278	2778670	48814
3	37441	18.4	19	10	34	Monopole	8	Debris (Line 2)	433716	2782498	48796
23B	37441	75.3	75.9	8	17	Monopole	7	Debris (Line 23B)	430620	2788464	48824
23	37441	12.8	13.4	1588	235	Monopole	9	6" LA Resources Pipeline			50363
23	37441	23.4	24	32	80	Monopole	9	Debris (Line 23)	434371	2780821	48818
23	37441	34.6	35.3	20	48	Monopole	9	Debris (Line 23)	433553	2782472	48779
23	37441	36.2	36.9	20	52	Dipole	8	Debris (Line 23)	433443	2782708	48804
23	37441	59.3	60	11	78	Dipole	9	Debris (Line 23)	431765	2786111	48795
23	37441	60.7	61.4	8	39	Monopole	9	Debris (Line 23)	431669	2786316	48788
23	37441	98.4	99	17	42	Dipole	8	Debris (Line 23)	428955	2791864	48794
23	37441	104.2	104.9	449	102	Dipole	7	Debris (Line 23)	428502	2792716	48892
23	37441	109.4	110.1	12	39	Monopole	9	Debris (Line 23)	428105	2793464	48797
23	37441	122.1	122.7	533	214	Complex	8	6" Amoco Pipeline			48545
23	37441	144.9	145.6	118	84	Monopole	8	Debris (Line 23)	425573	2798710	48918
23	37441	149.3	150	15	34	Monopole	9	Debris (Line 23)	425262	2799362	48821
23	37441	211	211.6	2204	400	Complex	8	16" Dynegy Pipeline			49024
23	37441	216.4	217	7	32	Monopole	9	Debris (Line 23)	420393	2809225	48820
23	37441	227.3	227.9	82	87	Monopole	9	Debris (Line 23)	419609	2810836	48881
23	37441	230.4	231	458	215	Dipole	7	12" Gas Pipeline (Abandoned)			48629
23	37441	254.6	255.3	38	154	Monopole	8	Debris (Line 23)	417629	2814856	48856
23	37441	285.1	285.8	172	93	Complex	6	Debris (Line 23)	415415	2819349	48798
23	37441	290.2	290.9	8	40	Dipole	8	Debris (Line 23)	415039	2820090	48823
23	37441	296.1	296.8	51	99	Monopole	8	Debris (Line 23)	414643	2820983	48862
23	37441	303.6	304.3	5	70	Monopole	9	Debris (Line 23)	414071	2822070	48827
23	37441	326.4	327	11	75	Dipole	8	Debris (Line 23)	412454	2825432	48827
26	37441	10.9	11.5	12	51	Dipole	10	Debris (Line 26)	434385	2778542	48805
26	37441	13.4	14.1	12	30	Monopole	10	6" LA Resources Pipeline			48787
26	37441	14.5	15.2	116	127	Monopole	10	Debris (Line 26)	434113	2779074	48737
26	37441	29.7	30.3	13	68	Monopole	11	Debris (Line 26)	433016	2781303	48811
26	37441	58.4	59	52	94	Dipole	10	Debris (Line 26)	430937	2785528	48802
26	37441	117.9	118.6	239	311	Dipole	10	6" Amoco Pipeline			48828
26	37441	202.9	203.5	1201	442	Monopole	10	16" Dynegy Pipeline			48733
26	37441	233.4	234	261	204	Dipole	10	12" Gas Pipeline (Abandoned)			48865
26	37441	202.4	203.1	1201	127	Dipole	9	16" Dynegy Pipeline			48018
26	37441	244.9	245.6	24	55	Monopole	9	Debris (Line 26)	417426	2812986	48811
26	37441	302.2	302.9	19	126	Dipole	10	Debris (Line 26)	413282	2821428	48806
26	37441	309.5	310.1	19	143	Dipole	10	Debris (Line 26)	412810	2822520	48825
26	37441	270.4	271.1	8	59	Monopole	9	Debris (Line 26)	415594	2816754	48814
24A	37441	0	327.4	60	59	Monopole	6	Sheet Pilings			48855
24A	37441	326.5	326	37	47	Monopole	7	Debris (Line 24A)	413408	2825709	48840
24A	37441	325.1	324.6	38	97	Dipole	8	Debris (Line 24A)	413500	2825497	48813
24A	37441	323.1	322.5	79	65	Dipole	7	Debris (Line 24A)	413673	2825204	48816
24A	37441	317	316.5	75	58	Dipole	6	Debris (Line 24A)	414102	2824309	48852

