FM 664
Technical Reports

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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 16, 2014, and executed by FHWA and TxDOT.

Air Quality Assessment Technical Report

FARM-TO-MARKET ROAD 664 (FM 664)

FROM U.S. HIGHWAY 287 (US 287)

TO WESTMORELAND ROAD

CSJ: 1051-01-038 and 1051-01-052
Cities of Ovilla and Waxahachie, Ellis County
Dallas District

Date: December 2019

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.

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I. INTRODUCTION

1. Project Description

The Texas Department of Transportation (TxDOT) Dallas District Office proposes the widening of the existing Farm-to-Market (FM) 664 from United States (US) Highway 287 to Westmoreland Road in Ellis County, Texas. This would include widening approximately 8.08 miles of FM 664. The proposed project would reconstruct, realign, and widen this section of FM 664 from a 2-lane rural roadway to a 4-lane urban roadway (ultimate 6-lanes) with a raised median. Refer to the following document that has been uploaded into TXECOS for a detailed description: Project Description (1051-01-038 and 1051-01-052).pdf

Refer to Appendix A for the following: **Figure 1** (**Project Location Map**), **Figure 2** (**U.S. Geological Survey Topographic Map**), **Figure 3** (**Aerial Map**), **Figure 4** (**Typical Sections**), **and Figure 5** (**Project Layout Map**).

2. Need and Purpose

The proposed project is needed because the existing FM 664 within the project limits (a) fails to meet current safety design standards because the existing facility lacks ROW for pedestrians and has hazardous 90-degree turns, and (b) is inadequate to meet current and future traffic volumes, resulting in congestion and reduced mobility.

According to the U.S. Census Bureau, the Census 2000 for the total population of Ellis County was 111,360. In 2010, the Census reported a total population of 149,610, an increase of 34 percent over the 10-year period. The U.S. Census Bureau's Annual Population Estimate shows the 2018 population for Ellis County to be 179,436, an increase of 19.9 percent over the previous eight years. According to the Ellis County's Thoroughfare Plan (updated presentation on December 2018), Ellis County is projecting a population of 333,954 by the year of 2045. This would be a growth of 86 percent from the 2018 population.

Traffic volumes continue to increase as a result of area population growth and associated development. The demand along FM 664 within the project limits has grown substantially over the years and is expected to grow from 9,095 daily volumes in 2018 to 28,739 daily volumes in 2045; an

increase of 116 percent. From 2014 to 2017, there have been 641 traffic collisions along FM 664 and is being considered a high crash corridor by Ellis County.

FM 664 improvements would increase the capacity and driver delay would decrease. Safety for pedestrians and drivers should also improve with the proposed project.

The purpose of the proposed project is to provide infrastructure options to reduce traffic congestion on the existing roadways; to improve operations of the roadway; to increase mobility (including pedestrian and bicycle accommodations); and, to provide improved connectivity to the area

II. AIR QUALITY ASSESSMENT

1. Transportation Conformity

This project is located within an area that has been designated by the Environmental Protection Agency (EPA) as a serious and marginal nonattainment area for the 2008 and 2015 ozone National Ambient Air Quality Standards (NAAQS) respectively; therefore, transportation conformity rules apply. Conformity for older standards is satisfied by conformity to the more stringent 2008 and 2015 ozone NAAQS.

Both the 2045 Metropolitan Transportation Plan (MTP) and the 2019-2022 Transportation Improvement Program (TIP) were initially found to conform to the TCEQ State Implementation Plan (SIP) by the Federal Highway Administration (FHWA) and the Federal Transportation Authority (FTA) on November 21, 2018 and September 28, 2018, respectively; however, the proposed project is not consistent with this conformity determination because it is still pending approval in the 2019-2020 Statewide Transportation Improvement Plan. TxDOT will not take final action on this environmental document until the proposed project is consistent with a currently conforming MTP and TIP.

2. Hot Spot Analysis

The project is not located within a carbon monoxide (CO) or particulate matter (PM) nonattainment or maintenance area; therefore, a project level hot spot analysis is not required.

3. CO Traffic Air Quality Analysis (TAQA)

Traffic data for the estimated time of completion (ETC) year 2025 and design year 2045 is 26,675 vehicles per day (vpd) and 38,300 vpd, respectively. A prior TxDOT modeling study and previous

analyses of similar projects demonstrated that it is unlikely that the CO standard would ever be exceeded as a result of any project with an average annual daily traffic (AADT) below 140,000. The AADT projections for the project do not exceed 140,000 vpd; therefore, a TAQA was not required.

4. Mobile Source Air Toxics (MSAT)

Background

Controlling air toxic emissions became a national priority with the passage of the Clean Air Act Amendments (CAAA) of 1990, whereby Congress mandated that the EPA regulate 188 air toxics, also known as hazardous air pollutants. The EPA has assessed this expansive list in their latest rule on the Control of Hazardous Air Pollutants from Mobile Sources (Federal Register, Vol. 72, No. 37, page 8430, February 26, 2007), and identified a group of 93 compounds emitted from mobile sources that are listed in their Integrated Risk Information System (IRIS).[1] In addition, EPA identified nine compounds with significant contributions from mobile sources that are among the national and regional-scale cancer risk drivers or contributors and non-cancer hazard contributors from the 2011 National Air Toxics Assessment (NATA).[2] These are 1,3-butadiene, acetaldehyde, acrolein, benzene, diesel particulate matter (diesel PM), ethylbenzene, formaldehyde, naphthalene, and polycyclic organic matter. While FHWA considers these the priority MSATS, the list is subject to change and may be adjusted in consideration of future EPA rules.

Motor Vehicle Emissions Simulator (MOVES)

According to EPA, MOVES2014 is a major revision to MOVES2010 and improves upon it in many respects. MOVES2014 includes new data, new emissions standards, and new functional improvements and features. It incorporates substantial new data for emissions, fleet, and activity developed since the release of MOVES2010.

These new emissions data are for light - and heavy-duty vehicles, exhaust and evaporative emissions, and fuel effects. MOVES2014 also adds updated vehicle sales, population, age distribution, and vehicle miles travelled (VMT) data. MOVES2014 incorporates the effects of three new Federal emissions standard rules not included in MOVES2010.

[1] http://www.epa.gov/iris/

[2] https://www.epa.gov/national-air-toxics-assessment

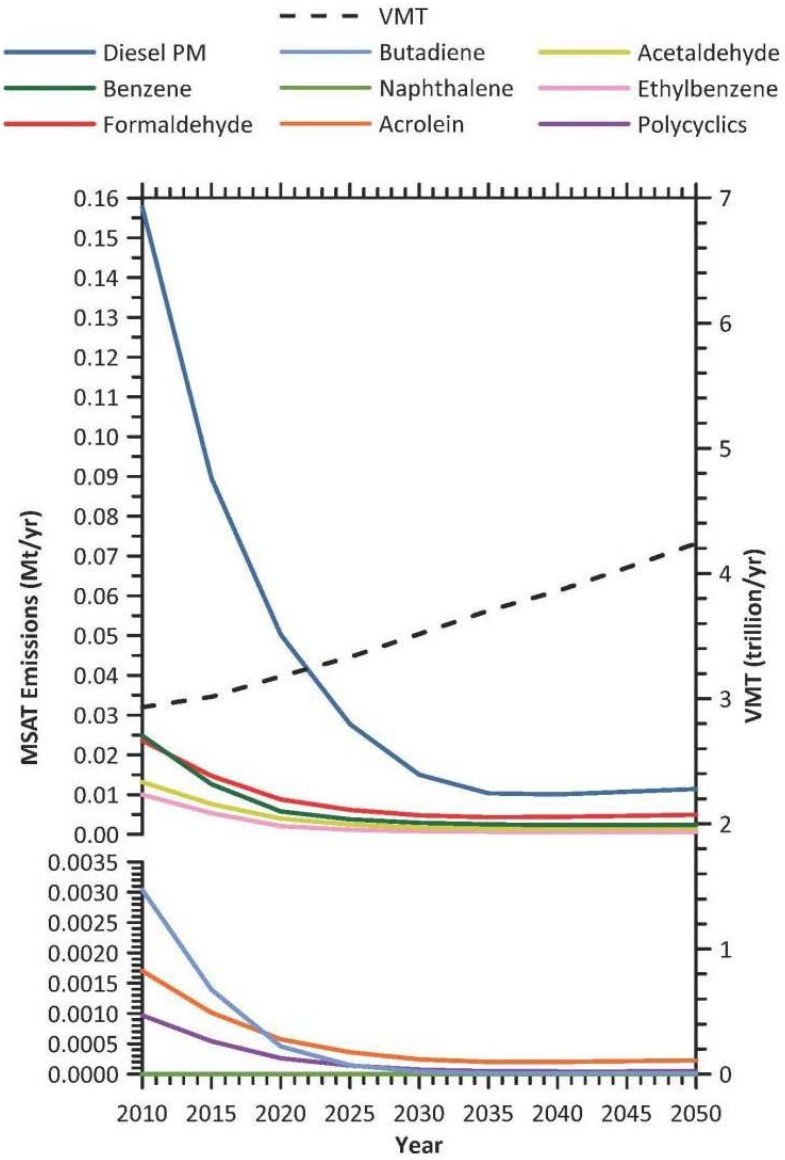
These new standards are all expected to impact MSAT emissions and include Tier 3 emissions and fuel standards starting in 2017 (79 FR 60344), heavy-duty greenhouse gas regulations that phase in during model years 2014-2018 (79 FR 60344), and the second phase of light duty greenhouse gas regulations that phase in during model years 2017-2025 (79 FR 60344).

Since the release of MOVES2014, EPA has released MOVES2014a. In the November 2015 MOVES2014a Questions and Answers Guide,[3] EPA states that for on-road emissions, MOVES2014a adds new options requested by users for the input of local VMT, includes minor updates to the default fuel tables, and corrects an error in MOVES2014 brake wear emissions. The change in brake wear emissions results in small decreases in PM emissions, while emissions for other criteria pollutants remain essentially the same as MOVES2014.

Using EPA's MOVES2014a model, as shown in **Exhibit 1**, FHWA estimates that even if VMT increases by 45 percent from 2010 to 2050 as forecast, a combined reduction of 91 percent in the total annual emissions for the priority MSAT is projected for the same time period.

[3] https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P100NNR0.txt

Exhibit 1: FHWA Projected National MSAT Emission Trends 2010 – 2050 for Vehicles Operating on Roadways Using EPA's Moves2014a Model



Source: EPA MOVES2014a model runs conducted by FHWA, September 2016.

Note: Trends for specific locations may be different, depending on locally derived information representing vehicle-miles travel led, vehicle speeds, vehicle mix, fuels, emission control programs, meteorological, and other factors.

Diesel PM is the dominant component of MSAT emissions, making up 50 to 70 percent of all priority MSAT pollutants by mass, depending on calendar year. Users of MOVES2014a will notice some differences in emissions compared with MOVES2010b. MOVES2014a is based on updated data on some emissions and pollutant processes compared to MOVES2010b, and also reflects the latest

Federal emissions standards in place at the time of its release. In addition, MOVES2014a emissions forecasts are based on lower VMT projections than MOVES2010b, consistent with recent trends suggesting reduced nationwide VMT growth compared to historical trends.

MSAT Research

Air toxics analysis is a continuing area of research. While much work has been done to assess the overall health risk of air toxics, many questions remain unanswered. In particular, the tools and techniques for assessing project-specific health outcomes as a result of lifetime MSAT exposure remain limited. These limitations impede the ability to evaluate how potential public health risks posed by MSAT exposure should be factored into project -level decision-making within the context of NEPA (National Environmental Policy Act). The FHWA, EPA, the Health Effects Institute (HEI), and others have funded and conducted research studies to try to more clearly define potential risks from MSAT emissions associated with highway projects. The FHWA will continue to monitor the developing research in this field.

Project-Specific MSAT Information

A qualitative analysis provides a basis for identifying and comparing the potential differences among MSAT emissions, if any, from the various alternatives. The qualitative assessment presented below is derived in part from a study conducted by FHWA entitled A Methodology for Evaluating Mobile Source Air Toxic Emissions Among Transportation Project Alternatives.[4]

For each alternative in this document, the amount of MSAT emitted would be proportional to the vehicle miles traveled, or VMT, assuming that other variables such as fleet mix are the same for each alternative. The VMT estimated for each of the Build Alternatives is slightly higher than that for the No Build Alternative, because the additional capacity increases the efficiency of the roadway and attracts rerouted trips from elsewhere in the transportation network. This increase in VMT would lead to higher MSAT emissions for the preferred action alternative along the highway corridor, along with a corresponding decrease in MSAT emissions along the parallel routes. The emissions increase is offset somewhat by lower MSAT emission rates due to increased speeds; according to EPA's MOVES2014 model, emissions of all of the priority MSAT decrease as speed increases. Also, regardless of the

[4] https://www.fhwa.dot.gov/environment/air_quality/air_toxics/research_and_analysis/mobile_source_air_toxics/msatemissions.cfm

alternative chosen, emissions will likely be lower than present levels in the design year as a result of EPA's national control programs that are projected to reduce annual MSAT emissions by over 90 percent between 2010 and 2050 (Updated Interim Guidance on Mobile Source Air Toxic Analysis in NEPA Documents, FHWA, October 12, 2016).[5]

Local conditions may differ from these national projections in terms of fleet mix and turnover, VMT growth rates, and local control measures. However, the magnitude of the EPA -projected reductions is so great (even after accounting for VMT growth) that MSAT emissions in the study area are likely to be lower in the future in nearly all cases.

The additional travel lanes contemplated as part of the Build Alternative will have the effect of moving some traffic closer to nearby homes, schools, and businesses; therefore, under this alternative there may be localized areas where ambient concentrations of MSAT could be higher than the No Build Alternative. The localized increases in MSAT concentrations would likely be most pronounced along the expanded roadway sections that would be built at the intersection of FM 664 and W. Main Street, an area along the section of the project with the highest projected daily traffic. However, the magnitude and the duration of these potential increases compared to the No Build Alternative cannot be reliably quantified due to incomplete or unavailable information in forecasting project-specific MSAT health impacts. In sum, when a highway is widened, the localized level of MSAT emissions for the Build Alternative could be higher relative to the No Build Alternative, but this could be offset due to increases in speeds and reductions in congestion (which are associated with lower MSAT emissions). Also, MSAT will be lower in other locations when traffic shifts away from them. However, on a regional basis, EPA's vehicle and fuel regulations, coupled with fleet turnover, will over time cause substantial reductions that, in almost all cases, will cause region-wide MSAT levels to be significantly lower than today.

[5] http://www.fhwa.dot.gov/environment/air_quality/air_toxics/policy_and_guidance/msat/index.cfm

Incomplete or Unavailable Information for Project-Specific MSAT Health Impacts Analysis

In FHWA's view, information is incomplete or unavailable to credibly predict the project-specific health impacts due to changes in MSAT emissions associated with a proposed set of highway alternatives. The outcome of such an assessment, adverse or not, would be influenced more by the uncertainty introduced into the process through assumption and speculation rather than any genuine insight into the actual health impacts directly attributable to MSAT exposure associated with a proposed action.

The U.S. EPA is responsible for protecting the public health and welfare from any known or anticipated effect of an air pollutant. They are the lead authority for administering the Clean Air Act (CAA) and its amendments and have specific statutory obligations with respect to hazardous air pollutants and MSAT. The EPA is in the continual process of assessing human health effects, exposures, and risks posed by air pollutants. They maintain the IRIS, which is "a compilation of electronic reports on specific substances found in the environment and their potential to cause human health effects."[6] Each report contains assessments of non-cancerous and cancerous effects for individual compounds and quantitative estimates of risk levels from lifetime oral and inhalation exposures with uncertainty spanning perhaps an order of magnitude.

Other organizations are also active in the research and analyses of the human health effects of MSAT, including the HEI. A number of HEI studies are summarized in Appendix D of FHWA's Updated Interim Guidance on Mobile Source Air Toxic Analysis in NEPA Documents.[7]

Among the adverse health effects linked to MSAT compounds at high exposures are; cancer in humans in occupational settings; cancer in animals; and irritation to the respiratory tract, including the exacerbation of asthma. Less obvious is the adverse human health effects of MSAT compounds at current environmental concentrations (HEI Special Report 16),[8] or in the future as vehicle emissions substantially decrease.

The methodologies for forecasting health impacts include emissions modeling; dispersion modeling; exposure modeling; and then final determination of health impacts – each step in the process building

[6] http://www.epa.gov/iris/

[7] http://www.fhwa.dot.gov/environment/air_quality/air_toxics/policy_and_guidance/msat/index.cfm

[8] https://www.healtheffects.org/publication/mobile-source-air-toxics-critical-review-literature-exposure-and-health-effects

on the model predictions obtained in the previous step. All are encumbered by technical shortcomings or uncertain science that prevents a more complete differentiation of the MSAT health impacts among a set of project alternatives. These difficulties are magnified for lifetime (i.e., 70 year) assessments, particularly because unsupportable assumptions would have to be made regarding changes in travel patterns and vehicle technology (which affects emissions rates) over that time frame, since such information is unavailable.

It is particularly difficult to reliably forecast 70-year lifetime MSAT concentrations and exposure near roadways; to determine the portion of time that people are actually exposed at a specific location; and to establish the extent attributable to a proposed action, especially given that some of the information needed is unavailable.

There are considerable uncertainties associated with the existing estimates of toxicity of the various MSAT, because of factors such as low-dose extrapolation and translation of occupational exposure data to the general population, a concern expressed by HEI (Special Report 16).[9] As a result, there is no national consensus on air dose-response values assumed to protect the public health and welfare for MSAT compounds, and in particular for diesel PM. The EPA states that with respect to diesel engine exhaust, "[t]he absence of adequate data to develop a sufficiently confident dose-response relationship from the epidemiologic studies has prevented the estimation of inhalation carcinogenic risk (EPA IRIS database, Diesel Engine Exhaust, Section II.C.)."[10]

There is also the lack of a national consensus on an acceptable level of risk. The current context is the process used by the EPA as provided by the CAA to determine whether more stringent controls are required in order to provide an ample margin of safety to protect public health or to prevent an adverse environmental effect for industrial sources subject to the maximum achievable control technology standards, such as benzene emissions from refineries. The decision framework is a two-step process. The first step requires EPA to determine an "acceptable" level of risk due to emissions from a source, which is generally no greater than approximately 100 in a million. Additional factors are considered in the second step, the goal of which is to maximize the number of people with risks less than 1 in a million due to emissions from a source. The results of this statutory two-step process do not guarantee

[9] https://www.healtheffects.org/publication/mobile-source-air-toxics-critical-review-literature-exposure-and-health-effects

[10] https://cfpub.epa.gov/ncea/iris/iris_documents/documents/subst/0642.htm#quainhal

that cancer risks from exposure to air toxics are less than 1 in a million; in some cases, the residual risk determination could result in maximum individual cancer risks that are as high as approximately 100 in a million. In a June 2008 decision, the U.S. Court of Appeals for the District of Columbia Circuit upheld EPA's approach to addressing risk in its two-step decision framework. Information is incomplete or unavailable to establish that even the largest of highway projects would result in levels of risk greater than deemed acceptable.[11]

Because of the limitations in the methodologies for forecasting health impacts described, any predicted difference in health impacts between alternatives is likely to be much smaller than the uncertainties associated with predicting the impacts. Consequently, the results of such assessments would not be useful to decision makers, who would need to weigh this information against project benefits, such as reducing traffic congestion, accident rates, and fatalities plus improved access for emergency response, that are better suited for quantitative analysis.

5. Congestion Management Process (CMP)

The CMP is a systematic process for managing congestion that provides information on transportation system performance and on alternative strategies for alleviating congestion and enhancing the mobility of persons and goods to levels that meet state and local needs. The project was developed from the North Central Texas Council of Governments (NCTCOG) CMP, which meets all requirements of 23 CFR 450.320 and 500.109, as applicable. The CMP was adopted by NCTCOG on January 2014.

The region commits to operational improvements and travel demand reduction strategies at two levels of implementation: program level and project level. Program level commitments are inventoried in the regional CMP, which was adopted by NCTCOG; they are included in the financially constrained MTP, and future resources are reserved for their implementation.

The CMP element of the plan carries an inventory of all project commitments (including those resulting from major investment studies) that details type of strategy, implementing responsibilities, schedules, and expected costs. At the project's programming stage, travel demand reduction strategies and commitments will be added to the regional TIP or included in the construction plans. The regional TIP

[11] https://www.cadc.uscourts.gov/internet/opinions.nsf/284E23FFE079CD59852578000050C9DA/$file/07-1053-1120274.pdf

provides for programming of these projects at the appropriate time with respect to the single occupancy vehicle (SOV) facility implementation and project-specific elements.

Committed congestion reduction strategies and operational improvements within the study boundary will consist of access management improvements (turn lanes); addition of new lanes; intersection improvements; bicycle and pedestrian facility improvements; and traffic signal improvements. Individual projects are listed in **Table 1**.

Table 1: Congestion Management Process Projects

Operational Improvements in the Travel Corridor		
Location	**Type**	**Implementation Date**
Interstate Highway 35E From US 77 South to US 77 North	Intersection Improvement	2028
FM 1387 From Midlothian Parkway to FM 664	Reconstruction, Addition of Lanes	2023

Source: NCTCOG Transportation Improvement Program Information System (TIPINS). Accessed October 25, 2019.

In an effort to reduce congestion and the need for SOV lanes in the region, TxDOT and NCTCOG will continue to promote appropriate congestion reduction strategies through the Congestion Mitigation and Air Quality Improvement program, the CMP, and the MTP. The congestion reduction strategies considered for this project would help alleviate congestion in the SOV study boundary, but would not eliminate it.

Therefore, the proposed project is justified. The CMP analysis for added SOV capacity projects in the Transportation Management Area is on file and available for review at NCTCOG.

In July 2013, the Regional Transportation Council also adopted a policy that requires the review and application of congestion mitigation strategies to correct corridor deficiencies identified in the CMP when performing corridor and environmental studies and report findings back to NCTCOG. Therefore, NCTCOG has developed a project level CMP analysis. The analysis requires completion of the Project Implementation Form, along with the Roadway Corridor Deficiency Form and Corridor Analysis Fact Sheet. The results of this analysis are attached in **Appendix B**.

6. Air Quality Construction Emissions Reduction Strategies

During the construction phase of this project, temporary increases in PM and MSAT emissions may occur from construction activities. The primary construction-related emissions of PM are fugitive dust from site preparation, and the primary construction-related emissions of MSAT are diesel PM from diesel powered construction equipment and vehicles.

The potential impacts of PM emissions will be minimized by using fugitive dust control measures contained in standard specifications, as appropriate. The Texas Emissions Reduction Plan (TERP) provides financial incentives to reduce emissions from vehicles and equipment.[12] TxDOT encourages construction contractors to use this and other local and federal incentive programs to the fullest extent possible to minimize diesel emissions.

However, considering the temporary and transient nature of construction-related emissions, the use of fugitive dust control measures, the encouragement of the use of TERP, and compliance with applicable regulatory requirements; it is not anticipated that emissions from construction of this project will have any significant impact on air quality in the area.

[12] https://www.tceq.texas.gov/airquality/terp.

Appendix A: Figures

Ellis County, Texas

CSJs: 1051-01-038 and 1051-01-052

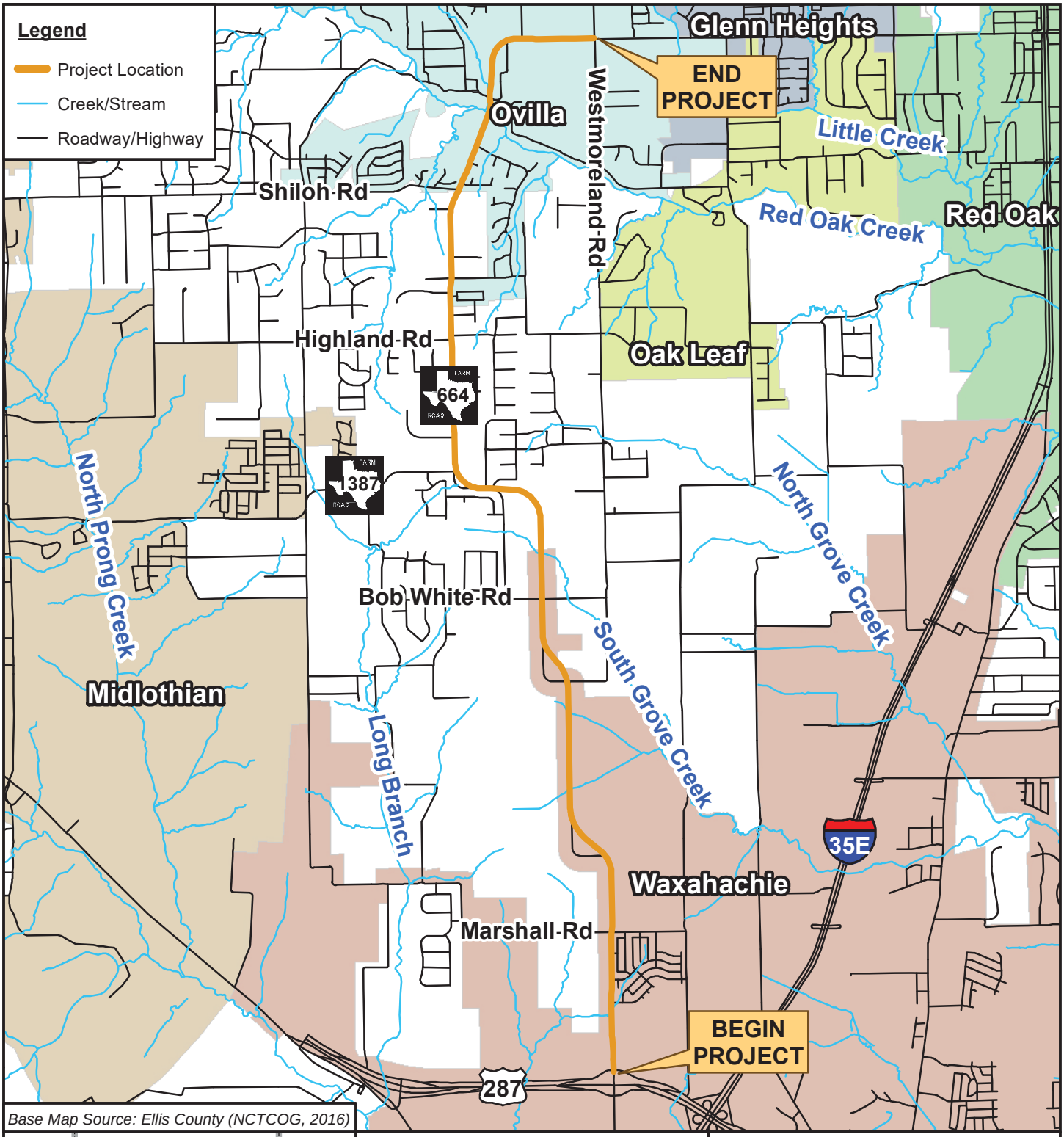
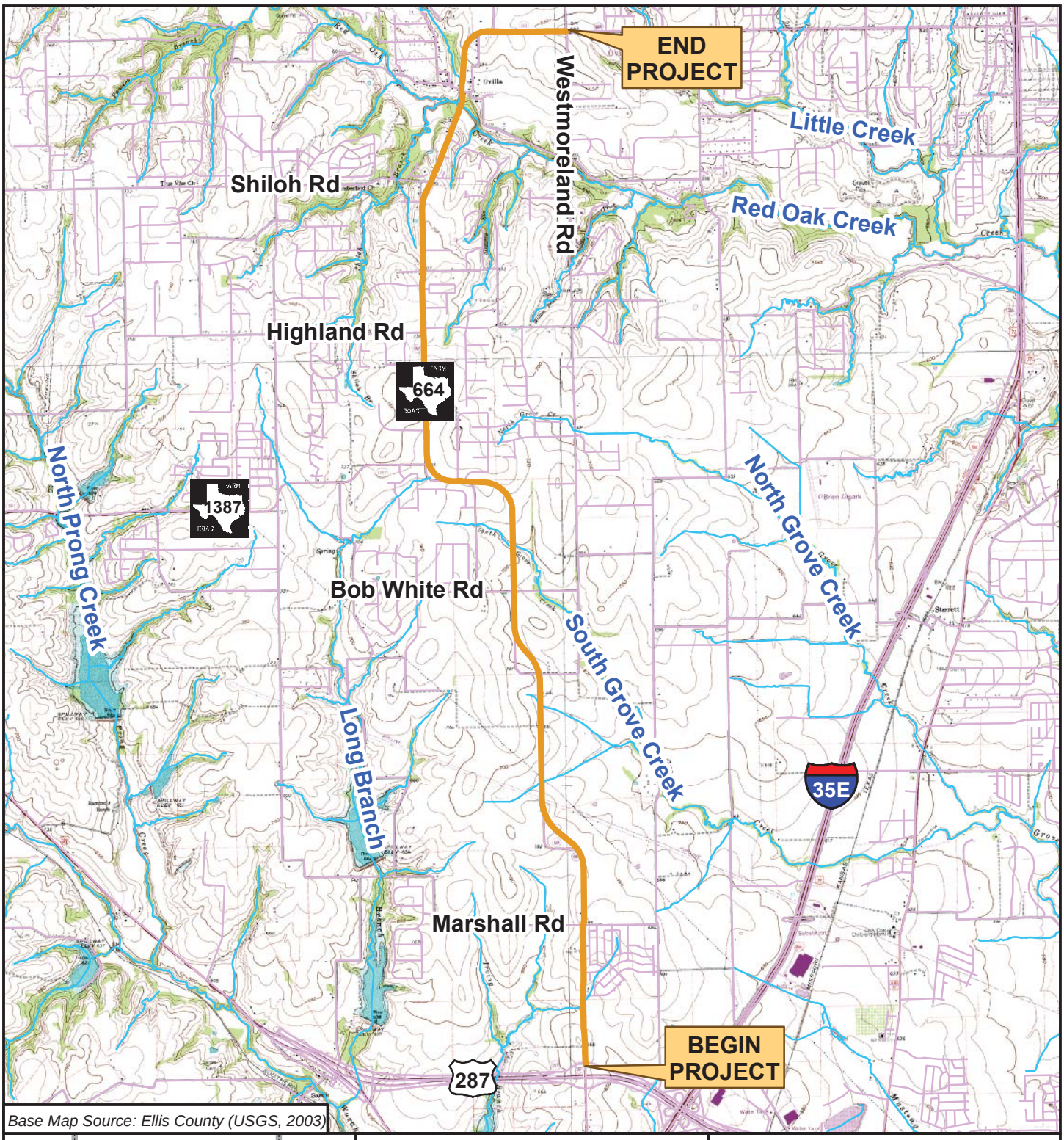


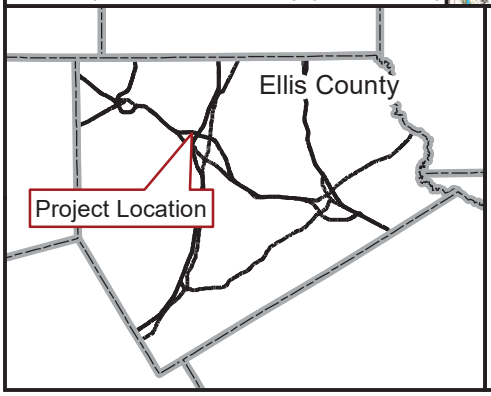
FIGURE 1
PROJECT LOCATION MAP

FARM-TO-MARKET ROAD (FM) 664
From U.S. Highway (US) 287
To Westmoreland Road
Ellis County

CSJs: 1051-01-038 and 1051-01-052



Base Map Source: Ellis County (USGS, 2003)



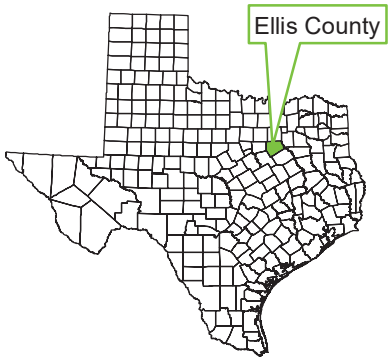


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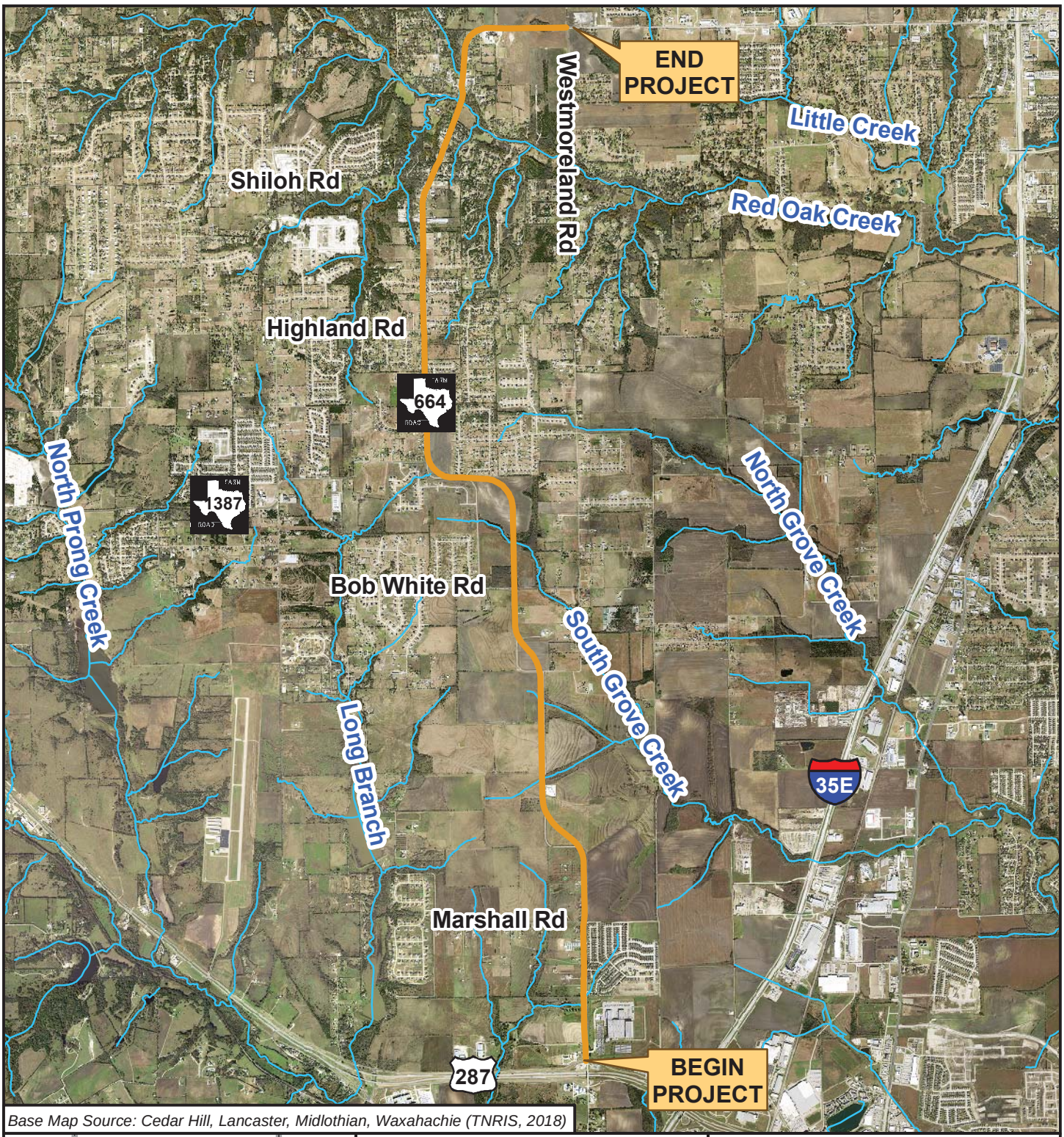
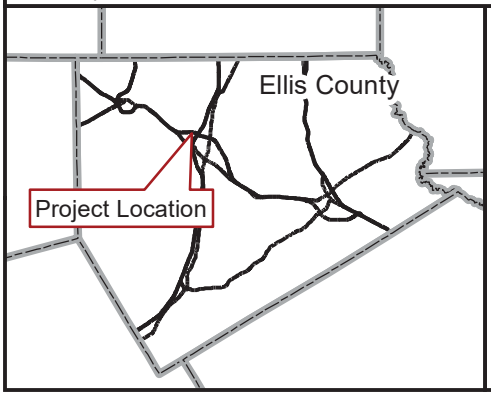
FIGURE 2
TOPOGRAPHIC MAP

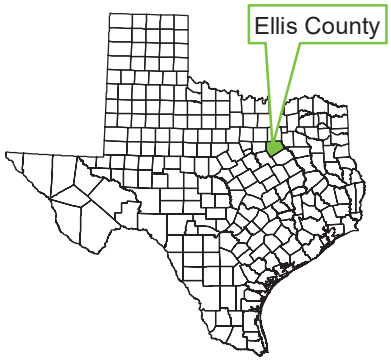
FARM-TO-MARKET ROAD (FM) 664
From U.S. Highway (US) 287
To Westmoreland Road
Ellis County

CSJs: 1051-01-038 and 1051-01-052



Base Map Source: Cedar Hill, Lancaster, Midlothian, Waxahachie (TNRIS, 2018)





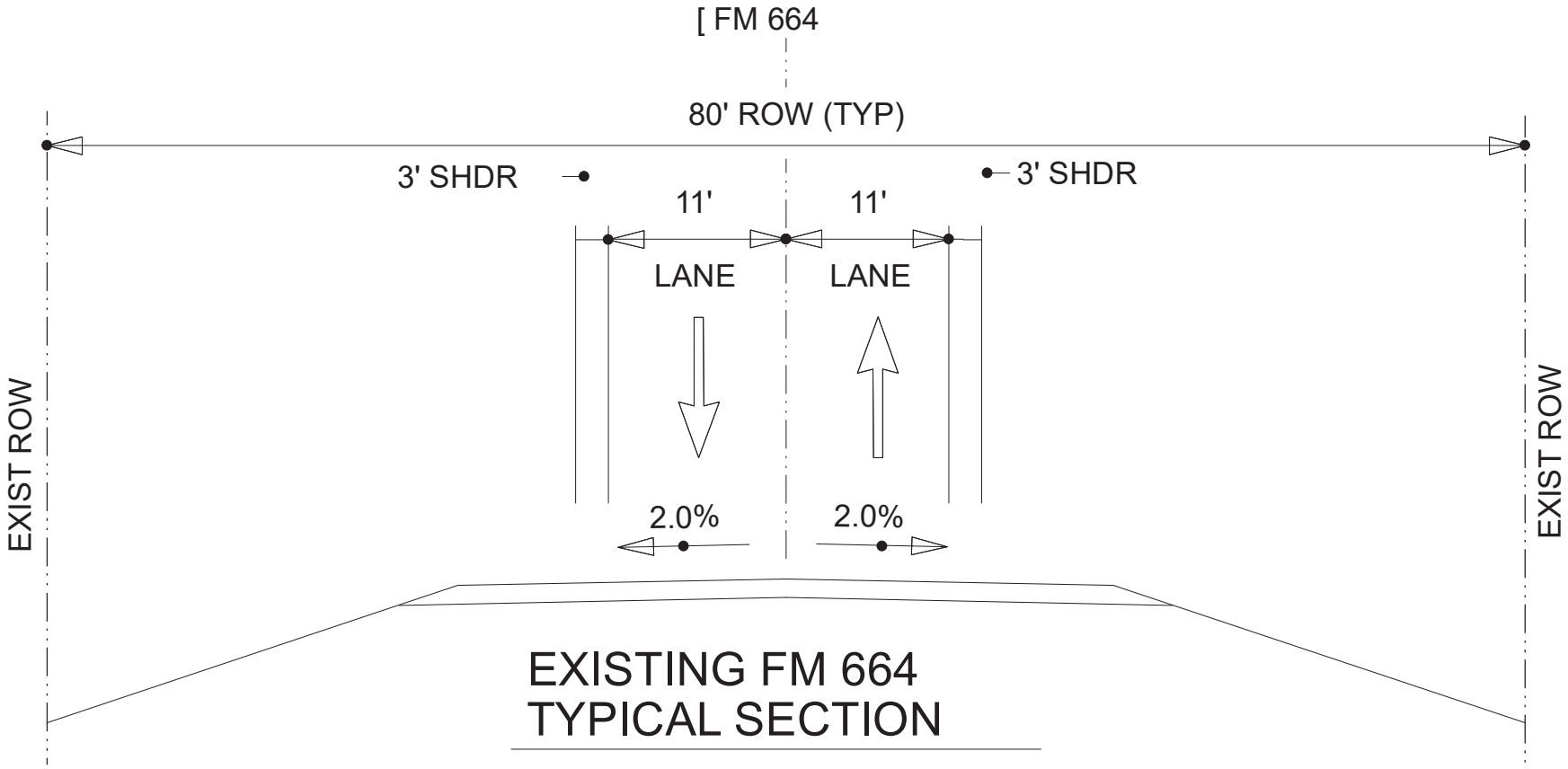
0 5,000 Feet

N W E S

FIGURE 3
AERIAL MAP

FARM-TO-MARKET ROAD (FM) 664
From U.S. Highway (US) 287
To Westmoreland Road
Ellis County

CSJs: 1051-01-038 and 1051-01-052



EXISTING FM 664
TYPICAL SECTION

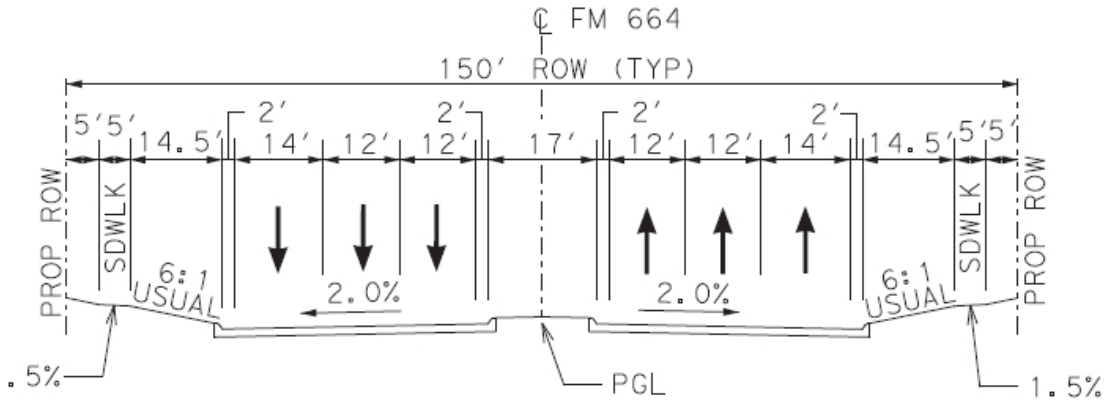
FOR REPORT
PURPOSES ONLY

Not for construction, bidding,
or permit purposes

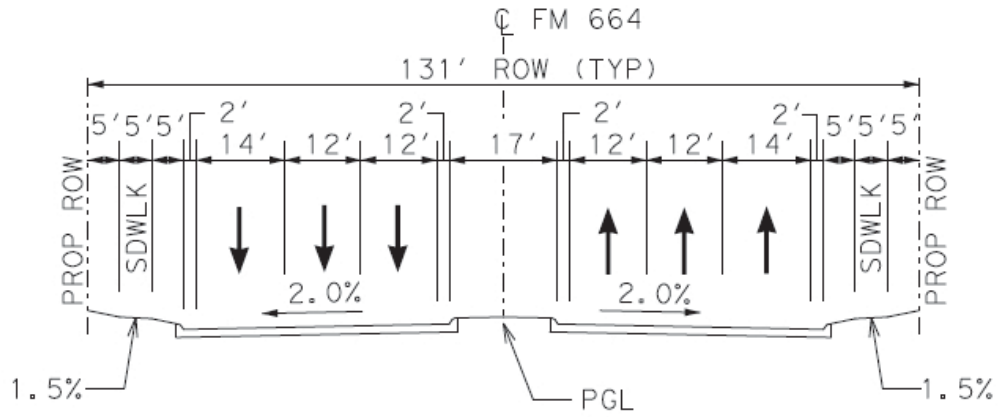
FIGURE 4
TYPICAL SECTIONS

FARM-TO-MARKET ROAD (FM) 664
From U.S. Highway (US) 287
To Westmoreland Road
Ellis County

CSJs: 1051-01-038 and 1051-01-052



PROPOSED TYPICAL SECTION FM664
STA. 411+82 TO 453+59
STA. 507+35 TO 668+00



PROPOSED TYPICAL SECTION FM664
STA. 355+00 TO 411+82
STA. 453+59 TO 507+35

FOR REPORT
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Not for construction, bidding,
or permit purposes

FIGURE 4
TYPICAL SECTIONS

FARM-TO-MARKET ROAD (FM) 664
From U.S. Highway (US) 287
To Westmoreland Road
Ellis County

CSJs: 1051-01-038 and 1051-01-052

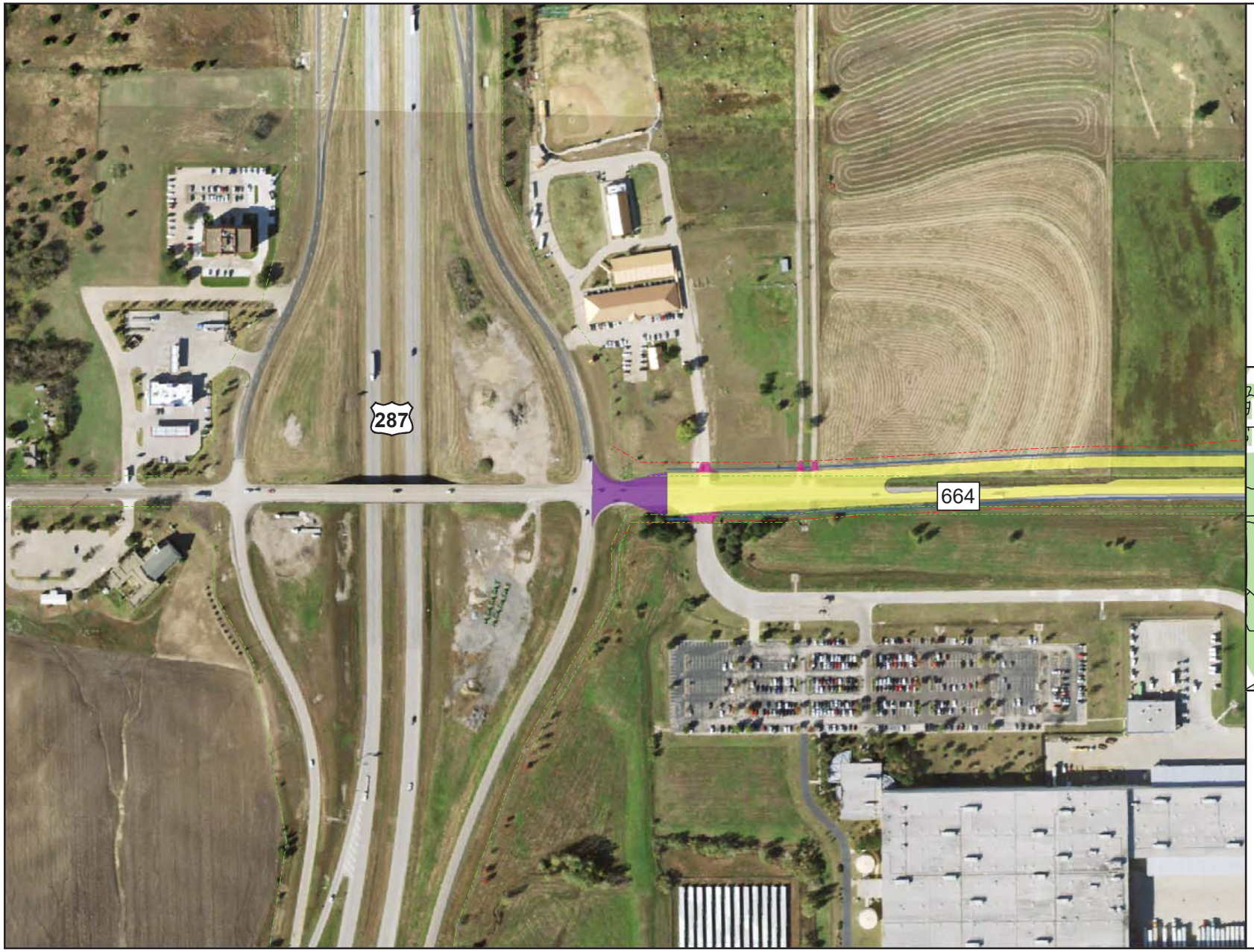
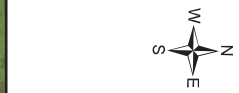


FIGURE 5

PROJECT LAYOUT MAP FM 664

FARM-TO-MARKET ROAD (FM) 664
From U.S. Highway (US) 287
To Westmoreland Road
Ellis County

CSJs: 1051-01-038 and 1051-01-052



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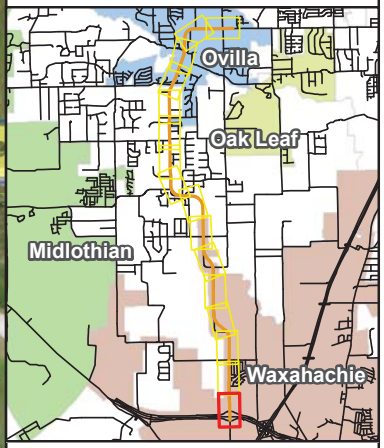

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Base Map Source: TNRIS (2018)

FIGURE 5

PROJECT LAYOUT MAP FM 664

FARM-TO-MARKET ROAD (FM) 664
From U.S. Highway (US) 287
To Westmoreland Road
Ellis County

CSJs: 1051-01-038 and 1051-01-052

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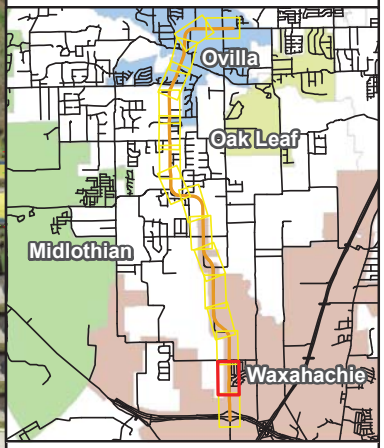

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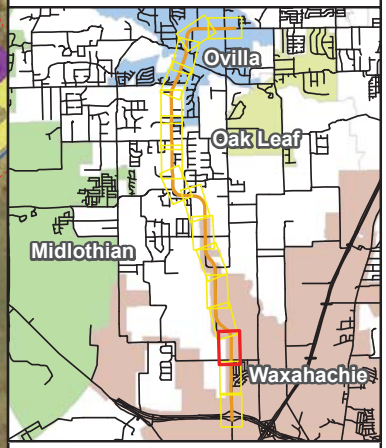

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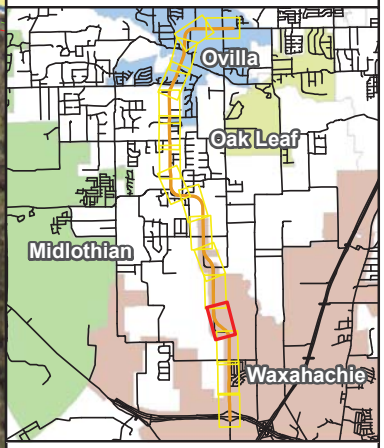

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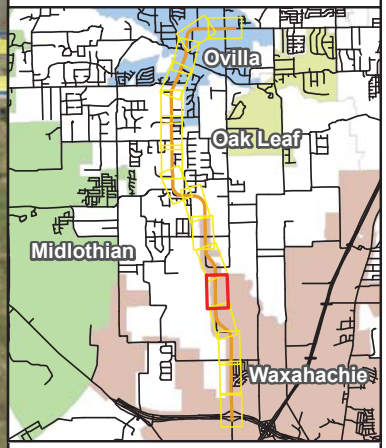

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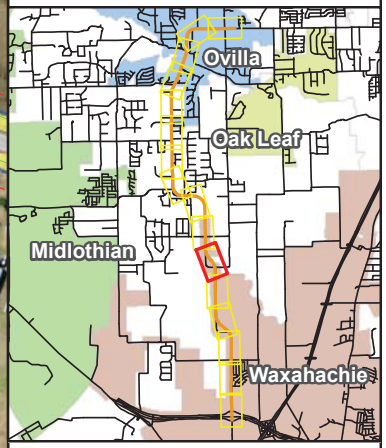

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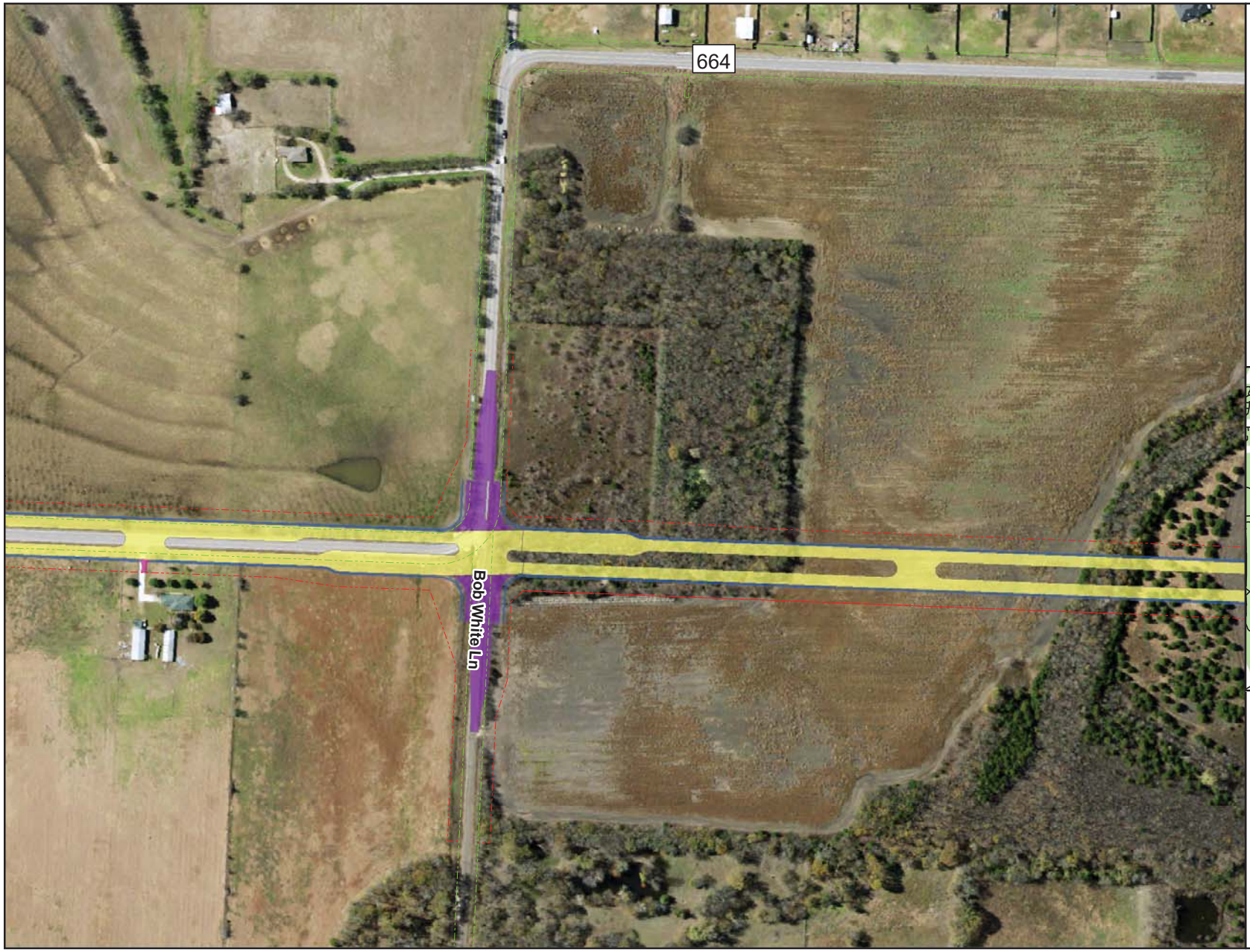

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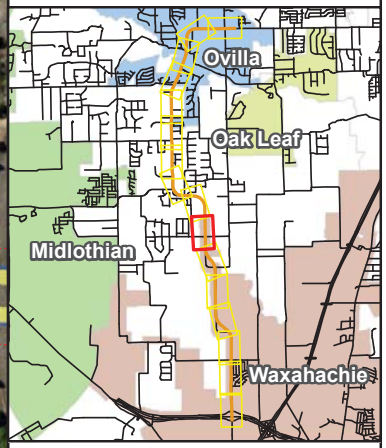

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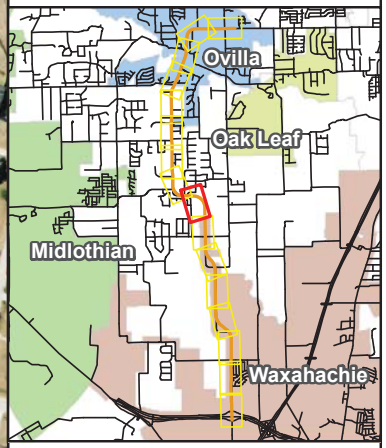

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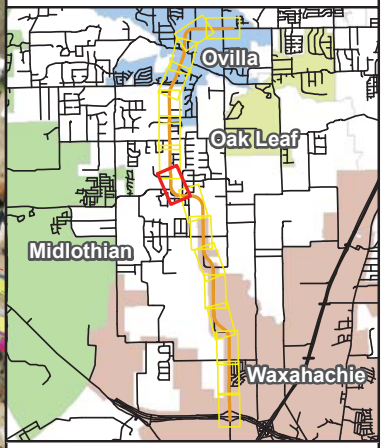

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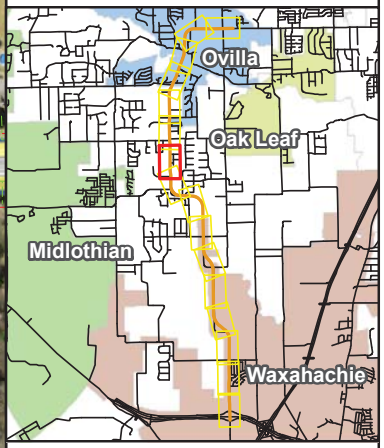

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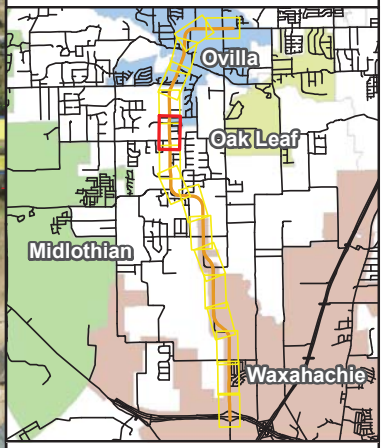

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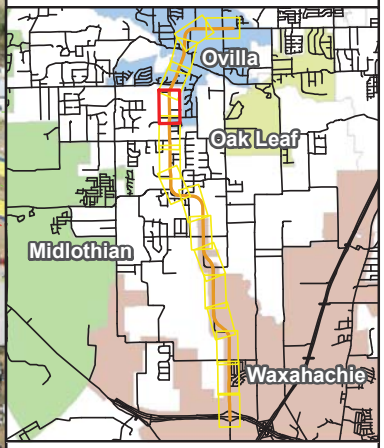

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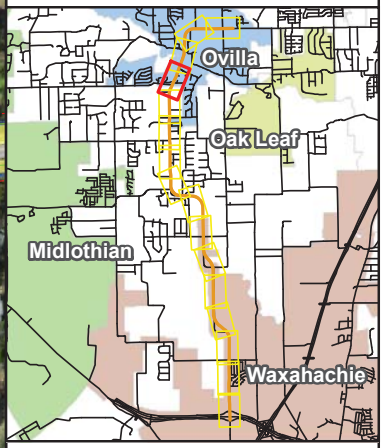

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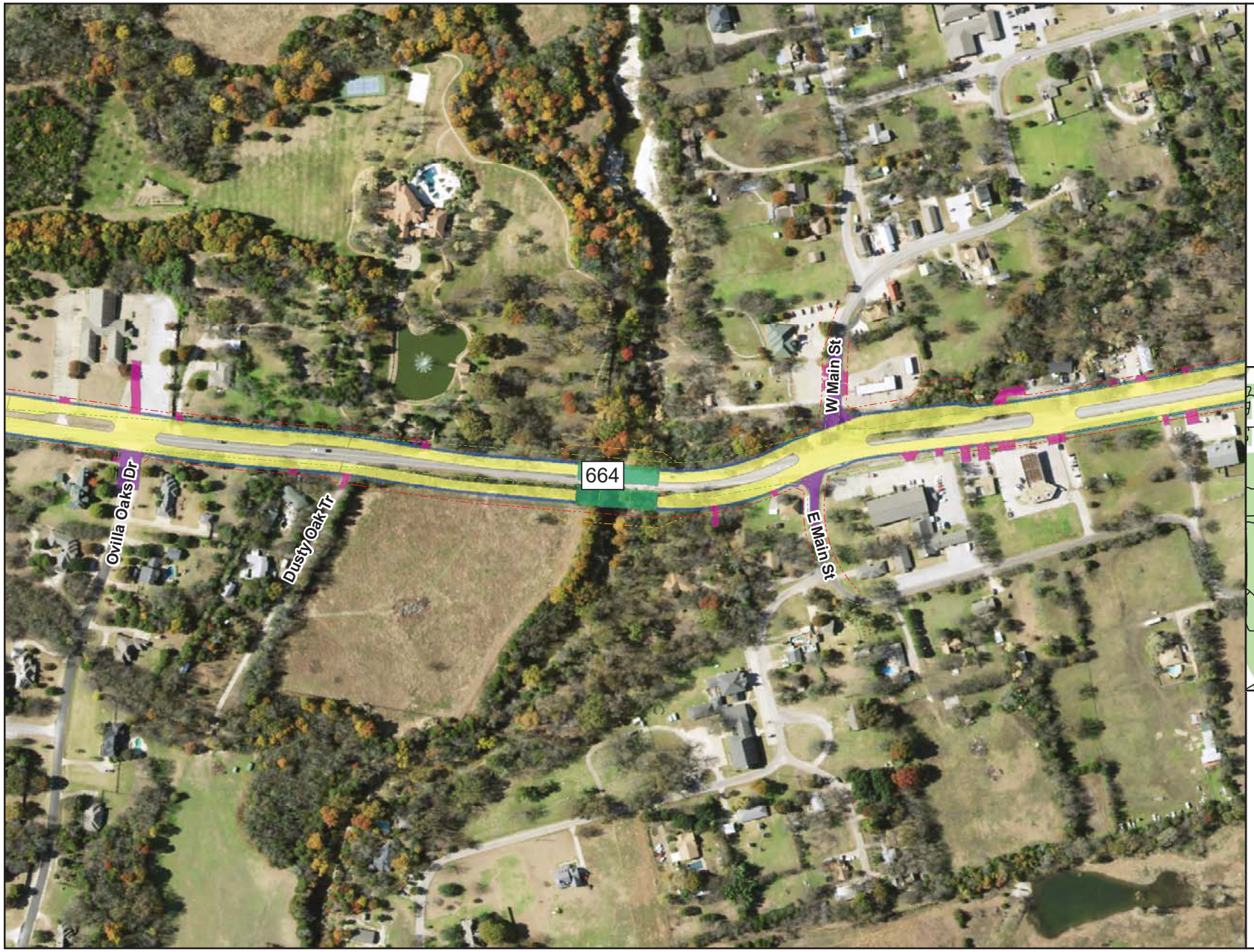

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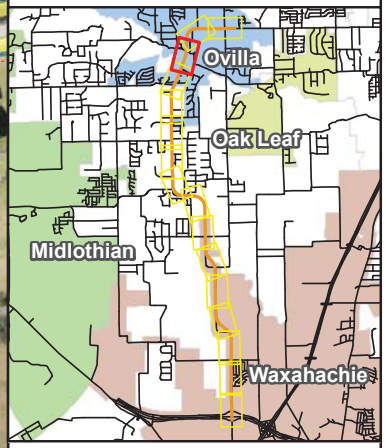

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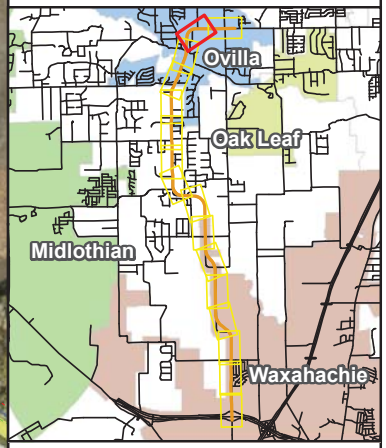

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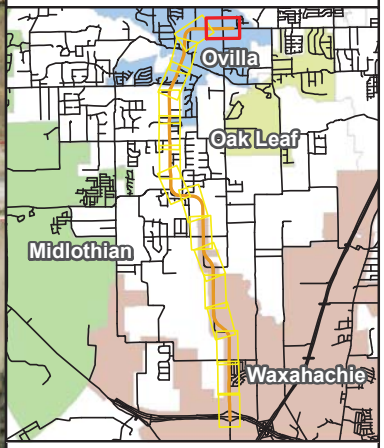

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Appendix B:
CMP Analysis

Ellis County, Texas

CSJs: 1051-01-038 and 1051-01-052

NCTCOG CMP
PROJECT IMPLEMENTATION FORM

Submitter Name: Austin Gibson
Agency Name: Texas Department of Transportation
Agency Address: 9330 LBJ Freeway Suite 1150 Dallas, Texas 75243-3497
Email: austin@civilassociates.com
Telephone Number: (214) 716-4589

Date: 11/7/2019

Please answer the following questions

Project Name FM 664
Project Limits (From) US 287
Project Limts (To) Westmoreland Road

2. Does this project add roadway capacity? (IF NOT, THIS FORM IS NOT REQUIRED)

YES

3. Are complementary Travel Demand Management (TDM) or Transportation System Management & Operations (TSM&O) projects within the corridor in the TIP?
If "yes," enter the project name(s), TIP Code(s) and/or CSJ number(s) in table below.
This information can be verified at the following link: Transportation Improvement Program Information System (TIPINS)
*For a list of TDM and TSM&O project types see: Appendix A - TDM and TSM&O Strategies

NO

Project Name	[Enter Here]	**TIP Code**		**CSJ#**	
Project Name	[Enter Here]	**TIP Code**		**CSJ#**	
Project Name	[Enter Here]	**TIP Code**		**CSJ#**	
Project Name	[Enter Here]	**TIP Code**		**CSJ#**	

3b. Are there any other projects not included in the TIP that may compliment the project?
If "yes," enter the project name(s) and implementing agency in table below.

