4 2 0 4 8

Miles

Note: Base map from LA Department of Transportation and Development "Official Map of Louisiana 2000"

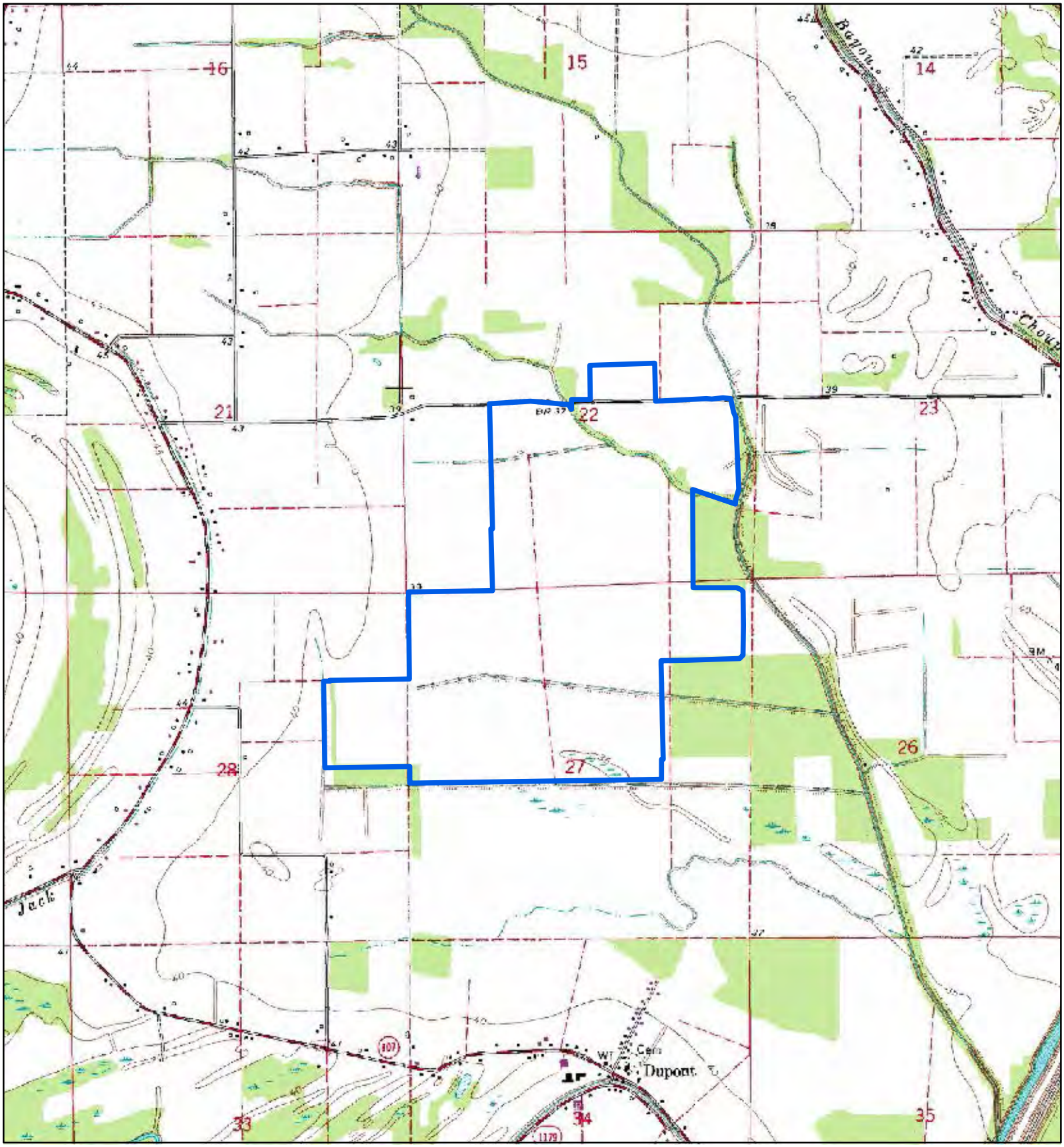
Bayou Choupique Mitigation Bank

VICINITY MAP

Avoyelles Parish, LA

Created :	JMJ/ArcView
Approved :	DEB
Date :	3/8/2011
Map No. :	F01_Vicinity Map_A.mxd

FIGURE 1



DELTA LAND SERVICES

N

2,000 1,000 0 2,000 4,000

Feet

Note: Base map from USGS 7.5-minute quadrangle "Plaucheville, LA"

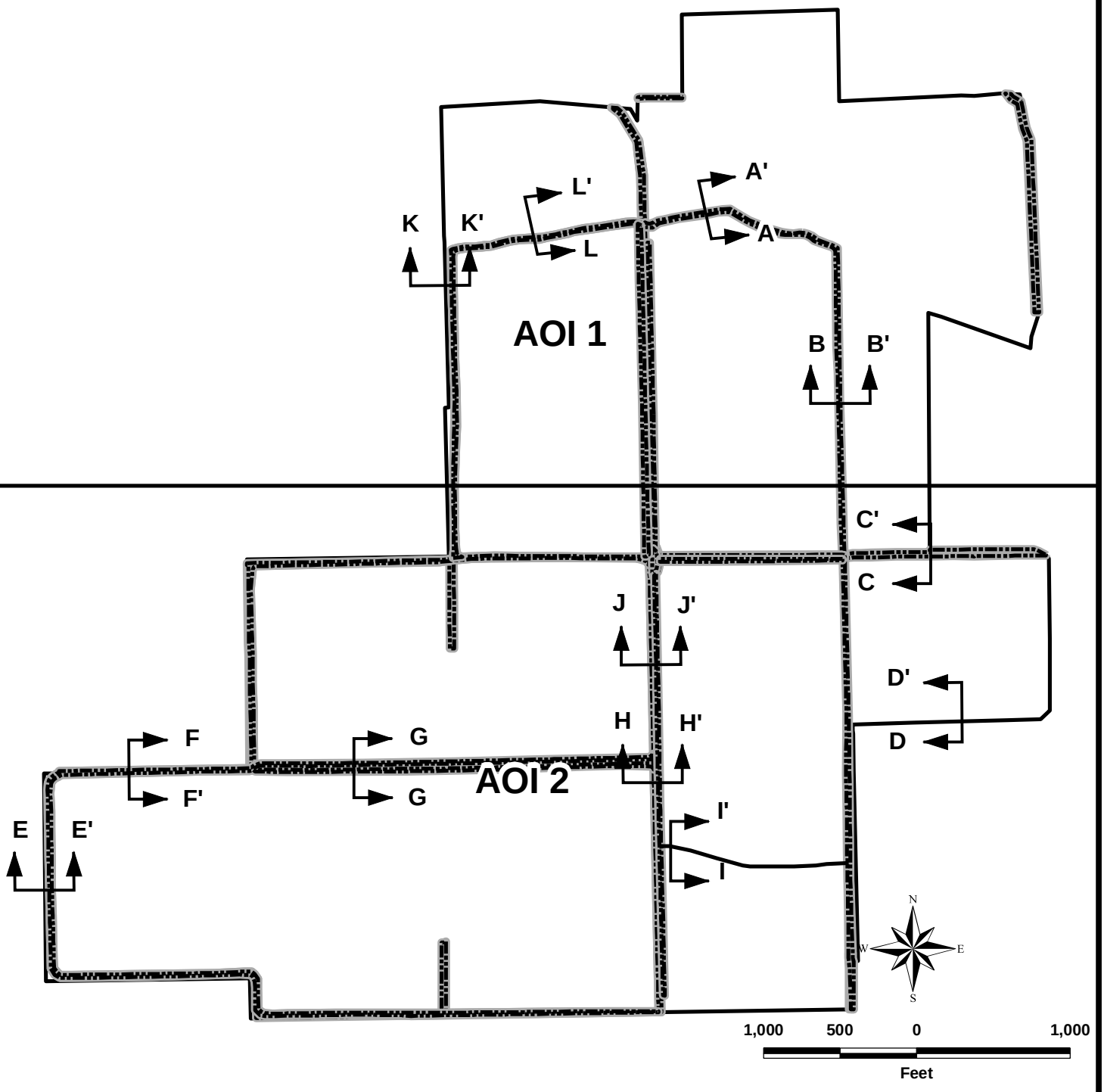
Bayou Choupique Mitigation Bank

USGS TOPOGRAPHIC MAP

Avoyelles Parish, LA

Created :	JMJ/ArcView
Approved :	DEB
Date :	3/8/2011
Map No. :	F02_24KQuad_A

FIGURE 2



Legend

- Project Area (595.4 Acres)
- Existing Canal/Ditch
- New Access Roads

DELTA LAND SERVICES

PORT ALLEN, LOUISIANA

BAYOU CHOUPIQUE MITIGATION BANK

PLAN VIEW

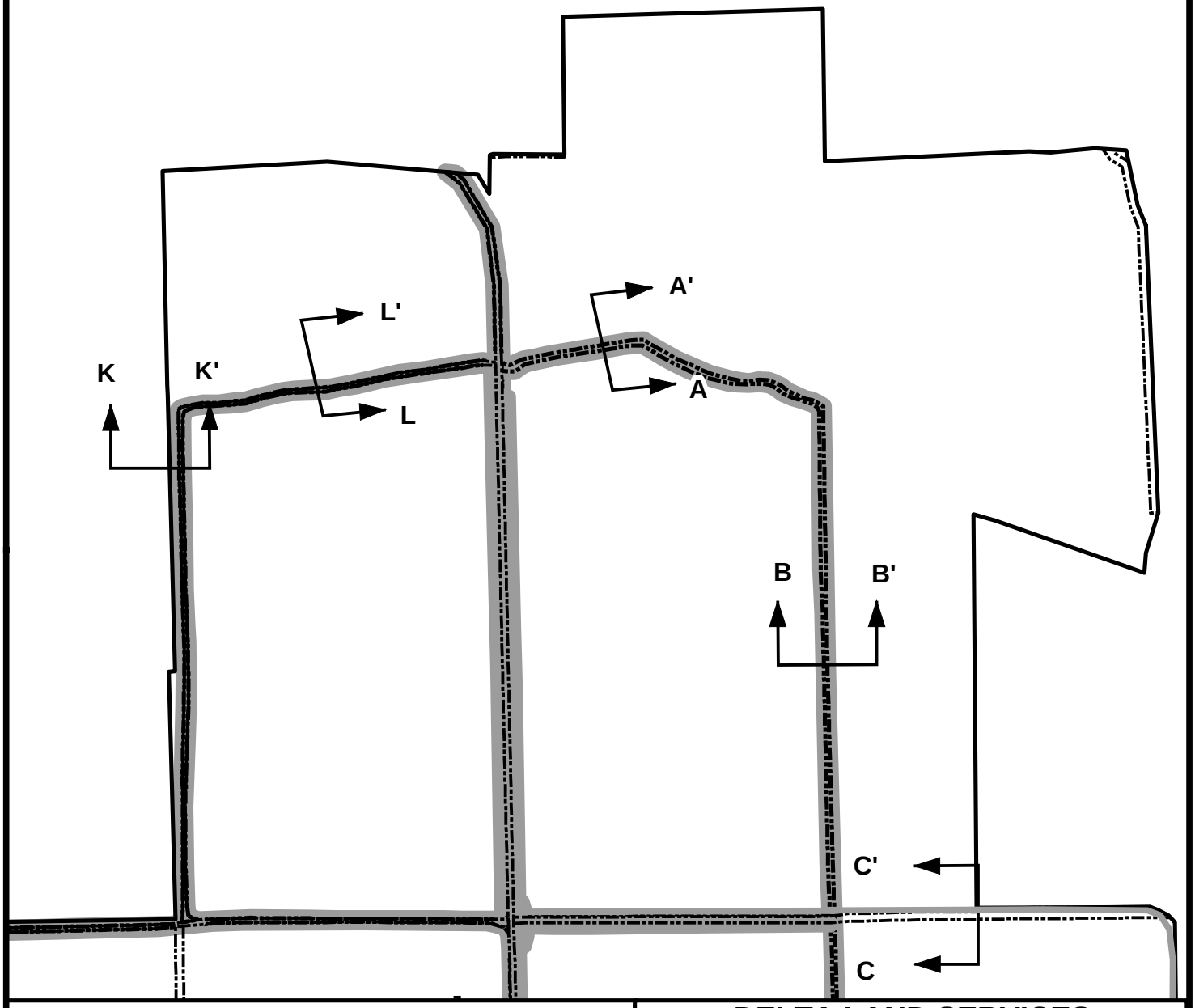
AVOYELLES PARISH

Drawn:	LJW/AM9.3
Checked:	--
Approved:	TEW
Date:	2/25/11
Dwg. No.:	A6688-13

C-K ASSOCIATES, LLC
ENVIRONMENTAL & ENGINEERING CONSULTANTS

ESRI AUTHORIZED CONSULTANT

FIGURE E-1



Legend

- Project Area (595.4 Acres)
- Existing Access Road
- Access Road To Be Degraded
- Canal\Ditch To Be Filled

