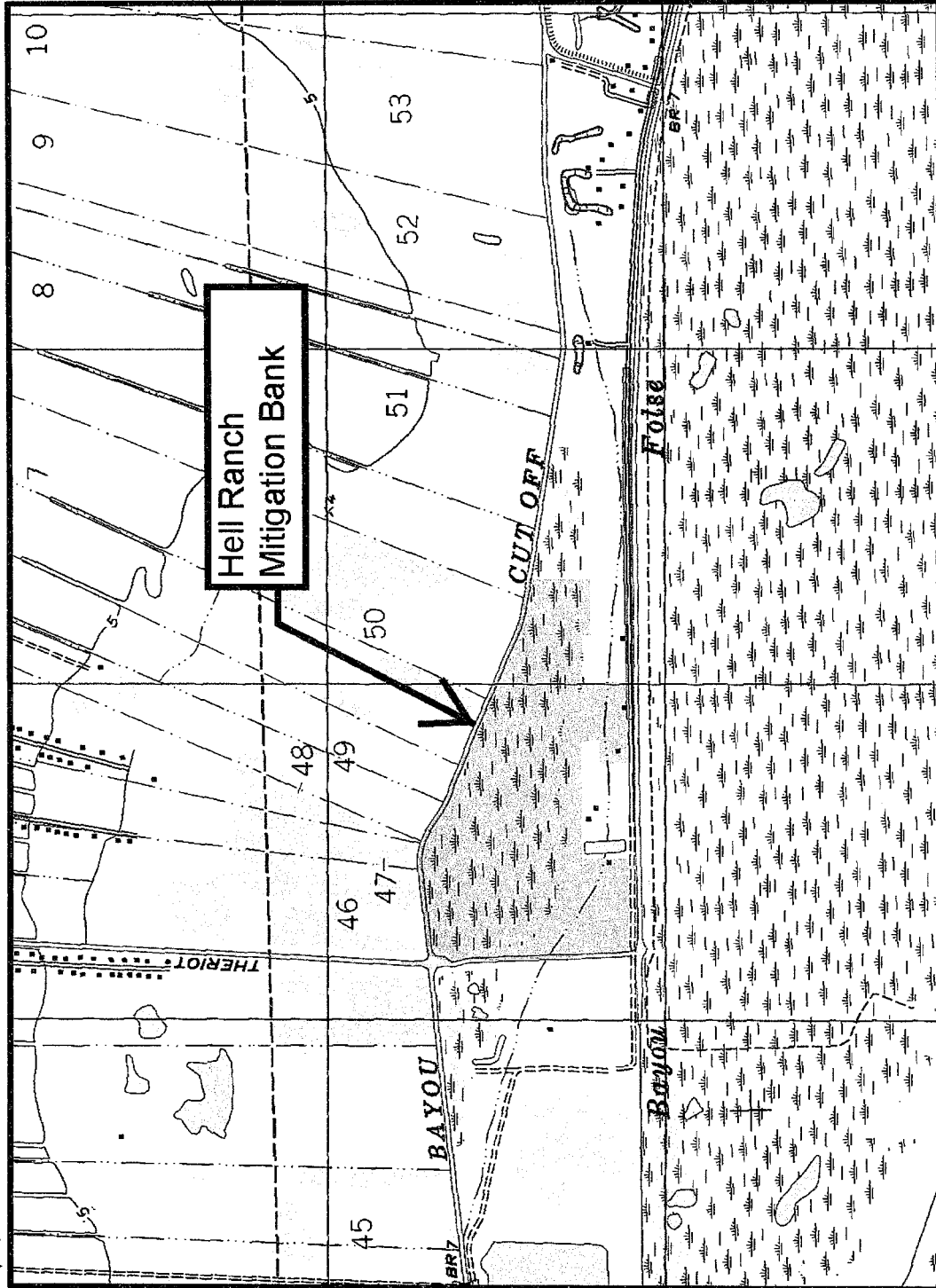


MVN-2009-02470



USGS Quad  
Map

## Hell Ranch Mitigation Bank

Lafourche Parish, Louisiana

Scale: NONE

Drawn By: Dwayne B  
Date: 8/17/2009

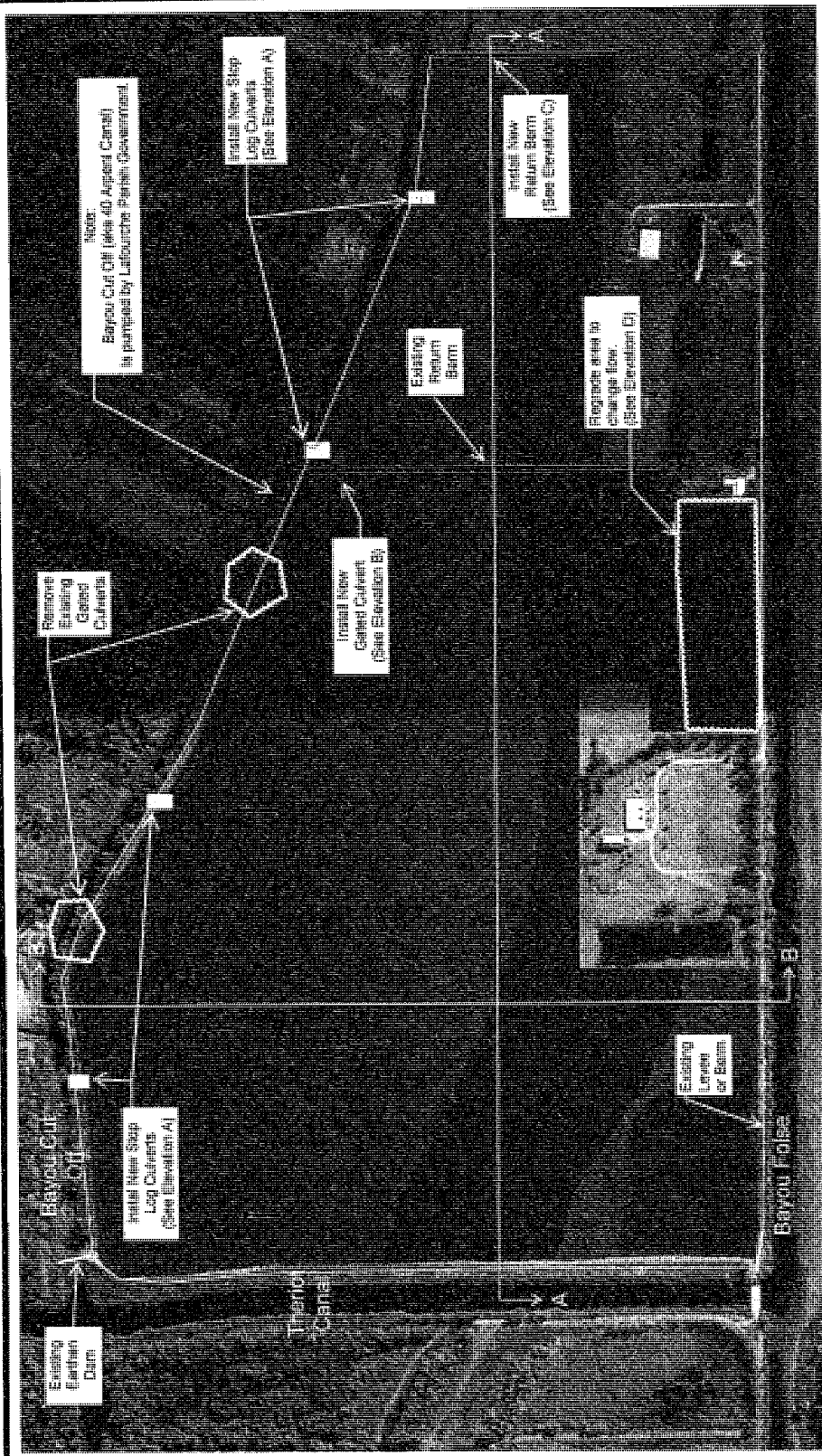
Prepared By:

Hell Ranch Mitigation Bank, LLC  
990 Bayou Folse Rd.  
Raceland, LA 70394

Vicinity Map

Figure 1B

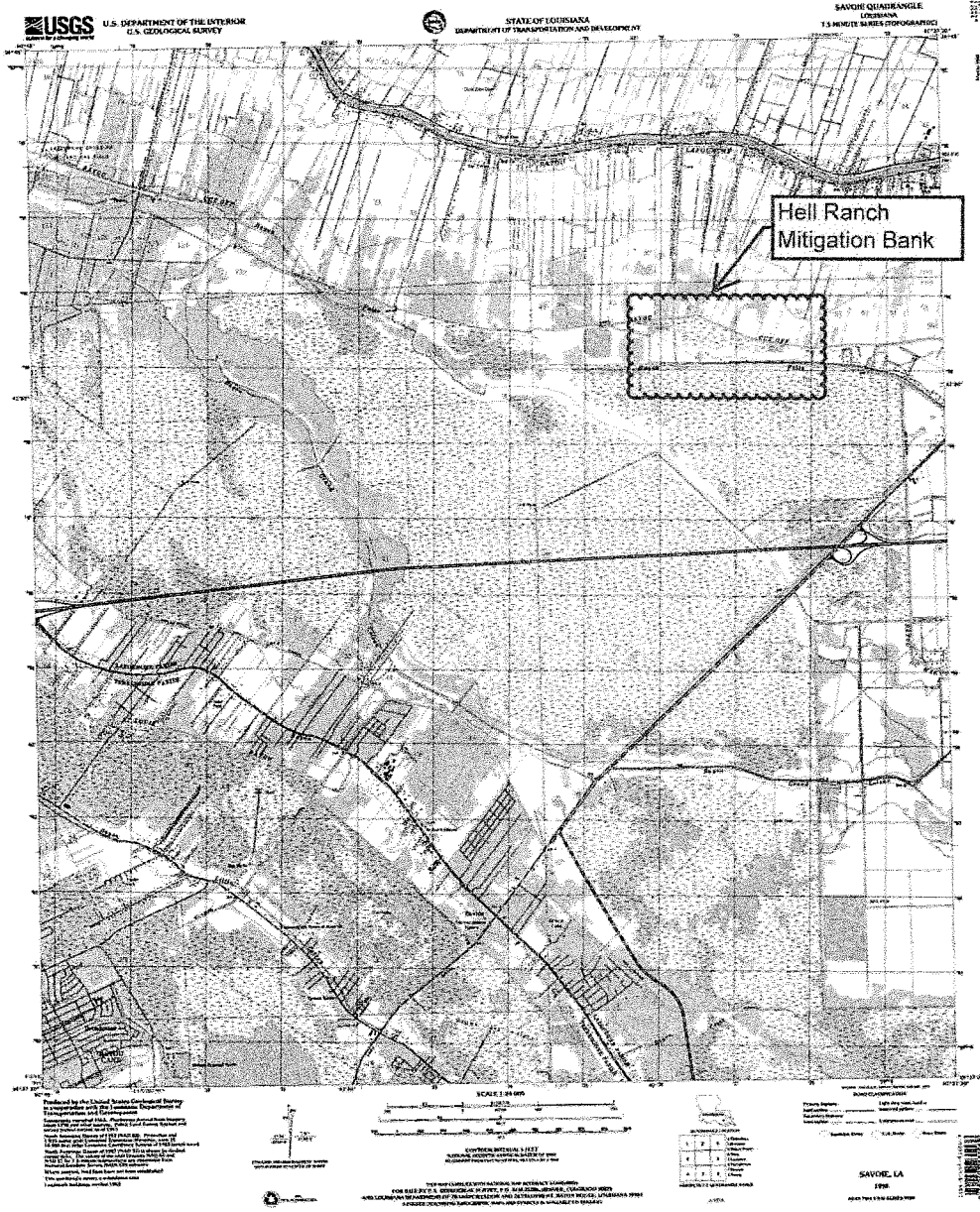
MVN-2009-02470



Lafourche Parish, Louisiana		Hell Ranch Mitigation Bank	
Scale: NONE		Prepared By: Hell Ranch Mitigation Bank, LLC 990 Bayou Folse Rd. Raceland, LA 70394	
Drawn By: Dwayne B		Plan View	
Date: 8/15/2010		Figure 2	

