

JOINT PUBLIC NOTICE

December 11, 2017

United States Army
Corps of Engineers
New Orleans District
Regulatory Branch
7400 Leake Avenue
New Orleans, LA. 70118

State of Louisiana
Department of Environmental Quality
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Attn: Water Quality Certifications

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WQC Application Number
WQC 171207-02

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

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

UPPER ATCHAFALAYA MITIGATION BANK IN POINTE COUPEE PARISH

NAME OF APPLICANT: Delta Land Services, L.L.C., 1090 Cinclare Drive, Port Allen, Louisiana 70767.

LOCATION OF WORK: The proposed Upper Atchafalaya Mitigation Bank is located in Sections 36 and 37 of Township 2 South, Range 7 East in Pointe Coupee Parish, Louisiana. The approximate center of the project is located at Latitude 30.920267° North and Longitude 91.749850° West. The Project is located within the Atchafalaya Watershed.

CHARACTER OF WORK: Delta Land Services, L.L.C. proposes to fill, grade multiple agricultural drainages, remove culverts, and conduct native vegetation plantings for the purpose of enhancing and restoring traditional surface hydrology and wetland habitats, in the construction of a bottomland hardwood mitigation bank, within the New Orleans District.

The comment period for the Department of the Army Permit and the Louisiana Department of Environmental Quality WQC will close **30 days** from the date of this joint public notice. Written comments, including suggestions for modifications or objections to the proposed work, stating reasons thereof, are being solicited from anyone having interest in this permit and/or this WQC request and must be mailed so as to be received before or by the last day of the comment period. Letters concerning the Corps of Engineers permit application must reference the applicant's name and the Permit Application Number, and be mailed to the Corps of Engineers at the address above, **ATTENTION: REGULATORY BRANCH**. **Similar letters concerning the Water Quality Certification must reference the applicant's name and the WQC Application number and be mailed to the Louisiana Department of Environmental Quality at the address above.** The application for this proposed project is on file with the Louisiana Department of Environmental Quality and may be examined during weekdays between 8:00 a.m. and 4:30 p.m. Copies may be obtained upon payment of costs of reproduction.

Corps of Engineers Permit Criteria

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

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

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

Our initial finding is that the proposed work will have no effect any species listed as endangered by the U.S. Departments of Interior or Commerce, nor affect any habitat designated as critical to the survival and recovery of any endangered species. Utilizing Standard Local Operating Procedure for Endangered Species in Louisiana (SLOPES) dated October 22, 2014, between the U.S. Army Corps of Engineers, New Orleans and U.S. Fish and Wildlife Service, Ecological Services Office, the Corps has determined that the proposed activity would have no effect on any listed species.

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

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

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

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

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Martin S. Mayer
Chief, Regulatory Branch

Enclosure



UPPER ATCHAFALAYA MITIGATION BANK

Pointe Coupee Parish, Louisiana

MVN-2014-02450

Prepared for
U. S. Army Corps of Engineers,
New Orleans District (Chair)

Sponsored by: Delta Land Services, LLC
November 29, 2017



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Louisiana Sportsman.com



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Restore & Revitalize

**PROSPECTUS FOR THE PROPOSED
UPPER ATCHAFALAY MITIGATION BANK**

**POINTE COUPEE PARISH
LOUISIANA**

November 29, 2017

PREPARED BY:

**DELTA LAND SERVICES, LLC
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1.0 INTRODUCTION

Delta Land Services, LLC (DLS) has prepared this prospectus in accordance with 33 CFR § 332.8(d)(2) to establish and operate the Upper Atchafalaya Mitigation Bank (UAMB). The UAMB is a 282.5-acre proposed mitigation bank to provide compensatory mitigation for unavoidable impacts to “Waters of the United States¹” authorized through the issuance of Department of the Army (DA) Permits by the U.S. Army Corps of Engineers (USACE) New Orleans District (CEMVN) pursuant to Section 404 of the Clean Water Act of 1972.

The UAMB is located between the Atchafalaya and Mississippi Rivers in the northern part of Pointe Coupee Parish, LA. The UAMB is approximately four miles northwest of Innis, Louisiana and three miles south of Lettsworth, Louisiana (Figure 1). The UAMB is located on the United States Geological Survey (USGS) 7.5-minute quadrangles “Innis, LA” and “Simmesport, LA” (Figure 2).

1.1 Site Location

The UAMB is located within the 29,555-square mile Mississippi Delta Cotton and Feed Grains Region Land Resource Region (LRR O) of the 38,865-square mile Southern Mississippi River Alluvium Major Land Resource Area (MLRA 131A), the Mississippi Alluvial Plain Level III Ecoregion, and the Southern Holocene Meander Belts Level IV Ecoregion (Natural Resources Conservation Service [NRCS] 2006, Omernik 1987, Environmental Protection Area [EPA] 2003). The UAMB is located within the 838,000-acre Atchafalaya Trace State Heritage Area as designated by the Louisiana Legislature (La. R.S. 25:1222-1225). The region was designated as a National Heritage Area by the National Park Service (NPS) in 2006 due to its concentration of significant natural, scenic, cultural, historic and recreational resources (Atchafalaya National Heritage Area 2012).

MLRA 131A is typically characterized by fertile soils, smooth topography, abundant moisture, and a long growing season. Such conditions favor agricultural production in this region. Landforms in the area are level or depressional to very gently undulating alluvial plains. Some convex areas exist as natural levees and undulating terraces and spoil banks of the artificial drainage network across the landscape. If agricultural production was to be achieved, artificial drainage was implemented to lower the water table and/or protect cropland from flood damage.

Pointe Coupee Parish has a warm and relatively humid, subtropical climate characterized by relatively high rainfall, with long hot summers and short mild winters (Soil Conservation Service [SCS] 1982). The average annual precipitation is 61.1 inches and falls almost entirely as rainfall during frontal storms in late fall, winter, and early spring. Other significant sources of precipitation are convective storms and heavy rainfall produced by tropical systems. The growing season may persist for up to 355 days, as soil temperatures rarely drop below freezing.

¹ 33 CFR § 328 defines waters of the United States as it applies to the jurisdictional limits of the authority of the Corps of Engineers under the Clean Water Act. Waters of the United States include those waters listed in 33 CFR § 328(a). The lateral limits of jurisdiction in those waters may be divided into three categories (i.e., territorial seas, tidal waters, and non-tidal waters, which are further described in 33 CFR § 328.4 (a), (b), and (c).

The UAMB is located in Sections 36 and 37 of Township 2 South, Range 7 East in Pointe Coupee Parish, Louisiana (Figure 2). The approximate center of the project is located at Latitude 30.920267 ° North and Longitude 91.749850 ° West (North American Datum of 1983 [NAD83]). The elevation of Pointe Coupee Parish ranges from below sea level to 65 feet mean sea level (MSL) and the UAMB ranges from 28 to 40 feet MSL North American Vertical Datum (NAVD) with the mean elevation at 36 feet MSL (Figure 3). The higher elevations are the tops of various levees and access roads associated with the current agricultural operations. The UAMB is located in the approximate 1,992-square mile Atchafalaya watershed as defined by the USGS 8-digit Hydrologic Unit Code (HUC) 08080101 (Figure 4). The entire UAMB is within the 100-year flood zone according to the Flood Insurance Rate Maps (FIRM) published by the Federal Emergency Management Agency (FEMA).

2.0 PROJECT GOALS AND OBJECTIVES

The goal of the UAMB is the re-establishment² and rehabilitation³ of bottomland hardwood (BLH) forested wetland ecosystems along with a forested buffer within the alluvial floodplain of the Mississippi River. Access areas and wildlife openings will be maintained as non-mitigation acreage within the UAMB. The purposes of these features are to provide wildlife openings and to facilitate monitoring/maintenance activities associated with Bank establishment, long-term management and continued recreational use of the property.

The restoration⁴ of BLH forest within the 282.5-acre UAMB will provide additional wetland functions and values that are not currently realized under existing conditions and land use. The cessation of intensive agricultural activities, afforestation⁵ with native wetland tree species, and increasing surface-water retention time for vegetative nutrient uptake and sedimentation will provide localized improvement to downstream waters. Wildlife habitat will improve for resident biota and nearctic-neotropical migrating bird species (e.g., staging, resting, feeding, escape cover, etc.) through afforestation with native wetland tree and shrub species. Additionally, afforestation of this site will provide habitat beneficial to the Louisiana black bear (*Ursus americanus luteolus*), a formerly designated threatened species recently classified as recovered by U.S. Fish and Wildlife Service (FWS)⁶.

² Re-establishment is defined in 33 CFR § 332.2 as *the manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former aquatic resource. Re-establishment results in rebuilding a former aquatic resource and results in a gain in aquatic resource area and functions.*

³ Rehabilitated is defined in 33 CFR § 332.2 as *the manipulation of the physical, chemical, or biological characteristics of a site with the goal of repairing natural/historic functions to a degraded aquatic resource. Rehabilitation results in a gain in aquatic resource function, but does not result in a gain in aquatic resource area.*

⁴ Restoration is defined in 33 CFR 332.2 as *the manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former or degraded aquatic resource. For the purpose of tracking net gains in aquatic resource area, restoration is divided into two categories: re-establishment and rehabilitation.*

⁵ The SAF (2011) defines afforestation as “the establishment of a forest or stand in an area where the preceding vegetation or land use was not forest whereas reforestation is the re-establishment of forest cover either naturally (by natural seeding, coppice, or root suckers) or artificially (by direct seeding or planting) —note reforestation usually maintains the same forest type and is done promptly after the previous stand or forest was removed —synonym regeneration”.

⁶ Federal Register Vol. 81, No. 48 titled *Endangered and Threatened Wildlife and Plants; Removal of the Louisiana Black Bear from the Federal List of Endangered and Threatened Wildlife and Removal of Similarity-of-Appearance Protections for the American Black Bear* promulgated as a Final Rule by the US Fish and Wildlife Service on March 11, 2016

Specifically, the project objectives are to improve and protect the physical, chemical and biological functions of a forested wetland system as follows:

- Restoration of historic and self-sustaining surface hydrology within the 282.5-acre UAMB through hydrological restoration activities such as backfilling artificial drainages;
- Re-establishment (272.9 acres) and Rehabilitation (1.2 acres) of a native BLH community through hydrology restoration and afforestation of native species;
- Improvement of water quality by means of cessation of agricultural activities and reduction of non-point source runoff through hydrological restoration activities;
- Ensuring long-term viability and sustainability of the UAMB through active and adaptive management including, but not limited to, invasive species control, appropriate monitoring, and long-term maintenance;
- Establishing financial assurances to achievement of long-term success criteria;
- Ensure long-term viability and sustainability by implementing specific management strategies such as
 - active and adaptive management
 - establishment of financial assurances (e.g., construction, establishment) and long-term funding mechanisms
 - initial, intermediate, and long-term monitoring
 - initial, intermediate, and long-term maintenance
 - initial, intermediate, and long-term invasive species control; and
- To provide for the long-term protection through the execution of a perpetual-term conservation servitude and establishment of a long-term fund to cover annual expenditures associated with maintenance and management of the UAMB.
- To restoration of forested habitat for aquatic fauna through afforestation of a diversity of indigenous species and control of invasive/noxious species; and
- To afforest and protect land surrounded by large, extant, and contiguous forested habitat which will benefit breeding birds in accordance with existing bird conservation plans and the Louisiana black bear in accordance with the post-delisting monitoring plan for the species (FWS 2016) (Figure 5).

3.0 ECOLOGICAL SUITABILITY OF THE SITE

3.1 Historical Ecological Characteristics

The UAMB is located within the approximately 25 million-acre Lower Mississippi Alluvial Valley (LMAV). Prior to European settlement and colonization, the LMAV consisted of mostly contiguous bottomland hardwoods and swamps with some alterations due to activities of Native Americans. Significant deforestation began after colonization as a result

of conversion of these lands to agricultural uses and an effort to satisfy a growing demand for timber. The rate of deforestation increased in the 20th century as a consequence of major flood control projects; particularly with major levee construction following the passage of the 1928 Flood Control Act. Soybean (*Glycine max*)⁷ demand following World War II increased the need for agricultural property within the LMAV (Oswalt 2013). Advancements in land clearing technology and inflation in the price of agricultural commodities during the 1960s and 1970s resulted in an acceleration of the deforestation (Lower Mississippi Valley Joint Venture [LMRJV] 2007). By the mid-1980s, only 6.6 million acres of the LMAV remained forested (Oswalt 2013). Approximately 20 percent of the original forested acreage remains with much of it in fragmented blocks averaging a total 158 acres in size (Twedt et al. 1999).

The primary sources of surface water on the UAMB was historically overbank flooding from the Atchafalaya and Mississippi River systems, precipitation and high water tables. Overbank flooding from the aforementioned river systems is no longer a major driver in the hydrology system given the construction of an extensive levee system on these rivers in the mid-20th century which leaves the primary sources of hydrologic input dependent on direct precipitation, surface runoff from higher elevations, and high water tables near the surface. Based on soil type and landscape position, native vegetation on the site was comprised of mixed, deciduous bottomland tree species. A review of historical aerial photography reveals the majority of the site and the surrounding area was forested as late as 1952. Clearing had begun in the area for agricultural purposes between 1941 and 1966 with the entire UAMB cleared and in agricultural production between 1972 and 1983 (Figures 6 through 14).

3.2 Soils

Approximately 98 percent of the soils mapped within the project area are Sharkey silty clay loam (Se) with the remaining 2 percent being mapped as Sharkey clay, 0 to 1 percent slopes, rarely flooded, south (Sf) according to the Soil Survey Geographic (SSURGO) database (NRCS 2017) (Figure 15). The Sf and Se mapping units are both listed as a predominately hydric soil series by the NRCS with a 93% and 90% hydric rating, respectively (2017).

3.3 Vegetation

The majority of the UAMB is prior-converted (PC) cropland and is currently in crop production, with sugarcane (*Saccharum* L.) and soybeans (*Glycine max*) being the predominant crop produced over the last several years (Figure 16). The area adjacent to Bayou Fisher on the northern portion of the site is a scrub/shrub community with green ash (*Fraxinus pennsylvanica*), Chinese tallowtree (*Triadica sebifera*), Canadian goldenrod (*Solidago canadensis*), broom-sedge (*Andropogon virginicus*), dotted smartweed

⁷ All plant scientific nomenclature is from Lichvar et al. (2014) or NRCS (2016^a).

(*Persicaria punctata*), October ladies'-tresses (*Spiranthes ovalis*) and southern dewberry (*Rubus trivialis*).

3.4 Hydrology

Current project hydrology is naturally influenced primarily by localized rainfall and high water tables. Most upstream, offsite drainage which may flow onto the UAMB is intercepted by artificial conveyances (i.e., agriculture drains). Additionally, flows and drainage from the neighboring agricultural fields to the northeast of UAMB will flow into existing agriculture drains which traverse the UAMB and flow through existing culverts into Bayou Fisher (Figure 17). Although most of this flow is confined to the agriculture drains, some overbank flooding may enter the UAMB from upstream flash flood events.

3.5 Jurisdictional Wetland Status

A wetland delineation report and associated request for preliminary jurisdictional determination (PJD) was submitted to the CEMVN on September 18, 2014. The CEMVN issued a jurisdictional determination (JD) on December 12, 2014 (MVN-2014-02450; Appendix D). The results of the JD shows approximately 1.2 acres of wetlands and 281.3 acres of PC cropland (e.g., “non-wetlands”) within the UAMB.

3.6 General Need

The primary factors considered during site selection were the presence of hydric soils, the evidence of the existence of forested wetlands prior to agricultural conversion, the compatibility with local and regional watershed initiatives and conservation plans, and the proposed restoration’s compatibility with existing and anticipated surrounding land uses (Figure 18). The restoration and protection of forested wetlands within the proposed UAMB will provide additional wetland functions and values that are currently not realized. Improved water quality will be achieved through re-establishing natural drainage patterns and afforestation of native BLH habitat. The cessation of intensive cultivation, reduction in the application of pesticides, and the reduced use of fertilizers will reduce potential, non-point source pollution into local water bodies (e.g., soil erosion and chemical runoff).

The proposed UAMB is located within the 838,000-acre Atchafalaya Basin. The Atchafalaya Basin is the largest river swamp in the United States with significant amounts of forested wetlands. It is over 100 miles in length from the Old River Control Structure northeast of Simmesport, Louisiana, south to the Atchafalaya River delta near Morgan City, Louisiana. Six threatened or endangered bird species and 29 rookeries are known within the Atchafalaya Basin in addition to over 40 species of reptiles and 20 species of amphibians (Atchafalaya Basin Program [ABP] 2012). The State Master Plan for the ABP was developed in 1998 and was approved by the Louisiana Legislature in 1999. The restoration of the UAMB is consistent with the mission statement of the State Master Plan which calls for the restoration and conservation of natural habitats within the Atchafalaya Basin. Vegetative plantings, invasive species control, protection through conservation servitudes,

and monitoring to ensure achievement of the restoration goals are recognized techniques for habitat restoration (Atchafalaya Basin Advisory Committee 1998; ABP 2012). The entire Atchafalaya watershed is designated as a Gulf Ecological Management Site (GEMS). Although the UAMB is within a portion of the Atchafalaya HUC that is not in the Louisiana Coastal Zone Boundary or the Louisiana Coastal Wetland Conservation Plan Area, the Louisiana Department of Natural Resources (LDNR) Office of Coastal Management (OCM) included the entire Atchafalaya HUC in the Intergovernmental Coordination (IGC) zone as it is subject to a moderate level of coastal processes and influence. In addition to the IGC designation, the OCM designated the entire HUC as a Watershed Planning Area (WPA) given its importance to water quality, ecosystem protection and flood control as it affects the coastal zone (LDNR OCM 2010). The Coastal Wetland Forest Science Working Group (2005) identified the forested wetlands within the entire Atchafalaya HUC as coastal wetland forests within the South Delta Coastal Area Region.

