JOINT PUBLIC NOTICE

April 15, 2019

United States Army
Corps of Engineers
New Orleans District
Regulatory Branch
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Project Manager
Brandon Gaspard
Permit Application Number
MVN-2017-01494-MG

Project Manager
Elizabeth Hill
WQC Application Number
WQC # 180615-01

Interested parties are hereby notified that a prospectus and 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).

CEDAR GROVE MITIGATION BANK AMENDMENT ONE IN TERREBONNE PARISH

NAME OF APPLICANT: JMB Partnership, L.L.C., Attn: Aaron Landry, Post Office Box 333, Franklin, Louisiana 70538.

LOCATION OF WORK: The project area is located in Terrebonne Parish within Sections 01 and 02, Township 18 South, Range 17 East, and Sections 59 and 79, Township 18 South, Range 18 East along Cedar Grove Road in Dulac, Louisiana approximately 5.4 miles south of Houma, Louisiana. The approximate site center is Latitude 29.530787 N, 90.675841 W. The project is located within the Terrebonne Basin Watershed, Hydrologic Unit 08070302.

CHARACTER OF WORK: JMB Partnership, L.L.C. proposes to conduct vegetative plantings, fill or plug multiple agricultural drains and furrows, degrade hydrologic impediments, remove culverts, construct a protection levee, and restore natural elevations on portions of the project site. These activities are to be conducted for the purpose of enhancing and restoring traditional surface hydrology in 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 N/A 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

Prospectus for the Proposed
Cedar Grove Mitigation Bank Amendment One
MVN-2017-01494-MG

Terrebonne Parish, Louisiana

March 25, 2019

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1.0 INTRODUCTION

JMB Partnership, LLC (JMB and/or Sponsor), submits this Prospectus to the U.S. Army Corps of Engineers - New Orleans District (CEMVN) and the CEMVN Mitigation Banking Interagency Review Team (IRT) in sponsorship of establishing Cedar Grove Mitigation Bank Amendment One (CGMBA1 and/or Bank) (MVN-2017-01494-MG). This Prospectus is an amendment/addition to the June 1, 2017, approved, Sponsor-operated Cedar Grove Mitigation Bank (MVN-2016-00151-MG). The Sponsor has prepared this Prospectus in accordance with 33 CFR § 332.8(d)(2). The purpose of CGMBA1 is to add additional acreage to Cedar Grove Mitigation Bank to compensate for unavoidable impacts to Waters of the United States, including wetlands, that result from activities authorized by the Department of the Army pursuant to Section 404 of the Clean Water Act and/or Section 10 of the Rivers and Harbors Act.

CGMBA1 is currently comprised of agriculture production fields (sugarcane), scrub shrub habitat and multiple forested habitats such as hardwood, cypress, transitional swamp, emergent swamp, and Chinese tallow (Attachment B: Figure 15). CGMBA1 has potential to be restored to bottomland hardwoods (BLH) and cypress swamp (CS) habitats through the implementation of re-establishment, rehabilitation, and enhancement Mitigation Types as defined in the CEMVN Louisiana Wetland Rapid Assessment Method Version 2.0 (LRAM) and the *LRAM Version 2.0 10/03/18 Excel Worksheet*. The Sponsor will restore 123.8 acres to BLH wetlands and 227.7 acres to CS wetlands, 9.2 acres to upland buffer, and contain 10.6 acres of Waters of the U.S. for a total of 371.3 acres (Attachment A: Table 1 and LRAMs BLH and CS). CGMBA1 will have long-term protection through financial assurances with long-term escrow accounts and the institution of conservation servitude.

1.1 Site Location

The Bank is in Terrebonne Parish, approximately 5.4 miles southeast of Houma, north of Cedar Grove Mitigation Bank and the St. Louis Canal (Attachment B: Figure 1). The approximate center point of CGMBA1 is located at Latitude 29.530787º and Longitude -090.675841º. CGMBA1 is in Sections 01 and 02 of Township 18 South, Range 17 East and in Sections 59 and 79 of Township 18 South, Range 18 East (Attachment B: Figure 2).

CGMBA1 topography is flat to sloping with areas of higher elevations occurring on the natural ridge in the center of CGMBA1. Elevations derived from state sponsored LIDAR data range from 0.0’ to 7.0’ relative to NAVD88 datum, with elevations between 0’ and 5’ within the proposed wetland areas (Attachment B: Figure 7). There are 10.3 acres over the 5’ contour within the CGMBA1 boundary (Attachment B: Figure 8). However, after site construction is completed, CGMBA1 will contain only 9.2 acres that is over the 5’ contour, all of which are upland restoration and inclusion restoration types. According to the Federal Emergency Management Agency (FEMA) CGMBA1 is within the 100-year flood zone.

Terrebonne Parish has a humid, subtropical, marine climate. Terrebonne Parish’s average annual total precipitation is about 63.7 inches. Of this, about 53.87 inches, or 85 percent, usually falls in February through November. In winter, the average temperature is 54.7 °F and the average daily minimum temperature is 44.6 °F. In summer, the average

temperature is 81.3 °F and the average daily maximum temperature is 90.0 °F. The sun shines 63 percent of the time in summer and 50 percent in winter (NRCS).

CGMBA1 is located in the United States Geological Survey (USGS) Hydrologic Unit Code (HUC) 0809302. This falls within the West Central Louisiana Coastal region, which is a subregion of the greater Terrebonne Basin (Attachment B: Figure 17). State and Federal jurisdictional boundaries that encompass CGMBA1 include the following; the Louisiana Office of Coastal Management (OCM) Deltaic Region of the Louisiana Coastal Zone, the Natural Resources Conservation Service (NRCS), Mississippi Delta Cotton and Feed Grains Land Resource Region (LRR O), and the Southern Mississippi River Alluvium Major Land Resource Area (MLRA 131A). The CGMBA1 also lies in the Environmental Protection Agency (EPA) designated Mississippi Alluvial Plain (73) Level III Ecoregion, and in three different Level IV Ecoregions; Inland Swamps (73n), Deltaic Coastal Marshes and Barrier Islands (73o), and Southern Holocene Meander Belts (73k).

1.2 Driving Directions

From US-90E, take exit 202 for LA-24 toward Thibodaux/Houma, turn right onto LA-24E / W. Main St. (0.1 miles), continue straight onto W. Main St. (3.3 miles), turn right onto LA-3040 / Martin Luther King Blvd. (5.8 miles), turn right onto LA-57S / Grand Caillou Rd. (2.8 miles), finally turn right onto unnamed road to Ashland Plantation.

2.0 PROJECT GOALS AND OBJECTIVES

The goal of CGMBA1 is the cumulative re-establishment of 122.2 acres of bottomland hardwood (BLH) and 145.3 acres of cypress swamp (CS), the rehabilitation of 1.6 acres of BLH and 75.5 acres of CS, the enhancement of 6.9 acres of CS, the restoration of 5.8 acres of upland buffer, and the inclusion of 3.4 acres of upland buffer and 10.6 acres of Waters of the U.S. in the Terrebonne Basin watershed (HUCs 08090302 and 08070300). The total acreage of CGMBA1 is 371.3 The current and proposed habitat types, proposed mitigation types, and acreage are listed in Attachment A: Table 1 & Attachment B: Figures 15 & 16. This amendment to Cedar Grove Mitigation Bank will increase the total area of wetland restoration thus providing increased wetland functions to the watershed.

The objectives of the Bank are diverse. CGMBA1 is strategically situated in the Terrebonne Basin and is capable of restoring and improving a range of physical, hydrological, biogeochemical, biotic, and atmospheric functions to the watershed. These objectives are as follows:

- Improving downstream water quality and soil compaction by ceasing all agriculture activities within Bank boundary.

- Restoring soil quality by subsoiling to reduce soil compaction and increase surface water infiltration to improve the success of vegetative plantings.

- Restoring natural tidal hydrologic cycling and flood storage of CGMBA1 by levee degradation, and the expansion of hydrologic entrance points. This would then inundate soils and return them to their natural historic hydric process.

- Restoring CGMBA1's topography and vegetative habitats to institute reclamation of the organic material to the system's soil, and filter sediment deposition runoff into Bayou Grand Caillou, Ashland Canal, and St. Louis Canal.

- Rebuilding swamp and bottomland hardwood habitats (Attachment A: Table 1) with native wetland tree and emergent species. This will positively affect the physical structure of the area and restore biogeochemical processes in the soil considerably via additional plant and invertebrate detritus. This in turn will enhance natural aesthetics of the area.

- Enhancing current impounded cypress swamp area by planting cypress trees, chemically controlling invasive species, and restoring natural water flow through the degradation of adjacent impounding levees.

- Restoring the natural ridges as an upland buffer by planting trees, and also the inclusion of other upland areas, will preserve the topography of this area and reduce adverse impacts to wetland functions from adjacent development by moderating storm water runoff, stabilizing soil to prevent erosion, providing habitat for wetland associated species, reducing direct human impact/access to a wetland, and by filtering suspended solids, nutrients, and toxic substances.

- Restoring the site will provide improved biotic conditions and create habitat for a multitude of mammals, reptiles, insects, and hundreds of species of migratory birds.

- Ensuring the quality of CGMBA1 habitat through annual vegetation monitoring, noxious invasive species control, and adaptive management if necessary.

- Providing long-term protection through financial assurances with long-term escrow accounts and the institution of a conservation servitude.

3.0 ECOLOGICAL SUITABILITY OF SITE/BASELINE CONDITIONS

This section describes the ecological suitability of the site to achieve the objectives of the proposed mitigation bank, including the physical, chemical, and biological characteristics of the Bank site and how that site will support the planned types of aquatic resources and functions, as stated in 33 CFR 332.8(d)(2)(vii)(B). This section provides the baseline/current site conditions on and adjacent to the proposed site.

3.1 Land Use

3.1.1 Historical Land Use

Historical land use of the project area has been agriculture production and logging activities. The mechanized clearing and hydrologic alteration of this site began prior to 1855. An 1855 plat indicates portions of the land within the CGMBA1 boundary was in agriculture production. This 1855 plat also describes a cypress swamp within the western portion of the Bank boundary. The 1855 plat shows the area surrounding the proposed CGMBA1 as mostly agriculture land (Attachment B: Figure 3A).

Aerial imagery from 1936 reveals the two primary historical land uses of the project area were sugarcane production and the logging of forested wetlands (Attachment B: Figure 3B). The presence of crop rows and agricultural drains are evident in this aerial, as well as the buildings and roads of the town, including the Ashland Sugar Mill. The 1936 image also shows the presence of a large canal with spoiled/leveed edges adjacent to them. The Sponsor believes these large canals, including the Ashland Canal, were dug to accommodate barges transporting agriculture and silviculture products to and from the Ashland Sugar Mill, which is also visible in the image. The area directly west of the Ashland Sugar Mill and east of the large canal looks to be heavily logged. In the 1920s, because of bagasse shortages, the Ashland Sugar Mill used trees adjacent to the mill for wood pulp to power the mill (Butler). In this aerial image, the cypress swamp on the far western portion of CGMBA1 appears to have been logged as well. This is evidenced by the dragline scars in the landscape.

Aerial imagery from 1963 & 1974 reveals the size/footprint of the town and sugar mill of Ashland has greatly decreased since the 1936 aerial (Attachment B: Figures 3C & 3D). This imagery also reveals the crop rows and agricultural drains that were used primarily for sugarcane production. To the west of the agricultural fields there is a recently dug canal with spoil placed on the western side of the canal. This canal was dug to drain water from agriculture fields to the south which would be subsequently pumped into the St. Louis Canal. In the 1974 image, on the southwestern portion of CGMBA1, there is a cleared wooded area that was an oil well location (serial number: 143110) drilled by South Coast Corporation in 1973. According to Louisiana Department of Natural Resources (LDNR) Strategic Online Natural Resources Information System (SONRIS), this well was plugged and abandoned on December 13, 1973.

Aerial imagery from 1989 & 1998 reveals a large north south access road that was built to maintain a powerline right-of-way (Attachment B: Figures 3E & 3F). This access road cut-off the Ashland Canal and the forested portion of the project area from natural ebb and flow of the surrounding swamp and St. Louis Canal. Also, the imagery reveals the existence of the deeper/larger ditch in the middle of the property that conveys water east across the natural ridge into a ditch that parallels Bayou Grand Caillou. This water flows north to the Ashland Drainage Pump Station where it is finally pumped into Bayou Grand Caillou.

The large north south access road to the west and deeper/larger ditch in the middle of the property exist today (Attachment B: Figure 3G). These two hydrological alterations have had a major impact on the site's current hydrology. The 2017 aerial reveals the impounded forest area's trees are highly stressed due it being hydrologically isolated from the natural ebb and flow of the surrounding swamp and St. Louis Canal by the large access road to the west. The deeper/larger ditch in the middle of the property continues to drain agriculture production land across the natural ridge where it is finally pumped into Bayou Grand Caillou by the Ashland Drainage Pump Station.

Reference sites with similar geology and potentially similar historical/current habitat type would include the areas adjacent to Cedar Grove Mitigation Bank, the flooded timber east of Lafayette Woods Blvd. next to Village East Elementary School, Cedar Grove Mitigation Bank to the south, and the area south of Ashland Landfill Road.

3.1.2 Existing/Current Land Use

Currently the following habitats occur within CGMBA1: 223.1 acres of agricultural land, 25.2 acres of agricultural drainage canals and levees, 1.3 acres of Chinese tallow forest,

1.8 acres of dirt access road, 11.4 acres of forested hardwoods, 4.6 acres of forested hardwoods with Chinese tallow, 6.9 acres of impounded cypress swamp, 61.6 acres of impounded transitional swamp, 10.8 acres of scrub shrub with ag rows, 9.1 acres of impounded emergent swamp, 5.0 acres of remnant spoil, and 10.5 acres of Waters of the U.S. (Attachment B: Figures 3G, 3H, & 15). The land use surrounding a one-mile radius of CGMBA1 consists of 850.5 acres of agricultural land, 1,535.2 acres of residential/commercial development, 325.9 acres of Cedar Grove Mitigation Bank, 1,674.9 acres of forested habitat, 311.1 acres of fresh marsh, and 117.6 acres of surface water (Attachment B: Figure 4).

3.2 Soils

The Terrebonne Parish Soil Survey (2007) and USDA Web Soil Survey at CGMBA1 reveal approximately 27.1 percent of soils mapped are hydric, 8.3 percent are predominantly hydric, 1.6 percent are partially hydric, and 61.6 percent are predominantly non-hydric. CGMBA1 also contains 1.4 percent water (Attachment A: Table 2 & Attachment B: Figures 5 & 6).

According to Terrebonne Parish Soil Survey (2007) and USDA Web Soil Survey of the subject property, the following soils are found to occur:

- Cancienne silt loam 0 to 1 percent slopes (CbA) and Cancienne silty clay loam 0 to 1 percent slopes (CdA). The Cancienne series consists of very deep, level to gently undulating, somewhat poorly drained mineral soils that are moderately slowly permeable. These soils formed in loamy and clayey alluvium. They are on high and intermediate positions on natural levees and deltaic fans of the Mississippi River and its distributaries. Slopes range from 0 to 3 percent.

- Fausse clay (FAA) 0 to 1 percent slopes, frequently flooded. The Fausse series consists of very deep, very poorly drained, very slowly permeable soils that formed in clayey alluvium. These soils are in low, ponded backswamp areas of the lower Mississippi River alluvial plain. Slopes are less than 1 percent.

- Gramercy-Cancienne silty clay loams, 0 to 1 percent slopes (GcA). The Gramercy series consists of very deep, poorly drained, very slowly permeable soils that formed in clayey over fine-silty alluvium. These soils are on alluvial flats and on the lower parts of natural levees on the alluvial plain of the Mississippi River and its distributaries. Slope is dominantly less than 0.5 percent but ranges to 3 percent. The Cancienne series consists of very deep, level to gently undulating, somewhat poorly drained mineral soils that are moderately slowly permeable. These soils formed in loamy and clayey alluvium. They are on high and intermediate positions on natural levees and deltaic fans of the Mississippi River and its distributaries. Slopes range from 0 to 3 percent.

- Schriever clay 0 to 1 percent slopes (ShA), Schriever clay 0 to 1 percent slopes frequently flooded (SIA), and Schriever clay 0 to 1 percent slopes occasionally flooded (SrA). The Schriever series consists of very deep, poorly drained, very slowly permeable soils that formed in clayey alluvium. These soils are on the lower parts of natural levees and in backswamp areas of the lower Mississippi River alluvial plain. Slopes range from 0 to 3 percent.

3.3 Hydrology

3.3.1 Contributing Watershed

The Terrebonne Basin is bordered by Bayou Lafourche on the east, the Atchafalaya Basin floodway on the west, and the Gulf of Mexico on the south. The Terrebonne Basin is divided into four subbasins: Timbalier, Penchant, Verret, and Fields. The Terrebonne Basin includes all of Terrebonne Parish, and parts of Lafourche, Assumption, St. Martin, St. Mary, Iberville, and Ascension parishes. The Terrebonne Basin covers approximately 1,712,500 acres of southern Louisiana, including about 728,700 acres of wetlands (The Terrebonne Basin: CWPPRA). The average annual rainfall over the Terrebonne Basin is approximately 63.70 inches. Of this, about 53.87 inches (85 percent) usually falls in February through November. During the year, July is the wettest month and October is the driest (Soil survey of Terrebonne Parish). Watershed sources include direct precipitation, surface runoff, high water tables, and tidal flooding.

Depending on winds and tides, freshwater draining from the Verret Basin may flow both to the east and west via the Gulf Intracoastal Waterway (GIWW). Winds, tides, and Atchafalaya River stage determine how much of the water flows west to the Atchafalaya River and how much flows east to Houma. During moderate to low Atchafalaya River discharge (180,000 cfs), approximately 70 to 72 percent of the GIWW's freshwater flows into Houma, then southward down the Houma Navigation Canal (HNC). This percentage may vary depending upon winds, tides, and the volume of freshwater reaching Houma. Other fresh water inputs occur through smaller streams and bayous which carry surface runoff from fastlands to pump stations which then empty into wetlands south of Houma. These flows are small in comparison to the Atchafalaya, but they keep the upper portion of the estuary fresh (The Terrebonne Parish Coastal Zone Management Advisory Committee).

Marine tides and tidal flows are strongest in Terrebonne Parish where and when river influence is weak. Tides enter and drain the estuary through passes between the barrier islands and natural channels like Bayou Grand Caillou and Bayou Terrebonne. Manmade navigation channels also enhance tidal flows, both ebb and flow. Tides along the coast are primarily diurnal and tide range is only about one foot, thus tidal energy is low. Nevertheless, tidal currents in the passes can be strong, and because of the flat slope of the landmass, the tidal influence on water levels is felt as far north as Houma. Water levels and tidal currents in the estuary can be greatly influenced by winds (The Terrebonne Parish Coastal Zone Management Advisory Committee). In 2011-2014 the United States Army Corp of Engineers (USACE) completed construction on two separate swing barges, floodwater control structures on the lower HNC near Dulac, Louisiana. This lock system on the HNC is for the protection of the people and the communities of South Louisiana, and to aid in the preservation of coastal wetlands by controlling the intrusion of saltwater via the HNC. These locks are a part of the larger Morganza to the Gulf of Mexico Hurricane Protection Project plan.

3.3.2 Historical Hydrology and Drainage Patterns

Prior to the early 1900s, the natural drainage and watershed hydrology of the Terrebonne Basin was driven by the ebb and flow of the Atchafalaya River and Bayou Lafourche. When the construction of navigational channels began throughout the landscape, the naturally occurring hydrology was altered/manipulated to suit manmade projects. Water flow in the Atchafalaya River had been increasing from 10 percent of the combined Mississippi and Red River flow in the 1850s to 30 percent before the construction of the

Old River Control Structure. Currently this structure maintains the water flow into the Atchafalaya River at 30 percent of the combined flow of the Red and Mississippi Rivers. Bayou Lafourche was naturally closing before its connection with the Mississippi River was closed in the early 1900s. With the closure of Bayou Lafourche, the inflow of fresh water into the central and eastern portions of the Terrebonne Basin was limited to local inflow. Water levels throughout the Terrebonne Basin are influenced by tides in the Gulf of Mexico. Water advances and retreats in channels and marshes with the tidal cycle (Louisiana Coastal Area Ecosystem Restoration Projects Study).

Since the early 1900s, the hydrology of the project area has been altered by the Atchafalaya Basin Floodway; the Gulf Intracoastal Waterway (GIWW); the Atchafalaya River; Bayous Chene, Boeuf, and Black; Houma Navigation Canal (HNC); and Houma area levees, pump systems, drainage and access canals (Louisiana Coastal Area Ecosystem Restoration Projects Study). The completion of the HNC in 1962 drastically changed the natural hydrology of the forested swamp land between Bayou Grand Caillou and Bayou Dularge (Houma Navigational Canal Lock Control Structure Resolution).

As stated in Section 3.1.1 of this Prospectus, historically, the hydrological influences of CGMBA1 prior to sugarcane production were from direct precipitation, high water tables, runoff from the neighboring natural ridges from Bayou Grand Caillou, and tidal flooding from wetlands and bayous to the south. Since the 1800s the hydrology within CGMBA1 has been intensively managed for agriculture through a combination of levees, drainage ditches, detention ditches, and lift pumps.

3.3.3 Existing/Current Hydrology and Drainage Patterns

The current sources of hydrology within the area labeled Drains to Ashland Pump includes direct precipitation, surface runoff, and high water tables (Attachment B: Figures 13 & 13A). Current habitat identified in this hydrological area include Agricultural, Agricultural Drainage Canal & Levee, Forested Hardwoods with Chinese Tallow, and Scrub-Shrub with Ag Rows (Attachment B: Figure 15). Hydrology in this area has been manipulated to quickly drain surface runoff for sugarcane farming. Currently these hydrological sources are force drained by crop rows into drainage ditches that eventually lead water into a deeper/larger ditch in the middle of the property that conveys water east across the natural ridge into a ditch that parallels Bayou Grand Caillou. Water then flows north to the Ashland Drainage Pump Station where it is finally pumped into Bayou Grand Caillou. Pumping events within these fastland ditches can be seen graphically in Attachment D: Figure D-1.

The current sources of hydrology within the area labeled Drains to Bayou Grand Caillou includes direct precipitation, surface runoff, and high water tables (Attachment B: Figures 13 & 13A). Current habitat identified in this hydrological area include Agricultural, Forested Hardwoods, and Chinese Tallow Forest (Attachment B: Figure 15). Hydrology in this area has been manipulated to quickly drain surface runoff for sugarcane farming. Currently these hydrological sources are force drained by crop rows into drainage ditches that lead east to the forested hardwood area. The water then gravity drains via small gaps in what appears to be remnant irregular spoil dredged into Bayou Grand Caillou (Attachment B: Figures 10 & 13).

The current sources of hydrology within the area labeled Impounded appear to be primarily direct precipitation with additional sources from surface runoff, high water tables, and in extreme circumstances tidal flooding (Attachment B: Figures 13 & 13A). Current habitat identified in this hydrological area include Forested Hardwoods with Chinese Tallow, Impounded Cypress Swamp, Impounded Transitional Swamp, Impounded Emergent

Swamp, Remnant Spoil, and Dirt Access Road (Attachment B: Figure 15). Preliminary water level data collected in this area during a three-month period indicates elevated water surface elevation when compared to water level data collected in the St. Louis Canal (Attachment D: Figure D-1). This area is hydrologically isolated mainly due to blockage by the large access road to the west and the levees to the north, south, and east.

CGMBA1 is hydrologically influenced by large amounts of fresh water pumped from the Ashland Drainage Pump Station, Ashland Portable Pump Station, and the Woodlawn Pump Station. The Ashland Drainage Pump Station diverts surface water runoff from East Houma into Bayou Grand Caillou. The Ashland Portable Pump Station diverts surface water runoff from the Mission Boulevard neighborhoods and the agricultural fields to the north into an east-west flowing canal that intersects Bayou Chauvin which is then intersected by St. Louis Canal at Ashland Landfill Road. The Woodlawn Pump Station diverts surface water runoff from East Houma into Bayou Chauvin which is then intersected by St. Louis Canal at Ashland Landfill Road (Attachment B: Figure 10A).

3.3.4 Jurisdictional Wetlands

The Sponsor conducted a wetland delineation on the southern portion of CGMBA1 which was then approved by the CEMVN as a preliminary jurisdictional determination MVN-2017-01494-SL (Attachment E). The said wetland delineation includes acreage that is not within the proposed CGMBA1 boundary. It is important to note the approved JD does not cover the entirety of the CGMBA1. Because of this the Sponsor conducted a second wetland delineation on the northern portion of the Bank which was then sent and approved by CEMVN for an approved preliminary jurisdictional determination (Attachment B: Figure 18 and Attachment E). The Sponsor's two wetland delineations reveal the CGMBA1 boundary contains approximately 84 acres of jurisdictional wetlands, 276.8 acres of uplands and 10.5 acres of non-wetland waters (Attachment B: Figures 19 & 20).

3.4 Vegetation

3.4.1 Historical Plant Community

Based on comparison to reference sites with similar soil, geology, and potentially similar historical/current habitat type, such as the areas adjacent to Bayou Pelton, the flooded timber east of Lafayette Woods Blvd. next to Village East Elementary School, and also the area south of Ashland Landfill Road, it is assumed that native vegetation was comprised of bottomland hardwood forest on slightly higher elevations of the project area, and bald cypress and tupelo swamp within the lower areas of the project area.

3.4.2 Existing Plant Community

USFWS lists two different NWI habitat classifications within the Project Area. The majority of CGMBA1 is classified as palustrine scrub shrub broad-leaved deciduous (PSS1R). The second classification is palustrine forested broad-leaved deciduous (PFO1R) (Attachment B: Figure 11).

Because of the closed hydrological system of the Bank, a multitude of diverse habitats were found to occur at CGMBA1. Habitat investigations and data from the Sponsor-performed wetland delineation revealed the following habitats at CGMBA1 (Attachment B: Figure 15).

The area defined as Agricultural was observed to have non-wet conditions and minimal areas with wet conditions. This area is heavily managed for sugarcane production. The

topography is altered by crop rows and ditches that reroute water to the Ashland Drainage Pump Station. The shrub and herb stratums of this area contained herbaceous plants with a wetland indicator status of FAC, FACU, or OBL. Dominant vegetation species within this portion of the project area include: sugarcane (*Saccharum officinarum*); Bermuda grass (*Cynodon dactylon*); foxtail (*Setaria italica*); Johnson grass (*Sorghum halepense*); aster (*Symphyotrichum tenuifolium*); and St. Augustine grass (*Stenotaphrum secundatum*).

The area defined as Agricultural Drainage Canal & Levee habitat was observed to be two non-wet levees bisected by a drainage canal containing non-wetland waters. This habitat has an inconsistent topography due to the spoil that was deposited to make the drainage canal. The tree stratum is dominated by nuttall, water oak, pumpkin ash, green ash, and Chinese tallow. The herb stratum contained herbaceous plants with a wetland indicator status of FACU, FAC, or FACW. Dominant vegetative species observed within this portion of the project area included: water oak (*Quercus nigra*); nuttall (*Quercus texana*); pumpkin ash (*Fraxinus profunda*); green ash (*Fraxinus pennsylvanica*); Chinese tallow (*Triadica sebifera*); water hickory (*Carya aquatic*); hackberry *(Celtis laevigata*); privet *(Ligustrum vulgare*); palmetto (*Sabal minor*); and chufa (*Cyperus esculentus*).

The area defined as Chinese Tallow Forest was observed to be non-wet along the Bayou Grand Caillou with absolute cover of Chinese tallow greater than 50%. The hydrology of this area is altered by ditches that decrease surface water retention and increase drainage flow into Bayou Grand Caillou. The average height of the tree stratum is 20 feet. Very young sapling stands of Chinese tallow were observed within openings of the forest canopy. The shrub and herb stratums of this area contained herbaceous plants with a wetland indicator status of FAC, FACW, or OBL. Dominant vegetative species observed within this portion of the project area included: Chinese tallow (*Triadica sebifera);* red maple (*Acer rubrum var. drummondii*)*;* black willow (*Salix nigra*); bald cypress (*Taxodium distichum*); eastern baccharis (*Baccharis halimifolia* L.); green ash (*Fraxinus pennsylvanica*); chufa (*Cyperus esculentus*); cattail (*Typha sp.*); giant cut grass (*Zizaniopsis miliacea*); and green flat sedge (*Cyperus virens*).

The area defined as Forested Hardwoods along the Bayou Grand Caillou was observed to be forested with some areas exhibiting wet conditions and other areas exhibiting non-wet conditions. The hydrology of this area is altered by ditches that decrease surface water retention. The tree stratum is dominated by water oaks, hickory, and hackberry trees. The herb stratum had herbaceous plants with a wetland indicator status of FAC or FACW. Dominant vegetative species observed within this portion of the project area included: water oak (*Quercus nigra*); water hickory (*Carya aquatic*); hackberry *(Celtis laevigata*); privet *(Ligustrum vulgare*); palmetto (*Sabal minor*); and chufa (*Cyperus esculentus*).

The area defined as Forested Hardwoods with Chinese Tallow mirrors the Forested Hardwoods with an absolute cover of Chinese tallow greater than 50%. The hydrology of this area is altered by ditches that decrease surface water retention. The tree stratum is dominated by Chinese tallow, nuttall, water oak, live oak, pumpkin ash, and green ash. The herb stratum had herbaceous plants with a wetland indicator status of FACU, FAC, or FACW. Dominant vegetative species observed within this portion of the project area included: Chinese tallow (*Triadica sebifera*); water oak (*Quercus nigra*); nuttall (*Quercus texana*); live oak (*Quercus virginiana*); pumpkin ash (*Fraxinus profunda*); green ash (*Fraxinus pennsylvanica*); water hickory (*Carya aquatic*); hackberry *(Celtis laevigata*); privet *(Ligustrum vulgare*); palmetto (*Sabal minor*); and chufa (*Cyperus esculentus*).

The area defined as Impounded Cypress Swamp was observed to be wet. The hydrology of this area is isolated because of the agricultural drainage canal levee to the east and the elevated access road to the west. In the tree stratum, an average 60 percent cover of bald cypress was observed. Saplings of Chinese tallow were observed in the shrub stratum. The herb stratum contained herbaceous plants with a wetland status of OBL. Dominant vegetative species observed within this portion of the project area included: bald cypress (*Taxodium distichum*); red maple (*Acer rubrum var. drummondii);* lizard's tail (*Saururus cernuus*); pickerelweed (*Pontederia cordata*); and cattail (*Typha latifolia*).

The area defined as Dirt Access Road was observed to be non-wet. This area is an elevated road used for access and hunting. Vegetation is heavily managed by routine cutting, and no trees were observed within the habitat area. The herb stratum had herbaceous plants with a wetland indicator status of FACU, FAC, or FACW. Dominant vegetative species observed within this portion of the project area included: Bermuda grass (*Cynodon dactylon*); foxtail (*Setaria italica*); Johnson grass (*Sorghum halepense*); aster (*Symphyotrichum tenuifolium*); and St. Augustine grass (*Stenotaphrum secundatum*).

The area defined as Impounded Transitional Swamp was observed to be wet and contains dense stands of Chinese tallow with an absolute cover of greater than 50%. The hydrology of this area is isolated because of the agricultural drainage canal levee to the east and the elevated access road to the west. This habitat overall was observed to be stressed due to high water levels and long periods of inundation. The tree stratum in this area is sparsely dominated by Chinese tallow, red maple, and black willow. The shrub and herb stratums of this area contained herbaceous plants with a wetland indicator status of FAC, FACW, or OBL. Dominant vegetative species observed within this portion of the project area included: Chinese tallow (*Triadica sebifera);* bald cypress (*Taxodium distichum*); red maple (*Acer rubrum var. drummondii*); green ash (*Fraxinus pennsylvanica*); palmetto (*Sabal minor*); lizard's tail (*Saururus cernuus*); wax myrtle (*Morella cerifera*); chufa (*Cyperus esculentus*); cattail (*Typha latifolia*) and green flat sedge (*Cyperus virens*).

The area defined as Impounded Emergent Swamp was observed to be wet. The tree and shrub stratum appear more stressed than the surrounding Impounded Transitional Swamp habitat. The hydrology of this area is isolated because of the agricultural drainage canal levee to the east and the elevated access road to the west. This habitat overall was observed to be stressed due to high water levels and long periods of inundation. The tree stratum in this area is sparsely dominated by Chinese tallow, red maple, and black willow. The average height of the tree stratum is 15 feet. The shrub and herb stratums of this area contained herbaceous plants with a wetland indicator status of FAC, FACW, or OBL. Dominant vegetative species observed within this portion of the project area included: red maple (*Acer rubrum var. drummondii*); Chinese tallow (*Triadica sebifera);* black willow (*Salix nigra*); sedge (*Carex frankii);* wax myrtle (*Morella cerifera*); pumpkin ash (*Fraxinus profunda*); and cattail (*Typha latifolia)*.

The area defined as Remnant Spoil was observed to be non-wet. This area has a mature tree stratum and variable topography due to the spoil that was deposited to create the Ashland Canal. The tree stratum is dominated by nuttall, water oak, live oak, pumpkin ash, green ash, and Chinese tallow. The herb stratum had herbaceous plants with a wetland indicator status of FACU, FAC, or FACW. Dominant vegetative species observed within this portion of the project area included: water oak (*Quercus nigra*); nuttall (*Quercus texana*); live oak (*Quercus virginiana*); pumpkin ash (*Fraxinus profunda*); green ash (*Fraxinus pennsylvanica*); Chinese tallow (*Triadica sebifera*); water hickory (*Carya*

aquatic); hackberry *(Celtis laevigata*); privet *(Ligustrum vulgare*); palmetto (*Sabal minor*); and chufa (*Cyperus esculentus*).

The area defined as Scrub Shrub is a fallow agriculture field that was last cultivated in 2012. This area was observed to be non-wet. This area was last farmed in 2012 and the remnant agriculture planting rows remain and continue to influence hydrology. The shrub stratum is dominated by baccharis and wax myrtle. The herb stratum had herbaceous plants with a wetland indicator status of OBL, FACW, or FAC. Dominant vegetative species observed within this portion of the project area included: baccharis (*Baccharis halimifolia*); wax myrtle (*Morella cerifera*); goldenrod (*Solidago stricta*); and yellow nutsedge (*Cyperus esculentus*).

3.5 General Bank Need

The proposed Bank, through reforestation of agricultural production land to forested wetlands, is expected to restore, provide, and enhance certain biogeochemical processes including attenuation, transformation, and storage of pollutants. Wetland ecological benefits to the watershed from re-forestation include increased nesting, feeding, foraging, denning and loafing habitat functions for wetland and aquatic species through both desirable canopy re-establishment, and increased desirable native wetland vegetative cover in the ground cover and shrub/sapling strata. Through hydrological restoration, increased wetland hydroperiods will provide greater storage volumes within the Terrebonne Basin, and provide increased biogeochemical and habitat benefits to aquatic species, as well as refuge during drier years within the restored depressional area.

The proposed CGMBA1 will directly address several identified needs, which include the following:

The Coastal Wetlands Planning, Protection, and Restoration Act (CWPPRA) *Basin Plan*:

- Supporting short-term strategy is to consider site-specific, small-scale projects in all subbasins where there is a critical need for wetlands protection or restoration, or a significant opportunity for wetlands creation. In the short-term, demonstration and pilot projects must also be conducted to develop, or test methods and approaches needed for implementing long-term strategies.
- Achieving no net loss of wetlands in the basin.
- Appropriate to the scale of stress on the cypress swamps.

The Terrebonne Parish Coastal Zone Management Advisory Committee 2000. *The Terrebonne Parish Local Coastal Program*:

- Support and maintain existing marsh management projects in the area to maximize retention of freshwater within marshes and swamps without excessive flooding of vegetation.
- To improve the quality of all waters throughout the marsh, but specifically in areas important to the development of renewable resources.
- To protect drinking water supply intakes in Houma from saltwater intrusion.
- To balance the development of non-renewable resources with the management of renewable resources.

LDWF Habitat Conservation Strategies for BLH and CS.

- Work with private landowners, etc. to promote corridors of BLH forests for wildlife species.

- Partner with state and federal agencies, NGOs, private landowners, etc. to increase conservation efforts on natural ridges.
- Develop methods to encourage landowners to remove cattle from natural ridges and manage the land for wildlife conservation.

4.0 ESTABLISHMENT OF THE MITIGATION BANK

This section describes how the mitigation bank will be established, as stated in 33 CFR 332.8(d)(2) (ii); the technical feasibility of the proposed mitigation bank, as stated in 33 CFR 332.8(d)(2) (iv); and the assurance of sufficient water rights to support the long-term sustainability of the mitigation bank, as stated in 33 CFR 332.8(d)(2)(vii)(A).

4.1 Site Restoration Plan

This section provides information on the proposed soils, hydrologic, and vegetative work that was determined to be necessary for restoration and/or enhancement of the proposed site.

This Bank will provide the cumulative re-establishment of 122.2 acres of BLH and 145.3 acres of CS, the rehabilitation of 1.6 acres of BLH and 75.5 acres of CS, the enhancement of 6.9 acres of CS, the restoration of 5.8 acres of upland buffer, and the inclusion of 3.4 acres of upland buffer and 10.6 acres of Waters of the U.S. in the Terrebonne Basin watershed (HUCs 08090302 and 08070300). The current and proposed habitat types, proposed mitigation types, and acreages are listed in Attachment A: Table 1 & Attachment B: Figures 15 & 16). In order to achieve the goals and objectives of the Bank, and to meet all requirements stated in 33 CFR 332.8; in summary, the Sponsor will cease sugarcane production, chemically control invasive species, subsoil non-forested re-establishment and rehabilitation planting areas, restore natural hydrology and allow for the natural recruitment of wet herbaceous plants, reforest historical BLH and CS habitat, restore and maintain habitat on the natural upland ridge, and include natural upland areas in the mitigation bank. Also, the Sponsor will implement effective short-term and long-term management strategies.

4.1.1 Soils/Hydrologic Work

Over the course of the land's conversion from its natural state to managed agricultural land, modifications such as lift pumps and ditches were installed to control site hydrology. To restore the area to a natural hydrologic state and meet the objectives of CGMBA1, these modifications must be removed. The Sponsor anticipates no long-term structural management requirements will be needed to assure sustained hydrology (Attachment C: Figures C-1, C-2, C-3, C-4, & C-5; Attachment B: Figure 12).

After all sugarcane production activities have ceased, and prior to seedling plantings the Sponsor will complete the following tasks to restore natural hydrology at CGMBA1:

To restore sheet flow to the current agricultural fields, the interior cross drainage ditches, rows, and culverts on both the east and west side of the natural ridge will be removed. To achieve this, the Sponsor will disk plow and chop the current sugarcane fields to natural grade using adjacent material (Attachment C: Cross Section F) and remove all culverts (Attachment C: Cross Section H). Also, the deep/large ditch in the middle of the property that conveys water east across the natural ridge will be filled to natural grade (Attachment C: Cross Section A). The ditch that conveys water north to Ashland Drainage Pump will

be degraded (Attachment C: Cross Sections L & K). Also, the headland road in the western portion of the property will be degraded into the adjacent ditch to natural grade (Attachment C: Cross Section G).

Re-establishment and rehabilitation tracts that are not currently forested will have the soils mechanically prepared to receive vegetative plantings (Attachment C: Planting Exhibit). Subsoiling using a ripping implement will be used at a depth of 18 inches to alleviate soil compaction and encourage air and water pore space for root growth (Allen et al). Soil preparation has been shown to significantly increase reforestation success in BLH and CS restoration (Lockhart et al).

To isolate the Bank's hydrology from the adjacent sugarcane fields and the Ashland Pump, a levee will be constructed north of the CGMBA1 boundary (Attachment C: Cross Section M). To further isolate the Bank's hydrology from the Ashland Pump, a levee/plug will be installed within north flowing ditch. This plug will also be north of the CGMBA1 boundary (Attachment C: Cross Sections N & O).

The levees along the main interior ditch will be degraded (Attachment C: Cross Sections D, I, & J). The earthen material from adjacent levees will be used to backfill the ditch to natural grade, and evacuated trees will be removed from the Bank and placed on adjacent uplands for proper disposal. Desirable large diameter trees will be left in place to provide a natural seed source. This construction will restore the natural sheet flow from the sugarcane fields to the impounded transitional swamp, impounded cypress swamp, and impounded emergent swamp.

To connect the current sugarcane fields east of the natural ridge to Bayou Grand Caillou, the remnant irregular spoil along Bayou Grand Caillou will be gapped in appropriate areas that best restore the natural ebb and flow of the tide to CGMBA1. The excavated earthen material will be thinly spread on the adjacent existing upland agriculture fields and removed from the Bank and placed on adjacent uplands for proper disposal. (Attachment C: Cross Section E).

To restore the historical Ashland Canal that ran south to the St. Louis Canal, the Sponsor will first excavate two separate gaps in the east-west running dirt access road which will then be degraded (Attachment C: Cross Section B). Spoil from these excavated gaps will be used to construct the levee north of the Bank boundary construction (Attachment C: Cross Section M). The Sponsor will then excavate one approximately 160 feet wide gap in north-south road between the cypress swamp to the west and the impounded transitional swamp to the east (Attachment C: Cross Section C). The spoil will be used to construct the levee to the north of CGMBA1 boundary (Attachment C: Cross Section M). Restoring the flow of the Ashland Canal will connect the impounded forested areas and the entire Bank to the natural ebb and flow of the surrounding swamp and St. Louis Canal.