N
W E
S

500 250 0 500

Feet

DELTA LAND SERVICES

PORT ALLEN, LOUISIANA

BAYOU CHOUPIQUE MITIGATION BANK

PLAN VIEW
AOI 1

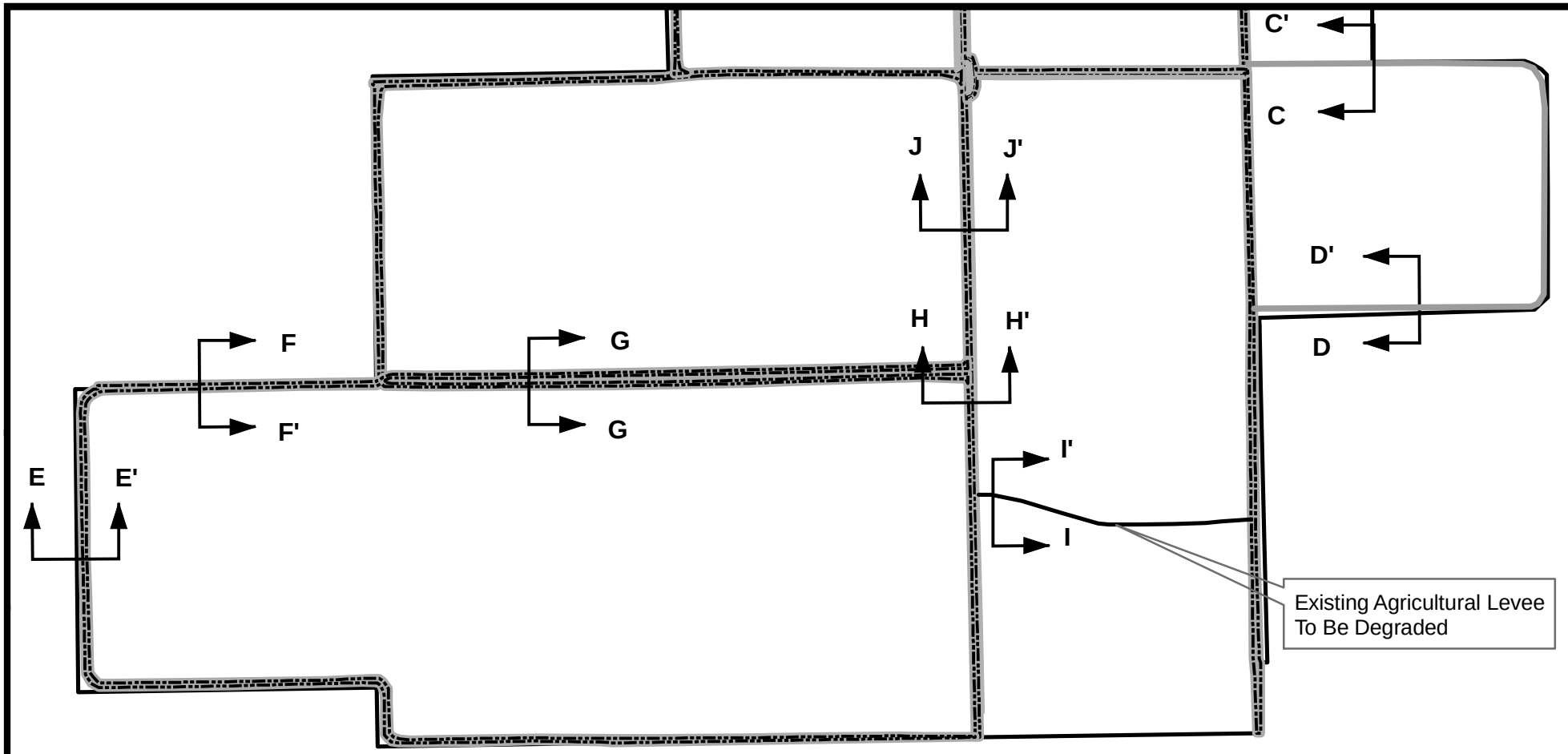
AVOYELLES PARISH

C-K ASSOCIATES, LLC

ENVIRONMENTAL & ENGINEERING CONSULTANTS

Drawn:	LJW/AM9.3
Checked:	--
Approved:	TEW
Date:	2/25/11
Dwg. No.:	A6688-14

FIGURE E-1A



Legend

- Project Area (595.4 Acres)
- Access Roads
- Canal\Ditch

N
W E
S

500 250 0 500

Feet

DELTA LAND SERVICES

PORT ALLEN, LOUISIANA

BAYOU CHOUPIQUE MITIGATION BANK

PLAN VIEW
AOI 2

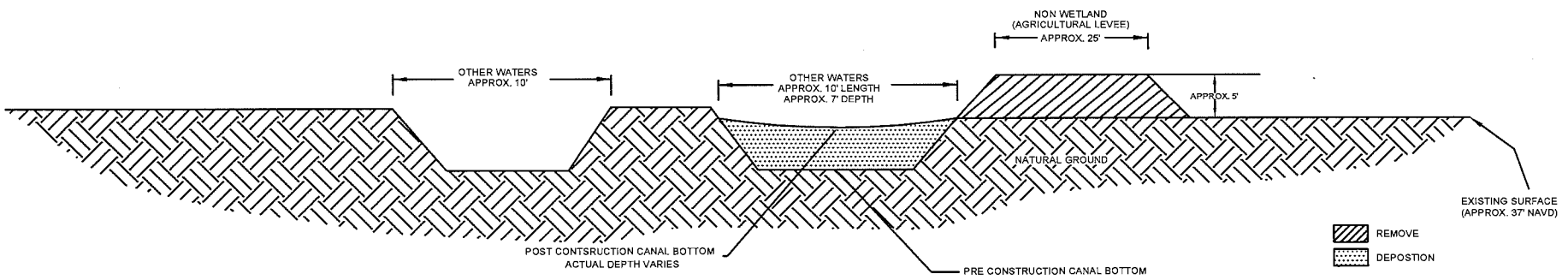
AVOYELLES PARISH

C-K ASSOCIATES, LLC

ENVIRONMENTAL & ENGINEERING CONSULTANTS

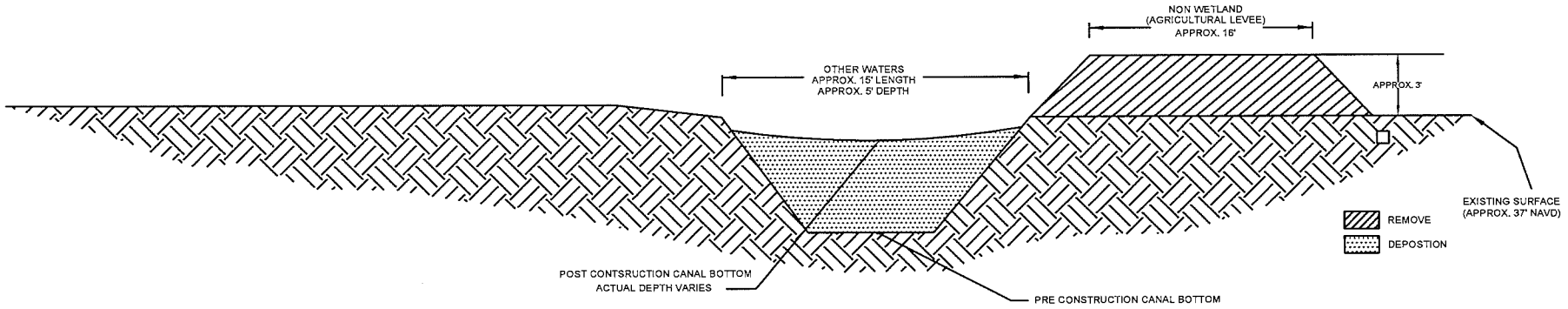
Drawn:	LJW/AM9.3
Checked:	--
Approved:	TEW
Date:	2/25/11
Dwg. No.:	A6688-26

FIGURE E-1B



TYPICAL CROSS-SECTION A-A'

NOT TO SCALE



TYPICAL CROSS-SECTION B-B'

NOT TO SCALE

NOTES:

1. ELEVATIONS IN NAVD FROM LIDAR.

DELTA LAND SERVICES
PORT ALLEN, LOUISIANA

BAYOU CHOUPIQUE MITIGATION BANK PROSPECTUS

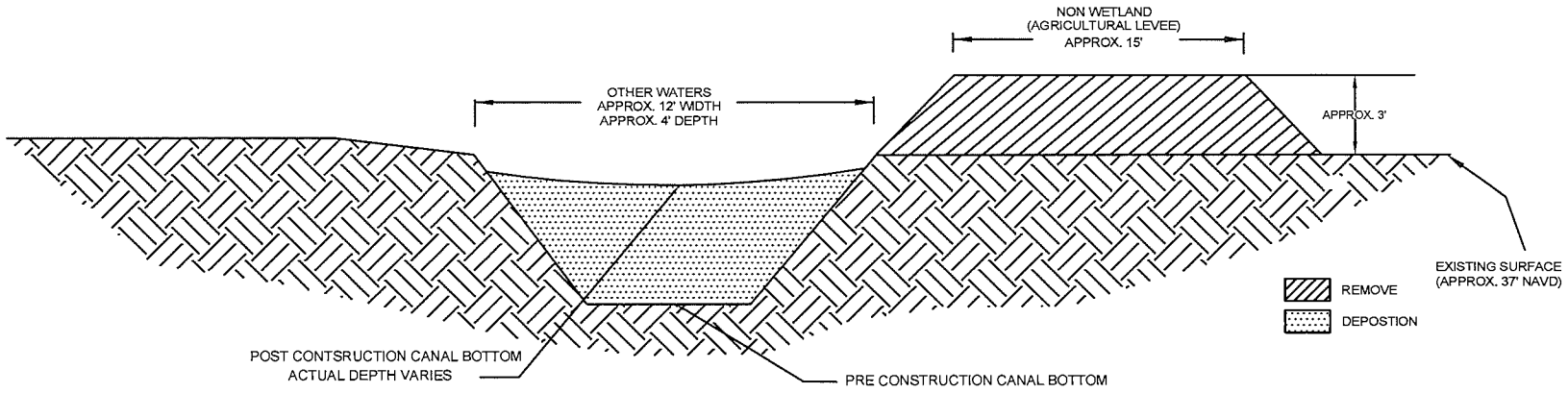
CROSS-SECTIONS A-A' AND B-B'

CAMERON PARISH, LA

C-K ASSOCIATES, LLC
ENVIRONMENTAL & ENGINEERING CONSULTANTS

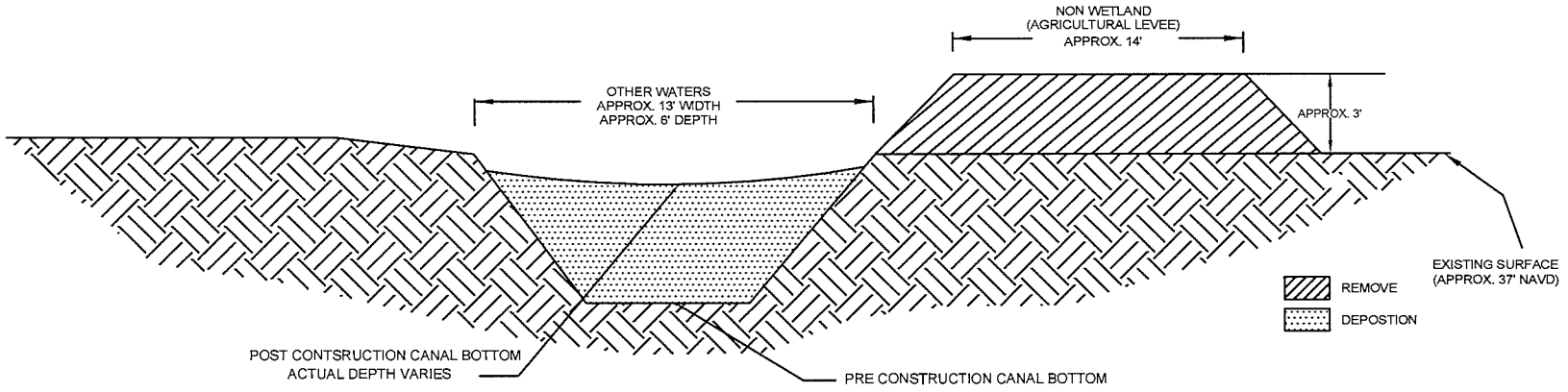
Drawn:	LJW/ACAD
GT Checked:	-
Checked:	TEW
Approved:	
Date:	02/02/11
Dwg. No.:	A6688-20

FIGURE E -2



TYPICAL CROSS-SECTION C-C'

NOT TO SCALE



TYPICAL CROSS-SECTION D-D'

NOT TO SCALE

NOTES:

1. ELEVATIONS IN NAVD FROM LIDAR.

DELTA LAND SERVICES
PORT ALLEN, LOUISIANA

BAYOU CHOUPIQUE MITIGATION BANK PROSPECTUS

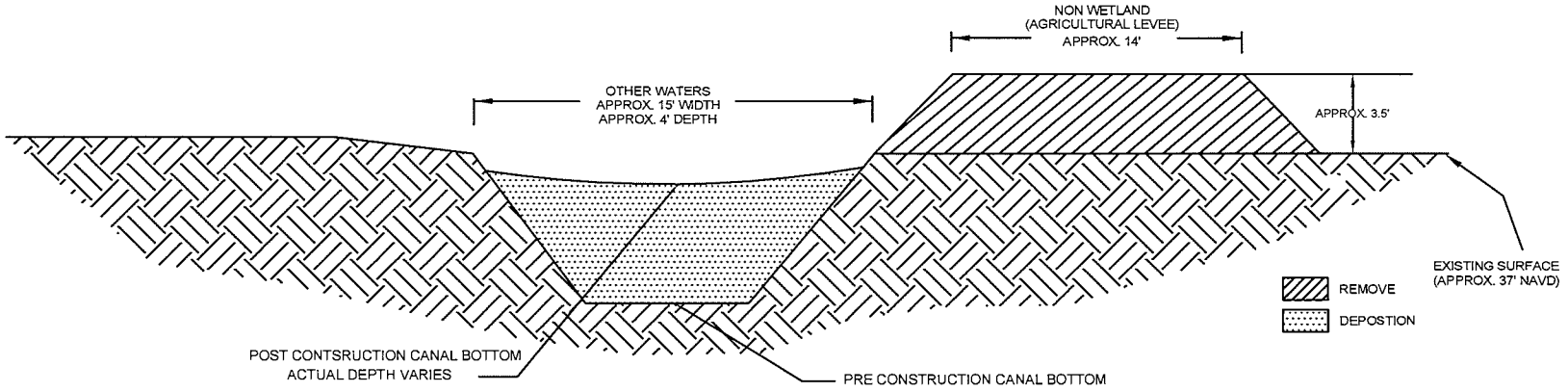
CROSS-SECTIONS C-C' AND D-D'

