JOINT PUBLIC NOTICE

December 11, 2017

United States Army
Corps of Engineers
New Orleans District
Regulatory Branch
Post Office Box 60267
New Orleans, La. 70160-0267

(504) 862-2548/ FAX (504) 862-2574
Jacqueline.R.Farabee@usace.army.mil
Project Manager
Jacqueline Farabee
Permit Application Number
MVN-2017-00656-MR

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

(225) 219-3225 FAX (225) 325-8250
Elizabeth.Hill@la.gov
Project Manager
Elizabeth Hill
WQC Application Number
WQC # 171204-03

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

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

TURTLE ISLAND MITIGATION BANK IN VERMILION PARISH

NAME OF APPLICANT: Turtle Island Lake Mitigation, LLC; c/o Pangaea Conservation and Compliance, Attn: Leonard McCauley, P.O. Box 40345, Baton Rouge, LA 70835.

LOCATION OF WORK: The 1,384 acre site is located approximately 6.0 miles south of Forked Island, Louisiana, in Vermilion Parish, as shown on enclosed drawings (Latitude: 29.792113 N, Longitude:–92.313225 W). The Project is located within the Mermentau Basin, Hydrologic Unit 08080202.

CHARACTER OF WORK: Degrade interior levees, elevated roads, and rice dikes, while utilizing approximately 124,000 cubic yards of in situ earthen fill as part of the work to enhance and restore traditional surface hydrology to the site for the construction of a mitigation bank with mixed habitats consisting of coastal prairie, bottomland hardwoods and fresh marsh.

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

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

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

Corps of Engineers Permit Criteria

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

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

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

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

Utilizing Standard Local Operating Procedure for Endangered Species in Louisiana (SLOPES), dated October 22, 2014, between the U.S. Army Corps of Engineers, New Orleans and U.S. Fish and Wildlife Service, Ecological Services Office, the Corps has determined that the proposed activity would have no effect on any species listed as endangered by the U.S. Department of the Interior.

This notice initiates the Essential Fish Habitat (EFH) consultation requirements of the Magnuson-Stevens Fishery Conservation and Management Act. The applicant's proposal would result in the destruction or alteration of 960.7 acre(s) of EFH utilized by various life stages of red drum and penaeid shrimp. Our initial determination is that the proposed action would not have a substantial adverse impact on EFH or federally managed fisheries in the Gulf of Mexico. Our final determination relative to project impacts and the need for mitigation measures is subject to review by and coordination with the National Marine Fisheries Service.

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

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

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

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

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

for
Martin S. Mayer
Chief, Regulatory Branch

Enclosure

FINAL PROSPECTUS FOR THE PROPOSED TURTLE ISLAND MITIGATION BANK MVN-2017-00656

Fresh Marsh, Coastal Prairie, and Bottomland Hardwood: Reestablishment, Rehabilitation, Enhancement, and Preservation

Vermilion Parish, Louisiana

October 2017

Sponsored By:

Turtle Island Lake Mitigation, LLC
300 Rue Beauregard Suites A
Lafayette, La 70510

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TURTLE ISLAND MITIGATION BANK
PROSPECTUS

1.0 INTRODUCTION

Turtle Island Lake Mitigation, LLC (Sponsor) submits this Prospectus to the U.S. Army Corps of Engineers - New Orleans District (CEMVN) and the Interagency Review Team (IRT) and to the Louisiana Department of Natural Resources (LDNR) to initiate evaluation of the proposed Turtle Island Mitigation Bank (TIMB) in accordance with 33 CFR 332.8(d)(2). The details pertaining to the use of this site as a mitigation bank will be specified in the subsequent mitigation banking instrument (MBI). TIMB consists of 1,384 acres currently used for agricultural purposes (Figures 1 and 2).

1.1 Site Location

The center point of the property is located at latitude 29.792113N and longitude –92.313225W (approximate center point) in Vermilion Parish, Louisiana. This location includes all or portions of Sections 25 and 36, Township 14 South, and Range 1 East; Sections 30 and 31, Township 14 South, and Range 2 East; and Section 6, Township 15 South and Range 2 East. The property is located in the Hydrologic Unit Code (HUC) 08080202 (Mermentau drainage basin).

Driving directions to the site are as follows:

The property is located approximately 6.0 miles south of Forked Island, Louisiana. To reach the property from I-10, take exit 100 from I-10 onto N. Ambassador Caffery Parkway (Louisiana Highway 3184). Follow Ambassador Caffery Parkway south for 5.3 miles to U.S. Highway 167. Turn right onto U.S. Highway 167 and continue for 14.8 miles. Turn right onto Veterans Memorial Drive (Louisiana Highway 14) and continue for 5.3 miles. Turn left on Louisiana Highway 695S and continue for 3.0 miles. Turn left on Louisiana Highway 335W and continue for 3.5 miles. Turn left on Louisiana Highway 35S and continue for 15.3 miles. Turn left on to unpaved agricultural road, which will dead end into the southern boundary of the property.

2.0 PROJECT GOALS AND OBJECTIVES

2.1 Aquatic Resource Type and Functions to be Restored/Enhanced/Preserved

This Bank will re-establish, rehabilitate, enhance, and preserve 112.9 acres of bottomland hardwood forest (BLH), 287.7 acres of coastal prairie (CP), and 961.3 acres of fresh marsh (FM).

Table 1: Current Habitat Types and Landuse (see Figure 3)

Habitat Type	Landuse	Acreage
Agricultural Prior Converted Wetlands	Agricultural	**342.9**
Herbaceous Wetlands	Agricultural	**757.5**
Forested Wetlands	Agricultural	**48.7**
Non-Wetlands	Agricultural	**136.7**
Non-Wetlands	Spoil Banks	**70.4**
Other U.S. Waters	Natural Drains / Drainage Canals	**27.8**
Total	---	**1,384.0**

Table 2: Proposed Mitigation Bank Habitat Types (see Figure 4)

Habitat Type	Acreage	Mitigation Type
Coastal Prairie	***287.7***	Re-establishment
Bottomland Hardwood Forest	***64.2***	Re-establishment
	48.7	Enhancement
Fresh Marsh	***204.0***	Re-establishment
	656.6	Rehabilitation
	100.7	Preservation
Gapped Levee	***13.9***	Non-mitigation
Access Road	***2.5***	Non-mitigation
Other U.S. Waters	***5.7***	Non-mitigation
Total	***1,384.0***	---
Total Mitigation and Inclusions	***1,375.8***	---

As defined by *The Natural Communities of Louisiana* published in 2009 by the Louisiana Department of Wildlife and Fisheries (LDWF) and the Louisiana Natural Heritage program (LNHP):

Bottomland Hardwood forests are forested, alluvial wetlands occupying broad floodplain areas that flank large river systems. BLH forests may be called fluctuating water level ecosystems characterized and maintained by a natural hydrologic regime of alternating wet and dry periods. These forests support distinct assemblages of plants and animals associated with particular landforms, soils, and hydrologic regimes. They are important natural communities for maintenance of water quality, providing a very productive habitat for a variety of fish and wildlife, and are important in regulation of flooding and stream recharge.

Coastal prairies, are prairies located within southwestern Louisiana, once very extensive but today are limited to small, remnant parcels. Coastal prairies located along the southern portion of the state may occur on "islands" or ridges surrounded by marsh. Soils are typically saturated in winter and dry in late spring and fall. The region is underlain by a clay pan 6 to 18 inches below the surface that prevents downward percolation of water and inhibits upward movement of capillary water. The diverse vegetation is most often dominated by grasses (with an abundance of forbs); however, trees can be found within coastal prairies within higher elevation (and better drained) areas near stream sides or along ridges, forming "gallery forests". These trees act to divide the Coastal Prairie into many subunits or "coves". The natural demarcation line between the forest and grassland is very sharp. Many plants in Coastal Prairie are the same as ones found in the pine savannahs and flatwoods that occur immediately north of the coastal prairie region. Fire plays a critical role in this natural community. Certain woody species may invade without periodic fire. The transition zone from coastal prairie to pine savannah is extremely diverse as it contains species from both communities.

Fresh marsh, are palustrine systems with emergent vegetation. The frequency and duration of flooding in these areas are determined by their microtopography, which together are the primary factors governing species distributions. These areas have the greatest plant diversity and highest soil organic matter content of any marsh. The species composition of these areas varies from site to site but is often dominated by *Panicum hemitomon* (maidencane). Intermediate marsh, as described in "The Natural Communities of Louisiana," is an estuarine system with intertidal emergent vegetation. It has an irregular tidal regime, is oligohaline, and is dominated by narrow-leaved, persistent species. It is characterized by a diversity of species and is often dominated by *Spartina patens* (wire grass). These two types of habitats are located adjacent to each other with fresh marshes existing along the northern extent of the coastal marshes, although they may occur beside coastal Bays where freshwater is entering the bay.

This project will re-establish, rehabilitate, and enhance fresh marsh, coastal prairie and bottomland hardwood habitat wetland communities so that they become species rich/diverse, sustainable wetland ecosystems. This shall be accomplished through removal of the site from agricultural use; degrading of spoil banks and rice dikes, thereby restoring sheetflow across the property; allowing overflowing of drainage features, thereby temporarily inundating the property; and through vegetative plantings in order to restore a natural assemblage of species, which will create additional wildlife habitat throughout.

2.2 Watershed Contributions

2.2.1 Watershed Need

The TIMB is proposed to provide compensatory mitigation for CEMVN approved projects within the Mermentau watershed, which encompasses approximately 1,150 square miles. In recent years, the watersheds to be serviced by the TIMB have seen the some of the highest demand for wetland mitigation in the New Orleans District.

Due to development and agriculture, very little native prairie and forest habitat remains in the vicinity of the site (see Figure 5), providing limited habitat for migratory birds and terrestrial wildlife. The restoration of this site will provide 1,375.8 acres of much needed natural habitat. The site will be converted to a more natural ecosystem, while also improving the water quality in the receiving waters downstream of this site.

2.2.2 Watershed Benefits

The TIMB project area is located in the drainage area to Subsegment LA050702 (Intracoastal Waterway – from Mermentau River to Vermilion Locks) as designated by Louisiana Department of Environmental Quality (LDEQ). The project area flows to the south via a tributary which drains to the Warren Canal (along southern boundary of the project). Warren Canal then flows to the southeast and drains to Schooner Bayou Canal (approximately 4.6 miles downstream of the project). Schooner Bayou Canal then flows to the east and drains to the Freshwater Bayou Canal (approximately 8.6 miles downstream of the project). Freshwater Bayou Canal then flows to the south and drains to the Gulf of Mexico (approximately 24 miles downstream of the project).

Although not identified as impaired in the current 2014 final LDEQ 303(d) list, the LDEQ-designated uses of Fish and Wildlife Propagation (FWP) and Primary Contact Recreation (PCR) for Subsegment LA050702 were identified as impaired in the 2014 final LDEQ 303(d) list. Identified impairments include chlorides, sulfates, temperature, and total dissolved solids (due to natural sources), as well as fecal coliforms (due to septic systems and similar decentralized systems). Due to its past water quality impairments, a Total Maximum Daily Load (TMDL) for total suspended solids was completed for Subsegment LA050702 (Intracoastal Waterway) in January 2001. Additional TMDLs for pesticides (carbofuran) and for dissolved oxygen and nutrients (ammonia and total phosphorus) were completed for Subsegment LA050702 in September 2001 and October 2001, respectively.

The cessation of agricultural activities along with degrading spoil banks and rice dikes, and restoration of native habitats for this project will aid in meeting the current and future TMDLs through the resulting water quality improvements due to increased filtration and plant uptake (i.e., nonpoint source pollution prevention).

In addition to improvement in water quality due to reduction in non-point source pollution, TIMB will improve plant and wildlife habitat and provide increased wetland function over that which is currently performed by the bank given its current condition.

3.0 ECOLOGICAL SUITABILITY OF THE SITE

This section contains both the historical and current ecological and physical information about the Bank Site.

3.1 Land Use

3.1.1 Historical Land Use

The area was cleared of forest and herbaceous wetlands converted to agricultural use around the turn of the 20th century. This was accomplished via the construction of levees and water control structures.

3.1.2 Current Land Use

Property is currently used for agricultural purposes. Different management regimes are utilized for portions of the property. The interior and eastern portions of the property are more intensively managed with multiple crop rotations per year while the western portion is only cropped once every other year.

3.2 Soils

The 1996 and current Vermilion Parish Soil Surveys map the soils located on the site as Ged clay (GE), Gueydan Muck (Gy), Kaplan silt loam (Ka), Edgerly loam (Mr), Allemands mucky peat (AE), and Midland silty clay loam (Mn). A soil map for the TIMB is provided as Figure 6.

- GE: Ged clay soils are very poorly drained, very slowly permeable soils tht formed in recent, very fluid clayey alluvium of Pleistocene age. These soils are on the landward side of freshwater narshes that have encroached on low coastal prairies. Slopes are less than 1 percent.
- Gy: Gueydan Muck silt loam soils are level, very poorly drained, firm, mineral soils found in former Freshwater Marshes that are drained and protected (by manmade levees) from flooding. Slopes are less than 1 percent.
- Ka: Kaplan silt loam soils are level, somewhat poorly drained soils on broad, slightly convex ridges on the Gulf Coastal Prairies. These soils are moderately well suited to woodland. The trees suitable for planting are Water Oak, Sweetgum, and Green Ash. Slopes are typically less than 1 percent.
- Mr: Edgerly loam soils are level, poorly drained soils located on broad flats on Gulf Coast Prairies. Slopes are less than 1 percent.
- AE: Allemands mucky peat soils are level, poorly drained organic soils found in freshwater marshes. These soils are usually ponded and frequently flooded. Slopes are less than 1 percent.
- Mn: Midland silty clay loam consists of poorly drained, very slowly permeable soils located within broad flats and in slightly concave areas on the Gulf Coast

Prairies. These soils are moderately well suited to woodland. The trees suitable for planting are Water Oak, Sweetgum, and Green Ash. Slopes are generally less than one (1) percent.

A wetland delineation conducted in 2013 confirmed that these soils are present on site as depicted within the Vermilion Parish Soil Surveys, do present hydric indicators, and are hydric soils as identified by the Natural Resources Conservation Service.

Agricultural use of this property in the past and present has modified the topography and hydrology of the project site.

3.3 Hydrology

3.3.1 Historical Hydrology and Drainage Patterns

TIMB is located within the Mermentau watershed and is currently utilized for agricultural activities including cattle grazing. Prior to agricultural activities, surface water was able to rise and recede from adjacent drainageways or sheetflow across the site.

Historical drainage patterns are believed to have been similar to those shown on Figure 8 as proposed (post-restoration) drainage patterns. The tributary to Warren Canal which borders the site along its western boundary (and Warren Canal itself along the southern boundary) are believed to be a historical/natural water features which were supplanted by the existing canals.

Historical water sources to the Bank included direct precipitation and overbank flooding from nearby drainageways. Drainage of this property has been impacted by construction/modification of adjacent drainageways (and associated levees/spoil banks and culverts), and construction of ditches (and associated levees/spoil banks and culverts) within the property (see Figure 7). Construction of rice dikes (see Figure 7) also impacted site drainage.

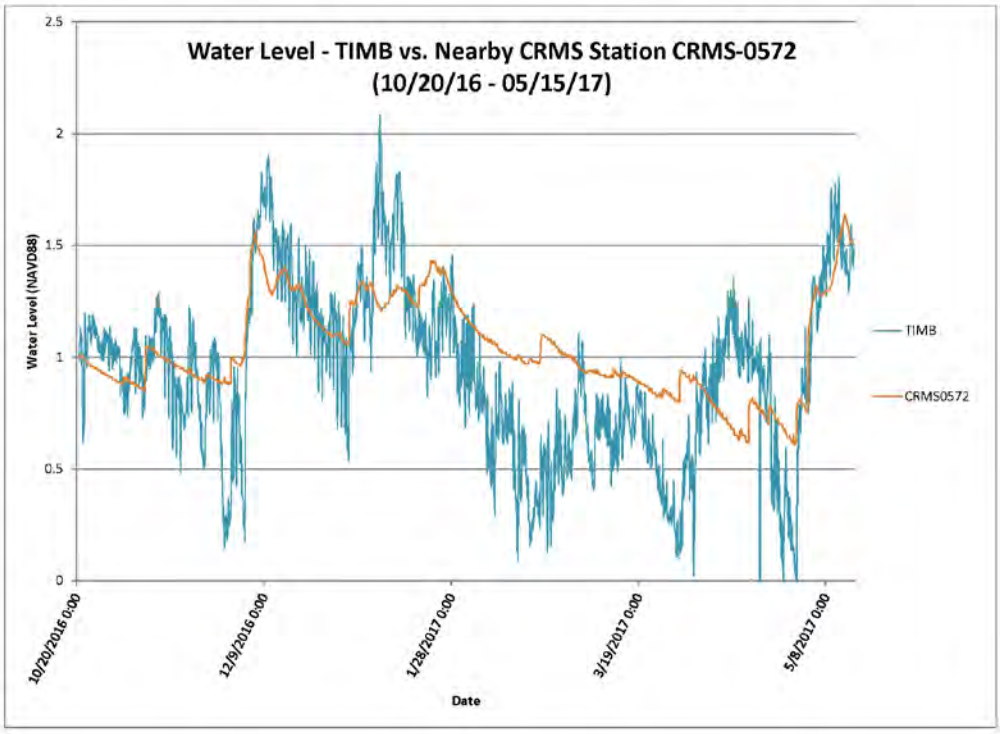
Jurisdictional determination MVN-2013-01087-SC was issued by CEMVN for this property on November 19, 2013 (Attachment A).

3.3.2 Existing Hydrology and Drainage Patterns

Natural hydrology has been altered by levees and pumping implemented to improve site conditions for agriculture (since approximately the 1950's). Currently, wetlands and drainageways on-site are hydrologically isolated due to spoil banks along drainageways, elevated roads, and rice dikes (with the exception of the 100.7-acre Fresh Marsh preservation area). Wetland hydrology on-site is currently driven by direct precipitation, which is pumped off. Current and proposed drainage patterns are depicted within Figures 7 and 8. The drainage area associated with the property is depicted in Figure 9, and elevations (LIDAR and 1-foot contours) are depicted on Figures 10-10d.

The hydrograph below depicts water levels within the canal along the western boundary of TIMB and CRMS Station 0572 located along the eastern boundary of TIMB over an approximate 6 month period. The two hydrographs show similar tidal influence.

The 100.7-acre Fresh Marsh preservation area is not located within areas



impounded by spoil banks along drainageways, elevated roads, and rice dikes; therefore, water is able to rise and recede within the preservation area (as it does in other surrounding natural marsh areas).

Those BLH enhancement and re-establishment areas on the site (currently under pump) have ground elevations ranging from 1.0 to 2.0 feet NGVD. Three reference sites with healthy BLH communities (shown on Figure 1) were selected within a 1 to 2 mile distance from the subject property, all of which also had ground elevations ranging from 1.0 to 2.0 feet NGVD.

Those Fresh Marsh re-establishment and rehabilitation areas (currently under pump) and Fresh Marsh preservation area (not under pump) on the site all have ground elevations of 0.5 feet NGVD or below. The nearby CRMS station 0572 (3/4 mile from the subject property) serves as a Fresh Marsh reference site, and has a ground elevation of 0.4 feet NGVD (with a mean water level of 1.18 feet).

Due to current scarcity of Coastal Prairie habitat in this area, no Coastal Prairie reference sites are available for elevation comparison.

3.4 Vegetation

3.4.1 Historical Plant Community

Species assemblages historically present on this site can be assumed to have been similar to existing native habitats in the vicinity of the site and as defined by *The Natural Communities of Louisiana* published in 2009 by the Louisiana Department of Wildlife and Fisheries (LDWF) and the Louisiana Natural Heritage program (LNHP). (See descriptions of habitat types in Section 2.1 of this Prospectus).

3.4.2 Existing Plant Community

Existing plant communities have been altered due to agricultural use (tilling, pumping, cattle grazing, etc.). The forested areas within the site boundary are found along a ridge that runs through the center of the property. This forested area vegetation is indicative of a by Hackberry - American elm - Green ash Bottonland Forest. The emergent vegetation found in the fields is indicative of a FACW-OBL community heavily impacted by hydrologic modification.

Marsh species present in preservation area to the east: *Typha latifolia L., Sagittaria lancifolia L., Ludwigia grandiflora (Michx.) Greuter & Burdet, Cladium mariscus (L.) Pohl, Sacciolepis striata (L.) Nash,* and *Alternanthera philoxeroides (Mart.) Griseb.*

Marsh species present on site: *Pontederia cordata L., Sagittaria lancifolia L., Alternanthera philoxeroides (Mart.) Griseb., Ipomoea sagittata Poir.,* and *Typha latifolia L.* .

BLH species present on site: *Celtis laevigata, Ulmus americana L.,*and *Fraxinus pennsylvanica.*

3.5 General Need for the Project in this Area

The TIMB is proposed to provide compensatory mitigation for CEMVN approved projects within the Mermentau watershed, which encompasses approximately 1,150 square miles. In recent years, the watersheds to be serviced by the TIMB have seen the some of the highest demand for wetland mitigation in the New Orleans District.

Due to development and agriculture, very little native prairie and forest habitat remains in the vicinity of the site (see Figure 5), providing limited habitat for migratory birds and terrestrial wildlife. The restoration of this site will provide 1,375.8 acres of much needed natural habitat. The site will be converted to a more natural ecosystem, while also improving the water quality in the receiving waters downstream of this site.

3.6 Technical Feasibility

The TIMB has the potential to re-establish, rehabilitate, enhance, and preserve 112.9 acres of bottomland hardwood forest (BLH), 287.7 acres of coastal prairie (CP), and 961.3 acres of fresh marsh (FM). These lands will be protected by a conservation servitude and maintained by a long-term maintenance and protection fund.

The site is underlain by hydric soils, according to the NRCS soil survey and verified via field investigations. Despite hydrologic modification of Bank lands, the hydric soil indicators have persisted.

A tributary to Warren Canal borders the site along its western boundary, and Warren Canal borders the site along its southern boundary. Following hydrologic restoration (i.e., removal of rice dikes and removal/gapping of spoil banks), water in these drainageways will be allowed to rise and recede on Bank lands during high water events as they did historically.

Reference sites (on-site and adjacent to the site) were used to determine the species assemblages which historically existed at the project site.

4.0 ESTABLISHMENT OF THE MITIGATION BANK

4.1 Site Restoration Plan

4.1.1 Hydrologic Restoration

Spoil Banks / Elevated Access Roads / Rice Dikes:

Currently, overbank flooding is impeded by spoil banks, elevated roads, and rice dikes. During flood stages sufficient to overtop these impediments, flood waters become impounded behind them. Removal of these impediments will contribute to the ability of flood waters on-site to rise and recede in a more natural regime.

Spoil bank material excavated during restoration will be spread over adjacent fields so as not to significantly alter topography or will be removed from site.

The access road to remain is currently at grade on the north end and is approximately 0.5-foot higher than surrounding grade on the south end. Based on measured water levels in the adjacent canal and the nearby CRMS station, the southern portion of the access road will be frequently inundated (i.e., will not impact hydrology). While the access road is not planned to be raised or lowered, low-water crossings will be installed (if necessary) to further facilitate drainage.

Figure 11 depicts the locations of cross-sections, and Figures 11a-11j are cross-sections which depict pre-restoration ground elevations at locations of rice dikes to be removed and spoil banks to be gapped (40' every 200') and/or removed.

Isle Marrone Drainage District has been consulted with, in regards to the proposed levees to be gapped and removed along the drainage canals to the west and south. The Isle Marrone Drainage District has no objection at this time and will be update periodically if current plan is modified.

4.1.2 Vegetative Restoration

4.1.2.1 BLH Reestablishment and Enhancement Measures

For those 64.2 acres proposed for designation as re-establishment, including cleared wetland areas (cleared prior to 1970 and having remained cleared since that time), an appropriate combination of hard and soft mast producing bare-root stock will be planted. Species assemblages will be selected and planted based on landscape position. Proposed species assemblages to be planted will be representative of a species assemblage historically common to surrounding wetland forest and bayous of the area. These species assemblages are identified in *The Natural Communities of Louisiana* (Louisiana Natural Heritage Program, August 2009, available at: http://www.wlf.louisiana.gov). A proposed species list is presented in Table 3.

Proposed planting spacing in areas designated as re-establishment will be 9'x 9' (for an initial density of 538 trees per acre) for bare-root stock. Initial / interim planting success rates for re-establishment areas will be a minimum of 250 trees per acre for bare-root stock. Long-term success for all replanted areas will be 80% canopy coverage. Escrow or bond sum release rates and monitoring requirements will be consistent with other recently implemented CEMVN approved mitigation banks.

Those 48.7 acres of the Bank which are designated as enhancement are currently forested with a mix of native and invasive species and grazed by cattle. The Sponsor will remove the site from agricultural use, remove/control invasive species, enhance wetland hydrology, and provide supplemental planting of bare-root stock. Invasive species within enhancement areas will be removed and stumps will be treated with herbicide. The existing canopy will be assessed with respect to hard to soft mast ratios, and trees will be removed as needed. Bare-root stock will be planted to replace those trees removed and in order to ultimately achieve a hard mast percentage of 50%.

Table 3. Proposed BLH Species Assemblage to be Planted

Scientific Name	Common Name (USDA)	Observed In Reference Site(1)	Recorded In Vermilion Parish (USDA)	Wetland Indicator Status Region 2 (USDA)	Percent Composition (%)
Bottomland Hardwood Hackberry-American Elm-Green Ash					
Celtis laevigata	Hackberry	Yes	Yes	FACW	12%
Ulmus americana L.	American elm	Yes	Yes	FAC	12%
Fraxinus pennsylvanica	Green ash	Yes	Yes	FACW	12%
Carya aquatica	Water hickory	Yes	Yes	OBL	10%
Quercus nigra L.	Water oak	Yes	Yes	FAC	10%
Quercus phellos L.	Willow oak	Yes	Yes	FACW	10%
Quercus texana Buckley	Nuttall oak	Yes	Yes	FACW	10%
Quercus lyrata	Overcup oak	Yes	Yes	OBL	10%
Liquidambar styraciflua L.	Sweetgum	Yes	Yes	FAC	7%
Acer rubrum L. var. drummondii (Hook. & Arn. Ex Nutt.) Sarg.	Drummond's maple	Yes	Yes	OBL	7%

(1) A nearby reference site of a natural (healthy) bottomland hardwood community was selected on which vegetative surveys were conducted.

4.1.2.2 Coastal Prairie Re-establishment Measures

For those 287.7 acres proposed for designation as Coastal Prairie re-establishment, an appropriate assemblage of coastal prairie species will be planted. Species assemblages will be selected and planted based on landscape position. Proposed species assemblages to be planted will be representative of a species assemblage historically common to surrounding wetland prairies of the area. These species assemblages are identified in *The Natural Communities of Louisiana* (Louisiana Natural Heritage Program, August 2009, available at: http://www.wlf.louisiana.gov). A proposed list of possible species to be planted is presented in Table 4.

Proposed coastal prairie areas designated as re-establishment will be prepared by applying herbicides and tilling soil to remove invasive species prior to planting. Coastal prairie areas will be replanted with seed from local suppliers or harvested from local habitats. Coastal prairie habitat will be maintained by prescribed burning on a 1-3 year cycle. Escrow or bond sum release rates and monitoring requirements will be consistent with other recently implemented CEMVN approved mitigation banks.