After restoration of hydrology, the Bank's hydrology will be driven by direct precipitation, surface runoff, high water tables, and tidal flooding. Hydrological restoration of CGMBA1 will re-establish wetland hydrology to 122.2 acres of BLH and 145.3 acres of CS and rehabilitate the wetland hydrology of 1.6 acres of BLH and 75.5 acres of CS by connecting these once isolated areas to the ebb and flow of the regional hydrology. Also, hydrology will be enhanced in the 6.9 acres of the current impounded cypress swamp by restoring the natural sheet flow to this area. After construction is completed CGMBA1 will contain 9.2 acres over the 5' contour. Many objectives will be achieved by the hydrologic restoration of the project area. The restoration will increase surface-water retention time

for vegetative nutrient uptake and sedimentation. Also, localized and downstream water quality will improve by removing agriculture activities. Restoration would also restore natural hydrologic cycling and flood storage which would inundate soils and return them to their natural historic hydric process (Attachment B: Figure 14).

4.1.2 Vegetative Work

The Sponsor intends to re-establish 122.2 acres BLH and rehabilitate 1.6 acres of BLH by conducting tree plantings and allowing the natural recruitment of appropriate emergent species within the mitigation areas. The BLH planting will be conducted during the first planting season (December 15 to March 15) following the completion of all soils/hydrological work. Current agricultural areas will be subsoiled, but current forested areas will not so as to avoid damage by heavy equipment. The composition of BLH species was chosen to match species to the closest extent possible to those on adjacent wetlands with similar soil types. Commercial BLH species will be chosen where appropriate to tolerate the same hydrological conditions as those on the adjacent lands and according to elevations on the proposed site (Attachment B: Figure 16). All seedlings must be obtained from a registered, licensed Louisiana nursery grower. The contractor must obtain and provide to DNR/OCM certification from the contracting nursery that plant materials are of a Louisiana ecotype species and have been acclimated to Louisiana climatic and habitable conditions for at least 90 days prior to planting. Seedlings of mixed BLH species, where appropriate, will then be planted at approximately 9' X 9' spacing at a minimum initial stand density of 538 stems per acre. Hard mast species for the BLH areas shall comprise of no less than 60 percent or greater than 80 percent of the planted seedlings overall. No individual species will represent more than 20 percent of the vegetative plantings for BLH habitat. It is important to note that the 5.8 acres of upland buffer restoration at CGMBA1 will be planted with the BLH species mixture listed in (Attachment A: Table 3).

The Sponsor intends to re-establish 145.3 acres CS, rehabilitate 75.5 acres of CS, and enhance 6.9 acres of CS by conducting tree plantings and allow the natural recruitment of appropriate emergent species within the mitigation areas. The CS planting will be conducted during the first planting season (December 15 to March 15) following the completion of all soils/hydrological work, approximately. Current agricultural areas will be subsoiled, but current forested areas will not so as to avoid damage by heavy equipment. The composition of CS species was chosen to match species to the closest extent possible to those on adjacent wetlands with similar soil types. Commercial CS species will be chosen where appropriate to tolerate the same hydrological conditions as those on the adjacent lands and according to elevations on the proposed sites (Attachment B: Figure 16). All seedlings will be obtained from a registered, licensed Louisiana nursery grower. The contractor must obtain, and provide to DNR/OCM, certification from the contracting nursery that plant materials are of a Louisiana ecotype species and have been acclimated to Louisiana climatic and habitable conditions for at least 90 days prior to planting. Seedlings of mixed CS species, where appropriate, will be planted at approximately 12' X 12' spacing at a minimum initial stand density of 302 stems per acre (Attachment A:Table 4).

The restoration of CGMBA1 topography and vegetative habitats is anticipated to institute reclamation of the organic material to the system's soil and to filter sediment deposition runoff into the Houma Navigational Canal and Bayou Grand Caillou. Also, rebuilding marsh and swamp habitats (Attachment A: Table 1) with native wetland tree and emergent species will positively affect the physical structure of the area and will restore biogeochemical processes in the soil considerably via additional plant and invertebrate detritus. This will also provide natural aesthetics to the area.

4.1.3 Noxious Plant Control

The Sponsor intends to use all prudent efforts, physical or chemical to eliminate existing invasive/exotic vegetation present such as Chinese tallow (*Triadica sebiferum*) at CGMBA1. This may include, but is not limited to, spray on application by helicopter as well as hand spraying by ground field crews. Prior to planting, all Chinese tallow within and immediately surrounding the mitigation boundary will be chemically treated with herbicides and eliminated. The treated tree stems will be left in place to deteriorate naturally within the system. No mechanized land clearing or large logging equipment will be used for the exotic eradication. If needed aerial or ground application of annual/perennial grasses and broadleaf weed herbicides will be used to effectively reduce competition for planted seedlings in re-establishment and rehabilitation areas.

In addition, the Sponsor will control these undesirable/exotic species as part of the maintenance and monitoring plan. Monitoring for exotic and invasive species will occur annually and control techniques will be implemented as needed to sustain long-term undesirable/exotic species presence to 3 percent per acre or less. The Sponsor will also control undesirable/exotic species within the powerline right-of-ways and high-pressure sewer line right-of-way that bisect the Bank boundary.

4.2 Technical Feasibility

The construction work required to develop the Bank is routine in nature and feasible. The mitigation activities involve primarily reforestation using bare-root seedlings. These activities have long been utilized in wetland restoration and mitigation projects and are proven methods. The Sponsor has the necessary funds and personnel to successfully implement the proposed vegetative plantings. A more specific examination of the technical restoration methods is presented in Section 4.0 of this Prospectus.

4.3 Current Site Risk

At this time there are no mortgages, liens, or oil and gas leases on the property. A title opinion and survey plat will be provided with the anticipated Draft MBI submittal. There are currently two right-of-ways/servitudes within the proposed CGMBA1 boundary. One is a Terrebonne Parish Government drainage servitude in the north western portion of CGMBA1. The other is an unutilized powerline right-of-way that runs north then veers east threw the Bank. The Sponsor is in the process of removing these two right-of-ways/servitudes from the property. Therefore, these two right-of-ways/servitudes will not negatively affect the Bank (Attachment B: Figure 9).

All the listed right-of-ways below are adjacent to the CGMBA1 boundary. Please see Attachment B: Figure 9 for a map of easements.

The servitude and right-of-way agreement signed by the right-of-way holder (Grantee) and the landowner (Grantor) states that *"In the event repairs to the use of the easement or servitude, or for other property of GRANTOR, are necessary as a result of Grantee's action, GRANTEE shall make such repairs in a manner so as to return Grantor's property to its original condition, or better, and shall be responsible for repairing at GRANTEE's expense of any such damages."* This statement ensures the long-term integrity of the proposed hydrology at CGMBA1. It is important to note that the right-of-way holder does not have access through the proposed CGMBA1 project boundary.

To the south of the CGMBA1 boundary is an electrical substation owned by South Louisiana Electric Cooperative Association (SLECA). The area is not a hydrological

impediment and is not anticipated to threaten the success of the project. This substation will not prevent CGMBA1 from achieving all goals listed in Section 2.0 of this Prospectus.

There are powerline right-of-ways that bisect CGMBA1. The Sponsor will cease all sugarcane production within and between adjacent powerline right-of-ways and will allow the areas to vegetate naturally to herbaceous wetlands. There are no access roads within powerline right-of-ways. Existing powerlines will not negatively affect the hydrological goals of CGMBA1. The topography of these areas are currently at the appropriate natural grade and elevation to support wetland functions. Segments of the larger south to north flowing drainage that are within right-of-ways will be degraded to natural grade to connect CGMBA1 to the surrounding watershed. The powerline right-of-way/large road west of the Bank boundary will be gapped to connect CGMBA1 hydrology to the surrounding bayous and swamps. These powerline right-of-ways will not prevent CGMBA1 from achieving all goals listed in Section 2.0 of this Prospectus. The Sponsor will also control undesirable/exotic species within these powerline right-of-ways.

There is a high-pressure sewer line right-of-way in the northern portion of CGMBA1 that bisects CGMBA1. The Sponsor will cease all sugarcane production within the right-of-way and will allow the areas to vegetate naturally to herbaceous wetlands. There are no access roads within the right-of-way. This high-pressure sewer line will not negatively affect the hydrological goals of CGMBA1. The topography of these areas is currently at the appropriate natural grade and elevation to support wetland functions. Sponsor will also control undesirable/exotic species within the high-pressure sewer line right-of-way.

The unnamed gravel road leading from Grand Caillou Rd. (State HWY 57) south to the electrical substation does not contain a right-of-way/easement but has been excluded from the Bank boundary to allow access to the substation and the Bank. This unnamed gravel road runs on the natural ridge of the property. Currently, hydrological sources such as direct precipitation, surface runoff, and high water tables drain/run either to the west or to the east of the natural ridge. Therefore, the gravel road will not negatively affect the hydrology of CGMBA1. This gravel road will not prevent CGMBA1 from achieving all goals listed in Section 2.0 of this Prospectus.

Louisiana Department of Natural Resources (LDNR) Strategic Online Natural Resources Information System (SONRIS) revealed an oil well location that was drilled by South Coast Corporation in 1973 (serial number: 143110). According to SONRIS this well was plugged and abandoned in December 13, 1973.

A comprehensive study of the salinity of the HNC was done by the USGS, *The Influence of the Houma Navigation Canal on Salinity Patterns and Landscape Configuration in Coastal Louisiana* (Steyer et al). The objective of this study was to perform an evaluation of the extent that outer continental shelf waterways and navigation canals have contributed to changes in salinity and wetland landscape patterns in coastal Louisiana. This document concluded that water level patterns in this lower HNC area are driven mostly by the coastal water levels; also, the salinity of the Terrebonne Bay water is not the entire driving force for the more interior locations of the HNC. Although high coastal water levels result in high water levels throughout the system, high salinity at the coast does not always result in high salinity at the inland stations. For further protection from saltwater intrusion, in the early 2010s, the USACE completed construction on two separate swing barges, floodwater control structures on the lower HNC near Dulac, Louisiana. This lock system on the HNC is for the protection of the people and the communities of South Louisiana, and to aid in the preservation of coastal wetlands by

controlling the intrusion of saltwater via the HNC. These locks are a part of the larger Morganza to the Gulf of Mexico Hurricane Protection Project plan (Louisiana Wildlife Federation). After extensive research, the Sponsor does not anticipate any negative effects from saltwater intrusion in the foreseeable future.

4.4 Long-Term Sustainability of the Site

Due to its location and project design, the proposed Mitigation Bank has a very high likelihood of success. CGMBA1 will be restored to the types of communities that were historically present in the project area. Long-term viability and sustainability of CGMBA1 will be ensured through active annual monitoring, adaptive management, invasive species control, and long-term maintenance. The natural hydrologic and landscape processes that have been altered for agriculture production will be reversed by a hydrological connection to the natural ebb and flow of the Terrebonne Basin System, tying CGMBA1 to this region's natural hydrologic processes. No weirs or structures will be required to maintain the CGMBA1 post-restoration hydrologic regime, so structural maintenance will not be an issue. Similarly, the reliance on the system's natural versus engineered hydrology will ensure that the restored habitats are subject to a regionally-appropriate, natural hydro-period. A long-term management plan will be included within the mitigation banking instrument. It will detail a long-term management plan and the associated costs, as well as identify a funding mechanism in accordance with 33 CFR 332.7(d).

5.0 PROPOSED SERVICE AREA

Due to CGMBA1 location within the Terrebonne Basin, the Sponsor suggests the primary service area be the Terrebonne Basin. The Terrebonne Basin is made up of two different HUCs, the West Central Louisiana Coastal (HUC:08090302) to the south and the Lower Grand (HUC:08070300) to the north. This service area will provide offsets for unavoidable impacts to wetlands and "Waters of the United States". Use of CGMBA1 beyond this area will be determined by the CEMVN on a case by case basis (Attachment B: Figure 17).

6.0 OPERATION OF THE MITIGATION BANK

This section describes how the proposed Bank will be operated, as required by 33 CFR 332.8(d)(2)(ii), and provides details on the proposed ownership arrangements and long-term management strategy for the mitigation bank, as required by 33 CFR 332.8(d)(2) (v).

6.1 Project Representatives

6.1.1 Sponsor and Operations Manager

JMB Partnership, LLC
203 Main Street
Franklin, Louisiana 70538
(337) 828-7090
POC: Russell Walters
(337) 522-7207
russell@jmbcompanies.com

6.1.2 Landowner

Warrior Met Coal LA, LLC

16243 Highway 216
Brookwood, AL 35444

6.2 Qualifications of the Sponsor

The Sponsor, JMB Partnership, LLC is a subsidiary of the JM Burguieres Co., Limited, which is a family legacy partnership established in 1877. The Sponsor has 141 years of land management experience in Louisiana, Texas, and Florida that includes mitigation banking, sugarcane production, and cattle ranching. The Sponsor's established mitigation banking business currently manages seven mitigation banks in Louisiana: Cypremort-Teche, Cypress Creek, Bee Bayou, Kilgore Plantation, Marine Bayou, Nabours "No Hope", and Cedar Grove Mitigation Bank, and two in Florida: Lake Wales Ridge Conservation Bank and Kissimmee Ridge Wetland Mitigation Bank. JMB has a qualified technical staff that have multiple years of experience in wetland science, land management, and permitting.

6.3 Proposed Long-Term Ownership and Management Representatives

The property encompassing the proposed 371.3 acre CGMBA1 is currently owned by Warrior Met Coal LA, LLC; however, the Sponsor is in the process of purchasing the property. When the purchase is finalized the Sponsor will be the legal owner prior to the implementation as a mitigation bank (i.e. Conservation Servitude filing and implementation of the mitigation work plan). JMB Partnership, LLC will also serve as the mitigation service provider (Sponsor) and the long-term steward of CGMBA1.

6.4 Site Protection

Pursuant to the Louisiana Conservation Servitude Act, R.S. 9:1271 et seq., a perpetual conservation servitude will be placed on the 371.3 acre CGMBA1. This servitude will be held by a conservation-oriented 501(c)(3) organization to be determined. The conservation servitude will be binding to and run with the title of the property. This conservation servitude will prohibit activities that would reduce the quality and quantity of the restored/enhanced wetlands, such as clear cutting, the discharge of fill, construction activities, cattle grazing, or other agricultural activities.

The servitude will also specify permissive activities such as hunting, fishing, recreational use, and mineral exploration given that the activity does not negatively affect the functions and values of the rehabilitated, re-established, and enhanced wetlands.

6.5 Long-Term Strategy

A long-term maintenance and protection escrow account will provide funding for long-term boundary maintenance and site protection in accordance with 33 CFR § 332.7 (d) into perpetuity. These long-term maintenance and site protection activities will be conducted by the Sponsor. The conservation easement will protect the site from any activities that would diminish the quality of restored wetlands on the site. No structures are proposed or would be necessary to assure hydrologic or vegetative restoration.

7.0 REFERENCES

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Attachment A:

Tables and Charts

Table: 1 Mitigation Plan Summary: Proposed Mitigation and Habitat Type

Current Habitat	Proposed Habitat	Proposed Mitigation Type	Acres
Agriculture Production Fields (non-wet), Forested Hardwoods (non-wet), Chinese Tallow Forest (non-wet).	Bottomland Hardwoods	Re-Establishment	122.2
Forested Hardwoods (wet).	Bottomland Hardwoods	Rehabilitation	1.6
		BLH Habitat:	**123.8**
Agriculture Production Fields (non-wet), Agricultural Drainage Canal & Levee (other waters & non-wet), Forested Hardwoods with Chinese Tallow (non-wet), Dirt Access Road (non-wet), Upland spoil (non-wet).	Cypress Swamp	Re-Establishment	145.3
Forested Hardwoods with Chinese Tallow (wet), Impounded Transitional Swamp (wet), Impounded Emergent Swamp (wet).	Cypress Swamp	Rehabilitation	75.5
Impounded Cypress Swamp (wet).	Cypress Swamp	Enhancement	6.9
		CS Habitat:	**227.7**
Agriculture Production Fields (non-wet).	Hardwoods	Upland Restoration	5.8
Upland Spoil (non-wet), Forested Hardwoods (non-wet).	Hardwoods	Upland Inclusion	3.4
		Upland Buffer:	**9.2**
Waters of the U.S., Dirt Access Road (non-wet), Impounded Transitional Swamp (wet).	Non-Wetland Waters	Waters of the U.S.	10.6
		Waters of the U.S.:	**10.6**

Subtotal Non-Mitigation Acreage: **19.8**

Subtotal Mitigation Acreage: **351.5**

TOTAL MITIGATION BANK ACREAGE: **371.3**

Table 2: NRCS Soil Survey of Terrebonne Parish, Louisiana Data

NRCS Soil Survey of Terrebonne Parish, Louisiana (LA109)					
Map Unit Symbol	Soil Name	Natural Drainage	Water Table Depth	Hydric Rating	Acres in Project Area
CbA	Cancienne silt loam, 0 to 1 % slopes	Somewhat poorly drained	18" to 48"	Predominantly non-hydric	106.4
CdA	Cancienne silty clay loam, 0 to1 % slopes	Somewhat poorly drained	0" to 43"	Predominantly non-hydric	122.2
FAA	Fausse clay, 0 to 1% slopes, frequently flooded	Very poorly drained	0" to 6"	Hydric	51.6
GcA	Gramercy-Cancienne silty clay loams, 0 to 1 percent slopes	Poorly drained	0” to 24”	Partially hydric	6.0
ShA	Schriever clay, 0 to 1 % slopes	Poorly drained	0"	Predominantly hydric	30.8
SIA	Schriever clay, 0 to 1% slopes, frequently flooded	Very poorly drained	0"	Hydric	45.2
SrA	Schriever clay, 0 to 1% slopes, occasionally flooded	Poorly drained	0"	Hydric	3.6
W	Water	–	–	–	5.5

Table 3: Representative BLH Species Suitable for CGMBA1:

Tree Species to be Planted in BLH Areas				
Scientific name	Common Name	Hard mast/Soft mast	Wetland Indicator Status	Composition
Quercus phellos	willow oak	Hardmast	FACW	<20%
Quercus lyrata	overcup oak	Hardmast	FACW	<20%
Quercus texana	nuttall oak	Hardmast	FACW	<20%
Quercus michauxii	swamp chestnut oak	Hardmast	FACW	<20%
Quercus nigra	water oak	Hardmast	FAC	<20%
Carya illinonsis	pecan	Hardmast	FACU	<20%
Carya aquatica	bitter pecan	Hardmast	OBL	<20%
Celtis laevigata	sugarberry	Softmast	FACW	<15%
Diospyros virginiana	common persimmon	Softmast	FAC	<15%
Liquidambar styraciflua	sweetgum	Softmast	FAC	<15%
Fraxinus pennsylvanica	green ash	Softmast	FACW	<15%
Taxodium distichum	cypress	Softmast	OBL	<15%

Table 4: Representative CS Species Suitable for CGMBA1:

Tree Species to be Planted in CS Areas				
Scientific Name	Common Name	Hardmast/Softmast	Wetland Indicator Status	Composition
Taxodium distichum	cypress	Softmast	OBL	<70%
Nyssa sylvatica var biflora	blackgum tupelo	Softmast	OBL	<30%

LOUISIANA WETLAND RAPID ASSESSMENT METHOD (LRAM) 2.0

CEMVN Acct #	MVN-2017-01494-MG				Bank Name				
Acres Mitigation	123.8				Cedar Grove Mitigation Bank Amendment One				
Watershed Basin	Terrebonne								

		Area 1	Area 2	Area 3	Area 4	Area 5	Area 6	Area 7	Area 8
Mitigation Factors	Mitigation Type	Re-Est	Rehab	Pick Here	Pick Here	Pick Here	Pick Here	Pick Here	Pick Here
		6.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0
	Management	None	None	Pick Here	Pick Here	Pick Here	Pick Here	Pick Here	Pick Here
		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Negative Influences	High	High	Pick Here	Pick Here	Pick Here	Pick Here	Pick Here	Pick Here
		-2.0	-2.0	0.0	0.0	0.0	0.0	0.0	0.0
	Size	500 : 100	500 : 100	Pick Here	Pick Here	Pick Here	Pick Here	Pick Here	Pick Here
		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Buffer / Upland	Restored	Restored	Pick Here	Pick Here	Pick Here	Pick Here	Pick Here	Pick Here
		0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0
	Sum:	4.5	3.5	0.0	0.0	0.0	0.0	0.0	0.0
	Area:	122.2	1.6	0.0					
	Sum x Area Affected:	549.9	5.6	0.0	0.0	0.0	0.0	0.0	0.0

∑ Mitigation:	555.5
Mitigation Potential:	4.5

COMMENTS

Mitigation Type	Bottomland Hardwood
Management	
Negative Influences	
Size	
Buffer/Upland	

LOUISIANA WETLAND RAPID ASSESSMENT METHOD (LRAM) 2.0

CEMVN Acct #	MVN-2017-01494-MG				Bank Name				
Acres Mitigation	227.7				Cedar Grove Mitigation Bank Amendment One				
Watershed Basin	Terrebonne								

		Area 1	Area 2	Area 3	Area 4	Area 5	Area 6	Area 7	Area 8
Mitigation Factors	Mitigation Type	Re-Est	Rehab	Enhanc	Pick Here	Pick Here	Pick Here	Pick Here	Pick Here
		6.0	5.0	3.0	0.0	0.0	0.0	0.0	0.0
	Management	None	None	None	Pick Here	Pick Here	Pick Here	Pick Here	Pick Here
		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Negative Influences	High	High	High	Pick Here	Pick Here	Pick Here	Pick Here	Pick Here
		-2.0	-2.0	-2.0	0.0	0.0	0.0	0.0	0.0
	Size	500 : 100	500 : 100	500 : 100	Pick Here	Pick Here	Pick Here	Pick Here	Pick Here
		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Buffer / Upland	Restored	Restored	Restored	Pick Here	Pick Here	Pick Here	Pick Here	Pick Here
		0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0
	Sum:	4.5	3.5	1.5	0.0	0.0	0.0	0.0	0.0
	Area:	145.3	75.5	6.9					
	Sum x Area Affected:	653.9	264.3	10.4	0.0	0.0	0.0	0.0	0.0

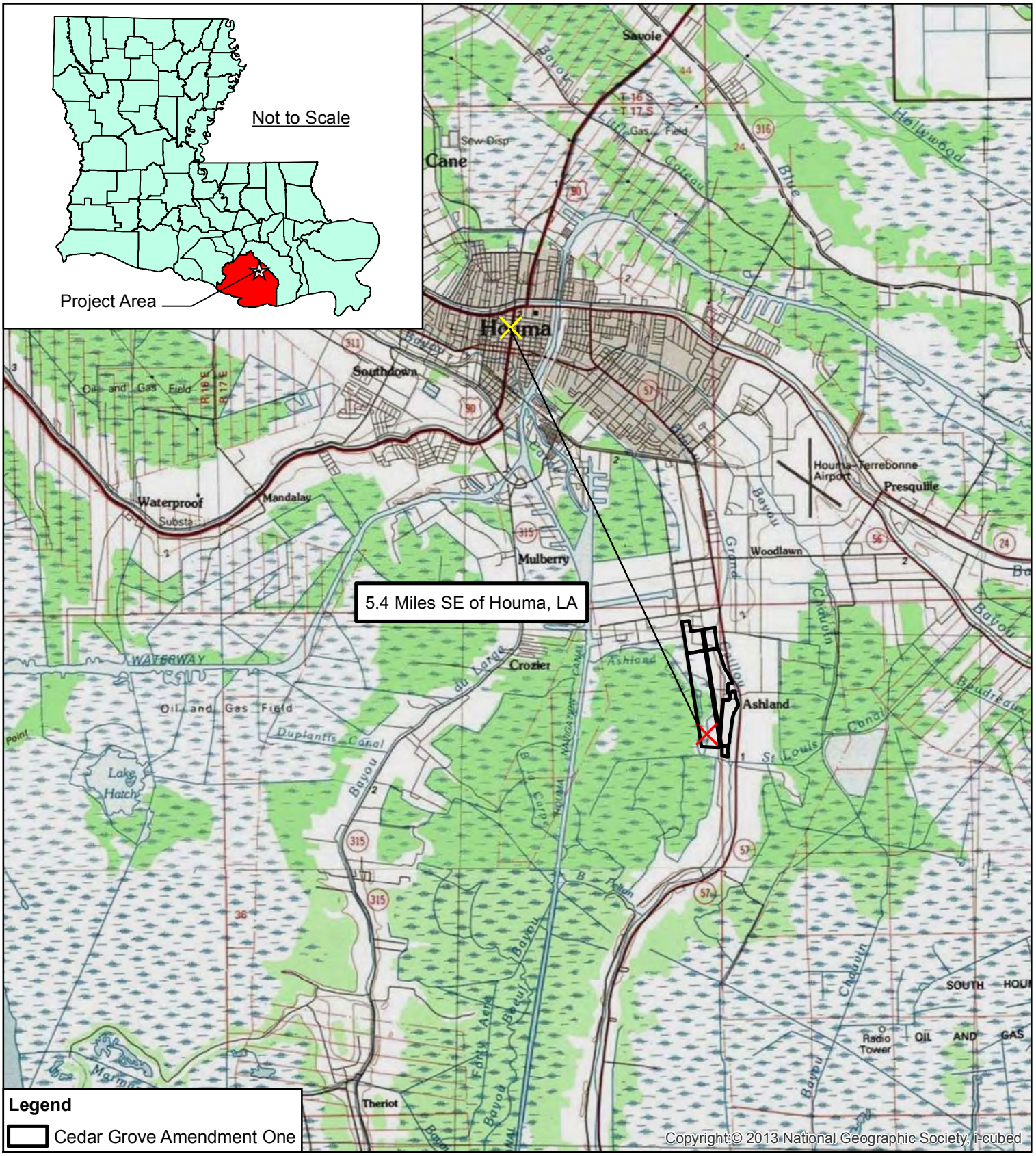
∑ Mitigation:	928.5
Mitigation Potential:	4.1

COMMENTS

Mitigation Type	Cypress
Management	
Negative Influences	
Size	
Buffer/Upland	

Attachment B:

Maps and Exhibits



0 0.5 1 2 3 4
Miles

N

PROPOSED CEDAR GROVE AMENDMENT ONE MITIGATION BANK

VICINITY EXHIBIT

TERREBONNE PARISH, LA

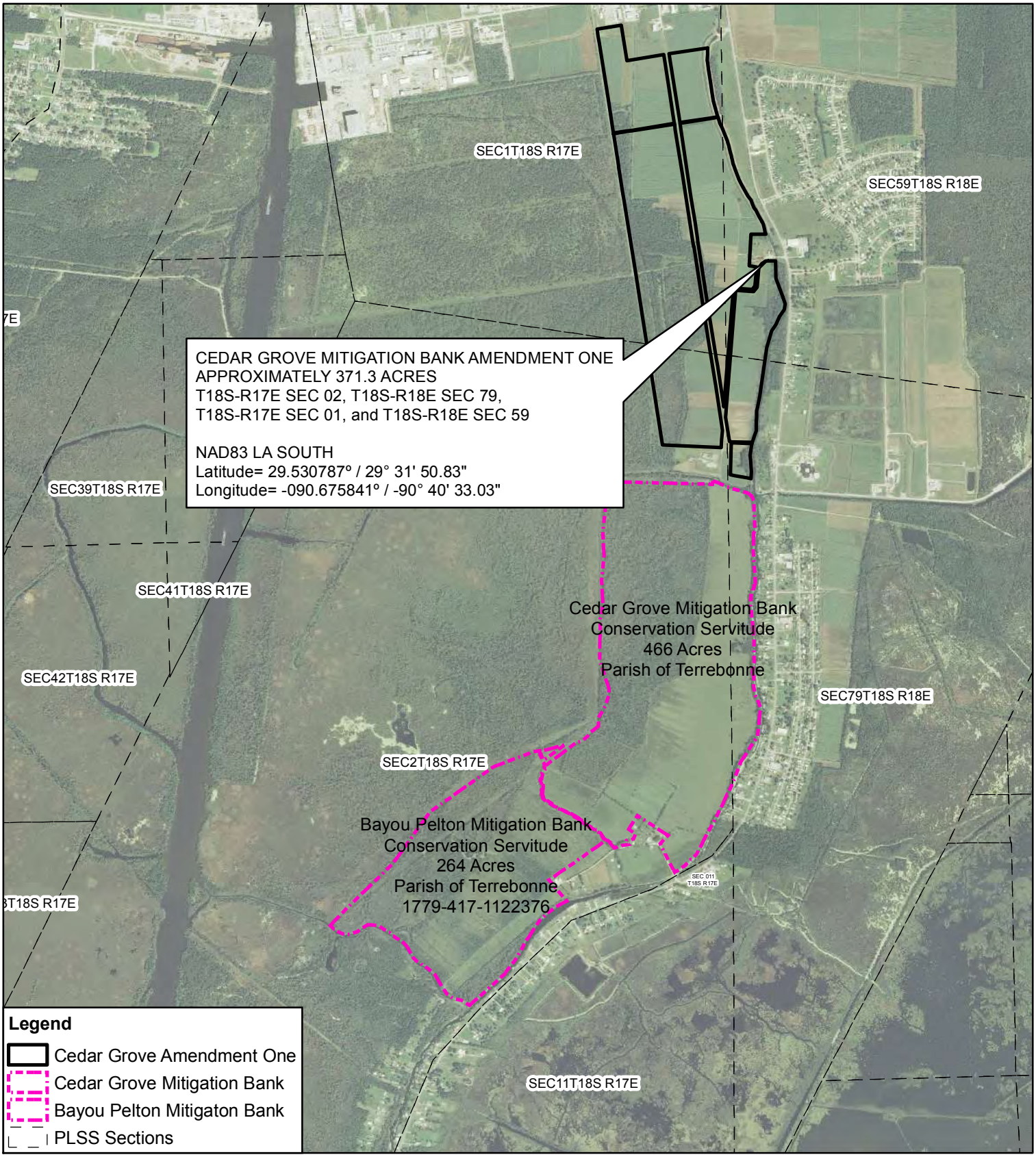
Drawing No.:

Date: 08/06/18 Author: BDS

FIGURE 1

JMB Partnership, LLC

Document Path: N:\Mitigation Banks\Cedar Grove Amendment One\Mapping\GIS Projects (.MXD)\Prospectus\ProspectusNorthEast_9_2018\Figure 1_Vicinity_CGMB_A1_08062018.mxd



0 1,000 2,000 3,000 4,000
Feet

N

PROPOSED CEDAR GROVE AMENDMENT ONE MITIGATION BANK

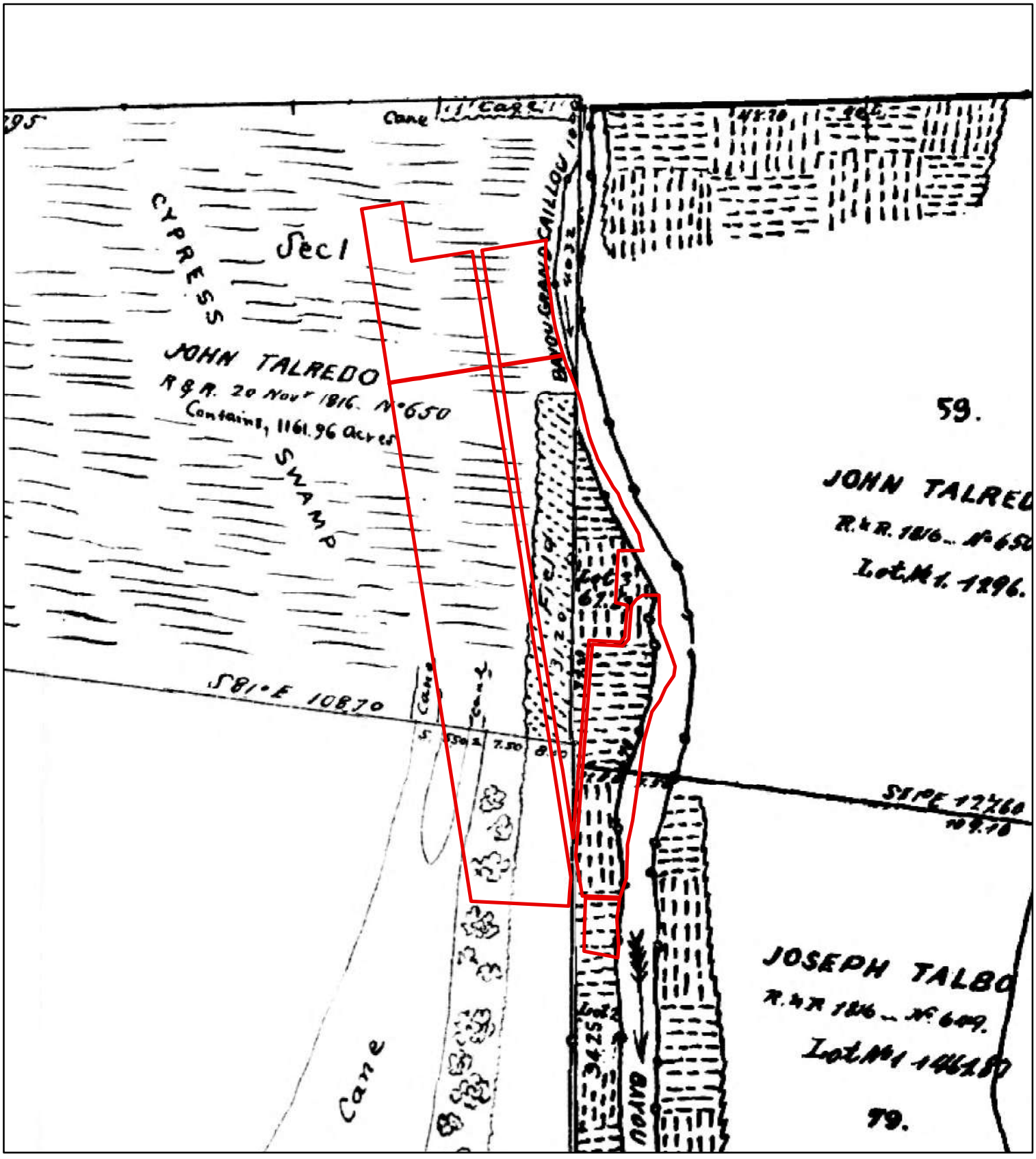
PROJECT BOUNDARY EXHIBIT
TERREBONNE PARISH, LA

Drawing No.:
Date: 09/27/2018 Author: JKP

FIGURE 2

JMB
JMB Partnership, LLC

Document Path: N:\Mitigation Banks\Cedar Grove Amendment One\Mapping\GIS Projects (.MXD)\Prospectus\ProspectusNorthEast_9_2018\Figure 2_Boundary_CGMB_A1_080618.mxd



Legend

Cedar Grove Amendment One

0 1,000 2,000 3,000

Feet

N

PROPOSED CEDAR GROVE AMENDMENT ONE MITIGATION BANK

MOSAIC 1855 HISTORICAL PLAT

TERREBONNE PARISH, LA

Drawing No.:

Date: 09/27/2018 Author: JKP

FIGURE 3A

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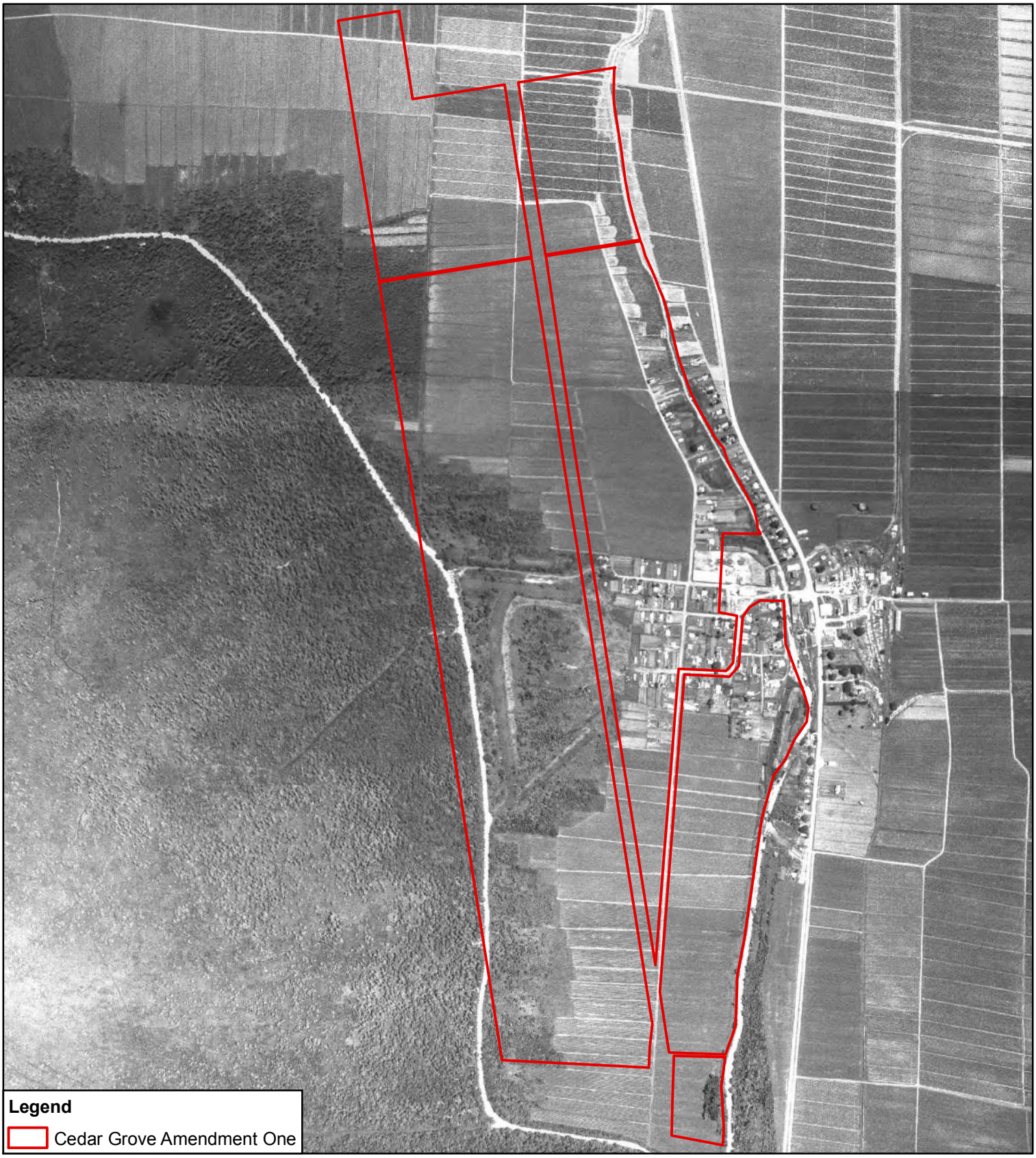

0 250 500 1,000 1,500 2,000

Feet

1 inch = 1,000 feet

N

PROPOSED CEDAR GROVE AMENDMENT ONE MITIGATION BANK

1936 HISTORICAL AERIAL

TERREBONNE PARISH, LA

Drawing No.:

Date: 04/23/18 Author: BDS

FIGURE 3B

JMB Partnership, LLC

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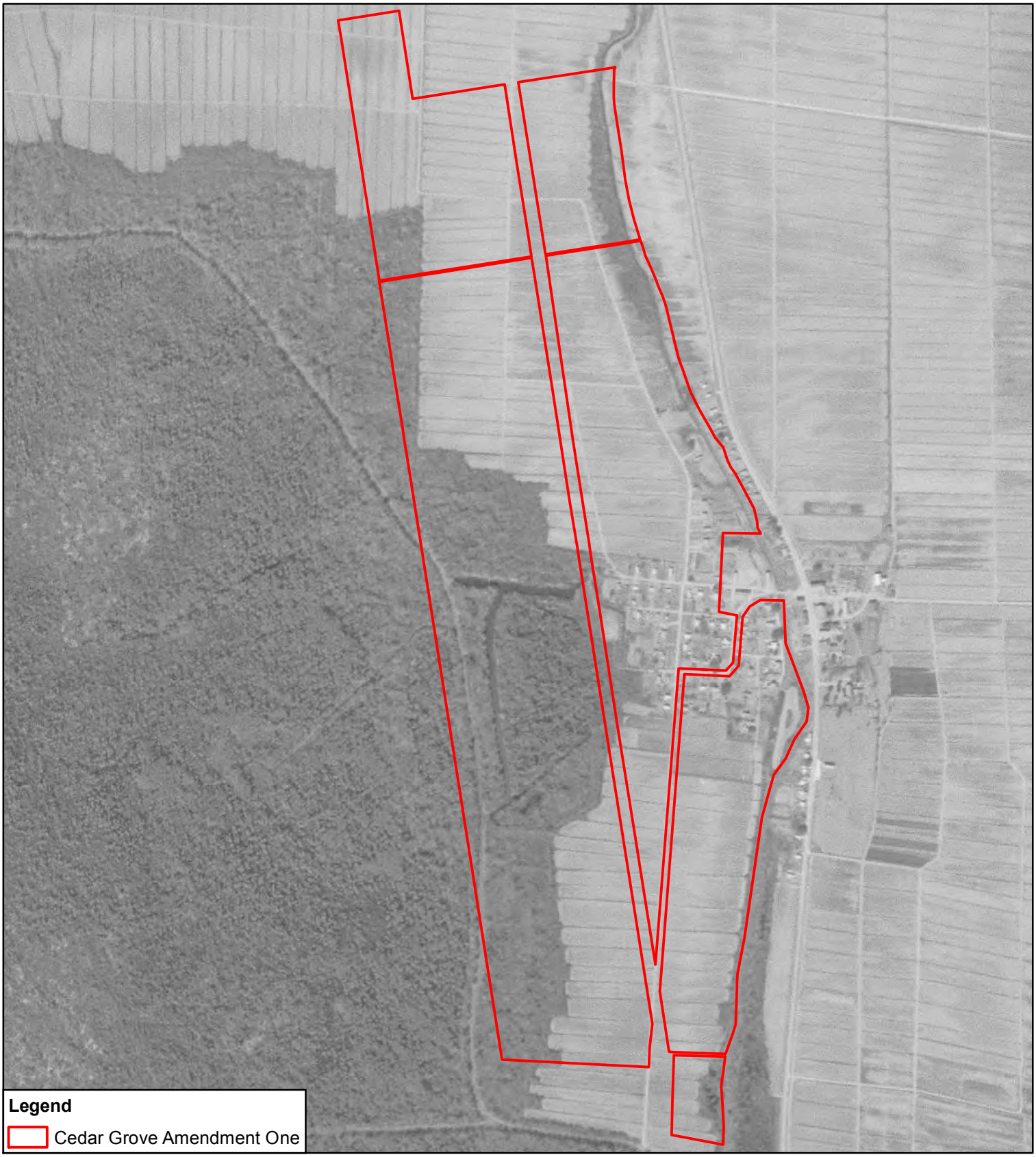

