Waters of the U.S. Delineation Report

Interstate Highway 30
From Linkcrest Drive to IH 820
(CSJ 1068-01-214)

Texas Department of Transportation, Fort Worth District

July 2020

The environmental review, consultation, and other actions required by applicable Federal environmental laws for this project are being, or have been, carried-out by TxDOT pursuant to 23 U.S.C. 327 and a Memorandum of Understanding dated December 9, 2019, and executed by FHWA and TxDOT.

Table of Contents

1.0 Introduction 1

2.0 Project Overview 1

3.0 Ecological Site Description 2

4.0 Methods 2

4.1 Map and Database Review 2

4.1.1 USGS Topographic Maps 2

4.1.2 USFWS NWI Data 2

4.1.3 NRCS Soil Survey Data 2

4.1.4 Aerial Photography 3

4.1.5 FEMA FIRM 3

4.1.6 LiDAR 3

4.2 Waters of the U.S. Delineation 3

4.2.1 Hydrology 3

4.2.2 Vegetation 4

4.2.3 Soils 4

5.0 Results 4

5.1 Map and Database Review 4

5.1.1 USGS Topographic Maps 4

5.1.2 USFWS NWI Data 5

5.1.3 NRCS Soil Survey Data 5

5.1.4 Aerial Photography 9

5.1.5 FEMA FIRM 10

5.1.6 LiDAR 10

5.2 Waters of the U.S. Delineation 10

5.2.1 Hydrology 13

5.2.2 Vegetation 13

5.2.3 Soils 14

6.0 Conclusion 14

7.0 References 16

8.0 Attachments 17

List of Tables

Table 1: NWI Features 5
Table 2: NRCS Soil Units 5
Table 3: Historic Aerial Photography Observations 9
Table 4: Summary of Waterbody/Wetland Features 12
Table 5: Wetland Hydrological Indicators 13
Table 6: Wetland Dominant Plant Species 14
Table 7: Upland Dominant Plant Species 14

1.0 Introduction

The Texas Department of Transportation (TxDOT) conducted a waters of the U.S. (WOTUS) delineation for a proposed road project on Interstate Highway (IH) 30 from Linkcrest Drive (Dr) to IH 820 in Fort Worth, Tarrant County, Texas (CSJ 1068-01-214). The delineation was originally completed on July 25-26, 2019. Additional delineations were completed on April 28, 2020 and July 13, 2020 to account for design and right-of-entry updates.

The delineation was performed to evaluate the presence of jurisdictional WOTUS 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 will be impacted, this WOTUSDR will also support applications for regulatory permits that may 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 four (4) attachments:

- **Attachment 1 – Figures:** contains maps of the project area
- **Attachment 2 – Wetland Determination Data Forms:** documents the three (3) criteria for wetlands at all sample points
- **Attachment 3 – Historical Aerial Photographs:** contains historical aerial imagery, starting with the oldest photographs first
- **Attachment 4 - Site Photographs:** contains photographs taken during the site visit(s)

2.0 Project Overview

TxDOT is proposing improvements to IH 30 from Linkcrest Dr to IH 820 in Fort Worth, Tarrant County, Texas. The distance of the proposed project is approximately 3.26 miles. The proposed project would include the widening of the freeway main lanes and provide continuous one-way frontage roads with pedestrian and bicycle facilities along the entire length of the project.

The proposed IH 30 improvements would include the widening of the freeway main lanes to a minimum of three (3) lanes in each direction (plus auxiliary lanes), providing continuous one-way frontage roads with a shared use path to accommodate pedestrians and bicycle use along the entire length of the project. The left entrance onto the westbound IH 30 lanes at the interchange with Spur 580 would be eliminated and the interchange of IH 30 and Spur 580 would be reconstructed to provide 18 feet and 6 inches of vertical clearance at all underpasses (IH 30 freeway is designated as a Freight Mobility Corridor), an IH 30 westbound exit to Ranch to Market (RM) 2871 (Longvue Avenue), and the reconstruction of the IH 30 and RM 2871 interchange.

The project area includes approximately 283.3 acres of existing roadway right-of way (ROW), 3.42 acres of proposed ROW, and 2.30 acres of existing permanent drainage easements. ROW would be required from four parcels located at the Spur 580 Interchange and the eastbound frontage road and Alemeda Street Intersection.

Attachment 1 - Figures contains numbered 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. Additional figures include water resources within the project area (**Figure 4**), soils (**Figure 5**), light detection and ranging (LiDAR) maps to aid in comparing base elevations (**Figure 6**), and field verified waters (**Figure 7**).

3.0 Ecological Site Description

The project area is located within the Southwestern Prairies Cotton and Forage Land Resource Region (LRR J) of the Great Plains and is more specifically located in Major Land Resource Area (MLRA) 85 (Grand Prairie). Most of this area is in ranches, farms, and other private holdings. A smaller acreage is used as cropland or improved pasture. The major crops in the area are small grains and forage sorghum, which are used as a supplemental feed for livestock and wildlife. The elevation ranges from 500 to 1, 310 feet in most of the area. The area is characterized by gently rolling to hilly, dissected limestone plateaus and the adjacent gently sloping valleys. Steep slopes commonly border the valleys along the major streams that cross the area. The annual precipitation in this region ranges from about 27 inches to 41 inches. The dominant soils are Vertisols and Mollisols. The soils range from moderately well drained to well drained. are well drained or moderately well drained. The native vegetation in this area consists of mid and tall grasses interspersed with scattered oaks.

Currently, the project area consists of residential urbanized areas and a large amount of the present vegetation is regularly maintained within ROW or adjacent developed facilities. Riparian zones were present within the floodplains and around creek crossings and were characterized by various trees and shrubs such as black willows (*Salix nigra*), yaupon (*Ilex vomitoria*), and cottonwoods (*Populus deltoides*), woody vines such as greenbrier (*Smilax sp*) and dewberry (*Rubus sp*), and unmaintained herbaceous species such as Johnson grass (*Sorghum halepense*) and giant ragweed (*Ambrosia trifida*).

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 Aledo and Benbrook, 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 United States Department of Agriculture (USDA) Natural Resources Conservation Service (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 at 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

The Federal Emergency Management Agency (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

Light detection and ranging (LiDAR) is a remote sensing technique that measures spatial and temporal data. LiDAR information is provided by the TNRIS online database for each USGS Quad. LiDAR data was obtained for the Aledo and Benbrook, Texas, USGS Quads to evaluate elevation changes throughout the project area.

4.2 Waters of the U.S. Delineation

With respect to any non-tidal waterbodies located within the project area, biologists followed the methodology outlined in RGL 05-05. No tidal waterbodies were identified within the project area.

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, 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. The data was post-processed utilizing Trimble Pathfinder.

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 Great Plains Regional Supplement (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 current 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)

An UPL status is recorded for those species for which insufficient information is available to determine an indicator status. This methodology only needed to be applied for WP 3 for this project.

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 that did not initially pass the dominance test.

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

Based on observations from USGS Topographic maps, the project area is lower in the middle near Mary's Creek and unnamed tributaries to Mary's Creek and a higher elevation along the western and eastern limits. One named stream, Mary's Creek, and five unnamed tributaries were identified on the USGS map within the project area. Refer to **Figure 3** in **Attachment 1** for topography surrounding the project area.

5.1.2 USFWS NWI Data

The table below summarizes the seven NWI features within the project area. Refer to **Figure 4** 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
R2UBH	Riverine lower perennial, unconsolidated bottom, permanently flooded	Riverine
PUBHh	Palustrine unconsolidated bottom, permanently flooded, diked/impounded	Pond
R4SBSC	Riverine intermittent, streambed, seasonally flooded	Riverine
R4SBSC	Riverine intermittent, streambed, seasonally flooded	Riverine
R4SBSC	Riverine intermittent, streambed, seasonally flooded	Riverine
R4SBSC	Riverine intermittent, streambed, seasonally flooded	Riverine
R4SBSC	Riverine intermittent, streambed, seasonally flooded	Riverine

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 **Figure 5** 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
1	Aledo gravelly clay loam, 1 to 8% slopes	Consists of shallow to very shallow, well drained, moderately permeable soils that formed in interbedded limestones and marls of Cretaceous age. These soils are on gently sloping to steep uplands. Slope is mostly less than 8%, but ranges from 1 to 40%.	No

Table 2: NRCS Soil Units

Soil Unit	Soil Unit Name	Description	Hydric/Non-hydric
2	Bolar-Aledo complex, 3 to 30% slopes	The Bolar series consists of moderately deep, well drained, moderately permeable soils that formed in interbedded limestones and calcareous marls. The soils are on gently sloping to moderately steep uplands. Slopes range from 1 to 15%. The Aledo series portion consists of shallow to very shallow, well drained, moderately permeable soils that formed in interbedded limestones and marls of Cretaceous age. These soils are on gently sloping to steep uplands. Slope is mostly less than 8%, but ranges from 1 to 40%.	No
3	Aledo-Bolar-Urban land complex, 3 to 20% slopes	The Bolar series consists of moderately deep, well drained, moderately permeable soils that formed in interbedded limestones and calcareous marls. The soils are on gently sloping to moderately steep uplands. Slopes range from 1 to 15%. The Aledo series portion consists of shallow to very shallow, well drained, moderately permeable soils that formed in interbedded limestones and marls of Cretaceous age. These soils are on gently sloping to steep uplands. Slope is mostly less than 8%, but ranges from 1 to 40%. Portions are largely developed for commercial or residential purposes.	No
4	Aledo-Urban land complex, 1 to 8% slopes	Consists of shallow to very shallow, well drained, moderately permeable soils that formed in interbedded limestones and marls of Cretaceous age. These soils are on gently sloping to steep uplands. Slope is mostly less than 8%, but ranges from 1 to 40%. Portions are largely developed for commercial or residential purposes.	No
15	Bolar clay loam, 3 to 5% slopes	Consists of moderately deep, well drained, moderately permeable soils that formed in interbedded limestones and calcareous marls. The soils are on gently sloping to moderately steep uplands. Slopes range from 1 to 15%.	No

Table 2: NRCS Soil Units

Soil Unit	Soil Unit Name	Description	Hydric/Non-hydric
26	Frio silty clay, 0 to 1% slopes, occasionally flooded	Consists of very deep, well drained, moderately slowly permeable soils that formed in calcareous loamy and clayey alluvium. These nearly level to very gently sloping soils occur on flood plains. Slope ranges from 0 to 2%.	No*
46	Maloterre, Aledo, and Brackett soils, 3 to 20% slopes	The Maloterre series consists of very shallow, somewhat excessively drained, moderately slow permeable soils that formed in residuum weathered from limestone. These upland soils have slopes ranging from 1 to 20%. The Aledo series portion consists of shallow to very shallow, well drained, moderately permeable soils that formed in interbedded limestones and marls of Cretaceous age. These soils are on gently sloping to steep uplands. Slope is mostly less than 8%, but ranges from 1 to 40%. The Brackett series consists of shallow to paralithic bedrock, well drained soils formed in residuum weathered from limestone of Cretaceous age, mainly from the Glen Rose formation. These nearly level to very steep soils are located on backslopes of ridges on dissected plateaus of the Edwards Plateau. Slopes are1 to 60%.	No
56	Pits, quarries, 0 to 45% slopes	Consists of very deep, poorly drained soils that formed in fine-textured alluvium weathered from extrusive and basic igneous rocks. Pit soils are on flood plains and in basins. Slopes range from 0 to 5%.	No
61	Purves clay, 1 to 3% slopes	Consists of shallow, well drained, moderately slowly permeable soils that formed in interbedded limestone and marl. These soils are on gently sloping to steep upland divides with plane to convex surfaces. Slopes are mainly 1 to 5%, but range from 1 to 40%.	No

Table 2: NRCS Soil Units

Soil Unit	Soil Unit Name	Description	Hydric/Non-hydric
62	Purves-Urban land complex, 0 to 5% slopes	Consists of shallow, well drained, moderately slowly permeable soils that formed in interbedded limestone and marl. These soils are on gently sloping to steep upland divides with plane to convex surfaces. Slopes are mainly 1 to 5%, but range from 1 to 40%. Portions are largely developed for commercial or residential purposes.	No
65	Sanger clay, 1 to 3% slopes	Consists of very deep, well drained, very slowly permeable soils that formed in clayey marine sediments. These gently sloping to strongly sloping soils are on broad uplands. Slopes range from 1 to 12%, however slopes are typically 1 to 5%.	No
66	Sanger clay, 3 to 5% slopes	Consists of very deep, well drained, very slowly permeable soils that formed in clayey marine sediments. These gently sloping to strongly sloping soils are on broad uplands. Slopes range from 1 to 12%, however slopes are typically 1 to 5%.	No
67	Sanger-Urban land complex, 1 to 5% slopes	Consists of very deep, well drained, very slowly permeable soils that formed in clayey marine sediments. These gently sloping to strongly sloping soils are on broad uplands. Slopes range from 1 to 12%, however slopes are typically 1 to 5%. Portions are largely developed for commercial or residential purposes.	No
74	Slidell clay, 1 to 3% slopes	Consists of very deep, moderately well drained, very slowly permeable soils that formed in calcareous, clayey sediments. These nearly level to gently sloping soils occur on base slopes of ridges on hills. Slope ranges from 0 to 5%.	No
78	Sunev clay loam, 3 to 8% slopes	Consists of very deep, well drained soils that formed in loamy alluvium. These soils are on nearly level to moderately steep stream terraces or foot slopes of valleys and ridges. Slope ranges from 0 to 15%.	No

*May include hydric inclusions
Source: NRCS 2017

5.1.4 Aerial Photography

Historic aerial imagery for the project and surrounding areas was evaluated using images provided by a third party service and Google Earth (2019). 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. Historic aerial photographs are available for 2005, 2006, 2008, 2012, and 2014 and depicted in **Attachment 3**, but not in the table below because no significant change occurred in the project area during those years. Water features observed in the project area appear have been unaltered and follow historic alignments.

Table 3: Historic Aerial Photography Observations

Year	Observations
1942	Spur 580 was visible in this photograph, but Spur 580 east the present day IH 30 had not been constructed. Surrounding areas are undeveloped.
1952	Same as 1942 aerial photograph except residential development is visible along Spur 330 and a small roadways representing current day Chapel Creek Blvd and IH 820 are visible. A housing development is visible near the future IH 30 and Spur 580 intersection.
1958	Same as 1952 aerial photograph except more development is visible in the housing development is visible near the future IH 30 and Spur 580 intersection.
1968	The present day IH 30 and connection to Spur 580 is visible. For the most part the land along this newly constructed area is undeveloped. Another housing development is visible south of IH 30 near the western project limit.
1976	Same as 1968 aerial photograph except IH 820 and the interchanges with IH 30 have been constructed. For the most part the land north of IH 30 is undeveloped. A landfill is visible north of IH 30 at the western project limit.
1981	Same as 1976 aerial photograph except for additional housing developments and other land disturbing activity near the western project limits. Longvue Avenue is visible.
1984	Same as 1984 aerial photograph. Housing developments are visible east of IH 820.
1995	A housing development is visible north of the project area along widened Chapel Creek Blvd. Alemeda Street and North Normandale Street are visible.
2004	The housing development north of IH 30 along Chapel Creek Blvd has expanded and a new housing development south of IH 30 along Chapel Creek Blvd has been developed. All Saints' Episcopal School is visible south of IH 30 along Longvue Avenue. The landfill near the western limits appears to be capped.
2005	A well pad or work site has been developed toward the north end of the project area. No other obvious differences are visible.
2006	Minor developments along IH 30 are visible. No major differences have occurred.

Year	Observations
2008	Ground disturbing activities are visible north of IH 30 at the intersection with Spur 580.
2010	The development from the 2008 aerials appears to be complete. Ground disturbing activity is visible south of IH 30 and west of Longvue Avenue.
2012	No obvious differences from the 2010 aerials.
2014	Earth disturbing activity for the housing development north of IH 30 and west of Chapel Creek Blvd is visible which expands the development between Waters 2 and 3a.
2016	The housing development under construction in the 2014 aerial is still under construction but has been expanded further.
2019	A new housing development is north of IH 30 and east of Chapel Creek Blvd along Amber Ridge Road.

5.1.5 FEMA FIRM

FEMA Flood Insurance Rate Map (FIRM) Panels 48439C0260K and 48439C0280K, both effective September 25, 2009, were reviewed for the project area. A review of FEMA FIRMs indicated that approximately 19.0 acres of the project area is located within the 100-Yr Floodplain. All designated floodplain areas within the project area are Zone AE – areas where base flood elevations (BFE) are provided. The BFE within the vicinity of the project area ranges from 722 to 800 feet above sea level. Refer to **Figure 4** 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 eastern and western portion of the project is generally of higher topography than middle of the project area. West of Mary's Creek, the mainlanes are generally at a higher elevation than the grassy medians and frontage roads and east of the Mary's Creek the mainlanes are generally lower than the remainder of the ROW. The lowest elevations are located in the middle of the project area and associated with the 100-Yr floodplain and tributaries that cross through the project area. Refer to **Figure 6** in **Attachment 1** for an illustration of LiDAR data within the project area.

5.2 Waters of the U.S. Delineation

Six potentially jurisdictional waters at nine locations were identified within the project area during field investigations on July 25-26, 2019, and April 28, 2020. These potential waters of the U.S. include one occurrence of Mary's Creek (Feature 1), and six occurrences of unnamed tributaries to Mary's Creek (Features 2, 3a, 4a, 4b, 4c, and 5). Three emergent herbaceous wetlands were observed in occurrence with unnamed tributaries to Mary's Creek (Features 3b, 3c, and 6). These potential waters are depicted on **Figure 7**. Features were only evaluated in areas where ROE was granted or the feature was visible from areas of public ROW.

Feature 1 flows through the project area beneath a bridge at IH 30. The average OHWM width within the project area ranges from 20 feet to 45 feet. Feature 1 runs for approximately 662.5 linear feet (LF) within the project area and is approximately 0.76 acre. Mary's Creek is a USGS and NHD mapped stream and would therefore likely be considered jurisdictional by USACE. Features 1is shown on **Figure 7** in **Attachment 1** and in **Photo 2 and 3** in **Attachment 4**.

Feature 2 is an unnamed tributary to Mary's Creek that flows from northwest to southeast and crosses beneath HI 30 through a culvert. The average OHWM on this creek ranges from 2 feet to 15 feet. This creek flowed into Mary's Creek between IH 30 and Spur 580. Feature 2 runs for approximately 830.7 LF within the project area and is approximately 0.31 acre. Feature 2 is a USGS and NHD mapped stream and would therefore likely be considered jurisdictional by USACE. Features 2 is shown on **Figure 7** in **Attachment 1** and in **Photos 4 and 5** in **Attachment 4**.

Feature 3a is an unnamed tributary to Mary's Creek that flows north to south beneath IH 30 through a culvert. This average OHWM of this tributary ranges from 2 feet to 14 feet. Feature 3a runs for approximately 642.5 LF within the project area and is approximately 0.12 acre. Feature 3b is an herbaceous emergent wetland on the west side of Feature 3a. This wetland totals less than 0.01 ac. Feature 3c is an herbaceous emergent wetland located on the east side of Feature 3a and is approximately 0.07 acre in size. These three features would be considered one single and complete crossing for permitting procedures through USACE; therefore, Feature 3 totals approximately 642.5 LF and 0.19 acre within the project area. Feature 3 is associated with a USGS and NHD mapped stream and would therefore likely be considered jurisdictional by USACE. Features 3a, 3b, and 3c are shown on **Figure 7** in **Attachment 1** and in **Photos 6, 8, and 11** in **Attachment 4**.

