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

August 13, 2018

Operations Division
Special Project and Policy Team
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SUBJECT: MVN-2016-00039-MA

PUBLIC NOTICE

Public Notice Purpose: Pursuant to Section 10 of the Rivers and Harbors Act of March 3, 1899 (30 Stat. 1151; 33 USC 403) and Section 404 of the Clean Water Act (86 Stat. 816; 33 USC 1344), the U.S. Army Corps of Engineers, New Orleans District, Regulatory Branch is soliciting comments from all interested parties on the development, utilization and long-term management of a proposed mitigation bank. The purpose of this mitigation bank is to provide compensatory mitigation for unavoidable impacts to wetland resources, including other waters of the United States, that result from projects authorized through the Department of the Army permit program.

PROPOSED RATLIFF WOODLANDS MITIGATION BANK IN ASSUMPTION PARISH

NAME OF APPLICANT: Ratliff Woodlands, LLC c/o SEG Environmental LLC Attention: Paul Chadwick, 224 Rue De Jean Lafayette, Louisiana

LOCATION OF WORK: In Section 59, 60, 61, 62, 63, 95 and 97, Township 13 South, Range 14 East, approximately 248.2 acres located approximately 1 mile northeast of Bayou Lafourche, Hwy 308 and the town of Napoleonville, LA and the southwestern boundary is located at the Ratliff Street in Assumption Parish, as shown on the attached prospectus. (Latitude 29.94963, Longitude -91.00661). Hydrologic Unit Code: 08090301

CHARACTER OF WORK: Degradation of internal agricultural drains, leveling of sugarcane fields, removal of culverts, filling of existing drainage, degrading ditch embankments, rerouting of one drainage ditch and planting the appropriate tree species to restore and/or enhance the historical bottomland hardwood forests so that it could be used as compensation for unavoidable impacts to wetlands associated with Department of the Army (DA) permits authorized under Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act.

The Corps of Engineers is soliciting written comments from the public; federal, state, and local agencies and officials; Indian Tribes; and other interested parties. The comment period will close **30 days** from the date of this public notice advertisement. Written comments, including suggestions for modifications or objections to the proposed work, stating reasons thereof, are being solicited from anyone having interest in this prospectus. Letters must reference the applicant's name and the subject number, be addressed and mailed to the above address,
ATTENTION: REGULATORY BRANCH.

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

Martin S. Meyer
Chief, Regulatory Branch

Enclosure

Prospectus for the Proposed Ratliff Woodlands Mitigation Bank

Assumption Parish, Louisiana

October 2017

Sponsor: Ratliff Woodlands, L.L.C.
Leo D. Sternfels and Marvin V. Marmande, Jr.
224A LA Highway 70 Spur
Plattenville, LA 70393

Agent: SEG Environmental LLC.
Name: Paul Chadwick
Address: 224 Rue De Jean
Lafayette Louisiana, 70503

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1. Introduction

This prospectus was prepared by SEG Environmental, LLC in accordance with 33 CFR § 332.8(d)(2)[1] to establish and operate the Proposed Ratliff Woodlands Mitigation Bank (RWMB). The proposed bank encompasses approximately 248.2 acres and will provide compensatory mitigation credits for unavoidable permitted impacts to "Waters of the United States[2]" per 33 CFR § 332.3 (1)(a) and 33 CFR § 332.3 (1)(b)[3]. The property is in the eastern central portion of the Parish at the end of Ratliff Street located approximately 1 mile northeast of Bayou Lafourche, Hwy 308 and the town of Napoleonville, LA. The majority of the property is located within the United State Geological Survey (USGS) 7.5-minute quadrangle "Napoleonville, LA" while the northeastern corner of the property falls within the "Madewood, LA" quadrangle.

1.1 Site Location

The property for the proposed RWMB is located in Assumption Parish 1 mile northeast of the town of Napoleonville, LA. The property is north of Bayou Lafourche and LA Hwy 308 and the southwestern boundary is located at the end of Ratliff St. The approximate center coordinates of the property are 29.94963 N latitude and -91.00661 W longitude. The property is located in sections 59, 60, 61, 62, 63, 95 and 97 in Township 13 south, Range 14 east (Figure 1).

2. Project Goals and Objectives

The goal of the RWMB is the restoration through re-establishment of 242.1 acres of bottomland hardwood forest, rehabilitation of 2.1 acres of bottomland hardwood forest, and rehabilitation of 3.9 acres of bald cypress wetland forest within the East Central Louisiana Coastal United States Geological Service (USGS) Hydrologic Catalog Unit (HUC) 08090301. The successful re-establishment of bottomland hardwood and bald cypress wetland forest will provide additional wetland functions and values not currently realized under the current land use practices. Hence, the objectives of the RWMB are to improve water quality by eliminating the current land use practices (i.e. farming), increase flood storage capacity and sediment retention time by eliminating crawfish pond levees and agriculture ditches, and increase wildlife habitat through reforestation. Thus, the establishment of the RWMB will restore and re-establish the unique wetland functions associated with the bottomland hardwood and bald cypress forest ecosystems that once existed on the property and increase opportunities for outdoor recreational activities (i.e. camping, hiking and hunting).

3. Ecological Suitability of the Site/Baseline Conditions

This section describes the ecological suitability of the site to achieve the objectives of the proposed mitigation bank, including the physical, chemical, and biological characteristics of the bank site and how that site will support the

planned types of aquatic resources and function, as stated in 33 CFR 332.8(d)(2)(vii)(B). This section provides the baseline/current site conditions on and adjacent to the proposed site.

3.1 Land Use

3.1.1 Historical Land Use

The project is located within the Lower Mississippi Alluvial Valley (LMAV), the historical reaches of the largest forested wetland ecosystem that once existed in the United States (Schoenholtz et al. 1999). While forested wetlands in the LMAV once encompassed approximately 24.7 million acres at the time of early European settlers, only 5.2 million acres remained by 1978 (MacDonald et. al 1979). The increasing need for food and raw building materials, The Flood Control Act of 1928, advancements in mechanical land clearing machinery, and a spike in agricultural prices in the 1960s and 1970s all contributed to accelerated forest clearing and fragmentation in the 20th century. Tiner (1984) attributed 87% of wetland losses at the time to agricultural development.

Extensive drainage developed to support agriculture in former wetlands have drastically altered the sites natural hydrology and continues to contribute to diminished water quality in the Barataria Basin.

Aerial imagery acquired in May 11, 1952 indicates that the Ratliff Bank property and much of the surrounding property was already cleared of trees by this date and in some form of agriculture. Aerial imagery since indicates that the Ratliff property has been farmed ever since, either for sugar cane or crawfish. The crawfish pond complex as it exist today was built on cleared agriculture or pasture land in stages, with the southern and eastern ponds being built prior to December of 1985, while the northern and western ponds were constructed by January of 1993 (Appendix A).

It is difficult to establish exactly when the Ratliff or surrounding properties were cleared of trees, and in fact, the same goes for many areas along Bayou Lafourche since much of the Bayou Lafourche area was being farmed by Acadians from Novia Scotia shortly after they arrived in 1764 (South Lafourche Levee District 2016).

3.1.2 Existing/Current Land Use

ArcMap and 2015 aerial imagery were used to generate Land Use maps for the Ratliff Property and surrounding area within 1 mile of the proposed Bank boundary. The Ratliff Property currently consist of approximately 129.6 acres of Sugarcane Agriculture and 118.6 acres of Crawfish Aquaculture while the surrounding area is comprised of the following: Sugarcane Agriculture = 2,350.9 acres; Crawfish Aquaculture = 59.2 acres; Forested BLH Wetlands = 601.8

acres; Residential/Commercial = 593.4 acres; Water (Bayou Lafourche = 47.1 acres; Utility ROWs = 33.1 acres; and Texas Brine Pipeline ROW = 10.0 acres (Figure 2).

3.2 Soils

Schriever clay soil which encompass the majority of the site (i.e. SkA and Water combined approx. 94%) make it ideal for a bottomland hardwood and cypress forest restoration project, one that will restore the historic forested wetland functions and values that once existed. According to USDA Natural Resources Conservation Service (NRCS 2013), the proposed Ratliff Woodlands Mitigation Bank property is comprised of 50.8% (126.3 ac.) of Schriever clay, 0-1% slopes, a soil with a hydric rating of 98%, 6.1 % (15.1 ac.) of Thibaut clay, a soil with a hydric rating of 15%, and 43.0 % (106.8 ac.) of water for the crawfish ponds (Figure 3). While the crawfish ponds are listed as water, the surrounding levees are listed as Schriever clay and the Schriever clay map unit encompasses the ponds and portions of the surrounding property in all directions.

3.3 Hydrology

3.3.1 Contributing Watershed

The proposed Ratliff Woodlands Mitigation Bank is located in the East Central Louisiana Coastal Watershed HUC8 08090301, a hydrologic unit encompassing approximately 1,733,766 acres. The drainage begins in Donalsonville, LA at the Mississippi River and has the west bank levee of the Mississippi River as it's eastern boundary and Bayou Lafourche as it's western boundary (Figure 4).

3.3.2 Historical Hydrology and Drainage Patterns

Historically, precipitation, high water tables, and periodic overbank flooding from Bayou Lafourche and the Atchafalaya and Mississippi Rivers were the source of hydrology for the site. However an extensive levee system developed along the Mississippi River by the U. S. Army Corp of Engineers (ACOE) in the late 1800s, a levee constructed at Bayou Lafourche at the Mississippi River in 1904, and finally leveeing of the Atchafalaya River following the Flood Control Act of 1928 all but eliminated overbank flow from these waterways as a source of hydrology for the area. Historically, the mitigation bank site drained through bottomland hardwood and cypress forest naturally via gravity from the higher natural levee areas along Bayou Lafourche to the lower elevation forested wetlands and Bayou Verret to the east (Figure 5).

3.3.3 Existing/Current Hydrology and Drainage Patterns

Today, precipitation, runoff from adjacent lands at higher elevations along the northern bank of Bayou Lafourche, and high water tables and saturation in

the sites poorly drained clayey soils are the primary sources of hydrology for the RWMB site along with occasional back flooding from adjacent bottomland hardwood and cypress forest swamps of the East Central Louisiana Coastal Watershed HUC8 08090301. The water table in poorly drained Schriever soils fluctuates between 0 to 2 feet below the surface during the months of December through April in normal years, while Thibaut soils are poorly drained with episaturation occurring from 0 to 6 inches below the surface from January through April during most years (NRCS 2013).

NOAA's National Centers for Environmental Information (NCEI) 1981-2010 precipitation normal for the nearby Donalsonville, LA station (GHCND:USC00162536) is 62.46 inches per year. The station reports that June is normally the wettest month of the year with approximately 7.71 inches of rainfall and April and November as being the driest months of the year with 4.23 and 4.28 inches respectively (NCEI 2016). NRCS (2013) estimates precipitation in the lower Mississippi River plain to be approximately 65 inches annually.

According to 3mNED lidar data the elevation along the southern boundary of the RWMB is approximately 8.5 ft. and 5.2 ft. in the northeast corner of the property. Elevation and National Hydrography Data indicates surface waters flow essentially southwest to northeast before field drains carry all water to a main drainage which flows northeastward to Baker Canal North (Figure 6). LIDAR elevation data is not available for the crawfish ponds but elevation data obtained by Acadia Land Surveying, LLC indicates there are approximately 22.24 acres within the crawfish ponds that are at 5 ft. or below in elevation (NAVD88), the largest contiguous area of which encompasses about 21.56 acres in the southeastern most crawfish pond. The mean elevation for these areas collectively is 4.76 ft., the max. 4.99 ft., and the minimum elevation is 4.04 ft. The plat developed by Acadia Land Surveying depicting the 5' and below contour lines along with the locations of each elevation shot is provided in Figure 7, (7a-7c).

Hydrology modifications on the site include furrows and rows, surface drains, culverts and main drainages developed to support sugarcane production, along with levees, associated borrow ditches and ponds to support crawfish production. Surface modifications developed to support sugarcane production contribute to excessive runoff, and hence diminished water retention time, diminished water quality, and increased downstream sedimentation, and modifications for crawfish production contribute to a reduction in flood storage capacity for the area.

3.3.4 Jurisdictional Wetlands

An ACOE preliminary jurisdictional determination dated 25 January, 2016 on the bank property is included as Appendix C. The determination concluded that that portions of the property currently in sugar cane production totaling 248.2

acres, i.e. rowed fields, headlands and shallow surface drains, along with the crawfish ponds and associated levees were Non-Wetlands. Moderate size drains, deep drains, the crawfish pond pump ditch, and the pond water supply ditch totaling 6.0 acres were determined to be waters of the U.S. (404).

3.4 Vegetation

3.4.1 Historical Plant Community

It is difficult to establish exactly what the historical plant communities were on the RWMB property since this area like others along Bayou Lafourche were being farmed by Acadians from Novia Scotia shortly after they arrived in 1764 (South Lafourche Levee District 2016). However, tree species in the Dugas and Leblanc, LTD woods along the northeast boundary include red maple (Acre rubrum), texas red oak (Quercus texana), overcup oak (Quercus lyrata), water oak (Quercus nigra), sweet-gum (Liquidambar styraciflua) and aerial imagery dating back to May 11, 1952 indicate this area was likely a BLH wetland forest (Appendix A).

3.4.2 Existing Plant Community

The RWMB property is essentially cleared of trees today and all acreage is in sugarcane or crawfish production. There is one narrow tree line about 0-25 ft. wide and approximately 1050 ft. long along the southeastern levees of the southeastern most crawfish ponds. Dominant tree species in these areas are water oak (Quercus nigra - FAC) and sugar-berry (Celtis laevigata - FACW) and the understory here and at other locations along the pond levees consist of primarily 50-55% purple flat-sedge (Cypers rotundus – FAC) and 30% tall goldenrod (Solidago altissima – FACU), the later for which rarely exceeds 1-2 ft. in height due to repeated mowing. The tops of the pond levees are dominated by 5-10% Bermuda grass and 0-5% tall golden rod, and this area is either sprayed or mowed repeatedly as well. The area consisting of sugarcane consist of approximately 38% sugar-cane (Saccharum officinarum - FACU) and 2% of purple flat-sedge.

3.5 General Need for the Project in this Area

The East Central Louisiana Coastal Watershed (HUC8 08090301) encompasses more than 1.7 million acres in South Louisiana and has both a high degree of development activity (i.e. commercial, residential, industrial, and pipeline and utility projects) along with a vast array of waterway and wetland systems (rivers, bayous, bottomland hardwood forest, cypress swamps and marshes). Hence the need for the availability of future mitigation credits in this Watershed and Watershed Basin is certainly justifiable.

The RWMB is also located within the Barataria Basin, a basin identified by the Barataria-Terrebonne National Estuary Program (BTNEP) as one requiring preservation and restoration. The RWMB helps accomplish many of the goals and objectives of BTNEP's Comprehensive Conservation Management Plan

(CCMP) including Action Plans EM-1, Hydrologic Restoration, EM-11, Reduction of Agriculture Pollution, EM-15, Protection of Habitat for Migratory and Resident Birds, and EM-16, Reduction of Impacts from Exotic Vegetation (Moore and Rivers 1996).

Development and preservation of the RWMB also meets the goals and objectives of the Lafourche Parish Coastal Zone Management to 1) recognize the value in natural coastal ecosystems, 2) protect, restore and enhance the coastal zone as a natural storm barrier, flood control system, and water infiltration system, 3) protect, restore and enhance the coastal zone as a habitat for wildlife, an aquatic resource, an aesthetic resource, a parish, state and national resource, and a historic cultural resource, and 4) protect, restore and enhance the coastal zone as a legacy to future generations (Lafourche Parish Government 2013).

The development, management, and preservation of the RWMB also supports the findings and recommendations of the Coastal Wetland Forest Science Working Group (2005) by 1) conserving, restoring, and managing coastal wetland forests, including collaborative efforts among public and private entities, to ensure that their functions and ecosystem services will be available to present and future citizens of Louisiana and the United States, and 2) insures mitigation credits of similar resource type are available for impacts to coastal wetland forests within the watershed.

While the development, management, and preservation of wetland forest is not a specific goal of Louisiana's Comprehensive Master Plan for a Sustainable Coast, the RWMB will help increase flood storage capacity in this portion of Assumption Parish and therefore helps reduce to some extent the threat of flooding to commercial and residential properties (CPRA Master Plan 2012) in the vicinity of the bank.

