

**MAY 2015**

**LONE OAK CAPITAL MANAGEMENT, LLC**



**MITIGATION BANK  
PROSPECTUS  
KELLY BAYOU  
MITIGATION BANK  
CADDO PARISH,  
LOUISIANA**

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Project Number 842-006



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## **1.0 INTRODUCTION**

The following report summarizes the mitigation potential on approximately 322.77 acres in Sections 25 and 36, Township 23 North, Range 15 West of Caddo Parish, LA. The purpose of the report is to summarize the existing conditions of the proposed Kelly Bayou Mitigation Bank (KBMB) and assess the potential for establishing a mitigation bank to provide compensatory wetland mitigation for unavoidable impacts to wetlands associated with Department of the Army (DA) permits authorized under Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act issued by the U.S. Army Corps of Engineers (USACE), Vicksburg District.

## **2.0 GOALS AND OBJECTIVES**

The proposed KBMB will encompass 322.77 acres placed in a conservation easement, including 311.19 acres of land in which restoration, enhancement, and preservation activities are proposed. The sponsor of the KBMB is Lone Oak Capital management, LLC (Lone Oak). The goal of Lone Oak will be to restore 173.97 acres of bottomland hardwood wetlands, 33.90 acres (12,333.49 linear feet) of bottomland hardwood stream buffer, and 4.50 acres (12,333.49 linear feet) of streams; enhance 3.48 acres of bottomland hardwood wetlands, 9.17 acres (2,912.95 linear feet) of bottomland hardwood stream buffers, 1.43 acres (2,912.95 linear feet) of streams, and 59.13 acres of upland buffer; and preserve 2.78 acres of bottomland hardwood wetlands, 6.79 acres of bottomland hardwood stream buffers, and 12.33 acres of upland buffers. The remainder of the tract consists of 5.19 acres of Kelly Bayou, 0.79 acre of canals to be filled, 0.93 acre of existing roads, and 4.67 acres of utility corridors.

Lone Oak, the bank sponsor, intends for the KBMB to serve as a bottomland hardwood and stream mitigation bank offering for sale, wetland mitigation and stream credits as compensation for unavoidable impacts to wetlands associated with DA Section 404 permits. A conservation easement will be executed for the entire 322.77-acre Tract. The tract is separated into two parcels, Tract 1 and Tract 2. With the long term steward for Tract 1 being Lone Oak and the long term steward for Tract 2 being Timothy and Robert Hale. Through a contractual agreement with individual permit recipients, Lone Oak will, for a fee to be paid by permittees, commit to implementing the mitigation specified in DA permits and incur the responsibility of the long-term maintenance, management, protection and overall success of the KBMB.

## **3.0 PROPERTY OWNERSHIP**

### **3.1 Ownership**

The Sponsor for the KBMB is Lone Oak Capital Management, LLC. The legal owner of the land encompassed by Tract 1 in the KBMB (Tract 1) is Lone Oak. The legal owner of the land encompassed by Tract 2 in the KBMB (Tract 2) is Robert and Timothy Hale. Lone Oak has entered into a contractual agreement with the legal owner of the land encompassed by Tract 2 in the KBMB.

### **3.2 Servitudes/Easements**

There are 4.67 acres of utility corridor servitudes on the 322.77-acre tract which cannot be subordinated, and are not included in the restoration, enhancement, or preservation acreage.

### **3.3 Liens/Encumbrances/Restrictions**

No liens, encumbrances, or restrictions have been identified on the portions of the properties proposed for restoration, enhancement, or preservation.

## **4.0 SPONSOR AND CONTRACTOR QUALIFICATIONS**

### **4.1 Lone Oak Capital Management, LLC**

Lone Oak has approximately eight years' experience in the mitigation banking business, with four approved mitigation banks; one in the USACE New Orleans District and three in the USACE Vicksburg District.

Currently, Lone Oak has two mitigation banks pending in the USACE Vicksburg District and one in the USACE Mobile District.

### **4.2 Providence Engineering and Environmental Group LLC**

Providence Engineering and Environmental Group LLC (Providence), has 15 years of experience providing industrial, commercial, and private clients with multi-media (air, water, waste, and natural resources) environmental compliance expertise. Providence has been involved with various stages of twenty-nine mitigation banks, totaling over 28,000 acres of wetland restoration, in the Vicksburg, New Orleans, Little Rock, and Mobile Districts of the USACE. Of the 29 mitigation banks, 12 have been approved and two are currently under review by the Vicksburg District.

## **5.0 WETLAND DELINEATION**

A wetland delineation was conducted on the KBMB by Providence in June 2014. A request for preliminary jurisdictional determination (JD) was submitted to the USACE, Vicksburg District on August 19, 2014, and subsequently a preliminary JD was rendered on August 25, 2014 (MVK-2014-602) for the KBMB and is included as **Attachment A**.

## **6.0 CURRENT SITE CONDITIONS**

The approximate 322.77-acre Site is 3.80 miles south of Ida, Louisiana (**Figure 1**). The Site is centered at approximate Latitude 32.949196°; Longitude -93.874843° in Sections 25 and 36, Township 23 North, Range 15 West of Caddo Parish (**Figure 2**). Access to the Site is via Mira Scotts Slough Road and US 71. The Site is characterized by herbaceous, scrub/shrub, and bottomland hardwood wetlands, and upland habitats.

Caddo Parish has a humid, subtropical climate characterized by rainfall averaging 44.7 inches per year. The average monthly maximum temperature is 68.5°F. The growing season for Caddo County spans from March 4 to November 18, approximately 259 days (United States Department of Agriculture [USDA] Soil Conservation Service 1907 and 1980).

7.0 EXISTING LAND USE

The 322.77-acre tract of the proposed KBMB currently contains approximately 215.44 acres of herbaceous wetlands, 13.57 acres of bottomland hardwood wetlands, 5.13 acres of shrub-scrub wetlands, 75.59 acres of uplands, 1.30 acres of existing roads, and 4.07 acres of existing utility corridor (**Figures 3a-3c**). The tract also contains approximately 7.67 acres of existing streams, including 5.19 acres of Kelly Bayou and 2.48 acres of unnamed tributaries.

**Table 1** contains pre-restoration habitat descriptions and acreages of the jurisdictional wetlands, other waters of the U.S., and upland areas associated with the 322.77-acre tract proposed for enhancement, restoration, and preservation activities within the KBMB (**Figures 3a-3c**).

**Table 1: Pre-Restoration Habitat Acreage Summary**

Kelly Bayou Mitigation Bank Pre-Restoration		
CLASS	HABITAT	ACREAGE
<b>Jurisdictional Wetlands</b>		
	Bottomland Hardwood	13.57
	Shrub-Scrub	5.13
	Herbaceous	215.44
<b>Jurisdictional Other Waters of the U.S.</b>		
	Kelly Bayou	5.19
	Unnamed Tributaries	2.48
<b>Non-Jurisdictional Areas</b>		
	Uplands	75.59
	Existing Roads	1.30
	Utility Corridor	4.07
	<b>TOTAL</b>	<b>322.77</b>

7.1 Existing Plant Communities

Dominant habitats associated with the jurisdictional wetlands on the tracts consisted of bottomland hardwood forest wetlands, shrub-scrub wetlands, and herbaceous wetlands. Dominant species identified in these habitats include: red maple (*Acer rubrum*), green ash (*Fraxinus pennsylvanica*), southern bald-cypress (*Taxodium distichum*), bitter-nut hickory (*Carya cordiformis*), common persimmon (*Diospyros virginiana*), possumhaw (*Viburnum nudum*), water hickory (*Carya aquatica*), Indian wood-oats (*Chasmanthium latifolium*), Bermuda grass (*Cynodon dactylon*), buckwheatvine (*Brunnichia ovata*), golden crown grass (*Paspalum dilatatum*), large beak sedge (*Rhynchospora macra*), bristly buttercup (*Ranunculus hispidus*), marsh bristle grass (*Setaria parviflora*), dotted smartweed (*Persicaria punctata*), field brome (*Bromus arvensis*), perennial rye grass (*Lolium perenne*), powderpuff (*Mimosa strigillosa*), curly dock (*Rumex crispus*), peppervine (*Ampelopsis arborea*), wooly croton (*Croton capitatus*), annual ragweed (*Ambrosia artemisiifolia*), trumpet-creeper (*Campsis radicans*), saw-tooth blackberry (*Rubus argutus*), and poison ivy (*Toxicodendron radicans*).

Dominant species identified within upland habitats include: common persimmon (*Diospyros virginiana*), powderpuff (*Mimosa strigillosa*), annual ragweed (*Ambrosia artemisiifolia*), golden crown grass (*Paspalum dilatatum*), woolly croton (*Croton capitatus*), marsh bristle grass (*Setaria parviflora*), perennial rye grass (*Lolium perenne*), and saw-tooth blackberry (*Rubus argutus*).

## 7.2 Soils

Conflicting soil information is available on the KBMB. As per current NRCS Web soil survey data (December 26, 2013, **Figure 14**) the soils on the Site are mapped as: Bernaldo fine sandy loam, 1 to 3 percent slopes; Betis loamy fine sand, 1 to 5 percent slopes; Betis loamy fine sand, 5 to 12 percent slopes; Bossier clay, 0 to 1 percent slopes frequently flooded; Buxin clay, 0 to 1 percent slopes; Gallion silty clay loam, 0 to 1 percent slopes; Guyton-lulus complex, 0 to 1 percent slopes, frequently flooded; Kirvin fine sandy loam, 5 to 15 percent slopes; Moreland clay, 0 to 1 percent slopes, rarely flooded MLRA 131C; and Sacul fine sandy loam, 1 to 5 percent slopes.

However, previous NRCS Web Soil Survey data (December 6, 2006; **Figure 15**) shows that the soils on the Site are mapped as: Buxin clay, occasionally flooded; Betis loamy fine sand, 10 to 5 percent slopes; Betis loamy fine sand, 5 to 12 percent slopes; Guyton soils, frequently flooded; Moreland clay; Sacul fine sandy loam, 1 to 5 percent slopes and Sacul fine sandy loam, 5 to 15 percent slopes.

On July 10, 2014, Providence biologists met with the USACE for a site visit on the proposed KBMB. It was determined that the 2006 NRCS web soil survey data dated December 6, 2006 (**Figure 15**), supplemented by LIDAR data more accurately depict the soil types and hydrology regimes found on KBMB than do the most recent soils data dated December 26, 2013 (**Figure 14**).

## 7.3 Existing Hydrology

The KBMB is in the Cross Bayou watershed; within USGS Hydrologic Cataloguing Unit 11140304. Hydrology on the Site is primarily restricted to rainfall, sheet flow, and back-water flooding from existing unnamed tributaries and the adjacent bottomland hardwood swamp located northwest of the Site. Kelly Bayou flows from north to south and runs along the eastern border of the site for the majority of the proposed KBMB.

## 7.4 Geographic Service Area

The KBMB is located in the Cross Bayou Watershed within USGS HUC 11140304 which includes portions Caddo Parish, Louisiana, Miller County Arkansas and Cass and Harrison Counties, Texas (**Figure 15**). HUC 11140304 will serve as the KBMB's primary service area, while HUC 11140306 will serve as a secondary service area.

**8.0 SITE RESTORATION PLAN**

Within the 322.77-acre KBMB, the Sponsor proposes to restore 173.97 acres of bottomland hardwood wetlands, 33.90 acres (12,333.49 linear feet) of bottomland hardwood stream buffer, and 4.50 acres (12,333.49 linear feet) of streams; enhance 3.48 acres of bottomland hardwood wetlands, 9.17 acres (2,912.95 linear feet) of bottomland hardwood stream buffers, 1.43 acres (2,912.95 linear feet) of streams, and 59.13 acres of upland buffer; and preserve 2.78 acres of bottomland hardwood wetlands, 6.79 acres of bottomland hardwood stream buffers, and 12.33 acres of upland buffers. The remainder of the tract consists of 5.19 acres of Kelly Bayou, 0.79 acre of canals to be filled, 0.93 acre of existing roads, and 4.67 acres of utility corridors (**Figures 4a-4c**).

**Table 2** contains post-restoration habitat and acreage descriptions for the proposed restoration, enhancement, and preservation of wetlands, stream buffers, upland buffers, and streams associated with the 322.77-acre KBMB.

**Table 2: Post-Restoration Habitat Acreage Summary**

<b>Kelly Bayou Mitigation Bank Post-Restoration</b>		
<b>CLASS</b>	<b>HABITAT</b>	<b>ACREAGE</b>
<b>Jurisdictional Areas</b>		
	Bottomland Hardwood Restoration	173.97
	Bottomland Hardwood Enhancement	3.48
	Bottomland Hardwood Preservation	6.49
	Stream Buffer Bottomland Hardwood Restoration	33.90
	Stream Buffer Bottomland Hardwood Enhancement	9.17
	Stream Buffer Bottomland Hardwood Preservation	6.79
	Stream Restoration	4.50
	Stream Enhancement	1.43
	Kelly Bayou	5.19
	<b>TOTAL</b>	<b>244.92</b>
<b>Non-Jurisdictional Areas</b>		
	Upland Buffer Enhancement	59.13
	Upland Buffer Preservation	12.33
	Existing Roads	0.93
	Utility Line Corridor	4.67
	Canal to be Filled	0.79
	<b>TOTAL</b>	<b>77.85</b>

**8.1 Surface Hydrology**

The Sponsor will restore historic hydrologic conditions by reestablishing a severed connection of an unnamed tributary to Kelly Bayou. The Sponsor proposes to fill approximately 0.79 acre of man-made canal which was historically constructed to expedite drainage (west to east) across the northern portion of the KBMB and empty directly into Kelly Bayou; which forms the eastern border of the tract. Subsequently, the north to south conveyance of the unnamed tributary to Kelly Bayou will be restored allowing water to drain north to south across the KBMB as it did historically (identified on **Figures 4a** and **4b** as stream reaches A, B, C, F, and G). To complete the historic connection a 36-inch-diameter culvert will be installed under Mira Scotts Slough Road to completely re-establish this connection. Following the restoration of the north to south conveyance, historic fingers of the unnamed tributary (as depicted on historic aerial photography, **Figures 5, 8, and 9**) will be restored as well (identified on **Figures 4a** and **4b** as stream reaches D, E, and H).

**8.2 Proposed Bottomland Hardwood Restoration (Palustrine Emergent Wetlands)**

Following the hydrologic restoration, discussed above, approximately 173.97 acres will be planted with an appropriate species mixture of bottomland hardwoods during the standard planting season (December-March). Seedlings will be planted using 9 x 9 foot spacing, for an initial stand density of at least 540 seedlings per acre. A mixture of no greater than 60 percent hard-mast and a minimum of 40 percent soft-mast producing species will be planted in accordance with the species list shown in **Table 3**. If seedling availability renders a discrepancy of more than five percent from the desired mixture of hard-mast to soft-mast species, Vicksburg District approval to modify the plan will be obtained.

**Table 3: Bottomland Hardwood Species List**

SPECIES	SCIENTIFIC NAME	MAST	COMPOSITION
Sweet-gum	<i>Liquidambar styraciflua</i>	Soft	4.00%
Bald-cypress	<i>Taxodium distichum</i>	Soft	10.00%
Red maple	<i>Acer rubrum</i>	Soft	4.00%
Persimmon	<i>Diospyros virginiana</i>	Soft	7.00%
Red mulberry	<i>Morus rubra</i>	Soft	4.00%
American elm	<i>Ulmus americana</i>	Soft	4.00%
American sycamore	<i>Platanus occidentalis</i>	Soft	7.00%
<b>TOTAL SOFT MAST</b>			<b>40.00%</b>

Texas red oak	<i>Quercus texana</i>	Hard	10.00%
Willow oak	<i>Quercus phellos</i>	Hard	10.00%
Water oak	<i>Quercus nigra</i>	Hard	10.00%
Overcup oak	<i>Quercus lyrata</i>	Hard	10.00%
Swamp chestnut oak	<i>Quercus michauxii</i>	Hard	10.00%
Water hickory	<i>Carya aquatica</i>	Hard	10.00%
<b>TOTAL HARD MAST</b>			<b>60.00%</b>

**8.3 Proposed Bottomland Hardwood Enhancement (Shrub-Scrub Wetlands)**

The Sponsor is proposing to enhance 3.48 acres of bottomland hardwoods. The area will be planted with an appropriate species mixture of bottomland hardwoods during the standard planting season (December-March). Seedlings will be planted using 9 x 9 foot spacing, for an initial stand density of at least 540 seedlings per acre. A mixture of no greater than 60 percent hard-mast and a minimum of 40 percent soft-mast producing species will be planted in accordance with the species list shown in **Table 4**. If seedling availability renders a discrepancy of more than five percent from the desired mixture of hard-mast to soft-mast species, Vicksburg District approval to modify the plan will be obtained.

**Table 4: Bottomland Hardwood Species List**

SPECIES	SCIENTIFIC NAME	MAST	COMPOSITION
Sweet-gum	<i>Liquidambar styraciflua</i>	Soft	4.00%
Bald-cypress	<i>Taxodium distichum</i>	Soft	10.00%
Red maple	<i>Acer rubrum</i>	Soft	4.00%
Persimmon	<i>Diospyros virginiana</i>	Soft	7.00%
Red mulberry	<i>Morus rubra</i>	Soft	4.00%
American elm	<i>Ulmus americana</i>	Soft	4.00%
American sycamore	<i>Platanus occidentalis</i>	Soft	7.00%
<b>TOTAL SOFT MAST</b>			<b>40.00%</b>
Texas red oak	<i>Quercus texana</i>	Hard	10.00%
Willow oak	<i>Quercus phellos</i>	Hard	10.00%
Water oak	<i>Quercus nigra</i>	Hard	10.00%
Overcup oak	<i>Quercus lyrata</i>	Hard	10.00%
Swamp chestnut oak	<i>Quercus michauxii</i>	Hard	10.00%
Water hickory	<i>Carya aquatica</i>	Hard	10.00%
<b>TOTAL HARD MAST</b>			<b>60.00%</b>

**8.4 Proposed Stream Buffer Bottomland Hardwood Restoration (Palustrine Emergent Wetlands)**

The Sponsor is proposing to restore and maintain a 75-foot-wide riparian buffer on both sides (150 feet total) of the streams restored within the KBMB; totaling 33.90 acres (12,333.49 linear feet) of restored stream buffer. Forested riparian buffer zones are essential to stream system function, channel stability, and maintenance of water quality and in-stream habitat.

Within the buffer, restoration will be accomplished by planting an appropriate mixture of bottomland hardwoods species during the standard planting season (December-March). Seedlings will be planted using 9 x 9 spacing, for an initial stand density of at least 540 seedlings per acre (**Table 5**). A mixture of no greater than 60 percent hard-mast and a minimum of 40 percent soft-mast producing species will be planted in accordance with the following species selection list. If seedling availability renders a discrepancy of more than

five percent from the desired mixture of hard-mast to soft-mast species, Vicksburg District approval to modify the plan will be obtained.

