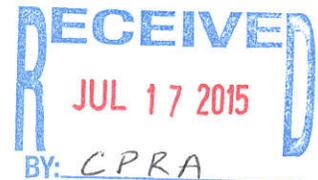




DEPARTMENT OF THE ARMY  
CORPS OF ENGINEERS, NEW ORLEANS DISTRICT  
P.O. BOX 60267  
NEW ORLEANS, LOUISIANA 70160-0267



REPLY TO  
ATTENTION OF

Operations Division  
Western Evaluation Section

JUL 15 2015

**SUBJECT: MVN-2012-00130-WPP**

US Fish and Wildlife Service  
646 Cajundome Blvd., Suite 400  
Lafayette, Louisiana 70506

Dear Gentlemen:

The proposed work, to dredge and fill for implementing the Grand Bayou Marsh Creation Project (CS-54), in the Cameron-Creole Watershed, in Cameron Parish, Louisiana, as shown on the attached drawings, is authorized under **Category II** of the **Programmatic General Permit** provided that all conditions of the permit are met.

The following special conditions are made part of this authorization:

1. This permit does not authorize the conversion of wetlands to uplands, or impacts to existing aquatic resources.
2. 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 authorized activities with local floodplain ordinances, regulations or permits.
3. If the authorized 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.

4. If the authorized project requires any additional work not expressly permitted herein, the permittee must obtain an amendment to this authorization prior to commencement of work.
5. That structures will not be placed across any state-owned water bottoms without approval of the Louisiana Office of Administration, State Lands Office. The permittee will be responsible for contacting the State Lands Office to ascertain if the structure will be placed over state-owned water bottoms.
6. The (attached) Standard Manatee Conditions for In-Water Activities are hereby made a part of this authorization.
7. Equipment access shall be through open water and limited to within the marsh creation areas and pipeline and equipment corridors shown on the permit drawings.

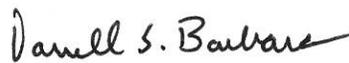
However, prior to commencing work on your project, you must obtain approvals from state and local agencies as required by law and by terms of this permit. These approvals include, but are not limited to, a permit, consistency determination or determination of "no direct or significant impact (NDSI) on 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 reevaluate its decision on this permit at any time the circumstances warrant.

Should you have any further questions concerning this matter, please contact Johnny Duplantis of this office at (504) 862-2548.

Sincerely,



Martin S. Mayer  
Chief, Regulatory Branch

Enclosures

## **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 made 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 US 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. The Chitimacha Tribe of Louisiana has stated that the project area is part of the aboriginal Chitimacha homelands. If during the course of work at the site, prehistoric and/or historic aboriginal cultural materials are discovered, the permittee will contact the Chitimacha Tribe of Louisiana at P.O. Box 661, Charenton, LA 70523, and CEMVN. CEMVN 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.

4. 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.

5. No activity may substantially disrupt the movement of those species of aquatic life indigenous to the waterbody, including those species which normally migrate through the area, unless the activity's primary purpose is to block or impound water.

6. 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.

7. For pipelines under an anchorage or a designated fairway in the Gulf of Mexico the following is applicable:

The National Ocean Service 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.

8. 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 a federally maintained 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 (504) 671-2112.

9. 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.

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

11. 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.

12. 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.

13. The Corps of Engineers may suspend, modify, or revoke this general permit if it is found in

the public interest to do so.

14. 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.

15. 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.

16. 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.

17. 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.

18. 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.

19. 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.

20. 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.

21. 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.

22. 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.

23. 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.

24. 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 26 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.

25. 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.

26. 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 owners agreement to accept the permit and abide by all conditions of the permit. This letter must be signed by both parties.

27. 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.

28. 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.

29. 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**

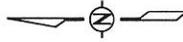
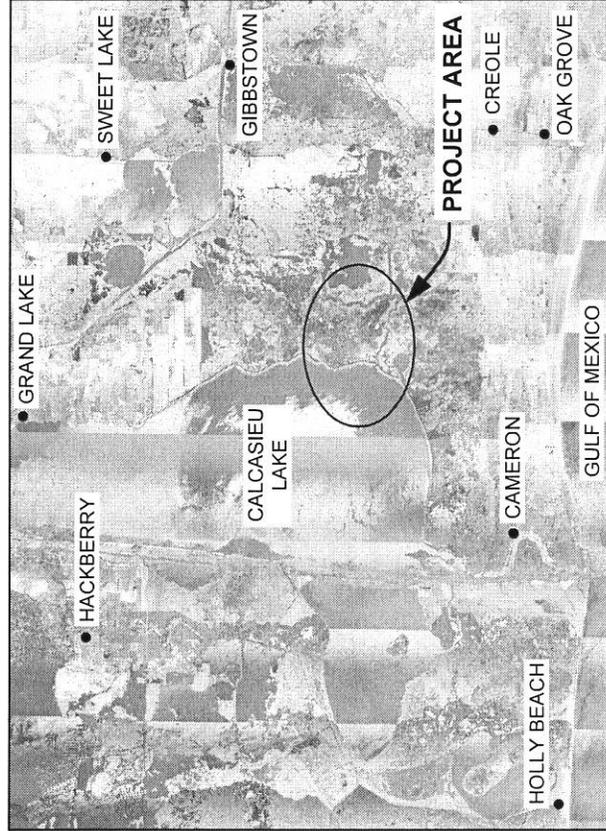
**SHEET NO. DESCRIPTION**

