

JOINT PUBLIC NOTICE

February 18, 2015

United States Army
Corps of Engineers
New Orleans District
Regulatory Branch
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New Orleans, La. 70160-0267

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Project Manager
Jacqueline Farabee
Permit Application Number
MVN-2014-02212-MR

State of Louisiana
Department of Environmental Quality
Post Office Box 4313
Baton Rouge, La. 70821-4313
Attn: Water Quality Certifications

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Karen.latuso@la.gov
Project Manager
Karen Latuso
WQC Application Number
WQC # 150206-02

Interested parties are hereby notified that a permit application has been received by the New Orleans District of the U.S. Army Corps of Engineers pursuant to: [X] Section 10 of the Rivers and Harbors Act of March 3, 1899 (30 Stat. 1151; 33 USC 403); and/or [X] Section 404 of the Clean Water Act (86 Stat. 816; 33 USC 1344).

Application has also been made to the Louisiana Department of Environmental Quality, for a Water Quality Certification (WQC) in accordance with statutory authority contained in Louisiana Revised Statutes of 1950, Title 30, Chapter 11, Part IV, Section 2074 A(3) and provisions of Section 401 of the Clean Water Act (P.L.95-17).

MANGROVE BAYOU MITIGATION BANK IN CAMERON PARISH

NAME OF APPLICANT: Miami Corporation: c/o Royal Engineers and Consultants LLC, Attn: April Dykes, 1231 Camellia Blvd, Lafayette, LA 70508.

LOCATION OF WORK: The 161.5 acre site consisting of mostly open water is located approximately 21.5 miles south of Lake Charles, Louisiana, in Cameron Parish, accessible by boat which can be launched at Hebert's Landing off Hwy 384, as shown on enclosed drawings (Latitude: 29.901458 N, Longitude: -93.230238 W). The Project is located within the Lower Calcasieu Basin, Hydrologic Unit 08080206.

CHARACTER OF WORK: Deposition of approximately 321,420 cubic yards of dredged material from two ditches totaling 24.6 acres (on north and west side of the site) to construct a berm around and deposit material on the site for the purpose of creating and enhancing approximately 136.7 acres of brackish marsh for the construction of a mitigation bank.

The comment period for the Department of the Army Permit and the Louisiana Department of Environmental Quality WQC will close **30 days** from the date of this joint public notice. Written comments, including suggestions for modifications or objections to the proposed work, stating reasons thereof, are being solicited from anyone having interest in this permit and/or this WQC request and must be mailed so as to be received before or by the last day of the comment period. Letters concerning the Corps of Engineers permit application must reference the applicant's name and the Permit Application Number, and be mailed to the Corps of Engineers

at the address above, **ATTENTION: REGULATORY BRANCH**. Similar letters concerning the **Water Quality Certification must reference the applicant's name and the WQC Application number and be mailed to the Louisiana Department of Environmental Quality at the address above.**

The application for this proposed project is on file with the Louisiana Department of Environmental Quality and may be examined during weekdays between 8:00 a.m. and 4:30 p.m. Copies may be obtained upon payment of costs of reproduction.

Corps of Engineers Permit Criteria

The decision whether to issue a permit will be based on an evaluation of the probable impacts, including cumulative impacts of the proposed activity on the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefit which reasonably may be expected to accrue from the proposal must be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the proposal will be considered including the cumulative effects thereof; among those are conservation, economics, aesthetics, general environmental concerns, wetlands, historic properties, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, considerations of property ownership and, in general, the needs and welfare of the people.

The U.S. Army Corps of Engineers is soliciting comments from the public, federal, state, and local agencies and officials, Indian Tribes, and other interested parties in order to consider and evaluate the impacts of this proposed activity. Any comments received will be considered by the U.S. Army Corps of Engineers to determine whether to make, modify, condition, or deny a permit for this proposal. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects, and other public interest factors listed above. Comments are used in the preparation of an Environmental Assessment and/or an Environmental Impact Statement pursuant to the National Environmental Policy Act. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the proposed activity.

The New Orleans District is unaware of properties listed on the National Register of Historic Places near the proposed work. The possibility exists that the proposed work may damage or destroy presently unknown archeological, scientific, prehistorical, historical sites, or data. Issuance of this public notice solicits input from the State Archeologist and State Historic Preservation Officer regarding potential impacts to cultural resources.

Our initial finding is that the proposed work would neither affect any species listed as endangered by the U.S. Departments of Interior or Commerce, nor affect any habitat designated as critical to the survival and recovery of any endangered species.

This notice initiates the Essential Fish Habitat (EFH) consultation requirements of the Magnuson-Stevens Fishery Conservation and Management Act. The applicant's proposal would result in the destruction or alteration of 161.5 acre(s) of EFH utilized by various life stages of red drum and penaeid shrimp. Our initial determination is that the proposed action would not have a substantial adverse impact on EFH or federally managed fisheries in the Gulf of Mexico. Our final determination relative to project impacts and the need for mitigation measures is subject to review by and coordination with the National Marine Fisheries Service.

If the proposed work involves deposits of dredged or fill material into navigable waters, the evaluation of the probable impacts will include the application of guidelines established by the Administrator of the Environmental Protection Agency. Also, a certification that the proposed activity will not violate applicable water quality standards will be required from the Department of Environmental Quality, before a permit is issued.

Any person may request, in writing, within the comment period specified in this notice, that a public hearing be held to consider this application. Requests for public hearings shall state, with particularity, the reasons for holding a public hearing.

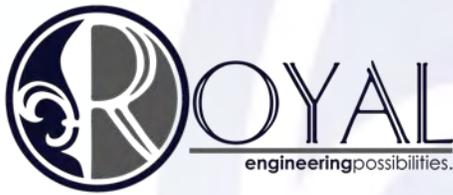
You are requested to communicate the information contained in this notice to any other parties whom you deem likely to have interest in the matter.

The applicant has certified that the proposed activity described in the application complies with and will be conducted in a manner that is consistent with the Louisiana Coastal Resources Program. The Department of the Army permit will not be issued unless the applicant received approval or a waiver of the Coastal Use Permit by the Department of Natural Resources.

You are requested to communicate the information contained in this notice to any other parties whom you deem likely to have interested in the matter.

Martin S. Mayer
Chief, Regulatory Branch

Enclosure



FINAL PROSPECTUS

**MANGROVE BAYOU COASTAL MARSH
MITIGATION BANK
CAMERON PARISH, LOUISIANA**

PREPARED FOR

U.S. Army Corps of Engineers
New Orleans District
New Orleans, Louisiana

PREPARED AND SUBMITTED BY

Royal Engineers & Consultants, LLC
214 Third Street
Suite 2C
Baton Rouge, LA 70801
www.royalengineering.net

MANGROVE BAYOU COASTAL MARSH MITIGATION BANK
CAMERON PARISH, LOUISIANA
DECEMBER 12, 2014

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FINAL PROSPECTUS
Royal Engineers & Consultants, LLC
Mangrove Bayou Coastal Marsh Mitigation Bank
Cameron Parish, Louisiana

1.0 Introduction

Royal Engineers & Consultants, LLC (ROYAL) submits this Final Prospectus on behalf of Miami Corporation to the U.S. Army Corps of Engineers New Orleans District (CEMVN) and the Interagency Review Team (IRT) to initiate evaluation of the proposed Mangrove Bayou Coastal Marsh Mitigation Bank in accordance with 33 CFR 332.8(d)(2). The details pertaining to the use of the site as a mitigation bank will be specified within the subsequent Mitigation Banking Instrument (MBI).

BANK SPONSER AND OWNER

Miami Corporation is the Sponsor of the Mangrove Bayou Coastal Marsh Mitigation Bank. The land is owned in fee title by Miami Corporation who will assume long term ownership and management of the Mangrove Bayou Coastal Marsh Mitigation Bank.

SITE LOCATION

The Mangrove Bayou Coastal Marsh Mitigation Bank is approximately 136.75 acres and will provide approximately 101.58 acres of created brackish marsh and approximately 35.17 acres of enhanced emergent brackish marsh. The site is located at 93° 13' 48.8655" W and 29° 54' 5.2502" N within Section 25 T13S R09W and Section 30 T13S R08W in Cameron Parish, Louisiana (Figure 1). The project site is bordered on the west by the levee borrow canal, which will be utilized for dredge material for completion of this project, and the levee located on the eastern side of Calcasieu Lake. To the north, the project site is bordered by Lake Shore Canal and to the

east it is bordered by the PPG Ditch. The Mangrove Bayou Coastal Marsh Mitigation Bank project site is located entirely within the area known as “The Island” within Cameron Parish, Louisiana, within the Lower Calcasieu Watershed, HUC 08080206 (Figure 2).

DRIVING DIRECTIONS

This site is only accessible by boat.

- Launch at Hebert’s Landing (Located on Grand Lake off of Highway 384).
- Travel South through Calcasieu Lake.
- Enter Grand Bayou Water Control Structure and travel into the Cameron Creole Watershed entering the borrow canal.
- Travel approximately 3 miles north through the borrow canal to the project site located at 93° 13’ 48.8655” W and 29° 54’ 5.2502” N.

2.0 Project Goals and Objectives

The goal of the Mangrove Bayou Coastal Marsh Mitigation Bank is the creation and enhancement of emergent brackish marsh within the Lower Calcasieu Watershed, HUC 08080206 (Figure 3). Table 1, located below, shows current and proposed habitat types and acreages.