**Table 5: Bottomland Hardwood Species List (Stream Buffer Restoration)**

SPECIES	SCIENTIFIC NAME	MAST	COMPOSITION
Sweet-gum	<i>Liquidambar styraciflua</i>	Soft	3.00%
Bald-cypress	<i>Taxodium distichum</i>	Soft	9.00%
Red maple	<i>Acer rubrum</i>	Soft	5.00%
Persimmon	<i>Diospyros virginiana</i>	Soft	4.00%
Red mulberry	<i>Morus rubra</i>	Soft	3.00%
American elm	<i>Ulmus americana</i>	Soft	4.00%
American sycamore	<i>Platanus occidentalis</i>	Soft	7.00%
River birch	<i>Betula nigra</i>	Soft	5.00%
<b>TOTAL SOFT MAST</b>			<b>40.00%</b>

Texas red oak	<i>Quercus texana</i>	Hard	10.00%
Willow oak	<i>Quercus phellos</i>	Hard	10.00%
Overcup oak	<i>Quercus lyrata</i>	Hard	10.00%
Water oak	<i>Quercus nigra</i>	Hard	10.00%
Swamp chestnut oak	<i>Quercus michauxii</i>	Hard	10.00%
Water hickory	<i>Carya aquatica</i>	Hard	10.00%
<b>TOTAL HARD MAST</b>			<b>60.00%</b>

### 8.5 Proposed Stream Buffer Bottomland Hardwood Enhancement

The Sponsor is proposing to enhance and maintain a 75-foot-wide riparian buffer on both sides (150 feet total) of the streams within the KBMB; totaling 9.17 acres (2,912.95 linear feet) of enhanced stream buffer. Forested riparian buffer zones are essential to stream system function, channel stability, and maintenance of water quality and in-stream habitat.

Enhancement will be accomplished by planting an appropriate mixture of bottomland hardwoods species during the standard planting season (December-March). Seedlings will be planted using 9 x 9 spacing, for an initial stand density of at least 540 seedlings per acre (Table 6). A mixture of no greater than 60 percent hard-mast and a minimum of 40 percent soft-mast producing species will be planted in accordance with the following species selection list. If seedling availability renders a discrepancy of more than five percent from the desired mixture of hard-mast to soft-mast species, Vicksburg District approval to modify the plan will be obtained.



**Table 6: Bottomland Hardwood Species List (Stream Buffer Enhancement)**

SPECIES	SCIENTIFIC NAME	MAST	COMPOSITION
Sweet-gum	<i>Liquidambar styraciflua</i>	Soft	3.00%
Bald-cypress	<i>Taxodium distichum</i>	Soft	9.00%
Red maple	<i>Acer rubrum</i>	Soft	5.00%
Persimmon	<i>Diospyros virginiana</i>	Soft	4.00%
Red mulberry	<i>Morus rubra</i>	Soft	3.00%
American elm	<i>Ulmus americana</i>	Soft	4.00%
American sycamore	<i>Platanus occidentalis</i>	Soft	7.00%
River birch	<i>Betula nigra</i>	Soft	5.00%
<b>TOTAL SOFT MAST</b>			<b>40.00%</b>

Texas red oak	<i>Quercus texana</i>	Hard	10.00%
Willow oak	<i>Quercus phellos</i>	Hard	10.00%
Overcup oak	<i>Quercus lyrata</i>	Hard	10.00%
Water oak	<i>Quercus nigra</i>	Hard	10.00%
Swamp chestnut oak	<i>Quercus michauxii</i>	Hard	10.00%
Water hickory	<i>Carya aquatica</i>	Hard	10.00%
<b>TOTAL HARD MAST</b>			<b>60.00%</b>

### 8.6 Proposed Bottomland Hardwood and Stream Buffer Preservation

The Sponsor is proposing to preserve 6.49 acres of existing bottomland hardwood forest. Bottomland hardwoods play an important role in maintaining the ecological health of wetland areas. Bottomland hardwood forests perform many important functions including sediment capture and dispersal, aquifer recharge, flood damage minimization as well as countless benefits to game and non-game wildlife species.

In addition to the bottomland hardwood wetlands preservation, 6.79 acres (2,549.80 linear feet) of bottomland hardwood stream buffer preservation is proposed on the KBMB. The buffer will be a 75-foot-wide buffer on the western side of the stream. Bottomland hardwood forest stream buffers provide many of the same benefits as bottomland hardwood forests, but are especially important because of their direct positive effects to adjacent streams. The proposed stream buffer preservation areas will provide important functions and ecological sustainability to the watershed, and the site will be permanently protected through the establishment of the KBMB.

### 8.7 Proposed Upland Buffer Enhancement

The Sponsor is proposing to enhance 59.13 acres of upland buffer. The area will be planted with an appropriate species mixture of upland species during the standard planting season (December-March). Seedlings will be planted using 9 x 9 foot spacing, for an initial stand density of at least 540 seedlings per acre. A mixture of hardwood and pine species will be planted to mimic the natural upland mixed hardwood-pine forests typically found in this area. Appropriate hardwood and pine species for the KBMB were determined through the use of

the US Environmental Protection Agency’s Level IV Ecoregions (Ecoregion 35a- South Central Plains, Tertiary Uplands), and will be planted in accordance with the species list shown in **Table 7**. If seedling availability renders a discrepancy of more than five percent from the desired mixture of upland species, Vicksburg District approval to modify the plan will be obtained.

**Table 7: Upland Buffer Enhancement Species List**

SPECIES	SCIENTIFIC NAME	COMPOSITION
Shortleaf pine	<i>Pinus echinata</i>	20.00%
Loblolly pine	<i>Pinus taeda</i>	20.00%
Southern red oak	<i>Quercus falcata</i>	10.00%
White oak	<i>Quercus alba</i>	10.00%
Post oak	<i>Quercus stellata</i>	10.00%
Mockernut hickory	<i>Carya tomentosa</i>	10.00%
Bitter-nut hickory	<i>Carya cordiformis</i>	10.00%
Sweet-gum	<i>Liquidambar styraciflua</i>	10.00%
<b>Total Species</b>		<b>100.00%</b>

**8.8 Proposed Upland Buffer Preservation**

The sponsor is proposing to preserve 12.33 acres of upland buffer. Upland buffers can play an important role in watershed health. They are often used in agriculture to improve environmental health and water quality. Upland buffers provide a larger, contiguously forested area, and when in conjunction with riparian and wetland buffers can increase overall watershed health. Upland buffers provide added benefits to watersheds such as slowed runoff of surface water, sequestration of surface water pollutants, erosion control and increased wildlife habitat.

**9.0 ACCOUNTING PROCEDURES, METHODS FOR DETERMINING CREDITS AND RELEASE OF CREDITS**

The Sponsor proposes that approximately 239.73 acres of the KBMB can be used as compensatory mitigation through the restoration, enhancement, and preservation of bottomland hardwoods. In addition, if determined applicable by the Interagency Review Team (IRT) an additional 71.49 acres of upland buffer (59.13 acres enhancement and 12.33 acres preservation) could be used as compensatory mitigation. Credits and debits will be assessed based on wetland acreage of restored, enhanced, and preserved bottomland hardwoods and linear footage of restored, enhanced, and preserved stream buffer. The available wetland and stream credits shall be determined by the Interagency Review Team (IRT) in accordance with the Charleston Methodology (2010).

**10.0 FINANCIAL ASSURANCES**

Financial assurances will be in the form of two sets of accounts, established at a federally insured depository that is well, or adequately, capitalized as defined in Section 38 of the Federal Deposit Insurance Act. The escrow account funds shall be placed into the proper account upon receipt of payment from permit recipients and divided as follows between the four funds: wetland construction

and establishment account, wetland long-term maintenance and protection account, stream construction and establishment account, and stream long-term maintenance and protection account. Specified percentages of this assurance shall be released back to the Sponsor incrementally in accordance with the achievement of milestones specified in the initial contract.

## **11.0 LONG-TERM MANAGEMENT OF MITIGATION BANK**

### **11.1 Long-Term Management**

The Sponsor, its heirs, assigns or successors, shall be responsible for maintaining and protecting lands contained within the restored portions of the KBMB, unless the bank lands are transferred to a state or federal resource agency or non-profit conservation organization or this responsibility is contractually conveyed to another person, subject to approval by the IRT. The IRT shall not unreasonably withhold authorization of transfer of long-term maintenance and protection to another person.

### **11.2 Impacts to Mitigation Bank**

After restoration, wetlands as well as streams within the KBMB will be jurisdictional and will therefore be subject to all applicable requirements established under the Clean Water Act (CWA). As such, permits from the Vicksburg District will be required for the deposition of dredged or fill material, including mechanized land clearing, in these areas. All requests for permits within the Mitigation Bank will be coordinated with the IRT; however, decisions regarding the issuance of such permits will be made by the Vicksburg District in accordance with applicable permit regulations and guidance.

### **11.3 Mitigation for Impacts to Mitigation Bank**

If impacts to wetland portions of the Mitigation Bank are permitted, the permittee will be required to compensate for the loss of wetland values associated with the project, past wetland impacts that are being mitigated by these wetlands, and all temporal losses associated with the restoration of new mitigation sites. The amount of compensation required will be based upon the acreage of wetlands actually impacted. Impacts to wetlands within the KBMB shall be mitigated at the KBMB if appropriate acreage is available. In cases where sufficient acreage is not available, the permittee will be responsible for fulfilling all or part of his compensatory mitigation requirement elsewhere, as approved by the Vicksburg District in consultation with the IRT.

### **11.4 Timber Management**

All timber harvests and thinning operations conducted in the KBMB shall be authorized by the IRT and shall only be performed if such activities are needed to maintain or enhance the ecological value of the site.

## **12.0 ADAPTIVE MANAGEMENT**

Exotic/noxious plant species (e.g., Chinese tallow-tree, cottonwood, and black willow) will be controlled as needed until crown closure has occurred. All timber harvests and thinning operations

conducted in the KBMB will be authorized by the Vicksburg District and will be performed in a manner that maintains and enhances timber stand and wildlife habitat quality.

## 13.0 SUCCESS CRITERIA

In order to be considered fully successful, the efforts within the KBMB must result in the restoration of viable wetlands capable of performing the important functions lost as a result of the projects it is intended to mitigate. The following criteria will be used to gauge the success of the mitigation effort:

### 13.1 Short-Term (5-Years) Performance Standards

#### 13.1.1 Hydrology

**Performance Standard:** Wetland hydrology, defined as saturation of the major part of the root zone (in the upper 12 inches of the soil profile) or ponding upon the soil surface for a period of time not to exceed twelve and one-half percent (12.5%) of the growing season in order to mimic the hydrologic conditions of adjacent wetland habitat conditions.

Achievement of the above performance standard will be measured through a combination of the following requirements and documented in monitoring reports by Year 5:

Wetland hydrology (as defined by current U.S. Army Corps of Engineers *Wetland Delineation Manual* specifications) will be attained and maintained assessments will be made using primary and secondary indicators of wetland hydrology.

#### 13.1.2 Hydric Soils

**Performance Standard:** Positive indicators of hydric soils formation must be demonstrated within 12 inches of the soil surface or within 20% of adjacent wetland habitat.

Achievement of the above performance standard will be measured through the following requirements and documented in monitoring reports by Year 5.

The installation of soil reduction tubes to provide evidence of soil saturation at selected fixed vegetative monitoring plots. One set of tubes will be installed for every ten acres of restored bank area. These tubes shall be painted with one coat of ferrihydrate paint and installed to a minimum depth of 20 inches below the surface leaving a minimum of ½ inch of coating above the surface. Upon removal, if most of the coating is dissolved, the soil will be determined to be significantly anaerobic and saturated.

#### 13.1.3 Vegetation

**Performance Standard:** Wetland vegetation dominance, defined as a vegetation community of species where more than 50% of all dominant species are facultative

(FAC) or wetter, excluding FAC- plants, using routine delineation methods as described in the U.S. Army Corps of Engineers Wetland Delineation Method, 1987 Manual or Regional Supplement.

Achievement of the above performance standard will be measured through a combination of the following requirements and documented in monitoring reports by Year 5:

a. Tree Seedling Survival

- A survival rate of 432 trees /acre of planted species at the minimum required planting density of 540 trees/acre by year 1. After year 3 there should be a minimum of 270 planted trees per acre.
- At year 5, there should be 270 trees/acre or greater. This number may include desirable natural recruitment.

b. Tree Composition and Growth

- Bottomland hardwood tree species will be planted to achieve an overall composition, on average, of seven (7) to ten (10) target bottomland hardwood species or greater per acre from the species listed in Section 8.2 of this prospectus, with no single bottomland hardwood species comprising more than 25% of the stocking and hard mast species comprising no greater than 60% of the total species planted.
- Demonstration of positive growth in planted tree root collars, diameter, and/or height.
- Exotic and nuisance species shall not comprise more than 5% cover and noxious species (e.g., honey locust, black willow, cotton wood) shall not comprise more than 20% of the total stem density.

c. HGM Functional Assessment

The HGM Functional Assessment will be utilized to assess the wetland ecological increase as a result of the restoration work. Evidence through the completion of an HGM Functional Assessment one year after initial planting shall demonstrate that a positive functional increase has occurred on the KBMB.

## 13.2 Long-Term (10 Years) Performance Standards

### 13.2.1 Vegetation

**Performance Standard:** Wetland vegetation dominance, defined as a vegetation community of species where more than 50% of all dominant species are facultative (FAC) or wetter, excluding FAC- plants, using routine delineation methods as described in the U.S. Army Corps of Engineers Wetland Delineation Method, 1987 Manual or Regional Supplement.

Achievement of the above performance standard will be measured through a combination of the following requirements and documented in monitoring reports by Year 10:

- a. Tree Seedling Survival  
At Year 10, the overall stand density shall be composed, on average, of seven (7) to ten (10) target tree species/acre or greater at a minimum density of 270 trees/acre, including desirable natural recruits.
- b. Tree Composition and Growth
  - The plant community must be comprised primarily of hydrophytic vegetation typical of bottomland hardwood community types (as defined in the current U.S. Army Corps of Engineers *Wetland Delineation Manual*).
  - Demonstration of a minimum of three years of positive growth of planted tree species through increased growth of planted tree root collars, diameters and/or height.
  - The average height of the planted canopy shall be a minimum of five (5) feet or greater, excluding fast growing genera such as *Platanus* and *Populus*.
  - Exotic and nuisance species (Chinese tallow tree) species shall not comprise more than 5% cover and noxious species (e.g., honey locust, black willow, cotton wood, thistle, and *Baccharis*) shall not comprise more than 20% of the total stem density.
  - There should be a range of hard to soft mast ratio target of 50/50 to 60/40 by Year 10.
- c. HGM Functional Assessment  
The HGM Functional Assessment will be utilized to assess the functional ecological lift of the restoration work. A minimum of three years of positive functional benefit shall be obtained and demonstrated using the HGM Functional Assessment prior to Year 10.

### 13.2.2 Hydrology

**Performance Standard:** Wetland hydrology, defined as saturation of the major part of the root zone (in the upper 12 inches of the soil profile) or ponding upon the soil surface for a period of time not to exceed twelve and one-half percent (12.5%) of the growing season in order to mimic the hydrologic conditions of adjacent wetland habitat conditions.

## 14.0 MAINTENANCE, MONITORING, AND REPORTING

### 14.1 Maintenance Provisions

The Sponsor agrees to perform all necessary work to maintain the KBMB consistent with the maintenance criteria established in the Mitigation Bank Restoration Plan. The Sponsor shall continue with such maintenance activities until closure of the Mitigation Bank.

### 14.2 Monitoring Provisions and Protocol

The Sponsor agrees to perform all necessary work to monitor the Mitigation Bank to demonstrate compliance with the performance criteria developed by the U. S. Army Corps

of Engineers, Vicksburg District, for bottomland hardwood wetlands. The Sponsor will provide an as-built or baseline report after the initial planting of the KBMB establishing the following:

1. The GPS referenced locations for all required monitoring plots and soil reduction tubes, and as-built data generated from the monitoring protocol specified below:
  - a. At the time of planting, long-term 1/10-acre randomized circular plots shall be established. These plots should represent at a minimum at least 5% of the bank acreage and will be identified with a permanent marker and GPS coordinates. Each habitat type (i.e. cypress slough, bottomland hardwoods, etc.) shall have representation through monitoring plots.
  - b. The establishment of a photo point at the center of each monitoring plot, with four photos taken facing outward toward each of the four cardinal directions (north, south, east and west).
  - c. The installation of soil reduction tubes to provide evidence of soil saturation at selected fixed vegetative monitoring plots. One set of tubes will be installed for every ten acres of restored bank area. These tubes shall be painted with one coat of ferrihydrate paint and installed to a minimum depth of 20 inches below the surface leaving a minimum of ½ inch of coating above the surface. Upon removal, if most of the coating is dissolved, the soil will be determined to be significantly anaerobic and saturated.
  - d. A baseline HGM analysis of the site prior to planting and restoration.

### **14.3 Monitoring Reports:**

Monitoring reports shall be provided to the Corps no later than December 15<sup>th</sup> following the growing seasons in years 1, 3, 5, 8, and 10 so that any corrective measures by the Sponsor may be undertaken. The Corps will distribute the report to the members of the IRT. In the event monitoring reveals that initial standards have not been met, the Sponsor shall take measures to achieve the performance standards the following year. Monitoring, reporting and remedial action shall be conducted in accordance with the following:

1. The Sponsor shall conduct surveys of living seedlings on the tract. Sampling shall be done between April 15<sup>th</sup> and September 15<sup>th</sup> following the initial planting of the Bank. Seedling survival shall be documented by performing monitoring at the established vegetative plots. For each monitoring event, density of all trees within the monitoring plots (including natural recruitment), species composition, diameter or DBH, and height of all planted trees will be collected and recorded to determine the survivability and growth rate. Monitoring data for species and density of exotic/invasive species within all strata and the species composition and coverage of shrub and herbaceous strata will also be documented and recorded. In addition, the Sponsor shall perform a cursory examination of the entire planted tract to determine if the site is meeting the short-term performance standard survival rate of at least 432 trees/acre at year 1, at the minimum required planting density.
2. The Sponsor shall provide a written report to the Corps by December 15<sup>th</sup> to allow for the Sponsor to complete vegetative chemical control, if needed. Reports shall be

submitted following the growing seasons in years 1, 3, 5, 8, and 10 documenting the results of the monitoring conducted above. The report shall include, at minimum, the following:

- a. A U. S. Geological Survey topographic quadrangle with the KBMB indicated.
- b. A detailed narrative that summarizes the condition of the KBMB and all regular maintenance activities.
- c. Appropriate site maps that show the locations of all sampling plots, permanent photographic stations, soil reduction tubes, and hydrologic monitoring devices or stations.
- d. Data and analysis regarding the hydrology of the KBMB (e.g., hydroperiod, extent and depth of inundation, groundwater monitoring results, precipitation records, etc.). Additionally, during each monitoring event, all primary and secondary hydrology indicators will be observed and documented for each monitoring plot, as currently defined in the USACE Delineation Manual, Environmental Laboratory, 1987, Corps of Engineers' Wetlands Delineation Manual (and Supplemental Guidance), Technical Report Y-87-1, U. S. USACE of Engineers Waterways Experiment Station, Vicksburg, Mississippi.
- e. Results and analysis of vegetation surveys, including the following: list of species of trees initially planted in the bank (1st monitoring report) visual estimates of overall percent cover and of percent cover within each stratum of vegetation; indices of species diversity; estimates of percent cover of exotic species within each stratum of vegetation present; composition of plant community (wetland indicator status); calculations of survival, growth and vigor/viability for planted trees; and estimates of natural recruitment.
- f. Results of surveys of wildlife usage of the site (e.g., observations of amphibians, reptiles, mammals, birds and macro invertebrates on or near the KBMB).
- g. Descriptions of the condition of applicable drainage ditch plugs and water control structures.
- h. A discussion of likely causes of observed tree mortality within those plots or areas that did not exhibit a survival rate for planted seedlings of at least 80% at year 1 and 50% by year 3.
- i. A completed HGM functional assessment of each planting zone utilizing the Riverine HGM form. The HGM will be utilized to assess the ecological functional lift of the restoration effort. The HGM score for each monitoring event will be compared to the original baseline pre-restoration score. The HGM Assessment shall determine a score for each of the following functions:
  1. Maintenance of Hydrologic Storage
  2. Maintenance of Biogeochemical Processes
  3. Retention of Particulates
  4. Maintenance of the Characteristic Biotic Community Type
- j. A drawing based upon the grading plans of the site that depicts topography, sampling plots, cross-sections, and permanent photo stations.
- k. Data regarding the hydrology of the bank (e.g. hydroperiod, extent and depth of inundation, precipitation records, etc.).