- 1 TITLE SHEET
- 2 PROJECT LAYOUT
- 3 SOUTHERN MARSH CREATION AREA LAYOUT
- 4 NORTHERN MARSH CREATION AREA LAYOUT
- 5 TYPICAL BORROW AND ACCESS CHANNEL SECTION
- 6 TYPICAL MARSH CREATION AREAS SECTION
- 7 - 8 DETAILS

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

**CAMERON-CREOLE WATERSHED  
GRAND BAYOU MARSH CREATION**

CS-54  
CAMERON PARISH



**NOT FOR CONSTRUCTION**  
DOCUMENTS ARE NOT TO BE USED FOR CONSTRUCTION, BIDDING, RECORDATION, CONVEYANCE, OR SALES.

APPLICATION BY: U.S. FISH & WILDLIFE SERVICE 646 CAJUNDOME BLVD., SUITE 400 LAFAYETTE, LA 70506	<b>COASTAL PROTECTION AND RESTORATION AUTHORITY</b> 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801	CAMERON-CREOLE WATERSHED GRAND BAYOU MARSH CREATION	TITLE SHEET
DRAWN BY: K. CANTU	DESIGNED BY: T. MCCLAIN, E.I.	APPROVED BY: D. BOURQUE, P.E.	DATE: FEBRUARY 2015
STATE PROJECT NUMBER: CS-54		FEDERAL PROJECT NUMBER:	
7 - 8		SHEET 1 OF 8	

BORROW AREA	
LATITUDE	LONGITUDE
1 29° 52' 25.20"	93° 15' 45.96"
2 29° 52' 27.20"	93° 14' 52.66"
3 29° 51' 42.29"	93° 15' 05.81"
4 29° 51' 40.87"	93° 15' 42.30"

LEVEE CROSSING 100' x ~600'  
(SEE DETAIL LC ON SHEET 7)

CALCASIEU LAKE ACCESS CHANNEL  
2,600 LINEAR FT

EQUIPMENT  
ACCESS ROUTE

BORROW AREA  
(MAX. CUT = -16.0')