Feature 4a is an unnamed tributary to Mary's Creek that flows northwest to southeast beneath IH 30 through a culvert. Two proposed easements overlap this unnamed tributary just south of the project area (Feature 4b and 4c). Feature 4a was a dry creek bed that averaged 10 feet wide between the OHWM. Feature 4a ran for approximately 732.3 LF within the project area and is approximately 0.16 acre in size. Feature 4b ran for approximately 236.5 LF within the project area and is approximately 0.04 ac. Feature 4c ran for approximately 118.7 LF within the project area and is approximately 0.02 acre. These three features would be considered one single and complete crossing for permitting procedures through USACE; therefore, Feature 4 totals approximately 1,087.5 LF and 0.22 acres. Feature 4 is a USGS and NHD mapped stream and would therefore likely be considered jurisdictional by USACE. Features 4a, 4b, and 4c are shown on **Figure 7** in **Attachment 1** and in **Photos 13-17** in **Attachment 4**.

Feature 5 is an unnamed tributary to Mary's Creek that runs from northwest to southeast beneath IH 30 through a culvert. Two proposed easements are associated with this crossing, but a new development disturbed the area north of IH 30 where this tributary flowed. The April 28, 2020 site visit determined that this crossing has been completely channelized on the north side of the roadway. An OHWM was visible within the southern easement for this crossing. Feature 5 totaled approximately 0.12 acre and ran for approximately 523.3 LF within the project area. A large pool of stagnant water was present at the time of the April 2020 site visit. The average width of the OHWM within the study area is 12 feet. Feature 5 is a USGS and NHD mapped stream and would therefore likely be considered jurisdictional by USACE. Feature 5 is shown on **Figure 7** in **Attachment 1** and in **Photos 18 and 19** in **Attachment 4**.

Feature 6 is mapped by the USGS as an unnamed tributary to Mary's Creek but was field verified not to have an OHWM. An emergent wetland is present along the beginning path of the mapped flowline within the project area. The herbaceous emergent wetland was approximately 0.04 acre in size. Feature 6 has direct hydrological nexus to a USGS and NHD mapped stream and would therefore likely be considered jurisdictional by USACE. Feature 6 is shown on **Figure 7** in **Attachment 1** and in **Photos 20 and 21** in **Attachment 18**.

Two linear water features were identified by the USGS topographic map that were determined upon field investigations to no longer be present within the project area: an unnamed tributary to Mary's Creek and an unnamed tributary to Farmer's Branch. The construction of IH 30 and subsequent urbanization in the adjacent areas appear to be the reason these tributaries are no longer present within the project area. Photographs of the mapped locations of these two unconfirmed tributaries are shown in **Photos 23 and 24** in **Attachment 4**.

The table below summarizes the waterbodies/wetlands identified within the project area. Refer to **Figure 7** 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**, **Representative Site Photos**, 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	Mary's Creek	Perennial Stream	32.7228, -97.5178	0.76	662.5	Yes	No
2	Unnamed Tributary to Mary's Creek	Intermittent Stream	32.7234, -97.5158	0.31	830.7	Yes	No
3a	Unnamed Tributary to Mary's Creek	Intermittent Stream	32.7273, -97.5085	0.12	642.5	Yes	No
3b	Wetland A	Herbaceous Emergent	32.7207, -97.5086	<0.01	N/A	Yes	No
3c	Wetland B	Herbaceous Emergent	32.7280, -97.5084	0.07	N/A	Yes	No
4a	Unnamed Tributary to Mary's Creek	Intermittent Stream	32.7316, -97.4990	0.16	732.3	Yes	No
4b	Unnamed tributary to Mary's Creek	Intermittent Stream	32.7302, -97.4980	0.04	236.5	Yes	No
4c	Unnamed Tributary to	Intermittent Stream	32.7299, -97.4979	0.02	118.7	Yes	No

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)?
	Mary's Creek						
5	Unnamed Tributary to Mary's Creek	Intermittent Stream	32.7350, -97.4918	0.12	523.3	Yes	No
6	Wetland C	Herbaceous Emergent	32.7296, -97.4877	0.04	N/A	Yes	No
			Total	**1.64**	**3,746.5**		

5.2.1 Hydrology

Normal hydrological circumstances were observed at the site of all three field verified wetlands. 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
Emergent	WP 1, 5	Saturation, Water Table, Standing Water	FAC – Neutral Test
Emergent	WP 3	Saturation, Water Table	FAC – Neutral Test

5.2.2 Vegetation

Normal vegetative circumstances were observed within the wetlands 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 2018 NWPL.

Table 6: Wetland Dominant Plant Species

Strata	Scientific Name	Common Name	NWPL Classification
Herbaceous	*Typha latifolia*	Broadleaf Cattail	OBL
Herbaceous	*Eleocharis acicularis*	Needle Spikerush	OBL
Tree	*Salix nigra*	Black Willow	FACW
Herbaceous	*Iva annua*	Sumpweed	FAC
Tree	*Ulmus crassifolia*	Cedar Elm	FAC

Table 7: Upland Dominant Plant Species

Strata	Scientific Name	Common Name	NWPL Classification
Herbaceous	*Lolium perenne*	Perennial Ryegrass	FACU
Tree	*Celtis occidentalis*	Hackberry	FACU
Herbaceous	*Boltonia asteroides*	False aster	FACW
Herbaceous	Cyperus pseudovegtus	Marsh Flatsedge	FACW

5.2.3 Soils

The soils onsite were observed to be primarily a clay loam to loam and ranged in color from a very dark gray to a dark grayish brown. Redox colors were observed were primarily a dark yellowish brown or yellowish red. No naturally problematic soils were encountered onsite. 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.

Wetland Type	Sample Point Name(s)	Hydric Soil Indicator(s)
Emergent	WP 1, 3, 5	Depleted Matrix (F3),
Non-wetland	WP 2, 4,	Depleted Matrix (F3)
Non-wetland	WP 6	Redox Dark Surface (F6)

6.0 Conclusion

A WOTUS delineation was conducted for the IH 30 from Linkcrest Dr to IH 820 in Fort Worth, Tarrant County, Texas (CSJ 1068-01-214). The delineation was completed on July 25-26, 2019, April 28, 2020, and July 13, 2020. Refer to **Section 5.2**, above, for a table summarizing the aquatic resources (i.e., waterbodies/wetlands) identified within the project area.

Nine water features were delineated at six single and complete crossings. One water feature, an unnamed tributary to Mary's Creek, crosses the project area in three locations; however, since it is the same waterway any impacts to this features would be combined as a single and complete water crossing (Feature 4). Features 3a,

3b, and 3c would be considered one single and complete water crossing as well due to the direct hydrological connectivity between the creek and wetlands.

The professional opinion offered in this report is based on best professional judgement. 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 pre-construction notification / permit application.

7.0 References

Cowardin, L. M., V. Carter, F. C. Golet, E. T. LaRoe. 1979. Classification of wetlands and deepwater habitats of the United States. U.S. Department of the Interior, Fish and Wildlife Service, Washington, D.C. Jamestown, ND: Northern Prairie Wildlife Research Center Online. http://www.npwrc.usgs.gov/resource/wetlands/classwet/index.htm (Version 04DEC1998).

Federal Emergency Management Agency (FEMA). 2009. Flood Insurance Rate Maps for Tarrant County. Accessed June 2020.

Google Inc. (2009). Google Earth (Version 5.1.3533.1731) [Software]. Accessed June 2020.

Lichvar, R.W., D.L. Banks, W.N. Kirchner, and N.C. Melvin. 2016. *The National Wetland Plant List*: 2016 wetland ratings. Phytoneuron 2016-30: 1-17. Published 28 April 2016. ISSN 2153 733X.

Lists of Hydric Soils. National List; all states. United States Department of Agriculture. National Resource Conservation Service. Available online at http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/use/hydric/. Accessed June 2020.

Munsell® Soil Color Charts. 2009. GretagMacbeth, New Windsor, New York

Natural Resources Conservation Service (NRCS). 2006. Land Resource Regions and Major Land Resource Areas of the United States, the Caribbean, and the Pacific Basin. Available online at www.nrcs.usda.gov/Internet/FSE_DOCUMENTS?nrcs142p2-050898.pdf. Accessed June 2020.

Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. Web Soil Survey. Available online at http://websoilsurvey.nrcs.usda.gov/. Accessed June 2020.

United States Department of Agriculture, Natural Resources Conservation Service. 2010. Field Indicators of Hydric Soils in the United States, Version 7.0. L.M. Vasilas, G.W. Hurt, and C.V. Noble (eds.). USDA, NRCS, in cooperation with the National Technical Committee for Hydric Soils.

U.S. Army Corps of Engineers (USACE). Regulatory Guidance Letter: Ordinary High Water Mark Identification. Available online http://www.usace.army.mil/Portals/2/docs/civilworks/RGLS/rg105-05.pdf. Accessed June 2020.

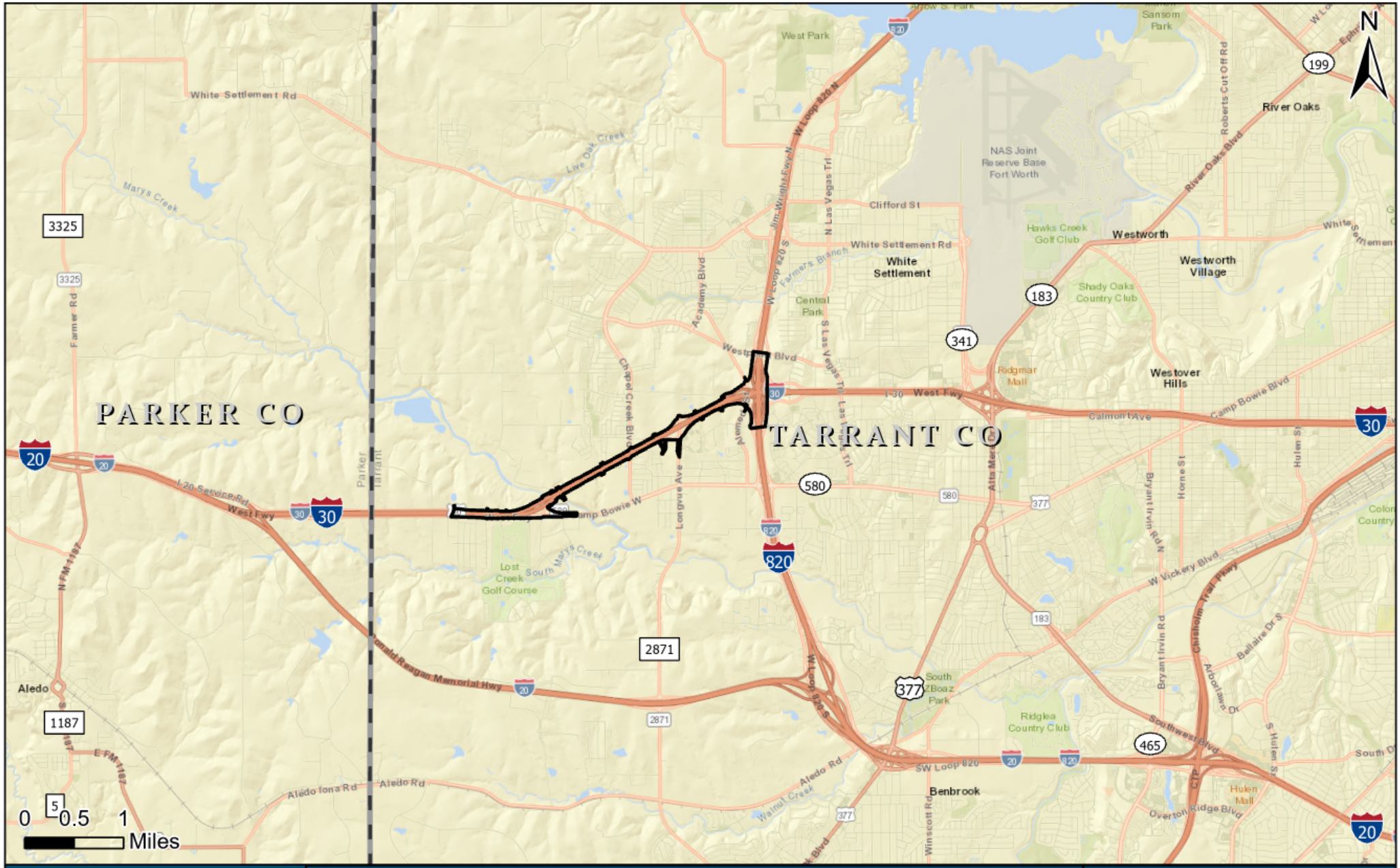
U.S. Army Corps of Engineers (USACE). 1987. Corps of Engineers Wetland Delineation Manual. Technical Report Y-87-1, U.S. Army Corps of Engineers Waterways Experiment Station, Vicksburg, MS.

U.S. Army Corps of Engineers (USACE). 2010. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Great Plains Region (Version 2.0), ed. J.S. Wakeley, R.W. Lichvar, and C.V. Noble. ERDC/EL TR-10-1. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

8.0 Attachments

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

Attachment 1 - Figures



Project Vicinity

I-30

From Linkcrest Drive to IH 820
Tarrant County, TX

Project Area

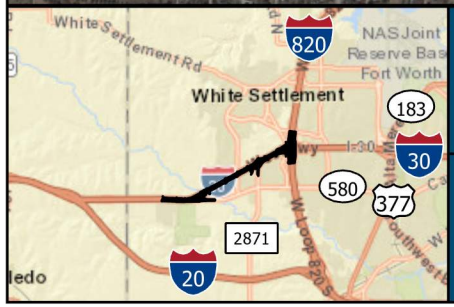
Figure No.: 1

Site Visit Date: July 25-26, 2019 & April 28th, 2020

Project No.: 1068-01-214

Drawn By: CP&Y

Sources: ESRI World Streets



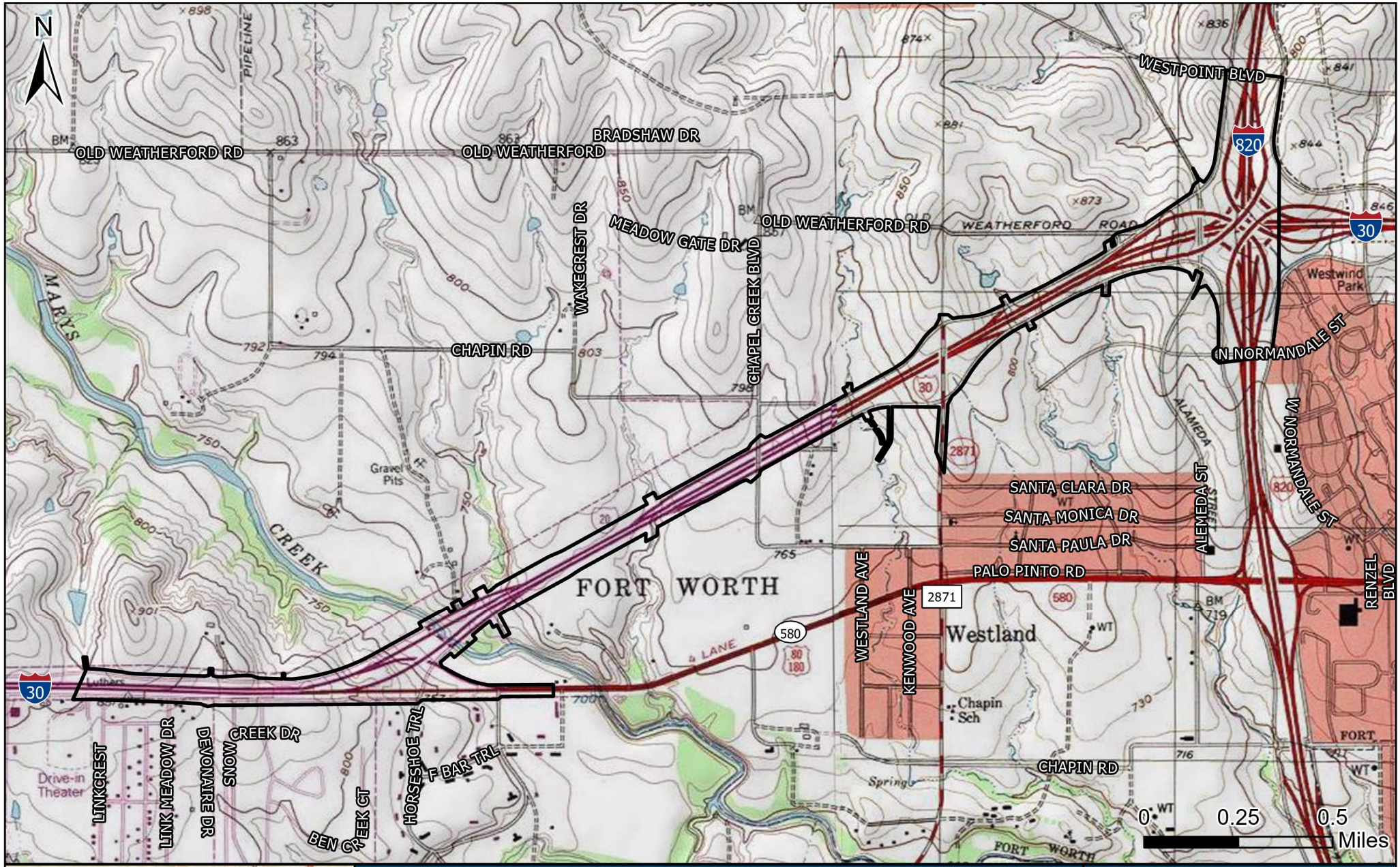
Aerial Overview

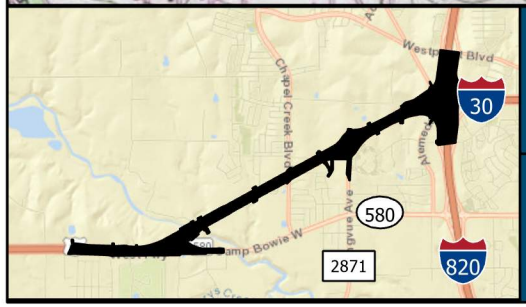
I-30

From Linkcrest Drive to IH 820
Tarrant County, TX

Project Area

Figure No.: 2	
Site Visit Date: July 25-26, 2019 & April 28th, 2020	
Project No.: 1068-01-214	
Drawn By: CP&Y	
Sources: Google Imagery 2019	