NO

Project Name	[Enter Here]	**Implementing Agency**	[Enter Here]
Project Name	[Enter Here]	**Implementing Agency**	[Enter Here]
Project Name	[Enter Here]	**Implementing Agency**	[Enter Here]
Project Name	[Enter Here]	**Implementing Agency**	[Enter Here]

4. Are the project limits within a corridor included in the current Metropolitan Transportation Plan?
This information can be verified in the Mobility Options found here: Appendix E of the MTP (pg. 53 - 97 / pg. 102 - 112)
If "yes," enter the MTP Reference #(s) in table below

YES

MTP Reference #	1.563.200
MTP Reference #	2.710.225
MTP Reference #	[Enter Here]
MTP Reference #	[Enter Here]

5. Are the project limits within a corridor included in the current CMP Corridor Analysis?
The complete inventory of corridor fact sheets can be found here: Appendix C - CMP Corridor Fact Sheet

NO

*If "yes," please proceed to question six.
*If "no," please evaluate corridor to determine if improvements are needed by completing the Fact Sheet Form in Step 2 in the tab below, before proceeding to question six.

6. Is the corridor identified as deficient in any category?

YES

*If "yes," please proceed to questions seven.
*If "no," please proceed to question 11.

7. Identify corridor deficiencies as specified in the current CMP Corridor Analysis or in the CMP Roadway Deficiency Form. (Check all that apply)

- [x] Alternative Roadway Infrastructure
- [x] Modal Options
- [ ] System Demand
- [x] System Reliability

8. Review Appendix A of the current CMP or other available resources to identify possible congestion mitigation strategies to correct the deficiency. (Check all that apply)
Appendix A - TDM and TSM&O Strategies

- [ ] Commuter Transportation Options
- [ ] Freight Management Activities
- [ ] Incentive to Use Alternative Modes
- [ ] In-Vehicle System Efficiency Improvements
- [ ] Roadway Incident and Emergency Management Options
- [x] Roadway Infrastructure Improvements
- [x] Sustainable Development Improvements
- [x] System Management and Operations Improvements
- [ ] Transit System Efficiency Improvements
- [ ] Traveler Information Services
- [ ] Work Zone/Construction Management Operations

9. Specify deficiency-correcting congestion mitigation strategy that will be implemented as part of the project.

[ENTER HERE]

10. If not implementing a congestion mitigation stragegy, please explain reason.

[ENTER HERE]

11. Submit completed form to NCTCOG - CMP Team at: CMP@nctcog.org or by clicking SUBMIT below

*Submit button will auto generate email to NCTCOG with completed excel document attached.
Please finalize step by sending the email.

SUBMIT

CMP CORRIDOR ANALYSIS - FACT SHEET

ROADWAY NAME	FM 664

HIGHWAY	LIMITS	LENGTH	DIRECTION	MAINLANES
FM 664	From US 287 to Westmoreland Rd	8.08 miles	South-North	2

CORRIDOR FACTS (WITHIN 1 MILE)

Functional Class	Major Thoroughfare	**Direct Connections**	Yes
HOV Lanes	No	**Truck Lane Restriction**	No
Parrallel Freeways (within 5 miles)	I-35W	**Hazmat Route**	No
Shoulders	Narrow, limited	**Population**	15,432
Frontage Roads	No	**Number of Employees**	3,602
Bike Options	No	**FIM Training Participants**	No
Available Transit	No	**Crash Rate (Use Most Recent Year)**	44
Park and Ride	No	**Construction Status**	Not constructed

PARRALLEL ARTERIALS (ENTIRE LIMITS)

None.

PARRALLEL ARTERIALS (PARTIAL LIMITS)

None.

CORRIDOR SCORE (Results from Step 3 - CMP Deficiency Form)

ROADWAY	MODAL OPTIONS	SYSTEM DEMAND	SYSTEM RELIABILITY	SCORE
14	0	25	13	52

CONCLUSIONS/RECOMMENDATIONS

Improvements needed in three of the four categories: 1) Roadway Infrastructure, 2) Modal Options, 3) System Reliability

Addition of one mainlane in each direction.
Addition of continuous raised medianwith regular breaks for cross streets and driveway access.
Realignment to create greater flow of traffic and reduce hazard of existing 90-degree turns.
Addition of continuous sidewalks.

ADD PROJECT CORRIDOR SEGMENT MAP HERE.

SEE ATTACHMENT

DEFICIENCY FORM IS REQUIRED WITH THIS SHEET
PLEASE COMPLETE BY GOING TO TAB 3 (STEP 3. DEFICIENCY FORM)
CLICK HERE

Project Name:	FM 664
Project Limits (From and To):	US 287 to Westmoreland Rd
Agency Name:	Texas Department of Transportation
Submitter Name:	Austin Gibson
Telephone:	(214) 716-4589
Email:	austin@civilassociates.com
Date Submitted:	11/07/19

Alternative Roadway Corridor Deficiency

The factors that influence alternative roadway infrastructure include the presence of parallel freeways, frontage roads, parallel arterials, and direct connections or interchanges.

	Click Cell To Select Answer	Score
1. Does the roadway facility have a parallel freeway or toll road within five miles?	Yes	12
2. Does the roadway facility include a frontage road system?	No	0
3. Does the roadway facility have a parallel arterial within two miles?	No	0
4. Does the roadway network include a direct connection or non-signalized interchange to another highway?	Yes	2
Total Points Received in Alternative Roadway Infrastructure Category		**14**

If total score is 14 or below, then improvements are needed in this category. Please see Appendix A of the current CMP to identify possible congestion mitigation strategies to correct the deficiency.

Modal Options Deficiency

The factors that influence modal options include the presence of transit options (bus and/or rail), park-and-ride facilities, HOV/Managed Lanes, and bicycle/pedestrian options.

	Click Cell To Select Answer	Score
1. Does the roadway facility have established transit service?	No	0
2. Is a park-and-ride facility located along the roadway corridor?	No	0
3. Are HOV or Managed lanes available along the roadway corridor?	No	0
4. Are bike trails or other bike options available along the roadway corridor?	No	0
Total Points Received in Modal Options Category		**0**

If total score is 14 or below, then improvements are needed in this category. Please see Appendix A of the current CMP to identify possible congestion mitigation strategies to correct the deficiency.

System Demand (Recurring) Deficiency

The factors that influence system demand include traffic volume, truck volume/percentage, number of employees along the roadway corridor block, and residential population.

	Click Cell To Select Answer	Score
1. Is the peak hour volume capacity above or below the current average Peak V/C of 0.692?	Below or Equal to the Average	10
2. Is the truck volume percentage along the corridor above or below the current average of 9%?	Below or Equal to the Average	7
3. Is the total number of employees along the corridor above or below the current average of 82,549 (by TSZ)	Below or Equal to the Average	5
4. Is the population along the corridor above or below the current average of 74,611 (by TSZ)?	Below or Equal to the Average	3
Total Points Received in System Demand Category		**25**

If total score is 14 or below, then improvements are needed in this category. Please see Appendix A of the current CMP to identify possible congestion mitigation strategies to correct the deficiency.

System Reliability (Non-Recurring) Deficiency

The factors that influence system reliability include facility crash rates, agencies that participate in incident management training, truck lane restrictions, roadway shoulders, and the presence of Intelligent Transportation Systems (ITS) technology.

	Click Cell To Select Answer	Score
1. Is the crash rate for the corridor below or above the current crash rate average of 75.19?*	Below or Equal to the Average	10
2. Does the roadway facility have paved shoulders?	Yes, partial shoulders along the entire limits	3
3. Have emergency response agencies (police and fire) along the corridor participated in Freeway Incident Management (FIM) training?**	No	0
4. Have truck lane restrictions been implemented along the corridor?	No	0
5. Is Intelligent Transportation Systems (ITS) technology being utilized along the corridor?	No	0
Total Points Received in System Reliability Category		**13**

If total score is 14 or below, then improvements are needed in this category. Please see Appendix A of the current CMP to identify possible congestion mitigation strategies to correct the deficiency.

Notes:
*Please use most recent crash year if available.
**FIM attendance information is maintained by NCTCOG Safety staff. Please call 817-695-9245 to request information.
CMP 2013 - Appendix A

Appendix C:
Traffic Data

Cities of Ovilla and Waxahachie, Ellis County, Texas

CSJs: 1051-01-038 and 1051-01-052

Texas Department of Transportation

MEMO

September 10, 2018

To: Transportation Planning & Programming Division
William E. Knowles, P.E.

Through: Dan Perge, P.E.
Advance Project Development Engineer

From: Rakhshanda Mahar, P.E.
Project Manager/Transportation Engineer

Subject: Traffic Projections Approval
CSJ: 1051-01-038, 1051-01-052
FM 664
Ellis County

The attached Traffic Projection & Methodology report with traffic diagrams were reviewed by TTI and TxDOT Dallas District. The traffic diagrams depict the 2025, 2045 and 2055 anticipated average daily traffic and turning movements for the proposed FM 664 from US 287 in Waxahachie to Westmoreland Drive.

Please develop the noise, air and pavement data for this project.

The current RTL date is: **October 2023**

If any additional information or clarification is needed, please contact Rakhshanda Mahar, P.E. at (214)-320-6244 or Godfrey Sendawula at (214)-320-6266.

Attachments:

1 Copy of the Traffic Projections Methodology report with traffic diagrams.
1 Copy of TTI's QA/QC of Traffic Forecast Methodology

SR:sr
cc: **Godfrey Sendawula**
C-5E, 11-1, CSJ: 1051-01-038 and 1051-01-052 FM 664, Traffic Approval to TPP Division

TRAFFIC ANALYSIS FOR HIGHWAY DESIGN

Dallas District

January 25, 2019

Project FM 664 Corridor (No-Build Conditions)

Description of Location	Average Daily Traffic 2025	Average Daily Traffic 2045	Base Year Dir Dist %	Base Year K Factor	Base Year Percent Trucks ADT	Base Year Percent Trucks DHV	ATHWLD	Percent Tandem Axles in ATHWLD	Total Number of Equivalent 18k Single Axle Load Applications One Direction Expected for a 20 Year Design Period (2025 to 2045) Flexible Pavement	SN	Rigid Pavement	SLAB
FM 664 Section 1: From US 287 in Waxahachie To Marshall Rd Ellis County	10,800	15,525	60-40	11.4	4.1	3.1	10,900	20	1,275,000	3	1,389,000	8"

Data for Use in Air & Noise Analysis

Vehicle Class	Base Year % of ADT	Base Year % of DHV
Light Duty	95.9	96.9
Medium Duty	2.7	2.0
Heavy Duty	1.4	1.1

Project FM 664 Corridor (No-Build Conditions)

Description of Location	Average Daily Traffic 2025	Average Daily Traffic 2055	Base Year Dir Dist %	Base Year K Factor	Base Year Percent Trucks ADT	Base Year Percent Trucks DHV	ATHWLD	Percent Tandem Axles in ATHWLD	Total Number of Equivalent 18k Single Axle Load Applications One Direction Expected for a 20 Year Design Period (2025 to 2055) Flexible Pavement	SN	Rigid Pavement	SLAB
FM 664 Section 1: From US 287 in Waxahachie To Marshall Rd Ellis County	10,800	17,325	60-40	11.4	4.1	3.1	10,900	20	2,044,000	3	2,226,000	8"

TRAFFIC ANALYSIS FOR HIGHWAY DESIGN

Dallas District

January 25, 2019

Project FM 664 Corridor (No-Build Conditions)

Description of Location	Average Daily Traffic 2025	Average Daily Traffic 2045	Base Year Dir Dist %	Base Year K Factor	Base Year Percent Trucks ADT	Base Year Percent Trucks DHV	ATHWLD	Percent Tandem Axles in ATHWLD	Total Number of Equivalent 18k Single Axle Load Applications One Direction Expected for a 20 Year Design Period (2025 to 2045) Flexible Pavement	SN	Rigid Pavement	SLAB
FM 664 Section 2: From Marshall Rd To FM 1387 Ellis County	4,950	7,150	60-40	11.4	6.1	4.6	10,600	30	865,000	3	945,000	8"

Data for Use in Air & Noise Analysis

Vehicle Class	Base Year % of ADT	Base Year % of DHV
Light Duty	93.9	95.4
Medium Duty	4.0	3.0
Heavy Duty	2.1	1.6

Project FM 664 Corridor (No-Build Conditions)

Description of Location	Average Daily Traffic 2025	Average Daily Traffic 2055	Base Year Dir Dist %	Base Year K Factor	Base Year Percent Trucks ADT	Base Year Percent Trucks DHV	ATHWLD	Percent Tandem Axles in ATHWLD	Total Number of Equivalent 18k Single Axle Load Applications One Direction Expected for a 20 Year Design Period (2025 to 2055) Flexible Pavement	SN	Rigid Pavement	SLAB
FM 664 Section 2: From Marshall Rd To FM 1387 Ellis County	4,950	7,950	60-40	11.4	6.1	4.6	10,700	30	1,384,000	3	1,512,000	8"

TRAFFIC ANALYSIS FOR HIGHWAY DESIGN

Dallas District

January 25, 2019

Project FM 664 Corridor (No-Build Conditions)									Total Number of Equivalent 18k Single Axle Load Applications One Direction Expected for a 20 Year Design Period (2025 to 2045)			
	Base Year											
Description of Location	Average Daily Traffic		Dir Dist %	K Factor	Percent Trucks		ATHWLD	Percent Tandem Axles in ATHWLD	Flexible Pavement	SN	Rigid Pavement	SLAB
	2025	2045			ADT	DHV						
FM 664 Section 3: From FM 1387 To S Westmoreland Rd (N. Jnctn.) Ellis County	11,050	15,875	60-40	11.4	4.1	3.1	10,900	20	1,304,000	3	1,421,000	8"

Data for Use in Air & Noise Analysis		
	Base Year	
Vehicle Class	% of ADT	% of DHV
Light Duty	95.9	96.9
Medium Duty	2.7	2.0
Heavy Duty	1.4	1.1

Project FM 664 Corridor (No-Build Conditions)									Total Number of Equivalent 18k Single Axle Load Applications One Direction Expected for a 20 Year Design Period (2025 to 2055)			
	Base Year											
Description of Location	Average Daily Traffic		Dir Dist %	K Factor	Percent Trucks		ATHWLD	Percent Tandem Axles in ATHWLD	Flexible Pavement	SN	Rigid Pavement	SLAB
	2025	2055			ADT	DHV						
FM 664 Section 3: From FM 1387 To S Westmoreland Rd (N. Jnctn.) Ellis County	11,050	17,700	60-40	11.4	4.1	3.1	10,900	20	2,089,000	3	2,275,000	8"

TRAFFIC ANALYSIS FOR HIGHWAY DESIGN

Dallas District

January 25, 2019

Project FM 664 Corridor (Build Conditions)

Description of Location	Average Daily Traffic 2025	Average Daily Traffic 2045	Base Year Dir Dist %	Base Year K Factor	Base Year Percent Trucks ADT	Base Year Percent Trucks DHV	ATHWLD	Percent Tandem Axles in ATHWLD	Total Number of Equivalent 18k Single Axle Load Applications One Direction Expected for a 20 Year Design Period (2025 to 2045) Flexible Pavement	SN	Rigid Pavement	SLAB
FM 664 Section 1: From US 287 in Waxahachie To S Westmoreland Rd (S. Jnctn.) Ellis County	10,800	15,525	60-40	11.4	4.1	3.1	10,900	20	1,275,000	3	1,389,000	8"

Data for Use in Air & Noise Analysis

Vehicle Class	Base Year % of ADT	Base Year % of DHV
Light Duty	95.9	96.9
Medium Duty	2.7	2.0
Heavy Duty	1.4	1.1

Project FM 664 Corridor (Build Conditions)

Description of Location	Average Daily Traffic 2025	Average Daily Traffic 2055	Base Year Dir Dist %	Base Year K Factor	Base Year Percent Trucks ADT	Base Year Percent Trucks DHV	ATHWLD	Percent Tandem Axles in ATHWLD	Total Number of Equivalent 18k Single Axle Load Applications One Direction Expected for a 20 Year Design Period (2025 to 2055) Flexible Pavement	SN	Rigid Pavement	SLAB
FM 664 Section 1: From US 287 in Waxahachie To S Westmoreland Rd (S. Jnctn.) Ellis County	10,800	17,325	60-40	11.4	4.1	3.1	10,900	20	2,044,000	3	2,226,000	8"

TRAFFIC ANALYSIS FOR HIGHWAY DESIGN

Dallas District

January 25, 2019

Project FM 664 Corridor (Build Conditions)

Description of Location	Average Daily Traffic 2025	Average Daily Traffic 2045	Base Year Dir Dist %	Base Year K Factor	Base Year Percent Trucks ADT	Base Year Percent Trucks DHV	ATHWLD	Percent Tandem Axles in ATHWLD	Total Number of Equivalent 18k Single Axle Load Applications One Direction Expected for a 20 Year Design Period (2025 to 2045) Flexible Pavement	SN	Rigid Pavement	SLAB
FM 664 Section 2: From S Westmoreland Rd (S. Jnctn.) To FM 1387 Ellis County	4,825	6,900	60-40	11.4	6.2	4.7	10,600	30	852,000	3	931,000	8"

Data for Use in Air & Noise Analysis

Vehicle Class	Base Year % of ADT	Base Year % of DHV
Light Duty	93.8	95.3
Medium Duty	4.0	3.0
Heavy Duty	2.2	1.7

Project FM 664 Corridor (Build Conditions)

Description of Location	Average Daily Traffic 2025	Average Daily Traffic 2055	Base Year Dir Dist %	Base Year K Factor	Base Year Percent Trucks ADT	Base Year Percent Trucks DHV	ATHWLD	Percent Tandem Axles in ATHWLD	Total Number of Equivalent 18k Single Axle Load Applications One Direction Expected for a 20 Year Design Period (2025 to 2055) Flexible Pavement	SN	Rigid Pavement	SLAB
FM 664 Section 2: From S Westmoreland Rd (S. Jnctn.) To FM 1387 Ellis County	4,825	7,700	60-40	11.4	6.2	4.7	10,700	30	1,365,000	3	1,492,000	8"

TRAFFIC ANALYSIS FOR HIGHWAY DESIGN

Dallas District

January 25, 2019

Project FM 664 Corridor (Build Conditions)									Total Number of Equivalent 18k Single Axle Load Applications One Direction Expected for a 20 Year Design Period (2025 to 2045)			
	Base Year											
Description of Location	Average Daily Traffic		Dir Dist %	K Factor	Percent Trucks		ATHWLD	Percent Tandem Axles in ATHWLD	Flexible Pavement	S N	Rigid Pavement	SLAB
	2025	2045			ADT	DHV						
FM 664 Section 3: From FM 1387 To S Westmoreland Rd (N. Jnctn.) Ellis County	11,050	15,875	60-40	11.4	4.1	3.1	10,900	20	1,304,000	3	1,421,000	8"

Data for Use in Air & Noise Analysis		
	Base Year	
Vehicle Class	% of ADT	% of DHV
Light Duty	95.9	96.9
Medium Duty	2.7	2.0
Heavy Duty	1.4	1.1

Project FM 664 Corridor (Build Conditions)									Total Number of Equivalent 18k Single Axle Load Applications One Direction Expected for a 20 Year Design Period (2025 to 2055)			
	Base Year											
Description of Location	Average Daily Traffic		Dir Dist %	K Factor	Percent Trucks		ATHWLD	Percent Tandem Axles in ATHWLD	Flexible Pavement	S N	Rigid Pavement	SLAB
	2025	2055			ADT	DHV						
FM 664 Section 3: From FM 1387 To S Westmoreland Rd (N. Jnctn.) Ellis County	11,050	17,700	60-40	11.4	4.1	3.1	10,900	20	2,089,000	3	2,275,000	8"

Archeological Background Study

FM 664 From North of US 287 to West of Westmoreland Road, Ellis County, Texas

CSJ: 1051-01-038 and 1051-01-052

Michael Chidley, M.A., RPA & Amy C, Favret, M.A., RPA
Jacobs Engineering, Inc.
July 2019

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 16, 2014, and executed by FHWA and TxDOT.

Project Description

The Texas Department of Transportation (TxDOT) proposes the widening of Farm to Market Road (FM) 664 in Ellis County, Texas. The existing two-lane facility would ultimately be reconstructed and widened to a four-lane divided roadway (with an ultimate of six-lanes) from north of US 287 to Westmoreland Road, a distance of approximately 8.1 miles (see Project Location Map in **Appendix A**).

This document is intended to identify known archeological sites, as well as the physiographic conditions that could contain intact archeological deposits. Background research consisted of an online records search of the Texas Historical Commission (THC) Archeological Sites Atlas (THC Atlas 2018) and a review of historic maps and aerial photographs. The research focused on the identification of previously recorded archeological sites, cultural resources sites designated as State Antiquities Landmarks (SALs), Recorded Texas Historic Landmarks (RTHLs) and listed in or eligible for the National Register of Historic Places (NRHP), cemeteries, and previously conducted archeological surveys within a 1-kilometer (km) (0.62-mile) radius around the project limits (Study Area).

The project's physiographic setting was evaluated using the Geologic Atlas of Texas (USGS 2018), and the Natural Resource Conservation Service Web Soil Survey (NRCS 2018) and the Dallas District Hybrid Potential Archeological Liability Map (HPALM) predictive model (Abbott and Pletka 2017) to determine if conditions are suitable for the stratigraphic preservation of archeological resources.

Proposed Facility

The proposed project is in north-central Ellis County, and begins at US 287 in the City of Waxahachie and extends roughly 7.8 miles north to Westmoreland Road in the City of Ovilla. The proposed project would consist of reconstructing, realigning, and widening the existing two-lane undivided rural roadway to a four-lane divided roadway (six-lanes ultimate). Approximately 3.1 miles of the 8.08-mile project length would be realigned. The proposed improvements are expected to be constructed within a typical 150-foot-wide right-of-way (ROW). New ROW is required for the project from both sides of FM 664 for the proposed widening and realigning. Additional ROW in the form of corner clips is required at most street crossings/intersections. Improvements also include eliminating 90-degree turns between Marshall Road and FM 1387 by realigning the roadway and constructing partially on new location.

Area of Potential Effects

The existing ROW for the project is typically 100 feet (ft) wide and approximately 60 acres. The typical width of the proposed ROW width is 150 ft and would require approximately 83.69 acres, including approximately 87.18 acres of new ROW and 0.61 acres of easement. The maximum depth of construction (vertical Area of Potential Effects [APE]) is estimated to be a typical depth of 4 ft to accommodate utilities and road grading, and approximately 50 ft for drilled shafts for bridge

construction at Red Oak Creek. The APE for archeological sites encompasses the 8.08-mile project limits, the vertical APE and the 100- to 150-ft wide existing and proposed ROWs, totalling approximately 143.69 acres. A map of the APE is provided in **Appendix B** and typical sections are included in **Appendix C**.

Physiography

The project area is situated on the Northern Blackland Prairie ecological region of Texas (Griffith et al. 2004). This region is underlain by Upper Cretaceous marine chalks, marls, limestones, and shales which gave rise to the formation of the characteristic black calcareous clay soils (e.g., Houston Black). The Blackland Prairie is characterized by sloping to gently rolling topography, which once sustained lush grassland prairies; today much of the land is used for farming, livestock and industrial purposes.

The APE is located at elevations ranging from 600 to 750 ft, which gradually increase from north to south along the project limits. The APE traverses rolling uplands comprised mostly of residential communities surrounding the city of Ovilla in the northern half, transitioning to rural pastureland in the southern half. The USGS topographic map for Ellis County shows that the APE intersects with Red Oak Creek, South Grove Creek and its drainages, and a small drainage of Irving Branch.

Soils and Geology

The review of the soil data for Ellis County (NRCS 2018) indicated a total of 14 map units in the APE. Descriptions of these soil types in terms of physical characteristics, acreage and frequency in the APE are provided in **Table 1** and discussed below.

Table 1: Soil units mapped in the APE (NRCS 2018).

Soil Unit Symbol	Soil Unit Name	Soil Characteristics (landform, texture and origin)	Approx. acreage in APE	Percentage in APE
AuB	Austin silty clay, 1 to 3 percent slopes	ridges, silty clay, residuum weathered from chalk	71.75	50%
AuC2	Austin silty clay, 2 to 5 percent slopes, eroded	ridges, silty clay, residuum weathered from chalk	3.65	3%
AuD2	Austin silty clay, 5 to 8 percent slopes, moderately eroded	ridges, silty clay, residuum weathered from chalk	2.75	2%
BkC2	Whitewright and Austin soils, 2 to 5 percent slopes eroded	ridges, silty clay loam, residuum weathered from chalk	0.15	0.1%

Soil Unit Symbol	Soil Unit Name	Soil Characteristics (landform, texture and origin)	Approx. acreage in APE	Percentage in APE
Br	Broken alluvial land, rarely flooded	drainage ways, clay loam, silty alluvium of Quaternary age derived from chalk	1.35	1%
EcB	Eddy gravelly clay loam, 1 to 3 percent slopes	ridges, gravelly clay loam, residuum weathered from chalk	3.15	1.7%
EdD2	Eddy soils, 3 to 8 percent slopes, eroded	ridges, gravelly clay loam, residuum weathered from chalk	11.25	8%
EdF	Eddy soils, 8 to 20 percent slopes	ridges, gravelly clay loam, residuum weathered from chalk	1.35	.9%
Fr	Frio silty clay, 0 to 1 percent slopes, frequently flooded	floodplains, silty clay, calcareous loamy and/or clayey alluvium derived from mudstone	1.15	1%
Fs	Frio silty clay, 0 to 1 percent slopes, occasionally flooded	floodplains, silty clay, calcareous loamy and/or clayey alluvium derived from mudstone	1.05	1%
HaB	Houston Black clay, 1 to 3 percent slopes	ridges, clay, clayey residuum weathered from calcareous mudstone of upper Cretaceous age	38.55	27%
SeB2	Stephen-Eddy complex, 1 to 3 percent slopes, eroded	ridges, silty clay, residuum weathered from chalk	3.55	2%
SeC2	Stephen-Eddy complex, 2 to 5 percent slopes	ridges, silty clay, residuum weathered from chalk	1.45	1%
StB	Stephen silty clay, 1 to 4 percent slopes	ridges, silty clay, residuum weathered from chalk	2.45	2%
Totals			143.69	100.0%

Based on the NRCS data, the soil units with potential for buried deposits are those located on alluvial floodplains. Soils with these characteristics consist of Broken alluvial land (Br), and Frio silty clay (Fr), which are located near Red Oak Creek. The remaining soil units are characterized as residual soils, which are typically found on uplands and have a low potential for deeply buried deposits since such soils formed in place prior to the arrival of humans to North America. Similarly, the underlying geology in the APE consists entirely of the Cretaceous-age Austin Chalk formation.

Cultural Resources

Previously Identified Archeological Sites and Surveys

The review of the Atlas revealed a total of three archeological sites and two cemeteries documented in the Study Area. The THC Atlas indicates that much of the APE has not previously undergone any formal cultural resources investigations. Information for archeological sites 41EL57, 41EL152 and 41EL258 is provided in **Table 2** and discussed below. The locations of the archeological sites, cemeteries, and previous cultural resource survey areas identified in the Study Area are included in **Appendix B**.

Table 2: Archeological sites documented in the Study Area (THC 2018).

Site Trinomial	Site Description	Recorder and Year	NRHP/SAL Eligibility	Distance from APE (meters [m])
41EL57	Historic homestead	D. Brown and D. Anthony 1990	Undetermined	84.35 m
41EL152	No site record	n/a	n/a	483.9 m
41EL258	Unspecified historic	Unspecified	Ineligible	Within ROW

Site 41EL57 is in a rural area and is described on the THC Atlas as a 1920s-era homestead containing a house, barn and two sheds. The site recorder denoted the presence of a "former house" located 276.73 ft (84.35 m) north of the homestead complex. The site centroid is mapped approximately 60 m (190 ft) southwest of the APE; the boundary of the site encompasses the complex of structures that extends northeast, overlapping with a portion of the APE (see Page 4 of **Appendix B**). Site 41EL57 was recorded in 1990 for the Rockett Water Supply Line project, which was determined by the site recorders to have negligible impacts to the site where it intersects with the site. Although an assessment of the buildings and their layout were documented during the initial recording, shovel testing and artifacts analyses have not been conducted. As such, the NRHP/SAL eligibility status of 41EL57 remains undetermined. No information is available on the THC Atlas for sites 41EL152 and 41258 beyond a determination that the latter site is ineligible for NRHP inclusion.

Cemeteries and Historical Markers

Two cemeteries (Ovilla and Shiloh) are located over 100 m (300 ft) outside of the APE in the city of Ovilla, Texas. Both are designated as Historic Texas Cemeteries and both have associated historic markers. Ovilla Cemetery (THC Atlas Marker 11782) was established by the New Ovilla Methodist Episcopal Church in 1886 and was designated a Historic Cemetery in 2000. The earliest marked grave is from 1884 and those interred at the cemetery include early settlers of the Ovilla community (founded in 1844) as well as veterans of the Civil War and later wars. Shiloh Cemetery (THC Atlas Marker 12572) was founded by the Shiloh Cumberland Presbyterian Church around the same time as Ovilla. The earliest marked grave from Shiloh Cemetery is from 1851; other grave stones mark the remains of pastors who served the Shiloh Church as well as war veterans and fraternal lodge members.

Three additional historical markers are located near the APE (in the town of Ovilla). The following historical marker descriptions are the respective summaries provided on the THC Atlas. Marker 7135 commemorates the town of Ovilla and is just east of the existing FM 664 ROW. As one of the oldest communities in Ellis County, Ovilla began as a fortified settlement built in 1844 on upper Red Oak Creek. Shiloh Cumberland Presbyterian Church was founded in 1847 and the town's first schoolhouse was erected in 1849. By the turn of the century, Ovilla had a post office, banks, several stores, and a cotton gin. Fires in 1918 and 1926 destroyed most of the downtown buildings, and this destruction, together with the fact that Ovilla was bypassed by railroads and major highways, led to a decline in growth (Stewart 2010).

Historical marker 7148 commemorates Shiloh Cumberland Presbyterian Church and is located approximately within the ROW. The Shiloh Cumberland Presbyterian Church congregation was chartered with twenty members on July 25, 1847, two years before the formation of Ellis County. The church was initiated under the leadership of the Rev. Finis E. King, a pioneer area minister, with the assistance of the Rev. J.C. Provine of Paris in Lamar County. Worship services were first conducted under a brush arbor and later in a cedar log tabernacle constructed by Matt McElroy and his eight sons. In 1872, during the pastorate of the Rev. D.G. Molloy, the present frame sanctuary was completed. J.P. Laughlin built the structure using lumber from Cherokee County in East Texas. Ministers here have included such prominent early Presbyterian preachers as the Rev. King, pastor from the church's organization until his death in 1859, and the Rev. E.M. White, who was instrumental in the formation of several Ellis County churches. Since the earliest days of settlement, the Shiloh Cumberland Presbyterian congregation has led in the development of Ovilla and the surrounding area.

Historic marker 13254 commemorates First Baptist Church of Ovilla and lies approximately 14 m (45 ft) to the west of the APE. Area residents organized a Baptist church in September 1903. The next year, the community built a wooden tabernacle on Red Oak Creek for use by local churches, including the Baptist congregation, which participated in regular services and revivals. In 1922, the Rev. Bob Burleson became the first full-time pastor for the Baptists. Records are unclear about

other early meeting spaces, but in 1936 the congregation built a sanctuary at this site, adding other facilities over time. More than 100 years after its initial organization, First Baptist Church of Ovilla still serves the community through worship, support and outreach.

Historic Land Use

A review of the historic aerial maps (NETR 2018) was conducted to determine how the Study Area had been utilized over time. The earliest available aerial photography for the area was produced in 1958 and covers the area between the northern project terminus and the southern outskirts of Ovilla. This map revealed that FM 664, or Ovilla Road, was extant along much of the current alignment and that the Ovilla city limits provided the only residential development in the Study Area. Aerial photography and topographic maps since that time show that the surrounding area underwent minimal change until the early-21st century when isolated subdivisions become increasingly common in the northern and central portions of the Study Area. The rural pasturelands to the south, however, have gone mostly unchanged since the mid-20th century.

As Dallas grew, however, and people started moving from the city to the suburbs, Ovilla once again began to grow. To escape annexation by DeSoto or any other neighboring city, the town of Ovilla was incorporated in 1963.

The southern half of the Study Area is on the northern outskirts of the city of Waxahachie. The following provides a summary of the *Handbook of Texas Online* entry for Waxahachie, TX (Felty 2010). The city derives its name from an Indian word meaning cow or buffalo, and the local Waxahachie Creek. The city was established as the Ellis County seat in 1850 on land donated by pioneer settler, Emory W. Rogers. The first county courthouse, a general store and the post office opened that same year and other businesses and residences soon followed. Following the organization of a Methodist church by local residents in the spring of 1849 at Rogers's home, the first church building was constructed in 1851 on land owned by Rogers. Before the Civil War four churches, Methodist, Baptist, Cumberland Presbyterian, and "Old School" Presbyterian, existed in Waxahachie.

Following establishment of its first schools, bank and newspaper between 1860 and 1870, Waxahachie was incorporated in 1871. Four years later the state legislature granted a corporate charter to the investors in the Waxahachie Tap Railroad to construct and operate a rail line to Garrett, twelve miles east. Ground was broken for the line on June 14, 1875; construction was completed, and the line was in operation in September 1879. Within one year of its completion the road transported over 5,000 bales of cotton from Waxahachie and carried over 140 carloads of lumber into the community. The arrival of additional rail lines during succeeding decades combined with the county's growing agricultural production to accelerate prosperity and rapid growth. The Civil War and Reconstruction seemed to have little effect on the development of Waxahachie.

HPALM

The review of the Dallas District HPALM (Abbott and Pletka 2017) showed that roughly 75 percent of the APE (135.37 acres) falls within Map Unit 1, which has a low potential for shallow or deeply buried geoarchaeological deposits. The second highest frequency in the APE is Map Unit 4 (12.56% or 22.61 acres), which has a moderate potential for shallow and low potential for deeply buried deposits. Map Unit 4 is found along sloping terrain near drainages where there is potential for colluvial deposition. The unit with the highest potential for geoarchaeological deposits (Map Unit 9) accounts for 1.36 percent of the APE (2.46 acres) and is found along the alluvial terraces of Red Oak Creek. A detailed breakdown of the acreage and frequency of each HPALM Unit mapped in the APE is provided below in **Table 3**. A map showing the distributions of the HPALM data is included in **Appendix D**.

Table 3: HPALM Map Units for the APE.

HPALM Unit	Map Unit Description	Acres in APE	Percentage of APE
1	low potential	135.37	75.18%
2	low shallow potential, moderate deep potential	1.85	1.03%
4	moderate shallow potential, low deep potential	22.61	12.56%
5	moderate potential	15.23	8.46%
6	moderate shallow potential, high deep potential	0.92	0.51%
7	high shallow potential, low deep potential	1.62	0.90%
9	high potential	2.46	1.36%
Totals		143.69	100%

Summary and Recommendations

In summary, there is a low potential for archeological materials to be present within most of the APE. The project area is mostly flat or rolling upland prairie with low geoarchaeological potential for buried prehistoric sites, as evidenced by the occurrence of HPALM Unit 1 throughout much of the APE. In addition, modern disturbances have had a small effect on the likelihood for preserved prehistoric- and historic-age archeological materials.

The review of the THC Atlas data indicated that no previously documented archeological sites listed on or eligible for NRHP inclusion and/or SAL designation would be impacted by the proposed project. However, site 41EL258 is present within the ROW and currently has an undetermined NRHP/SAL eligibility status. In addition, the soil and HPALM data indicate there is a high potential for geoarchaeological deposits in the portions of the APE that overlap with the alluvial terraces at Red Oak Creek where proposed construction depths are the deepest. The proposed ROW portion of the APE has not undergone prior cultural resource investigations and could potentially contain archeological resources in undisturbed context. Undisturbed archeological sites with stratigraphic preservation can potentially have integrity of location, which is an important element of NRHP eligibility under 36 CFR 60.4 of the National Historic Preservation Act (NHPA). Much of the

remaining APE contains a low potential for geoarchaeological deposits as evidenced by the HPALM data.

The Red Oak Creek and South Grove Creek floodplains have potential for NHPA-eligible prehistoric archeological sites to be preserved near the surface and at deeper levels. Therefore, an intensive archeological survey is recommended in areas where a high potential for geoarchaeological deposits (HPALM Unit 9) is indicated, and where new ROW is proposed. The survey should include pedestrian survey and shovel testing supplemented by backhoe trenching in the high potential areas.

It is therefore recommended that Section 106 review and consultation should proceed in accordance with the Programmatic Agreement among TxDOT, THC, Federal Highway Administration, and Advisory Council on Historic Preservation, as well as the Memorandum of Understanding between THC and TxDOT.

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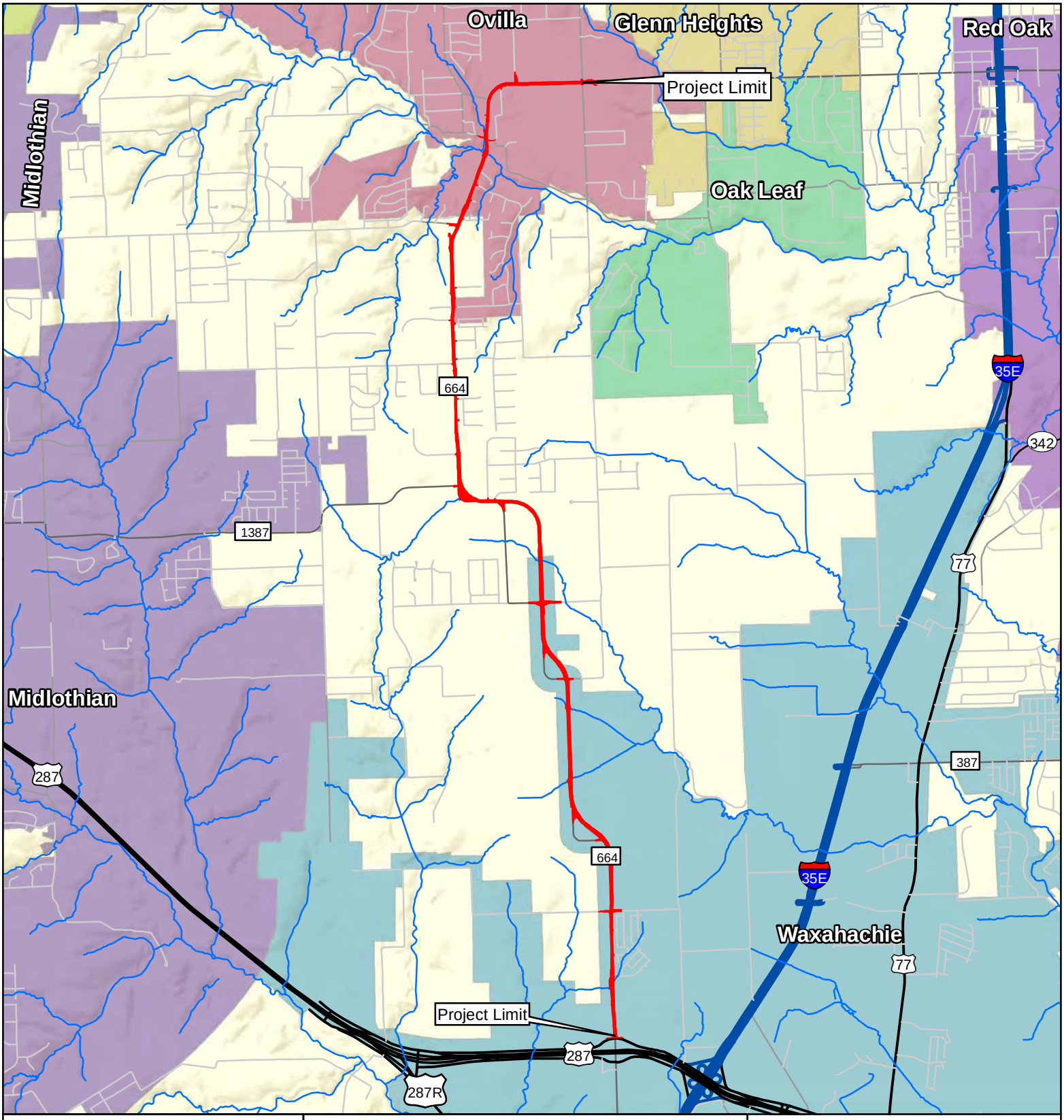
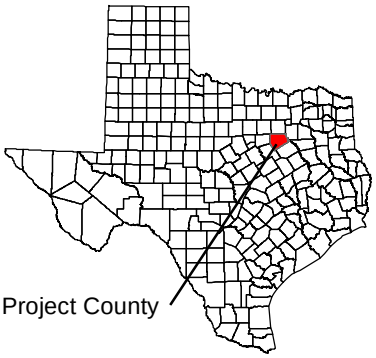
APPENDIX A:
PROJECT LOCATION MAP





Project Location Map

FM 664 From North of US 287 to
West of Westmoreland Road
Ellis County, Texas
CSJ: 1051-01-038 and 1051-01-052

Texas Department of Transportation

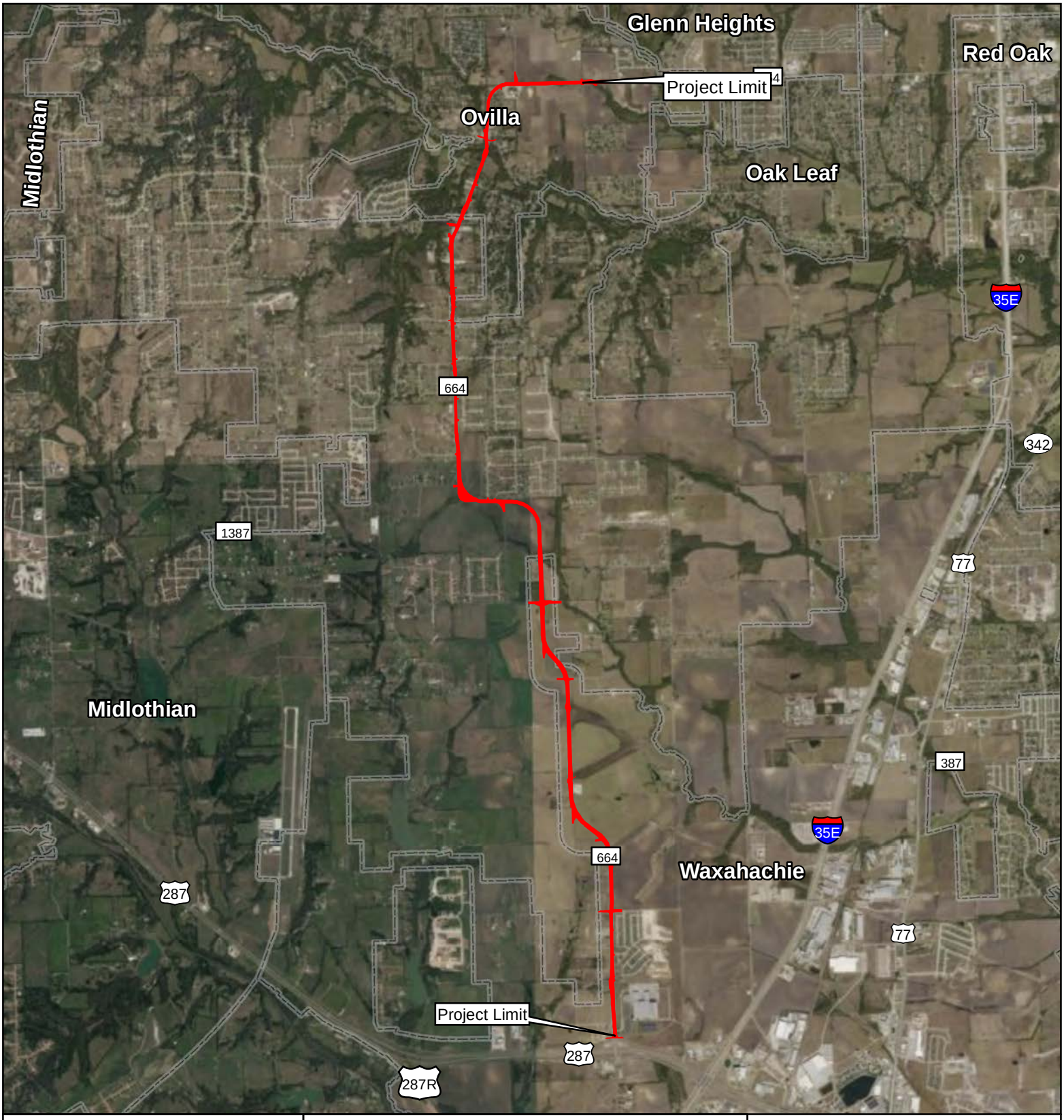
0 0.25 0.5 1 Miles

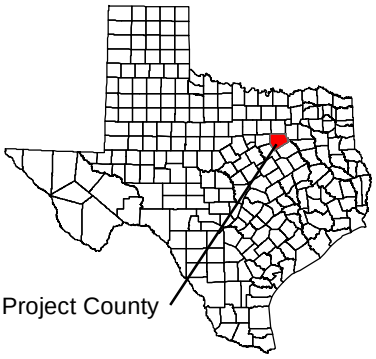
N

Legend

- Project Area
- Waterway

Map Created: 7/24/2019





Project Location Map

FM 664 From North of US 287 to
West of Westmoreland Road
Ellis County, Texas
CSJ: 1051-01-038 and 1051-01-052

Texas Department of Transportation

0 0.25 0.5 1 Miles

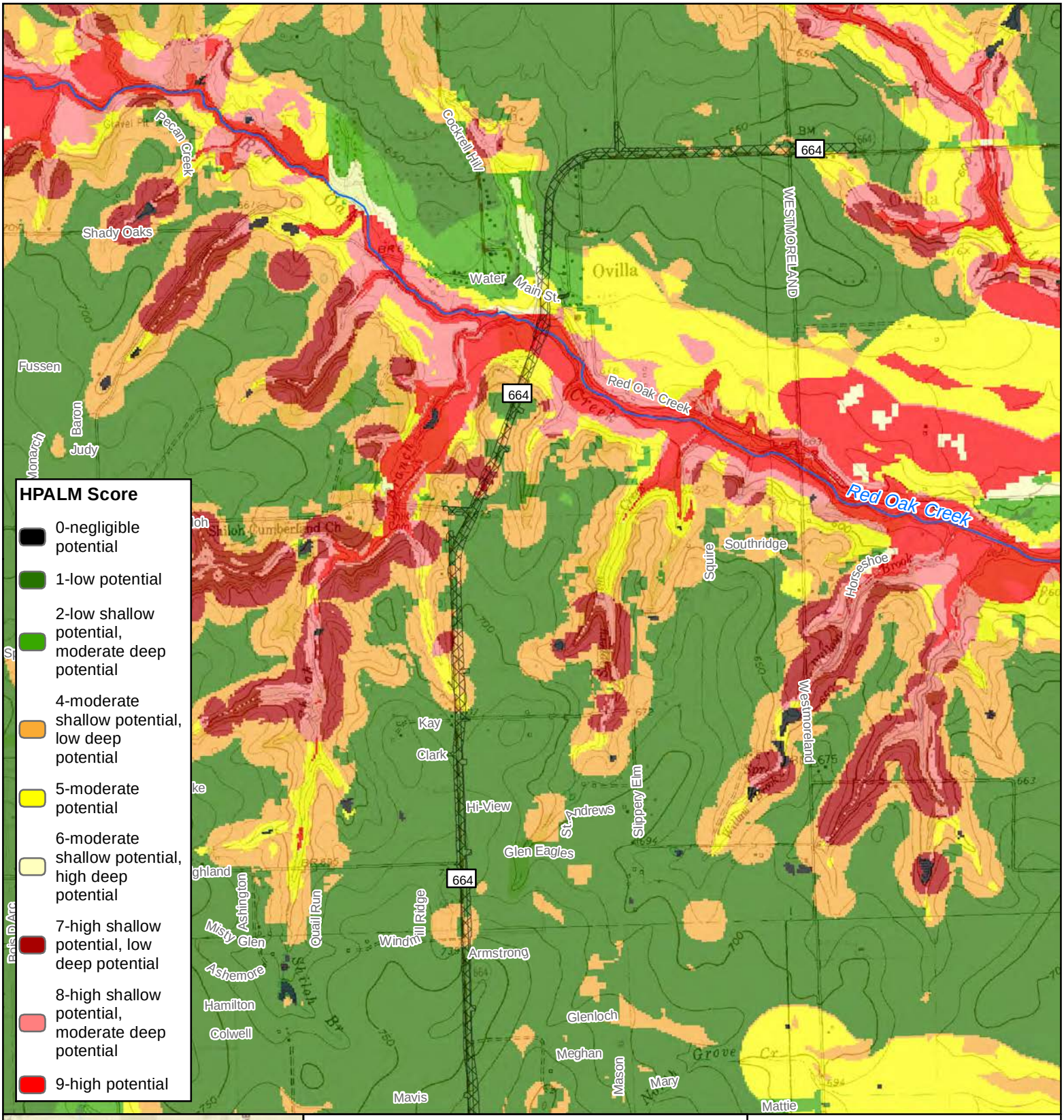
N

Legend

- Project Area
- Waterway

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

APPENDIX D:
HPALM DATA MAP



HPALM Data Map (Page 1 of 3)

FM 664 From North of US 287 to West of Westmoreland Road
Ellis County, Texas
CSJ: 1051-01-038 and 1051-01-052

Texas Department of Transportation

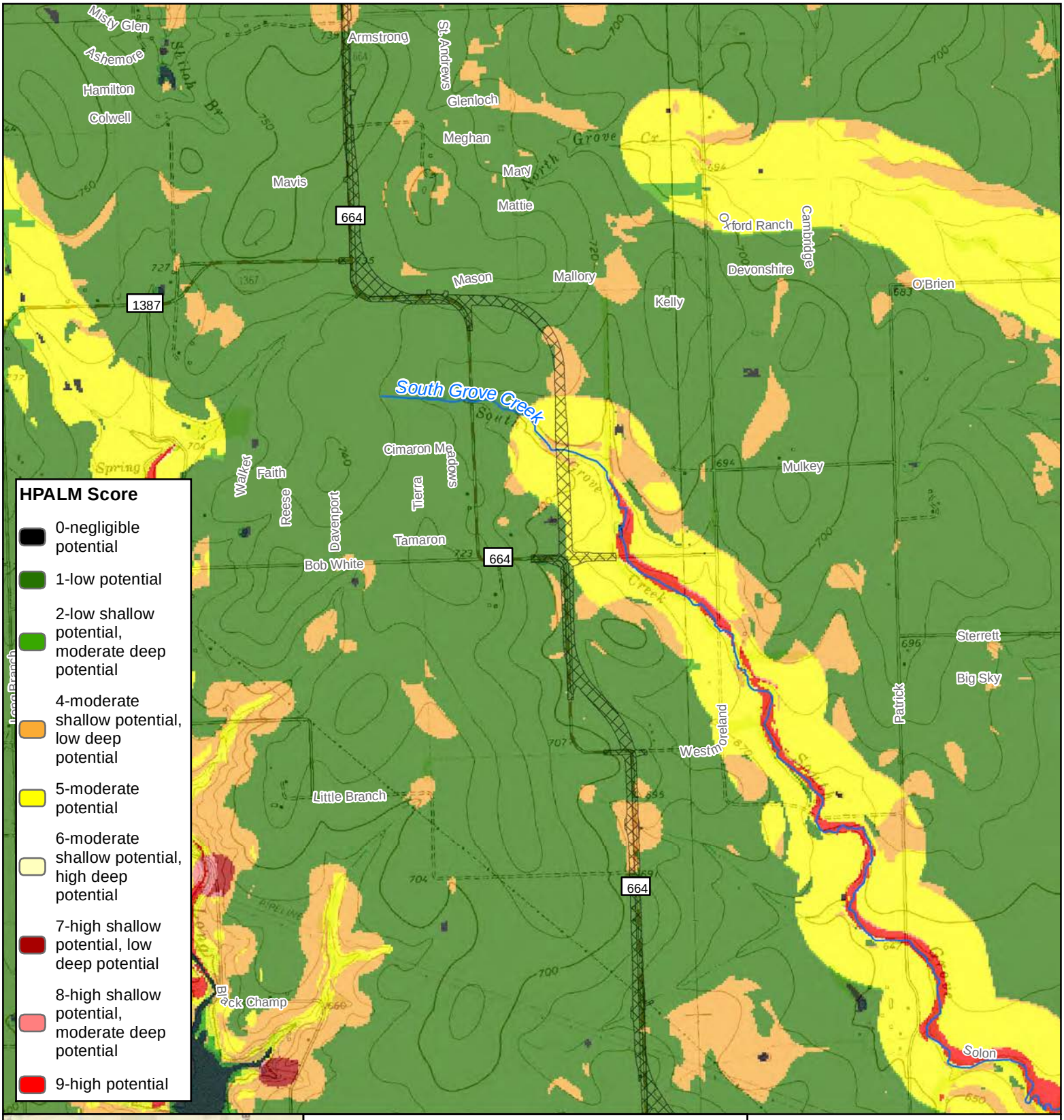
0 650 1,300 2,600 Feet

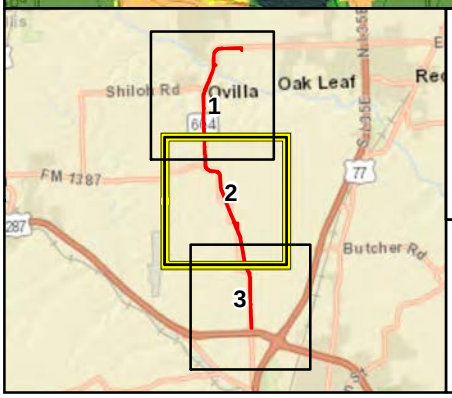
0 195 390 780 Meters

N

Legend

Project APE





HPALM Data Map
(Page 2 of 3)

FM 664 From North of US 287 to
West of Westmoreland Road
Ellis County, Texas
CSJ: 1051-01-038 and 1051-01-052

Texas Department of Transportation

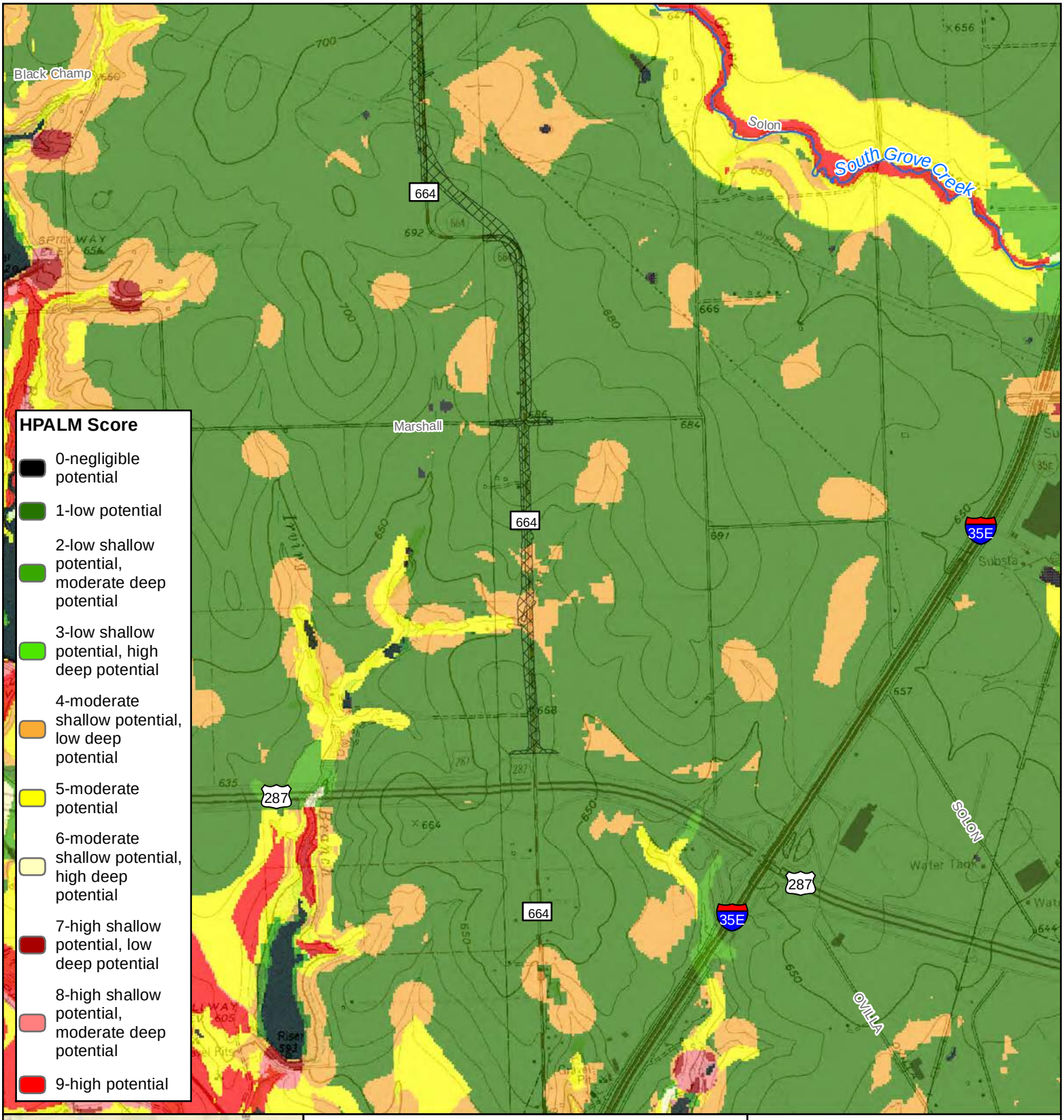
0 650 1,300 2,600 Feet

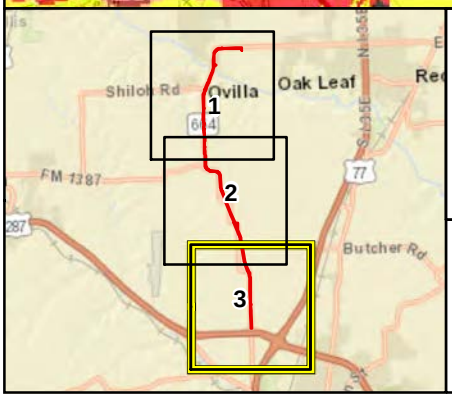
0 195 390 780 Meters

N

Legend

Project APE





HPALM Data Map (Page 3 of 3)

FM 664 From North of US 287 to
West of Westmoreland Road
Ellis County, Texas
CSJ: 1051-01-038 and 1051-01-052

Texas Department of Transportation

0 650 1,300 2,600 Feet

0 190 380 760 Meters

N

Legend

Project APE

Species Analysis Form and Tier I Site Assessment

Farm-to-Market (FM) 664

From: U.S. Highway (US) 377
To: Westmoreland Road

Ellis County, Texas
Control-Section-Job (CSJ) 1051-01-038 & 1051-01-052

Date: April 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 16, 2014, and executed by FHWA and TxDOT.