- I. Monitoring reports shall present yearly data in tabular and graphical format comparing as-built, target, current and previous years monitoring data, and shall include a discussion of any deviation from as-built, target, or previous year's data.
- m. An as-built report shall be submitted to the IRT within 60 days of completion of restoration activities. The report shall include:
  - Plan view of the constructed/restored wetlands, streams, and adjacent buffers with location of all permanent sampling stations, monitoring wells, in-stream and stream bank structures, and all permanent cross-sections and profiles;
  - Photographs of the completed site taken from the permanent photo stations;
  - Planting zones, phases, and densities; and
  - As-built elevations
3. The Sponsor shall also provide to the Corps for distribution to the IRT a monitoring report containing the information specified above at the time of the request for final release of credits.
4. The monitoring report shall document that the bank has met the long-term performance standards.
5. At the time of bank closure, a final report shall be provided to the Corps for distribution to the IRT documenting that the site meets the long-term performance standards.
6. If survival (as determined by sampling or observing high mortality rates within any planting zone of a phase) is less than 250 trees per acre at year 3, the Sponsor shall take appropriate actions, as recommended by the IRT, to address the causes of mortality and shall replace all dead trees with new seedlings of the appropriate species during the following non-growing season.
7. The Sponsor shall continue annual monitoring and reporting of each planting effort, for a minimum of ten (10) years. Annual reports will be provided to the Corps for distribution to the IRT members.

## **15.0 CORRECTIVE ACTIONS**

### **15.1 Contingency Plans / Remedial Actions**

In the event the Mitigation Bank fails to achieve any of the short-term or long-term success criteria, the Sponsor shall develop necessary contingency plans and implement appropriate remedial actions for the KBMB in coordination with the IRT. In the event the Sponsor fails to implement necessary remedial actions within 45 calendar days after notification by the Corps of necessary remedial action to address any failure in meeting the criteria, the IRT (acting through the Chair) will notify the Sponsor and the appropriate authorizing agencies and recommend appropriate remedial actions.

**15.2 Completion of Corrective Actions**

At the request of the Sponsor, the IRT will perform a final compliance visit to determine whether all performance standards have been satisfied. Upon satisfaction of the performance standards, any remaining contingency funds will be released to the Sponsor, if eligible.

**15.3 Deficits**

If the authorizing agencies determine that the KBMB is operating at a deficit, debiting of credits will immediately cease, and the authorizing agencies, in consultation with the IRT and the Sponsor, will determine what remedial actions are necessary to correct the situation. As determined by the Chair, in coordination with the IRT and the Sponsor, if conditions at the KBMB continue to deteriorate or do not improve within a reasonable time frame from the date that the need for remediation was first identified in writing to the Sponsor by the Chair of the IRT, the Construction Account Funds and the Long-Term Management Account shall be transferred from the identified Financial Institution to the Vicksburg District and will be used to undertake corrective measures in accordance with IRT specifications.

**15.4 Non-Compliance**

In the event the Sponsor does not comply with the mitigation covenant/conservation easement, the Sponsor will be required to immediately perform corrective actions (e.g., replanting and repair or replacement of water control structures). The Corps will then convene a meeting with the Sponsor and the IRT to determine if a reassessment of the management or mitigation potential is necessary. At that time, the IRT may choose to stop use of the bank until corrective action has occurred. If remedial action is not taken within one year, the IRT will cease recognition of the KBMB, and the Sponsor will be required to implement mitigation, as approved by the Corps, to replace all mitigation which had been performed at the KBMB, but was not successful. Alternatively, if placed in default, failure by the Sponsor to replace mitigation will result in forfeiture of the portion of the letter of credit or funds pertaining to the tract(s) for which the Sponsor has been placed in default.

**15.5 Adjustment of Mitigation Potential**

The management or mitigation potential may be adjusted by the IRT at any time should any activity adversely affect the value or functioning of the KBMB. Any adjustments to the management or mitigation potential will apply only to unsold credit acreage within the bank. If all credits have been sold, then other means of corrective action will be taken within the bank and will not affect those tracts that have already been debited.

**15.6 Force Majeure**

Force majeure damage, including natural disasters or any other “Act of God”, will remain the responsibility of the Sponsor until the short-term bottomland hardwood success criteria have been met. If the IRT determines that a Force Majeure event has occurred, and that event affects the long term viability of the Bank, the IRT can require appropriate measures be taken by the Sponsor to implement corrections that may be funded by a release of funds from the construction account or interest earnings from the long-term endowment.

## 16.0 CONCLUSION

In summary, establishment of an 322.77-acre tract within the KBMB will include the restoration of 173.97 acres of bottomland hardwood wetlands, 38.40 acres (12,333.49 linear feet) of bottomland hardwood stream buffer, and 4.50 acres (12,333.49 linear feet) of streams; the enhancement of 3.48 acres of bottomland hardwood wetlands, 10.60 acres (2,912.95 linear feet) of bottomland hardwood stream buffers, 1.43 acres (2,912.95 linear feet) of streams, and 59.13 acres of upland buffer; and the preservation of 2.78 acres of bottomland hardwood wetlands, 6.79 acres of bottomland hardwood stream buffers, and 12.33 acres of upland buffers. The remainder of the tract consists of 5.19 acres of Kelly Bayou, 0.79 acre of canals to be filled, 0.93 acre of existing roads, and 4.67 acres of utility corridors.

## 17.0 REFERENCES

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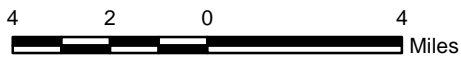
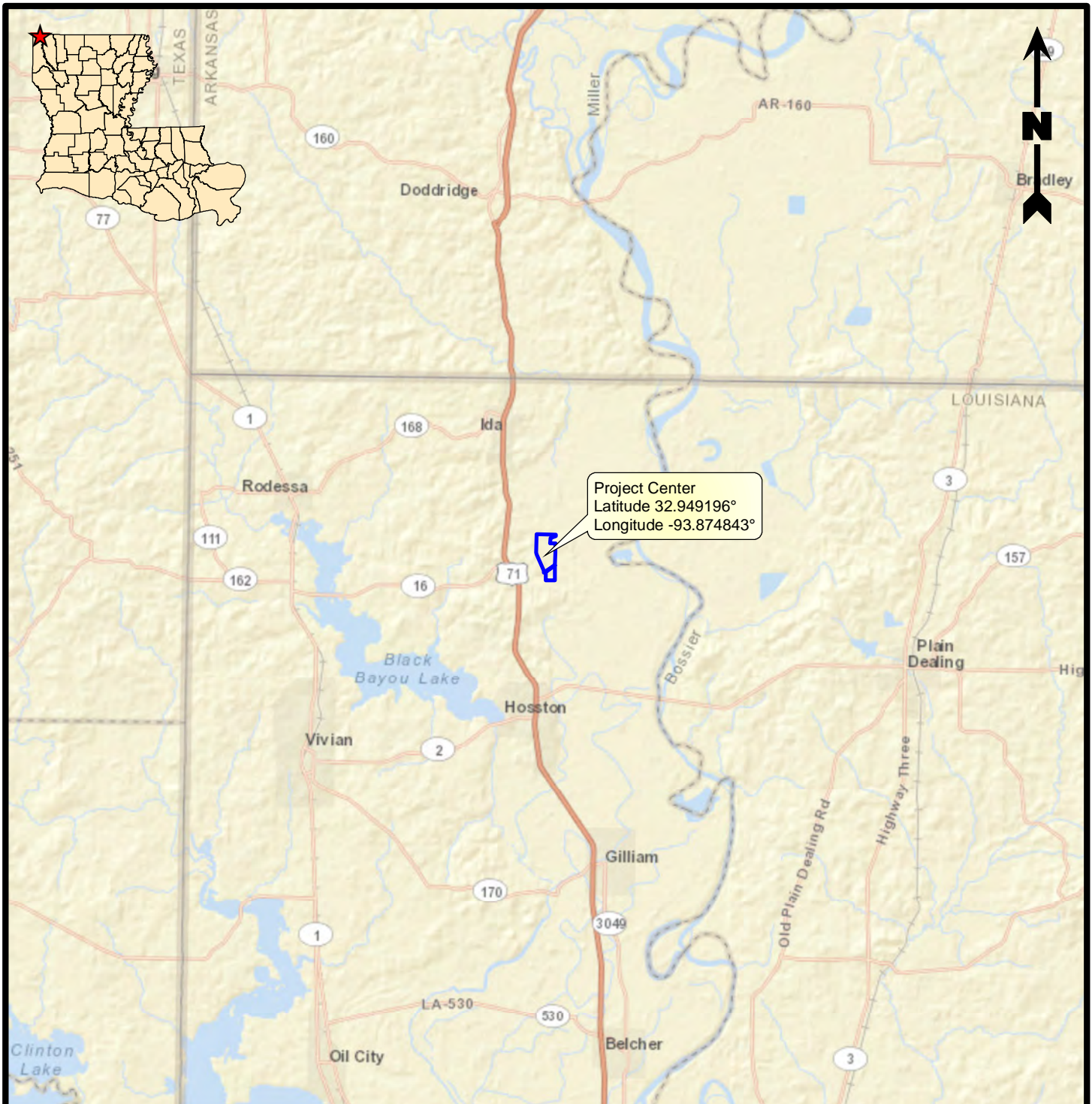
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**FIGURE 1**  
**VICINITY MAP**



**Legend**

Kelly Bayou Mitigation Bank (322.77 acres)

**Reference**

Base map comprised of ESRI StreetMap USA data.

**Vicinity Map**

**Mitigation Bank Prospectus**  
Caddo Parish, Louisiana

**Lone Oak Capital Management, LLC**  
Kelly Bayou Mitigation Bank

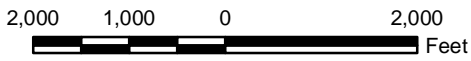
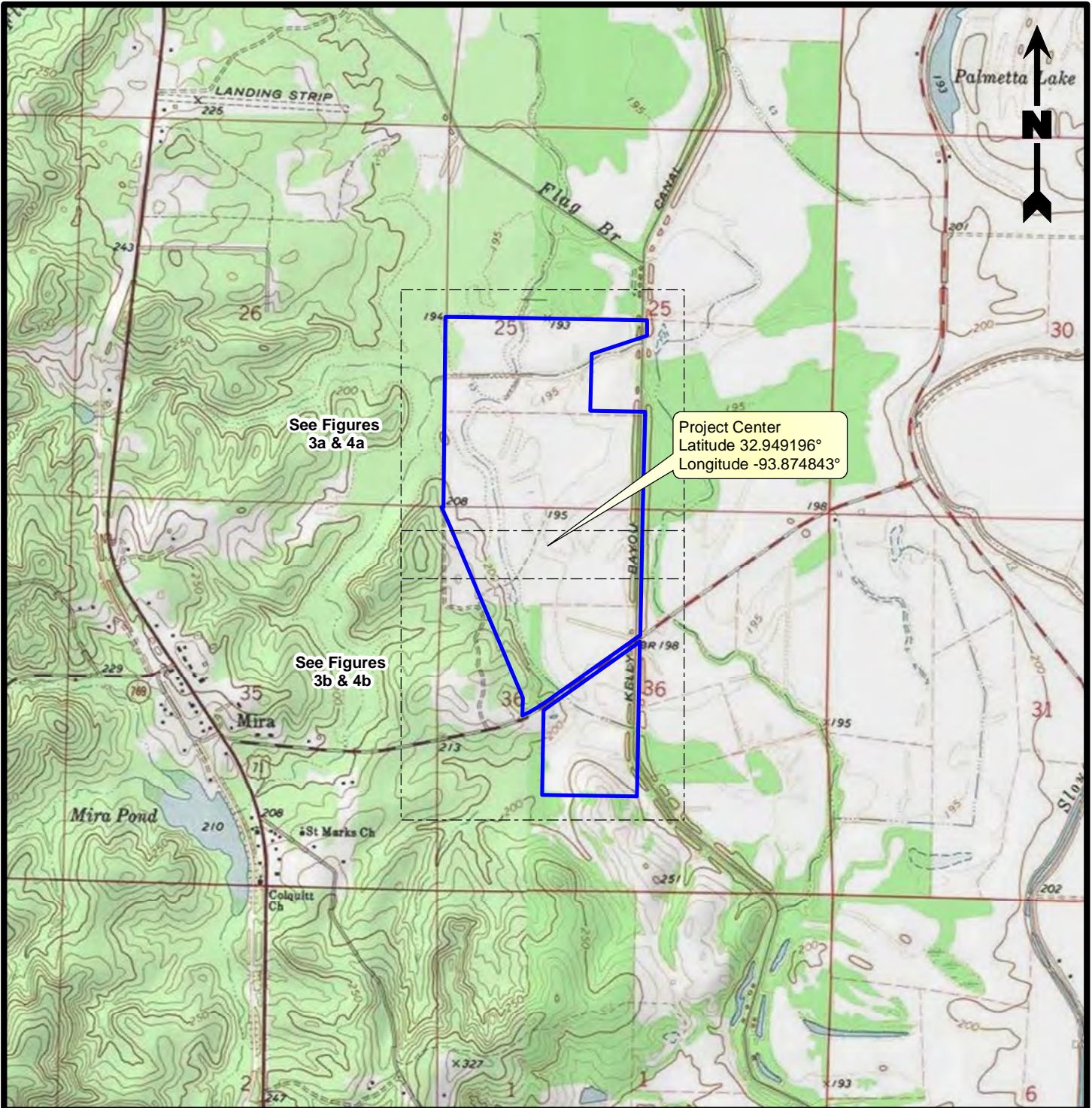


**PROVIDENCE**

Drawn By	CT	5/5/2015
Checked By	ABS	5/5/2015
Approved By	LAW	5/5/2015
Project Number		1 Figure
842-006		
Drawing Number	842-006-A033	

**FIGURE 2**  
**SITE LOCATION MAP**





**Legend**

Kelly Bayou Mitigation Bank (322.77 acres)

**Reference**

Base map comprised of U.S.G.S. 7.5 minute topographic map, "Vivian North, LA" and "Wardview, LA" dated 1971.

**Site Location Map**

**Mitigation Bank Prospectus**  
Caddo Parish, Louisiana

**Lone Oak Capital Management, LLC**  
Kelly Bayou Mitigation Bank

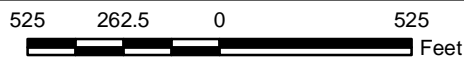
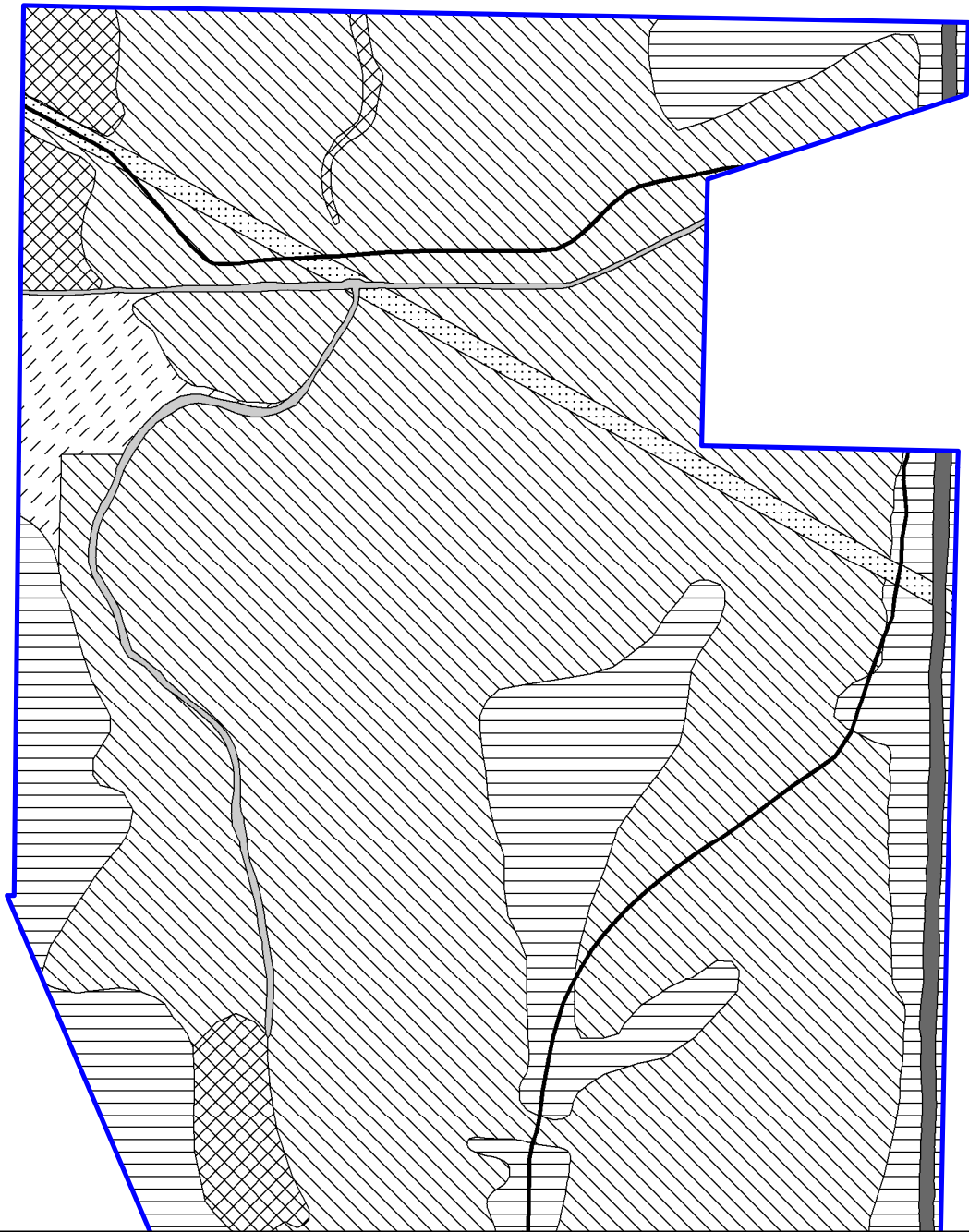


**PROVIDENCE**

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Approved By	LAW	5/5/2015
Project Number		2
842-006		
Drawing Number		Figure
842-006-A034		

**FIGURES 3a – 3c**  
**PRE-RESTORATION SITE PLAN**





**Legend**

- |  |                                  |
|--|----------------------------------|
| Kelly Bayou Mitigation Bank (322.77 acres) | <b>Waterbodies</b>               |
| Bottomland Hardwood Wetlands (13.57 acres) | Kelly Bayou (5.19 acres)         |
| Shrub-Scrub Wetlands (5.13 acres)          | Unnamed Tributaries (2.48 acres) |
| Herbaceous Wetlands (215.44 acres)         | Roads (1.30 acres)               |
| Uplands (75.59 acres)                      | Utility Corridor (4.07 acres)    |