USGS Topographic Map

I-30

From Linkcrest Drive to IH 820
Tarrant County, TX

Project Area

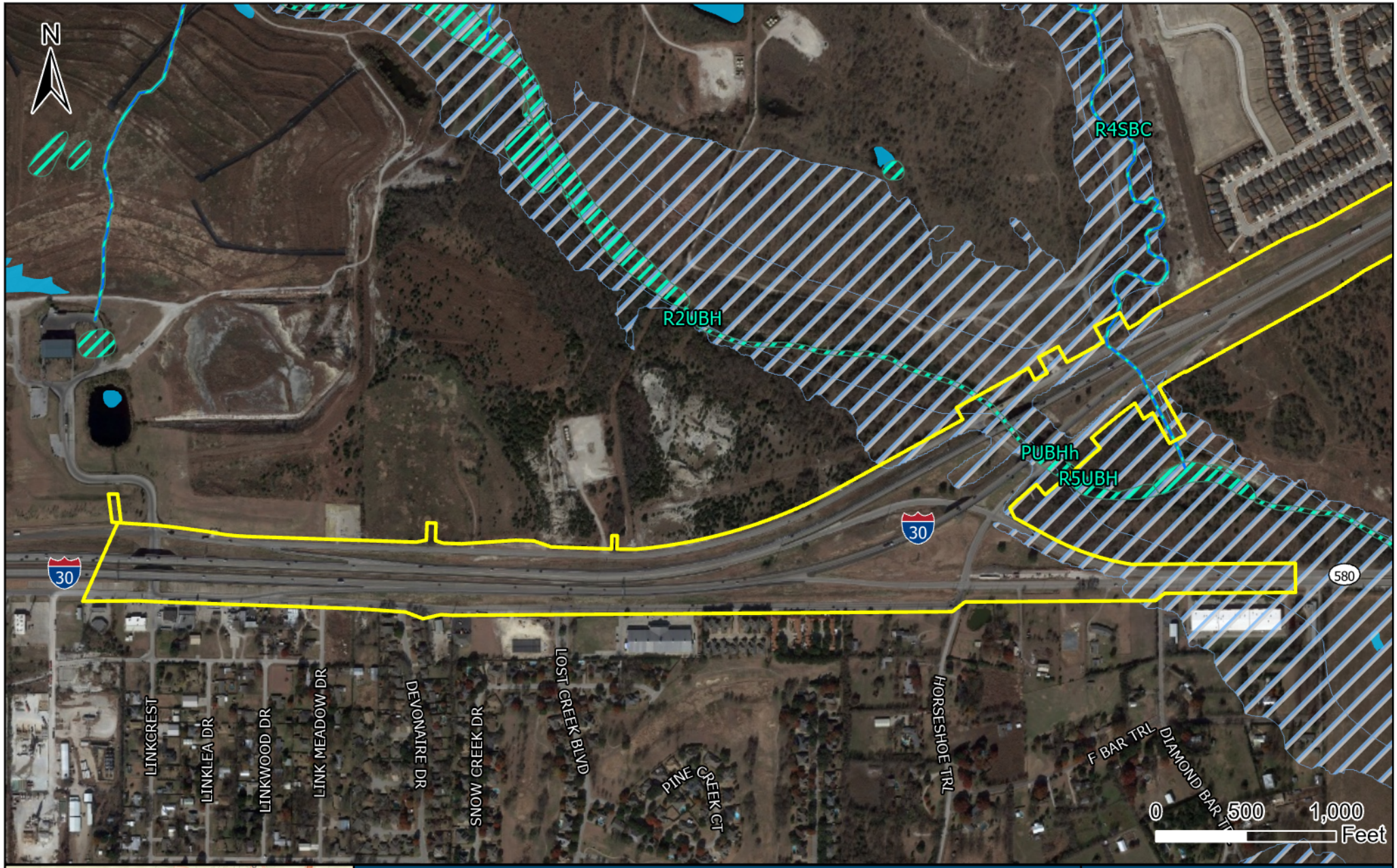
Figure No.: 3

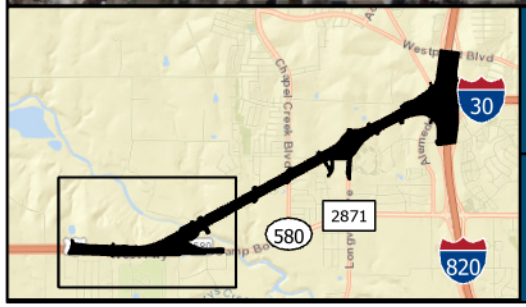
Site Visit Date: July 25-26, 2019 & April 28th, 2020

Project No.: 1068-01-214

Drawn By: CP&Y

Sources: ESRI USA Topographic Map, Quadrangles Aledo and Benbrook





Water Resources

I-30

From Linkcrest Drive to IH 820
Tarrant County, TX

Project Area
NWI Mapped Wetland
Waterbody
River/Stream
100-year Floodplain

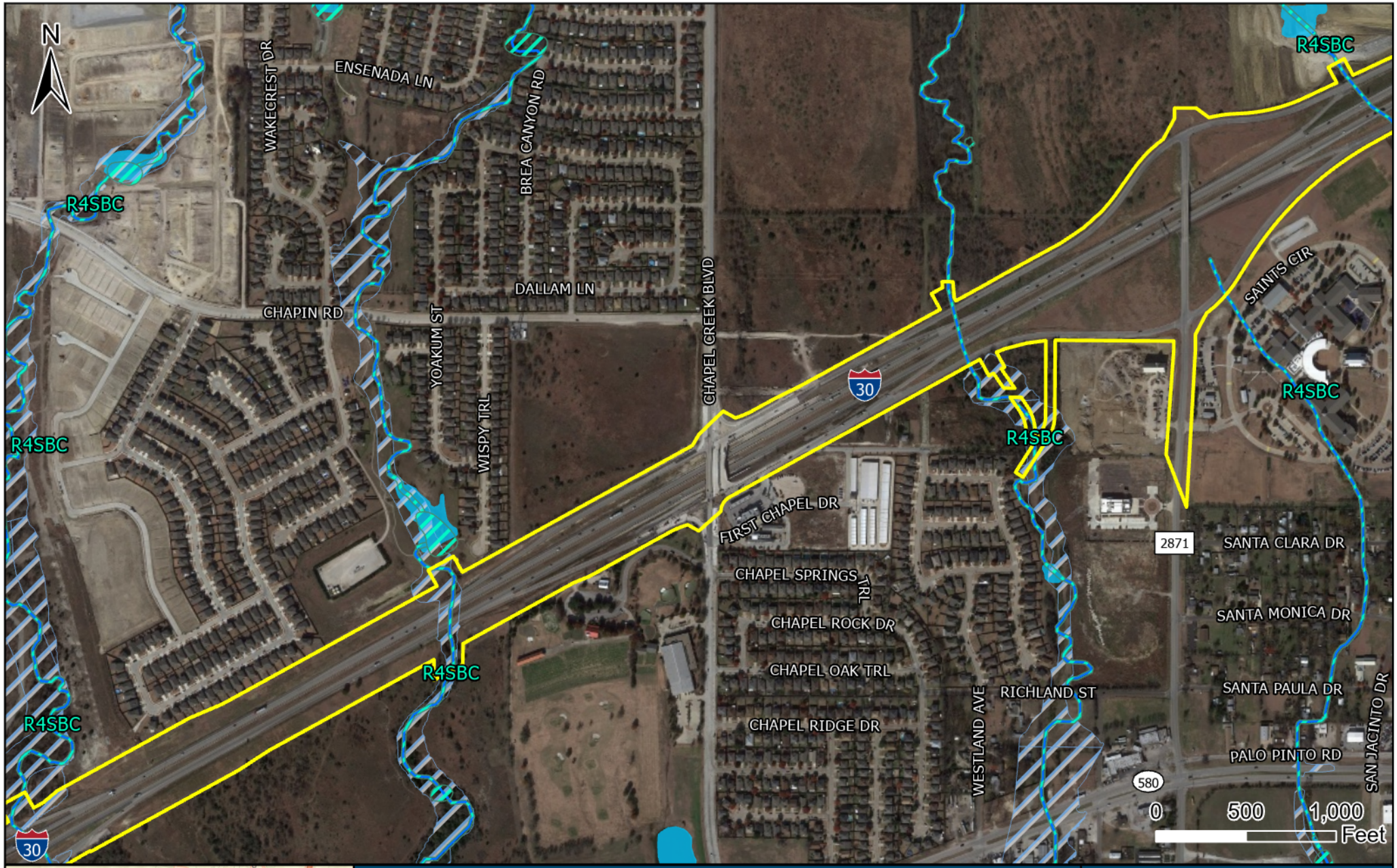
Figure No.: 4 - Page 1 of 3

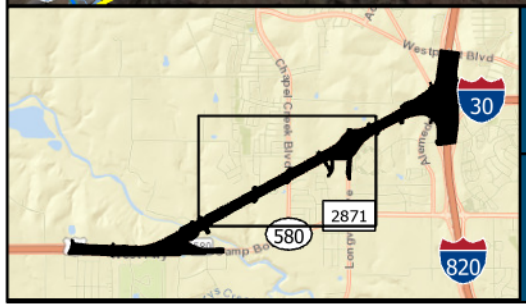
Site Visit Date: July 25-26, 2019 & April 28th, 2020

Project No.: 1068-01-214

Drawn By: CP&Y

Sources: Google Imagery 2019, NWI 2020, NHD 2017





Water Resources

I-30

From Linkcrest Drive to IH 820
Tarrant County, TX

Project Area
NWI Mapped Wetland
Waterbody
River/Stream
100-year Floodplain

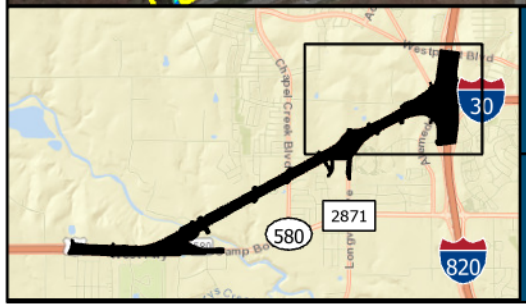
Figure No.: 4 - Page 2 of 3

Site Visit Date: July 25-26, 2019 & April 28th, 2020

Project No.: 1068-01-214

Drawn By: CP&Y

Sources: Google Imagery 2019, NWI 2020, NHD 2017



Water Resources

I-30

From Linkcrest Drive to IH 820
Tarrant County, TX

Project Area | NWI Mapped Wetland | Waterbody
River/Stream | 100-year Floodplain

Figure No.: 4 - Page 3 of 3

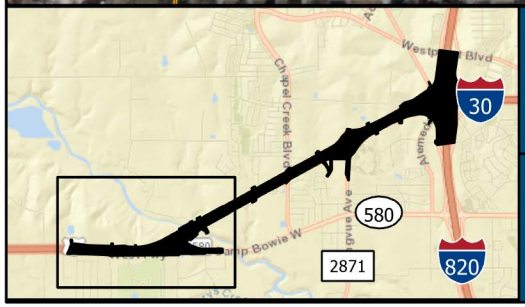
Site Visit Date: July 25-26, 2019 & April 28th, 2020

Project No.: 1068-01-214

Drawn By: CP&Y

Sources: Google Imagery 2019, NWI 2020, NHD 2017

1- Aledo gravelly clay loam, 1 to 8% slopes
2 - Bolar-Aledo complex, 3 to 30% slopes
4 - Aledo-Urban land complex, 1 to 8% slopes
15 - Bolar clay loam, 3 to 5% slopes
26 - Frio silty clay, 0 to 1% slopes, occasionally flooded
46 - Maloterre, Aledo, and Brackett soils, 3 to 20% slopes
56 - Pits, quarries, 0 to 45% slopes
61 - Purves clay, 1 to 3% slopes
62 - Purves-Urban land complex, 0 to 5% slopes
65 - Sanger clay, 1 to 3% slopes
66 - Sanger clay, 3 to 5% slopes
67 - Sanger-Urban land complex, 1 to 5% slopes
74 - Slidell clay, 1 to 3% slopes
78 - Sunev clay loam, 3 to 8% slopes



NRCS Soils Map

I-30

From Linkcrest Drive to IH 820
Tarrant County, TX

Project Area
NRCS Soil Unit

Figure No.: 5 - Page 1 of 3

Site Visit Date: July 25-26, 2019 & April 28th, 2020

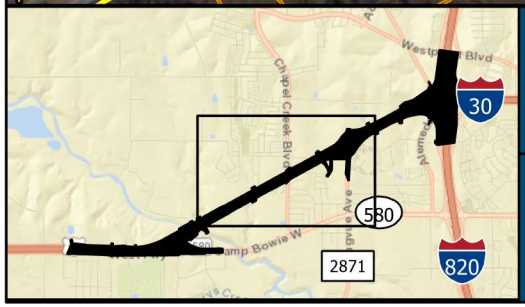
Project No.: 1068-01-214

Drawn By: CP&Y

Sources: Google Imagery 2019, NRCS 2019

1- Aledo gravelly clay loam, 1 to 8% slopes
2 - Bolar-Aledo complex, 3 to 30% slopes
3 - Aledo-Bolar-Urban land complex, 3 to 20% slopes
15 - Bolar clay loam, 3 to 5% slopes
26 - Frio silty clay, 0 to 1% slopes, occasionally flooded
46 - Maloterre, Aledo, and Brackett soils, 3 to 20% slopes
61 - Purves clay, 1 to 3% slopes
65 - Sanger clay, 1 to 3% slopes
66 - Sanger clay, 3 to 5% slopes
67 - Sanger-Urban land complex, 1 to 5% slopes
74 - Slidell clay, 1 to 3% slopes
78 - Sunev clay loam, 3 to 8% slopes

BREA CANYON RD
DALLAM LN
WISPY TRL
CHAPEL CREEK BLVD
FIRST CHAPEL DR
CHAPEL SPRINGS TRL
CHAPEL ROCK DR
CHAPEL OAK TRL
CHAPEL RIDGE DR
WESTLAND AVE
RICHLAND ST
SAINTS CIR
SANTA CLARA DR
SANTA MONICA DR
SANTA PAULA DR
PALO PINTO RD
SAN JACINTO DR
30
2871
580
N
0 500 1,000 Feet



NRCS Soils Map

I-30

From Linkcrest Drive to IH 820
Tarrant County, TX

Project Area
NRCS Soil Unit

Figure No.: 5 - Page 2 of 3

Site Visit Date: July 25-26, 2019 & April 28th, 2020

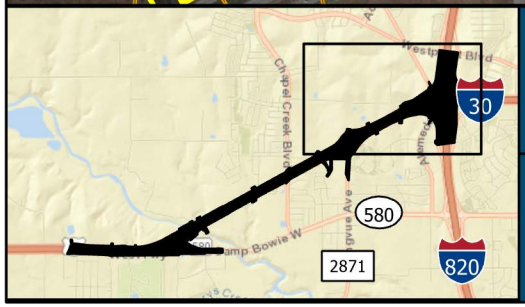
Project No.: 1068-01-214

Drawn By: CP&Y

Sources: Google Imagery 2019, NRCS 2019

1- Aledo gravelly clay loam, 1 to 8% slopes
2 - Bolar-Aledo complex, 3 to 30% slopes
3 - Aledo-Bolar-Urban land complex, 3 to 20% slopes
4 - Aledo-Urban land complex, 1 to 8% slopes
15 - Bolar clay loam, 3 to 5% slopes
61 - Purves clay, 1 to 3% slopes
65 - Sanger clay, 1 to 3% slopes
66 - Sanger clay, 3 to 5% slopes
67 - Sanger-Urban land complex, 1 to 5% slopes
74 - Slidell clay, 1 to 3% slopes

WESTPOINT BLVD
ALEMEDA ST
OLD WEATHERFORD RD
N NORMANDALE ST
SAINTS CIR
2871
820
30
0 500 1,000 Feet
N



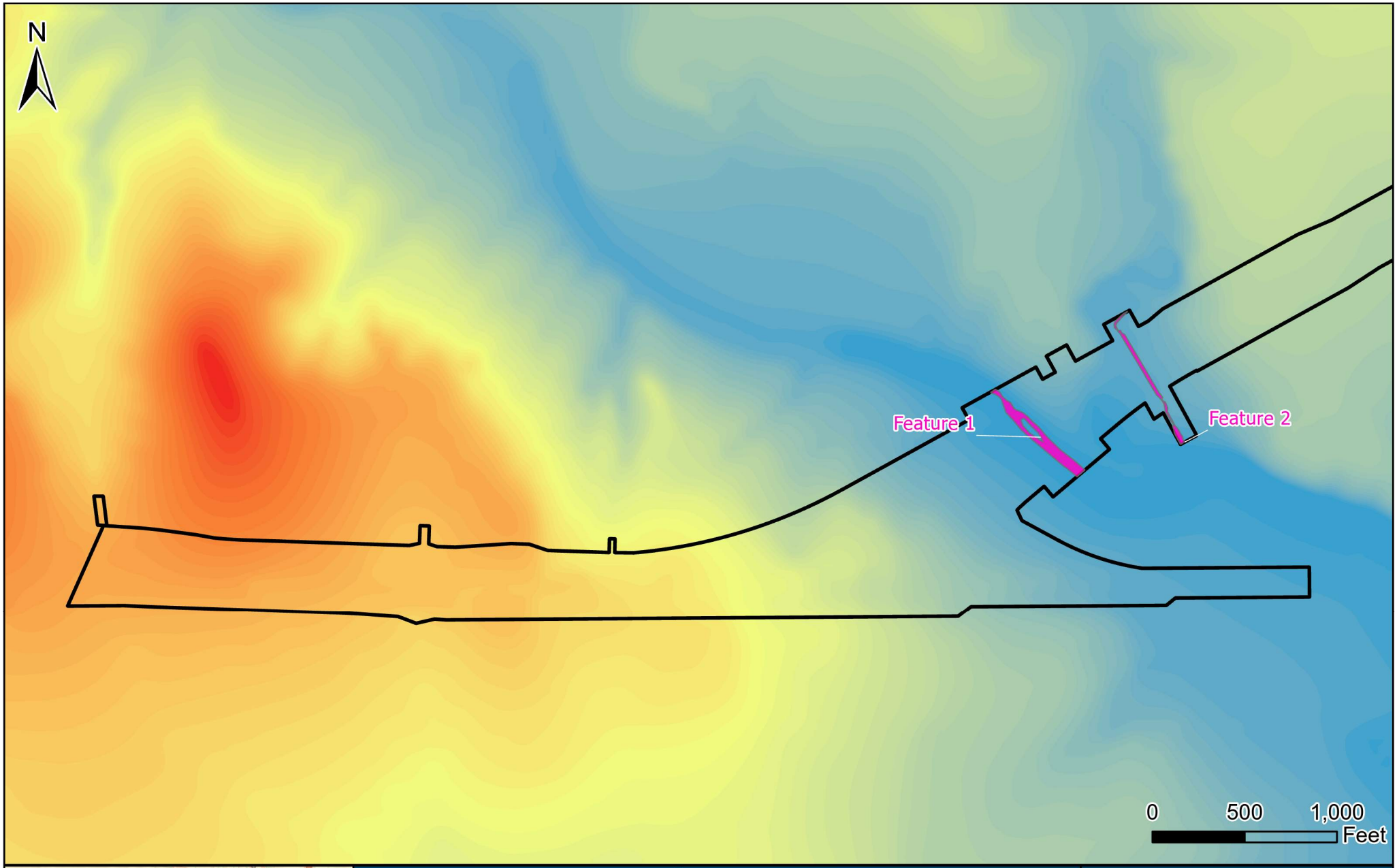
NRCS Soils Map

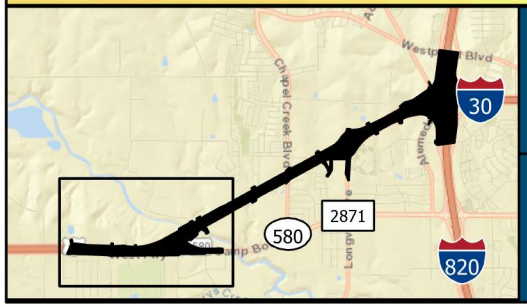
I-30

From Linkcrest Drive to IH 820
Tarrant County, TX

Project Area
NRCS Soil Unit

Figure No.: 5 - Page 3 of 3
Site Visit Date: July 25-26, 2019 & April 28th, 2020
Project No.: 1068-01-214
Drawn By: CP&Y
Sources: Google Imagery 2019, NRCS 2019