SPECIES ANALYSIS SUMMARY
Project Name: FM 664
CSJ(s): 1051-01-038 1051-01-052

County	Taxon	Common Name	Scientific Name	Habitat	Suitable Habitat Present?	Explanation for determination regarding suitable habitat	Federal Status	Effect/Take Determination for Federally Listed Species	State Status	Impact Determination for State-Listed Species	Explanation for Effect/Take and/or Impact Determination	Presence/ Absence survey conducted?
Ellis	Birds	Bald Eagle	*Haliaeetus leucocephalus*	The species occurs throughout Texas and is divided into two populations: breeding and non-breeding or wintering birds. Breeding populations occur primarily in the eastern half of the state and in coastal counties from Rockport to Houston. Nonbreeding or wintering populations are located primarily in the panhandle, central, and east Texas, and in other areas of suitable habitat throughout the state. Habitat consists of dense mature coniferous or hardwood trees adjacent to large open bodies of water. Breeding habitat can include any type of wetland habitat such as rivers, marshes, or large lakes with high concentration of prey fish. Trees utilized for nesting are typically over 60 feet tall, have an open structure, and close proximity to habitat edge.	N	There are no dense mature coniferous or hardwood trees adjacent to large open bodies of water or wetlands with high concentrations of prey fish were identified within the project area.	—	N/A	T	No impact	No suitable habitat is present in the project area.	N
Ellis	Birds	Black Rail	*Laterallus jamaicensis*	Black rails are year-round residents of the central and upper coast and migrants in the eastern part of the state. The species nests in salt, brackish, and freshwater marshes, pond borders, wet meadows, and wetlands with hydrophytic grass species. Water depth is an important and key habitat component, as the species typically is found where water is less than two to four centimeters deep. Other significant habitat factors may include vegetation density, distance to open water, and water regime stability. Nesting typically occurs in the highest sections of the marsh, which have mesic to hydric soils and are flooded by only the highest tides. Nests are built in areas with saturated or shallowly flooded soils and dense vegetation on damp ground, on mat of previous year's dead grasses, or over shallow water. In salt or brackish marshes, typical habitat includes dense stands of cordgrasses (*Spartina* sp.), spikegrasses (*Distichlis* sp.), and needlerush (*Juncus* sp.), or, in more upland saltbush communities along marsh edges. Typical freshwater habitat includes species such as cattail (*Typha*) and bulrush (*Scirpus* sp.). Non-breeding habitat is thought to be similar to breeding habitat.	N	There are no marshes, pond borders, wet meadows or wetlands within the action area. The action area lines up with the project area.	PT	No effect	—	N/A	No suitable habitat is present in the action area.	N
Ellis	Birds	Least Tern	*Sternula (=Sterna) antillarum*	The interior population (subspecies *athalassos*) of the Least Tern nests on bare or sparsely vegetated sand, shell, and gravel beaches, sandbars, islands, and salt flats associated with inland rivers and reservoirs. It occasionally nests on man-made structures such as sand and gravel pits or gravel rooftops. Preferred habitat includes sand and gravel bars within a wide unobstructed river channel, or open flats along shorelines of lakes and reservoirs. Colony sites can move annually, depending on landscape disturbance and vegetation growth at established colonies. It is known to nest at three reservoirs along the Rio Grande River, on the Canadian River in the northern Panhandle, and along the Red River.	N	There are no bare or sparsely vegetated sand, shell, and gravel beaches, sandbars, islands, and salt flats associated with inland rivers and reservoirs within the action area. The action area lines up with the project area.	E	No effect	E	No impact	No suitable habitat is present in the action area. In addition, the USFWS IPaC Official Species List, dated 12/04/2019 states that the species only needs to be considered for wind energy projects.	N

County	Taxon	Common Name	Scientific Name	Habitat	Suitable Habitat Present?	Explanation for determination regarding suitable habitat	Federal Status	Effect/Take Determination for Federally Listed Species	State Status	Impact Determination for State-Listed Species	Explanation for Effect/Take and/or Impact Determination	Presence/ Absence survey conducted?
Ellis	Birds	Piping Plover	*Charadrius melodus*	This migratory species overwinters in Texas, where it occurs on beaches, ephemeral sand flats, barrier islands, sand, mud, algal flats, washover passes, salt marshes, lagoons, and dunes along the Gulf Coast and adjacent offshore islands, including spoil islands in the Intracoastal Waterway. Algal flats appear to be the highest quality habitat because of their relative inaccessibility and their continuous availability throughout all tidal conditions. Sand flats often appear to be preferred over algal flats when both are available, but large portions of sand flats along the Texas coast are available only during low or very low tides and are often completely unavailable during extreme high tides or strong north winds. Beaches appear to serve as a secondary habitat to the flats associated with the primary bays, lagoons, and inter-island passes. Beaches are rarely used on the southern Texas coast, where bayside habitat is always available, and are abandoned as bayside habitats become available on the central and northern coast.	N	The project location is not along the Gulf Coast or adjacent offshore islands. There are no beaches, ephemeral sand flats, barrier islands, sand, mud, algal flats, washover passes, salt marshes, lagoons and dunes within the action area. The action area lines up with the project area.	T	No effect	T	No impact	No suitable habitat is present in the action area. In addition, the USFWS IPaC Official Species List, dated 12/04/2019 states that the species only needs to be considered for wind energy projects.	N
Ellis	Birds	Red Knot	*Calidris canutus rufa*	The species is a winter resident and migrant in Texas. It is primarily found in marine habitats such as sandy beaches, salt marshes, lagoons, mudflats of estuaries and bays, and mangrove swamps during winter months. It primarily occurs along the Gulf coast on tidal flats and beaches and less frequently in marshes and flooded fields. It has occasionally been observed along shorelines of large lakes and freshwater marshes.	N	The project location is not along the Gulf Coast or adjacent offshore islands. There are no beaches, salt marshes, lagoons, mudflats of estuaries and bays, and mangrove swamps within the action area. The action area lines up with the project area.	T	No effect	—	N/A	No suitable habitat is present in the action area. In addition, the USFWS IPaC Official Species List, dated 12/04/2019 states that the species only needs to be considered for wind energy projects.	N
Ellis	Birds	White-faced Ibis	*Plegadis chihi*	The species is found in the Western Gulf Coastal Plains ecoregion of Texas. Preferred habitat includes freshwater wetlands, marshes, ponds, rivers, irrigated land, and sloughs, but it occasionally forages in brackish or saltwater marshes. It nests in marshes in low trees, on the ground in bulrushes (Scirpus sp.) or reeds, or on floating mats.	N	There are no suitable freshwater or saltwater locations within the project area.	—	N/A	T	No impact	No suitable habitat is present in the project area.	N
Ellis	Birds	Whooping Crane	*Grus americana*	The species breeds in Canada and winters on the Texas coast at Aransas National Wildlife Refuge. During migration it typically stops to rest and feed in open bottomlands of large rivers and marshes but, like other waterbirds, it may also utilize flooded croplands, playas, large wetlands associated with lakes, small ponds, and various other aquatic features. Typical migration habitat includes sites with good horizontal visibility, water depth of 30 centimeters or less, and minimum wetland size of 0.04 hectare for roosting.	N	There are no large rivers or marshes, or small ponds within the action area. The action area lines up with the project area.	E	No effect	E	No impact	No suitable habitat is present in the action area.	N

SPECIES ANALYSIS SUMMARY
Project Name: FM 664
CSJ(s): 1051-01-038 1051-01-052

County	Taxon	Common Name	Scientific Name	Habitat	Suitable Habitat Present?	Explanation for determination regarding suitable habitat	Federal Status	Effect/Take Determination for Federally Listed Species	State Status	Impact Determination for State-Listed Species	Explanation for Effect/Take and/or Impact Determination	Presence/ Absence survey conducted?
Ellis	Birds	Wood Stork	*Mycteria americana*	The species breeds in Mexico, and nesting sites have not been recorded in Texas since 1960. However, post-breeding migrants disperse into Texas in the summer. Foraging habitat includes freshwater prairie ponds, flooded pastures or fields, ditches, and other shallow standing water with an open canopy, occasionally including brackish wetlands. The species typically roosts communally in tall snags, sometimes in association with other wading birds (i.e. active heronries).	Y	There are roadside ditches, ephemeral drainages in agriculture fields, and other standing water sources in the project area.	—	N/A	T	No impact	Suitable habitat is present in the project area, but BMPs would be implemented.	N
Ellis	Mollusks	Louisiana Pigtoe	*Pleurobema riddellii*	Freshwater mussel currently found in the Sabine, Neches, and Trinity River basins in Texas. The species occurs in streams to medium-sized rivers with moderate flow. In Texas, the species has only been documented occurring in relatively shallow lotic waters with preferable substrate being sand and sand with gravel and silt. It is not generally known to tolerate impoundments.	N	There are no lotic waters within the project location.	—	N/A	T	No impact	No suitable habitat is present in the project area.	N
Ellis	Mollusks	Sandbank Pocketbook	*Lampsilis satura*	A freshwater mussel that is currently limited to the Upper Trinity, Neches, Sabine, and San Jacinto River basins in Texas. The species occurs in flowing small to large rivers with gravel, gravel-sand, and sand substrates. It has been observed in littoral areas with snags, gravel, or sand substrate with slow to moderate currents, as well as lotic waters in substrates of sand, silty sand, and sand and clay mixture.	Y	There is a slow-moving perennial stream (Red Oak Creek) within the project location.	—	N/A	T	No impact	Suitable habitat is present in the project area, but BMPs would be implemented.	N
Ellis	Mollusks	Texas Heelsplitter	*Potamilus amphichaenus*	A freshwater mussel currently known from the Trinity, Neches, and Sabine River basins. The species occurs in small streams to medium rivers with sand or mud substrate. It is found in flowing water but not in riffles or shoals. It prefers quiet waters and can be found in reservoirs.	Y	There is a slow-moving perennial stream (Red Oak Creek) within the project location.	—	N/A	T	No impact	Suitable habitat is present in the project area, but BMPs would be implemented.	N
Ellis	Reptiles	Alligator Snapping Turtle	*Macrochelys temminckii*	Occurs in East Texas where it inhabits perennial water bodies such as the deep water of rivers, canals, lakes, and oxbows, along with swamps, bayous, and ponds near deep running water. Preferred habitat is usually in water with a mud bottom and abundant aquatic vegetation, but the species may use sand-bottomed creeks.	Y	There is a perennial water body within the project location, namely Red Oak Creek.	—	N/A	T	No impact	Suitable habitat is present in the project area, but BMPs would be implemented.	N
Ellis	Reptiles	Texas Horned Lizard	*Phrynosoma cornutum*	The species is found in semi-arid open areas with scattered vegetation comprised of bunchgrass, cacti, yucca, mesquite, acacia, juniper, or other woody shrubs and small trees commonly found in loose sandy or loamy soils.	Y	Edwards Plateau Savannah and Woodland biome are found in the project location, which have vegetation including mesquite and juniper in loamy soils.	—	N/A	T	No impact	While there is suitable habitat, in a TPWD publication on a 10-year watch of Texas Horned Lizards, they were never sighted in Ellis County. BMPs would be implemented.	N

County	Taxon	Common Name	Scientific Name	Habitat	Suitable Habitat Present?	Explanation for determination regarding suitable habitat	Federal Status	Effect/Take Determination for Federally Listed Species	State Status	Impact Determination for State-Listed Species	Explanation for Effect/Take and/or Impact Determination	Presence/ Absence survey conducted?
Ellis	Reptiles	Timber (Canebrake) Rattlesnake	*Crotalus horridus*	The timber rattlesnake may be found in swamps, floodplains, upland pine and deciduous woodlands, riparian zones, and abandoned farmland near a permanent water source, such as rivers, lakes, ponds, streams, and swamps where tree stumps, logs, and branches provide refuge. The species generally prefers dense ground cover, such as grapevines or palmetto. The timber rattlesnake occurs widely in eastern Texas.	Y	Edwards Plateau Savannah and Woodland biome and riparian biome are found in the project location, which have suitable dense vegetation .	—	N/A	T	No impact	Suitable habitat is present in the project area, but BMPs would be implemented.	N

SPECIES ANALYSIS SUMMARY REFERENCES

Taxon	Species (Common Name)	Reference
All	All Species	NatureServe Explorer website http://explorer.natureserve.org
All	All Species	TPWD RTEST website https://tpwd.texas.gov/gis/rtest/ July 17, 2019 version retrieved July 29, 2019.
All	All Species	USFWS ECOS website https://ecos.fws.gov/ Retrieved August 16, 2019.
All	All Species	USFWS IPAC website https://ecos.fws.gov/ipac/ Retrieved August 2019.
Amphibians	Austin Blind Salamander	Chamberlain, D. A. and L. O'Donnell. 2003. City of Austin's captive breeding program for the Barton Springs and Austin blind salamanders (January 1-December 31, 2002). City of Austin Watershed Protection and Development Review Department annual permit (PRT-839031) report.
Amphibians	Austin Blind Salamander	Hillis, D. M., D. A. Chamberlain, T. P. Wilcox, and P. T. Chippindale. 2001. A new species of subterranean blind salamander (Plethodontidae: Hemidactyliini: Eurycea: Typhlomolge) from Austin, Texas, and a systematic revision of central Texas paedomorphic salamanders. Herpetologica 57:266-280.
Amphibians	Barton Springs Salamander	https://tpwd.texas.gov/huntwild/wild/species/bartonspringssalamander/
Amphibians	Barton Springs Salamander	https://www.iucnredlist.org/species/8392/12909469
Amphibians	Black-spotted Newt	http://explorer.natureserve.org/servlet/NatureServe?searchName=Notophthalmus+meridionalis
Amphibians	Black-spotted Newt	https://www.iucnredlist.org/species/59452/11944420
Amphibians	Blanco Blind Salamander	Berkhouse, C. S., and J. N. Fries. 1995. Critical thermal maxima of juvenile and adult San Marcos salamanders (Eurycea nana). Southwestern Naturalist 40(4).
Amphibians	Blanco Blind Salamander	Hillis, D. M., D. A. Chamberlain, T. P. Wilcox, and P. T. Chippindale. 2001. A new species of subterranean blind salamander (Plethodontidae: Hemidactyliini: Eurycea: Typhlomolge) from Austin, Texas, and a systematic revision of central Texas paedomorphic salamanders. Herpetologica 57:266-280.
Amphibians	Cascade Caverns Salamander	http://explorer.natureserve.org/servlet/NatureServe?searchName=Eurycea+latitans
Amphibians	Cascade Caverns Salamander	https://www.iucnredlist.org/species/59267/11895685#habitat-ecology
Amphibians	Comal Blind Salamander	http://explorer.natureserve.org/servlet/NatureServe?sourceTemplate=tabular_report.wmt&loadTemplate=species_RptComprehensive.wmt&selectedReport=RptComprehensive.wmt&summaryView=tabular_report.wmt&elKey=105895&paging=home&save=true&startIndex=1&nextStartIndex=1&reset=false&offPageSelectedElKey=105895&offPageSelectedElType=species&offPageYesNo=true&post_processes=&radiobutton=radiobutton&selectedIndexes=105895
Amphibians	Comal Blind Salamander	https://www.inaturalist.org/taxa/27119-Eurycea-tridentifera
Amphibians	Comal Blind Salamander	https://www.iucnredlist.org/species/8393/12909608#habitat-ecology

Taxon	Species (Common Name)	Reference
Amphibians	Georgetown Salamander	http://explorer.natureserve.org/servlet/NatureServe?sourceTemplate=tabular_report.wmt&loadTemplate=species_RptComprehensive.wmt&selectedReport=RptComprehensive.wmt&summaryView=tabular_report.wmt&elKey=105895&paging=home&save=true&startIndex=1&nextStartIndex=1&reset=false&offPageSelectedElKey=105895&offPageSelectedElType=species&offPageYesNo=true&post_processes=&radiobutton=radiobutton&selectedIndexes=105895
Amphibians	Houston Toad	Price, A.H. 2003. The Houston Toad in Bastrop State Park 1990 - 2002: A Narrative. Occasional Papers Wildlife Division, Texas Parks & Wildlife Department. 1:1-21.
Amphibians	Houston Toad	Price, A.H. and J.H. Yantis. 1993. Houston toad (Bufo houstonensis) status survey. Final Report as required by the Endangered Species Act, Section 6, Endangered and Threatened Species Conservation. Texas Project No. E-1-4, Job No. 8. Texas Parks and Wildlife Department, Austin, Texas. 13 pp + figs.
Amphibians	Jollyville Plataeau Salamander	http://explorer.natureserve.org/servlet/NatureServe?searchName=Eurycea+tonkawae
Amphibians	Jollyville Plataeau Salamander	http://www.austintexas.gov/content/1361/FAQ/4646
Amphibians	Jollyville Plataeau Salamander	https://www.iucnredlist.org/species/59275/11908615
Amphibians	Mexican Burrowing Toad	https://www.herpsoftexas.org/content/mexican-burrowing-toad
Amphibians	Mexican Burrowing Toad	https://www.iucnredlist.org/species/59040/11873951#habitat-ecology
Amphibians	Mexican TreeFrog	http://explorer.natureserve.org/servlet/NatureServe?searchName=smilisca+baudinii
Amphibians	Mexican TreeFrog	https://www.iucnredlist.org/species/64076/12741970#habitat-ecology
Amphibians	Salado Salamander	https://amphibiaweb.org/species/5378
Amphibians	Salado Salamander	https://www.iucnredlist.org/species/59271/11908207#habitat-ecology
Amphibians	San Marcos Salamander	Nelson, J. 1993. Population size, distribution, and life history of Euiycea nana in the San Marcos River. M.S. Thesis, Southwest Texas State University. USFWS 1996. San Marcos and Comal Springs and associated aquatic ecosystems (revised) recovery plan. U.S. Fish and Wildlife Service.
Amphibians	sheep Frog	http://www.zo.utexas.edu/research/txherps/frogs/
Amphibians	sheep Frog	https://www.herpsoftexas.org/content/sheep-frog
Amphibians	South Texas siren	https://tpwd.texas.gov/gis/rtest/
Amphibians	Texas Blind Salamander	Berkhouse, C. S., and J. N. Fries. 1995. Critical thermal maxima of juvenile and adult San Marcos salamanders (Eurycea nana). Southwestern Naturalist 40(4).
Amphibians	Texas Blind Salamander	Hillis, D. M., D. A. Chamberlain, T. P. Wilcox, and P. T. Chippindale. 2001. A new species of subterranean blind salamander (Plethodontidae: Hemidactyliini: Eurycea: Typhlomolge) from Austin, Texas, and a systematic revision of central Texas paedomorphic salamanders. Herpetologica 57:266-280.
Amphibians	White-lipped Frog	http://explorer.natureserve.org/servlet/NatureServe?searchName=Leptodactylus+fragilis

Taxon	Species (Common Name)	Reference
Amphibians	White-lipped Frog	https://amphibiaweb.org/cgi/amphib_query?where-genus=Leptodactylus&where-species=fragilis
Amphibians	White-lipped Frog	https://www.iucnredlist.org/species/57127/11587519
Arachnids	Bee Creek Cave Harvestman	http://explorer.natureserve.org/servlet/NatureServe?searchName=Texella+reddelli
Arachnids	Bee Creek Cave Harvestman	https://ecos.fws.gov/docs/federal_register/fr1473.pdf
Arachnids	Bone Cave Harvestman	http://explorer.natureserve.org/servlet/NatureServe?searchName=Texella+reyesi
Arachnids	Bone Cave Harvestman	https://ecos.fws.gov/docs/five_year_review/doc5768.pdf
Arachnids	Braken Bat Cave Meshweaver	https://ecos.fws.gov/ecp0/profile/speciesProfile?spcode=J01D
Arachnids	Braken Bat Cave Meshweaver	Hedin et al. 2018. Sequence capture phylogenomics of eyeless Cicurina spiders from Texas caves, with emphasis on US federally-endangered species from Bexar County.
Arachnids	Cokendolpher Cave Harvestman	http://explorer.natureserve.org/servlet/NatureServe?searchName=Texella+cokendolpheri
Arachnids	Cokendolpher Cave Harvestman	https://ecos.fws.gov/ecp0/profile/speciesProfile?spcode=J016
Arachnids	Government Canyon Bat Cave Meshweaver	https://ecos.fws.gov/ecp0/profile/speciesProfile?spcode=J01B
Arachnids	Government Canyon Bat Cave Meshweaver	Hedin et al. 2018. Sequence capture phylogenomics of eyeless Cicurina spiders from Texas caves, with emphasis on US federally-endangered species from Bexar County.
Arachnids	Government Canyon Bat Cave Spider	http://explorer.natureserve.org/servlet/NatureServe?searchName=Neoleptoneta+microps
Arachnids	Government Canyon Bat Cave Spider	https://ecos.fws.gov/ecp0/profile/speciesProfile?spcode=J018
Arachnids	Madla Cave Meshweaver	Hedin et al. 2018. Sequence capture phylogenomics of eyeless Cicurina spiders from Texas caves, with emphasis on US federally-endangered species from Bexar County.
Arachnids	Madla Cave Meshweaver	https://ecos.fws.gov/ecp0/profile/speciesProfile?spcode=J019
Arachnids	Robber Baron Cave Meshweaver	https://ecos.fws.gov/ecp0/profile/speciesProfile?spcode=J01A
Arachnids	Tooth Cave Pseudoscorpion	https://ecos.fws.gov/docs/five_year_review/doc5773.pdf
Arachnids	Tooth Cave Pseudoscorpion	https://ecos.fws.gov/ecp0/profile/speciesProfile?spcode=J00A
Arachnids	Tooth Cave Spider	https://ecos.fws.gov/docs/five_year_review/doc5774.pdf
Arachnids	Tooth Cave Spider	https://ecos.fws.gov/ecp0/profile/speciesProfile?spcode=J00B
Birds	American Peregrine Falcon	https://tpwd.texas.gov/huntwild/wild/species/amperegrine/
Birds	American Peregrine Falcon	https://www.allaboutbirds.org/guide/peregrine_falcon/lifehistory
Birds	Arizona Botteri's Sparrow	https://www.audubon.org/field-guide/bird/botteris-sparrow
Birds	Attwater's Greater Prairie-chicken	2010. Attwater's Prairie-chicken Recovery Plan. 2nd Rev. Southwestern Region USFW. Albuguerque, New Mexico.
Birds	Bachman's Sparrow	Farrand, J., Jr. 1988. Eastern Birds: An Audubon Handbook. McGraw-Hill Book Company. New York, New York, USA.
Birds	Bald Eagle	https://www.fs.fed.us/database/feis/animals/bird/hale/all.html
Birds	Bald Eagle	https://www.webcitation.org/6Q2VGMkav?url=http://raptors.hancockwildlife.org/BEIA/PAGES/Section-14.pdf
Birds	Black Rail	https://ebird.org/species/blkrai
Birds	Black Rail	https://www.allaboutbirds.org/guide/Black_Rail/id
Birds	Black-capped Vireo	https://www.fws.gov/southwest/es/Documents/R2ES/black-capped_vireo_Science_Report_FINAL_5-06.pdf

Taxon	Species (Common Name)	Reference
Birds	Black-capped Vireo	https://www.wjoonline.org/doi/abs/10.1676/11-134.1
Birds	Botteri's Sparrow	https://www.audubon.org/field-guide/bird/botteris-sparrow
Birds	Cactus Ferruginous Pygmy-owl	https://www.audubon.org/field-guide/bird/ferruginous-pygmy-owl
Birds	Common Black-hawk	https://txtbba.tamu.edu/species-accounts/common-black-hawk
Birds	Eskimo Curlew	https://tpwd.texas.gov/huntwild/wild/species/eskcurl/
Birds	Eskimo Curlew	https://www.audubon.org/news/the-eskimo-curlew-hasnt-been-seen-55-years-it-time-declare-it-extinct
Birds	Golden-cheeked Warbler	Groce, J., H.A. Mathewson, M.L. Morrison, N. Wilkins. 2010. Scientific evaluation for the 5-year status review of the golden-cheeked warbler. Prepared for U.S. Fish and Wildlife Service
Birds	Golden-cheeked Warbler	Ladd, C. G. 1985. Nesting habitat requirements of the golden-cheeked warbler. M.S. thesis. Southwest Texas State University. San Marcos, Texas, USA.
Birds	Golden-cheeked Warbler	U.S. Fish and Wildlife Service (USFWS). 1992. golden-cheeked warbler (Dendroica chrysoparia) recovery plan. Albuquerque, New Mexico, USA.
Birds	Gray Hawk	https://txtbba.tamu.edu/species-accounts/gray-hawk/
Birds	Gray Hawk	https://www.allaboutbirds.org/guide/gray_hawk/lifehistory
Birds	Least Tern	Campbell, L. 2003. Endangered and threatened animals of Texas, their life history and management. Texas Parks and Wildlife Press. Austin, Texas, USA.
Birds	Least Tern	https://tpwd.texas.gov/huntwild/wild/species/leasttern/
Birds	Least Tern	Lott, C. A. 2006. Distribution and Abundance of the Interior Population of the least tern (Sternula antillarum), 2005: A Review of the First Complete Range-Wide Survey in the Context of Historic and Ongoing Monitoring Efforts. U.S. Army Corps of Engineers. Washington, D.C., USA.
Birds	Mexican Spotted Owl	https://ecos.fws.gov/ecp0/profile/speciesProfile?sId=8196
Birds	Northern Aplomado Falcon	https://txtbba.tamu.edu/species-accounts/aplomado-falcon/
Birds	Northern Aplomado Falcon	https://www.iucnredlist.org/species/22696450/131940332
Birds	Northern Beardless-tyrannulet	https://www.iucnredlist.org/species/22699177/93717756
Birds	Piping Plover	Haig, S.M. and L.W. Oring. 1985. Distribution and status of the piping plover throughout the annual cycle. J. Field Ornith. 56(4):334-345.
Birds	Piping Plover	http://ecos.fws.gov/speciesProfile/profile/speciesProfile?spcode=B079
Birds	Piping Plover	U.S. Fish and Wildlife Service (USFWS). 2003. Recovery Plan for the Great Lakes piping plover (Charadrius melodus). USFWS Region 3. Ft. Snelling, Minnesota, USA.
Birds	Red Knot	https://www.allaboutbirds.org/guide/Red_Knot/lifehistory
Birds	Red Knot	https://www.texassaltwaterfishingmagazine.com/fishing/education/fishy-facts/red-knots
Birds	Red-cockaded Woodpecker	https://tpwd.texas.gov/huntwild/wild/species/rcw/
Birds	Red-cockaded Woodpecker	https://txtbba.tamu.edu/species-accounts/red-cockaded-woodpecker/
Birds	Red-cockaded Woodpecker	https://www.fws.gov/ncsandhills/rcw.html
Birds	Red-crowned Parrot	https://ebird.org/species/recpar
Birds	Red-crowned Parrot	https://txtbba.tamu.edu/species-accounts/red-crowned-parrot/

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Taxon	Species (Common Name)	Reference
Birds	Reddish Egret	https://nhpbs.org/natureworks/reddishegret.htm#3
Birds	Reddish Egret	https://tpwd.texas.gov/huntwild/wild/species/reddishegret/
Birds	Reddish Egret	https://www.iucnredlist.org/species/22696916/93592693
Birds	Rose-throated Becard	https://neotropical.birds.cornell.edu/Species-Account/nb/species/rotbec/distribution
Birds	Rose-throated Becard	https://www.iucnredlist.org/species/22700670/93791247
Birds	Sooty Tern	https://neotropical.birds.cornell.edu/Species-Account/nb/species/sooter1/distribution#hab
Birds	Sooty Tern	https://txtbba.tamu.edu/species-accounts/sooty-tern/
Birds	Southwestern Willow Flycatcher	http://explorer.natureserve.org/servlet/NatureServe?searchName=Empidonax+traillii+extimus
Birds	Southwestern Willow Flycatcher	https://www.fws.gov/nevada/protected_species/birds/species/swwf.html
Birds	Swallow-tailed Kite	https://txtbba.tamu.edu/species-accounts/swallow-tailed-kite/
Birds	Swallow-tailed Kite	https://www.audubon.org/field-guide/bird/swallow-tailed-kite
Birds	Texas Botteri's Sparrow	https://txtbba.tamu.edu/species-accounts/botteris-sparrow/
Birds	Tropical Parula	https://txtbba.tamu.edu/species-accounts/tropical-parula/
Birds	Whooping Crane	https://www.allaboutbirds.org/guide/Whooping_Crane/lifehistory
Birds	wood stork	https://tpwd.texas.gov/publications/pwdpubs/media/pwd_bk_w7000_0496.pdf
Birds	Yellow-billed Cuckoo	http://explorer.natureserve.org/servlet/NatureServe?searchName=Coccyzus+americanus
Birds	Zone-tailed Hawk	https://txtbba.tamu.edu/species-accounts/zone-tailed-hawk
Birds	Zone-tailed Hawk	https://www.nwf.org/Educational-Resources/Wildlife-Guide/Birds/Whooping-Crane
Crustaceans	Diminutive Amphipod	http://explorer.natureserve.org/servlet/NatureServe?searchName=Gammarus+hyalleloides
Crustaceans	Diminutive Amphipod	https://tpwd.texas.gov/gis/rtest/
Crustaceans	Peck's Cave Amphipod	http://explorer.natureserve.org/servlet/NatureServe?sourceTemplate=tabular_report.wmt&loadTemplate=species_RptComprehensive.wmt&selectedReport=RptComprehensive.wmt&summaryView=tabular_report.wmt&elKey=110476&paging=home&save=true&startIndex=1&nextStartIndex=1&reset=false&offPageSelectedElKey=110476&offPageSelectedElType=species&offPageYesNo=true&post_processes=&radiobutton=radiobutton&selectedIndexes=110476
Crustaceans	Peck's Cave Amphipod	https://ecos.fws.gov/ecp0/profile/speciesProfile?sId=8575
Crustaceans	Pecos Amphipod	https://ecos.fws.gov/ecp0/profile/speciesProfile?spcode=K024
Crustaceans	Pecos Amphipod	https://www.govinfo.gov/content/pkg/FR-2012-08-16/pdf/2012-19829.pdf

Taxon	Species (Common Name)	Reference
Fish	Scalloped Hammerhead Shark	George H. Burgess, Lawrence R. Beerkircher, Gregor M. Cailliet, John K. Carlson, Enris Cortés, Kenneth J. Goldman, R. Dean Grubbs, John A. Musick, Michael K. Musyl & Colin A. Simpfendorfer. 2005. Is the collapse of shark populations in the Northwest Atlantic Ocean and Gulf of Mexico real?, Fisheries, 30:10, 19-26, DOI: 10.1577/1548-8446(2005)30[19:ITCOSP]2.0.CO;2
Fish	Scalloped Hammerhead Shark	Piercy Andrew N., Carlson John K., Sulikowski James A., Burgess George H. 2007. Age and growth of the scalloped hammerhead shark, Sphyrna lewini, in the north-west Atlantic Ocean and Gulf of Mexico. Marine and Freshwater Research 58, 34-40.
Fishes	Arkansas River Shiner	http://ecos.fws.gov/tess_public/profile/speciesProfile;jsessionid=59559A8156AC4701D4B745DAD565003C?spcode=E05X
Fishes	Atlantic Sturgeon	National Oceanic and Atmospheric Administration (NOAA), Atlantic Sturgeon (Acipenser oxyrinchus oxyrinchus). Available at https://www.fisheries.noaa.gov/species/atlantic-sturgeon. Accessed August 2019.
Fishes	Big Bend Gambusia	https://tpwd.texas.gov/huntwild/wild/species/bbgambus/
Fishes	Big Bend Gambusia	https://www.biologicaldiversity.org/campaigns/esa_works/profile_pages/BigBendgambusia.html
Fishes	Big Bend Gambusia	https://www.iucnredlist.org/species/8890/18229201#habitat-ecology
Fishes	Blackside Darter	http://txstate.fishesoftexas.org/percina%20maculata.htm
Fishes	Blackside Darter	http://www.fishesoftexas.org/taxa/percina-maculata
Fishes	Blackside Darter	https://www.fishbase.se/summary/3498
Fishes	Blue Sucker	Walburg, C. H., G. L. Kaiser, and P. L. Hudson. 1971. Lewis and Clark Lake tailwater biota and some relations of the tailwater and reservoir fish populations, pp. 449-467. In; Reservoir fisheries and limnology. G. E. Hall, ed. Spec. Publ., no. 8, American Fisheries Society, Washington, D.C.
Fishes	Bluehead Shiner	http://txstate.fishesoftexas.org/pteronotropis%20hubbsi.htm
Fishes	Chihuahua Shiner	http://txstate.fishesoftexas.org/notropis%20chihuahua.htm
Fishes	Clear Creek Gambusia	http://txstate.fishesoftexas.org/gambusia%20heterochir.htm
Fishes	Clear Creek Gambusia	https://tpwd.texas.gov/huntwild/wild/species/clearcreekgambusia/
Fishes	Comanche Springs Pupfish	http://www.fishesoftexas.org/taxa/cyprinodon-elegans
Fishes	Conchos Pupfish	http://txstate.fishesoftexas.org/cyprinodon%20eximius.htm
Fishes	Devils River Minnow	http://txstate.fishesoftexas.org/cyprinodon%20eximius.htm
Fishes	Dwarf Seahorse	Fedrizzi N, Stiassny ML, Boehm JT, Dougherty ER, Amato G, Mendez M. Population Genetic Structure of the Dwarf Seahorse (Hippocampus zosterae) in Florida. PLoS One. 2015;10(7):e0132308. Published 2015 Jul 22. doi:10.1371/journal.pone.0132308.
Fishes	Fountain Darter	Habitat utilization and population size estimate of fountain darters, Etheostoma fonticola, in the Comal River, Texas. Texas Journal of Science 45(4):341-348.
Fishes	Fountain Darter	Schenck, J. R., and B.G. Whiteside. 1976. Distribution, habitat preference, and population size estimate of Etheostoma fonticola. Copeia 76(4):697-703.

Taxon	Species (Common Name)	Reference
Fishes	Giant Manta Ray	Graham RT, Witt MJ, Castellanos DW, Remolina F, Maxwell S, Godley BJ, et al. 2012. Satellite Tracking of Manta Rays Highlights Challenges to Their Conservation. PLoS ONE 7(5): e36834. https://doi.org/10.1371/journal.pone.0036834.
Fishes	Gulf Sturgeon	
Fishes	Leon Springs Pupfish	http://txstate.fishesoftexas.org/cyprinodon%20bovinus.htm
Fishes	Leon Springs Pupfish	https://ecos.fws.gov/ecp0/profile/speciesProfile?sId=1135
Fishes	Mexican Blindcat	https://www.iucnredlist.org/species/18136/7669809
Fishes	Mexican Goby	https://www.fishbase.de/summary/Ctenogobius-claytonii.html
Fishes	Mexican Stoneroller	http://txstate.fishesoftexas.org/campostoma%20ornatum.htm
Fishes	Nassau Grouper	Sadovy, Y. 1999.The Case of the Diappearing Grouper: Epinephelus striatus, the Nassau Group, in the Caribbean and Western Altantic. Proceedings of the 45th Gulf and Caribbean Fisheries Institute.
Fishes	Oceanic Whitetip Shark	George H. Burgess, Lawrence R. Beerkircher, Gregor M. Cailliet, John K. Carlson, Enris Cortés, Kenneth J. Goldman, R. Dean Grubbs, John A. Musick, Michael K. Musyl & Colin A. Simpfendorfer. 2005. Is the collapse of shark populations in the Northwest Atlantic Ocean and Gulf of Mexico real?, Fisheries, 30:10, 19-26, DOI: 10.1577/1548-8446(2005)30[19:ITCOSP]2.0.CO;2
Fishes	Opposum Pipefish	https://www.fishbase.se/summary/Microphis-brachyurus.html
Fishes	Paddlefish	http://txstate.fishesoftexas.org/polydon%20spathula.htm
Fishes	Pecos Gambusia	https://ecos.fws.gov/ecp0/profile/speciesProfile?sId=460
Fishes	Pecos Gambusia	https://tpwd.texas.gov/huntwild/wild/species/pecogamb/
Fishes	Pecos Pupfish	http://txstate.fishesoftexas.org/cyprinodon%20pecosensis.htm
Fishes	Proserpine Shiner	http://txstate.fishesoftexas.org/cyprinella%20proserpina.htm
Fishes	Rio Grande Chub	http://txstate.fishesoftexas.org/gila%20pandora.htm
Fishes	Rio Grande Darter	http://txstate.fishesoftexas.org/etheostoma%20grahami.htm
Fishes	Rio Grande Silvery Minnow	https://ecos.fws.gov/ecp0/profile/speciesProfile?spcode=E07I
Fishes	River Goby	http://txstate.fishesoftexas.org/awaous%20banana.htm
Fishes	San Marcos Gambusia	http://txstate.fishesoftexas.org/gambusia%20georgei.htm
Fishes	Sharpnose Shiner	http://txstate.fishesoftexas.org/notropis%20oxyrhynchus.htm
Fishes	Shortnose Sturgeon	
Fishes	Shovelnose Sturgeon	http://txstate.fishesoftexas.org/scaphirhynchus%20platorynchus.htm
Fishes	Smalleye Shiner	http://txstate.fishesoftexas.org/notropis%20buccula.htm
Fishes	Smalltooth Sawfish	Carlson, John K., Jason Osborn, J., Thomas Schmidt. 2007. Monitoring the recovery of smalltooth sawfish, Pristis pectinata, using standardized relative indices of abundance. Biological Conservation. 136(0), 195-202.
Fishes	Smalltooth Sawfish	https://www.fishbase.se/summary/Pristis-pectinata
Fishes	Smalltooth Sawfish	https://www.iucnredlist.org/species/18175/141791261#habitat-ecology
Fishes	Smalltooth Sawfish	
Fishes	Spotfin Gambusia	https://www.iucnredlist.org/species/8898/
Fishes	Toothless Blindcat	http://txstate.fishesoftexas.org/trogloglanis%20pattersoni.htm
Fishes	Western Creek Chubsucker	https://www.fishbase.se/summary/66122

Taxon	Species (Common Name)	Reference
Fishes	Widemouth Blindcat	http://txstate.fishesoftexas.org/satan%20eurystomus.htm
Insects	[no common name] Beetle (Rhadine exilis)	http://explorer.natureserve.org/servlet/NatureServe?searchName=Rhadine+exilis+
Insects	[no common name] Beetle (Rhadine exilis)	https://ecos.fws.gov/docs/five_year_review/doc3846.pdf
Insects	[no common name] Beetle (Rhadine infernalis)	https://bugguide.net/node/view/1138577
Insects	American Burying Beetle	https://ecos.fws.gov/docs/five_year_review/doc1968.pdf
Insects	Coffin Cave Mold Beetle	http://explorer.natureserve.org/servlet/NatureServe?searchName=Batrisodes+texanus
Insects	Coffin Cave Mold Beetle	https://bugguide.net/node/view/443852
Insects	Coffin Cave Mold Beetle	https://ecos.fws.gov/docs/five_year_review/doc5768.pdf
Insects	Comal Springs Dryopid Beetle	http://explorer.natureserve.org/servlet/NatureServe?searchName=Stygoparnus+comalensis
Insects	Comal Springs Dryopid Beetle	https://bugguide.net/node/view/287708
Insects	Comal Springs Dryopid Beetle	https://www.biologicaldiversity.org/species/invertebrates/Comal_Springs_dryopid_beetle/natural_history.html
Insects	Comal Springs Riffle Beetle	http://explorer.natureserve.org/servlet/NatureServe?searchName=Heterelmis+comalensis
Insects	Comal Springs Riffle Beetle	https://bioone.org/journals/The-Coleopterists-Bulletin/volume-69/issue-3/0010-065X-69.3.521/Underwater-Pupation-by-the-Comal-Springs-riffle-beetle-iHeterelmis-comalensis/10.1649/0010-065X-69.3.521.short
Insects	Helotes Mold Beetle	http://explorer.natureserve.org/servlet/NatureServe?searchName=Batrisodes+venyivi
Insects	Helotes Mold Beetle	https://ecos.fws.gov/ecp0/profile/speciesProfile?spcode=I0PT
Insects	Kretschmarr Cave Mold Beetle	https://ecos.fws.gov/docs/five_year_review/doc5771.pdf
Insects	Kretschmarr Cave Mold Beetle	https://ecos.fws.gov/ecp0/profile/speciesProfile?sId=3140
Insects	Tooth Cave Ground Beetle	https://ecos.fws.gov/docs/five_year_review/doc5772.pdf
Insects	Tooth Cave Ground Beetle	https://ecos.fws.gov/ecp0/profile/speciesProfile?spcode=I0IB
Invertebrates	Boulder Star Coral	Vize, P.D. Coral Reefs (2006) 25: 169. https://doi.org/10.1007/s00338-005-0082-5
Invertebrates	Boulder Star Coral	Zimmer, B., Precht, W., Hickerson, E. et al. Coral Reefs. 2006. 25: 192. https://doi.org/10.1007/s00338-005-0054-9.
Invertebrates	Elkhorn Coral	Vize, P.D. Coral Reefs (2006) 25: 169. https://doi.org/10.1007/s00338-005-0082-5
Invertebrates	Elkhorn Coral	William F. Prechta, Kenneth J. P. Deslarzes, Emma L. Hickerson, George P. Schmahl, Marissa F. Nuttall, Richard B. Aronsond. 2014. Back to the future: The history of acroporid corals at the Flower Garden Banks, Gulf of Mexico, US. Marine Geology. 349: 152-161.
Invertebrates	Elkhorn Coral	Zimmer, B., Precht, W., Hickerson, E. et al. Coral Reefs. 2006. 25: 192. https://doi.org/10.1007/s00338-005-0054-9.
Invertebrates	Lobed Star Coral	Vize, P. D. 2006. Coral Reefs 25: 169. https://doi.org/10.1007/s00338-005-0082-5
Invertebrates	Lobed Star Coral	Zimmer, B., Precht, W., Hickerson, E. et al. Coral Reefs. 2006. 25: 192. https://doi.org/10.1007/s00338-005-0054-9.

Taxon	Species (Common Name)	Reference
Invertebrates	Mountainous Star Coral	John P. Rippe Mikhail V. Matz Elizabeth A. Green Mónica Medina Nida Z. Khawaja Thanapat Pongwarin Jorge H. Pinzón C. Karl D. Castillo Sarah W. Davies. 2017. Population structure and connectivity of the mountainous star coral, Orbicella faveolata, throughout the wider Caribbean region. Ecology and Evolution. 7(22): Available at https://doi.org/10.1002/ece3.3448.
Invertebrates	Mountainous Star Coral	Vize, P. D. 2006. Coral Reefs 25: 169. https://doi.org/10.1007/s00338-005-0082-5
Invertebrates	Mountainous Star Coral	Zimmer, B., Precht, W., Hickerson, E. et al. Coral Reefs. 2006. 25: 192. https://doi.org/10.1007/s00338-005-0054-9.
Invertebrates	Pillar Coral	Vize, P. D. 2006. Coral Reefs 25: 169. https://doi.org/10.1007/s00338-005-0082-5
Invertebrates	Pillar Coral	Zimmer, B., Precht, W., Hickerson, E. et al. Coral Reefs. 2006. 25: 192. https://doi.org/10.1007/s00338-005-0054-9.
Invertebrates	Rough Cactus Coral	Vize, P. D. 2006. Coral Reefs 25: 169. https://doi.org/10.1007/s00338-005-0082-5
Invertebrates	Rough Cactus Coral	Zimmer, B., Precht, W., Hickerson, E. et al. Coral Reefs. 2006. 25: 192. https://doi.org/10.1007/s00338-005-0054-9.
Invertebrates	Staghorn Coral	Vize, P. D. 2006. Coral Reefs 25: 169. https://doi.org/10.1007/s00338-005-0082-5
Invertebrates	Staghorn Coral	William F.Prechta, Kenneth J.P.Deslarzes, Emma L.Hickerson, George P.Schmahl, Marissa F.Nuttall, Richard B.Aronsond. 2014. Back to the future: The history of acroporid corals at the Flower Garden Banks, Gulf of Mexico, US. Marine Geology. 349: 152-161.
Invertebrates	Staghorn Coral	Zimmer, B., Precht, W., Hickerson, E. et al. Coral Reefs. 2006. 25: 192. https://doi.org/10.1007/s00338-005-0054-9.
Mammals	Black Bear	https://tpwd.texas.gov/landwater/land/habitats/trans_pecos/nongame/blackbear/
Mammals	Black Bear	https://tpwd.texas.gov/landwater/land/habitats/trans_pecos/nongame/blackbear/
Mammals	Black Bear	https://www.jstor.org/stable/3671651?seq=1#page_scan_tab_contents
Mammals	Black Bear	https://www.jstor.org/stable/3873013?seq=1#page_scan_tab_contents
Mammals	Blue Whale	Fertl, Dagmar. 1998. Whales and dolphins of the Gulf of Mexico: A teacher's companion.
Mammals	Bryde's Whale	Fertl, Dagmar. 1998. Whales and dolphins of the Gulf of Mexico: A teacher's companion.
Mammals	Bryde's Whale	https://www.fisheries.noaa.gov/species/brydes-whale
Mammals	Coues' Rice Rat	http://explorer.natureserve.org/servlet/NatureServe?searchName=Oryzomys+couesi+aquaticus
Mammals	Coues' Rice Rat	https://tpwd.texas.gov/gis/maps/images/biotic-provinces-of-texas/view
Mammals	Coues' Rice Rat	https://www.iucnredlist.org/species/15592/115128044
Mammals	False Killer Whale	Fertl, Dagmar. 1998. Whales and dolphins of the Gulf of Mexico: A teacher's companion.
Mammals	Fin Whale	Fertl, Dagmar. 1998. Whales and dolphins of the Gulf of Mexico: A teacher's companion.

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Taxon	Species (Common Name)	Reference
Mammals	Gulf Coast Jaguarundi	https://tpwd.texas.gov/publications/pwdpubs/media/pwd_bk_w7000_0013_jaguarundi.pdf
Mammals	Gulf Coast Jaguarundi	Norwell, K. and P. Jackson. 1996. Status Survey and Conservation Action Plan: Wild Cats. Available at https://portals.iucn.org/library/sites/library/files/documents/1996-008.pdf
Mammals	Gulf of Mexico Bryde's Whale	Fertl, Dagmar. 1998. Whales and dolphins of the Gulf of Mexico: A teacher's companion.
Mammals	Humpback Whale	Fertl, Dagmar. 1998. Whales and dolphins of the Gulf of Mexico: A teacher's companion.
Mammals	Humpback Whale	http://www.nsrl.ttu.edu/tmot1/meganova.htm
Mammals	Humpback Whale	https://tpwd.texas.gov/gis/rtest/
Mammals	Killer Whale	Fertl, Dagmar. 1998. Whales and dolphins of the Gulf of Mexico: A teacher's companion.
Mammals	Louisiana Black Bear	https://www.fws.gov/southeast/wildlife/mammals/louisiana-black-bear/#habitat-section
Mammals	Mexican Long-nosed Bat	https://academic.oup.com/jmammal/article-abstract/72/4/706/886702
Mammals	Mexican Long-nosed Bat	https://www.iucnredlist.org/species/11697/22126172
Mammals	North Atlantic Right Whale	Fertl, Dagmar. 1998. Whales and dolphins of the Gulf of Mexico: A teacher's companion.
Mammals	ocelot	https://tpwd.texas.gov/publications/pwdpubs/media/pwd_bk_w7000_0013_ocelot.pdf
Mammals	ocelot	Norwell, K. and P. Jackson. 1996. Status Survey and Conservation Action Plan: Wild Cats. Available at https://portals.iucn.org/library/sites/library/files/documents/1996-008.pdf
Mammals	Palo Duro Mouse	https://tpwd.texas.gov/huntwild/wild/species/pdmouse/
Mammals	Rafinesque's Big-eared Bat	https://plants.usda.gov/core/profile?symbol=nyaq2
Mammals	Rafinesque's Big-eared Bat	https://www.fws.gov/refuge/trinity_river/wildlife/bats.html
Mammals	Rafinesque's Big-eared Bat	https://www.iucnredlist.org/species/17600/21976905
Mammals	Sei Whale	Fertl, Dagmar. 1998. Whales and dolphins of the Gulf of Mexico: A teacher's companion.
Mammals	Southern Yellow Bat	https://tpwd.texas.gov/huntwild/wild/species/syellow/
Mammals	Southern Yellow Bat	https://www.iucnredlist.org/species/11350/22119259#habitat-ecology
Mammals	Sperm Whale	Fertl, Dagmar. 1998. Whales and dolphins of the Gulf of Mexico: A teacher's companion.
Mammals	Spotted Bat	http://www.nsrl.ttu.edu/tmot1/eudemacu.htm
Mammals	Spotted Bat	https://tpwd.texas.gov/huntwild/wild/species/spotted/
Mammals	Spotted Bat	https://www.iucnredlist.org/species/8166/22028573
Mammals	Texas Kangaroo Rat	https://ecos.fws.gov/ecp0/profile/speciesProfile?sId=2985
Mammals	Texas Kangaroo Rat	https://tpwd.texas.gov/huntwild/wild/species/kanrat/
Mammals	Texas Kangaroo Rat	https://www.fws.gov/southwest/es/ArlingtonTexas/pdf/TKR_FactSheet_20160808.pdf

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Taxon	Species (Common Name)	Reference
Mammals	West Indian Manatee	U.S. Fish and Wildlife Service. 2001. Florida Manatee Recovery Plan (Trichechus manatus latirostris) – Third Revision. Southeast Region, U.S. Fish and Wildlife Service. Atlanta, Georgia. https://ecos.fws.gov/ecp0/profile/speciesProfile?spcode=A007
Mammals	White-nosed Coati	http://www.nsrl.ttu.edu/tmot1/nasunari.htm
Mammals	White-nosed Coati	https://www.iucnredlist.org/species/41683/45216060#habitat-ecology
Mollusks	Diamond Y Spring snail	http://explorer.natureserve.org/servlet/NatureServe?searchName=Pseudotryonia+adamantina+
Mollusks	Diamond Y Spring snail	https://tpwd.texas.gov/gis/rtest/
Mollusks	False Spike	http://explorer.natureserve.org/servlet/NatureServe?sourceTemplate=tabular_report.wmt&loadTemplate=species_RptComprehensive.wmt&selectedReport=RptComprehensive.wmt&summaryView=tabular_report.wmt&elKey=SYN.121144&paging=home&save=true&startIndex=1&nextStartIndex=1&reset=false&offPageSelectedElKey=SYN.121144&offPageSelectedElType=species_synonymn&offPageYesNo=true&post_processes=&radiobutton=radiobutton&selectedIndexes=SYN.121144
Mollusks	False Spike	https://www.fws.gov/southwest/es/Documents/R2ES/AUES_Mussel_Summit_3_Robertson&Pandolfi.pdf
Mollusks	Golden Orb	http://explorer.natureserve.org/servlet/NatureServe?sourceTemplate=tabular_report.wmt&loadTemplate=species_RptComprehensive.wmt&selectedReport=RptComprehensive.wmt&summaryView=tabular_report.wmt&elKey=SYN.122925&paging=home&save=true&startIndex=1&nextStartIndex=1&reset=false&offPageSelectedElKey=SYN.122925&offPageSelectedElType=species_synonymn&offPageYesNo=true&post_processes=&radiobutton=radiobutton&selectedIndexes=SYN.122925
Mollusks	Gonzales Tryonia	http://explorer.natureserve.org/servlet/NatureServe?sourceTemplate=tabular_report.wmt&loadTemplate=species_RptComprehensive.wmt&selectedReport=RptComprehensive.wmt&summaryView=tabular_report.wmt&elKey=108392&paging=home&save=true&startIndex=1&nextStartIndex=1&reset=false&offPageSelectedElKey=108392&offPageSelectedElType=species&offPageYesNo=true&post_processes=&radiobutton=radiobutton&selectedIndexes=108392
Mollusks	Louisiana Pigtoe	http://explorer.natureserve.org/servlet/NatureServe?sourceTemplate=tabular_report.wmt&loadTemplate=species_RptComprehensive.wmt&selectedReport=RptComprehensive.wmt&summaryView=tabular_report.wmt&elKey=113470&paging=home&save=true&startIndex=1&nextStartIndex=1&reset=false&offPageSelectedElKey=113470&offPageSelectedElType=species&offPageYesNo=true&post_processes=&radiobutton=radiobutton&selectedIndexes=113470

Taxon	Species (Common Name)	Reference
Mollusks	Mexican Fawnsfoot	http://explorer.natureserve.org/servlet/NatureServe?sourceTemplate=tabular_report.wmt&loadTemplate=species_RptComprehensive.wmt&selectedReport=RptComprehensive.wmt&summaryView=tabular_report.wmt&elKey=117864&paging=home&save=true&startIndex=1&nextStartIndex=1&reset=false&offPageSelectedElKey=117864&offPageSelectedElType=species&offPageYesNo=true&post_processes=&radiobutton=radiobutton&selectedIndexes=117864
Mollusks	Ouachita Rock Pocketbook	http://explorer.natureserve.org/servlet/NatureServe?sourceTemplate=tabular_report.wmt&loadTemplate=species_RptComprehensive.wmt&selectedReport=RptComprehensive.wmt&summaryView=tabular_report.wmt&elKey=SYN.125299&paging=home&save=true&startIndex=1&nextStartIndex=1&reset=false&offPageSelectedElKey=SYN.125299&offPageSelectedElType=species_synonymn&offPageYesNo=true&post_processes=&radiobutton=radiobutton&selectedIndexes=SYN.125299
Mollusks	Ouachita rock pocketbook	https://ecos.fws.gov/ecp0/profile/speciesProfile?sId=4509
Mollusks	Pecos assiminea	http://explorer.natureserve.org/servlet/NatureServe?sourceTemplate=tabular_report.wmt&loadTemplate=species_RptComprehensive.wmt&selectedReport=RptComprehensive.wmt&summaryView=tabular_report.wmt&elKey=821442&paging=home&save=true&startIndex=1&nextStartIndex=1&reset=false&offPageSelectedElKey=821442&offPageSelectedElType=species&offPageYesNo=true&post_processes=&radiobutton=radiobutton&selectedIndexes=821442
Mollusks	Phantom Springsnail	http://explorer.natureserve.org/servlet/NatureServe?sourceTemplate=tabular_report.wmt&loadTemplate=species_RptComprehensive.wmt&selectedReport=RptComprehensive.wmt&summaryView=tabular_report.wmt&elKey=SYN.115842&paging=home&save=true&startIndex=1&nextStartIndex=1&reset=false&offPageSelectedElKey=SYN.115842&offPageSelectedElType=species_synonymn&offPageYesNo=true&post_processes=&radiobutton=radiobutton&selectedIndexes=SYN.115842
Mollusks	Phantom Tryonia	http://explorer.natureserve.org/servlet/NatureServe?sourceTemplate=tabular_report.wmt&loadTemplate=species_RptComprehensive.wmt&selectedReport=RptComprehensive.wmt&summaryView=tabular_report.wmt&elKey=109259&paging=home&save=true&startIndex=1&nextStartIndex=1&reset=false&offPageSelectedElKey=109259&offPageSelectedElType=species&offPageYesNo=true&post_processes=&radiobutton=radiobutton&selectedIndexes=109259
Mollusks	Salina Mucket	http://explorer.natureserve.org/servlet/NatureServe?sourceTemplate=tabular_report.wmt&loadTemplate=species_RptComprehensive.wmt&selectedReport=RptComprehensive.wmt&summaryView=tabular_report.wmt&elKey=680054&paging=home&save=true&startIndex=1&nextStartIndex=1&reset=false&offPageSelectedElKey=680054&offPageSelectedElType=species&offPageYesNo=true&post_processes=&radiobutton=radiobutton&selectedIndexes=680054
Mollusks	Salina mucket	https://tpwd.texas.gov/gis/rtest/

Taxon	Species (Common Name)	Reference
Mollusks	Sandbank Pocketbook	http://explorer.natureserve.org/servlet/NatureServe?sourceTemplate=tabular_report.wmt&loadTemplate=species_RptComprehensive.wmt&selectedReport=RptComprehensive.wmt&summaryView=tabular_report.wmt&elKey=117064&paging=home&save=true&startIndex=1&nextStartIndex=1&reset=false&offPageSelectedElKey=117064&offPageSelectedElType=species&offPageYesNo=true&post_processes=&radiobutton=radiobutton&selectedIndexes=117064
Mollusks	Smooth Pimpleback	http://explorer.natureserve.org/servlet/NatureServe?sourceTemplate=tabular_report.wmt&loadTemplate=species_RptComprehensive.wmt&selectedReport=RptComprehensive.wmt&summaryView=tabular_report.wmt&elKey=SYN.122926&paging=home&save=true&startIndex=1&nextStartIndex=1&reset=false&offPageSelectedElKey=SYN.122926&offPageSelectedElType=species_synonymn&offPageYesNo=true&post_processes=&radiobutton=radiobutton&selectedIndexes=SYN.122926
Mollusks	Southern Hickorynut	https://www.iucnredlist.org/species/15021/546965#habitat-ecology
Mollusks	Texas Fatmucket	http://explorer.natureserve.org/servlet/NatureServe?sourceTemplate=tabular_report.wmt&loadTemplate=species_RptComprehensive.wmt&selectedReport=RptComprehensive.wmt&summaryView=tabular_report.wmt&elKey=112012&paging=home&save=true&startIndex=1&nextStartIndex=1&reset=false&offPageSelectedElKey=112012&offPageSelectedElType=species&offPageYesNo=true&post_processes=&radiobutton=radiobutton&selectedIndexes=112012
Mollusks	Texas Fawnsfoot	http://explorer.natureserve.org/servlet/NatureServe?sourceTemplate=tabular_report.wmt&loadTemplate=species_RptComprehensive.wmt&selectedReport=RptComprehensive.wmt&summaryView=tabular_report.wmt&elKey=120471&paging=home&save=true&startIndex=1&nextStartIndex=1&reset=false&offPageSelectedElKey=120471&offPageSelectedElType=species&offPageYesNo=true&post_processes=&radiobutton=radiobutton&selectedIndexes=120471
Mollusks	Texas Fawnsfoot	https://tpwd.texas.gov/gis/rtest/
Mollusks	Texas Heelsplitter	Howells, R.G., R.W. Neck, and H.D. Murray. 1996. Freshwater Mussels of Texas. Texas Parks and Wildlife Press: Austin, Texas. 218 pp.
Mollusks	Texas Heelsplitter	http://explorer.natureserve.org/servlet/NatureServe?sourceTemplate=tabular_report.wmt&loadTemplate=species_RptComprehensive.wmt&selectedReport=RptComprehensive.wmt&summaryView=tabular_report.wmt&elKey=115372&paging=home&save=true&startIndex=1&nextStartIndex=1&reset=false&offPageSelectedElKey=115372&offPageSelectedElType=species&offPageYesNo=true&post_processes=&radiobutton=radiobutton&selectedIndexes=115372

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Taxon	Species (Common Name)	Reference
Mollusks	Texas Hornshell	http://explorer.natureserve.org/servlet/NatureServe?sourceTemplate=tabular_report.wmt&loadTemplate=species_RptComprehensive.wmt&selectedReport=RptComprehensive.wmt&summaryView=tabular_report.wmt&elKey=121272&paging=home&save=true&startIndex=1&nextStartIndex=1&reset=false&offPageSelectedElKey=121272&offPageSelectedElType=species&offPageYesNo=true&post_processes=&radiobutton=radiobutton&selectedIndexes=121272
Plants	Ashy Dogweed	Poole, J.M., W. R. Carr, D.M. Price and J.R. Singhurst. 2007. Rare Plants of Texas. Texas A&M University Press, College Station
Plants	Ashy Dogweed	U.S. Fish and Wildlife Service. 1987. Ashy dogweed (Thymophlla tephroleuca) Recovery Plan. U.S. Fish and Wildlife Service, Albuquerque, New Mexico. https://ecos.fws.gov/docs/recovery_plan/880729.pdf
Plants	Ashy Dogweed	Williamson, P. 2002. The effects of disturbance on the ashy dogweed (Thymophylla tephroleuca) and the prostrate milkweed (Asclepias prostrata). Section 6 final report. Austin: Texas Parks & Wildlife Department. https://tpwd.texas.gov/huntwild/wild/wildlife_diversity/nongame/listed-species/plants/ashy_dogweed.phtml
Plants	Black Lace Cactus	Poole, J.M., W. R. Carr, D.M. Price and J.R. Singhurst. 2007. Rare Plants of Texas. Texas A&M University Press, College Station
Plants	Black Lace Cactus	U.S. Fish and Wildlife Service. 1986.Black Lace Cactus (Echinochereus reichenbachii var. altertii). Recovery Plan, U.S. Fish and Wildlife Service, Albuquerque, New Mexico.
Plants	Bracted Twistflower	https://tpwd.texas.gov/gis/rtest/
Plants	Bracted Twistflower	Poole, J.M., W. R. Carr, D.M. Price and J.R. Singhurst. 2007. Rare Plants of Texas. Texas A&M University Press, College Station.
Plants	Bunched Cory Cactus	U.S. Fish and Wildlife Service. 1989. Bunched Cory cactus (Coryphantha ramillosa) Recovery Plan. U.S. Fish and Wildlife Service, Albuquerque. https://ecos.fws.gov/docs/recovery_plan/900413c.pdf
Plants	Chisos Mountains Hedgehog Cactus	Poole, J.M., W. R. Carr, D.M. Price and J.R. Singhurst. 2007. Rare Plants of Texas. Texas A&M University Press, College Station
Plants	Davis' Green Pitaya	Poole, J.M., W. R. Carr, D.M. Price and J.R. Singhurst. 2007. Rare Plants of Texas. Texas A&M University Press, College Station
Plants	Geocarpon minimum	https://tpwd.texas.gov/gis/rtest/
Plants	Geocarpon minimum	Poole, J.M., W. R. Carr, D.M. Price and J.R. Singhurst. 2007. Rare Plants of Texas. Texas A&M University Press, College Station
Plants	Guadalupe Fescue	Federal Register 2017. Endangered and Threatened Wildlife and Plants; Endangered Species Status for Guadalupe fescue; Designation of Critical Habitat for Guadalupe fescue. Federal Register, Volume 82, number 172. Thursday, September 7, 2017, Rules and Regulations, pages 42245 -42260. https://www.govinfo.gov/content/pkg/FR-2017-09-07/pdf/2017-19001.pdf#page=1
Plants	Guadalupe Fescue	Poole, J.M., W. R. Carr, D.M. Price and J.R. Singhurst. 2007. Rare Plants of Texas. Texas A&M University Press, College Station https://www.govinfo.gov/content/pkg/FR-2017-09-07/pdf/2017-19001.pdf#page=1

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Taxon	Species (Common Name)	Reference
Plants	Hinckley Oak	Poole, J.M., W. R. Carr, D.M. Price and J.R. Singhurst. 2007. Rare Plants of Texas. Texas A&M University Press, College Station
Plants	Johnson's Seagrass	Eiseman, N. J., Calvin McMillan. 1980. A new species of seagrass, Halophila johnsonii, from the Atlantic coast of Florida. Aquatic Botany.90(2009:89-92.)
Plants	Large-fruited Sand-verbena	Poole, J.M., W. R. Carr, D.M. Price and J.R. Singhurst. 2007. Rare Plants of Texas. Texas A&M University Press, College Station
Plants	Little Aguja (=creek) Pondweed	https://tpwd.texas.gov/gis/rtest/
Plants	Little Aguja (=creek) Pondweed	Poole, J.M., W. R. Carr, D.M. Price and J.R. Singhurst. 2007. Rare Plants of Texas. Texas A&M University Press, College Station
Plants	Little Aguja (=creek) Pondweed	USFWS 1994. Little Anuja Pondweek Recovery Plan (Potamogeton clystocarpus). U.S. Fish and Wildlife Servce, Region 2, Albuquerque, New Mexico. Available at: https://ecos.fws.gov/docs/recovery_plan/940620a.pdf
Plants	Lloyd's Mariposa Cactus	Poole, J.M., W. R. Carr, D.M. Price and J.R. Singhurst. 2007. Rare Plants of Texas. Texas A&M University Press, College Station
Plants	Navasota ladies'-tresses	Poole, J.M., W. R. Carr, D.M. Price and J.R. Singhurst. 2007. Rare Plants of Texas. Texas A&M University Press, College Station
Plants	Neches River Rose-mallow	Poole, J.M., W. R. Carr, D.M. Price and J.R. Singhurst. 2007. Rare Plants of Texas. Texas A&M University Press, College Station
Plants	Nellie Cory Cactus	Poole, J.M., W. R. Carr, D.M. Price and J.R. Singhurst. 2007. Rare Plants of Texas. Texas A&M University Press, College Station
Plants	Pecos (=puzzle, =paradox) Sunflower	Federal Register 2008. Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for Helianthus paradoxus (Pecos Sunflower); Final Rule. U.S. Fish and Wildlife Service. Fegeral REgister, Volumene 73, Number 63, Tuesday, April 1, 2008. Rules and Regulations. page 17762 - 17807. https://www.govinfo.gov/content/pkg/FR-2008-04-01/pdf/E8-5811.pdf#page=2
Plants	Pecos (=puzzle, =paradox) Sunflower	https://tpwd.texas.gov/gis/rtest/
Plants	Pecos (=puzzle, =paradox) Sunflower	Poole, J.M., W. R. Carr, D.M. Price and J.R. Singhurst. 2007. Rare Plants of Texas. Texas A&M University Press, College Station
Plants	Slender Rush-pea	Federal Register 2017. Endangered and Threatedned Wildlife and Plants; Draft Texas Coastal Bend Shortgrass Praire Multi-species Recovery Plan: Including Slender Rush-Pea (Hoffmannseggia tenella) and South Texas Ambrosia (Amborsia cheiranthifolia). U.S. Fish and Wildlife Service. Fegeral Register, Volume 82, Number 104, Thursday, June 1, 2017, Notices. Page 25299 - 25302. https://www.govinfo.gov/content/pkg/FR-2017-06-01/pdf/2017-11305.pdf#page=1
Plants	Slender Rush-pea	https://tpwd.texas.gov/gis/rtest/
Plants	Slender Rush-pea	Poole, J.M., W. R. Carr, D.M. Price and J.R. Singhurst. 2007. Rare Plants of Texas. Texas A&M University Press, College Station
Plants	Sneed Pincushion Cactus	Poole, J.M., W. R. Carr, D.M. Price and J.R. Singhurst. 2007. Rare Plants of Texas. Texas A&M University Press, College Station

