JOINT PUBLIC NOTICE

March 5, 2018

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

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Project Manager
Jacqueline Farabee
Permit Application Number
MVN-2017-00626-MR

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

(225) 219-3225 FAX (225) 325-8250
Elizabeth.Hill@la.gov
Project Manager
Elizabeth Hill
WQC Application Number
WQC # 171207-01

Interested parties are hereby notified that a permit application has been received by the New Orleans District of the U.S. Army Corps of Engineers pursuant to: [ ] 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).

BEAVER CREEK MITIGATION BANK IN EAST BATON ROUGE PARISH

NAME OF APPLICANT: Delta Land Services, LLC; Attn: Daniel Bollich, 1090 Cinclare Drive, Port Allen, LA 70767.

LOCATION OF WORK: The 160.9 acre site is located approximately 3.5 miles north of Greenwell Springs, Louisiana, in East Baton Parish, as shown on enclosed drawings (Latitude: 30.632198° N, Longitude:–91.005243° W). The Project is located within the Lake Pontchartrain Basin, Hydrologic Unit 08070202.

CHARACTER OF WORK: Backfilling of artificial surface drainage features and ponds with approximately 4,257 cubic yards of in situ earthen fill as part of the work to enhance and restore traditional surface hydrology to the site for the construction of a mitigation bank with a bottomland hardwood habitat.

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

Water Quality Certification must reference the applicant's name and the WQC Application number and be mailed to the Louisiana Department of Environmental Quality at the address above.

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

Corps of Engineers Permit Criteria

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

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

The New Orleans District is unaware of properties listed on the National Register of Historic Places near the proposed work. The possibility exists that the proposed work may damage or destroy presently unknown archeological, scientific, prehistorical, historical sites, or data. Issuance of this public notice solicits input from the State Archeologist and State Historic Preservation Officer regarding potential impacts to cultural resources. After receipt of comments from this public notice the Corps will evaluate potential impacts and consult with the State Historic Preservation Officer and Native American Tribes in accordance with Section 106 of the national Historic Preservation Act, as appropriate.

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

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 species listed as endangered by the U.S. Department of the Interior.

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

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

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

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

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

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

for
Martin S. Mayer
Chief, Regulatory Branch

Enclosure

DELTA LAND SERVICES

BEAVER CREEK MITIGATION BANK

East Baton Rouge Parish, Louisiana

MVN-2017-00626
Prospectus prepared for
New Orleans District U. S. Army Corps of Engineers

Sponsored by: Delta Land Services, LLC

December 5, 2017

Restore & Revitalize

audubon.org/field-guide/bird/hooded-warbler

wikipedia.com

PROSPECTUS FOR THE PROPOSED BEAVER CREEK MITIGATION BANK MVN-2017-00626

EAST BATON ROUGE PARISH LOUISIANA

December 5, 2017

PREPARED BY:

DELTA LAND SERVICES, LLC
1090 CINCLARE DRIVE
PORT ALLEN, LOUISIANA 70767

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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 Beaver Creek Mitigation Bank (BCMB). The BCMB is a 160.9-acre proposed mitigation bank to provide compensatory mitigation for unavoidable impacts to "Waters of the United States[1]" 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 Sections 9 and 10 of the Rivers and Harbors Act of 1899 and Section 404 of the Clean Water Act of 1972.

1.1 Regional Description, Site Location, and Climate

The BCMB is located in the Mississippi Valley Loess Plains Level III Ecoregion and the Baton Rouge Terrace Level IV Ecoregion (74d; Environmental Protection Agency [EPA] 2003; Omernik 1987), the South Atlantic and Gulf Slope Cash Crops, Forest, and Livestock Land Resource Region (LRR P), and the Southern Mississippi Valley Loess Major Land Resource Area (MLRA 134; Natural Resources Conservation Service [NRCS] 2006). The restoration site is located in the Mississippi Alluvial Plain Section of MLRA 134 and is typically characterized by fertile, medium-textured mineral soils, smooth to undulating topography, and a long growing season. Some convex areas exist as narrow rolling intervening ridges with broad and flat interfluves. Stream valleys are typically narrow in the upper reaches but broaden rapidly downstream and have wide, flat flood plains and meandering stream channels. Other features include natural levees and undulating terraces and spoil banks from the natural and artificial deepening of drainageways across the landscape.

The site is approximately 3.5 miles north of Greenwell Springs, Louisiana and is located in Sections 9, 10, and 61 of Township 6 South, Range 2 East in East Baton Rouge Parish, Louisiana (Figures 1 and 2). The approximate site center is located at Latitude 30.632198°, Longitude -91.005243°[2]. The site lies in the lower portion of the approximate 25.9 square-mile Little Sandy-Sandy Creek Subwatershed (USGS HUC 080702020503). This subwatershed contains approximately 49.4 miles of streams. The BCMB is traversed by Beaver Creek at its confluence with Little Sandy Creek (Figure 3). These waterways eventually drain to the Amite River, Lake Maurepas and Lake Pontchartrain. Natural elevations on the site range from approximately 70 to 80 feet[3] (Figure 4). Portions of the site located nearest Beaver Creek and Little Sandy Creek are located within the 100-year flood zone per the

[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 wasters, and non-tidal waters, which are further described in 33 CFR § 328.4 (a), (b), and (c).
[2] All geographic coordinates are based on North American Datum of 1983 (NAD83)
[3] All elevations referenced within the report are from digital elevation models (DEM) derived from light detection and ranging (LIDAR) datasets obtained from the Louisiana State University CADGIS Research Laboratory. Elevations are purported in North American Vertical Datum of 1988 (NAVD)

Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM; Figure 5).

East Baton Rouge Parish has a warm, humid, subtropical climate characterized by relatively high rainfall. The average annual precipitation in this area is 63 inches[4]. Rainfall occurs primarily as high-intensity, convective thunderstorms, but moderate-intensity tropical storms can produce large amounts of rainfall during the fall and winter. The average annual temperatures range from a low of 56° to a high of 78° Fahrenheit (F). The growing season lasts year-round as soil temperatures rarely drop below 32°F with the number of frost-free days averaging 325 per year.

1.2 Sponsorship and Ownership

DLS will be the sponsor of the BCMB and will construct, operate, monitor, and manage the Bank. The BCMB is within the boundaries of a 171.0-acre tract of land owned by DLS. DLS will protect the BCMB project area by granting the conservation servitude as described in Section 6.4.

1.3 Driving Directions to the Site

From Zachary, Louisiana: At the intersection of Highway 19 and 64, proceed approximately 5.3 miles east on Highway 64 (Zachary Deerford Road). Turn left onto Peairs Road and proceed approximately 3.6 miles to an entrance to a private road.

From Greenwell Springs, Louisiana: At the intersection of Highwy 408 and Hwy 64, proceed north on Highway 64 to Hwy 409 (Liberty Road). Turn left onto Liberty Road and proceed approximately 3.9 miles to Peairs Road. Turn left onto Peairs Road and proceed approximately 2.4 miles to the private entrance road. Once through the private entrance, proceed 0.7 miles down the private road to the BCMB.

2.0 PROJECT GOALS AND OBJECTIVES

The goal of the BCMB is the re-establishment[5], rehabilitation[6] and enhancement[7] of a spruce pine-hardwood flatwood wetlands as defined by the Louisiana Department of

[4] Precipitation and temperature averages are based on 30-year averages from 1981 through 2010 per NRCS climate datasets.

[5] *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.*

[6] *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.*

[7] *Enhancement is defined in 33 CFR § 332.2 as the manipulation of the physical, chemical, or biological characteristics of an aquatic resource to heighten, intensify, or improve a specific aquatic resource function(s). Enhancement results in the gain of selected aquatic resource function(s), but may also lead to a decline in other aquatic resource function(s). Enhancement does not result in a gain in aquatic resource area..*

Wildlife and Fisheries Natural Heritage Program (LNHP 2009). Existing areas of non-hydric soils and riparian uplands will be restored along with the forested wetlands but will be classified as restored buffers[8]. Access areas and open water features will be maintained as non-mitigation acreage within the BCMB. The purposes of these features are to facilitate monitoring/maintenance activities associated with Bank establishment, long-term management and continued recreational use of the property (Figure 6, Table 1).

According to the habitat description of LNHP (2009) and USACE (2017), spruce pine-hardwood flatwoods are natural mixed forest community indigenous to the western Florida parishes in southeast Louisiana. The wetlands variation of this community occupies poorly drained flats, depressional areas and small drainages that lie in a mosaic with higher, nonwetland areas. Hardwoods usually dominate the forest composition but spruce pine (*Pinus glabra*)[9] can dominate areas within the stand with loblolly pine (*Pinus taeda*) also present at some level. Areas with the floodplains of Beaver Creek and Little Sandy Creek may be restored to a Small Stream Forest as defined by LNHP (2009). These areas are defined by the LNHP (2009) and USACE (2017) as narrow riparian forests along rivers and large creeks in central, western, southeastern and northern Louisiana. With regards to credit type, USACE (2017) classifies the spruce pine-hardwood flatwoods and small stream forest habitats as bottomland hardwood (BLH).

The restoration[10] and enhancement of wetland and non-wetland forest within the 160.9-acre BCMB will provide additional wetland functions and values that are not realized under existing conditions and land use. The cessation of intensive grazing and hay production activities and subsequent afforestation[11] with native wetland tree and shrub species combined with removal of the improved surface drainage system will provide localized improvement to downstream waters by increasing surface-water retention time for vegetative nutrient uptake and reducing sediment and chemical run-off. Wildlife habitat will improve for resident biota and nearctic-neotropical migrating bird species (e.g., staging, resting, feeding, escape cover, etc.) through afforestation and subsequent forest development. The removal of livestock from the creek and associated riparian area and subsequent afforestation of this areas will help reduce localized stream bank erosion which will help reduce the redistribution of sediment downstream. Specifically, DLS' objectives are to improve and protect the physical, chemical and biological functions of a forested wetland system as follows:

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[8]*Buffers are defined in 33 CFR § 332.2 as an upland, wetland, and/or riparian area that protects and/or enhances aquatic resource functions associated with wetlands, rivers, streams, lakes, marine, and estuarine systems from disturbances associated with adjacent land uses.*

[9] This and all subsequent scientific nomenclature is from NRCS 2017[a]

[10]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.*

[11]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".

- Restoration, enhancement, and protection of historic and self-sustaining surface hydrology within the 160.9-acre BCMB through hydrological restoration activities such as backfilling artificial drainages;
- Restoration of a native spruce pine-hardwood flatwood and small stream forest (121.6 acres) forest community through hydrology restoration and afforestation with native species;
- Enhancement of native BLH (12.7 acres) forest through timber stand improvement including invasive species removal and underplanting with native species;
- Restoration of a forested buffer and riparian area (14.9 acres) that will provide a valuable upland and riparian buffer along Beaver Creek, as well as vital habitat to fauna species that utilize both wetland and upland systems throughout their life-cycle;
- Improvement of local and downstream water quality by means of reduced non-point source runoff, reduced erosion and increased nutrient uptake through hydrological and vegetative restoration activities;

- 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 BCMB.

3.0 ECOLOGICAL SUITABILITY OF THE SITE[12]

3.1 Historic Ecological Characteristics and Current Land Use

The primary factors considered during site selection were the presence of hydric soils, evidence of previously existing forested wetlands, and compatibility with existing and anticipated surrounding land uses (Figure 7).

The site was historically forested but has been in livestock and pasture use for the past few decades (Figures 8 and 9). Based on soil type and landscape position, native vegetation on the site was comprised of deciduous tree species with a minor component of pine species. Historic sources of surface water on the BCMB included overbank flooding from Beaver Creek and Little Sandy Creek, precipitation, and locally perched high-water tables. Overbank flooding does still occur from the waterways, however, most of the restoration site currently relies on direct

[12] Site specific data observation of soils, vegetation and hydrology were obtained by DLS biologists on August 24-25, 2017 and are documented in the "Wetland Delineation Report, Beaver Creek, East Baton Rouge Parish, LA" prepared by Delta Land Services dated April 28, 2017 and submitted to the CEMVN for review and verification. The CEMVN issued the preliminary jurisdictional determination on August 7, 2017. DLS collected additional site data was obtained on September 9, 2017 on the portion of the property north of Beaver Creek and submitted the data to the CEMVN on the same date.

precipitation, surface runoff from higher elevations, and local high-water tables. The site's relatively flat topography allows for lower runoff potential and greater retention without the aid of artificial drainages.

At present the site is utilized for livestock grazing and hay production (Figures 10 to 12). Much of the area is accessible to livestock for grazing, foraging, shading and watering. This includes the existing forested areas and the areas in and around Beaver Creek. Only the access road and telecommunications tower are fenced to exclude livestock.

3.2 Soils

Figure 13 depicts the mapped soil units within the project area. These map units are GeA: Gilbert silt loam, 0-1% slopes, OUA: Ouchita, Ochlockonee, and Guyton soils, frequently flooded, and OpA: Oprairie silt, 0-1% slopes (NRCS 2017[b]). The GeA and OUA map units contain varying degrees of hydric soil components while the OpA soil series is listed as a non-hydric soil. Gilbert and Guyton silt loams occupy broad flats, narrow depressions or floodplains (Guyton). These soils are poorly drained with low runoff and permeability. Ouachita and Ochlockonee soils are well drained and are moderately slowly (Ouachita) to moderately rapidly permeable (Ochlockonee). These soils are on located on floodplains and natural levees along streams. Oprairie soils are somewhat poorly drained soils located on silty upland terraces (NRCS 2017[c]).

Eleven (11) soil profiles were analyzed as part of the delineation study in accordance with the AGCP Regional Supplement (USACE 2010). Nine soil profiles contained the depleted matrix indicator sufficient to be considered hydric per USACE 2010. One data point was in an inundated area with approximately 4 inches deep and therefore was assumed hydric based on the surface inundation along with the presence of wetland vegetation and hydrology at the observation point. One data point had no hydric indicators. Three data points were in OpA map units within pastures; five data points were in GeA map units within pastures; and three were in an OUA map unit in a forested area and areas along Beaver Creek. The nonhydric data point was in the OUA map unit near Beaver Creek.

3.3 Vegetation

The BCMB consists mostly of grazing and hay production pastures. Dominant pasture species include but are not limited to common carpetgrass (*Axonopus fissifolius*), white clover (*Trifolium repens*), coastal lovegrass (*Eragrostis refracta*), Bermudagrass (*Cynodon dactylon*), perennial rye (*Lolium perenne*), and bahiagrass *(Paspalum notatum*). Wet pastures consisted of roundhead rush (*Juncus validus*), common rush *(Juncus effusus),* and tapetip rush (*Juncus acuminatus)*. The particular compositions of species varied among delineation sample sites based primarily on the intensity of management for hay production or

seasonal grazing requirements, and a localized soil moisture regime driven by the sample's proximity to the nearest artificial surface drainage feature.

The 12.7-acre proposed enhancement area is a small block of forested wetlands near the central portion of the property. The most prevalent species in this area are Chinese tallowtree (*Tridica sebifera*), water oak (*Quercus nigra)*, greenash (*Fraxinus pennsylvanica*), sweetgum (*Liquidambar styraciflua*), lizard's tail (*Saururus cernuus*), and palmetto (*Sabal minor)*. Based on the tree species and dominant age class present, this area appears to be at an early successional stage, and highly susceptible to the further encroachment of invasive/exotic species. DLS biologists observed up to 80% absolute cover of Chinese tallowtree in the tree stratum. The lack of natural regeneration of native species is contributing to the proliferation of Chinese tallowtree.

3.4 Hydrology

Current project hydrology relies primarily on direct precipitation, surface runoff from higher elevations, and local high-water tables. Within the project site, natural topography creates a slow sheet flow drainage generally from west to east. Most of this surface water is captured by some form of artificial drainage feature. The extensive drainage system is made up of a series of culverts and drains connected to surface ditches and an underground conduit. These features eventually flow north and east toward an impounded stock pond and into Little Sandy Creek. Ditching and culverts are the primary means by which surface water is removed from the livestock and hay fields. These surface features direct captured waters to the underground piping which runs adjacent to and parallel with both sides of the gravel access road carrying it north to the stock ponds. With the exception of areas immediately adjacent to Beaver Creek, the entire project site currently drains into the large stock pond located in the northeast portion of the project area which subsequently drains to Little Sandy Creek via an overflow pipe (Figure 14).

Since the property's conversion to livestock pasture, the system has been altered to expedite the removal of surface water and dry the fields quickly enough to ensure pasture grass production suitable for sustained grazing and hay production. Despite these efforts, the forested portion of the property and small areas of managed pasture do remain saturated for periods sufficient to support wetland hydrology. Of the nine data points collected during the site investigation, six had wetland hydrology indicators in accordance with USACE (2010). Observed primary indicators included surface water (A1), saturation (A3), water marks (B1) and water-stained leaves (B-9) and oxidized rhizospheres (C3) while common secondary indicators were Moss Trim Lines (B16) and the FAC-Neutral Test (D5).

3.5 Jurisdictional Wetland Status

A preliminary jurisdictional determination (PJD) was issued on August 7, 2017 (MVN-2017-00626-SG) for the BCMB south of Beaver Creek (159.6-acre tract). The results of the PJD show approximately 17.7 acres of wetlands, 137.0 acres of managed pasture (e.g., "non-wetlands"), and 4.9 acres of other waters. This PJD covers most of the BCMB and covers all the proposed re-establishment and enhancement acres. An addendum for the portion of the BCMB north of Beaver Creek (4.6 acres) was submitted to the ACOE on September 8, 2017 for verification.

3.6 General Need

In addition to providing compensation for unavoidable impacts associated with local commercial and residential developments, the proposed BCMB will also serve to mitigate for potential impacts associated with linear projects such as pipelines and roadways in the already highly developed industrial Pontchartrain basin. Development of wetland restoration sites such as the BCMB in an area of increasing development and urbanization will provide an important resource with regard to storm water retention and flood storage. Successful restoration of the site will result in the restoration of spruce pine-hardwood flatwoods which is listed by Holcombe et al. (2015) as having a state rank of S1 which is a critically imperiled habitat in Louisiana due to rarity (i.e. five or fewer known extant populations). This habitat is typically restricted to Louisiana occupying a narrow range in Livingston, East Baton Rouge and possibly Ascension Parish. It was thought to have a pre-settlement acreage ranging from 50,000 to 100,000 acres with only 10-25% remaining. Protected areas with this type of habitat are on Tickfaw State Park and Frenchtown Road Conservation Area (Holcombe et al. 2015; Smith 1993).

Major soil resource concerns exist in this area due to the generally unconsolidated nature of loess sediments from which the landscape is formed. These concerns include water erosion, maintenance of organic matter content and productivity, and management of soil moisture. Water erosion is a particular hazard in sloping areas that are bare due to timber harvest operations. Though many of the soils in this region remain wet or have a high-water table for some or most of the year, forested wetland restoration projects like the proposed BCMB serve to increase the amount of precipitation interception and increase flood/storm water retention time. These functions serve to reduce potential erosion hazards and aid in the accumulation and maintenance of soil organic matter.

The restoration and afforestation of the BCMB near larger tracts of forested lands will provide benefit to various species of wildlife such as nearctic-neotropical migrant birds. Twedt et al. (1999) lists 14 forest breeding species as species of high concern. 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. 1999; Twedt et al. 2010). Holcombe et al (2015) describes spruce pine-hardwood flatwoods as habitat for 29 species of greatest conservation need (SGCN)[13] in Louisiana.

3.7 Technical Feasibility

The construction work required to develop the proposed BCMB is based on currently-accepted restoration methods and is technically feasible. The construction work will consist of 1) site preparation, 2) afforestation, and 3) filling 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 in the areas currently being used as grazing pasture and hay fields. The existence of forested wetlands within and adjacent to the BCMB also suggests a high potential for successful restoration. Once artificial 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 removal of livestock, cessation of intensive haying operations, restoration of surface hydrology, afforestation, and implementing effective short and long-term management strategies. Establishment of the BCMB will restore 121.6 acres of BLH forest and 14.9 acres of forested upland buffer and enhance 12.7 acres of BLH forest. The remaining 11.7 acres will consist of maintained herbaceous habitat, existing servitudes, open water, and access trails (Figure 6, Table 1).

Once the livestock are removed, site preparation is anticipated to begin in the summer or fall of 2018. This activity will be accomplished by drainage/spoil removal, herbicide treatments, cultivation, and ripping the soil at equidistant intervals to a depth of approximately 18 inches (Allen et al. 2001). As part of the restoration activity, approximately 1.3 acres of other waters will be filled to grade or slightly subgrade with approximately 4,257 cubic yards[14] of adjacent in-situ earthen material and spoil. As part of the enhancement activity, Chinese tallowtree and other undesirable species will be chemically treated and/or removed from the project area.