Additionally, wetland forest of Louisiana provide important habitat for both fish and wildlife. Many nesting birds of prey will nest in or hunt near wetland forest, such as the Bald Eagle, a threatened species, Osprey, Black and Turkey Vultures, Swallow-tailed Kite, a species of conservation concern, Mississippi Kite, American Kestrel, and Cooper's, Red-shouldered, and Red-tailed Hawks (Dittmann et al. 2010). These forest also serve as nesting habitat for numerous resident land and wading bird species as well. Additionally, wetland forest of Louisiana also provide habitat for millions of Nearctic-Neotropical migrant birds during spring and fall migrations. More specifically, wetland forest of the Barataria-Terrebone Basin have been shown to support various migrant species such as Yellow crowned Night-Herons, Eastern Phoebes, Acadian Flycatchers, Northern Parulas, and Hooded, Yellow rumped, Prothonotary, and Yellow-throated Warblers. Wetland forest in the area also support resident bird species such as Great Blue Herons, Wood Ducks, Red-shouldered Hawks, Great Horned and Barred Owls, Pileated Woodpeckers, Yellow-bellied Sapsuckers, Northern Cardinals, Blue Jays and Carolina Chickadees, as well as migrant songbirds

such as Yellow-billed Cuckoos, Summer Tanagers, Red-eyed Vireos, and Great Crested Flycatchers (Demay et al. 2007). Numerous species of waterfowl frequent flooded wetland forest as well, including Mallard, Gadwall, Blue and Green-winged Teal, American Wigeon, Hooded Merganser, and Wood duck.

During 18 breeding bird censuses, Twedt et al (1999) found that species richness, diversity, and territory density were greater in bottomland hardwood stands than managed cottonwood stands and that mature bottomland hardwood forests are twice as valuable for bird conservation as cottonwood plantations. The development, management and conservation of the RWMB is also in accord with Partners in Flight plan for bird conservation in the Mississippi Alluvial Valley to reestablish bottomland hardwood forest so as to increase the area of forests (Twedt et. 2006). Wetland forest of the Barataria-Basin also serve as critical wintering habitat for Central Region populations of American Woodcock. U.S. Fish and Wildlife Service (1990) reported an annual decrease of 0.8% since 1968 and Kelly and Rau (2006) noted an 8% decline of displaying adults from 2005 to 2006. U.S. Fish and Wildlife Service (1990) attributed declining woodcock populations to a decrease in quantity and quality of habitat and management objectives include reversing this trend.

Dramatic forested wetland loss in the Lower Mississippi Alluvial Valley has also reduced critical habitat for numerous bat species, including Southeastern Myotis, Little Brown Myotis, Gray Myotis, Yellow Bat, Rafinesque's Big-Eared Bat, Hoary Bat, Northern Myotis, Indiana or Social Myotis, and Silver-Haired Bat (MMNS 2005) and increasing mature wetland forest in the southeast is key to conserving and managing declining bat populations in eastern forest of the United States (Loeb 2013). Given that Boyels et al. (2011) attribute the value of insect control by bats to US agriculture to be as high as $23 billion annually, increasing habitat for insectivorous bat species in the Barataria-Terrebone Basin could potentially reduce the use of pesticides in the future.

4. Establishment of a Mitigation Bank

Site restoration for the RWMB will consist of hydrology restoration and reforestation, via replanting, of native bottomland hardwood and cypress forest species. The Bank will restore approximately 242.1 acres through re-establishment of bottomland hardwood forest on areas formerly occupied by sugarcane fields and associated surface drains, headlands, crawfish ponds and crawfish pond levees, rehabilitation of 2.1 acres of bottomland hardwood forest on moderate sized drainages, and rehabilitation of 3.9 acres of cypress forest on deep drainages, the crawfish pond pump ditch, and the crawfish pond water supply ditch (Figure 8). Restoration of surface hydrology, cessation of agriculture and aquaculture, continued development of planted trees and recruitment of natural herbaceous communities in the understory will continue to improve water and nutrient retention time, thereby improving aquatic functions and values on the Bank.

4.1 Site Restoration Plan

4.1.1 Soils/Hydrologic Work

Within the Bank, all impediments to surface flow such as sugar-cane rows, headlands, culverts, surface and main drainages, levees and levee borrow ditches will be removed, degraded or filled such that any impediments to surface flow and the natural topography within the bank is restored to 0-1% grade. A new main drainage system will be constructed along the southwestern and southeastern perimeter of the Bank to support ongoing agricultural activities on properties owned by Lula-Westfield, LLC adjacent to the Bank.

The Plan View detailing the work required to restore hydrology to the RWMB is located in Appendix B, Figures B-1 to B-8. Figure B-1 of Appendix C includes the Plan View showing the location of sugarcane fields to level, culverts to be removed, pond fill pipes to remove, pond outflow/drain pipes to remove, headlands to degrade, sugarcane field surface drains to fill, main agricultural drains to fill, the crawfish pond pump ditch to fill, the water supply ditch to fill, and crawfish pond levees to degrade.

The crawfish ponds will be drained in May or June prior to being planted so as to allow the area to begin drying. At this time excavators will work atop dry levees and berms and begin degrading these features. In late fall all agricultural practices will cease, all culverts removed, field rows and furrows will be disked and leveled, and the area formerly in crawfish production will be disked and leveled.

Culverts, Pond Outflow Pipes, and Pond Fill Pipes

There are 83 culverts to be removed that currently drain the sugarcane agricultural fields, 6 pond outflow pipes to be removed that drain the crawfish ponds, and 6 fill pipes to remove that are used to pump water into the crawfish ponds (Appendix B, Figure B-1). All of these structures will be removed with a Caterpillar 300 series size excavator and a John Deere 6 or 7 series tractor with a heavy set of disk harrows will be used to prepare the ground for planting.

Waters of the US to Fill

Cross sections A-C show three typical sizes of main drainage ditches that have been determined to be Waters of the US. The larger drainage in Cross Section A represents drainages with a total length of 3,740.71 feet long, approximately 9.7 feet wide, have a surface area of 0.8 acres, an area of 14.42 ft^2 per linear foot, and a volume of approximately 36,284.90 ft^3/1,997.82 yd^3. Material degraded from the headland will be used to fill the ditches on either side of the headland in Cross Section A and low spots in the sugarcane fields on either side. Headlands typical of Cross Section A total 6,219.63 linear feet, have a width of 32.6 feet, a surface area of 4.7 acres, an area of 32.6 ft^2 per linear

foot, and a total volume of 202,759.84 ft^3/7,509.62 yd^3 of material to degrade. The headlands have a non-wetland determination and represent approximately 4.7 acres of bottomland hardwood re-establishment credits, while the drainage has a Waters of the US determination and represents 0.8 acres of bottomland hardwood rehabilitation credits (Appendix B, Figures B-1 and B-2).

Drainages typical of Cross Section B are approximately 11.6 feet wide, have a total length of 4,735.39 feet, have a surface area of 1.3 acres, an area of 21.97 ft^2 per linear foot, and a volume of approximately 104,036.49 ft^3/3,853.20 yd^3. Material from the headlands and adjacent high spots in the sugarcane fields will be used to fill these ditches. Headlands typical of Cross Section B total 10,360.77 linear feet, are approximately 11.3 feet wide (avg. of 2 headlands), have a surface area of 2.7 acres, an area of 12.75 ft^2 per linear foot (2 headlands combined), and have a total volume of 132,099.86 ft^3/4,892.59 yd^3 of material to degrade. The headlands have a non-wetland determination and represent approximately 2.7 acres of bottomland hardwood re-establishment credits, while the drainage has a Waters of the US determination and represents 1.3 acres of bottomland hardwood rehabilitation credits (Appendix B, Figures B-1, B-3, and B-4).

The main drainage in Cross Section C is approximately 28.8 feet wide, has a total length of 2,189.85 feet, a surface area of 1.4 acres, an area of 120.72 ft^2 per linear foot, and a volume of approximately 264,358.15 ft^3/9,791.04 yd^3. Material from adjacent levees and headlands will be used to fill this drainage. Headlands typical of Cross Section C total 2,211.00 linear feet, are approximately 30.3 feet wide, have a surface area of 1.5 acres, an area of 13.59 ft^2 per linear foot, and a total volume of 30,047.50 ft^3/1,112.87 yd^3 of material to degrade. Levees total 2,086.29 linear feet, are approximately 28.8 feet wide, have a surface area of 1.4 acres, an area of 120.72 ft^2 per linear foot, and a volume of 65,321.69 ft^3/ 2,419.32 yd^3 to degrade. The levee and headland have a non-wetland determination and represent approximately 2.9 acres of bottomland hardwood re-establishment credits, while the drainage has a Waters of the US determination and represents 1.4 acres of cypress swamp rehabilitation credits (Appendix B, Figures B-1 and B-4).

Cross Section D depicts the dimensions of the crawfish pond pump ditch from which water is pumped into all four crawfish ponds and Cross Section E depicts the dimensions of the water supply ditch constructed to convey water to the crawfish pond pump ditch. The crawfish pond pump ditch is 1,118.47 feet long, approximately 37.2 feet wide, has a surface area of 1.0 acres, an area of 204.52 ft^2 per linear foot, and a volume of 228,748.64 ft^3/8,472.17 yd^3. Material degraded from the crawfish pond levees on either side of the ditch and high spots within the pond adjacent to the levees will be used to fill the pump ditch and low areas adjacent to the levees in the crawfish pond. The southernmost levee is 1,129.91 feet long, 37.4 feet wide, has a surface area of 1.0 acres, an area of 66.44 ft^2 per linear foot, and is comprised of approximately 75,071.13 ft^3/

2,780.41 yd^3 of material. The northernmost levee is 1,158.01 feet long, 44.7 feet wide, has a surface area of 1.2 acres, an area of 125.82 ft^2 per linear foot, and is comprised of approximately 145,700.36 ft^3/5,396.31 yd^3 of material. The levees have a non-wetlands determination and represent approximately 2.2 acres of bottomland hardwood re-establishment credits, while the pump ditch has a Waters of the US determination and will represent 1.0 acres of cypress swamp rehabilitation credits (Appendix B, Figures B-1 and B-5).

Cross Section E depicts the cut and fill areas that will reestablish a hydrologic connection between the RWMB and the adjacent forested wetlands to the northeast. Material from the 2 northeastern most pond levees and the 2 berms on the adjacent property will be used to fill the water supply ditch, low areas within the crawfish pond adjacent to the levees and to the southwest, and the small ditch between the 2 berms. The crawfish pond water supply ditch is approximately 1,959.08 feet long, 34.1 feet wide, has a surface area of the 1.5 acres, an area of 106.70 ft^2 per linear foot, and a volume of 209,033.33 ft^3/7,741.98 yd^3. The small berm to the northeast is 1,915.89 feet long, approximately 19.3 feet wide, has a surface area of 0.8 acres, an area of 17.26 ft^2 per linear foot, and a volume of 33,068.19 ft^3/1,224.75 yd^3. The large berm is approximately 1,964.36 feet long, 43.0 feet wide, has a surface area of 1.9 acres, an area of 79.20 ft^2 per linear foot, and a volume of 155,577.56 ft^3/5,762.13 yd^3. The small ditch between the berms has a Waters of the US determination and is approximately 6.6 feet wide, 1,950.51 feet long, has a surface area of approximately 0.30 acres, an area of 1.74 ft^2 per linear foot, and a volume of 3,393.89 ft^3/125.70 yd^3. Note that the 2 berms and the small ditch are outside of the RWMB boundaries. The levees along the 2 northeastern most crawfish ponds total 1,909.75 linear feet, are approximately 45.3 feet wide, have a surface area of 2.0 acres, an area of 62.5 ft^2 per linear foot, and a volume of 119,359.41 ft^3/4,420.72 yd^3. The crawfish pond levees have a non-wetlands determination and represent approximately 2.0 acres of bottomland hardwood re-establishment credits, while the water supply ditch has a Waters of the US determination and will represent 1.5 acres of cypress swamp rehabilitation credits (Appendix B, Figures B-1 and B-6).

The above main drainages, crawfish pond pump ditch, and the water supply ditch totaling 6.0 acres have a Waters of the US determination and since we expect settlement of material over time at these locations, all will be planted with cypress swamp species and will serve as rehabilitation credits for the RWMB.

A D7 or D8 class bulldozer and a Caterpillar 300 series size excavator will be used to degrade all pond levees, berms and headlands and fill adjacent ditches and low areas within the ponds and fields, and a John Deere 6 or 7 series tractor with a heavy set of disk harrows will be used to prepare the ground for planting.

Other Crawfish Pond Levees

Cross Section F is representative of the 3 interior levees that divide the entire crawfish pond complex into 4 separate ponds, the northern most pond levees, and the western most pond levees. Interior levees have a total length of 9,138.62 linear feet, are approximately 28.5 feet wide, have a surface area of 6.0 acres, an area of 59.45 ft^2 per linear foot, and a volume of 543,291.03 ft^3/ 9,646.32 yd^3 of material. These levees have a non-wetland determination and represent 6.0 acres of bottomland hardwood re-establishment credits for the RWMB. The material from the levees will be distributed to low areas within the crawfish pond on either side of the levee and/or into adjacent borrow ditches (Appendix B, Figures B-1 and B-7).

A D7 or D8 class bulldozer and a Caterpillar 300 series size excavator will be used to degrade all pond levees and fill adjacent low areas within the pond or ditches and a John Deere 6 or 7 series tractor with a heavy set of disk harrows will be used to prepare the ground for planting.

Sugarcane Rows and Furrows

The location of sugarcane agricultural fields on the RWMB, totaling 112.9 acres, are depicted in Appendix B, Figure B-1 and are comprised of trapezoid shaped rows spaced on 70 inch centers, 70 inches wide at the base, 27 inches across the top, 16 inches high, and have an area of 776.00 ft^2 per linear foot. There are approximately 908 sugarcane rows on the Ratliff property totaling 774,861 linear feet to degrade with a total volume of 601,292,239 ft^3/22,270,082.93 yd^3 of material (Appendix B, Figure B-8). Small surface drainages in fields constructed to move water to the main drainage ditches are somewhat “v” shaped and measure approximately 5.4 feet across the top, 0.6 feet deep, and have an area of approximately 3.23 ft^2 per linear foot. There are 33,959 linear feet of surface drains totaling 4.7 acres. Total surface drain volume is approximately 109,689 ft^3/4,062.56 yd^3 (Appendix B, Figures B-2 and B-8). The above mentioned work is located in non-wetlands and all will go towards 112.9 acres of bottomland hardwood re-establishment credits.

A John Deere 6 or 7 series tractor with a heavy set of disk harrows will be used to degrade the sugarcane rows and fill the furrows and internal field surface drains. Surface drain fill material will come from both sides of the drainages. Disk harrows will break up the rows and fill surface drains by first plowing parallel to the direction of the rows and then will level the field and surface drains by plowing perpendicular to the rows.

New Drainage for Adjacent Landowners

The sponsors of the RWMB worked with adjacent land owners to develop a new agriculture drainage system along the Bank perimeter on the southwest,

southeast, and a 735.00 foot stretch along the northeast side to support agriculture on adjacent Ratliff Planting Co., LLC lands. Along the northeastern portion of the bank property there is an existing drainage 735.00 foot long that has a Waters of the US Determination. The drainage is currently the size of that in Cross Section B (21.97 SF) and will be enlarged to the dimensions of that in Cross Section C (120.72 SF). The ditch is 735.00 foot long, 11.8 feet wide, has a surface area of 0.20 acres, the difference between Ditch B and C is 98.75 ft^2 per linear foot, and the volume to be cut along this stretch is 72,581.25 Cu ft./2,688.19 Cu Yds. (Appendix B, Figure B-9). The new ditch to be dug outside of the bank along the southwest and southeast sides will be the dimension of the drainage in Cross Section C. The ditch will be 7,715.93 feet long, 28.8 feet wide, have a surface area of 5.10 acres, an area of 120.72 SF per linear foot, and will remove approximately 93,1467.07 Cu ft./ 34,498.78 Cu Yds. of material during construction. This work will take place in an upland area and the material removed during construction of the ditch will be used to build up a new headland adjacent to the ditch. The headland will be approximately 7,715.93 feet long, 20.00 feet wide, 3.45 feet high, have a surface area of 3.54 acres, and a volume of 93,1467.07 Cu ft./ 34,498.78 Cu Yds.