**Pre-Restoration Site Plan**

**Mitigation Bank Prospectus**  
Caddo Parish, Louisiana

**Lone Oak Capital Management, LLC**  
Kelly Bayou Mitigation Bank

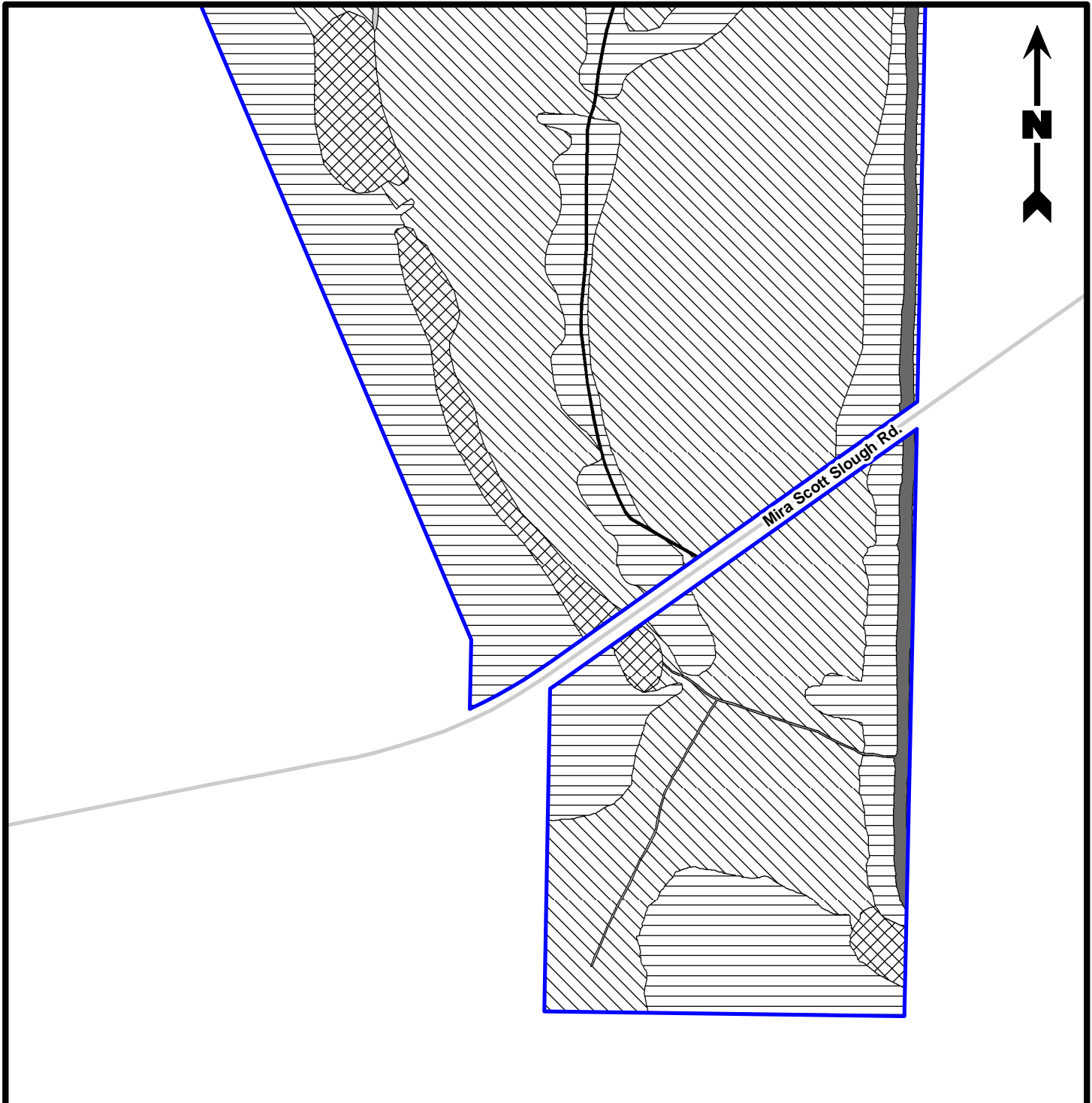


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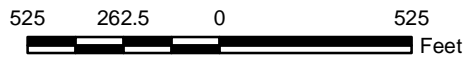
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Checked By	ABS	5/5/2015
Approved By	LAW	5/5/2015

Project Number	842-006
Drawing Number	842-006-A035

**3a**  
Figure



**Legend**



- |  |                                  |
|--|----------------------------------|
| Kelly Bayou Mitigation Bank (322.77 acres) | <b>Waterbodies</b>               |
| Bottomland Hardwood Wetlands (13.57 acres) | Kelly Bayou (5.19 acres)         |
| Shrub-Scrub Wetlands (5.13 acres)          | Unnamed Tributaries (2.48 acres) |
| Herbaceous Wetlands (215.44 acres)         | Roads (1.30 acres)               |
| Uplands (75.59 acres)                      | Utility Corridor (4.07 acres)    |

**Pre-Restoration Site Plan**

**Mitigation Bank Prospectus**  
Caddo Parish, Louisiana

**Lone Oak Capital Management, LLC**  
Kelly Bayou Mitigation Bank



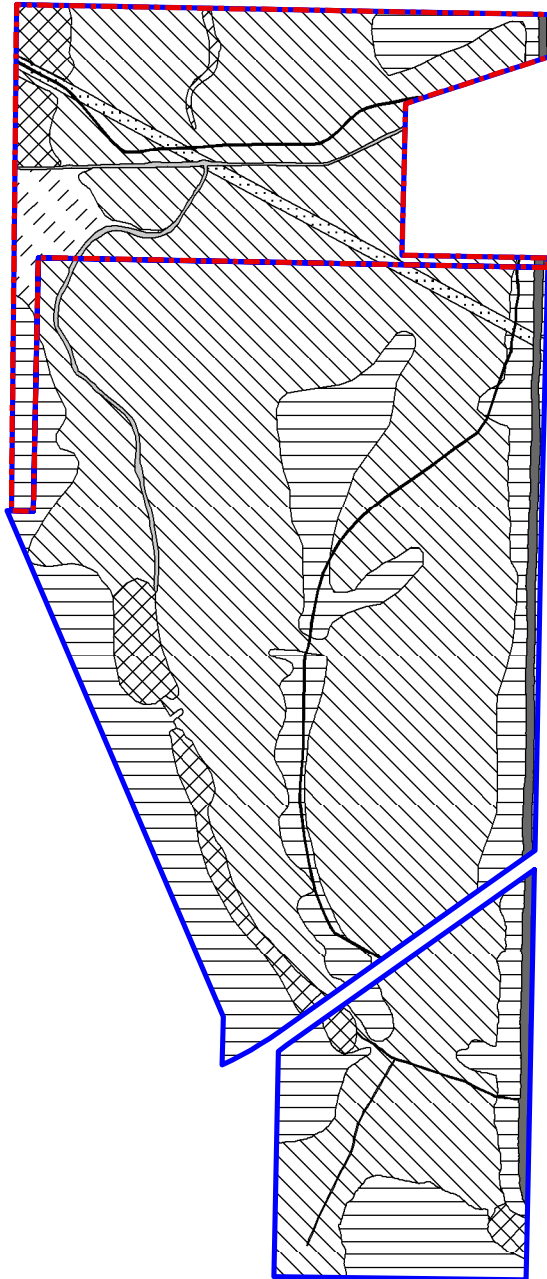
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Drawn By	CT	5/5/2015
Checked By	ABS	5/5/2015
Approved By	LAW	5/5/2015

Project Number 842-006	<b>3b</b> Figure
Drawing Number 842-006-A035	

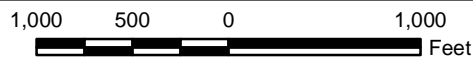


Tract 2	Acreage
Bottomland Hardwood Wetlands	4.70
Shrub-Scrub Wetlands	5.08
Herbaceous Wetlands	50.08
Kelly Bayou	0.28
Unnamed Tributaries	1.29
Uplands	7.08
Roads	0.48
Utility Corridor	2.91
<b>Total</b>	<b>71.90</b>



Tract 1	Acreage
Bottomland Hardwood Wetlands	8.87
Shrub-Scrub Wetlands	0.05
Herbaceous Wetlands	165.36
Kelly Bayou	4.91
Unnamed Tributaries	1.19
Uplands	68.51
Roads	0.82
Utility Corridor	1.16
<b>Total</b>	<b>250.87</b>

**Legend**



- Tract 1 (250.87 acres)
- Tract 2 (71.90 acres)
- Bottomland Hardwood Wetlands (13.57 acres)
- Shrub-Scrub Wetlands (5.13 acres)
- Herbaceous Wetlands (215.44 acres)
- Uplands (75.59 acres)
- Waterbodies**
- Kelly Bayou (5.19 acres)
- Unnamed Tributaries (2.48 acres)
- Roads (1.30 acres)
- Utility Corridor (4.07 acres)

**Pre-Restoration Site Plan**

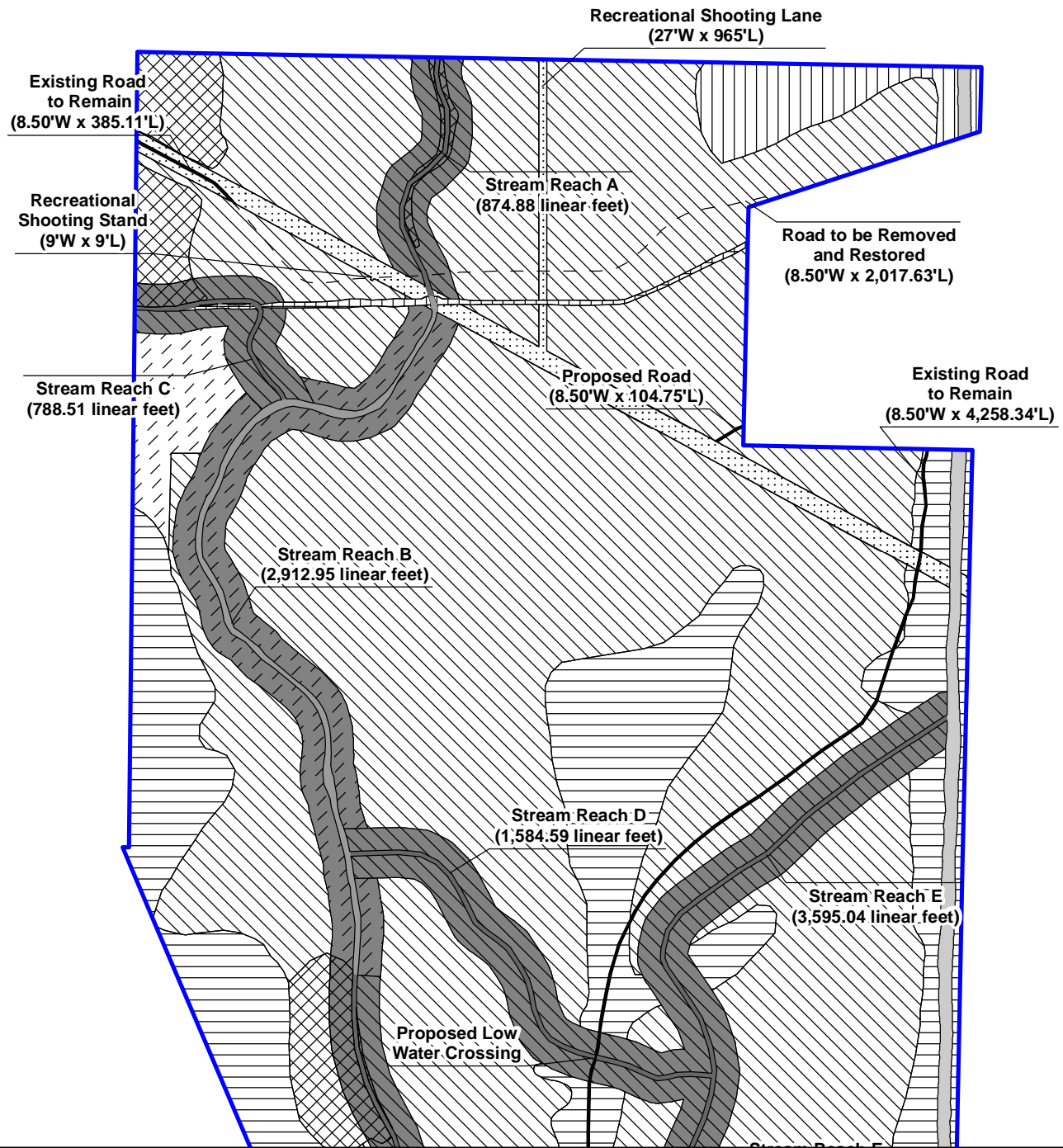
**Mitigation Bank Prospectus**  
Caddo Parish, Louisiana

**Lone Oak Capital Management, LLC**  
Kelly Bayou Mitigation Bank



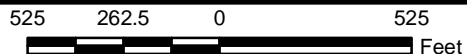
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Approved By	LAW	5/5/2015
Project Number		3C Figure
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Drawing Number		3C Figure
842-006-A042		

**FIGURES 4a – 4c**  
**POST-CONSTRUCTION SITE PLAN**



Legend

- |   |   |
|---|---|
| Kelly Bayou Mitigation Bank (322.77 acres)                          | Stream Restoration (38.40 acres; 12,333.49 linear feet) |
| Bottomland Hardwood Enhancement (Shrub-Scrub Wetlands; 3.48 acres)  | Stream Enhancement (10.60 acres; 2,912.95 linear feet)  |
| Bottomland Hardwood Restoration (Herbaceous Wetlands; 173.97 acres) | Stream Buffer Preservation (6.79 acres)                 |
| Bottomland Hardwood Preservation (6.49 acres)                       | Canals to be Filled (0.79 acre)                         |
| Upland Buffer Enhancement (59.13 acres)                             | Kelly Bayou (5.19 acres)                                |
| Upland Buffer Preservation (12.33 acres)                            | Existing Roads (0.93 acre)                              |
|   | Utility Corridor (4.67 acres)                           |



## Post-Restoration Site Plan

Mitigation Bank Prospectus  
Caddo Parish, Louisiana

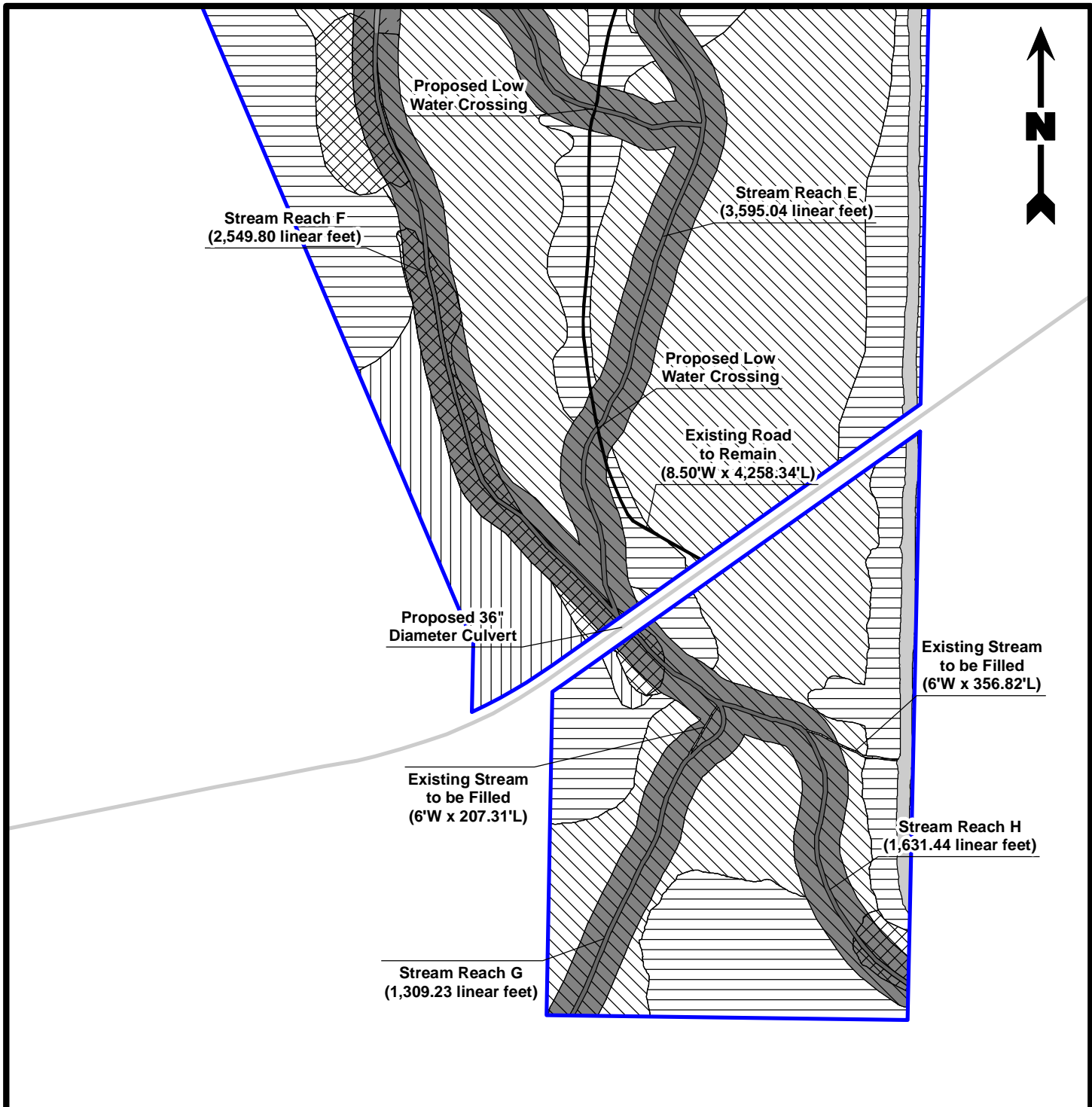
**Lone Oak Capital Management, LLC**  
Kelly Bayou Mitigation Bank



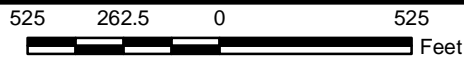
**PROVIDENCE**

Drawn By	CT	5/5/2015
Checked By	ABS	5/5/2015
Approved By	LAW	5/5/2015

Project Number	842-006	4a Figure
Drawing Number	842-006-A036	



**Legend**



- |   |   |
|---|---|
| Kelly Bayou Mitigation Bank (322.77 acres)                          | Stream Restoration (38.40 acres; 12,333.49 linear feet) |
| Bottomland Hardwood Enhancement (Shrub-Scrub Wetlands; 3.48 acres)  | Stream Enhancement (10.60 acres; 2,912.95 linear feet)  |
| Bottomland Hardwood Restoration (Herbaceous Wetlands; 173.97 acres) | Stream Buffer Preservation (6.79 acres)                 |
| Bottomland Hardwood Preservation (6.49 acres)                       | Canals to be Filled (0.79 acre)                         |
| Upland Buffer Enhancement (59.13 acres)                             | Kelly Bayou (5.19 acres)                                |
| Upland Buffer Preservation (12.33 acres)                            | Existing Roads (0.93 acre)                              |
|   | Utility Corridor (4.67 acres)                           |