The restoration and afforestation of the UAMB near larger, extant tracts of bottomland hardwoods will provide benefit to various species of wildlife such as nearctic-neotropical migrant birds and threatened species such as the Louisiana black bear (NRCS 2005). Approximately 107 bird species, excluding wading birds, nest regularly within the MAV with 70 species utilizing bottomland hardwoods as primary habitat (Twedt et al. 1999¹). The Partners in Flight Bird Conservation Plan for the MAV recommends increasing the interior area of forested fragments to increase habitat for forest-dwelling (silvicolous) bird species (Twedt et al. 1999¹). Twedt et al. (1999²) lists 14 forest breeding species as species of high concern. Three of these species, Swainson's warbler (*Limnothlypis swainsonii*), Cerulean warbler (*Dendroica creulea*), and swallow-tailed kites (*Elanoides forficatus*), are highest priority species for conservation. The planting of densely-spaced seedlings and the management of such species to provide a diversity of structure in areas within largely forested landscapes is an identified strategy to encourage the recruitment of breeding populations of scrub-dwelling (thamnic) and silvicolous bird species (Twedt et al. 1999¹; Twedt et al. 2010). Promotion of reforestation efforts and the protection of habitat with conservation easements is a recognized and successful strategy for bird conservation on private lands in the Barataria and Terrebonne basins (Wiedenfield et al. 1996). Using the spatial analysis model developed by Twedt et al. (2006), the UAMB is in a high priority area for the restoration of bird habitat (Figure 5).

In addition to the importance to migratory bird species and the Louisiana black bear, the MMNS (2005) purports that old-growth bottomland hardwood forests are critical habitat for 11 of the 18 species of bats known to the Southeast. Southern myotis (*Myotis austroriparius*) and Rafinesque's big-eared bat (*Corynorhinus rafinesquii*) prefer large, hollow trees in mature bottomland hardwood and swamp habitats, respectively (LMRJV 2007; Taylor 2006). Furthermore, the locale of the UAMB offers the opportunity to provide habitat with a diversity of hydrological regimes that are critical to the life cycles of many species of reptiles and amphibians. The location of the site in proximity to a larger, extant forested wetland tract coincides with the large home ranges that many herpetofaunal species require (Dundee and Rossman 1989, Waddle 2011; LMRJV 2007).

3.7 Technical Feasibility

The construction work required to develop the proposed UAMB is based on currently-accepted restoration methods and is technically feasible. The construction work will consist of 1) site preparation, 2) afforestation, and 3) the filling of artificial drains. The relatively low landscape position and the presence of hydric soils indicate that minimal soil work will be required for successful restoration of wetland hydrology and forested wetlands. The existence of the Bayou Fisher Mitigation Bank and associated Permittee-Responsible Mitigation (PRM) area adjacent to the UAMB indicates a high potential for successful restoration. Once drainage modifications are rendered ineffective through restoration efforts, a more natural, historic water regime will be restored.

4.0 ESTABLISHMENT OF THE MITIGATION BANK

4.1 Site Restoration Plan

The proposed mitigation work plan involves the cessation of agricultural operations, restoration of surface hydrology, afforestation, and implementing effective short and long-term management strategies. Establishment of the UAMB will re-establish 272.9 acres and rehabilitate 1.2 acres of BLH as well as restoring 0.9 acres of forested buffer (Figure 19).

Site preparation is anticipated to begin in the summer or fall of 2018. All agricultural activities will cease on the UAMB prior to the commencement of these activities. Site preparation activities within the proposed re-establishment areas will be accomplished by preparing the site as needed through levee/spoil removal, herbicide treatments, cultivation, and ripping the soil at equidistant intervals to a depth of approximately 18 inches (Allen et al. 2001).

Native BLH seedlings will be planted during the first planting season following site preparation (January 1st through March 31st). The project area will be restored as Type 1-2 BLH as described by LNH (2009) and Lester et al. (2005). Table 2 describes the species suitable for each habitat type. The arrangement of species was based upon species noted in adjacent forests as well as those in which the native range has been documented for the UAMB by the LNH (2009), Lester et al. (2005), Burns and Honkala (1990), Lichvar et al. (2014) and NRCS (2016^a). The exact species and quantities to be planted will be determined by the availability of such species from commercial nurseries providing localized ecotype seedlings. At least ten species shall be represented in the planting mosaic to insure adequate species richness and seedlings will be mixed prior to planting so that areas are not afforested with a monotypic species community (Twedt and Best 2004). Hard mast⁸ species should account for approximately 60% of the bottomland hardwood plantings. All species selected

⁸ For the purpose of this, hard mast is defined as heavy-seeded species of *Quercus* spp. and *Carya* spp.

for afforestation have a designated growth habit of a tree⁹ or combination tree/shrub¹⁰ per NRCS 2016^a. All species planted within the wetland restoration areas will have an indicator status of Obligate (OBL), Facultative Wetland (FACW) or Facultative (FAC) as described by Lichvar et al. (2012) and Lichvar et al. (2014).

The afforestation effort will integrate the utilization of fast-growing soft mast species with slower-growing hard mast species to allow for greater vertical structural diversity which is necessary habitat for forest breeding birds of highest conservation importance (Twedt et al. 1999¹; Figure 6). The integration of rapid growth early successional species mimics early natural succession and provide natural habitat and partial cover for late successional species which exhibit increased growth in partial cover and dappled sunlight exposure (Twedt and Portwood 1997, Gardiner and Hodges 1998). The early successional species create biotic and abiotic environmental conditions that promote seedling emergence and survival of late successional species (Harper et al. 1965, Twedt and Portwood 1997).

Hydrologic restoration will increase the retention time of surface water and saturation, which will reduce nonpoint source runoff and increase water quality through increased nutrient uptake by vegetation. Six 24-inch culverts will be removed and backfilled. Four 36-inch culverts allowing the drainage of agriculture ditches into Bayou Fisher will be replaced with drop pipes in order to maintain the integrity of the perimeter access road and to prevent inundation with deep water for prolonged periods at the lower elevations (Figure 20). The drop pipes will remain in place for approximately 3 to 5 years following the initial vegetative planting. Once the establishment period ends, the structures may be removed.

All interior levees and agriculture drains measuring approximately 13,350 linear feet will be leveled to grade and planted as part of the restoration area. The process will involve the redistribution of approximately 39,555 cubic yards of *in situ* earthen fill material which will be utilized as part of the restoration effort. No fill material will be required from offsite and DLS anticipates that all material excavated will be redeposited on-site in a beneficial manner therefore no offsite disposal of excess material will be required. No existing Jurisdictional Wetlands or Waters of the US will be impacted per the Approved Jurisdictional Determination referenced in Section 3.5.

4.2 Current Site Risks

Based upon title review and survey work conducted to date, no encumbrances have been identified within the UAMB boundary. A title opinion and survey plat will be provided with the anticipated Draft MBI submittal for this project. Any mortgages on the property will be subordinated to the Conservation Servitude.

⁹ Trees are defined as perennial, woody plant with a single stem (trunk), normally greater than 13 to 16 feet in height; under certain environmental conditions, some tree species may develop a multi-stemmed or short growth form (less than 13 feet in height).

¹⁰ Shrubs are defined as perennial, multi-stemmed woody plant that is usually less than 13 to 16 feet in height. Shrubs typically have several stems arising from or near the ground, but may be taller than 16 feet or single-stemmed under certain environmental conditions.

A review of the Louisiana Department of Natural Resources (LDNR) Strategic Online Natural Resources Information System (SONRIS) revealed no current or previous oil and gas well locations on the UAMB.

The Sponsor does not foresee any adverse impacts to the mitigation site resulting from the continued existence and operation of the neighboring land uses. Much of the land use and cover type surrounding the UAMB are existing agriculture land, conservation lands or woody wetlands/scrub/shrub (Figure 18). These areas have remained in this land use over the past 50 years as evidenced in the historical photographic records (Figures 6 through 14). The surrounding forested areas do not appear to contain noxious species to an extent that it would be a seed-source concern.

There are no zoning or existing ordinances in place which affect the UAMB. The Mitigation Banking Instrument (MBI) will contain a final survey plat of the proposed conservation servitude area, a metes and bounds description and a title opinion.

4.3 Long-term Sustainability and Water Rights

Long-term viability and sustainability of the UAMB will be ensured through active and adaptive management including, but not limited to, invasive species control, appropriate monitoring and long-term maintenance. No *long-term* structural management will be required because there are no water control structures to maintain.

With regard to 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 proposed UAMB will depend primarily on precipitation, runoff from surrounding areas, and high water tables. As such, long-term hydrology maintenance will not depend on the utilization of water captured from irrigation wells; therefore, sufficient water rights are ensured for such purposes. The Sponsor does not foresee any adverse impacts on neighboring properties as a result of this project.

5.0 PROPOSED SERVICE AREA

The Atchafalaya Basin will serve as the service area for the Bank (Figure 4). The use of credits outside of the defined service area will be handled on a case specific basis by the CEMVN and is specified as such in the subsequent MBI.

6.0 OPERATION OF THE MITIGATION BANK

DLS will comply with all conditions of Sponsorship required by the CEMVN. The UAMB will be established and operated through mitigation bank procedures outlined in 33 CFR § 332.8. This includes, but is not limited to, review process, modifications, permit coordination, project implementation, financial assurance determination and mechanisms, credit determination, accounting procedures, credit withdrawals, and the use of credits. Details on the operation of the UAMB will be further described in the Draft MBI per 33 CFR § 332.8 (6).

6.1 Project Representatives

Sponsor: Delta Land Services, LLC
1090 Cinclare Drive 1008
Port Allen, LA 70767
Attn: Daniel Bollich
Phone: 225-388-5146
Electronic Mail: daniel@deltaland-services.com

Landowner: Idlewild, LLC and DMMERR, LLC
c/o Edward J. Merrick, Jr.
10830 Island Road
Ventress, LA 70783

6.2 Qualifications of the Sponsor

DLS is a land management and restoration company whose technical staff includes Certified Wildlife Biologists, Professional Wetland Scientists, and Certified Foresters. In addition, DLS has construction specialists on staff experienced in wetland construction activities such as heavy equipment operation, vegetation establishment, herbicide application, and contractor management.

DLS currently operates 18 approved wetland and/or stream mitigation banks within the CEMVN, CEMVK, CESWG and CESWF totaling 8,349.0 acres. These are the Bayou Conway Mitigation Bank (MVN-2010-01111), Roseland Refuge Mitigation Bank (MVK-2010-01423), Oak Land Mitigation Bank (MVK-2011-00308), Bayou Choupique Mitigation Bank (MVN-2011-00824), Ponderosa Ranch of Pointe Coupee Mitigation Bank (MVN-2011-03213), Ponderosa Ranch of Pointe Coupee Mitigation Bank Amendment One (MVN-2015-00393), Danza del Rio Mitigation Bank (SWG-2011-00566), Moss Lake Mitigation Bank (MVN-2012-02652), Phillips Creek Mitigation Bank (SWF-2012-00417), Graham Creek Mitigation Bank (SWF-2011-00309), Bayou Fisher Mitigation Bank (MVN-2013-02342), Bayou Fisher Mitigation Bank Amendment One (MVN-2014-02764), Little Bayou Pierre Mitigation Bank (MVK-2012-00555), Laurel Valley Coastal Mitigation Bank (MVN-2013-02798), Laurel Valley Coastal Mitigation Bank Amendment One (MVN-2015-0149), Belle Pointe Coastal Mitigation Bank (MVN-2014-02764), and South Fork Coastal Mitigation Bank (MVN-2014-01888). DLS currently has 6 pending mitigation banks that are under review with the CEMVN, CEMVK and CESWG totaling 3,020.9 acres. These include the proposed Bayou Maringouin Umbrella Mitigation Bank (MVN-2015-01994), Long Island Cove Mitigation Bank (SWG-2014-00210), Crooked Bayou Mitigation Bank (MVK-2015-00527), Cane River Mitigation Bank (MVK-2015-00472), and the Long Island Cove Mitigation Bank (SWG-2014-00210). In addition to mitigation banking, DLS serves as the responsible party for the establishment and maintenance of 3,936.6 acres of approved Permittee-Responsible Mitigation (PRM) wetland and stream projects.

6.3 Proposed Long-term Ownership and Management Representatives

Idlewild, LLC and DMMERR, LLC will own UAMB and DLS will be the long-term manager but may appoint a Long-term Steward in accordance with 33 CFR § 332.7 (d) and approval from the CEMVN.

6.4 Site Protection

In order to provide for such protection, DLS 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 UAMB and record it in the Mortgage and Conveyances Records Office of Pointe Coupee Parish. DLS will utilize a not-for-profit conservation group as the entity that will hold the servitude.

6.5 Long-term Strategy

Long-term management will consist of monitoring, vegetation management, invasive species control, boundary maintenance, site protection and funding of such activities. Invasive species control will include control of nuisance wildlife species such as feral hogs (*Sus scrofa*). The forest will be managed to maintain or increase the biological, chemical and physical wetland functions this site and to achieve and maintain the desired forest conditions which will provide forested habitat capable of supporting populations for priority wildlife species. The desired forest conditions are defined by the LMVJV (2007). A long-term management plan will be included with the MBI which will detail long-term management needs, costs and identify a funding mechanism in accordance with 33 CFR § 332.7 (d). The Sponsor (or Long-term Steward) and the Owner (or its heirs, assigns or purchasers) shall be responsible protecting lands contained within the UAMB in perpetuity.

6.6 Umbrella Bank Consideration

Should the CEMVN and the IRT find merit to this prospect and move forward to the review of a Draft MBI, the sponsor requests consideration for the review of this site as a potential umbrella MBI which would allow for the additional sites to be evaluated, reviewed and potentially included as an additional site governed by a single instrument. The criteria for additional site inclusion would be contained within the draft MBI.

7.0 CONCLUSION

In summary, the proposed 282.5-acre UAMB has a high potential for successfully restoring 274.1 acres of bottomland hardwood wetland forest, 0.9 acres of forested buffer and protecting 0.2 acres of existing forested buffer. The cessation of the current agricultural land use, re-establishment of forested cover and restoration of a more natural hydrologic water regime will result in improved water quality through a reduction in non-point source storm runoff, increased ecological diversity and provide increased habitat for resident, migratory, and recovering wildlife species. The project

is compatible with adjacent land uses and coincides with current initiatives to restore and improve the aquatic conditions and overall ecological functions of the larger watershed.

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Tables

Table 1. Pre-Restoration Condition and Post-Restoration Mitigation Habitat Types at the Upper Atchafalaya Mitigation Bank in Pointe Coupee Parish, Louisiana.

Baseline Condition	Mitigation Habitat and Type	Acres
Non-wet/Prior-Converted Agriculture Field	Bottomland Hardwood Re-establishment	272.9
Scrub/Shrub Wetland	Bottomland Hardwood Rehabilitation	1.2
	<i>Bottomland Hardwood Restoration</i>	<i>274.1</i>
Forested Wetland	Forested Wetland Inclusion	0.2
	<i>Wetland Inclusion</i>	<i>0.2</i>
Non-wet/Prior-Converted Agriculture Field	Restored Forested Buffer	<i>0.9</i>
	<i>Restored Forested Buffer</i>	<i>0.9</i>
Non-wet/Prior-Converted Agriculture Field	Wildlife Opening	4.7
Non-wet/Prior-Converted Agriculture Field	Access Trail	2.6
	<i>Total Non-Mitigation Credit Acreage</i>	<i>7.3</i>
	Subtotal Restoration Credit Acreage	274.1
	Subtotal Indirect Credit Acreage	1.1
	Subtotal Non-Mitigation Acreage	7.3
	<i>Total Acreage</i>	<i>282.5</i>

Table 2 Total Post-Restoration Habitat Types at the Upper Atchafalaya Mitigation Bank in Pointe Coupee Parish, Louisiana.

Post-Restoration Habitat Types	Acres
Re-established Bottomland Hardwood Credit Acreage	272.9
Rehabilitated Bottomland Hardwood Credit Acreage	1.2
<i>Bottomland Hardwood Restoration Acreage Subtotal</i>	<i>274.1</i>
<i>Restoration Credit Acreage Total</i>	<i>274.1</i>
Wetland Inclusion/Restored Buffer	1.1
Non-mitigation Acreage	7.3
<i>Conservation Servitude Acreage Total</i>	<i>282.5</i>

Table 3. Planting Composition of Wetland Restoration Areas at the Upper Atchafalaya Mitigation Bank in Pointe Coupee Parish, Louisiana ¹.

