



January 21, 2008

Mr. John Clary  
Lindale Economic Development Corporation  
201 N. Main Street  
Lindale, Texas, 75771

Re: Delineation of Waters of the U.S.  
Approximately 105 Acre Tract on Harvey Road

Dear Mr. Clary,

Please find attached the wetland delineation report on the project referenced above. Please let us know if you have any questions.

Thank you for this opportunity to be of service.

Sincerely,  
Adams Engineering

A handwritten signature in black ink, appearing to read 'Jeremy Rowden', is written over a light blue horizontal line.

Jeremy Rowden, PG  
Environmental Program Manager



**Preliminary Jurisdictional Determination  
Of Waters of the U.S.**

**Lindale Economic Development Corporation  
Approximately 105 Acres  
Southwest Corner of I-20 at Harvey Road  
Lindale, Texas**

**ACEI Project No. 2007-301**

**January 21, 2008**

**Prepared for:**

Lindale Economic Development Corporation  
201 N. Main Street  
Lindale, Texas, 75771

**Prepared by:**

Adams Engineering  
P.O. Box 131599  
Tyler, Texas 75713-1599

## **Introduction**

Adams Engineering (ADAMS) is pleased to present this preliminary jurisdictional determination of waters of the U.S. on approximately 105 acres located at the southwest corner of the intersection of Interstate 20 and Harvey Road in Lindale, Texas. ADAMS has evaluated the site in accordance with the procedures outlined in the U.S. Army Corps of Engineers 1987 Wetland Delineation Manual, U.S. Army Corps of Engineers Regulatory Guidance Letter No. 05-05 (December 7, 2005) and the U.S. Army Corps of Engineers and Environmental Protection Agency's joint guidance on Clean Water Act Jurisdiction Following the U.S. Supreme Court's Decision in Rapanos V. United States & Carabell v. United States. Waters of the U.S. in the form of perennial stream, scrub-shrub wetlands and open water have been identified and delineated on the property. Figure 1 contains the Jurisdictional Determination Map and depiction of waters of the U.S. on the property.

## **Baseline Conditions of the Site**

The waters of the U.S. found to be present on the site were identified in the field and mapped with a hand-held, mapping-grade Global Position System. The total length of stream present on the property is approximately 200 linear feet. The area of wetlands delineated on the property is approximately 0.6 acres. The area of open water delineated on the property is approximately 0.4 acres. The total area of the site considered to be waters of the U.S. is approximately 1.0 acre.

The information collected and depicted on the attached exhibits is sufficient for planning for the avoidance and minimization of impacts to waters of the U.S. and is sufficient for the permitting of any impacts resulting from proposed development plans. The data collected from the delineation was compiled into the attached Jurisdictional Determination Map.

The majority of the property is characterized as uplands. However, Long Brake Creek (waters of the U.S.) flows through the southwestern corner of the property. Wetlands and an open water impoundment of Long Brake Creek are also waters of the U.S. Long Brake Creek drains directly to Prairie Creek, a direct tributary to the Neches River (a traditionally navigable waterway). Since the on-site waters drain to navigable waters, these waters are regulated by the U.S. Army Corps of Engineers ("the Corps") under Section 404 of the Clean Water Act.

## **Jurisdictional Determination of Project Site**

ADAMS performed a routine determination of potential wetlands on the property. Observation points were established along one transect. At each observation point, wetland parameters were characterized. The dominant plant species, soil characteristics, and hydrology indicators occurring at each observation point were recorded on Data Forms, copies of which are included herein.

## Vegetation

Within the radii specified in the Wetland Delineation Manual, the dominant species of vegetation were subjectively determined by estimating those with the largest relative basal area, the greatest height, the greatest percentage of areal cover, and/or the greatest number of stems. The dominant species were recorded on Data Forms along with their indicator status.

The site is generally comprised of a mixture of upland pastureland with waters of the U.S. being present in only the southwestern corner of the property. Upland vegetation dominates the open pasture areas of the property. The only areas found to exhibit a dominance of hydrophytic vegetation were within the Long Brake Creek bottom.

The scrub-shrub wetlands are dominated by smartweed (*Polygonum sp.*), soft rush (*Juncus effuses*), sedges (*Carex spp.*), *Hydrocotyle umbellata*, southern wax myrtle (*Myrica cerifera*), black willow (*Salix nigra*), sweetgum (*Liquidambar styraciflua*), and river birch (*Betula nigra*). The upland fringe around the wetland is dominated by American holly (*Ilex opaca*), eastern red cedar (*Juniperus virginiana*), water oak (*Quercus nigra*), and other oak species.

## Soils

Prior to conducting the on-site inspection, a review of the United States Department of Agriculture (USDA) Soil Survey of Smith County, Texas was conducted. According to the soil survey, numerous soil series were mapped on the property. The wetlands were generally found within the Mantachie loam, frequently flooded soil series. An observation point established outside of the wetland boundary was located within the Cuthbert fine sandy loam, 5-20 percent slopes soil series.