[13] Holcombe et al (2015) defines SGCN as species document or suspected to be in population decline or those which may be subject to declines within 10 years.
[14] This consists of approximately 918 cubic yards to fill artificial drainage ditches and 3,339 cubic yards to fill two anthropogenic stock ponds which are considered “other waters of the US” per PJD MVN-2017-00626-SG).

Native seedlings will be planted during the first planting season following site preparation (January 1st through March 31st). Generally, areas that will be restored as upland buffer are natural levee features of Beaver Creek and Little Sandy Creek. Given their relatively higher landscape position and that soil analysis in these buffer areas did not reveal hydric indicators during the wetland delineation, DLS feels that the restoration may not result in adequate hydrology on these areas per the requirements of the USACE (2010). However, restoration of the native forested community in this area will benefit the project in terms of providing contiguous forested habitat as well as reducing overall runoff and potential soil erosion in these areas. The Sponsor will continue to monitor these areas post restoration for potential wetland development.

Tables 2, 3 and 4 describe the species suitable for the proposed habitat type. The arrangement of species was based upon native trees noted in adjacent forests as well as those in which the native range has been documented for the BCMB by the LNH (2009), Holcombe et al. (2015), Burns and Honkala (1990), Lichvar et al. (2016) and NRCS (2017[a]). The exact species and quantities to be planted will be determined by the availability of such species from commercial nurseries capable of providing localized ecotype seedlings. At least ten species shall be represented in the planting mosaic to insure adequate species richness. Seedlings will be mixed prior to planting so that areas are not afforested with a monotypic community (Twedt and Best 2004). Within restoration areas Hard mast[15] species should account for approximately 60% of the tree plantings. The enhancement area will be interplanted with all hard mast given the existing prevalence of soft mast species within the enhancement area. All species selected for afforestation have a designated growth habit of a tree[16] or combination tree/shrub[17] per NRCS 2017[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 upland restoration areas will include native, wetland and non-wetland species with an indicator status of Facultative Upland (FACU), FAC, or FACW). Restoration areas will be planted an approximate density of 538 stems per acre (spa) while the enhancement area will be planted at a lesser rate relative to the remaining desirable tree density following stand improvement activities described above.

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

[15] For the purpose of this, hard mast is defined as heavy-seeded species of *Quercus* spp. and *Carya* spp.
[16] 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).
[17] 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.

importance (Twedt et al. 1999[1]). The integration of rapid growth early successional species mimics early natural succession and provides natural habitat and partial cover for late successional species adapted for growth in partial cover and dappled sunlight (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. With the exception of a single culvert to remain under the gravel access road, all culverts, drains, and associated piping that direct the drainage of agriculture fields into the lower stock pond and Little Sandy Creek will be removed, filled, plugged, or otherwise rendered ineffective. The remaining culvert under the gravel access road will be set at a higher elevation to further increase the hydroperiod of restored areas existing west of the road and sized to accommodate potential overbank flooding of Beaver Creek and excess runoff from neighboring properties. All elevated access trails will be leveled to grade and planted as part of the re-establishment effort except for the primary gravel access road through the central portion of the site. The process will involve the redistribution 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. The primary access road will be maintained in its existing condition to provide access to the southern portions of the property for monitoring/maintenance activities as well as access to the telecommunications facility (Figure 15).

4.2 Current Site Risks

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 BCMB are existing forestlands and livestock/hay pastures.

A telecommunications tower, a 30-foot wide access road and 30-foot wide electrical line ROW exist within the BCMB. These features will remain in their current use. However, the Sponsor does not anticipate any adverse impacts to the successful restoration and management of the BCMB. The access road is approximately 4,800 feet long and is situated parallel too much of the natural hydrologic flow and traveled very infrequently. Only the Sponsor and the telecommunications tower operator have access to utilize the road. The utility line is a single wire above-ground line which is approximately 3,860 feet long and supplies electrical service to the tower. A sufficient buffer totaling 1.2 acres will remain around the telecommunications tower and associated appurtenances so that trees will not interfere with operation of the facility. 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 BCMB 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 BCMB will depend primarily on precipitation, runoff from surrounding areas, locally high water tables, and potential overbank/backwater flooding of Beaver Creek and Little Sandy Creek. As such, long-term hydrology maintenance will not depend on the utilization of water captured from irrigation wells or any other artificial source; 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 Pontchartrain Basin will serve as the service area for the Bank (Figure 16). The use of credits outside of the defined service area will be handled on a case specific basis by the CEMVN and will be specified as such in the subsequent MBI.

This Basin is comprised of the Amite Subbasin (USGS Hydrologic Unit Code [HUC] 08070202), the Tickfaw Subbasin (USGS HUC 08070203), the Lake Maurepas Subbasin (USGS HUC 08070204), the Tangipahoa Subbasin (USGS HUC 08070205), the Liberty Bayou-Tchefuncta Subbasin (USGS HUC 08090201), the Lake Pontchartrain Subbasin (USGS HUC 08090202), and the Eastern Louisiana Coastal Subbasin (USGS HUC 08090203). Some of Louisiana's most densely populated areas are contained within the Lake Pontchartrain River Basin. These include the cities of Hammond, Baton Rouge, and New Orleans. Also within the Bank's service area are towns such as Clinton, Kentwood, Amite, Denham Springs, Gonzales, Covington, and Mandeville. These communities and their surrounding municipalities provide a high likelihood for residential and commercial expansion. Major industrial areas exists along the Mississippi River from Baton Rouge to New Orleans and large transportation corridors such as U.S. Highway 190, Interstate Highway 10, Interstate Highway 12, and Interstate Highway 55 traverse this basin. Therefore, it is likely that unavoidable impacts associated with this infrastructure such as pipelines, utilities, and transportation development could be compensated for at the proposed BCMB. The BCMB restoration site would consolidate the mitigation for these types of impacts within a single, strategic location. This will provide the most benefit to

the watershed through the restoration and protection of a larger block of sensitive habitat, offsetting any cumulative effect of smaller, spatially fragmented projects.

6.0 OPERATION OF THE MITIGATION BANK

DLS will comply with all conditions of Sponsorship required by the CEMVN. The BCMB 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 BCMB 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 Drive1008 Port Allen, LA 70767 Attn: Daniel Bollich Phone: 225-388-5146 Electronic Mail: daniel@deltaland-services.com
Landowner:	Delta Land Services, LLC 1090 Cinclare Drive1008 Port Allen, LA 70767 Attn: D. Winship Songy Phone: 225-343-3900 Electronic Mail: win@deltaland-services.com

6.2 Qualifications of the Sponsor

Per 33 CFR § 332.8(d) (2) (vi.), this section describes the Sponsor's qualifications to successfully complete all work associated with establishment and operation of the proposed BCMB. DLS will serve as the Sponsor and 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 experienced in wetland construction activities such as heavy equipment operation, vegetation establishment, herbicide application, and contractor management. The biographies of DLS personnel are available at www.deltaland-services.com.

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 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 Bayou La Carpe Coastal Mitigation Bank (MVN-2016-00147). 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

DLS will own BCMB and 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 BCMB and record it in the Mortgage and Conveyances Records Office of East Baton Rouge 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 at the site and to achieve and maintain the desired forest conditions which will provide forested habitat capable of supporting populations for priority wildlife species. A long-term management plan will be included with the DMBI 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 for protecting lands contained within the BCMB in perpetuity.

7.0 CONCLUSION

In summary, the proposed 160.9-acre BCMB has a high potential for successfully restoring and enhancing 134.3 acres of bottomland hardwood forested wetlands and 14.9 acres of forested buffer to be used as compensation for USACE permitted impacts. 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, increase 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 Proposed Beaver Creek Mitigation Bank in East Baton Rouge Parish, Louisiana.

Baseline Condition	Proposed Post-Restoration Habitat Type	Acres
Non-Wetland Pasture	BLH Re-establishment	114.6
Other Waters of the U.S.	BLH Re-establishment	1.3
Emergent Wetland Pasture	BLH Rehabilitation	5.7
Forested BLH Wetland	BLH Enhancement	12.7
Total Direct Mitigation Credit Acreage		***134.3***
Non-Wetland Pasture	Upland Buffer and Riparian Area Restoration	14.9
Total Indirect Mitigation Credit Acreage		***14.9***
Non-Wetland Pasture	Utility Line ROW	2.1
Non-Wetlands	Telecommunications Facility/Tower	1.2
Non-Wetlands	Open Space	1.1
Non-Wetlands	Perimeter Buffer	2.5
Non-Wetlands	Access Road to Telecommunication Tower	2.5
Other Waters of the U.S.	Open Water/Beaver Creek Channel	2.3
Total Non-Mitigation Feature Acreage		***11.7***
Total Project Area		***160.9***

[1] Wetland and Other Waters baseline conditions were determined per a preliminary jurisdictional determination issued by CEMVN to DLS on August 7, 2017 (MVN-2017-00626-SG).

Table 2. Potential Planting Composition of Wetland Restoration Areas at the Proposed Beaver Creek Mitigation Bank in East Baton Rouge Parish, Louisiana[1].

Hard Mast Species[2] (approximately 55-65% overall composition)				
Common Name	**Scientific Name[3]**	**Indicator Status[4]**	**Composition[5]**	**Growth Habit[6]**
laurel oak	*Quercus laurifolia*	FACW	≤25%	Tree
cow oak	*Quercus michauxii*	FACW	≤25%	Tree
water oak	*Quercus nigra*	FAC	≤25%	Tree
cherrybark oak	*Quercus pagoda*	FACW	≤25%	Tree
willow oak	*Quercus phellos*	FACW	≤25%	Tree
bitternut hickory	*Carya cordiformis*	FAC	≤15%	Tree
Soft Mast Species[2] (approximately 35-45% of overall composition)				
Common Name	**Scientific Name**	**Indicator Status**	**Composition**	**Growth Habit**
Drummond red maple[7]	*Acer rubrum* var. *drummondii*	OBL	≤15%	Tree
Buttonbush[7]	*Cephalanthus occidentalis*	OBL	≤15%	Shrub/Tree
mayhaw	*Crataegus opaca*	OBL	≤15%	Shrub/Tree
green haw	*Crataegus viridus*	FACW	≤15%	Shrub/Tree
common persimmon	*Diospyros virginiana*	FAC	≤15%	Tree
Carolina ash[7]	*Fraxinus caroliniana*	OBL	≤15%	Shrub/Tree
green ash	*Fraxinus pennsylvanica*	FACW	≤15%	Tree
deciduous holly / possumhaw	*Ilex decidua*	FACW	≤15%	Shrub/Tree
sweetgum	*Liquidambar styraciflua*	FAC	≤15%	Tree
southern magnolia	*Magnolia grandiflora*	FAC	≤15%	Tree
sweetbay magnolia	*Magnolia virginiana*	FACW	≤15%	Shrub/Tree
wax-myrtle	*Morella cerifera*	FAC	≤15%	Shrub/Tree
blackgum	*Nyssa sylvatica*	FAC	≤15%	Tree
spruce pine	*Pinus glabra*	FACW	≤15%	Tree
American sycamore	*Platanus occidentalis*	FAC	≤15%	Tree
Baldcypress[7]	*Taxodium distichum*	OBL	≤10%	Tree

[1]Not all species listed on the above-referenced table are likely to be available however the Sponsor will take steps to try to obtain and plant at least 10 species from the list.
[2] For the purpose of this list, hard mast is defined as any oak, hickory or pecan species. All other species are considered soft mast species.
[3] Scientific name and indicator status from 2016 National Wetland Plant List (http://wetland_plants.usace.army.mil/) except where otherwise noted
[4] Indicator status from 1988 National Wetland Plant List, Region 2 as 2014 National Wetland Plant List does not differentiate indicator status for species with trinomials.
[5] The composition represents the maximum percentage a species may comprise of the entire planting mosaic regardless of mast type. Exact species and quantities to be determined by seedling availability from commercial sources providing seedlings grown from localized ecotypes.
[6] Growth habitat per the Plants Database, available at http://plants.usda.gov and accessed on March 30, 2017.
[7]OBL species will be limited to stream bottoms and floodplain wetland areas within the stream zone of Beaver Creek that are prone to frequent riverine flooding and inundation.

Table 3. Potential Planting Composition of the Wetland Enhancement Areas at the Proposed Beaver Creek Mitigation Bank in East Baton Rouge Parish, Louisiana[1].

Hard Mast Species[2] (approximately 55-65% overall composition)				
Common Name	**Scientific Name[3]**	**Indicator Status[4]**	**Composition[5]**	**Growth Habit[6]**
laurel oak	*Quercus laurifolia*	FACW	≤25%	Tree
cow oak	*Quercus michauxii*	FACW	≤25%	Tree
cherrybark oak	*Quercus pagoda*	FACW	≤25%	Tree
willow oak	*Quercus phellos*	FACW	≤25%	Tree
bitternut hickory	*Carya cordiformis*	FAC	≤15%	Tree

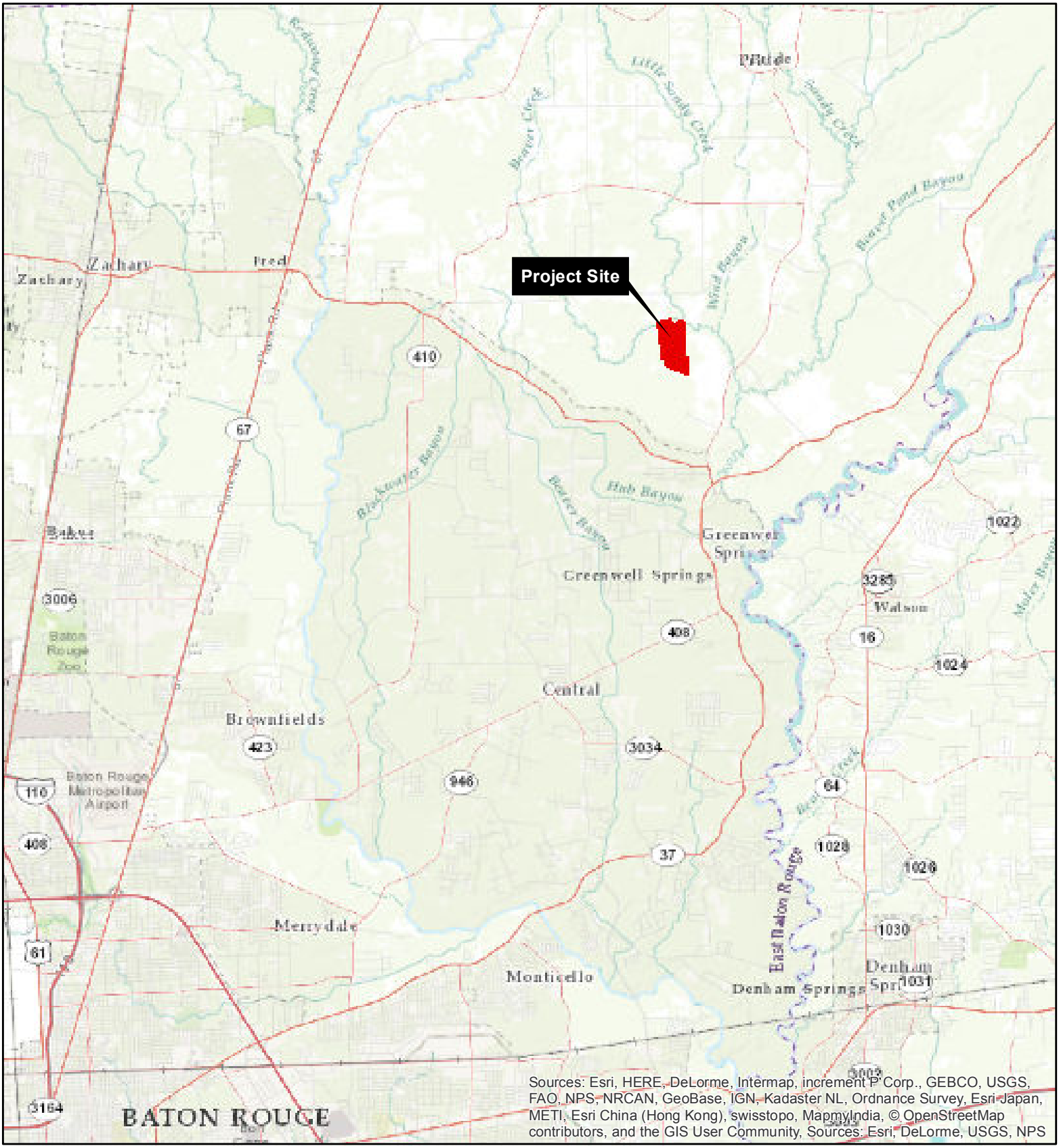
[1]Not all species listed on the above-referenced table are likely to be available.
[2] For the purpose of this list, hard mast is defined as any oak, hickory or pecan species. All other species are considered soft mast species.
[3] Scientific name and indicator status from 2016 National Wetland Plant List (http://wetland_plants.usace.army.mil/) except where otherwise noted
[4] Indicator status from 1988 National Wetland Plant List, Region 2 as 2014 National Wetland Plant List does not differentiate indicator status for species with trinomials.
[5] The composition represents the maximum percentage a species may comprise of the entire planting mosaic regardless of mast type. Exact species and quantities to be determined by seedling availability from commercial sources providing seedlings grown from localized ecotypes.
[6] Growth habitat per the Plants Database, available at http://plants.usda.gov and accessed on March 30, 2017.

Table 4. Planting Composition of Upland Buffer/ Riparian Restoration Areas at the Proposed Beaver Creek Mitigation Bank in East Baton Rouge Parish, Louisiana[1].

Hard Mast Species[2] (approximately 55-65% overall composition)				
Common Name	**Scientific Name[3]**	**Indicator Status[4]**	**Composition[5]**	**Growth Habit[6]**
laurel oak	*Quercus laurifolia*	FACW	≤25%	Tree
cow oak	*Quercus michauxii*	FACW	≤25%	Tree
water oak	*Quercus nigra*	FAC	≤25%	Tree
cherrybark oak	*Quercus pagoda*	FACW	≤25%	Tree
willow oak	*Quercus phellos*	FACW	≤25%	Tree
pignut hickory	*Carya glabra*	FACU	≤15%	Tree
white oak	*Quercus alba*	FACU	≤15%	Tree
live oak	*Quercus virginiana*	FACU	≤15%	Tree
Soft Mast Species[2] (approximately 35-45% of overall composition)				
Common Name	**Scientific Name**	**Indicator Status**	**Composition**	**Growth Habit**
common persimmon	*Diospyros virginiana*	FAC	≤15%	Tree
American beech	*Fagus grandifolia*	FACU	≤15%	Tree
green ash	*Fraxinus pennsylvanica*	FACW	≤15%	Tree
deciduous holly / possumhaw	*Ilex decidua*	FACW	≤15%	Shrub/Tree
sweetgum	*Liquidambar styraciflua*	FAC	≤15%	Tree
southern magnolia	*Magnolia grandiflora*	FAC	≤15%	Tree
sweetbay magnolia	*Magnolia virginiana*	FACW	≤15%	Shrub/Tree
wax-myrtle	*Morella cerifera*	FAC	≤15%	Shrub/Tree
blackgum	*Nyssa sylvatica*	FAC	≤15%	Tree
spruce pine	*Pinus glabra*	FACW	≤15%	Tree
American sycamore	*Platanus occidentalis*	FAC	≤15%	Tree
tuliptree	*Liriodendron tulipifera*	FACU	≤10%	Tree
black cherry	*Prunus serotina*	FACU	≤10%	Shrub/Tree

[1]Not all species listed on the above-referenced table are likely to be available however the Sponsor will take steps to try to obtain and plant at least 10 species from the list.
[2] For the purpose of this list, hard mast is defined as any oak, hickory or pecan species. All other species are considered soft mast species.
[3] Scientific name and indicator status from 2016 National Wetland Plant List (http://wetland_plants.usace.army.mil/) except where otherwise noted
[4] Indicator status from 1988 National Wetland Plant List, Region 2 as 2014 National Wetland Plant List does not differentiate indicator status for species with trinomials.
[5] The composition represents the maximum percentage a species may comprise of the entire planting mosaic regardless of mast type. Exact species and quantities to be determined by seedling availability from commercial sources providing seedlings grown from localized ecotypes.
[6] Growth habitat per the Plants Database, available at http://plants.usda.gov and accessed on March 30, 2017.