Table 1: Current Habitat Types, Proposed Habitat Type, Land Use, and Proposed Mitigation Type

Present Habitat Type	Proposed Habitat Type	Current Land Use	Mitigation Type	Acreage
Shallow Open Water (Brackish)	Emergent Brackish Marsh	Marsh	Marsh Creation	101.58
Emergent Brackish Marsh	Emergent Brackish Marsh	Marsh	Marsh Enhancement	35.17

3.0 Ecological Suitability of the Site

3.1 Historical Site Conditions

The Mangrove Bayou Coastal Marsh Mitigation Bank, located within the Cameron-Creole Watershed, consisted, historically, of densely vegetated brackish marsh as evidenced by aerial photography. In 2005 these marshes suffered severe impacts due to Hurricane Rita and again in 2008 due to Hurricane Ike. In addition to impacts from hurricanes and as a result of damage due to hurricanes, the project area has been affected by surface erosion and the exportation of organic matter as well as compaction of soils due to loss of vegetation and root material resulting in decreases in elevation. Prior to Hurricane Katrina, mean elevation within the project area was found to be 0.784, as determined by available LIDAR data. Following Hurricanes Katrina and Ike, in 2009, mean elevation was determined to be -0.090, based upon contour data provided by the United States Department of Agriculture Natural Resources Conservation Service within the

Cameron-Creole Freshwater Introduction Project (CS-49) Vegetative Plantings Preliminary Design Report dated September 2009. Although much of this change in elevation is due to impacts associated with these two hurricanes, surface erosion, exportation of organic matter, and subsidence are actively occurring within this area.

Prior to 2005, mean salinity within the project area was determined to be 8 ppt. Due to storm surge, severe and persistent flooding within the project area occurred following Hurricane Rita and continued through the beginning of 2006. Once storm waters receded, it became apparent that a large portion of the marsh located within the project area had fragmented and many areas had become mudflats with little to no vegetation. Again in September of 2008, due to Hurricane Ike, the marsh located within the project area sustained additional damage resulting in additional loss of marsh and vegetation within the project area. In addition, salinities had risen significantly to a mean of 11 ppt. following the storm and receding of storm waters.

By June of 2012, salinities were documented to be between 14-17 ppt. and water levels were found to be 0.2 feet. Within only a few months of very low regional rainfall and scheduled monthly openings of the control structures within the Cameron-Creole Watershed, it was documented that salinities had increased up to 21 ppt. and the water level had risen up to +1 foot at which it remained throughout the remainder of 2012.

3.2 Current Site Conditions and Characteristics

The majority of the project area, approximately 101.58 acres, is now shallow open water which contains little to no living vegetation. The remaining 35.17 acres consists of fragmented emergent brackish marsh. As of June of 2014, as noted within the United States Department of Agriculture Natural Resources Conservation Service Trip Report via Email, water levels within the project area were documented to be 0.4 feet and salinities were found to be 18-20 ppt. Subsidence rates within this area are 1-15 mm/year as documented within Louisiana's Comprehensive Master Plan for a Sustainable Coast.

CURRENT VEGETATION

Vegetation is present within the approximately 35.17 acres of emergent brackish marsh located within the project site. Vegetation located within the emergent brackish marsh consists entirely of *Spartina alterniflora* and *Spartina patens*. No vegetation is present within the approximately 101.58 acres of shallow open water.

CURRENT SOILS

The project site, in its entirety, is mapped as Bancker muck according to the current USDA NRCS *Custom Soil Resources Report for Cameron Parish, Louisiana* (Figure 3). Bancker muck, typical of Cameron Parish, Louisiana, consists of very poorly drained, very slowly permeable, slightly saline, mucky mineral soils located within brackish marshes. These soils are generally flooded with several inches of water; however, these soils may be flooded with up to 10 feet of water during intense storms due to extreme tides. This soil is listed as hydric within the *National*

Lists of Hydric Soils; All States (U.S. Department of Agriculture Natural Resources Conservation Service, 2014).

PROPERTY CONSTRAINTS

Mangrove Bayou Coastal Marsh Mitigation Bank project site is located South of Grand Lake within an area of land known as “The Island” within Calcasieu Parish, Louisiana. The project site and adjacent property are located within unincorporated land, absent of zoning regulations. The site is connected to and surrounded by both natural and man-made tributaries and emergent brackish marsh.

JURISDICTIONAL DETERMINATION

A Jurisdictional Determination was issued by CEMVN on September 26, 2014, stating that the Mangrove Bayou Coastal Marsh Mitigation Bank project site, in its entirety, is a wetland and subject to U.S. Army Corps. Of Engineers jurisdiction. A copy of the Jurisdictional Determination is included within Appendix A.

3.3 General Watershed Characteristics

WATER SOURCES AND LOSSES

The primary sources of water for the Mangrove Bayou Coastal Marsh Mitigation Bank are precipitation, flow from adjacent properties due to tidal influence, or ingress from Calcasieu Lake due to management of the Cameron-Creole Watershed through the use of water control structures. Average annual precipitation within the vicinity of the project area is approximately 57 inches per year. June is the wettest month of 2014 with average precipitation of 14.54 inches, while April is the driest month of 2014 with average precipitation of 0.85 inches.

Water levels within the Mangrove Bayou Coastal Marsh Mitigation Bank project area are somewhat tidally influenced from Calcasieu Lake; however, water levels within this area are managed through the use of the water control structures located along the eastern shore of Calcasieu Lake. During high water events, water flows into the Mangrove Bayou Coastal Marsh Mitigation Bank project area from the levee borrow canal bordering the western side of the project area, from Lake Shore Canal bordering the northern side of the project area, from the PPG Ditch to the east, and from the marsh bordering the southern portion of the project area. Water from within the project area then drains back through all of those areas at varying water levels. By implementing the hydrologic restoration plan as detailed within Section 4.1, the project area elevation will be increased such that ponding within the area will be decreased allowing for growth of emergent vegetation. Drainage will then occur from west to east such that water drains exclusively through gaps within the containment placed along PPG ditch and through adjacent marsh located south of the project area (Figure 5).

HYDROPERIOD

The presence of hydric soils indicates that prolonged conditions of saturation and/or inundation have occurred historically within the area. This site is composed entirely of Bancker muck, a hydric soil, which consists of very poorly drained, very slowly permeable, slightly saline, mucky mineral soils. Bancker muck is located within brackish marsh and is generally flooded with several inches of water; however, these soils may be flooded with up to 10 feet of water during intense storms due to extreme tides. During periods when Bancker muck is not flooded, the water table exists 1.0 foot above to 0.5 foot below the surface.

3.4 Congruence with Local Action Plans

The Mangrove Bayou Coastal Marsh Mitigation Bank is in line with the goals and objectives of the Cameron-Creole Watershed Management Plan that was developed to assist in restoring the Cameron-Creole Watershed to the approximate 1972 conditions by restoring the vegetative communities and salinity regimes within the watershed.

CWPPRA project CS-49 is located within the vicinity of the project area. CS-49, otherwise known as the Cameron-Creole Freshwater Introduction, will introduce freshwater to restore the function, value, and sustainability of approximately 22,247 acres of marsh and open water within the Cameron-Creole Watershed. A portion of CS-49, the vegetative planting portion, was completed within the Mangrove Bayou Coastal Marsh Mitigation Bank project area in June of 2012; however, all vegetation planted within the project area has since died and the United States Department of Agriculture Natural Resources Conservation Service has recommended, as of July 2014 within a Trip Report via Email (Appendix B), that no additional plantings occur within this area at this time. Instead, it is suggested that there are numerous marsh nourishment projects needed within this area which would result in increases in elevation thereby providing conditions more conducive to supporting vegetation. Therefore, creation of the Mangrove Bayou Coastal Marsh Mitigation Bank will restore an area that was intended to be restored within CS-49, making this project in line with the goals and objectives set forth by CWPPRA for this area.

Southwest Coastal Louisiana Feasibility Study project 3c1 is also located within the vicinity of the project area. 3c1 includes beneficial use of dredge material, obtained from the Calcasieu Ship Channel, to restore approximately 1,765 acres of brackish marsh located adjacent to the eastern rim of Calcasieu Lake within the Cameron-Creole Watershed. The Mangrove Bayou Coastal Marsh Mitigation Bank does fall within the proposed marsh restoration area and is in line with the proposed project as beneficial use of dredge material would be used to restore marsh.

3.5 General Bank Need

There are currently no brackish marsh mitigation banks located within the proposed primary service area of the Mangrove Bayou Coastal Marsh Mitigation Bank, the Chenier Plain including HUC 08080206, HUC 08080202, and a portion of HUC 08080103.

The Mangrove Bayou Coastal Marsh Mitigation Bank will provide mitigation for oil and gas exploration and production, as well as industrial development which is currently ongoing within

this area of the state. In addition, mitigation will be available for residential and commercial development.

3.6 Technical Feasibility

The Mangrove Bayou Coastal Marsh Mitigation Bank has a high degree of technical feasibility. The project is located within the Cameron Creole Watershed, an area that is extensively studied and, once again, extensively controlled for fisheries, vegetative communities, and salinity regimes. This degraded/fragmented/deteriorated brackish marsh, the project site, is surrounded by areas of existing emergent brackish marsh at elevations conducive to support and that do support emergent brackish marsh. It is expected, due to the increased elevation of the marsh and the salt tolerant species (0-30 ppt.) to be planted, that the success of the project will not be completely dependent upon strict adherence to the Cameron-Creole Watershed Management Plan, although strict adherence would be preferred. Periodic fluctuations in water level and salinity are to be expected and were considered during preliminary design and engineering. The Mangrove Bayou Coastal Marsh Mitigation Bank shall be a success once elevations within the project site are increased, hydrology is altered such that shallow open water is not located on site year round, and salinities are lowered.