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Feet

1 inch = 1,000 feet

N

PROPOSED CEDAR GROVE AMENDMENT ONE MITIGATION BANK

1963 AERIAL IMAGERY EXHIBIT

TERREBONNE PARISH, LA

Drawing No.:

Date: 08/06/18 Author: BDS

FIGURE 3C

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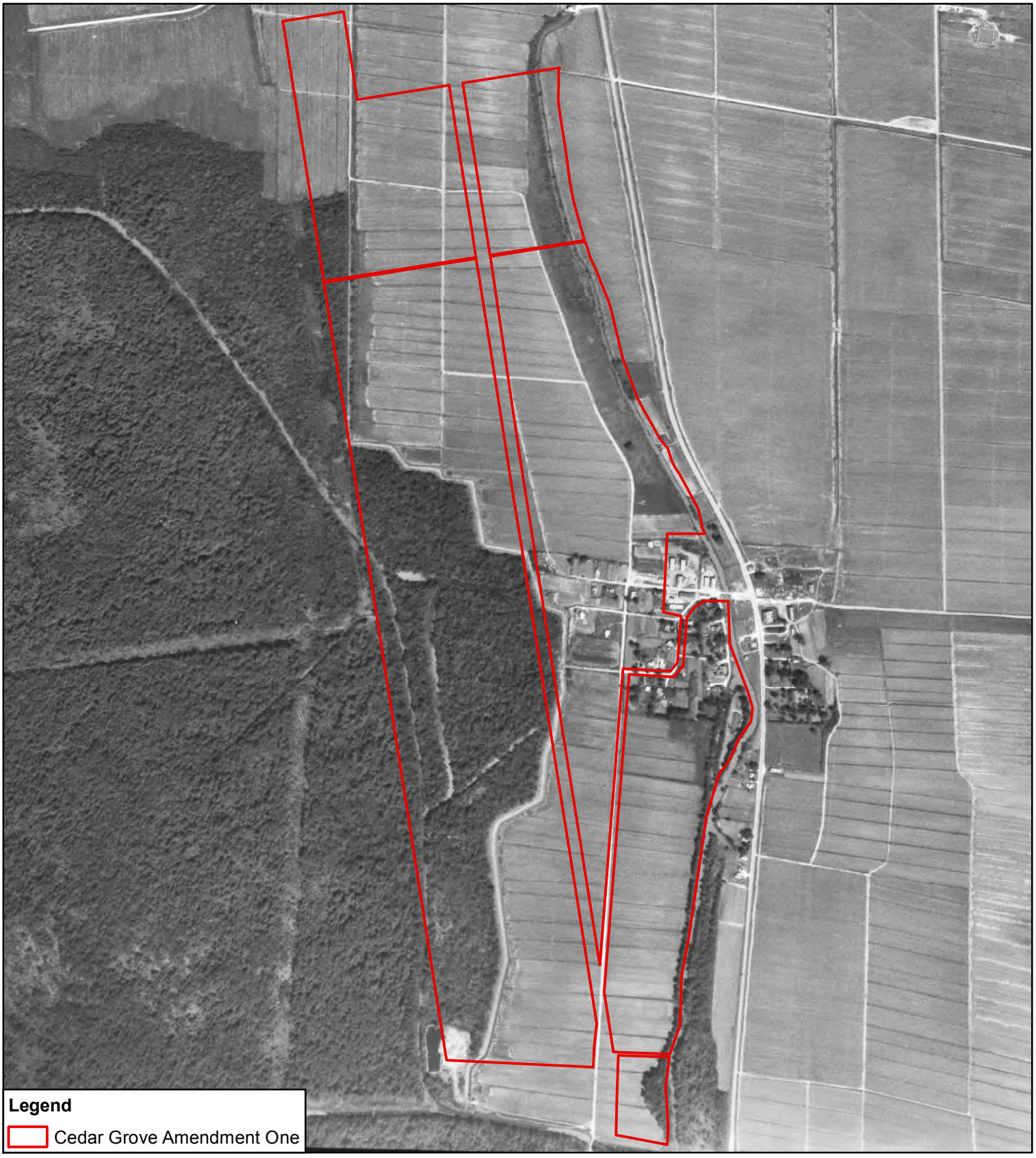

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Feet

1 inch = 1,000 feet

N

PROPOSED CEDAR GROVE AMENDMENT ONE MITIGATION BANK

1974 AERIAL IMAGERY EXHIBIT

TERREBONNE PARISH, LA

Drawing No.:

Date: 08/06/18 Author: BDS

FIGURE 3D

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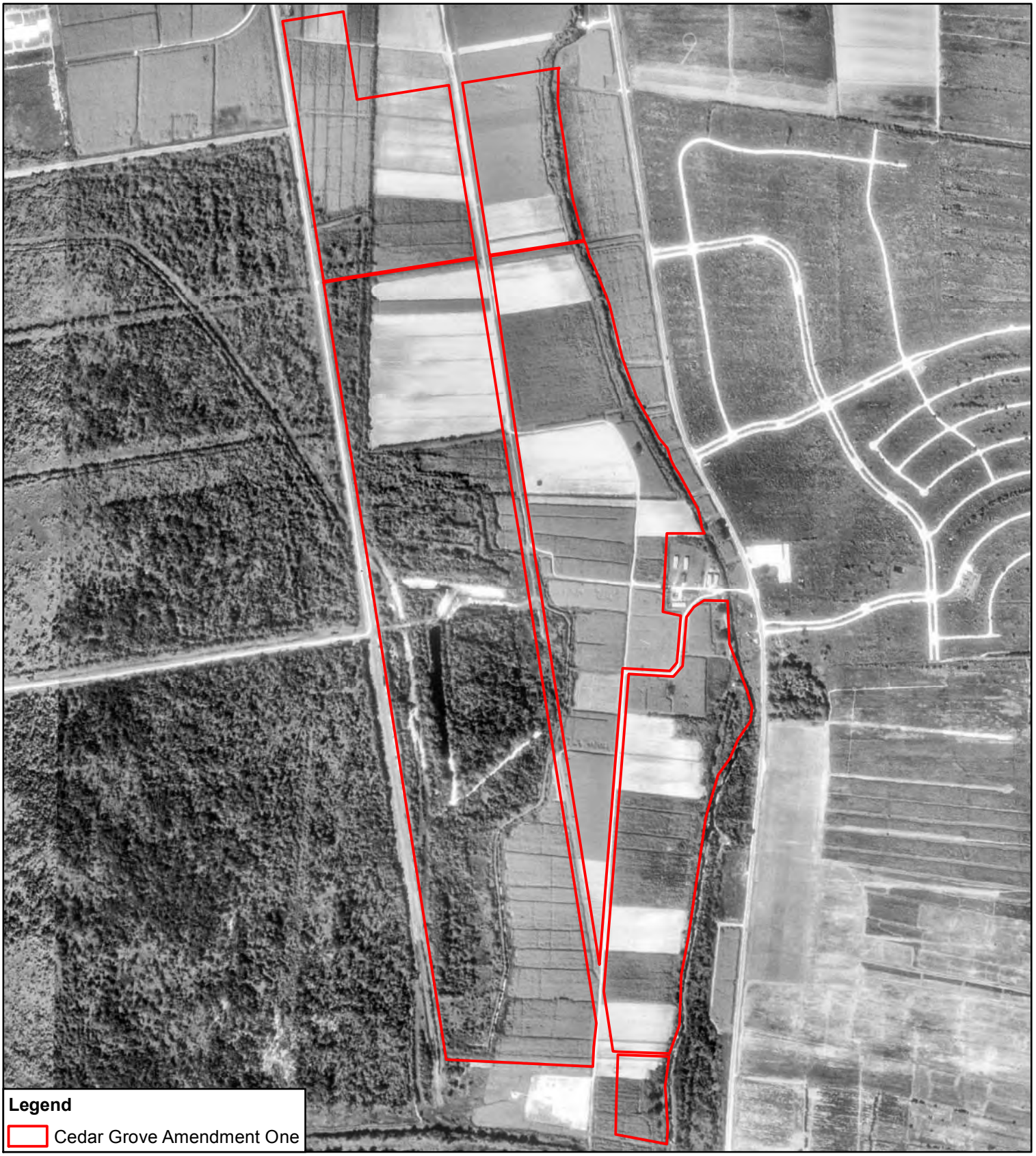

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Feet

1 in = 1,000 ft

N

PROPOSED CEDAR GROVE AMENDMENT ONE MITIGATION BANK

1989 AERIAL IMAGERY EXHIBIT

TERREBONNE PARISH, LA

Drawing No.:

Date: 09/27/2018 Author: JKP

FIGURE 3E

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Document Path: N:\Mitigation Banks\Cedar Grove Amendment One\Mapping\GIS Projects (.MXD)\Prospectus\ProspectusNorthEast_9_2018\Figure 3E_1989_CGMB_A1_08062018.mxd

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Feet

1 inch = 1,000 feet

N

PROPOSED CEDAR GROVE AMENDMENT ONE MITIGATION BANK

1998 AERIAL IMAGERY EXHIBIT

TERREBONNE PARISH, LA

Drawing No.:

Date: 08/06/18 Author: BDS

FIGURE 3F

JMB

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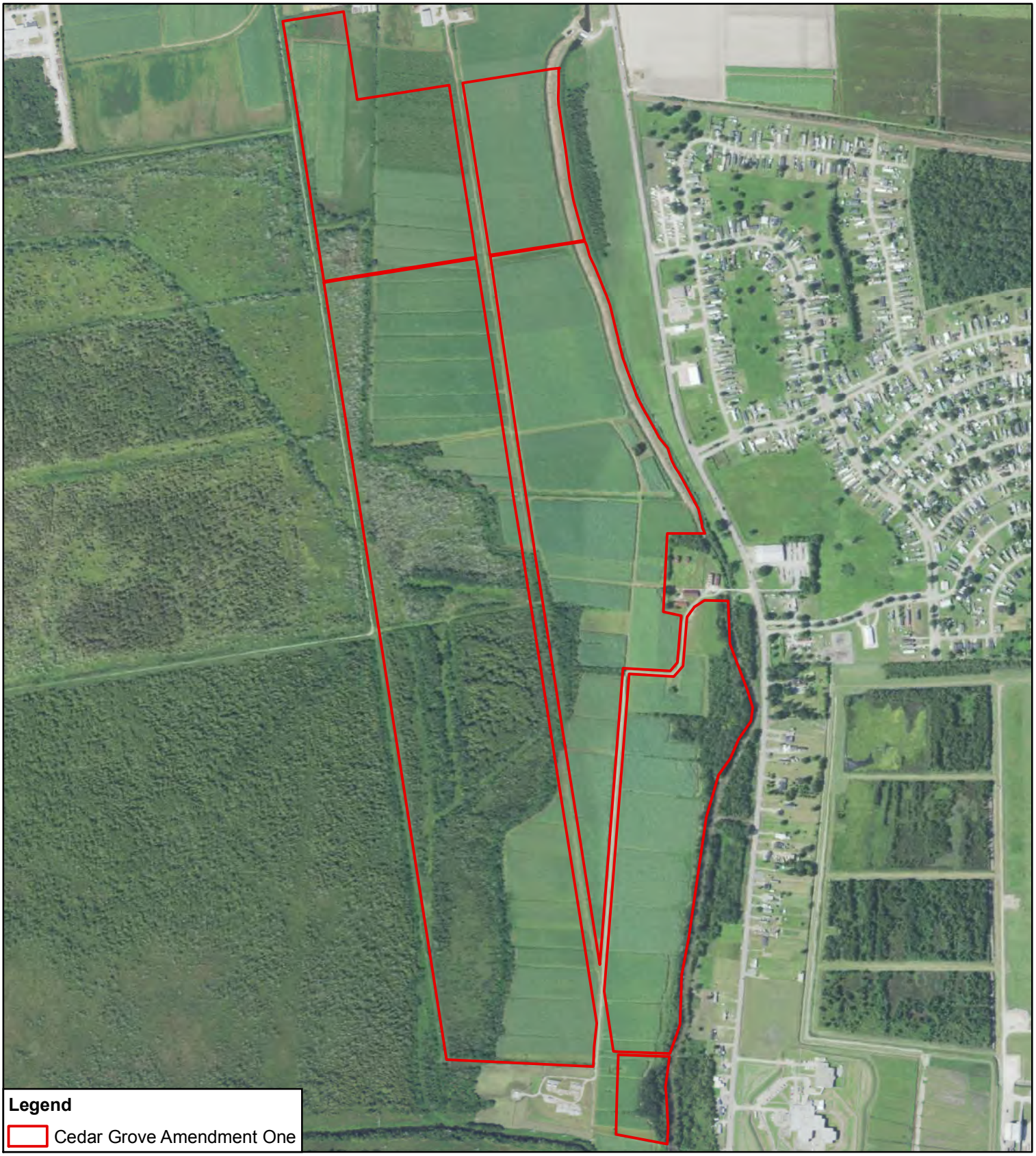

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Feet

1 inch = 1,000 feet

N

PROPOSED CEDAR GROVE AMENDMENT ONE MITIGATION BANK

2017 AERIAL IMAGERY EXHIBIT

TERREBONNE PARISH, LA

Drawing No.:

Date: 09/27/2018 Author: JKP

FIGURE 3G

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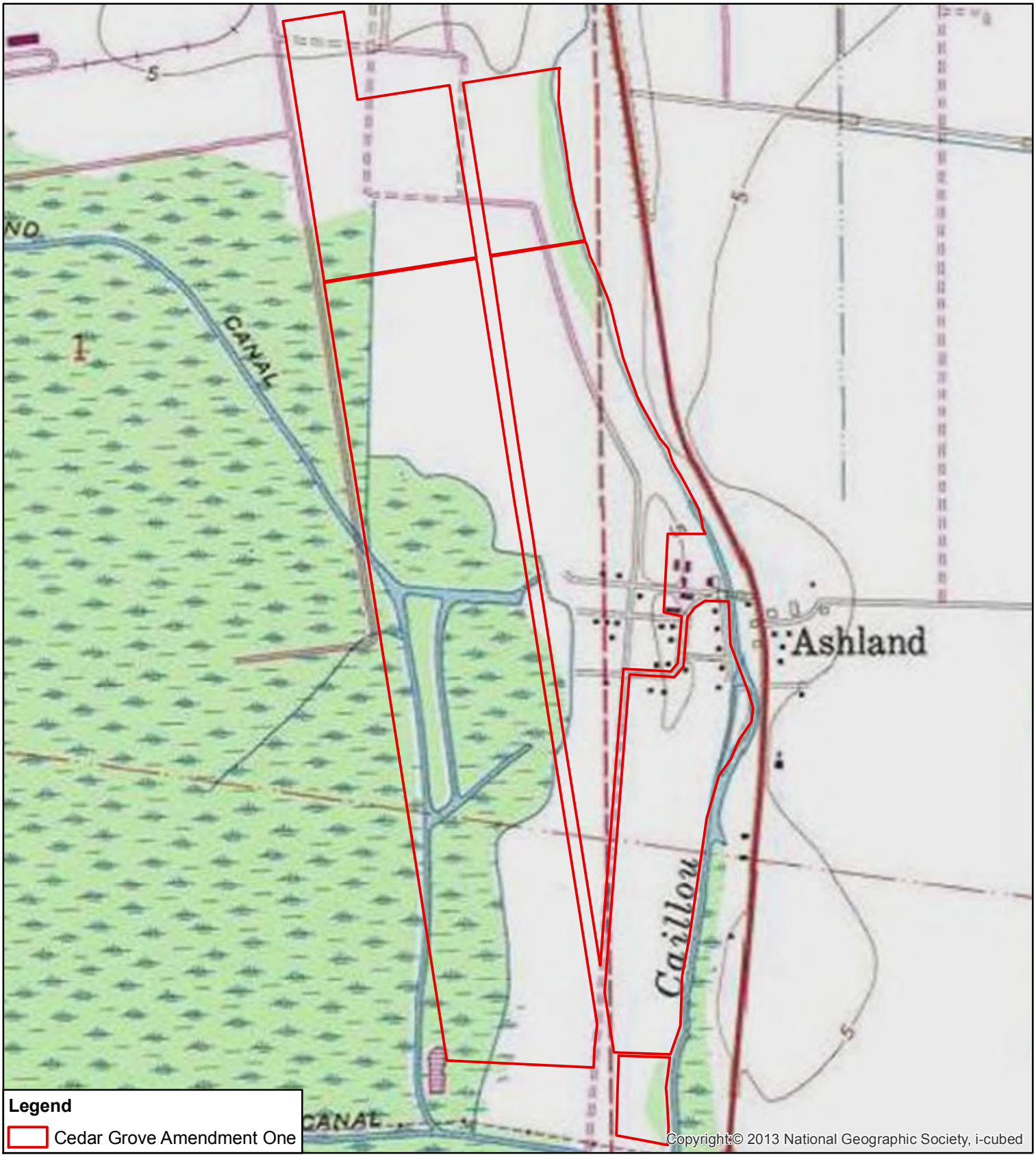

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Feet

1 inch = 1,000 feet

N

PROPOSED CEDAR GROVE AMENDMENT ONE MITIGATION BANK

USGS 7.5 Minute Quadrangle

TERREBONNE PARISH, LA

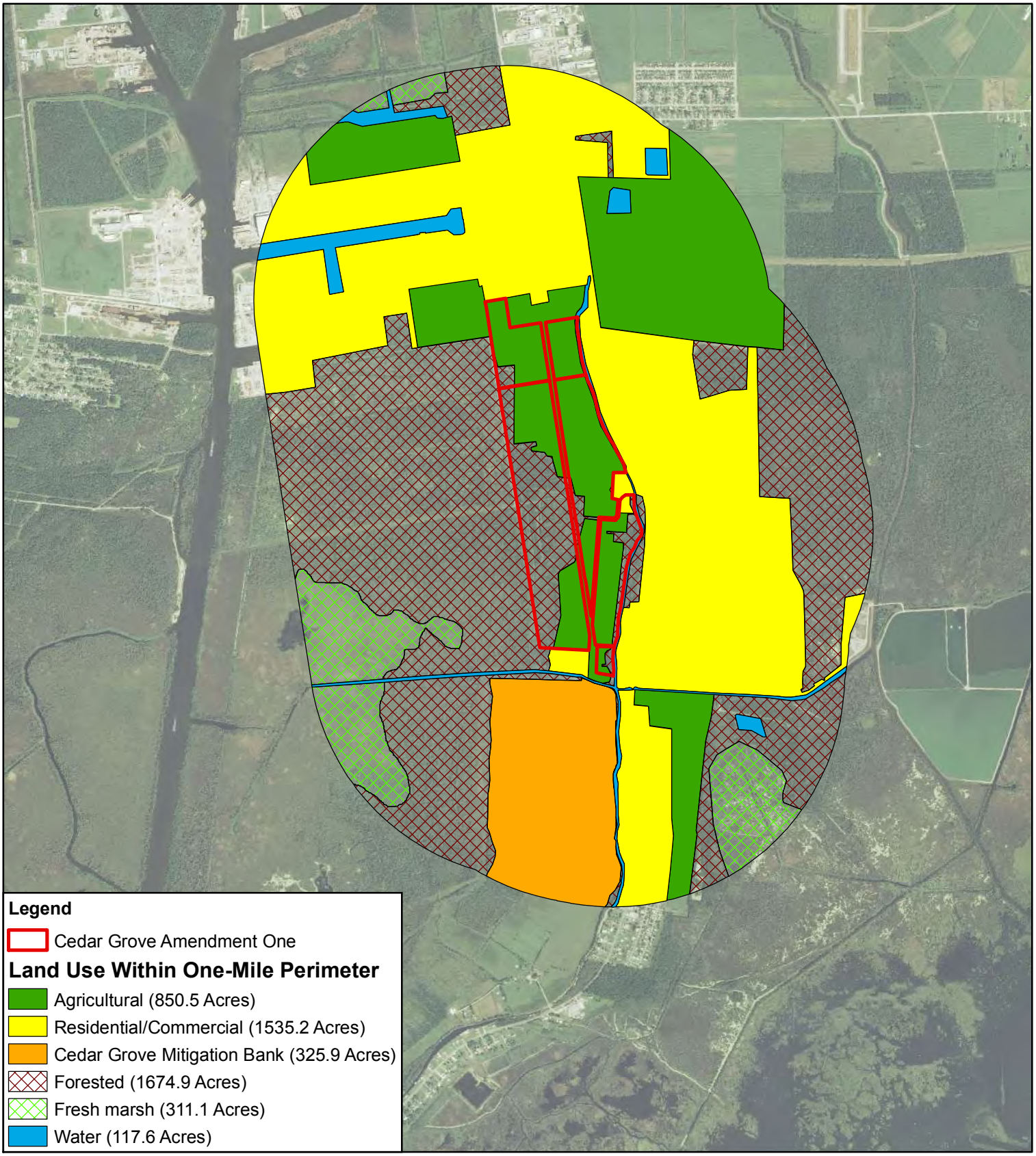
Drawing No.:

Date: 09/27/2018 Author: JKP

FIGURE 3H

JMB Partnership, LLC

Document Path: N:\Mitigation Banks\Cedar Grove Amendment One\Mapping\GIS Projects (.MXD)\Prospectus\ProspectusNorthEast_9_2018\Figure 3H_USGS 7.5 min Q_CGMB_A1_08062018.mxd



0 1,500 3,000 4,500 6,000

Feet

1 inch = 3,000 feet

N

PROPOSED CEDAR GROVE AMENDMENT ONE MITIGATION BANK

LAND USE EXHIBIT

TERREBONNE PARISH, LA

Drawing No.:

Date: 09/27/2018 Author: JKP

FIGURE 4

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JMB Partnership, LLC

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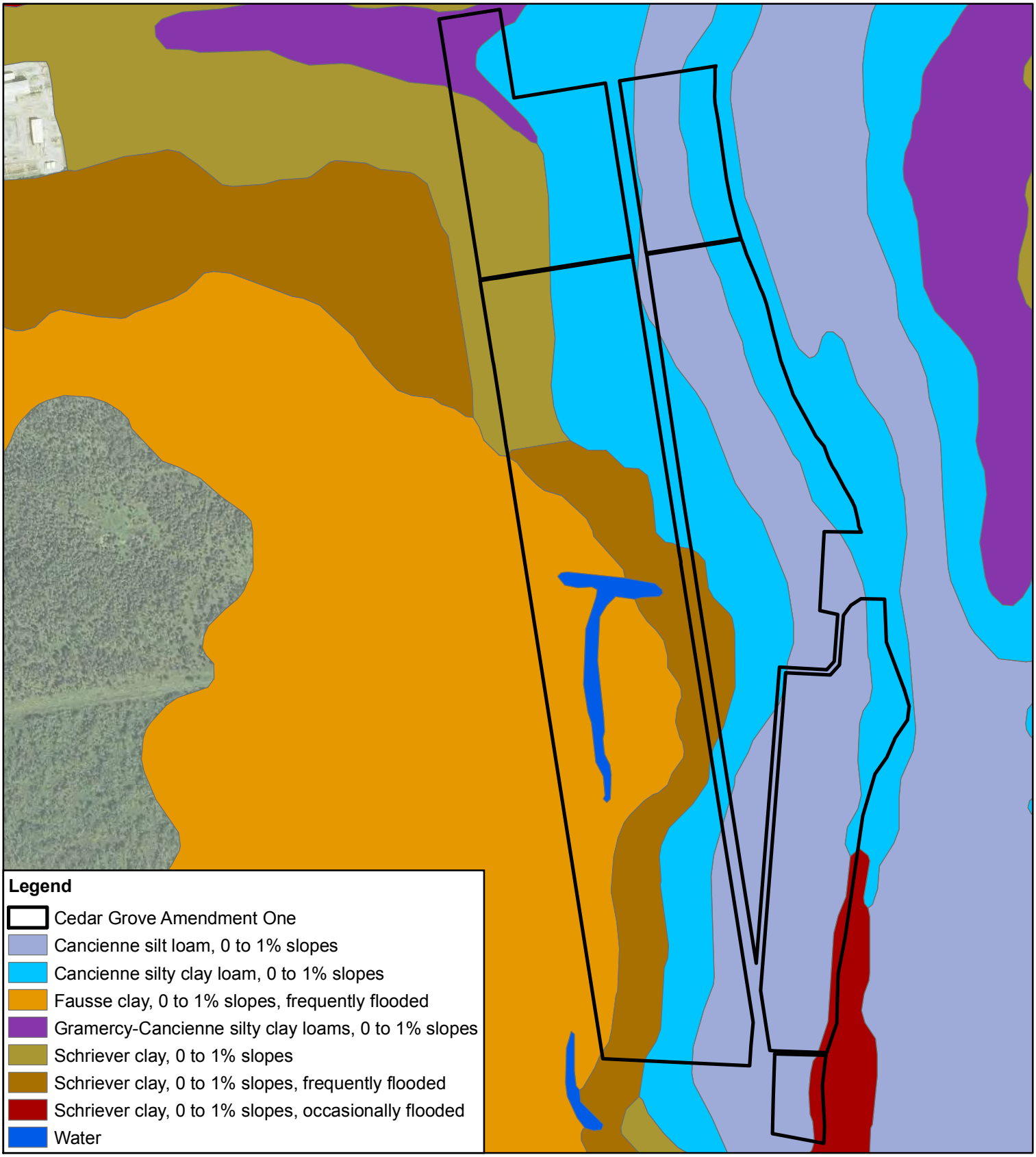

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Feet

1 inch = 1,000 feet

N

PROPOSED CEDAR GROVE AMENDMENT ONE MITIGATION BANK

NRCS SOILS EXHIBIT

TERREBONNE PARISH, LA

Drawing No.:

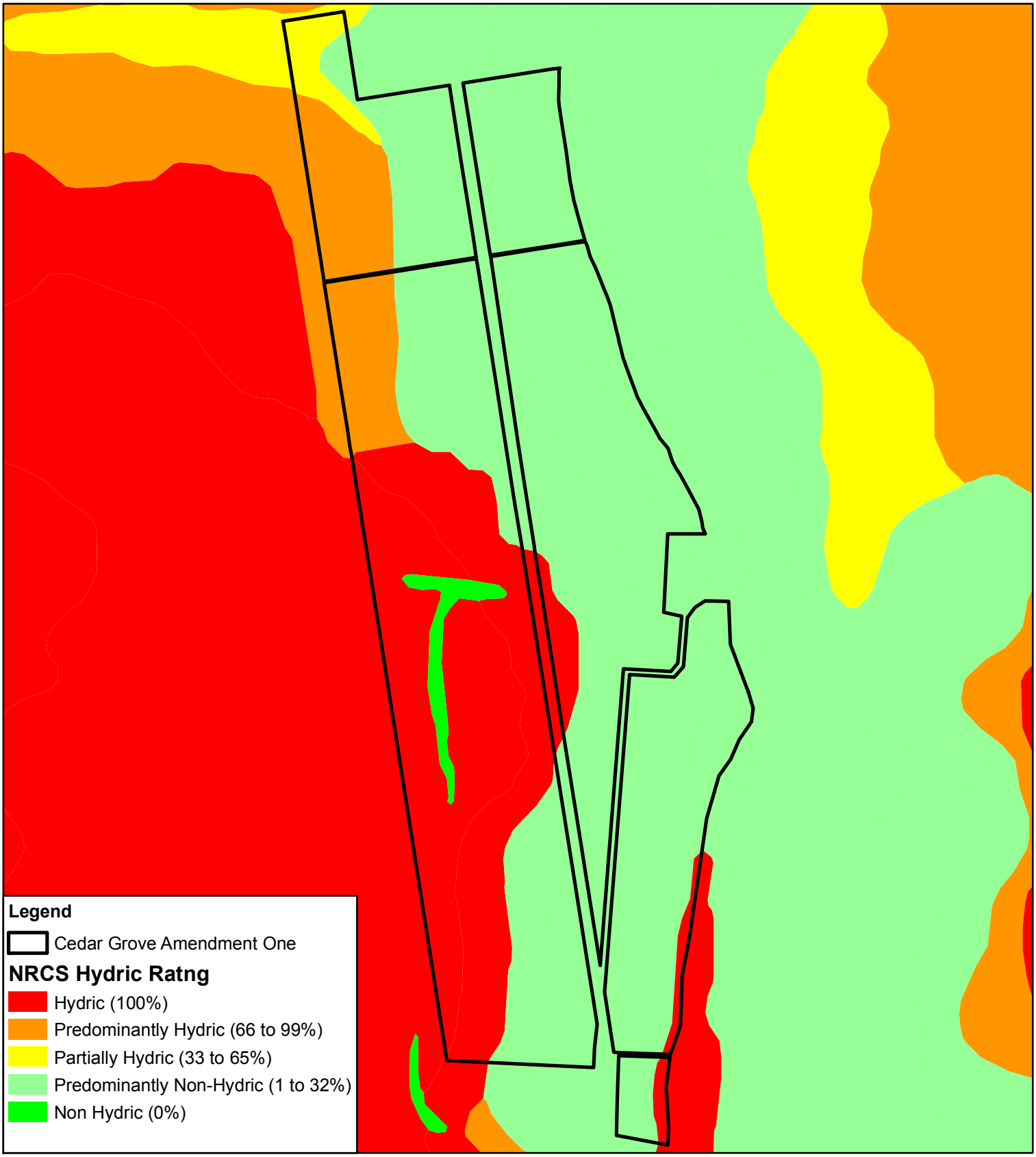
Date: 09/27/2018 Author: JKP

FIGURE 5

JMB

JMB Partnership, LLC

Document Path: N:\Mitigation Banks\Cedar Grove Amendment One\Mapping\GIS Projects (.MXD)\Prospectus\ProspectusNorthEast_9_2018\Figure 5_Soil_CGMB_A1_08072018.mxd



0 250 500 1,000 1,500 2,000

Feet

1 inch = 1,000 feet

N

PROPOSED CEDAR GROVE AMENDMENT ONE MITIGATION BANK

HYDRIC RATING EXHIBIT

TERREBONNE PARISH, LA

Drawing No.:

Date: 09/27/2018 Author: JKP

FIGURE 6

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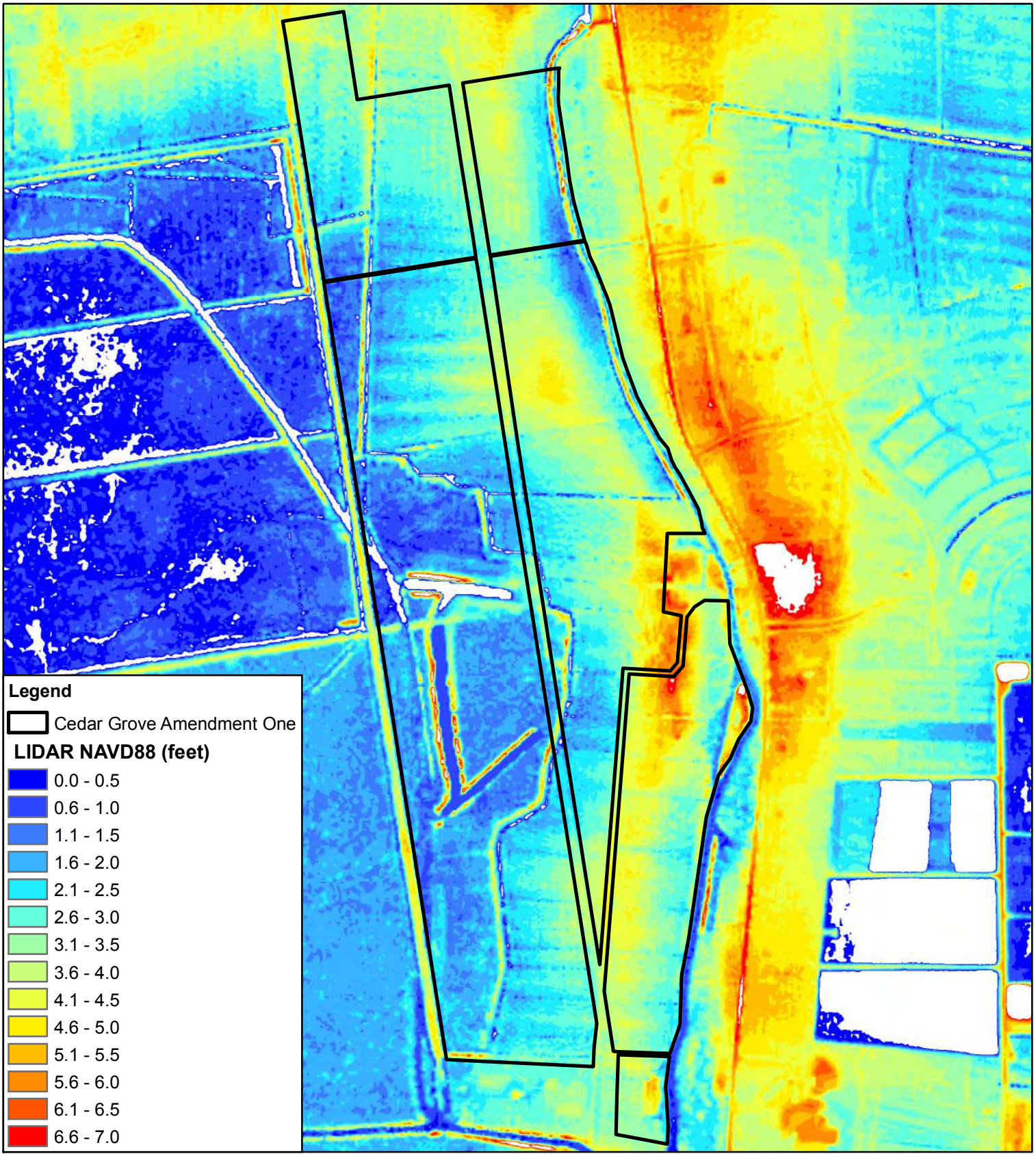
JMB Partnership, LLC

Document Path: N:\Mitigation Banks\Cedar Grove Amendment One\Mapping\GIS Projects (.MXD)\Prospectus\ProspectusNorthEast_9_2018\Figure 6_HydricRating_CGMB_A1_08072018.mxd



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Feet

1 inch = 1,000 feet

N

PROPOSED CEDAR GROVE AMENDMENT ONE MITIGATION BANK

ELEVATION EXHIBIT

TERREBONNE PARISH, LA

Drawing No.:

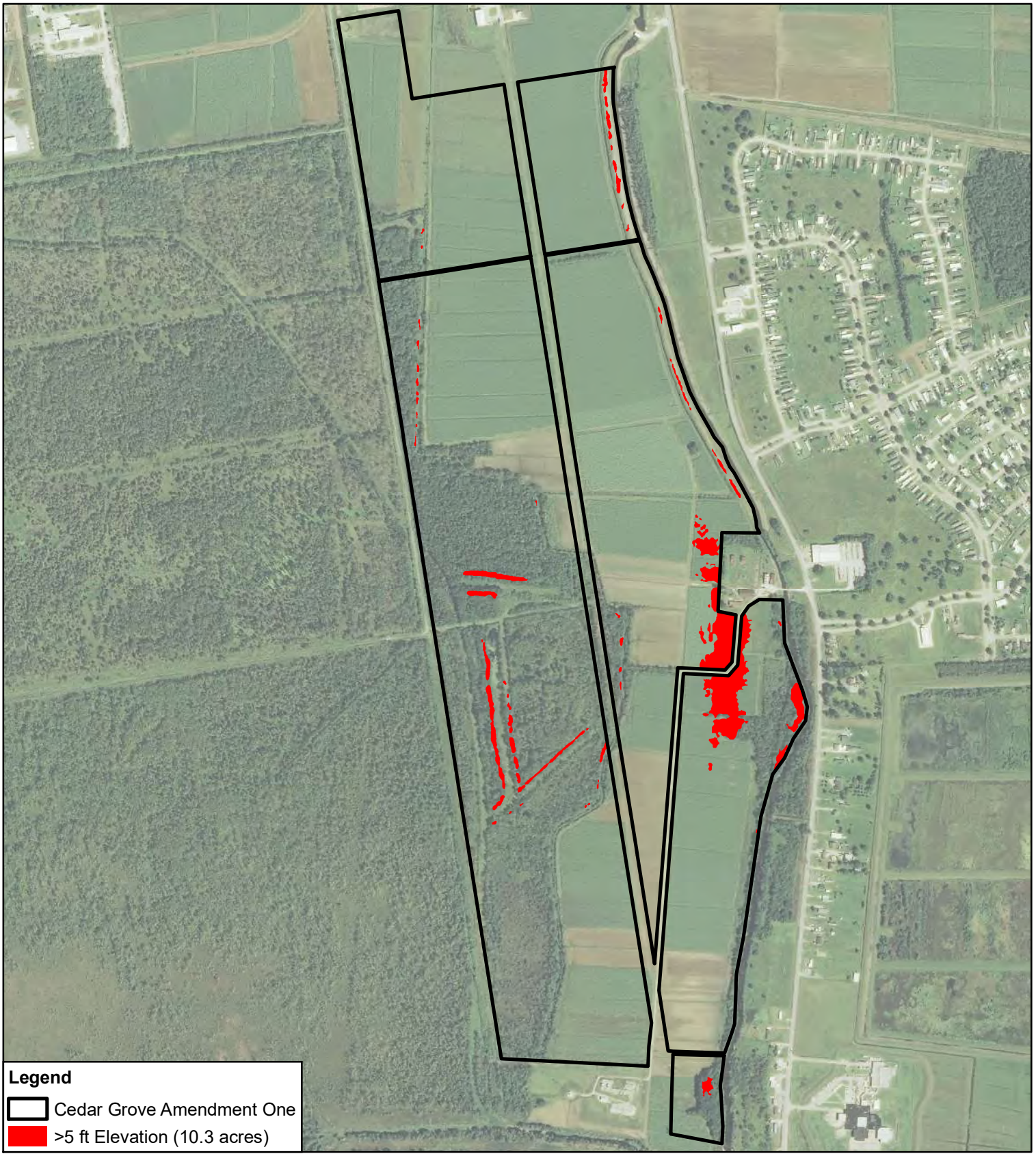
Date: 09/27/2018 Author: JKP

FIGURE 7

JMB

JMB Partnership, LLC

Document Path: N:\Mitigation Banks\Cedar Grove Amendment One\Mapping\GIS Projects (.MXD)\Prospectus\ProspectusNorthEast_9_2018\Figure 7_LIDAR_CGMB_A1_08072018.mxd



0 500 1,000 1,500 2,000
Feet

1 inch = 1,000 feet

N

PROPOSED CEDAR GROVE AMENDMENT ONE MITIGATION BANK

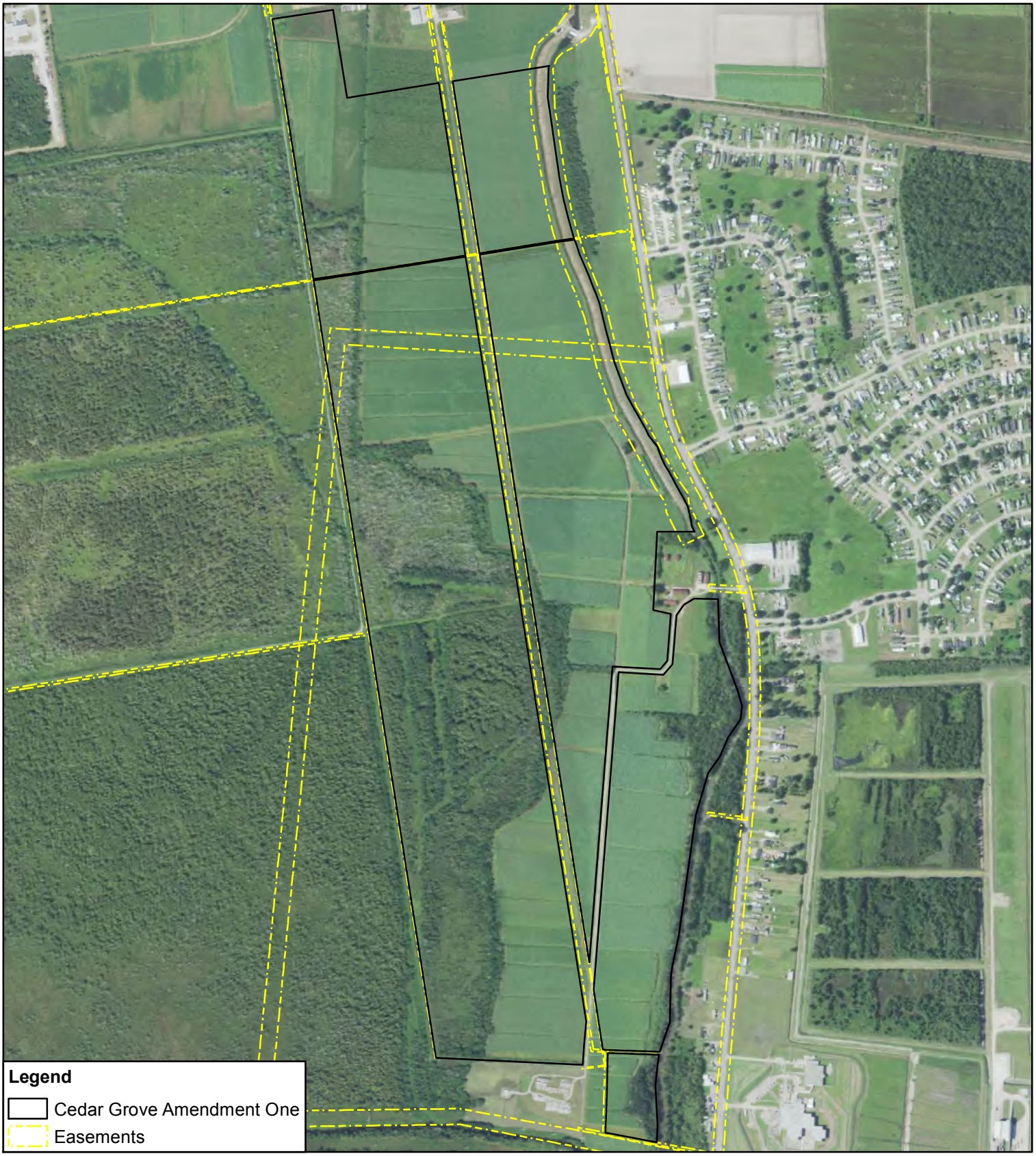
> 5 FOOT CONTOUR EXHIBIT
TERREBONNE PARISH, LA

Drawing No.:
Date: 10/01/2018 Author: JKP/BDS

FIGURE 8

JMB
JMB Partnership, LLC

Document Path: N:\Mitigation Banks\Cedar Grove Amendment One\Mapping\GIS Projects (.MXD)\Prospectus\ProspectusNorthEast_9_2018\Figure 8_5FootContour_CGMB_A1.mxd



