

Grand Canard Wetland Mitigation Bank Addendum II

Mitigation Plan

A Part of
Grand Canard Wetland Mitigation Bank

Sponsored By:

**Third Louisiana Resource, LLC
c/o Resource Environmental Solutions
412 N Fourth St., Suite 300
Baton Rouge, Louisiana 70802**

Grand Canard Wetland Mitigation Bank Addendum II
Jefferson Davis Parish, Louisiana
Mitigation Plan

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I Introduction

This Mitigation Plan, dated and effective upon execution by the U.S. Army Corps of Engineers New Orleans District (CEMVN) and consistent with state and federal authorities (Appendix A), is an agreement made and entered into by Third Louisiana Resource, LLC (referred to hereinafter as Sponsor) and the Interagency Review Team (IRT) composed of CEMVN, the U.S. Environmental Protection Agency (EPA), the U.S. Fish and Wildlife Service (FWS), and the Louisiana Department of Wildlife and Fisheries (LDWF).

The purpose of this Mitigation Plan is to establish guidelines and responsibilities for the establishment, use, operation, protection, monitoring and maintenance of the Grand Canard Wetlands Mitigation Bank, Addendum II (Bank). This document is submitted as an addendum to the Mitigation Banking Instrument (MBI) for the first phase of the Grand Canard Wetland Mitigation Bank (hereinafter, Phase I MBI) which was signed on March 24, 2010 and established the cumulative re-establishment, rehabilitation, and enhancement of 247.2 acres of swamp, bottomland hardwood, and emergent freshwater wetlands.

In accordance with the Phase I MBI, in addition to the parameters outlined in this Mitigation Plan, the Sponsor will initiate an addendum to the first phase of the Grand Canard Wetland Mitigation Bank that includes the cumulative re-establishment, rehabilitation and enhancement of 276.7 acres of freshwater emergent marsh within a 280.2-acre conservation area (hereinafter referred to as the Addendum II Site). Unless specified in this document, the provisions of the Phase I MBI apply to this Addendum II Site.

II Location

A. Site Location

The Addendum II Site is located in Jefferson Davis Parish, Louisiana, in Sections 22, 23, 26, and 27, Township 11 South, Range 6 West at latitude 30.069651° north and longitude 92.956181° west (Figures 1 and 2) within United States Geological Survey (USGS) Cataloging Unit 08080202. More specifically, the Bank is located approximately 2.35 miles south of Bell City, Louisiana. The Addendum II Site lands subject to Conservation Servitude will encompass approximately 276.7 acres.

The Addendum II Site lands are owned in fee by Third Louisiana Resource, LLC. There are no recorded liens, encumbrances, easements, servitudes, or restrictions that have been identified on the portion of the property proposed for restoration. Further, the Addendum II Site lands will not be identified as collateral in other business transactions. A pipeline traverses the site from north to south. This pipeline has a 15-foot right-of-way

which is not included in the lands subject to the Conservation Servitude. The pipeline right-of-way agreement limits grantee surface activities thusly:

- Ingress and egress for the purposes of operation, maintenance, or repair shall be exercised only at times agreeable to and with the permission of the grantor, except for the purpose of repairing a break in the pipelines;
- Inspection and policing of the pipeline shall be done by aircraft only;
- Grantee has the right to cut all trees, undergrowth, and other obstructions that may injure, endanger, or interfere with the operation, maintenance, or repair of the pipelines;
- Grantee agrees to pay for damages to the property that result from the Grantee's operations; and
- Grantee agrees to indemnify and hold grantor harmless from any and all damages, losses, injuries, claims, and causes of action arising out of, incident to, or in connection with grantee's operations.

The Sponsor maintains liability, in accordance with this MBI, for achievement of all success criteria outside of the 15-foot right-of-way.

B. Legal Description

Appendix F provides the legal description of the Addendum II Site as well as of the pipeline right-of-way and drainage easement area to be excluded from the Conservation Servitude.

III Site-Specific Goals and Objectives

A. Baseline Conditions

1. Existing Land Use: The Addendum II Site is comprised primarily of 236.4 acres of agricultural land which was designated as Farmed Wetlands by the U.S. Department of Agriculture Natural Resources Conservation Service (NRCS) and used primarily for grain cultivation. The remaining acreage consists of 4.5 acres of existing emergent wetlands, 13.2 acres of ditches and drainages (other waters), and 22.6 acres of spoil banks and roads, all of which will be protected by the Conservation Servitude. The property also includes 1.9 acres of pipeline right-of-way and 1.6 acres of spoil bank adjacent to an unnamed public drainageway transecting the property which will not be included in the Conservation Servitude (Figure 3). The surrounding land use is primarily rural with a mixture of agricultural use, freshwater marsh, wetland scrub-shrub, and forested wetlands.

2. Existing Plant Communities. Perimeter levee vegetation includes tallow tree (*Triadica sebifera*) and black willow (*Salix nigra*) in the tree stratum while the shrub stratum was dominated by common reed (*Phragmites australis*), great ragweed

(*Ambrosia trifida*), button bush (*Cephalanthus occidentalis*), elderberry (*Sambucus Canadensis*), and eastern baccharis (*Baccharis halimifolia*). The herbaceous stratum was dominated by southern dewberry (*Rubus trivialis*), Japanese climbing fern (*Lygodium japonicum*), tallow tree (*Triadica sebifera*), and golden rod (*Solidago* spp.). The indicator status of these plants range from FAC to OBL.

Roadside vegetation included Bermuda grass (*Cynodon dactylon*), alligator weed (*Alternathera philoxeroides*), maiden-cane (*Panicum hemitomon*), barnyard grass (*Echinochloa crusgalli*), and small dog-fennel (*Eupatorium capillifolium*). The indicator status of these plants range from FACU to OBL.

Vegetation within the 3.8 acre emergent wetlands is currently dominated by square-stemmed spikerush (*Eleocharis quadrangulata*), bull-tongue (*Sagittaria lancifolia*), maiden-cane (*Panicum hemitomon*), and broad-leaf cattail (*Typha latifolia*). The indicator status of these plants is OBL.

3. Soils. The Addendum II Site is underlain by Ged clay (GDA), Judice silty clay (JdA), Morey silt loam (MoA) and Midland silt loam (MdA) (NRCS 2008)¹ (Figure 6). The Ged clay, Judice silty clay, and Midland silt loam are listed by the NRCS as hydric soils and the Morey series is listed as non-hydric (NRCS 2008).² During the field investigation and baseline assessment in July 2009, all soils within the project area being proposed for mitigation contained hydric indicators identified in the Field Indicators of Hydric Soils (NRCS 2002)³. A brief description of each soil type is included below:

A. GDA: Ged clay. This soil is level and very poorly drained with a high frequency of flooding.

B. MdA: Midland Silt Loam. This soil type is level and poorly drained with slopes less than one percent and is subject to rare flooding.

C. JdA: Judice silty clay. This soil is level, poorly drained soil with slopes of less than one percent and rarely flooded.

D. MoA: Morey silt loam. This soil type is level and poorly drained with slopes less than one percent and is subject to rare flooding.

4. Existing Hydrology. The Addendum II Site is contiguous to adjacent wetlands. Generally, the Addendum II Site topography is flat with general site elevations ranging from +1 ft to +5 ft NAVD (Figure 4) and is influenced by interior and perimeter

¹ Natural Resources Conservation Service (2008) *Web Soil Survey* [website]. U.S. Department of Agriculture, Natural Resources Conservation Service, *Soil Survey Staff*. Accessed June 17, 2008. Available URL: ftp://ftp-fc.sc.egov.usda.gov/NSSC/Hydric_Soils/Lists/hydric_soils.xlsx

² Natural Resources Conservation Service (2008) *National Hydric Soils List by State* [website]. U.S. Department of Agriculture, Natural Resources Conservation Service, *Soil Survey Staff*. Accessed June 17, 2008. Available

³ Natural Resources Conservation Service (2002) *Field Indicators of Hydric Soils in the United States, A Guide for Identifying and Delineating Hydric Soils, Version 5.0*. G.W. Hurt, Whited, P.M., and Pringle, F.F. (eds.). U.S. Department of Agriculture, Natural Resources Conservation Service, Fort Worth, Texas.

levees (elevations up to +15 ft NAVD), irrigation and drainage ditches, and canals associated with past rice production. The Addendum II Site interior is hydrologically isolated by the perimeter levee, with water ingress and egress controlled by irrigation pumps and drainpipes with stop logs. The historical drainage area is presented in Figure 5.

Two unnamed canals serve as drainageways and irrigation water supply for the property and adjacent agricultural lands. These canals directly interface with the Bell City Drainage Canal. A weir with stoplogs does exist within the southernmost canal at the interface of the canal and the Bell City Drainage Canal. This weir was constructed by Jefferson Davis Parish at an unspecified date but is maintained and controlled by the Sponsor. A variable crest weir which utilizes stoplogs is maintained in an open position (i.e. stoplogs removed) to facilitate natural flow and drainage from the canal and is only closed in anticipation of flooding with high salinity water which could affect adjacent agricultural properties.

Currently the Addendum II Site is surrounded by a perimeter levee and hydrologic inputs (aside from precipitation) are controlled through pumping. Also, surface water drainage is controlled through a series of pipes with stoplogs. These mechanisms are in place to facilitate irrigated rice production. However, upon implementation of the hydrology restoration, the Addendum II Site will receive surface water via the Bell City Drainage Canal and an unnamed drainage canal.

The Bell City Drainage Canal and Indian Bayou Canal, which intersect approximately three miles northwest of Bell City, may influence freshwater inputs from surface drainage north of the Bank and are not controlled by the sponsor. Neither of these canals has water control structures. Approximately 16 miles south of the Addendum II Site in the southwest corner of Grand Lake is the Catfish Point Control Structure. The structure closes the Mermenau River to the Gulf of Mexico to prevent saltwater intrusion and does not have an operating schedule. However, the structure is opened and closed to alleviate flooding, adjust lake salinities and to allow for commercial traffic passage.

The high water table at the Addendum II Site usually ranges from one foot above ground surface to two feet below ground surface (BGS). Water surface elevation readings from the Bell City Drainage Canal reveal a normal fluctuation between 0 and 0.7 feet NAVD. Areas of Ged clay soil are saturated or inundated year round. Areas of Judice silty clay and Morey silt loam are typically saturated to the ground surface between December and April.

B. Existing Site Wetland Status

A preliminary jurisdictional determination was approved by Mr. Gary Couret, CEMVN, on March 6, 2009 (MVN-2009-01966-SC). The determination concluded that Section 404 wetlands are present within the existing freshwater emergent marsh area and in agricultural fields (farmed wetlands), and that areas consisting of spoil

bank/access roads were nonwetland. A copy of the preliminary jurisdictional determination is included in Appendix B.

C. Wetland Functions to be Enhanced/Restored

The goal of the Bank is the cumulative re-establishment, rehabilitation and enhancement of 276.7 acres of freshwater emergent marsh in accordance with an IRT approved plan and this MBI (Table 1). The remaining 3.5 acres will remain as non-mitigation land comprised of a portion of a spoil bank associated with an unnamed drainage canal and a pipeline ROW (Figure 7A-B).

Historically, the Addendum II Site was part of the headwater for an unnamed tributary of Bayou Lacassine and likely included various habitats, including freshwater emergent marsh and wetland riparian forest. The Addendum II Site is currently in agricultural use for grain cultivation with perimeter levees and interior agricultural ditches used for water management. It is the intent of the Bank to restore much of this area as freshwater emergent marsh habitat. This will benefit water quality through cessation of agricultural practices (i.e., nonpoint source pollution reduction). The restored area will also benefit wildlife by providing improved habitat.

Exterior levee openings will allow connection to man-made hydrological features including the Bell City Canal which will allow natural ingress and egress of tidally-influenced water into the system (Appendix C). The most immediate water quality effects will be to the Bell City Canal and the associated wetlands in the immediate vicinity of the site. Filling of interior drainage ditches will allow water to sheetflow across the site as it did historically.

Cessation of commercial agriculture and its attendant water management by structural means, such as levees and ditches, will be used to restore natural hydroperiod. Soil preparation and vegetative plantings will be used to restore natural vegetation. Long-term maintenance will be provided to prevent colonization by noxious plants, erosion along canal interfaces and trespass/ vandalism. Restored hydrology and vegetative communities will communicate directly with an unnamed drainage canal (and, indirectly, with the Bell City Drainage Canal) as well as abutting and adjacent emergent wetlands.

IV Mitigation Plan

A. Habitat to be Restored

The Sponsor will restore and maintain freshwater emergent marsh habitat (Figure 7) in compliance with the provisions of this Mitigation Plan and the Phase I MBI. The restoration and maintenance of freshwater emergent marsh habitat at the Addendum II Site will require that the Sponsor plant those areas previously cleared for agricultural purposes and which are currently in agricultural use. Restoration efforts will utilize plugs of appropriate marsh vegetation representative of a species assemblage historically common to the marshes of the Gulf Coastal Prairie region (see Table 2). Target areas for

habitat types are based on soil types and elevations which were determined from reference habitat types adjacent to the Addendum II Site.

B. Habitat Restoration Procedures

The freshwater emergent marsh re-establishment areas (35.9 acres) and rehabilitation areas (236.4 acres) will be planted with an assemblage of commercially available species or from species that could potentially be collected from native stock within the marsh that is adjacent to the restoration site and is also owned by the Sponsor. The list of plant species to be planted appears in Table 2.

Prior to planting, site preparation will be conducted using mechanical and chemical means such as mowing, shredding, and herbicidal application for the alleviation of competitive pressures from weedy vegetation; disking for restoration of natural grades; and ripping to alleviate soil compaction. Invasive and undesirable species control will be conducted throughout the entire project area over the life of the Bank.

The Addendum II Site will be prepared in such a manner that soil disturbance will be avoided or minimized to the maximum extent practicable, and site preparation has been planned such that favorable conditions for planting will be established and maintained throughout the preparation activities. Site preparation activities will be documented with digital photographs and provided to the IRT during times in which these activities take place.

