



20 December 2021

Mark C. Spear, P.E.
Pape Dawson Engineers, Inc.
5810 Tennyson Parkway, Suite 470
Plano, Texas 75024

Re: Stephens Towne Center - Waters of the United States Delineation
Approximately 196+/- acres located at the southeast corner of Lois Lane and Interstate Highway
35 in the City of Sanger, Denton County, Texas

Dear Mr. Spear,

Integrated Environmental Solutions, LLC (IES) performed a site survey to identify any aquatic features that meet a definition of a water of the United States on approximately 196+/- acres located at the southeast corner of Lois Lane and Interstate Highway (IH) 35 in the City of Sanger, Denton County, Texas (**Attachment A, Figure 1**). This report will ultimately assess and delineate potentially jurisdictional aquatic features to ensure compliance with Clean Water Act (CWA) Sections 401 and 404.

INTRODUCTION

Waters of the United States are protected under guidelines outlined in CWA Sections 401 and 404, in Executive Order (EO) 11990 (Protection of Wetlands), and by the review process of the Texas Commission on Environmental Quality (TCEQ). Agencies that regulate impacts to the nation's water resources within Texas include the U.S. Army Corps of Engineers (USACE), the U.S. Environmental Protection Agency (USEPA), the U.S. Fish and Wildlife Service (USFWS), and the TCEQ. The USACE has the primary regulatory authority for enforcing CWA Section 404 requirements for waters of the United States.

The decision for whether a CWA Section 404 permit is required on a property is determined if there are waters of the United States present and the extent of losses of those features. The USACE and USEPA have gone through rulemaking to define what is a water of the United States, independently and jointly, several times since the initial CWA. The longest standing definitions of waters of the United States were those published in 1986; however, these definitions were challenged in 2001 and 2007 U.S. Supreme Court decisions. Since then, both the Obama and Trump administration completed rulemaking to modify the definitions of waters of the United States in the Clean Water Rule in 2016 and the Navigable Water Protection Rule (NWPR) in 2020. A recent federal district court decision in Arizona struck down the NWPR but was silent on which definitions of waters of the United States would replace it. As of the date of this letter report, the USACE Fort Worth District has provided verbal guidance that the USACE will be utilizing the pre-2015 definitions (i.e., 1986 definitions combined with the *Rapanos* and *Carabell* U.S. Supreme Court decisions) to define waters of the United States. USEPA has indicated that the pre-2015 definitions will be in place until new definitions have been developed as part of the new definitions rulemaking process that was started in June 2021, prior to the Arizona court decision.

1986 Waters of the United States Definitions and Rapanos Decision

The definition of waters of the United States, in 33 Code of Federal Regulations (CFR) 328.3, includes waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, wetlands, sloughs, wet meadows, or natural ponds and all impoundments of waters otherwise defined as waters of the United States. Also included are wetlands adjacent to waters (other than waters that are themselves wetlands). The term *adjacent* is defined as bordering, contiguous, or neighboring. Jurisdictional wetlands are a category of waters of the United States and have been defined by the USACE as areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.

Waters of the United States are defined in 33 CFR 328.3 (a), 13 November 1986, as:

1. *All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;*
2. *All interstate waters including interstate wetlands;*
3. *All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation, or destruction of which could affect interstate or foreign commerce including any such waters:*
 - i. *Which are or could be used by interstate or foreign travelers for recreational or other purposes; or*
 - ii. *From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or*
 - iii. *Which are used or could be used for industrial purposes by industries in interstate commerce;*
4. *All impoundments of waters otherwise defined as waters of the United States under the definition;*
5. *Tributaries of waters identified in paragraphs (a)(1)-(4) of this section;*
6. *The territorial seas;*
7. *Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (a)(1)-(6) of this section.*

On 05 June 2007, the USACE and the USEPA issued joint guidance on delineation of waters on the United States based on the U.S. Supreme Court decisions in *Rapanos* and *Carabell*. Under this guidance, potential waters of the United States have been classified as traditional navigable waters (TNW), relatively permanent waters (RPW) (i.e., having flow most of the year or at least seasonally), or non-RPWs. This guidance states that TNWs and RPWs and contiguous or adjacent wetlands to these aquatic features are waters of the United States. Wetlands that are bordering, contiguous, or neighboring another water of the United States is considered adjacent. Additionally, wetlands that are within the 100-year floodplain of another water of the United States are also considered adjacent. Non-RPWs, wetlands contiguous or adjacent to non-RPWs, and isolated wetlands must undergo a “significant nexus” test on a case-by-case basis to determine the jurisdictional nature of these aquatic features. Under the “significant nexus” test a water feature must have substantial connection to a TNW by direct flow, or by indirect biological, hydrologic, or chemical connection. Under the “significant nexus” test the USACE District Engineer must submit the jurisdictional determination (JD) to the regional USEPA office, which makes the decision whether to move the JD to Headquarters USACE to make the final determination.

This guidance does not void the January 2001 decision of the U.S. Supreme Court in *Solid Waste Agency of Northern Cook County (SWANCC) v. USACE* which disallowed regulation of isolated wetlands under the CWA through the “Migratory Bird Rule.” Previously, the USACE assumed jurisdiction over isolated waters of the United States based on its 1986 preamble stating that migratory birds used these habitats. The “Migratory Bird Rule” provided the nexus to interstate commerce and thus protection under the CWA. However, the new guidance does require that the “significant nexus” test be performed in addition to an analysis of other potential interstate commerce uses for isolated waters.

METHODOLOGY

Prior to conducting fieldwork, the U.S. Geological Survey (USGS) topographic map (**Attachment A, Figures 2A and 2B**), the *Soil Survey of Denton County, Texas*, and the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) digital soil databases for Denton County (**Attachment A, Figure 3**), the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) (**Attachment A, Figure 4**), and recent and historic aerial photographs of the proposed survey area were studied to identify possible aquatic features that could meet the definition of waters of the United States and areas prone to wetland development. Ms. Mackenzie Lyon and Ms. Emily Palsa of IES conducted the delineation in the field in accordance with the USACE procedures on 14 December 2021.

Wetland determinations and delineations were performed on location using the methodology outlined in the 1987 Corps of Engineers Wetland Delineation Manual and the Regional Supplement to the Corps of Engineer Wetland Delineation Manual: Great Plains Region (Version 2.0). The presence of a wetland is determined by the positive indication of three criteria (i.e., hydrophytic vegetation, hydrology, and hydric soils). Potential jurisdictional boundaries for other water features (i.e., non-wetland) were delineated in the field at the ordinary high-water mark (OHWM). The 33 CFR 328.3 (c)(7) defines OHWM as the line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.

Water feature boundaries were recorded on a Trimble GeoExplorer XT Global Positioning System (GPS) unit capable of sub-meter accuracy. Photographs were also taken at representative points within the survey area (**Attachment B**). Routine wetland determination data forms are provided in **Attachment C**. Historic aerial photographs, from Environmental Data Resources, Inc. (EDR), were used in the jurisdictional determination of some aquatic features, are included in **Attachment D**.

RESULTS

Background Review

Topographic Setting

The USGS topographic map (Valley View, Texas 7.5' Quadrangle 1961, revised 1978) illustrates two blue line features and two ponds within the survey area. The first blue line feature is illustrated in the southeast with an overall west-to-east orientation. The second blue line feature begins along the western boundary and continues west. The two ponds are depicted in the eastern portion, north of the first blue line feature (see **Attachment A, Figure 2A**). The 2019 versions of the Valley View, Texas 7.5' Quadrangle map illustrates the blue line features and ponds within similar alignment (see **Attachment A, Figure 2B**). The overall topography of the site was illustrated with a hilltop in the west-central portion and slope oriented in all direction from the hilltop. The maximum elevation was approximately 740 feet above mean sea level (amsl) and a minimum elevation of approximately 690 feet amsl.

Soils

The *Soil Survey of Denton County, Texas* identified four soil map units within the survey area, Burleson clay, 1 to 3 percent slopes; Medlin-Sanger stony clay, 5 to 15 percent slopes; Sanger clay, 1 to 3 percent slopes; and Sanger clay, 3 to 5 percent slopes. None of these soil map units were listed as a hydric soil on the Hydric Soils of Texas list prepared by the National Technical Committee for Hydric Soils (accessed 14 December 2021, Denton County, Texas) (see **Attachment A, Figure 3**). Hydric soils are described as those soils that are sufficiently wet in the upper part to develop anaerobic conditions during the growing season.