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Taxon	Species (Common Name)	Reference
Plants	South Texas Ambrosia	Federal Register 2017. Endangered and Threatedned Wildlife and Plants; Draft Texas Coastal Bend Shortgrass Praire Multi-species Recovery Plan: Including Slender Rush-Pea (Hoffmannseggia tenella) and South Texas Ambrosia (Amborsia cheiranthifolia). U.S. Fish and Wildlife Service. Fegeral Register, Volume 82, Number 104, Thursday, June 1, 2017, Notices. Page 25299 - 25302. https://www.govinfo.gov/content/pkg/FR-2017-06-01/pdf/2017-11305.pdf#page=1
Plants	South Texas Ambrosia	Poole, J.M., W. R. Carr, D.M. Price and J.R. Singhurst. 2007. Rare Plants of Texas. Texas A&M University Press, College Station
Plants	Star Cactus	Poole, J.M., W. R. Carr, D.M. Price and J.R. Singhurst. 2007. Rare Plants of Texas. Texas A&M University Press, College Station
Plants	Star Cactus	USFWS 2003. Star cactus (Astrophytum asterias) Recovery Plan. U.S. Fish and Wildlife Service, Southwest Region, Albuquerque, New Mexico. https://ecos.fws.gov/docs/recovery_plan/031106.pdf
Plants	Terlingua Creek Cat's-eye	Poole, J.M., W. R. Carr, D.M. Price and J.R. Singhurst. 2007. Rare Plants of Texas. Texas A&M University Press, College Station
Plants	Terlingua Creek Cat's-eye	USFWS 1994. Terlingua Creek Cat's-eye Recovery Plan (Cryptantha crassipes). US Fish and Wildlife Service, Region 2, Albuquerque, New Mexico. https://ecos.fws.gov/docs/recovery_plan/940405.pdf
Plants	Texas Ayenia	https://tpwd.texas.gov/gis/rtest/
Plants	Texas Ayenia	Poole, J.M., W. R. Carr, D.M. Price and J.R. Singhurst. 2007. Rare Plants of Texas. Texas A&M University Press, College Station
Plants	Texas Ayenia	USFWS 2016. Recovery Plan for the Tamaulipan Kidneypetal (Ayenia limitaris). U.S. Fish and Wildlife Service, Southwest Region, Albuquerque, New Mexico. https://ecos.fws.gov/docs/recovery_plan/Texas%20ayenia%20Recovery%20Plan%20R2.pdf
Plants	Texas Golden Gladecress	https://tpwd.texas.gov/gis/rtest/
Plants	Texas Golden Gladecress	Poole, J.M., W. R. Carr, D.M. Price and J.R. Singhurst. 2007. Rare Plants of Texas. Texas A&M University Press, College Station
Plants	Texas Poppy-mallow	https://tpwd.texas.gov/gis/rtest/
Plants	Texas Poppy-mallow	Poole, J.M., W. R. Carr, D.M. Price and J.R. Singhurst. 2007. Rare Plants of Texas. Texas A&M University Press, College Station
Plants	Texas Prairie Dawn-flower	https://tpwd.texas.gov/gis/rtest/
Plants	Texas Prairie Dawn-flower	Poole, J.M., W. R. Carr, D.M. Price and J.R. Singhurst. 2007. Rare Plants of Texas. Texas A&M University Press, College Station
Plants	Texas Snowbells	https://tpwd.texas.gov/gis/rtest/
Plants	Texas Snowbells	Poole, J.M., W. R. Carr, D.M. Price and J.R. Singhurst. 2007. Rare Plants of Texas. Texas A&M University Press, College Station
Plants	Texas Trailing Phlox	https://tpwd.texas.gov/gis/rtest/
Plants	Texas Trailing Phlox	Poole, J.M., W. R. Carr, D.M. Price and J.R. Singhurst. 2007. Rare Plants of Texas. Texas A&M University Press, College Station
Plants	Texas Trailing Phlox	USFWS 1995. Texas Trailing Phlos (Plox mivalis spp. texensis) Recovery Plan. U.S. Fish and Wildlife Service, Albuquerque, New Mexico. https://ecos.fws.gov/docs/recovery_plan/950328a.pdf
Plants	Texas Wild-rice	https://tpwd.texas.gov/gis/rtest/

Taxon	Species (Common Name)	Reference
Plants	Texas Wild-rice	Poole, J.M., W. R. Carr, D.M. Price and J.R. Singhurst. 2007. Rare Plants of Texas. Texas A&M University Press, College Station.
Plants	Tobusch Fishhook Cactus	https://tpwd.texas.gov/gis/rtest/
Plants	Tobusch Fishhook Cactus	Poole, J.M., W. R. Carr, D.M. Price and J.R. Singhurst. 2007. Rare Plants of Texas. Texas A&M University Press, College Station.
Plants	Walker's Manioc	https://tpwd.texas.gov/gis/rtest/
Plants	Walker's Manioc	Poole, J.M., W. R. Carr, D.M. Price and J.R. Singhurst. 2007. Rare Plants of Texas. Texas A&M University Press, College Station.
Plants	White Bladderpod	https://tpwd.texas.gov/gis/rtest/
Plants	White Bladderpod	Poole, J.M., W. R. Carr, D.M. Price and J.R. Singhurst. 2007. Rare Plants of Texas. Texas A&M University Press, College Station.
Plants	Zapata Bladderpod	https://tpwd.texas.gov/gis/rtest/
Plants	Zapata Bladderpod	Poole, J.M., W. R. Carr, D.M. Price and J.R. Singhurst. 2007. Rare Plants of Texas. Texas A&M University Press, College Station
Plants	Zapata Bladderpod	USFWS 2004. Zapata bladderpod (Lesquerella thamnophila) Recovery Plan. U.S. Fish and Wildlife Service, Region 2, Albuquerque, New Mexico. https://ecos.fws.gov/docs/recovery_plan/040825.pdf
Reptiles	Alligator Snapping Turtle	Dixon, J. R. 2013. Amphibians and Reptiles of Texas. Third Edition. Texas A&M University Press. College Station, Texas, USA.
Reptiles	Black-striped Snake	https://www.herpsoftexas.org/content/regal-black-striped-snake
Reptiles	Black-striped Snake	https://www.iucnredlist.org/species/63750/3128696#habitat-ecology
Reptiles	Brazos Water Snake	Conant, R. and J. T. Collins. 1998. The Peterson field guide series: A field guide to Reptiles and Amphibians, Eastern and Central North America, third edition. Houghton Mifflin Company, Boston, Massachusetts, USA.
Reptiles	Cagle's Map Turtle	Hibbitts, T.D. and T.L. Hibbitts. 2016. Texas Turtles and Crocodilians. Texas Natural History Guides, University of Texas Press.
Reptiles	Cagle's Map Turtle	University of Texas. 2018. Herps of Texas Website. Available at: http://www.herpsoftexas.org/
Reptiles	Chihuahuan Desert lyre snake	http://explorer.natureserve.org/servlet/NatureServe?sourceTemplate=tabular_report.wmt&loadTemplate=species_RptComprehensive.wmt&selectedReport=RptComprehensive.wmt&summaryView=tabular_report.wmt&elKey=681174&paging=home&save=true&startIndex=1&nextStartIndex=1&reset=false&offPageSelectedElKey=681174&offPageSelectedElType=species&offPageYesNo=true&post_processes=&radiobutton=radiobutton&selectedIndexes=681174
Reptiles	Chihuahuan Desert Lyre Snake	https://www.inaturalist.org/taxa/73981-Trimorphodon-vilkinsonii
Reptiles	Chihuahuan Desert Lyre Snake	https://www.iucnredlist.org/species/63997/12728524#habitat-ecology
Reptiles	Chihuahuan Mud Turtle	https://www.inaturalist.org/taxa/39741-Kinosternon-hirtipes-murrayi
Reptiles	Chihuahuan Mud Turtle	https://www.iucnredlist.org/species/63670/97381507#habitat-ecology
Reptiles	Green Sea Turtle	https://tpwd.texas.gov/huntwild/wild/species/greentur/

Taxon	Species (Common Name)	Reference
Reptiles	Green Sea Turtle	Valverde R.A., Holzwart K.R. 2017. Sea Turtles of the Gulf of Mexico. In: Ward C. (eds) Habitats and Biota of the Gulf of Mexico: Before the Deepwater Horizon Oil Spill. Springer, New York, NY.
Reptiles	Hawksbill Sea Turtle	https://tpwd.texas.gov/huntwild/wild/species/seaturtle/
Reptiles	Hawksbill Sea Turtle	https://www.iucnredlist.org/species/8005/12881238#habitat-ecology
Reptiles	Kemp's Ridley Sea Turtle	https://tpwd.texas.gov/huntwild/wild/species/ridley/
Reptiles	Kemp's Ridley Sea Turtle	https://www.iucnredlist.org/species/11533/3292342#habitat-ecology
Reptiles	Kemp's Ridley Sea Turtle	Valverde R.A., Holzwart K.R. 2017. Sea Turtles of the Gulf of Mexico. In: Ward C. (eds) Habitats and Biota of the Gulf of Mexico: Before the Deepwater Horizon Oil Spill. Springer, New York, NY.
Reptiles	Leatherback Sea Turtle	https://tpwd.texas.gov/huntwild/wild/species/lethback/
Reptiles	Leatherback Sea Turtle	https://www.iucnredlist.org/species/6494/43526147#habitat-ecology
Reptiles	Leatherback Sea Turtle	Valverde R.A., Holzwart K.R. 2017. Sea Turtles of the Gulf of Mexico. In: Ward C. (eds) Habitats and Biota of the Gulf of Mexico: Before the Deepwater Horizon Oil Spill. Springer, New York, NY.
Reptiles	Loggerhead Sea Turtle	https://srelherp.uga.edu/turtles/carcar.htm
Reptiles	Loggerhead Sea Turtle	https://tpwd.texas.gov/huntwild/wild/species/logghead/
Reptiles	Loggerhead Sea Turtle	Valverde R.A., Holzwart K.R. 2017. Sea Turtles of the Gulf of Mexico. In: Ward C. (eds) Habitats and Biota of the Gulf of Mexico: Before the Deepwater Horizon Oil Spill. Springer, New York, NY.
Reptiles	Louisiana Pine Snake	Werler, J. E., and J. R. Dixon. 2000. Texas snakes: Identification, Distribution, and Natural History. University of Texas Press. Austin, Texas, USA. Dixon, J. R. 2013. Amphibians and Reptiles of Texas. Third Edition. Texas A&M University Press. College Station, Texas, USA.
Reptiles	Mountain Short-horned Lizard	https://www.inaturalist.org/taxa/36315-Phrynosoma-hernandesi
Reptiles	Mountain Short-horned Lizard	https://www.iucnredlist.org/species/64076/12741970#habitat-ecology
Reptiles	Northern Cat-eyed Snake	http://animaldiversity.ummz.umich.edu/site/accounts/information/Leptodeira_septentrionalis.html
Reptiles	Northern Cat-eyed Snake	https://tpwd.texas.gov/gis/maps/images/biotic-provinces-of-texas/view
Reptiles	Northern Cat-eyed Snake	https://www.inaturalist.org/taxa/29724-Leptodeira-septentrionalis
Reptiles	Northern Scarlet Snake	Werler, J. E., and J. R. Dixon. 2000. Texas snakes: Identification, Distribution, and Natural History. University of Texas Press. Austin, Texas, USA
Reptiles	Reticulate Collared Lizard	http://explorer.natureserve.org/servlet/NatureServe?searchName=Crotaphytus+reticulatus
Reptiles	Reticulate Collared Lizard	https://www.iucnredlist.org/species/64012/12735138#habitat-ecology

SPECIES ANALYSIS SUMMARY REFERENCES

Taxon	Species (Common Name)	Reference
Reptiles	Reticulated Gecko	https://www.herpsoftexas.org/category/taxon/sauria/eublepharidae/coleonyx/coleonyx-reticulatus
Reptiles	Reticulated Gecko	https://www.iucnredlist.org/species/64037/12738857#habitat-ecology
Reptiles	Speckled Racer	https://www.inaturalist.org/taxa/26835-Drymobius-margaritiferus#Habitat
Reptiles	Speckled Racer	https://www.iucnredlist.org/species/197481/2488545#habitat-ecology
Reptiles	Texas Horned Lizard	https://tpwd.texas.gov/huntwild/wild/species/thlizard/
Reptiles	Texas Indigo Snake	http://explorer.natureserve.org/servlet/NatureServe?sourceTemplate=tabular_report.wmt&loadTemplate=species_RptComprehensive.wmt&selectedReport=RptComprehensive.wmt&summaryView=tabular_report.wmt&elKey=637223&paging=home&save=true&startIndex=1&nextStartIndex=1&reset=false&offPageSelectedElKey=637223&offPageSelectedElType=species&offPageYesNo=true&post_processes=&radiobutton=radiobutton&selectedIndexes=637223&selectedIndexes=103475
Reptiles	Texas Scarlet Snake	http://explorer.natureserve.org/servlet/NatureServe?searchName=Cemophora+coccinea+lineri
Reptiles	Texas Scarlet Snake	https://www.inaturalist.org/taxa/27379-Cemophora-coccinea-lineri#Geographic_range
Reptiles	Texas Tortoise	Hibbitts, T.D. and T.L. Hibbitts. 2016 Texas Turtles and Crocodilians. Texas Natural History Guides, University of Texas Press.
Reptiles	Texas Tortoise	http://www.herpsoftexas.org/
Reptiles	Texas Tortoise	http://www.texasturtles.org/Gopherus_berlandieri.html
Reptiles	Timber (Canebrake) Rattlesnake	https://tpwd.texas.gov/huntwild/wild/species/timberrattlesnake/
Reptiles	Timber (Canebrake) Rattlesnake	Werler, J. E., and J. R. Dixon. 2000. Texas snakes: Identification, Distribution, and Natural History. University of Texas Press. Austin, Texas, USA
Reptiles	Trans-Pecos Black-headed Snake	http://explorer.natureserve.org/servlet/NatureServe?sourceTemplate=tabular_report.wmt&loadTemplate=species_RptComprehensive.wmt&selectedReport=RptComprehensive.wmt&summaryView=tabular_report.wmt&elKey=101137&paging=home&save=true&startIndex=1&nextStartIndex=1&reset=false&offPageSelectedElKey=101137&offPageSelectedElType=species&offPageYesNo=true&post_processes=&radiobutton=radiobutton&selectedIndexes=101137
Reptiles	Trans-Pecos Black-headed Snake	https://www.herpsoftexas.org/content/trans-pecos-black-headed-snake

SPECIES ANALYSIS SUMMARY (SGCN)
Project Name: FM 664
CSJ(s): 1051-01-038 1051-01-052

County	Taxon	Common Name	vole	Habitat	Suitable Habitat Present?	Explanation for determination regarding suitable habitat	Impact Determination for SGCNs	Explanation for Impact Determination	Presence/ Absence survey conducted?
Ellis	Amphibians	southern crawfish frog	*Lithobates areolatus areolatus*	The Southern Crawfish Frog can be found in abandoned crawfish holes and small mammal burrows. This species inhabits moist meadows, pasturelands, pine scrub, and river flood plains. This species spends nearly all of its time in burrows and only leaves the burrow area to breed. Although this species can be difficult to detect due to its reclusive nature, the call of breeding males can be heard over great distances. Eggs are laid and larvae develop in temporary water such as flooded fields, ditches, farm ponds and small lakes. Habitat: Shallow water, Herbaceous Wetland, Riparian, Temporary Pool, Cropland/hedgerow, Grassland/herbaceous, Suburban/orchard, Woodland Conifer.	N	According to Tipton, et al. 2012, the species prefers the Post Oak Savannah ecoregion, and the range does not extend to the project area. No post oak savannah habitat is present in the project area.	No impact	No suitable habitat is present in the project area.	N
Ellis	Amphibians	cajun chorus frog	*Pseudacris fouquettei*	The cajun chorus frog can be found at forest edge, forest and woodland grassland/herbaceous areas, riparian, savanna, and shrubland/chaparral.	Y	Forest edges, woodlands, and riparian areas were identified in the project area.	May impact	Suitable habitat is present in the project area; however, no frogs were observed during the site assessment.	N
Ellis	Amphibians	Strecker's chorus frog	*Pseudacris streckeri*	Wooded floodplains and flats, prairies, cultivated fields and marshes. Likes sandy substrates.	Y	Cultivated agricultural fields are located within in the project area.	May impact	Suitable habitat is present in the project area; however, no frogs were observed within the project area.	N
Ellis	Amphibians	Woodhouse's toad	*Anaxyrus woodhousii*	Extremely catholic up to 5,000 feet, does very well (except for traffic) in association with man.	Y	The project area contains grasslands, floodplains, agriculture, and suburban areas with moisture.	May impact	Suitable habitat is present in the project area; however, no toads were observed within the project area.	N
Ellis	Birds	Franklin's gull	*Leucophaeus pipixcan*	Nests in freshwater prairie and open-country marshes with patches of emergent and floating vegetation. Migrates mostly through the continent's center, utilizing agricultural fields, marshes, reservoirs, and many other habitats. Winters mostly along Pacific coastline of Peru and Chile.	N	Marshes or inland lakes were not identified in the project area.	No impact	No suitable habitat is present in the project area.	N
Ellis	Birds	western burrowing owl	*Athene cunicularia hypugaea*	Open grasslands, especially prairie, plains, and savanna, sometimes in open areas such as vacant lots near human habitation or airports; nests and roosts in abandoned burrows	Y	Fallow farmland, open grasslands, and some undeveloped areas were identified within the project area.	No impact	Suitable habitat present; however, no owls were observed within the project area. BMPs would be implemented.	N
Ellis	Mammals	southern short-tailed shrew	*Blarina carolinensis*	Found primarily in pine forests, dry to wet and even swampy habitats, as well as disturbed forests and abandoned agricultural land.	N	According to Schmidley and Bradley 2016, the known range for this species extends to the eastern portion of Ellis County. Therefore, the project area lies outside the known range of this species.	No impact	No suitable habitat is present in the project area.	N

County	Taxon	Common Name	vole	Habitat	Suitable Habitat Present?	Explanation for determination regarding suitable habitat	Impact Determination for SGCNs	Explanation for Impact Determination	Presence/ Absence survey conducted?
Ellis	Mammals	southeastern myotis bat	*Myotis austroriparius*	Caves are rare in Texas portion of range; buildings, hollow trees are probably important. Historically, lowland pine and hardwood forests with large hollow trees; associated with ecological communities near water. Roosts in cavity trees of bottomland hardwoods, concrete culverts, and abandoned man-made structures.	N	No caves are located in the project area. Tree species known to develop hollows, sloughing bark, or other potential bat roosting features were not located in the project area.	No impact	No suitable habitat is present in the project area.	N
Ellis	Mammals	cave myotis bat	*Myotis velifer*	Colonial and cave-dwelling; also roosts in rock crevices, old buildings, carports, under bridges, and even in abandoned Cliff Swallow (Hirundo pyrrhonota) nests; roosts in clusters of up to thousands of individuals; hibernates in limestone caves of Edwards Plateau and gypsum cave of Panhandle during winter; opportunistic insectivore.	Y	There is a bridge over Red Oak Creek suitable for habitation within the project area.	No impact	There were no rub marks, guano odor or other evidence of bat presence at the bridge over Red Oak Creek. Therefore, the bridge is presumed unoccupied.	N
Ellis	Mammals	tricolored bat	Perimyotis subflavus	Forest, woodland and riparian areas are important. Caves are very important to this species. They are not often found in buildings or in deep woods, seeming to prefer edge habitats near areas of mixed agricultural use.	N	Wooded areas dominated by sugar-berry (*Celtis laevigata*), cedar elm (*Ulmus crassifolia*), Shumard oak (*Quercus shumardii*), and American elm (*Ulmus americana*) were observed within the project area. These trees do not provide suitable habitat for the species as they prefer cypress trees, which are known to develop hollows. Tight bark trees like red oaks are unlikely to provide roost sites, but dead pines with sloughing bark may provide roost sites. This species was not observed during the site investigation.	No impact	No suitable habitat is present in the project area.	N

County	Taxon	Common Name	vole	Habitat	Suitable Habitat Present?	Explanation for determination regarding suitable habitat	Impact Determination for SGCNs	Explanation for Impact Determination	Presence/ Absence survey conducted?
Ellis	Mammals	big brown bat	*Eptesicus fuscus*	Any wooded areas or woodlands except south Texas. Riparian areas in west Texas.	N	Wooded areas dominated by sugar-berry (*Celtis laevigata*), cedar elm (*Ulmus crassifolia*), Shumard oak (*Quercus shumardii*), and American elm (*Ulmus americana*) were observed within the action area. These trees do not provide suitable habitat for the species as they prefer cypress trees, which are known to develop hollows. Tight bark trees like red oaks are unlikely to provide roost sites, but dead pines with sloughing bark may provide roost sites. This species was not observed during the site investigation. The action area includes the proposed project area.	No impact	No suitable habitat is present in the project area.	N
Ellis	Mammals	eastern red bat	*Lasiurus borealis*	Found in a variety of habitats in Texas. Usually associated with wooded areas. Found in towns especially during migration.	N	No caves, structures, or tree species known to develop hollows, sloughing bark, or other potential bat roosting features are located in the project area.	No impact	No suitable habitat is present in the project area.	N

County	Taxon	Common Name	vole	Habitat	Suitable Habitat Present?	Explanation for determination regarding suitable habitat	Impact Determination for SGCNs	Explanation for Impact Determination	Presence/ Absence survey conducted?
Ellis	Mammals	hoary bat	*Lasiurus cinereus*	Known from montane and riparian woodland in Trans-Pecos, forests and woods in east and central Texas.	N	Riparian areas dominated by sugar-berry (*Celtis laevigata*), cedar elm (*Ulmus crassifolia*), bur oak (*Quercus macrocarpa*), Shumard oak (*Quercus shumardii*), and American elm (*Ulmus americana*) were observed within the action area. These trees do not provide suitable habitat for the species as they prefer cypress trees, which are known to develop hollows. Tight bark trees like red oaks are unlikely to provide roost sites, but dead pines with sloughing bark may provide roost sites. This species was not observed during the site investigation. The action area includes the proposed project area.	No impact	No suitable habitat is present in the project area.	N
Ellis	Mammals	Mexican free-tailed bat	*Tadarida brasiliensis*	Roosts in buildings in east Texas. Largest maternity roosts are in limestone caves on the Edwards Plateau. Found in all habitats, forest to desert.	N	The proposed project is located in North Texas. Limestone caves or wooded riparian zones consisting of cypress trees, which are known to develop hollows, were not identified within the action area. The action area includes the proposed project area.	No impact	No suitable habitat present in the project area.	N
Ellis	Mammals	swamp rabbit	*Sylvilagus aquaticus*	Mainly lives close to lowland water, often in cypress swamps, marshland, floodplain, and river tributaries	Y	Known range of this species includes all of Ellis County. Red Oak Creek and its associated riparian corridor lies within the project area.	May impact	Suitable habitat is present in the project area; however, no rabbits were observed within the project area.	N
Ellis	Mammals	thirteen-lined ground squirrel	*Ictidomys tridecemlineatus*	Prefers open areas with short grass and well-drained sandy or loamy soils for burrows. It avoids wooded areas.	N	Short grass and well-drained sandy or loamy soils were not identified within the project area.	No impact	No suitable habitat present in the project area.	N
Ellis	Mammals	woodland vole	*Microtus pinetorum*	Include grassy marshes, swamp edges, old-field/pine woodland ecotones, tallgrass fields; generally sandy soils.	Y	Known range of this species includes all of Ellis County. Red Oak Creek and its associated riparian corridor lies within the project area.	May impact	Suitable habitat is present in the project area; however, no voles were observed within the project area.	N

County	Taxon	Common Name	vole	Habitat	Suitable Habitat Present?	Explanation for determination regarding suitable habitat	Impact Determination for SGCNs	Explanation for Impact Determination	Presence/ Absence survey conducted?
Ellis	Mammals	long-tailed weasel	*Mustela frenata*	Includes brushlands, fence rows, upland woods and bottomland hardwoods, forest edges & rocky desert scrub. Usually live close to water.	Y	Fence rows were identified within the project area.	May impact	Suitable habitat present; however, no weasels were observed within the project area.	N
Ellis	Mammals	mink	*Neovison vison*	Intimately associated with water; coastal swamps & marshes, wooded riparian zones, edges of lakes. Prefer floodplains.	Y	A wooded riparian zone is located at Red Oak Creek, a perennial stream.	May impact	Suitable habitat is present in the project area at Red Oak Creek. No mink were observed during the site assessment.	N
Ellis	Mammals	American badger	*Taxidea taxus*	Prefers grasslands and open areas with grasslands, which can include parklands, farms, and treeless areas with friable soil and a supply of rodent prey. They may also be found in forest glades and meadows, marshes, brushy areas, hot deserts, and mountain meadows.	N	Grasslands and open areas with grasslands with friable soil and a supply of rodent prey, forest glades and meadows, marshes, brushy areas, hot deserts, or mountain meadows were not identified within the project area.	No impact	No suitable habitat present is present in the project area.	N
Ellis	Mammals	eastern spotted skunk	*Spilogale putorius*	Catholic; open fields prairies, croplands, fence rows, farmyards, forest edges & woodlands. Prefer wooded, brushy areas & tallgrass prairies. S.p. ssp. interrupta found in wooded areas and tallgrass prairies, preferring rocky canyons and outcrops when such sites are available.	Y	This species is widespread and utilize a wide variety of habitats.	No impact	Suitable habitat present; however, no skunks were observed within the project area. BMPs would be implemented.	N
Ellis	Mammals	western hog-nosed skunk	*Conepatus leuconotus*	Habitats include woodlands, grasslands & deserts, to 7200 feet, most common in rugged, rocky canyon country; little is known about the habitat of the ssp. telmalestes	Y	This species is widespread and utilize a wide variety of habitats.	May impact	Suitable habitat present; however, no skunks were observed within the project area.	N
Ellis	Mammals	mountain lion	*Puma concolor*	Rugged mountains & riparian zones.	N	Rugged mountains were not identified within the action area. A riparian zone is located within the project area; however, the area is too urbanized to support mountain lions.	No impact	No suitable habitat is present in the project area.	N

County	Taxon	Common Name	vole	Habitat	Suitable Habitat Present?	Explanation for determination regarding suitable habitat	Impact Determination for SGCNs	Explanation for Impact Determination	Presence/ Absence survey conducted?
Ellis	Reptiles	eastern box turtle	*Terrapene carolina*	Eastern box turtles inhabit forests, fields, forest-brush, and forest-field ecotones. In some areas they move seasonally from fields in spring to forest in summer. They commonly enters pools of shallow water in summer. For shelter, they burrow into loose soil, debris, mud, old stump holes, or under leaf litter. They can successfully hibernate in sites that may experience subfreezing temperatures. In Maryland bottomland forest, some hibernated in pits or depressions in forest floor (usually about 30 cm deep) usually within summer range; individuals tended to hibernate in same area in different years (Stickel 1989). Also attracted to farms, old fields and cut-over woodlands, as well as creek bottoms and dense woodlands. Egg laying sites often are sandy or loamy soils in open areas; females may move from bottomlands to warmer and drier sites to nest. In Maryland, females used the same nesting area in different years (Stickel 1989).	Y	Woodland area was identified within the project area.	May impact	Suitable habitat is present; however, no box turtles were observed within the project area.	N
Ellis	Reptiles	western box turtle	*Terrapene ornata*	Ornate or western box turtles inhabit prairie grassland, pasture, fields, sandhills, and open woodland. They are essentially terrestrial but sometimes enter slow, shallow streams and creek pools. For shelter, they burrow into soil (e.g., under plants such as yucca) (Converse et al. 2002) or enter burrows made by other species; winter burrow depth was 0.5-1.8 meters in Wisconsin (Doroff and Keith 1990), 7-120 cm (average depth 54 cm) in Nebraska (Converse et al. 2002). Eggs are laid in nests dug in soft well-drained soil in open area (Legler 1960, Converse et al. 2002). Very partial to sandy soil.	Y	Ephemeral, intermittent and perennial streams and woodlands were identified within the project area.	May impact	Potential suitable habitat is present; however, no turtles were observed within the project area.	N
Ellis	Reptiles	slender glass lizard	*Ophisaurus attenuatus*	Prefers relatively dry microhabitats, usually associated with grassy areas. Habitats include open grassland, prairie, woodland edge, open woodland, oak savannas, longleaf pine flatwoods, scrubby areas, fallow fields, and areas near streams and ponds, often in habitats with sandy soil. This species often appears on roads in spring. During inactivity, it occurs in underground burrows. In Kansas, slender glass lizards were scarce in heavily grazed pastures, increased as grass increased with removal of grazing, and declined as brush and trees replaced grass (Fitch 1989). Eggs are laid underground, under cover, or under grass clumps (Ashton and Ashton 1985); in cavities beneath flat rocks or in abandoned tunnels of small mammals (Scalopus, Microtus) (Fitch 1989)	Y	Woodland edge was identified within the project area.	May impact	Suitable habitat is present; however, no lizards were observed within the project area.	N
Ellis	Reptiles	Texas garter snake	*Thamnophis sirtalis annectens*	Irrigation canals and riparian-corridor farmlands in west; marshy, flooded pastureland, grassy or brushy borders of permanent bodies of water; coastal salt marshes. Wet or moist microhabitats are conducive to the species occurrence, but is not necessarily restricted to them; hibernates underground or in or under surface cover; breeds March-August.	Y	Riparian-corridor and farmlands were identified within the project area.	No impact	Suitable habitat present; however, no snakes were observed within the project area. BMPs would be implemented.	N

SPECIES ANALYSIS SUMMARY (SGCN)
Project Name: FM 664
CSJ(s): 1051-01-038 1051-01-052

County	Taxon	Common Name	vole	Habitat	Suitable Habitat Present?	Explanation for determination regarding suitable habitat	Impact Determination for SGCNs	Explanation for Impact Determination	Presence/ Absence survey conducted?
Ellis	Plants	Engelmann's bladderpod	*Physaria engelmannii*	Grasslands and calcareous rock outcrops in a band along the eastern edge of the Edwards Plateau, ranging as far north as the Red River (Carr 2015).	N	Grasslands and calcareous rock outcrops were not identified within the project area.	No impact	No suitable habitat is present in the project area.	N
Ellis	Plants	Hall's prairie clover	*Dalea hallii*	In grasslands on eroded limestone or chalk and in oak scrub on rocky hillsides; Perennial; Flowering May-Sept; Fruiting June-Sept	N	Grasslands on eroded limestone or chalk and oak scrub on rocky hillsides were not identified within the project area.	No impact	No suitable habitat is present in the project area.	N

Form
Species Analysis

Project Name: **FM 664**

CSJ(s): **1051-01-038 & 1051-01-052**

County(ies): **Ellis**

Date Analysis Completed: **April 10, 2020**

Prepared by: **Jonathan Stewart, Civil Associates, Inc.**

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.

I. Endangered Species Act

Select the appropriate statement below based on the determinations recorded in the completed project-specific species analysis spreadsheet:

☒ This project does not require consultation with or authorization from the USFWS under the Endangered Species Act.

☐ This project requires consultation with or authorization from the USFWS under the Endangered Species Act.

For a project that requires federal authorization or approval, if the completed project-specific species analysis spreadsheet indicates, “May affect,” for any species, then consultation with the USFWS is required under section 7 of the Endangered Species Act and the second checkbox above must be checked.

For more information regarding the Endangered Species Act, see **ENV’s Endangered Species Act Handbook**.

II. TPWD Coordination

Select the appropriate statement below:

☐ This project consists solely of maintenance activities that are of a type or type(s) covered by the Maintenance Program Environmental Assessment, and therefore no coordination with TPWD is required. Do not fill out a separate Tier I Site Assessment Form.

☒ This project does not consist solely of maintenance activities that are of a type or type(s) covered by the Maintenance Program Environmental Assessment, and therefore a Tier I Site Assessment is required.

III. Bald and Golden Eagle Protection Act (BGEPA)

Select the appropriate statement below:

☒ This project is not within 660 feet of an active or inactive Bald or Golden Eagle nest. Therefore, no coordination with USFWS is required.

☐ This project is within 660 feet of an active or inactive Bald or Golden Eagle nest; however, construction activities within 660 feet will not occur during the nesting season, and the project will adhere to the National Bald Eagle Management Guidelines of 2007. Therefore, no coordination with USFWS is required.

☐ This project is within 660 feet of an active or inactive Bald or Golden Eagle nest, and construction within 660 feet will occur during the nesting season or the project will not adhere to the National Bald Eagle Management Guidelines of 2007. Therefore, coordination with USFWS to obtain a Non-Purposeful Take Permit is required.

For more information regarding BGEPA, see Section 7.0 of **ENV's Ecological Resources Handbook**.

IV. Migratory Bird Protections

This project will comply with applicable provisions of the Migratory Bird Treaty Act (MBTA) and Texas Parks and Wildlife Code Title 5, Subtitle B, Chapter 64, Birds. It is the department's policy to avoid removal and destruction of active bird nests except through federal or state approved options. In addition it is the department's policy to, where appropriate and practicable:

- use measures to prevent or discourage birds from building nests on man-made structures within portions of the project area planned for construction, and
- schedule construction activities outside the typical nesting season.

For more information regarding migratory bird protections, see **ENV's Guidance: Avoiding Migratory Birds and Handling Potential Violations** and Section 3.0 of **ENV's Ecological Resources Handbook**.

V. Resources Consulted

Indicate which resources were consulted/actions were taken to make the species analysis determinations recorded in this form (DO NOT ATTACH TO THIS FORM OR UPLOAD TO ECOS ANY RESOURCES CONSULTED – JUST CHECK THE APPROPRIATE BOX(ES)):

☒ Aerial Photography ☒ Topographic Map ☒ Natural Diversity Database (NDD)
☐ Karst Zone Maps ☒ Ecological Mapping System of Texas (EMST)
☒ Site Visit ☐ Species Expert Consulted ☐ Species Habitat or Presence/absence Survey
☒ Other:NRCS Soil Map

Tier I Site Assessment

Main CSJ: 1051-01-038, etc.
Form Prepared By: Jonathan Stewart, Civil Associates, Inc.
Date of Evaluation: April 10, 2020
Proposed Letting Date: November 2024
☐ *Project not assigned to TxDOT under the NEPA Assignment MOU*
District(s): Dallas
County(ies): Ellis
Roadway Name: FM 664
Limits From: US 287 in Waxahachie
Limits To: FM 1387
Project Description: Please see the project description available in ECOS in the Work Plan Development Section I.

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.

1. No — Is the project limited to a maintenance activity exempt from coordination?
   http://txdot.gov/inside-txdot/division/environmental/maintenance-program.html

2. No — Has the project previously completed coordination with TPWD?

3. Yes — Is the project within range of a state threatened or endangered species or SGCN and suitable habitat is present?

*Explain:

There is suitable habitat present within the proposed project area for the state-listed Wood Stork (Myceteria americana), sandbank pocketbook (Lampsillis satura), Texas heelsplitter (Potamilus amphicaenus), alligator snapping turtle (Macrochelys temminckii), Texas horned lizard (Phrynosoma cornutum), and timber (canebrake) rattlesnake (Crotalus horridus).

SGCN were analyzed and only those included on the Tier 1 form may be impacted. All other SGCN would not be impacted by the project.

There is suitable habitat present within the proposed project area for the following SGCN species:
cajun chorus frog (Pseudacris fouquettei), Strecker's chorus frog (Pseudacris streckeri, Woodhouse's toad (Anaxyrus woodhousii), Western Burrowing Owl (Athene cunicularia hypugaea), swamp rabbit (Sylvilagus aquaticus), woodland vole (Microtus pinetorum), long-tailed weasel (Mustela frenata), mink (Neovison vison), eastern spotted skunk (Spilogale putorius), western hog-nosed skunk (Conepatus leuconotus), eastern box turtle (Terrapene carolina), western turtle box (Terrapene ornata), slender glass lizard (Ophisaurus attenuatus), and Texas garter snake (Thamnophis sirtalis annectens).

Suitable habitats for these species were present; however, no species were observed within the proposed project during the time of the site assessment.

Date TPWD County List Accessed: March 24, 2020

Date that the NDD was accessed: December 4, 2019

What agency performed the NDD search? TPWD

NDD Search Results for EOIDs and Tracked Managed Areas

EOID Number	Common Name	Scientific Name	Listing Status	Buffer Zone
10990	Hall's prairie clover	*Dalea hallii*	SGCN	10 Mile
11074	Hall's prairie clover	*Dalea hallii*	SGCN	10 Mile
843	Cedar elm-sugarberry Series	*Ulmus crassifolia-celtis laevigata series*	-	10 Mile
11920	Vertisol Blackland Prairie	*Schizachyrium scoparium - Sorghastrum nutans - Andropogon gerardii - Bifora americana Vertisol Grassland*	-	10 Mile
3061	Vertisol Blackland Prairie	*Schizachyrium scoparium - Sorghastrum nutans - Andropogon gerardii - Bifora americana Vertisol Grassland*	-	10 Mile
5234	Warnock's coral-root	*Hexalectris warnockiii*	-	10 Mile
4433	Ashe juniper-oak Series	*Juniperus ashei-quercus spp series*	-	10 Mile
4082	Glass mountain's coral-root	*Hexalectris nitida*	-	10 Mile
3327	Black-capped vireo	*Vireo atricapilla*	-	10 Mile
3522	Black-capped vireo	*Vireo atricapilla*	-	10 Mile
3734	Black-capped vireo	*Vireo atricapilla*	-	10 Mile

No Does the BMP PA eliminate the requirement to coordinate for all species?

Comments:

The following state-listed and SGCN species have species-specific BMPs included in the BMP PA that are listed in full at the end of this form:

Wood Stork, Western Burrowing Owl - Bird BMPs.

Sandbank pocketbook and Texas heelsplitter - Freshwater Mussel BMPs and Water Quality BMPs

Alligator snapping turtle - 1) Minimize impacts to wetlands and 2) Aquatic Reptile BMPs.

Texas horned lizard - 1) Avoid harvester ant mounds in the selection of Project Specific Locations (PSLs) where feasible. 2) Terrestrial Reptile BMPs.

Timber (canebrake) rattlesnake and Texas garter snake - Terrestrial Reptile BMPs

Eastern spotted skunk (using the plains spotted skunk BMP with TPWD approval)- Contractors will be advised of potential occurrence in the project area, to avoid harming the species if encountered, and to avoid unnecessary impacts to dens.

Coordination with TPWD is triggered because the following species do not have species-specific BMPs included in the BMP PA: Cajun chorus frog, Strecker's chorus frog, Woodhouse's Toad, swamp rabbit, woodland vole, long-tailed weasel, mink, western hog-nosed skunk, eastern box turtle, western box turtle, and slender glass lizard.

4. Yes — NDD and TCAP review indicates adverse impacts to remnant vegetation?

*Explain:

According to the MOU with TPWD, important remnant vegetation includes 1) rare vegetation communities and 2) those that are suitable habitat for SGCNs.

To address the first component, Texas Natural Diversity Database (TXNDD) data obtained from TPWD on December 4, 2019, was reviewed along with the USFWS Official Species List, dated December 4, 2019. The TXNDD search radii was 1.5 miles and 10 miles from the proposed project. The NDD search revealed no element of occurrence record within 1.5 miles of the proposed project area. The NDD search also revealed 11 element of occurrence records within 10 miles of the proposed project area and consist of two records for the Hall's prairie clover (Dalea hallii), one record for the Cedar elm-sugarberry Series (Ulmus crassifolia-celtis laevigata series), two records for the Vertisol Blackland Prairie (Schizachyrium scoparium - Sorghastrum nutans - Andropogon gerardii - Bifora americana Vertisol Grassland), one record for the Warnock's coral-root (Hexalectris warnockiii), one record for the Ashe juniper-oak Series (Juniperus ashei-quercus spp series), one record for the Glass mountain's coral-root (Hexalectris nitida), and three records for the Black-capped vireo (Vireo atricapilla). These species and plant communities are located outside of the project area and would not be impacted by the proposed project.

To address important remnant vegetation's second component, general habitat types of those SGCNs that may be impacted by the proposed project include agricultural, forest, grassland, riparian, riverine, savanna/open woodland, shrubland, and woodland. These habitat types are located immediately adjacent to the existing FM 664 corridor, and each includes an edge component. The majority of riparian, riverine, woodland, and forest habitat is located along Red Oak Creek and its tributary, with smaller amounts present at tributary to Irving Branch, South Grove Creek and its tributaries, and smaller culvert crossings. Habitat in an agricultural area is present north of Marshall Road to Old Gate Drive (realignment section of the proposed project). In general, savannah/open woodland, shrubland, and grassland areas are located throughout the project area within rural residential properties, pastures, and areas used for hay production. Developed habitat is located throughout the project area. Impacts to these habitats were quantified, based on the MOU type that best fits vegetation present in the given habitat, by using the Ecological Management Systems of Texas (EMST) correcting for discrepancies using actual observed vegetation types as discussed below. None of these areas that include habitat for SGCNs are considered rare or remnant vegetation communities.

5. Yes — Does the project require a NWP with PCN or IP by USACE?

*Explain:

A NWP 14 with a PCN would be required at Crossing 5 (intermittent tributary to Red Oak Creek). The proposed project would permanently impact approximately 312-linear feet (0.13 acre) of the stream.

6. Yes — Does the project include more than 200 linear feet of stream channel for each single and complete crossing of one or more of the following that is not already channelized or otherwise maintained:

- No — Channel realignment; or
- Yes — Stream bed or stream bank excavation, scraping, clearing, or other permanent disturbance.

*Explain:

The proposed project would impact approximately 312-linear feet of stream (tributary to Red Oak Creek) due to proposed culvert installation).

The proposed bridge at Red Oak Creek will be designed to TxDOT hydraulic specifications. As directed by TxDOT Dallas District, the proposed bridge minimum low chord is to be set at the same or higher elevation of the existing bridge minimum low chord of 608.6 feet and the freeboard would be at least two-feet above the proposed condition of 25-year water-surface elevation. The design meets or exceeds these criteria.

By using proper construction sequencing (construct new northbound bridge while keeping traffic on the existing bridge and then switch the work and traffic), temporary crossing or water diversions would not be required. Coffer dam/temporary dike may be required when constructing the concrete riprap slope pavings underneath the Red Oak Creek bridge.

7. No — Does the project contain known isolated wetlands outside the TxDOT ROW that will be directly impacted by the project?

8. Yes — Would the project impact at least 0.10 acre of riparian vegetation?

*Explain:

The proposed project would impact approximately 3.4 acres of riparian vegetation.

9. Yes — Does project disturb a habitat type in an area equal to or greater than the area of disturbance indicated in the Threshold Table Programmatic Agreement?

*Explain:

The approximately 34.7 acres of Agriculture MOU Type habitat disturbance exceeds the 10-acre area of threshold indicated in the Texas Blackland Prairies Threshold Table PA for Agriculture.

The approximately 10.8 acres of Disturbed Prairie MOU Type habitat disturbance exceeds the 3-acre area of threshold indicated in the Texas Blackland Prairies Threshold Table PA for Disturbed Prairie.

The approximately 3.0 acres of Edwards Plateau Savannah, Woodland, and Shrubland MOU Type habitat disturbance exceeds the 1-acre area of threshold indicated in the Texas Blackland Prairies Threshold Table PA for Edwards Plateau Savannah, Woodland, and Shrubland.

The approximately 3.4 acres of Riparian MOU Type habitat disturbance exceeds the 0.1-acre area of threshold indicated in the Texas Blackland Prairies Threshold Table PA for Riparian.

The approximately 26.5 acres of Tallgrass Prairie, Grassland MOU Type habitat disturbance exceeds the 2-acre area of threshold indicated in the Texas Blackland Prairies Threshold Table PA for Tallgrass Prairie, Grassland.

*Attach associated file of EMST output (Mapper Report or other Excel File which includes MOU Type, Ecosystem Name, Common/Vegetation Type Name) in ECOS

Excel File Name:

FINAL DRAFT 10 1051-01-038, etc. FM 664 EMSTandActualVegTable 4-3-20.xlsx

9.1. Yes — Is there a discrepancy between actual habitat(s) and EMST mapped habitat(s)?

*Explain:

MOU Type	Actual Area (ac)	EMST Area (ac)
Agriculture	34.7	18.3
Disturbed Prairie	10.8	6.4
Edwards Plateau Savannah, Woodland, and Shrubland	3.0	10.1
Open Water	0.4	0
Riparian	3.4	6.7
Tallgrass Prairie, Grassland	26.5	86.8

Urban		112.5	63.2
	Total	191.4	191.4

Attach file showing discrepancy between actual and EMST mapped habitat(s).
File Name:

FINAL DRAFT 08 1051-01-038, etc. FM 664 EMSTfigures 4-3-20.pdf
FINAL DRAFT 09 1051-01-038, etc. FM 664 ActualVegFigures 4-3-20.pdf
FINAL DRAFT 10 1051-01-038, etc. FM 664 EMSTandActualVegTable 4-3-20.xlsx
FINAL DRAFT 11 1051-01-038, etc. FM 664 Photos 12-31-19.pdf

Is TPWD Coordination Required?

Yes

☒ Early Coordination

☐ Administrated Coordination - Must be conducted through ENV-NRM

BMPs Implemented or EPICs included (as necessary):

The implementation of the following BMPs by TxDOT eliminates the need for coordination for potential impacts to these species impacts under section 2.206(i) of the MOU:

Wood Stork and Western Burrowing Owl - Bird BMPs: a) In addition to complying with the Migratory Bird Treaty Act perform the following BMPs: Prior to construction, perform daytime surveys for nests including under bridges and in culverts to determine if they are active before removal. Nests that are active should not be disturbed. b) Do not disturb, destroy, or remove active nests, including ground nesting birds, during the nesting season. c) Avoid the removal of unoccupied, inactive nests, as practicable. d) Prevent the establishment of active nests during the nesting season on TxDOT owned and operated facilities and structures proposed for replacement or repair. e) Do not collect, capture, relocate, or transport birds, eggs, young, or active nests without a permit.

Sandbank pocketbook and Texas heelsplitter - Freshwater Mussel BMPs - a) When work is in the water, survey project footprints for state listed species where appropriate habitat exists. b) When work is in the water and mussels are discovered during surveys, relocate state listed and SGCN mussels under TPWD authorization and implement Water Quality BMPs. c) When work is adjacent to the water, Water Quality BMPs implemented as part of the SWPPP for a construction general permit or any conditions of the 401 water quality certification for the project will be implemented.

Water Quality BMPs - In addition to BMPs required for a TCEQ Storm Water Pollution Prevention Plan and/or 401 water quality permits: a) Minimize the use of equipment in streams and riparian areas during construction. When possible, equipment access should be from banks, bridge decks, or barges. b) When temporary stream crossings are unavoidable, remove stream crossings once they are no longer needed and stabilize banks and soils around the crossing.

Alligator snapping turtle - 1) Minimize impacts to wetland and riverine habitats 2) Aquatic Reptile BMPs

Amphibian and Aquatic Reptile BMPs - a) Contractors will be advised of potential occurrence in the project area, and to avoid harming the species if encountered. b) Minimize impacts to wetland, temporary and permanent open water features, including depressions, and riverine habitats. c) Maintain hydrologic regime and connections between wetlands and other aquatic features. d) Use barrier fencing to direct animal movements away from construction activities and areas of potential wildlife-vehicle collisions in construction areas directly adjacent, or that may directly impact, potential habitat for the target species. e) Apply hydromulching and/or

hydroseeding in areas for soil stabilization and/or revegetation of disturbed areas where feasible. If hydromulching and/or hydroseeding are not feasible due to site conditions, using erosion control blankets or mats that contain no netting, or only contain loosely woven natural fiber netting is preferred. Plastic netting should be avoided to the extent practicable. f) Project specific locations (PSLs) proposed within state-owned ROW should be located in uplands away from aquatic features. g) When work is directly adjacent to the water, minimize impacts to shoreline basking sites (e.g., downed trees, sand bars, exposed bedrock) and overwinter sites (e.g., brush and debris piles, crayfish burrows) where feasible. h) Avoid or minimize disturbing or removing downed trees, rotting stumps, and leaf litter, which may be refugia for terrestrial amphibians, where feasible. i) If gutters and curbs are part of the roadway design, where feasible install gutters that do not include the side box inlet and include sloped (i.e. mountable) curbs to allow small animals to leave roadway. If this modification to the entire curb system is not possible, install sections of sloped curb on either side of the storm water drain for several feet to allow small animals to leave the roadway. Priority areas for these design recommendations are those with nearby wetlands or other aquatic features. j) For sections of roadway adjacent to wetlands or other aquatic features, install wildlife barriers that prevent climbing. Barriers should terminate at culvert openings in order to funnel animals under the road. The barriers should be of the same length as the adjacent feature or 80 feet long in each direction, or whichever is the lesser of the two. k) For culvert extensions and culvert replacement/installation, incorporate measures to funnel animals toward culverts such as concrete wingwalls and barrier walls with overhangs. l) When riprap or other bank stabilization devices are necessary, their placement should not impede the movement of terrestrial or aquatic wildlife through the water feature. Where feasible, biotechnical streambank stabilization methods using live native vegetation or a combination of vegetative and structural materials should be used.

Texas horned lizard - 1) Avoid harvester ant mounds in the selection of Project Specific Locations (PSLs) where feasible. 2) Terrestrial Reptile BMPs.

Timber (canebrake) rattlesnake and Texas garter snake - Terrestrial Reptile BMPs: a) Apply hydro-mulching and/or hydroseeding in areas for soil stabilization and/or revegetation of disturbed areas where feasible. If hydro-mulching and/or hydroseeding are not feasible due to site conditions, utilize erosion control blankets or mats that contain no netting or contain loosely woven, natural fiber netting is preferred. Plastic netting should be avoided to the extent practicable. b) For open trenches and excavated pits, install escape ramps at an angle of less than 45 degrees (1:1) in areas left uncovered. Visually inspect excavation areas for trapped wildlife prior to backfilling. c) Inform contractors that if reptiles are found on project site allow species to safely leave the project area. d) Avoid or minimize disturbing or removing downed trees, rotting stumps, and leaf litter where feasible. e) Contractors will be advised of potential occurrence in the project area, and to avoid harming the species if encountered.

Eastern spotted skunk - Contractors will be advised of potential occurrence in the project area, to avoid harming the species if encountered, and to avoid unnecessary impacts to dens.

TxDOT proposes the following BMPs for species with no species-specific BMPs included in the BMP PA:

Cajun chorus frog, Strecker's chorus frog, Woodhouse's toad - Amphibian and Aquatic Reptile BMPs

Swamp rabbit, woodland vole, long-tailed weasel, and mink - Contractors will be advised of potential occurrence in the project area, and to avoid harming the species if encountered.

Western hog-nosed skunk - Contractors will be advised of potential occurrence in the project area, and to avoid harming the species if encountered, and to avoid unnecessary impacts to dens.

Slender glass lizard, Eastern box turtle, Western box turtle - Terrestrial Reptile BMPs.

TxDOT Contact Information

Name: Leslie Mirise

Phone Number: (214) 320-6162

E-mail: Leslie.Mirise@txdot.gv

Suggested Attachments

Aerial Map (with delineated project boundaries)

USFWS T&E List

TPWD T&E List

Species Analysis Summary

NDD EOID List and Tracked Managed Areas (Required for TPWD Coordination)

EMST Project MOU Summary Table (Required for TPWD Coordination)

TPWD SGCN List

Photos (Required for TPWD Coordination)

Previous TPWD Coordination Documentation (if applicable)

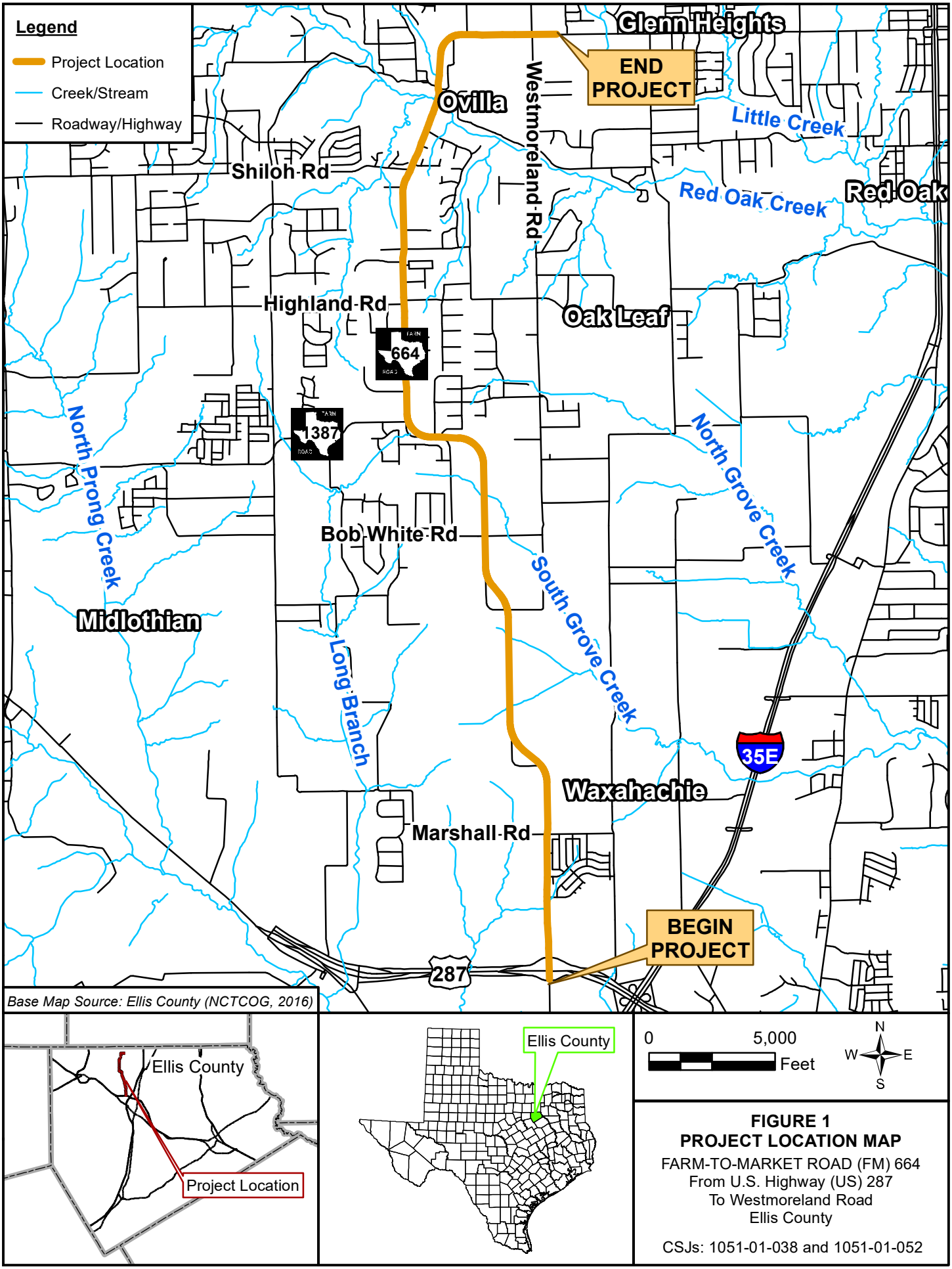
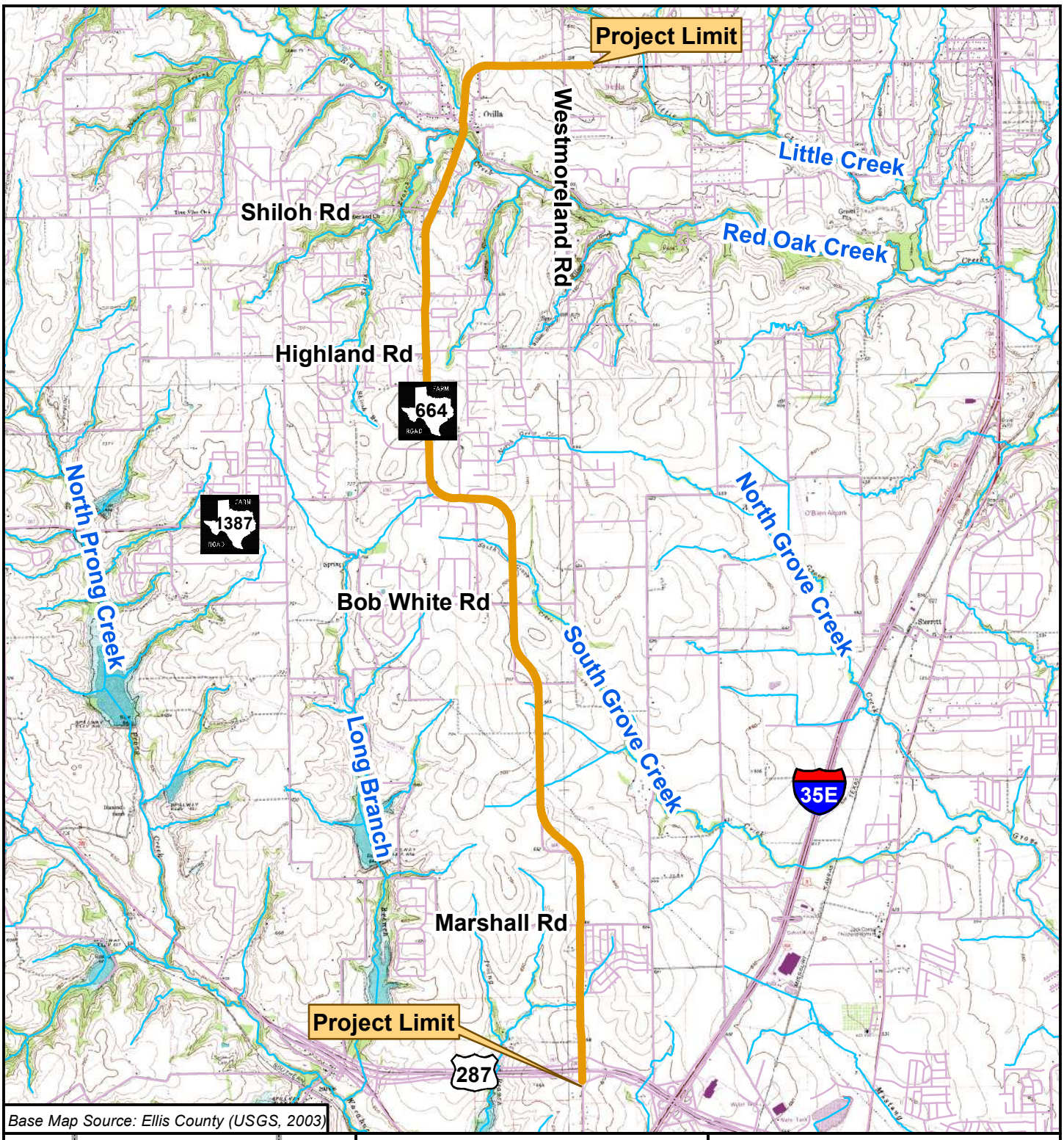


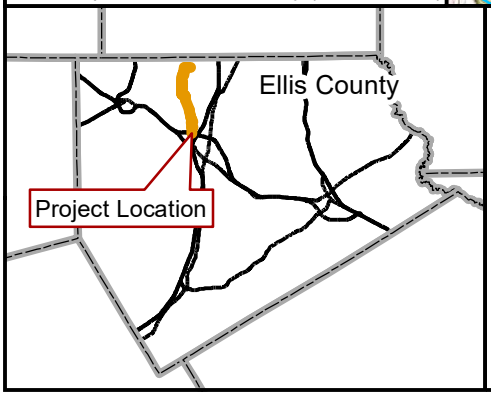
FIGURE 1
PROJECT LOCATION MAP

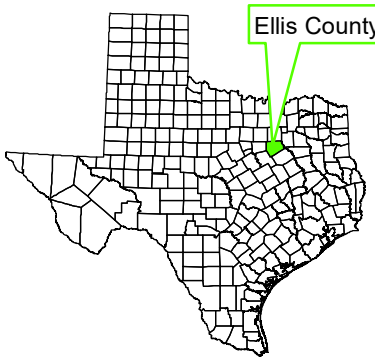
FARM-TO-MARKET ROAD (FM) 664
From U.S. Highway (US) 287
To Westmoreland Road
Ellis County

CSJs: 1051-01-038 and 1051-01-052



Base Map Source: Ellis County (USGS, 2003)





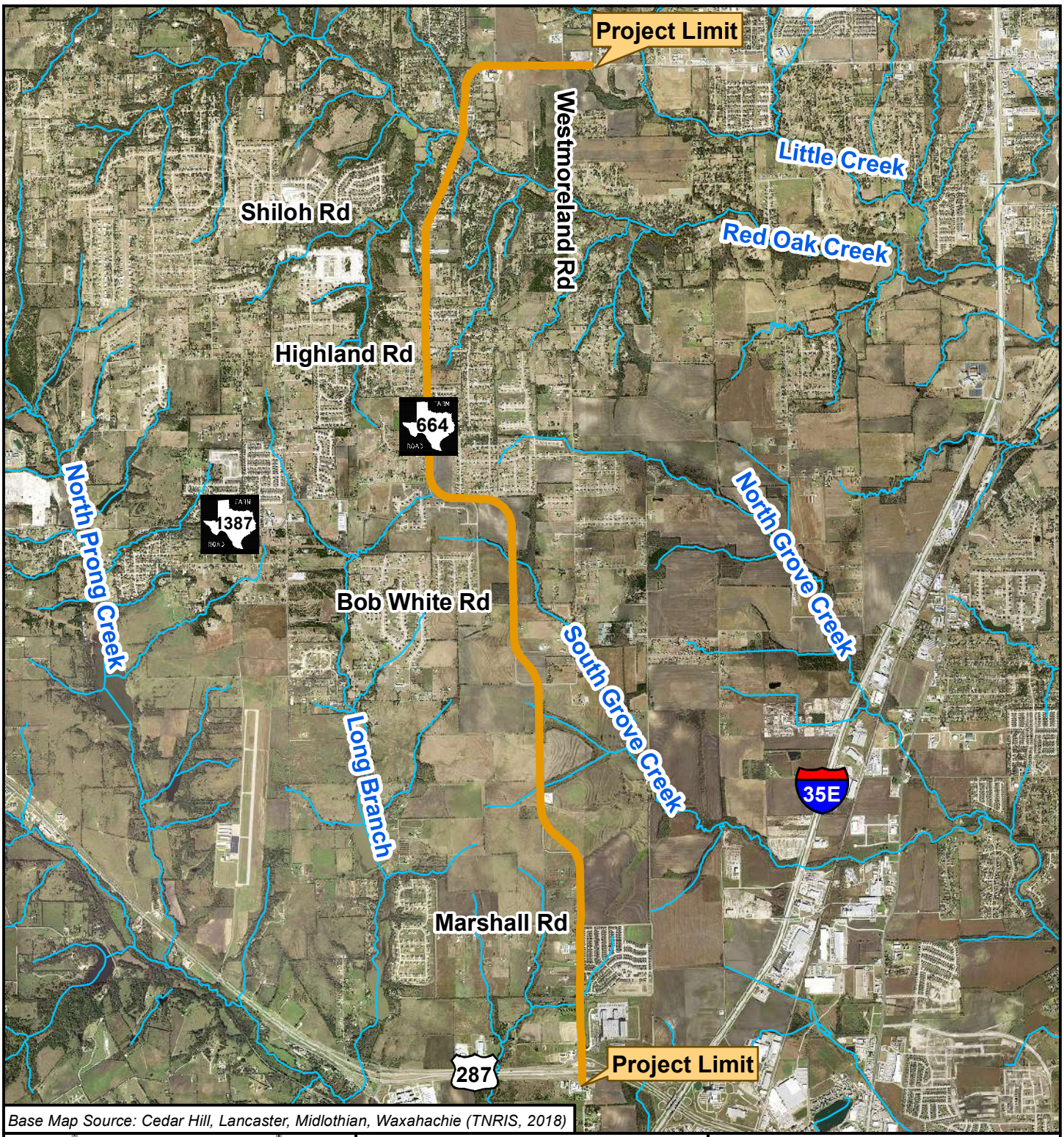
0 5,000 Feet

N W E S

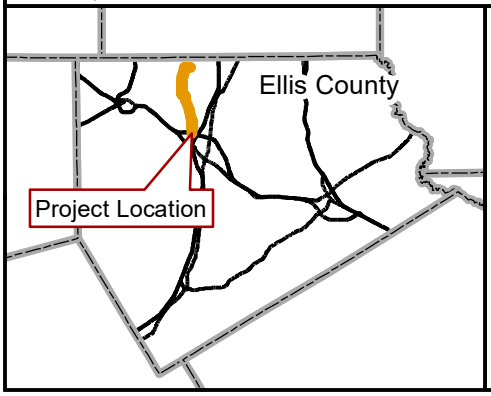
FIGURE 2
TOPOGRAPHIC MAP

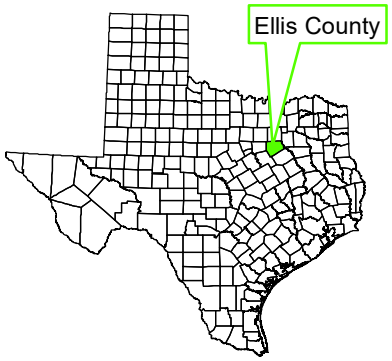
FARM-TO-MARKET ROAD (FM) 664
From U.S. Highway (US) 287
To Westmoreland Road
Ellis County

CSJs: 1051-01-038 and 1051-01-052



Base Map Source: Cedar Hill, Lancaster, Midlothian, Waxahachie (TNRIS, 2018)





0 5,000 Feet

N W E S

FIGURE 3
AERIAL MAP

FARM-TO-MARKET ROAD (FM) 664
From U.S. Highway (US) 287
To Westmoreland Road
Ellis County

CSJs: 1051-01-038 and 1051-01-052

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Arlington Ecological Services Field Office
2005 Ne Green Oaks Blvd
Suite 140
Arlington, TX 76006-6247
Phone: (817) 277-1100 Fax: (817) 277-1129
http://www.fws.gov/southwest/es/arlingtontexas/
http://www.fws.gov/southwest/es/EndangeredSpecies/lists/

In Reply Refer To: December 04, 2019
Consultation Code: 02ETAR00-2019-SLI-1434
Event Code: 02ETAR00-2020-E-00837
Project Name: 2640.01 FM 664

Subject: Updated list of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed, and candidate species, as well as proposed and final designated critical habitat, which may occur within the boundary of your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.).