Planting procedures will adhere to the following specifications:

- 1.** Plugs of appropriate marsh vegetation obtained from a registered licensed regional nursery grower and of a regional eco-type species properly stored and handled to ensure viability will be planted. If seedlings listed are not available, then substitutions may be made if they are approved by the IRT before planting the site. The anticipated schedule for planting is the growing season of 2013. The Sponsor will plant appropriate species in such a manner to ensure adequate species diversity (Table 2). The Sponsor will implement supplemental plantings of shrubs such as buttonbush (*Cephalanthus occidentalis*) with scattered baldcypress on higher sites within the proposed fresh marsh restoration area, providing habitat which may be utilized by various wildlife such as neotropical migrant bird species; and
- 2.** Plugs of appropriate marsh vegetation will be planted over 25 percent of the marsh restoration acreage on a 4' x 4' spacing to achieve an initial stand density of, at minimum, 2,700 plugs per acre. The remaining 75 percent of the acreage is anticipated to regenerate from natural regeneration of native species (such as maidencane and cattail) from the existing seed bank as well as colonization and recruitment from adjacent planted stock; and

3. The Addendum II Site will be maintained, on an as-needed basis, by the use of mechanical or chemical control or some combination thereof in an effort to control noxious/exotic species colonization; and

4. Sponsor will use all prudent efforts (physical, chemical, and/or mechanical) to eradicate Chinese tallow tree and any other existing noxious/exotic vegetation from the Addendum II Site lands, including prevention of colonization from the nearest seed sources for colonization for these species, where possible. The Addendum II Site will be monitored to prevent re-infestation by noxious/exotic vegetation. Noxious/exotic vegetation stem density will be controlled to one percent (1%) or less of the total stem density on an acre-by-acre basis.

C. Hydrologic Restoration

Hydrology restoration plans are presented in Appendix C. Four portions of the perimeter levee along the eastern boundary, totaling approximately 200 linear feet, will be mechanically degraded. These gaps coincide with low elevation areas as determined by LIDAR analysis (Figure 4). Material from the levees will be deposited in adjacent ditches and canals. Bank monitoring and adaptive management will be used to assess proper functioning of the perimeter levee opening. All interior levees shall be degraded to surrounding ground elevations. All internal ditches will be filled to the maximum extent possible using in-situ materials.

In total, the implementation of this Mitigation Plan will result in the degradation of 31,745 linear feet of interior levees, the filling of 22,131 linear feet of interior ditches, and the gapping of 200 linear feet of the perimeter levee. This equates to the removal of 93.3% of all hydrologic impediments.

An access road along the western boundary of the site will be degraded from a width of 30 feet to 8 feet. The access road is currently separated from the Addendum II Site by a levee and ditch along the road's eastern border. The levee will be degraded, and the material will be deposited in the adjacent ditch. The access road will remain and will be maintained by mowing. This road is necessary for future access for management and monitoring.

V Performance Standards

The performance standards in the Phase I MBI for vegetation remain in effect. The following performance standards for hydrology will apply to the Addendum II site in place of the Phase I MBI performance standards for hydrology.

Initial

Ground surface elevations must be conducive to the establishment and support of wetland vegetation and re-establishment and maintenance of hydric soil characteristics. To that

end, 200 feet of the exterior perimeter levee and all interior levees will be degraded. The perimeter access road will be degraded from a width of 30 feet to 8 feet. Furthermore, any other earthen structures meant to hold or divert water will be leveled restoring surface hydrology to pre-disturbance conditions to the extent practicable.

Interim

Data demonstrating the planted tracts meet wetland criteria as described in USACE Delineation Manual, Environmental Laboratory, 1987 Corps of Engineers' Wetlands Delineation Manual and any current regional supplement utilized by CEMVN shall be collected by the Sponsor in Year 3 following successful attainment of the one-year survivorship criteria. This data shall be included in the Year 3 monitoring report provided to CEMVN. Upon receipt, CEMVN will review the wetland delineation within six months to verify that the Bank is a wetland.

VI Determination of Bank Credits

The exchange currency of the Bank is acres in one-tenth acre increments. To determine the amount of acres required to offset a particular impact to emergent wetlands, CEMVN will use either best professional judgment or an assessment method that calculates the number of credits per acre available at the Bank and the number of credits lost as a result of an impact. The same assessment method will be used to calculate both credits available and credits lost. The amount of available credits per acre calculated using the New Orleans District Modified Charleston Method is included as Table 4.

VII Financial Assurances

Prior to credit sales, the Sponsor shall establish financial assurance mechanisms to ensure that sufficient funds are available to a Third Party⁴ in the case of non-compliance or Bank failure. For the Grand Canard Wetland Mitigation Bank, Addendum II, the Sponsor will utilize two cash escrow accounts; one for construction and one for establishment. Each account will be funded, in entirety, prior to credit release. Cost estimates for each account are presented in Appendix D.

The cash escrow account for the Construction Fund will be funded in the amount of **Three Hundred and Two Thousand One Hundred and Thirty Nine Dollars (\$302,139.00)**. Sponsor calculated this amount by estimating the labor, materials and equipment costs for those items described in Appendix D.

The cash escrow account for the Establishment Fund will be funded in the amount of **Thirty Five Thousand Five Hundred and Thirty Seven Dollars (\$35,537.00)**. Sponsor calculated this amount by estimating the labor, materials and equipment costs for those items necessary to comply with the successful establishment of the Bank as described in Appendix D. Together the costs totaled \$32,383.00. Because the account must be sufficient to fund establishment activities during the

⁴ Third party is defined to mean a Standby Trust, the Holder, Long-Term Steward, agency represented on the IRT or its designee, or other entity approved by CEMVN to effect necessary conditions.

every five years. The 3.2 percent inflation rate is based on Sponsor's evaluation of Consumer Price Index (CPI) performance.

The principal amount (**\$302,139.00**) of the Construction Fund will be phased out in a single transaction. Upon verification by the IRT that those items described in Section II of this Mitigation Plan have been accomplished, CEMVN, acting on behalf of the IRT, shall advise the provider of the financial assurance to release **100 percent (\$302,139.00)** of the financial assurance amount.

The principal amount (**\$35,537.00**) of the Establishment Fund will be phased out as milestones are met and success criteria are achieved in accordance with the following schedule (see Establishment Fund Table in Appendix D):

- a. Upon verification by the IRT that the Initial Success Criteria have been attained, the CEMVN, acting on behalf of the IRT, shall advise the provider of the financial assurance to release **\$7,107.40** of the financial assurance amount;
- b. Upon submittal of the Year 2 monitoring report described in the Phase I MBI (Section VIII), the CEMVN, acting on behalf of the IRT, shall advise the provider of the financial assurance to release **\$7,107.40** of the financial assurance amount;
- c. Upon verification by the IRT that the Interim Success Criteria have been attained, the CEMVN, acting on behalf of the IRT, shall advise the provider of the financial assurance to release **\$7,107.40** of the financial assurance amount;
- d. Upon submittal of the Year 4 monitoring report described in the Phase I MBI (Section VIII), the CEMVN, acting on behalf of the IRT, shall advise the provider of the financial assurance to release **\$7,107.40** of the financial assurance amount;
- e. Upon verification by the IRT that the Long-Term Success Criteria have been attained, the CEMVN, acting on behalf of the IRT, shall advise the provider of the financial assurance to release the remaining **\$7,107.40** of the original financial assurance amount.

A financial assurance release summary is depicted in Table 3.

VIII Long-Term Maintenance and Protection Funding Mechanism

To ensure that sufficient funds are available to provide a source of funding for the perpetual maintenance of the Bank, the Sponsor shall establish an escrow account administered by a federally-insured depository that is "well-capitalized" or "adequately-capitalized" as defined in Section 38 of the Federal Deposit Insurance Act to fund the "Long-Term Maintenance and Protection" financial assurance. The account will be incrementally funded through credit sales and shall contain a minimum balance of

\$120,000.00 by the time 75 percent of the total number of credits are sold or upon successful achievement of the Interim Success Criteria, whichever occurs first. Any accrued interest shall be used in the operation, maintenance or other purpose that directly benefits the mitigation Bank. Only the interest accumulated maybe withdrawn for this purpose. The principal shall not be used and shall remain as part of the Bank's assets to ensure that sufficient funds are available should perpetual maintenance responsibilities be assumed by a third party. The Sponsor or Long-Term Steward may withdraw the accumulated interest only with written approval from CEMVN. The Sponsor shall provide copies of depository account statements to CEMVN upon request and in its monitoring reports.

Sponsor is responsible for ensuring that the funding of the Long-Term Maintenance and Protection account is sufficient. In the event capitalization of that account proves insufficient to meet the long-term management needs of the Bank, Sponsor remains liable for such costs while Sponsor is managing the Bank. Prior to a transfer of Bank management to a Long-Term Steward or other third party, Sponsor shall submit current information and analyses concerning the anticipated long-term costs of managing the Bank, the sufficiency of existing funding and a plan to address any foreseeable deficit, if applicable. Prior to approval of a transfer of Bank management, the IRT will determine whether any additional funding by Sponsor is necessary and if so, in what amount.

Signature Page

IN WITNESS WHEREOF, the parties hereto have executed this Agreement on the date herein below last written.

U.S. Army Corps of Engineers New Orleans District

Date

By: _____

Its: _____

Signature Page

IN WITNESS WHEREOF, the parties hereto have executed this Agreement on the date herein below last written.