Existing Magnetometer Anomalies											
2002 Survey											
Horizontal Datum NAD83 (1992) LOUISIANA SOUTH ZONE											
Line Num	Date	Rec Shot	Cor Shot	Gamma	Duration	Type	Depth	Description	Northing	Easting	Ref Gamma
24A	37441	316.4	315.9	56	55	Dipole	7	Debris (Line 24A)	414147	2824223	48815
24A	37441	313.3	312.7	15	47	Dipole	8	Debris (Line 24A)	414357	2823743	48818
24A	37441	309.7	309.1	109	80	Monopole	7	Debris (Line 24A)	414643	2823230	48915
24A	37441	301.9	301.3	198	59	Dipole	5	Debris (Line 24A)	415194	2822081	49000
24A	37441	295.7	295.2	5	43	Monopole	7	Debris (Line 24A)	415644	2821178	48815
24A	37441	288.4	287.8	74	80	Dipole	7	Debris (Line 24A)	416166	2820091	48777
24A	37441	284.7	284.2	46	118	Monopole	5	Debris (Line 24A)	416421	2819548	48781
24A	37441	283.5	283	18	49	Monopole	6	Debris (Line 24A)	416506	2819366	48817
24A	37441	278	277.4	74	83	Dipole	6	Debris (Line 24A)	416933	2818566	48823
24A	37441	248.6	248.1	16	45	Monopole	6	Debris (Line 24A)	419054	2814239	48835
24A	37441	228.5	227.9	1064	163	Dipole	6	12" Gas Pipeline (Abandoned)			49012
24A	37441	227.3	226.8	148	66	Dipole	7	PL & Pilings			48778
24A	37441	221	220.5	27	48	Dipole	6	PL & Pilings			48831
24A	37441	219.7	219.1	1237	198	Dipole	7	16" Dynegy Pipeline			48955
24A	37441	203	202.5	256	103	Monopole	7	Debris (Line 24A)	422337	2807526	48838
24A	37441	152.7	152.2	16	89	Monopole	7	Debris (Line 24A)	425994	2800124	48801
24A	37441	147.1	146.6	12	22	Monopole	7	Debris (Line 24A)	426402	2799306	48817
24A	37441	135.2	134.6	14	38	Monopole	7	Debris (Line 24A)	427259	2797540	48823
24A	37441	128.5	128	695	571	Complex	7	6" Amoco Pipeline			48825
24A	37441	121.4	120.9	7	61	Dipole	6	Debris (Line 24A)	428258	2795512	48812
24A	37441	111.2	110.6	18	143	Monopole	6	Debris (Line 24A)	429000	2794003	48795
24A	37441	91	90.4	25	71	Dipole	6	Debris (Line 24A)	430458	2791024	48786
24A	37441	92.2	91.7	6	45	Monopole	6	Debris (Line 24A)	430370	2791221	48808
24A	37441	65.3	64.8	490	285	Dipole	7	Wellhead (Line 24A)			49243
24A	37441	46.8	46.2	13	67	Monopole	7	Debris (Line 24A)	433671	2784525	48790
24A	37441	49	48.4	7	50	Monopole	6	Debris (Line 24A)	433492	2784850	48804
24A	37441	15.4	14.8	18	49	Monopole	9	Debris (Line 24A)	435926	2779898	48810
24A	37441	12.6	12.1	306	163	Monopole	7	6" LA Resources Pipeline			48519
2	37441	12.7	12.2	26	81	Dipole	6	Debris (Line 2)	435846	2780791	48807
2	37441	17.6	17	22	66	Dipole	7	Debris (Line 2)	435142	2780403	48800
5	37441	12.5	13.2	43	72	Dipole	5	Debris (Line 5)	432372	2787415	48794
5	37441	11.3	11.9	782	360	Dipole	5	Wellhead (Line 5)			48656
6	37441	24.3	23.7	57	76	Monopole	9	Debris (Line 6)	429657	2788835	48779
7	37441	21.5	22.2	19	93	Monopole	8	Debris (Line 7)	428731	2791171	48804
7	37441	13.5	14.1	11	38	Dipole	5	Debris (Line 7)	429917	2791772	48823
8	37441	20.1	19.5	16	51	Dipole	8	Debris (Line 8)	427922	2793544	48821
9	37441	13	13.6	925	384	Complex	5	6" Amoco Pipeline			48895
10	37441	17.3	16.7	14	61	Monopole	7	Debris (Line 10)	426223	2798315	48833
12	37441	10.6	10.1	42	37	Monopole	4	Debris (Line 12)	425247	2803448	48825
11	37441	0	9.6	16	34	Dipole	4	Debris (Line 12)	426353	2801170	48822
13	37441	22.4	23	18	137	Monopole	8	Debris (Line 13)	422171	2804669	48835
14	37440	26.4	27.1	882	273	Complex	10	16" Dynegy Pipeline			48991
14	37440	17.5	18.1	41	57	Dipole	7	Debris (Line 14)	421764	2807266	48863