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under section 7(a)(1) of the Act, Federal agencies are directed to utilize their authorities to carry out programs for the conservation of threatened and endangered species. Under and 7(a)(2) and its implementing regulations (50 CFR 402 et seq.), Federal agencies are required to determine whether their actions may affect threatened and endangered species and/or designated critical habitat. A Federal action is an activity or program authorized, funded, or carried out, in whole or in part, by a Federal agency (50 CFR 402.02).

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For Federal actions other than major construction activities, the Service suggests that a biological evaluation (similar to a Biological Assessment) be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

After evaluating the potential effects of a proposed action on federally listed species, one of the following determinations should be made by the Federal agency:

1. *No effect* - the appropriate determination when a project, as proposed, is anticipated to have no effects to listed species or critical habitat. A "no effect" determination does not require section 7 consultation and no coordination or contact with the Service is necessary. However, the action agency should maintain a complete record of their evaluation, including the steps leading to the determination of affect, the qualified personnel conducting the evaluation, habitat conditions, site photographs, and any other related information.
2. *May affect, but is not likely to adversely affect* - the appropriate determination when a proposed action's anticipated effects are insignificant, discountable, or completely beneficial. Insignificant effects relate to the size of the impact and should never reach the scale where "take" of a listed species occurs. Discountable effects are those extremely unlikely to occur. Based on best judgment, a person would not be able to meaningfully measure, detect, or evaluate insignificant effects, or expect discountable effects to occur. This determination requires written concurrence from the Service. A biological evaluation or other supporting information justifying this determination should be submitted with a request for written concurrence.
3. *May affect, is likely to adversely affect* - the appropriate determination if any adverse effect to listed species or critical habitat may occur as a direct or indirect result of the proposed action, and the effect is not discountable or insignificant. This determination requires formal section 7 consultation.

The Service recommends that candidate species, proposed species, and proposed critical habitat be addressed should consultation be necessary. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at: http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 et seq.), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy

guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

For additional information concerning migratory birds and eagle conservation plans, please contact the Service's Migratory Bird Office at 505-248-7882.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Arlington Ecological Services Field Office
2005 Ne Green Oaks Blvd
Suite 140
Arlington, TX 76006-6247
(817) 277-1100

Project Summary

Consultation Code: 02ETAR00-2019-SLI-1434

Event Code: 02ETAR00-2020-E-00837

Project Name: 2640.01 FM 664

Project Type: TRANSPORTATION

Project Description: Improvements to FM 664

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/32.47999034413855N96.88102450666646W

Counties: Ellis, TX

Endangered Species Act Species

There is a total of 4 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Note that 3 of these species should be considered only under certain conditions.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Birds

NAME	STATUS
Least Tern *Sterna antillarum*	Endangered
Piping Plover *Charadrius melodus*	Threatened
Red Knot *Calidris canutus rufa*	Threatened
Whooping Crane *Grus americana*	Endangered

Least Tern *Sterna antillarum* — Endangered

Population: interior pop.

No critical habitat has been designated for this species.

This species only needs to be considered under the following conditions:

- Wind Energy Projects

Species profile: https://ecos.fws.gov/ecp/species/8505

Piping Plover *Charadrius melodus* — Threatened

Population: [Atlantic Coast and Northern Great Plains populations] - Wherever found, except those areas where listed as endangered.

There is **final** critical habitat for this species. Your location is outside the critical habitat.

This species only needs to be considered under the following conditions:

- Wind Energy Projects

Species profile: https://ecos.fws.gov/ecp/species/6039

Red Knot *Calidris canutus rufa* — Threatened

No critical habitat has been designated for this species.

This species only needs to be considered under the following conditions:

- Wind Energy Projects

Species profile: https://ecos.fws.gov/ecp/species/1864

Whooping Crane *Grus americana* — Endangered

Population: Wherever found, except where listed as an experimental population

There is **final** critical habitat for this species. Your location is outside the critical habitat.

Species profile: https://ecos.fws.gov/ecp/species/758

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

Last Update: 3/4/2020

ELLIS COUNTY

AMPHIBIANS

cajun chorus frog *Pseudacris fouquettei*

Aquatic and terrestrial: Habitats of this ground-dwelling frog are diverse and include forests, fields, swamps, marshes, irrigation ditches, and temporarily flooded areas (Bartlett and Bartlett 1999, Lemmon et al. 2008). Eggs are laid in small clusters that adhere to submerged vegetationin shallow temporary pools, ditches, and flooded areas where emergent vegetation or a grassy margin is present (Dundee and Rossman 1989).

Federal Status: State Status: SGCN: Y
Endemic: N Global Rank: G5 State Rank: SU

southern crawfish frog *Lithobates areolatus areolatus*

Terrestrial and aquatic: The terrestial habitat is primarily grassland and can vary from pasture to intact prairie; it can also include small prairies ir the middle of large forested areas. Aquatic habitat is any body of water but preferred habitat is ephemeral wetlands.

Federal Status: State Status: SGCN: Y
Endemic: N Global Rank: G4T4 State Rank: S3

Strecker's chorus frog *Pseudacris streckeri*

Terrestrial and aquatic: Wooded floodplains and flats, prairies, cultivated fields and marshes. Likes sandy substrates.

Federal Status: State Status: SGCN: Y
Endemic: N Global Rank: G5 State Rank: S3

Woodhouse's toad *Anaxyrus woodhousii*

Terrestrial and aquatic: A wide variety of terrestrial habitats are used by this species, including forests, grasslands, and barrier island sand dunes. Aquatic habitats are equally varied.

Federal Status: State Status: SGCN: Y
Endemic: N Global Rank: G5 State Rank: SU

BIRDS

bald eagle *Haliaeetus leucocephalus*

Found primarily near rivers and large lakes; nests in tall trees or on cliffs near water; communally roosts, especially in winter; hunts live prey, scavenges, and pirates food from other birds

Federal Status: State Status: T SGCN: Y
Endemic: N Global Rank: G5 State Rank: S3B,S3N

black rail *Laterallus jamaicensis*

Salt, brackish, and freshwater marshes, pond borders, wet meadows, and grassy swamps; nests in or along edge of marsh, sometimes on damp ground, but usually on mat of previous years dead grasses; nest usually hidden in marsh grass or at base of Salicornia

Federal Status: PT State Status: SGCN: Y
Endemic: N Global Rank: G3G4 State Rank: S2

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ELLIS COUNTY

BIRDS

Franklin's gull *Leucophaeus pipixcan*

This species is only a spring and fall migrant throughout Texas. It does not breed in or near Texas. Winter records are unusual consisting of one or a few individuals at a given site (especially along the Gulf coastline). During migration, these gulls fly during daylight hours but often come down to wetlands, lake shore, or islands to roost for the night.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S2N

interior least tern *Sternula antillarum athalassos*

Sand beaches, flats, bays, inlets, lagoons, islands. Subspecies is listed only when inland (more than 50 miles from a coastline); nests along sand and gravel bars within braided streams, rivers; also know to nest on man-made structures (inland beaches, wastewater treatment plants, gravel mines, etc); eats small fish and crustaceans, when breeding forages within a few hundred feet of colony

Federal Status: LE	State Status: E	SGCN: Y
Endemic: N	Global Rank: G4T3Q	State Rank: S1B

piping plover *Charadrius melodus*

Beaches, sandflats, and dunes along Gulf Coast beaches and adjacent offshore islands. Also spoil islands in the Intracoastal Waterway. Based on the November 30, 1992 Section 6 Job No. 9.1, Piping Plover and Snowy Plover Winter Habitat Status Survey, algal flats appear to be the highest quality habitat. Some of the most important aspects of algal flats are their relative inaccessibility and their continuous availability throughout all tidal conditions. Sand flats often appear to be preferred over algal flats when both are available, but large portions of sand flats along the Texas coast are available only during low-very low tides and are often completely unavailable during extreme high tides or strong north winds. Beaches appear to serve as a secondary habitat to the flats associated with the primary bays, lagoons, and inter-island passes. Beaches are rarely used on the southern Texas coast, where bayside habitat is always available, and are abandoned as bayside habitats become available on the central and northern coast. However, beaches are probably a vital habitat along the central and northern coast (i.e. north of Padre Island) during periods of extreme high tides that cover the flats. Optimal site characteristics appear to be large in area, sparsely vegetated, continuously available or in close proximity to secondary habitat, and with limited human disturbance.

Federal Status: LT	State Status: T	SGCN: Y
Endemic: N	Global Rank: G3	State Rank: S2N

red knot *Calidris canutus rufa*

Red knots migrate long distances in flocks northward through the contiguous United States mainly April-June, southward July-October. A small plump-bodied, short-necked shorebird that in breeding plumage, typically held from May through August, is a distinctive and unique pottery orange color. Its bill is dark, straight and, relative to other shorebirds, short-to-medium in length. After molting in late summer, this species is in a drab gray-and-white non-breeding plumage, typically held from September through April. In the non-breeding plumage, the knot might be confused with the omnipresent Sanderling. During this plumage, look for the knot’s prominent pale eyebrow and whitish flanks with dark barring. The Red Knot prefers the shoreline of coast and bays and also uses mudflats during rare inland encounters. Primary prey items include coquina clam (Donax spp.) on beaches and dwarf surf clam (Mulinia lateralis) in bays, at least in the Laguna Madre. Wintering Range includes- Aransas, Brazoria, Calhoun, Cameron, Chambers, Galveston, Jefferson, Kennedy, Kleberg, Matagorda, Nueces, San Patricio, and Willacy. Habitat: Primarily seacoasts on tidal flats and beaches, herbaceous wetland, and Tidal flat/shore.

Federal Status: LT	State Status:	SGCN: Y
Endemic: N	Global Rank: G4T2	State Rank: SNRN

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ELLIS COUNTY

BIRDS

western burrowing owl *Athene cunicularia hypugaea*

Open grasslands, especially prairie, plains, and savanna, sometimes in open areas such as vacant lots near human habitation or airports; nests and roosts in abandoned burrows

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G4T4	State Rank: S2

white-faced ibis *Plegadis chihi*

Prefers freshwater marshes, sloughs, and irrigated rice fields, but will attend brackish and saltwater habitats; currently confined to near-coastal rookeries in so-called hog-wallow prairies. Nests in marshes, in low trees, on the ground in bulrushes or reeds, or on floating mats.

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S4B

whooping crane *Grus americana*

Small ponds, marshes, and flooded grain fields for both roosting and foraging. Potential migrant via plains throughout most of state to coast; winters in coastal marshes of Aransas, Calhoun, and Refugio counties.

Federal Status: LE	State Status: E	SGCN: Y
Endemic: N	Global Rank: G1	State Rank: S1N

wood stork *Mycteria americana*

Prefers to nest in large tracts of baldcypress (Taxodium distichum) or red mangrove (Rhizophora mangle); forages in prairie ponds, flooded pastures or fields, ditches, and other shallow standing water, including salt-water; usually roosts communally in tall snags, sometimes in association with other wading birds (i.e. active heronries); breeds in Mexico and birds move into Gulf States in search of mud flats and other wetlands, even those associated with forested areas; formerly nested in Texas, but no breeding records since 1960

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G4	State Rank: SHB,S2N

INSECTS

American bumblebee *Bombus pensylvanicus*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic:	Global Rank: G3G4	State Rank: SNR

No accepted common name *Amblycorypha uhleri*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic:	Global Rank: G2G3	State Rank: SNA

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ELLIS COUNTY

INSECTS

No accepted common name *Arethaea ambulator*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic:	Global Rank: GNR	State Rank: SNR

MAMMALS

American badger *Taxidea taxus*

Generalist. Prefers areas with soft soils that sustain ground squirrels for food. When inactive, occupies underground burrow. Young are born in underground burrows.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S5

big brown bat *Eptesicus fuscus*

Any wooded areas or woodlands except south Texas. Riparian areas in west Texas.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S5

cave myotis bat *Myotis velifer*

Colonial and cave-dwelling; also roosts in rock crevices, old buildings, carports, under bridges, and even in abandoned Cliff Swallow (Hirundo pyrrhonota) nests; roosts in clusters of up to thousands of individuals; hibernates in limestone caves of Edwards Plateau and gypsum cave of Panhandle during winter; opportunistic insectivore.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G4G5	State Rank: S4

eastern red bat *Lasiurus borealis*

Found in a variety of habitats in Texas. Usually associated with wooded areas. Found in towns especially during migration.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G3G4	State Rank: S4

eastern spotted skunk *Spilogale putorius*

Generalist; open fields prairies, croplands, fence rows, farmyards, forest edges & woodlands. Prefer wooded, brushy areas & tallgrass prairies. S.p. ssp. interrupta found in wooded areas and tallgrass prairies, preferring rocky canyons and outcrops when such sites are available.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G4	State Rank: S1S3

hoary bat *Lasiurus cinereus*

Known from montane and riparian woodland in Trans-Pecos, forests and woods in east and central Texas.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G3G4	State Rank: S4

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ELLIS COUNTY

MAMMALS

long-tailed weasel *Mustela frenata*

Includes brushlands, fence rows, upland woods and bottomland hardwoods, forest edges & rocky desert scrub. Usually live close to water.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S5

Mexican free-tailed bat *Tadarida brasiliensis*

Roosts in buildings in east Texas. Largest maternity roosts are in limestone caves on the Edwards Plateau. Found in all habitats, forest to desert.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S5

mink *Neovison vison*

Intimately associated with water; coastal swamps & marshes, wooded riparian zones, edges of lakes. Prefer floodplains.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S4

mountain lion *Puma concolor*

Generalist; found in a wide range of habitats statewide. Found most frequently in rugged mountains & riparian zones.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S2S3

plains spotted skunk *Spilogale putorius interrupta*

Generalist; open fields, prairies, croplands, fence rows, farmyards, forest edges, and woodlands; prefers wooded, brushy areas and tallgrass prairie

Federal Status:	State Status:	SGCN: N
Endemic: N	Global Rank: G4T4	State Rank: S1S3

southeastern myotis bat *Myotis austroriparius*

Caves are rare in Texas portion of range; buildings, hollow trees are probably important. Historically, lowland pine and hardwood forests with large hollow trees; associated with ecological communities near water. Roosts in cavity trees of bottomland hardwoods, concrete culverts, and abandoned man-made structures.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G4	State Rank: S3

southern short-tailed shrew *Blarina carolinensis*

Found in East Texas pine forests and agricultural land. May favor areas with abundant leaf litter and fallen logs (Baumgardner et al. 1992). Nest sites are probably under logs, stumps and other debris.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S4

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ELLIS COUNTY

MAMMALS

swamp rabbit *Sylvilagus aquaticus*

Primarily found in lowland areas near water including: cypress bogs and marshes, floodplains, creeks and rivers.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S5

thirteen-lined ground squirrel *Ictidomys tridecemlineatus*

Prefers short grass prairies with deep soils for burrowing. Frequently found in grazed ranchland, mowed pastures, and golf courses.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S5

tricolored bat *Perimyotis subflavus*

Forest, woodland and riparian areas are important. Caves are very important to this species.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G2G3	State Rank: S3S4

western hog-nosed skunk *Conepatus leuconotus*

Habitats include woodlands, grasslands & deserts, to 7200 feet, most common in rugged, rocky canyon country; little is known about the habitat of the ssp. telmalestes

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G4	State Rank: S4

woodland vole *Microtus pinetorum*

Include grassy marshes, swamp edges, old-field/pine woodland ecotones, tallgrass fields; generally sandy soils.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S3

MOLLUSKS

Louisiana pigtoe *Pleurobema riddellii*

Occurs in small streams to large rivers in slow to moderate currents in substrates of clay, mud, sand, and gravel. Not known from impoundments (Howells 2010f; Randklev et al. 2013b; Troia et al. 2015). [Mussels of Texas 2019]

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G1G2	State Rank: S1

No accepted common name *Fusconaia chunii*

Found in a variety of habitats but most common in riffles. Inhabits various substrates though most often sand, gravel, and cobble (species was recently split from Texas Pigtoe and occurs in similar habitats; Howells 2010a; Randklev et al. 2013b; Randklev et al. 2014a; Troia et al 2015). [Mussels of Texas 2019]

Federal Status:	State Status:	SGCN: N
Endemic: Y	Global Rank: GNR	State Rank: S1

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ELLIS COUNTY

MOLLUSKS

sandbank pocketbook *Lampsilis satura*

Occurs in small streams to large rivers in slow to moderate current in sandy mud to sand and gravel substrate. Can occur in a variety of habitats but most common in littoral habitats such as banks or backwaters or in protected areas along point bars (Randklev et al. 2013b; Randklev et al. 2014a; Troia et al. 2015). [Mussels of Texas 2019]

Federal Status:	State Status: T	SGCN: Y
Endemic:	Global Rank: G2?	State Rank: S1

Texas heelsplitter *Potamilus amphichaenus*

Occurs in small streams to large rivers in standing to slow-flowing water; most common in banks, backwaters and quiet pools; adapts to some reservoirs. Often found in soft substrates such as mud, silt or sand (Howells et al. 1996; Randklev et al. 2017a). [Mussels of Texas 2019]

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G1G3	State Rank: S1

REPTILES

alligator snapping turtle *Macrochelys temminckii*

Aquatic: Perennial water bodies; rivers, canals, lakes, and oxbows; also swamps, bayous, and ponds near running water; sometimes enters brackish coastal waters. Females emerge to lay eggs close to the waters edge.

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G3G4	State Rank: S2

American alligator *Alligator mississippiensis*

Aquatic: Coastal marshes; inland natural rivers, swamps and marshes; manmade impoundments.

Federal Status:	State Status:	SGCN: N
Endemic: N	Global Rank: G5	State Rank: S4

common garter snake *Thamnophis sirtalis*

Terrestrial and aquatic: Habitats used include the grasslands and modified open areas in the vicinity of aquatic features, such as ponds, streams or marshes. Damp soils and debris for cover are thought to be critical.

Federal Status:	State Status:	SGCN: N
Endemic:	Global Rank: G5	State Rank: S2

eastern box turtle *Terrapene carolina*

Terrestrial: Eastern box turtles inhabit forests, fields, forest-brush, and forest-field ecotones. In some areas they move seasonally from fields in spring to forest in summer. They commonly enters pools of shallow water in summer. For shelter, they burrow into loose soil, debris, mud, old stump holes, or under leaf litter. They can successfully hibernate in sites that may experience subfreezing temperatures.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S3

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ELLIS COUNTY

REPTILES

slender glass lizard *Ophisaurus attenuatus*

Terrestrial: Habitats include open grassland, prairie, woodland edge, open woodland, oak savannas, longleaf pine flatwoods, scrubby areas, fallow fields, and areas near streams and ponds, often in habitats with sandy soil.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S3

Texas garter snake *Thamnophis sirtalis annectens*

Terrestrial and aquatic: Habitats used include the grasslands and modified open areas in the vicinity of aquatic features, such as ponds, streams or marshes. Damp soils and debris for cover are thought to be critical.

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G5T4	State Rank: S1

Texas horned lizard *Phrynosoma cornutum*

Terrestrial: Open habitats with sparse vegetation, including grass, prairie, cactus, scattered brush or scrubby trees; soil may vary in texture from sandy to rocky; burrows into soil, enters rodent burrows, or hides under rock when inactive. Occurs to 6000 feet, but largely limited below the pinyon-juniper zone on mountains in the Big Bend area.

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G4G5	State Rank: S3

timber (canebrake) rattlesnake *Crotalus horridus*

Terrestrial: Swamps, floodplains, upland pine and deciduous woodland, riparian zones, abandoned farmland. Limestone bluffs, sandy soil or black clay. Prefers dense ground cover, i.e. grapevines, palmetto.

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G4	State Rank: S4

western box turtle *Terrapene ornata*

Terrestrial: Ornate or western box trutles inhabit prairie grassland, pasture, fields, sandhills, and open woodland. They are essentially terrestrial but sometimes enter slow, shallow streams and creek pools. For shelter, they burrow into soil (e.g., under plants such as yucca) (Converse et al. 2002) or enter burrows made by other species.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S3

PLANTS

Engelmann's bladderpod *Physaria engelmannii*

Grasslands and calcareous rock outcrops in a band along the eastern edge of the Edwards Plateau, ranging as far north as the Red River (Carr 2015).

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G4	State Rank: S3

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ELLIS COUNTY

PLANTS

Hall's prairie clover *Dalea hallii*

In grasslands on eroded limestone or chalk and in oak scrub on rocky hillsides; Perennial; Flowering May-Sept; Fruiting June-Sept

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3	State Rank: S2

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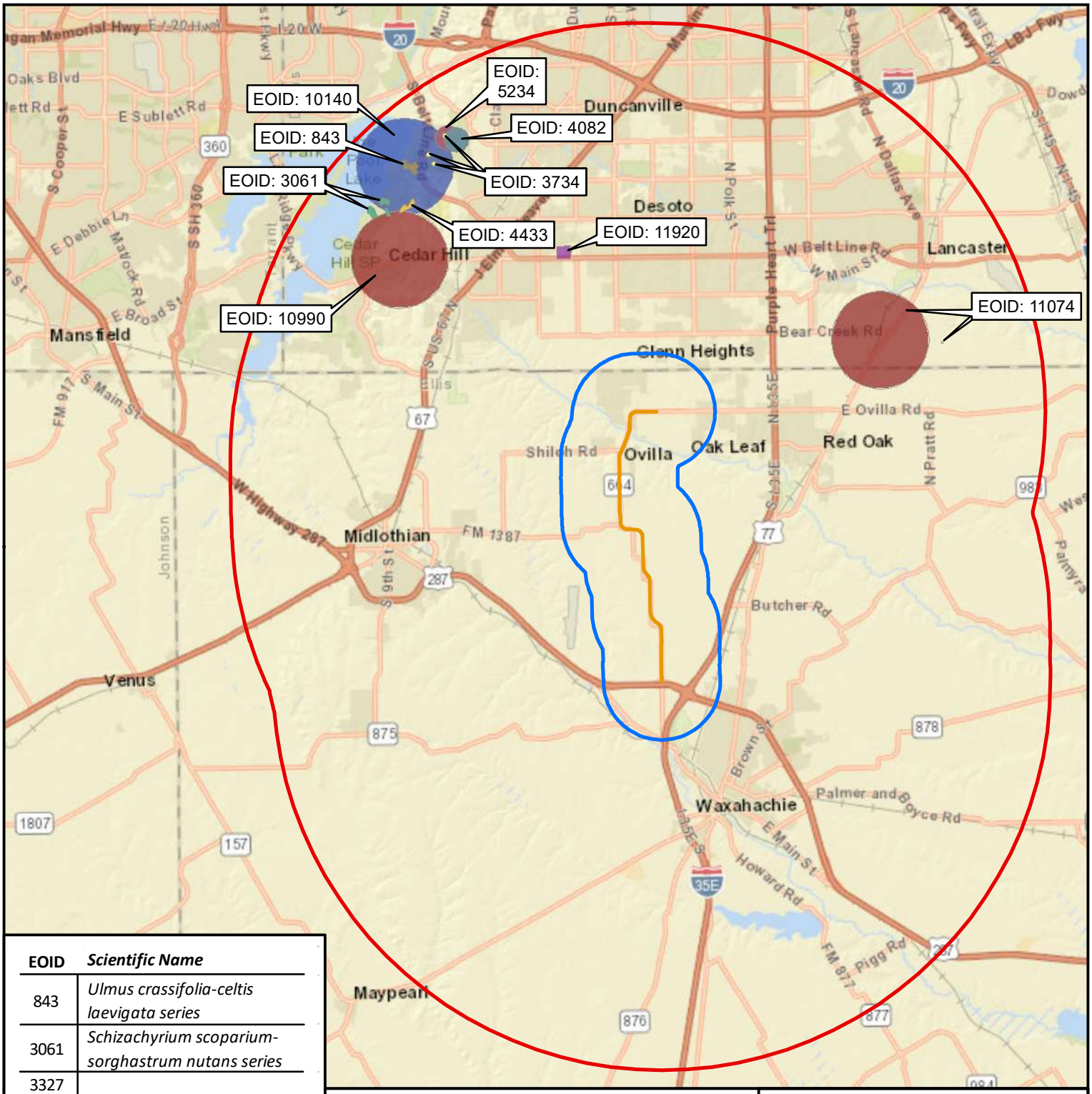


EOID	*Scientific Name*
843	*Ulmus crassifolia-celtis laevigata series*
3061	*Schizachyrium scoparium-sorghastrum nutans series*
3327 3522 3734	*Vireo atricapilla*
4082	*Hexalectris nitida*
4433	*Juniperus ashei-quercus spp. series*
5234	*Hexalectris warnockii*
10140	*Matelea edwardsensis*
10990 11074	*Dalea hallii*
11920	*Schizachyrium scoparium - Sorghastrum nutans - Andropogon gerardii - Bifora americana Vertisol Grassland*

Legend

Project Location

1.5-mile NDD buffer

10-mile NDD buffer

Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, © OpenStreetMap contributors, and the GIS User Community; TPWD NDD (12/04/2019)

0 1.5 3 Miles

N W E S

TXNDD MAP

FARM-TO-MARKET ROAD (FM) 664
From U.S. Highway (US) 287
To Westmoreland Road
Ellis County

CSJs: 1051-01-038 and 1051-01-052

Element Occurrence Record

Scientific Name: Dalea hallii
Occurrence #: 5 **Eo Id:** 10990
Common Name: Hall's prairie clover
Track Status: Track all extant and selected historical EOs
Identification Confirmed: Y - Yes
TX Protection Status:
Global Rank: G3 **State Rank:** S2
Federal Status:

Location Information:

Directions

2 mi W of Cedar Hill.

Survey Information:

First Observation: 1949-09-25 **Survey Date:** **Last Observation:** 1949-09-25
Eo Type: **Eo Rank:** H **Eo Rank Date:** 2006-12-07
Observed Area:

Comments:

General Description: On barren areas in Austin Chalk.

Comments: Complete label citation: 2 mi W of Cedar Hill, rare on barren areas in Austin Chalk, 25 Sep 1949, B. L. Turner 1485 (BRIT/SMU).

Protection Comments:

Management Comments:

Data:

EO Data: 1949: Described by collector as rare.

Community Information:

Scientific Name:	Stratum:	Dominant:	Lifeform:	Composition Note:

Reference:

Citation:

Turner, B.L. (1485). 1949. BRIT/SMU.

Specimen:

Turner, B.L. (1485). 1949. BRIT/SMU. (S49TURSMTXUS)

Element Occurrence Record

Scientific Name: Dalea hallii **Occurrence #:** 6 **Eo Id:** 11074

Common Name: Hall's prairie clover **Track Status:** Track all extant and selected historical EOs

Identification Confirmed: Y - Yes **TX Protection Status:**

Global Rank: G3 **State Rank:** S2 **Federal Status:**

Location Information:

Directions

Plants were observed approx. 2-2.5 miles south of Lancaster. The directions are generalized as this record consists of multiple observations, including a specimen.

Survey Information:

First Observation: 1948-09-26 **Survey Date:** 2015-09-15 **Last Observation:** 2015-09-15

Eo Type: **Eo Rank:** E **Eo Rank Date:** 2015-09-15

Observed Area:

Comments:

General Description: 1948: Gravelly soil, chalk slope. 15 Sep 2015: Species was found on a limestone bedrock outcropping with a significant presence of gravel adjacent to the riparian zone of an intermittent creek which feeds a large impoundment downstream. Topography was gently sloping towards the creek bed. Surrounding ecological communities included disturbed pasture land with introduced grass species, such as Bermudagrass (Cynodon dactylon) and yellow bluestem (Bothriochloa ischaemum), and various forbs and hardwood-evergreen scrubland dominated by live oak (Quercus virginiana), eastern red cedar (Juniperus virginiana), honey mesquite (Prosopis glandulosa), cedar elm (Ulmus crassifolia), black willow (Salix nigra), and possumhaw (Ilex decidua). Identifiable associated species included cusp blazing star (Liatris punctata var. mucronata).

Comments: Complete label citation: 2 mi SSW of Lancaster, gravelly soil, chalk slope, 26 Sep 1948, L. H. Shinners 10464 (BRIT/SMU). 15 Sep 2015: Other adjacent outcroppings were not surveyed for the presence of the plant.

Protection Comments:

Management Comments:

Data:

EO Data: 26 Sep 1948: A specimen was collected. 15 Sep 2015: Roughly five individuals were observed. Most were flowering, in fair health, but showed some signs of stress (browning, brittleness) likely from dry conditions and/or livestock traffic and grazing.

Community Information:

Scientific Name:	Stratum:	Dominant:	Lifeform:	Composition Note:

Reference:

Citation:

Barton, J. M. 2017. Texas Natural Diversity Database Reporting Form regarding an observation of Hall's prairie clover (Dalea hallii) on 15 September 2015, south of Lancaster, Dallas County.

Specimen:

Shinners, L.H. (10464). 1948. BRIT/SMU. (S48SHISMTXUS)

Element Occurrence Record

Scientific Name: Fusconaia chunii **Occurrence #:** 56 **Eo Id:** 12359

Common Name: **Track Status:** Track all extant and selected historical EOs

Identification Confirmed: N - No **TX Protection Status:**

Global Rank: GNR **State Rank:** SNR **Federal Status:**

Location Information:

Directions

Mussels were observed in the Trinity River less than 0.2 mile upstream of the SH 12 bridge in southeast Dallas. The directions are generalized as this record consists of multiple observations.

Survey Information:

First Observation: 2013-06-26 **Survey Date:** 2015-10-14 **Last Observation:** 2013-08-21

Eo Type: **Eo Rank:** E **Eo Rank Date:** 2015-10-14

Observed Area:

Comments:

General Description: 26 June 2013: Substrates of the entire survey area (119 sq. meters) consisted mostly of silt (67%), but also included gravel (23%), sand (6%), and cobble (4%). The mussels were observed at depths of 8-10 ft. 12-14 Oct 2015: Streambed morphology and frequent high-flow events have combined to considerably change the substrate in the relocation area from sand and gravel to thick silt. The F. chunii/flava were found in substrates composed of varying amounts of silt, sand, gravel, and cobble; percentages are provided in the 2015 TxDOT report. Water depth ranged from 2.1 to 4.0 meters.

Comments: The 2013, 2015 observations were originally identified as Fusconaia askewi which was deemed skeptical by the TPWD invertebrate biologist based on Burlakova, et al., 2012 and Howells, 2014. Based on genetic research outlined in Pieri, et al., 2018, these observations are either Fusconaia chunii or F. flava which are morphologically indistinguishable; molecular data are needed to differentiate. 26 June 2013: 116 person-minutes were spent surveying a total of 119 sq. meters using visual searches along the shoreline and SCUBA within areas over 3 feet deep. 22-24 and 29-30 July 2013: F. chunii/flava were placed within a 1-meter radius of 2 stakes within the downstream relocation site. In addition to the Fusconaia sp., 113 non-listed mussels were also relocated. 12-21 August 2013: F. chunii/flava were placed within a 1-meter radius around 18 points (stakes) within the upstream relocation site; 9-11 mussels were placed around a majority of the stakes. In total 756 mussels (rare and common species) were relocated to this site. Common species were distributed throughout the site. 12-14 Oct 2015: No marked mussels (rare and common species) were recovered in the established relocation stations (SF ID 26250). Very few untagged mussels (species not indicated, but assumed to be common species) were present. The established relocation stations (554 sq. meters) were searched for 316 person-minutes. Streambed morphology and frequent high-flow events have combined to scour out and remove all the original relocation stations. Surveyors performed bank to bank sweeps of the streambed just downstream of the relocation site, covering 969 sq. meters in 725 person-minutes. Because of the unsuitable substrate and lack of recaptures in the relocation area, it is advisable to abandon search efforts in this area and instead focus future monitoring efforts on areas downstream where recapture is more likely. In future monitoring, divers will perform transects across the channel perpendicular to flow.

Protection Comments:

Management Comments:

Data:

EO Data: It is assumed the identification of these observations cannot be determined due to lack of genetic material; see the General Comments field. 26 June 2013: Two live mussels (a young individual and a large adult) were observed at the downstream relocation site. 22-24 and 29-30 July 2013: A total of 10 live mussels were collected upstream at one site (Continental Ave. bridge; EO ID: 9696) and relocated to the downstream relocation site. 12-21 August 2013: A total of 163 live mussels were collected upstream from seven sites (IH-30 and IH-35; EO ID: 9696), marked, and relocated to the upstream relocation site. 12-14 Oct 2015: No mussels were observed in the upstream relocation site. A total of 25 live mussels (9 tagged), 5 recently dead (1 tagged), and 1 subfossil were observed immediately downstream of the relocation site.

Community Information:

Scientific Name:	Stratum:	Dominant:	Lifeform:	Composition Note:

Reference:

Citation:

Pieri, A. M., K. Inoue, N. A. Johnson, C. H. Smith, J. L. Harris, C. Robertson, and C. R. Randklev. 2018. Molecular and morphometric analyses reveal cryptic diversity within freshwater mussels (Bivalvia: Unionidae) of the western Gulf coastal drainages of the USA. Biological Journal of the Linnean Society XX:1-17.

Hutchins, Ben. 2015. Multiple emails in December to Dr. Charles Randklev, Institute of Renewable Natural Resources, and Sandy Birnbaum, Texas Natural Diversity Database, addressing the identification of Lampsilis satura observations in the Trinity River and Fusconaia askewi observations in the Trinity and San Jacinto rivers.

Burlakova, Lyubov E., D. Campbell, A. Y. Karatayev, and D. Barclay. 2012. Distribution, genetic analysis and conservation priorities for rare Texas freshwater molluscs in the genera Fusconaia and Pleurobema (Bivalvia: Unionidae). Aquatic Biosystems 8:12.

Howells, Robert G. 2014. Field guide to Texas freshwater mussels. BioStudies, Kerrville, TX. 141 pp.

Texas Dept. of Transportation. 2014. Relocation of rare and state-listed mussel species; bridge replacement over the Trinity River at IH 30 and IH 35 in downtown Dallas, Dallas County, Texas. CSJ: 1068-04-116. 22 January 2014.

Halff Associates, Inc. 2013. Presence/absence survey & relocation of state-listed threatened mussel species, Continental Bridge improvement project, Trinity River, Dallas, Texas. Prepared for City of Dallas, Trinity Watershed Management. October 2013. 30 pp plus appendices.

Texas Dept. of Transportation. 2015. Technical memorandum: Third monitoring event for relocated mussels in the Trinity River at State Highway 12, Dallas County, Texas. CSJ: 1068-04-116. Prepared by Zara Environmental LLC. 16 November 2015.

Specimen:

Element Occurrence Record

Scientific Name: Hexalectris nitida **Occurrence #:** 8 **Eo Id:** 4082

Common Name: Glass Mountains coral-root **Track Status:** Track all extant and selected historical EOs

Identification Confirmed: Y - Yes **TX Protection Status:**

Global Rank: G3 **State Rank:** S3 **Federal Status:**

Location Information:

Directions

Plants were observed in the Cedar Ridge Preserve, Dallas Co. The directions are generalized as this record consists of multiple observations.

Survey Information:

First Observation: 1986-07-16 **Survey Date:** 2016-07-21 **Last Observation:** 2016-07-21

Eo Type: **Eo Rank:** E **Eo Rank Date:** 2016-07-21

Observed Area:

Comments:

General Description: 16 and 19 July 1986: Habitat described as sterile floor of juniper woodland. 21 July 2016: Plants were located in leaf litter on gently sloping limestone substrate within a juniper/oak woodland. Associated species were provided.

Comments:

Protection Comments:

Management Comments:

Data:

EO Data: 16 July 1986: A specimen was collected. 19 July 1986: A specimen was collected. 21 July 2016: 5 flowering plants in good to excellent vigor were observed.

Community Information:

Scientific Name:	Stratum:	Dominant:	Lifeform:	Composition Note:

Reference:

Citation:

Taylor, K. 2016. Emails of 12 and 13 December to Sandy Birnbaum, Texas Natural Diversity Database manager, regarding Bob O'Kennon specimens of Hexalectris warnockii (# 861) and H. nitida (# 862) collected in Dallas County.

Strong, A. W. 2016. Field survey for Hexalectris nitida, H. warnockii, and H. arizonica in Cedar Ridge Preserve, Dallas County of 21 July 2016.

Specimen:

Botanical Research Institute of Texas (from Southern Methodist University), Fort Worth, TX; Bob and Lou Ellen O'Kennon (# 862), Barcode # unknown, 16 July 1986, BRIT/SMU.

Botanical Research Institute of Texas (from Southern Methodist University), Fort Worth, TX; W. F. Mahler (# 9993), Barcode # unknown, 19 July 1986, BRIT/SMU.

Element Occurrence Record

Scientific Name: Hexalectris warnockii **Occurrence #:** 5 **Eo Id:** 5234

Common Name: Warnock's coral-root **Track Status:** Track all extant and selected historical EOs

Identification Confirmed: Y - Yes **TX Protection Status:**

Global Rank: G2G3 **State Rank:** S2 **Federal Status:**

Location Information:

Directions

Plants were observed in the Cedar Ridge Preserve, Dallas Co. The directions are generalized as this record consists of multiple observations.

Survey Information:

First Observation: 1986-07-16 **Survey Date:** 2016-07-21 **Last Observation:** 2016-07-21

Eo Type: **Eo Rank:** E **Eo Rank Date:** 2016-07-21

Observed Area:

Comments:

General Description: 16 July 1986: Habitat described as under juniper trees. 21 July 2016: Plants were located in leaf litter on gently sloping limestone substrate within a juniper/oak woodland. Associated species were provided.

Comments:

Protection Comments:

Management Comments:

Data:

EO Data: 16 July 1986: A specimen was collected. 21 July 2016: Approx. 52 flowering plants in good to excellent vigor were observed in two subpopulations.

Community Information:

Scientific Name:	Stratum:	Dominant:	Lifeform:	Composition Note:

Reference:

Citation:

Taylor, K. 2016. Emails of 12 and 13 December to Sandy Birnbaum, Texas Natural Diversity Database manager, regarding Bob O'Kennon specimens of Hexalectris warnockii (# 861) and H. nitida (# 862) collected in Dallas County.

Strong, A. W. 2016. Field survey for Hexalectris nitida, H. warnockii, and H. arizonica in Cedar Ridge Preserve, Dallas County of 21 July 2016.

Specimen:

Botanical Research Institute of Texas (from Southern Methodist University), Fort Worth, TX; Bob and Lou Ellen O'Kennon (# 861), Barcode # BRIT251709, 16 July 1986, BRIT/SMU.

Element Occurrence Record

Scientific Name: Juniperus ashei-quercus spp. series **Occurrence #:** 16 **Eo Id:** 4433

Common Name: Ashe Juniper-oak Series **Track Status:** Track all extant and selected historical EOs

Identification Confirmed: Y - Yes **TX Protection Status:**

Global Rank: G4 **State Rank:** S4 **Federal Status:**

Location Information:

Directions

SLOPES ALONG EAST BOUNDARY OF CEDAR HILL SP

Survey Information:

First Observation: **Survey Date:** 1989-11-10 **Last Observation:** 1989-11-10

Eo Type: **Eo Rank:** C **Eo Rank Date:** 1989-11-10

Observed Area:

Comments:

General Description: BRUSHY WOODLAND, MODERATE TO LOW DIVERSITY; PATCHES OF POST OAK DOMINATE SMALL ERODING SHALE AREAS

Comments:

Protection Comments:

Management Comments:

Data:

EO Data: DESCRIPTION AND PLANT LIST IN DLI REPORT, SITE 2

Community Information:

Scientific Name:	Stratum:	Dominant:	Lifeform:	Composition Note:

Reference:

Citation:

TEXAS PARKS & WILDLIFE DEPARTMENT. 1990. CEDAR HILL STATE PARK. SUMMARY OF REPRESENTATIVE PLANT COMMUNITIES.

Specimen:

Element Occurrence Record

Scientific Name: Matelea edwardsensis **Occurrence #:** 13 **Eo Id:** 10140

Common Name: plateau milkvine **Track Status:** Track all extant and selected historical EOs

Identification Confirmed: **TX Protection Status:**

Global Rank: G3 **State Rank:** S3 **Federal Status:**

Location Information:

Directions

Cedar Hill State Park.

Survey Information:

First Observation: 19-- **Survey Date:** 19-- **Last Observation:** 19--

Eo Type: **Eo Rank:** **Eo Rank Date:**

Observed Area:

Comments:

General Description:

Comments: Note that this is the only broadleaf milkvine reported from this park. Matelea reticulata was not reported from Dallas County by Diggs, Lipscomb & O'Kennon (1999). See photos and story in: Woodward, W. 1999. Fire to flower. Texas Parks & Wildlife Magazine, November 1999, pp 26-29.

Protection Comments:

Management Comments:

Data:

EO Data:

Community Information:

Scientific Name:	Stratum:	Dominant:	Lifeform:	Composition Note:

Reference:

Citation:

Baldon, P. 1995. Cedar Hill State Park, Dallas County, Texas: preliminary checklist of vascular plants. March 1995 draft. Texas Parks and Wildlife Department, Austin, Texas.

Specimen:

Element Occurrence Record

Scientific Name: Pleurobema riddellii **Occurrence #:** 22 **Eo Id:** 12360

Common Name: Louisiana pigtoe **Track Status:** Track all extant and selected historical EOs

Identification Confirmed: N - No **TX Protection Status:** T

Global Rank: G1G2 **State Rank:** S1 **Federal Status:**

Location Information:

Directions

Mussels were observed in the Trinity River less than 0.2 mile upstream of the SH 12 bridge in southeast Dallas. The directions are generalized as this record consists of multiple observations.

Survey Information:

First Observation: 2013-08-12 **Survey Date:** 2015-10-14 **Last Observation:** 2015-10-14

Eo Type: **Eo Rank:** E **Eo Rank Date:** 2015-10-14

Observed Area:

Comments:

General Description: 12-14 Oct 2015: Streambed morphology and frequent high-flow events have combined to considerably change the substrate in the relocation area from sand and gravel to thick silt. The single P. riddellii was found in substrate that was 60 percent silt, 30 percent sand, and 10 percent cobble. Water depth was 3.1 meters.

Comments: This observation is considered a misidentification based on Randklev, 2017 which states to date, no live or recent shell of P. riddellii has been found during contemporary surveys of the Trinity River. Recent reports of live individuals from the Elm Fork or mainstem near Dallas by private contractors appear to be misidentifications (cites Halff Associates surveys, 2013). 12-21 August 2013: In total 756 mussels (rare and common species) were relocated to this site. 12-14 Oct 2015: No marked mussels (rare and common species) were recovered in the established relocation stations (SF ID: 26251). Very few untagged mussels (species not indicated, but assumed to be common species) were present. The established relocation stations (554 sq. meters) were searched for 316 person-minutes. Streambed morphology and frequent high-flow events have combined to scour out and remove all the original relocation stations. Surveyors performed bank to bank sweeps of the streambed just downstream of the relocation site, covering 969 sq. meters in 725 person-minutes. A total of ten tagged mussels (nine live, one recently dead) were recovered but none were P. riddellii. Because of the unsuitable substrate and lack of recaptures in the relocation area, it is advisable to abandon search efforts in this area and instead focus future monitoring efforts on areas downstream where recapture is more likely. In future monitoring, divers will perform transects across the channel perpendicular to flow.

Protection Comments:

Management Comments:

Data:

EO Data: This observation is considered a misidentification; see General Comments field. 12-21 August 2013: A total of 2 live mussels were collected upstream from one site (EO ID: 12357), marked, and relocated to this site. 12-14 Oct 2015: No mussels were observed in the relocation site. One live (unmarked) mussel was observed immediately downstream of the relocation site.

Community Information:

Scientific Name:	Stratum:	Dominant:	Lifeform:	Composition Note:

Reference:

Citation:

Randklev, C. R., K. Inoue, M. Hart, and A. Pieri. 2017. Assessing the conservation status of native freshwater mussels (Family: Unionidae) in the Trinity River Basin. Grant No. TX E-164-R Endangered Species Program. Submitted to Texas Parks and Wildlife Dept., Austin TX. 31 August 2017.

Texas Dept. of Transportation. 2014. Relocation of rare and state-listed mussel species; bridge replacement over the Trinity River at IH 30 and IH 35 in downtown Dallas, Dallas County, Texas. CSJ: 1068-04-116. 22 January 2014.

Texas Dept. of Transportation. 2015. Technical memorandum: Third monitoring event for relocated mussels in the Trinity River at State Highway 12, Dallas County, Texas. CSJ: 1068-04-116. Prepared by Zara Environmental LLC. 16 November 2015.

Hutchins, Ben. 2015. E-mails of 8 and 24 June with Dr. Neil Ford, University of Texas - Tyler, and David Ford, Halff & Associates, and an e-mail of 23 June with Dr. Charles Randklev, Institute of Renewable Natural Resources, confirming the identification of Pleurobema riddellii specimens from the Trinity River in Dallas County.

Specimen:

Element Occurrence Record

Scientific Name: Rookery
Occurrence #: 468 **Eo Id:** 561
Common Name:
Track Status: Track all extant and selected historical EOs
Identification Confirmed: Y - Yes
TX Protection Status:
Global Rank: G5 **State Rank:** SNR
Federal Status:

Location Information:

Directions

PORTIONS OF DALLAS HUNTING AND FISHING CLUB LAKE AND LANCASTER CLUB LAKE, AS WELL AS ADJACENT STRETCH OF TRINITY RIVER, EAST-SOUTHEAST OF HUTCHINS

Survey Information:

First Observation: 1981 **Survey Date:** **Last Observation:** 1981
Eo Type: **Eo Rank:** **Eo Rank Date:**
Observed Area:

Comments:

General Description: NESTS NOT SUBJECT TO FLOODING

Comments: COLONY NUMBER 555-059

Protection Comments:

Management Comments:

Data:

EO Data: NESTING COLONY OF THE CATTLE EGRET

Community Information:

Scientific Name:	Stratum:	Dominant:	Lifeform:	Composition Note:

Reference:

Citation:

TEXAS COLONIAL WATERBIRD SOCIETY AND TEXAS PARKS & WILDLIFE DEPARTMENT. 1981-1985. TEXAS COLONIAL WATERBIRD CENSUS SUMAMRY.

Specimen:

Element Occurrence Record

Scientific Name: Rookery
Occurrence #: 469 **Eo Id:** 7930
Common Name:
Track Status: Track all extant and selected historical EOs
Identification Confirmed: Y - Yes
TX Protection Status:
Global Rank: G5 **State Rank:** SNR
Federal Status:

Location Information:

Directions

BOTH SIDES OF HIGHWAY 45/75 AT RED OAK CREEK, NORTH OF PALMER

Survey Information:

First Observation: 1981 **Survey Date:** **Last Observation:** 1990
Eo Type: **Eo Rank:** **Eo Rank Date:**
Observed Area:

Comments:

General Description:

Comments: COLONY NUMBER 555-060

Protection Comments:

Management Comments:

Data:

EO Data: NESTING COLONY OF THE GREAT EGRET, SNOWY EGRET, LITTLE BLUE HERON, CATTLE EGRET, BLACK-CROWNED NIGHT-HERON

Community Information:

Scientific Name:	Stratum:	Dominant:	Lifeform:	Composition Note:

Reference:

Citation:

Martin, Catrina. 1991. Texas Colonial Waterbird Census Summary - 1990. Compiled for Texas Parks & Wildlife Dept. and Texas Colonial Waterbird Society. 13 March 1991.

Specimen:

Element Occurrence Record

Scientific Name: Rookery **Occurrence #:** 474 **Eo Id:** 1439

Common Name: **Track Status:** Track all extant and selected historical EOs

Identification Confirmed: Y - Yes **TX Protection Status:**

Global Rank: G5 **State Rank:** SNR **Federal Status:**

Location Information:

Directions

INTERSECTION OF SIMPSON STUART AND BONNIE VIEW ROADS INCLUDING FIVEMILE CREEK TRIBUTARY AND SEVERAL PONDS, WEST-NORTHWEST OF HUTCHINS

Survey Information:

First Observation: 1988 **Survey Date:** **Last Observation:** 1990

Eo Type: **Eo Rank:** **Eo Rank Date:**

Observed Area:

Comments:

General Description:

Comments: COLONY NUMBER 555-065

Protection Comments:

Management Comments:

Data:

EO Data: NESTING COLONY OF THE GREAT EGRET, SNOWY EGRET, LITTLE BLUE HERON, CATTLE EGRET, BLACK-CROWNED NIGHT-HERON

Community Information:

Scientific Name:	Stratum:	Dominant:	Lifeform:	Composition Note:

Reference:

Citation:

Martin, Catrina. 1991. Texas Colonial Waterbird Census Summary - 1990. Compiled for Texas Parks & Wildlife Dept. and Texas Colonial Waterbird Society. 13 March 1991.

TEXAS COLONIAL WATERBIRD SOCIETY AND TEXAS PARKS & WILDLIFE DEPARTMENT. 1986-1989. TEXAS COLONIAL WATERBIRD CENSUS SUMMARY. SPECIAL ADMINISTRATIVE REPORTS.

Specimen:

Element Occurrence Record

Scientific Name: Rookery
Occurrence #: 477 **Eo Id:** 6868
Common Name:
Track Status: Track all extant and selected historical EOs
Identification Confirmed: Y - Yes
TX Protection Status:
Global Rank: G5 **State Rank:** SNR
Federal Status:

Location Information:

Directions

AT FISH HATCHERIES NORTH OF LOG CABIN ROAD, SOUTH OF KLEBERG

Survey Information:

First Observation: 1990 **Survey Date:** **Last Observation:** 1990
Eo Type: **Eo Rank:** **Eo Rank Date:**
Observed Area:

Comments:

General Description:

Comments: COLONY NUMBER 555-068

Protection Comments:

Management Comments:

Data:

EO Data: NESTING COLONY OF THE GREAT EGRET, SNOWY EGRET, LITTLE BLUE HERON, CATTLE EGRET, WHITE-FACED IBIS

Community Information:

Scientific Name:	Stratum:	Dominant:	Lifeform:	Composition Note:

Reference:

Citation:

Martin, Catrina. 1991. Texas Colonial Waterbird Census Summary - 1990. Compiled for Texas Parks & Wildlife Dept. and Texas Colonial Waterbird Society. 13 March 1991.

Specimen:

Element Occurrence Record

Scientific Name: Schizachyrium scoparium - Sorghastrum nutans - Andropogon gerardii - Bifora americana Vertisol Grassland
Occurrence #: 29 **Eo Id:** 11919
Common Name: Vertisol Blackland Prairie
Track Status: Track all extant and selected historical EOs
Identification Confirmed: Y - Yes
TX Protection Status:
Global Rank: G1G2 **State Rank:** SNR
Federal Status:

Location Information:

Directions

The site is located approximately 2.0 air miles southwest of Hutchins, and 2.5 air miles northeast of Lancaster, on the east side of Lancaster Hutchins Road. The directions were created by database staff.

Survey Information:

First Observation: 2009-03-14 **Survey Date:** 2009-03-14 **Last Observation:** 2009-03-14
Eo Type: **Eo Rank:** E **Eo Rank Date:** 2009-03-14
Observed Area:

Comments:

General Description: 14 March 2009: This site is noted as having a stream. See the Composition Tab for other species within the area.

Comments:

Protection Comments:

Management Comments:

Data:

EO Data: 14 March 2009: One plant community site of poor quality grass species; Forb species are less than 5 percent medium quality, and in low abundance; Exotic species are present; Woody cover is 51-75 percent.

Community Information:

Scientific Name:	Stratum:	Dominant:	Lifeform:	Composition Note:
Andropogon gerardii	Herb (field)	Y	Graminoid	SFID:25753
Bifora americana	Herb (field)	Y	Flowering forb	SFID:25753
Bothriochloa laguroides	Herb (field)	Y	Graminoid	SFID:25753
Juniperus virginiana	Tree (canopy & subcanopy)	Y	Needle-leaved tree	SFID:25753
Nassella leucotricha	Herb (field)	Y	Graminoid	SFID:25753
Schizachyrium scoparium	Herb (field)	Y	Graminoid	SFID:25753
Sorghastrum nutans	Herb (field)	Y	Graminoid	SFID:25753

Reference:

Citation:

Native Prairies Association of Texas. 2011. Tallgrass prairie survey project that includes shapefiles, excel files, documents, images, and protocol for multiple counties in Texas (2000-2013).

Specimen:

Element Occurrence Record

Scientific Name: Schizachyrium scoparium - Sorghastrum nutans - Andropogon gerardii - Bifora americana Vertisol Grassland
Occurrence #: 30 **Eo Id:** 11920
Common Name: Vertisol Blackland Prairie
Track Status: Track all extant and selected historical EOs
Identification Confirmed: Y - Yes
TX Protection Status:
Global Rank: G1G2 **State Rank:** SNR
Federal Status:

Location Information:

Directions

The site is located approximately 4.0 air miles almost directly south of Duncanville, 3.5 air miles directly west of Desoto, and 2.0 air miles east of Cedar Hill, on the north side of Belt Line Road/FM 1382. The directions were created by database staff.

Survey Information:

First Observation: 2009-03-21 **Survey Date:** 2009-03-21 **Last Observation:** 2009-03-21
Eo Type: **Eo Rank:** E **Eo Rank Date:** 2009-03-21
Observed Area:

Comments:

General Description: 21 March 2009: There is a small stream that runs through the site. See the Composition Tab for other species within the area.

Comments:

Protection Comments:

Management Comments:

Data:

EO Data: 21 March 2009: One plant community site of unknown quality grass species; Forb species are poor quality; Exotic species are present; Woody cover is greater than 75 percent.

Community Information:

Scientific Name:	Stratum:	Dominant:	Lifeform:	Composition Note:
Andropogon gerardii	Herb (field)	Y	Graminoid	SFID:25751
Bifora americana	Herb (field)	Y	Flowering forb	SFID:25751
Juniperus virginiana	Tree (canopy & subcanopy)	Y	Needle-leaved tree	SFID:25751
Schizachyrium scoparium	Herb (field)	Y	Graminoid	SFID:25751
Sorghastrum nutans	Herb (field)	Y	Graminoid	SFID:25751

Reference:

Citation:

Native Prairies Association of Texas. 2011. Tallgrass prairie survey project that includes shapefiles, excel files, documents, images, and protocol for multiple counties in Texas (2000-2013).

Specimen:

Element Occurrence Record

Scientific Name: Schizachyrium scoparium - Sorghastrum nutans - Andropogon gerardii - Bifora americana Vertisol Grassland
Occurrence #: 83 **Eo Id:** 11973
Common Name: Vertisol Blackland Prairie
Track Status: Track all extant and selected historical EOs
Identification Confirmed: Y - Yes
TX Protection Status:
Global Rank: G1G2 **State Rank:** SNR
Federal Status:

Location Information:

Directions

The site is located approximately 0.7 air miles directly east of the Arlington Municipal Airport, on the east side of New York Avenue. The directions were created by database staff.

Survey Information:

First Observation: 2010-08-07 **Survey Date:** 2010-08-07 **Last Observation:** 2010-08-07
Eo Type: **Eo Rank:** E **Eo Rank Date:** 2010-08-07
Observed Area:

Comments:

General Description: 7 August 2010: There is no surface water on the site; See the Composition Tab for other species within the area.

Comments:

Protection Comments:

Management Comments: 7 August 2010: This site would benefit from occassional grazing and from prescribed burning.

Data:

EO Data: 7 August 2010: One plant community of medium quality grass species; Forb species are high quality; Exotic species are present; Woody cover is 51-75 percent.

Community Information:

Element Occurrence Record

Scientific Name:	Stratum:	Dominant:	Lifeform:	Composition Note:
Andropogon gerardii	Herb (field)	Y	Graminoid	SFID: 25966
Bifora americana	Herb (field)	Y	Forb	SFID: 25966
Celtis laevigata	Tree (canopy & subcanopy)	N	Broad-leaved deciduous tree	SFID: 25966
Helianthus maximiliani	Herb (field)	N	Forb	SFID: 25966
Prosopis glandulosa	Tree (canopy & subcanopy)	N	Thorn tree	SFID: 25966
Salvia farinacea	Herb (field)	N	Forb	SFID: 25966
Schizachyrium scoparium	Herb (field)	Y	Graminoid	SFID: 25966
Solidago canadensis	Herb (field)	N	Forb	SFID: 25966
Sorghastrum nutans	Herb (field)	Y	Graminoid	SFID: 25966
Ulmus crassifolia	Tree (canopy & subcanopy)	N	Broad-leaved deciduous tree	SFID: 25966

Reference:

Citation:

Native Prairies Association of Texas. 2011. Tallgrass prairie survey project that includes shapefiles, excel files, documents, images, and protocol for multiple counties in Texas (2000-2013).

Specimen:

Element Occurrence Record

Scientific Name: Schizachyrium scoparium-sorghastrum nutans series
Occurrence #: 27 **Eo Id:** 588
Common Name: Little Bluestem-indiangrass Series
Track Status: Track all extant and selected historical EOs
Identification Confirmed: Y - Yes
TX Protection Status:
Global Rank: G2 **State Rank:** S2
Federal Status:

Location Information:

Directions

FERRIS, 20 MILES SOUTH OF DALLAS, THEN ONE MILE EAST OF IH-45 ON 660, ON SOUTH SIDE OF 660

Survey Information:

First Observation: 1985 **Survey Date:** 1985-07-12 **Last Observation:** 1985-07-12
Eo Type: **Eo Rank:** C **Eo Rank Date:**
Observed Area: 1.00

Comments:

General Description: A SMALL, MOSTLY NATIVE MEADOW, WITH A LOT OF JOHNSONGRASS

Comments:

Protection Comments:

Management Comments:

Data:

EO Data:

Community Information:

Scientific Name:	Stratum:	Dominant:	Lifeform:	Composition Note:

Reference:

Citation:

DIAMOND, D. D. 1985. FIELD TRIP TO NORTH TEXAS JULY 10- 12, 1985.

BURLESON, MICKEY. 1984. FILES OF MICKEY BURLESON, 1984.

Specimen:

Element Occurrence Record

Scientific Name: Schizachyrium scoparium-sorghastrum nutans series
Occurrence #: 31 **Eo Id:** 3061
Common Name: Little Bluestem-indiangrass Series
Track Status: Track all extant and selected historical EOs
Identification Confirmed: Y - Yes
TX Protection Status:
Global Rank: G2 **State Rank:** S2
Federal Status:

Location Information:

Directions

AT THE END OF A DEAD END ROAD IN CEDAR HILL STATE PARK OFF BELT LINE ROAD

Survey Information:

First Observation: 1984 **Survey Date:** 1989-11-10 **Last Observation:** 1989-11-10
Eo Type: **Eo Rank:** BC **Eo Rank Date:**
Observed Area:

Comments:

General Description: UNBROKEN SOD WITH MANY NATIVE SPECIES AND SOME INVASION OF JOHNSONGRASS IN PATCHES

Comments: ONLY FAIR CONDITION; MADGE GATLIN ALSO KNOWS HOW TO GET TO THIS SITE

Protection Comments:

Management Comments: ACTIVE MANAGEMENT REQUIRED TO REDUCE MESQUITE COVER - BURN?

Data:

EO Data: DESCRIPTION AND PRELIMINARY PLANT LIST FOR ONE PORTION OF OCCURRENCE IN DLI REPORT, SITE 1

Community Information:

Scientific Name:	Stratum:	Dominant:	Lifeform:	Composition Note:

Reference:

Citation:

TEXAS PARKS & WILDLIFE DEPARTMENT. 1990. CEDAR HILL STATE PARK. SUMMARY OF REPRESENTATIVE PLANT COMMUNITIES.

