



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

October 7, 2013

REPLY TO
ATTENTION OF:

Operations Division
Regulatory Branch
Project Manager
Stephen D. Pfeffer
(504) 862-2227

SUBJECT: MVN-2013-01824-MS

PUBLIC NOTICE

Interested parties are hereby notified that an application has been received by the District engineer for a Department of the Army permit to authorize the following pursuant to () 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).

PROPOSED BIG BEND MITIGATION BANK IN AVOYELLES PARISH

NAME OF APPLICANT: Fourth Louisiana Resource, LLC, c/o Resource Environmental Solutions, LLC, 412 North Fourth Street, Suite 300, Baton Rouge, Louisiana 70802.

LOCATION OF WORK: The project area is located in Sections 19, 20, 29, and 30, Township 1 North and Range 7 East approximately 9.7 miles east of Pomme De Terre Wildlife Management Area in the town of Moreauville in Avoyelles Parish, Louisiana.

CHARACTER OF WORK: The Sponsor proposes to establish a wetland mitigation bank to include the cumulative re-establishment and rehabilitation of 203 acres of bottomland hardwoods and 70.1 acres of baldcypress/tupelo swamp with an additional 7.0 acres of hydric inclusions and 23.6 acres of non-hydric inclusions. The Sponsor proposes to restore the hydrology at the project area by pushing spoil banks into adjacent onsite ditches to restore natural elevation. Approximately 20,800 +/- linear feet of spoil banks will be pushed in to fill approximately 3.8 acres of other waters. Additionally, onsite culverts located within the drainage ditches will be plugged or removed. The Sponsor will reforest the site with an assemblage of species indicative of bottomland hardwood or baldcypress/tupelo swamp wetland forests in this area. Additional details of the proposed restoration plan are attached for review in the mitigation banking prospectus.

The comment period will close **30 days** from the date of this public notice advertisement. Written comments, including suggestions for modifications or objections

to the proposed work, stating reasons therefore, are being solicited from anyone having interest in this permit request. Letters must reference the applicant's name and the subject number, be addressed and mailed to the above address, ATTENTION: REGULATORY BRANCH.

The decision whether to issue a permit will be based on an evaluation of the probable impact 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 that 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, consideration of property ownership and, in general, the needs and welfare of the people.

The 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 Corps of Engineers to determine whether to issue, 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 the other public interest factors listed above. Comments are used in the preparation of an Environmental Assessment and/or 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.

No properties listed in the National Register of Historic Places are near the proposed work. The possibility exists that the proposed work may damage or destroy presently unknown archeological, scientific, pre-historical or historical sites or data. Copies of this notice are being sent to the State Archeologist and the State Historic Preservation Officer.

Our initial finding is that the proposed work would neither affect any species listed as endangered by the U.S. Department of Interior 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 Magnus-Stevens Fishery Conservation and Management Act. The applicant's proposal would result in the alteration of 0 acres 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 and certification that the proposed activity will not violate applicable water quality standards will be required from the Louisiana Department of Environmental Quality, Office of Water Resources, 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.

Martin S. Mayer
Chief, Regulatory Branch



FINAL PROSPECTUS

BIG BEND MITIGATION BANK AVOYELLES PARISH, LOUISIANA

PREPARED FOR

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

PREPARED AND SUBMITTED BY

Fourth Louisiana Resource, LLC
Resource Environmental Solutions, LLC
412 N. Fourth Street, Suite 300
Baton Rouge, Louisiana 70802

**BIG BEND MITIGATION BANK
AVOYELLES PARISH, LOUISIANA
October 3, 2013**

TABLE OF CONTENTS

PREAMBLE	3
1.0 INTRODUCTION	3
1.1 Bank Sponsor and Owner	3
1.2 Site Location	3
1.3 Driving Directions	3
2.0 GOALS AND OBJECTIVES	4
2.1 Aquatic Function Improvement	4
3.0 ECOLOGICAL SUITABILITY OF THE SITE	5
3.1 Historical Site Conditions	5
3.2 Current Site Conditions and Characteristics	5
3.2.1 Current Vegetation	5
3.2.2 Current Soils	5
3.2.3 Property Constraints	5
3.2.4 Jurisdictional Determination	6
3.2.5 Water Rights	6
3.3 General Watershed Characteristics	6
3.3.1 Water Sources and Losses	6
3.3.2 Hydroperiod	6
3.4 Congruence with Local Action Plans	6
3.5 General Bank Need	7
3.6 Louisiana Black Bear Critical Habitat	7
3.7 Technical Feasibility	7
4.0 BANK ESTABLISHMENT	7
4.1 Establishment, Operation, and Credit Assessment	7
4.2 Proposed Restoration Measures	8
4.2.1 Restoration Overview	8
4.2.2 Hydrologic Restoration	8
4.2.3 Drainage Area	8
4.2.4 Vegetative Restoration	8
4.2.5 Invasive Species Control	9
4.2.6 Monitoring	9
4.3 Proposed Service Area	9
5.0 OPERATIONS	9
5.1 Future Ownership and Long-Term Management	9
5.2 Perpetual Site Protection Mechanism	10
5.3 Long-Term Management Strategy	10
5.4 Sponsor Qualifications	10
6.0 REFERENCES	10

Appendix A: Figures

Figure 1: Site Location Map

Figure 2: USGS 24k Quad Map

Figure 3: Service Area Map

Figure 4: Existing Conditions Map

Figure 5: Existing Elevation Map

Figure 6: Drainage Area Map

Figure 7: Soils Map

Figure 8: Proposed Mitigation Plan Map

Figure 9: Hydrologic Improvements Map

Figure 10: Typical Cross-Section Proposed Ditch Backfill

Figure 11: Conservation Area Map

Figure 12: 1941 Historical Aerial

Figure 13: 1966 Historical Aerial

Figure 14: 1998 Historical Aerial

Figure 15: 2004 Historical Aerial

Figure 16: 2010 Historical Aerial

Appendix B: PRELIMINARY JURISDICTIONAL DETERMINATION

Preamble

Fourth Louisiana Resource, LLC (4LR) submits this Prospectus to the U.S. Army Corps of Engineers, New Orleans District (CEMVN) and Interagency Review Team (IRT) to initiate evaluation of the proposed Big Bend Mitigation Bank (BBMB) in accordance with 33 CFR 332.8(d) (2). The details pertaining to the use of this site as a mitigation bank will be specified in the subsequent Mitigation Banking Instrument (MBI).

1.0 INTRODUCTION

1.1 Bank Sponsor and Owner

4LR is the Sponsor of the BBMB. The land is owned in fee title by 4LR, which will also assume long-term ownership and management of the BBMB. Electronic correspondence with the Sponsor may be directed to Frankie Savoy at the following address:

Fourth Louisiana Resource, LLC
412 N. Fourth Street, Suite 300
Baton Rouge, LA 70802
Office: 225-372-6106
Mobile: 337-580-2781
frankie@res.us

1.2 Site Location

The proposed 303.7 acre BBMB is located within the Atchafalaya Watershed, United States Geological Survey (USGS) Cataloging Unit 08080101, in Avoyelles Parish, Louisiana. The Bank Site lies approximately 9.7 miles east of the Pomme De Terre Wildlife Management Area in the town of Moreauville. Specifically, the site is located at latitude/longitude 31° 02' 08.41"N/91° 47' 20.65"W, in Sections 19, 20, 29, and 30 of Township 1N, Range 7E (Figures 1 & 2).

1.3 Driving Directions

From the Pomme De Terre State Wildlife Management Area:

- Head northwest on Horseshoe Lake Rd toward Pete Laborde Rd;
- Turn right onto Pete Laborde Rd;
- Take the 1st right onto LA-451 N;
- Continue onto Bobby Gaspard Crossing; and
- Turn right onto Big Bend Rd

From this point arrangements should be made with the landowner prior to accessing the site.

2.0 GOALS AND OBJECTIVES

The goal of the BBMB is the re-establishment/rehabilitation of bottomland hardwood forest and the re-establishment/rehabilitation of baldcypress/tupelo swamp in the Atchafalaya Watershed, HUC 08080101. Present habitat types found within the BBMB include areas listed as Prior Converted Cropland (PC), areas that currently delineate as wetlands, and non-hydric inclusions, as shown in Figure 4. Table 1 shows the current and proposed habitat types.

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

Present Habitat Type	Proposed Habitat Type	Mitigation Type	Acreage
Farmed PC	Bottomland Hardwood	Re-Establishment	135.3
Farmed Wetland	Bottomland Hardwood	Rehabilitation	67.7
Farmed PC	Baldcypress/Tupelo Swamp	Re-Establishment	20.1
Farmed Wetland	Baldcypress/Tupelo Swamp	Rehabilitation	50.0
Forested Wetland	Existing Bottomland Hardwood	Hydric Inclusion	7.0
Farmed Non-Wetland	Non-Wet Bottomland Hardwood	Non-Hydric Inclusion	23.6
Total Area to be Restored			303.7
Conservation Easement Area			303.7

2.1 Aquatic Function Improvement

Below are proposed actions anticipated to improve aquatic functions:

- The removal of perimeter ditching and culverts to restore natural sheet flow across the property
- Soil preparation and vegetative plantings to restore natural vegetation across the property
- Restoration of surface hydrology through the re-establishment of natural sheet flow to restore the historic wetland functions and values of the project site
- Long-term maintenance to prevent colonization by noxious and invasive species, erosion along interfaces of drainageways, and trespass vandalism
- Vegetative plantings as well as the restoration of the historic hydroperiod across the property to create improved wildlife habitat
- Hydrologic restoration to increase the retention time of surface water and saturation, reducing non-point source runoff and increasing water quality through increased nutrient uptake by hydrophytic vegetation

3.0 ECOLOGICAL SUITABILITY OF THE SITE

3.1 Historical Site Conditions

The BBMB historically contained bottomland hardwood habitat underlain with hydric soils (Figures 12 & 13). Examination of historical photographs shows that at some point between the years 1966 and 1998 the area was cleared and maintained as agricultural fields (Figures 14-16). Since that time, the property has been used primarily for soybean production. Although agricultural fields dominate the project area, mature bottomland hardwood forest exist along the southern and eastern perimeter of the project area, with approximately 7.0 acres of forested wetland included within the project area.

3.2 Current Site Conditions and Characteristics

The project area consists of agricultural fields primarily used for soybean production. The site is bordered on the north and west sides by agricultural fields and on the east and south sides by mature bottomland hardwood forest, similar to the habitat that existed on the BBMB prior to clearing. The years of agricultural activities onsite have severely impacted the BBMB beyond the removal of native vegetation. As a result of efforts to facilitate drainage and enhance crop growth, the natural hydrology of the BBMB lands is currently impaired. Since the hydrology was altered, the entire site has experienced a decrease in duration of water inundation and soil saturation.

3.2.1 Current Vegetation

The vegetation growing within the project area consists of a variety of herbaceous species typically found in agricultural fields between growing seasons.

Typical dominant vegetation within the non-wetland areas includes annual bluegrass (*Poa annua*), common wheat (*Triticum aestivum*), common yellow oxalis (*Oxalis stricta*), Brazilian vervain (*Verbena brasiliensis*), field burweed (*Soliva sessilis*), spiny sowthistle (*Sonchus asper*), curly dock (*Rumex crispus*), henbit deadnettle (*Lamium amplexicaule*), spinyfruit buttercup (*Ranunculus muricatus*), dewberry (*Rubus spp.*), and Carolina geranium (*Geranium carolinianum*).