MVN-2009-02470

## USGS Quad Map



## Lafourche Parish, Louisiana

## Hell Ranch Mitigation Bank

Scale: NONE

Drawn By: Dwayne B  
Date: 8/17/2009

Prepared By:

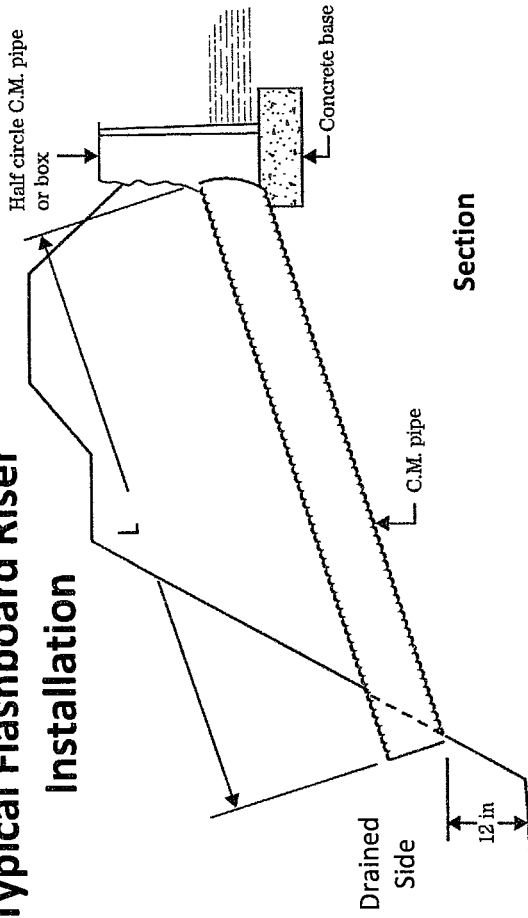
Hell Ranch Mitigation Bank, LLC  
990 Bayou Folse Rd.  
Raceland, LA 70394

## Vicinity Map

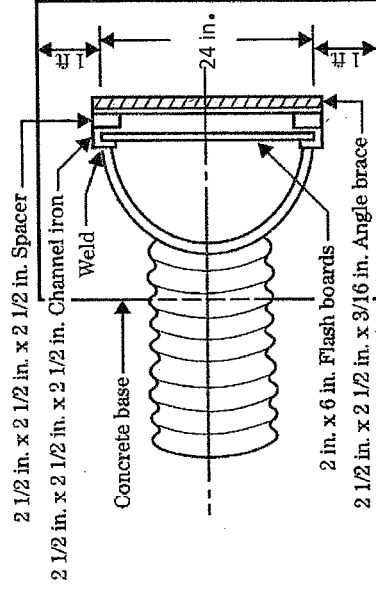
Figure 1A

MVN-2009-02470

## Typical Flashboard Riser Installation



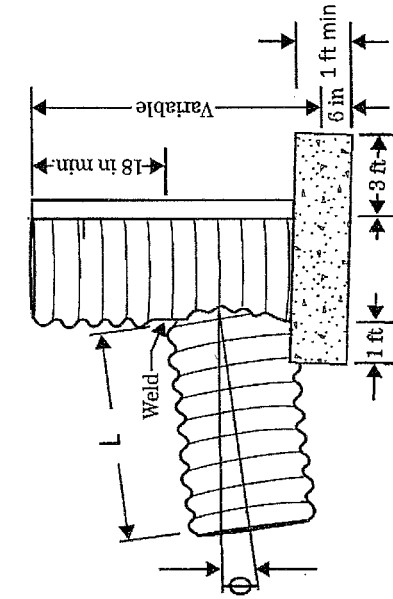
Section



Plan

### General Notes:

- 1) This drawing shows the typical installation of the flashboard Risers. Other types of Flashboard Riser type devices may be used; but, must be functionally equivalent. Actual Installation will be determined by conditions at the final location of each installation as shown on Fig. 2.
- 2) The length and angle of the C.M. Tail pipe is to be such that the discharge is approximately 12 inches above the nominal water level in the drained area.
- 3) The top surface of the base of the Flashboard Riser should be flush with the adjacent grade.
- 4) The height of the riser is such that the top of the is installed to a finished height of 6' elevation.



Elevation

## Hell Ranch Mitigation Bank

Lafourche Parish, Louisiana

Cross Section and  
Elevation Details

Prepared By:  
Hell Ranch Mitigation Bank, LLC  
990 Bayou Folse Rd.  
Raceland, LA 70394

Figure 3, Elevation A

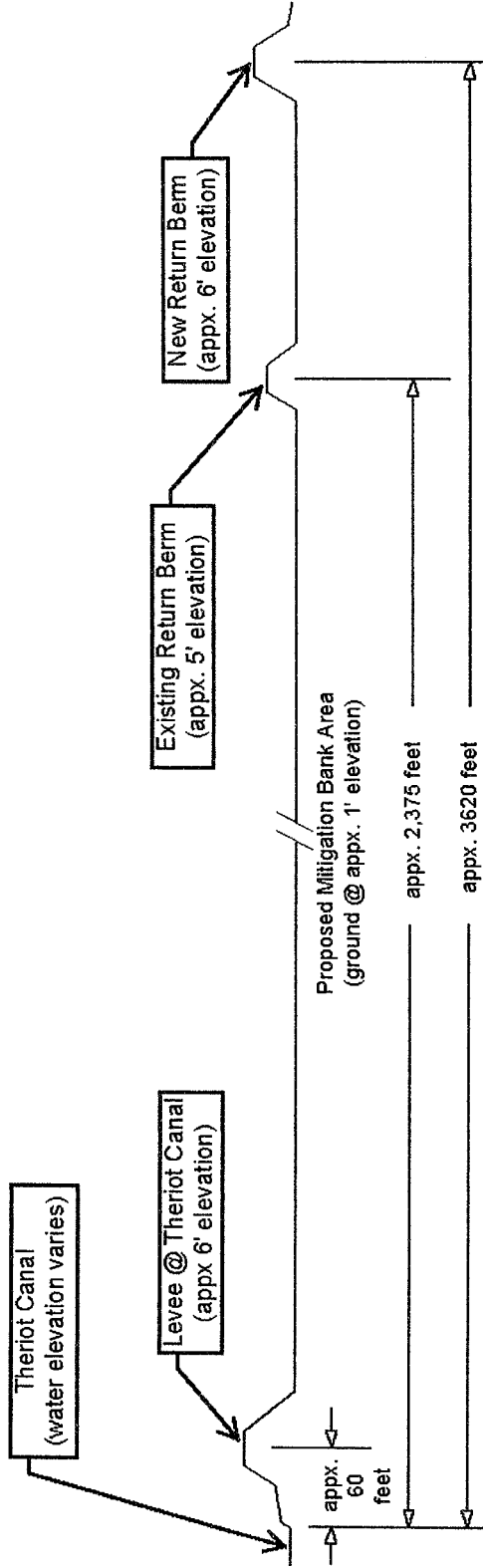
Scale: None

Drawn By: Dwayne B  
Date: 9/4/2010

MVN 2009-02470

## Cross Section A - A

(Not to Scale, Illustration purpose only.)



## Hell Ranch Mitigation Bank

Lafourche Parish, Louisiana

Scale:

Drawn By: Dwayne B

Date: 9/4/2010

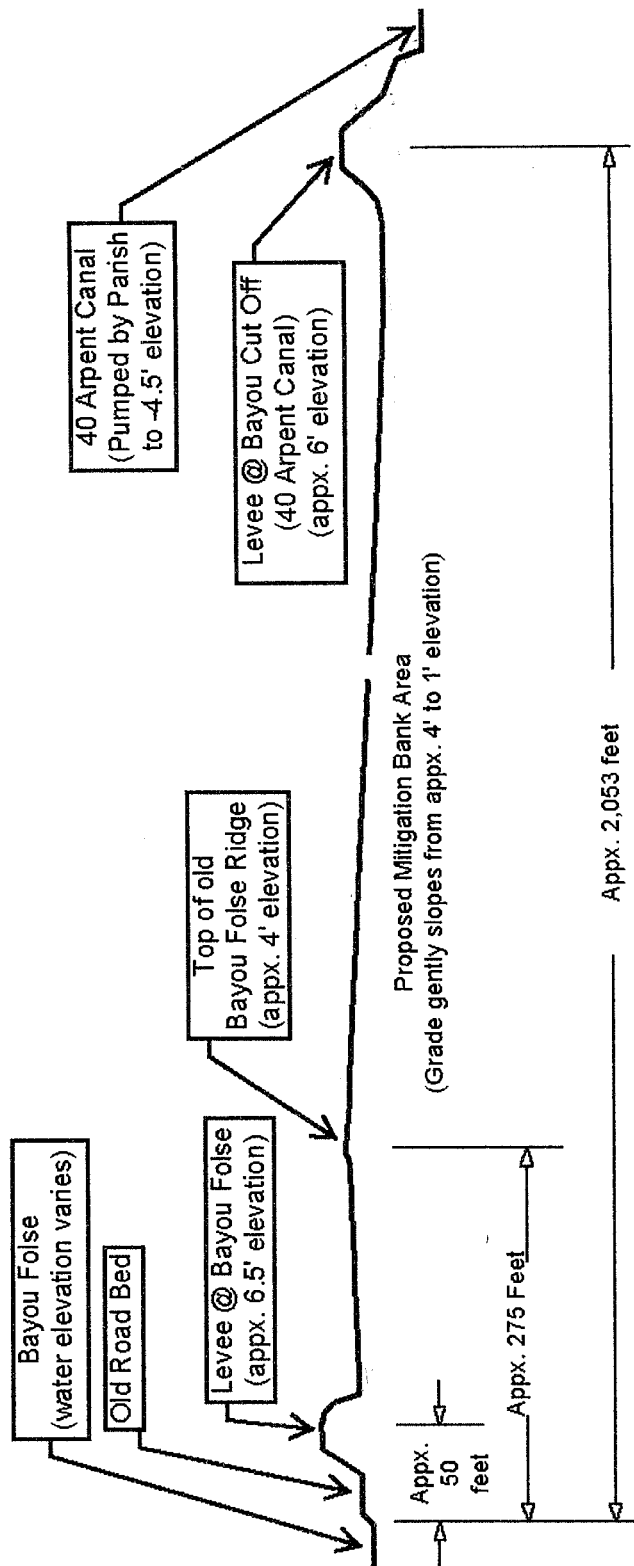
Prepared By:  
Hell Ranch Mitigation Bank, LLC  
990 Bayou Folse Rd.  
Raceland, LA 70394

Cross Section and  
Elevation Details

Figure 3, Cross Section A - A

MVN 2009-02470

Cross Section B - B  
(Not to scale, illustration purpose only.)