AVOYELLES PARISH, LA

C-K ASSOCIATES, LLC
ENVIRONMENTAL & ENGINEERING CONSULTANTS

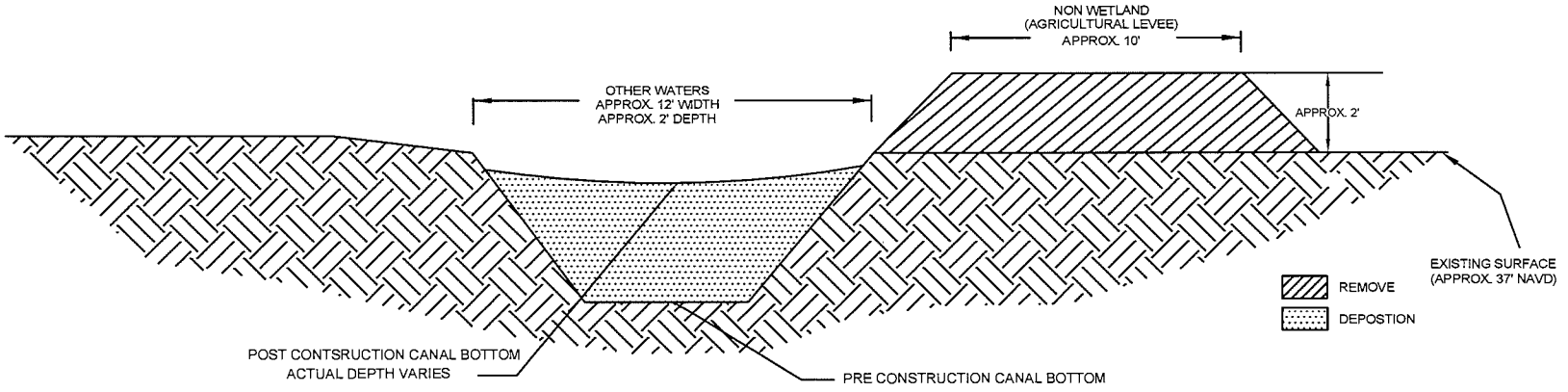
Drawn:	LJW/ACAD
GT Checked:	-
Checked:	TEW
Approved:	
Date:	02/28/11
Dwg. No.:	A6688-21

FIGURE E - 3



TYPICAL CROSS-SECTION E-E'

NOT TO SCALE



TYPICAL CROSS-SECTION F-F'

NOT TO SCALE

NOTES:

1. ELEVATIONS IN NAVD FROM LIDAR.

DELTA LAND SERVICES
PORT ALLEN, LOUISIANA

BAYOU CHOUPIQUE MITIGATION BANK PROSPECTUS

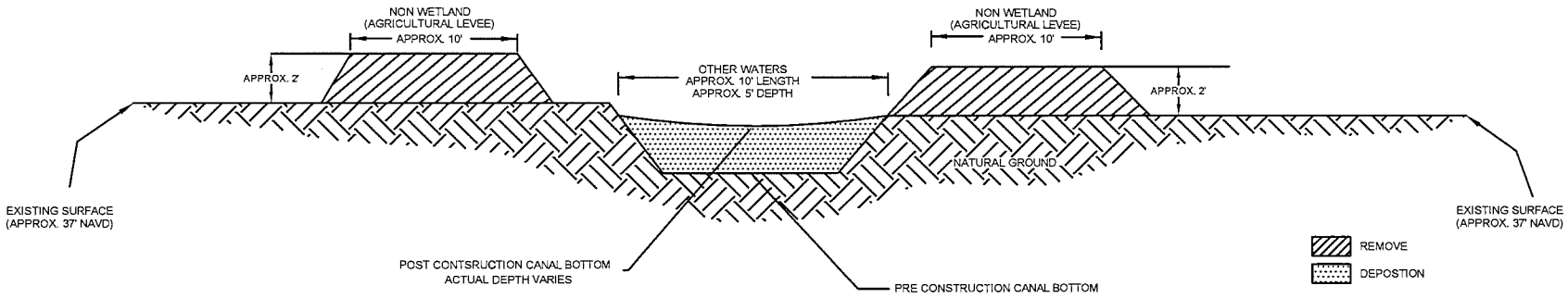
CROSS-SECTIONS E-E' AND F-F'

AVOYELLES PARISH, LA

C-K ASSOCIATES, LLC
ENVIRONMENTAL & ENGINEERING CONSULTANTS

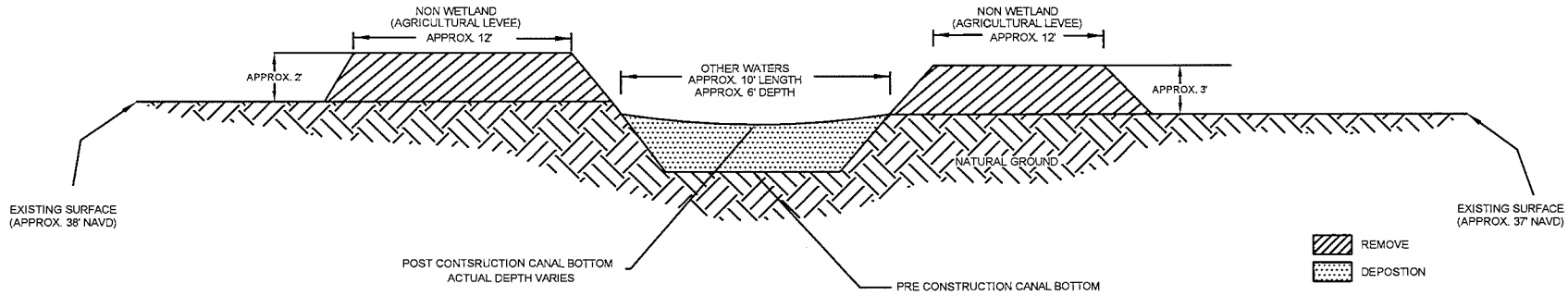
Drawn:	LJW/ACAD
GT Checked:	-
Checked:	TEW
Approved:	
Date:	02/28/11
Dwg. No.:	A6688-22

FIGURE E - 4



TYPICAL CROSS-SECTION G-G'

NOT TO SCALE



TYPICAL CROSS-SECTION H-H'

NOT TO SCALE

NOTES:

1. ELEVATIONS IN NAVD FROM LIDAR.

DELTA LAND SERVICES
PORT ALLEN, LOUISIANA

BAYOU CHOUPIQUE MITIGATION BANK PROSPECTUS

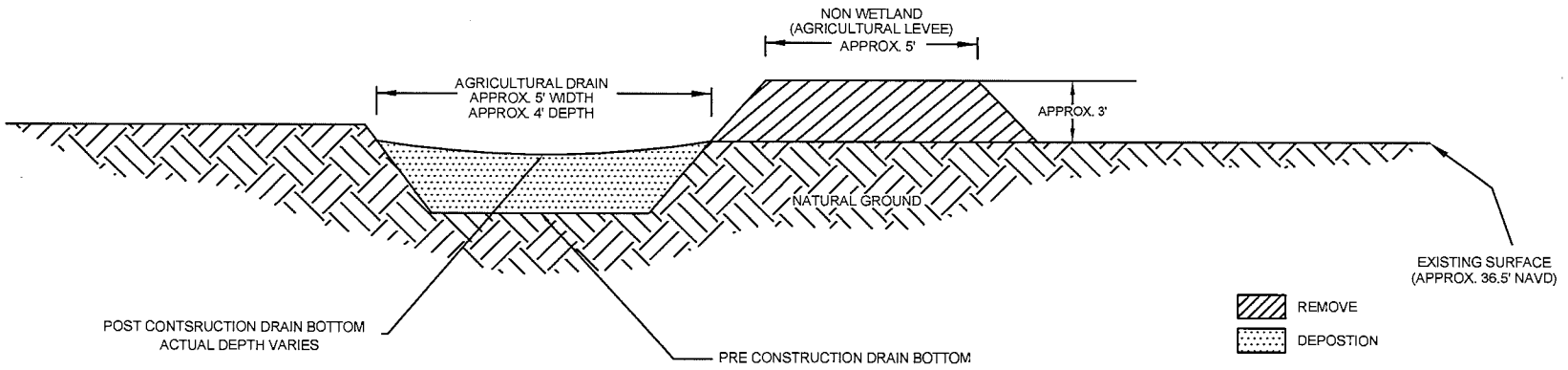
CROSS-SECTIONS G-G' AND H-H'

AVOYELLES PARISH, LA

C-K ASSOCIATES, LLC
ENVIRONMENTAL & ENGINEERING CONSULTANTS

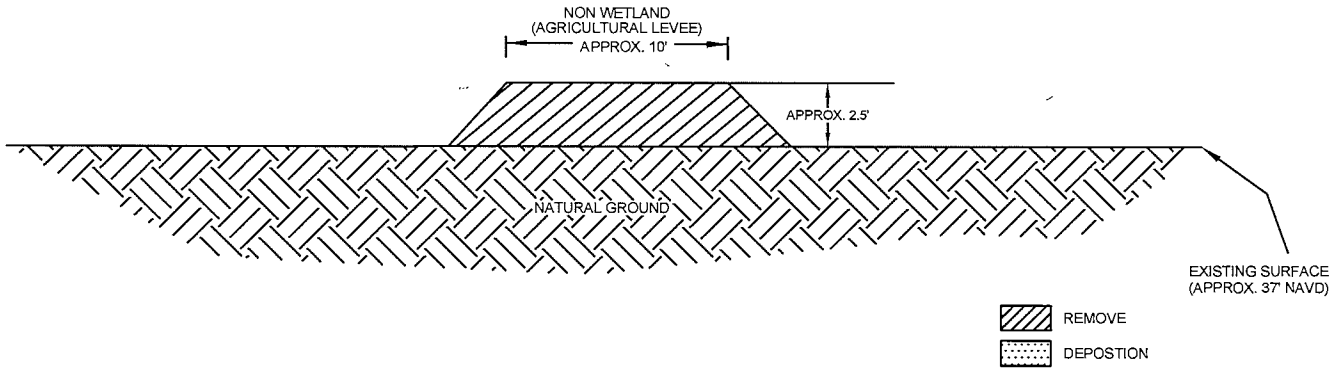
Drawn:	LJW/ACAD
GT Checked:	-
Checked:	TEW
Approved:	
Date:	02/28/11
Dwg. No.:	A6688-23

FIGURE E - 5



TYPICAL CROSS-SECTION I-I'

NOT TO SCALE



TYPICAL CROSS-SECTION J-J'

NOT TO SCALE

NOTES:

1. ELEVATIONS IN NAVD FROM LIDAR.

DELTA LAND SERVICES
PORT ALLEN, LOUISIANA

BAYOU CHOUPIQUE MITIGATION BANK PROSPECTUS

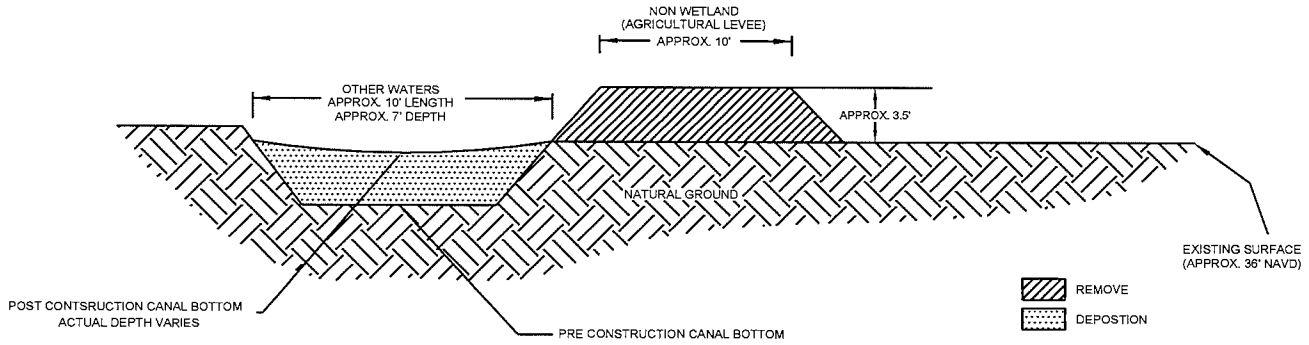
CROSS-SECTIONS I-I' AND J-J'