Typical dominant vegetation within the wetland areas includes species such as water oak (*Quercus nigra*), willow oak (*Quercus phellos*), American elm (*Ulmus americana*), sweetgum (*Liquidambar styraciflua*), Chinese tallow (*Triadica sebiferum*) common buttonbush (*Cephalanthus occidentalis*), spike rush (*Eleocharis obtusa*), blackberry (*Rubus betulifolius*), lizard's tail (*Saururus cernuus*), and poison ivy (*Toxicodendron radicans*).

3.2.2 Current Soils

The association of soils found on the Bank Site consists primarily of clays and loams commonly found in floodplains adjacent to natural levees (Figure 7). Typical drainage patterns have been altered to accommodate agricultural operations on the site.

The soils mapped within the project area are listed as:

- **Moreland Clay (MT):** 46%, occasionally flooded, hydric (NRCS)
- **Sharkey Clay (Se):** 28%, overwash, occasionally flooded, hydric (NRCS)
- **Coushatta Silt Loam (No):** 13%, well drained, moderately slowly permeable
- **Tensas-Sharkey Complex (Ts):** 7%, undulating, hydric (NRCS)
- **Coushatta Silty Clay Loam (Nw):** 6%, well drained, moderately slowly permeable

3.2.3 Property Constraints

There are no property constraints within the BBMB and the site is free of encumbrances.

3.2.4 Jurisdictional Determination

The Jurisdictional Determination was performed by CEMVK and was issued on June 11, 2013. While the BBMB is physically located just within the jurisdictional boundary of CEMVK, it has been determined through coordination with both Districts that CEMVN will accept the permitting responsibility of the Bank as its service area is nearly entirely located within the CEMVN jurisdiction. A copy has been included in the Appendix B.

3.2.5 Water Rights

Louisiana Civil Code, Article 490, treats water resources under the theory of absolute ownership and rule of capture, provided that capture does not result in harm to neighbors. All culverts are slated to be removed. Should it be deemed necessary to retain any of these features, they would be passively maintained unless hydrologic monitoring reports reveal a need for maintenance. Should this occur, appropriate action will be taken with IRT approval.

3.3 General Watershed Characteristics

3.3.1 Water Sources and Losses

The primary sources of water to the BBMB are direct precipitation and occasional backwater flooding from the Atchafalaya River through the adjacent forested wetlands. The average annual precipitation in the vicinity of the project area is approximately 57.2 inches. January is the wettest month of the year with an average precipitation of 5.88 inches, and August is the driest month of the year with an average precipitation of 3.78 inches.

3.3.2 Hydroperiod

The presence of hydric soils indicate that prolonged conditions of saturation, flooding, or ponding are likely to have occurred historically in the area. Additionally, marks left on trees in the adjacent wetlands serve as an indication of historical inundation. The onsite surface hydrology was altered during the creation of drainage ditches along the eastern edge of the property which allows for more accelerated movement of water from the site. Since the hydrology was altered, the entire site has experienced a decrease in duration of water inundation and soil saturation.

3.4 Congruence with Local Action Plans

The uniquely and nationally significant expanses of bottomland hardwoods, swamps, bayous, and back water lakes that comprise the Atchafalaya Basin provide an exceptionally diverse habitat for more than 200 species of birds and over 100 species of mammals, reptiles, and fish. The collective goal of the BBMB is to provide restored and rehabilitated wetland habitat that can be used to replace the exact function and value of wetlands that are adversely affected by projects within and adjacent to the Atchafalaya basin, in accordance with Section 404 of the Clean Water Act. Through this endeavor, the BBMB will also help to further the goals of several local conservation programs (Figure 11), by accomplishing the following:

<p>Louisiana Black Bear Critical Habitat</p>	<ul style="list-style-type: none"> • Re-establishment/rehabilitation and long-term conservation of high functioning wetlands, including 203.0 acres of bottomland hardwood and 70.1 acres of baldcypress/tupelo swamp;
<p>The Atchafalaya National Wildlife Refuge</p>	<ul style="list-style-type: none"> • Provide habitat and protection for threatened and endangered native species; • Provide habitat for wildlife and plant species of special concern;
<p>Pomme De Terre Wildlife Management Area</p>	<ul style="list-style-type: none"> • Provide migrating and wintering habitat for migratory waterfowl and other migratory birds;
<p>The Wetlands Reserve Program</p>	<ul style="list-style-type: none"> • Restoration and preservation of bottomland hardwood forests inhabited by or which provide corridors for movement of the Louisiana Black Bears

3.5 General Bank Need

The Atchafalaya Basin is the nation's largest swamp composed of nearly one-half million acres of bottomland hardwoods, bayous, swamps, and backwater lakes. The Atchafalaya Basin begins near Simmesport, Louisiana – in immediate proximity to the BBMB - and stretches some 140 miles southward, crossing through parts of eight parishes, to the Gulf of Mexico. The entire basin is contained within HUC 08080101 which is the proposed primary service area of the BBMB.

There are currently no approved mitigation banks located within the Atchafalaya watershed. In addition to servicing commercial, residential, and pipeline projects within or crossing through the basin, the BBMB is also intended to provide compensation for projects affecting Louisiana Black Bear Critical Habitat.

3.6 Louisiana Black Bear Critical Habitat

"Critical Habitat" is a term used in the Endangered Species Act which refers to specific geographic regions that are essential for the conservation and protection of a threatened or endangered species. On March 10, 2009 the U.S. Fish and Wildlife Service designated 1,195,821 acres of Louisiana Black Bear Critical Habitat in 15 parishes across northeast and south central Louisiana. The designation of Critical Habitat is significant for those activities occurring within the region which require a federal permit. The BBMB is designed to provide compensation for those projects through the restoration and preservation of bottomland hardwood forests inhabited by or which provide corridors for movement of the Louisiana Black Bear.

Furthermore, the BBMB will help to advance the Critical Habitat preservation efforts of the U.S. Fish and Wildlife Service by providing the following for the Louisiana Black Bear:

- Space for individual and population growth and for normal behavior
- Cover/shelter
- Sites for bearing and rearing offspring
- Habitat that is protected from disturbances and is representative of the historic geographical and ecological distribution of the species

3.7 Technical Feasibility

The BBMB has a high degree of technical feasibility. The site operators have extensive experience developing similar projects, and the actions required to develop the BBMB are routine. Furthermore, the presence of mature bottomland hardwood habitat directly adjacent to the BBMB indicates that the site is conducive to successful restoration efforts.

4.0 BANK ESTABLISHMENT

4.1 Establishment, Operation, and Credit Assessment

4LR possess the financial resources, planning, and scientific professionals required to successfully restore the land proposed for inclusion within the BBMB. 4LR will perform all re-establishment and rehabilitation activities, provide for financial assurances, administer the sale and accounting of credits, and complete all record-keeping and reporting requirements for BBMB.

As part of the review process, 4LR in concert with local environmental specialists will draft the Mitigation Banking Instrument (MBI) for review and approval by the CEMVN and the Interagency Review Team (IRT) in accordance with 33 CFR 332.8(d)(6-8). The MBI shall establish the BBMB's service area, accounting proce-

dures, provisions stating the bank sponsor's legal responsibility for providing compensatory mitigation upon secured credits, default and closure provisions, reporting protocols, mitigation plans, credit release schedules, as well as other information required for inclusion by the CEMVN.

4.2 Proposed Restoration Measures

4.2.1 Restoration Overview

Site restoration will be accomplished through hydrological restoration and afforestation of the native vegetative community. This will include, but will not be limited to, abandoning farming, the filling of artificial drains and agricultural ditches, restoration of natural surface topography, site preparation, the elimination of invasive species, and the replanting of bottomland hardwoods and baldcypress/tupelo species.

The BBMB work plan will focus on a watershed approach to improve physical factors that slow water movement and increase nutrient retention. Improvements to factors that impede water movement are intended to increase aquatic functions and values on the site and surrounding area. The reestablishment of forested wetlands on the site will create the physical structure to slow the movement of surface runoff across the property during heavy rain events. Slower water movement leads to longer periods of water retention and contact with vegetation, which results in lower levels of suspended solids and dissolved solids, and higher nutrient and sediment filtration rates.

4.2.2 Hydrologic Restoration

The primary sources of hydrology to the proposed BBMB are direct precipitation and occasional backwater flooding from the Atchafalaya River through the adjacent forested wetlands. Rainfall is estimated to be approximately 57.2 inches per year (NRCS 2011). As part of the restoration process, the interior and perimeter ditches currently in place to move surface and subsurface water off the site will be removed or modified. These features flow primarily to the east and into Bayou Courville, which drains to the Atchafalaya River. The diversion of this water prevents ponding and saturation within the upper portions of the soil horizon. The modifications of these drainage features combined with the slow infiltration and low permeability of the site's heavy clay soils will help to re-establish wetland hydrology throughout much of the proposed BBMB.

The spoil banks adjacent to the onsite ditches shall be pushed in to restore natural elevation, regaining the historic surface flow across the BBMB. Approximately 20,800 +/- linear feet of spoil banks will be pushed in to fill approximately 3.8 acres of other waters throughout these ditches. Additionally, the 15 onsite culverts located within the drainage ditches will be plugged or removed.

Figure 9 presents the location of culverts to be plugged or removed and drainage features to be modified. Figure 9 also shows cross-section locations, the profiles of which are shown on Figure 10.

4.2.3 Drainage Area

Because of the ditching and drainage features present on site, water currently moves across the site primarily through eight drainage ways that transect the site (Figure 9). While the drainage area will remain the same post-project, the project will allow surface flow, currently directed to and contained within the drainageways, to cross the site via sheet flow (Figure 6). This alteration will lead to an increase in duration of saturation and inundation, helping to restore historic hydrologic conditions. Figure 5 shows existing elevations on the site.

4.2.4 Vegetative Restoration

For the 135.3 acres of farmed PC and the 67.7 acres of farmed wetland proposed for designation as bottomland hardwood re-establishment and rehabilitation, respectively, an appropriate combination of hard and soft mast producing bare-root stock will be planted. The specific breakdown of each assemblage to be planted will be representative of those historically common to bottomland hardwoods of the area. These species

assemblages are identified in *The Natural Communities of Louisiana* (LNHP 2009). These assemblages and their planting locations will be stated in the subsequent Draft MBI. Planting densities, planting success rates, escrow or bond sum release rates, and monitoring requirements will be consistent with other recently implemented CEMVN approved mitigation banks.

For the 20.1 acres of farmed PC and 50.0 acres of farmed wetlands proposed for designation as baldcypress/tupelo swamp re-establishment and rehabilitation, respectively, restoration will include removal of invasive plant species and planting with desirable baldcypress/tupelo swamp species (bare-root stock). The 23.6 acres of farmed non-wetland will be reforested and maintained as a non-hydric inclusion. The 7.0 acres of existing bottomland hardwood wetland habitat will be preserved onsite and maintained for invasive species (Figure 8).

Soils in the fields within the total project area will be mechanically prepared for vegetative plantings. Disking and deep-ripping will be used to alleviate soil compaction and encourage air and water pore space for root growth.

4.2.5 Invasive Species Control

Invasive plant species, such as the Chinese tallow tree (*Triadica sebifera*) growing within and near the planted area, will be removed by shredding and/or herbicidal treatment immediately after initial planting and yearly as needed to remain in compliance with all invasive species performance standards. The percent cover of invasive plants will be monitored during short-term and long-term success monitoring, and appropriate corrective action will be taken if necessary.

4.2.6 Monitoring

At minimum, monitoring reports shall be completed in the spring (when new growth makes identification practicable) of Years 1, 3, 5, 10, 15, and prior to and following the first thinning operation. Reports will be submitted by December 31 of each monitoring year.