LiDAR

I-30

From Linkcrest Drive to IH 820
Tarrant County, TX

Project Area
Verified Waters

Elevation (ft)
902
722

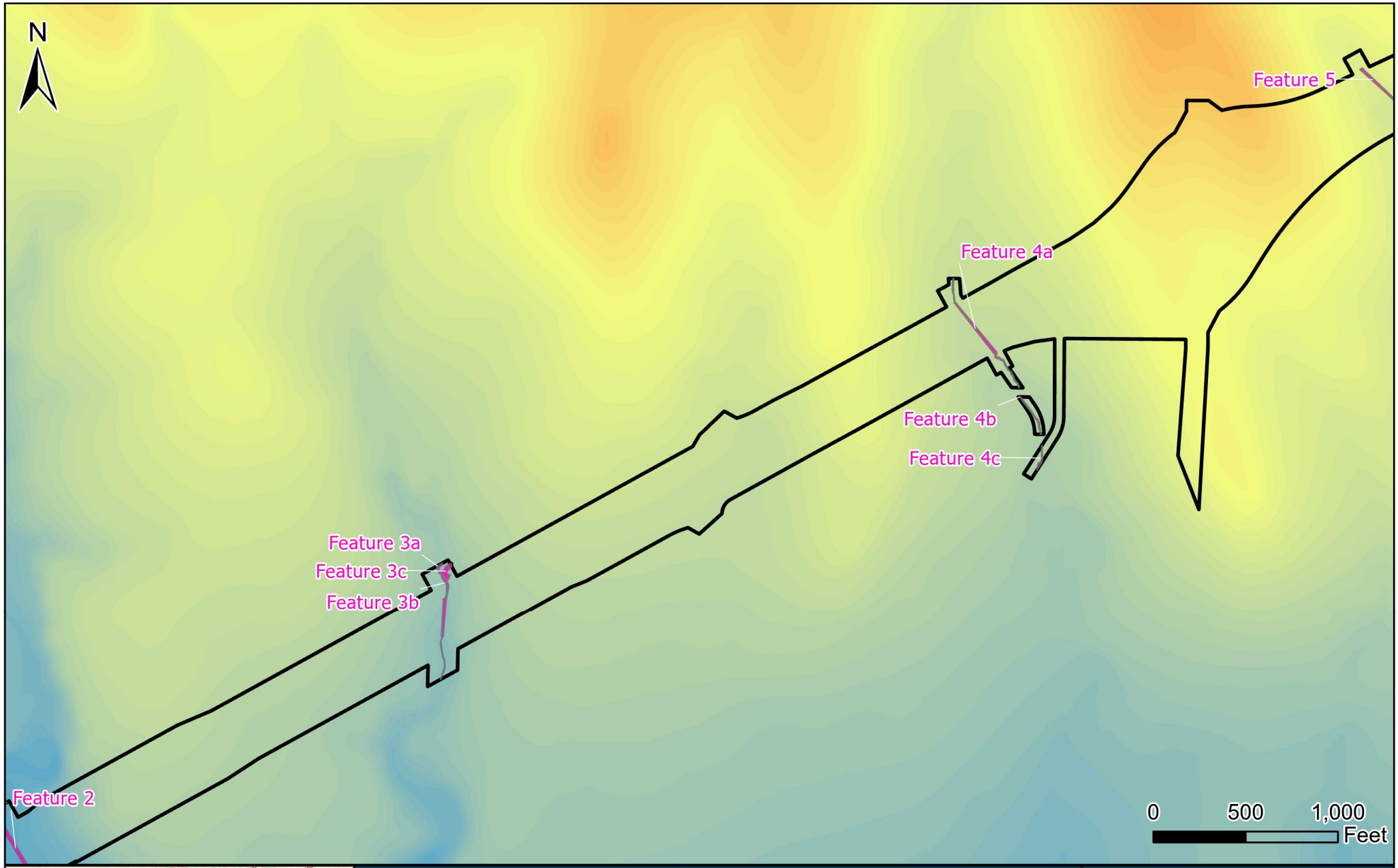
Figure No.: 6 - Page 1 of 3

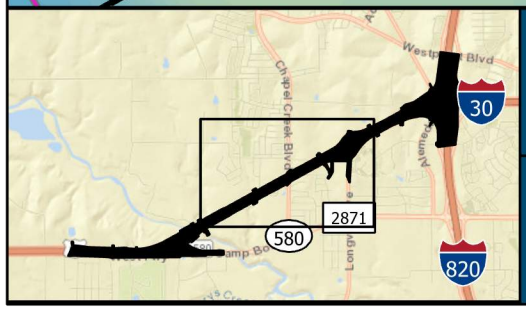
Site Visit Date: July 25-26, 2019 & April 28th, 2020

Project No.: 1068-01-214

Drawn By: CP&Y

Sources: ESRI Terrain 2020





LiDAR

I-30

From Linkcrest Drive to IH 820
Tarrant County, TX

Project Area
Verified Waters

Elevation (ft)
902
722

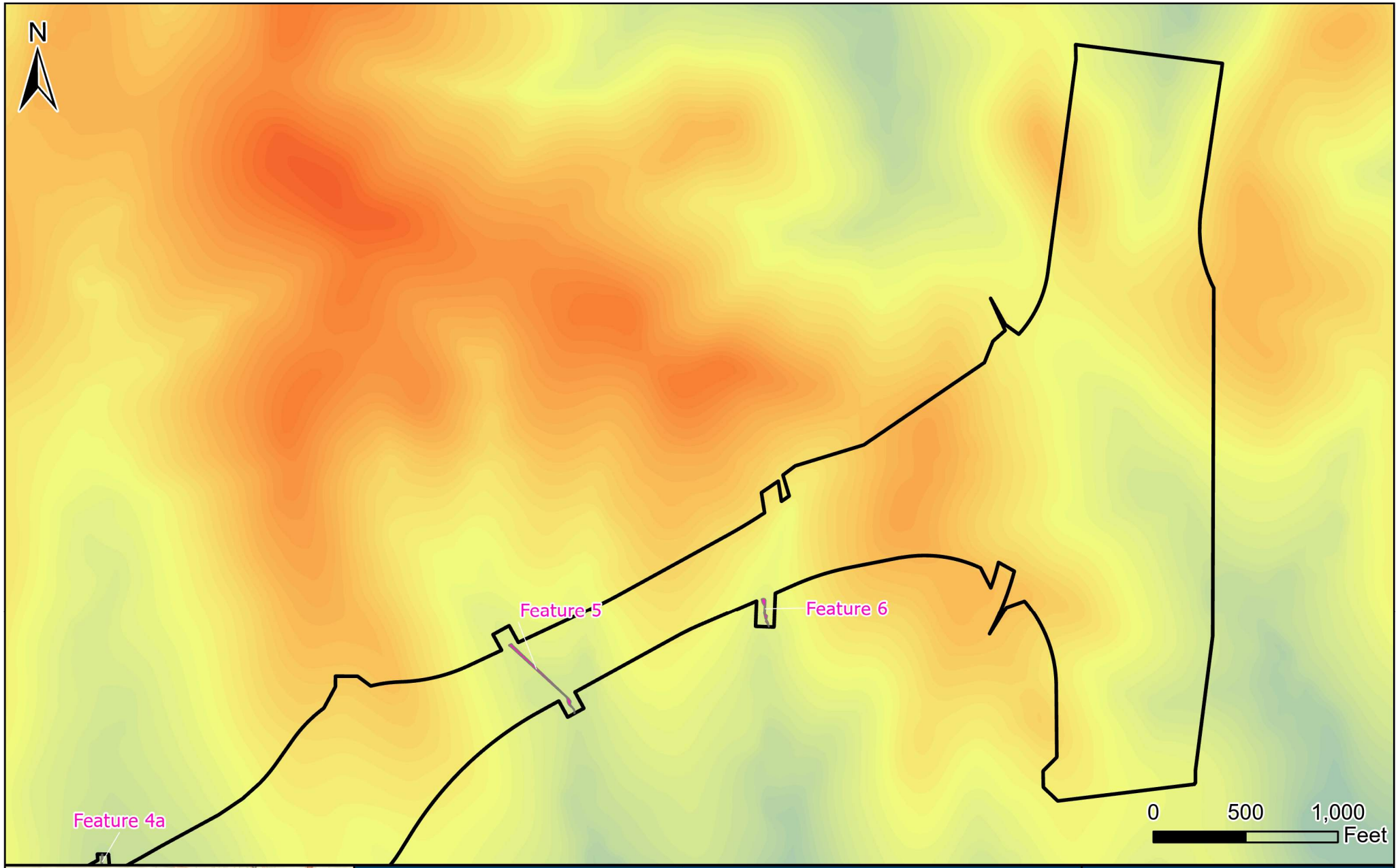
Figure No.: 6 - Page 2 of 3

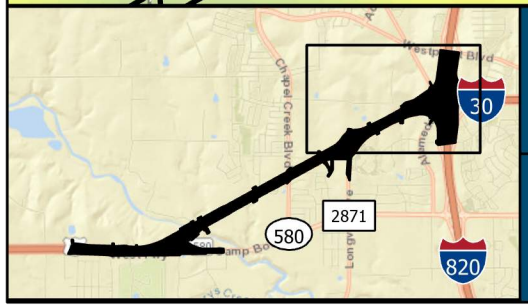
Site Visit Date: July 25-26, 2019 & April 28th, 2020

Project No.: 1068-01-214

Drawn By: CP&Y

Sources: ESRI Terrain 2020





LiDAR

I-30

From Linkcrest Drive to IH 820
Tarrant County, TX

Project Area
Verified Waters

Elevation (ft)
902
722

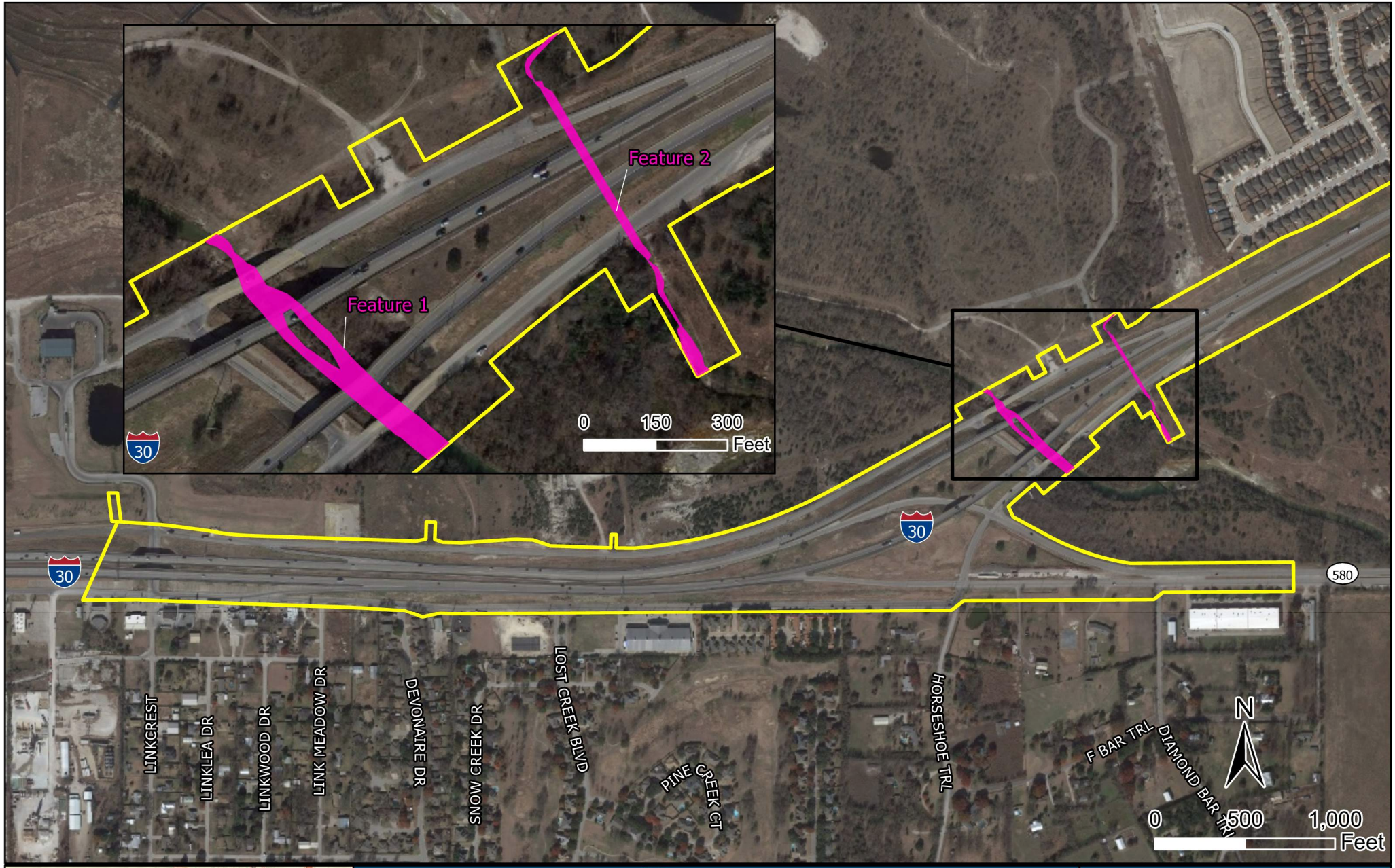
Figure No.: 6 - Page 3 of 3

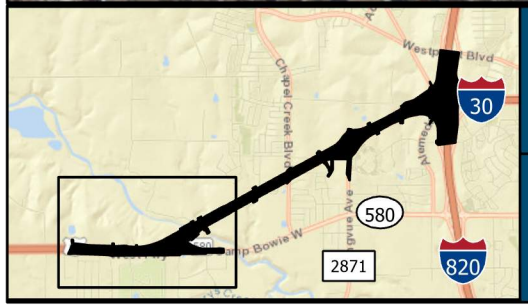
Site Visit Date: July 25-26, 2019 & April 28th, 2020

Project No.: 1068-01-214

Drawn By: CP&Y

Sources: ESRI Terrain 2020





Verified Waters

I-30

From Linkcrest Drive to IH 820
Tarrant County, TX

Project Area Verified Waters

OHWM

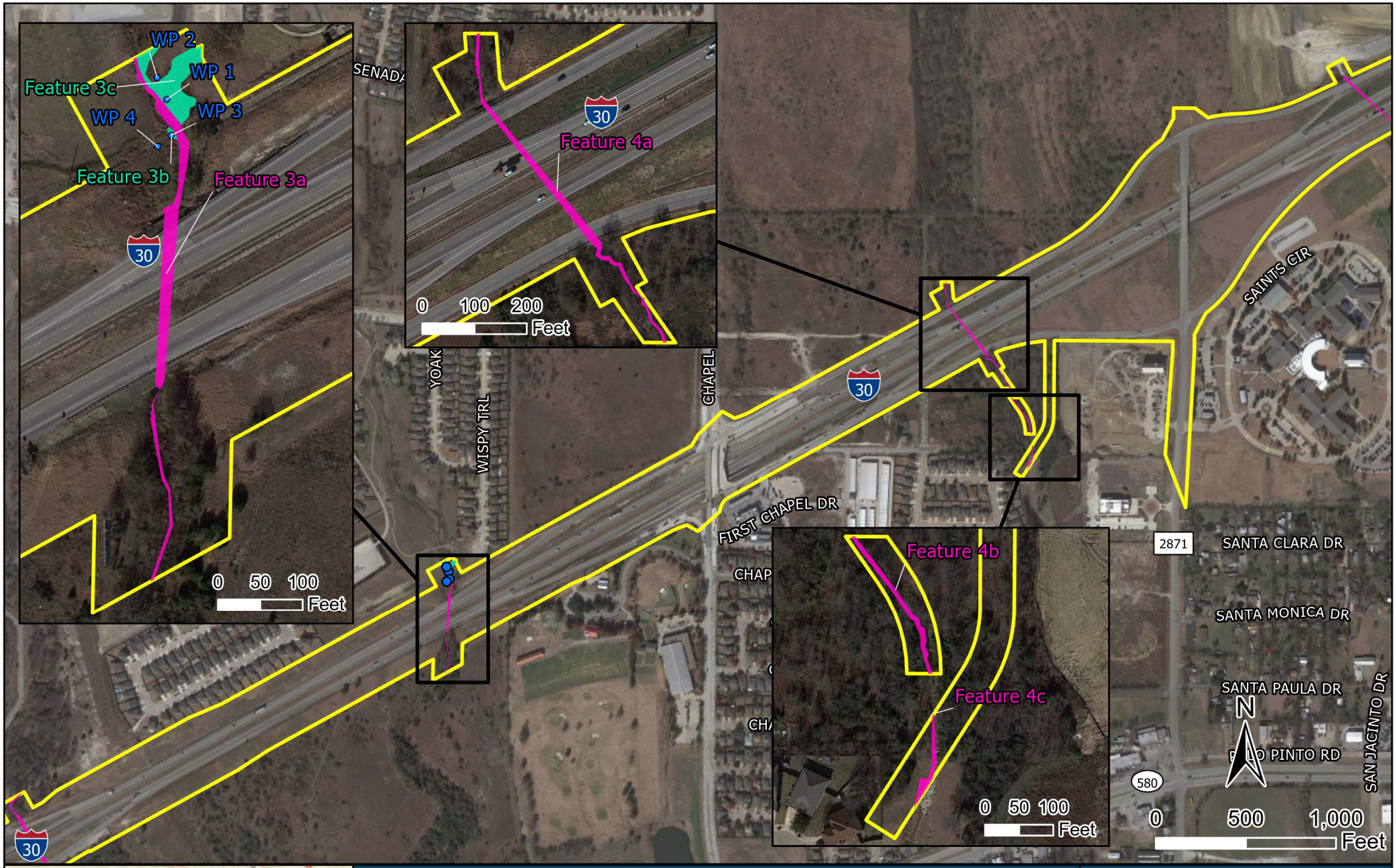
Figure No.: 7 - Page 1 of 3

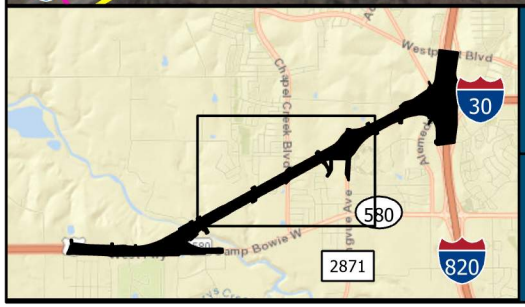
Site Visit Date: July 25-26, 2019 & April 28th, 2020