Table 4. Proposed Potential Coastal Prairie Species to be Planted

Scientific Name	Common Name (USDA)	CP Coefficient of Conservation (USGS)	Wetland Indicator Status Region 2 (USDA)
Coastal Prairie			
Agalinis fasciculata	Beach Purple False Foxglove	3	FAC
Agalinis purpurea	Purple False Foxglove	W6	FACW
Agrostis hyemalis	Winter Bent Grass	4	FAC
Amsonia tabernaemontana	Eastern Bluestar	6	FACW
Andropogon gerardii	Big Bluestem	9	FAC
Andropogon glomeratus	Bushy Bluestem	3	FACW
Andropogon gyrans	Elliot's Bluestem	-	FAC
Andropogon virginicus	Broomsedge	2	FAC
Aristida purpurascens	Three Awn Grass	8	FACW
Arnoglossum ovatum	Egg-leaf Indian Plantain	9	FAC
Aster praealtus	Tall Blue Aster	-	FACW
Aster puniceus	Roughstem Aster	-	OBL
Bidens aristosa	Beaded Beggar's Ticks	3	FACW
Buchnera Americana	American Blue Hearts	9	FAC
Carex spp.	Caric Sedges	-	FACW
Chaerophyllum tainturieri	Wild Chervil	1	FAC
Coreopsis pubescens	Star Tickseed	-	FAC
Coreopsis tinctoria	Plains Tickseed	3	FAC
Coreopsis tripteris	Tall Tickseed	7	FAC
Ctenium aromaticum	Toothache Grass	8	FACW
Dichanthelium commutatum	Variable Panic Grass	W5	FAC
Dichanthelium dichotomum	Cypress Panic Grass	W6	FAC
Dichanthelium	Panic Grass	-	OBL
Dichanthelium acuminatum	Tapered rosette grass	7	FAC
Dichanthelium scoparium	Velvet Panic Grass	4	FACW
Eleocharis parvula	Dwarf Spikerush	W3	OBL
Eragrostis elliottii	Elliot Lovegrass	-	FACW
Eragrostis refracta	Coastal Love Grass	-	FACW
Erigeron philadelphicus	Showy Daisy Fleabane	0	FAC
Erigeron strigosus	Fleabane	5	FAC
Eryngium yuccifolium	Button Snakeroot	9	FAC
Eupatorium perfoliatum	Boneset	4	FACW
Eupatorium rotundifolium	Roundleaf Boneset	7	FAC
Euthamia leptocephala	Flat-topped Goldenrod	5	FACW
Helenium vernale	Vernal Sneezeweed	-	FACW
Helianthus angustifolius	Narrow Leaf Sunflower	5	FACW
Hibiscus moscheutos	Crimsoneyed Mallow	W7	OBL
Juncus effusus	Soft Rush	2	FACW

Scientific Name	Common Name (USDA)	CP Coefficient of Conservation (USGS)	Wetland Indicator Status Region 2 (USDA)
Coastal Prairie			
Liatris spicata	Blazing Star	10	FAC
Lobelia puberula	Purple Dew Drop	-	FACW
Muhlenbergia capillaris	Coastal Muhly Grass	8	FAC
Panicum anceps	Beaked Switchgrass	-	FAC
Panicum virgatum	Switchgrass	6	FAC
Paspalum floridanum	Florida Paspalum	8	FACW
Paspalum plicatulum	Brownseed Paspalum	6	FAC
Penstemon digitalis	Smooth Beardtongue	9	FAC
Penstemon laxiflorus	Beardtongue	8	FAC
Prunella vulgaris	Common Self-heal	2	FAC
Psoralea simplex	Single Stem Snakeroot	-	FAC
Pycnanthemum albescens	Whiteleaf Mountain Mint	6	FAC
Pycnanthemum muticum	Lowland Mt. Mint	7	FAC
Pycnanthemum tenuifolium	Thin Leaf Mt. Mint	7	FACW
Rhexia mariana	Maryland Meadow Beauty	7	FACW
Rhynchospora caduca	Anglestem Beaksedge	7	OBL
Scutellaria integrifolia	Helmet Flower	9	FAC
Sisyrinchium angustifolium	Narrowleafed Blue-eyed	5	FACW
Solidago rugosa	Roughleaf Goldenrod	-	FAC
Solidago sempervirens	Seaside Goldenrod	10	FACW
Symphyotrichum dumusom	Rice Button Aster	-	FAC
Symphyotrichum lateriflorum	Calico Aster	W4	FAC
Tradescantia ohiensis	Common Spiderwort	-	FAC
Tridens ambiguus	Pine Barren Tridens	-	FACW
Tridens strictus	Long-spike Tridens	4	FACW
Tripsacum dactyloides	Eastern Gamma	9	FAC
Vernonia gigantea	Giant Ironweed	5	FAC

4.1.2.3 Fresh Marsh Reestablishment & Rehabilitation & Preservation Measures

For those 860.6 acres proposed for designation as Fresh Marsh re-establishment and rehabilitation, an appropriate assemblage of fresh marsh species will be established via planting and natural recruitment. Species assemblages will be selected and planted based on elevation. Proposed species assemblages to be planted will be representative of a species assemblage historically common to surrounding fresh marsh of the area. These species assemblages are identified in *The Natural Communities of Louisiana* (Louisiana Natural Heritage Program, August 2009, available at: http://www.wlf.louisiana.gov). A proposed list of possible species to be planted is presented in Table 5.

Proposed fresh marsh areas designated as re-establishment and rehabilitation will be prepared by applying herbicides to invasive species, burning, and tilling soil where rice levees may have compacted soils prior to planting. Fresh marsh areas will be planted with nursery stock from regional suppliers or seed harvested from adjacent/local habitats. Escrow or bond sum release rates and monitoring requirements will be consistent with other recently implemented CEMVN approved mitigation banks.

Table 5. Proposed Potential Fresh Marsh Species to be established

Scientific Name	**Common Name (USDA)**	**Wetland Indicator Status Region 2 (USDA)**
Fresh Marsh		
Panicum hemitomon	Maidencane	OBL
Eleocharis spp.	Spikerush	OBL
Sagittaria lancifolia	Bulltongue	OBL
Sagittaria latifolia	Duck potato	OBL
Spartina patens	Wire grass	FACW
Bacopa monnieri	Coastal water hyssop	OBL
Ceratophyllum	Coontail	OBL
Cyperus odoratus	Fragrant flatsedge	FACW
Pontederia cordata	Pickerelweed	OBL
Peltandra virginica	Arrow arum	OBL
Hydrocotyle spp.	Pennnyworts	OBL
Lemna minor	Common duckweed	OBL
Nymphaea odorata	White waterlilly	OBL

For those 100.7 acres proposed for designation as Fresh Marsh preservation, those areas will be protected in perpetuity by a conservation servitude. This will provide for connectivity of Fresh Marsh land to those restored acres to the north and west.

4.1.2.5 Invasive Species Control

Invasive plant species such as Chinese tallowtree (*Triadica sebiferum*) will be removed by cutting or herbicidal treatment during initial planting. The percent cover of invasive plants will be monitored during long-term and short-term success monitoring, and appropriate action will be taken if needed.

4.1.2.6 Monitoring

Monitoring and reporting activities (to be detailed in the MBI) will be commensurate with other recently approved mitigation banks and current MBI templates.

4.2 Current Site Risks

While there is no immediate threat of conversion to a more intensive landuse for this site (or any known proposed development on any adjacent properties), continued use of this site for agricultural purposes would further degrade the water quality of the receiving water bodies and would provide limited benefit to wildlife habitat.

TIMB is free of liens and encumbrances. TIMB and adjacent properties are within unincorporated land and are absent of zoning regulations.

Louisiana Civil Code, Article 490, treats water resources under the theory of absolute ownership and rule of capture, provided capture does not result in harm to neighbors.

4.3 Long-Term Sustainability of the Site

TIMB will be self-sustaining, requiring minimal maintenance after the final success criteria are met. No structures are proposed or would be necessary to assure hydrologic or vegetative restoration.

5.0 PROPOSED SERVICE AREA

TIMB is located primarily in the Hydrologic Unit Code (HUC) 08080202.

TIMB will provide BLH mitigation credits primarily to the HUC 08080202 area and secondarily to the Mermentau drainage basin (HUC 08080201) (Figure 12).

TIMB will provide Coastal Prairie mitigation credits primarily to the HUC 08080202 area and secondarily to HUCs 08080201, 08080203, 08080204, 08080205, 08080206, 08080102, and 08080103 (Figure 13).

TIMB will provide FM mitigation credits primarily to the HUC 08080202 area and secondarily to the Chenier plains (HUCs 08080206 and 08080103) (Figure 14).

These proposed service areas are consistent with the LRAM and other CEMVN approved mitigation banks within this region.

6.0 OPERATION OF THE MITIGATION BANK

6.1 Project Representatives

Sponsor: Turtle Lake Island Mitigation, LLC
POC: Bart Bellaire
300 Rue Beauregard Suites A
Lafayette, La 70510

Agent: Pangaea Conservation & Compliance, LLC
P.O. Box 40345
Baton Rouge, LA 70835

Landowner / Long-Term Manager:
Olivia Rae Farms, LLC
POC: Bart Bellaire
300 Rue Beauregard Suites A
Lafayette, La 70510

6.2 Qualifications of the Sponsor

Turtle Lake Island Mitigation staff members have extensive experience in land management and currently manage thousands of acres for wildlife habitat.

6.3 Proposed Long-Term Ownership and Management Representatives

The long-term owner of the bank is proposed to be Olivia Rae Farms, LLC, and the long-term management of the bank is proposed to be conducted by Olivia Rae Farms, LLC.

A long-term maintenance and protection escrow account will provide funding for long-term boundary maintenance and site protection, into perpetuity. These long-term maintenance and site protection activities will be conducted by the Sponsor. The conservation servitude will protect the site from any activities that would diminish the quality of restored wetlands on the site. No structures are proposed or would be necessary to assure hydrologic or vegetative restoration.

6.4 Site Protection

TIMB will be protected in perpetuity by a conservation servitude pursuant to Louisiana Revised Statute 9:1271 et seq. The servitude will be held by U.S. Land Conservancy (Holder), a conservation-oriented 501(c)(3) organization. The servitude will inure and run with the property title.

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

6.5 Long-Term Strategy

A long-term maintenance and protection escrow account will provide funding for long-term boundary maintenance and site protection, into perpetuity. These long-term maintenance and site protection activities will be conducted by the Sponsor. The conservation servitude will protect the site from any activities that would diminish the quality of restored wetlands on the site. No structures are proposed or would be necessary to assure hydrologic or vegetative restoration.

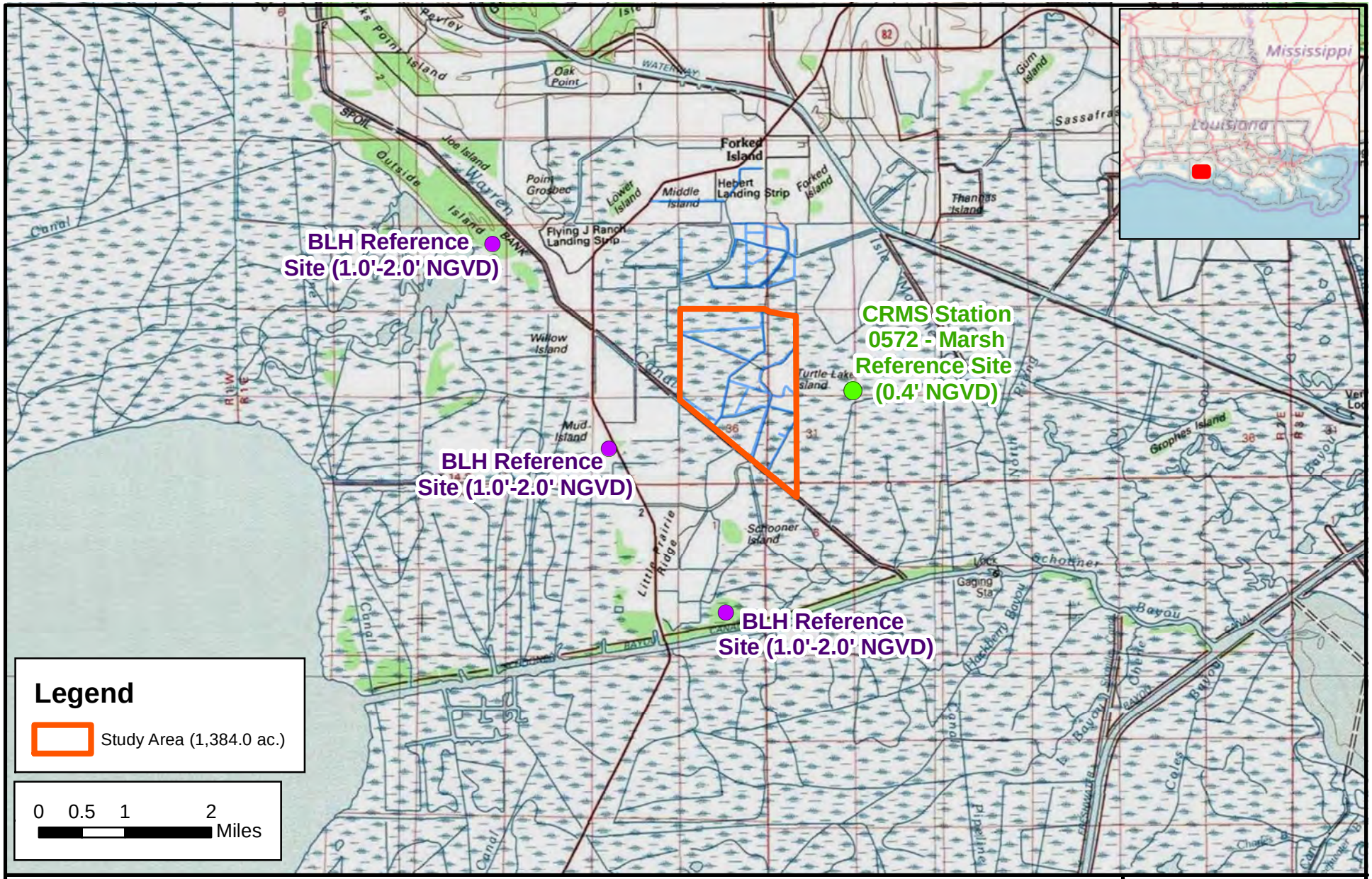
7.0 REFERENCES

Code of Federal Regulations, Title 33, Parts 325 and 332 and Title 40, Part 230, as published on pages 19594-19704 in the Federal Register dated 10 April 2008.

United States Department of Agriculture – Natural Resources Conservation Service, Web Soil Survey, Vermilion Parish, Louisiana, Retrieved December 2010. http://soils.usda.gov/survey/online_surveys/louisiana/index.html

United States Department of Agriculture – Natural Resources Conservation Service, PLANTS Database – USDA PLANTS, Retrieved June 2009. http://plants.usda.gov/

Louisiana Department of Environmental Quality 303(d) Impaired Waterbodies List, 2016.



SITE VICINITY MAP

Turtle Island Mitigation Bank
Vermilion Parish, Louisiana

PANGAEA
Conservation and Compliance, LLC

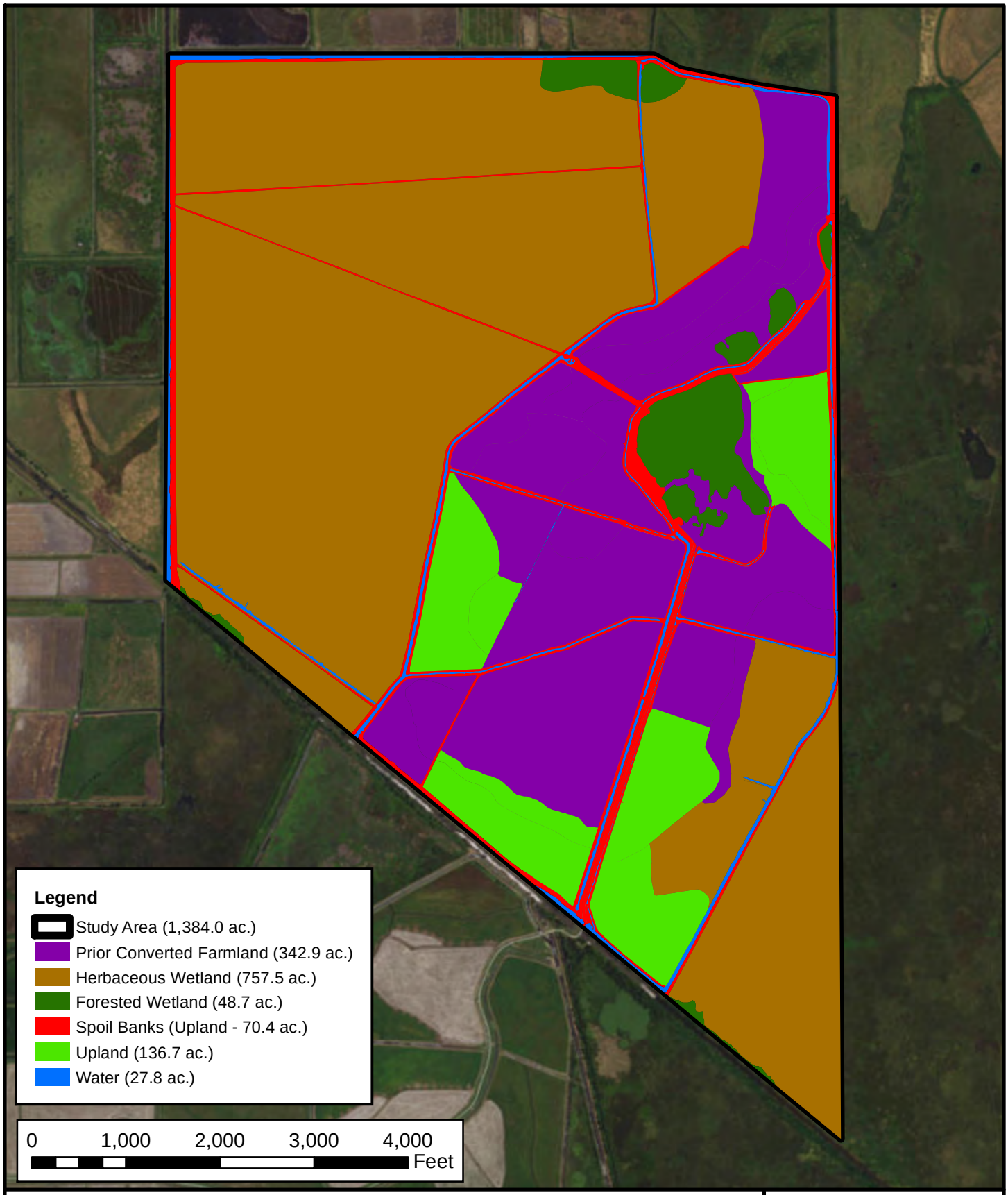
Figure: 1
Date: October 2017
Scale:1:100,000

SITE BOUNDARY

Turtle Island Mitigation Bank
Vermilion Parish, Louisiana

PANGAEA
Conservation and Compliance, LLC

Figure:	2
Date:	October 2017
Scale:	1:17,000



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EXISTING CONDITIONS

Turtle Island Mitigation Bank
Vermilion Parish, Louisiana

PANGAEA
Conservation and Compliance, LLC

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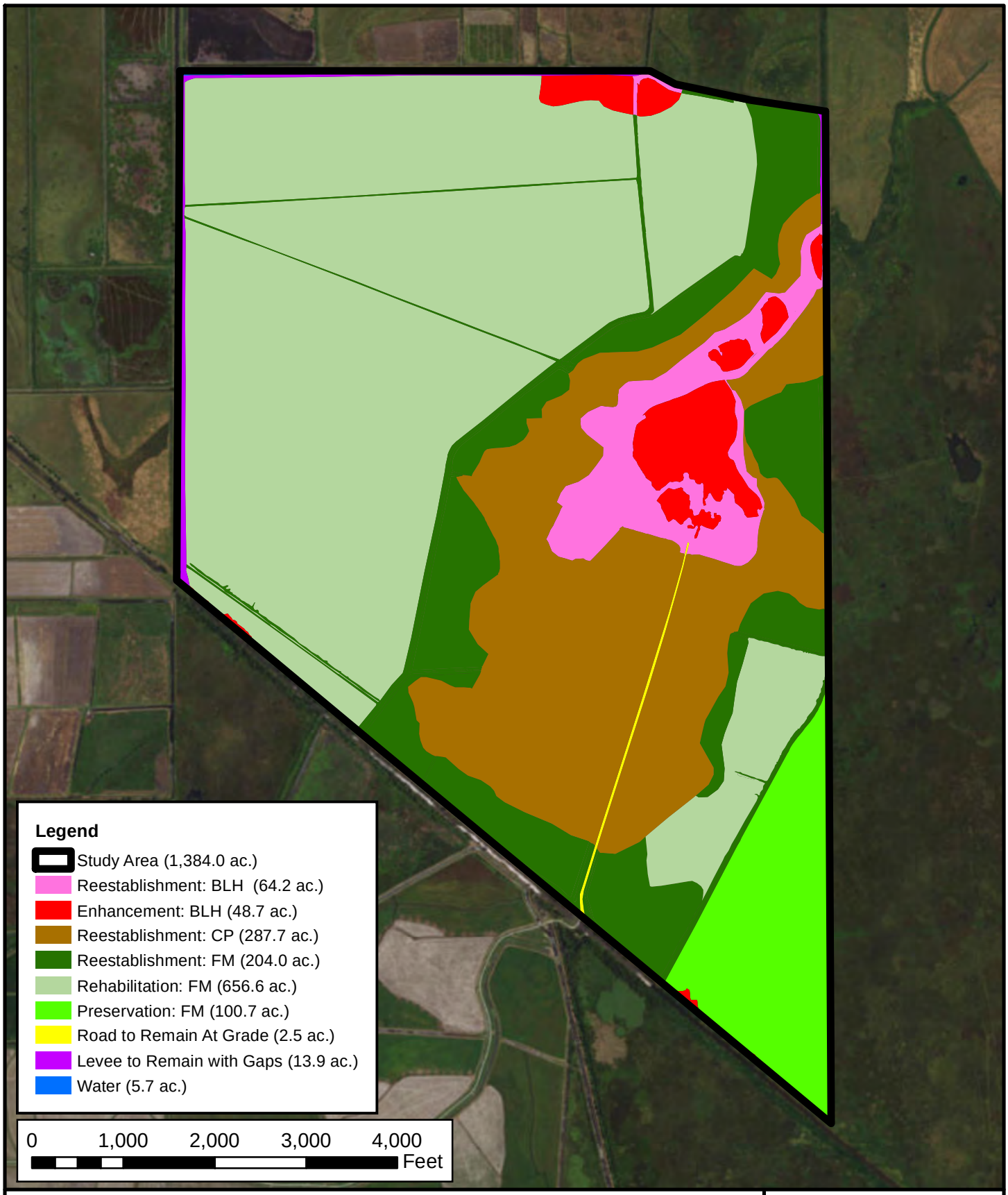
Scale: 1:17,000



PROPOSED MITIGATION TYPES

Turtle Lake Island Mitigation Bank
Vermilion Parish, Louisiana

PANGAEA
Conservation and Compliance, LLC

Figure: 4
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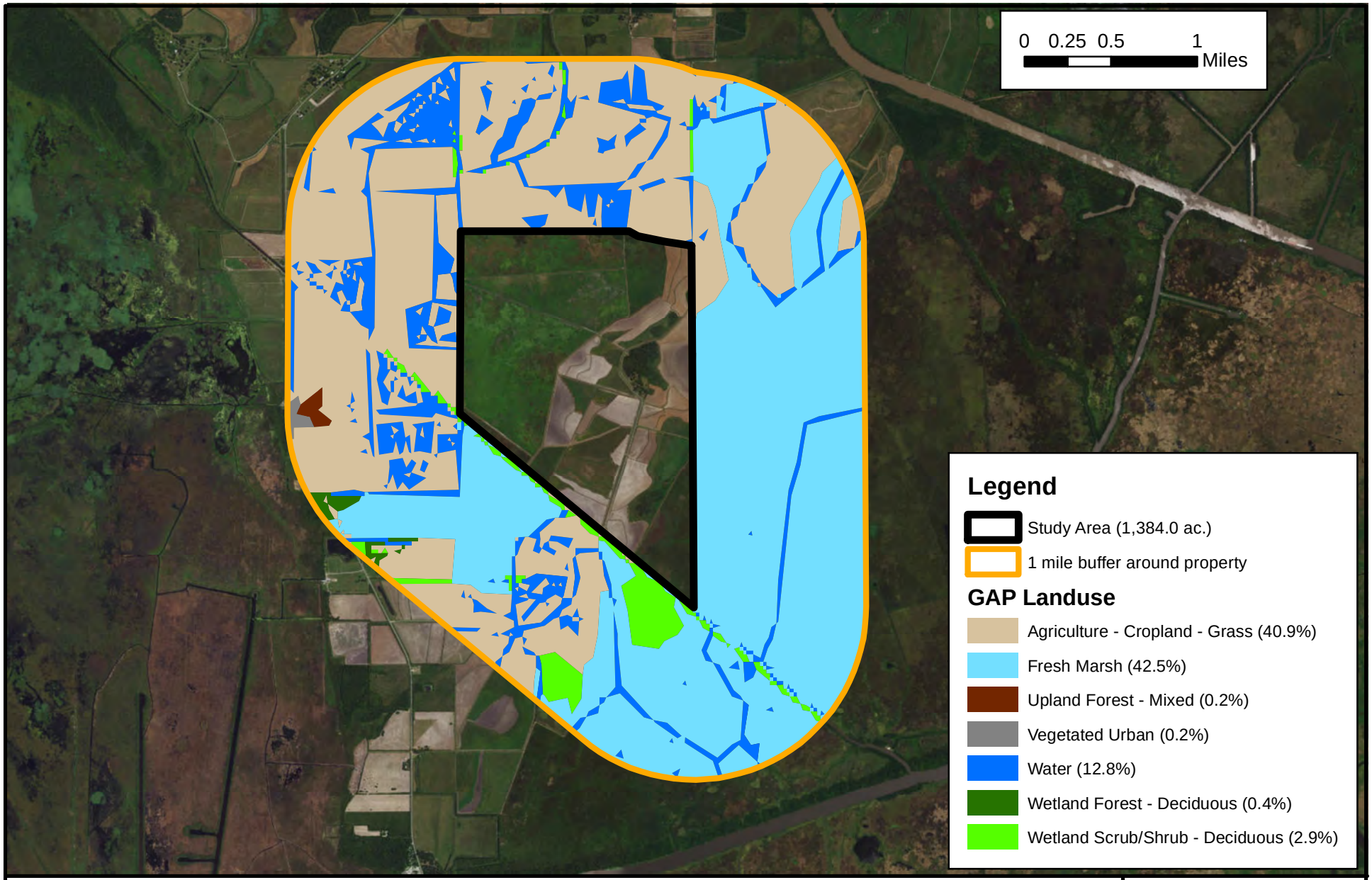
Scale: 1:17,500



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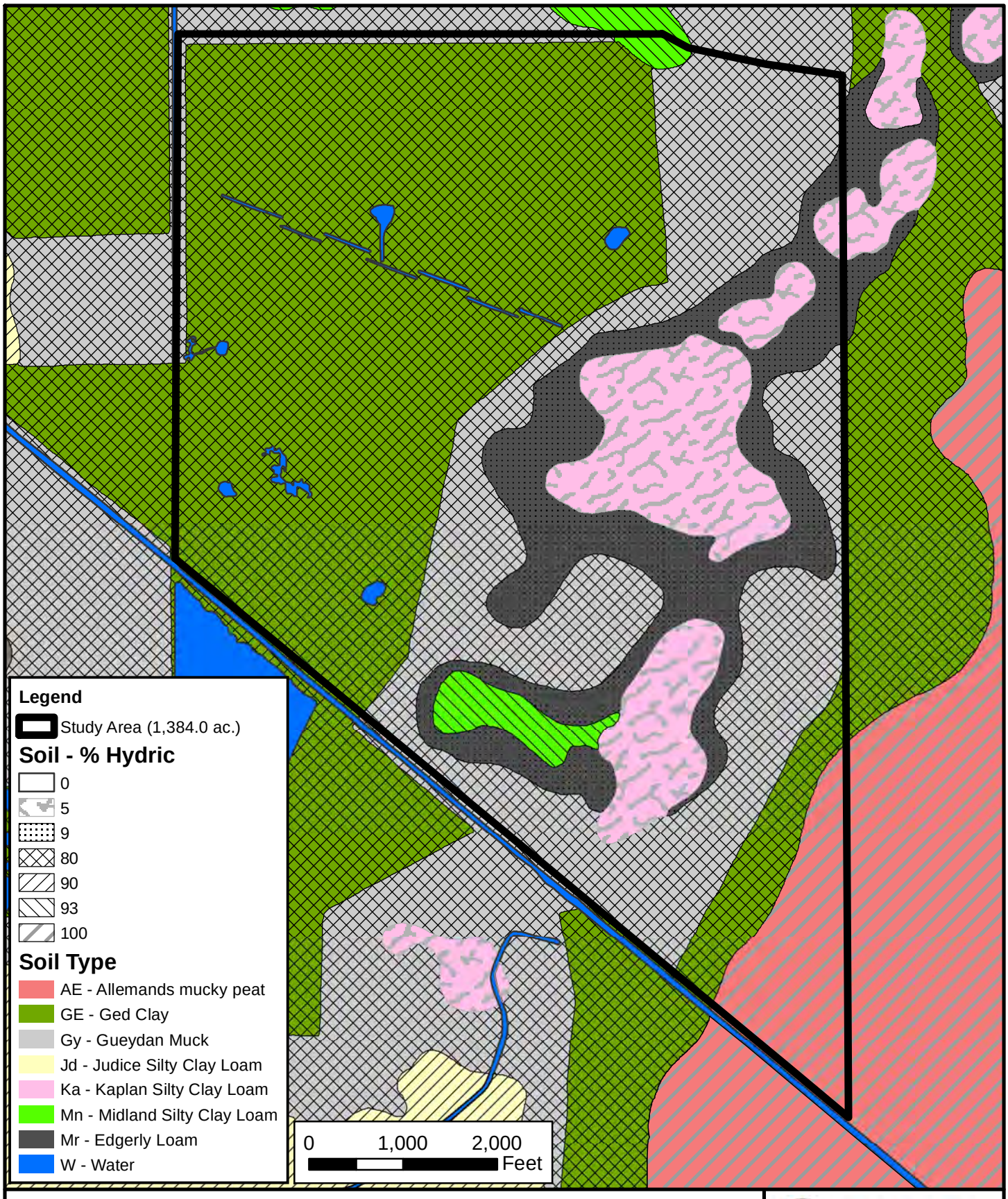
LAND USE/LAND COVER WITHIN 1 MILE BUFFER

