



Waters of the U.S. Delineation Report-Draft

FM 2931 from US 380 to FM 428
(CSJ 2979-01-011)

Texas Department of Transportation, Dallas District
March 2022

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1.0 Introduction

The Texas Department of Transportation (TxDOT) conducted a water features delineation for a proposed road project on Farm-to-Market (FM) 2931 from United States (US) Highway 380 to FM 428 in Denton County, Texas (CSJ 2979-01-011). The delineation was completed on November 9 and November 10, 2020.

The delineation was performed to evaluate the presence of jurisdictional water features and identify their boundaries within the project area. It is anticipated that this waters of the U.S. delineation report (WOTUS DR) will be used in support of the jurisdictional determination process for on-site aquatic resources. If it is determined that jurisdictional resources would be impacted, this WOTUS DR will also support applications for regulatory permits that might be required from the United States Army Corps of Engineers (USACE) for proposed construction activities.

Waterbodies were delineated according to USACE Regulatory Guidance Letter (RGL) 05-05 Ordinary High Water Mark (OHWM) Identification for non-tidal waters and the Mean High Tide (MHT) line for tidal waters. As required under Section 404 of the Clean Water Act (CWA), wetlands were delineated using the routine method described in the USACE 1987 Wetlands Delineation Manual (1987 Manual) and the USACE Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Great Plains Region (Version 2.0) (2010 Regional Supplement). Wetland types and boundaries were determined through initial map review, followed by fieldwork involving the examination of three (3) parameters: hydrology, vegetation, and soils. Delineation criteria and indicators for each of these parameters are outlined in the 1987 Manual and the 2010 Regional Supplement. The 2010 Regional Supplement presents wetland indicators, delineation guidance, and other information that is specific to the Great Plains Region, per the regional supplement. Wetlands were classified according to the Cowardin Classification System used for the United States Fish and Wildlife Service's (USFWS) National Wetlands Inventory (NWI).

This document contains the following three (3) attachments:

- Attachment 1 – Figures
- Attachment 2 – Wetland Determination Data Forms
- Attachment 3 – Historical Aerial Photography
- Attachment 3 – Site Photographs

2.0 Project Overview

The TxDOT Dallas District is proposing to widen FM 2931 from US 380 to FM 428 in Denton County, Texas. The FM 2931 reconstruction project includes widening approximately 6.37 miles of FM 2931 with a 1,300-foot transition north of FM 428/Spring Hill Road. The existing FM 2931 is a rural two-lane roadway with a right-of-way width of approximately 100 feet wide. The proposed FM 2931 would be reconstructed as a six-lane urban roadway section with a raised median and left-turn lanes in various locations. The proposed right-of-way would be approximately 130 feet wide, with the minimum and maximum right of way width ranging from 126 feet to 244 feet, respectively. Right of entry was not granted for approximately 4.5 acres of the proposed right of way.

Attachment 1 – Figures contains multiple sets of maps of the project area. **Figure 1** provides a vicinity map that depicts the location of the project area, **Figure 2** is an aerial overview map of the project area, and **Figure 3** is a 7.5-minute series United States Geological Survey (USGS) topographic overview map. **Figures 4-1** through **4-6** depict the NWI, **Figures 5-1** through **5-6** depict the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) soils units, and **Figure 6** shows the Federal Emergency Management Agency (FEMA) 100-year floodplains. **Figures 7-1** through **7-6** show a Light Detection and Ranging (LiDAR) map of the project area, and **Figures 8-1** through **8-9** illustrate the waterbodies and wetlands delineated within the project area.

3.0 Ecological Site Description

The project area is located within the Southwestern Prairies Cotton and Forage Region (LRR J) in the southern Great Plains and is more specifically located in Major Land Resource Area (MLRA) 84C (East Cross Timbers).

This MLRA is characterized by gently sloping to rolling uplands that are moderately dissected. Sandstone capped hills and ridges rise prominently above the surrounding landscape. This area is underlain by interbedded sandstones and shales in the Woodbine Formation of Cretaceous age. On this gently sloping to rolling landscape, the more resistant sandstones form ridges and hilltops and the more erodible sediments form side slopes, hillsides, and valleys (NRCS 2006).

The dominant soil orders in this MLRA are Alfisols, Entisols, and Mollisols. They are moderately deep or deep, medium textured to coarse textured, and moderately well drained to somewhat excessively drained. They have a thermic soil temperature regime, an ustic soil moisture regime, and smectitic, siliceous, or mixed mineralogy (NRCS 2006). The average annual precipitation in this area is 34 to 41 inches. Most of the rainfall occurs in spring and fall. The average annual temperature is 62 to 66 degrees F (17 to 19 degrees C) (NRCS 2006).

The project area, which is along the existing FM 2931 alignment with additional right of way proposed, consists primarily of upland forest dominated by post oak. The dominant trees include pecan (*Carya illinoensis*), eastern red cedar (*Juniperus virginiana*), post oak (*Quercus stellata*), American elm (*Ulmus americana*), cedar elm (*Ulmus crassifolia*), sugarberry (*Celtis laevigata*) and vines such as greenbrier (*Smilax bona-nox*) and southern dewberry (*Rubus trivialis*) are included in the woody understory. Bermudagrass (*Cynodon dactylon*), johnsongrass (*Sorghum halepense*), King Ranch bluestem (*Bothriochloa ischaemum*), Virginia wildrye (*Elymus virginicus*), and dallisgrass (*Paspalum dilatatum*) are the dominant herbaceous species.

4.0 Methods

4.1 Map and Database Review

The following information sources were considered and, if applicable, consulted prior to and during the field delineation to assist in the identification of potential waters of the U.S. within the project area.

4.1.1 USGS Topographic Maps

USGS topographic maps illustrate elevation contours, drainage patterns, and hydrography. The Aubrey and Little Elm, Texas, USGS Quad maps were reviewed to determine the likelihood of the project area containing jurisdictional waterbodies.

4.1.2 USFWS NWI Data

NWI data were reviewed as a contributing resource to help identify potential wetland features located within the project area.

4.1.3 NRCS Soil Survey Data

The USDA NRCS maintains an online Web Soil Survey database. The data provided in the Web Soil Survey provides a good basis for the soil textures and types one can expect to find at a particular delineation area. NRCS-mapped soil types within the project area were reviewed to determine which of the soils exhibit hydric characteristics. NRCS-mapped soil types are assigned a hydric indicator status of “hydric” or “non-hydric” by the National Technical Committee for Hydric Soils.

4.1.4 Aerial Photography

Aerial photography provides good insight to the state and function of land resources. Signs of inundation and vegetative signatures on aerial images indicate whether land might be functioning as a wetland or supporting a

stream system. Historic and current aerial photography was reviewed utilizing Google Earth prior to and during the field delineation, in order to further understand the nature of the project area.

4.1.5 FEMA FIRM

FEMA maintains flood insurance rate maps (FIRMs). The FIRM including the project area was reviewed to determine if the 100-year floodplain is mapped. The USACE utilizes the 100-year floodplain to assist in determining jurisdiction of aquatic features. FEMA FIRM data was reviewed to evaluate the location of any mapped floodplain in relation to aquatic resources located within the project area.

4.1.6 LiDAR

LiDAR is a remote sensing technique that measures spatial and temporal data. LiDAR information is provided by the Texas Natural Resources Information System (TNRIS) online database for each USGS Quad. LiDAR data was obtained for the Aubrey and Little Elm, Texas, USGS Quads to evaluate elevation changes throughout the project area.

4.2 Water Features Delineation

With respect to any non-tidal waterbodies located within the project area, biologists followed the methodology outlined in RGL 05-05. With respect to any tidal waterbodies located within the site, biologists identified the MHT line by observing changes in vegetation, drift deposits of shells and debris, and physical markings or characteristics along the shoreline that may indicate the general height reached by a rising tide.

Data collected for any waterbodies includes average water depth, average width per waterbody, length of linear segments within the project boundary, and water flow classification (i.e., tidal, non-tidal, ephemeral, intermittent, and/or perennial).

Any wetland delineation was conducted based on the 1987 Manual and the 2010 Regional Supplement: Great Plains Region (Version 2.0), as well as the three (3) parameters described within. The three-parameter approach requires investigation of hydrological characteristics, hydrophytic vegetation, and hydric soils at selected sample points within a project area. Sample points are located to ascertain upland/wetland boundaries and to record significant spatial changes in wetland plant communities. All three (3) indicator parameters must be met in order for the area to be classified as a wetland. See subsections on Hydrology, Vegetation, and Soils, below, for indicator-specific information.

Geospatial data was collected utilizing a Trimble GeoXT 2007 Series Global Positioning System (GPS) with sub-meter accuracy.

4.2.1 Hydrology

Wetland hydrology is characterized when, under normal circumstances, the surface is either inundated or the upper horizon(s) of the soil are saturated at a sufficient frequency and duration to create anaerobic conditions. Seasonal and long-term rainfall patterns, local geology and topography, soil type, local water table conditions, and drainage are factors that influence hydrology.

Wetland hydrology indicators include: oxidized rhizospheres along living roots, saturated soils, standing surface water, algal mat, aquatic fauna, high water table, iron deposits, sparsely vegetated concave surface, geomorphic position, moss trim lines, water-stained leaves, crawfish burrows, watermarks, drainage patterns, and surface soil cracks.

During the field survey, these indicators were used to determine if an area exhibited wetland hydrology.

4.2.2 Vegetation

In accordance with the procedure set forth in the 1987 Manual and the 2010 Regional Supplement: Great Plains Region (Version 2.0), the hydrophytic status of vegetation communities was determined by identifying dominant species and, if necessary, calculating a "Prevalence Index," as defined in the 1987 Manual.

Individual plant species were checked against the 2020 National Wetland Plant List (NWPL), and their regional wetland indicator status was determined. Species are classified as follows:

- Obligate Wetland (OBL) if they almost always occur in wetlands (>99 percent of the time)
- Facultative Wetland (FACW) if they usually occur in wetlands (67-99 percent of the time)
- Facultative (FAC) if they are equally likely to occur in wetlands and non-wetlands (34-66 percent of the time)
- Facultative Upland (FACU) if they usually occur in non-wetlands (67-99 percent of the time)
- Obligate Upland (UPL) if they almost always occur in non-wetlands (>99 percent of the time)
- A no indicator (NI) status is recorded for those species for which insufficient information is available to determine an indicator status.

Hydrophytic (wetland) vegetation is considered prevalent where more than 50% of the dominant species in a plant community have an indicator status of OBL, FACW, or FAC. However, in cases where the vegetation community does not meet this hydrophytic threshold, but indicators of hydric soils and wetlands hydrology are present, the prevalence index can be applied. Calculation of this index is based on consideration of both dominant and non-dominant plants in the vegetation community, whereby each indicator status category is given a numeric code and weighted by absolute percent cover. The prevalence index ranges from 1 to 5 and an index of 3.0 or less signifies that hydrophytic vegetation is present. In the current delineation, and as shown on the wetland determination data forms in **Attachment 2**, a prevalence index was calculated for each sample point's vegetation community, where warranted.

4.2.3 Soils

Hydric soils are defined as soils that are saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions in the upper horizons. Anaerobic conditions created by repeated or prolonged saturation or flooding result in permanent changes in soil color and chemistry. The changes in soil color are used to differentiate hydric from non-hydric soils.

At each sample point, in areas where the absence of inundation or heavy saturation allowed, a pit was excavated to a depth of at least 16 inches to reveal soil profiles and to determine whether or not positive indicators of hydric soils were present. Hydric soil indicators relate to color, structure, organic content, and the presence of reducing conditions. Color characteristics (Hue, Value, and Chroma) were recorded using Munsell® Charts.

5.0 Results

5.1 Map and Database Review

5.1.1 USGS Topographic Maps

The Aubrey and Little Elm, Texas USGS 7.5-minute topographic quadrangle maps show that one named stream and several tributaries cross the project area. Running Branch, an associated unnamed tributary, and an unnamed tributary to Little Elm Creek flow south-southeast through the project area. Four other unnamed tributaries to Pecan Creek (outside the project area) flow east-southeast through the project area. It should be noted that during field investigations there was no evidence of the unnamed tributary to Running Branch within

the project area. A storm sewer drain was noted in this location (see **Photo 5** in **Attachment 4**). Additionally, one unnamed tributary to Pecan Creek was identified as a swale with no discernable OHWM (see **Photo 30** in **Attachment 4**). The topography is rolling to strongly sloping with elevations between approximately 545 and 605 feet above mean sea level (AMSL) across the project area. Refer to **Figure 3** in **Attachment 1** for an illustration of topography in and surrounding the project area.

5.1.2 USFWS NWI Data

The table below summarizes the NWI features within the project area. Refer to **Figures 4-1** through **4-6** in **Attachment 1** for an illustration of the NWI features in and surrounding the project area.

Table 1: NWI Features

Classification Code	Code Description	Wetland Type
PFO1C	Palustrine Forested, Broad-Leaved Deciduous, Seasonally Flooded	Forested Wetland
R4SBC	Riverine, intermittent, streambed, seasonally flooded	Intermittent Stream

5.1.3 NRCS Soil Survey Data

The table below summarizes the soil units represented within the project area based on information collected from the Web Soil Survey database. Refer to **Figures 5-1** through **5-6** in **Attachment 1** for an illustration of the mapped soil units in and surrounding the project area.

Table 2: NRCS Soil Units

Soil Unit	Soil Unit Name	Description	Hydric/Non-hydric
8	Aubrey fine sandy loam, 2 to 5 percent slopes	Moderately deep, well drained, slowly permeable	Non-hydric
12	Birome fine sandy loam, 3 to 5 percent slopes	Moderately deep, well drained, slowly permeable	Non-hydric
20	Bunyan fine sandy loam, frequently flooded	Very deep, well drained, moderately permeable	Non-hydric
23	Callisburg fine sandy loam, 1 to 3 percent slopes	Deep, well drained, moderately slowly permeable soils on uplands	Non-hydric
24	Callisburg fine sandy loam, 3 to 5 percent slopes	Deep, well drained, moderately slowly permeable soils on uplands	Non-hydric
26	Crockett fine sandy loam, 0 to 1 percent slopes	Deep, moderately well drained, very slowly permeable	Non-hydric
27	Crockett fine sandy loam, 1 to 3 percent slopes	Deep, moderately well drained, very slowly permeable	Non-hydric

Table 2: NRCS Soil Units

Soil Unit	Soil Unit Name	Description	Hydric/Non-hydric
35	Gasil fine sandy loam, 1 to 3 percent slopes	Very deep, well drained, moderately permeable	Non-hydric
39	Gowen clay loam, occasionally flooded	Very deep, well drained, moderately permeable	Non-hydric
40	Gowen clay loam, frequently flooded	Very deep, well drained, moderately permeable	Non-hydric
50	Konsil fine sandy loam, 3 to 8 percent slopes	Very deep, well drained, moderately permeable upland soils	Non-hydric
51	Konsil fine sandy loam, 3 to 8 percent slopes	Very deep, well drained, moderately permeable upland soils	Non-hydric
59	Navo clay loam, 0 to 1 percent slopes	Deep, moderately well drained, very slowly permeable	Non-hydric
60	Navo clay loam, 1 to 3 percent slopes	Deep, moderately well drained, very slowly permeable	Non-hydric
72	Silstid loamy fine sand, 1 to 5 percent slopes	Very deep, well drained, moderately permeable	Non-hydric
83	Wilson clay loam, 0 to 1 percent slopes	Very deep, moderately well drained, very slowly permeable	Non-hydric

5.1.4 Aerial Photography

Historic aerial imagery for the project area and surrounding areas was evaluated using images provided by Google Earth. The table below summarizes observations for the project area for each year reviewed. **Attachment 3** contains copies of the historic aerial photographs reviewed for the project area.

Table 3: Historic Aerial Photography Observations

Year	Observations
2005	This aerial photograph reflects the general rural nature of the area. Multiple riparian corridors indicative of stream crossings are apparent in the project area. An apparent mining site with a large pond/impoundment is visible on the southwest corner of the Fishtrap Road/FM 2931 intersection. Drainage patterns and potential wetland signatures are noticeable with saturated soils and a contrast in vegetation signatures and can be seen at the locations of wetlands (W-1, W-2, and W-3) identified in the project area.
2015	No additional changes are visible within the project area.

Year	Observations
2018	Large areas of land have been cleared for residential development and signatures of wetlands (W-1, W-2, and W-3) identified in the project area are no longer visible. The large pond/impoundment at the mining site identified in the 2005 historic aerial has been filled in and reclamation of the site has begun.
2019	Land clearing has occurred east of FM 2931 on the south side of IS-2 (Unnamed Tributary to Pecan Creek) for a residential subdivision. No other notable changes within the project area are visible.

5.1.5 FEMA FIRM

A review of FEMA FIRMs indicated that portions of the project area associated with streams are within the 100-year floodplain (FEMA FIRM 48121C effective 4/18/2011). These areas include Running Branch and two tributaries to Pecan Creek. Refer to **Figure 6** in **Attachment 1** for an illustration of the FEMA FIRM data within and surrounding the project area.

5.1.6 LiDAR

A review of LiDAR data indicated that the project area is sloping to the south-southeast with the highest elevations found in the northern end of the project near FM 428. Refer to **Figures 7-1** through **7-6** in **Attachment 1** for an illustration of LiDAR data within the project area.

5.2 Water Features Delineation

The table below summarizes the waterbodies/wetlands identified within the project area. Refer to **Figures 8-1** through **8-9** in **Attachment 1** for a depiction of the boundaries of each waterbody/wetland feature, as well as the location within the project area where sample point data were collected. Refer to **Attachment 2 – Wetland Determination Data Forms**, for the completed wetland determination data forms for the project. Refer to **Attachment 4 – Site Photographs**, for one or more photographs of each waterbody/wetland feature observed within the project area.

Table 4: Summary of Waterbody/Wetland Features

Waterbody or Wetland Number	Name	Type	Latitude, Longitude	Acres within project area (all waterbodies and wetlands)	Linear feet within project area (waterbodies only)	Potentially Jurisdictional (Section 404)?	Potentially Navigable (Section 10)?
1	DD-1	Drainage Ditch	33.225237, -96.965127	0.02	54	No	No
2	Running Branch	Perennial Stream	33.247972, -96.956130	0.11	393	Yes	No
3	W-1	Palustrine Emergent Wetland	33.247923, -96.944654	0.04	N/A	Yes	No

Table 4: Summary of Waterbody/Wetland Features

Waterbody or Wetland Number	Name	Type	Latitude, Longitude	Acres within project area (all waterbodies and wetlands)	Linear feet within project area (waterbodies only)	Potentially Jurisdictional (Section 404)?	Potentially Navigable (Section 10)?
4	W-2	Palustrine Emergent Wetland	33.248051, -96.950731	0.02	N/A	Yes	No
5	ES-1	Ephemeral Stream	33.288120, -96.937474	0.02	78	Yes	No
6	W-3	Palustrine Emergent Wetland	33.247821, -96.950770	0.06	N/A	Yes	No
7	IS-1	Intermittent Stream	33.275697, -96.938173	0.10	330	Yes	No
8	OW-1	Pond/ Impoundment	33.254861, -96.940661	<0.01	N/A	Yes	No
9	IS-2	Intermittent Stream	33.262860, -96.940521	0.10	285	Yes	No
10	IS-3	Intermittent Stream	33.255662, -94.680873	0.08	361	Yes	No
11	PS-1	Perennial Stream	33.294342, -96.937132	0.20	417	Yes	No
Total				0.75	1,918		

5.2.1 Hydrology

Normal circumstances were present within the project area. The table below summarizes wetland hydrological indicators identified within the project area. Refer to the wetland determination data forms in **Attachment 2** to see the specific hydrology recorded at each sample point.

Table 5: Wetland Hydrological Indicators

Wetland Type	Sample Point Name(s)	Primary Wetland Hydrological Indicators	Secondary Wetland Hydrological Indicators
Palustrine Emergent Wetland	SP10, SP12, SP14	Surface Water (A1); Algal Mat or Crust (B4); Oxidized Rhizospheres along Living Roots (C3)	Drainage Patterns (B10)

5.2.2 Vegetation

Normal circumstances were present within the project area. Representative dominant taxa for each distinct habitat type encountered within the project area are listed in the tables below. Indicator status for each species was obtained from the 2020 NWPL.

Table 6: Palustrine Emergent Wetland Dominant Plant Species

Strata	Scientific Name	Common Name	NWPL Classification
Sapling/Shrub	<i>Salix nigra</i>	Black Willow	OBL
Herb	<i>Cynodon dactylon</i>	Bermudagrass	FACU
Herb	<i>Eleocharis montevidensis</i>	Sand Spikerush	FACW

Table 7: Upland Dominant Plant Species

Strata	Scientific Name	Common Name	NWPL Classification
Tree	<i>Ulmus americana</i>	American Elm	FAC
Tree	<i>Carya illinoensis</i>	Pecan	FAC
Tree	<i>Populus deltoides</i>	Eastern Cottonwood	FAC
Tree	<i>Ulmus crassifolia</i>	Cedar Elm	FAC
Tree	<i>Quercus stellata</i>	Post Oak	FACU
Tree	<i>Celtis laevigata</i>	Sugarberry	FAC
Sapling/Shrub	<i>Ulmus rubra</i>	Slippery Elm	FACU
Sapling/Shrub	<i>Morus alba</i>	White Mulberry	FACU
Sapling/Shrub	<i>Celtis laevigata</i>	Sugarberry	FAC
Sapling/Shrub	<i>Ulmus crassifolia</i>	Cedar Elm	FAC
Sapling/Shrub	<i>Sambucus canadensis</i>	Elderberry	UPL
Sapling/Shrub	<i>Quercus falcata</i>	Southern Red Oak	FACU

Strata	Scientific Name	Common Name	NWPL Classification
Sapling/Shrub	<i>Gleditsia triacanthos</i>	Honeylocust	FACU
Sapling/Shrub	<i>Platanus occidentalis</i>	American Sycamore	FAC
Sapling/Shrub	<i>Ulmus americana</i>	American Elm	FAC
Herb	<i>Chasmanthium latifolium</i>	Indian Woodoats	FACU
Herb	<i>Cynodon dactylon</i>	Bermudagrass	FACU
Herb	<i>Setaria leucopila</i>	Streambed Bristlegrass	UPL
Herb	<i>Paspalum dilatatum</i>	Dallisgrass	FAC
Herb	<i>Elymus virginicus</i>	Virginia Wildrye	FAC
Herb	<i>Sorghum halepense</i>	Johnsongrass	FACU
Herb	<i>Carex blanda</i>	Eastern Woodland Sedge	FAC
Woody Vine	<i>Smilax bona-nox</i>	Saw Greenbrier	FACU
Woody Vine	<i>Vitis mustangensis</i>	Mustang Grape	UPL
Woody Vine	<i>Rubus trivialis</i>	Southern Dewberry	FACU
Woody Vine	<i>Campsis radicans</i>	Trumpet Creeper	FACU

5.2.3 Soils

Normal circumstances were present for soils within the project area. The table below summarizes hydric soil data identified within the project area. Refer to the wetland determination data forms in **Attachment 2** to see the specific soil data recorded at each sample point.

Table 8: Hydric Soil Indicator(s)

Wetland Type	Sample Point Name(s)	Hydric Soil Indicator(s)
Palustrine Emergent Wetland	SP10, SP12, SP14	Sandy Redox (S5) Depleted Matrix (F3)

6.0 Conclusion

A WOTUS delineation was conducted for FM 2931 from US 380 to FM 428 located in Denton County, Texas (CSJ 2979-01-011). The field delineation was completed on November 9 and November 10, 2020. Refer to **Section 5.2**, above, for a table summarizing the aquatic resources (i.e., waterbodies/wetlands) identified within the project area. The following jurisdictional determinations are based on the pre-2015 regulatory regime.

6.1 Potentially Jurisdictional Waterbodies and Wetlands

The project area consists of two potentially jurisdictional perennial streams (P-1 and Running Branch), three potentially jurisdictional intermittent streams (IS-1 through IS-3), one potentially jurisdictional open water

pond/impoundment (OW-1), one potentially jurisdictional ephemeral stream (ES-1), and three potentially jurisdictional palustrine emergent wetlands (W-1, W-2, and W-3). P-1, Running Branch, and IS-1 through IS-3 were determined to be Relatively Permanent Waters (RPWs) that exhibit defined OHWMs and have a continuous downstream surface connection that contributes surface water to Pecan Creek and Little Elm Creek, which both flow to Lewisville Lake, a Traditional Navigable Waterway (TNW). Therefore, the USACE would likely assert jurisdiction over these features.

OW-1, which was under construction at the time of the field investigation, is an on-channel impoundment of IS-3, a potentially jurisdictional RPW. Because of this, the USACE would likely assert jurisdiction over this feature.

ES-1 was determined to be a Non-Relatively Permanent Water (Non-RPW) that appears to have a discontinuous OHWM downstream of the proposed project. Based on a review of current and historical aerial imagery and LiDAR, this feature generally flows south and southeast through a series of on-channel ponds to Little Elm Creek. Drainage patterns and potential wetland signatures are noticeable with saturated soils and a contrast in vegetation signatures both upstream and downstream of the on-channel ponds with the channel becoming more defined and continuous further downstream. Because of its downstream surface connection to Little Elm Creek, ES-1 likely has a significant nexus with Lewisville Lake, a TNW. Therefore, the USACE may assert jurisdiction over this feature. It should be noted that ongoing development and disturbance are currently occurring downstream of the project area. Pooling water observed within this feature during the field investigation is artificially sourced from overflow from an upstream manmade lake excavated in uplands and created as an aesthetic amenity for a recently constructed subdivision. W-3 is located between the manmade lake and ES-1, is also artificially sourced from overflow from the lake, but has a direct hydrologic surface connection to ES-1 through an existing culvert. Because of this, the USACE may assert jurisdiction over this feature.

W-1 and W-2 are located within a drainage swale that appears to develop a discontinuous OHWM downstream of the proposed project. Based on a review of current and historical aerial imagery and LiDAR, this feature generally flows south and southeast through a series of on-channel ponds to ES-1. Drainage patterns are noticeable with saturated soils and a contrast in vegetation signatures both upstream and downstream of the on-channel ponds. Because W-1 and W-2 appear to have a hydrologic surface connection to ES-1, the USACE may assert jurisdiction over these features.

6.2 Potentially Non-Jurisdictional Waterbodies and Wetlands

The project consists of one potentially non-jurisdictional drainage ditch (DD-1). DD-1 is a manmade drainage ditch that, based on a review of historical aerial imagery and topographic maps, was recently created, excavated in uplands and drains only uplands, and does not relocate a tributary; therefore, the USACE is not likely to assert jurisdiction over this feature.

The professional opinion offered in this report is based on best professional judgment. It should be noted that the USACE makes the final determination on the location of waterbody and wetland boundaries and their jurisdictional status. To obtain an official jurisdictional determination (JD) from the USACE, this report must be submitted to the USACE Fort Worth District Office, along with a JD request form and, if appropriate, a PCN/permit application.

7.0 References

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8.0 Attachments

1. Figures
2. Wetland Determination Data Forms
3. Historical Aerial Photography
4. Site Photographs

Attachment 1 - Figures

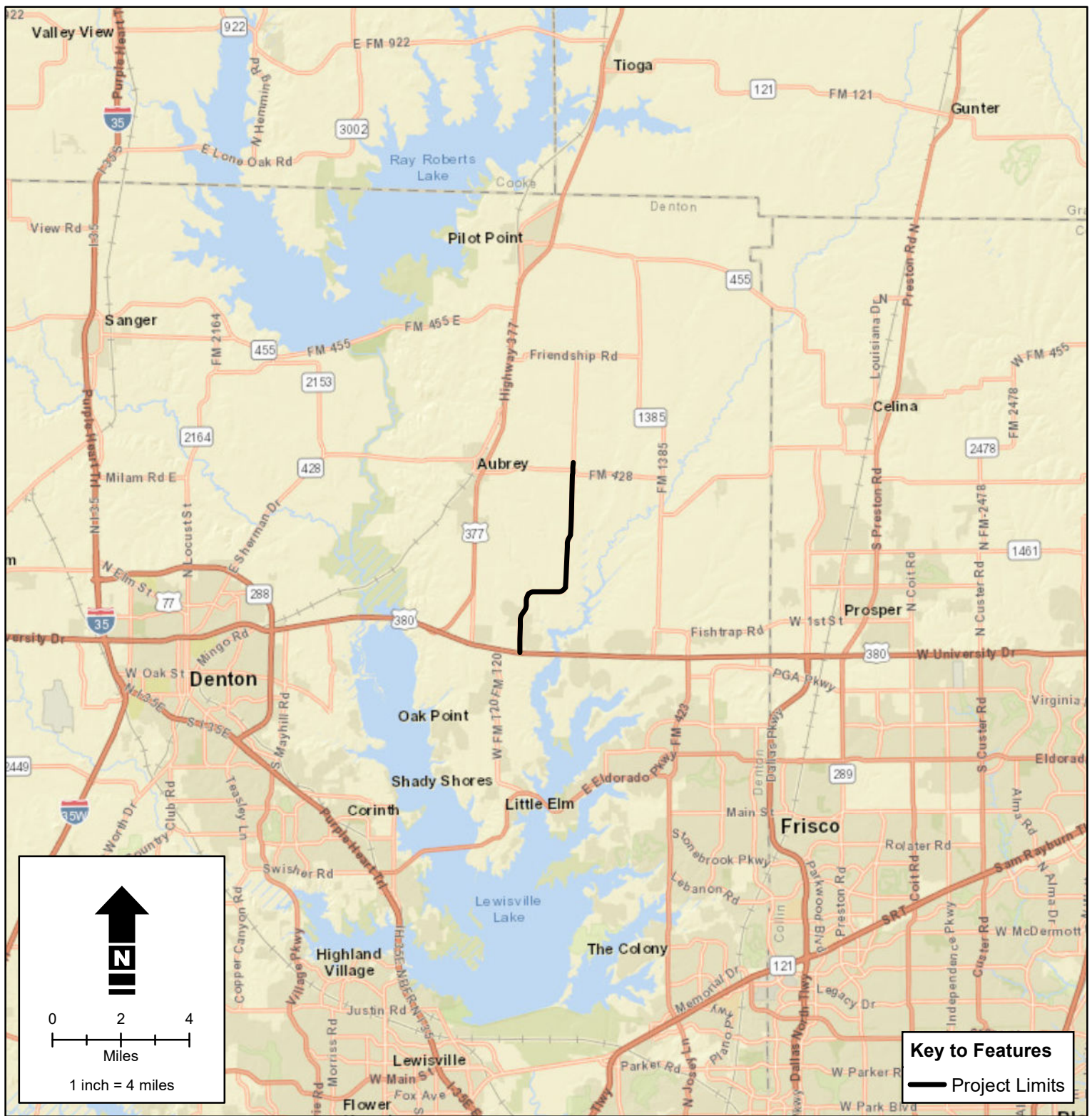
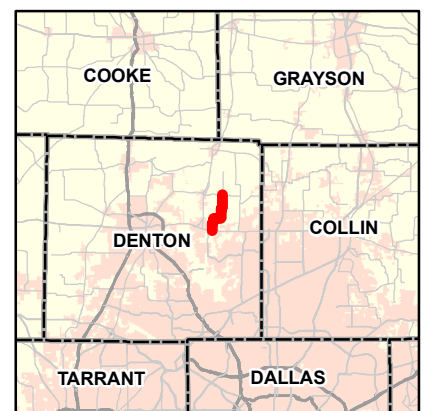


Figure 1

Vicinity Map

FM 2931 from US 380 to FM 428
Denton County, Texas
CSJ: 2979-01-011

Source: ESRI World Street Map (2020)



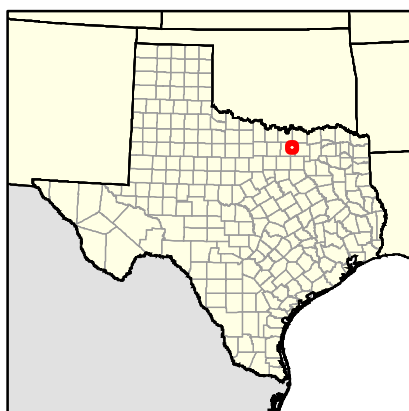
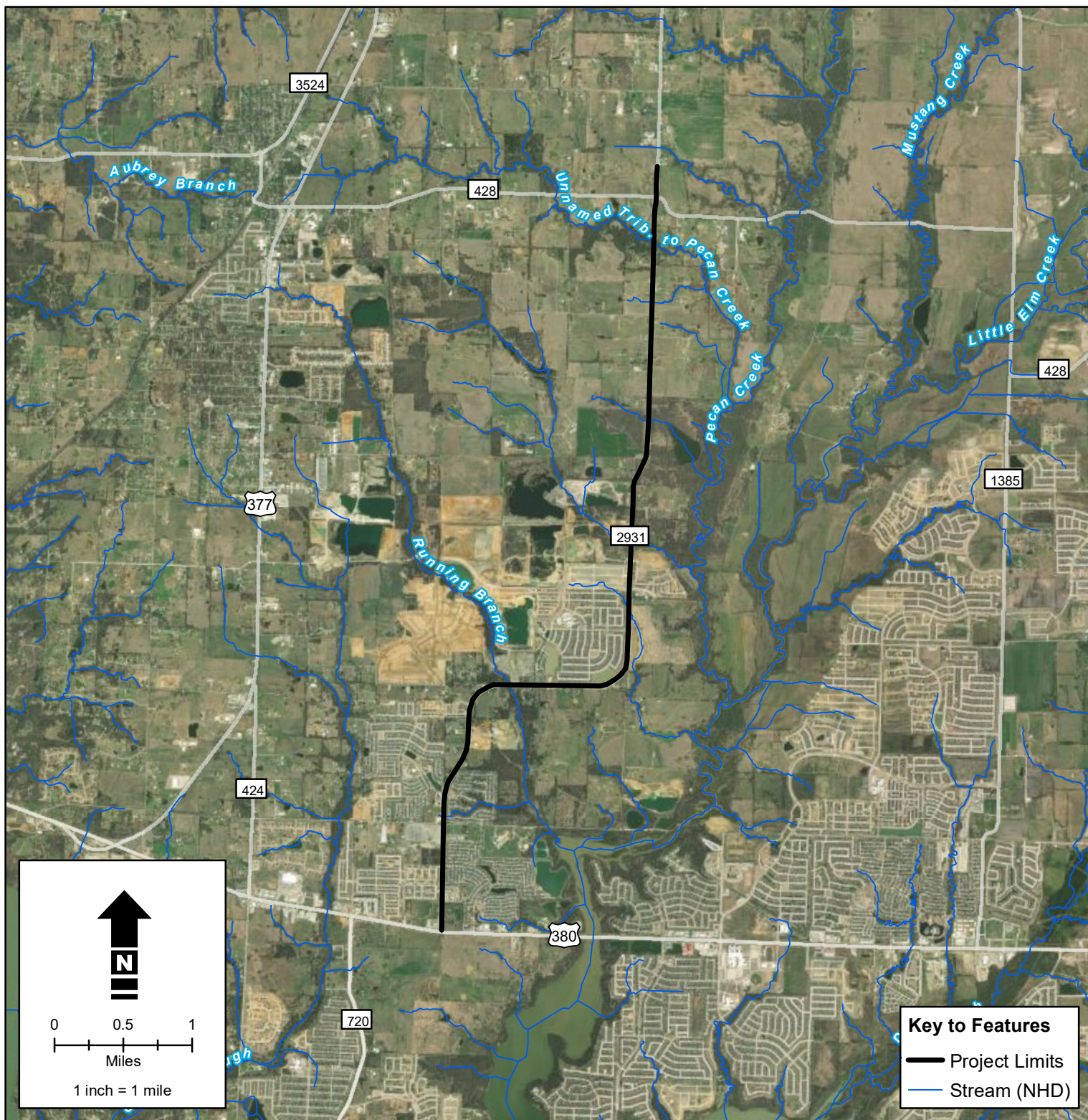


Figure 2

Aerial Overview Map

FM 2931 from US 380 to FM 428
Denton County, Texas
CSJ: 2979-01-011

Source: Maxar 3/7/2021



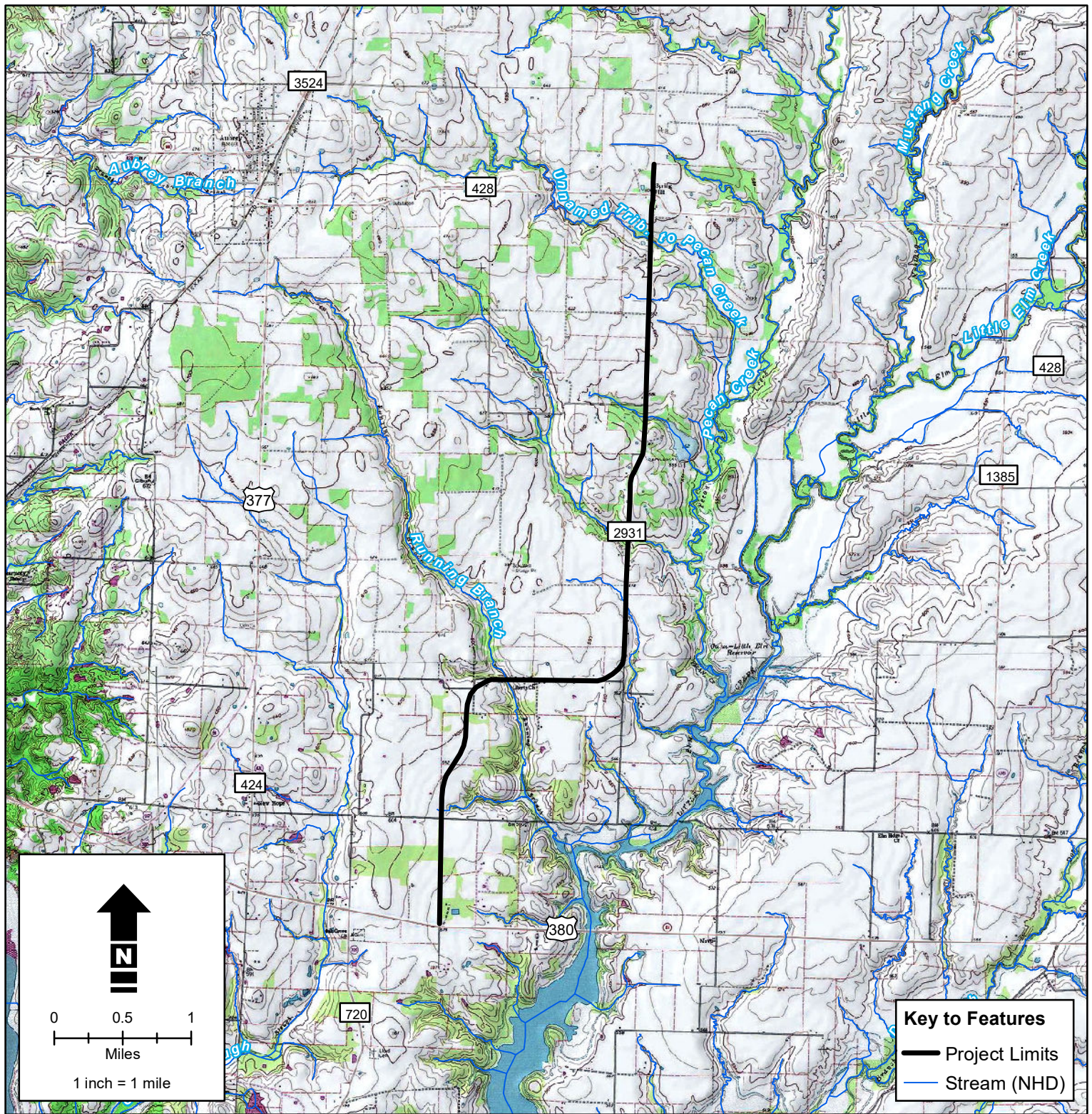


Figure 3

Topographic Overview Map

FM 2931 from US 380 to FM 428
Denton County, Texas
CSJ: 2979-01-011

USGS 7.5-minute Topographic Quadrangles:
Little Elm (33096-B8), & Aubrey (33096-C8), TX

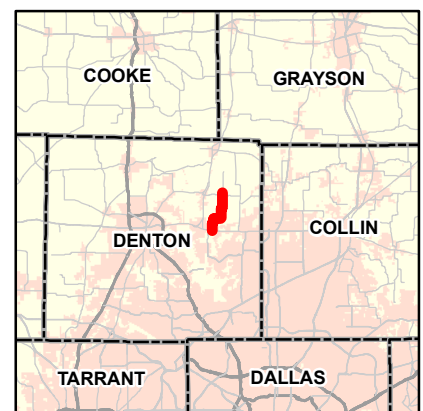
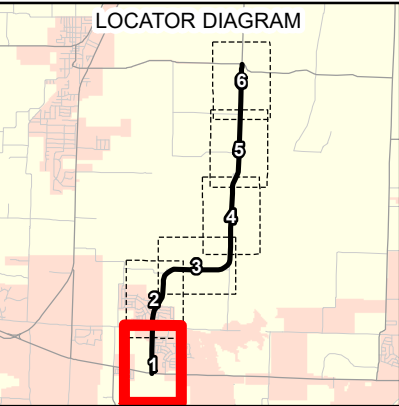




Figure 4-1

National Wetlands Inventory

FM 2931 from US 380 to FM 428
Denton County, Texas
CSJ: 2979-01-011



Key to Features

- Existing ROW
- Proposed ROW
- Existing Easement
- Wetland (NWI)

Sources: U.S. Fish & Wildlife Service (2020)
Aerial: Maxar 3/7/2021



0 250 500
Feet

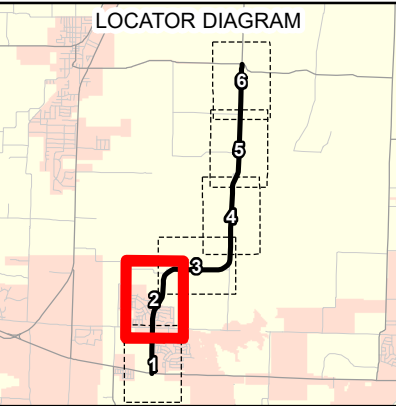
1 inch = 500 feet



Figure 4-2

National Wetlands Inventory

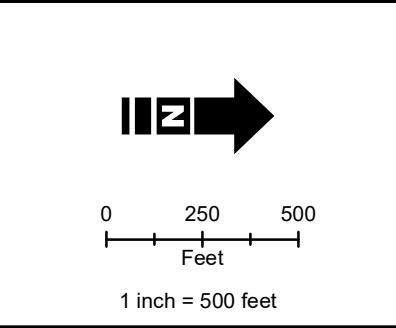
FM 2931 from US 380 to FM 428
Denton County, Texas
CSJ: 2979-01-011



Key to Features

- Existing ROW
- Proposed ROW
- Existing Easement
- Wetland (NWI)

Sources: U.S. Fish & Wildlife Service (2020)
Aerial: Maxar 3/7/2021



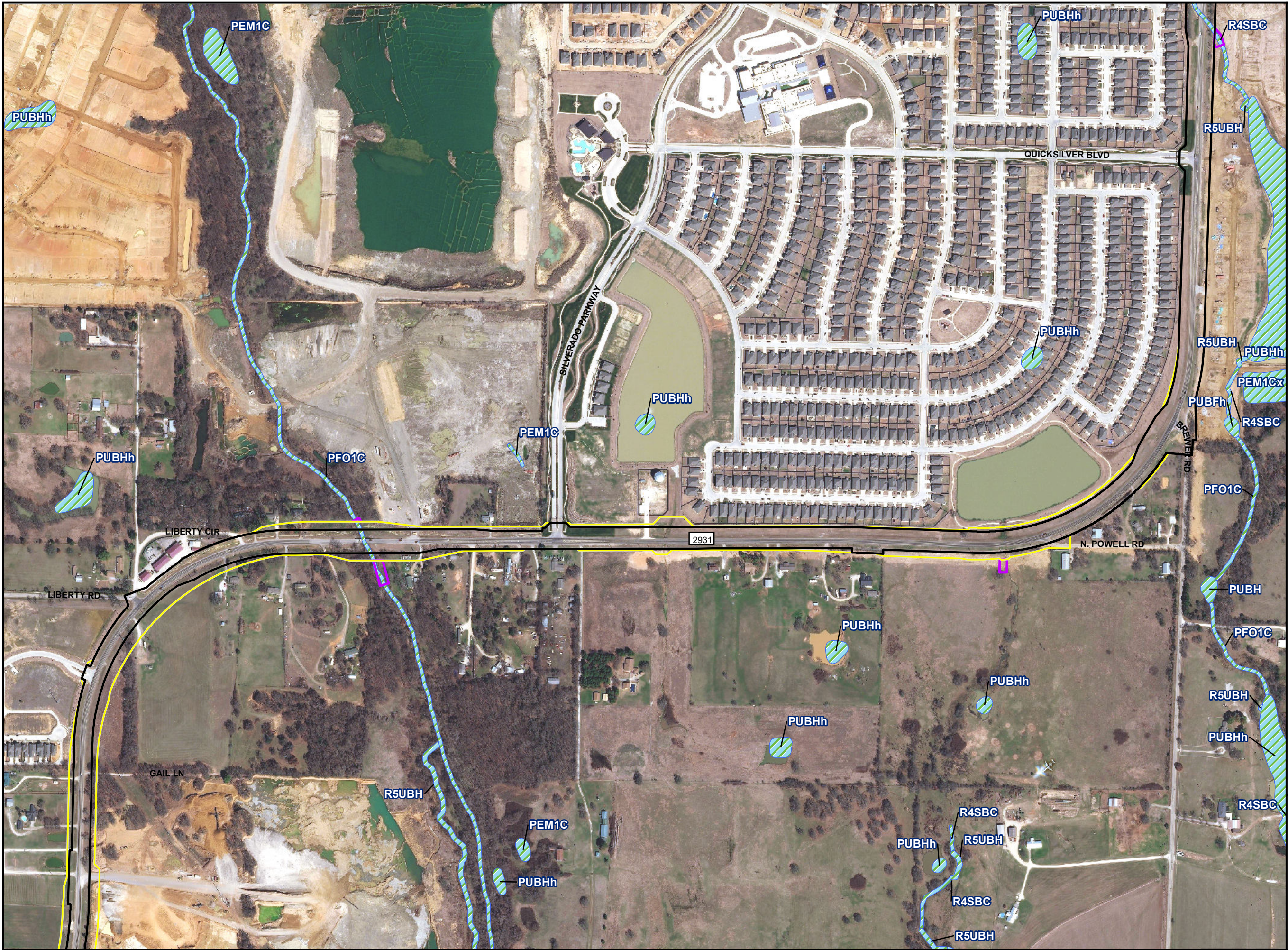
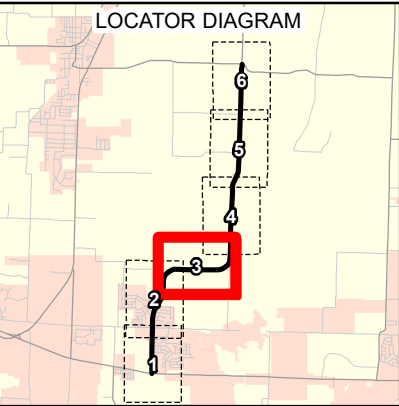


Figure 4-3

National Wetlands Inventory

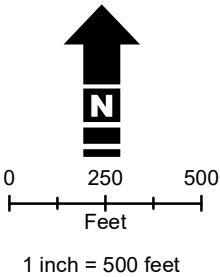
FM 2931 from US 380 to FM 428
Denton County, Texas
CSJ: 2979-01-011



Key to Features

- Existing ROW
- Proposed ROW
- Existing Easement
- Wetland (NWI)

Sources: U.S. Fish & Wildlife Service (2020)
Aerial: Maxar 3/7/2021



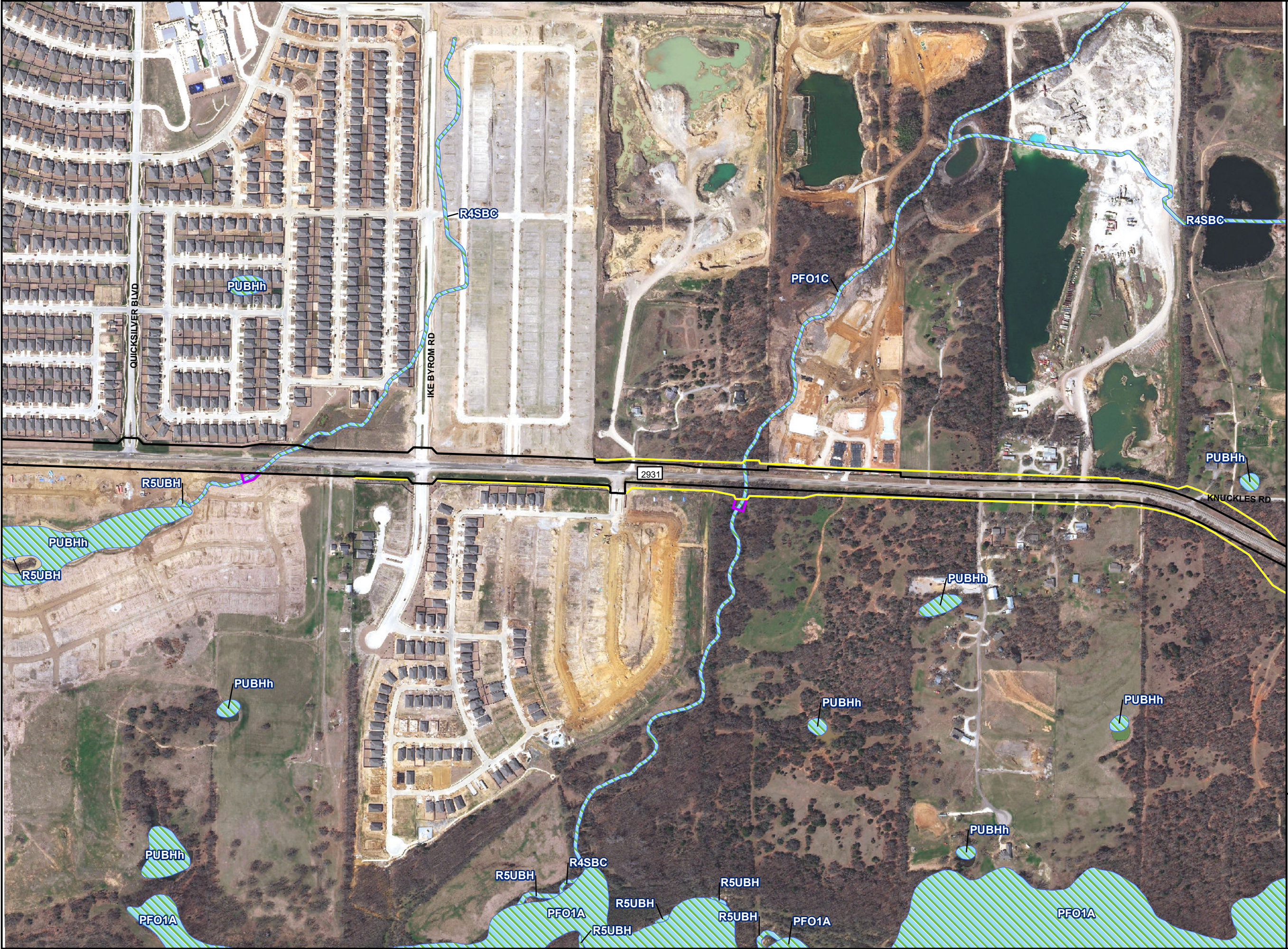
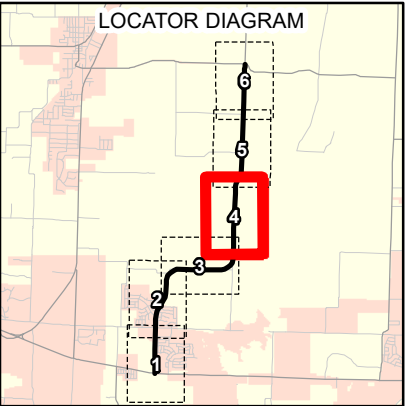
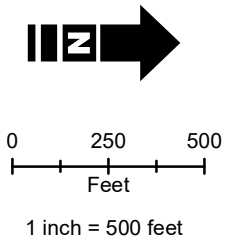


Figure 4-4
National Wetlands Inventory
FM 2931 from US 380 to FM 428
Denton County, Texas
CSJ: 2979-01-011



- Key to Features**
- Existing ROW
 - Proposed ROW
 - Existing Easement
 - Wetland (NWI)

Sources: U.S. Fish & Wildlife Service (2020)
Aerial: Maxar 3/7/2021



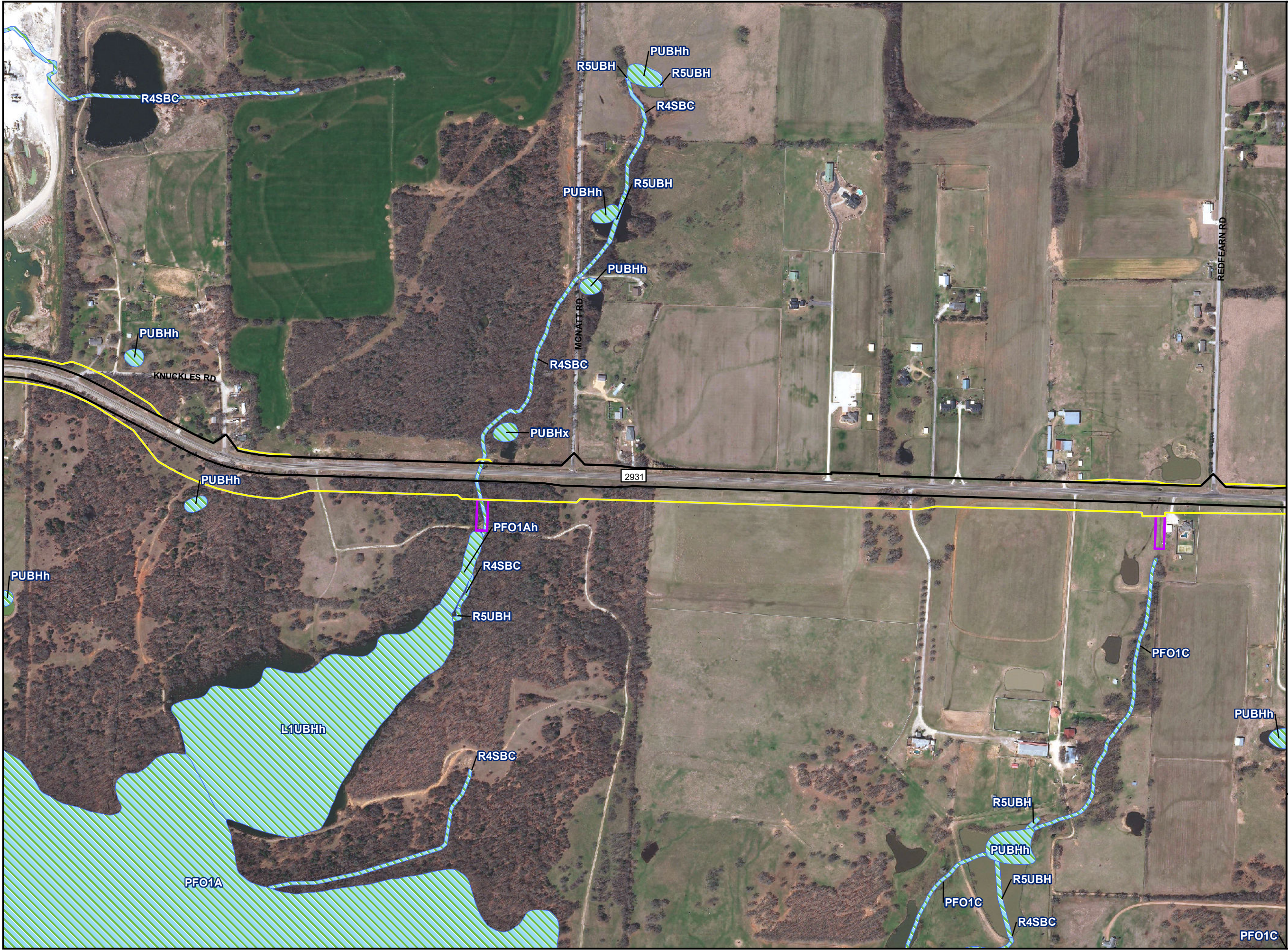
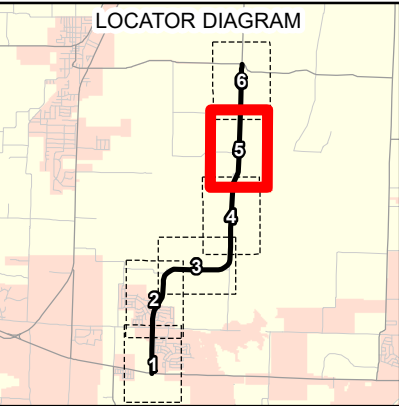


Figure 4-5

National Wetlands Inventory

FM 2931 from US 380 to FM 428
Denton County, Texas
CSJ: 2979-01-011



Key to Features

- Existing ROW
- Proposed ROW
- Existing Easement
- Wetland (NWI)

Sources: U.S. Fish & Wildlife Service (2020)
Aerial: Maxar 3/7/2021



0 250 500
Feet

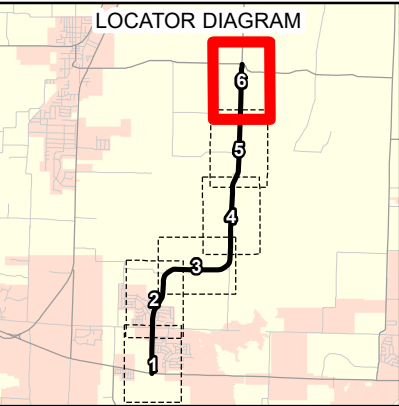
1 inch = 500 feet



Figure 4-6

National Wetlands Inventory

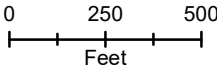
FM 2931 from US 380 to FM 428
Denton County, Texas
CSJ: 2979-01-011



Key to Features

- Existing ROW
- Proposed ROW
- Existing Easement
- Wetland (NWI)

Sources: U.S. Fish & Wildlife Service (2020)
Aerial: Maxar 3/7/2021

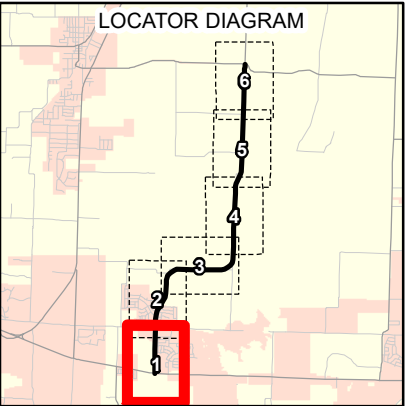


1 inch = 500 feet

Figure 5-1

Soil Units

FM 2931 from US 380 to FM 428
Denton County, Texas
CSJ: 2979-01-011



Key to Features

- Existing ROW
- Proposed ROW
- Existing Easement
- Soil Type Boundary
- Stream (NHD)

Intersecting Soil Type

- 23 - Callisburg fine sandy loam, 1 to 3 percent slopes
- 27 - Crockett fine sandy loam, 1 to 3 percent slopes
- 35 - Gasil fine sandy loam, 1 to 3 percent slopes
- 51 - Konsil fine sandy loam, 3 to 8 percent slopes
- 60 - Navo clay loam, 1 to 3 percent slopes
- 72 - Silstid loamy fine sand, 1 to 5 percent slopes
- 83 - Wilson clay loam, 0 to 1 percent slopes



0 250 500
Feet

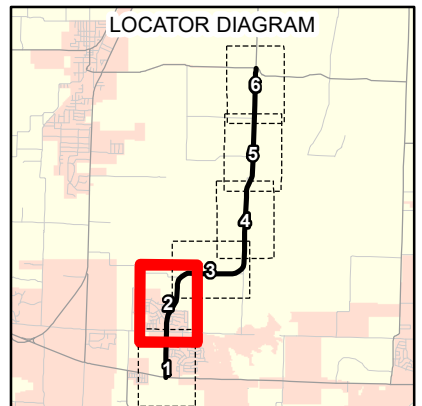
1 inch = 500 feet

Sources: Natural Resources Conservation Service (2020)
Aerial: Maxar 3/7/2021






Figure 5-2

Soil Units

FM 2931 from US 380 to FM 428
Denton County, Texas
CSJ: 2979-01-011

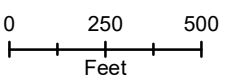


Key to Features

-  Existing ROW
 Proposed ROW
 Existing Easement
 Soil Type Boundary
 Stream (NHD)

Intersecting Soil Type

- 12 - Birome fine sandy loam, 3 to 5 percent slopes
- 20 - Bunyan fine sandy loam, frequently flooded
- 23 - Callisburg fine sandy loam, 1 to 3 percent slopes
- 26 - Crockett fine sandy loam, 0 to 1 percent slopes
- 27 - Crockett fine sandy loam, 1 to 3 percent slopes
- 35 - Gasil fine sandy loam, 1 to 3 percent slopes
- 51 - Konsil fine sandy loam, 3 to 8 percent slopes
- 72 - Silstid loamy fine sand, 1 to 5 percent slopes



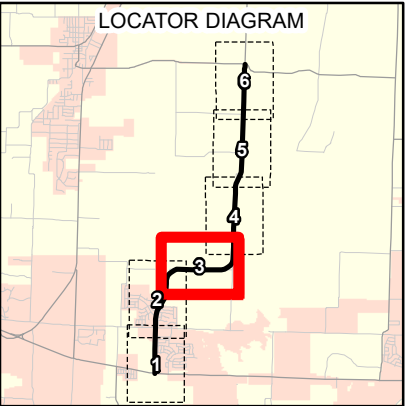
1 inch = 500 feet

Sources: Natural Resources Conservation Service (2020)
Aerial: Maxar 3/7/2021

Figure 5-3

Soil Units

FM 2931 from US 380 to FM 428
Denton County, Texas
CSJ: 2979-01-011

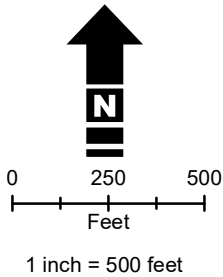


Key to Features

- Existing ROW
- Proposed ROW
- Existing Easement
- Soil Type Boundary
- Stream (NHD)

Intersecting Soil Type

- 12 - Birome fine sandy loam, 3 to 5 percent slopes
- 20 - Bunyan fine sandy loam, frequently flooded
- 23 - Callisburg fine sandy loam, 1 to 3 percent slopes
- 24 - Callisburg fine sandy loam, 3 to 5 percent slopes
- 26 - Crockett fine sandy loam, 0 to 1 percent slopes
- 35 - Gasil fine sandy loam, 1 to 3 percent slopes
- 51 - Konsil fine sandy loam, 3 to 8 percent slopes
- 60 - Navo clay loam, 1 to 3 percent slopes
- 72 - Silstid loamy fine sand, 1 to 5 percent slopes
- 83 - Wilson clay loam, 0 to 1 percent slopes



Sources: Natural Resources Conservation Service (2020)
Aerial: Maxar 3/7/2021

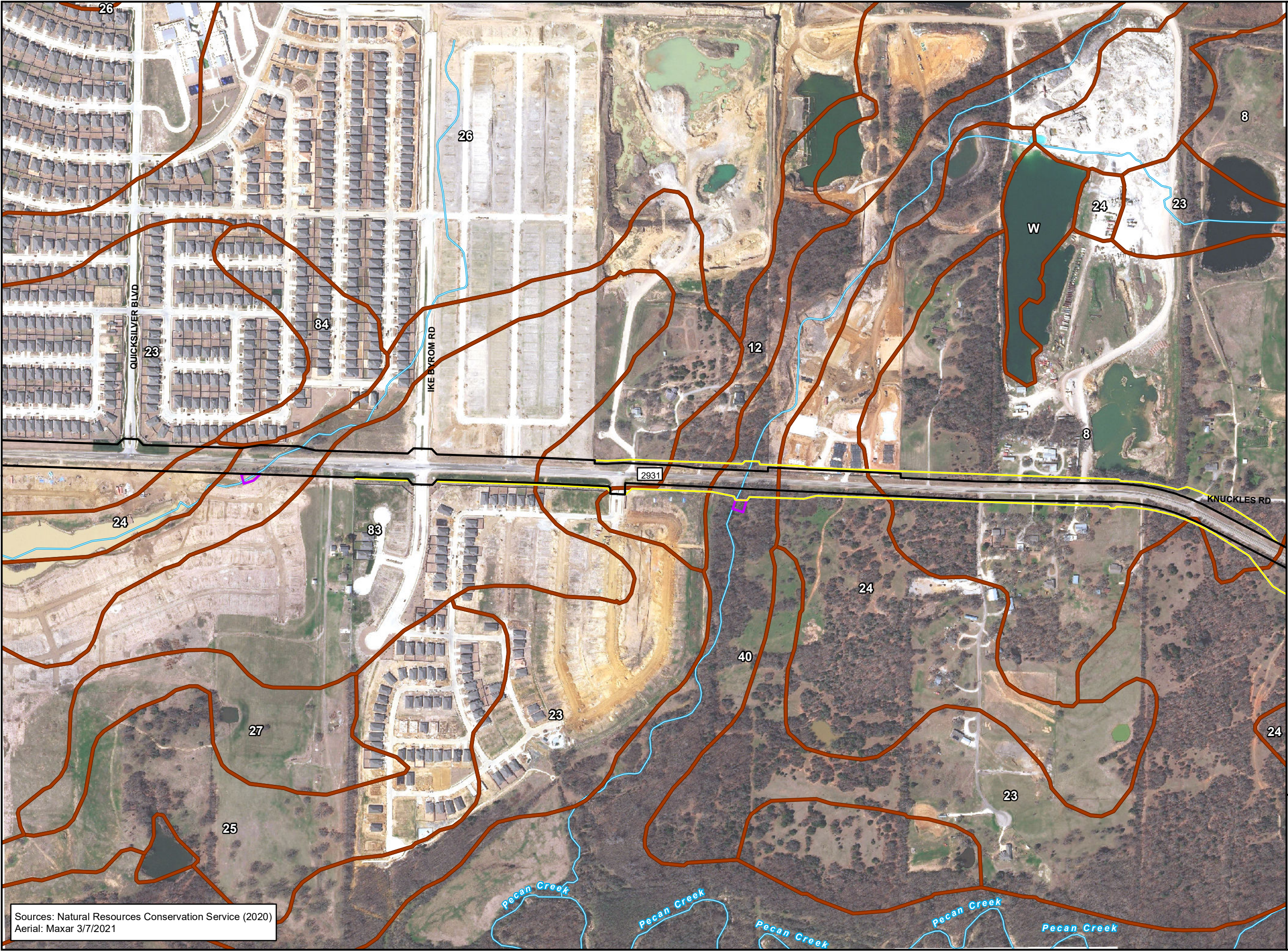
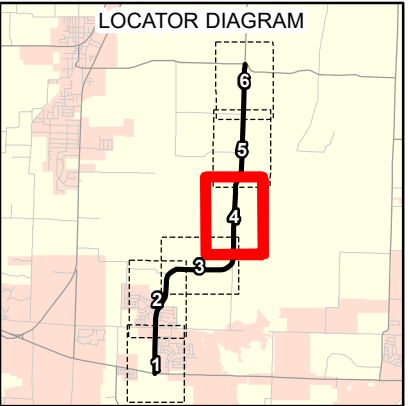


Figure 5-4

Soil Units

FM 2931 from US 380 to FM 428
Denton County, Texas
CSJ: 2979-01-011

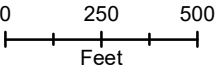


Key to Features

- Existing ROW
- Proposed ROW
- Existing Easement
- Soil Type Boundary
- Stream (NHD)

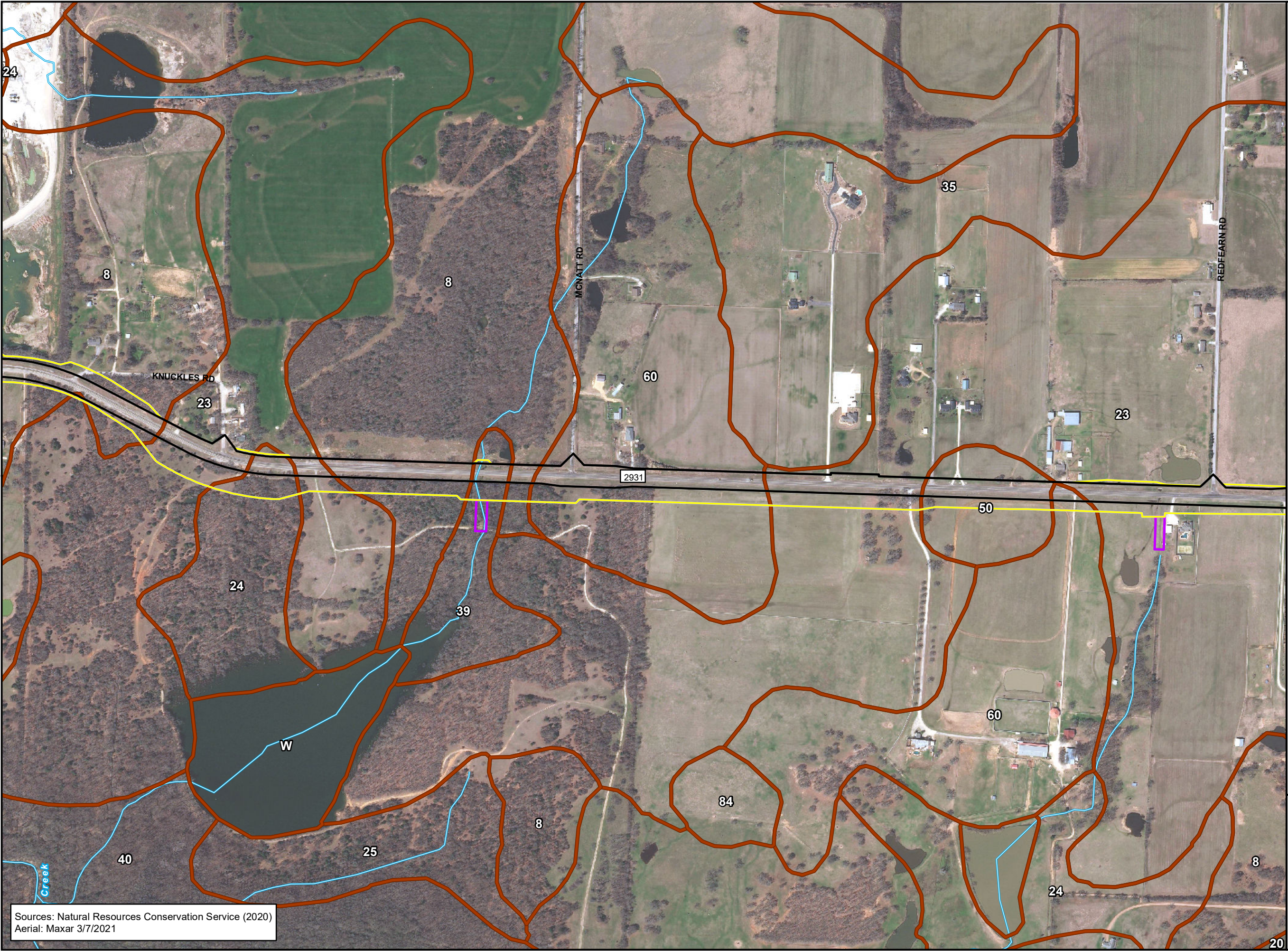
Intersecting Soil Type

- 12 - Birome fine sandy loam, 3 to 5 percent slopes
- 23 - Callisburg fine sandy loam, 1 to 3 percent slopes
- 24 - Callisburg fine sandy loam, 3 to 5 percent slopes
- 26 - Crockett fine sandy loam, 0 to 1 percent slopes
- 27 - Crockett fine sandy loam, 1 to 3 percent slopes
- 40 - Gowen clay loam, frequently flooded
- 8 - Aubrey fine sandy loam, 2 to 5 percent slopes
- 83 - Wilson clay loam, 0 to 1 percent slopes



1 inch = 500 feet

Sources: Natural Resources Conservation Service (2020)
Aerial: Maxar 3/7/2021

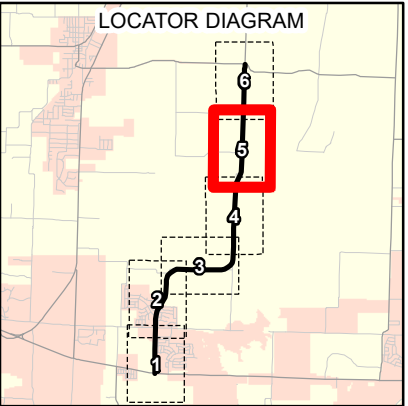


Sources: Natural Resources Conservation Service (2020)
Aerial: Maxar 3/7/2021

Figure 5-5

Soil Units

FM 2931 from US 380 to FM 428
Denton County, Texas
CSJ: 2979-01-011



Key to Features

- Existing ROW
- Proposed ROW
- Existing Easement
- Soil Type Boundary
- Stream (NHD)

Intersecting Soil Type

- 20 - Bunyan fine sandy loam, frequently flooded
- 23 - Callisburg fine sandy loam, 1 to 3 percent slopes
- 24 - Callisburg fine sandy loam, 3 to 5 percent slopes
- 35 - Gasil fine sandy loam, 1 to 3 percent slopes
- 39 - Gowen clay loam, occasionally flooded
- 40 - Gowen clay loam, frequently flooded
- 50 - Konsil fine sandy loam, 1 to 3 percent slopes
- 60 - Navo clay loam, 1 to 3 percent slopes
- 8 - Aubrey fine sandy loam, 2 to 5 percent slopes



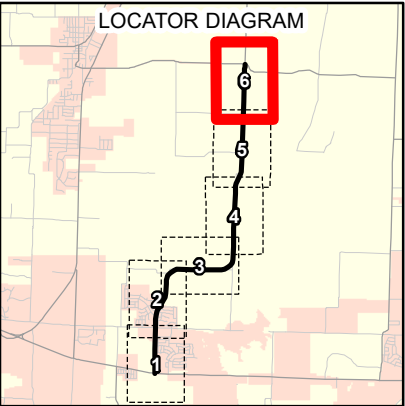
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Feet

1 inch = 500 feet

Figure 5-6

Soil Units

FM 2931 from US 380 to FM 428
Denton County, Texas
CSJ: 2979-01-011

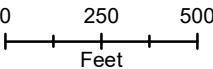


Key to Features

- Existing ROW
- Proposed ROW
- Existing Easement
- Soil Type Boundary
- Stream (NHD)

Intersecting Soil Type

- 20 - Bunyan fine sandy loam, frequently flooded
- 23 - Callisburg fine sandy loam, 1 to 3 percent slopes
- 24 - Callisburg fine sandy loam, 3 to 5 percent slopes
- 26 - Crockett fine sandy loam, 0 to 1 percent slopes
- 27 - Crockett fine sandy loam, 1 to 3 percent slopes
- 35 - Gasil fine sandy loam, 1 to 3 percent slopes
- 51 - Konsil fine sandy loam, 3 to 8 percent slopes
- 59 - Navo clay loam, 0 to 1 percent slopes
- 8 - Aubrey fine sandy loam, 2 to 5 percent slopes



1 inch = 500 feet

Sources: Natural Resources Conservation Service (2020)
Aerial: Maxar 3/7/2021

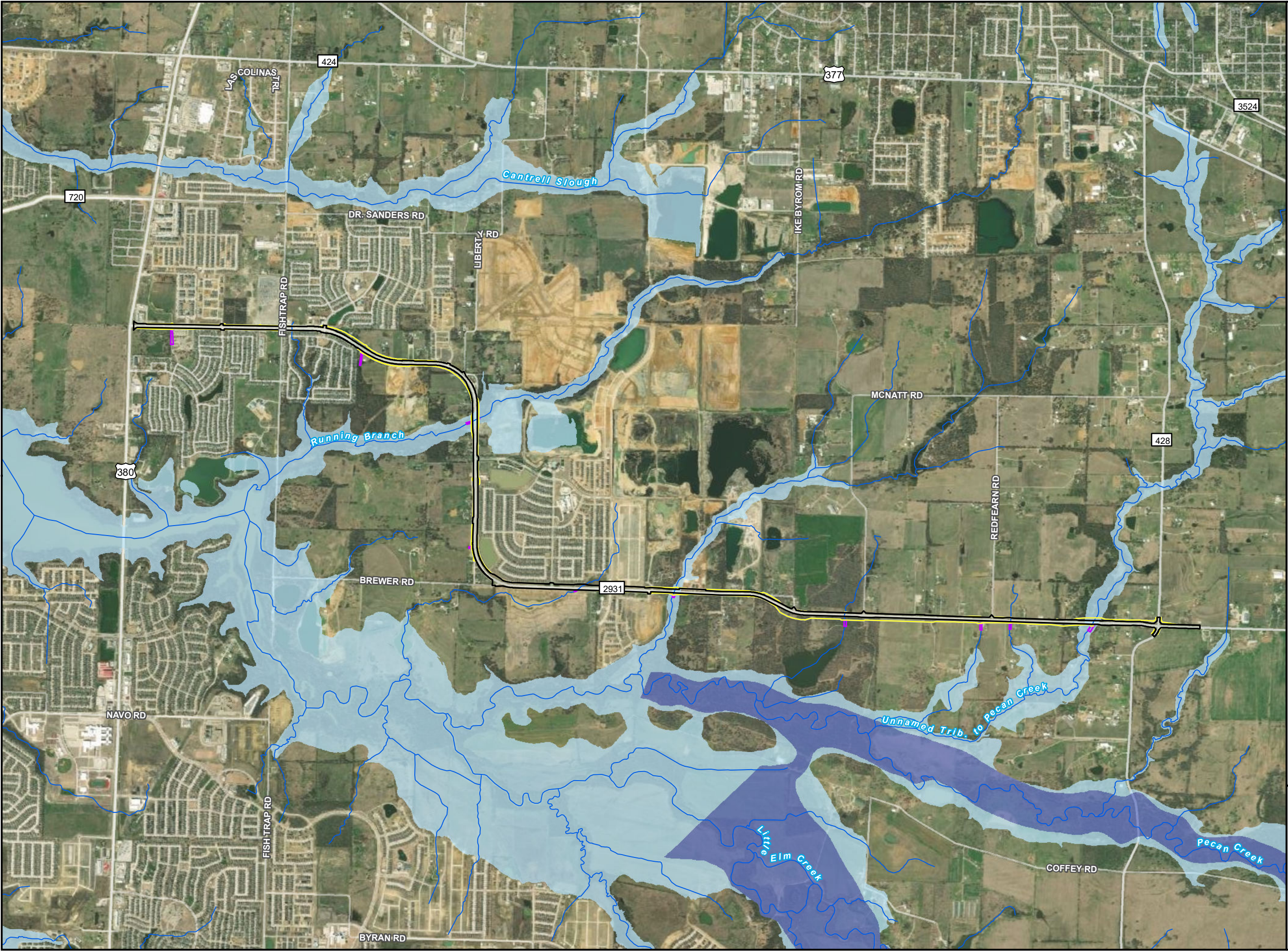


Figure 6

FEMA Floodplains

FM 2931 from US 380 to FM 428
Denton County, Texas
CSJ: 2979-01-011

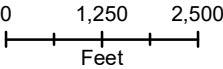


Key to Features

- Existing ROW
- Proposed ROW
- Existing Easement
- 1% Annual Chance Flood Hazard
- Regulatory Floodway
- Stream (NHD)

Source: National Flood Hazard Layer
(DFRIM ID: 48121C0270G, 48121C0405G, 48121C0265G FEMA, 2020)

Aerial Source: 3/7/2021



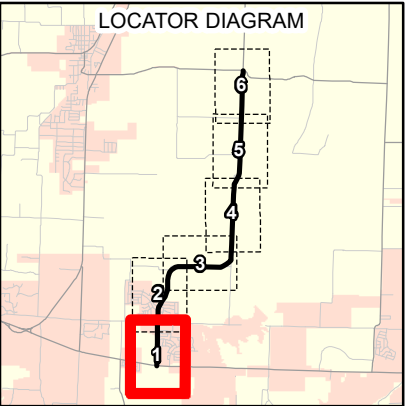
1 inch = 2,500 feet



Figure 7-1

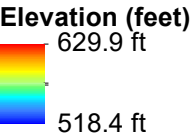
LiDAR

FM 2931 from US 380 to FM 428
Denton County, Texas
CSJ: 2979-01-011

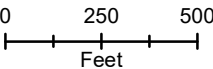


Key to Features

- Existing ROW
- Proposed ROW
- Existing Easement
- Stream (NHD)



Source: Strategic Mapping Program (StratMap). Collin, Denton, & Kaufman Counties Lidar, 2011-03-01. Web. 2021-01-05.



1 inch = 500 feet

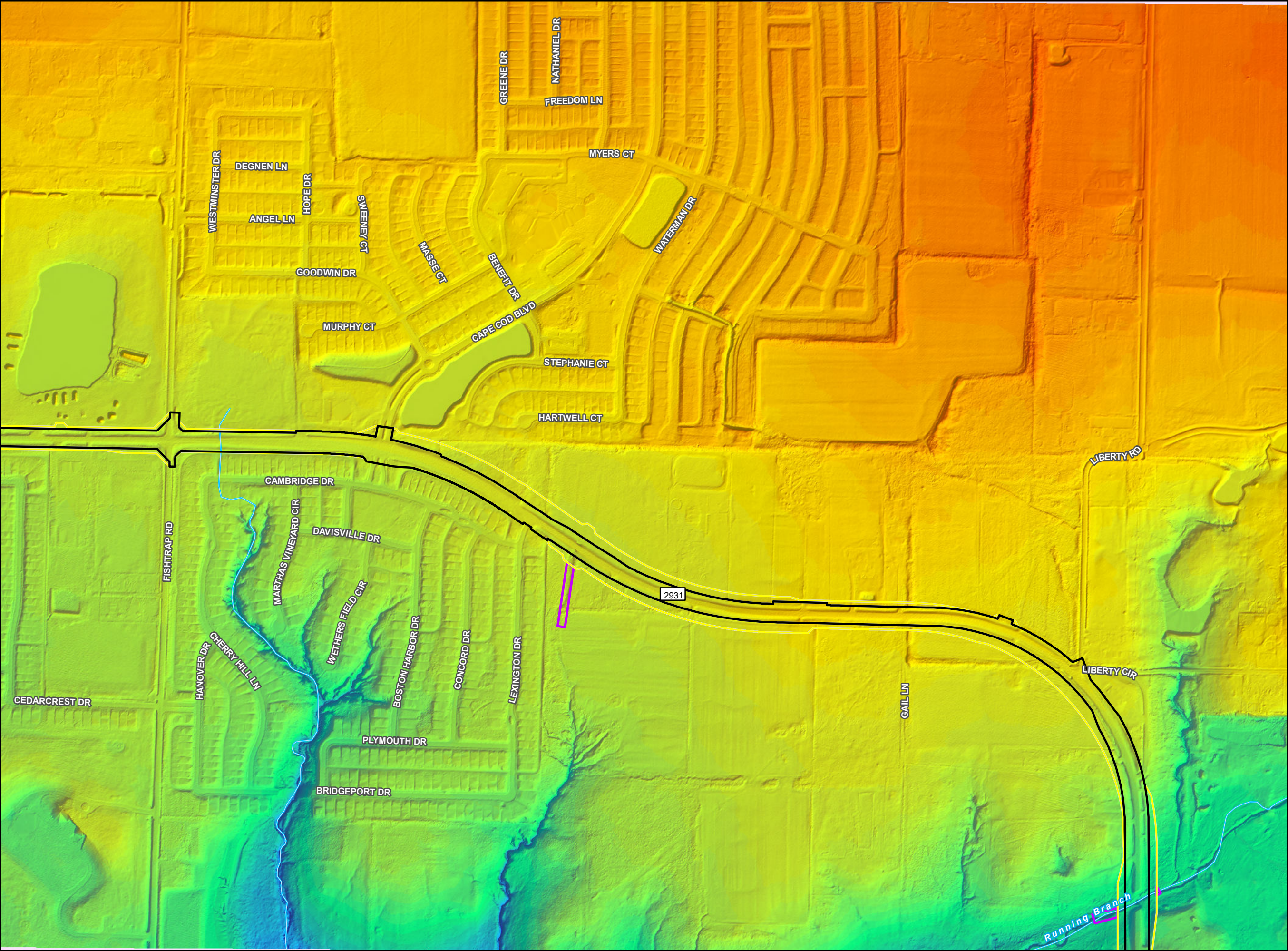
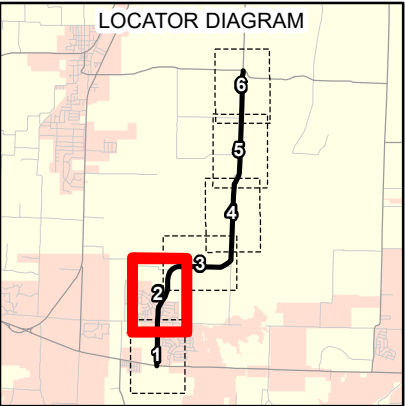


Figure 7-2

LiDAR

FM 2931 from US 380 to FM 428
Denton County, Texas
CSJ: 2979-01-011



Key to Features

- Existing ROW
- Proposed ROW
- Existing Easement
- Stream (NHD)

Elevation (feet)
629.9 ft
518.4 ft

Source: Strategic Mapping Program
(StratMap). Collin, Denton, & Kaufman
Counties Lidar, 2011-03-01.
Web. 2021-01-05.



0 250 500
Feet

1 inch = 500 feet

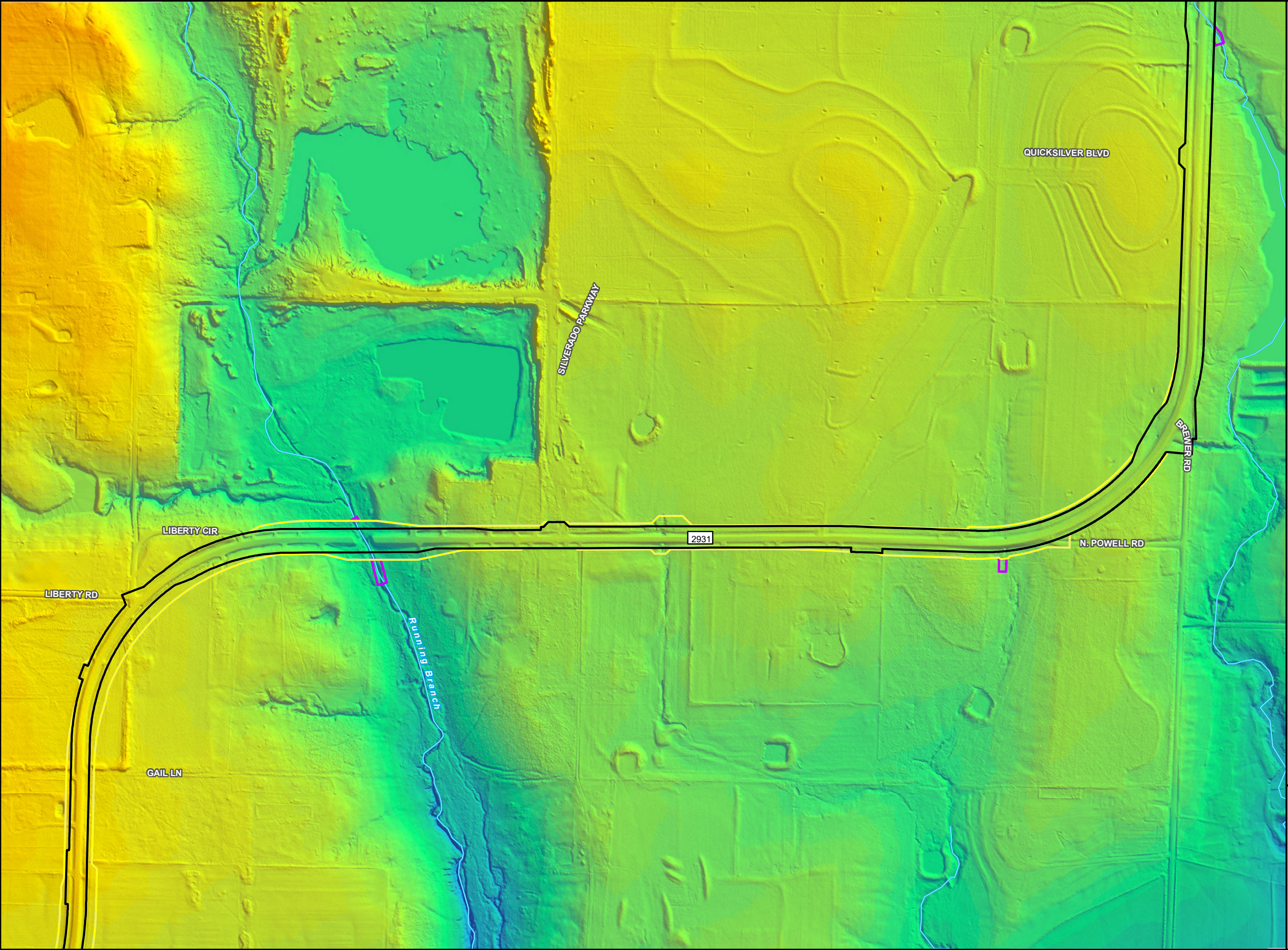
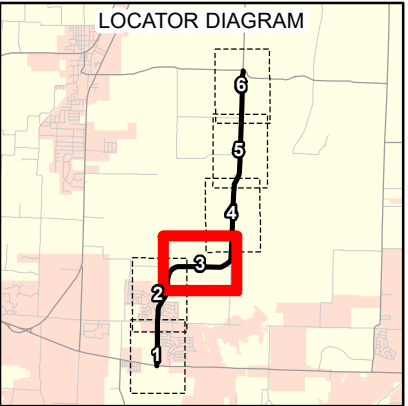


Figure 7-3

LiDAR

FM 2931 from US 380 to FM 428
Denton County, Texas
CSJ: 2979-01-011



Key to Features

- Existing ROW
- Proposed ROW
- Existing Easement
- Stream (NHD)

Elevation (feet)
629.9 ft
518.4 ft

Source: Strategic Mapping Program
(StratMap). Collin, Denton, & Kaufman
Counties Lidar, 2011-03-01.
Web. 2021-01-05.

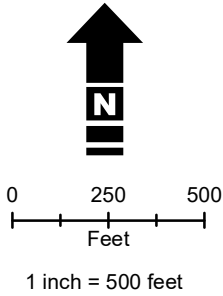
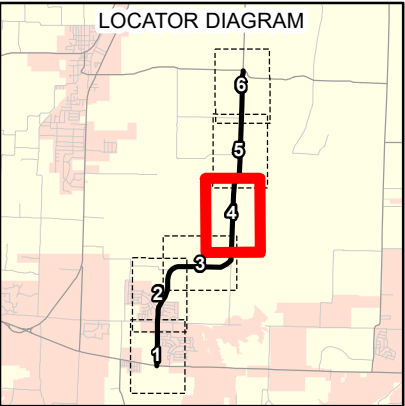


Figure 7-4

LiDAR

FM 2931 from US 380 to FM 428
Denton County, Texas
CSJ: 2979-01-011



Key to Features

- Existing ROW
- Proposed ROW
- Existing Easement
- Stream (NHD)

Elevation (feet)
629.9 ft
518.4 ft

Source: Strategic Mapping Program
(StratMap). Collin, Denton, & Kaufman
Counties Lidar, 2011-03-01.
Web. 2021-01-05.



0 250 500
Feet

1 inch = 500 feet

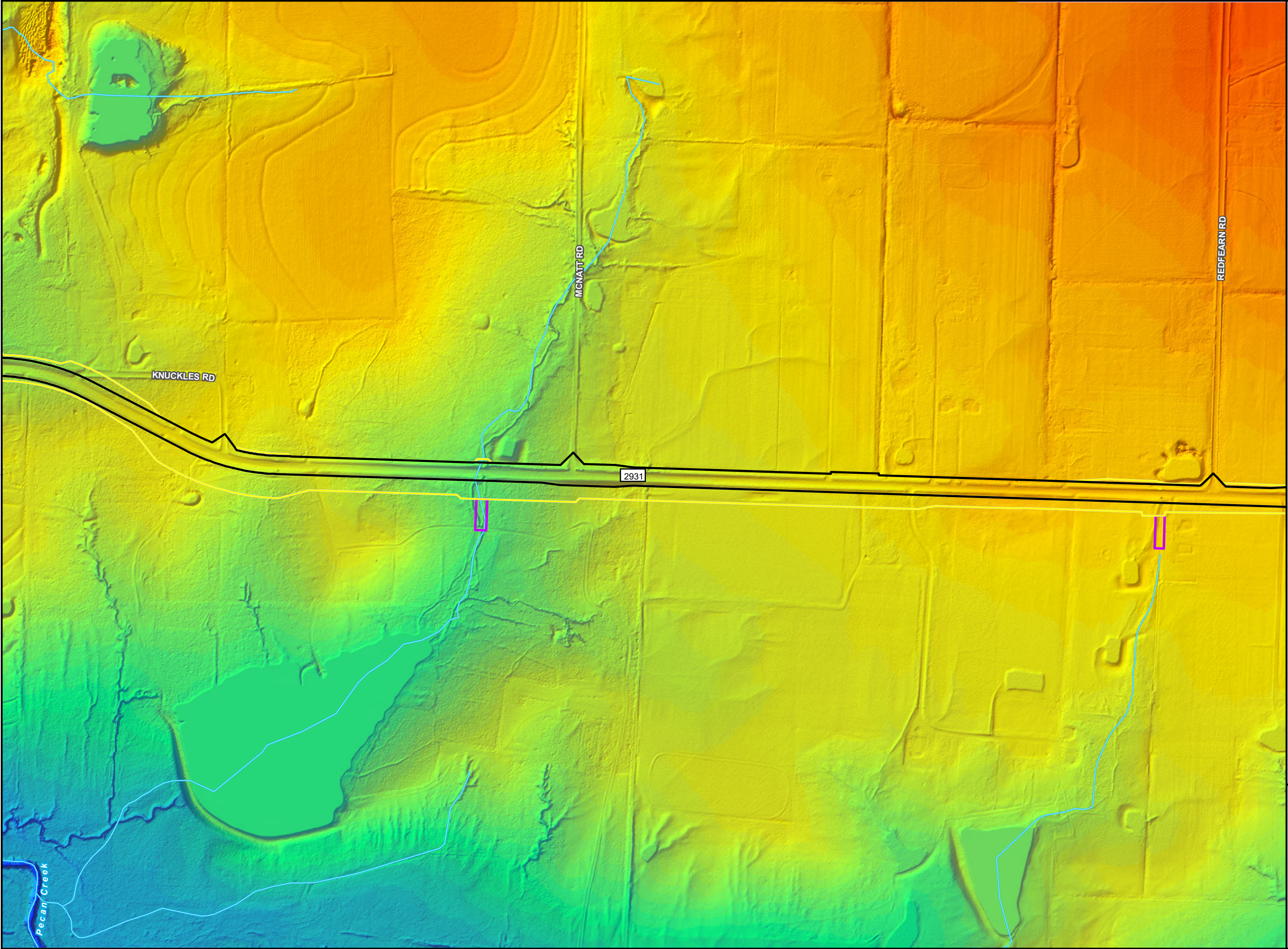
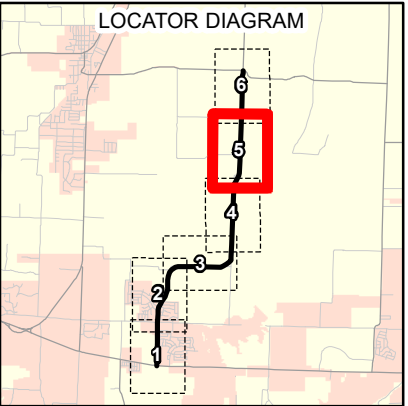


Figure 7-5

LiDAR

FM 2931 from US 380 to FM 428
Denton County, Texas
CSJ: 2979-01-011



Key to Features

- Existing ROW
- Proposed ROW
- Existing Easement
- Stream (NHD)

Elevation (feet)
629.9 ft
518.4 ft

Source: Strategic Mapping Program
(StratMap). Collin, Denton, & Kaufman
Counties Lidar, 2011-03-01.
Web. 2021-01-05.



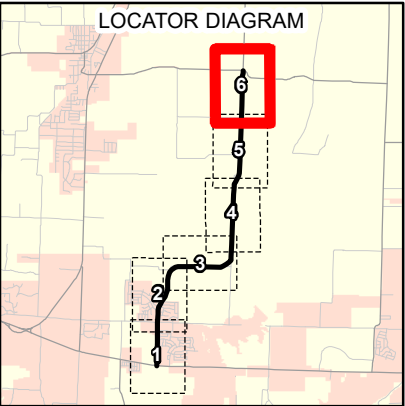
0 250 500
Feet

1 inch = 500 feet

Figure 7-6

LiDAR

FM 2931 from US 380 to FM 428
Denton County, Texas
CSJ: 2979-01-011



Key to Features

- Existing ROW
- Proposed ROW
- Existing Easement
- Stream (NHD)

Elevation (feet)
629.9 ft
518.4 ft

Source: Strategic Mapping Program (StratMap). Collin, Denton, & Kaufman Counties Lidar, 2011-03-01. Web. 2021-01-05.



0 250 500
Feet

1 inch = 500 feet

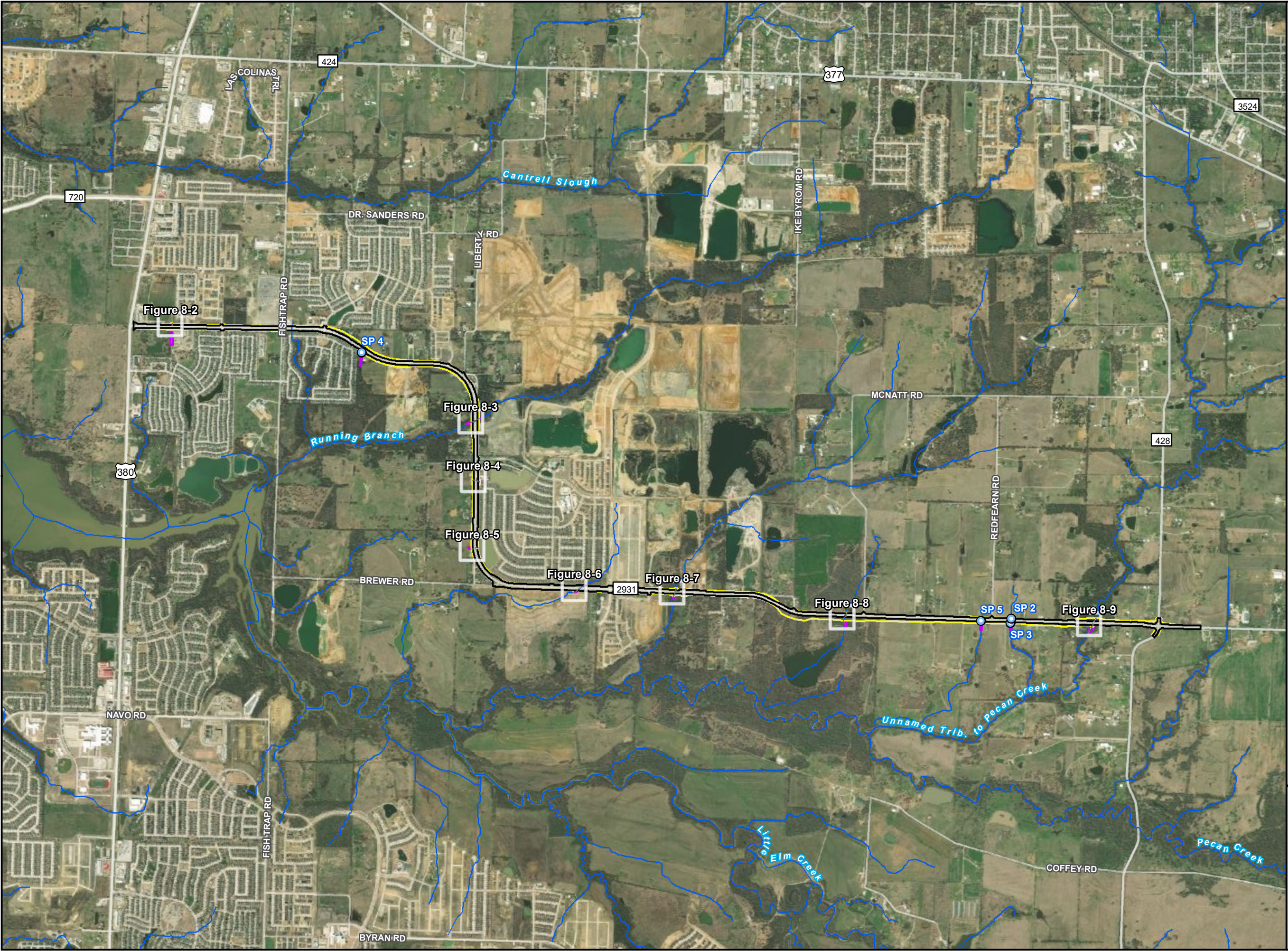


Figure 8-1

Waterbodies & Wetlands

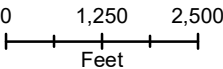
FM 2931 from US 380 to FM 428
Denton County, Texas
CSJ: 2979-01-011



Key to Features

- Existing ROW
- Proposed ROW
- Existing Easement
- Wetland Sample Point
- Stream (NHD)

Aerial Source: Maxar 3/7/2021



1 inch = 2,500 feet

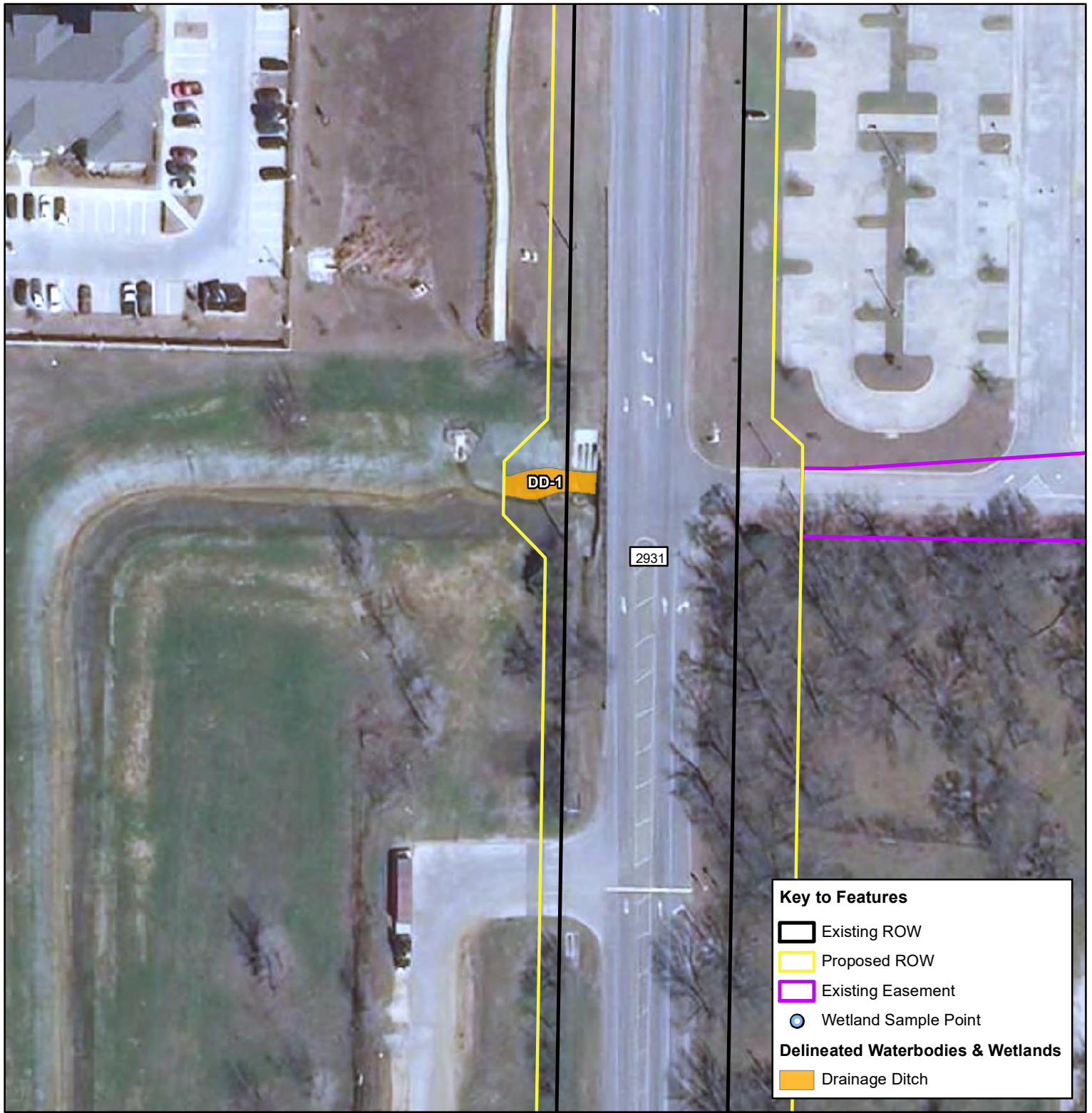
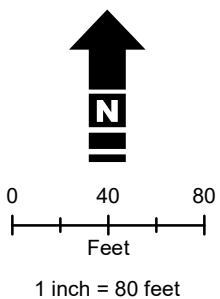


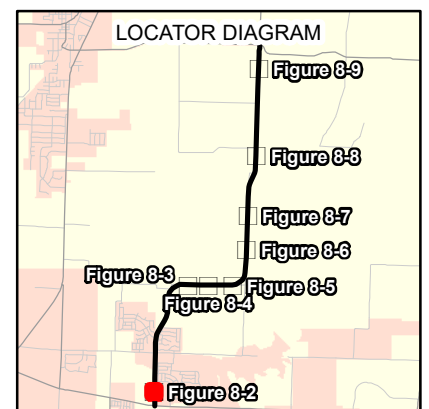
Figure 8-2

Waterbodies & Wetlands

FM 2931 from US 380 to FM 428
Denton County, Texas
CSJ: 2979-01-011



Source: Maxar 3/7/2021



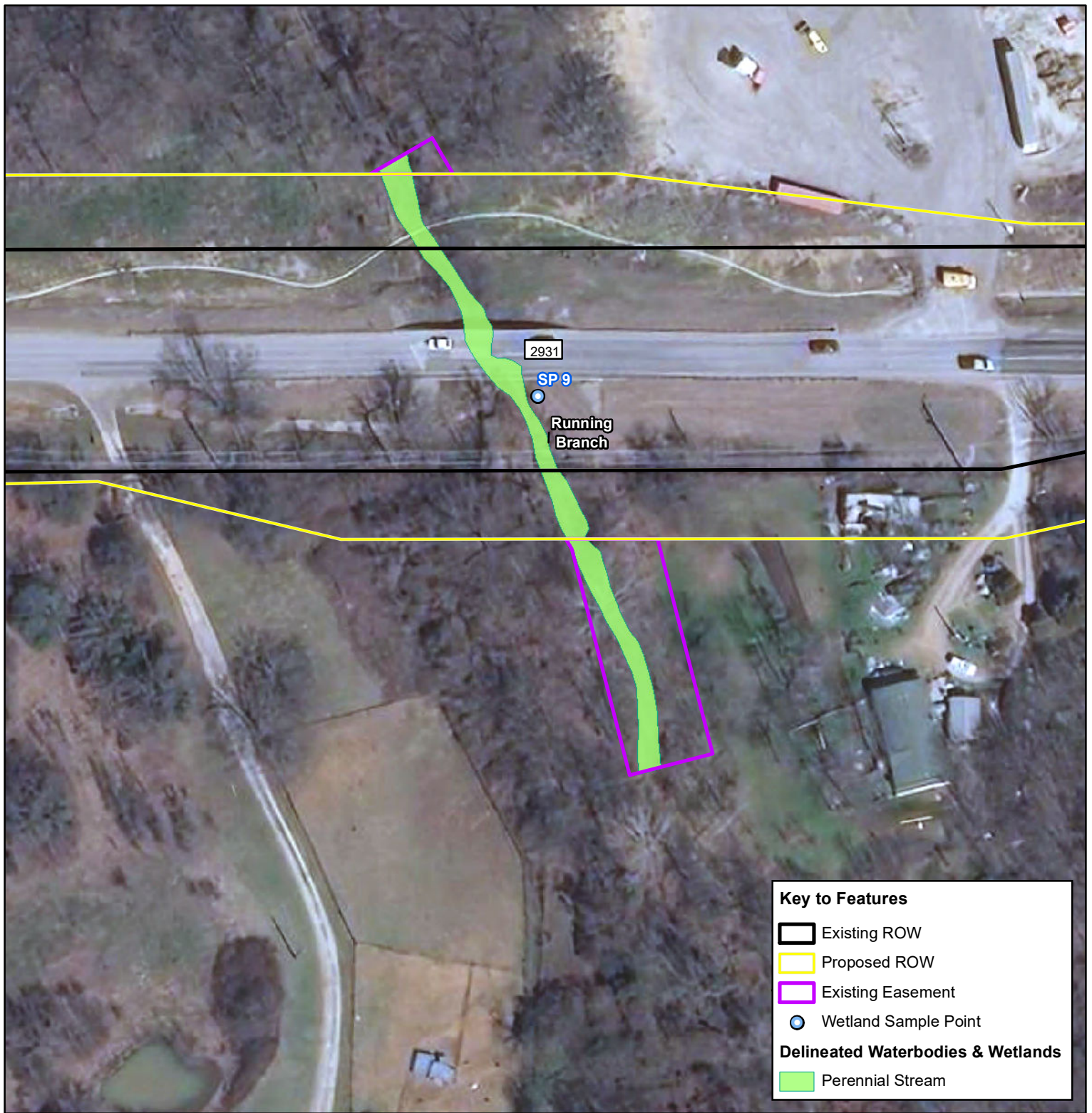
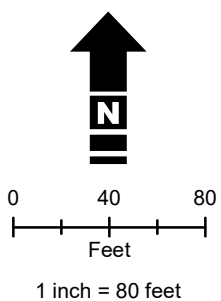


Figure 8-3

Waterbodies & Wetlands

FM 2931 from US 380 to FM 428
Denton County, Texas
CSJ: 2979-01-011



Source: Maxar 3/7/2021

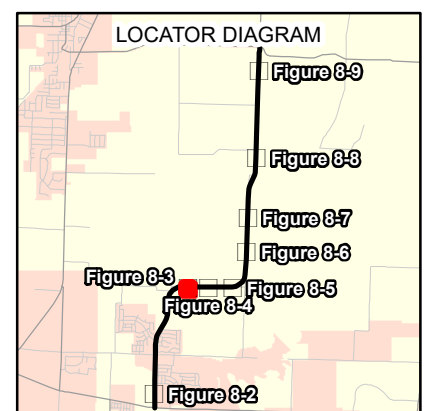


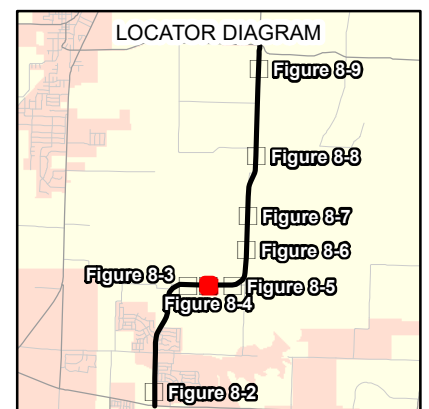


Figure 8-4

Waterbodies & Wetlands

FM 2931 from US 380 to FM 428
Denton County, Texas
CSJ: 2979-01-011

Source: Maxar 3/7/2021



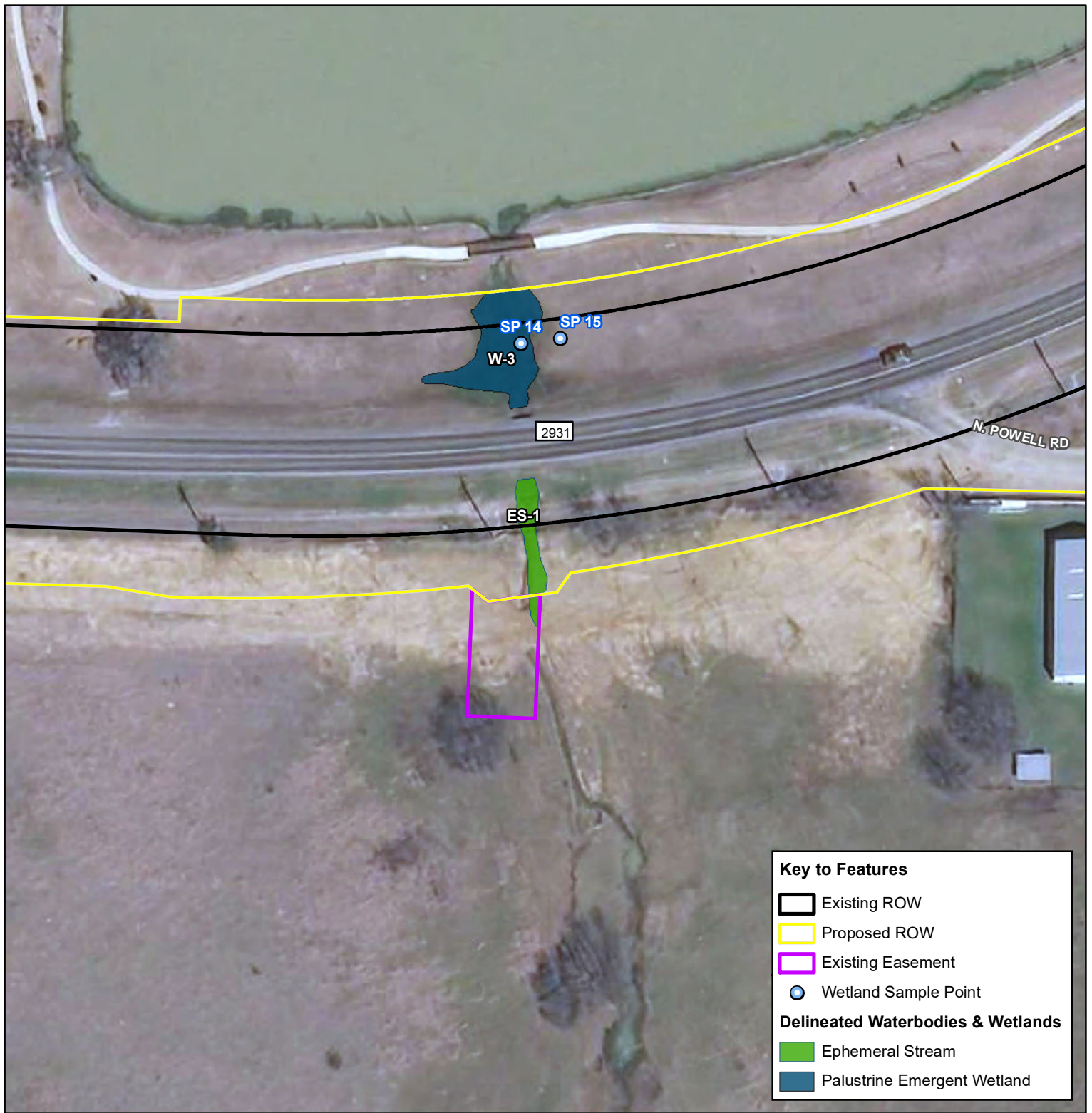
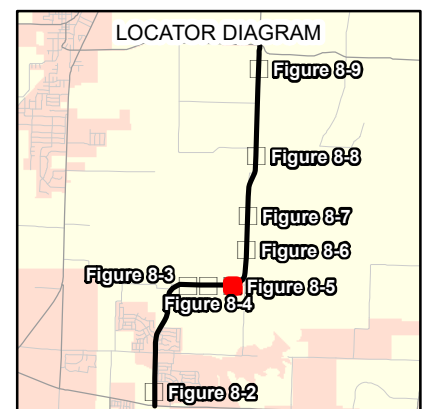
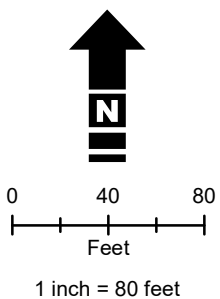


Figure 8-5

Waterbodies & Wetlands

FM 2931 from US 380 to FM 428
Denton County, Texas
CSJ: 2979-01-011

Source: Maxar 3/7/2021



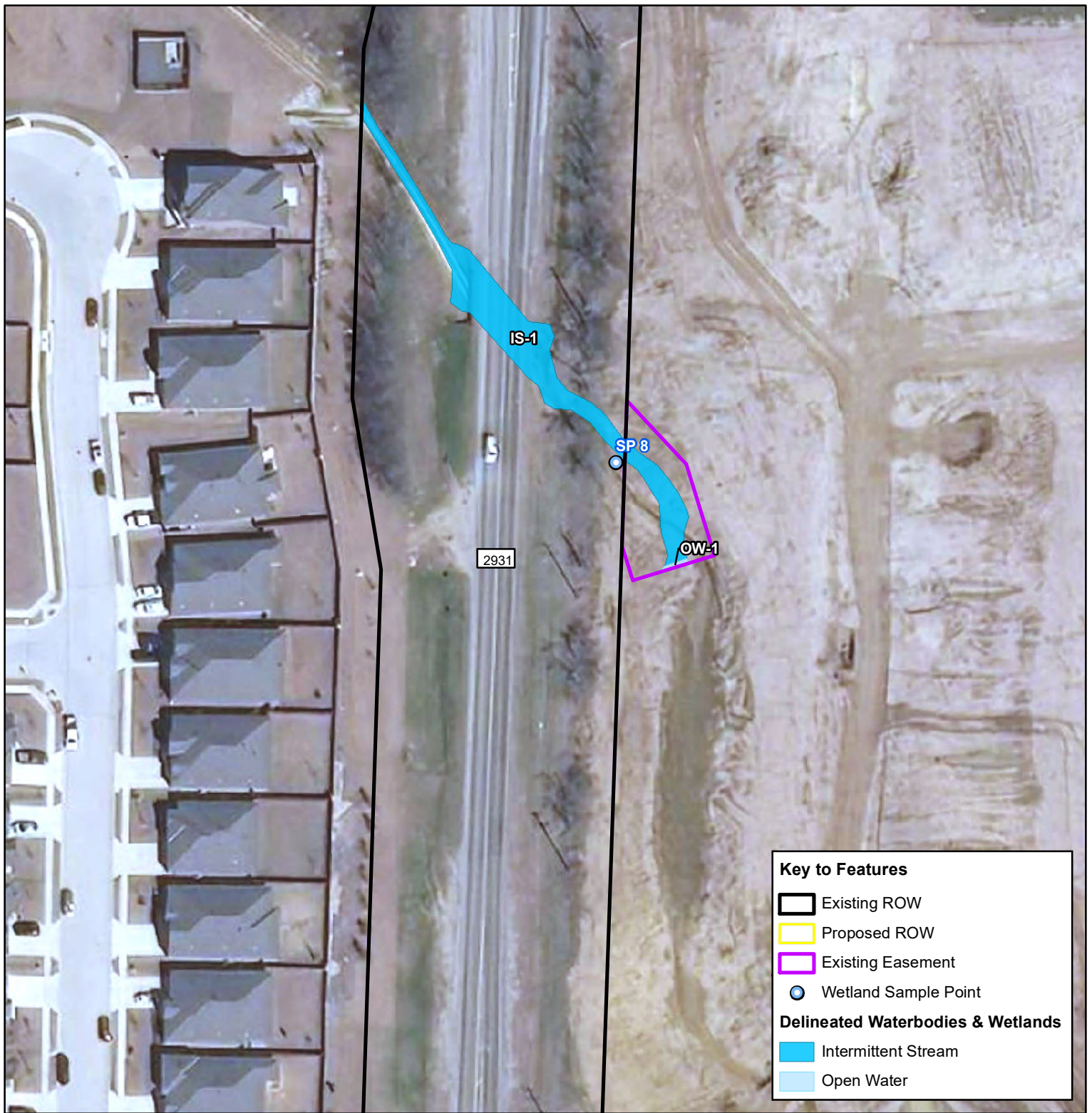
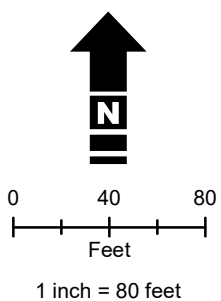


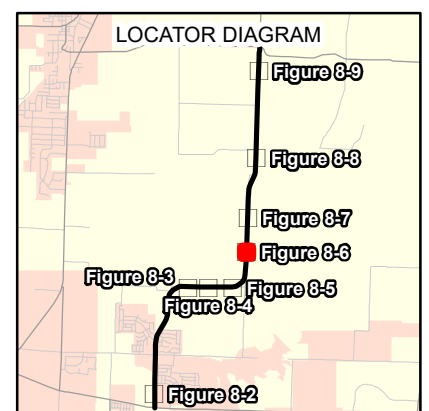
Figure 8-6

Waterbodies & Wetlands

FM 2931 from US 380 to FM 428
Denton County, Texas
CSJ: 2979-01-011



Source: Maxar 3/7/2021



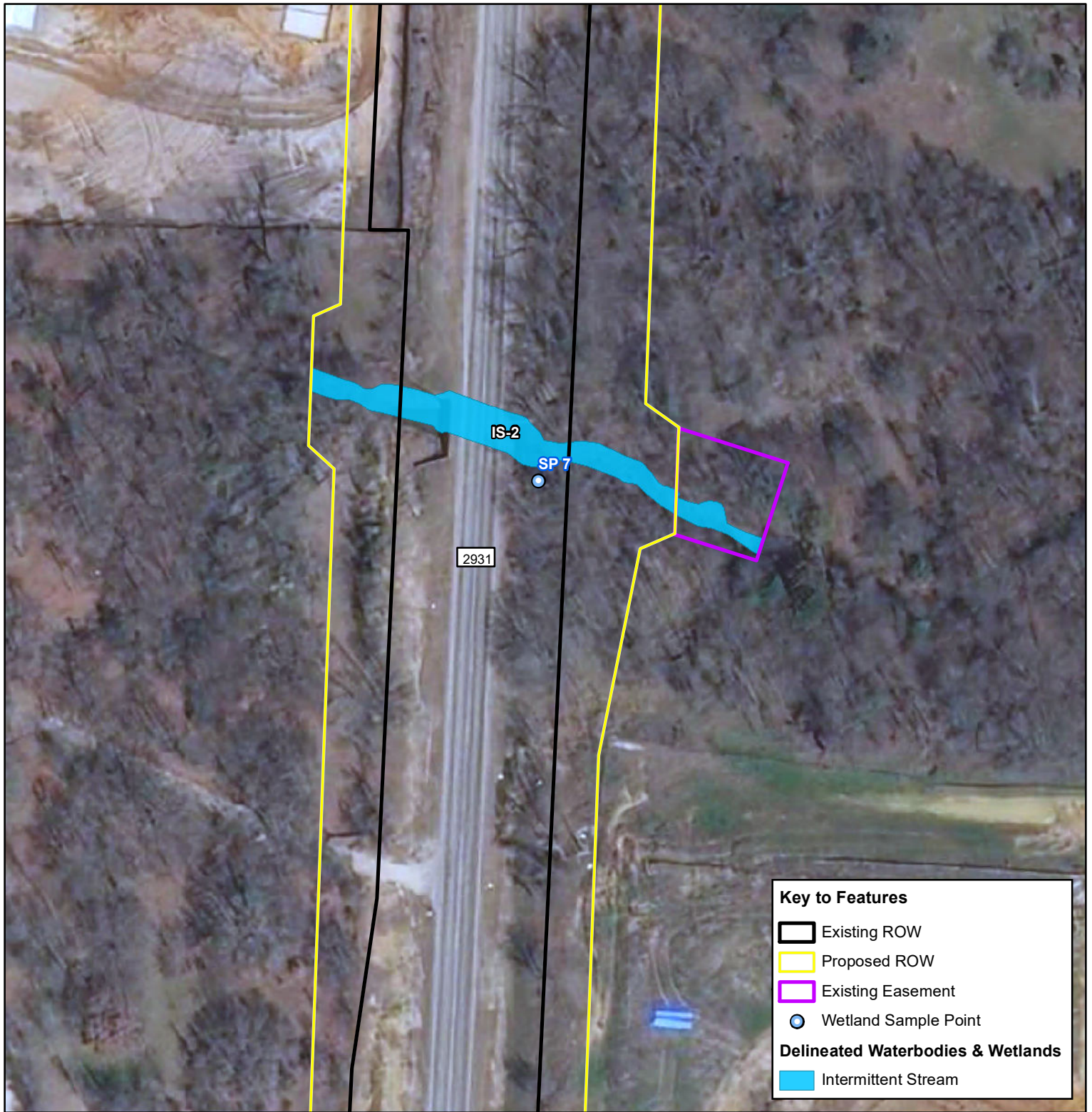
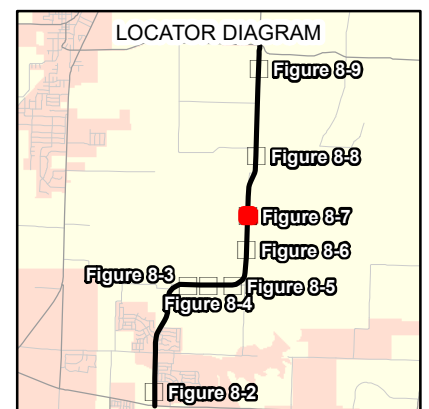
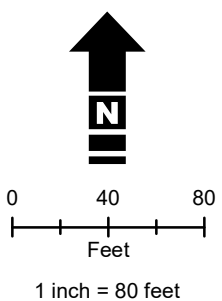


Figure 8-7

Waterbodies & Wetlands

FM 2931 from US 380 to FM 428
Denton County, Texas
CSJ: 2979-01-011

Source: Maxar 3/7/2021



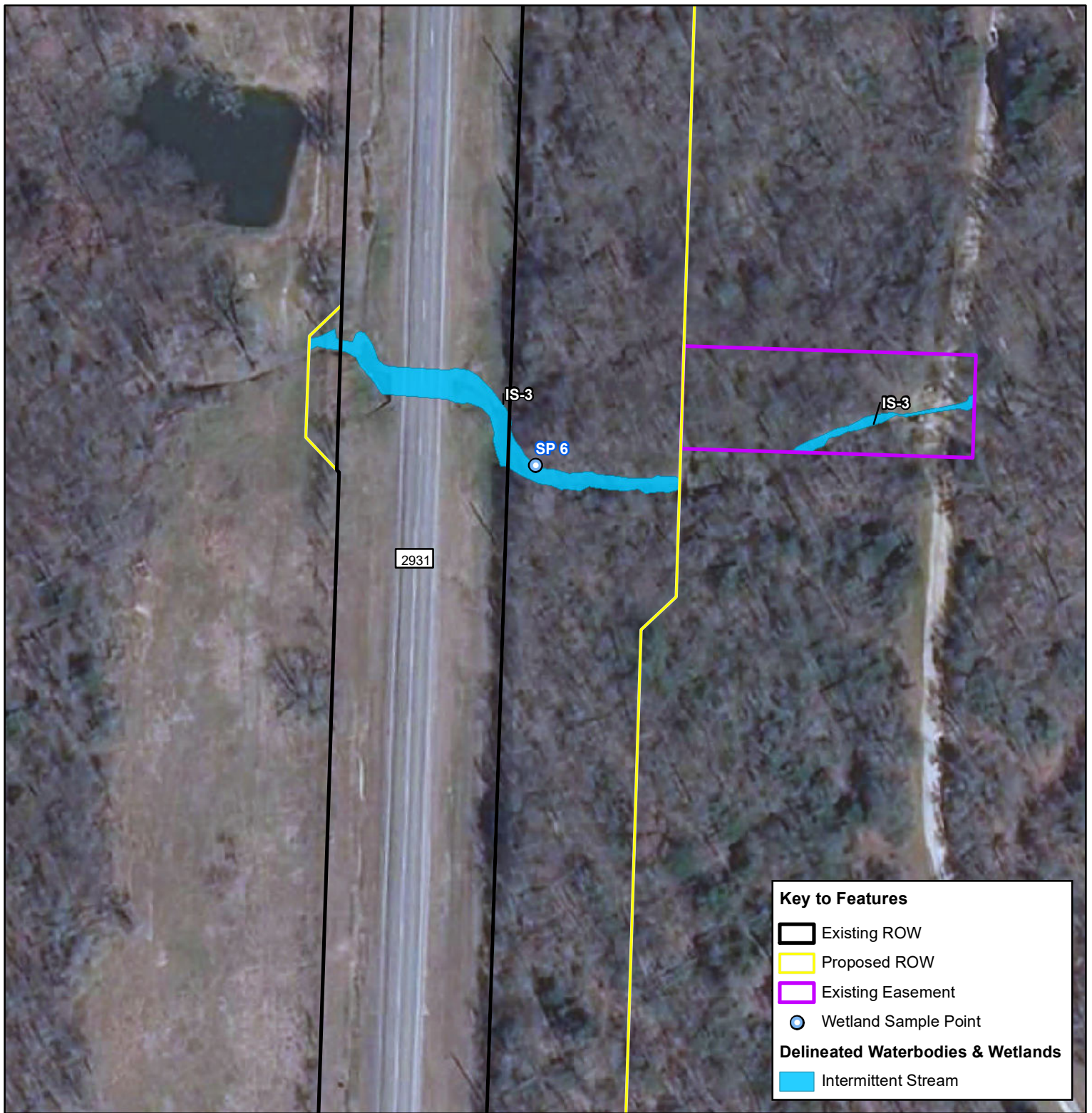
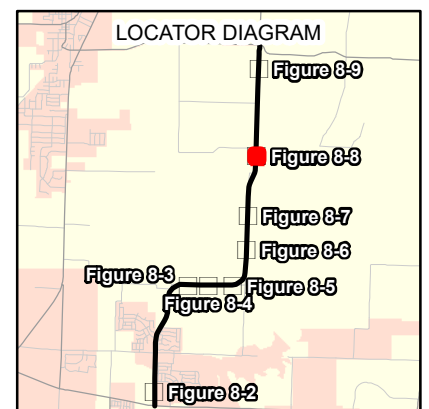
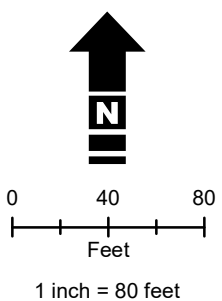


Figure 8-8

Waterbodies & Wetlands

FM 2931 from US 380 to FM 428
Denton County, Texas
CSJ: 2979-01-011

Source: Maxar 3/7/2021



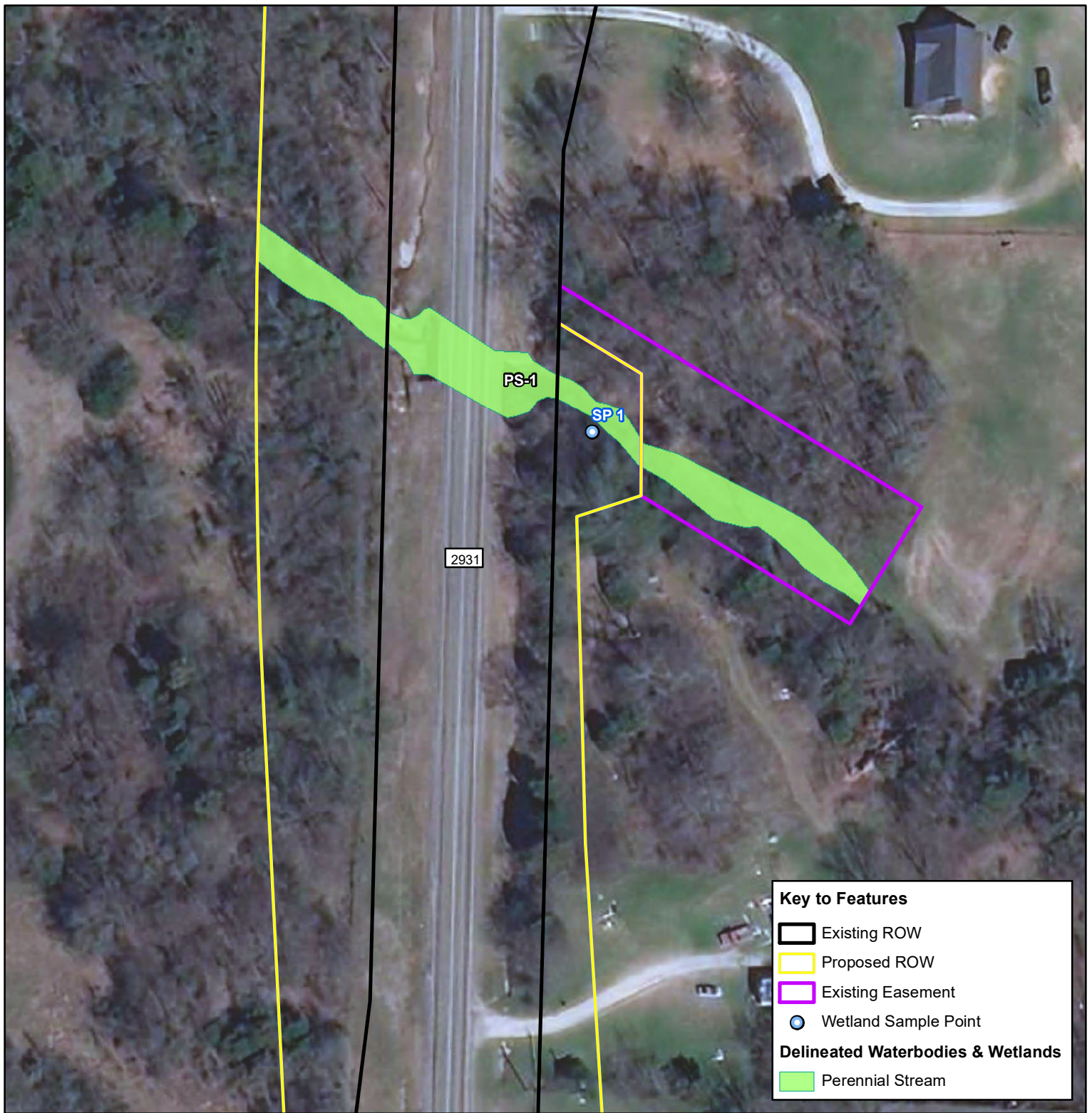
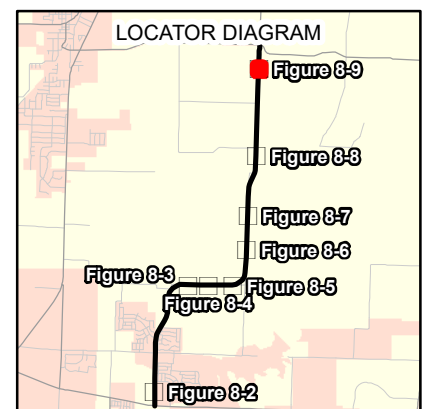
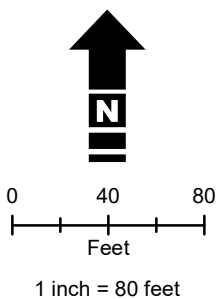


Figure 8-9

Waterbodies & Wetlands

FM 2931 from US 380 to FM 428
Denton County, Texas
CSJ: 2979-01-011

Source: Maxar 3/7/2021



Attachment 2 - Wetland Determination Data Forms

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: FM 2931 City/County: Denton Sampling Date: 11/9/2020
 Applicant/Owner: TxDOT Dallas District State: Texas Sampling Point: SP 1
 Investigator(s): J. LeClair, P. Van Zandt Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 0-2%
 Subregion (LRR): LLR J Lat: 33.294242 Long: -96.936891 Datum: NAD 1983
 Soil Map Unit Name: Bunyan fine sandy loam, frequently flooded NWI Classification: None
 Are climatic/hydrologic conditions of the site typical for this time of the year? Yes X No (If no, explain in remarks)
 Are vegetation No, soil No, or hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are vegetation No, soil No, or hydrology No 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 <u> </u>	No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Hydric Soil Present?	Yes <u> </u>	No <u>X</u>	
Wetland Hydrology Present?	Yes <u> </u>	No <u>X</u>	
Remarks: Does not meet the three criteria for a wetland. Sample point taken on streambank. Sand and gravel substrate. A review of the Antecedent Precipitation Tool data indicates a typical year.			

VEGETATION -- Use scientific names of plants.

Tree Stratum	(Plot size: <u>30-ft R</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>8</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50%</u> (A/B)
1. <u>Ulmus americana</u>		<u>40</u>	<u>Yes</u>	<u>FAC</u>	
2. <u>Carya illinoensis</u>		<u>30</u>	<u>Yes</u>	<u>FAC</u>	
3. <u>Juniperus virginiana</u>		<u>15</u>	<u>No</u>	<u>UPL</u>	
4. <u>Quercus stellata</u>		<u>5</u>	<u>No</u>	<u>FACU</u>	
		<u>90</u> = Total Cover			
50% of total cover:		<u>45</u>	20% of total cover:	<u>18</u>	
Sapling/Shrub Stratum	(Plot size: <u>15-ft R</u>)				Prevalence Index Worksheet Total % Cover of: <u> </u> Multiply by: OBL species <u> </u> x 1 = <u> </u> FACW species <u>15</u> x 2 = <u>30</u> FAC species <u>75</u> x 3 = <u>225</u> FACU species <u>35</u> x 4 = <u>140</u> UPL species <u>20</u> x 5 = <u>100</u> Column Totals <u>145</u> (A) <u>495</u> (B) Prevalence Index = B/A = <u>3.41</u>
1. <u>Ulmus americana</u>		<u>5</u>	<u>Yes</u>	<u>FAC</u>	
2. <u>Morus alba</u>		<u>5</u>	<u>Yes</u>	<u>FACU</u>	
3. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
4. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
		<u>10</u> = Total Cover			
50% of total cover:		<u>5</u>	20% of total cover:	<u>2</u>	
Herb Stratum	(Plot size: <u>5-ft R</u>)				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
1. <u>Symphyotrichum lateriflorum</u>		<u>15</u>	<u>Yes</u>	<u>FACW</u>	
2. <u>Chasmanthium latifolium</u>		<u>10</u>	<u>Yes</u>	<u>FACU</u>	
3. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
4. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
5. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
6. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
7. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
8. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
9. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
10. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
		<u>25</u> = Total Cover			
50% of total cover:		<u>12.5</u>	20% of total cover:	<u>5</u>	
Woody Vine Stratum	(Plot size: <u>30-ft R</u>)				
1. <u>Smilax bona-nox</u>		<u>15</u>	<u>Yes</u>	<u>FACU</u>	
2. <u>Vitis mustangensis</u>		<u>5</u>	<u>Yes</u>	<u>UPL</u>	
		<u>20</u> = Total Cover			
50% of total cover:		<u>10</u>	20% of total cover:	<u>4</u>	
% Bare Ground in Herb Stratum <u> </u>					

Remarks: Does not meet the criteria for hydrophytic vegetation.
 Approximately 75% of total cover in herb stratum consisted of leaf litter.

SOIL

Sampling Point: SP 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 5/6	98	7.5YR 4/6	2	C	M	sand	

¹Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains.²Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)
<input type="checkbox"/> Stratified Layers (A5) (LRR F)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)	<input type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)	<input type="checkbox"/> High Plains Depressions (F16)
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	<input type="checkbox"/> (MLRA 72 & 73 of LRR H)

Indicators for Problematic Hydric Soils³:

<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)
<input type="checkbox"/> (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)
³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

 Type: _____
 Depth (inches): _____
Hydric Soil Present? Yes _____ No X

Remarks: Does not meet the criteria for hydric soil.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> (C3) (where not tilled)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Water-Stained Leaves (B9)	

Secondary Indicators (minimum of two required)

<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input checked="" type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> (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)

Field Observations:

 Surface Water Present? Yes _____ No X Depth (inches): _____
 Water Table Present? Yes _____ No X Depth (inches): _____
 Saturation Present? Yes _____ No X Depth (inches): _____
 (includes capillary fringe)
Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Does not meet the criteria for wetland hydrology.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: FM 2931 City/County: Denton Sampling Date: 11/9/2020
 Applicant/Owner: TxDOT Dallas District State: Texas Sampling Point: SP 2
 Investigator(s): J. LeClair, P. Van Zandt Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): Ditch Local relief (concave, convex, none): Concave Slope (%): 1-2%
 Subregion (LRR): LLR J Lat: 33.288169 Long: -96.937569 Datum: NAD 1983
 Soil Map Unit Name: Callisburg fine sandy loam, 1 to 3% slopes NWI Classification: None
 Are climatic/hydrologic conditions of the site typical for this time of the year? Yes X No (If no, explain in remarks)
 Are vegetation No, soil No, or hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are vegetation No, soil No, or hydrology No 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 <u> </u>	No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Hydric Soil Present?	Yes <u>X</u>	No <u> </u>	
Wetland Hydrology Present?	Yes <u> </u>	No <u>X</u>	
Remarks: Does not meet the three criteria for a wetland. Sample point taken within a roadside ditch draining to concrete lined feature at RCP culvert. A review of the Antecedent Precipitation Tool data indicates a typical year.			

VEGETATION -- Use scientific names of plants.

Tree Stratum	(Plot size: <u>30-ft R</u>)	Absolute % Cover	Dominant Species?	Indicator Status	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)
1. <u>N/A</u>					
2. <u> </u>					
3. <u> </u>					
4. <u> </u>					
		<u>0</u> = Total Cover			
50% of total cover:		<u>0</u>	20% of total cover:	<u>0</u>	
Sapling/Shrub Stratum	(Plot size: <u>15-ft R</u>)				Prevalence Index Worksheet Total % Cover of: <u> </u> Multiply by: <u> </u> OBL species <u> </u> x 1 = <u> </u> FACW species <u> </u> x 2 = <u> </u> FAC species <u> </u> x 3 = <u> </u> FACU species <u> </u> x 4 = <u> </u> UPL species <u> </u> x 5 = <u> </u> Column Totals <u> </u> (A) <u> </u> (B) Prevalence Index = B/A = <u> </u>
1. <u>N/A</u>					
2. <u> </u>					
3. <u> </u>					
4. <u> </u>					
5. <u> </u>					
		<u>0</u> = Total Cover			
50% of total cover:		<u>0</u>	20% of total cover:	<u>0</u>	
Herb Stratum	(Plot size: <u>5-ft R</u>)				Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation <u> </u> 2 - Dominance Test is >50% <u> </u> 3 - Prevalence Index is ≤3.0 ¹ <u> </u> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) <u> </u> ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
1. <u>Cynodon dactylon</u>		<u>95</u>	<u>Yes</u>	<u>FACU</u>	
2. <u>Echinochloa crus-galli</u>		<u>5</u>	<u>No</u>	<u>FAC</u>	
3. <u> </u>					
4. <u> </u>					
5. <u> </u>					
6. <u> </u>					
7. <u> </u>					
8. <u> </u>					
9. <u> </u>					
10. <u> </u>					
		<u>100</u> = Total Cover			
50% of total cover:		<u>50</u>	20% of total cover:	<u>20</u>	
Woody Vine Stratum	(Plot size: <u>30-ft R</u>)				Hydrophytic Vegetation Present Yes <u> </u> No <u>X</u>
1. <u>N/A</u>					
2. <u> </u>					
		<u>0</u> = Total Cover			
50% of total cover:		<u>0</u>	20% of total cover:	<u>0</u>	
% Bare Ground in Herb Stratum <u> </u>					
Remarks: Does not meet the criteria for hydrophytic vegetation.					

SOIL

Sampling Point: SP 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	95	7.5YR 3/4	5	C	PL	clay	

¹Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains.²Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)
<input type="checkbox"/> Stratified Layers (A5) (LRR F)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)	<input type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input checked="" type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)	<input type="checkbox"/> High Plains Depressions (F16)
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	(MLRA 72 & 73 of LRR H)

Indicators for Problematic Hydric Soils³:

<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)
³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

 Type: _____
 Depth (inches): _____
Hydric Soil Present? Yes ☒ No ☐

Remarks: Meets the criteria for hydric soil.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots
<input type="checkbox"/> Drift Deposits (B3)	(C3) (where not tilled)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Water-Stained Leaves (B9)	

Secondary Indicators (minimum of two required)

<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)

Field Observations:

 Surface Water Present? Yes ☐ No ☒ Depth (inches): _____
 Water Table Present? Yes ☐ No ☒ Depth (inches): _____
 Saturation Present? Yes ☐ No ☒ Depth (inches): _____
 (includes capillary fringe)
Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Does not meet the criteria for wetland hydrology.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: FM 2931 City/County: Denton Sampling Date: 11/9/2020
 Applicant/Owner: TxDOT Dallas District State: Texas Sampling Point: SP 3
 Investigator(s): J. LeClair, P. Van Zandt Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): Concave Slope (%): 1-2%
 Subregion (LRR): LLR J Lat: 33.288117 Long: -96.937189 Datum: NAD 1983
 Soil Map Unit Name: Callisburg fine sandy loam, 1 to 3% slopes NWI Classification: None
 Are climatic/hydrologic conditions of the site typical for this time of the year? Yes X No (If no, explain in remarks)
 Are vegetation No, soil No, or hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are vegetation No, soil No, or hydrology No 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 <u> </u>	No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Hydric Soil Present?	Yes <u> </u>	No <u>X</u>	
Wetland Hydrology Present?	Yes <u> </u>	No <u>X</u>	
Remarks: Does not meet the three criteria for a wetland.			
Vegetated swale with no OHWM. A review of the Antecedent Precipitation Tool data indicates a typical year.			

VEGETATION -- Use scientific names of plants.

Tree Stratum	(Plot size: <u>30-ft R</u>)	Absolute % Cover	Dominant Species?	Indicator Status	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>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50%</u> (A/B)
1. <u>N/A</u>					
2. <u> </u>					
3. <u> </u>					
4. <u> </u>					
		<u>0</u> = Total Cover			
50% of total cover:		<u>0</u>	20% of total cover:	<u>0</u>	
Sapling/Shrub Stratum	(Plot size: <u>15-ft R</u>)				Prevalence Index Worksheet Total % Cover of: <u> </u> Multiply by: <u> </u> OBL species <u> </u> x 1 = <u> </u> FACW species <u>3</u> x 2 = <u>6</u> FAC species <u>27</u> x 3 = <u>81</u> FACU species <u>10</u> x 4 = <u>40</u> UPL species <u>60</u> x 5 = <u>300</u> Column Totals <u>100</u> (A) <u>427</u> (B) Prevalence Index = B/A = <u>4.27</u>
1. <u>N/A</u>					
2. <u> </u>					
3. <u> </u>					
4. <u> </u>					
5. <u> </u>					
		<u>0</u> = Total Cover			
50% of total cover:		<u>0</u>	20% of total cover:	<u>0</u>	
Herb Stratum	(Plot size: <u>5-ft R</u>)				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
1. <u>Setaria leucopila</u>		<u>60</u>	<u>Yes</u>	<u>UPL</u>	
2. <u>Paspalum dilatatum</u>		<u>27</u>	<u>Yes</u>	<u>FAC</u>	
3. <u>Cynodon dactylon</u>		<u>10</u>	<u>No</u>	<u>FACU</u>	
4. <u>Persicaria pensylvanica</u>		<u>3</u>	<u>No</u>	<u>FACW</u>	
5. <u> </u>					
6. <u> </u>					
7. <u> </u>					
8. <u> </u>					
9. <u> </u>					
10. <u> </u>					
		<u>100</u> = Total Cover			
50% of total cover:		<u>50</u>	20% of total cover:	<u>20</u>	
Woody Vine Stratum	(Plot size: <u>30-ft R</u>)				Hydrophytic Vegetation Present Yes <u> </u> No <u>X</u>
1. <u>N/A</u>					
2. <u> </u>					
		<u>0</u> = Total Cover			
50% of total cover:		<u>0</u>	20% of total cover:	<u>0</u>	
% Bare Ground in Herb Stratum <u> </u>					
Remarks: Does not meet the criteria for hydrophytic vegetation.					

SOIL

Sampling Point: SP 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 3/3	90	5YR 3/4	10	C	PL/M	sandy loam	

¹Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains.²Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)
<input type="checkbox"/> Stratified Layers (A5) (LRR F)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)	<input type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)	<input type="checkbox"/> High Plains Depressions (F16)
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	<input type="checkbox"/> (MLRA 72 & 73 of LRR H)

Indicators for Problematic Hydric Soils³:

<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)
<input type="checkbox"/> (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)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

 Type: _____
 Depth (inches): _____
Hydric Soil Present? Yes _____ No X

Remarks: Does not meet the criteria for hydric soil.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> (C3) (where not tilled)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Water-Stained Leaves (B9)	

Secondary Indicators (minimum of two required)

<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)
<input type="checkbox"/> (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)

Field Observations:

 Surface Water Present? Yes _____ No X Depth (inches): _____
 Water Table Present? Yes _____ No X Depth (inches): _____
 Saturation Present? Yes _____ No X Depth (inches): _____
 (includes capillary fringe)
Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Does not meet the criteria for wetland hydrology.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: FM 2931 City/County: Denton Sampling Date: 11/9/2020
 Applicant/Owner: TxDOT Dallas District State: Texas Sampling Point: SP 4
 Investigator(s): J. LeClair, P. Van Zandt Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): Concave Slope (%): 0-2%
 Subregion (LRR): LLR J Lat: 33.239488 Long: -96.962318 Datum: NAD 1983
 Soil Map Unit Name: Gasil fine sandy loam, 1 to 3% slopes NWI Classification: None
 Are climatic/hydrologic conditions of the site typical for this time of the year? Yes X No (If no, explain in remarks)
 Are vegetation No, soil No, or hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are vegetation No, soil No, or hydrology No 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 <u> </u>	No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Hydric Soil Present?	Yes <u>X</u>	No <u> </u>	
Wetland Hydrology Present?	Yes <u> </u>	No <u>X</u>	
Remarks: Does not meet the three criteria for a wetland. Vegetated swale with no OHWM. A review of the Antecedent Precipitation Tool data indicates a typical year.			

VEGETATION -- Use scientific names of plants.

Tree Stratum	(Plot size: <u>30-ft R</u>)	Absolute % Cover	Dominant Species?	Indicator Status	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>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50%</u> (A/B)
1. <u>Populus deltoides</u>		<u>15</u>	<u>Yes</u>	<u>FAC</u>	
2. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
3. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
4. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
		<u>15</u> = Total Cover			
50% of total cover:		<u>7.5</u>	20% of total cover:	<u>3</u>	
Sapling/Shrub Stratum (Plot size: <u>15-ft R</u>)					
1. <u>N/A</u>		<u> </u>	<u> </u>	<u> </u>	Prevalence Index Worksheet Total % Cover of: <u> </u> Multiply by: OBL species <u> </u> x 1 = <u> </u> FACW species <u> </u> x 2 = <u> </u> FAC species <u>30</u> x 3 = <u>90</u> FACU species <u>85</u> x 4 = <u>340</u> UPL species <u> </u> x 5 = <u> </u> Column Totals <u>115</u> (A) <u>430</u> (B)
2. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
3. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
4. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
5. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
		<u>0</u> = Total Cover			
50% of total cover:		<u>0</u>	20% of total cover:	<u>0</u>	
Herb Stratum (Plot size: <u>5-ft R</u>)					
1. <u>Cynodon dactylon</u>		<u>85</u>	<u>Yes</u>	<u>FACU</u>	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)
2. <u>Rumex crispus</u>		<u>15</u>	<u>No</u>	<u>FAC</u>	
3. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
4. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
5. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
6. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
7. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
8. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
9. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
10. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
		<u>100</u> = Total Cover			
50% of total cover:		<u>50</u>	20% of total cover:	<u>20</u>	
Woody Vine Stratum (Plot size: <u>30-ft R</u>)					
1. <u>N/A</u>		<u> </u>	<u> </u>	<u> </u>	Hydrophytic Vegetation Present Yes <u> </u> No <u>X</u>
2. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
		<u>0</u> = Total Cover			
50% of total cover:		<u>0</u>	20% of total cover:	<u>0</u>	
% Bare Ground in Herb Stratum <u>5</u>					

Remarks: Does not meet the criteria for hydrophytic vegetation.

SOIL

Sampling Point: SP 4

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			
0-8	10YR 3/2	98	7.5YR 3/4	2	C	PL	sandy loam	
8-16	10YR 5/6	100					sand	

¹Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains.²Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)
<input type="checkbox"/> Histic Epipedon (A2)	<input checked="" type="checkbox"/> Sandy Redox (S5)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)
<input type="checkbox"/> Stratified Layers (A5) (LRR F)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)	<input type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)	<input type="checkbox"/> High Plains Depressions (F16)
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	(MLRA 72 & 73 of LRR H)

Indicators for Problematic Hydric Soils³:

<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)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

 Type: _____
 Depth (inches): _____
Hydric Soil Present? Yes ☒ No ☐

Remarks: Meets the criteria for hydric soil.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> (C3) (where not tilled)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Water-Stained Leaves (B9)	

Secondary Indicators (minimum of two required)

<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)

Field Observations:

 Surface Water Present? Yes ☐ No ☒ Depth (inches): _____
 Water Table Present? Yes ☐ No ☒ Depth (inches): _____
 Saturation Present? Yes ☐ No ☒ Depth (inches): _____
 (includes capillary fringe)
Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Does not meet the criteria for wetland hydrology.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: FM 2931 City/County: Denton Sampling Date: 11/9/2020
 Applicant/Owner: TxDOT Dallas District State: Texas Sampling Point: SP 5
 Investigator(s): J. LeClair, P. Van Zandt Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 2-3%
 Subregion (LRR): LLR J Lat: 33.285882 Long: -96.937433 Datum: NAD 1983
 Soil Map Unit Name: Callisburg fine sandy loam, 1 to 3% slopes NWI Classification: None
 Are climatic/hydrologic conditions of the site typical for this time of the year? Yes X No (If no, explain in remarks)
 Are vegetation No, soil No, or hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are vegetation No, soil No, or hydrology No 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 <u>X</u>	No <u> </u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Hydric Soil Present?	Yes <u> </u>	No <u>X</u>	
Wetland Hydrology Present?	Yes <u> </u>	No <u>X</u>	
Remarks: Though hydrophytic vegetation was present at the sample location, no hydric soils or wetland hydrology were present. Therefore, the sampled area does not meet the criteria for a wetland. Upstream and downstream pond. Vegetated swale with no OHWM. A review of the Antecedent Precipitation Tool data indicates a typical year.			

VEGETATION -- Use scientific names of plants.

Tree Stratum	(Plot size: <u>30-ft R</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>67%</u> (A/B)
1. <u>N/A</u>					
2. <u> </u>					
3. <u> </u>					
4. <u> </u>					
		0 = Total Cover			
50% of total cover:		0	20% of total cover:	0	
Sapling/Shrub Stratum	(Plot size: <u>15-ft R</u>)				Prevalence Index Worksheet Total % Cover of: <u> </u> Multiply by: OBL species <u> </u> x 1 = <u> </u> FACW species <u> </u> x 2 = <u> </u> FAC species <u> </u> x 3 = <u> </u> FACU species <u> </u> x 4 = <u> </u> UPL species <u> </u> x 5 = <u> </u> Column Totals <u> </u> (A) <u> </u> (B) Prevalence Index = B/A = <u> </u>
1. <u>N/A</u>					
2. <u> </u>					
3. <u> </u>					
4. <u> </u>					
5. <u> </u>					
		0 = Total Cover			
50% of total cover:		0	20% of total cover:	0	
Herb Stratum	(Plot size: <u>5-ft R</u>)				Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>X</u> <u>2</u> - Dominance Test is >50% <u>3</u> - Prevalence Index is ≤3.0 ¹ <u>4</u> - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation ¹ (Explain) <u> </u> ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
1. <u>Paspalum dilatatum</u>		40	Yes	FAC	
2. <u>Persicaria pensylvanica</u>		25	Yes	FACW	
3. <u>Setaria leucopila</u>		25	Yes	UPL	
4. <u>Rumex crispus</u>		10	No	FAC	
5. <u> </u>					
6. <u> </u>					
7. <u> </u>					
8. <u> </u>					
9. <u> </u>					
10. <u> </u>					
		100 = Total Cover			
50% of total cover:		50	20% of total cover:	20	
Woody Vine Stratum	(Plot size: <u>30-ft R</u>)				Hydrophytic Vegetation Present Yes <u>X</u> No <u> </u>
1. <u>N/A</u>					
2. <u> </u>					
		0 = Total Cover			
50% of total cover:		0	20% of total cover:	0	
% Bare Ground in Herb Stratum <u> </u>					
Remarks: <u>Meets the criteria for hydrophytic vegetation.</u>					

SOIL

Sampling Point: SP 5

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 3/3	100					sandy loam	

¹Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains.²Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)
<input type="checkbox"/> Stratified Layers (A5) (LRR F)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)	<input type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)	<input type="checkbox"/> High Plains Depressions (F16)
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	<input type="checkbox"/> (MLRA 72 & 73 of LRR H)

Indicators for Problematic Hydric Soils³:

<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)
<input type="checkbox"/> (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)
³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

 Type: _____
 Depth (inches): _____
Hydric Soil Present? Yes _____ No X

Remarks: Does not meet the criteria for hydric soil.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> (C3) (where not tilled)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Water-Stained Leaves (B9)	

Secondary Indicators (minimum of two required)

<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)
<input type="checkbox"/> (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)

Field Observations:

 Surface Water Present? Yes _____ No X Depth (inches): _____
 Water Table Present? Yes _____ No X Depth (inches): _____
 Saturation Present? Yes _____ No X Depth (inches): _____
 (includes capillary fringe)
Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Does not meet the criteria for wetland hydrology.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: FM 2931 City/County: Denton Sampling Date: 11/10/2020
 Applicant/Owner: TxDOT Dallas District State: Texas Sampling Point: SP 6
 Investigator(s): J. LeClair, P. Van Zandt Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 0-2%
 Subregion (LRR): LLR J Lat: 33.275561 Long: -96.937943 Datum: NAD 1983
 Soil Map Unit Name: Gowen clay loam, occasionally flooded NWI Classification: None
 Are climatic/hydrologic conditions of the site typical for this time of the year? Yes X No (If no, explain in remarks)
 Are vegetation No, soil No, or hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are vegetation No, soil No, or hydrology No 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 <u>X</u>	No <u> </u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Hydric Soil Present?	Yes <u> </u>	No <u>X</u>	
Wetland Hydrology Present?	Yes <u>X</u>	No <u> </u>	
Remarks: Though hydrophytic vegetation and wetland hydrology was present at the sample location, no hydric soils were present. Therefore, the sampled area does not meet the criteria for a wetland. Sample location on stream bank above OHWM of intermittent stream and RS4BC NWI feature. A review of the Antecedent Precipitation Tool data indicates a typical year.			

VEGETATION -- Use scientific names of plants.

Tree Stratum	(Plot size: <u>30-ft R</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>5</u> (A) Total Number of Dominant Species Across All Strata: <u>8</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>63%</u> (A/B)
1. <u>Ulmus crassifolia</u>		<u>40</u>	<u>Yes</u>	<u>FAC</u>	
2. <u>Quercus stellata</u>		<u>25</u>	<u>Yes</u>	<u>FACU</u>	
3. <u>Celtis laevigata</u>		<u>20</u>	<u>Yes</u>	<u>FAC</u>	
4. <u>Juniperus virginiana</u>		<u>10</u>	<u>No</u>	<u>UPL</u>	
		<u>95</u> = Total Cover			
50% of total cover:		<u>47.5</u>	20% of total cover:	<u>19</u>	
Sapling/Shrub Stratum	(Plot size: <u>15-ft R</u>)				Prevalence Index Worksheet Total % Cover of: <u> </u> Multiply by: OBL species <u> </u> x 1 = <u> </u> FACW species <u> </u> x 2 = <u> </u> FAC species <u> </u> x 3 = <u> </u> FACU species <u> </u> x 4 = <u> </u> UPL species <u> </u> x 5 = <u> </u> Column Totals <u> </u> (A) <u> </u> (B) Prevalence Index = B/A = <u> </u>
1. <u>Celtis laevigata</u>		<u>30</u>	<u>Yes</u>	<u>FAC</u>	
2. <u>Ulmus crassifolia</u>		<u>20</u>	<u>Yes</u>	<u>FAC</u>	
3. <u>Quercus stellata</u>		<u>10</u>	<u>No</u>	<u>FACU</u>	
4. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
		<u>60</u> = Total Cover			
50% of total cover:		<u>30</u>	20% of total cover:	<u>12</u>	
Herb Stratum	(Plot size: <u>5-ft R</u>)				Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>X</u> <u>2</u> - Dominance Test is >50% <u>3</u> - Prevalence Index is ≤3.0 ¹ <u>4</u> - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation ¹ (Explain) <u> </u> ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
1. <u>Chasmanthium latifolium</u>		<u>10</u>	<u>Yes</u>	<u>FACU</u>	
2. <u>Elymus virginicus</u>		<u>5</u>	<u>Yes</u>	<u>FAC</u>	
3. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
4. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
5. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
6. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
7. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
8. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
9. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
		<u>15</u> = Total Cover			
50% of total cover:		<u>7.5</u>	20% of total cover:	<u>3</u>	
Woody Vine Stratum	(Plot size: <u>30-ft R</u>)				Hydrophytic Vegetation Present Yes <u>X</u> No <u> </u>
1. <u>Smilax bona-nox</u>		<u>30</u>	<u>Yes</u>	<u>FACU</u>	
2. <u> </u>		<u>30</u>	<u> </u>	<u> </u>	
		<u>30</u> = Total Cover			
50% of total cover:		<u>15</u>	20% of total cover:	<u>6</u>	
% Bare Ground in Herb Stratum <u> </u>					
Remarks: <u>Meets the criteria for hydrophytic vegetation.</u>					

SOIL

Sampling Point: SP 6

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 3/4	100					sandy loam	

¹Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains.²Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)
<input type="checkbox"/> Stratified Layers (A5) (LRR F)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)	<input type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)	<input type="checkbox"/> High Plains Depressions (F16)
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	(MLRA 72 & 73 of LRR H)

Indicators for Problematic Hydric Soils³:

<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)
³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

 Type: _____
 Depth (inches): _____
Hydric Soil Present? Yes _____ No X

Remarks: Does not meet the criteria for hydric soil.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots
<input checked="" type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> (C3) (where not tilled)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Water-Stained Leaves (B9)	

Secondary Indicators (minimum of two required)

<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)

Field Observations:

 Surface Water Present? Yes _____ No X Depth (inches): _____
 Water Table Present? Yes _____ No X Depth (inches): _____
 Saturation Present? Yes _____ No X Depth (inches): _____
 (includes capillary fringe)
Wetland Hydrology Present? Yes X No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Meets the criteria for wetland hydrology.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: FM 2931 City/County: Denton Sampling Date: 11/10/2020
 Applicant/Owner: TxDOT Dallas District State: Texas Sampling Point: SP 7
 Investigator(s): J. LeClair, P. Van Zandt Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 0-2%
 Subregion (LRR): LLR J Lat: 33.262768 Long: -96.940394 Datum: NAD 1983
 Soil Map Unit Name: Gowen clay loam, frequently flooded NWI Classification: None
 Are climatic/hydrologic conditions of the site typical for this time of the year? Yes X No (If no, explain in remarks)
 Are vegetation No, soil No, or hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are vegetation No, soil No, or hydrology No 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 <u>X</u>	No <u> </u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Hydric Soil Present?	Yes <u> </u>	No <u>X</u>	
Wetland Hydrology Present?	Yes <u> </u>	No <u>X</u>	
Remarks: Does not meet the three criteria for a wetland. Sample location above OHWM of perennial stream and PFO1C NWI feature. Sand and silt substrate. A review of the Antecedent Precipitation Tool data indicates a typical year.			

VEGETATION -- Use scientific names of plants.

Tree Stratum	(Plot size: <u>30-ft R</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>5</u> (A) Total Number of Dominant Species Across All Strata: <u>8</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>63%</u> (A/B)
1. <u>Ulmus americana</u>		40	Yes	FAC	
2. <u>Celtis laevigata</u>		30	Yes	FAC	
3. <u>Salix nigra</u>		20	Yes	FACW	
4. <u>Juniperus virginiana</u>		10	No	UPL	
		100 = Total Cover			
50% of total cover:		50	20% of total cover:	20	
Sapling/Shrub Stratum	(Plot size: <u>15-ft R</u>)				Prevalence Index Worksheet Total % Cover of: <u> </u> Multiply by: OBL species <u> </u> x 1 = <u> </u> FACW species <u> </u> x 2 = <u> </u> FAC species <u> </u> x 3 = <u> </u> FACU species <u> </u> x 4 = <u> </u> UPL species <u> </u> x 5 = <u> </u> Column Totals <u> </u> (A) <u> </u> (B) Prevalence Index = B/A = <u> </u>
1. <u>Sambucus canadensis</u>		10	Yes	UPL	
2. <u>Quercus falcata</u>		5	Yes	FACU	
3. <u> </u>					
4. <u> </u>					
5. <u> </u>					
		15 = Total Cover			
50% of total cover:		7.5	20% of total cover:	3	
Herb Stratum	(Plot size: <u>5-ft R</u>)				Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation X 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
1. <u>Elymus virginicus</u>		20	Yes	FAC	
2. <u>Carex cherokeensis</u>		15	Yes	FACW	
3. <u> </u>					
4. <u> </u>					
5. <u> </u>					
6. <u> </u>					
7. <u> </u>					
8. <u> </u>					
9. <u> </u>					
10. <u> </u>					
		35 = Total Cover			
50% of total cover:		17.5	20% of total cover:	7	
Woody Vine Stratum	(Plot size: <u>30-ft R</u>)				Hydrophytic Vegetation Present Yes <u>X</u> No <u> </u>
1. <u>Smilax bona-nox</u>		20	Yes	FACU	
2. <u> </u>					
		20 = Total Cover			
50% of total cover:		10	20% of total cover:	4	
% Bare Ground in Herb Stratum <u> </u>					
Remarks: Meets the criteria for hydrophytic vegetation.					

SOIL

Sampling Point: SP 7

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 4/4	100					sandy loam	

¹Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains.²Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)
<input type="checkbox"/> Stratified Layers (A5) (LRR F)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)	<input type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)	<input type="checkbox"/> High Plains Depressions (F16)
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	<input type="checkbox"/> (MLRA 72 & 73 of LRR H)

Indicators for Problematic Hydric Soils³:

<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)
<input type="checkbox"/> (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)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

 Type: _____
 Depth (inches): _____
Hydric Soil Present? Yes _____ No X

Remarks: Does not meet the criteria for hydric soil.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> (C3) (where not tilled)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Water-Stained Leaves (B9)	

Secondary Indicators (minimum of two required)

<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)
<input type="checkbox"/> (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)

Field Observations:

 Surface Water Present? Yes _____ No X Depth (inches): _____
 Water Table Present? Yes _____ No X Depth (inches): _____
 Saturation Present? Yes _____ No X Depth (inches): _____
 (includes capillary fringe)
Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Does not meet the criteria for wetland hydrology.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: FM 2931 City/County: Denton Sampling Date: 11/10/2020
 Applicant/Owner: TxDOT Dallas District State: Texas Sampling Point: SP 8
 Investigator(s): J. LeClair, P. Van Zandt Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 1-2%
 Subregion (LRR): LLR J Lat: 33.255419 Long: -96.940745 Datum: NAD 1983
 Soil Map Unit Name: Callisburg fine sandy loam, 1 to 3% slopes NWI Classification: None
 Are climatic/hydrologic conditions of the site typical for this time of the year? Yes X No (If no, explain in remarks)
 Are vegetation Yes, soil Yes, or hydrology Yes significantly disturbed? Are "Normal Circumstances" present? Yes No X
 Are vegetation No, soil No, or hydrology No 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 <u> </u>	No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Hydric Soil Present?	Yes <u> </u>	No <u>X</u>	
Wetland Hydrology Present?	Yes <u>X</u>	No <u> </u>	

Remarks: Though wetland hydrology was present at the sample location, no hydrophytic vegetation or hydric soils were present. Therefore, the sampled area does not meet the criteria for a wetland. Sampled area consisted of cleared/disturbed land from construction activity. Intermittent stream flowing west to east through box culvert under FM 2931. Stream is concrete-lined west of roadway and through disturbed land from construction of new subdivision east of roadway. A review of the Antecedent Precipitation Tool data indicates a typical year.

VEGETATION -- Use scientific names of plants.

Tree Stratum	(Plot size: <u>30-ft R</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>6</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50%</u> (A/B)
1. <u>Celtis laevigata</u>		<u>25</u>	<u>Yes</u>	<u>FAC</u>	
2. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
3. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
4. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
		<u>25</u> = Total Cover			
50% of total cover:		<u>12.5</u>	20% of total cover:	<u>5</u>	
Sapling/Shrub Stratum	(Plot size: <u>15-ft R</u>)				Prevalence Index Worksheet Total % Cover of: <u> </u> Multiply by: OBL species <u> </u> x 1 = <u> </u> FACW species <u> </u> x 2 = <u> </u> FAC species <u>40</u> x 3 = <u>120</u> FACU species <u>35</u> x 4 = <u>140</u> UPL species <u> </u> x 5 = <u> </u> Column Totals <u>75</u> (A) <u>260</u> (B) Prevalence Index = B/A = <u>3.47</u>
1. <u>Celtis laevigata</u>		<u>10</u>	<u>Yes</u>	<u>FAC</u>	
2. <u>Gleditsia triacanthos</u>		<u>10</u>	<u>Yes</u>	<u>FACU</u>	
3. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
4. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
5. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
		<u>20</u> = Total Cover			
50% of total cover:		<u>10</u>	20% of total cover:	<u>4</u>	
Herb Stratum	(Plot size: <u>5-ft R</u>)				Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation <u> </u> 2 - Dominance Test is >50% <u> </u> 3 - Prevalence Index is ≤3.0 ¹ <u> </u> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) <u> </u> ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
1. <u>Sorghum halepense</u>		<u>15</u>	<u>Yes</u>	<u>FACU</u>	
2. <u>Carex blanda</u>		<u>5</u>	<u>Yes</u>	<u>FAC</u>	
3. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
4. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
5. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
6. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
7. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
8. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
9. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
10. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
		<u>20</u> = Total Cover			
50% of total cover:		<u>10</u>	20% of total cover:	<u>4</u>	
Woody Vine Stratum	(Plot size: <u>30-ft R</u>)				Hydrophytic Vegetation Present Yes <u> </u> No <u>X</u>
1. <u>Rubus trivialis</u>		<u>10</u>	<u>Yes</u>	<u>FACU</u>	
2. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
		<u>10</u> = Total Cover			
50% of total cover:		<u>5</u>	20% of total cover:	<u>2</u>	
% Bare Ground in Herb Stratum <u>80</u>					

Remarks: Does not meet the criteria for hydrophytic vegetation.

SOIL

Sampling Point: SP 8

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 3/3	100					loam	

¹Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains.²Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)
<input type="checkbox"/> Stratified Layers (A5) (LRR F)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)	<input type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)	<input type="checkbox"/> High Plains Depressions (F16)
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	(MLRA 72 & 73 of LRR H)

Indicators for Problematic Hydric Soils³:

<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)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

 Type: _____
 Depth (inches): _____
Hydric Soil Present? Yes _____ No X

Remarks: Does not meet the criteria for hydric soil.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots
<input checked="" type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> (C3) (where not tilled)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Water-Stained Leaves (B9)	

Secondary Indicators (minimum of two required)

<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)

Field Observations:

 Surface Water Present? Yes _____ No X Depth (inches): _____
 Water Table Present? Yes _____ No X Depth (inches): _____
 Saturation Present? Yes _____ No X Depth (inches): _____
 (includes capillary fringe)
Wetland Hydrology Present? Yes X No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Meets the criteria for wetland hydrology.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: FM 2931 City/County: Denton Sampling Date: 11/10/2020
 Applicant/Owner: TxDOT Dallas District State: Texas Sampling Point: SP 9
 Investigator(s): J. LeClair, P. Van Zandt Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 2-3%
 Subregion (LRR): LLR J Lat: 33.247901 Long: -96.956037 Datum: NAD 1983
 Soil Map Unit Name: Bunyan fine sandy loam, frequently flooded NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? Yes X No (If no, explain in remarks)
 Are vegetation No, soil No, or hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are vegetation No, soil No, or hydrology No 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 <u>X</u>	No <u> </u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Hydric Soil Present?	Yes <u> </u>	No <u>X</u>	
Wetland Hydrology Present?	Yes <u> </u>	No <u>X</u>	
Remarks: Though hydrophytic vegetation was present at the sample location, no hydric soils or wetland hydrology were present. Therefore, the sampled area does not meet the criteria for a wetland. Sample location above OHWM of perennial stream (Running Branch) and PFO1C NWI feature. Sand, silt, and gravel substrate. A review of the Antecedent Precipitation Tool data indicates a typical year.			

VEGETATION -- Use scientific names of plants.

Tree Stratum	(Plot size: <u>30-ft R</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>7</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>57%</u> (A/B)
1. <u>Salix nigra</u>		<u>20</u>	<u>Yes</u>	<u>FACW</u>	
2. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
3. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
4. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
		<u>20</u> = Total Cover			
50% of total cover:		<u>10</u>	20% of total cover:	<u>4</u>	
Sapling/Shrub Stratum (Plot size: <u>15-ft R</u>)					
1. <u>Platanus occidentalis</u>		<u>5</u>	<u>Yes</u>	<u>FAC</u>	Prevalence Index Worksheet Total % Cover of: <u> </u> Multiply by: OBL species <u> </u> x 1 = <u> </u> FACW species <u> </u> x 2 = <u> </u> FAC species <u> </u> x 3 = <u> </u> FACU species <u> </u> x 4 = <u> </u> UPL species <u> </u> x 5 = <u> </u> Column Totals <u> </u> (A) <u> </u> (B)
2. <u>Ulmus americana</u>		<u>5</u>	<u>Yes</u>	<u>FAC</u>	
3. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
4. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
5. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
		<u>10</u> = Total Cover			
50% of total cover:		<u>5</u>	20% of total cover:	<u>2</u>	
Herb Stratum (Plot size: <u>5-ft R</u>)					
1. <u>Cynodon dactylon</u>		<u>65</u>	<u>Yes</u>	<u>FACU</u>	Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>X</u> <u>2</u> - Dominance Test is >50% <u> </u> <u>3</u> - Prevalence Index is ≤3.0 ¹ <u> </u> <u>4</u> - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation ¹ (Explain) <u> </u> ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
2. <u>Dichanthelium scoparium</u>		<u>20</u>	<u>Yes</u>	<u>FACW</u>	
3. <u>Ambrosia trifida</u>		<u>15</u>	<u>No</u>	<u>FAC</u>	
4. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
5. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
6. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
7. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
8. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
9. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
10. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
		<u>100</u> = Total Cover			
50% of total cover:		<u>50</u>	20% of total cover:	<u>20</u>	
Woody Vine Stratum (Plot size: <u>30-ft R</u>)					
1. <u>Smilax bona-nox</u>		<u>10</u>	<u>Yes</u>	<u>FACU</u>	Hydrophytic Vegetation Present Yes <u>X</u> No <u> </u>
2. <u>Campsis radicans</u>		<u>10</u>	<u>Yes</u>	<u>FACU</u>	
3. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
4. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
		<u>20</u> = Total Cover			
50% of total cover:		<u>10</u>	20% of total cover:	<u>4</u>	
% Bare Ground in Herb Stratum <u> </u>					
Remarks: <u>Meets the criteria for hydrophytic vegetation.</u>					

SOIL

Sampling Point: SP 9

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 4/6	100					sand	

¹Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains.²Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)
<input type="checkbox"/> Stratified Layers (A5) (LRR F)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)	<input type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)	<input type="checkbox"/> High Plains Depressions (F16)
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	<input type="checkbox"/> (MLRA 72 & 73 of LRR H)

Indicators for Problematic Hydric Soils³:

<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)
<input type="checkbox"/> (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)
³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

 Type: _____
 Depth (inches): _____
Hydric Soil Present? Yes _____ No X

Remarks: Does not meet the criteria for hydric soil.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> (C3) (where not tilled)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Water-Stained Leaves (B9)	

Secondary Indicators (minimum of two required)

<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)
<input type="checkbox"/> (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)

Field Observations:

 Surface Water Present? Yes _____ No X Depth (inches): _____
 Water Table Present? Yes _____ No X Depth (inches): _____
 Saturation Present? Yes _____ No X Depth (inches): _____
 (includes capillary fringe)
Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Does not meet the criteria for wetland hydrology.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: FM 2931 City/County: Denton Sampling Date: 11/10/2020
 Applicant/Owner: TxDOT Dallas District State: Texas Sampling Point: SP 10
 Investigator(s): J. LeClair, P. Van Zandt Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): Concave Slope (%): 0-1%
 Subregion (LRR): LLR J Lat: 33.247836 Long: -96.950729 Datum: NAD 1983
 Soil Map Unit Name: Navo clay loam, 1 to 3% slopes NWI Classification: None
 Are climatic/hydrologic conditions of the site typical for this time of the year? Yes X No (If no, explain in remarks)
 Are vegetation No, soil No, or hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are vegetation No, soil No, or hydrology No 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 <u>X</u>	No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Hydric Soil Present?	Yes <u>X</u>	No <u> </u>	
Wetland Hydrology Present?	Yes <u>X</u>	No <u> </u>	
Remarks: Meets the three criteria for a wetland. A review of the Antecedent Precipitation Tool data indicates a typical year.			

VEGETATION -- Use scientific names of plants.

Tree Stratum	(Plot size: <u>30-ft R</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>N/A</u>					Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>2</u> (A)
2. <u> </u>					Total Number of Dominant Species Across All Strata: <u>3</u> (B)
3. <u> </u>					Percent of Dominant Species That Are OBL, FACW, or FAC: <u>67%</u> (A/B)
4. <u> </u>					
		<u>0</u> = Total Cover			
50% of total cover:		<u>0</u>	20% of total cover:	<u>0</u>	
Sapling/Shrub Stratum	(Plot size: <u>15-ft R</u>)				Prevalence Index Worksheet
1. <u>Salix nigra</u>		<u>3</u>	<u>Yes</u>	<u>FACW</u>	Total % Cover of: <u> </u> Multiply by: <u> </u>
2. <u> </u>					OBL species <u> </u> x 1 = <u> </u>
3. <u> </u>					FACW species <u> </u> x 2 = <u> </u>
4. <u> </u>					FAC species <u> </u> x 3 = <u> </u>
5. <u> </u>					FACU species <u> </u> x 4 = <u> </u>
		<u>3</u> = Total Cover			UPL species <u> </u> x 5 = <u> </u>
50% of total cover:		<u>1.5</u>	20% of total cover:	<u>0.6</u>	Column Totals <u> </u> (A) <u> </u> (B)
Herb Stratum	(Plot size: <u>5-ft R</u>)				Prevalence Index = B/A = <u> </u>
1. <u>Cynodon dactylon</u>		<u>50</u>	<u>Yes</u>	<u>FACU</u>	Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation X 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>Eleocharis montevidensis</u>		<u>45</u>	<u>Yes</u>	<u>FACW</u>	
3. <u>Symphyotrichum subulatum</u>		<u>10</u>	<u>No</u>	<u>OBL</u>	
4. <u>Cyperus esculentus</u>		<u>5</u>	<u>No</u>	<u>FACW</u>	
5. <u> </u>					
6. <u> </u>					
7. <u> </u>					
8. <u> </u>					
9. <u> </u>					
10. <u> </u>					
		<u>110</u> = Total Cover			
50% of total cover:		<u>55</u>	20% of total cover:	<u>22</u>	
Woody Vine Stratum	(Plot size: <u>30-ft R</u>)				Hydrophytic Vegetation Present Yes <u>X</u> No <u> </u>
1. <u>N/A</u>					
2. <u> </u>					
		<u>0</u> = Total Cover			
50% of total cover:		<u>0</u>	20% of total cover:	<u>0</u>	
% Bare Ground in Herb Stratum <u> </u>					
Remarks: Meets the criteria for hydrophytic vegetation.					

SOIL

Sampling Point: SP 10

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			
0-8	10YR 4/2	95	7.5YR 3/4	5	C	M	clay loam	
8-16	10YR 3/2	100					sandy loam	

¹Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains.²Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)
<input type="checkbox"/> Stratified Layers (A5) (LRR F)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)	<input checked="" type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)	<input type="checkbox"/> High Plains Depressions (F16)
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	(MLRA 72 & 73 of LRR H)

Indicators for Problematic Hydric Soils³:

<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)
³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks: Meets the criteria for hydric soil.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

<input checked="" type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> (C3) (where not tilled)
<input checked="" type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Water-Stained Leaves (B9)	

Secondary Indicators (minimum of two required)

<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)

Field Observations:

Surface Water Present? Yes ☒ No ☐ Depth (inches): 1

Water Table Present? Yes ☒ No ☐ Depth (inches): surface

Saturation Present? Yes ☒ No ☐ Depth (inches): surface

(includes capillary fringe)

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Meets the criteria for wetland hydrology.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: FM 2931 City/County: Denton Sampling Date: 11/10/2020
 Applicant/Owner: TxDOT Dallas District State: Texas Sampling Point: SP 11
 Investigator(s): J. LeClair, P. Van Zandt Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): Ditch Local relief (concave, convex, none): Concave Slope (%): 2-3%
 Subregion (LRR): LLR J Lat: 33.247836 Long: -96.950671 Datum: NAD 1983
 Soil Map Unit Name: Navo clay loam, 1 to 3% slopes NWI Classification: None
 Are climatic/hydrologic conditions of the site typical for this time of the year? Yes X No (If no, explain in remarks)
 Are vegetation No, soil No, or hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are vegetation No, soil No, or hydrology No 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 <u> </u>	No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Hydric Soil Present?	Yes <u> </u>	No <u>X</u>	
Wetland Hydrology Present?	Yes <u> </u>	No <u>X</u>	
Remarks: Does not meet the three criteria for a wetland. A review of the Antecedent Precipitation Tool data indicates a typical year.			

VEGETATION -- Use scientific names of plants.

Tree Stratum	(Plot size: <u>30-ft R</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>N/A</u>					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)
2. <u> </u>					
3. <u> </u>					
4. <u> </u>					
		<u>0</u> = Total Cover			
	50% of total cover: <u>0</u>	20% of total cover: <u>0</u>			
Sapling/Shrub Stratum	(Plot size: <u>15-ft R</u>)				Prevalence Index Worksheet
1. <u>N/A</u>					Total % Cover of: <u> </u> Multiply by: <u> </u> OBL species <u> </u> x 1 = <u> </u> FACW species <u> </u> x 2 = <u> </u> FAC species <u> </u> x 3 = <u> </u> FACU species <u> </u> x 4 = <u> </u> UPL species <u> </u> x 5 = <u> </u> Column Totals <u> </u> (A) <u> </u> (B) Prevalence Index = B/A = <u> </u>
2. <u> </u>					
3. <u> </u>					
4. <u> </u>					
5. <u> </u>					
		<u>0</u> = Total Cover			
	50% of total cover: <u>0</u>	20% of total cover: <u>0</u>			
Herb Stratum	(Plot size: <u>5-ft R</u>)				Hydrophytic Vegetation Indicators: <u> </u> 1 - Rapid Test for Hydrophytic Vegetation <u> </u> 2 - Dominance Test is >50% <u> </u> 3 - Prevalence Index is ≤3.0 ¹ <u> </u> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation ¹ (Explain) <u> </u> ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
1. <u>Cynodon dactylon</u>		<u>100</u>	<u>Yes</u>	<u>FACU</u>	
2. <u> </u>					
3. <u> </u>					
4. <u> </u>					
5. <u> </u>					
6. <u> </u>					
7. <u> </u>					
8. <u> </u>					
9. <u> </u>					
		<u>100</u> = Total Cover			
	50% of total cover: <u>50</u>	20% of total cover: <u>20</u>			
Woody Vine Stratum	(Plot size: <u>30-ft R</u>)				Hydrophytic Vegetation Present Yes <u> </u> No <u>X</u>
1. <u>N/A</u>					
2. <u> </u>		<u>0</u> = Total Cover			
	50% of total cover: <u>0</u>	20% of total cover: <u>0</u>			
% Bare Ground in Herb Stratum <u> </u>					
Remarks: Does not meet the criteria for hydrophytic vegetation.					

SOIL

Sampling Point: SP 11

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			
0-3	10YR 3/3	100					sandy loam	
3-16	7.5YR4/4	100					sandy loam	road base mixing

¹Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains.²Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)
<input type="checkbox"/> Stratified Layers (A5) (LRR F)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)	<input type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)	<input type="checkbox"/> High Plains Depressions (F16)
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	<input type="checkbox"/> (MLRA 72 & 73 of LRR H)

Indicators for Problematic Hydric Soils³:

<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)
<input type="checkbox"/>	(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)
<input type="checkbox"/>	³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

 Type: _____
 Depth (inches): _____
Hydric Soil Present? Yes _____ No X

Remarks: Does not meet the criteria for hydric soil.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> (C3) (where not tilled)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Water-Stained Leaves (B9)	

Secondary Indicators (minimum of two required)

<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)
<input type="checkbox"/> (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)

Field Observations:

 Surface Water Present? Yes _____ No X Depth (inches): _____
 Water Table Present? Yes _____ No X Depth (inches): _____
 Saturation Present? Yes _____ No X Depth (inches): _____
 (includes capillary fringe)
Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Does not meet the criteria for wetland hydrology.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: FM 2931 City/County: Denton Sampling Date: 11/10/2020
 Applicant/Owner: TxDOT Dallas District State: Texas Sampling Point: SP 12
 Investigator(s): J. LeClair, P. Van Zandt Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): Concave Slope (%): 0-1%
 Subregion (LRR): LLR J Lat: 33.247997 Long: -96.950741 Datum: NAD 1983
 Soil Map Unit Name: Navo clay loam, 1 to 3% slopes NWI Classification: None
 Are climatic/hydrologic conditions of the site typical for this time of the year? Yes X No (If no, explain in remarks)
 Are vegetation No, soil No, or hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are vegetation No, soil No, or hydrology No 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 <u>X</u>	No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Hydric Soil Present?	Yes <u>X</u>	No <u> </u>	
Wetland Hydrology Present?	Yes <u>X</u>	No <u> </u>	
Remarks: Meets the three criteria for a wetland. A review of the Antecedent Precipitation Tool data indicates a typical year.			

VEGETATION -- Use scientific names of plants.

Tree Stratum	(Plot size: <u>30-ft R</u>)	Absolute % Cover	Dominant Species?	Indicator Status	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)
1. <u>N/A</u>					
2. <u> </u>					
3. <u> </u>					
4. <u> </u>					
		<u>0</u> = Total Cover			
50% of total cover:		<u>0</u>	20% of total cover:	<u>0</u>	
Sapling/Shrub Stratum	(Plot size: <u>15-ft R</u>)				Prevalence Index Worksheet Total % Cover of: <u> </u> Multiply by: <u> </u> OBL species <u> </u> x 1 = <u> </u> FACW species <u> </u> x 2 = <u> </u> FAC species <u> </u> x 3 = <u> </u> FACU species <u> </u> x 4 = <u> </u> UPL species <u> </u> x 5 = <u> </u> Column Totals <u> </u> (A) <u> </u> (B) Prevalence Index = B/A = <u> </u>
1. <u>N/A</u>					
2. <u> </u>					
3. <u> </u>					
4. <u> </u>					
5. <u> </u>					
		<u>0</u> = Total Cover			
50% of total cover:		<u>0</u>	20% of total cover:	<u>0</u>	
Herb Stratum	(Plot size: <u>5-ft R</u>)				Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>X</u> <u>2</u> - Dominance Test is >50% <u>3</u> - Prevalence Index is ≤3.0 ¹ <u>4</u> - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation ¹ (Explain) <u> </u> ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
1. <u>Eleocharis montevidensis</u>		<u>100</u>	<u>Yes</u>	<u>FACW</u>	
2. <u> </u>					
3. <u> </u>					
4. <u> </u>					
5. <u> </u>					
6. <u> </u>					
7. <u> </u>					
8. <u> </u>					
9. <u> </u>					
10. <u> </u>					
		<u>100</u> = Total Cover			
50% of total cover:		<u>50</u>	20% of total cover:	<u>20</u>	
Woody Vine Stratum	(Plot size: <u>30-ft R</u>)				Hydrophytic Vegetation Present Yes <u>X</u> No <u> </u>
1. <u>N/A</u>					
2. <u> </u>					
		<u>0</u> = Total Cover			
50% of total cover:		<u>0</u>	20% of total cover:	<u>0</u>	
% Bare Ground in Herb Stratum <u> </u>					
Remarks: Meets the criteria for hydrophytic vegetation.					

SOIL

Sampling Point: SP 12

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			
0-8	10YR 5/2	90	7.5YR 5/4	10	C	PL	sand	
8-16	10YR 4/2	100					sandy loam	

¹Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains.²Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)
<input type="checkbox"/> Histic Epipedon (A2)	<input checked="" type="checkbox"/> Sandy Redox (S5)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)
<input type="checkbox"/> Stratified Layers (A5) (LRR F)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)	<input type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)	<input type="checkbox"/> High Plains Depressions (F16)
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	(MLRA 72 & 73 of LRR H)

Indicators for Problematic Hydric Soils³:

<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)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

 Type: _____
 Depth (inches): _____
Hydric Soil Present? Yes ☒ No ☐

Remarks: Meets the criteria for hydric soil.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

<input checked="" type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Sediment Deposits (B2)	<input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots
<input type="checkbox"/> Drift Deposits (B3)	(C3) (where not tilled)
<input checked="" type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Water-Stained Leaves (B9)	

Secondary Indicators (minimum of two required)

<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
(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)

Field Observations:

 Surface Water Present? Yes ☒ No ☐ Depth (inches): 3
 Water Table Present? Yes ☒ No ☐ Depth (inches): surface
 Saturation Present? Yes ☒ No ☐ Depth (inches): surface
 (includes capillary fringe)
Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Meets the criteria for wetland hydrology.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: FM 2931 City/County: Denton Sampling Date: 11/10/2020
 Applicant/Owner: TxDOT Dallas District State: Texas Sampling Point: SP 13
 Investigator(s): J. LeClair, P. Van Zandt Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): Plain Local relief (concave, convex, none): None Slope (%): 0-1%
 Subregion (LRR): LLR J Lat: 33.248028 Long: -96.950691 Datum: NAD 1983
 Soil Map Unit Name: Navo clay loam, 1 to 3% slopes NWI Classification: None
 Are climatic/hydrologic conditions of the site typical for this time of the year? Yes X No (If no, explain in remarks)
 Are vegetation No, soil No, or hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are vegetation No, soil No, or hydrology No 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 <u> </u>	No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Hydric Soil Present?	Yes <u> </u>	No <u>X</u>	
Wetland Hydrology Present?	Yes <u> </u>	No <u>X</u>	
Remarks: Does not meet the three criteria for a wetland. A review of the Antecedent Precipitation Tool data indicates a typical year.			

VEGETATION -- Use scientific names of plants.

Tree Stratum	(Plot size: <u>30-ft R</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>N/A</u>					Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>0</u> (A)
2. <u> </u>					Total Number of Dominant Species Across All Strata: <u>1</u> (B)
3. <u> </u>					Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0%</u> (A/B)
4. <u> </u>					
		<u>0</u> = Total Cover			
50% of total cover:		<u>0</u>	20% of total cover:	<u>0</u>	
Sapling/Shrub Stratum	(Plot size: <u>15-ft R</u>)				Prevalence Index Worksheet
1. <u>N/A</u>					Total % Cover of: <u> </u> Multiply by: <u> </u>
2. <u> </u>					OBL species <u> </u> x 1 = <u> </u>
3. <u> </u>					FACW species <u> </u> x 2 = <u> </u>
4. <u> </u>					FAC species <u> </u> x 3 = <u> </u>
5. <u> </u>					FACU species <u> </u> x 4 = <u> </u>
		<u>0</u> = Total Cover			UPL species <u> </u> x 5 = <u> </u>
50% of total cover:		<u>0</u>	20% of total cover:	<u>0</u>	Column Totals <u> </u> (A) <u> </u> (B)
Herb Stratum	(Plot size: <u>5-ft R</u>)				Prevalence Index = B/A = <u> </u>
1. <u>Cynodon dactylon</u>		<u>90</u>	<u>Yes</u>	<u>FACU</u>	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
2. <u>Paspalum dilatatum</u>		<u>10</u>	<u>No</u>	<u>FAC</u>	
3. <u> </u>					
4. <u> </u>					
5. <u> </u>					
6. <u> </u>					
7. <u> </u>					
8. <u> </u>					
9. <u> </u>					
10. <u> </u>					
		<u>100</u> = Total Cover			
50% of total cover:		<u>50</u>	20% of total cover:	<u>20</u>	
Woody Vine Stratum	(Plot size: <u>30-ft R</u>)				Hydrophytic Vegetation Present Yes <u> </u> No <u>X</u>
1. <u>N/A</u>					
2. <u> </u>					
		<u>0</u> = Total Cover			
50% of total cover:		<u>0</u>	20% of total cover:	<u>0</u>	
% Bare Ground in Herb Stratum <u> </u>					
Remarks: Does not meet the criteria for hydrophytic vegetation.					

SOIL

Sampling Point: SP 13

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 4/4	100					sandy loam	

¹Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains.²Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)
<input type="checkbox"/> Stratified Layers (A5) (LRR F)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)	<input type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)	<input type="checkbox"/> High Plains Depressions (F16)
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	<input type="checkbox"/> (MLRA 72 & 73 of LRR H)

Indicators for Problematic Hydric Soils³:

<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)
<input type="checkbox"/> (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)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

 Type: _____
 Depth (inches): _____
Hydric Soil Present? Yes _____ No X

Remarks: Does not meet the criteria for hydric soil.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> (C3) (where not tilled)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Water-Stained Leaves (B9)	

Secondary Indicators (minimum of two required)

<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)
<input type="checkbox"/> (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)

Field Observations:

 Surface Water Present? Yes _____ No X Depth (inches): _____
 Water Table Present? Yes _____ No X Depth (inches): _____
 Saturation Present? Yes _____ No X Depth (inches): _____
 (includes capillary fringe)
Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Does not meet the criteria for wetland hydrology.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: FM 2931 City/County: Denton Sampling Date: 11/10/2020
 Applicant/Owner: TxDOT Dallas District State: Texas Sampling Point: SP 14
 Investigator(s): J. LeClair, P. Van Zandt Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): Concave Slope (%): 0-2%
 Subregion (LRR): LLR J Lat: 33.247952 Long: -96.944623 Datum: NAD 1983
 Soil Map Unit Name: Callisburg fine sandy loam, 1 to 3% slopes NWI Classification: None
 Are climatic/hydrologic conditions of the site typical for this time of the year? Yes X No (If no, explain in remarks)
 Are vegetation No, soil No, or hydrology Yes significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are vegetation No, soil No, or hydrology No 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 <u>X</u>	No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Hydric Soil Present?	Yes <u>X</u>	No <u> </u>	
Wetland Hydrology Present?	Yes <u>X</u>	No <u> </u>	

Remarks: Meets the three criteria for a wetland.

Ongoing development and disturbance are currently occurring downstream of the project area. Hydrology is artificially sourced from overflow from an upstream manmade lake excavated in uplands and created as an aesthetic amenity for a recently constructed subdivision.

VEGETATION -- Use scientific names of plants.

Tree Stratum	(Plot size: <u>30-ft R</u>)	Absolute % Cover	Dominant Species?	Indicator Status	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)
1. <u>N/A</u>					
2. <u> </u>					
3. <u> </u>					
4. <u> </u>					
		<u>0</u> = Total Cover			
50% of total cover:		<u>0</u>	20% of total cover:	<u>0</u>	
Sapling/Shrub Stratum	(Plot size: <u>15-ft R</u>)				Prevalence Index Worksheet Total % Cover of: <u> </u> Multiply by: <u> </u> OBL species <u> </u> x 1 = <u> </u> FACW species <u> </u> x 2 = <u> </u> FAC species <u> </u> x 3 = <u> </u> FACU species <u> </u> x 4 = <u> </u> UPL species <u> </u> x 5 = <u> </u> Column Totals <u> </u> (A) <u> </u> (B) Prevalence Index = B/A = <u> </u>
1. <u>N/A</u>					
2. <u> </u>					
3. <u> </u>					
4. <u> </u>					
5. <u> </u>					
		<u>0</u> = Total Cover			
50% of total cover:		<u>0</u>	20% of total cover:	<u>0</u>	
Herb Stratum	(Plot size: <u>5-ft R</u>)				Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>X</u> <u>2</u> - Dominance Test is >50% <u>3</u> - Prevalence Index is ≤3.0 ¹ <u>4</u> - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation ¹ (Explain) <u> </u> ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
1. <u>Eleocharis montevidensis</u>		<u>75</u>	<u>Yes</u>	<u>FACW</u>	
2. <u>Cynodon dactylon</u>		<u>20</u>	<u>No</u>	<u>FACU</u>	
3. <u>Rumex crispus</u>		<u>5</u>	<u>No</u>	<u>FAC</u>	
4. <u>Juncus effusus</u>		<u>5</u>	<u>No</u>	<u>OBL</u>	
5. <u> </u>					
6. <u> </u>					
7. <u> </u>					
8. <u> </u>					
9. <u> </u>					
10. <u> </u>					
		<u>105</u> = Total Cover			
50% of total cover:		<u>52.5</u>	20% of total cover:	<u>21</u>	
Woody Vine Stratum	(Plot size: <u>30-ft R</u>)				Hydrophytic Vegetation Present Yes <u>X</u> No <u> </u>
1. <u>N/A</u>					
2. <u> </u>					
		<u>0</u> = Total Cover			
50% of total cover:		<u>0</u>	20% of total cover:	<u>0</u>	
% Bare Ground in Herb Stratum <u> </u>					

Remarks: Meets the criteria for hydrophytic vegetation.

SOIL

Sampling Point: SP 14

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			
0-10	10YR 4/2	90	7.5YR 4/6	10	C	PL	clay loam	
10-16	10YR 3/1	95	7.5YR 5/4	5	C	M	loamy clay	

¹Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains.²Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)
<input type="checkbox"/> Stratified Layers (A5) (LRR F)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)	<input checked="" type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)	<input type="checkbox"/> High Plains Depressions (F16)
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	(MLRA 72 & 73 of LRR H)

Indicators for Problematic Hydric Soils³:

<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)
³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

 Type: _____
 Depth (inches): _____
Hydric Soil Present? Yes ☒ No ☐

Remarks: Meets the criteria for hydric soil.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

<input checked="" type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> (C3) (where not tilled)
<input checked="" type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Water-Stained Leaves (B9)	

Secondary Indicators (minimum of two required)

<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input checked="" type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Oxidized Rhizospheres on Living Roots
(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)

Field Observations:

 Surface Water Present? Yes ☒ No ☐ Depth (inches): 2
 Water Table Present? Yes ☒ No ☐ Depth (inches): surface
 Saturation Present? Yes ☒ No ☐ Depth (inches): surface
 (includes capillary fringe)
Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Meets the criteria for wetland hydrology.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: FM 2931 City/County: Denton Sampling Date: 11/10/2020
 Applicant/Owner: TxDOT Dallas District State: Texas Sampling Point: SP 15
 Investigator(s): J. LeClair, P. Van Zandt Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): Plain Local relief (concave, convex, none): None Slope (%): 0-1%
 Subregion (LRR): LLR J Lat: 33.247959 Long: -96.944548 Datum: NAD 1983
 Soil Map Unit Name: Callisburg fine sandy loam, 1 to 3% slopes NWI Classification: None
 Are climatic/hydrologic conditions of the site typical for this time of the year? Yes X No (If no, explain in remarks)
 Are vegetation No, soil No, or hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are vegetation No, soil No, or hydrology No 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 <u> </u>	No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Hydric Soil Present?	Yes <u> </u>	No <u>X</u>	
Wetland Hydrology Present?	Yes <u> </u>	No <u>X</u>	
Remarks: Does not meet the three criteria for a wetland. Sample location above OHWM of PFO1C NWI feature. Sand and gravel substrate. A review of the Antecedent Precipitation Tool data indicates a typical year.			

VEGETATION -- Use scientific names of plants.

Tree Stratum	(Plot size: <u>30-ft R</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>N/A</u>					Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>0</u> (A)
2. <u> </u>					Total Number of Dominant Species Across All Strata: <u>1</u> (B)
3. <u> </u>					Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0%</u> (A/B)
4. <u> </u>					
		<u>0</u> = Total Cover			
50% of total cover:		<u>0</u>	20% of total cover:	<u>0</u>	
Sapling/Shrub Stratum	(Plot size: <u>15-ft R</u>)				Prevalence Index Worksheet
1. <u>N/A</u>					Total % Cover of: <u> </u> Multiply by: <u> </u>
2. <u> </u>					OBL species <u> </u> x 1 = <u> </u>
3. <u> </u>					FACW species <u> </u> x 2 = <u> </u>
4. <u> </u>					FAC species <u> </u> x 3 = <u> </u>
5. <u> </u>					FACU species <u> </u> x 4 = <u> </u>
		<u>0</u> = Total Cover			UPL species <u> </u> x 5 = <u> </u>
50% of total cover:		<u>0</u>	20% of total cover:	<u>0</u>	Column Totals <u> </u> (A) <u> </u> (B)
Herb Stratum	(Plot size: <u>5-ft R</u>)				Prevalence Index = B/A = <u> </u>
1. <u>Cynodon dactylon</u>		<u>100</u>	<u>Yes</u>	<u>FACU</u>	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
2. <u> </u>					
3. <u> </u>					
4. <u> </u>					
5. <u> </u>					
6. <u> </u>					
7. <u> </u>					
8. <u> </u>					
9. <u> </u>					
10. <u> </u>					
		<u>100</u> = Total Cover			
50% of total cover:		<u>50</u>	20% of total cover:	<u>20</u>	
Woody Vine Stratum	(Plot size: <u>30-ft R</u>)				Hydrophytic Vegetation Present Yes <u> </u> No <u>X</u>
1. <u>N/A</u>					
2. <u> </u>					
		<u>0</u> = Total Cover			
50% of total cover:		<u>0</u>	20% of total cover:	<u>0</u>	
% Bare Ground in Herb Stratum <u> </u>					
Remarks: Does not meet the criteria for hydrophytic vegetation.					

SOIL

Sampling Point: SP 15

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 3/3	100					clay loam	road base mixing

¹Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains.²Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)
<input type="checkbox"/> Stratified Layers (A5) (LRR F)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)	<input type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)	<input type="checkbox"/> High Plains Depressions (F16)
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	(MLRA 72 & 73 of LRR H)

Indicators for Problematic Hydric Soils³:

<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)
³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

 Type: _____
 Depth (inches): _____
Hydric Soil Present? Yes _____ No X

Remarks: Does not meet the criteria for hydric soil.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> (C3) (where not tilled)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Water-Stained Leaves (B9)	

Secondary Indicators (minimum of two required)

<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)

Field Observations:

 Surface Water Present? Yes _____ No X Depth (inches): _____
 Water Table Present? Yes _____ No X Depth (inches): _____
 Saturation Present? Yes _____ No X Depth (inches): _____
 (includes capillary fringe)
Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Does not meet the criteria for wetland hydrology.

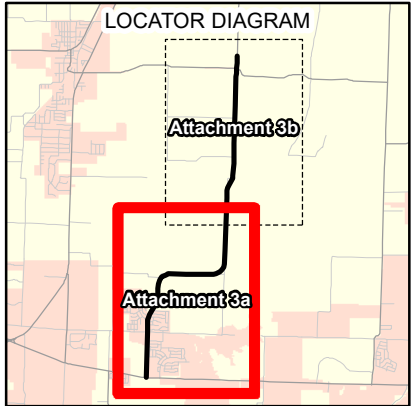
Attachment 3 - Historical Aerial Photography



Attachment 3a

**Historic Aerial
Photography 2005**

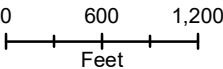
FM 2931 from US 380 to FM 428
Denton County, Texas
CSJ: 2979-01-011



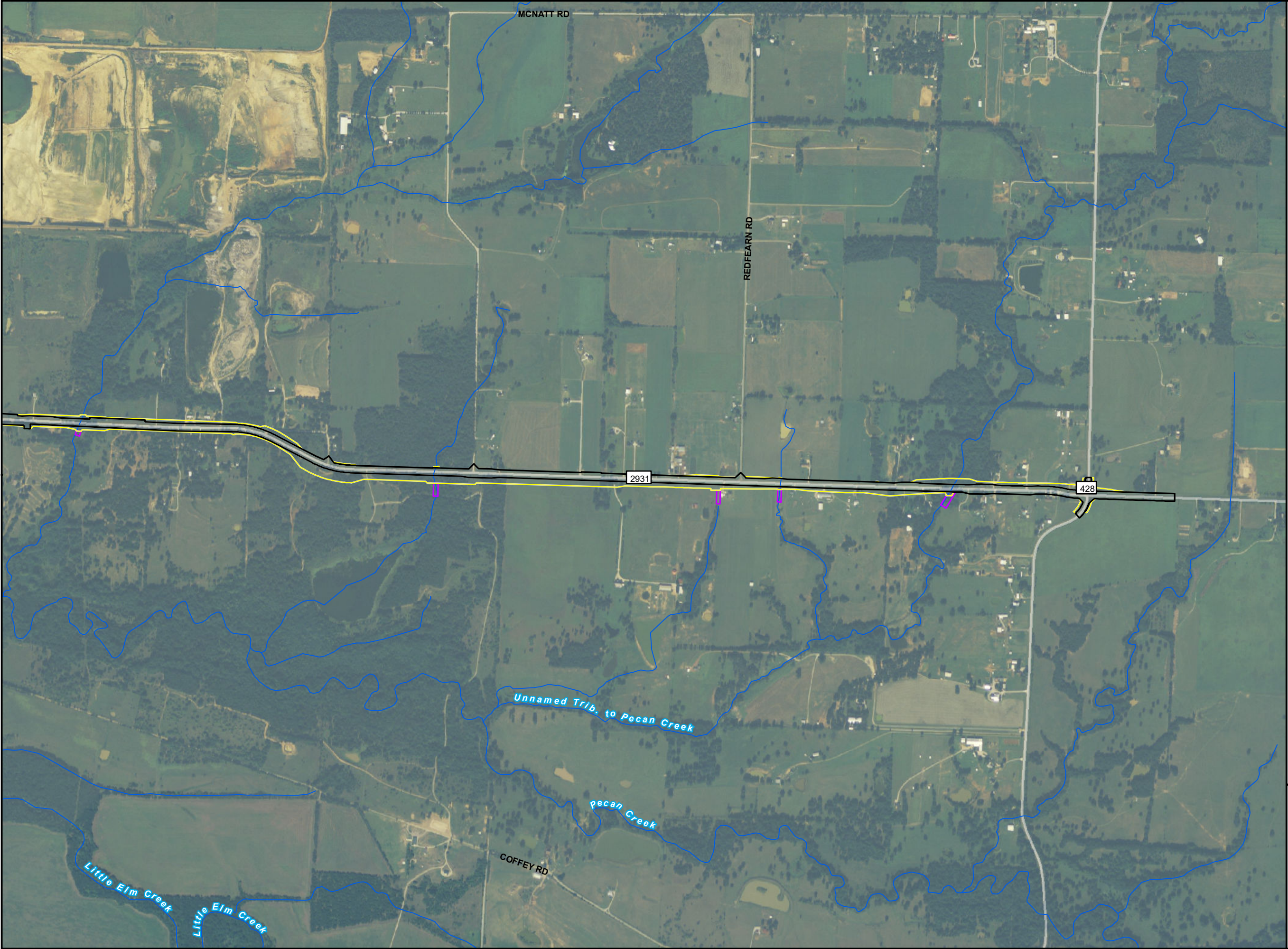
Key to Features

- Existing ROW
- Proposed ROW
- Existing Easement
- Stream (NHD)

United States Department of Agriculture (USDA).
Texas NAIP Imagery, 2005-10-17.
Web. 2021-01-07.



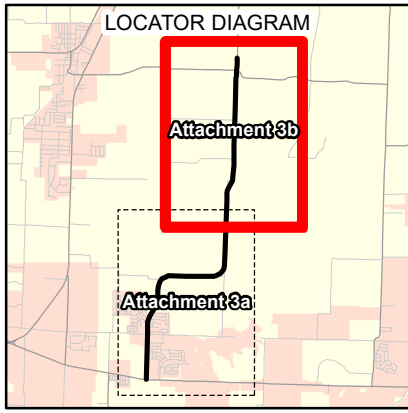
1 inch = 1,200 feet



Attachment 3b

**Historic Aerial
Photography 2005**

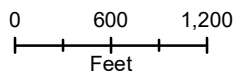
FM 2931 from US 380 to FM 428
Denton County, Texas
CSJ: 2979-01-011



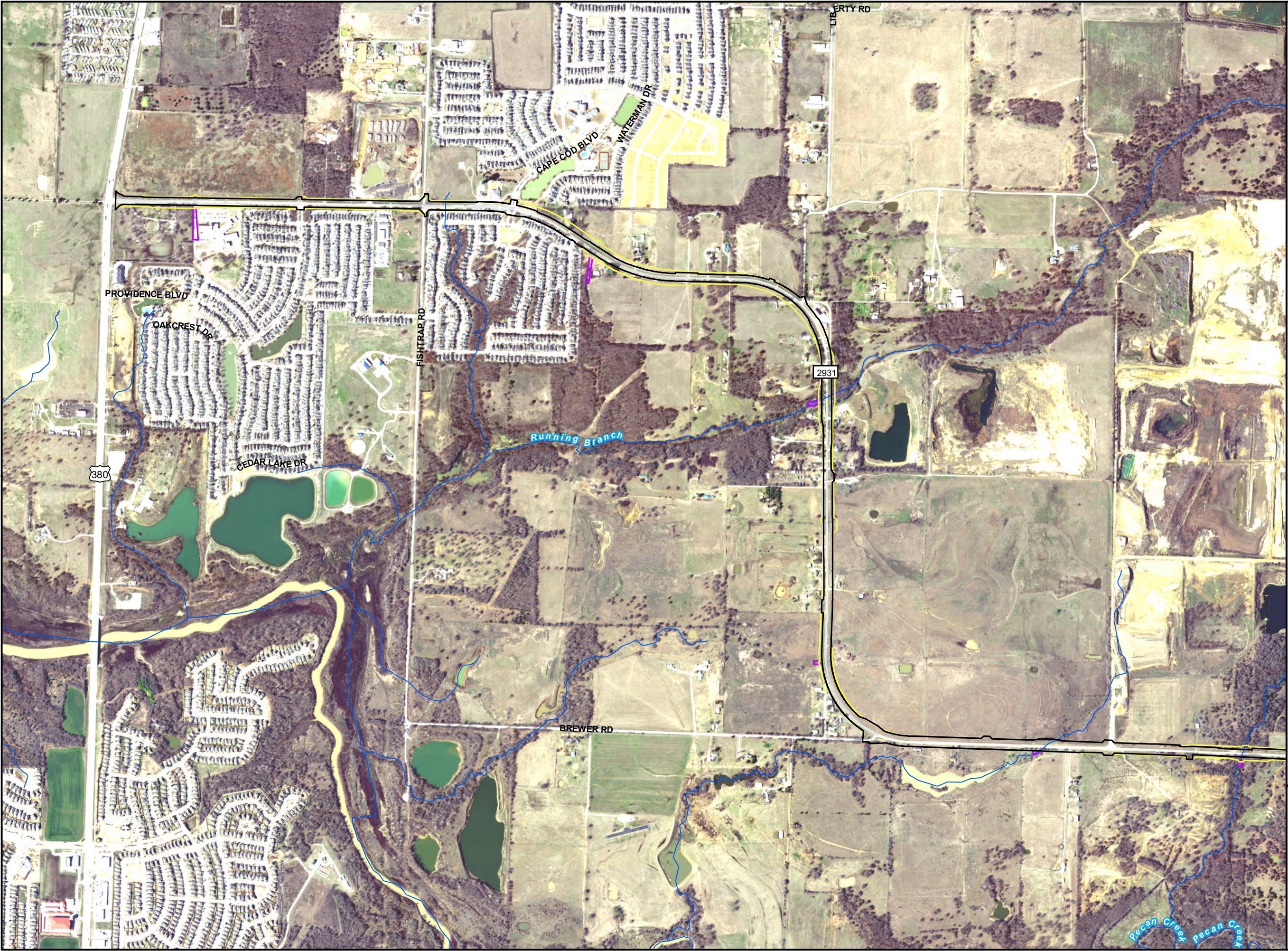
Key to Features

- Existing ROW
- Proposed ROW
- Existing Easement
- Stream (NHD)

United States Department of Agriculture (USDA).
Texas NAIP Imagery, 2005-10-17.
Web. 2021-01-07.



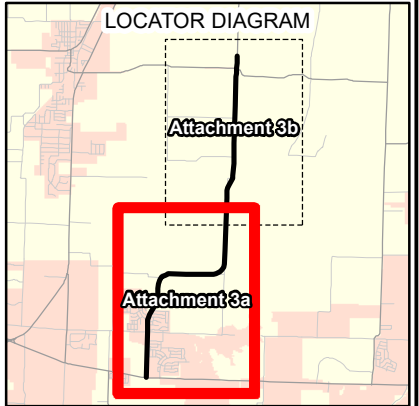
1 inch = 1,200 feet



Attachment 3a

**Historic Aerial
Photography 2015**

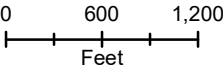
FM 2931 from US 380 to FM 428
Denton County, Texas
CSJ: 2979-01-011



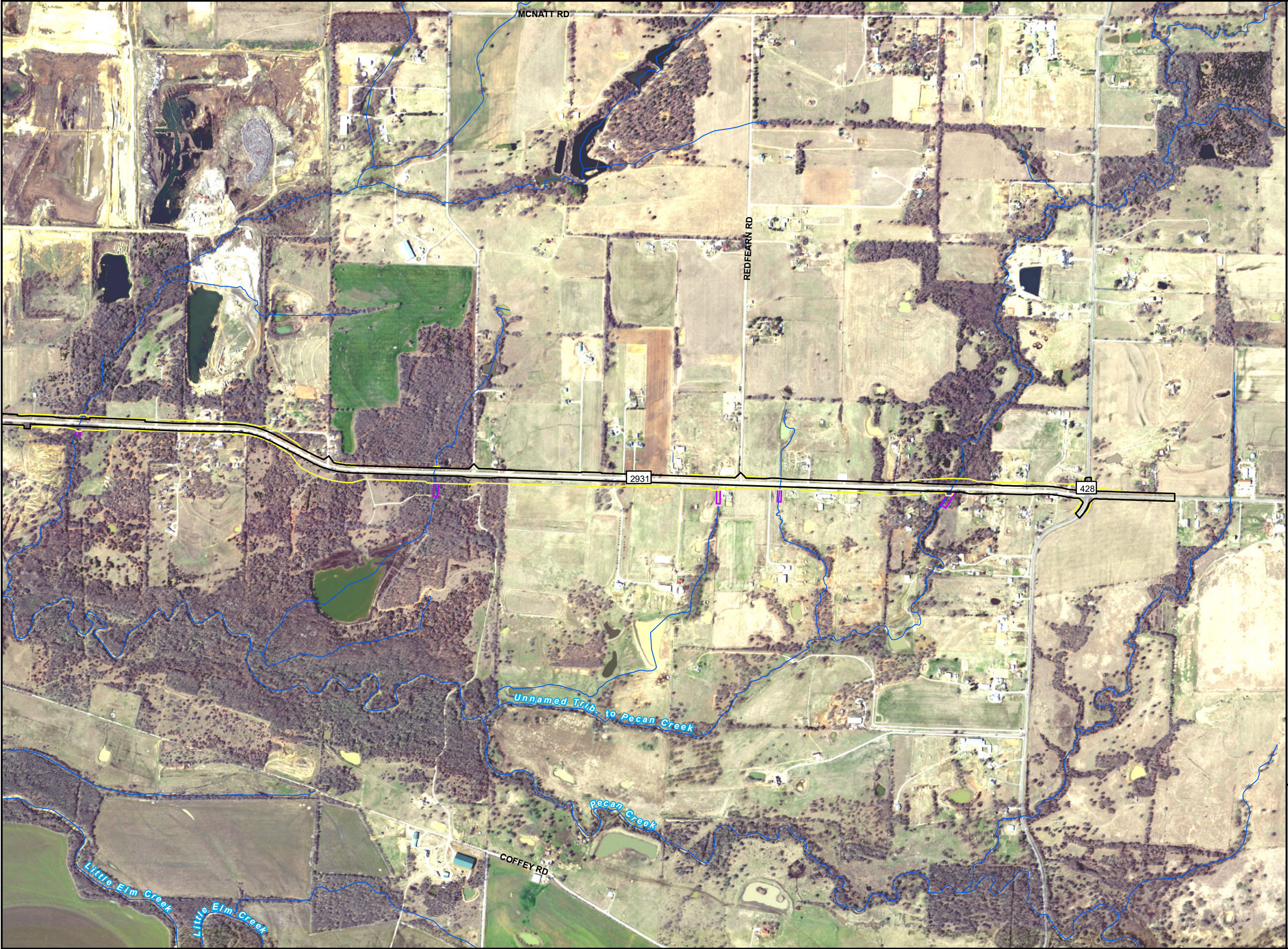
Key to Features

- Existing ROW
- Proposed ROW
- Existing Easement
- Stream (NHD)

Texas Natural Resources
Information System (TNRIS).
Texas TOP Imagery, 2015-12-31.
Web. 2021-01-07.



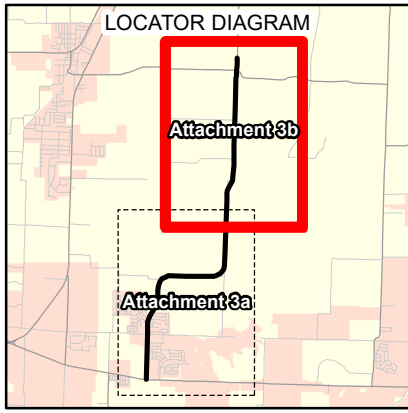
1 inch = 1,200 feet



Attachment 3b

**Historic Aerial
Photography 2015**

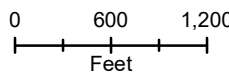
FM 2931 from US 380 to FM 428
Denton County, Texas
CSJ: 2979-01-011



Key to Features

- Existing ROW
- Proposed ROW
- Existing Easement
- Stream (NHD)

Texas Natural Resources
Information System (TNRIS).
Texas TOP Imagery, 2015-12-31.
Web. 2021-01-07.



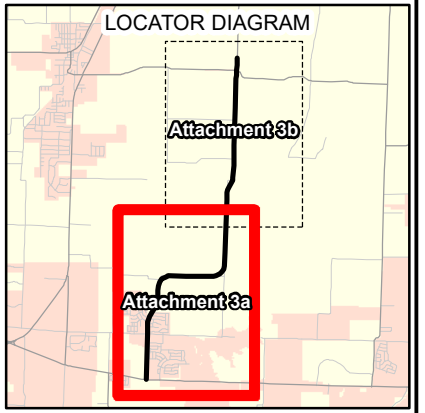
1 inch = 1,200 feet



Attachment 3a

Historic Aerial Photography 2018

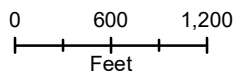
FM 2931 from US 380 to FM 428
Denton County, Texas
CSJ: 2979-01-011



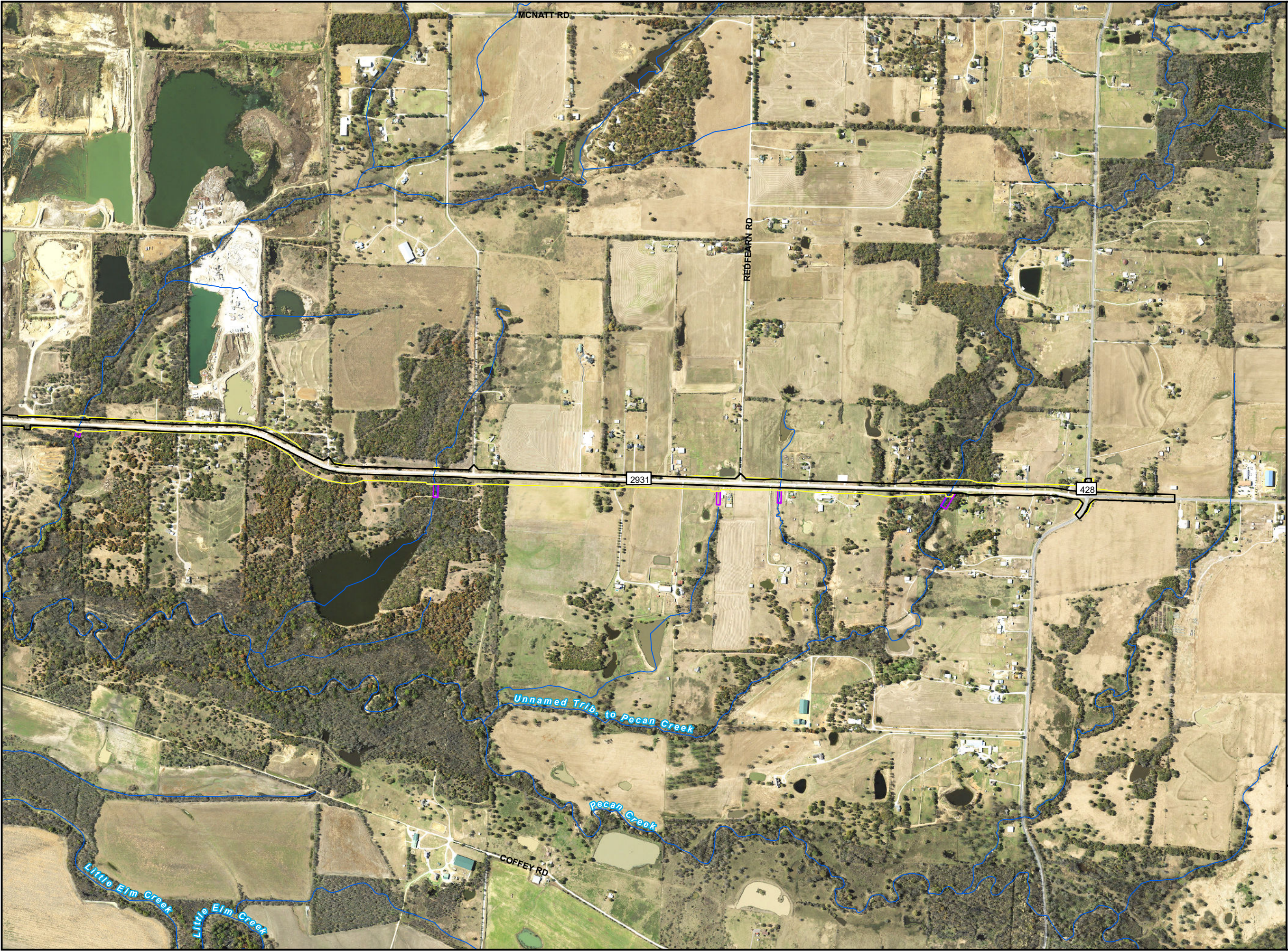
Key to Features

- Existing ROW
- Proposed ROW
- Existing Easement
- Stream (NHD)

United States Department of Agriculture (USDA).
Texas NAIP Imagery, 2018-12-31.
Web. 2021-01-07.



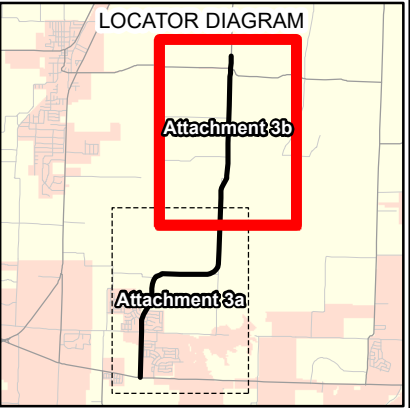
1 inch = 1,200 feet



Attachment 3b

**Historic Aerial
Photography 2018**

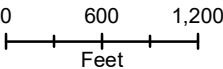
FM 2931 from US 380 to FM 428
Denton County, Texas
CSJ: 2979-01-011



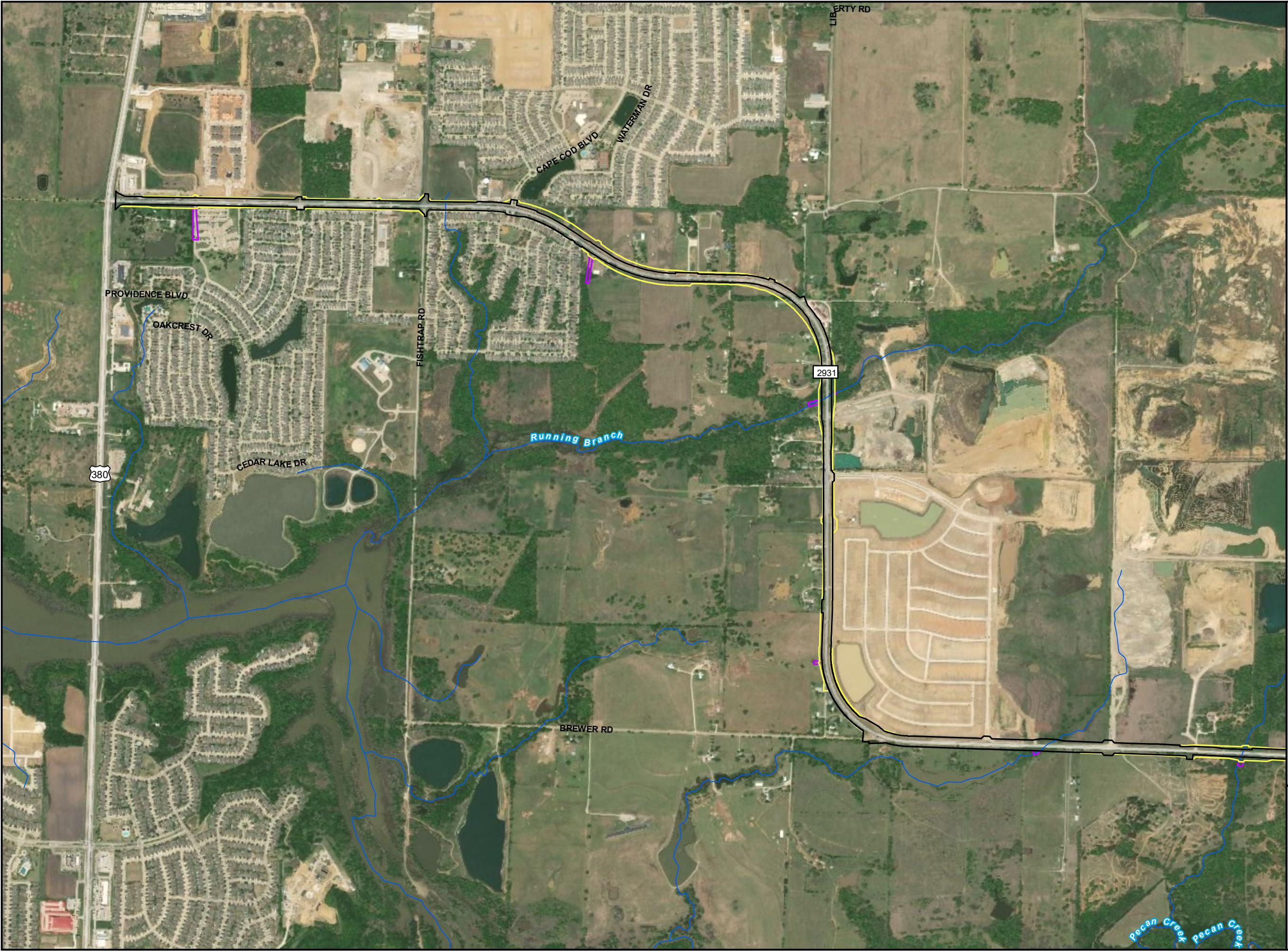
Key to Features

- Existing ROW
- Proposed ROW
- Existing Easement
- Stream (NHD)

United States Department of Agriculture (USDA).
Texas NAIP Imagery, 2018-12-31.
Web. 2021-01-07.



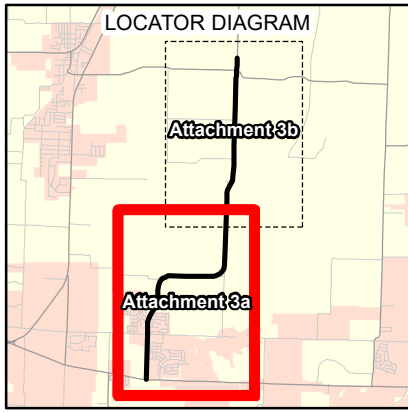
1 inch = 1,200 feet



Attachment 3a

Historic Aerial Photography 2019

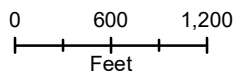
FM 2931 from US 380 to FM 428
Denton County, Texas
CSJ: 2979-01-011



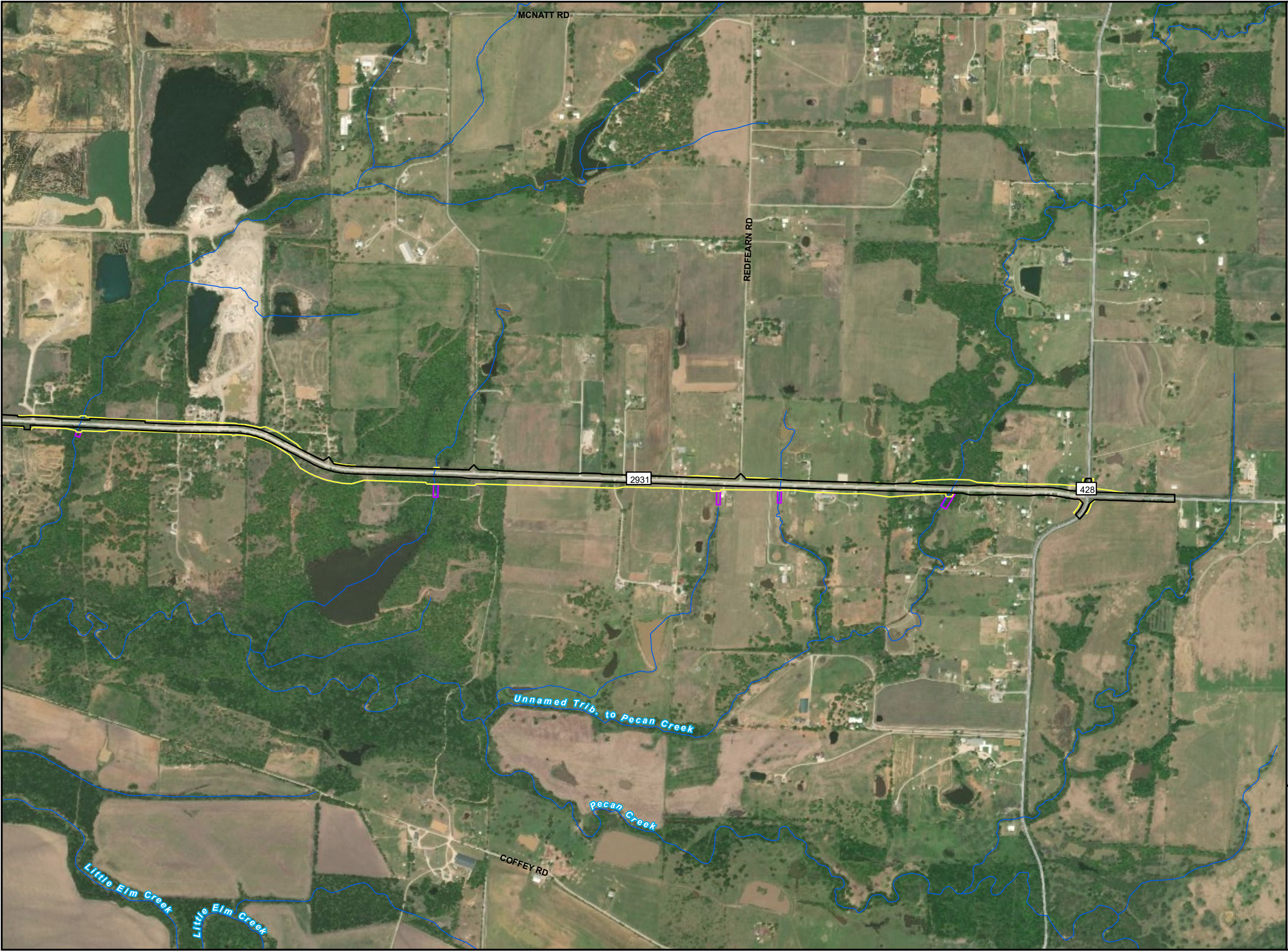
Key to Features

- Existing ROW
- Proposed ROW
- Existing Easement
- Stream (NHD)

ESRI World Imagery; Maxar
2019-12-12



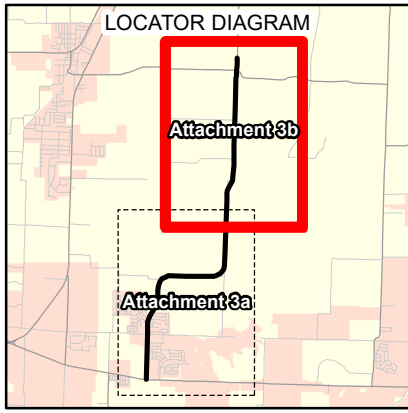
1 inch = 1,200 feet



Attachment 3b

**Historic Aerial
Photography 2019**

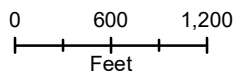
FM 2931 from US 380 to FM 428
Denton County, Texas
CSJ: 2979-01-011



Key to Features

- Existing ROW
- Proposed ROW
- Existing Easement
- Stream (NHD)

ESRI World Imagery; Maxar
2019-12-12



1 inch = 1,200 feet

Attachment 4 - Site Photographs



Photo 1: General view of project limits at north end.
Facing north from the south side of FM 428. (November 9, 2020)



Photo 2: General view of project limits at north end.
Facing south from the south side of FM 428. (November 9, 2020)



Photo 3: General view of DD-1, facing west. (November 10, 2020)



Photo 4: General view of DD-1, facing north. (November 10, 2020)



Photo 5: General view of the location where topographic maps indicate an unnamed tributary to Running Branch crosses FM 2931, facing south from the northbound lane. (November 10, 2020)



Photo 6: SP 4, upland point within a vegetated swale and general view of existing easement on the east side of FM 2931. Facing west. (November 9, 2020)



Photo 7: General view of Running Branch and bridge on the south and downstream side of FM 2931. Facing northwest. (November 10, 2020)



Photo 8: General view of Running Branch. Facing south and downstream. (November 10, 2020)



Photo 9: SP 9, upland point east of FM 2931 near Running Branch. Facing west. (November 10, 2020)



Photo 10: General view of W-1 (emergent wetland) and culvert on the north side of FM 2931. Facing south. (November 10, 2020)



Photo 11: SP 12 at W-1, north of FM 2931. Facing west. (November 10, 2020)



Photo 12: SP 13, upland point near W-1 on the north side of FM 2931. Facing west. (November 10, 2020)



Photo 13: General view of W-2 (emergent wetland) and culvert on the south side of FM 2931. Facing north. (November 10, 2020)



Photo 14: SP 10 at W-2, south of FM 2931. Facing west. (November 10, 2020)



Photo 15: SP 11, upland point near W-2 on the south side of FM 2931. Facing west. (November 10, 2020)



Photo 16: General view of W-3 (emergent wetland) within and abutting the channel of ES-1 (Unnamed Tributary to Little Elm Creek) on the north side of FM 2931. Facing south and downstream. (November 10, 2020)



Photo 17: Additional view of W-3 (emergent wetland) within and abutting the channel of ES-1 (Unnamed Tributary to Little Elm Creek) on the north side of FM 2931. Facing north and upstream. (November 10, 2020)



Photo 18: SP 14 at W-3, north of FM 2931. Facing south. (November 10, 2020)



Photo 19: SP 15, upland point near W-3 on the north side of FM 2931. Facing west. (November 10, 2020)



Photo 20: General view of ES-1 (Unnamed Tributary to Little Elm Creek) and culvert on the south and downstream side of FM 2931. Facing northeast. (November 10, 2020)



Photo 21: General view of ES-1 (Unnamed Tributary to Little Elm Creek) on the south side of FM 2931. Facing south and downstream. (November 10, 2020)



Photo 22: General view of concrete-lined channel portion of IS-1 (Unnamed Tributary to Pecan Creek) on the west side of FM 2931. Facing northwest and upstream. (November 10, 2020)



Photo 23: General view of IS-1 (Unnamed Tributary to Pecan Creek) on the east side of FM 2931. Facing southeast and downstream. (November 10, 2020)



Photo 24: General view of OW-1 in the disturbed area on the east and downstream side of FM 2931. Facing north. (November 10, 2020)



Photo 25: SP 8, upland point east of FM 2931 near IS-1. Facing northwest. (November 10, 2020)



Photo 26: General view of IS-2 (Unnamed Tributary to Pecan Creek) and culvert on the west and upstream side of FM 2931. Facing east. (November 10, 2020)



Photo 27: General view of IS-2 (Unnamed Tributary to Pecan Creek) on the east and downstream side of FM 2931. Facing west and upstream. (November 10, 2020)



Photo 28: SP 7, upland point east of FM 2931 near IS-2. Facing north. (November 10, 2020)



Photo 29: SP 5 upland point within a vegetated swale on the east side of FM 2931. Facing west. (November 9, 2020)



Photo 30: General view of swale at SP5 on the east side and downstream of FM 2931. Facing east. (November 9, 2020)



Photo 31: General view of swale located on east side and downstream of FM 2931. Facing west. (November 9, 2020)



Photo 32: SP 3, upland point east of FM 2931 and within a vegetated swale. Facing east. (November 9, 2020)



Photo 33: SP 2, upland point west of FM 2931 and upstream of vegetated swale at SP 3. Facing south. (November 9, 2020)



Photo 34: General view of IS-3 (Unnamed Tributary to Pecan Creek) and culvert on the west and upstream side of FM 2931. Facing southeast. (November 10, 2020)



Photo 35: General view of IS-3 (Unnamed Tributary to Pecan Creek) on the west side of FM 2931. Facing east and downstream. (November 10, 2020)



Photo 36: SP 6, upland point east of FM 2931 near IS-3. Facing southeast. (November 10, 2020)



Photo 37: General view of PS-1 (Unnamed Tributary to Pecan Creek) on the west side of FM 2931. Facing west and upstream. (November 9, 2020)



Photo 38: General view of PS-1 (Unnamed Tributary to Pecan Creek) and culvert on the east and downstream side of FM 2931. Facing west and upstream. (November 9, 2020)



Photo 39: SP 1, upland point east of FM 2931 near PS-1. Facing northeast. (November 9, 2020)

