DELTA LAND SERVICES

October 19, 2016

US Army Corps of Engineers, Galveston District
Regulatory Branch
2000 Fort Point Dr.
Galveston, Texas 77553
Attn: Mr. Jayson Hudson

Subject: SWG-2015-00628, Prospectus for the Proposed Long Island Cove Mitigation Bank, Liberty County, Texas.

Dear Mr. Hudson:

Delta Land Services, LLC (DLS) is submitting the above-referenced mitigation bank prospectus for the proposed Long Island Cove Mitigation Bank located in Liberty County, Texas. In accordance with 33 CFR § 332.8 (d)(2), DLS is submitting the prospectus for completeness review and subsequent public notice per 33 CFR § 332.8 (d)(4). If you have any questions regarding the prospectus, please feel free to contact me at 225-388-5196 (office), 337-274-1680 (cell) or billy@deltaland-services.com.

Sincerely,

Bill DeLany, PhD, PWS
Senior Ecologist and Restoration Specialist
Delta Land Services, LLC

Enclosure

Long Island Cove Mitigation Bank Prospectus with attachments

U.S. ARMY CORPS OF ENGINEERS
GALVESTON DISTRICT
SWG-2015-00628

LONG ISLAND COVE MITIGATION BANK PROSPECTUS

LIBERTY COUNTY, TEXAS

October 19, 2016

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)[1] to establish and operate the proposed 601.1-acre Long Island Cove Mitigation Bank (Bank). DLS will serve as the Bank Sponsor and will be referred to as the Sponsor throughout this Prospectus. The Bank will restore approximately 513.9 wetland acres, 50.8 acres of forested riparian buffer, 2,661.6 linear feet (lf) of perennial stream, and 3,735.9 lf of intermittent stream for compensatory mitigation of unavoidable, permitted impacts to "Waters of the United States" [2] if determined appropriate per 33 CFR § 332.3 (a) (1) and 33 CFR § 332.3 (b) (1)[3]. Additionally, 36.4 acres of non-mitigation will be located within the Bank and will consist of 27.8 acres of perimeter buffer, 5.2 acres of pipeline rights-of-way (ROW), and 3.4 acres of fire lane / access trails.

2.0 REGIONAL DESCRIPTION AND SITE LOCATION

The Bank is approximately 3.4 miles southeast of Hardin, Texas in Liberty County (Attachment A, Figure 1) and its boundary is shown on the United States Geological Survey (USGS) Quadrangle Map "Daisetta, Texas" (Attachment A, Figure 2). The approximate center point of the Bank is Latitude 30.127434° North and Longitude 94.687562° West[4]. The Bank is within the 16,365-square mile Gulf Coast Prairies Major Land Resource Area (MLRA 150A) of the 92,630-square mile Atlantic and Gulf Coast Lowland Forest and Crop Land Resource Region (LRRT) (Natural Resources Conservation Service [NRCS] 2006). MLRA 150A is characterized by nearly level plains that are dissected by rivers and streams flowing toward the Gulf of Mexico. The Bank lies within the Lower Trinity Cataloguing Unit (Lower Trinity; USGS Hydrologic Unit Code [HUC] 12030203), which is adjacent to the Lower Trinity-Kickapoo Cataloguing Unit (Lower Trinity-Kickapoo; HUC 12030202). The Lower Trinity is located in the Western Gulf Coastal Plain and South Central Plains Level III Ecoregions and the Lower Trinity-Kickapoo is located in the South Central Plains Level III Ecoregion (Omernik 1987, Environmental Protection Agency [EPA] 2003; Attachment A, Figure 3).

Near the Gulf of Mexico coastline, the distinguishing topographic characteristics are relatively flat topography and a prevalence of grassland vegetation. Inland, the plains become more irregular and forests become the predominant vegetative community. Recent urbanization and industrialization are concerns in this region and many acres of native habitat have been converted to cropland, rangeland, and pasture. Abandoned land is immediately colonized by Chinese tallow (*Triadica sebifera*) and transitions to a tallow-scrub-shrub.

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[1] 33 CFR § 332.8 (d) (2) summarizes the information regarding a proposed mitigation bank at a sufficient level of detail to support informed public and IRT comment. Information included (but not limited too) in a prospectus are the objectives, establishment, operation, service area, general need, technical feasibility, ownership, long-term management, sponsor qualifications, ecological suitability, and water rights.

[2] 33 CFR § 328 defines waters of the United States as it applies to the jurisdictional limits of the authority of the Corps of Engineers under the Clean Water Act. Waters of the United States include those waters listed in 33 CFR § 328(a). The lateral limits of jurisdiction in those waters may be divided into three categories (i.e., territorial seas, tidal waters, and non-tidal waters, which are further described in 33 CFR § 328.4 (a), (b), and (c).

[3] 33 CFR § 332.3 (a) (1) and 33 CFR § 332.3 (b) (1) described general compensatory mitigation requirements; resource types and location of compensatory mitigation; and watershed approach.

[4] All geographic coordinates are based on the North American Datum of 1983 (NAD83).

In Liberty County, the summers are hot and humid and the winters are warm and interrupted by cold frontal passages (NRCS 1996). The average summer temperature is 82° F and the average winter temperature is 52° F. The average, annual precipitation is 53.6 inches with approximately 29 inches falling from April through September. The elevation ranges from 20 feet mean sea level (MSL)[5] to 210 feet MSL. Typical Bank surface elevations range from approximately 63 to 69 feet MSL and levee elevations range from 72 to 75 feet MSL (Attachment A, Figure 4). The Bank includes a historic portion of Daisetta Swamp that is mapped as the 100-year flood zone (Flood Zone A; Federal Emergency Management Agency [FEMA] 2008; Attachment A, Figure 5).

2.1 Ownership and Sponsorship

DLS is the Property Owner and will serve as the Bank Sponsor (Sponsor). The Sponsor will oversee construction and establishment of the Bank and will serve as the long-term manager and steward but may appoint a long-term steward pursuant to 33 CFR § 332.7 (u) (2)[6], which is subject to approval by the U.S. Army Corps of Engineers Galveston District (CESWG). The anticipated long-term management will consist of activities such as monitoring, invasive species control, controlled burning, and boundary maintenance / protection. As a conservation area, the Bank will be protected by a perpetual conservation easement described in Section 7.4.

2.2 Driving Directions to the Site

From the U.S. Interstate 10 / U.S. Hwy 90 interchange in Beaumont, Texas, proceed west on U.S. Hwy 90 for approximately 46.9 miles then turn right onto TX-146. Travel north for approximately 4.8 miles and turn right onto Farm to Market Road 2830 to Latitude 30.113446° Longitude 94.716629°, then continue approximately 2.21 miles on an unimproved farm road to the entry point of the Bank.

3.0 PROJECT GOALS AND OBJECTIVES

The goal is to restore[7] (re-establishment[8] or rehabilitate[9]) palustrine forest (PFO), palustrine emergent (PEM), palustrine scrub-shrub (PSS), palustrine riparian buffer (riparian buffer), and stream channel (stream) within the Lower Trinity Cataloguing Unit (Attachment A, Figure 6; Attachment B, Table 1).

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[5] All vertical elevations are based upon the North American Vertical Datum of 1988 (NAVD).

[6] Transfer of long-term stewardship is defined in 33 CFR § 332.7 (u) (2) as *the instrument may contain provisions for the sponsor to transfer long-term management responsibilities to a land stewardship entity, such as a public agency, non-governmental organization, or private land manager.*

[7] Restore 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.*

[8] 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.*

[9] Rehabilitate 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.*

The restoration of PFO, PEM, PSS, riparian buffer, and stream will provide additional wetland functions[10] and values not currently realized under the existing conditions and land use such as flood storage, water quality amelioration, native / migratory species habitat, threatened / endangered species[11] habitat, outdoor recreation, etc.

Wetland and stream restoration will improve localized and downstream water quality by retiring the land from existing and future agricultural uses (i.e., crop and livestock production), increasing surface-water retention, and natural surface water flow. In addition, habitat will improve for native and migratory wildlife via afforestation[12], herbaceous cover maintenance, invasive species control, and stream restoration.

Specifically, the project objectives are to restore and protect the physical, chemical, and biological functions of a wetland landscape that includes PFO, PEM, PSS, stream habitats, and riparian buffer:

- restore historic and self-sustaining surface hydrology (e.g., levee removal, backfilling artificial drainages, and restoring natural stream drainages);
- restore the historic, hydrologic connection to the 100-year flood plain by degrading approximately 26,241 lf of earthen levee consisting of 136,323 cubic yards of levee bank / spoil;
- restore 243.6 acres of native PFO through site preparation and afforestation with native forest species;
- restore 231.4 acres of native PEM through site preparation, natural herbaceous regeneration, and prescribed fire for habitat maintenance;
- restore 38.9 acres of native PSS through site preparation, natural herbaceous regeneration, and prescribed fire for habitat maintenance;
- restore 2,661.6 lf of perennial stream through natural stream design, stream construction, and riparian buffer restoration;
- restore 3,735.9 lf of intermittent stream through natural stream design, stream construction, and riparian buffer restoration;
- ensure long-term viability and sustainability by implementing specific management strategies such as
    - active and adaptive management;
    - establishment of financial assurances (i.e., construction, establishment) and long-term funding mechanisms;
    - initial, intermediate, and long-term monitoring, maintenance, and invasive species control; and

[10] Wetland function is defined in 33 CFR § 332 as *the physical (i.e., water storage [USGS 1997]), chemical (i.e., nutrient transformation [USGS 1997]), and biological processes (i.e., organic matter production [USGS 1997]) that occur in ecosystems.*

[11] Texas Parks and Wildlife Department (TPWD) *Annotated County Lists of Rare Species.* Revised February 7, 2016. Available URL accessed February 26, 2016. http://tpwd.texas.gov/gis/rtest/

[12] The SAF (2012) defines afforestation (afforest) 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 for regeneration]*.

- provide for the long-term protection through the execution of a perpetual-term conservation easement and establishment of a long-term fund to cover annual expenditures associated with maintenance and management of the Bank.

4.0 ECOLOGICAL SUITABILITY OF THE SITE

4.1 Historical Ecological Characteristics

Daisetta Swamp was a grassland swamp impacted in the mid 1900's by the construction of levees and drainage ways (personal communications, Charles D. Stutzenbaker, Texas Parks and Wildlife Department Retired Wildlife Biologist). Prior to development, Daisetta Swamp and the surrounding land was a mix of forested and herbaceous wetlands. These habitats appear to have been maintained by a combination of fire and sustained higher water levels. Hydrologically, the primary sources of surface water were precipitation, runoff, stream flooding, back flooding, microrelief ponding (gilgai[13]; if present), and seasonally-perched water tables caused by the predominance of clay soils (NRCS 1996). The 1943 United States Geological Survey Quadrangle Map[14] (USGS Quad) indicates the Bank was forested habitat (Attachment A, Figure 7). The 1955 and 1957 USGS Quads show the Bank as forested, open ground, or marshy-swamp (Attachment A, Figures 8 and 9). The 1938 aerial imagery shows the Bank as potentially forested and herbaceous wetlands (Attachment A, Figure 10). A review of historical aerial imagery from 1952 to 1988 indicates agricultural development (e.g. rice cultivation [*Oryza* spp.][15] and off-channel reservoirs (reservoirs) for impounding irrigation water) (Attachment A, Figures 11 through 16). The 2010 aerial photograph shows abandonment and transition to scrub-shrub-forested habitat (Attachment A, Figure 17).

In recent history, the Bank habitats have become tallow-PFO, tallow-PEM, tallow-PSS, and an agriculture reservoir with emergent, floating, and submerged vegetation (Attachment C, Site Photographs). By 1972, it appears that the forest canopy in the northeast quadrant of the Bank area was partially removed (Attachment A, Figure 14). By 1988, the forest canopy in the northeast quadrant appears to have closed and tallow-scrub-shrub habitat was developing in the southern reservoir (Attachment A, Figure 16). With the cessation of farm activities after 1988, farm and / or pasture land became fallow and was colonized by tallow (Attachment A, Figures 16 and 17).

[13] The NRCS (1996) defines gilgai as *a succession of microbasins and microknolls in nearly level areas or of microvalleys and microridges parallel with the slope. Typically, this is the microrelief of clayey soils that shrink and swell considerably with changes in moisture content.*

[14] U.S. Corps of Engineers [USACOE] (1922) *Texas, Liberty Quadrangle, Grid Zone D*. Edgar Jadwin, Colonel, Eight Corps Area. Special Publication no. 59 (original located at the Center for American History, University of Texas at Austin).

[15] The aforementioned and all subsequent plant scientific nomenclature is from Lichvar et al. (2014) and NRCS (2015[a]).

4.2 Current Ecological Characteristics

4.2.1 Soils

The Project Area soil types are Beaumont clay (BeaA), Bevil clay (BevA), and Viterbo silty clay loam (VirA), (Attachment A, Figure 18 and Attachment B, Table 2). The entire Bank area is mapped as potentially having hydric components (NRCS 2015[b] and 2015[c]). Of the 47 data points sampled, all contained hydric soil indicators regardless of the map unit in which they were located. Common soil indicators included: Depleted Matrix (F3), Depleted Below Dark Surface (A11), and Hydrogen Sulfide (A4).

4.2.2 Vegetation

The northeast corner tallow-scrub-shrub-PFO is dominated by tallow in all three canopy levels with few scattered hardwood species (Attachment B, Table 3). Observed tree species were tallow, green ash (*Fraxinus pennsylvanica*), bottomland post oak (*Quercus similis*), laurel oak (*Quercus laurifolia*), overcup oak (*Quercus lyrata*), water oak (*Quercus nigra*), willow oak (*Quercus phellos*), water hickory (*Carya aquatica*), sweetgum (*Liquidambar styraciflua*), American elm (*Ulmus americana*), and water elm (*Planera aquatica*). Tallow is dominant to the extent that monoculture stands are prevalent. The sapling-shrub and herbaceous layers are crowded with tallow saplings and seedlings with few stems of buttonbush (*Cephalanthus occidentalis*), eastern baccharis (*Baccharis halimifolia*), and sawtooth blackberry (*Rubus argutus*). Herbaceous species included savannah panicgrass (*Phanopyrum gymnocarpon*), lizard's tail (*Saururus cernuus*), Virginia water horehound (*Lycopus virginicus*), and American water-willow (*Justicia americana*).

The northwest corner (north reservoir) is vegetated with woody species along the reservoir edge and scattered clumps of emergent vegetation, submergent vegetation, and floating species within the reservoir. Observed woody species were tallow, black willow (*Salix nigra*), poisonbean, (*Sesbania drummondii*), sugarberry (*Celtis laevigata*), and wax myrtle (*Morella cerifera*). Emergent herbaceous species occur along the edges of the reservoir with a few scattered colonies within the reservoir. Observed emergent species were cattail (*Typha latifolia*), softrush (*Juncus effusus*), swamp smartweed (*Persicaria hydropiperoides*), curlytop smartweed (*Polygonum lapathifolium*), arrowhead (*Sagittaria lancifolia*), seedbox (*Ludwigia* spp.), and alligatorweed (*Alternanthera philoxeroides*). Observed rooted-floating aquatics were American lotus (*Nelumbo lutea*), white waterlily (*Nymphaea odorata*), watershield (*Brasenia schreberi*), water hyacinth (*Eichhornia crassipes*), duckweed (*Lemna aequinoctialis*), bladderwort (*Utricularia gibba*), and pondweed (*Potamogeton* spp.). Submerged aquatic species were coontail (*Ceratophyllum demersum*) and Carolina fanwort (*Cabomba caroliniana*).

The southern portion (south reservoir) is dominated by tallow and a tallow-PEM-PSS wetland. Dense community stands of tallow, eastern baccharis, and sawtooth blackberry inhabit the south reservoir. Observed herbaceous species were softrush, swamp smartweed, sand spikerush (*Eleocharis montevidensis*), maiden cane (*Panicum hemitomon*), flatsedges (*Cyperus* spp.), beaked sedges (*Rhynchospora* spp.), Virginia buttonweed (*Diodia virginiana*), marsh elder (*Iva frutescens*), and sawtooth blackberry. Other observed tree and shrub species were green ash, black willow, buttonbush, common persimmon (*Diospyros virginiana*), and red maple (*Acer rubrum*).

Levees are present around the perimeter of the north and south reservoirs. Observed grass species were Bermuda grass (*Cynodon dactylon*), dallisgrass (*Paspalum dilatatum*), Vasey's grass (*Paspalum urvillei*), common carpetgrass (*Axonopus fissifolius*), brownseed paspalum (*Paspalum plicatulum*), and Virginia wild rye (*Elymus virginicus*). Common forb species were southern dewberry (*Rubus trivialis*), ragweed (*Ambrosia spp.*), sumpweed (*Iva* spp.), and poison ivy (*Toxicodendron radicans*).

4.2.3 Hydrology

The Bank is saturated or inundated for periods of time sufficient to support facultative wet and obligate species/plant communities (NRCS 2015[a]). Of the 47 data points collected for the wetland delineation report and subsequent Approved Jurisdictional Determination (AJD), 43 data points contained wetland hydrology indicators. The most common primary indicators were surface water (A1), high water table (A2), saturation (A3), water marks (B1), water stained leaves (B9), and Oxidized Rhizospheres (C3), while common secondary indicators were Crawfish Burrows (C8) and the FAC-Neutral Test (D5). The remaining non-wetland data points were located on containment levees.

Water flows into the Bank from two channelized sources: 1) a maintained drainage ditch flows directly into the west boundary, through the Bank, and into Daisetta Swamp (Attachment A, Figure 21); and 2) current NHD flowline for Long Island Creek flows through the Bank and into Daisetta Swamp (Attachment A, Figure 21). Two off-channel agriculture reservoirs significantly influence the flow of water across the Bank. Currently, the north reservoir does not have any surface water inputs and water levels are maintained by rainfall. The levee of the southern reservoir is breached and it does not hold water. Both reservoirs are a major hindrance to surface water flow.

4.2.4 Jurisdictional Wetland Status

The mitigation features map (Attachment A, Figure 6) is based on the AJD dated May 17, 2016 (Attachment E; SWG-2015-00628). The AJD delineated an area slightly larger than the proposed Bank area, which the AJD encompassed 616.3 acres of Waters of the United States (WOUS) and 21.9 acres of uplands / non-aquatic resources. The WOUS is composed of 118.6 acres of open water and 497.7 acres of adjacent wetlands. The Bank includes a portion of Daisetta Swamp 100-year floodplain as mapped by FEMA and as palustrine and lacustrine habitat as mapped by the U.S. Fish and Wildlife Service National Wetland Inventory (Attachment A, Figure 5).

4.3 General Need

The Bank will restore native PFO, PSS, PEM, natural stream channel, and riparian habitats on land impacted by the development for farming, livestock, off-channel reservoirs, surface drainage, and stream channelization. These restoration efforts will provide a natural flow of water into the restored portion of Daisetta Swamp within the Bank and the portion of Daisetta Swamp receiving water from the Bank. In regards to permitted wetland impacts, the Bank will provide wetland mitigation credit to compensate for permitted losses of Waters of the U.S. (i.e., PFO, PSS, PEM, and stream). Many of these impacts will result from the construction of oil and gas transmission pipelines (Interstate Natural Gas Association of America; INGAA 2014) within the watersheds of

the Primary and Secondary Service Areas described in Section 6.1. The proposed service area encompasses a major east-west energy transportation corridor paralleling Interstate 10 Highway corridor and its associated development.

Future oil and gas transmission lines will service various fossil fuel processing facilities within this region. It is estimated that between 2014 and 2035, natural gas pipeline capacity will increase from 4.8 billion cubic feet per day (cf/d) to 10.2 billion cf/d in the Southwest Region (Arkansas, Louisiana, New Mexico, Oklahoma, and Texas; INGAA 2014). The establishment of transmission lines and processing facilities will likely be complimented by localized development activities such as industrial, residential, retail, and public works that may require wetland mitigation. The Bank will offset the cumulative effect of spatially fragmented impacts and consolidate the mitigation into a single, strategic location within the service area. The following parameters were considered in the selecting the site for wetland restoration.

- Location – the site is ideal for wetland and stream restoration due to the on-site presence of jurisdictional wetlands and WOUS.
- Mitigation need - the increasing requests for PFO, PSS, PEM, and stream mitigation within the primary and secondary service areas.
- Mitigation availability - the limited availability of PFO, PSS, PEM, and stream mitigation credits within the primary and secondary service areas.
- Landscape positioning - the relative low elevation of the site, the aspect of Long Island Creek in the Bank, and the inclusion of a portion of Daisetta Swamp.
- Hydric soils - the documented presence of hydric soils.
- Historic evidence - the historical presence of PFO, PSS, PEM, and streams as evidenced by historical topographic maps and aerial photography.
- Compatibility - the surrounding land uses consist of pasture, conservation (Wetland Reserve Program; WRP), and forest lands.
- Trinity River conservation efforts - the need to support the goals and objectives of the Trinity River Basin Master Plan (2012) and the Trinity River Initiative (Texas A&M AgriLife 2014) such as conserving water, land, and soil resources, reducing flood damage, improving the water quality, and the recovering critical wildlife habitats.

4.4 Wildlife and Habitat Values

The Bank will provide additional corridor habitat within the Trinity River Basin. Corridor restoration and conservation will facilitate wildlife migration and plant distribution for anticipated transitions associated with predicted climate change (National Fish, Wildlife and Plants Climate Adaptation Strategy Management Team [*Strategy*] 2012). In terms of migratory birds, the Bank will benefit Nearctic-Neotropical birds migrating through the Trinity River Basin (NRCS 2005, Shackelford et al. 2005). Coastal Texas is a major staging and fallout area for Transgulf and Circumgulf nearctic-neotropical migratory birds (Rosen et al. 2008, Shackelford et al. 2005). Approximately 330 species of migratory birds utilize the Texas Gulf Coast (Shackelford et al. 2005). These Texas coastal habitats provide the final opportunity for feeding and resting before traversing the Gulf of Mexico as well as the first opportunity to feed and rest during the return migration. Seven (7) priority bird species will benefit from establishing the ecotone between the grasslands and forested wetlands (Vermillion et al. 2008). The list consists of the Northern

bobwhite (*Colinus virginianus*), loggerhead shrike (*Lanius ludovicianus*), Le Conte's sparrow (*Ammodramus leconteii*), seaside sparrow (*Ammodramus maritimus*), Cerulean warbler (*Dendroica cerulea*), golden-winged warbler (*Vermivora chrysoptera*), and Swainson's warbler (*Limnothlypis swainsonii*). The integration of PFO, PSS, and PEM habitat will benefit other migratory species such as gray catbird (*Dumetella carolinensis*), indigo bunting (*Passerina cyanea*), ruby-throated hummingbird (*Archilochus colubris*), and hooded warbler (*Setophaga citrina*) and resident bird species such as the yellow-breasted chat (*Icteria virens*), painted bunting (*Passerina ciris*), orchard oriole (*Icterus spurius*), and eastern towhee (*Pipilo erythrophthalmus*).

Old-growth forests are critical habitat for 11 of the 18 species of bats known to the Southeastern United States (MMNS 2005). Two species, the Southeastern myotis (*Myotis austroriparius*) and Rafinesque's big-eared bat (*Corynorhinus rafinesquii*) prefer large, hollow trees in mature bottomland hardwood and swamp habitats (LMRJV 2007; Taylor 2006). In Texas, the largest maternal colony of Rafinesque's big-eared bat is located on the Trinity River National Wildlife Refuge (TRNWR) approximately four miles west of the Bank[16]. This bat is listed as threatened by the Texas Parks and Wildlife Service (TPWD) and a species of concern by the U. S. Fish and Wildlife Service (USFWS). Given the Bank's proximity to the TRNWR and contiguity with Daisetta Swamp, the Bank will provide habitat for the long-term conservation of this species. In addition for bat feeding needs, PSS and PEM adjacent to PFO will provide openings and flight corridors for foraging and sustainability (Loeb 2013).

Wetland soils of the Bank will be enhanced by increasing soil organic matter, decreasing soil bulk density, increasing hydraulic conductivity, increasing soil saturation potential, and increasing the formation of redoximorphic features (Collins and Kuehl 2001). Soil organic carbon is critical to soil reduction which will increase as soil organic material increases from the deposition of leaf litter, coarse woody debris, and decaying root material (Collins and Kuehl 2001). The restored forested wetland plant community will reduce runoff by canopy and leaf litter interception of rainfall and the increased stem density will reduce surface water sheet flow velocities. The result is a reduction in erosion runoff and an increase in soil infiltration (Richardson et al. 2001).

4.5 Technical Feasibility

The construction work required to develop the Bank is routine and feasible. Site preparation will consist of backfilling artificial drains, degrading reservoir levees, restoring historic stream patterns, afforesting with native shrub/tree species, and naturally regenerating the herbaceous plant community. The relatively flat landscape, the juxtaposition of Daisetta Swamp, and existing wetland hydrology implies that the Bank is a prime site for wetland re-establishment and rehabilitation. The Long Island Creek has been impacted by historic agricultural practices, channelization, off-channel reservoir development, and maintenance. Implementing stream construction plans will restore the natural dimension, pattern, and profile of Long Island Creek and an unnamed tributary.

The current existence of PFO, PEM, and PSS species inhabiting the Bank indicate a high potential for successful restoration. The National Wetland Inventory (NWI) Mapping (Attachment A,

[16] From Trinity River National Wildlife Refuge website. Available URL: http://www.fws.gov/refuge/Trinity_River/wildlife_and_habitat/index.html

Figure 5) and current Google Earth imagery depicts these existing wetland habitats or wetland signatures (Cowardin et al. 1979, USFWS 2014). The 100-year flood zone (Zone A) extends into the Bank and was identified in 1955 and 1957 as a portion of the Daisetta Swamp wetland area east of the Bank (Attachment A, Figures 8 and 9).