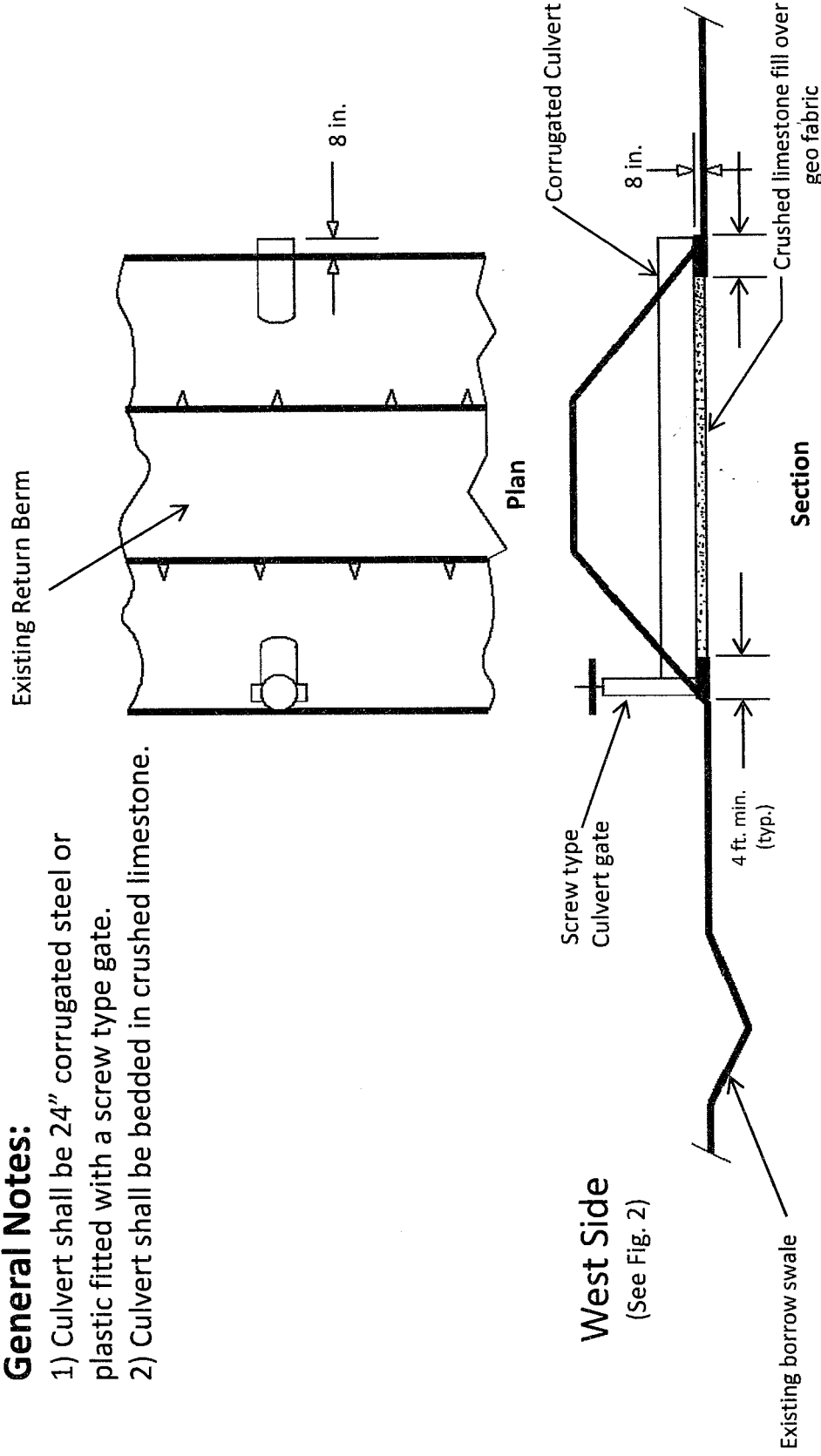


Lafourche Parish, Louisiana		Hell Ranch Mitigation Bank	
Scale:		Prepared By: Hell Ranch Mitigation Bank, LLC 990 Bayou Folse Rd. Raceland, LA 70394	Cross Section and Elevation Details
Drawn By: Dwayne B Date: 9/4/2010			Figure 3, Cross Section B - B

MVN-2009-02470

### General Notes:

- 1) Culvert shall be 24" corrugated steel or plastic fitted with a screw type gate.
- 2) Culvert shall be bedded in crushed limestone.



## Hell Ranch Mitigation Bank

Lafourche Parish, Louisiana

Scale: None

Drawn By: Dwayne B  
Date: 9/4/2010

Prepared By:

Hell Ranch Mitigation Bank, LLC  
990 Bayou Folse Rd.  
Raceland, LA 70394

Cross Section and  
Elevation Details

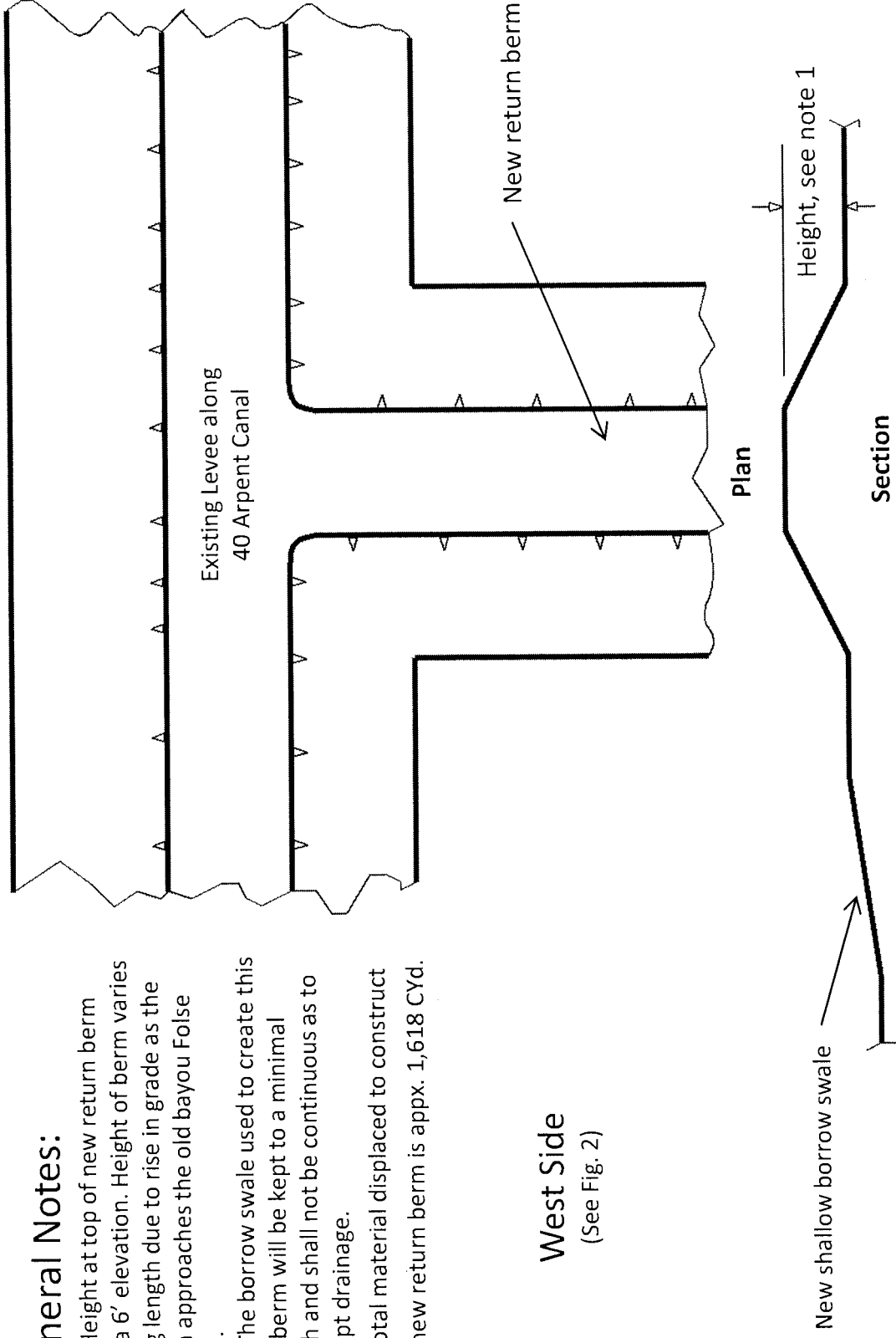
Figure 3, Elevation B

MVN-2009-02470

### General Notes:

- 1) Height at top of new return berm is at a 6' elevation. Height of berm varies along length due to rise in grade as the berm approaches the old bayou Folse ridge.
- 2) The borrow swale used to create this new berm will be kept to a minimal depth and shall not be continuous as to disrupt drainage.
- 3) Total material displaced to construct this new return berm is appx. 1,618 CYd.

**West Side**  
(See Fig. 2)



## Hell Ranch Mitigation Bank

**Lafourche Parish, Louisiana**

Scale: None

Drawn By: Dwayne B  
Date: 4/7/2011

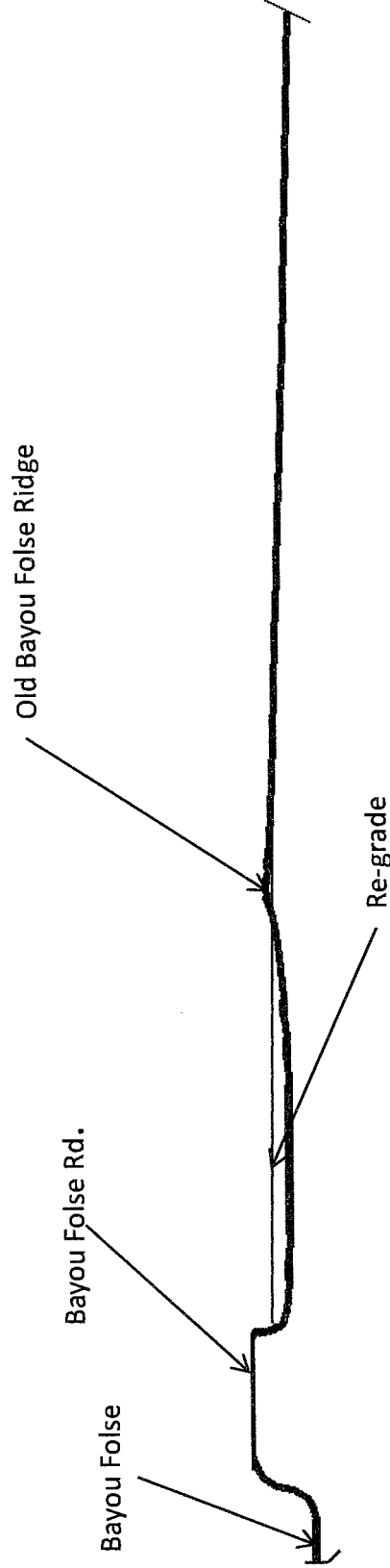
Prepared By:  
Hell Ranch Mitigation Bank, LLC  
990 Bayou Folse Rd.  
Raceland, LA 70394

Cross Section and  
Elevation Details

Figure 6F, Elevation C



MIN-2009-02470



Lafourche Parish, Louisiana		Hell Ranch Mitigation Bank	
Scale: None	Prepared By: Hell Ranch Mitigation Bank, LLC 990 Bayou Folse Rd. Raceland, LA 70394	Cross Section and Elevation Details	
Drawn By: Dwayne B Date: 9/4/2010		Figure 3, Elevation D	

<b>Table of Contents:</b>		<b>Page</b>
I	Introduction	4
II	Location, Climate and Historical Ecological Characteristics	4
III	Bank Goals and Objectives	5
IV	Sponsorship and Ownership of Bank Lands	5
V	Bank Size and Classes of Wetlands	7
VI	General Need and Technical Feasibility	7
VII	Existing Conditions	8
	A Existing and Surrounding Land Use	
	B Existing Plant Communities	
	C Soils	
	D Existing Hydrology	
	E Existing Wetland Status	
VIII	Geographic Service Area	12
IX	Site Restoration Work Plan	12
	A Surface Hydrology Restoration	
	B Vegetative Restoration and Re-establishment	
	C Other Site Work	
X	Monitoring and Maintenance Plan	14
	A General	
	B Noxious & Invasive Species Control	
	C Vegetative Management	
	D Risk	
XI	Adaptive Management	15
XII	Performance Standards, Financial Assurances and Long Term Protection	16
XIII	Methods for Determining Credits and Release of Credits	17
XIV	Accounting Procedures	18
XV	Conclusion	18
XVI	References	18
XVII	List of Acronyms	19

**Attachments:**

Figure 1A, 1B & 1C	Vicinity Map (Quad)
Figure 2	Site Map
Figure 3A, 3B & 3C	Soil Maps
Figure 4	Proposed Mitigation Bank Aerial (Site Plan)
Figure 5	Area Map (Aerial)
Figure 6A	Proposed Hydrological Restoration Plan
Figure 6B	Hydrological Restoration Plan, Cross section A-A
Figure 6C	Hydrological Restoration Plan, Cross section B-B
Figure 6D	Hydrological Restoration Plan, Elevation A
Figure 6E	Hydrological Restoration Plan, Elevation B
Figure 6F	Hydrological Restoration Plan, Elevation C

Figure 6G	Hydrological Restoration Plan, Elevation D
Figure 7A & 7B	NRCS Wetland Determination
Figure 8A (2 pgs.)	Natural Communities of LA, Freshwater Marsh
Figure 8B (2 pgs.)	Natural Communities of LA, Bottomland Hardwood Forest
Figure 8C (2 pgs.)	Natural Communities of LA, Cypress Swamp & Cypress – Tupelo Swamp
Figure 9	USGS West Central Louisiana Coast Cataloging Unit 08090302
Attachment A	Wetland Determination Report and Application

## **I Introduction**

This report summarizes the mitigation potential of the Initial Phase of the proposed Hell Ranch Mitigation Bank (HRMB). At this time, this prospectus serves to summarize the existing conditions and assesses the potential for establishing a mitigation bank on approximately 103.5 acres of land in Lafourche Parish, Louisiana. The HRMB is being established with the purpose of providing compensatory wetland mitigation for unavoidable impacts to wetlands associated with Section 404 permits issued by the US Army Corps of Engineers (USACE), New Orleans District, (CEMVN) and for impacts associated with USACE Civil Works Projects under the Water Resources Development Act of 2007, Section 2036(c)(1).