FIGURES



BCMB Boundary (160.9ac)

2 1 0 2

Miles

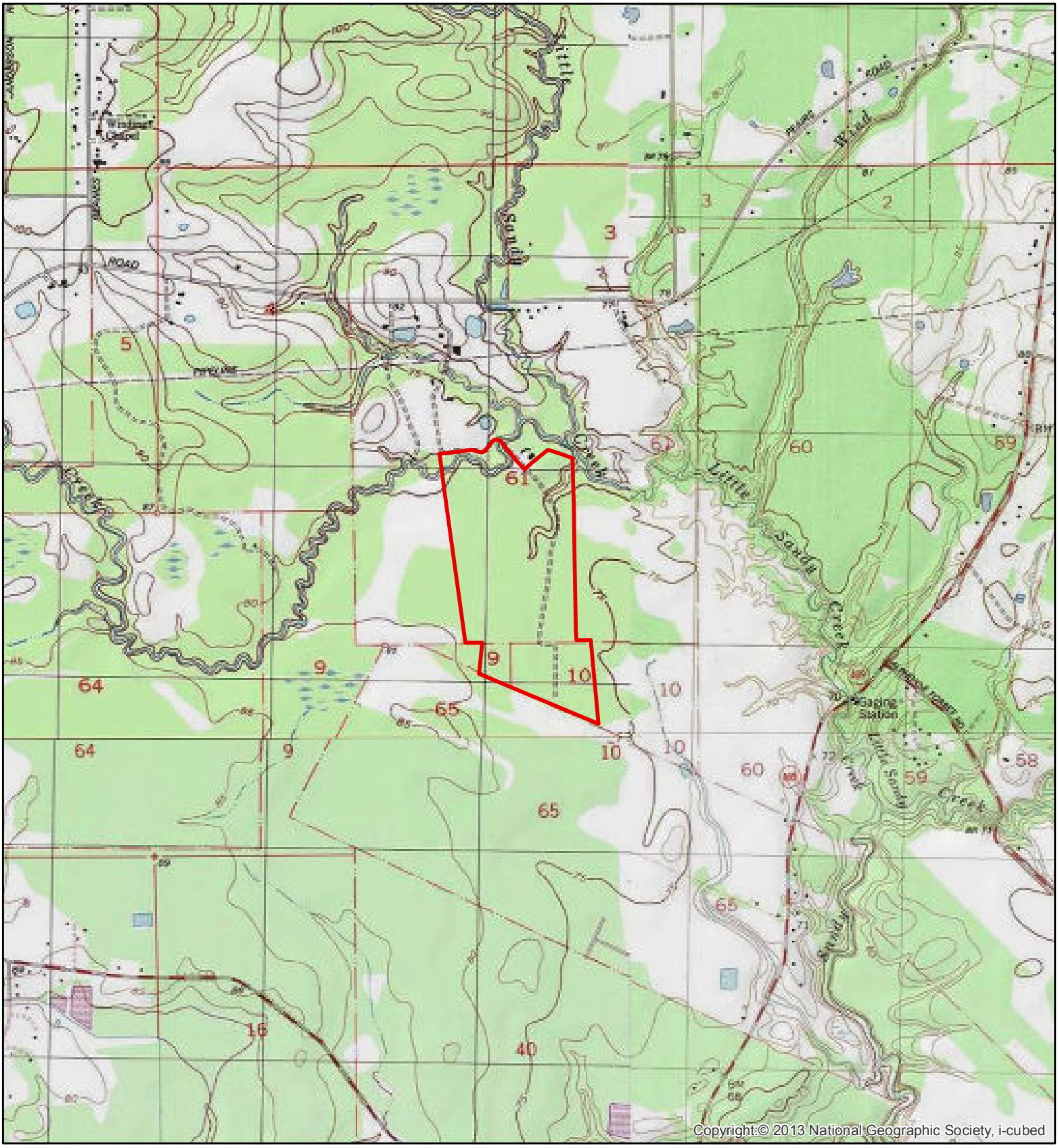
Beaver Creek Mitigation Bank

VICINITY MAP

East Baton Rouge Parish, LA

Created : TSC/ArcView10	
Approved : JMJ	
Date : 9/28/2017	
Map # : F01VicinityMap.mxd	

FIGURE 1



BCMB Boundary (160.9ac)

2,000 1,000 0 2,000

Feet

Source: USGS 7.5-Minute Quadrangle "Fred, LA"

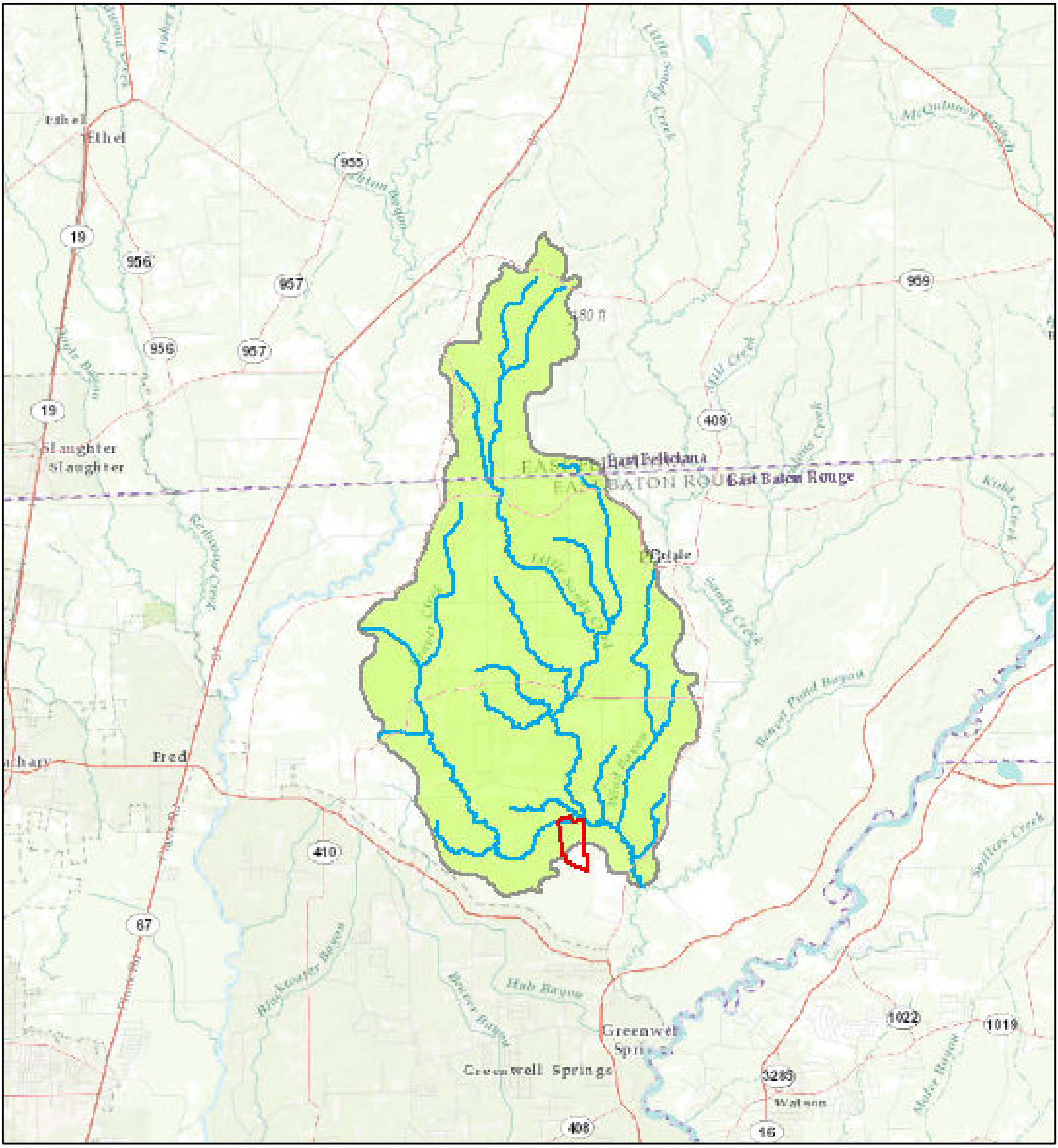
Beaver Creek Mitigation Bank

USGS 7.5' QUADRANGLE MAP

East Baton Rouge Parish, LA

Created : TSC/ArcView10	
Approved : JMJ	
Date : 9/28/2017	
Map # : F02QuadMap.mxd	

FIGURE 2



BCMB Boundary (160.9ac)

Little Sandy Creek-Sandy Creek Subwatershed (appx. 29.5 square miles)

Streams (appx. 49.4 miles)

1 0.5 0 1 2 3 4 5 6 7

Miles

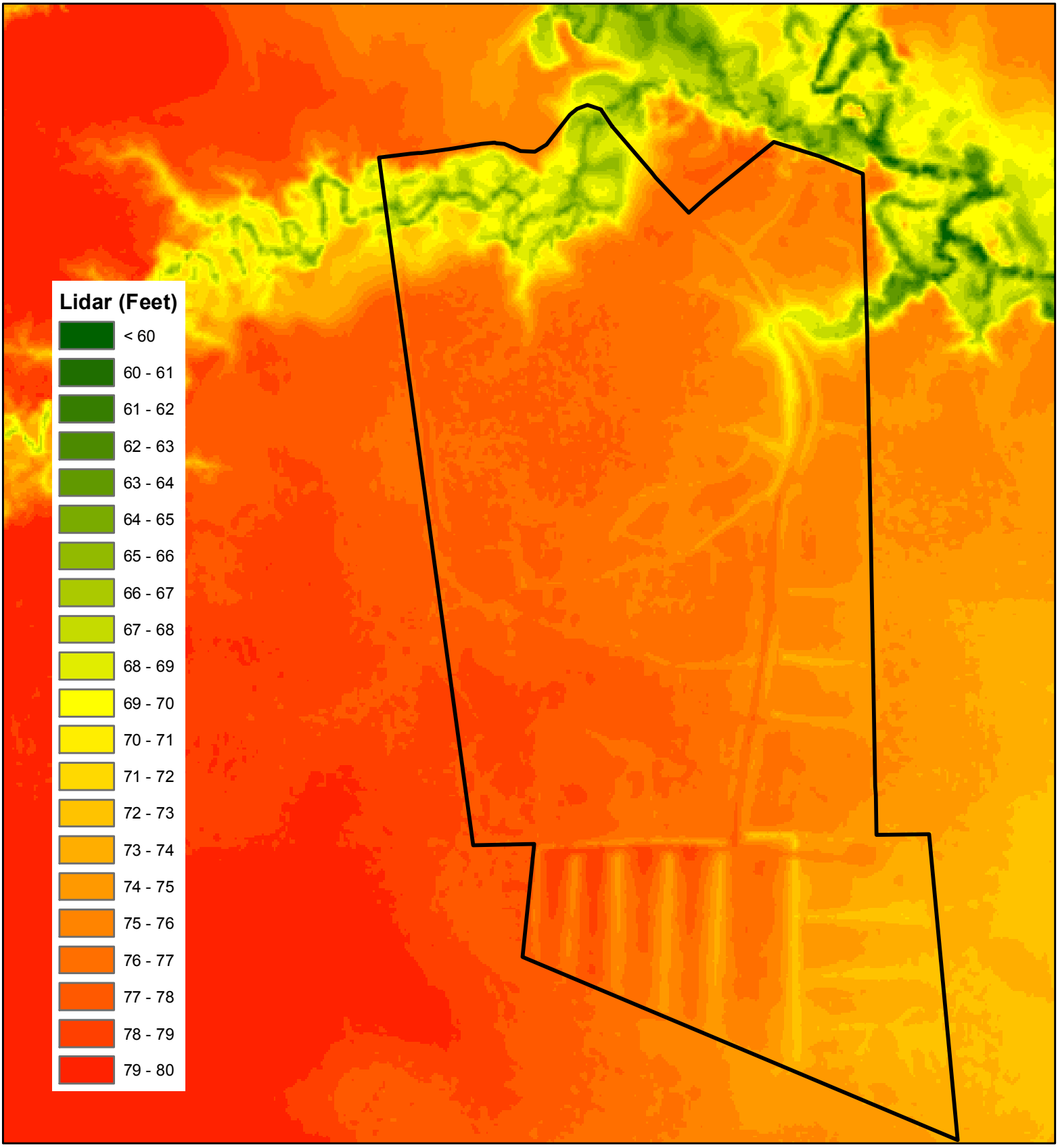
Beaver Creek Mitigation Bank

CONTRIBUTING DRAINAGE MAP

East Baton Rouge Parish, LA

Created : TSC/ArcView10	
Approved : JMJ	
Date : 9/28/2017	
Map # : F03_condrainage.mxd	

FIGURE 3



BCMB Area (160.9ac)

N

550 275 0 550

Feet

Beaver Creek Mitigation Bank

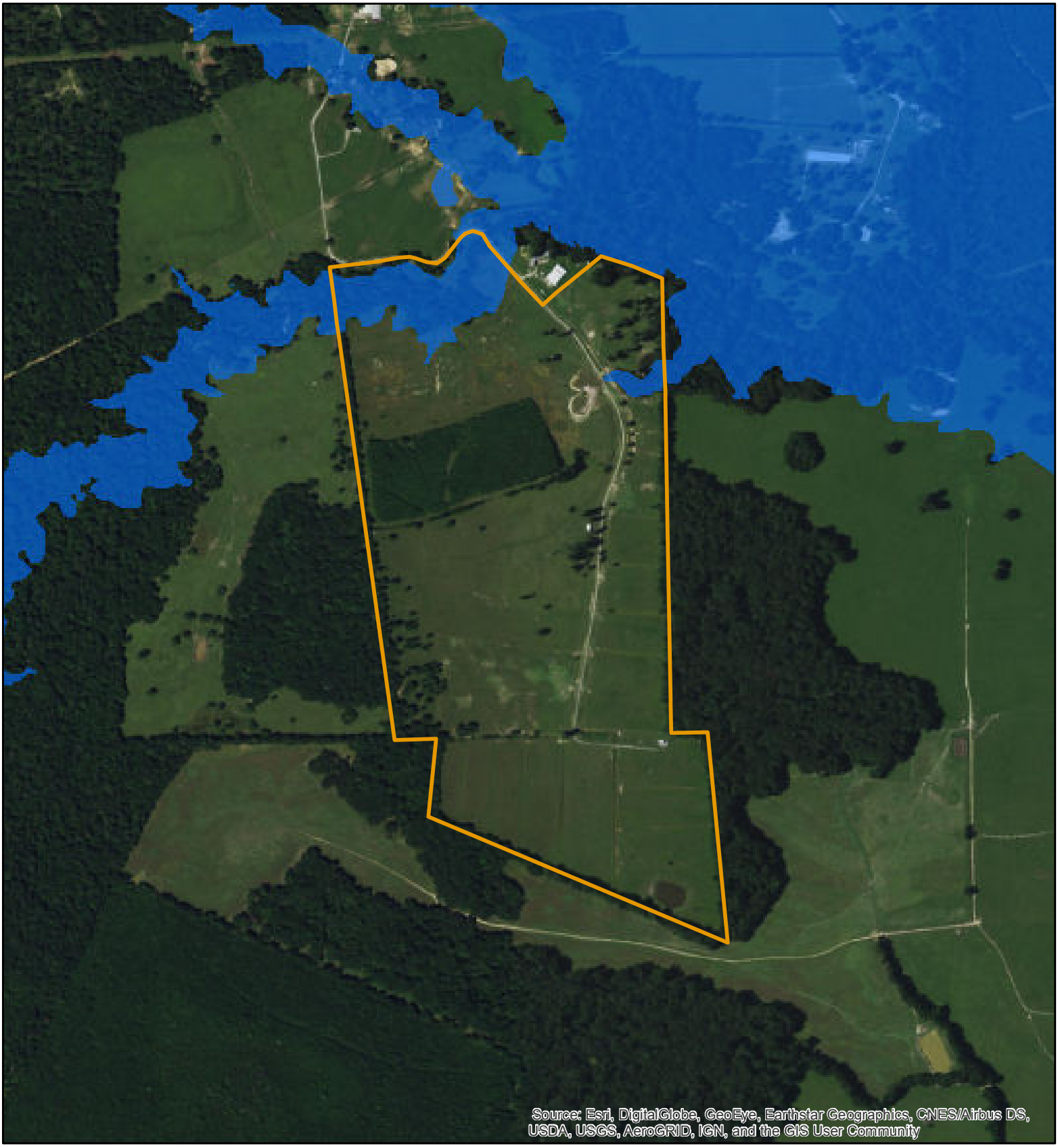
LIDAR ELEVATION MAP

East Baton Rouge Parish, LA

Created : TSC/ArcView10	
Approved : JMJ	
Date : 9/28/2017	
Map # : F03LidarMap.mxd	

DELTA LAND SERVICES

FIGURE 4



BCMB Boundary (160.9ac)

100-Year Flood Zone

N

800 400 0 800

Feet

Note: Flood Zone dreived from FEMA FIRM Map 22033C0070(effective date 5/2/2008)

Beaver Creek Mitigation Bank

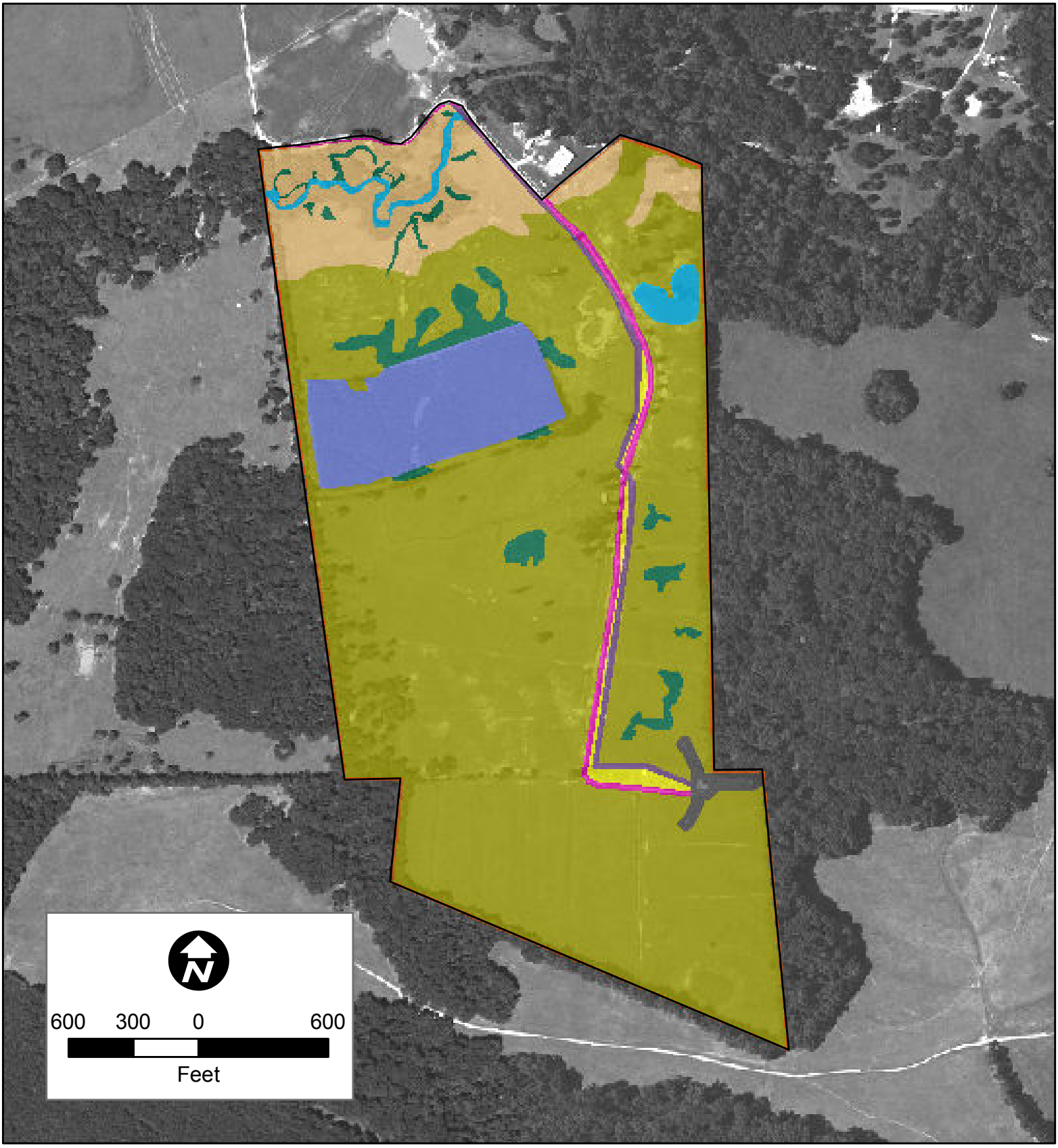
FEMA FIRM FLOOD ZONE MAP

East Baton Rouge Parish, LA

Created : TSC/ArcView10	
Approved : JMJ	
Date : 9/28/2017	
Map # : F04LidarMap.mxd	