RISKIND, DAVID H. 1984. FILES OF DAVID RISKIND.

Specimen:

Element Occurrence Record

Scientific Name: Schizachyrium scoparium-sorghastrum nutans series
Occurrence #: 106 **Eo Id:** 4434
Common Name: Little Bluestem-indiangrass Series
Track Status: Track all extant and selected historical EOs
Identification Confirmed: Y - Yes
TX Protection Status:
Global Rank: G2 **State Rank:** S2
Federal Status:

Location Information:

Directions

FROM INTERSECTION OF COUNTRY CLUB (FM 1722) AND BALDRIDGE, GO SOUTHWEST 0.3 MILE, THEN TURN NORTHWEST (THERE IS A SIGN FOR KACHINA PRAIRIE PARK)

Survey Information:

First Observation: 1992? **Survey Date:** 2000-07-14 **Last Observation:** 2000-07-14
Eo Type: **Eo Rank:** **Eo Rank Date:**
Observed Area:

Comments:

General Description: ANDROPOGON GERARDII - SORGHASTRUM NUTANS - SCHIZACHYRIUM SCOPARIUM - PANICUM VIRGATUM; GOOD FORB DIVERSITY BUT NEEDS MANAGEMENT FOR WOODY AND EXOTIC SPECIES

Comments: OWNED BY CITY OF ENNIS, MANAGED UNDER CONSERVATION EASEMENT BY NATURAL AREAS PRESERVATION ASSOCIATION; SPECIES LIST ON FILE

Protection Comments:

Management Comments: NEEDS MANAGEMENT FOR WOODY AND EXOTIC SPECIES

Data:

EO Data: PRAIRIE REMNANT

Community Information:

Scientific Name:	Stratum:	Dominant:	Lifeform:	Composition Note:

Reference:

Citation:

SINGHURST, JASON. NO DATE. BOTANIST/ECOLOGIST, WILDLIFE DIVERISTY BRANCH, TEXAS PARKS AND WILDLIFE DEPARTMENT, 4200 SMITH SCHOOL ROAD, AUSTIN, TEXAS 78744; PHONE 512/389-8726; jason.singhurst@tpwd.state.tx.us

PRICE, DANA M. NO DATE. BOTANIST, WILDLIFE DIVERSITY BRANCH, TEXAS PARKS AND WILDLIFE DEPARTMENT, 3000 SOUTH IH-35, SUITE 100, AUSTIN, TEXAS 78704; PHONE: 512/912-7043.

Specimen:

Element Occurrence Record

Scientific Name: Spilogale putorius **Occurrence #:** 5 **Eo Id:** 12604

Common Name: eastern spotted skunk **Track Status:** Track all extant and selected historical EOs

Identification Confirmed: Y - Yes **TX Protection Status:**

Global Rank: G4 **State Rank:** S1S3 **Federal Status:**

Location Information:

Directions

Multiple observations located throughout the Dallas/Fort Worth (DFW) Metroplex. Directions were created by database staff. The directions are generalized as this record consists of multiple observations.

Survey Information:

First Observation: 1950-10-12 **Survey Date:** 2015-03-20 **Last Observation:** 2015-03-20

Eo Type: **Eo Rank:** E **Eo Rank Date:** 2015-03-20

Observed Area:

Comments:

General Description: 20 March 2015: This observation was recorded in bottomland hardwoods.

Comments:

Protection Comments:

Management Comments:

Data:

EO Data: 12 October 1950: Skin and skull of one male preserved specimen; 8 November 1959: One adult male preserved specimen; 28 July 1964: One preserved specimen of unknown sex and age; June 1967: One adult female preserved specimen; 15 March 1972: One adult male preserved specimen; 15 June 1973: One female preserved specimen; 20 March 2015: One eastern spotted skunk photo was captured by a Moultrie game camera at 5:16 a.m. The temperature was noted as 45 degrees Fahrenheit. The game camera was deployed on 16 February 2015, the batteries ran out on 15 May 2015, and the camera was picked up on 26 May 2015. Derek Broman, Texas Parks and Wildlife Department Urban Wildlife Biologist, confirmed the identification of the observation.

Community Information:

Scientific Name:	Stratum:	Dominant:	Lifeform:	Composition Note:

Reference:

Citation:

Ferguson, Adam. 2014. Texas Skunk Record Database regarding five specices of skunk in Texas.

Barker, Alex W. 1995. Letter and printout of catalogue cards of April to Peggy Horner, Texas Parks and Wildlife Department, Conservation Scientist, regarding Vulpes velox, Vulpes macrotis, and Spilogale putorius interrupta from the Dallas Museum of Natural History in Fair Park, Dallas, TX.

Denkhaus, R. 2015. Email of 27 May to Derek Broman, Texas Parks and Wildlife Department Urban Wildlife Biologist, about an eastern spotted skunk at The Fort Worth Nature Center and Refuge, Fort Worth, TX.

Voss, William J. 1995. Letter of 7 April to Peggy Horner regarding specimens of swift and kit foxes, and spotted skunks, including scans of records, at the Fort Worth Museum of Science and History, Fort Worth, TX.

Schmidly, David J. 1983. Texas mammals east of the Balcones Fault Zone. Number six: The W. L. Moody, Jr. natural history series. Texas A&M University Press, College Station, TX. 400 pp.

Specimen:

Dallas Museum of Natural History, Dallas, TX; unknown (#unknown), Catalog #MAM000052, 12 October 1950, DaMNH.

Fort Worth Museum of Science and History, Fort Worth, TX; J. M. Goode (#unknown), Catalog #6, 8 November 1959, FWMSH.

Fort Worth Museum of Science and History, Fort Worth, TX; Ted Klepper (#unknown), Catalog #95H-1830, June 1967, FWMSH.

Fort Worth Museum of Science and History, Fort Worth, TX; W. L. Pratt (#unknown), Catalog #95H-1824, 28 July 1964, FWMSH.

Fort Worth Museum of Science and History, Fort Worth, TX; unknown (#unknown), Catalog #95H-1848, 15 June 1973, FWMSH.

University of Texas at Arlington, Arlington, TX; unknown (#unknown), Catalog #1066, 15 March 1972, UTA

Element Occurrence Record

Scientific Name: Sternula antillarum athalassos **Occurrence #:** 31 **Eo Id:** 7284

Common Name: interior least tern **Track Status:** Track all extant and selected historical EOs

Identification Confirmed: Y - Yes **TX Protection Status:** E

Global Rank: G4T3Q **State Rank:** S1B **Federal Status:** LE

Location Information:

Directions

GRAVEL MINE NEAR BELT LINE AND POST OAK ROADS IN SOUTHEAST DALLAS, EAST OF I-45

Survey Information:

First Observation: 2000-08-04 **Survey Date:** **Last Observation:** 2000-08-04

Eo Type: **Eo Rank:** **Eo Rank Date:**

Observed Area:

Comments:

General Description: GRAVEL MINE

Comments: SEE REPORT (U01BOY01TXUS) FOR MORE DETAILS; HIGH PROBABILITY THAT THESE BIRDS ARE THE SAME ONES OR OF THE SAME COLONY AS THOSE OBSERVED AT SOUTHSIDE WASTEWATER TREATMENT PLANT CA. 2 AIR MILES NORTHEAST OF GRAVEL MINE (SEE OCCURRENCE 032)

Protection Comments:

Management Comments:

Data:

EO Data: 4 AUGUST 2000, FIVE ADULTS AND FOUR FLEDGLINGS OBSERVED

Community Information:

Scientific Name:	Stratum:	Dominant:	Lifeform:	Composition Note:

Reference:

Citation:

BOYLAN, JEANETTE. 2001. RESULTS OF THE 2000 INTERIOR LEAST TERN MONITORING PROJECT AT THE SOUTHSIDE WASTEWATER TREATMENT PLANT IN DALLAS.

Specimen:

Element Occurrence Record

Scientific Name: Sternula antillarum athalassos **Occurrence #:** 32 **Eo Id:** 2874

Common Name: interior least tern **Track Status:** Track all extant and selected historical EOs

Identification Confirmed: Y - Yes **TX Protection Status:** E

Global Rank: G4T3Q **State Rank:** S1B **Federal Status:** LE

Location Information:

Directions

SOUTHSIDE WASTEWATER TREATMENT PLANT, SOUTHEAST DALLAS, JUST EAST OF TRINITY RIVER

Survey Information:

First Observation: 1992 **Survey Date:** **Last Observation:** 2000-08-28

Eo Type: **Eo Rank:** **Eo Rank Date:**

Observed Area:

Comments:

General Description: WASTEWATER TREATMENT PLANT

Comments: MONITORING PROJECT BEGAN FOR THIS SITE IN 1998; MONITORS ARE VOLUNTEERS FROM THE DALLAS COUNTY AUDUBON SOCIETY AND THE DALLAS ZOO; OTHER BIRDS OBSERVED (HIGHEST NUMBER SEEN ON ANY PARTICULAR DAY): WOOD STORKS (150), WHITE-FACED IBIS (25), WHITE IBIS (4), GREEN HERONS (4), ROSEATE SPOONBILLS, BLACK TERNS, AND COMMON MOORHENS; THE REPORT (U01BOY01TXUS) CONTAINS DAILY OBSERVATIONS FROM MAY-AUGUST 2000 INCLUDING OBSERVERS, WEATHER, AND NUMBER OF ADULTS AND EGGS/CHICKS

Protection Comments:

Management Comments:

Data:

EO Data: IN 1998 AND 1999 CA. 4 CHICKS PRODUCED; 30 MAY 2000 BREEDING COLONY DISCOVERED IN MONOFILL (AREA OF PLANT WHERE SLUDGE IS MIXED WITH SAND), HIGHEST NUMBER OF ADULTS SEEN WAS 21 WITH 4-6 NESTS, AFTER SEVERAL HEAVY RAINS TERNS ABANDONED THIS NEST SITE; 23 JUNE 2000 TERNS OBSERVED COURTING IN FIELD A; JUNE-JULY 2000 TERNS SELDOM SEEN, SO SEARCH AREA EXPANDED, OBSERVED POSSIBLE NESTING AT GRAVEL MINE SOUTHWEST OF PLANT (SEE OCCURRENCE 031); 28 AUGUST 2000 TWO JUVENILES AND 6 SUBADULTS OBSERVED FLYING AND FISHING OVER, AND LOAFING ON A SANDBAR IN PULICH POND

Community Information:

Scientific Name:	Stratum:	Dominant:	Lifeform:	Composition Note:

Reference:

Citation:

BOYLAN, JEANETTE. 2001. RESULTS OF THE 2000 INTERIOR LEAST TERN MONITORING PROJECT AT THE SOUTHSIDE WASTEWATER TREATMENT PLANT IN DALLAS.

REID, JEFFERY A. 1993. MEMO TO USFWS FIELD SUPERVISOR RE: ABANDONMENT OF BALD EAGLE NEST ON RAY ROBERTS RESERVOIR (INCLUDES MAPS FOR BALD EAGLE AND INTERIOR LEAST TERN NESTING LOCALITIES). MAY 3, 1993.

Specimen:

Element Occurrence Record

Scientific Name: Ulmus crassifolia-celtis laevigata series
Occurrence #: 25 **Eo Id:** 843
Common Name: Cedar Elm-sugarberry Series
Track Status: Track all extant and selected historical EOs
Identification Confirmed: Y - Yes
TX Protection Status:
Global Rank: G2G3 **State Rank:** S4
Federal Status:

Location Information:

Directions

TERRACES ALONG JOHN PENN BRANCH, BOTH SIDES OF OLD ROUTE 1382, CA. THREE-QUARTER MILE NORTHEAST OF ENTRANCE TO CEDAR HILL SP

Survey Information:

First Observation: **Survey Date:** 1989-11-10 **Last Observation:** 1989-11-10
Eo Type: **Eo Rank:** C **Eo Rank Date:** 1989-11-10
Observed Area:

Comments:

General Description: DECIDUOUS BOTTOMLAND FOREST WITH BURR OAK, CEDAR ELM, SUGARBERRY; CORALBERRY COMMON IN UNDERSTORY

Comments:

Protection Comments:

Management Comments:

Data:

EO Data: DESCRIPTION AND PLANT LIST IN DLI REPORT, SITE 3

Community Information:

Scientific Name:	Stratum:	Dominant:	Lifeform:	Composition Note:

Reference:

Citation:

TEXAS PARKS & WILDLIFE DEPARTMENT. 1990. CEDAR HILL STATE PARK. SUMMARY OF REPRESENTATIVE PLANT COMMUNITIES.

Specimen:

Element Occurrence Record

Scientific Name: Vireo atricapilla **Occurrence #:** 8 **Eo Id:** 3327

Common Name: black-capped vireo **Track Status:** Track all extant and selected historical EOs

Identification Confirmed: Y - Yes **TX Protection Status:** E

Global Rank: G3 **State Rank:** S3B **Federal Status:**

Location Information:

Directions

GREENHILLS ENVIRONMENTAL CENTER

Survey Information:

First Observation: 1984 **Survey Date:** 1985 **Last Observation:** 1985

Eo Type: **Eo Rank:** A **Eo Rank Date:**

Observed Area:

Comments:

General Description: DWARF WOODLAND; JUNIPER, OAK, SUMAC WITH WELL VEGETATED SHRUB LAYERS

Comments: THREATENED BY HABITAT MODIFICATION AND COWBIRD PARASITISM.

Protection Comments: LEGALLY PROTECTED MIGRANT BIRD - ADEQUATE.

Management Comments: DO NOT GRAZE OR BROWSE HABITAT.

Data:

EO Data: INSECTIVOROUS, FOLIAGE GLEANING VIREO. NEST 0.5 TO 1 METER HIGH IN BRUSH AT END OF LIMB. HIGH FIDELITY TO NEST TERRITORY BY MATED PAIRS. NESTING SUCCESSFUL.

Community Information:

Scientific Name:	Stratum:	Dominant:	Lifeform:	Composition Note:

Reference:

Citation:

MARSHALL, J. T., R. B. CLAPP AND J. A. GRZYBOWSKI. 1984. INTERIM STATUS REPORT: VIREO ATRICAPILLUS WOODHOUSE, BLACK-CAPPED VIREO. USF& WS, ALBUQUERQUE, NM.

RISKIND, DAVID, PH.D. TEXAS PARKS AND WILDLIFE DEPARTMENT 4200 SMITH SCHOOL ROAD AUSTIN, TEXAS 78744 PH-512/479-4897 (WORK)

MARSHALL, J. T., R. B. CLAPP AND J. A. GRZYBOWSKI. 1985. STATUS REPORT: VIREO ATRICAPILLUS WOODHOUSE (BLACK-CAPPED VIREO). REPORT TO USF& WS, ALBUQUERQUE, NEW MEXICO. 48pp.

Specimen:

Element Occurrence Record

Scientific Name: Vireo atricapilla **Occurrence #:** 14 **Eo Id:** 3734

Common Name: black-capped vireo **Track Status:** Track all extant and selected historical EOs

Identification Confirmed: Y - Yes **TX Protection Status:** E

Global Rank: G3 **State Rank:** S3B **Federal Status:**

Location Information:

Directions

IMMEDIATELY BELOW THE RADIO TOWER, DALLAS COUNTY, JUST NORTH OF KINGSWOOD AND JUST SOUTH OF TELEVISION ANTENNAE, STATION KRLD

Survey Information:

First Observation: **Survey Date:** **Last Observation:** 1984-SUMM

Eo Type: **Eo Rank:** **Eo Rank Date:**

Observed Area:

Comments:

General Description: JUNIPER-OAK WOODLAND

Comments: SITE BEARS FURTHER EXAMINATION & PERHAPS FIELD VERIFICATION.

Protection Comments:

Management Comments:

Data:

EO Data: NO DATA AVAILABLE AS TO NUMBERS OF INDIVIDUALS, SUCCESS OF BREEDING ACTIVITY OR CONDITION OF HABITAT.

Community Information:

Scientific Name:	Stratum:	Dominant:	Lifeform:	Composition Note:

Reference:

Citation:

STANFORD, GEOFFREY. 1985-01-31. TELEPHONE CONVERSATION WITH DR. STANFORD, DIRECTOR OF THE GREENHILLS ENVIRONMENTAL CENTER, ON 31 JAN. 1985 AT 10:00 A.M., PH-214/296-1955. 7575 WHEATFIELD ROAD, DALLAS, TX 75249.

Specimen:

Element Occurrence Record

Scientific Name: Vireo atricapilla **Occurrence #:** 63 **Eo Id:** 3522

Common Name: black-capped vireo **Track Status:** Track all extant and selected historical EOs

Identification Confirmed: Y - Yes **TX Protection Status:** E

Global Rank: G3 **State Rank:** S3B **Federal Status:**

Location Information:

Directions

ON FM 1382 ABOUT 1.6 MILES SOUTH OF INTERSECTION OF 1382 AND IH-20 ON WEST-SOUTHWEST FACING SLOPE ON EAST SIDE OF ROAD; SOUTHWEST DALLAS COUNTY

Survey Information:

First Observation: 1985 **Survey Date:** 1993-04-26 **Last Observation:** 1993-05-04

Eo Type: **Eo Rank:** **Eo Rank Date:**

Observed Area:

Comments:

General Description:

Comments: FOR SALE, ALTHOUGH SITE IS PROBABLY NOT DEVELOPABLE, ADJACENT AREAS ARE DEVELOPABLE; ONLY ONE PAIR FOUND ON RTC PROPERTY, NONE FOUND AT ADJACENT GREENHILLS ENVIRONMENTAL CENTER

Protection Comments:

Management Comments:

Data:

EO Data: TWO BLACK-CAPPED VIREOS LOCATED ALONG EAST BOUNDARY OF TRACT A; POSSIBLY ONE MALE WAS MATED

Community Information:

Scientific Name:	Stratum:	Dominant:	Lifeform:	Composition Note:

Reference:

Citation:

TURNER, PAUL D. 1993. ASSESSMENT OF THE OCCURRENCE OF AN ENDANGERED SPECIES, THE BLACK-CAPPED VIREO, AT MOUNTAIN CREEK ASSET. REOMS # 613198762, FOR THE RESOLUTION TRUST CORPORATION. MAY 1993.

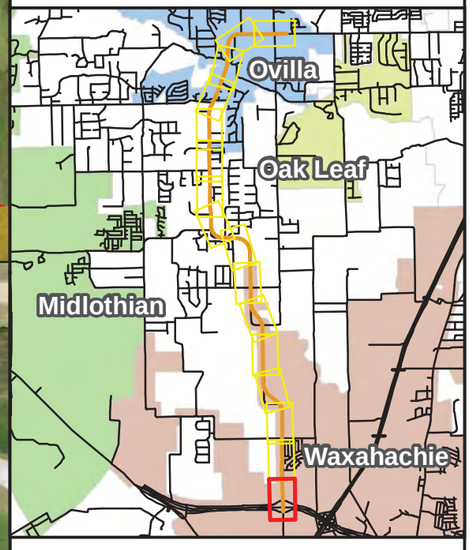
Specimen:

EMST
VEGETATION MAP

FARM-TO-MARKET ROAD (FM) 664
From U.S. Highway (US) 287
To Westmoreland Road
Ellis County

CSJs: 1051-01-038 and 1051-01-052

0 250 500 Feet



Legend

- Existing Right-of-Way
- Proposed Right-of-Way
- Proposed Easement
- Agriculture
- Disturbed Prairie
- Edwards Plateau Savannah, Woodland, and Shrubland
- Riparian
- Tallgrass Prairie, Grassland
- Urban

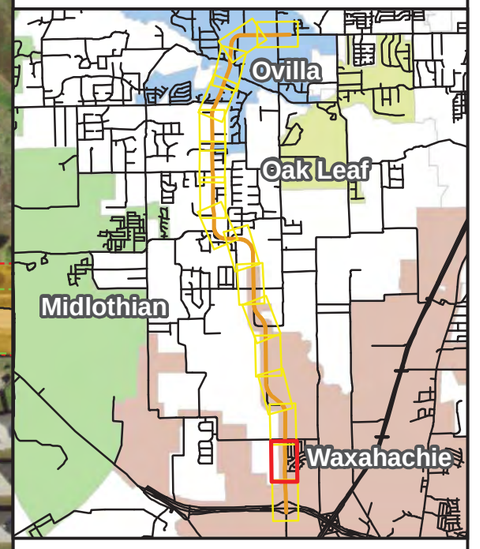
Base Map Source: TNRIS (2018)

EMST
VEGETATION MAP

FARM-TO-MARKET ROAD (FM) 664
From U.S. Highway (US) 287
To Westmoreland Road
Ellis County

CSJs: 1051-01-038 and 1051-01-052

0 250 500 Feet



Tributary to Irving Branch

115+00 120+00 125+00 130+00 664 135+00 140+00 145+00

Oregon Tr
Valley View Dr
Zander Dr

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Ellis County

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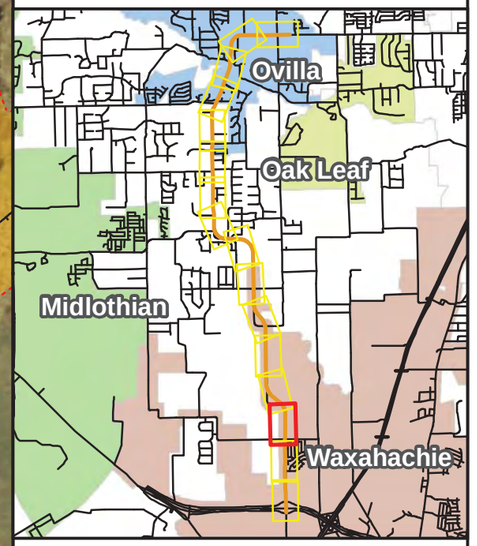

Legend

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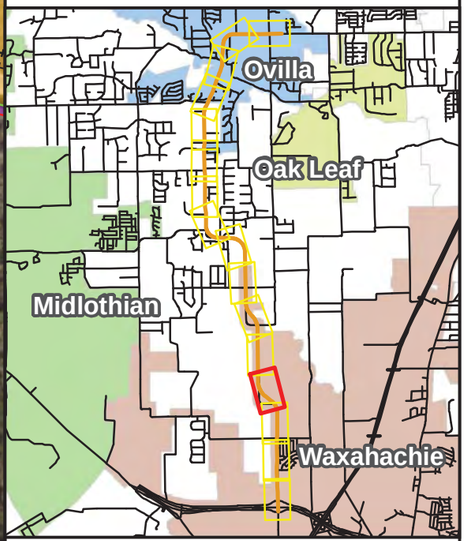

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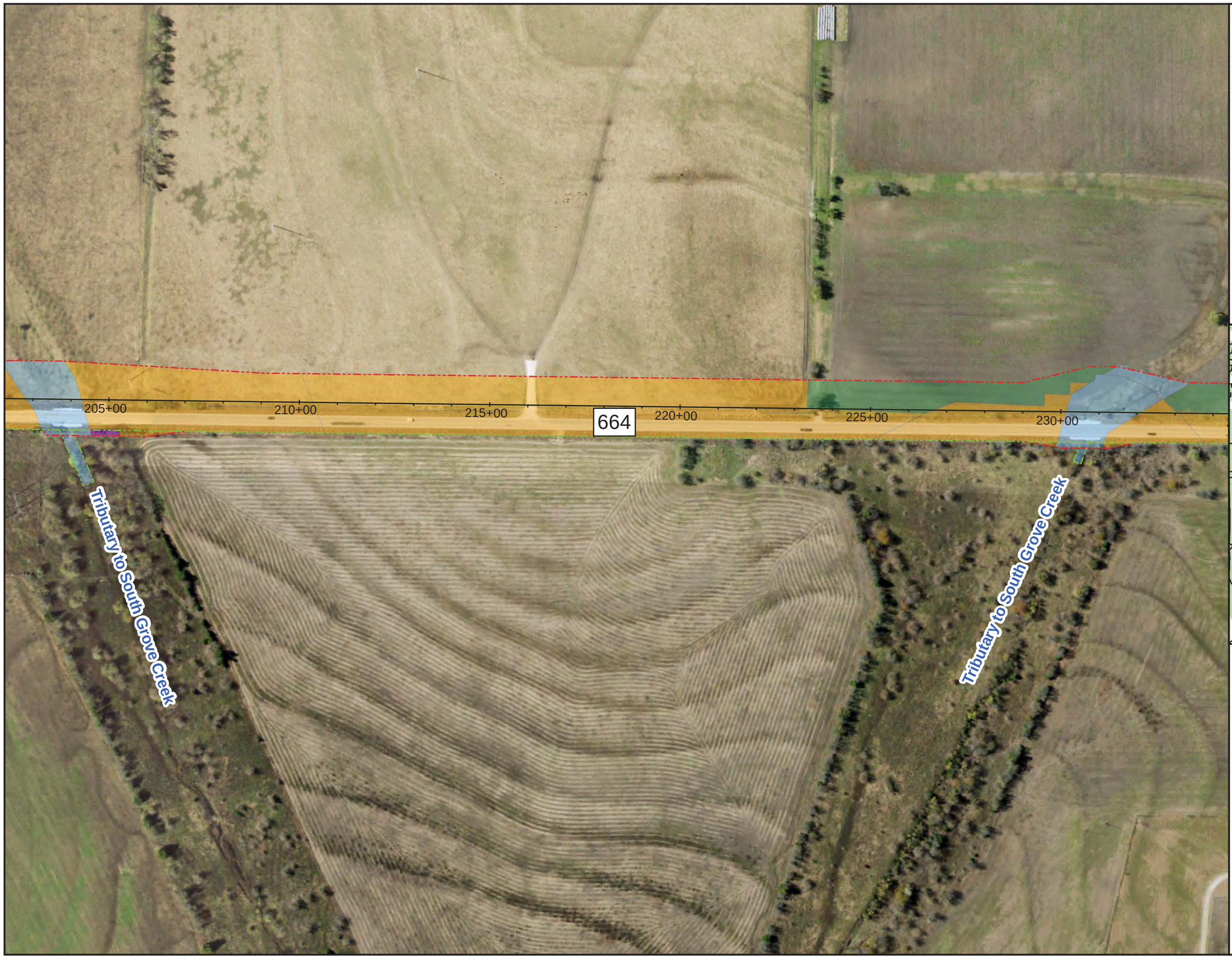

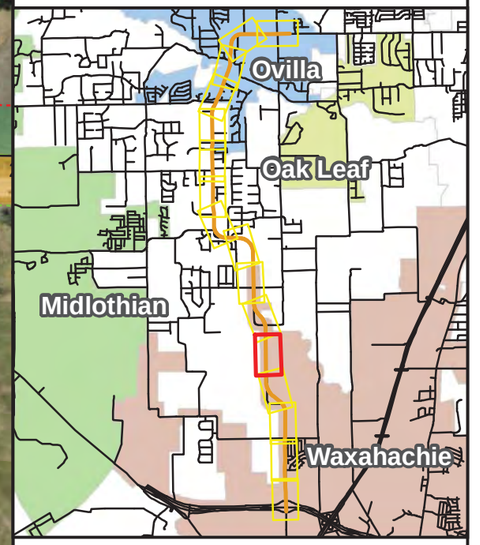

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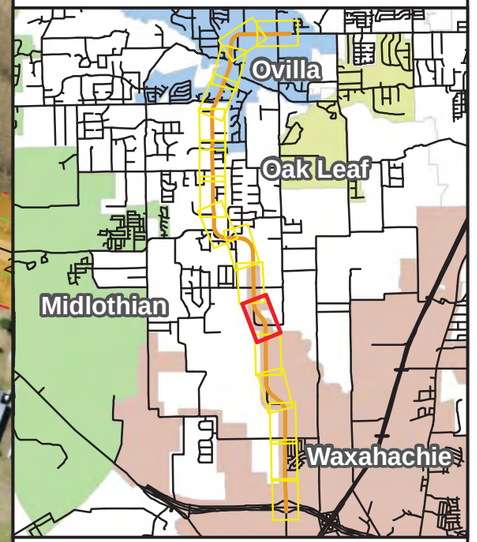

664

235+00
240+00
245+00
250+00
255+00
260+00

S Westmoreland Rd

Legend

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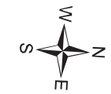

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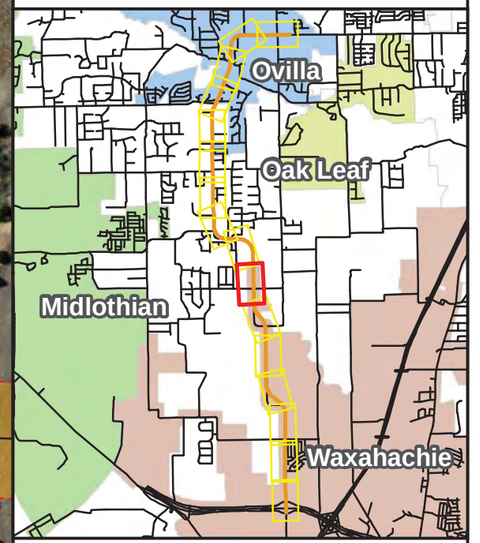

664

265+00
270+00
275+00
280+00
285+00
290+00

Bob White Ln

South Grove Creek

Legend

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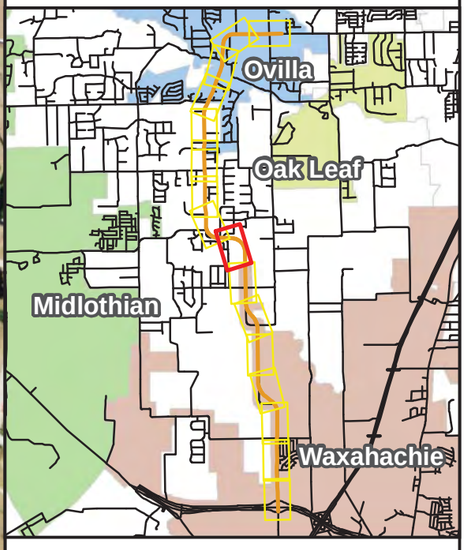

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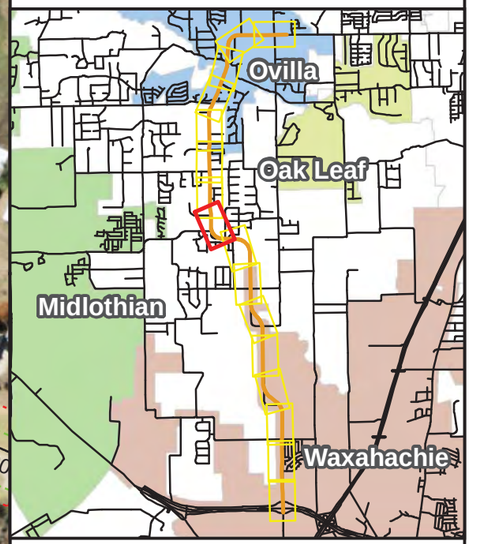

1387

664

Mavis Ave

Meghann Ln

Mason Ln

320+00
325+00
330+00
335+00
340+00
345+00
350+00
355+00
360+00

Legend

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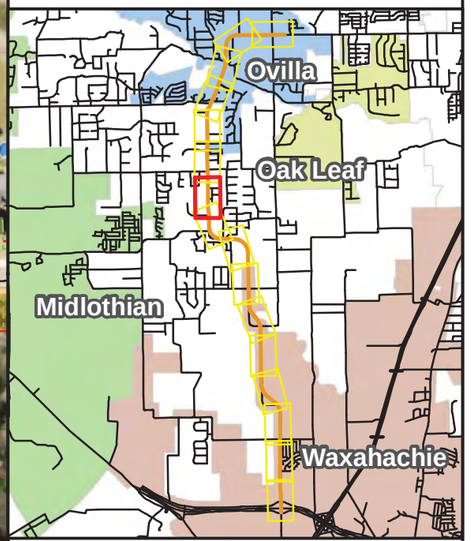

Legend

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- Proposed Right-of-Way
- Proposed Easement
- Agriculture
- Disturbed Prairie
- Edwards Plateau Savannah, Woodland, and Shrubland
- Riparian
- Tallgrass Prairie, Grassland
- Urban

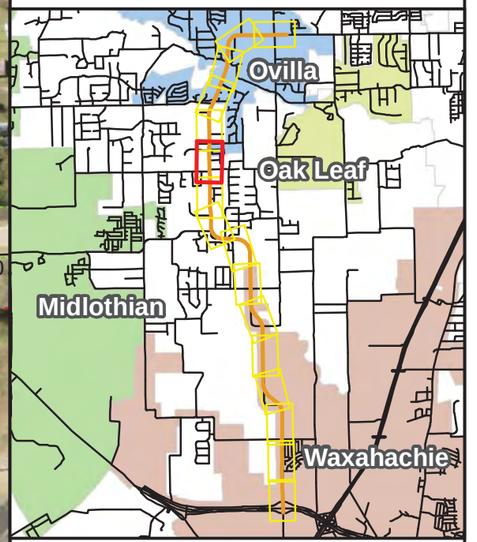
Base Map Source: TNRIS (2018)

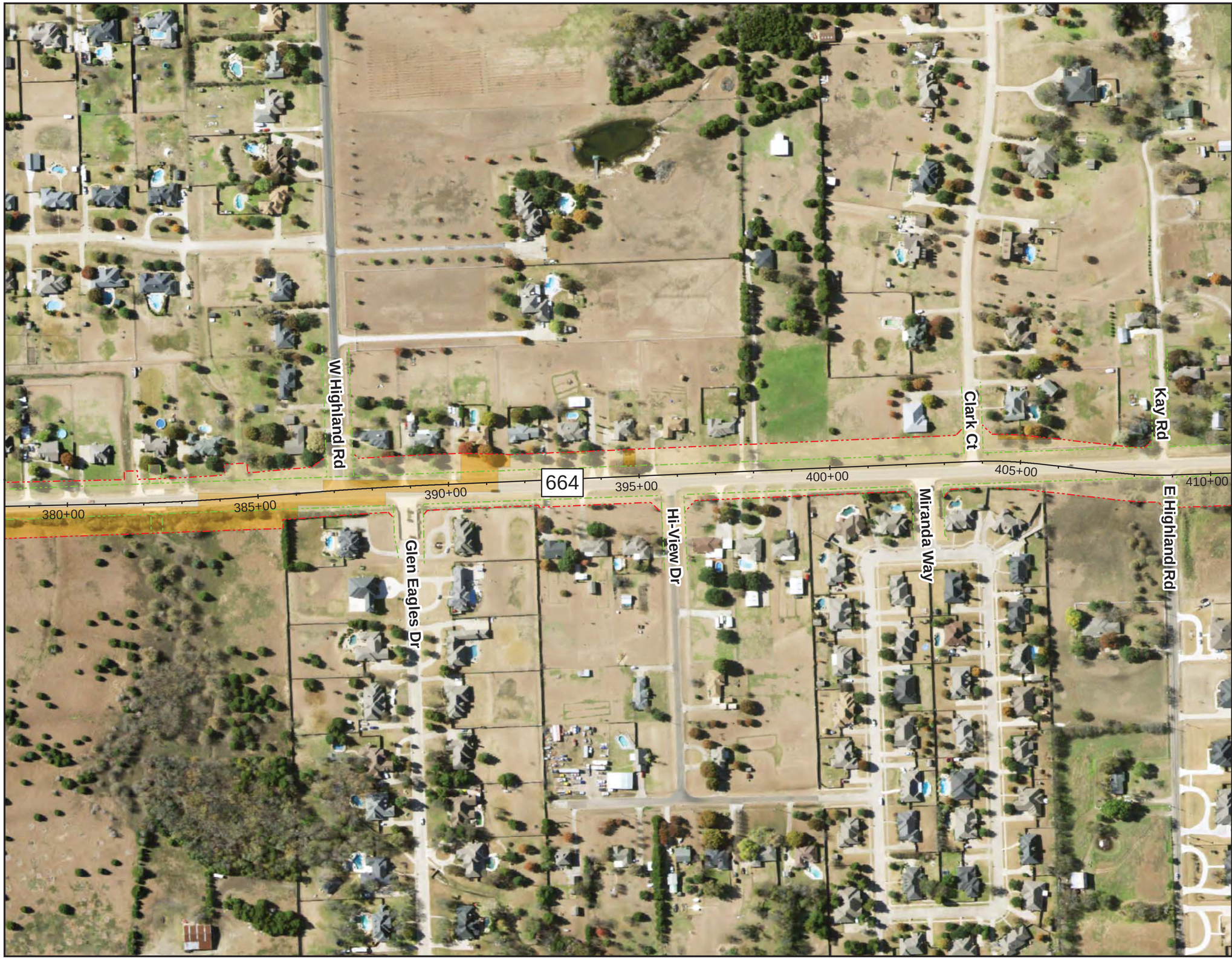
EMST
VEGETATION MAP

FARM-TO-MARKET ROAD (FM) 664
From U.S. Highway (US) 287
To Westmoreland Road
Ellis County

CSJs: 1051-01-038 and 1051-01-052

0 250 500 Feet





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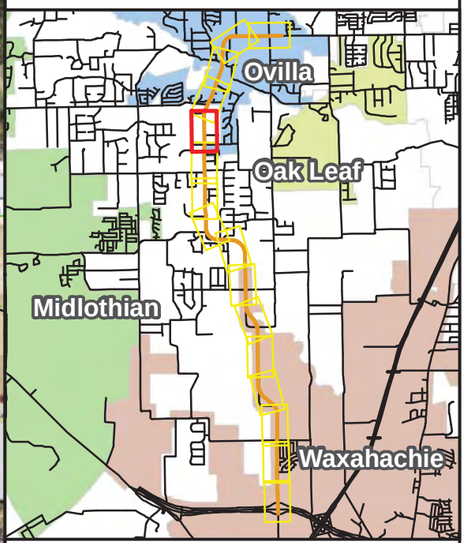

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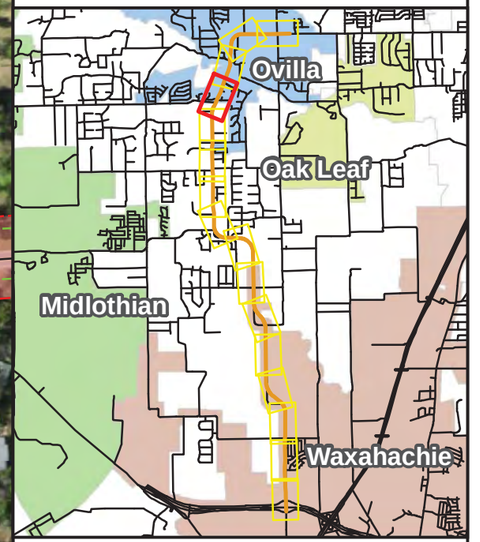

Ovilla Rd
Shiloh Rd
435+00
440+00
445+00
664
450+00
455+00
460+00
430+00
Cumberland Dr
High View Ct
Ovilla Oaks Dr

Legend

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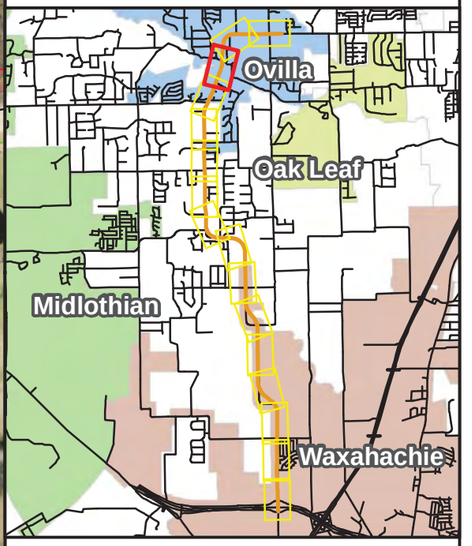

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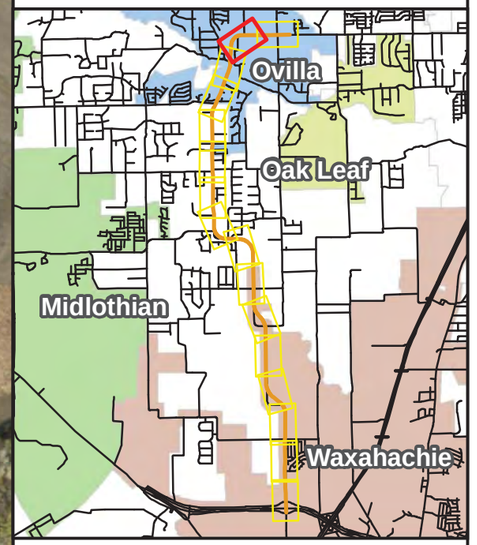

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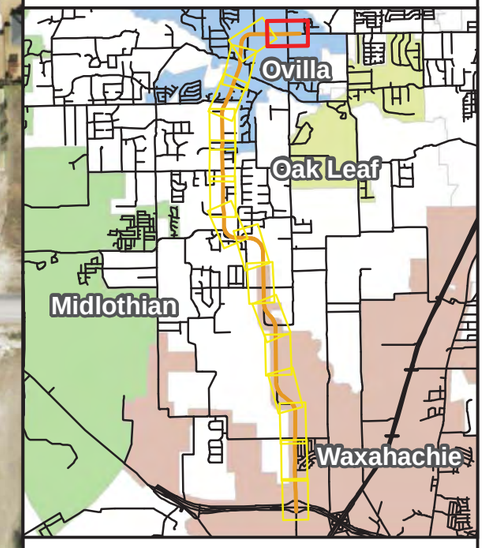
0 250 500
Feet



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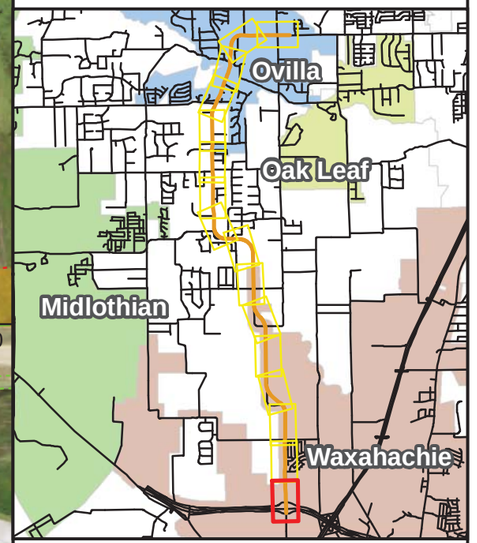

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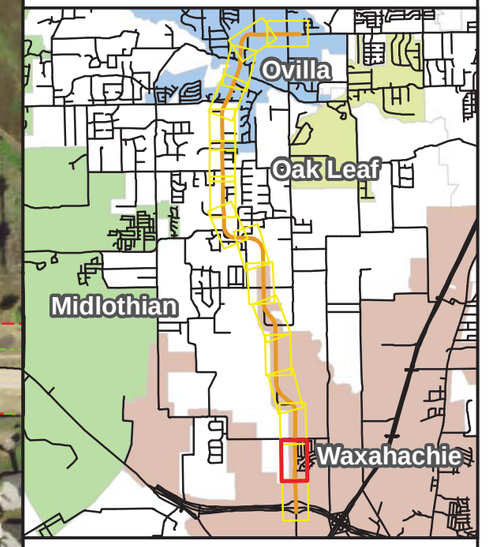

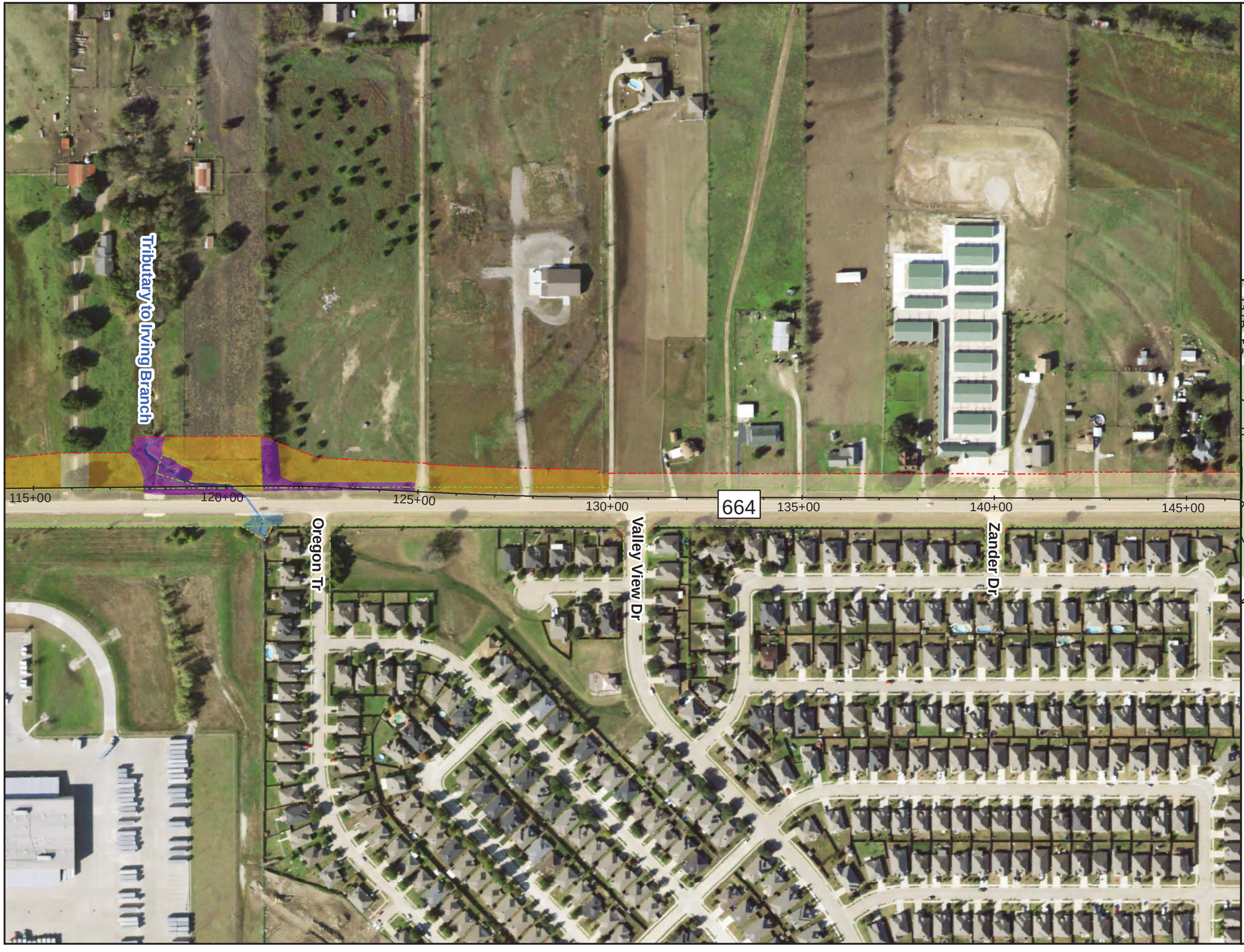

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Ellis County

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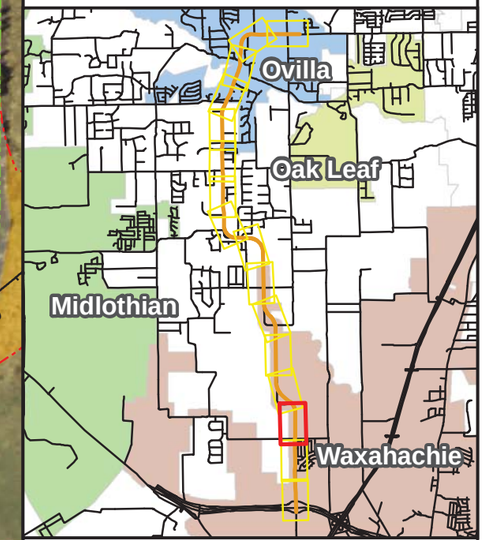
W
S
N
E

0 250 500 Feet



664

145+00
150+00
155+00
160+00
165+00
170+00
175+00

Marshall Rd

Legend

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Ellis County

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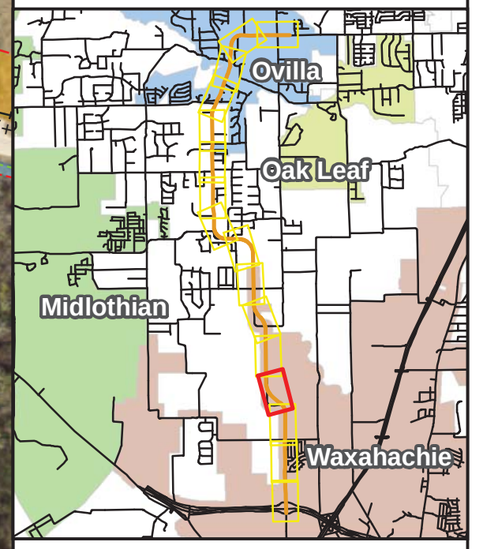
0 250 500 Feet

664

175+00 180+00 185+00 190+00 195+00 200+00 205+

Tributary to South Grove Creek



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0 250 500 Feet

205+00 210+00 215+00 664 220+00 225+00 230+00

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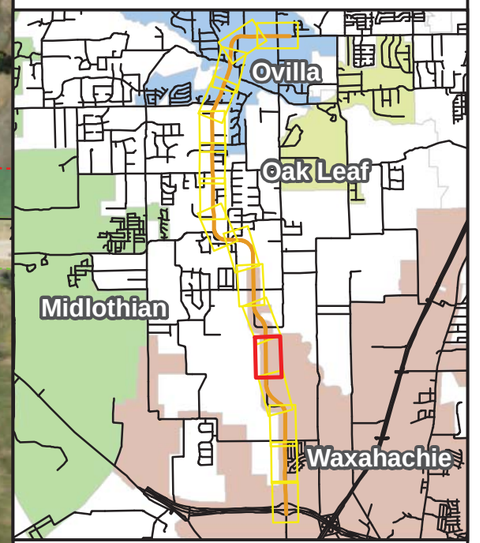
Tributary to South Grove Creek



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0 250 500 Feet

664

235+00
240+00
245+00
250+00
255+00
260+00

S Westmoreland Rd

Ovilla
Oak Leaf
Midlothian
Waxahachie
NEIL

Legend

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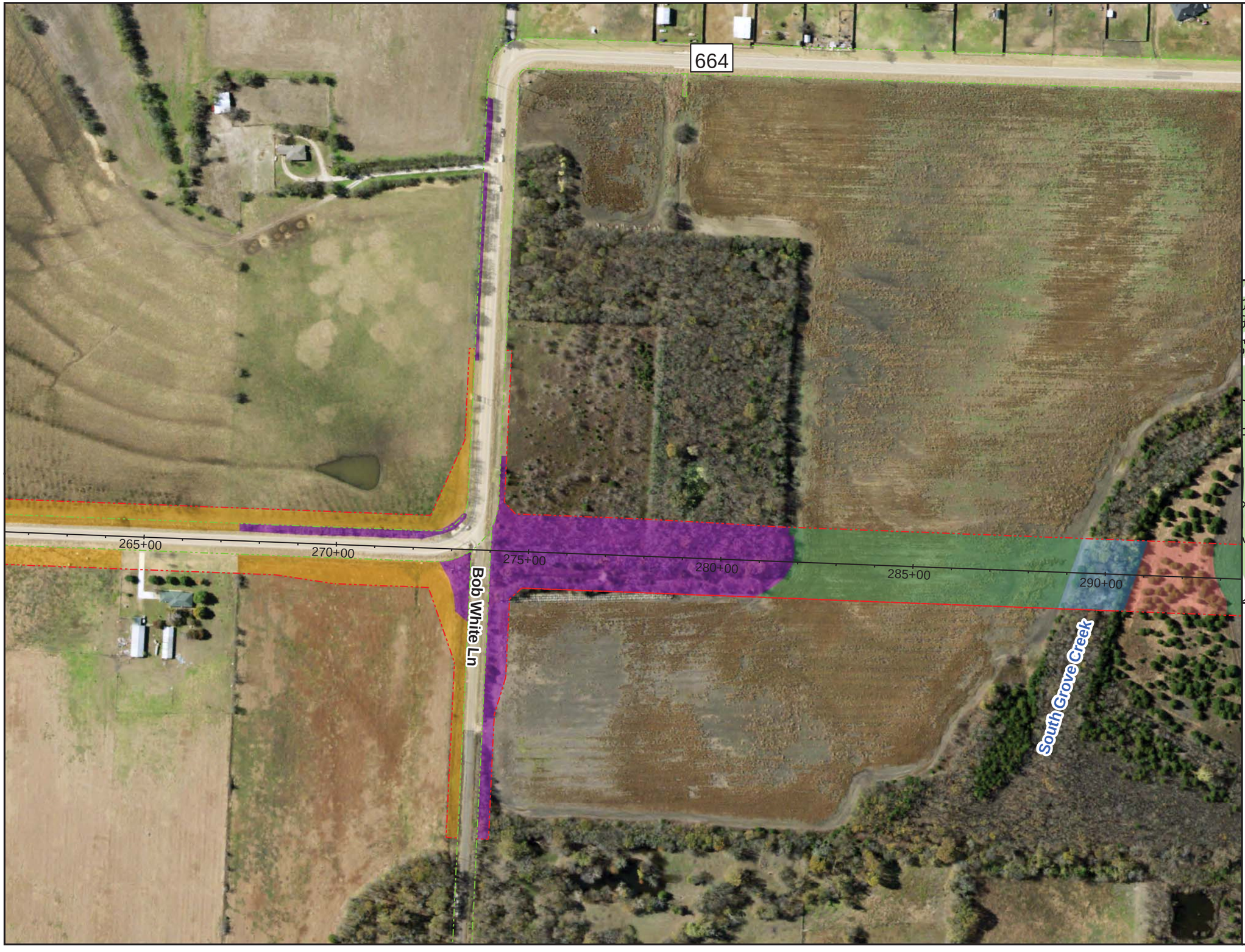

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Ellis County

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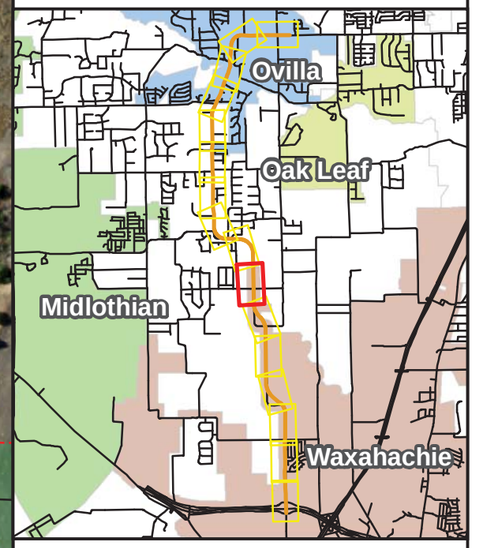
W
S
N
E

0 250 500 Feet



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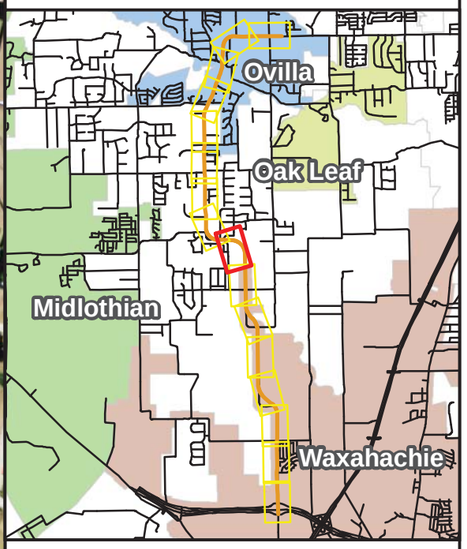

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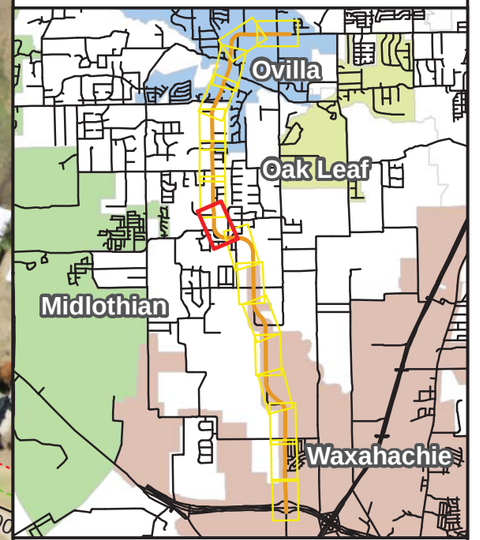

1387

664

340+00

335+00

345+00

350+00

355+00

360+00

330+00

325+00

320+00

Mavis Ave

Meghann Ln

Mason Ln

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0 250 500 Feet

Mavis Ave
S Gate Dr
Armstrong Way
664
355+00
360+00
365+00
370+00
375+00
380+00

Ovilla
Oak Leaf
Midlothian
Waxahachie

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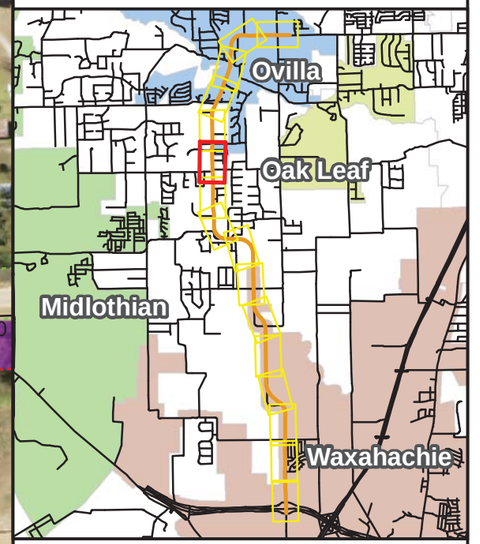

664

380+00 385+00 390+00 395+00 400+00 405+00 410+00

W Highland Rd
Glen Eagles Dr
Hi-View Dr
Clark Ct
Miranda Way
Kay Rd
E Highland Rd

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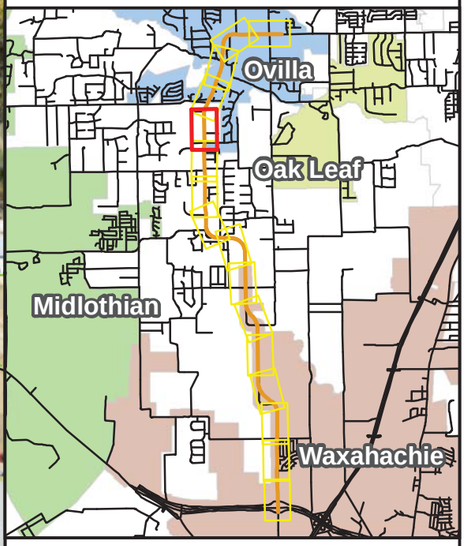

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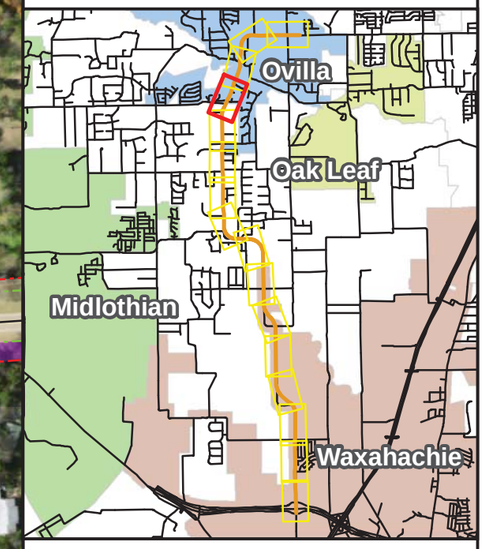

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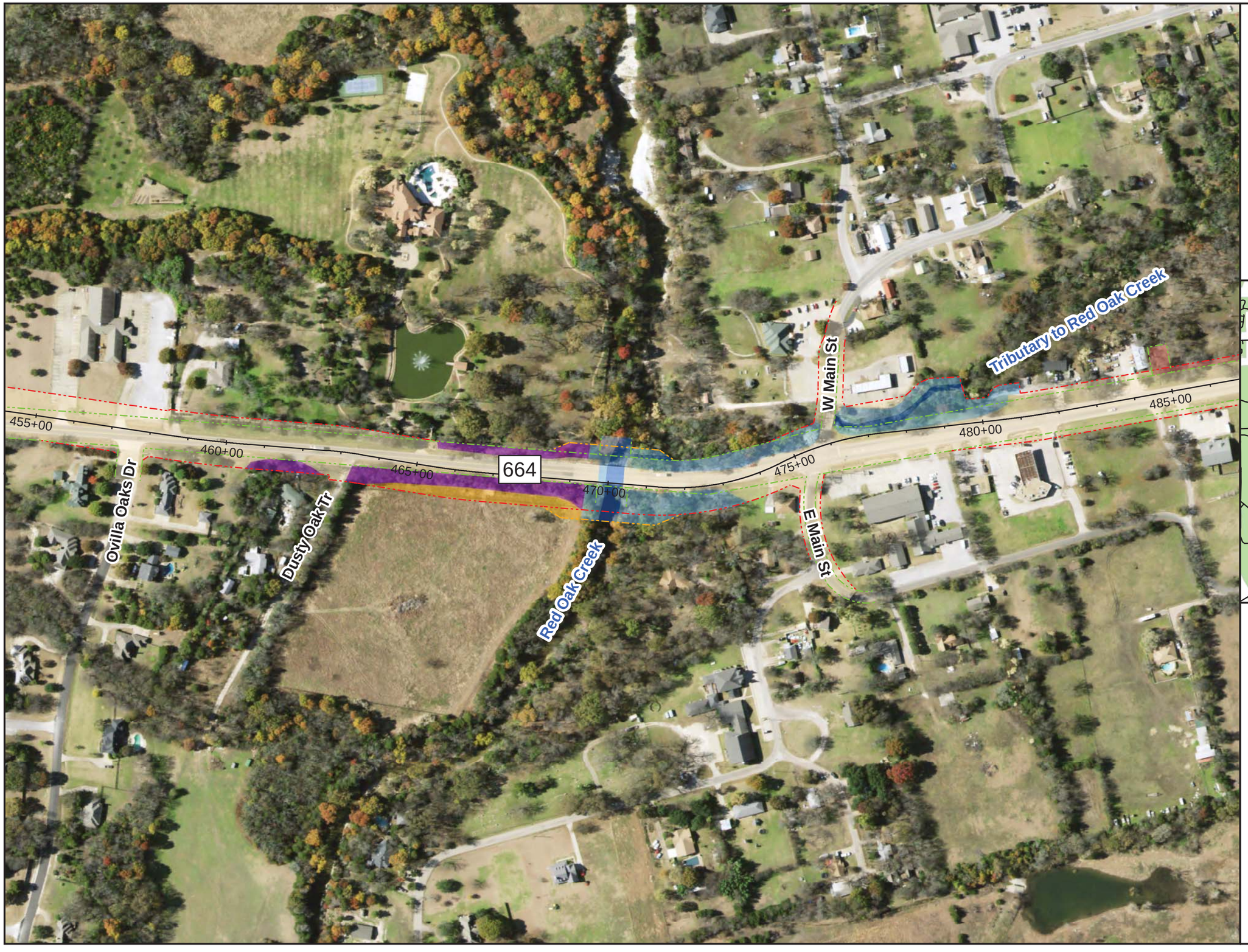

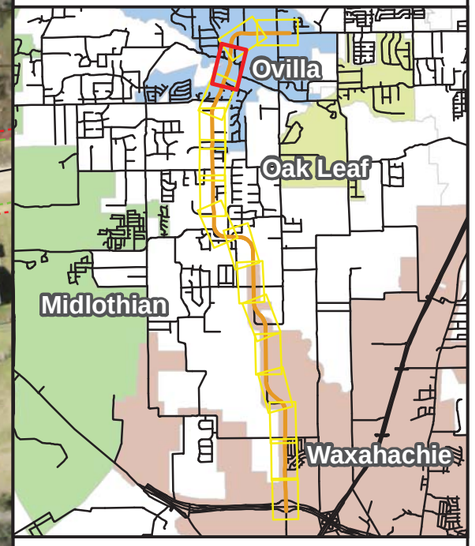

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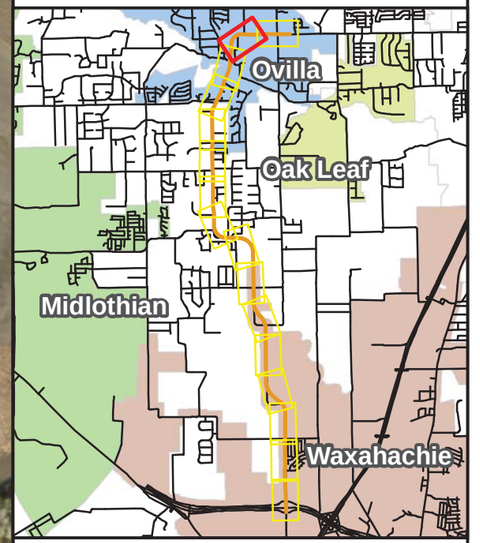

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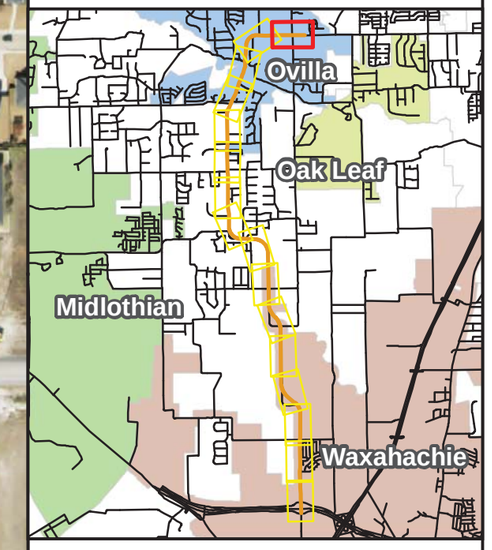
N
W E
S

0 250 500
Feet



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U.S. DEPARTMENT OF AGRICULTURE
Natural Resources Conservation Service

NRCS-CPA-106
(Rev. 1-91)

FARMLAND CONVERSION IMPACT RATING FOR CORRIDOR TYPE PROJECTS

PART I *(To be completed by Federal Agency)*	3. Date of Land Evaluation Request	4. Sheet 1 of 1
1. Name of Project **FM 664 from US 287 to Westmoreland Rd**	5. Federal Agency Involved **TxDOT**	
2. Type of Project **Roadway widening and realignment**	6. County and State **Ellis County, Texas**	

PART II *(To be completed by NRCS)*	1. Date Request Received by NRCS	2. Person Completing Form
3. Does the corridor contain prime, unique statewide or local important farmland? (If no, the FPPA does not apply - Do not complete additional parts of this form). YES ☐ NO ☐		4. Acres Irrigated / Average Farm Size
5. Major Crop(s)	6. Farmable Land in Government Jurisdiction Acres: %	7. Amount of Farmland As Defined in FPPA Acres: %
8. Name Of Land Evaluation System Used	9. Name of Local Site Assessment System	10. Date Land Evaluation Returned by NRCS

PART III *(To be completed by Federal Agency)*	Alternative Corridor For Segment			
	Corridor A	**Corridor B**	**Corridor C**	**Corridor D**
A. Total Acres To Be Converted Directly	**94.1**			
B. Total Acres To Be Converted Indirectly, Or To Receive Services				
C. Total Acres In Corridor	**191.3**			
PART IV *(To be completed by NRCS) Land Evaluation Information*				
A. Total Acres Prime And Unique Farmland				
B. Total Acres Statewide And Local Important Farmland				
C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted				
D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value				
PART V *(To be completed by NRCS) Land Evaluation Information Criterion Relative value of Farmland to Be Serviced or Converted (Scale of 0 - 100 Points)*				

PART VI *(To be completed by Federal Agency) Corridor Assessment Criteria (These criteria are explained in 7 CFR 658.5(c))*	**Maximum Points**				
1. Area in Nonurban Use	15	**7**			
2. Perimeter in Nonurban Use	10	**6**			
3. Percent Of Corridor Being Farmed	20	**9**			
4. Protection Provided By State And Local Government	20	**0**			
5. Size of Present Farm Unit Compared To Average	10	**8**			
6. Creation Of Nonfarmable Farmland	25	**25**			
7. Availablility Of Farm Support Services	5	**5**			
8. On-Farm Investments	20	**2**			
9. Effects Of Conversion On Farm Support Services	25	**0**			
10. Compatibility With Existing Agricultural Use	10	**0**			
TOTAL CORRIDOR ASSESSMENT POINTS	160	**62**	**0**	**0**	**0**
PART VII *(To be completed by Federal Agency)*					
Relative Value Of Farmland (From Part V)	100	**0**	**0**	**0**	**0**
Total Corridor Assessment (From Part VI above or a local site assessment)	160	**62**	**0**	**0**	**0**
TOTAL POINTS *(Total of above 2 lines)*	260	**62**	**0**	**0**	**0**

1. Corridor Selected:	2. Total Acres of Farmlands to be Converted by Project:	3. Date Of Selection:	4. Was A Local Site Assessment Used?
A	**48.1**		YES ☐ NO ☑

5. Reason For Selection:

Signature of Person Completing this Part: **Austin Gibson**

DATE **10/29/19**

NOTE: Complete a form for each segment with more than one Alternate Corridor

Clear Form

CORRIDOR - TYPE SITE ASSESSMENT CRITERIA

The following criteria are to be used for projects that have a linear or corridor - type site configuration connecting two distant points, and crossing several different tracts of land. These include utility lines, highways, railroads, stream improvements, and flood control systems. Federal agencies are to assess the suitability of each corridor - type site or design alternative for protection as farmland along with the land evaluation information.