Within one mile of the Bank perimeter, the surrounding land uses are pasture (31.6%), conservation lands (31.7%), pineywoods (13.5%), invasive scrub-shrub (9.7%), coastal prairie (8.2%), swamp / marsh (5.2%), and urban (0.1%). Given the low level of disturbance anticipated from these compatible land uses, wetland restoration will be complementary in this landscape setting (Attachment A, Figure 19).

5.0 ESTABLISHMENT OF THE MITIGATION BANK

5.1 Site Restoration Plan

Ecological site restoration will be accomplished through cessation of all agricultural practices (e.g., artificial drainage, cattle, crops, interior fencing), returning the soil surface to natural topography, site planting preparation, planting native PFO species, and natural regeneration of PEM and PSS species. Hydrology restoration will increase surface water retention and soil saturation, reduce nonpoint source runoff, and improve water quality through nutrient immobilization (uptake) by vegetation. The plant communities will be restored as PFO, PSS, and PEM communities. The PFO mitigation area will be planted with an assemblage of native, wetland tree and shrub species. The PSS and PEM mitigation areas will regenerate naturally. In addition, the PSS will be planted with appropriate native PSS species that are adapted to the hydrologic conditions of the PSS mitigation area. Physical, chemical, or mechanical means will be used to eliminate existing pasture grasses and invasive/exotic vegetation (e.g., tallow and other species currently listed by the Texas Invasives Database (TexasInvasives.org[17]). The Sponsor anticipates that no short or long-term structural management requirements will be required to sustain wetland hydrology.

5.1.1 Hydrology Restoration

Hydrology restoration will require redistributing stream flow, filling agricultural drainages with *in-situ*, earthen material, removing three water control structures, and degrading all reservoir levees to reconnect to the natural hydrology of the Daisetta Swamp 100-year flood plain (Attachment D and D-1 through D-12). Approximately 26,241 lf of levee comprised of approximately 136,323 cubic yards will be degraded to natural grade. Approximately 3,735.9 lf of intermittent stream and 2,661.6 lf of perennial stream will be restored. A detailed description of hydrologic restoration plan and figures will be included in the subsequent Draft Mitigation Banking Instrument (MBI).

5.1.2 Site Preparation, Plant Materials, and Prescribed Fire

Site preparation is dependent upon area specific conditions and planned habitat type(s). New normal circumstances exist on the Bank. The Bank area is excessively colonized by tallow seed bearing trees, saplings, and seedlings. The Bank is affected during the growing season by extended

[17] http://www.texasinvasives.org/invasives_database/.

flooding / soil saturation, which is due to upstream channelization and excessive downstream levees constructed within and adjacent to the Daisetta Swamp. Once hardwoods mature, their life cycle appears to be shorter than normal. Mature trees appear to be experiencing upper-canopy limb loss, root collar rotting, and wind throw. Furthermore, for every mature tree in the canopy that dies or falls, hundreds of tallows sprout in its place. Due to the topographical changes downstream of the Bank in Daisetta Swamp, it no longer functions a historical flatwood ecosystem. The strategy for each habitat type is discussed separately below.

For initial tallow control in PFO, PSS, and PEM, heavy equipment will be used to remove, pile, burn, and redistribute burn residue. Heavy equipment will consist of bulldozers, excavators, and mulchers. Best management practices for operating machinery will be used to minimize soil disturbance. Following ground clearance, spraying for root-sprouting and seedling control will occur as well as follow-up annual spot spraying for interim and long-term management. The appropriate herbicides will be applied by licensed applicators in accordance with state and federal law to control invasive introduced species such as tallow. In addition to minimizing soil disturbance, healthy / mature hard and soft mast trees will be marked and protected (i.e., oaks, *Quercus* spp.; hickory, *Carya* spp.; planertree, *Planera aquatica*).

The stems selected for PFO afforestation will be commercially available, Facultative Wet (FACW) or wetter, forest species currently inhabiting the Bank, observed in Liberty County (NRCS 2015[a]), or observed in counties adjacent to Liberty County (NRCS 2015[a]). These species will be site-appropriate for frequently saturated / inundated soils, plant community richness, and tallow competition (Attachment B, Table 4). Stem planting density will be at a rate of at least 681 stems per acre (8-foot centers) and hard mast species will account for approximately 40-60% of the plantings. Single stem planting of PFO species will occur the first planting season (December through February) following site preparation. As many as 10 species may be represented and distributed in the planting assemblage with no species comprising more than 35% of the assemblage. To enhance species planting diversity and avoid monotypic plantings, seedlings will be thoroughly mixed at an offsite facility prior to planting (Twedt and Best 2004).

Native herbaceous seeds and plant materials for restoring the Bank PEM and PSS communities exist on site and within the 12-digit HUC. The Bank is located in the southern reach of the 25,292-acre, Daisetta Swamp-Long Island Creek sub-watershed (HUC 120200070108) (Attachment A, Figure 21). Long Island Creek flows through the Bank and will provide plant materials for restoring the PEM and PSS communities. Within the Bank boundary, a herbaceous, floristic survey was implemented from July 7 through July 16, 2015 (Attachment B, Table 5). In the areas determined as jurisdictional wetlands, 97 FAC or wetter herbaceous species were identified, 91 were native species, and 6 were introduced species. Due to its natural inhabitance of this type of PEM-PSS, buttonbush was included in this herbaceous list. To estimate the average wetland indicator status for all species, native species, and introduced species, the following values were used: OBL = 5, FACW = 4, FAC =3. The average wetland indicator status of all species was 4.22 (n = 97); for native species, the average wetland indicator was 4.19 (n = 91); and the average wetland indicator status for introduced species was 3.83 (n = 6). Due to the number of observed native wetland herbaceous species, location of Long Island Creek, frequency of flooding, and landscape position in the watershed, the Bank will naturally reseed and colonize with native species.

In the southeast Texas coastal plain, prescribed fire was a natural tool for maintaining healthy and diverse PEM and PSS ecosystems. Fire controls woody encroachment, maintains full sunlight, mobilizes nutrients, and selects for native species (Allain et al. 2000). The initial burn will be applied when an adequate fuel supply (litter) is available and may occur during any season. After the initial burn, burning will be conducted when conditions are suitable during the growing season to select for fire tolerant native species and control woody encroachment. Fire lanes will be established along the PEM and PSS perimeters for fire containment. Controlled burning will occur during favorable conditions for safety and smoke management (e.g., wind direction, wind speed). In addition to burning, herbicide spot-treatments will be used to control individual hardwood stems and colonies of invasive species.

5.1.3 Palustrine Forest Re-establishment and Rehabilitation I and II

The strategy outlined below will be implemented to re-establish or rehabilitate the following PFO acreages (Attachment A, Figure 6).

- Re-establishment - 29.4 acres of PFO in the north reservoir
- Rehabilitation I - 4.4 acres of PFO in the north reservoir
- Rehabilitation II - 39.3 acres of PFO in the south reservoir

Tallow will be removed as described in Section 5.1.2. During dry conditions in the late summer-fall, a tractor-pulled, sub-soiling implement will cut 18-inch deep furrows into the soil surface at approximately 8-foot intervals (Allen et al. 2001). With the onset of typical late-fall, early-winter rains, the rows will settle into the furrow and create PFO seedling planting beds without interrupting surface sheet flow. Approximately 681 stems per acre will be planted on approximate 8-foot by 8-foot centers. The higher planting density will increase hardwood canopy closure and increase shade to aid in tallow control. Tallow will be spot treated as necessary during the interim and long-term periods.

5.1.4 Palustrine Forest Rehabilitation III

The strategy outlined below will be implemented to rehabilitate the following PFO acreage (Attachment A, Figure 6). The baseline for 191.4 acres of PFO in the northeast quadrant will be determined once the tallow are removed, which the tallow infestation is discussed below. Approximately 681 stems per acre will be planted on approximate 8-foot by 8-foot centers. The higher planting density will increase hardwood canopy closure and increase shade to aid in tallow control. Tallow will be spot treated as necessary during the interim and long-term periods.

Tallow stem data collected from 12, 1/10th-acre sampling plots with nested 1/20th-acre plots indicated considerable tallow stem numbers, age diversity, seed bearing maturity, and canopy dominance. Tallow stems were measured following the guidelines of the Regional Supplement[18]. Based on the 1/10th-acre sampling plot estimates, the average number of tallow trees per plot was

[18] Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region (2010) - trees have a diameter breast height (DBH) greater than or equal to 3 inches, saplings-shrubs have a DBH less than 3 inches, and seedlings are found in the herbaceous layer

10.1 and sapling-shrubs was 57.8 (Attachment B, Table 3). Based on the 1/20th-acre sampling plots, the average number of seedlings per plot was 74.3. The estimated average number of tallow trees, saplings, and seedlings per acre were 100.8, 577.5, and 1,485.0, respectively. Across the PFO rehabilitation area, considerable variation exists in stem densities as is evidenced by the large standard deviations associated with the average number of each stem type.

5.1.5 Palustrine Emergent Re-establishment, Rehabilitation I, and Rehabilitation II

The strategy outlined below will be implemented to restore the following PEM acreages (Attachment A, Figure 6).

- Re-establishment - 63.7 acres of PEM in the north reservoir
- Rehabilitation I - 8.9 acres of PEM in the north reservoir
- Rehabilitation II - 178.7 acres of PEM in the south reservoir

Tallow and native hardwood encroachment will be treated with a Triclopyr based herbicide and mechanically removed where necessary. Mechanized clearing will be minimized to reduce soil disturbance, invasive species germination, and tallow root sprouting. Due to the frequency and duration of flood water received from the adjoining watershed, plant community re-establishment will occur naturally via the native seed bank. Prescribed fire will be applied as discussed in Section 5.1.2. Tallow will be spot treated as necessary during the interim and long-term periods.

5.1.6 Palustrine Scrub-Shrub Re-establishment and Rehabilitation

The strategy outlined below will be implemented to restore the following PSS acreages (Attachment A, Figure 6).

- Re-establish 7.5 acres of PSS in the south reservoir
- Rehabilitate 31.4 acres of PSS in the south reservoir

Tallow and native hardwood encroachment will be treated with a Triclopyr based herbicide and mechanically removed where necessary. Mechanized clearing will be minimized to reduce soil disturbance, invasive species germination, and tallow root sprouting. Due to the frequency and duration of flood water, plant community re-establishment will occur naturally via the native seed bank. Buttonbush and redbay (*Persea barbonia*) stem planting density will be approximately 303 stems per acre on 12-foot by 12-foot centers. Prescribed fire will be applied on a three year rotation. Tallow will be spot treated as necessary during the interim and long-term periods.

5.1.7 Stream Buffer Restoration

The stream buffer will be re-established using the same techniques as the PFO re-establishment area (i.e., site preparation, planting density, tree species selection; Attachment B, Table 4). The forested stream buffer will be a minimum 200 feet wide and a 12-foot fire lane will be established between the stream buffer and PEM / PSS components of the south reservoir.

5.1.8 Stream Restoration

Stream work will involve restoration and reconnection of a historic tributary identified as Long Island Creek or Long Island Bayou by the USGS Topographic Maps and/or National Hydrography Dataset (NHD) (Attachment A, Figure 21). In its current form, Long Island Creek has been re-routed through a series of excavated and channelized waterways designed to expedite the movement of large volumes of surface water through the watershed while providing a source of agricultural irrigation waters in the form of off-channel reservoirs (i.e., the north and south reservoirs). The dimension of these man-altered channels, specifically the depth and bank height, reduce overbank flooding and lower the local water table.

The restored stream channel will be designed to promote distribution of surface water across the landscape and raise the local water table (Attachment A, Figure 6). To do this, the stream channels will be constructed with a high width/depth ratio and low bank heights. Descriptively, the stream channels will resemble local referenced waterways typically referred to as sloughs or shallow bayous. Characteristics of these conveyances evolve around their receiving position in the landscape and usually exhibit very low gradients and graduated flows during times of high precipitation and upstream runoff. This is due to the lack of slope associated within the landscape leading to the Bank and Daisetta Swamp flood plain.

Specific design criteria will be developed based on reference data collected in similar systems with comparable hydro-physiographic conditions. These criteria and reference data will be enumerated in the Draft MBI and will include but not be limited to variables such as width, depth, sinuosity, radius of curvature, and beltwidth.

5.1.9 Non-mitigation Acreage

For management and monitoring, open space will be maintained as access trails and an approximate 40-foot wide perimeter buffer. The open space is designed in conjunction with the existing rights-of-way (ROW) described in Section 5.3, which the ROW acreage accounts for approximately 5.2 acres of the project area. All access trails will be maintained at or near level grade and will not interfere with surface hydrology. No mitigation credits will be generated from the access trail, fire lane, perimeter buffer or pipeline ROW acreage. However, should any of these areas be restored in the future (i.e., ROW relinquishment, trail closure, etc.), the Sponsor may request that additional credits be granted to applicable acreage. No adverse effects are anticipated by the continued existence of these open space features.

5.2 Monitoring and Management

The Sponsor will maintain the Bank following construction and throughout the initial, interim and long-term monitoring and management periods. The Sponsor will use all prudent efforts, physical, chemical, or mechanical, to eliminate existing noxious and/or invasive vegetation present (i.e., noxious and invasive species listed in the most current Texas Invasives Database [www.texasinvasives.org]). In addition to invasive plants species, the Sponsor will attempt to control nuisance, invasive wildlife species such as feral hogs (*Sus scrofa*). Following completion of construction activities, the Bank will be monitored and inspected annually for invasive species

colonization and biotic and abiotic factors that may affect tree growth. Monitoring will determine if adaptive management measures, such as replanting, need to be considered. The Sponsor will continue to monitor the Bank through annual inspections to document the following:

- the effectiveness of control efforts;
- the extent and degree of invasive species present;
- the extent and degree of any herbivory or insect damage;
- the extent and degree of adverse climate impacts (i.e., drought); and
- the condition and functionality of any earthen structures (i.e., *in situ* earthen fill or plugs).

Following such monitoring, invasive species control will be implemented as necessary. The boundaries will be inspected and it is anticipated that boundary maintenance will take place at five year intervals (e.g., gates, signage, fencing, boundary marking, etc.).

5.3 Mortgages, Easements and Encumbrances

A Summary of Title Matters will be prepared and provided with the MBI.

Two relict agricultural reservoirs do exist on the Property for the purpose of rice production, which rice production is no longer a land use of the Property or on the adjacent lands. The reservoirs were granted by the Texas Natural Resource Conservation Commission on May 20, 2004 (Permit No. 5783 to Appropriate State Water; Attachment F). The portion of water rights available to the Landowner / Sponsor will be retained; however, the levees of both reservoirs will deconstructed to natural elevations and will no longer function as off-channel reservoirs. The retention of these water rights is to protect the Bank from upstream water uses which may have an adverse effect.

One 50-foot wide pipeline easement exists on the Property with multiple pipelines traversing the Bank in one corridor near the southeast corner (Attachment A, Figure 6; Magnolia Pipeline Company, Mobil Pipe Line Company, and Williams Midstream Ethylene Pipeline). The acreage associated with these encumbrances is non-mitigation acreage, from which mitigation credit will not be generated. The Sponsor intends that the conservation easement described in Section 7.4 will cover the easement and right-of-way areas described above but will not be subordinate to these easements. However, should any of these pipeline easements be terminated or relinquished, the conservation easement will become dominate insuring site protection. An indebtedness mortgage will likely exist at the time the conservation easement is to be filed. However, the holder of the mortgage will subordinate it in favor of the conservation easement upon its execution in the event the mortgage is not retired prior to the easement filing.

5.4 Current Site Risks

Due to the outflow of Long Island Creek onto the Bank and the removal of external and internal levees, the Sponsor does not foresee any hindrances in restoring the natural hydrology of the Bank. In addition, the Sponsor does not foresee any adverse impacts to the Bank resulting from the continued existence and operation of the neighboring land uses or from the continued use of the pipeline ROW described in Section 5.3. The Bank is bordered by herbaceous wetland pasture on the western and southern boundaries, forested wetlands and conservation wetlands on the east

boundary land, and conservation wetlands on the north boundary (Attachment A, Figure 19). Landownership and management of these adjacent properties will not affect the establishment and long-term success of the Bank.

The proposed Bank is a jurisdictional wetland, was historically cultivated for rice production, and served as off-channel reservoirs for rice cultivation. By 2010, the surface features for rice cultivation (rice levees) were removed from the Bank and surrounding lands. With the cessation of rice farming in this area, it is highly unlikely that rice farming will return as a viable industry and will not impact the Bank. Furthermore, cattle ranchers and rural residential land owners prefer for surface water to flow unimpeded away of their land. For this purpose, the Bank will function as additional floodplain area that will encompass the 100-year flood plain of Long Island Creek as it exists on the Bank.

5.5 Long-term Sustainability

Based on the current AJD (Attachment E), the existing hydrology is sustaining the area of the Bank as a jurisdictional wetland. Long-term viability and sustainability of the Bank is assured by enhancing the current hydrologic conditions through hydrologic restoration and active, adaptive management including, but not limited to, invasive species control, appropriate monitoring, and long-term maintenance. With regard to surface hydrology, the Sponsor will restore the hydrology by removing existing reservoir and drainage improvements, restoring natural drainage patterns, and habitat restoration or enhancement (i.e., PFO, PSS, and PEM). Long-term surface hydrology will be maintained by localized rainfall, seasonally perched water table on clay soils, headwater flooding from Long Island Creek, and backwater flooding from Daisetta Swamp. The Sponsor does not foresee any adverse impacts on neighboring properties resulting from the Bank.

5.6 Water Rights

As discussed in Section 5.3 of this Prospectus, the water rights for the north and south reservoirs were granted on May 20, 2004 (Attachment F). Per review of the Texas Commission on Environmental Quality's (TCEQ) water rights database[19], the previous landowner used State water until March 2013 (TCEQ 2014). Under DLS's ownership since March 12, 2015, all water control structures leading into the reservoirs have been closed and will continue to be closed until all reservoir improvements are removed. All improvements (i.e., levees, canals, and water control structures) constructed to create the north and south off-channel reservoirs will be removed to allow the unimpeded flow of water across the entirety of the Bank. Furthermore, the Bank will be functionally restored as a wetland adjacent to Long Island Creek and a portion of the Daisetta Swamp floodplain.

The wetlands restored by the Bank will remove two off-channel reservoirs that artificially stored, held, retained, or diverted water from state water sources (i.e., surface or subsurface). Long Island Creek will be restored under the new normal circumstances that currently result from channelized stream channels. Consequently, the land protected by conservation easement will function as it did prior to construction of the reservoirs. Long-term hydrology maintenance will not depend on

[19] The Water Use data from 2000 through 2014 is accessible from the URL: http://www.tceq.state.tx.us/permitting/water_rights/wr-permitting/wr_databases. (Accessed March 2, 2016).

the utilization of water captured from irrigation wells or a Texas public water system; therefore, a permit for State water use will not be required.

6.0 PROPOSED GEOGRAPHIC SERVICE AREA AND CREDIT USE[20]

6.1 Primary and Secondary Service Areas

The primary service area is the Lower Trinity Subbasin (HUC 12030203) located within the Western Gulf Coastal Plain and South Central Plains Level III Ecoregions (Attachment A, Figures 3 and 20). The secondary service area is the lower portion of the Lower Trinity-Kickapoo Subbasin (HUC 12030202) located within the South Central Plain Level III Ecoregion. The proposed service area does not extend beyond the administrative boundaries of the CESWG and is entirely within the state of Texas. The primary and the secondary service areas are approximately 823.7 square miles and 181.9 square miles, respectfully.

6.2 Credit Use

The Bank will not provide compensation for impacts to the following habitats / areas which are excluded from the service area:

- tidal fringe wetlands including low marsh (i.e., subject to at least one daily tide and regularly flooded) and high marsh (i.e., not subject to daily tide and irregularly flooded including extreme high spring tides);
- mid-coastal Barrier Islands/coastal marshes barrier islands (Bolivar Peninsula);
- areas south of the Gulf Intracoastal Waterway (GIWW);
- estuaries associated with the Lower Trinity River and upper Trinity Bay (Wallisville and Anahuac areas);
- wetlands mapped as estuarine per the U.S. Fish and Wildlife (FWS) National Wetland Inventory (NWI); and
- property managed by TPWD (i.e., Davis Hill State Park and Lake Livingston State Park).

The PFO, PEM, and PSS mitigation areas will provide credits for non-tidal PFO, PEM, and PSS impacts. Unavoidable impacts to wetland function within the primary service area will be replaced at a 1:1 ratio while those impacts within the secondary service area will be debited at a 1.5:1 ratio. Any out-of-kind or use beyond the service area will be considered by the CESWG on a case-by-case basis.

Due to the agricultural development in the southeast Texas coastal plains, much of the native herbaceous wetlands were converted to rice production and / or improved pasture. Unfortunately, once abandoned, these agricultural acres become tallow-PEM-PSS habitats, and re-establishing native PEM-PSS is problematic. Using PEM-PSS mitigation credits to compensate for tallow-PEM-PSS impacts is a cost effective and prudent approach to increasing the acreage of early successional, native PEM-PSS. On a case-by-case basis, PEM-PSS credits may be used to mitigate

[20] The Service Area is defined in 33 CFR § 332.2 as the *geographic area within which impacts can be mitigated at a specific mitigation bank or in-lieu fee program, as designated in its instrument.*

for tallow-PEM-PSS impacts on soils which historically supported native PEM-PSS. Due to the woody nature of tallow-PEM-PSS, this may appear to be out-of-kind mitigation; however, it is habitat restoration for native PEM that would exist if not for anthropomorphic influences (e.g., fire abatement).

Prior to the authorized use the Bank PEM or PSS mitigation credits for tallow-PEM-PSS habitats, the Permittee should provide evidence demonstrating that the impacted area was historic PEM or PSS habitat on non-PFO soil types. PEM and PSS mitigation used in this manner is in-kind mitigation because tallow-scrub-shrub was historically a native, fire-tolerant, PEM-PSS landscape.

7.0 OPERATION OF THE PROPOSED MITIGATION BANK

The Sponsor will comply with all conditions required by the CESWG. The Bank 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 Bank will be further described in the Draft MBI per 33 CFR § 332.8 (6).

The following legal responsibility statement will be included in Chapter III. Bank Operations, Section G. Legal Responsibility Statement of the draft and final MBI.

The Sponsor assumes all legal responsibility for satisfying all mitigation requirements of Department of the Army (DA) permits for which the bank has been utilized, or fees have been accepted (i.e. the implementation, performance, and long-term management of the compensatory mitigation project approved under this agreement). The transfer of liability from permittee to the Sponsor is established by the following: 1) the approval of the mitigation bank intrument by the Sponsor and District Engineer (DE), 2) receipt of a credit transaction report by the DE that is signed and dated by the Sponsor and the Permittee, and 3) the transfer of fees required from the Permittee to the Sponsor. The responsibility for financial success and risk to the investment initialed by the Bank Sponsor rests solely with the Bank Sponsor. The regulatory agencies that are parties to this agreement administer their regulatory programs to best protect and serve the public's interest, and not to guarantee the financial success of banks, specific individuals, or entities. Accordingly, there is no guarantee of profitability for any individual mitigation bank. Bank sponsors should not construe the agreement as a guarantee in any way that the agencies will ensure sale of credits or that the agencies will forgo other mitigation options that may also serve the public interest. Since the agencies do not control the number of banks proposed or the resulting market impacts upon success or failure of individual banks, in depth market studies of the potential and future demand for bank credits are the sole responsibility of the Sponsor.

7.1 Project Representatives

The project Sponsor and Point of Contact is as follows:

Delta Land Services, LLC
1090 Cinclare Drive
Port Allen, LA 70767
Attn: Dr. Bill DeLany \ Mr. Daniel Bollich \ Mr. Chad Butler
Phone: 225.388.5146\337.274.1680
Electronic Mail: billy@deltaland-services.com \ daniel@deltaland-services.com
chad@deltaland-services.com

7.2 Qualifications of the Sponsor

Per 33 CFR **§** 332.8(d) (2) (vi.), this section describes the Sponsor's qualifications to successfully complete the proposed LICMB. DLS will serve as the Sponsor. DLS is a land management and restoration company whose technical staff includes Certified Wildlife Biologists, Professional Wetland Scientists, and Certified Foresters. In addition, DLS has construction specialists 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 14 approved wetland and / or stream mitigation banks within the CEMVN, CEMVK, CESWG and CESWF totaling 7,717.3 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), 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), Belle Pointe Coastal Mitigation Bank (MVN-2014-02764), and South Fork Coastal Mitigation Bank (MVN-2014-01888). DLS currently has 7 pending mitigation banks that are under review with the CEMVN, CEMVK and CESWG totaling 3,407.0 acres. These include the proposed Bayou Maringouin Mitigation Bank (MVN-2015-01994), Ponderosa Ranch of Pointe Coupee Mitigation Bank Amendment One (MVN-2011-03213), Long Island Cove Mitigation Bank (SWG-2014-00210), Crooked Bayou Mitigation Bank (MVK-2015-00527), Cane River Mitigation Bank (MVK-2015-00472), Laurel Valley Coastal Mitigation Bank Amendment One (MVN-2015-01489), and the Long Island Cove Mitigation Bank (SWG-2014-00210). In addition to mitigation banking, DLS serves as the responsible party for the establishment and maintenance of 3,929.1 acres of approved Permittee-Responsible Mitigation (PRM) wetland and stream projects.

7.3 Proposed Long-term Ownership and Management Representatives

DLS intends to serve as the owner, sponsor, long-term manager, and steward of the Bank. The Sponsor may appoint a long-term steward if such appointment is approved by the CESWG per 33 CFR § 332.7 (u) (2). The anticipated long-term management will consist of monitoring, invasive species control, prescribed fire, forest management, boundary maintenance, and site protection.