The Mantachie loam, frequently flooded soil series is described as a soil on nearly level flood plains along the meander of streams. The soil is somewhat poorly drained, and is listed on the National Hydric soils list. The taxonomy of this soil is classified as Aeric Fluvaquents. The Cuthbert fine sandy loam, 5-20 percent slopes soils are described as strongly sloping or moderately steep soils on uplands. The soil is well drained and is not listed on the National Hydric Soils list. The Cuthbert soil taxonomy is described as Typic Hapludults.

At each of the established observations points in the field, a soil pit was excavated to evaluate soil characteristics. Each soil pit was excavated using a shovel (sharp shooter), and the pit was excavated with a 1-foot diameter (minimum). The sharp shooter was extended to the blade depth in a full circle to circumscribe the pit perimeter, and the final mass of soil was lifted from the hole. This method produced a pit with an approximate depth of 16 inches. The soils were examined immediately below the A-horizon or 10 inches (whichever was shallower) and the soils were evaluated for the presence of hydric soil indicators. Soil findings were recorded on the Data Form corresponding to the observation point location.

Evidence of hydric soils was identified by the presence of reducing conditions, an aquic soil moisture regime, organic streaking in sandy soils, reducing conditions, and sulfidic odors. Soil colors were found to be 10YR 4/2 with no mottles within the observation point. Typically, mottles would have been expected in this series, but significant sedimentation from uphill and upstream sources had recently modified the character of the soil.

## **Hydrology**

Hydrology indicators were evaluated at each observation point. Wetlands hydrology was observed throughout the wetlands mapped in the attached Jurisdictional Determination Map. Primary and secondary hydrology indicators were identified including inundation, saturation in the upper 12 inches, local soil survey data, and the FAC-neutral test.

### **Summary of Permit Requirements**

Since adverse impacts to waters of the U.S. require a permit from the Corps, it is advisable to plan for the mitigation of impacts to waters of the U.S. Applicable Corps guidance documents describe mitigation as the sequential process of avoidance, minimization and compensation for impacts. Avoidance is defined as taking all appropriate and practicable measures to avoid those adverse impacts to the aquatic ecosystem that are not necessary. Minimization is defined as taking all appropriate and practicable measures to minimize those adverse impacts to the aquatic ecosystem that cannot reasonably be avoided. Compensation is defined as implementing appropriate and practicable measures to compensate for adverse project impacts to the aquatic ecosystem that cannot reasonably be avoided or further minimized. This step is referred to as compensatory mitigation.

If the development can be planned around the jurisdictional waters, avoidance of impacts can be demonstrated and no permit would be required. However, if impacts are necessary to develop the site, the impacts must be minimized to the extent practical. Any filling of the waters of the U.S. which may occur as a part of site construction will require a permit from the Corps. The time and costs associated with obtaining a permit from the Corps is contingent upon the final site design.

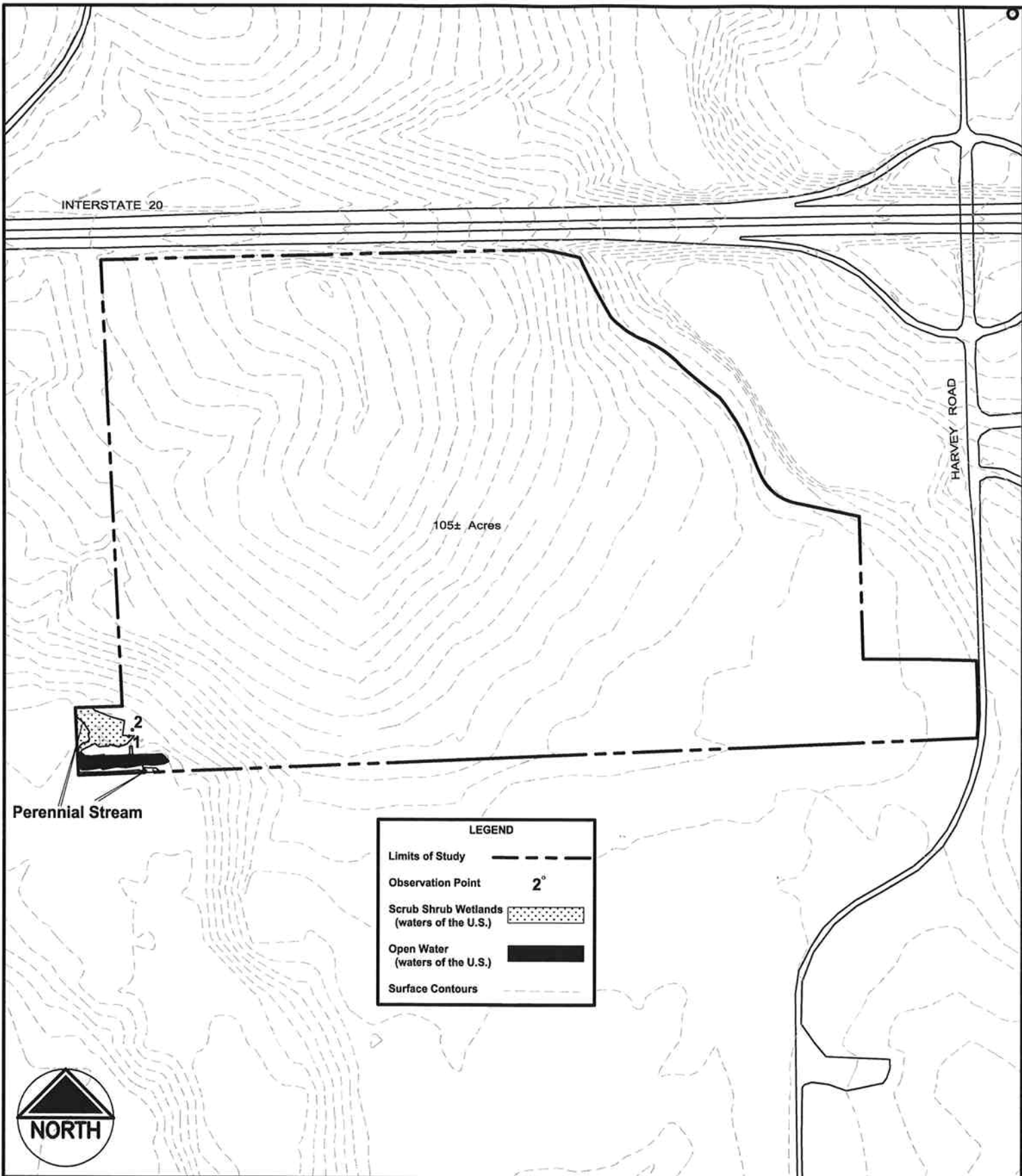
ADAMS can assist the client in identifying suitable alternatives which may avoid a lengthy or difficult permitting situation. If no impacts to waters of the U.S. will occur, then no permit will be required. If impacts to waters of the U.S. cannot be avoided as discussed above, then ADAMS can assist in the preparation of the permit application and mitigation plan documents.