Common Name	Species	Wetland Indicator Status ²	Mast Type ³	Approximate Percent Composition Range ⁴
Overcup oak	<i>Quercus lyrata</i>	OBL	Hard	<25%
Nuttall oak	<i>Quercus texana</i>	FACW	Hard	<25%
Willow oak	<i>Quercus phellos</i>	FACW	Hard	<25%
Laurel oak	<i>Quercus laurifolia</i>	FACW	Hard	<25%
Water oak	<i>Quercus nigra</i>	FAC	Hard	<25%
Water hickory	<i>Carya aquatica</i>	OBL	Hard	<25%
Drummond red maple	<i>Acer rubrum var. drummondii</i>	FAC ³	Soft	<10%
Sugarberry	<i>Celtis laevigata</i>	FACW	Soft	<10%
Mayhaw	<i>Crataegus opaca</i>	OBL	Soft	<10%
Persimmon	<i>Diospyros virginiana</i>	FAC	Soft	<10%
Green ash	<i>Fraxinus pennsylvanica</i>	FACW	Soft	<10%
Sweetgum	<i>Liquidambar styraciflua</i>	FAC	Soft	<10%
Sycamore	<i>Platanus occidentalis</i>	FACW	Soft	<10%
Eastern cottonwood	<i>Populus deltoides</i>	FAC	Soft	<10%
Baldcypress	<i>Taxodium distichum</i>	OBL	Soft	<10%

¹ All plant scientific nomenclature is from the NRCS Plants Database, available at <http://plants.usda.gov> and accessed on August 31, 2017

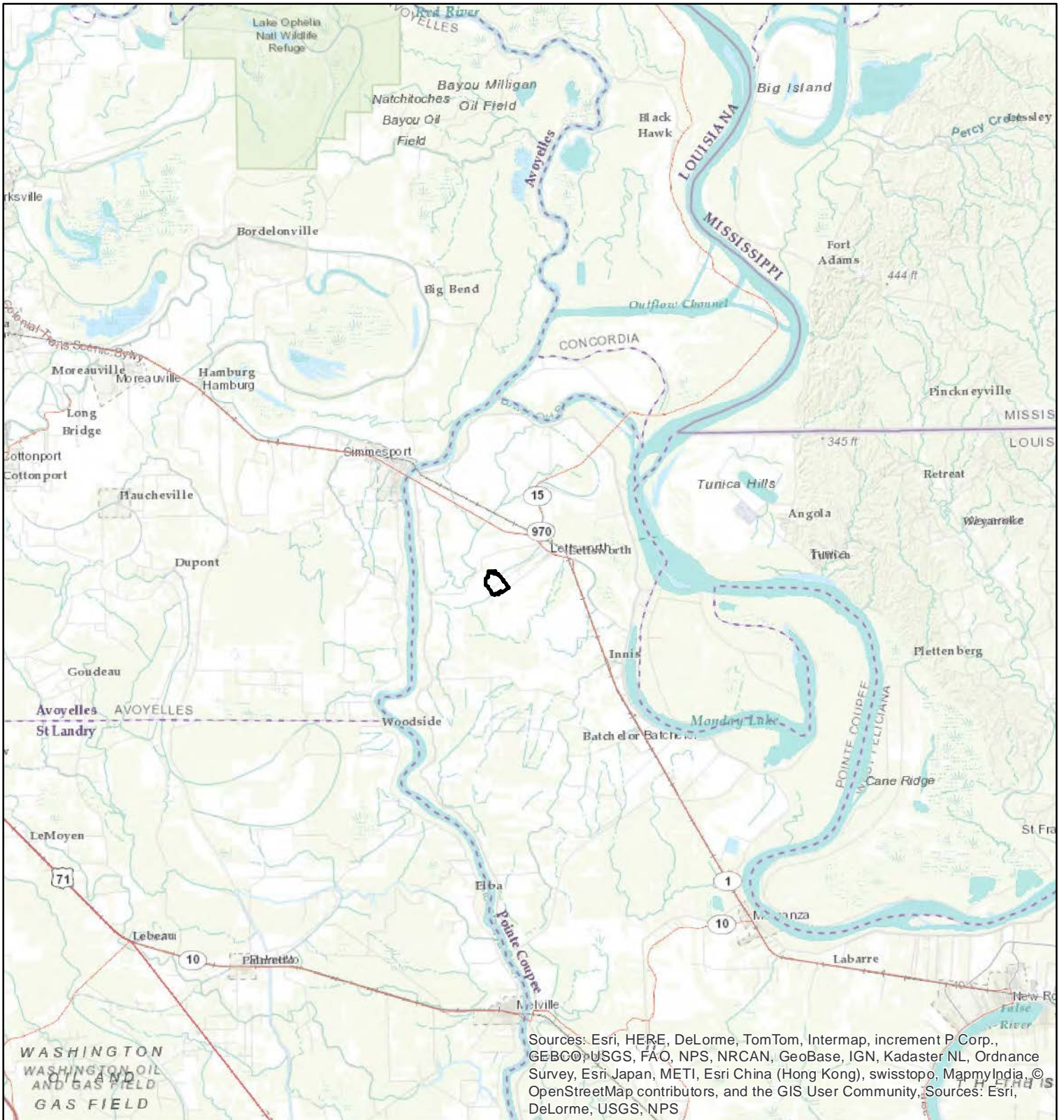
² Wetland Indicator Status from Lichvar et al (2016)

³ For the purpose of this table, hard mast species consists of oaks or hickories. All other species are soft mast.

³ Lichvar et al (2016) does not assign indicators beyond the species level. *Acer rubrum* is listed as FAC. However, this variety was listed as OBL in the 1988 *National List of Plant Species that Occur in Wetlands for the Southeast Region (Region 2)*.

⁴ These represent the percentage range within the entire planting composition (i.e. both hard and soft mast). However, the overall percentage of hard mast planted will account for approximately 60% of the overall planting. The exact species and quantities to be determined by seedling availability from commercial sources providing seedlings grown from localized ecotypes. However, the overall planting will have no fewer than 10 species within the assemblage.

Figures



Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community, Sources: Esri, DeLorme, USGS, NPS

Legend

 Project Area



Miles

Upper Atchafalaya Mitigation Bank

VICINITY MAP

Pointe Coupee Parish, LA

Created : LJW/ARCVIEW

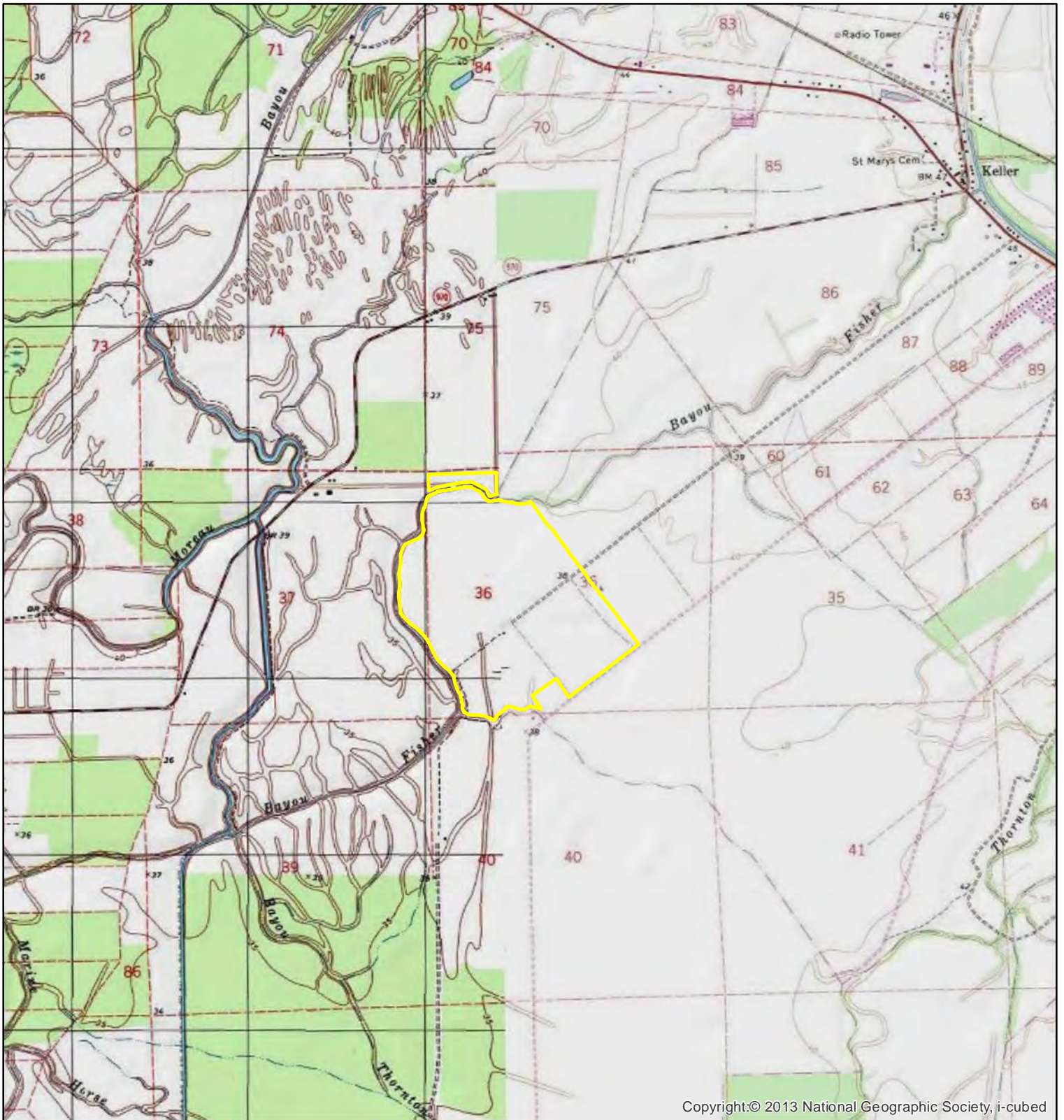
Approved : DEB

Date : 9/15/17

Map No. : F01_VicinityMap



FIGURE 1



Copyright:© 2013 National Geographic Society, i-cubed

Legend

 Project Area



2,500 1,250 0 2,500



Feet

Upper Atchafalaya Mitigation Bank

USGS 7.5-MINUTE QUADRANGLE

Pointe Coupee Parish, LA

Created : LJW/ARCVIEW

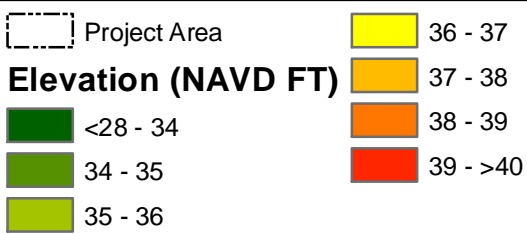
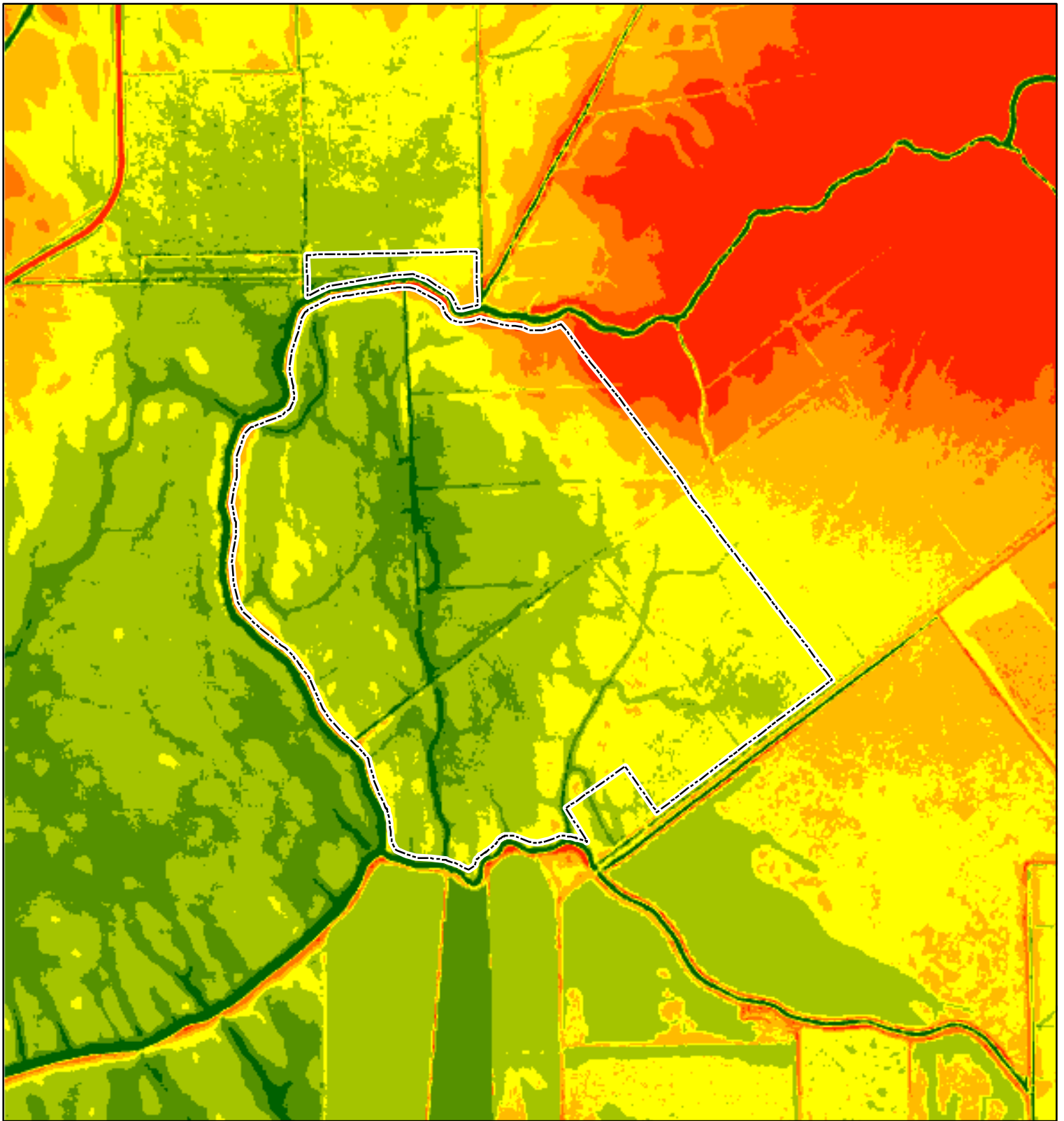
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Date : 9/17/17

Map No. : F02_TopoMap



FIGURE 2



Upper Atchafalaya Mitigation Bank

LIDAR Digital Elevation Model

Pointe Coupee Parish, LA

Created : LJW/ARCVIEW

Approved : DEB

Date : 3/30/17

Map No. : F03_LIDARMap






FIGURE 3

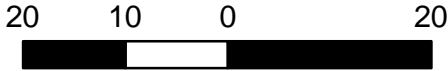


Sources: Esri, HERE, DeLorme, USGS, Intermap, increment P Corp., NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), TomTom, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

Legend

-  Project Area
-  Proposed Service Area





Miles

Upper Atchafalaya Mitigation Bank

PROPOSED GEOGRAPHIC SERVICE AREA

Pointe Coupee Parish, Louisiana


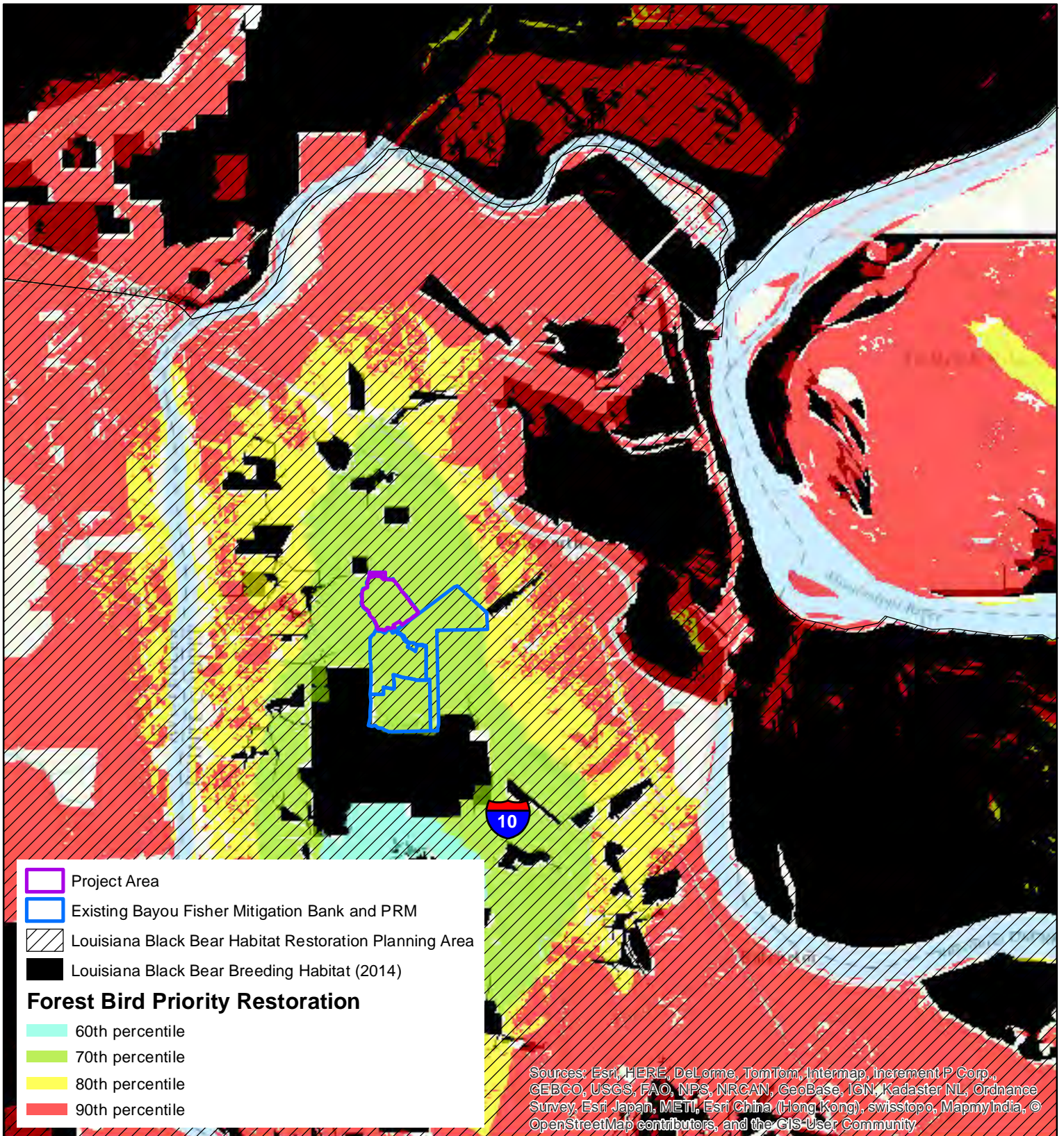
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Approved : DEB	
Date : 09/19/2017	
Map : F04_Watershed Map.mxd	

FIGURE 4



Notes: 1) Forest Bird Priority Restoration areas obtained from Twedt et al. 2006
 2) Habitat Restoration Areas and 2014 Breeding Habitat are as depicted in the Post-Delisting Monitoring Plan for the Louisiana Black Bear (*Ursus americanus luteolus*) (USFWS 2016). Breeding bear habitat areas are not static and are subject to change therefore the U.S. Fish and Wildlife Service, Lafayette Ecological Field Office or the Louisiana Department of Wildlife and Fisheries should be consulted if such information is to be used for consultations or effect determinations.

Upper Atchafalaya Mitigation Bank
PRIORITY SITES FOR BREEDING BIRD
HABITAT RESTORATION AND
BLACK BEAR CONSERVATION

Iberville Parish, LA

Created : LJW/ArcView	
Approved : DEB	
Date : 09/19/2017	
Map No. : F05_PBRA and BlackBear.mxd	

FIGURE 5



Legend

 Project Area



600 300 0 600



Feet

Upper Atchafalaya Mitigation Bank

1941 AERIAL PHOTOGRAPH

Pointe Coupee Parish, LA

Created : LJW/ARCVIEW

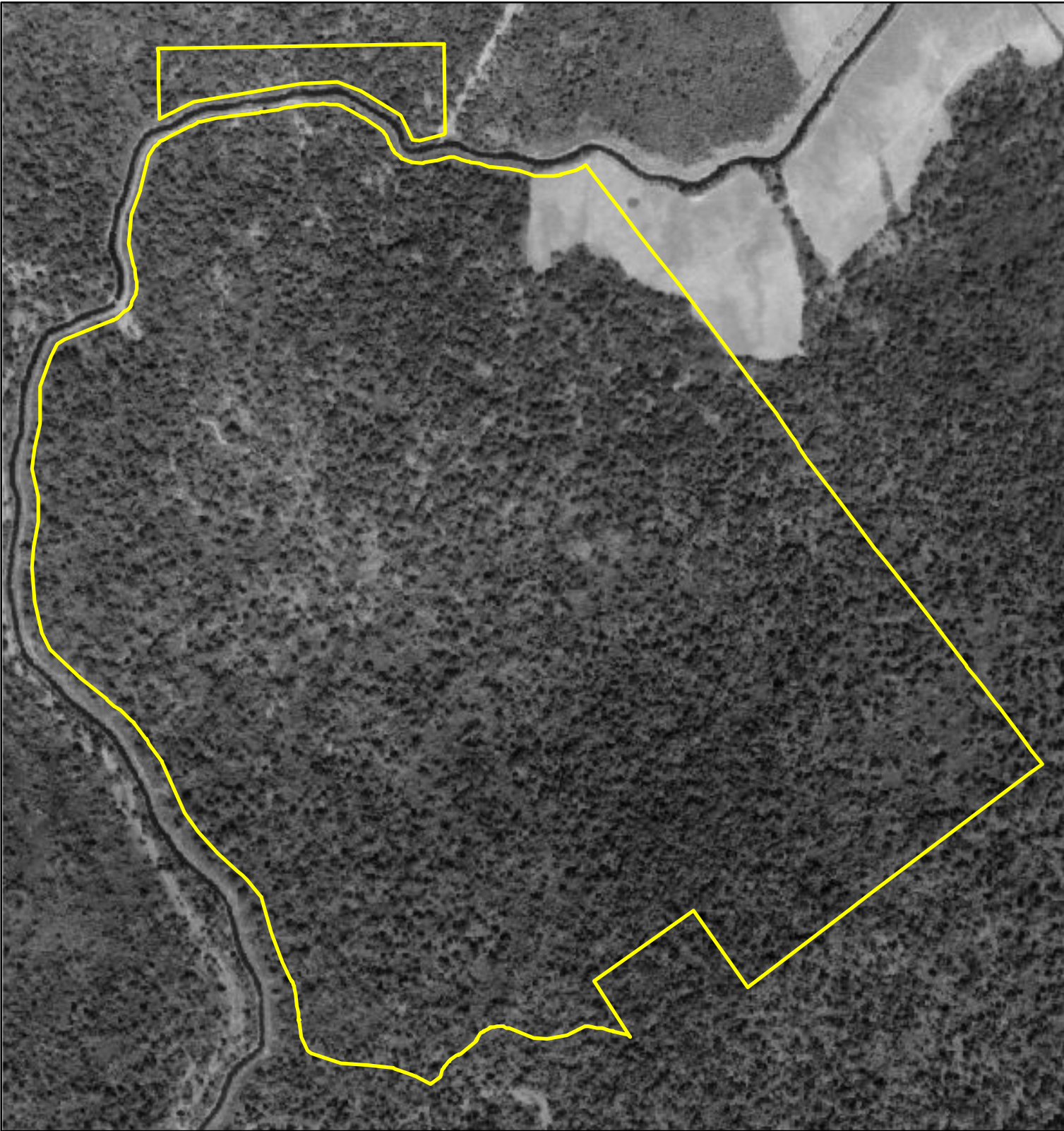
Approved : DEB

Date : 09/19/17

Map No. : F06_1941Aerial



FIGURE 6



Legend

 Project Area



600 300 0 600



Feet

Upper Atchafalaya Mitigation Bank

1952 AERIAL PHOTOGRAPH

Pointe Coupee Parish, LA

Created : LJW/ARCVIEW

Approved : DEB

Date : 9/19/17

Map No. : F07_1952Aerial



FIGURE 7



Legend

 Project Area



600 300 0 600



Feet

Upper Atchafalaya Mitigation Bank

1966 AERIAL PHOTOGRAPH

Pointe Coupee Parish, LA

Created : LJW/ARCVIEW

Approved : DEB

Date : 9/19/17

Map No. : F08_1966Aerial



FIGURE 8



Legend

 Project Area



600 300 0 600



Feet

Upper Atchafalaya Mitigation Bank

1972 AERIAL PHOTOGRAPH

Pointe Coupee Parish, LA

Created : LJW/ARCVIEW

Approved : DEB

Date : 9/19/17

Map No. : F09_1972Aerial

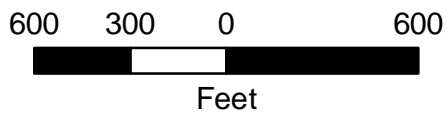


FIGURE 9



Legend

 Project Area



Upper Atchafalaya Mitigation Bank

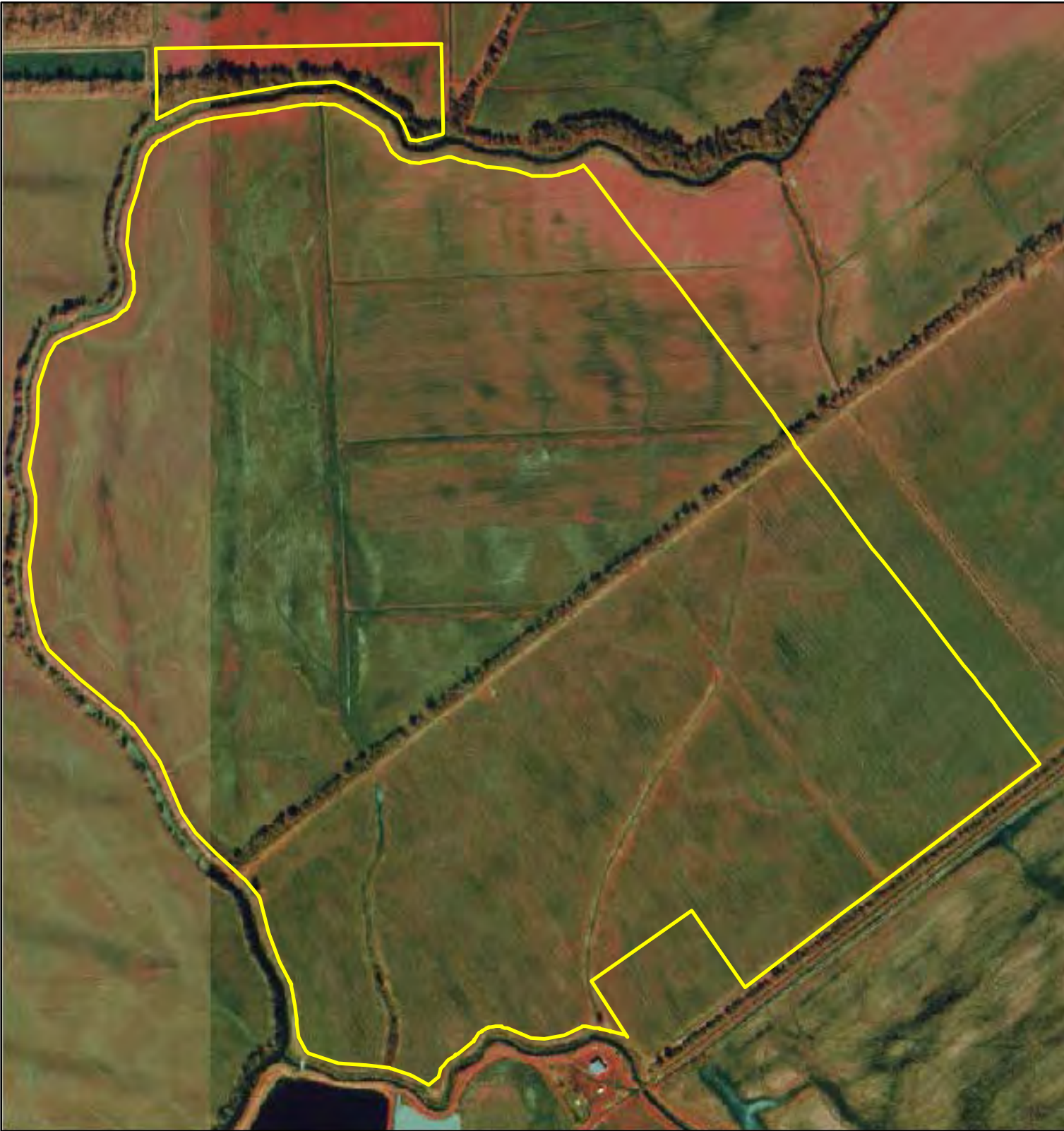
1983 AERIAL PHOTOGRAPH

Pointe Coupee Parish, LA

Created : LJW/ARCVIEW
Approved : DEB
Date : 9/19/17
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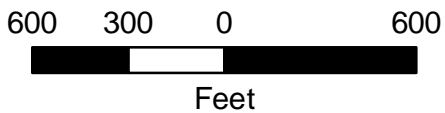


FIGURE 10



Legend

 Project Area



Upper Atchafalaya Mitigation Bank

1998 AERIAL PHOTOGRAPH

Pointe Coupee Parish, LA

Created : LJW/ARCVIEW
Approved : DEB
Date : 9/19/17
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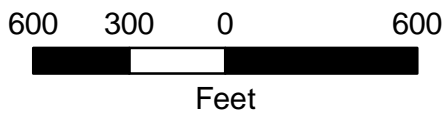


FIGURE 11



Legend

 Project Area



Upper Atchafalaya Mitigation Bank

2007 AERIAL PHOTOGRAPH

Pointe Coupee Parish, LA

Created : LJW/ARCVIEW

Approved : DEB

Date : 9/19/17

Map No. : F12_2007Aerial



FIGURE 12



Legend

 Project Area



600 300 0 600



Feet

Upper Atchafalaya Mitigation Bank

2010 AERIAL PHOTOGRAPH

Pointe Coupee Parish, LA

Created : LJW/ARCVIEW

Approved : DEB

Date : 9/19/17

Map No. : F13_2010Aerial



FIGURE 13



Legend

 Project Area



600 300 0 600



Feet

Upper Atchafalaya Mitigation Bank

2015 AERIAL PHOTOGRAPH

Pointe Coupee Parish, LA

Created : LJW/ARCVIEW

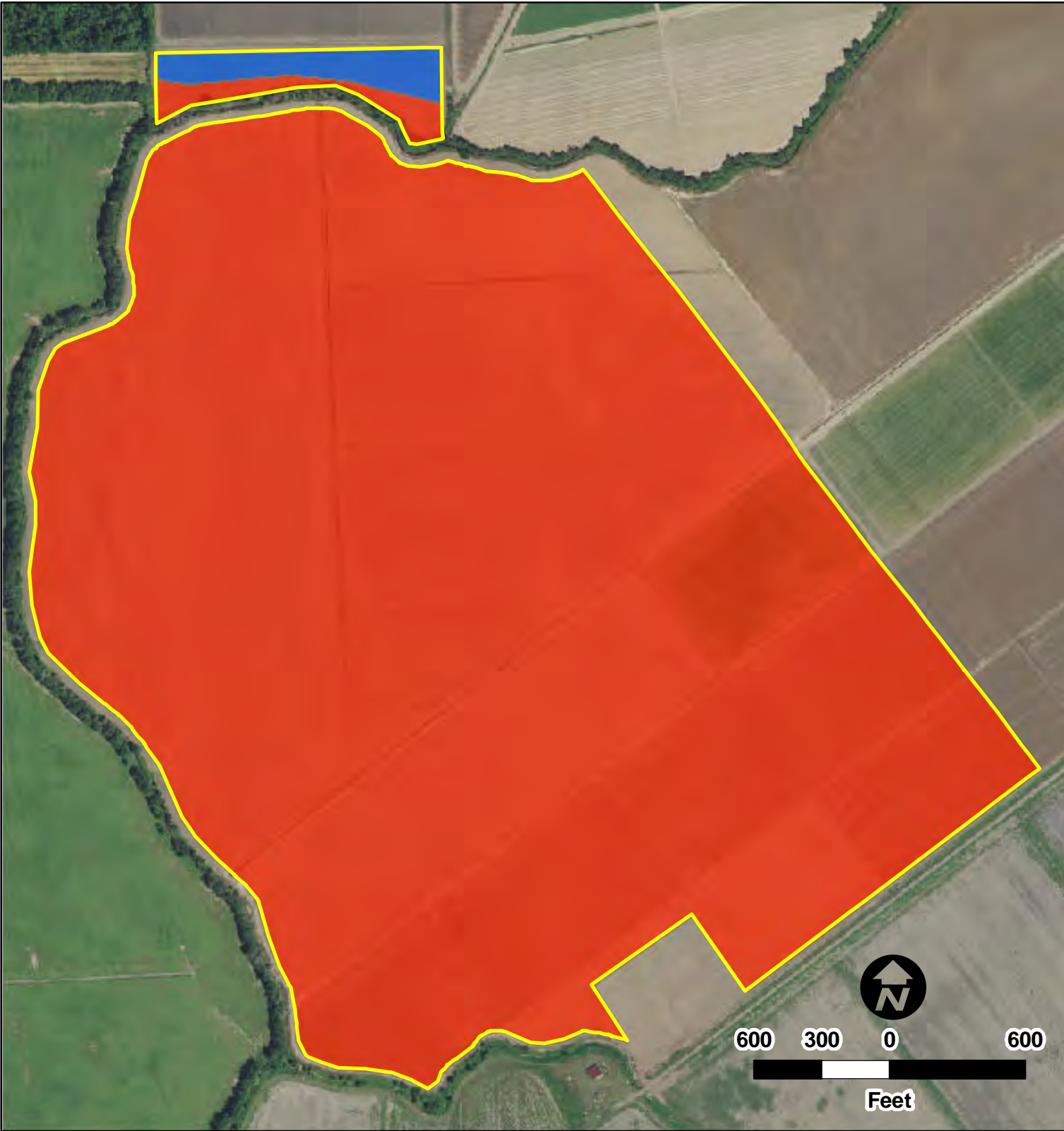
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Map No. : F14_2015Aerial




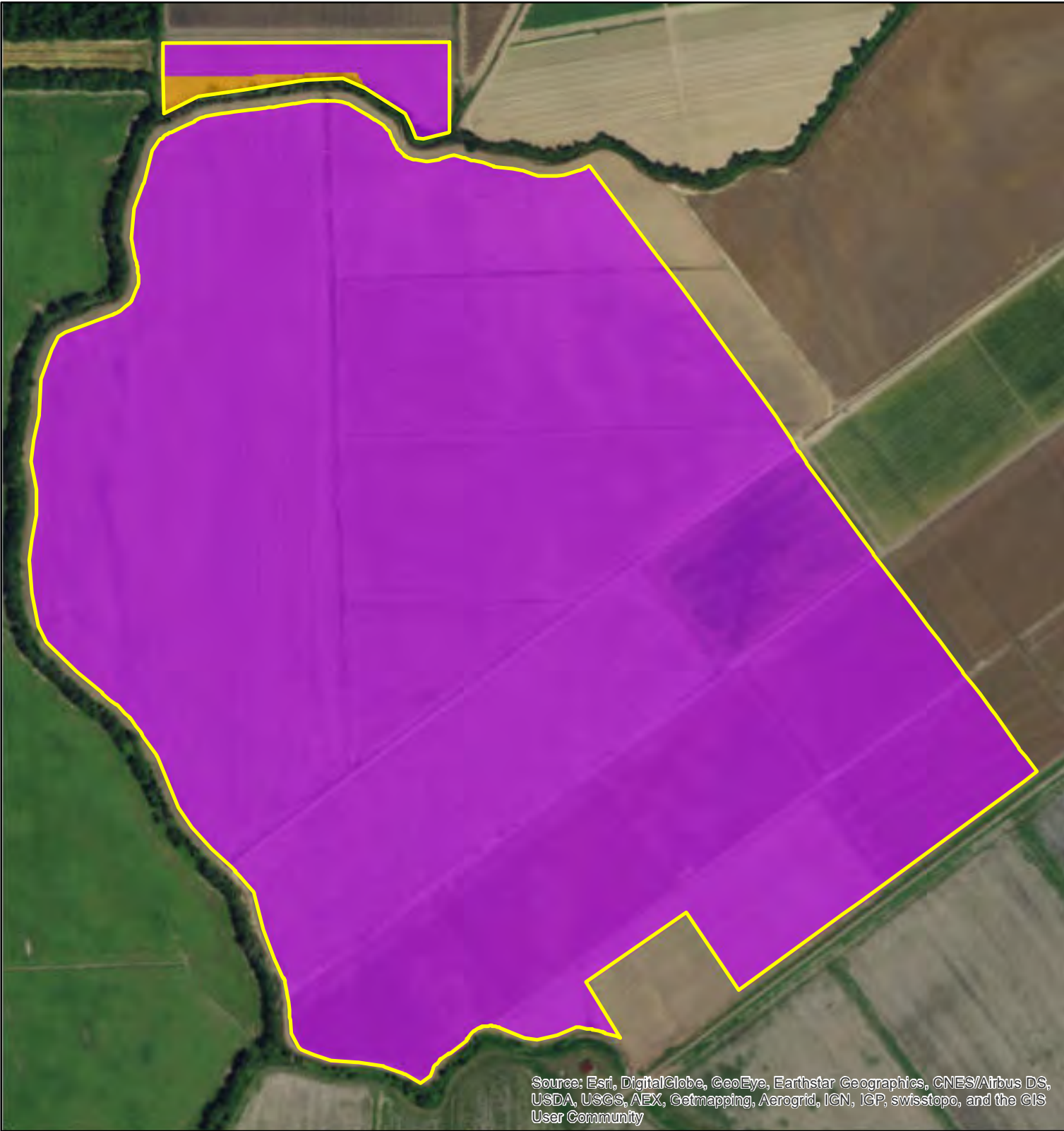
FIGURE 14



Legend




- Project Area
- Se: Sharkey silty clay loam
- Sf: Sharkey clay, 0 to 1 percent slopes, rarely flooded, south

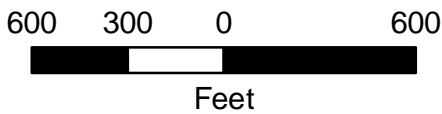
Upper Atchafalaya Mitigation Bank	
NRCS SOILS MAP	
Pointe Coupee Parish, LA	
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Approved : DEB	
Date : 9/19/17	
Map No. : F15_NRCSSoils	
FIGURE 15	



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Legend

-  Project Area
-  Agriculture Field
-  Scrub/Shrub



Upper Atchafalaya Mitigation Bank

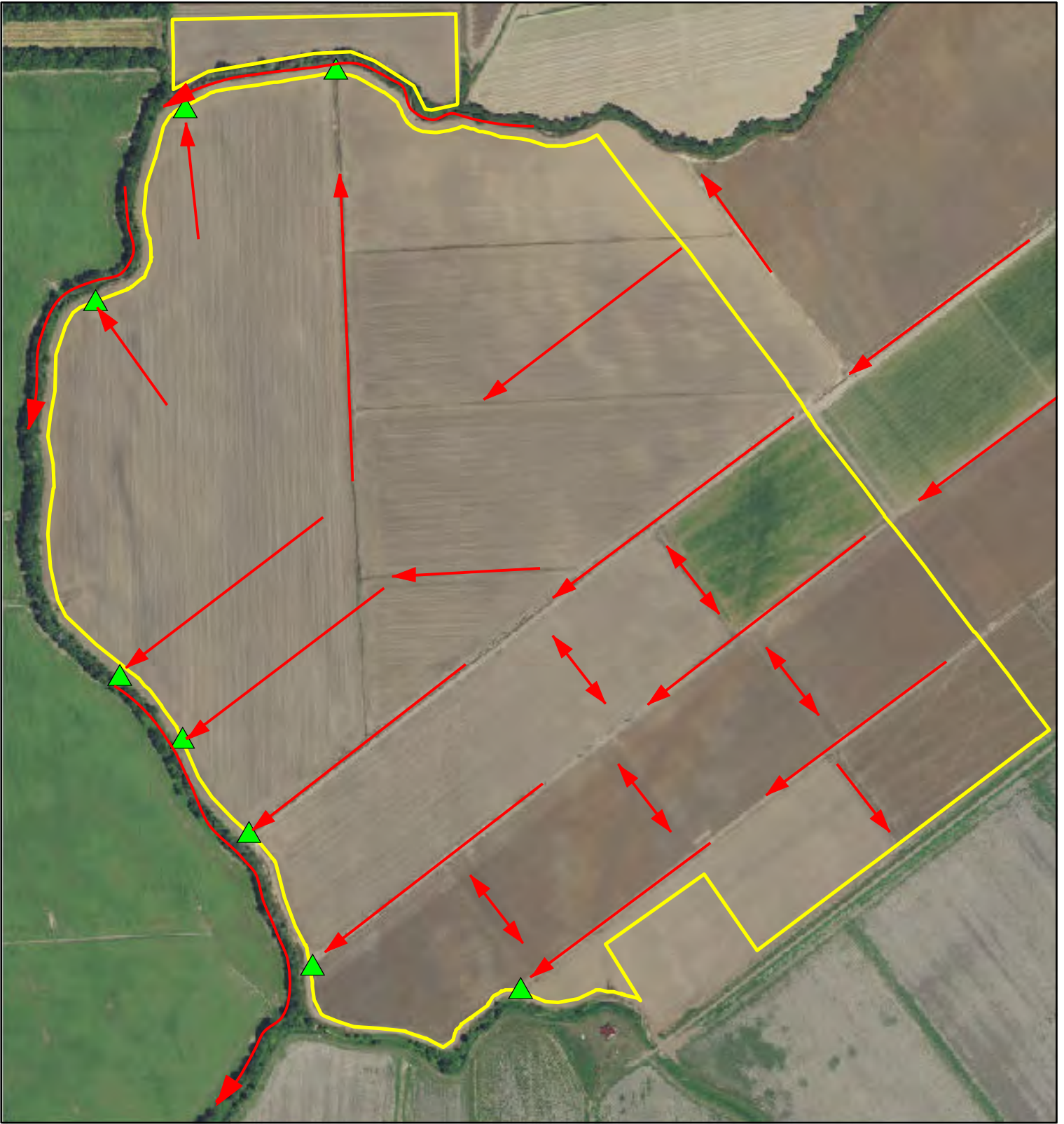
EXISTING CONDITIONS

Pointe Coupee Parish, LA




Created : LJW/ARCVIEW
Approved : DEB
Date : 9/19/17
Map No. : F16_ExCond



FIGURE 16



Legend

-  Project Area
-  Culvert
-  Pre-Construction Flow



600 300 0 600



Feet

Upper Atchafalaya Mitigation Bank

PRE-CONSTRUCTION HYDROLOGY

Pointe Coupee Parish, LA

Created : LJW/ARCVIEW

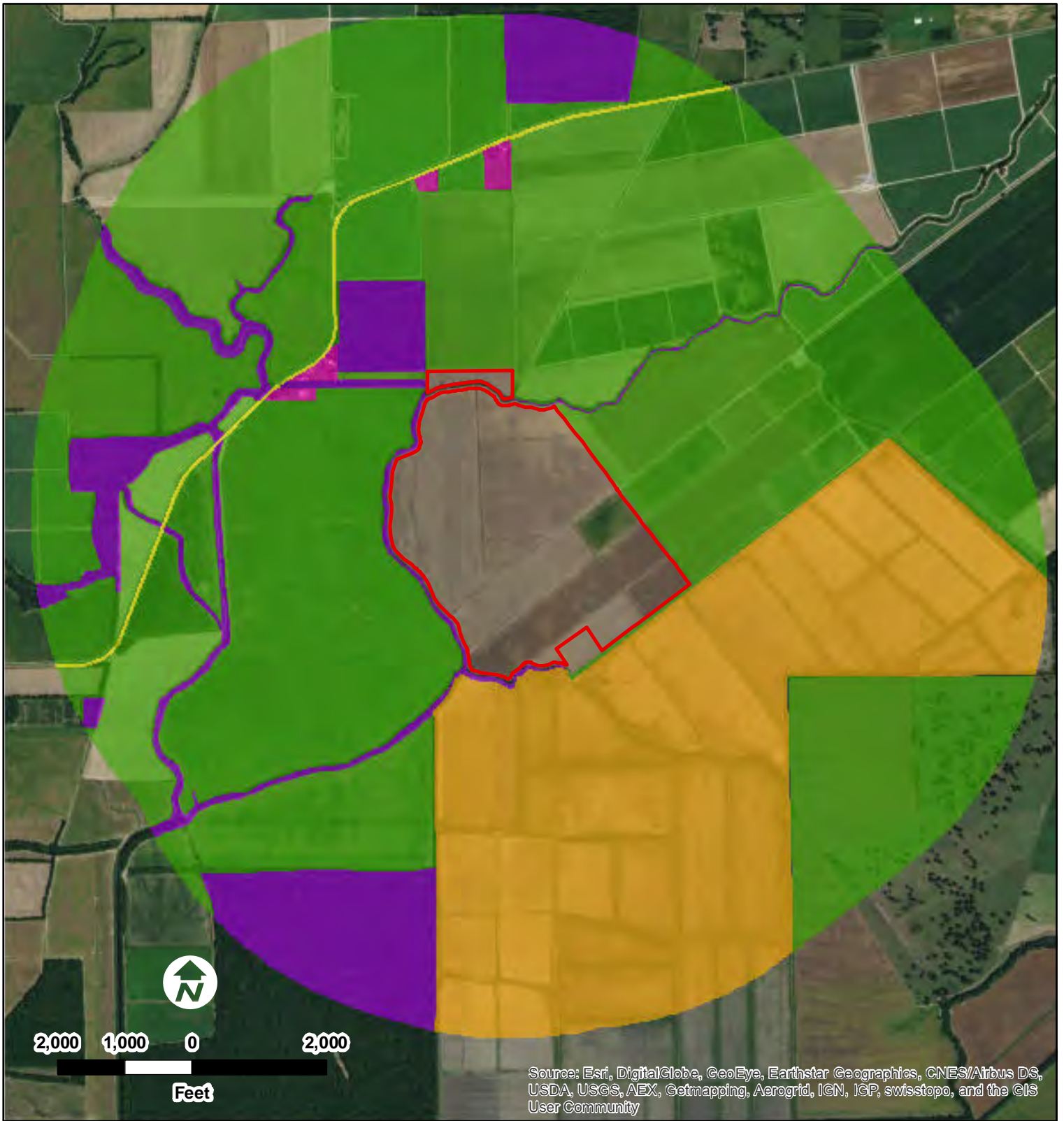
Approved : DEB

Date : 11/7/17

Map No. : F17_PreFlow



FIGURE 17



Legend

- Project Area
- Agriculture Lands
- Woody Wetlands/Scrub/Shrub
- Road
- Conservation Lands
- Developed, Low Intensity

Upper Atchafalaya Mitigation Bank

**LAND USE WITHIN
ONE-MILE PERIMETER**

Pointe Coupee Parish, LA

Created : LJW/ARCVIEW

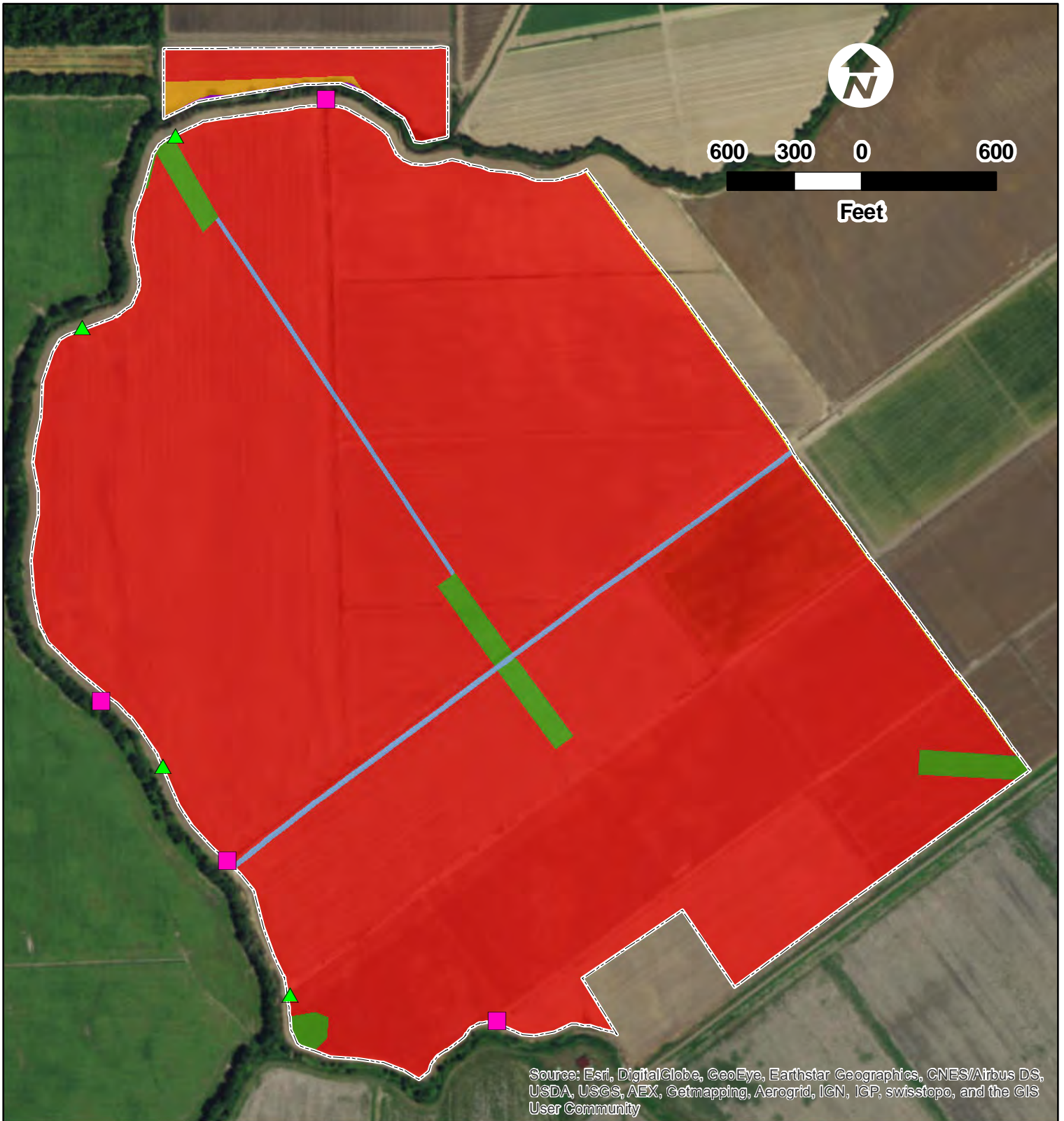
Approved : DEB

Date : 9/19/17

Map No. : F18_LULC



FIGURE 18



Legend

- Project Area (282.5 Acres)
- Type 1-2 BLH Re-establishment (272.9 Acres)
- Type 1-2 BLH Rehabilitation (1.2 Acres)
- Buffer Inclusion (0.2 Acres)
- Restored Forested Buffer (0.9 Acres)
- Wildlife Opening (4.7 Acres)
- Access Trail (2.6 Acres)
- Culvert to be Removed
- Culvert to be Replaced with Drop Pipe

Upper Atchafalaya Mitigation Bank

MITIGATION FEATURES

Pointe Coupee Parish, LA

Created : LJW/ARCVIEW

Approved : DEB

Date : 11/7/17

Map No. : F19_MitFeatures







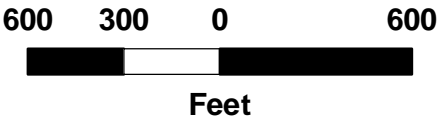
FIGURE 19



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Legend

-  Project Area
-  Post Construction Flow
-  Culvert to be Removed
-  Culvert to be Replaced with Drop Pipe



Upper Atchafalaya Mitigation Bank
POST CONSTRUCTION HYDROLOGY

Pointe Coupee Parish, LA

Created : LJW/ARCVIEW
 Approved : DEB
 Date : 11/7/17
 Map No. : F20_PostHydrology



FIGURE 20

Appendices

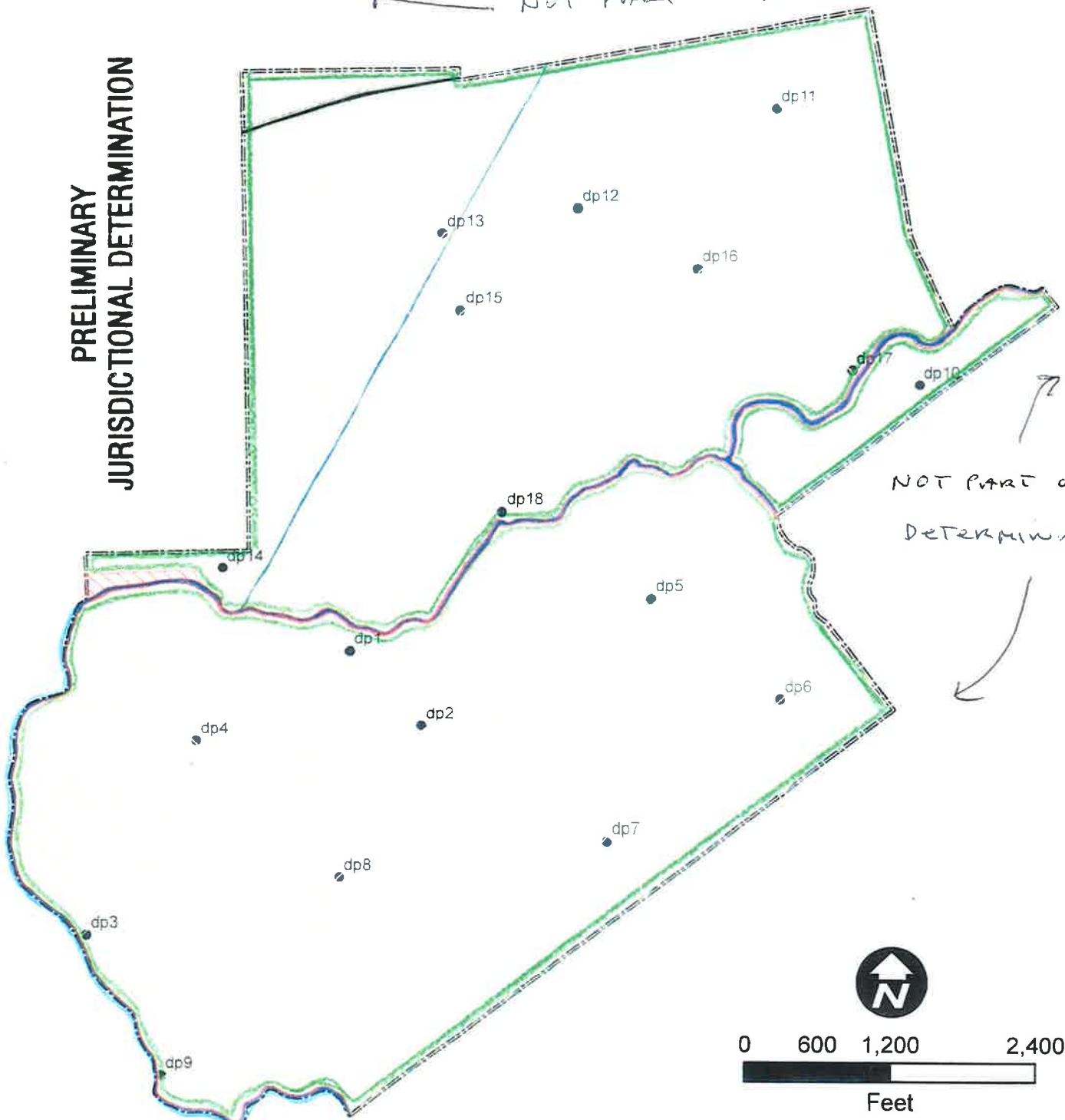
Appendix A

Preliminary Jurisdictional Determination

PRELIMINARY JURISDICTIONAL DETERMINATION

← NOT PART →

NOT PART OF DETERMINATION



USACE ACCT. # MVN-2014-02450-SC
 For Mac Ware with consultant's field data
 Lat 30.927915, Long -91.743864, Sec 75 & 86, T1S, R7E &
 Sec 35, 36 & 37, T2S, R7E, Pointe Coupee Parish, LA
 ih 12-1-14 gmc

Legend

- Other Waters of the U.S. (8.8 ac) sec. 404
- Wetlands (8.2 ac) sec. 404
- Prior converted wetlands (1018.0 ac) **NON-WETLAND**
- Highway 970 (1.6 ac)
- Project Area (1036.6 ac)
- Data Points

Merrick Property Delineation

DELINEATION MAP

Pointe Coupee Parish, LA

Created : TSC/ARCVIEW

Approved : KMW

Date : 9/15/14

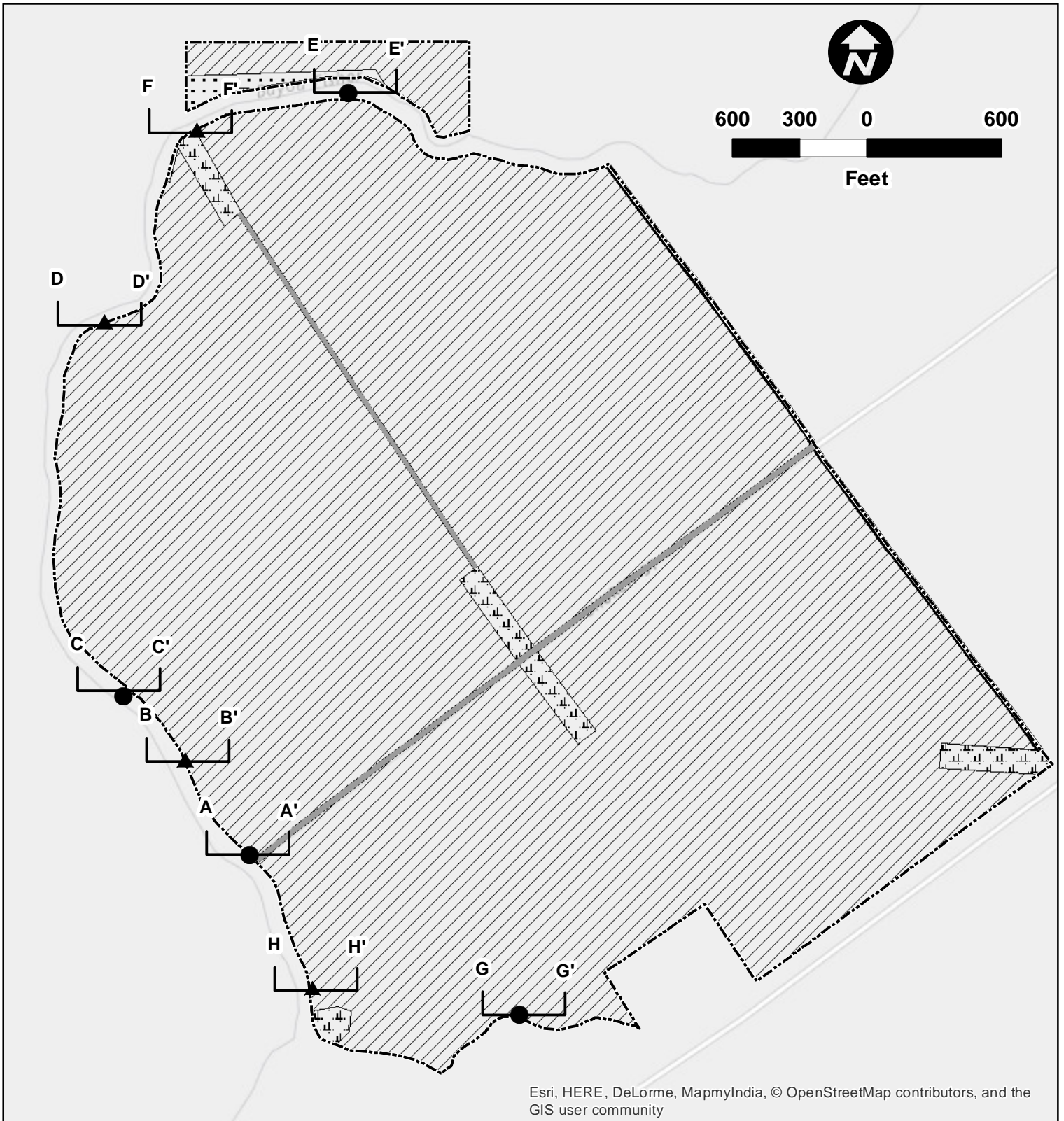
Map No. : F05_DelineationMap



FIGURE 5

Appendix B

Hydrology Restoration Typical Drawings



Legend

-  Project Area
-  Type 1-2 BLH Re-establishment (272.9 Acres)
-  Type 1-2 BLH Rehabilitation (1.2 Acres)
-  Restored Forested Buffer (0.9 Acres)
-  Buffer Inclusion (0.2 Acres)
-  Access Trail (2.6 Acres)
-  Wildlife Opening (4.7 Acres)
-  Culvert to be Removed
-  Culvert to be Replaced with Drop Pipe

Upper Atchafalaya Mitigation Bank

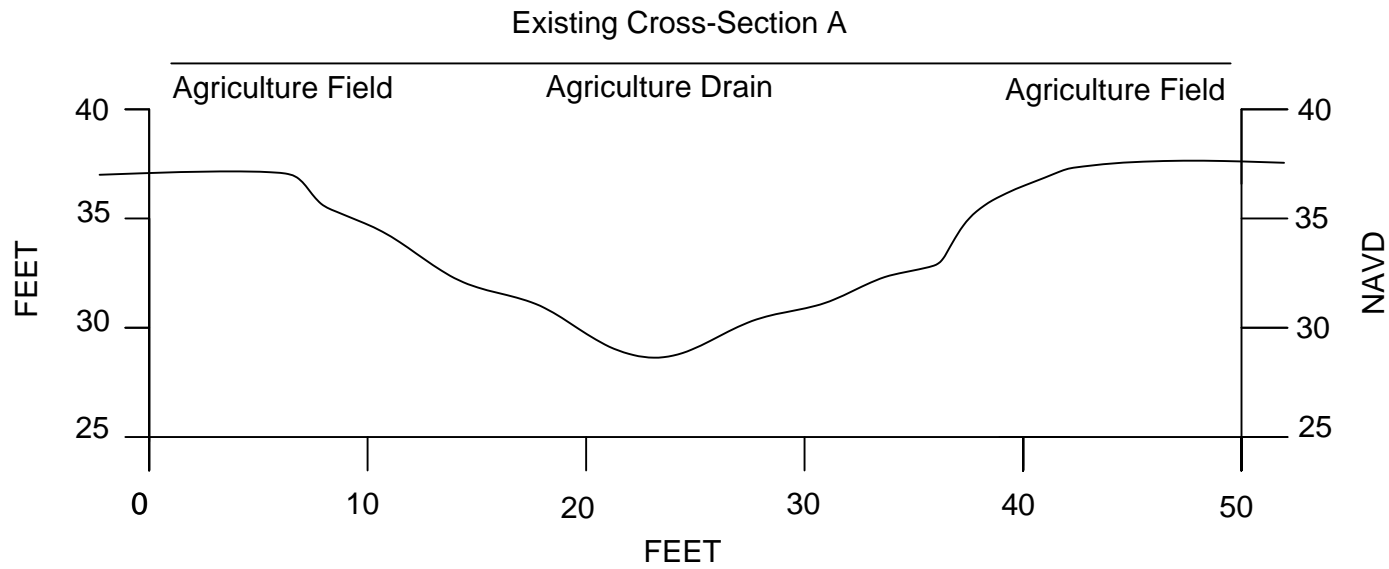
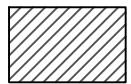
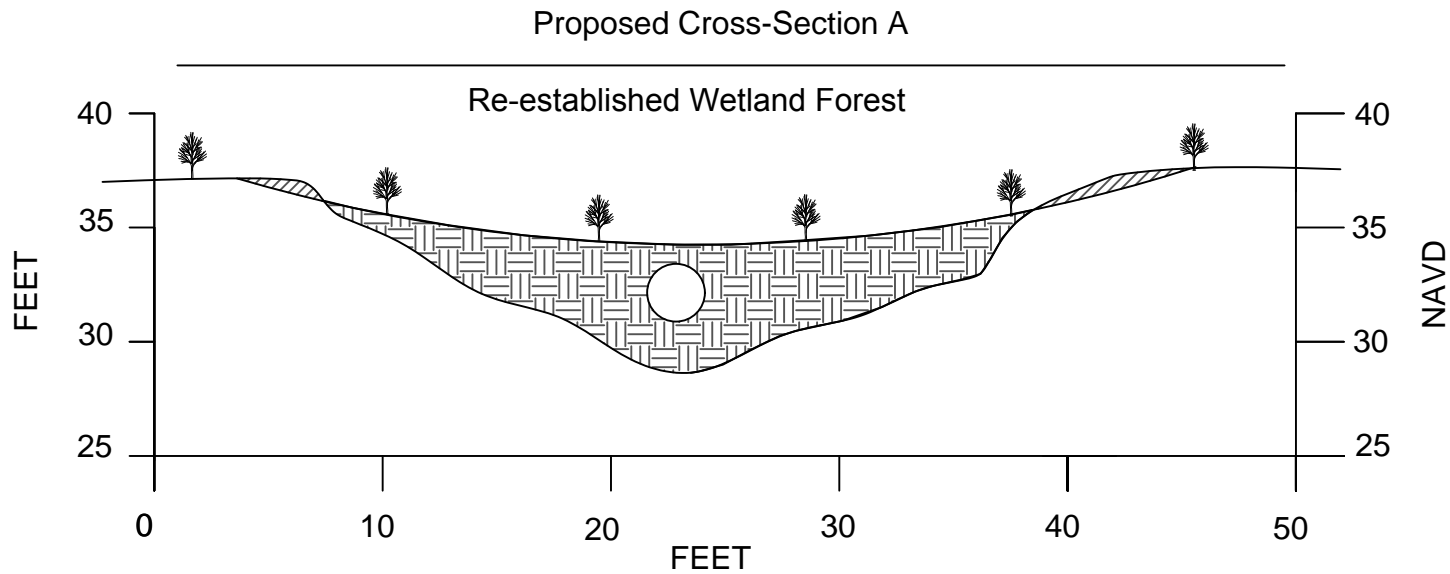
PLAN VIEW

Pointe Coupee Parish, LA

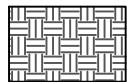
Created : LJW/ARCVIEW
 Approved : DEB
 Date : 9/27/17
 Map No. : FB1_PlanView



FIGURE B-1

A**A'****A****A'**

Excavation



Earthen Fill

Note: Top of drop pipe will be set at approximately 34.5' elevation NAVD

Upper Atchafalaya Mitigation Bank

CROSS-SECTION A-A'

Pointe Coupee Parish, Louisiana

Created: TSC/AutoCAD

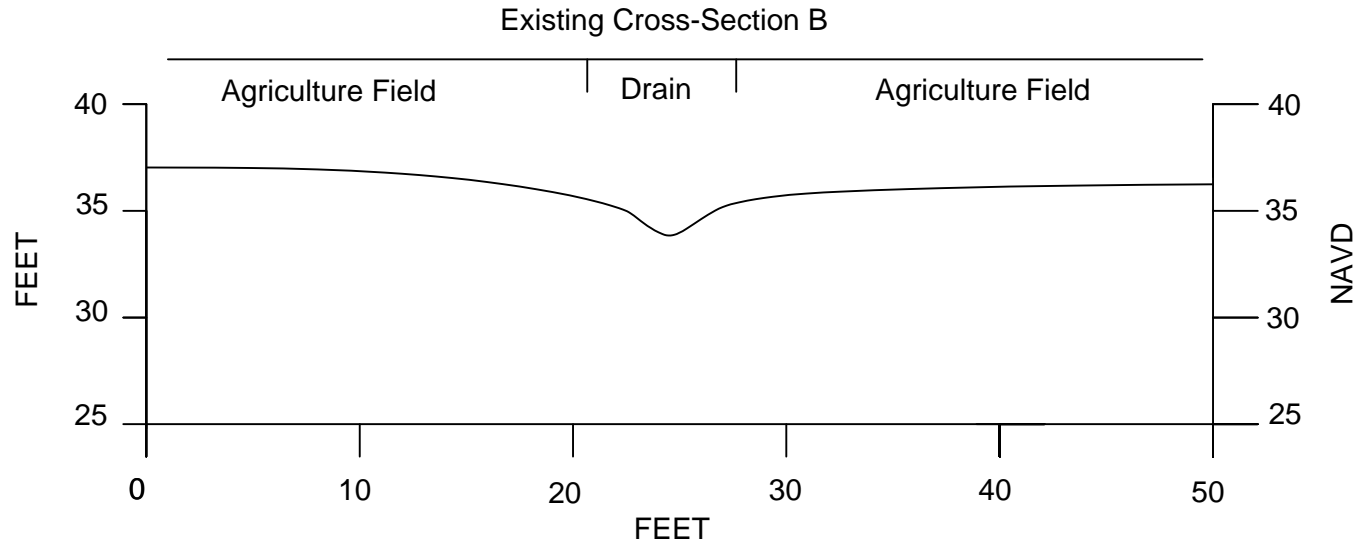
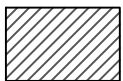
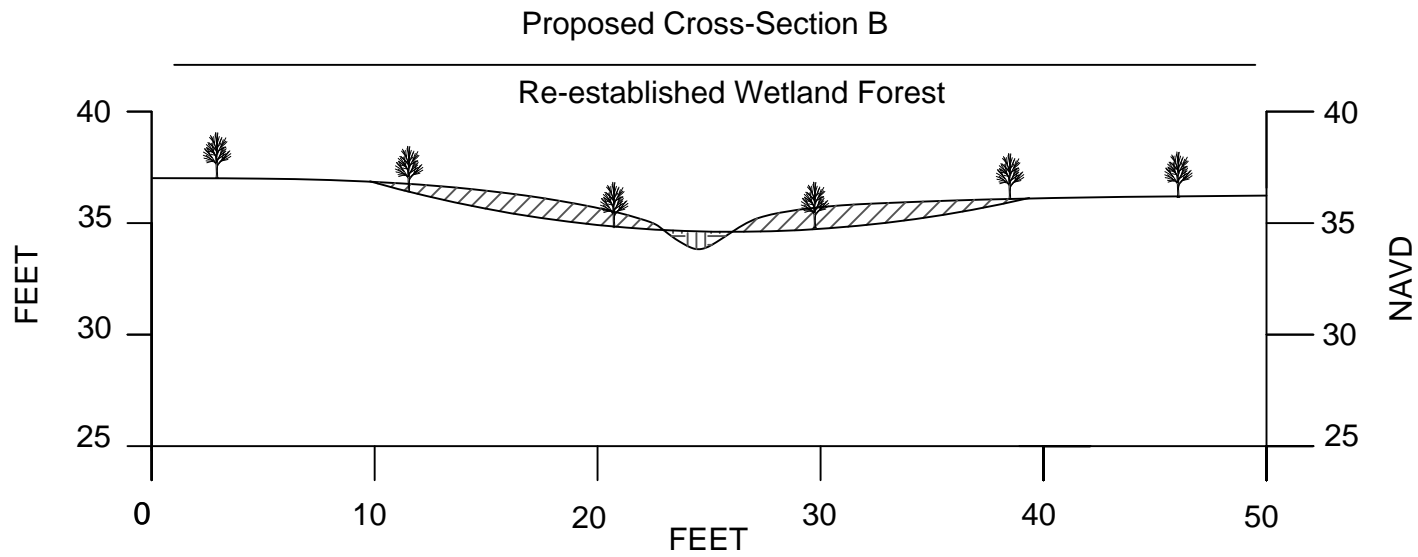
Approved: LJW

Date: 7/31/2017

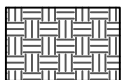
Dwg. No.: Xsection_prospectus



Figure B-2

B**B'****B****B'**

Excavation



Earthen Fill

Upper Atchafalaya Mitigation Bank

CROSS-SECTION B-B'