In addition, the CWPPRA project, the Cameron-Creole Freshwater Introduction Project (CS-49), once complete, will provide for additional freshwater input which will assist in sustainability and increases in organic productivity within this area.

4.0 Bank Establishment

4.1 Management Summary

HYDROLOGIC RESTORATION

The primary sources of hydrology of the proposed Mangrove Bayou Coastal Marsh Mitigation Bank include rainfall; groundwater; and surface inundation due to flooding events, tidal fluctuations, or opening and closing of water controls structures associated with the Cameron-Creole Watershed Management Plan. Rainfall is estimated to be approximately 57 inches per year according to National Oceanic and Atmospheric Administration National Weather Service Weather Forecast Office. Water levels, from the Cameron-Creole Watershed Management Plan, are expected to remain between 2" above and 6" below marsh elevation; however, within the project area, mean high water is 0.7506 and mean low water is -0.0276.

In order to create marsh and enhance existing marsh within the project area, containment will be constructed along the borrow canal and PPG Ditch. Dredge material, approximately 321,420 cubic yards, will then be placed within the containment at a post construction target elevation of +1.5' NAVD 88 elevation over the entirety of the project area designated for marsh creation. In order to enhance existing marsh, dredge material will be placed within the degraded areas within the project area designated for marsh creation at a post construction target elevation of +1.5' NAVD 88. Based upon expected settlement rates for this area, marsh elevation is expected

to stabilize within the MHW and MLW levels. Following dewatering, containment along PPG Ditch will be gapped in order to allow for drainage of the project area. Drainage will also occur through the southern end of the project area as containment will not be constructed within this area. Figures 6 and 7 present typical cross-sections for creation and enhancement construction activities.

DRAINAGE AREA

Once the Mangrove Bayou Coastal Marsh Mitigation Bank project is completed, water will enter the project area via rain water accumulation, from the south via sheet flow through marsh bordering the southern portion of the project area, and through gaps located within the containment along PPG Ditch. Water will then drain into PPG Ditch through those same gap and through the marsh located south of the project area.

VEGETATIVE RESTORATION

Vegetation restoration will include planting *Spartina alterniflora* and *Spartina patens* within the approximately 101.58 acres of created emergent brackish marsh and where necessary within the approximately 35.17 acres of enhanced emergent brackish marsh. *Spartina alterniflora* can tolerate water with salinities ranging from 0 ppt. to 35 ppt. *Spartina patens* will tolerate irregular inundations of water with a salinity of 0 ppt. to 35 ppt.

INVASIVE SPECIES CONTROL

During both short-term and long-term success monitoring, invasive plant species growing within the planted areas will be treated using herbicidal treatment, if necessary.

MONITORING

Monitoring shall begin 30 to 60 days after completion of placement of dredge material and shall then occur during active growing season of years 1, 3, and 7. Monitoring reports shall be prepared following monitoring activities and reports shall be submitted by no later than December 31 of that monitoring year.

If additional dredge material is required in order to meet elevation requirements, then required monitoring shall be based on the new dredge material completion date. If additional plantings are required, then required monitoring shall be based on the new planting completion date.

4.2 Proposed Service Area

The Mangrove Bayou Coastal Marsh Mitigation Bank is located in the Lower Calcasieu Watershed, HUC 08080206. Miami Corporation proposes the Chenier Plain including HUC 08080206, HUC 08080202, and a portion of HUC 08080103 as the Primary Service Area of the Mangrove Bayou Coastal Marsh Mitigation Bank.

5.0 Operations

5.1 Future Ownership and Long-Term Management

SPONSOR/OPERATIONS MANAGER/LONG-TERM MANAGEMENT

Miami Corporation
309 La Rue France
Suite 201
Lafayette, Louisiana 70508
(337) 264-1695
Point of Contact: Chad J. Courville
ccourville@miami-corp.com

LANDOWNER/LONG-TERM OWNERSHIP

Miami Corporation
309 La Rue France
Suite 201
Lafayette, Louisiana 70508
(337) 264-1695
Point of Contact: Chad J. Courville
ccourville@miami-corp.com

AGENT

Royal Engineers & Consultants, LLC
1231 Camellia Boulevard
Lafayette, Louisiana 70508
(337) 456-5351
Point of Contact: Ralph Libersat
rlibersat@royalengineers.net

5.2 Site Protection Mechanism

The Mangrove Bayou Coastal Marsh Mitigation Bank will be protected for a duration of 20 years, commensurate with the Louisiana Department of Natural Resources In-Lieu Fee program and other coastal marsh mitigation banks. The servitude will be held by a conservation oriented 501(c)(3) organization to be determined and will prohibit fill discharges and/or other development that would diminish the quality or quantity of created/restored/enhanced wetlands. The servitude will be associated with the property title.

5.3 Long Term Management Strategy

The sponsor, Miami Corporation, will ensure the long-term success and sustainability of the Mangrove Bayou Coastal Marsh Mitigation Bank. Mechanisms used to do so include site

monitoring, vegetative plantings as necessary, exotic/invasive species control, hydrologic maintenance as necessary, establishment of financial assurances, and protection by conservation servitude. A short and long term marsh management plan will be included within the Mitigation Banking Instrument.

5.4 Sponsor Qualifications

Miami Corporation is a private land holding company that allows for responsible oil and gas exploration, hunting, fishing, and other sustainable surface uses of their approximately 240,000 acres of land throughout coastal Louisiana. Miami Corporation has participated in numerous coastal restoration projects and programs and currently have numerous coastal monitoring stations located on their property within coastal Louisiana.

6.0 Conclusion

The Mangrove Bayou Coastal Marsh Mitigation Bank has the potential to create 101.58 acres of emergent brackish marsh and to enhance 35.17 acres of emergent brackish marsh. Miami Corporation, assisted by Royal Engineers & Consultants, has determined that the Mangrove Bayou Coastal Marsh Mitigation Bank has a very high probability of success based upon an in-depth review of historical and current data.

7.0 References

Cameron-Creole Freshwater Introduction Project (CS-49) Vegetative Plantings Preliminary Design Report. U.S. Department of Agriculture Natural Resources Conservation Service, 2009.

Cameron Creole Watershed Status and Trends. Louisiana Coastal Protection and Restoration Authority, 2014. <http://coastal.la.gov/wp-content/uploads/2014/07/CCW-Status-and-Trends_CCA-final.pdf>

Clean Water Act, 40 C.F.R. §230, 2013.

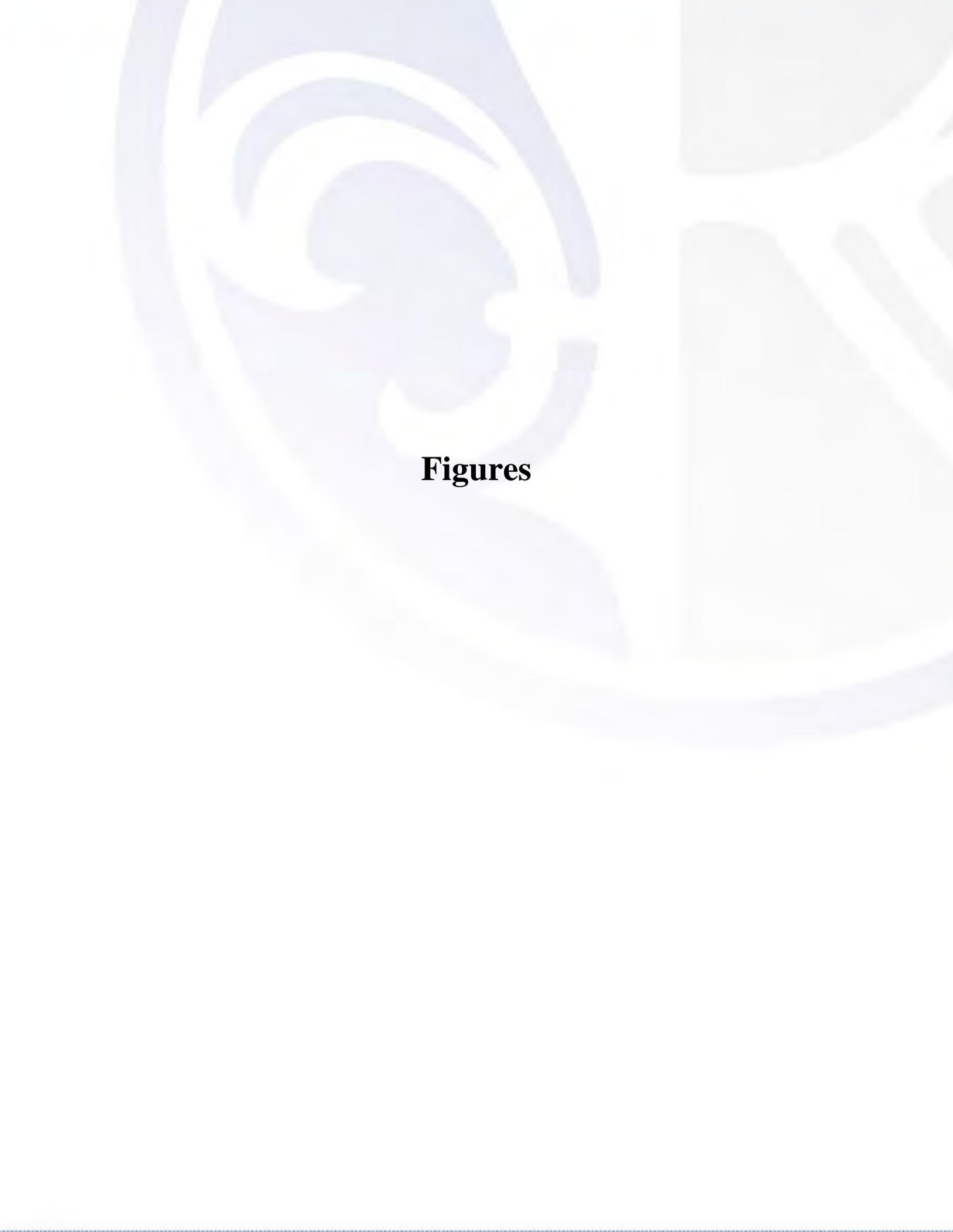
Clean Water Act, Navigation and Navigable Waters, 33 C.F.R. §325, 2013.