DELTA LAND SERVICES

FIGURE 5



- BCMB Boundary (160.9ac)
- Re-establishment (115.9 ac)
- Rehabilitation (5.7 ac)
- Enhancement (12.7 ac)
- Upland Buffer Restoration (14.9 ac)
- Other Waters to Remain (2.3 ac)
- Access Road (2.5 ac)
- Telecommunications Facility/Tower (1.2 ac)
- Non-Mitigation / Open Space (1.1 ac)
- Overhead Powerline (2.1 ac)
- Perimeter Buffer (2.5 ac)

Beaver Creek Mitigation Bank

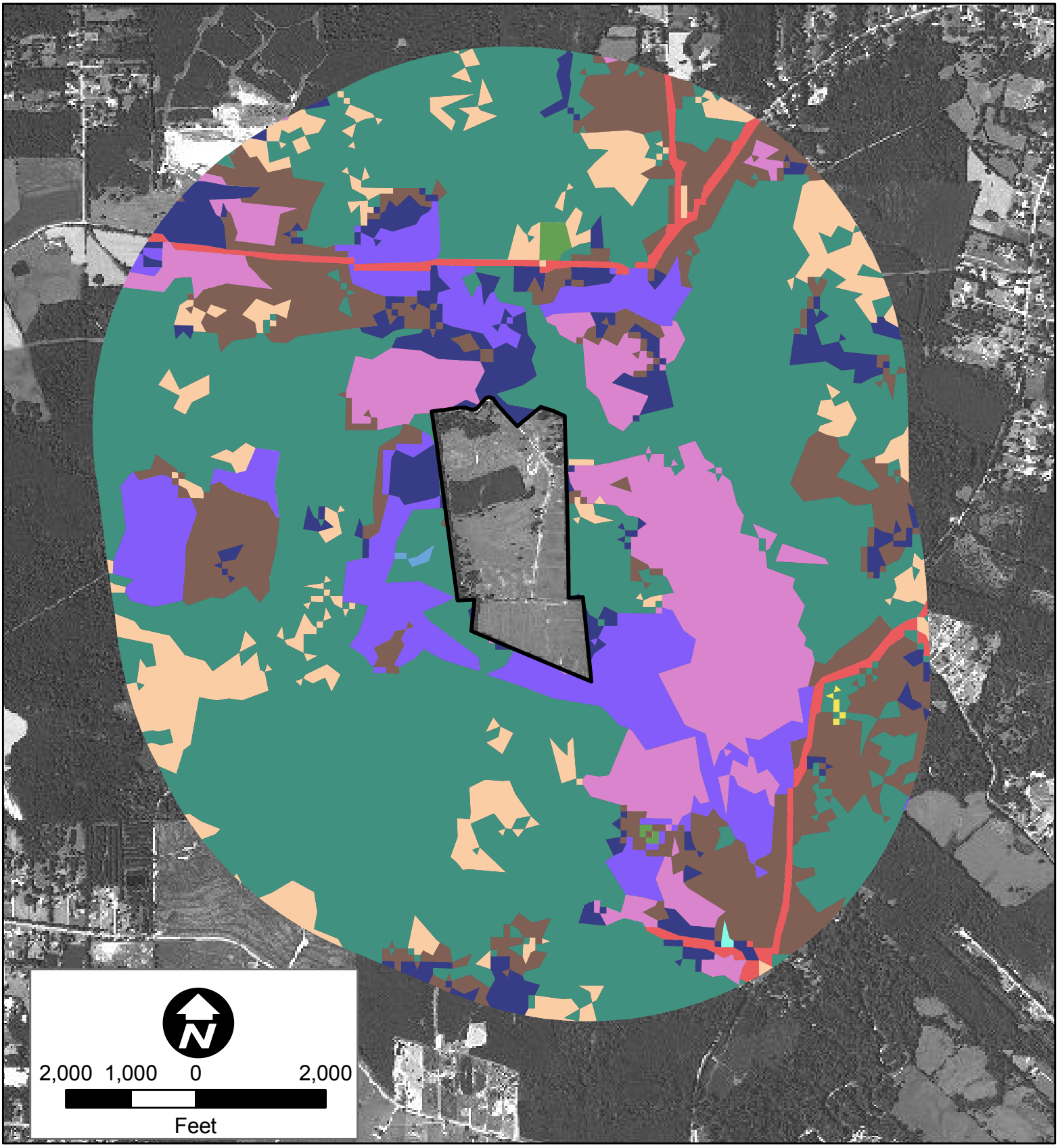
PRELIMINARY FEATURE MAP

East Baton Rouge Parish, LA

Created : TSC/ArcView10	
Approved : JMJ	
Date : 9/28/2017	
Map # : F06FeaturesMap.mxd	

DELTA LAND SERVICES

FIGURE 6



BCMB Boundary (160.9ac)
Barren Land
Cultivated Crops
Developed
Emergent Herbaceuous Wetlands
Evergreen Forest
Hay/Pasture
Herbaceuous
Mixed Forest
Open Water
Shrub/Scrub
Woody Wetlands

Beaver Creek Mitigation Bank

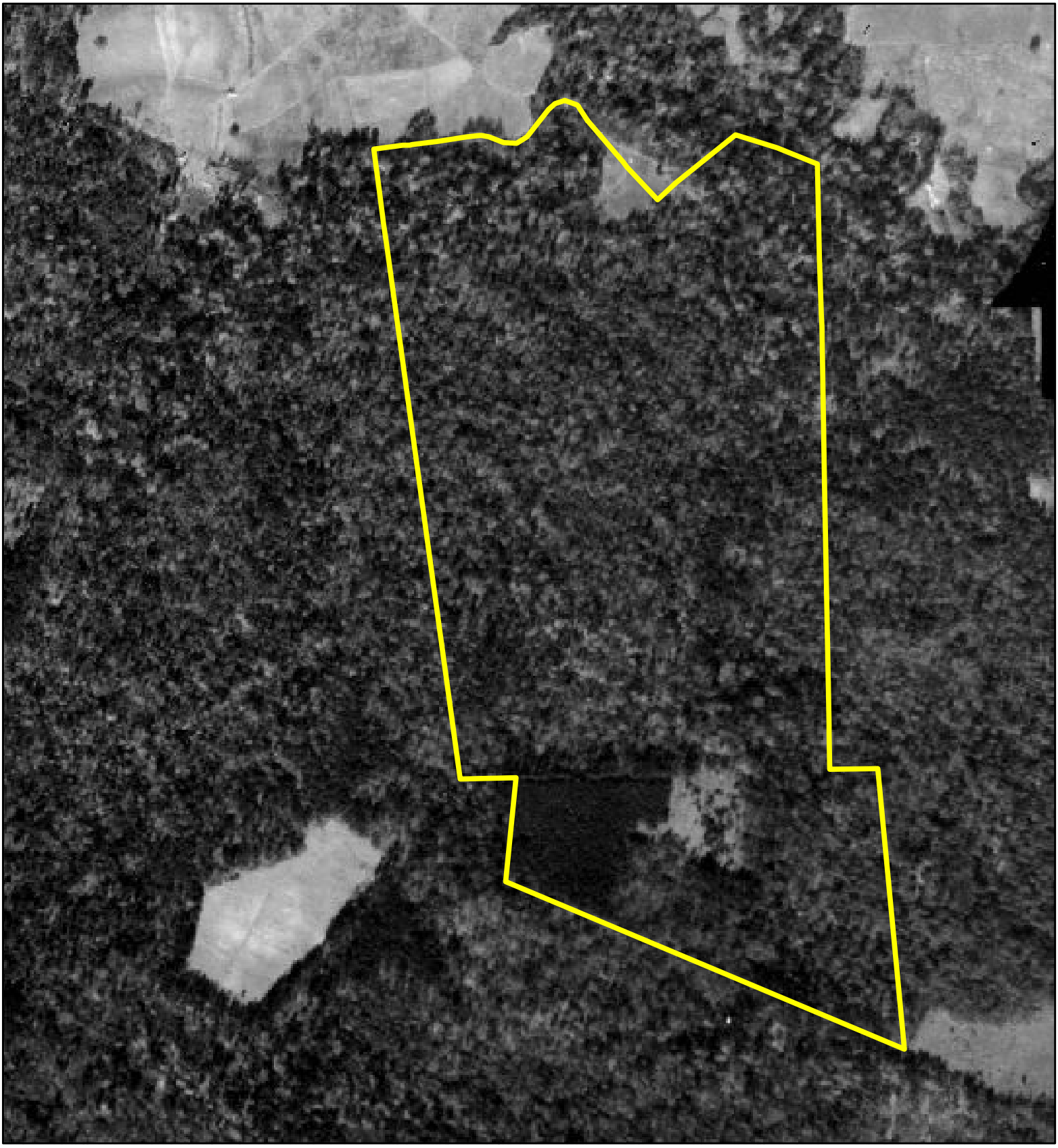
LAND USE AND LAND COVER WITHIN A ONE MILE RADIUS

East Baton Rouge Parish, LA

Created : TSC/ArcView10	
Approved : JMJ	
Date : 9/28/2017	
Map # : F07_LULCwatershed.mxd	

DELTA LAND SERVICES

FIGURE 7



BCMB Boundary (160.9ac)

600 300 0 600

Feet

Beaver Creek Mitigation Bank

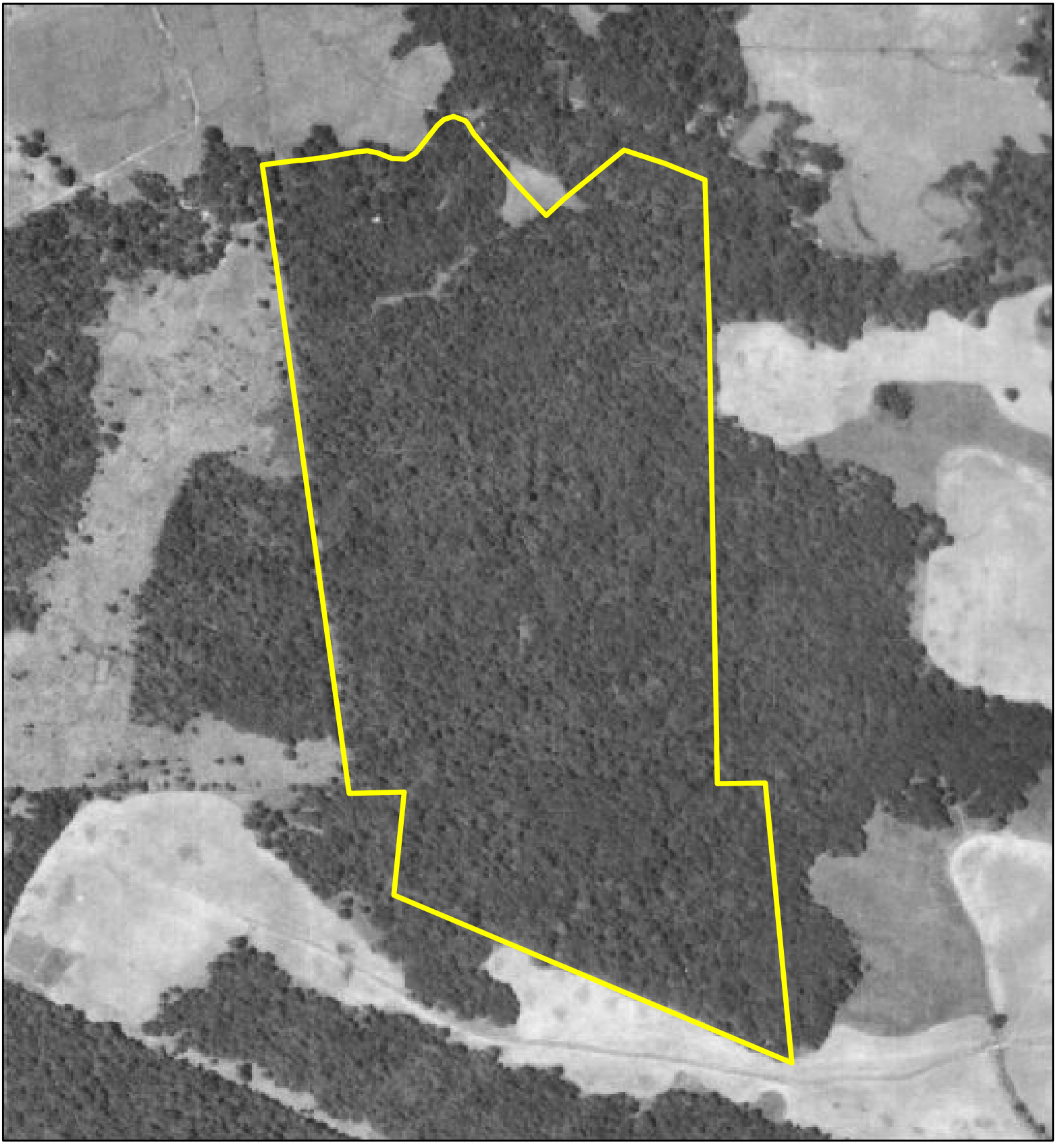
1941 AERIAL

East Baton Rouge Parish, LA

Created : TSC/ArcView10	
Approved : JMJ	
Date : 8/31/2017	
Map # : F08_1941.mxd	

DELTA LAND SERVICES

FIGURE 8



BCMB Boundary (160.9ac)

600 300 0 600

Feet

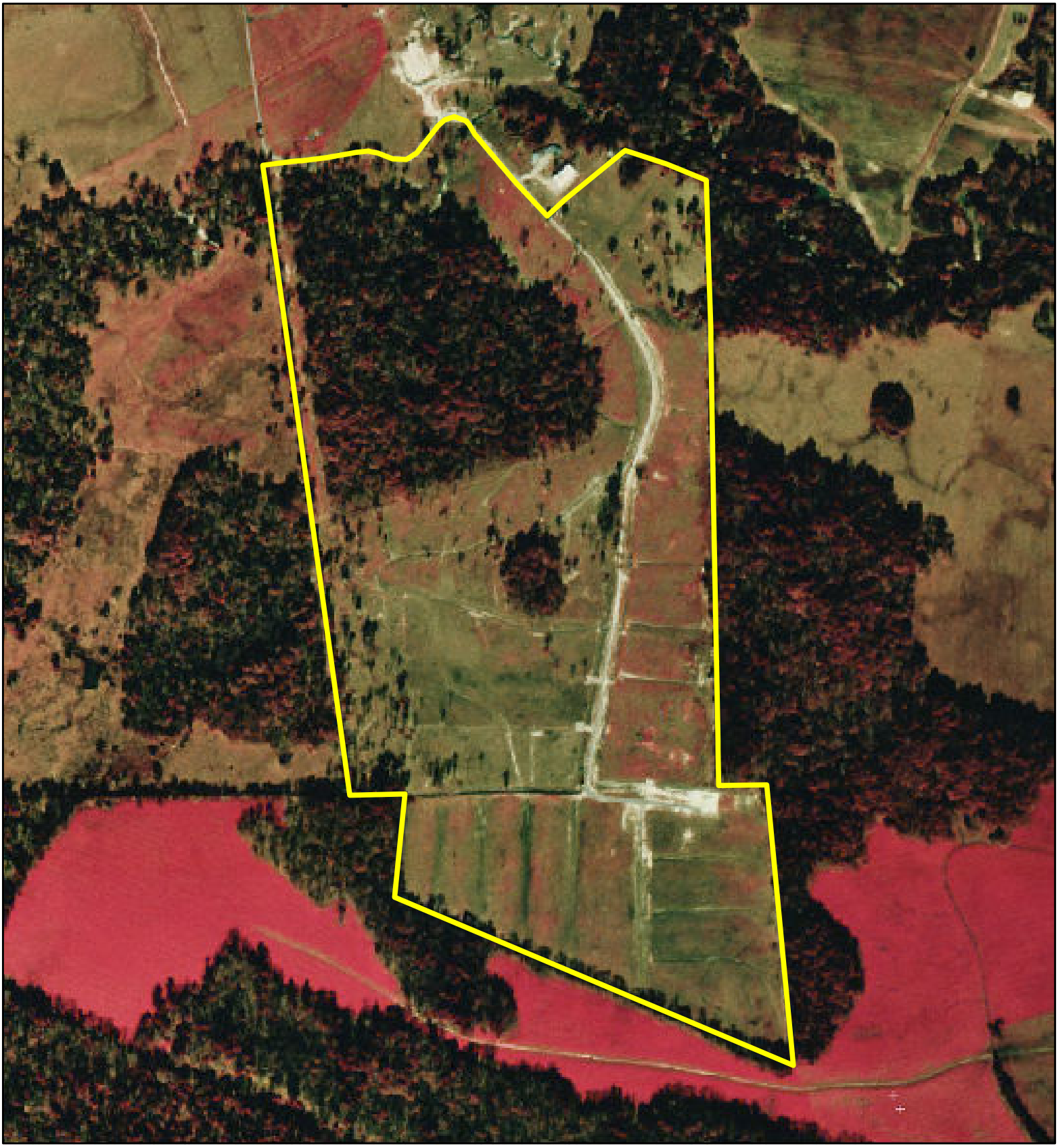
Beaver Creek Mitigation Bank

1978 AERIAL

East Baton Rouge Parish, LA

Created : TSC/ArcView10	
Approved : JMJ	
Date : 8/31/2017	
Map # : F09_1978.mxd	

FIGURE 9



BCMB Boundary (160.9ac)

600 300 0 600

Feet

Beaver Creek Mitigation Bank

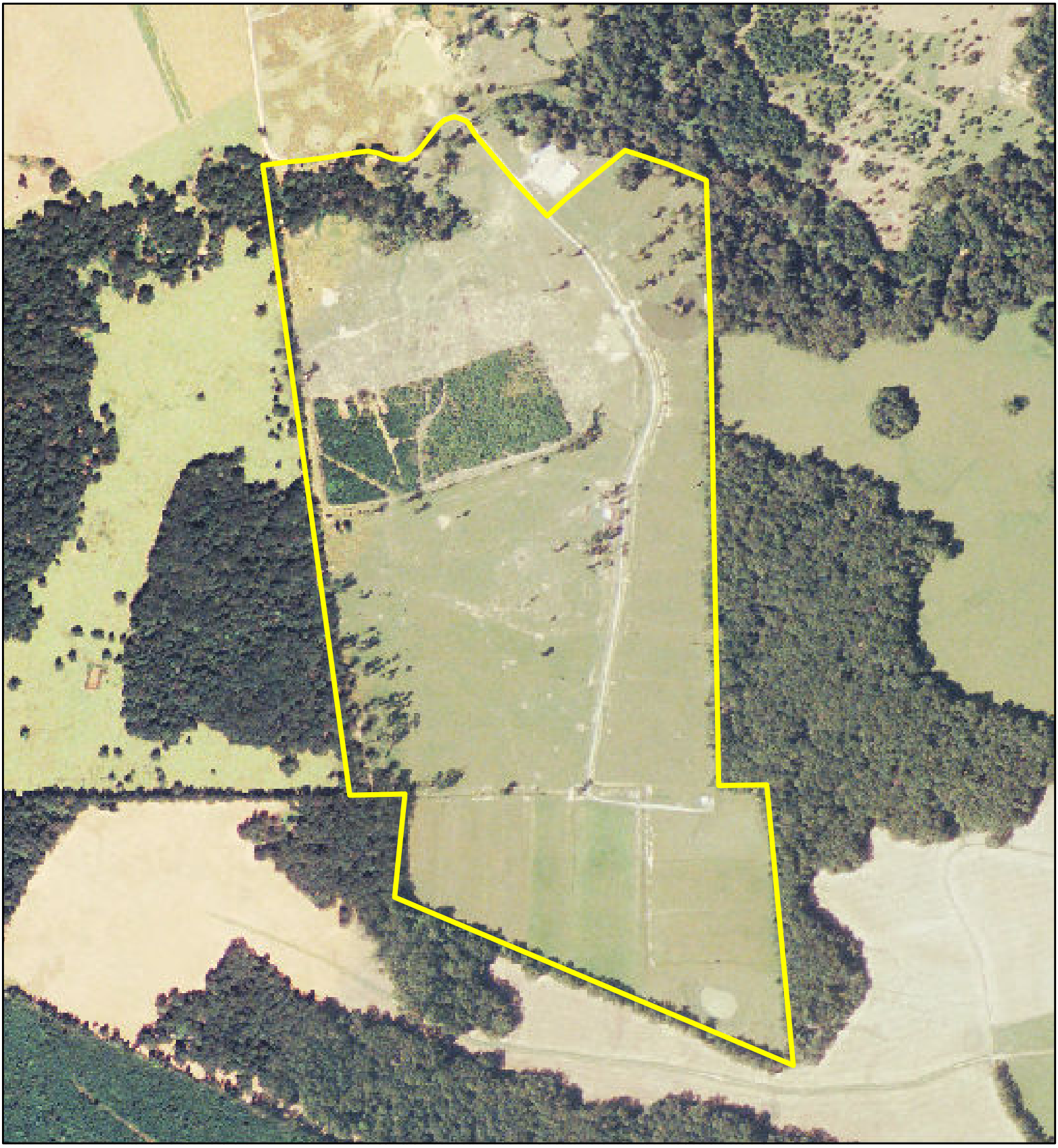
1998 AERIAL

East Baton Rouge Parish, LA

Created : TSC/ArcView10	
Approved : JMJ	
Date : 9/28/2017	
Map # : F10_1998.mxd	

DELTA LAND SERVICES

FIGURE 10



BCMB Boundary (160.9ac)