Project No.: 1068-01-214

Drawn By: CP&Y

Sources: Google Imagery 2019





Verified Waters

I-30

From Linkcrest Drive to IH 820
Tarrant County, TX

Project Area
Wetland Determination Point

Verified Waters
OHWM
Wetland

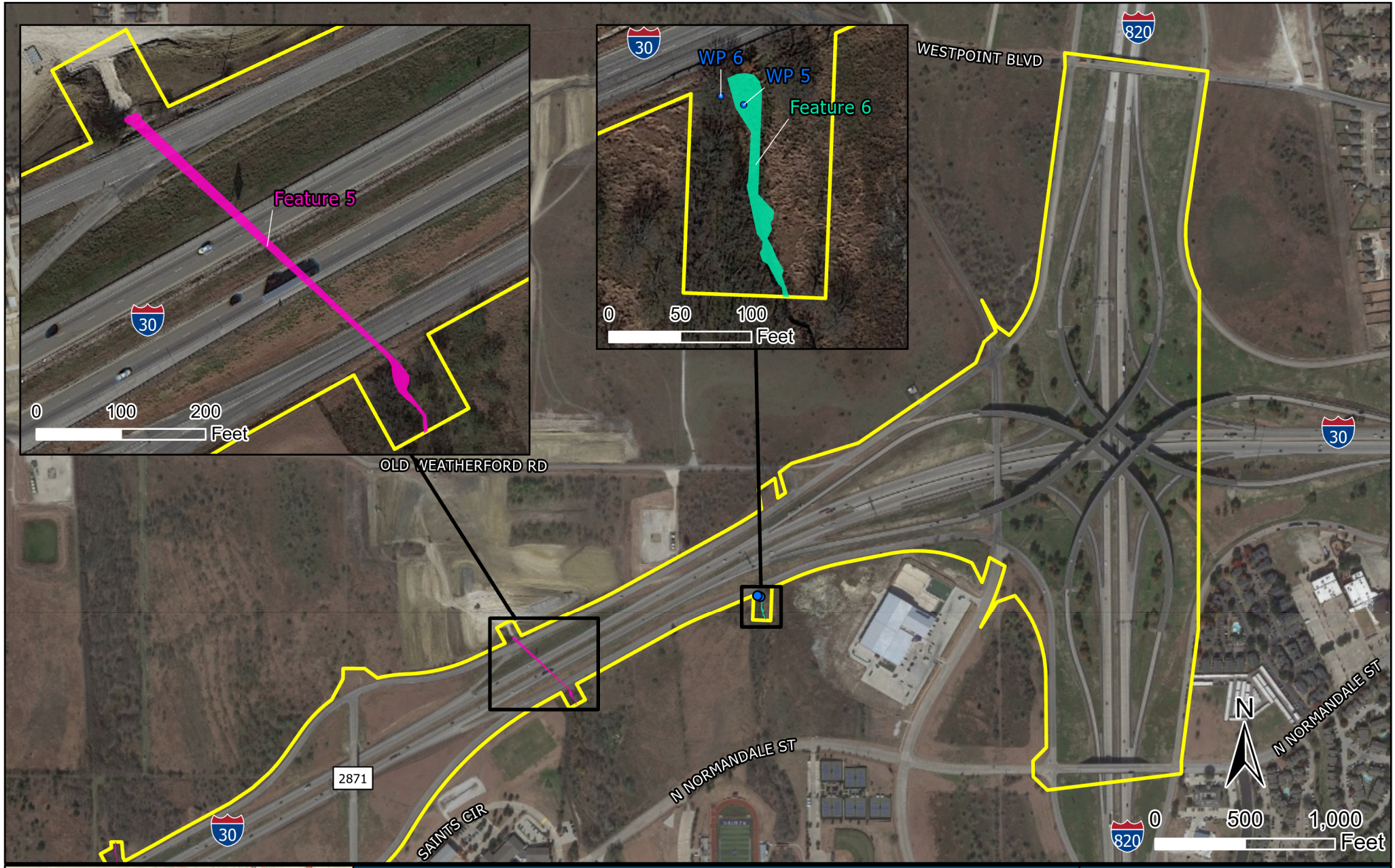
Figure No.: 7 - Page 2 of 3

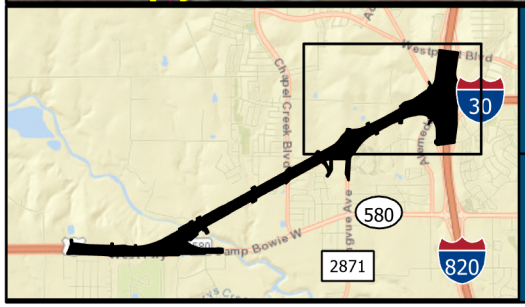
Site Visit Date: July 25-26, 2019 & April 28th, 2020

Project No.: 1068-01-214

Drawn By: CP&Y

Sources: Google Imagery 2019





Verified Waters

I-30

From Linkcrest Drive to IH 820
Tarrant County, TX

Project Area
Wetland Determination Point

Verified Waters
OHWM
Wetland

Figure No.: 7 - Page 3 of 3

Site Visit Date: July 25-26, 2019 & April 28th, 2020

Project No.: 1068-01-214

Drawn By: CP&Y

Sources: Google Imagery 2019

Attachment 2 - Wetland Determination Data Forms

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: IH 30 Improvements City/County: Ft. Worth, Tarrant County Sampling Date: 4/28/2020

Applicant/Owner: TxDOT State: TX Sampling Point: 01

Investigator(s): M. Cross (CP&Y, Inc.), L. Raderschadt (CP&Y, Inc.) Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR): J Lat: 32.727948 Long: -97.508468 Datum: NAD 1983

Soil Map Unit Name: 46 - Maloterre, Aledo, and Brackett soils, 3-20% slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____ Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____ Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ✓	No _____
Hydric Soil Present?	Yes ✓	No _____
Wetland Hydrology Present?	Yes ✓	No _____

Is the Sampled Area within a Wetland? **Yes** ✓ **No** _____

Remarks: Hydrophytic vegetation, hydric soils, and wetland hydrology were present; therefore, the sampled area is within a wetland.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 15ft x 15ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix nigra	2	Y	FACW
2.			
3.			
4.			
	2 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15ft x 15ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 15ft x 15ft)			
1. Typha latifolia	70	Y	OBL
2. Eleocharis acicularis	30	Y	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: 15ft x 15ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ___ 1 – Rapid Test for Hydrophictic 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.

Hydrophytic Vegetation Present? **Yes** ✓ **No** _____

Remarks: (Include photo numbers here or on a separate sheet.)

Hydrophytic vegetation was observed.

SOIL

Sampling Point: WP 01

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-3	7.5 YR 3/2	100					Silty loam	Orangic material and roots present
3-16	10 YR 5/1	95	5 YR 5/6	5	C	M	Clay	Rocks present

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRRI, J)**
- ___ Coast Prairie Redox (A16) **(LRR F, G, H)**
- ___ Dark Surface (S7) **(LRR G)**
- ___ High Plains Depressions (F16) **(LRRH outside of MLRA 72 & 73)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: N/A

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ___

Remarks:

Hyrdic soil was observed.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ✓ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present? Yes ✓ No ___ Depth (inches): 0.5

Water Table Present? Yes ✓ No ___ Depth (inches): 0

Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): 0

Wetland Hydrology Present? Yes ✓ No ___

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

Remarks: Wetland hydrology was observed.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: IH 30 Improvements City/County: Fort Worth, Tarrant County Sampling Date: 4/28/2020

Applicant/Owner: TxDOT State: TX Sampling Point: 02

Investigator(s): M. Cross (CP&Y, Inc.), L. Raderschadt (CP&Y, Inc.) Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR): J Lat: 32.72801 Long: -97.508504 Datum: NAD 1983

Soil Map Unit Name: 46 - Maloterre, Aledo, and Brackett soils, 3-20% slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation ____ Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____ Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ✓	No ____
Hydric Soil Present?	Yes ✓	No ____
Wetland Hydrology Present?	Yes ____	No ✓

Is the Sampled Area within a Wetland? **Yes** ____ **No** ✓

Remarks: Hydrophytic vegetation and hydric soils were observed, but wetland hydrology was not; therefore, the sampled area is not within a wetland.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 15ft x 15ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15ft x 15ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 15ft x 15ft)			
1. Eleocharis acicularis	20	Y	OBL
2. Cyperus pseduovegetus	50	Y	FACW
3. Sorghum halepense	10	N	FACU
4. Boltonia asteroides	20	Y	FACW
5.			
6.			
7.			
8.			
9.			
10.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: 15ft x 15ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

- ___ 1 – Rapid Test for Hydrophictic 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.

Hydrophytic Vegetation Present? **Yes** ✓ **No** ____

Remarks: (Include photo numbers here or on a separate sheet.)

Hydrophytic vegetation was observed.

SOIL

Sampling Point: WP 02

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-3	10 YR 4/2	85	10 YR 4/6	5			Loamy Clay	
	10 YR 5/1	10					Loamy Clay	
3-16	10 YR 5/1	60	10 YR 4/6	15			Loamy Clay	Rocks throughout
	10 YR 4/2	10					Loamy Clay	
	10 YR 5/3	15					Loamy Clay	

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

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5) **(LRR F)**
___ 1 cm Muck (A9) **(LRR F, G, H)**
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ 2.5 cm Mucky Peat or Peat (S2) **(LRR G, H)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR F)**

___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Loamy Mucky Mineral (F1)
___ Loamy Gleyed Matrix (F2)
✓ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ High Plains Depressions (F16) **(MLRA 72 & 73 of LRR H)**

Indicators for Problematic Hydric Soils[3]:

___ 1 cm Muck (A9) **(LRRI, J)**
___ Coast Prairie Redox (A16) **(LRR F, G, H)**
___ Dark Surface (S7) **(LRR G)**
___ High Plains Depressions (F16) **(LRRH outside of MLRA 72 & 73)**
___ Reduced Vertic (F18)
___ Red Parent Material (TF2)
___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: N/A

Depth (inches): _____

Hydric Soil Present? **Yes** ✓ **No** ___

Remarks:

Hyrdic soil was observed.

HYDROLOGY

Wetland Hydrology Indicators:

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

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Water-Stained Leaves (B9)

___ Salt Crust (B11)
___ Aquatic Invertebrates (B13)
___ Hydrogen Sulfide Odor (C1)
___ Dry-Season Water Table (C2)
___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
___ Presence of Reduced Iron (C4)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Sparsely Vegetated Concave Surface (B8)
___ Drainage Patterns (B10)
___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Geomorphic Position (D2)
___ FAC-Neutral Test (D5)
___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): _____

Water Table Present? Yes ___ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): _____

Wetland Hydrology Present? **Yes** ___ **No** ✓

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

Remarks: Wetland hydrology was not observed.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: IH 30 Improvements City/County: Fort Worth, Tarrant County Sampling Date: 4/28/2020

Applicant/Owner: TxDOT State: TX Sampling Point: 03

Investigator(s): M. Cross (CP&Y, Inc.), L. Raderschadt (CP&Y, Inc.) Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR): J Lat: 32.72783 Long: -97.508452 Datum: NAD 1983

Soil Map Unit Name: 46 - Maloterre, Aledo, and Brackett soils, 3-20% slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____ Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____ Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ✓	No _____	**Is the Sampled Area within a Wetland?** **Yes** ✓ **No** _____
Hydric Soil Present?	Yes ✓	No _____	
Wetland Hydrology Present?	Yes ✓	No _____	

Remarks: Hydrophytic vegetation, hydric soils, and wetland hydrology were present; therefore, the sampled area is within a wetland.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 15ft x 15ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix nigra	5	Y	FACW
2. Ulmus crassifolia	5	Y	FAC
3.			
4.			
	10	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15ft x 15ft)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 15ft x 15ft)			
1. Typha latifolia	20	Y	OBL
2. Eleocharis acicularis	5	N	OBL
3. Iva annua	20	Y	FAC
4. Scandix pecten-veneris	15	N	UPL
5. Sorghum halepense	15	N	FACU
6. Boltonia asteroides	5	N	FACW
7.			
8.			
9.			
10.			
	80	= Total Cover	
Woody Vine Stratum (Plot size: 15ft x 15ft)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 20

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ___ 1 – Rapid Test for Hydrophictic 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.

Hydrophytic Vegetation Present? **Yes** ✓ **No** _____

Remarks: (Include photo numbers here or on a separate sheet.)

Hydrophytic vegetation was observed.

SOIL

Sampling Point: WP 03

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-3	10 YR 4/2	85	10 YR 4/6	5	C	PL	Loamy Clay	Dual Matrix
	10 YR 5/1	10						
3-16	10 YR 5/1	60	10 YR 4/6	15	C	M	Clay	Organic material and rocks throughout
	10 YR 4/2	10						
	10 YR 5/3	15						

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRRI, J)**
- ___ Coast Prairie Redox (A16) **(LRR F, G, H)**
- ___ Dark Surface (S7) **(LRR G)**
- ___ High Plains Depressions (F16) **(LRRH outside of MLRA 72 & 73)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: N/A

Depth (inches): _____

Hydric Soil Present? **Yes** ✓ **No** ___

Remarks:

Hyrdic soil was observed.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ✓ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): _____

Water Table Present? Yes ✓ No ___ Depth (inches): 7

Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): 6

Wetland Hydrology Present? **Yes** ✓ **No** ___

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

Remarks: Wetland hydrology was observed.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: IH 30 Improvements City/County: Ft. Worth, Tarrant County Sampling Date: 4/28/2020

Applicant/Owner: TxDOT State: TX Sampling Point: 04

Investigator(s): M. Cross (CP&Y, Inc.), L. Raderschadt (CP&Y, Inc.) Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR): J Lat: 32.72779 Long: -97.508503 Datum: NAD 1983

Soil Map Unit Name: 46 - Maloterre, Aledo, and Brackett soils, 3-20% slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____ Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____ Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes _____	No ✓	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✓
Hydric Soil Present?	Yes ✓	No _____	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks: Though hydric soils were observed, wetland hydrology and hydrophytic vegetations were not; therefore, the sampled area is not within a wetland.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 15ft x 15ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15ft x 15ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 15ft x 15ft)			
1. Iva annua	10	N	FAC
2. Ambrosia trifida	10	N	FAC
3. Lolium perenne	80	Y	FACU
4. Boltonia asteroides	2	N	FACW
5. Cirsium arvense	5	N	FACU
6.			
7.			
8.			
9.			
10.			
	107 = Total Cover		
Woody Vine Stratum (Plot size: 15ft x 15ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	0	x 1 = 0
FACW species	2	x 2 = 4
FAC species	20	x 3 = 60
FACU species	85	x 4 = 340
UPL species	0	x 5 = 0
Column Totals:	107 (A)	404 (B)

Prevalence Index = B/A = 3.8

Hydrophytic Vegetation Indicators:

___ 1 – Rapid Test for Hydrophictic 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.

Hydrophytic Vegetation Present? **Yes** _____ **No** ✓

Remarks: (Include photo numbers here or on a separate sheet.)

Hydrophytic vegetation was not observed.

SOIL

Sampling Point: WP 04

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-3	10 YR 4/2	85	10 YR 4/6	5			Loamy Clay	
	10 YR 5/1	10					Loamy Clay	
3-16	10 YR 5/1	60	10 YR 4/6	15			Loamy Clay	Rocks throughout
	10 YR 4/2	10					Loamy Clay	
	10 YR 5/3	15					Loamy clay	

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRRI, J)**
- ___ Coast Prairie Redox (A16) **(LRR F, G, H)**
- ___ Dark Surface (S7) **(LRR G)**
- ___ High Plains Depressions (F16) **(LRRH outside of MLRA 72 & 73)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: N/A

Depth (inches): _____

Hydric Soil Present? **Yes** ✓ **No** ___

Remarks:

Hyrdic soil was observed.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): _____

Water Table Present? Yes ___ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): _____

Wetland Hydrology Present? **Yes** ___ **No** ✓

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

Remarks: Wetland hydrology was not observed.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: IH 30 Improvements City/County: Ft. Worth, Tarrant County Sampling Date: 4/28/2020

Applicant/Owner: TxDOT State: TX Sampling Point: 05

Investigator(s): M. Cross (CP&Y, Inc.), L. Raderschadt (CP&Y, Inc.) Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR): J Lat: 32.735954 Long: -97.48775 Datum: NAD 1983

Soil Map Unit Name: 66 - Sanger clay, 1-3% slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation ____ Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____ Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ✓	No ____
Hydric Soil Present?	Yes ✓	No ____
Wetland Hydrology Present?	Yes ✓	No ____

Is the Sampled Area within a Wetland? **Yes** ✓ **No** ____

Remarks: Hydrophytic vegetation, hydric soils, and wetland hydrology were present; therefore, the sampled area is within a wetland.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 15ft x 15ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix nigra	5	Y	FACW
2.			
3.			
4.			
	5 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15ft x 15ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 15ft x 15ft)			
1. Eleocharis acicularis	85	Y	OBL
2. Oenothera speciosa	5	N	UPL
3. Verbena bonariensis	2	N	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	92 = Total Cover		
Woody Vine Stratum (Plot size: 15ft x 15ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 5

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

- ___ 1 – Rapid Test for Hydrophictic 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.

Hydrophytic Vegetation Present? **Yes** ✓ **No** ____

Remarks: (Include photo numbers here or on a separate sheet.)

Hydrophytic vegetation was observed.

SOIL

Sampling Point: WP 05

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0--9	10 YR 3/1	60	10 YR 4-6	5			Loamy Clay	
	10 YR 5/4	15					Loamy Clay	
	10 YR 5/1	20					Loamy Clay	

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRRI, J)**
- ___ Coast Prairie Redox (A16) **(LRR F, G, H)**
- ___ Dark Surface (S7) **(LRR G)**
- ___ High Plains Depressions (F16) **(LRRH outside of MLRA 72 & 73)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: Hard Pan

Depth (inches): 9

Hydric Soil Present? **Yes** ✓ **No** ___

Remarks:

Hyrdic soil was observed.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ✓ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present? Yes ✓ No ___ Depth (inches): 0.5

Water Table Present? Yes ✓ No ___ Depth (inches): 9

Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): 6

Wetland Hydrology Present? **Yes** ✓ **No** ___

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

Remarks: Wetland hydrology was observed.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: IH 30 Improvements City/County: Ft. Worth, Tarrant County Sampling Date: 4/28/2020

Applicant/Owner: TxDOT State: TX Sampling Point: 06

Investigator(s): M. Cross (CP&Y, Inc.), L. Raderschadt (CP&Y, Inc.) Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR): J Lat: 32.73597 Long: -97.487802 Datum: NAD 1983

Soil Map Unit Name: 66 - Sanger clay, 1-3% slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____ Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____ Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes _____	No ✓	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✓
Hydric Soil Present?	Yes ✓	No _____	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks: Though hydric soils were observed, wetland hydrology and hydrophytic vegetations were not; therefore, the sampled area is not within a wetland.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 15ft x 15ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Celtis occidentalis	30	Y	FACU
2.			
3.			
4.			
	30 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15ft x 15ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 15ft x 15ft)			
1. Ambrosia trifida	10	N	FAC
2. Verbena bonariensis	10	N	FACW
3. Lolium perenne	70	Y	FACU
4. Boltonia asteroides	2	N	FACW
5.			
6.			
7.			
8.			
9.			
10.			
	92 = Total Cover		
Woody Vine Stratum (Plot size: 15ft x 15ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 8

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	0	x 1 = 0
FACW species	12	x 2 = 24
FAC species	10	x 3 = 30
FACU species	100	x 4 = 400
UPL species	0	x 5 = 0
Column Totals:	122 (A)	454 (B)

Prevalence Index = B/A = 3.7

Hydrophytic Vegetation Indicators:

___ 1 – Rapid Test for Hydrophictic 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.

Hydrophytic Vegetation Present? **Yes** _____ **No** ✓

Remarks: (Include photo numbers here or on a separate sheet.)

Hydrophytic vegetation was not observed.

SOIL

Sampling Point: WP 06

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-3	10 YR 3/2	90	10 YR 5/4	10	C	M		

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

___ 1 cm Muck (A9) **(LRRI, J)**
___ Coast Prairie Redox (A16) **(LRR F, G, H)**
___ Dark Surface (S7) **(LRR G)**
___ High Plains Depressions (F16) **(LRRH outside of MLRA 72 & 73)**
___ Reduced Vertic (F18)
___ Red Parent Material (TF2)
___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: N/A

Depth (inches): _____

Hydric Soil Present? **Yes** ✓ **No** ___

Remarks:

Hyrdic soil was observed.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Sparsely Vegetated Concave Surface (B8)
___ Drainage Patterns (B10)
___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Geomorphic Position (D2)
___ FAC-Neutral Test (D5)
___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): _____

Water Table Present? Yes ___ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): _____

Wetland Hydrology Present? **Yes** ___ **No** ✓

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

Remarks: Wetland hydrology was not observed.

Attachment 3 – Historical Aerial Photographs

GeoSearch

On time. On target. In touch.™

Historical Aerial Photographs

NEW: *GeoLens by Geosearch*

Target Property:

IH-30 at Spur 580
IH-30
Aledo, Tarrant, Texas 76008

Prepared For:

AmaTerra Environmental Inc.

Order #: 130143
Job #: 306147
Project #: 107-047
Date: 7/25/2019

Target Property Summary

IH-30 at Spur 580

IH-30

Aledo, Tarrant, Texas 76008

USGS Quadrangle: ***ALEDO, BENBROOK***

Target Property Geometry: ***Corridor***

Target Property Longitude(s)/Latitude(s):

(-97.533632688, 32.720944579), (-97.525049619, 32.720439105), (-97.523075513, 32.720872369), (-97.515522413, 32.723977369), (-97.505394392, 32.728742972), (-97.493292264, 32.734158121), (-97.488142423, 32.736540682), (-97.485052518, 32.737695840), (-97.481876783, 32.738201218)

Aerial Research Summary

Date	Source	Scale	Frame
2016	USDA	1" = 700'	N/A
2016	USDA	1" = 700'	N/A
2014	USDA	1" = 700'	N/A
2014	USDA	1" = 700'	N/A
2012	USDA	1" = 700'	N/A
2012	USDA	1" = 700'	N/A
2010	USDA	1" = 700'	N/A
2010	USDA	1" = 700'	N/A
2008	USDA	1" = 700'	N/A
2008	USDA	1" = 700'	N/A
2006	USDA	1" = 700'	N/A
2006	USDA	1" = 700'	N/A
2005	USDA	1" = 700'	N/A
2005	USDA	1" = 700'	N/A
2004	USDA	1" = 700'	N/A
2004	USDA	1" = 700'	N/A
01/19/1995	USGS	1" = 700'	N/A
01/31/1995	USGS	1" = 700'	N/A
07/09/1984	TXDOT	1" = 700'	1197
07/09/1984	TXDOT	1" = 700'	1227
09/19/1981	USGS	1" = 700'	153-78
11/01/1981	USGS	1" = 700'	221-23
02/23/1976	TXDOT	1" = 700'	69
02/23/1976	TXDOT	1" = 700'	69
09/18/1968	USGS	1" = 700'	4-50
09/18/1968	USGS	1" = 700'	4-50
01/07/1958	ASCS	1" = 700'	PI-3
01/07/1958	ASCS	1" = 700'	PI-3
04/01/1952	USGS	1" = 700'	1-101
04/01/1952	USGS	1" = 700'	1-101

Disclaimer - The information provided in this report was obtained from a variety of public sources. GeoSearch cannot ensure and makes no warranty or representation as to the accuracy, reliability, quality, errors occurring from data conversion or the customer's interpretation of this report. This report was made by GeoSearch for exclusive use by its clients only. Therefore, this report may not contain sufficient information for other purposes or parties. GeoSearch and its partners, employees, officers and independent contractors cannot be held liable for actual, incidental, consequential, special or exemplary damages suffered by a customer resulting directly or indirectly from any information provided by GeoSearch.

Aerial Research Summary

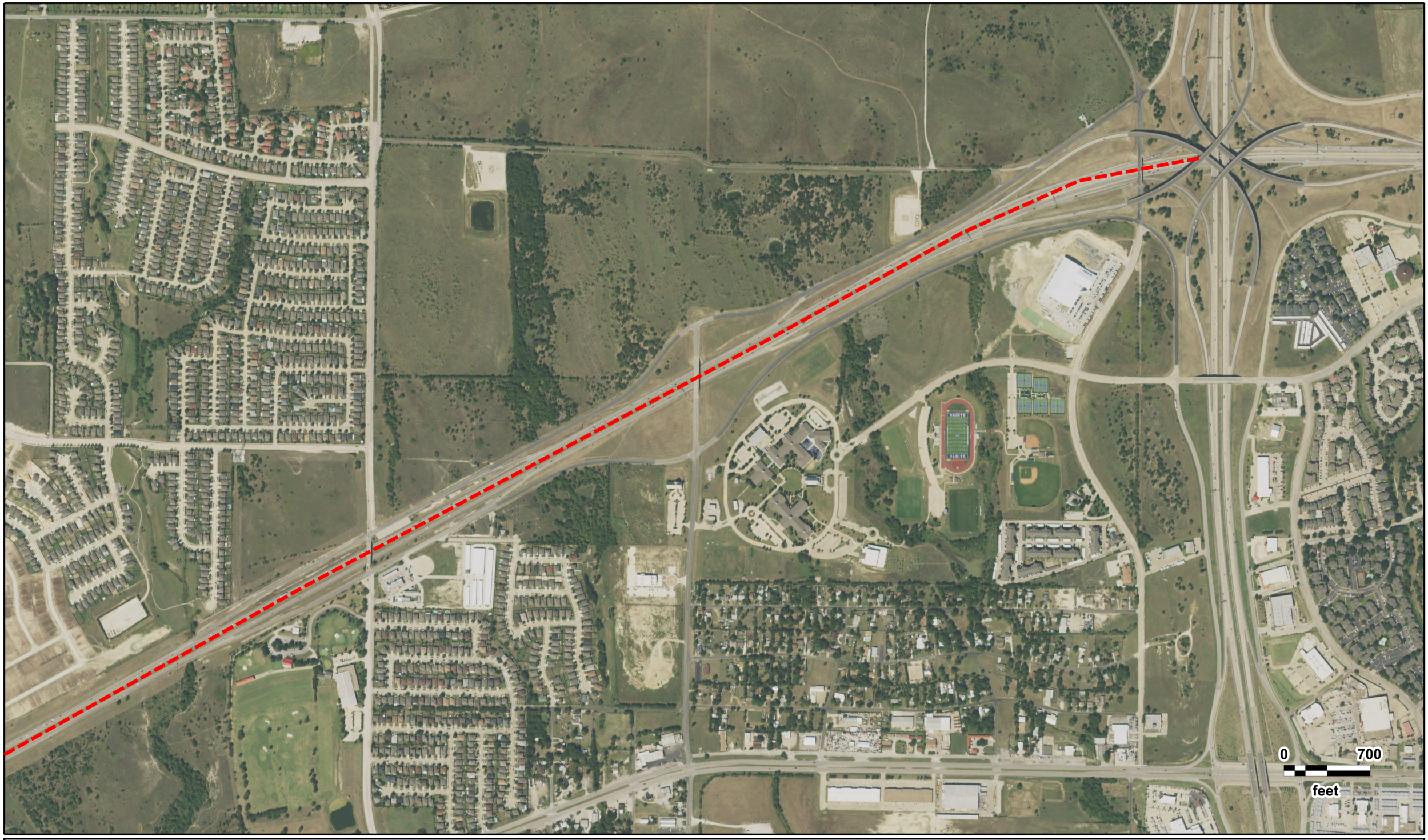
Date	Source	Scale	Frame
05/04/1942	ASCS	1" = 700'	3-112
05/04/1942	ASCS	1" = 700'	3-112

N
W E
S

IH-30 at Spur 580
USDA
2016

GeoSearch

JOB #: 306147 - 07/25/2019



N
W E
S

IH-30 at Spur 580
USDA
2016

GeoSearch

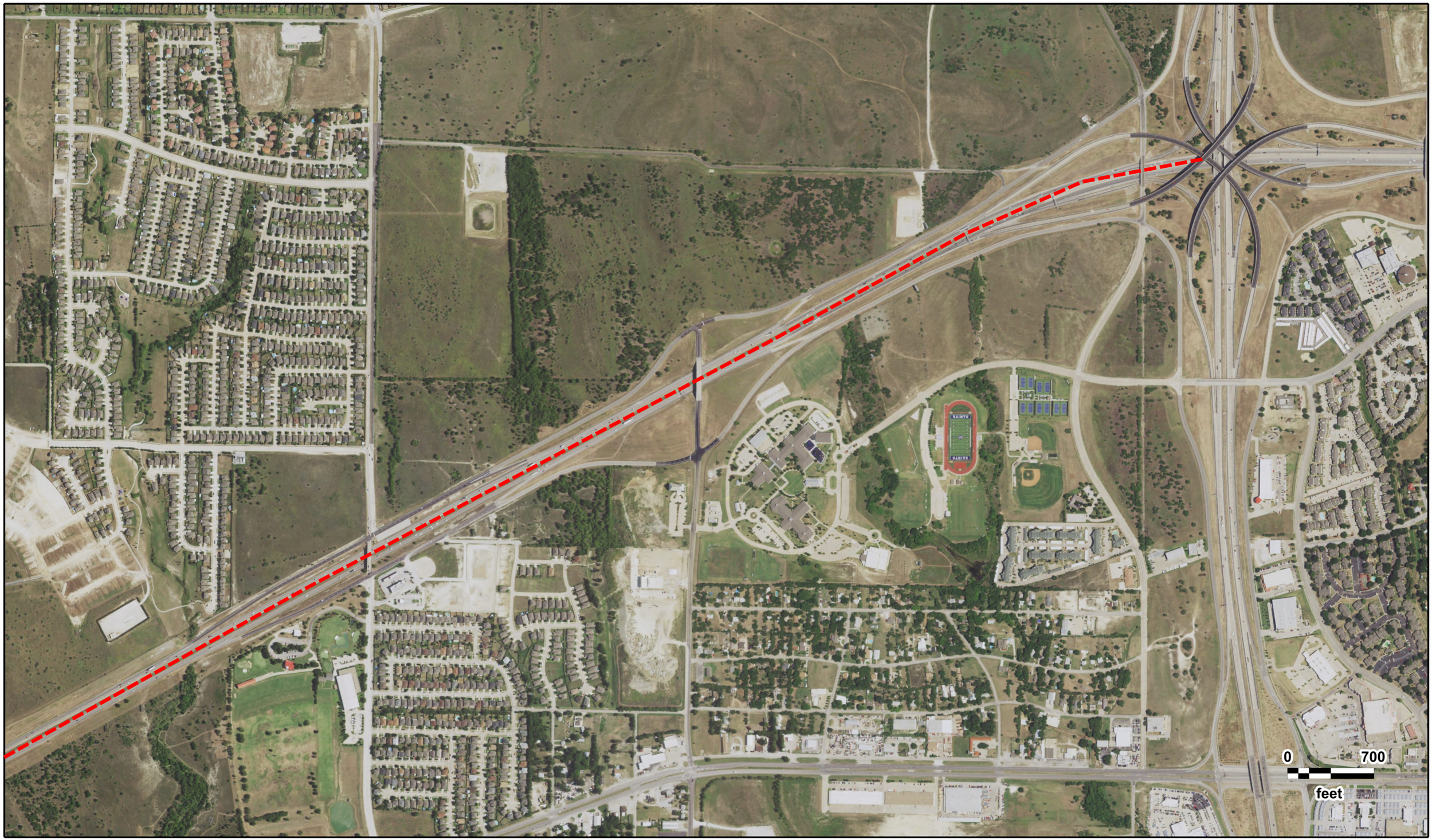
JOB #: 306147 - 07/25/2019

N
W E
S

IH-30 at Spur 580
USDA
2014

GeoSearch

JOB #: 306147 - 07/25/2019



N
W E
S

IH-30 at Spur 580
USDA
2014

GeoSearch

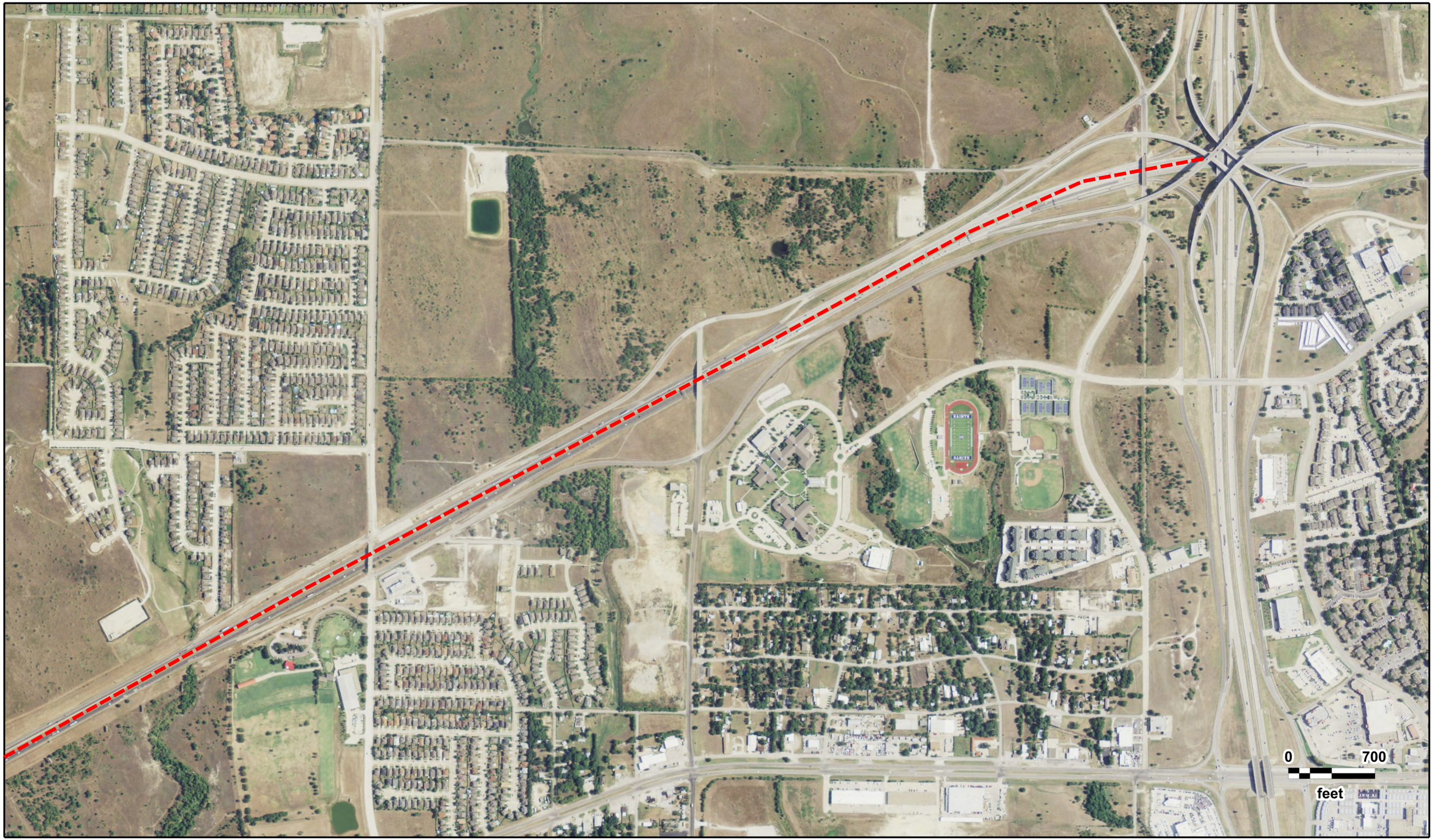
JOB #: 306147 - 07/25/2019

N
W E
S

IH-30 at Spur 580
USDA
2012

GeoSearch

JOB #: 306147 - 07/25/2019



N
W E
S

IH-30 at Spur 580
USDA
2012

GeoSearch

JOB #: 306147 - 07/25/2019

N
W E
S

IH-30 at Spur 580
USDA
2010

GeoSearch

JOB #: 306147 - 07/25/2019

N
W E
S

IH-30 at Spur 580
USDA
2010

GeoSearch

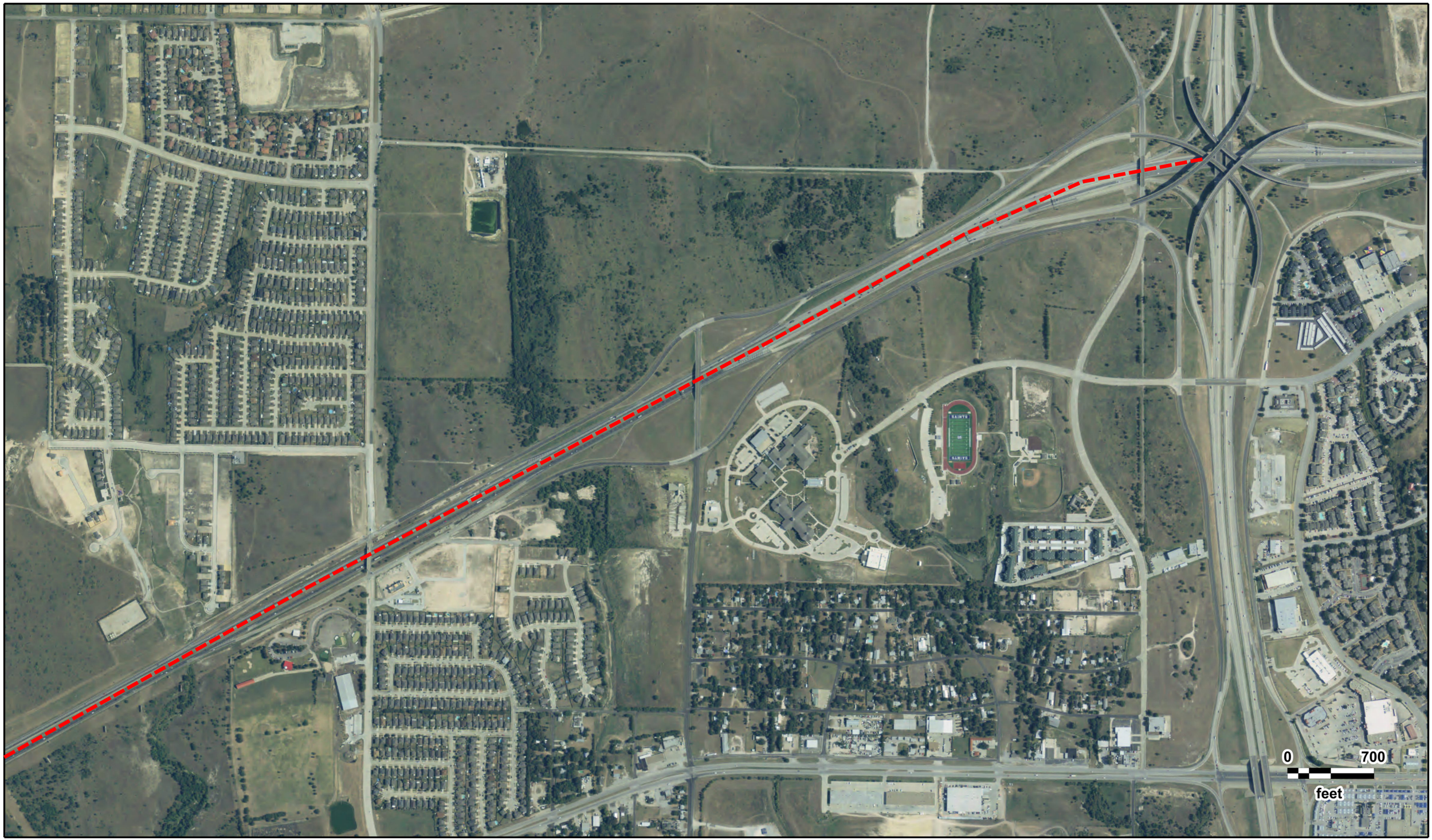
JOB #: 306147 - 07/25/2019

N
W E
S

IH-30 at Spur 580
USDA
2008

GeoSearch

JOB #: 306147 - 07/25/2019

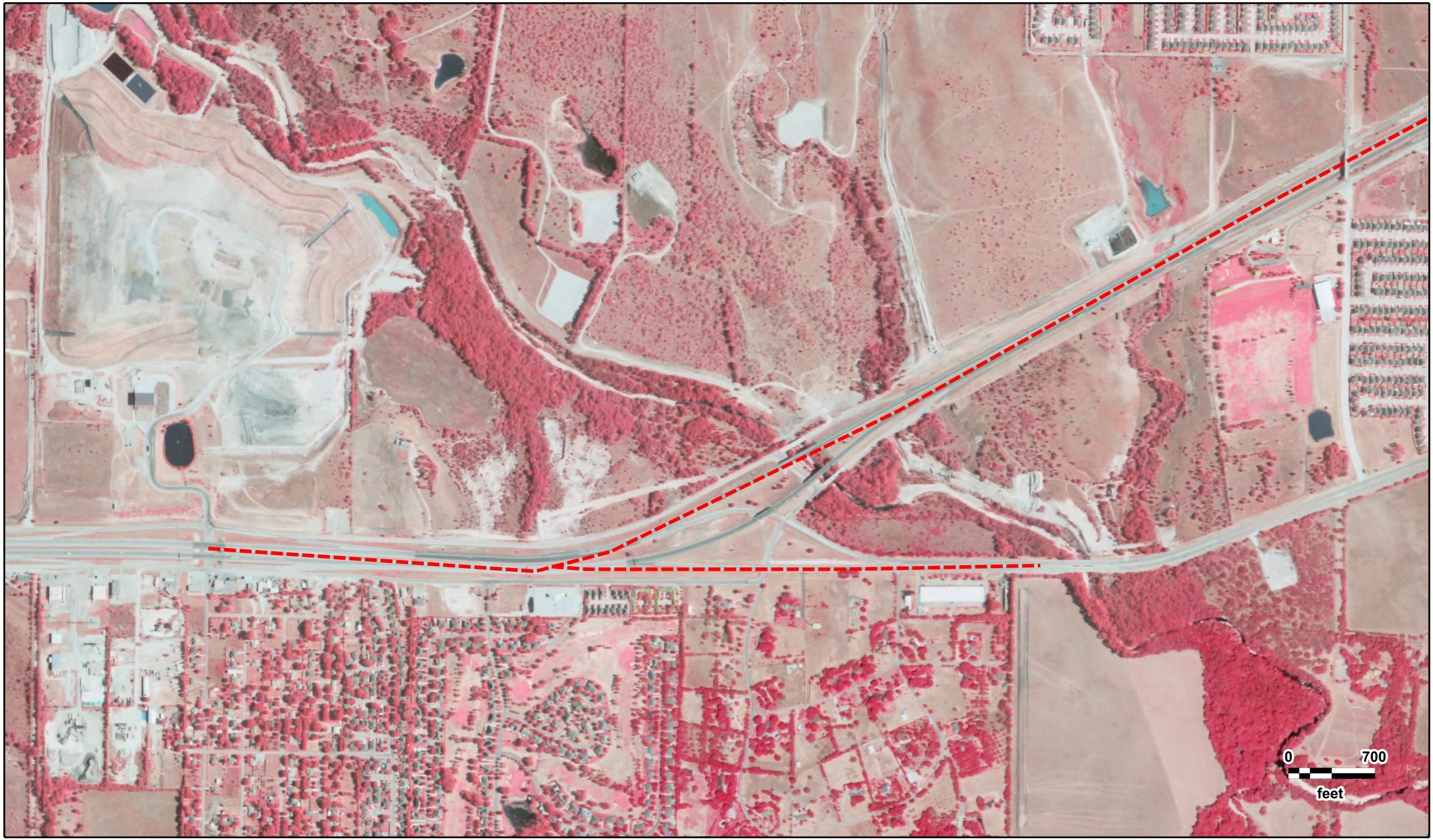


N
W E
S

IH-30 at Spur 580
USDA
2008

GeoSearch

JOB #: 306147 - 07/25/2019

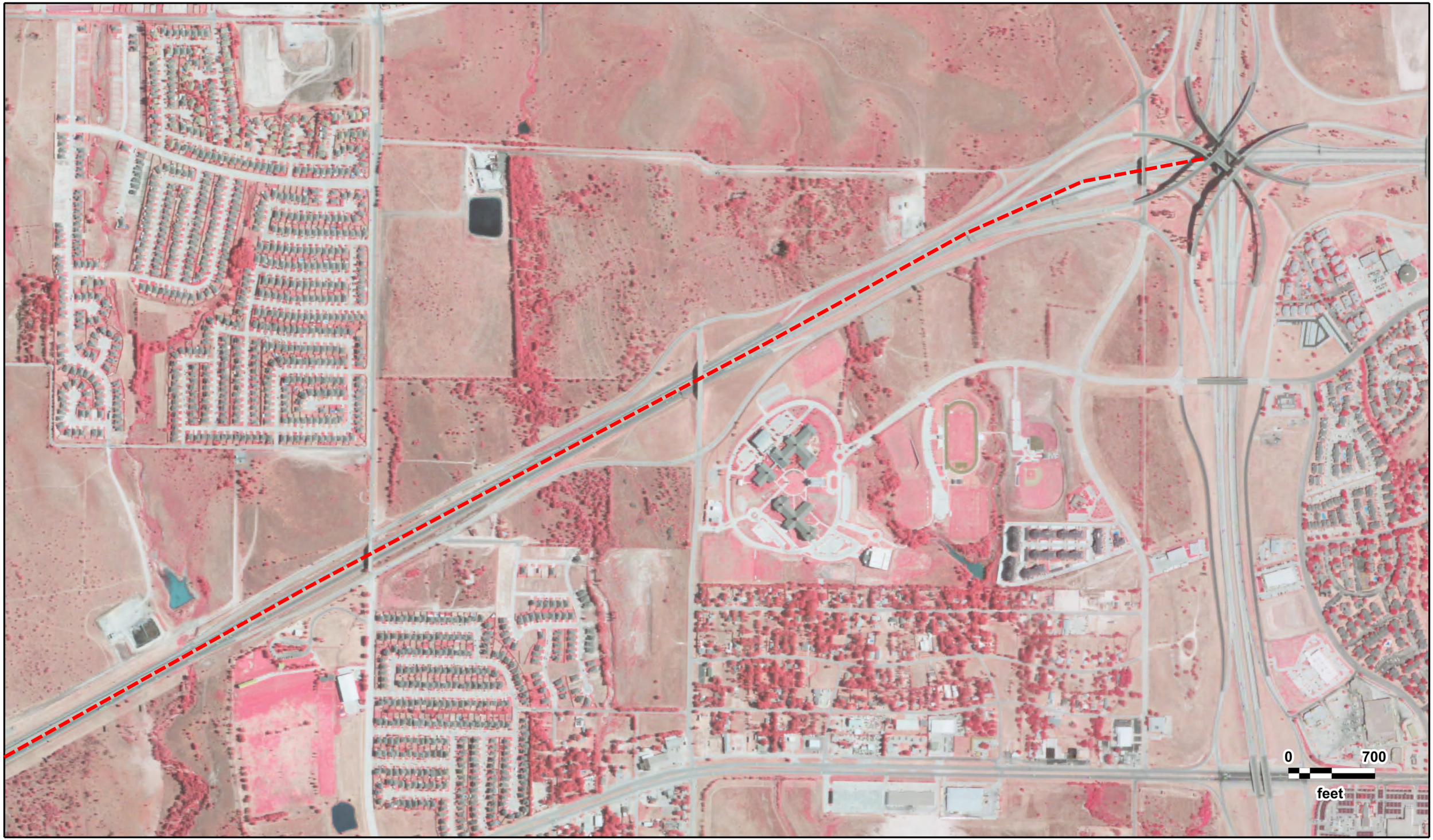


N
W E
S

IH-30 at Spur 580
USDA
2006

GeoSearch

JOB #: 306147 - 07/25/2019



N
W E
S

IH-30 at Spur 580
USDA
2006

GeoSearch

JOB #: 306147 - 07/25/2019

N
W E
S

IH-30 at Spur 580
USDA
2005

GeoSearch

JOB #: 306147 - 07/25/2019

N
W E
S

IH-30 at Spur 580
USDA
2005

GeoSearch

JOB #: 306147 - 07/25/2019

N
W E
S

IH-30 at Spur 580
USDA
2004

GeoSearch

JOB #: 306147 - 07/25/2019

N
W E
S

IH-30 at Spur 580
USDA
2004

GeoSearch

JOB #: 306147 - 07/25/2019

N
W E
S

IH-30 at Spur 580
USGS
01/19/1995

GeoSearch

JOB #: 306147 - 07/25/2019

N
W E
S

IH-30 at Spur 580
USGS
01/31/1995

GeoSearch

JOB #: 306147 - 07/25/2019

N
W E
S

IH-30 at Spur 580
TXDOT
07/09/1984

GeoSearch

JOB #: 306147 - 07/25/2019

N
W E
S

IH-30 at Spur 580
TXDOT
07/09/1984

GeoSearch

JOB #: 306147 - 07/25/2019

N
W E
S

IH-30 at Spur 580
USGS
09/19/1981

GeoSearch

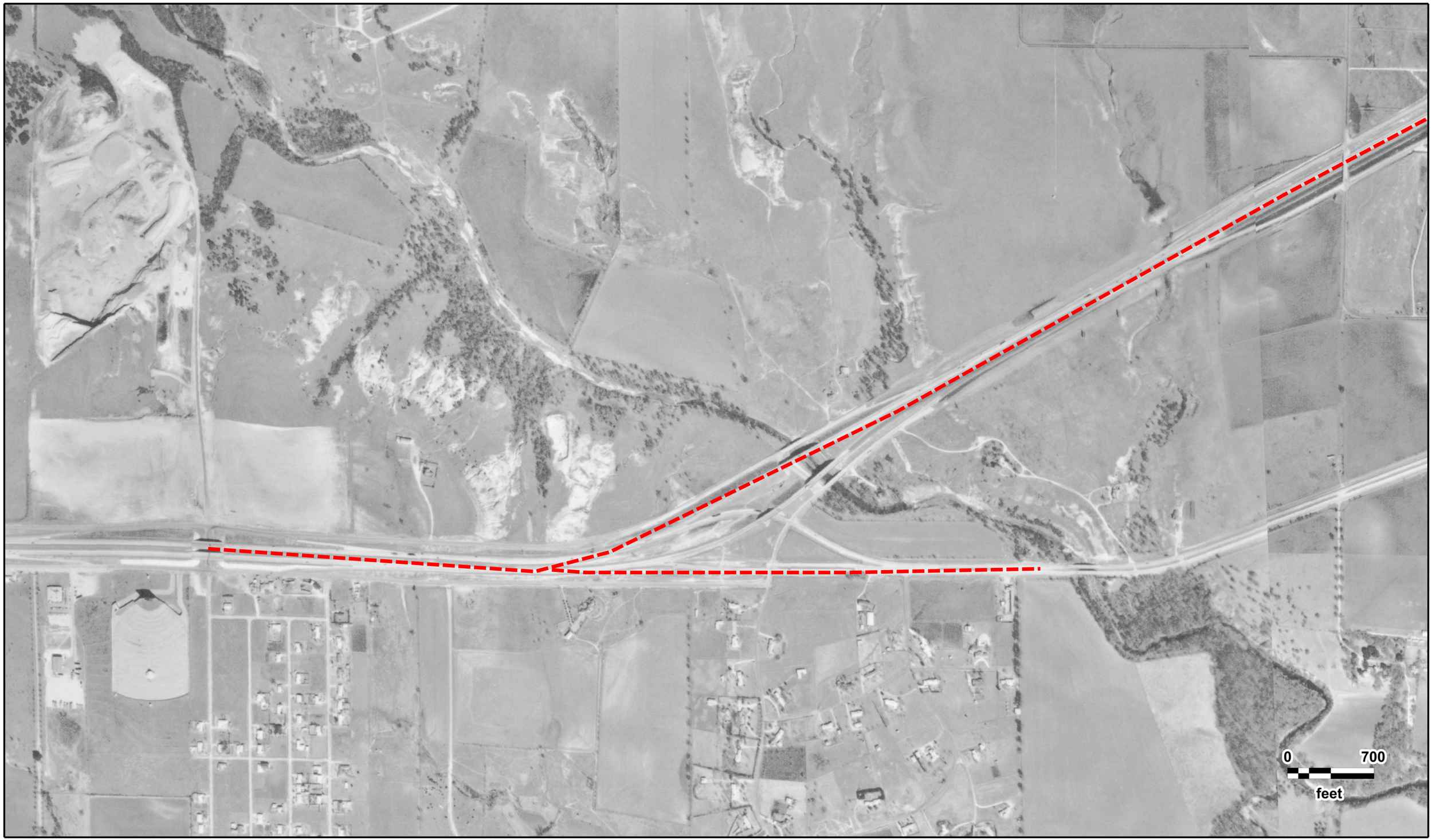
JOB #: 306147 - 07/25/2019

N
W E
S

IH-30 at Spur 580
USGS
11/01/1981

GeoSearch

JOB #: 306147 - 07/25/2019



N
W E
S

IH-30 at Spur 580
TXDOT
02/23/1976

GeoSearch

JOB #: 306147 - 07/25/2019

N
W E
S

IH-30 at Spur 580
TXDOT
02/23/1976

GeoSearch

JOB #: 306147 - 07/25/2019

N
W E
S

IH-30 at Spur 580
USGS
09/18/1968

GeoSearch

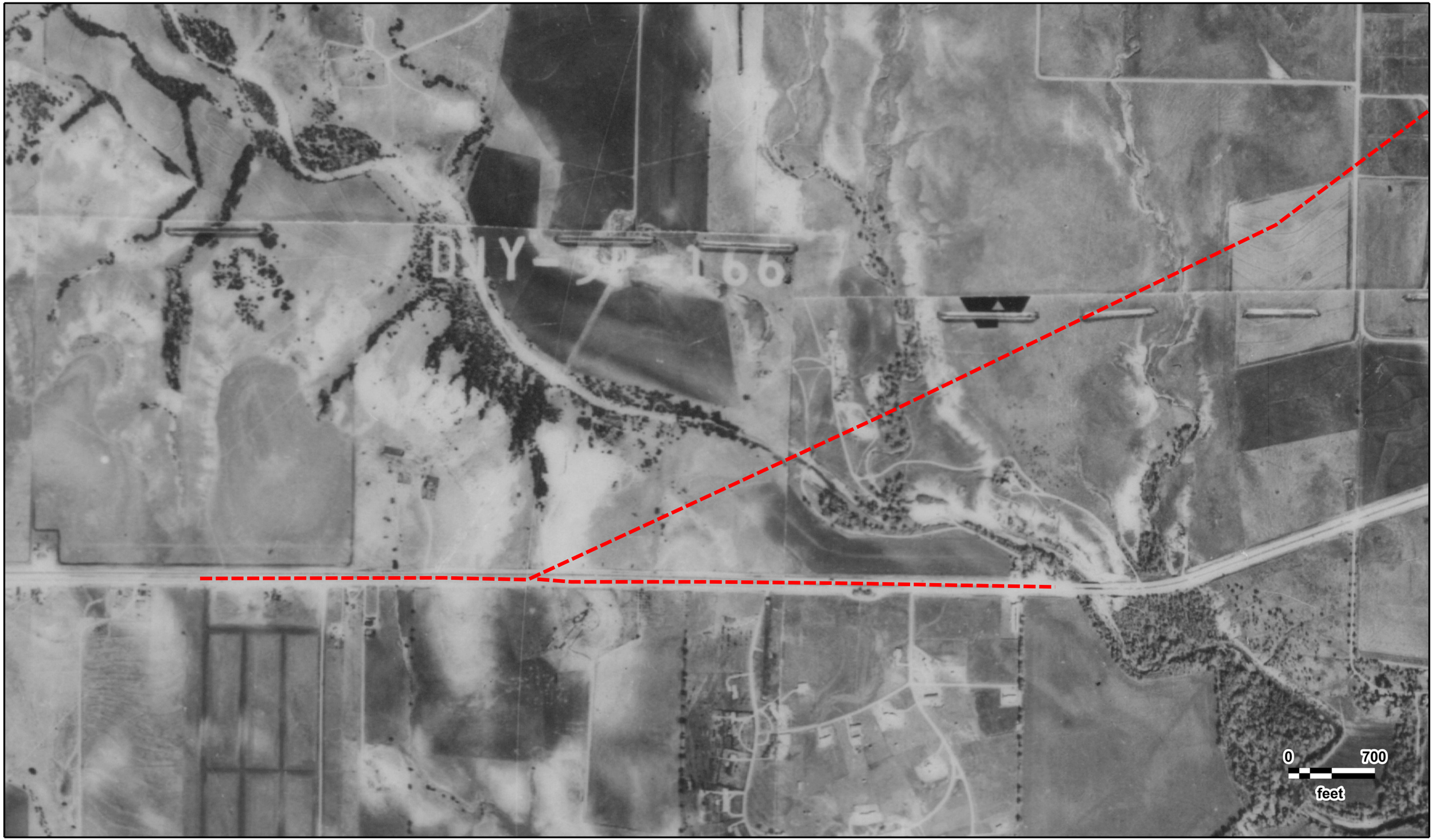
JOB #: 306147 - 07/25/2019

N
W E
S

IH-30 at Spur 580
USGS
09/18/1968

GeoSearch

JOB #: 306147 - 07/25/2019

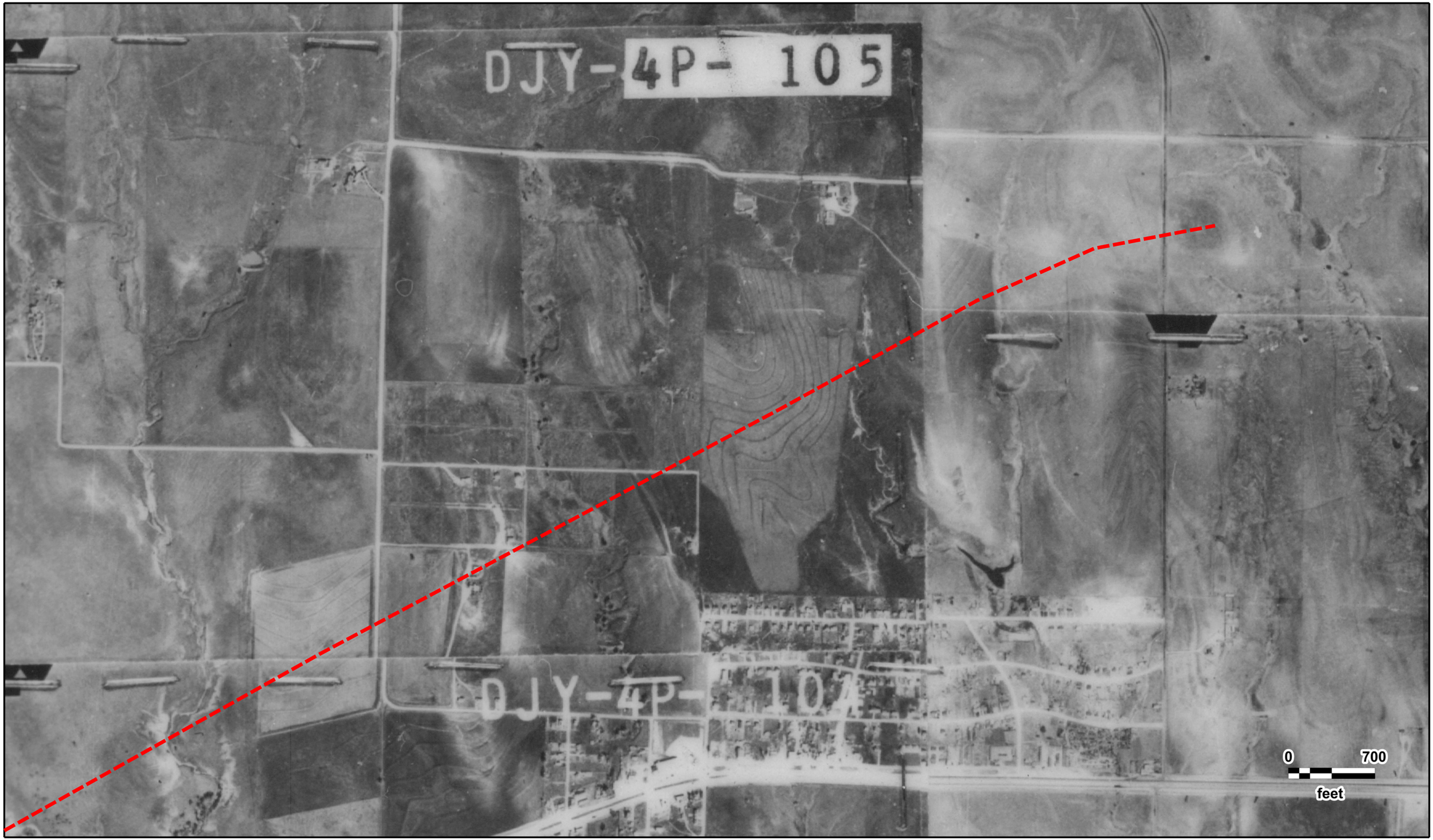


N
W E
S

IH-30 at Spur 580
ASCS
01/07/1958

GeoSearch

JOB #: 306147 - 07/25/2019

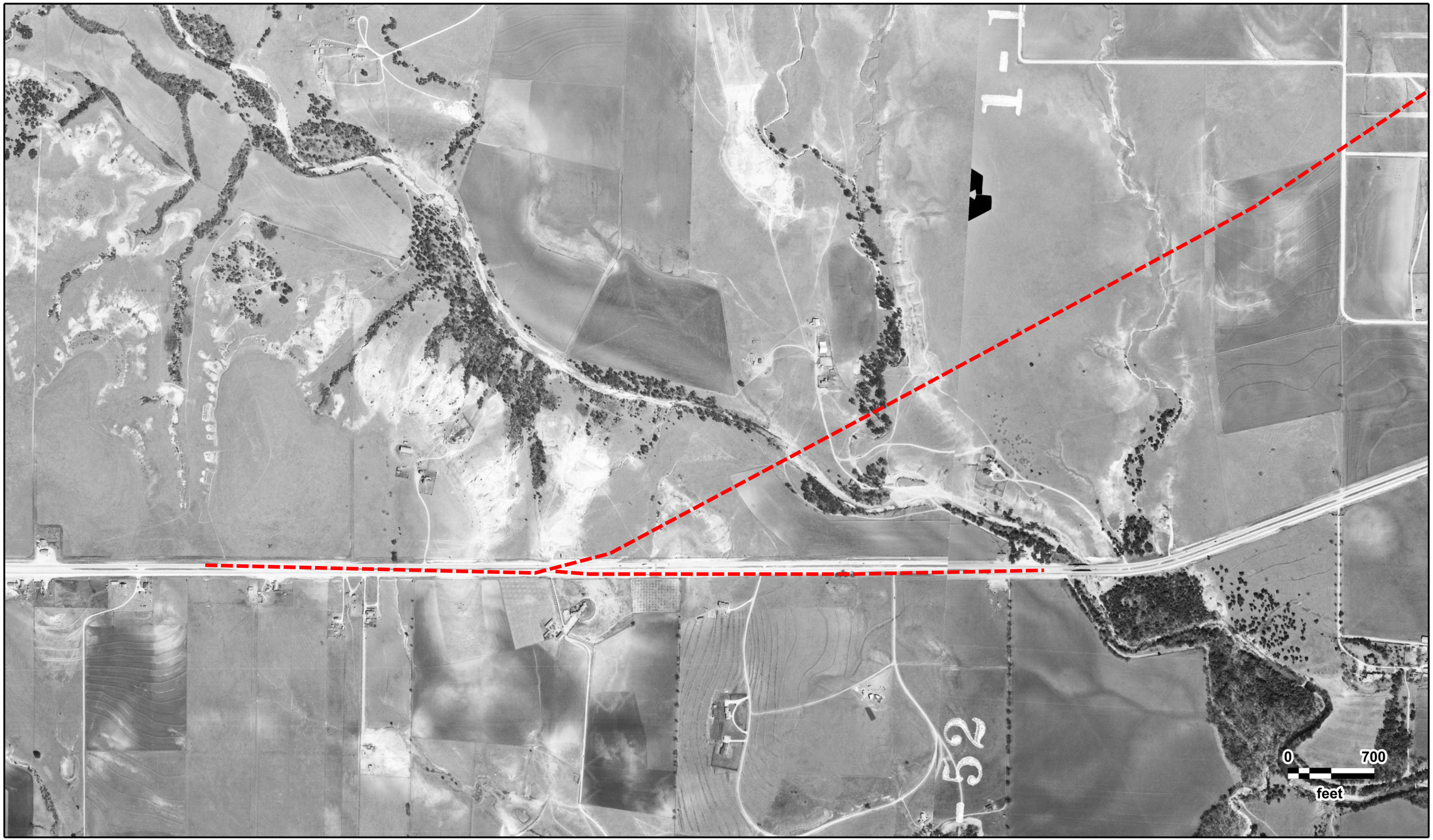


N
W E
S

IH-30 at Spur 580
ASCS
01/07/1958

GeoSearch

JOB #: 306147 - 07/25/2019



N
W E
S

IH-30 at Spur 580
USGS
04/01/1952

GeoSearch

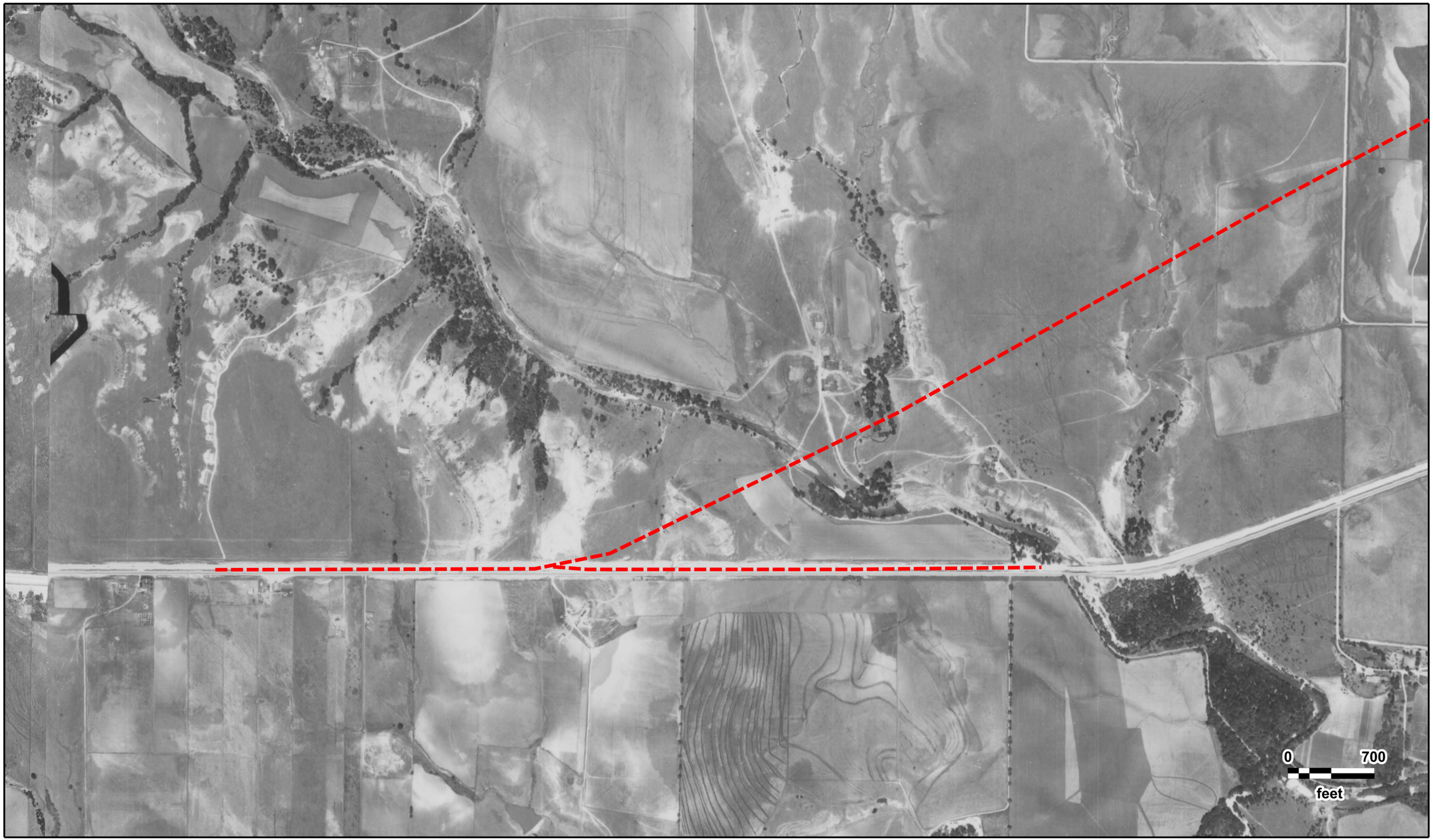
JOB #: 306147 - 07/25/2019

N
W E
S

IH-30 at Spur 580
USGS
04/01/1952

GeoSearch

JOB #: 306147 - 07/25/2019

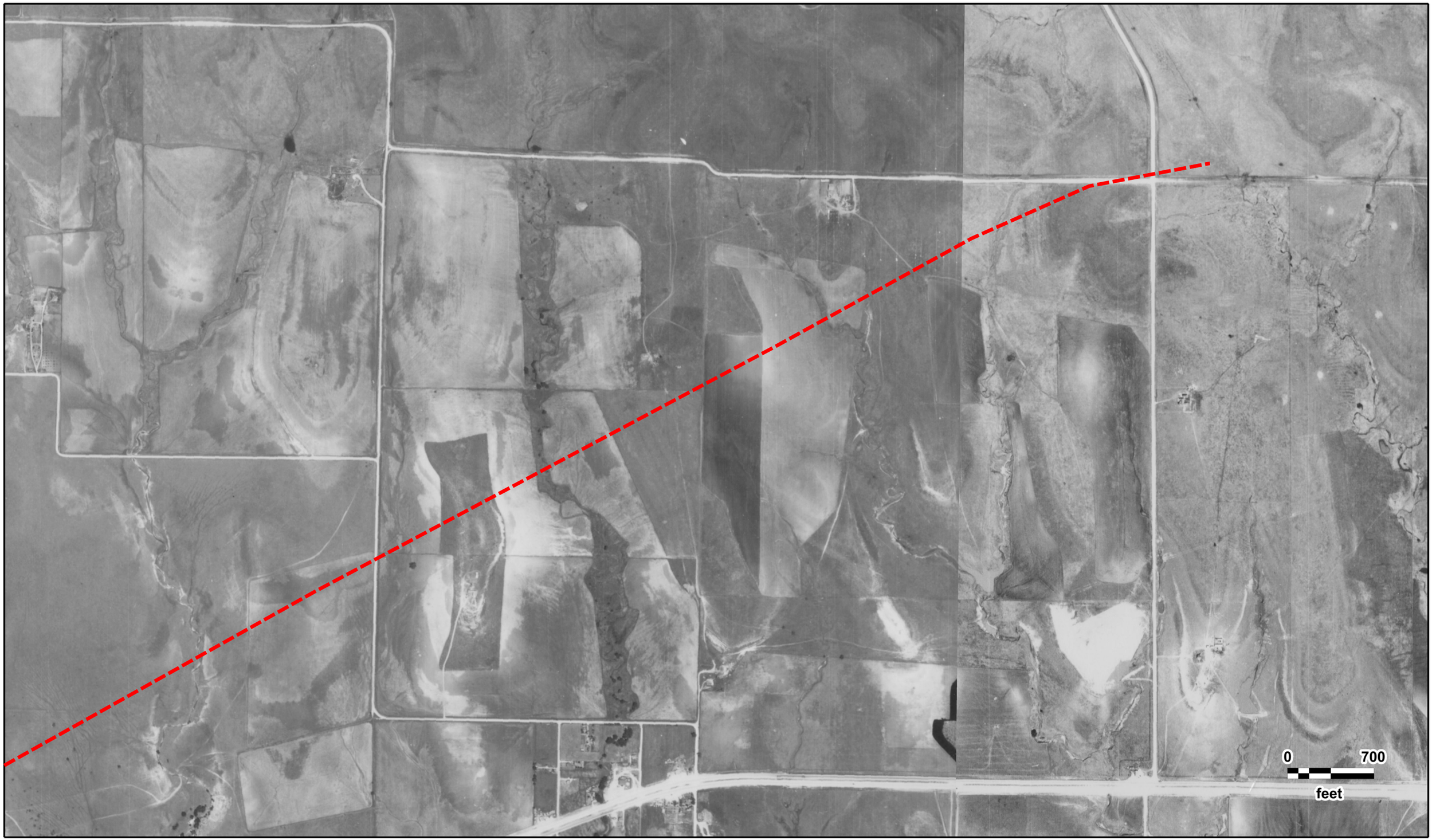


N
W E
S

IH-30 at Spur 580
ASCS
05/04/1942

GeoSearch

JOB #: 306147 - 07/25/2019

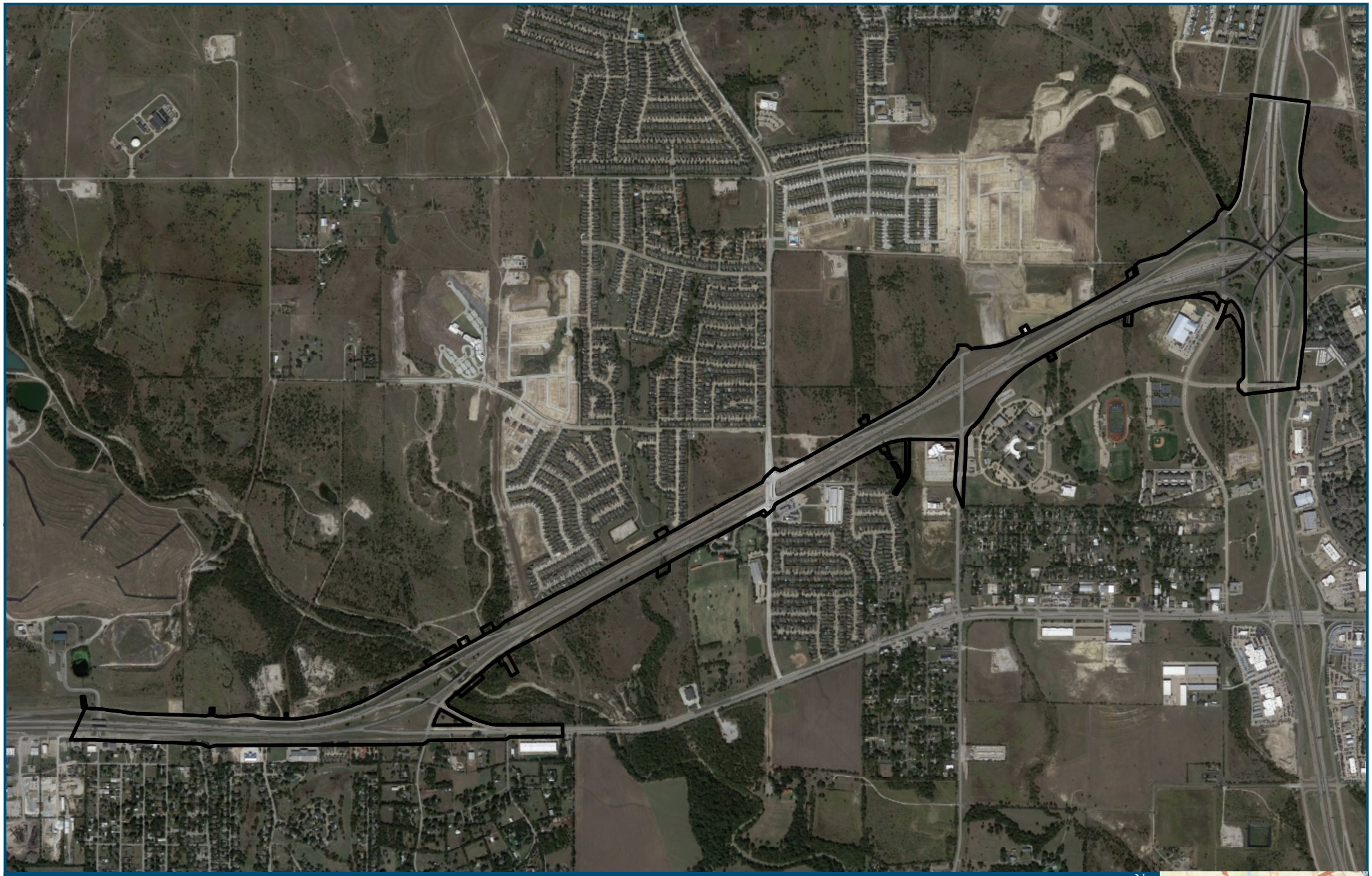


N
W E
S

IH-30 at Spur 580
ASCS
05/04/1942

GeoSearch

JOB #: 306147 - 07/25/2019



Project Location (Aerial Base)

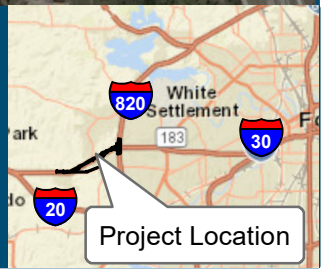
IH 30
From Linkcrest Drive to IH 820
Tarrant County, TX
CSJ: 1068-01-214

Source: Google Imagery 2019

Project Footprint

0 0.5 1 Miles

N



Attachment 4 - Site Photograph

Photograph 1. View looking east from Linkcrest Drive at the western project limit. Photo taken July 2019.

Photograph 2. View looking north (upstream) at Feature 1, Mary's Creek from beneath IH 30. Photo taken July 2019.

Photograph 3. View looking south (downstream) at Feature 1, Mary's Creek. Photo taken April 2020.

Photograph 4. View looking southeast (downstream) at Feature 2, an unnamed tributary to Mary's Creek. Photo taken July 2019.

Photograph 5. View looking north (upstream) at Feature 2, an unnamed tributary to Mary's Creek. Photo taken April 2020.

Photograph 6. View looking south (downstream) along Feature 3a, an unnamed tributary to Mary's Creek. Photo taken April 2020.

Photograph 7. View of Wetland Determination Point (WP) 1 within Feature 3c. This point did meet the three necessary criteria to be considered a wetland. Photo taken April 2020.

Photograph 8. View looking east at Feature 3c, an emergent wetland. Photo taken April 2020.

Photograph 9. View of WP 2. This point did not meet the three necessary criteria to be considered a wetland. Photo taken April 2020.

Photograph 10. View of WP 3 within Feature 3b. This point did meet the three necessary criteria to be considered a wetland. Photo taken April 2020.

Photograph 11. View looking south at Feature 3b, an emergent wetland. Photo taken April 2020.

Photograph 12. View of WP 4. This point did not meet the three necessary criteria to be considered a wetland. Photo taken April 2020.

Photograph 13. View looking north (upstream) at Feature 4a, an unnamed tributary to Mary's Creek. Photo taken April 2020.

Photograph 14. View looking southeast (downstream) at Feature 4a, an unnamed tributary to Mary's Creek. Photo taken April 2020.

Photograph 15. View looking southeast (downstream) at Feature 4b, an unnamed tributary to Mary's Creek. Photo taken July 2020.

Photograph 16. View looking south (downstream) along Feature 4c, an unnamed tributary to Mary's Creek. Photo taken April 2020.

Photograph 17. View looking north (upstream) along Feature 4c, an unnamed tributary to Mary's Creek. Photo taken April 2020.

Photograph 18. View looking north (upstream) at Feature 5, an unnamed tributary to Mary's Creek. There was a large development under construction located adjacent to the ROW in this area. Photo taken April 2020.

Photograph 19. View looking south (downstream) at Feature 5, an unnamed tributary to Mary's Creek. Photo taken July 2019.

Photograph 20. View looking south (downstream) at Feature 6, an herbaceous emergent wetland. Photo taken April 2020.

Photograph 21. View looking north (upstream) at Feature 6, an herbaceous emergent wetland. Photo taken April 2020.

Photograph 22. A view of WP 5. This point did meet the three necessary criteria to be considered within a wetland. Photo taken April 2020.

Photograph 23. A view of WP 6. This point did not meet the three necessary criteria to be considered within a wetland. Photo taken April 2020.

Photograph 24. View looking north at the location of an NHD-mapped unnamed tributary to Mary's Creek. Field reconnaissance determined that this feature is no longer present within the study area at this location. Photo taken July 2019.

Photograph 25. View looking north at the location of an NHD-mapped unnamed tributary to Farmer's Branch. Field reconnaissance determined that this feature is no longer present within the study area at this location. Photo taken July 2019.

Photograph 26. View looking south from Westpoint Boulevard, the northern project limit. Photo taken July 2019.

Photograph 27. View looking north from North Normandale St, at the southern project limit. Photo taken July 2019.