Turtle Island Mitigation Bank
Vermilion Parish, Louisiana

PANGAEA
Conservation and Compliance, LLC

Figure: 5
Date: October 2017
Scale: 1:50,000



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SOILS MAP

Turtle Island Mitigation Bank
Vermilion Parish, Louisiana

PANGAEA
Conservation and Compliance, LLC

Figure: 6
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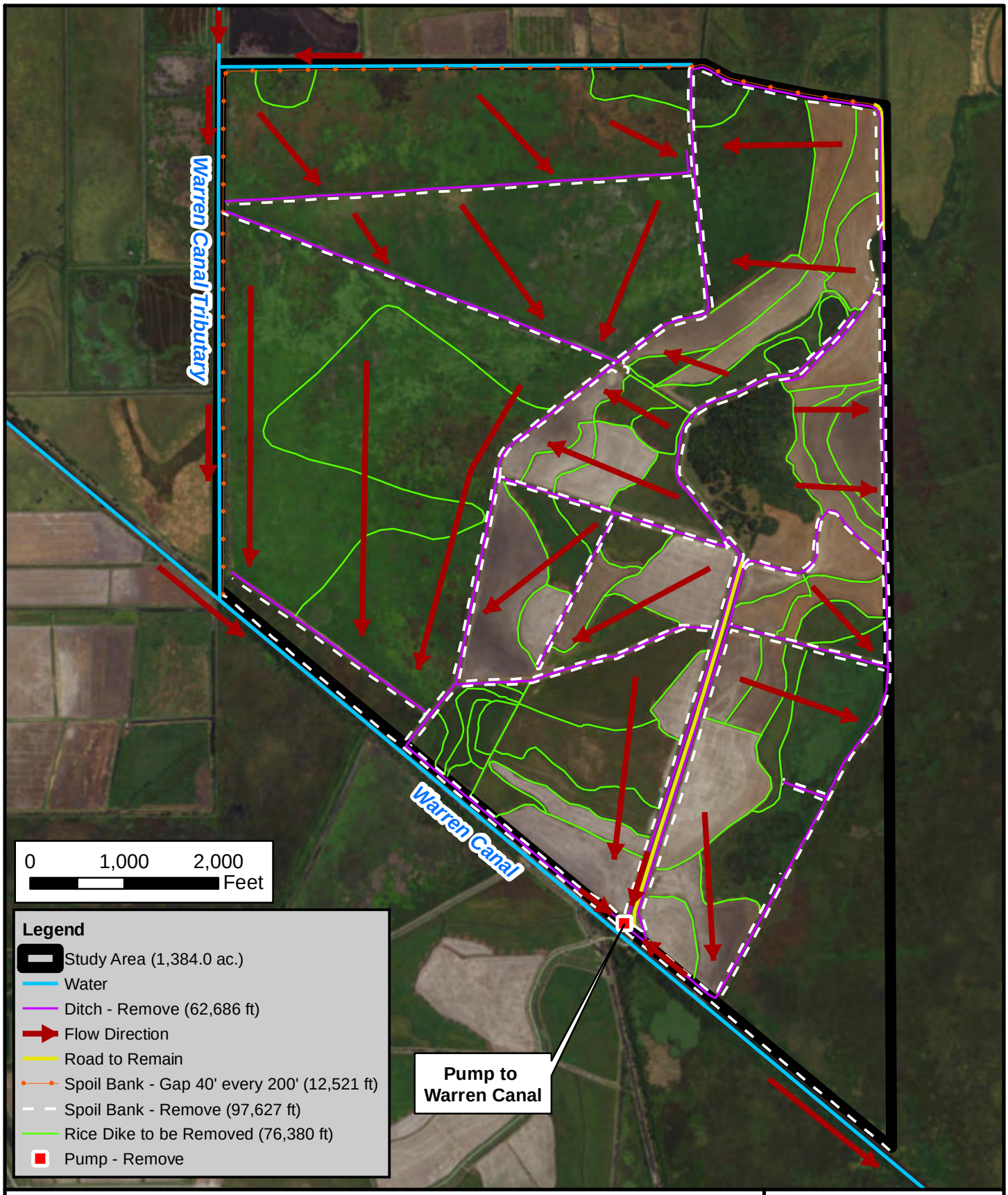

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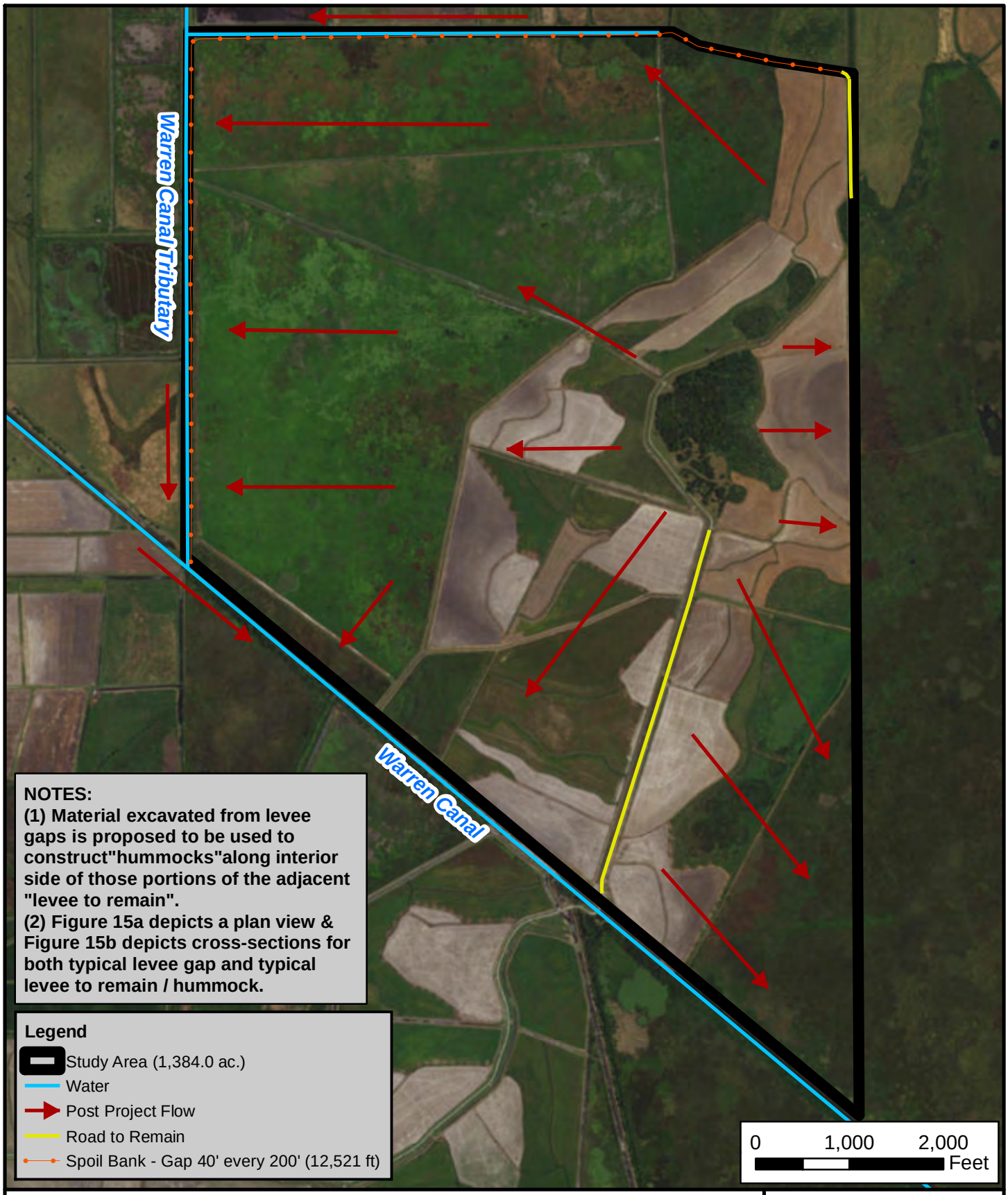
EXISTING DRAINAGE

Turtle Island Mitigation Bank
Vermilion Parish, Louisiana

PANGAEA
Conservation and Compliance, LLC

Figure: 7
Date: November 2017
Scale: 1:17,000



PROPOSED DRAINAGE

Turtle Island Mitigation Bank
Vermilion Parish, Louisiana

PANGAEA
Conservation and Compliance, LLC

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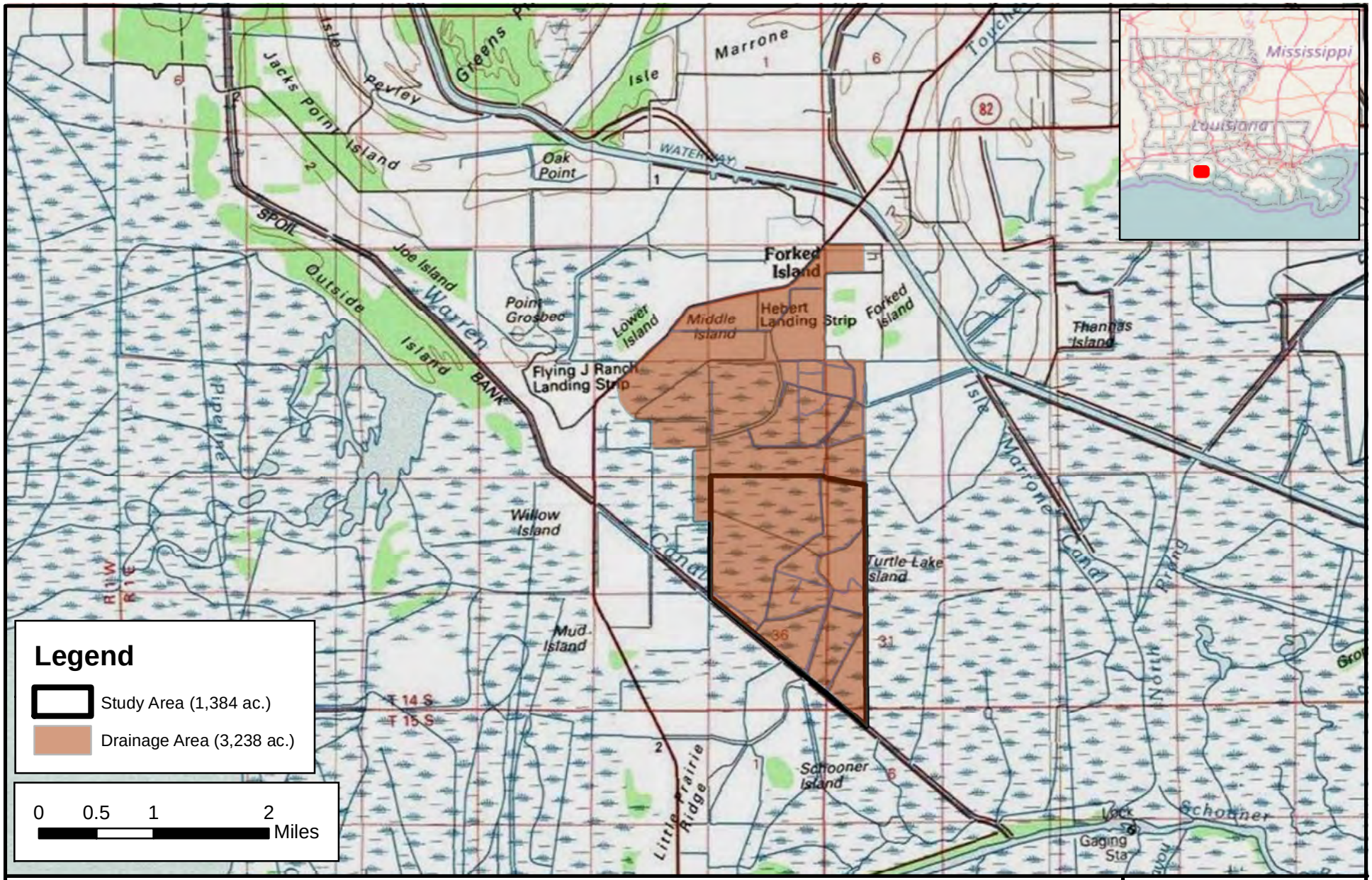

DRAINAGE AREA

Turtle Island Mitigation Bank
Vermilion Parish, Louisiana

PANGAEA
Conservation and Compliance, LLC

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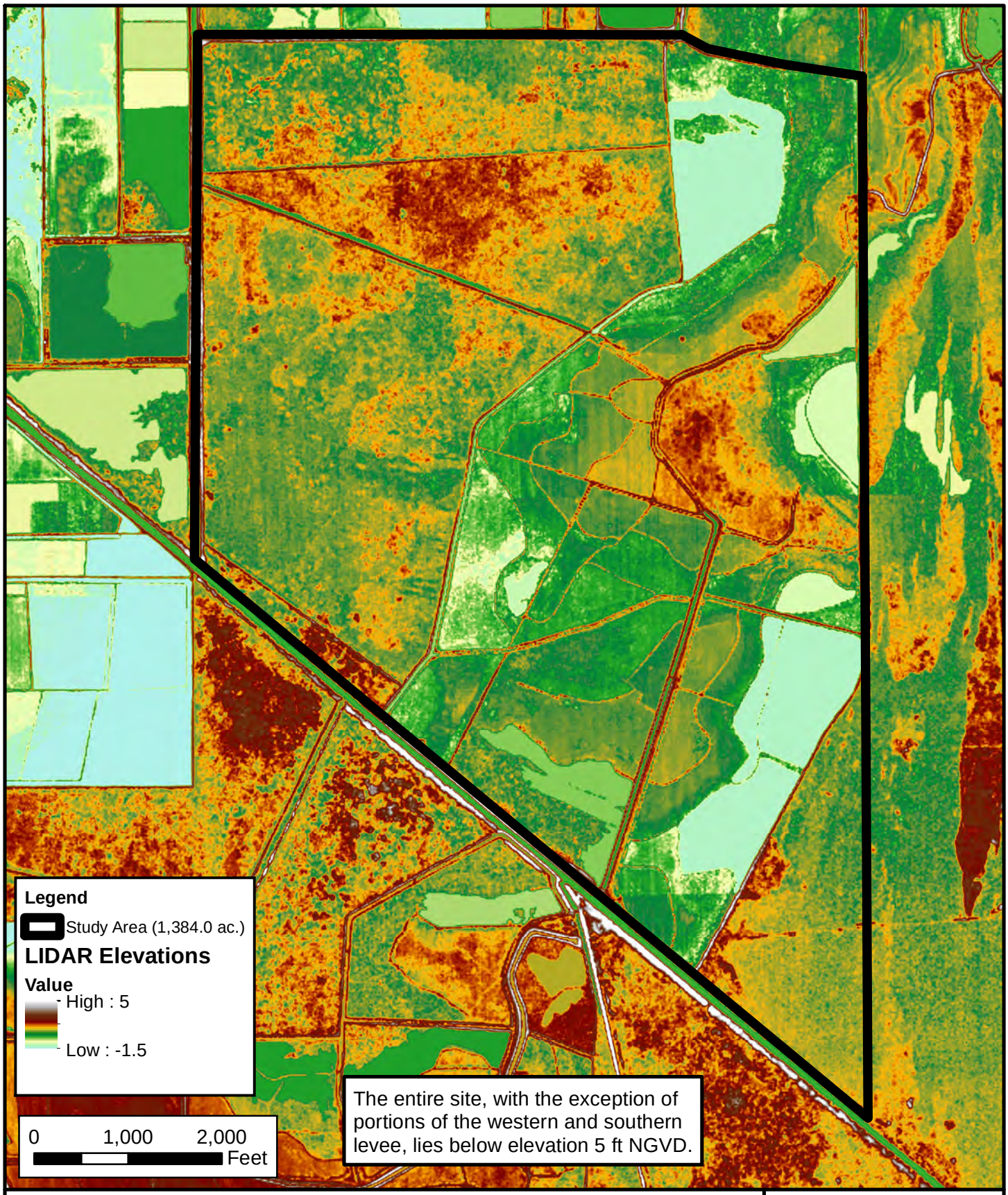

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LIDAR ELEVATIONS

Turtle Island Mitigation Bank
Vermilion Parish, Louisiana

PANGAEA
Conservation and Compliance, LLC

Figure: 10
Date: October 2017
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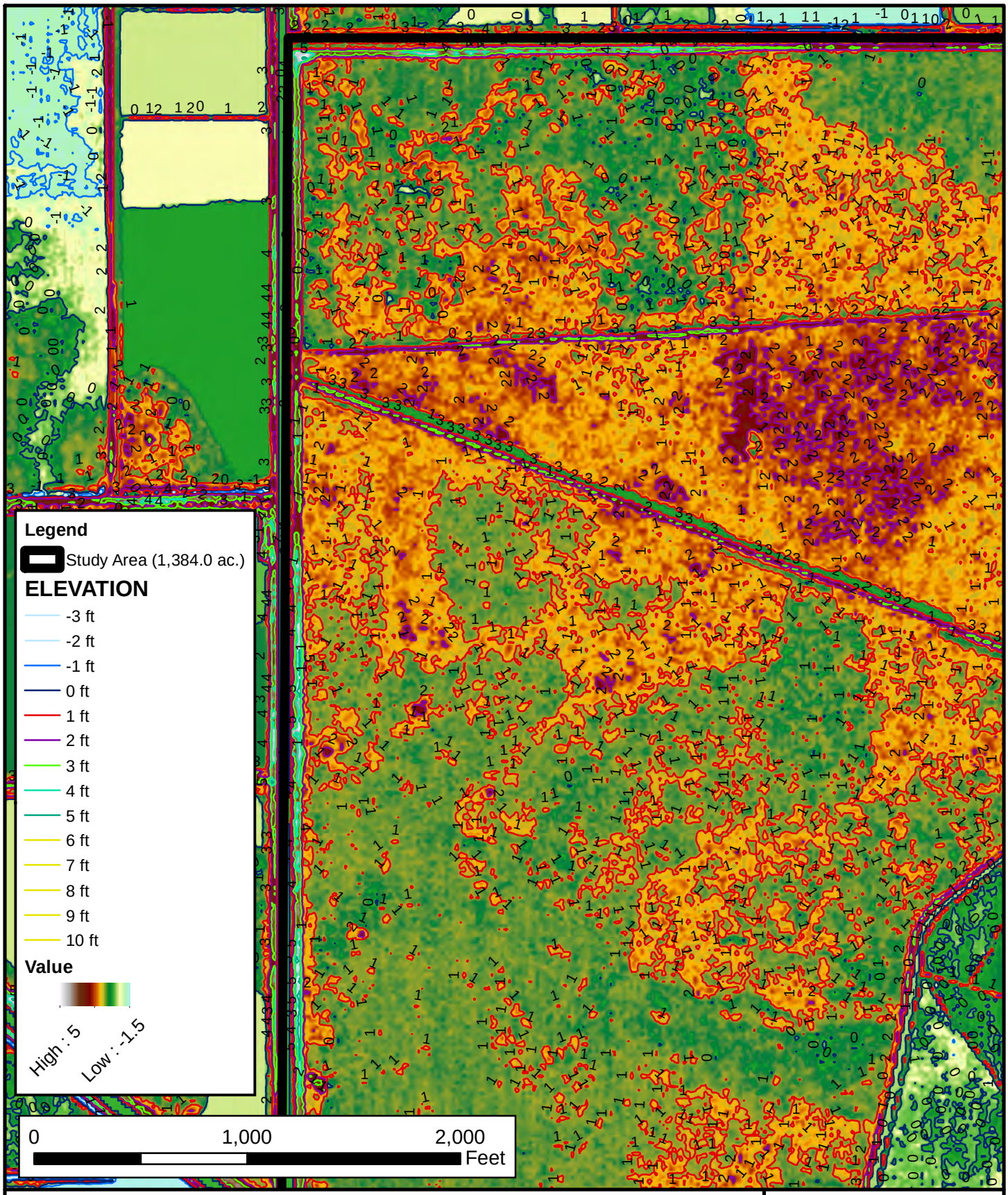

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LIDAR / 1 FT CONTOUR ELEVATIONS

Turtle Island Mitigation Bank
Vermilion Parish, Louisiana

PANGAEA
Conservation and Compliance, LLC

Figure:	10a
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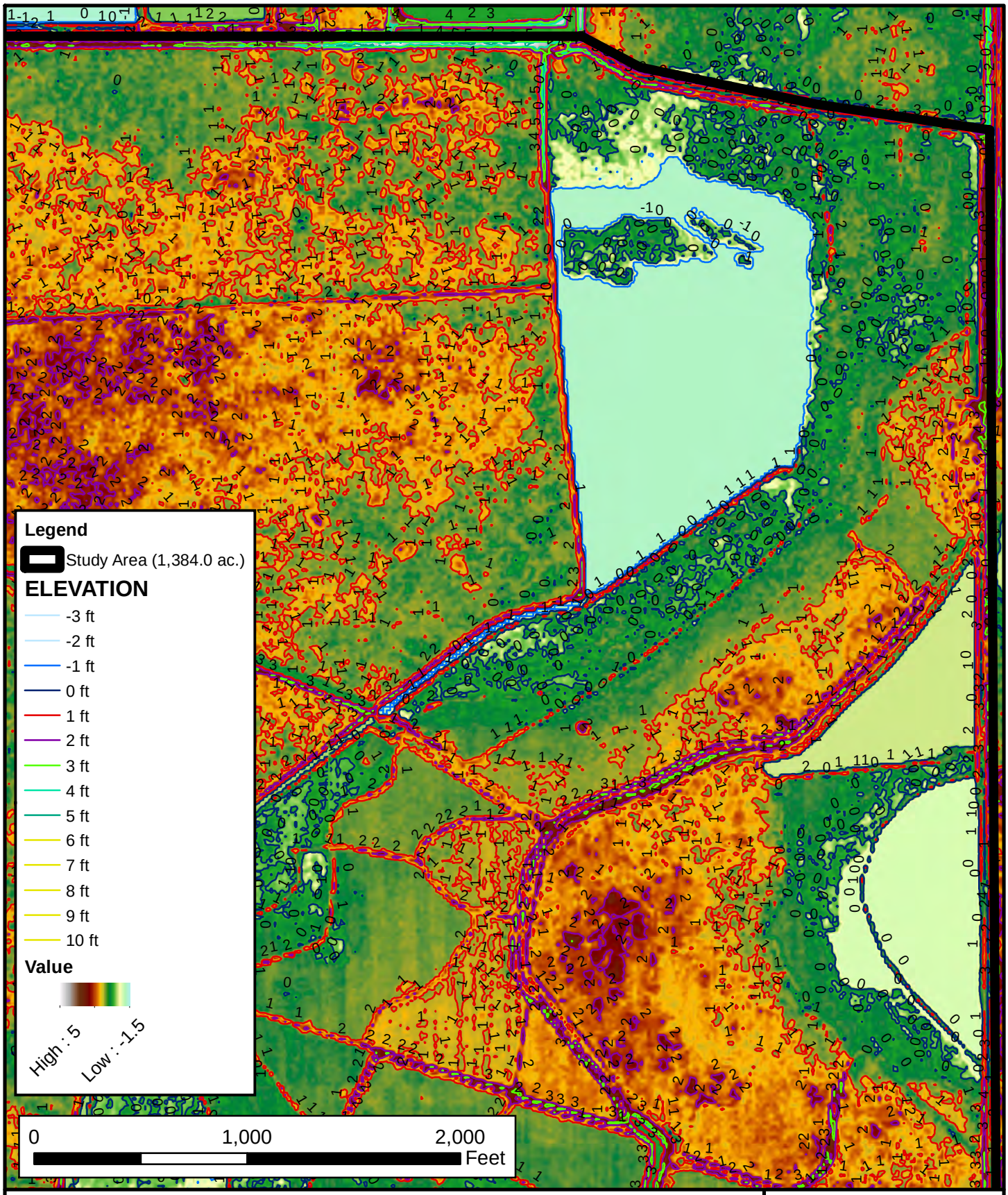

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LIDAR / 1 FT CONTOUR ELEVATIONS

Turtle Island Mitigation Bank
Vermilion Parish, Louisiana

PANGAEA
Conservation and Compliance, LLC

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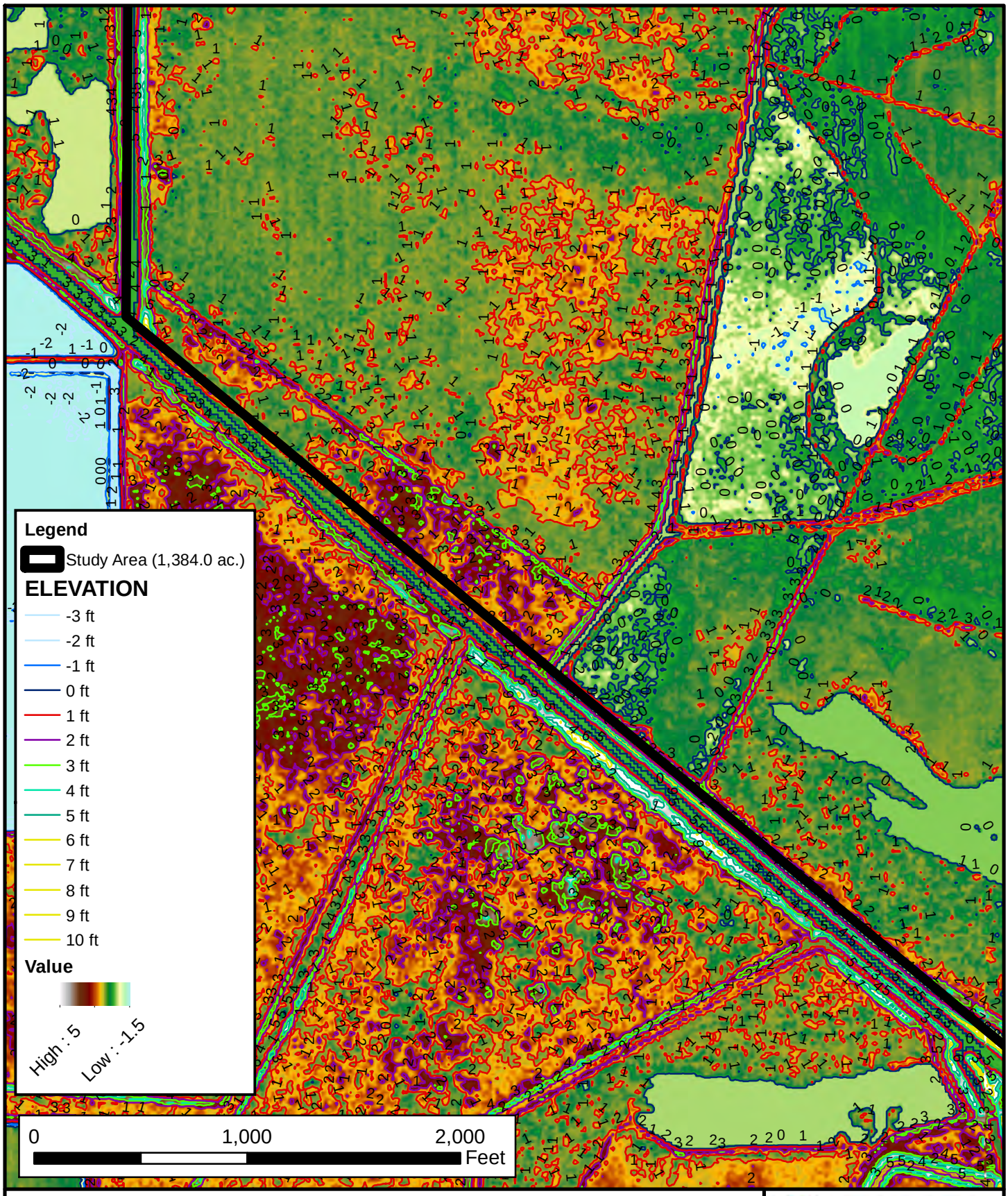

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LIDAR / 1 FT CONTOUR ELEVATIONS