## **II Location, Climate and Historical Ecological Characteristics**

The proposed mitigation area is on one contiguous section of land in central Lafourche Parish, Louisiana. (See figures 1A and 1B) The tract is located southwest of Raceland, LA in a non-incorporated, non-zoned area adjacent to Bayou Folse Road within Sections 5 & 6, Township 16 South, Range 18 East and is approximately centered at 29.713843° Latitude, -90.657342° Longitude. The HRMB is currently outside of the LA Coastal Zone Boundary and directly adjacent to the LA Coastal Conservation Plan Area as defined by the LA Department of Natural Resources (DNR). It is important to note that the Louisiana DNR is nearly complete with a study and report to re-establish the LA Coastal Zone Boundary. This report will be presented to the LA Legislation in 2011. If this revised boundary is adopted, and all indications is that it will be, HRMB will be located within the LA Coastal Zone Boundary.

Lafourche Parish lies entirely within the Mississippi river delta. The soils primarily formed by decomposed plant remains and by alluvium deposited by Bayou Lafourche, which was once a channel of the Mississippi River and the Bayou Lafourche distributaries. Loamy soils are dominant on the highest positions of the natural levees and clayey soils are dominant on the low positions of the natural levees and in back swamps. Semifluid, organic soils are dominant in the marshes. (Data from Soil Conservation Service {SCS} 1968)

Lafourche Parish has long, hot and humid summers with coastal areas frequently cooled by sea breezes. Winters are warm and only occasionally interrupted by cool air from the north. Rain occurs throughout the year with a total annual precipitation of 59.35 inches. The average growing season is approximately 282 days. (Data from SCS 1968)

The Historical Ecological Characteristics of the proposed HRMB and the surrounding lands as a combination of primarily freshwater marsh interspersed with cypress & tupelo swamp and bottomland hardwoods was interrupted by clear cut logging in 1900 and subdivision into farmlands in 1918. With the subdivision of the land for farming, came damming off of the reaction to adjacent wetlands and pumping of the internal rain water and a general lowering of the water table. Most adjacent historical wetlands in the area suffered a similar fate; but, to a

lesser extent. Today, most of the area surrounding the proposed HRMB has reverted to wetland functions.

### **III Bank Goals and Objectives**

The goal of Hell Ranch Mitigation Bank, LLC (Sponsor) is to restore a 103+ acre site located near Raceland, Lafourche Parish, Louisiana (See Figure 2) as a sustainable freshwater wetlands ecosystem. The site will be restored as it existed prior to being converted to croplands after clear cutting in 1900 and subdivision into farmland in 1918. The site is former farmlands used for production of various crops and is now being used primarily for the production of hay. Overall, the goal is to restore Historical Ecological Characteristics as wetland functions and values associated with Bottomland Hardwood Forest, Cypress / Tupelo Swamps and Freshwater Marshes such as surface water retention, stream flow maintenance, aquatic productivity, plant diversity, nutrient cycling and plant and wildlife habitat.

More specifically, the Sponsor proposes to restore 67.1 acres to Freshwater Marsh by allowing the hydrology of this area to be restored to its prior condition, in a controlled manner along with invasive species control. Additionally, the Sponsor will restore 29.7 acres of slightly elevated land along a natural ridge (Bayou Folse Ridge) to Bottom Land Hardwood Forest through surface hydrology restoration, invasive species control and native vegetative planting. Finally, an additional 6.7 acres of historical freshwater swamp will be restored to a Cypress / Tupelo Swamp by contour elevation changes to the existing crawfish pond area along with native vegetative planting and control of invasive species.

The establishment of HRMB will serve as a Freshwater Marsh, Bottomland Hardwood and Cypress / Tupelo swamp mitigation area offering for sale habitat credits as compensation for unavoidable impacts to wetlands associated with Coastal Use Permits (CUP) issued by the Louisiana Department of Natural Resources (DNR) and the US Army Corps of Engineers permits authorized under Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act, issued by the USCAE, New Orleans District (CEMVN).

Further, the establishment of HRMB will serve as a template for adding additional and adjacent prior converted crop lands into future phases of the HRMB as time and resources allow.

### **IV Sponsorship and Ownership of Bank Lands**

Hell Ranch Mitigation Bank, LLC (HRMB,LLC) is the Sponsor, Responsible Party and Owner of the Hell Ranch Mitigation Bank (HRMB) in perpetuity. Throughout this document, the term Sponsor indicates HRMB, LLC. The HRMB,LLC is partially owned by each of the land owners who own the property to be encompassed within the initial phase of the HRMB. These landowners include Mr. Octave “Butch” Monnier and Mr. Dennis Blanchard. The contact information for each of these parties is as follows”

**Hell Ranch Mitigation Bank, LLC**

990 Bayou Folse Road

Raceland, LA 70394

Phone: 985-537-6707

Contact Person: Butch Monnier ([hellranch@gmail.com](mailto:hellranch@gmail.com))

Dwayne Bourgeois (985-228-0052, [dwayne@workforcerecovery.com](mailto:dwayne@workforcerecovery.com))

Mr. Octave Monnier

990 Bayou Folse Road

Raceland, LA 70394

Phone: 985-537-6707

Mr. Dennis Blanchard

876 Bayou Folse Road

Raceland, LA 70394

Phone: 985-537-7521

The aforementioned landowners own all of the land that encompasses the initial phase of the HRMB. The landowners and the proposed Sponsor have entered into an agreement to use the property for the purposes of establishing a mitigation area. The property proposed for mitigation is free of any mortgage, liens, encumbrances, easements, servitudes or restrictions. The HRMB lies in an unincorporated, un-zoned portion of Lafourche Parish.

The members of HRMB, LLC are particularly capable of undertaking the HRMB project. Mr. Monnier has over 38 years experience as a corporate executive overseeing literally hundreds of multi-million dollar projects. In addition, he and his wife Sandy Leblanc Monnier are avid conservationist. Mr. Blanchard, a retire teacher and coach along with his wife Cindy are also conservationist with a keen interest in the success of this project. Further technical expertise comes from the children of the Monnier's and Blanchard's who are also active members in HRMB, LLC. Monique Monnier Jones has a BS in Biology, English and General Studies. Her primary course work in Biology was environmental and Botany with a minor in chemistry. Mr. Brett Michael Monnier is an IT specialist at the University of Texas Medical Center. Mr. Robbie James LeBlanc is in charge of Health, Safety, Security and Environmental concerns for Cenac Towing. Mr. Cory Blanchard holds a BS in Environmental Biology and he is in charge of Corporate Environmental Compliance at Bollinger Shipyards. Finally, Courtney Blanchard is a teacher who holds a BS in Agricultural Business. This diverse group of members in HRMB, LLC will assure the long term success of this project.

More specifically, as to the day to day operations of the HRMB, daily monitoring of the overall status of the bank, water control monitoring, security, adaptive management needs and overall health of the plant and wildlife species within the bank will be performed by Octave and Sandy Monnier. Consultant Dwayne Bourgeois will also be monitoring the progress of the bank annually to assure that the objectives of the bank are being met. Dwayne Bourgeois is also available on an as needed basis to address any problems or concerns that may arise. The

Monniers, along with Consultant Dwayne Bourgeois will be responsible for completing and filing all reports required by the final Banking Instrument. The Monniers are uniquely positioned for these tasks as they live directly adjacent to the HRMB property and are recently retired. In addition, Monique Monnier Jones will be responsible for annual monitoring of the status of the plant community and making any suggestion to the adaptive management in response to her observations.

While Hell Ranch Mitigation Bank, LLC is the Sponsor, Responsible Party and Owner of the Hell Ranch Mitigation Bank (HRMB) in perpetuity, it is expected that the Management team, as described above, will be responsible for the long term management of the bank. If at any time during the management period, the members of HRMB, LLC become unable to perform the required management and monitoring task, additional outside consulting will be hired to fill these rolls on an as needed basis.

## **V Bank Size and Classes of Wetlands**

The Sponsor intends to restore this 103+ acre initial site to 67.1 acres of Fresh Water Marsh, 29.7 acres of Bottomland Hardwood Forest and 6.7 acres of Cypress – Tupelo Swamp at the HRMB (See Figure 4). These three Natural Communities of Louisiana are beautifully detailed with the value, rarity, plant and animal species, range, threats and beneficial management practices illustrated in publications by the Louisiana Department of Wildlife and Fisheries and the Barataria – Terrebonne National Estuary Program included in this prospectus as Figure 8.

## **VI General Need and Technical Feasibility**

Generally, the need for the HRMB lies in the need to provide compensatory mitigation within the Barataria- Terrebonne Basin, hydrologic unit codes 08070300, 08090301 & 08090302 this is the primary rationale for the creation of the Hell Ranch Mitigation Bank. Use of the bank in the greater south Louisiana area would be determined by CEMVN on a case by case basis. The proposed Hell Ranch Mitigation Bank site lies within hydrologic unit code (HUC) 08090302 as depicted on Figure 9 which would be the primary HUC for Hell Ranch Mitigation Bank. Secondary HUCs would include 08070300 and 08090301. The Barataria – Terrebonne Basin includes significant metropolitan growth areas such as the Houma – Thibodaux Region. Both of these areas as well as the northern portions of both Lafourche and Terrebonne Parishes in general are currently seeing increased residential and industrial growth due to land loss and storm flood threats to the lower portions of each Parish. The HRMB is well suited to provide compensatory mitigation for CEMVN permitted unavoidable wetland impacts within this watershed. Of particular interest is the extremely limited availability of Freshwater Marsh and limited availability of Cypress – Tupelo Swamp from any existing Mitigation Banks within this watershed.

The HRMB was historically a combination of Freshwater Marsh, Bottomland Hardwood Forest and Cypress – Tupelo Swamp underlain by hydric soils typical of those in the Mississippi River Delta floodplain in Lafourche Parish. The prior conversion of the HRMB site by forced drainage to farmlands segmented adjacent wetlands devaluing the entire area from a habitat point of view. Establishment of the HRMB will restore the contiguousness of adjacent existing Freshwater Marsh, Bottomland Hardwood Forest and Cypress – Tupelo Swamp as is evident in Figures 1 and 5.

The construction work required to develop the HRMB is routine and simple making the project technically feasible. The site includes very little existing invasive species that would require initial removal. As such, the mitigation work plan will be primarily the planting of bare-root seedlings and hydrological modifications. The hydrological modifications include light site work as required to remove the current functionality of existing ditches through plugging at intervals and plugging drains previously created to facilitate drainage of the site. Such activities have a proven success record in wetland restoration and mitigation creation. Details of the Site Restoration Work Plan are found in section IX of this Prospectus. The Sponsor has sufficient funds to accomplish the required vegetative plantings and site work. As described in the next section, the existing soils are particularly suitable for wetland habitat.

## **VII Existing Conditions**

### **A Existing and Surrounding Land Use**

The primary current land use of the HRMB site is in the pasture management in support of the production of hay for livestock. Additionally, a small amount of current use is in pasture management for livestock and non-commercial crawfish ponds. As can be seen on the Site Map (Figure 2), the site is practically devoid of any trees or marsh grasses which are in opposition to its historical value and the adjacent area.