**Post-Restoration Site Plan**

**Mitigation Bank Prospectus**  
Caddo Parish, Louisiana

**Lone Oak Capital Management, LLC**  
Kelly Bayou Mitigation Bank

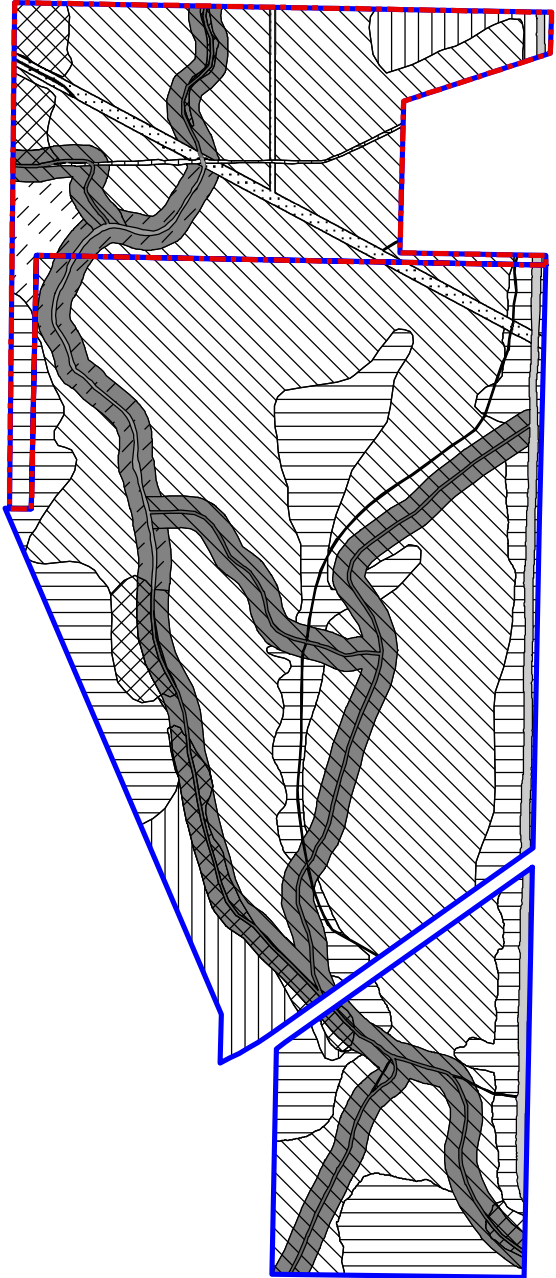


Drawn By	CT	5/5/2015
Checked By	ABS	5/5/2015
Approved By	LAW	5/5/2015
Project Number		4b Figure
842-006		
Drawing Number		
842-006-A036		





Tract 2	Acreage
Bottomland Hardwood Enhancement	3.45
Bottomland Hardwood Restoration	43.59
Bottomland Hardwood Preservation	3.71
Stream Restoration	5.31 acres; 1,663.40 linear feet
Stream Enhancement	3.38 acres; 979.96 linear feet
Stream Buffer Preservation	0.76
Upland Buffer Enhancement	3.09
Upland Buffer Preservation	4.00
Areas to be Filled	0.71
Roads	0.11
Utility Corridor	3.51
Kelly Bayou	0.28
<b>Total</b>	<b>71.90</b>



Tract 1	Acreage
Bottomland Hardwood Enhancement	0.03
Bottomland Hardwood Restoration	130.38
Bottomland Hardwood Preservation	2.78
Stream Restoration	33.09 acres; 10,670.09 linear feet
Stream Enhancement	7.22 acres; 1,932.99 linear feet
Stream Buffer Preservation	6.03
Upland Buffer Enhancement	56.04
Upland Buffer Preservation	8.33
Areas to be Filled	0.08
Roads	0.82
Utility Corridor	1.16
Kelly Bayou	4.91
<b>Total</b>	<b>250.87</b>

**Legend**



- Tract 1 (250.87 acres)
- Tract 2 (71.90 acres)
- Bottomland Hardwood Enhancement (Shrub-Scrub Wetlands; 3.48 acres)
- Bottomland Hardwood Restoration (Herbaceous Wetlands; 173.97 acres)
- Bottomland Hardwood Preservation (6.49 acres)
- Upland Buffer Enhancement (59.13 acres)
- Upland Buffer Preservation (12.33 acres)
- Stream Restoration (38.40 acres; 12,333.49 linear feet)
- Stream Enhancement (10.60 acres; 2,912.95 linear feet)
- Stream Buffer Preservation (6.79 acres)
- Canals to be Filled (0.79 acre)
- Kelly Bayou (5.19 acres)
- Existing Roads (0.93 acre)
- Utility Corridor (4.67 acres)

**Post-Restoration Site Plan**

**Mitigation Bank Prospectus**  
Caddo Parish, Louisiana

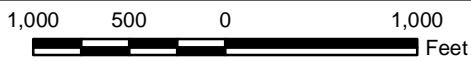
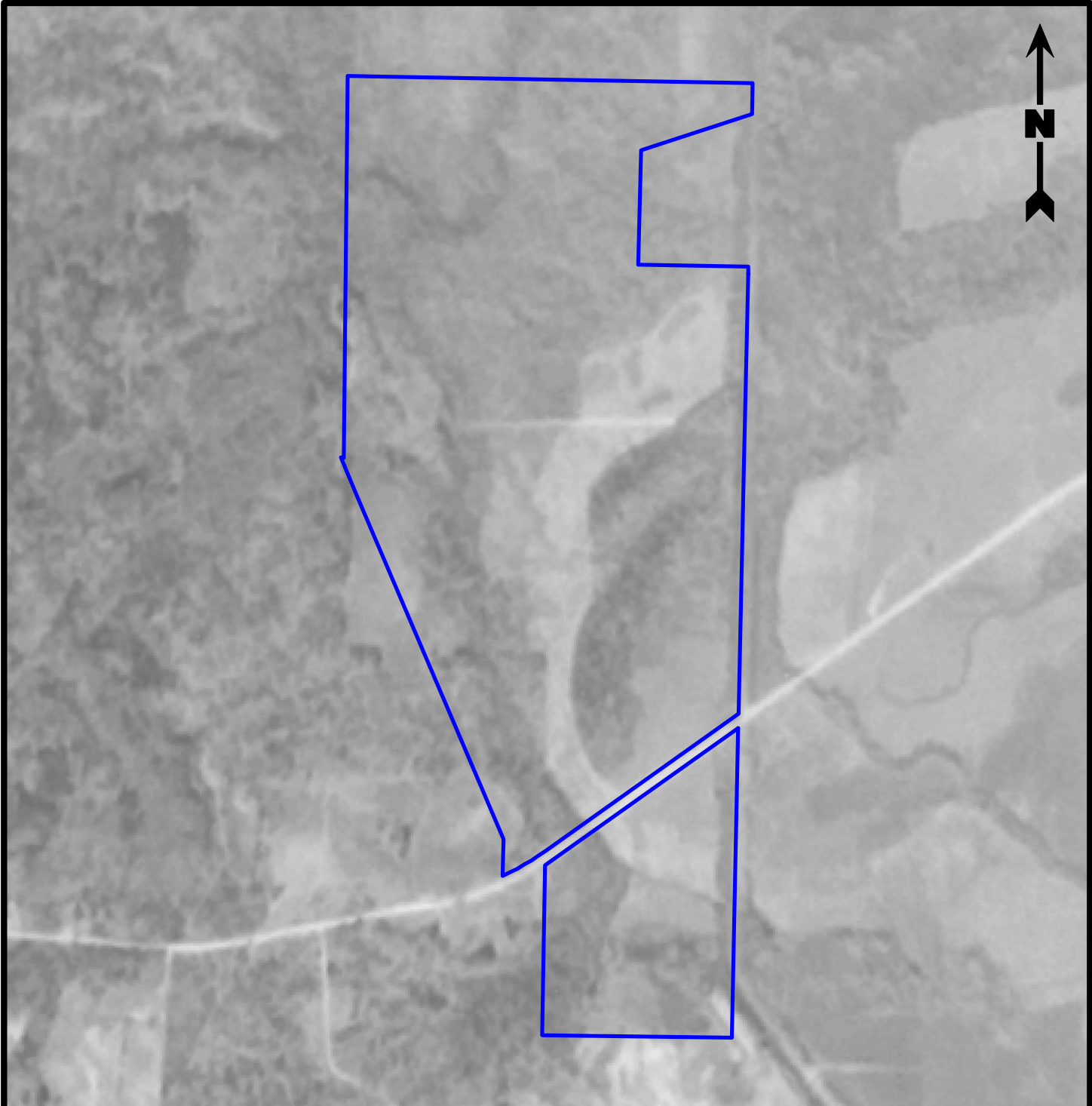
**Lone Oak Capital Management, LLC**  
Kelly Bayou Mitigation Bank



Drawn By	CT	5/5/2015
Checked By	ABS	5/5/2015
Approved By	LAW	5/5/2015
Project Number		4C Figure
842-006		
Drawing Number		4C Figure
842-006-A043		

**FIGURE 5**  
**1949 AERIAL PHOTOGRAPH**





**Legend**

Kelly Bayou Mitigation Bank (322.77 acres)

**Reference**

Base map comprised of U.S.G.S. Aerial Single Fram Photograph, dated November 20, 1949.

**1949 Aerial Photograph**

**Mitigation Bank Prospectus**  
Caddo Parish, Louisiana

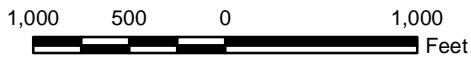
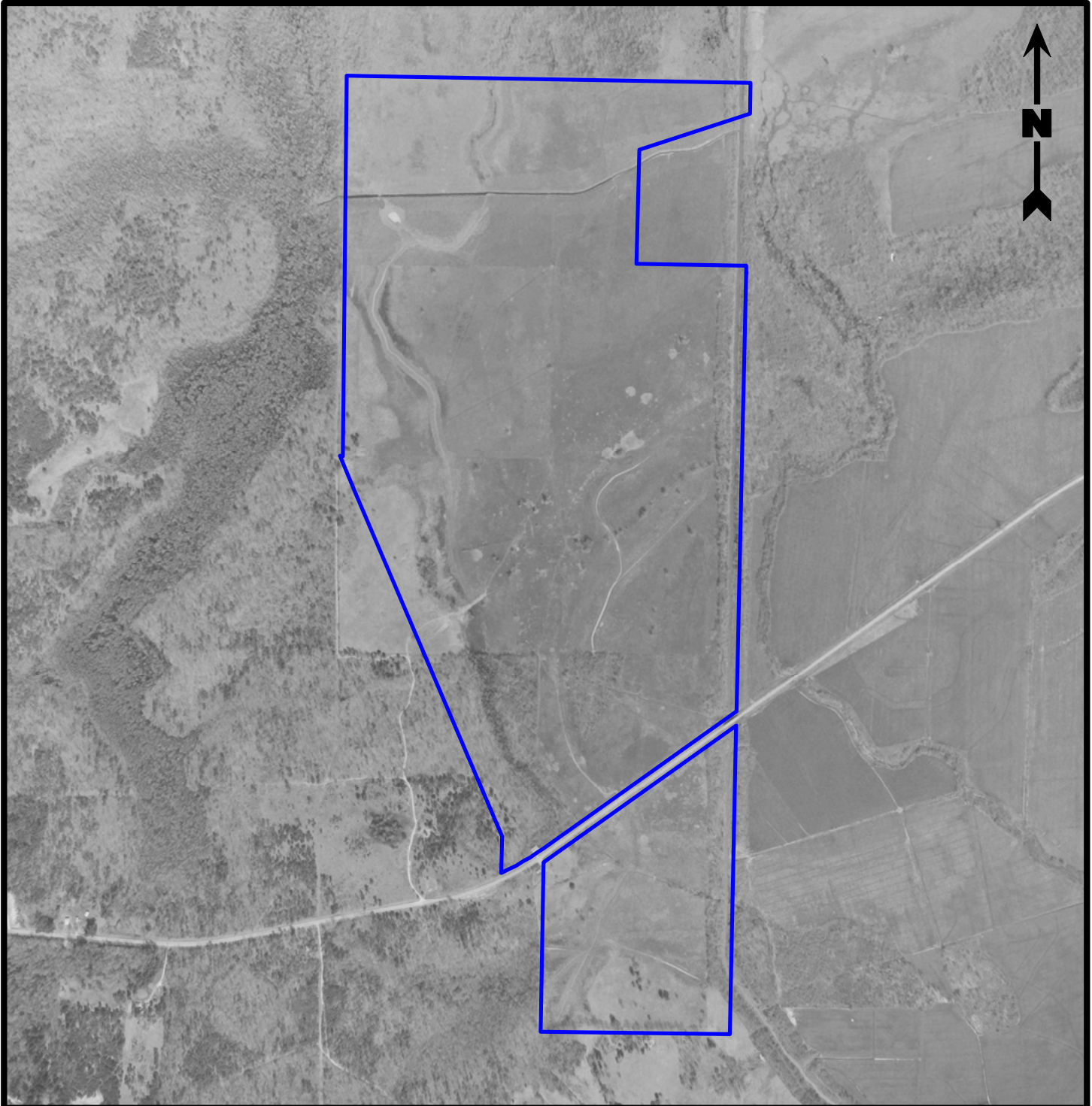
**Lone Oak Capital Management, LLC**  
Kelly Bayou Mitigation Bank



**PROVIDENCE**

Drawn By	CT	5/5/2015
Checked By	ABS	5/5/2015
Approved By	LAW	5/5/2015
Project Number 842-006		<b>5</b> Figure
Drawing Number 842-006-A037		

**FIGURE 6**  
**1970 AERIAL PHOTOGRAPH**



**Legend**

Kelly Bayou Mitigation Bank (322.77 acres)

**Reference**

Base map comprised of U.S.G.S. Aerial Single Fram Photograph, dated March 15, 1970.

**1970 Aerial Photograph**

**Mitigation Bank Prospectus**  
Caddo Parish, Louisiana

**Lone Oak Capital Management, LLC**  
Kelly Bayou Mitigation Bank

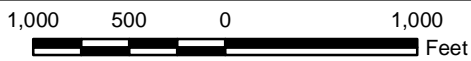
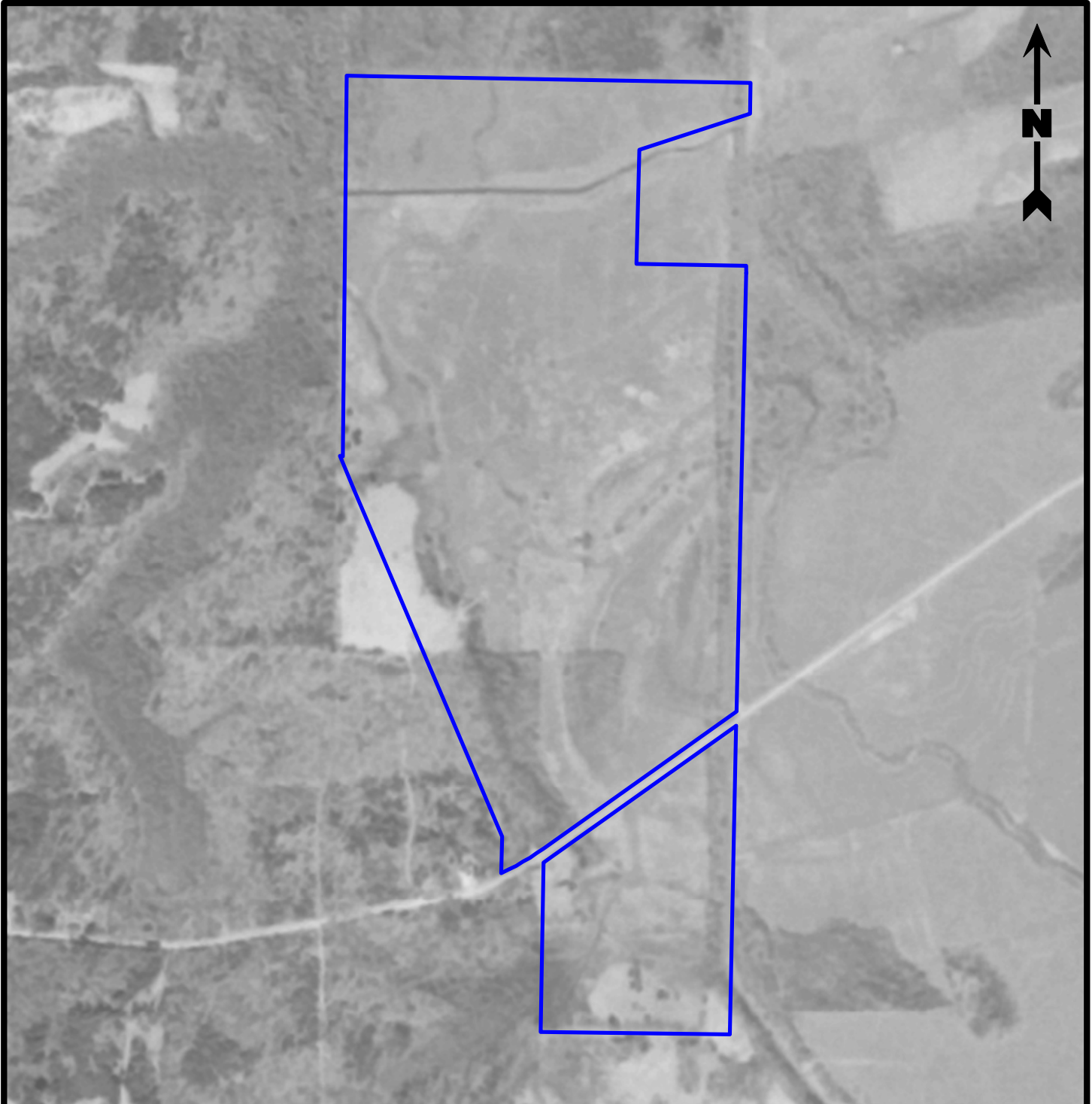


**PROVIDENCE**

Drawn By	CT	5/5/2015
Checked By	ABS	5/5/2015
Approved By	LAW	5/5/2015

Project Number 842-006	<b>6</b> Figure
Drawing Number 842-006-A044	

**FIGURE 7**  
**1975 AERIAL PHOTOGRAPH**



**Legend**

 Kelly Bayou Mitigation Bank (322.77 acres)

**Reference**

Base map comprised of U.S.G.S. Aerial Single Fram Photograph, dated February 25, 1975.