Third Louisiana Resource, LLC

By: _____

Its: _____

Date

FIGURES

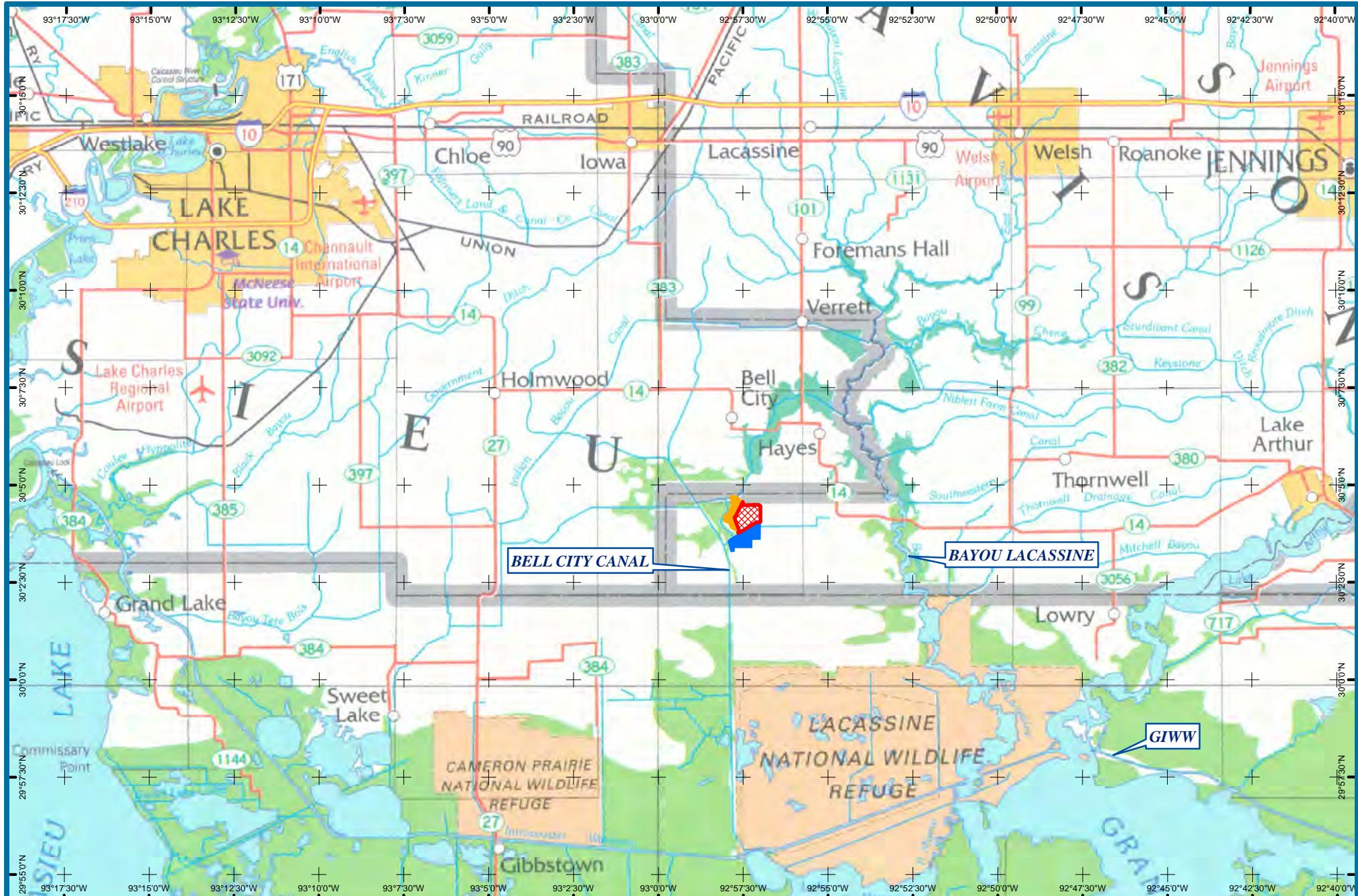


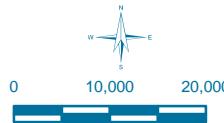
FIGURE 1

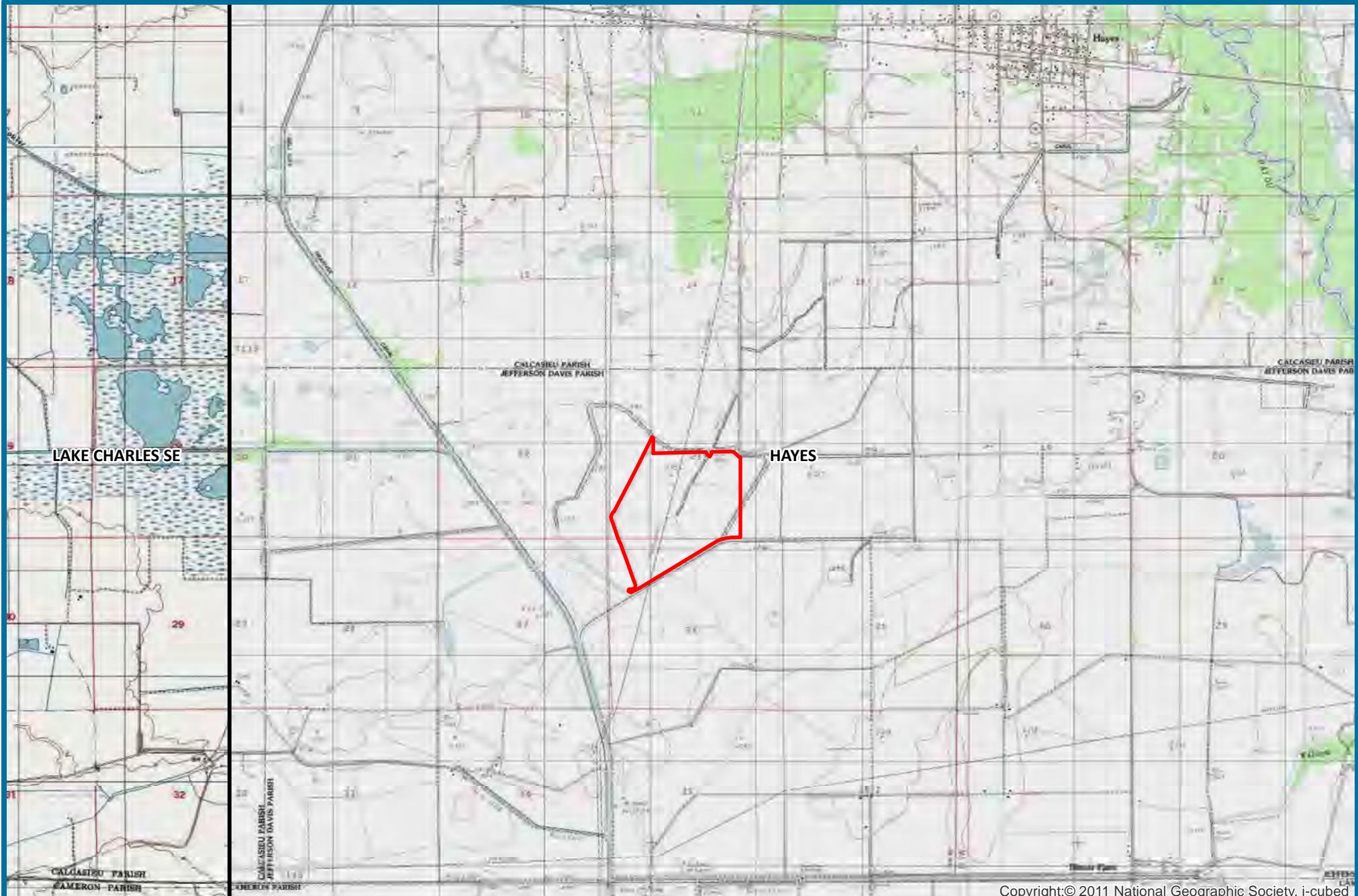
LOCATION MAP
GCMB - ADDENDUM II
SECTION 23 & 26, T11S-R6W

JEFFERSON DAVIS PARISH, LOUISIANA

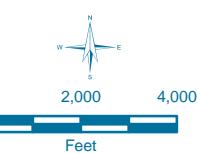
Legend

- Grand Canard Mitigation Bank (271.7 Ac.)
- GCMB - Addendum I (187.9 Ac.)
- GCMB - Addendum II (280.2 Ac.)





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TLR001GC_A085_AddendumII_USGS24kQuadMap_2013.mxd

FIGURE 2

**USGS QUAD MAP
GCMB - ADDENDUM II
SECTION 23 & 26, T11S-R6W**

JEFFERSON DAVIS PARISH, LOUISIANA

Legend

- GCMB - Addendum II (280.2 Ac.)
- Quad Index 24K (LOSCO 2007)



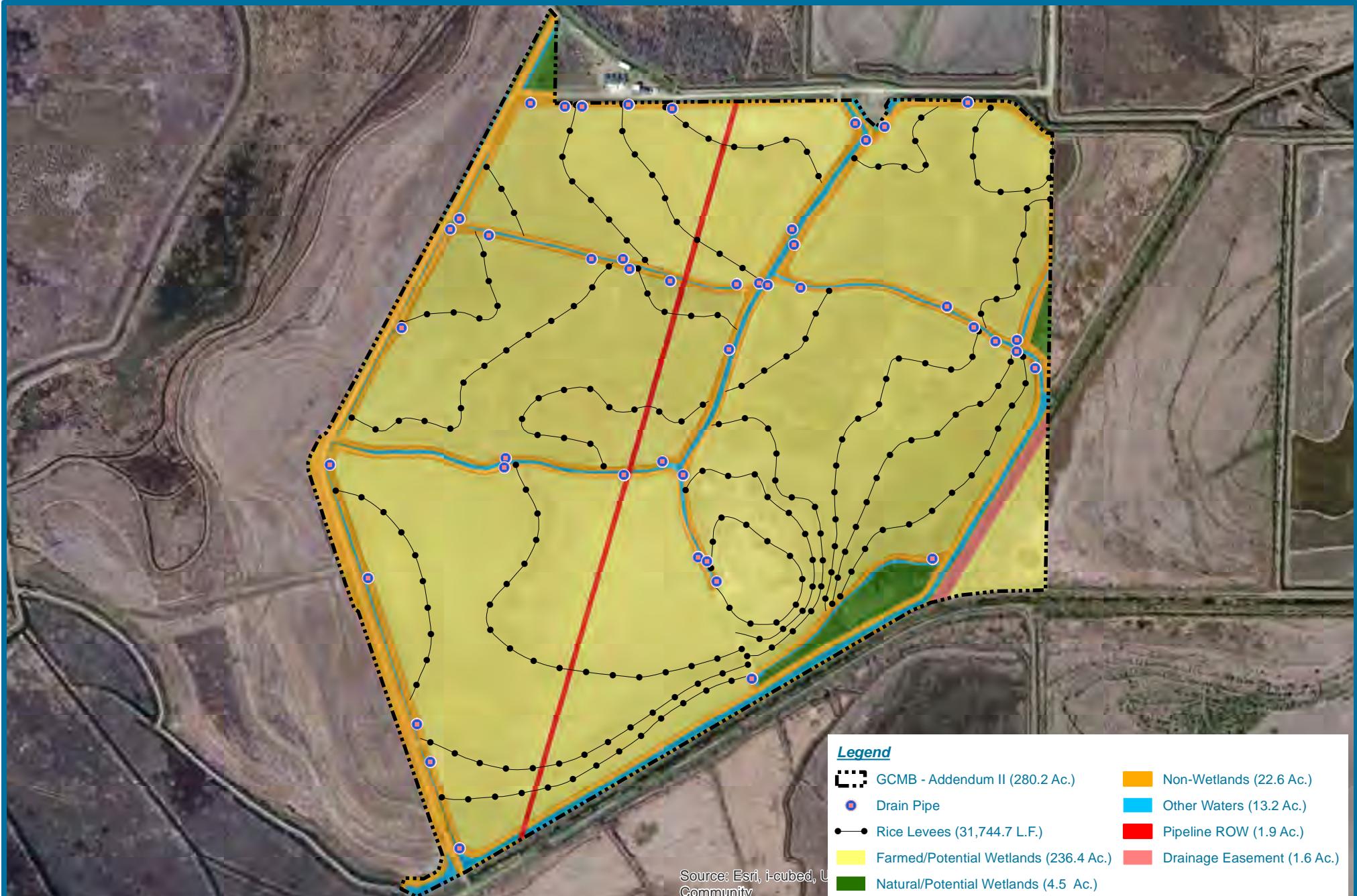


FIGURE 3

EXISTING CONDITIONS MAP
GCMB - ADDENDUM II
SECTION 23 & 26, T11S-R6W

JEFFERSON DAVIS PARISH, LOUISIANA

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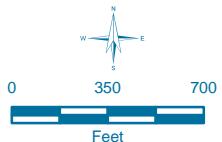
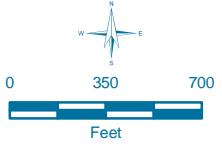




FIGURE 4

EXISTING ELEVATIONS MAP
GCMB - ADDENDUM II
SECTION 23 & 26, T11S-R6W

JEFFERSON DAVIS PARISH, LOUISIANA



TLR001GC_A086_AddendumII_ExistingElevationsMap.mxd

Legend

- GCMB - Addendum II (280.2 Ac.)
- 5 FT Elevation Contours
- 1 FT Elevation Contours

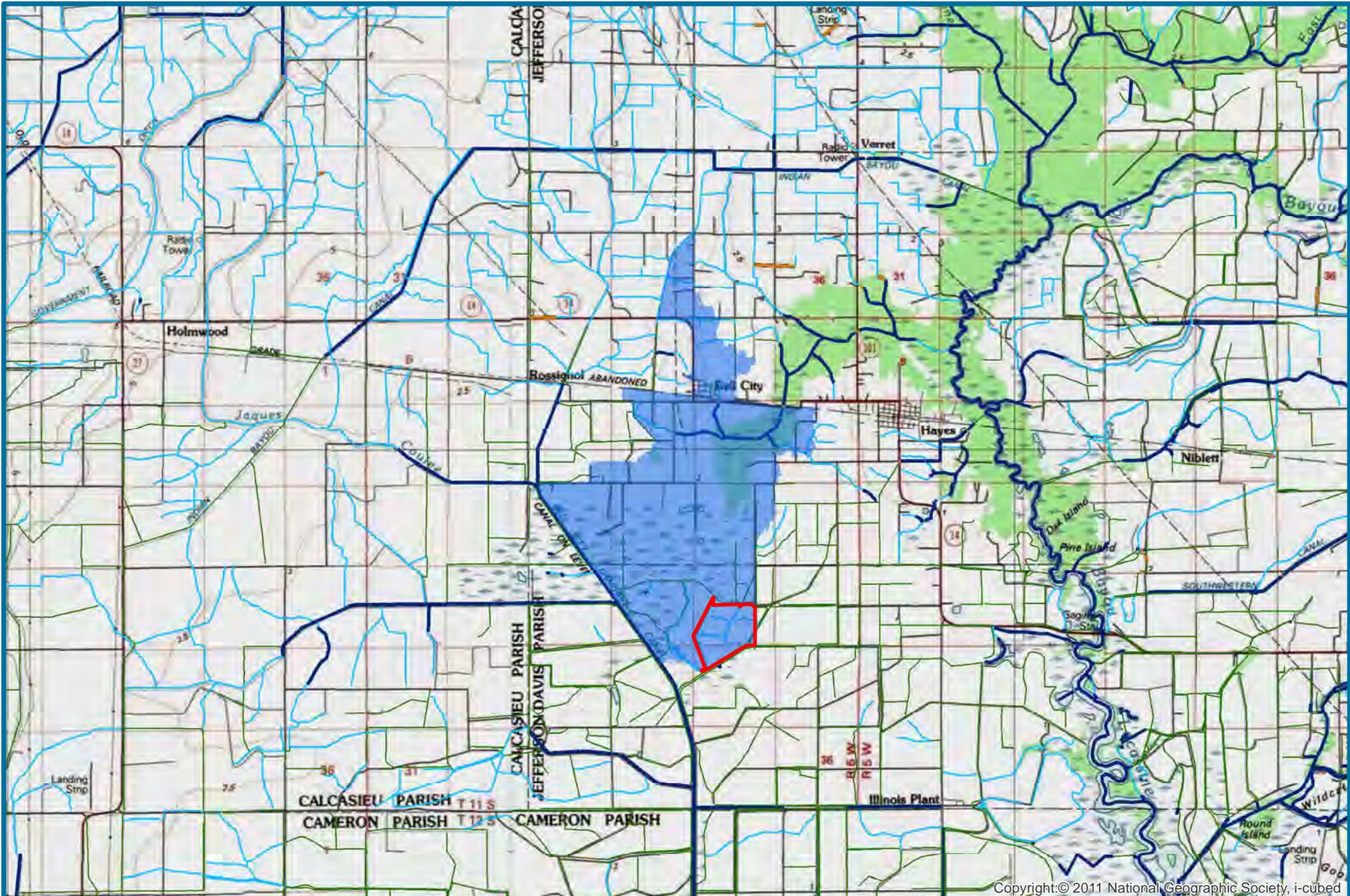
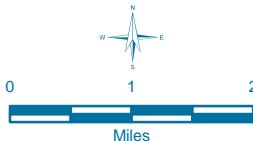


FIGURE 5

DRAINAGE AREA MAP
GCMB - ADDENDUM II
SECTION 23 & 26, T11S-R6W

JEFFERSON DAVIS PARISH, LOUISIANA



TLR001GC_A089_AddendumII_DrainageArea_2013.mxd

Legend

■ GCMB - Addendum II (280.2 Ac.)