Pointe Coupee Parish, Louisiana

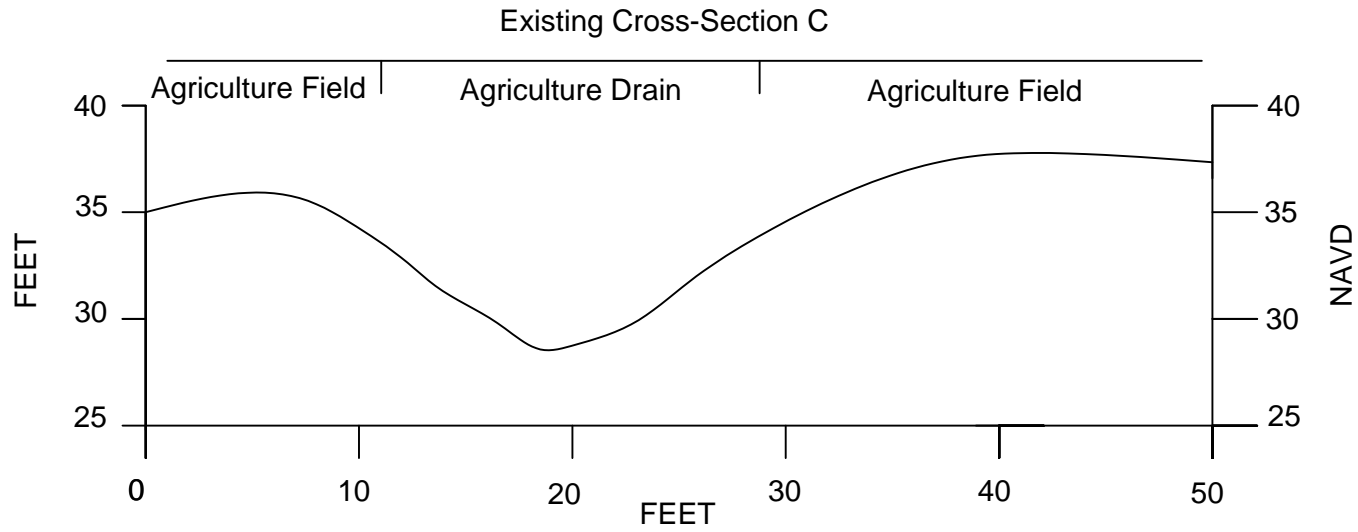
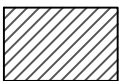
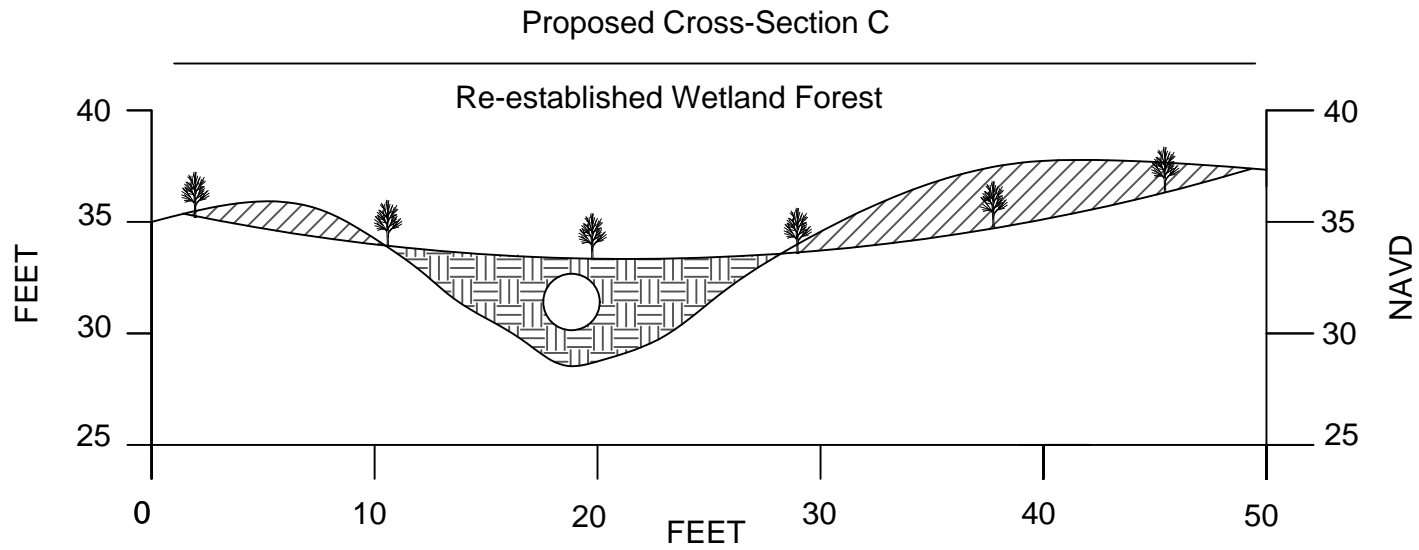
Created: TSC/AutoCAD

Approved: LJW

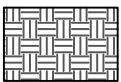
Date: 7/31/2017

Dwg. No.: Xsection_prospectus

**Figure B-3**

C**C'****C****C'**

Excavation



Earthen Fill

Note: Top of drop pipe will be set at approximately 34.5' elevation NAVD

Upper Atchafalaya Mitigation Bank

CROSS-SECTION C-C'

Pointe Coupee Parish, Louisiana

Created: TSC/AutoCAD

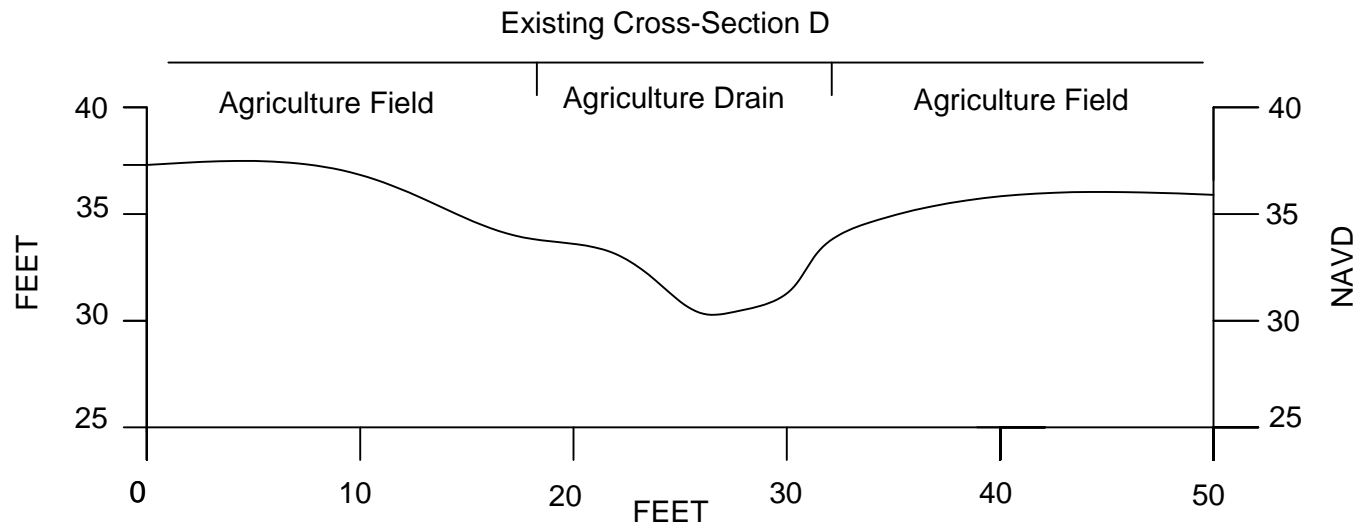
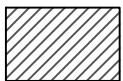
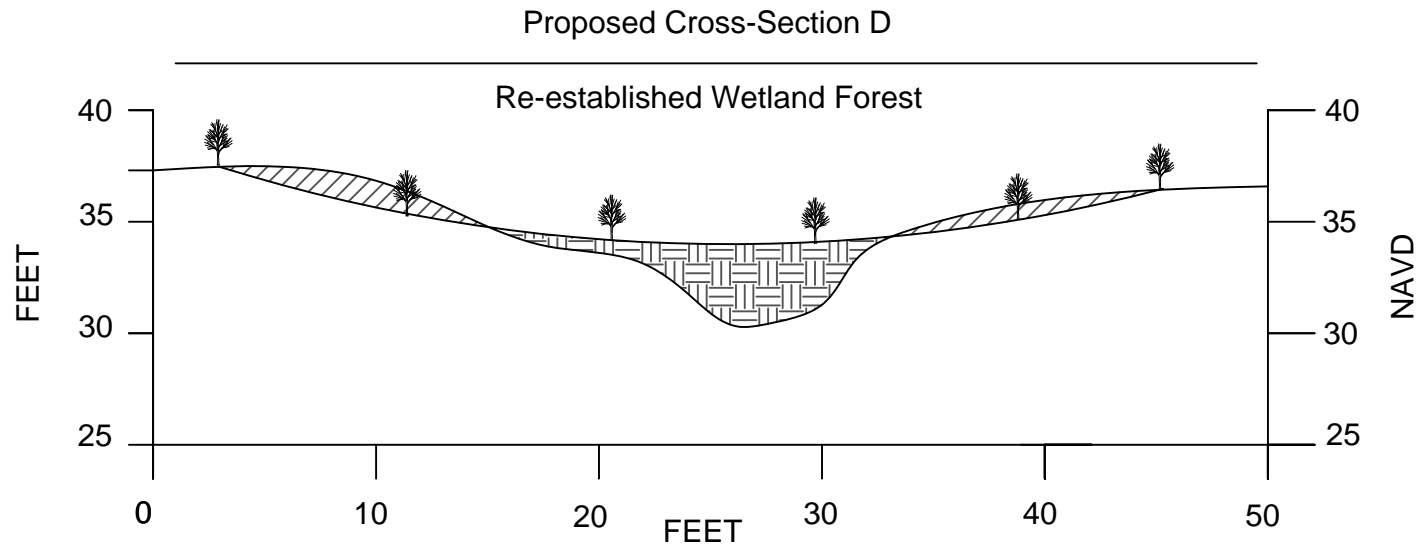
Approved: LJW

Date: 7/31/2017

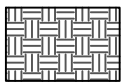
Dwg. No.: Xsection_prospectus



Figure B-4

D**D'****D****D'**

Excavation



Earthen Fill

Upper Atchafalaya Mitigation Bank

CROSS-SECTION D-D'

Pointe Coupee Parish, Louisiana

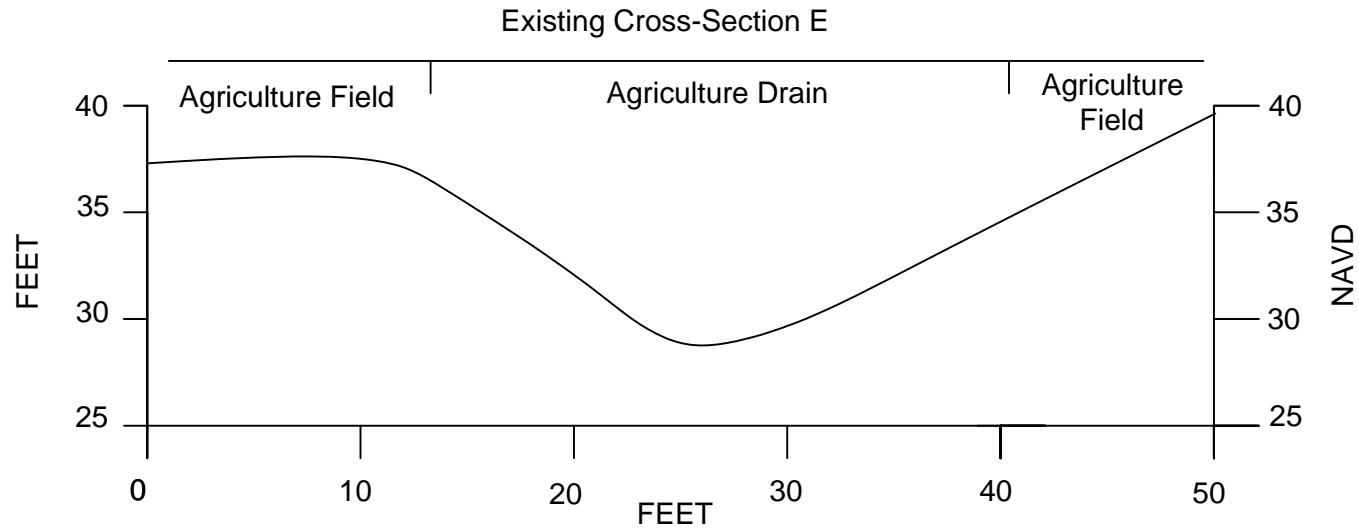
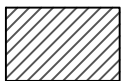
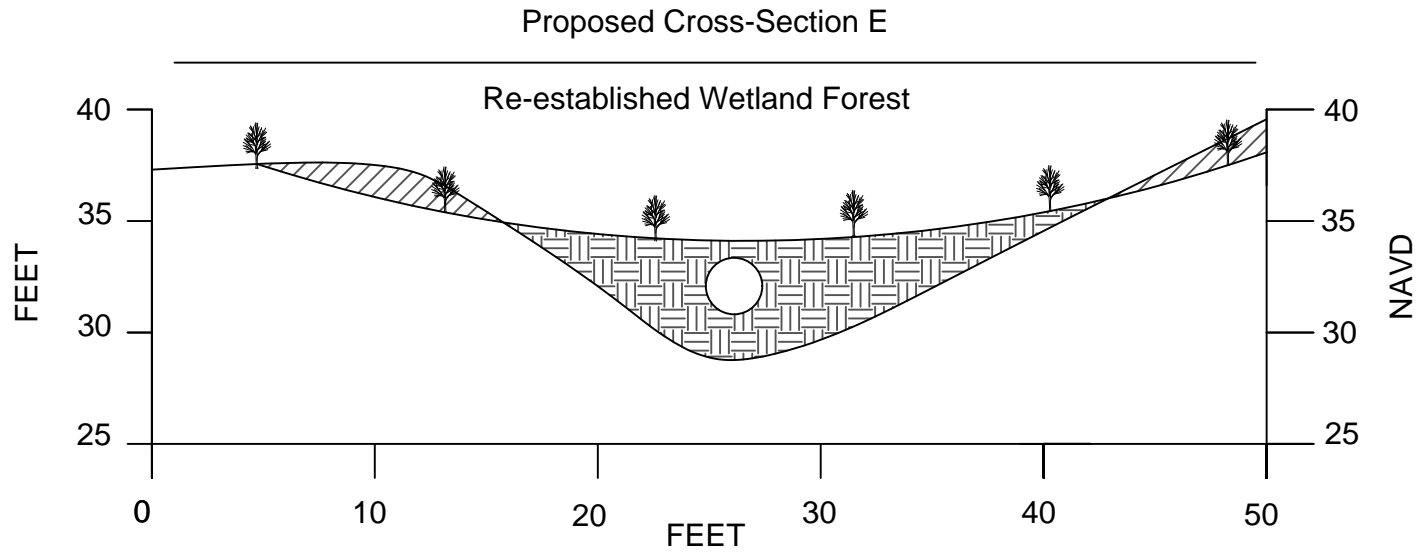
Created: TSC/AutoCAD

Approved: LJW

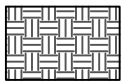
Date: 7/31/2017

Dwg. No.: Xsection_prospectus

**Figure B-5**

E**E'****E****E'**

Excavation



Earthen Fill

Note: Top of drop pipe will be set at approximately 34.5' elevation NAVD

Upper Atchafalaya Mitigation Bank

CROSS-SECTION E-E'

Pointe Coupee Parish, Louisiana

Created: TSC/AutoCAD

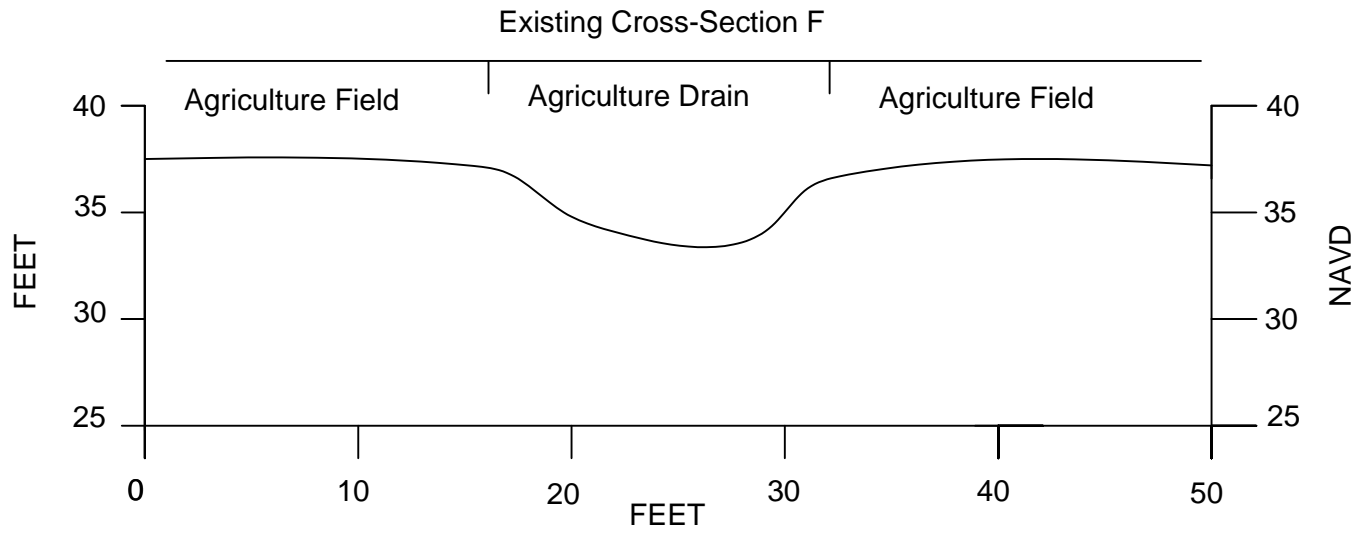
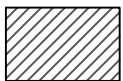
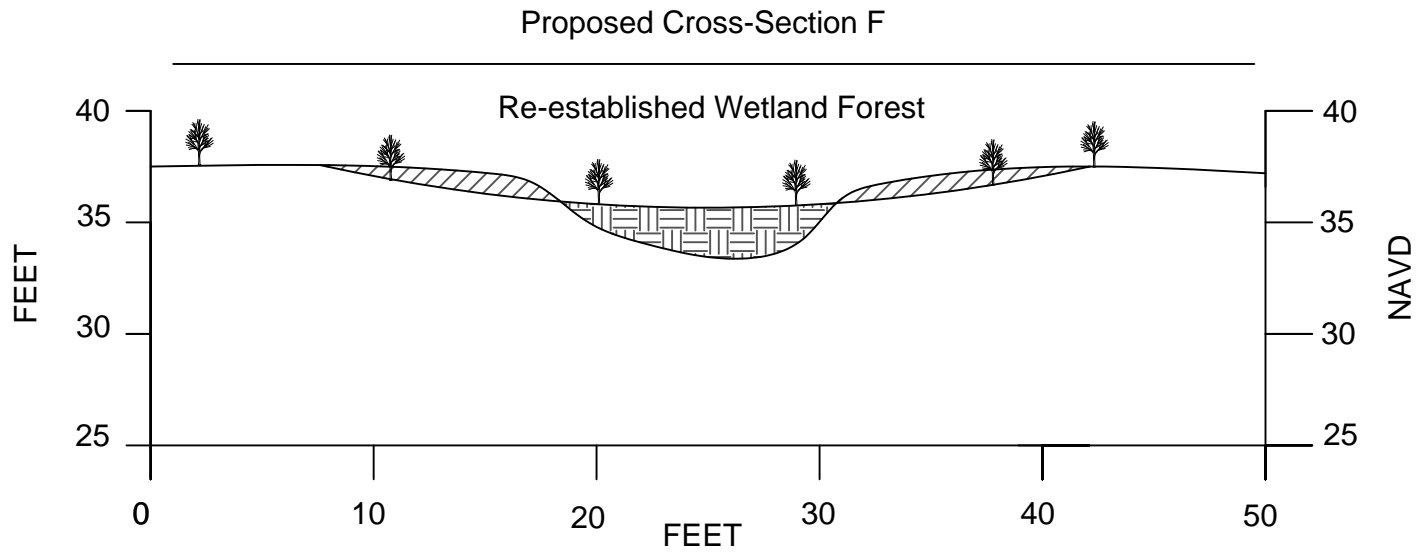
Approved: LJW