Existing Magnetometer Anomalies											
2002 Survey											
Horizontal Datum NAD83 (1992) LOUISIANA SOUTH ZONE											
Line Num	Date	Rec Shot	Cor Shot	Gamma	Duration	Type	Depth	Description	Northing	Easting	Ref Gamma
14	37440	13.5	14.1	34	78	Monopole	5	Debris (Line 14)	422348	2807562	48852
15	37440	13.5	14.2	171	199	Complex	6	16" Dynegy Pipeline			48779
16A	37440	21.6	22.3	520	360	Dipole	9	12" Gas Pipeline (Abandoned)			48783
16A	37440	12.8	13.5	8	31	Dipole	6	Debris (Line 14)	420005	2811986	48830
18	37440	13.9	14.6	10	47	Dipole	4	Debris (Line 18)	417905	2816526	48831
18	37440	13	13.7	7	38	Monopole	4	Debris (Line 18)	418044	2816580	48830
18	37440	0	9.6	8	48	Dipole	2	Debris (Line 18)	418634	2816874	48827
19	37440	12.1	12.7	26	71	Monopole	5	Debris (Line 19)	416785	2818756	48830
20	37440	11.1	11.8	17	42	Dipole	4	Debris (Line 20)	415912	2821111	48825
20	37440	12.6	13.3	36	47	Dipole	5	Debris (Line 20)	415694	2821002	48825
21A	37440	12.1	12.8	24	47	Monopole	7	Debris (Line 21A)	414491	2823199	48801
22A	37440	14.8	15.5	10	65	Dipole	7	6 Pilings			48835
22A	37440	16.2	16.8	28	124	Complex	7	Debris (Line 22A)	413464	2825473	48833
23B	37441	76.9	77.6	6	64	Monopole	7	Debris (Line 23B)	430469	2788688	48818

Existing Magnetometer Anomalies											
2013 Survey											
Horizontal Datum NAD83 LOUISIANA SOUTH ZONE											
Seq Num	Line Num	Rec Shot	Cor Shot	Gamma	Duration	Type	Depth	Description	Northing	Easting	Ref Gamma
2	1	7856	7856.8	20	36	Monopole	0	Debris	417954	2818687	47479
3	1	7863	7863.9	28	19	Monopole	0	Debris	418068	2818541	47480
4	1	7895	7895.8	12	91	Monopole	0	Debris	418443	2817851	47480
5	1	7991	7992.0	12	16	Monopole	0	Debris	419524	2815690	47480
6	1	7992	7992.8	13	16	Monopole	0	Debris	419533	2815679	47480
7	1	8091	8091.9	40	377	Monopole	0	Debris	420593	2813432	47493
8	1	8100	8100.8	101	162	Monopole	0	Debris	420672	2813232	47467
9	1	8102	8102.9	21	14	Monopole	0	Debris	420696	2813172	47442
10	1	8106	8106.8	297	47	Monopole	0	Debris	420739	2813096	47415
11	1	8114	8114.8	71	265	Monopole	0	Debris	420833	2812919	47441

APPENDIX K:

Subcontractor Report

CURRENT INVOICE NO. _____
PURCHASE ORDER NO. _____

APPENDIX K

COASTAL CONSTRUCTION AND VEGETATIVE

PROJECTS SUBCONTRACTOR REPORT

PRIME CONTRACTOR

[illegible]