Clean Water Act, Navigation and Navigable Waters, 33 C.F.R. §332, 2013.

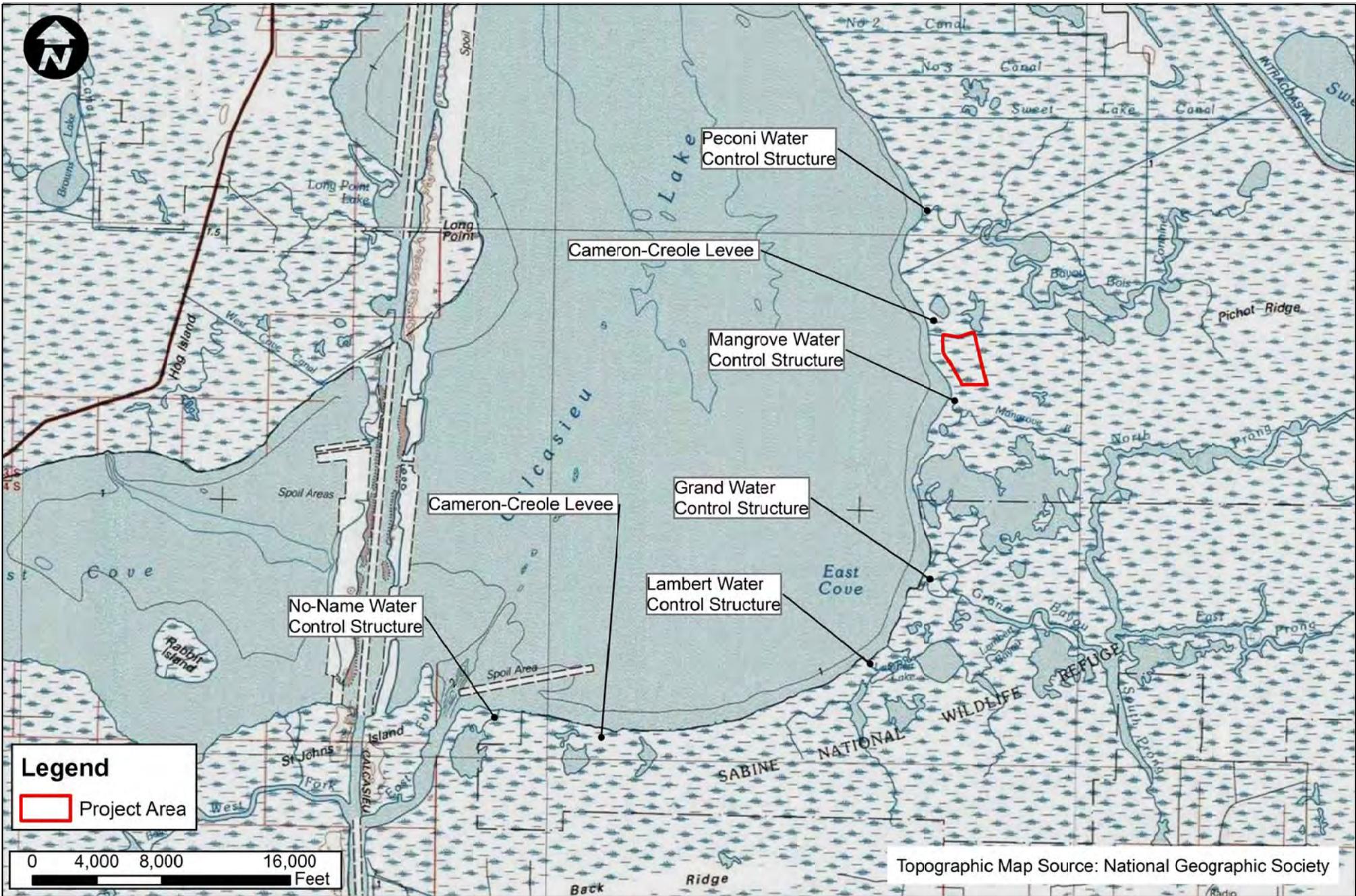
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<<http://www.deq.louisiana.gov/portal/DIVISIONS/WaterPermits/WaterQualityAssessment/WaterQualityInventorySection305b.aspx>>

- Louisiana's Nonpoint Source Management Plan*. Louisiana Department of Environmental Quality, 2012. <http://nonpoint.deq.louisiana.gov/docs/000002_NPS_Management_Plan_1.pdf>
- National Lists of Hydric Soils; All States*. U.S. Department of Agriculture Natural Resources Conservation Service, 2014. <<http://www.soils.usda.gov>>
- National Oceanic and Atmospheric Administration National Weather Service Weather Forecast Office. *Climate Information Yearly Climate Summaries for Lake Charles, Louisiana*. <<http://www.srh.noaa.gov/lch/?n=climate>>
- National Wetland Plant List, Version 3.2*. U.S. Army Corps of Engineers, 2014. <http://wetland_plants.usace.army.mil/>
- The Natural Communities of Louisiana*. Louisiana Department of Wildlife and Fisheries Louisiana Natural Heritage Program, 2009. <http://www.wlf.louisiana.gov/sites/default/files/pdf/page_wildlife/6776-are%20Natural%20Communities/LA_NAT_COM.pdf>
- U.S. Department of Agriculture Natural Resources Conservation Service. Natural Resources Conservation Service, Louisiana Agricultural Experiment Station, and Louisiana Soil and Water Conservation Committee. *Soil Survey of Cameron Parish, Louisiana*. Washington D.C.: National Cooperative Soil Survey, 1995.
- U.S. Department of Agriculture Natural Resources Conservation Service National Plants Database. <<http://plants.usda.gov>>
- U.S. Department of Agriculture Natural Resources Conservation Service Web Soil Survey. *Custom Soil Resources Report for Cameron Parish, Louisiana*. <<http://www.websoilsurvey.sc.egov.usda.gov>>
- U.S. Fish and Wildlife Service National Wetlands Inventory. <<http://www.fws.gov/wetlands/>>

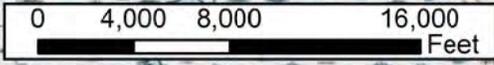


Figures



Legend

Project Area



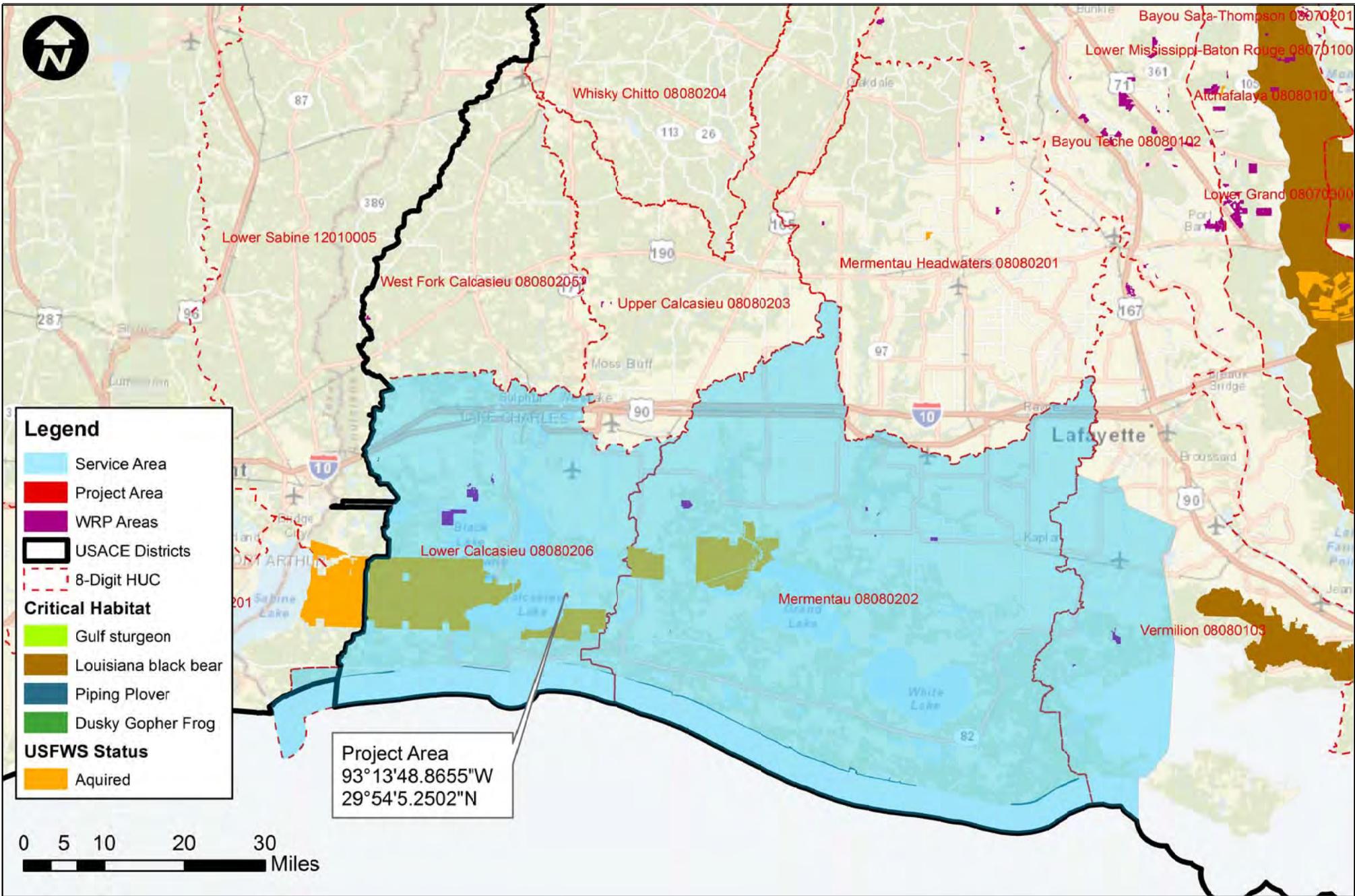
REV.	DATE	DESCRIPTION	BY

CLIENT: **MIAMI CORPORATION**

TITLE: VICINITY MAP			
PROJ. NAME: MIAMI CORP. MARSH CREATION MITIGATION BANK			
DES: BT	SCALE: AS SHOWN		
DR: LL	JOB No. 2014-18	SHEET NO.	REV.
CH: AD	DATE: 10/16/2014		
APP: RL			