7.4 Site Protection

The Sponsor (or Long-term Steward / Owner), or its heirs, assigns or purchasers shall be responsible for protecting lands contained within the Bank in perpetuity. To provide such protection, the Owner shall execute a perpetual conservation easement on all acreage identified as the Bank and the conservation easement will be recorded in the Title Records of Liberty County, Texas (Texas Law, Natural Resources Code, Title 8 Chapter 183 Subchapter A; Texas Legislature 2005). The conservation easement will be held by a qualified, non-profit organization (Holder) whose mission is to retain or protect the land's natural habitat, wildlife, open-space, scenic, educational, recreational, historical, or cultural values. In accordance with 33 CFR 332.7 (a) (3), the easement shall contain a provision requiring a 60-day advance notification to the CESWG before action is taken to void or modify the easement including transfer of title. The conservation easement will protect the Bank from activities inconsistent with the purpose of preserving the conservation values of the Bank and from development or any other activity contrary to its use.

The Holder will be accredited by the National Land Trust Alliance or a credible non-profit conservation organization that is a member of the Texas Land Trust Council. The Holder will conduct annual inspections to verify that there are no activities occurring on the Bank that are inconsistent with the purpose of preserving the conservation values of the restored area. The Holder for the Bank conservation easement will be determined prior to submittal of the draft MBI.

7.5 Long-term Strategy

A long-term management plan will be included with the draft MBI which will detail long-term management needs, costs and identify a funding mechanism in accordance with 33 CFR § 332.7 (d). The Sponsor will establish the "Long-term Land Management and Maintenance" (LTMM) endowment to insure adequate funding is available to cover future LTMM costs. The Sponsor will enter into a Mitigation Bank Endowment Agreement with the National Fish and Wildlife Foundation (NFWF) to ensure sufficient long-term funding is available for perpetual maintenance and protection of the Bank. Long-term management will consist of monitoring, vegetation management, invasive species control, controlled burning, boundary maintenance (perimeter is approximately 4.1 miles), site protection, and the funding of such activities.

The development of snags and course woody debris (CWD) will serve as microhabitat for various species of invertebrates and vertebrates. Snags are beneficial to cavity-nesting birds such as the Downy Woodpecker (*Picoides pubescens*) and White-breasted Nuthatch (*Sitta canadensis*), which are beneficial for long-term forest health by means of controlling invasive insects such as the emerald ash borer (*Agrilus planipennis*; Koenig et al. 2013). Clustered, large snags will provide

roosting habitat for various tree bats (Loeb 2013). Deadwood is important for nutrient cycling and provides habitat for various species of invertebrates, amphibians, and reptiles (Brinson et al. 1995, NRCS 2003). Rare wildlife species such as the White-faced Ibis (*Plegadis chihi*) and Wood Stork (*Mycteria americana*) will benefit from the restored PEM and PSS habitat. Prescribed fire will select for fire tolerant native species, sustain diversity, and control invasive species. As the stream and riparian buffer matures, the inherent functions of a stream listed below will improve over time (U.S. Fish and Wildlife Service; USFWS 2011).

- Hydrology (transport of water from the watershed to the channel): maintain a balance between rainfall and runoff, natural flooding frequency, and flow duration.
- Hydraulic (transport of water in the channel on the floodplain): low stream velocity, shear stress, and entrenchment.
- Geomorphological (transport of wood and sediment to create diverse bed forms and dynamic equilibrium): improve channel stability to reduce stream bank erosion.
- Physiochemical (temperature and oxygen regulation and the processing of organic matter): improve water quality by increasing dissolved oxygen, regulating temperature extremes, and recycling nutrients.
- Biological (maintenance of plant and animal communities): improve intermittent and perennial stream and riparian habitats.

8.0 CONCLUSION

In summary, the Bank has a high potential for successfully restoring 258.7 acres of PFO, 251.3 acres of PEM, 38.9 acres of PSS wetlands, 2,661.6 lf of perennial stream, 3,735.9 lf of intermittent stream, 50.8 acres of riparian buffer. The cessation of agricultural land use, restoration of natural hydrology, and re-establishment of PFO, PEM, and PSS habitats will improve watershed quality by reducing non-point source runoff, increasing ecosystem plant diversity, and increasing habitat for native and migratory wildlife species.

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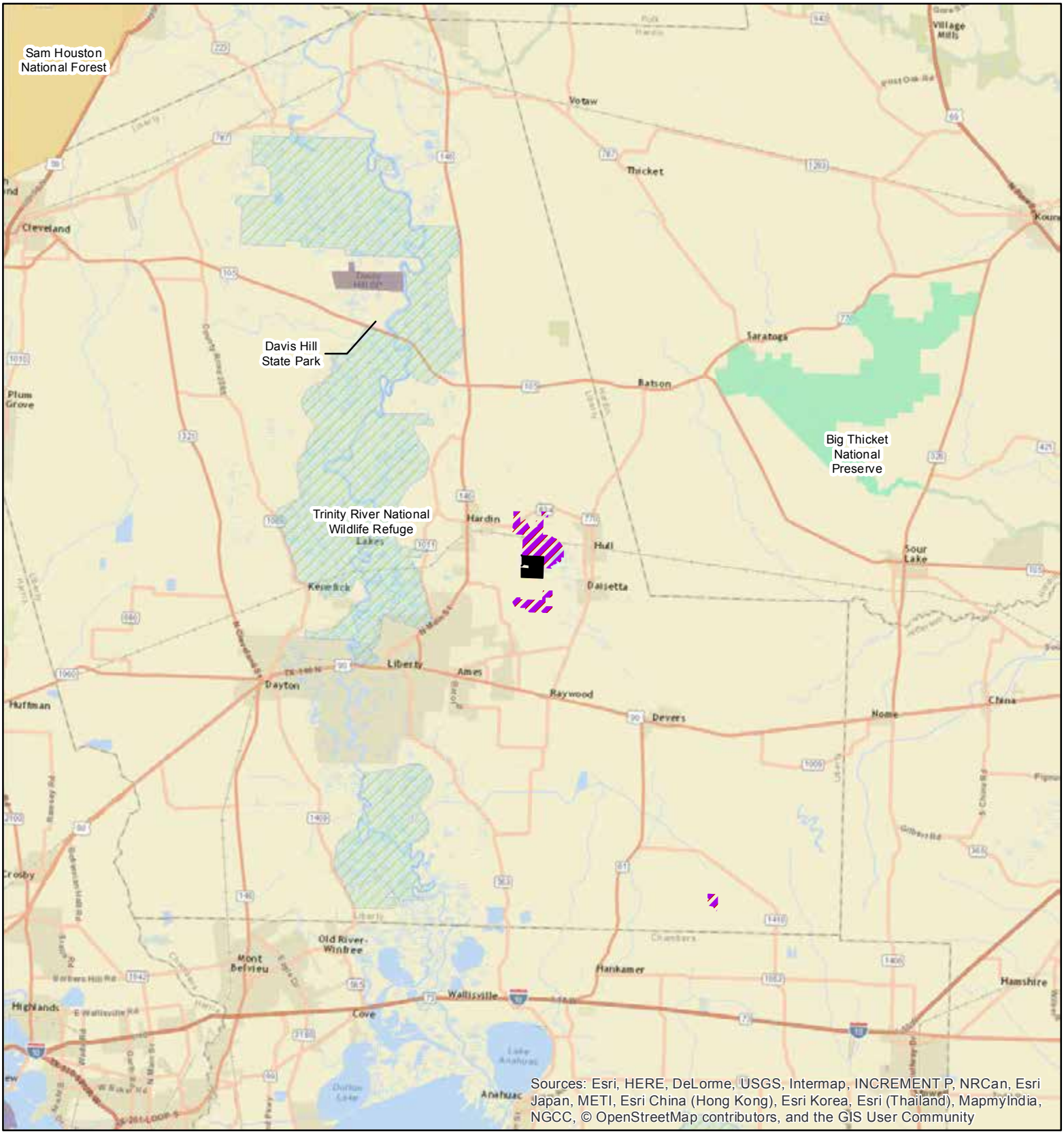
Attachment A. Figures



Legend

- Project Area (601.1 ac)
- Conservation Lands

6 3 0 6

Miles

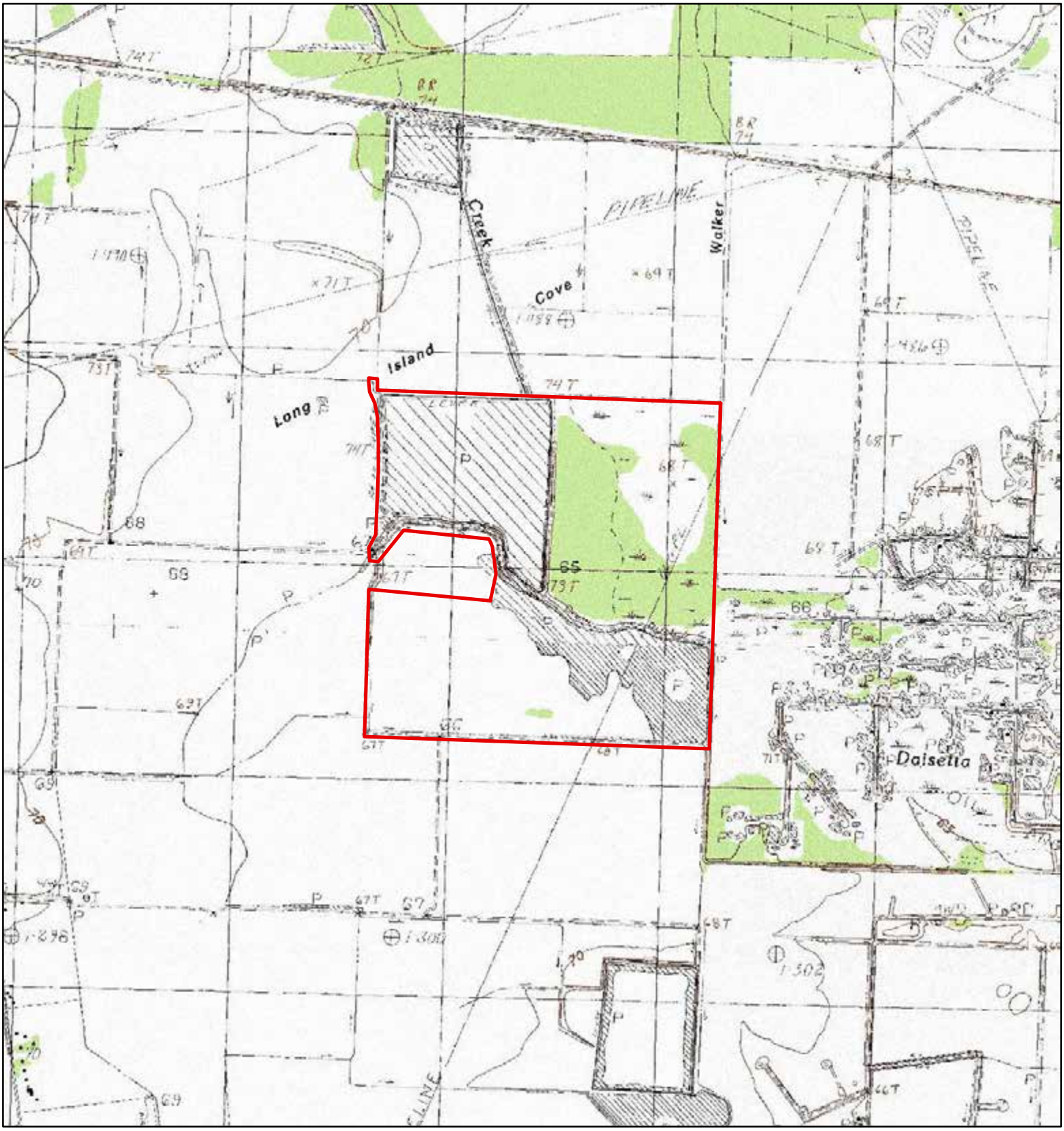
Proposed Long Island Cove Mitigation Bank

VICINITY MAP

Liberty County, TX

Created :	TSC/ArcView10
Approved :	BWD
Date :	9/19/16
Map # :	F01_VicinityMap.mxd

FIGURE 1



Legend

Project Area (601.1 ac)

2,000 1,000 0 2,000

Feet

Note: 2008 USGS Quadrangle obtained from USDA NRCS database.

Proposed Long Island Cove Mitigation Bank
2008 USGS
7.5' QUADRANGLE MAP
Liberty County, TX

Created :	TSC/ArcView10
Approved :	BWD
Date :	9/19/16
Map # :	F02_QuadMap.mxd

FIGURE 2

Legend

- Project Area (601.1 ac)
- Lower Trinity (HUC 12030203)
- Southern Portion of Lower Trinity-Kickapoo (HUC 12030202)

9 4.5 0 9

Miles

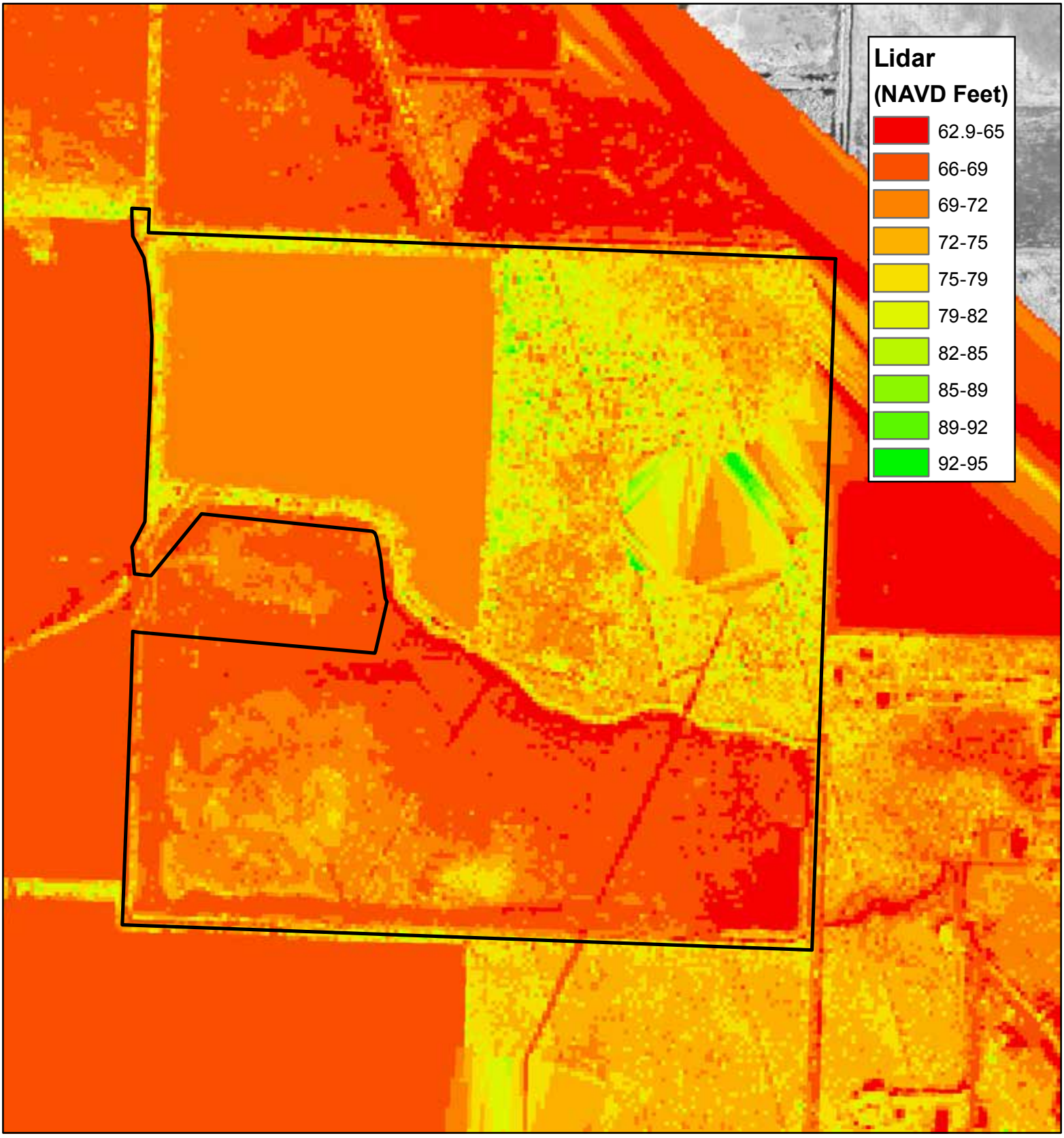
Proposed Long Island Cove Mitigation Bank

LEVEL III ECOREGION MAP

Liberty County, TX

Created :	TSC/ArcView10
Approved :	BWD
Date :	10/11/2016
Map # :	EcoregionMap.mxd

FIGURE 3



Legend

Project Area (601.1 ac)

N

1,000 500 0 1,000

Feet

Note: Elevations derived from LIDAR-based DEM for Liberty County, Texas.

Proposed Long Island Cove Mitigation Bank

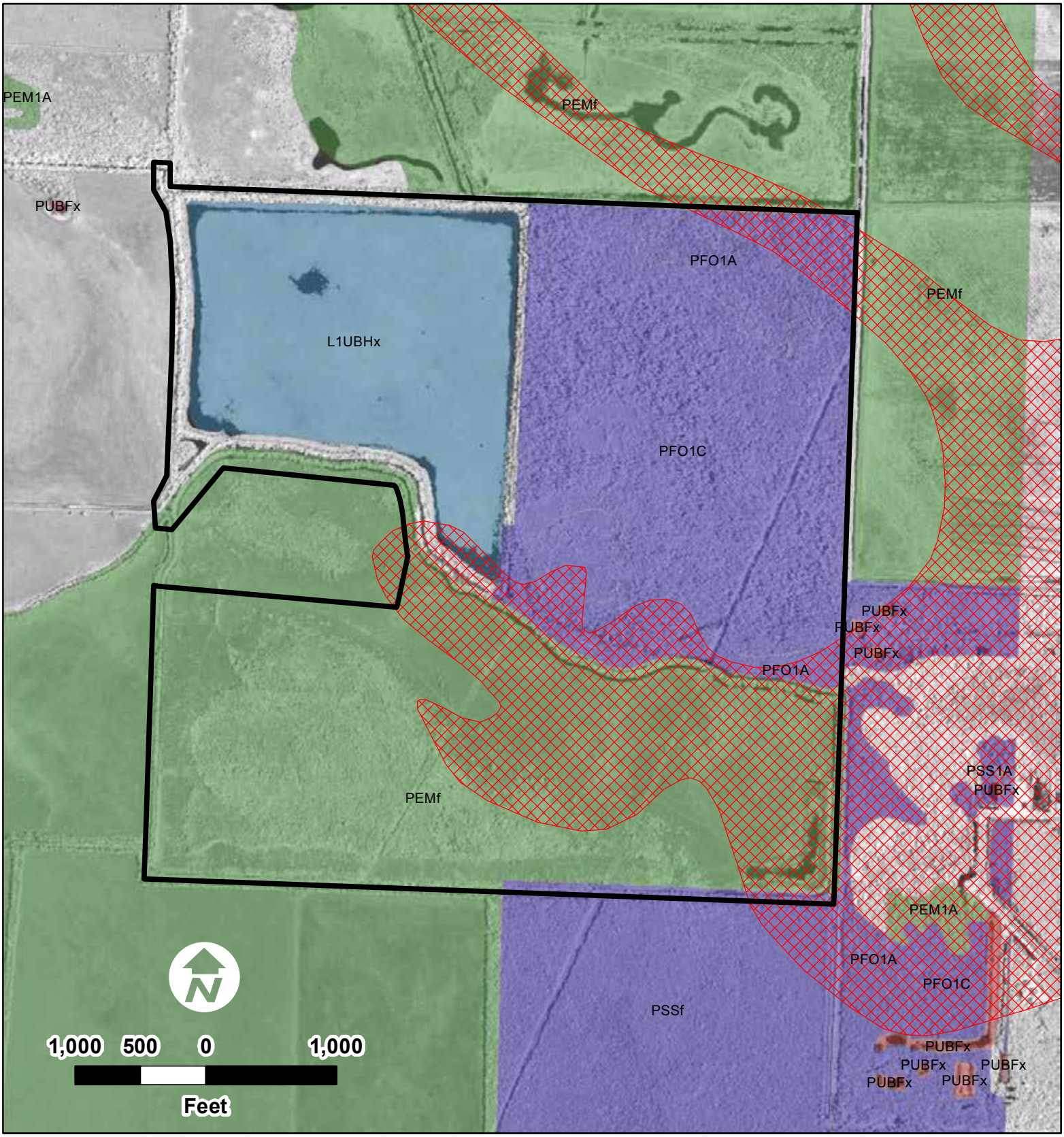
LIDAR DIGITAL ELEVATION MODEL

Liberty County, TX

Created :	TSC/ArcView10
Approved :	BWD
Date :	9/19/16
Map # :	F04_LidarMap.mxd

DELTA LAND SERVICES

FIGURE 4



Legend

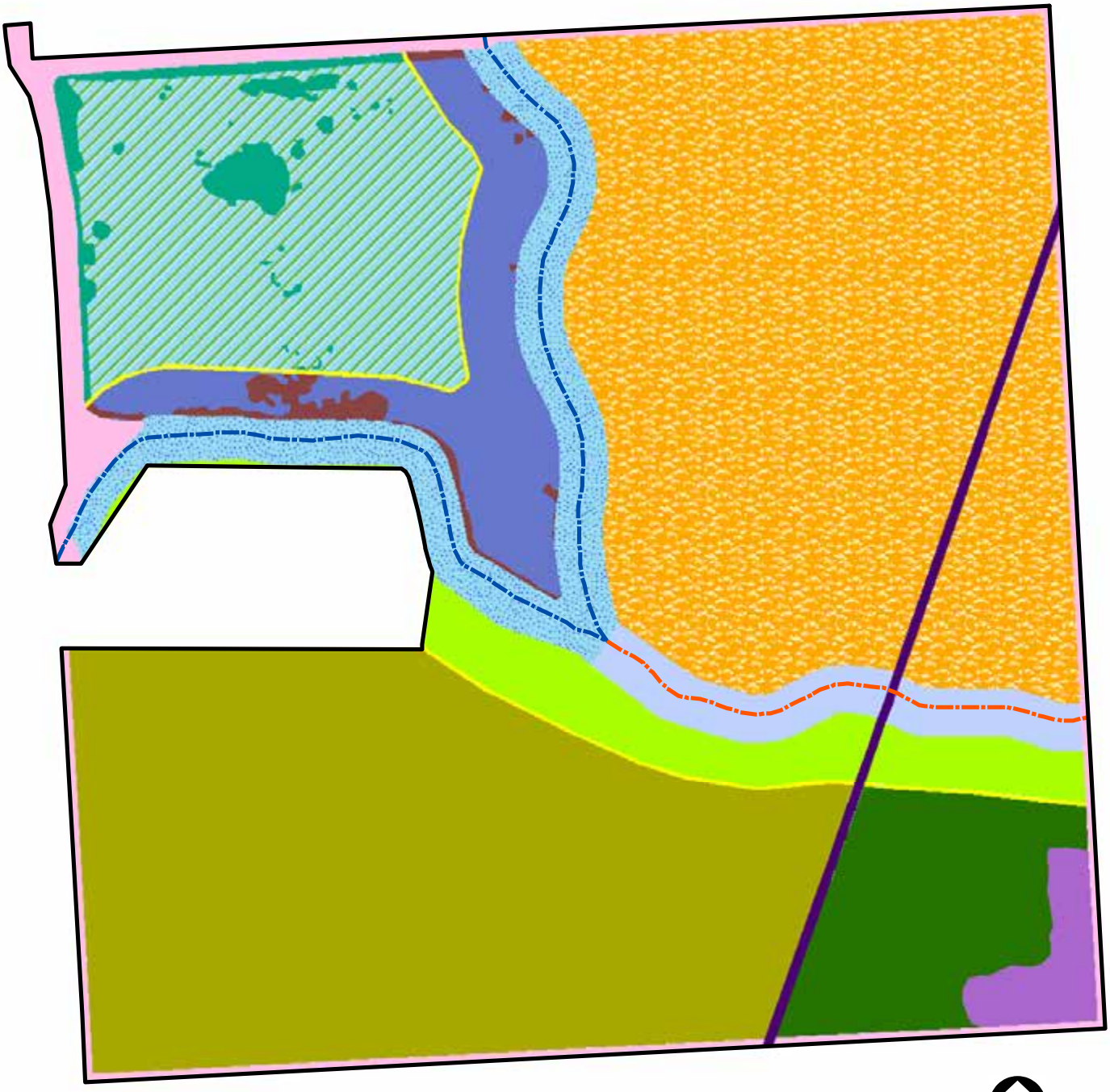
- Project Area (601.1 ac)
- FEMA Flood Zone A
- Palustrine Emergent Wetland (PEM)
- Palustrine Forested (PFO) /Shrub Wetland (PSS)
- Freshwater Pond
- Lacustrine
- Other
- Riverine

Note: FEMA Flood Zone data obtained from FEMA FIRM database. NWI data obtained from USFWS NWI database.