From Figures 1 & 5, one can clearly see that the surrounding land is still primarily Freshwater Marsh, Bottomland Hardwood Forest and Cypress – Tupelo Swamp. More specifically, the surrounding land use is as follows:

To the North: The HRMB site is bounded by the 40 Arpent Canal (AKA Bayou Cutoff) and primarily consist of Bottomland Hardwood Forest with lesser amounts of prior converted croplands and pasture.

To the East: The HRMB site is bordered by prior converted cropland primarily as managed pasture for the production of livestock.

To the South: The HRMB site is bounded by the rerouted Bayou Folse. Beyond Bayou Folse is an expansive area of Freshwater Marsh, primarily Paille Fine Marsh (maidencane) a large part of which is floating (flotant) marsh interspersed with stands of



Black Willow (*Salix nigra*) and Chinese Tallow (*Triadica sabifera*), especially along its perimeters.

To the West: The HRMB site is bounded by Theriot Canal. Beyond the Theriot Canal is additional prior converted cropland currently being used in pasture management for the production of hay and stands of Bottomland Hardwood Forest, additional Freshwater Marsh and Cypress – Tupelo Swamp.

These existing hard boundaries provide the rationale for setting the limits of the proposed services area for this initial phase of the HRMB.

## **B Existing Plant Communities:**

With the primary current use of the HRMB site as pasture managed for the production of hay for livestock, the existing number of plant species is very low. Most of the land has been planted with commercial grasses suitable for the production of hay. Dominant non-commercial species include:

<u>Common Name</u>	<u>Scientific Name</u>	<u>Region 2 Designation</u>
Johnsongrass	<i>Sorghum Halepense</i>	FACU
Bermudagrass	<i>Cynodon dactylon</i>	FACU
Ryegrass, perennial	<i>Lolium perenne</i>	FACU
Timothy	<i>Phleum Pratense</i>	FACU
Dallisgrass	<i>Paspalum dilatatum</i>	FAC+
Clover, White	<i>Trifolium repens</i>	FACU
Bahia Grass	<i>Paspalum notatum</i>	FACU+
Clover, Red	<i>Trifolium pretense</i>	FACU-
Knotweed, prostrate	<i>Polygonum aviculare</i>	FAC-
Butter-cup, Hairy	<i>Ranunculus sardous</i>	FAC+

## **C Soils**

Figure 3 shows a custom Soil Map for the HRMB produced from the USDA Natural Resources Conservation Service (NRCS) Web Soil Survey. The predominate soil is Rita Muck (Ra) which makes up 67.1 acres or 64.8% of the project site. Schriever Clay (Sk) makes up 29.7 acres or 28.7% of the project area. The remaining area is classified as Schriever Clay, occasionally flooded (Sr) making up 6.7 acres or 6.4% of the project area.

The soil contours indicated on the NRCS Soil Map are consistent with observations that can be made on site and are the basis for the different types of wetlands proposed herein. Figure 4, the site plan shows the arrangement of Freshwater Marsh, Bottomland Hardwood and Cypress – Tupelo Swamp along the various soil contours. Support for the success and suitability of these soils to support the specific wetland habitat is found in

the United States Department of Agriculture, Soil Conservation Service, Soil Survey of Lafourche Parish, Louisiana (1984) as referenced below.

Freshwater Marsh in Rita muck (Ra): The Soil Survey indicates that the Ra soils in Lafourche Parish are found “in former freshwater marshes that are drained and protected from most floods”. Therefore, returning the natural hydrology will allow the land to support freshwater marsh wetlands. Freshwater marsh is also preferred here because “This soil is poorly suited to woodland. Native trees did not grow on this soil before it was drained.” This factor will work in favor of a freshwater marsh area as it will limit the amount of native and invasive trees that would otherwise require substantial mechanical control. However, the Soil Survey also states that “This soil is well suited to wetland wildlife habitat and moderately well suited to openland wildlife habitat. Habitat for openland wildlife habitat can be improved by maintaining vegetated areas for wildlife cover.” As such, a small amount of vegetative cover, from non-invasive species, may be tolerated or even desirable for the benefit of wildlife.

Bottomland Hardwood Forest in Schriever clay (Sk): Adjacent to the Freshwater marsh, in what the Soil Survey indicates as Sk (or Sharkey clay) is a proposed stand of Bottomland Hardwoods. This soil runs along the old meander of Bayou Folse, a former distributary of Bayou Lafourche, as is consistent with the Soil Survey’s description of the deposition of these soils. According to the Soil Survey, “This soil is well suited to woodland. It has high potential for production of bottom land hardwoods. American sycamore, cherrybark oak, eastern cottonwood, green ash, pecan and sweetgum are the main suitable trees”. Again, natural hydrology will have to be restored to the sight. Further, the Soil Survey states “This soil has good potential for use as woodland and wetland wildlife habitat and fair potential for openland wildlife habitat.

Cypress – Tupelo Swamp in Schriever clay, occasionally flooded (Sr): Also consistent with the Soil Survey’s deposition of the soils, the Sr soils (also called Sharkey clay, occasionally flooded) are found on the lower positions of the old Bayou Folse Ridge. A good portion of this area is currently in a crawfish pond which benefits from the natural introduction of ground water from the old Bayou Folse aquifer. Restoring the natural hydrology in a controlled manner, along with vegetative planting of flood tolerant species, specifically baldcypress and tupelo gum will result in a sustainable Cypress – Tupelo Swamp. The Soil Survey indicates that “This soil is well suited to wetland and woodland wildlife habitat.”

## **D Existing Hydrology**

Currently, the HRMB site is bounded to the south and west by manmade levees which buffer the property from Bayou Folse and Theriot Canal respectively. Bayou Folse and the Theriot Canal are connected. Freshwater from the Thibodaux area drains down the 40 Arpent Canal into the Theriot Canal and then into Bayou Folse. Water from Bayou

Folse drains into the Company Canal in Lockport which then drains into the GIWW in Larose. These levees are built to approximately 6 feet above sea level offering substantial protection from backwater flooding during storm events. To the north, another manmade levee isolates the property from the 40 Arpent Canal (AKA Bayou Cutoff) which is dammed at Theriot Canal and pumped by the Lafourche Parish Government (LPG) into Bayou Folse at two locations. The old Bayou Folse ridge, which bisects the site, causes the majority of the land, which is to the north of the ridge to drain into the 40 Arpent Canal through a series of ditches and gated culverts. Historically, water south of the ridge, drained via ditches and gated culverts into Bayou Folse. This water has since been diverted to the north to protect the property from storm flooding. The gated culverts are currently used to isolate the area from extremely high storm water elevations in Bayou Folse.

The water level in the 40 Arpent Canal, while typically pumped down by the LPG to approximately a -4.0 ft. NAVD88 elevation, varies dramatically during the course of a year. The 40 Arpent Canal has a very large contributing drainage area relative to its pumping capacity. Water north of the 40 Arpent Canal, which is gravity fed into the canal, frequently floods the undeveloped areas north of the canal for sustained periods of time during the course of a year. Currently, these floods are prevented from entering the property by gates installed on the drainage culverts. The creation of the HRMB provides a huge improvement to the drainage of the areas north of the 40 Arpent canal by allowing the 103+ acres of the HRMB to serve as storm water detention. Currently this detention capacity is denied by the levee along the 40 arpent canal and the gated culverts.

## **E Existing Wetland Status**

Figure 7 is a Wetland Determination made on the HRMB site by the USDA Natural Resources Conservation Service. (NRCS) Most of the site has been classified as Prior Converted Cropland (PC). The non-wetland designation referred to on this Wetland Determination is on the manmade levees described above. While these levees are part of the property owned by the land owners, this land is intended to remain as buffers and is not included in the HRMB mitigation site. The Lafourche Parish Government and the North Lafourche Conservation, Levee and Drainage District maintain legal servitudes on these levees along with the responsibility of maintaining them. The Artificial Wetland (Pond) is not included in the mitigation site.

The attached determination does not fully extend to the eastern boundary of the HRMB mitigation site. However, all indications are that this property, being identical in make-up, soils and hydrology, would receive a similar Wetlands Determination.

In conjunction with the preparation of this Prospectus, a Wetland Delineation Report was performed and submitted independently to the Corps (CEMVN) in accordance with the *Corps of Engineer's Wetland Delineation Manual* (1987) and the Corps' *Interim*

*Regional Supplement to the Corps of Engineers Wetland Delineation Manual, Atlantic & Gulf Coastal Plain Region. A copy of the same is included as Attachment A of this Prospectus.*

## **VIII Geographic Service Area**

The HRMB is in the Barataria – Terrebonne Basin within the United States Geological Survey (USGS) West Central Louisiana Coast Cataloging Unit 08090302 which includes large portions of Assumption, Lafourche and Terrebonne Parish as well as small parts of Ascension, Iberville, St. Mary & St. Martin Parishes. (See Figure 9) Projects impacting jurisdictional waters and/or special aquatic sites within this cataloging unit, where determined appropriate by CEMVN, could use this bank to compensate for unavoidable loss to wetlands. The Central Louisiana Coast Accounting Unit (080903) and the Lower Grand Accounting Unit (080703) both of which make up the Barataria – Terrebonne Basin, would serve as the secondary service areas as appropriate. Use of the HRMB beyond its cataloging unit would be determined by CEMVN on a case by case basis.

## **IX Site Restoration Work Plan**

### **A Surface Hydrology Restoration**

As an overall guidance and to add procedural and technical background, all hydrology and hydraulic restorations as described in this Site Restoration Work Plan and associated figures will follow the guidance provided by the United States Department of Agriculture, Natural Resource Conservation Service, Part 650 Engineering Field Handbook, *Chapter 13, Wetland Restoration, Enhancement or Creation* (April 2008) and pertinent sections of the *Wetland Restoration, enhancement, and Management* publication (January 2003). The dominant sources of water are direct precipitation, overland flow from precipitation events and groundwater discharge. Direct precipitation is in excess of 59 inches per year. Fresh groundwater discharge, especially along the old meander of Bayou Folse, is a historically proven feature of the mitigation area.

Existing drainage ditches will be plugged at periodic intervals to prevent excess drainage in any area and to achieve greater wetland hydrology within the mitigation area.

It is also anticipated and part of the restoration plan that small, temporary “rice” berms will be installed at grade contours in 0.25 foot elevation intervals along existing contour lines to detain water run-off until natural hydrology is established. “Rice gates” will be installed at fixed overfall points to prevent these levees from being cut by runoff flows, improving longevity of the rice berms. These berms are considered temporary and will

provide a series of impoundments to increase hydrology until nature (debris, vegetation, and wildlife) establishes onsite hydrology.

Existing gated drainage culverts to the 40 Arpent Canal will be replaced with flashboard riser type drainage gates allowing precise control the water level within the mitigation site. (See Figure 6) These flashboard riser structures will serve several purposes. First, they will allow for a gradual reintroduction of water levels in the mitigation area. As such, plantings in the Bottomland Hardwood and Cypress – Tupelo Swamp areas of the mitigation area can be performed and maintained under ideal conditions. Second, they allow for a controlled re-elevation of the water level to control undesirable species and promote the restoration of vegetation in the freshwater marsh areas. Finally, these structures will allow the frequent capacity for aquatic organisms to enter and leave the wetlands via high external water elevations caused by periodic storm water elevations to the north of the project site.

As a buffer, and to provide access through the project area, a return berm will be constructed as shown on the Proposed Hydrological Restoration Plan (Figure 6). Gated culverts will be provided through these return berms as indicated.

The Sponsor does not anticipate any long term structural or mechanical management requirements needed to assure the above hydrologic restorations. Additionally, there are no known outside or adjacent hydrological sources or disturbances, beyond the control of the sponsor, which would affect this hydraulic restoration.

The resulting hydrology restoration will increase retention time of surface water and saturation time of the site which will reduce nonpoint source runoff and increase water quality.