Date: 7/31/2017

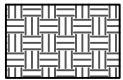
Dwg. No.: Xsection_prospectus



Figure B-6

F**F'****F****F'**

Excavation



Earthen Fill

Upper Atchafalaya Mitigation Bank

CROSS-SECTION F-F'

Pointe Coupee Parish, Louisiana

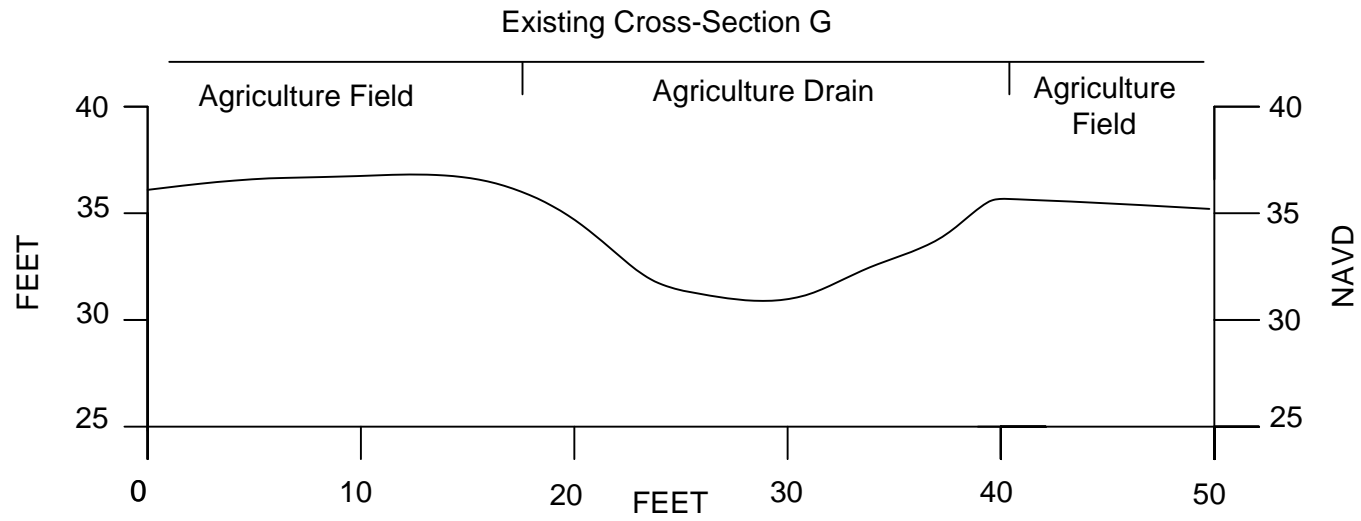
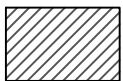
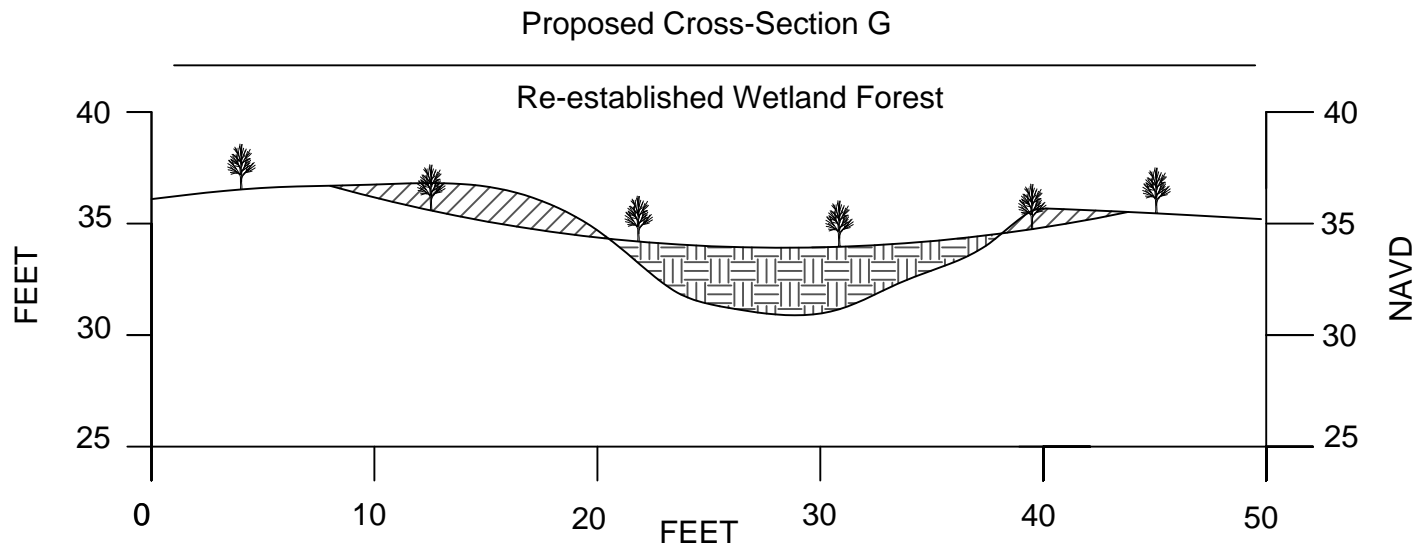
Created: TSC/AutoCAD

Approved: LJW

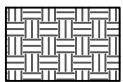
Date: 7/31/2017

Dwg. No.: Xsection_prospectus

**Figure B-7**

G**G'****G****G'**

Excavation



Earthen Fill

Upper Atchafalaya Mitigation Bank

CROSS-SECTION G-G'

Pointe Coupee Parish, Louisiana

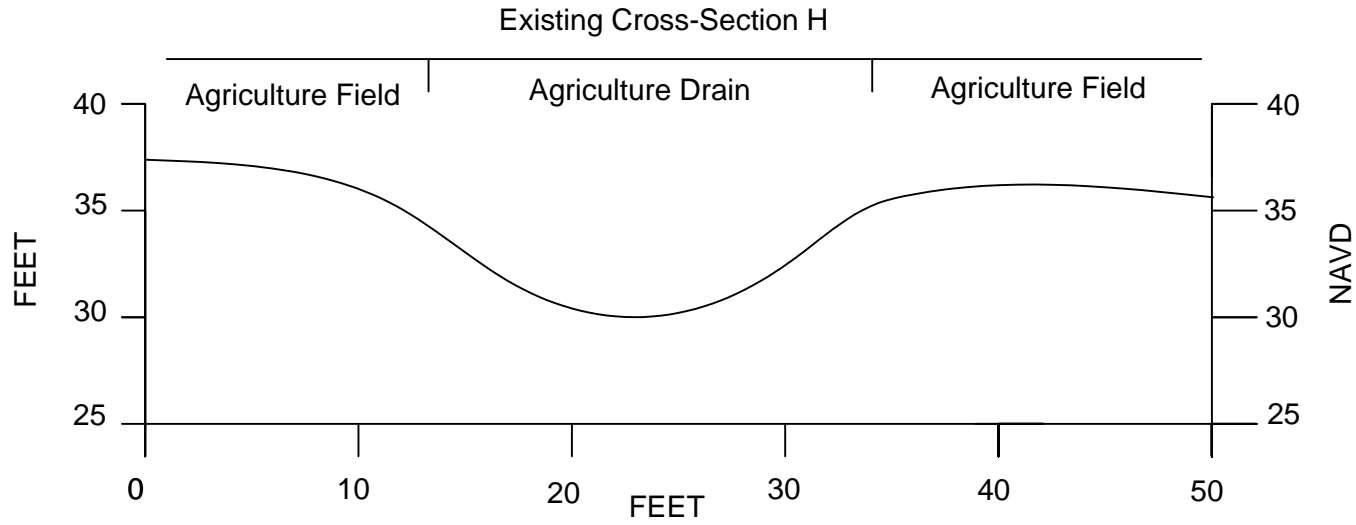
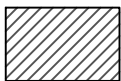
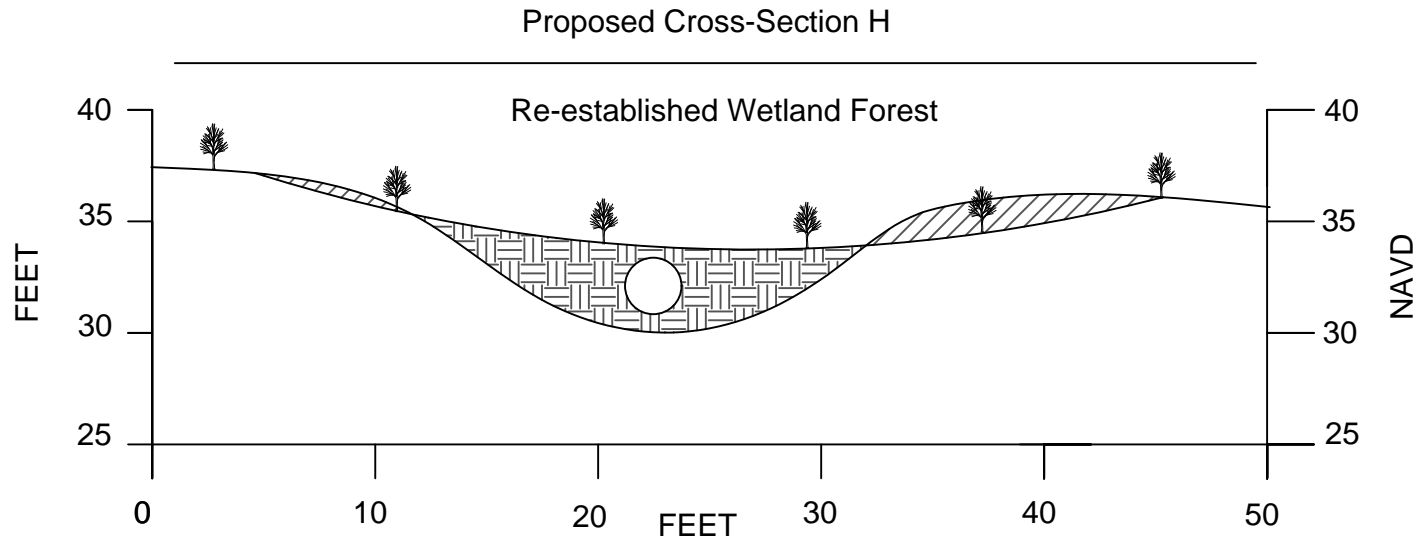
Created: TSC/AutoCAD

Approved: LJW

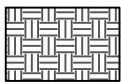
Date: 7/31/2017

Dwg. No.: Xsection_prospectus

**Figure B-8**

H**H'****H****H'**

Excavation



Earthen Fill

Note: Top of drop pipe will be set at approximately 34.5' elevation NAVD

Upper Atchafalaya Mitigation Bank

CROSS-SECTION H-H'

Pointe Coupee Parish, Louisiana

Created: TSC/AutoCAD

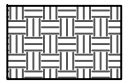
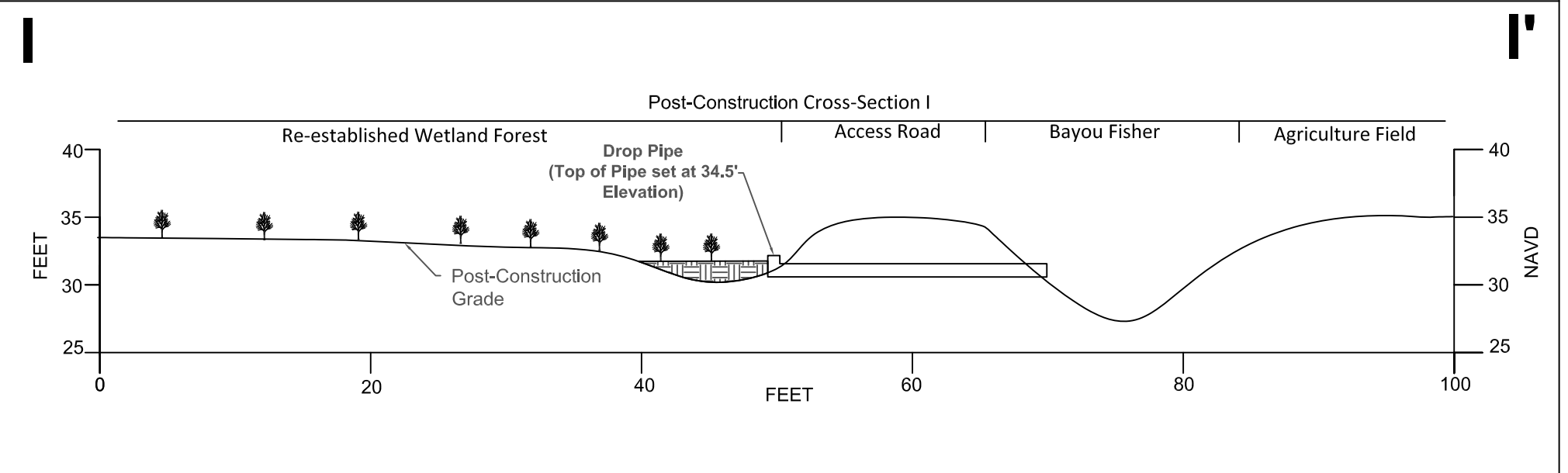
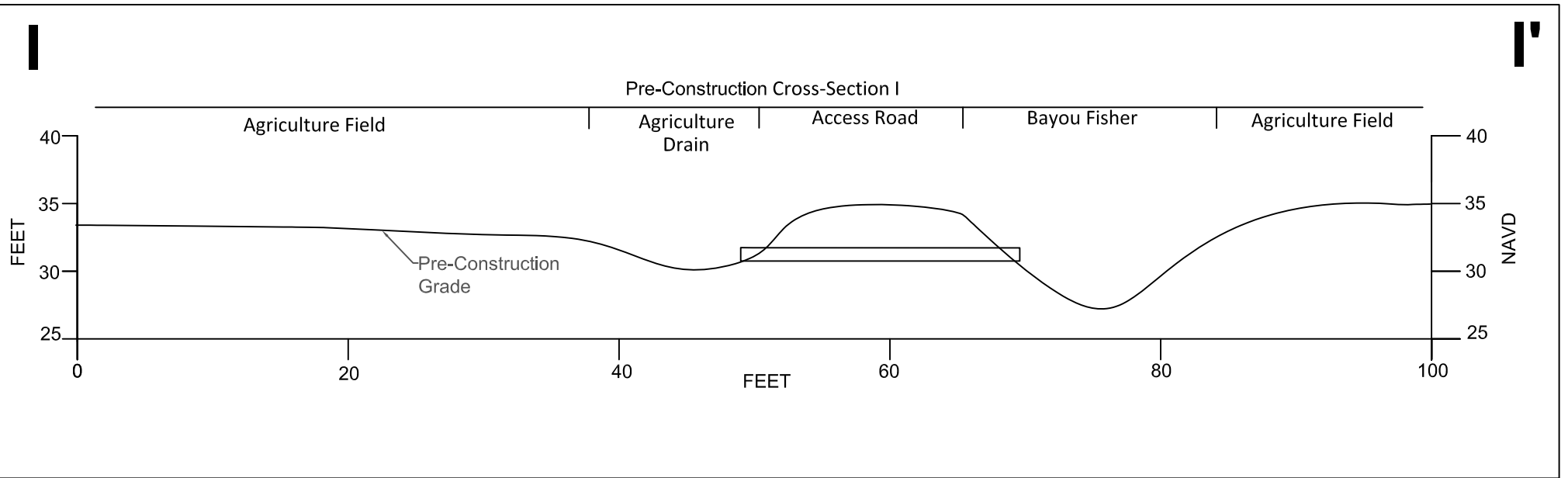
Approved: LJW

Date: 7/31/2017

Dwg. No.: Xsection_prospectus



Figure B-9



Earthen Fill

Upper Atchafalaya Mitigation Bank

TYPICAL DROP PIPE CROSS SECTION

Pointe Coupee Parish, Louisiana

Created: TSC/AutoCAD

Approved: LJW

Date: 7/31/2017

Dwg. No.: Xsection_prospectus



Figure B-10

Appendix D
Site Photographs



Typical view of soybean field



Typical view of sugarcane field



View of wetland area proposed for rehabilitation



View of typical interior agriculture drain to be filled



View of typical large agriculture drain to be filled



View of typical large agriculture drain to be filled