Proposed Long Island Cove Mitigation Bank
NATIONAL WETLAND INVENTORY AND FLOOD ZONE MAP
Liberty County, TX

Created :	TSC/ArcView10
Approved :	BWD
Date :	9/19/16
Map # :	F05_NWIMap.mxd

FIGURE 5



Legend

- Project Area (601.1 ac)
- PFO Re-establishment (29.4 ac)
- PFO Rehabilitation I (4.4 ac)
- PFO Rehabilitation II (24.2 ac)
- PFO Rehabilitation III (185.6 ac)
- PEM Re-establisment (63.7 ac)
- PEM Rehabilitation I (8.9 ac)
- PEM Rehabilitation II (158.8 ac)
- PSS Re-establishment (7.5)
- PSS Rehabilitation (31.4 ac)
- Perennial Stream Buffer (15.1 ac)
- Intermittent Stream Buffer (35.7 ac)
- Fire Lane / Access Trail (20' wide) (3.4 ac)
- Perimeter Buffer ≥ (40' wide) (27.8 ac)
- Pipeline (5.2 ac)
- Intermittent Stream (3,735.9 ln. ft.)
- Perennial Stream (2,661.6 ln. ft.)

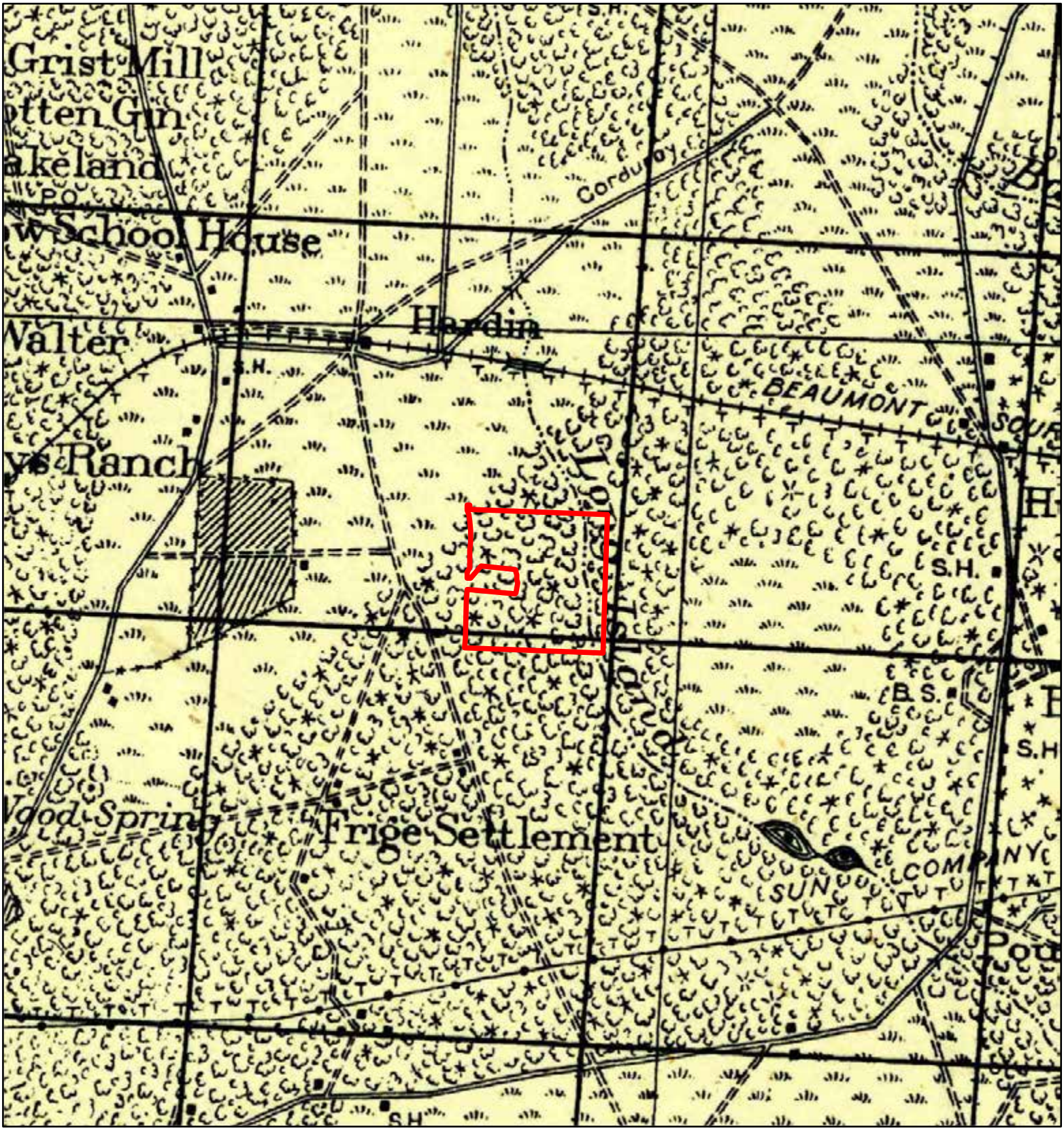
Proposed Long Island Cove Mitigation Bank

MITIGATION FEATURES

Liberty County, TX

Created :	TSC/ArcView10
Approved :	BWD
Date :	9/19/16
Map # :	F06_MitigationFeatures.mxd

FIGURE 6



Legend

Project Area (601.1 ac)

N

5,000 2,500 0 5,000

Feet

Note: 1943 USGS Quadrangle Map obtained from USGS Historical Topographic Map Explorer.

Proposed Long Island Cove Mitigation Bank

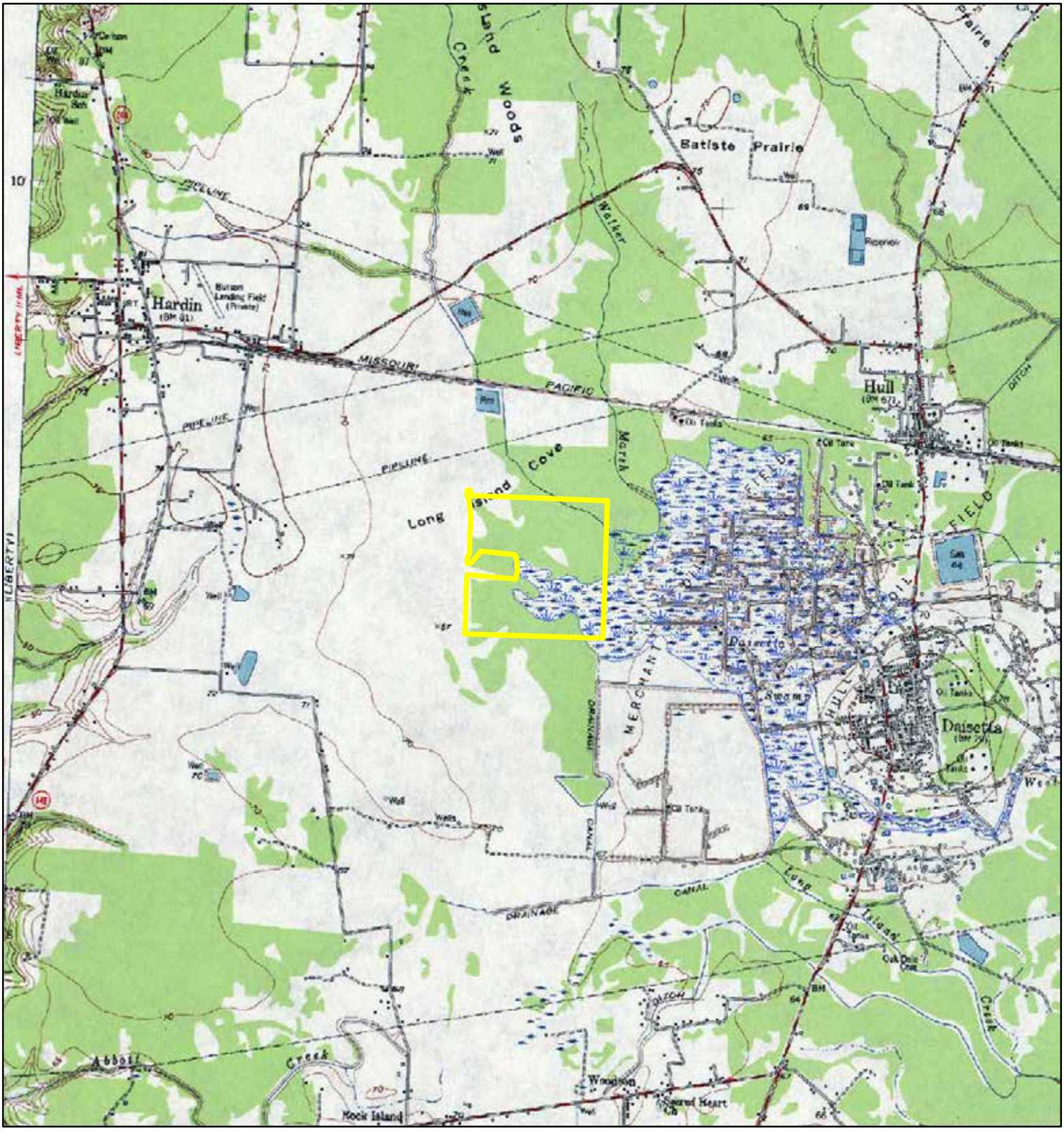
1943 USGS QUADRANGLE MAP

Liberty County, TX

Created :	TSC/ArcView10
Approved :	BWD
Date :	9/19/16
Map # :	F07_1943QuadMap.mxd

DELTA LAND SERVICES

FIGURE 7



Legend

- Project Area (601.1 ac)
- Daisetta Swamp

5,000 2,500 0 5,000

Feet

Note: 1955 USGS Quadrangle Map obtained from USGS Historical Topographic Map Explorer.

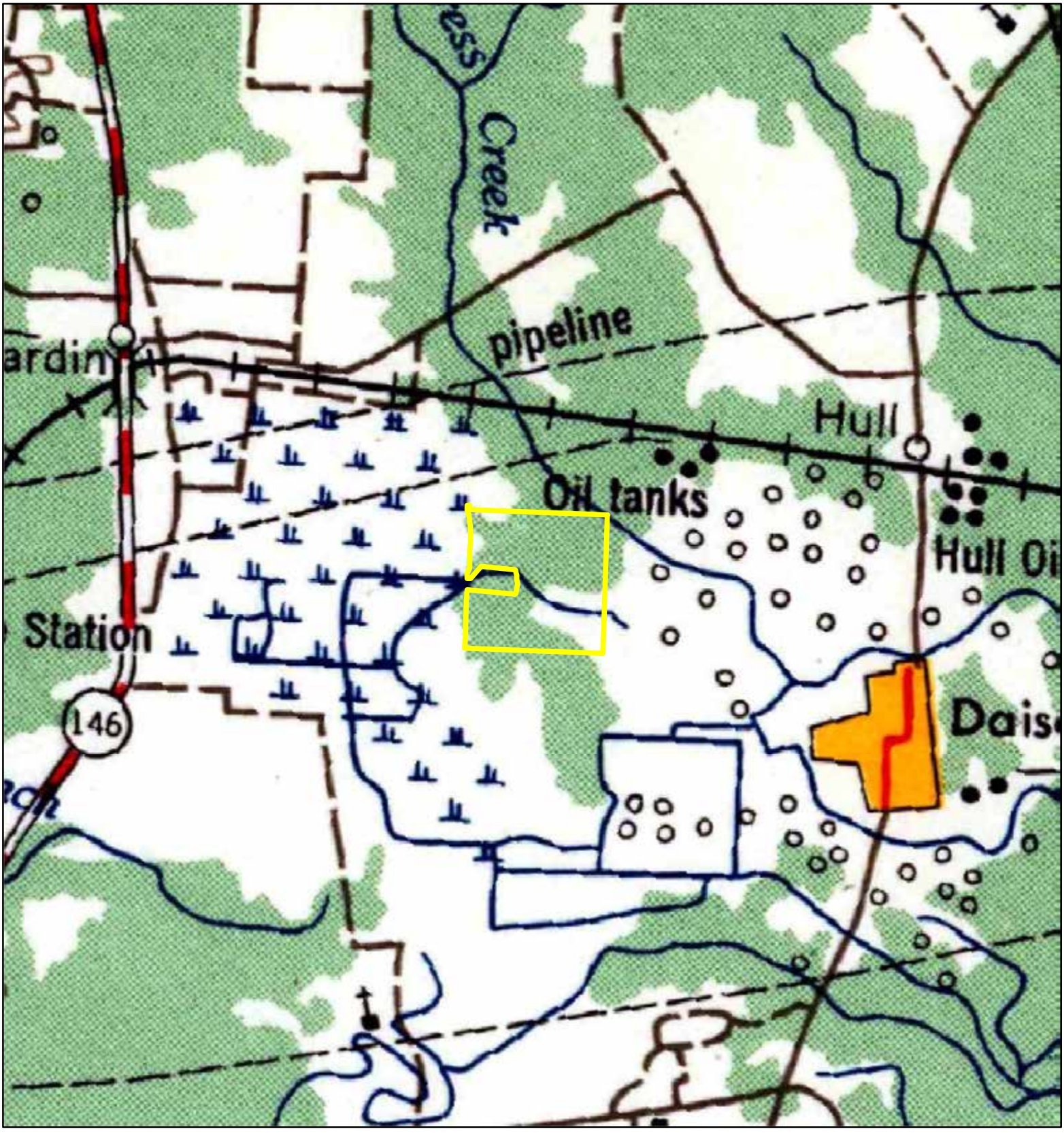
Proposed Long Island Cove Mitigation Bank

1955 QUADRANGLE MAP

Liberty County, TX

Created :	TSC/ArcView10
Approved :	BWD
Date :	9/19/16
Map # :	F08_1955QuadMap.mxd

FIGURE 8



Legend

Project Area (601.1 ac)

N

5,000 2,500 0 5,000

Feet

Note: 1957 USGS Quadrangle Map obtained from USGS Historical Topographic Map Explorer.

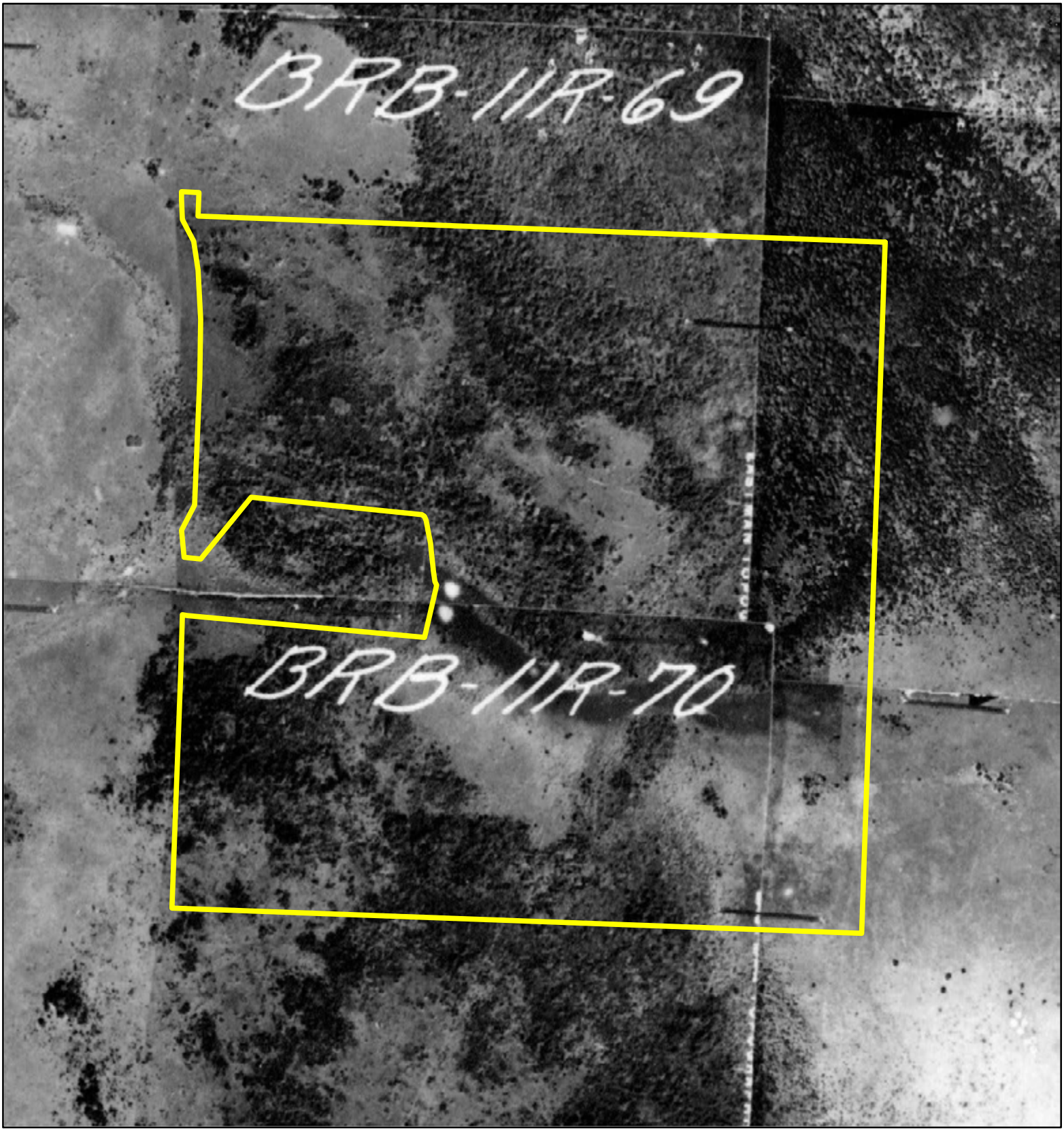
Proposed Long Island Cove Mitigation Bank

1957 USGS QUADRANGLE MAP

Liberty County, TX

Created :	TSC/ArcView10
Approved :	BWD
Date :	9/19/16
Map # :	F09_1957QuadMap.mxd

FIGURE 9



Legend

Project Area (601.1 ac)

1,000 500 0 1,000

Feet

Note: 1938 Aerial Photograph obtained from USDA FSA Historical Imagery.

Proposed Long Island Cove Mitigation Bank

1938 AERIAL PHOTOGRAPHY

Liberty County, TX

Created :	TSC/ArcView10
Approved :	BWD
Date :	9/19/16
Map # :	F10_1938AERIAL.mxd

FIGURE 10

Legend

Project Area (601.1 ac)

N

1,000 500 0 1,000

Feet

Note: 1952 Aerial Photograph obtained from USDA FSA Historical Imagery.

Proposed Long Island Cove Mitigation Bank

1952 AERIAL PHOTOGRAPHY

Liberty County, TX

Created :	TSC/ArcView10
Approved :	BWD
Date :	9/19/16
Map # :	F11_1952AERIAL.mxd

FIGURE 11

Legend

Project Area (601.1 ac)

1,000 500 0 1,000

Feet

Note: 1958 Aerial Photograph obtained from USDA FSA Historical Imagery.

Proposed Long Island Cove Mitigation Bank

1958 AERIAL PHOTOGRAPHY

Liberty County, TX

Created :	TSC/ArcView10
Approved :	BWD
Date :	9/19/16
Map # :	F12_1958AERIAL.mxd

FIGURE 12

Legend

Project Area (601.1 ac)

1,000 500 0 1,000

Feet

Note: 1964 Aerial Photograph obtained from USDA FSA Historical Imagery.

Proposed Long Island Cove Mitigation Bank

1964 AERIAL PHOTOGRAPHY

Liberty County, TX

Created :	TSC/ArcView10
Approved :	BWD
Date :	9/19/16
Map # :	F13_1964AERIAL.mxd

FIGURE 13

Legend

Project Area (601.1 ac)

1,000 500 0 1,000

Feet

Note: 1972 Aerial Photograph obtained from USDA FSA Historical Imagery.

Proposed Long Island Cove Mitigation Bank

1972 AERIAL PHOTOGRAPHY

Liberty County, TX

Created :	TSC/ArcView10
Approved :	BWD
Date :	9/19/16
Map # :	F14_1972AERIAL.mxd

FIGURE 14

Legend

Project Area (601.1 ac)

1,000 500 0 1,000

Feet

Note: 1976 Aerial Photograph obtained from USDA FSA Historical Imagery.
Background imagery from 1972 USDA FSA Historical Imagery.

Proposed Long Island Cove Mitigation Bank

1976 AERIAL PHOTOGRAPHY

Liberty County, TX

Created :	TSC/ArcView10
Approved :	BWD
Date :	9/19/16
Map # :	F15_1976AERIAL.mxd

FIGURE 15

Legend

Project Area (601.1 ac)

N

1,000 500 0 1,000

Feet

Note: 1988 Aerial Photograph obtained from USDA FSA Historical Imagery.

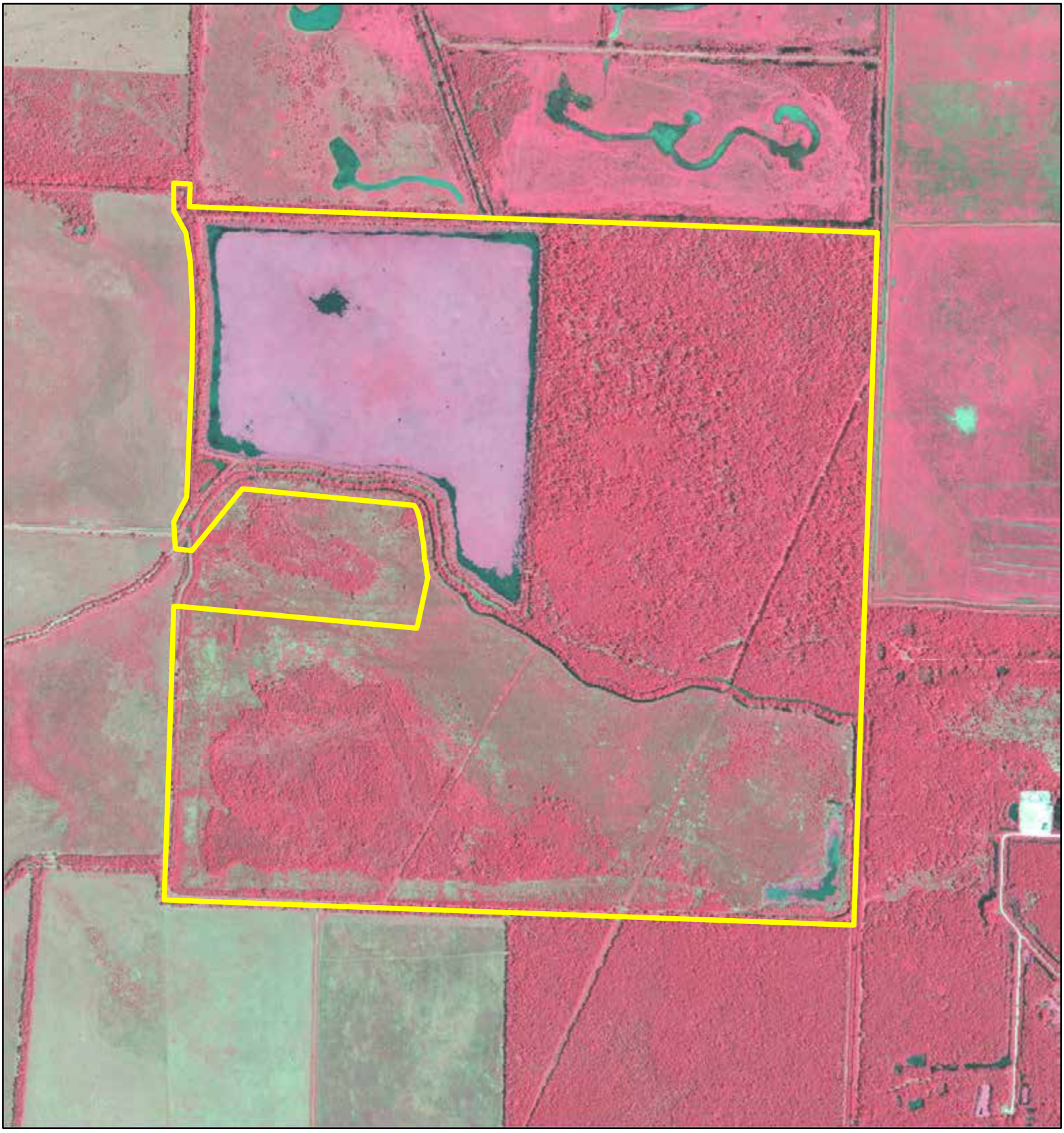
Proposed Long Island Cove Mitigation Bank

1988 AERIAL PHOTOGRAPHY

Liberty County, TX

Created :	TSC/ArcView10
Approved :	BWD
Date :	9/19/16
Map # :	F16_1988AERIAL.mxd

FIGURE 16



Legend

Project Area (601.1 ac)

1,000 500 0 1,000

Feet

Note: 1938 Aerial Photograph obtained from USDA NAIP Imagery for Liberty County, Texas.