AVOYELLES PARISH, LA

C-K ASSOCIATES, LLC
ENVIRONMENTAL & ENGINEERING CONSULTANTS

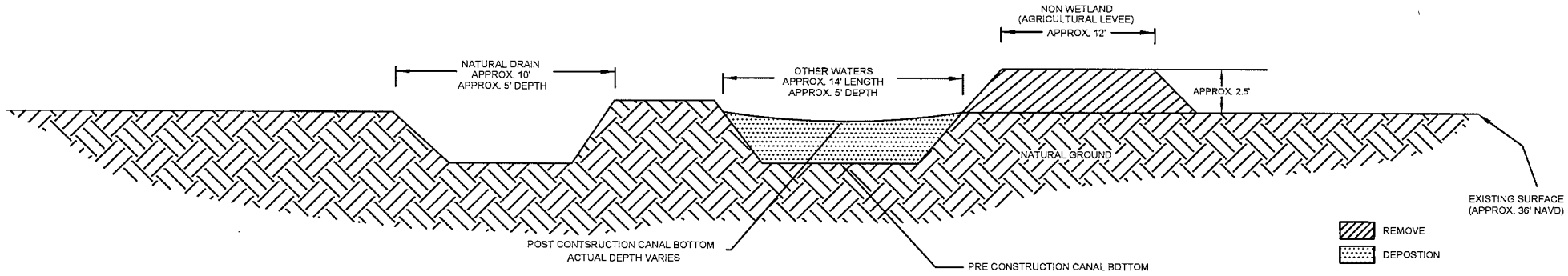
Drawn:	LJW/ACAD
GT Checked:	-
Checked:	TEW
Approved:	
Date:	02/28/11
Dwg. No.:	A6688-24

FIGURE E - 6



TYPICAL CROSS-SECTION K-K'

NOT TO SCALE



TYPICAL CROSS-SECTION L-L'

NOT TO SCALE

NOTES:

1. ELEVATIONS IN NAVD FROM LIDAR.

DELTA LAND SERVICES
PORT ALLEN, LOUISIANA

BAYOU CHOUPIQUE MITIGATION BANK PROSPECTUS

CROSS-SECTIONS K-K' AND L-L'

AVOYELLES PARISH, LA

C-K ASSOCIATES, LLC
ENVIRONMENTAL & ENGINEERING CONSULTANTS

Drawn:	LJW/ACAD
GT Checked:	-
Checked:	TEW
Approved:	
Date:	02/28/11
Dwg. No.:	A6688-25

FIGURE E - 7

TABLE OF CONTENTS

ATTACHMENTS

1.0 INTRODUCTION AND SITE LOCATION

The purpose of this prospectus is to provide a summary of Delta Land Services, LLC (DLS) proposal to establish and operate the 595.44-acre Bayou Choupique Mitigation Bank (BCMB). The BCMB will be established and operated per the requirements of 33 CFR 332.8 (2). The proposed mitigation property is located in Sections 22, 27, and 28, Township 1 South, Range 5 East at latitude 30.949325°North and longitude 91.950425°West (approximate center). Generally, the project area is located 0.5 mile north of the town of Dupont, 2.0 miles southeast of the town of Plaucheville, and 1.0 mile east of LA Highway 107 in Avoyelles Parish, LA just west of the Bayou des Glaises Diversion Canal (Attachment A, Figures 1 and 2). A survey of a 1,449.87-acre tract of land, fully inclusive of the proposed mitigation property, was conducted by Patin Engineers and Surveyors in December 2010 and certified by Mr. Cletus Langlois (LA Registration No. 4723) on January 6, 2011. Within the surveyed tract of land, the following legal description of the proposed mitigation area is as follows:

A portion of land together with all improvements identified as Bayou Choupique Tract. Said Tract being calculated as 595.4 Acres, being located in Sections 22, 27 & 28 Township 1 South, Range 5 East, Avoyelles Parish, Louisiana, being more particularly described as follows:

Commencing at a point (P.O.C.) being of commencement the Section Corner common to Section 27, 28, 33 & 34, Township 1 South, Range 5 East, thence N 1°53'34" E a distance of 2390.04 feet to a calculated point also being the point of beginning (P.O.B.); Thence N 0°05'30" E a distance of 261.69 feet to a calculated point; thence N 89°51'37" W a distance of 1329.62 feet to a calculated point; thence N 0°19'50" E a distance of 1349.74 feet to a calculated point; thence S 89°53'45" E a distance of 100.00 feet to a calculated point; thence N 0°19'50" E a distance of 15.00 feet to a calculated point; thence S 89°53'45" E a distance of 1241.32 feet to a calculated point; thence N 0°12'27" E a distance of 1361.59 feet to a calculated point; thence S 89°55'43" E a distance of 1317.86 feet to a calculated point; thence N 0°35'48" W a distance of 967.68 feet to a calculated point; thence N 89°24'12" E a distance of 25.00 feet to a calculated point; thence N 0°35'48" W a distance of 1119.14 feet to a calculated point; thence N 0°24'29" W a distance of 837.43 feet to a calculated point; thence N 87°38'51" E a distance of 645.59 feet to a calculated point; thence S 84°05'36" E a distance of 593.15 feet to a calculated point; thence S 29°59'14" E a distance of 86.22 feet to a calculated point; thence N 1°23'11" E a distance of 152.35 feet to a calculated point; thence N 79°22'51" E a distance of 13.07 feet to a calculated point; thence S 88°50'16" E a distance of 279.37 feet to a calculated point; thence N 0°25'39" E a distance of 536.37 feet to a calculated point; thence N 89°10'45" E a distance of 1017.56 feet to a calculated point; thence S 0°07'33" W a distance of 595.36 feet to a calculated point; thence N 88°10'00" E a distance of 798.08 feet to a calculated point; thence S 86°25'23" E a distance of 85.26 feet to a calculated point; thence N 85°30'41" E a distance of 173.53 feet to a calculated point; thence S 85°42'01" E a distance of 124.41 feet to a calculated point; thence S 10°45'28" E a distance of 219.28 feet to a calculated point; thence S 20°25'13" E a distance of 85.13 feet to a calculated point; thence S 1°36'40" E a distance of 1123.90

feet to a calculated point; thence S 17°47'07" W a distance of 165.97 feet to a calculated point; thence S 5°42'51" W a distance of 77.45 feet to a calculated point; thence N 69°39'31" W a distance of 618.98 feet to a calculated point; thence N 72°48'54" W a distance of 88.61 feet to a calculated point; thence S 0°30'31" W a distance of 1539.16 feet to a calculated point; thence S 89°24'13" E a distance of 678.79 feet to a calculated point; thence S 68°25'37" E a distance of 36.71 feet to a calculated point; thence S 59°50'01" E a distance of 45.04 feet to a calculated point; thence S 42°29’07" E a distance of 36.08 feet to a calculated point; thence S 0°20'45" W a distance of 525.05 feet to a calculated point; thence S 1°06'13" W a distance of 467.50 feet to a calculated point; thence S 47°29'17" W a distance of 80.58 feet to a calculated point; thence S 89°14'00" W a distance of 220.08 feet to a calculated point; thence S 89°17'16" W a distance of 608.52 feet to a calculated point; thence S 89°18'35" W a distance of 397.60 feet to a calculated point; thence S 0°23'21" E a distance of 992.29 feet to a calculated point; thence S 0°21'49" E a distance of 545.85 feet to a calculated point; thence N 89°36'09" W a distance of 29.12 feet to a calculated point; thence S 0°54'23" W a distance of 314.51 feet to a calculated point; thence N 89°56'26" W a distance of 1282.96 feet to a calculated point; thence N 89°55'55" W a distance of 2650.85 feet to a calculated point and being the point of beginning (P.O.B.).

2.0 GOALS AND OBJECTIVES

The goal of the BCMB is to provide compensatory mitigation for unavoidable impacts to “Waters of the United States” authorized through the issuance of Department of the Army Permits pursuant to Sections 9 and 10 of the Rivers and Harbors Act of 1899 and Section 404 of the Clean Water Act of 1972. This will be accomplished by the re-establishment of 520.7 acres of bottomland hardwoods and baldcypress swamp wetland ecosystem. Specifically, this will consist of 418.1 acres of bottomland hardwoods re-establishment and 102.6 acres of baldcypress swamp re-establishment with 74.7 non-mitigation credit acres existing as maintained wildlife openings, access roads, and perimeter buffers. Specifically, the project objectives are as follows:

- To restore, protect and manage the 595.4-acre BCMB as a wetland conservation area,
- To re-establish the native bottomland hardwood species community within 418.1 acres of the BCMB,
- Te re-establish the native baldcypress swamp species community within 102.6 acres of the BCMB
- To protect 21.9 acres of existing bottomland hardwood forests
- To ensure long term viability and sustainability of the BCMB through active and adaptive management including, but not limited to invasive species control, appropriate monitoring, and long term maintenance,
- To establish financial assurances needed to achieve long term success criteria, and
- To provide compensatory mitigation for unavoidable wetland impacts associated with the issuance of Department of the Army Permits pursuant to Sections 9 and 10 of the Rivers and Harbors Act of 1899 and Section 404 of the Clean Water Act

of 1972 within the U.S. Army Corps of Engineers (USACE), New Orleans District (CEMVN).

The restoration of bottomland hardwoods within the BCMB will provide additional wetland functions and values which are not currently being realized under the existing land use and condition. These additional functions and values include, but are not limited to, an improvement in water quality, wildlife habitat, and continuity of existing bottomland hardwood forests. These benefits will be achieved through a reduction in runoff associated with agricultural operations, and increase in surface water retention time, and vegetative nutrient uptake following the appropriate vegetative plantings.

3.0 ESTABLISHMENT AND OPERATION

Delta Land Services (DLS) will serve as the Sponsor of the BCMB and will establish and operate the BCMB in compliance with all conditions of Sponsorship required by the CEMVN and outlined in 33 CFR 332.8. This includes construction, monitoring, reporting, providing financial assurances, providing for long-term management, and maintaining appropriate ledgers. Details on the operation of the BCMB will be further described in the Mitigation Banking Instrument per 33 CFR 332.8 (6).

4.0 PROPOSED BANK SERVICE AREA

The BCMB is located within USGS eight-digit hydrologic unit code (HUC) or cataloging unit 08080102 which is the Bayou Teche Watershed. The Sponsor proposes that this serve as the primary service area and the cataloging unit 08080103 (Vermillion Basin) would serve as the secondary service area of the BCMB (Attachment A, Figure 3). Any use of the bank beyond these defined areas would be determined by the CEMVN on a case by case basis. According to the National Land Cover Database (MRLC 2011), the largest single land use within the Bayou Teche Watershed is for cultivated crop production. Much of this production utilizes intense practices such as traditional tillage and fertilizer and insecticide application. Retirement of marginal croplands and aforestation of these lands, such as the BCMB, will contribute to a reduction of nonpoint source runoff within the watershed.

5.0 GENERAL NEED AND TECHNICAL FEASIBILITY

The construction work required to complete restoration is routine in nature and feasible, consisting primarily of returning the improved drainage system to pre-agricultural surface elevations to the extent practicable and implementing the appropriate vegetative plantings of native species. The concept and feasibility of re-forestation of farmlands associated with the establishment of the BCMB have received much support in recent years. The proposed 595.4-acre BCMB was a functional forested wetland as recently as 1965. During the late 1960's, this area was cleared, drained and converted to fagricultural production as was thousands of acres of forested wetlands within the Southern Mississippi River Alluvial Plain. The property has been designated a prior-converted by the United States Department of Agriculture (USDA) Natural Resources Conservation

Services (NRCS) and remains in crop production as well as aquacultural use. Documentation from the USDA Farm Service Agency (FSA) and the Natural Resource Conservation Service (NRCS) is included as Attachment B. The re-forestation of prior-converted wetlands has been successfully performed in numerous projects and is a proven method in establishing wetland mitigation banks.

In addition to restoring wetland functions and values, restoration of forests near extant tracts of bottomland hardwoods will provide benefit to various species of wildlife such as Neaarctic-Neotropical migrant birds and the Louisiana black bear (*Ursus americanus luteolus*), a federally-listed threatened species. The Partners in Flight Bird Conservation Plan for the Mississippi Alluvial Valley recommends increasing the interior area of forested fragments to increase habitat for forest-dwelling, or silvicolous, bird species (Twedt et al. 1999). The planting of densely-spaced seedlings in areas within largely forested landscapes encourage the recruitment of breeding populations of thamnic and silvicolous bird species (Twedt et al. 2010). The BCMB is located west of existing bottomland hardwoods which were designated as critical habitat by the US Fish and Wildlife Service (USFWS) (Attachment A, Figure 4). The area is approximately eight miles west of this federally-designated zone. The re-forestation of existing agricultural lands within the BCMB will expand contiguous, extant forested habitat located between this site and critical habitat area which would provide for larger forested corridor establishment. Other benefits include providing food (hard and soft mast), escape cover, future den sites, and minimized human disturbance.

Overall, approximately 1,043 acres of contiguous forested wetland acreage will be created and protected, which includes the 595.4 acre proposed BCMB and an adjacent 448.3-acre agricultural field that has recently been utilized as a permittee-responsible mitigation site and which has been protected by a perpetual conservation servitude, will be retired from agricultural production in 2011, and reforested with bottomland hardwoods and baldcypress during the winter of 2012.

6.0 ECOLOGICAL SUITABILITY

The site is located in the Lower Mississippi River Alluvial Valley which is historically consisted of over 38,600 square miles of forest. Upon settlement by native American and European colonists, higher areas along ridges and natural levees were cleared. Lower lands were subsequently cleared following extensive drainage and implementation of flood control. Approximately 27,000 square miles were cleared and remaining forests were primarily relegated to small, isolated fragments (Twedt et al 2010).

As part of this clearing and agricultural converstion, the surface hydrology of the BCMB project area was altered to facilitate agricultural production. Drainage channels were created to move water efficiently throughout the site as needed for rice (*Oryza sativa*), soybean (*Glycine max*), sorghum (*Sorghum bicolor*), and crawfish production (The aforementioned and all subsequent plant scientific names are from NRCS 2010[1]). Levees were constructed to retain surface water for irrigation around the perimeter of individual fields as well as to provide for access for farm equipment.