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 Lafayette, LOUISIANA 70508



Project Area
 93° 13' 48.8655"W
 29° 54' 5.2502"N

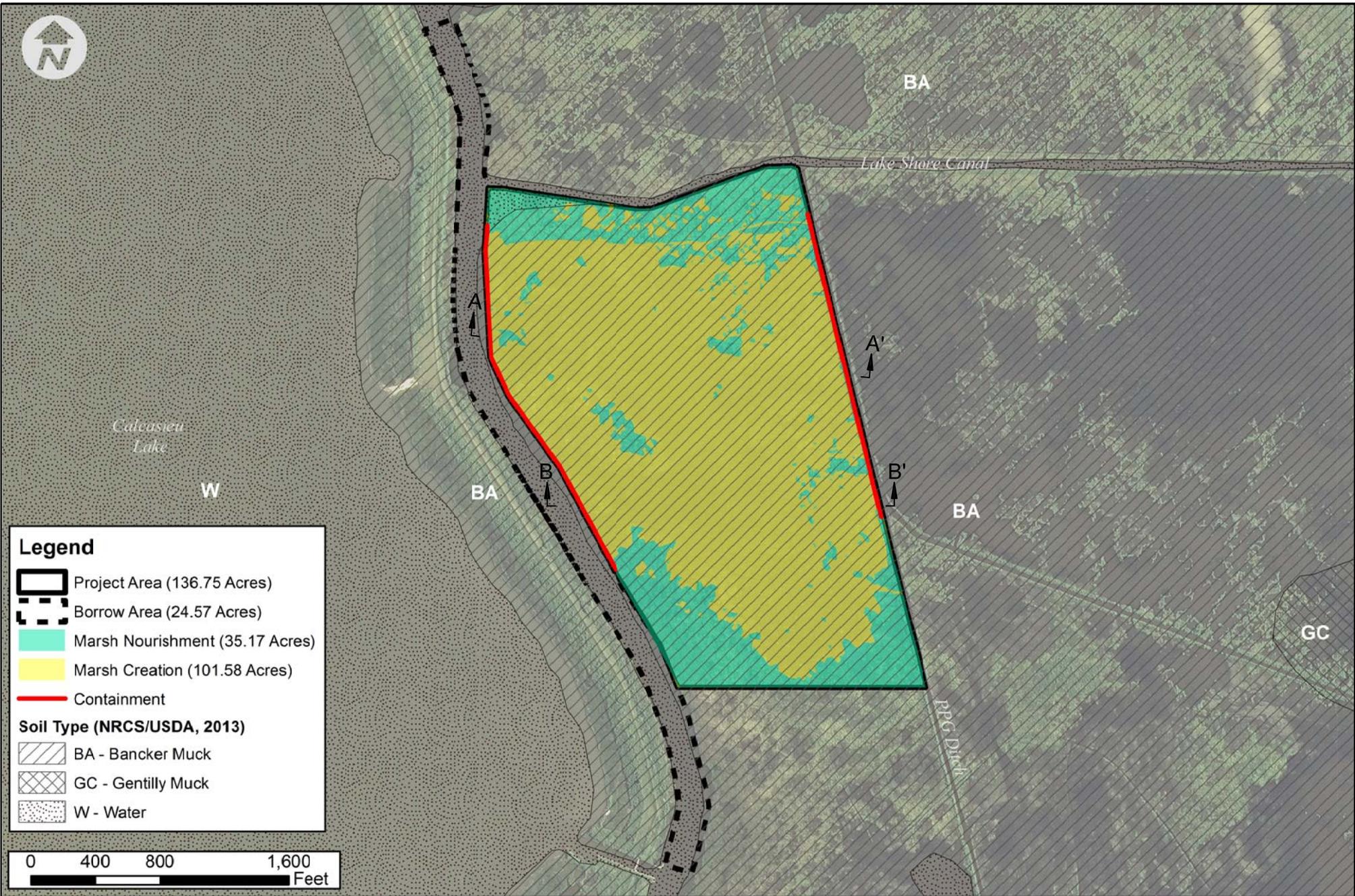
REV.	DATE	DESCRIPTION	BY

CLIENT:
MIAMI CORPORATION

TITLE: SERVICE AREA MAP			
PROJ. NAME: MIAMI CORP. MARSH CREATION MITIGATION BANK			
DES: BT	SCALE: AS SHOWN	SHEET NO.	REV.
DR: LL	JOB No. 2014-18	FIGURE 2	
CH: AD	DATE: 8/27/2014		
APP: RL			



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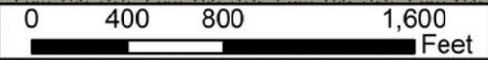


Legend

- Project Area (136.75 Acres)
- Borrow Area (24.57 Acres)
- Marsh Nourishment (35.17 Acres)
- Marsh Creation (101.58 Acres)
- Containment

Soil Type (NRCS/USDA, 2013)

- BA - Bancker Muck
- GC - Gentilly Muck
- W - Water

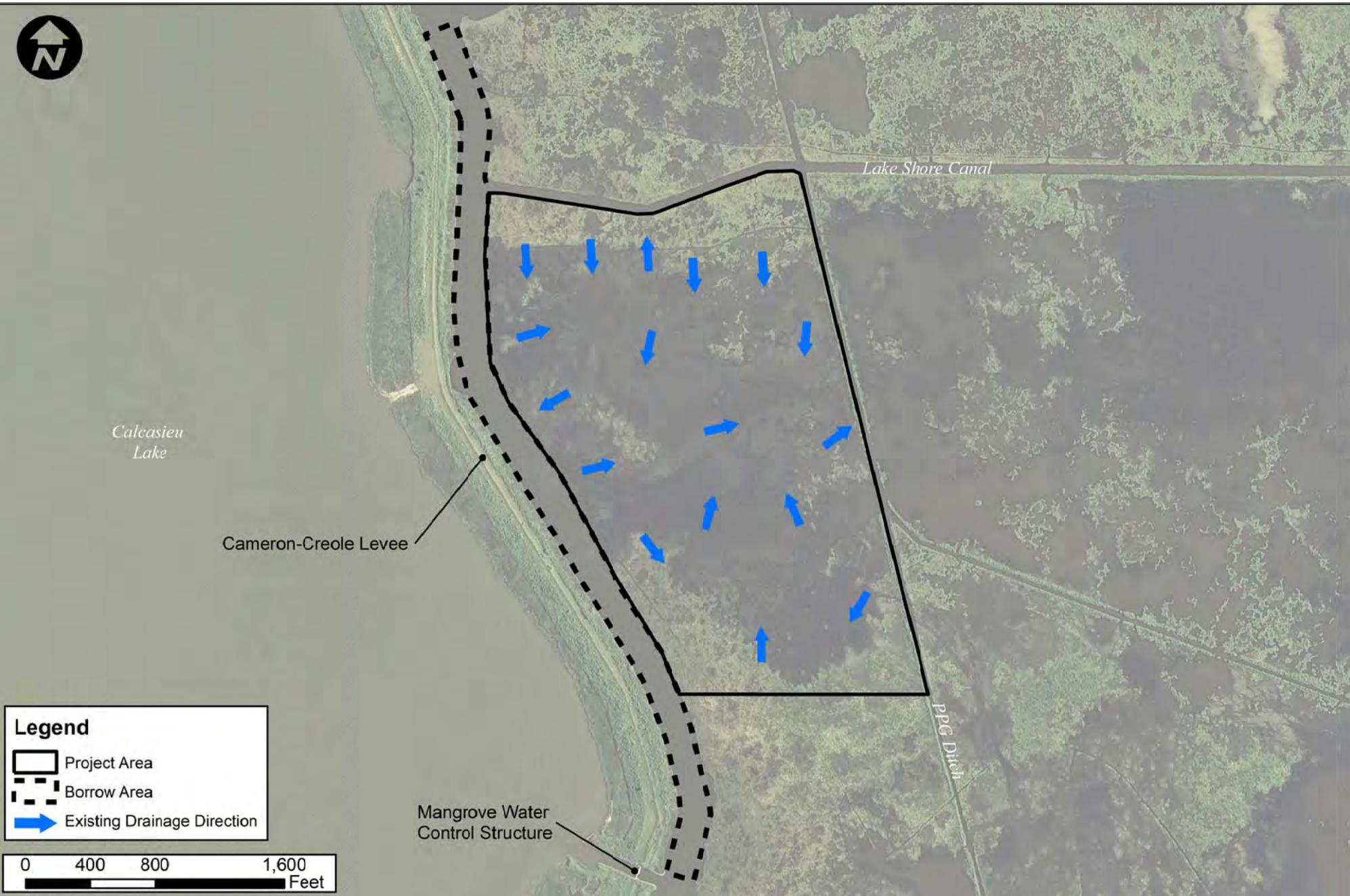


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REV.	DATE	DESCRIPTION	BY

CLIENT:
MIAMI CORPORATION

TITLE: PROPOSED RETORATION PLAN, SOILS & CROSS-SECTION LOCATION MAP			
PROJ. NAME: MIAMI CORP. MARSH CREATION MITIGATION BANK			
DES: BT	SCALE: AS SHOWN	SHEET NO.	REV.
DR: LL	JOB No. 2014-18		
CH: AD	DATE: 2/9/2015		
APP: RL			