**1975 Aerial Photograph**

**Mitigation Bank Prospectus**  
Caddo Parish, Louisiana

**Lone Oak Capital Management, LLC**  
Kelly Bayou Mitigation Bank



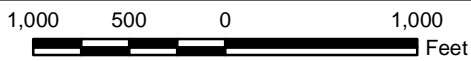
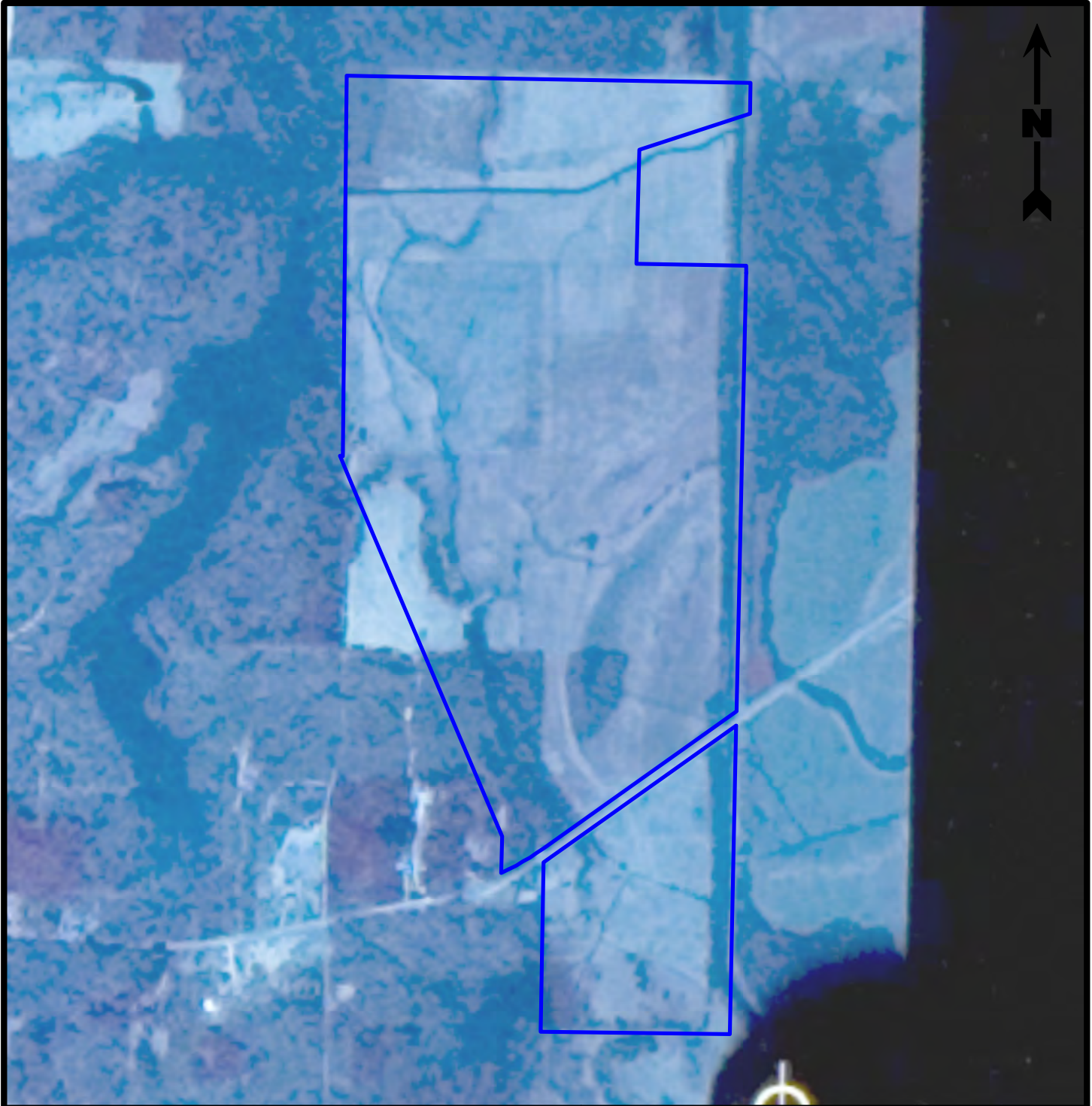
**PROVIDENCE**

Drawn By	CT	5/5/2015
Checked By	ABS	5/5/2015
Approved By	LAW	5/5/2015

Project Number	7 Figure
842-006	
Drawing Number	
842-006-A045	

**FIGURE 8**  
**1980 AERIAL PHOTOGRAPH**





**Legend**

 Kelly Bayou Mitigation Bank (322.77 acres)

**Reference**

Base map comprised of U.S.G.S. Aerial Single Fram Photograph, dated February 26, 1980.

**1980 Aerial Photograph**

**Mitigation Bank Prospectus**  
Caddo Parish, Louisiana

**Lone Oak Capital Management, LLC**  
Kelly Bayou Mitigation Bank



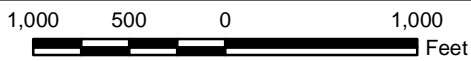
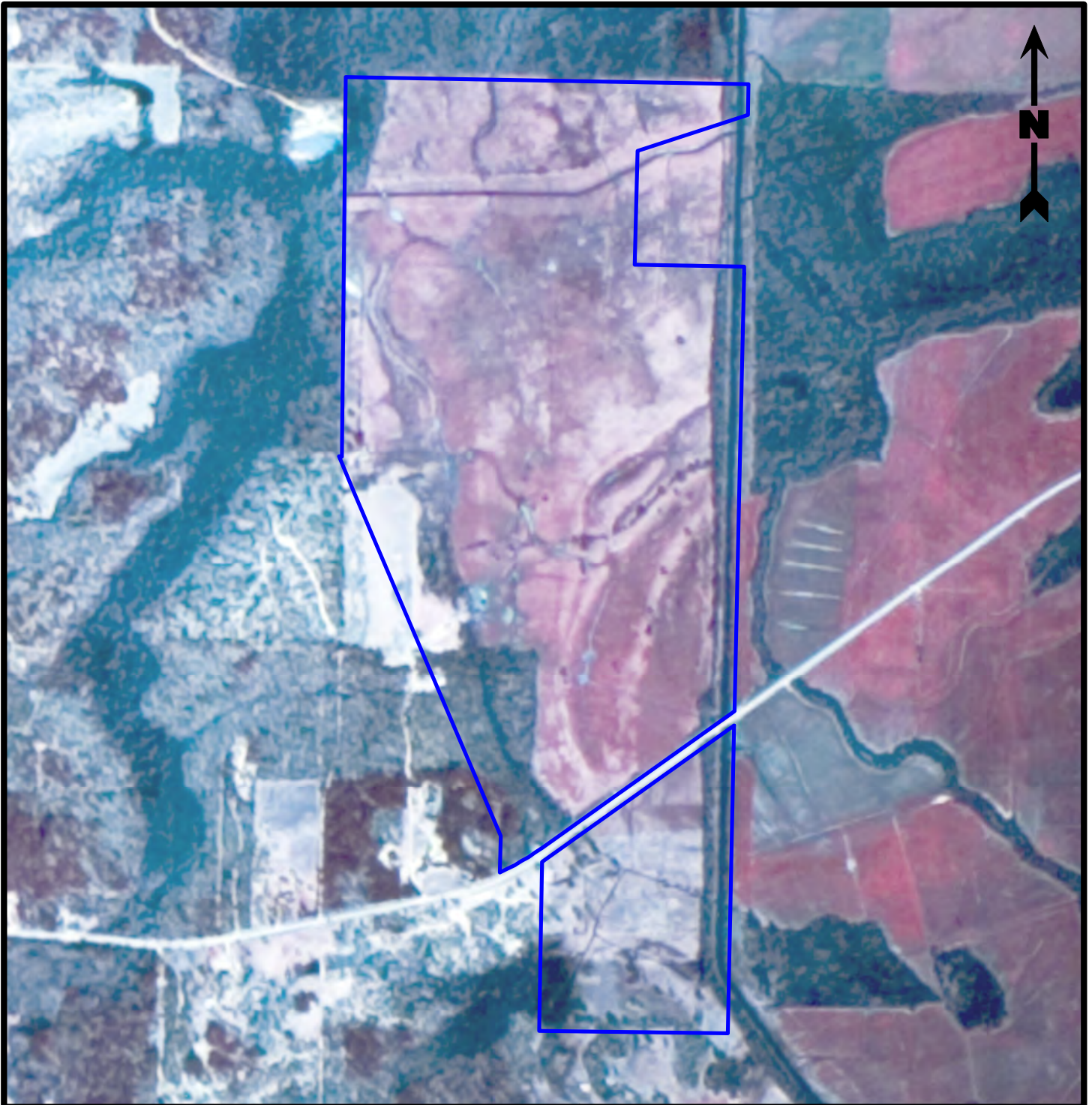
**PROVIDENCE**

Drawn By	CT	5/5/2015
Checked By	ABS	5/5/2015
Approved By	LAW	5/5/2015

Project Number	8
842-006	
Drawing Number	8 Figure
842-006-A046	

**FIGURE 9**  
**1989 AERIAL PHOTOGRAPH**





**Legend**

 Kelly Bayou Mitigation Bank (322.77 acres)

**Reference**

Base map comprised of 1989 aerial photograph from USDA/FSA - Aerial Photography Field Office.

**1989 Aerial Photograph**

**Mitigation Bank Prospectus**  
Caddo Parish, Louisiana

**Lone Oak Capital Management, LLC**  
Kelly Bayou Mitigation Bank



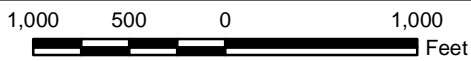
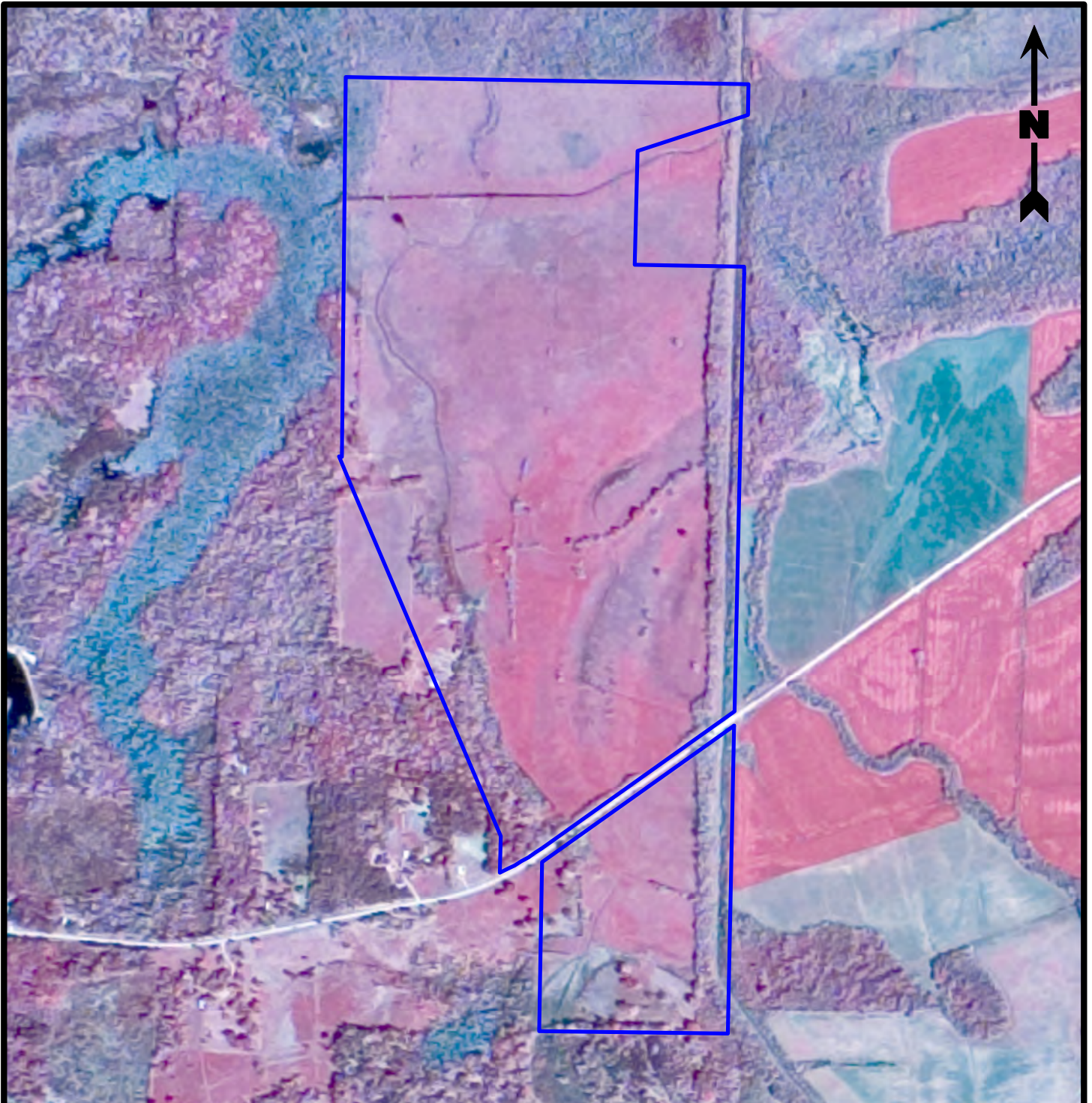
**PROVIDENCE**

Drawn By	CT	5/5/2015
Checked By	ABS	5/5/2015
Approved By	LAW	5/5/2015

Project Number 842-006	<b>9</b> Figure
Drawing Number 842-006-A047	

**FIGURE 10**  
**2000 AERIAL PHOTOGRAPH**





**Legend**

Kelly Bayou Mitigation Bank (322.77 acres)

**Reference**

Base map comprised of 2000 aerial photograph from USDA/FSA - Aerial Photography Field Office.

**2000 Aerial Photograph**

**Mitigation Bank Prospectus**  
Caddo Parish, Louisiana

**Lone Oak Capital Management, LLC**  
Kelly Bayou Mitigation Bank



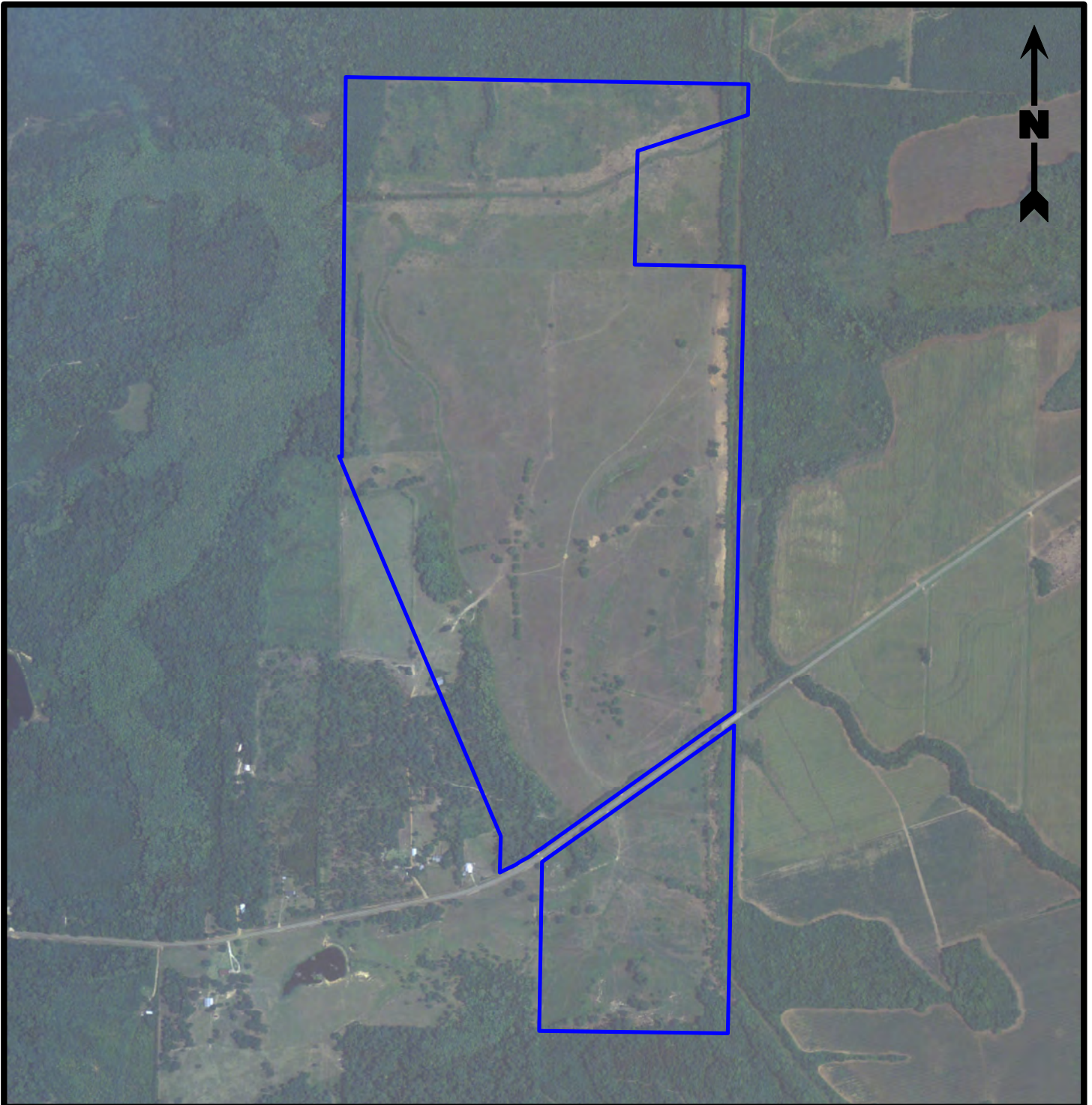
**PROVIDENCE**

Drawn By	CT	5/5/2015
Checked By	ABS	5/5/2015
Approved By	LAW	5/5/2015

Project Number 842-006	<b>10</b> Figure
Drawing Number 842-006-A048	

**FIGURE 11**  
**2005 AERIAL PHOTOGRAPH**





**Legend**

Kelly Bayou Mitigation Bank (322.77 acres)

**Reference**

Base map comprised of 2005 aerial photograph from USDA/FSA - Aerial Photography Field Office.

**2005 Aerial Photograph**

**Mitigation Bank Prospectus**  
Caddo Parish, Louisiana

**Lone Oak Capital Management, LLC**  
Kelly Bayou Mitigation Bank



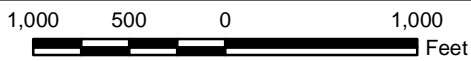
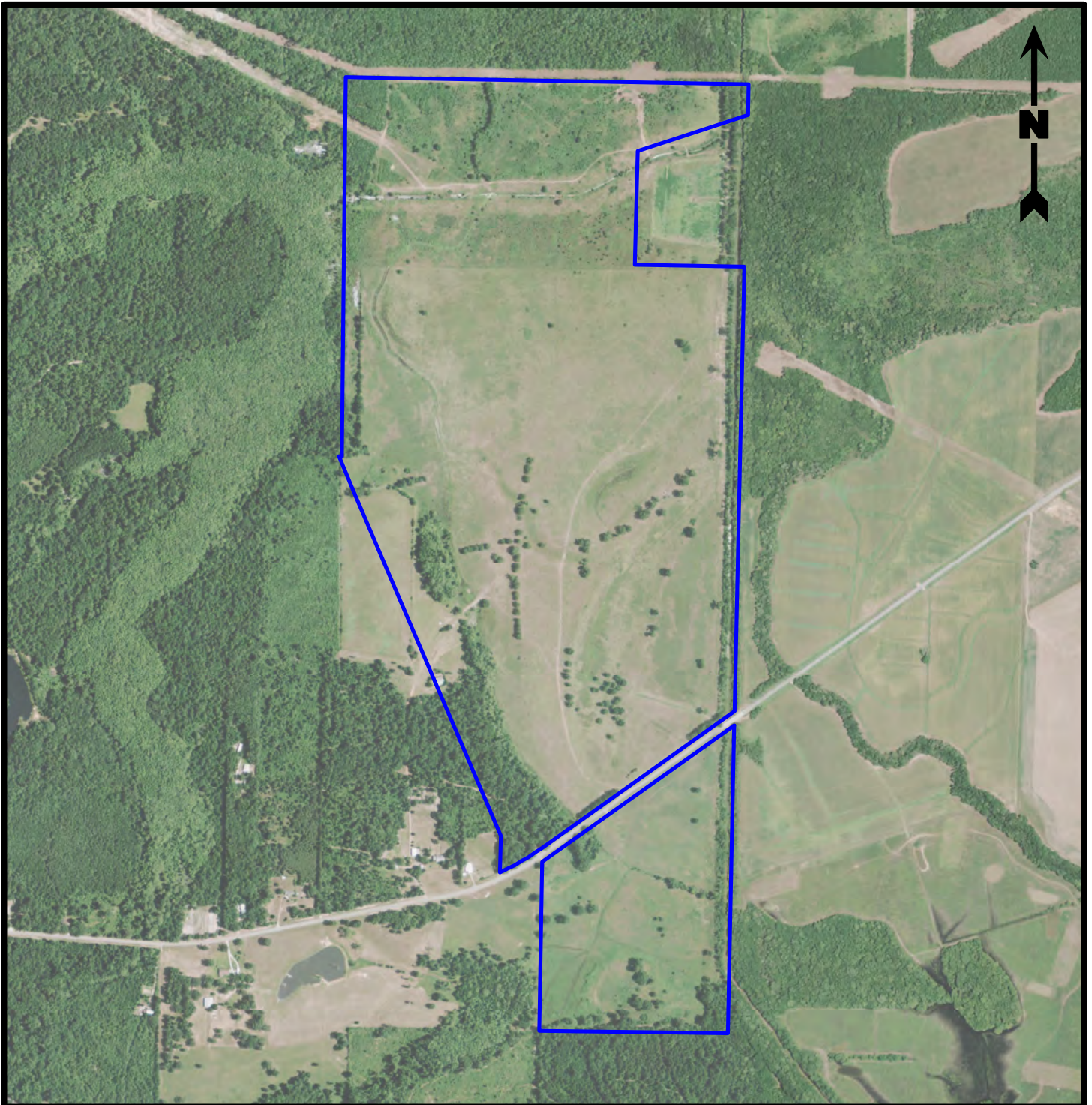
**PROVIDENCE**

Drawn By	CT	5/5/2015
Checked By	ABS	5/5/2015
Approved By	LAW	5/5/2015

Project Number 842-006	<b>11</b> Figure
Drawing Number 842-006-A049	

**FIGURE 12**  
**2009 AERIAL PHOTOGRAPH**





**Legend**

Kelly Bayou Mitigation Bank (322.77 acres)

**Reference**

Base map comprised of 2009 aerial photograph from USDA/FSA - Aerial Photography Field Office.