**SIGNATURE OF CONSULTANT**

Please note that only the U.S. Army Corps of Engineers can approve a final jurisdictional Determination. This preliminary jurisdictional determination has been prepared under the direction and supervision of the consultant, undersigned below. The review and interpretation of information upon which the report is based as well as the on-site reconnaissance and delineation were all portions of the study performed by the undersigned.



Jeremy W. Rowden, PG  
Environmental Program Manager



INTERSTATE 20

HARVEY ROAD

105± Acres

Perennial Stream

LEGEND	
Limits of Study	---
Observation Point	2°
Scrub Shrub Wetlands (waters of the U.S.)	
Open Water (waters of the U.S.)	
Surface Contours	- - - -




SCALE: 1" = 500'

SHEET NO.

**1**

**JURISDICTIONAL  
DETERMINATION MAP**

LINDALE ECONOMIC DEVELOPMENT  
CORPORATION  
APPX. 105 ACRES, LINDALE, TEXAS



**Adams  
ENGINEERING**

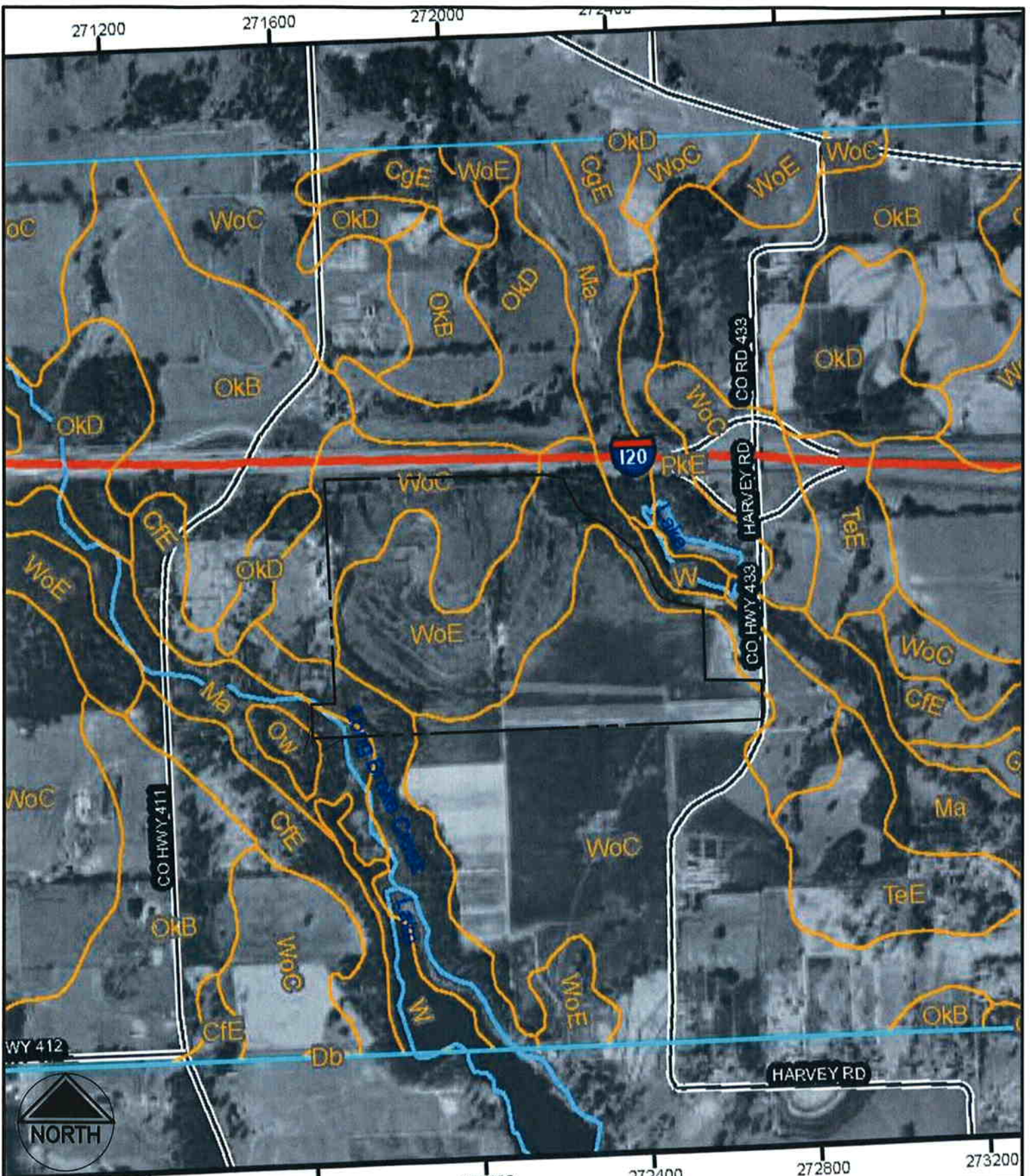
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PROJECT NO.  
2007.301