FEMA FIRM

The FEMA FIRM (Denton County; Map Panel 48453C0280J; effective 18 August 2014) shows the entirety of the survey area to be within Zone X (Areas determined to be outside the 0.2 percent annual chance floodplain) (see **Attachment A, Figure 4**).

Historic Aerial Photographs

Historic aerial photographs from an aerial photograph decade package from EDR were also reviewed to understand the sequence of events that have occurred in the survey area (see **Attachment D**). The following paragraphs provide a description of the aerial photographs based on site conditions:

1942-1951 – The survey area is characterized an active agricultural property comprised of plowed fields, pastureland, roadways, and stock ponds. Two isolated stock ponds are illustrated in the east-central portion and several weakly defined drainages indicate possible hillside erosion. Surrounding properties depict similar land use in addition to a railway bordering the western boundary.

1972-1990 – Several poorly-defined drainages are visible with scouring and vegetation that lack consistent OHWM indicators, one in the southwest that dissipates across the hillside to the southwest, another in the southeast that has a section of meandering scour in the location of the blue line feature on the USGS topographic map, but also dissipates downslope, and the beginning of a one is visible just to the west between the boundary and the railroad where the western blue line feature is illustrated on the USGS topographic map.

2006-2016 – An additional isolated pond is illustrated in the southwestern corner. Sparse tree cover along fence lines and throughout the eastern half indicate a change from the plowed fields to pasturelands and hay production.

Weather History

The weather history for Wunderground.com Whitley Place weather station (KTXSANGE59) recorded no precipitation during the 7-day period and a total of 3.04 inches during the 30-day period, prior to the site visit. The Antecedent Precipitation Tool (APT) indicated that the conditions on-site at the time of the evaluation were considered hydrologically “drier than normal” based on the 30-year climactic average (33.390653N, - -97.167119W).

Field Investigation

The survey area was located in a recently grazed pastureland mixed on relic agricultural properties. The survey area was dominated by a **pastureland** vegetation community with grazing activities recently stopped. The community was dominated by grasses and forbs including Bermudagrass (*Cynodon dactylon*), western ragweed (*Ambrosia psilostachya*), roughleaf cocklebur (*Xanthium strumarium*), and annual broomweed (*Gutierrezia dracunculoides*). Honey mesquite (*Prosopis glandulosa*) was sparsely found throughout the property.

Water from the survey area flows east into Pond Creek, which flows into the Elm Fork Trinity River. The Elm Fork Trinity River ultimately flows into the Trinity River, a TNW. **Table 1** and the following paragraphs detail the aquatic features identified within the survey area at the time of evaluation (see **Attachment A, Figure 5**).

Table 1. Aquatic Features Identified within the Survey Area

Water Identification	Hydrology Characteristics	Area (Acre)	Length (Linear Feet)
Wetland 1	Seasonally Saturated	0.01	---
Wetland 2	Seasonally Saturated	0.02	---
Wetland 3	Seasonally Saturated	0.02	---
Wetland 4	Seasonally Saturated	0.01	---
Wetland 5	Seasonally Saturated	0.01*	---
Wetland 6	Seasonally Saturated	0.01*	---
Wetland 7	Seasonally Saturated	0.01*	---
Wetland 8	Seasonally Saturated	0.01*	---
Pond 1	Seasonally Inundated	0.45	---
Pond 2	Seasonally Inundated	1.01	---
Pond 3	Seasonally Inundated	0.37	---
Ditch 1	Ephemeral	0.01*	27

*Actual acreage less than 0.01 acre

Wetlands 1 through 8 were small, isolated wetland swales located in the southern portion. Wetlands 1 through 8 were dominated by spikerush (*Eleocharis palustris*) and roughleaf cocklebur, both hydric plants. Wetland 1 was downslope of Pond 2 and appeared to receive hydrology from a seep from Pond 2's dam. Wetlands 2 through 7 were observed along the USGS blue line feature and meandering swales observed in historic aerial photography. Though the wetlands were identified in a conveyance, there was more upland area observed within the conveyance than wetland. Wetland 8 was observed in the far southwestern corner, south of Pond 3. Hydric soil was indicated by Depleted Matrix with a matrix of 10YR 4/1 with redoximorphic concentrations of 5YR 4/6 in the pore linings and matrix. Hydrologic indicators for Wetland 1, and 4 through 7 consisted of saturation, algal mat, and crayfish burrows. Indicators for Wetlands 2, 3, and 8 consisted of surface water, saturation, and an algal mat. Given these features' locations in the watershed, Wetlands 1 through 8 would likely only be seasonally saturated.

Ponds 1 through 3 were isolated, artificially excavated stock ponds located in the southern portion with no OHWM entering or exiting the ponds. The ponds' limits were identified by OHWM characteristics that included a natural line impressed in the bank, a water line, and a wrack line. A review of recent historical aerial photographs depict that the ponds have seasonal dry periods. As such, it is IES's professional opinion that Ponds 1 through 3 would be seasonally inundated.

Ditch 1 was identified as a channel along the western railway to convey stormwater from nearby roads, detention pond, and hillside sheet flow. The ditch was likely constructed at approximately the same time as the railway. A portion of the ditch, a plunge pool upslope, was inundated while majority of the ditch was dry at the time of evaluation. As such, it is IES' professional opinion that Ditch 1 would be considered to have ephemeral flow.

POTENTIAL JURISDICTIONAL ASSESSMENT

The 05 June 2007 USACE and USEPA jointly published instructional guidebook is intended to provide the USACE field staff a national standard operating procedure for conducting jurisdictional determinations. The guidebook was prepared by combining all prior applicable provisions, regulations, statutes, and case laws pertaining to the CWA. All terms, definitions, and conclusions regarding the jurisdictional nature of the aquatic features used within this report are derived directly, as they are practiced, from the guidance. The following outlines the applicable interpretations of the guidance appropriate for this situation. **Table 2** provides an overview of the jurisdictional assessment of the aquatic features under the 1986 Waters of the United States definitions and the *Rapanos* decision (**Attachment A, Figure 5**).

Table 2. Jurisdictional Assessment of Aquatic Features Under the 1986 Definitions

Water Identification	Post-Rapanos Water Classification	33 CFR 328.3 Definition
Non-Jurisdictional Features		
Wetland 1	Isolated	---
Wetland 2	Isolated	---
Wetland 3	Isolated	---
Wetland 4	Isolated	---
Wetland 5	Isolated	---
Wetland 6	Isolated	---
Wetland 7	Isolated	---
Wetland 8	Isolated	---
Pond 1	Artificial Upland	---
Pond 2	Artificial Upland	---
Pond 3	Artificial Upland	---
Ditch 1	Ditch	---

Non-Jurisdictional Features

Wetlands 1 through 8

Wetlands 1 through 8 were isolated wetlands with no more than a speculative connection to a TNW. As such, these features would not meet a definition of a water of the United States and would not, therefore, be subject to regulation under CWA Section 404.

Ponds 1 through 3

Based on evidence provided, Ponds 1 through 3 were created in an upland setting by excavating and placing earthen fill across the natural gradient of the landscape in a manner to collect and redirect upslope sheet flow with no signs of previous jurisdictional features. No features with OHWM characteristics were observed entering or exiting the ponds at the time of the evaluation indicating that they were isolated in the landscape. Under the 2007 guidance:

- Ponds 1 through 3 would not be subject to jurisdiction under CWA Section 404, by definition, as they;
- are not natural ponds, impoundments of waters, or waters as defined in paragraphs (a)(1)-(7) of the CWA 33 CFR 328.3;
- are not TNWs or wetlands adjacent to a TNW, nor are they non-navigable tributaries of a TNW with relatively permanent flow or wetlands that abut such tributaries; and
- as clarified under 33 CFR 323.2 (b), The term *lake* ... As used in this regulation, the term does not include artificial lakes or ponds created by excavating and/or diking dry land to collect and retain water for such purposes as stock watering, irrigation, settling basins, cooling, and rice growing

Ditch 1

Based on the historic aerial photography, Ditch 1 was excavated along a railway in an upland area to convey surface hydrology from the adjacent hillsides and was mostly dry at the time of evaluation. The linear nature of the channel indicates the ditch was a man-made feature that was constructed in an upland area. Current site conditions indicate that the ditches are ephemeral and does not carry relatively permanent flow. Under the 2007 guidance:

Drainage ditches would not be subject to jurisdiction under CWA Section 404 by definition, as such features;

- are not tributaries of waters, impoundment of waters, or are waters as defined in paragraphs (a)(1) through (7) of the CWA 33 CFR 328.3;
- are not TNW's or wetlands adjacent to a TNW, nor are they non-navigable tributaries of a TNW with relatively permanent flow or wetlands that abut such tributaries; and
- in accordance with the *Rapanos* guidance, ditches (including roadside ditches) excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water, are generally not considered to be waters of the United States.

Generally, under the guidance, features that do not have the physical characteristics of a tributary or a wetland and only convey sporadic flow with a speculative connection to a TNW are not considered waters of the United States.

CONCLUSIONS

To summarize the delineation, eight wetlands, three ponds, and a ditch were identified and delineated within the survey area. A summary of the jurisdictional assessment is presented in **Table 2** under the 1986 waters of the United States definition and the *Rapanos* decision.

Under the **1986 waters of the United States definitions** and the *Rapanos* decision, **Wetlands 1 through 8**, and **Ponds 1 through 3** would be considered isolated and therefore would not be regulated under CWA Section 404. **Ditch 1** was not a replacement of, nor connected two waters of the United States, as such **Ditch 1** would not be regulated under CWA Section 404.

This delineation is based on professional experience in the approved methodology and from experience with the USACE Fort Worth District regulators; however, this delineation does not constitute a jurisdictional determination of waters of the United States. This delineation has been based on the professional experience of IES staff and our

interpretation of USACE regulations at 33 CFR 328.3, the joint USACE/USEPA guidance regarding the *Rapanos* and *Carabell* decisions and the Regulatory Guidance Letter (RGL) 08-02. While IES believes our delineation to be accurate, final authority to interpret the regulations lies solely with the USACE and USEPA. The USACE Headquarters in association with the USEPA often issue guidance that changes the interpretation of published regulations. USACE/USEPA guidance issued after the date of this report has the potential to invalidate the report conclusions and/or recommendations, which may create the need to reevaluate the report conclusions. IES has no regulatory authority, as such, proceeding based solely upon this report does not protect the Client from potential sanction or fines from the USACE/USEPA. The Client acknowledges that they have the opportunity to submit this report to the USACE for a preliminary jurisdictional determination for concurrence prior to proceeding with any work within aquatic features located on the survey area. If the Client elects not to do so, then the Client proceeds at their sole risk.

IES appreciates the opportunity to work with you and Pape Dawson on this project, and we hope we may be of assistance to you in the future. If you have any comments, questions, or concerns, please do not hesitate to contact us. We can be reached at 972-562-7672 or by email at skipp@intenvsol.com or rreinecke@intenvsol.com.

Sincerely,

Integrated Environmental Solutions, LLC.



Mr. Shae Kipp
Ecologist

Attachments

File ref: 04.289.041

ATTACHMENT A
Figures




Figure 1.
General Location Map

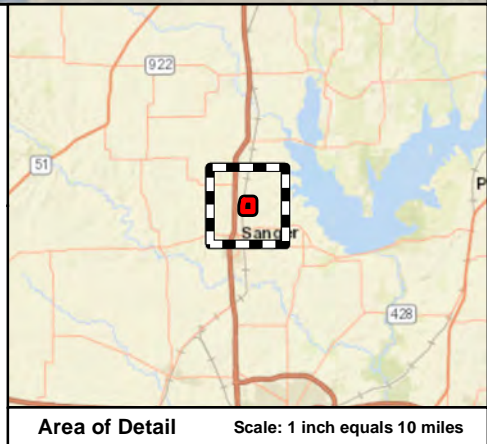
Stephens Townes Center
 City of Sanger
 Denton County, Texas

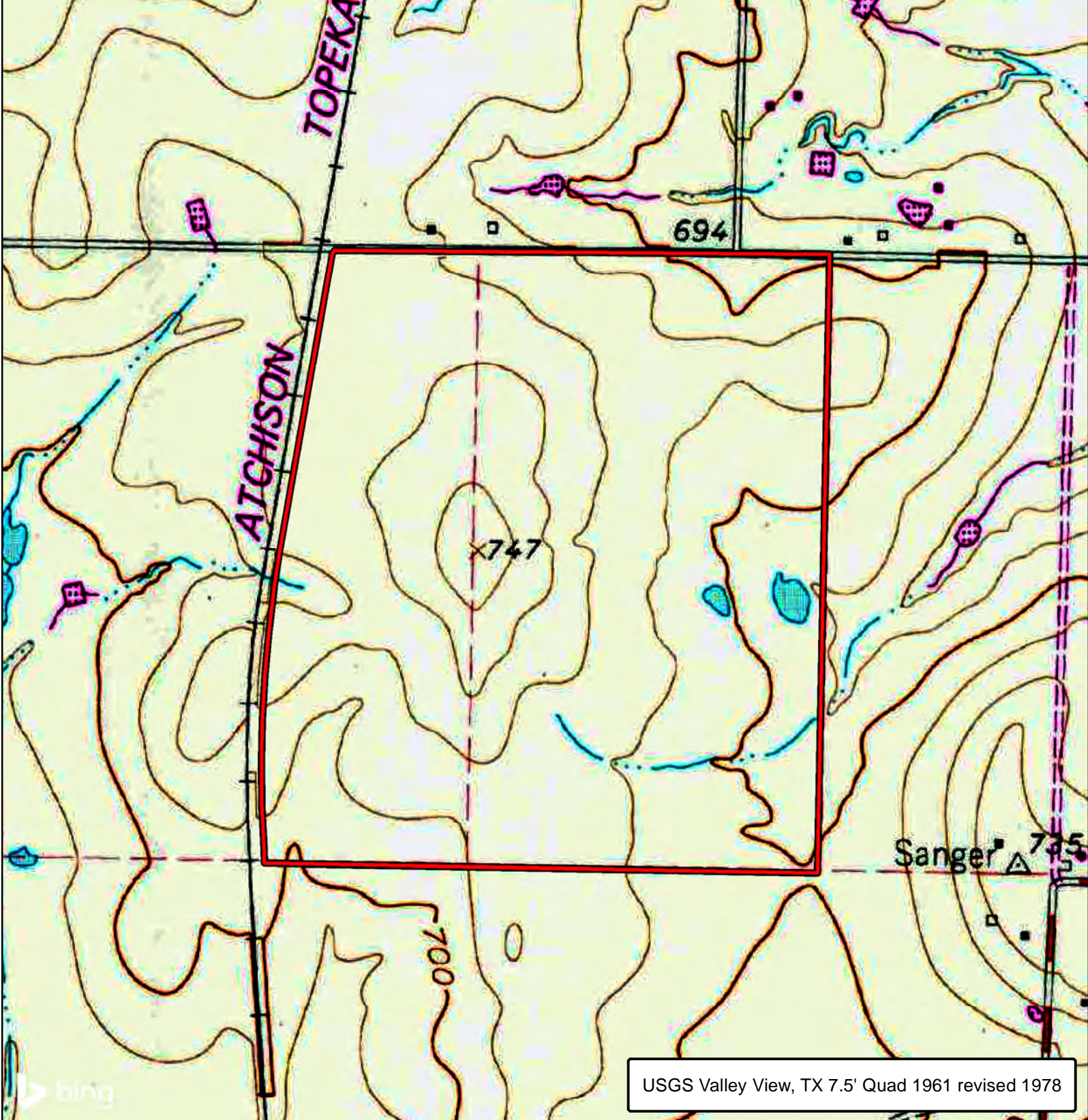
1 in = 2,500 feet

0 2,500 Feet

File Ref. 04.289.041
 Date: 12/13/2021

 Survey Area




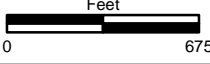


USGS Valley View, TX 7.5' Quad 1961 revised 1978

Figure 2A.
Topographic Setting

Stephens Townes Center
City of Sanger
Denton County, Texas

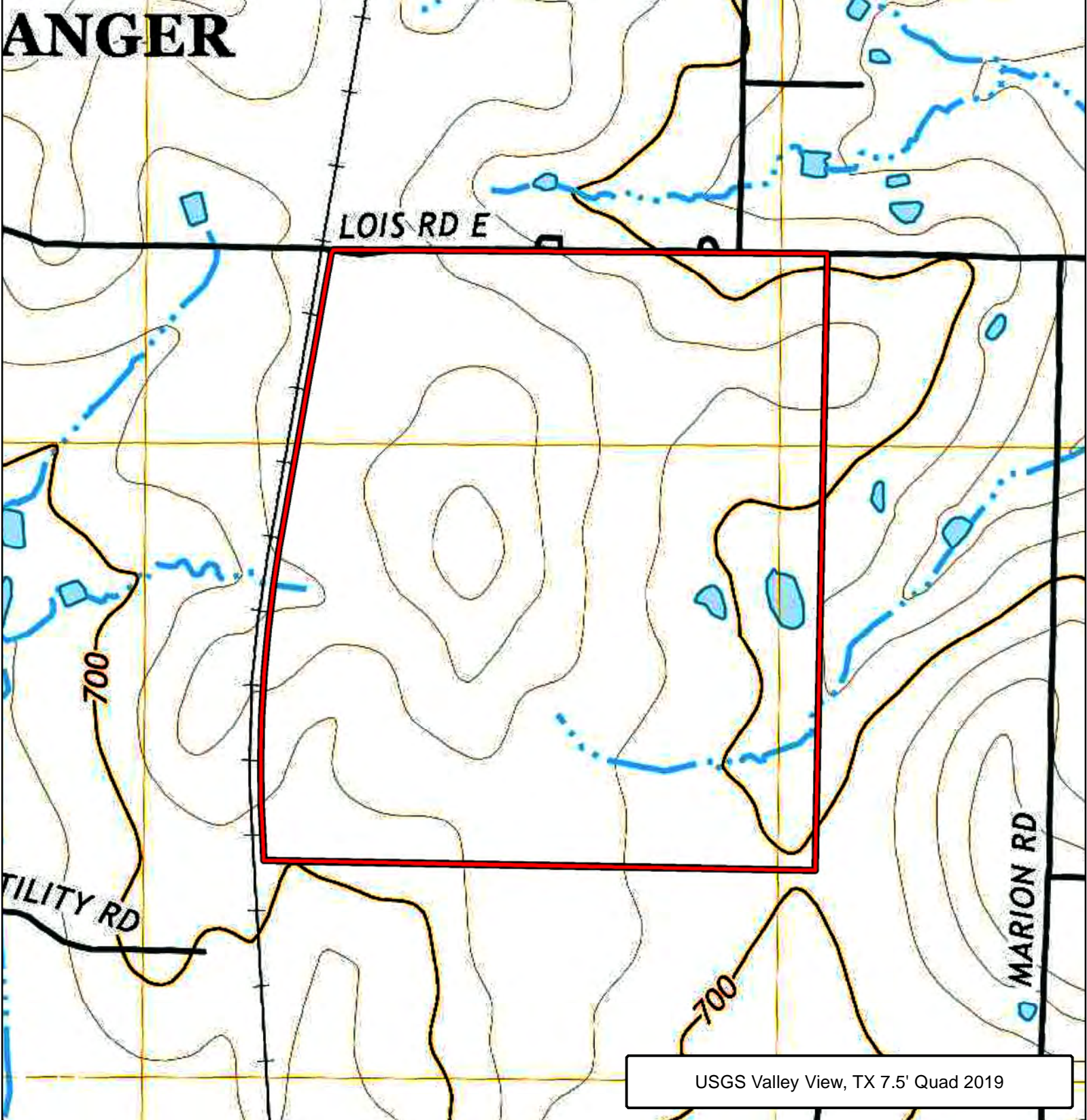
 Survey Area

1 in = 675 feet 



File Ref. 04.289.041
Date: 12/13/2021

SANGER



USGS Valley View, TX 7.5' Quad 2019

Figure 2B.
Topographic Setting

Stephens Townes Center
City of Sanger
Denton County, Texas

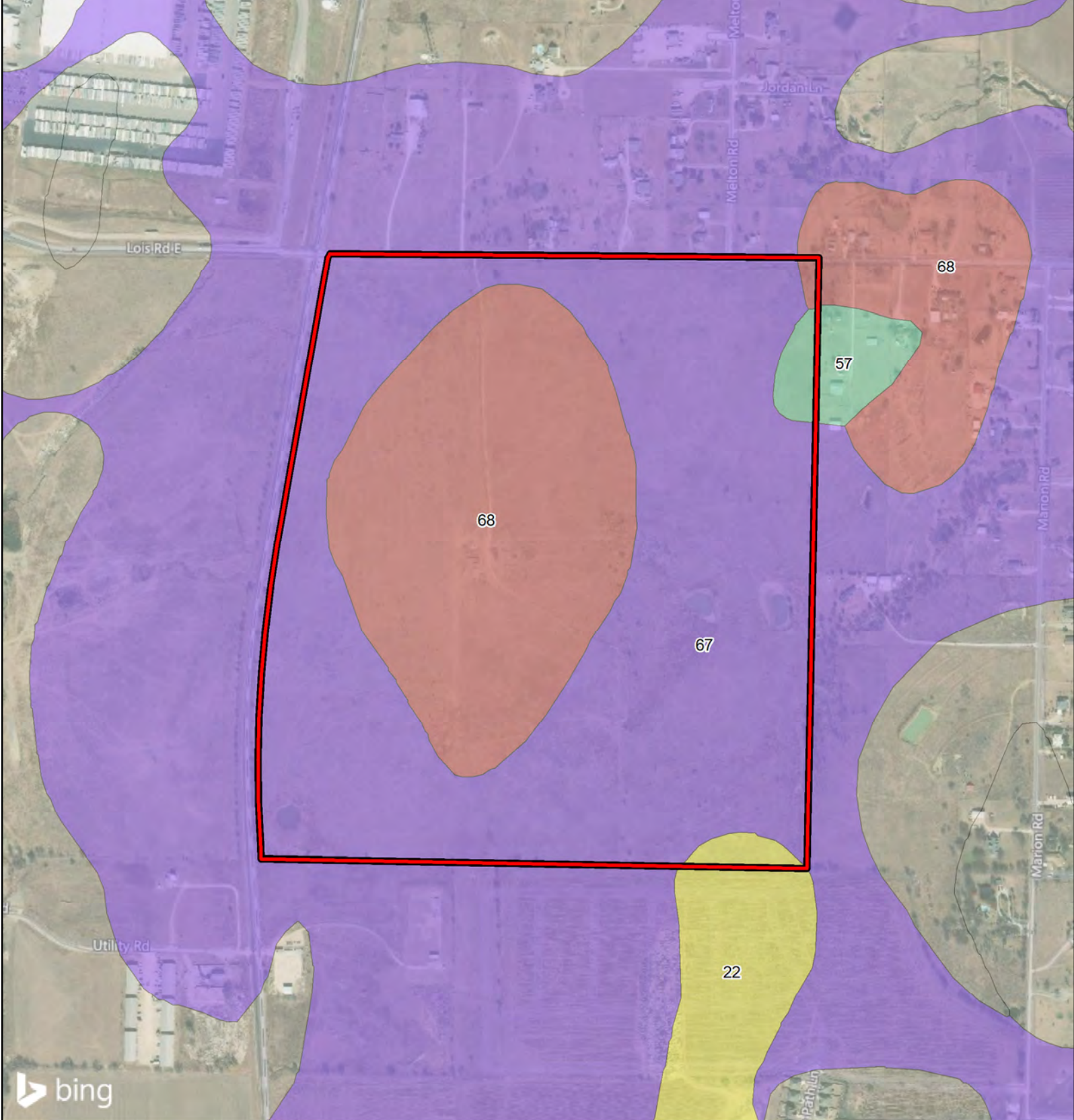
1 in = 675 feet

Feet
0 675

File Ref. 04.289.041
Date: 12/13/2021

 Survey Area





**Figure 3.
Soils Map**

Stephens Townes Center
City of Sanger
Denton County, Texas

- Survey Area
- Soil map units outside the survey area
- Soil Map Units**
- 22 - Burleson clay, 1 to 3 percent slopes
- 57 - Medlin-Sanger stony clay, 5 to 15 percent slopes
- 67 - Sanger clay, 1 to 3 percent slopes
- 68 - Sanger clay, 3 to 5 percent slopes

1 in = 675 feet

Feet

0 675



File Ref. 04.289.041
Date: 12/14/2021

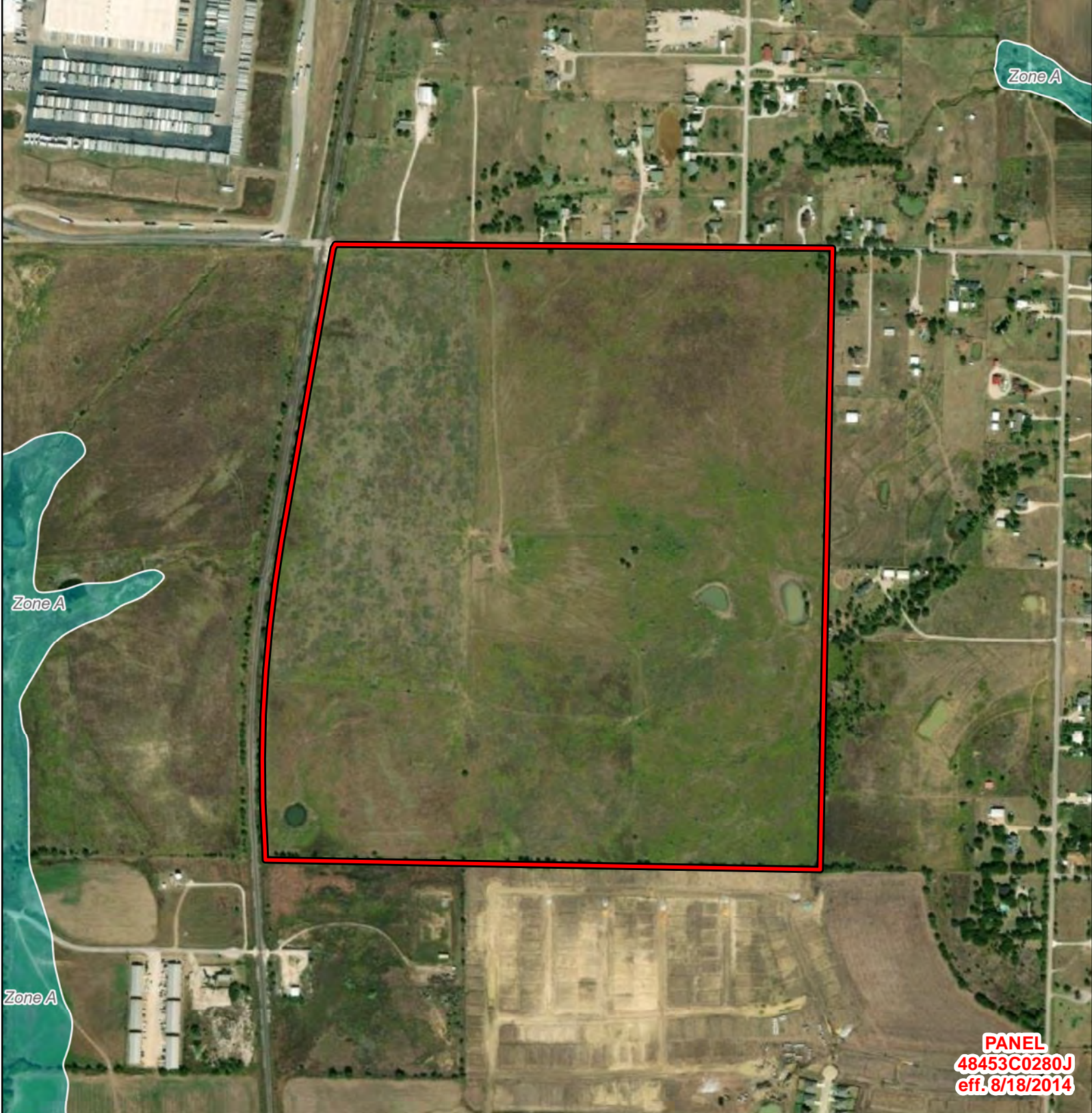



Figure 4.
Federal Emergency
Management Agency
Flood Insurance Rate Map

Stephens Townes Center
 City of Sanger
 Denton County, Texas






1 in = 675 feet
 Feet
 0 675



File Ref. 04.289.041
 Date: 12/13/2021

 Survey Area

FEMA FIRM Zone Descriptions

-  Zone X - Areas determined to be outside the 0.2% annual chance floodplain
-  Zone X - Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood
-  Zone A - Special Flood Hazard Areas subject to inundation by the 1% annual chance flood; No base flood elevations determined
-  Zone AE - Special Flood Hazard Areas subject to inundation by the 1% annual chance flood; Base flood elevations determined
-  Zone AE - Floodway areas in Zone AE

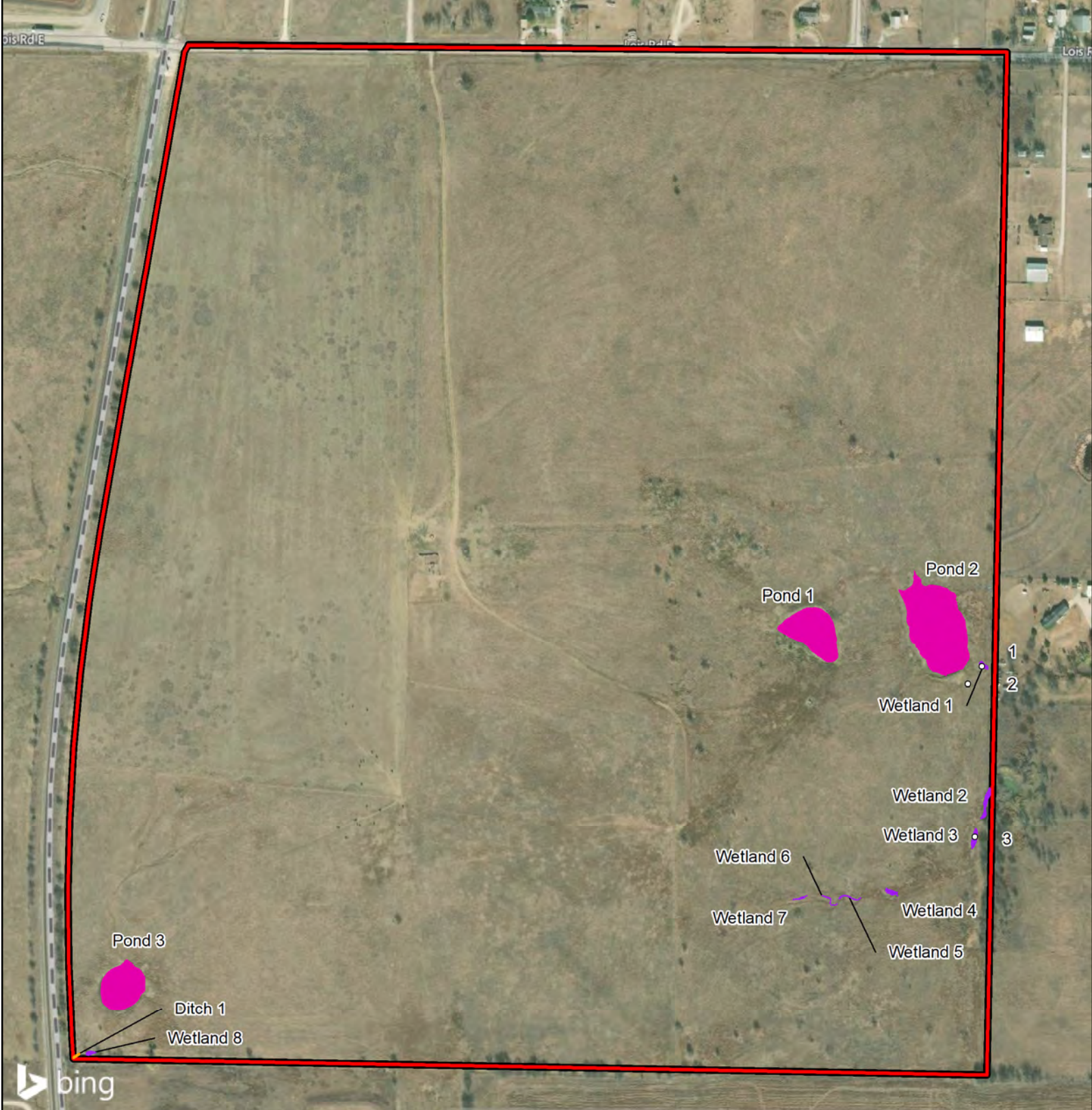


Figure 5.
Aquatic Features Identified
within the Survey Area

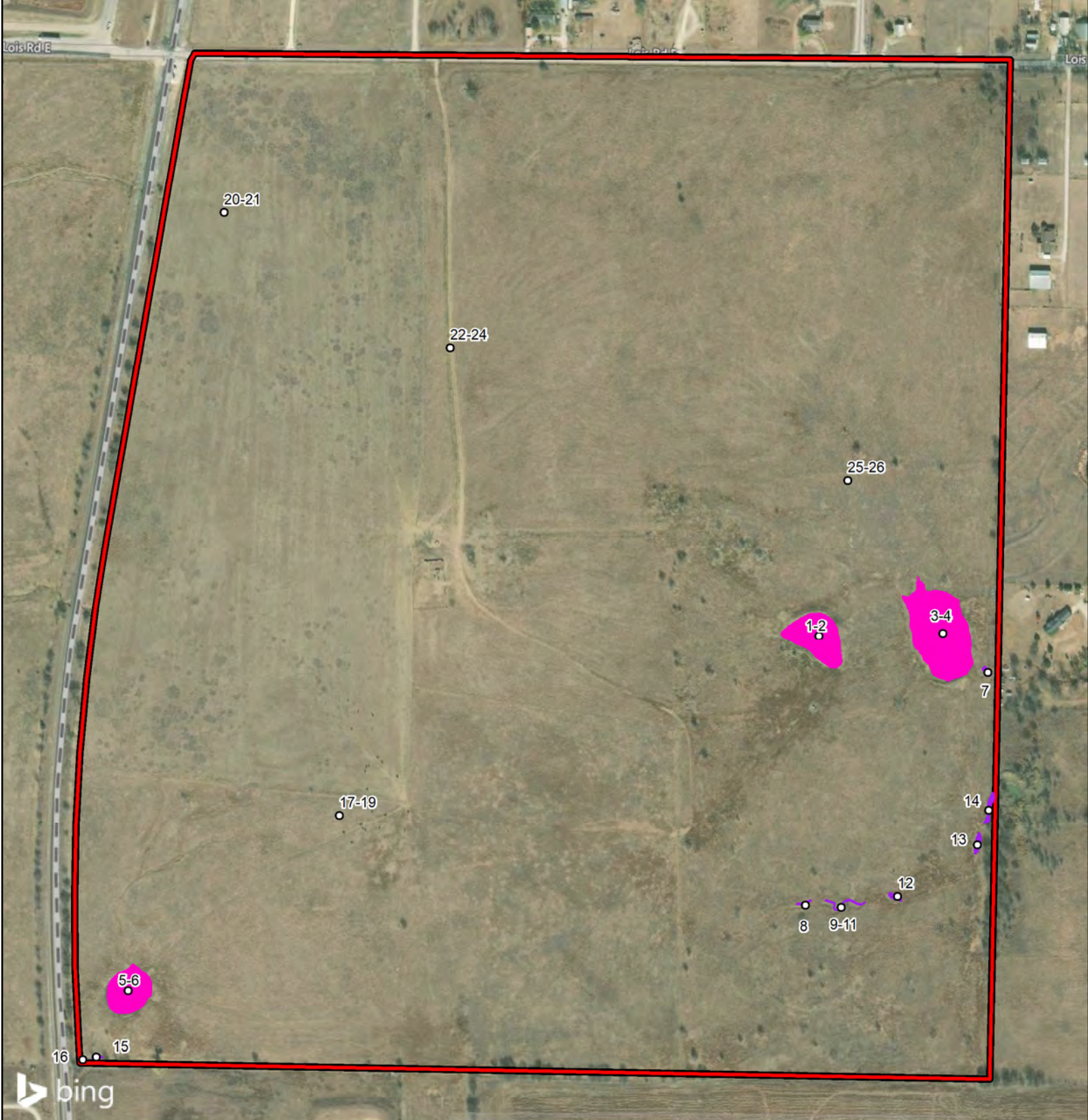
Stephens Townes Center
 City of Sanger
 Denton County, Texas



File Ref. 04.289.041
 Date: 12/16/2021

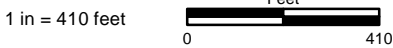
- Survey Area
- Wetland Determination Data Form
- Features that do not meet a definition of a water of the United States**
- Artificial Pond
- Ditch
- Wetland, Isolated

ATTACHMENT B
Site Photographs



Photograph Location Map

Stephen Townes Center
 City of Sanger
 Denton County, Texas



File Ref. 04.289.041
 Date: 12/16/2021

- Survey Area
- Photograph Location

Aquatic Features that do not meet a definition of a Water of the United States

- Artificial Pond
- Ditch
- Wetland, Isolated



Photograph 1



Photograph 2



Photograph 3



Photograph 4



Photograph 5



Photograph 6



Photograph 7



Photograph 8



Photograph 9



Photograph 10



Photograph 11



Photograph 12



Photograph 13



Photograph 14



Photograph 15



Photograph 16



Photograph 17



Photograph 18



Photograph 19



Photograph 20



Photograph 21



Photograph 22



Photograph 23



Photograph 24



Photograph 25



Photograph 26

ATTACHMENT C
Routine Wetland Determination Data Forms

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Stephens Towne Crossing City/County: Krum/ Denton County Sampling Date: 12/14/2021
 Applicant/Owner: Pape Dawson State: TX Sampling Point: 1
 Investigator(s): Mackenzie Lyon, Emily Palsa Section, Township, Range: ---
 Landform (hillslope, terrace, etc.): Toeslope Local relief (concave, convex, none): concave Slope %: 1
 Subregion (LRR): J Lat: 33.28715 N Long: -97.16097 W Datum: NAD 1983
 Soil Map Unit Name: Sanger clay, 1 to 3 percent slopes NWI Classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are vegetation, Soil, Or hydrology Significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are vegetation, Soil, Or hydrology Naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Is the Sampled Area within a wetland?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Remarks: <u>Vegitated seep below Pond #2 berm</u>					

VEGETATION – Use scientific names of plants.

Tree Stratum	Absolute % Coverage	Dominant Species?	Indicator Status	
1. ---				Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
2. _____				
3. _____				
4. _____				
	<u>0</u>	= Total Cover		
Sapling/Shrub Stratum (Plot Size: <u>15" radius</u>)				
1. ---				Prevalence Index Worksheet: Total % Cover of: _____ Multiply By: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
2. _____				
3. _____				
4. _____				
5. _____				
	<u>0</u>	= Total Cover		
Herb Stratum (Plot Size: <u>5" radius</u>)				
1. <u>Eleocharis palustris</u>	<u>85</u>	<u>Y</u>	<u>OBL</u>	Hydrophytic Vegetation Indicators: _____ 1 - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is > 50% _____ 3 - Prevalence Index is ≤ 3.0 ¹ _____ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) _____ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <u>Xanthium strumarium</u>	<u>5</u>	<u>N</u>	<u>FAC</u>	
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
	<u>90</u>	= Total Cover		
Woody Vine Stratum (Plot Size: <u>15" radius</u>)				
1. ---				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
2. _____				
	<u>0</u>	= Total Cover		
% Bare Ground in Herb Stratum <u>10</u>				
Remarks: _____				

SOILS

Sampling Point: 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features			Loc ²	Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹			
0-16	10YR 4/1	97	5YR 4/6	3	C	PL/M	Clay	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix

<p>Hydric Soil indicators: (Applicable to all LRRs, unless otherwise noted.)</p> <ul style="list-style-type: none"> <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) (LRR F) <input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H) <input type="checkbox"/> Depleted below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G, H) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F) 	<ul style="list-style-type: none"> <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input checked="" type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> High Plains Depressions (F16 (MLRA 72 & 73 of LRR H)) 	<p>Indicators for Problematic Hydric Soils³:</p> <ul style="list-style-type: none"> <input type="checkbox"/> 1 CM Muck (A9) (LRR I, J) <input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H) <input type="checkbox"/> Dark Surface (S7) (LRR G) <input type="checkbox"/> High Plains Depressions (F16) (LRR H outside of MLRA 72 & 73) <input type="checkbox"/> Reduced Vertic (F18) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks) <p>³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless distributed or problematic.</p>
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<p>Restrictive Layer (if present):</p> <p>Type: ---</p> <p>Depth (inches): ---</p>	<p>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>
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Remarks:

HYDROLOGY

<p>Wetland Hydrology Indicators:</p> <p>Primary indicators (minimum of one required; check all that apply)</p> <ul style="list-style-type: none"> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input checked="" type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water Stained Leaves (B9) 		<ul style="list-style-type: none"> <input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) (where not tilled) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Thin Muck Surface <input type="checkbox"/> Other (Explain in Remarks) 	<p>Secondary Indicators (minimum of two required)</p> <ul style="list-style-type: none"> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage patterns (B10) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) (where tilled) <input checked="" type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F)
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<p>Field Observations:</p> <p>Surface Water Present? Yes? <input type="checkbox"/> No? <input checked="" type="checkbox"/></p> <p>Water Table Present? Yes? <input checked="" type="checkbox"/> No? <input type="checkbox"/></p> <p>Saturation Present? (includes capillary fringe) Yes? <input checked="" type="checkbox"/> No? <input type="checkbox"/></p> <p>Depth (inches): ---</p> <p>Depth (inches): 0</p> <p>Depth (inches): 0</p>	<p>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Stephens Towne Crossing City/County: Krum/ Denton County Sampling Date: 12/14/2021
 Applicant/Owner: Pape Dawson State: TX Sampling Point: 2
 Investigator(s): Mackenzie Lyon, Emily Palsa Section, Township, Range: ---
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope %: 5%
 Subregion (LRR): J Lat: 33.38700 N Long: -97.16111 W Datum: NAD 1983
 Soil Map Unit Name: Sanger clay, 1 to 3 percent slopes NWI Classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are vegetation, Soil, Or hydrology Significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are vegetation, Soil, Or hydrology Naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Is the Sampled Area within a wetland?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Wetland Hydrology Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Remarks: <u>Vegitated hillslope in upland setting adjacent to Pond 2.</u>					

VEGETATION – Use scientific names of plants.

Tree Stratum	Absolute % Coverage	Dominant Species?	Indicator Status	
(Plot Size: <u>30" radius</u>)				
1. <u>---</u>				
2. _____				
3. _____				
4. _____				
	<u>0</u>	= Total Cover		
Dominance Test worksheet:				
Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-):				<u>0</u> (A)
Total Number of Dominant Species Across All Strata:				<u>1</u> (B)
Percent of Dominant Species That Are OBL, FACW, or FAC:				<u>0%</u> (A/B)
Sapling/Shrub Stratum (Plot Size: <u>15" radius</u>)				
1. <u>---</u>				
2. _____				
3. _____				
4. _____				
5. _____				
	<u>0</u>	= Total Cover		
Prevalence Index Worksheet:				
Total % Cover of:		Multiply By:		
OBL species	_____	x 1 =	_____	
FACW species	_____	x 2 =	_____	
FAC species	_____	x 3 =	_____	
FACU species	_____	x 4 =	_____	
UPL species	_____	x 5 =	_____	
Column Totals:	_____ (A)		_____ (B)	
Prevalence Index = B/A = _____				
Herb Stratum (Plot Size: <u>5" radius</u>)				
1. <u><i>Cynodon dactylon</i></u>	<u>70</u>	<u>Y</u>	<u>FACU</u>	
2. <u><i>Amphichyris dracunculoides</i></u>	<u>6</u>	<u>N</u>	<u>FACU</u>	
3. <u><i>Achilla ptarmica</i></u>	<u>2</u>	<u>N</u>	<u>FACU</u>	
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
	<u>78</u>	= Total Cover		
Hydrophytic Vegetation Indicators:				
_____ 1 - Rapid Test for Hydrophytic Vegetation				
_____ 2 - Dominance Test is > 50%				
_____ 3 - Prevalence Index is ≤ 3.0 ¹				
_____ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)				
_____ Problematic Hydrophytic Vegetation ¹ (Explain)				
¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.				
Woody Vine Stratum (Plot Size: <u>15" radius</u>)				
1. <u>---</u>				
2. _____				
	<u>0</u>	= Total Cover		
Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>				
% Bare Ground in Herb Stratum <u>12%</u>				
Remarks: _____				

SOILS

Sampling Point: 2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features			Loc ²	Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹			
0-16	10YR 3/2	100					Clay	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix

<p>Hydric Soil indicators: (Applicable to all LRRs, unless otherwise noted.)</p> <ul style="list-style-type: none"> <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) (LRR F) <input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H) <input type="checkbox"/> Depleted below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G, H) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F) 	<ul style="list-style-type: none"> <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> High Plains Depressions (F16 (MLRA 72 & 73 of LRR H) 	<p>Indicators for Problematic Hydric Soils³:</p> <ul style="list-style-type: none"> <input type="checkbox"/> 1 CM Muck (A9) (LRR I, J) <input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H) <input type="checkbox"/> Dark Surface (S7) (LRR G) <input type="checkbox"/> High Plains Depressions (F16) (LRR H outside of MLRA 72 & 73) <input type="checkbox"/> Reduced Vertic (F18) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks) <p>³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless distributed or problematic.</p>
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<p>Restrictive Layer (if present):</p> <p>Type: ---</p> <p>Depth (inches): ---</p>	<p>Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p>
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Remarks:

HYDROLOGY

<p>Wetland Hydrology Indicators:</p> <p>Primary indicators (minimum of one required; check all that apply)</p> <ul style="list-style-type: none"> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water Stained Leaves (B9) <input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) (where not tilled) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Thin Muck Surface <input type="checkbox"/> Other (Explain in Remarks) 		<p>Secondary Indicators (minimum of two required)</p> <ul style="list-style-type: none"> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage patterns (B10) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) (where tilled) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F)
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<p>Field Observations:</p> <p>Surface Water Present? Yes? <input type="checkbox"/> No? <input checked="" type="checkbox"/> Depth (inches): ---</p> <p>Water Table Present? Yes? <input type="checkbox"/> No? <input checked="" type="checkbox"/> Depth (inches): ---</p> <p>Saturation Present? (includes capillary fringe) Yes? <input type="checkbox"/> No? <input checked="" type="checkbox"/> Depth (inches): ---</p>	<p>Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Stephens Towne Crossing City/County: Krum/ Denton County Sampling Date: 12/14/2021
 Applicant/Owner: Pape Dawson State: TX Sampling Point: 3
 Investigator(s): Mackenzie Lyon, Emily Palsa Section, Township, Range: ---
 Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): Concave Slope %: 0-1%
 Subregion (LRR): J Lat: 33.38569 N Long: -97.16106 W Datum: NAD 1983
 Soil Map Unit Name: Sanger clay, 1 to 3 percent slopes NWI Classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are vegetation, Soil, Or hydrology Significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are vegetation, Soil, Or hydrology Naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Is the Sampled Area within a wetland?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Remarks: <u>Vegitate swale in fielded setting</u>					

VEGETATION – Use scientific names of plants.

Tree Stratum	Absolute % Coverage	Dominant Species?	Indicator Status		
(Plot Size: <u>30" radius</u>)					
1. <u>---</u>					
2. _____					
3. _____					
4. _____					
	<u>0</u>	= Total Cover			
Dominance Test worksheet:					
				Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-):	<u>1</u> (A)
				Total Number of Dominant Species Across All Strata:	<u>1</u> (B)
				Percent of Dominant Species That Are OBL, FACW, or FAC:	<u>100%</u> (A/B)
Sapling/Shrub Stratum (Plot Size: <u>15" radius</u>)					
1. <u>---</u>					
2. _____					
3. _____					
4. _____					
5. _____					
	<u>0</u>	= Total Cover			
Prevalence Index Worksheet:					
		Total % Cover of:	Multiply By:		
OBL species		x 1 =	_____		
FACW species		x 2 =	_____		
FAC species		x 3 =	_____		
FACU species		x 4 =	_____		
UPL species		x 5 =	_____		
Column Totals:		(A)		(B)	
Prevalence Index = B/A= _____					
Herb Stratum (Plot Size: <u>5" radius</u>)					
1. <u>Xanthium strumarium</u>	<u>40</u>	<u>Y</u>	<u>FAC</u>		
2. <u>Amphichyris dracunculoides</u>	<u>2</u>	<u>N</u>	<u>FACU</u>		
3. <u>Cynodon dactylon</u>	<u>2</u>	<u>N</u>	<u>FACU</u>		
4. _____					
5. _____					
6. _____					
7. _____					
8. _____					
9. _____					
10. _____					
	<u>44</u>	= Total Cover			
Hydrophytic Vegetation Indicators:					
_____ 1 - Rapid Test for Hydrophytic Vegetation					
<u>X</u> 2 - Dominance Test is > 50%					
_____ 3 - Prevalence Index is ≤ 3.0 ¹					
_____ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)					
_____ Problematic Hydrophytic Vegetation ¹ (Explain)					
¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.					
Woody Vine Stratum (Plot Size: <u>15" radius</u>)					
1. <u>---</u>					
2. _____					
	<u>0</u>	= Total Cover			
Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>					
% Bare Ground in Herb Stratum <u>56%</u>					
Remarks:					