There will be a 10 foot buffer between the Ratliff Woodlands Mitigation Bank and the new ditch bank along the southwest and southeast boundaries and 2 - 4 foot diameter culverts will be used along each side to create access to the bank in these sides. Also, a headland will be built up and kept on the Ratliff Woodlands property on the northeast side of the property to allow Ratliff Planting Co., LLC access to the existing drainage leading to Baker Canal North for maintenance purposes and to afford Dugas and Leblanc, LTD owner's access to their woodland property to the northeast (Appendix B, Figure B-9).

Leveling all agricultural rows and furrows and back filling agricultural drainage ditches will allow for a natural passive flow of surface waters that is currently manipulated by those features. Leveling the fields will slow and in some areas hold (perch) water that are currently ushered off of the site. It will also once again allow flood waters from the adjacent wet forested area to the northeast to backflood into the Bank site creating a wetter substrate and also increasing the regional storage capacity of floodwaters. Overall the above said work will create a wetter regime conducive to wetland propagation and hydric soil conditions.

Considering the Bank is being developed from agricultural land that was historically wetlands, and the area of adjacent forested wetlands (to the northeast) to which we intend to connect flood regularly, three sides of the perimeter of the Bank (agriculture fields outside the Bank) will be modified to stop flood waters from routinely entering the remaining agriculture area. This will not impede waters from entering nor egressing from the Bank site. An uninterrupted flow will exist to the existing forested wetlands to the northeast.

4.1.2 Vegetative Work

Following the Soils/Hydrologic preparation the site will be planted with native bare root seedlings from an approved certified nursery by a licensed forester. Plantings will be conducted between December 15th and March 15th of any given year. Spacing for the vegetative planting will be on a 9' by 9' spacing equating to 538 stems per acre. A species list and percentage for each of the two habitat types proposed (BLH & Cypress Swamp SW) is listed in the Table 1 below including the percentage of hard versus soft mast species (60% hard mast/40% soft mast). Bottomland hardwood species will be planted on 241.1 acres for Re-Establishment credits and 2.1 acres for rehabilitation credits, and 3.9 acres of cypress swamp species will be planted for rehabilitation credits. Cypress is to be planted in former main drainages where greater settlement is likely to occur (3.9 acres) and bottomland hardwoods species are to be planted throughout the remainder of the site (244.2 acres Re-establishment) (Figure 7). Species were chosen by identifying species growing on forested wetlands of Dugas and Leblanc, LTD to the northeast and matching those species as best as possible and practical with commercially available species.

Species	AGCP Wetland Status	SW Species	BLH Species	BLH (hardmast)	BLH (softmast)	BLH %	SW%
Bitter Pecan *(Carya aquatica)*	OBL		X	X		15%	
Water Oak (*Quercus nigra*)	FAC		X	X		5%	
Nuttall oak *(Q. texana)*	FACW		X	X		15%	
Overcup Oak (Q. lyrata)	OBL		X	X		15%	
Swamp Chestnut Oak *(Q. michauxii)*	FACW		X	X		5%	
Willow Oak (Q. phellos)	FACW		X	X		5%	
American Elm (*Ulmus americana)*	FAC		X		X	8%	
Bald cypress (*Taxodium distichum*)	OBL	X	X		X	11%	95%
Common Persimmon (Diospyros virginiana)	FAC		X		X	2%	
Hackberry (Celtis laevigata)	FACW		X		X	2%	
Red maple (*Acer rubrum*)	FAC	X	X		X	15%	5%
Sweetgum (*Liquidambar styraciflua*)	FAC		X		X	2%	
TOTAL				60%	40%	100%	100%

Table 1. Species plant list, mast type, percentage of each, and overall hard/soft mast ratio.

All of the listed species are available commercially. The goal is to match plant species to the closest extent possible to those species growing on adjacent wetland forest to the northeast. Commercial species were chosen where appropriate to tolerate the same hydrological conditions as those on the adjacent lands and according to elevations on the proposed sites. Natural regeneration and recruitment of native species is anticipated to occur at this site and will be cataloged and submitted via the required annual monitoring reports on the appropriate schedule set forth by the IRT. The Sponsor intends to use all prudent efforts, physical, chemical, or mechanical, to eliminate existing undesirable/exotic vegetation present on the site. Ground cover herbicide treatments and invasive control treatments will be implemented initially and as needed during the establishment of the Bank.

The major anticipated invasive species of concern for the RWMB is Chinese Tallow (T*riadica* *sebifera*) especially during the first seven years of the bank establishment during early succession (until relative canopy cover and shading inhibit growth of Tallow). All invasive species will be cataloged annually and reported during the appropriate reporting year and measures will be taken to keep any particular invasive species to less than five percent of the re-establishment forested system as a whole. Products such as Clearcast and Garlon may be utilized to keep Chinese Tallow within allowable tolerances. Costs for long term monitoring and invasive species control are figured into the Long Term Management Plan and financial assurances. Invasive species control is not expected to present any particular problems at the Bank.

4.2 Technical Feasibility

The construction work required to establish the bank is certainly feasible and well within the sponsors capabilities to support. The property as it exist today is a modern farm utilizing modernized mechanized equipment to efficiently prepare the land for sugarcane and crawfish production. For the most part, this same equipment will be sufficient to develop the bank as discussed above. Equipment required will be a large bulldozer to fill surface and deep drains, and a large excavator to degrade the pond levees, both of which are available and used regularly by nearby farmers or construction and equipment companies. Additionally, the owners of the proposed RWMB already own and operate Enterprise Woodlands Mitigation Bank and so are aware the equipment required and cost for the proposed construction work.

4.3 Current Site Risks

There are no known potential threats to the bank site or resource type the bank intends to provide and/or protect. The Texas Brine Pipeline right-of-way is located on the sponsors property and runs along the northern boundary of the Bank, and an Entergy Utility right-of-way runs across the very northern corner of the property. Both of these right-of-ways will be located outside of the Proposed Bank area (Figure 9).

Agricultural land to the north, southwest and southeast is zoned Agricultural, while the wooded area adjacent to the bank to the northeast is zoned Timberland. Owners of the Bank and owners of the agriculture to the southwest and southeast adjacent to the Bank, i.e. Ratliff Planting Co., LLC have spoken about the needs of both parties and have agreed to establish standards that meet the requirements of both endeavors (agriculture and mitigation banking). Owners of the proposed Bank have discussed with representatives of Ratliff Planting Co., LLC the need for developing a new drainage ditch around the proposed Bank perimeter and have agreed to limit the size of the drainage so as to not negatively affect the hydrology of the Proposed RWMB. Additionally,

owners of the Dugas and Leblanc, LTD property have agreed to allow owners of the proposed Bank to remove the levee in the woodlands along the northeastern boundary of the proposed Bank so as to restore hydrologic connectivity.

4.4 Long-Term Sustainability of the Site

Adaptable management techniques will be employed to control invasive species, conduct required monitoring and reporting and perform long-term maintenance. The vast majority of the site is comprised of Schriever clay, a soil series consisting of very deep, poorly drained, very slowly permeable soils that formed on the plains of the lower Mississippi River alluvial plain where mean annual rainfall is about 65 inches per year (NRCS 2013). Therefore, eliminating surface and deep drains along with surface grade restoration, i.e. 0-1% slopes, on the Bank interior should ensure rainfall will be sufficient to ensure long-term hydrologic sustainability. Hydrology will also be provided occasionally from back flooding from adjacent forest as well. Additionally, adjacent properties are not dependent on the conveyance of surface waters from the Bank property, so water rights is not an issue.

Note that none of the main drainages in this area are tidally influenced, so salt-water intrusion is a non-issue.

5. Proposed Service Area

Commensurate with the Louisiana Wetland Rapid Assessment Method (LRAM), the Primary Service Area for the RWMB will be the Barataria Watershed Basin which includes the East – Central Louisiana Coastal (08090301) hydrologic unit (Figure 5). This vast area includes commercially active portions of Ascension, Assumption, St. James, St. John the Baptist, St. Charles, Jefferson, Lafourche and Plaquemine Parishes. A RIBITS search for credits on February 5, 2016 indicates that there are currently only 77.6 Bottomland Hardwood credits and 38.6 Cypress/Tupelo Gum Swamp credits available in the Primary Service Area of the RWMB. Use of bank credits beyond the Primary Service Area will be determined on case-by-case basis by the CEMVN.

6. Operation of the Mitigation Bank

6.1 Project Representatives

Sponsor:	*Ratliff Woodlands, LLC* *Leo D. Sternfels and Marvin V. Marmande, Jr.* *224A LA Highway 70 Spur* *Plattenville, LA 70393*
Agent:	*SEG Environmental, LLC* *224 Rue De Jean*

Lafayette, LA 70508
pchadwick@segenviro.com
337-257-8906 (c)
337-347-6777 (o)

Landowner: *Ratliff Woodlands, LLC*
Leo D. Sternfels and Marvin V. Marmande, Jr.
224A LA Highway 70 Spur
Plattenville, LA 70393

6.2 Qualifications of the Sponsor

Ratliff Woodlands, LLC will be responsible for administrative duties and management of the Bank land. The owners of RWMB also successfully own and operate Enterprise Woodlands Mitigation Bank (EWMB) established 2 years ago in the same HUC. RWMB has hired SEG Environmental, LLC (SEG) of Lafayette, LA as their Environmental Agent, a company with over 20 years of combined experience in the environmental and mitigation banking industry. SEG mitigation bank establishment and management experience includes but is not limited to: wetlands determinations, Section 404 permitting, prospectus development, MBI development, site preparation, site planting, monitoring, reporting and management related duties.

6.3 Proposed Long-Term Ownership and Management Representatives

Ratliff Woodlands, LLC will ultimately be responsibility for the Long-Term Ownership and Management of the RWMB. The current owner, Mr. Leo Sternfels and Mr. Marvin Marmande, are very familiar with the mitigation banking industry and currently own, operate and oversee the management of Enterprise Woodlands Mitigation Bank located in the same watershed in Lafourche Parish, LA.

6.4 Site Protection

The Sponsor/Owner shall be responsible for protecting all lands within the entire Bank. The site will be protected by a perpetual Louisiana conservation servitude in accordance with the Louisiana Conservation Servitude Act (La. R.S. 9:1271, *et seq*.) on the entire 248.2 acre tract. The conservation servitude shall be recorded in the Mortgage and Conveyance Records of Assumption Parish.

6.5 Long-Term Strategy

The Sponsor will ensure the long-term success and sustainability of the RWMB by restoring the surface hydrology (passive) of the entire Bank area, thence by such mechanisms as vegetative plantings, maintenance, invasive species control, site monitoring, establishment of financial assurances and

perpetual protection through the establishment of a Louisiana conservation servitude. A long-term management plan will be included in the Mitigation Banking Instrument that will address long-term management requirements, costs and the identification of a funding mechanism in accordance with 33 CFR §332.7(d).

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FIGURES

Legend

Ratliff Woodlands Mitigation Bank = 248.2 ac.

Ratliff Woodlands Mitigation Bank
Ratliff Woodlands, LLC

Figure 1: Vicinity Map

Assumption Parish, Louisiana

0 9,000 18,000 36,000 Feet

Coordinate System: NAD 1983 StatePlane Louisiana South FIPS 1702 Feet
Projection: Lambert Conformal Conic
Datum: North American 1983
False Easting: 3,280,833.3333
False Northing: 0.0000
Central Meridian: -91.3333
Standard Parallel 1: 29.3000
Standard Parallel 2: 30.7000
Latitude Of Origin: 28.5000
Units: Foot US

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Legend

Ratliff Woodlands Mitigation Bank = 248.2

Ratliff Woodlands Mitigation Bank
Ratliff Woodlands, LLC

Figure 2: Ratliff Property and 1 Mile Radius Current Land Use

Assumption Parish, Louisiana

0 1,050 2,100 4,200 Feet

N
W E
S

Coordinate System: NAD 1983 StatePlane Louisiana South FIPS 1702 Feet
Projection: Lambert Conformal Conic
Datum: North American 1983
False Easting: 3,280,833.3333
False Northing: 0.0000
Central Meridian: -91.3333
Standard Parallel 1: 29.3000
Standard Parallel 2: 30.7000
Latitude Of Origin: 28.5000
Units: Foot US

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Legend

Ratliff Woodlands Mitigation Bank = 248.2 ac.

Ratliff Woodlands Mitigation Bank
Ratliff Woodlands, LLC

Figure 3: NRCS Soils

Assumption Parish, Louisiana

0 287.5 575 1,150 Feet

Coordinate System: NAD 1983 StatePlane Louisiana South FIPS 1702 Feet
Projection: Lambert Conformal Conic
Datum: North American 1983
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Units: Foot US

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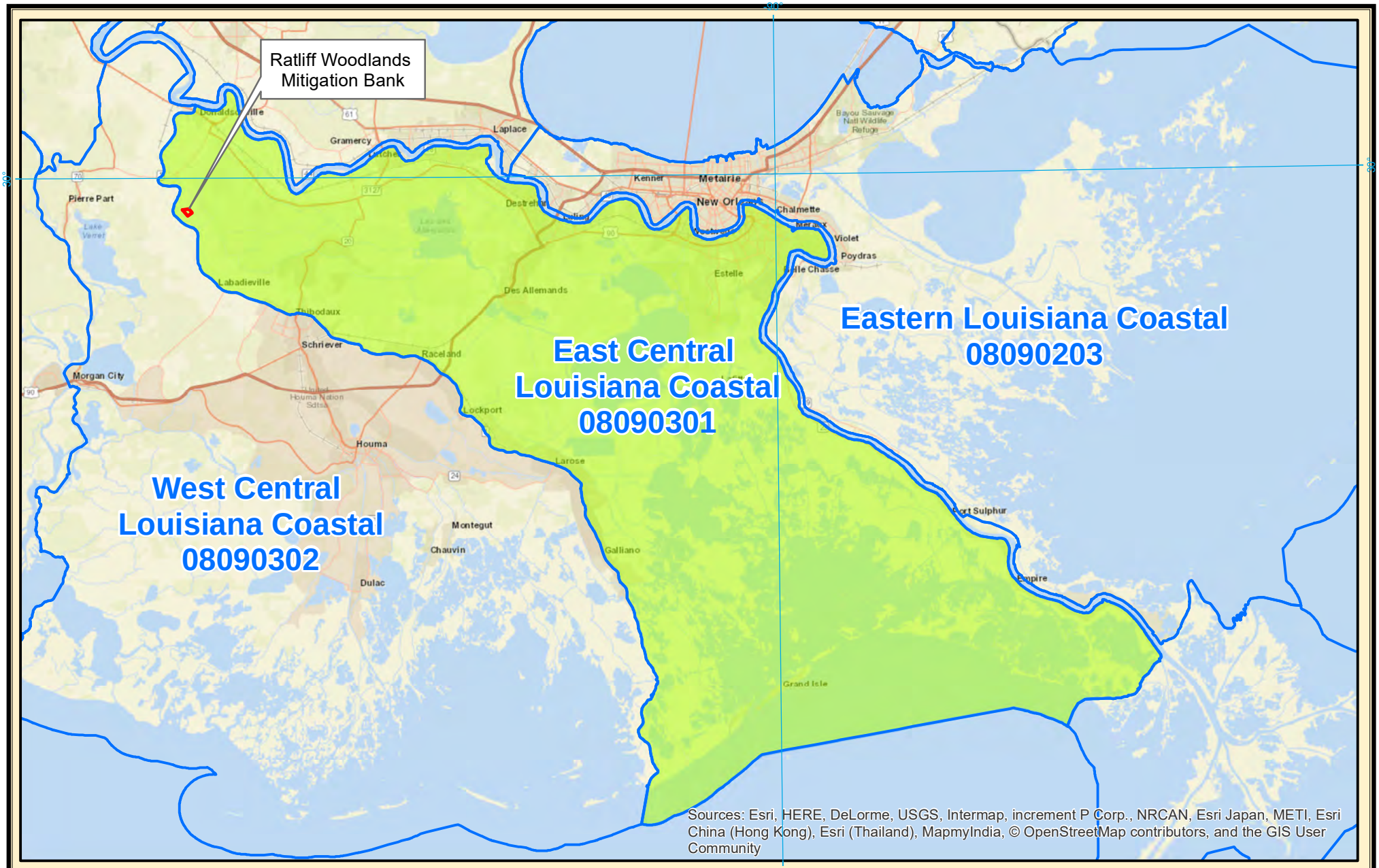