DATE  
1/17/08

PROJECT MGR.  
JWR

PROJECT TECH  
JWR



SCALE: 1" = 1000'

**NRCS SOIL SURVEY  
MAP**

SHEET NO.

**2**

LINDALE ECONOMIC DEVELOPMENT  
CORPORATION  
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SCALE: 1" = 500'

SHEET NO.

**3**

**2006 AERIAL  
PHOTOGRAPH**

**LINDALE ECONOMIC DEVELOPMENT  
CORPORATION  
APPX. 105 ACRES, LINDALE, TEXAS**



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**ENGINEERING**  
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**PROJECT NO.**  
2007.301

**DATE**  
1/17/08

**PROJECT MGR.**  
JWR

**PROJECT TECH**  
JWR



SCALE: 1" = 500'

SHEET NO.

**4**

**2003 AERIAL  
PHOTOGRAPH**

**LINDALE ECONOMIC DEVELOPMENT  
CORPORATION  
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JWR**

**PROJECT TECH  
JWR**



SCALE: 1"= 500'

SHEET NO.

**5**

**1995 AERIAL  
PHOTOGRAPH**

**LINDALE ECONOMIC DEVELOPMENT  
CORPORATION  
APPX. 105 ACRES, LINDALE, TEXAS**



**Adams  
ENGINEERING**

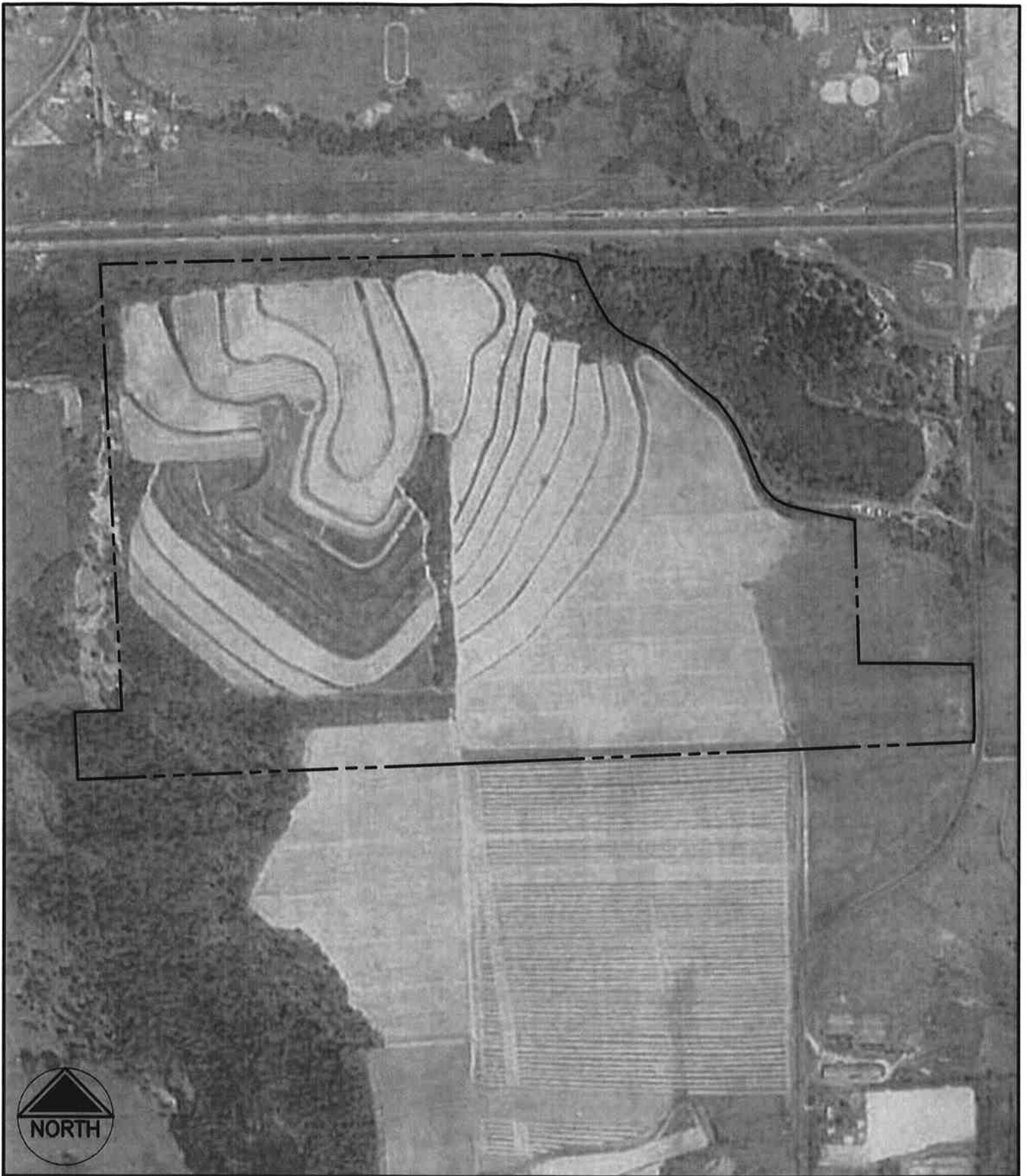
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2007.301**

**DATE  
1/17/08**

**PROJECT MGR.  
JWR**

**PROJECT TECH  
JWR**



SCALE: 1"= 500'

SHEET NO.

**6**

**1987 AERIAL  
PHOTOGRAPH**

**LINDALE ECONOMIC DEVELOPMENT  
CORPORATION  
APPX. 105 ACRES, LINDALE, TEXAS**



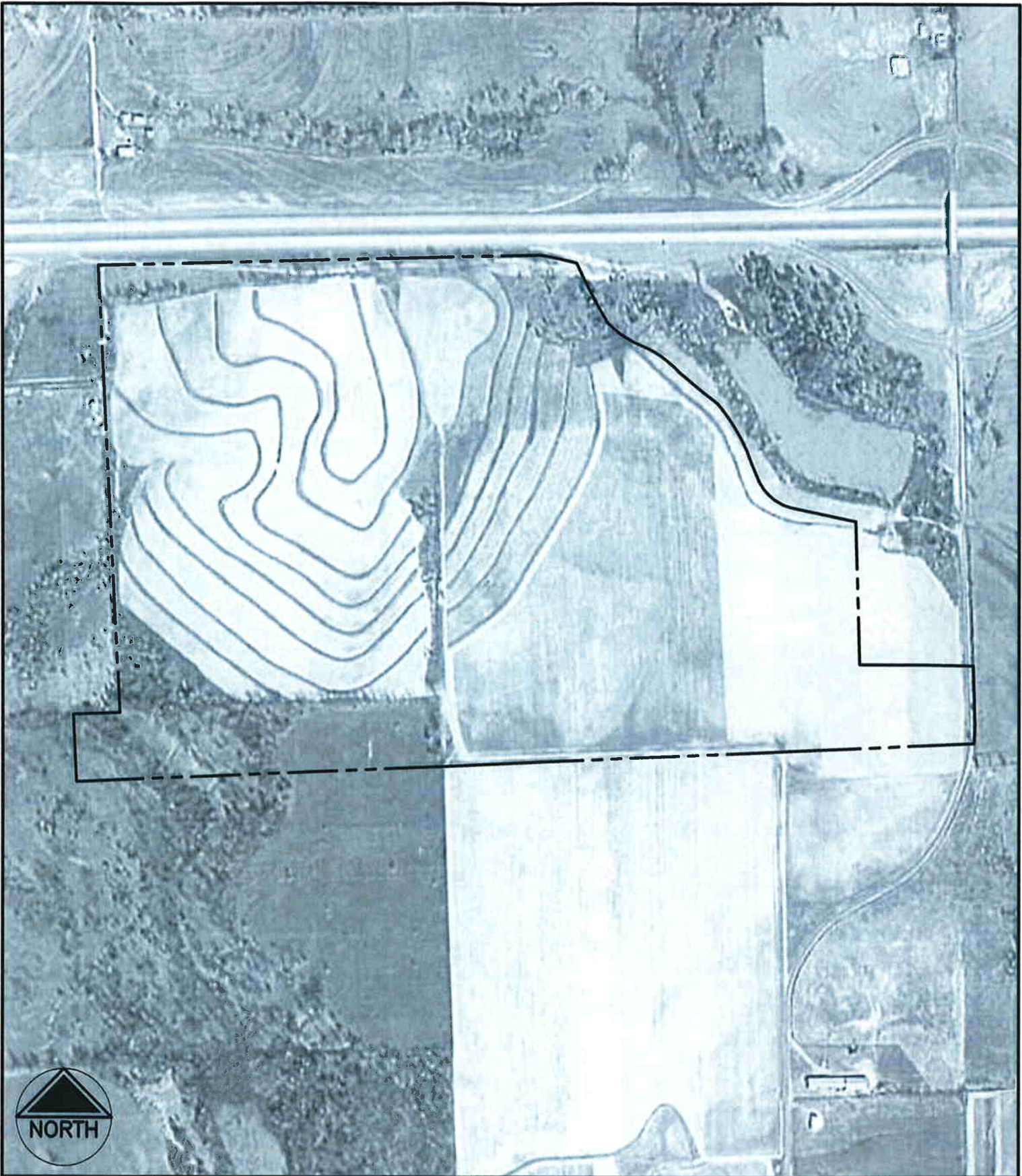
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**PROJECT NO.  
2007.301**