Legend

- Project Area
- Borrow Area
- Existing Drainage Direction



REV.	DATE	DESCRIPTION	BY

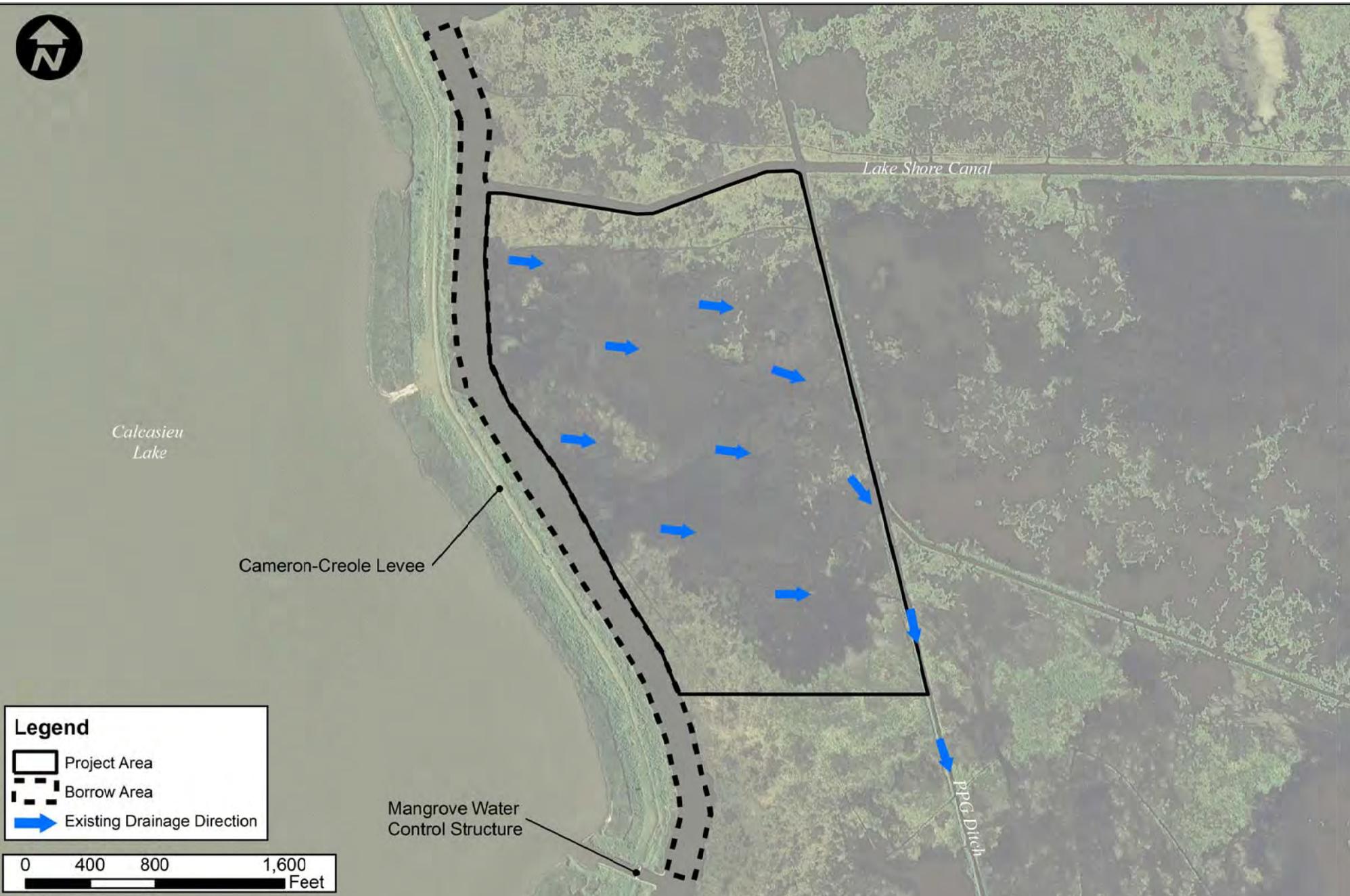
CLIENT:
MIAMI CORPORATION

TITLE: CURRENT HYDROLOGY MAP			
PROJ. NAME: MIAMI CORP. MARSH CREATION MITIGATION BANK			
DES: BT	SCALE: AS SHOWN		
DR: LL	JOB No. 2014-18	SHEET NO.	REV.
CH: AD	DATE: 10/16/2014		
APP: RL			



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Legend

- Project Area
- Borrow Area
- Existing Drainage Direction

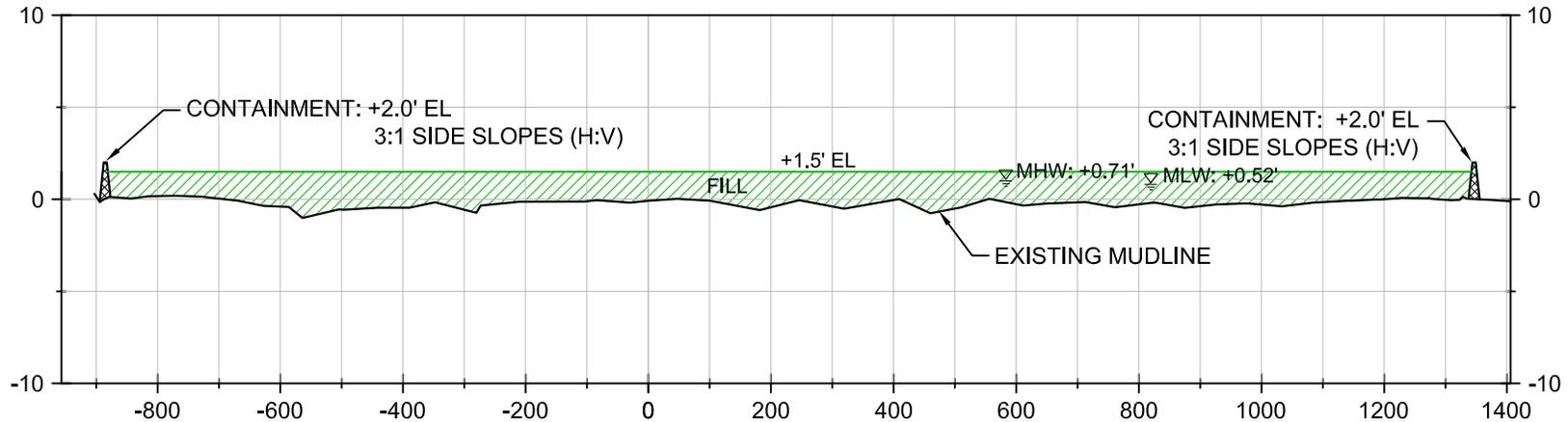


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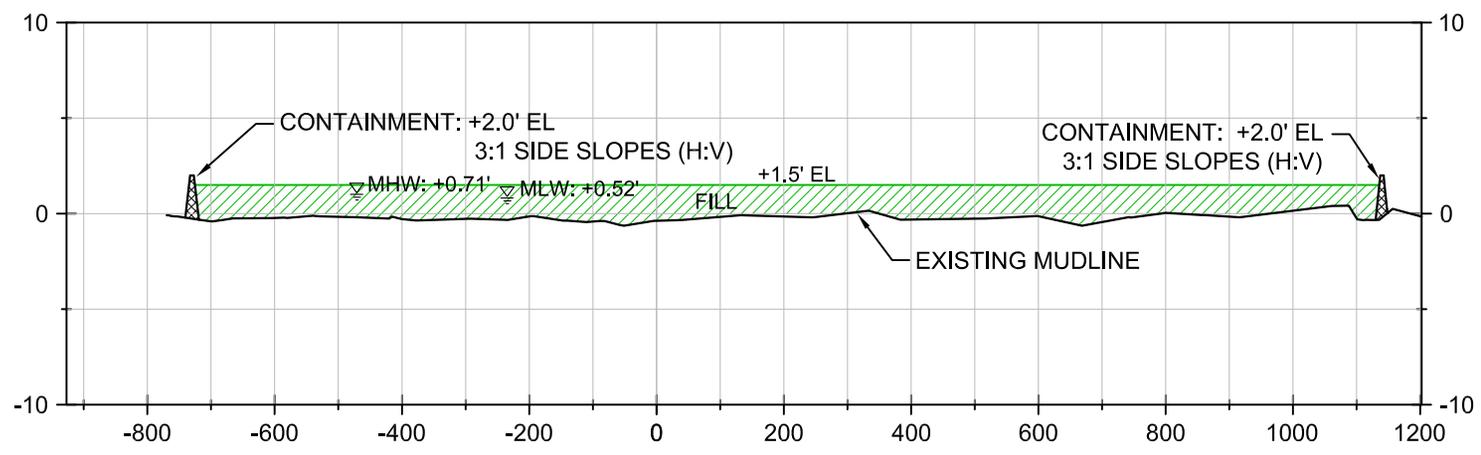
REV.	DATE	DESCRIPTION	BY

CLIENT:
MIAMI CORPORATION

TITLE: POST CONSTRUCTION HYDROLOGY MAP			
PROJ. NAME: MIAMI CORP. MARSH CREATION MITIGATION BANK			
DES: BT	SCALE: AS SHOWN	SHEET NO.	REV.
DR: LL	JOB No. 2014-18		
CH: AD	DATE: 10/16/2014		
APP: RL			



TYPICAL CROSS-SECTION A-A'
 HORIZONTAL SCALE: 1" = 300'
 VERTICAL SCALE: 1" = 10'



TYPICAL CROSS-SECTION B-B'
 HORIZONTAL SCALE: 1" = 300'
 VERTICAL SCALE: 1" = 10'

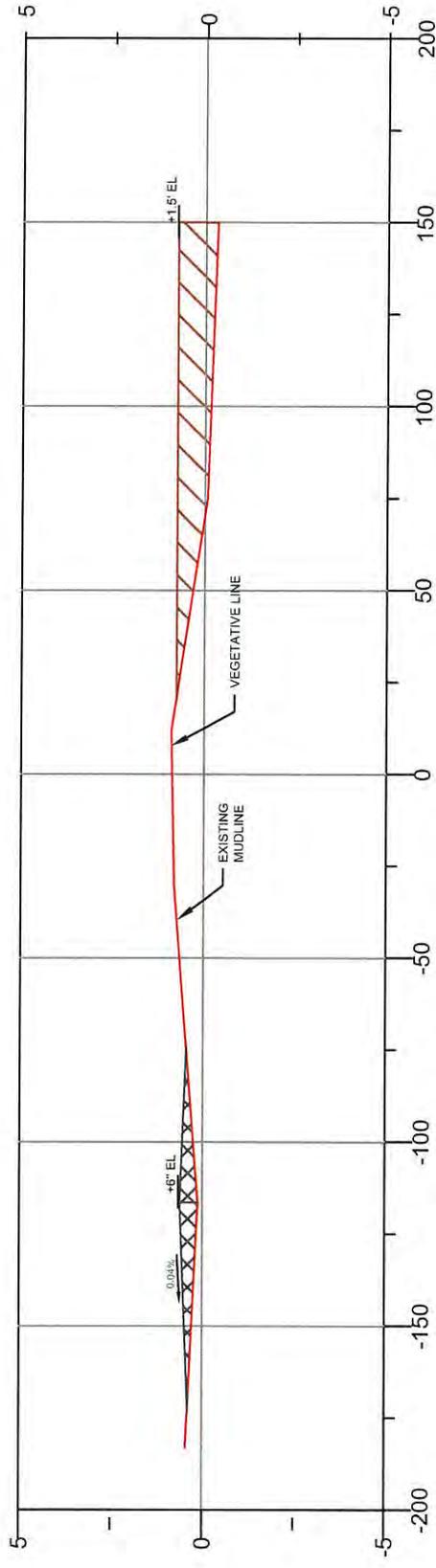


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REV.	DATE	DESCRIPTION	BY

CLIENT:
MIAMI CORPORATION

TITLE: TYPICAL CROSS SECTIONS			
PROJ. NAME: MIAMI CORP MARSH CREATION MITIGATION BANK			
DES:	BT	SCALE: AS SHOWN	
DR:	LL	JOB No. 2014-18	SHEET NO.
CH:	AD	DATE: 7/14/2014	FIGURE 6
APP:	RL		REV.



 MARSH CREATION
 MARSH NOURISHMENT

TYPICAL CROSS-SECTION

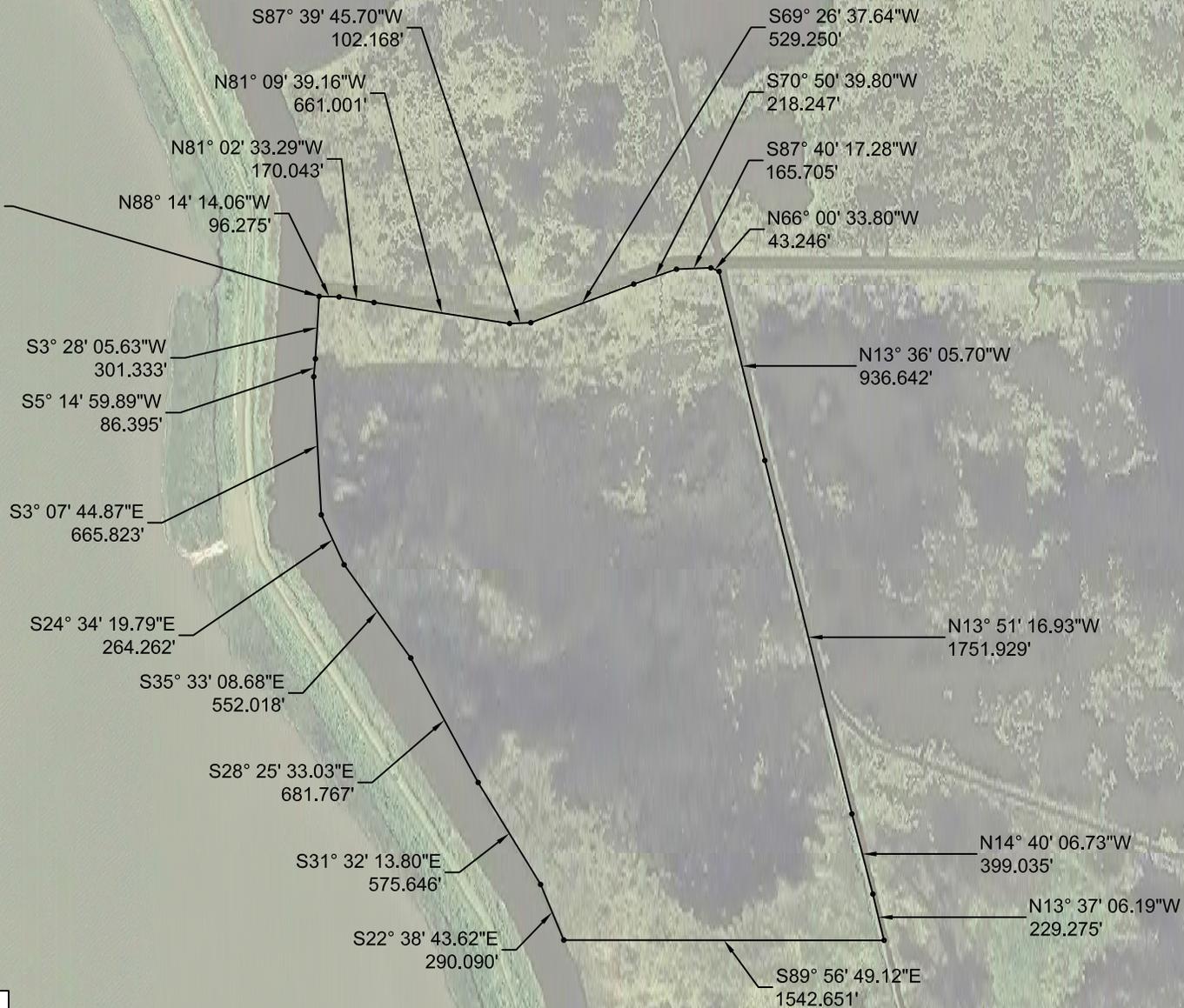
HORIZONTAL SCALE: 1" = 50'
 VERTICAL SCALE: 1" = 5'

NOTE: Marsh nourishment of the adjacent marshes will not exceed greater than 6" of material over established marsh. The design-build team will take every precaution to control the flow of the dredge slurry and strategically place the dredge outfall so that established marsh will not be covered with layers of fill greater than 6".

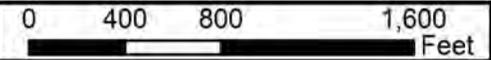
 ROYAL ENGINEERS & CONSULTANTS, LLC 1231 Camellia Boulevard Lafayette, LOUISIANA 70508		CLIENT:		MIAMI CORPORATION		TITLE:	
		REV.	DATE			BY	DESCRIPTION
REV.	DATE	BY	DESCRIPTION	PROJECT NAME: MIAMI CORP MARSH NOURISHMENT	DES: BT	SCALE: AS SHOWN	SHEET NO.
REV.	DATE	BY	DESCRIPTION	DR: LURD	JOB No. 2014-18	AD	REV
REV.	DATE	BY	DESCRIPTION	APP: RL	DATE: 10/7/2014	RL	REV



POINT OF BEGINNING
LA STATE PLANE NAD83
SOUTH ZONE FT
N: 516024.2586'
E: 2678552.6022'



Legend
— Project Boundary



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Lafayette, LOUISIANA 70508

REV.	DATE	DESCRIPTION	BY

CLIENT:
MIAMI CORPORATION

TITLE: BOUNDARY SURVEY			
PROJ. NAME:	MIAMI CORP MARSH CREATION MITIGATION BANK		
DES:	BT	SCALE:	AS SHOWN
DR:	LL	JOB No.	2014-18
CH:	AD	SHEET NO.	REV.
APP:	RL	DATE:	7/14/2014
			FIGURE 7



Calcasieu
Lake

Lake Shore Canal

PPG Ditch

Legend

 Project Area

 Borrow Area



Imagery Source: LSU ATLAS, 1998



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REV.	DATE	DESCRIPTION	BY

CLIENT:
MIAMI CORPORATION

TITLE:			
HISTORICAL AERIAL 1998			
PROJ. NAME: MIAMI CORP. MARSH CREATION MITIGATION BANK			
DES:	BT	SCALE:	AS SHOWN
DR:	LL	JOB No.	2014-18
CH:	AD	SHEET NO.	REV.
APP:	RL	DATE:	7/14/2014
		FIGURE 8	



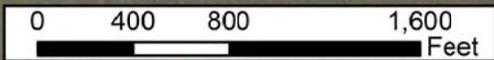
Calcasieu
Lake

Lake Shore Canal

PPG Ditch

Legend

-  Project Area
-  Borrow Area



Imagery Source: NAIP, 2003



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REV.	DATE	DESCRIPTION	BY

CLIENT:

MIAMI CORPORATION

TITLE:

HISTORICAL AERIAL 2003

PROJ. NAME: MIAMI CORP. MARSH CREATION MITIGATION BANK			
DES: BT	SCALE: AS SHOWN	SHEET NO.	REV.
DR: LL	JOB No. 2014-18		
CH: AD	DATE: 7/14/2014	FIGURE 9	
APP: RL			



Calcasieu
Lake

Lake Shore Canal

PPG Ditch

Legend

 Project Area

 Borrow Area



Imagery Source: NAIP, 2009



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Lafayette, LOUISIANA 70508

REV.	DATE	DESCRIPTION	BY

CLIENT:
MIAMI CORPORATION

TITLE:			
HISTORICAL AERIAL 2009			
PROJ. NAME: MIAMI CORP. MARSH CREATION MITIGATION BANK			
DES: BT	SCALE: AS SHOWN		
DR: LL	JOB No. 2014-18	SHEET NO.	REV.
CH: AD		FIGURE 10	
APP: RL	DATE: 7/14/2014		



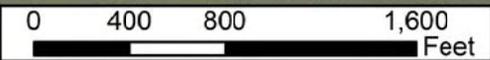
Calcasieu
Lake

Lake Shore Canal

PPG Ditch

Legend

-  Project Area
-  Borrow Area



Imagery Source: NAIP, 2013



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REV.	DATE	DESCRIPTION	BY

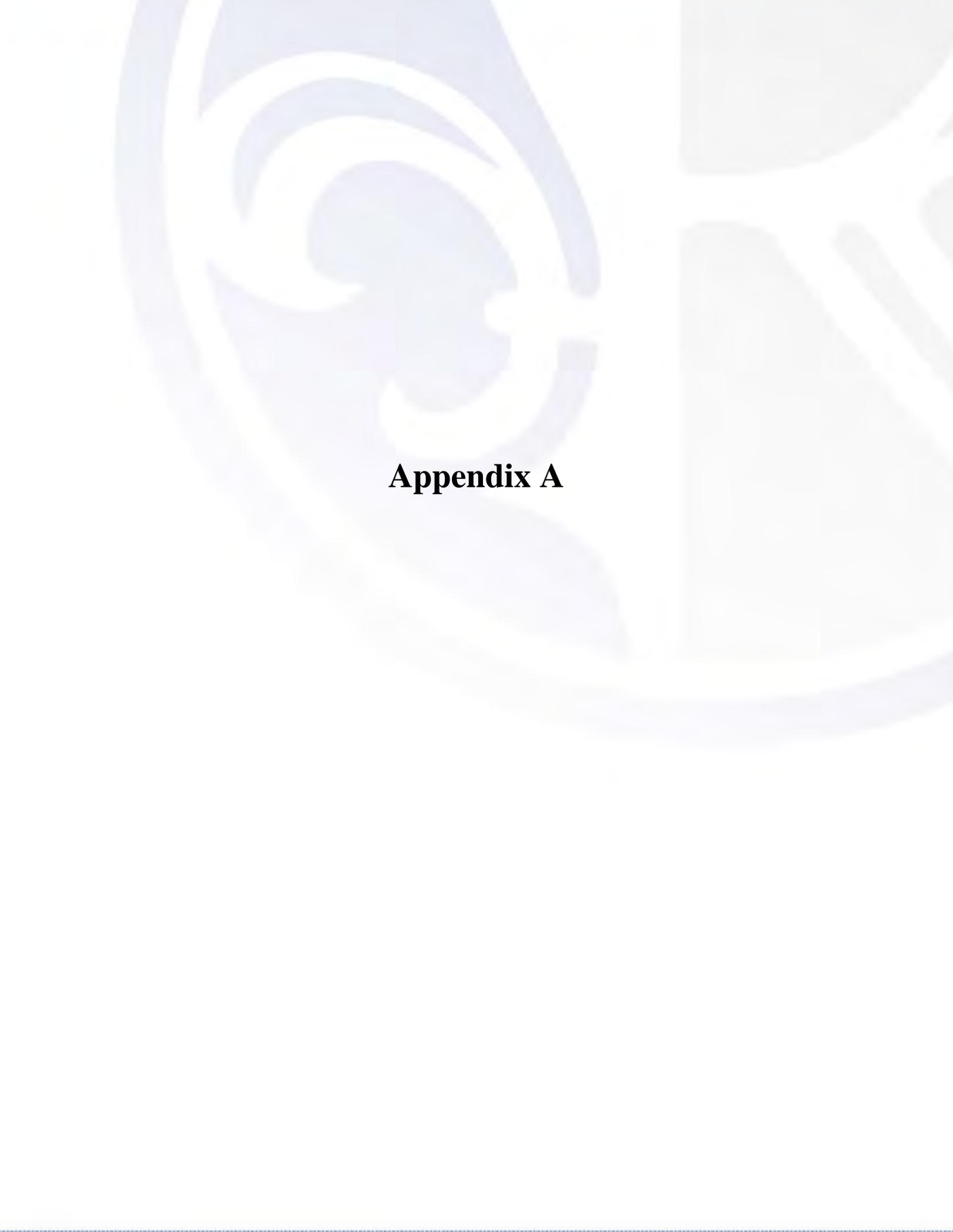
CLIENT:

MIAMI CORPORATION

TITLE:

AERIAL 2013

PROJ. NAME: MIAMI CORP. MARSH CREATION MITIGATION BANK			
DES: BT	SCALE: AS SHOWN	SHEET NO.	REV.
DR: LL	JOB No. 2014-18	FIGURE 11	
CH: AD	DATE: 7/14/2014		
APP: RL			



Appendix A



REPLY TO
ATTENTION OF

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

SEP 26 2014

Operations Division
Surveillance and Enforcement Section

Ms. April V. Dykes
Royal Engineers & Consultants, LLC
214 Third Street, Ste 2C
Baton Rouge, Louisiana 70801

Dear Ms. Dykes:

Reference is made to your request for a U.S. Army Corps of Engineers' (Corps) jurisdictional determination on property located in Section 25, Township 13 South, Range 9 West and Section 30, Township 13 South, Section 8 West, Cameron Parish, Louisiana (enclosed map). Specifically, this property is identified as 136.75-acre proposed Mangrove Bayou Coastal Marsh Mitigation Bank site.

Based on review of recent maps, aerial photography, and soils data, we have determined that this property is a wetland and subject to Corps' jurisdiction. A Department of the Army (DA) permit under Section 404 of the Clean Water Act will be required prior to the deposition or redistribution of dredged or fill material into this wetland. This wetland is also tidal and, along with the waters indicated in blue on the map, is subject to Corps' jurisdiction under Section 10 of the Rivers and Harbors Act. A DA Section 10 permit will be required prior to any work in this waterway or the tidal wetland.

You are advised that this approved jurisdictional determination is valid for a period of 5 years from the date of this letter unless new information warrants revision prior to the expiration date or the District Commander has identified, after public notice and comment, that specific geographic areas with rapidly changing environmental conditions merit re-verification on a more frequent basis.

Please be advised that this property is in the Louisiana Coastal Zone and a Coastal Use Permit may be required prior to initiation of any activities on this site. For additional information, contact Ms. Christine Charrier, Office of Coastal Management, Louisiana Department of Natural Resources at (225) 342 7953.

Should there be any questions concerning these matters, please contact Ms. Christine Thibodeaux at (504) 862-2278 and reference our Account No. MVN-2014-01978-ST. If you have specific questions regarding the permit process or permit applications, please contact our Western Evaluation Section at (504) 862-2411.

Sincerely,

Martin S. Mayer
Chief, Regulatory Branch

Enclosures



U.S. ARMY CORPS OF ENGINEERS
APPROVED
 JURISDICTIONAL DETERMINATION

USACE
 FSV (IH) Date: 8-27-2014
 Botanist: C. Thibodeaux
 Requestor: A. Dykes
 # MVN-2014-01978-ST
 - WETLAND Sec 10/404
 - OTHER WATERS Sec 10/404

Imagery Source: NAIP, 2013

Legend

- Project Area
- Borrow Area
- Emergent Marsh - 35.17 Acres
- Open Water - 101.58 Acres




ROYAL ENGINEERS & CONSULTANTS, LLC
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 Lafayette, LOUISIANA 70508

REV.	DATE	DESCRIPTION	BY

CLIENT: MIAMI CORPORATION

TITLE:		LAND/WATER RATIO
PROJ. NAME:	MIAMI CORP MARSH CREATION MITIGATION BANK	
DES:	BT	
	SCALE: AS SHOWN	
DR:	LL	
CHK:	AD	
APP:	RL	
	DATE: 7/22/2014	
		SHEET NO. FIGURE 6
		REV.