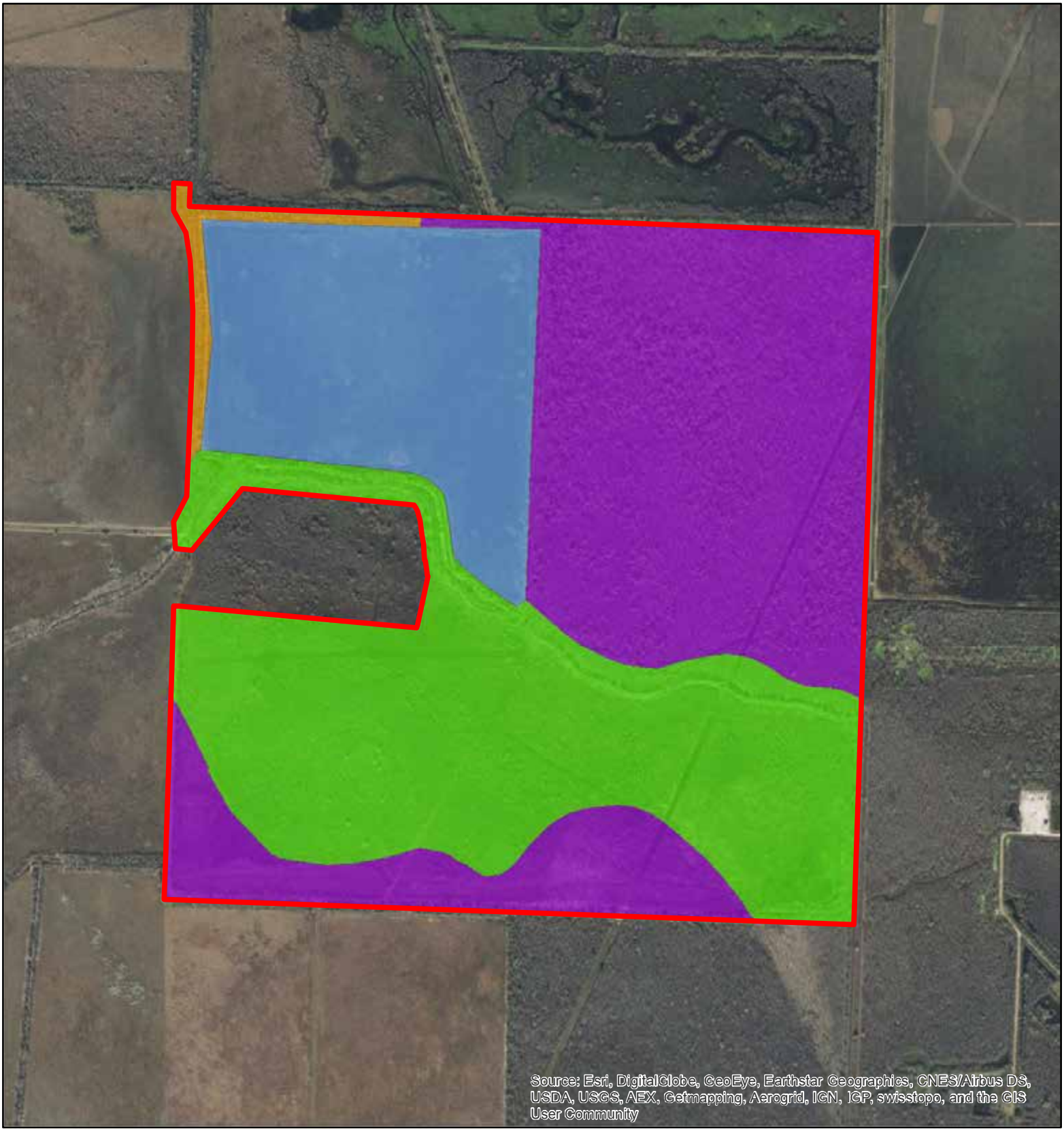
Proposed Long Island Cove Mitigation Bank

2010 AERIAL PHOTOGRAPHY

Liberty County, TX

Created :	TSC/ArcView10
Approved :	BWD
Date :	9/19/16
Map # :	F17_2010AERIAL.mxd

FIGURE 17



Legend

- Project Area (601.1 ac)
- BeaA: Beaumont clay, 0 to 1 percent slope
- VirA: Viterbo silty clam loam, 0 to 1 percent slope
- BevA: Bevil clay, 0 to 1 percent slope
- W: Water

1,000 500 0 1,000

Feet

Note: Soils data obtained from NRCS Soil Survey Geographic (SSURGO) database.

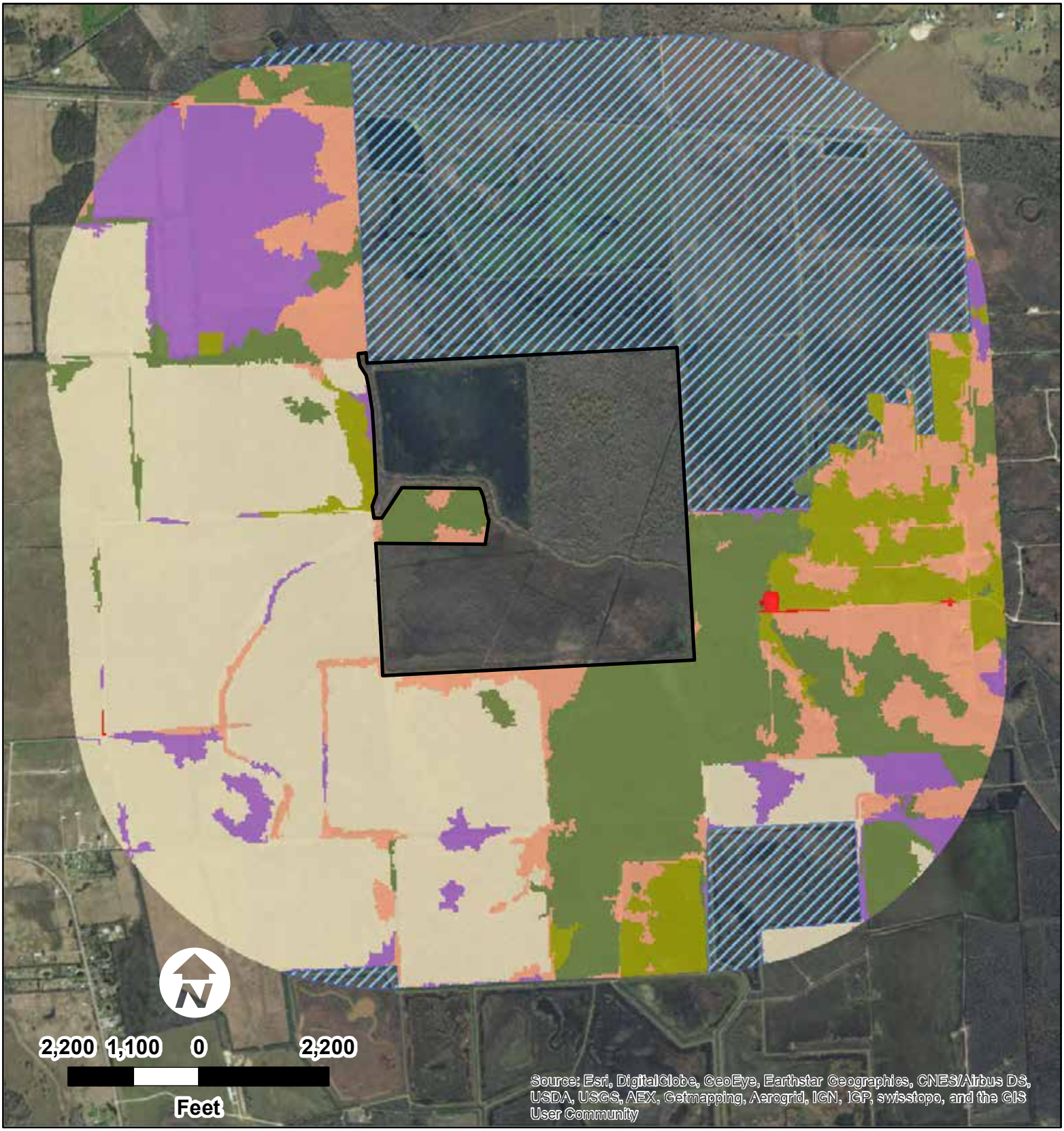
Proposed Long Island Cove Mitigation Bank

SSURGO SOILS MAP

Liberty County, TX

Created :	TSC/ArcView10
Approved :	BWD
Date :	9/19/16
Map # :	F18_SSURGO.mxd

FIGURE 18



Legend

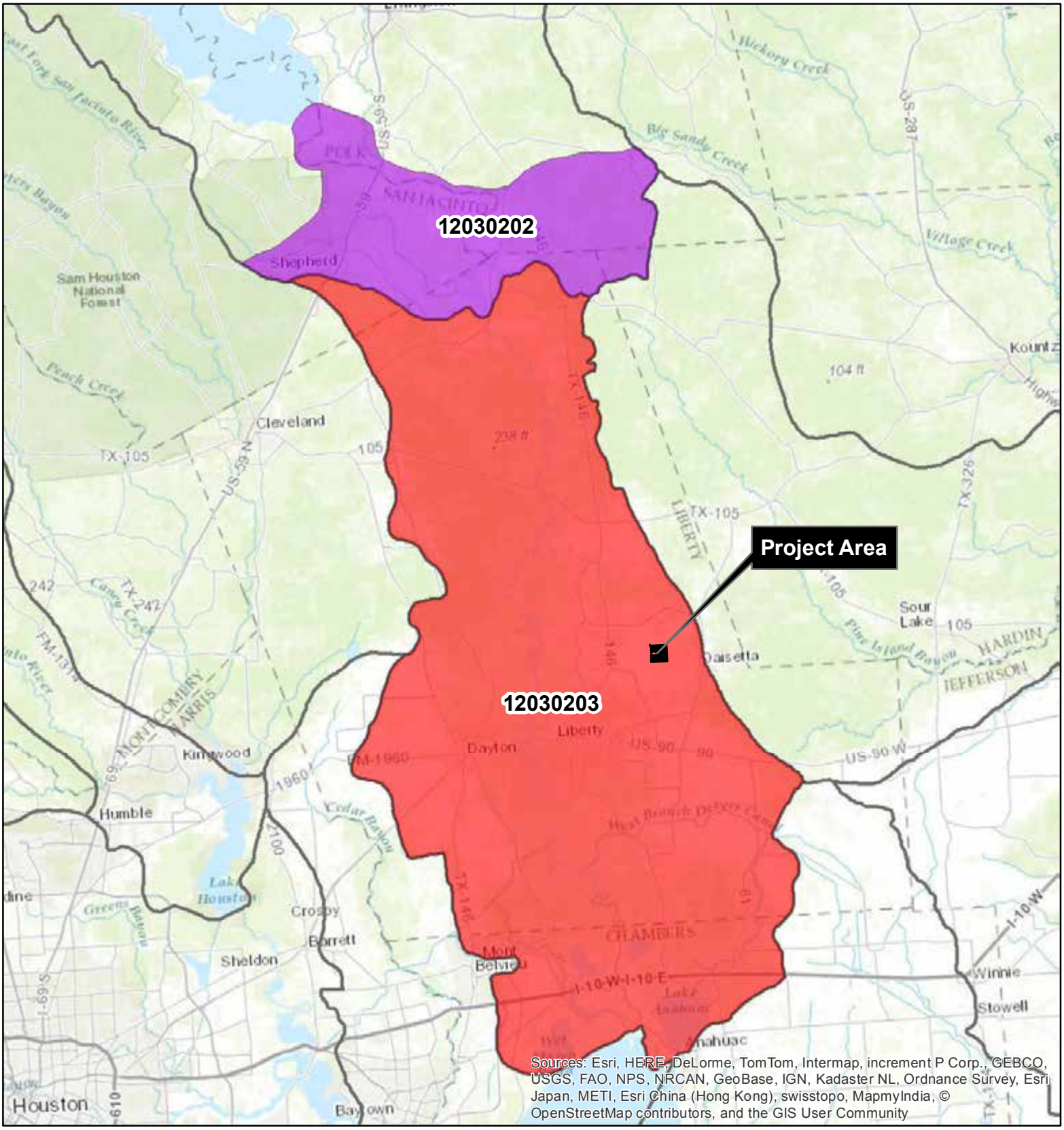
- Project Area (601.1 ac)
- Pasture (31.6%)
- Conservation Lands (31.7%)
- Pineywoods (13.5%)
- Invasive Scrub-shrub (9.7%)
- Gulf Coast: Coastal Prairie (8.2%)
- Swamp / Marsh (5.2%)
- Urban (0.1%)

Note: Surrounding Land Use data obtained from National Land Cover Database 2001 (NLCD2001).

Proposed Long Island Cove Mitigation Bank
LAND USE WITHIN A ONE-MILE BUFFER MAP
Liberty County, TX

Created :	TSC/ArcView10
Approved :	BWD
Date :	9/20/16
Map # :	F19_landuse1mile.mxd

FIGURE 19



Legend

- Project Area (601.1 ac)
- Primary Service Area: Lower Trinity (HUC 12030203)
- Secondary Service Area: Southern Portion of Lower Trinity-Kickapoo (HUC 12030202)

8 4 0 8

Miles

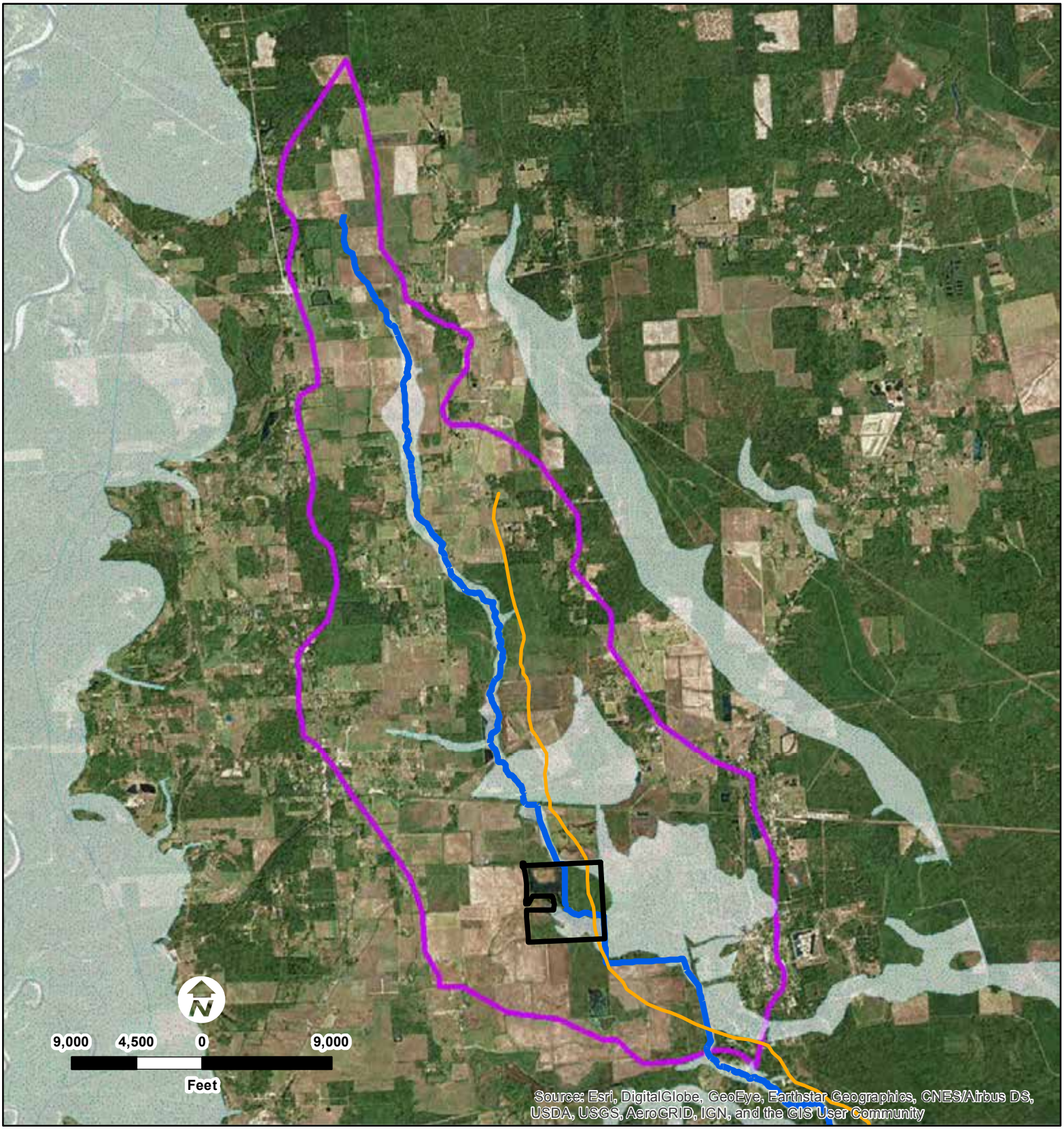
Proposed Long Island Cove Mitigation Bank

SERVICE AREA MAP

Liberty County, TX

Created :	TSC/ArcView10
Approved :	BWD
Date :	10/11/2016
Map # :	F20_ServiceArea.mxd

FIGURE 20



Legend

- Project Area (601.1 ac)
- Flood Zone A
- Daisetta Swamp - LIC (HUC 120200070108) (25,292 ac)
- Long Island Creek (1922 USACE Quad)
- Long Island Creek (Current NHD Flowline)

Note: Flood Zone obtained from FEMA FIRM database. 1922 Long Island Creek digitized from 1922 USACE Quadrangle Map. Current Long Island Creek obtained from USGS National Hydrography Dataset.

Long Island Cove Mitigation Bank
HISTORIC AND CURRENT NHD FLOWLINE FOR LONG ISLAND CREEK
Liberty County, TX

Created :	TSC/ArcView10
Approved :	BWD
Date :	9/20/16
Map # :	F21_NHD

FIGURE 21

Attachment B. Tables

Table 1. Existing Condition and Restored Wetland Type for Long Island Cove Mitigation Bank, Liberty County, Texas.

Existing Condition	Mitigation or Non-mitigation Type	Acres	Totals
Open water (north reservoir)	Palustrine Forest (PFO) Re-establishment	29.4	
Open water PEM (north reservoir)	PFO Rehabilitation I	4.4	
Chinese tallow scrub-shrub (south reservoir)	PFO Rehabilitation II	24.2	
Chinese tallow dominated forest (northeast quadrant)	PFO Rehabilitation III	185.6	**243.6**
Open water (north reservoir)	Palustrine Emergent (PEM) Re-establishment	63.7	
Open water PEM (north reservoir)	PEM Rehabilitation I	8.9	
Chinese tallow scrub-shrub (southeast corner of south reservoir)	PEM Rehabilitation II	158.8	**231.4**
Open water and spoil levee (southeast corner of south reservoir)	Palustrine Scrub-Shrub (PSS) Re-establishment	7.5	
Chinese tallow scrub-shrub (south reservoir)	PSS Rehabilitation	31.4	**38.9**
		Total Mitigation Acres	**513.9**
Aggregate of existing habitat types (Chinese tallow scrub-shrub-forest)	Perennial Stream Buffer	15.1	
Aggregate of existing habitat types (open water and Chinese tallow scrub-shrub-forest)	Intermittent Stream Buffer	35.7	
		Total Stream Buffer Acres	**50.8**
Channelized stream and spoil levees	Perennial Stream (linear feet)	2,661.6	
Channelized stream and spoil levees	Intermittent Stream (linear feet)	3,735.9	
		Total Stream Linear Feet	**6,397.5**
Pipeline Rights-of-Way (ROW)	Pipeline ROW	5.2	
Aggregate of existing habitat types (open water and Chinese tallow scrub-shrub-forest)	Perimeter Buffer	27.8	
Aggregate of existing habitat types (open water and Chinese tallow scrub-shrub-forest)	Fire Lane / Access Trails	3.4	
		Total Non-mitigation Acres	**36.4**
		Total Acres	**601.1**

Table 2. Soil Map Units[1] Identified within the Long Island Cove Mitigation Bank, Liberty County, Texas.

Symbol	Name	Ponding Frequency	Drainage Class	Percent Hydric Components
BeaA	Beaumont clay, 0 to 1% slopes	0-14%	Poorly drained	85
BevA	Bevil clay, 0 to 1% slopes	0-14%	Poorly drained	85
VirA	Viterbo silty clay loam, 0 to 1% slopes	0-14%	Somewhat poorly drained	90
W	Water	N/A	N/A	100

[1]Natural Resources Conservation Service [NRCS] (2015[b]) Web Soil Survey [website]. U.S. Department of Agriculture, Natural Resources Conservation Service, Web Soil Survey.

Table 3. Chinese tallowtree (*Triadica sebifera*) stem count estimate, 1/10th-acre Plot Sampling for Northwest quadrant, Long Island Cove Mitigation Bank, Liberty County, Texas, March 29, 2016.

Plots	Trees ≥ 3"	Sapling < 3"	Seedlings[1]
1	0	53	0
2	0	244	0
3	4	0	223
4	15	45	131
5	7	0	111
6	7	41	42
7	13	11	24
8	9	0	0
9	4	33	14
10	17	78	117
11	23	92	103
12	22	96	126
Average	**10.1**	**57.8**	**74.3**
Standard Deviation	**7.9**	**68.1**	**71.2**
10x	**100.8**	**577.5**	**1,485.0**
Average total of trees, saplings, and seedlings per acre			**2,163.3**

[1]Seedling tally was estimated on 1/20th-acre plots nested within the 1/10th-acre plots.

Table 4. Potential Palustrine Forest (PFO) and Palustrine Scrub Shrub (PSS) Planting List for the Long Island Cove Mitigation Bank, Liberty County, Texas.

Common Name	Scientific Name[1]	AGCP Wetland Indicator[1]
PFO Hard Mast Species (approximately 40-60%)[2]		
water hickory	*Carya aquatica*[5]	FACW
laurel oak	*Quercus laurifolia*[5]	FACW
Overcup oak	*Quercus lyrata*[4,5]	OBL
willow oak	*Quercus phellos*[4,5]	FACW
bottomland post oak	*Quercus similis*[5]	FACW
Texas red oak	*Quercus texana*[4,5]	FACW
PFO Soft Mast Species (approximately 40-60%)[2]		
sugarberry	*Celtis laevigata*[4]	FACW
mayhaw	*Crataegus opaca*[3]	OBL
green ash	*Fraxinus pennsylvanica*[4,5]	FACW
redbay	*Persea borbonia*[4]	FACW
swamp tupelo	*Nyssa biflora*[3]	OBL
baldcypress	*Taxodium distichum*[4]	OBL
planertree	*Planera aquatica*[5]	OBL
PSS Species[2]		
buttonbush	*Cephalanthus occidentalis*[5] (seed)	OBL
redbay	*Persea barbonia*[4]	FACW

[1] Plant scientific nomenclature and wetland indicator status for the Atlantic and Gulf Coastal Plain from NRCS 2014 and Lichvar et al. 2014.

[2] The actual planting composition is contingent on commercial species availability. However, the overall planting regime should include at least 10 species from the planting list with no single species consisting of more than 25% of the overall species composition.

[3] This species is not listed in Liberty County; however it is listed in at least one adjacent county to Liberty County (NRCS 2014).

[4] This species is listed as occurring in Liberty County (NRCS 2014).

[5] Native to Texas, several mature speciemens growing on the Bank.

Table 5. Floristic List, Long Island Cove Mitigation Bank, Liberty County, Texas, July 7-16, 2015.

Number	Scientific Name	Common Name	USDA Plants Wetland Indicator Status[1]	USDA Plants Native or Introduced Status[1]
1	*Alternanthera philoxeroides*	Alligatorweed	5	0
2	*Ambrosia trifida*	Giant ragweed	3	1
3	*Ammannia coccinea*	Valley redstem	5	1
4	*Axonopus fissifolius*	Common carpetgrass	4	1
5	*Brunnichia ovata*	American buckwheat vine	4	1
6	*Carex caroliniana*	Carolina sedge	4	1
7	*Carex cherokeensis*	Cherokee sedge	4	1
8	*Carex crus-corvi*	Ravenfoot sedge	5	1
9	*Carex flaccosperma*	Thinfruit sedge	4	1
10	*Carex frankii*	Frank's sedge	5	1
11	*Carex gigantea*	Giant sedge	5	1
12	*Carex glaucescens*	Southern waxy sedge	5	1
13	*Carex lupulina*	Hop sedge	5	1
14	*Carex triangularis*	Eastern fox sedge	4	1
15	*Cephalanthus occidentalis*	Buttonbush	5	1
16	*Chasmanthium laxum*	Slender woodoats	4	1
17	*Clematis crispa*	Swamp leather flower	4	1
18	*Crinum americanum*	Seven sisters lily	5	1
19	*Cyperus esculentus*	Yellow nutsedge	3	1
20	*Cyperus haspan*	Haspan flatsedge	5	1
21	*Cyperus polystachyos*	Manyspike flatsedge	4	1
22	*Cyperus pseudovegetus*	Marsh flatsedge	4	1
23	*Cyperus virens*	Green flatsedge	4	1
24	*Dichanthelium acuminatum*	Tapered rosette grass	3	1
25	*Dichanthelium scoparium*	Broom rosette grass	4	1
26	*Dichondra carolinensis*	Carolina ponysfoot	3	1
27	*Diodia virginiana*	Virginia buttonweed	4	1
28	*Echinochloa crus-galli*	Barnyardgrass	4	0
29	*Echinocystis lobata*	Wild cucumber	4	1
30	*Eclipta prostrata*	False daisy	4	1
31	*Eleocharis microcarpa*	Smallfruit spikerush	5	1
32	*Eleocharis montevidensis*	Sand spikerush	4	1
33	*Eleocharis parvula*	Dwarf spikerush	5	1
34	*Eleocharis quadrangulata*	Squarestem spikerush	5	1
35	*Elymus virginicus*	Virginia wildrye	3	1
36	*Eryngium hookerii*	Hooker's eryngo	4	1
37	*Eryngium integrifolium*	Blueflower eryngo	4	1
38	*Eupatorium semiserratum*	Smallflower thoroughwort	4	1
39	*Eupatorium serotinum*	Lateflowering thoroughwort	3	1
40	*Euthamia gymnospermoides*	Texas goldentop	3	1
41	*Euthamia leptocephala*	Bushy goldentop	4	1
42	*Galium tinctorium*	Stiff marsh bedstraw	4	1

Table 5. Floristic List, Long Island Cove Mitigation Bank, Liberty County, Texas, July 7-16, 2015.