## **B Vegetative Restoration and Re-establishment**

In general, all vegetative restorations will follow the guidance provided by the United States Department of Agriculture, Natural Resource Conservation Service, Part 650 Engineering Field Handbook, *Chapter 13, Wetland Restoration, Enhancement or Creation* (April 2008) and pertinent sections of the *Wetland Restoration, Enhancement, and Management* publication (January 2003).

The Freshwater Marsh, Bottomland Hardwood Forest and Cypress – Tupelo Swamp restoration activities will be accomplished by preparing the site as needed (mowing, herbicide, etc.) during the fall of 2011. Planting of an appropriate species mixture indicative of the Bottomland Hardwood Forest and Cypress – Tupelo Swamp respectively will be accomplished during the following non-growing season (i.e. December – March) of 2011-2012. Restoration of the Freshwater Marsh area will be accomplished through the controlled water level increase. No plantings are proposed for the Freshwater Marsh Area. The sponsor anticipates that the natural species marsh

species will colonize the site and flourish under the more natural hydrologic regime. Desired species, primarily maidencane (*Panicum hemitomon*) currently exist on some areas of the site.

The forested (Bottomland Hardwood and Cypress – Tupelo) will be planted with a combination of bare-root stock hard and soft mass tree species as specified for type and ratio by CEMVN and the Interagency Review Team (IRT). The vegetative plantings will be on 9 foot centers (i.e. on 9 x 9 grid) It is assumed that the desired plantings will be as follows:

**Bottomland Hardwood Plantings:**

Hard Mass (60-80 %)

- Nuttall Oak (*Quercus texana*)
- Willow Oak (*Quercus phellos*)
- Water Oak (*Quercus nigra*)
- Overcup Oak (*Quercus lyrata*)
- Bitter Pecan (*Carya illinoensis*)

Soft mass (20-40%)

- Green Ash (*Fraxinus pennsylvanica*)
- Drummond Red Maple (*Acer rubrum*)
- Sweetgum (*Liquidambar styraciflua*)
- Common Persimmon (*Diospyros virginiana*)
- Sugarberry (*Celtis laevigata*)
- American Elm (*Ulmus americana*)
- Baldcypress (*Taxodium distichum*)
- Mayhaw (*Crataegus aestivalis*)
- Japanese Plum (*Eriobotrya japonica*)

**Cypress – Tupelo Swamp Plantings:**

- Baldcypress (*Taxodium distichum*)
- Tupelo Gum (*Nyssa aquatic*)

**C Other Site Work**

All existing interior fences will be removed.

**X Monitoring and Maintenance Operation Plan**

**A General**

The site will be monitored and maintained by the Sponsor or a future designated Long Term Steward. In general, all monitoring and management of the restorations will follow

the guidance provided by the United States Department of Agriculture, Natural Resource Conservation Service, *Wetland Restoration, Enhancement, and Management* publication, specifically Section II *Ecological Monitoring* and Section III *Management*.

## **B      Noxious & Invasive Species Control**

The site currently contains only minimal presence of any noxious or invasive species. Noxious (Black Willow) and invasive (Chinese Tallow) will be controlled by either cutting, herbicide treatment or a combination of these methods.

## **C      Vegetative Management**

Upon or after crown closure, timber harvesting or thinning will only be allowed if the IRT determines that harvesting or thinning is needed to maintain or enhance the ecological value of the site. Timber harvesting or thinning, if required, will be performed by the Sponsor or its appointed Long Term Steward. If harvesting or thinning are required, additional measures to control the encroachment of noxious and/or invasive species will be implemented.

## **D      Risk**

The Sponsor does not anticipate any long term structural or mechanical management requirements needed to assure hydrologic restorations. Additionally, there are no known outside or adjacent hydrological sources or disturbances, beyond the control of the sponsor, which would affect this hydraulic restoration or the success of the vegetation restoration.

As a buffer, and to provide access through and around the HRMB site, the proposed return berm and surrounding perimeter berms as shown on the Proposed Hydrological Restoration Plan (Figure 6), will be maintained by the landowner for ease of access.

## **XI      Adaptive Management**

In the event that initial plantings do not meet milestones specified by CEMVN, the Sponsor will replant until the specified success criteria is achieved. If, by the end of year 5, wetland hydrology (as determined by the USACE 1987 Wetland Delineation Manual) is not established in all areas, the Sponsor shall document those areas requiring attention in the Monitoring Report. Working with CEMVN and the IRT, the sponsor will develop an adaptive hydrologic management plan to address any reported shortfalls. This adaptive hydrologic management plan will include details on all corrective measure that must be taken and will be implemented upon final approval by the CEMVN and IRT as required.

## **XII Performance Standards, Financial Assurances and Long Term Protection**

Specific Performance Standards and Success Criteria will be finalized in the Mitigation Banking Instrument as determined by, and at the discretion of the CEMVN and the IRT in accordance with their typical practice for establishing Performance Standards and Success Criteria. By way of example, anticipate Performance Standards and Success Criteria might include; but, are not limited to, the following:

- 1) Initial Success Criteria (Typically in Year 1)  
This may include a success criteria based on the initial planting.
- 2) Interim Success Criteria (Typically in Year 2 or Year 3)  
This might include success criteria based on a percentage survival rate and /or a specific number of certain species present per acre. In addition, this may include criteria centered on the adequacy of the hydrology restoration.
- 3) Long Term Success Criteria (Typically in Year 15)  
This would likely include criteria on canopy closure.

Performance will be determined through monitoring and reporting by the Sponsor or its Long Term Steward. Monitoring Reports will be provided through the operational life of the mitigation area.

Financial assurance will be in the form of an escrow account approved by an adequately capitalized, federally insured depository. Specified percentages of this assurance shall be released back to the Sponsor incrementally in accordance with achievement of mitigation milestones specified in the Mitigation Banking Instrument.

To insure the long term protection of all lands included in the Mitigation Banking Instrument, the Sponsor, its heirs, assigns or successors will be responsible for protecting lands contained within the HRMB in perpetuity, unless the lands are transferred to a State or Federal resource Agency or non-profit conservation organization or if these responsibilities are conveyed to another person or entity after approval of the CEMVN. A Conservation Servitude (pursuant to the Louisiana Conservation servitude Act, R.S. 9:1271 et seq.) shall be executed on all acreage identified as the HRMB project area (See Figure 2). This executed Conservation Servitude shall be recorded in the Mortgage and Conveyance Records Office of Lafourche Parish. The qualified Holder of this Conservation Servitude shall be approved by the CEMVN / IRT prior to execution. At this time, it is expected that the Holder of the Conservation Servitude will be the LA Department of Natural Resources because this is a requirement for mitigation banks within the LA Coastal Zone Boundary.

The Conservation Servitude (see Figure 2, Site Map for extents) will be binding to and runs with the title of the property. This servitude will generally prohibit specific activities (such as dumping, filling, etc.) that would reduce the quality of the wetlands. The servitude will also



specify certain permissive activities (such as hunting, fishing, recreational use and mineral exploration) given that the activities do not negatively affect the functions and values of the restored wetlands.

### **XIII Methods for Determining Credits and Release of Credits**

The Sponsor proposes that approximately 103.5 acres can be used as compensatory mitigation through the restoration of the Freshwater Marsh, Bottomland Hardwood Forest and Cypress – Tupelo Swamp as proposed in this prospectus. There are several assessment models available to determine the potential for restored functions of the HRMB wetlands. It is believed that the CEMVN is currently using the Wetland Value Assessment (WVA) and the Modified Charleston Method (MCM) to determine the amount of credits necessary to replace wetland functions impacted by authorized projects. Of course, other methods may be deemed more appropriate for this habitat by CEMVN.

The terms of the credit release schedule for the HRMB shall be included in the Mitigation Banking Instrument. This release schedule typically allows for a debiting of a percentage of the total credits projected at the mitigation banks maturity, provided that the Mitigation Banking Instrument and mitigation plan have been approved, specific milestones have been met, appropriate financial assurance or in place and all other requirements determined necessary by CEMVN have been fulfilled. This prospectus is based on the following typical credit release schedule:

- 1) Forty percent (40%) of the total anticipated project credits will be available for debiting upon finalizing the Mitigation Banking Instrument, filing of the Conservation Servitude and the financial assurance being established.
- 2) An additional twenty-five percent (25%) of the total anticipated credits will be made available for debiting upon planting of the site. (This would be considered HRMB Year 0)
- 3) An additional twenty percent (20%) of the total anticipated credits will be made available for debiting upon completing defined success criteria at the end of HRMB Year 1.
- 4) An additional five percent (5%) of the total anticipated credits will be made available for debiting upon completing defined success criteria at the end of HRMB Year 5.
- 5) The remaining ten percent (10%) of the total anticipated credits will be made available for debiting upon completing defined success criteria at the end of HRMB Year 15.

## **XIV Accounting Procedures**

HRMB, LLC shall maintain a ledger to account for all credit transactions and will notify CEMVN of all credit transactions as required and specified in the Mitigation Banking Instrument. HRMB, LLC will also compile an annual ledger report showing the beginning and ending balance of available credits, permitted impacts for each resource type, the additions and subtractions of credits and any other change in credit availability as may be required. It is expected that these procedures will be defined in the Mitigation Banking Instrument.

## **XV Conclusion**

In conclusion, the HRMB area has the potential to restore 67.1 acres of Freshwater Marsh, 29.7 acres of Bottomland Hardwood Forest and 6.7 acres of Cypress – Tupelo Swamp which is indigenous to this area. The above wetland wildlife habitats are all in decline in this areas and the HRMB site is subject to the pressure of future commercial or residential development if not restored and protected by the creation of HRMB. The restoration of these wetlands has the potential to create viable habitat for fish and wildlife such as mammalian quadrupeds, migratory and resident birds, amphibians and reptiles all in both game and non-game species. The HRMB proximity to similar habitat will allow the rapid natural colonization of the HRMB.

## **XVI References**

Department of Defense, Department of the Army, Corps of Engineers 33 CFR Parts 325 and 332, and Environmental Protection Agency, 40 CFR Part 230, *Compensatory Mitigation for Losses of Aquatic Resources*, Federal Register, April 10, 2008.

United States Department of Agriculture, Natural Resource Conservation Service, Part 650 Engineering Field Handbook, *Chapter 13, Wetland Restoration, Enhancement or Creation*, April 2008

United States Department of Agriculture, Natural Resource Conservation Service, *Wetland Restoration, enhancement, and Management* publication. January 2003

United States Department of Agriculture, Natural Resources Conservation Service, *The Plants Database*, Version 3.5 [website <http://plants.usda.gov>]

United States Department of Agriculture, Natural Resources Conservation Service, *Web Soil Survey*, [website <http://websoilsurvey.nrcs.usda.gov>]

United States Department of Agriculture, Soil Conservation Service, *Soil Survey of Lafourche Parish Louisiana (1984)*

Louisiana Department of Wildlife & Fisheries and Barataria – Terrebonne Natural Estuary Program, Natural Communities of Louisiana,

United States Department of the Interior, U.S. Geological Survey, *Savoie Quadrangle, Louisiana 7.5 series Topographic Map*, 1998