The 595.4-acre BCMB represents the low landscape position between two slightly elevated ridges adjacent to large natural canals just west of the Atchafalaya Basin (Attachment A, Figure 5). These elevated ridges were converted to farmland prior to the conversion of the BCMB project area suggesting that the lower landscape position of the project area represented the natural drainage way for over 6,000 acres. According to NRCS published soil maps, approximately 70% of the project area is underlain by hydric soils; however, field investigations reveal that all of the soils within the proposed re-establishment area exhibit hydric characteristics indicating that the site formed under hydric conditions. Therefore, the restoration of surface hydrology by restoring a more natural hydrologic regime combined with the restoration of this historic vegetative community will result in the BCMB becoming a fully functional forested wetland.

6.1 Baseline Conditions

Until 1965, the entire BCMB was a forested wetland comprised of species representative of a typical bottomland hardwood ecosystem with areas along the higher, natural levees west of the project area were utilized for agricultural purposes (Attachment A, Figures 6 through 8). During the late 1960's, the BCMA project area was drained, cleared, and converted for agricultural crop production. The site continues to be utilized for agricultural production but does have some hardwood forest existing along natural drainages and forested areas occur on the east boundary of the project site (Attachment A, Figures 9 through 11).

A. Soils

The project area is underlain by Sharkey clay (Sa), Moreland clay (Ms) and Dundee silty clay loam (De) soils (NRCS 2008) (Attachment A, Figure 12). The Sharkey series is listed as a hydric soil whereas the Moreland and Dundee series are listed as non-hydric (NRCS 2008). Although Moreland clay is listed as nonhydric, the NRCS has identified this as a problem series for hydric determinations due to the red parent material. Given this, many Moreland clays do exhibit hydric indicators. During the field investigation and baseline assessment, DLS confirmed the presence of hydric soils based on indicators described in the Wetlands Delineation Manual and Regional Supplement (USACE 1987 and 2010, respectively). DLS also found that most soil samples, even in areas mapped as non-hydric by the NRCS, showed hydric features such as redoximorphic features of depleted matrix with iron accumulations.

B. Vegetation

The entire proposed BCMB is currently under a crop rotation of rice, sorghum, corn (*Zea mays*), soybean, and crawfish, since it was cleared and drained in the 1960's. At the time of the initial site visit in March 2010, the only observed vegetation within/near the cultivated fields were on the side slopes of containment levees and included southern dewberry (*Rubus trivialis*), Brazilian vervain

(*Verbena brasiliensis*), field clover (*Trifolium campestre*), barnyard grass (*Echinochloa crus-galli*), Carolina geranium (*Geranium caroliniana*), spinyfruit buttercup (*Ranunculus muricatus*), curly dock (*Rumex crispus*), yellow thistle (*Cirsium horridulum*), Canada goldenrod (*Solidago canadensis*), catchweed (*Galium aparine*), and narrow-leaved vetch (*Vicia sativa*).

The vegetation within the crawfish ponds and adjacent containment levee side slopes consists of alligator weed (*Alternanthera philoxeroides*), common rush (*Juncus effuses*), spikerush (*Eleocharis spp.)*, rice, cattails (*Typha latifolia*), spiny sowthistle (*Sonchus asper*), wheat (*Triticum aestivum spp*.), spinyfruit buttercup, and field clover.

C. Hydrology

The NRCS has classified all of the agricultural fields as prior-converted (PC) farmland (Attachment B). Significant hydrological modifications including ditch and levee construction have been used to control surface water levels for each specific crop. To accommodate rice and crawfish production, groundwater is pumped and channeled into individual fields and held for a desired period of time. This water is then drained via gravity flow into artificial irrigation/drainage canals. These canals drain to the south and east into various other channels in the project area and then discharge into the Bayou des Glaises Diversion Canal which parallels the West Atchafalaya Guide Levee (Attachment A, Figure 13).

Surface water within the BCMB will be primarily from rainfall and runoff from neighboring farmlands and rural housing, but also is likely to receive flood waters due to backwater flooding from the Bayou des Glaises Diversion Canal and associated tributaries. According to the landowner, significant portions of the property become inundated during times of high water in the Bayou des Glaises Diversion Canal and associated drainage ways as a result of over-bank flooding (Attachment C).

The water table for the Sharkey soil series is estimated to be at a depth of 12.2 inches below the soil surface. The heavy clay soil and high water table suggest slow infiltration and low permeability of surface water which results in saturated soils for long durations.

6.2 Jurisdictional Determination

On July 7, 2010, the CEMVN issued a Preliminary Jurisdictional Determination (PJD) MVN-2010-01012-SC for the southern portion of the property, which estimates approximately 21.2 acres of wetlands (mostly existing forest), approximately 34,000 linear feet of other waters, and 1,090.3 acres of non-wetland (PC). On February 2, 2011, a PJD MVN-2010-02429 was issued for the remainder of the property that estimates approximately 3.0 acres of forested

wetlands, 0.6 acres of other waters, and 84.2 acres of non-wetland (PC) (Attachment D).

7.0 MITIGATION WORK PLAN

The proposed mitigation work plan involves restoring surface hydrology, conducting appropriate vegetative plantings, and providing effective short and long term management on the 595.4-acre BCMB. Of this, approximately 74.7 acres will consist of non-mitigation credit features such as wildlife openings, food plots and access roads. The BCMB will provide for 520.7 wetland mitigation credit acres of re-established bottomland hardwood and baldcypress swamp habitat (Attachment A, Figures 14 and 15).

7.1 Surface Hydrology Restoration

In order to restore wetland hydrology and sheet flow throughout the BCMB, approximately 29,000 linear feet of existing dredged canals will be filled with earthen material from the existing spoil bank/levees to the extent practical (Attachment E, Figures 1-7). All existing rice field levees will be leveled to grade during restoration and site preparation activities. Any shallow cross drains designed to carry surface water from agricultural fields will be eliminated through site preparation activities (i.e. ripping). Select existing culverts will be removed.

There are no new roads proposed but select existing roads will remain in place to facilitate access to the property for monitoring/maintenance activities and specified permissive recreational activities (hunting, fishing, etc.). The existing north-south access road (i.e. main access road) is a well-maintained roadway that is approximately 12-24 inches above the surrounding grade. This roadway will remain in its current condition and select culverts will remain in this road to facilitate the flow of surface water across the project area. All other access roads will be degraded to the surrounding grade. DLS anticipates little to no long-term structural management to ensure hydrologic restoration.

7.2 Vegetative Plantings

Baldcypress swamp areas will occupy the portions of the BCMB that are in the range of 34 to 35 feet NAVD or lower as these areas are subject to more frequent flooding while the bottomland hardwood species will occupy higher portions of the elevation range. Bottomland hardwood re-establishment activities will be accomplished by preparing the site as needed (mowing, disking, herbicide, etc.) during the fall of 2011. The re-establishment areas will be planted during the non-growing season (December 15, 2011 to March 15, 2012). Appropriate seedlings of bottomland hardwood and baldcypress swamp habitat species, including a mixture of both hard mast and soft mast will be planted at approximately 9-foot x 9-foot spacing at an initial stand density of approximately 538 stems per acre. For the bottomland hardwoods, hard mast species shall

comprise between 50% and 70% of the bottomland hardwood planted seedlings. For the baldcypress swamp area, baldcypress shall comprise between 60 to 70% of the species composition. Seedlings will be mixed prior to or during planting so that areas are not comprised of a single species. The selected species listed in Table 1 were based upon species listed by the Louisiana Natural Heritage Program (2009) and Lester et al. (2005) for bottomland hardwoods and baldcypress, which are commonly available from commercial seedling nurseries.

Table 1. Potential Species PlantingList

Common Name	Scientific Name	Region 2 Wetland Indicator
Nuttall oak	*Quercus nuttalli*	OBL
willow oak	*Quercus phellos*	FACW-
cherrybark oak	*Quercus pagoda*	FAC+
water oak	*Quercus nigra*	FAC
cow oak	*Quercus michauxii*	FACW-
sweet pecan	*Carya illinoinensis*	FAC+
green ash	*Fraxinus pennsylvanica*	FACW
Drummond red maple	*Acer rubrum* var. *drummondii*	FAC
sweetgum	*Liquidambar styraciflua*	FAC+
common persimmon	*Diospyros virginiana*	FAC
sugarberry	*Celtis laevigata*	FACW
American elm	*Ulmus americana*	FACW
baldcypress	*Taxodium distichum*	OBL
mayhaw	*Crataegus opaca*	OBL
red mulberry	*Morus rubra*	FAC

Common Name	Scientific Name	Region 2 Wetland Indicator
baldcypress	*Taxodium distichum*	OBL
swamp blackgum	*Nyssa sylvatica biflora*	OBL
overcup oak	*Quercus lyrata*	OBL
Nuttall oak	*Quercus nuttalli*	OBL
water hickory	*Carya aquatica*	OBL
green ash	*Fraxinus pennsylvanica*	FACW
Drummond red maple	*Acer rubrum* var. *drummondii*	FAC
buttonbush	*Cephalanthus occidentalis*	OBL

The Sponsor acknowledges that control of invasive species is very important; however, the Sponsor does not foresee this becoming a major issue. The surrounding land use is comprised of active agriculture, pastures, and existing hardwood forest. Neither the project area nor the surrounding areas currently have a viable seed source for exotic species such as Chinese tallow (*Triadica sebifera*). However, invasive and undesirable species will be monitored by DLS and controlled throughout the entire project area as necessary. Nuisance wildlife species such feral hogs (*Sus scrofa*) will also be monitored and controlled as necessary.

8.0 WATER RIGHTS

Article 490 of the Louisiana Civil Code treats water resources under the theory of absolute ownership and rule of capture provided that such capture does not result in harm to neighboring properties. The site will be dependent primarily on precipitation, seasonally high water tables, and seasonal flooding due to its close proximity to the Bayou Des Glaises Diversion Canal. As such, long-term hydrology maintenance will not depend on the utilization of water captured from irrigation wells or nearby surface water (i.e. irrigation canals) or any temporary or long-term structures (levees, weirs, culverts, etc.). No adverse impacts on neighboring properties are anticipated from implementation of the project.

The contributing drainage area upstream of the BCMA is approximately 1,933 acres (Attachment A, Figure 16). This area was calculated using Light Detection and Ranging Data (LIDAR) contours and USGS topographic maps to determine surrounding elevations and drainage patterns.

9.0 OWNERSHIP, LONG-TERM MANAGEMENT AND SITE PROTECTION

The property is currently owned by JBM Investment, LLC. DLS will serve as Mitigation Sponsor, Long-Term Steward, and Manager of the BCMB and will comply with all conditions as the party responsible for mitigation that is required by the CEMVN. The property is located adjacent to but outside of the West Atchafalaya Floodway therefore, no flowage easements exist on the property. A title opinion was rendered by Mr. Stephen Jewell of Jewell & Jewell on March 17, 2011. The only recorded surface servitude within the BCMB is a 30-foot right-of-way (ROW) for Central Louisiana Electric Company Inc (CLECO) that begins at the southern property boundary of the property and extends north approximately 900 feet into the property. This ROW occupies approximately 2.0 acres. This acreage will remain in the project acreage but be maintained and managed as a wildlife opening or food plot area (i.e. non credit acreage). Additionally, the approximate 1.0 acre ROW for the existing Levi Gremillion Road was included in the project acreage but excluded from the mitigation credit acreage. Three mineral reservations were noted in the title opinion. The Sponsor does not anticipate the existence of these reservations to adversely affect the restoration, maintenance and protection of the Property. There is no established zoning which affects the Property or any adjacent properties and there are no existing or proposed residential or commercial developments adjacent to the Property.

A long-term management plan will be included with the Mitigation Banking Instrument which will detail long-term management needs and costs and identify a funding mechanism in accordance with 33 CFR 332.7 (d). The Sponsor (or Long-Term Steward)/ Owner, or its heirs, assigns or purchasers shall be responsible for protecting lands contained within the mitigation area in perpetuity. In order to provide for such protection, the Owner shall execute a perpetual conservation servitude (pursuant to the Louisiana Conservation Servitude Act, R.S. 9:1271 *et seq*.) on all acreage identified as the BCMB

and record it in the Mortgage and Conveyances Records Office of Avoyelles Parish. The Conservation Servitude will be held by a qualified, non-profit organization whose mission is to retain or protect the land's natural habitat, open space, scenic, educational, recreational, historical or cultural values.

10.0 SPONSOR QUALIFICATIONS

DLS is a company whose services include wetland restoration, natural resource management, recreational land management and wildlife management. DLS manages several land holdings and has participated in wetland restoration programs such as the Wetland Reserve Program (WRP) as well as mitigation programs. DLS' staff includes wetland scientists, wildlife biologists, foresters, wetland regulatory specialists and land management specialists. For further information on DLS, please visit www.deltaland-services.com. The contact information for responsible parties is as follows:

Sponsor: Delta Land Services, LLC; Attn: Daniel Bollich, 1090 Cinclare Drive Port Allen, LA 70767 Phone: (225) 343-3900 Email: daniel@deltaland-services.com.