Legend

- USGS HUC Units
- Primary Service Area East Central LA Coastal
- Ratliff Woodlands Mitigation Bank

Ratliff Woodlands Mitigation Bank
Ratliff Woodlands, LLC

Figure 4: Contributing Watershed and Proposed Service Area

Assumption Parish, Louisiana

0 41,000 82,000 123,000 Feet

Coordinate System: NAD 1983 StatePlane Louisiana South FIPS 1702 Feet
Projection: Lambert Conformal Conic
Datum: North American 1983
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False Northing: 0.0000
Central Meridian: -91.3333
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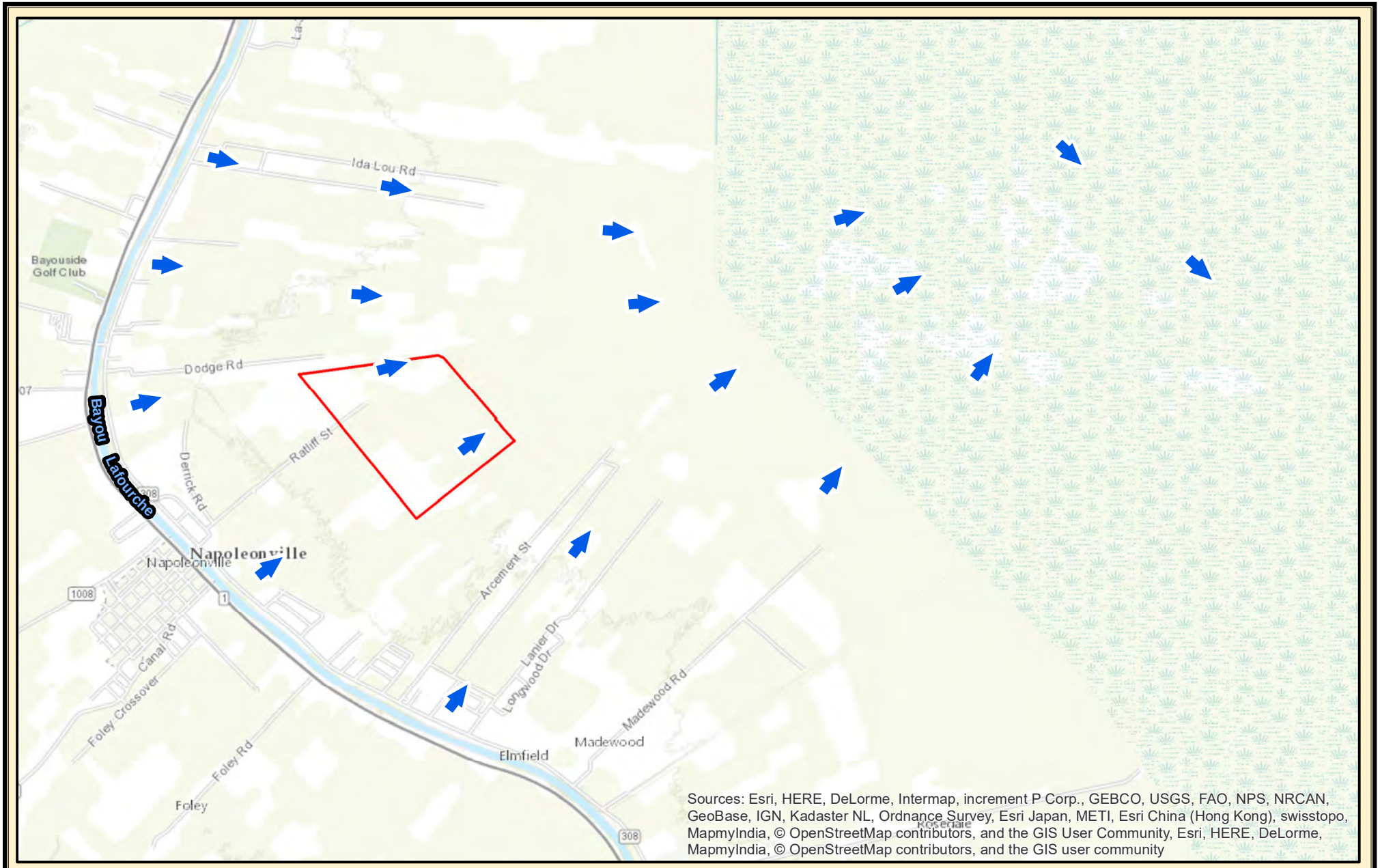

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Historical Drainage Patterns

Ratliff Woodlands Mitigation Bank = 248.2

Ratliff Woodlands Mitigation Bank
Ratliff Woodlands, LLC

Figure 5: Historical Drainage Patterns

Assumption Parish, Louisiana

0 1,300 2,600 3,900 5,200
Feet

N
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S

Coordinate System: NAD 1983 StatePlane Louisiana South FIPS 1702 Feet
Projection: Lambert Conformal Conic
Datum: North American 1983
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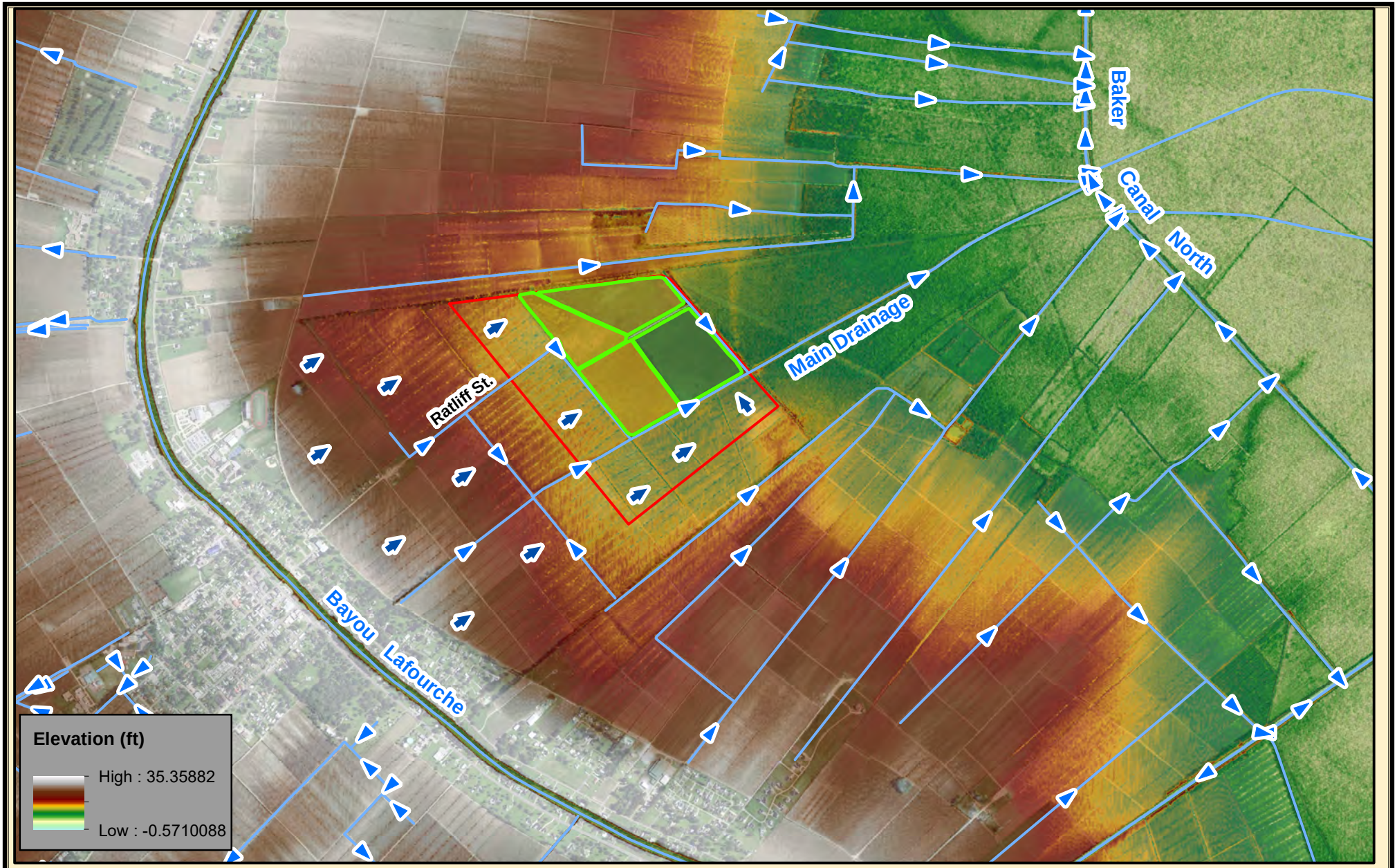

Legend

- Surface Flow
- NHD Drainage Flow
- Ratliff Crawfish Ponds = 106.9 ac.
- Ratliff Woodlands Mitigation Bank = 248.2 ac.

Ratliff Woodlands Mitigation Bank
Ratliff Woodlands, LLC

Figure 6: Current Drainage Patterns

Assumption Parish, Louisiana

0 920 1,840 2,760 3,680 Feet

N W E S

Coordinate System: NAD 1983 StatePlane Louisiana South FIPS 1702 Feet
Projection: Lambert Conformal Conic
Datum: North American 1983
False Easting: 3,280,833.3333
False Northing: 0.0000
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Units: Foot US

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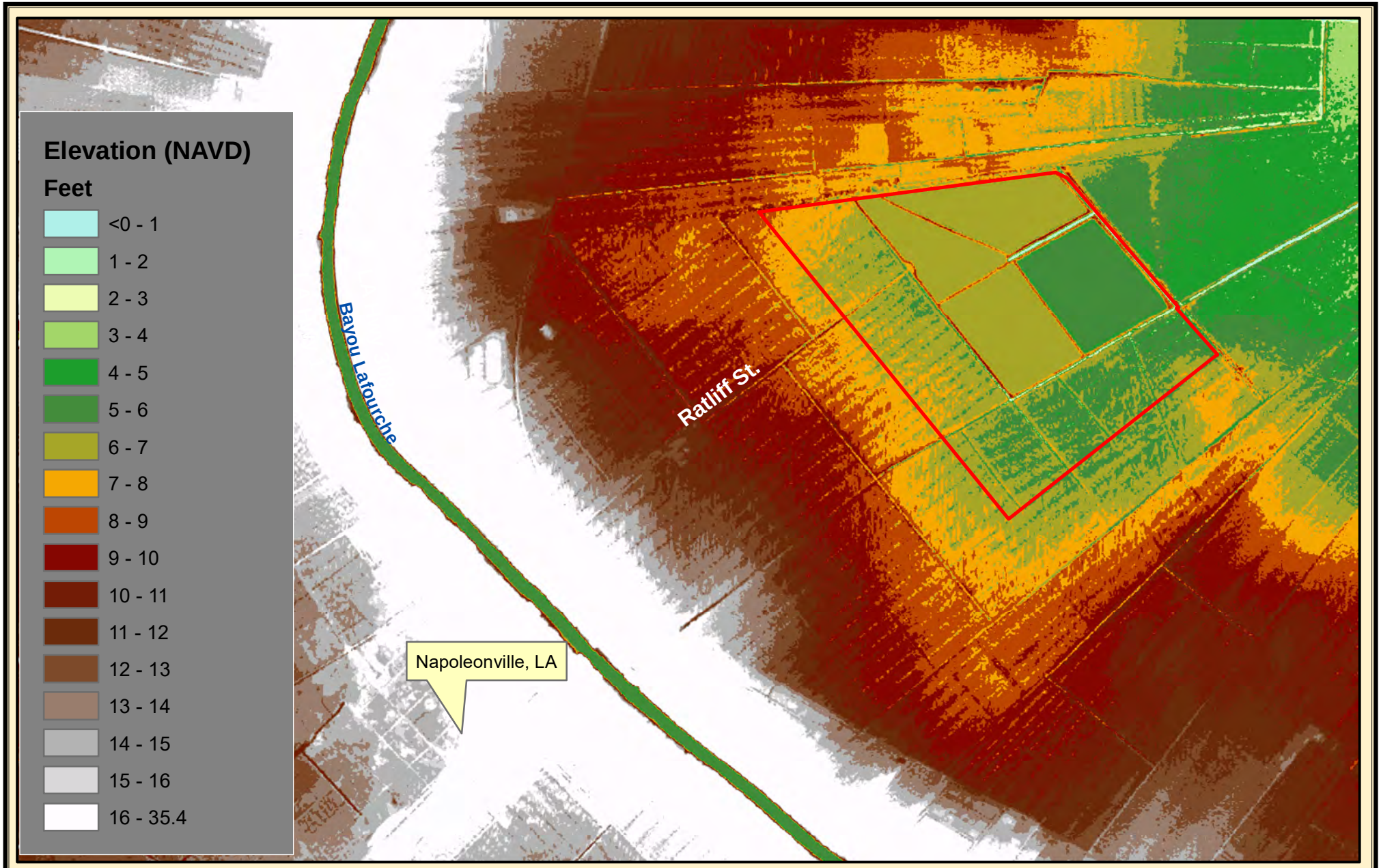

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Ratliff Woodlands Mitigation Bank = 248.2

Ratliff Woodlands Mitigation Bank
Ratliff Woodlands, LLC

Figure 7a: Site Elevation

Assumption Parish, Louisiana

0 650 1,300 1,950 2,600
Feet

N
W E
S

Coordinate System: NAD 1983 StatePlane Louisiana South FIPS 1702 Feet
Projection: Lambert Conformal Conic
Datum: North American 1983
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False Northing: 0.0000
Central Meridian: -91.3333
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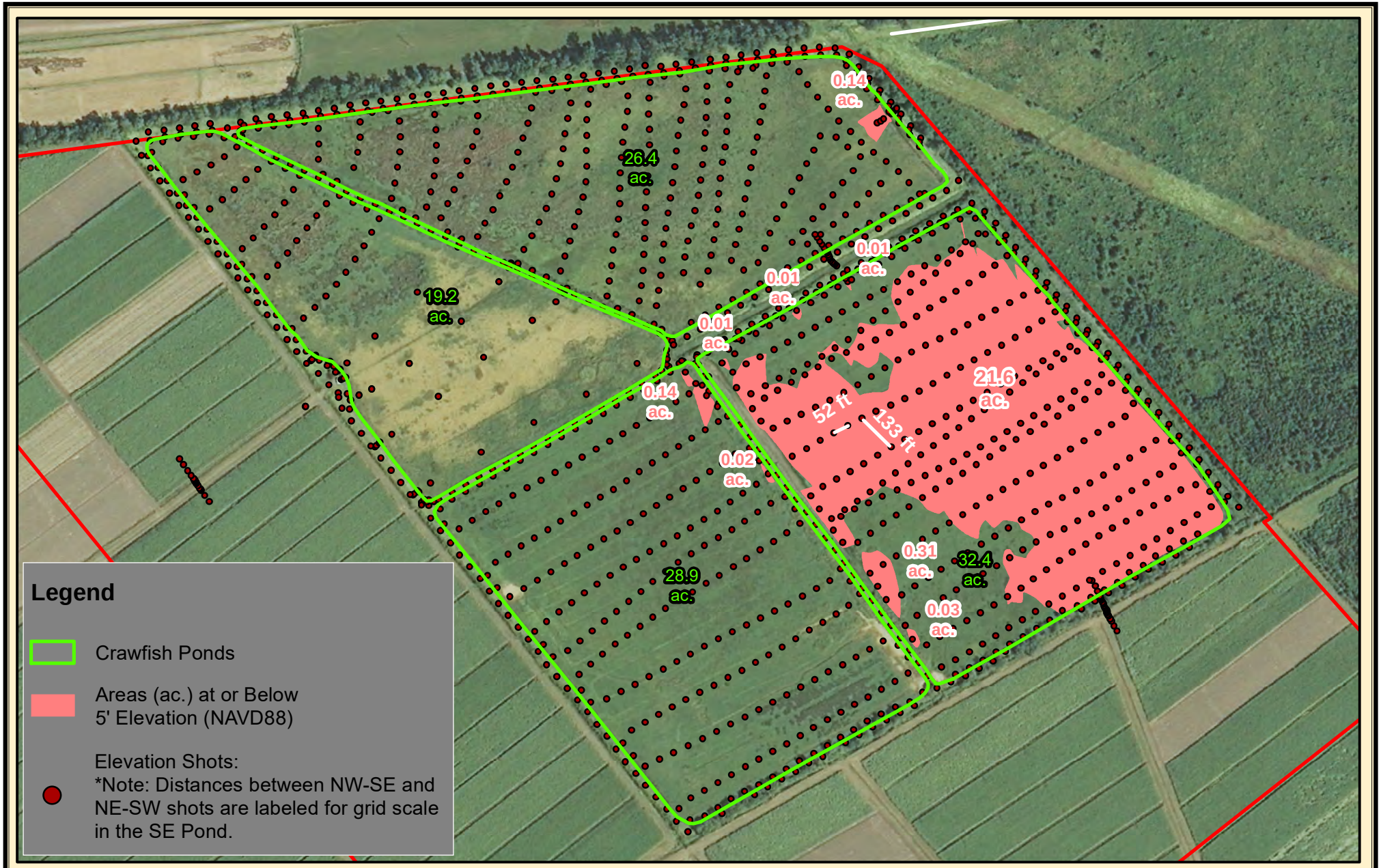
Standard Parallel 2: 30.7000
Latitude Of Origin: 28.5000
Units: Foot US