**2009 Aerial Photograph**

**Mitigation Bank Prospectus**  
Caddo Parish, Louisiana

**Lone Oak Capital Management, LLC**  
Kelly Bayou Mitigation Bank



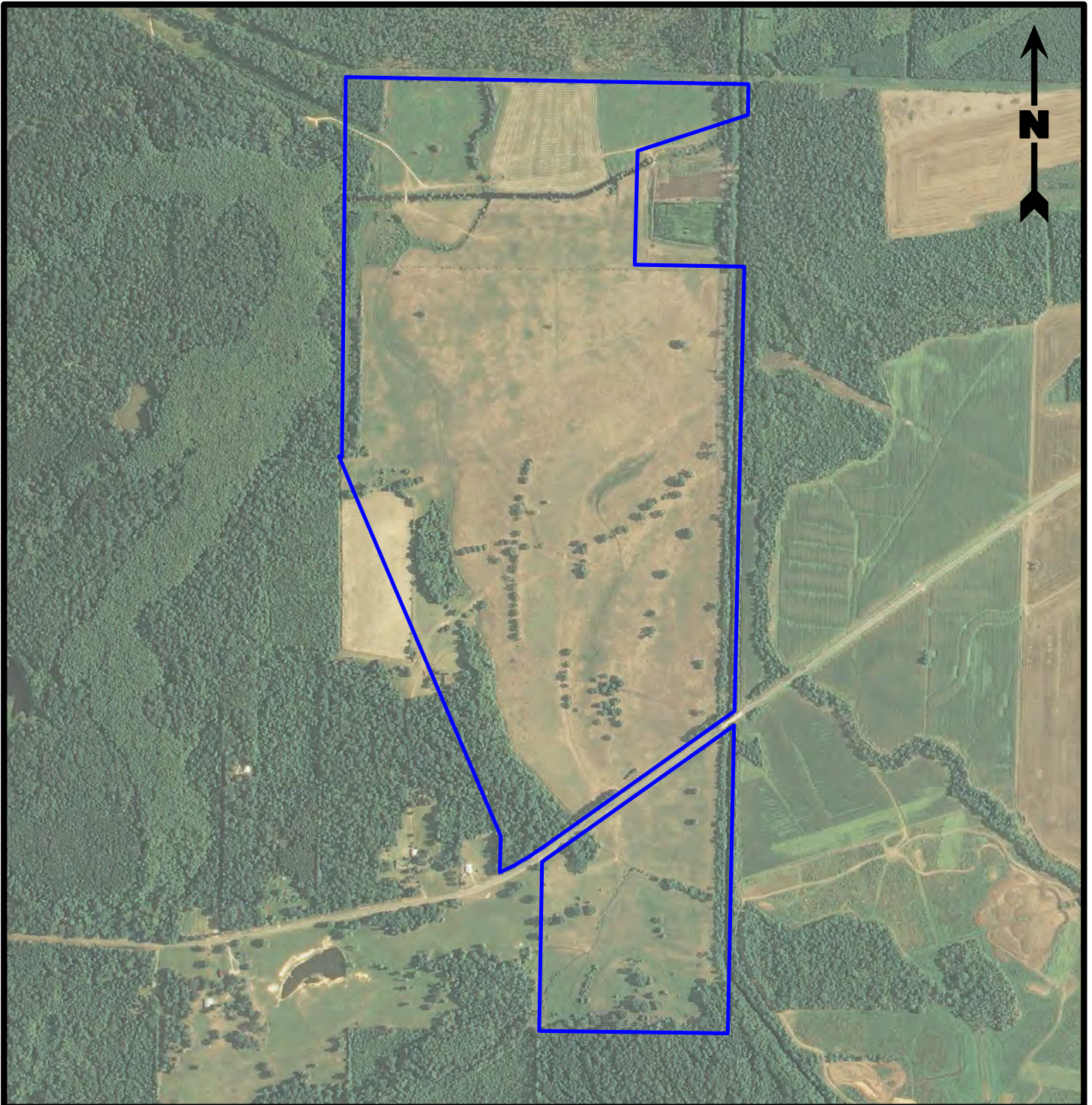
**PROVIDENCE**

Drawn By	CT	5/5/2015
Checked By	ABS	5/5/2015
Approved By	LAW	5/5/2015

Project Number 842-006	<b>12</b> Figure
Drawing Number 842-006-A050	

**FIGURE 13**  
**2013 AERIAL PHOTOGRAPH**





**Legend**

 Kelly Bayou Mitigation Bank (322.77 acres)

**Reference**

Base map comprised of 2013 aerial photograph from USDA/FSA - Aerial Photography Field Office.

**2013 Aerial Photograph**

**Mitigation Bank Prospectus**  
Caddo Parish, Louisiana

**Lone Oak Capital Management, LLC**  
Kelly Bayou Mitigation Bank



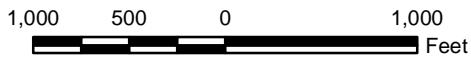
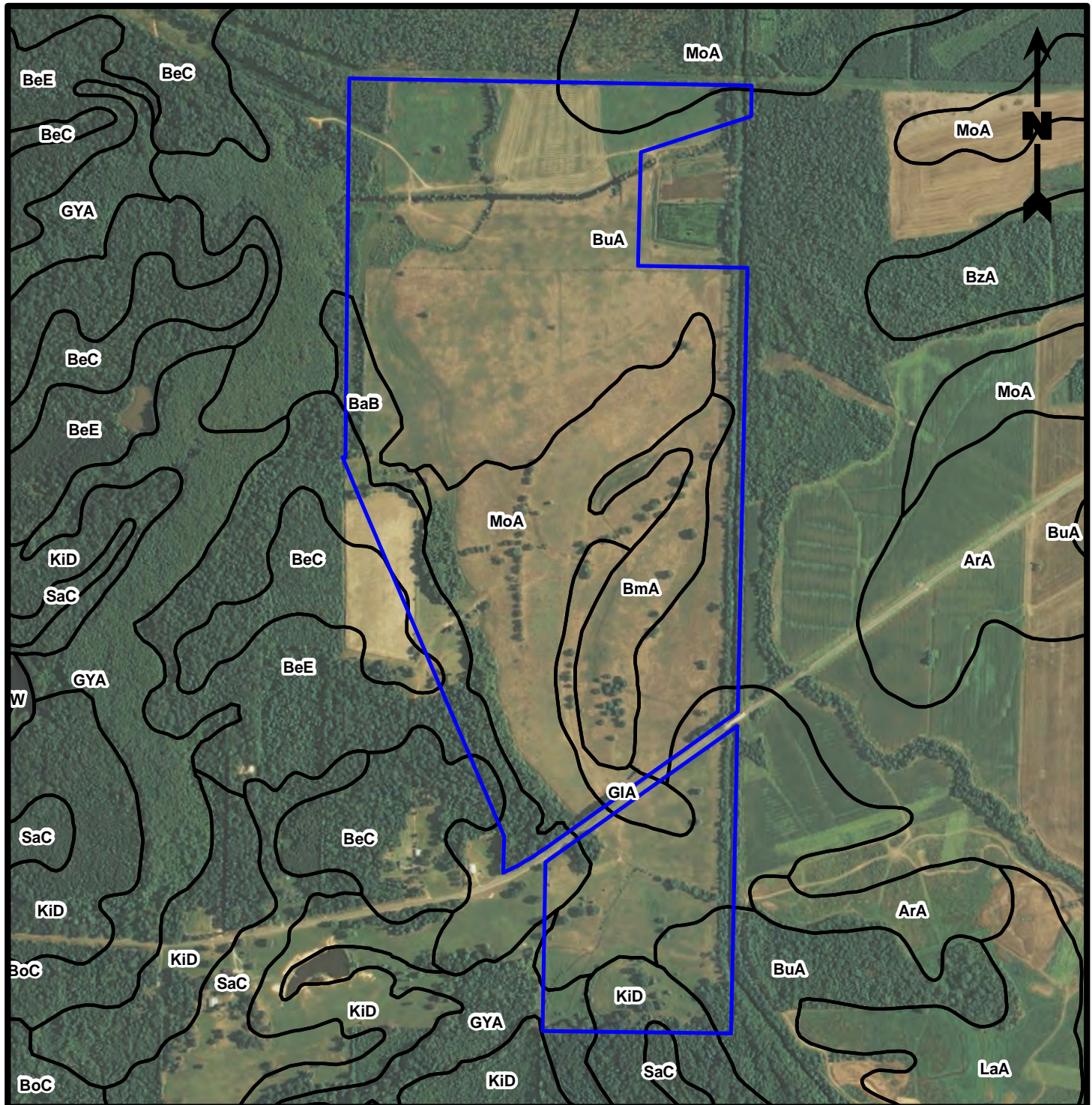
**PROVIDENCE**

Drawn By	CT	5/5/2015
Checked By	ABS	5/5/2015
Approved By	LAW	5/5/2015

Project Number	13 Figure
842-006	
Drawing Number	
842-006-A038	

**FIGURE 14**  
**2013 SOILS MAP**





**Legend**

- Kelly Bayou Mitigation Bank (322.77 acres)
- Soils
  - BaB - Bernaldo fine sandy loam, 1 to 3 percent slopes
  - BeC - Betis loamy fine sand, 1 to 5 percent slopes
  - BeE - Betis loamy fine sand, 5 to 12 percent slopes
  - BmA - Bossier clay, 0 to 1 percent slopes, frequently flooded
  - BuA - Buxin clay, 0 to 1 percent slopes
  - GIA - Gallion silty clay loam, 0 to 1 percent slopes
  - GYA - Guyton-lulus complex, 0 to 1 percent slopes, frequently flooded
  - KiD - Kirvin fine sandy loam, 5 to 15 percent slopes
  - MoA - Moreland clay, 0 to 1 percent slopes, rarely flooded MLRA 131C
  - SaC - Sacul fine sandy loam, 1 to 5 percent slopes

**Reference**

Base map comprised of ESRI World Imagery. Soils data obtained from Natural Resources Conservation Service (NRCS) data-server dated 12/26/2013.

**2013 Soils Map**

**Mitigation Bank Prospectus**  
Caddo Parish, Louisiana

**Lone Oak Capital Management, LLC**  
Kelly Bayou Mitigation Bank

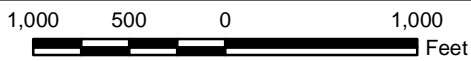
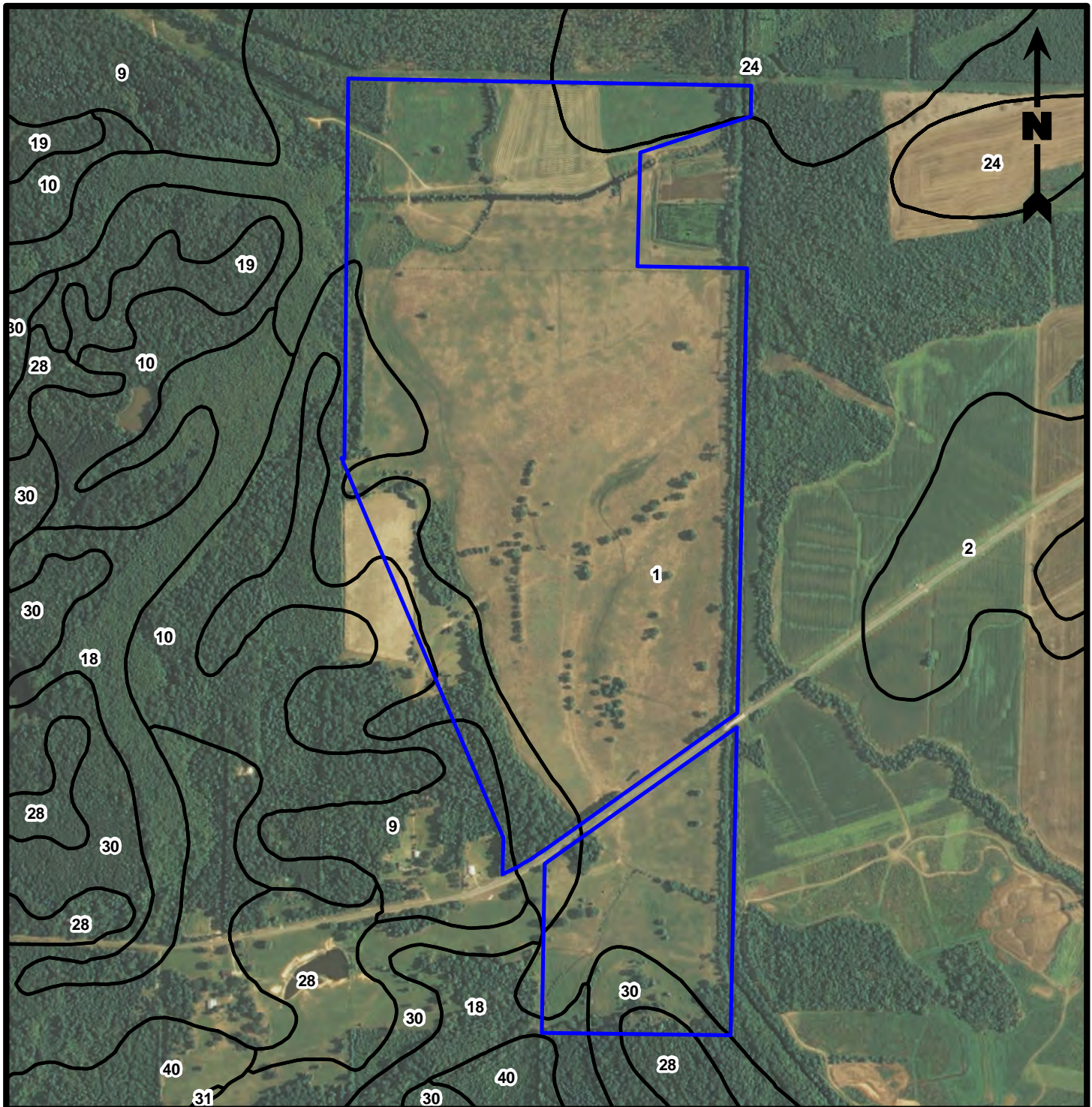


**PROVIDENCE**

Drawn By	CT	5/5/2015
Checked By	ABS	5/5/2015
Approved By	LAW	5/5/2015
Project Number		<b>14</b>
842-006		
Drawing Number		Figure
842-006-A039		

**FIGURE 15**  
**2006 SOILS MAP**





**Legend**

 Kelly Bayou Mitigation Bank (322.77 acres)

 Soils

- 1 - Buxin clay, occasionally flooded
- 9 - Betis loamy fine sand, 1 to 5 percent slopes
- 10 - Betis loamy fine sand, 5 to 12 percent slopes
- 18 - Guyton soils, frequently flooded
- 24 - Moreland clay
- 28 - Sacul fine sandy loam, 1 to 5 percent slopes
- 30 - Sacul fine sandy loam, 5 to 15 percent slopes

**Reference**

Base map comprised of ESRI World Imagery. Soils data obtained from Natural Resources Conservation Service (NRCS) data-server dated 12/6/2006.

**2006 Soils Map**

**Mitigation Bank Prospectus**  
Caddo Parish, Louisiana

**Lone Oak Capital Management, LLC**  
Kelly Bayou Mitigation Bank



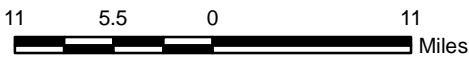
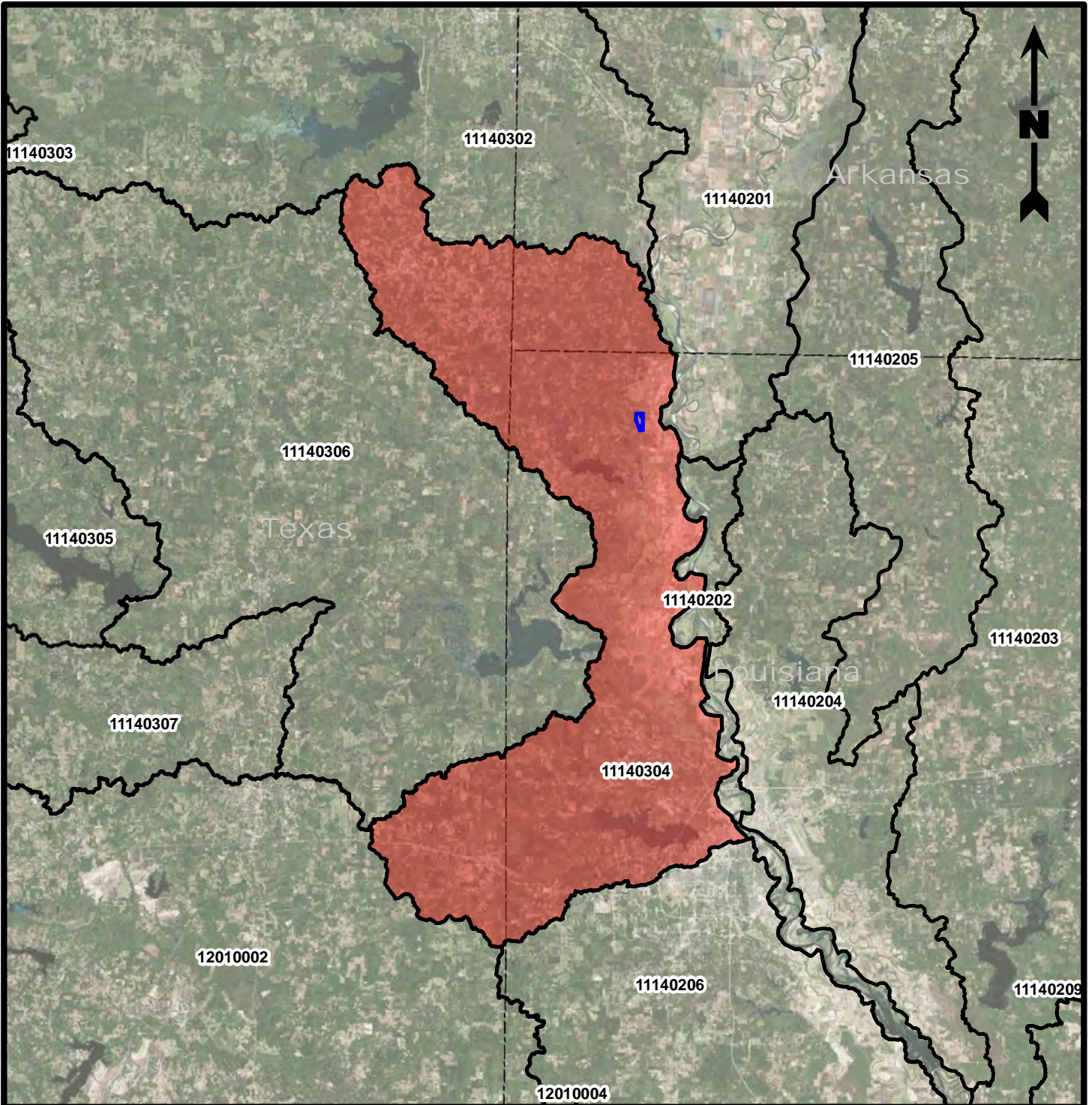
**PROVIDENCE**

Drawn By	CT	5/5/2015
Checked By	ABS	5/5/2015
Approved By	LAW	5/5/2015

Project Number	15 Figure
842-006	
Drawing Number	
842-006-A051	

**FIGURE 16**  
**BANK SERVICE AREA MAP**





**Legend**

- Kelly Bayou Mitigation Bank (322.77 acres)
- Primary Service Area
- Hydrologic Unit Boundary
- State Boundary

**Reference**

Base map comprised of ESRI World Imagery. Hydrologic Unit Boundaries (HUC) obtained from Louisiana Department of Environmental Quality (LDEQ).