CALCASIEU LAKE

GRAND BAYOU

POTENTIAL UNCONTAINED  
MARSH NOURISHMENT AREA 1

NORTHERN MARSH  
CREATION AREA

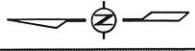
DREDGE PIPELINE  
CORRIDOR - OPTION 2

DREDGE PIPELINE  
CORRIDOR - OPTION 1

SOUTHERN MARSH  
CREATION AREA

POTENTIAL UNCONTAINED  
MARSH NOURISHMENT AREA 2

NORTH PRONG



**LEGEND**

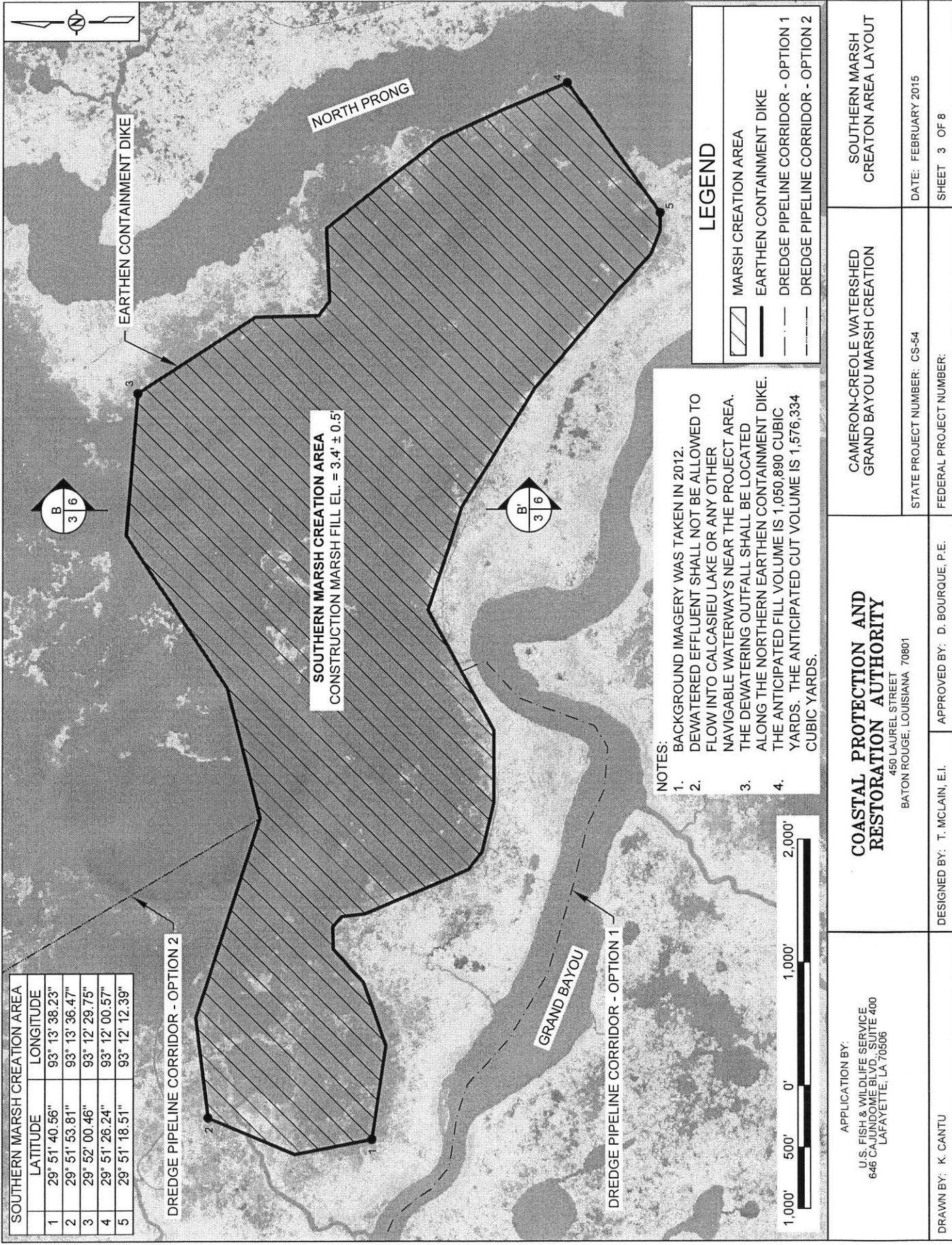
- MARSH CREATION AREA
- BORROW AREA
- POTENTIAL UNCONTAINED MARSH NOURISHMENT
- CALCASIEU LAKE ACCESS CHANNEL
- EQUIPMENT ACCESS ROUTE
- DREDGE PIPELINE CORRIDOR OPTION 1
- DREDGE PIPELINE CORRIDOR OPTION 2
- LEVEE CROSSING



**NOTES:**

- BACKGROUND IMAGERY WAS TAKEN IN 2012.
- THE BORROW AREA CUT DEPTH IS APPROXIMATELY 10.0 FEET WITH A MAXIMUM CUT ELEVATION OF -16.0 FEET.
- THE BORROW AREA CONTAINS APPROXIMATELY 5.7 M CUBIC YARDS OF MATERIAL.
- LEVEE CROSSING LOCATION AND DIMENSIONS ARE APPROXIMATIONS AND WILL BE FINALIZED BEFORE BIDDING.
- ARTICULATING MAT REQUIRED FOR LEVEE PROTECTION.
- EQUIPMENT ACCESS ROUTES SHALL BE ALONG THE DREDGE PIPELINE CORRIDORS OR WITHIN GRAND BAYOU AND NORTH PRONG CHANNELS.
- APPROPRIATE TURBIDITY CONTROL MEASURES WILL BE REQUIRED AT THE DREDGE SITE AS NOTED IN THE BID DOCUMENTS.

APPLICATION BY: U.S. FISH & WILDLIFE SERVICE 646 CALCASIEU BLVD, SUITE 400 LAFALETTE, LA 70506	<b>COASTAL PROTECTION AND RESTORATION AUTHORITY</b> 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801	CAMERON-CREOLE WATERSHED GRAND BAYOU MARSH CREATION	PROJECT LAYOUT
DRAWN BY: K. CANTU	DESIGNED BY: T. MCLAIN, E.I.	STATE PROJECT NUMBER: CS-54	DATE: FEBRUARY 2015
		FEDERAL PROJECT NUMBER:	SHEET 2 OF 8



APPLICATION BY:  
 U.S. FISH & WILDLIFE SERVICE  
 646 CALYPSO DRIVE, SUITE 400  
 LAFAYETTE, LA 70506

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

DESIGNED BY: T. MCCLAIN, E.I.  
 APPROVED BY: D. BOURQUE, P.E.

CAMERON-CREOLE WATERSHED  
 GRAND BAYOU MARSH CREATION

STATE PROJECT NUMBER: CS-54  
 FEDERAL PROJECT NUMBER:

SOUTHERN MARSH  
 CREATION AREA LAYOUT

DATE: FEBRUARY 2015  
 SHEET 3 OF 8

NORTHERN MARSH CREATION AREA	
LATITUDE	LONGITUDE
6 29° 52' 57.80"	93° 13' 17.40"
7 29° 53' 06.70"	93° 13' 18.58"
8 29° 53' 15.25"	93° 13' 04.15"
9 29° 53' 17.75"	93° 12' 08.82"
10 29° 52' 55.35"	93° 12' 08.34"
11 29° 53' 05.36"	93° 12' 45.15"

EARTHEN CONTAINMENT DIKE

NORTHERN MARSH CREATION AREA  
CONSTRUCTION MARSH FILL EL. = 3.2' ± 0.5'

DREDGE PIPELINE CORRIDOR - OPTION 2

DREDGE PIPELINE CORRIDOR  
OPTION 1

CONSTRUCTED DUCKS UNLIMITED  
TERRACING PROJECT

NORTH PRONG

NOTES:

1. BACKGROUND IMAGERY WAS TAKEN IN 2012.
2. DEWATERED EFFLUENT SHALL NOT BE ALLOWED TO FLOW INTO CALCASIEU LAKE OR ANY OTHER NAVIGABLE WATERWAYS NEAR THE PROJECT AREA.
3. THE DEWATERING OUTFALL SHALL BE LOCATED ALONG THE NORTHERN EARTHEN CONTAINMENT DIKE. THE ANTICIPATED FILL VOLUME IS 659,280 CUBIC YARDS. THE ANTICIPATED CUT VOLUME IS 988,920 CUBIC YARDS.
- 4.



LEGEND

- MARSH CREATION AREA
- EARTHEN CONTAINMENT DIKE
- DREDGE PIPELINE CORRIDOR - OPTION 1
- DREDGE PIPELINE CORRIDOR - OPTION 2



APPLICATION BY:  
U.S. FISH & WILDLIFE SERVICE  
646 CALJUDOME BLVD., SUITE 400  
LAFAYETTE, LA 70506

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

CAMERON-CREOLE WATERSHED  
GRAND BAYOU MARSH CREATION

NORTHING MARSH  
CREATION AREA LAYOUT

DRAWN BY: T. MC LAIN, E.I.

DESIGNED BY: D. BOURQUE, P.E.

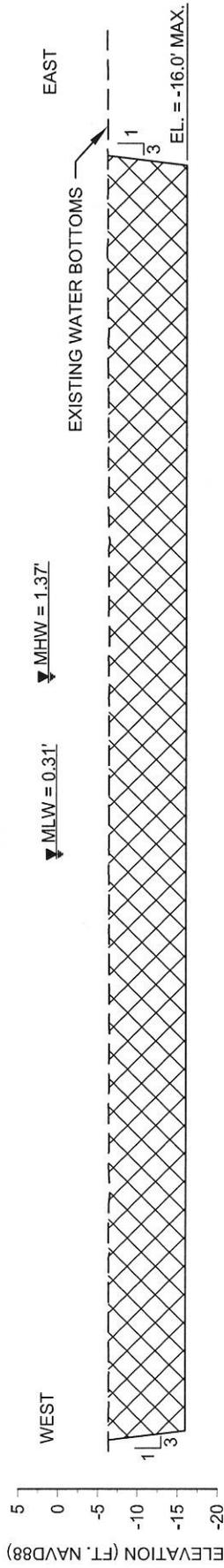
APPROVED BY: J. CARROLL, P.E.

FEDERAL PROJECT NUMBER:

STATE PROJECT NUMBER: CS-54

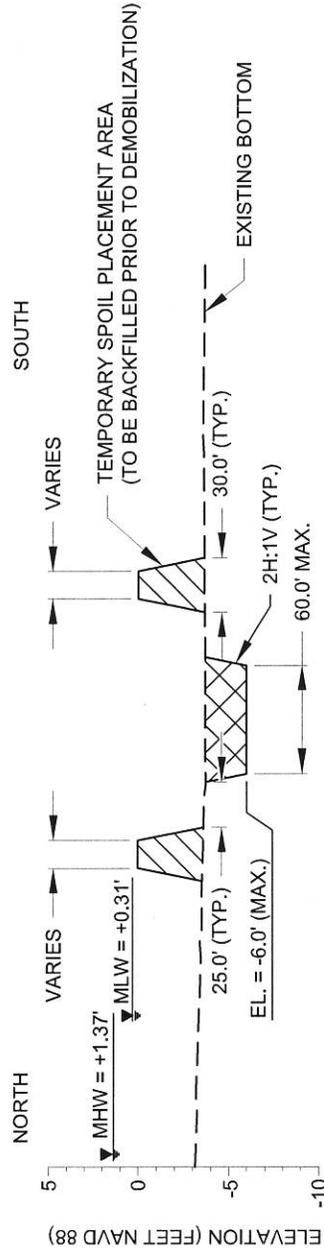
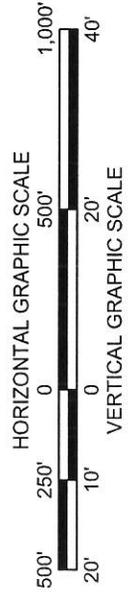
DATE: FEBRUARY 2015

SHEET 4 OF 8

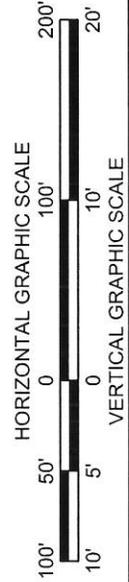


**TYPICAL SECTION - WEST BORROW AREA**

- NOTES:
1. THE BORROW AREA CONTAINS APPROXIMATELY 5.7 M CUBIC YARDS OF MATERIAL.
  2. SEE SHEET 2 FOR PLAN VIEWS OF THE BORROW AREA LAYOUT.



**TYPICAL CALCASIEU LAKE ACCESS CHANNEL SECTION**



APPLICATION BY:  
 U.S. FISH & WILDLIFE SERVICE  
 646 CAJUNDOME BLVD., SUITE 400  
 LAFAYETTE, LA 70506

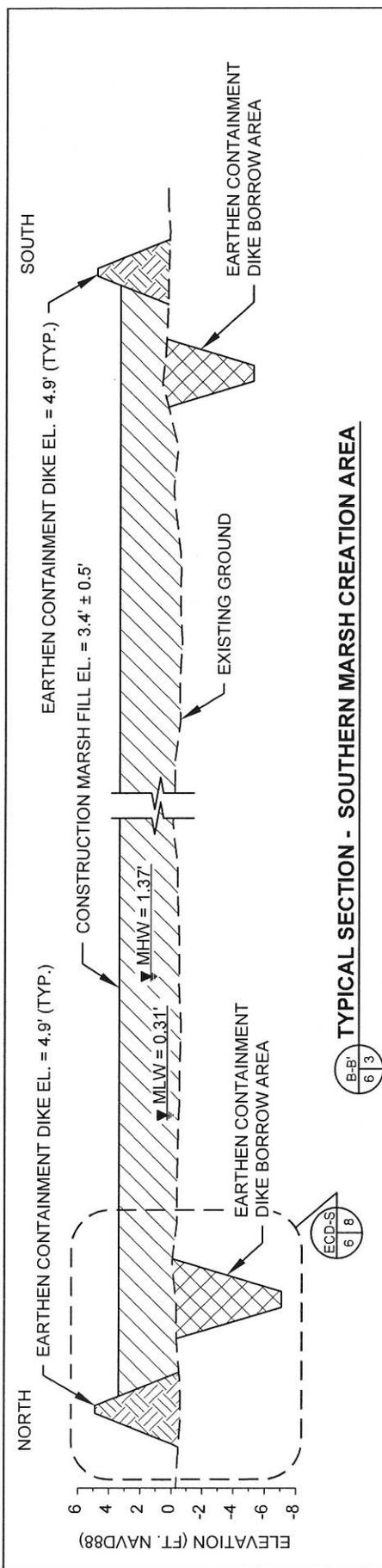
**COASTAL PROTECTION AND RESTORATION AUTHORITY**  
 450 LAUREL STREET  
 BATON ROUGE, LOUISIANA 70801

CAMERON-CREOLE WATERSHED  
 GRAND BAYOU MARSH CREATION

STATE PROJECT NUMBER: CS-54  
 FEDERAL PROJECT NUMBER:

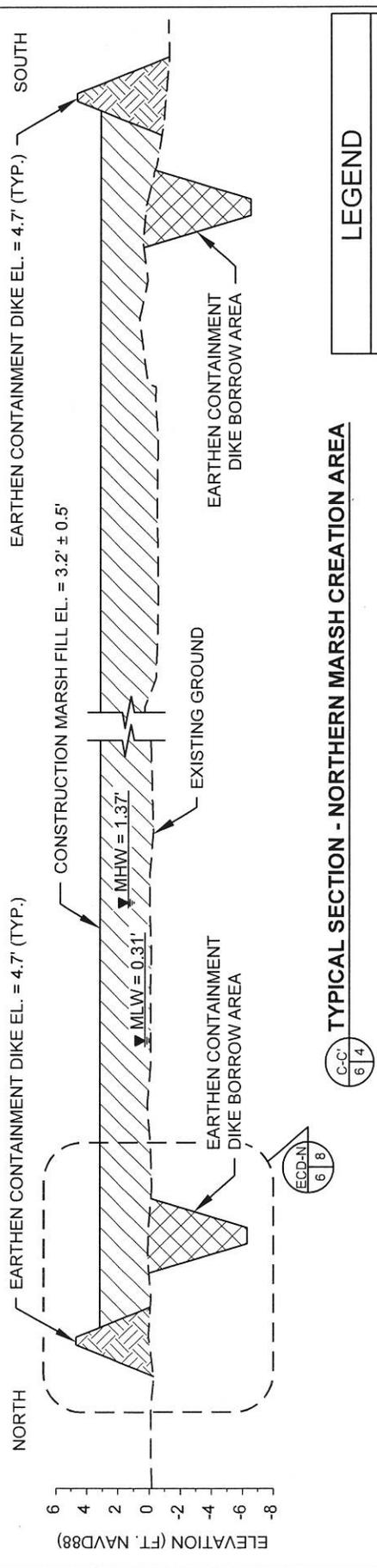
TYPICAL BORROW AND ACCESS CHANNEL SECTION

DATE: FEBRUARY 2015  
 SHEET 5 OF 8



**TYPICAL SECTION - SOUTHERN MARSH CREATION AREA**

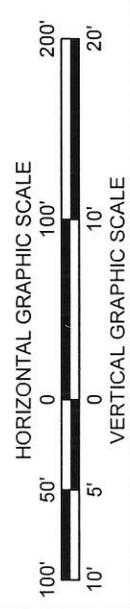
B-B  
6 | 3



**TYPICAL SECTION - NORTHERN MARSH CREATION AREA**

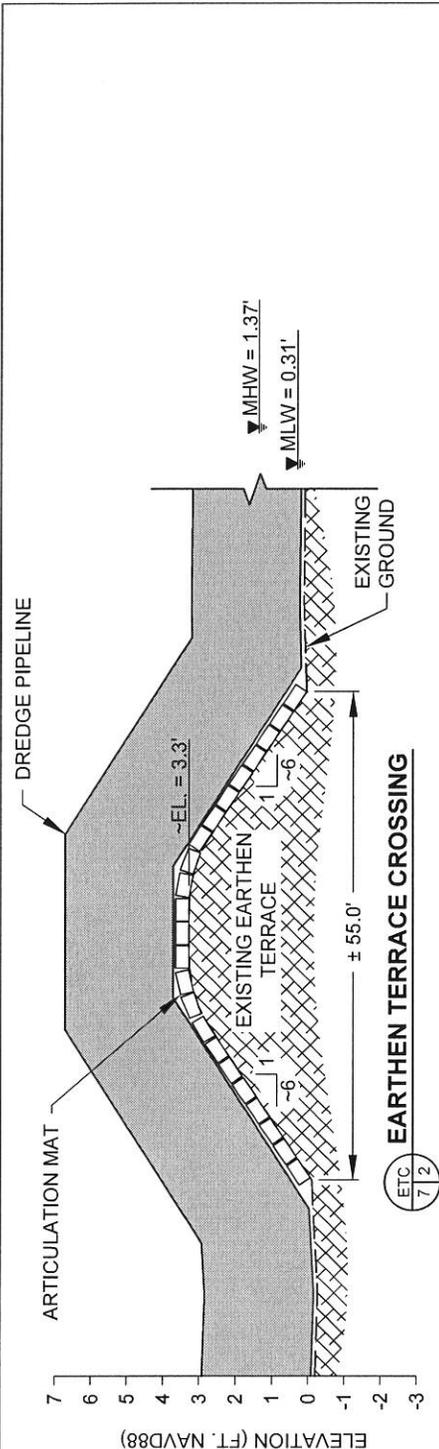
C-C  
6 | 4

LEGEND	
	EARTHEN CONTAINMENT DIKE
	EARTHEN CONTAINMENT DIKE BORROW AREA
	MARSH CREATION FILL
	EXISTING GROUND

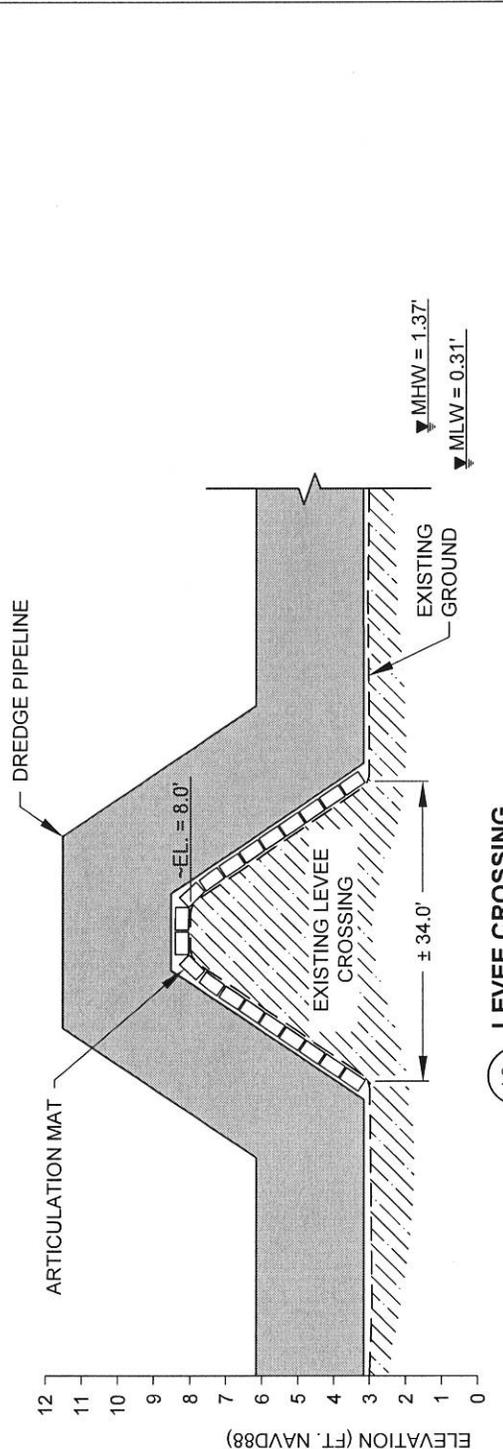


NOTE:  
DISCHARGE SHALL BE DIRECTED TO RETAIN  
AS MUCH MATERIAL AS POSSIBLE.

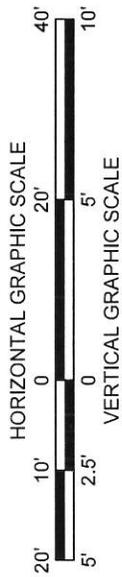
APPLICATION BY: U.S. FISH & WILDLIFE SERVICE 646 CALUNDOME BLVD., SUITE 400 LAFAYETTE, LA 70506	<b>COASTAL PROTECTION AND RESTORATION AUTHORITY</b> 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801		CAMERON-CREOLE WATERSHED GRAND BAYOU MARSH CREATION	TYPICAL MARSH CREATION AREAS SECTION
	DRAWN BY: K. CANTU	DESIGNED BY: T. MCCLAIN, E.I.	APPROVED BY: D. BOURQUE, P.E.	STATE PROJECT NUMBER: CS-54
			FEDERAL PROJECT NUMBER:	SHEET 6 OF 8



**EARTHEN TERRACE CROSSING**

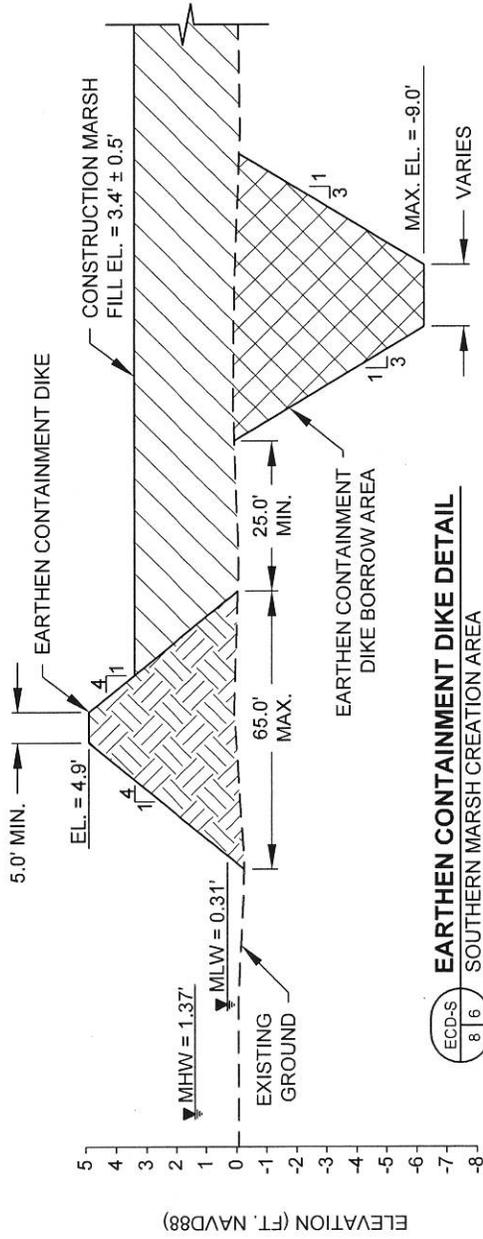


**LEVEE CROSSING**

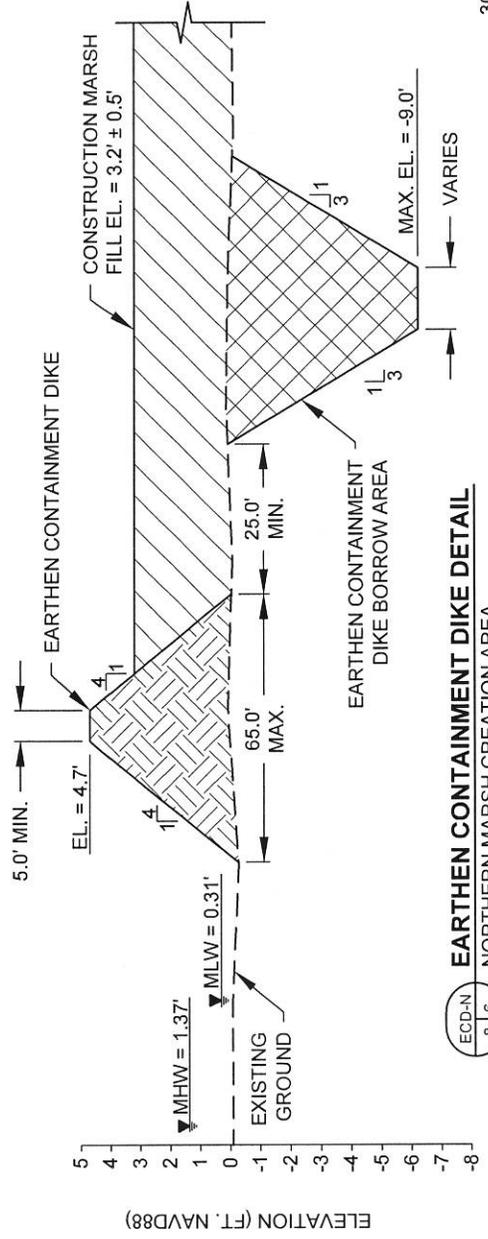


NOTE:  
THE CONTRACTOR SHALL RETURN THE EXISTING  
TERRACE AND LEVEE TO PRE-CONSTRUCTION  
CONDITIONS PRIOR TO DE-MOBILIZATION.

APPLICATION BY: U.S. FISH & WILDLIFE SERVICE 646 CALJUNDOME BLVD., SUITE 400 LAFAYETTE, LA 70506	<b>COASTAL PROTECTION AND RESTORATION AUTHORITY</b> 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801	CAMERON-CREOLE WATERSHED GRAND BAYOU MARSH CREATION STATE PROJECT NUMBER: CS-54 FEDERAL PROJECT NUMBER:	DETAILS DATE: FEBRUARY SHEET 7 OF 8
DRAWN BY: K. CANTU	DESIGNED BY: T. MCCLAIN, E.I.	APPROVED BY: D. BOURQUE, P.E.	



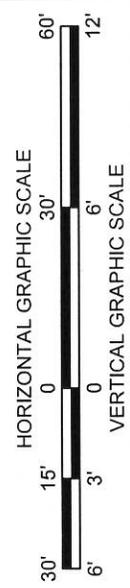
**EARTHEN CONTAINMENT DIKE DETAIL**  
SOUTHERN MARSH CREATION AREA



**EARTHEN CONTAINMENT DIKE DETAIL**  
NORTHERN MARSH CREATION AREA

- NOTES:
1. THE EARTHEN CONTAINMENT DIKES SHALL BE CONSTRUCTED USING IN-SITU MATERIAL. SEE SHEET 3 & 4 FOR EARTHEN CONTAINMENT DIKE LOCATIONS.
  2. THE LENGTHS OF EACH EARTHEN CONTAINMENT DIKE WERE ESTIMATED USING AUTOCAD AND AERIAL PHOTOGRAPHY.
  3. THE OWNER RESERVES THE RIGHT TO REQUEST ADDITIONAL LINEAR FEET OF EARTHEN CONTAINMENT DIKE FOR CONSTRUCTION AT THE CONTRACTOR'S UNIT BID PRICE.

LEGEND	
	EARTHEN CONTAINMENT DIKE
	EARTHEN CONTAINMENT DIKE BORROW AREA
	MARSH CREATION FILL
	EXISTING GROUND



APPLICATION BY: U.S. FISH & WILDLIFE SERVICE 646 CAJUNDOME BLVD., SUITE 400 LAFA YETTE, LA 70506	<b>COASTAL PROTECTION AND RESTORATION AUTHORITY</b> 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801	CAMERON-CREOLE WATERSHED GRAND BAYOU MARSH CREATION	DETAILS
DRAWN BY: K. CANTU	DESIGNED BY: T. MC LAIN, E.I. APPROVED BY: D. BOURQUE, P.E.	STATE PROJECT NUMBER: CS-54	DATE: FEBRUARY 2015
		FEDERAL PROJECT NUMBER:	SHEET 8 OF 8