Number	Scientific Name	Common Name	USDA Plants Wetland Indicator Status[1]	USDA Plants Native or Introduced Status[1]
43	*Hibiscus moscheutos*	Crimsoneyed rosemallow	5	1
44	*Hydrolea ovata*	Ovate false fiddleleaf	5	1
45	*Hymenocallis liriosme*	Spring spiderlily	5	1
46	*Hypericum hypericoides*	St. Andrew's cross	3	1
47	*Iva annua*	Annual marsh elder	3	1
48	*Juncus acuminatus*	Knotty leaf rush	5	1
49	*Juncus bufonius*	Toad rush	4	1
50	*Juncus diffusissimus*	Slimpod rush	4	1
51	*Juncus effusus*	Soft rush	5	1
52	*Juncus marginatus*	Bog rush	4	1
53	*Justicia ovata*	Looseflower water-willow	5	1
54	*Leersia lenticularis*	Catchfly grass	5	1
55	*Limnobium spongia*	American spongeplant	5	1
56	*Limnosciadium pumilum*	Prairie dogshade	5	1
57	*Ludwigia grandiflora*	Large-flower primrose-willow	5	0
58	*Ludwigia octovalvis*	Mexican primrose-willow	5	1
59	*Ludwigia repens*	Creeping primrose-willow	5	1
60	*Lycopus virginicus*	Virginia water horehound	5	1
61	*Lygodium japonicum*	Japanese climbing fern	3	0
62	*Mikania scandens*	Climbing hempvine	4	1
63	*Mimosa strigillosa*	Powderpuff	3	1
64	*Panicum hemitomon*	Maidencane	5	1
65	*Panicum rigidulum*	Redtop panicgrass	4	1
66	*Paspalum bifidum*	Pitchfork crowngrass	4	1
67	*Paspalum dilatatum*	dallisgrass	3	0
68	*Paspalum dissectum*	Mudbank crowngrass	5	1
69	*Paspalum leave*	Field paspalum	4	1
70	*Paspalum plicatulum*	Brownseed paspalum	3	1
71	*Paspalum setaceum*	Slender crowngrass	3	1
72	*Paspalum urvillei*	Vasey's grass	3	0
73	*Persicaria hydropiperoides*	Swamp smartweed	5	1
74	*Persicaria lapathifolia*	Curlytop knotweed	4	1
75	*Persicaria punctata*	Dotted smartweed	5	1
76	*Persicaria virginiana*	Jumpseed	3	1
77	*Phanopyrum gymnocarpon*	Savannah-panicgrass	5	1
78	*Phyla nodiflora*	Turkey tangle frogfruit	3	1
79	*Rhexia mariana*	Maryland meadowbeauty	4	1
80	*Rhynchospora caduca*	Anglestem beaksedge	5	1
81	*Rhynchospora corniculata*	Shortbristle horned beaksedge	5	1
82	*Rhynchospora fascicularis*	Fascicled beaksedge	4	1
83	*Rhynchospora glomerata*	Clustered beaksedge	5	1
84	*Rhynchospora inexpansa*	Nodding beaksedge	4	1

Table 5. Floristic List, Long Island Cove Mitigation Bank, Liberty County, Texas, July 7-16, 2015.

Number	Scientific Name	Common Name	USDA Plants Wetland Indicator Status[1]	USDA Plants Native or Introduced Status[1]
85	*Rhynchospora mixta*	Mingled beaksedge	5	1
86	*Rubus argutus*	Sawtooth blackberry	3	1
87	*Saccharum baldwinii*	Narrow plumegrass	5	1
88	*Sagittaria lancifolia*	Bulltongue arrowhead	5	1
89	*Saururus cernuus*	Lizard's tail	5	1
90	*Scirpus cyperinus*	Cottongrass bulrush	5	1
91	*Scutellaria integrifolia*	Helmet flower	3	1
92	*Sesbania drummondii*	Poisonbean	4	1
93	*Setaria parviflora*	Marsh bristlegrass	4	1
94	*Solidago sempervirens*	Seaside goldenrod	4	1
95	*Strophostyles umbellata*	Trailing fuzzybean	3	1
96	*Symphyotrichum dumosum*	Rice button American aster	3	1
97	*Typha latifolia*	Broadleaf cattail	5	1
		Overall Average Wetland Indicator Status	**4.20**	**n = 97**
		Introduced Species Wetland Indicator Status	**3.83**	**n = 6**
		Average Native Species Wetland Indicator Status	**4.22**	**n = 91**

1 USDA Plant wetland indicator status: Obligate = 5; Facultative wet = 4; Facutative = 3. USDA Plant native or introduced status; 0 = introduced; 1 = Native.

Attachment C. Site Photographs

Existing Conditions Proposed Long Island Cove Mitigation Bank

Typical View of Reservoir Looking Northwest on North Reservoir

Typical View of Drainage Canal Separating North and South Reservoirs

Typical View of Chinese Tallow Scrub-shrub in South Reservoir

Typical View of Chinese Tallow Herbaceous-scrub-shrub in South Reservoir

Long Island Cove Creek Flowing into the Bank

at the North Property Line during Flood Conditions

Typical View of Flooding in Forested Area along the Northern Perimeter

Typical View of Chinese Tallow Infestation of Palustrine Forested Area

Rare *Quercus texana* Specimen in Chinese Tallow Forested Area

Typical View of Few Hardwoods in Chinese Tallow Forested Area

Typical View of Short Hardwood Life Cycle (wind throw and basal rotting)

Typical View of Chinese Tallow Infestation Saplings and Seed Bearing Trees

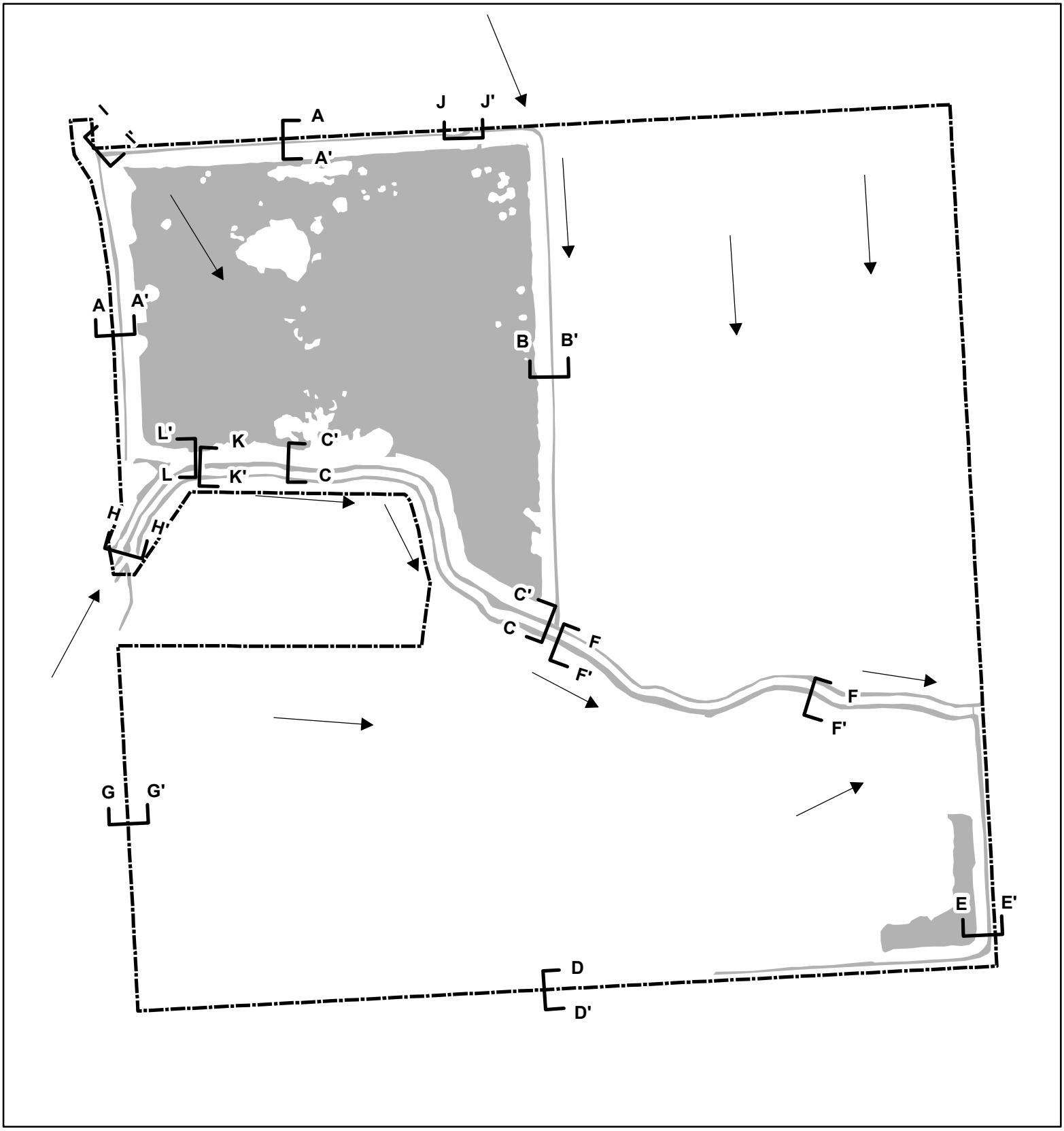
Typical View of Scrub-shrub-herbaceous with Hunting Area Maintenance

Diesel Lift Pump and Shed for Removal

Diesel Lift Pump Intake for Removal

Diesel Lift Pump Outfall for Removal

Attachment D. Hydrology Restoration Plan



Legend

- Project Area (601.1 ac)
- Open Water
- Flowlines

800 400 0 800

Feet

Long Island Cove Mitigation Bank

HYDROLOGY RESTORATION PLAN

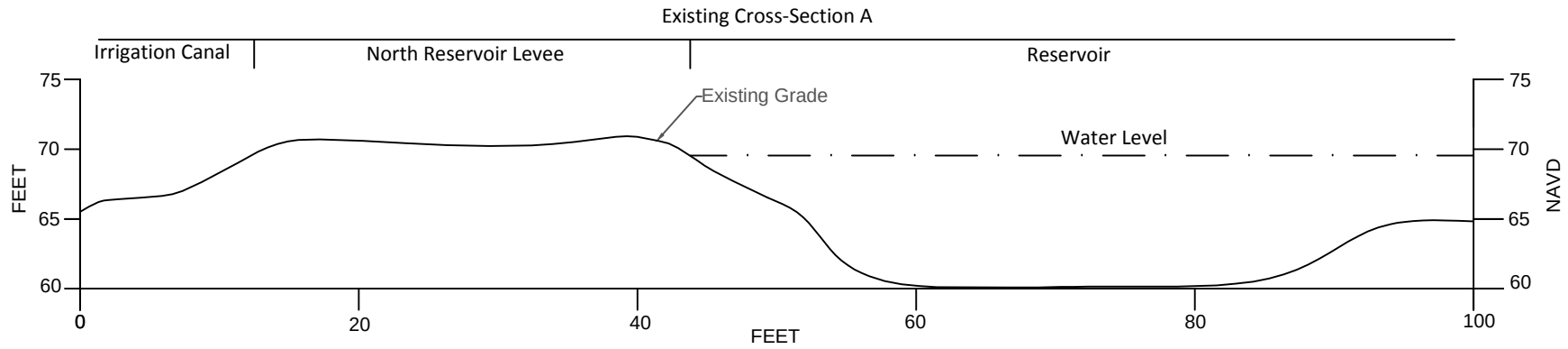
Liberty County, TX

Created :	TSC/ArcView10
Approved :	BWD
Date :	6/2/2016
Map # :	FD_RestorationPlan

ATTACHMENT D

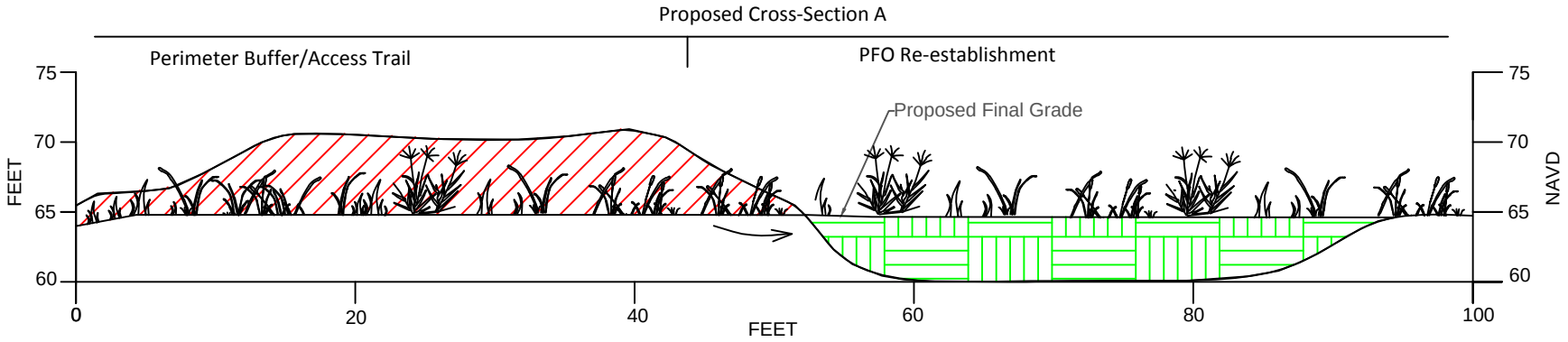
A

A'



A

A'



Proposed Excavation

Proposed Earthen Fill

Long Island Cove Mitigation Bank

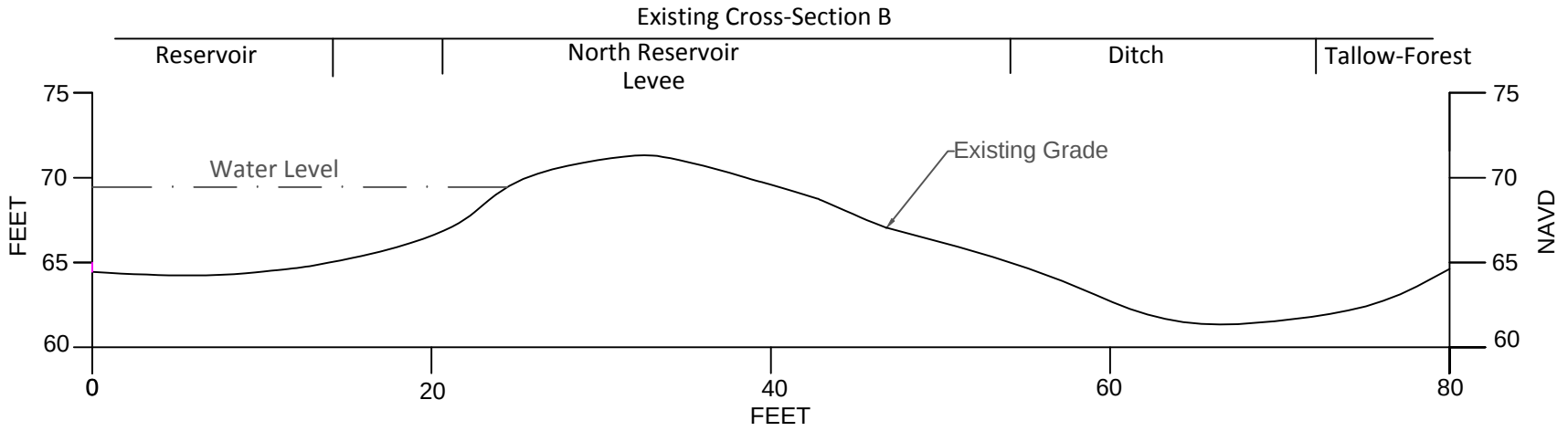
CROSS SECTION

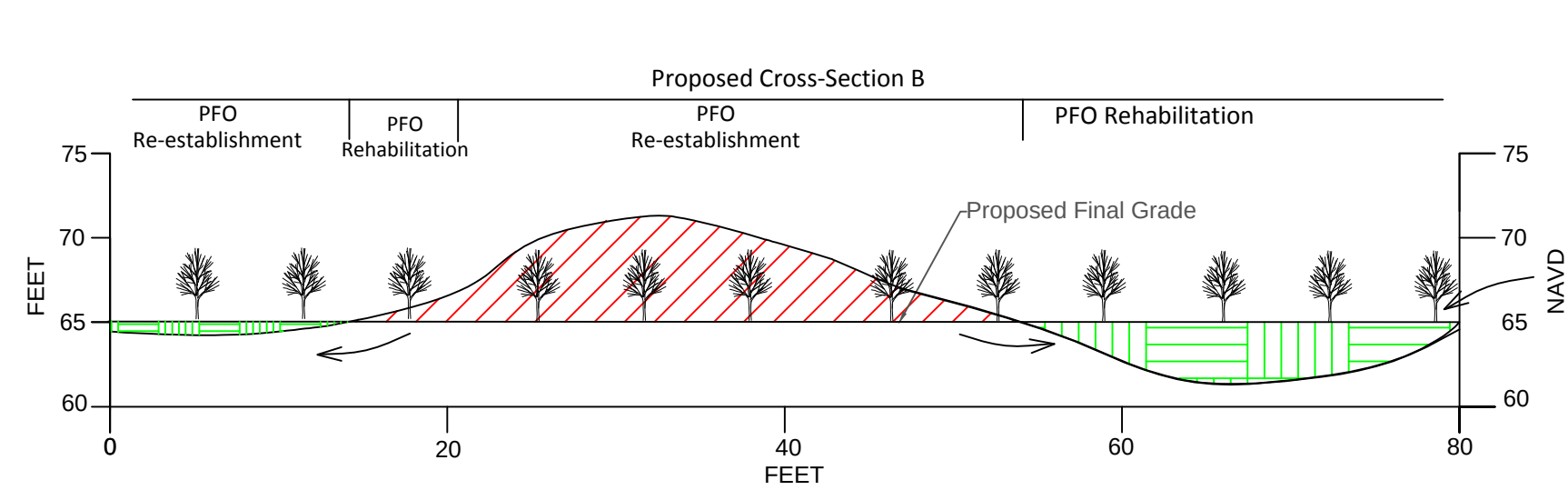
Liberty County, TX

Created:	TSC/AutoCAD
Approved:	BWD
Date:	6/2/2016
Dwg. No.:	deloach_xsections.dwg

Attachment D-1

DELTA LAND SERVICES





Proposed Excavation

Proposed Earthen Fill

Long Island Cove Mitigation Bank

CROSS SECTION

Liberty County, TX

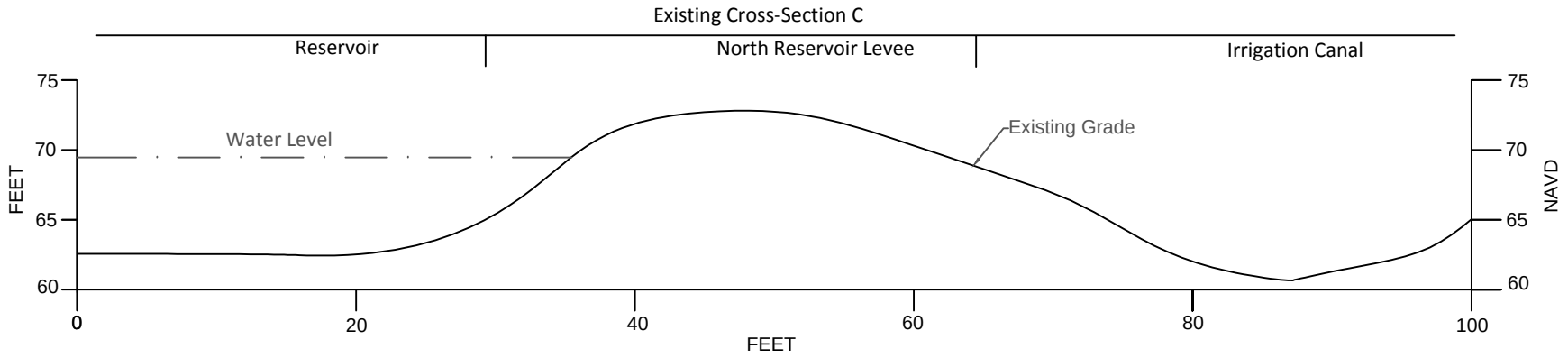
Created:	TSC/AutoCAD
Approved:	BWD
Date:	6/2/2016
Dwg. No.:	deloach_xsections.dwg

Attachment D-2

DELTA LAND SERVICES

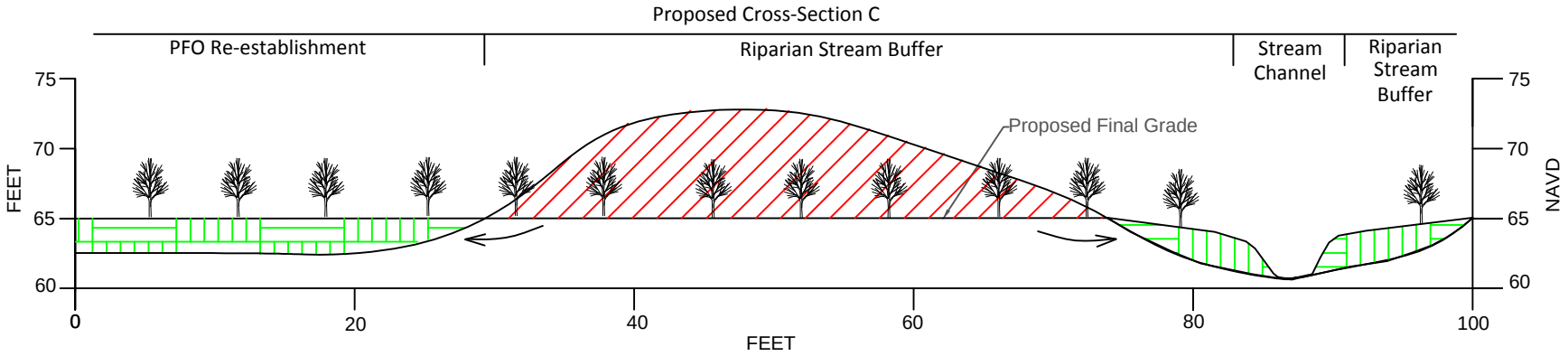
C'

C



C'

C



Proposed Excavation

Proposed Earthen Fill

Long Island Cove Mitigation Bank

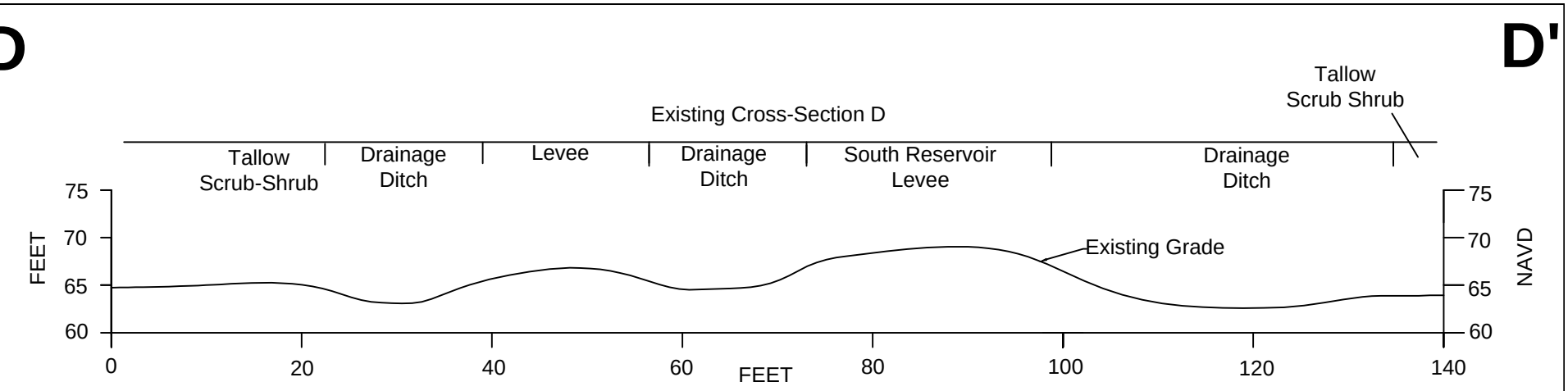
CROSS SECTION

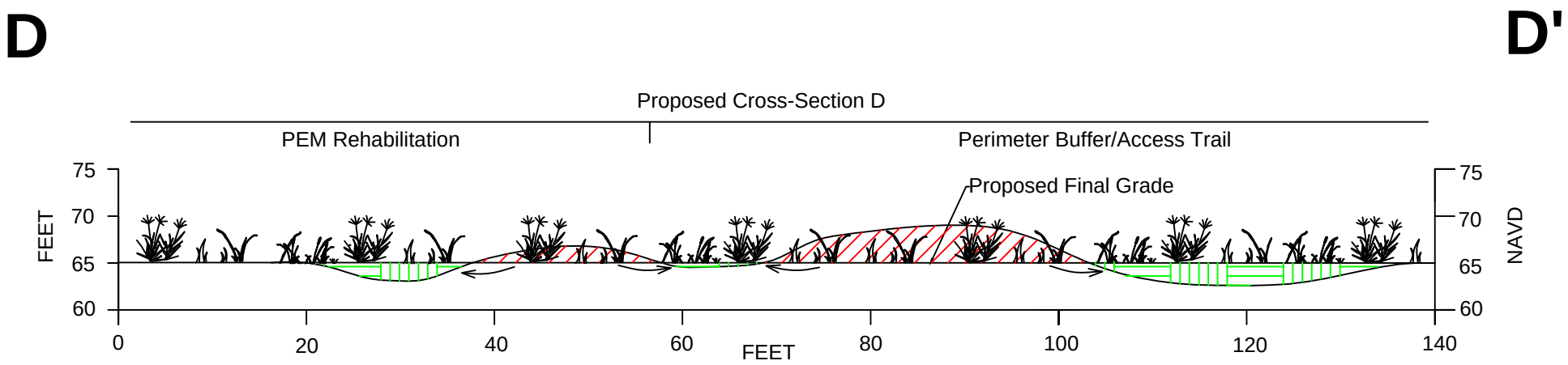
Liberty County, TX

Created:	TSC/AutoCAD
Approved:	BWD
Date:	3/15/2016
Dwg. No.:	deloach_xsections.dwg