SEG ENVIRONMENTAL



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Ratliff Woodlands Mitigation Bank = 248.2

Ratliff Woodlands Mitigation Bank
Ratliff Woodlands, LLC

Figure 7b: Pond Elevation Shots

Assumption Parish, Louisiana

0 180 360 540 720 Feet

N W E S

Coordinate System: NAD 1983 StatePlane Louisiana South FIPS 1702 Feet
Projection: Lambert Conformal Conic
Datum: North American 1983
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False Northing: 0.0000
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Units: Foot US

SEG ENVIRONMENTAL

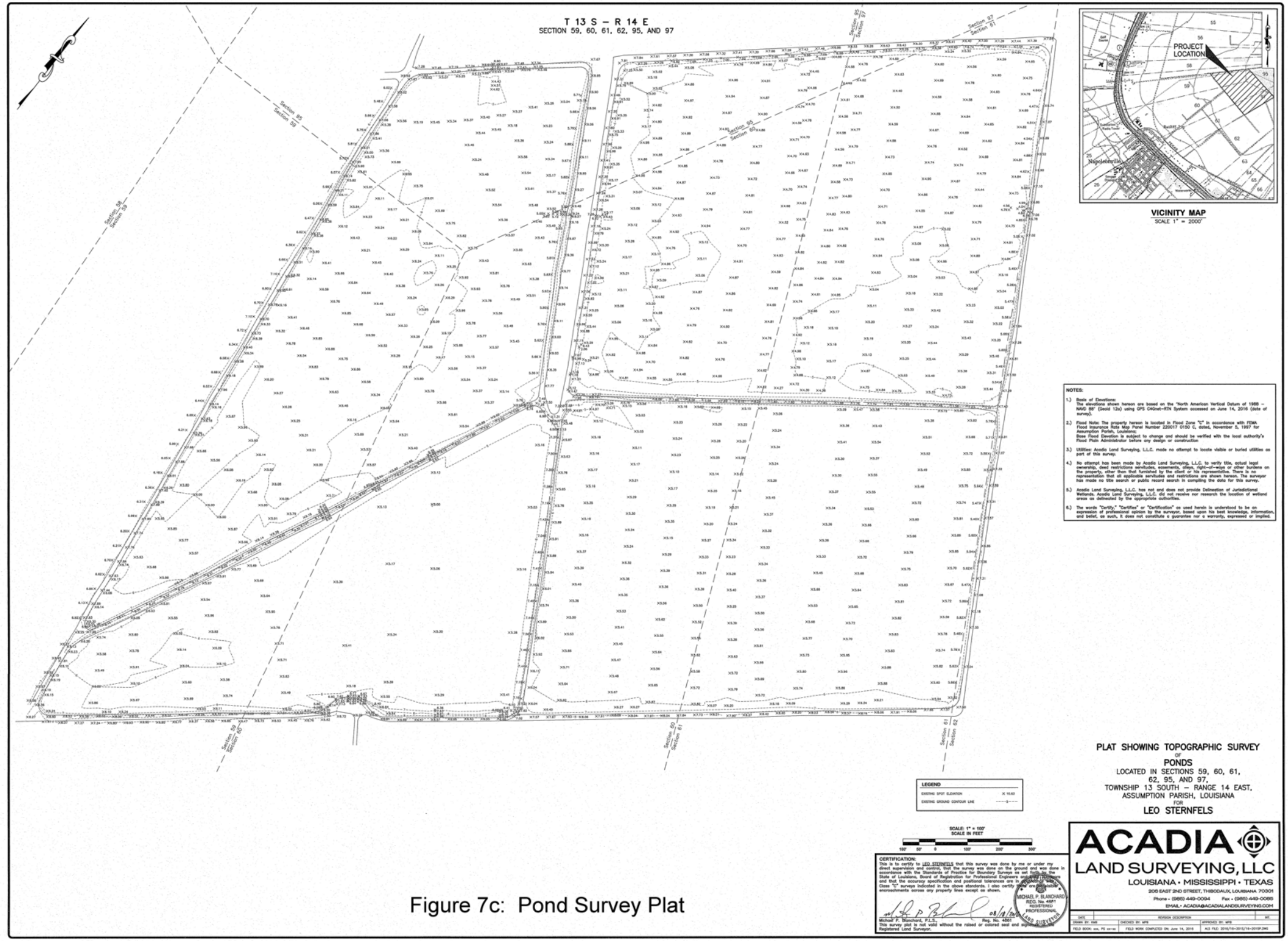
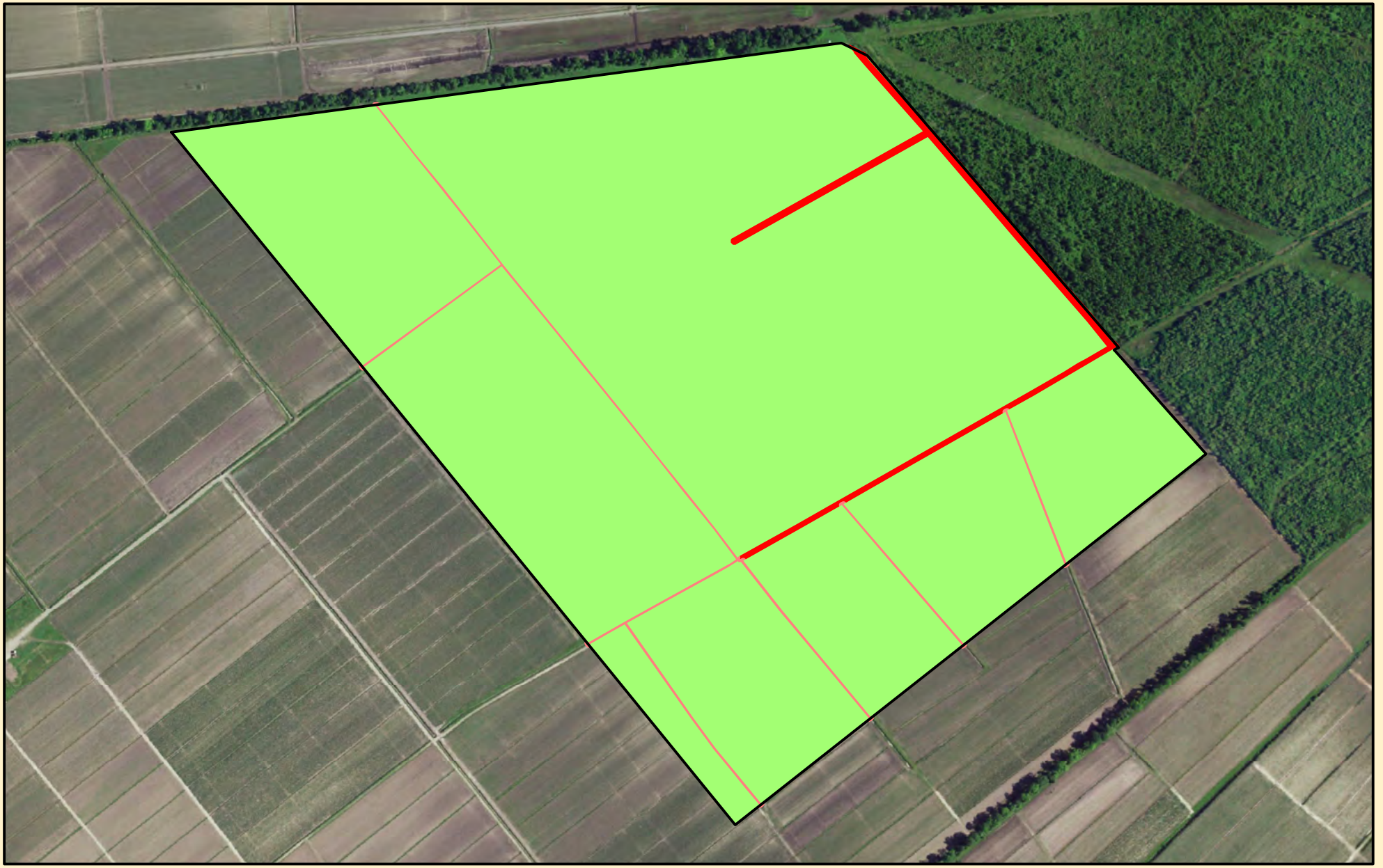


Figure 7c: Pond Survey Plat



Legend

- Re-Establishment Bottomland Hardwoods = 242.1 ac.
- Rehabilitation Bottomland Hardwoods = 2.1 ac.
- Rehabilitation Cypress-Tupelo = 3.9 ac.
- Ratliff Woodlands Mitigation Bank = 248.2 ac.

Ratliff Woodlands Mitigation Bank
Ratliff Woodlands, LLC

Figure 8: Habitat Restoration Plan

Assumption Parish, Louisiana

0 145 290 580 870 1,160
Feet

N
W E
S

Coordinate System: NAD 1983 StatePlane Louisiana South FIPS 1702 Feet
Projection: Lambert Conformal Conic
Datum: North American 1983
False Easting: 3,280,833.3333
False Northing: 0.0000
Central Meridian: -91.3333
Standard Parallel 1: 29.3000
Standard Parallel 2: 30.7000
Latitude Of Origin: 28.5000
Units: Foot US

SEG ENVIRONMENTAL

Document Path: R:\seg-enviro\ratliff-woodlands\Prospectus\MXDs\Figure 7 Habitat Restoration Plan.mxd

Legend

- Texas Brine Pipeline ROW
- Entergy Wireline ROW
- Ratliff Woodlands Mitigation Bank = 248.2 ac.

Ratliff Woodlands Mitigation Bank
Ratliff Woodlands, LLC

Figure 9: Encumbrances

Assumption Parish, Louisiana

0 600 1,200 2,400 Feet

N W E S

Coordinate System: NAD 1983 StatePlane Louisiana South FIPS 1702 Feet
Projection: Lambert Conformal Conic
Datum: North American 1983
False Easting: 3,280,833.3333
False Northing: 0.0000
Central Meridian: -91.3333
Standard Parallel 1: 29.3000
Standard Parallel 2: 30.7000
Latitude Of Origin: 28.5000
Units: Foot US

SEG ENVIRONMENTAL

Document Path: R:\seg-enviro\ratliff-woodlands\Prospectus\MXDs\Figure 8 Encumbrances.mxd

Appendix A

Historical Aerial

May 11, 1952 imagery obtained from http://earthexplorer.usgs.gov/. Image information:

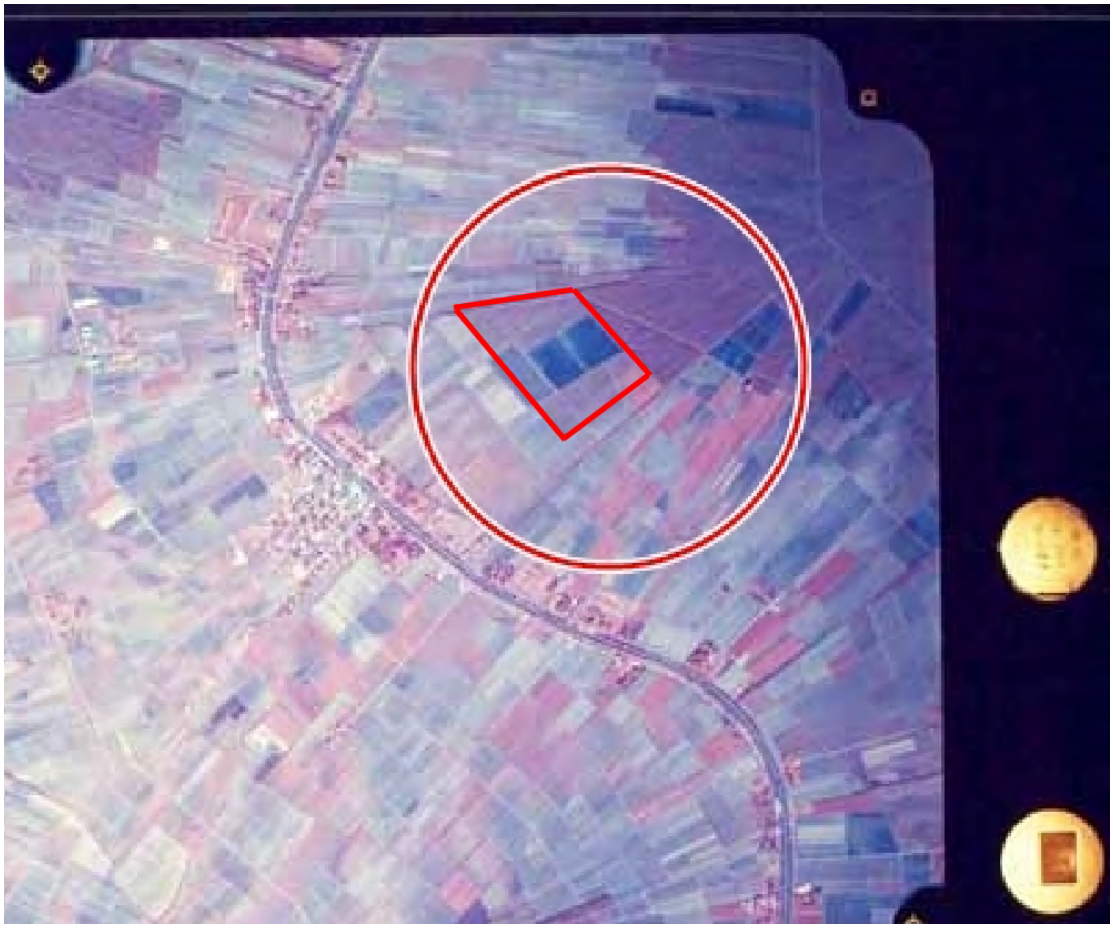
Entity ID: ARA000960233908
Coordinates: 29.93815, -90.97386
Acquisition date: 11-May-52 Scale:
69000

February 6, 1963 imagery obtained from http://earthexplorer.usgs.gov/. Image information:

Entity ID:AR1VAPU00020036
Coordinates:29.954628 , -91.000611
Acquisition Date: 06-FEB-63
Scale: 23000