■ Approximate Drainage Area (7.4 sq mi)

NHD Data

— ArtificialPath

— CanalDitch

— Connector

— StreamRiver

— UndergroundConduit

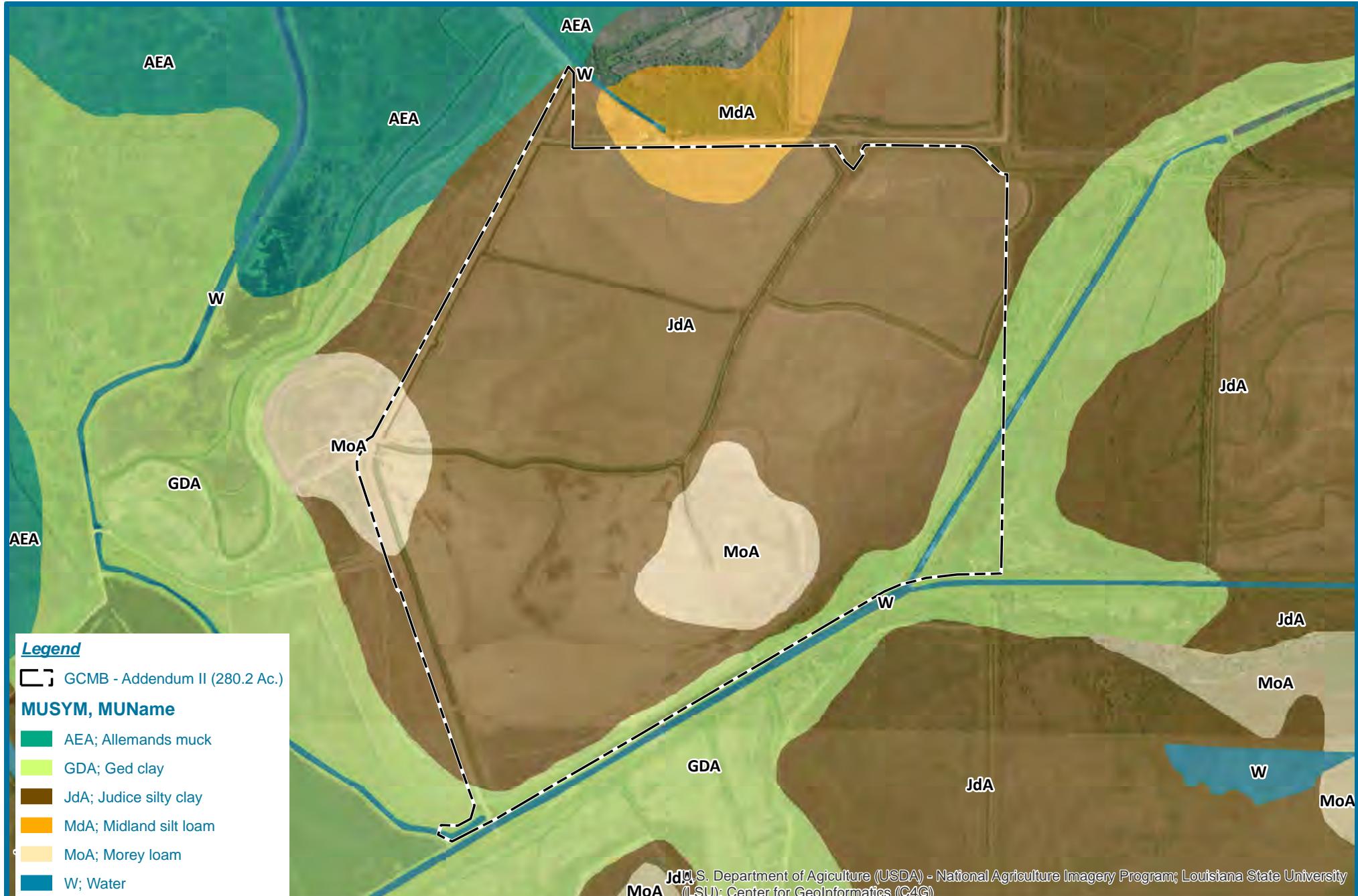


FIGURE 6
SOILS MAP
GCMB - ADDENDUM II
SECTION 23 & 26, T11S-R6W

JEFFERSON DAVIS PARISH, LOUISIANA

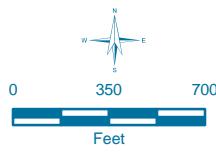
TLR001GC_A087_AddendumII_SoilsMap.mxd



FIGURE 7

PROPOSED MITIGATION PLAN
GCMB - ADDENDUM II
SECTION 23 & 26, T11S-R6W

JEFFERSON DAVIS PARISH, LOUISIANA



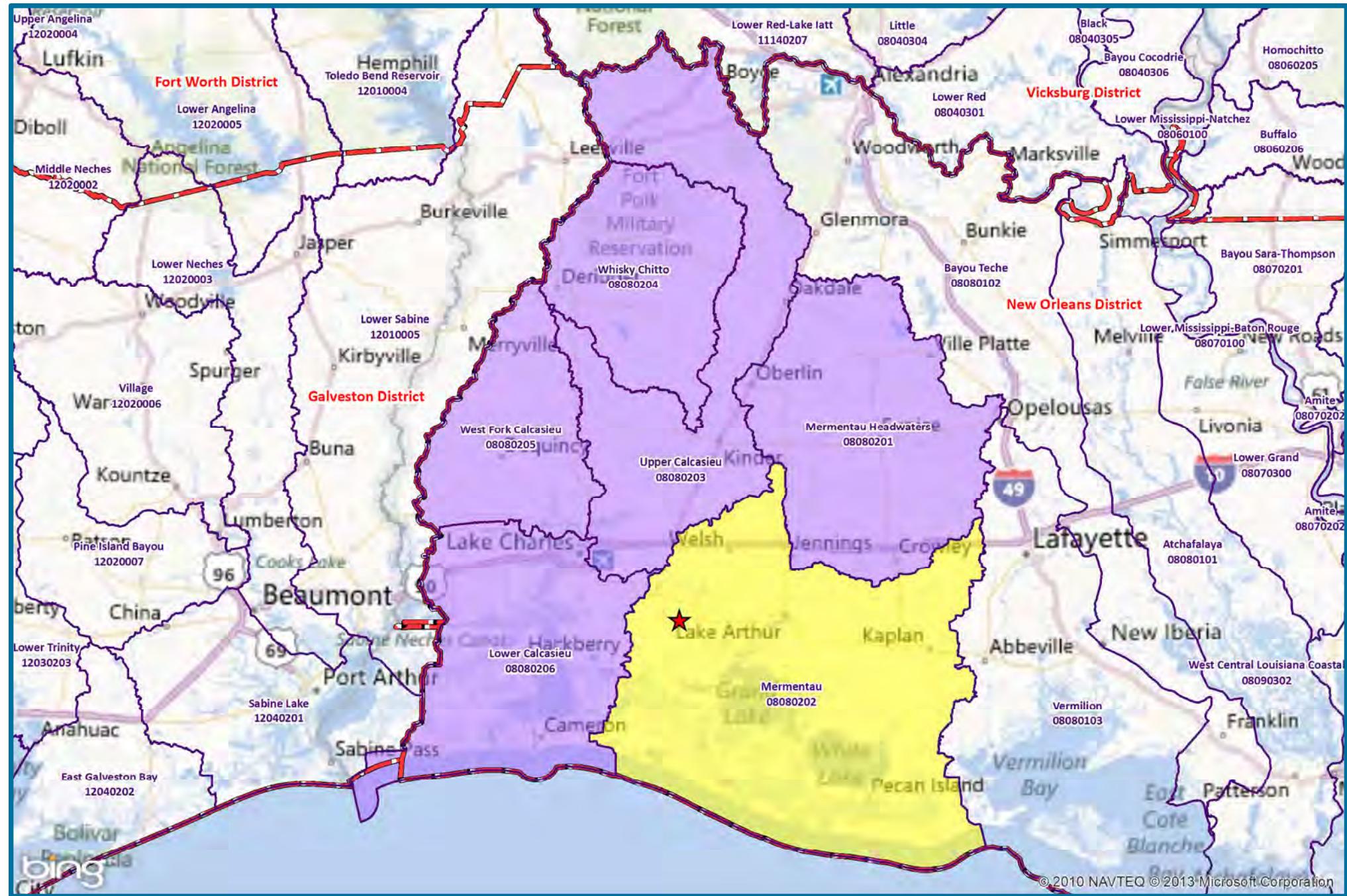
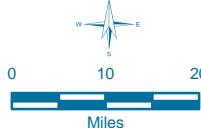


FIGURE 8

**SERVICE AREA MAP
GCMB - ADDENDUM II
SECTION 23 & 26, T11S-R6W**

JEFFERSON DAVIS PARISH, LOUISIANA



Legend

- The legend consists of four colored squares with corresponding labels:

 - Red Star:** GCMB - Addendum II (280.2 Ac.)
 - Yellow:** Primary Service Area
 - White:** 8-Digit HUC
 - Purple:** Secondary Service Area
 - Red:** USACE Districts (2011 HQ)



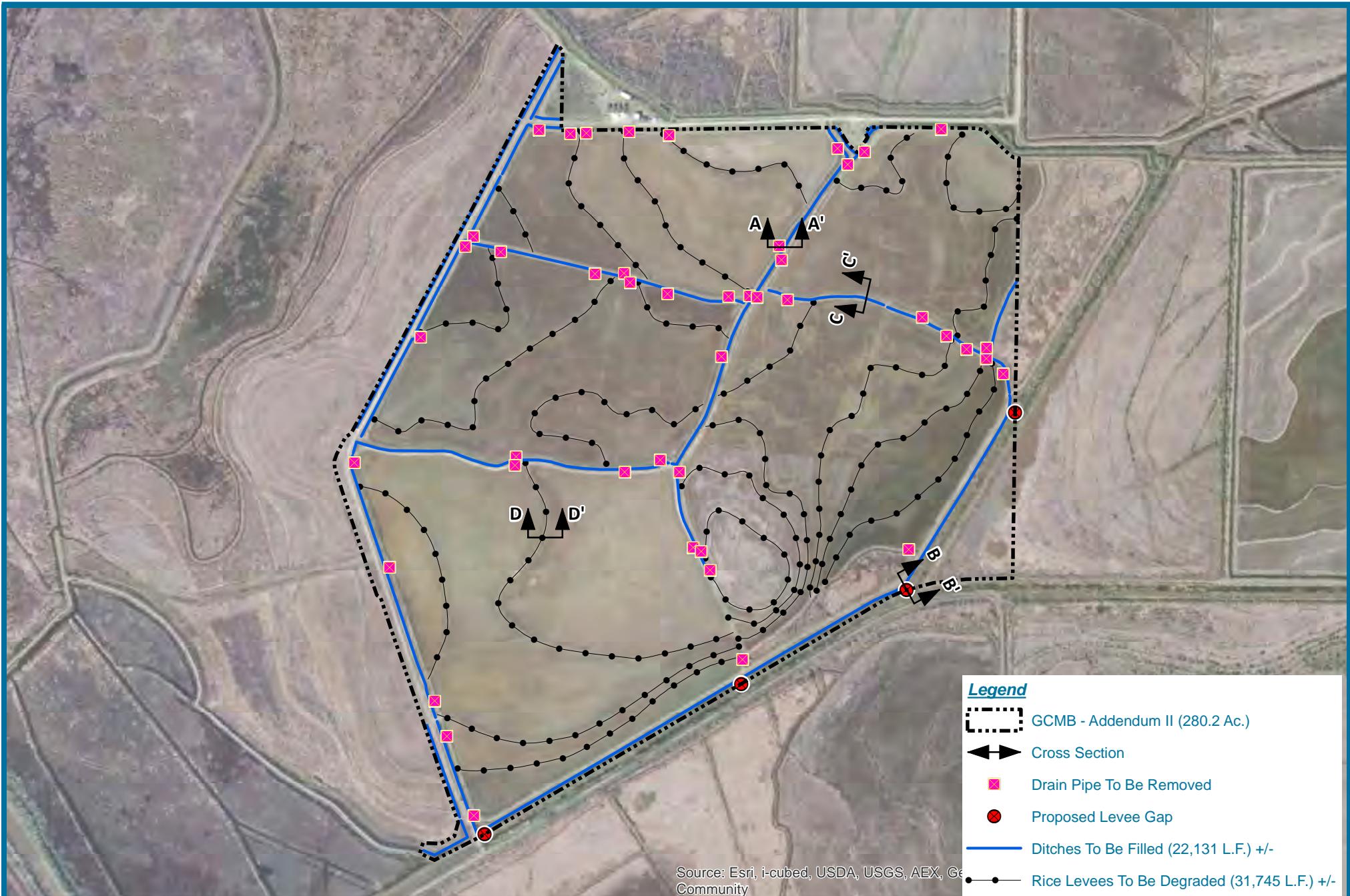
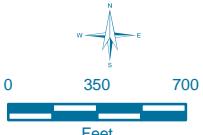


FIGURE 9

HYDROLOGIC IMPROVEMENTS & TYPICAL CROSS-SECTION LOCATION
GCMB - ADDENDUM II
SECTION 23 & 26, T11S-R6W

JEFFERSON DAVIS PARISH, LOUISIANA

TLR001GC_A092_AddendumII_HydrologicImprovements.mxd



TABLES

Table 1: Existing Conditions and Mitigation Habitats

Existing Habitat/Land Use	Acreage	Mitigation Type	Mitigation Habitat
Prior Converted Cropland (Wetland)	236.4	Rehabilitation I	Fresh Marsh
Emergent Wetland (Wetland)	4.5	Enhancement I	Fresh Marsh
Drainage Ditches (Other Waters)	13.2	Re-establishment I	Fresh Marsh
Spoil Banks	22.6	Re-establishment I	Fresh Marsh
Pipeline ROW	1.9	Non-mitigation Area	--
Drainage Easement	1.6	Non-mitigation Area	--
Total	280.2		

Table 2: Proposed Plant Species

Freshwater Emergent Marsh Plantings	
Common Name	Scientific Name
California bulrush	<i>Schoenoplectus californicus</i> (C.A. Mey.) Palla
Jamaica sawgrass	<i>Cladium mariscus</i> (L.) Pohl ssp. <i>jamaicense</i> (Crantz) Kük
Black needlerush	<i>Juncus roemerianus</i> Scheele
Cutgrass	<i>Zizaniopsis miliacea</i> (Michx.) Döll & Asch.
Marshhay cordgrass	<i>Spartina patens</i> (Aiton) Muhl.
Roseau cane	<i>Phragmites australis</i> (Cav.) Trin. ex Steud.
Maidencane	<i>Panicum hemitomon</i> Schult.
Arrowhead	<i>Sagittaria</i> spp. L.

Table 3: Financial Assurance Release Summary

Release	Milestone	Projected Year
20%	Achievement of Initial Success Criteria	1
20%	Achievement of Year Two Monitoring Criteria	2
20%	Achievement of Interim Success Criteria	3
20%	Achievement of Year Four Monitoring Criteria	4
20%	Achievement of Long-Term Success Criteria	5

Table 4: Mitigation Credit Summary
New Orleans District Modified Charleston Method (MCM)

Mitigation Type	Acreage	Baseline MCM Credits/Acre	Baseline MCM Credits	MCM Credits/Acre for In-Kind/In-Watershed Impacts	MCM Credits for In-Kind/In-Watershed Impacts
Fresh Marsh Rehabilitation I	236.4	3.5	815.6	4.3	1004.7
Fresh Marsh Re-Establishment I	35.8	4.5	159.3	5.3	188.0
Fresh Marsh Enhancement I	4.5	2.8	12.4	3.6	16.0
	276.7	3.6	987.3	4.4	1208.7

Table 5: Credit Release Summary

Credit Release	Milestone
25%	MBI Execution, Permit Acquisition, Conservation Servitude
25%	Site Preparation
20%	Achievement of Interim Success Criteria
30%	Achievement of Long-Term Success Criteria

APPENDIX A:
Federal and State Authorities

Federal and State Authorities

- Clean Water Act (33 USC 1251, et seq.);
- Rivers and Harbors Act (33 USC 403);
- Fish and Wildlife Coordination Act (16 USC 661, et seq.);
- Regulatory Programs of the Corps of Engineers, Final Rule (33 CFR Parts 320-330);
- Guidelines for Specification of Disposal Sites for Dredged and Fill Material (40 CFR Part 230);
- Memorandum of Agreement between the Environmental Protection Agency and the Department of the Army concerning the Determination of Mitigation Under Clean Water Act, Section 404 (b)(1) Guidelines (February 6, 1990);
- Compensatory Mitigation for Losses of Aquatic Resources (33 CFR Part 332);
- Louisiana Revised Statute 56; and
- Louisiana Conservation Servitude Act, R.S. 9:1271, et seq.