**DATE  
1/17/08**

**PROJECT MGR.  
JWR**

**PROJECT TECH  
JWR**



SCALE: 1"= 500'

SHEET NO.

**7**

**1967 AERIAL  
PHOTOGRAPH**

LINDALE ECONOMIC DEVELOPMENT  
CORPORATION  
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2007.301

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PROJECT MGR.  
JWR

PROJECT TECH  
JWR



SCALE: 1"= 500'

**1958 AERIAL  
PHOTOGRAPH**

SHEET NO.

**8**

LINDALE ECONOMIC DEVELOPMENT  
CORPORATION  
APPX. 105 ACRES, LINDALE, TEXAS



**Adams**  
**ENGINEERING**

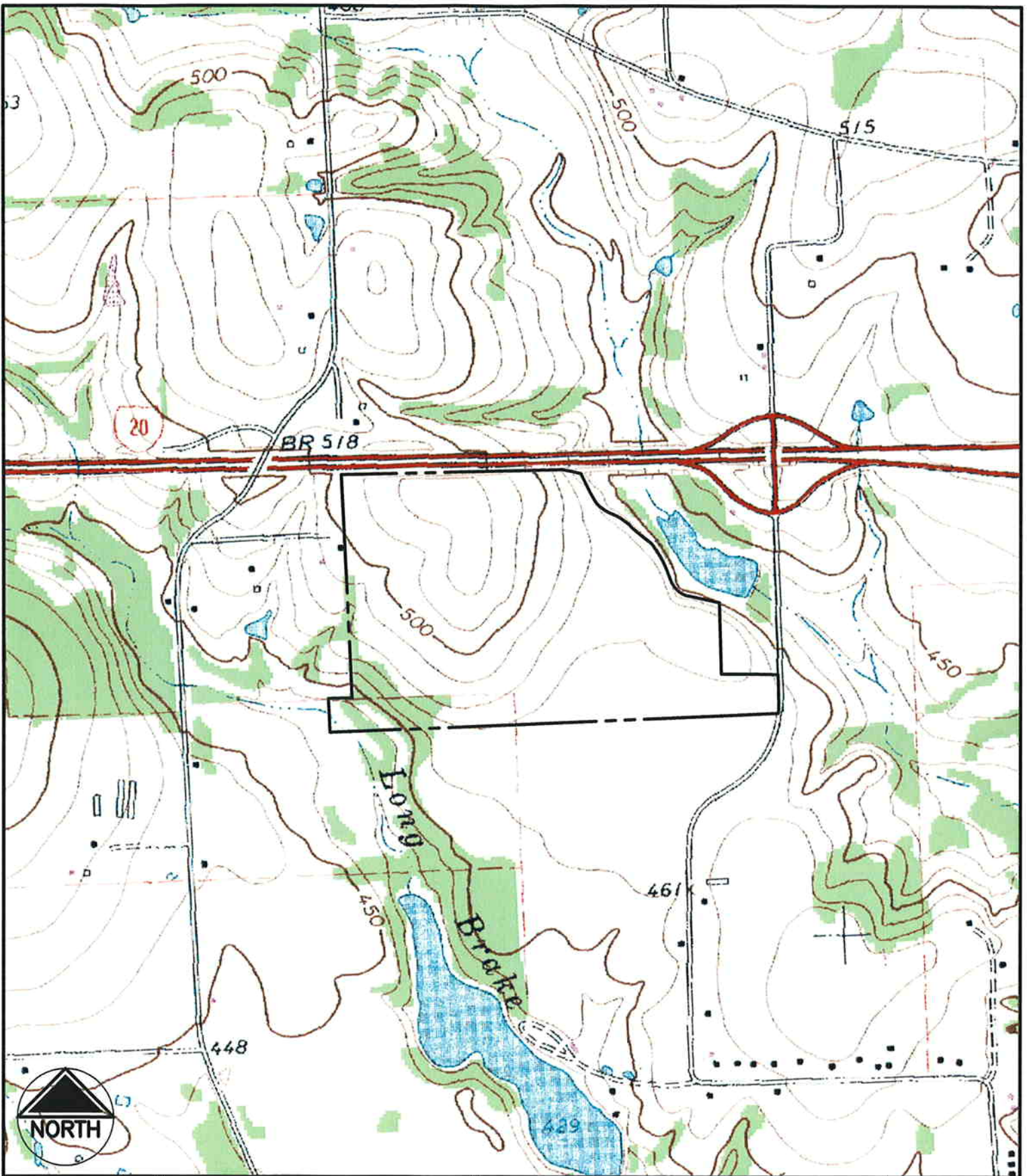
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PROJECT NO.  
2007.301