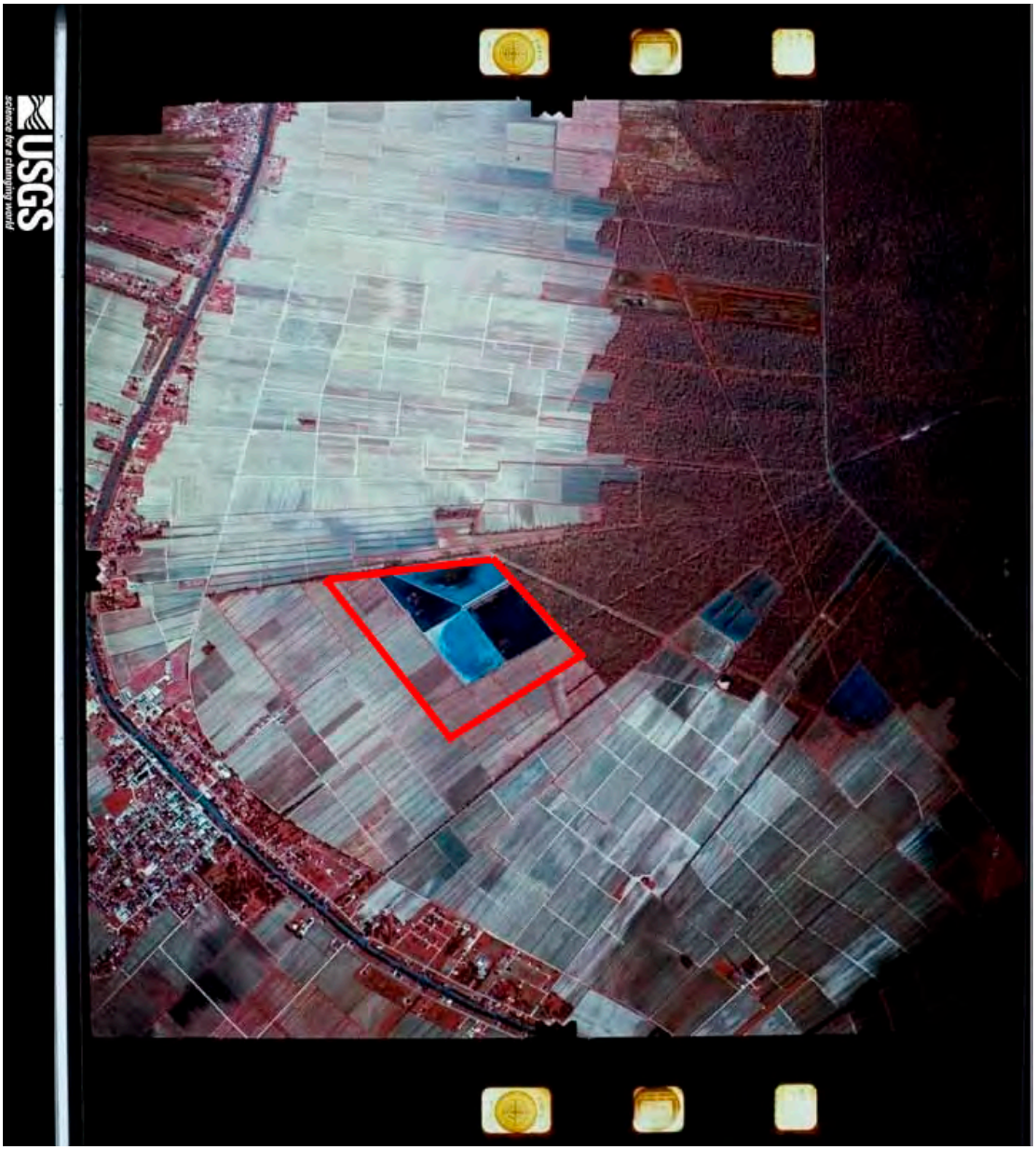
Nov. 15, 1979, imagery obtained from http://earthexplorer.usgs.gov/. Image information:

Entity ID:AR5790028468942
Coordinates:29.990783 , -90.990076
Acquisition Date:15-NOV-79
Scale: 61600



December 14, 1985 imagery obtained from http://earthexplorer.usgs.gov/. Image information:

Entity ID:AR5850035501781
Coordinates:29.918867 , -91.04694
Acquisition Date:14-DEC-85
Scale: 66184



January 27, 1993 imagery obtained from http://earthexplorer.usgs.gov/. Image information:

Entity ID:AR5930045470279
Coordinates:29.952794 , -90.998891
Acquisition Date:27-JAN-93
Scale: 24400

Appendix B

HYDROLOGIC RESTORATION PLAN VIEW

Legend

Ratliff Woodlands Mitigation Bank = 248.2 ac.

Cross Section Profiles

Ratliff Woodlands Mitigation Bank
Ratliff Woodlands, LLC

Figure B-1: Plan View
Hydrologic Restoration Drawings

Assumption Parish, Louisiana

0 340 680 1,020 1,360 Feet

Coordinate System: NAD 1983 StatePlane Louisiana South FIPS 1702 Feet
Projection: Lambert Conformal Conic
Datum: North American 1983
False Easting: 3,280,833.3333
False Northing: 0.0000
Central Meridian: -91.3333
Standard Parallel 1: 29.3000
Standard Parallel 2: 30.7000
Latitude Of Origin: 28.5000
Units: Foot US

Document Path: R:\seg-enviro\ratliff-woodlands\Prospectus\MXDs\Figure B 1 Plan View.mxd

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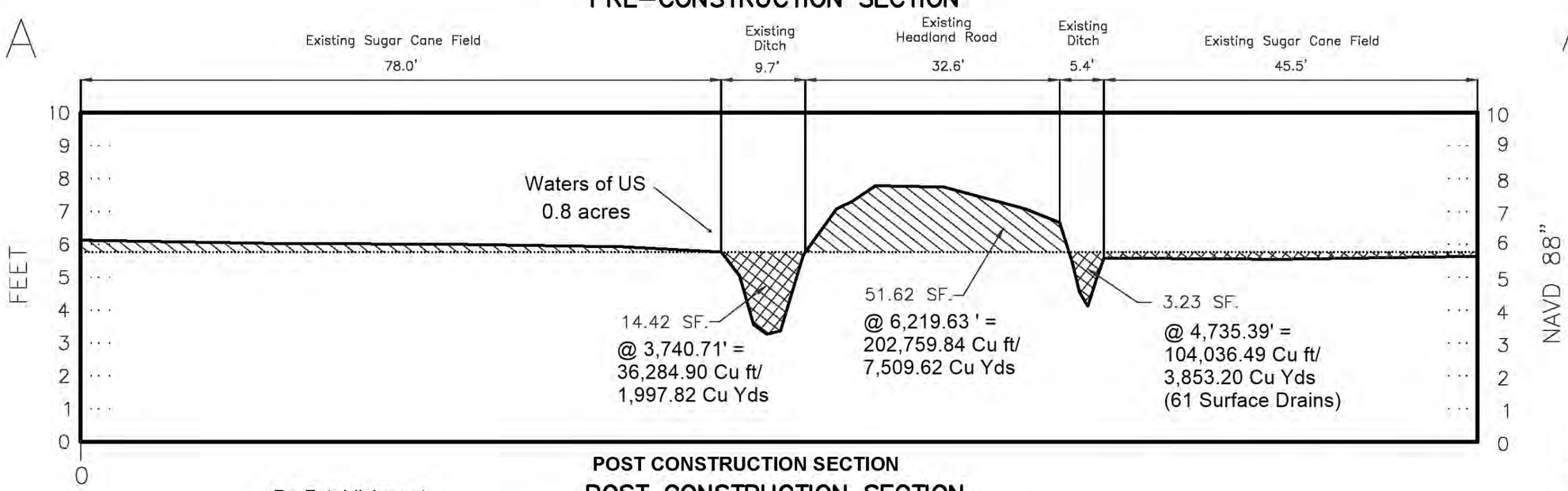
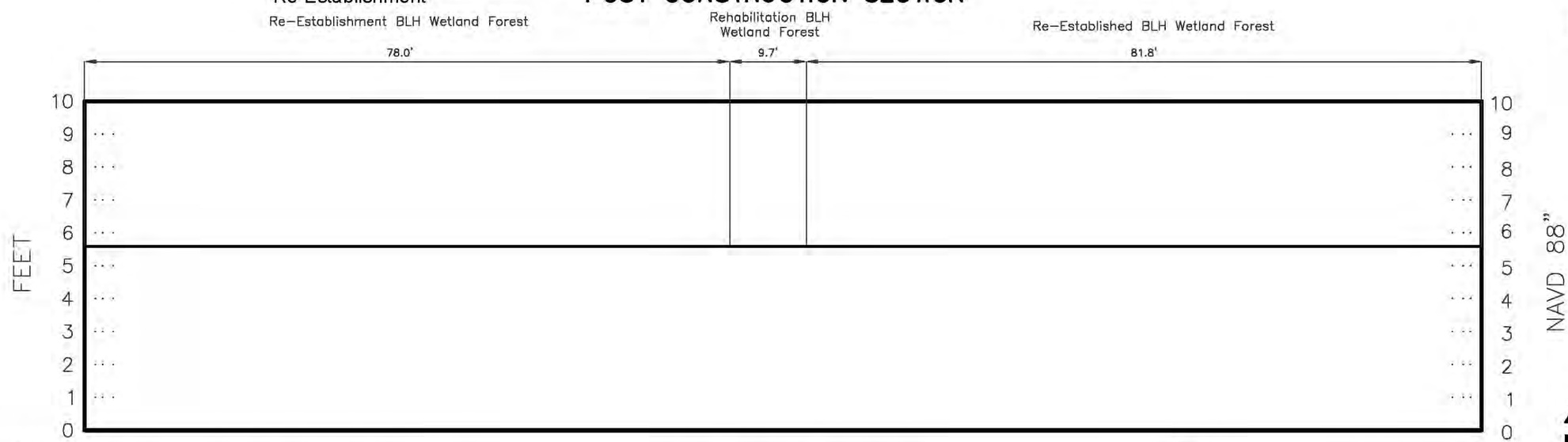


POST CONSTRUCTION SECTION

POST CONSTRUCTION SECTION



PROPOSED CUT

202,759.84 Cu ft/7,509.62 Cu Yds

PROPOSED FILL

140,321.39 Cu ft/5197.09 Cu Yds

Basis of Elevations:
The elevations shown hereon are based on the "North American Vertical Datum of 1988 – NAVD 88" (Geoid 12a) using GPS C4Gnet–RTN System accessed on June 13, 2016.

PROFILES NOT TO SCALE

Figure B-2

ACADIA
LAND SURVEYING, LLC
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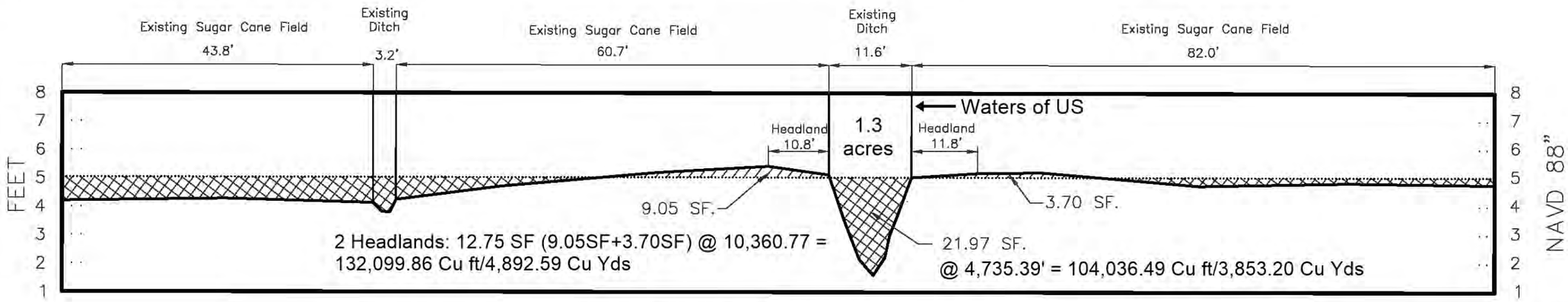
314 EAST BAYOU ROAD, THIBODAUX, LOUISIANA 70301
Phone • (985) 449-0334 Fax • (985) 449-0335
EMAIL: ACADIA@ACADIALANDSURVEYING.COM

ALS FILE: 2015/15–274S/15–274S1(sheet 2).DWG

B

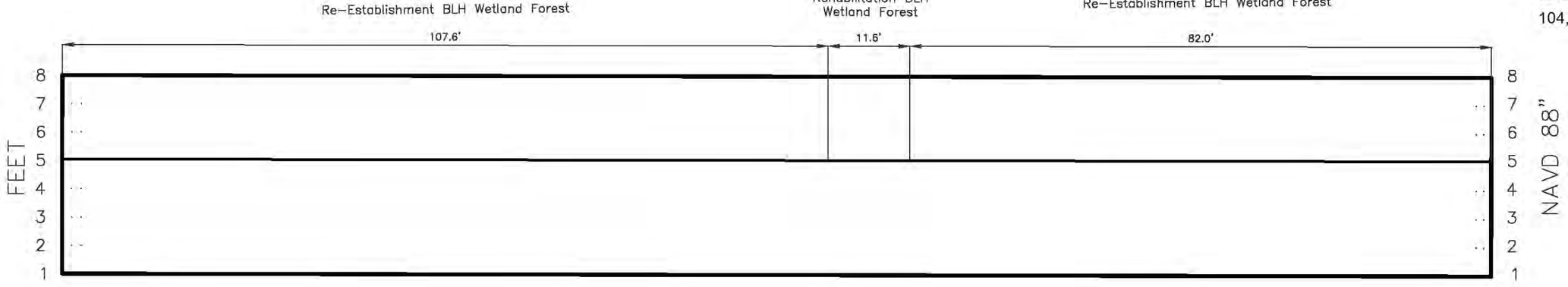
PRE–CONSTRUCTION SECTION

B'



2 Headlands: 12.75 SF (9.05SF+3.70SF) @ 10,360.77 = 132,099.86 Cu ft/4,892.59 Cu Yds

POST CONSTRUCTION SECTION



PROPOSED CUT
132,099.86 Cu ft/4,892.59 Cu Yds

PROPOSED FILL
104,036.49 Cu ft/3,853.20 Cu Yds

Basis of Elevations:
The elevations shown hereon are based on the "North American Vertical Datum of 1988 – NAVD 88" (Geoid 12a) using GPS C4Gnet–RTN System accessed on June 13, 2016.