Louisiana Coastal Authorities:

The Louisiana Coastal Zone is regulated and monitored by the Louisiana Department of Natural Resources (DNR), Coastal Management Division (CMD), under authority of the Louisiana Coastal Resources Management Act of 1978, LA. R.S. 49:214.21-214.41. The purpose of this law is to protect, develop, and where feasible, restore or enhance the resources of the State's Coastal Zone. CMD's authority to require mitigation is found in R.S. 49:214.41, et seq. The Louisiana Administrative Code, Title 43, Part I, Chapter 7, 724-729 requires compensatory mitigation for all unavoidable impacts and establishes a specific mitigation sequence as law within the Coastal Zone. The Coastal Wetlands Planning, Protection, and Restoration Act (Public Law 101-646, Title IIICWPPRA) was enacted and signed into law on November 29, 1990. As required by Section 304 of the Act (16 USC 3953), the State of Louisiana developed the Louisiana Coastal Wetlands Conservation Plan (Plan), which was approved by the Secretary of the Army, the Director of the United States Fish and Wildlife Service, and the Administrator of the Environmental Protection Agency on December 1, 1997. The Coastal Wetlands Conservation Plan Area (Plan Area) is an area delineated in the Plan itself and is bounded by the Plan boundary, which is also set out in the Plan. Mitigation areas are not specifically addressed in the cited. The participation by DNR in a particular mitigation area is, therefore, discretionary. Each mitigation area proposal is subject to the negotiation of a written Mitigation Agreement (Agreement) upon terms and conditions acceptable to the DNR Secretary. The restoration site occurs within Coastal Wetland Conservation boundary adjacent to the Louisiana Coastal Zone, which is regulated by DNR. Furthermore, the site is within the Plan Area defined pursuant to CWPPRA.

APPENDIX B:
CEMVN Jurisdictional Determination



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
NEW ORLEANS DISTRICT, CORPS OF ENGINEERS
P.O. BOX 60267
NEW ORLEANS, LOUISIANA 70160-0267
NOV -6 2009

Operations Division
Surveillance and Enforcement Section

Mr. Brighton Heard
Natural Resource Professionals, LLC
4664 Jamestown Avenue, Suite 325
Baton Rouge, LA 70808

Dear Mr. Heard:

Reference is made to your request, on behalf of Resource Environmental Solutions, LLC, for a U.S. Army Corps of Engineers' (Corps) jurisdictional determination on property located in Sections 22, 23, 26 and 27, Township 11 South, Range 6 West, Jefferson Davis Parish, Louisiana (enclosed map). Specifically, this property is identified as a 485.81-acre tract, known as the Grand Canard Mitigation Bank, Phase II, located at the end of Joe Breaux Road, south of Bell City, Louisiana.

Based on review of 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 (CWA) will be required prior to the deposition or redistribution of dredged or fill material into wetlands that are waters of the United States. Also, 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. Additionally, the tributary to Bell City Drainage Canal is a tidal waterway and may be subject to Corps' jurisdiction under Section 404 of the CWA and Section 10 of the Rivers and Harbors Act. A DA permit will be required prior to any work in tidal waterways subject to Corps' jurisdiction.

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.

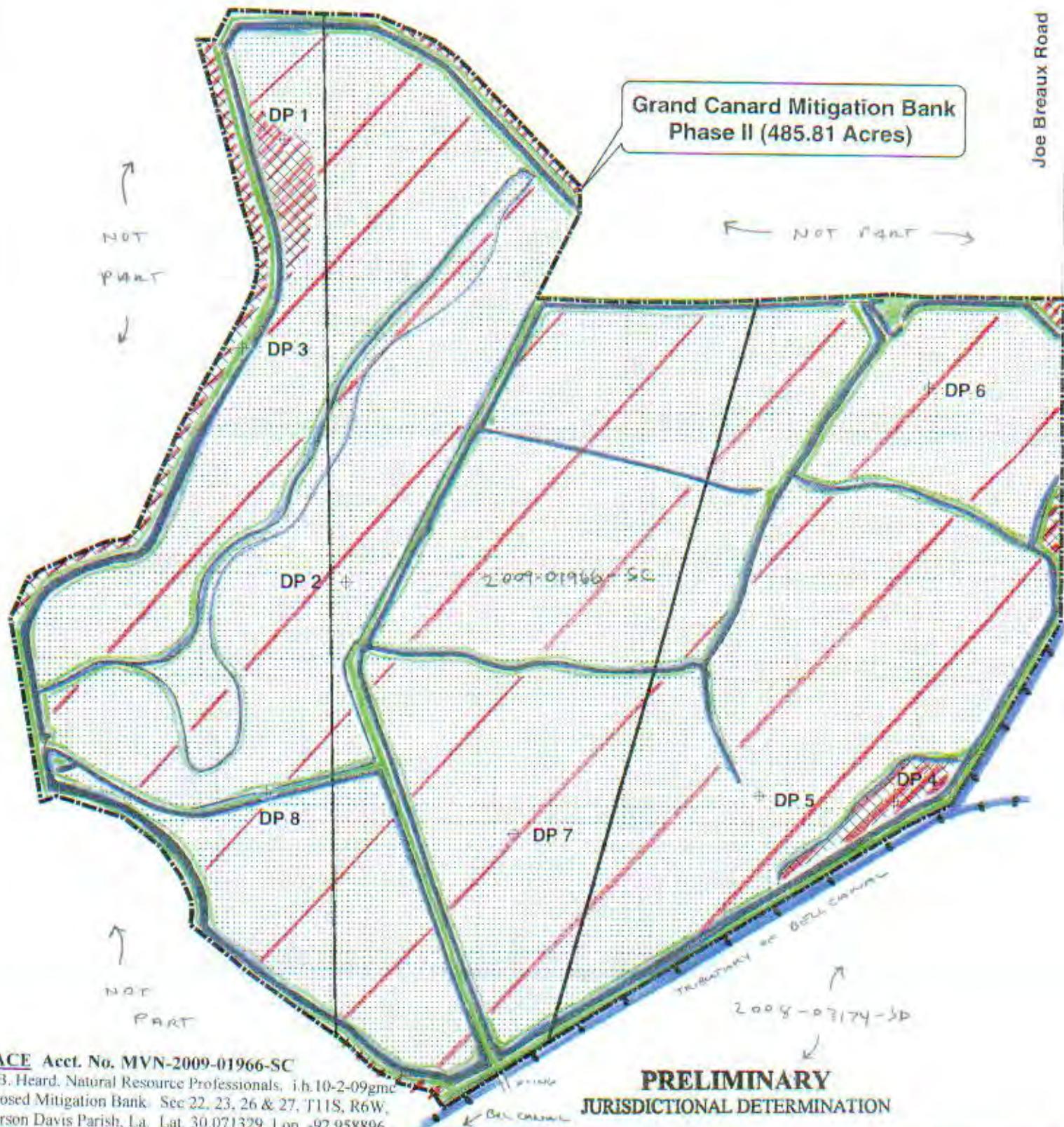
You and your client are advised that this preliminary jurisdictional determination is valid for a period of 5 years from the date of this letter unless new information warrants revision prior to the expiration date or the District Engineer has identified, after public notice and comment, that specific 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-2009-01966-SC. If you have specific questions regarding the permit process or permit applications, please contact Mr. Stephen Pfeffer of our Special Projects and Policy Team at (504) 862-2227. 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 and return the enclosed Customer Service Survey or complete the survey on our web site at <http://per2.nwp.usace.army.mil/survey.html>.

Sincerely,

Pete J. Serio
Pete J. Serio
Chief, Regulatory Branch

Enclosures



USACE Acct. No. MVN-2009-01966-SC
For B. Heard, Natural Resource Professionals, i.h.10-2-09gmc
Proposed Mitigation Bank Sec 22, 23, 26 & 27, T11S, R6W,
Jefferson Davis Parish, La. Lat. 30.071329, Lon. -92.958896

PRELIMINARY JURISDICTIONAL DETERMINATION

Legend

- Project Area (485.81 Acres)
- Farmed Wetlands (382.56 Acres) SEC. 4 & 4
- Natural Wetlands (14.41 Acres) SEC. 4 & 4
- Non-Wetlands (45.98 Acres)
- Other Waters (32.93 Acres) SEC. 4 & 4
- Pipeline R.O.W.'s (3.91 Acres) SEC. 4 & 4
- + Data Points
- = Sec 10/404 Tidal Water of the U.S
(Tributary of BellCity Drainage Canal)

750 325 0 750 Feet



NRP



RES	
Hayes, LA	
WETLAND DELINEATION MAP	
JEFFERSON DAVIS PARISH, LOUISIANA	
Created:	BKH/ArcView
Approved:	SPN
Date:	7/13/2009
Map No.:	WD09060901-02

FIGURE 2

PRELIMINARY JURISDICTIONAL DETERMINATION FORM

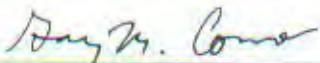
This preliminary JD finds that there "may be" waters of the United States on the subject project site, and identifies all aquatic features on the site that could be affected by the proposed activity, based on the following information:

District Office	New Orleans District	File/ORM #	MVN-2009-01966-SC	PJD Date:	Oct 2, 2009
State	LA	City/County	Jefferson Davis Parish		
Nearest Waterbody:	Bel City Drainage Canal			Name/ Address of Person Requesting PJD	Mr. Brighton Heard Natural Resource Professionals, LLC 4664 Jamestown Avenue, Suite 325 Baton Rouge, Louisiana 70808
Location: TRS, Lat/Long or UTM:	Sections 22, 23, 26 & 27, T11S, R6W Lat. 30.071329, Long. -92.958896				
Identify (Estimate) Amount of Waters in the Review Area:			Name of Any Water Bodies on the Site Identified as Tidal: Tributary of Bell City Drainage Canal Non-Tidal:		
Non-Wetland Waters:			Stream Flow:		
linear ft		width 32.94	acres	N/A	
Wetlands:			Cowardin Class:	Palustrine, emergent	
			<input checked="" type="checkbox"/> Office (Desk) Determination		
			<input type="checkbox"/> Field Determination	Date of Field Trip:	

SUPPORTING DATA: Data reviewed for preliminary JD (check all that apply - checked items should be included in case file and, where checked and requested, appropriately reference sources below).

- Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant.
- Data sheets prepared/submitted by or on behalf of the applicant/consultant.
 - Office concurs with data sheets/delineation report.
 - Office does not concur with data sheets/delineation report.
- Data sheets prepared by the Corps
- Corps navigable waters' study:
- U.S. Geological Survey Hydrologic Atlas:
 - USGS NHD data.
 - USGS 8 and 12 digit HUC maps.
- U.S. Geological Survey map(s). Cite quad name: Hayes, LA
- USDA Natural Resources Conservation Service Soil Survey. Citation: NRCS Website
- National wetlands inventory map(s). Cite name:
- State/Local wetland inventory map(s):
- FEMA/FIRM maps:
- 100-year Floodplain Elevation is:
- Photographs:
 - Aerial (Name & Date): SONRIS, 1998, 2004, 2005, 2007 & 2008
 - Other (Name & Date): Consultant field report photos dated 6/17/09
- Previous determination(s). File no. and date of response letter:
- Other information (please specify):

IMPORTANT NOTE: The information recorded on this form has not necessarily been verified by the Corps and should not be relied upon for later jurisdictional determinations.

 10-2-09

Signature and Date of Regulatory Project Manager
(REQUIRED)

Mr. Brighton Heard requested Preliminary JD on 6/29/09 in writing.

Signature and Date of Person Requesting Preliminary JD
(REQUIRED, unless obtaining the signature is impracticable)

EXPLANATION OF PRELIMINARY AND APPROVED JURISDICTIONAL DETERMINATIONS:

1. The Corps of Engineers believes that there may be jurisdictional waters of the United States on the subject site, and the permit applicant or other affected party who requested this preliminary JD is hereby advised of his or her option to request and obtain an approved jurisdictional determination (JD) for that site. Nevertheless, the permit applicant or other person who requested this preliminary JD has declined to exercise the option to obtain an approved JD in this instance and at this time.
2. In any circumstance where a permit applicant obtains an individual permit, or a Nationwide General Permit (NWP) or other general permit verification requiring "preconstruction notification" (PCN), or requests verification for a non-reporting NWP or other general permit, and the permit applicant has not requested an approved JD for the activity, the permit applicant is hereby made aware of the following: (1) the permit applicant has elected to seek a permit authorization based on a preliminary JD, which does not make an official determination of jurisdictional waters; (2) that the applicant has the option to request an approved JD before accepting the terms and conditions of the permit authorization, and that basing a permit authorization on an approved JD could possibly result in less compensatory mitigation being required or different special conditions; (3) that the applicant has the right to request an individual permit rather than accepting the terms and conditions of the NWP or other general permit authorization; (4) that the applicant can accept a permit authorization and thereby agree to comply with all the terms and conditions of that permit, including whatever mitigation requirements the Corps has determined to be necessary; (5) that undertaking any activity in reliance upon the subject permit authorization without requesting an approved JD constitutes the applicant's acceptance of the use of the preliminary JD, but that either form of JD will be processed as soon as is practicable; (6) accepting a permit authorization (e.g., signing a proffered individual permit) or undertaking any activity in reliance on any form of Corps permit authorization based on a preliminary JD constitutes agreement that all wetlands and other water bodies on the site affected in any way by that activity are jurisdictional waters of the United States, and precludes any challenge to such jurisdiction in any administrative or judicial compliance or enforcement action, or in any administrative appeal or in any Federal court; and (7) whether the applicant elects to use either an approved JD or a preliminary JD, that JD will be processed as soon as is practicable. Further, an approved JD, a proffered individual permit (and all terms and conditions contained therein), or individual permit denial can be administratively appealed pursuant to 33 C.F.R. Part 331, and that in any administrative appeal, jurisdictional issues can be raised (see 33 C.F.R. 331.5(a)(2)). If, during that administrative appeal, it becomes necessary to make an official determination whether CWA jurisdiction exists over a site, or to provide an official delineation of jurisdictional waters on the site, the Corps will provide an approved JD to accomplish that result, as soon as is practicable.

**NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND
REQUEST FOR APPEAL**

Applicant: Mr. Brighton Heard, NRP, LLC	File No.: MVN-2009-01966 -SC	Date: NOV -6 2009
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
	APPROVED JURISDICTIONAL DETERMINATION	D
X	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://usace.army.mil/inet/functions/cw/cecw0/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.

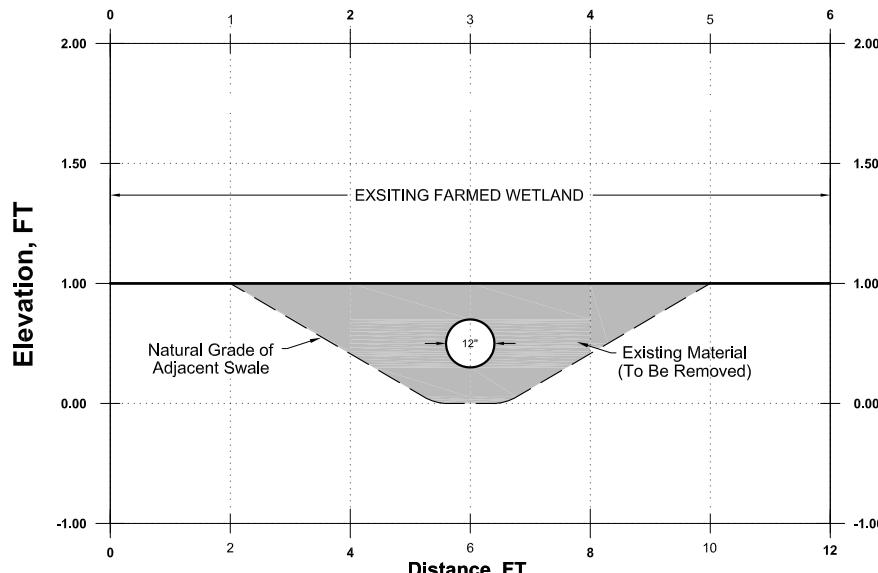
D: APPROVED JURISDICTIONAL DETERMINATION: You may accept or appeal the approved JD or provide new information.

- **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.

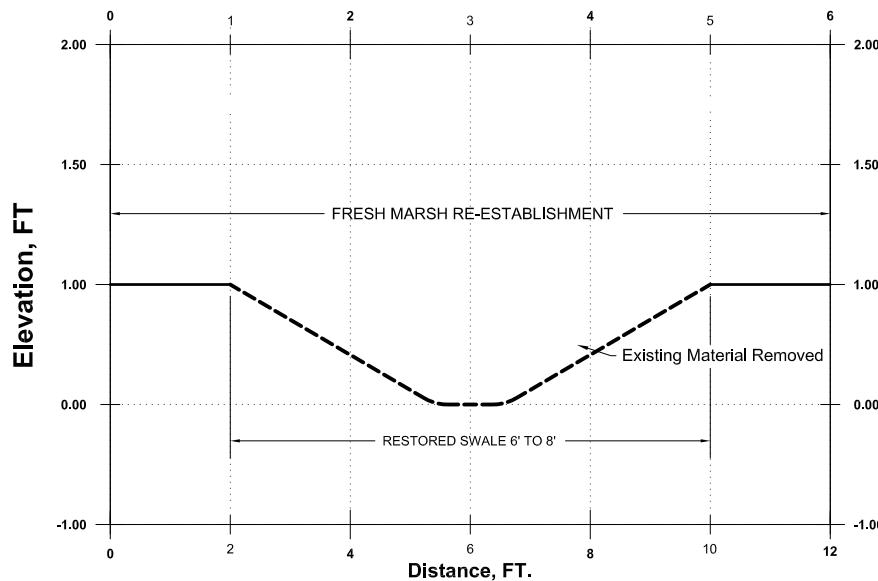
E: PRELIMINARY JURISDICTIONAL DETERMINATION: You do not need to respond to the Corps regarding the preliminary JD. The Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also you may provide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

(over)

APPENDIX C:
Hydrology Restoration Drawings



TYPICAL CROSS-SECTION TYPICAL PIPE

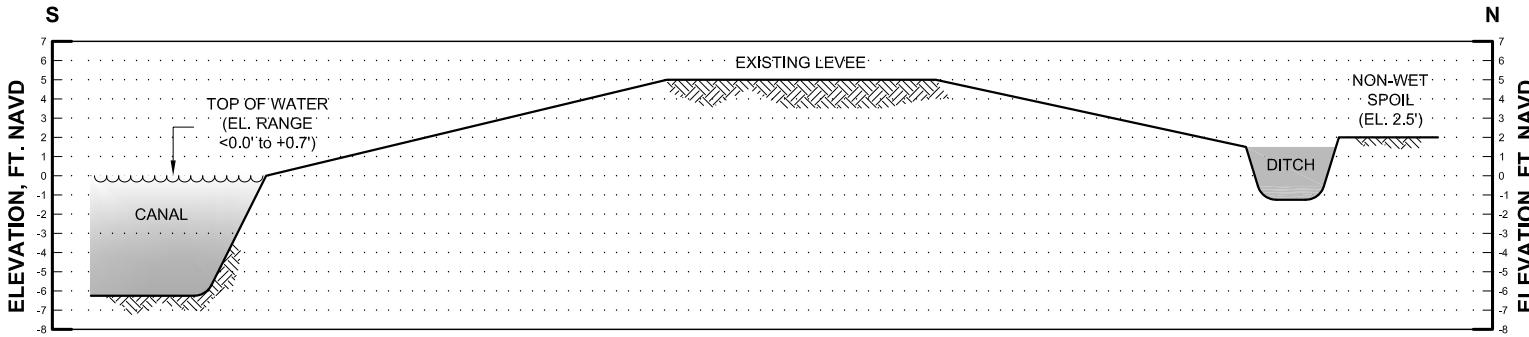


TYPICAL CROSS-SECTION PROPOSED PIPE REMOVAL



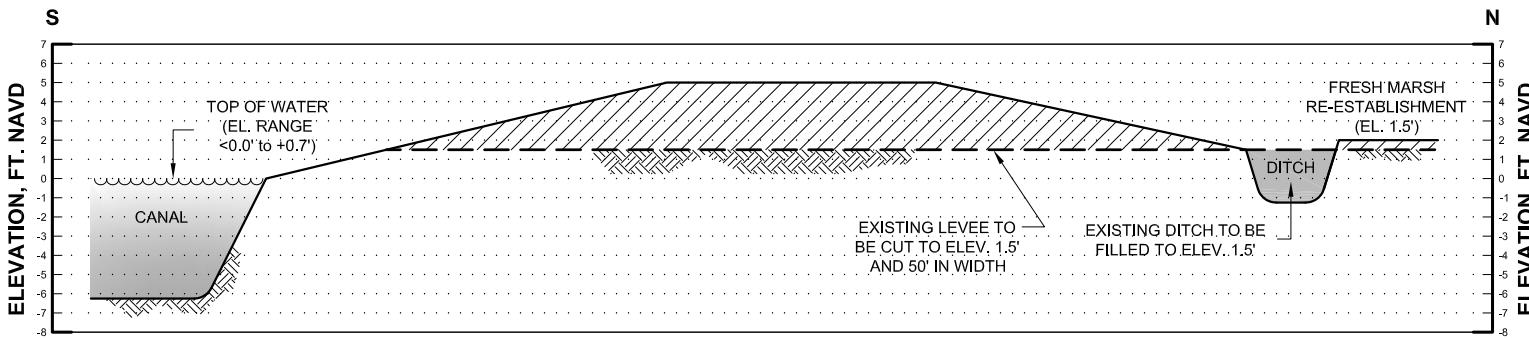
Horizontal Scale
Vertical Scale Is As Shown

FIGURE 10
PROPOSED HYDROLOGICAL RESTORATION PLAN
INTERIOR DITCH CROSS-SECTION A-A'
GCMB - ADDENDUM II
JEFFERSON DAVIS PARISH, LOUISIANA



SECTION B-B' EXISTING CONDITIONS

HORIZONTAL SCALE: 1" = 10'



SECTION B-B' PROPOSED CONDITIONS

HORIZONTAL SCALE: 1" = 10'

FIGURE 11

**PROPOSED HYDROLOGICAL RESTORATION PLAN
SECTION B-B'
GCMB - ADDENDUM II**

JEFFERSON DAVIS PARISH, LOUISIANA

NOTE: ANY SURPLUS MATERIAL REMOVED WILL BE DEPOSITED ON EXISTING NON-WETLAND AREAS DITCHES TO BE FILLED

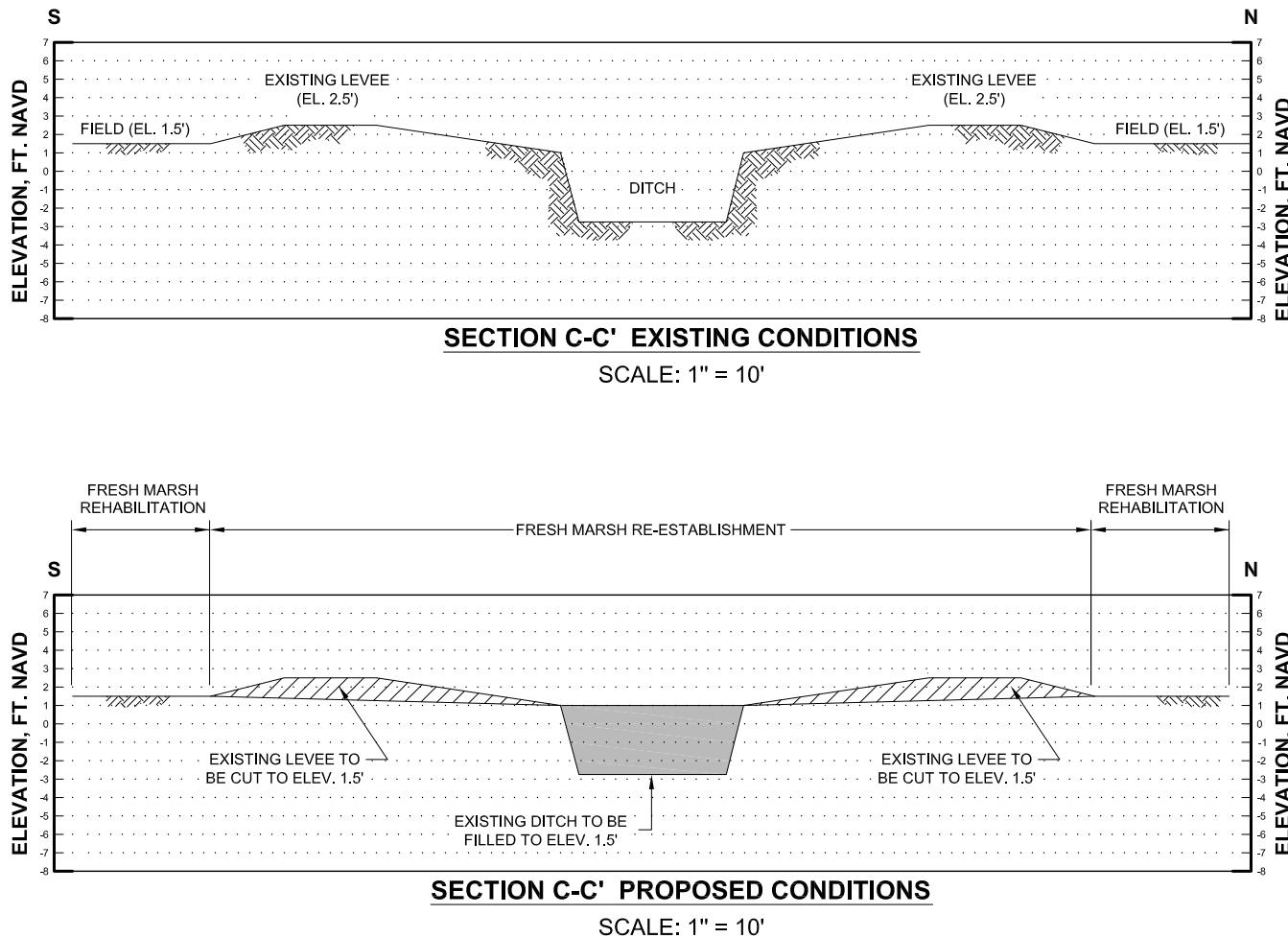
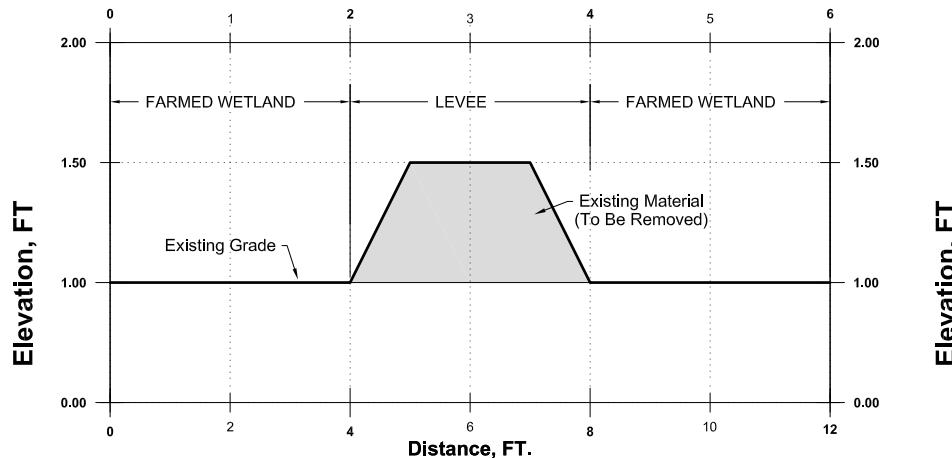