600 300 0 600

Feet

Beaver Creek Mitigation Bank

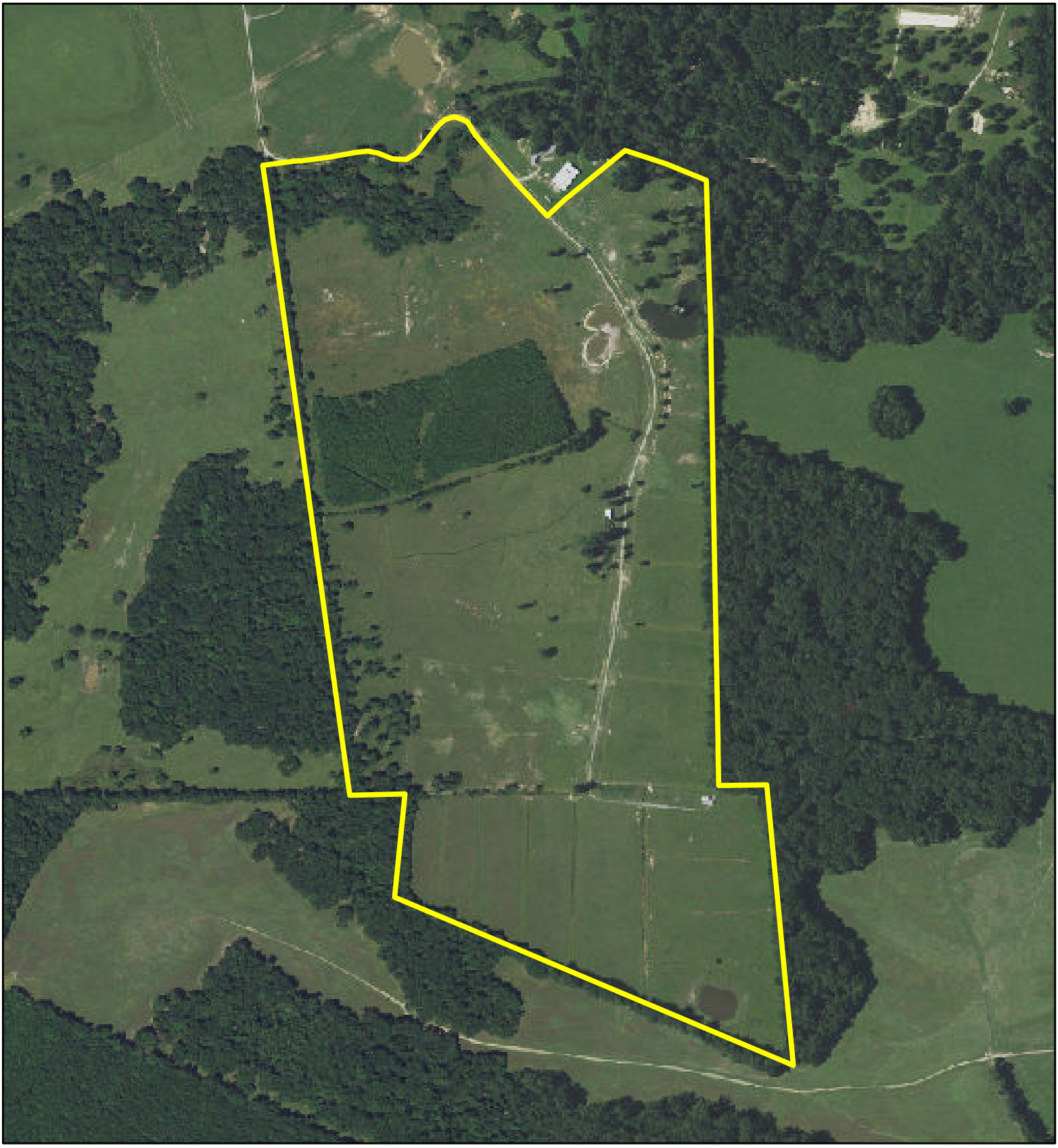
2007 AERIAL

East Baton Rouge Parish, LA

Created : TSC/ArcView10	
Approved : JMJ	
Date : 9/28/2017	
Map # : F11_2007.mxd	

DELTA LAND SERVICES

FIGURE 11



BCMB Boundary (160.9ac)

600 300 0 600

Feet

Beaver Creek Mitigation Bank

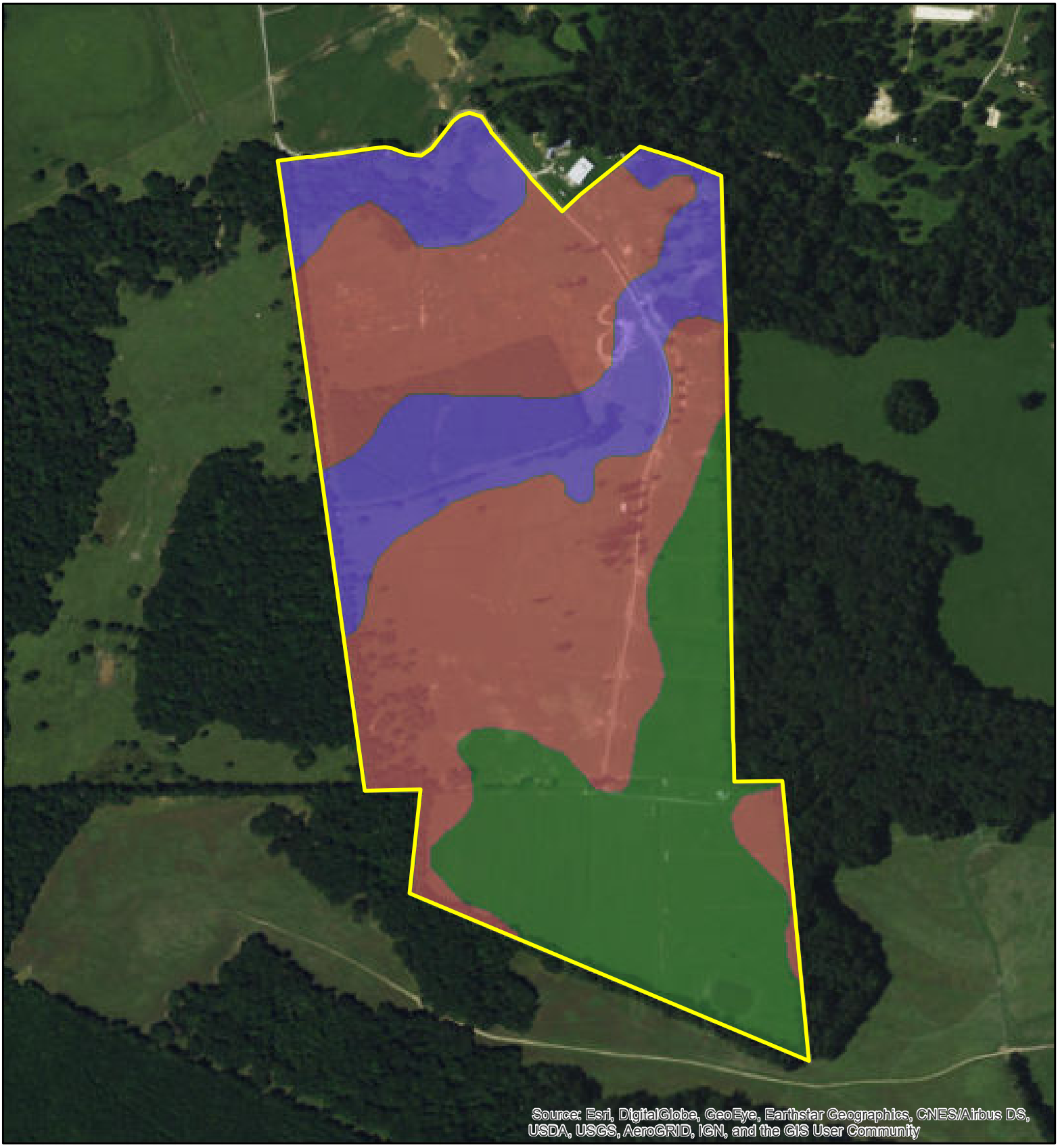
2015 AERIAL

East Baton Rouge Parish, LA

Created : TSC/ArcView10	
Approved : JMJ	
Date : 9/28/2017	
Map # : F12_2015.mxd	

DELTA LAND SERVICES

FIGURE 12



BCMB Boundary (160.9ac)

GeA: Gilbert silt loam, 0 to 1 percent slopes (80.4 AC)

OUA: Ouachita, Ochlockonee, and Guyton soils, frequently flooded (34.8 AC)

OpA: Oprairie silt, 0 to 1 percent slopes (45.7 AC)

N

600 300 0 600

Feet

Note: Soil mapping units taken from Soil Survey Geographic (SSURGO) database for East Baton Rouge Parish, LA Spatial Version 5.

Beaver Creek Mitigation Bank

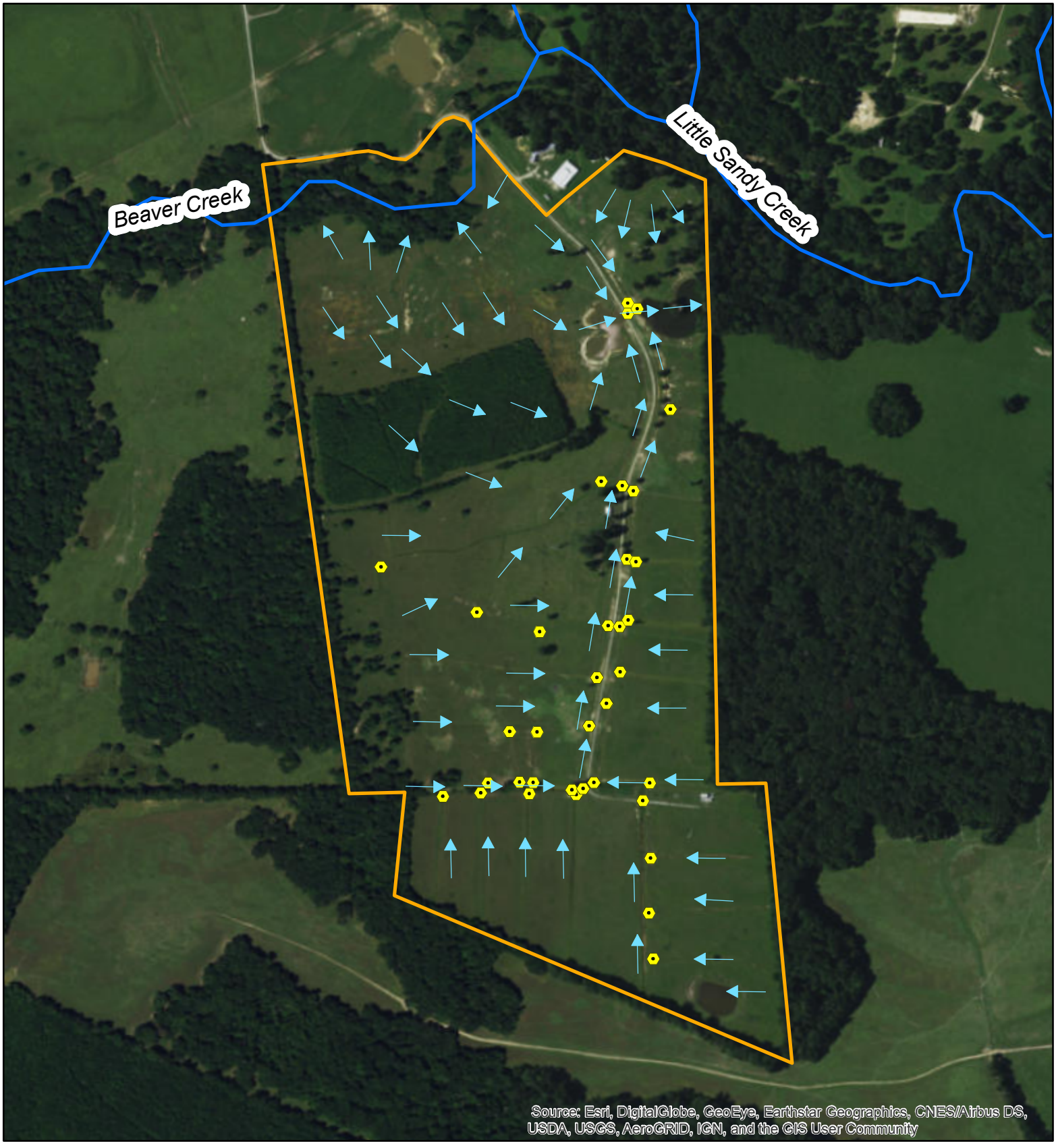
SOIL MAP UNITS

East Baton Rouge Parish, LA

Created : TSC/ArcView10	
Approved : JMJ	
Date : 9/28/2017	
Map # : F13_soils.mxd	

DELTA LAND SERVICES

FIGURE 13



BCMB Boundary (160.9 ac)

Existing Culverts

Hyrologic Flow

N

600 300 0 600

Feet

Beaver Creek Mitigation Bank

EXISTING SITE HYDROLOGY

East Baton Rouge Parish, LA

Created : TSC/ArcView10	
Approved : JMJ	
Date : 12/4/2017	
Map # : F14_existinghydro.mxd	

DELTA LAND SERVICES

FIGURE 14

BCMB Boundary (160.9ac)

Other Waters to be Filled (1.3ac)

Culverts to be Plugged or Removed

Culvert to Remain

N

600 300 0 600

Feet

Beaver Creek Mitigation Bank

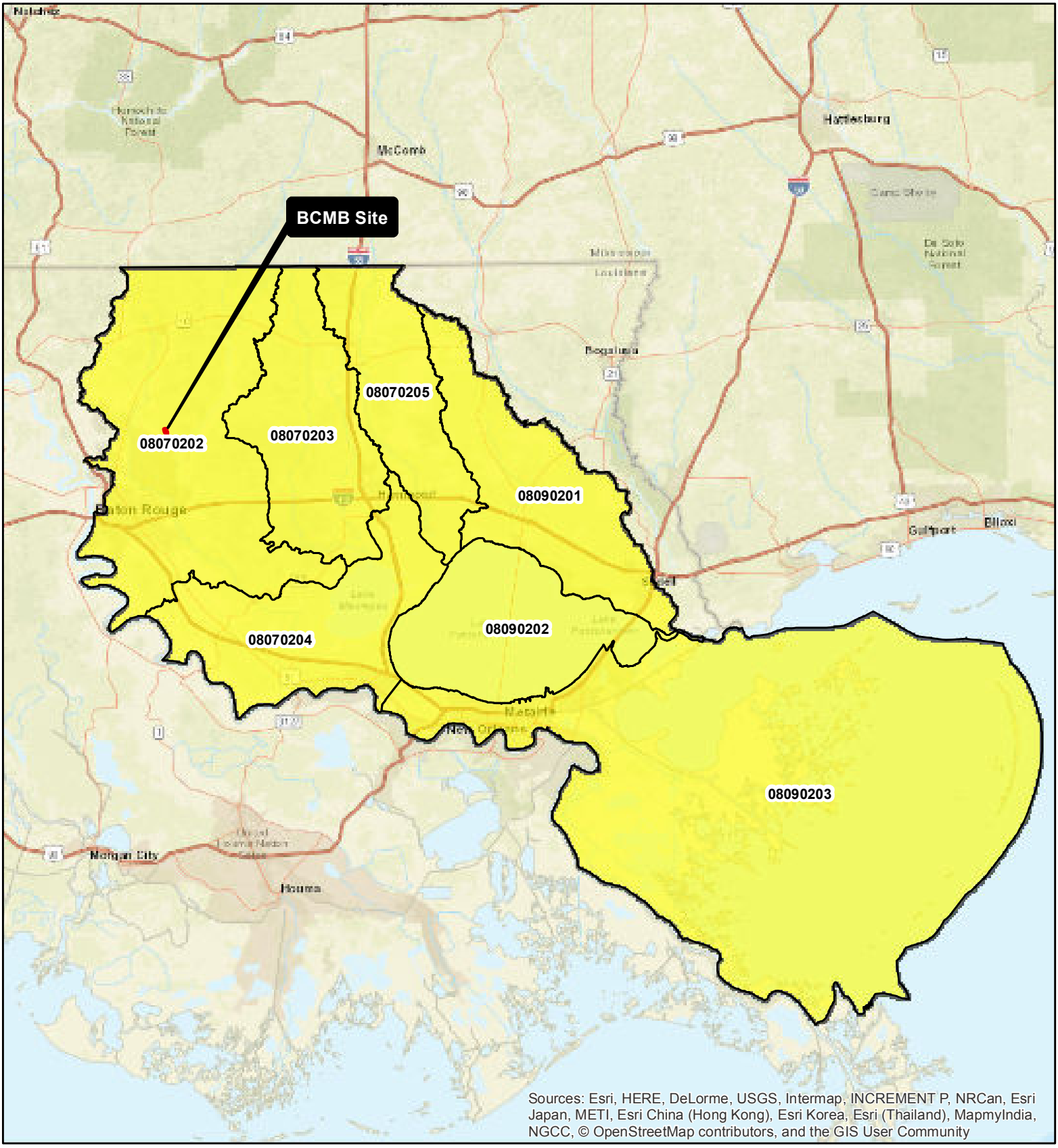
HYDROLOGY RESTORATION MAP

East Baton Rouge Parish, LA

Created : TSC/ArcView10	
Approved : JMJ	
Date : 12/4/2017	
Map # : F15_hydrorestoration.mxd	

DELTA LAND SERVICES

FIGURE 15



BCMB Boundary

Pontchartrain Basin

20 10 0 20

Miles

Beaver Creek Mitigation Bank

BANK SERVICE AREA

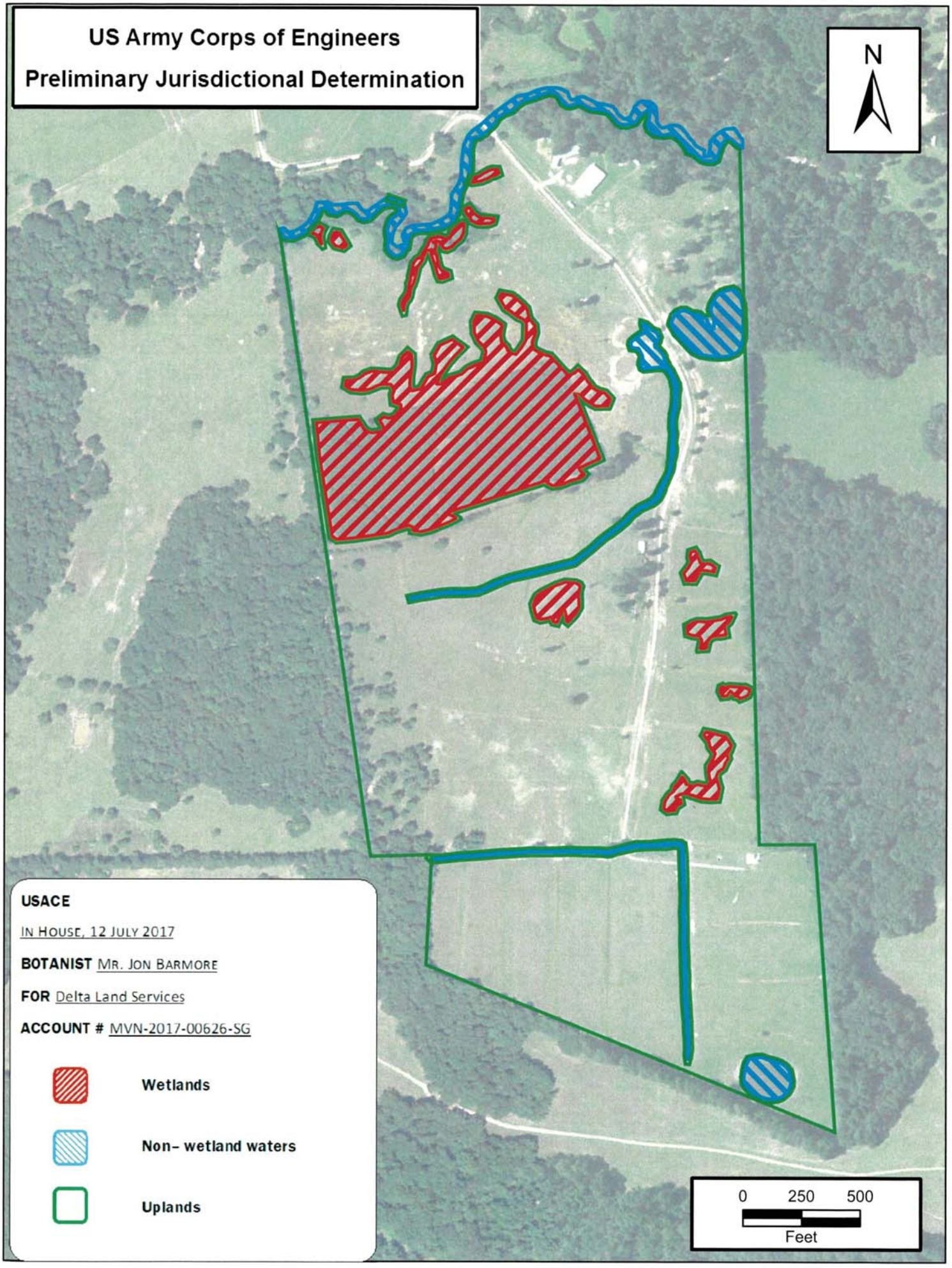
East Baton Rouge Parish, LA

Created : TSC/ArcView10	
Approved : JMJ	
Date : 9/28/2017	
Map # : F16_servicearea.mxd	

