

DEPARTMENT OF THE ARMY PERMIT

Permittee: Louisiana Department of Transportation

Permit No.: TLA-MVK-2009-1505

Issuing Office: CEMVK-OD-FE

NOTE: The term "you" and its derivatives, as used in this permit, means the permittee or any future transferee. The term "this office" refers to the appropriate district or division office of the Corps of Engineers having jurisdiction over the permitted activity or the appropriate official of that office acting under the authority of the commanding officer.

You are authorized to perform work in accordance with the terms and conditions specified below.

Project Description: See maps and drawings (encl 1).

Acres Impacted: 79.02 acres

Acres Mitigated: 291.7 acres

Project Location: Sections 1, 6, 7, 12, 18, 19, 30, and 31, T19N-R14W; Sections 1, 2, and 12, T19N-R15W; Section 31, T20N-14W; and Section 36, T22N-R15W, within the Twelve Mile Bayou drainage basin, Caddo Parish, Louisiana.

Permit Conditions:

General Conditions:

1. ~~The time~~ <sup>APR 21 2015</sup> limit for completing the work authorized ends on                     . If you find that you need more time to complete the authorized activity, submit your request for a time extension to this office for consideration at least one month before the above date is reached.
2. You must maintain the activity authorized by this permit in good condition and in conformance with the terms and conditions of this permit. You are not relieved of this requirement if you abandon the permitted activity, although you may make a good faith transfer to a third party in compliance with General Condition 4, below. Should you wish to cease to maintain the authorized activity or should you desire to abandon it without a good faith transfer, you must obtain a modification of this permit from this office, which may require restoration of the area.

*Continuation 1*

3. If you discover any previously unknown historic or archeological remains while accomplishing the activity authorized by this permit, you must immediately notify this office of what you have found. We will initiate the Federal and State coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

4. If you sell the property associated with this permit, you must obtain the signature of the new owner in the space provided and forward a copy of the permit to this office to validate the transfer of this authorization.

5. If a conditioned water quality certification has been issued for your project, you must comply with the conditions specified in the certification as special conditions to this permit. For your convenience, a copy of the certification is attached if it contains such conditions (encl 2).

6. You must allow representatives from this office to inspect the authorized activity at any time deemed necessary to ensure that it is being, or has been, accomplished in accordance with the terms and conditions of your permit.

Special Conditions:

1. The permittee shall use best management practices during construction to minimize erosion at the project site.

2. The permittee shall approve any offsite borrow area(s) and insure that in obtaining the borrow material, there are no unauthorized impacts to jurisdictional waters of the United States and/or cultural resource sites eligible or potentially eligible for inclusion in the National Register of Historic Places. If permits or other clearances are required for the use of the borrow site, those approvals must be obtained by the landowner of the site or his agent prior to use of the site for borrow.

3. The applicant shall take measures to ensure wetlands adjacent to the proposed alignment segment "3" thru "6" maintain sufficient hydrologic connection with the surrounding areas.

4. The applicant shall install a 24-inch culvert every 500 feet for any access roads constructed through wetlands

5. As compensatory mitigation for the permanent fill of 79.02 acres of bottomland hardwood wetlands associated with the construction of segment "I" of I-49, the applicant has proposed to mitigate by the restoration of 291.7 acres of pine plantation to bottomland hardwood wetland, and the enhancement of 7.81 acres

of bottomland hardwood wetland located near Serepta, in sections 17, 18, 19, and 20, T22N-R11W, Bossier Parish, Louisiana. A copy of the filed mitigation covenant shall be submitted to this office prior to final permit issuance.

6. The restoration shall include the reforestation of 291.7 acres of pine plantation to bottomland hardwood wetland, and the enhancement of 7.81 acres of bottomland hardwood wetland in Bossier Parish, adhering to the following planting and monitoring requirements:

a. The mitigation site restoration shall be in the form of planting not less than one year old (1.0), hard mast bottomland hardwood seedlings, no later than March 31, 2011.

b. A certified/registered forester shall select the species to be planted from the U.S. Department of the Interior Biological Report 88(26.2) National List of Plant Species That Occur in Wetlands: Southeast (Region 2). Indicator Categories should range from Facultative + to Obligate depending on site hydrology.

c. Seedlings shall be planted on 14- by 6- foot spacing in the converted wetlands. Within 30 days of the completed planting date, a Planting Report shall state the date(s) of planting, species planted, and the number of each species planted.

d. Certification by a certified/registered forester of a survival rate of not less than 50 percent (150 seedlings per acre) of the target species after the first growing season (March 31, 2011 through August 15, 2011) is required. This determination shall be made using standard forestry sampling techniques. The permittee shall provide the certified Survival Report to this office no later than October 1, 2011.

e. If a 50 percent survival rate of the target species (150 seedlings per acre) is not achieved after the first growing season, an appropriate number of seedlings shall be replanted no later than March 31, 2012 to achieve the required 50 percent survival rate.

f. After the second growing season (March 31, 2012 through August 15, 2012), a certified/registered forester shall certify that a survival rate of not less than 50 percent of the target species (150 seedlings per acre) has been maintained. This determination shall be made using standard forestry sampling techniques. The permittee shall provide the certified Survival Report to this office no later than October 1, 2012.

g. Replanting and providing certified Survival Reports shall continue until such time that a 50 percent survival rate of the target species (150 seedlings per year) is achieved for four consecutive years or until the permit is modified to accomplish appropriate mitigation.

h. Following the establishment of a 50 percent survival rate of the target species (150 seedlings per acre) for four consecutive growing seasons, no actions to inhibit or prevent continued natural succession of the mitigation site shall be allowed. An exception to this condition would be the required control of invasive exotic species. Control recommendations by a certified/registered forester must be approved by the Vicksburg District Regulatory Branch prior to initiation of control measures.

i. Planting and Survival Reports should be mailed to:

U.S. Army Corps of Engineers  
Vicksburg District  
Regulatory Branch Attention: Compliance Officer  
4155 Clay Street  
Vicksburg, MS 39183-3435

7. The mitigation site shall be restored to a wetland with the appropriate hydrology, soils, and vegetation as defined in the "Corps of Engineers Wetlands Delineation Manual" (Waterways, Experiment Station Technical Report Y-87-1, January 1987). If deemed necessary by the Corps, the permittee shall provide to the Corps proof that all three wetland criteria are met. If the area is not successfully restored to a wetland meeting these three criteria at the end of four years, the permittee must provide alternative mitigation deemed appropriate by the Corps.

8. Prior to final permit issuance, a "mitigation covenant" shall be recorded on the land records of Bossier Parish, Louisiana. The permittee shall provide a certified copy of the land records to the Corps of Engineers documenting that the mitigation covenant has been properly recorded.

This mitigation covenant shall remain in effect for the life of the project or for as long as the project induced impacts are present on the project site. Following project life, or if the project is abandoned, the site shall be restored to preconstruction conditions. If the site is properly restored, as verified by a compliance inspection by the Corps of Engineers, the mitigation covenant shall be released, and a document so indicating shall be furnished to the permittee and property owner for recording. If the project site is not restored, the mitigation covenant shall remain in effect.

THE FOLLOWING IS AN EXAMPLE OF THE PARAGRAPH AND RESTRICTIONS THAT SHALL BE RECORDED ON THE LAND RECORDS FOR THE COVENANT. THE DOCUMENT (COVENANT) SHALL BE RETURNED TO THE CORPS AFTER PREPARATION, SIGNING (NOTARIZED SIGNATURE) BY THE PERMITTEE, MITIGATION SITE PROPERTY OWNER, AND RECORDING ON THE COUNTY LAND RECORDS.

The following notarized paragraph and restrictions shall be recorded on the land records:

The 307.09 acre parcel of property, known as the Mot Mitigation Site, owned by Weyerhaeuser, North America, located in Sections 17, 18, 19, and 20, T22N-R11W, Bossier Parish, Louisiana, herein, and hereinafter as "the property", is being placed under mitigation covenant for proposed work associated with the construction of segment "I" of I-49, in Sections 1, 6, 7, 12, 18, 19, 30, and 31, T19N-R14W; Sections 1, 2, and 12, T19N-R15W; Section 31, T20N-14W; and Section 36, T22N-R15W, within the Twelve Mile Bayou drainage basin, Caddo Parish, Louisiana. A mitigation covenant has been placed on the property (insert metes and bounds description) and is agreed upon by the permittee, the site property owner, and the Corps of Engineers. This mitigation covenant includes the following restrictions:

a. Vegetation - After vegetation is established, as defined in the above-referenced permit, there shall be no removal, destruction, cutting, mowing, application of biocides, or disturbance or other change in vegetation on the site. Timber management recommendations by a registered forester shall be considered.

b. Uses - There shall be no agricultural (to include grazing by domestic livestock), commercial, or industrial activities allowed on the mitigation site. This restriction does not apply to hunting and fishing activities in accordance with state law.

c. Buildings - There shall be no construction or placement of buildings or other structures on the property.

d. Roads - There shall be no construction of roads on the property.

Upon mutual agreement among the permittee, Weyerhaeuser NR, and the Corps of Engineers, this mitigation covenant may be modified due to unforeseen circumstances.

This instrument may be executed in any number of counterparts, each of which shall be considered an original for all purposes.

WITNESS THE EXECUTION hereof by the parties on this the \_\_\_\_\_ day of \_\_\_\_\_, 2010.

EXAMPLE

\_\_\_\_\_  
PERMITTEE  
Louisiana Department of  
Transportation  
By: Traci Johnson

\_\_\_\_\_  
MITIGATION PROPERTY OWNER  
Weyerhaeuser NR

Further Information:

1. Congressional Authorities: You have been authorized to undertake the activity described above pursuant to:

(X) Section 404 of the Clean Water Act (33 U.S.C. 1344).

2. Limits of this authorization.

a. This permit does not obviate the need to obtain other Federal, State, or local authorizations required by law.

b. This permit does not grant any property rights or exclusive privileges.

c. This permit does not authorize any injury to the property or rights of others.

d. This permit does not authorize interference with any existing or proposed Federal project.

3. Limits of Federal Liability. In issuing this permit, the Federal Government does not assume any liability for the following:

a. Damages to the permitted project, or uses thereof, as a result of other permitted or unpermitted activities or from natural causes.

b. Damages to the permitted project, or uses thereof, as a result of current or future activities undertaken by, or on behalf of, the United States in the public interest.

c. Damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit.

d. Design or construction deficiencies associated with the permitted work.

e. Damage claims associated with any future modification, suspension, or revocation of this permit.

4. Reliance on Applicant's Data: The determination of this office that issuance of this permit is not contrary to the public interest was made in reliance on the information you provided.

5. Reevaluation of Permit Decision. This office may reevaluate its decision on this permit at any time the circumstances warrant. Circumstances that could require a reevaluation include, but are not limited to, the following:

a. You fail to comply with the terms and conditions of this permit.

b. The information provided by you in support of your permit application proves to have been false, incomplete, or inaccurate (See 4, above).

c. Significant new information surfaces which this office did not consider in reaching the original public interest decision.

Such a reevaluation may result in a determination that it is appropriate to use the suspension, modification, and revocation procedures contained in 33 CFR 325.7, or enforcement procedures such as those contained in 33 CFR 326.4 and 326.5. The referenced enforcement procedures provide for the issuance of an administrative order requiring you to comply with the terms and conditions of your permit and for the initiation of legal action where appropriate. You will be required to pay for any corrective measures ordered by this office, and if you fail to comply with such directive, this office may in certain situations (such as those specified in 33 CFR 209.170) accomplish the corrective measures by contract or otherwise and bill you for the cost.

6. Extensions. General condition 1 establishes a time limit for the completion of the activity authorized by this permit. Unless there are circumstances requiring either a prompt completion of the authorized activity or a reevaluation of the public interest decision, the Corps will normally give favorable consideration to a request for an extension of this time limit.

Your signature below, as permittee, indicates that you accept and agree to comply with the terms and conditions of this permit.



\_\_\_\_\_  
(PERMITTEE)  
MS. TRACI JOHNSON  
LOUISIANA DEPARTMENT OF  
TRANSPORTATION

\_\_\_\_\_  
(DATE)

This permit becomes effective when the Federal official, designated to act for the Secretary of the Army, has signed below.

  
\_\_\_\_\_  
(DISTRICT COMMANDER)  
Jeffrey R. Eckstein  
Colonel, Corps of Engineers  
District Commander



\_\_\_\_\_  
(DATE)

When the structures or work authorized by this permit are still in existence at the time the property is transferred, the terms and conditions of this permit will continue to be binding on the new owner(s) of the property. To validate the transfer of this permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below.

\_\_\_\_\_  
(TRANSFEE)

\_\_\_\_\_  
(DATE)



**US Army Corps  
of Engineers.**

Vicksburg District  
4155 Clay Street  
Vicksburg, MS 39183-3435  
www.mvk.usace.army.mil



# Public Notice

APPLICATION NO.:	TLA-MVK-2009-1505
EVALUATOR:	Ms. Tonya Acuff
PHONE NO.:	(601) 631-7528
FAX NO.:	(601) 631-5459
E-MAIL:	Tonya.Acuff@usace.army.mil
DATE:	January 15, 2009
EXPIRATION DATE:	February 5, 2009

Interested parties are hereby notified that the U.S. Army Corps of Engineers, Vicksburg District, and the Louisiana Department of Environmental Quality, Office of Environmental Services are considering an application for a Department of the Army permit and State water quality certification for the work described herein. A water quality certification is required in accordance with statutory authority contained in the LRS 30:2074 A(3) and provisions of the Clean Water Act. Comments should be forwarded to the Vicksburg District, Attention: CEMVK-OD-F, at the above address, and the state of Louisiana, Department of Environmental Quality, Attention: Water Quality Certifications, Post Office Box 4313, Baton Rouge, Louisiana 70821-4313.

Law Requiring a Permit: Section 404 of the Clean Water Act (33 U.S.C. 1344), which applies to discharges of dredged or fill material into waters of the United States.

Name of Applicant:  
Louisiana Department of  
Transportation and Development  
Post Office Box 94245  
Baton Rouge, Louisiana 70804

Location of Work: Sections 1, 6, 7, 12, 18, 19, 30, and 31, T19N-R14W; Sections 1, 2, and 12, T19N-R15W; Section 31, T20N-14W; and Section 36, T22N-R15W, within the Twelve Mile Bayou drainage basin, Caddo Parish, Louisiana.

Description of Work: (See enclosed map and drawings.)

The following descriptions of the proposed project and associated impacts are based upon information provided by the applicant.

*Encl 1*

The applicant is applying for a Department of the Army permit to mechanically clear and fill 79.02 acres of wetlands and 5.51 acres of other waters of the United States associated with the construction and maintenance of a four-lane, divided, fully controlled access highway on a new alignment located in Caddo Parish, Louisiana.

The highway work encompasses segment "I" of I-49. Work begins at highway LA 1 and extends in a northerly direction and ends at LA 173. Four new lanes of asphaltic concrete roadway would be constructed and separated by a 92-foot wide depressed median.

Roadbed dimensions for the newly constructed four-lane interstate roadway would have an average top width of 160 feet and an average bottom width of 300 feet. The average right-of-way would be 500 feet with a minimum right-of-way of 340 feet to a maximum right-of-way of 500 feet. At the interchange locations, the right-of-way can be as wide as approximately 1,200 feet, due to the access ramps. The travel lanes would be 12 feet wide with shoulders an average of 10 feet for the outside and 4 feet on the inside. This project would require approximately 885,000 cubic yards of general excavation and approximately 2,340,000 cubic yards of embankment. The total length of the project would be 7.1 miles including some cross roads (LA 173, LA 538, and Albany Road) that would be reconstructed for geometric connections.

The purpose of the work is to construct and maintain the new Interstate 49 roadway, to provide a four-lane north-south link between Kansas City, Missouri to New Orleans, Louisiana and to improve accessibility along the I-49 corridor by increasing the safety and level of service of the highway. This project is only a portion of the Shreveport, Louisiana to Kansas, Missouri corridor.

I-49 has a High Priority designation as stated in the Intermodal Surface Transportation Efficiency Act (ISTEA, 1991) which provided funding to further develop this corridor in Louisiana. The National Highway Designation Act of 1995 defined and identified I-49 as the number one High Priority Corridor of national significance. The Shreveport, Louisiana to Kansas City, Missouri was one of the longest corridors identified. The I-49 (North-South Expressway) project from Shreveport to Arkansas state line forms the most southern segment of the Shreveport to Kansas City corridor.

A total of 16 sites were examined and 7 sites were identified as wetlands that would be impacted by the project. A total of 79.02 acres of jurisdictional wetlands would be impacted by the construction of the proposed project, including the cleared right-of-way. The locations, types, and amounts of impacts for these sites are shown in the Delineation Site Summary Table.

Some of the dominant species of vegetation at the delineated wetland sites include: Loblolly pine (*Pinus taeda*), Cow Oak (*Quercus michauxii*), Black willow (*Salix nigra*), Chinese tallow (*Sapium sebiferum*), Button bush (*Cephalanthus occidentalis*), Water oak (*Quercus nigra*), and willow oak (*Quercus laurifolia*).

A total of 5.51 acres of other waters of the United States would be impacted by the construction of the proposed project including the cleared right-of-way. Of the 16 delineated sites, 9 were identified as other waters of the United States. The location, type, and amount of impacts for these sites are shown in the Delineation Site Summary Table. Most other waters impacts would occur as a result of placing rip-rap and concrete along approaches and support pilings associated with bridge construction. No linear stream impacts would occur as a result of the proposed work. Perennial and intermittent streams would be culverted with the appropriate culvert size to insure no interruption of the flow of the stream.

Where bridges are proposed, there would be approximately 15,844 cubic yards of excavation and approximately 21,113 cubic yards of embankment. Three (3) of the bridges would be concrete girder bridges and one (1) would be a steel girder bridge.

There are 4 bridges planned for the I-49 construction. The following is a breakdown of those proposed spans:

Segment I:

- LA 538 over I-49 located from STA. 23+15.00 to 28+45.00; this would be a steel girder span bridge.
- Albany Road over I-49 located from STA. 1345.00 to 18+45.00; this would be a Type BT-72 girder bridge.
- I-49 Bridge over Twelve Mile Bayou located from STA. 201+61.00 to 213+85.00; this would be a Type IV girder span bridge.
- I-49 Bridge over LA 173 located from STA. 389+78.71 to 399+98.71; this would be a Type IV girder span bridge.

Please refer to I-49 Bridge Location sheet for complete details.

Approximately 322.0 acres of additional right-of-way would be required for the construction of the proposed projects.

Mitigation for wetlands and streams being impacted by construction activities would be in the form of purchasing credits from an appropriate and approved mitigation bank within the watershed or the nearest watershed.

The placement of dredged and/or fill material in waters of the United States associated with the mechanized land clearing requires a Department of the Army Permit.

Upon reviewing this notice, you should write to this office to provide your opinion of the impacts this work will have on the natural and human environment and address any mitigation you believe is necessary to offset these impacts. Other comments are welcome, but the above information will further our review of the applicant's plan as proposed. Comments of a general nature are not as helpful as those specific to the impacts of the subject project.

State Water Quality Permit: The State Pollution Control Agency must certify that the described work will comply with the State's water quality standards and effluent limitations before a Corps permit is issued.

Cultural Resources: An initial review indicates that the proposed project would not affect cultural resources listed, or eligible for listing, in the National Register of Historic Places. Cultural resources include prehistoric and historic archeological sites and areas or structures of cultural interest which occur in the permit area. Copies of this notice have been sent to the State Historic Preservation Officer, the Corps Regulatory Archaeologist, Federally Recognized Tribes, and other interested parties for comment on potential effects to cultural resources that could result from this activity.

Endangered Species: Our initial finding is that the proposed work would not likely adversely affect any endangered species or their critical habitat. This proposal is being coordinated with the U.S. Fish and Wildlife Service, and any comments regarding endangered species or their critical habitat will be addressed in our evaluation of the described work.

Flood Plain: In accordance with 44 CFR Part 60 (Flood Plain Management and Use), participating communities are required to review all proposed development to determine if a flood plain development permit is required. Flood plain administrators should review the proposed development described in this public notice and apprise this office of any flood plain development permit requirements.

Evaluation Factors: The decision whether or not to issue a permit will be based upon an evaluation of the probable impact of the proposed activity on the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefits that may be expected to accrue from the proposal must be balanced against its expected adverse effects. All factors which may be relevant to the proposal will be considered; among these are conservation, economics, aesthetics, general environmental concerns, historic values, fish and wildlife values, flood damage prevention, land

use classification, navigation, recreation, water supply, water quality, energy needs, safety, food requirements and, in general, the needs and welfare of the people. Evaluation of the proposed activity will include application of the guidelines published by the Environmental Protection Agency under authority of Section 404(b) of the Clean Water Act.

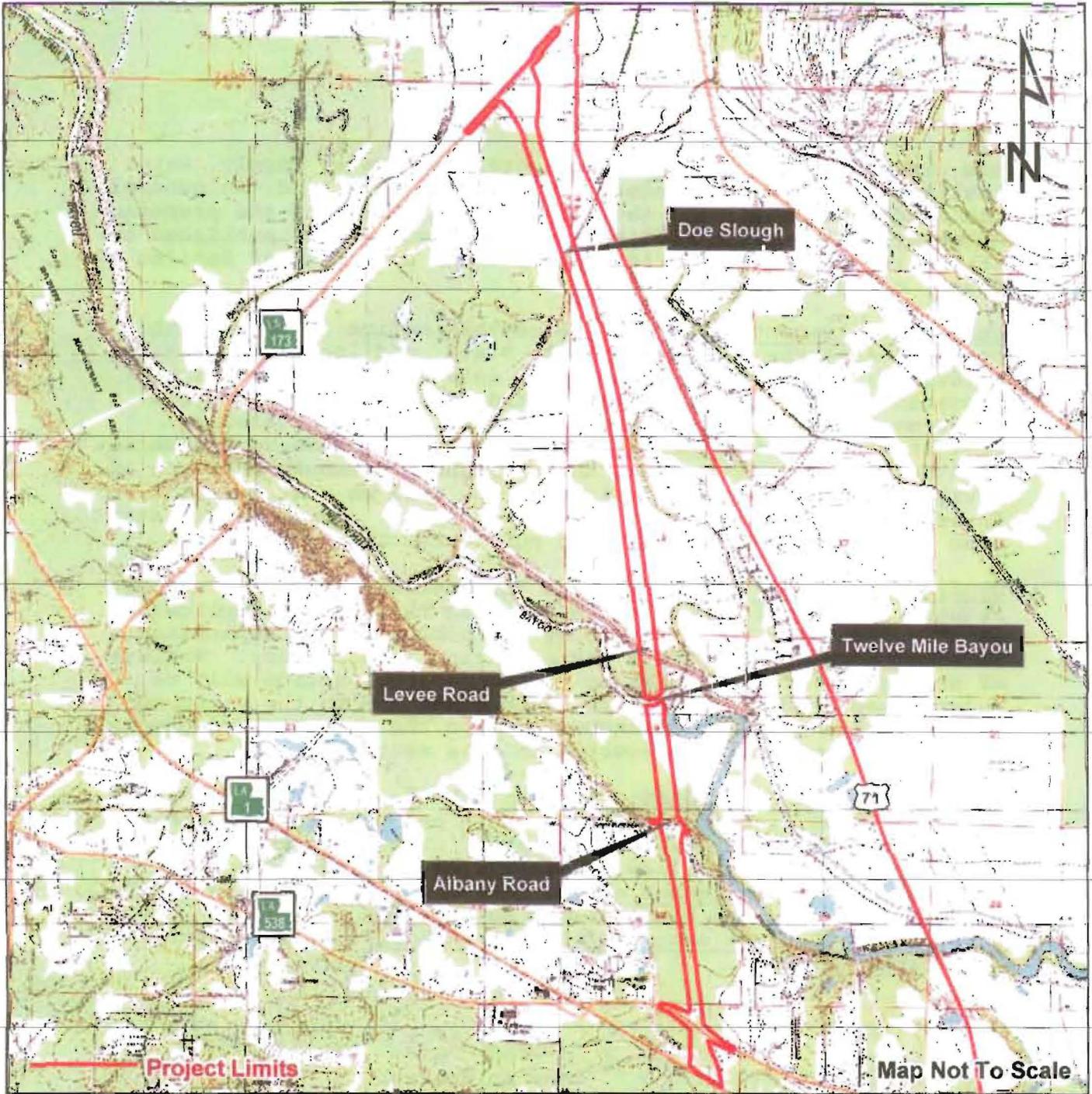
Public Involvement: The purpose of this notice is to solicit comments from the public; Federal, State, and local agencies and officials; Indian Tribes; and other interested parties. These comments will be used to evaluate the impacts of this project. All comments will be considered and used to help determine whether to issue the permit, deny the permit, or issue the permit with conditions, and to help us determine the amount and type of mitigation necessary. This information will be used in our Environmental Assessment or Impact Statement. Comments are also used to determine the need for a public hearing.