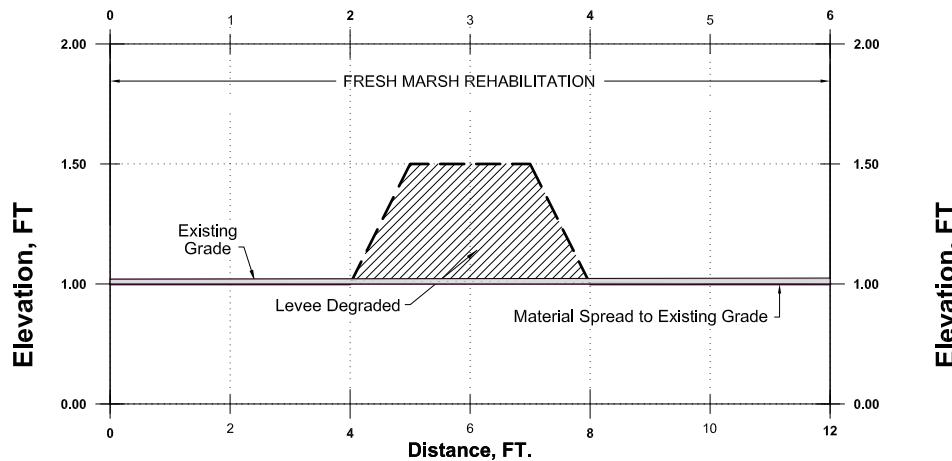
FIGURE 12

**PROPOSED HYDROLOGICAL RESTORATION PLAN
INTERIOR DITCH CROSS-SECTION C-C'
GCMB - ADDENDUM II**

JEFFERSON DAVIS PARISH, LOUISIANA



TYPICAL CROSS-SECTION INTERIOR LEVEE



TYPICAL CROSS-SECTION PROPOSED INTERIOR LEVEE DEGRADED



Vertical Scale Is As Shown

FIGURE 13

**PROPOSED HYDROLOGICAL RESTORATION PLAN
INTERIOR DITCH CROSS-SECTION D-D'
GCMB - ADDENDUM II**

JEFFERSON DAVIS PARISH, LOUISIANA

APPENDIX D:

**Financial Assurance and Long-Term
Maintenance and Protection Fund Cost
Estimates**

Cost Structure for Grand Canard Wetland Mitigation Bank Addendum II

Site Variables	
Site Acreage (Conservation Servitude)	280.2
Planted Acreage	69
Seedlings (Total)	186,985
CFI Plots	14
Perimeter Boundary Miles	2.37
Levee Removal (Feet)	31,000

Construction Fund Item Cost	Unit	Unit Cost	Total Cost
Ripping	Acre	\$100.00	\$6,900.00
Plugs and Labor	Plug	\$0.75	\$140,238.75
Hydrology Restoration (Levee Removal)	Feet	\$5.00	\$155,000.00

Establishment Item Cost	Unit	Unit Cost	Total Cost
Invasive Species Control (Spot Treatment)	Acre	\$35.00	\$9,821.00
Invasive Species Mobilization	NA	NA	\$150.00
Monitoring (Plant Counts)	Acre	\$30.00	\$8,418.00
Monitoring (Inspection)	Acre	\$5.00	\$1,403.00
Delineation	NA	NA	\$6,500.00
CF Monitoring	Plot	\$100	\$1,400.00
Boundary Maintenance (10 years)	Mile	\$300.00	\$710.23
Culvert Replacement	NA	\$3,000.00	\$3,000.00

Long-Term Fund Annual Costs Years 16-20			
Taxes (Annually)	Acre	\$2.00	\$561.20
Herbivory Control	NA	NA	\$200.00
Invasive Species Control (Spot Treatment) at 1%	Acre	\$35.00	\$98.21
Mobilization	NA	NA	\$150.00
Misc			\$1,500.00
10-Year Boundary Maintenance (Annualized)	Mile	\$300.00	\$71.02
Culvert Replacement (Annualized)		\$3,000.00	\$300.00
Total			\$2,880.43

Financial Assurance (Construction Fund) Year 0				
Time (Year)	Item	Total Cost at Year 0	5-Year Inflationary Adjustment	Percent of Cost
			3.2%	
Year 0				
0	Ripping	\$6,900.00	\$7,120.80	2%
0	Planting (Seedlings and Labor)	\$140,238.75	\$144,726.39	47%
0	Broadcast Spraying	\$-	\$-	0%
0	Hydrology Restoration	\$155,000.00	\$155,000.00	51%
	Total	\$302,138.75	\$306,847.19	100%
	Total Per Acre	\$1,076.76	\$1,093.54	

Financial Assurance (Establishment Fund) Year 0 to Year 15				
Time (Year)	Item	Total Cost at Year 0	5-Year Inflationary Adjustment	Percent of Cost
			3.2%	
0	Taxes	\$561.20	\$561.20	2%
1	Monitoring (Plant Counts)	\$8,418.00	\$8,418.00	24%
1	Taxes	\$561.20	\$561.20	2%
2	Broadcast Spraying	\$-	\$-	0%
2	Taxes	\$561.20	\$561.20	2%
3	Monitoring (Plant Counts)	\$6,500.00	\$6,500.00	18%
3	Taxes	\$561.20	\$561.20	2%
4	Broadcast Spraying (50%)	\$-	\$-	0%
4	Monitoring (Inspection)	\$1,403.00	\$1,403.00	4%
4	Broadcast Spraying (25%)	\$-	\$-	0%
4	Monitoring (Inspection)	\$1,403.00	\$1,403.00	4%
4	Taxes	\$561.20	\$561.20	2%
5	CF Monitoring	\$1,400.00	\$1,638.80	5%
5	Taxes	\$561.20	\$656.93	2%
6	Invasive Species Control (5%)	\$491.05	\$574.81	2%
6	Invasive Species Control Mobilization	\$150.00	\$175.59	0%
6	Taxes	\$561.20	\$656.93	2%
7	Invasive Species Control (5%)	\$491.05	\$574.81	2%
7	Invasive Species Control Mobilization	\$150.00	\$175.59	0%
7	Taxes	\$561.20	\$656.93	2%
8	Invasive Species Control (2%)	\$196.42	\$229.92	1%
8	Invasive Species Control Mobilization	\$150.00	\$175.59	0%
8	Taxes	\$561.20	\$656.93	2%
9	Invasive Species Control (2%)	\$196.42	\$229.92	1%
9	Invasive Species Control Mobilization	\$150.00	\$175.59	0%
9	Taxes	\$561.20	\$656.93	2%
10	CF Monitoring	\$1,400.00	\$1,918.34	5%
10	Taxes	\$561.20	\$768.98	2%
10	Boundary Maintenance	\$710.23	\$973.18	3%
10	Culvert Replacement	\$3,000.00	\$4,110.72	12%
	Total	\$32,382.37	\$35,536.46	100%
	Total Per Acre	\$121.17	\$132.98	

**Long-Term Maintenance and Protection Fund anticipated for Year 16 to Year 50 for
Grand Canard Mitigation Bank Addendum II**

			Interest Rate	Total	Per Acre	Return
			3.20%	\$120,000	\$427.66	4.50%
Time (Year)	Item	Total Cost at Year 0	5-Year Inflationary Adjustment	Escrow Account Activity		Investment Earning
1		\$-	\$-	\$24,000.00	\$24,000.00	\$-
2		\$-	\$-	\$24,000.00	\$49,080.00	\$1,080.00
3		\$-	\$-	\$24,000.00	\$75,288.60	\$2,208.60
4		\$-	\$-	\$24,000.00	\$102,676.59	\$3,387.99
5		\$-	\$-	\$24,000.00	\$131,297.03	\$4,620.45
6		\$-	\$-	\$-	\$137,205.40	\$5,908.37
7		\$-	\$-	\$-	\$143,379.64	\$6,174.24
8		\$-	\$-	\$-	\$149,831.73	\$6,452.08
9		\$-	\$-	\$-	\$156,574.15	\$6,742.43
10		\$-	\$-	\$-	\$163,619.99	\$7,045.84
11		\$-	\$-	\$-	\$170,982.89	\$7,362.90
12		\$-	\$-	\$-	\$178,677.12	\$7,694.23
13		\$-	\$-	\$-	\$186,717.59	\$8,040.47
14		\$-	\$-	\$-	\$195,119.88	\$8,402.29
15		\$-	\$-	\$-	\$203,900.28	\$8,780.39
16	Annual Cost 16-50	\$2,880.43	\$4,767.96	\$(4,767.96)	\$208,307.83	\$9,175.51
17	Annual Cost 16-50	\$2,880.43	\$4,767.96	\$(4,767.96)	\$212,913.72	\$9,373.85
18	Annual Cost 16-50	\$2,880.43	\$4,767.96	\$(4,767.96)	\$217,726.87	\$9,581.12
19	Annual Cost 16-50	\$2,880.43	\$4,767.96	\$(4,767.96)	\$222,756.62	\$9,797.71
20	Annual Cost 16-50	\$2,880.43	\$5,408.19	\$(5,408.19)	\$227,372.48	\$10,024.05
21	Annual Cost 16-50	\$2,880.43	\$5,408.19	\$(5,408.19)	\$232,196.05	\$10,231.76
22	Annual Cost 16-50	\$2,880.43	\$5,408.19	\$(5,408.19)	\$237,236.69	\$10,448.82
23	Annual Cost 16-50	\$2,880.43	\$5,408.19	\$(5,408.19)	\$242,504.15	\$10,675.65
24	Annual Cost 16-50	\$2,880.43	\$5,408.19	\$(5,408.19)	\$248,008.65	\$10,912.69
25	Annual Cost 16-50	\$2,880.43	\$6,330.68	\$(6,330.68)	\$252,838.36	\$11,160.39
26	Annual Cost 16-50	\$2,880.43	\$6,330.68	\$(6,330.68)	\$257,885.41	\$11,377.73
27	Annual Cost 16-50	\$2,880.43	\$6,330.68	\$(6,330.68)	\$263,159.58	\$11,604.84
28	Annual Cost 16-50	\$2,880.43	\$6,330.68	\$(6,330.68)	\$268,671.08	\$11,842.18
29	Annual Cost 16-50	\$2,880.43	\$6,330.68	\$(6,330.68)	\$274,430.61	\$12,090.20
30	Annual Cost 16-50	\$2,880.43	\$7,410.52	\$(7,410.52)	\$279,369.46	\$12,349.38
31	Annual Cost 16-50	\$2,880.43	\$7,410.52	\$(7,410.52)	\$284,530.57	\$12,571.63
32	Annual Cost 16-50	\$2,880.43	\$7,410.52	\$(7,410.52)	\$289,923.93	\$12,803.88
33	Annual Cost 16-50	\$2,880.43	\$7,410.52	\$(7,410.52)	\$295,559.98	\$13,046.58
34	Annual Cost 16-50	\$2,880.43	\$7,410.52	\$(7,410.52)	\$301,449.66	\$13,300.20
35	Annual Cost 16-50	\$2,880.43	\$8,674.55	\$(8,674.55)	\$306,340.34	\$13,565.23
36	Annual Cost 16-50	\$2,880.43	\$8,674.55	\$(8,674.55)	\$311,451.10	\$13,785.32
37	Annual Cost 16-50	\$2,880.43	\$8,674.55	\$(8,674.55)	\$316,791.85	\$14,015.30
38	Annual Cost 16-50	\$2,880.43	\$8,674.55	\$(8,674.55)	\$322,372.93	\$14,255.63

39	Annual Cost 16-50	\$2,880.43	\$8,674.55	\$(8,674.55)	\$328,205.16	\$14,506.78
40	Annual Cost 16-50	\$2,880.43	\$10,154.20	\$(10,154.20)	\$332,820.19	\$14,769.23
41	Annual Cost 16-50	\$2,880.43	\$10,154.20	\$(10,154.20)	\$337,642.90	\$14,976.91
42	Annual Cost 16-50	\$2,880.43	\$10,154.20	\$(10,154.20)	\$342,682.64	\$15,193.93
43	Annual Cost 16-50	\$2,880.43	\$10,154.20	\$(10,154.20)	\$347,949.16	\$15,420.72
44	Annual Cost 16-50	\$2,880.43	\$10,154.20	\$(10,154.20)	\$353,452.67	\$15,657.71
45	Annual Cost 16-50	\$2,880.43	\$11,886.23	\$(11,886.23)	\$357,471.81	\$15,905.37
46	Annual Cost 16-50	\$2,880.43	\$11,886.23	\$(11,886.23)	\$361,671.81	\$16,086.23
47	Annual Cost 16-50	\$2,880.43	\$11,886.23	\$(11,886.23)	\$366,060.81	\$16,275.23
48	Annual Cost 16-50	\$2,880.43	\$11,886.23	\$(11,886.23)	\$370,647.32	\$16,472.74
49	Annual Cost 16-50	\$2,880.43	\$11,886.23	\$(11,886.23)	\$375,440.22	\$16,679.13
50	Annual Cost 16-50	\$2,880.43	\$13,913.70	\$(13,913.70)	\$378,421.33	\$16,894.81
Total		\$100,815.15	\$282,307.38			

APPENDIX E:
Credit Calculations

New Orleans Version Modified Charleston Method (MCM)

Table 2B: Proposed Restoration/Enhancement Mitigation Worksheet**Mitigation Project Name:**

Grand Canard Wetland Mitigation Bank Addendum II

Mitigation Project Size (Acres) Include Wetlands, Non-**wetlands and Buffer Areas:** 280.2**Mitigation Project HUC:** 08080202**Mitigation Project Basin:** Mermentau**Impacted HUC:** (HUC)**Mitigation Project in the same basin as the impact:** Yes**Proximity Factor:** 1.0

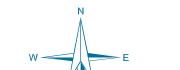
	Factors	Area 1	Area 2	Area 3	Area 4	Area 5
Net Improvement	Mitigation Type	Rehabilitation I	Re-establishment I	Enhancement I	(Select an Option)	(Select an Option)
	Maintenance/ Management Requirement	Self-Sustaining	Self-Sustaining	Self-Sustaining	(Select an Option)	(Select an Option)
	Control	Conservation Servitude	Conservation Servitude	Conservation Servitude	(Select an Option)	(Select an Option)
	Temporal Lag	5 to 10	5 to 10	5 to 10	(Select an Option)	(Select an Option)
	Credit Schedule	Schedule 1	Schedule 1	Schedule 1	(Select an Option)	(Select an Option)
	Kind	Category 1	Category 1	Category 1	(Select an Option)	(Select an Option)
	Location	Zone 1	Zone 1	Zone 1	(Select an Option)	(Select an Option)
Negative Influences on the mitigation site	Commercial/Residential Development	No Impact	No Impact	No Impact	No Impact	No Impact
	Oil & gas activities	No Impact	No Impact	No Impact	No Impact	No Impact
	Size	Category 1	Category 1	Category 1	Category 1	Category 1
	Corridors	Moderate	Moderate	Moderate	No Impact	No Impact