FIGURE 16

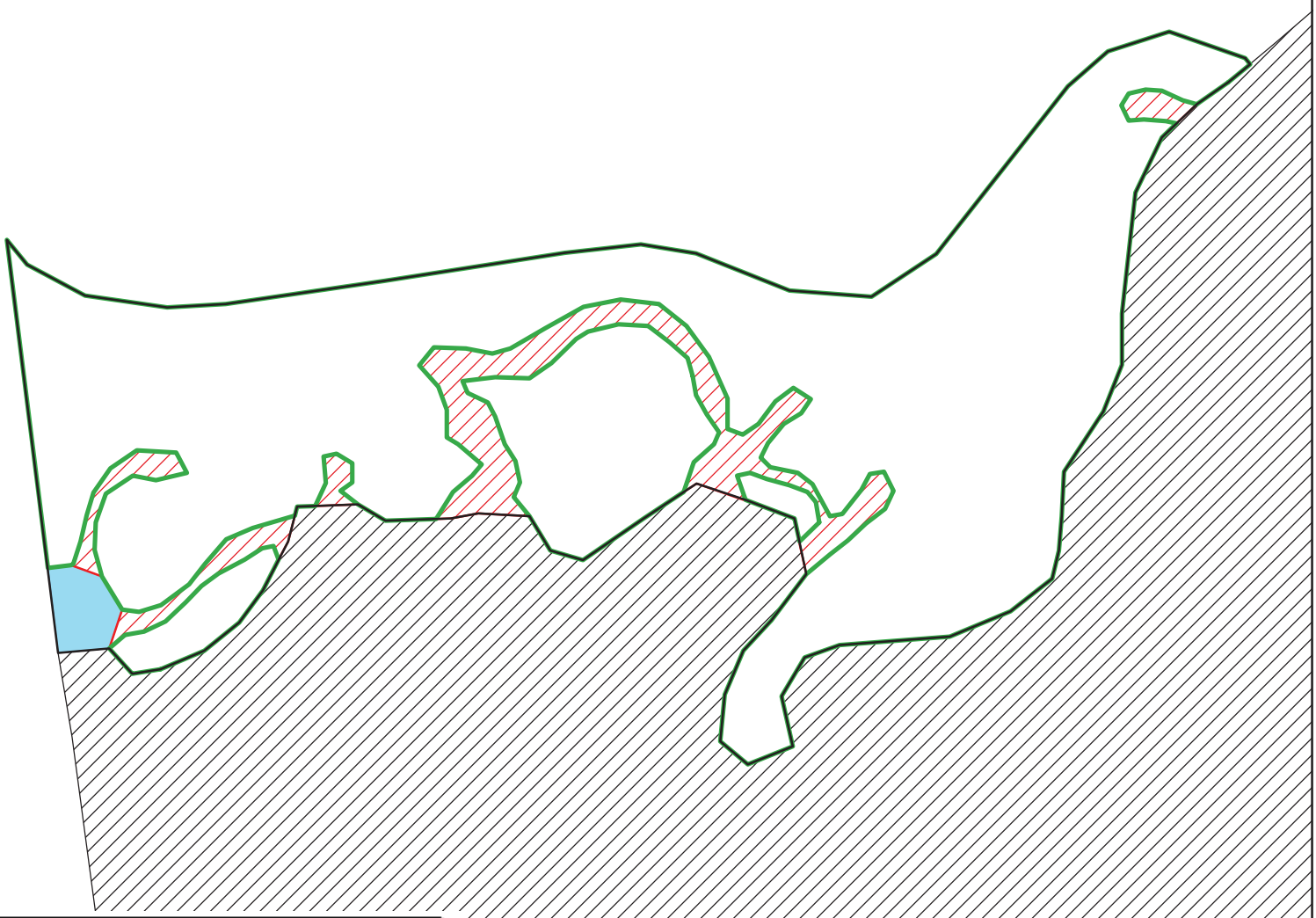
ATTACHMENTS

Attachment A: Preliminary Jurisdictional Determination


US Army Corps of Engineers
Preliminary Jurisdictional Determination
N
USACE
IN HOUSE, 12 JULY 2017
BOTANIST MR. JON BARMORE
FOR Delta Land Services
ACCOUNT # MVN-2017-00626-SG
Wetlands
Non- wetland waters
Uplands
0 250 500
Feet

US Army Corps of Engineers

Preliminary Jurisdictional Determination



MVN-2017-00626-SG (159.6 ac.)

USACE

In House, 2 October 2017

BOTANIST Mr. Jon Barmore

FOR Delta Land Services

ACCOUNT # MVN-2017-00626-1-SG

Wetlands

Non- wetland waters

JD Boundary

100 50 0 100

Feet

Beaver Creek Mitigation Bank

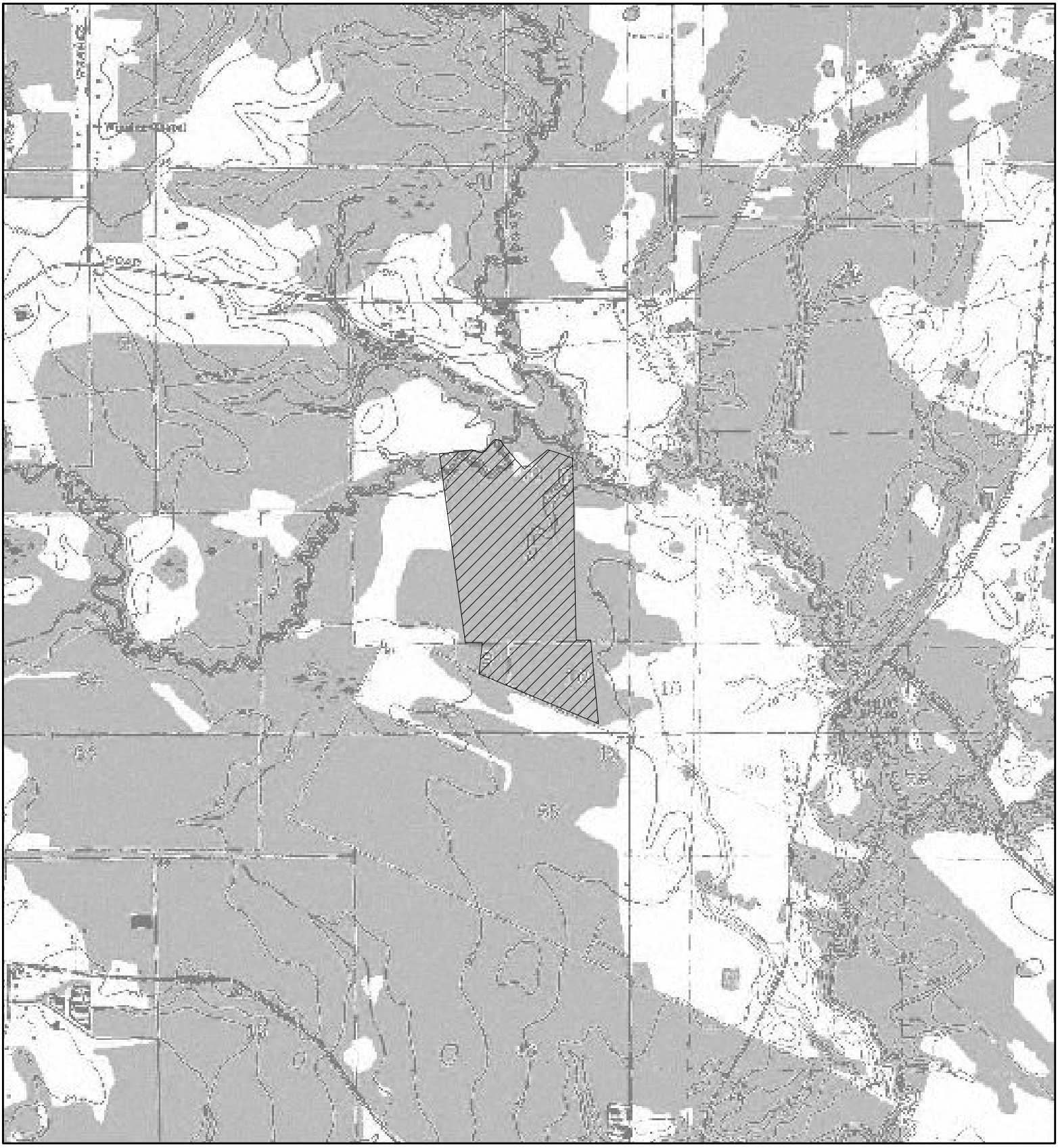
ADDENDUM DELINEATION MAP

East Baton Rouge Parish, LA

Created : TSC/ArcView10	
Approved : JMJ	
Date : 9/13/2017	
Map # : AERIALS.mxd	

FIGURE 8

Attachment B: Hydrology Restoration Typical Drawings



BCMB Boundary (160.9ac)

2,000 1,000 0 2,000

Feet

Source: USGS 7.5-Minute Quadrangle "Fred, LA"

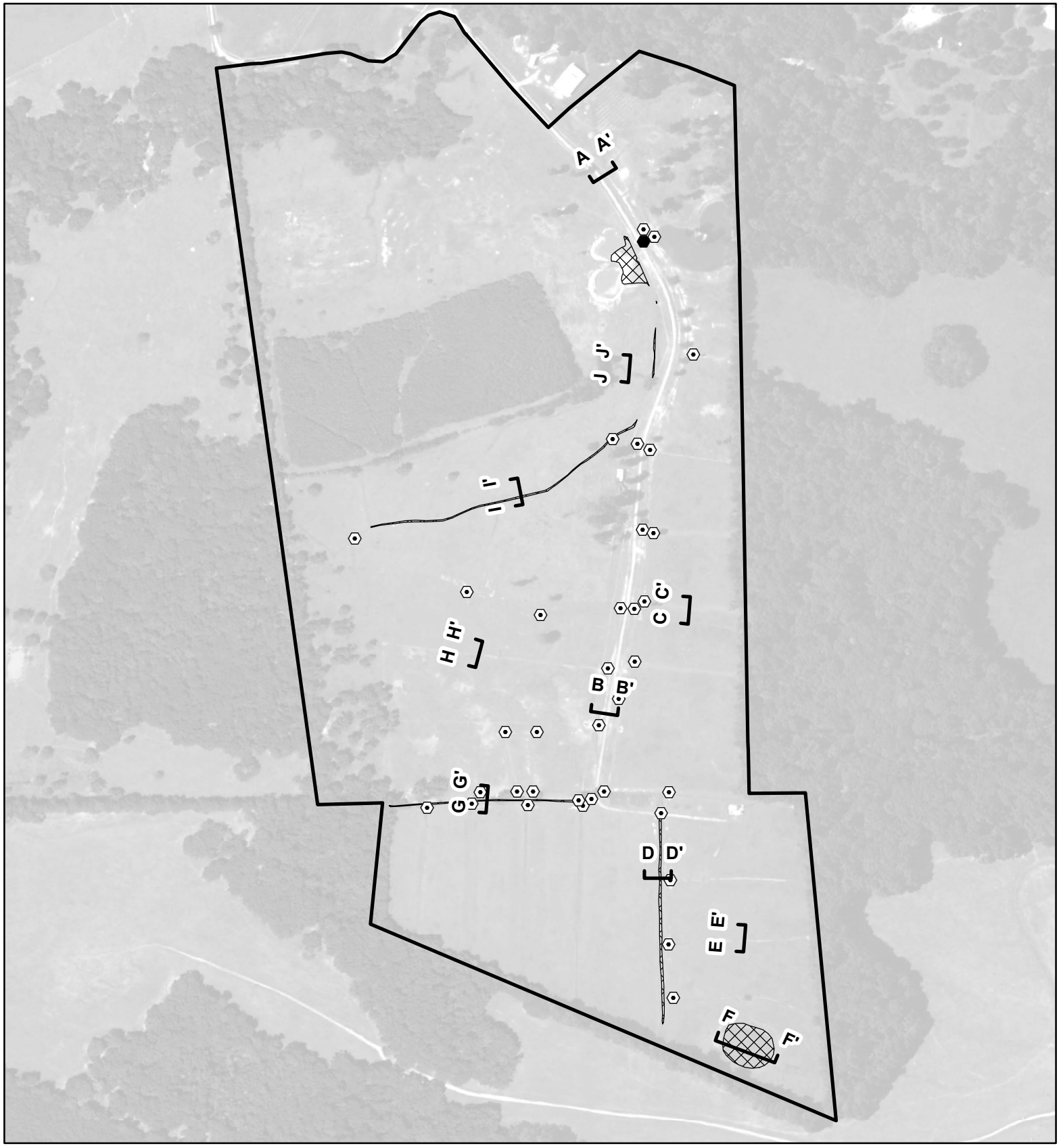
Beaver Creek Mitigation Bank

QUAD MAP

East Baton Rouge Parish, LA

Created : TSC/ArcView10	
Approved : JMJ	
Date : 9/28/2017	
Map # : HF01XS_quad.mxd	

FIGURE 1XS



BCMB Boundary (160.9ac)

Other Waters to be Filled (1.3ac)

Culverts to be Removed/Plugged

Culvert to Remain

N

600 300 0 600

Feet

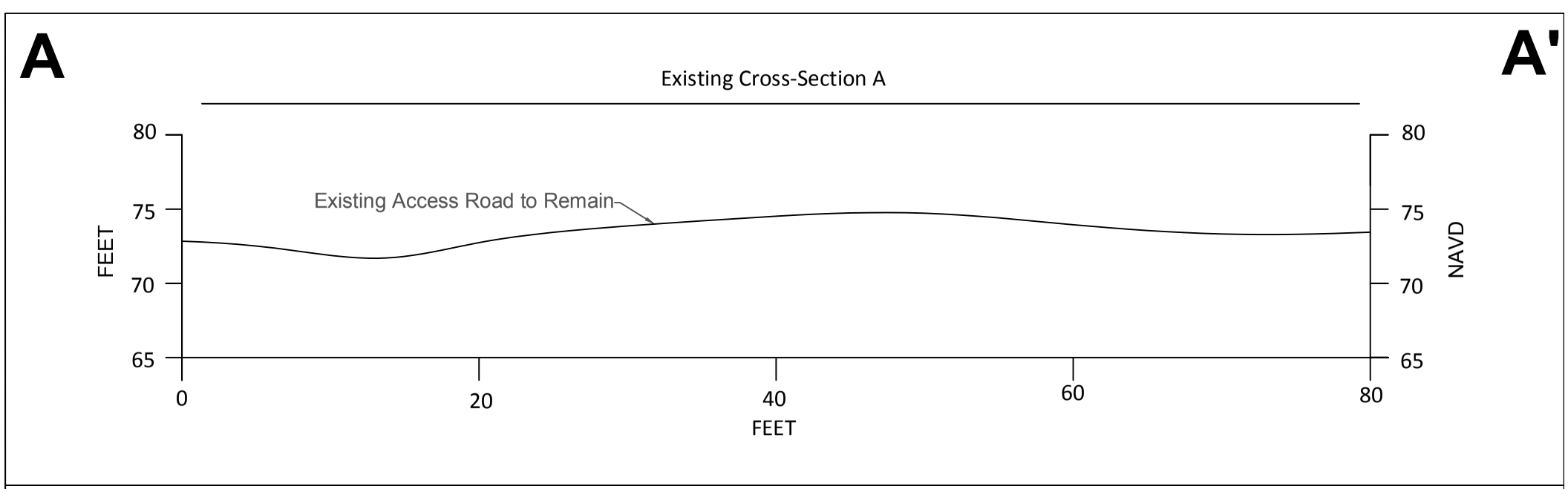
Beaver Creek Mitigation Bank

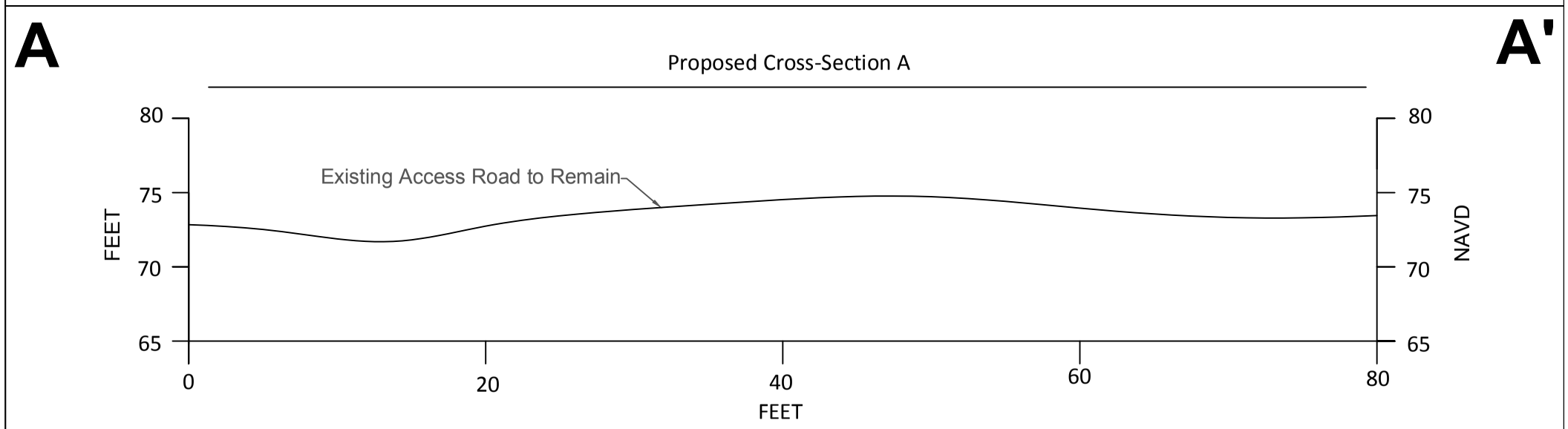
HYDROLOGY RESTORATION PLAN VIEW

East Baton Rouge Parish, LA

Created : TSC/ArcView10	DELTA LAND SERVICES
Approved : JMJ	
Date : 12/4/2017	
Map # : HF02XS_planview.mxd	

FIGURE 2XS





Proposed Excavation

Proposed Earthen Fill

BEAVER CREEK MITIGATION BANK

CROSS SECTION A-A'

EAST BATON ROUGE PARISH, LA

Created:	TSC/AutoCAD
Approved:	JMJ
Date:	9/12/2017
Dwg. No.:	beavercreekxsections_prospectus.dwg

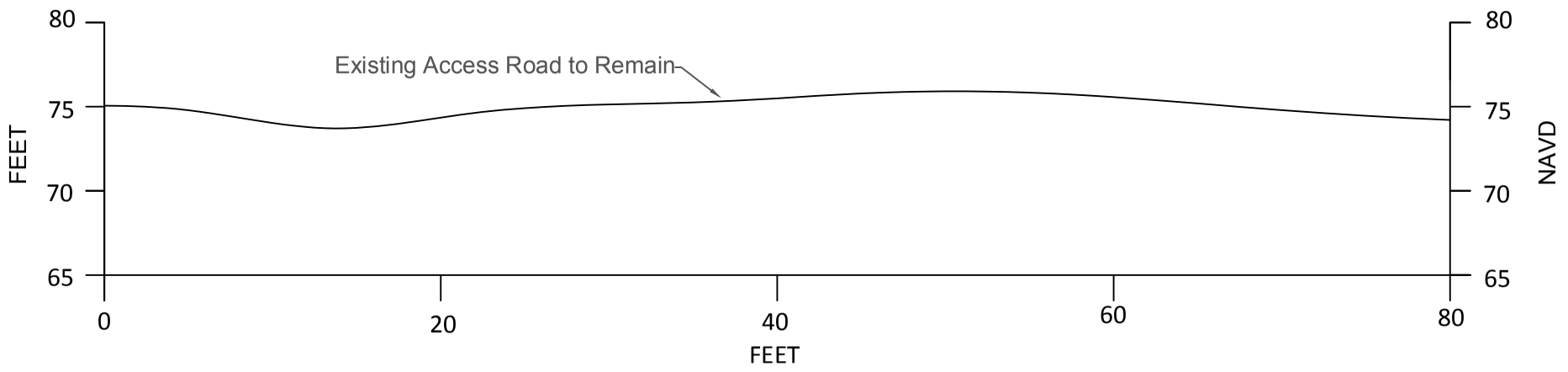
DELTA LAND SERVICES

Figure A

B

B'