Turtle Island Mitigation Bank
Vermilion Parish, Louisiana

PANGAEA
Conservation and Compliance, LLC

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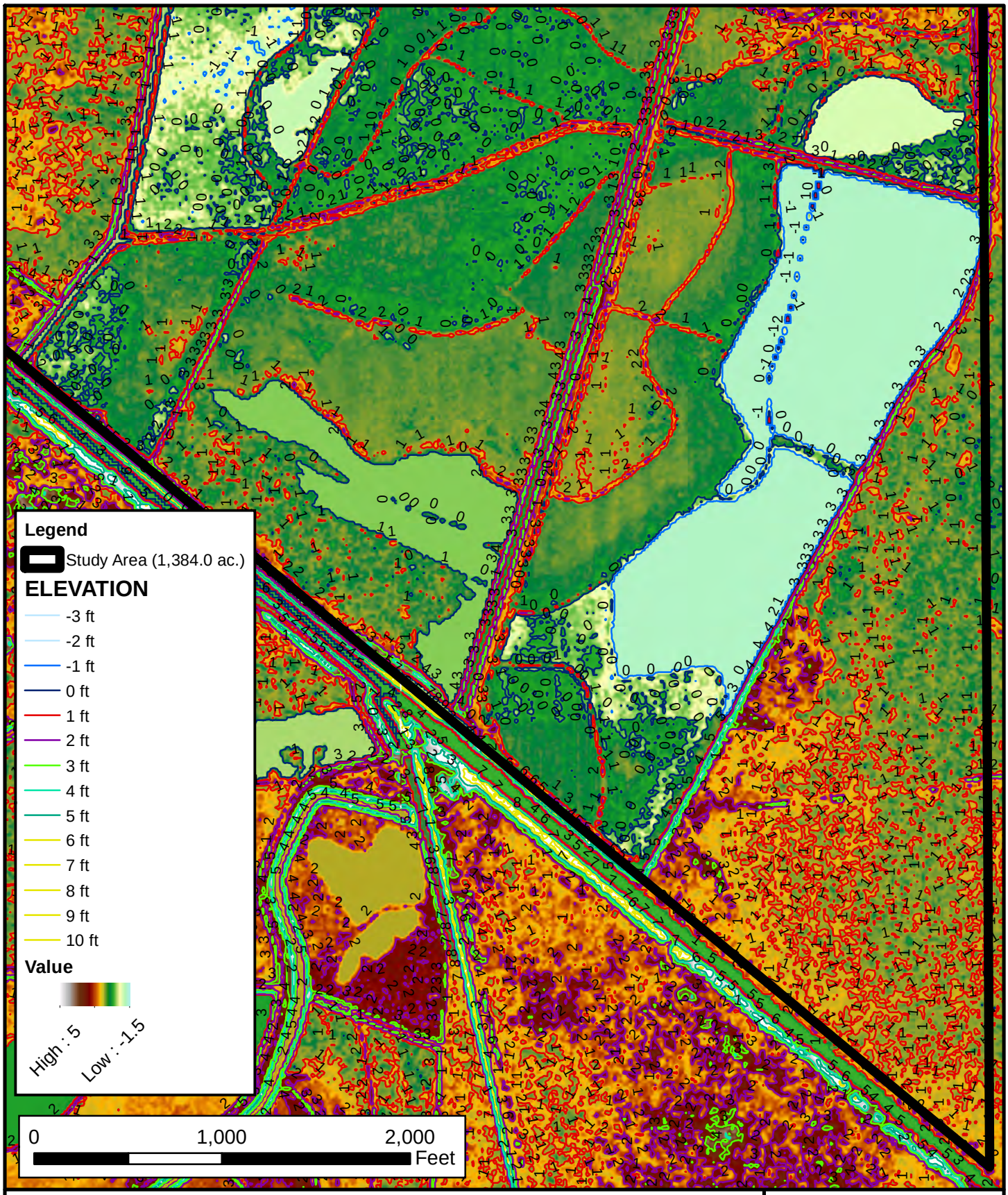

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LIDAR / 1 FT CONTOUR ELEVATIONS

Turtle Island Mitigation Bank
Vermilion Parish, Louisiana

PANGAEA
Conservation and Compliance, LLC

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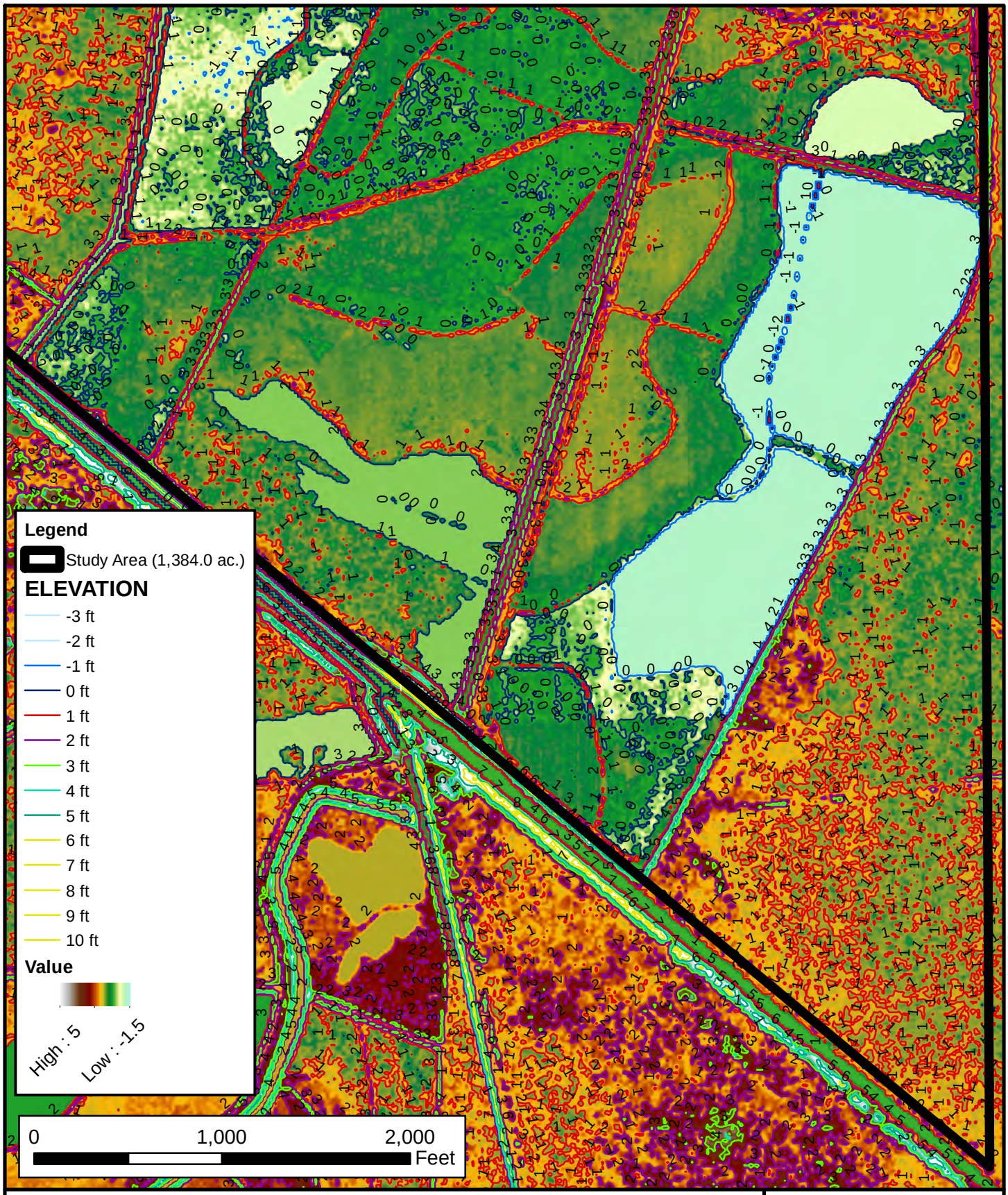


N

LIDAR / 1 FT CONTOUR ELEVATIONS

Turtle Island Mitigation Bank
Vermilion Parish, Louisiana

PANGAEA
Conservation and Compliance, LLC

Figure: 10d
Date: October 2017
Scale: 1:8,500

SITE PLAN

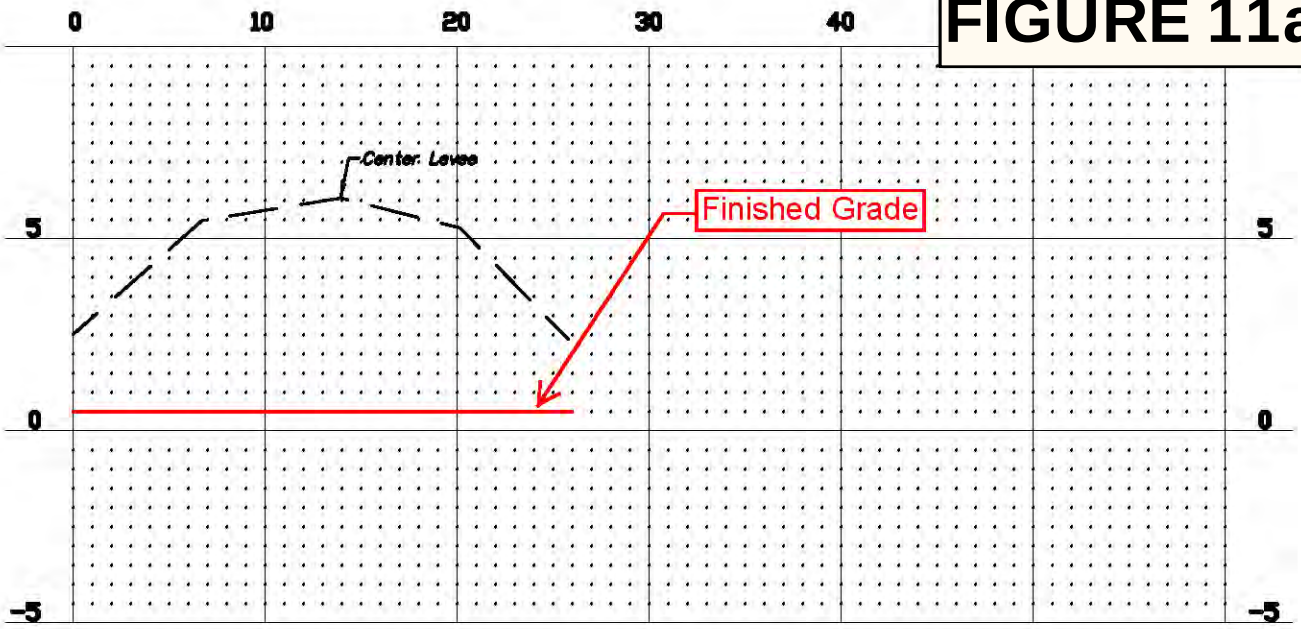
TURTLE LAKE ISLAND
MITIGATION BANK

Prepared by: PRIMEAUX, TOUCHET & ASSOCIATES., L.L.C.
Consulting Engineers & Land Surveyors
Abbeville, Louisiana

JUNE 2017

JOB 17−90
SHEET 1 of 11

FIGURE 11a



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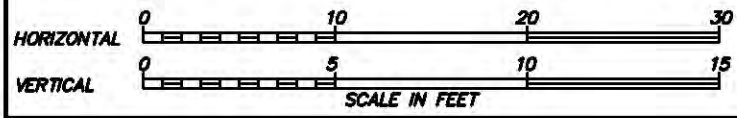

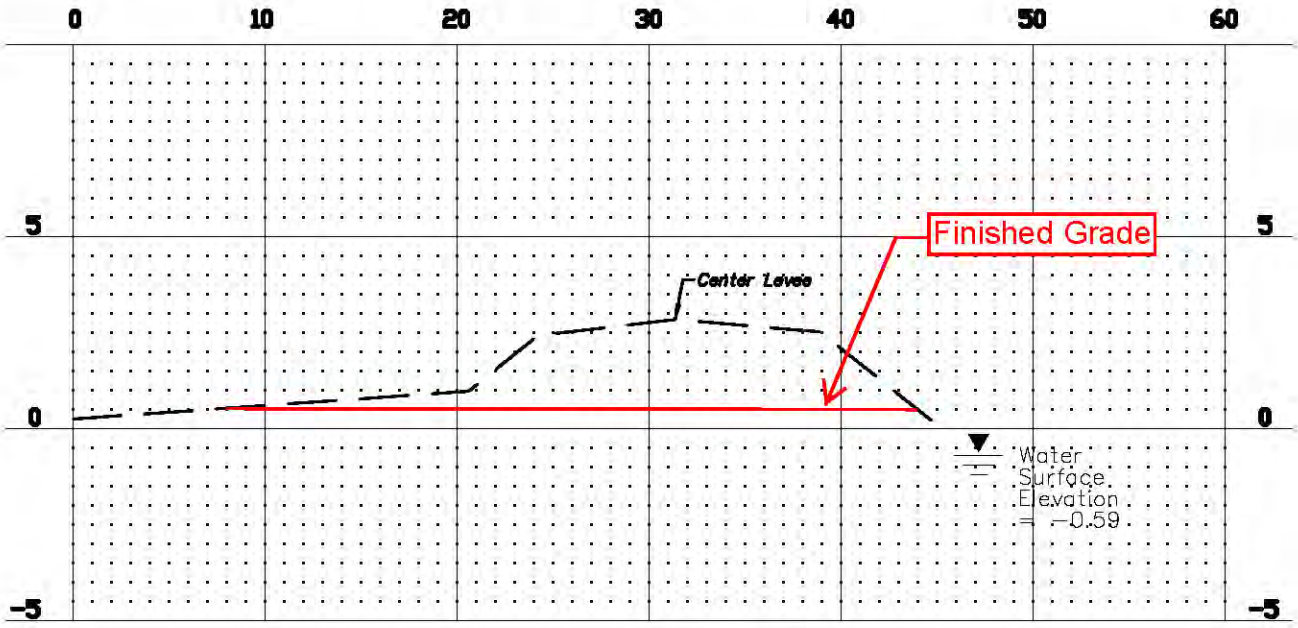

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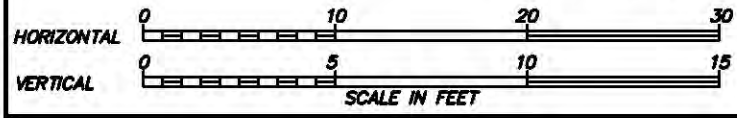


ELEVATIONS ARE NAVD 88

SECTIONS A & B

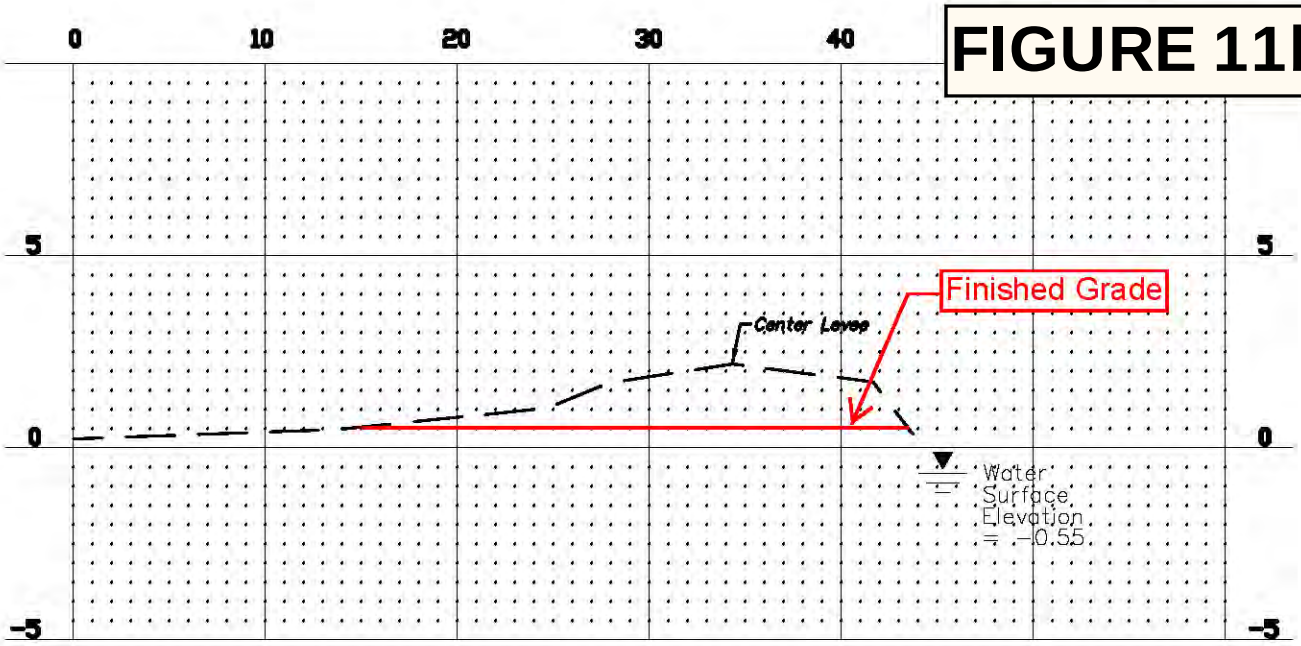
TURTLE LAKE ISLAND MITIGATION BANK

Prepared by: PRIMEAUX, TOUCHET & ASSOCIATES., L.L.C.
Consulting Engineers & Land Surveyors
Abbeville, Louisiana

JUNE 2017

JOB 17-90
SHEET 2 of 11

FIGURE 11b



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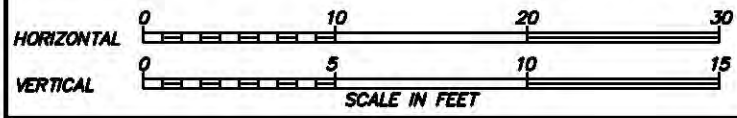

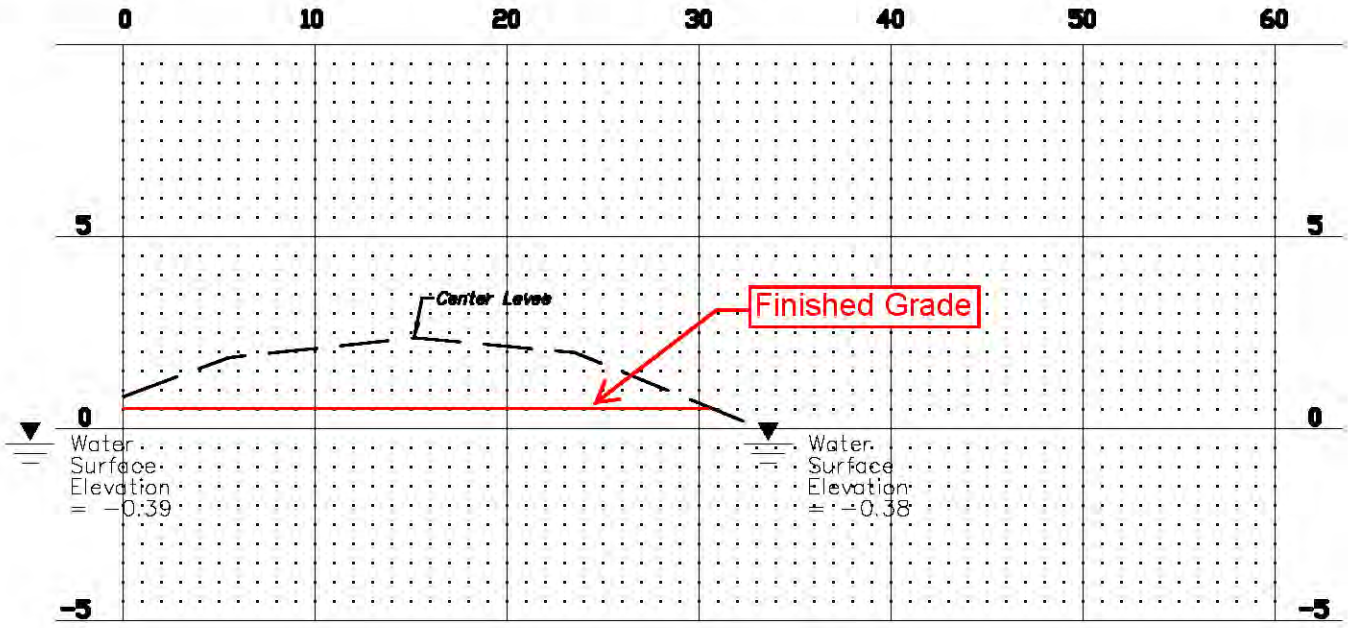

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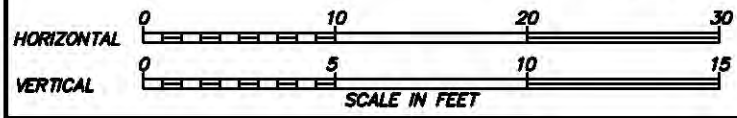

ELEVATIONS ARE NAVD 88

SECTIONS C & D

TURTLE LAKE ISLAND MITIGATION BANK

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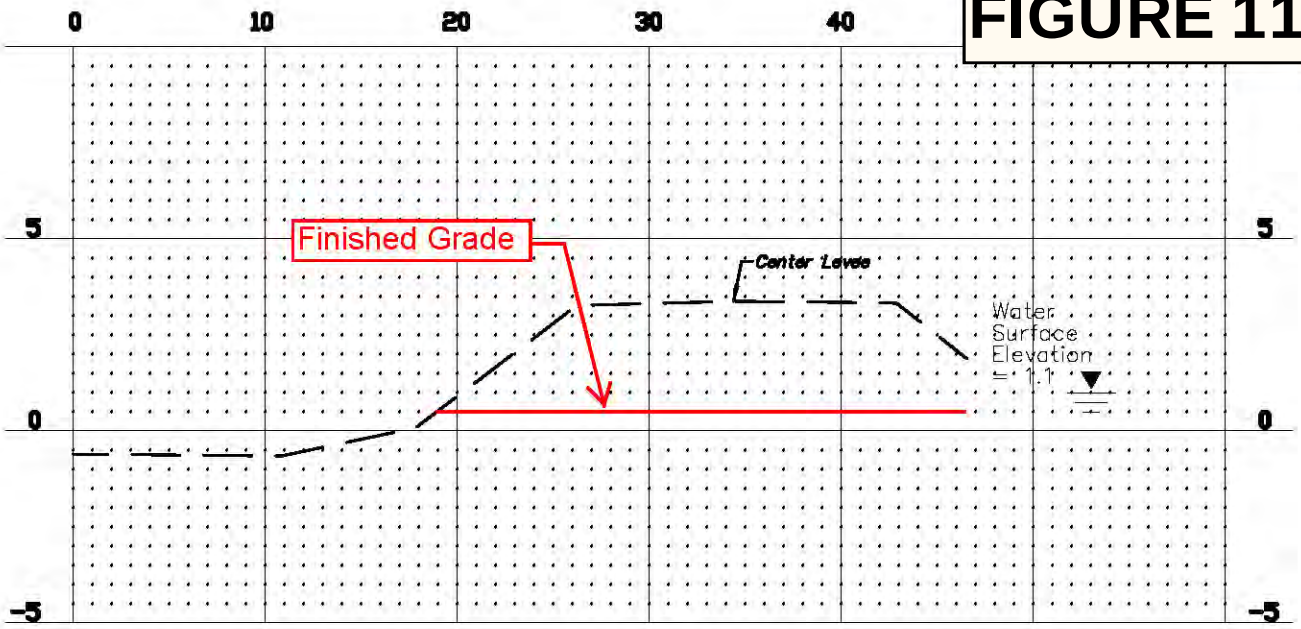
Consulting Engineers & Land Surveyors
Abbeville, Louisiana

JUNE 2017

FIGURE 11c



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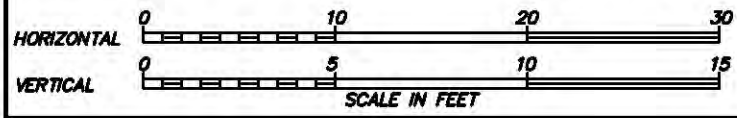

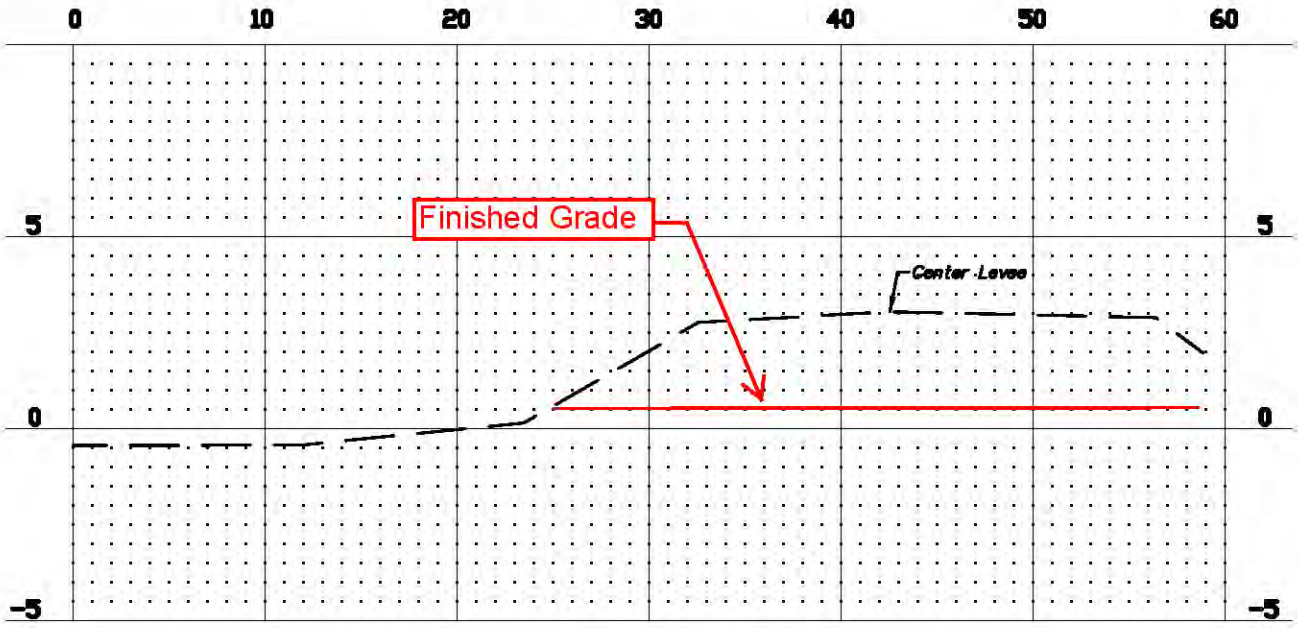

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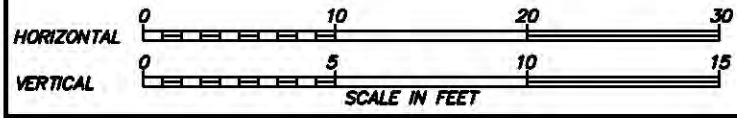


ELEVATIONS ARE NAVD 88

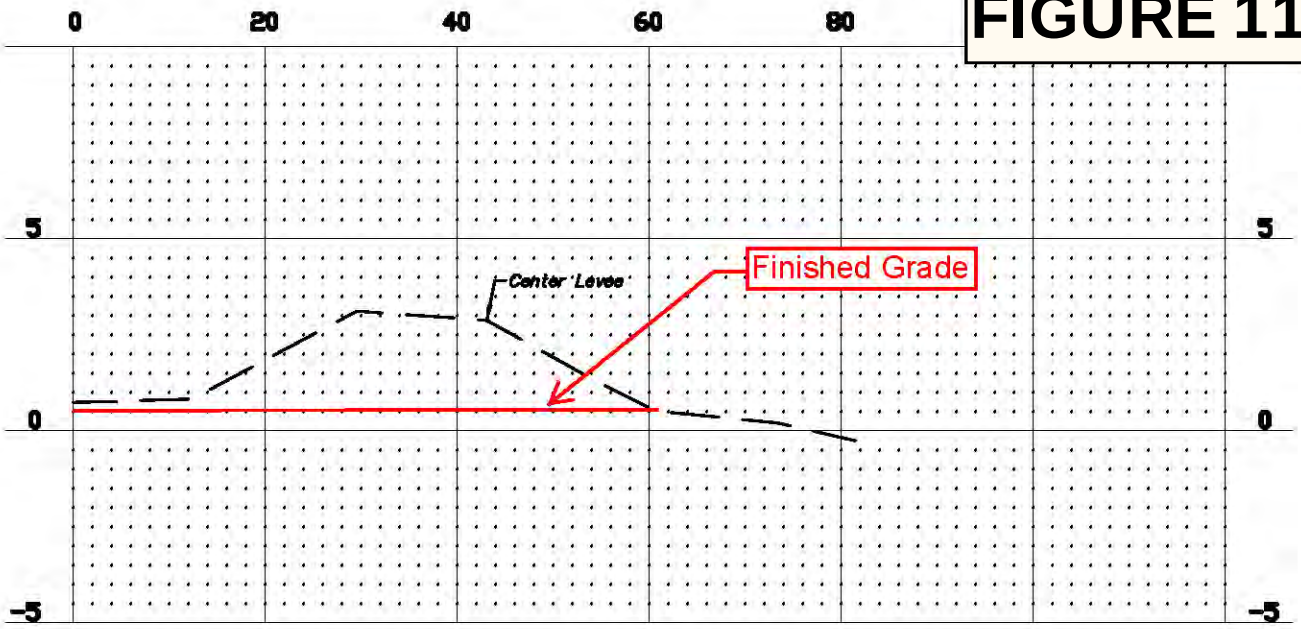
SECTIONS E & F

TURTLE LAKE ISLAND MITIGATION BANK

Prepared by: PRIMEAUX, TOUCHET & ASSOCIATES., L.L.C.
Consulting Engineers & Land Surveyors
Abbeville, Louisiana

JUNE 2017

FIGURE 11d



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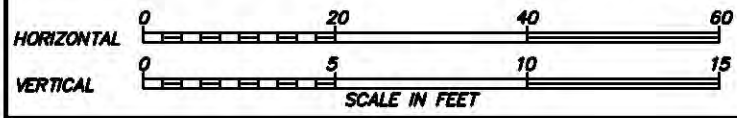
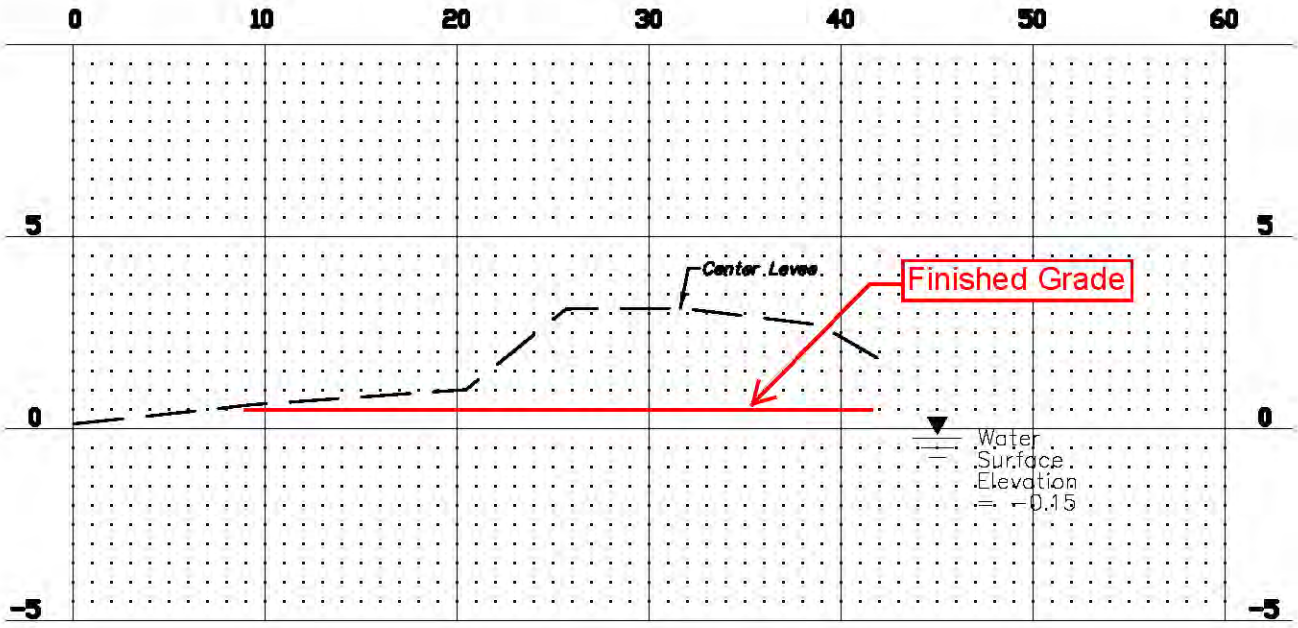
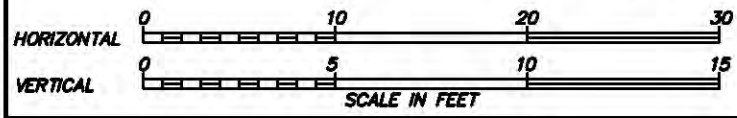




SECTION H–H'



ELEVATIONS ARE NAVD 88

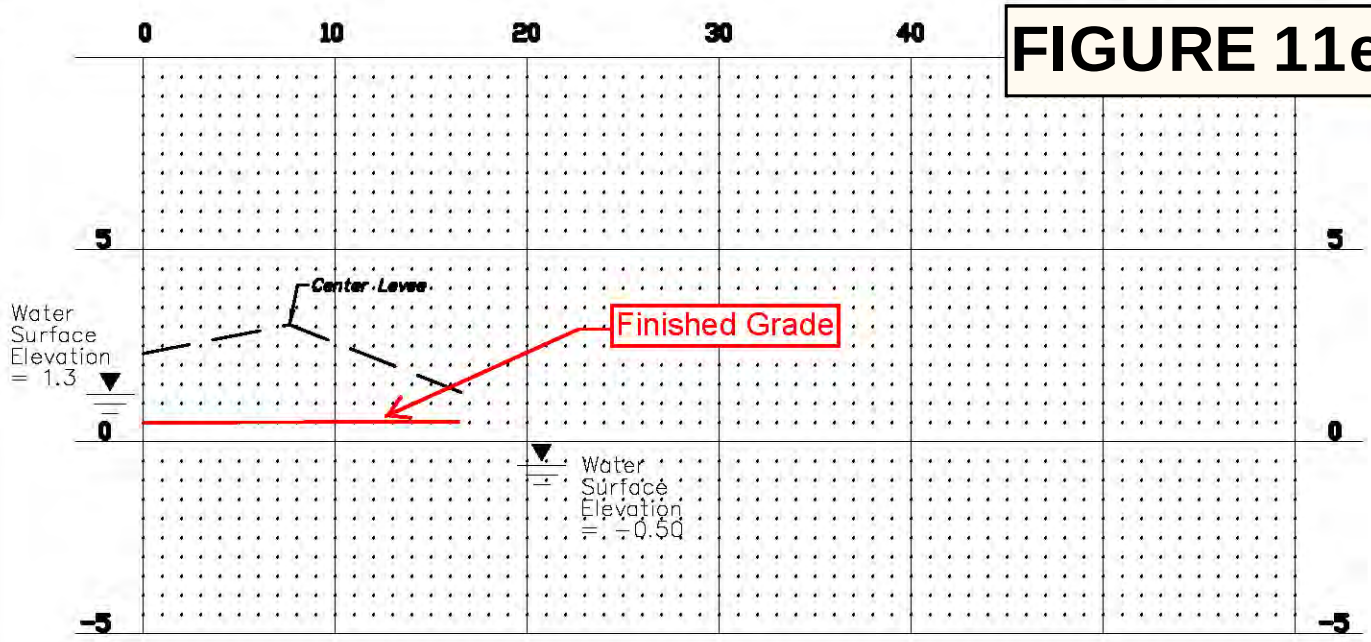
SECTIONS G & H

TURTLE LAKE ISLAND MITIGATION BANK

Prepared by: PRIMEAUX, TOUCHET & ASSOCIATES., L.L.C.
Consulting Engineers & Land Surveyors
Abbeville, Louisiana

JUNE 2017

FIGURE 11e



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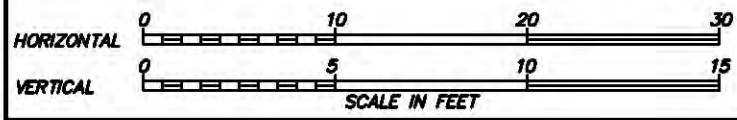
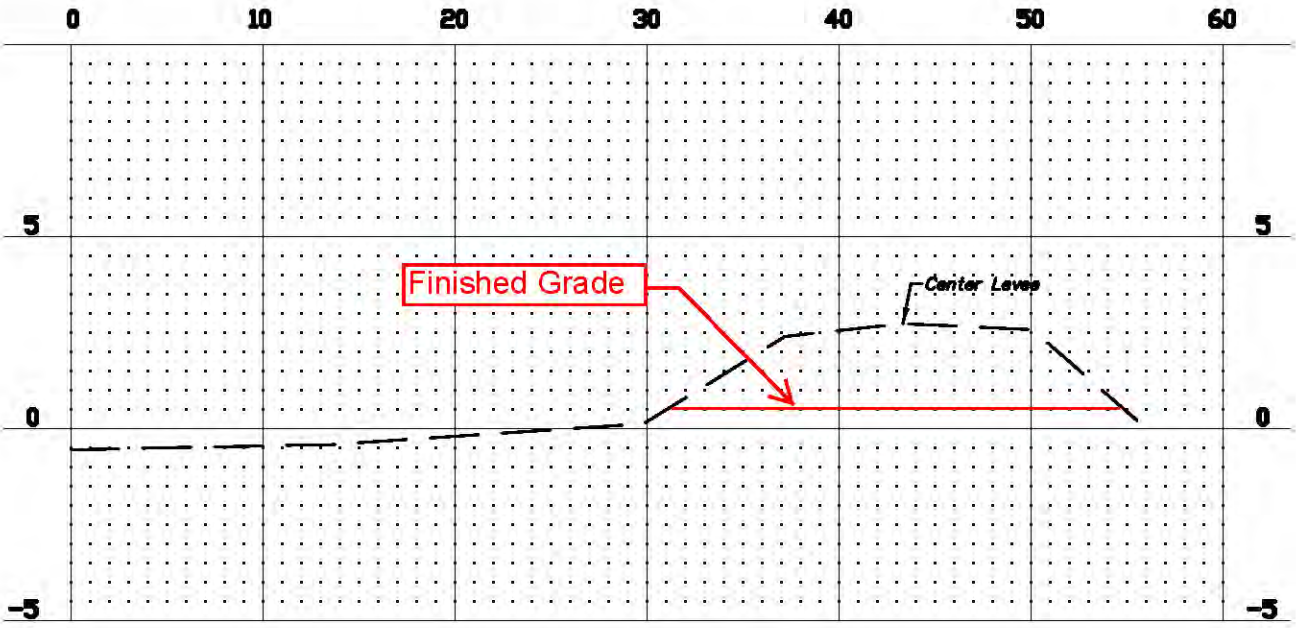
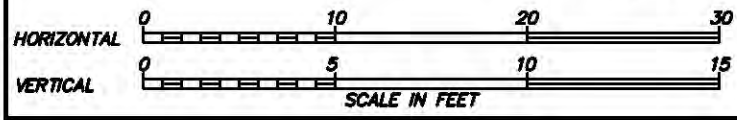




SECTION J–J'



ELEVATIONS ARE NAVD 88

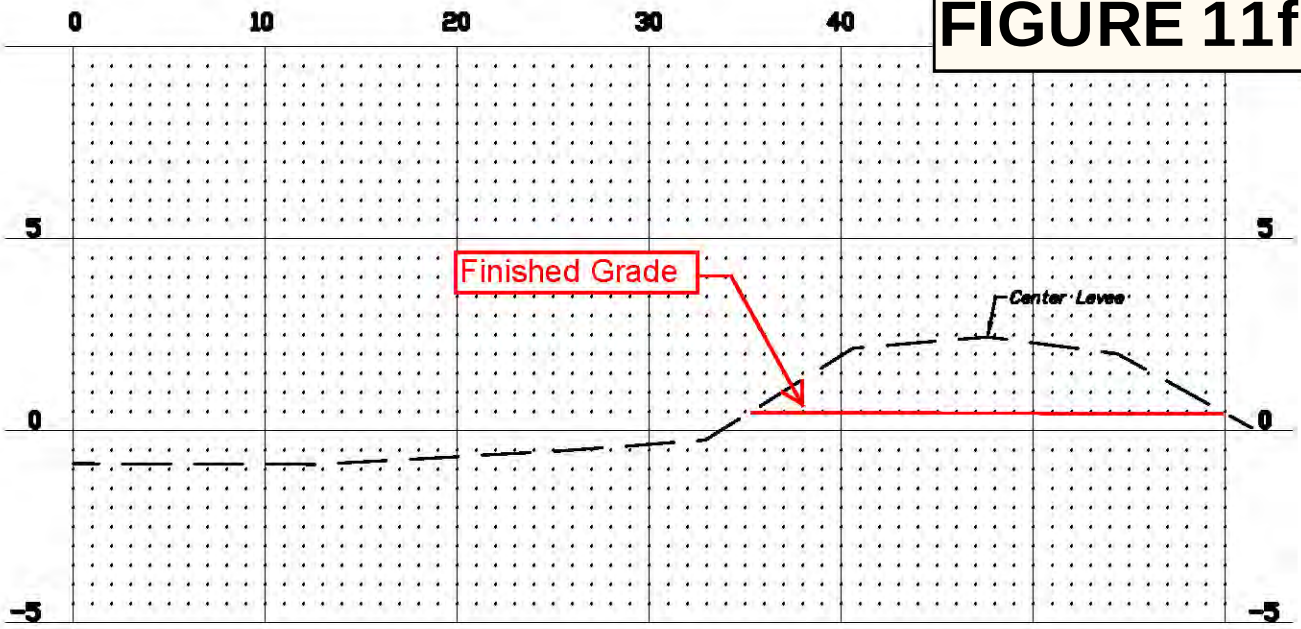
SECTIONS I & J

TURTLE LAKE ISLAND MITIGATION BANK

Prepared by: PRIMEAUX, TOUCHET & ASSOCIATES., L.L.C.
Consulting Engineers & Land Surveyors
Abbeville, Louisiana

JUNE 2017

FIGURE 11f



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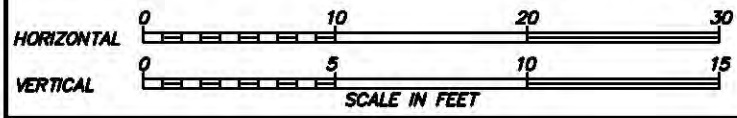
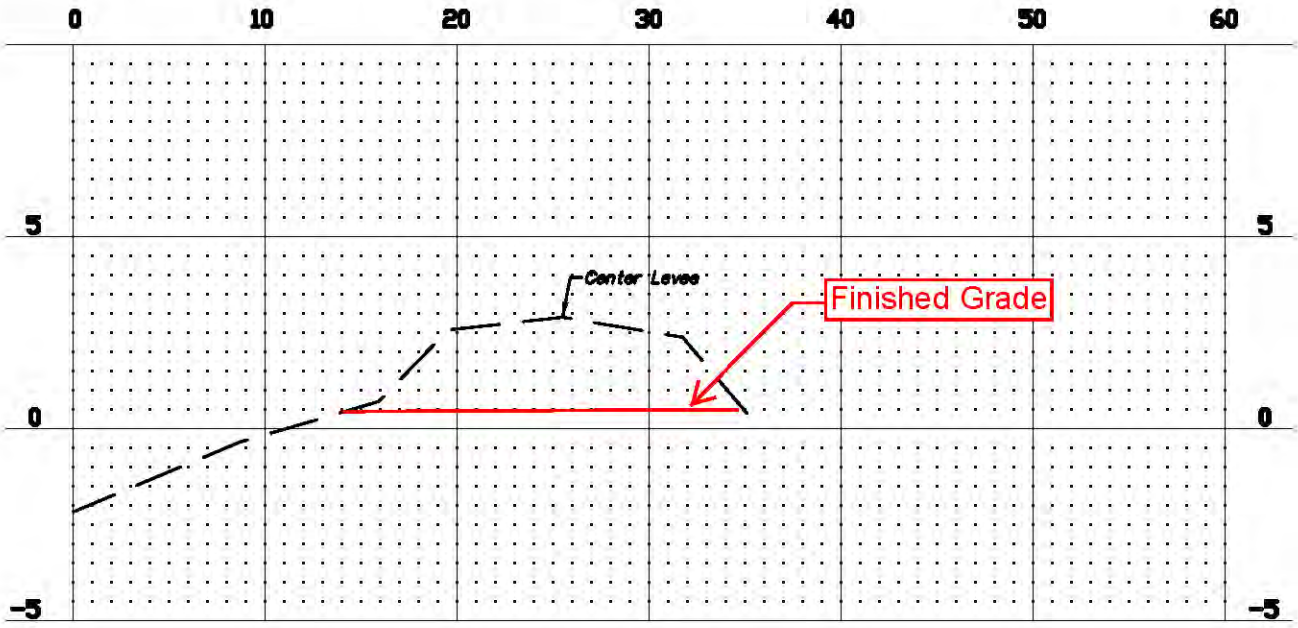
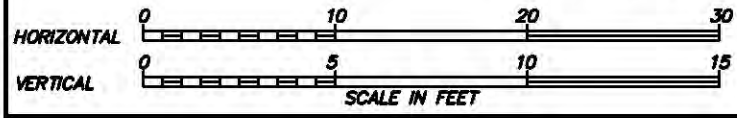




SECTION L–L'



ELEVATIONS ARE NAVD 88

SECTIONS K & L

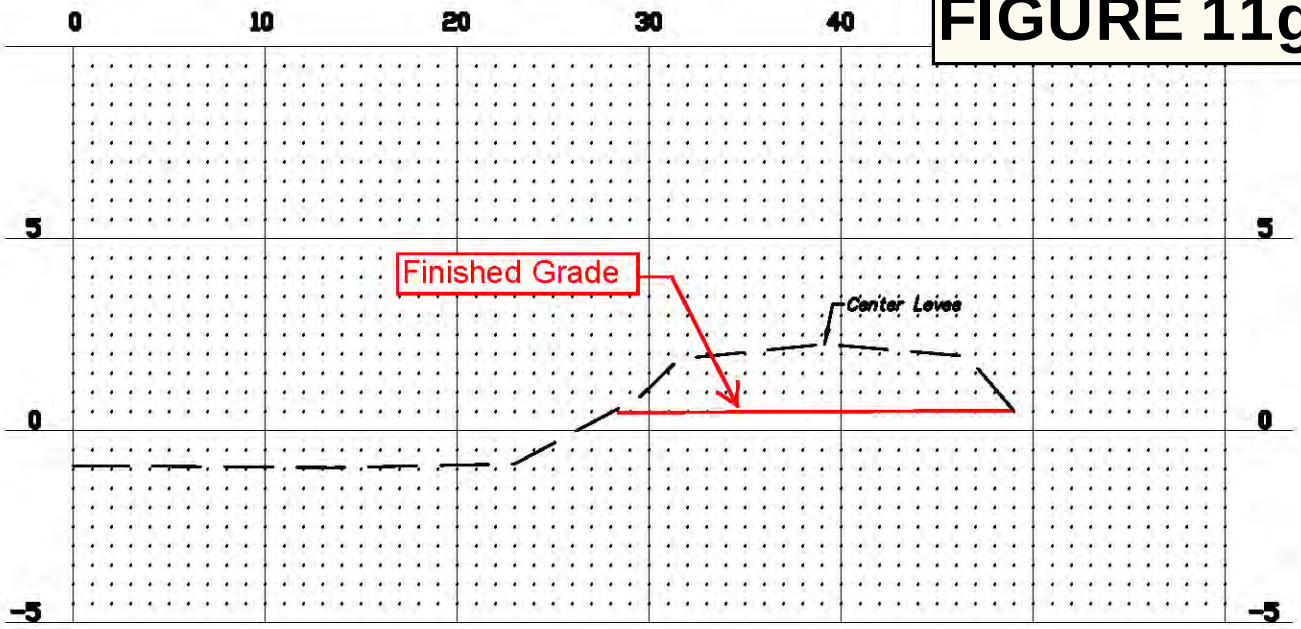
TURTLE LAKE ISLAND
MITIGATION BANK

Prepared by: PRIMEAUX, TOUCHET & ASSOCIATES., L.L.C.
Consulting Engineers & Land Surveyors
Abbeville, Louisiana

JUNE 2017

JOB 17-90
SHEET 7 of 11

FIGURE 11g



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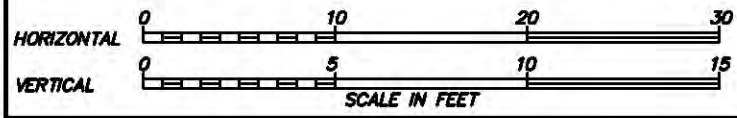
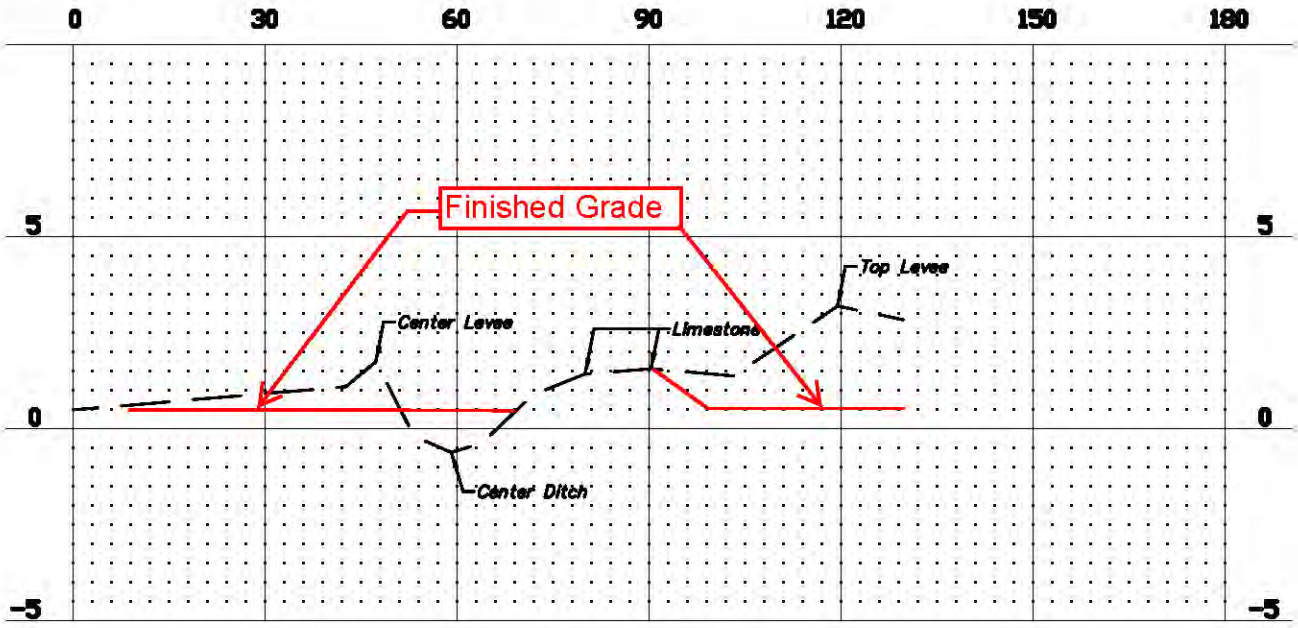
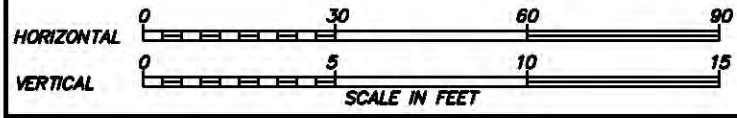




SECTION N–N'



ELEVATIONS ARE NAVD 88

SECTIONS M & N

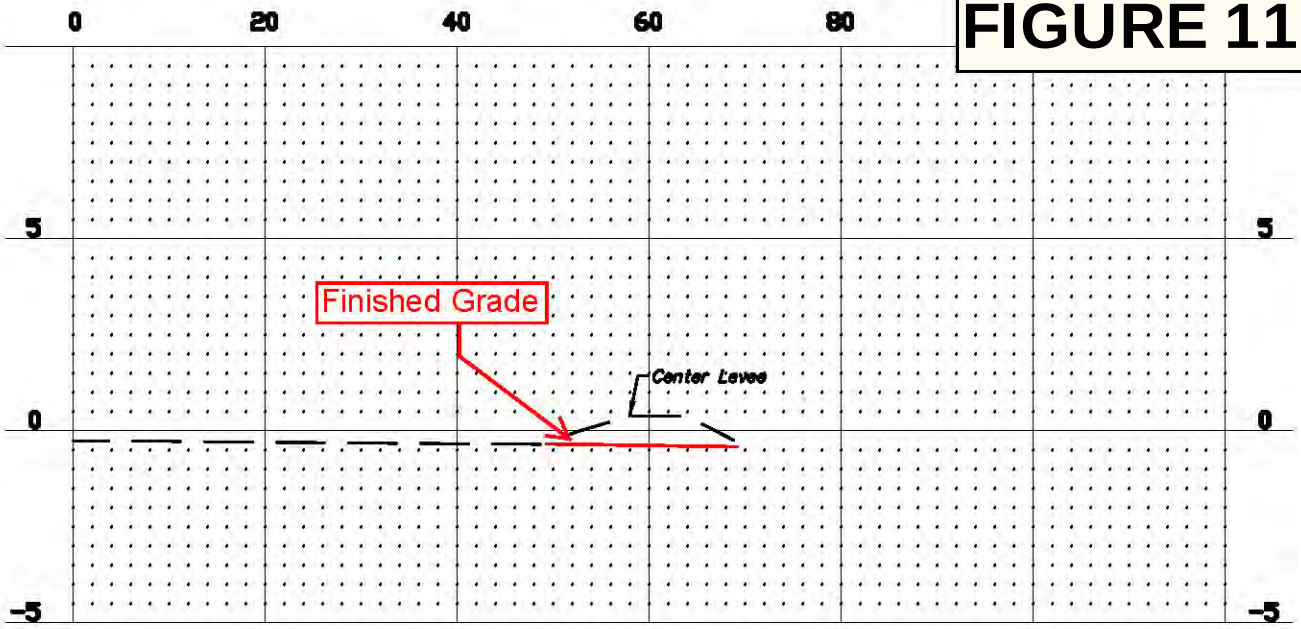
TURTLE LAKE ISLAND
MITIGATION BANK

Prepared by: PRIMEAUX, TOUCHET & ASSOCIATES., L.L.C.
Consulting Engineers & Land Surveyors
Abbeville, Louisiana

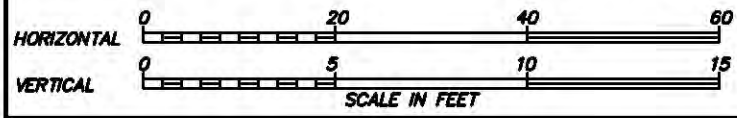
JUNE 2017

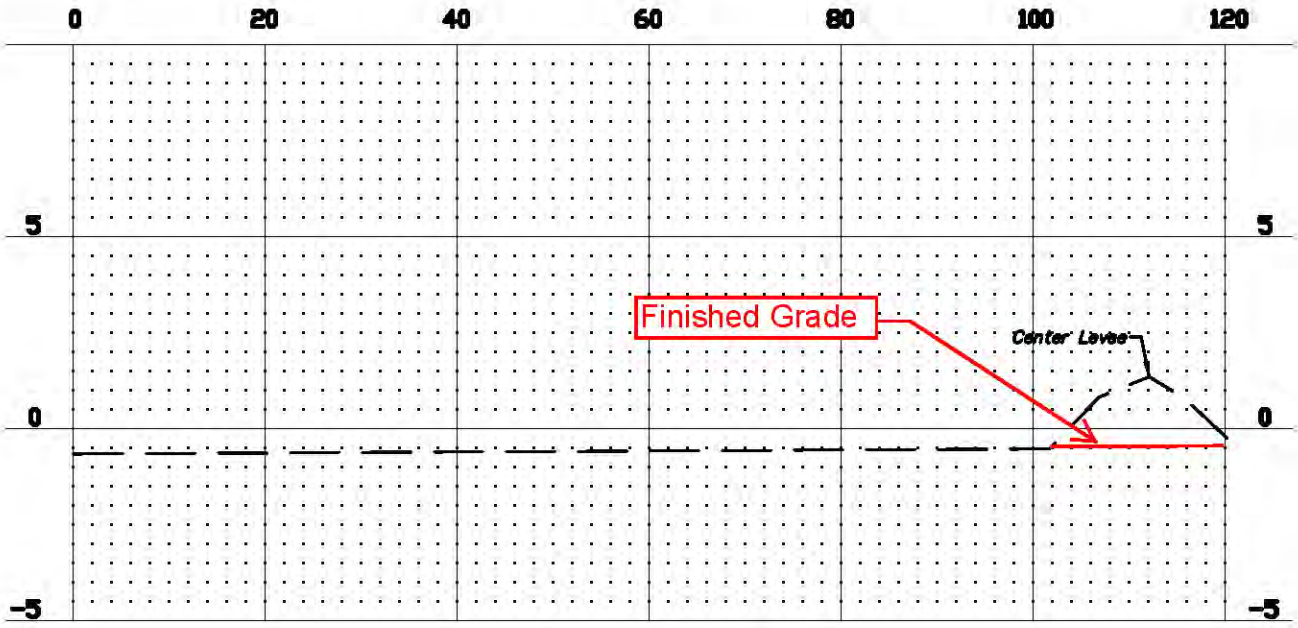
JOB 17-90
SHEET 8 of 11

FIGURE 11h

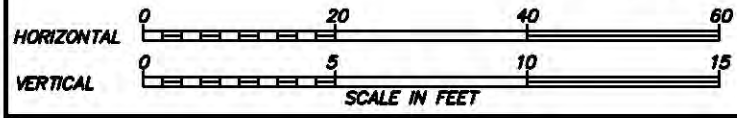


SECTION O–O'





SECTION P–P'