Table 2B: Proposed Restoration/Enhancement Mitigation Worksheet**Mitigation Project Name:****Grand Canard Wetland Mitigation Bank Addendum II**

Factors		Area 1	Area 2	Area 3	Area 4	Area 5
Net Improvement	Mitigation Type * Maintenance/Management Requirement	3.0	4.0	2.3	0.0	0.0
	Control	0.4	0.4	0.4	0.0	0.0
	Temporal Lag	-0.1	-0.1	-0.1	0.0	0.0
	Credit Schedule	0.4	0.4	0.4	0.0	0.0
	Kind	0.4	0.4	0.4	0.0	0.0
	Location	0.4	0.4	0.4	0.0	0.0
	Subtotal	4.5	5.5	3.8	0.0	0.0
Negative Influences on the mitigation site	Commercial/Residential Development	0.0	0.0	0.0	0.0	0.0
	Oil & gas activities	0.0	0.0	0.0	0.0	0.0
	Size	0.0	0.0	0.0	0.0	0.0
	Utility Corridors	-0.3	-0.3	-0.3	0.0	0.0
	Sum of negative impacts	-0.3	-0.3	-0.3	0.0	0.0
	Sum of m Factors	4.3	5.3	3.6	0.0	0.0
	Size of Area (Acres)	236.4	35.8	4.5	0.0	0.0
	M × A=	1004.7	188.0	16.0	0.0	0.0
Acreage required for Permittee-responsible Mitigation project using required credits calculated in Adverse impact Worksheet.		0.0	0.0	0.0	0.0	0.0
Total Restoration/Enhancement Credits = $\sum (M \times A) =$						1208.6
Total Available including buffers						1208.6
Average Credit Per Acre =						4.4

	Buffers	Non-hydric inclusions	Hydric Inclusions
Credits per acre (M)	0.2	0.4	0.6
Size in Acres (A)		0.0	0.0
M × A=	0.0	0.0	0.0
Credits added to bank =			0.0

APPENDIX E:
Legal Description


 LOUISIANA SOUTH ZONE
1983 NAD DATUM

 0 300 600
Feet

EXHIBIT A
BOUNDARY SURVEY FOR:
**GRAND CANARD
MITIGATION BANK
ADDENDUM II
LOCATED IN
T11S, R06W, SEC'S. 23 & 26
JEFFERSON DAVIS
PARISH, LOUISIANA
JANUARY 25, 2013**
LEGEND

- PROPERTY LINE
- - SECTION LINE
- - - PIPELINE ROW
- ... DRAINAGE SERVITUDE

REFERENCE

- 1.) DIMENSIONS WERE DERIVED FROM PREVIOUS SURVEYS AND DIGITIZING AERIAL PHOTOGRAPH. THEY MAY BE SUBJECT TO CHANGE UPON SURVEY OF THESE TRACTS.

15' RIGHT OF WAY
TENNESSEE GAS PIPELINE CO.
DATE: MAY 24, 1968
RECORD: Conv Bk 325, 1037
page 846, 354
PAGES: 258, 211
(NOT IN PROJECT AREA)

22

115' RIGHT OF WAY
JD PARISH POLICE JURY
DRAINAGE SERVITUDE
DATE: MARCH 11, 1975
RECORD: Conv Bk 415 page 374
PAGE: 287
(NOT IN PROJECT AREA)

23

20' RIGHT OF WAY
TENNESSEE GAS TRANSMISSION CO.
DATE: MAY 15, 1957
RECORD: Conv Bk 214 page 169
PAGE: 253
(NOT IN PROJECT AREA)

**GCMB - PHASE III ADDENDUM
280.2 ACRES**

POINT OF BEGINNING DRAINAGE ROW LESS & EXCEPT
X = 2769540.06, Y = 574826.74, LASPS83

24

115' RIGHT OF WAY
JD PARISH POLICE JURY
DRAINAGE SERVITUDE
DATE: Nov. 14, 1978
RECORD: Conv Bk 462 page 70
PAGE: 293

**PIPELINE - LESS & EXCEPT
1.9 ACRES**

**DRAINAGE - LESS & EXCEPT
3.0 ACRES**

NORTHWEST CORNER OF SECTION 26
X = 2765462.80, Y = 573802.38, LASPS83

27

S0° 52' 19.55"W
795.14'
S31° 16' 01.71"W
957.85'
(NOT IN PROJECT AREA)

26

L=215.86'
R=980.00'
Δ=12.62
L=175.60'
R=980.00'
Δ=10.27
N90° 00' 00.00"W
270.93'

Bell City Canal

Exhibit "A"

Grand Canard Conservation Servitude

Addendum II

Legal Description

The legal description of the conservation servitude is as follows:

Commencing at a point being the northwest corner of T11S, R06W, Section 26 (herein defined as X = 2,765,462.80, Y = 573,802.38, Louisiana State Plane South NAD 83, US survey feet), thence S 89° 14' 38.14" E for a distance of 271.53' to a point being the "Point of Beginning";

Point of Beginning: North: 573798.79' East: 2765734.30'

Segment #1: Line

Course: N18° 14' 58"W Length: 686.66'
North: 574450.9191' East: 2765519.2671'

Segment #2: Curve

Length: 79.66' Radius: 100.00'
Delta: 45.6434 (d) Tangent: 42.081'
Chord: 77.573' Course: N4° 34' 20"E
Course In: N71° 45' 02"E Course Out: N62° 36' 22"W
RP North: 574482.2348' East: 2765614.2373'
End North: 574528.2453' East: 2765525.4508'

Segment #3: Line

Course: N27° 23' 38"E Length: 124.29'
North: 574638.5996' East: 2765582.6382'

Segment #4: Line

Course: N58° 01' 34"E Length: 38.07'
North: 574658.7590' East: 2765614.9325'

Segment #5: Line

Course: N28° 30' 21"E Length: 424.75'
North: 575032.0127' East: 2765817.6425'

Segment #6: Line

Course: N28° 07' 03"E Length: 585.93'
North: 575548.7940' East: 2766093.7802'

Segment #7: Line

Course: N28° 26' 05"E Length: 508.36'
North: 575995.8290' East: 2766335.8401'

Segment #8: Line

Course: N27° 17' 45"E Length: 551.53'
North: 576485.9458' East: 2766588.7623'

Segment #9: Line

Course: N27° 22' 04"E Length: 531.26'
North: 576957.7429' East: 2766832.9828'

Segment #10: Line

Course: S41° 45' 28"E Length: 50.11'
North: 576920.3642' East: 2766866.3538'

Segment #11: Line

Course: S1° 01' 59"W Length: 470.07'
North: 576450.3755' East: 2766857.8778'

Segment #12: Line

Course: N89° 21' 44"E Length: 975.14'
North: 576461.2299' East: 2767832.9618'

Segment #13: Line

Course: N89° 26' 07"E Length: 20.88'
North: 576461.4357' East: 2767853.8454'

Segment #14: Line

Course: N89° 26' 07"E Length: 637.90'
North: 576467.7226' East: 2768491.7131'

Segment #15: Line

Course: S31° 52' 56"E Length: 119.02'
North: 576366.6589' East: 2768554.5765'

Segment #16: Line

Course: S47° 54' 39"E Length: 70.15'
North: 576319.6356' East: 2768606.6380'

Segment #17: Line

Course: N34° 16' 49"E Length: 108.53'
North: 576409.3157' East: 2768667.7682'

Segment #18: Line

Course: N24° 33' 02"W Length: 29.91'
North: 576436.5220' East: 2768655.3406'

Segment #19: Line

Course: N31° 24' 27"E Length: 38.61'
North: 576469.4753' East: 2768675.4613'

Segment #20: Line

Course: N89° 23' 53"E Length: 89.31'
North: 576470.4138' East: 2768764.7682'

Segment #21: Line

Course: S89° 14' 54"E Length: 511.04'
North: 576463.7100' East: 2769275.7639'

Segment #22: Line

Course: S87° 46' 10"E Length: 44.57'
North: 576461.9774' East: 2769320.2458'

Segment #23: Line

Course: S71° 11' 51"E Length: 42.22'
North: 576448.3695' East: 2769360.2128'

Segment #24: Line

Course: S45° 59' 48"E Length: 211.00'
North: 576301.7850' East: 2769511.9881'

Segment #25: Line

Course: S73° 30' 44"E Length: 52.45'
North: 576286.8984' East: 2769562.2840'

Segment #26: Line

Course: S0° 52' 20"W Length: 1460.32'
North: 574826.7434' East: 2769540.0573'

Segment #27: Line

Course: S0° 52' 20"W Length: 227.29'
North: 574599.4787' East: 2769536.5979'

Segment #28: Line

Course: S0° 52' 20"W Length: 795.14'
North: 573804.4303' East: 2769524.4955'

Segment #29: Line

Course: N90° 00' 00"W Length: 270.93'
North: 573804.4303' East: 2769253.5625'

Segment #30: Curve

Length: 215.86' Radius: 980.00'
Delta: 12.6200 (d) Tangent: 108.366'
Chord: 215.419' Course: S83° 41' 24"W
Course In: S0° 00' 00"E Course Out: N12° 37' 12"W
RP North: 572824.4303' East: 2769253.5625'
End North: 573780.7541' East: 2769039.4483'

Segment #31: Curve

Length: 175.60' Radius: 980.00'
Delta: 10.2662 (d) Tangent: 88.033'
Chord: 175.360' Course: S72° 14' 49"W
Course In: S12° 37' 12"E Course Out: N22° 53' 10"W
RP North: 572824.4303' East: 2769253.5625'
End North: 573727.2839' East: 2768872.4387'

Segment #32: Curve

Length: 127.87' Radius: 980.00'
Delta: 7.4761 (d) Tangent: 64.027'
Chord: 127.782' Course: S63° 22' 33"W
Course In: S22° 53' 10"E Course Out: N30° 21' 44"W
RP North: 572824.4303' East: 2769253.5625'
End North: 573670.0200' East: 2768758.2060'

Segment #33: Line

Course: S59° 38' 16"W Length: 2407.16'
North: 572453.2821' East: 2766681.1947'

Segment #34: Line

Course: S59° 38' 16"W Length: 29.14'
North: 572438.5548' East: 2766656.0547'

Segment #35: Line

Course: S59° 38' 16"W Length: 327.41'
North: 572273.0584' East: 2766373.5471'

Segment #36: Line

Course: S62° 54' 53"W Length: 298.16'
North: 572137.2993' East: 2766108.0821'

Segment #37: Line

Course: N64° 08' 01"W Length: 95.51'
North: 572178.9660' East: 2766022.1446'

Segment #38: Line

Course: N16° 40' 01"E Length: 63.24'
North: 572239.5482' East: 2766040.2822'

Segment #39: Line

Course: S87° 44' 08"E Length: 103.88'
North: 572235.4439' East: 2766144.0827'

Segment #40: Line

Course: N62° 06' 47"E Length: 91.77'
North: 572278.3689' East: 2766225.1988'

Segment #41: Line

Course: N15° 35' 18"E Length: 86.07'
North: 572361.2754' East: 2766248.3285'

Segment #42: Line

Course: N19° 03' 37"W Length: 1404.55'
North: 573688.8207' East: 2765789.6554'

Segment #43: Line

Course: N55° 29' 52"W Length: 26.04'
North: 573703.5734' East: 2765768.1919'

Segment #44: Line

Course: N19° 35' 32"W Length: 101.07'
North: 573798.7938' East: 2765734.3000'

To a point being the "Point of Beginning" containing **280.2** Acres,
Perimeter: 15,308.42', Area: 12,200,657.42 Sq. Ft.

Exhibit "A"

Grand Canard Conservation Servitude

Addendum II Less and Except

Tennessee Gas Pipeline Co. Right-of-Way

Legal Description

The legal description of the conservation servitude is as follows:

Commencing at a point being the northwest corner of T11S, R06W, Section 26 (herein defined as X = 2,765,462.80, Y = 573,802.38, Louisiana State Plane South NAD 83, US survey feet), thence S 41° 11' 02.06" E for a distance of 1,812.15' to a point being the "Point of Beginning";

Point of Beginning: North: 572438.5548' East: 2766656.0547'

Segment #1: Line

Course: N16° 18' 28"E Length: 4191.30'
North: 576461.2299' East: 2767832.9618'

Segment #2: Line

Course: N89° 26' 07"E Length: 20.89'
North: 576461.4357' East: 2767853.8454'

Segment #3: Line

Course: S16° 18' 28"W Length: 4176.17'
North: 572453.2821' East: 2766681.1947'

Segment #4: Line

Course: S59° 38' 16"W Length: 29.14'
North: 572438.5548' East: 2766656.0547'

To a point being the "Point of Beginning" containing **1.9** Acres, Perimeter: 8417. 5', Area: 83630.2 Sq. Ft.

Exhibit "B"

Grand Canard Conservation Servitude

Addendum II Less and Except

Jefferson Davis Parish Police Jury Drainage Right-of-Way

Legal Description

The legal description of the conservation servitude is as follows:

Commencing at a point being the northwest corner of T11S, R06W, Section 26 (herein defined as X = 2,765,462.80, Y = 573,802.38, Louisiana State Plane South NAD 83, US survey feet), thence N 75°53'49.09" E for a distance of 4,203.97' to a point being the "Point of Beginning";

Point of Beginning: North: 574826.74' East: 2769540.06'

Segment #1: Line

Course: S0° 52' 20"W Length: 227.29'
North: 574599.4787' East: 2769536.5979'

Segment #2: Line

Course: S31° 16' 02"W Length: 957.85'
North: 573780.7541' East: 2769039.4483'

Segment #3: Curve

Length: 175.60' Radius: 980.00'
Delta: 10.2662 (d) Tangent: 88.033'
Chord: 175.360' Course: S72° 14' 49"W
Course In: S12° 37' 12"E Course Out: N22° 53' 10"W
RP North: 572824.4303' East: 2769253.5625'
End North: 573727.2839' East: 2768872.4387'

Segment #4: Line

Course: N31° 16' 02"E Length: 1286.28'
North: 574826.7434' East: 2769540.0573'

To a point being the "Point of Beginning" containing **3.0** Acres, Perimeter: 2647.015',
Area: 128577.76 Sq. Ft.