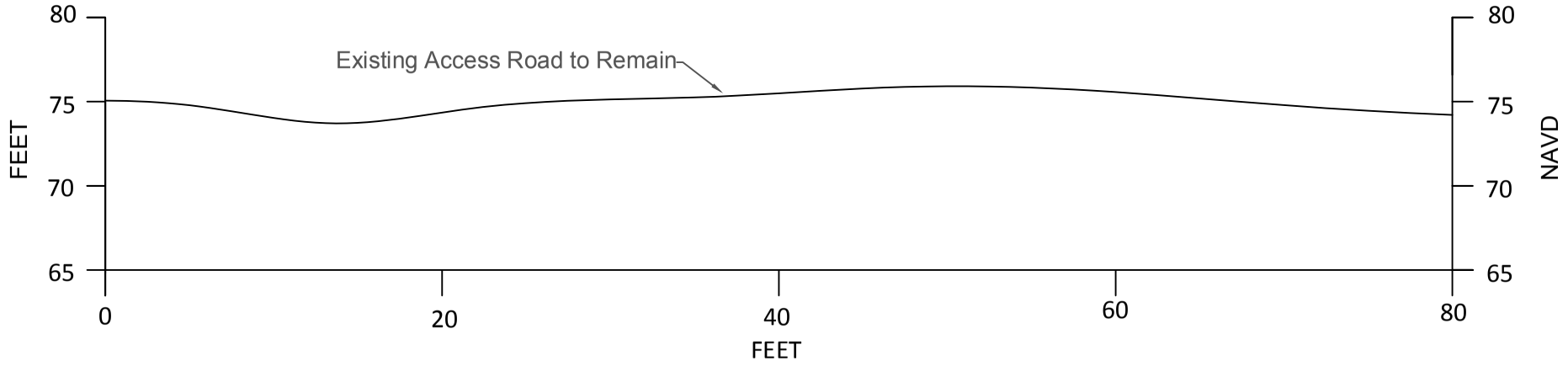
Existing Cross-Section B



B

B'

Proposed Cross-Section B



Proposed Excavation

Proposed Earthen Fill

BEAVER CREEK MITIGATION BANK

CROSS SECTION B-B'

EAST BATON ROUGE PARISH, LA

Created:	TSC/AutoCAD
Approved:	JMJ
Date:	9/12/2017
Dwg. No.:	beavercreekxsections_prospectus.dwg

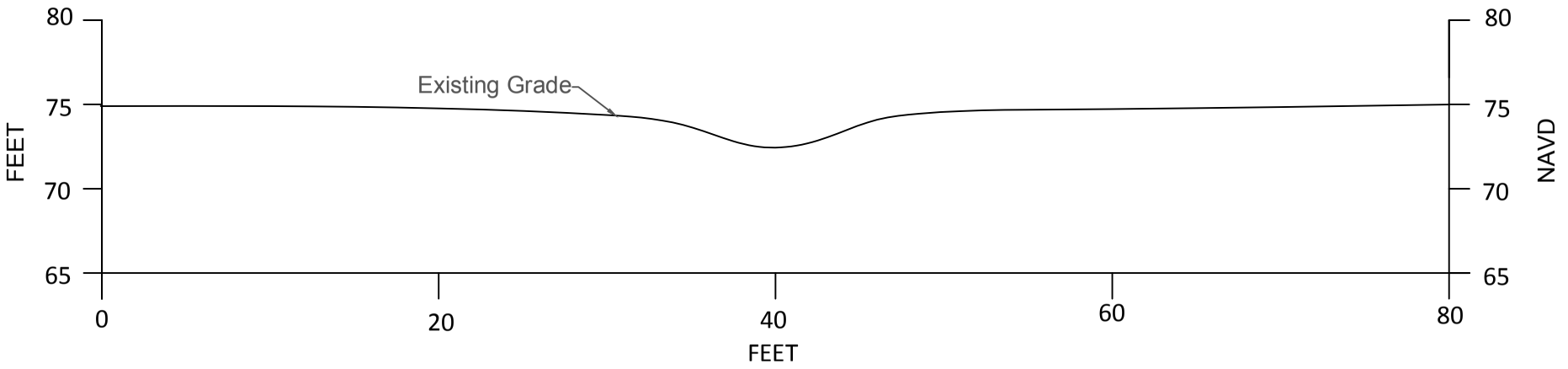
DELTA LAND SERVICES

Figure B

C

C'

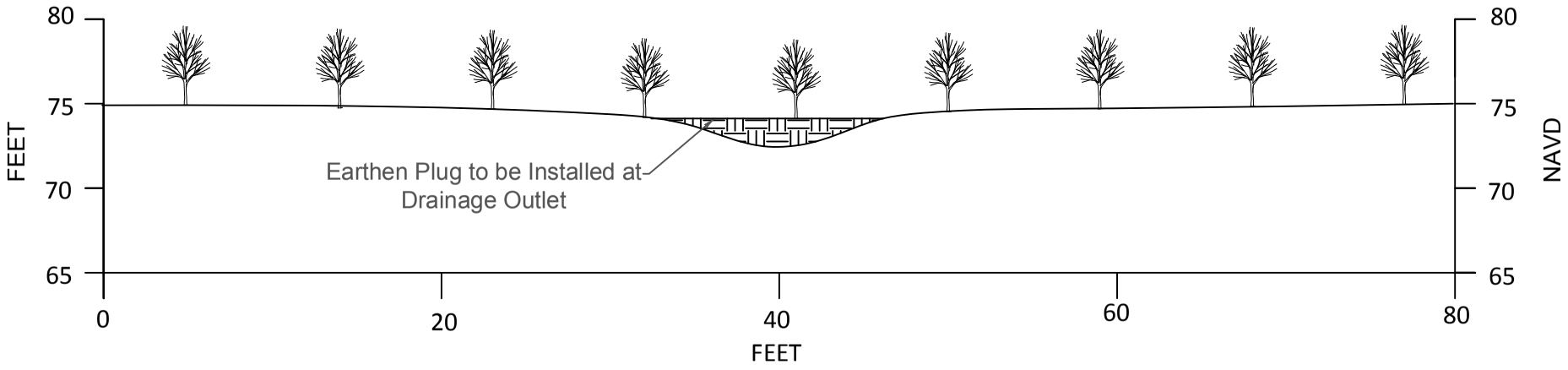
Existing Cross-Section C



C

C'

Proposed Cross-Section C



Proposed Excavation

Proposed Earthen Fill

BEAVER CREEK MITIGATION BANK

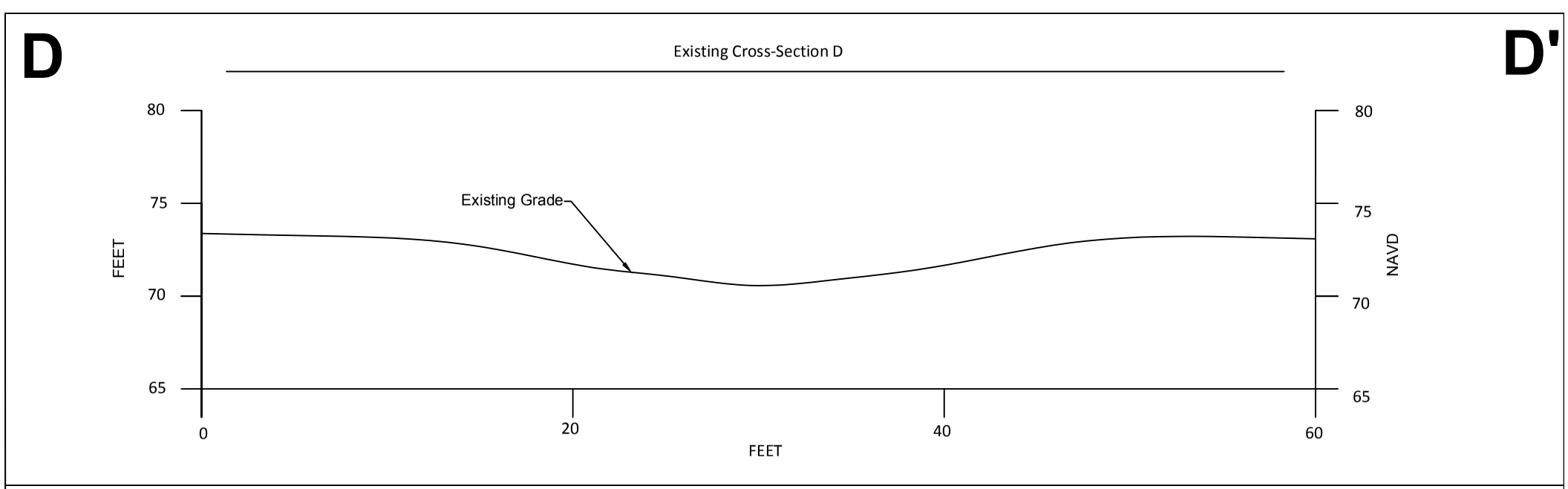
CROSS SECTION C-C'

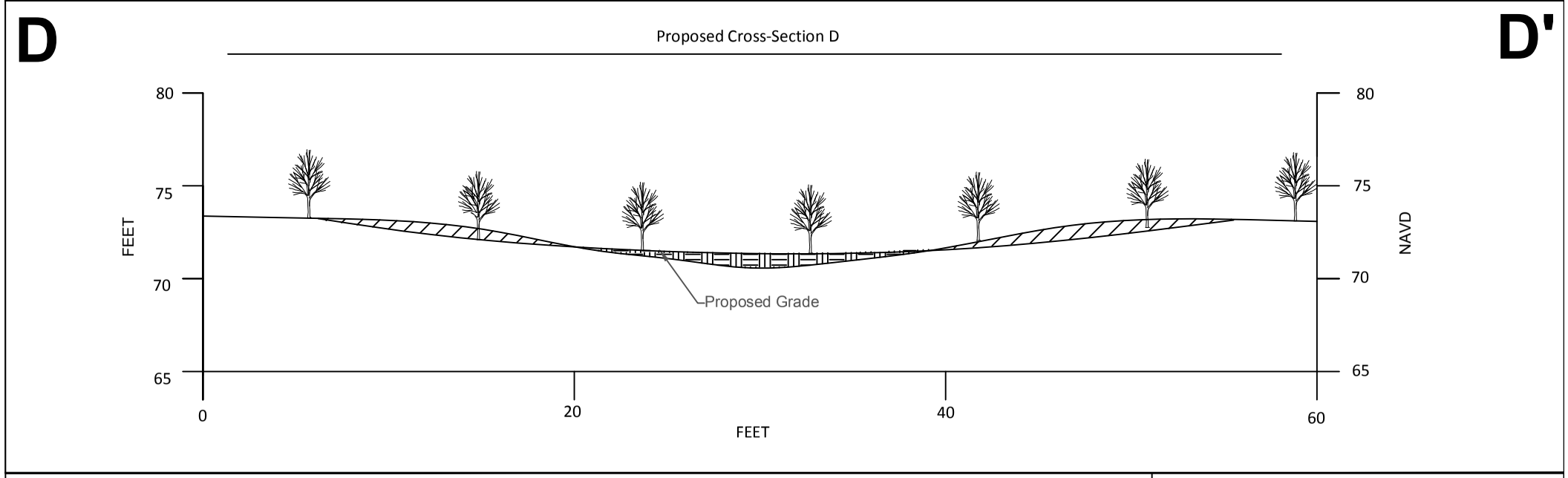
EAST BATON ROUGE PARISH, LA

Created:	TSC/AutoCAD
Approved:	JMJ
Date:	9/12/2017
Dwg. No.:	beavercreekxsections_prospectus.dwg

DELTA LAND SERVICES

Figure C





Proposed Excavation

Proposed Earthen Fill

BEAVER CREEK MITIGATION BANK

CROSS SECTION D-D'

EAST BATON ROUGE PARISH, LA

Created:	TSC/AutoCAD
Approved:	JMJ
Date:	9/12/2017
Dwg. No.:	beavercreekxsections_prospectus.dwg

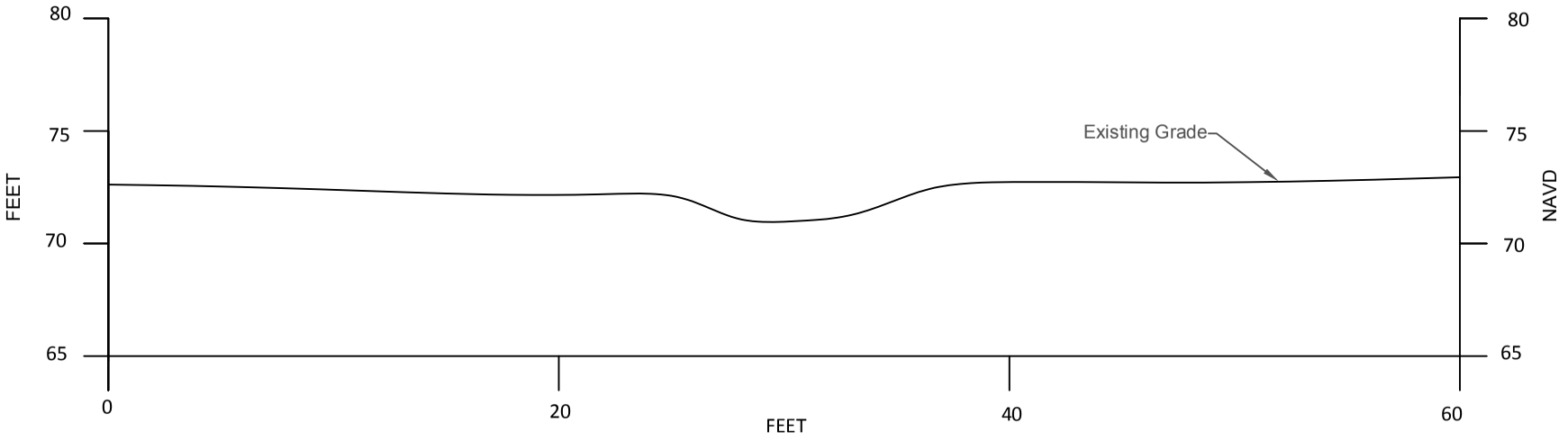
DELTA LAND SERVICES

Figure D

E

Existing Cross-Section E

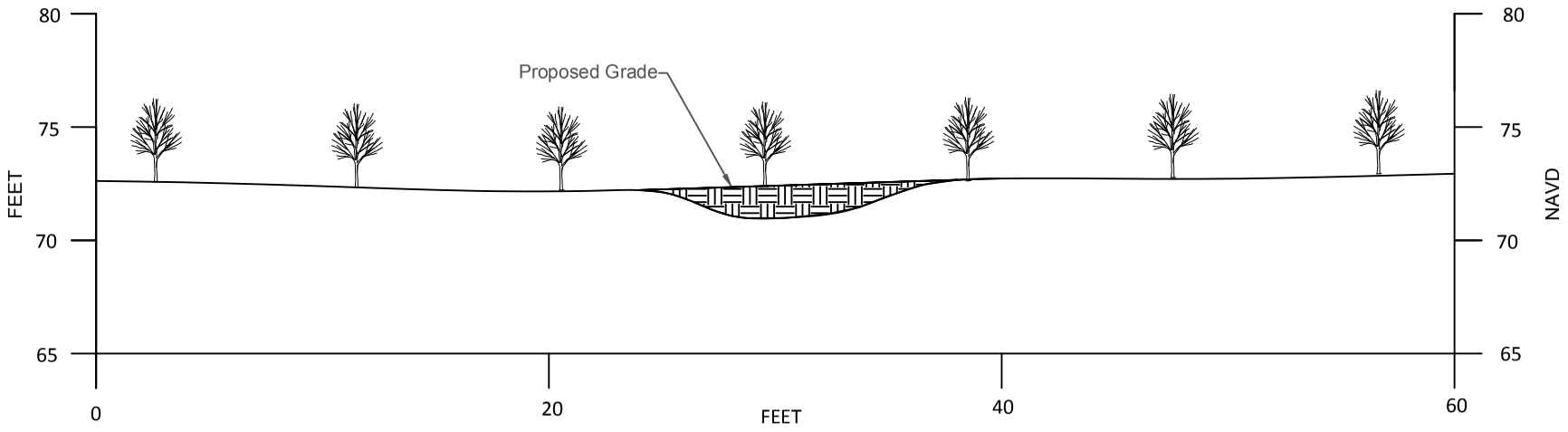
E'



E

Proposed Cross-Section E

E'



Proposed Excavation

Proposed Earthen Fill

BEAVER CREEK MITIGATION BANK

CROSS SECTION E-E'

EAST BATON ROUGE PARISH, LA

Created:	TSC/AutoCAD
Approved:	JMJ
Date:	9/12/2017
Dwg. No.:	beavercreekxsections_prospectus.dwg

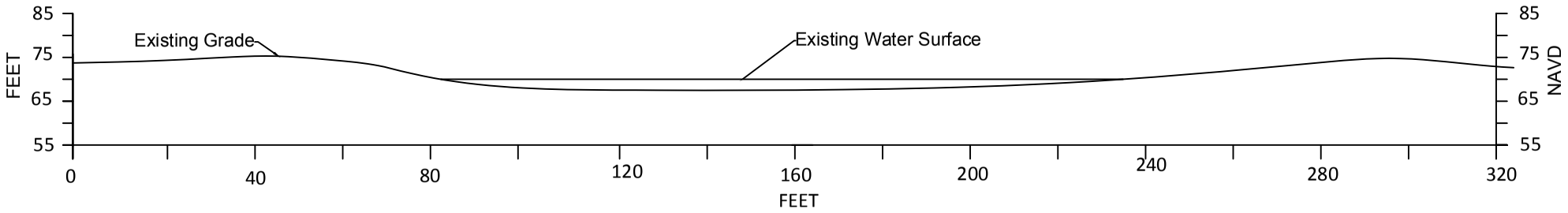
DELTA LAND SERVICES

Figure E

F

F'

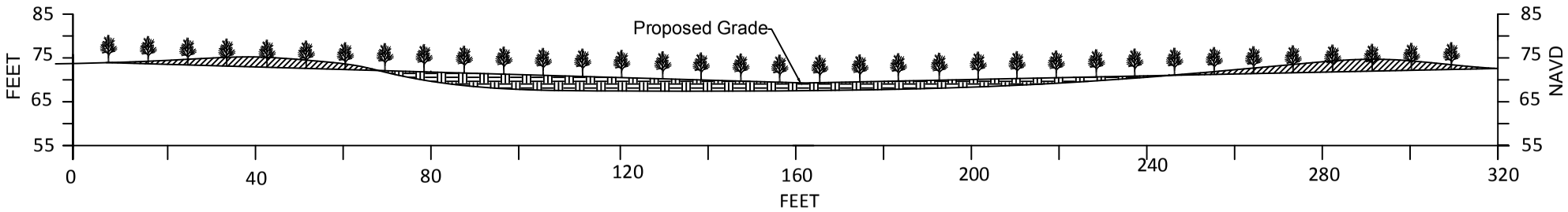
Existing Cross-Section F



F

F'

Proposed Cross-Section F



Proposed Excavation

Proposed Earthen Fill

BEAVER CREEK MITIGATION BANK

CROSS SECTION F-F'

EAST BATON ROUGE PARISH, LA

Created:	TSC/AutoCAD
Approved:	JMJ
Date:	9/12/2017
Dwg. No.:	beavercreekxsections_prospectus.dwg