SOILS

Sampling Point: 3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features			Loc ²	Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹			
0-16	10YR 4/2	98	5YR 4/6	2	C	PL/M	Clay	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix

<p>Hydric Soil indicators: (Applicable to all LRRs, unless otherwise noted.)</p> <ul style="list-style-type: none"> <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) (LRR F) <input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H) <input type="checkbox"/> Depleted below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G, H) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F) 	<ul style="list-style-type: none"> <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input checked="" type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> High Plains Depressions (F16 (MLRA 72 & 73 of LRR H)) 	<p>Indicators for Problematic Hydric Soils³:</p> <ul style="list-style-type: none"> <input type="checkbox"/> 1 CM Muck (A9) (LRR I, J) <input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H) <input type="checkbox"/> Dark Surface (S7) (LRR G) <input type="checkbox"/> High Plains Depressions (F16) (LRR H outside of MLRA 72 & 73) <input type="checkbox"/> Reduced Vertic (F18) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks) <p>³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless distributed or problematic.</p>
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<p>Restrictive Layer (if present):</p> <p>Type: ---</p> <p>Depth (inches): ---</p>	<p>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>
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Remarks:

HYDROLOGY

<p>Wetland Hydrology Indicators:</p> <p>Primary indicators (minimum of one required; check all that apply)</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input checked="" type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water Stained Leaves (B9) <input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) (where not tilled) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Thin Muck Surface <input type="checkbox"/> Other (Explain in Remarks) 		<p>Secondary Indicators (minimum of two required)</p> <ul style="list-style-type: none"> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage patterns (B10) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) (where tilled) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F)
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<p>Field Observations:</p> <p>Surface Water Present? Yes? <input checked="" type="checkbox"/> No? <input type="checkbox"/> Depth (inches): <u>1</u></p> <p>Water Table Present? Yes? <input checked="" type="checkbox"/> No? <input type="checkbox"/> Depth (inches): <u>0</u></p> <p>Saturation Present? (includes capillary fringe) Yes? <input checked="" type="checkbox"/> No? <input type="checkbox"/> Depth (inches): <u>0</u></p>	<p>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

ATTACHMENT D
Historic Aerial Photographs



Stephens Townes Center

225 Lois Rd E, Sanger, TX 76266

Sanger, TX 76266

Inquiry Number: 6786612.1

December 13, 2021

The EDR Aerial Photo Decade Package



6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Aerial Photo Decade Package

12/13/21

Site Name:

Stephens Townes Center
225 Lois Rd E, Sanger, TX 762
Sanger, TX 76266
EDR Inquiry # 6786612.1

Client Name:

Integrated Env. Solutions, Inc.
610 Elm St Suite 300
McKinney, TX 75069
Contact: Emily Palsa



Environmental Data Resources, Inc. (EDR) Aerial Photo Decade Package is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's professional researchers provide digitally reproduced historical aerial photographs, and when available, provide one photo per decade.

Search Results:

<u>Year</u>	<u>Scale</u>	<u>Details</u>	<u>Source</u>
2016	1"=500'	Flight Year: 2016	USDA/NAIP
2012	1"=500'	Flight Year: 2012	USDA/NAIP
2006	1"=500'	Flight Year: 2006	USDA/NAIP
1990	1"=500'	Flight Date: January 29, 1990	NAPP
1981	1"=500'	Flight Date: October 27, 1981	USDA
1972	1"=500'	Flight Date: February 21, 1972	USDA
1951	1"=500'	Flight Date: January 19, 1951	USDA
1942	1"=500'	Flight Date: April 01, 1942	USDA

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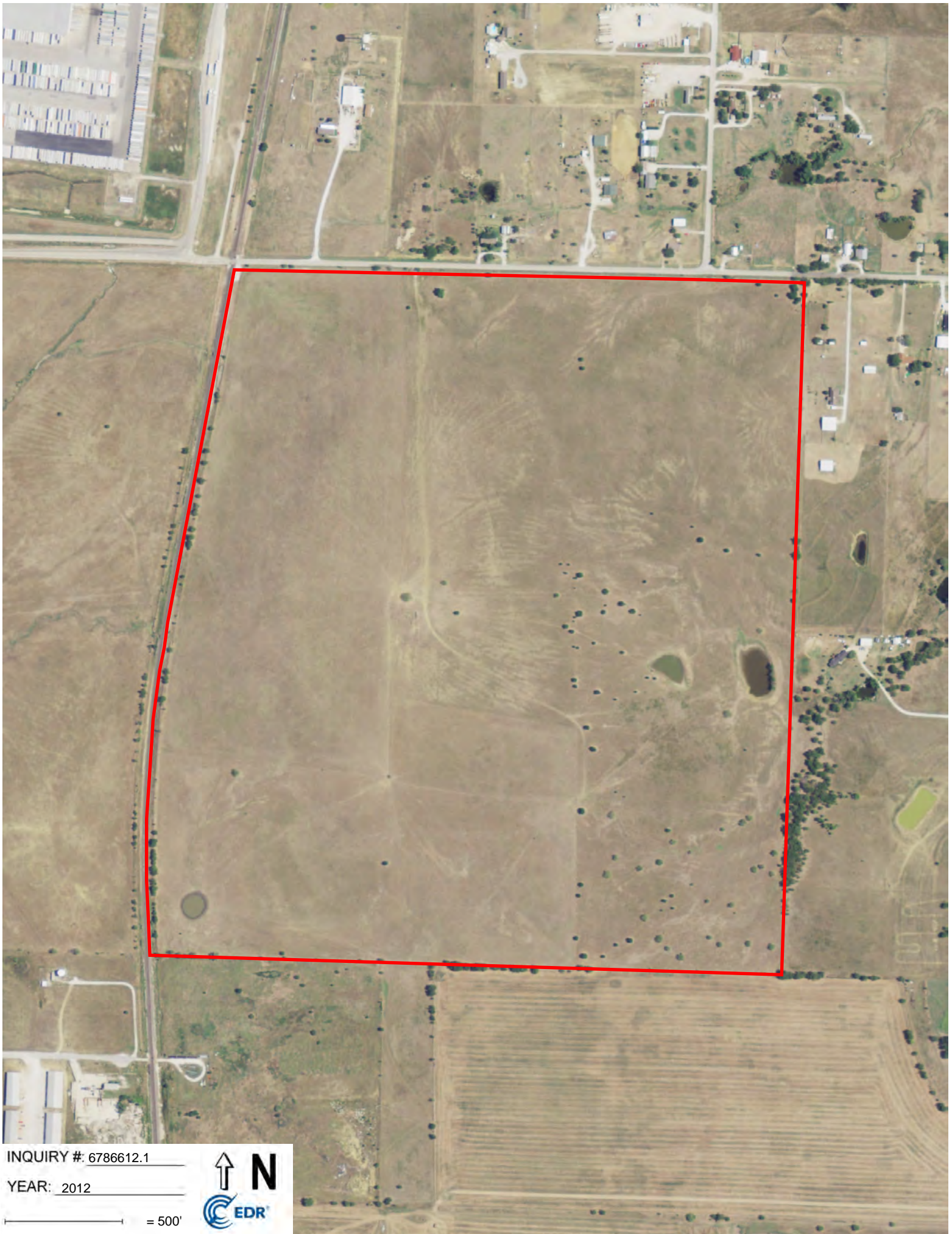


INQUIRY #: 6786612.1

YEAR: 2016

— = 500'





INQUIRY #: 6786612.1

YEAR: 2012

— = 500'





INQUIRY #: 6786612.1

YEAR: 2006

— = 500'





INQUIRY #: 6786612.1

YEAR: 1990

— = 500'





INQUIRY #: 6786612.1

YEAR: 1981

— = 500'





INQUIRY #: 6786612.1

YEAR: 1972

— = 500'





INQUIRY #: 6786612.1

YEAR: 1951

— = 500'





INQUIRY #: 6786612.1

YEAR: 1942

— = 500'