**Bank Service Area Map**

**Mitigation Bank Prospectus**  
Caddo Parish, Louisiana

**Lone Oak Capital Management, LLC**  
Kelly Bayou Mitigation Bank

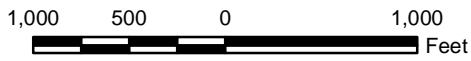
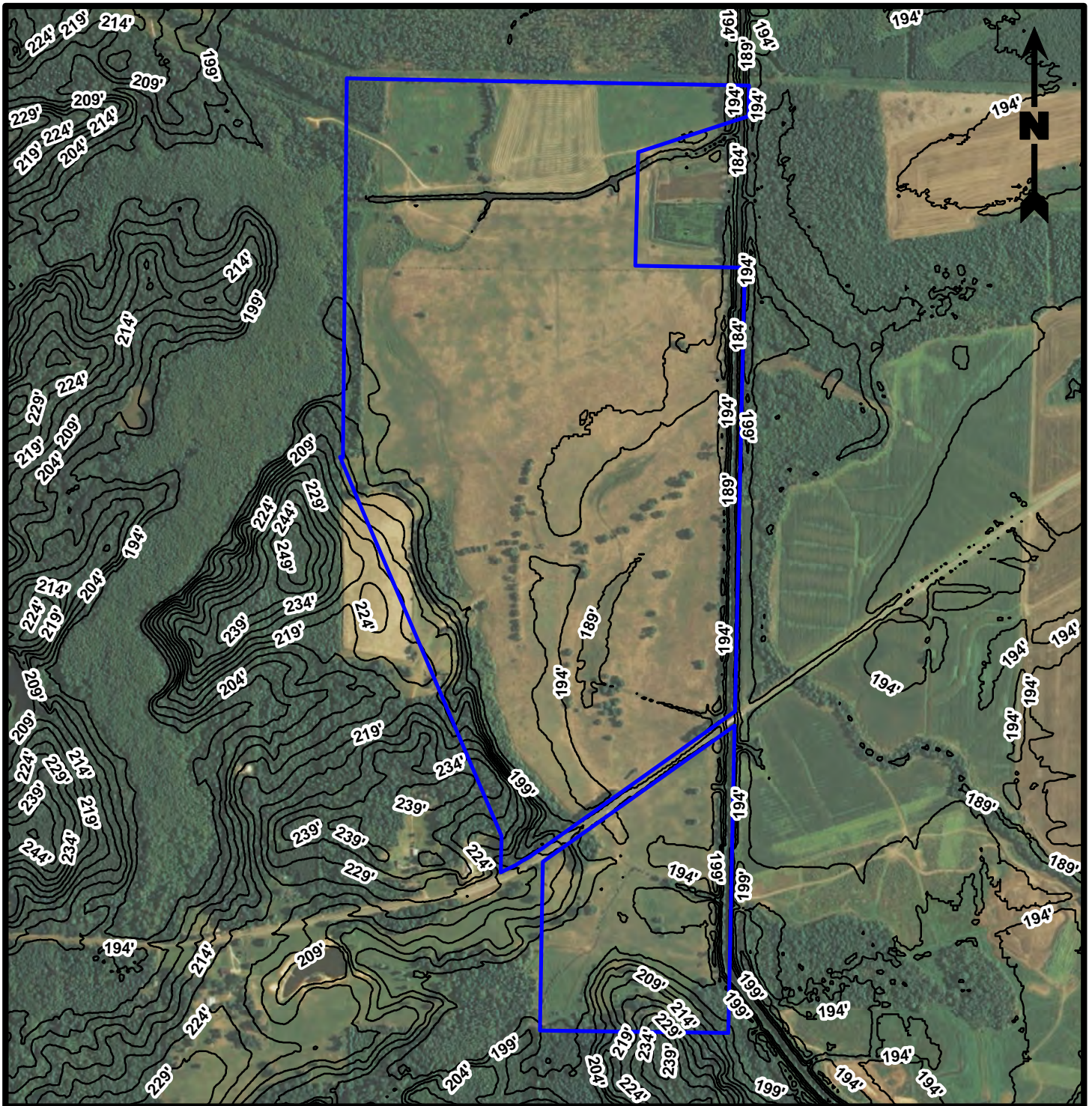


**PROVIDENCE**

Drawn By	CT	5/5/2015
Checked By	ABS	5/5/2015
Approved By	LAW	5/5/2015
Project Number		16
842-006		
Drawing Number		Figure
842-006-A040		

**FIGURE 17**  
**LIDAR MAP**





**Legend**

- Kelly Bayou Mitigation Bank (322.77 acres)
- LIDAR Elevation Contours

**Reference**

Base map comprised of ESRI World Imagery. LIDAR Contours comprised of USACE/FEMA, elevation contours, dated 2003.

**LIDAR Map**

**Mitigation Bank Prospectus**  
Caddo Parish, Louisiana

**Lone Oak Capital Management, LLC**  
Kelly Bayou Mitigation Bank



**PROVIDENCE**

Drawn By	CT	5/5/2015
Checked By	ABS	5/5/2015
Approved By	LAW	5/5/2015
Project Number		<b>17</b>
842-006		
Drawing Number		Figure
842-006-A041		

**ATTACHMENT A**  
**PRELIMINARY JURISDICTIONAL DETERMINATION**  
**(MVK-2014-602)**



## DEPARTMENT OF THE ARMY

VICKSBURG DISTRICT, CORPS OF ENGINEERS  
4155 CLAY STREET  
VICKSBURG, MISSISSIPPI 39183-3435

REPLY TO  
ATTENTION OF:

August 25, 2014

Operations Division

**SUBJECT: Preliminary Jurisdictional Determination – Loneoak Capital Management, LLC, 389.99-Acre Site, Kelly Bayou Tract, Caddo Parish, Louisiana**

Mr. Lee Womack  
Senior Environmental Scientist  
Providence Engineering  
and Environmental Group, LLC  
1201 Main Street  
Baton Rouge, Louisiana 70802

Dear Mr. Womack:

This is in response to your inquiry requesting concurrence with a preliminary jurisdictional determination on the subject property. The location of the activity is depicted on the enclosed map (enclosure 1).

Based upon the information provided, it appears there are jurisdictional areas within the project boundary subject to regulation pursuant to Section 404 of the Clean Water Act. The approximate extent of wetlands and other waters of the United States within the boundary of the property described in your letter is depicted on the enclosed preliminary map (enclosure 2). Any work involving the discharge of dredged or fill material (land clearing, ditching, filling, leveeing, etc.) within the limits of the jurisdictional areas identified will require a Department of the Army Section 404 permit prior to beginning work. For your information, I have included a copy of an appeals form (enclosure 3).

An application packet with instructions may be obtained at our official Regulatory Program webpage: <http://www.mvk.usace.army.mil/Missions/Regulatory.aspx>. An application for work in wetlands or other waters of the United States should be submitted at least 90 to 120 days in advance of the proposed starting date. In order to expedite the evaluation process, please refer to identification no. MVK-2014-602 when submitting the application.

If you have any questions, please contact Mr. Jim Cole of this office, telephone (601) 631-5289, fax (601) 631-5459, or e-mail address: jim.l.cole@usace.army.mil.

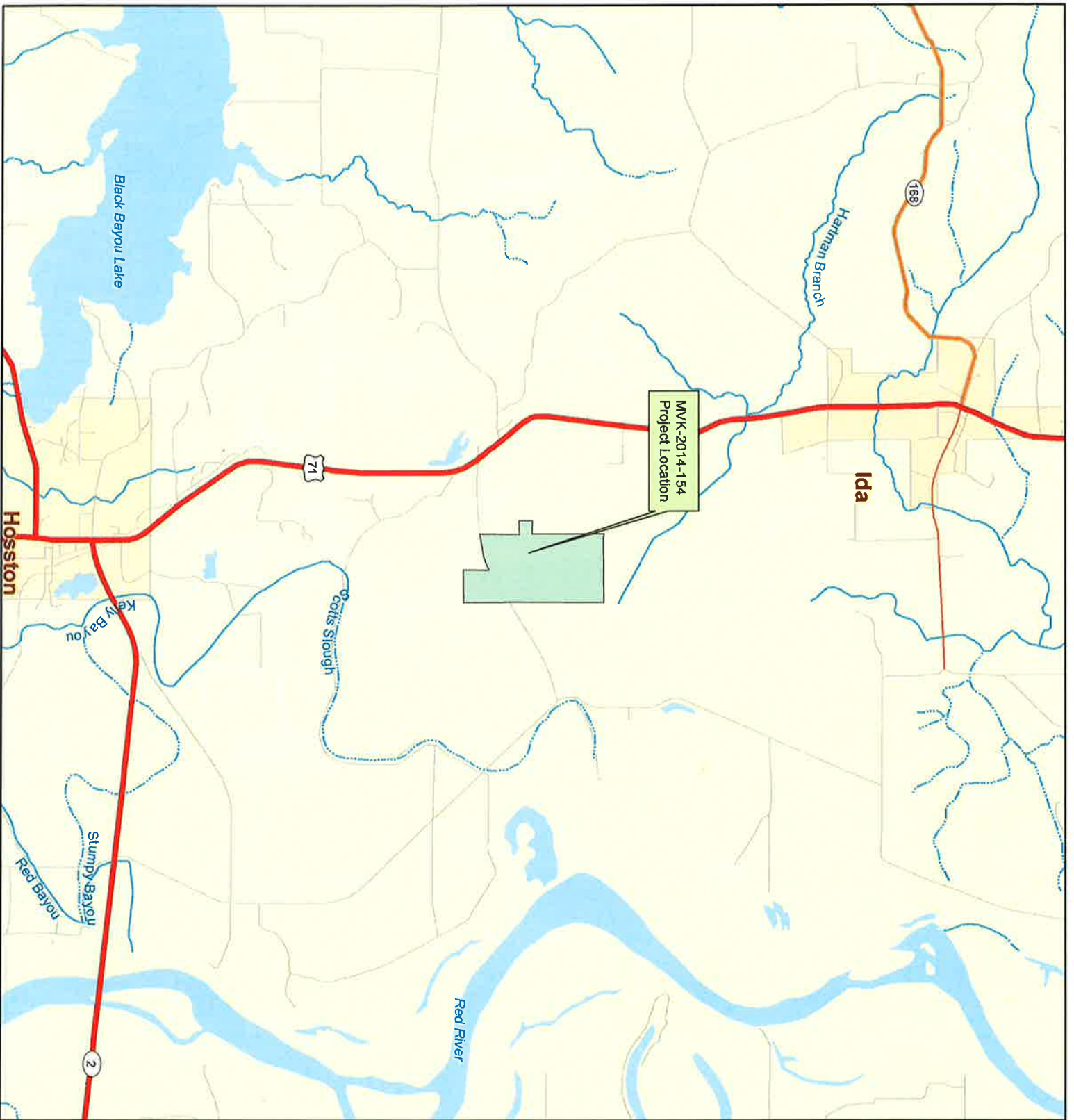
Sincerely,

A handwritten signature in cursive script that reads "Charles R. Allred, Jr.".

Charles R. Allred, Jr.  
Chief, Enforcement Section  
Regulatory Branch

Enclosures





25 August 2014

MVK-2014-602

Applicant:  
Loneoak Capital Management, LLC  
Proposed Work:  
Mitigation Bank  
Location:  
Sections 25, T28N-R15W  
Caddo Parish, Louisiana  
Map Background:  
Street Map USA

**Project Location Map**

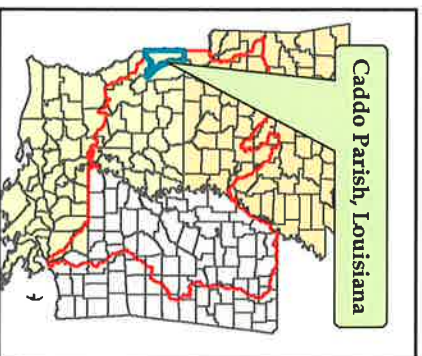
Prepared by:  
Jim Cole



**US Army Corps  
of Engineers®**

**Regulatory Branch**

**Enforcement Section**



**Caddo Parish, Louisiana**

ENCLOSURE 1



25 August 2014  
MVK-2014-602

Applicant  
Loneoak Capital Management, LLC  
Proposed Work:  
Mitigation Bank  
Location:  
Sections 25, T29N-R15W  
Caddo Parish, Louisiana  
Map Background:  
NAD 2013

**Preliminary**  
**Jurisdictional Determination**

Prepared by:  
Jim Cole

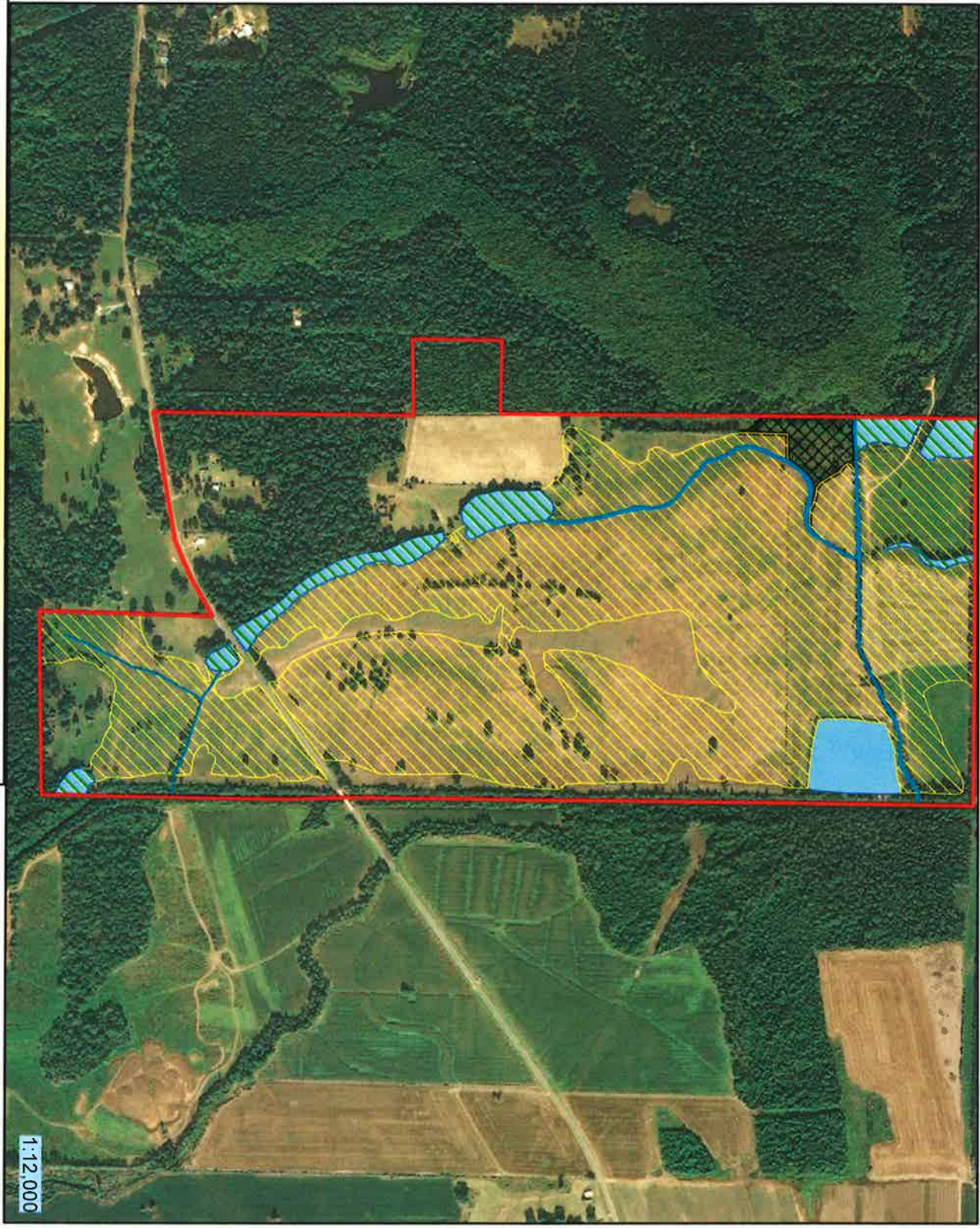
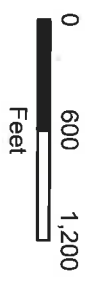


US Army Corps  
of Engineers



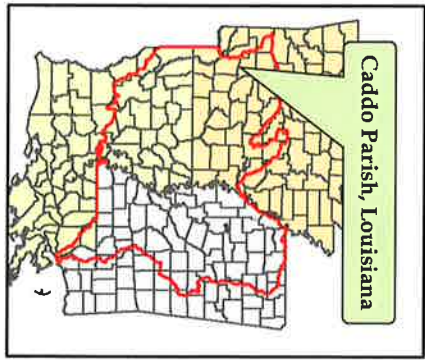
### Regulatory Branch

Enforcement Section



### Legend

- Property Boundary 389.99 Acres
- Other Waters 2.83 Acres/7649 Linear Feet
- Forested Wetlands 13.58 Acres
- Emergent Wetlands 226.68 Acres
- Constructed Pond 6.87 Acres
- Scrub Shrub Wetlands 5.11 Acres



Caddo Parish, Louisiana



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

Applicant: Loneoak Capital Management, LLC		File Number: MVK-2014-602	Date: 8/25/2104
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://www.usace.army.mil/cecw/pages/reg\\_materials.aspx](http://www.usace.army.mil/cecw/pages/reg_materials.aspx) 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.