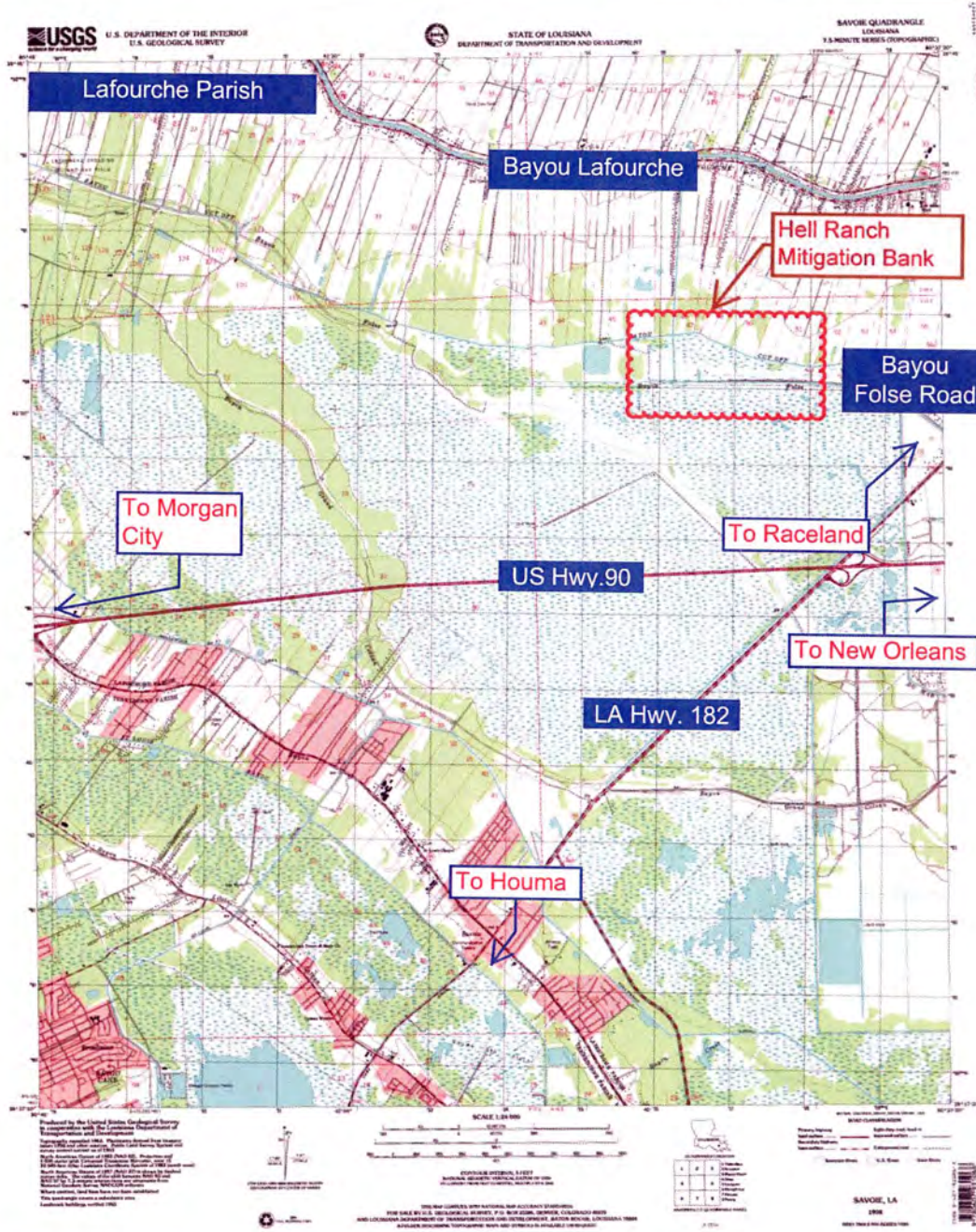
United States Army Corps of Engineers (1987) *Corps of Engineers Wetland Delineation Manual*.

United States Army, Corps of Engineers, *Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual, Atlantic & Gulf Coastal Plain Region*.

## **XVII List of Acronyms**

CEMVN	New Orleans District, United States Army Corps of Engineers
CUP	Coastal Use Permit, LA Department of Natural Resources
DNR	Department of Natural Resources
GIWW	Gulf Intracoastal Waterway
HRMB	Hell Ranch Mitigation Bank
HRMB, LLC	Hell Ranch Mitigation Bank, LLC (Sponsor)
IRT	Interagency Review Team
LPG	Lafourche Parish Government
MBI	Mitigation Banking Instrument
MCM	Modifies Charleston Method
NRCS	Natural Resources Conservation Service, United States Dept. of Agriculture
SCS	Soil Conservation Service, USDA
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
USGS	United States Geological Survey, US Dept. of the Interior
WVA	Wetland Value Assessment

# USGS Quad Map



## Hell Ranch Mitigation Bank

## Lafourche Parish, Louisiana

### Vicinity Map

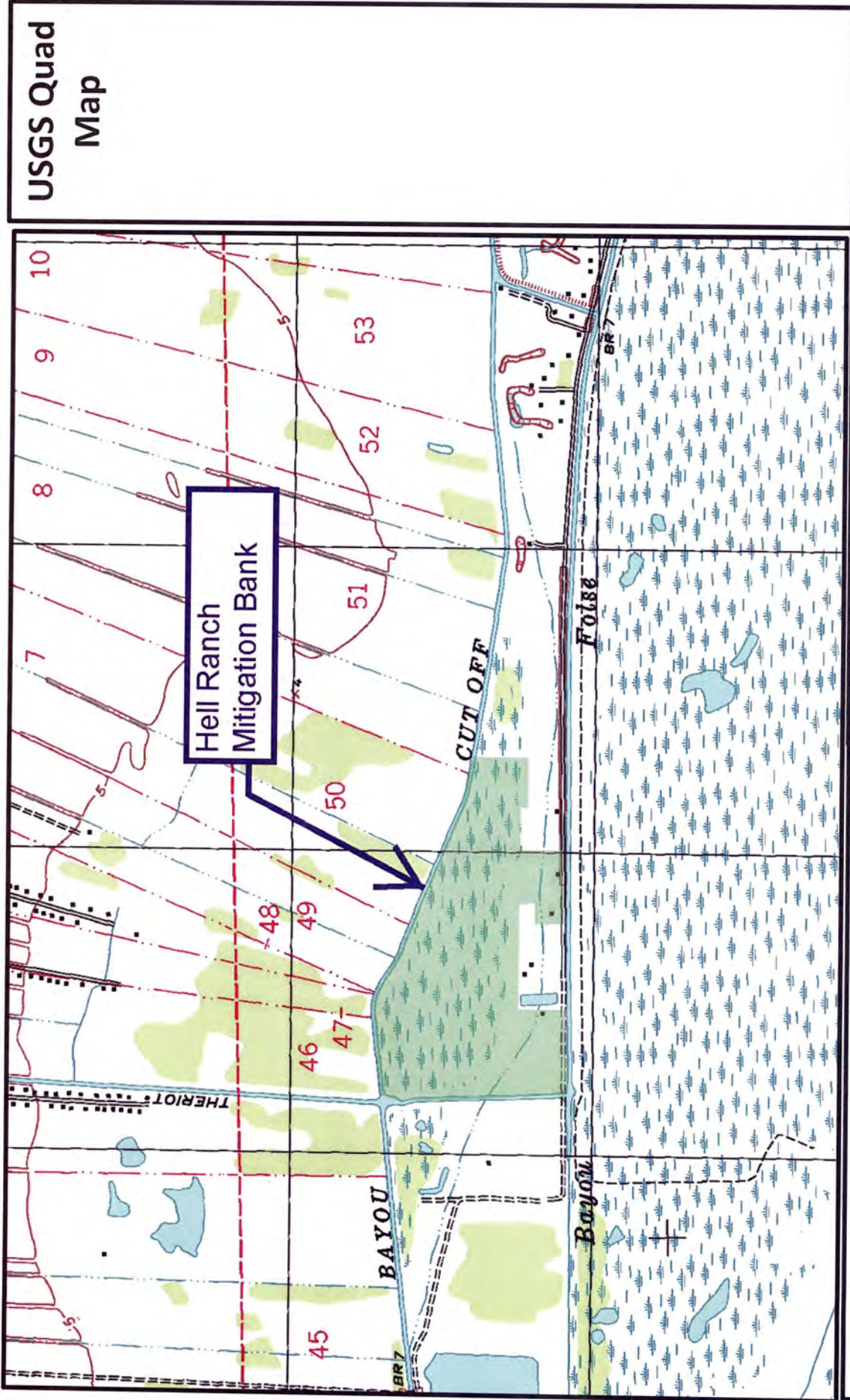
Figure 1A

Prepared By:  
Hell Ranch Mitigation Bank, LLC  
990 Bayou Folse Rd.  
Raceland, LA 70394

Scale: NONE

Drawn By: Dwayne B  
Date: 8/17/2009

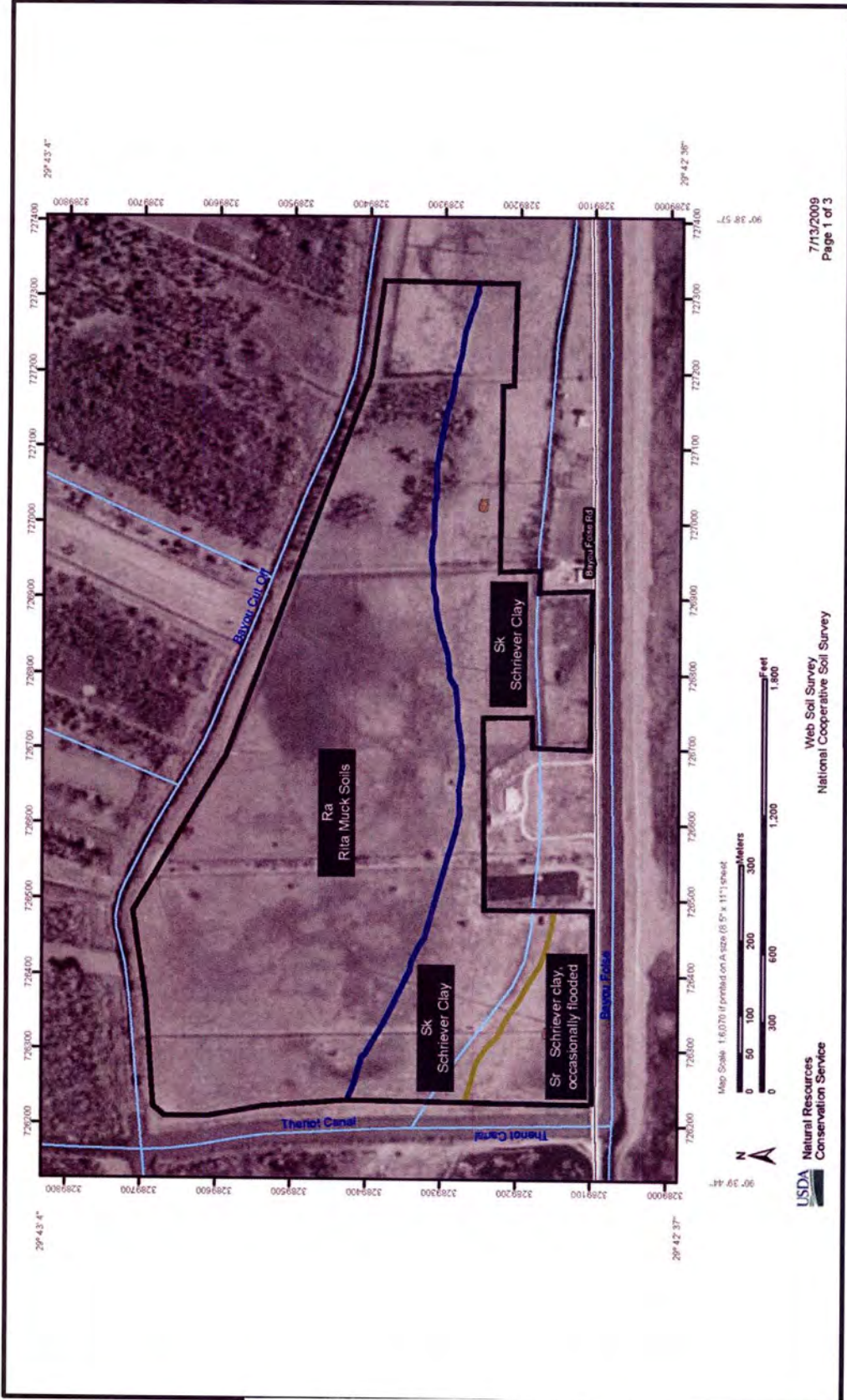




USGS Quad  
Map

Lafourche Parish, Louisiana		Hell Ranch Mitigation Bank	
Scale: NONE		Prepared By: Hell Ranch Mitigation Bank, LLC 990 Bayou Folse Rd. Raceland, LA 70394	Vicinity Map
Drawn By: Dwayne B Date: 8/17/2009			Figure 1B