DATE  
1/17/08

PROJECT MGR.  
JWR

PROJECT TECH  
JWR



SCALE: 1"= 1000'

1973 USGS TOPOGRAPHIC  
MAP (MT. SYLVAN QUAD)

SHEET NO.

9

LINDALE ECONOMIC DEVELOPMENT  
CORPORATION  
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**ENGINEERING**

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2007.301

DATE  
1/17/08

PROJECT MGR.  
JWR

PROJECT TECH  
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**SITE PHOTOGRAPHS**



**TYPICAL VIEW OF UPLANDS**



**VIEW OF POND ON SOUTHWEST CORNER OF SITE**





**VIEW OF WETLANDS ON SOUTHWEST CORNER OF SITE**

**DATA FORM**  
**ROUTINE WETLAND DETERMINATION**  
(1987 COE Wetlands Delineation Manual)

Project/Site: <u>LEDC 105 Acr.</u> Applicant/Owner: <u>LEDC</u> Investigator: <u>JWR</u>	Date: <u>1/15/08</u> County: <u>Smith</u> State: <u>TX</u>
Do Normal Circumstances Exist on the site? <span style="float: right;"><input checked="" type="radio"/> Yes <input type="radio"/> No</span> Is the site significantly disturbed (Atypical Situation)? <span style="float: right;"><input type="radio"/> Yes <input checked="" type="radio"/> No</span> Is the area a potential Problem Area? <span style="float: right;"><input type="radio"/> Yes <input checked="" type="radio"/> No</span> (If needed, explain on reverse.)	Community ID: <u>1</u> Transect ID: <u>1</u> Plot ID: <u>1</u>

**VEGETATION**

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u>Juncus effusus</u>	<u>H</u>	<u>OBL</u>	9. _____	_____	_____
2. <u>Salix nigra</u>	<u>T</u>	<u>FACW+</u>	10. _____	_____	_____
3. <u>Hydrocotyle umbellata</u>	<u>H</u>	<u>OBL</u>	11. _____	_____	_____
4. <u>Carex spp.</u>	<u>H</u>	<u>FACW</u> <u>or</u> <u>wetter</u>	12. _____	_____	_____
5. _____	_____	_____	13. _____	_____	_____
6. _____	_____	_____	14. _____	_____	_____
7. _____	_____	_____	15. _____	_____	_____
8. _____	_____	_____	16. _____	_____	_____

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 100%

Remarks:

**HYDROLOGY**

<input type="checkbox"/> Recorded Data (Describe in Remarks): <input type="checkbox"/> Stream, Lake, or Tide Gauge <input type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input type="checkbox"/> No Recorded Data Available	Wetland hydrology Indicators: Primary Indicators: <input checked="" type="checkbox"/> Inundated <input checked="" type="checkbox"/> Saturated in Upper 12 Inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands Secondary Indicators (2 or more required): <input type="checkbox"/> Oxidized Root Channels in Upper 12" <input checked="" type="checkbox"/> Water-Stained Leaves <input checked="" type="checkbox"/> Local Soil Survey Data <input checked="" type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
Field Observations:  Depth of Surface Water: <u>6</u> (in.) Depth to Free Water in Pit: <u>-</u> (in.) Depth to Saturated Soil: _____ (in.)	Remarks:

**SOILS**

Map Unit Name (Series and Phase): Mantachic loam, frequently flooded Drainage Class: Somewhat poor

Taxonomy (Subgroup): Aeric Fluvaquents Field Observations Confirm Mapped Type? Yes  No

**Profile Description:**

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
4"	A	10YR 3/2	-		loamy sand
5"	B	10YR 5/2	-		sand