4.3 Proposed Service Area

The BBMB is located in the Atchafalaya Watershed, HUC 08080101. Accordingly, 4LR proposes HUC 08080101 as the Primary Service Area of the BBMB. This watershed contains portions of Avoyelles Parish, Point Coupee Parish, St. Landry Parish, Iberville Parish, St. Martin Parish, Iberia Parish, St. Mary Parish, and Terrebonne Parish. Use beyond the BBMB's primary service area will be determined by the CEMVN on a case-by-case basis.

5.0 OPERATIONS

5.1 Future Ownership and Long-Term Management

4LR intends to maintain and monitor the site with the option of appointing a long-term steward in accordance with 33 CFR 332.7(d) (1). The appointment of such an entity shall be approved by the CEMVN. The site shall be constructed to be self-sustaining with management activities limited primarily to items such as inspections, invasive species control and boundary maintenance.

In order to fund long-term maintenance of the site, 4LR will provide financial assurances, which shall generate funds in order to implement long-term maintenance and management. The details of the funding mechanism and arrangements shall be established within the MBI.

5.2 Perpetual Site Protection Mechanism

The BBMB will be protected in perpetuity by conservation servitude pursuant to Louisiana Revised Statute 9:1271 *et seq.* The servitude will be held by a conservation-oriented 501(c)(3) organizations to be determined. The servitude will inure and run with the property title.

The servitude will prohibit activities such as clear cutting, fill discharges, cattle grazing, or other commercial surface development that would diminish the quality or quantity of restored wetlands.

5.3 Long-Term Management Strategy

The Sponsor will ensure the long-term success and sustainability of the BBMB through mechanisms including vegetative and hydrologic maintenance as necessary, site monitoring, invasive species management, establishment of financial assurances, and protection in perpetuity by conservation servitude. A long-term management plan will be included in the MBI.

5.4 Sponsor Qualifications

4LR is a wholly owned subsidiary of Resource Environmental Solutions, LLC (RES). RES will be the entity responsible for bank land management and administration. RES has over 23,000 acres of approved wetlands and stream, and species mitigation across the United States. The company operates over 30 distinct mitigation banks and works in more than 10 USACE districts across the country. RES has a profile at www.res.us.

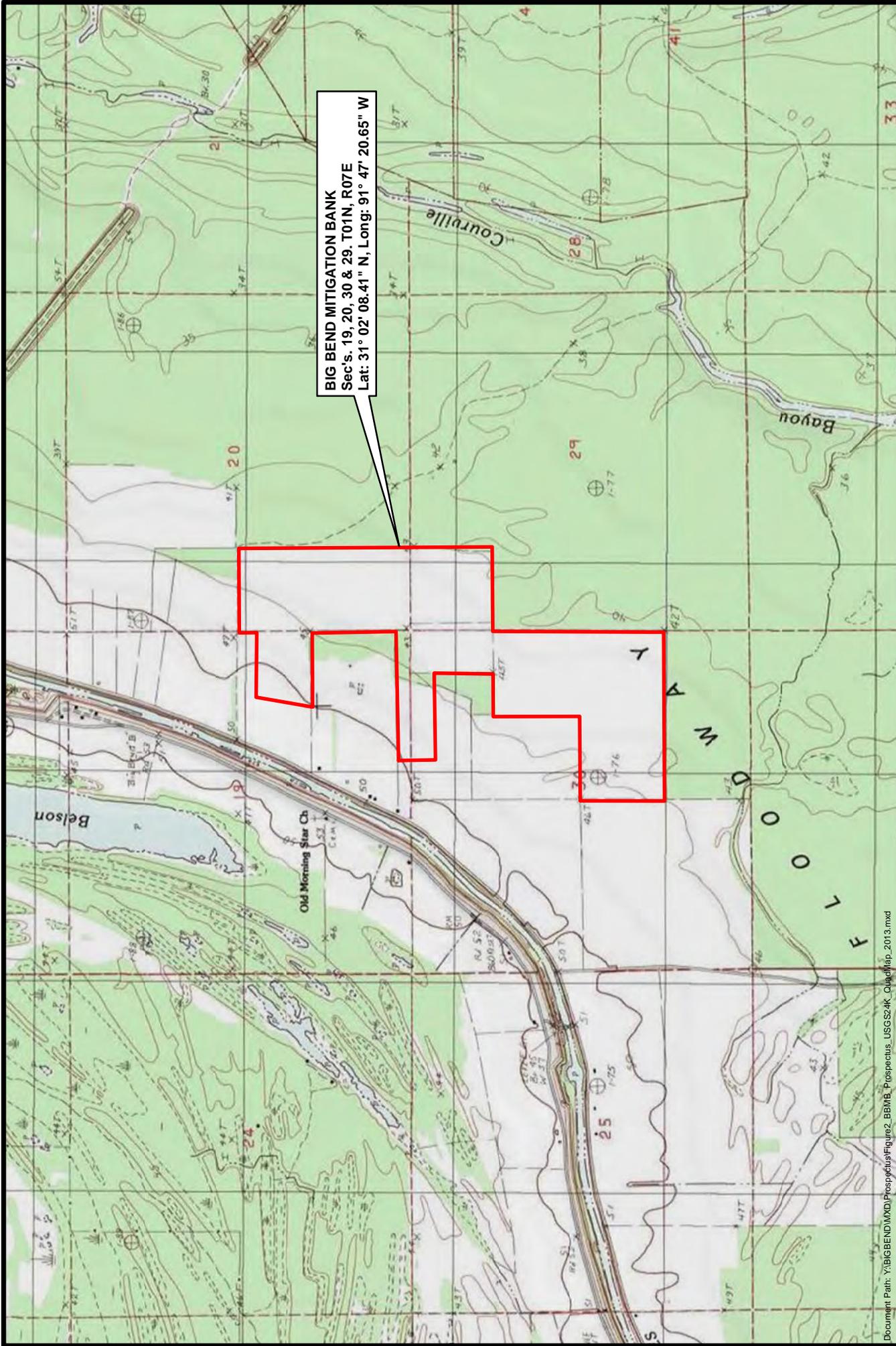
6.0 REFERENCES

Louisiana Natural Heritage Program (LNHP). 2009. "The Natural Communities of Louisiana." Available at: http://www.wlf.louisiana.gov/sites/default/files/pdf/page_wildlife/6776-Rare%20Natural%20Communities/LA_NAT_COM.pdf. Accessed July 2013.

U.S. Fish and Wildlife Service. 2013. "Final Designation of Critical Habitat for the Louisiana Black Bear." Available at: http://www.fws.gov/Lafayette/la_black_bear_PCH.html. Accessed July 2013.

APPENDIX A

FIGURES



Document Path: Y:\BIGBEND\IXD\Prospectus\Figure2_BBMB_Prospectus_USGS24K_Quad\Map_2013.mxd

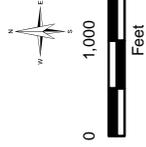


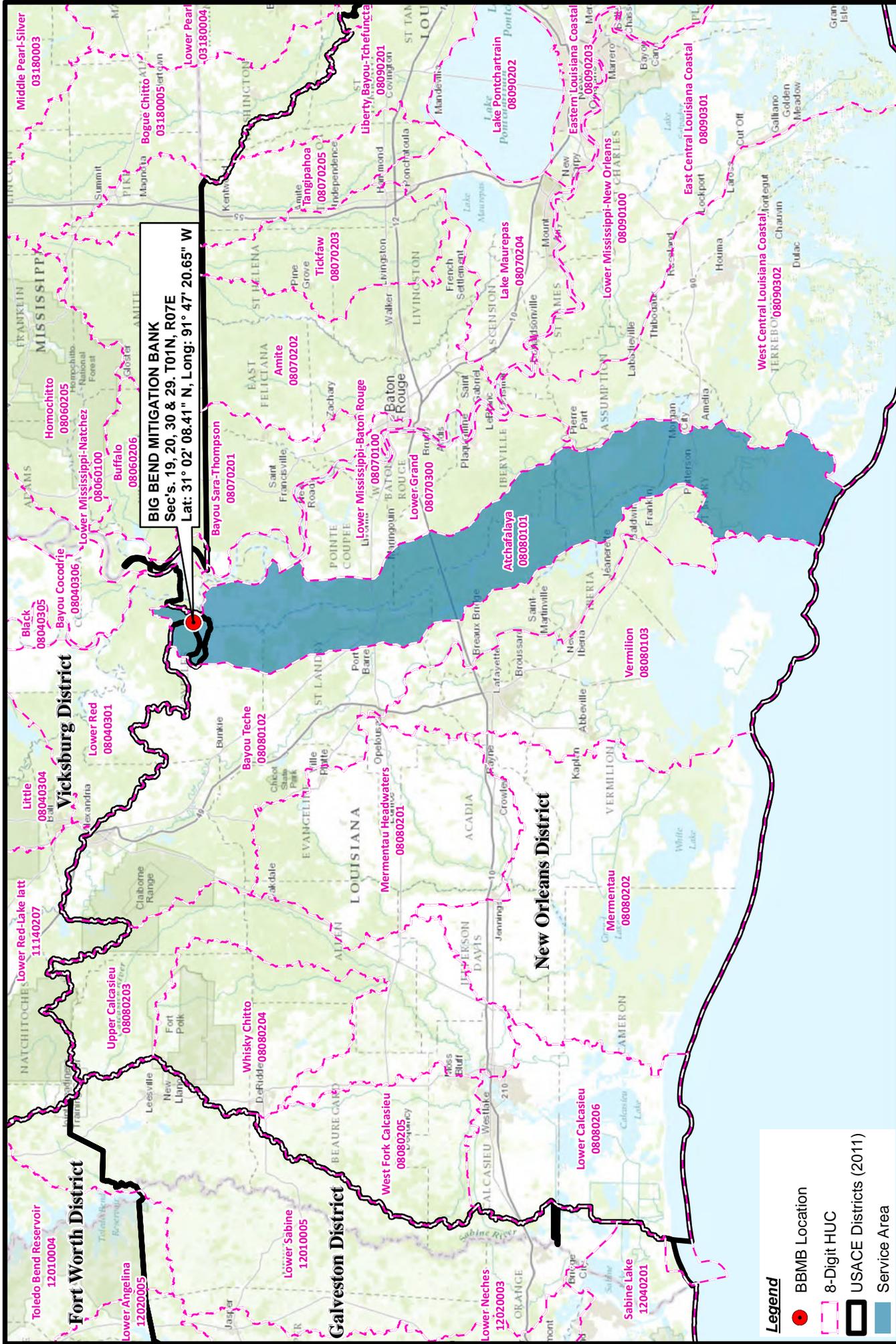
FIGURE 2

**BIG BEND MITIGATION BANK
U.S.G.S. 24K QUAD MAP
AVOYELLES PARISH, LOUISIANA**

Legend

 Big Bend Mitigation Bank (303.7 Ac.)





BIG BEND MITIGATION BANK
 Sec's. 19, 20, 30 & 29, T01N, R07E
 Lat: 31° 02' 08.41" N, Long: 91° 47' 20.65" W

- Legend**
- BBMB Location
 - 8-Digit HUC
 - ▭ USACE Districts (2011)
 - ▭ Service Area

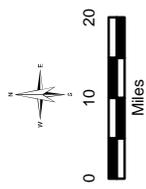
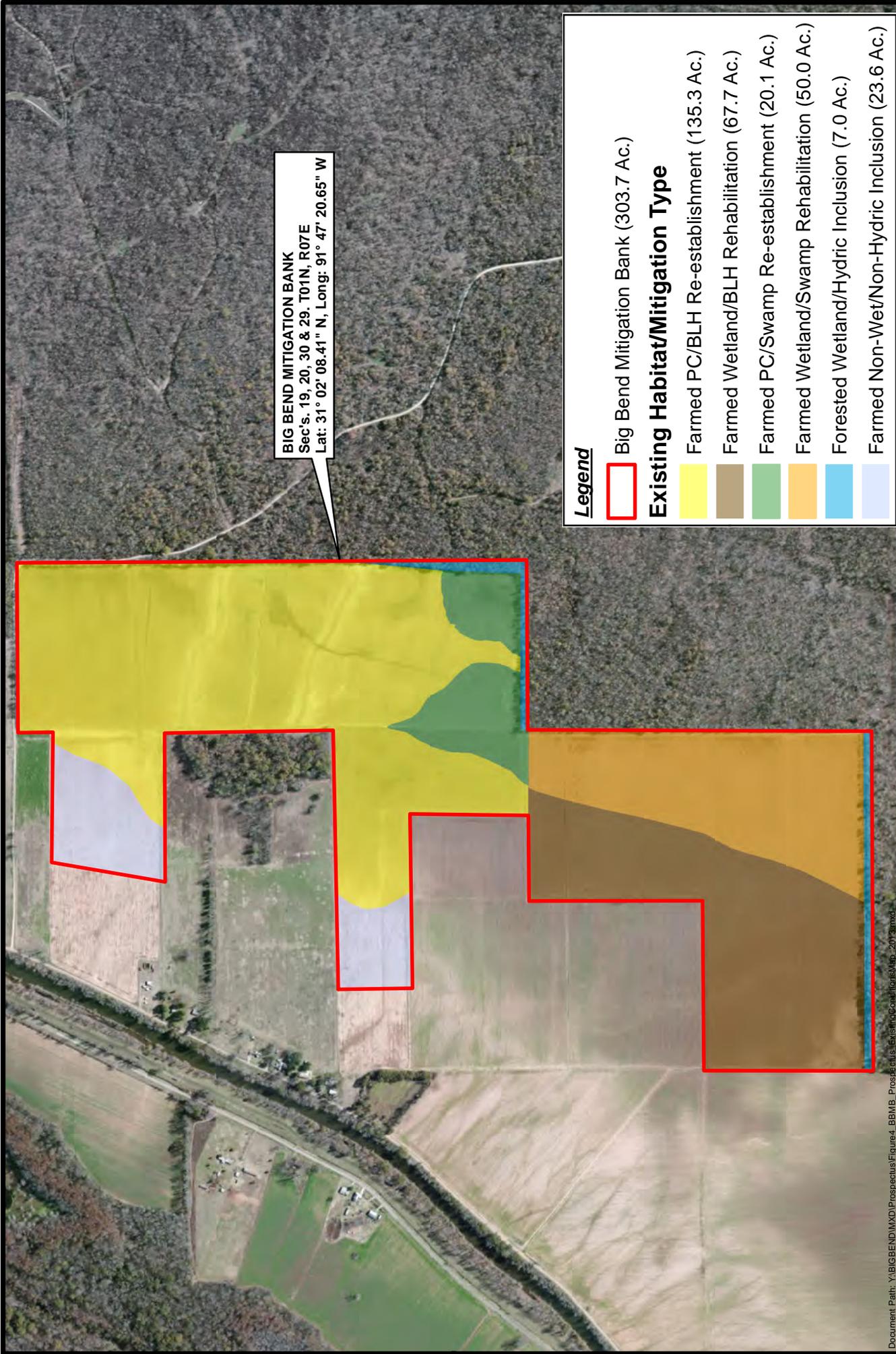


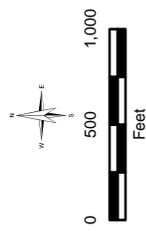
FIGURE 3
BIG BEND MITIGATION BANK
SERVICE AREA MAP
AVOYELLES PARISH, LOUISIANA

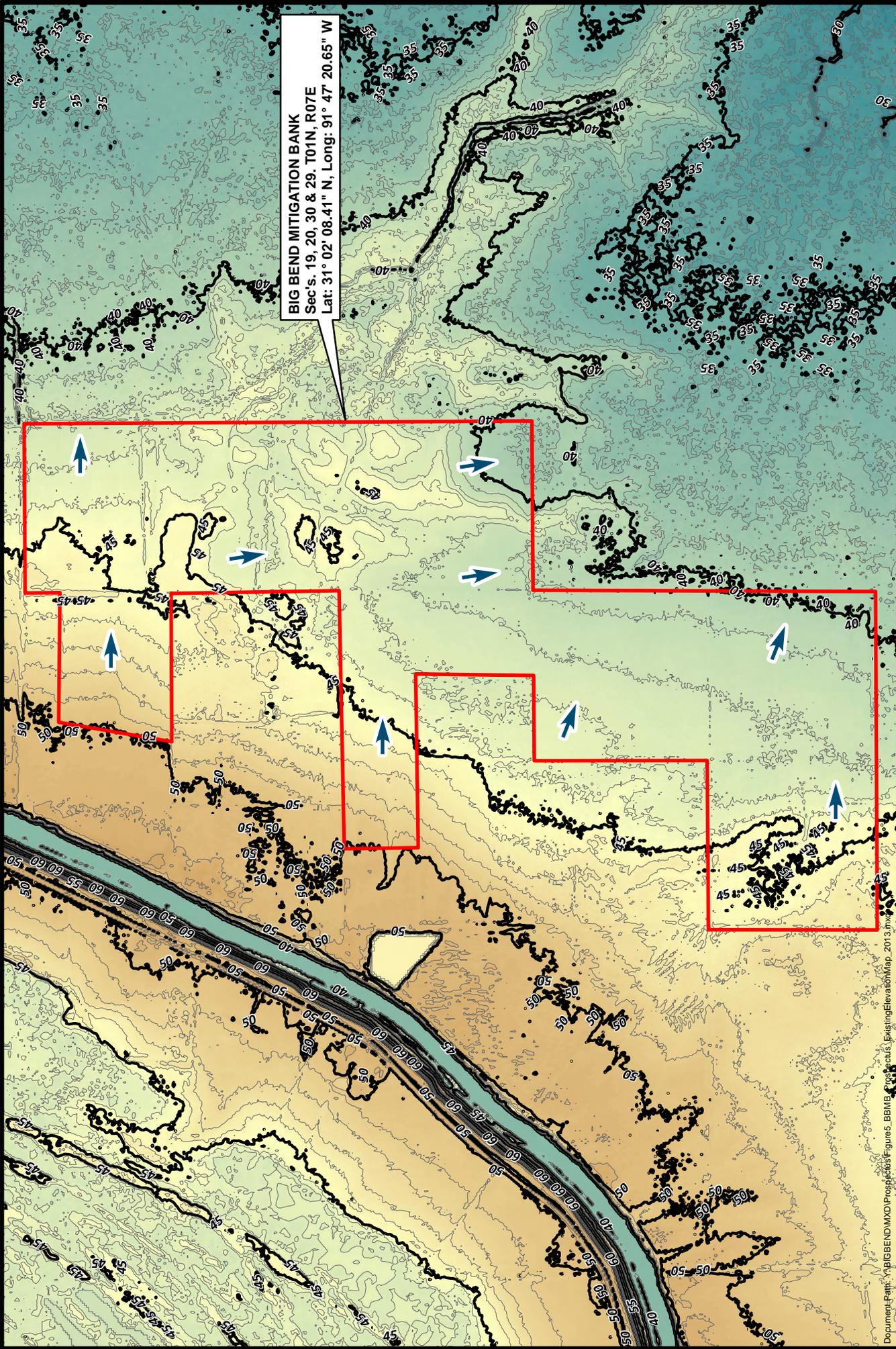




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FIGURE 4
BIG BEND MITIGATION BANK
EXISTING CONDITIONS MAP
AVOYELLES PARISH, LOUISIANA





Legend

- Big Bend Mitigation Bank (303.7 Ac.)
- ↑ Drainage Direction
- 5' Contour
- 1' Contour

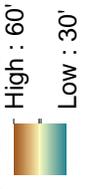
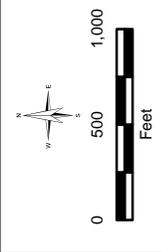


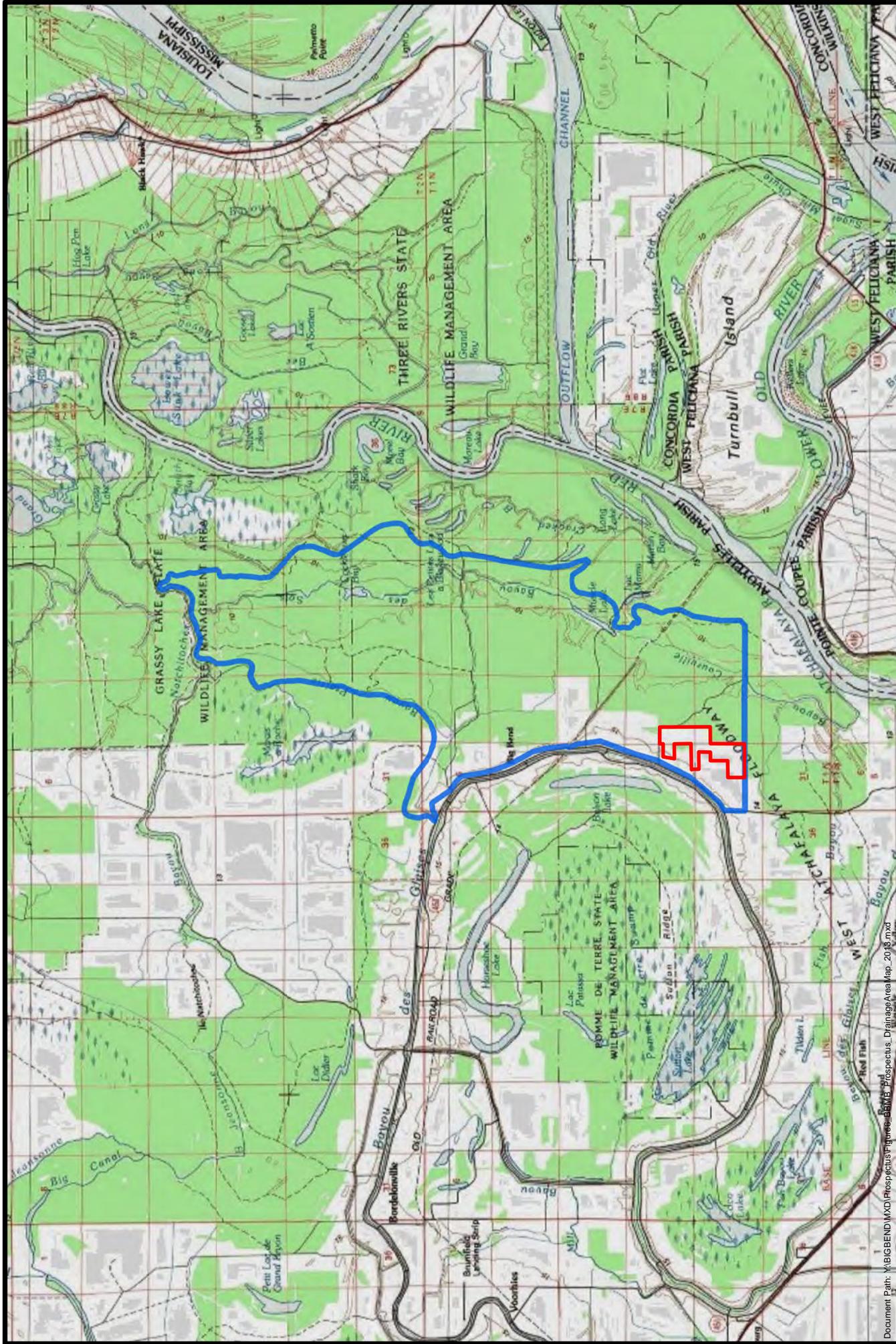
FIGURE 5

**BIG BEND MITIGATION BANK
EXISTING ELEVATIONS MAP
AVOYELLES PARISH, LOUISIANA**



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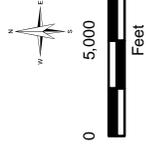


FIGURE 6
BIG BEND MITIGATION BANK
DRAINAGE AREA MAP
AVOYELLES PARISH, LOUISIANA

Legend

- Big Bend Mitigation Bank (303.7 Ac.)
- Drainage Area (19.5 sq/mi)

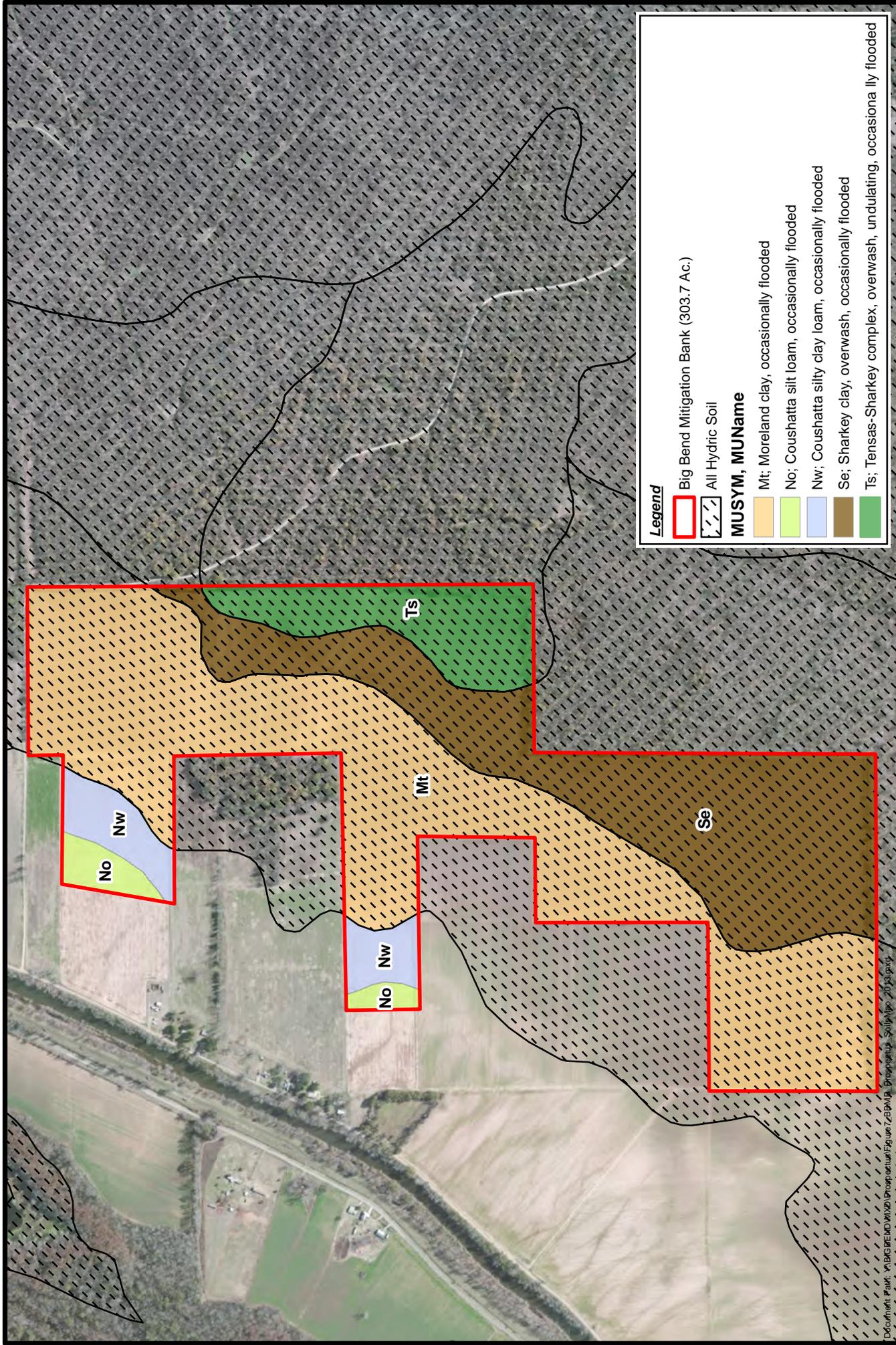
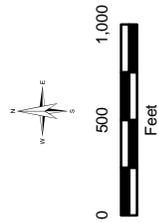


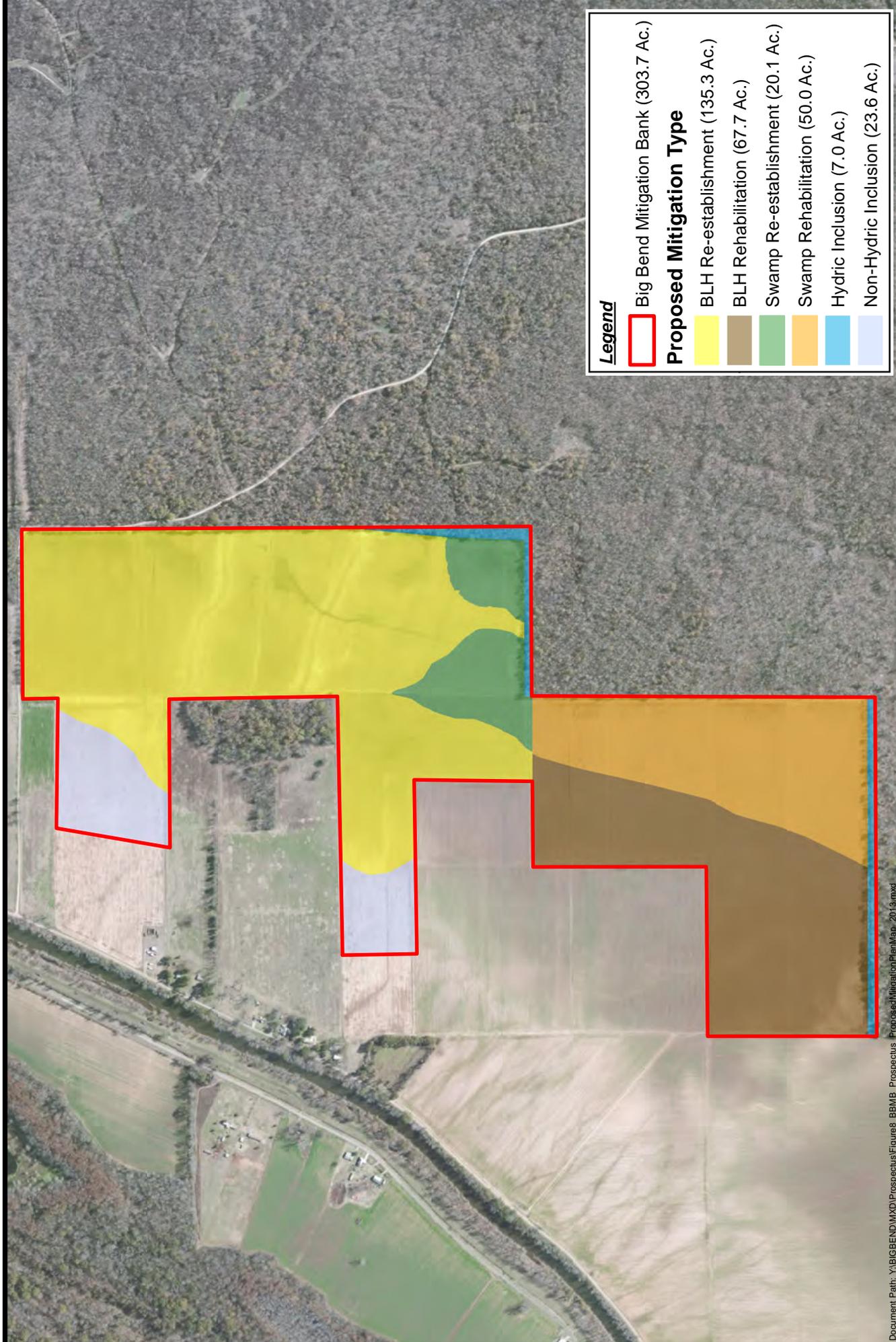
FIGURE 7

**BIG BEND MITIGATION BANK
SOILS MAP**

AVOYELLES PARISH, LOUISIANA



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Legend

- Big Bend Mitigation Bank (303.7 Ac.)
- BLH Re-establishment (135.3 Ac.)
- BLH Rehabilitation (67.7 Ac.)
- Swamp Re-establishment (20.1 Ac.)
- Swamp Rehabilitation (50.0 Ac.)
- Hydric Inclusion (7.0 Ac.)
- Non-Hydric Inclusion (23.6 Ac.)

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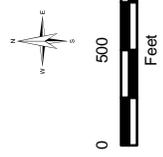
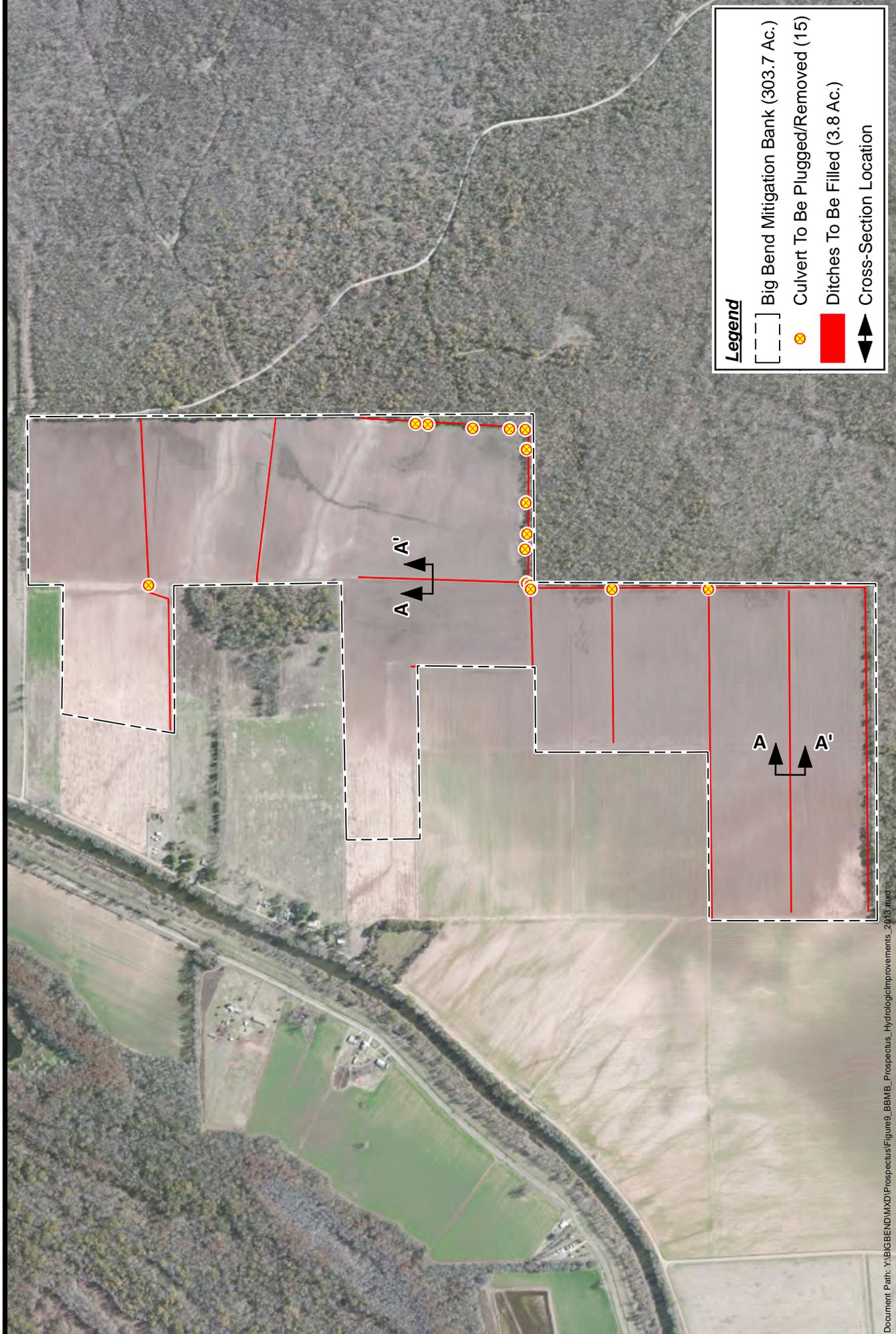


FIGURE 8
BIG BEND MITIGATION BANK
PROPOSED MITIGATION PLAN MAP
AVOYELLES PARISH, LOUISIANA



Legend

- Big Bend Mitigation Bank (303.7 Ac.)
- ✕ Culvert To Be Plugged/Removed (15)
- Ditches To Be Filled (3.8 Ac.)
- ↔ Cross-Section Location

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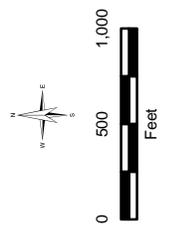
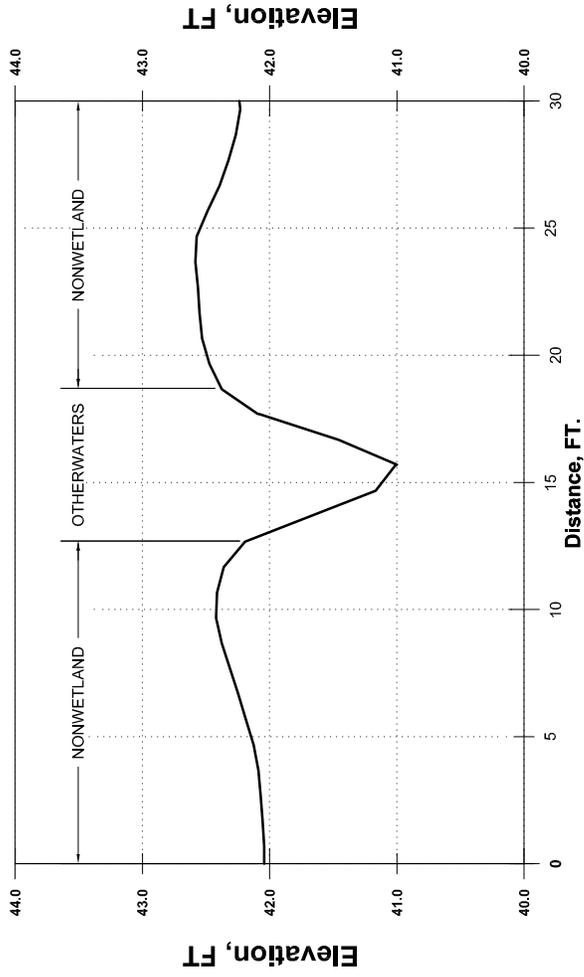
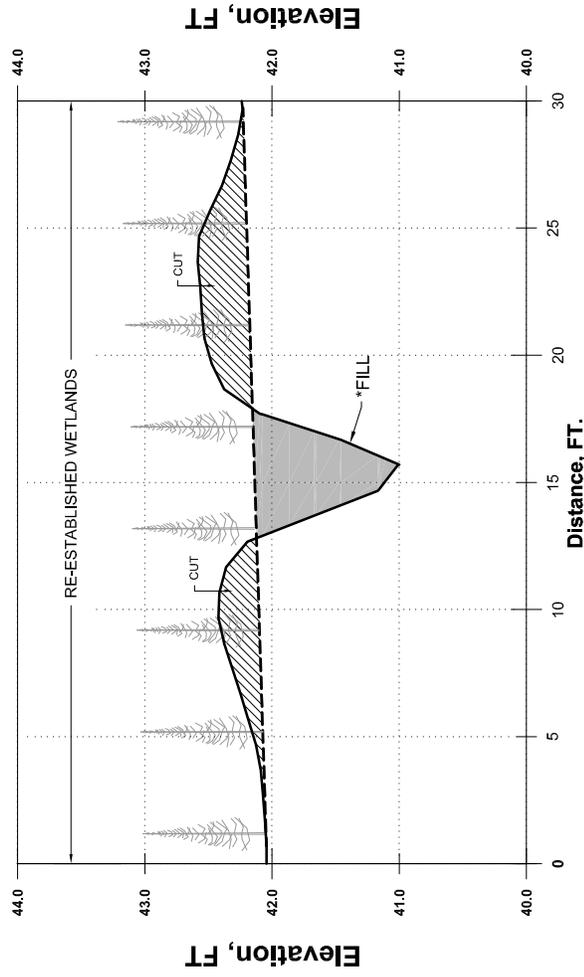


FIGURE 9
BIG BEND MITIGATION BANK
HYDROLOGIC IMPROVEMENTS & TYPICAL CROSS-SECTION LOCATION MAP
AVOYELLES PARISH, LOUISIANA

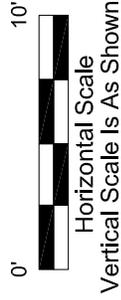




TYPICAL CROSS-SECTION EXISTING CONDITIONS

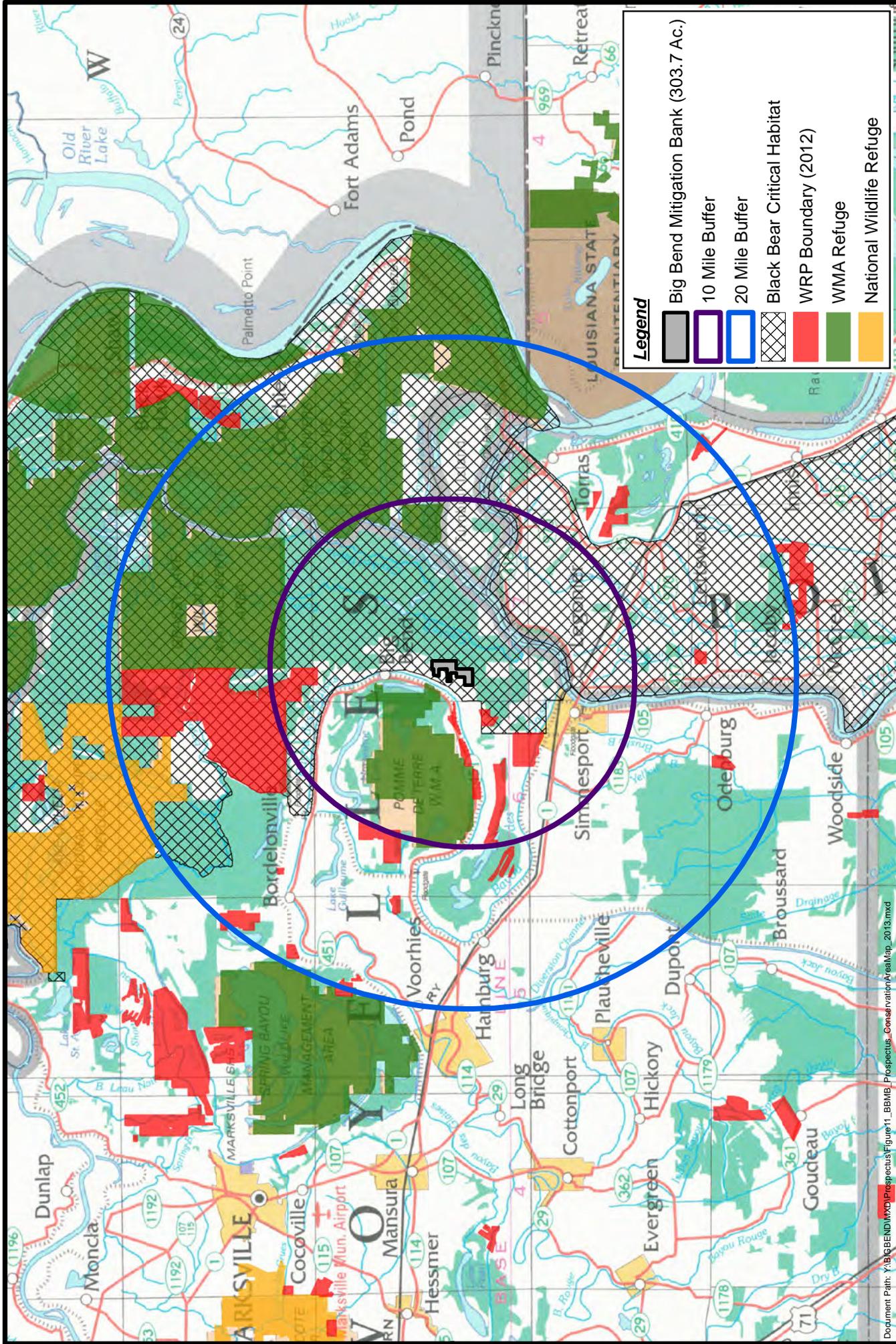


TYPICAL CROSS-SECTION PROPOSED DITCH BACKFILL



*Ditch to be filled to the extent that adjacent spoil will allow.