ELEVATIONS ARE NAVD 88

SECTIONS O & P

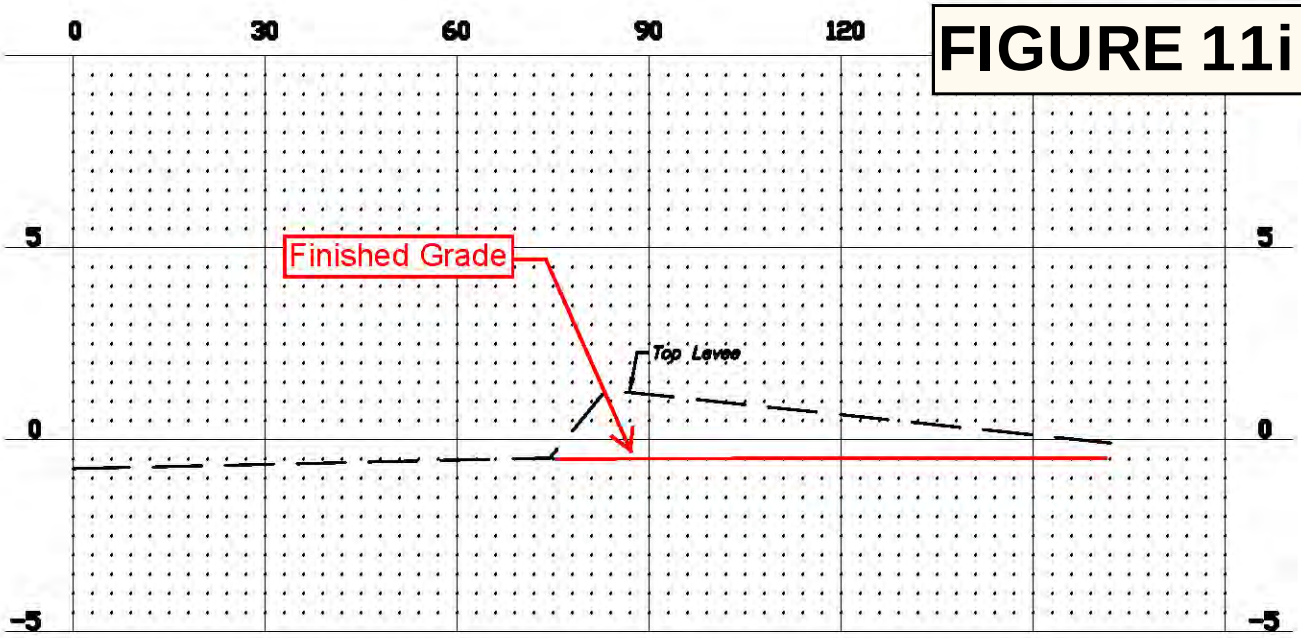
TURTLE LAKE ISLAND
MITIGATION BANK

Prepared by: PRIMEAUX, TOUCHET & ASSOCIATES., L.L.C.
Consulting Engineers & Land Surveyors
Abbeville, Louisiana

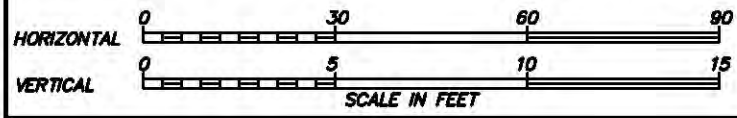
JUNE 2017

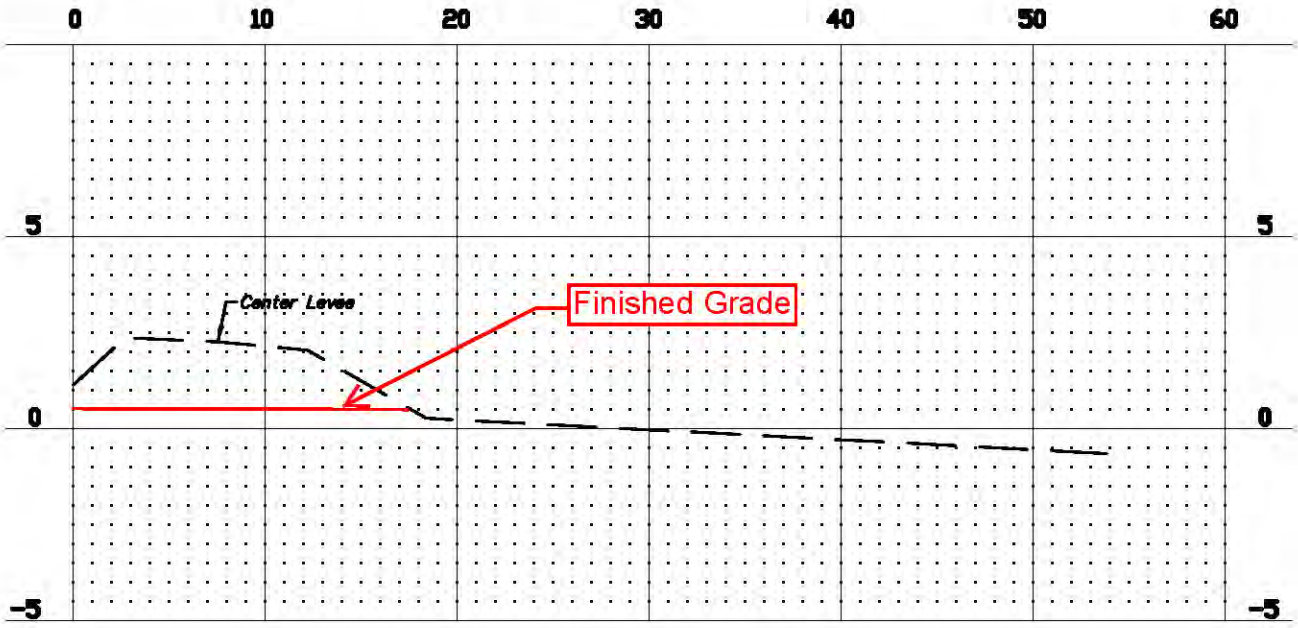
JOB 17-90
SHEET 9 of 11

FIGURE 11i



SECTION Q–Q'





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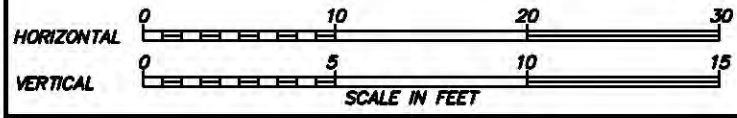


ELEVATIONS ARE NAVD 88

SECTIONS Q & R

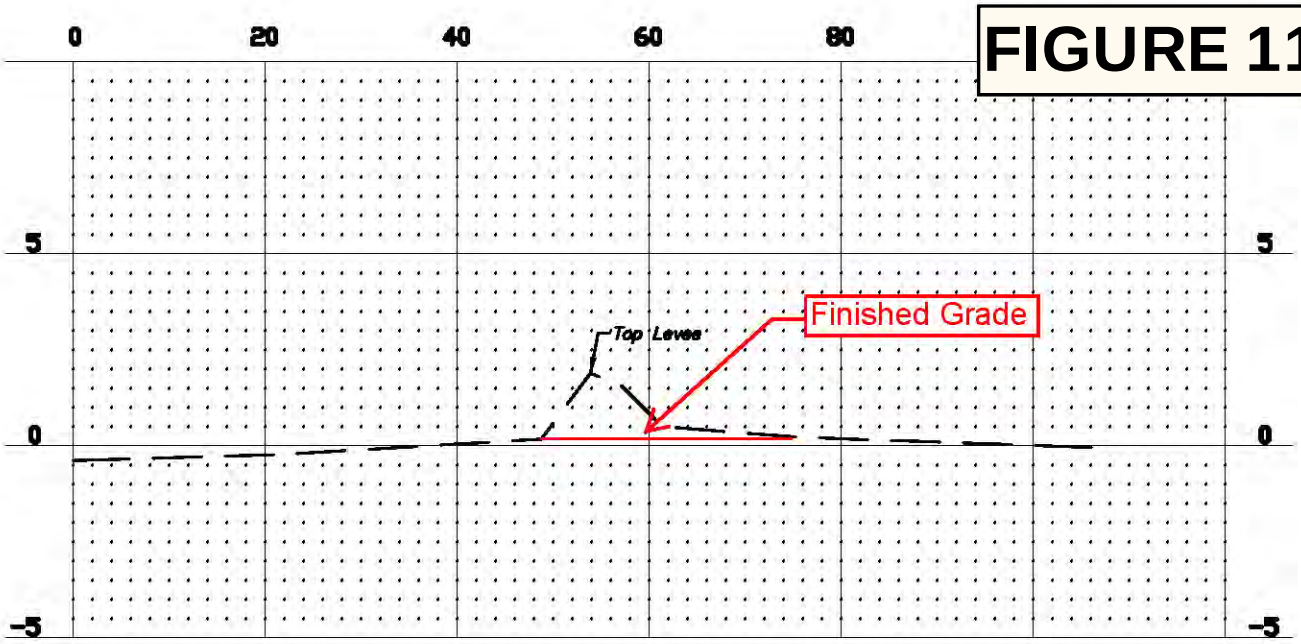
TURTLE LAKE ISLAND
MITIGATION BANK

Prepared by: PRIMEAUX, TOUCHET & ASSOCIATES., L.L.C.
Consulting Engineers & Land Surveyors
Abbeville, Louisiana

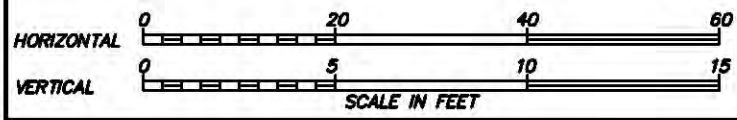
JUNE 2017

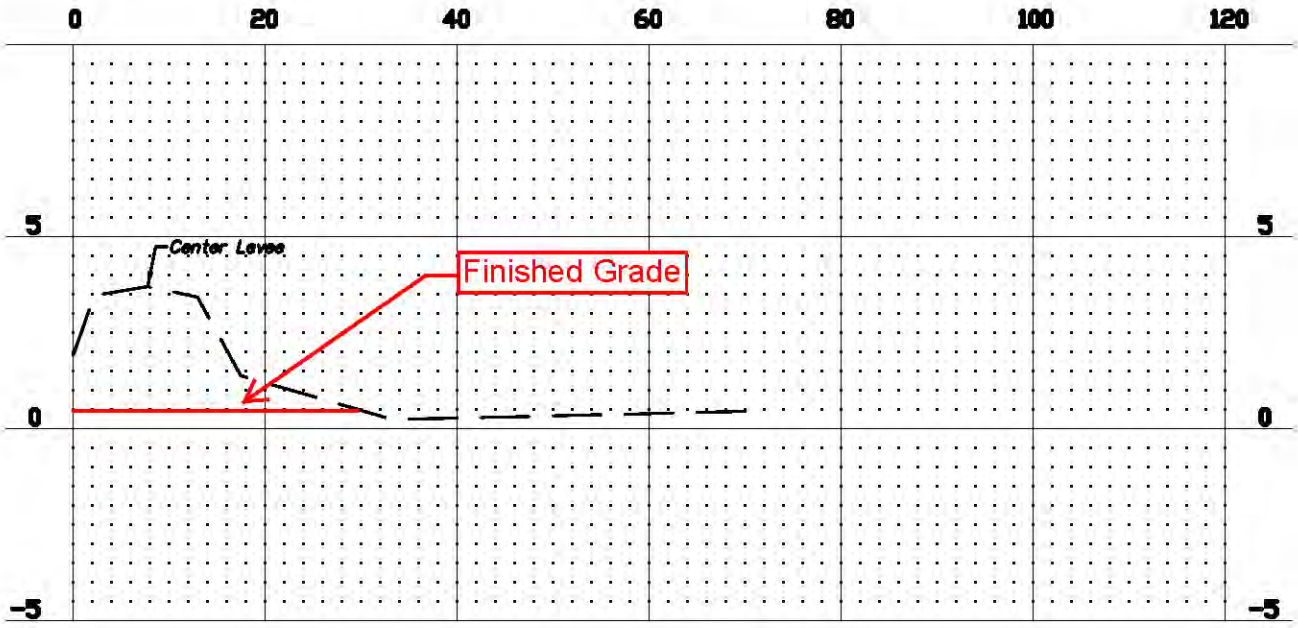
JOB 17-90
SHEET 10 of 11

FIGURE 11j

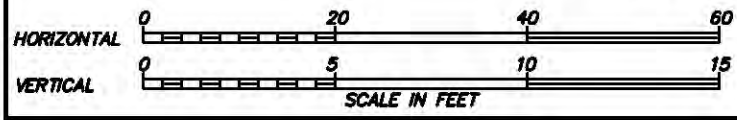


SECTION S–S'





SECTION T–T'



ELEVATIONS ARE NAVD 88

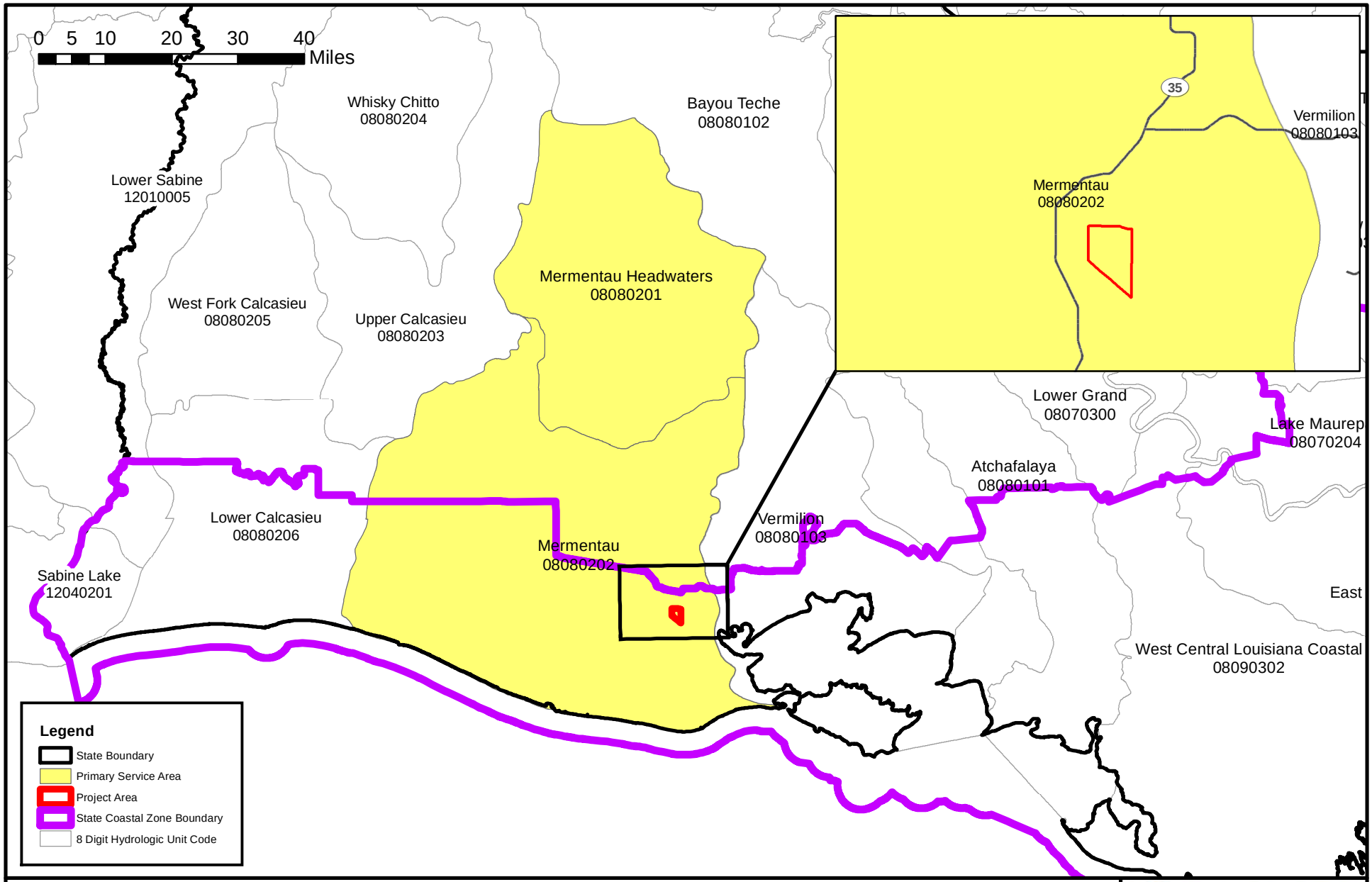
SECTIONS S & T

TURTLE LAKE ISLAND
MITIGATION BANK

Prepared by: PRIMEAUX, TOUCHET & ASSOCIATES., L.L.C.
Consulting Engineers & Land Surveyors
Abbeville, Louisiana

JUNE 2017

JOB 17-90
SHEET 11 of 11



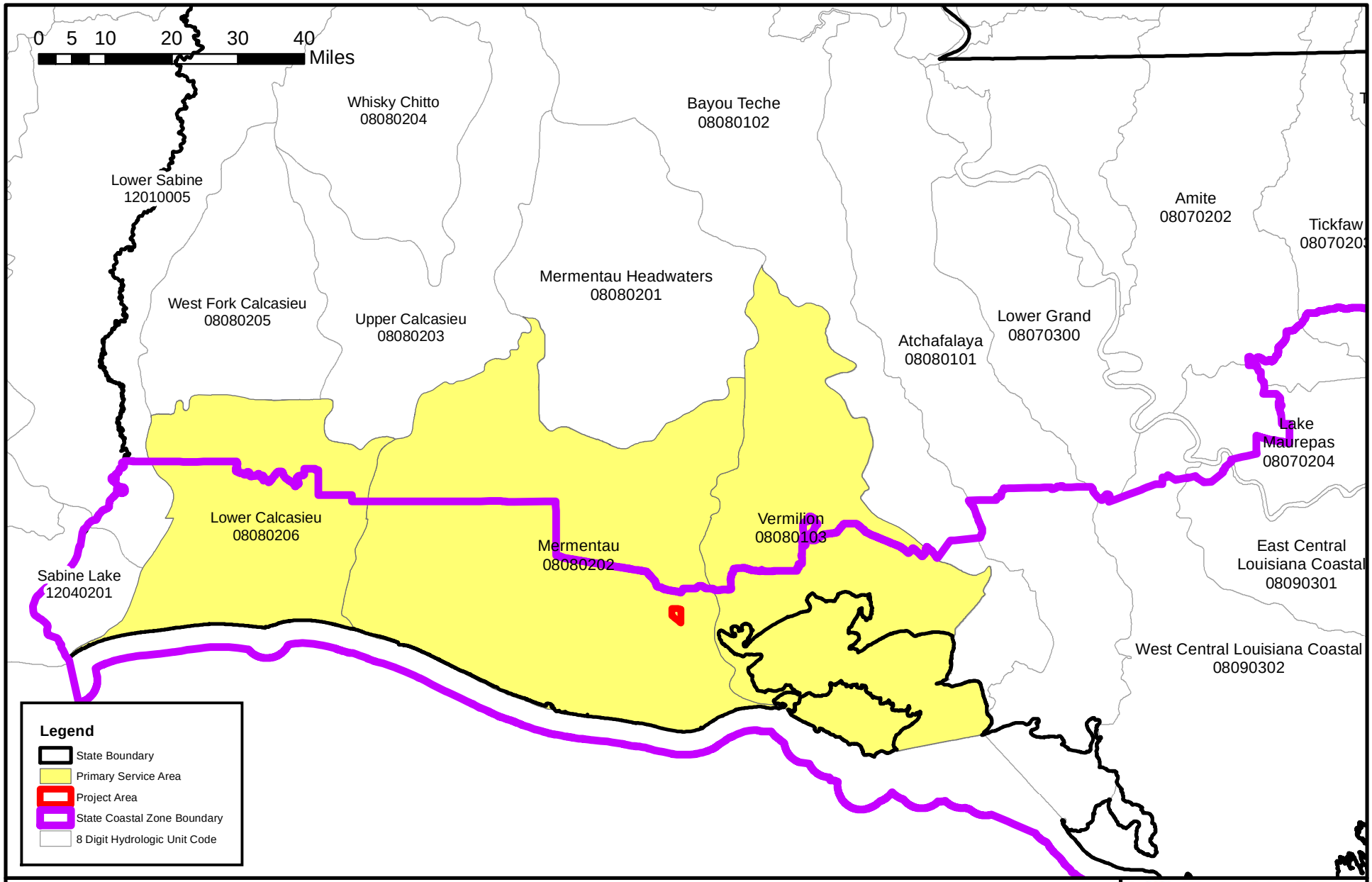
N

BOTTOMLAND HARDWOOD SERVICE AREA MAP

Turtle Island Mitigation Bank
Vermilion Parish, Louisiana

PANGAEA
Conservation and Compliance, LLC

Figure: 12
Date: October 2017
Scale:1:1,300,000



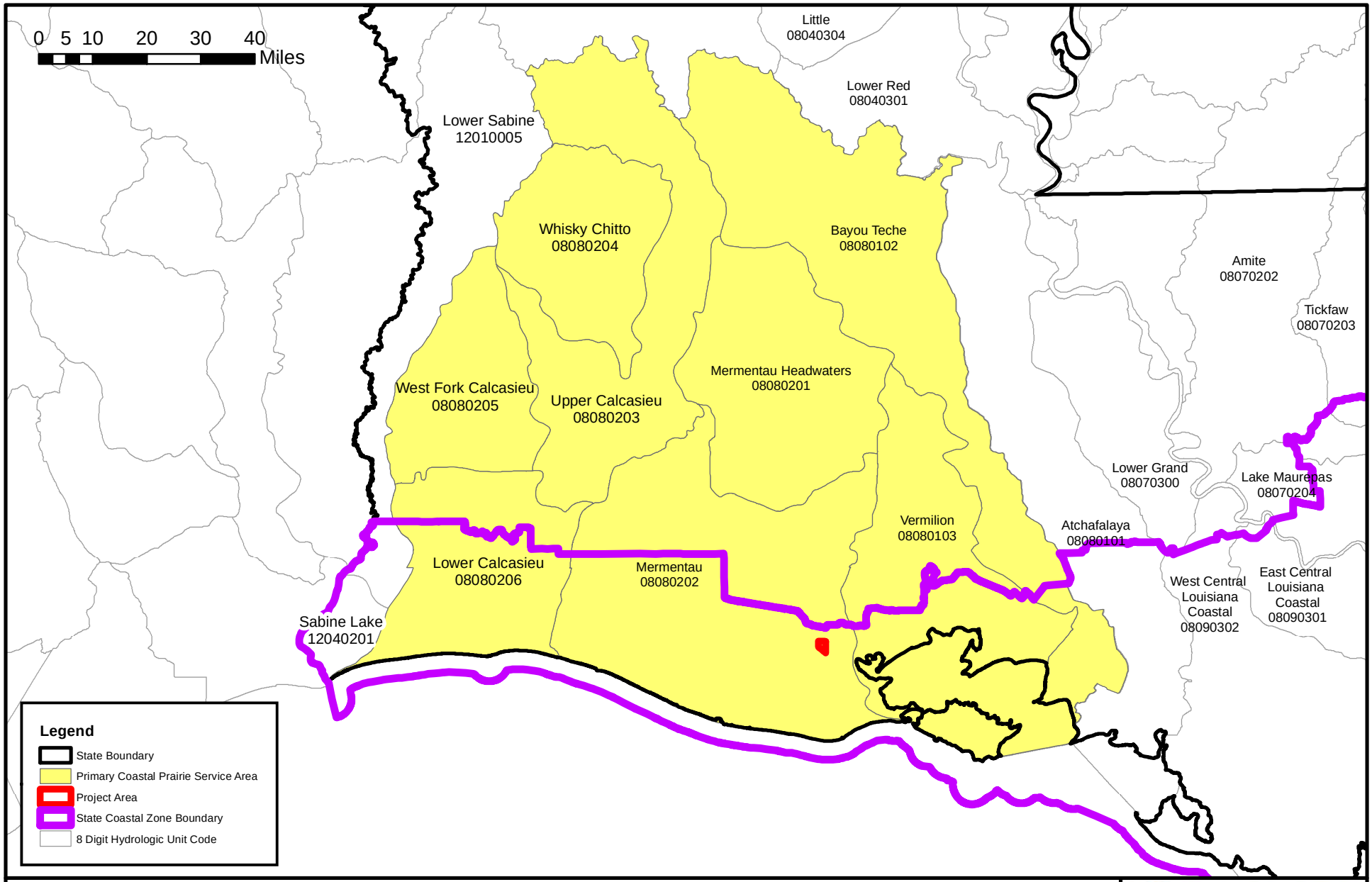
N

FRESH MARSH SERVICE AREA MAP

Turtle Island Mitigation Bank
Vermilion Parish, Louisiana

PANGAEA
Conservation and Compliance, LLC

Figure: 13
Date: October 2017
Scale: 1:1,300,000



N

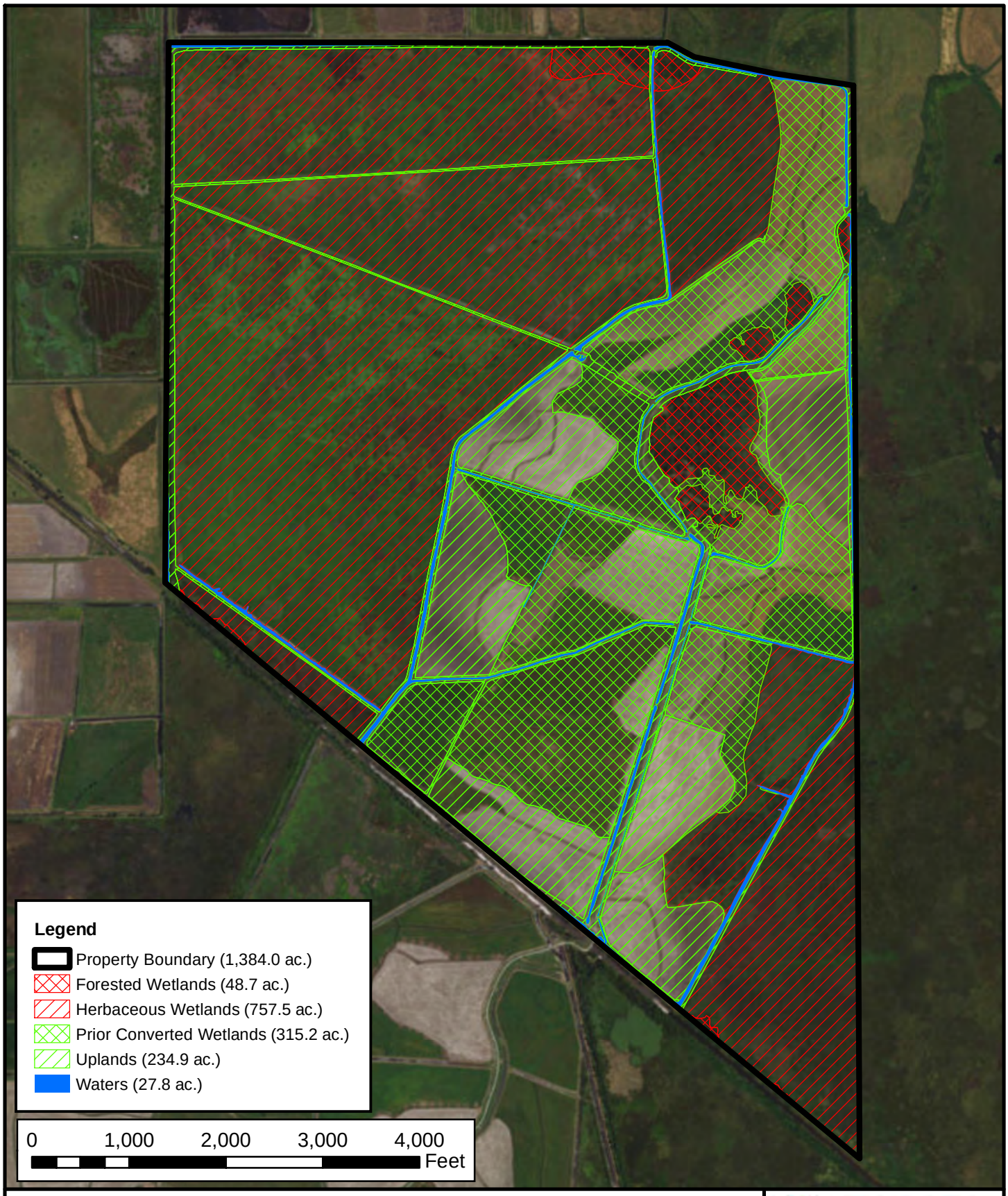
COASTAL PRAIRIE SERVICE AREA MAP

Turtle Island Mitigation Bank
Vermilion Parish, Louisiana

PANGAEA
Conservation and Compliance, LLC

Figure: 14
Date: October 2017
Scale:1:1,600,000

ATTACHMENT A



WETLANDS (from Jurisdictional Determination)

Turtle Island Mitigation Bank
Vermilion Parish, Louisiana

PANGAEA
Conservation and Compliance, LLC

Figure: 1
Date: November 2017
Scale: 1:16,500

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

REPLY TO
ATTENTION OF

DEC 18 2013

RECEIVED
DEC 20 2013
KOURCO

Operations Division
Surveillance and Enforcement Section

Mr. John Koury
KourCo Environmental Services, Incorporated
3131 Cameron Street
Lafayette, Louisiana 70506

Dear Mr. Koury:

Reference is made to your request, on behalf of Little Prairie Ranch, for a U.S. Army Corps of Engineers' (Corps) jurisdictional determination on property located in Sections 19, 30 and 31, Township 14 South, Range 2 East, Sections 24, 25 and 36, Township 14 South, Range 1 East, and Section 6, Township 15 South, Range 2 East, Vermilion Parish, Louisiana (enclosed map). Specifically, this property is identified as a 2101.95-acre tract known as the Little Prairie Ranch, located north of Warren Canal near Forked Island, Louisiana.

Based on review of recent maps, aerial photography, soils data, and the information provided with your request, we have determined that part of the property is wetland and may be subject to Corps' jurisdiction. The approximate limits of the wetland are designated in red on the map. A Department of the Army (DA) permit under Section 404 of the Clean Water Act will be required prior to the deposition or redistribution of dredged or fill material into wetlands that are waters of the United States. Additionally, a DA permit will be required if you propose to deposit dredged or fill material into other waters subject to Corps' jurisdiction. Other waters that may be subject to Corps' jurisdiction are indicated in blue on the map. Also, waters that may be subject to Corps' jurisdiction under Section 10 of the Rivers and Harbors Act (RHA) are indicated in blue on the map. A DA permit will be required prior to any work in waters subject to Corps' jurisdiction under Section 10 of the RHA.

This delineation/determination has been conducted to identify the limits of the Corps' Clean Water Act jurisdiction for the particular site identified in your request. This delineation/determination may not be valid for the wetland conservation provisions of the Food Security Act of 1985, as amended. If the property owner or tenant is a USDA farm participant, or anticipates participation in USDA programs, a certified wetland determination should be requested from the local office of the Natural Resources Conservation Service prior to starting work.

Please be advised that this property is in the Louisiana Coastal Zone. For additional information regarding coastal use permit requirements, contact Ms. Christine Charrier, Office of Coastal Management, Louisiana Department of Natural Resources at (225) 342-7953.

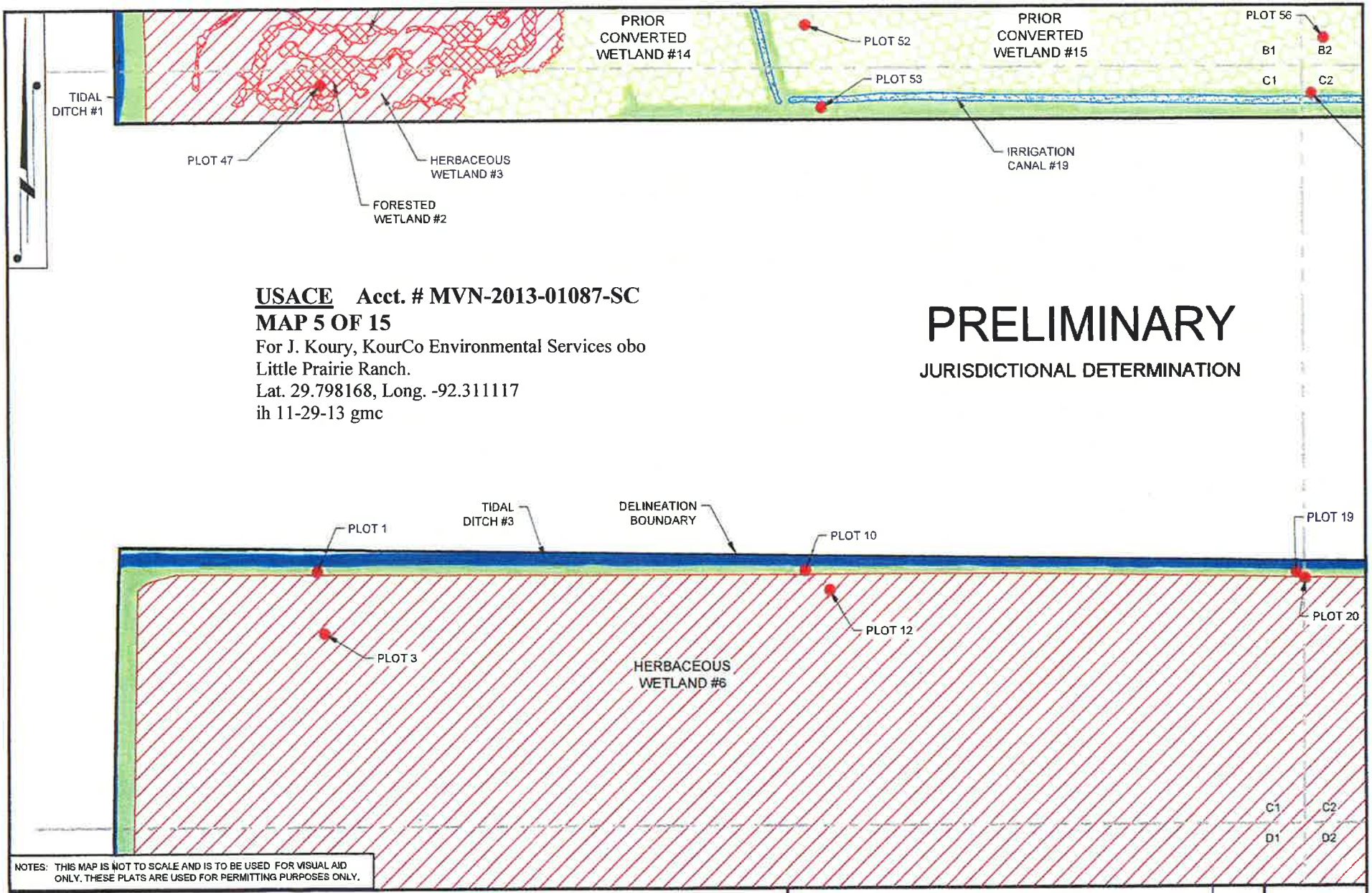
You and your client are advised that this preliminary jurisdictional determination is valid for a period of 5 years from the date of this letter unless new information warrants revision prior to the expiration date or the District Commander has identified, after public notice and comment, that specific geographic areas with rapidly changing environmental conditions merit re-verification on a more frequent basis.

Should there be any questions concerning these matters, please contact Mr. Gary Couret at (337) 291-3042 and reference our Account No. MVN-2013-01087-SC. If you have specific questions regarding the permit process or permit applications, please contact our Western Evaluation Section at (504) 862-2261. The New Orleans District Regulatory Branch is committed to providing quality and timely service to our customers. In an effort to improve customer service, please complete the survey on our web site at http://per2.nwp.usace.army.mil/survey.html.

Sincerely,

Martin S. Mayer
Chief, Regulatory Branch

Enclosures



USACE Acct. # MVN-2013-01087-SC
MAP 5 OF 15
For J. Koury, KourCo Environmental Services obo
Little Prairie Ranch.
Lat. 29.798168, Long. -92.311117
ih 11-29-13 gmc

PRELIMINARY

JURISDICTIONAL DETERMINATION

NOTES: THIS MAP IS NOT TO SCALE AND IS TO BE USED FOR VISUAL AID ONLY. THESE PLATS ARE USED FOR PERMITTING PURPOSES ONLY.

WETLANDS (1,101.38± ACRES) SEC 404
PRIOR CONVERTED WETLANDS (592.04± ACRES)
NONWETLAND

SCALE: 1" = 400'
400' 200' 0 400'

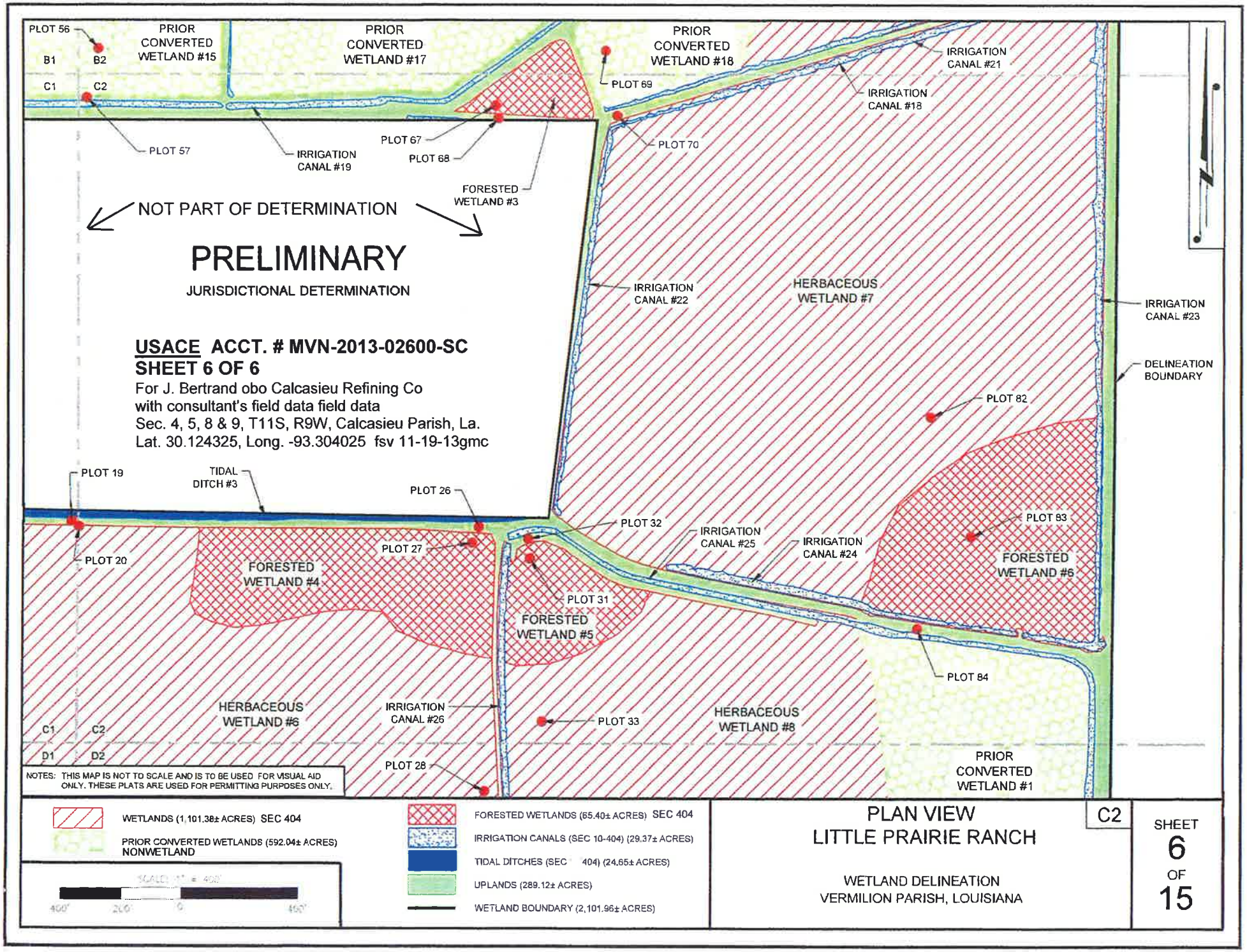
FORESTED WETLANDS (65.40± ACRES) SEC 404
IRRIGATION CANALS (SEC 404) (29.37± ACRES)
TIDAL DITCHES (SEC 10/404) (24.65± ACRES)
UPLANDS (289.12± ACRES)
WETLAND BOUNDARY (2,101.96± ACRES)

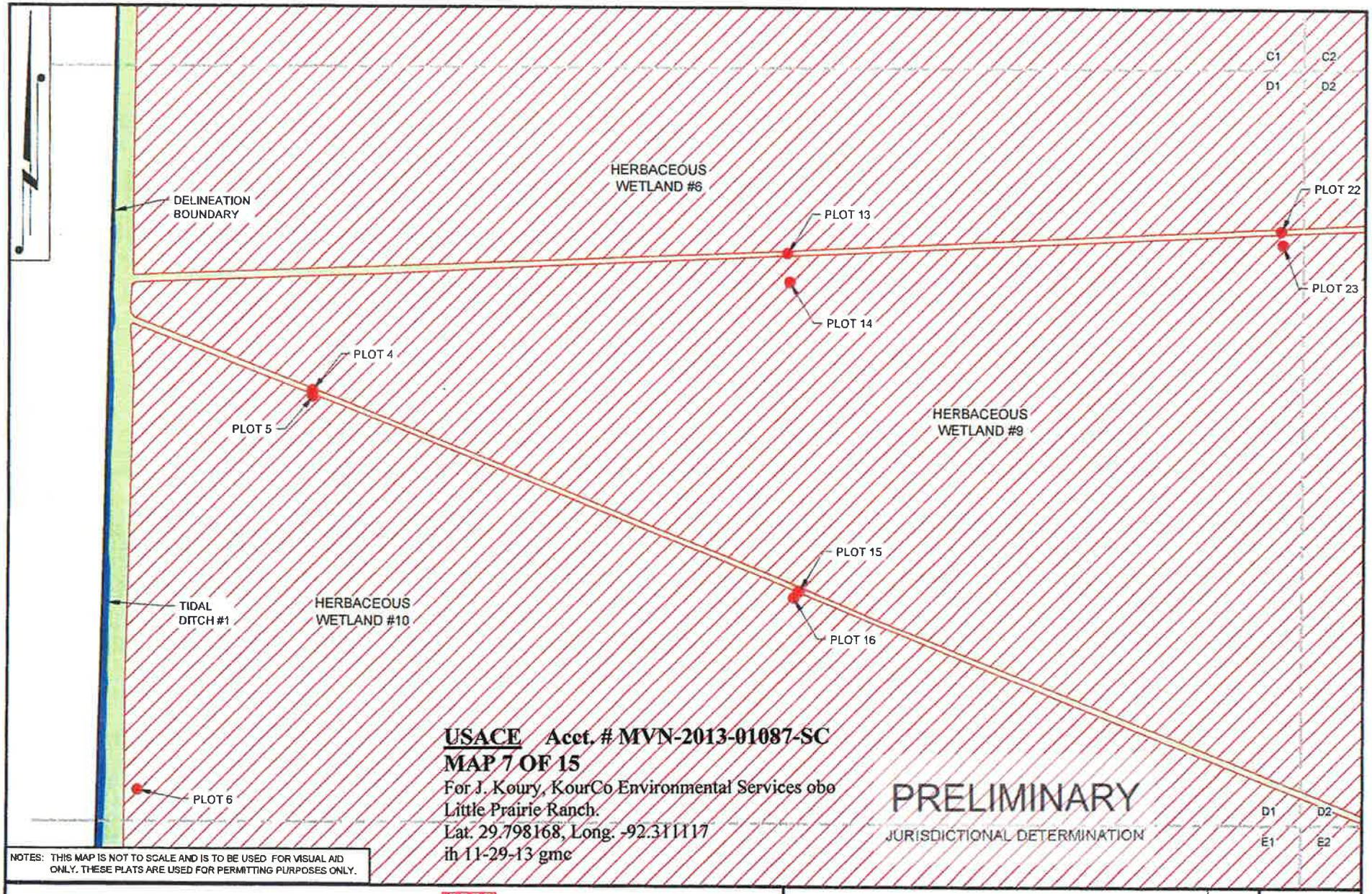
PLAN VIEW
LITTLE PRAIRIE RANCH

WETLAND DELINEATION
VERMILION PARISH, LOUISIANA

C1

SHEET 5 OF 15


PLOT 56
B1
B2
C1
C2
PRIOR CONVERTED WETLAND #15
PRIOR CONVERTED WETLAND #17
PRIOR CONVERTED WETLAND #18
PLOT 57
IRRIGATION CANAL #19
PLOT 67
PLOT 68
FORESTED WETLAND #3
PLOT 69
PLOT 70
IRRIGATION CANAL #21
IRRIGATION CANAL #18
NOT PART OF DETERMINATION
PRELIMINARY
JURISDICTIONAL DETERMINATION
USACE ACCT. # MVN-2013-02600-SC
SHEET 6 OF 6
For J. Bertrand obo Calcasieu Refining Co
with consultant's field data field data
Sec. 4, 5, 8 & 9, T11S, R9W, Calcasieu Parish, La.
Lat. 30.124325, Long. -93.304025 fsv 11-19-13gmc
IRRIGATION CANAL #22
HERBACEOUS WETLAND #7
IRRIGATION CANAL #23
DELINEATION BOUNDARY
PLOT 82
PLOT 19
TIDAL DITCH #3
PLOT 26
PLOT 32
PLOT 83
PLOT 20
PLOT 27
IRRIGATION CANAL #25
IRRIGATION CANAL #24
FORESTED WETLAND #4
FORESTED WETLAND #6
PLOT 31
FORESTED WETLAND #5
PLOT 84
HERBACEOUS WETLAND #6
IRRIGATION CANAL #26
PLOT 33
HERBACEOUS WETLAND #8
C1
C2
D1
D2
PLOT 28
PRIOR CONVERTED WETLAND #1
NOTES: THIS MAP IS NOT TO SCALE AND IS TO BE USED FOR VISUAL AID ONLY. THESE PLATS ARE USED FOR PERMITTING PURPOSES ONLY.
WETLANDS (1,101.38± ACRES) SEC 404
PRIOR CONVERTED WETLANDS (592.04± ACRES)
NONWETLAND
FORESTED WETLANDS (65.40± ACRES) SEC 404
IRRIGATION CANALS (SEC 10-404) (29.37± ACRES)
TIDAL DITCHES (SEC 404) (24.65± ACRES)
UPLANDS (289.12± ACRES)
WETLAND BOUNDARY (2,101.96± ACRES)
400'
200'
0
400'
PLAN VIEW
LITTLE PRAIRIE RANCH
WETLAND DELINEATION
VERMILION PARISH, LOUISIANA
C2
SHEET 6 OF 15



USACE Acct. # MVN-2013-01087-SC

MAP 7 OF 15

For J. Koury, KourCo Environmental Services obo Little Prairie Ranch.
Lat. 29.798168, Long. -92.311117
ih 11-29-13 gmc

PRELIMINARY

JURISDICTIONAL DETERMINATION

NOTES: THIS MAP IS NOT TO SCALE AND IS TO BE USED FOR VISUAL AID ONLY. THESE PLATS ARE USED FOR PERMITTING PURPOSES ONLY.

WETLANDS (1,101.38± ACRES) SEC 404

PRIOR CONVERTED WETLANDS (592.04± ACRES) NONWETLAND

SCALE: 1" = 400'

400' 200' 0 400'

FORESTED WETLANDS (65.40± ACRES) SEC 404

IRRIGATION CANALS (SEC 404) (29.37± ACRES)

TIDAL DITCHES (SEC 10/404) (24.65± ACRES)

UPLANDS (289.12± ACRES)

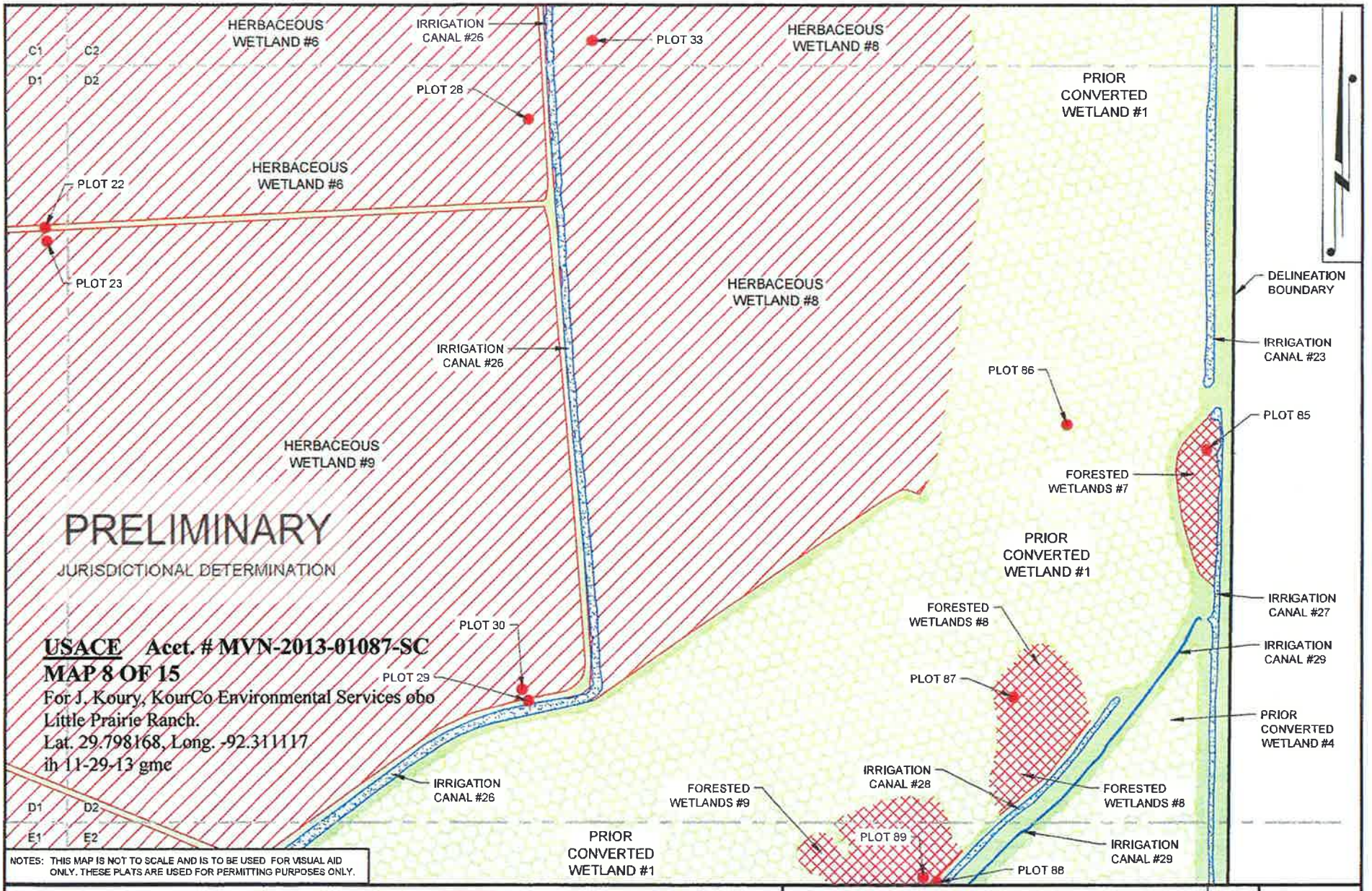
WETLAND BOUNDARY (2,101.96± ACRES)

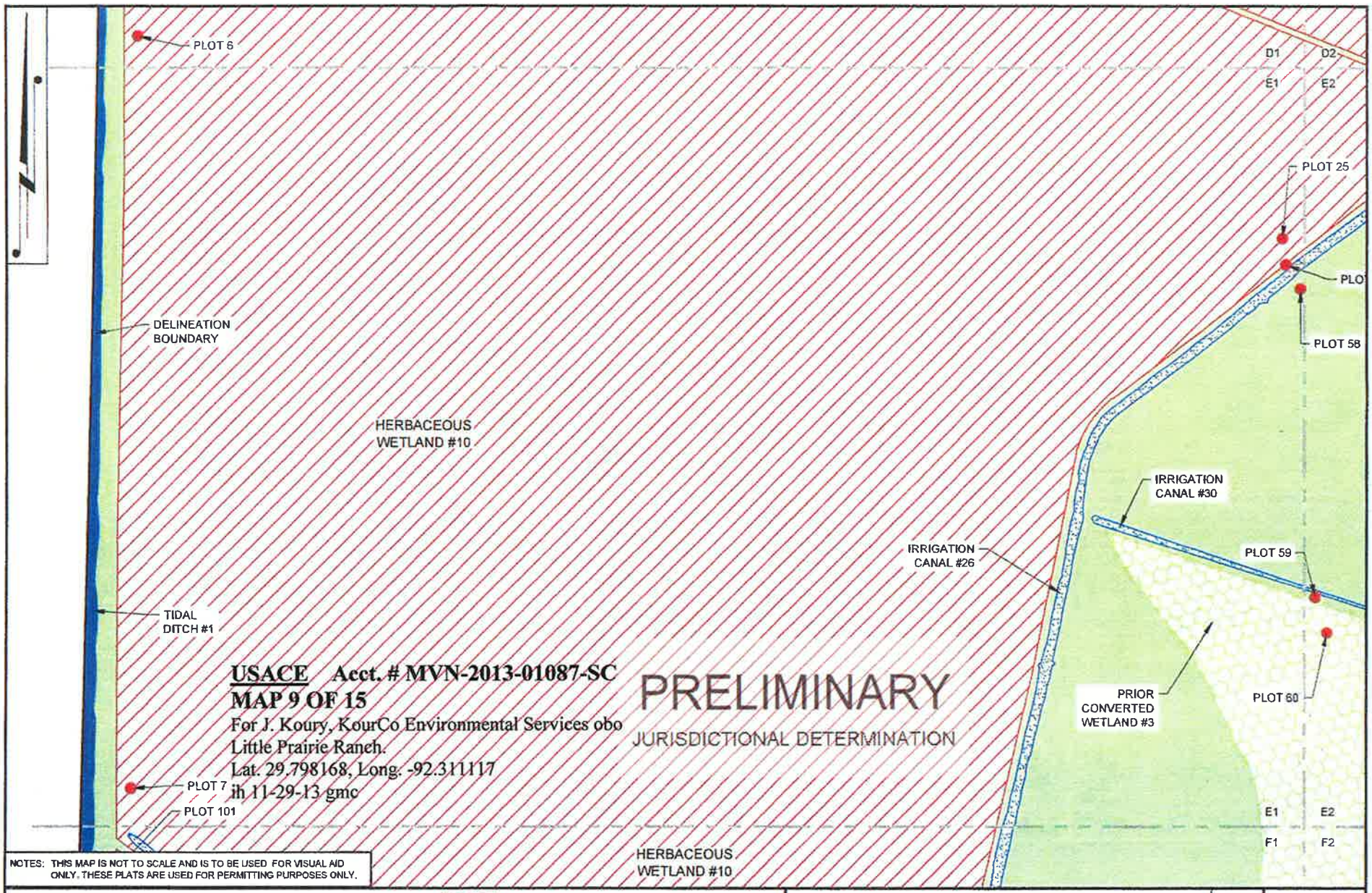
PLAN VIEW
LITTLE PRAIRIE RANCH

D1

WETLAND DELINEATION
VERMILION PARISH, LOUISIANA

SHEET 7 OF 15


HERBACEOUS WETLAND #6
IRRIGATION CANAL #26
PLOT 33
HERBACEOUS WETLAND #8
PRIOR CONVERTED WETLAND #1
C1
C2
D1
D2
PLOT 28
HERBACEOUS WETLAND #6
PLOT 22
PLOT 23
HERBACEOUS WETLAND #8
DELINEATION BOUNDARY
IRRIGATION CANAL #23
IRRIGATION CANAL #26
PLOT 86
PLOT 85
HERBACEOUS WETLAND #9
FORESTED WETLANDS #7
PRELIMINARY
JURISDICTIONAL DETERMINATION
PRIOR CONVERTED WETLAND #1
FORESTED WETLANDS #8
IRRIGATION CANAL #27
PLOT 30
IRRIGATION CANAL #29
PLOT 29
PLOT 87
PRIOR CONVERTED WETLAND #4
USACE Acct. # MVN-2013-01087-SC
MAP 8 OF 15
For J. Koury, KourCo Environmental Services obo
Little Prairie Ranch.
Lat. 29.798168, Long. -92.311117
ih 11-29-13 gmc
IRRIGATION CANAL #28
FORESTED WETLANDS #8
IRRIGATION CANAL #26
FORESTED WETLANDS #9
D1
D2
E1
E2
PRIOR CONVERTED WETLAND #1
PLOT 89
IRRIGATION CANAL #29
PLOT 88
NOTES: THIS MAP IS NOT TO SCALE AND IS TO BE USED FOR VISUAL AID ONLY. THESE PLATS ARE USED FOR PERMITTING PURPOSES ONLY.
WETLANDS (1,101.38± ACRES) SEC 404
PRIOR CONVERTED WETLANDS (592.04± ACRES)
NONWETLAND
SCALE: 1" = 400'
400' 200' 0 400'
FORESTED WETLANDS (65.40± ACRES) SEC 404
IRRIGATION CANALS (SEC -404) (29.37± ACRES)
TIDAL DITCHES (SEC 10/404) (24.65± ACRES)
UPLANDS (289.12± ACRES)
WETLAND BOUNDARY (2,101.96± ACRES)
PLAN VIEW
LITTLE PRAIRIE RANCH
WETLAND DELINEATION
VERMILION PARISH, LOUISIANA
D2
SHEET 8 OF 15



USACE Acct. # MVN-2013-01087-SC
MAP 9 OF 15
For J. Koury, KourCo Environmental Services obo Little Prairie Ranch.
Lat. 29.798168, Long. -92.311117
ih 11-29-13 gmc

PRELIMINARY
JURISDICTIONAL DETERMINATION

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WETLANDS (1,101.38± ACRES) SEC 404
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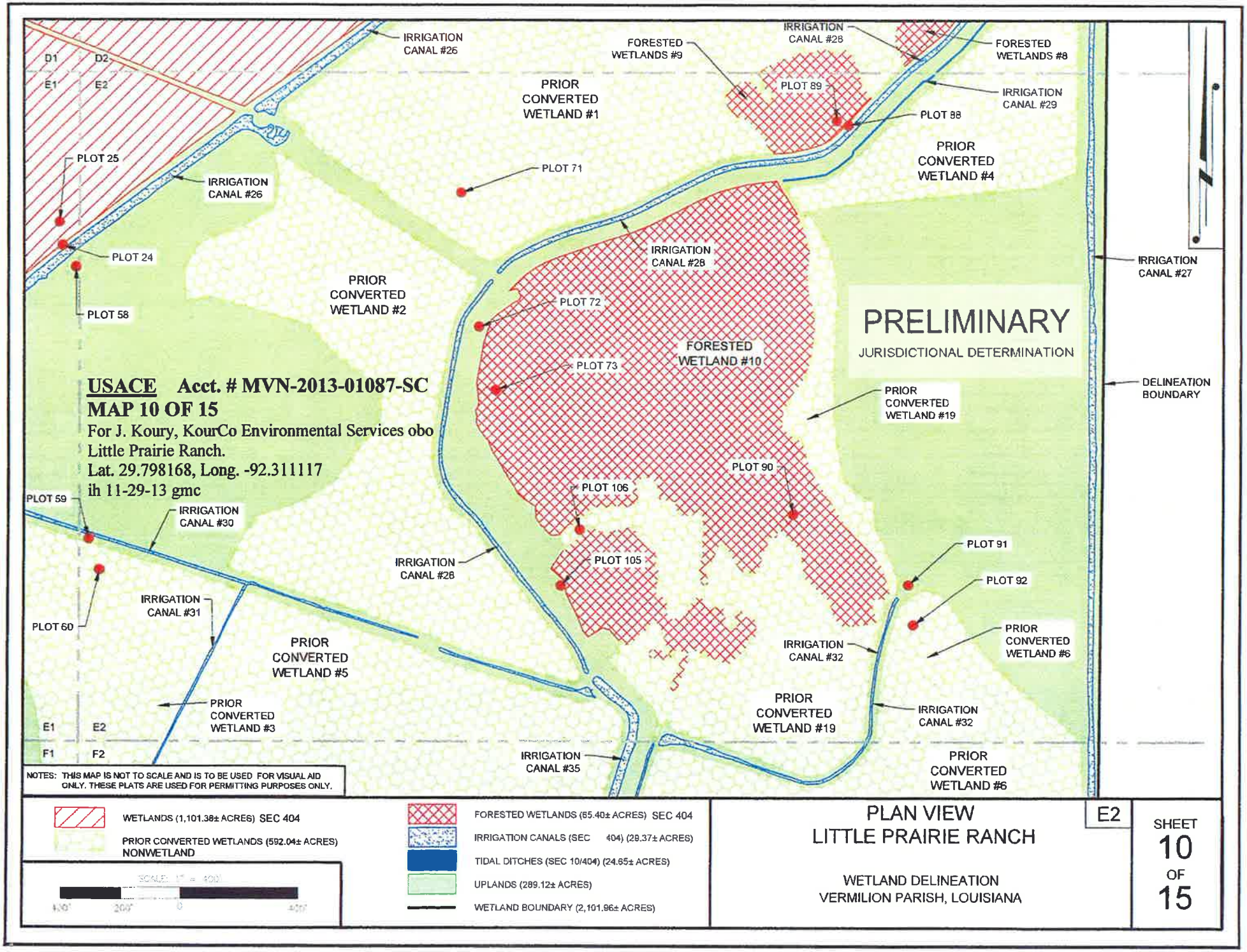
UPLANDS (289.12± ACRES)
WETLAND BOUNDARY (2,101.96± ACRES)

PLAN VIEW
LITTLE PRAIRIE RANCH

WETLAND DELINEATION
VERMILION PARISH, LOUISIANA

E1

SHEET 9 OF 15


IRRIGATION CANAL #26
FORESTED WETLANDS #9
IRRIGATION CANAL #28
FORESTED WETLANDS #8
D1
D2
E1
E2
PRIOR CONVERTED WETLAND #1
PLOT 89
IRRIGATION CANAL #29
PLOT 88
PLOT 25
PLOT 71
PRIOR CONVERTED WETLAND #4
IRRIGATION CANAL #26
PLOT 24
IRRIGATION CANAL #28
IRRIGATION CANAL #27
PRIOR CONVERTED WETLAND #2
PLOT 58
PLOT 72
PRELIMINARY
JURISDICTIONAL DETERMINATION
FORESTED WETLAND #10
PLOT 73
DELINEATION BOUNDARY
USACE Acct. # MVN-2013-01087-SC
MAP 10 OF 15
For J. Koury, KourCo Environmental Services obo
Little Prairie Ranch.
Lat. 29.798168, Long. -92.311117
ih 11-29-13 gmc
PRIOR CONVERTED WETLAND #19
PLOT 90
PLOT 59
IRRIGATION CANAL #30
PLOT 106
PLOT 91
IRRIGATION CANAL #28
PLOT 105
PLOT 92
IRRIGATION CANAL #31
PLOT 60
PRIOR CONVERTED WETLAND #6
IRRIGATION CANAL #32
PRIOR CONVERTED WETLAND #5
PRIOR CONVERTED WETLAND #19
IRRIGATION CANAL #32
PRIOR CONVERTED WETLAND #3
E1
E2
F1
F2
IRRIGATION CANAL #35
PRIOR CONVERTED WETLAND #6
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WETLANDS (1,101.38± ACRES) SEC 404
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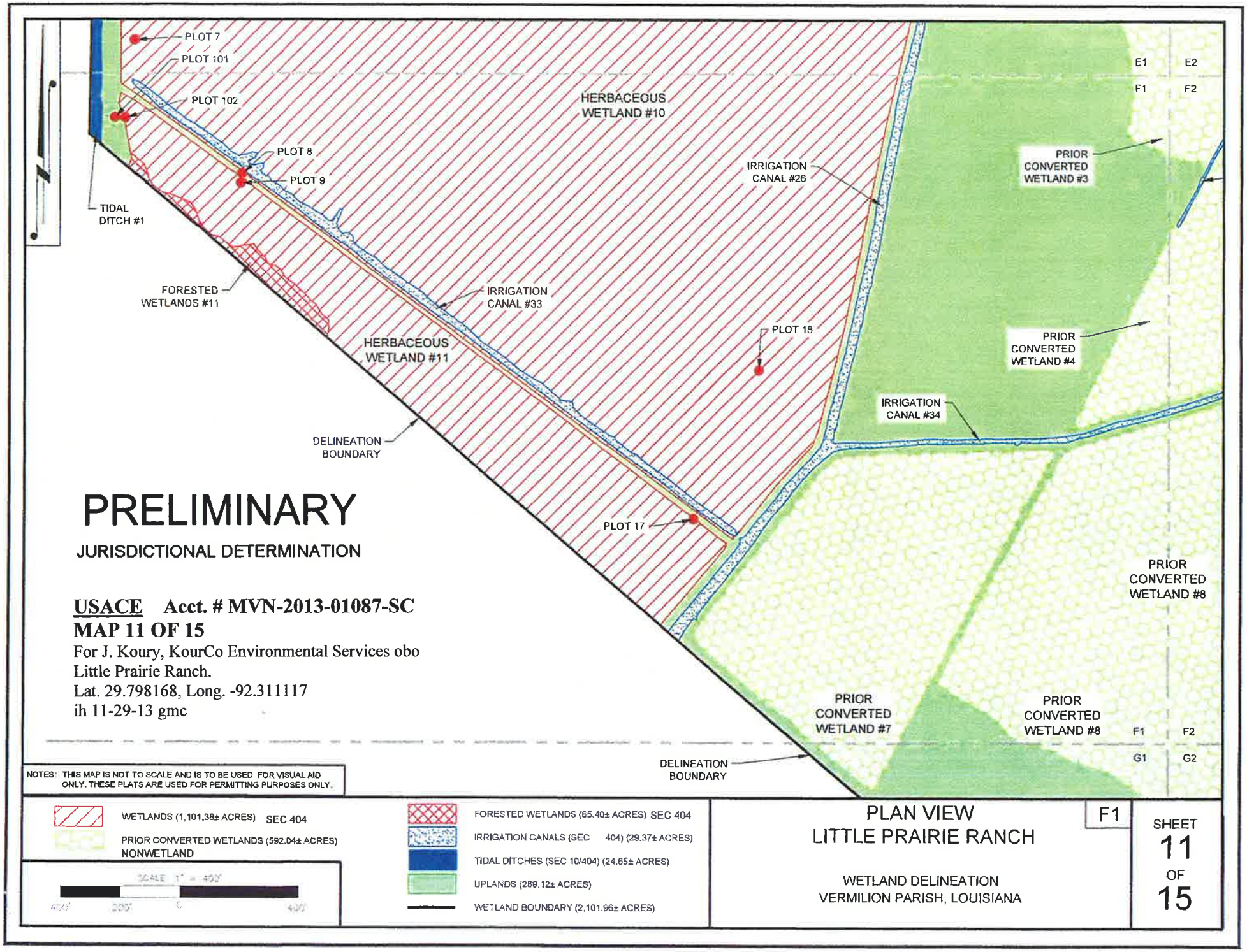
WETLAND BOUNDARY (2,101.96± ACRES)
PLAN VIEW
LITTLE PRAIRIE RANCH
WETLAND DELINEATION
VERMILION PARISH, LOUISIANA
E2
SHEET 10 OF 15


PLOT 7
PLOT 101
PLOT 102
PLOT 8
PLOT 9
TIDAL DITCH #1
HERBACEOUS WETLAND #10
IRRIGATION CANAL #26
PRIOR CONVERTED WETLAND #3
E1
E2
F1
F2
FORESTED WETLANDS #11
IRRIGATION CANAL #33
HERBACEOUS WETLAND #11
PLOT 18
PRIOR CONVERTED WETLAND #4
IRRIGATION CANAL #34
DELINEATION BOUNDARY
PLOT 17
PRIOR CONVERTED WETLAND #8
PRIOR CONVERTED WETLAND #7
PRIOR CONVERTED WETLAND #8
F1
F2
G1
G2
DELINEATION BOUNDARY
PRELIMINARY
JURISDICTIONAL DETERMINATION
USACE Acct. # MVN-2013-01087-SC
MAP 11 OF 15
For J. Koury, KourCo Environmental Services obo
Little Prairie Ranch.
Lat. 29.798168, Long. -92.311117
ih 11-29-13 gmc
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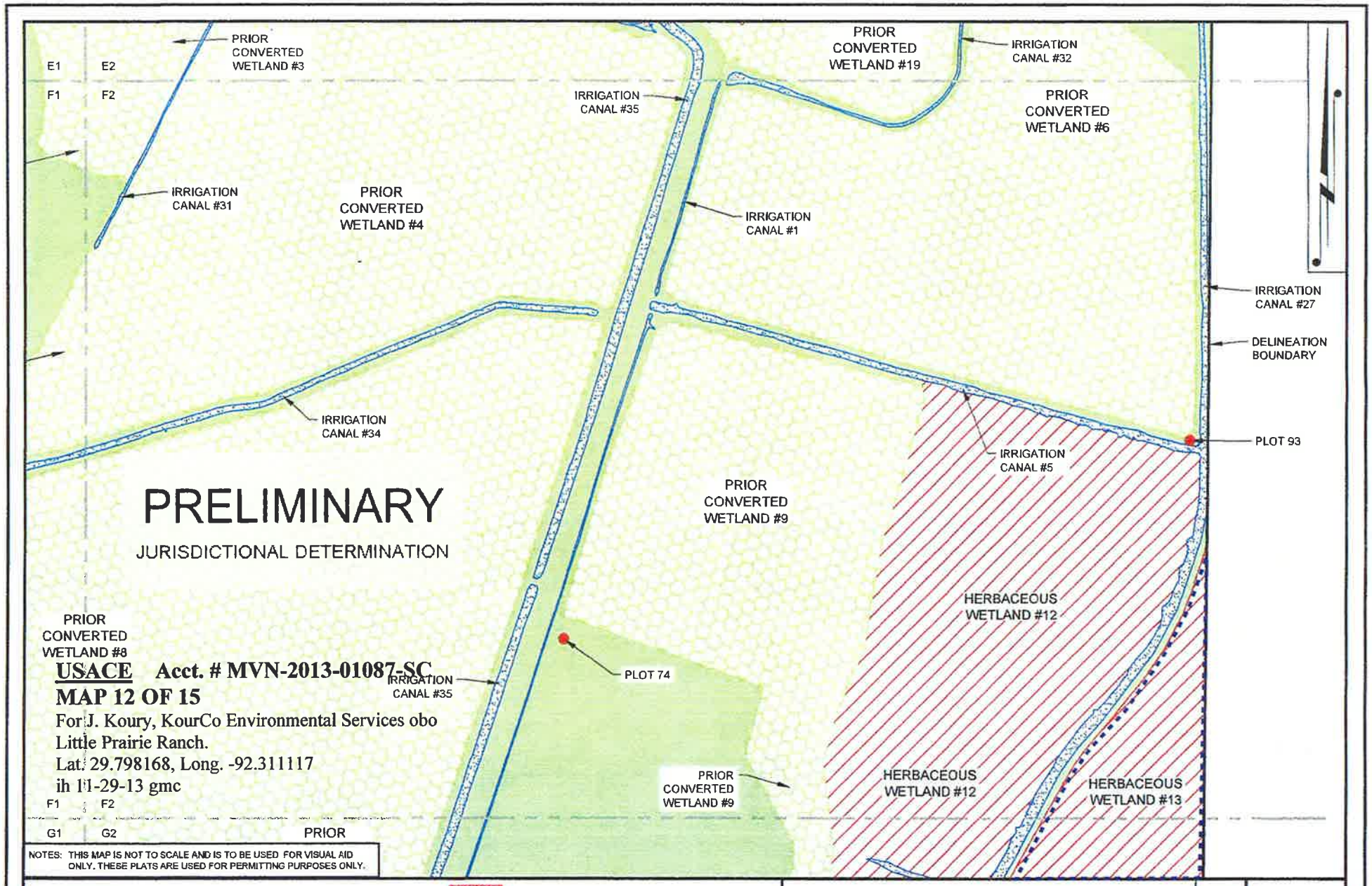
WETLAND BOUNDARY (2,101.96± ACRES)
PLAN VIEW
LITTLE PRAIRIE RANCH
WETLAND DELINEATION
VERMILION PARISH, LOUISIANA
F1
SHEET 11 OF 15



PRELIMINARY

JURISDICTIONAL DETERMINATION

USACE Acct. # MVN-2013-01087-SC

MAP 12 OF 15

For J. Koury, KourCo Environmental Services obo Little Prairie Ranch.

Lat. 29.798168, Long. -92.311117

ih 11-29-13 gmc

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WETLANDS (1,101.38± ACRES) SEC 404

PRIOR CONVERTED WETLANDS (592.04± ACRES)

NONWETLAND

FORESTED WETLANDS (65.40± ACRES) SEC 404

IRRIGATION CANALS (SEC 404) (29.37± ACRES)

TIDAL DITCHES (SEC 10/404) (24.65± ACRES)

UPLANDS (289.12± ACRES)

SEC 10/404 WATERS

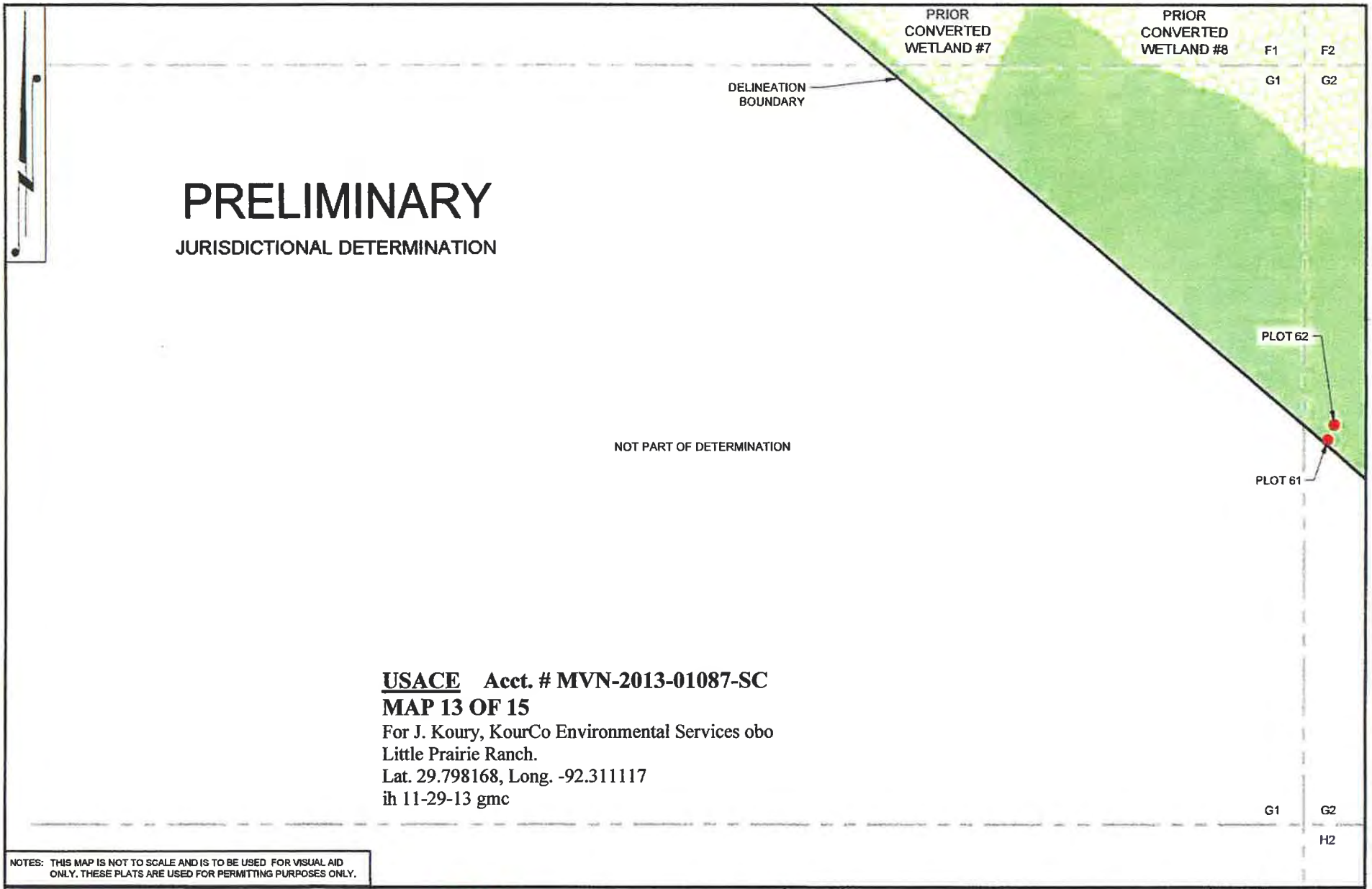
WETLAND BOUNDARY (2,101.96± ACRES)

PLAN VIEW
LITTLE PRAIRIE RANCH

WETLAND DELINEATION
VERMILION PARISH, LOUISIANA

F2

SHEET 12 OF 15



PRELIMINARY

JURISDICTIONAL DETERMINATION

USACE Acct. # MVN-2013-01087-SC
MAP 13 OF 15
For J. Koury, KourCo Environmental Services obo
Little Prairie Ranch.
Lat. 29.798168, Long. -92.311117
ih 11-29-13 gmc

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WETLANDS (1,101.38± ACRES) SEC 404
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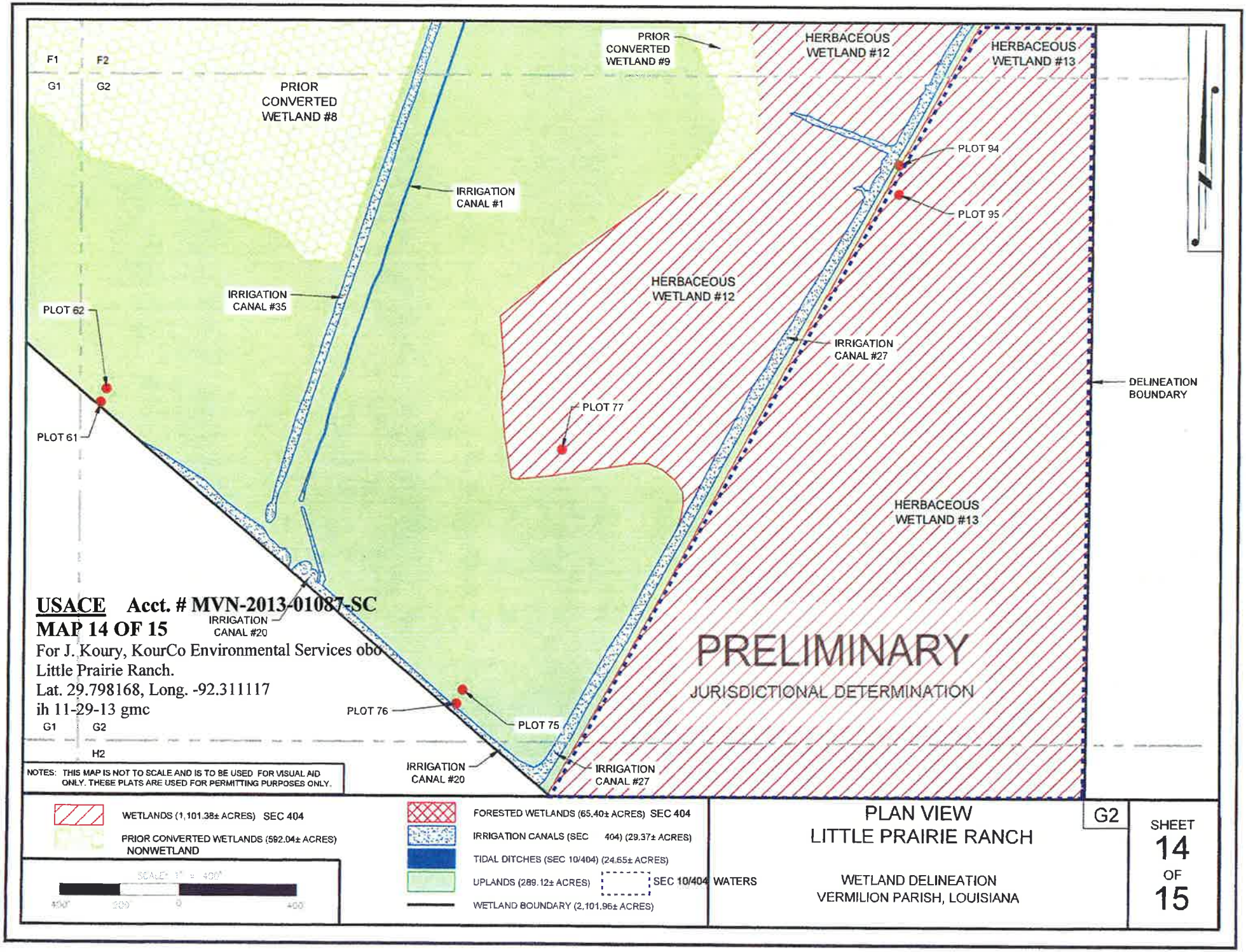
WETLAND BOUNDARY (2,101.96± ACRES)

PLAN VIEW
LITTLE PRAIRIE RANCH

G1

WETLAND DELINEATION
VERMILION PARISH, LOUISIANA

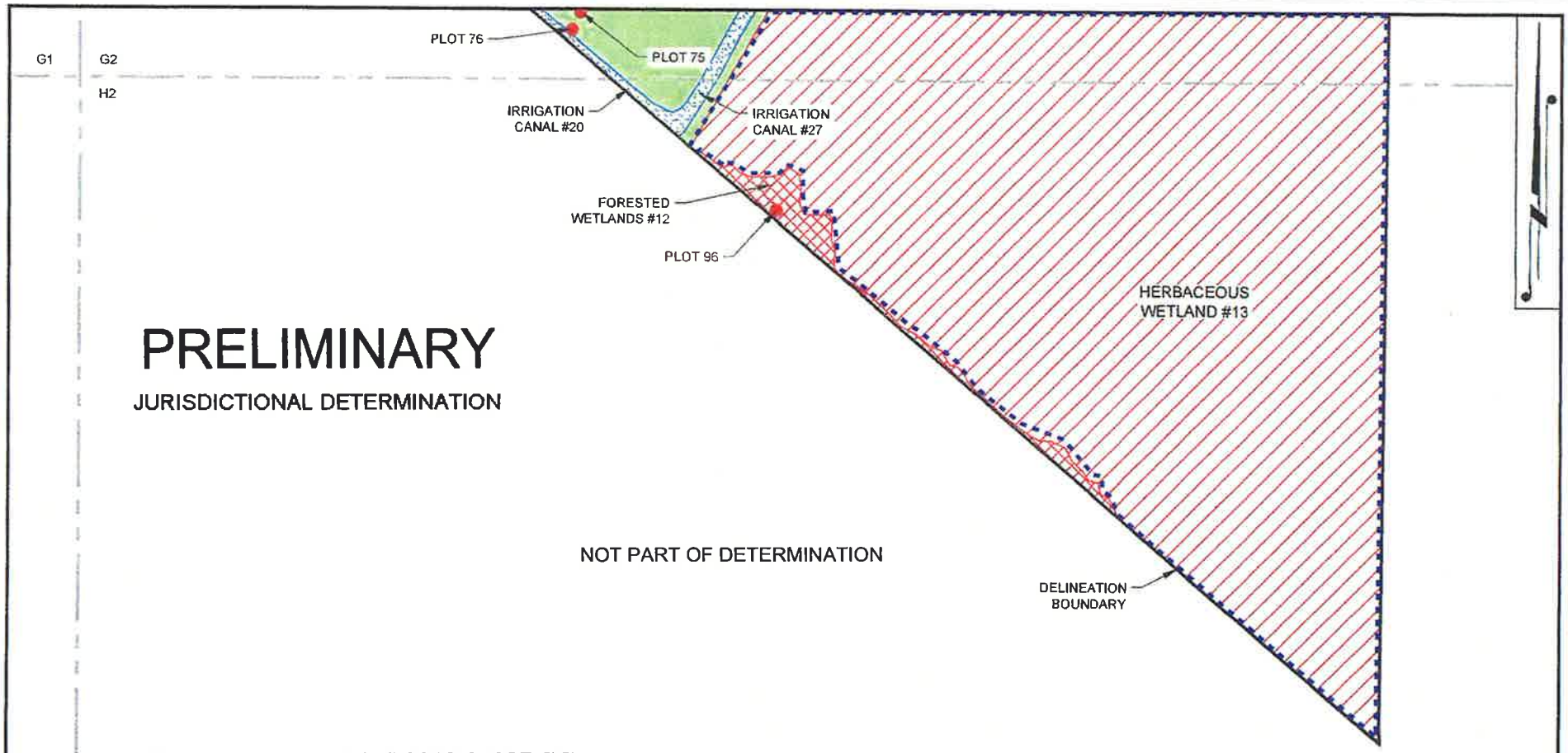
SHEET 13 OF 15



USACE Acct. # MVN-2013-01087-SC

MAP 14 OF 15

For J. Koury, KourCo Environmental Services obo
Little Prairie Ranch.
Lat. 29.798168, Long. -92.311117
ih 11-29-13 gmc



PRELIMINARY

JURISDICTIONAL DETERMINATION

USACE Acct. # MVN-2013-01087-SC

MAP 15 OF 15

For J. Koury, KourCo Environmental Services obo
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Lat. 29.798168, Long. -92.311117
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SECTION 10/404 WATERS

WETLANDS (1,101.38± ACRES) SEC 404

PRIOR CONVERTED WETLANDS (592.04± ACRES)

NONWETLAND

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400' 200' 0 400'

FORESTED WETLANDS (65.40± ACRES) SEC 404

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TIDAL DITCHES (SEC 10/404) (24.65± ACRES)

UPLANDS (289.12± ACRES)

WETLAND BOUNDARY (2,101.96± ACRES)

PLAN VIEW
LITTLE PRAIRIE RANCH

WETLAND DELINEATION
VERMILION PARISH, LOUISIANA

H2

SHEET 15 OF 15