**Hydric Soil Indicators:**

<input type="checkbox"/> Histosol	<input type="checkbox"/> Concretions
<input type="checkbox"/> Histic Epipedon	<input type="checkbox"/> High Organic Content in Surface Layer Sandy Soils
<input checked="" type="checkbox"/> Sulfidic Odor	<input checked="" type="checkbox"/> Organic Streaking in Sandy Soils
<input checked="" type="checkbox"/> Aquic Moisture Regime	<input type="checkbox"/> Listed on Local Hydric Soils List
<input checked="" type="checkbox"/> Reducing Conditions	<input type="checkbox"/> Listed on National Hydric Soils List
<input type="checkbox"/> Gleyed or Low-Chroma Colors	<input type="checkbox"/> Other (Explain in Remarks)

Remarks:

**WETLAND DETERMINATION**

Hydrophytic Vegetation Present? <input checked="" type="radio"/> Yes <input type="radio"/> No (Circle)	Is this Sampling Point Within a Wetland? <input checked="" type="radio"/> Yes <input type="radio"/> No (Circle)
Wetland Hydrology Present? <input checked="" type="radio"/> Yes <input type="radio"/> No	
Hydric Soils Present? <input checked="" type="radio"/> Yes <input type="radio"/> No	
Remarks:	

**DATA FORM**  
**ROUTINE WETLAND DETERMINATION**  
(1987 COE Wetlands Delineation Manual)

Project/Site: <u>LEDC 105 acr.</u> Applicant/Owner: <u>LEDC</u> Investigator: <u>JWR</u>	Date: <u>1/15/08</u> County: <u>Smith</u> State: <u>TX</u>
Do Normal Circumstances Exist on the site? <input checked="" type="radio"/> Yes <input type="radio"/> No Is the site significantly disturbed (Atypical Situation)? Yes <input type="radio"/> No <input checked="" type="radio"/> Is the area a potential Problem Area? Yes <input type="radio"/> No <input checked="" type="radio"/> (If needed, explain on reverse.)	Community ID: <u>2</u> Transect ID: <u>1</u> Plot ID: <u>2</u>

**VEGETATION**

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u><del>Myrica</del> Myrica cerifera</u>	<u>S</u>	<u>FAC</u>	9. _____	_____	_____
2. <u>Ilex opaca</u>	<u>T</u>	<u>FACU</u>	10. _____	_____	_____
3. <u>Ilex decidua</u>	<u>S</u>	<u>FACW-</u>	11. _____	_____	_____
4. <u>Quercus nigra</u>	<u>T</u>	<u>FAC+</u>	12. _____	_____	_____
5. <u>Eastern red cedar</u>	<u>T</u>	<u>FACU-</u>	13. _____	_____	_____
6. <u>(Juniperus virginiana)</u>	_____	_____	14. _____	_____	_____
7. _____	_____	_____	15. _____	_____	_____
8. _____	_____	_____	16. _____	_____	_____

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 60%

Remarks:

**HYDROLOGY**

<input type="checkbox"/> Recorded Data (Describe in Remarks): <input type="checkbox"/> Stream, Lake, or Tide Gauge <input type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input type="checkbox"/> No Recorded Data Available	<b>Wetland hydrology Indicators:</b> <b>Primary Indicators:</b> <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 Inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands <b>Secondary Indicators (2 or more required):</b> <input checked="" type="checkbox"/> Oxidized Root Channels in Upper 12" <input type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
<b>Field Observations:</b>  Depth of Surface Water: _____ (in.) Depth to Free Water in Pit: _____ (in.) Depth to Saturated Soil: _____ (in.)	
Remarks:	

**SOILS**

Map Unit Name (Series and Phase): Cuthbert fine sandy loam S-202 Slopes Drainage Class: Well drained

Taxonomy (Subgroup): Typic hapludults Field Observations Confirm Mapped Type? Yes  No

**Profile Description:**

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
<u>4"</u>	<u>A</u>	<u>10YR 3/2</u>	<u>-</u>	<u>-</u>	<u>loamy sand</u>
<u>12"</u>	<u>B</u>	<u>10YR 3/3</u>	<u>-</u>	<u>-</u>	<u>sand</u>

**Hydric Soil Indicators:**

<input type="checkbox"/> Histosol	<input type="checkbox"/> Concretions
<input type="checkbox"/> Histic Epipedon	<input type="checkbox"/> High Organic Content in Surface Layer Sandy Soils
<input type="checkbox"/> Sulfidic Odor	<input type="checkbox"/> Organic Streaking in Sandy Soils
<input type="checkbox"/> Aquic Moisture Regime	<input type="checkbox"/> Listed on Local Hydric Soils List
<input type="checkbox"/> Reducing Conditions	<input type="checkbox"/> Listed on National Hydric Soils List
<input type="checkbox"/> Gleyed or Low-Chroma Colors	<input type="checkbox"/> Other (Explain in Remarks)

Remarks:

**WETLAND DETERMINATION**

Hydrophytic Vegetation Present? <input checked="" type="radio"/> Yes <input type="radio"/> No (Circle)	(Circle)
Wetland Hydrology Present? <input type="radio"/> Yes <input checked="" type="radio"/> No	
Hydric Soils Present? <input type="radio"/> Yes <input checked="" type="radio"/> No	Is this Sampling Point Within a Wetland? <input type="checkbox"/> Yes <input type="checkbox"/> No

Remarks: