



LOUISIANA NATURAL AND SCENIC RIVERS SYSTEM

PERMIT APPLICATION

Permit # 968 (Assigned by Department)

The Louisiana Department of Wildlife and Fisheries' Scenic Rivers program is authorized by LRS title 56, Chapter 9 Part II. This law requires permits authorizing activities in or affecting rivers that have been designated by the Louisiana Legislature as Natural and Scenic. Information provided on this form will be used in evaluating the application for a permit. Information in this application is made a matter of public record through issuance of a public notice. Disclosure of the information requested is voluntary, however, the data requested is necessary in order to communicate with the applicant and to evaluate the permit application. If necessary information is not provided, the permit application cannot be processed nor can a permit be issued.

APPLICANT INFORMATION

Table with 2 columns: Applicant information (Name, Address, City, State, Zip, Phone, Email) and Agent information (Name, Address, City, State, Zip, Phone, Email).

DESCRIPTION OF THE PROPOSED ACTIVITY

Brief summary of the description and purpose of the proposed activity (details to be attached as a separate document). Please see the attachment. Is any portion of the activity complete? YES or NO (If yes, indicate month and year of completion).

LOCATION OF PROPOSED ACTIVITY

Table with 2 columns: Field (Stream Name, Address, City, State, Zip, Parish, Sec/Township/Range, Latitude/Longitude) and Value (Bayou Manchac, Bayou Manchac/Alligator Bayou Road, Prairieville, LA 70769, Ascension, Section 33, Township 9 South, Range 3 East, N 30, 19'24.13" - W 91, 01'05.20").

ADJACENT LANDOWNERS

Table with 2 columns: Field (Names, Addresses, Phone Numbers of Adjacent Landowners) and Value (1-Spanish Lake Wildlife Refuge and Botanical Gardens, 35019 Alligator Bayou Road Prairieville, LA 70769; 2-Dennis Carouso; 10917 Malcom Drive, Baton Rouge, LA 70811).

ENVIRONMENTAL ASSESSMENT

Must be a separate document. See the attached instruction sheet for completing the assessment.

CONFIRMATION OF INFORMATION ACCURACY

Application is hereby made for a Scenic River Permit to authorize the activities described herein. I certify that I am familiar with the information contained in this application and that, to the best of my knowledge and belief, such information is true, complete, and accurate. I further certify that I possess the authority to undertake the proposed activities, or I am acting as the duly authorized agent of the applicant.

Signature line with handwritten signature.

Date line with handwritten date 6-8-16.



# Natural Resource Professionals, LLC

Wetlands Permitting and Mitigation Banking • Conservation Land Use Planning

7478 Highland Road, Baton Rouge, LA 70808  
Phone 225-928-5333 Fax 225-246-8319

June 9, 2016

LDWF Scenic Rivers Program  
2000 Quail Drive, Room 432  
Baton Rouge, LA 70808

**Subject:** Scenic River Application  
Frog Bayou Culvert Improvement Project

Dear Sir/Madam:

On behalf of the East Ascension Parish Consolidated Gravity Drainage District #1 and Department of Public Works, (Applicant), Natural Resource Professionals, LLC (NRP) respectfully submits this Louisiana Natural and Scenic Rivers System Permit Application for the proposed "Frog Bayou Culvert Improvement Project," located in Ascension Parish, LA.

Please find the attached application and supplemental information for you review. Please contact me at 225.928.5333 with any questions, comments, or if you require any additional information.

Sincerely,



Gregg Fell  
Senior Permitting Analyst



JOHN BEL EDWARDS  
GOVERNOR

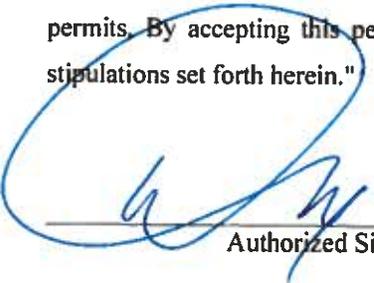
State of Louisiana  
DEPARTMENT OF WILDLIFE AND FISHERIES

CHARLES J. MELANCON  
SECRETARY

Dear Scenic River Permit Applicant:

Please review and concur on the following statement regarding the issuance of permits by the Louisiana Department of Wildlife and Fisheries. This agreement must be signed and returned before a Scenic River Permit can be issued.

"I have been advised and do understand that by applying for and accepting a Scenic Rivers permit issued by the Louisiana Department of Wildlife and Fisheries, I am being allowed to engage in an activity which would otherwise be prohibited by law or for which a permit is required. I understand that the permit is not a license and confers no property right upon me. I specifically agree to abide by all State and Federal fish and wildlife laws and regulations, and all State and Federal laws and regulations which relate to this permit or the permitted activity, and by all other terms and conditions of this permit. I understand that the permit for which I am applying may be suspended, annulled, withdrawn or revoked and that I may be assessed civil penalties, all in accordance with the provision of the Louisiana Administrative Procedure Act, and that I may be denied future permits as a consequence of my failure to fully and completely comply with the terms and conditions of the permit, as well as other laws and regulations pertinent thereto. If served with or notified of a cease and desist order signed by the Scenic Rivers Administrator, I agree to immediately and without delay cease all activities and operations which relate to the permitted activity or which are impacting the Scenic River, until such time as the matter can be resolved in an adjudicatory hearing pursuant to the Louisiana Administrative Procedure Act. I understand and agree that any permit issued to me by the Louisiana Department of Wildlife and Fisheries is in the nature of a privilege which is being voluntarily extended to me by the Department and the failure on my part to cooperate with the Department can result in the loss of the privilege conferred and the denial of future requests for permits. By accepting this permit, I evidence my agreement to be bound by all conditions and stipulations set forth herein."

  
\_\_\_\_\_  
Authorized Signature

6-9-16  
\_\_\_\_\_  
Date

REV. 12/7/98

**Louisiana Natural and Scenic Rivers System – Permit Application  
 East Ascension Consolidated Gravity Drainage District #1  
 Frog Bayou Culvert Improvements  
 Attachments and Environmental Assessment**

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**1.0 Description of the Proposed Activity**

**Purpose and Need**

The purpose of the proposed project is to improve the conveyance of Frog Bayou into Bayou Manchac during flood events when Manchac is low enough to open the Frog Bayou Box Culverts (Floodgates). The need for this project is to improve drainage for Ascension Parish residents that live in and around the Bluff Swamp/Spanish Lake Basin.

**Nature of the Proposed Activity**

The nature of the proposed project involves the installation of two (2) 10' x 10' x 75' Box Culverts and supporting features which are adjacent to an existing 6' x 6' x 75' box culvert beneath the existing Alligator Bayou/Manchac Road. Additionally, sheet pile and minor backfill will be installed along the north bank of Bayou Manchac. The project will be constructed in the following manner:

- 1) Install sheet pile coffer dam
- 2) Close regular vehicular traffic for alligator bayou/bayou Manchac road
- 3) Excavate beneath alligator bayou/bayou Manchac road and portions of the Frog Bayou and Bayou Manchac and remove material to an approved disposal site
- 4) Install 10 timber pilings, 6" aggregate base, and 12" concrete base
- 5) Install 2-10'x75' box culverts
- 6) Back fill with fill and concrete/asphalt
- 7) Reopen regular vehicular traffic Alligator Bayou/Bayou Manchac Road
- 8) Install rip rap and sheetpile bulkhead.
- 9) Install sheet pile and backfill along Bayou Manchac
- 10) Remove coffer dam
- 11) Excavate remaining portions of the Frog Bayou/Bayou Manchac Channel
- 12) Install floodgates/slucice gates

The project is illustrated in Figures 1-11. The project will take approximately 60-90 days to complete, and will require road closure for up to 30 days during the installment of the culverts and support structures beneath the roadway. However, partial road closure may be necessary at times thereafter. All heavy equipment (bulldozers, excavators, dump trucks, pile drivers) will be stationed on the existing Alligator Bayou/Bayou Manchac Road and/or Bayou Manchac, and any excavated material will be hauled away to an approved disposal site.

**Dimensions/Quantities**

General Project Area: 0.9 acres	Aggregate Base: 30cy
Impacts below OHWM: 0.054 acres	Concrete/asphalt: 80cy
Excavation: 900 cubic yards	Box Culverts: 10'x10'x75' (20 cy)
Timber Pilings: (10) 20" x 20'	Clean Fill: 300 cy
Sheet Pile: 200'	Rip Rap: 185 cy

### **Description of Avoidance, Minimization, and Alternatives**

The applicant has minimized impacts to Bayou Manchac to the maximum extent practicable. The proposed 10 x10 floodgates/box culverts will be constructed adjacent to the existing 6x6 floodgate/box culvert. The footprint of the existing Bayou Manchac/Alligator Bayou Road will not change following the completion of construction activities.

The sheet pile is necessary to stabilize the north bank of Bayou Manchac and can be installed from a small barge in the Bayou Manchac Channel. Rip rap was considered to stabilize the bank but would require hauling the material across Bayou Manchac upstream from the Project Area and through the existing wetlands on the north side of the bayou which would cause more impacts to the ecosystem, in addition to requiring improvements to the Bayou Manchac crossing.

During construction, the applicant will employ Best Management Practices (BMPs) to minimize impacts to the aquatic environment. Examples of BMPs to be utilized include silt fencing, haybales, and stabilizing exposed slopes immediately upon completion of the project. Any construction debris, excavated fill material, and cleared vegetation will be removed from the site and disposed of in an approved location.

The proposed project is needed to improve conveyance of Frog Bayou into Bayou Manchac. The project is located at the conveyance of these 2 waterways adjacent to an existing floodgate; therefore no alternative locations for the project are practical.

### **List of All other Local, State, and Federal Permits Required for this Project**

- Section 404 and 10 (US Army Corps of Engineers)
- LAR 200000 and Water Quality Certification (Louisiana Department of Environmental Quality)
- Scenic Rivers Permit (Louisiana Department of Wildlife and Fisheries)

### **Applicant Compliance History and Project**

The Applicant has no record of violation under the Scenic River Act.

## **2.0 Environmental Assessment**

Figures 1A and 2A illustrate the location of the proposed project and area features described and referenced below.

### ***Existing Land Use***

The existing land-use in the vicinity of the project area includes commercial development, residential areas, public areas, and undeveloped/natural areas. The commercial activity consists of the Alligator Bayou Tour Facility and the residential component includes residences along Bayou Manchac/Alligator Bayou Road and the Country Club of Louisiana approximately 650 feet to the northwest. There is also public access for fishing and biking on/along Bayou Manchac/Alligator Bayou Road which is bordered to the south and north by the Bayou Manchac/Spanish Lake/Bluff Swamp Basins and existing wetland and aquatic habitats. There is also occasional kayak/canoe/light outboard boat usage within Bayou Manchac at this location, but public access to the bayou is limited.

The proposed project will have no long term effect on the existing land-use in the vicinity of the project area. During the construction of the project, there may be temporary road closures and limited boat access to the bayou, however, the applicant will communicate with the residences and businesses in the area to minimize adverse effects.

#### ***Wilderness Qualities***

The project area is located along Bayou Manchac where the bayou transitions from a vegetated and swamp-like ecosystem to a channelized aquatic ecosystem. It is also where the Bayou Manchac/Spanish Lake/Bluff Swamp Basins and existing wetland ecosystems transition to the highly developed areas along Bayou Manchac within East Baton Rouge and Ascension Parish. As such, any wilderness qualities have been impacted by human development but partially remain due the fact that the area is relatively undeveloped. The lowest quality wilderness is found in the immediate vicinity of the project area due to the presence of the road, swamp tour operation, and the existing floodgates. The highest quality wilderness values occur within the wetland ecosystems to the south and north.

The proposed project will temporarily affect wilderness qualities in the immediate vicinity during construction due to noise, increased water turbidity, clearing of vegetation, and access. However, it is anticipated that there will be no long-term adverse effects since most of the project area is within the existing roadway and immediately adjacent to the existing floodgate. It is also anticipated that the project will improve wilderness qualities in the Spanish Lake/Bluff Swamp Basin because of decreased flooding inundation durations, which will improve wetland functions and habitat.

#### ***Scenic/Aesthetic Values***

The project area is located along Bayou Manchac where the bayou transitions from a vegetated and swamp-like ecosystem to a channelized aquatic ecosystem with a vegetated and forested riparian habitat. Despite human influences and surrounding development, the scenic values in this area are high due the relatively natural environment.

The proposed project will temporarily affect scenic values during construction due to the presence of construction materials and equipment. The project will permanently impact the north bank of Bayou Manchac by the construction of sheet pile material however, in the long term benefits will outweigh these impacts due to the stabilization of the bank. This will minimize erosion and improve water quality during future operation of the floodgates. The remainder of the project will be constructed within the footprint of Bayou Manchac/Alligator Bayou Road and therefore any long term impacts to scenic/aesthetic values in this area will be minimal.

#### ***Ecological Regimes***

The project area is located along Bayou Manchac where the bayou transitions from a vegetated and swamp-like ecosystem to a channelized aquatic ecosystem with a narrow floodplain. Although water levels average approximately 2 ft in depth, Manchac can rise as high as 12-14 feet in this location in response to high rain events and/or backwater flooding of the Amite River. The growing season in this area is essentially year-round, and high water periods typically occur during the fall/winter. The climate of the project area consists of mild winters and hot, humid summers.

The current proposed operational plan involves only closing the floodgate when water levels in Manchac are high. This will allow daily ecological and hydrological functions to take place. Therefore, there are no anticipated adverse impacts to ecological regimes within Bayou Manchac as a result of the project.

#### ***Recreation Use/Opportunities***

As stated previously, the project area is located along Bayou Manchac where the bayou transitions from a vegetated and swamp-like ecosystem to a channelized aquatic ecosystem with a narrow floodplain. In addition, the project area is bordered by bottomland hardwoods and cypress swamp to the north and south. Recreational opportunities within Bayou Manchac consist of fishing, boating, and birdwatching, and recreational opportunities within the bottomland hardwoods and cypress swamp consist primarily of hunting. There is also a swamp-tour facility in the immediate vicinity that provides recreational access. Most of the land within this area is privately owned, therefore general public access to these features is limited.

During construction, access to the area for recreational purposes may be limited; however, following construction recreational use should not be adversely affected in the long term.

#### ***Fish, Aquatic Life, and Wildlife***

As stated previously, the project area is located along Bayou Manchac where the bayou transitions from a vegetated and swamp-like ecosystem to a channelized aquatic ecosystem with a narrow floodplain. Water is present in the Bayou Manchac channel year round which supports a large ecological system within the larger Bayou Manchac Basin. According to the “Bayou Manchac and Amite River Louisiana Feasibility Report” (USACE 1979), the forested wetlands and associated streams provide a wide variety of habitat for terrestrial and aquatic animals. Common mammals in the area include white-tailed deer, muskrat, raccoon, opossum, mink, otter, red fox, grey fox, bobcat, nutria, beaver, cottontail rabbit, swamp rabbit, fox squirrel and grey squirrel. Important game birds present in the area include wild turkey, woodcock, mourning dove, and many species of waterfowl. The wetlands support many species of reptiles including the American alligator. Sport fishes include spotted bass, largemouth bass, black crappie, white crappie, bluegill and warmouth. Commercially important fishes include black bullhead, blue catfish, channel catfish, and freshwater drum.

The proposed project is anticipated to temporarily disrupt fish, aquatic life, and wildlife during construction activities due to the presence of equipment, materials, and workers. However, following construction it is not anticipated that the project will adversely affect wildlife species since a majority of the project will be constructed within the footprint of Bayou Manchac/Alligator Bayou Road. During construction, the applicant will minimize temporary impacts by installing erosion control structures such as silt fences and hay-bales and will stabilize exposed slopes upon completion.

#### ***Historical and Archaeological Resources/ Cultural Resources***

Bayou Manchac is an historic waterway that forms the boundary between East Baton Rouge Parish, Iberville, and Ascension Parishes. Human settlement began in this area at approximately 7,000 BC and European Settlement began in approximately 1542, according to the “Cultural Resources Survey of the Bayou Fountain Channel Enlargement Area, East Baton Rouge Parish,” (CEI 1997). Historic journal entries by

Pierre le Moyne Sieur de Iberville in 1699 describe the extensive forest resources and abundant wildlife within the region. Since that time, there has been human development within the vicinity of the project area primarily in the form of home sites. In the 1950's several drainage projects were constructed in the area including the existing Frog Bayou and Alligator Bayou floodgates. There is an historic site within the immediate vicinity of the project area, 16AN11, which is classified as "Pre-historic" or Neo-Indian," however this site now lies beneath the Alligator Bayou Tour Facility. There are additional historic sites in the area but all are outside of a 500' radius of the project area.

The proposed project will have no adverse effect on cultural resources in the area; most of the project will be conducted beneath the footprint of the existing Bayou Manchac Road and the bank stabilization of Bayou Manchac will not require any excavation of existing soil.

### ***Geological Resources***

The project area is located within the historic Mississippi River Floodplain at the foot of the Pleistocene Terrace (CEI 1997). Geographically, the general project area is bound by a bluff that overlooks the Mississippi Flood Plain, which now consists primarily of bottomland hardwoods and cypress swamp in this area. The bluff is the western edge of the "Prairie Complex," a geological formation that reaches a thickness of 500 ft. The Prairie Complex and the Pleistocene Terrace formations developed between about 1.5 Million and 13,000 Year B.P. during Pleistocene interglacial periods, when the northern glaciers melted and sent huge volumes of water through the inland drainage system (CEI 1997).

The proposed project will not adversely affect geological resources. The landscape features shaped by natural forces in this area will not change, as the project intends to improve natural hydrology in the area by decreasing the duration of flooding in the Bluff Swamp Basin. The proposed 10x10 box culverts will be installed at the natural channel bottom elevation of Frog Bayou/Bayou Manchac and will be supported by a series of pilings and it is anticipated to be stable for the long term.

### ***Botanical Resources***

Based on a recent field survey, Dominant overstory vegetation along the north bank of Bayou Manchac includes American hornbeam (*Carpinus caroliniana*), water oak (*Quercus nigra*), American elm (*Ulmus americana*), and sugarberry (*Celtis laevigata*). The understory is dominated by saplings/shrubs of water oak, American hornbeam, and yaupon (*Ilex vomitoria*). Dominant herbaceous vegetation includes dwarf palmetto (*Sabal minor*), eastern poison ivy (*Toxicodendron radicans*), common blue violet (*Viola sororia*), and Virginia dayflower (*Commelina virginica*). The woody vine stratum is dominated by muscadine (*Vitis rotundifolia*), eastern poison ivy (*Toxicodendron radicans*), trumpet creeper (*Campsis radicans*), and Virginia creeper (*Parthenocissus quinquefolia*). With the exception of the occasional weed, there is no vegetation within the floodgate/road portion of the project area.

During construction, it may be necessary to remove and/or trim vegetation in order to safely and effectively install the proposed sheetpile and backfill while stabilizing the bank of Bayou Manchac-however, roots/rootballs will not be removed. The applicant will minimize the amount of clearing to the maximum extent.

### ***Water Quality and Quantity***

The water quality in this area is generally poor due to surrounding development and associated stormwater and wastewater input. According to the Louisiana Department of Environmental Quality's "Bayou Manchac Watershed Phase I TMDLS For Chlorides, Sulfates, and Total Dissolved Solids TMDL Report (DEQ 2011), in this area (sub-segment 040201), Bayou Manchac was on the 2006 Integrated Report and Environmental Protection Agency's Consent Decree list of impaired waterbodies. This sub-segment was found to be "not supporting" any of its designated uses of primary contact recreation, secondary contact recreation, and fish and wildlife population. The suspected causes of impairment are low dissolved oxygen (DO), and elevated nitrate/nitrite, total phosphorous, chlorides, sulfates, total dissolved solids, total ammonia, and total fecal coliform.

Water Quantity in this area is driven by rainfall which averages over 60 inches annually. The Frog Bayou watershed contains approximately 6,600 acres all of which must ultimately drain through the existing and proposed structures. The Bayou Manchac Watershed encompasses the majority of Baton Rouge and portions of Iberville and Ascension Parish and eventually connects with the Amite River approximately 10 miles downstream from the project area. During high water events, drainage from other portions of the Bayou Manchac Watershed and Amite River Watershed can raise water levels in Bayou Manchac which in turn causes flooding concerns for the residents and business within the Bluff Swamp and Spanish Lake Basin. While the current floodgate is successful at minimizing backwater flooding from Bayou Manchac into the Bluff Swamp Basin via Frog Bayou, there is a need to expedite drainage within the Bluff Swamp Basin when Manchac is low enough to open the gates, as water continues to flow in from the 6,600-acre Frog Bayou Watershed.

The proposed project is designed to facilitate drainage of the Frog Bayou Watershed to relieve flooding concerns for the residents and business in this area, while maintaining natural hydrologic connections during normal periods. Therefore, it is anticipated that the project will improve water quantity in the area for the purpose of flood relief and for ecological purposes due to decreased inundation durations. It is not anticipated that the proposed project will adversely affect or improve water quality in the area.

### ***Hydrologic Features***

The project area is located near/at the confluence of Bayou Manchac, Frog Bayou, Alligator Bayou, and Bayou Fountain. Alligator Bayou and Frog Bayou are the primary drainage outlets for the Spanish Lake and Bluff Swamp Subbasins, respectively. The Frog Bayou drainage area contains approximately 6,600 acres and the Bayou Manchac watershed contains a majority of Baton Rouge, and portions of Iberville and Ascension Parishes.

Bayou Manchac is a natural tributary of the Mississippi River and a tributary of the Amite River. According the Kniffen (1935), Bayou Manchac's natural connection with the Mississippi River was severed by Andrew Jackson in 1814. Even before it was dammed, Bayou Manchac was an intermittent stream until reaching the project area, where at this point Bayou Manchac would have a deeply cut channel and narrow floodplain for approximately 2 miles, and then the floodplain broadens until it meets the

Amite River. Historically, during high water periods of the Amite River, Bayou Manchac would reverse flow to the west and cause backwater flooding within the Spanish Lake and Bluff Swamp Subbasins.

In the 1950's, a drainage project was constructed which consisted of a series of drainage canals designed to facilitate drainage along the natural levee of the Mississippi River as well as the construction of the Frog Bayou and Alligator Bayou floodgates. The purpose of the floodgates was to minimize backwater flooding for the residences and business in and around the Bluff Swamp and Spanish Lake Basins.

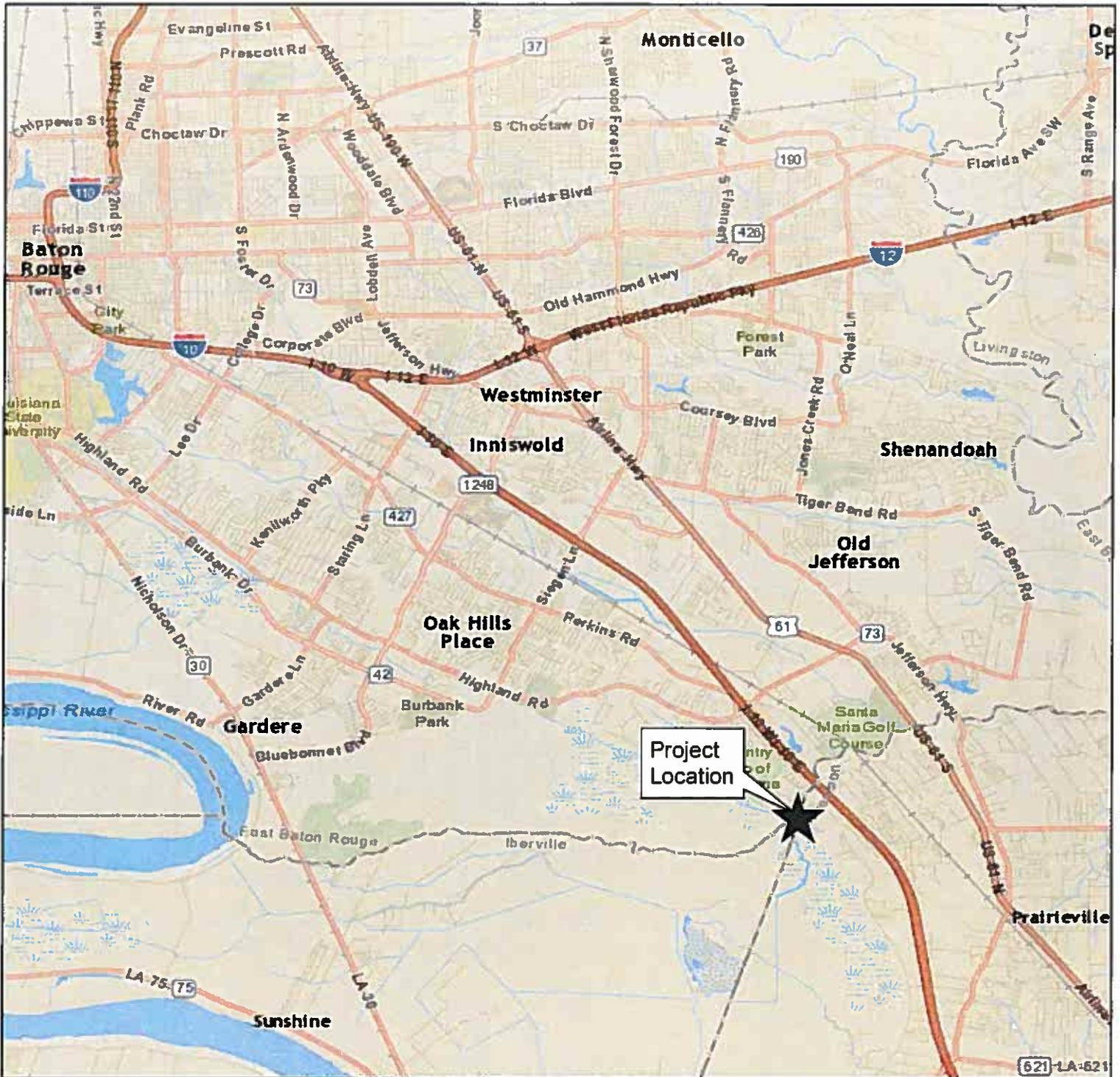
Shortly after the 1950's drainage project, the Alligator Bayou Floodgate began to be operated in the "closed position" as it was discovered that doing so would artificially flood Spanish Lake and its surrounding wetlands which facilitated recreational access (fishing/boating/hunting) to the area. This led to tremendous ecological decline in the Spanish Lake Subbasin in addition to reducing flood storage capacity. In contrast, the Frog Bayou floodgate remained in the "open position" and as a result, the wetland habitat quality remained relatively high along with flood storage capacity.

Since approximately 2010, both Floodgates have been operated in the open position, and only close when Bayou Manchac is at or above approximately 5 feet. However, even with the floodgates closed, rainfall can still result in flooding of the Bluff Swamp and Spanish Lake Subbasins through normal flow/drainage patterns. This results in a need to facilitate drainage of the Basins, particularly during periods of "back to back rains" when Manchac is only low enough to open the floodgates for a few days.

Therefore, the purpose of the project is to partially restore the natural connection of Frog Bayou and Bayou Manchac by adding 2-10'x10' box culverts to the existing 6'x6' box culvert. This will result in expedited drainage to relieve flooding for residents in the Bluff Swamp Basin. Because the proposed operational plan is the same as the current operational plan there will be no increased backwater flooding from Bayou Manchac and there will be no increased flooding from normal drainage into the Bluff Swamp Basin.

#### ***Economic Impact of the Project***

The project will decrease the chance of flooding for the residents and business that drain into the Bluff Swamp Basin. It will reduce amount of public funds needed to provide flood protection and flood related services such as emergency response and resolving damages to public and private property. The project may also result in lower flood insurance costs for the residents/businesses within the area.



**Legend**

 Project Area



**Map Notes:**

1. Topographic map provided by ArcGIS.
2. The boundary shown is based on the boundary survey provided by the client.

East Ascension  
Consolidated Gravity Drainage District #1  
Gonzales, LA

**VICINITY MAP**

**ASCENSION PARISH, LOUISIANA**

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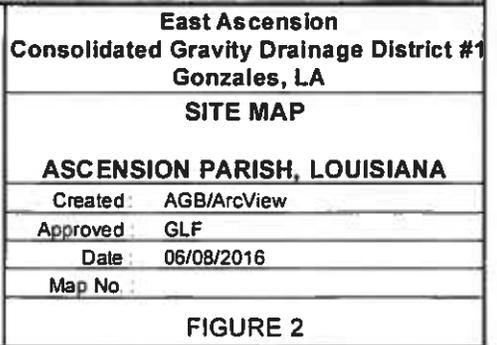
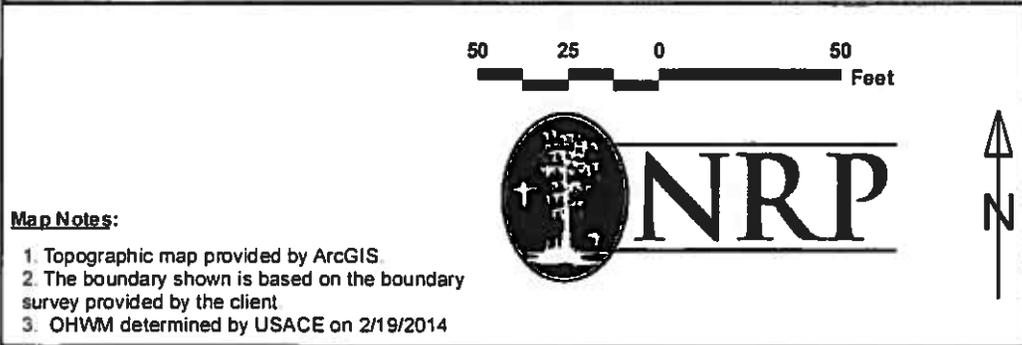
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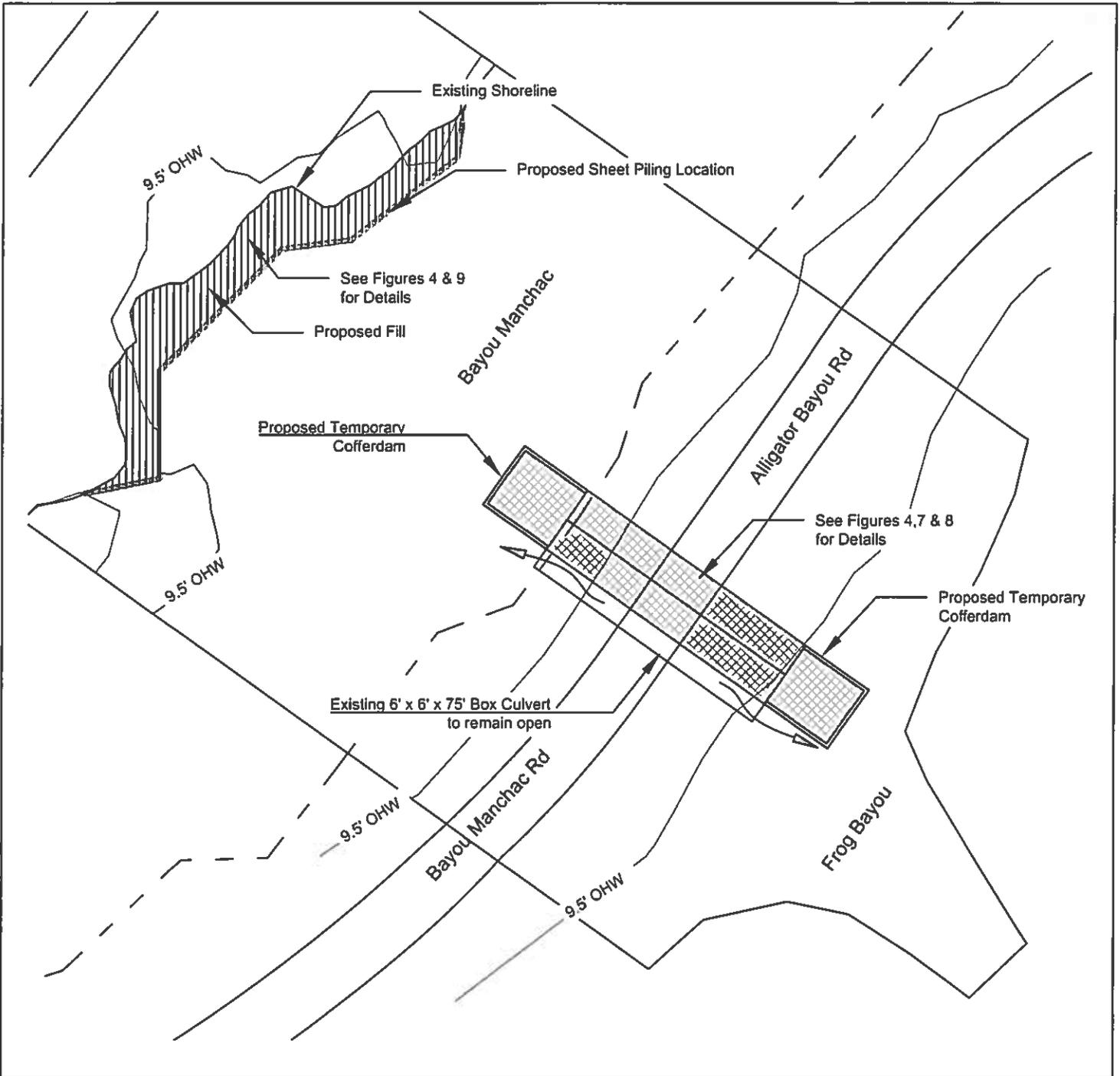
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Map No. :



**FIGURE 1**





East Ascension  
 Consolidated Gravity Drainage District #1  
 Gonzales, LA

PLAN VIEW

ASCENSION PARISH, LA

Created: AGB

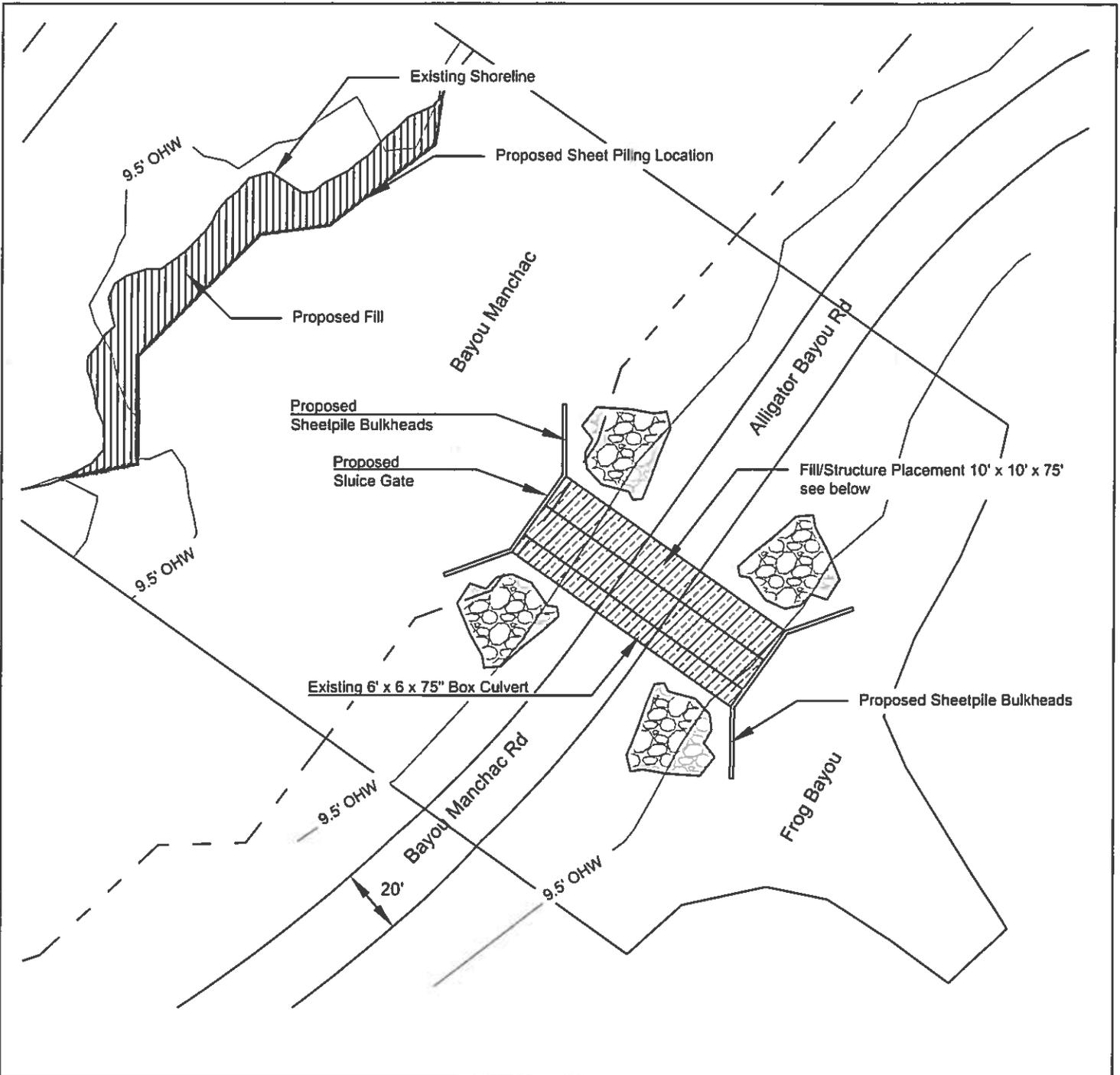
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Date: 06/08/2016

Map No.:



FIGURE 3



**Sequence of Fill / Structure Placement:**

1. Install 10 - 20" Timber Pilings to a depth of approximately 20' (20 cu yds)
2. Install 6" aggregate base (30 cu yds) & 12" concrete base (60 cu yds)
3. Install 2 - 10' x 10' x 75' box culverts (600 cu yds)
4. Backfill with clean earthen fill (300 cu yds) & concrete asphalt road (20 cu yds)
5. Place rip rap for shoreline stabilization (185 cu yds)
7. Install sheetpile/backfill along Bayou Manchac Bank. (100 cu yds)
8. Install sheetpile bulkhead and sluice gate.

**Note:**  
 All work to be conducted on  
 Bayou Manchac/Alligator Bayou Rd  
 and with a crane barge placed in Bayou Manchac.



East Ascension  
 Consolidated Gravity Drainage District #1  
 Gonzales, LA

**PLAN VIEW CONSTRUCTION  
 (FILL & STRUCTURE)  
 ASCENSION PARISH, LA**

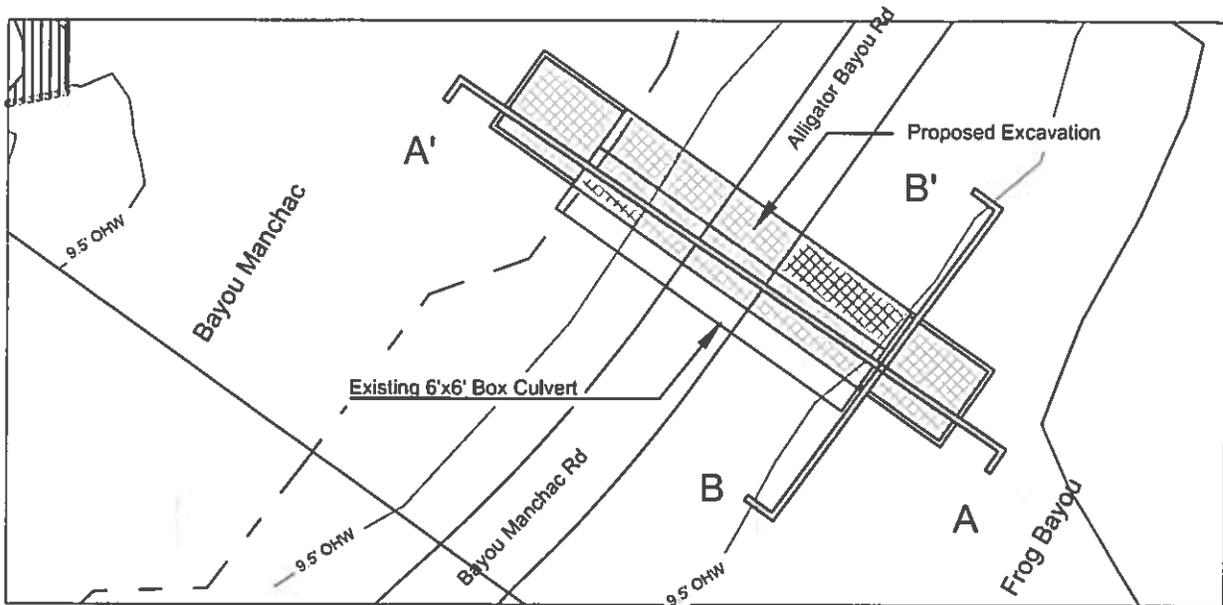
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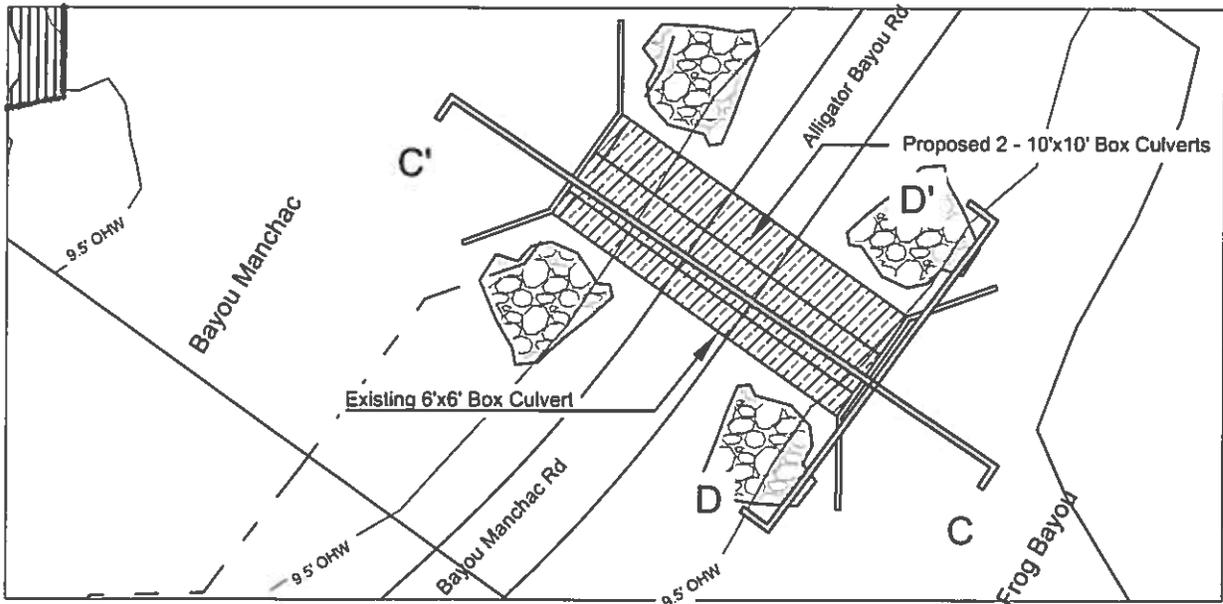
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**FIGURE 4**



Construction (Excavation) Cross Section Map



Construction (Fill and Structures) Cross Section Map

East Ascension  
 Consolidated Gravity Drainage District #1  
 Gonzales, LA

CROSS SECTION MAP

ASCENSION PARISH, LA

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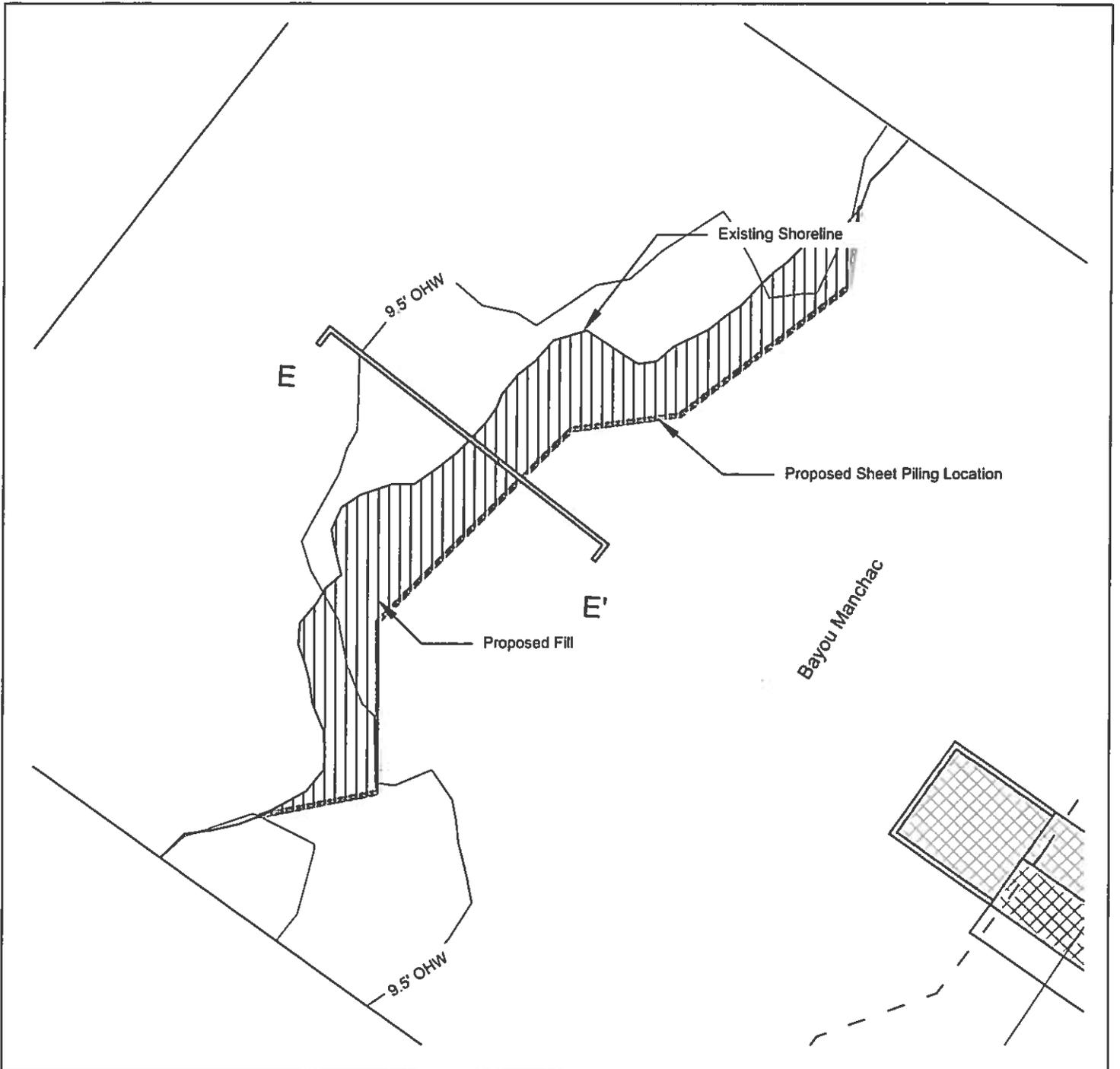
Approved: GLF

Date: 06/08/2016

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FIGURE 5





East Ascension  
 Consolidated Gravity Drainage District #1  
 Gonzales, LA

**CROSS SECTION MAP**

ASCENSION PARISH, LA

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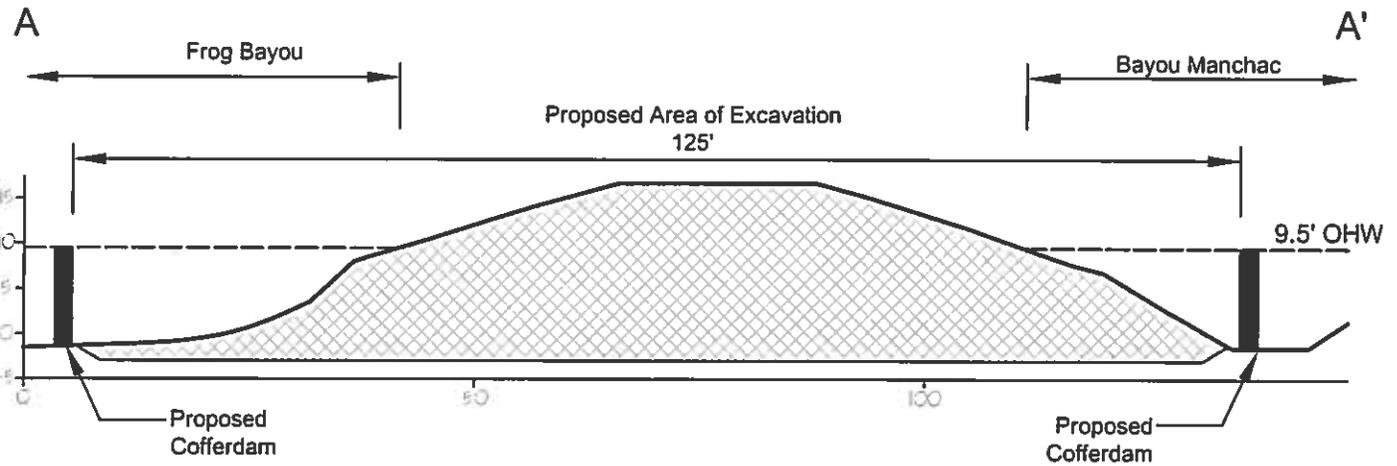
Approved: GLF

Date: 06/08/2016

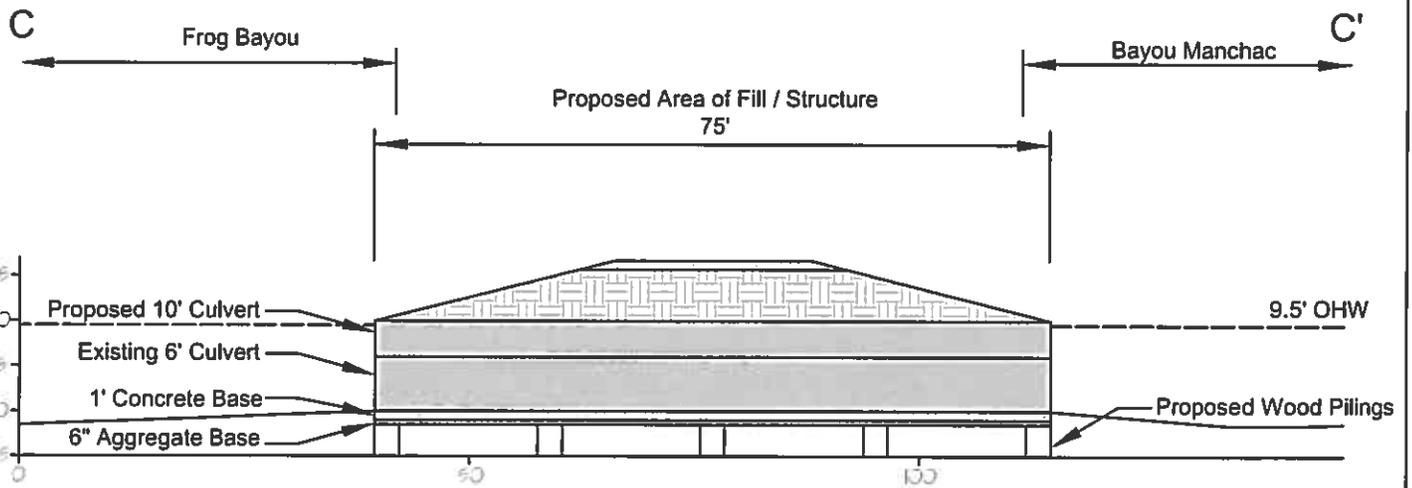
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**FIGURE 6**



Construction Frog Bayou to Bayou Manchac  
 (Excavation)  
 Cross Section A-A'  
 Scale: NTS



Construction Frog Bayou to Bayou Manchac  
 (Fill and Structures)  
 Cross Section C-C'  
 Scale: NTS

East Ascension  
 Consolidated Gravity Drainage District #1  
 Gonzales, LA

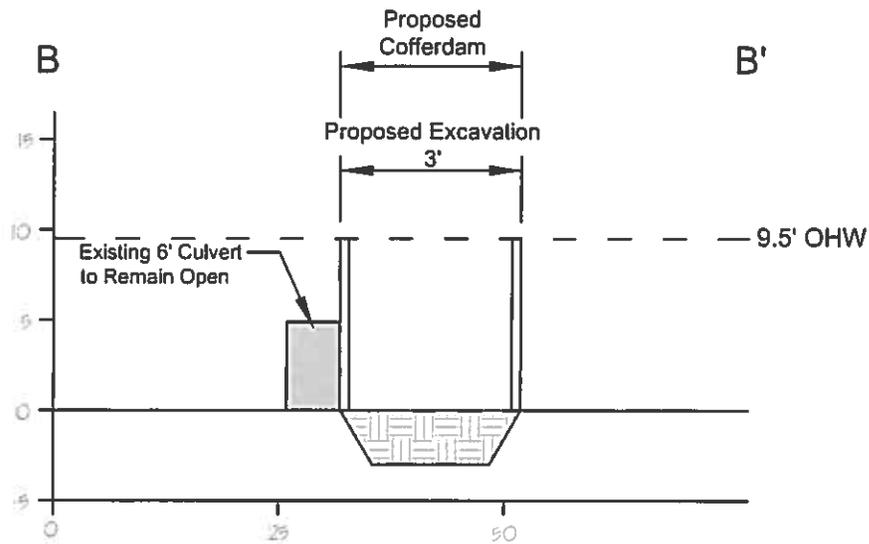
CROSS SECTION

ASCENSION PARISH, LA

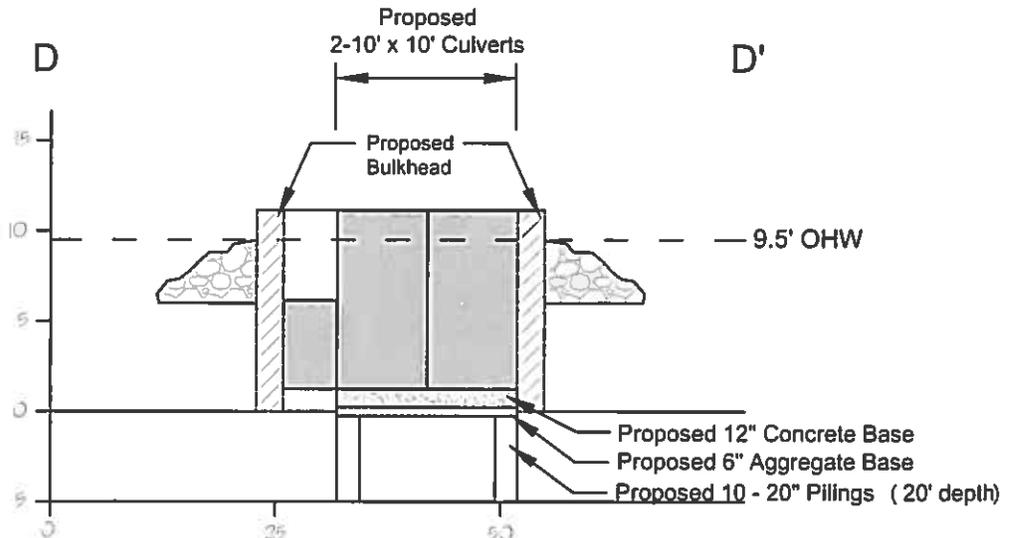
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 Approved: SPN  
 Date: 06/08/2016  
 Map No.:

FIGURE 7





Typical Construction Cofferdam  
(Excavation)  
Cross Section B-B'  
Scale: NTS



Typical Construction Bulkhead  
(Fill and Structures)  
Cross Section D-D'  
Scale: NTS

 Proposed Rip Rap Locations



East Ascension  
Consolidated Gravity Drainage District #1  
Gonzales, LA

CROSS SECTION

ASCENSION PARISH, LA

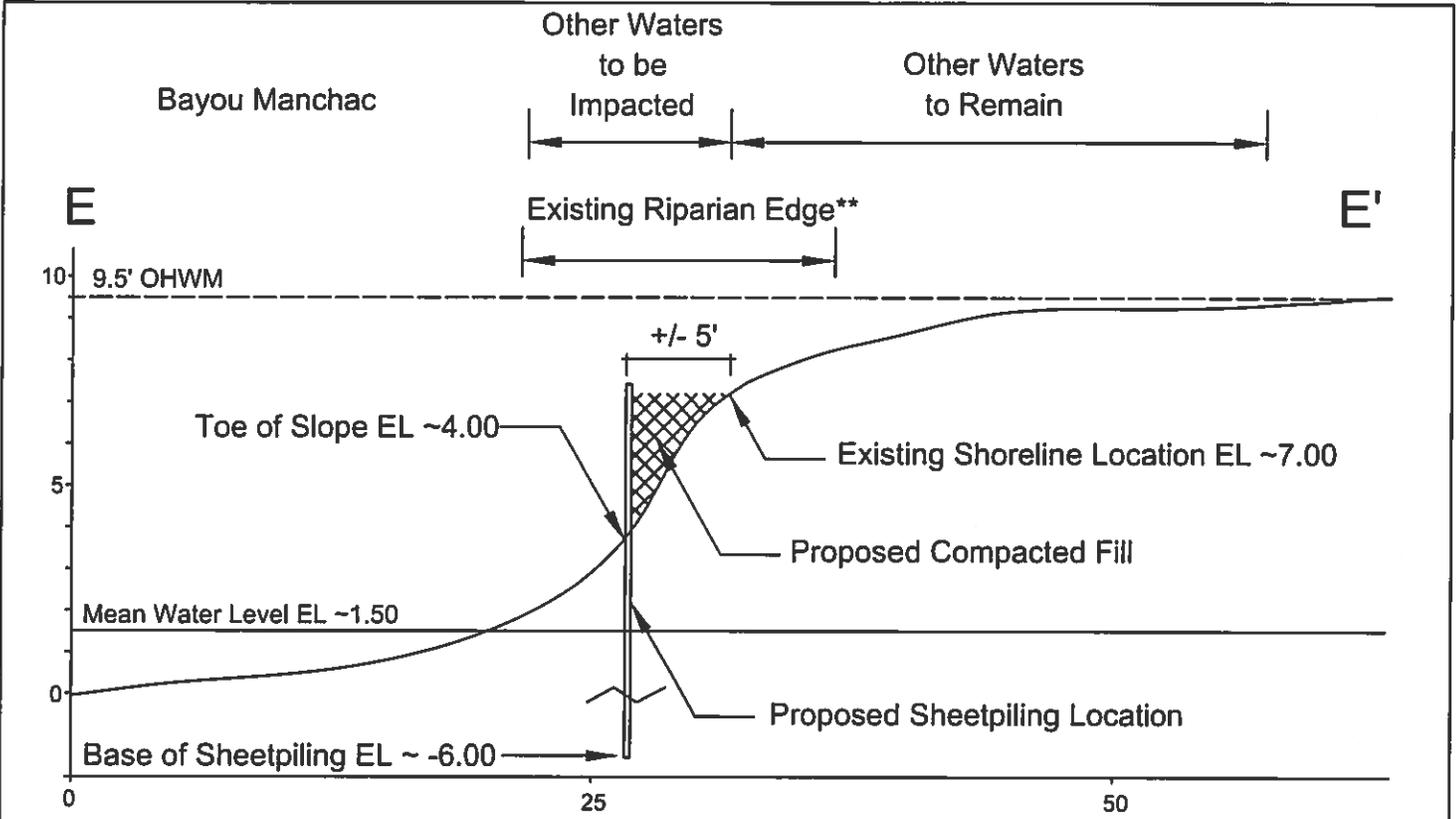
Created: AGB

Approved: SPN

Date: 06/08/2016

Map No.:

FIGURE 8



Section E-E' Proposed Bayou Manchac Sheet Piling Installation  
 & Shoreline Stabilization  
 2:1 Vertical Exaggeration  
 NTS

**Quantities:**

Sheet Piling: 170 In ft

Fill: 100 cu yds

\*\*Existing riparian vegetation to be cleared as needed.  
 All rootballs to be left in place.



Ascension Parish
Gonzales, LA
PHOTO APPENDIX
TERREBONNE PARISH, LA
Created: AGB
Approved: SPN
Date: 06/08/2016
Map No.:

FIGURE 9

Frog Bayou Culvert Improvements, Scenic River Permit Application, Photo Appendix



Bayou Manchac Across from the Frog Bayou Floodgate



Bayou Manchac Across from the Frog Bayou Floodgate

Frog Bayou Culvert Improvements, Scenic River Permit Application, Photo Appendix



Bayou Manchac Upstream from the Frog Bayou Floodgates, on Bayou Manchac Road



Bayou Manchac downstream from the Frog Bayou Floodgate

Frog Bayou Culvert Improvements, Scenic River Permit Application, Photo Appendix



Frog Bayou Floodgate at Bayou Manchac



Frog Bayou Floodgate at Frog Bayou