0 250 500 1,000 1,500 2,000

Feet

1 inch = 1,000 feet

N

PROPOSED CEDAR GROVE AMENDMENT ONE MITIGATION BANK

EASEMENT EXHIBIT

TERREBONNE PARISH, LA

Drawing No.:

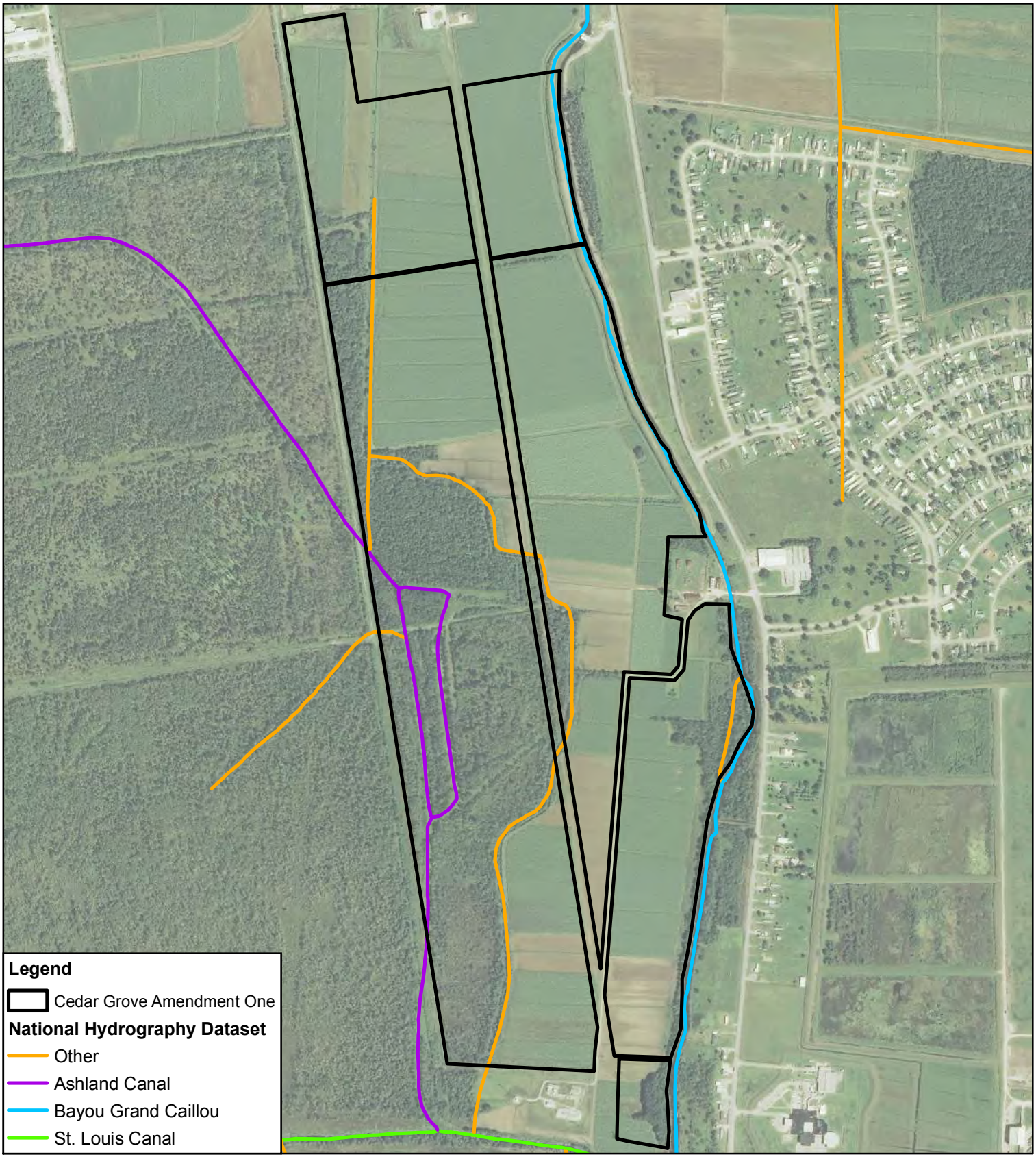
Date: 09/27/2018 Author: JKP

FIGURE 9

JMB

JMB Partnership, LLC

Document Path: N:\Mitigation Banks\Cedar Grove Amendment One\Mapping\GIS Projects (.MXD)\Prospectus\ProspectusNorthEast_9_2018\Figure 9_Easement_CGMB_A1.mxd



0 250 500 1,000 1,500 2,000
Feet

1 inch = 1,000 feet

N

PROPOSED CEDAR GROVE AMENDMENT ONE MITIGATION BANK

NATIONAL HYDROGRAPHY DATASET EXHIBIT
TERREBONNE PARISH, LA

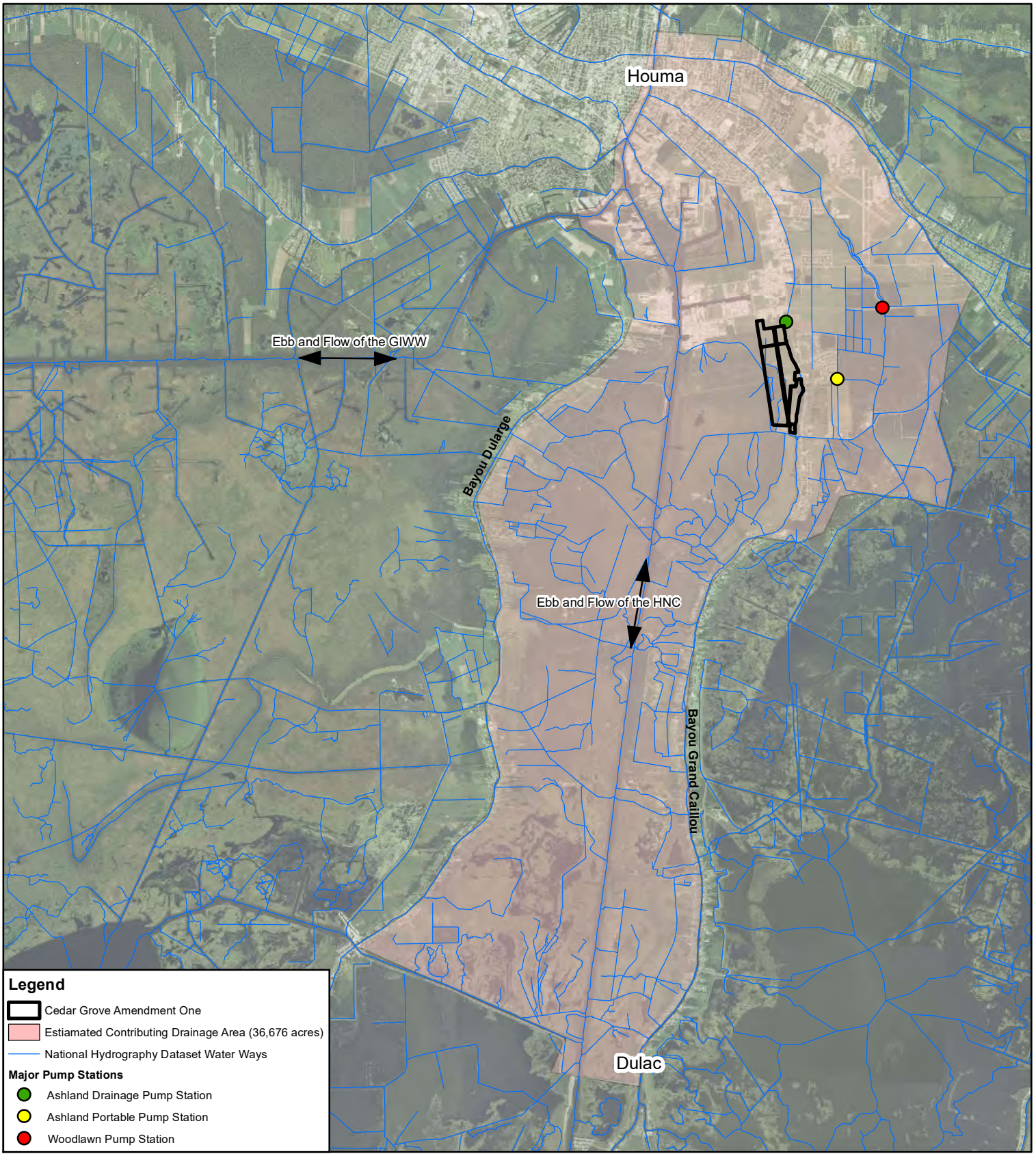
Drawing No.:

Date: 09/27/2018 Author: JKP

FIGURE 10

JMB
JMB Partnership, LLC

Document Path: N:\Mitigation Banks\Cedar Grove Amendment One\Mapping\GIS Projects (.MXD)\Prospectus\ProspectusNorthEast_9_2018\Figure 10_NHD_CGMB_A1_08072018.mxd



0 1 2 3 4
Miles

N

PROPOSED CEDAR GROVE AMENDMENT ONE MITIGATION BANK

CONTRIBUTING DRAINAGE AREA MAP
TERREBONNE PARISH, LA

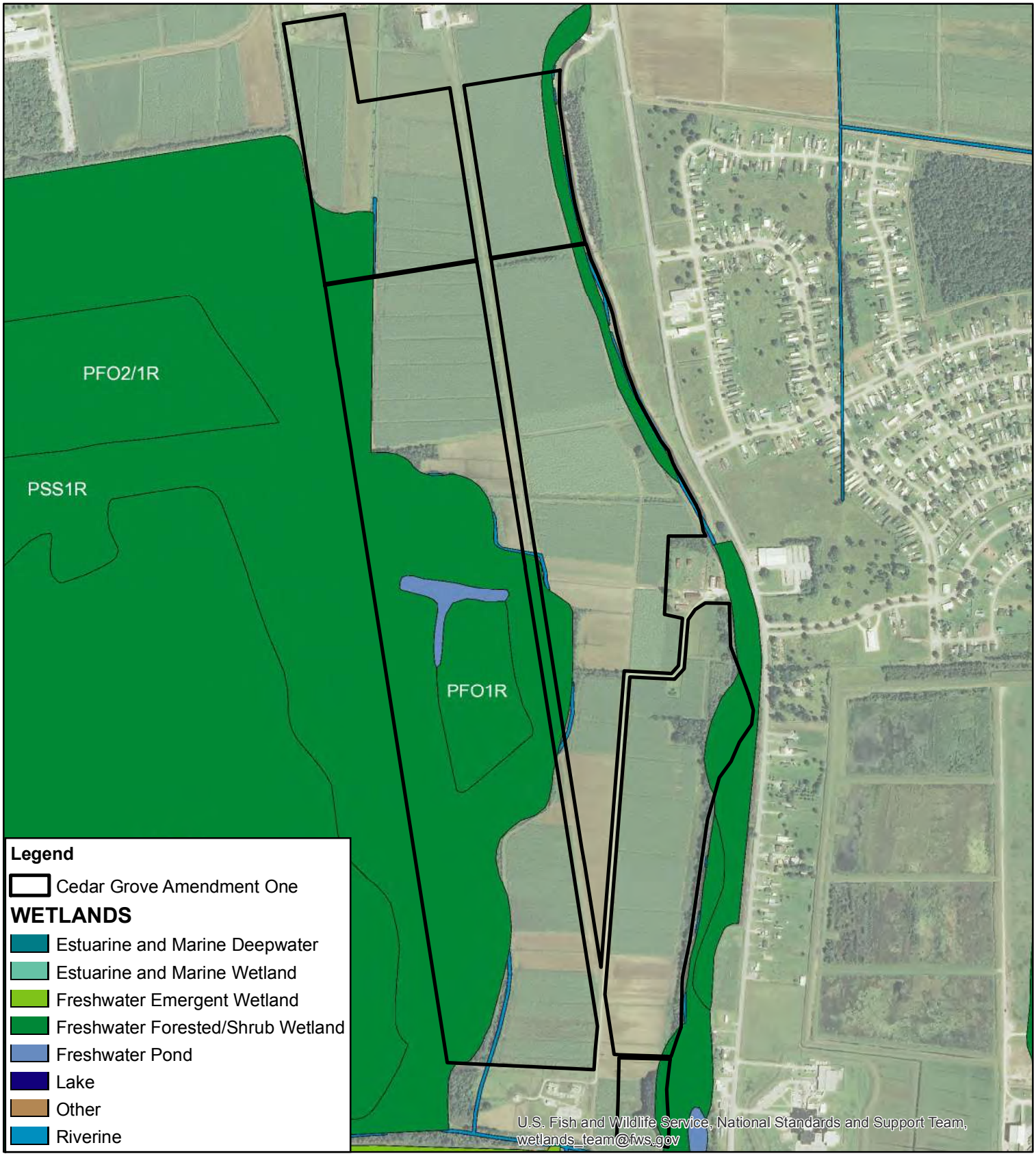
Drawing No.:

Date: 08/07/18 Author: BDS

FIGURE 10A

JMB Partnership, LLC

Document Path: N:\Mitigation Banks\Cedar Grove Amendment One\Mapping\GIS Projects (.MXD)\Prospectus\ProspectusNorthEast_9_2018\Figure 10A_Drainage Area_CGMB_A1_008072018.mxd



0 250 500 1,000 1,500 2,000

Feet

1 inch = 1,000 feet

N

PROPOSED CEDAR GROVE AMENDMENT ONE MITIGATION BANK

NATIONAL WETLANDS INVENTORY EXHIBIT
TERREBONNE PARISH, LA

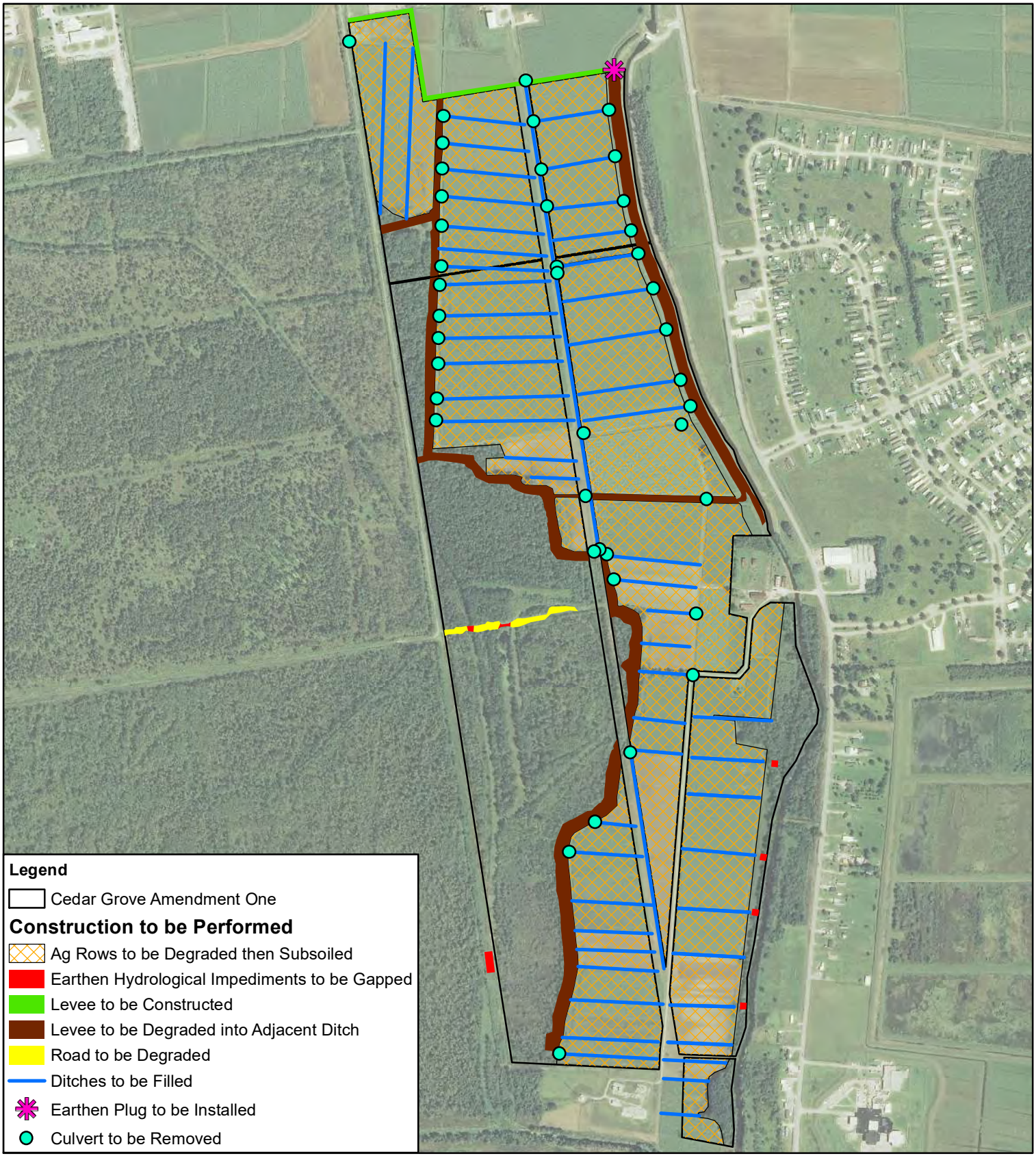
Drawing No.:

Date: 09/27/2018 Author: JKP

FIGURE 11

JMB Partnership, LLC

Document Path: N:\Mitigation Banks\Cedar Grove Amendment One\Mapping\GIS Projects (.MXD)\Prospectus\ProspectusNorthEast_9_2018\Figure 11_NWI_CGMB_A1_08072018.mxd



0 250 500 1,000 1,500 2,000

Feet

1 inch = 1,000 feet

N

PROPOSED CEDAR GROVE AMENDMENT ONE MITIGATION BANK

PROPOSED CONSTRUCTION EXHIBIT
TERREBONNE PARISH, LA

Drawing No.:

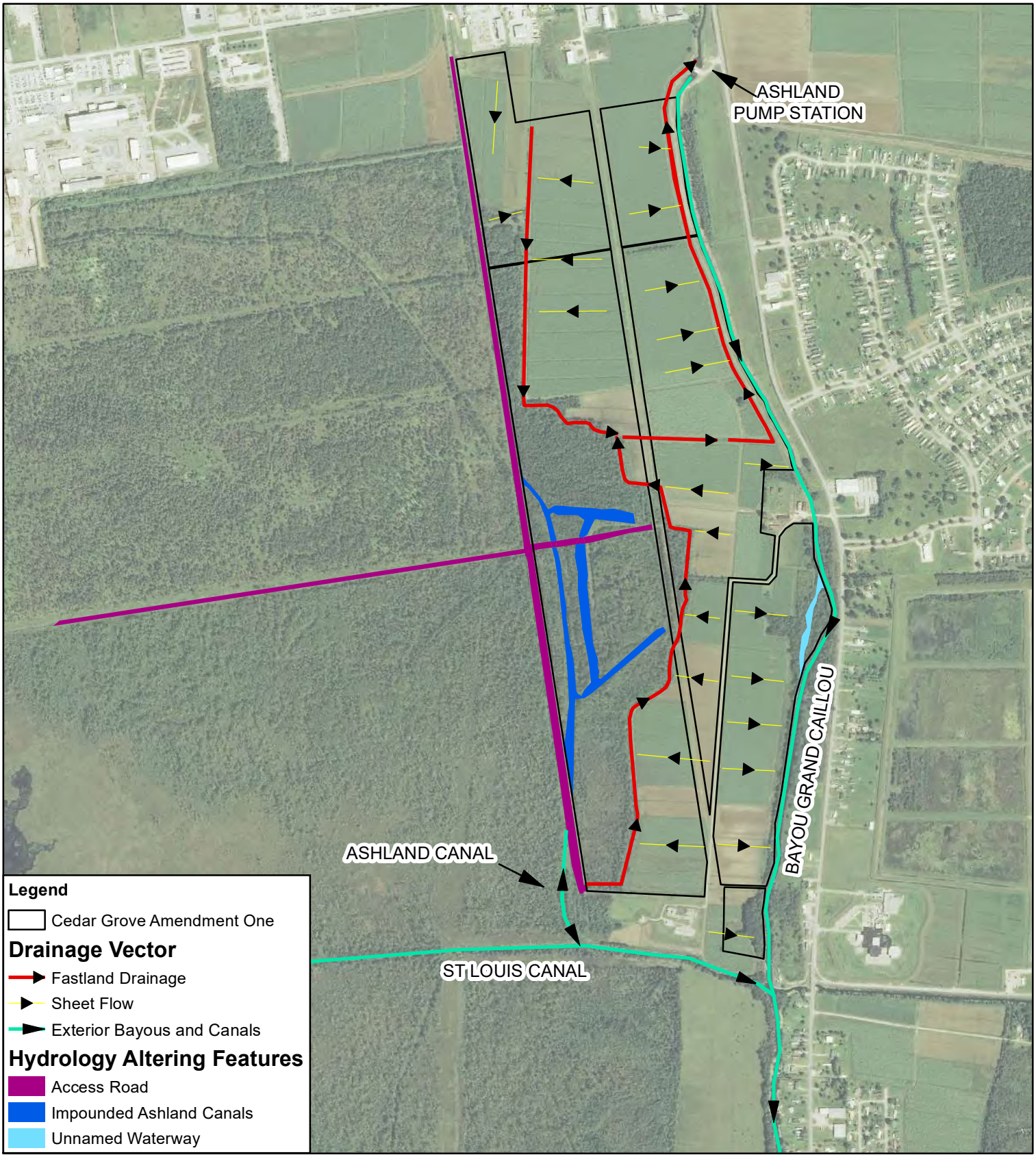
Date: 9/26/2018 Author: JKP

FIGURE 12

JMB

JMB Partnership, LLC

Document Path: N:\Mitigation Banks\Cedar Grove Amendment One\Mapping\GIS Projects (.MXD)\Prospectus\ProspectusNorthEast_9_2018\Figure 12_Construction_CGMB_A1_10152018.mxd



0 312.5 625 1,250 1,875 2,500
Feet

N

PROPOSED CEDAR GROVE AMENDMENT ONE MITIGATION BANK

CURRENT HYDROLOGY EXHIBIT

TERREBONNE PARISH, LA

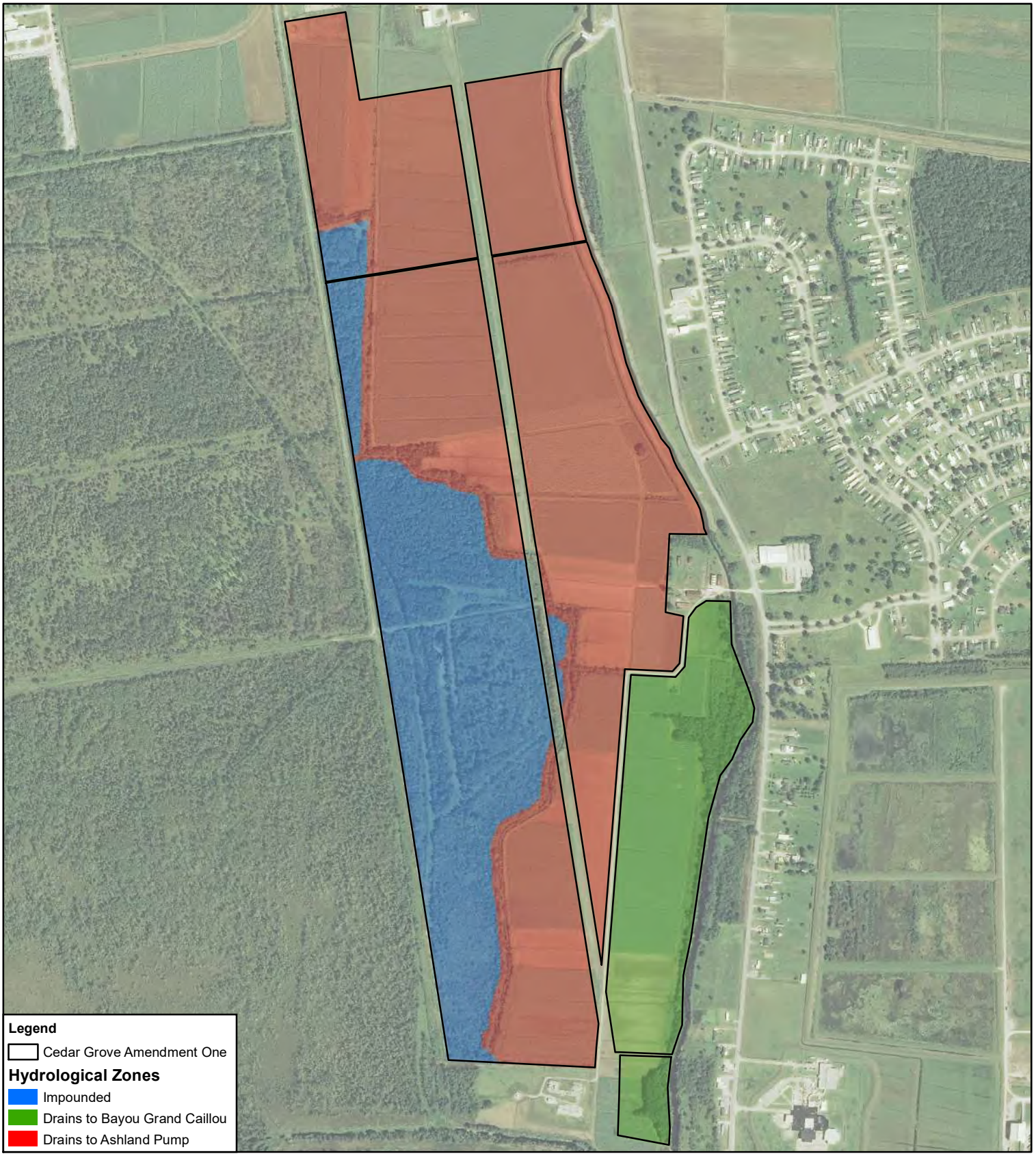
Drawing No.:

Date: 09/27/2018 Author: JKP

FIGURE 13

JMB
JMB Partnership, LLC

Document Path: N:\Mitigation Banks\Cedar Grove Amendment One\Mapping\GIS Projects (.MXD)\Prospectus\ProspectusNorthEast_9_2018\Figure 13_CurrentHydro_CGMB_A1_08072018_NEW.mxd



0 500 1,000 1,500 2,000

Feet

1 in = 1,000 ft

N

PROPOSED CEDAR GROVE AMENDMENT ONE MITIGATION BANK

CURRENT HYDROLOGICAL ZONES

TERREBONNE PARISH, LA

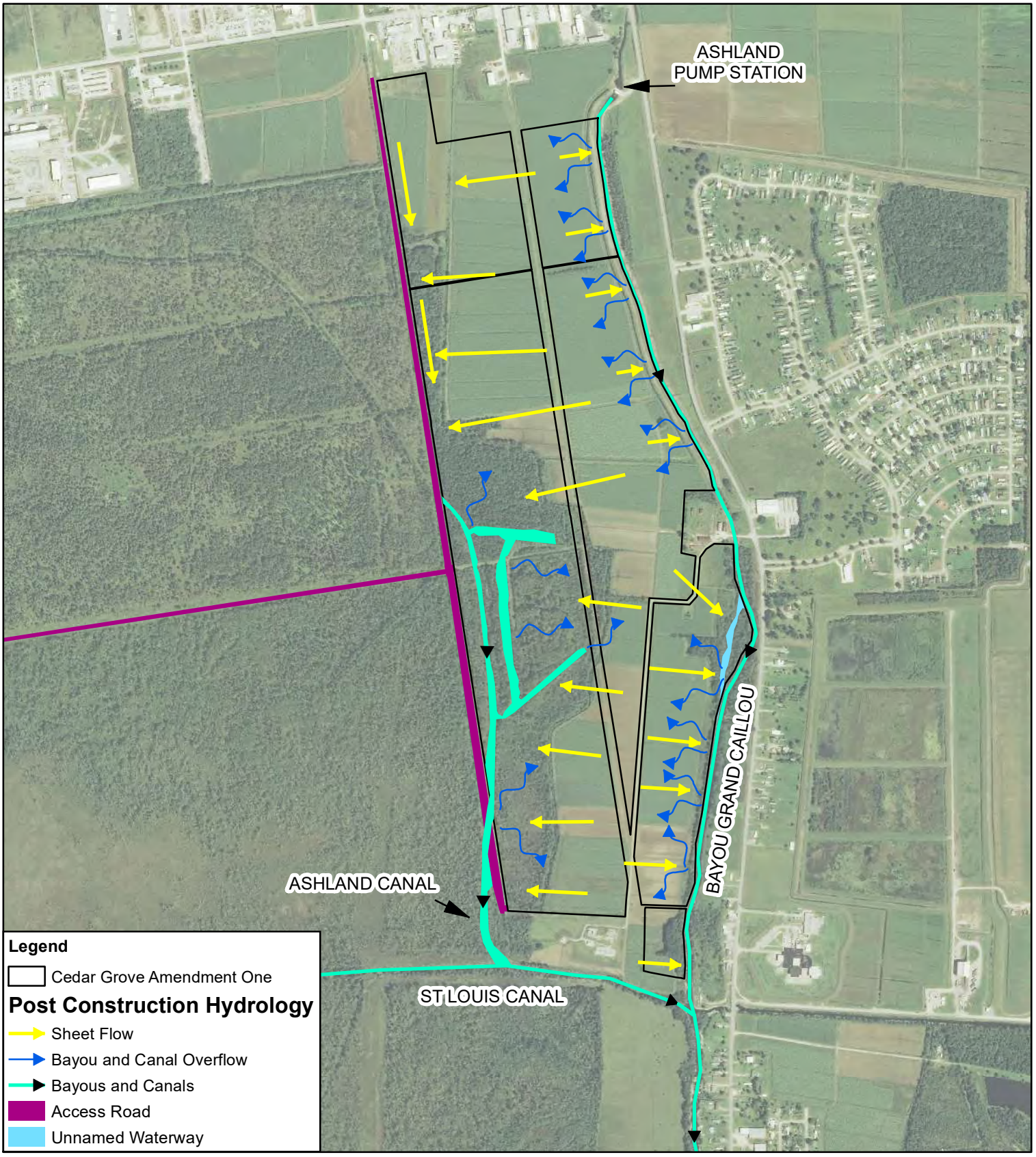
Drawing No.:

Date: 09/26/18 Author: JKP

FIGURE 13A

JMB Partnership, LLC

Document Path: N:\Mitigation Banks\Cedar Grove Amendment One\Mapping\GIS Projects (.MXD)\Prospectus\ProspectusNorthEast_9_2018\Figure 13A_CurrentHydro_Zones_CGMB_A1.mxd



0 1,000 2,000 3,000
Feet

N

PROPOSED CEDAR GROVE AMENDMENT ONE MITIGATION BANK

PROPOSED HYDROLOGY EXHIBIT

TERREBONNE PARISH, LA

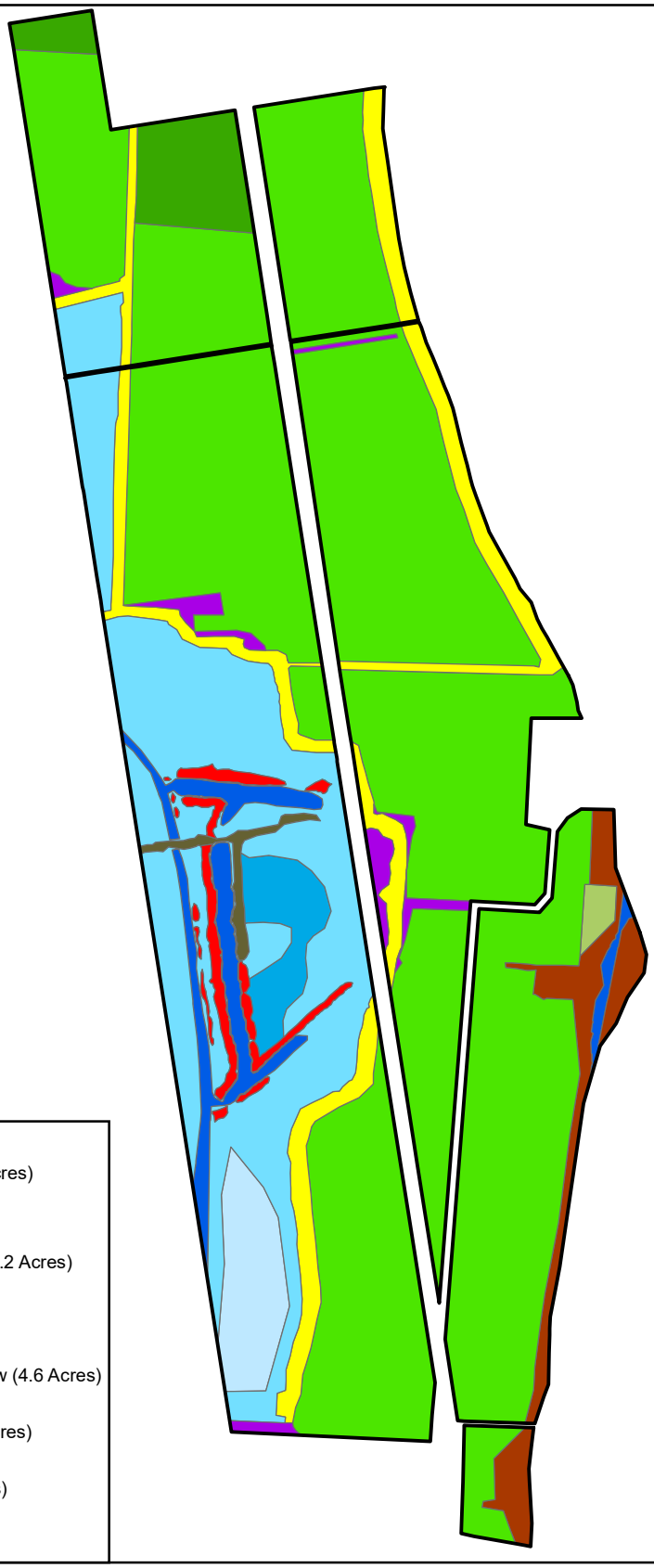
Drawing No.:

Date: 09/27/2018 Author: JKP

FIGURE 14

JMB
JMB Partnership, LLC

Document Path: N:\Mitigation Banks\Cedar Grove Amendment One\Mapping\GIS Projects (.MXD)\Prospectus\ProspectusNorthEast_9_2018\Figure 14_ProposedHydro_CGMB_A1_08072018.mxd



Legend

- Cedar Grove Amendment One (371.3 Acres)

CGMBA1 Current Habitat

- Agricultural (223.1 Acres)
- Agricultural Drainage Canal & Levee (25.2 Acres)
- Chinese Tallow Forest (1.3 Acres)
- Dirt Access Road (1.8 Acres)
- Forested Hardwoods (11.4 Acres)
- Forested Hardwoods with Chinese Tallow (4.6 Acres)
- Impounded Cypress Swamp (6.9 Acres)
- Impounded Transitional Swamp (61.6 Acres)
- Scrub-Shrub with Ag Rows (10.8 Acres)
- Impounded Emergent Swamp (9.1 Acres)
- Remnant Spoil (5.0 Acres)
- Waters of the US (10.5 Acres)

0 500 1,000 1,500 2,000

Feet

1 in = 1,000 ft

N

PROPOSED CEDAR GROVE AMENDMENT ONE MITIGATION BANK

CURRENT HABITAT EXHIBIT

TERREBONNE PARISH, LA

Drawing No.:

Date: 10/01/18 Author: JKP/BDS

FIGURE 15

JMB Partnership, LLC

Document Path: N:\Mitigation Banks\Cedar Grove Amendment One\Mapping\GIS Projects (.MXD)\Prospectus\ProspectusNorthEast_9_2018\Figure 15_PreHabitat_CGMB_A1.mxd

Legend

- Cedar Grove Amendment One (371.3 acres)

Bottomland Hardwoods

- Re-establishment (122.2 Acres)
- Rehabilitation (1.6 Acres)

Cypress/Tupelo

- Re-establishment (145.3 Acres)
- Rehabiliation (75.5 Acres)
- Enhancement (6.9 Acres)

Upland Buffer

- Upland Inclusion (3.4 Acres)
- Upland Restoration (5.8 Acres)

Water

- Non-Wetland Waters (10.6 Acres)

0 500 1,000 1,500 2,000

Feet

1 inch = 1,000 feet

N

PROPOSED CEDAR GROVE AMENDMENT ONE MITIGATION BANK

PROPOSED HABITAT EXHIBIT

TERREBONNE PARISH, LA

Drawing No.:

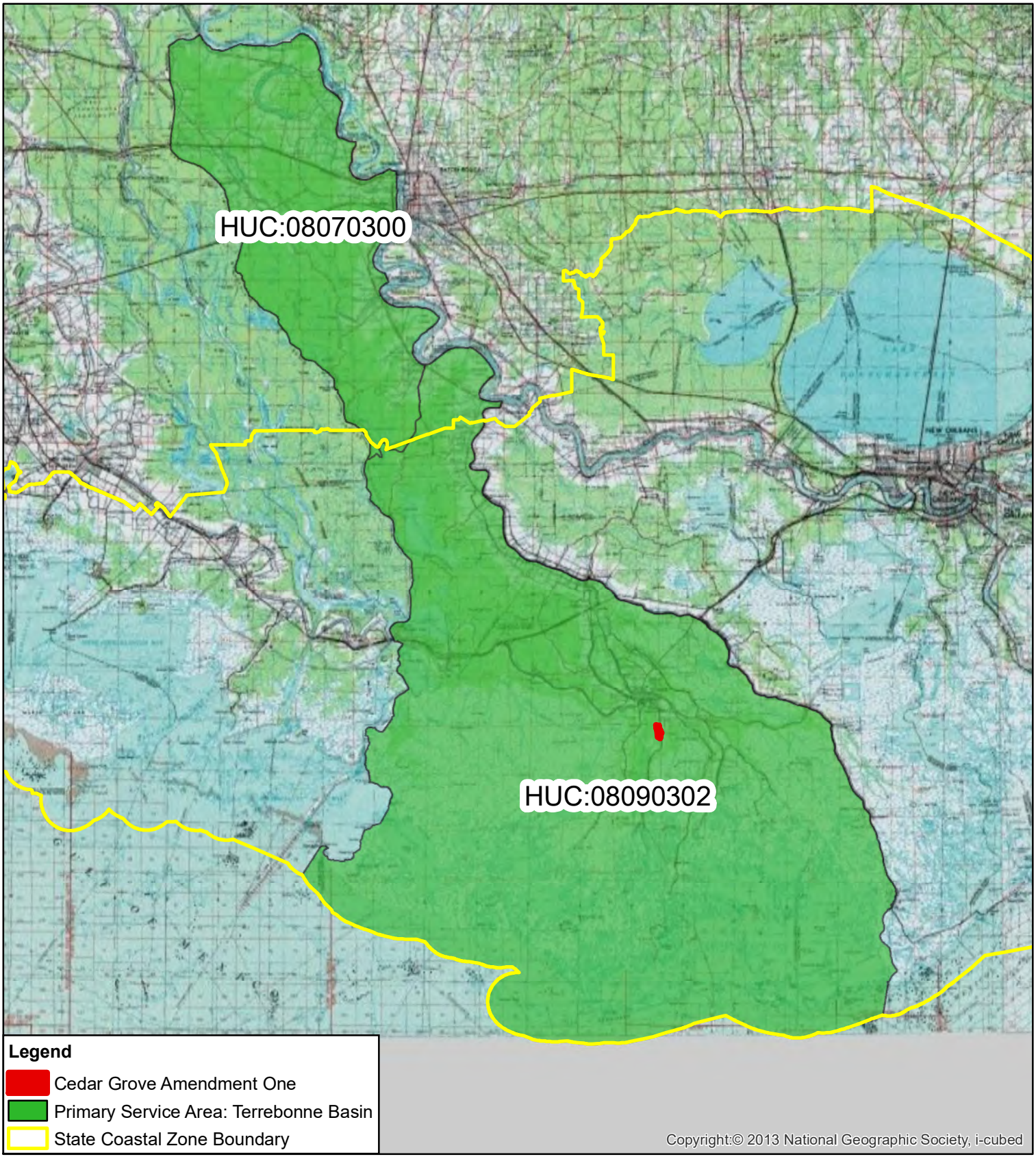
Date: 10/01/18 Author: JKP/BDS

FIGURE 16

JMB

JMB Partnership, LLC

Document Path: N:\Mitigation Banks\Cedar Grove Amendment One\Mapping\GIS Projects (.MXD)\Prospectus\ProspectusNorthEast_9_2018\Figure 16_ProposedHabitat_CGMB_A1_.mxd