Owner: JBM Investments, LLC; Attn: Danny Deshotel, 18567 Highway 15 Lettsworth, Louisiana 70753 Phone: (318) 359-3889 Email: patdeshotels@hotmail.com

11.0 CITATIONS

Lester G., S. Sorenson, P. Faulkner, C. Reid, and I. Maxit (2005) *Louisiana Comprehensive Wildlife Strategy (Wildlife Action Plan)*. Louisiana Department of Wildlife and Fisheries

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Natural Resources Conservation Service (2010)[1] *Web Soil Survey* [website]. U.S. Department of Agriculture, Natural Resources Conservation Service, *Soil Survey Staff*. Accessed September 12, 2010. Available URL: http://websoilsurvey.nrcs.usda.gov/app/

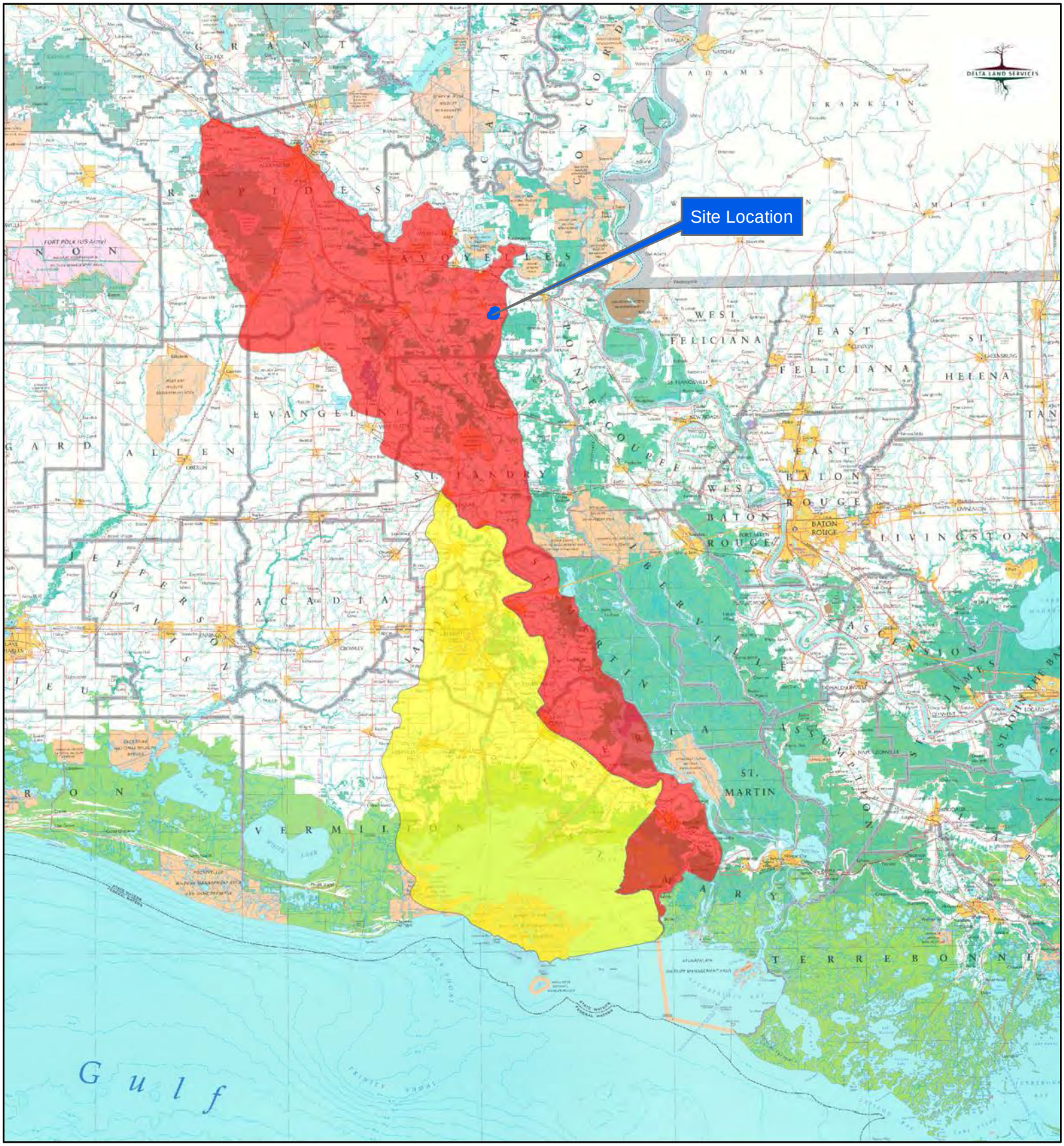
Natural Resources Conservation Service (2010)[2] *National Hydric Soils List by State* [website]. U.S. Department of Agriculture, Natural Resources Conservation Service, *Soil Survey Staff*. Accessed June 17, 2010. Available URL: http://websoilsurvey.nrcs.usda.gov/app/

Twedt, D.J, S.G. Somershoe, K.R. Hazler, R.J. Cooper (2010) Landscape and vegetation effects on avian reproduction on bottomland forest restorations. Journal of Wildlife Management 74(3): 423-436, 2010; DOI: 10.2193/2008-563.

Twedt, D.J. and C.R. Loesch (1999) Forest area and distribution in the Mississippi Alluvial Valley: implications for breeding bird conservation. Journal of Biogeography. 26:1215-1224.

United States Army Corps of Engineers (2010) *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Regions (Version 2.0).* US Army Engineer Research and Development Center Environmental Labratory Technical Report ERDC/EL TR-10-20.

United States Army Corps of Engineers (1987) *Corps of Engineers Wetland Delineation Manual*. USACE Waterways Experiment Station Technical Report Y-87-1.



Legend

- Primary (08080102 Bayou Teche)
- Secondary (08080103 Vermilion)

0 10 20 40

Miles

Note: Base map from LA Department of Transportation and Development "Official Map of Louisiana 2000"

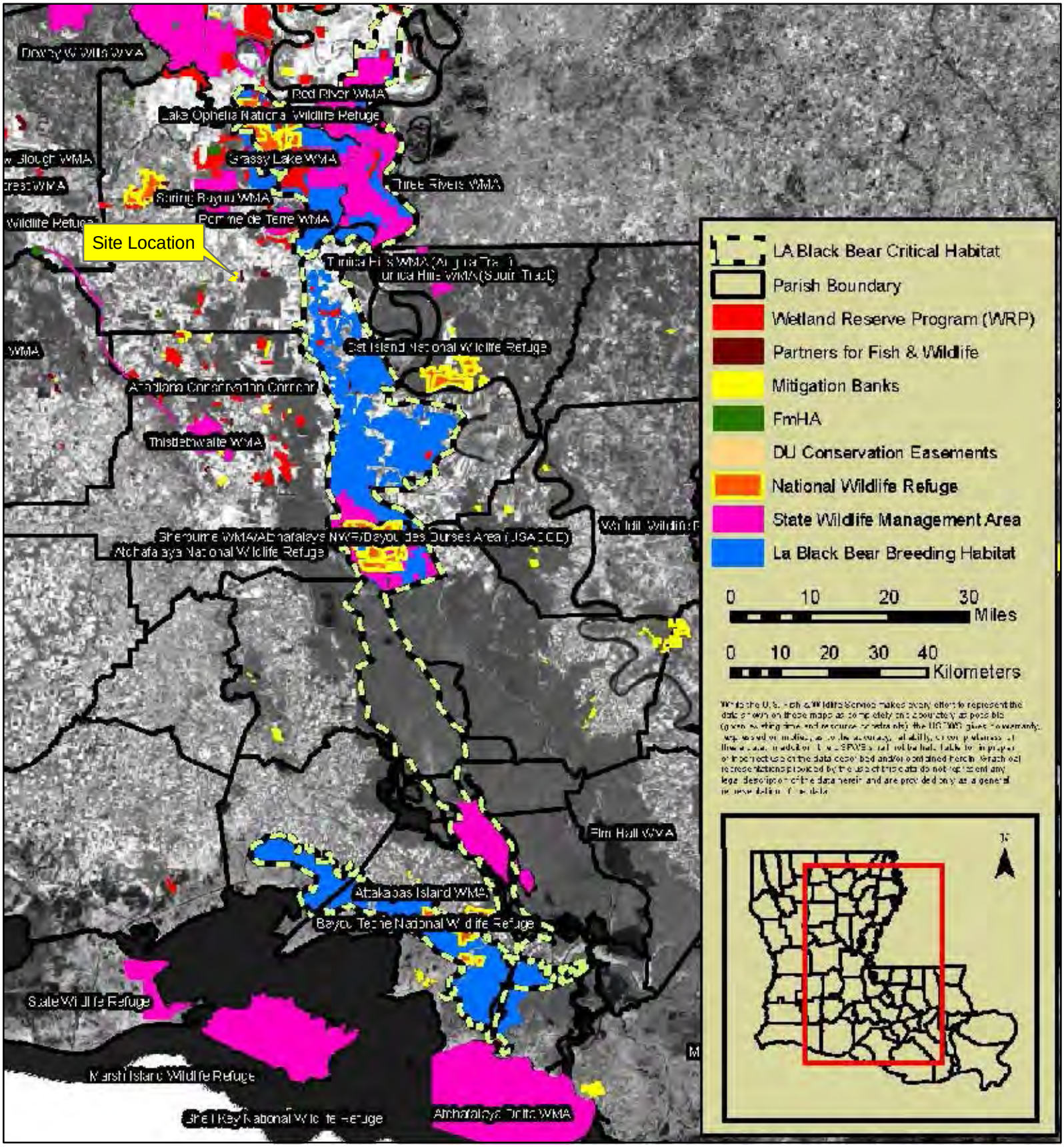
Bayou Choupique Mitigation Bank

PROPOSED SERVICE AREA

Avoyelles Parish, LA

Created :	JMJ/ArcView
Approved :	DEB
Date :	3/8/2011
Map No. :	F03_ServiceAreas_A

FIGURE 3



0 10 20 40
Miles

Note: Base map from USFWS Black Bear Conservation Map (date unknown)

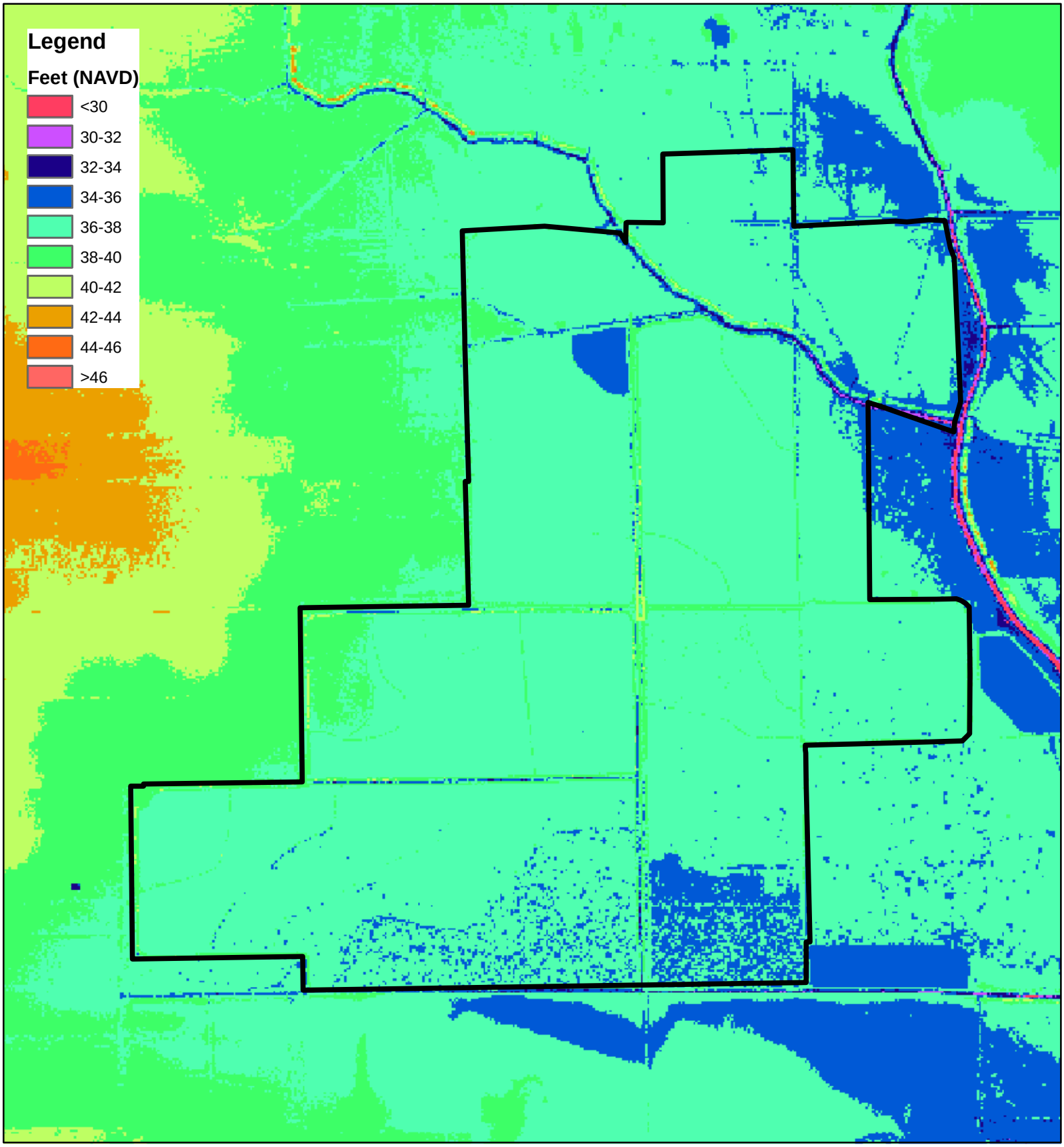
Bayou Choupique Mitigation Bank

REGIONAL CONSERVATION MAP

Avoyelles Parish, LA

Created :	JMJ/ArcView
Approved :	DEB
Date :	3/8/2011
Map No. :	F04_ConservationMap_A

FIGURE 4



DELTA LAND SERVICES

N

1,000 500 0 1,000 2,000

Feet

Note: Base map from northwest quarter quadrangle "Plaucheville, LA"

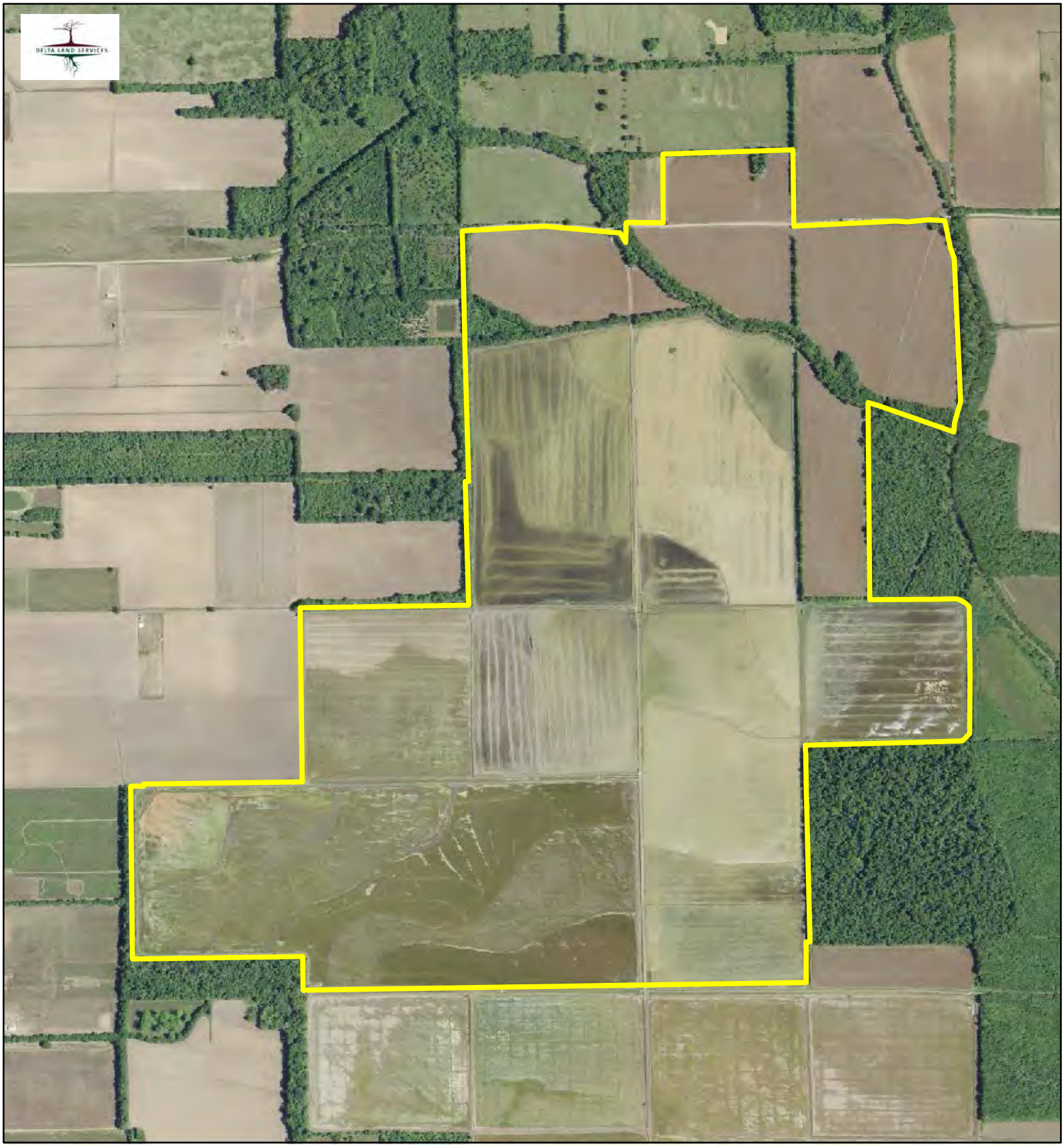
Bayou Choupique Mitigation Bank

LIDAR DIGITAL ELEVATION MODEL

Avoyelles Parish, LA

Created :	JMJ/ArcView
Approved :	DEB
Date :	3/8/2011
Map No. :	F05_lidar_A

FIGURE 5



BCMB Project Area

1,000 500 0 1,000

Feet

Note: Base imagery from USDA Farm Services Agency Aerial Photography Field Office

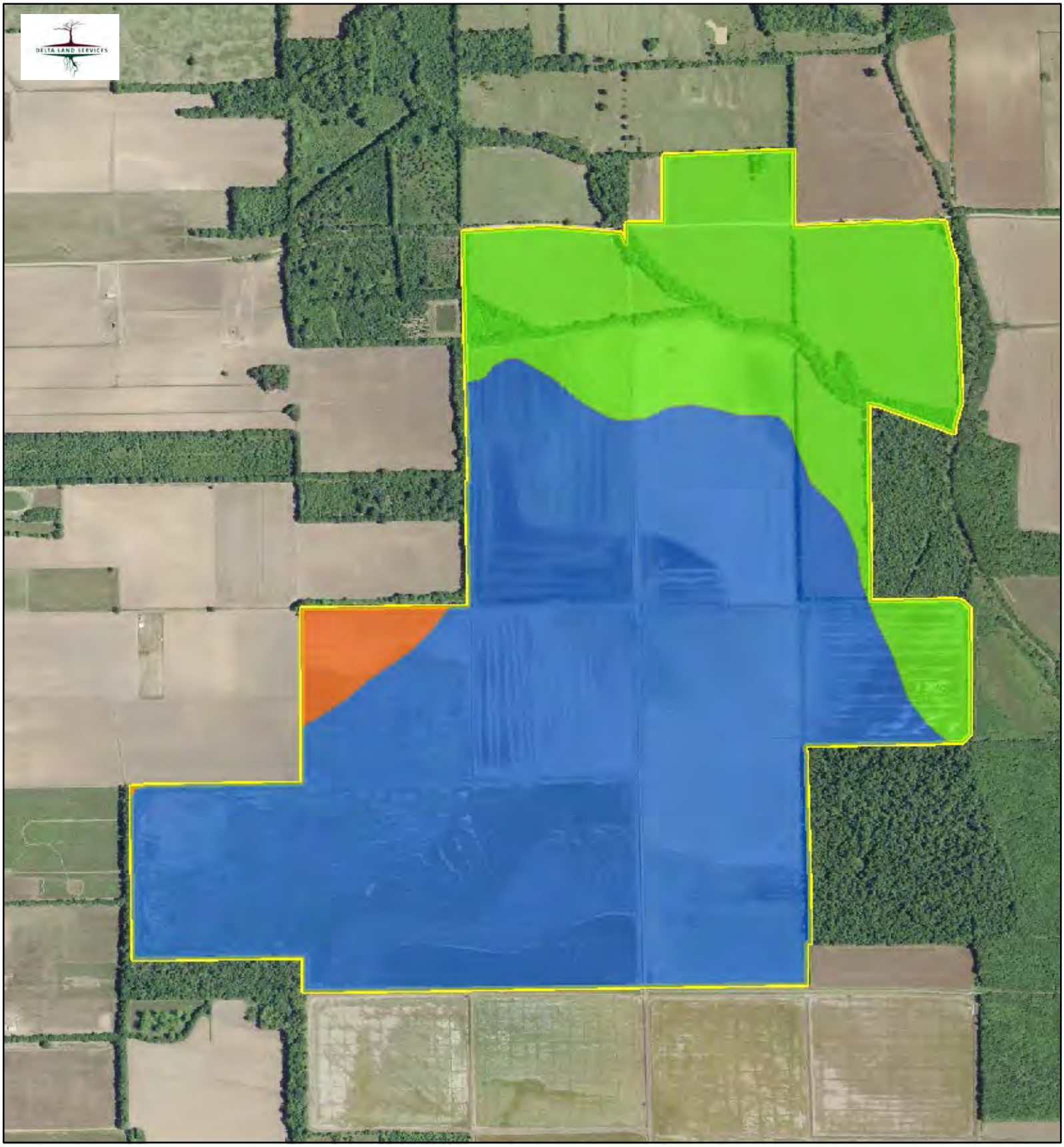
Bayou Choupique Mitigation Bank

2010 AERIAL PHOTOGRAPHY

Avoyelles Parish, LA

Created :	JMJ/ArcView
Approved :	DEB
Date :	3/8/2011
Map No. :	F11_2010aerial

FIGURE 11



BCMB Project Area
De: Dundee silt loam
Ms: Moreland clay
Sa: Sharkey clay

1,000 500 0 1,000
Feet

Note: Data from USDA Natural Resources Conservation Service Soil Survey Geographic (SSURGO) database for Avoyelles Parish, Louisiana; Published 4/12/2007

Bayou Choupique Mitigation Bank

SSURGO MAP

Avoyelles Parish, LA

Created :	JMJ/ArcView
Approved :	DEB
Date :	3/8/2011
Map No. :	F12_SSURGO

FIGURE 12

BCMB Project Area

Outflow

1,000 500 0 1,000

Feet

Notes:
1. Base imagery from USDA Farm Services Agency Aerial Photography Field Office
2. Existing Hydrological Inflow from Precipitation, Irrigation, and/or Backwater Flooding from Bayou des Glaises Diversion Channel

Bayou Choupique Mitigation Bank

EXISTING HYDROLOGY

Avoyelles Parish, LA

Created :	JMJ/ArcView
Approved :	DEB
Date :	3/8/2011
Map No. :	F13_Hydrology

FIGURE 13

Legend

- Bottomland Hardwood Re-establishment (418.1 acres)
- Baldcypress Swamp Re-establishment (102.6 acres)

1,000 500 0 1,000

Feet

Note: Base imagery from USDA Farm Services Agency Aerial Photography Field Office

Bayou Choupique Mitigation Bank

MITIGATION CREDIT ACRES

Avoyelles Parish, LA

Created :	JMJ/ArcView
Approved :	DEB
Date :	4/7/2011
Map No. :	F14_Mitigation

FIGURE 14

Legend

- Open Space/ Food Plots (37.1 acres)
- Existing Forest (21.9 acres)
- Secondary Access Roads (9.8 acres)
- Main Access Road (2.9 acres)
- Utility Line Right-of-Way/ Open Space (2.0 acres)
- Levi Gremillion Road (1.0 acres)

1,000 500 0 1,000

Feet

Note: Base imagery from USDA Farm Services Agency Aerial Photography Field Office

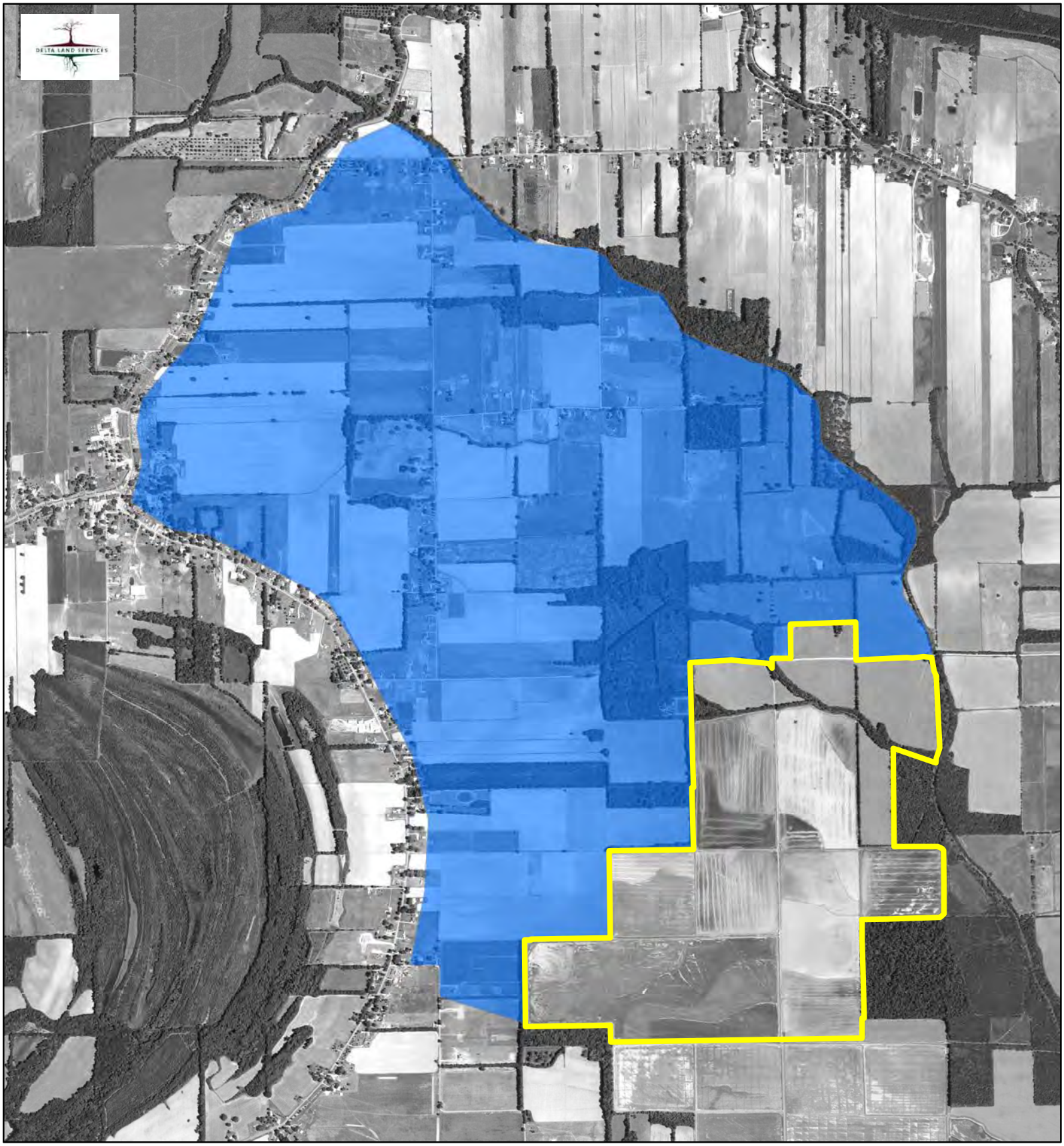
Bayou Choupique Mitigation Bank

NONMITIGATION ACRES

Avoyelles Parish, LA

Created :	JMJ/ArcView
Approved :	DEB
Date :	4/7/2011
Map No. :	F15_Mitigation

FIGURE 15



Legend

- BCMB Project Area
- Drainage Area

2,000 1,000 0 2,000

Feet

Note:
1. Base imagery from USDA Farm Services Agency Aerial Photography Field Office
2. Upstream drainage derived from lidar and contour maps and is for illustrative purposes only as not all surface water from the "Drainage Area" feature flows onto the BCMB.

Bayou Choupique Mitigation Bank

CONTRIBUTING DRAINAGE AREA

Avoyelles Parish, LA

Created :	JMJ/ArcView
Approved :	DEB
Date :	4/7/2011
Map No. :	F16_Drainage

FIGURE 16

Hydrology Report
Bayou Choupique Mitigation Area
Avoyelles Parish, Louisiana

The proposed Bayou Choupique Mitigation Area (BCMA) is located about 3 miles southeast of Moreauville, LA, and is adjacent to and west of the Bayou des Glaises Diversion Channel (Channel). To the east of the Channel is the Atchafalaya River west levee. Due to this landscape position, high water events frequently inundate the BCMA.

The Channel begins at its juncture with Bayou des Glaises near Moreauville. The US Geological Survey (USGS) has operated a gage station (water level and discharge) on the Channel near the juncture since 1943; the station remains active and data is available through the USGS website (http://waterdata.usgs.gov.) The Channel terminates about 38 miles to the south near Courtableau on US Hwy 190.

On Thursday April 1, 2010, a cursory hydrologic survey was conducted on the BJMA by Delta Land Services (DLS) and Max Forbes. The purpose of the survey was to gather information on the inundation of the property as affecting soil moisture. A Light Detection and Ranging (LIDAR) map of the tract shows elevation ranging from about 32-38 NGVD at the northwestern edge, however a majority of the BCMA was within the 34-36 NGVD range. The trees bordering the end of the tract nearest the Channel were examined for high watermarks that might define a significant past inundation event. Several were located for a future surveying trip.

One of the former landowners familiar with the property was interviewed as to his experience with the inundation of the BcMA. He indicated that the property not leveed has been inundated about twice a year and that inundation normally lasts for 4-5 days. Of particular interest was his assertion that a part of Levi Gremillion Rd. and the land to the north was inundated. As indicated by the LIDAR map, this would put the extent of inundation at about 36-37 ft NGVD.

On April 7, 2010, DLS and Max Forbes visited the tract to survey the high-water marks. A bench-mark was set at approximately 33 ft NGVD. In that part of the tract near the Channel, high water marks on five trees were surveyed to the bench-mark elevation. Based on that elevation, the high-water mark elevations ranged from 36.92 ft to 36.71 ft NGVD. The spread in the marks was considered acceptable. These marks compared well with the extent of flooding of Levi Gremillion Rd. and the other expression of inundation as voiced by the landowner.

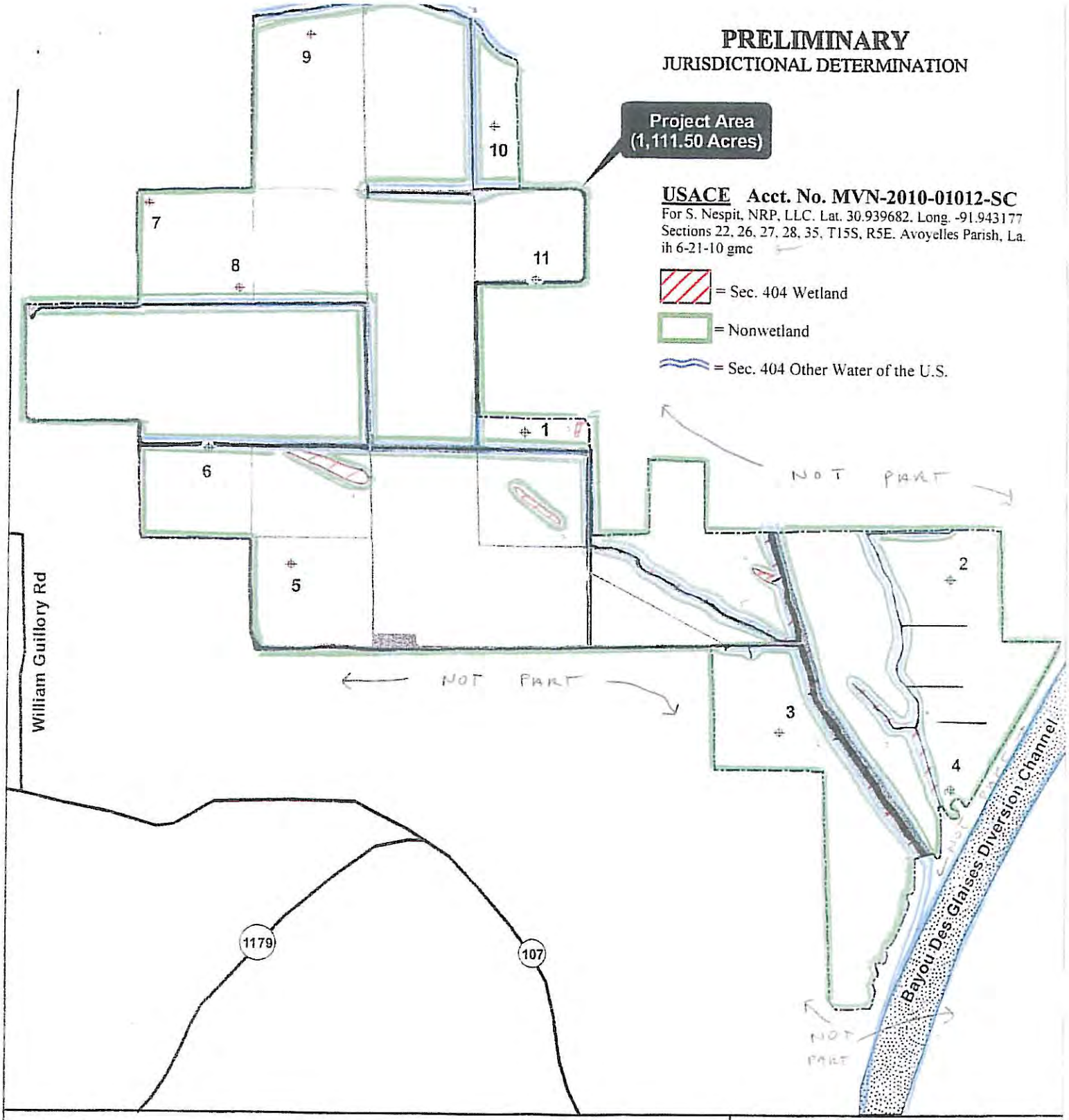
High water events on the Channel are preceded by a period of significant rainfall that could saturate the areas affected by the rain. Following the period of inundation, a significant period of drying out could occur. Thus, the period when soils are saturated could extend for a much long period than that of inundation alone.

The attached spreadsheet shows observations of high-water events as taken from the published records of the USGS for the gage station on the Channel. The listing is for years 1990-1999, and 2002.

Bayou des Glaises Diversion Channel at Moreauville, LA

USGS Water Year	Days above 35.0' NGVD	Days above 37.0' NGVD	NGVD Max Elevation
1990	18	9	43.71
	1	0	40.15
1991	11	1	38.53
	4	3	37.79
	3	3	38.69
	24	18	40.21
1992	11	1	39.5
	8	8	39.01
1993	1	0	37.09
1994	17	5	41.78
	4	3	38.22
1995	2	0	36.58
	3	2	38.2
1996	1	0	35.9
	2	1	39.02
1997	3	3	40.44
	2	0	35.23
	2	2	37.83
1998	2	1	39.15
	20	11	41.75
1999	10	2	38.93
2002	13	5	41.55
	1	0	35.54

PRELIMINARY
JURISDICTIONAL DETERMINATION



USACE Acct. No. MVN-2010-01012-SC
For S. Nespit, NRP, LLC. Lat. 30.939682. Long. -91.943177
Sections 22, 26, 27, 28, 35, T15S, R5E. Avoyelles Parish, La.
ih 6-21-10 gmc

= Sec. 404 Wetland

= Nonwetland

= Sec. 404 Other Water of the U.S.

Legend

Project Area (1,111.50 Acres)

1,500 750 0 1,500 Feet

+ Data Points

Map Notes:

1. The boundary shown is based on the boundary survey provided by the client.

NRP

N

Delta Land Services

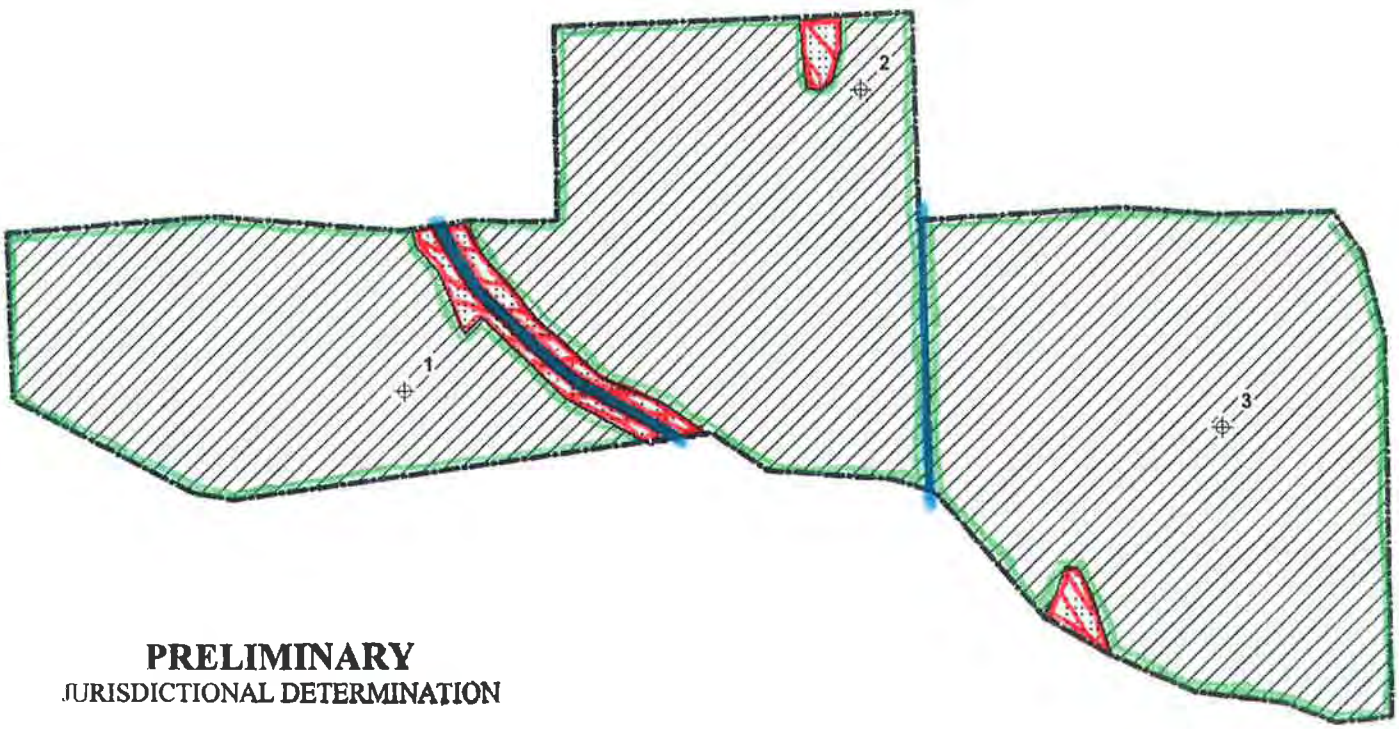
Plaucheville, LA

WETLAND DELINEATION MAP 1

AVOYELLES PARISH, LOUISIANA

Created :	BKH/ArcView
Approved :	GLF
Date :	4/21/2010
Map No. :	WD10032401-02

FIGURE 2



PRELIMINARY
JURISDICTIONAL DETERMINATION

USACE
Account # MVN-2010-02429-SR
Lat: 30.957095
Long: -91.947307
Section, Township, Range: 22, T1S, R5E
Parish, LA Avoyelles
(I.H./F.S.V. Date: 1-14-11 RP

Legend

- North Tract (87.8 Acres)
- Wetlands: Forested (3.0 Acres) (Sec 404)
- Non-Wetlands: Prior-Converted (84.2 Acres)
- Other Waters (0.6 Acres) (Sec 404)
- Data Points

400 200 0 400 Feet

Bayou Choupique North Tract

WETLAND DELINEATION MAP

Avoyelles Parish, LA

Created :	JMJ/ArcView
Approved :	DEB
Date :	9/29/2010
Map No. :	F02_Delineation_B&W.mxd

FIGURE 2