FIGURE 10
BIG BEND MITIGATION BANK
TYPICAL CROSS-SECTION A-A'
AVOUELLES PARISH, LOUISIANA



Legend

- Big Bend Mitigation Bank (303.7 Ac.)
- 10 Mile Buffer
- 20 Mile Buffer
- Black Bear Critical Habitat
- WRP Boundary (2012)
- WMA Refuge
- National Wildlife Refuge

FIGURE 11

**BIG BEND MITIGATION BANK
CONSERVATION AREA MAP
AVOYELLES PARISH, LOUISIANA**



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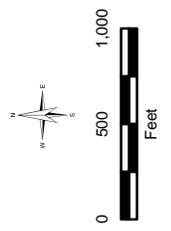


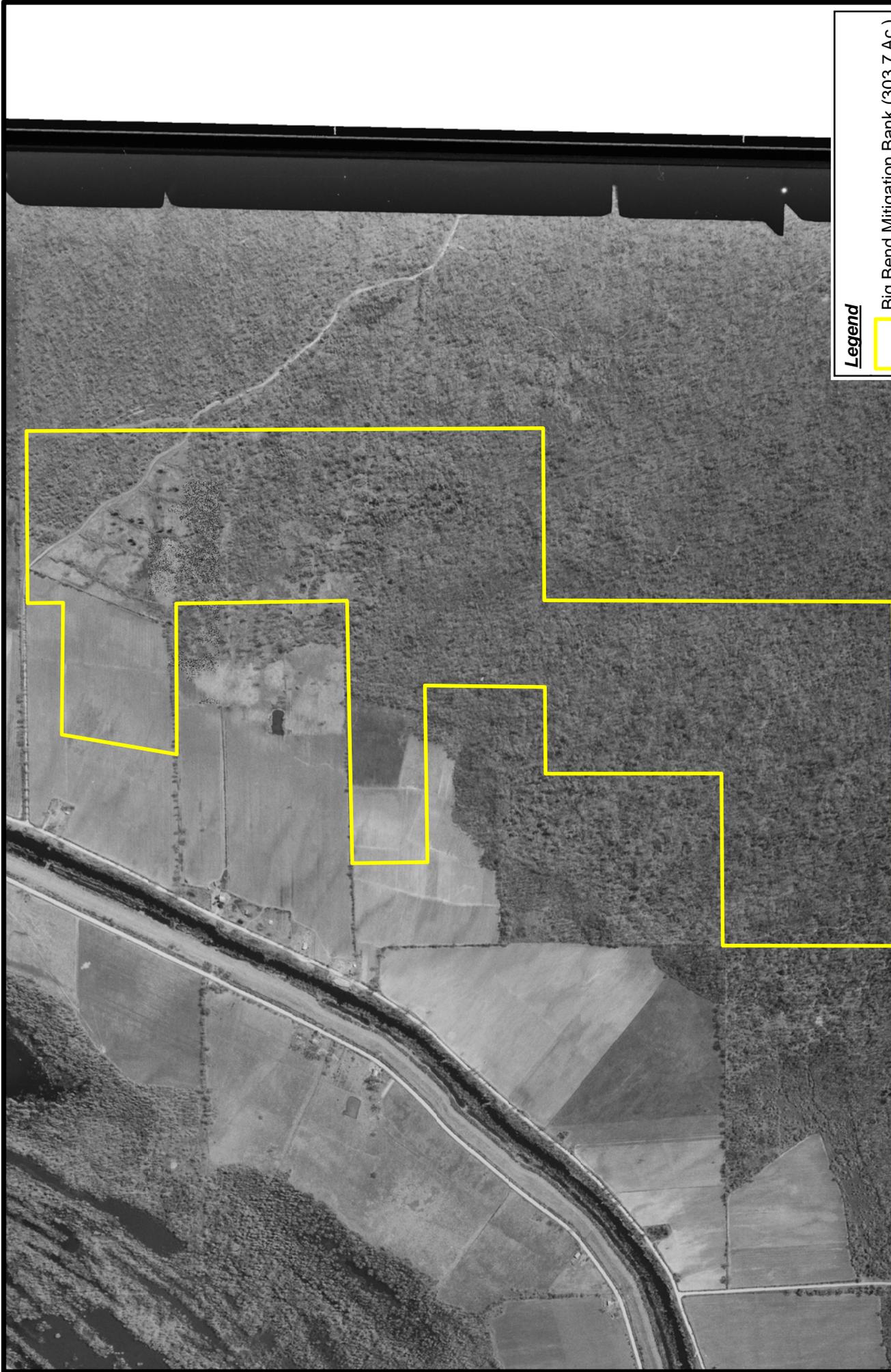
Legend

 Big Bend Mitigation Bank (303.7 Ac.)

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FIGURE 12
BIG BEND MITIGATION BANK
1941 AERIAL
AVOUELLES PARISH, LOUISIANA





Legend



Big Bend Mitigation Bank (303.7 Ac.)

Document Path: X:\BIG BEND\WXD\Prospectus\Figure 13\BBMB_Prospectus_1966Aerial_2013.mxd

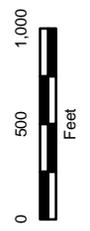
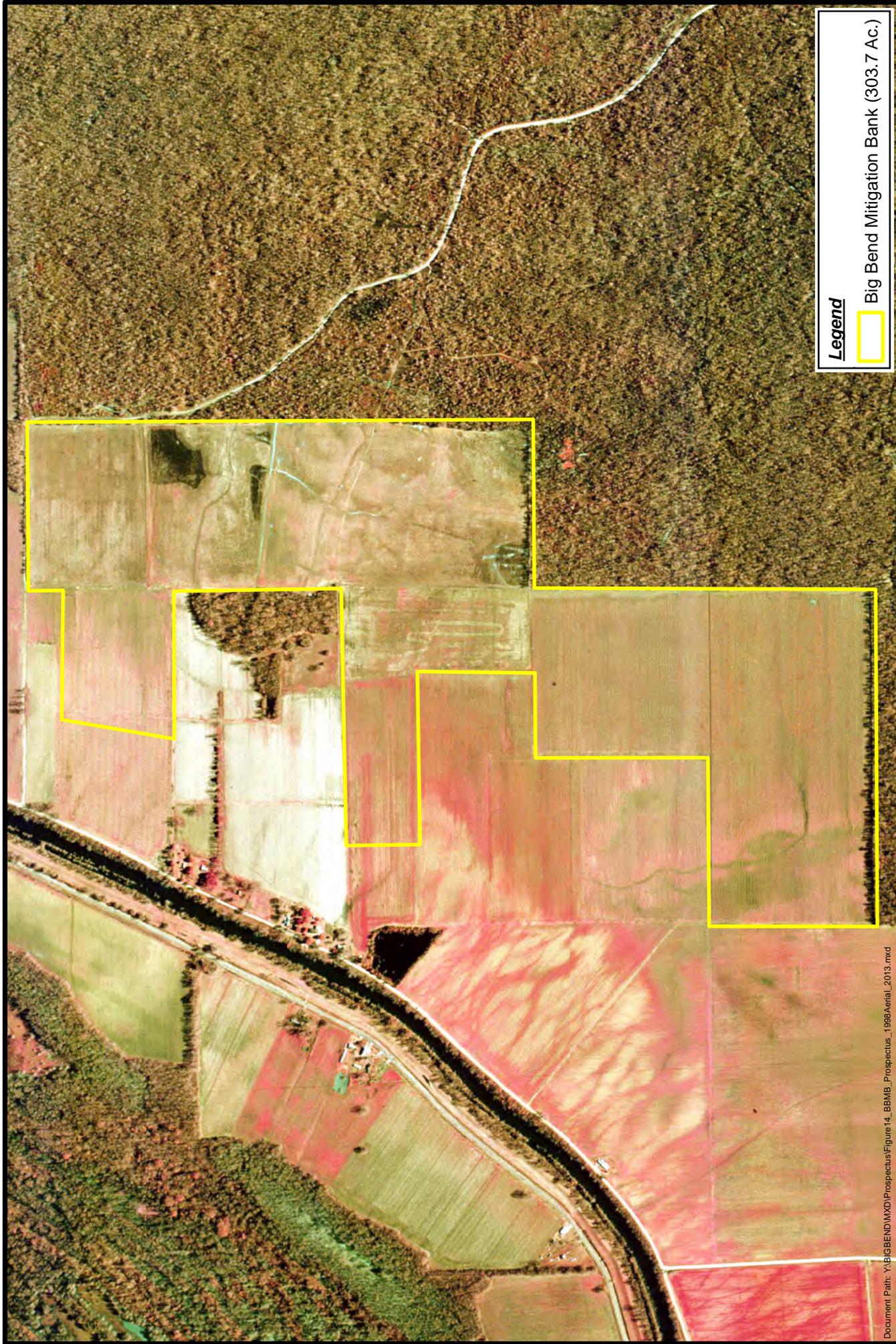


FIGURE 13
BIG BEND MITIGATION BANK
1966 AERIAL
AVOYELLES PARISH, LOUISIANA





Legend

Big Bend Mitigation Bank (303.7 Ac.)

Document Path: X:\BIGBEND\MXD\Prospectus\Figure14_BBMB_Prospectus_1998Aerial_2013.mxd

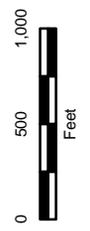
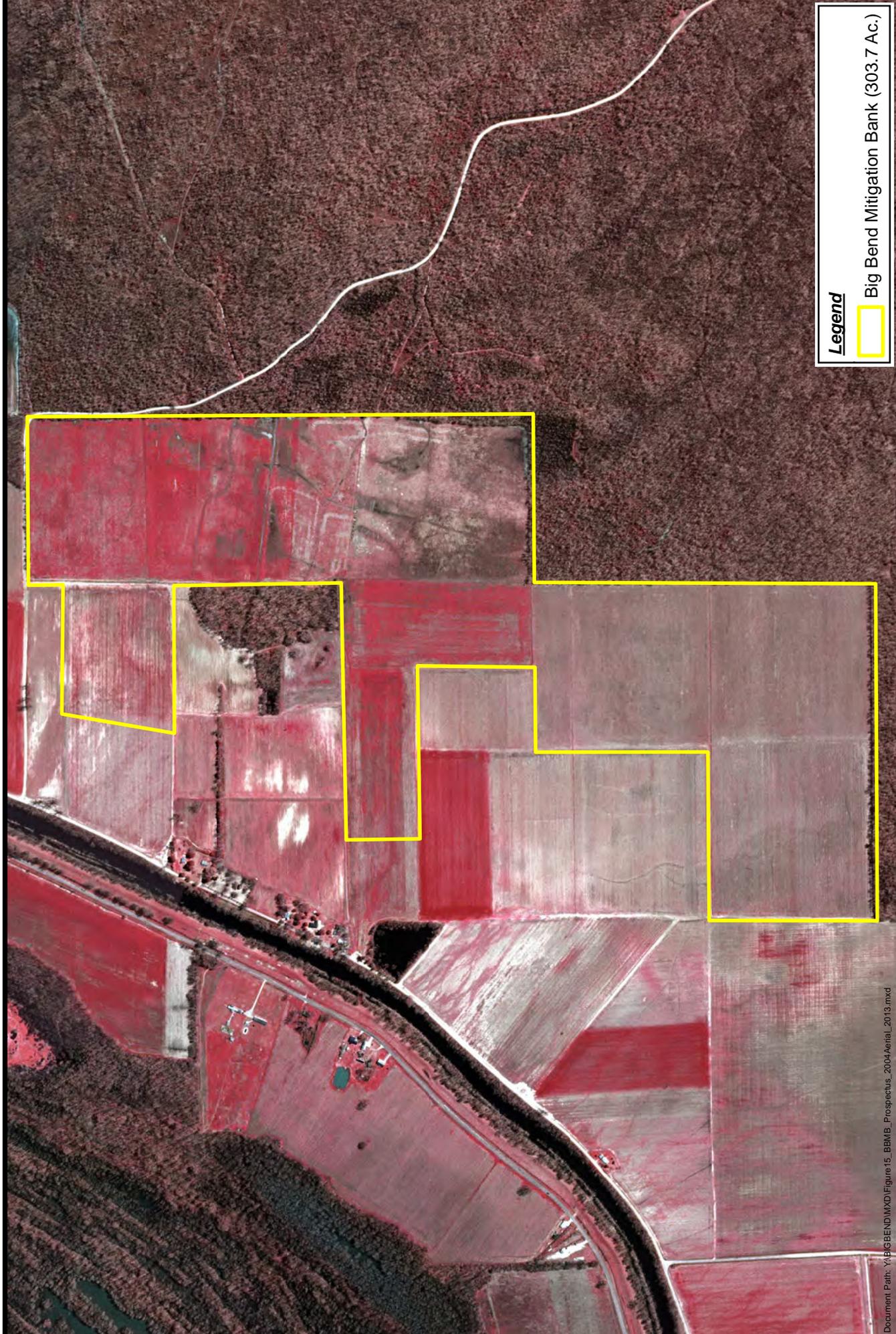


FIGURE 14
BIG BEND MITIGATION BANK
1998 AERIAL
AVOYELLES PARISH, LOUISIANA





Legend

 Big Bend Mitigation Bank (303.7 Ac.)

Document Path: Y:\BIGBEND\WXD\Figure15_BBMB_Prospectus_2004Aerial_2013.mxd

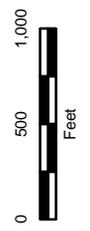
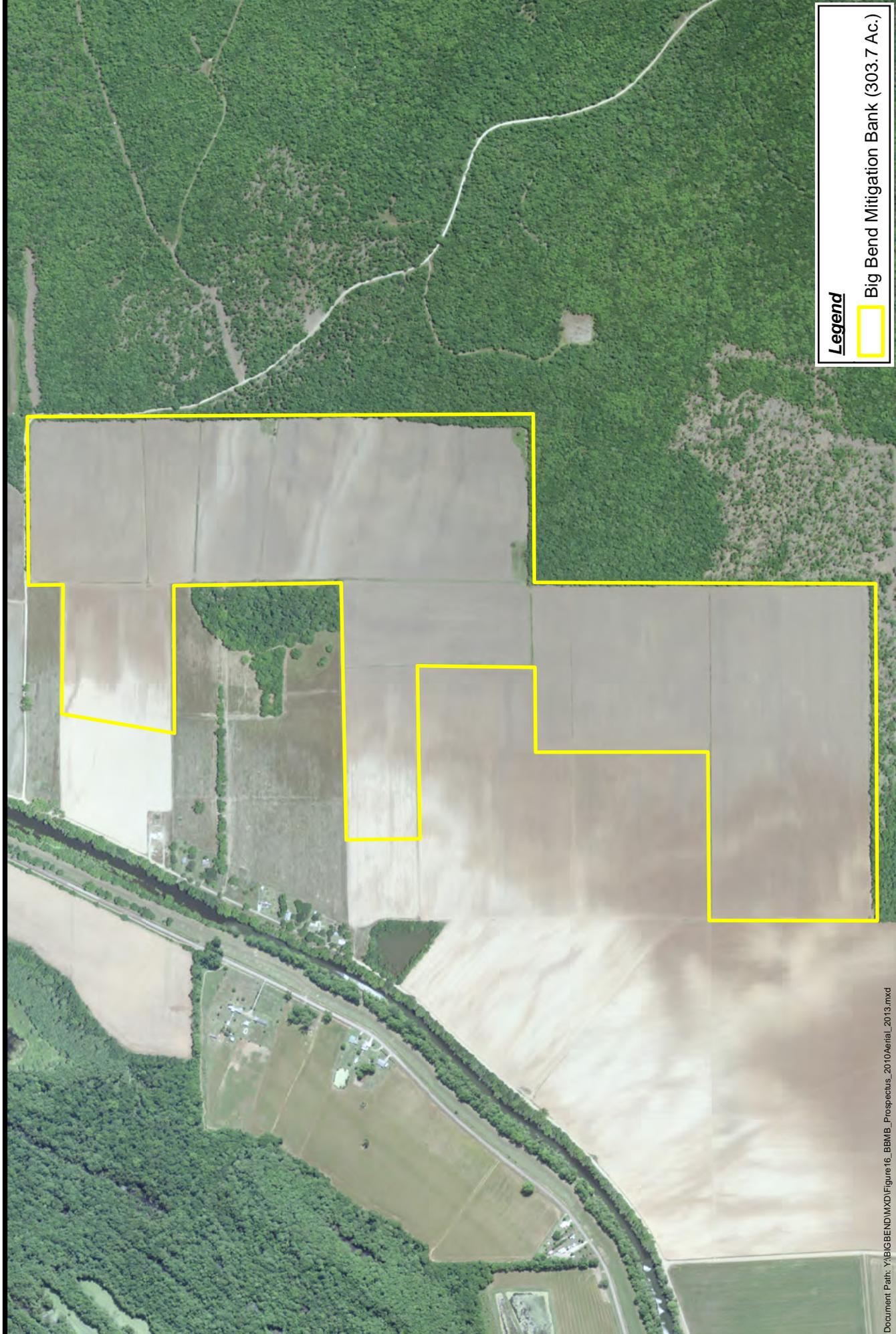


FIGURE 15
BIG BEND MITIGATION BANK
2004 AERIAL
AVOYELLES PARISH, LOUISIANA





Legend



Big Bend Mitigation Bank (303.7 Ac.)

Document Path: Y:\BIGBEND\MXD\Figure16_BBMB_Prospectus_2010\Aerial_2013.mxd

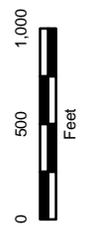
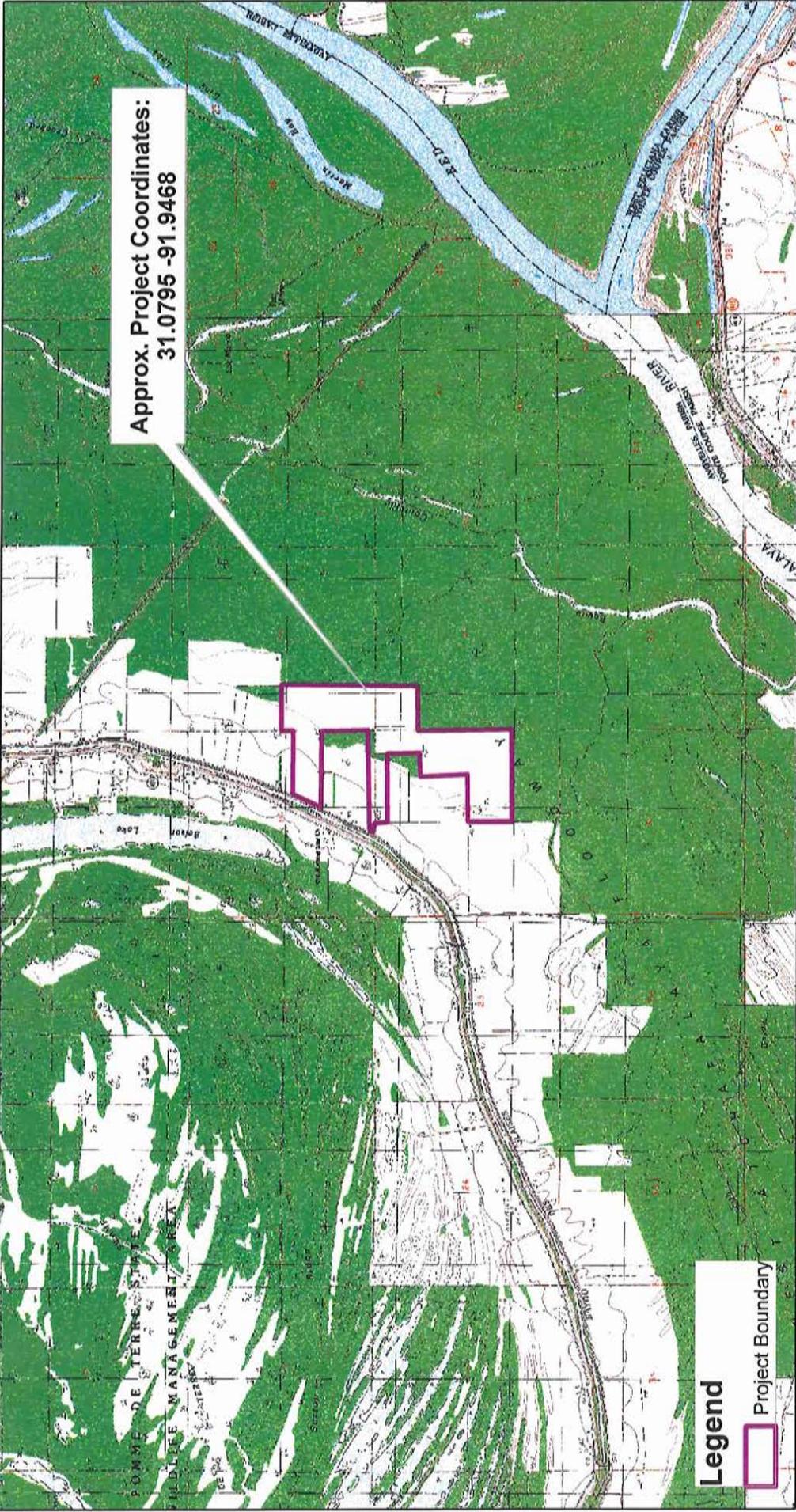


FIGURE 16
BIG BEND MITIGATION BANK
2010 AERIAL
AVOYELLES PARISH, LOUISIANA



APPENDIX B

PRELIMINARY JURISDICTIONAL DETERMINATION

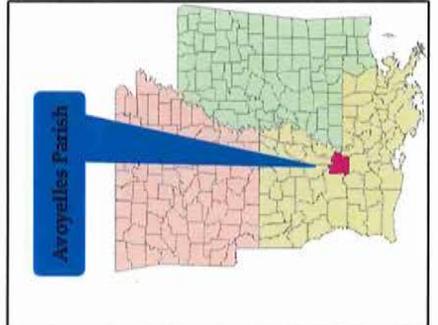
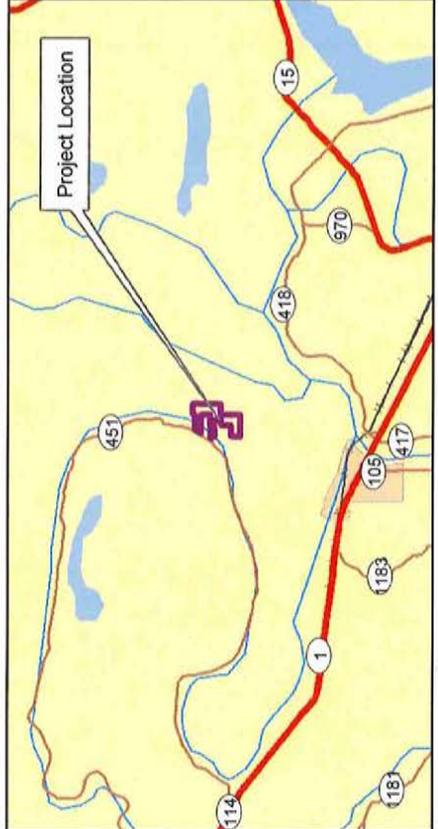


US Army Corps of Engineers

Regulatory Branch
Enforcement Section

0 2,300 4,600
Feet

11 June 2013
MVK-2012-1059
 Applicant:
 Brighton Heard
 Proposed Work:
 Mitigation Bank Development
 Location:
 Sections 19, 20, 29 and 30, T1N-R7E
 Big Bend, Quadrangle
 Avoyelles Parish, LA
 Map Background:
 NAIP Aerial Imagery (2004)
Preliminary
Jurisdictional Determination
 Prepared by:
 Robert C. Ulmer, Jr.



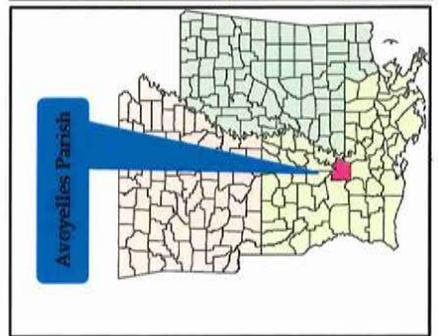
(2) jma



Approx. Project Coordinates:
31.0795 -91.9468

Legend

-  Project Boundary
-  wetlands




US Army Corps of Engineers



Regulatory Branch
Enforcement Section



0 750 1,500
Feet

11 June 2013
MVK-2012-1059
Applicant:
Brighton Heard
Proposed Work:
Mitigation Bank Development
Location:
Sections 19, 20, 29 and 30, T1N-R7E
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