0 7 14 21 28 35
Miles

N

PROPOSED CEDAR GROVE AMENDMENT ONE MITIGATION BANK

SERVICE AREA EXHIBIT
TERREBONNE PARISH, LA

Drawing No.:
Date: 09/27/2018 Author: JKP

FIGURE 17

JMB
JMB Partnership, LLC

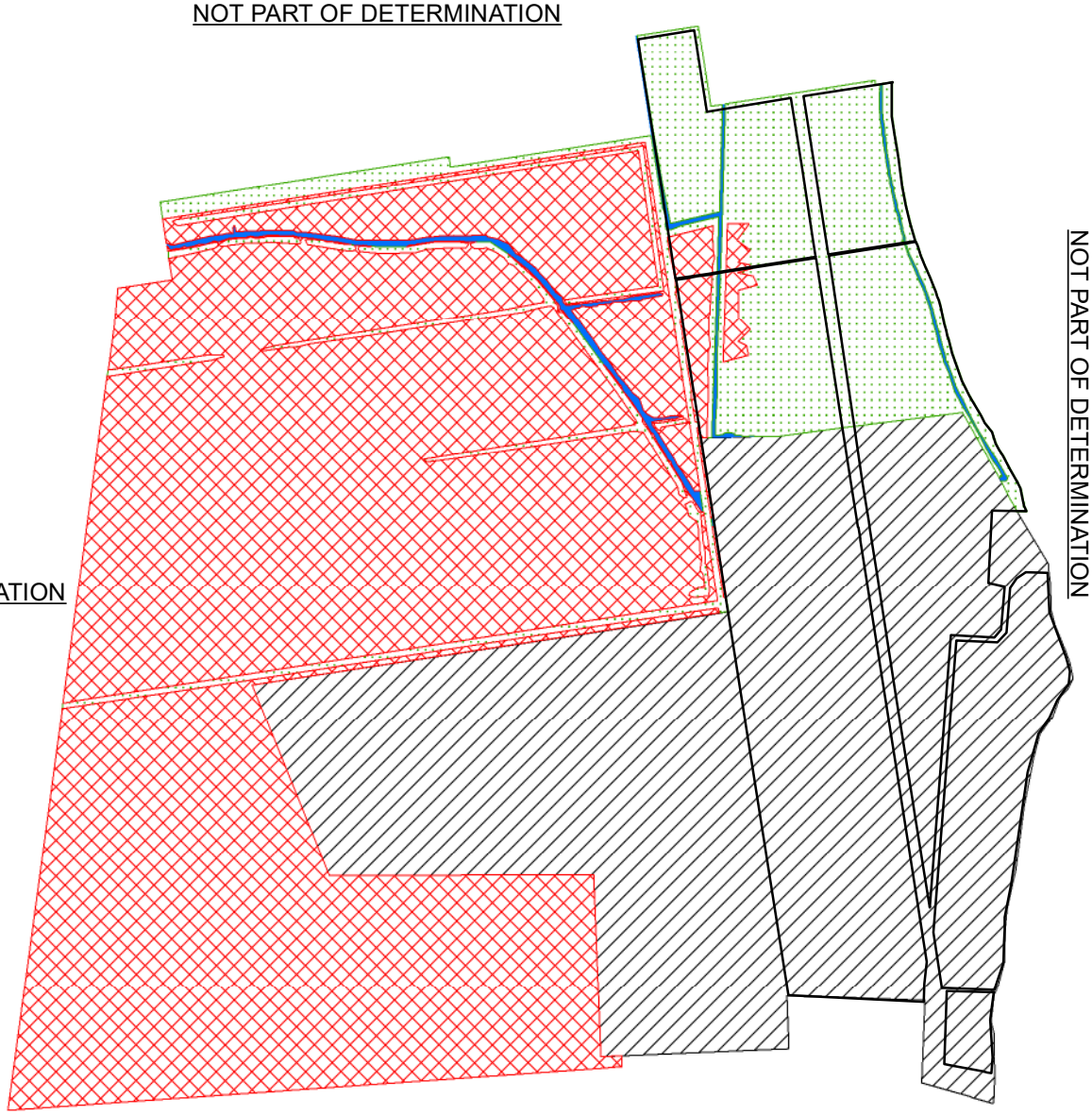
Document Path: N:\Mitigation Banks\Cedar Grove Amendment One\Mapping\GIS Projects (.MXD)\Prospectus\ProspectusNorthEast_9_2018\Figure 17_HUC_CGMB_A1_08.08.2018.mxd

NOT PART OF DETERMINATION

NOT PART OF DETERMINATION

NOT PART OF DETERMINATION

NOT PART OF DETERMINATION



Legend

Cedar Grove Amendment One (371.3 Acres)

Type

Other Waters

Uplands

Wetlands

Approved Jurisdictional Determination

MVN-2017-01494-SL

0 750 1,500 2,250 3,000

Feet

1 in = 1,500 ft

N

PROPOSED CEDAR GROVE AMENDMENT ONE MITIGATION BANK

PENDING

PRELIMINARY JURISDICTIONAL DETERMINATION

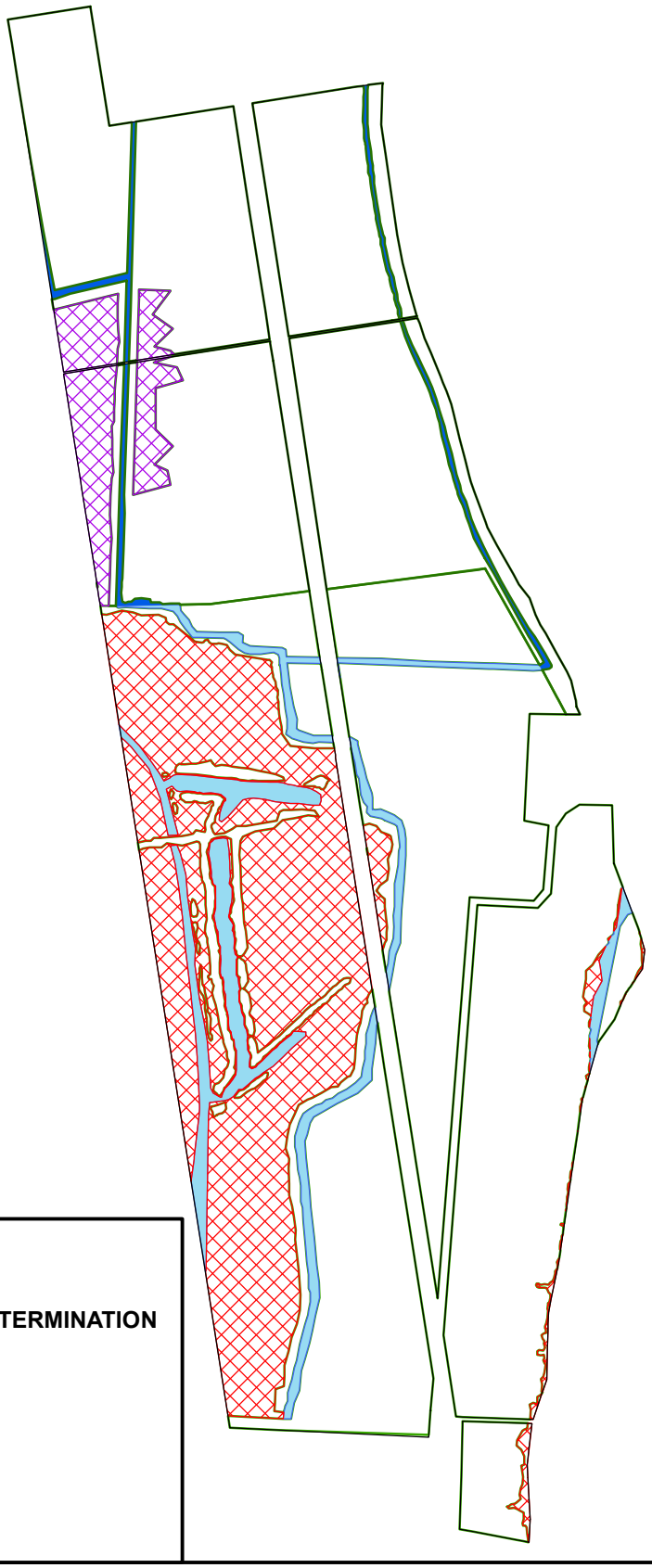
TERREBONNE PARISH, LA

Coordinate System: *NAD83 LOUISIANA SOUTH US SURVEY FEET*	Date: *9/27/2018*
Vertical Datum: *NAVD88 FEET*	Author: *JKP*

FIGURE 18

JMB Partnership, LLC

Document Path: N:\Mitigation Banks\Cedar Grove Amendment One\Mapping\GIS Projects (.MXD)\Prospectus\ProspectusNorthEast_9_2018\Figure 18_JD_CGMB_A1.mxd



Legend

Cedar Grove Amendment One

PENDING PRELIMINARY JURISDICTIONAL DETERMINATION

Other Waters

Uplands

Wetlands

MVN-2017-01494-SL

Other Waters

Uplands

Wetlands

0 500 1,000 1,500 2,000

Feet

1 in = 1,000 ft

N

PROPOSED CEDAR GROVE AMENDMENT ONE MITIGATION BANK

WETLAND DETERMINATION EXHIBIT

TERREBONNE PARISH, LA

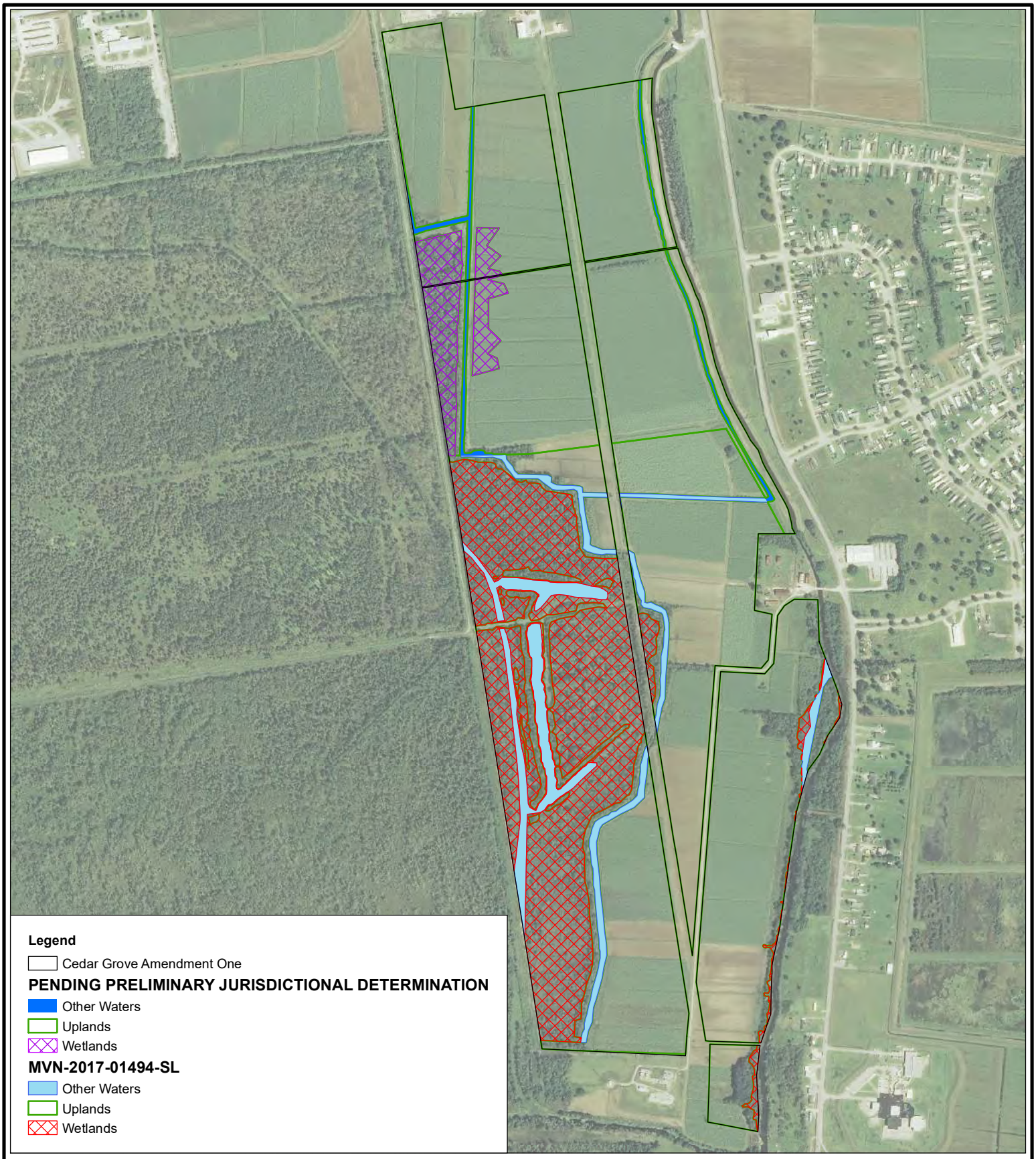
Coordinate System: *NAD83 LOUISIANA SOUTH US SURVEY FEET* Date: *9/27/2018*

Vertical Datum: *NAVD88 FEET* Author: *JKP*

FIGURE 19

JMB Partnership, LLC

Document Path: N:\Mitigation Banks\Cedar Grove Amendment One\Mapping\GIS Projects (.MXD)\Prospectus\ProspectusNorthEast_9_2018\Figure 19_JDcombo_CGMB_A1.mxd



0 500 1,000 1,500 2,000

Feet

1 in = 1,000 ft

N

PROPOSED CEDAR GROVE AMENDMENT ONE MITIGATION BANK

WETLAND DETERMINATION EXHIBIT

TERREBONNE PARISH, LA

Coordinate System: *NAD83 LOUISIANA SOUTH US SURVEY FEET*	Date: *9/27/2018*
Vertical Datum: *NAVD88 FEET*	Author: *JKP*

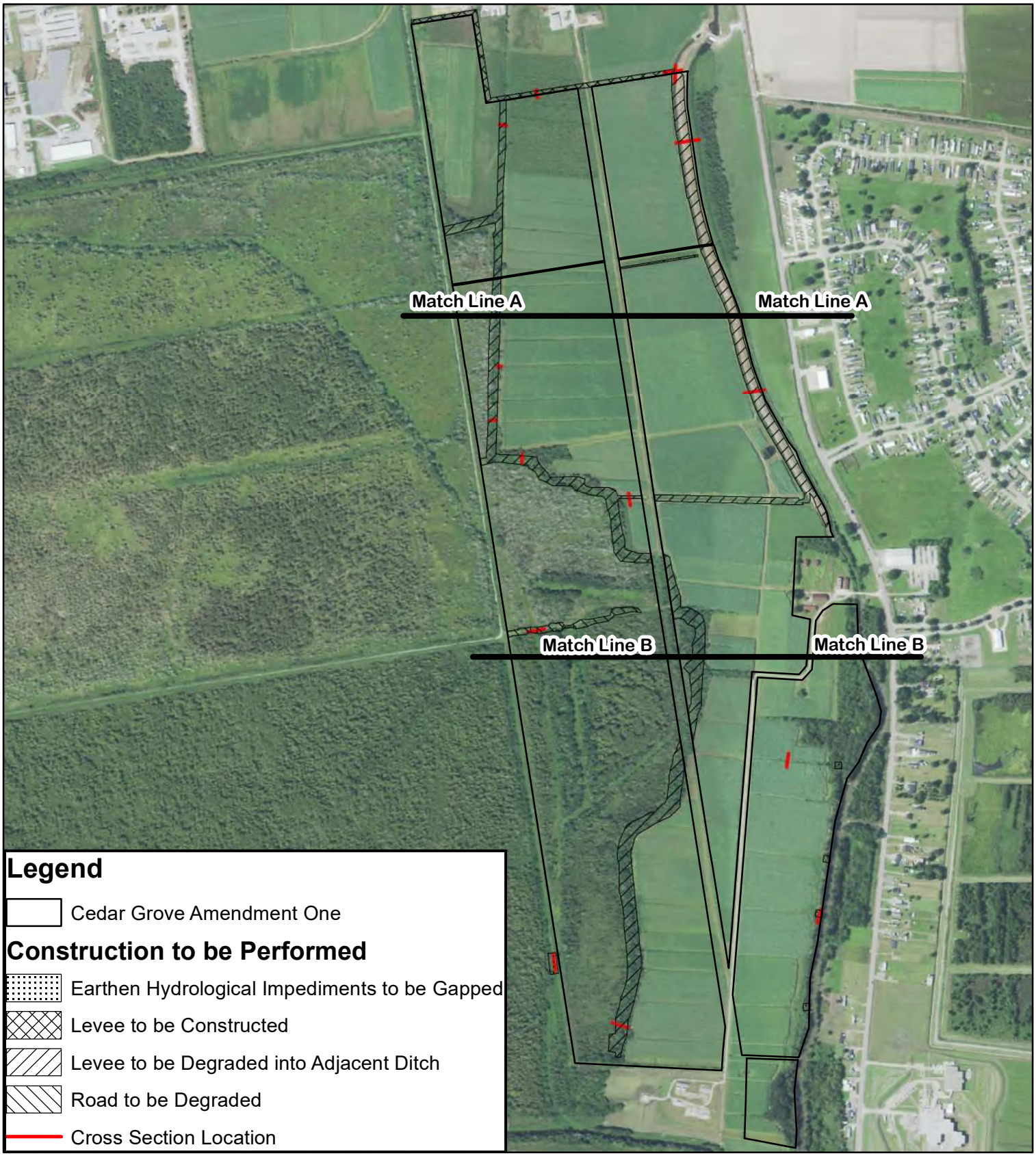
FIGURE 20

JMB Partnership, LLC

Document Path: N:\Mitigation Banks\Cedar Grove Amendment One\Mapping\GIS Projects (.MXD)\Prospectus\ProspectusNorthEast_9_2018\Figure 20_JDcombo_CGMB_A1.mxd

Attachment C:

Cross Sections



0 250 500 1,000 1,500 2,000

Feet

N

PROPOSED CEDAR GROVE AMENDMENT ONE MITIGATION BANK

CROSS SECTION OVERVIEW EXHIBIT VIEW 1

TERREBONNE PARISH, LA

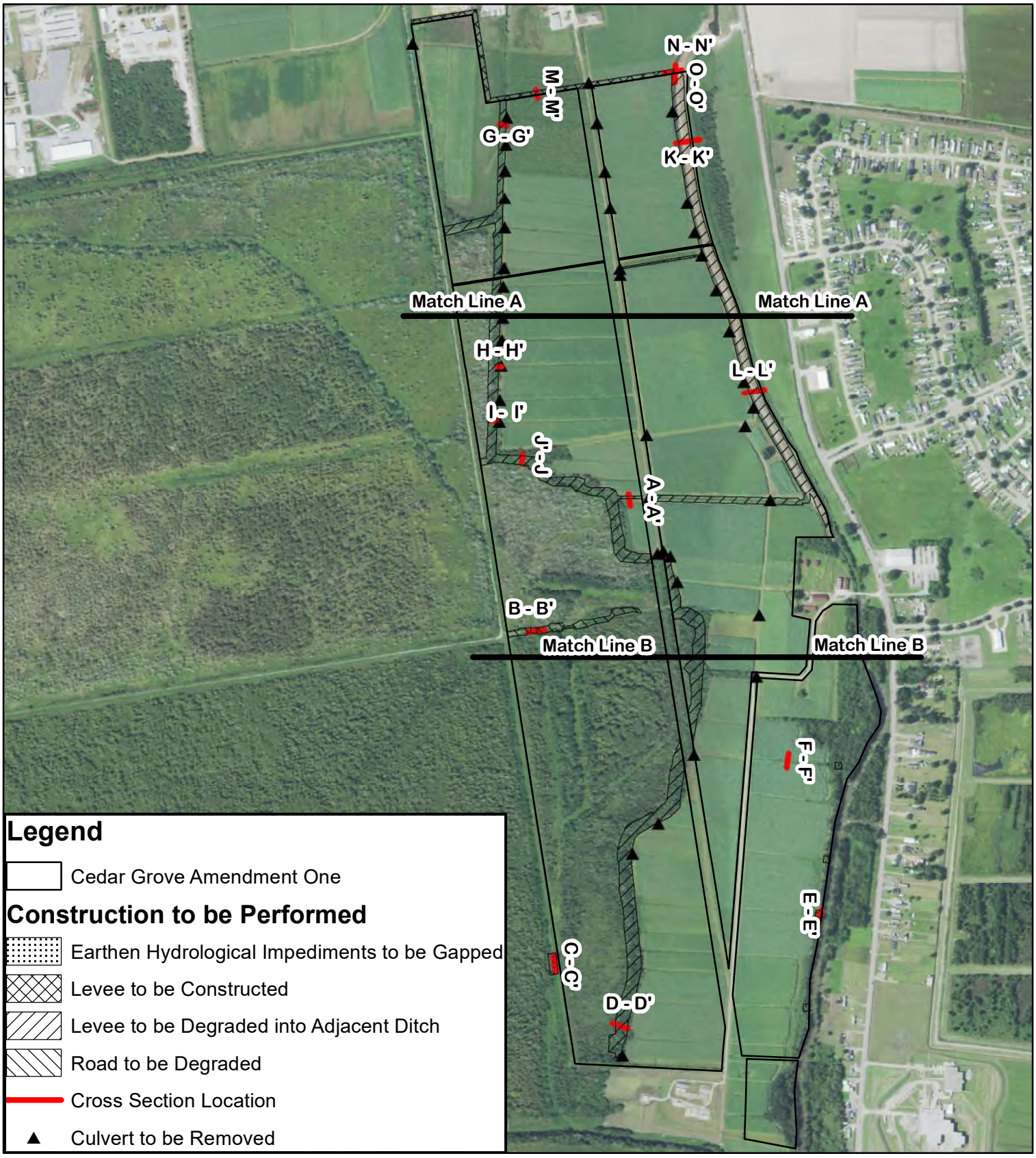
Drawing No.:

Date: 01/22/18 Author: JKP

FIGURE C-1

JMB Partnership, LLC

Document Path: N:\Mitigation Banks\Cedar Grove Amendment One\Mapping\GIS Projects (.MXD)\Prospectus\ProspectusNorthEast_9_2018\XSections\Figure C-1 XSections_Overview_FULLEXT_NOTEXT.mxd



0 250 500 1,000 1,500 2,000

Feet

N

PROPOSED CEDAR GROVE AMENDMENT ONE MITIGATION BANK

CROSS SECTION OVERVIEW EXHIBIT VIEW 2

TERREBONNE PARISH, LA

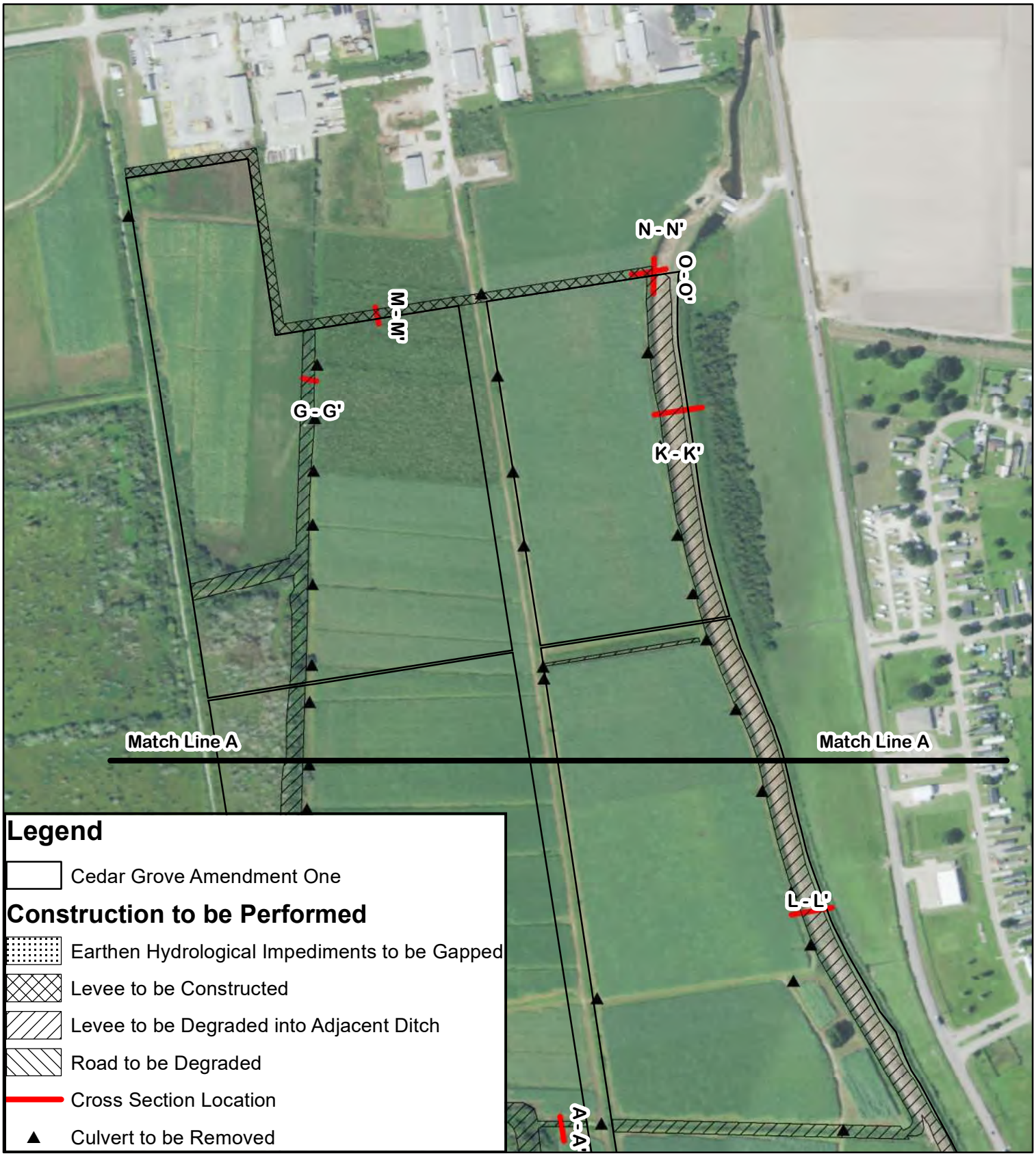
Drawing No.:

Date: 01/22/18 Author: JKP

FIGURE C-2

JMB Partnership, LLC

Document Path: N:\Mitigation Banks\Cedar Grove Amendment One\Mapping\GIS Projects (.MXD)\Prospectus\ProspectusNorthEast_9_2018\XSections\Figure C-2 XSections_Overview_FULLEXT.mxd



Legend

- Cedar Grove Amendment One

Construction to be Performed

- Earthen Hydrological Impediments to be Gapped
- Levee to be Constructed
- Levee to be Degraded into Adjacent Ditch
- Road to be Degraded
- Cross Section Location
- Culvert to be Removed

0 150 300 600 900 1,200

Feet

N

PROPOSED CEDAR GROVE AMENDMENT ONE MITIGATION BANK

CROSS SECTION OVERVIEW EXHIBIT VIEW 3

TERREBONNE PARISH, LA

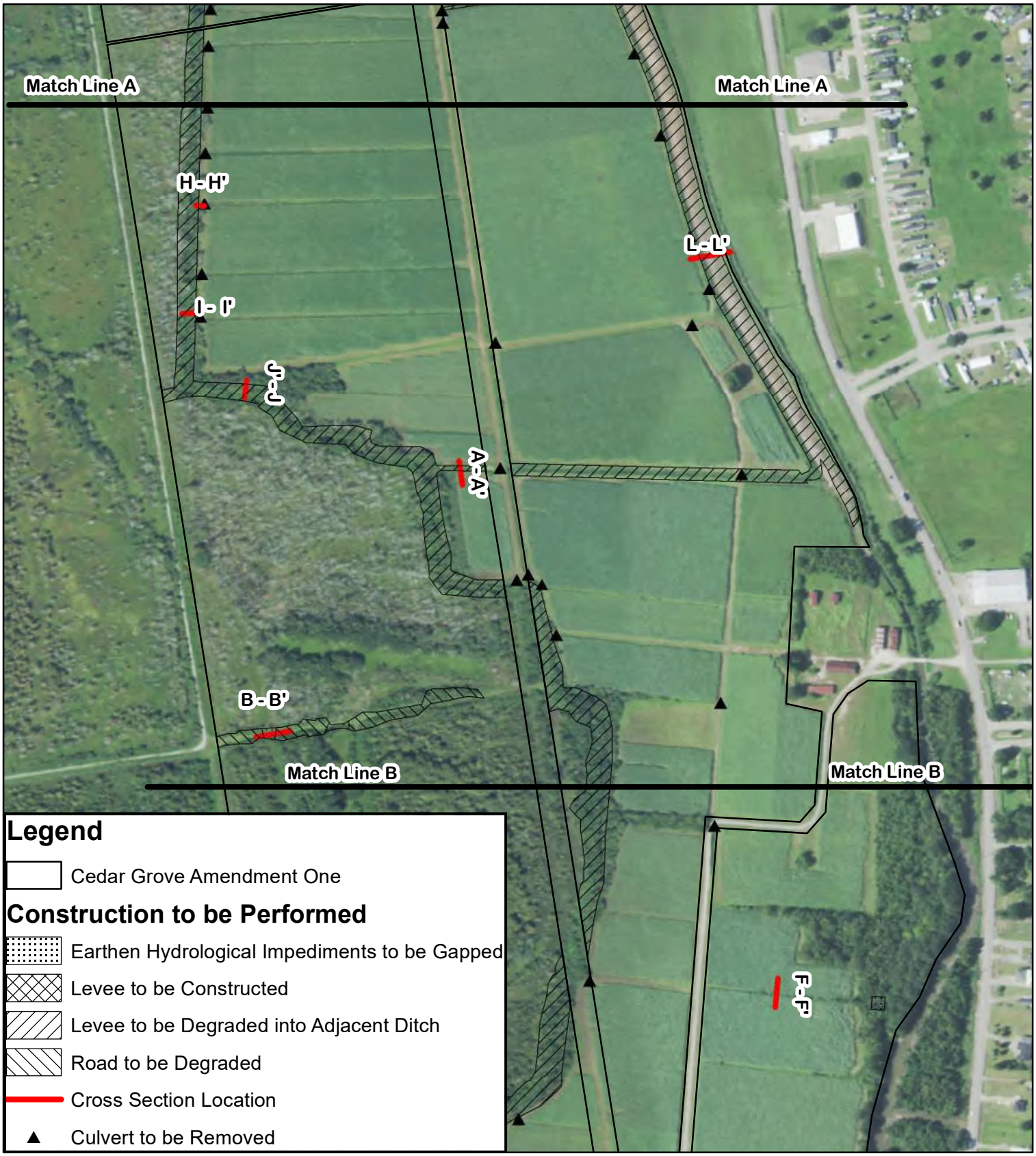
Drawing No.:

Date: 01/22/18 Author: JKP

FIGURE C-3

JMB Partnership, LLC

Document Path: N:\Mitigation Banks\Cedar Grove Amendment One\Mapping\GIS Projects (.MXD)\Prospectus\ProspectusNorthEast_9_2018\XSections\Figure C-3 XSections_Overview_1.mxd



Legend

- Cedar Grove Amendment One

Construction to be Performed

- Earthen Hydrological Impediments to be Gapped
- Levee to be Constructed
- Levee to be Degraded into Adjacent Ditch
- Road to be Degraded
- Cross Section Location
- ▲ Culvert to be Removed

0 150 300 600 900 1,200

Feet

N

PROPOSED CEDAR GROVE AMENDMENT ONE MITIGATION BANK

CROSS SECTION OVERVIEW EXHIBIT VIEW 4

TERREBONNE PARISH, LA

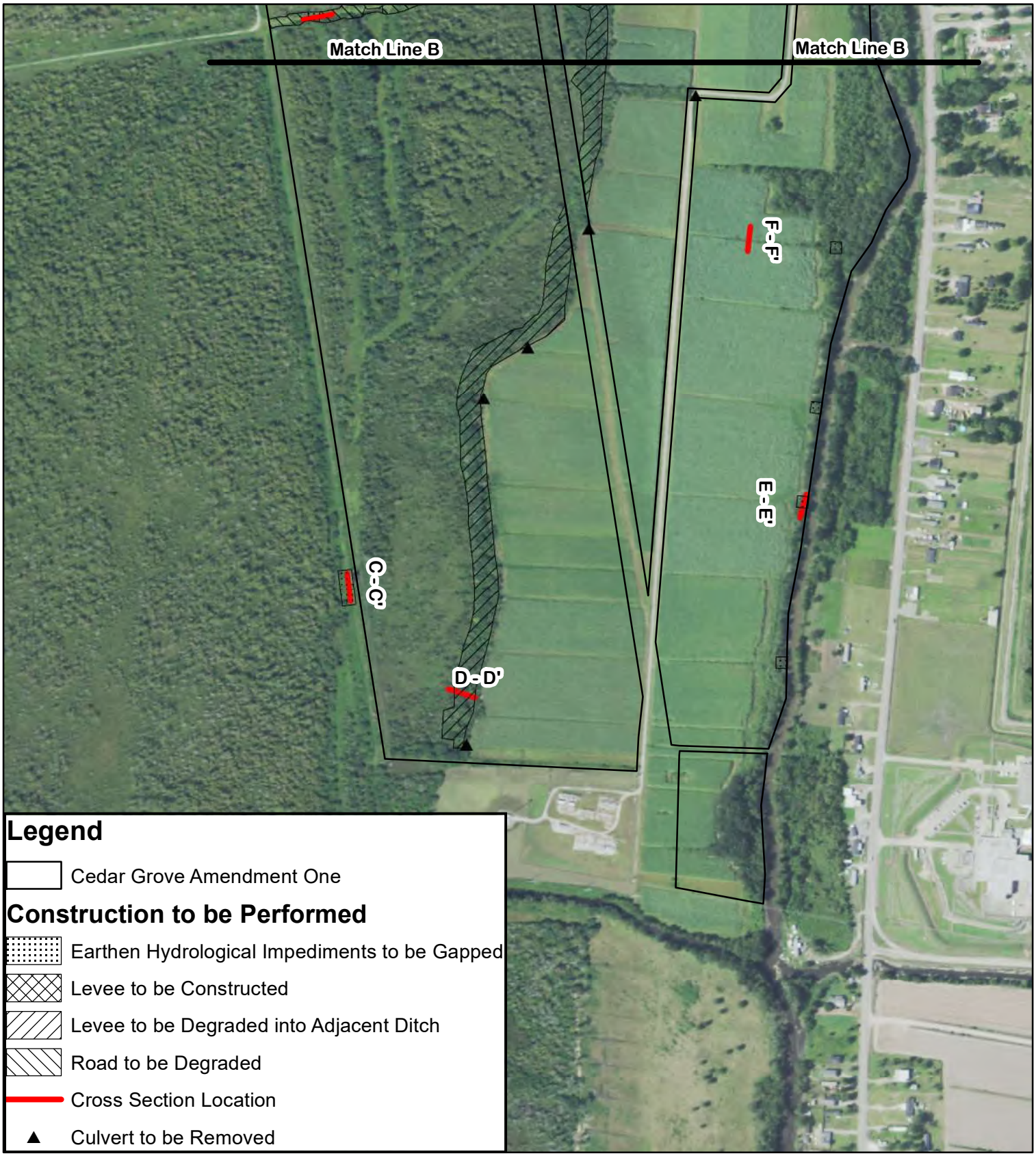
Drawing No.:

Date: 01/22/18 Author: JKP

FIGURE C-4

JMB Partnership, LLC

Document Path: N:\Mitigation Banks\Cedar Grove Amendment One\Mapping\GIS Projects (.MXD)\Prospectus\ProspectusNorthEast_9_2018\XSections\Figure C-4 XSections_Overview_2.mxd



Legend

- Cedar Grove Amendment One

Construction to be Performed

- Earthen Hydrological Impediments to be Gapped
- Levee to be Constructed
- Levee to be Degraded into Adjacent Ditch
- Road to be Degraded
- Cross Section Location
- ▲ Culvert to be Removed

0 175 350 700 1,050 1,400

Feet

N

PROPOSED CEDAR GROVE AMENDMENT ONE MITIGATION BANK

CROSS SECTION OVERVIEW EXHIBIT VIEW 5

TERREBONNE PARISH, LA

Drawing No.:

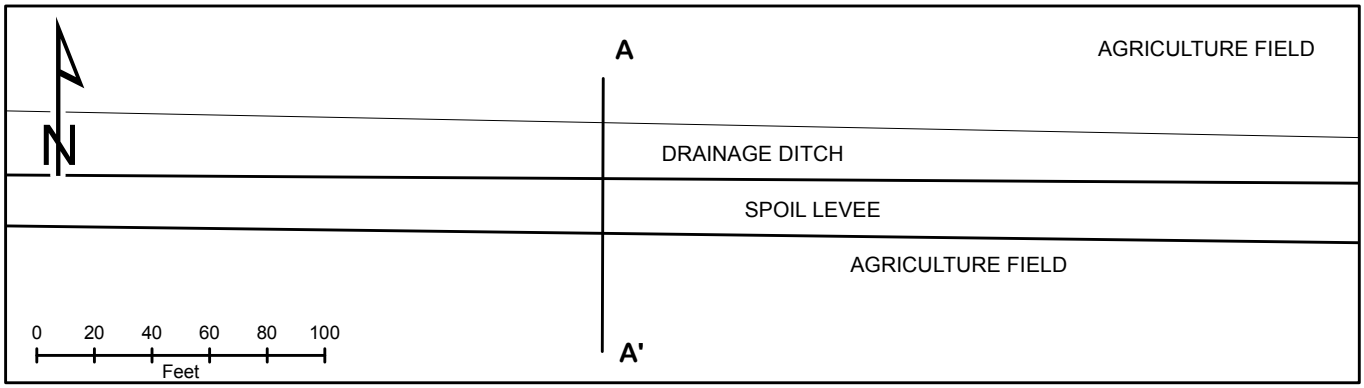
Date: 01/22/18 Author: JKP

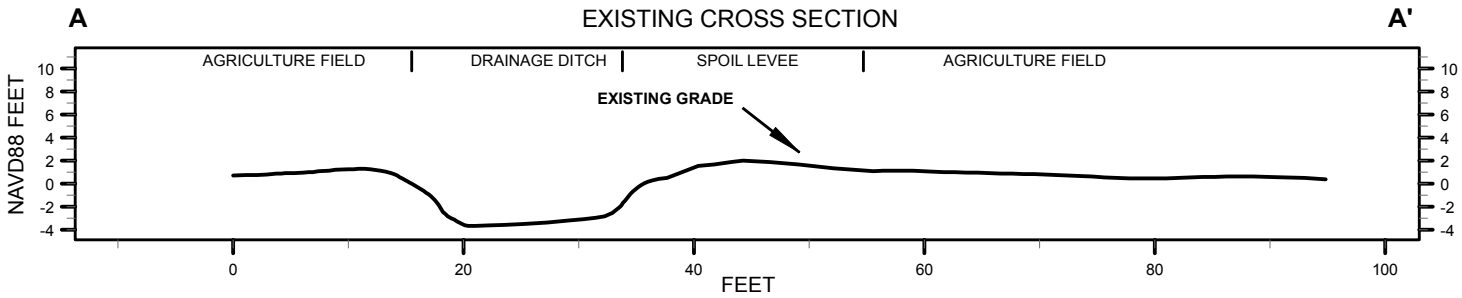
FIGURE C-5

JMB Partnership, LLC

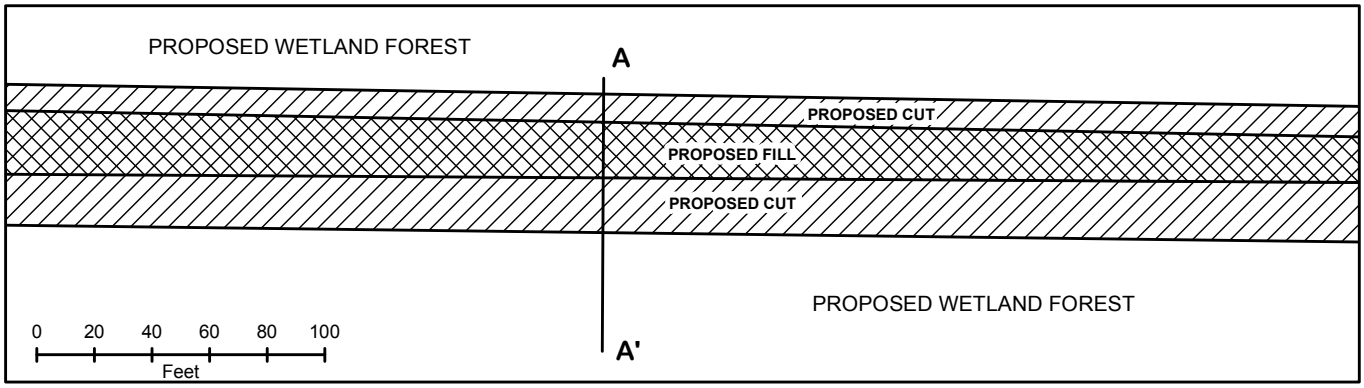
Document Path: N:\Mitigation Banks\Cedar Grove Amendment One\Mapping\GIS Projects (.MXD)\Prospectus\ProspectusNorthEast_9_2018\XSections\Figure C-5 XSections_Overview_3.mxd