7/13/2009  
Page 1 of 3

# Hell Ranch Mitigation Bank

Soils Map

Figure 3A

Prepared By:  
Hell Ranch Mitigation Bank, LLC  
990 Bayou Folse Rd.  
Raceland, LA 70394

Lafourche Parish, Louisiana

Scale: NONE

Drawn By: Dwayne B  
Date: 11/3/2010

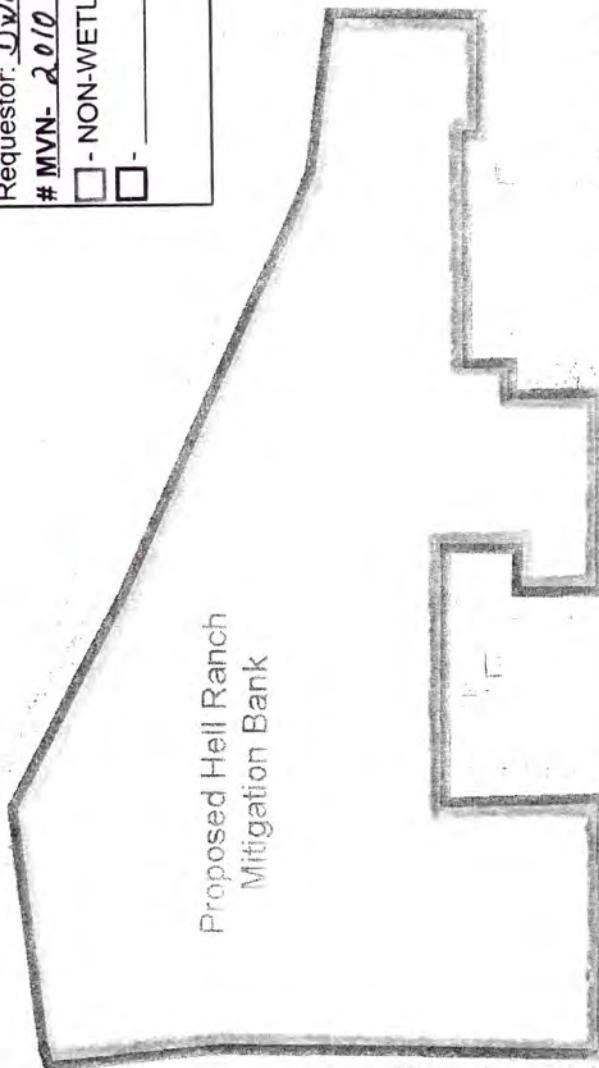
Lafourche Parish, Louisiana (LA057)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Ra	Rita muck	67.1	64.6%
Sk	Schriever clay	29.7	28.7%
Sr	Schriever clay, occasionally flooded	6.7	6.4%
Totals for Area of Interest		103.5	100.0%

Map Unit Legend

**APPROVED**

JURISDICTIONAL DETERMINATION

USACE	FSV / IH	Date: 3-4-11
Botanist:	William Nethery	
Requestor:	Wayne Bourgeois	
# MVN-	2010-01849-58	
<input type="checkbox"/> - NON-WETLAND		
<input type="checkbox"/> -		



Bayou Folse (canal)

Bayou Folse Rd.





The above sketch indicates the proposed habitat types. The boundaries for each type are along existing soil contours.

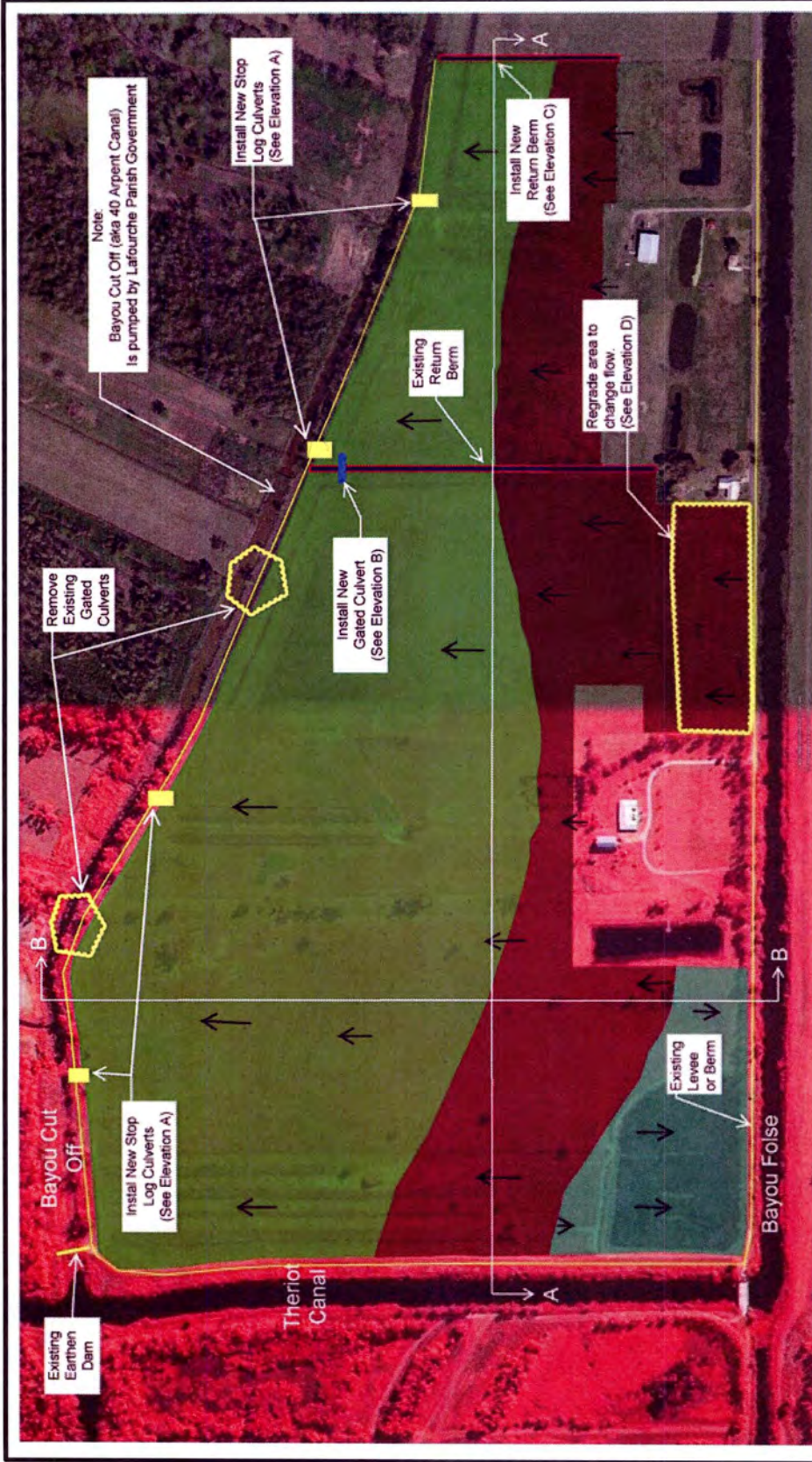
<b>Lafourche Parish, Louisiana</b>		<b>Hell Ranch Mitigation Bank</b>	
Scale: NONE	Drawn By: Dwayne B Date: 11/3/2010	Prepared By: Hell Ranch Mitigation Bank, LLC 990 Bayou Folse Rd. Raceland, LA 70394	
		Proposed Habitats f/ HRMB	
		Figure 4	





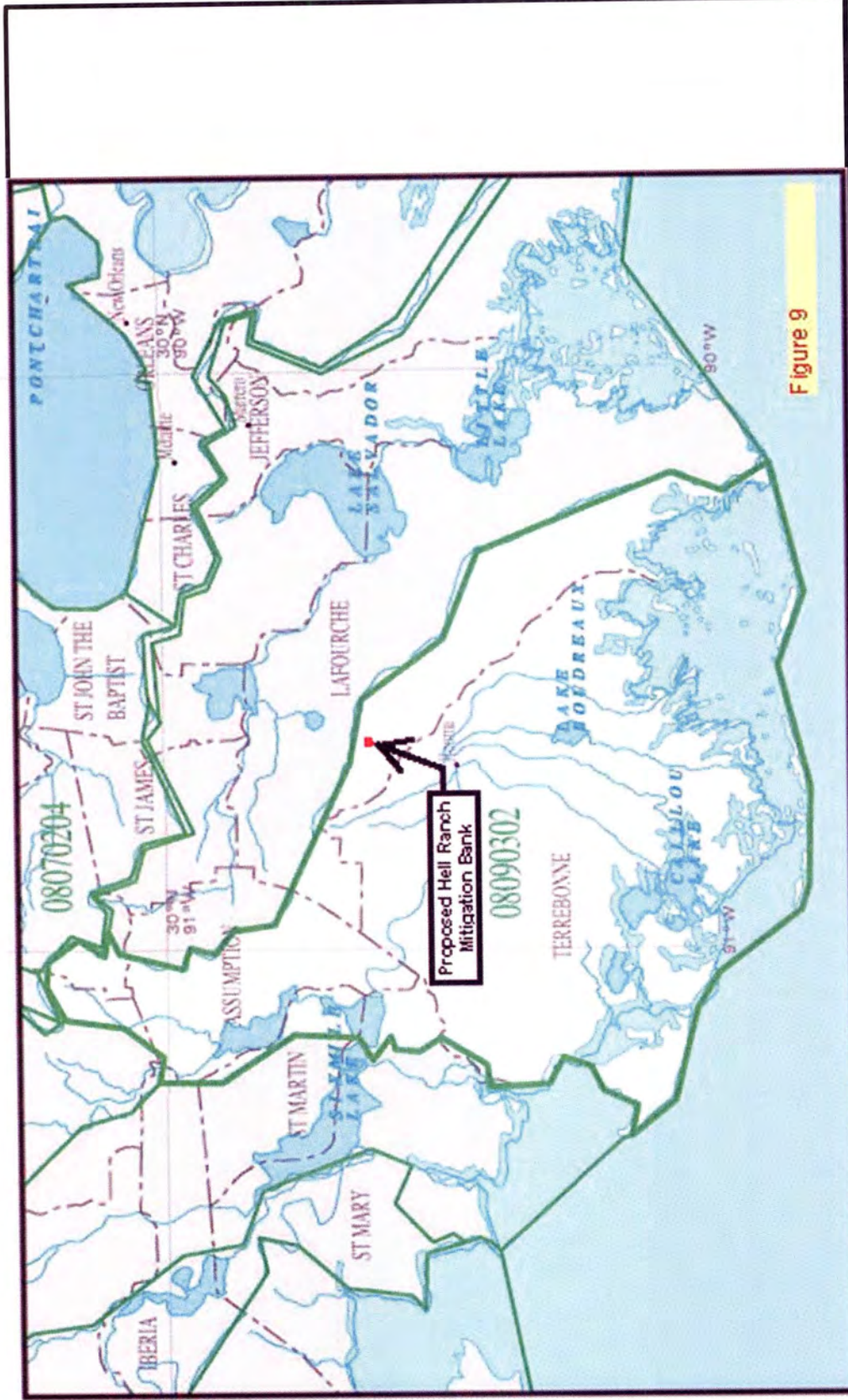
Lafourche Parish, Louisiana		Hell Ranch Mitigation Bank	
Scale: NONE	Drawn By: Dwayne B Date: 8/17/2009	Prepared By: Hell Ranch Mitigation Bank, LLC 990 Bayou Folse Rd. Raceland, LA 70394	
		Area Map	
		Figure 5	





Lafourche Parish, Louisiana		Hell Ranch Mitigation Bank	
Scale: NONE		Prepared By: Hell Ranch Mitigation Bank, LLC 990 Bayou Folse Rd. Raceland, LA 70394	
Drawn By: Dwayne B		Hydrological Restoration Plan	
Date: 8/15/2010		Figure 6A	





Lafourche Parish, Louisiana		Hell Ranch Mitigation Bank	
Scale:	NONE	USGS Cataloging Unit 08090302	
Drawn By:	Dwayne B	Hell Ranch Mitigation Bank, LLC 990 Bayou Folse Rd. Raceland, LA 70394	
Date:	11/3/2010	Figure 9	