PROFILES NOT TO SCALE

Figure B-3

ACADIA
LAND SURVEYING, LLC
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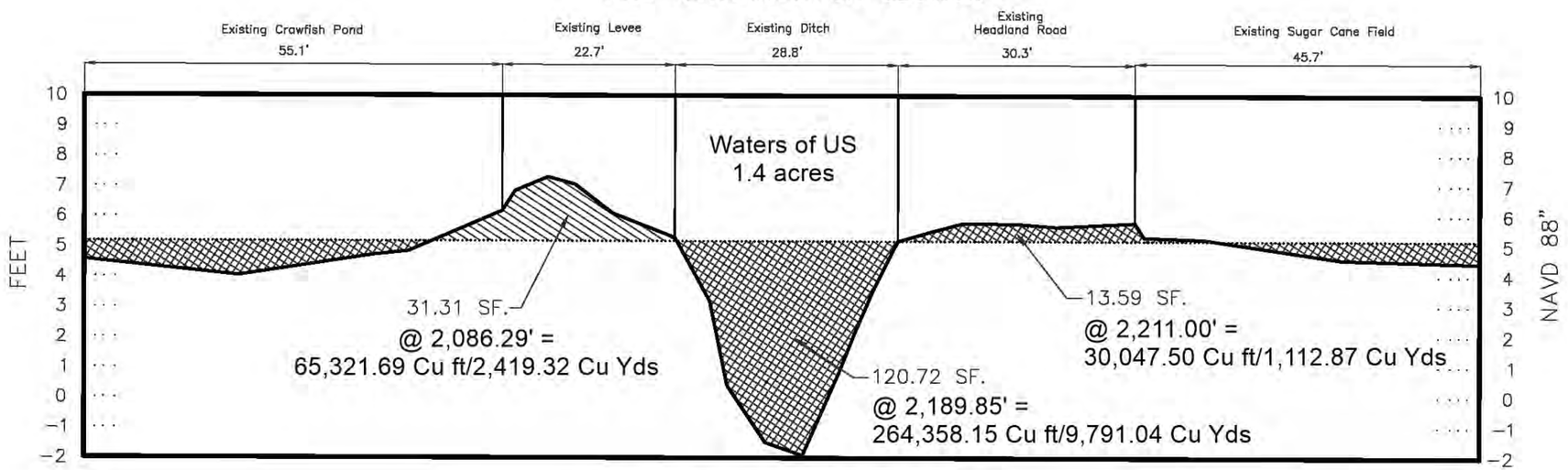
ALS FILE: 2015/15–274S/15–274S1(sheet 3).DWG

C

C'

PRE–CONSTRUCTION SECTION



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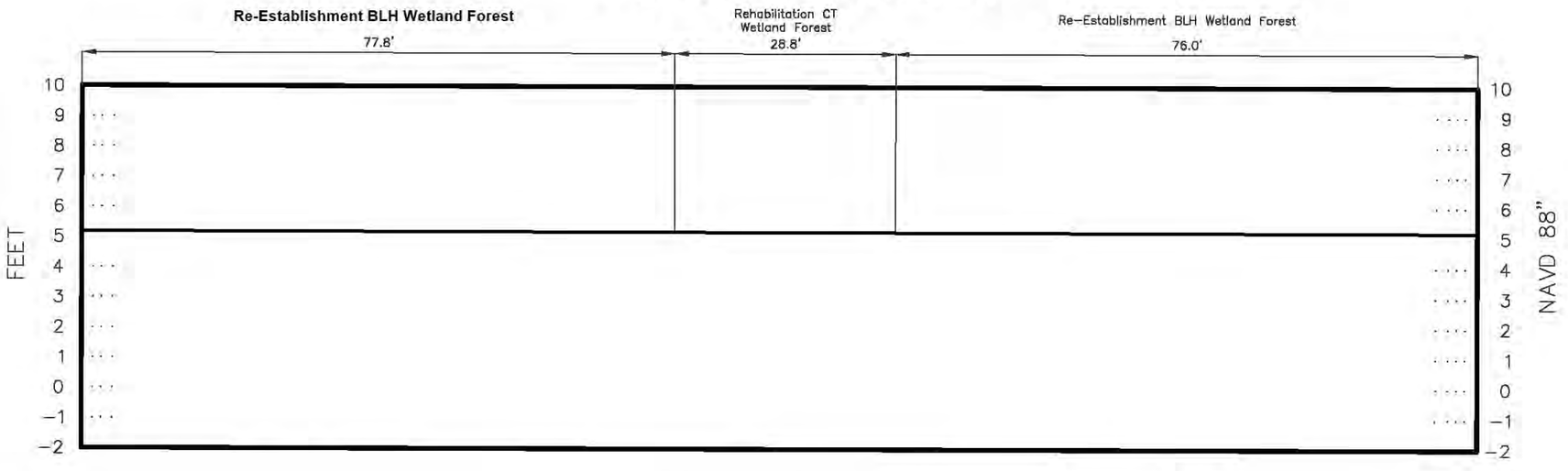

PROPOSED CUT

95,369.19 Cu ft/3,532.19 Cu Yds

PROPOSED FILL

264,358.15 Cu ft/9,791.04 Cu Yds

Basis of Elevations:
The elevations shown hereon are based on the "North American Vertical Datum of 1988 – NAVD 88" (Geoid 12a) using GPS C4Gnet–RTN System accessed on June 13, 2016.

PROFILES NOT TO SCALE

Figure B-4

ACADIA
LAND SURVEYING, LLC
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514 EAST BAYOU ROAD, THIBODAUX, LOUISIANA 70301
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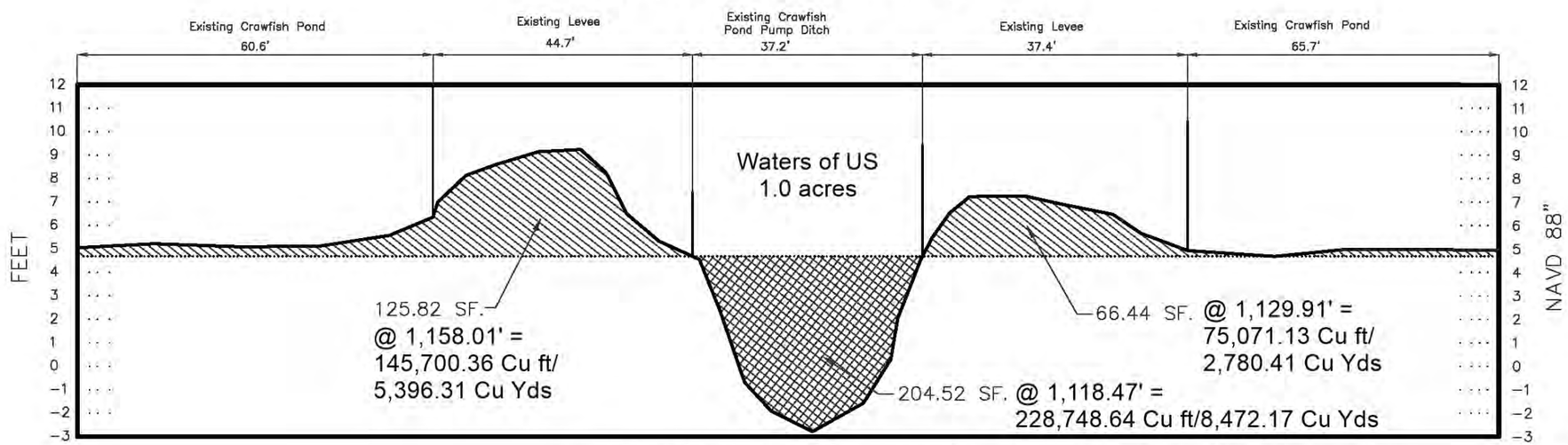
EMAIL: ACADIA@ACADIALANDSURVEYING.COM

ALS FILE: 2015/15–274S/15–274S1(sheet 4).DWG

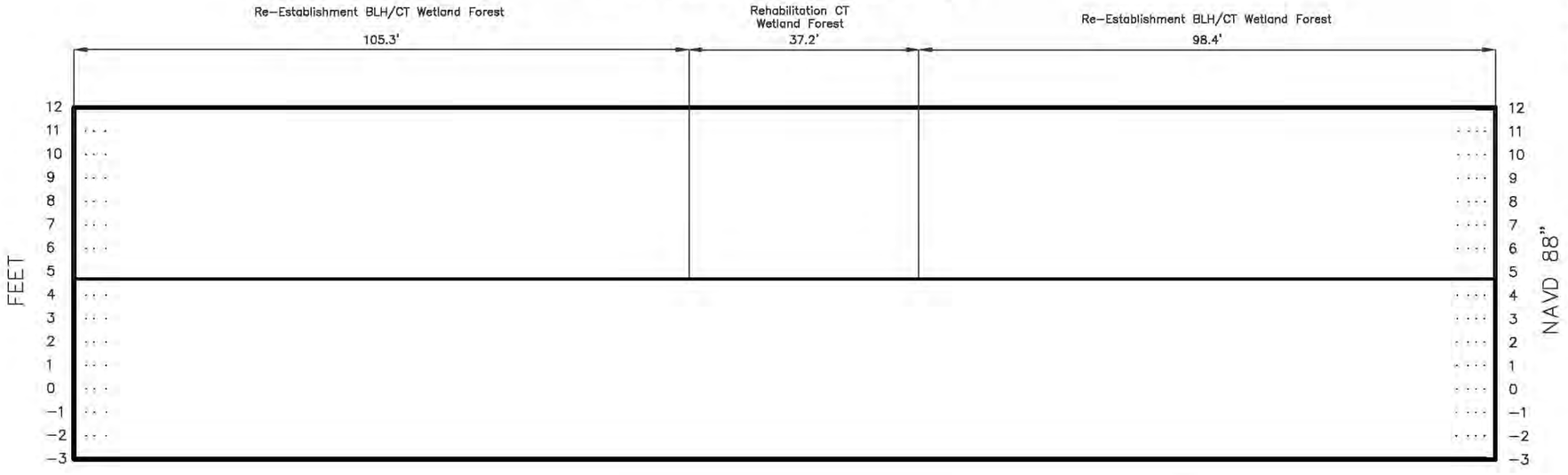
PRE–CONSTRUCTION SECTION

D

D'



POST CONSTRUCTION SECTION



PROPOSED CUT
220,771.49 Cu ft/8,176.72 Cu Yds

PROPOSED FILL
228,748.64 Cu ft/8,472.17 Cu Yds

Basis of Elevations:
The elevations shown hereon are based on the "North American Vertical Datum of 1988 – NAVD 88" (Geoid 12a) using GPS C4Gnet–RTN System accessed on June 13, 2016.

PROFILES NOT TO SCALE

N

Figure B-5

ACADIA
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LOUISIANA • MISSISSIPPI • TEXAS
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Phone • (985) 449-0024 Fax • (985) 449-0025
EMAIL • ACADIA@ACADIALANDSURVEYING.COM

ALS FILE: 2015/15–274S/15–274S1(sheet 5).DWG

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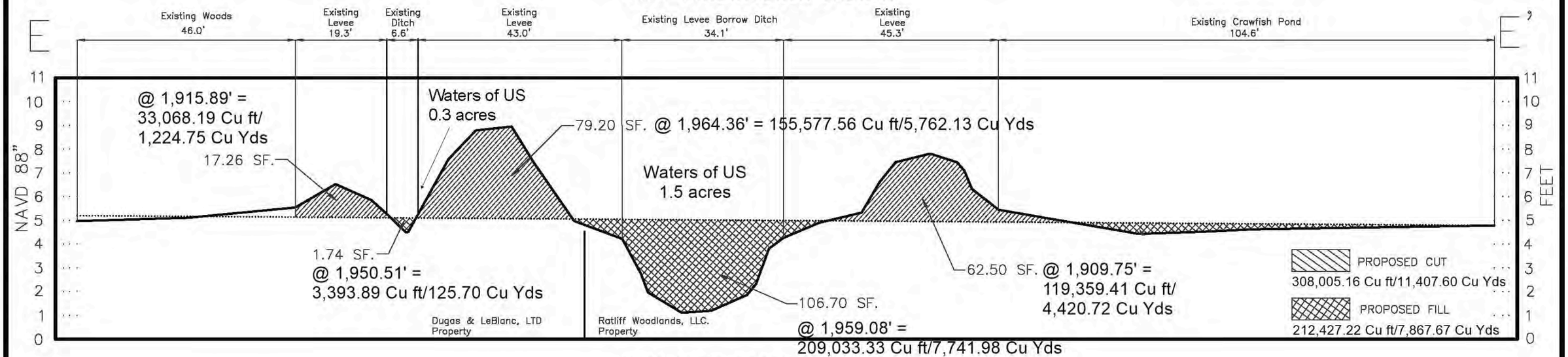

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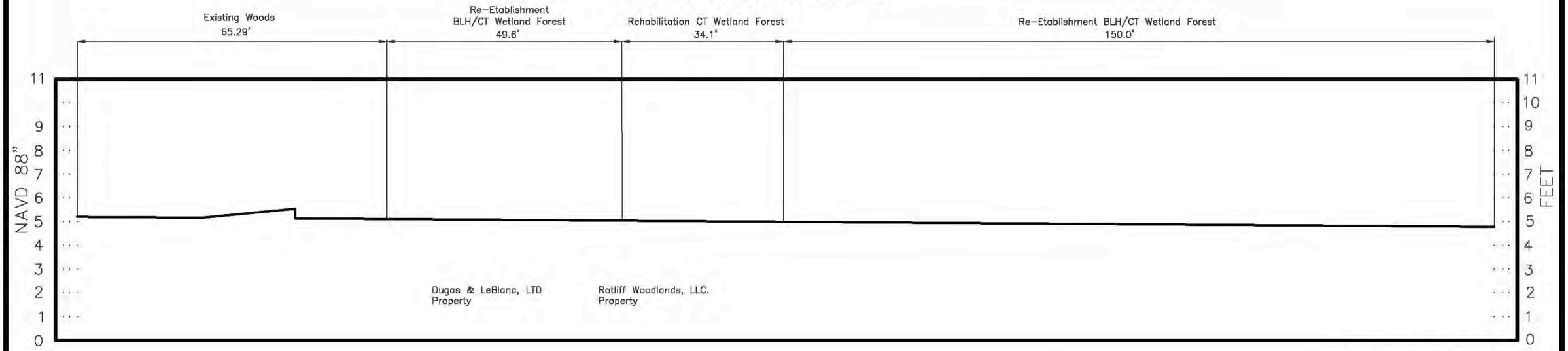

Basis of Elevations:
The elevations shown hereon are based on the "North American Vertical Datum of 1988 – NAVD 88" (Geoid 12a) using GPS C4Gnet–RTN System accessed on June 13, 2016.

PROFILES NOT TO SCALE

Figure B-6

ACADIA
LAND SURVEYING, LLC
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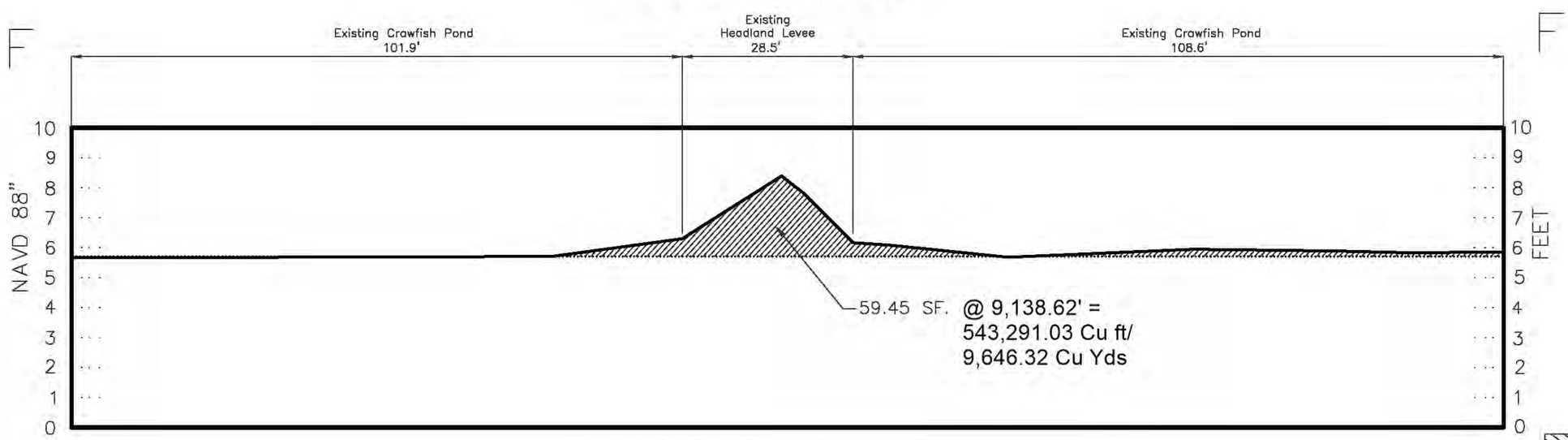
EMAIL • ACADIA@ACADIALANDSURVEYING.COM

ALS FILE: 2015/15–274S/15–274S1(sheet 6).DWG

PRE-CONSTRUCTION SECTION



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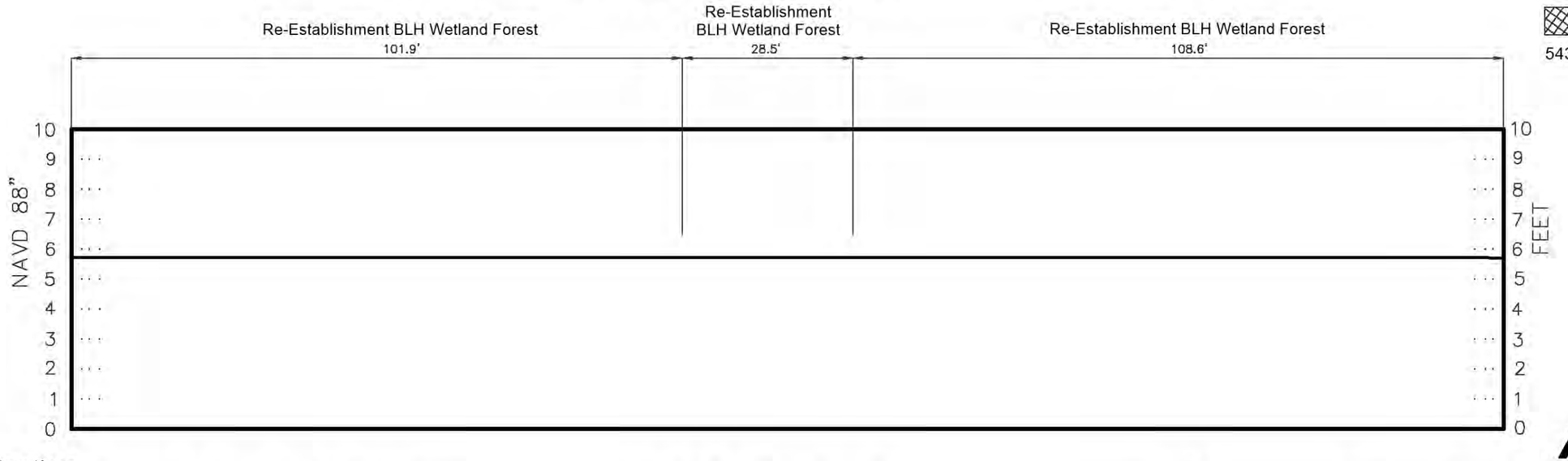


PROPOSED CUT
543,291.03 Cu ft/9,646.32 Cu Yds

PROPOSED FILL
543,291.03 Cu ft/9,646.32 Cu Yds

Basis of Elevations:
The elevations shown hereon are based on the "North American Vertical Datum of 1988 – NAVD 88" (Geoid 12a) using GPS C4Gnet–RTN System accessed on June 13, 2016.

PROFILES NOT TO SCALE

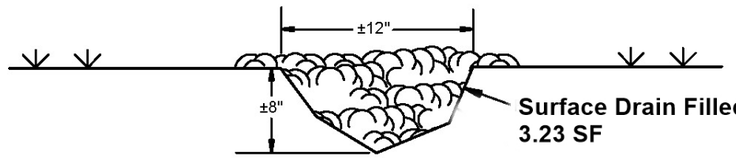
Figure B-7

ACADIA
LAND SURVEYING, LLC
LOUISIANA • MISSISSIPPI • TEXAS
214 EAST BAYOU ROAD, THIBODAUX, LOUISIANA 70301
Phone • (985) 449-0334 Fax • (985) 449-0335
EMAIL • ACADIA@ACADIALANDSURVEYING.COM

ALS FILE: 2015/15-274S/15-274S1(sheet 7).DWG

TYPICAL FIELD SURFACE DRAINS

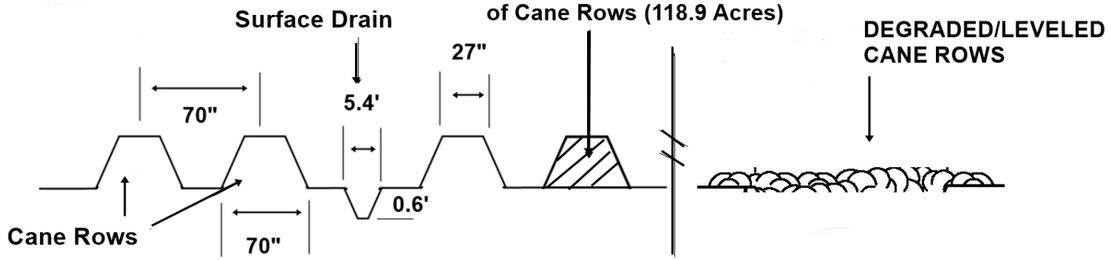
NOT TO SCALE

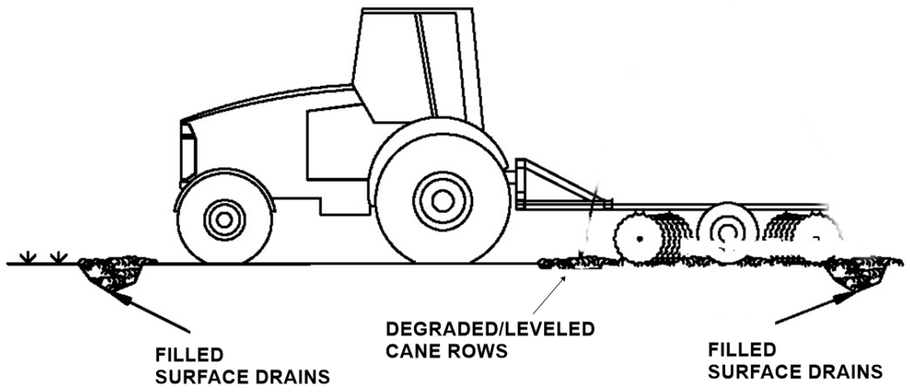


TYPICAL CANE ROWS

NOT TO SCALE

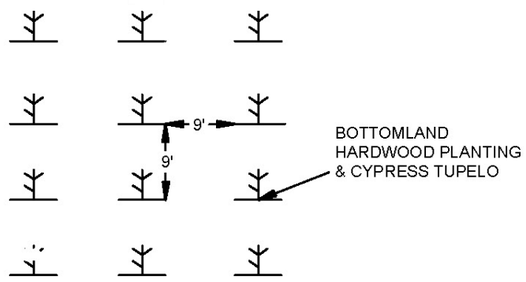
776.0 SF @ 774,861 linear feet' =
DEGRADE 22,270,082.93 CY
of Cane Rows (118.9 Acres)





ALL SITES PLANTED ON TYPICAL 9X9 SPACING

NOT TO SCALE



Total Cut Volume Non Jurisdictional: 45,165.04 CY
Total Fill Volume Jurisdictional: 31,981.90 CY
Total Cut Acreage Non Jurisdictional: 20.50 Acres
Total Fill Acreage Jurisdictional: 6.0 Acres
Total Fill Acreage Non Jurisdictional: 118.9 Acres
Total Fill Acreage: 124.9 Acres

Basis of Elevations:
The elevations shown hereon are based on the "North American Vertical Datum of 1988 – NAVD 88" (Geoid 12a) using GPS C4Gnet–RTN System accessed on June 13, 2016.

PROFILES NOT TO SCALE

Note: Permittee shall contact the Louisiana One Call at 1-800-272-3020 forty-eight hours prior to excavation or demolition.

Figure B-8

ACADIA
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914 EAST BAYOU ROAD, THIBODAUX, LOUISIANA 70301
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EMAIL • ACADIA@ACADIALANDSURVEYING.COM

ALS FILE: 2015/15–274S/15–274S1(sheet 7).DWG

Legend

Drainage Flow

Ratliff Woodlands Mitigation Bank = 248.2

Ratliff Woodlands Mitigation Bank
Ratliff Woodlands, LLC

Figure B-9: New Agriculture Drainage Plan and Bank Access Plan

Assumption Parish, Louisiana

0 360 720 1,080 1,440 Feet

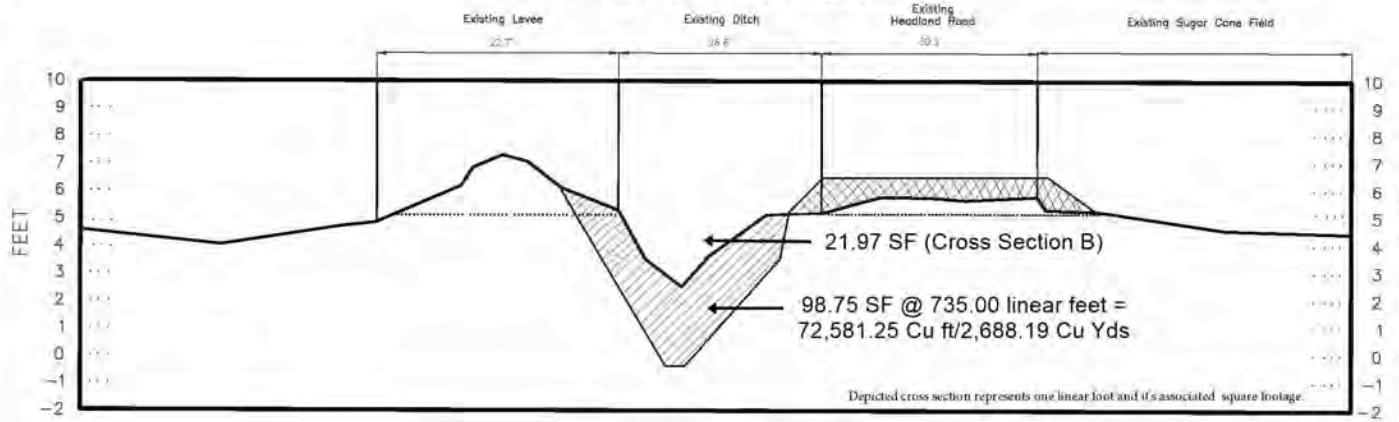
Coordinate System: NAD 1983 StatePlane Louisiana South FIPS 1702 Feet
Projection: Lambert Conformal Conic
Datum: North American 1983
False Easting: 3,280,833.3333
False Northing: 0.0000
Central Meridian: -91.3333
Standard Parallel 1: 29.3000
Standard Parallel 2: 30.7000
Latitude Of Origin: 28.5000
Units: Foot US

Document Path: R:\seg-enviro\ratliff-woodlands\Prospectus\MXDs\Figure_B9_New Agriculture_Drainage_Plan_and_Bank Access.mxd

G

G '

PRE–CONSTRUCTION SECTION



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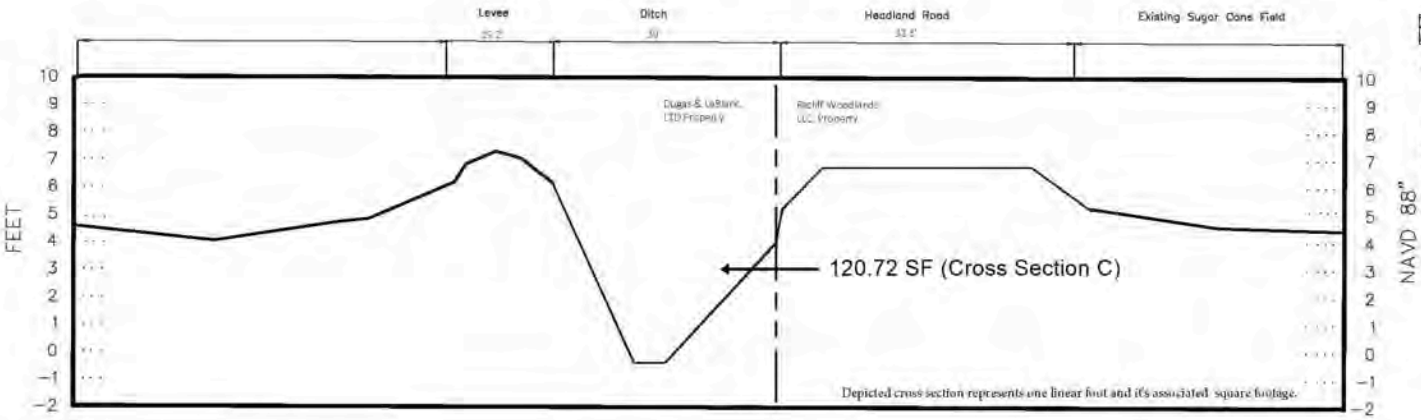


EXISTING 735' LONG DITCH

PROPOSED CUT - EXISTING DITCH ENLARGEMENT

72,581.25 Cu ft/2,688.19 Cu Yds

PROPOSED FILL - EXISTING HEADLAND ENLARGEMENT

72,581.25 Cu ft/2,688.19 Cu Yds

NEW 7,715.93' LONG DITCH

PROPOSED CUT - NEW DITCH

93,1467.07 Cu ft/ 34,498.78 Cu Yds

PROPOSED FILL - NEW HEADLAND

93,1467.07 Cu ft/ 34,498.78 Cu Yds

Basis of Elevations:
The elevations shown hereon are based on the "North American Vertical Datum of 1988 – NAVD 88" (Geoid 12a) using GPS C4Gnet–RTN System accessed on June 13, 2016.

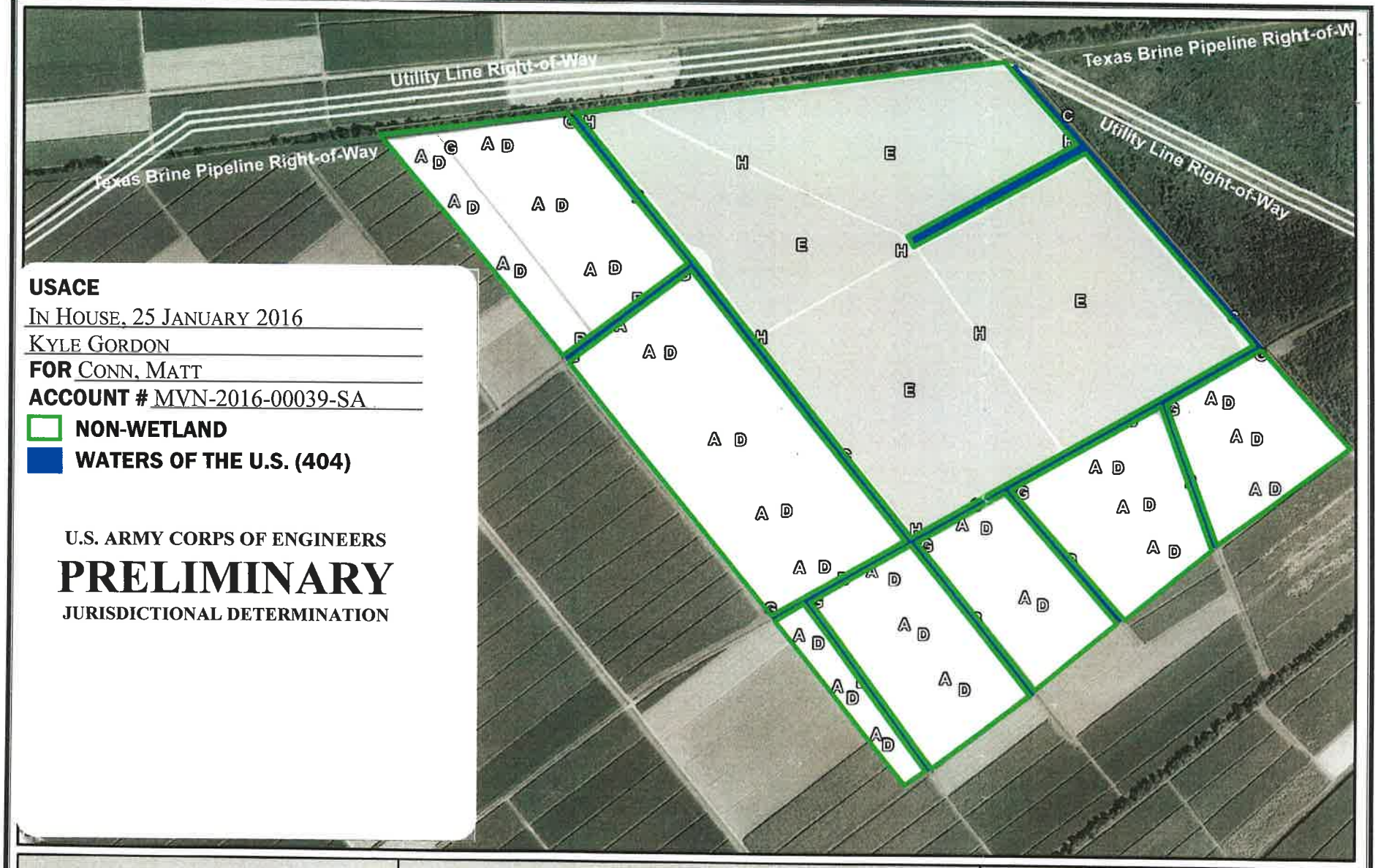
PROFILES NOT TO SCALE

Figure B-10

ALS FILE: 2015/15–274S/15–274S1(sheet 4).DWG

Appendix C

CEMVN JURISDICTIONAL DETERMINATION



Legend

Ratliff Woodlands, LLC
= 255 ac.

Ratliff Woodlands, LLC Property
Appendix C: Land Use Map

0 0.0276.055 0.11 0.165 0.22
Miles

Coordinate System: NAD 1983 StatePlane Louisiana South FIPS 1702 Feet
Projection: Lambert Conformal Conic
Datum: North American 1983
False Easting: 3,280,833.3333
False Northing: 0.0000
Central Meridian: -91.3333
Standard Parallel 1: 29.3000
Standard Parallel 2: 30.7000
Latitude Of Origin: 29.5000
Units: Feet US