Opportunity for a Public Hearing: Any person may make a written request for a public hearing to consider this permit application. This request must be submitted by the public notice expiration date and must clearly state why a hearing is necessary. Failure of any agency or individual to comment on this notice will be interpreted to mean that there is no objection to the proposed work. Please bring this announcement to the attention of anyone you know who might be interested in this matter.

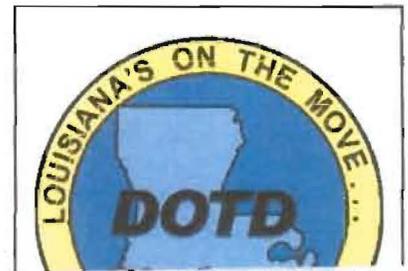
Notification of Final Permit Actions: Each month, the final permit actions from the preceding month are published on the Vicksburg District Regulatory web page. To access this information, you may follow the link from the Regulatory web page, <http://www.mvk.usace.army.mil/offices/od/odf/main.asp>, or go directly to the Final Permit Actions web page at <http://www.mvk.usace.army.mil/offices/od/odf/PubNotice/MonthlyNotice/pnmain.asp>.



Anne S. Woerner  
Chief, Evaluation Section  
Regulatory Branch

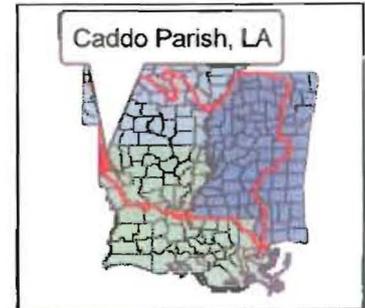
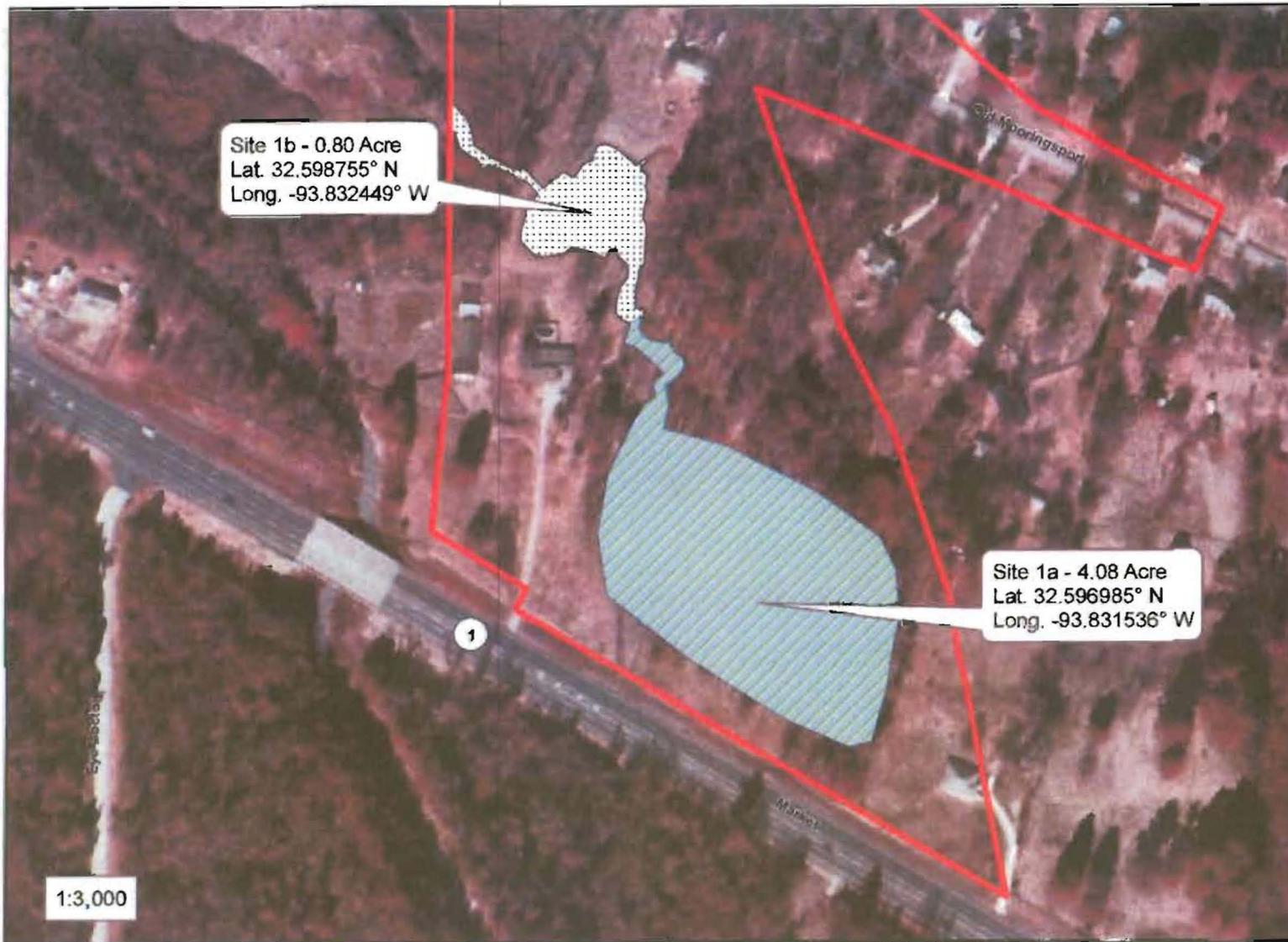


STATE PROJECT NOS. 455-09-0003, 078-04-0002,  
 & 094-02-0020  
 F.A.P. NOS. DPS-0021(013), DPS-0903(508),  
 & DPS-0903(509)  
 I-49 NORTH  
 SECTION I (LA 1 – LA 173)  
 CADDO PARISH

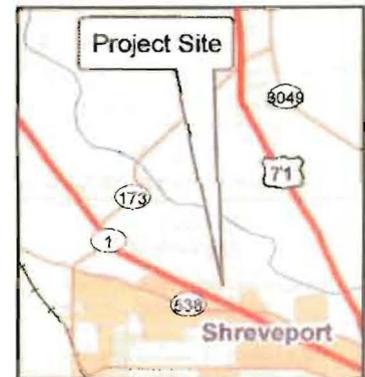


**CEMVK-OD-FE TLA-MVK-2009-1505**

**LOUISIANA DEPARTMENT OF  
 TRANSPORTATION & DEVELOPMENT**



18 December 2009  
**MVK-2009-1505**  
 Proposed I-49 North  
 LADOTD  
 Section I (LA Hwy 1 - LA Hwy 173)  
 Caddo Parish, Louisiana  
**Approved**  
**Jurisdictional Determination**  
 Prepared by  
 Arel Simpson



**US Army Corps of Engineers,**  
 Regulatory Branch  
 Enforcement Section

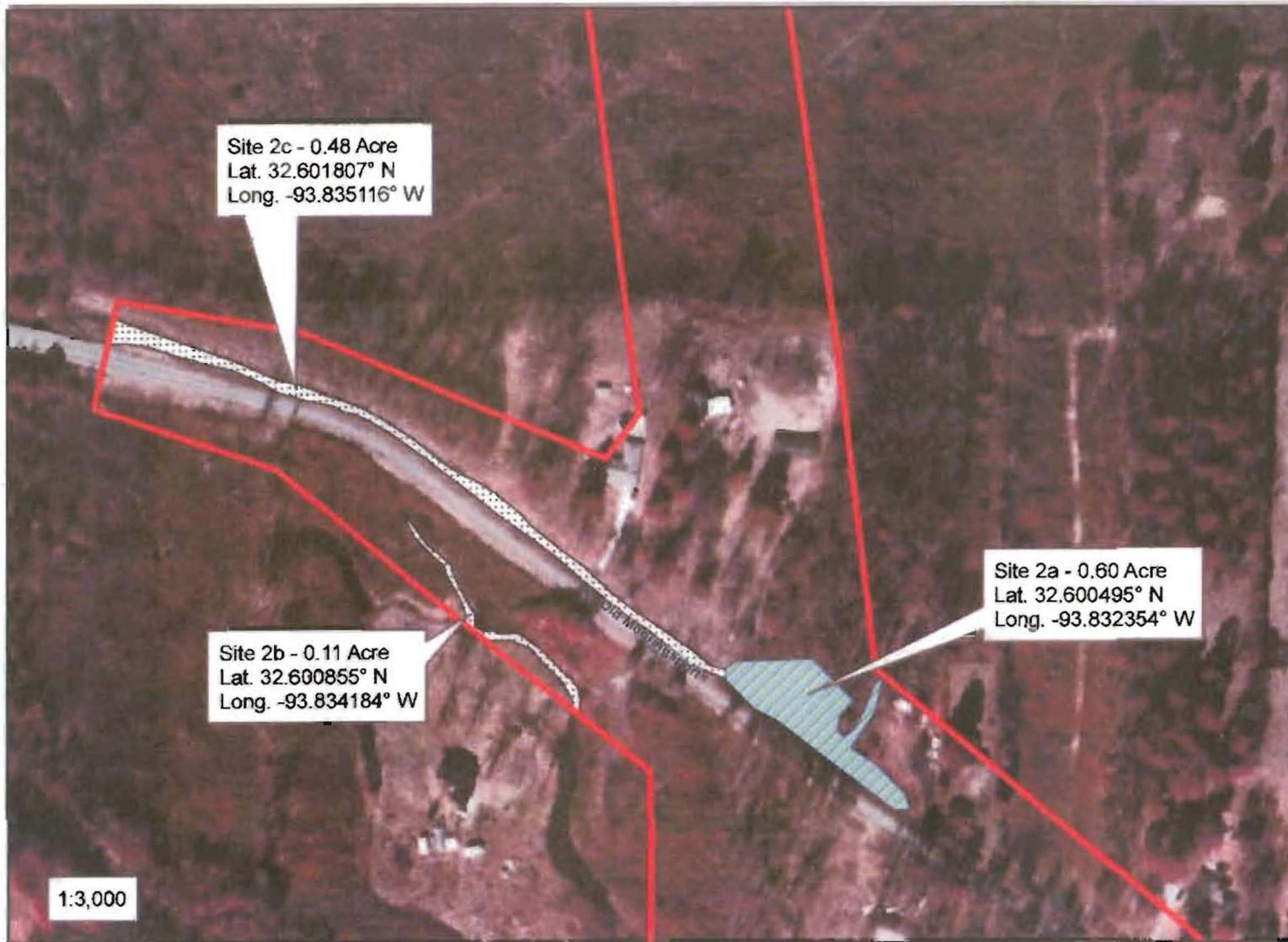
0 75 150 300 Feet

Enclosure 1

**Legend**

- Project Boundary
- Site 1a - Jurisdictional Wetlands
- Site 1b - Jurisdictional Other Waters

There are jurisdictional wetlands and other waters of the U.S. within project boundaries. A permit is required for all work within jurisdictional areas.



18 December 2009  
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 LADOTD  
 Section I (LA Hwy 1 - LA Hwy 173)  
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 Arel Simpson



**US Army Corps of Engineers**

**Regulatory Branch**  
**Enforcement Section**

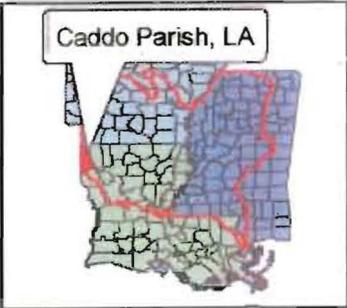
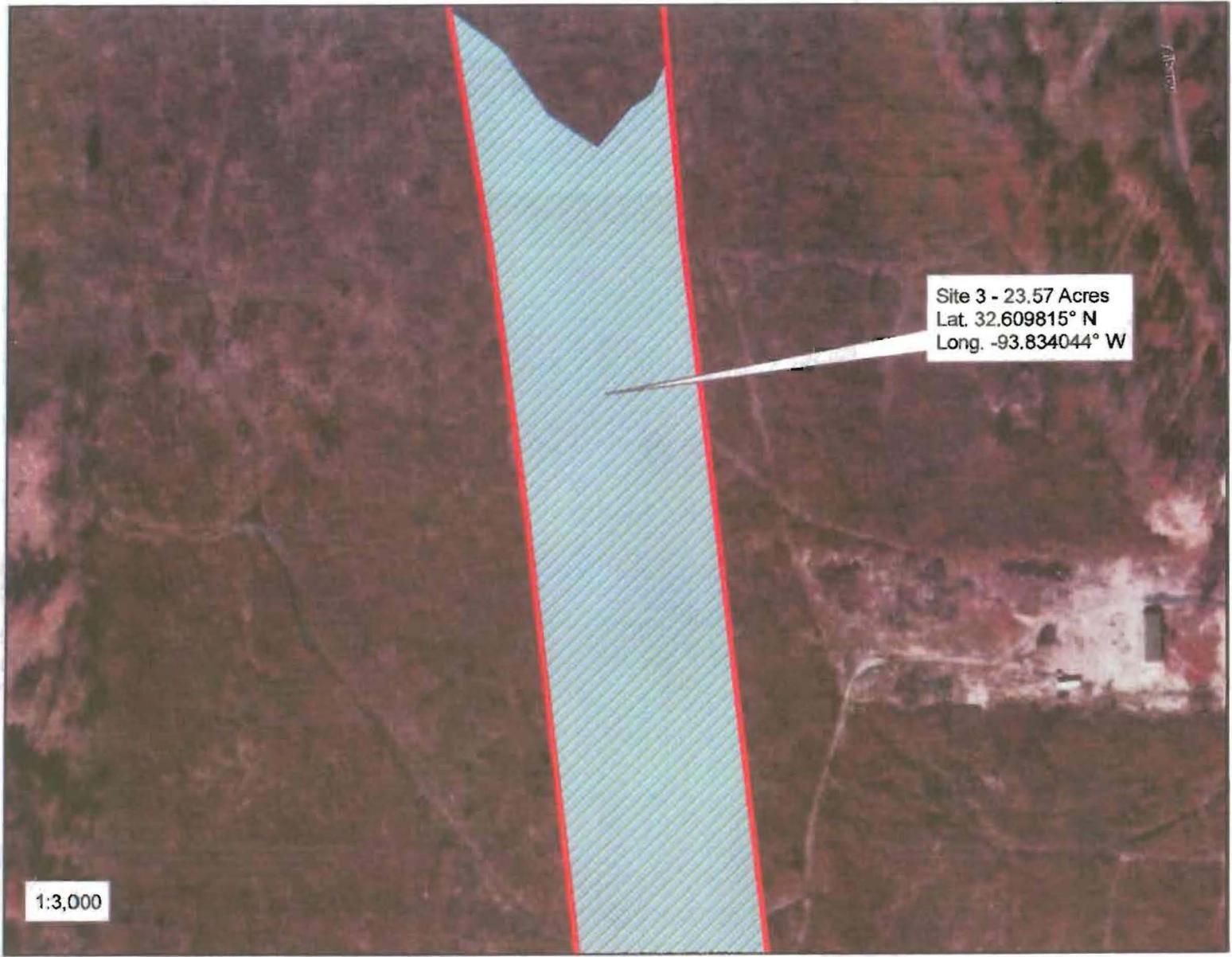
0 75 150 300 Feet

Enclosure 1

There are jurisdictional wetlands and other waters of the U.S. within project boundaries. A permit is required for all work within jurisdictional areas.

**Legend**

- Project Boundary
- Site 2a - Jurisdictional Wetlands
- Site 2b & 2c - Jurisdictional Other Waters



18 December 2009  
**MVK-2009-1505**  
 Proposed I-49 North  
 LADOTD  
 Section 1 (LA Hwy 1 - LA Hwy 173)  
 Caddo Parish, Louisiana  
**Approved**  
**Jurisdictional Determination**  
 Prepared by  
 Arel Simpson



**US Army Corps of Engineers.**  
**Regulatory Branch**  
**Enforcement Section**

0 75 150 300 Feet

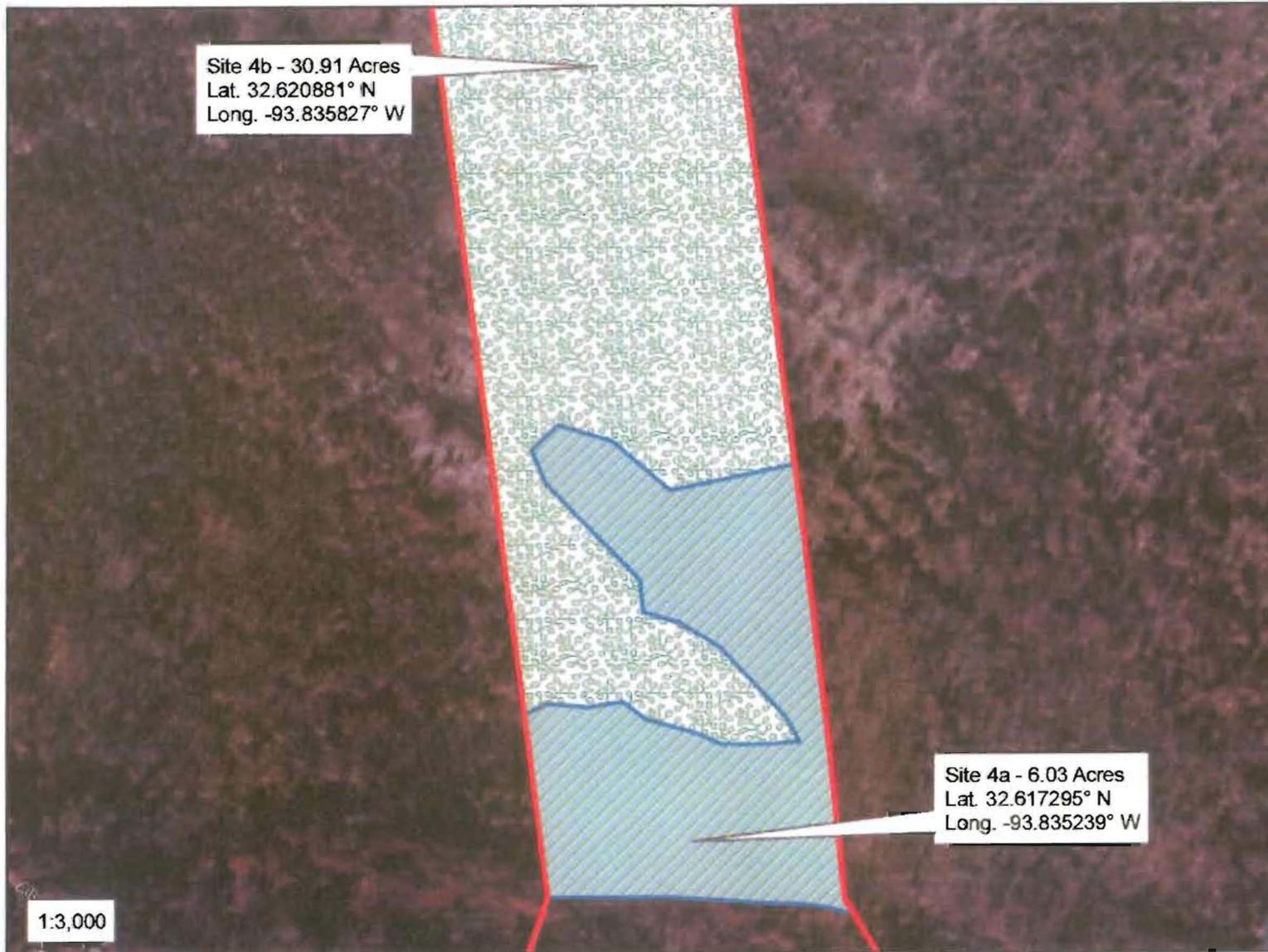
Enclosure 1

There are jurisdictional wetlands and other waters of the U.S. within project boundaries. A permit is required for all work within jurisdictional areas.

**Legend**

Project Boundary

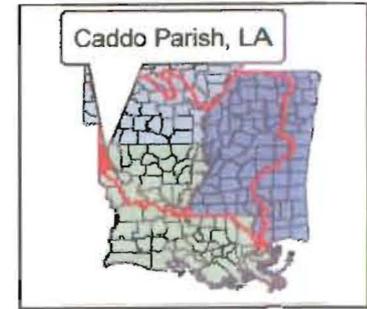
Site 3 - Jurisdictional Wetlands



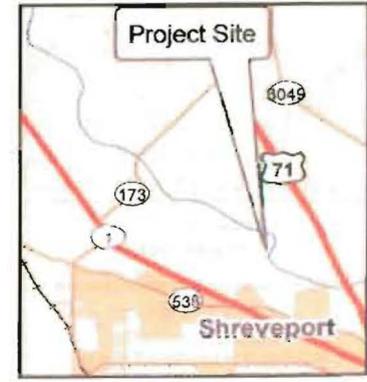
There are jurisdictional wetlands and other waters of the U.S. within project boundaries. A permit is required for all work within jurisdictional areas.

**Legend**

-  Project Boundary
-  Site 4a - Jurisdictional Wetlands
-  Site 4b - Jurisdictional Pastured Wetlands



18 December 2009  
**MVK-2009-1505**  
 Proposed I-49 North  
 LADOTD  
 Section I (LA Hwy 1 - LA Hwy 173)  
 Caddo Parish, Louisiana  
**Approved**  
**Jurisdictional Determination**  
 Prepared by  
 Arel Simpson





**US Army Corps of Engineers**

**Regulatory Branch**  
 Enforcement Section

0 75 150 300 Feet

Enclosure 1



Site 4b - 30.91 Acres  
 Lat. 32.624227° N  
 Long. -93.836396° W

1:3,000

There are jurisdictional wetlands and other waters of the U.S. within project boundaries. A permit is required for all work within jurisdictional areas.

**Legend**

-  Project Boundary
-  Site 4b - Jurisdictional Pastured Wetlands



18 December 2009  
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 LADOTD  
 Section I (LA Hwy 1 - LA Hwy 173)  
 Caddo Parish, Louisiana  
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 Prepared by  
 Arel Simpson

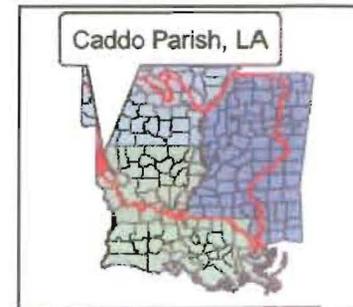




**US Army Corps of Engineers.**  
**Regulatory Branch**  
**Enforcement Section**

0 75 150 300 Feet

Enclosure 1



18 December 2009  
**MVK-2009-1505**  
 Proposed I-49 North  
 LADOTD  
 Section 1 (LA Hwy 1 - LA Hwy 173)  
 Caddo Parish, Louisiana  
**Approved**  
**Jurisdictional Determination**  
 Prepared by  
 Arel Simpson



**US Army Corps of Engineers**

**Regulatory Branch**  
**Enforcement Section**

0 75 150 300 Feet

Enclosure 1

There are jurisdictional wetlands and other waters of the U.S. within project boundaries. A permit is required for all work within jurisdictional areas.

**Legend**

- Project Boundary
- Site 5 - Jurisdictional Other Waters
- Site 6 - Jurisdictional Wetlands



Site 7a - 0.52 Acre  
 Lat. 32.630162° N  
 Long. -93.837057° W

1:3,000

There are jurisdictional wetlands and other waters of the U.S. within project boundaries. A permit is required for all work within jurisdictional areas.

**Legend**

-  Project Boundary
-  Site 7a - Jurisdictional Other Waters



18 December 2009  
**MVK-2009-1505**  
 Proposed I-49 North  
 LADOTD  
 Section I (LA Hwy 1 - LA Hwy 173)  
 Caddo Parish, Louisiana  
**Approved**  
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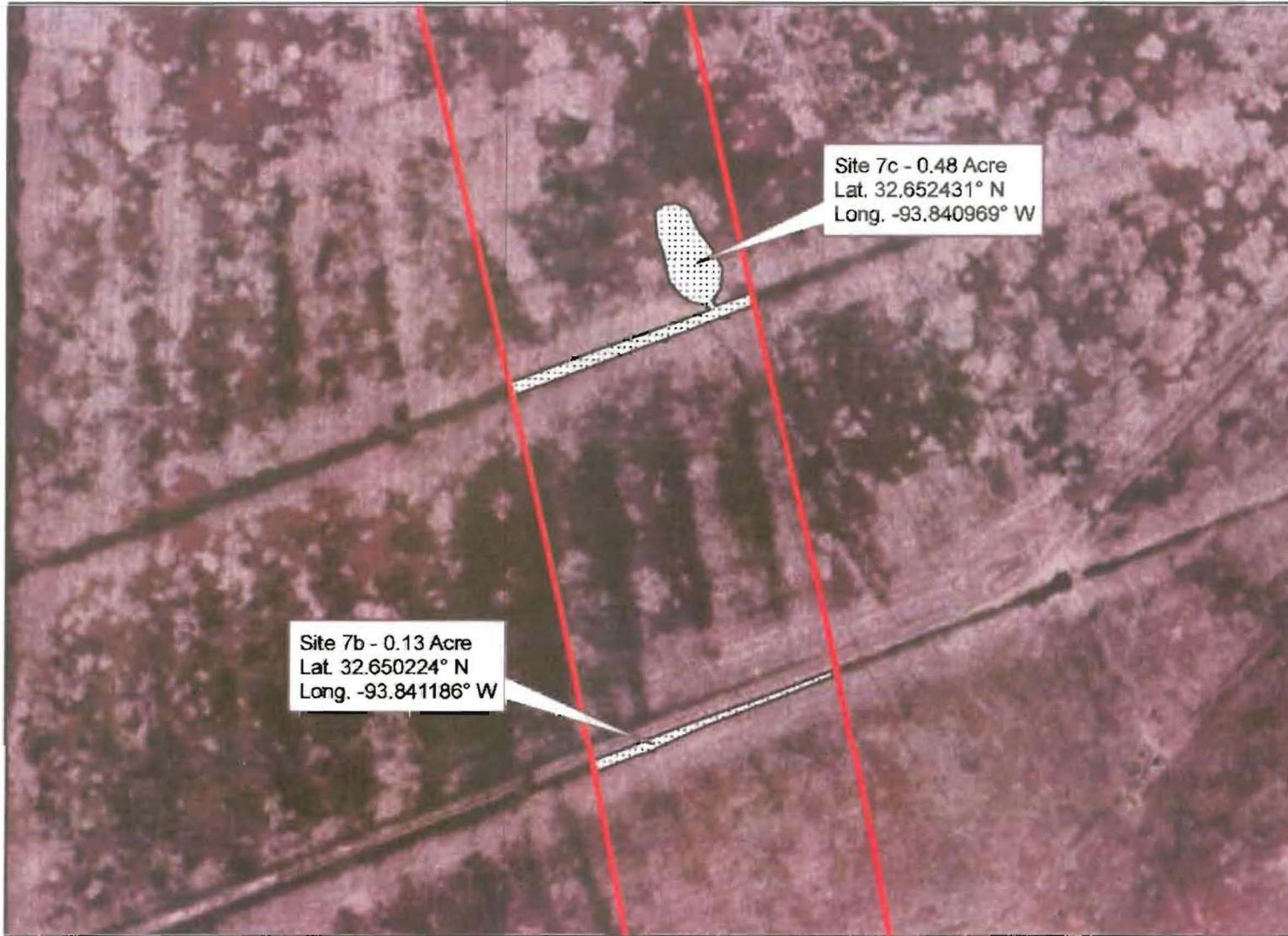
**US Army Corps of Engineers.**

**Regulatory Branch**

**Enforcement Section**

0 75 150 300 Feet

Enclosure 1



There are jurisdictional wetlands and other waters of the U.S. within project boundaries. A permit is required for all work within jurisdictional areas.

**Legend**

-  Project Boundary
-  Site 7b & 7c - Jurisdictional Other Waters



18 December 2009  
**MVK-2009-1505**  
 Proposed I-49 North  
 LADOTD  
 Section I (LA Hwy 1 - LA Hwy 173)  
 Caddo Parish, Louisiana  
**Approved**  
**Jurisdictional Determination**  
 Prepared by  
 Arel Simpson





**US Army Corps of Engineers.**

**Regulatory Branch**  
**Enforcement Section**

0 75 150 300 Feet

Enclosure 1



There are jurisdictional wetlands and other waters of the U.S. within project boundaries. A permit is required for all work within jurisdictional areas.

**Legend**

 Project Boundary

 Site 7d - Jurisdictional Other Waters



18 December 2009  
**MVK-2009-1505**  
 Proposed I-49 North  
 LADOTD  
 Section I (LA Hwy 1 - LA Hwy 173)  
 Caddo Parish, Louisiana  
**Approved**  
**Jurisdictional Determination**  
 Prepared by  
 Arel Simpson





**US Army Corps of Engineers.**

**Regulatory Branch**

**Enforcement Section**

0 75 150 300 Feet

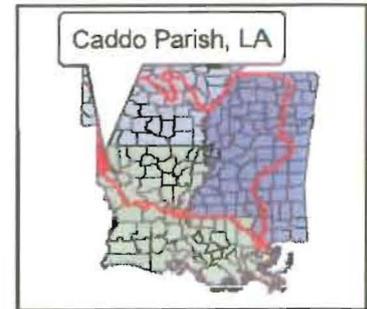
Enclosure 1



There are jurisdictional wetlands and other waters of the U.S. within project boundaries. A permit is required for all work within jurisdictional areas.

**Legend**

-  Project Boundary
-  Site 8a - Jurisdictional Wetlands
-  Site 8b - Jurisdictional Other Waters



18 December 2009  
**MVK-2009-1505**  
 Proposed I-49 North  
 LADOTD  
 Section I (LA Hwy 1 - LA Hwy 173)  
 Caddo Parish, Louisiana  
**Approved**  
**Jurisdictional Determination**  
 Prepared by  
 Arel Simpson





**US Army Corps of Engineers**

**Regulatory Branch**

**Enforcement Section**

0 75 150 300 Feet

Enclosure 1

**Delineation Site Summary Table**

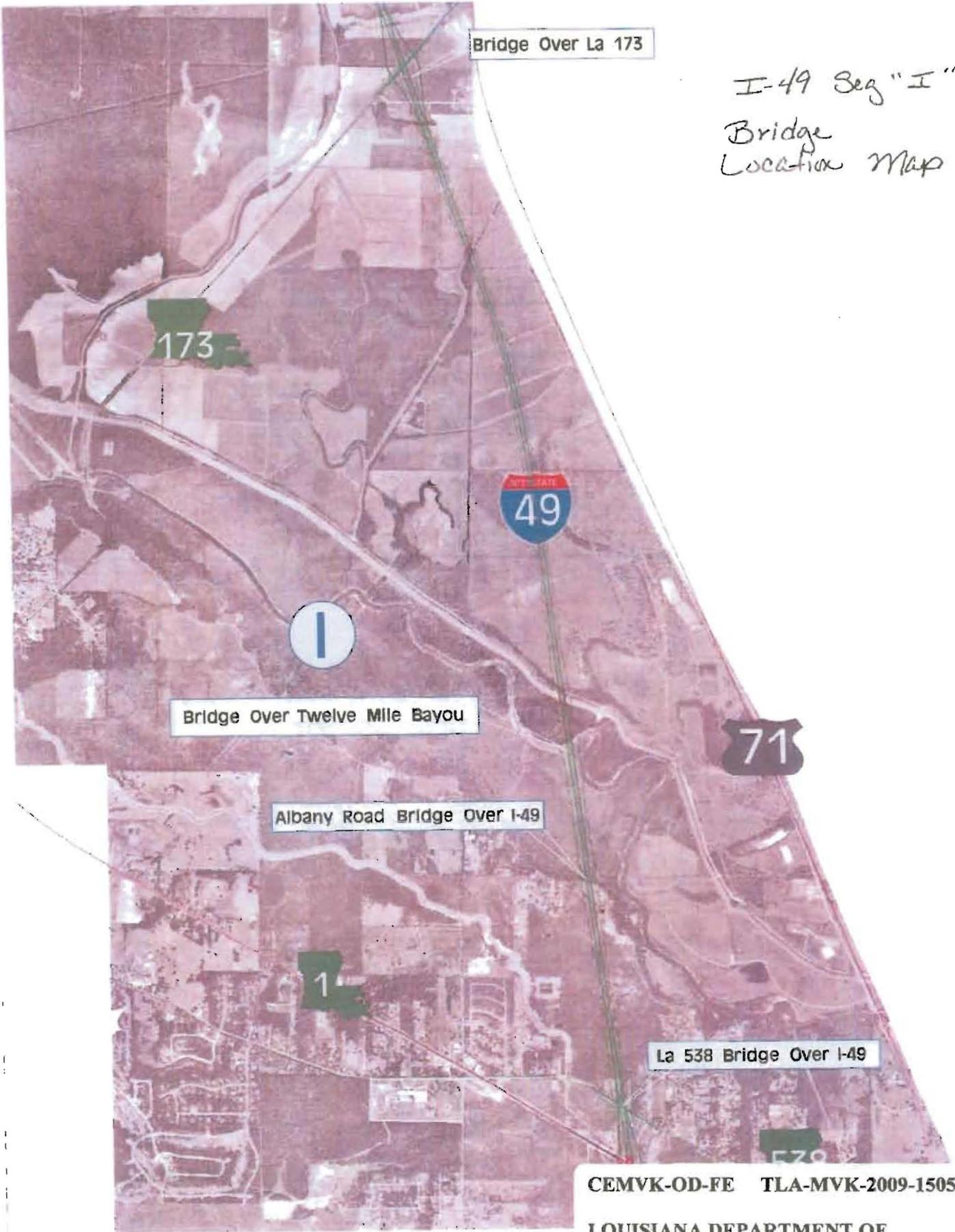
<u>Site</u>	<u>Wetlands</u>	<u>Other Waters</u>	<u>Impact Type</u>	<u>Project No.</u>
1a	4.08		F	SP 455-09-0003
1b		0.8	C	
2a	0.6		F	
2b		0.11	C	
2c		0.48	C	
3	23.57		F	
4a	6.03		F	
4b	30.91		F	
5		2.11	B	
6	13.48		F	
7a		0.52	B	
7b		0.13	C	
7c		0.48	C	
7d		0.59	C	
8a	0.35		F	
8b		0.29	C	
<b>Totals</b>	<b>79.02</b>	<b>5.51</b>		

Impact Type

- (C)- Culvert
- (B)- Bridge
- (F)- Fill

CEMVK-OD-FE TLA-MVK-2009-1505

LOUISIANA DEPARTMENT OF  
TRANSPORTATION & DEVELOPMENT



I-49 Seg "I"  
Bridge  
Location Map

CEMVK-OD-FE TLA-MVK-2009-1505

LOUISIANA DEPARTMENT OF  
TRANSPORTATION & DEVELOPMENT

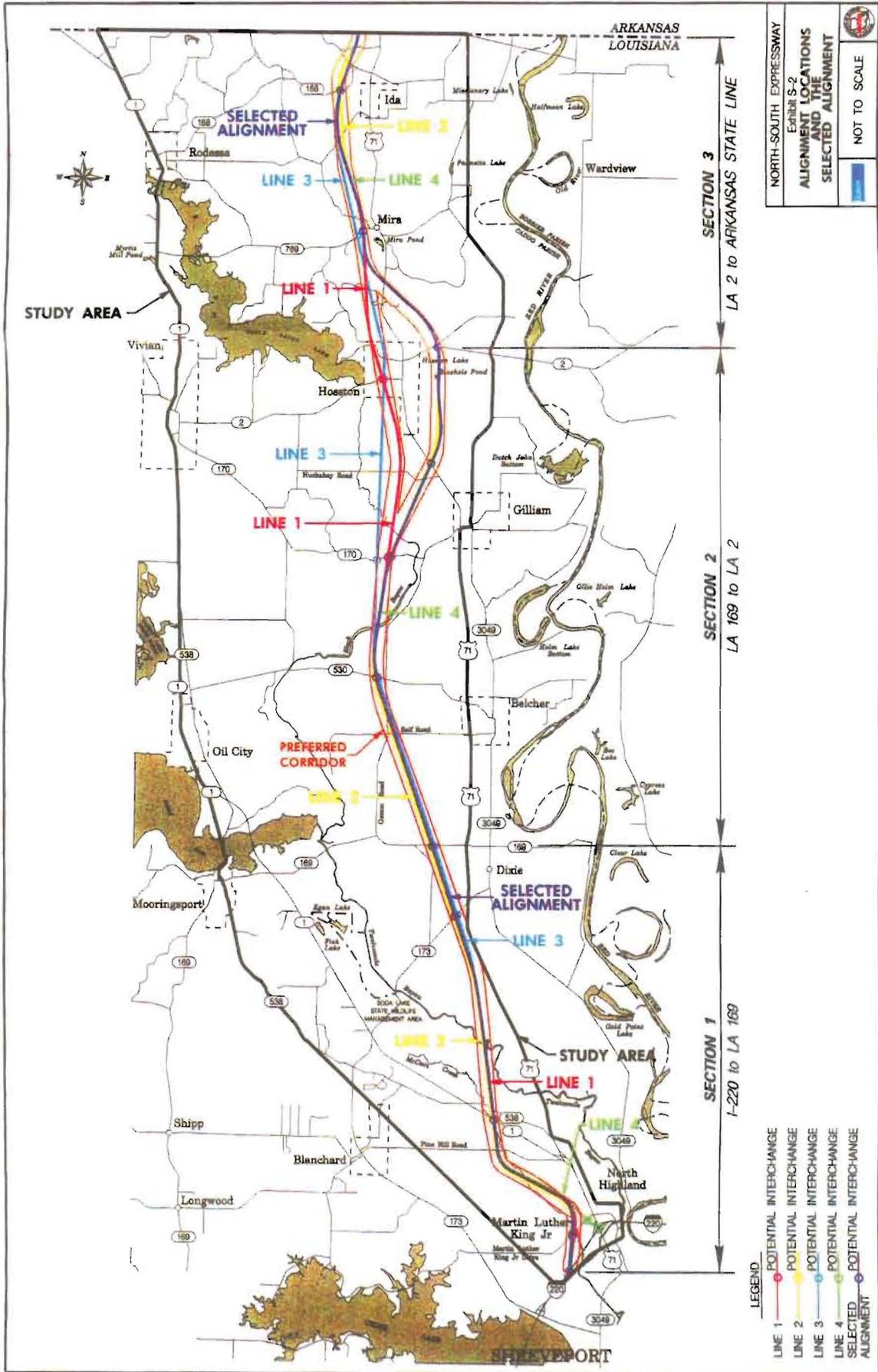
### I-49 Bridge Locations

Location	Begin Bridge Station	End Bridge Station	Gen Excavation (cu yards)	Embankment (cu yards)
LA538 over I-49	23+15.00	28+45.00	0	10,529
Albany Road over I-49	13+45.00	18+45.00	15,844	0
I-49 over Twelve Mile Bayou	201+61.00	213+85.00	0	4,400
I-49 over LA173	389+78.71	399+98.71	0	2,917

CEMVK-OD-FE TLA-MVK-2009-1505

LOUISIANA DEPARTMENT OF  
TRANSPORTATION & DEVELOPMENT

*Page 2*



fund 4

BOBBY JINDAL  
GOVERNOR



PEGGY M. HATCH  
SECRETARY

State of Louisiana  
DEPARTMENT OF ENVIRONMENTAL QUALITY  
ENVIRONMENTAL SERVICES

FEB 08 2010

Louisiana Department of Transportation & Development  
P.O. Box 94245  
Baton Rouge, LA 70804

Attention: Robert Lott

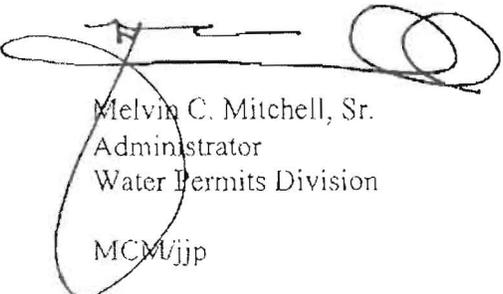
RE: Water Quality Certification (WQC 100119-03/A1 91949/CER 20100001)  
Corps of Engineers Permit (MVK-2009-1505)  
Caddo Parish

Dear Mr. Lott:

The Louisiana Department of Environmental Quality (the Department) has reviewed your application to clear land and place fill material for construction of federal highway infrastructure (Interstate 49, segment "I"), in the vicinity north of Shreveport, Louisiana.

Based on the information provided in the application, the Department made a determination that the requirements for a Water Quality Certification have been met and concludes that the placement of the fill material will not violate water quality standards of Louisiana as provided for in LAC 33:IX.Chapter 11. Therefore, the Department hereby issues a Water Quality Certification to the Louisiana Department of Transportation & Development.

Sincerely,



Melvin C. Mitchell, Sr.  
Administrator  
Water Permits Division

MCM/jjp

c: Corps of Engineers- Vicksburg District

2010

**PROJECT-SPECIFIC MITIGATION PLAN  
LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT  
SEGMENT "I" OF INTERSTATE - 49  
MVK-2009-1505  
MOT MITIGATION SITE**

## 1.0 INTRODUCTION

The following mitigation plan summarizes the mitigation potential and restoration plan for approximately 307.09 acres in Bossier Parish, Louisiana. The purpose of the report is to summarize the existing conditions of the proposed Mot Mitigation Site (MMS) and provide details of the plan to establish the MMS as a wetland mitigation site for the purpose of providing project-specific compensatory wetland mitigation for impacts to wetlands associated with a Section 404 permit to be issued to Louisiana Department of Transportation and Development (LDOTD) for Segment "I" of the I-49 Project by the US Army Corps of Engineers (USACE), Vicksburg District (MVK).

## 2.0 GOALS AND OBJECTIVES

The MMS is owned by Weyerhaeuser NR Company (WNRC). The goal of WNRC is to restore 291.17 wetland acres of the MMS as a sustainable bottomland hardwood ecosystem and enhance and preserve 7.81 acres of existing bottomland hardwood forest. The site consists of 284.72 acres of pine plantation, 7.81 acres of existing bottomland hardwood forest, 7.72 acres of pipeline rights-of-way, 3.67 acres of abandoned well pad, 2.89 acres of access road to be restored, and 0.39 acres of access road to remain in use. WNRC proposes to restore bottomland hardwood forests to re-establish wetland functions and values associated with bottomland hardwood habitat. WNRC intends for the MMS to serve as a bottomland hardwood mitigation site to provide mitigation as compensation for unavoidable impacts to wetlands to satisfy the mitigation requirements for a permit (MVK-2009-1505) to be issued to LDOTD.

It is the intention of WNRC to implement wetland restoration for LDOTD, which needs compensatory mitigation to satisfy permit requirements. Through a contractual agreement with LDOTD, WNRC will, for a fee to be paid by LDOTD, commit to implementing the mitigation specified in Department of the Army (DA) permit and incur the responsibility of the long-term maintenance, management, protection and overall success of the MMS, as well as record a conservation servitude limiting future use of the site.

### 3.0 LOCATION

The 307.09-acre Mot site is approximately 2.3 miles southeast of the junction of LA 2 and Mot Road, approximately half-way between the towns of Plain Dealing and Serepta in Bossier Parish, Louisiana (Figure 1). The site is centered approximately at Latitude 32°53'32.24"N; Longitude 93°31'45.06"W in Sections 17, 18, 19, and 20, Township 22 North, Range 11 West, Bossier Parish (Figure 2).

### 4.0 SITE OWNERSHIP

The Owner and Sponsor of the MMS is WNRC. There are no liens, encumbrances, easements, servitudes, or restrictions other than two pipeline rights-of-way that pass through the site proposed for restoration. An existing well pad located on the site will be restored by removing the aggregate to lower the elevation to the surrounding grade.

### 5.0 WETLAND DELINEATION

A wetland data report and request for jurisdictional determination are attached for your use. WNRC acknowledges that acreage figures used in this mitigation plan may change and/or become modified pending jurisdictional determination.

### 6.0 CURRENT MMS CONDITIONS

WNRC currently manages the 307.09-acre MMS for growing and harvesting primarily pure stands of pine trees. The MMS is composed of approximately 284.72 acres of pine forested wetlands, 7.8 acres of existing bottomland hardwood forest wetlands, 7.72 acres of pipeline right-of-way, 3.67 acres of abandoned well pad to be restored, 2.89 acres of access road to be restored, and 0.39 acre of access road to remain in place. The well pad and access roads are not currently wetlands.

#### 6.1. Existing Land Use

The site is managed for pine timber harvest and pipeline rights-of-way.

#### 6.2. Existing Plant Communities

Forested areas of the majority of the MMS are dominated by dense stands of loblolly pine (*Pinus taeda*). Stand age varies across the MMS depending on when WNRC conducted plantings. Current stands include 157.26 acres in 9-year old loblolly pine, 69.2 acres are clear cut, 46.65 acres in 5-year old loblolly pine, and 11.56 acres in 26-year old loblolly pine (Figure 3). The southwest portion of the site contains 7.81 acres of

existing bottomland hard wood forest.

### **6.3. Soils**

The NRCS's Web Soil Survey was used to determine mapped soil series. The revised official series descriptions were used to confirm profile matrix, redox features, and texture of soils underlying the site. The Web Soil Survey shows that the site may be entirely underlain by Ashford silty clay, 0 to 1 percent slopes. Field data indicates that the entire site is underlain by Ashford silty clay. Ashford silty clay is listed as a hydric soil on both the local list (NRCS Web Soil Survey 2010) and the national list (NRCS 2010 National Hydric Soils List by State).

### **6.4. Existing Hydrology**

The site is in the Red River Basin; within the United States Geological Survey (USGS) Hydrologic Cataloguing Unit 11140205. Sources of hydrology on the site are primarily rainfall, sheet flow, and backwater flooding from Bear Branch. The site drains primarily north to south into Bear Branch which ultimately drains into the Bayou Bodcau Reservoir. Natural sheet flow hydrology on the site is disrupted by an existing access road and well pad. The well pad and majority of the access road will be restored to natural elevations and replanted in bottomland hardwood species.

## **7.0 MMS RESTORATION PLAN**

The Sponsor proposes to restore approximately 291.17 acres of the total 307.9 acres back to bottomland hardwood forest which historically was the dominant habitat in the area. Additionally the Sponsor proposes to enhance and preserve 7.81 acres of existing bottomland hardwood forest on the site. Following the harvest of pine trees and restoration of the well pad and access road, the site will be mechanically prepared and replanted with bottomland hardwood seedlings.

### **7.1. Surface Hydrology**

The site is generally flat. Rainwater runoff appears to flow by sheet flow from north to south. The natural surface flow has been disrupted by the construction of an access road and an abandoned well pad. The natural sheet flow hydrology of the site will be restored by leveling the existing access road and filling associated roadside ditched to achieve natural elevation. Aggregate from the well pad will be removed for use elsewhere and the elevation of the well pad will be reduced to the surrounding elevation.

### Timeframe

Once the site has been approved and the permit has been issued by the USACE, the timber removal will begin immediately as weather permits to minimize impact to the site. After the timber is removed, targeted for the summer of 2010, the goal is to restore near natural hydrology as soon as possible before planting.

## 7.2. Proposed Bottomland Hardwood Restoration

The Sponsor proposes to restore approximately 291.17 acres, which includes 284.72 acres of pine plantation wetlands and 6.56 acres of well pad and access roads (Figure 4). A conservation servitude will be executed for the mitigation implemented. Through a contractual agreement with LDOTD, WNRC will, for a fee to be paid by LDOTD, commit to implementing the mitigation specified in Department of the Army (DA) permit MVK-2009-1505 and incur the responsibility of the long-term maintenance, management, protection and overall success of the MMS.

### Hydrologic Restoration

The Sponsor will take appropriate actions to restore near-natural hydrologic conditions. The Sponsor will discontinue harvesting and cultivating the natural landscape and restore the well pad and access road on the site to natural elevations to allow for natural sheet flow of surface water on the site.

### Vegetative Plantings

Restoration will be accomplished by planting an appropriate species mixture of bottomland hardwoods during the standard planting season (December-March). Seedlings will be planted on approximately 291.17 acres using 14 x 6 foot spacing for an initial stand density of at least 518 seedlings per acre. A mixture of at least 80 percent hard-mast and a maximum of 20 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. A mixture of the following species will be planted to restore the site:

#### Proposed Species

Water oak (*Quercus nigra*) <5%  
Willow oak (*Quercus phellos*)  
Nuttall oak (*Quercus nuttallii*)  
Cherrybark oak (*Quercus pagoda*)  
Overcup oak (*Quercus lyrata*)

Cherrybark oak (*Quercus pagoda*)  
 Swamp chestnut oak (*Quercus michauxii*)  
 Water hickory (*Carya aquatic*)  
 Sweet pecan (*Carya illinoensis*)  
 Sycamore (*Platanus occidentalis*)  
 Sweet gum (*Liquidambar styraciflua*)  
 Sugarberry (*Celtis laevigata*)  
 Green ash (*Fraxinus pennsylvanica*) <10%  
 Red mulberry (*Morus rubra*)  
 Common persimmon (*Diospyros virginiana*)

## 8.0 EXOTIC/NUISANCE VEGETATIVE SPECIES CONTROL

Exotic/noxious plant species (e.g., Chinese tallow, cottonwood, honey locust, and black willow) will be controlled as needed until crown closure has occurred. All timber harvests and thinning operations conducted in the MMS will be authorized by the Vicksburg District and will be performed in a manner that maintains and enhances wildlife habitat quality.

## 9.0 PERFORMANCE STANDARDS

The following performance standards shall be implemented during the initial restoration of the mitigation site (year 1). Following year 1, annual monitoring reports shall be conducted through the first five years.

### 1. Success Criteria

#### Bottomland Hardwood Establishment Criteria

- a. Site Preparation
  - Removal of exotics/invasives and/or inappropriate or competing species.
- b. Development of hydrology (continuation of site preparation)
  - Elimination of impediments to desired hydrology (removal of roads or berms, filling of ditches, ruts, beaver dams, etc.).
- c. Tree Planting
  - Should be initiated after site preparation associated with hydrologic restoration has been completed or desired site hydrology has been attained. Species placement should be based upon micro-topographical and edaphic habitat preference promoting diversity within the mitigation site.

- Tree species will be planted on 14 x 6 foot spacing (518 trees per acre) to achieve overall composition of 50% hard mast and 7-10 target species per acre.
- Planted to achieve a final coverage at year 5 of at least 200 stems/acre (including desirable natural recruits) and 85% canopy coverage at maturity.
- Introduction of shrub and herbaceous layer (if not naturally recruited).
- The HGM Functional Assessment will be utilized to assess the functional ecological lift of the restoration work. A minimum of three consecutive years of positive functional benefit shall be obtained using the HGM Functional Assessment.
- The referenced performance standards shall be implemented during the initial restoration of the site (year 1). Following year 1, annual monitoring reports shall be conducted for the following 5 years.

#### 9.1. 5-Year Success Criteria:

The following criteria will be used to assess short-term project success:

1. Wetland hydrology (as defined by current U.S. Army Corps of Engineers Wetland Delineation Manual 1987/ specifications) will be attained and maintained as described herein. Assessments will be made using primary and secondary indicators of wetland hydrology.
2. A 50% survival rate of the planted and naturally recruited tree seedlings or 259 desirable trees per acre will be attained through second growing season of the five-year monitoring requirement of this plan. The hard mast component of 50% must be obtained after 5 growing seasons. This figure may include natural recruitment, but should not include exotic (Chinese tallow-tree) or noxious (black willow, cottonwood, water locust) species. The site shall have <5% coverage of exotic species and <20% coverage of noxious species.

## 10.0 LONG-TERM MAINTENANCE AND PROTECTION

WNRC shall be responsible for protecting and maintaining lands contained within the MMS in perpetuity, unless site is transferred or sold. The conservation servitude shall incorporate this mitigation plan by reference and bind WNRC and future owners to complying with the terms of this copy of the mitigation plan. A copy of the conservation servitude to be filed in the real estate records of the Mortgage and Conveyance Office of Bossier Parish shall be provided to MVK for review and approval prior to filing. After filing, a copy of the recorded

conservation servitude, clearly showing the book, page and date of filing, will be provided to MVK.

#### 10.1. Uses Prohibited by the Conservation Servitude:

- 1) Placing, filling, storing, or dumping of refuse, trash, vehicle bodies or parts, rubbish, debris, junk, waste, or other such items on the Site.
- 2) Mechanized land clearing or deposition of soil, shell, rock or other fill on the Site without written authorization from MVK.
- 3) Cutting, removal or destruction of vegetation on the Site except in accordance with the Sponsor's conservation servitude and/or in accordance with any permits authorized by the Corps of Engineers at the time the cutting is proposed. Timber harvests/thinning will only be approved if the MVK determines that such activities are needed to maintain or enhance the ecological value of the MMS.
- 4) Grazing of cattle or other livestock on the site.
- 5) Commercial, industrial, agricultural, or residential uses of the Site or partitioning by fencing without prior approval from the MVK.
- 6) Dredging, draining, ditching, damming or in any way altering the hydrology of the Site except as required or permitted by this mitigation plan.
- 7) All other activities, which the MVK determines to be inconsistent with the establishment, maintenance and protection of wetlands within the MMS and that may or may not be subject to Corps of Engineers regulatory authority.

#### 10.2. Uses Allowed By the Conservation Servitude:

No other human activities that result in the material degradation of habitat on the MMS shall occur without written authorization from MVK. *However, it is understood that the conservation servitude shall not prohibit, subject to appropriate regulatory authority, hunting, fishing, trapping, non-consumptive recreational pursuits, exploration and production of minerals, and timber harvesting conducted for enhancing performance of wetland functions, subject to all applicable Federal, State and/or local licenses and permits and other provisions contained herein.*

- 1) Monitoring of vegetation, soils and water;
- 2) Hunting and fishing, and non-consumptive recreational uses such as hiking and bird watching;
- 3) Ecological education;
- 4) Exploration and production of minerals subject to obtaining all appropriate permits.

- 5) Provision of rights-of-way;
- 6) Timber harvesting as set forth herein; and
- 7) Compliance with Federal regulations or appropriate court orders.

## 11.0 MONITORING AND REPORTING PROVISIONS

### 11.1. Monitoring Provisions

The Sponsor agrees to perform all necessary work to monitor MMS to demonstrate compliance with the success criteria established in this mitigation plan. The sponsor shall establish monitoring plots at the time of seedling planting. One-tenth acre shall be identified with permanent markers and shall be recorded with GPS equipment and identified on a map submitted to the Vicksburg District with the first monitoring report.

### 11.2. Monitoring Reports

Monitoring reports shall be provided to the Vicksburg District by December 15<sup>th</sup> to allow for the Sponser to complete vegetative chemical control. The Vicksburg District will distribute the report to the members of the IRT. In the event monitoring reveals that initial success criteria have not been met, the Sponsor shall take measures to achieve the criteria the following year. Monitoring, reporting and remedial action shall be conducted in accordance with the following:

1. The Sponsor shall conduct annual surveys of living seedlings in each planted tract. Sampling shall be done between April 15<sup>th</sup> and November 15<sup>th</sup> following the growing seasons for the first 5 years. Additional monitoring reports may be required by the IRT following implementation of adaptive management should one of the success criteria not be met by the 5<sup>th</sup> year. Seedling survival shall be documented by performing a comprehensive tally on 1/10 acre random plots at a frequency of 1 plot/20 acres. In addition, the Sponsor shall perform a cursory examination of the entire planted tract to determine if overall survival rate is adequate.
2. The Sponsor will, within 60 days following the survey, provide a written report to the Vicksburg District. The report shall include, at a minimum, the following:
  - a. A U.S. Geological Survey topographic map with the MMS indicated.
  - b. A detailed narrative that summarizes the condition of the MMS and all regular maintenance activities.

- c. Appropriate site maps that show the locations of sampling plots, permanent photographic stations, sampling transects, etc.
  - d. Data regarding the hydrology of the MMS (e.g., hydroperiod, extent and depth of inundation, precipitation records, etc.)
  - e. Results of vegetation surveys, including the following: visual estimates of overall percent cover and of percent cover within each layer of vegetation; indices of species diversity; estimates of percent cover of exotic and noxious species within each layer of vegetation and control measures to be taken; composition of plant community (wetland indicator status); calculations of survival for planted trees; estimates of natural re-vegetation; and estimates of plant vigor (as measured by evidence of reproduction).
  - f. Results of surveys of wildlife usage of the site (e.g., observations of amphibians, reptiles, mammals, birds and macroinvertebrates on or near the MMS).
  - 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 tracts that did not exhibit a survival rate for planted seedlings of at least 200 stems per acre.
  - i. Monitoring Reports to be disseminated to IRT should be mailed to:  
U.S. Army Corps of Engineers  
Vicksburg District  
Regulatory Branch Attn: Compliance Officer  
4155 Clay Street  
Vicksburg, Mississippi 39183-3435
3. If survival is less than 200 desirable trees per acre (as determined by sampling or observing high mortality within any zone or location within a planted tract), the Sponsor shall take appropriate actions as recommended by the IRT to address the causes of mortality and shall replace all dead seedlings with new seedlings of the appropriate species from the approved list (replacements need not be the same species) during the following non-growing season. Replanting, in accordance with this paragraph, and monitoring and reporting, as described in this mitigation plan, shall occur yearly thereafter as needed to achieve and document the required survival rate for five consecutive years.
  4. The Sponsor shall continue annual monitoring and reporting of each planting effort, in accordance with this plan, to verify the presence of a minimum of 200 desirable trees per acre including natural recruitment, for a minimum of five years. Annual reports will be provided to the Vicksburg District.
  5. The Sponsor will not be responsible for replacement of seedlings or

trees when mortality is due to an Act of God or other force majeure event (other than beaver predation) that occurs after the long-term criteria are met.

## **12.0 CORRECTIVE ACTIONS**

### **12.1. Contingency Plans/Remedial Actions**

In the event the MMS fails to achieve the success criteria specified in this mitigation plan, the Sponsor shall develop necessary contingency plans and implement appropriate remedial actions for the MMS in coordination with the Vicksburg District. In the event the Sponsor fails to implement necessary remedial actions within the first growing season following notification by the Vicksburg District of necessary remedial action to address any failure in meeting the success criteria, the Vicksburg District (acting through the Chair) will notify the Sponsor and the appropriate authorizing agencies and recommend appropriate remedial actions.

### **12.2. Completion of Corrective Actions**

Following completion of corrective action, at the request of the Sponsor, the Vicksburg District will perform a final compliance visit to determine whether all success criteria have been satisfied. Upon satisfaction of the success criteria, any remaining contingency funds will be released to the Sponsor.

### **12.3. Non-Compliance**

In the event the Sponsor does not comply with this mitigation plan or the conservation servitude, the Sponsor will be required to immediately perform corrective actions (e.g., replanting and repair or replacement of water control structures). The Vicksburg District will then convene a meeting with the Sponsor and the IRT to determine if a reassessment of the management or mitigation potential is necessary. If remedial action is not taken within one year, the Vicksburg District will cease recognition of the MMS. 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.

### **12.4. 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 MMS. The management or mitigation potential may also be adjusted should any activity positively affect the value or functioning of the MMS. Any adjustments to the management or mitigation potential will apply to future debits within the additions to the MMS as well as those tracts that

have already been debited.

Should the IRT determine that an activity or activities authorized in planted or unplanted tracts within the MMS would likely affect the mitigation potential of the MMS; the IRT shall coordinate with the Sponsor and reevaluate the mitigation potential. The reevaluated mitigation potential will not affect acreage that has already been planted but will be used to determine the appropriate acreage to plant for future activities using the MMS as compensatory mitigation.

#### **12.5. Force Majeure:**

*Force Majeure* is defined here as a natural event over which WNRC has no control to prevent the damage from occurring. The following are examples of *Force Majeure*: Fire, wind, flood, drought and other natural disasters and insect damage, or infection damages to planted vegetation.

Damages caused by events beyond the control of WNRC may be repaired using funds (principal and interest) accumulated in the endowment account by WNRC, the Long-Term Steward or Holder. WNRC shall bear the financial responsibility for any and all remedial measures necessary to correct any deficiency caused by any means prior to successful attainment and verification of the Year 5 criteria by the Vicksburg District. The funds will be provided to whichever entity has responsibility to repair the resulting damages at the time of catastrophic event.

### **13.0 FINANCIAL ASSURANCES**

The purposes of financial assurances are to assure that (1) construction, including planting the MMS and restoring wetland hydrology to the MMS, is performed in accordance with the MMS restoration plan, (2) to ensure the availability of funds for long-term maintenance, monitoring, and remediation by a third party, and (3) to ensure project success. To accomplish these goals, sufficient funds to perform the restoration work must be escrowed and a Long-Term Management Fund established. Therefore, WNRC agrees to establish a financial mechanism to ensure that sufficient funds are available to a third party in the case of non-compliance or bank failure. In the event that WNRC does not fulfill their obligations to perform, as specified in this agreement, the escrow account shall guarantee payment to a third party as necessary to complete the work. "Third party" is defined to mean the Holder, Long-Term Steward or an agency/organization determined appropriate by the MVK.

To establish the required financial assurance, \$1,000 for each acre of mitigation sold shall be placed within an escrow account administered by a federally-insured depository that is "well-capitalized" or "adequately-capitalized" as defined in Section 38 of the Federal Deposit Insurance Act. Copies of depository account statement shall be provided to MVK upon request and/or in their annual report.

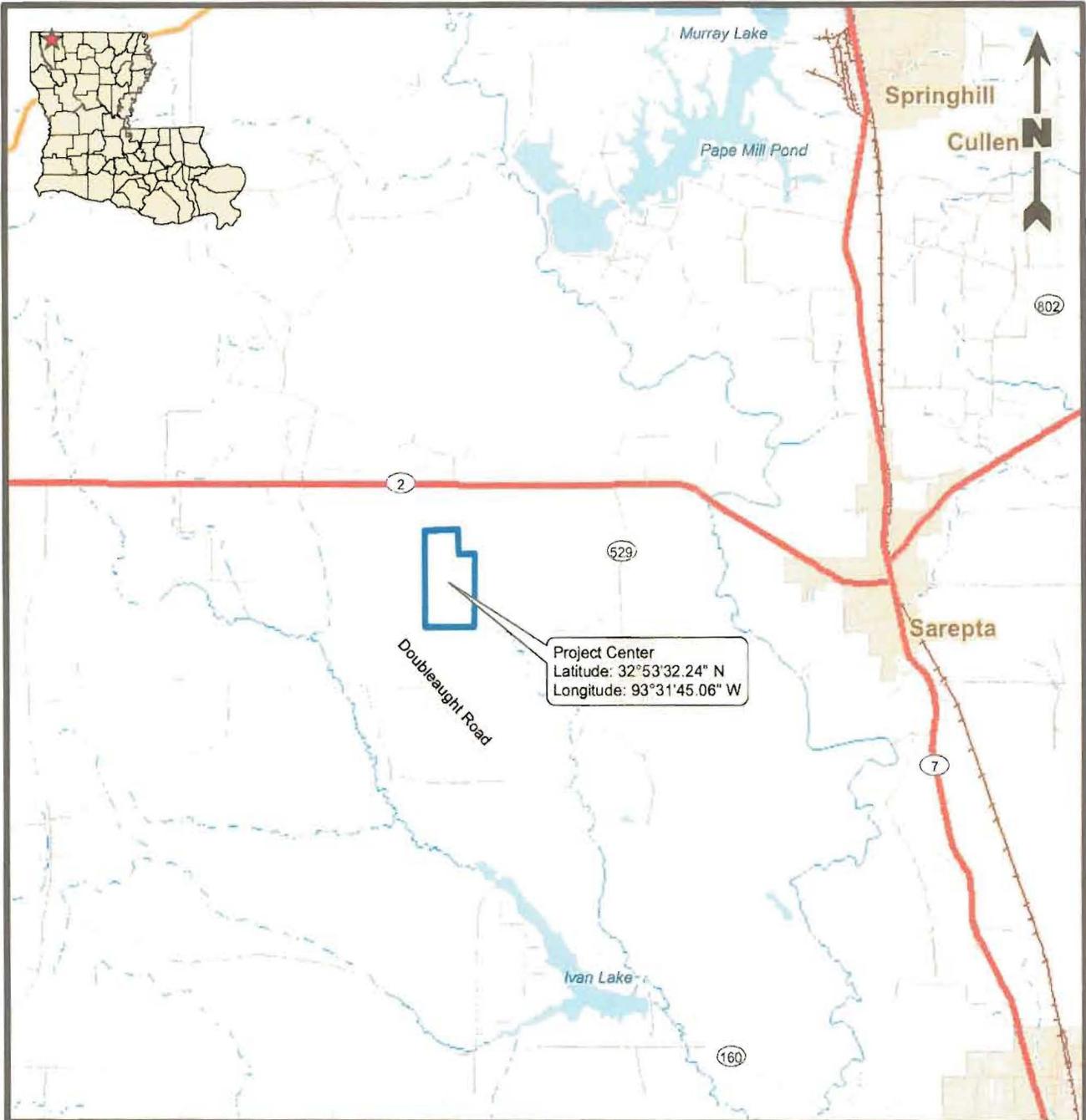
Any interest from the escrow account shall be paid to WNRC. Upon verification by the MVK that the 5-year success criteria have been attained for the MMS, the balance of escrow funds will be release to the Sponsor.

#### **14.0 MITIGATION SITE SELECTION & JUSTIFICATION**

There are no mitigation credits for purchase or sites conducive to restoration available to the applicant in the immediate area of the project impacts. The MMS site is located in the Red River Drainage Basin as is the proposed project. The 307.09-acre MMS has the potential to be restored to bottomland hardwood forest. The proposed mitigation consists of restoration of 284.72 acres of bottomland hardwood forested wetlands currently consisting primarily of loblolly pine plantation, and enhancement and preservation of 7.81 acres of existing bottomland hardwood forest.

#### **15.0 TRANSFER OF SITE**

WNRC may donate or otherwise convey the site to a conservation organization or other entity, with the approval of the Vicksburg District.



Project Center  
 Latitude: 32°53'32.24" N  
 Longitude: 93°31'45.06" W



**Legend**

 LDOTD Mot Mitigation Site (307.09 Acres)

**Reference**

Base map comprised of ESRI StreetMap USA data.

**Vicinity Map**

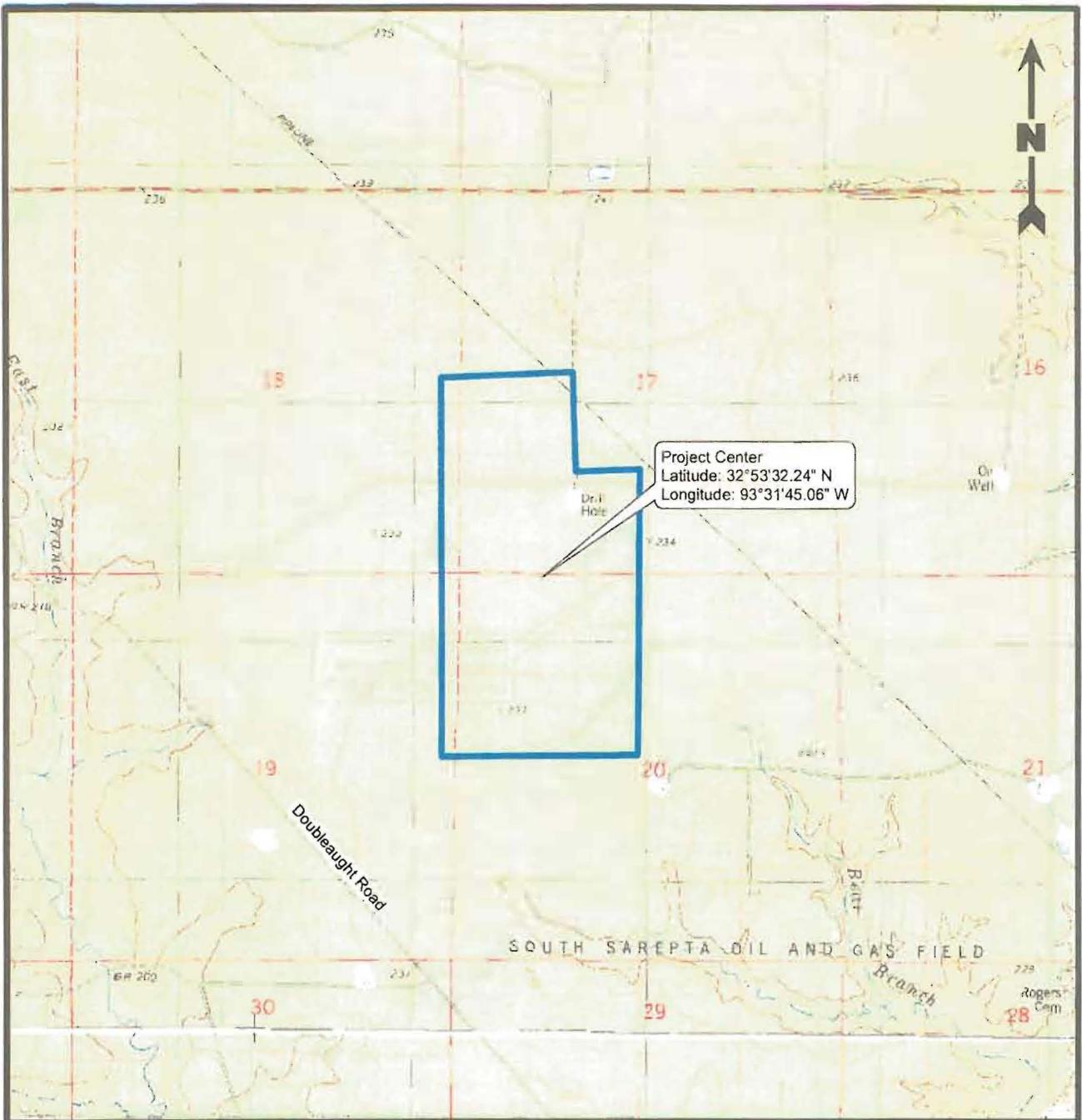
Project Specific Mitigation  
 LDOTD Segment "I" of I-49  
 Mot, Bossier Parish, Louisiana

**Weyerhaeuser Company**  
 MOTT Tract



Drawn By	LMM	02/15/10
Checked By	DRA	02/15/10
Approved By	CEJ	02/15/10

Project Number	<b>1</b> Figure
398-006	
Drawing Number	
398-006-A049	



**Legend**

LDOTD Mot Mitigation Site (307.09 Acres)

**Reference**

Base map comprised of U.S.G.S. 7.5 minute topographic maps, "Carterville, LA" and "Ivan, LA" dated 1981.

**Site Location Map**

Project Specific Mitigation  
 LDOTD Segment "I" of I-49  
 Mot, Bossier Parish, Louisiana

**Weyerhaeuser Company**  
 MOTT Tract

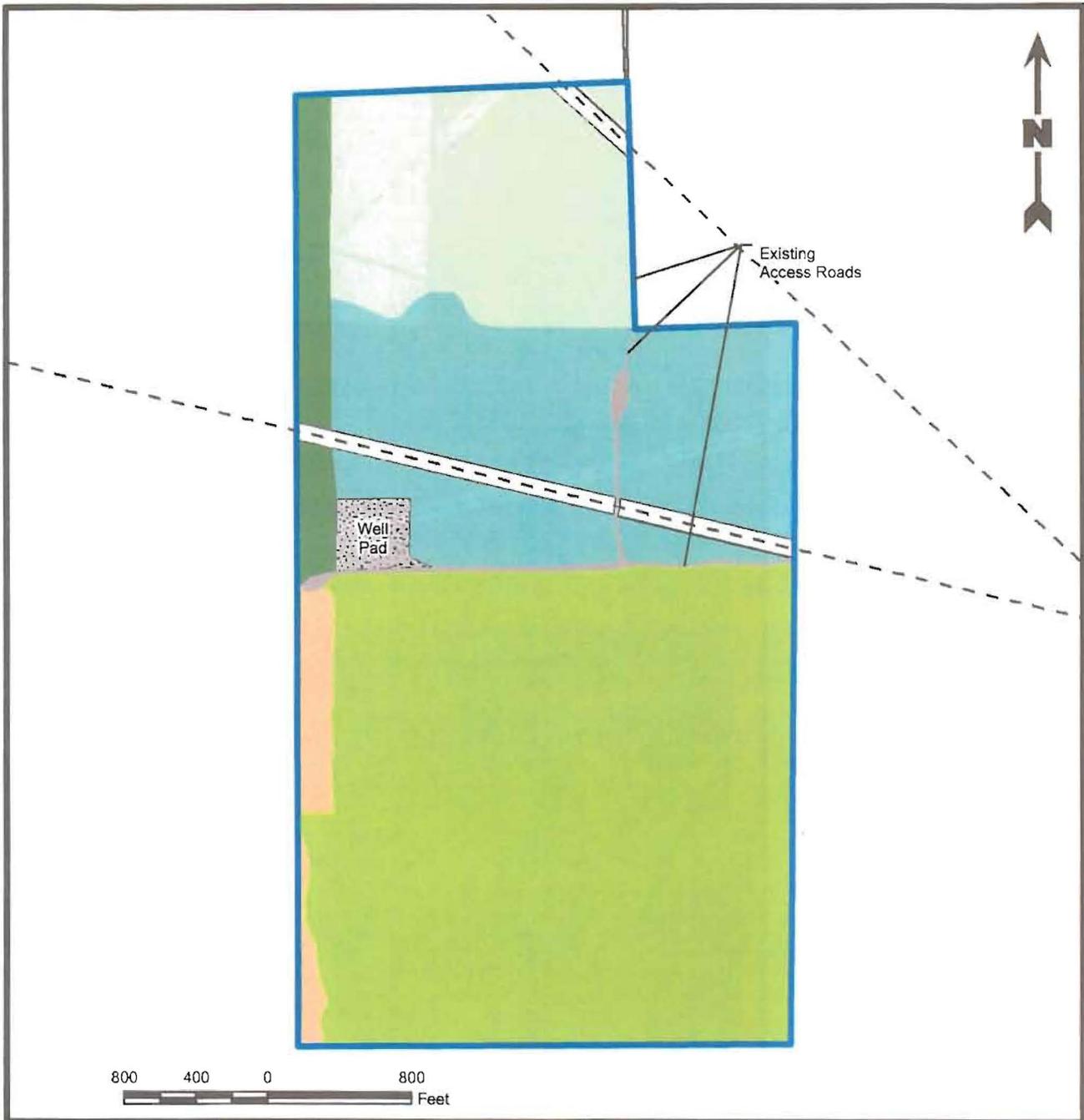


**PROVIDENCE**

Drawn By	DRA	02/15/10
Checked By	LMH	02/15/10
Approved By	CEJ	02/15/10

Project Number	398-006
Drawing Number	398-006-A050

**2**  
Figure



**Legend**

- LDOTD Mot Mitigation Site (307.09 Acres)
- 9 Year Old Planted Pine (157.28 Acres)
- Clearcut (69.20 Acres)
- 5 Year Old Planted Pine (46.65 Acres)
- 26 Year Old Planted Pine (11.56 Acres)
- Existing BLH (7.81 Acres)
- Existing Rights-of-Way (7.67 Acres)
- Existing Well Pad (3.66 Acres)
- Existing Access Road (3.28 Acres)
- Existing Pipelines

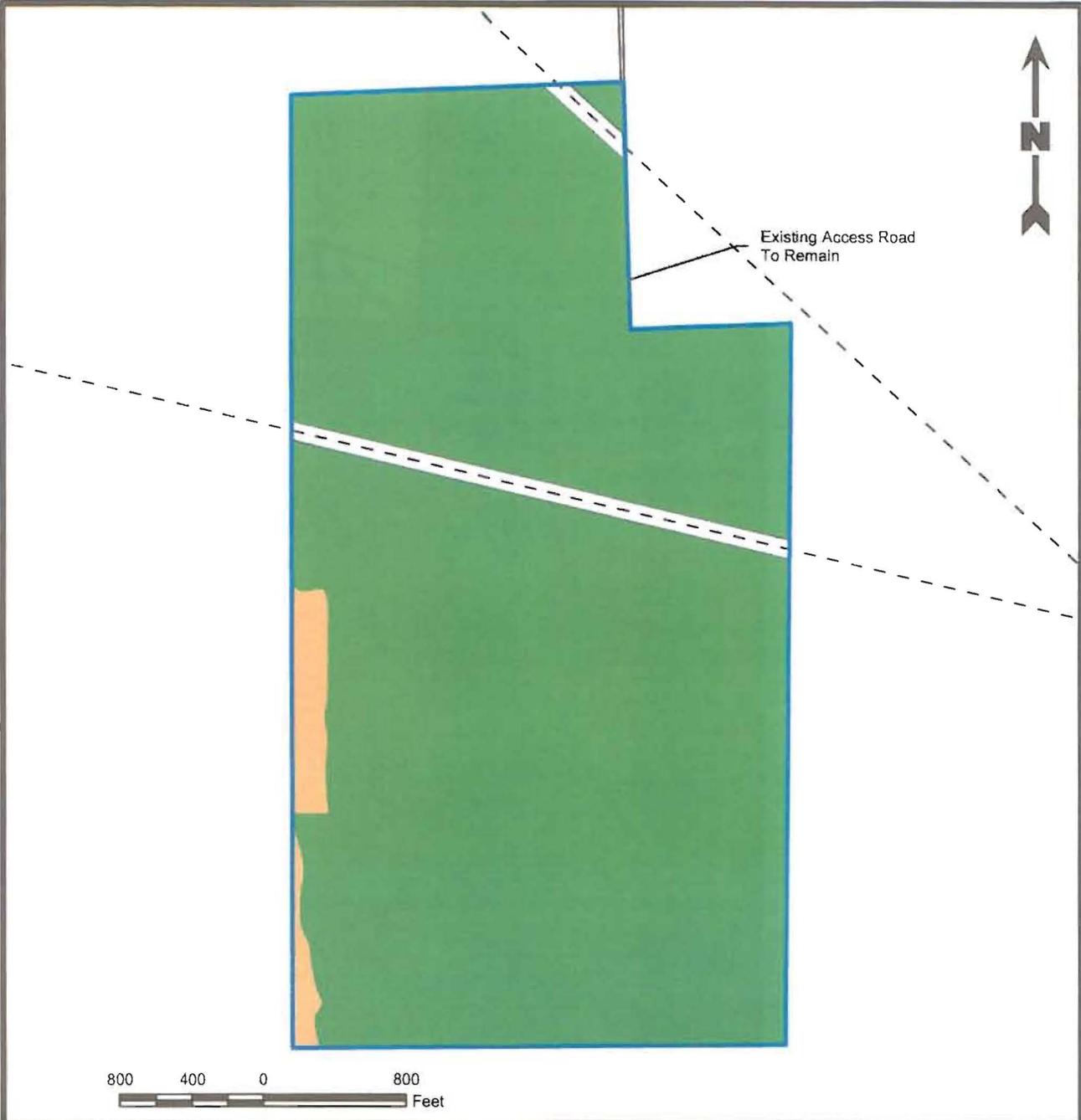
**Pre-Restoration Site Plan**

Project Specific Mitigation  
 LDOTD Segment "I" of I-49  
 Mot, Bossier Parish, Louisiana

**Weyerhaeuser NR Company**  
 MOTT Tract



Drawn By	LMM	02/15/10
Checked By	DRA	02/15/10
Approved By	CEJ	02/15/10
Project Number		<b>3</b>
398-006		
Drawing Number		Figure
398-006-A051		



**Legend**

- LDOTD Mot Mitigation Site (307.09 Acres)
- Proposed BLH Restoration (291.17 Acres)
- Proposed BLH Preservation (7.81 Acres)
- Existing Rights-of-Way (7.72 Acres)
- Existing Access Road To Remain (0.39 Acre)
- Existing Pipelines

**Post-Restoration Site Plan**

Project Specific Mitigation  
 LDOTD Segment "I" of I-49  
 Mot, Bossier Parish, Louisiana

**Weyerhaeuser NR Company**  
 MOTT Tract



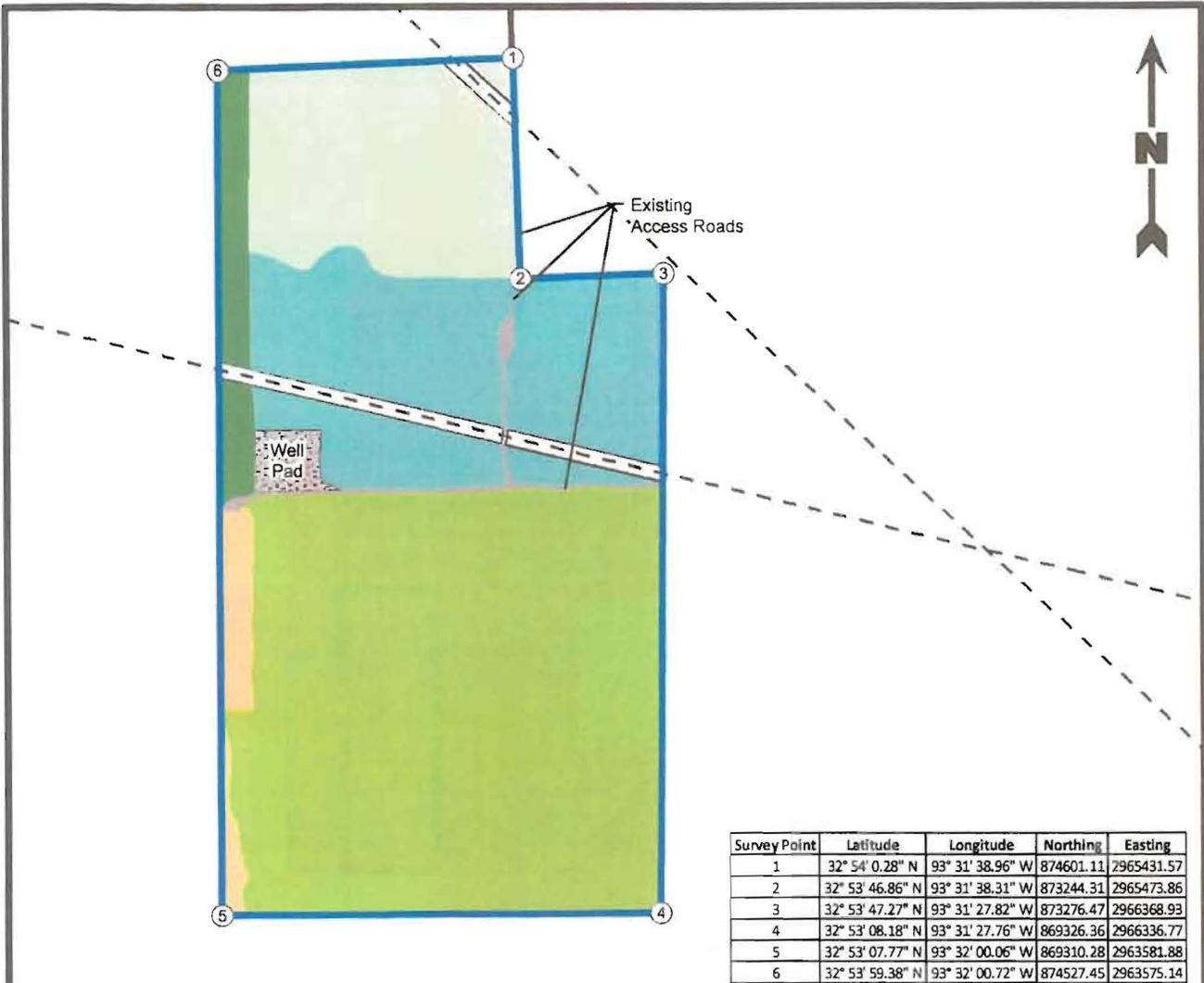
Drawn By	LMM	02/15/10
Checked By	DRA	02/15/10
Approved By	CEJ	02/15/10

Project Number  
 398-006

Drawing Number  
 398-006-A052

4

Figure



Survey Point	Latitude	Longitude	Northing	Easting
1	32° 54' 0.28" N	93° 31' 38.96" W	874601.11	2965431.57
2	32° 53' 46.86" N	93° 31' 38.31" W	873244.31	2965473.86
3	32° 53' 47.27" N	93° 31' 27.82" W	873276.47	2966368.93
4	32° 53' 08.18" N	93° 31' 27.76" W	869326.36	2966336.77
5	32° 53' 07.77" N	93° 32' 00.06" W	869310.28	2963581.88
6	32° 53' 59.38" N	93° 32' 00.72" W	874527.45	2963575.14

**Legal Description**

Beginning at a point 1 having coordinates of N:873244.31, E:2965473.86; thence with a bearing of N 87°56'32" E a distance of 895.65 feet to a point; thence with a bearing of S 00°27'59" W a distance of 3950.24 feet to a point; thence with a bearing of S 89°39'56" W a distance of 2754.94 feet to a point; thence with a bearing of N 00°04'26" W a distance of 5217.17 feet to a point; thence with a bearing of N 87°43'40" E a distance of 1857.89 feet to a point; thence with a bearing of S 01°47'07" E a distance of 1357.46 feet to a point of beginning.; containing 13380592.57 square feet or 307.09 acres.

NAD 1983 State Plane Louisiana North FIPS 1701 Feet



**Legend**

- LDOTD Mot Mitigation Site (307.09 Acres)
- 9 Year Old Planted Pine (157.26 Acres)
- Clearcut (69.20 Acres)
- 5 Year Old Planted Pine (46.65 Acres)
- 26 Year Old Planted Pine (11.56 Acres)
- Existing BLH (7.81 Acres)
- Existing Rights-of-Way (7.67 Acres)
- Existing Well Pad (3.66 Acres)
- Existing Access Road (3.28 Acres)
- Existing Pipelines

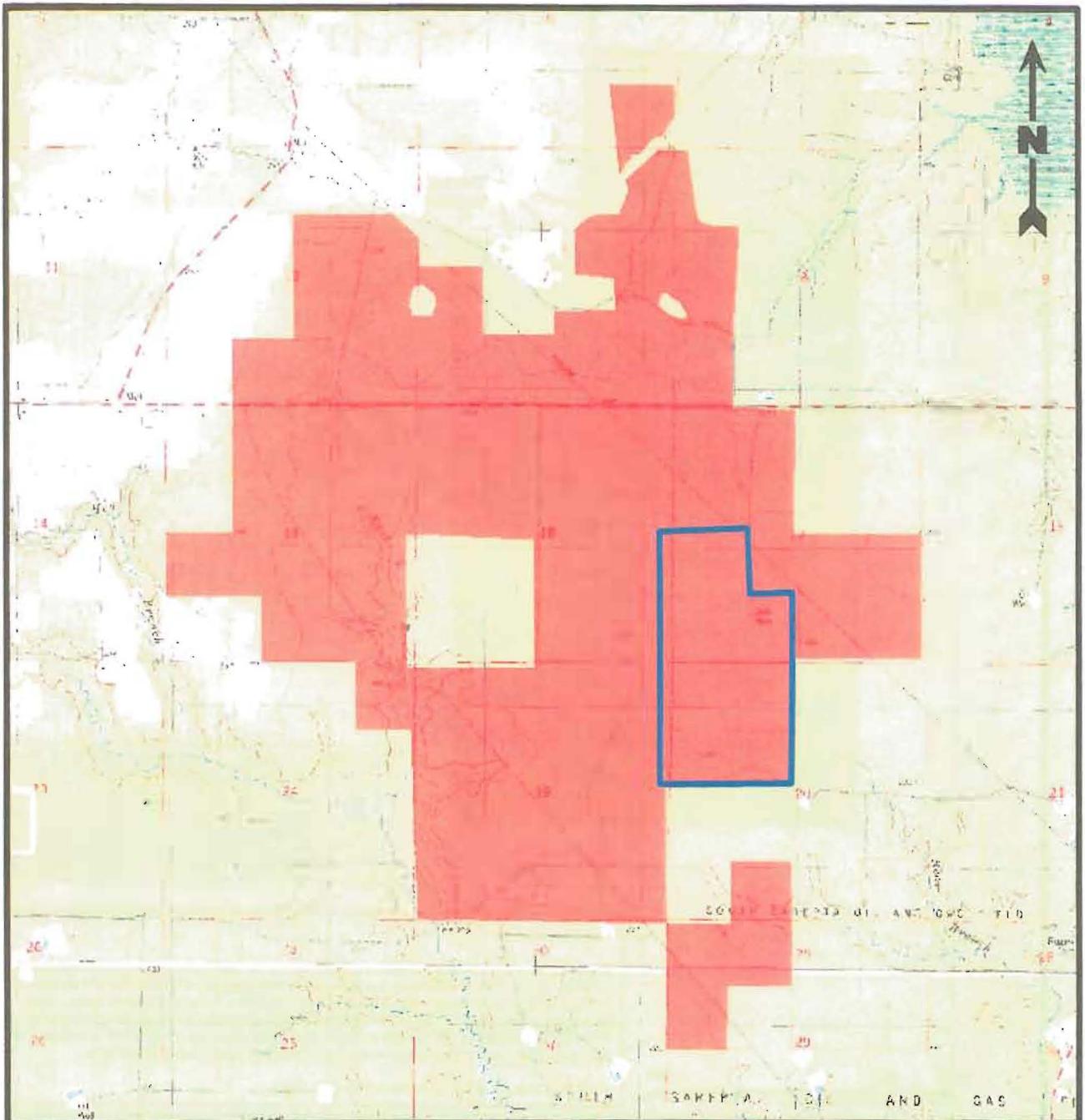
**Survey and Legal Description**

Project Specific Mitigation  
LDOTD Segment "I" of I-49  
Mot, Bossier Parish, Louisiana

**Weyerhaeuser NR Company**  
MOTT Tract



Drawn By	LMM	02/15/10
Checked By	DRA	02/15/10
Approved By	CEJ	02/15/10
Project Number		<b>5</b> Figure
398-006		
Drawing Number		
398-006-A053		



3,000 1,500 0 3,000  
Feet

**Legend**

-  LDOTD Mot Mitigation Site (307.06 Acres)
-  Mot Mitigation Bank Boundary

**Reference**

Base map comprised of U.S.G.S. 7.5 minute topographic maps, "Carterville, LA" and "Ivan, LA" dated 1981.

**Mitigation Bank Boundaries**

Project Specific Mitigation  
LDOTD Segment "I" of I-49  
Mot, Bossier Parish, Louisiana

**Weyerhaeuser Company**  
MOTT Tract



Drawn By	DRA	02/15/10
Checked By	LMH	02/15/10
Approved By	CEJ	02/15/10

Project Number 398-006
Drawing Number 398-006-A054

**6**  
Figure

## HGM FUNCTIONAL ASSESSMENT

Use walking survey of entire Wetland Assessment Area (WAA) for all variables except V7. If project area is large or highly heterogeneous requiring the designation of several WAAs, a separate assessment should be performed for each WAA. Check the appropriate blank(s) below.

**SITE:** Mott Mitigation Site

**WAA:** Pine Plantation/Cutover Wetlands

**V1: River Connection (RIVCON)**

- |   |  |  |
|---|--|--|
| <p>1. Overbank flooding has not been impacted. (SI = 1.0)</p> <p><input type="checkbox"/> no artificial levee(s), spoil piles, roads, or other obstructions</p> <p><input type="checkbox"/> stream in vicinity of WAA is naturally meandering</p>                     | <p><input type="checkbox"/> stream channel not down cut</p> <p><input type="checkbox"/> flood frequency <math>\leq</math> 2 years</p>                      | <p><input type="checkbox"/> local knowledge</p> <p><input type="checkbox"/> gauge data</p> |
| <p>2. Overbank flooding has been moderately impacted. (SI = 0.5)</p> <p><input checked="" type="checkbox"/> levee(s) etc. present but allow some overbank flooding to occur</p> <p><input type="checkbox"/> stream channel in vicinity of WAA moderately down cut</p> | <p><input type="checkbox"/> moderate bank failure in vicinity of WAA</p> <p><input checked="" type="checkbox"/> flood frequency &gt; 2 years - 9 years</p> | <p><input type="checkbox"/> local knowledge</p> <p><input type="checkbox"/> gauge data</p> |
| <p>3. Overbank flooding has been severely impacted. (SI = 0.1)</p> <p><input type="checkbox"/> levee(s) etc. have eliminated overbank flooding</p> <p><input type="checkbox"/> stream channel in vicinity of WAA severely down cut</p>                                | <p><input type="checkbox"/> severe bank failure in vicinity of WAA</p> <p><input type="checkbox"/> flood frequency <math>\geq</math> 10 years</p>          | <p><input type="checkbox"/> local knowledge</p> <p><input type="checkbox"/> gauge data</p> |

**Notes:** The pine cutover wetland assessment area has been historically managed for pines. An existing well pad and access roads (proposed for restoration) currently hinder backwater flooding of Bear Branch and natural sheet flow within the northern portion of the property.

**V2: Hydroperiod (HYDRO)**

- |   |  |
|---|--|
| <p>1. Hydrologic storage has not been impacted (SI = 1.0).</p> <p><input type="checkbox"/> no ditches / tiles present</p> <p><input type="checkbox"/> no fill or excessive sediment</p>   | <p><input type="checkbox"/> no artificial dikes (s) etc. that alter hydroperiod (i.e., causing prolonged ponding)</p>  |
| <p>2. Hydrologic storage moderately impacted (SI = 0.5).</p> <p><input type="checkbox"/> part of site ditched or tiled, or some tiles broken</p> <p><input type="checkbox"/> ditches / tiles present over entire site but are &gt; 700 ft apart</p>                 | <p><input checked="" type="checkbox"/> part of site impacted by fill, excessive sediment, or leveling</p> <p><input type="checkbox"/> part of site impacted by dikes or other structures</p> |
| <p>3. Hydrologic storage has been severely impacted (SI = 0.1)</p> <p><input type="checkbox"/> ditches / tiles present over entire site and are &lt; 700 ft apart</p> <p><input type="checkbox"/> entire site impacted by fill, excessive sediment, or leveling</p> | <p><input type="checkbox"/> entire site impacted by dikes or other structures</p>  |

**Notes:** The pine cutover wetland assessment area is routinely clear-cut, grubbed, graded, and leveled on a rotational basis.

**V3: Canopy Tree Size Class (CDBH)**

1. Average DBH (inches) of canopy trees.
- > 16 (SI = 1.0)     13 - 16 (SI = 0.9)     9 - 12 (SI = 0.7)     5 - 8 (SI = 0.5)     < 5 (SI = 0.3)
- no trees present (SI = 0.0)

**Notes:** The pine plantation is clear-cut on a rotation and will be clear-cut and site prepped prior to the establishment of the mitigation site.

**V4: Tree Density (TDEN)**

1. Average number of trees (> 4 inches DBH) per 30-ft radius plot.
- 8 - 16 trees (SI = 1.0)     17 - 27 trees (SI = 0.8)     > 27 trees (SI = 0.7)     3 - 7 trees (SI = 0.6)     1 - 2 trees (SI = 0.1)
- no trees present (SI = 0.0)

**Notes:** The pine plantation is clear-cut on a rotation and will be clear-cut and site prepped prior to the establishment of the mitigation site.

**V5: Vegetation Composition and Diversity (COMP)**

1. Check dominant tree species from Groups 1, 2, and 3 below using the 50/20 rule. If tree cover is < 20 %, check the dominants in the next tallest stratum. If a dominant does not appear in lists below but is a native wetland species, it can be added as a Group 2 species using the blanks provided. Species in Group 3 are considered invasive in western Tennessee riverine wetlands. Other invasive (usually non-native) dominants can be added using the blanks provided and should be treated as Group 3 species.

GROUP 1		GROUP 2			GROUP 3
<input type="checkbox"/> water oak <sup>F</sup>	<input type="checkbox"/> Shumard oak <sup>F</sup>	<input type="checkbox"/> American elm <sup>F</sup>	<input type="checkbox"/> red maple <sup>F</sup>	<input type="checkbox"/> paw paw <sup>F</sup>	<input type="checkbox"/> European privet
<input type="checkbox"/> willow oak <sup>F</sup>	<input type="checkbox"/> water hickory <sup>F</sup>	<input type="checkbox"/> slippery elm <sup>F</sup>	<input type="checkbox"/> boxelder <sup>F</sup>	<input type="checkbox"/> deciduous holly <sup>F</sup>	<input type="checkbox"/> Japanese honeysuckle
<input type="checkbox"/> cherrybark oak <sup>F</sup>	<input type="checkbox"/> honey locust <sup>F</sup>	<input type="checkbox"/> sweetgum <sup>F</sup>	<input type="checkbox"/> green ash <sup>F, D</sup>	<input type="checkbox"/> swamp privet <sup>D, F</sup>	
<input type="checkbox"/> pin oak <sup>F</sup>	<input type="checkbox"/> overcup oak <sup>D*</sup>	<input type="checkbox"/> Am. hornbeam <sup>F, D</sup>	<input type="checkbox"/> black willow <sup>F</sup>	<input type="checkbox"/> water elm <sup>D</sup>	
<input type="checkbox"/> swamp chestnut oak <sup>F</sup>	<input type="checkbox"/> water tupelo <sup>D*</sup>	<input type="checkbox"/> sugarberry <sup>F</sup>	<input type="checkbox"/> stiff dogwood <sup>F</sup>	<input type="checkbox"/> button bush <sup>D</sup>	
<input type="checkbox"/> Nuttall oak <sup>D, F</sup>	<input type="checkbox"/> bald cypress <sup>D*</sup>				

\* If these species are dominant, the Q can be multiplied by 1.0 if only 1 or 2 species are present

2. Using the checked dominants in Groups 1, 2, and 3 above, calculate a quality index (Q) using the following formula.  

$$[(1.0 \times \# \text{ of checked dominants in Group 1}) + (0.66 \times \# \text{ of checked dominants in Group 2}) + (0.0 \times \# \text{ of checked dominants in Group 3})] / \text{total } \# \text{ of checked dominants in all groups} = \underline{0.0}$$
3. Multiply Q above by one of the following constants<sup>1</sup>.
- a) if  $\geq 4$  species from Groups 1 and/or 2 occur as dominants, multiply Q by 1.0 \_\_\_\_\_
  - b) if 3 species from Groups 1 and/or 2 occur as dominants, multiply Q by 0.75 \_\_\_\_\_
  - c) if 2 species from Groups 1 and/or 2 occur as dominants, multiply Q by 0.50 \_\_\_\_\_
  - e) if 1 species from Groups 1 and/or 2 occur as dominants, multiply Q by 0.25 \_\_\_\_\_
  - f) if no species from Groups 1 and/or 2 occur as dominants, multiply Q by 0.0 0.0
4. Calculate the square root of the value from Step 3 above. This is the SI for V5. 0.0

Notes:

**V6: Soil Organic Matter (ORGANIC)**

1. Unaltered  
 100% cover of "O" and/or "A" horizon (SI = 1.0)
2. Altered (estimate the % area in which surface horizons have been removed or covered)
- |   |  |   |                                  |
|---|--|---|----------------------------------|
| <input type="checkbox"/> % excavated          | <input type="checkbox"/> % construction/development    | <input type="checkbox"/> % intentional fill | <input type="checkbox"/> % other |
| <input type="checkbox"/> 100 % graded/scraped | <input type="checkbox"/> % excessive sediment deposits | <input type="checkbox"/> % mined            |                                  |
3. Subtract the sum of the values from Step 2 above from 100. Convert this value to a decimal. This is the SI for V6 (e.g., if 75% of the WAA does not have an "O" or "A" soil horizon due to a major disturbance, it will have an SI = 0.25).

Notes: The entire wetland assessment is graded and scraped during the preparation phase before planting occurs.

**V7: Tract Size (TRACT)**

1. Area (acres) of adjacent wetland and upland forest that is contiguous with the WAA.
- |  |  |  |
|--|--|--|
| <input type="checkbox"/> > 7,000 (SI = 1.0)        | <input checked="" type="checkbox"/> 200 - 1,000 (SI = 0.5) | <input type="checkbox"/> 1 - 40 (SI = 0.2) |
| <input type="checkbox"/> 1,000 - 7,000 (SI = 0.75) | <input type="checkbox"/> 40 - 200 (SI = 0.3)               | <input type="checkbox"/> < 1 (SI = 0.0)    |

<sup>1</sup> In a small WAA (e.g., < 1 acre), fewer than 4 species may be dominant. In this case, Q can be multiplied by 1.0 if only 2 or 3 species are dominant.

<sup>2</sup> To apply the 50/20 rule, rank species in descending order of percent cover. Identify dominants by summing relative dominance in descending order until 50 percent is exceeded. Additional species with 20 percent relative dominance should also be included as dominants.

**FUNCTIONAL CAPACITY INDEX (FCI)**

SUBINDEX VALUES:			
V1 <u>0.5</u> (RIVCON)	V3 <u>0.0</u> (CDBH)	V5 <u>0.0</u> (COMP)	V7 <u>0.5</u> (TRACT)
V2 <u>0.5</u> (HYDRO)	V4 <u>0.0</u> (TDEN)	V6 <u>0.0</u> (ORGANIC)	

**WETLAND FUNCTIONS**

<p><b>FUNCTION 1: MAINTAIN HYDROLOGIC STORAGE</b></p> $FCI = (V1 \times V2)^{1/2} \Rightarrow (\_ \times \_)^{1/2} = \boxed{0.50}$	<p><b>FUNCTION 2: MAINTAIN BIOGEOCHEMICAL PROCESSES</b></p> $FCI = [(V1 \times V2)^{1/2} \times V6]^{1/2} \Rightarrow [(\_ \times \_)^{1/2} \times \_]^{1/2} = \boxed{0.00}$
<p><b>FUNCTION 3: RETAIN PARTICULATES</b></p> $FCI = \frac{[(V1 \times V2)^{1/2} + V4]}{2} \Rightarrow \frac{[(\_ \times \_)^{1/2} + \_]}{2} = \boxed{0.25}$	
<p><b>FUNCTION 4: MAINTAIN CHARACTERISTIC BIOTIC COMMUNITY</b></p> $FCI = \frac{[2(V1 \times V2)^{1/2}] + [2\left(\frac{V3 + V4 + V5}{3}\right)] + V7}{5} \Rightarrow \frac{[2(\_ \times \_)^{1/2}] + [2\left(\frac{\_ + \_ + \_}{3}\right)] + \_}{5} = \boxed{0.20}$	

## HGM FUNCTIONAL ASSESSMENT

Use walking survey of entire Wetland Assessment Area (WAA) for all variables except V7. If project area is large or highly heterogeneous requiring the designation of several WAAs, a separate assessment should be performed for each WAA. Check the appropriate blank(s) below.

**SITE:** Mott Mitigation Site

**WAA:** BLH Preservation

**V1: River Connection (RIVCON)**

- |  |   |   |
|--|---|---|
| <p>1. Overbank flooding has not been impacted. (SI = 1.0)<br/> <input checked="" type="checkbox"/> no artificial levee(s), spoil piles, roads, or other obstructions<br/> <input type="checkbox"/> stream in vicinity of WAA is naturally meandering</p> | <p><input type="checkbox"/> stream channel not down cut<br/> <input checked="" type="checkbox"/> flood frequency <math>\leq</math> 2 years</p>  | <p><input checked="" type="checkbox"/> local knowledge<br/> <input type="checkbox"/> gauge data</p> |
| <p>2. Overbank flooding has been moderately impacted. (SI = 0.5)<br/> <input type="checkbox"/> levee(s) etc. present but allow some overbank flooding to occur<br/> <input type="checkbox"/> stream channel in vicinity of WAA moderately down cut</p>   | <p><input type="checkbox"/> moderate bank failure in vicinity of WAA<br/> <input type="checkbox"/> flood frequency &gt; 2 years - 9 years</p>   | <p><input type="checkbox"/> local knowledge<br/> <input type="checkbox"/> gauge data</p>            |
| <p>3. Overbank flooding has been severely impacted. (SI = 0.1)<br/> <input type="checkbox"/> levee(s) etc. have eliminated overbank flooding<br/> <input type="checkbox"/> stream channel in vicinity of WAA severely down cut</p>                       | <p><input type="checkbox"/> severe bank failure in vicinity of WAA<br/> <input type="checkbox"/> flood frequency <math>\geq</math> 10 years</p> | <p><input type="checkbox"/> local knowledge<br/> <input type="checkbox"/> gauge data</p>            |

**Notes:** The bottomland hardwood preservation assessment area does not appear to exhibit hydrologic alterations and currently experiences backwater flooding from Bear Branch.

**V2: Hydroperiod (HYDRO)**

- |   |   |
|---|---|
| <p>1. Hydrologic storage has not been impacted (SI = 1.0).<br/> <input checked="" type="checkbox"/> no ditches / tiles present<br/> <input type="checkbox"/> no fill or excessive sediment</p>  | <p><input checked="" type="checkbox"/> no artificial dikes (s) etc. that alter hydroperiod (i.e., causing prolonged ponding)</p>  |
| <p>2. Hydrologic storage moderately impacted (SI = 0.5).<br/> <input type="checkbox"/> part of site ditched or tiled, or some tiles broken<br/> <input type="checkbox"/> ditches / tiles present over entire site but are &gt; 700 ft apart</p>                 | <p><input type="checkbox"/> part of site impacted by fill, excessive sediment, or leveling<br/> <input type="checkbox"/> part of site impacted by dikes or other structures</p> |
| <p>3. Hydrologic storage has been severely impacted (SI = 0.1)<br/> <input type="checkbox"/> ditches / tiles present over entire site and are &lt; 700 ft apart<br/> <input type="checkbox"/> entire site impacted by fill, excessive sediment, or leveling</p> | <p><input type="checkbox"/> entire site impacted by dikes or other structures</p>   |

**Notes:**

**V3: Canopy Tree Size Class (CDBH)**

1. Average DBH (inches) of canopy trees.  
 > 16 (SI = 1.0)     13 - 16 (SI = 0.9)     9 - 12 (SI = 0.7)     5 - 8 (SI = 0.5)     < 5 (SI = 0.3)  
 no trees present (SI = 0.0)

**Notes:**

**V4: Tree Density (TDEN)**

1. Average number of trees (> 4 inches DBH) per 30-ft radius plot.  
 8 - 16 trees (SI = 1.0)     17 - 27 trees (SI = 0.8)     > 27 trees (SI = 0.7)     3 - 7 trees (SI = 0.6)     1 - 2 trees (SI = 0.1)  
 no trees present (SI = 0.0)

**Notes:**

**V5: Vegetation Composition and Diversity (COMP)**

1. Check dominant tree species from Groups 1, 2, and 3 below using the 50/20 rule. If tree cover is < 20 %, check the dominants in the next tallest stratum. If a dominant does not appear in lists below but is a native wetland species, it can be added as a Group 2 species using the blanks provided. Species in Group 3 are considered invasive in western Tennessee riverine wetlands. Other invasive (usually non-native) dominants can be added using the blanks provided and should be treated as Group 3 species.

GROUP 1		GROUP 2			GROUP 3
<input checked="" type="checkbox"/> water oak <sup>F</sup>	Shumard oak <sup>F</sup>	<input type="checkbox"/> American elm <sup>F</sup>	<input type="checkbox"/> red maple <sup>F</sup>	<input type="checkbox"/> paw paw <sup>F</sup>	<input type="checkbox"/> European privet
<input checked="" type="checkbox"/> willow oak <sup>F</sup>	<input type="checkbox"/> water hickory <sup>F</sup>	<input type="checkbox"/> slippery elm <sup>F</sup>	<input type="checkbox"/> boxelder <sup>F</sup>	<input type="checkbox"/> deciduous holly <sup>F</sup>	<input type="checkbox"/> Japanese
<input checked="" type="checkbox"/> cherrybark oak <sup>F</sup>	<input type="checkbox"/> honey locust <sup>F</sup>	<input type="checkbox"/> sweetgum <sup>F</sup>	<input checked="" type="checkbox"/> green ash <sup>F, D</sup>	<input type="checkbox"/> swamp privet <sup>D, F</sup>	<input type="checkbox"/> honeysuckle
<input type="checkbox"/> pin oak <sup>F</sup>	<input type="checkbox"/> overcup oak <sup>D*</sup>	<input type="checkbox"/> Am. hornbeam <sup>F, D</sup>	<input type="checkbox"/> black willow <sup>F</sup>	<input type="checkbox"/> water elm <sup>D</sup>	
<input type="checkbox"/> swamp chestnut oak <sup>F</sup>	<input type="checkbox"/> water tupelo <sup>D*</sup>	<input type="checkbox"/> sugarberry <sup>F</sup>	<input type="checkbox"/> stiff dogwood <sup>F</sup>	<input type="checkbox"/> button bush <sup>D</sup>	
<input type="checkbox"/> Nuttall oak <sup>D, F</sup>	<input type="checkbox"/> bald cypress <sup>D*</sup>	<input checked="" type="checkbox"/> loblolly pine	<input type="checkbox"/> slash pine	<input type="checkbox"/> red bay	

\* If these species are dominant, the Q can be multiplied by 1.0 if only 1 or 2 species are present

2. Using the checked dominants in Groups 1, 2, and 3 above, calculate a quality index (Q) using the following formula.  

$$[(1.0 \times \# \text{ of checked dominants in Group 1}) + (0.66 \times \# \text{ of checked dominants in Group 2}) + (0.0 \times \# \text{ of checked dominants in Group 3})] / \text{total } \# \text{ of checked dominants in all groups} = \underline{0.864}$$
3. Multiply Q above by one of the following constants<sup>1</sup>.
- a) if  $\geq 4$  species from Groups 1 and/or 2 occur as dominants, multiply Q by 1.0 \_\_\_\_\_
  - b) if 3 species from Groups 1 and/or 2 occur as dominants, multiply Q by 0.75 0.648
  - c) if 2 species from Groups 1 and/or 2 occur as dominants, multiply Q by 0.50 \_\_\_\_\_
  - e) if 1 species from Groups 1 and/or 2 occur as dominants, multiply Q by 0.25 \_\_\_\_\_
  - f) if no species from Groups 1 and/or 2 occur as dominants, multiply Q by 0.0 \_\_\_\_\_
4. Calculate the square root of the value from Step 3 above. This is the SI for V5. 0.80

Notes:

**V6: Soil Organic Matter (ORGANIC)**

1. Unaltered  
 100% cover of "O" and/or "A" horizon (SI = 1.0)
2. Altered (estimate the % area in which surface horizons have been removed or covered)
- |                        |                                     |                          |               |
|------------------------|-------------------------------------|--------------------------|---------------|
| _____ % excavated      | _____ % construction/development    | _____ % intentional fill | _____ % other |
| _____ % graded/scraped | _____ % excessive sediment deposits | _____ % mined            |               |
3. Subtract the sum of the values from Step 2 above from 100. Convert this value to a decimal. This is the SI for V6 (e.g., if 75% of the WAA does not have an "O" or "A" soil horizon due to a major disturbance, it will have an SI = 0.25).

Notes:

**V7: Tract Size (TRACT)**

1. Area (acres) of adjacent wetland and upland forest that is contiguous with the WAA.
- |                                 |  |                         |
|---------------------------------|--|-------------------------|
| _____ > 7,000 (SI = 1.0)        | <input checked="" type="checkbox"/> 200 - 1,000 (SI = 0.5) | _____ 1 - 40 (SI = 0.2) |
| _____ 1,000 - 7,000 (SI = 0.75) | _____ 40 - 200 (SI = 0.3)                                  | _____ < 1 (SI = 0.0)    |

<sup>1</sup> In a small WAA (e.g., < 1 acre), fewer than 4 species may be dominant. In this case, Q can be multiplied by 1.0 if only 2 or 3 species are dominant.

<sup>2</sup> To apply the 50/20 rule, rank species in descending order of percent cover. Identify dominants by summing relative dominance in descending order until 50 percent is exceeded. Additional species with 20 percent relative dominance should also be included as dominants.

## FUNCTIONAL CAPACITY INDEX (FCI)

### SUBINDEX VALUES:

V1 1.0 (RIVCON)

V3 0.9 (CDBH)

V5 0.8 (COMP)

V7 0.5 (TRACT)

V2 1.0 (HYDRO)

V4 0.8 (TDEN)

V6 1.0 (ORGANIC)

### WETLAND FUNCTIONS

#### FUNCTION 1: MAINTAIN HYDROLOGIC STORAGE

$$FCI = (V1 \times V2)^{1/2} \Rightarrow (\underline{\quad} \times \underline{\quad})^{1/2} = \boxed{1.00}$$

#### FUNCTION 2: MAINTAIN BIOGEOCHEMICAL PROCESSES

$$FCI = [(V1 \times V2)^{1/2} \times V6]^{1/2} \Rightarrow [(\underline{\quad} \times \underline{\quad})^{1/2} \times \underline{\quad}]^{1/2} = \boxed{1.00}$$

#### FUNCTION 3: RETAIN PARTICULATES

$$FCI = \frac{[(V1 \times V2)^{1/2} + V4]}{2} \Rightarrow \frac{[(\underline{\quad} \times \underline{\quad})^{1/2} + \underline{\quad}]}{2} = \boxed{0.90}$$

#### FUNCTION 4: MAINTAIN CHARACTERISTIC BIOTIC COMMUNITY

$$FCI = \frac{[2(V1 \times V2)^{1/2}] + [2\left(\frac{V3 + V4 + V5}{3}\right)] + V7}{5} \Rightarrow \frac{[2(\underline{\quad} \times \underline{\quad})^{1/2}] + [2\left(\frac{\underline{\quad} + \underline{\quad} + \underline{\quad}}{3}\right)] + \underline{\quad}}{5} = \boxed{0.833}$$

**MITIGATION AGREEMENT**  
by and between  
**The State of Louisiana**  
through the  
**Department of Transportation and Development**  
and  
**Weyerhaeuser NR Company**  
State Project No. 455-09-0003  
Federal Aid No. ARR-DPS-0021(013)

This **AGREEMENT** is made and entered into as of this <sup>15<sup>th</sup></sup> day of ~~April~~ 2010, by and between Weyerhaeuser NR Company (hereinafter referred to as ("Contractor") and the Louisiana Department of Transportation and Development (hereinafter referred to as "Buyer"). Contractor agrees to perform wetlands mitigation services, and Buyer agrees to engage and compensate Contractor for wetlands mitigation services in accordance with and pursuant to this Agreement (the "Agreement") with respect to Buyer's development and construction of I-49 North from LA1 to LA 173 hereinafter referred to as the "Project" generally depicted on Exhibit "A" as Segment I and located in Caddo Parish, Louisiana. The purpose of this Agreement is to provide the Buyer with sufficient off-site wetland mitigation to satisfy the mitigation requirements for the Project's U.S. Army Corps of Engineers, (the "Corps") Clean Water Act, Section 404 permit (TLA-MVK-2009-1505) hereinafter referred to as the "Permit."

**FOR AND IN CONSIDERATION** of the covenants and conditions herein contained the receipt and sufficiency of which is hereby acknowledged by the parties hereto, Contractor and Buyer agree as follows:

**1. SERVICES:**

Contractor is authorized to and agrees to perform certain "wetlands mitigation services" to provide wetlands mitigation in the form of restoration and enhancement of Bottomland Hardwood Wetlands for Buyer under criteria established by the United States Army Corps of Engineers, which services shall be in compliance with the proposed Project-Specific Mitigation Plan attached hereto as Exhibit "B", which is incorporated fully herein by reference, or such other project mitigation plan approved in writing by Buyer, Contractor and the Corps for the Project, (the "Mitigation Plan"), and which services will be in strict compliance with the compensatory mitigation and other requirements of any permit approved by the Corps in connection with the Mitigation Plan and the Project (the "Services"). The Services are contemplated to include, but not be limited to:

- A. Contractor shall provide Buyer with approximately 294 acres of wetlands mitigation restoration (the "Mitigation Area"); and
- B. Contractor shall perform certain initial and ongoing preservation, restorative and maintenance obligations in the Mitigation Area; and
- C. Contactor shall record a conservation servitude approved by the Corps and reasonably satisfactory to Buyer upon the Mitigation Area, but only if the Mitigation Plan is approved by the Corps, and

D. Contractor shall satisfy all mitigation requirements of the Permit.

Contractor shall have no obligation to provide the Services unless and until the Mitigation Plan is approved by the Corps and the Buyer pays the Price (as defined below) in full.

## 2. PAYMENT:

Buyer shall pay Contractor for the Services in accordance with the terms and conditions of this Agreement as follows:

- A. Buyer shall pay to Contractor the "Price" of **\$12,000** per acre for a total of Three Million Five Hundred and Twenty Thousand Dollars (**\$3,528,000**), based on an estimated 294 acres of mitigation located within the 307.09-acre Mitigation Area referred to as the "MOT Mitigation Site" in Bossier, Parish; provided, however, that the Price shall be adjusted, if necessary, commensurate with any change in the acreage of mitigation required by the Corps.
- B. Buyer agrees that within sixty (60) business days of the full execution of this Agreement, Buyer will provide to Contractor full payment. This payment will be refundable should Weyerhaeuser not be able to provide any mitigation site that meets with the approval of the U.S. Army Corps of Engineers, Vicksburg District.
- C. Buyer shall deliver full payment to Contractor as an electronic funds transfer, provided that the Contractor completes and submits the necessary forms required by the Buyer to make such transfers. If, for any reason, an electronic funds transfer cannot be completed, Buyer shall deliver payment to Contractor in immediately available funds within the same time period.
- D. Contractor shall pay any and all costs associated with its performance of the Services upon receipt of approval of the Mitigation Plan by the Corps and payment hereunder.

## 3. WARRANTY:

- A. Contractor's Warranty:  
Contractor represents and warrants that it is a Washington corporation in good standing, that it is duly authorized to enter into this Agreement and to provide the Services, and that the Services shall be performed in accordance with the terms and conditions of the Mitigation Plan, the Permit and this Agreement.
- B. Buyer's Warranty:
  1. Buyer warrants that it is a State agency, and is duly authorized to enter into this Agreement and purchase the Services. Buyer further warrants, to the best of Buyer's knowledge, there are no legal impediments restricting or otherwise existing that would prevent it from performing its obligations hereunder.
  2. Buyer further represents and warrants that the Corps and/or Buyer have or will calculate and determine the appropriate acreage of Services that are necessary to compensate for the wetlands loss attributed to the Permit; that Contractor is relying on Buyer with respect thereto; and that Contractor has made no representations or warranties to Buyer with respect thereto; and that Contractor has made no representations or warranties to Buyer with respect to the

necessary number of acres or Services for Buyer's needs.

#### **4. REMEDIES and INDEMNITY:**

- A. In the event that Contractor fails to conduct the mitigation services set forth in this Agreement, Buyer may, upon thirty (30) days notice to Contractor, may seek to restrain, by injunction, any violation or threatened violation by Contractor of any of the terms, covenants, or conditions of this Agreement, or to obtain a decree to compel performance of any such terms, covenants or conditions, it being agreed that the remedy at law for a breach of any such term, covenant, or condition is not adequate.
- B. In the event either party shall institute any action or proceeding against the other party relating to the provisions of this Agreement, or to any default hereunder, or to collect any amounts owing hereunder, or in the event an arbitration proceeding is commenced by agreement of the parties to any dispute, the unsuccessful litigant in such action or proceeding shall reimburse the successful litigant therein for costs and expenses incurred by the successful litigant in connection with such action or proceeding and any appeals there from, including reasonable attorney's fees and court costs.
- C. Contractor hereto agrees to indemnify, defend and hold harmless the Buyer, its affiliates and each of their members, managers, officers, directors, agents, employees, successors and assigns for and against all claims resulting from Contractor's failure to perform the Services, to maintain the servitude, to comply with the requirements of the Mitigation Plan or the Mitigation Conditions of the Permit to otherwise comply with the provisions of this Agreement. Contractor's indemnity shall be in addition to and not in limitation of any right or remedy Buyer may have at law or in equity with respect to any actual, alleged or anticipatory breach of this Agreement by Contractor, including but not limited to the right to seek specific performance or injunctive relief, which Buyer specifically reserves. Additionally, each party hereto agrees to indemnify, defend and hold harmless the other for any claims resulting from a breach of warranty or other obligations hereunder. The provisions of this Section 4 shall survive any termination of this Agreement.

#### **5. SAVINGS AND SEVERABILITY PROVISIONS:**

The parties agree that if a portion of this Agreement or if the application of this Agreement to any person or circumstance shall to any extent be declared invalid by a court of competent jurisdiction, then the remainder of this Agreement and the application of such provisions to persons or circumstances other than those held to be invalid shall not be affected thereby. Moreover, each other such provision of this Agreement shall be valid and enforced to the fullest extent permitted by applicable law.

#### **6. ASSIGNMENT:**

This Agreement is not assignable and the duties hereunder are not delegable without the prior written consent of the parties hereto; provided, however, that Buyer shall be permitted to assign this Agreement and the rights hereunder to any affiliated governmental agency with mitigation responsibilities pursuant to the Permit without

Contractor's consent but with reasonable notice to Contractor and further provided that Contractor shall be permitted to assign this Agreement to Weyerhaeuser Real Estate Development Company ("WREDCO"), its wholly-owned subsidiary, provided that WREDCO shall assume, in writing and in a form reasonably satisfactory to Buyer, each of the obligations of Contractor set forth herein and further provided that Contractor shall not be relieved of any liability or obligation arising under this Agreement in connection with such assignment. Any assignment by Buyer may only be made after full payment of the Purchase Price as set forth in Section 2.A. of this Agreement.

**7. EXPLANATION OF AGREEMENT:**

The Agreement contains the entire understanding between the parties with respect to the subject matter hereof. Furthermore, this Agreement supersedes and revokes all previous communications, negotiations and agreements, whether oral or written, between the parties with respect to the subject matter of this Agreement. No addition, modification or deletion of or to this Agreement or any waiver of any of its provisions shall be binding on either party unless made in writing and executed both by Contractor and Buyer.

**8. JURISDICTION:**

This Agreement shall be governed and construed for all purposes under and in accordance with the laws of the State of Louisiana.

**9. NOTICE:**

Any notice required under this Agreement or otherwise shall be sent to the following person at the address indicated:

The Address of the Contractor:

Paul McMahan  
P.O. Box 147  
Taylor, La 71080  
Paul.Mcmahan@weyerhaeuser.com

The Address of the Buyer:

Richard Savoie  
Chief Engineer  
Louisiana Department of Transportation and Development  
P.O. Box 94245  
Baton Rouge, LA 70804-9245

**10. MISCELLANEOUS:**

This Agreement may be executed and delivered by facsimile.



**THUS DONE AND SIGNED** in the Parish of East Baton Rouge, State of Louisiana, on the 20<sup>th</sup> day of April, 2010, in the presence of the undersigned competent witnesses and me, Notary, after a due reading of the whole.

**WITNESSES:**

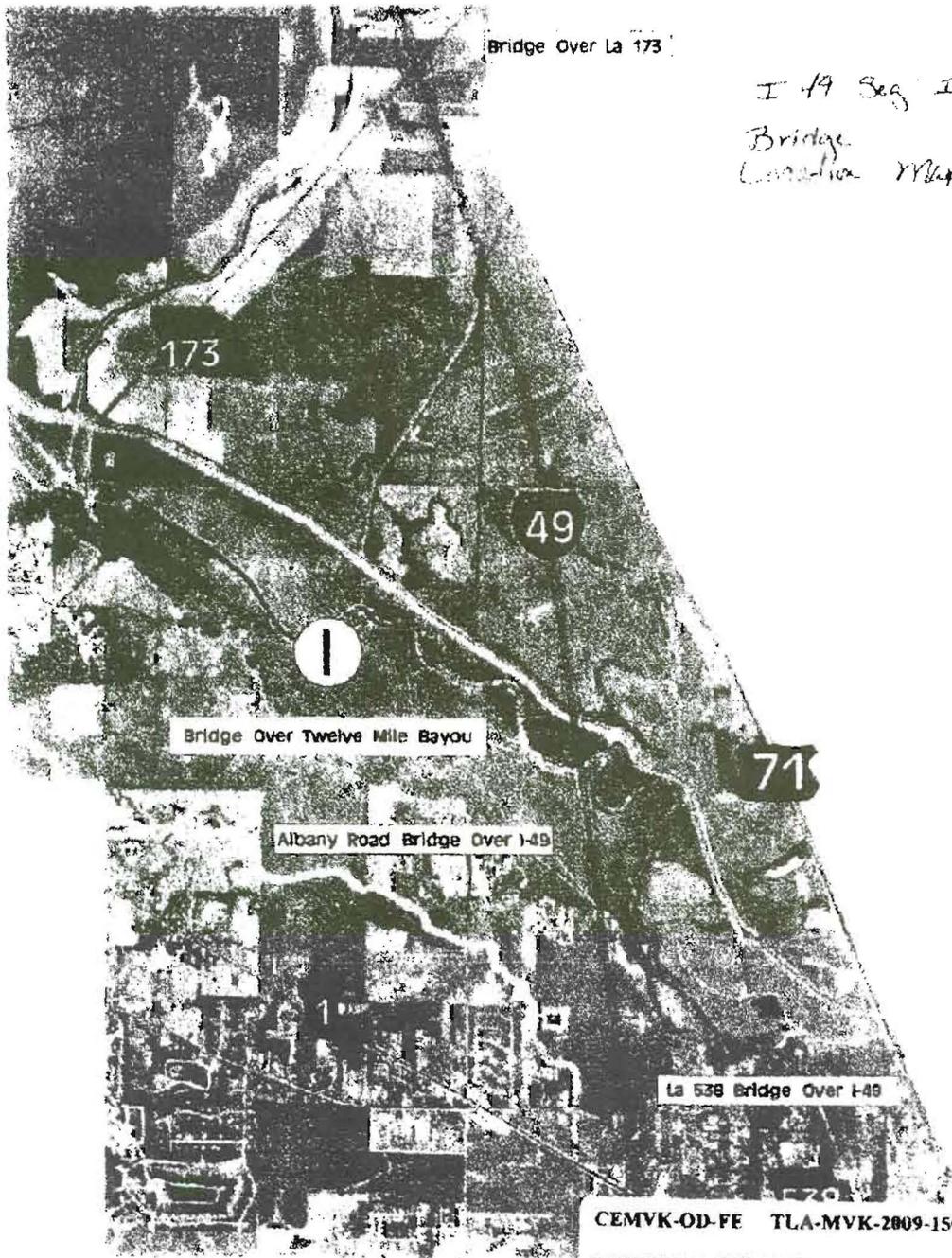
Cassandra D. May  
Neil Ardour

**DEPARTMENT OF TRANSPORTATION  
AND DEVELOPMENT**

By: Riad Z. Sweir

Title: Chief Engineer

Madeline Ahlgrun  
NOTARY PUBLIC  
Bar Roll #31009



Bridge Over La 173

*I-49 Seg I  
Bridge  
Location Map*

173

49

I

Bridge Over Twelve Mile Bayou

Albany Road Bridge Over I-49

71

La 538 Bridge Over I-49

CEMVK-OD-FE TLA-MVK-2009-1505

LOUISIANA DEPARTMENT OF  
TRANSPORTATION & DEVELOPMENT

**PROJECT-SPECIFIC MITIGATION PLAN  
LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT  
SEGMENT "I" OF INTERSTATE - 49  
MVK-2009-1505  
MOT MITIGATION SITE**

**1.0 INTRODUCTION**

The following mitigation plan summarizes the mitigation potential and restoration plan for approximately 307.09 acres in Bossier Parish, Louisiana. The purpose of the report is to summarize the existing conditions of the proposed Mot Mitigation Site (MMS) and provide details of the plan to establish the MMS as a wetland mitigation site for the purpose of providing project-specific compensatory wetland mitigation for impacts to wetlands associated with a Section 404 permit to be issued to Louisiana Department of Transportation and Development (LDOTD) for Segment "I" of the I-49 Project by the US Army Corps of Engineers (USACE), Vicksburg District (MVK).

**2.0 GOALS AND OBJECTIVES**

The MMS is owned by Weyerhaeuser NR Company (WNRC). The goal of WNRC is to restore 291.17 wetland acres of the MMS as a sustainable bottomland hardwood ecosystem and enhance and preserve 7.81 acres of existing bottomland hardwood forest. The site consists of 284.67 acres of pine plantation, 7.81 acres of existing bottomland hardwood forest, 7.72 acres of pipeline rights-of-way, 3.66 acres of abandoned well pad, 2.84 acres of access road to be restored, and 0.39 acres of access road to remain in use. WNRC proposes to restore bottomland hardwood forests to re-establish wetland functions and values associated with bottomland hardwood habitat. WNRC intends for the MMS to serve as a bottomland hardwood mitigation site to provide mitigation as compensation for unavoidable impacts to wetlands to satisfy the mitigation requirements for a permit (MVK-2009-1505) to be issued to LDOTD.

It is the intention of WNRC to implement wetland restoration for LDOTD, which needs compensatory mitigation to satisfy permit requirements. Through a contractual agreement with LDOTD, WNRC will, for a fee to be paid by LDOTD, commit to implementing the mitigation specified in Department of the Army (DA) permit and incur the responsibility of the long-term maintenance, management, protection and overall success of the MMS, as well as record a conservation servitude limiting future use of the site.

**3.0 LOCATION**

The 307.09-acre Mot site is approximately 2.3 miles southeast of the junction of LA 2 and Mot Road, approximately half-way between the towns of Plain Dealing and Serepta in Bossier Parish, Louisiana (Figure 1). The site is centered approximately at Latitude 32°53'32.24"N; Longitude 93°31'45.06"W in Sections 17, 18, 19, and 20, Township 22 North, Range 11 West, Bossier Parish (Figure 2).

**4.0 SITE OWNERSHIP**

The Owner and Sponsor of the MMS is WNRC. There are no liens, encumbrances, easements, servitudes, or restrictions other than two pipeline rights-of-way that pass through the site proposed for restoration. An existing well pad located on the site will be restored by removing the aggregate to lower the elevation to the surrounding grade.

**5.0 WETLAND DELINEATION**

A wetland data report and request for jurisdictional determination are attached for your use. WNRC acknowledges that acreage figures used in this mitigation plan may change and/or become modified pending jurisdictional determination.

**6.0 CURRENT MMS CONDITIONS**

WNRC currently manages the 307.09-acre MMS for growing and harvesting primarily pure stands of pine trees. The MMS is composed of approximately 284.67 acres of pine forested wetlands, 7.81 acres of existing bottomland hardwood forest wetlands, 7.72 acres of pipeline right-of-way, 3.66 acres of abandoned well pad to be restored, 2.84 acres of access road to be restored, and 0.39 acre of access road to remain in place. The well pad and access roads are not currently wetlands.

**6.1. Existing Land Use**

The site is managed for pine timber harvest and pipeline rights-of-way.

**6.2. Existing Plant Communities**

Forested areas of the majority of the MMS are dominated by dense stands of loblolly pine (*Pinus taeda*). Stand age varies across the MMS depending on when WNRC conducted plantings. Current stands include 157.26 acres in 9-year old loblolly pine, 69.2 acres are clear cut, 46.65 acres in 5-year old loblolly pine, and 11.56 acres in 26-year old loblolly pine (Figure 3). The southwest portion of the site contains 7.81 acres of

existing bottomland hard wood forest.

**6.3. Soils**

The NRCS's Web Soil Survey was used to determine mapped soil series. The revised official series descriptions were used to confirm profile matrix, redox features, and texture of soils underlying the site. The Web Soil Survey shows that the site may be entirely underlain by Ashford silty clay, 0 to 1 percent slopes. Field data indicates that the entire site is underlain by Ashford silty clay. Ashford silty clay is listed as a hydric soil on both the local list (NRCS Web Soil Survey 2010) and the national list (NRCS 2010 National Hydric Soils List by State).

**6.4. Existing Hydrology**

The site is in the Red River Basin, within the United States Geological Survey (USGS) Hydrologic Cataloging Unit 11140205. Sources of hydrology on the site are primarily rainfall, sheet flow, and backwater flooding from Bear Branch. The site drains primarily north to south into Bear Branch which ultimately drains into the Bayou Bodcau Reservoir. Natural sheet flow hydrology on the site is disrupted by an existing access road and well pad. The well pad and majority of the access road will be restored to natural elevations and replanted in bottomland hardwood species.

**7.0 MMS RESTORATION PLAN**

The Sponsor proposes to restore approximately 291.17 acres of the total 307.9 acres back to bottomland hardwood forest which historically was the dominant habitat in the area. Additionally, the Sponsor proposes to enhance and preserve 7.81 acres of existing bottomland hardwood forest on the site. Following the harvest of pine trees and restoration of the well pad and access road, the site will be mechanically prepared and replanted with bottomland hardwood seedlings.

**7.1. Surface Hydrology**

The site is generally flat. Rainwater runoff appears to flow by sheet flow from north to south. The natural surface flow has been disrupted by the construction of an access road and an abandoned well pad. The natural sheet flow hydrology of the site will be restored by leveling the existing access road and filling associated roadside ditched to achieve natural elevation. Aggregate from the well pad will be removed for use elsewhere and the elevation of the well pad will be reduced to the surrounding elevation.

#### Timeframe

Once the site has been approved and the permit has been issued by the USACE, the timber removal will begin immediately as weather permits to minimize impact to the site. After the timber is removed, targeted for the summer of 2010, the goal is to restore near natural hydrology as soon as possible before planting.

#### 7.2. Proposed Bottomland Hardwood Restoration

The Sponsor proposes to restore approximately 291.17 acres, which includes 284.67 acres of pine plantation wetlands and 6.50 acres of well pad and access roads (Figure 4). A conservation servitude will be executed for the mitigation implemented. Through a contractual agreement with LDOTD, WNRC will, for a fee to be paid by LDOTD, commit to implementing the mitigation specified in Department of the Army (DA) permit MVK-2009-1505 and incur the responsibility of the long-term maintenance, management, protection and overall success of the MMS.

#### Hydrologic Restoration

The Sponsor will take appropriate actions to restore near-natural hydrologic conditions. The Sponsor will discontinue harvesting and cultivating the natural landscape and restore the well pad and access road on the site to natural elevations to allow for natural sheet flow of surface water on the site.

#### Vegetative Plantings

Restoration will be accomplished by planting an appropriate species mixture of bottomland hardwoods during the standard planting season (December-March). Seedlings will be planted on approximately 291.17 acres using 14 x 6 foot spacing for an initial stand density of at least 518 seedlings per acre. A mixture of at least 80 percent hard-mast and a maximum of 20 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. A mixture of the following species will be planted to restore the site:

##### Proposed Species

Water oak (*Quercus nigra*) <5%  
Willow oak (*Quercus phellos*)  
Nuttall oak (*Quercus nuttallii*)  
Cherrybark oak (*Quercus pagoda*)  
Overcup oak (*Quercus lyrata*)

Cherrybark oak (*Quercus pagoda*)  
Swamp chestnut oak (*Quercus michauxii*)  
Water hickory (*Carya aquatica*)  
Sweet pecan (*Carya illinoensis*)  
Sycamore (*Platanus occidentalis*)  
Sweet gum (*Liquidambar styraciflua*)  
Sugarberry (*Celtis laevigata*)  
Green ash (*Fraxinus pennsylvanica*) <10%  
Red mulberry (*Morus rubra*)  
Common persimmon (*Diospyros virginiana*)

#### 8.0 EXOTIC/NUISANCE VEGETATIVE SPECIES CONTROL

Exotic/noxious plant species (e.g., Chinese tallow, cottonwood, honey locust, and black willow) will be controlled as needed until crown closure has occurred. All timber harvests and thinning operations conducted in the MMS will be authorized by the Vicksburg District and will be performed in a manner that maintains and enhances wildlife habitat quality.

#### 9.0 PERFORMANCE STANDARDS

The following performance standards shall be implemented during the initial restoration of the mitigation site (year 1). Following year 1, annual monitoring reports shall be conducted through the first five years.

##### 1. Success Criteria

###### Bottomland Hardwood Establishment Criteria

- a. Site Preparation
  - Removal of exotics/invasives and/or inappropriate or competing species.
- b. Development of hydrology (continuation of site preparation)
  - Elimination of impediments to desired hydrology (removal of roads or berms, filling of ditches, ruts, beaver dams, etc.).
- c. Tree Planting
  - Should be initiated after site preparation associated with hydrologic restoration has been completed or desired site hydrology has been attained. Species placement should be based upon micro-topographical and edaphic habitat preference promoting diversity within the mitigation site.

- Tree species will be planted on 14 x 6 foot spacing (518 trees per acre) to achieve overall composition of 50% hard mast and 7-10 target species per acre.
- Planted to achieve a final coverage at year 5 of at least 200 stems/acre (including desirable natural recruits) and 85% canopy coverage at maturity.
- Introduction of shrub and herbaceous layer (if not naturally recruited).
- The HGM Functional Assessment will be utilized to assess the functional ecological lift of the restoration work. A minimum of three consecutive years of positive functional benefit shall be obtained using the HGM Functional Assessment.
- The referenced performance standards shall be implemented during the initial restoration of the site (year 1). Following year 1, annual monitoring reports shall be conducted for the following 5 years.

**9.1. 5-Year Success Criteria:**

The following criteria will be used to assess short-term project success:

1. Wetland hydrology (as defined by current U.S. Army Corps of Engineers Wetland Delineation Manual 1987/ specifications) will be attained and maintained as described herein. Assessments will be made using primary and secondary indicators of wetland hydrology.
2. A 50% survival rate of the planted and naturally recruited tree seedlings or 259 desirable trees per acre will be attained through second growing season of the five-year monitoring requirement of this plan. The hard mast component of 50% must be obtained after 5 growing seasons. This figure may include natural recruitment, but should not include exotic (Chinese tallow-tree) or noxious (black willow, cottonwood, water locust) species. The site shall have <5% coverage of exotic species and <20% coverage of noxious species.

**10.0 LONG-TERM MAINTENANCE AND PROTECTION**

WNRC shall be responsible for protecting and maintaining lands contained within the MMS in perpetuity, unless site is transferred or sold. The conservation servitude shall incorporate this mitigation plan by reference and bind WNRC and future owners to complying with the terms of this copy of the mitigation plan. A copy of the conservation servitude to be filed in the real estate records of the Mortgage and Conveyance Office of Bossier Parish shall be provided to MVK for review and approval prior to filing. After filing, a copy of the recorded

conservation servitude, clearly showing the book, page and date of filing, will be provided to MVK.

**10.1. Uses Prohibited by the Conservation Servitude:**

- 1) Placing, filling, storing, or dumping of refuse, trash, vehicle bodies or parts, rubbish, debris, junk, waste, or other such items on the Site.
- 2) Mechanized land clearing or deposition of soil, shell, rock or other fill on the Site without written authorization from MVK.
- 3) Cutting, removal or destruction of vegetation on the Site except in accordance with the Sponsor's conservation servitude and/or in accordance with any permits authorized by the Corps of Engineers at the time the cutting is proposed. Timber harvests/thinning will only be approved if the MVK determines that such activities are needed to maintain or enhance the ecological value of the MMS.
- 4) Grazing of cattle or other livestock on the site.
- 5) Commercial, industrial, agricultural, or residential uses of the Site or partitioning by fencing without prior approval from the MVK.
- 6) Dredging, draining, ditching, damming or in any way altering the hydrology of the Site except as required or permitted by this mitigation plan.
- 7) All other activities, which the MVK determines to be inconsistent with the establishment, maintenance and protection of wetlands within the MMS and that may or may not be subject to Corps of Engineers regulatory authority.

**10.2. Uses Allowed By the Conservation Servitude:**

No other human activities that result in the material degradation of habitat on the MMS shall occur without written authorization from MVK. *However, it is understood that the conservation servitude shall not prohibit, subject to appropriate regulatory authority, hunting, fishing, trapping, non-consumptive recreational pursuits, exploration and production of minerals, and timber harvesting conducted for enhancing performance of wetland functions, subject to all applicable Federal, State and/or local licenses and permits and other provisions contained herein.*

- 1) Monitoring of vegetation, soils and water;
- 2) Hunting and fishing, and non-consumptive recreational uses such as hiking and bird watching;
- 3) Ecological education;
- 4) Exploration and production of minerals subject to obtaining all appropriate permits.

- 5) Provision of rights-of-way;
- 6) Timber harvesting as set forth herein; and
- 7) Compliance with Federal regulations or appropriate court orders.

## 11.0 MONITORING AND REPORTING PROVISIONS

### 11.1. Monitoring Provisions

The Sponsor agrees to perform all necessary work to monitor MMS to demonstrate compliance with the success criteria established in this mitigation plan. The sponsor shall establish monitoring plots at the time of seedling planting. One-tenth acre shall be identified with permanent markers and shall be recorded with GPS equipment and identified on a map submitted to the Vicksburg District with the first monitoring report.

### 11.2. Monitoring Reports

Monitoring reports shall be provided to the Vicksburg District by December 15<sup>th</sup> to allow for the Sponsor to complete vegetative chemical control. The Vicksburg District will distribute the report to the members of the IRT. In the event monitoring reveals that initial success criteria have not been met, the Sponsor shall take measures to achieve the criteria the following year. Monitoring, reporting and remedial action shall be conducted in accordance with the following:

1. The Sponsor shall conduct annual surveys of living seedlings in each planted tract. Sampling shall be done between April 15<sup>th</sup> and November 15<sup>th</sup> following the growing seasons for the first 5 years. Additional monitoring reports may be required by the IRT following implementation of adaptive management should one of the success criteria not be met by the 5<sup>th</sup> year. Seedling survival shall be documented by performing a comprehensive tally on 1/10 acre random plots at a frequency of 1 plot/20 acres. In addition, the Sponsor shall perform a cursory examination of the entire planted tract to determine if overall survival rate is adequate.
2. The Sponsor will, within 60 days following the survey, provide a written report to the Vicksburg District. The report shall include, at a minimum, the following:
  - a. A U.S. Geological Survey topographic map with the MMS indicated.
  - b. A detailed narrative that summarizes the condition of the MMS and all regular maintenance activities.

- c. Appropriate site maps that show the locations of sampling plots, permanent photographic stations, sampling transects, etc.
  - d. Data regarding the hydrology of the MMS (e.g., hydroperiod, extent and depth of inundation, precipitation records, etc.)
  - e. Results of vegetation surveys, including the following: visual estimates of overall percent cover and of percent cover within each layer of vegetation; indices of species diversity; estimates of percent cover of exotic and noxious species within each layer of vegetation and control measures to be taken; composition of plant community (wetland indicator status); calculations of survival for planted trees; estimates of natural re-vegetation; and estimates of plant vigor (as measured by evidence of reproduction).
  - f. Results of surveys of wildlife usage of the site (e.g., observations of amphibians, reptiles, mammals, birds and macroinvertebrates on or near the MMS).
  - 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 tracts that did not exhibit a survival rate for planted seedlings of at least 200 stems per acre.
  - i. Monitoring Reports to be disseminated to IRT should be mailed to:
    - U.S. Army Corps of Engineers
    - Vicksburg District
    - Regulatory Branch Attn: Compliance Officer
    - 4155 Clay Street
    - Vicksburg, Mississippi 39183-3435
3. If survival is less than 200 desirable trees per acre (as determined by sampling or observing high mortality within any zone or location within a planted tract), the Sponsor shall take appropriate actions as recommended by the IRT to address the causes of mortality and shall replace all dead seedlings with new seedlings of the appropriate species from the approved list (replacements need not be the same species) during the following non-growing season. Replanting, in accordance with this paragraph, and monitoring and reporting, as described in this mitigation plan, shall occur yearly thereafter as needed to achieve and document the required survival rate for five consecutive years.
4. The Sponsor shall continue annual monitoring and reporting of each planting effort, in accordance with this plan, to verify the presence of a minimum of 200 desirable trees per acre including natural recruitment, for a minimum of five years. Annual reports will be provided to the Vicksburg District.
5. The Sponsor will not be responsible for replacement of seedlings or

trees when mortality is due to an Act of God or other force majeure event (other than beaver predation) that occurs after the long-term criteria are met.

## 12.0 CORRECTIVE ACTIONS

### 12.1. Contingency Plans/Remedial Actions

In the event the MMS fails to achieve the success criteria specified in this mitigation plan, the Sponsor shall develop necessary contingency plans and implement appropriate remedial actions for the MMS in coordination with the Vicksburg District. In the event the Sponsor fails to implement necessary remedial actions within the first growing season following notification by the Vicksburg District of necessary remedial action to address any failure in meeting the success criteria, the Vicksburg District (acting through the Chair) will notify the Sponsor and the appropriate authorizing agencies and recommend appropriate remedial actions.

### 12.2. Completion of Corrective Actions

Following completion of corrective action, at the request of the Sponsor, the Vicksburg District will perform a final compliance visit to determine whether all success criteria have been satisfied. Upon satisfaction of the success criteria, any remaining contingency funds will be released to the Sponsor.

### 12.3. Non-Compliance

In the event the Sponsor does not comply with this mitigation plan or the conservation servitude, the Sponsor will be required to immediately perform corrective actions (e.g., replanting and repair or replacement of water control structures). The Vicksburg District will then convene a meeting with the Sponsor and the IRT to determine if a reassessment of the management or mitigation potential is necessary. If remedial action is not taken within one year, the Vicksburg District will cease recognition of the MMS. 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.

### 12.4. 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 MMS. The management or mitigation potential may also be adjusted should any activity positively affect the value or functioning of the MMS. Any adjustments to the management or mitigation potential will apply to future debits within the additions to the MMS as well as those tracts that

have already been debited.

Should the IRT determine that an activity or activities authorized in planted or unplanted tracts within the MMS would likely affect the mitigation potential of the MMS; the IRT shall coordinate with the Sponsor and reevaluate the mitigation potential. The reevaluated mitigation potential will not affect acreage that has already been planted but will be used to determine the appropriate acreage to plant for future activities using the MMS as compensatory mitigation.

**12.5. Force Majeure:**

*Force Majeure* is defined here as a natural event over which WNRC has no control to prevent the damage from occurring. The following are examples of *Force Majeure*: Fire, wind, flood, drought and other natural disasters and insect damage, or infection damages to planted vegetation.

Damages caused by events beyond the control of WNRC may be repaired using funds (principal and interest) accumulated in the endowment account by WNRC, the Long-Term Steward or Holder. WNRC shall bear the financial responsibility for any and all remedial measures necessary to correct any deficiency caused by any means prior to successful attainment and verification of the Year 5 criteria by the Vicksburg District. The funds will be provided to whichever entity has responsibility to repair the resulting damages at the time of catastrophic event.

**13.0 FINANCIAL ASSURANCES**

The purposes of financial assurances are to assure that (1) construction, including planting the MMS and restoring wetland hydrology to the MMS, is performed in accordance with the MMS restoration plan, (2) to ensure the availability of funds for long-term maintenance, monitoring, and remediation by a third party, and (3) to ensure project success. To accomplish these goals, sufficient funds to perform the restoration work must be escrowed and a Long-Term Management Fund established. Therefore, WNRC agrees to establish a financial mechanism to ensure that sufficient funds are available to a third party in the case of non-compliance or bank failure. In the event that WNRC does not fulfill their obligations to perform, as specified in this agreement, the escrow account shall guarantee payment to a third party as necessary to complete the work. "Third party" is defined to mean the Holder, Long-Term Steward or an agency/organization determined appropriate by the MVK.

To establish the required financial assurance, \$1,000 for each acre of mitigation sold shall be placed within an escrow account administered by a federally-insured depository that is "well-capitalized" or "adequately-capitalized" as defined in Section 38 of the Federal Deposit Insurance Act. Copies of depository account statement shall be provided to MVK upon request and/or in their annual report.

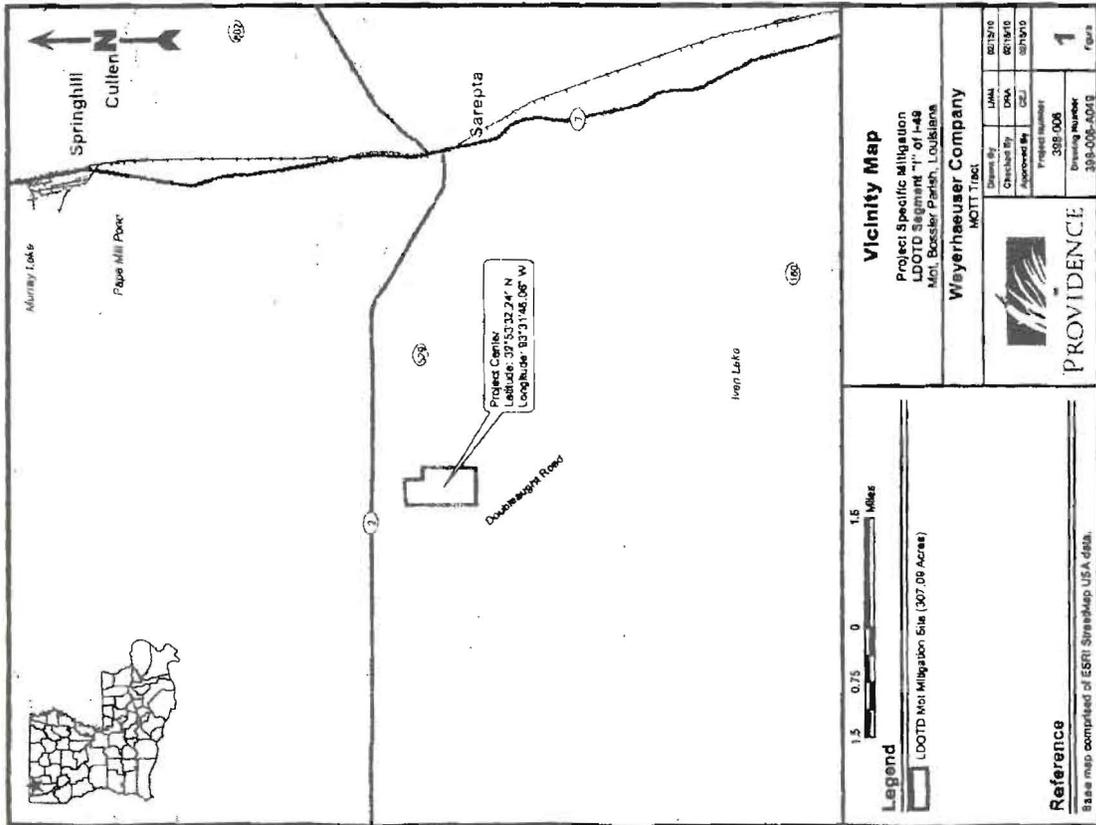
Any interest from the escrow account shall be paid to WNRC. Upon verification by the MVK that the 5-year success criteria have been attained for the MMS, the balance of escrow funds will be release to the Sponsor.

#### 14.0 MITIGATION SITE SELECTION & JUSTIFICATION

There are no mitigation credits for purchase or sites conducive to restoration available to the applicant in the immediate area of the project impacts. The MMS site is located in the Red River Drainage Basin as is the proposed project. The 307.09-acre MMS has the potential to be restored to bottomland hardwood forest. The proposed mitigation consists of restoration of 291.17 acres of bottomland hardwood forested wetlands currently consisting primarily of loblolly pine plantation, and enhancement and preservation of 7.61 acres of existing bottomland hardwood forest.

#### 15.0 TRANSFER OF SITE

WNRC may donate or otherwise convey the site to a conservation organization or other entity, with the approval of the Vicksburg District.



**Vicinity Map**

Project Specific Mitigation  
 LDDTD Segment "1" of I-49  
 MOI, Bossier Parish, Louisiana

Weyerhaeuser Company

Drawn By	USA	Checked By	USA	Project Number	389-006
Checked By	USA	Approved By	USA	Drawing Number	389-006-001G
Approved By	USA			Page	1



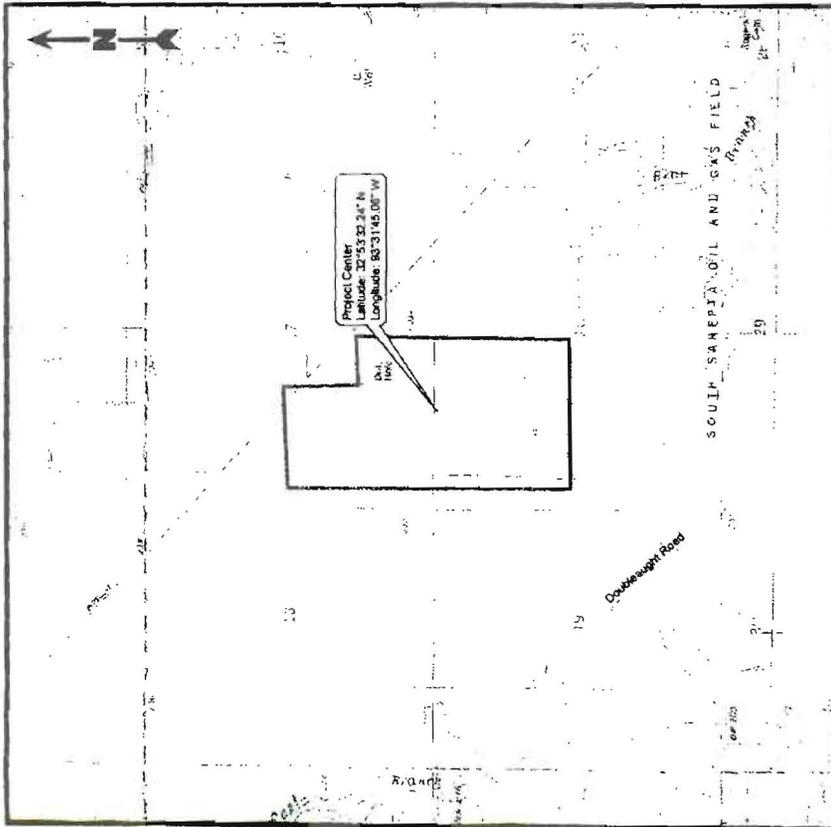
PROVIDENCE

**Legend**

Legend: LDDTD MOI Mitigation Site (307.09 Acres)

**Reference**

Base map compiled of ESRI StreetMap USA data.

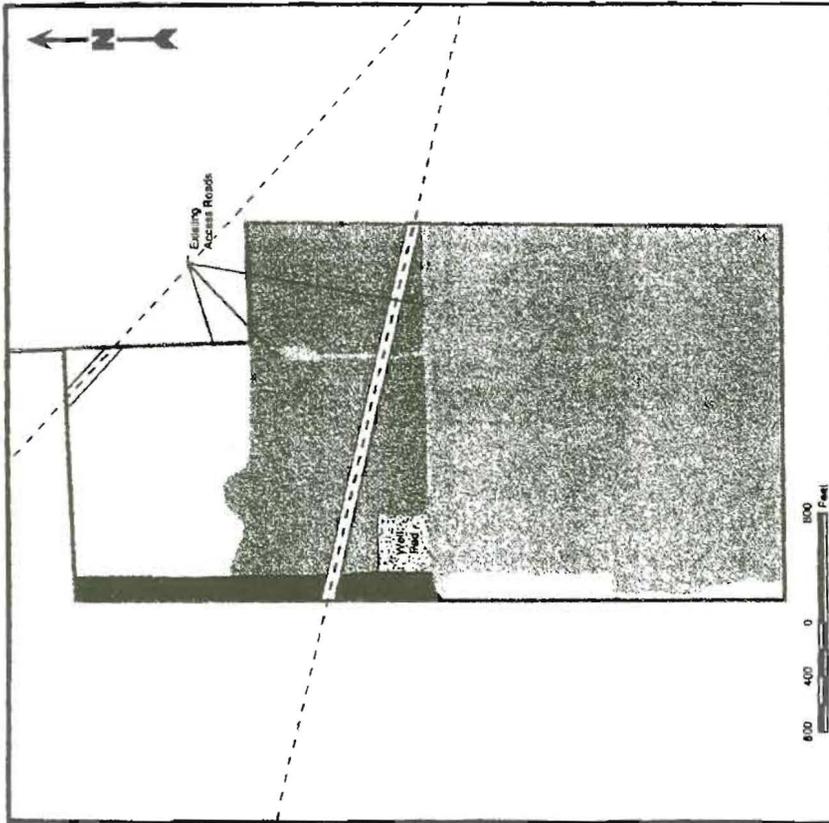


**Site Location Map**  
 Project Specific Mitigation  
 LD OTD Segment "1" of I-49  
 Mol. Bossier Parish, Louisiana  
 Weyerhaeuser Company  
 MOIT Tract

Drawn By	DVA	02/25/10
Checked By	JAT	02/10/10
Approved By	CEJ	02/16/10
Project Number	386-006	
Drawing Number	386-006-A050	
		<b>2</b>
		Page

**Legend**  
 LOOTD Mit. Mitigation Site (307.08 Acres)

**Reference**  
 Base map compiled of U.S.G.S. 7.5 minute topographic maps, Carterville, LA and near, LA dated 1981.

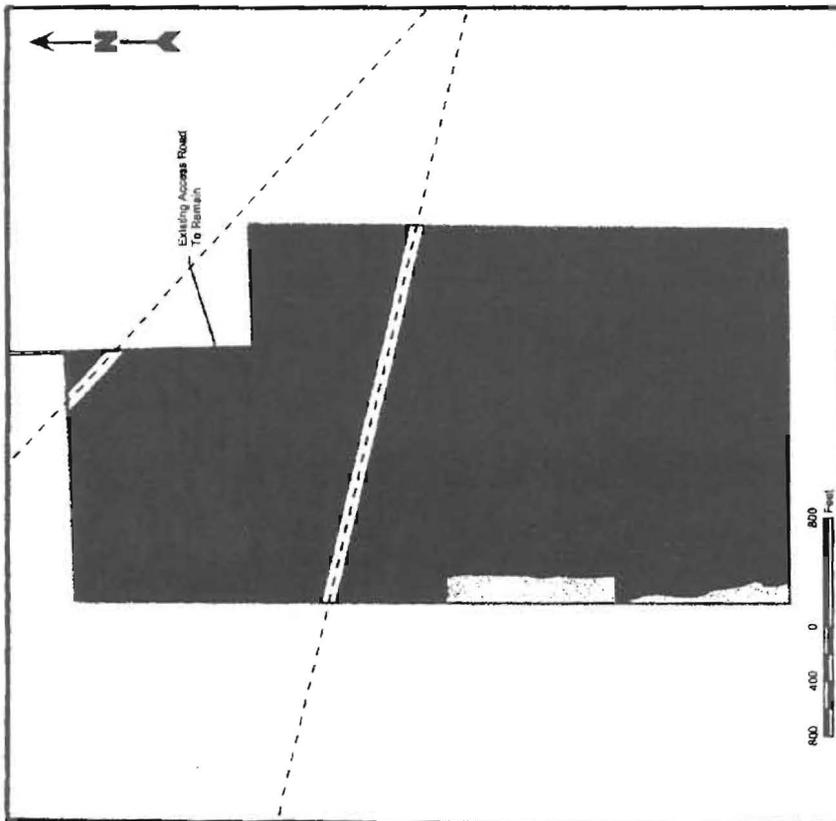


**Legend**

- LDDTD Mid Mitigation Site (307.08 Acres)
- 9 Year Old Planned Pines (157.78 Acres)
- Oakwood (89.70 Acres)
- 8 Year Old Planned Pines (46.65 Acres)
- 28 Year Old Planned Pine (11.58 Acres)
- Existing BLH (7.81 Acres)
- Existing Right-of-Way (7.72 Acres)
- Existing West Pad (3.08 Acres)
- Existing Access Road (3.23 Acres)
- Existing Pipelines

**Pre-Restoration Site Plan**  
 Project Specific Mitigation  
 LDDTD Segment "1" of L-49  
 Mod. Bossier Parish, Louisiana  
 Weyerhaeuser NR Company  
 MOTT Tract

Drawn By	LMM	02/29/10
Checked By	DNA	02/26/10
Approved By	GLJ	02/15/10
Project Number 3198-006		
Drawing Number 3198-006-MS1		3
		Pages



**Legend**

- LLOTD Mit. Mitigation Site (307.08 Acres)
- Proposed BLH Restoration (291.17 Acres)
- Proposed BLH Preservation (7.81 Acres)
- Existing Right-of-Way (7.72 Acres)
- Existing Access Road To Remain (0.39 Acres)
- Existing Pipelines

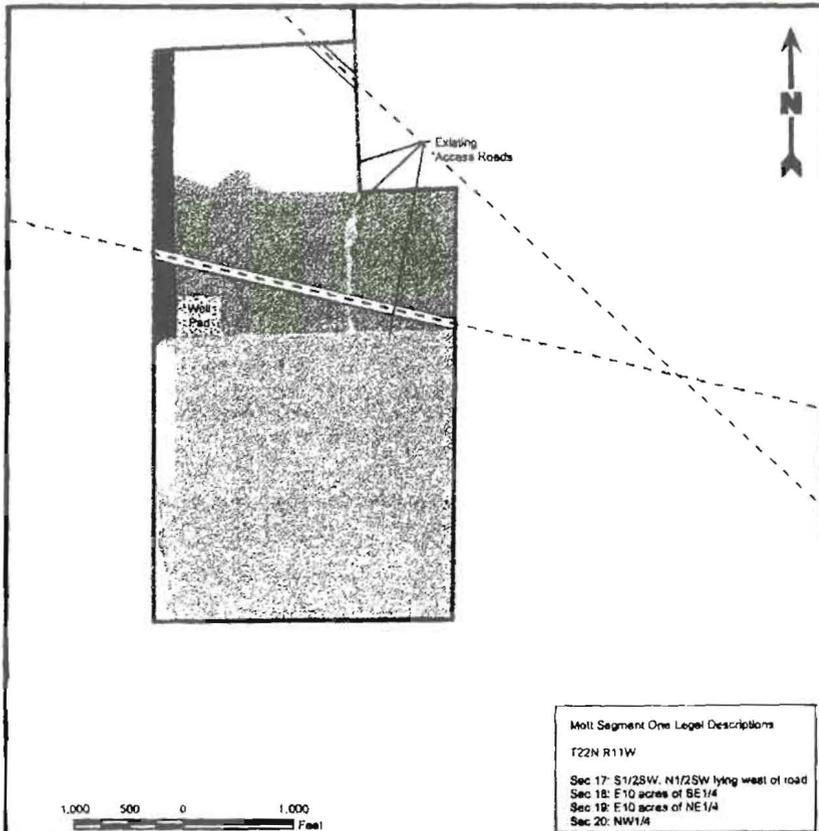
800 400 0 Feet

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**Post-Restoration Site Plan**

Project Specific Mitigation  
LLOTD Segment "1" of L-49  
Met. Bossier Parish, Louisiana  
Weyerhaeuser NR Company

Drawn By	LMB	Date	02/15/18
Checked by	DNA	Date	02/15/18
Approved By	CEJ	Date	02/15/18
Project Number	388-005		
Drawing Number	388-005-1007		
			<b>4</b>
PROVIDENCE			Page



Mott Segment One Legal Descriptions  
 T22N R11W  
 Sec 17: S1/2SW, N1/2SW lying west of road  
 Sec 18: E1/4 acres of SE1/4  
 Sec 19: E1/4 acres of NE1/4  
 Sec 20: NW1/4

**Legend**

	LDOTD Mott Mitigation Site (307.08 Acres)
	9 Year Old Planted Pine (157.28 Acres)
	Clearcut (69.20 Acres)
	5 Year Old Planted Pine (48.86 Acres)
	26 Year Old Planted Pine (11.66 Acres)
	Existing BLW (7.81 Acres)
	Existing Right-of-Way (7.72 Acres)
	Existing Wet Pad (3.86 Acres)
	Existing Access Road (3.23 Acres)
	Existing Pipelines

**Survey and Legal Description**

Project Specific Mitigation  
 LDOTD Segment "I" of I-49  
 Mott, Bossier Parish, Louisiana

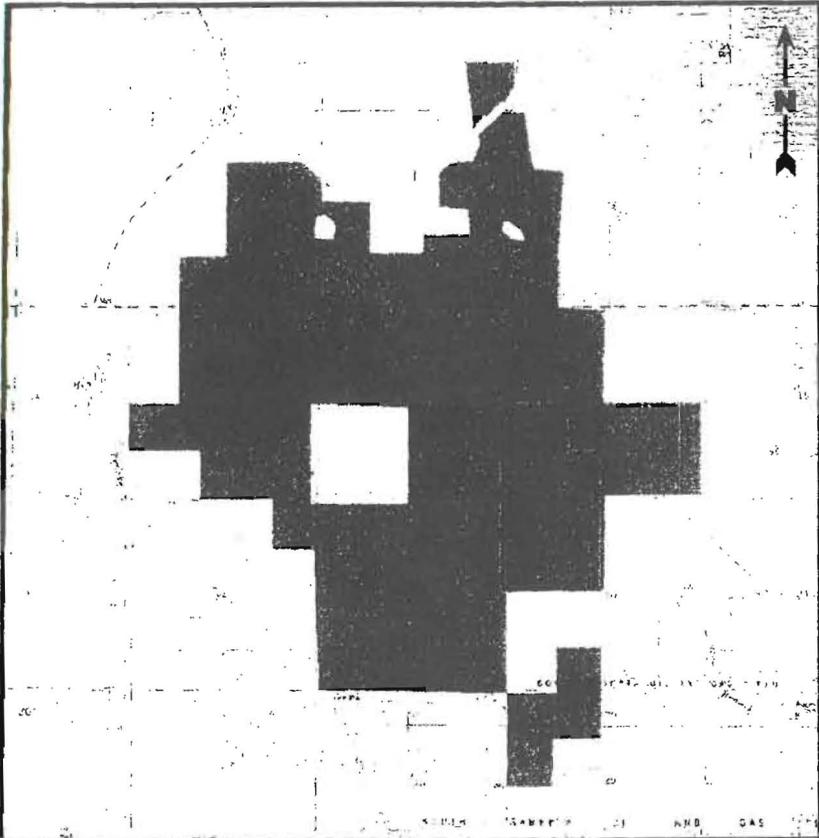
Weyerhaeuser NR Company  
 MOTT Tract



Drawn By	LMW	02/19/10
Checked by	ORA	02/19/10
Approved By	CEJ	02/19/10
Project Number	398-006	
Drawing Number	398-006-A053	

5

Figure



3,000 1,500 0 3,000  
Foot

**Legend**

-  LDOTD Wet Mitigation Site (307.09 Acres)
-  Wet Mitigation Bank Boundary

**Reference**

Base map comprised of U.S.G.S. 7.5 minute topographic maps, "Cartersville LA" and "Hart, LA" dated 1981

**Mitigation Bank Boundaries**

Project Specific Mitigation  
LDOTD Segment "1" of I-49  
Mol, Bossier Parish, Louisiana

**Weyerhaeuser Company**  
MOTT Tract



PROVIDENCE

Drawn By	ORA	02/15/10
Checked By	LAM	02/15/10
Approved By	CEJ	02/15/10

Project Number  
396-006  
Drawing Number  
396-006-A054

**6**  
Page