Attachment D-3

DELTA LAND SERVICES





Proposed Excavation

Proposed Earthen Fill

Long Island Cove Mitigation Bank

CROSS SECTION

Liberty County, TX

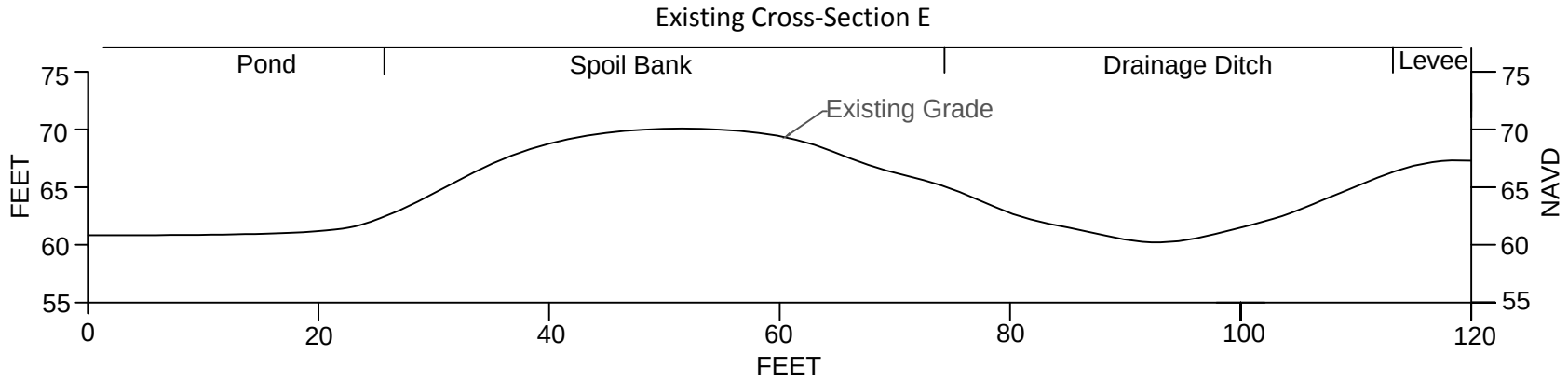
Created:	TSC/AutoCAD
Approved:	BWD
Date:	6/2/2016
Dwg. No.:	deloach_xsections.dwg

Attachment D-4

DELTA LAND SERVICES

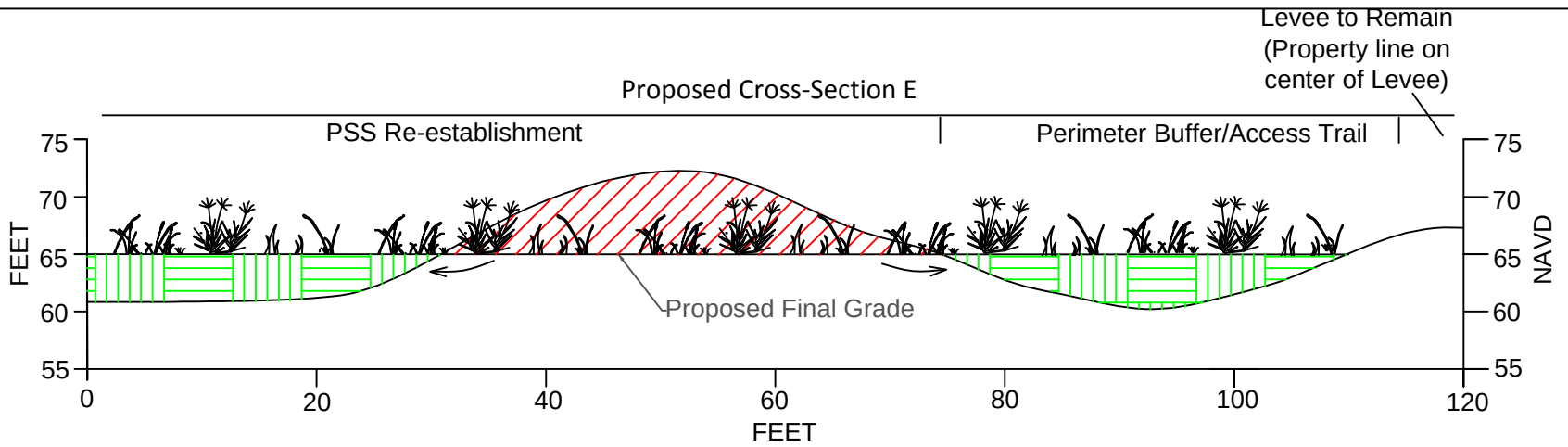
E

E'



E

E'



Proposed Excavation

Proposed Earthen Fill

Long Island Cove Mitigation Bank

CROSS SECTION

Liberty County, TX

Created:	TSC/AutoCAD
Approved:	BWD
Date:	6/2/2016
Dwg. No.:	deloach_xsections.dwg

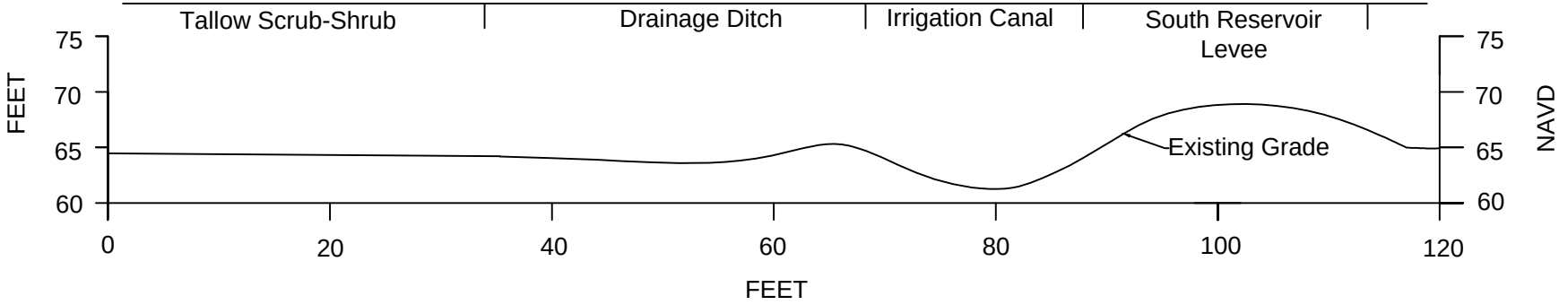
Attachment D-5

DELTA LAND SERVICES

F

F'

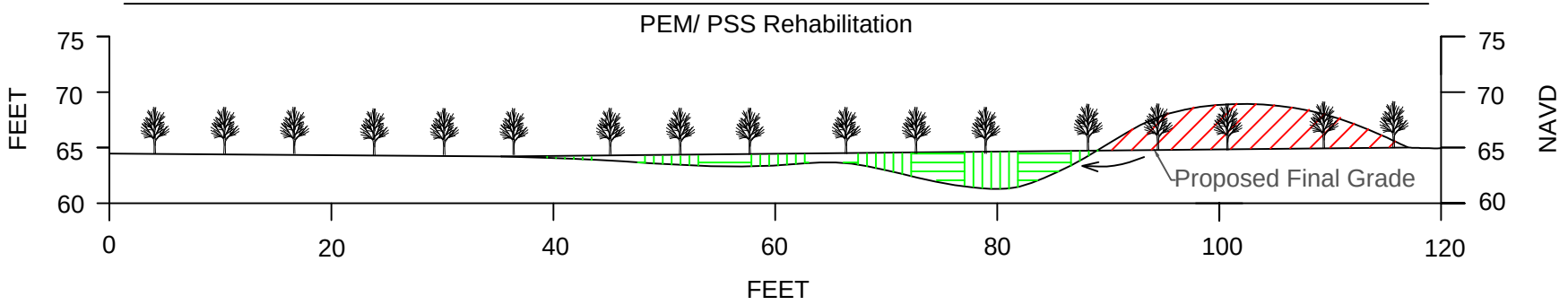
Existing Cross-Section F



F

F'

Proposed Cross-Section F



Proposed Excavation

Proposed Earthen Fill

Long Island Cove Mitigation Bank

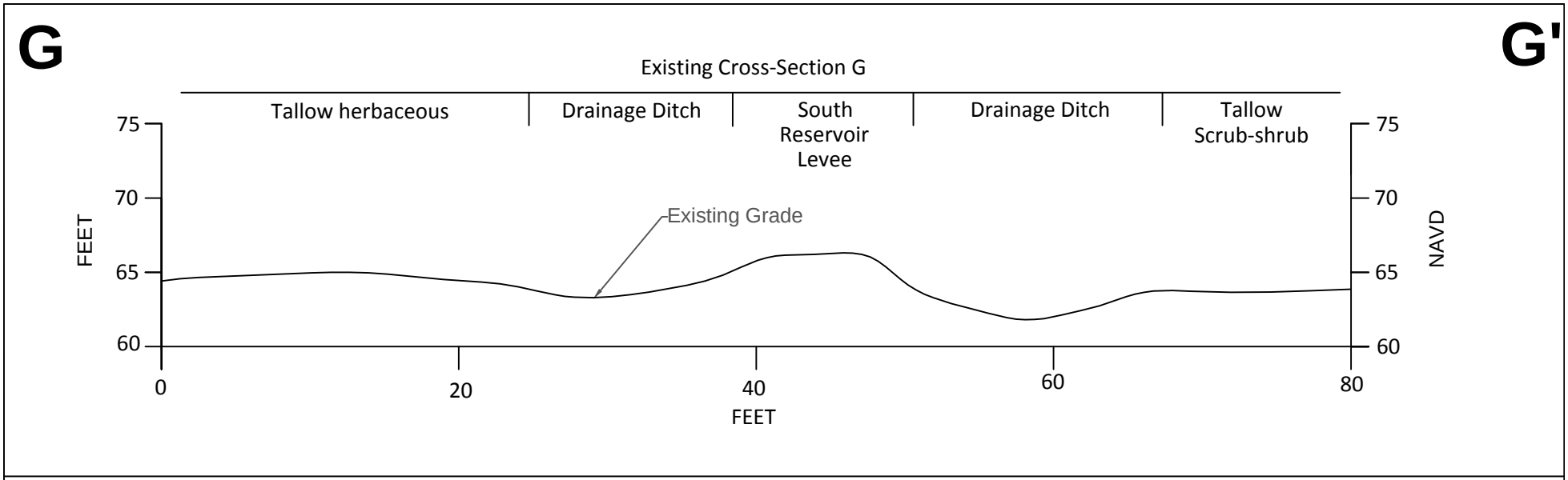
CROSS SECTION

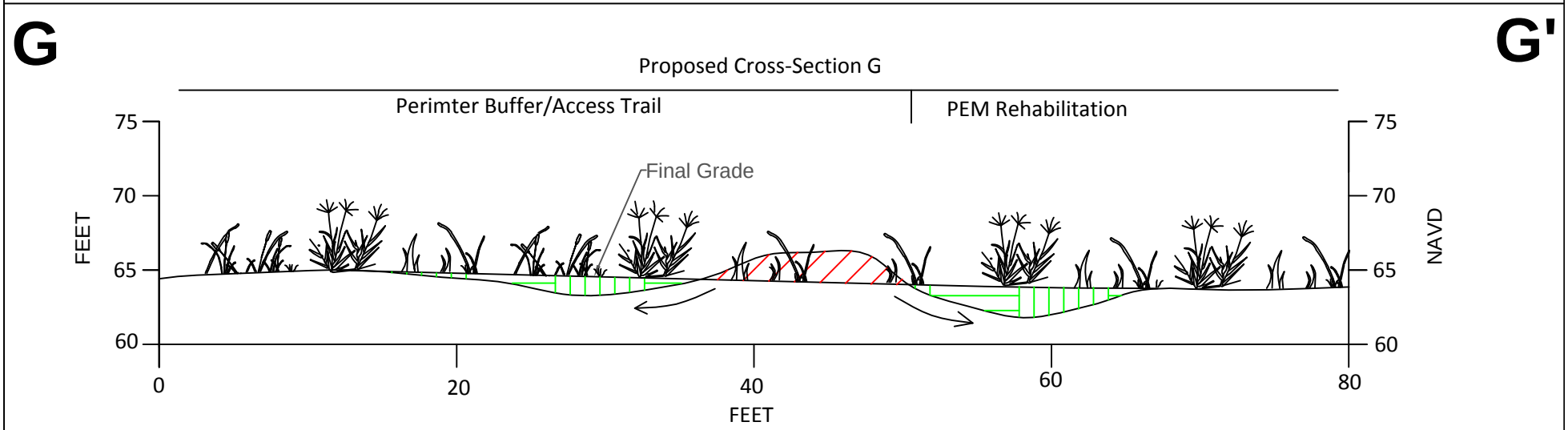
Liberty County, TX

Created:	TSC/AutoCAD
Approved:	BWD
Date:	6/2/2016
Dwg. No.:	deloach_xsections.dwg

Attachment D-6

DELTA LAND SERVICES





Proposed Excavation

Proposed Earthen Fill

Long Island Cove Mitigation Bank

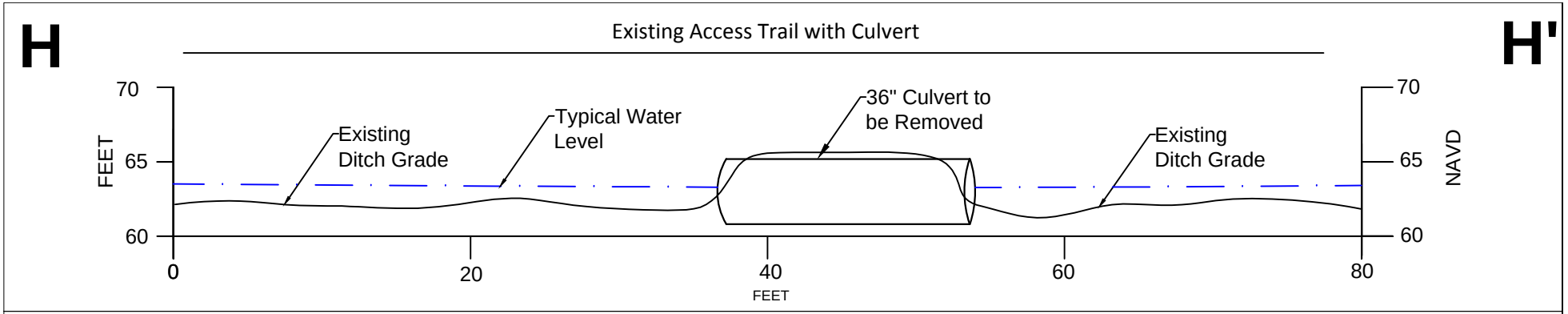
CROSS SECTION

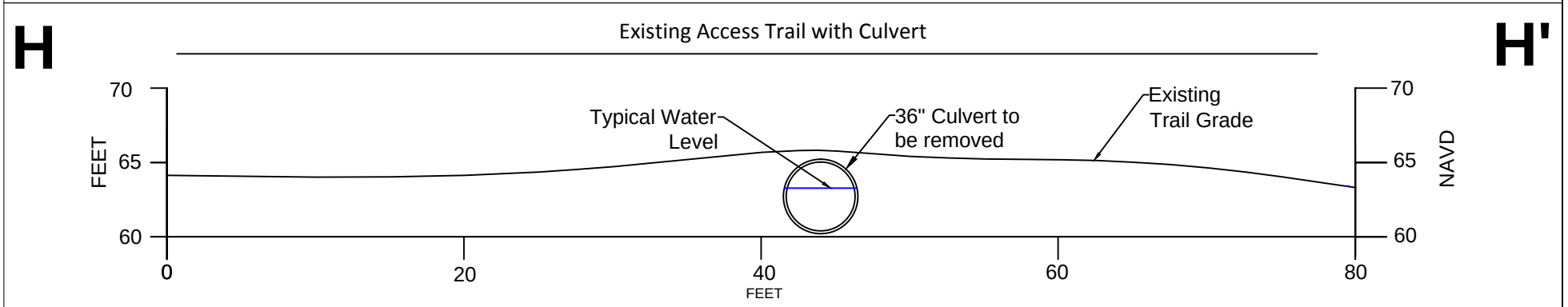
Liberty County, TX

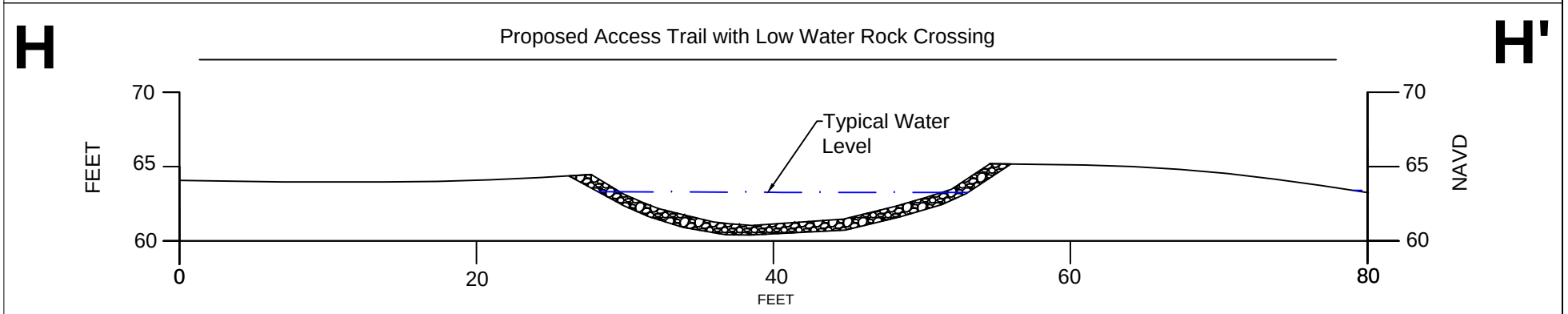
Created:	TSC/AutoCAD
Approved:	BWD
Date:	6/2/2016
Dwg. No.:	deloach_xsections.dwg

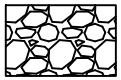
Attachment D-7

DELTA LAND SERVICES









Proposed 3"-5" Limestone Rock

Long Island Cove Mitigation Bank

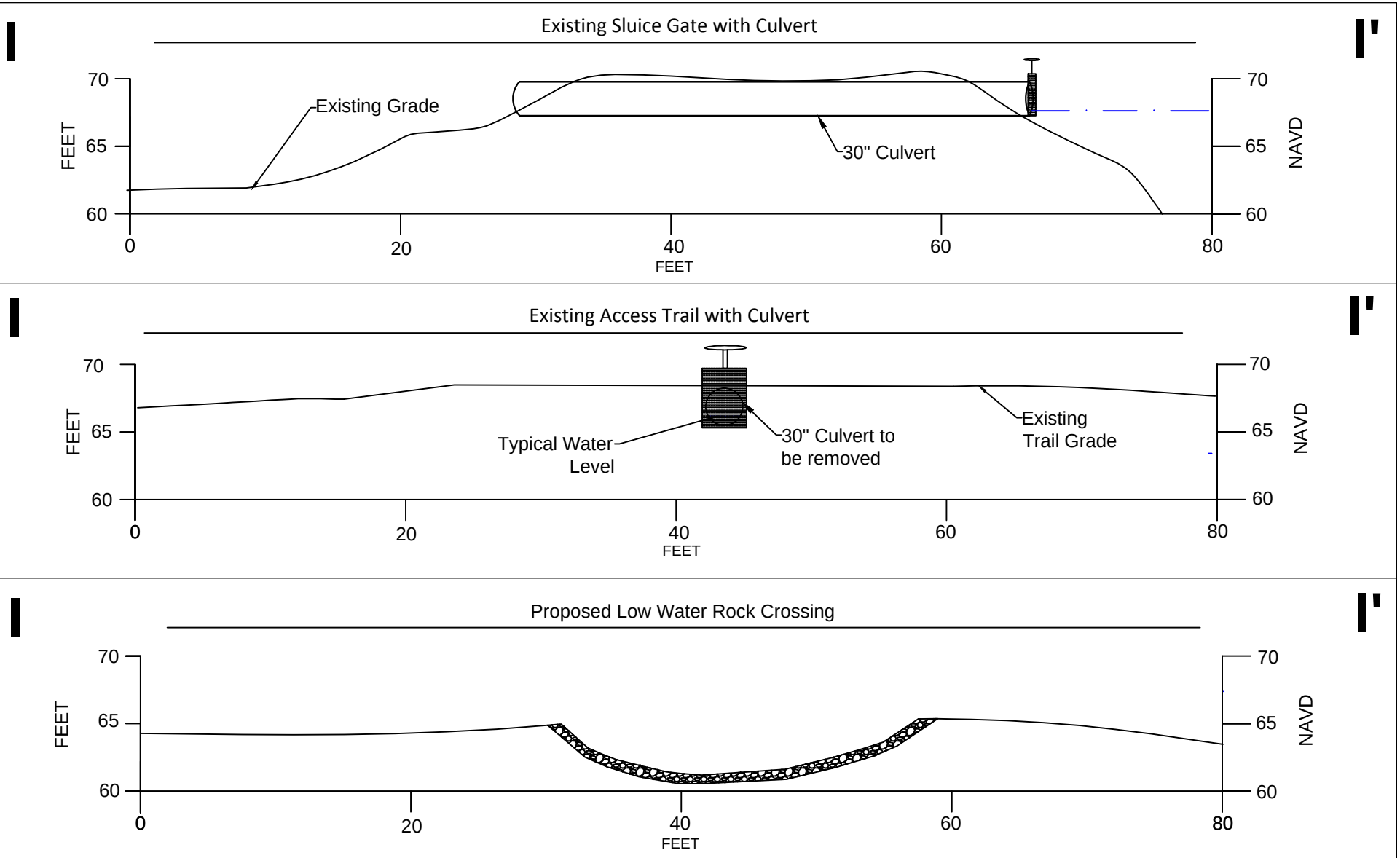
CULVERT REMOVAL
REPLACED WITH LOW WATER CROSSING

Liberty County, TX

Created:	TSC/AutoCAD
Approved:	BWD
Date:	6/2/2016
Dwg. No.:	deloach_xsections.dwg

Attachment D-8

DELTA LAND SERVICES



Proposed 3"-5" Limestone Rock

Long Island Cove Mitigation Bank

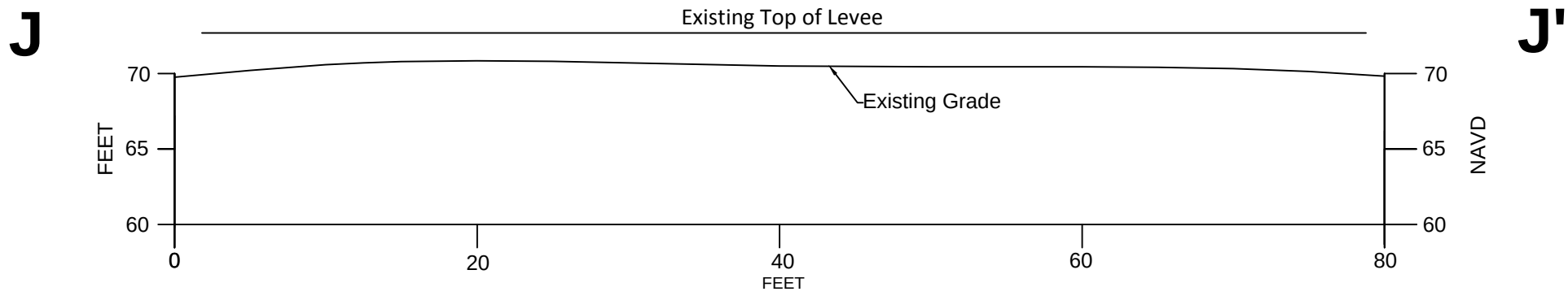
PERENNIAL STREAM LOW WATER CROSSING

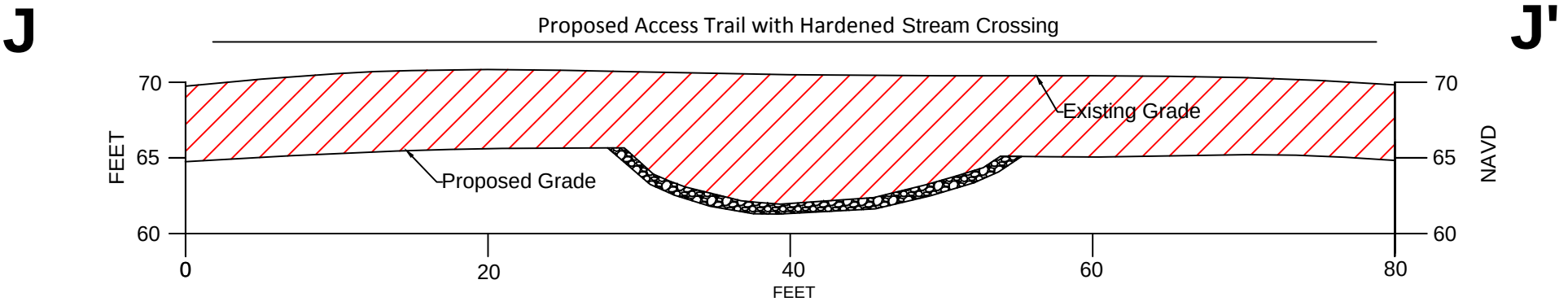
Liberty County, TX

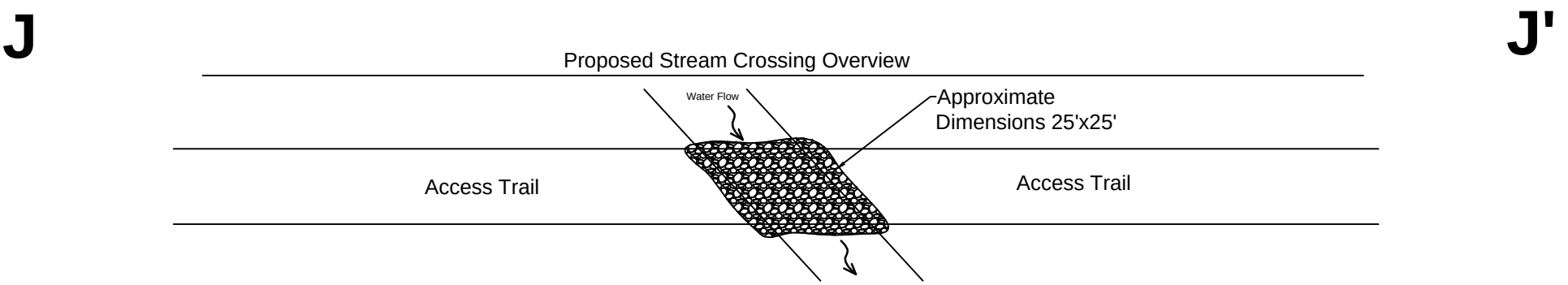
Created:	TSC/AutoCAD
Approved:	BWD
Date:	6/2/2016
Dwg. No.:	deloach_xsections.dwg