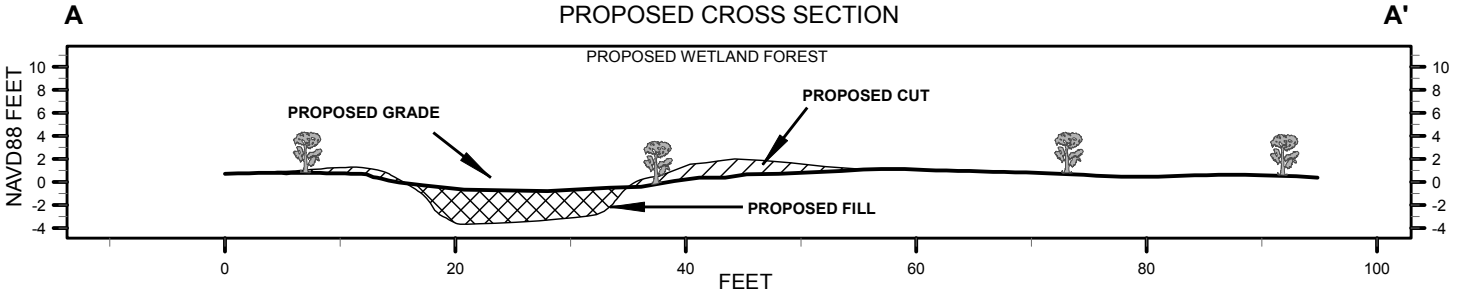
EXISTING PLAN VIEW





PROPOSED PLAN VIEW





HEADLAND DEGRADE AND DITCH FILL CALCULATIONS

AREA = APPROX 0.84 ACRES OF CUT (NON-WETLAND)
APPROX 0.54 ACRES OF FILL (OTHER WATERS)
VOLUME = APPROX 2,050 YD³ OF CUT (NON-WETLAND)
APPROX 2,050 YD³ OF FILL (OTHER WATERS)
LENGTH = APPROX 1,300 LINEAR FEET
ELEVATION = NATURAL GRADE

PROPOSED CEDAR GROVE AMENDMENT ONE MITIGATION BANK

CROSS SECTION A EXHIBIT

TERREBONNE PARISH, LA

Drawing No.:

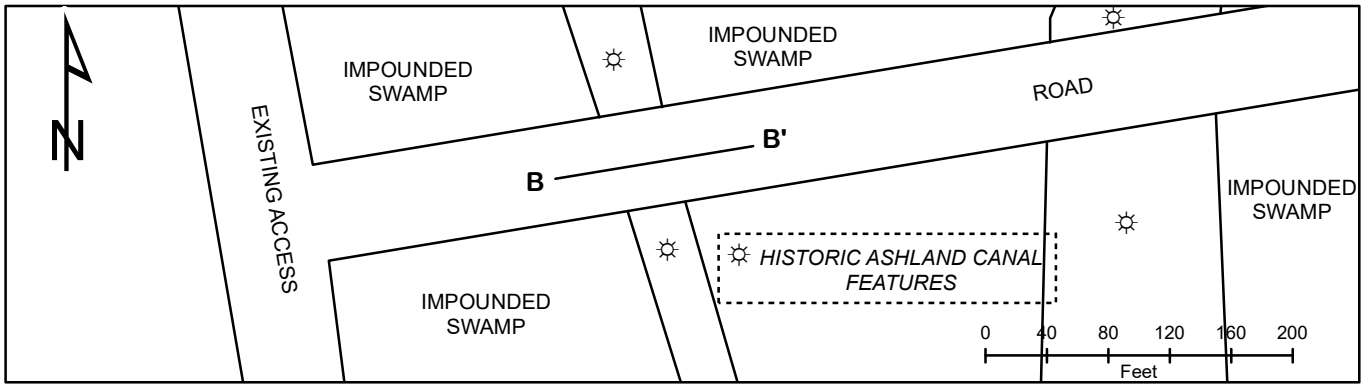
Date: 10/12/18 Author: BDS

FIGURE C-6

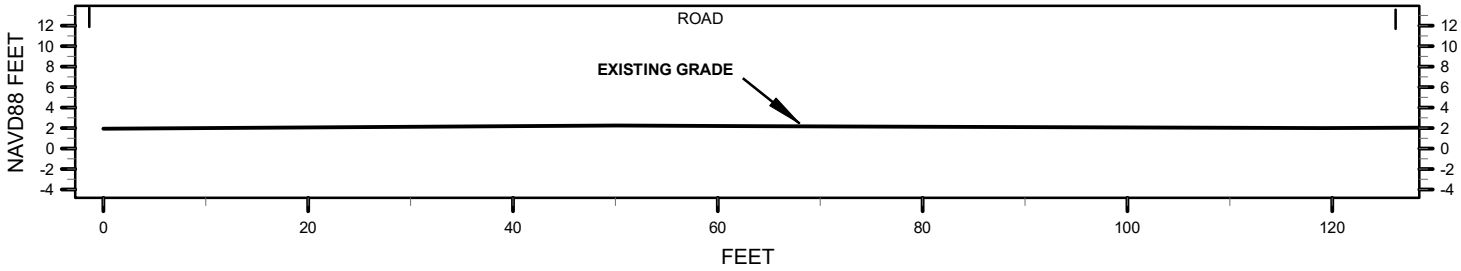
JMB Partnership, LLC

Document Path: N:\Mitigation Banks\Cedar Grove Amendment One\Mapping\GIS Projects (.MXD)\Prospectus\ProspectusNorthEast_9_2018\XSections\Figure C-6 XSections_A.mxd

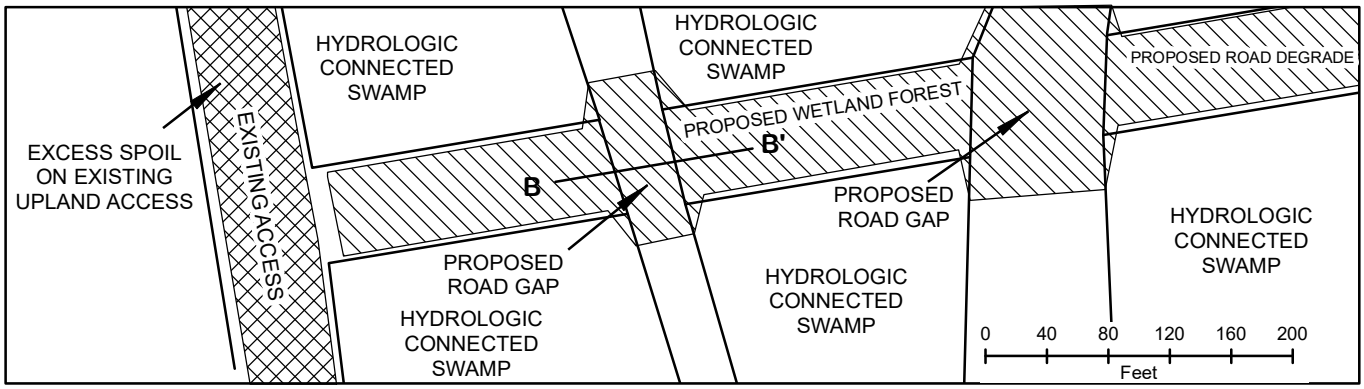
EXISTING PLAN VIEW



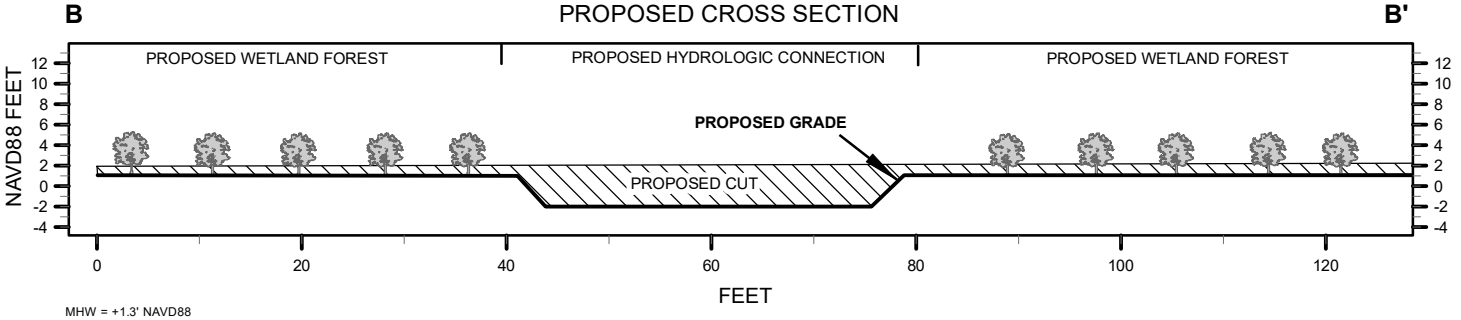
EXISTING CROSS SECTION



PROPOSED PLAN VIEW



PROPOSED CROSS SECTION



MHW = +1.3' NAVD88
MLW = +0.5' NAVD88

ROAD DEGRADE AND GAP CALCULATIONS

AREA = APPROX 0.94 ACRE OF CUT (NON-WET)
APPROX 0.15 ACRE OF CUT (WETLAND)
VOLUME = APPROX 2,900 YD³ OF CUT (NON-WET)
APPROX 1,200 YD³ OF CUT (WETLAND)
LENGTH = APPROX 1,050 LINEAR FEET
ELEVATION = +1.0 FT NAVD88 (ROAD DEGRADE)
-2.0 FT NAVD88 (HYDROLOGIC CONNECTION)

SPOIL TO BE USED IN LEVEE CONSTR. (FIGURE C14), EXCESS MATERIAL WILL BE THINLY SPREAD ON EXISTING UPLAND ACCESS ROAD.

PROPOSED CEDAR GROVE AMENDMENT ONE MITIGATION BANK

CROSS SECTION B EXHIBIT
TERREBONNE PARISH, LA

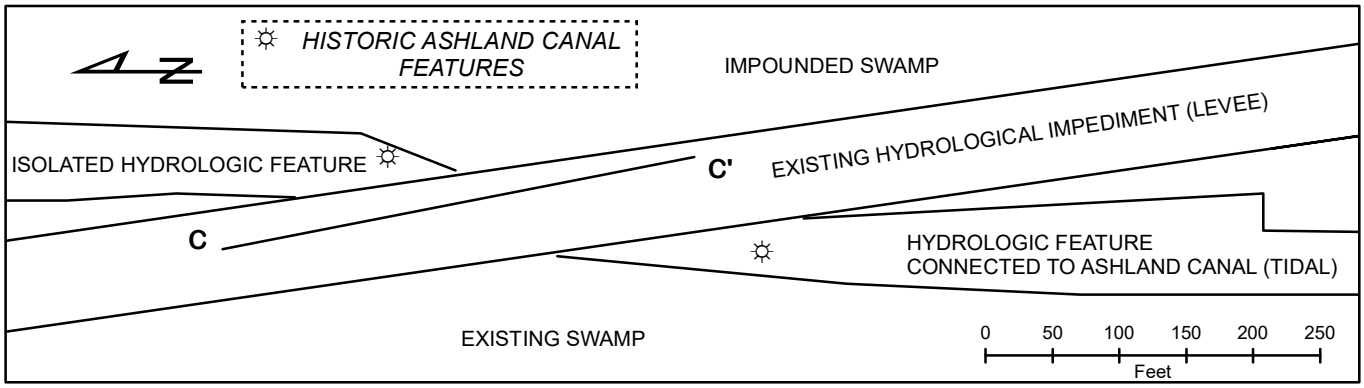
Drawing No.:
Date: 06/12/18 Author: BDS

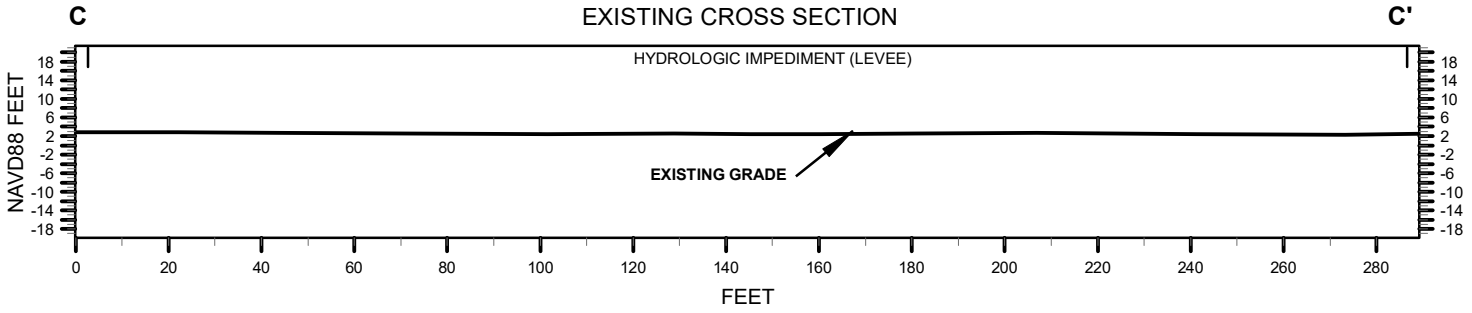
FIGURE C-7

JMB Partnership, LLC

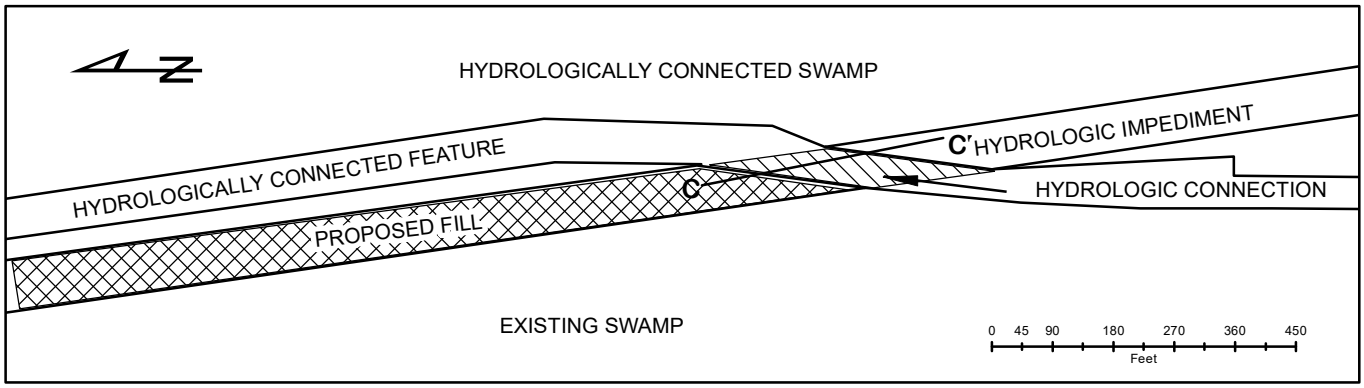
Document Path: N:\Mitigation Banks\Cedar Grove Amendment One\Mapping\GIS Projects (.MXD)\Prospectus\ProspectusNorthEast_9_2018\XSections\Figure C-7 XSections_B.mxd

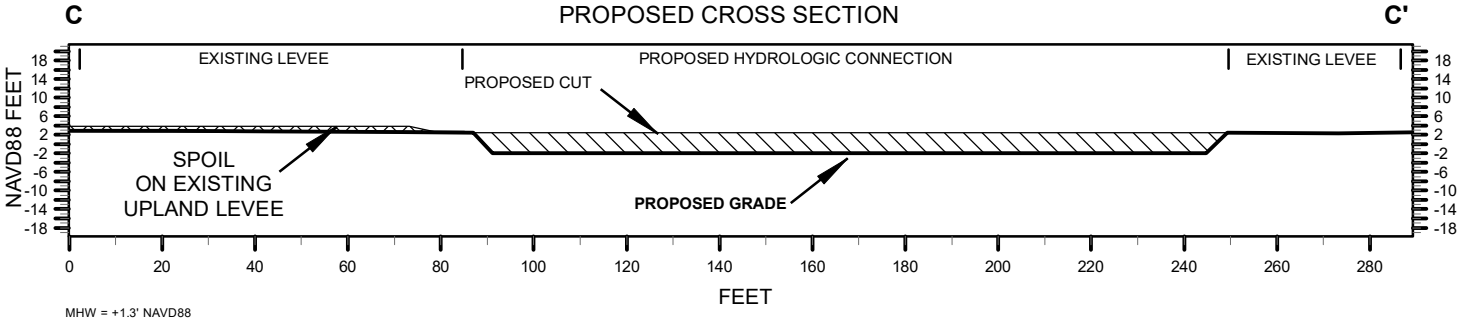
EXISTING PLAN VIEW





PROPOSED PLAN VIEW





MHW = +1.3' NAVD88
MLW = +0.5' NAVD88

LEVEE GAP CALCULATIONS

AREA = APPROX 0.30 ACRE OF CUT (NON-WET)
APPROX 0.21 ACRE OF CUT (WETLAND)
APPROX 1.70 ACRES OF FILL (NON-WET)
VOLUME = APPROX 2,050 YD³ OF CUT (NON-WET)
APPROX 680 YD³ OF CUT (WETLAND)
APPROX 2730 YD³ OF FILL (NON-WET)
LENGTH = APPROX 170 LINEAR FEET OF CUT
ELEVATION = -2.0 FT NAVD88 (HYDROLOGIC CONNECTION)

SPOIL MATERIAL WILL BE THINLY SPREAD ON EXISTING UPLAND LEVEE.

PROPOSED CEDAR GROVE AMENDMENT ONE MITIGATION BANK

CROSS SECTION C EXHIBIT
TERREBONNE PARISH, LA

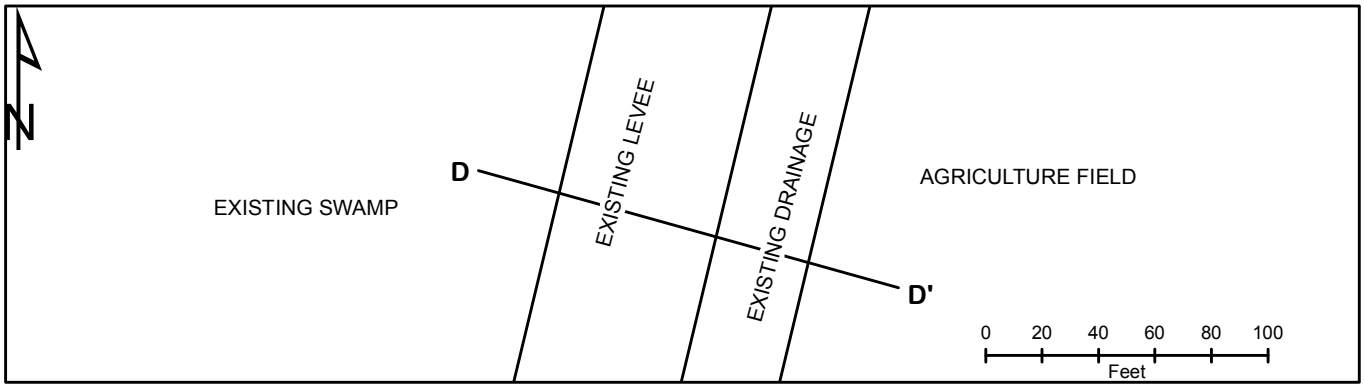
Drawing No.:
Date: 06/12/18 Author: BDS

FIGURE C-8

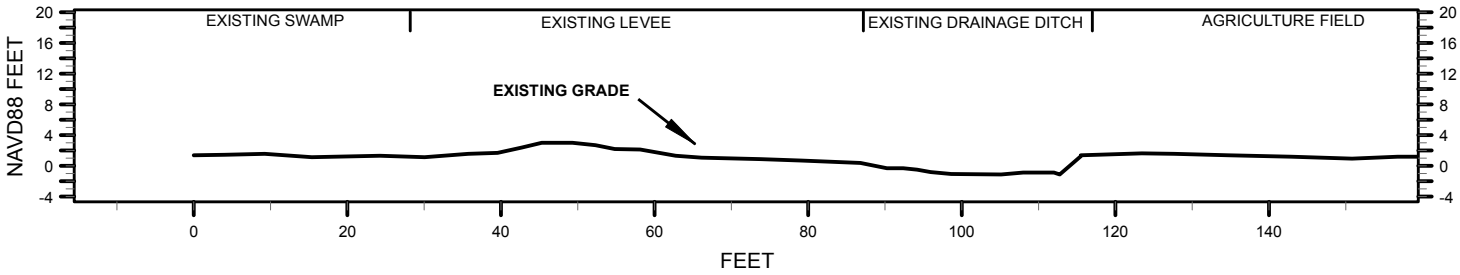
JMB Partnership, LLC

Document Path: N:\Mitigation Banks\Cedar Grove Amendment One\Mapping\GIS Projects (.MXD)\Prospectus\ProspectusNorthEast_9_2018\XSections\Figure C-8 XSections_C.mxd

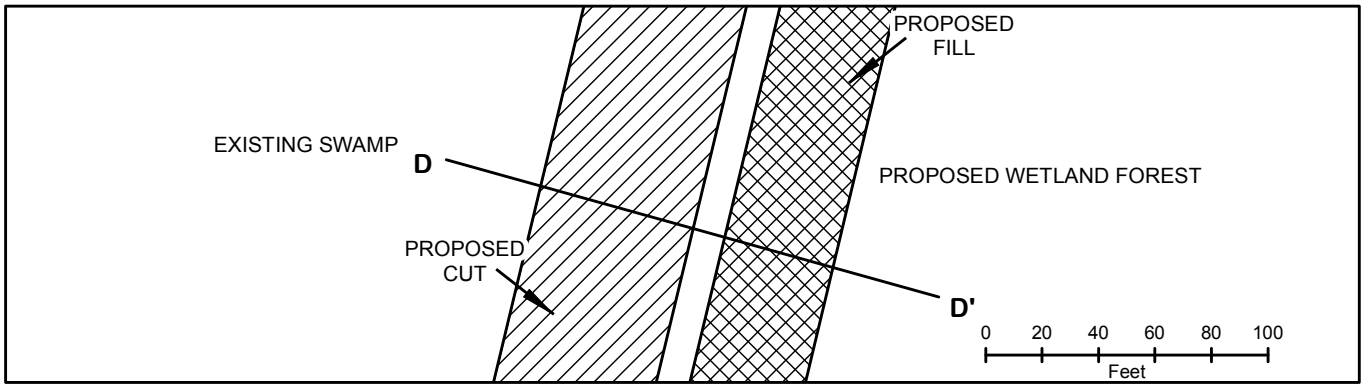
EXISTING PLAN VIEW



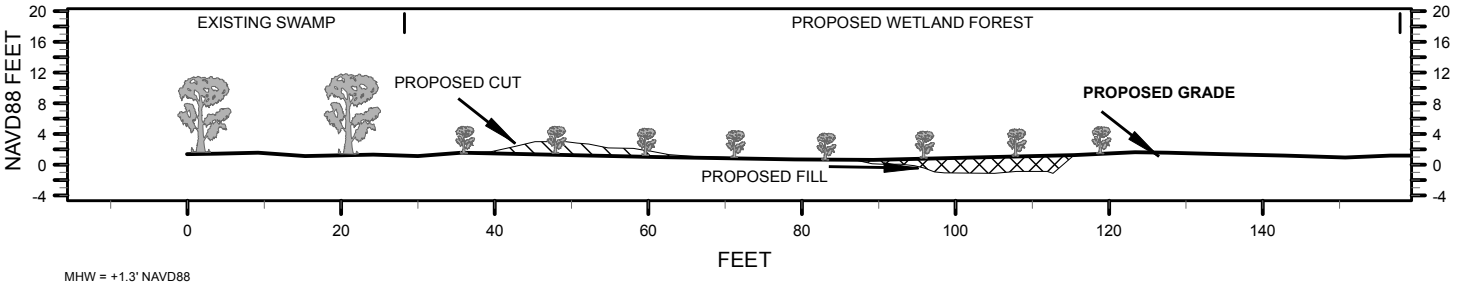
D EXISTING CROSS SECTION D'



PROPOSED PLAN VIEW



D PROPOSED CROSS SECTION D'



MHW = +1.3' NAVD88
MLW = +0.5' NAVD88

LEVEE DEGRADE AND DITCH FILL CALCULATIONS

AREA = APPROX 5.7 ACRES OF CUT (NON-WETLAND)
APPROX 4.0 ACRES OF FILL (OTHER WATERS)
VOLUME = APPROX 5,898 YD³ OF CUT (NON-WETLAND)
APPROX 5,898 YD³ OF FILL (OTHER WATERS)
LENGTH = APPROX 4,550 LINEAR FEET
ELEVATION = NATURAL GRADE

PROPOSED CEDAR GROVE AMENDMENT ONE MITIGATION BANK

CROSS SECTION D EXHIBIT
TERREBONNE PARISH, LA

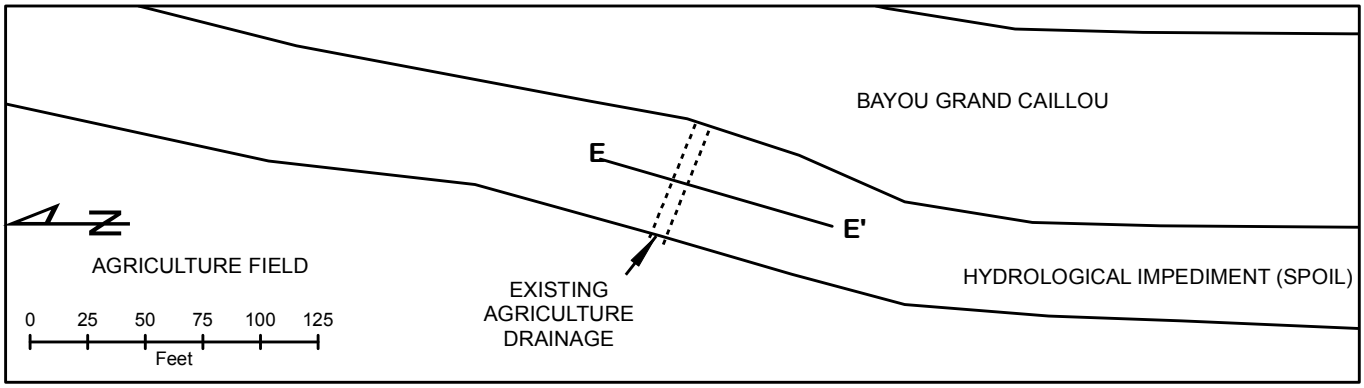
Drawing No.:
Date: 10/15/18 Author: BDS

FIGURE C-9

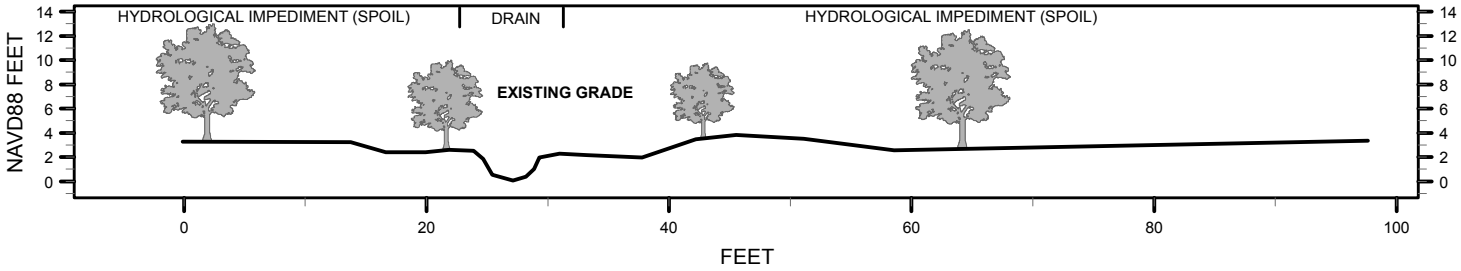
JMB Partnership, LLC

Document Path: N:\Mitigation Banks\Cedar Grove Amendment One\Mapping\GIS Projects (.MXD)\Prospectus\ProspectusNorthEast_9_2018\XSections\Figure C-9 XSections_D.mxd

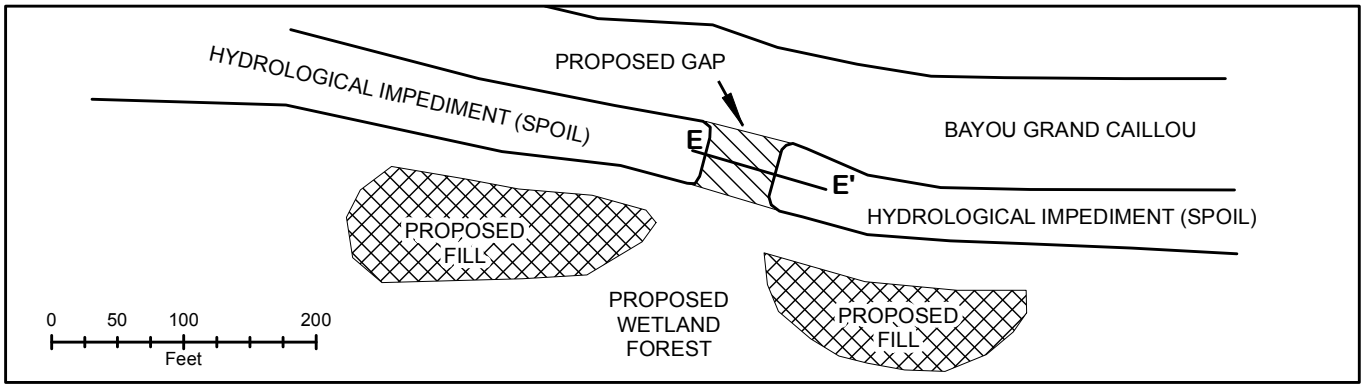
EXISTING PLAN VIEW



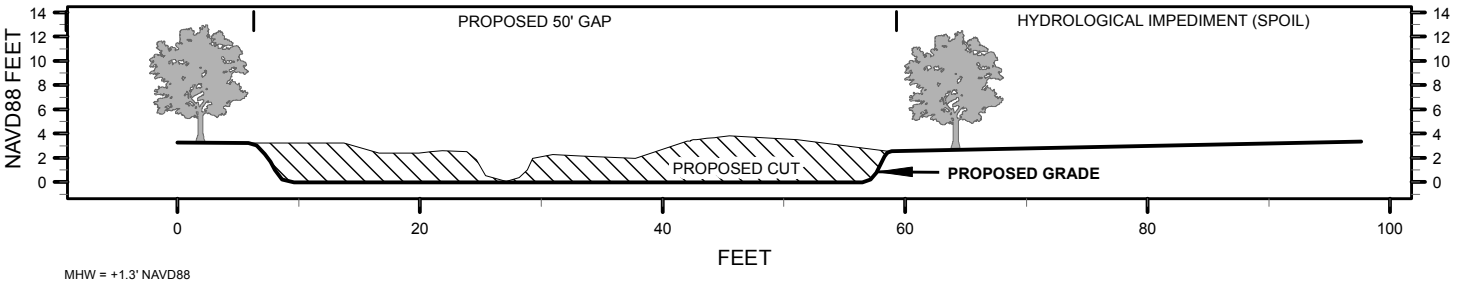
EXISTING CROSS SECTION



PROPOSED PLAN VIEW



PROPOSED CROSS SECTION



MHW = +1.3' NAVD88
MLW = +0.5' NAVD88

LEVEE GAPS (4) CALCULATIONS

AREA = APPROX 0.22 ACRE OF CUT (NON-WET)
APPROX 0.01 ACRE OF CUT (WETLAND)
APPROX 2.32 ACRES OF FILL (NON-WET)
VOLUME = APPROX 1,116 YD³ OF CUT (NON-WET)
APPROX 16 YD³ OF CUT (WETLAND)
APPROX 1132 YD³ OF FILL (NON-WET)
LENGTH = APPROX 200 LINEAR FEET
ELEVATION = 0.0 FT NAVD88

SPOIL MATERIAL WILL BE THINLY SPREAD ON EXISTING UPLAND AGRICULTURE FIELD.

PROPOSED CEDAR GROVE AMENDMENT ONE MITIGATION BANK

CROSS SECTION E EXHIBIT
TERREBONNE PARISH, LA

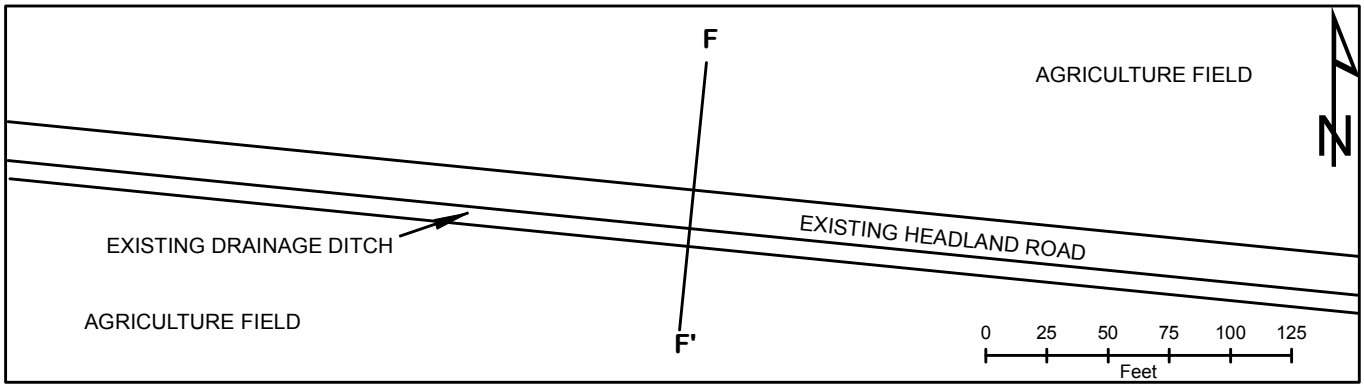
Drawing No.:
Date: 06/13/18 Author: BDS

FIGURE C-10

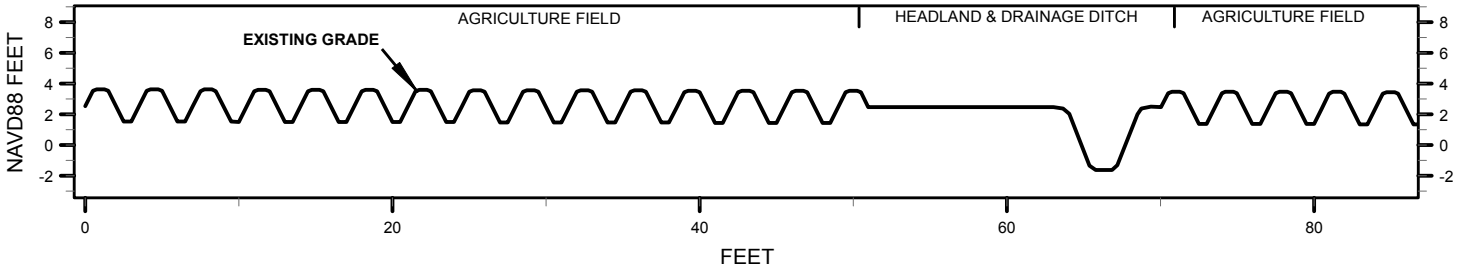
JMB Partnership, LLC

Document Path: N:\Mitigation Banks\Cedar Grove Amendment One\Mapping\GIS Projects (.MXD)\Prospectus\ProspectusNorthEast_9_2018\XSections\Figure C-10 XSections_E.mxd

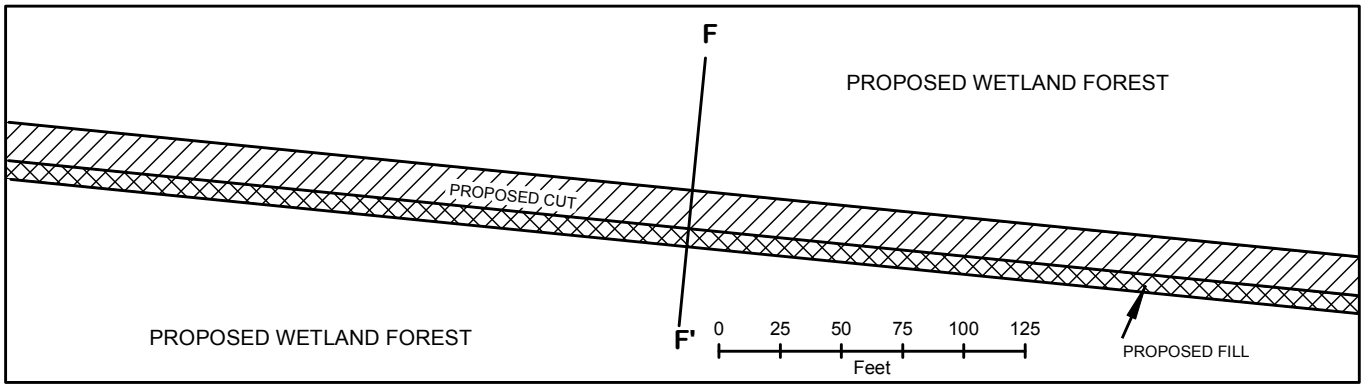
EXISTING PLAN VIEW



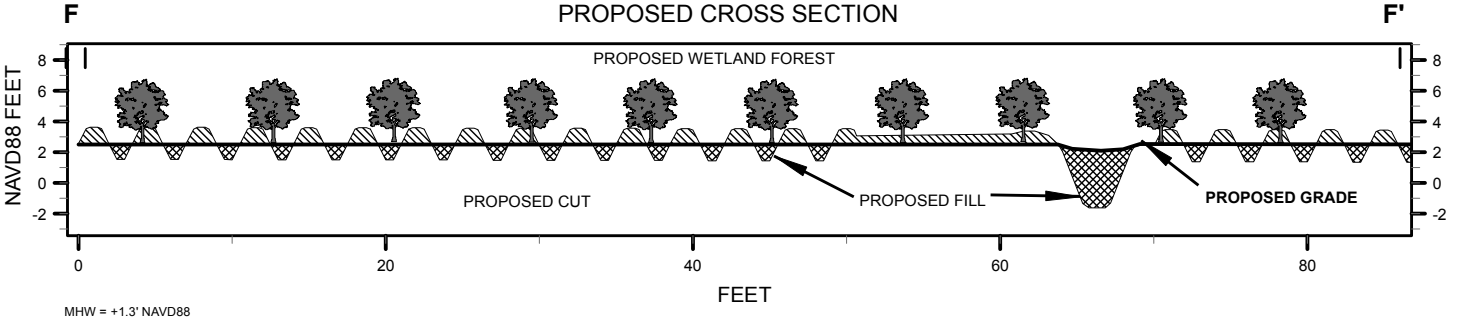
F — EXISTING CROSS SECTION — F'



PROPOSED PLAN VIEW



F — PROPOSED CROSS SECTION — F'



MHW = +1.3' NAVD88
MLW = +0.5' NAVD88

AGRICULTURE DRAINAGES

AREA = APPROX. 9.60 ACRES OF CUT (NON-WET)
APPROX. 0.30 ACRE OF CUT (WET)
APPROX. 2.41 ACRE OF FILL (NON-WET)
APPROX. 0.09 ACRE OF FILL (WET)
VOLUME = APPROX. 5437 YD^3 OF CUT (NON-WET)
APPROX. 168 YD^3 OF CUT (WET)
APPROX. 5437 YD^3 OF FILL (NON-WET)
APPROX. 168 YD^3 OF FILL (WET)
ELEVATION = AGRICULTURE ROWS AND DRAINAGE FEATURES TO BE DEGRADED TO NATURAL GRADE UTILIZING ADJACENT MATERIAL.

PROPOSED CEDAR GROVE AMENDMENT ONE MITIGATION BANK

CROSS SECTION F EXHIBIT
TERREBONNE PARISH, LA

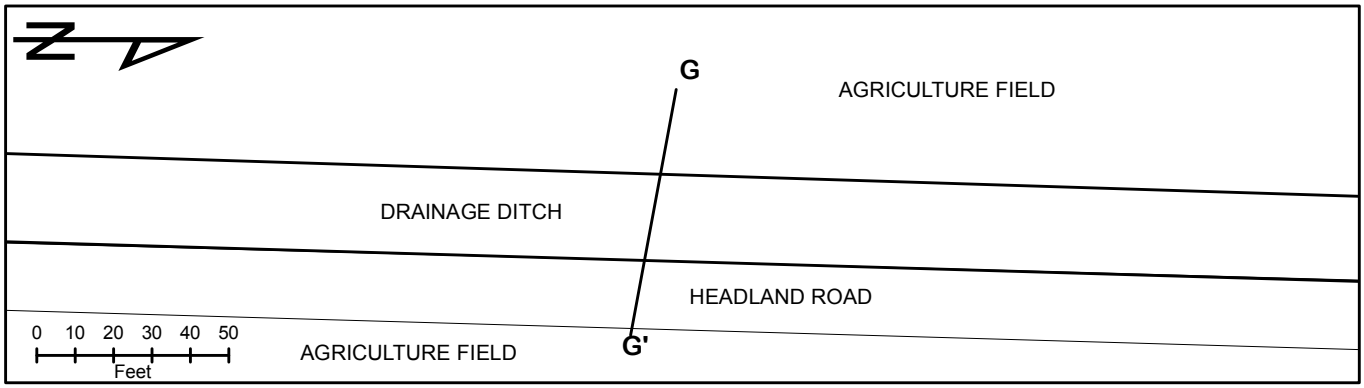
Drawing No.:
Date: 06/13/18 Author: BDS

FIGURE C-11

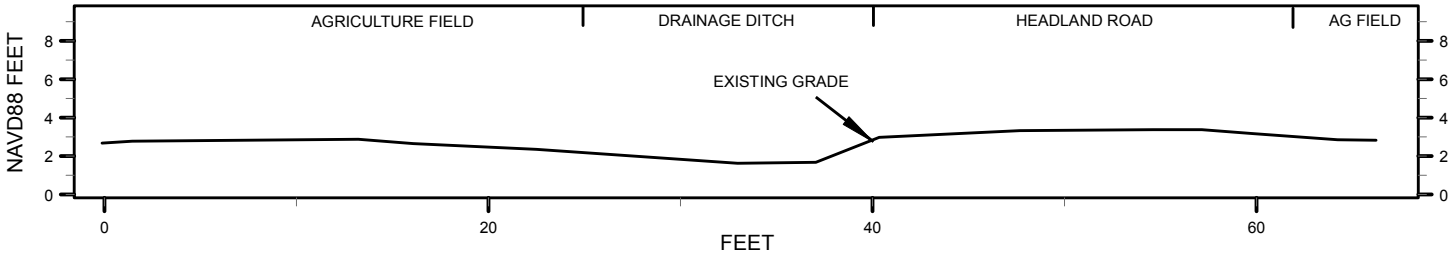
JMB Partnership, LLC

Document Path: N:\Mitigation Banks\Cedar Grove Amendment One\Mapping\GIS Projects (.MXD)\Prospectus\ProspectusNorthEast_9_2018\XSections\Figure C-11 XSections_F.mxd

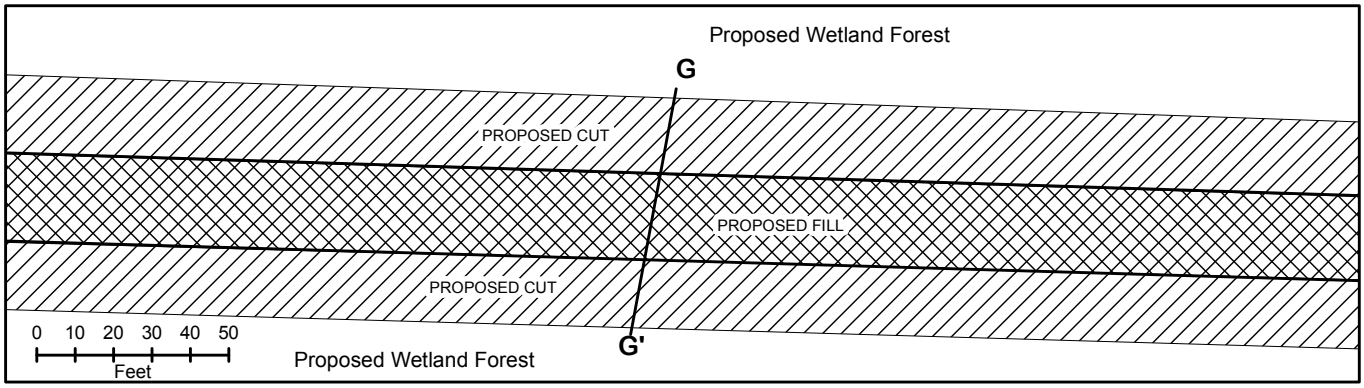
EXISTING PLAN VIEW



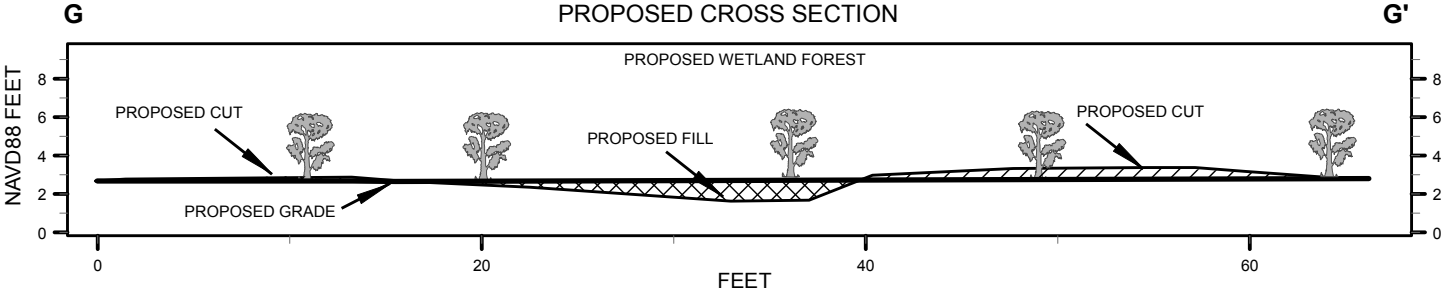
G EXISTING CROSS SECTION G'



PROPOSED PLAN VIEW



G PROPOSED CROSS SECTION G'



HEADLAND DEGRADE AND DITCH FILL CALCULATIONS

AREA = APPROX 0.64 ACRES OF CUT (NON-WETLAND)
APPROX 0.29 ACRES OF FILL (OTHER WATERS)
VOLUME = APPROX 589 YD³ OF CUT (NON-WETLAND)
APPROX 589 YD³ OF FILL (OTHER WATERS)
LENGTH = APPROX 837 LINEAR FEET
ELEVATION = NATURAL GRADE

PROPOSED CEDAR GROVE AMENDMENT ONE MITIGATION BANK
CROSS SECTION G EXHIBIT
TERREBONNE PARISH, LA

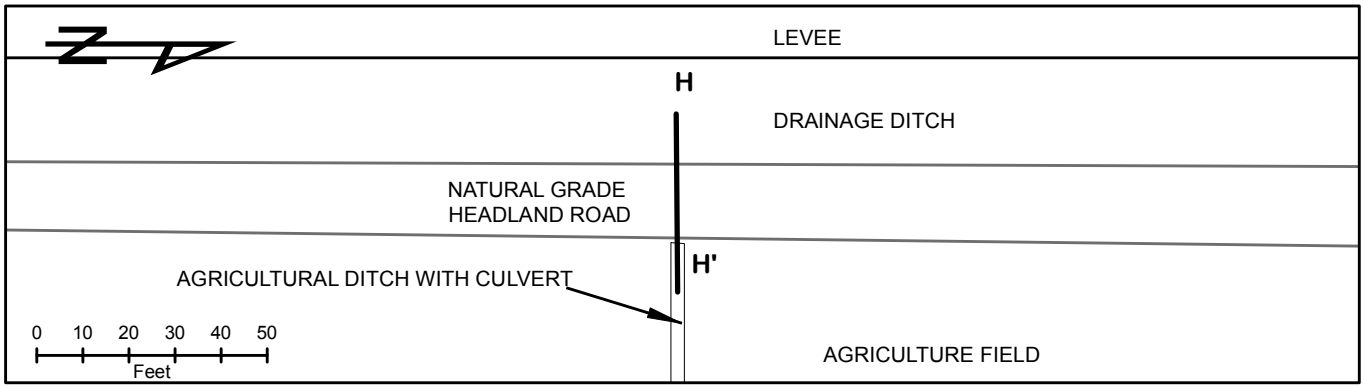
Drawing No.:
Date: 8/22/18 Author: AWS

FIGURE C-12

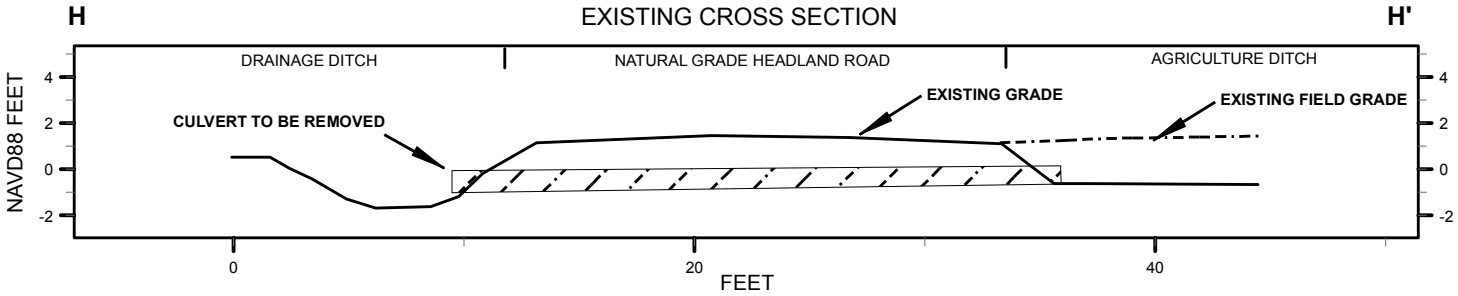
JMB Partnership, LLC

Document Path: N:\Mitigation Banks\Cedar Grove Amendment One\Mapping\GIS Projects (.MXD)\Prospectus\ProspectusNorthEast_9_2018\XSections\Figure C-12 XSections_G.mxd

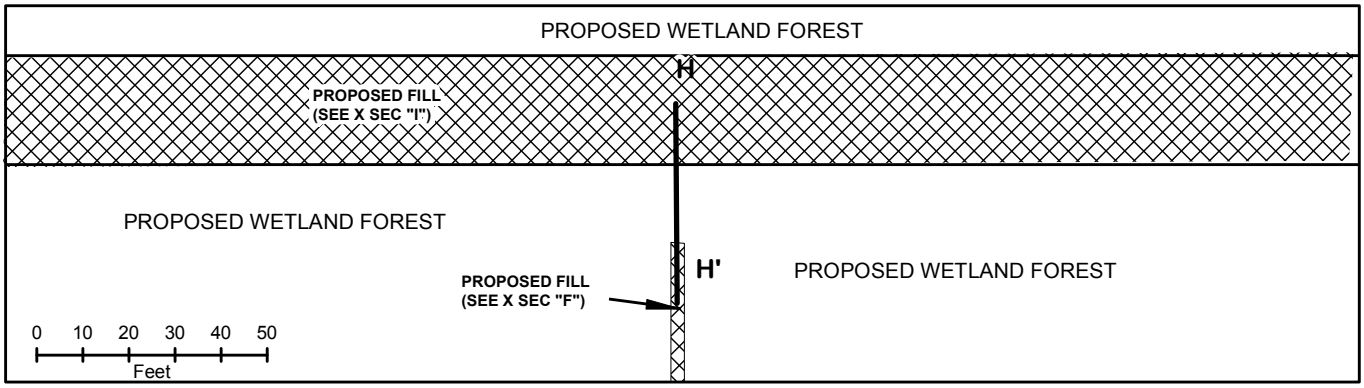
EXISTING PLAN VIEW



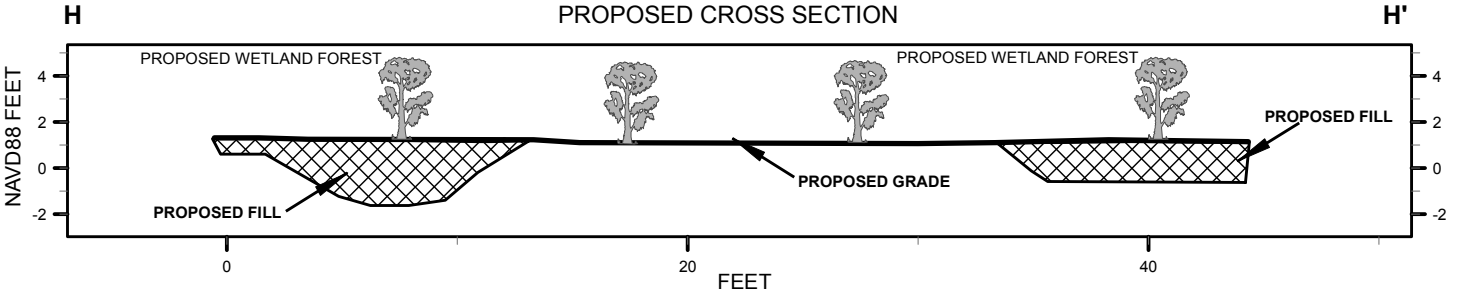
EXISTING CROSS SECTION



PROPOSED PLAN VIEW



PROPOSED CROSS SECTION



CULVERT REMOVAL

ELEVATION = NATURAL GRADE

MATERIAL EXCAVATED FOR CULVERT REMOVAL WILL BE BACKFILLED AND GRADED

PROPOSED CEDAR GROVE AMENDMENT ONE MITIGATION BANK

CROSS SECTION H EXHIBIT

TERREBONNE PARISH, LA

Drawing No.:

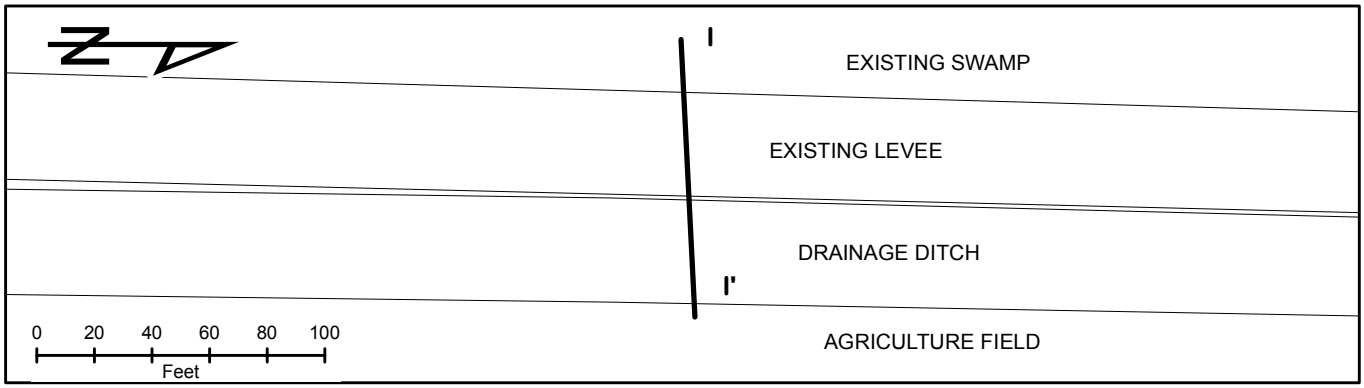
Date: 8/22/18 Author: BDS

FIGURE C-13

JMB Partnership, LLC

Document Path: N:\Mitigation Banks\Cedar Grove Amendment One\Mapping\GIS Projects (.MXD)\Prospectus\ProspectusNorthEast_9_2018\XSections\Figure C-13 XSections_H.mxd

EXISTING PLAN VIEW



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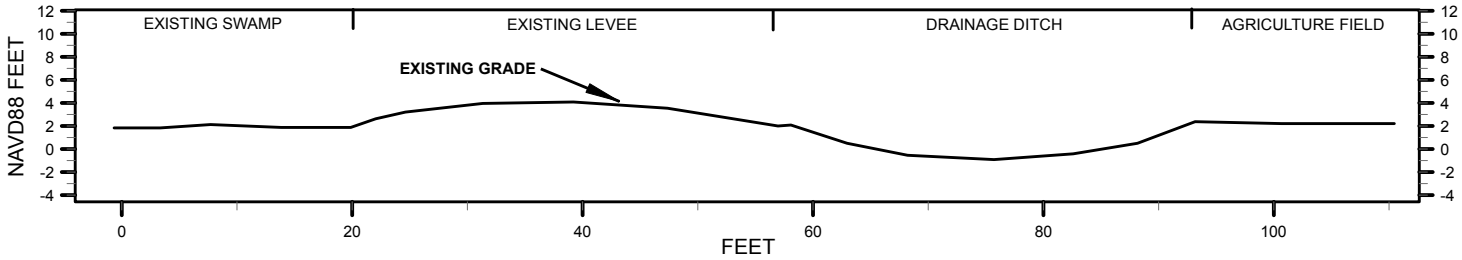
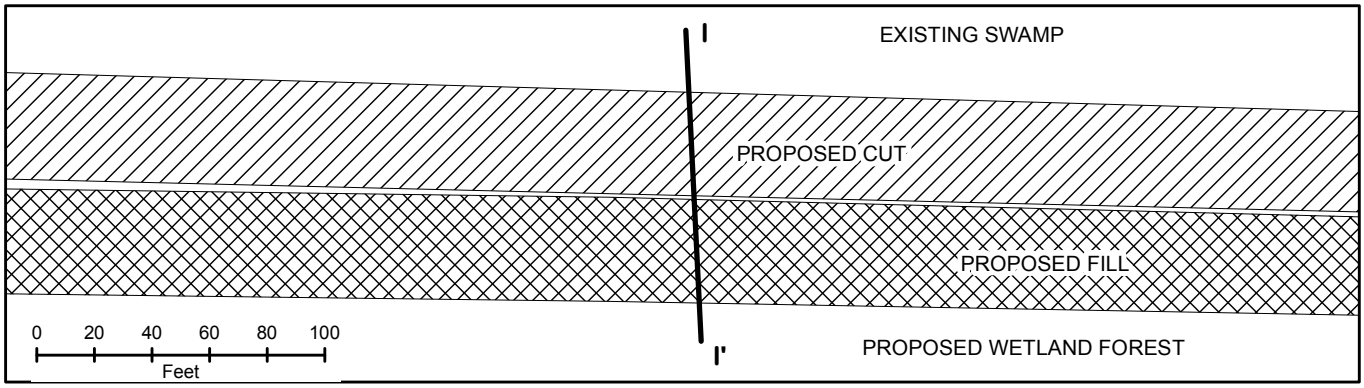
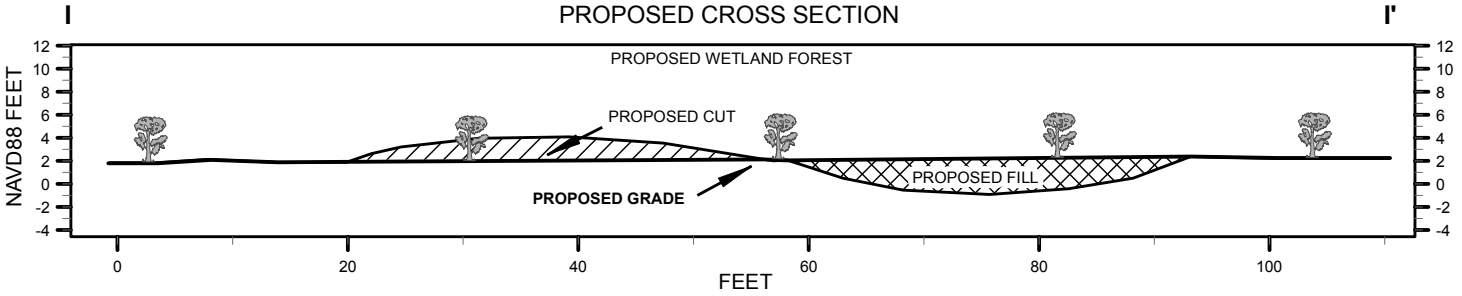


PROPOSED PLAN VIEW



PROPOSED CROSS SECTION



HEADLAND DEGRADE AND DITCH FILL CALCULATIONS

AREA = APPROX 1.74 ACRES OF CUT (NON-WETLAND)
APPROX 1.73 ACRES OF FILL (OTHER WATERS)
VOLUME = APPROX 2,523 YD³ OF CUT (NON-WETLAND)
APPROX 2,523 YD³ OF FILL (OTHER WATERS)
LENGTH = APPROX 2,245 LINEAR FEET
ELEVATION = NATURAL GRADE

PROPOSED CEDAR GROVE AMENDMENT ONE MITIGATION BANK
CROSS SECTION I EXHIBIT
TERREBONNE PARISH, LA

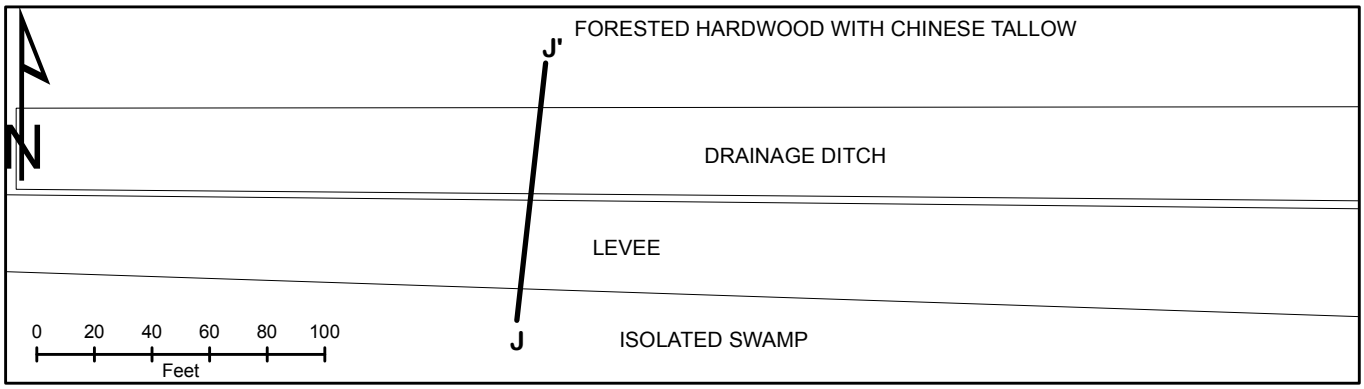
Drawing No.:
Date: 10/18/18 Author: AWS

FIGURE C-14

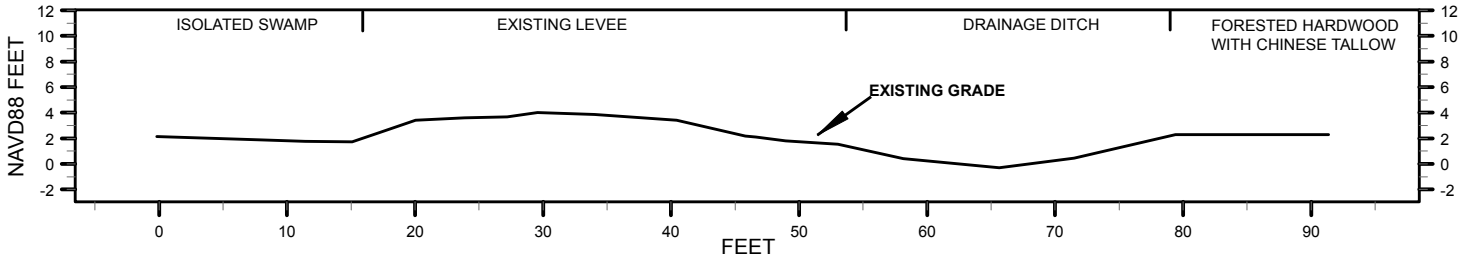
JMB Partnership, LLC

Document Path: N:\Mitigation Banks\Cedar Grove Amendment One\Mapping\GIS Projects (.MXD)\Prospectus\ProspectusNorthEast_9_2018\XSections\Figure C-14 XSections_I.mxd

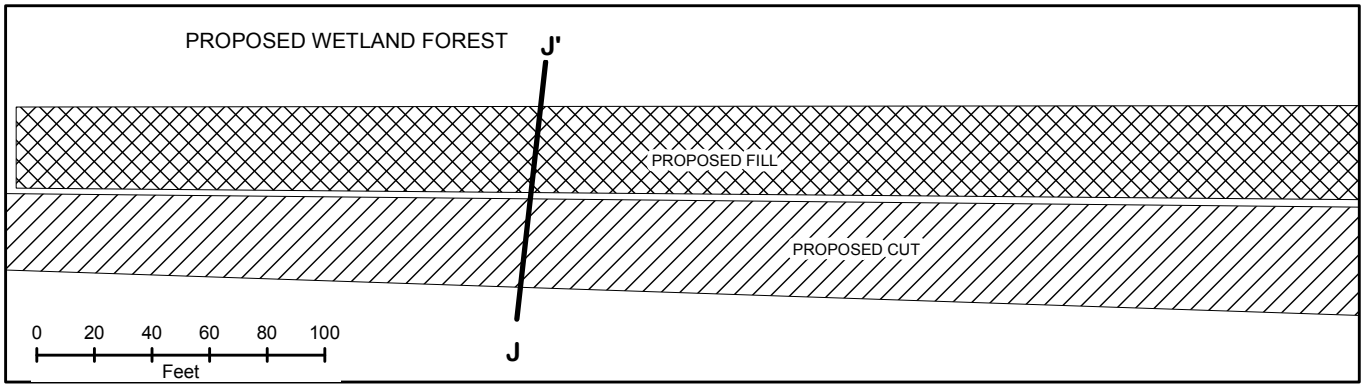
EXISTING PLAN VIEW



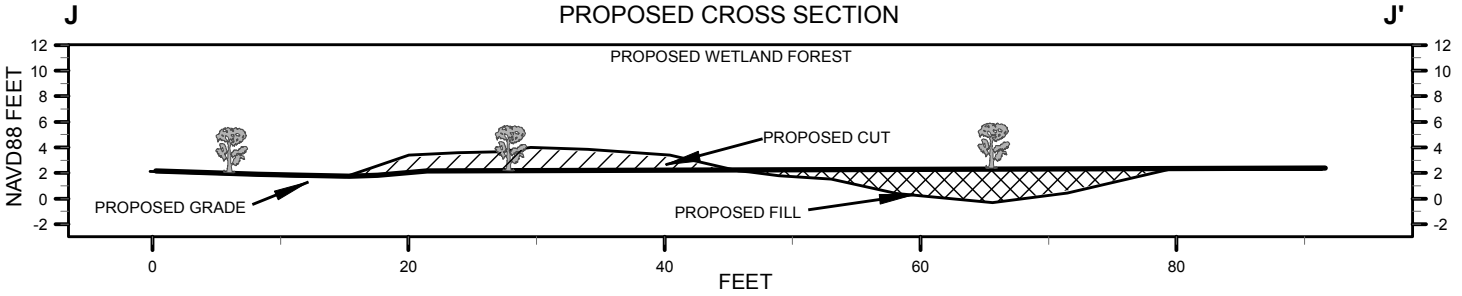
EXISTING CROSS SECTION



PROPOSED PLAN VIEW



PROPOSED CROSS SECTION



HEADLAND DEGRADE AND DITCH FILL CALCULATIONS

AREA = APPROX 1.03 ACRES OF CUT (NON-WETLAND)
APPROX 0.77 ACRES OF FILL (OTHER WATERS)
VOLUME = APPROX 2,850 YD³ OF CUT (NON-WETLAND)
APPROX 2,850 YD³ OF FILL (OTHER WATERS)
LENGTH = APPROX 1,120 LINEAR FEET
ELEVATION = NATURAL GRADE

PROPOSED CEDAR GROVE AMENDMENT ONE MITIGATION BANK

CROSS SECTION J EXHIBIT

TERREBONNE PARISH, LA

Drawing No.:

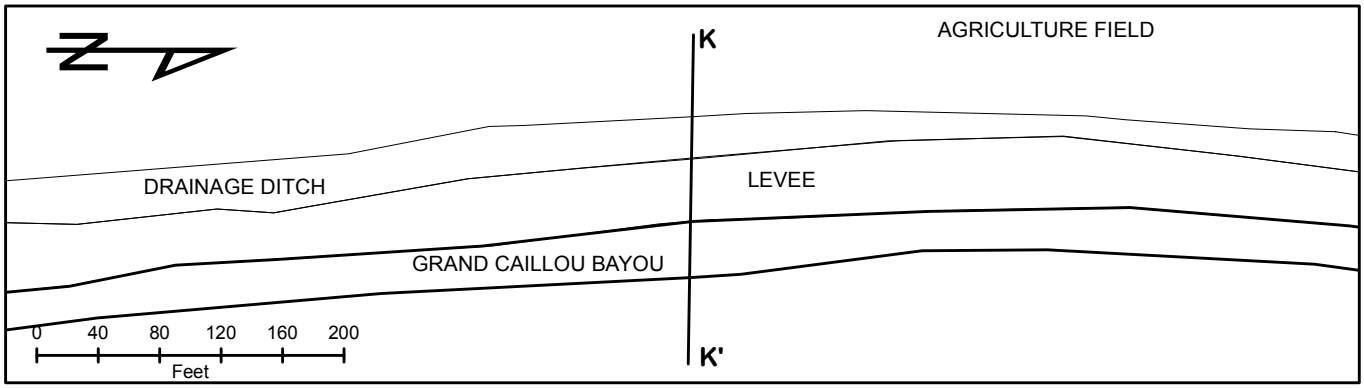
Date: 10/18/18 Author: AWS

FIGURE C-15

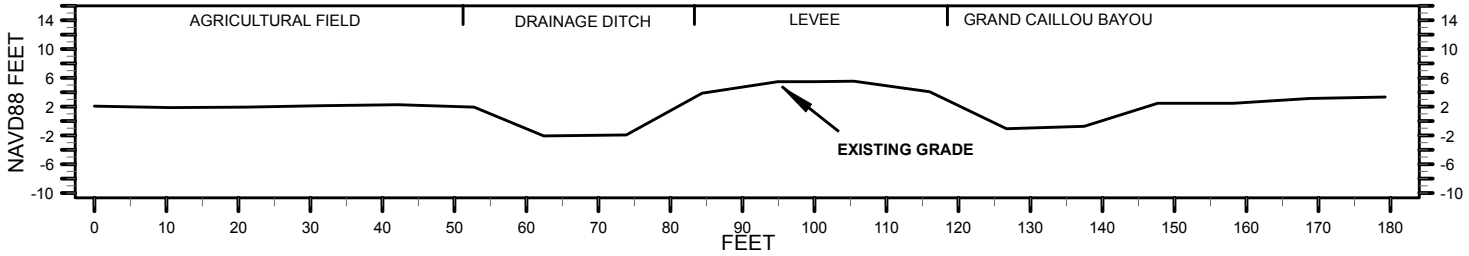
JMB Partnership, LLC

Document Path: N:\Mitigation Banks\Cedar Grove Amendment One\Mapping\GIS Projects (.MXD)\Prospectus\ProspectusNorthEast_9_2018\XSections\Figure C-15 XSections_J.mxd

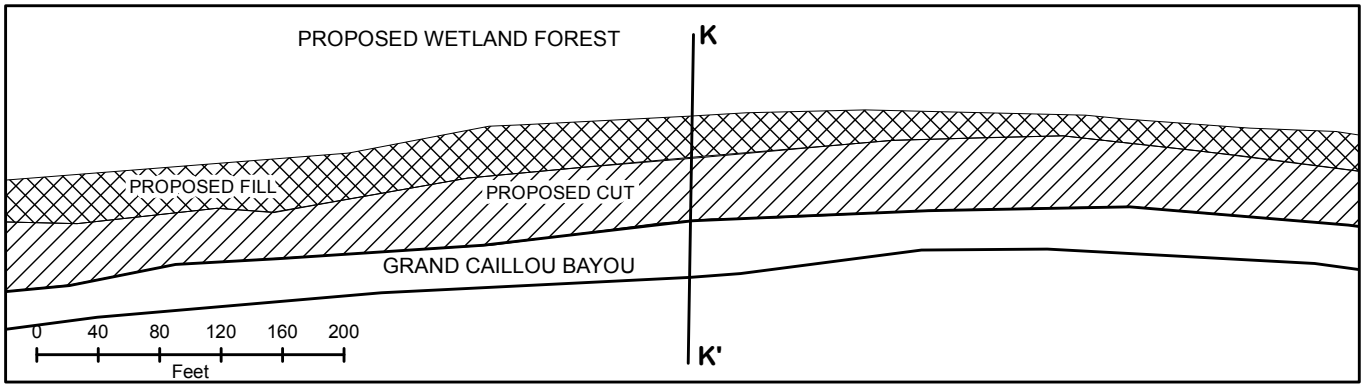
EXISTING PLAN VIEW



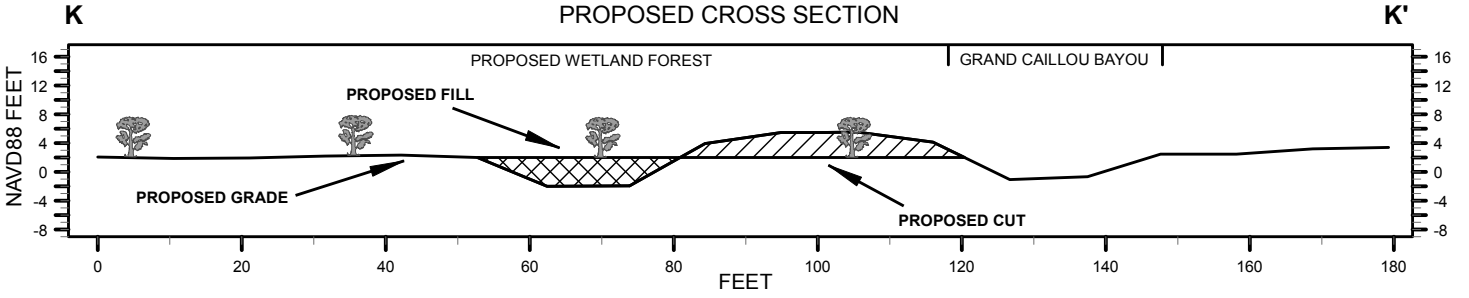
EXISTING CROSS SECTION



PROPOSED PLAN VIEW



PROPOSED CROSS SECTION



LEVEE DEGRADE AND DITCH FILL CALCULATIONS

AREA = APPROX 2.07 ACRES OF CUT (NON-WETLAND)
APPROX 1.23 ACRES OF FILL (OTHER WATERS)
VOLUME = APPROX 5,124 YD³ OF CUT (NON-WETLAND)
APPROX 3,677 YD³ OF FILL (OTHER WATERS)
LENGTH = APPROX 1,340 LINEAR FEET
ELEVATION = NATURAL GRADE

EXCESS MATERIAL TO BE MOVED TO NORTH BOUNDARY LEVEE

PROPOSED CEDAR GROVE AMENDMENT ONE MITIGATION BANK

CROSS SECTION K EXHIBIT

TERREBONNE PARISH, LA

Drawing No.:

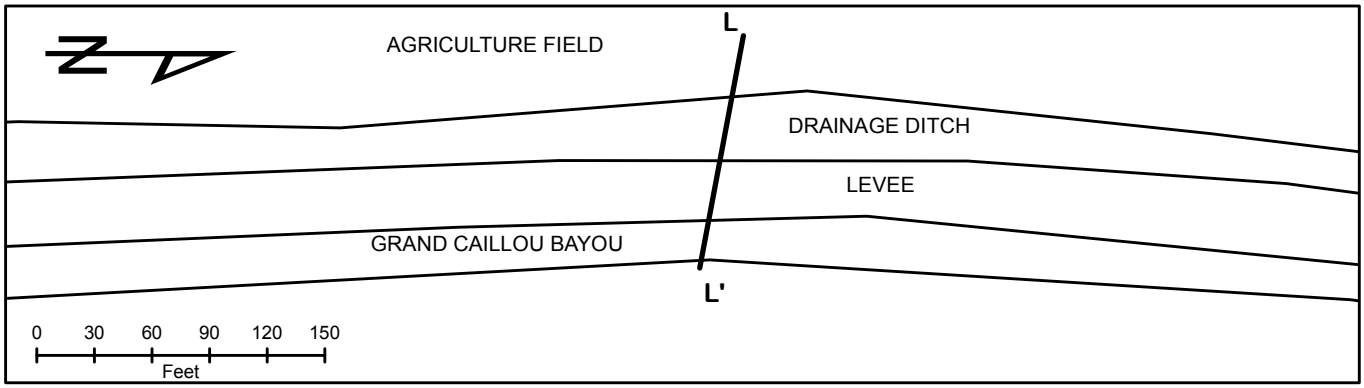
Date: 10/18/18 Author: AWS

FIGURE C-16

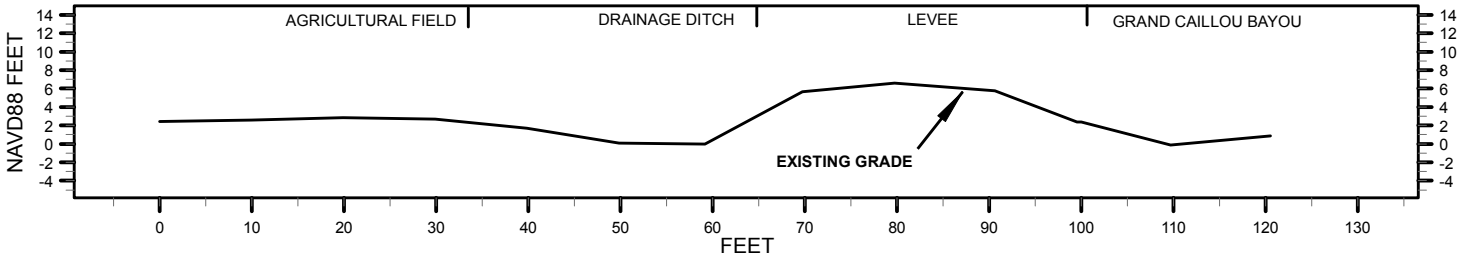
JMB Partnership, LLC

Document Path: N:\Mitigation Banks\Cedar Grove Amendment One\Mapping\GIS Projects (.MXD)\Prospectus\ProspectusNorthEast_9_2018\XSections\Figure C-16 XSections_K.mxd

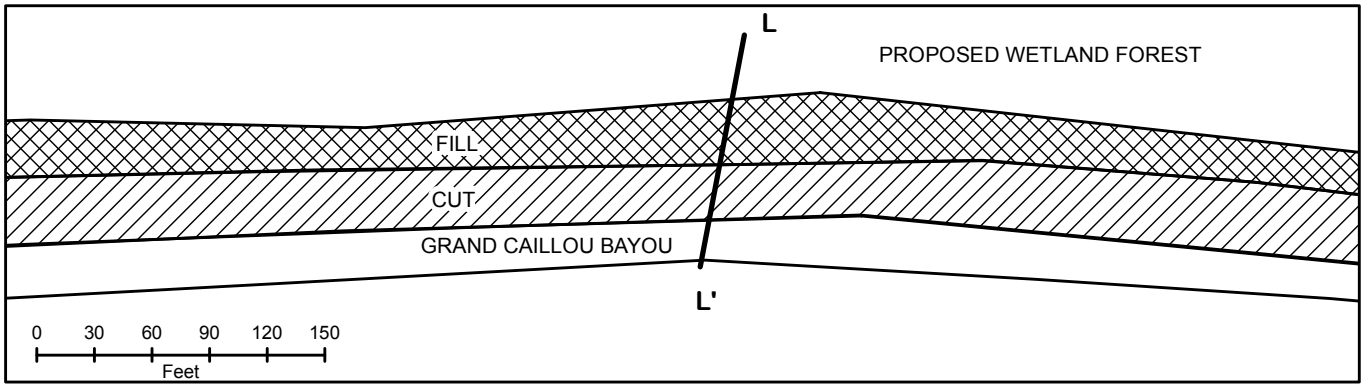
EXISTING PLAN VIEW



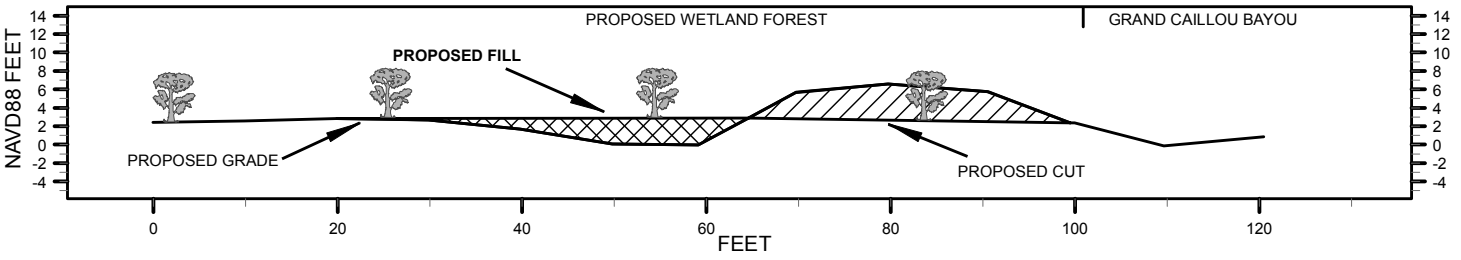
L — EXISTING CROSS SECTION — L'



PROPOSED PLAN VIEW



L — PROPOSED CROSS SECTION — L'



LEVEE DEGRADE AND DITCH FILL CALCULATIONS

AREA = APPROX 2.42 ACRES OF CUT (NON-WETLAND)
APPROX 2.28 ACRES OF FILL (OTHER WATERS)
VOLUME = APPROX 4,970 YD³ OF CUT (NON-WETLAND)
APPROX 3,794 YD³ OF FILL (OTHER WATERS)
LENGTH = APPROX 2,130 LINEAR FEET
ELEVATION = NATURAL GRADE

EXCESS MATERIAL TO BE MOVED TO NORTH BOUNDARY LEVEE

PROPOSED CEDAR GROVE AMENDMENT ONE MITIGATION BANK

CROSS SECTION L EXHIBIT

TERREBONNE PARISH, LA

Drawing No.:

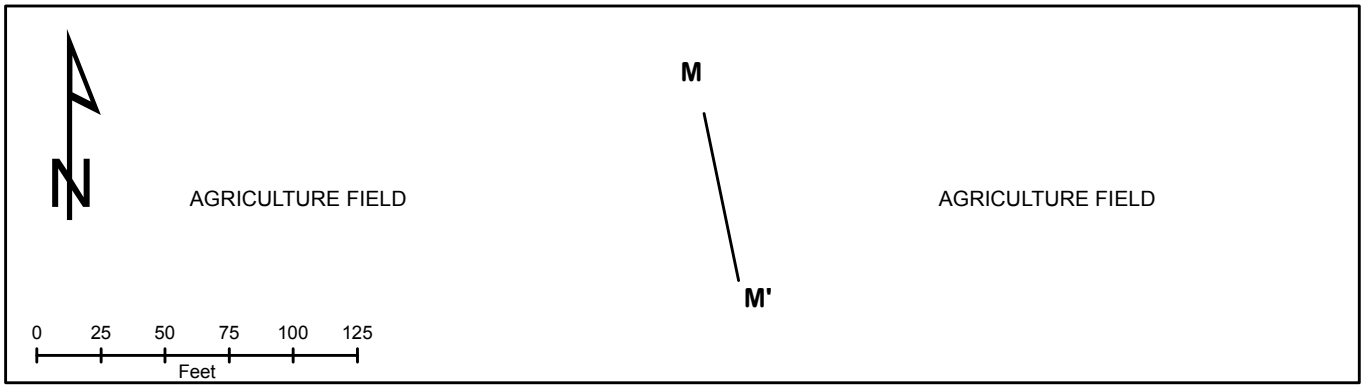
Date: 10/18/18 Author: AWS

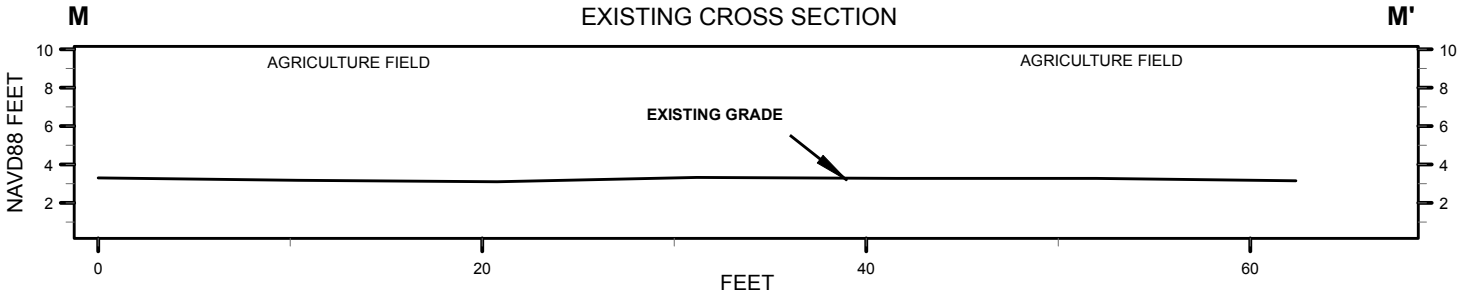
FIGURE C-17

JMB Partnership, LLC

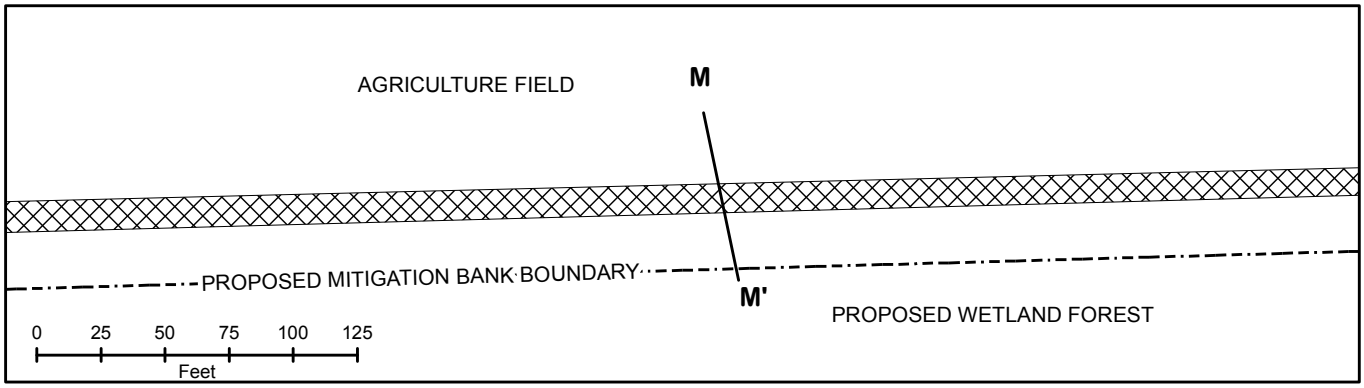
Document Path: N:\Mitigation Banks\Cedar Grove Amendment One\Mapping\GIS Projects (.MXD)\Prospectus\ProspectusNorthEast_9_2018\XSections\Figure C-17 XSections_L.mxd

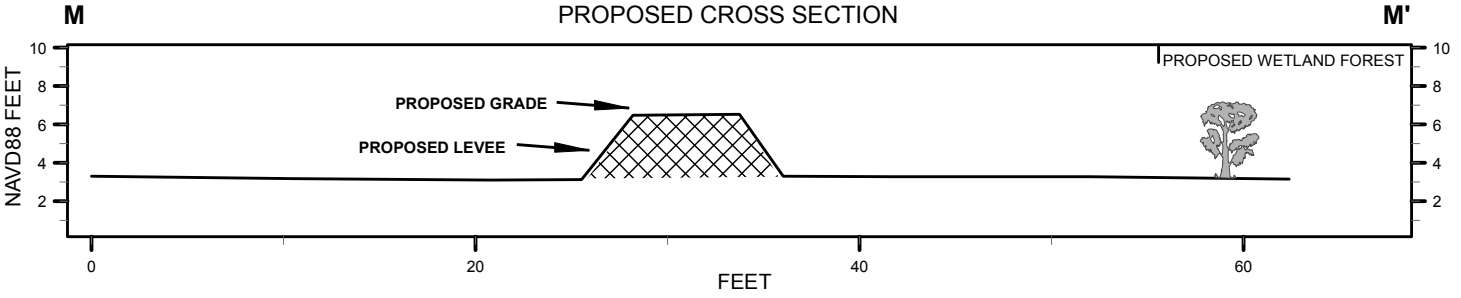
EXISTING PLAN VIEW





PROPOSED PLAN VIEW





LEVEE BUILD CALCULATIONS

AREA = APPROX 0.65 ACRES OF FILL (NON-WETLAND)
VOLUME = APPROX 2446 YD³ OF FILL (NON-WETLAND)
LENGTH = APPROX 2590 LINEAR FEET
ELEVATION = TOP OF LEVEE + 6.5 FEET

EXCESS MATERIAL FROM OTHER AREAS MOVED TO THIS LEVEE

PROPOSED CEDAR GROVE AMENDMENT ONE MITIGATION BANK

CROSS SECTION M EXHIBIT
TERREBONNE PARISH, LA

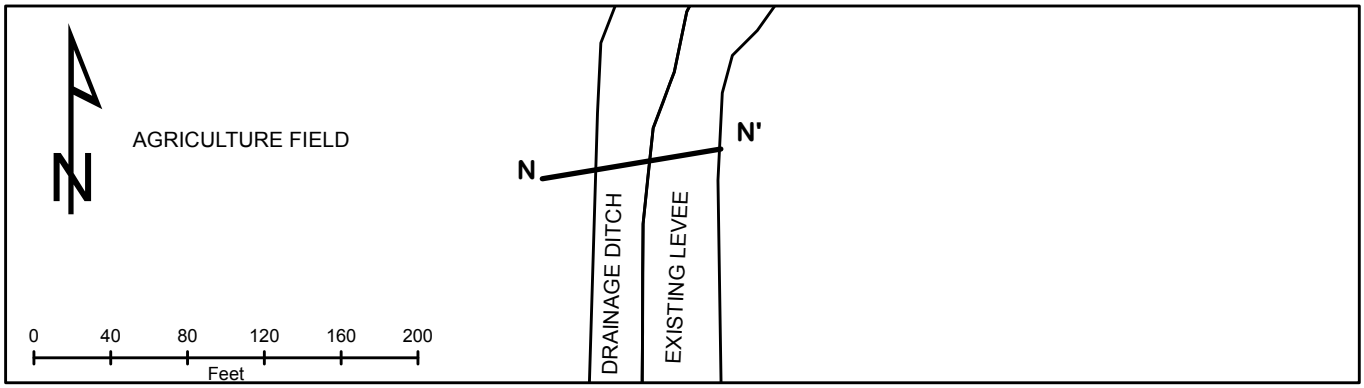
Drawing No.:
Date: 10/18/18 Author: AWS

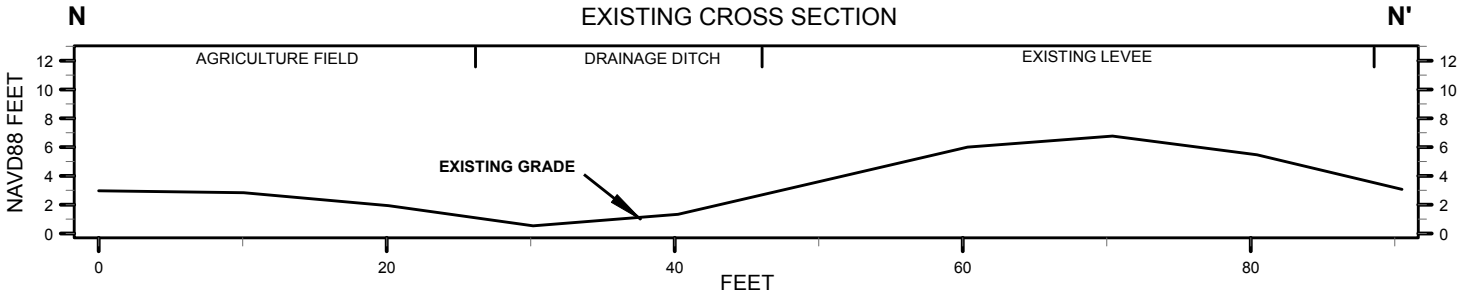
FIGURE C-18

JMB Partnership, LLC

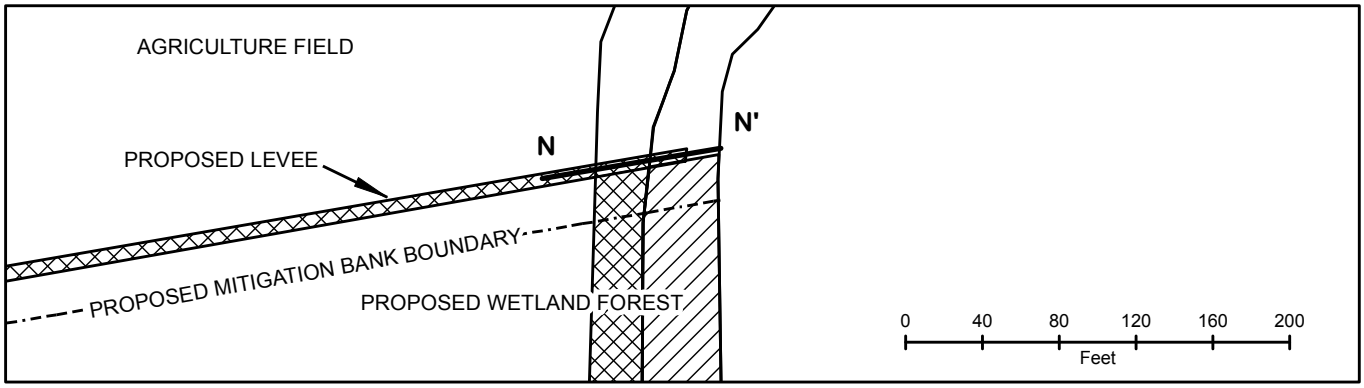
Document Path: N:\Mitigation Banks\Cedar Grove Amendment One\Mapping\GIS Projects (.MXD)\Prospectus\ProspectusNorthEast_9_2018\XSections\Figure C-18 XSections_M.mxd

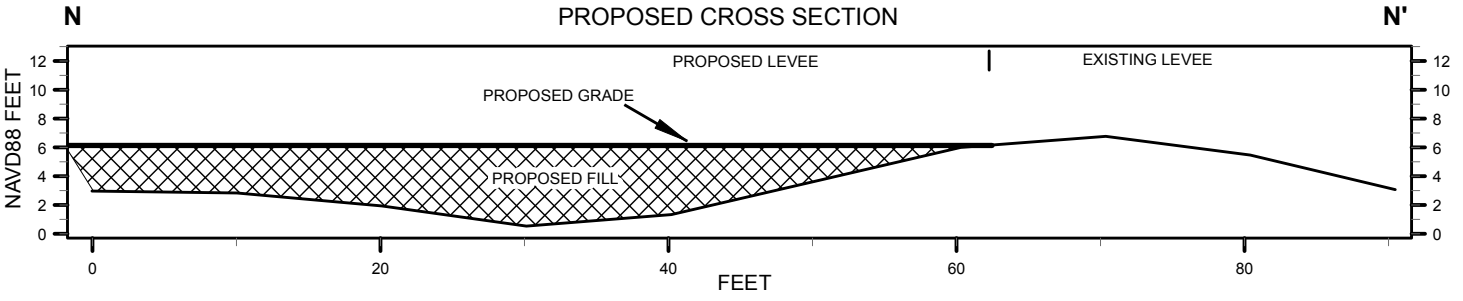
EXISTING PLAN VIEW





PROPOSED PLAN VIEW





PROPOSED CEDAR GROVE AMENDMENT ONE MITIGATION BANK

CROSS SECTION N EXHIBIT

TERREBONNE PARISH, LA

Drawing No.:

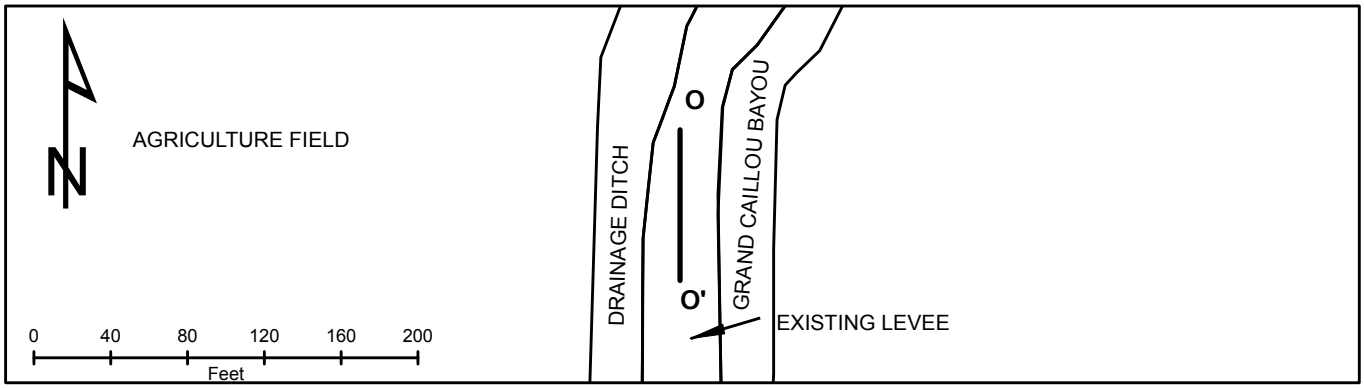
Date: 10/18/18 Author: AWS

FIGURE C-19

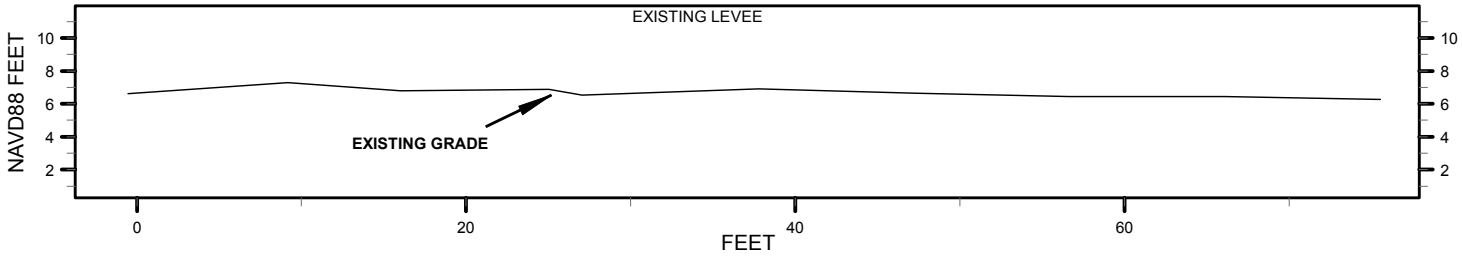
JMB Partnership, LLC

Document Path: N:\Mitigation Banks\Cedar Grove Amendment One\Mapping\GIS Projects (.MXD)\Prospectus\ProspectusNorthEast_9_2018\XSections\Figure C-19 XSections_N.mxd

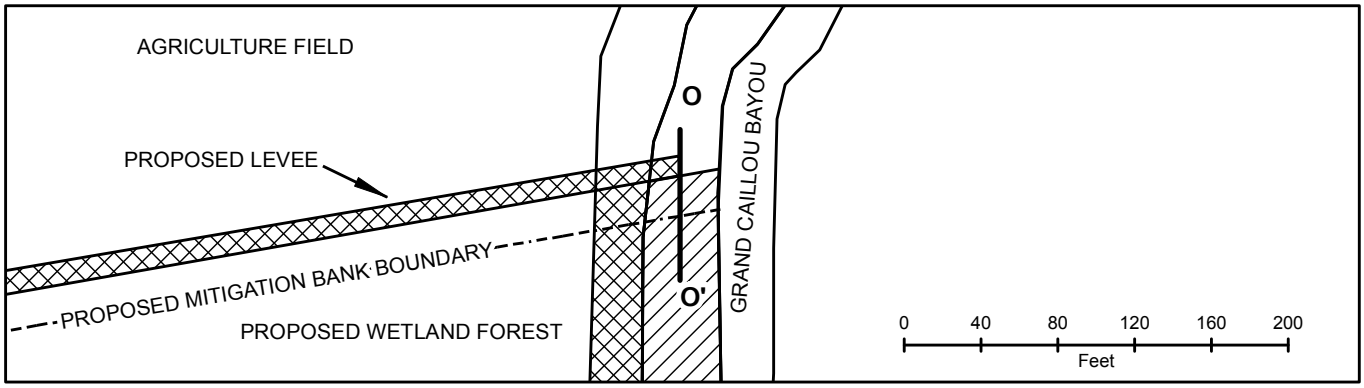
EXISTING PLAN VIEW



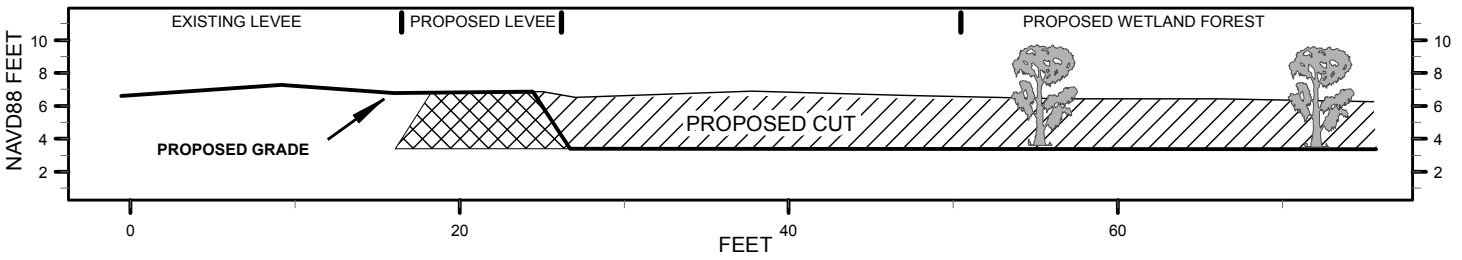
O — EXISTING CROSS SECTION — O'



PROPOSED PLAN VIEW



O — PROPOSED CROSS SECTION — O'



PROPOSED CEDAR GROVE AMENDMENT ONE MITIGATION BANK

CROSS SECTION O EXHIBIT

TERREBONNE PARISH, LA

Drawing No.:

Date: 10/18/18 Author: AWS

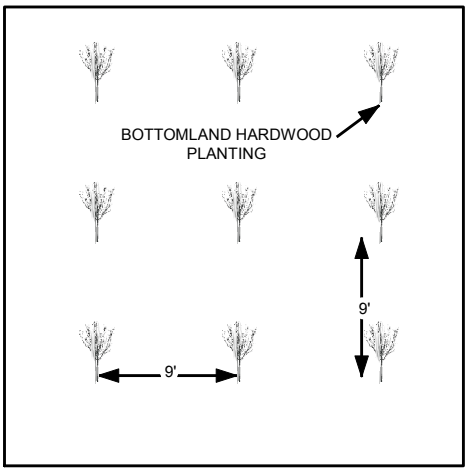
FIGURE C-20

JMB Partnership, LLC

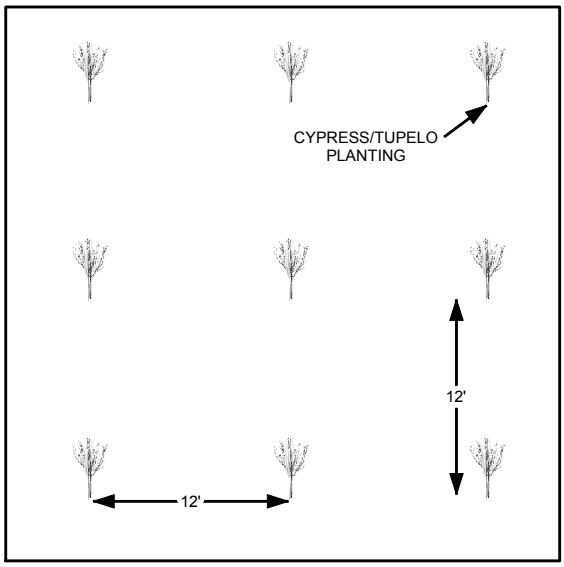
Document Path: N:\Mitigation Banks\Cedar Grove Amendment One\Mapping\GIS Projects (.MXD)\Prospectus\ProspectusNorthEast_9_2018\XSections\Figure C-20 XSections_O.mxd

VEGETATIVE PLANTING

BOTTOMLAND HARDWOODS



CYPRESS TUPELO SWAMP



PLANTING NOTES:

BOTTOMLAND HARDWOODS TO BE PLANTED AT 9 FOOT SPACING. PROPOSED TREE DENSITY IS 538 TREES PER ACRE.

CYPRESS/TUPELO TO BE PLANTED AT 12 FOOT SPACING. PROPOSED TREE DENSITY IS 302 TREES PER ACRE.

SUMMARY OF CALCULATIONS

WETLAND CUT:
AREA = 0.67 ACRE
VOLUME = 2,064 YD ^{3}

WETLAND FILL:
AREA = 0.10 ACRE
VOLUME = 168 YD ^{3}

NON-WET CUT:
AREA = 25.5 ACRES
VOLUME = 35,507 YD ^{3}

NON-WET FILL:
AREA = 9.53 ACRES
VOLUME = 15,845YD ^{3}

OTHER WATERS FILL:
AREA = 10.84 ACRES
VOLUME = 21,381 YD ^{3}

EXCESS MATERIAL WILL BE THINLY PLACED ON NON-WET ACCESS ROADS OUTSIDE OF PROJECT BOUNDARIES.

PROPOSED CEDAR GROVE AMENDMENT ONE MITIGATION BANK
PLANTING EXHIBIT
TERREBONNE PARISH, LA

Drawing No.:
Date: 01/22/18 Author: BDS

FIGURE C-21

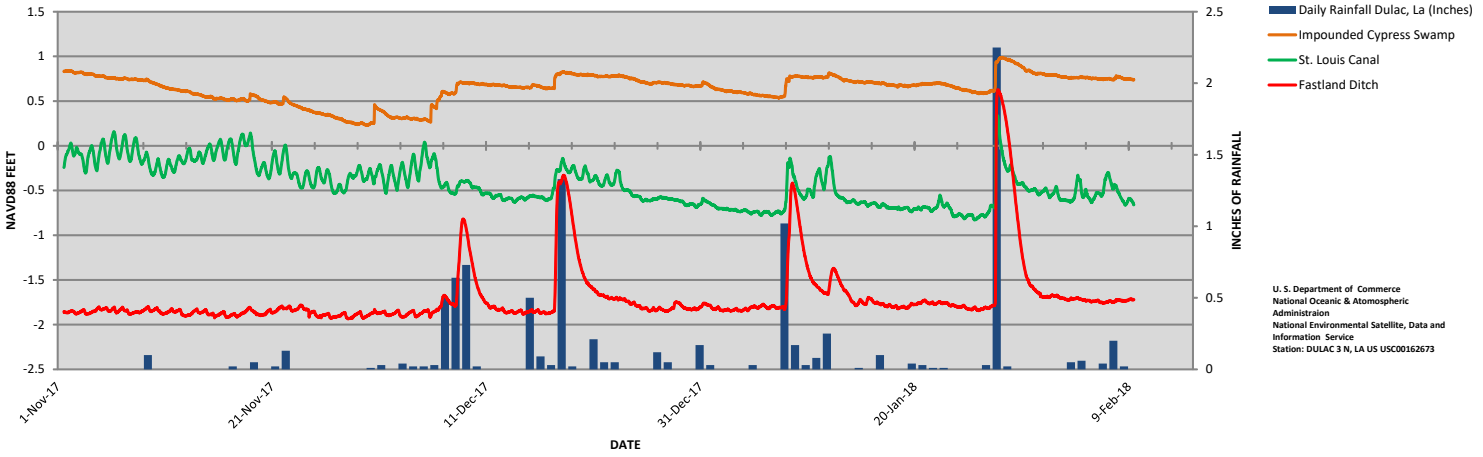
JMB Partnership, LLC

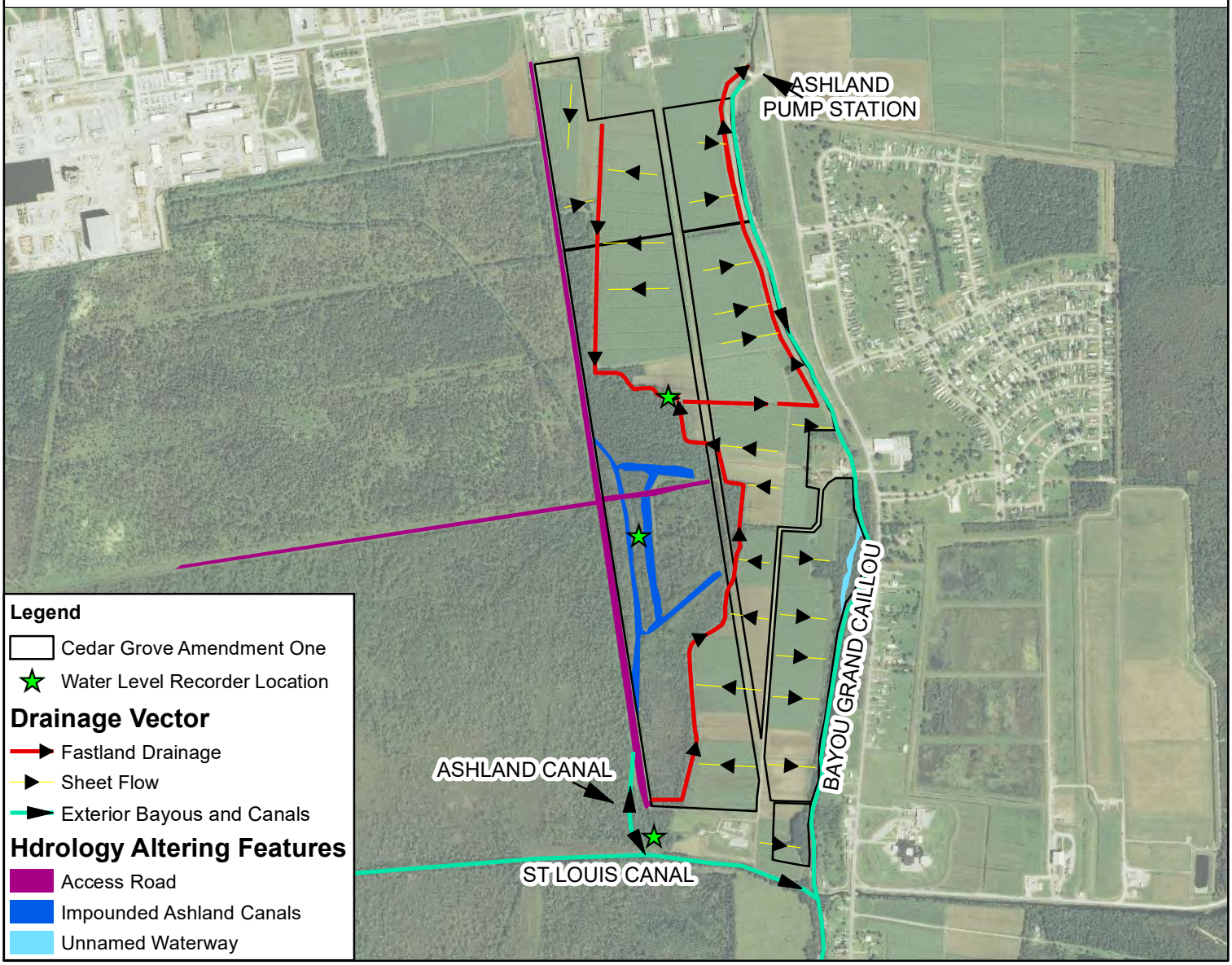
Document Path: N:\Mitigation Banks\Cedar Grove Amendment One\Mapping\GIS Projects (.MXD)\Prospectus\ProspectusNorthEast_9_2018\XSections\Figure C-21 XSections_Planting.mxd

Attachment D:

Water Level Recorder Data

CEDAR GROVE AMENDMENT ONE WATER LEVEL DATA





0 375 750 1,500 2,250 3,000
Feet

N

PROPOSED CEDAR GROVE AMENDMENT ONE MITIGATION BANK

CURRENT HYDROLOGY EXHIBIT
TERREBONNE PARISH, LA

Drawing No.:
Date: 09/27/2018 Author: JKP

FIGURE D-1

JMB Partnership, LLC

Document Path: N:\Mitigation Banks\Cedar Grove Amendment One\Mapping\GIS Projects (.MXD)\Prospectus\ProspectusNorthEast_9_2018\Figure D-1_CurrentHydro_CGMB_A1_08082018.mxd

Attachment E:

Approved Preliminary Jurisdictional Determination

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, NEW ORLEANS DISTRICT
7400 LEAKE AVENUE
NEW ORLEANS, LOUISIANA 70118-03651

REPLY TO
ATTENTION OF

March 1, 2018

Operations Division
Surveillance and Enforcement Section

Mr. Aaron Landry
J.M. Burguieres Company Limited
2205 West Pinhook Road, Suite 200
Lafayette, LA 70508

Dear Mr. Landry:

Reference is made to your request for a U.S. Army Corps of Engineers' (Corps) jurisdictional determination on property located in Section 68, Township 18 South, Range 18 East, Terrebonne Parish, Louisiana (enclosed map). Specifically, this property is identified as a 436.9 acres tract on and east of Grand Caillou Road approximately 5.4 miles southeast of Houma.

A field inspection of the property was conducted on February 7, 2018. Based on the results of this investigation and information provided with your application, we have determined that part of the property is wetland and subject to Corps' jurisdiction. The approximate limits of the wetland are designated in red on the map. 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. Additionally, a DA permit will be required if you propose to deposit dredged or fill material into non-wetland waters of the U.S. designated in blue on the map. Also, a portion of the wetland and non-wetland waters are 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 the wetland or non-wetland waters.

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.

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.

Should there be any questions concerning these matters, please contact Mr. Jeffrey Linville at (504) 862-2227 and reference our Account No. MVN-2017-01494-SL. If you have specific questions regarding the permit process or permit applications, please contact our Central Evaluation Section at (504) 862-1582.

Sincerely,

[redacted]

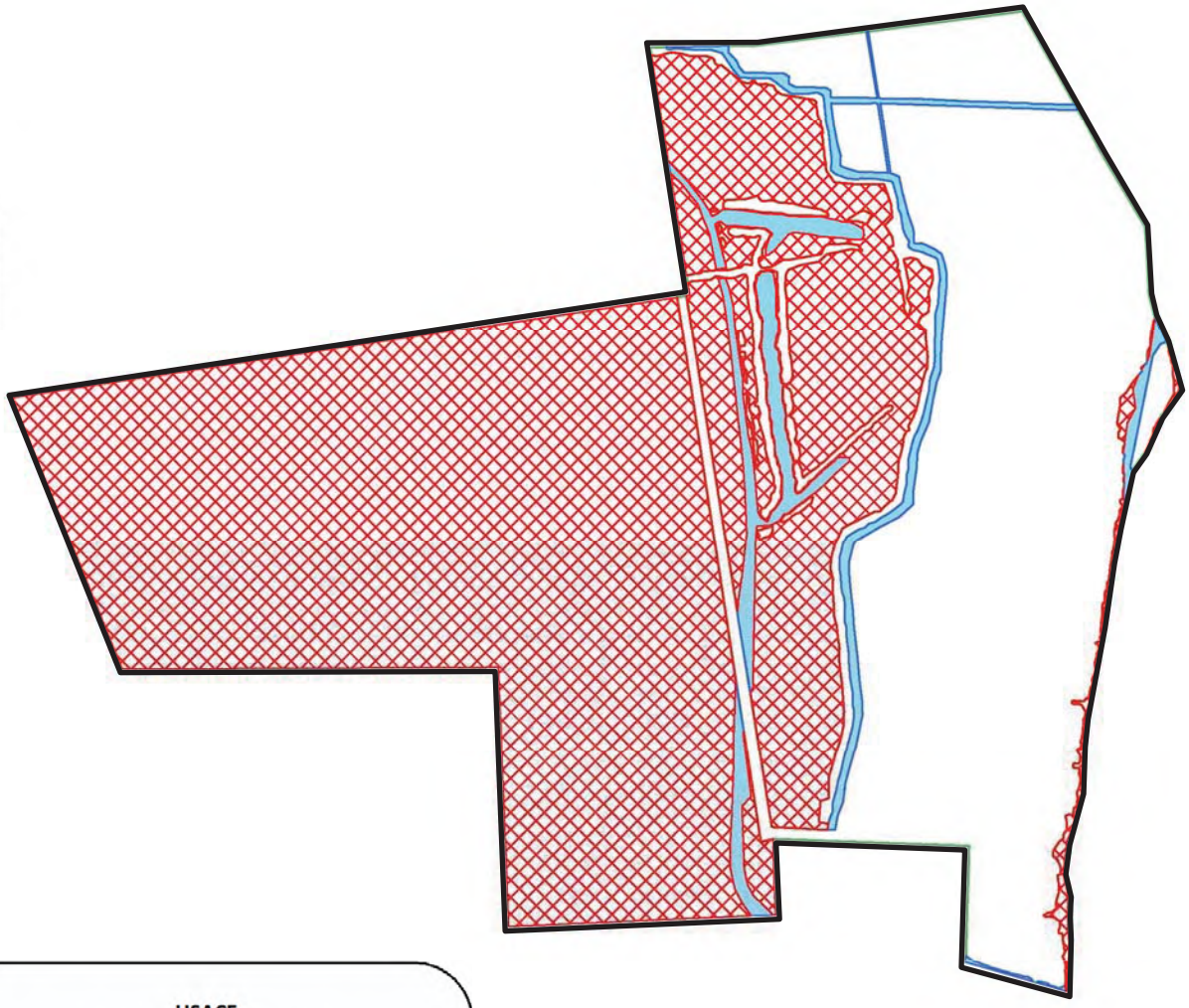
for Martin S. Mayer
Chief, Regulatory Branch

Enclosures

United States Army Corps of Engineers

Approved Jurisdictional Determination

NOT PART OF DETERMINATION



NOT PART OF DETERMINATION

NOT PART OF DETERMINATION

NOT PART OF DETERMINATION

USACE

In House: 22 February, 2018

Botanist: M. Jeffrey Linville

For: Aaron Landry

Account # MVN-2017-01494-SL

Wetlands

JD Review Area

Non-Wetland Waters

Uplands

0 500 1,000 1,500 2,000

Feet

N

WARRIOR TRACT
WETLAND DETERMINATION EXHIBIT

TERREBONNE PARISH, LA

Drawing No.:

Date: 02/21/2018 Author: JKP

FIGURE 5

J.M. Burguières Co., LTD

Document Path: N:\Mitigation Banks\Cedar Grove Amendment One\Mapping\GIS Projects (.MXD)\JD\JD_CGMB_WetlandDeterminationExhibit_FIGURE5_FULL.mxd

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, NEW ORLEANS DISTRICT
7400 LEAKE AVE
NEW ORLEANS LA 70118-3651

March 22, 2019

Operations Division
Surveillance and Enforcement Section

Mr. Aaron Landry
J.M. Burguieres Company Limited
2205 West Pinehook Road, Suite 200
Lafayette, LA 70508

Dear Mr. Landry:

Reference is made to your request, on behalf of JMB Partnership, LLC, for a U.S. Army Corps of Engineers' jurisdictional determination on property located in Section 68, Township 18 South, Range 18 East, Terrebonne Parish, Louisiana (enclosed map). Specifically, this property is identified as 858.8 acres east of Louisiana Highway 57 in Houma, also known as the Warrior Tract North Addition.

A field inspection of the property was conducted on March 20, 2019. Based on the results of this investigation and information provided with your request, we have determined that part of this property is wetland and may be 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 jurisdictional wetlands. Also, a portion of this wetland and the waters indicated in blue on the map may be subject to Corps' jurisdiction under Section 10 of the Rivers and Harbors Act (RHA). A DA Section 10 permit will be required prior to any work in waters of the United States, including wetlands, subject to Corps jurisdiction under Section 10 of the RHA.

You and your client are advised that this preliminary 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.

Additionally, federal projects are known to exist in this area that may require further engineering review prior to the initiation of any activities on this site. For more information, please contact Mr. Ray Newman of our Operations Division at (504) 862-1828.

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 Mr. Jeffrey Linville at (504) 862-2227 and reference our Account No. MVN-2017-01494-1-SL. If you have specific questions regarding the permit process or permit applications, please contact our Eastern Evaluation Section at (504) 862-2292.

Sincerely,

[redacted]

for Martin S. Mayer
Chief, Regulatory Branch

Enclosures

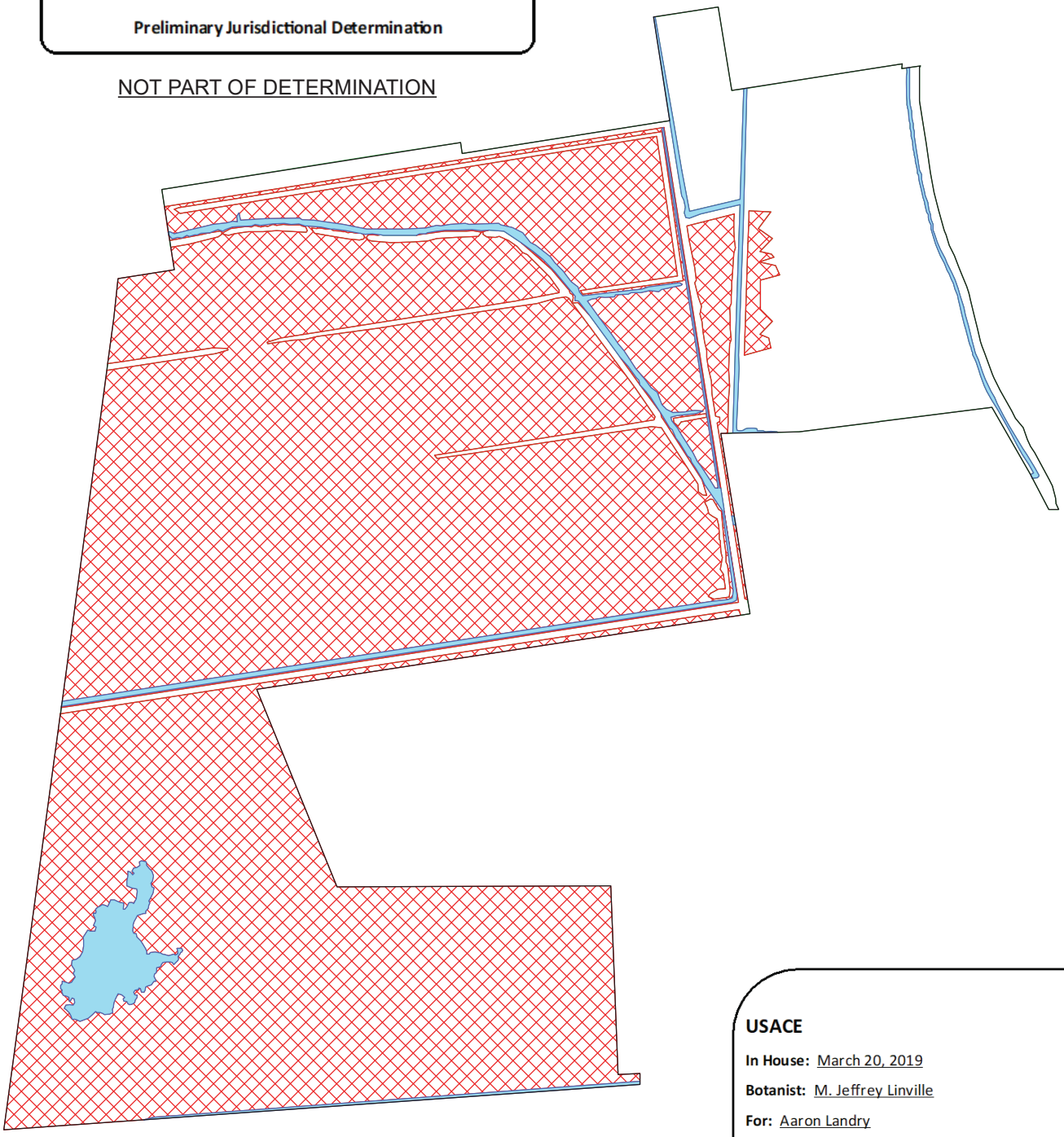
United States Army Corps of Engineers

Preliminary Jurisdictional Determination

NOT PART OF DETERMINATION

NOT PART OF DETERMINATION

NOT PART OF DETERMINATION



NOT PART OF DETERMINATIO

USACE

In House: March 20, 2019

Botanist: M. Jeffrey Linville

For: Aaron Landry

Account # MVN-2017-01494-1-SL

Wetlands

Non-Wetland Waters

J. D. Review Area

0 625 1,250 1,875 2,500

Feet

1 in = 1,250 ft

WARRIOR TRACT - NORTH ADDITION
WETLAND DETERMINATION EXHIBIT
TERREBONNE PARISH, LA

Coordinate System: *NAD83 LOUISIANA SOUTH US SURVEY FEET* Date: *03/20/2019*

Vertical Datum: *NAVD88 FEET* Author: *JKP*

FIGURE 05

JMB Partnership, LLC

Document Path: N:\Mitigation Banks\Cedar Grove Amendment One\Mapping\GIS Projects (.MXD)\JD\JD_North\NorthEast\3.20.2019_JD_CGMB_A1_NA_WetlandDeterminationExhibit.mxd