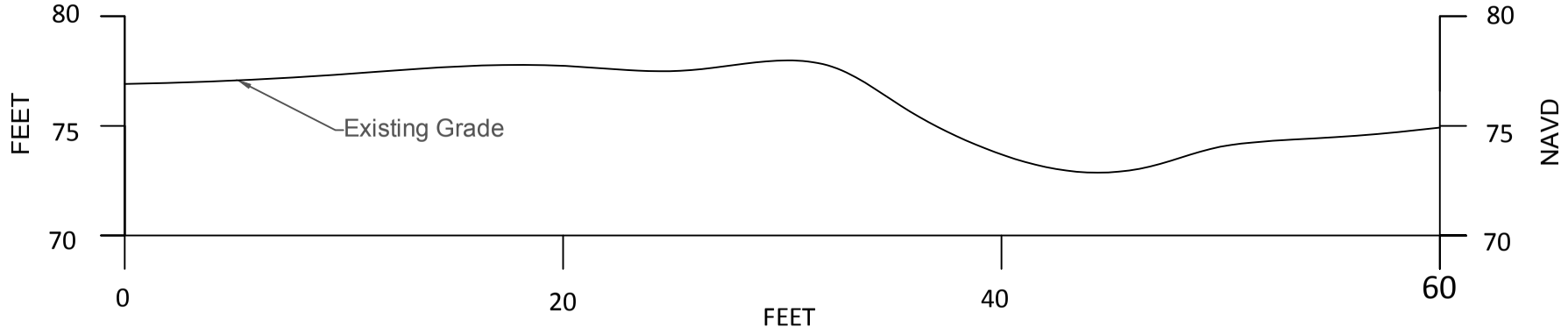
DELTA LAND SERVICES

Figure F

G

G'

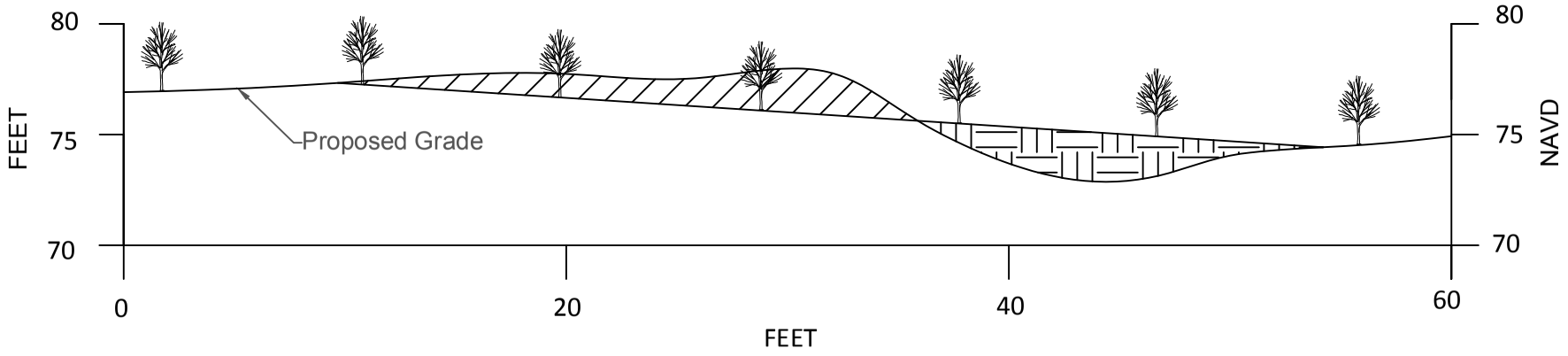
Existing Cross-Section G



G

G'

Proposed Cross-Section G



Proposed Excavation

Proposed Earthen Fill

BEAVER CREEK MITIGATION BANK

CROSS SECTION G-G'

EAST BATON ROUGE PARISH, LA

Created:	TSC/AutoCAD
Approved:	JMJ
Date:	9/12/2017
Dwg. No.:	beavercreekxsections_prospectus.dwg

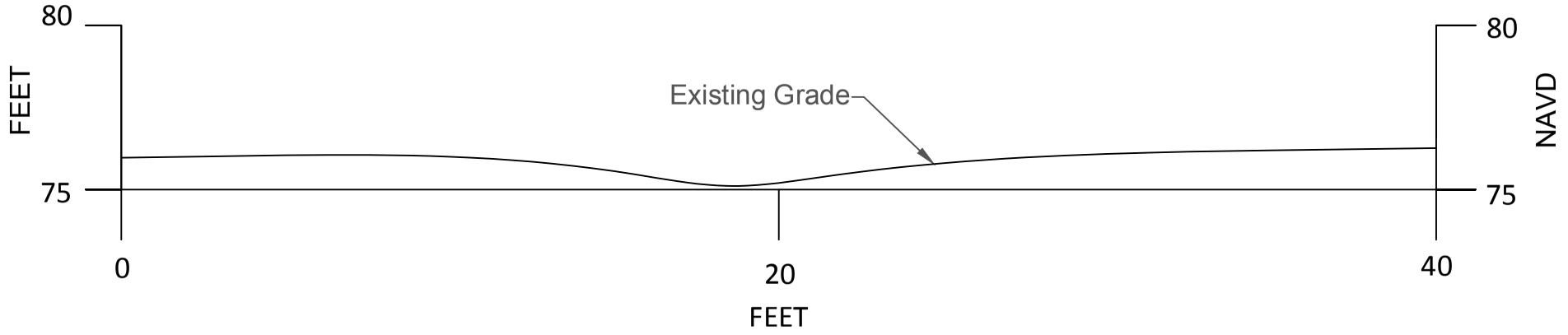
DELTA LAND SERVICES

Figure G

H

H'

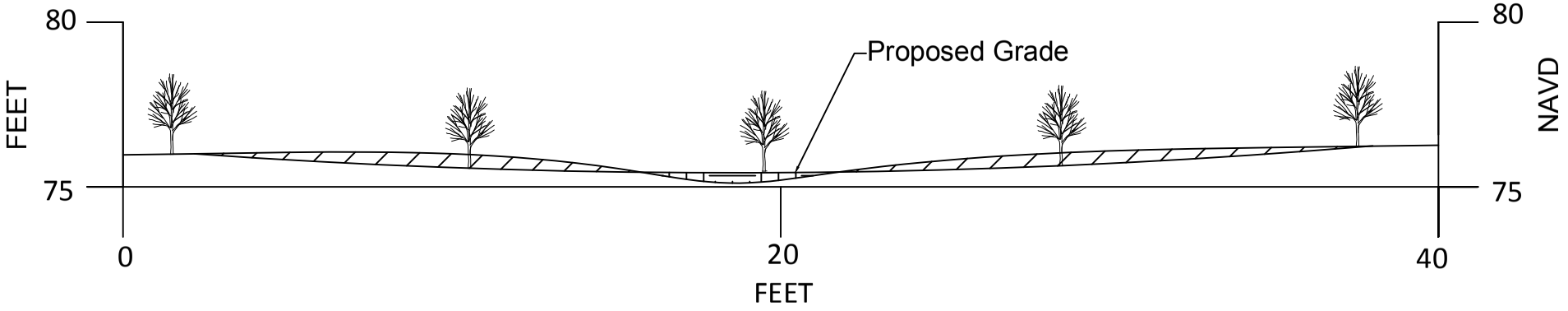
Existing Cross-Section H



H

H'

Proposed Cross-Section H



Proposed Excavation

Proposed Earthen Fill

BEAVER CREEK MITIGATION BANK

CROSS SECTION H-H'

EAST BATON ROUGE PARISH, LA

Created:	TSC/AutoCAD
Approved:	JMJ
Date:	9/12/2017
Dwg. No.:	beavercreekxsections_prospectus.dwg

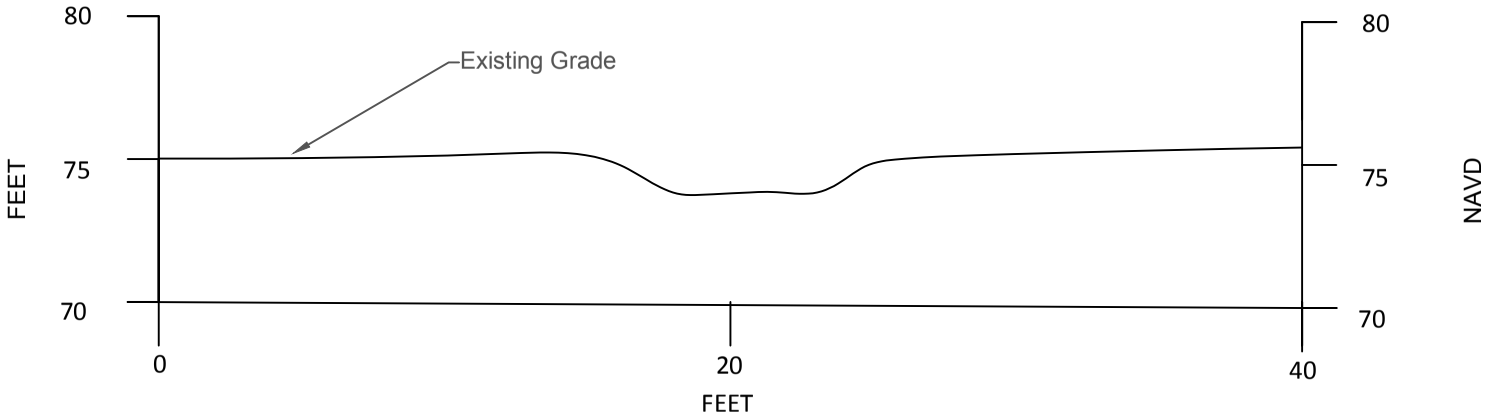
DELTA LAND SERVICES

Figure H

I

I'

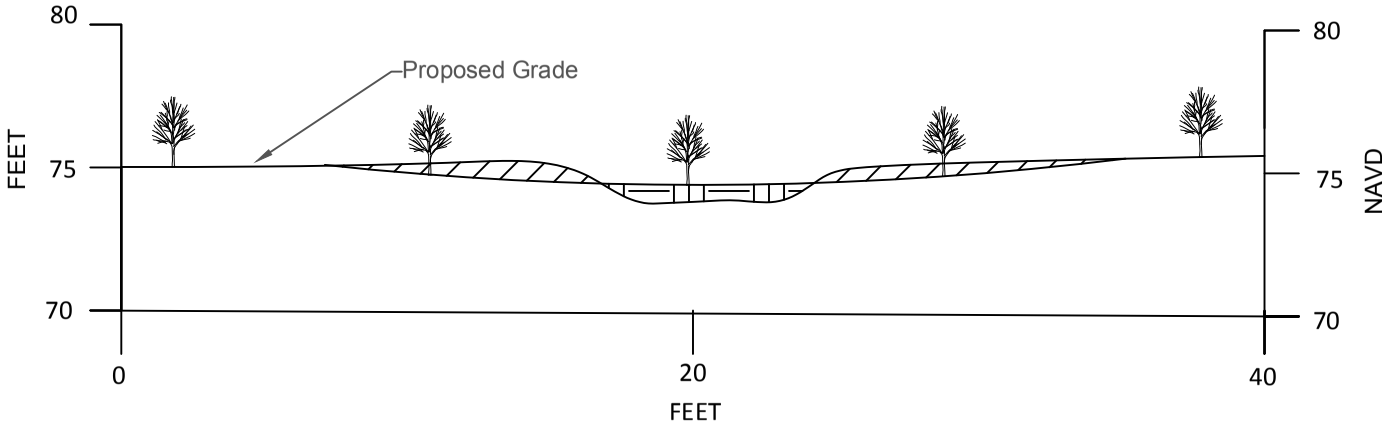
Existing Cross-Section I



I

I'

Proposed Cross-Section I



Proposed Excavation

Proposed Earthen Fill

BEAVER CREEK MITIGATION BANK

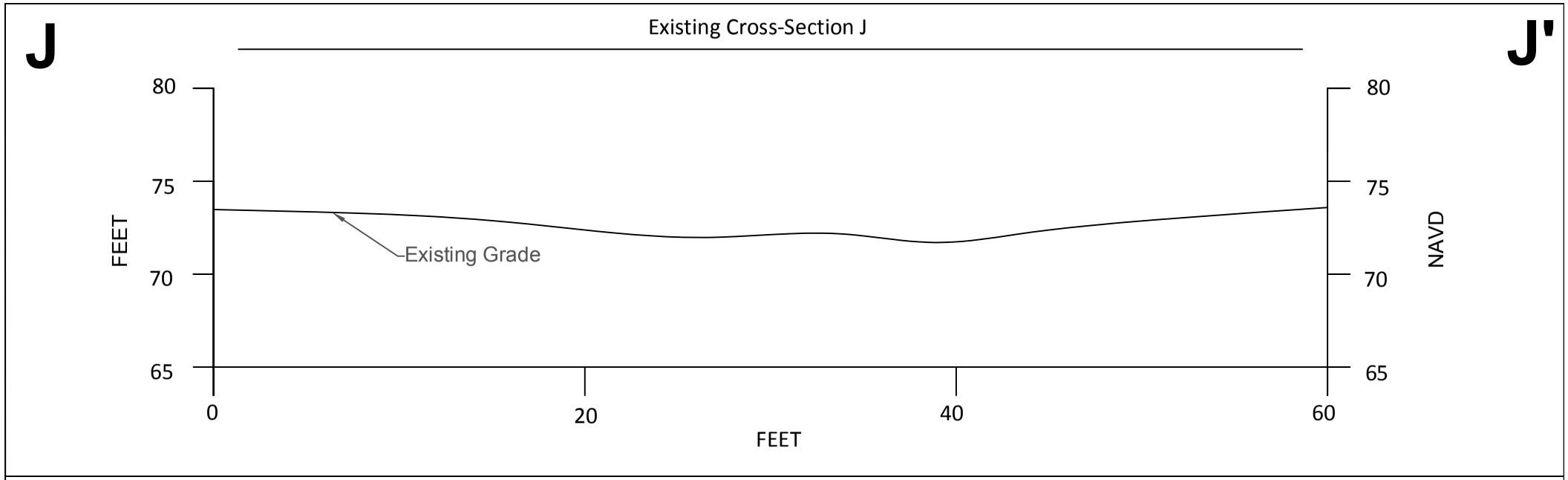
CROSS SECTION I-I'

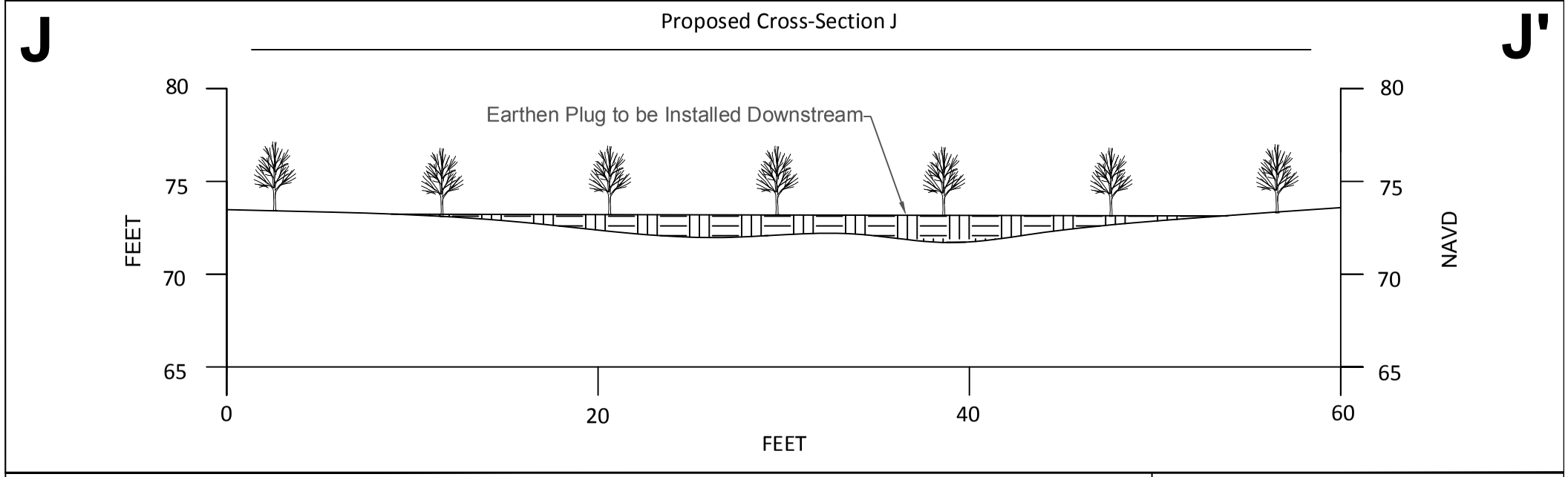
EAST BATON ROUGE PARISH, LA

Created:	TSC/AutoCAD
Approved:	JMJ
Date:	9/12/2017
Dwg. No.:	beavercreekxsections_prospectus.dwg

DELTA LAND SERVICES

Figure I





Proposed Excavation

Proposed Earthen Fill

BEAVER CREEK MITIGATION BANK

CROSS SECTION J-J'

EAST BATON ROUGE PARISH, LA

Created:	TSC/AutoCAD
Approved:	JMJ
Date:	9/12/2017
Dwg. No.:	beavercreekxsections_prospectus.dwg

DELTA LAND SERVICES

Figure J

Attachment C: Preliminary Louisiana Rapid Assessment Method (LRAM) Calculations

LOUISIANA WETLAND RAPID ASSESSMENT METHOD (LRAM) 2.0

CEMVN Acct #		MVN-2017-00626			Bank Name				
Acres Mitigation	134.3				Beaver Creek Mitigation Bank (BCMB)				
Watershed Basin		LakePont							
		Area 1	Area 2	Area 3	Area 4	Area 5	Area 6	Area 7	Area 8
Mitigation Factors	Mitigation Type	Re-Est	Rehab	Enhanc	Pick Here	Pick Here	Pick Here	Pick Here	Pick Here
		6.0	5.0	3.0	0.0	0.0	0.0	0.0	0.0
	Management	None	None	None	Pick Here	Pick Here	Pick Here	Pick Here	Pick Here
		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Negative Influences	Low	Low	Low	Pick Here	Pick Here	Pick Here	Pick Here	Pick Here
		-0.5	-0.5	-0.5	0.0	0.0	0.0	0.0	0.0
	Size	500 : 100	500 : 100	500 : 100	Pick Here	Pick Here	Pick Here	Pick Here	Pick Here
		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Buffer / Upland	Restored	Restored	Restored	Pick Here	Pick Here	Pick Here	Pick Here	Pick Here
		0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0
	Sum:	6.0	5.0	3.0	0.0	0.0	0.0	0.0	0.0
	Area:	115.9	5.7	12.7	0.0	0.0	0.0	0.0	0.0
	Sum x Area Affected:	695.4	28.5	38.1	0.0	0.0	0.0	0.0	0.0

∑ Mitigation: 762.0

Mitigation Potential: 5.7

COMMENTS

Mitigation Type	
Management	
Negative Influences	Access road and overhead powerlines to telecommunications service tower.
Size	160.9 total acres to be placed under conservation servitude.
Buffer/Upland	Upland and riparian buffer afforestation.

Attachment D: Site Photographs

Maintained grazing pasture and hay field proposed for BLH re-establishment, Proposed Beaver Creek Mitigation Bank (photo taken August 24, 2017).

Maintained emergent wetland area\grazing pasture proposed BLH rehabilitation, Proposed Beaver Creek Mitigation Bank (photo taken August 24, 2017).

Early successional tallow-infested forested wetland proposed for BLH enhancement, Proposed Beaver Creek Mitigation Bank (photo taken August 24, 2017).

Beaver Creek channel and adjacent habitat, Proposed Beaver Creek Mitigation Bank (photo taken September 27, 2017).

Remnant channel of Beaver Creek, Proposed Beaver Creek Mitigation Bank (photo taken September 27, 2017).

Beaver Creek channel and adjacent habitat, Proposed Beaver Creek Mitigation Bank (photo taken September 27, 2017).

Culvert to be removed, Proposed Beaver Creek Mitigation Bank (photo taken September 27, 2017).

Subsurface drain to be plugged, Proposed Beaver Creek Mitigation Bank (photo taken September 27, 2017).

Aerial view (looking west) of proposed BLH restoration area south of enhancement area. The artificial drainage feature to be filled is visible on the right side of photo; Proposed Beaver Creek Mitigation Bank (photo taken February 15, 2017).

Aerial view (looking north) of drainage alterations in re-establishment/rehabilitation areas, forested BLH enhancement area, and northern most stock pond to be filled; Proposed Beaver Creek Mitigation Bank (photo taken February 15, 2017).

Aerial view (looking south) of drainage alterations in re-establishment/rehabilitation areas and access road/ telecommunication facility/tower to remain, Proposed Beaver Creek Mitigation Bank (photo taken February 15, 2017).

Aerial view (looking south) along access road to telecommunication facility/tower; northern most stock pond to fill on rights side of road; Proposed Beaver Creek Mitigation Bank (photo taken February 15, 2017).

Aerial view (looking east) of southern most portion of the property to be restored; artificial drainage ditch and southernmost stock pond (southeast corner of property) to fill are visible near southeast corner; Proposed Beaver Creek Mitigation Bank (photo taken February 15, 2017).