Attachment D-9

DELTA LAND SERVICES







Proposed Excavation

Proposed 3"-5" Limestone Rock

Long Island Cove Mitigation Bank

PERINNIAL STREAM LOW WATER CROSSING

Liberty County, TX

Created:	TSC/AutoCAD
Approved:	BWD
Date:	6/2/2016
Dwg. No.:	deloach_xsections.dwg

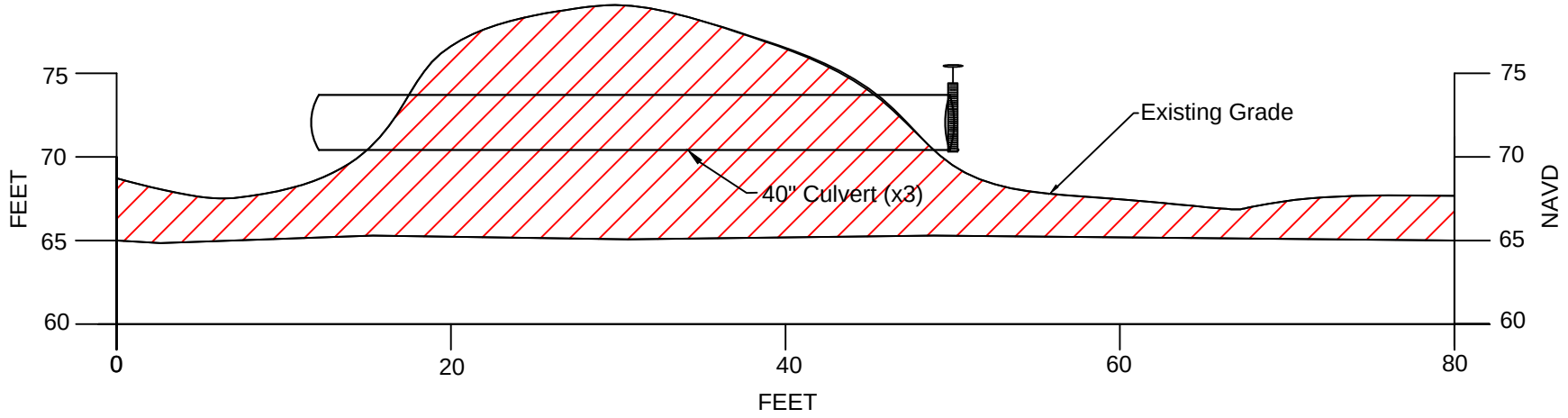
Attachment D-10

DELTA LAND SERVICES

K

Existing Canal Plug and Three Culverts to be Removed Side View

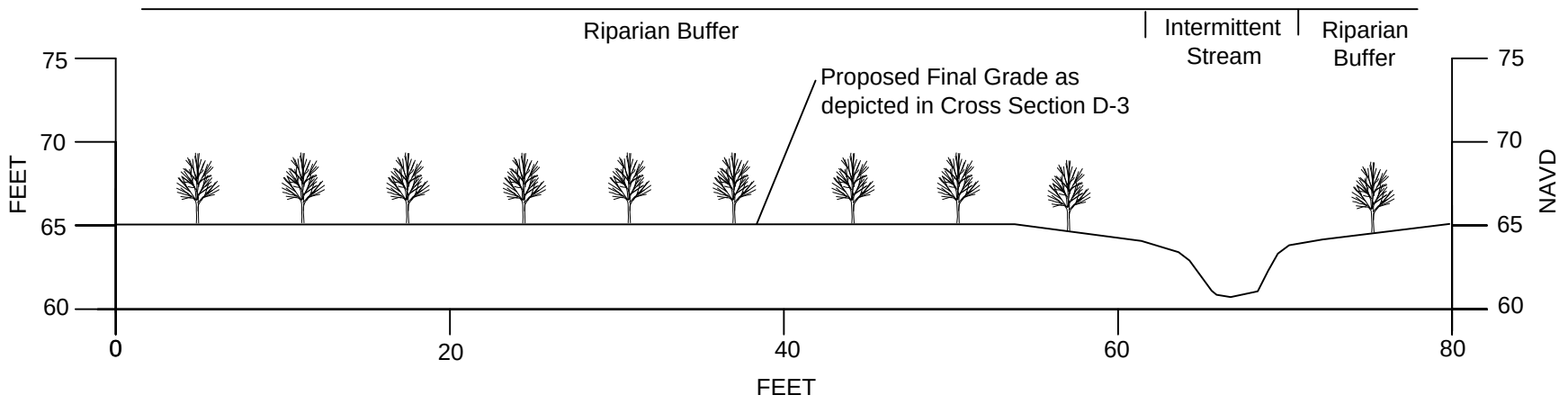
K'



K

Intermittent Stream Restoration Cross-section

K'



Proposed Excavation

Long Island Cove Mitigation Bank

IRRIGATION STRUCTURE REMOVAL

Liberty County, TX

Created:	TSC/AutoCAD
Approved:	BWD
Date:	6/2/2016
Dwg. No.:	deloach_xsections.dwg

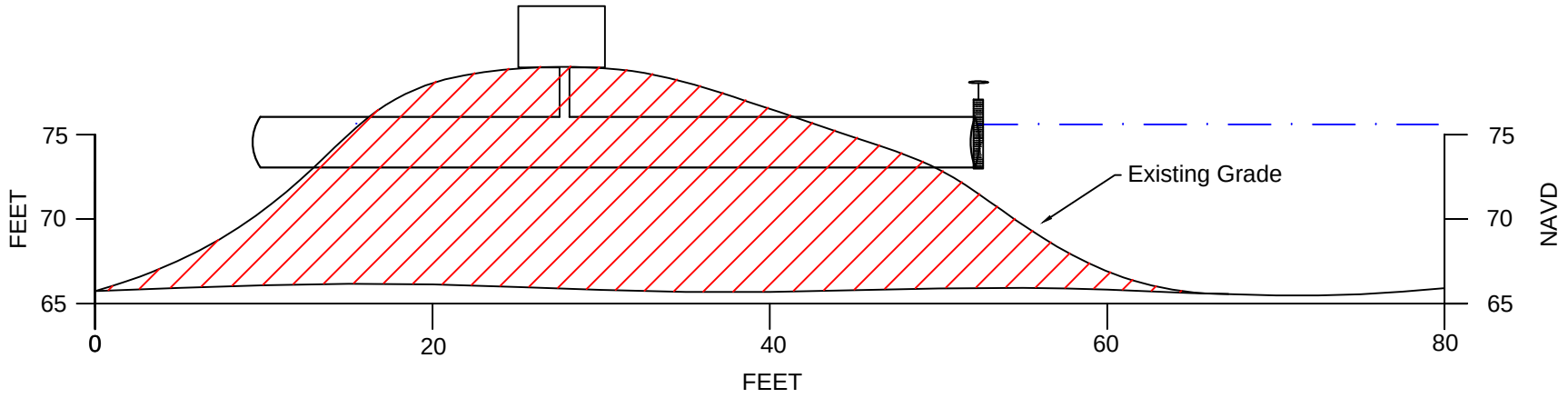
Attachment D-11

DELTA LAND SERVICES

L

L'

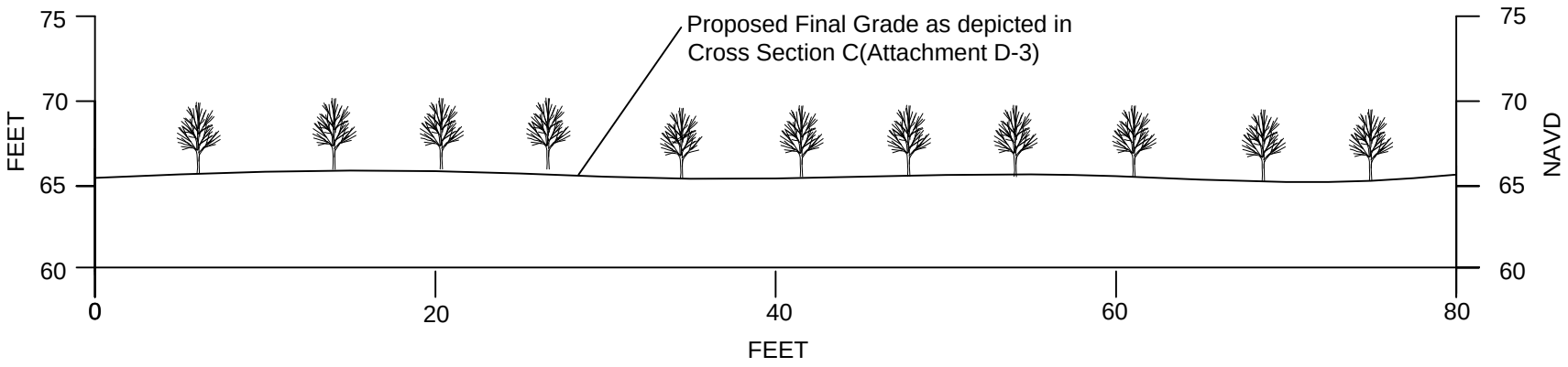
Existing Diesel Motor and Low Lift Water Pump and Culvert to be Removed Cross Section



L'

L'

Riparian Buffer Restoration



Proposed Excavation

Long Island Cove Mitigation Bank

IRRIGATION STRUCTURE REMOVAL

Liberty County, TX

Created:	TSC/AutoCAD
Approved:	BWD
Date:	6/2/2016
Dwg. No.:	deloach_xsections.dwg

Attachment D-12

DELTA LAND SERVICES

Attachment E. Approved Jurisdictional Determination (SWG-2015-00628)

DEPARTMENT OF THE ARMY
GALVESTON DISTRICT, CORPS OF ENGINEERS
P. O. BOX 1229
GALVESTON, TEXAS 77553-1229

May 17, 2016

REPLY TO
ATTENTION OF:

Compliance Branch

SUBJECT: **SWG-2015-00628**; Jurisdictional Determination and Delineation Verification, Deloach Property, Proposed Mitigation Bank, Liberty County, Texas

Mr. Arthur Perkins
DESCO, Environmental Consultants
26902 Nichols Sawmill
Magnolia, Texas 77355

Dear Mr. Perkins:

This is in response to the August 19, 2015 request for a jurisdictional determination and delineation verification on the behalf of Delta Land Services for an approximate 636-acre proposed mitigation bank site; referenced as the Deloach Property. This site is located north of U.S. Highway 90, west of Daisetta in Liberty County, Texas.

Based upon federal regulations, the Atlantic and Gulf Coast Plain Region Supplement to the 1987 Corps of Engineers Wetland Delineation Manual, site specific information (including our site visits in November 2015 and February 2016) we concur that there are 616.33-acres of waters of the United States on this 638.24-acre tract. Specifically, there are 118.64-acres of open water, 497.69-acres of adjacent wetlands and 21.91-acres of uplands/non-aquatic resources. The enclosed map dated February 24, 2016, provides a reasonable depiction of the extents of the aquatic resources and uplands on this site. There is a relatively permanent tributary waterway on the site (Long Island Creek) that had an ordinary high water mark and bed and bank, along with numerous acres of adjacent wetlands. Wetlands on the site were identified using the Atlantic and Gulf Coast Plain Region Supplement to the 1987 Corps of Engineers Wetland Delineation Manual which requires under normal circumstances, a predominance of hydrophytic vegetation, wetland soils, and sufficient hydrology at/or near the surface to support this aquatic ecosystem.

This approved determination has been conducted to identify waters of the United States Army Corps of Engineers (USACE) CWA jurisdiction for the particular site identified in this request. However, this determination may not be valid for the wetland conservation provisions of the Food Security Act of 1985, as amended. If you or your tenant are USDA program participants or anticipate participation in USDA programs, you should request a certified wetland determination from the local office of the Natural Resources Conservation Service prior to starting work.

This letter constitutes an approved jurisdictional determination for the subject site, and is valid for five years from the date of this letter unless new information warrants a revision prior to the expiration date. If there is an objection to this determination, an administrative appeal request may be submitted under USACE regulations at 33 CFR Part 331. Enclosed is the Notification of Appeals Process (NAP) fact sheet and Request for Appeal (RFA) form. If an appeal of this determination is desired, a completed RFA form must be submitted to the Southwest Division Office at the following address:

Mr. Elliott Carman
Regulatory Appeals Review Officer
Southwestern Division USACE (CESWD-PD-O)
1100 Commerce Street, Suite 831
Dallas, Texas 75242-1731
Phone: 469-487-7061 or
Fax: 469-487-7199

In order for an RFA to be accepted by USACE, USACE must determine it is complete, meets the criteria for appeal under 33 CFR Part 331.5, and has been received by the Division Office within 60 days of the date of the NAP. It is not necessary to submit an RFA form to the Division Office if you do not object to the determination in this letter.

If there are any questions concerning this approved jurisdictional determination verification please reference file number **SWG-2015-00628** and contact me at the letterhead address or by telephone at 409-766-3985. To assist us in improving our services, please complete the customer survey found at http://corpsmapu.usace.army.mil/cm_apex/f?p=136:4:0. If you would prefer a hard copy of the survey form, please let us know, and one will be mailed to you.

Sincerely,

Kenny Jaynes
Chief, Compliance Branch

Enclosure:

Cf:

Daniel Bollich, PWS, CWB
Delta Land Services, LLC
1090 Cinclare Drive
Port Allen, Louisiana 70767

NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND REQUEST FOR APPEAL

Applicant:	File Number:	Date:
DELOACH PROPERTY	**SWG 2015-00628**	**05/17/2016**

Attached is:		See Section below
	INITIAL PROFFERED PERMIT (Standard Permit or Letter of Permission)	A
	PROFFERED PERMIT (Standard Permit or Letter of Permission)	B
	PERMIT DENIAL	C
X	APPROVED JURISDICTIONAL DETERMINATION	D
	PRELIMINARY JURISDICTIONAL DETERMINATION	E

SECTION I - The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found at http://www.usace.army.mil/inet/functions/cw/cecwo/reg/ or Corps regulations at 33 CFR Part 331.

A: INITIAL PROFFERED PERMIT: You may accept or object to the permit.

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- OBJECT: If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the district engineer. Your objections must be received by the district engineer within 60 days of the date of this notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your letter, the district engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the district engineer will send you a proffered permit for your reconsideration, as indicated in Section B below.

B: PROFFERED PERMIT: You may accept or appeal the permit

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- APPEAL: If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

C: PERMIT DENIAL: You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

D: APPROVED JURISDICTIONAL DETERMINATION: You may accept or appeal the approved jurisdictional determination (JD) or provide new information.

- ACCEPT: You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice, means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD.
- APPEAL: If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

E: PRELIMINARY JURISDICTIONAL DETERMINATION: You do not need to respond to the Corps regarding the preliminary JD. The preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also you may provide new information for further consideration by the Corps to reevaluate the JD.

SECTION II - REQUEST FOR APPEAL or OBJECTIONS TO AN INITIAL PROFFERED PERMIT

REASONS FOR APPEAL OR OBJECTIONS: (Describe your reasons for appealing the decision or your objections to an initial proffered permit in clear concise statements. You may attach additional information to this form to clarify where your reasons or objections are addressed in the administrative record.)

ADDITIONAL INFORMATION: The appeal is limited to a review of the administrative record, the Corps memorandum for the record of the appeal conference or meeting, and any supplemental information that the review officer has determined is needed to clarify the administrative record. Neither the appellant nor the Corps may add new information or analyses to the record. However, you may provide additional information to clarify the location of information that is already in the administrative record.

POINT OF CONTACT FOR QUESTIONS OR INFORMATION:

If you have questions regarding this decision and/or the appeal process you may contact:	If you only have questions regarding the appeal process you may also contact:
Mr. Samuel J. Watson Project Manager, Policy Analysis Branch U.S. Army Corps of Engineers P.O. Box 1229 Galveston, Texas 77553-1229 409-766-3946; FAX: 409-766-3931	Mr. Elliott Carman Appeal Review Officer Southwestern Division USACE CESWD-PD-O 1100 Commerce Street, Room 831 Dallas, Texas 75242-1731 Telephone: 469-487-7061; FAX: 469-487-7199

RIGHT OF ENTRY: Your signature below grants the right of entry to Corps of Engineers personnel, and any government consultants, to conduct investigations of the project site during the course of the appeal process. You will be provided a 15-day notice of any site investigation, and will have the opportunity to participate in all site investigations.

	Date:	Telephone number:
Signature of appellant or authorized agent.		

Legend

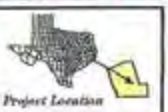
- ▲ Sample Points
- Transects
- Long Island Cove Property (DLS)
- Open Water (118.04 acres)
- Potentially Jurisdictional Wetlands (407.69 acres)

* Upland Acres: 21.81

0 250 500 1,000 Feet

Wetland Delineation Map
Long Island Cove Property

Liberty County, Texas



Map Base: 2014 CIR Aerial Imagery from http://www.tnris.org
Map Datum: NAD 1983 UTM Zone 15N, meters
Map Date: February 24, 2016

N

1:8,500

DESCO

Attachment F. Permit to Appropriate State Water

Sched B Item 9

TEXAS NATURAL RESOURCE CONSERVATION COMMISSION

PERMIT TO APPROPRIATE STATE WATER

APPLICATION NO 5793 PERMIT NO 5793 TYPE 11 121

Permittee	Weldon Alders	Address	704 W Highway 90 P O Drawer 10 Dayton, Texas 77535
Filed	January 13, 2003	Granted	MAY 20 2004
Purpose	Agriculture	County	Liberty
Watercourse	Long Island Bayou, tributary of Blau Gully, tributary of Whites Bayou, tributary of Turtle Bayou, tributary of the Trinity River	Watershed	Trinity River Basin

WHEREAS, Weldon Alders, Applicant, seeks authorization to divert not to exceed 1,050 acre-feet of water from Long Island Bayou, tributary of Blau Gully, tributary of Whites Bayou, tributary of Turtle Bayou, tributary of the Trinity River, Trinity River Basin, Liberty County for storage into two existing off-channel reservoirs, "North Reservoir" and "South Reservoir", for subsequent diversion for agricultural purposes to irrigate 300 acres of land out of a 2,700 acre tract 5 miles northeast of Liberty and 3 miles southeast of Hardin in Liberty County, and

S50°23'42"E 103

30°08'06" 94°41'46" (100) WHEREAS, North Reservoir is located at a point bearing S50 395°E, 199 64 feet from the northwest corner of the H O. Alger Survey No 184, Abstract No 724, also located at Latitude 30 135°N and Longitude 94 696°W, and has a surface area of 114 16 acres and a storage capacity of 1,027 44 acre-feet, and

S14°13'30"E

30°07'52" 94°41'42" (101) WHEREAS, South Reservoir is located at a point bearing S14 225°E, 2090 74 feet from the northwest corner of the H O Alger Survey No 184, Abstract No 724, also located at Latitude 30 131°N and Longitude 94 695°W, and has a surface area of 274 48 acres and a storage capacity of 1,372 4 acre-feet, and

WHEREAS, water will be diverted from a point on the right, or west bank, of Long Island Bayou located at Latitude 30 135° N and Longitude 94 696° W, at a maximum diversion rate of 9 58 cfs (4300 gpm) through a gate structure and canal to North Reservoir, and

WHEREAS, water will be diverted from the perimeter of North Reservoir, and

WHEREAS, the combined maximum diversion rate from both diversion points will not exceed 4,300 (gpm) (9 58 cfs), and

WHEREAS, the levees forming the impoundments are less than 6 feet in height, and

WHEREAS, ownership of the land is evidenced by the Deed of Trust dated July 30, 2002, filed in the Deed Records of Liberty County, and

WHEREAS, the Texas Commission on Environmental Quality finds that jurisdiction over the application is established, and

WHEREAS, the Executive Director has determined that in order to provide sufficient flow to maintain instream uses of Long Island Bayou certain special conditions should be included in the permit, and

WHEREAS, the Executive Director has determined that there is sufficient unappropriated water available to support the requested diversion amount, and

WHEREAS, no person protested the issuance of this application, and

WHEREAS, the Commission has complied with the requirements of the Texas Water Code and Rules of the Texas Commission on Environmental Quality in issuing this permit

NOW, THEREFORE, Water Use Permit No 5793 is issued to Weldon Alders, subject to the following terms and conditions

1 IMPOUNDMENT

A Permittee is authorized to maintain an off-channel reservoir known as North Reservoir with a surface area of 114 16 acres and to impound therein not to exceed 1,027 44 acre-feet The reservoir is located at a point bearing S50 395°E, 199 64 feet from the northwest corner of the H O Alger Survey No 184, Abstract No 724, also located at Latitude 30 135°N and Longitude 94 696°W in Liberty County

same coords??

B Permittee is authorized to maintain an off-channel reservoir known as South Reservoir with a surface area of 274 48 acres and to impound therein not to exceed 372 4 acre-feet The reservoir is located at a point bearing S50 395°E, 199 64 feet

from the northwest corner of the H O Alger Survey No 184, Abstract No 724, also located at Latitude 30 135°N and Longitude 94 696°W in Liberty County

2 USE

Permittee is authorized to divert not to exceed 1,050 acre-feet of water per annum from Long Island Bayou into North Reservoir for subsequent diversion and use for agricultural purposes to irrigate 300 acres of land out of a 2,700 acre tract of land in the H O Alger Survey No 184, Abstract No 724, approximately 5 miles northeast of Liberty in Liberty County, Texas

3 DIVERSION

A Points

1 Diversion Point No 1 - on the right, or west, bank of Long Island Bayou at a point located at 30 135° N and Longitude 94 696° W

2 Diversion Point No 2 - on the Perimeter of North Reservoir

B Rate

The maximum combined diversion rate from Long Island Bayou and North Reservoir shall not exceed 4,300 gpm (9 58 cfs)

4 TIME PRIORITY

Permittee's time priority for the impoundment, diversion, and use of the water authorized by this permit is January 13, 2003

5 CONSERVATION

Owners shall implement water conservation plans that provide for the utilization of those practices, techniques, and technologies that reduce or maintain the consumption of water, prevent or reduce the loss or waste of water, maintain or improve the efficiency in the use of water, increase the recycling and reuse of water, or prevent the pollution of water, so that a water supply is made available for future or alternative uses

6 SPECIAL CONDITIONS

A In order to provide sufficient flows to maintain instream uses in Long Island Bayou, Permittee shall close the gated structure on Long Island Bayou after the permitted amount of water has been diverted from the canal

B. Prior to diversion of the water authorized herein, Permittee shall install and maintain measuring devices at the described diversion points, capable of measuring within plus or minus 5% accuracy, to record the amount of water diverted from the stream and from the reservoir for agricultural purposes Representatives of the TCEQ shall, upon demand, be provided physical access to the diversion (pump) sites for inspection and verification purposes

This permit is issued subject to all superior and senior water rights in the Trinity River Basin

Permittee agrees to be bound by the terms, conditions and provisions contained herein and such agreement is a condition precedent to the granting of this permit

All other matters requested in the application which are not specifically granted by this permit are denied

The water right granted by this permit is appurtenant to and is an undivided part of the above-described land within which irrigation is authorized A transfer of any portion of the land described includes, unless otherwise specified, a proportionate amount of the water right owned by the owner or seller at the time of the transaction

This permit is issued subject to the Rules of the Texas Commission on Environmental Quality and to the right of continuing supervision of State water resources exercised by the Commission

TEXAS COMMISSION ON
ENVIRONMENTAL QUALITY

For the Commission

ISSUED MAY 20 2004

OFFICIAL RECORDS
LIBERTY COUNTY
DELIA SELLERS
COUNTY CLERK
RECORDING FEE $15 00
2004008695
2004008695
06/04/2004 03 10 PM 4 PGS
MCESSNA,DC Receipt #007898

STATE OF TEXAS }
COUNTY OF LIBERTY }
I Delia Sellers hereby certify that this instrument was FILED in the number sequence on the date and at the time stamped hereon by me and was duly RECORDED in the volume and page of the OFFICIAL PUBLIC RECORDS of Liberty County, Texas as stamped hereon by me on

JUN – 4 2004

COUNTY CLERK
LIBERTY COUNTY, TEXAS