(1) How much land is in nonurban use within a radius of 1.0 mile from where the project is intended?
More than 90 percent - 15 points
90 to 20 percent - 14 to 1 point(s)
Less than 20 percent - 0 points

(2) How much of the perimeter of the site borders on land in nonurban use?
More than 90 percent - 10 points
90 to 20 percent - 9 to 1 point(s)
Less than 20 percent - 0 points

(3) How much of the site has been farmed (managed for a scheduled harvest or timber activity) more than five of the last 10 years?
More than 90 percent - 20 points
90 to 20 percent - 19 to 1 point(s)
Less than 20 percent - 0 points

(4) Is the site subject to state or unit of local government policies or programs to protect farmland or covered by private programs to protect farmland?
Site is protected - 20 points
Site is not protected - 0 points

(5) Is the farm unit(s) containing the site (before the project) as large as the average - size farming unit in the County ? (Average farm sizes in each county are available from the NRCS field offices in each state. Data are from the latest available Census of Agriculture, Acreage or Farm Units in Operation with $1,000 or more in sales.)
As large or larger - 10 points
Below average - deduct 1 point for each 5 percent below the average, down to 0 points if 50 percent or more below average - 9 to 0 points

(6) If the site is chosen for the project, how much of the remaining land on the farm will become non-farmable because of interference with land patterns?
Acreage equal to more than 25 percent of acres directly converted by the project - 25 points
Acreage equal to between 25 and 5 percent of the acres directly converted by the project - 1 to 24 point(s)
Acreage equal to less than 5 percent of the acres directly converted by the project - 0 points

(7) Does the site have available adequate supply of farm support services and markets, i.e., farm suppliers, equipment dealers, processing and storage facilities and farmer's markets?
All required services are available - 5 points
Some required services are available - 4 to 1 point(s)
No required services are available - 0 points

(8) Does the site have substantial and well-maintained on-farm investments such as barns, other storage building, fruit trees and vines, field terraces, drainage, irrigation, waterways, or other soil and water conservation measures?
High amount of on-farm investment - 20 points
Moderate amount of on-farm investment - 19 to 1 point(s)
No on-farm investment - 0 points

(9) Would the project at this site, by converting farmland to nonagricultural use, reduce the demand for farm support services so as to jeopardize the continued existence of these support services and thus, the viability of the farms remaining in the area?
Substantial reduction in demand for support services if the site is converted - 25 points
Some reduction in demand for support services if the site is converted - 1 to 24 point(s)
No significant reduction in demand for support services if the site is converted - 0 points

(10) Is the kind and intensity of the proposed use of the site sufficiently incompatible with agriculture that it is likely to contribute to the eventual conversion of surrounding farmland to nonagricultural use?
Proposed project is incompatible to existing agricultural use of surrounding farmland - 10 points
Proposed project is tolerable to existing agricultural use of surrounding farmland - 9 to 1 point(s)
Proposed project is fully compatible with existing agricultural use of surrounding farmland - 0 points

United States Department of Agriculture

Natural Resources
Conservation Service

State Office

101 S. Main Street
Temple, TX 76501
Voice 254.742.9800
Fax 254.742.9819

November 18, 2019

Civil Associates, Inc.
Austin@civilassociates.com

Attention: Austin Gibson, *via email*

Subject: LNU-Farmland Protection
Proposed FM 664 Widening and Realignment Project
NEPA/FPPA Evaluation
City of Waxahachie, Ellis County, Texas

We have reviewed the information provided in your correspondence dated November 7, 2019 concerning the proposed roadway improvements project located in the City of Waxahachie, Ellis County, Texas. This review is part of the National Environmental Policy Act (NEPA) evaluation for the Texas Department of Transportation (TXDOT). We have evaluated the proposed site as required by the Farmland Protection Policy Act (FPPA).

The proposed corridor may involve areas of Prime Farmland; however, we consider the location to be "land committed to urban development" due to its location within the city limits/urbanized area of Waxahachie and Dallas/Fort Worth Metroplex, Texas. Additionally, the corridor location is included within an area of land with a density of 30 structures per 40-acre area. Due to these reasons, this project is exempt from provisions of FPPA and no further consideration from protection is necessary. We strongly encourage the use of acceptable erosion control methods during the construction of this project.

If you have further questions, please contact me at 254.742.9836 or by email at Carlos.Villarreal@usda.gov (Preferred).

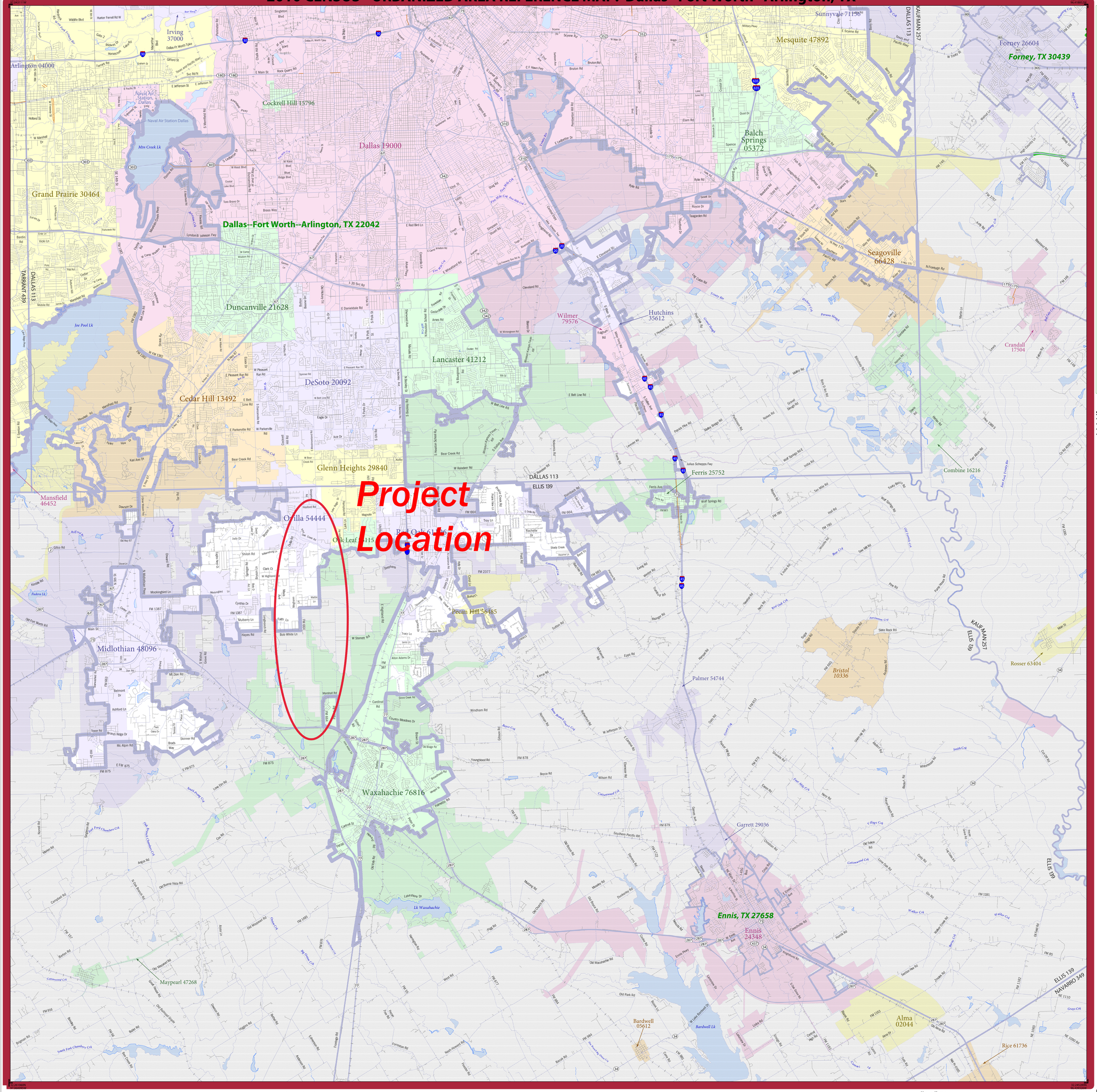
Sincerely,

Carlos J. Villarreal
NRCS Soil Scientist

Attachment: NA

USDA is an Equal Opportunity Provider, Employer, and Lender

2010 CENSUS - URBANIZED AREA REFERENCE MAP: Dallas--Fort Worth--Arlington, TX



LEGEND

SYMBOL DESCRIPTION	SYMBOL	LABEL STYLE
International		CANADA
Federal American Indian Reservation		L'ANSE RES 1880
Off-Reservation Trust Land		T1880
Urbanized Area		Dover, DE 24580
Urban Cluster		*Tooele, VT 88057*
State (or statistically equivalent entity)		NEW YORK 36
County (or statistically equivalent entity)		ERIE 029
Minor Civil Division (MCD) [1,2]		Bristol town 07485
Consolidated City		MILFORD 47500
Incorporated Place [1,3]		Davis 18100
Census Designated Place (CDP) [3]		*Incline Village 35100*

DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL
Interstate	35	Water Body	Pleasant Lake
U.S. Highway	2	Military	Fort Belvoir
State Highway	4	Outside Subject Area	
Other Road	Marsh Ln		
Railroad	Southern RR		
Perennial Stream	Tumbling Cr		
Intermittent Stream	Piney Cr		

Where international, state, county, and/or MCD boundaries coincide, the map shows the boundary symbol for only the highest-ranking of these boundaries.

1 A '*' following an MCD name denotes a false MCD. A '°' following a place name indicates that a false MCD exists with the same name and FIPS code as the place; the false MCD label is not shown.

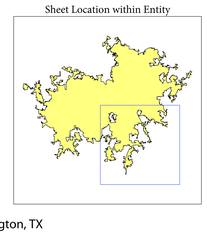
2 MCD boundaries are shown in the following states in which some or all MCDs function as general-purpose governmental units: Connecticut, Illinois, Indiana, Kansas, Maine, Massachusetts, Michigan, Minnesota, Missouri, Nebraska, New Hampshire, New Jersey, New York, North Dakota, Ohio, Pennsylvania, Rhode Island, South Dakota, Vermont, and Wisconsin. (Note that Illinois and Nebraska have some counties covered by nongovernmental precincts and Missouri has most counties covered by nongovernmental townships.)

3 Place label color corresponds to the place fill color.
Label colors: Davis Davis Davis Davis Davis

SUBJECT AREA COUNTIES ON MAP SHEET

48113	Dallas
48139	Ellis
48257	Kaufman
48439	Tarrant

Sheet Location within Entity



All legal boundaries and names are as of January 1, 2010. Urban areas are based on results from the 2010 Decennial Census. The boundaries shown on this map are for Census Bureau statistical data collection and tabulation purposes only; their depiction and designation for statistical purposes does not constitute a determination of jurisdictional authority or rights of ownership or entitlement.

Geographic Vintage: 2010 Census (reference date: January 1, 2010)
Data Source: U.S. Census Bureau's MAF/TIGER database (TAB10)
Map Created by Geography Division: March 10, 2012

U.S. DEPARTMENT OF COMMERCE Economics and Statistics Administration U.S. Census Bureau

Projection: Albers Equal Area Conic
Datum: NAD 83
Spheroid: GRS 80
1st Standard Parallel: 27 36 51
2nd Standard Parallel: 34 43 24
Central Meridian: -100 04 35
Latitude of Projection's Origin: 25 50 13
False Easting: 0
False Northing: 0

0 2 4 6 8 10 Kilometers
0 1 2 3 4 5 Miles
The plotted map scale is 1:80000

N W E S

Key to Sheets

1	2	3
4	5	

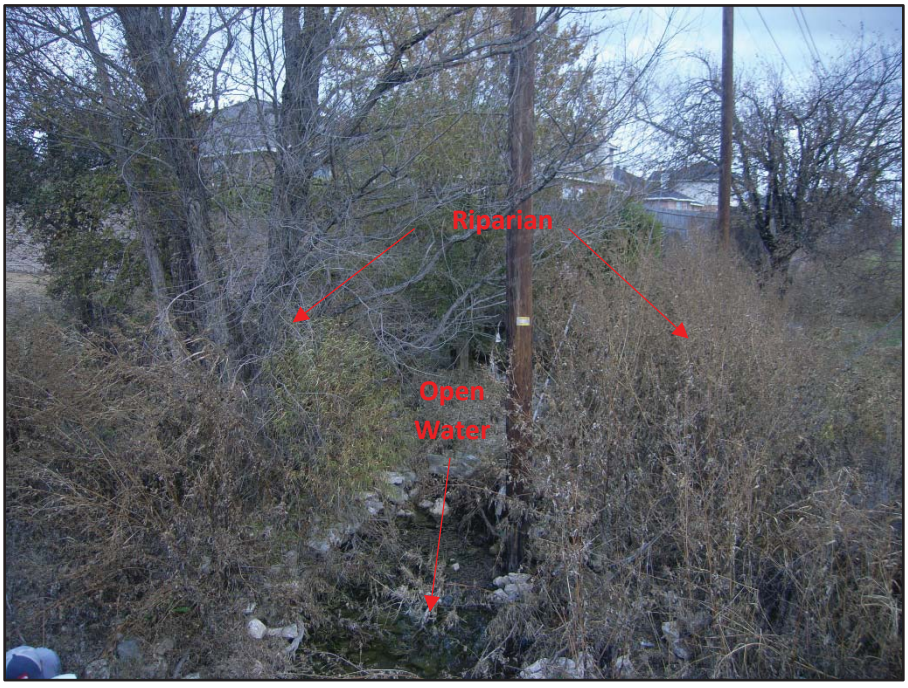
PARENT SHEET 5

Total Sheets: 6
- Index Sheets: 1
- Parent Sheets: 5

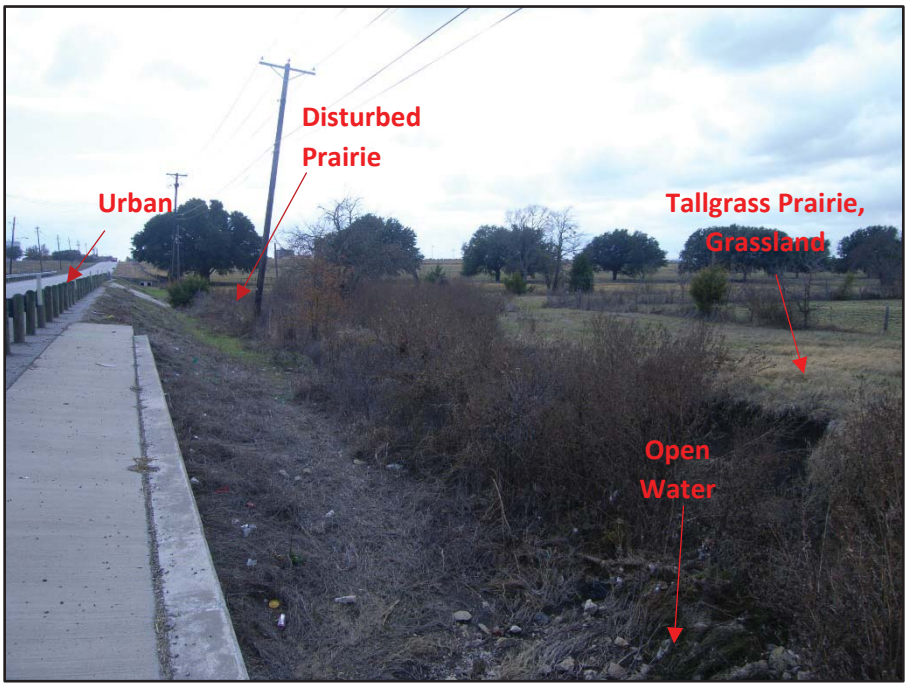
UA NAME: Dallas--Fort Worth--Arlington, TX
UA CODE: 22042
ENTITY TYPE: Urbanized Area (UA)
ST: Texas (48)

2010 CENSUS UA REF MAP (PARENT)
231022042005

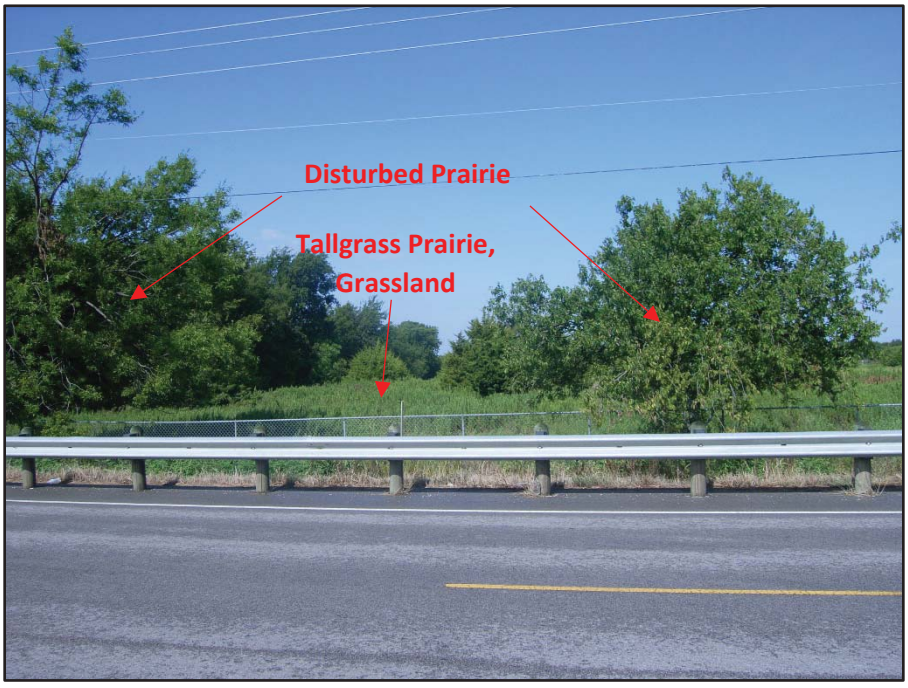
Photograph 1: View looking northwest along the FM 664 west ROW from near STA. 105+00. The TESCP/EMST Mapper classifies the vegetation as Tallgrass Prairie, Grassland; however, they better fit the Agriculture classification. Date of photograph: 08/14/19



Photograph 2: View looking south along the FM 664 west ROW near STA. 120+00. The TESCP/EMST Mapper classifies portions of the roadway and adjacent vegetation as Tallgrass Prairie, Grassland and Riparian; however, they better fit the Urban, Riparian and Open Water classifications. Date of photograph: 11/20/19



Photograph 3: View looking south along the FM 664 west ROW near STA. 120+00. The TESCP/EMST Mapper classifies portions of the roadway and adjacent vegetation as Tallgrass Prairie, Grassland and Riparian; however, the roadway better fits the Urban classification. The adjacent vegetation better fits the Disturbed Prairie classification. There are also areas of Open Water along the channel. Date of photograph: 11/20/19

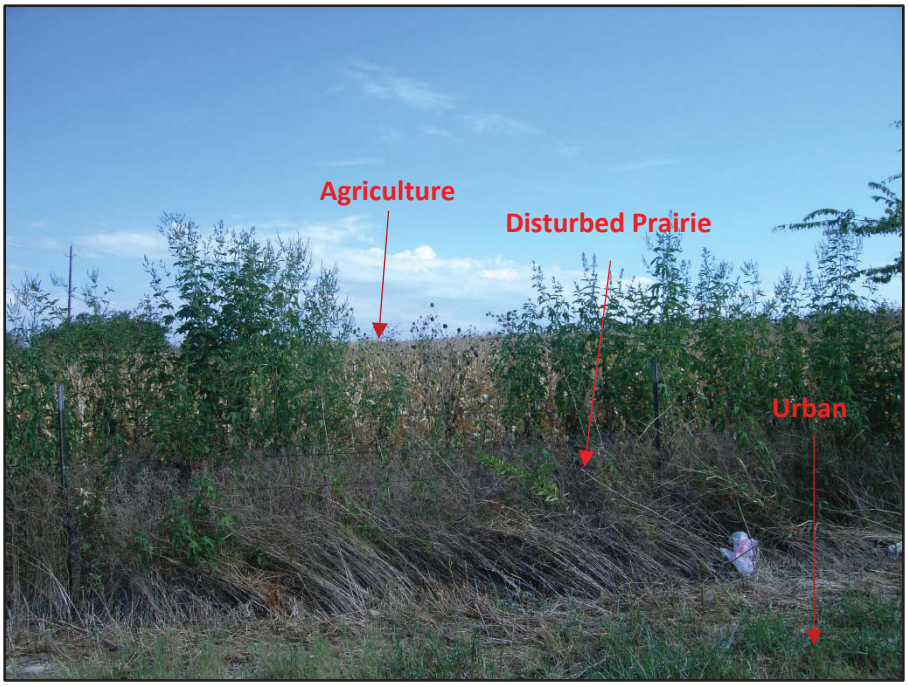


Photograph 4: View looking west from the FM 664 west ROW near STA. 123+00. The TESCP/EMST Mapper classifies the unmaintained and woody vegetation along the fence line as Urban and the woody vegetation further south around STA 121+00 as Tallgrass Prairie, Grassland; however, the woody vegetation better fits the Disturbed Prairie classification. The unmaintained vegetation better fits the Tallgrass Prairie, Grassland classification. Date of photograph: 08/14/19

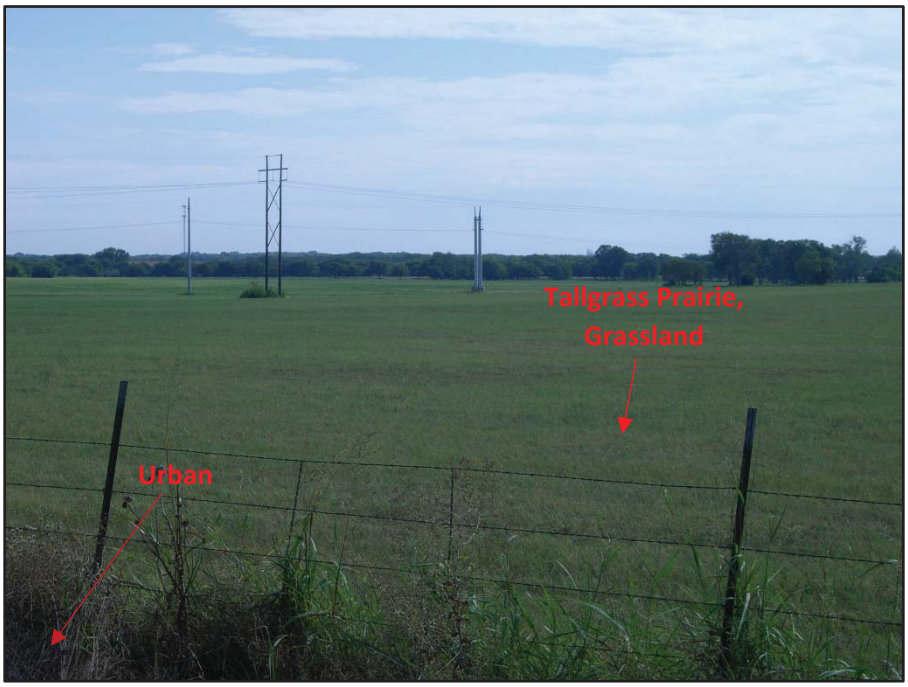
Photograph 5: View looking west from the FM 664 west ROW near STA. 123+00. The TESCP/EMST Mapper classifies the vegetation beyond the fence line as Urban; however, it better fits the Tallgrass Prairie, Grassland classification. Date of photograph: 08/14/19

Photograph 6: View looking north from FM 664 ROW near STA. 132+00. The TESCP/EMST Mapper classifies portions of the mowed-maintained vegetation as Tallgrass Prairie, Grassland; however, it better fits the Urban classification. Date of photograph: 08/14/19

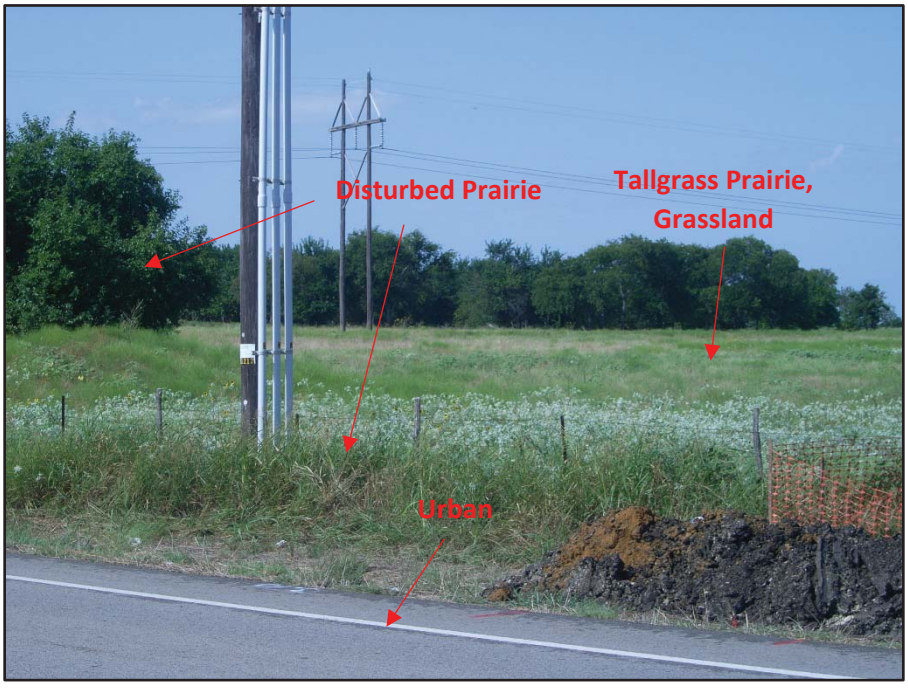
Photograph 7: View looking west from FM 664 east ROW near STA. 140+00. The TESCP/EMST Mapper classifies the roadway and mowed-maintained vegetation as Tallgrass Prairie, Grassland and Edwards Plateau Savannah, Woodland, and Shrubland; however, it better fits the Urban classification. Date of photograph: 08/14/19



Photograph 8: View looking north along FM 664 east ROW near STA. 148+00. The TESCP/EMST Mapper classifies portions of the vegetation, mowed-maintained vegetation and roadway all as Tallgrass Prairie, Grassland. The mowed-maintained vegetation and roadways better fits the Urban classification and the fence line vegetation better fits the Disturbed Prairie classification. The vegetation beyond the fence line better fits the Agriculture classification. Date of photograph: 08/14/19

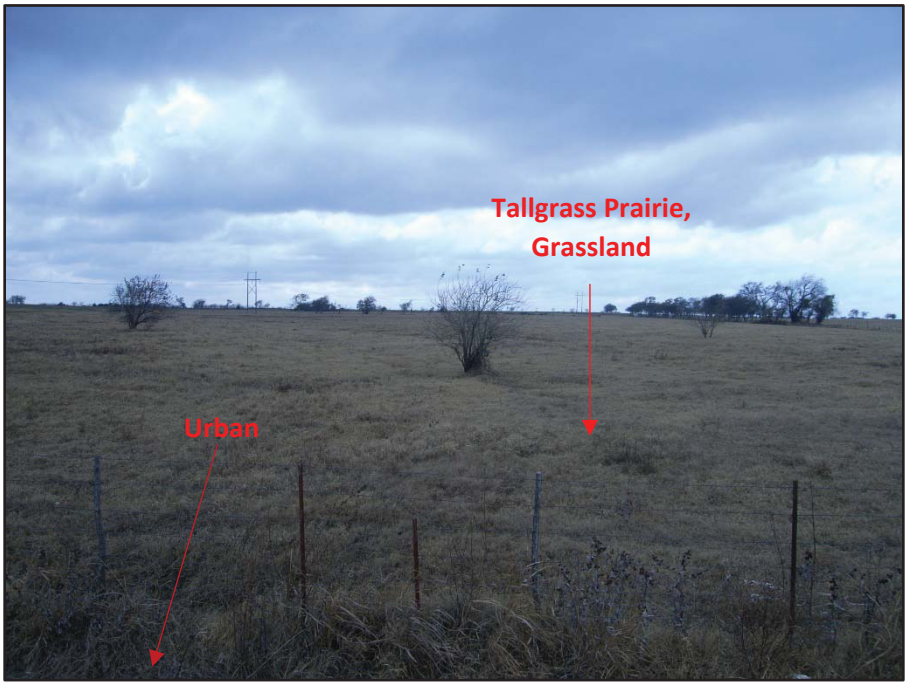


Photograph 9: View looking east along FM 664 east ROW from STA. 193+00. The TESCP/EMST Mapper classifies portions of the mowed-maintained vegetation and vegetation beyond the fence as Tallgrass Prairie, Grassland. The mowed-maintained vegetation better fits the Urban classification. Date of photograph: 08/14/19

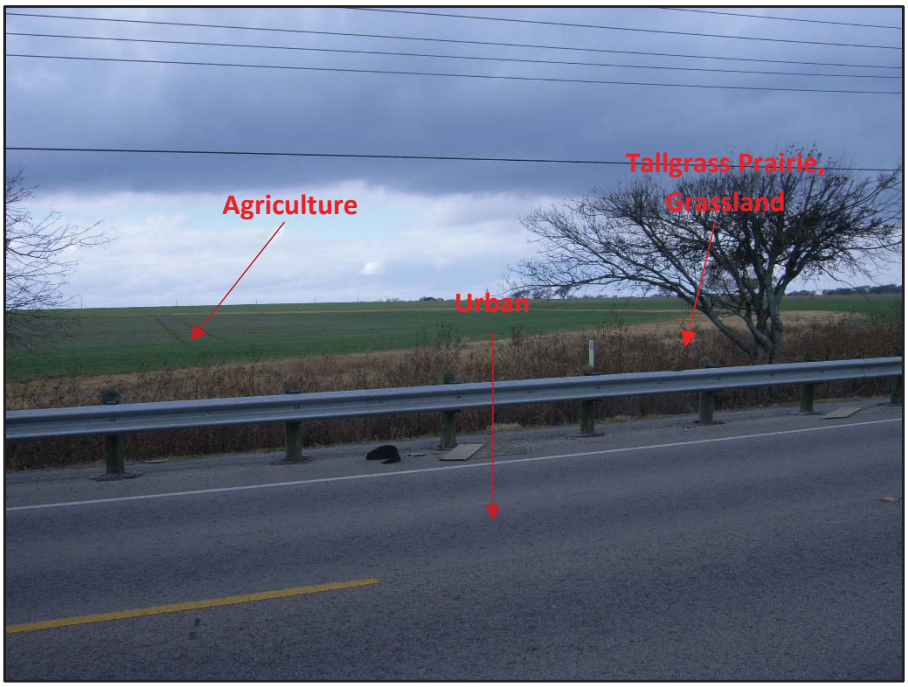


Photograph 10: View looking southwest along FM 664 west ROW near STA. 198+00. The TESCP/EMST Mapper classifies the mowed-maintained vegetation, roadway, and other unmaintained and woody vegetation as Tallgrass Prairie, Grassland. The mowed-maintained vegetation and roadway better fits the Urban classification. The unmaintained vegetation better fits the Tallgrass Prairie, Grassland classification. The woody vegetation and vegetation along the fence line better fits the Disturbed Prairie classification. Date of photograph: 08/14/19

Photograph 11: View looking east from the FM 664 east ROW line near STA. 204+00. The TESCP/EMST Mapper classifies the woody vegetation as Disturbed Prairie; however, it better fits the Riparian classification. Date of photograph: 11/20/19



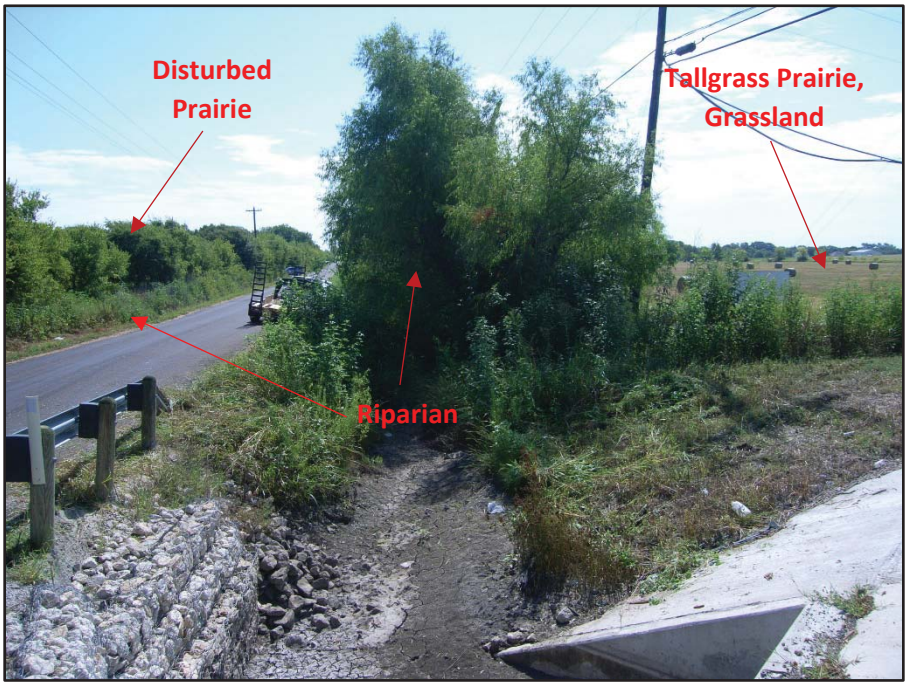
Photograph 12: View looking west along FM 664 west ROW near STA. 205+00. The TESCP/EMST Mapper classifies the mowed-maintained vegetation, roadway as Tallgrass Prairie, Grassland, and vegetation beyond the fence as Riparian. The mowed-maintained vegetation and roadway better fits the Urban classification. The vegetation beyond the fence better fits the Tallgrass Prairie, Grassland classification. Date of photograph: 11/20/19



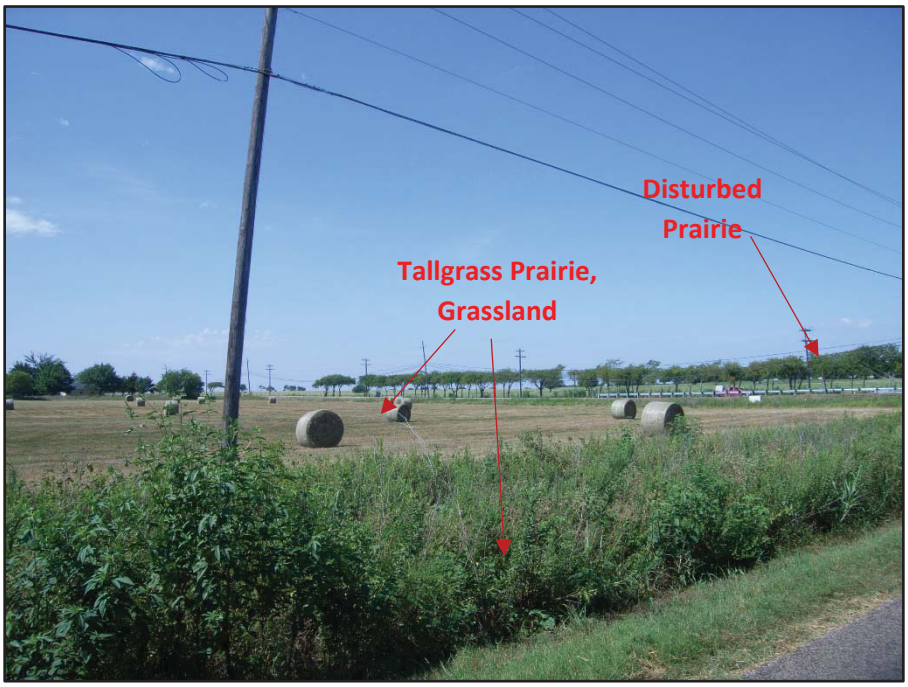
Photograph 13: View looking west along FM 664 west ROW near STA. 231+00. The TESCP/EMST Mapper classifies portions of the roadway, and the mowed-maintained, unmaintained vegetation all as Tallgrass Prairie, Grassland and Riparian. The roadway and mowed-maintained vegetation better fit the Urban classification and the unmaintained vegetation better fits the Tallgrass Prairie, Grassland classification. Date of photograph: 11/20/19

Photograph 14: View looking west along FM 664 near STA. 242+00. The TESCP/EMST Mapper classifies portions of the roadway, and the mowed-maintained vegetation as Tallgrass Prairie, Grassland and Agriculture. The roadway and mowed-maintained vegetation better fit the Urban classification. Date of photograph: 08/14/19

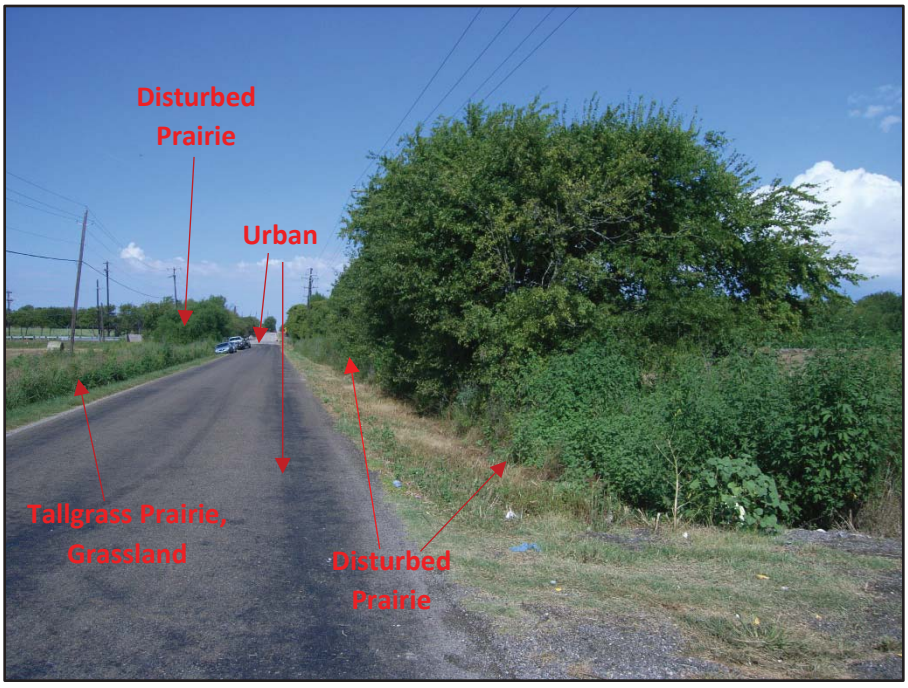
Photograph 15: View looking north along FM 664 near STA. 270+00. The TESCP/EMST Mapper classifies portions of the roadway, mowed-maintained vegetation and other vegetation as Tallgrass Prairie, Grassland. The roadway and mowed-maintained vegetation better fit the Urban classification. The vegetation along the fence line better fits the Disturbed Prairie classification. Date of photograph: 12/24/19



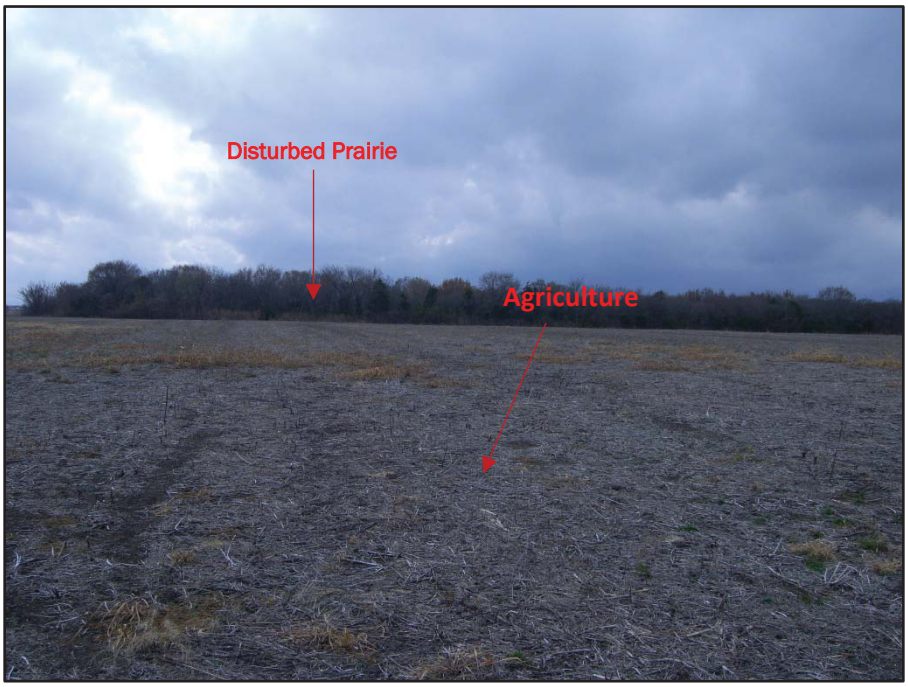
Photograph 16: View looking west Bob White Ln near FM 664 near STA. 273+00. The TESCP/EMST Mapper classifies portions of the roadway, and the mowed-maintained vegetation, and woody and unmaintained vegetation as Tallgrass Prairie, Grassland. The woody and unmaintained vegetation within the roadside ditches better fits the Riparian classification. The woody and unmaintained vegetation to the left better fits the Disturbed Prairie classification. The roadway and mowed-maintained vegetation fits the Urban classification. The vegetation in the background behind the Disturbed Prairie fits the Tallgrass Prairie, Grassland classification. Date of photograph: 08/14/19



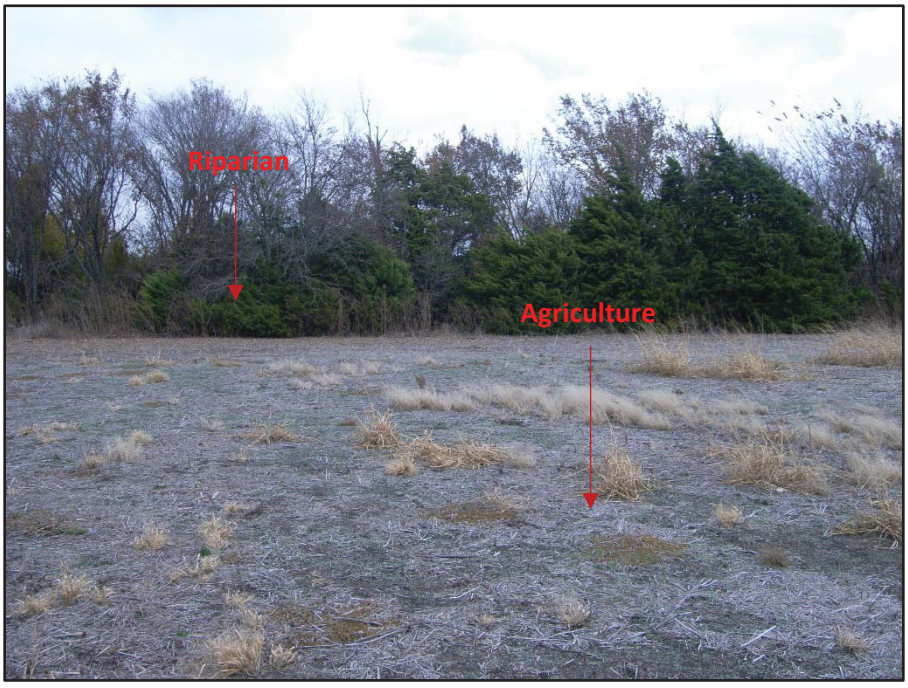
Photograph 17: View looking west Bob White Ln near FM 664 near STA. 274+00. The TESCP/EMST Mapper classifies portions of the roadway, mowed-maintained vegetation and unmaintained vegetation as Tallgrass Prairie, Grassland and Disturbed Prairie. The unmaintained vegetation better fits the Tallgrass Prairie, Grassland classification. The mowed-maintained vegetation fits the Urban classification. The fence line vegetation in the distance better fits the Disturbed Prairie classification. Date of photograph: 08/14/19



Photograph 18: View looking west along Bob White Lane near STA. 274+00. The TESCP/EMST Mapper classifies portions of the roadway, and the mowed-maintained vegetation, and woody and unmaintained vegetation as Tallgrass Prairie, Grassland. In the roadside ditch, the woody and unmaintained vegetation better fits the Disturbed Prairie classification. The mowed-maintained vegetation fits the Urban classification. Date of photograph: 08/14/19



Photograph 19: View looking south along the future location of FM 664 near STA. 288+00. The TESCP/EMST Mapper classifies portions of maintained vegetation, as Tallgrass Prairie, and woody and unmaintained vegetation as Disturbed Prairie. The maintained vegetation better fits the Agriculture classification. The woody unmaintained vegetation better fits Disturbed Prairie. Date of photograph: 11/20/19

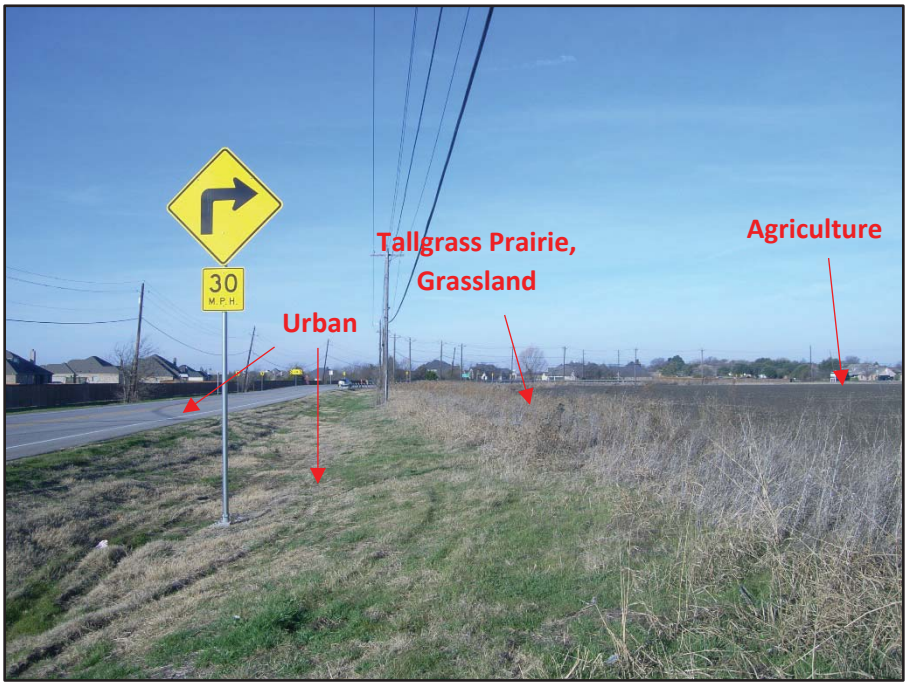


Photograph 20: View looking north along the future location of FM 664 near STA. 289+00. The TESCP/EMST Mapper classifies portions of the vegetation, and woody and unmaintained vegetation as Disturbed Prairie. The woody and unmaintained vegetation fit the Riparian classification. The other vegetation in the foreground better fits the Agriculture classification. Date of photograph: 11/20/19

Photograph 21: View looking south along the west ROW of existing FM 664 near STA. 300+00. The TESCP/EMST Mapper classifies portions of the mowed-maintained vegetation and roadway as Tallgrass Prairie, Grassland and riparian. The mowed-maintained vegetation and roadway better fits the Urban classification. Date of photograph: 12/24/19

Photograph 22: View looking east along existing FM 664 near STA. 302+00. The TESCP/EMST Mapper classifies portions of the mowed-maintained, and unmaintained vegetation and roadway as Tallgrass Prairie, Grassland. The mowed-maintained vegetation and roadway better fits the Urban classification. The unmaintained vegetation better fits the Agriculture classification. Date of photograph: 12/24/19

Photograph 23: View looking southwest along FM 664 east ROW near STA. 325+00. The TESCP/EMST Mapper classifies portions of the roadway and mowed-maintained vegetation (not recently mowed) as Tallgrass Prairie, Grassland. The roadway and mowed-maintained vegetation better fit the Urban classification. Date of photograph: 08/14/19

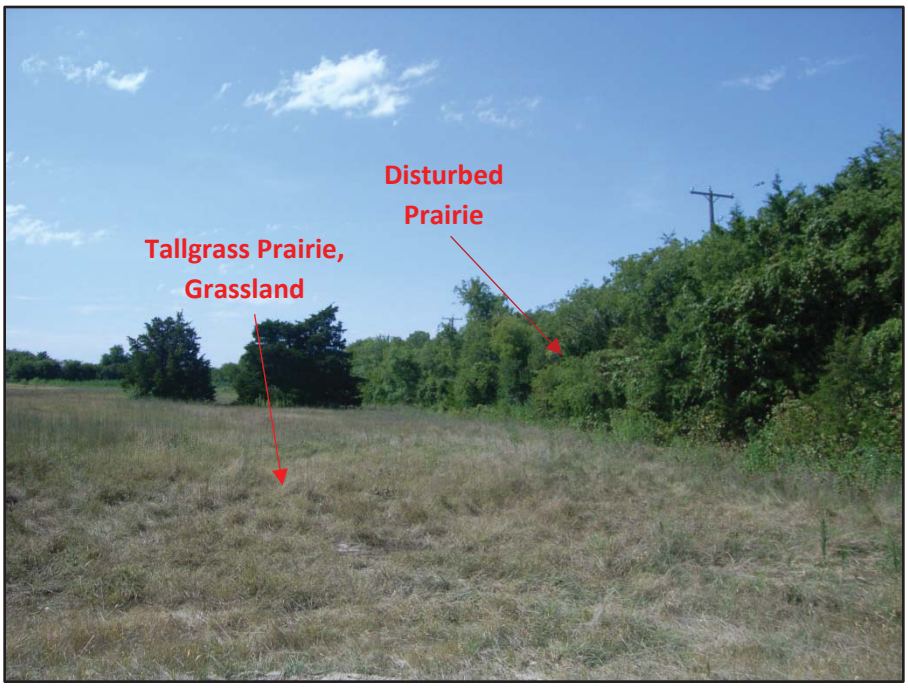


Photograph 24: View looking west along FM 664 east ROW near STA. 331+00. The TESCP/EMST Mapper classifies portions of the roadway, mowed-maintained vegetation, and other vegetation as Tallgrass Prairie, Grassland. The mowed-maintained vegetation and roadway better fit the Urban classification and part of the other vegetation fits the Agriculture classification. A narrow portion of Tallgrass Prairie, Grassland remains along a depressed area. Date of photograph: 12/24/19

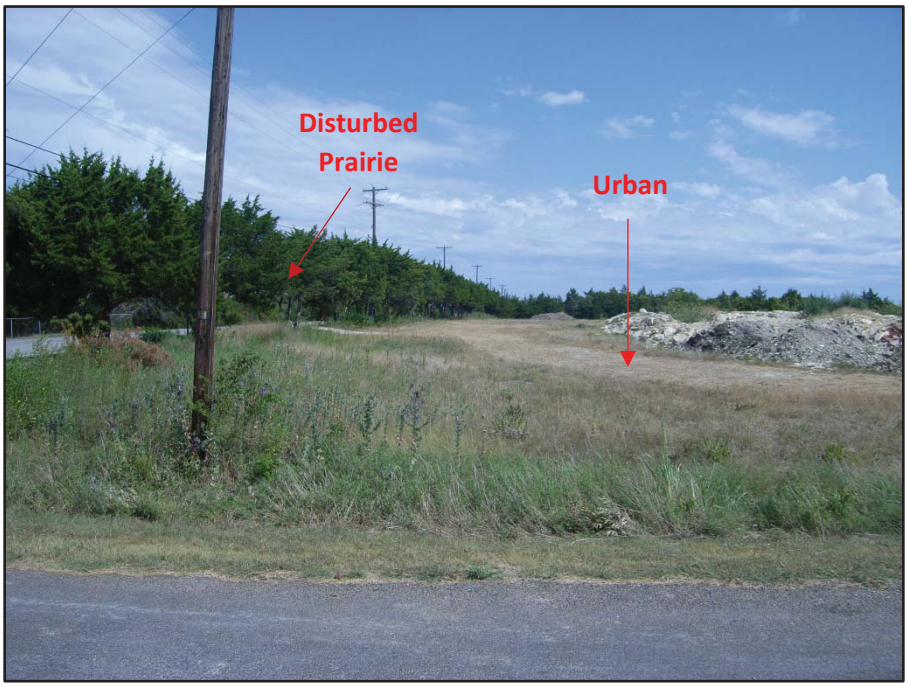
Photograph 25: View looking west along FM 664 west ROW near STA. 336+00. The TESCP/EMST Mapper classifies portions of the roadway, mowed-maintained vegetation, and woody vegetation as Tallgrass Prairie, Grassland and Riparian. The mowed-maintained vegetation and roadway better fit the Urban classification. The woody vegetation fits the Disturbed Prairie and Riparian classification. Date of photograph: 12/24/19

Photograph 26: View looking south along FM 664 east Row near STA. 340+00. The TESCP/EMST Mapper classifies portions of the roadway, mowed-maintained and other vegetation as Agriculture, Tallgrass Prairie, Grassland, and Disturbed Prairie. The roadway and mowed-maintained vegetation better fit the Urban classification and the other vegetation better fits the Agriculture classification. Date of photograph: 12/24/19

Photograph 27: View looking south from FM 664 east ROW near STA. 386+00. The TESCP/EMST Mapper classifies the roadway, mowed-maintained and woody vegetation as Tallgrass Prairie, Grassland. The woody vegetation better fits the Disturbed Prairie classification. The roadway and mowed-maintained vegetation better fit the Urban classification. The unmaintained vegetation behind the woody vegetation fits the Tallgrass Prairie, Grassland classification. Date of photograph: 08/14/19



Photograph 28: View looking south from Slippery Creek St near STA. 416+00. The TESCP/EMST Mapper classifies portions of woody and unmaintained vegetation as Urban. The woody vegetation better fits the Disturbed Prairie classification. The unmaintained vegetation better fits the Tallgrass Prairie, Grassland classification. Date of photograph: 08/14/19

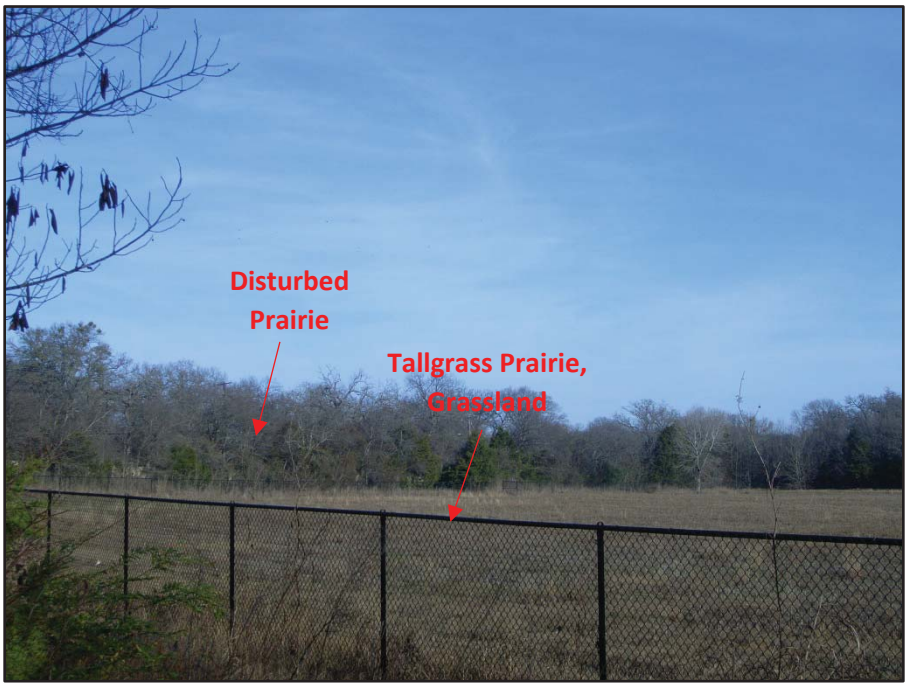


Photograph 29: View looking north from Slippery Creek St near STA. 416+00. The TESCP/EMST Mapper classifies the woody and unmaintained vegetation urban, and the disturbed soil/vegetation as Edwards Plateau Savannah, Woodland, and Shrubland. The woody vegetation better fits the Disturbed Prairie classification. The disturbed soil/vegetation better fits Urban classification. Date of photograph: 08/14/19

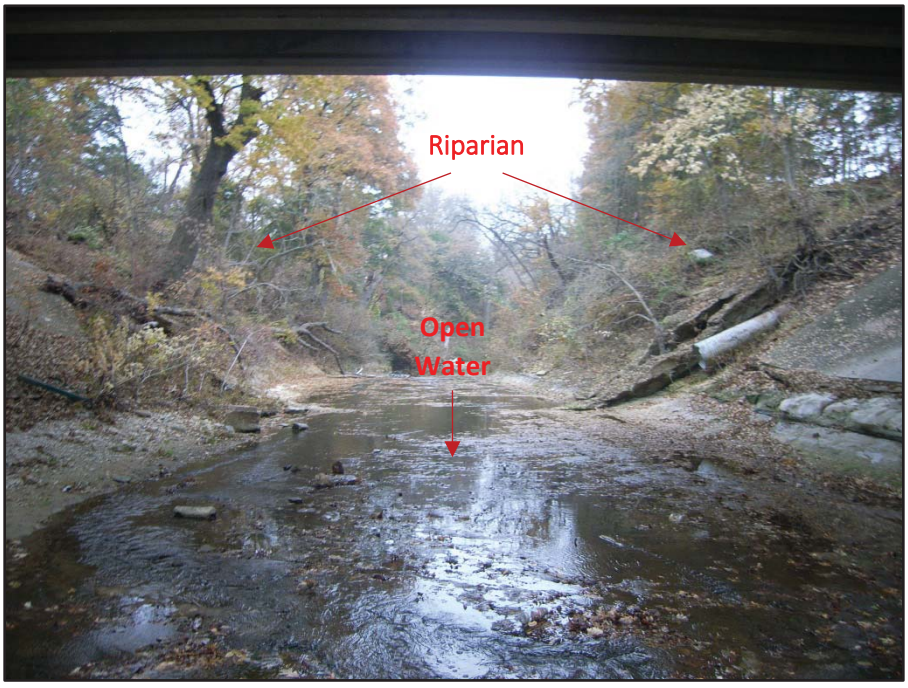
Photograph 30: View looking north along FM 664 near STA. 427+00. The TESCP/EMST Mapper classifies portions of the roadway unmaintained and woody vegetation as Edwards Plateau Savannah, Woodland, and Shrubland. The roadway better fits the Urban classification. The woody vegetation better fits the Disturbed Prairie classification. The unmaintained vegetation beyond the fence better fits the Tallgrass Prairie, Grassland classification. Date of photograph: 12/24/19

Photograph 31: View looking southwest along Shiloh Rd near STA. 441+00. The TESCP/EMST Mapper classifies portions of the roadway and woody vegetation as Edwards Plateau Savannah, Woodland, and Shrubland. The roadway better fits the Urban classification. Date of photograph: 08/14/19

Photograph 32: View looking south along FM 664 near STA. 466+00. The TESCP/EMST Mapper classifies the roadway, mowed-maintained vegetation and woody vegetation, as Tallgrass Prairie, Grassland, Disturbed Prairie and Edwards Plateau Savannah, Woodland, and Shrubland. The roadway and mowed-maintained vegetation better fit the Urban classification. The woody vegetation better fit the Disturbed Prairie classification. Date of photograph: 08/14/19



Photograph 33: View looking northwest along Dusty Oak Trail near STA. 463+00. The TESCP/EMST Mapper classifies the unmaintained vegetation and woody vegetation, as Tallgrass Prairie, Grassland and Riparian. The unmaintained vegetation better fits the Tallgrass Prairie, Grassland classification. The woody vegetation better fit the Disturbed Prairie classification. Date of photograph: 12/24/19



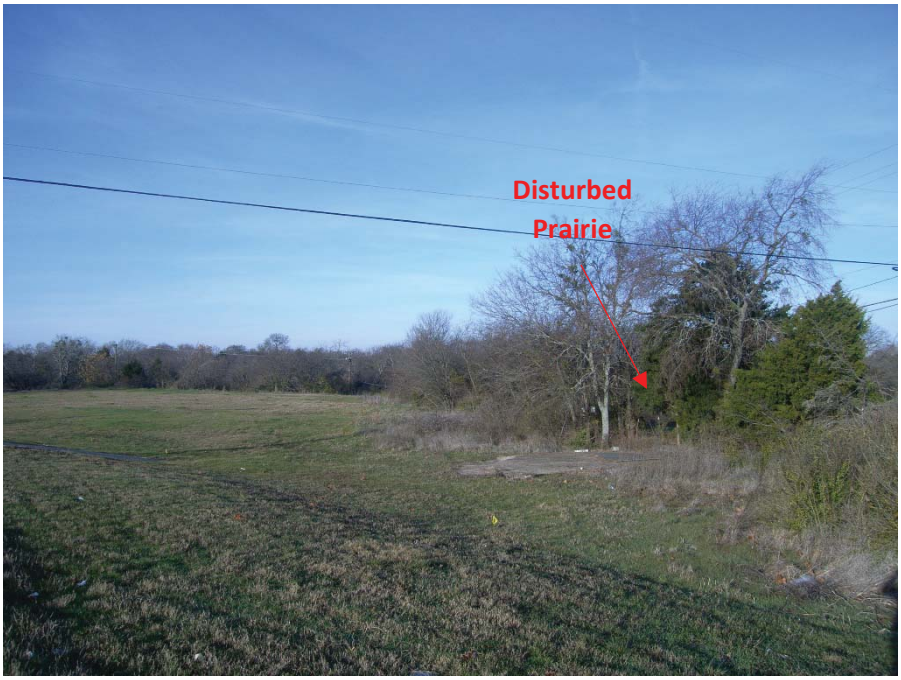
Photograph 34: View looking east underneath FM 664 along Red Oak Creek near STA. 470+00. The TESCP/EMST Mapper classifies portions of the river and woody vegetation as Urban and Riparian. The river better fits the Open Water classification. Date of photograph: 11/20/19

Photograph 35: View looking south from a tributary to Red Oak Creek near STA. 476+00. The TESCP/EMST Mapper classifies portions of the roadway and maintained vegetation as Urban. The woody vegetation better fits the Riparian classification. Date of photograph: 11/20/19

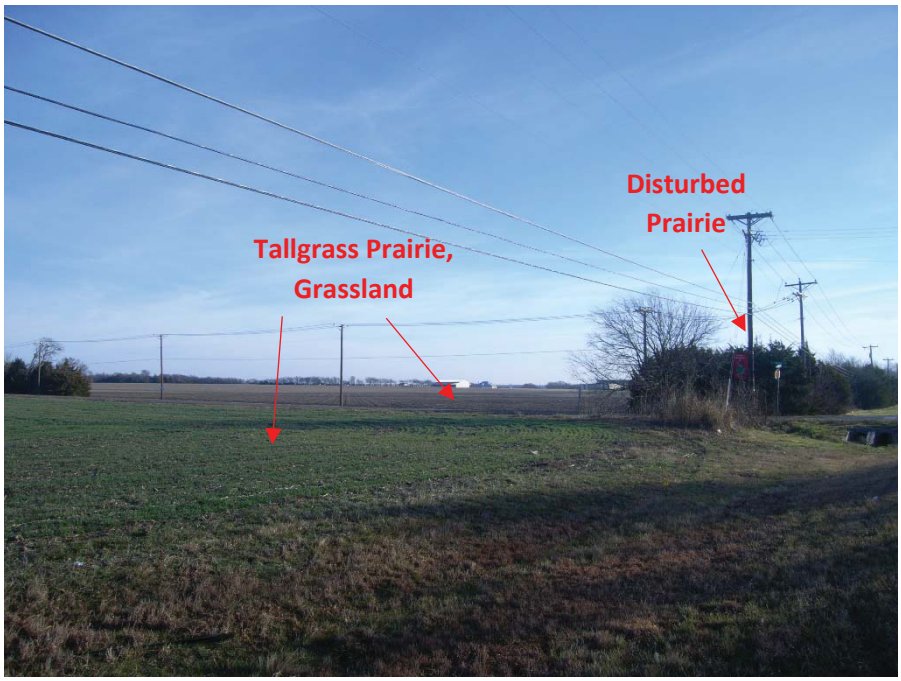
Photograph 36: View looking north from tributary to Red Oak Creek near STA. 476+00. The TESCP/EMST Mapper classifies portions of the woody and unmaintained vegetation as Riparian. The channel better fits the Open Water classification while the vegetation around it fits the Riparian classification. Date of photograph: 11/20/19

Photograph 37: View looking north from tributary to Red Oak Creek near STA. 476+00. The TESCP/EMST Mapper classifies portions of the woody vegetation as Riparian and Urban. The woody vegetation better fits the Edwards Plateau Savannah, Woodland, and Shrubland classification. Date of photograph: 12/24/19

Photograph 38: View looking southwest along FM 664 west ROW near STA. 493+00. The TESCP/EMST Mapper classifies portions of the woody and maintained vegetation as Edwards Plateau Savannah, Woodland, and Shrubland. The vegetation better fits the Urban classification. Date of photograph: 12/24/19



Photograph 39: View looking west along FM 664 west ROW near STA. 497+00. The TESCP/EMST Mapper classifies portions of the woody vegetation as Urban. The woody vegetation better fits the Disturbed Prairie classification. Date of photograph: 12/24/19



Photograph 40: View looking northeast along FM 664 north ROW near STA. 502+00. The TESCP/EMST Mapper classifies portions of the vegetation as Urban and Agriculture. The woody vegetation better fits the Disturbed Prairie classification. The other vegetation better fits the Tallgrass Prairie, Grassland classification. Date of photograph: 12/24/19

Photograph 41: View looking east along FM 664 north ROW near STA. 516+00. The TESCP/EMST Mapper classifies portions of the vegetation as Urban and Agriculture. The woody vegetation better fits the Disturbed Prairie classification. Date of photograph: 12/24/19

Photograph 42: View looking east along S Westmoreland Road near STA. 529+00. The TESCP/EMST Mapper classifies portions of the construction site as Agriculture. The site better fits the Urban classification. Date of photograph: 12/24/19

Photograph 43: View looking south along FM 664 east ROW near STA. 534+00. The TESCP/EMST Mapper classifies portions of the woody vegetation as Urban. The woody vegetation better fits the Riparian classification. Date of photograph: 11/20/19

Form
Community Impacts Assessment Technical Report

Project Name: Farm-to-Market Road (FM) 664 Realignment, Reconstruction, & Widening

Control Section Job Number (CSJ): 1051-01-038 & 1051-01-052

Report Date: 02/13/2020

District: Dallas **County(ies):** Ellis **Let Date:** 10/2024

Project Classification: Environmental Assessment

Report Version **Draft** ☐ **Revised** ☐ **Final** ☒

Please refer to the italicized instructions throughout this form, for guidance in determining which section should be completed. More detailed information on filling out this form is available in the Community Impacts Assessment Technical Report Instructions document in the CIA Toolkit. Additional guidance can be found in the Environmental Handbook - Community Impacts, Environmental Justice, Limited English Proficiency and Title VI and Frequently Asked Questions page in the Community Impacts Assessment Toolkit available on TxDOT.gov. For further assistance in developing this report or to discuss review comments on previous analyses, please contact the Environmental Affairs Division (ENV).

A. Applicable Projects

Would the proposed project involve ANY of the following conditions?

- Displacements of any kind
- Permanent increase in travel times to community facilities, businesses, or homes (except for projects that construct a new or extend an existing raised median or median barrier – see question below)
- Permanent elimination of driveway connections to/from community facilities, businesses, or homes
- Permanent impediment to use of non-automobile modes of travel
- Construction of a highway on new location
- Creation of a new bypass or reliever route
- Upgrading a non-freeway facility to a freeway facility
- Adding toll lanes

☒ Yes *Completion of this Community Impact Assessment Technical Report form is required. Proceed to **Section B**. Do not answer the remaining questions in this **Section A.***

☐ No *Proceed to the following question*

Would the proposed project involve ANY of the following conditions?

- Expansion of the roadway pavement by the width of one vehicle lane or more
- Creation of a new grade separation
- Construction of a new or extends an existing raised median or median barrier in front of a school OR with a section longer than 3 miles without a break or crossover

☐ Yes *Proceed to the following question*

☐ No *Completion of this Community Impact Assessment Technical Report form is not required (unless there is a reason to believe that the project would, nevertheless, have the potential to result in adverse temporary or permanent impacts to community resources, in which case proceed to **Section B**.) Do not answer the remaining questions in this **Section A.***

Are all of the following statements correct (to the extent they are applicable to the specific project)?

- For a project that involves expansion of a roadway by the width of one vehicle lane or more, the expansion is limited to an area that is rural or undeveloped.
- For a project that creates a new grade separation, the grade separation is limited to only one level (i.e. creating an overpass where one roadway will pass over another roadway), and is not a multi-level interchange.
- For a project that constructs a new or extends an existing raised median or median barrier in front of a school OR with a section longer than 3 miles without a break or crossover, the new or extended raised median or median barrier will not change access to any driveways or cross streets.

☐ Yes *Provide a brief summary of why there would not be any community impacts in the text box below. This will conclude the analysis and completion of the remainder of this Community Impact Assessment Technical Report form is not required (unless there is a reason to believe that the project would, nevertheless, have the potential to result in adverse temporary or permanent impacts to community resources, in which case proceed to **Section B**).*

☐ No *Completion of this Community Impact Assessment Technical Report form is required. Proceed to **Section B**.*

B. Community Study Area

Please answer all of the following questions in full sentences and proceed to *Section C.*

1. **Describe the overall objective of the improvements (e.g., to reduce congestion at an intersection, to improve operational efficiency, etc.).**

The proposed project consists of the realignment, reconstruction, and widening of FM 664 from United States (US) 287 to Westmoreland Road for approximately 8.08 miles. Improvements would include the expansion of the current 2-lane rural roadway to a 4-lane urban roadway (ultimate 6-

lanes) with a raised median to provide additional capacity and improve safety. Improvements would consist of 12-foot-wide travel lanes, and 14-foot-wide outside shared-use lanes, 6-foot wide sidewalks with American Disabilities Act (ADA) curb ramps in both directions. Other improvements would include eliminating 90-degree turns along FM 664 between FM 1387 and Marshall Road. The proposed design speed is 40 miles per hour (mph). The existing right-of-way (ROW) width would increase with the proposed project to the typical 150-foot wide ROW footprint. The proposed project is anticipated to require 87.18 acres of additional ROW and 0.61 acre of easement.

2. **Describe the boundaries of the community study area and the reasoning behind why these boundaries were selected for this analysis. State the county, distance to major city, and nearby major roadways for the community that may be impacted. Attach a map showing the community study area as well as the locations of all community facilities within the study area (e.g., schools, places of worship, health care facilities, recreation centers, social services, libraries, emergency services, etc.).**

The proposed FM 664 project limits are from US 287 in the city of Waxahachie, to Westmoreland Road in the town of Ovilla, both in Ellis County, Texas. The Community Impacts Assessment (CIA) study area is comprised of nine census block groups, all of which lie in Ellis County and encompass the proposed project area. The nine block groups were deemed an appropriate study area because they encompass developed and undeveloped areas within the proposed project area that may benefit from the improved facility. The CIA study area is located in the municipalities of Glenn Heights, Midlothian, Oak Leaf, Ovilla and Waxahachie.

3. **Describe the current land use patterns within the community study area (e.g., scattered rural development and agricultural use, planned suburban residential development, high-density urban development, mixed use, etc.).**

The proposed project is located in the cities of Ovilla and Waxahachie in Ellis County. The CIA study area is located in the municipalities of Glenn Heights, Midlothian, Oak Leaf, Ovilla and Waxahachie. The CIA study area is most densely developed in the vicinity of I 35E and US 287 on the study area's eastern and southern edges in the City of Waxahachie. Agriculture accounts for the majority of land use. Residential developments are present across the study area, with larger residential areas along FM 664 in the northern portion and FM 1387 in the western portion of the study area, associated with the cities of Midlothian and Ovilla, as well as an area near US 287 in the city of Waxahachie. The central, and southernmost portions of the study area are mostly undeveloped agricultural land with interspersed rural residential development. Existing non-agricultural development within the CIA study area is predominantly single-family residential, followed by commercial/retail, educational, recreational and municipal.

4. List and describe the community facilities within the community study area in the table below and show these facilities on an attached map.

#	Name of Facility	Type of Facility (ex.: school, park, place of worship, etc.)	Public or Private?	Serves a Specific Population?	Adjacent to the Project?	Additional Details/Comments
1	Harvest of Praise Ministry	Place of Worship	Public	No	No	
2	Shields Elementary School	School	Public	Children	No	
3	Little Hawks Learning Center	Educational	Public	Children	No	
4	Ovilla Road Church of Nazarene	Place of Worship	Public	No	No	
5	Ovilla Christian School	Place of Worship	Public	Children	Yes	
6	All Things Good Kids Academy	Educational	Private	Children	No	
7	Ellis County Outdoorsman Church	Place of Worship	Public	No	No	
8	Ovilla City Hall, Fire/Police Department	Government	Public	No	No	
9	Ovilla Market	Retail	Private	No	Yes	
10	United States Post Office	Government	Public	No	No	
11	Fire House Kids Christian Child Care Center	Educational	Private	Children	Yes	
12	Vertical Church	Place of Worship	Public	No	Yes	
13	Ovilla Medical Clinic	Medical	Private	No	Yes	
14	Heritage Park	Park	Public	No	Yes	

#	Name of Facility	Type of Facility (ex.: school, park, place of worship, etc.)	Public or Private?	Serves a Specific Population?	Adjacent to the Project?	Additional Details/Comments
15	Walnut Grove Driving School	Educational	Private	No	No	
16	Ovilla United Methodist Church	Place of Worship	Public	No	No	
17	Ovilla Church of Christ	Place of Worship	Public	No	Yes	
18	Dolores W. McClatchey Elementary	School	Public	Children	No	
19	Shiloh Cumberland Presbyterian Church	Place of Worship	Public	No	No	
20	T. E. Baxter Elementary School	School	Public	Children	No	
21	Walnut Grove Middle School	School	Public	Children	No	
22	Gateway Church of the Assemblies of God	Place of Worship	Public	No	No	
23	Moonbow Field	Airport	Private	No	No	
24	Longbranch Elementary School	Educational	Public	Children	No	
25	Walnut Grove Child Care	Educational	Private	Children	No	
26	Longbranch Community Baptist Church	Place of Worship	Public	No	No	
27	Mid-Way Regional Airport	Airport	Private	No	No	
28	Swagg Programs	Non-Profit	Public	No	Yes	
29	Ellis Baptist Association	Place of Worship	Public	No	No	
30	Ellis County Expo Center	Recreational	Public	No	No	
31	Cowboy Church of Ellis County	Place of Worship	Public	No	No	

#	Name of Facility	Type of Facility (ex.: school, park, place of worship, etc.)	Public or Private?	Serves a Specific Population?	Adjacent to the Project?	Additional Details/Comments
32	Faith Family Academy - Waxahachie	Educational	Private	No	Yes	
33	Sardis United Methodist Church	Place of Worship	Public	No	No	
34	St. Paul Episcopal Church	Place of Worship	Public	No	Yes	
35	Waxahachie High School	School	Public	Children	No	
36	Hillcrest Burial Park	Cemetery	Public	No	No	
etc.	Refer to Attachment 2: Facilities List for Full List					

C. Demographics

Attach tables to this Community Impact Assessment Technical Report form detailing race/ethnicity (including Hispanic or Latino persons), language, income, employment, disability, and age data for the community study area. Include other demographic data as appropriate. A template demographics table is provided as Appendix A to this form. Following completion of this section, proceed to Section D.

1. **What data sources were used?**

   ☒ U.S. Census Bureau

   ☒ American Community Survey (ACS)

   ☐ Texas Demographics Center

   ☐ Texas Education Agency – "Texas Academic Performance Reports"

   ☒ Site Visit – The Date of Site Visit: 8/14/2019

   ☒ Current and/or historic aerial photographs

   ☐ Other <Insert Text>

2. **How many of the census geographies within the community study area indicate half or more of the population as minorities (e.g., 2 out of 10 census blocks within the community study area indicate half or more of their populations to be minorities)? Also consider whether any of the census geographies indicate an appreciably greater percentage of minorities compared to the next largest census geography (e.g., one block indicates a 45-percent minority population, while its parent block group indicates a five-percent minority population). What is the racial makeup of the minority census geographies? Minority data should be evaluated at the block level in most circumstances.**

   The 2010 Census P9 (Hispanic or Latino, and not Hispanic or Latino by Race) data was utilized to identify minority populations. The data was obtained for the CIA study area block groups from the U.S. Census Bureau's American FactFinder at https://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml.

   There are 486 census blocks and nine census block groups that comprise the CIA study area. Because the census blocks and census block groups share the same boundary, the total recorded population and percent of each race/ethnicity are the same. The total recorded population of the

CIA study area is an estimated 16,973 based on the 2010 Census. Of these, approximately 80% (13,572) are White alone; 10.8% (1,824) are Hispanic or Latino; 6.8% (1,151) are Black or African American alone; 1.2% (197) are two or more races; 0.7% (122) are Asian alone; 0.5% (79) are American Indian and Alaska Native alone; less than 0.1% of the recorded population are Some Other Race alone (19) or Native Hawaiian and Other Pacific Islander alone (9). The minority population for the CIA study area totals approximately 3,401 people or 20%.

Of the 486 census blocks, 195 have no recorded population. The total population of the remaining 291 census blocks ranges from an estimated one person to 811 people per block. For the populated census blocks, the percent minority ranges from 0% to 100%. Of the 291 populated census blocks, 30 have a minority population greater than 50%. Percent minority in the 30 Environmental Justice (EJ) blocks ranges from 54.5% to 100% and the total population ranges from 1 person to 136 people per block. The total population of the EJ blocks is 594. Of these, 47% (279) are Hispanic or Latino; 15.8% (94) are Black or African American alone; 3.9% (23) are Two or More Race; 3.2% (19) are Asian alone; 0.5% (3) are American Indian and Alaska Native alone; 0.5% (3) are Some Other Race alone; none are Native Hawaiian and Other Pacific Islander alone; and 29.12% (173) are White alone.

Of the nine census block groups in the CIA study area, none have a minority population greater than 50%. The percent minority in the nine census block groups ranges from 12.7% to 41%. Refer to the attached "Census Geography Map - Minority Populations" for the locations of the EJ blocks (minority population greater than 50%) and attached census data obtained from the American FactFinder. As shown in the above referenced map, minority populations are located throughout the CIA study area and not in any one general location.

3. **What is the current U.S. Department of Health and Human Services (DHHS) poverty level for a family of four, and what year is this based on?**

The 2020 DHHS poverty level for a family of four is $26,200.00.

4. **How many of the census geographies show a median household income below the DHHS poverty level? What are the median incomes of each those census geographies? If there are more than four block groups in the study area, list the range of incomes (e.g., Median income in the study area ranges from $32,415 to $47,651). Median household income should be evaluated at the block group level if available.**

No geographies show a median household income below the DHHS poverty level. Median income in the study area within census block groups ranges from $70,809 to $141,818 and within census tracts ranges from $89,559 to $108,304.

5. **Do any of the census geographies show the presence of persons who speak English “less than very well?” Which languages are spoken by those with limited English proficiency? Language spoken should be evaluated at the block group level if available.**

The 2013-2017 ACS 16004 (Age by Language Spoken at Home by Ability to Speak English for the Population 5 Years and Over) data was utilized to identify persons who speak English "less than very well." The data was obtained for the CIA study area block groups from the U.S. Census Bureau's American FactFinder at https://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml.

There are nine census block groups that comprise the CIA study area. Of these, eight census block groups have populations who speak English "less than very well". Census block group 5 of census tract 602.04 in Ellis County does not contain persons aged five years and over who speak English "less than very well."

Based on census data for LEP populations, the total recorded population (age 5 years and over) for the CIA study area is 18,350. Of the 18,350 people, 599, or 3.3%, speak English "less than very well," with 3% (542) speaking Spanish; 0.2% (31) speaking Asian and Pacific Island languages; 0.1% (20) speaking other Indo-European languages; and 0.03% (6) speaking other languages. For the eight census block groups that contain LEP populations, the percent LEP ranges from 0.7% in census block group 2 of census tract 602.11 in Ellis County to 16.6% in census block group 4 of census tract 602.04 in Ellis County. Refer to the attached "Census Geography Map - LEP Populations" for the locations of the block groups with more than 10% LEP population (contain persons age 5 years and over that speak English "less than very well") and the the attached census data obtained from the American FactFinder.

D. Site Visit

*Following completion of this section, proceed to **Section E**.*

1. **Was a site visit conducted? If so, indicate when the site visit was conducted, attach documentation (including notes and photographs) from the field visit, and complete the rest of Section D. A site visit should be conducted for most projects. If not, explain why site visit was not conducted.**

   Yes, a site visit was conducted on 8/14/2019, 11/20/2019, and 12/24/2019.

2. **Were there signs observed in languages other than English? Describe the language(s) observed as well as the frequency and general location of signs in other languages (e.g., throughout the community study area, concentrated in a particular vicinity, etc.).**

   No.

3. **Were there places of worship, businesses, services, or other community facilities that target or primarily serve specific minority groups?**

   No.

4. **Were there observable signs of persons with disabilities, such as ramps on homes or public transportation vehicles, or stops specifically designed for persons with disabilities?**

   No.

5. **Were there signs of other vulnerable populations (including children and elderly persons), such as the presence of daycares, elementary schools, or assisted living facilities?**

   Yes. Signs of other vunerable populations found within the CIA study area include several elementary and middle schools, and child care facilities. Refer to the Project Area Photographs, Photos, 1, 5, & 11 for a representative photographs.

6. **Were there signs of low-income populations or neighborhoods, such as government-subsidized housing, homes in disrepair, and low-cost health care facilities?**

   No.

7. **Were there signs of other modes of transportation, such as bus stops, train stations, or designated bicycle lanes or bicycle lane signage? Did you observe cyclists in the area? Are there sidewalks or trails? Did you observe "goat paths" or dirt pathways adjacent to the proposed facility? If any of these signs are present, please describe their location and extent and show on a map, if necessary.**

   No.

8. **Based on the observations made during the site visit and the data provided in Sections B and C, summarize the general character of the community study area. Consider the present condition as well as the overall development trends within the community study area.**

   While the project area is primarily rural with over 50% of existing land use being agricultural, there are areas of existing residential neighborhoods, retail, and other light commercial, primarily in Ovilla. A number of single-family residential neighborhoods are relatively new, showing signs of expanding suburbanization in the area as nearby cities such as Waxahachie and Midlothian continue to grow and develop.

E. Public Involvement

*Following completion of this section, proceed to **Section F.***

1. **Please describe the public involvement efforts planned or previously carried out for the proposed project.**

   There was a Public Meeting held on March 5, 2019, at the Waxahachie Civic Center, where there were approximately 176 attendees.

   A Public Hearing is planned.

2. **If public involvement has already occurred or is ongoing, what type of feedback has been received from the public regarding the proposed project or other community-related issues (i.e., what is the general sentiment of the public regarding the proposed project**.

   Comments received in response to the March 5 Public Meeting have been mixed, with many supporting the project. However a majority had various concerns related to access due to raised medians, right-of-way (ROW) acquisition, noise levels, and traffic increases. While many people were greatful for efforts to prepare for future growth through added capacity and realignment to improve safety, many felt that the improvements would themselves promote increased traffic and unwanted growth in areas they felt should stay rural. Many adjacent property owners were concerned about reimbursement and mitigation for ROW acquisition to their properties.

3. **If public involvement has already occurred or is ongoing, and if feedback has been received from the public, how has this feedback been incorporated into the proposed project? Have attempts been made to address specific concerns of the public?**

   The schematic has considered public input and has implemented many of the elements from the feedback from the MAPO meetings and Public Meeting. Examples of this effort are included in the public meeting comment responses. Some specific examples are:
   - Churches adjacent to project limits – The alignment was modified from previous schematic and feasibility studies to minimize the impacts to the church property in all locations. There are three churches bordering the project Ovilla Church of Christ, Vertical Church, and Ovilla Baptist Church
   - Alignment adjustment North of Main Street to minimize impacts on properties and eliminate displacements.

F. Displacements

Would the proposed project result in any displacements?

☐ No Proceed to **Section G**, Access and Travel Patterns.

☒ Yes Answer the questions in all applicable sections.

- *If residential displacements would occur, answer all questions in* ***Section F.a.***
- *If commercial displacements would occur, answer all questions in* ***Section F.b.***
- *If commercial displacements would occur, (such as places of worship, community centers, or schools), answer all questions in* ***Section F.c.***

1. Residential Displacements

If residential displacements would occur, answer all the questions in this section and proceed to **Section G.**

a. How many residences would be displaced (including those that would be impacted in a manner that would prevent them from being occupied because of loss of parking or access, etc.)? What types of residences would be displaced (e.g., single-family homes, apartments, duplexes, etc.)?

There is one single-family home that may be displaced as a result of the proposed project. The property is located at 3619 Ovilla Rd. Ovilla, TX 75154. The appraised value of this property is $105,970. The home on the property is around 1,500 square feet, with other older improvements on the land including a barn and a detached garage/carport.

b. Is there an adequate number of available replacement homes of comparable type, size, and cost? How was this determined?

Based on research at home-buying websites such as zillow.com, there do not appear to be homes for sale within the $50k-150k price range of the singe potential residential displacement anywhere near it. The closest home visible on these websites is over four miles away. There are however, a number of vacant lots available for sale below the appraised value of the home, with lots within 3 miles of the home as low as $65k. There are many homes of higher value available within a mile, ranging from $169k to $900k with most homes ranging from $300k to $400k; three to four times the value of the potential displacement. Further, there appears to be more than enough room on the existing property after ROW acquisition to rebuild there should they choose to do so.

2. Commercial Displacements

If the number of employees at businesses that would be displaced represents less than five percent of the workforce in the community study area, then only questions i through vii should be answered below. If the number of employees at businesses that would be displaced represents more than five percent of the workforce in the community study area, then answer all of the questions in this section and refer to ***Appendix B*** *for guidance on how to further analyze economic impacts (unless there is reason to believe that the overall economic impact of the displacements on the community would nevertheless be minor, in which case discuss with an ENV*

SME before completing all of the questions in this section). Upon completion of this section, proceed to ***Section G.***

a. What types of businesses exist in the study area (e.g., commercial, retail, industrial, medical, etc.)?

There are a limited number of commercial/retail locations along the project corridor, though more are present along the edges of the study area along I-35E, US 287 and Bus 287. Industrial areas are also present on the edges of the study area though there are very few along the project corridor. There is only one medical clinic near adjacent to the project, with no others within the project area.

b. Which businesses would be displaced (including those that are impacted in a manner that would prevent them from continuing to operate because of loss of parking, removal of access, etc.)?

There is one realty office that my be displaced as a result of the proposed project. The property is located at 3711 Ovilla Rd, Ovilla, TX 75154. The appraised value of the property is $183,330.

c. Are these businesses unique to the area? How far would a person have to travel to find a business offering similar services?

The realty office is not unique to the area, there are a number of realty offices nearby and RE/MAX is a global real estate agency with many locations in the region. Residents would have to travel no more than 2 miles to go to one of five other realty offices in the area, assuming the business wasn't rebuilt at another nearby location.

d. Do these businesses serve a specific population such as persons with disabilities, children, the elderly, a specific ethnic group, low-income families, or a specific religious group?

No, this realty company is one of many in the area, including four other RE/MAX offices within 10 miles.

e. Have any business owners indicated that they would or would not relocate if the proposed project is implemented? (base your answer on any information that is already available, there is no need to poll business owners for the sole purpose of answering this question)

There is no indication one way or the other, though there are areas of vacant land designated commercial in the area around Ovilla where they could rebuild.

f. Do customers generally access these businesses by car, mass transit, walking, or bicycling?

Customers would generally access this business by car as there are no existing sidewalks along the project corridor.

g. Are there replacement properties available for relocation of the businesses? Are there parcels available of comparable size, zoning, or special access needs (e.g., adjacent to a railroad)?

There are areas of vacant land designated commercial that can be parcelled out into single acres which would be comparable to the existing location for the business that may be displaced.

3. Other Displacements

Other displacements could include but are not limited to places of worship, community centers, or schools. If other displacements would occur, answer all of the questions in this section and proceed to ***Section G.***

a. What non-residential and non-commercial displacements would occur? Where are these facilities located?

N/A

b. Do the displaced facilities serve a specific population such as persons with disabilities, children, the elderly, a specific ethnic group, low-income families, or a specific religious group?

N/A

c. Are there replacement properties available for relocation of comparable size or zoning?

N/A

d. How far would a person have to travel to find similar facilities or services?

N/A

e. Is there any opportunity to mitigate the impact to the facilities?

N/A

G. Access and Travel Patterns

Would the project potentially result in permanent changes to access (i.e., driveway closures), permanent removal of bike or pedestrian facilities, or permanent changes to travel patterns? Project elements that could result in changes in access and/or travel patterns include but are not limited to: introduction or modification of raised medians; dividing a previously undivided facility; reconfiguration of intersections; construction of a highway on new location; and construction of frontage roads along a highway.

☐ No Proceed to **Section H**, Community Cohesion

☒ Yes Answer questions in the applicable sections

- If the project would improve an existing facility (including construction of new frontage roads along an existing highway), complete Section G.a. only and proceed to **Section H**.
- If the project would be constructed on new location but would not create a new bypass or reliever route, complete Section G.b. only and proceed to **Section H**.
- If the project would create a new bypass or reliever route, complete Sections G.b. and G.c. and proceed to **Section H**.

1. Changes in Access and Travel Patterns for Projects on Existing Facilities

a. What modes do people currently use to access destinations in the community study area (car, walking, cycling, and/or mass transit)?

The most common form of transportation people use to access the adjacent parcels is by automobile followed by walking though narrow shoulders and no sidewalks makes this hazardous. Mass transit is not available within the study area.

b. Describe the current travel patterns along the existing facility and within the community study area. Consider the travel patterns observed during the site visit as well as the potential origins and destinations of trips for people in the community study area. Consider all modes if multiple modes are used in the community study area.

Under existing conditions, motorists can enter both north and south-bound FM 664 within the project limits from adjacent driveways, side streets, and cross streets. There are no adjacent sidewalks or shoulders along the project corridor.

c. Describe how the proposed project would permanently change access and travel patterns along the facility and within the community study area compared to the existing condition, including beneficial and adverse impacts. Please include estimated travel time changes, as appropriate.

As part of the proposed improvements, a raised median would be introduced, and access to/from northeast and southwest-bound FM 664 to/from adjacent driveways, side streets, and cross streets would be limited to select locations. Areas of FM 664 would be realigned through current agricultural areas to remove existing 90 degree turns to create more gradual turns which would improve safety and eliminate slowdowns at these existing turns.

Median openings would be provided at nearly all existing cross/side streets (excluding Ovilla Rd and Clark Ct), but not at all adjacent driveways, and intermittently in the more rural, southern portion of the proposed project. For motorists seeking a destination on the opposite side of the roadway, left turn lanes are provided at the median openings to allow them to perform a U-turn and continue back to their destination. This may potentially cause an increase in travel time because the motorists cannot directly access their destination or residence on the opposite side of the road. They might have to pass their destination, and continue until they reach a median opening, and then conduct a U-turn to reach their final destination. Proposed median break locations are subject to change during the Plans, Specifications & Estimates (PS&E) phase of the project. All properties currently having access to FM 664 would continue to do so following implementation of the proposed project.

The proposed bike/pedestrian facilities along FM 664 within the project limits, 14-foot wide outside shared use lane and 6-foot wide sidewalks, may influence a change in travel patterns as people utilize non-motorized transportation.

d. Describe the specific areas that would be affected by these changes, such as residences or businesses. Which community facilities listed in Section B.g. would be affected? Do any of the community facilities provide “essential services,” such as clinics, schools, or emergency response?

Cross streets affected by access changes:

Ovilla Rd currently splits from FM 664 continuing north while FM 664 turns slightly northeast. The proposed project would remove access to FM 664 and create a cul-de-sac, making the properties connected have to divert up to Shiloh Rd approximately 400-450 feet north. Shiloh Rd would still have full access to FM 664 with a median break.

Clark Ct currently connects to FM 664 from the west. The proposed project does not provide median access to Clark Ct, due to its proximity to Miranda Way which would have median access. This means those travelling northbound on FM 664 would be unable to turn left onto Clark Ct, and those travelling east on Clark Ct will be unable to turn left onto FM 664. Nearby median breaks would allow for U-turns to provide access for those travelling along Clark Ct.

Community facilities impacted by proposed changes:

Access between southbound FM 664 and Ovilla Market would not be provided at one of the two existing driveways as part of the proposed improvements. Motorists that currently travel between southbound FM 664 and Ovilla Market would have to turn left at the left turn lane that would be introduced at the north driveway as part of the proposed project. The south driveway would be accessible only to those traveling north. Similar changes in access and travel patterns are proposed at additional driveways along the length of the proposed project.

Various other community facilities would be impacted by the raised medians requiring them to make U-turns at available median breaks rather than left turns. These facilities are: Ovilla Christian School (one of four driveways have median break), Fire House Kids Christian Child Care Center, Vertical Church, Heritage Park, and Swagg Programs.

Proposed median break locations may impact locations along the project corridor, but these median breaks are subject to change during the Plans, Specifications & Estimates (PS&E) phase of the project.

e. How would the proposed project affect emergency response times? Please calculate added distance and/or estimated travel times for any potential response time increases.

The proposed project would increase roadway capacity and improve mobility and safety in the proposed project area. Median openings would be provided at most existing cross/side streets, but not at all adjacent driveways, and intermittently in the more rural, southern portion of the proposed project. For emergency response vehicles seeking a destination on the opposite side of the roadway, left turn lanes are provided at the median openings to allow them to perform a U-turn and continue back to their destination. The realignment of FM 664 to avoid 90 degree turns would allow safer movement at higher speeds for emergency vehicles improving response times. While access may be less direct in some locations for emergency response vehicles, the proposed project would be expected to result in an overall improvement in response times throughout the project area. Changes in access to area hospitals as a result of the proposed improvements is not anticipated.

f. Are there active farms or ranches in the community study area? If so, would the project affect the movement of farm equipment or livestock trailers across the highway?

Rural areas primarily found in the southern end of the project would have regularly spaced median breaks allowing access for farm equipment or livestock trailers to gain access to the highway in either direction. Regardless, this would still impead movement of farm equipment and live stock trailers compared to the existing rural roadways with no raised medians. However, median breaks would be spaced out no greater than 1/4-mile, while median breaks near areas with cross streets would be considerably closer, allowing for access throughout the project corridor.

g. Are any design elements proposed to mitigate adverse impacts to access and/or travel patterns?

The raised median was a major concern and one that was dealt with during design. Some specific examples include:

- Coordinated median openings for various businesses along the route as much as possible to provide dual access from both traveling directions.
- Maintained access to all private property via driveways and provided median openings at many locations as allowed by design regulations.
- All possible cross-street intersections maintained accessibility via median openings as allowed by design regulation

The schematic also improved the traffic patterns by eliminating existing unsafe curves and providing safer navigable curves throughout the project.

- Mitigated several dangerous sharp curves by improving the alignment and layout to allow for smoother and safer traffic patterns along the route.

2. Changes in Access and Travel Patterns for Construction of Highway on New Locations

a. What modes do people currently use to access destinations in the community study area (car, walking, cycling, and/or mass transit)?

The most common form of transportation people use to access the adjacent parcels is by automobile followed by walking though narrow medians and no sidewalks makes this hazardous. Mass transit is not available within the study area.

b. Describe the current travel patterns within the community study area. Consider the travel patterns observed during the site visit as well as the potential origins and destinations of trips for people in the community study area. Consider all modes if multiple modes are used in the community study area.

Under existing conditions, motorists can enter both north and south-bound FM 664 within the project limits from adjacent driveways, side streets, and cross streets. There are no adjacent sidewalks or shoulders along the project corridor.

c. Describe the changes in access and travel patterns that would result from the proposed project, including any beneficial and adverse impacts. For new location projects, consider whether access to previously inaccessible areas would be created, as well as how the introduction of the project to the area could change previously established travel patterns on other facilities in the community study area.

Portions of FM 664 would be realigned over existing agricultural areas to remove existing 90 degree turns which would provide safer movement along the project without reducing the movement of vehicles as much at turns.

d. Describe the specific areas that would be affected by these changes. What residences or businesses are located near the proposed new-location facility? Which community facilities listed in Section B.d. would be affected? Do any of the community facilities provide "essential services," such as clinics, schools, or emergency response?

N/A

e. How would the new highway affect emergency response times?

The removal of sharp 90 degree turns, realigning the project at new locations, would increase emergency response times by creating safer and more direct routes, no longer requiring reduced speeds at turns.

f. Is land adjacent to the new-location highway available for development?

Adjacent land at new locations is primarily agricultural and may be developed in the future, but is currently privately owned.

g. Are there active farms or ranches in the community study area? If so, would the project affect the movement of farm equipment, livestock, or trailers across the highway?

New locations would bisect certain agricultural areas, and raised medians would reduce available access north and south for adjacent agricultural areas. Proposed median break

locations are subject to change during the PS&E phase of the project. Agricultural areas between the existing and the proposed new locations of FM 664 would potentially be unable to continue being used because the new raodway would create a barrier.

h. Are any design elements proposed to mitigate adverse impacts to access and/or travel patterns?

N/A

3. Changes in Access and Travel Patterns for New Bypass or Reliever Route Projects

a. What businesses are located along the existing corridor for which the bypass or reliever route would be created? Which of these businesses are primarily dependent on passing traffic for business (e.g., gas stations, restaurants, hotels, etc.)?

N/A

b. Are frontage roads proposed as part of the project? If so, describe the type and location of the frontage roads.

N/A

c. Describe any mitigation or design element, such as new signage, proposed to address adverse impacts to existing traffic-dependent businesses.

N/A

H. Community Cohesion

Does the project involve one or more of the following elements?

- Construction of a highway on new location
- Construction of a new grade separation of more than one level
- Construction of a new interchange
- Expansion of an existing facility or interchange by a width equal to or greater than an existing travel lane.
- Upgrade of a non-freeway facility to a free-way facility

- Addition of tolled or managed lanes
- Construction of a new raised median or extension of an existing raised median that will prevent access to a least one driveway or cross street.
- Introduction of a new median along a previously undivided facility

☐ No Proceed to **Section I, Environmental Justice**.

☒ Yes Answer all questions in this section and proceed to **Section I.** .

1. **Briefly characterize the existing level of community cohesion. Ideally, this information should be based on feedback from members of the affected community or communities. If no such information is available, rely on geographic characteristics, development patterns, and observations made during the site visit.**

   The existing FM 664 roadway has been a central part of the study area for decades, with the Town of Ovilla's growth being directly dependant on the provided connectivity to the major thoroughfares of IH 35E and US 287, giving the area access to the greater region. The study area however, is spread across a number of towns and large areas of unincorporated land dominated by farm and cropland. These different areas all have their own community cohesion, though some of them are periphery areas of greater communities, specifically Midlothian and Waxahachie, of which have suburban areas within the study area.

2. **Describe whether construction of the proposed project would change the existing level(s) of separation experienced near the project area. Changes in separation could include but are not limited to introduction of a new physical barrier; expansion of an existing physical barrier; or contribution to a perceived sense of separation by constructing a new grade separation. Consider all modes if multiple modes are used in the community study area.**

   While the increased width of the project and raised medians across the entire project limits would add to existing levels of physical separation, improved travel times as a result of realigning FM 664 to remove 90 degree turns, along with added shared-use lanes and continous sidewalks would overall reduce the levels of separation through greater ease of travel across the project area. These improvements coupled with safer traffic conditions resulting from raised medians would help to reduce the perceived sense of separation.

3. **Describe whether the changes associated with the proposed project (including impacts to access and travel patterns) would directly or indirectly result in separation or isolation of any geographic areas or groups of people. Consider all modes if multiple modes are used in the community study area.**

   The proposed changes associated with the proposed project are not anticipated to separate or isolate any geographic areas or groups of people. The changes would not remove access to any

cross streets connecting neighborhoods to the proposed project, and regular median breaks would maintain consistent north/south access along FM 664, ensuring no areas or groups of people are isolated. It is unlikely that having to conduct an occasional U-turn and the associated slight increase in travel time would influence people to change how they access the community/local activities. Continuous shared use lanes and sidewalks along the project would reduce separation for those without the means to travel by vehicle.

4. **Describe whether the changes associated with the proposed project would affect use of local services and community facilities. Would the project make access to these services and facilities more or less convenient? Would the frequency with which people access other parts of the community change? Consider all modes if multiple modes are used in the community study area.**

The introduction of bike/pedestrian facilities may encourage people to pursue alternative modes of transportation. With improved access to bike/pedestrian facilities people may desire to visit or use local services and facilities more frequently.

Raised medians are not anticipated to impact use of local facilities or services, as cross streets would for the most part have median breaks to allow for north/south access to FM 664, along with regular median breaks along the rest of the project.

5. **Are any design elements proposed to mitigate adverse impacts to community cohesion?**

The schematic has considered the community in many instances.

- Many of the border widths and ROW widths in the highly residential areas were minimized to 15 ft from the typical 20ft or 24ft width. This resulted in less impact to established communities as possible.
- Number of displacements were essentially reduced from 6 or 7 to 2 with the current schematic design. That is reduction of 70%.

I. Environmental Justice

Based on the data provided in Sections C.b. and C.d., does the community study area include any minority or low-income census geographies (i.e., “EJ census geographies”)?

☐ No Proceed to **Section J, Limited English Proficiency.**

☒ Yes Answer all questions in this section and proceed to **Section J**.

1. **If the project would result in displacements, how many of these displacements would be located in EJ census geographies versus non-EJ census geographies?**

Neither of the potential displacements would be in EJ census geographies, however, the single-family home is in a census block with a minority population of 23%.

2. **Would there be impacts related to access and/or travel patterns? If yes, what types of impacts would occur in EJ census geographies versus non-EJ census geographies?**

   There are no access and travel patterns that would occur only in EJ census blocks. Of the 30 minority EJ census blocks out of 486 total, there is only one EJ census block that is adjacent to the project. In general, the raised medians discussed in the Access and Travel Patterns section would have regular median breaks at most cross streets and at regular intervals, ensuring greater safety while also still allowing for north/south movement along FM 664 with minimal disruption, regardless of whether adjacent census blocks are EJ or not.

3. **Would there be impacts related to community cohesion? If yes, what types of impacts would occur in EJ census geographies versus non-EJ census geographies?**

   There are no community cohesion impacts that would occur only in EJ census blocks. As discussed in the Community Cohesion section, while raised medians and ROW acquisition would increase physical separation, improve traffic flow with increased lane capacity along with shared-use lanes and the addition of sidewalks across the entirety of the project would overall reduce the perception of separation. These changes would be project-wide and not specific to any areas, EJ or otherwise.

4. **Do any of the displaced businesses, community facilities, or services specifically cater to minority or low-income populations? Would the services provided cease, be reduced, or be forced to temporarily stop if displaced? If so, where is the nearest comparable service provided? Consider the effects to EJ populations that reside within the community study area as well as EJ populations that may reside elsewhere but still rely on the services being provided by these establishments.**

   The only potential displaced business is a realty company. They do not specifically cater to minority or low-income populations. Other realty companies are throughout the region and the loss of this business would not reduce available services.

5. **Based on the other technical documentation prepared for the proposed project, would there be any impacts to the human environment (e.g., noise, air quality, etc.) that could affect the community study area? If yes, would these impacts occur in EJ census geographies or non-EJ census geographies?**

   No, noise and air quality impacts are not expected.

6. **Has the community experienced substantial impacts from past transportation projects such as a new roadway causing a large number of displacements or introducing a barrier and separating parts of the community? Describe any recurring community impacts that may be perpetuated by the proposed project.**

   No.

7. **Have there been any major infrastructure projects, industrial facilities, or other large-scale developments constructed in or adjacent to the community area?**

   Various residential areas have recently been developed.

8. **Are there any minimization or mitigation efforts proposed specifically to lessen impacts to EJ populations?**

   Not aplicable, as there are not expected to be disproportionate impacts to EJ populations within the study area.

9. **In consideration of all the impacts to EJ populations described above and any mitigation proposed, would impacts to EJ populations be disproportionately high and adverse when compared to impacts to and mitigation for impacts to non-EJ populations? Describe why or why not.**

   No, EJ populations are limited within the study area, and impacts are not limited to these areas, making disproportionate impacts to EJ populations not likely.

J. Limited English Proficiency

Based on the data provided in Sections C.e. and observations made during the site visit, are LEP persons likely to be present in the community study area?

☐ No Proceed to **Section K, Conclusions**.

☒ Yes Answer all questions in this section and proceed to **Section K.**

1. **What languages do the LEP persons likely to be present in the community study area speak?**

There are an estimated 599 people five years and over that speak English "less than very well". Of these, 90% speak Spanish. There are very small numbers of people speaking other languages such as Asian and Pacific Island language speakers. The majority of Spanish-speaking LEP populations can be found in Census Block Group 4, Census Tract 602.04, which is found on the northeastern end of the CIA study area.

2. **If public involvement events have occurred or are ongoing, then describe the accommodations that have been made for LEP persons during the public involvement process. Was assistance in a language other than English requested or is it anticipated to be requested? Were notices for public involvement opportunities provided in languages other than English? Were services such as translation or interpretation provided during public involvement events?**

Accommodations for LEP persons during public involvement have included, and would continue to include, providing bilingual (English/Spanish) public notices, placing public notice display ads in English and Spanish newspapers, and having Spanish-speaking staff present at public involvement events. In addition, the public involvement notices state that accommodations for other non-English languages would be provided if requested ahead of the meeting.

3. **Are more public involvement efforts planned? If yes, has the plan to accommodate LEP persons changed based on past public involvement feedback?**

Yes, there is a planned Public Hearing, which would also provide accomodation for non-English speaking LEP populations should they be necessary.

K. Conclusions

Following approval of the Community Impact Assessment Technical Report form by TxDOT ENV, this summary must be included in the draft EA or draft EIS, if one is being prepared.

In the text box provided below, provide a summary of the analysis conducted above and include the following information:

- Whether EJ populations occur within the community study area
- Summary of impacts related to displacements
- Summary of impacts related to access and travel patterns
- Summary of impacts related to community cohesion
- Summary of impacts to EJ populations
- Summary of LEP issues and accommodations

If some of the above components of the analysis do not apply to a particular project, please indicate this in the conclusion statements (i.e., "The proposed project would not result in any displacements; therefore, a displacements analysis was not required.").

EJ populations occur within the CIA study area. There are 30 out of 486 census blocks within the CIA study area that contain 50% or more minorities, with populations within these census blocks ranging from 1 to 136 people. Of these 30 census blocks, 23 have populations of approximately 10 or fewer, and only two census blocks have populations estimated to be over 100, with the combined population of all EJ census blocks being 594, only 3.5% of the total CIA study area population.There are no EJ census block groups within the CIA study area. Only four EJ census blocks are adjacent to the project.

The proposed project may result in two displacements, one residential and one commercial. There is available undeveloped residential and commercial property within a reasonable distance of the displacements, though there are not available existing developments of comparable value. Alternatively, each of these would be able to rebuild on their remaining land after ROW acquisition.

The proposed project is anticipated to reduce travel times through the removal of 90 degree turns, with realignments over new locations with more gradual turns, and added travel lanes widening the project to four lanes with added turn lanes at median breaks. The inclusion of raised medians in the proposed project would require motorists to make U-turns at median breaks to access certain locations where median breaks are not available, reducing travel times, though general improvements and are anticipated to offset these delays. Access would be improved for non-motorists, through the inclusion of shared use paths and sidewalks. Raised medians and shared use paths would improve safety for motorists, bicylists and pedestrians.

Minimal adverse impacts to community cohesion would occur as the proposed project is primarily on existing roadways, and displacements are not widespread. Where the proposed project is on new locations, agricultural areas would be most affected, with certain areas being separated making them likely unusable. These would likely be the largest impacts to cohesion and impacts as residential areas would be minimal, with increases to cohesion likely with the inclusion of shared use paths and sidewalks. Proposed median break locations may impact the cohesion of homes and retail along the project corridor, but these median breaks are subject to change during the PS&E phase of the project. The safety provided by raised medians would help to offset potential impacts of median break locations, overall improving community cohesion and access.

No adverse impacts to EJ populations are anticipated. There are only four EJ census blocks adjacent to the project out of 486 and displacements do not occur in them. Any adverse impacts would be equally shared between EJ populations and non-EJ populations.

The languages that LEP persons likely speak in the CIA study area are predominantly Spanish, but also include Asian and Pacific Island, Indo-European and Other languages. Accommodations for LEP persons during public involvement have included, and would continue to include, providing bilingual (English/Spanish) public notices, placing public notice display ads in English and Spanish newspapers, and having Spanish-speaking staff present at public involvement events. In addition, the public involvement notices state that accommodations for other non-English languages would be provided if requested ahead of the meeting.

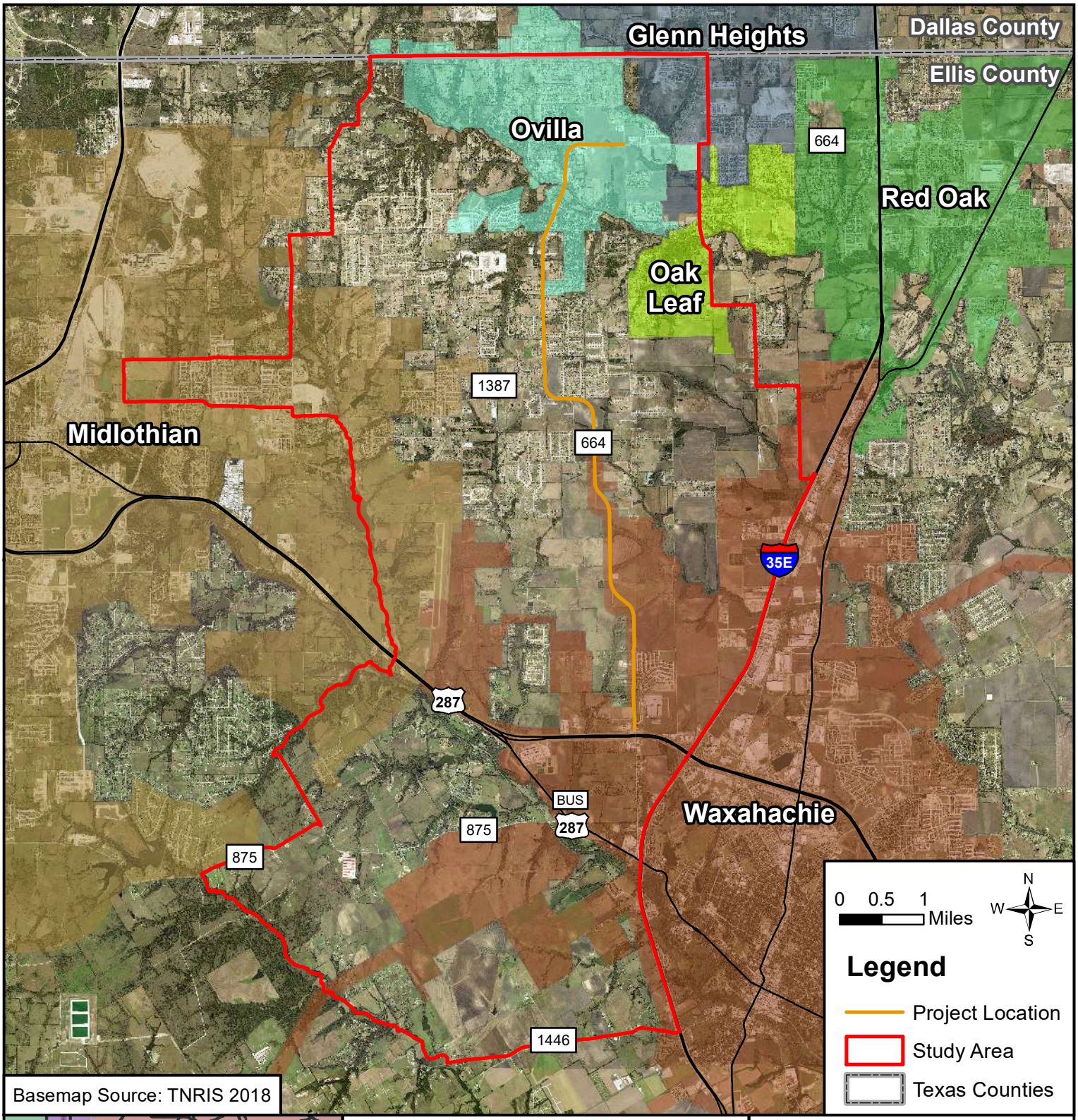
ATTACHMENTS

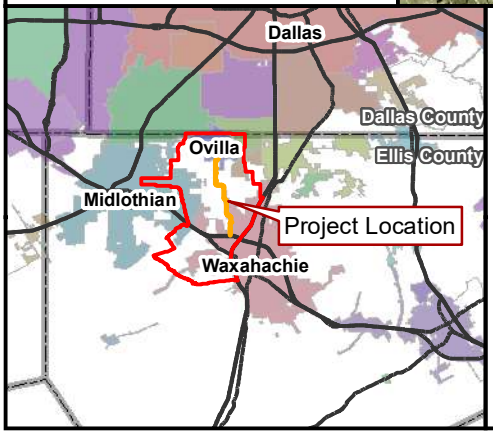
The following have been attached to this report:
Attachment 1: CIA Study Area Map (1 sheet)
Attachment 2: Facilities List (1 sheets)
Attachment 3: Facilities Map (1 sheet)
Attachment 4: Summary of Census Data for the Community Impacts Assessment (CIA) Study Area (18 sheets)
Attachment 5: Census Geography Map – Minority Populations (1 sheet)
Attachment 6: Census Geography Map – Minority Population Density (1 sheet)
Attachment 7: Census Geography Map – Median Household Income (1 sheet)
Attachment 8: Census Geography Map – LEP Populations (1 sheet)
Attachment 9: CIA Project Area Photographs (6 sheets)

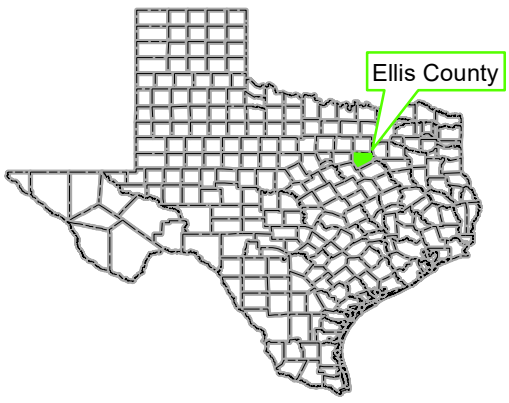
The following are available in the TXECOS file for the project:
Project Description
Project Location Map
USGS Topographic Map

Attachment 1

CIA Study Area Map







CIA Study Area Map
FM 664

Farm-to-Market Road (FM) 664
Realignment, Reconstruction
& Widening
From
U.S. Highway (US) 287
To
Westmoreland Road
CSJs: 1051-01-038 & 1051-01-052
Ellis County, Texas

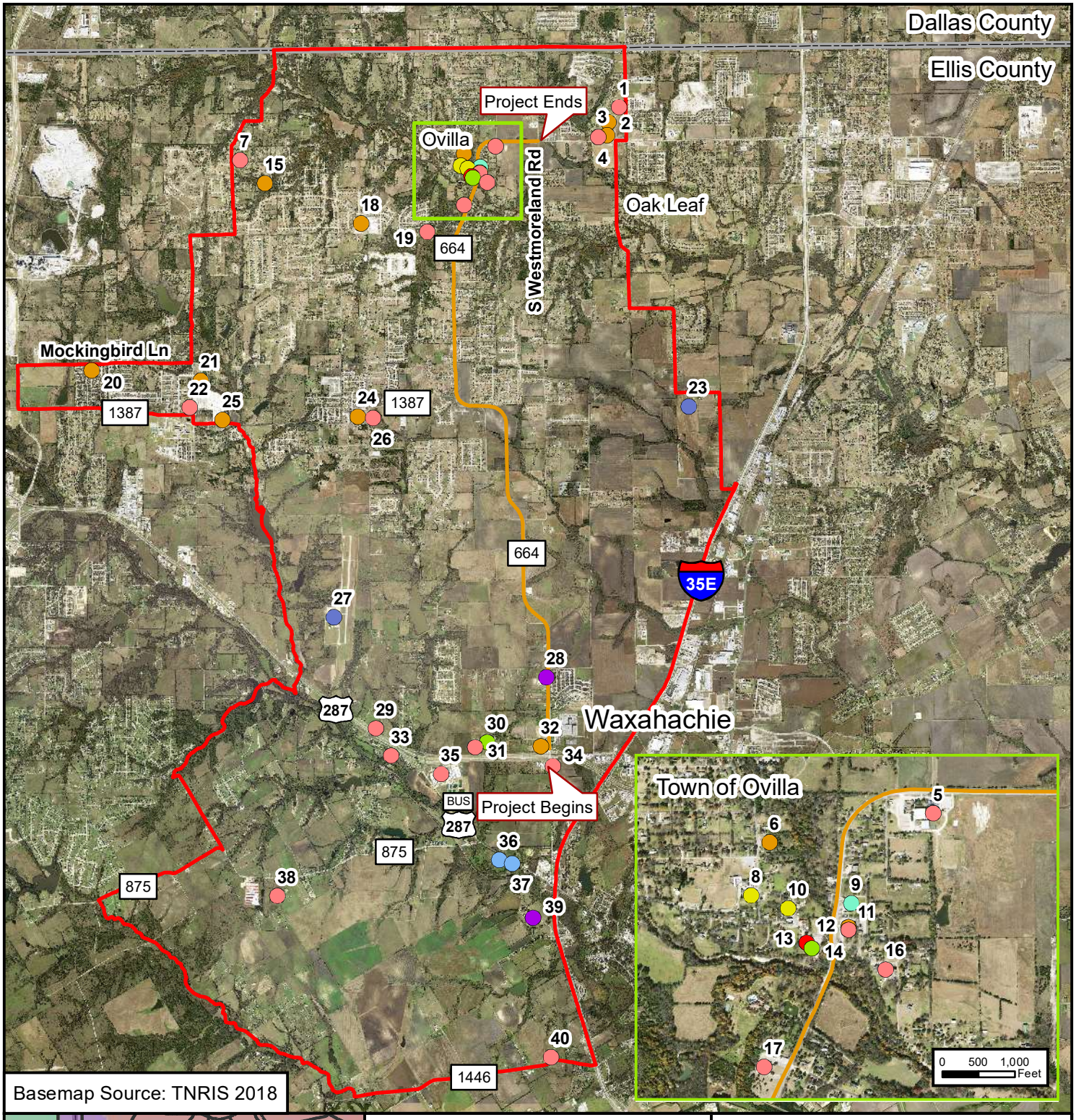
Attachment 2

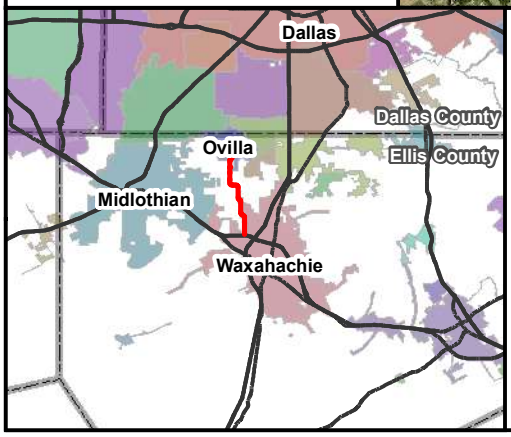
Facilities List

No	Name of Facility	Type of Facility	Public or Private?	Serves a Specific Population?	Adjacent to the Project
1	Harvest of Praise Ministry	Place of Worship	Public	No	No
2	Shields Elementary School	Educational	Public	Children	No
3	Little Hawks Learning Center	Educational	Public	Children	No
4	Ovilla Road Church of Nazarene	Place of Worship	Public	No	No
5	Ovilla Christian School	Place of Worship	Public	No	Yes
6	All Things Good Kids Academy	Educational	Private	Children	No
7	Ellis County Outdoorsman Church	Place of Worship	Public	No	No
8	Ovilla City Hall, Fire/Police Department	Government	Public	No	No
9	Ovilla Market	Retail	Private	No	Yes
10	US Post Office	Government	Public	No	No
11	Fire House Kids Christian Child Care Center	Educational	Private	Children	Yes
12	Vertical Church	Place of Worship	Public	No	Yes
13	Ovilla Medical Clinic	Medical	Private	No	Yes
14	Heritage Park	Recreational	Public	No	Yes
15	Walnut Grove Driving School	Educational	Private	Children	No
16	Ovilla United Methodist Church	Place of Worship	Public	No	No
17	Ovilla Church of Christ	Place of Worship	Public	No	No
18	Dolores W. McClatchey Elementary	Educational	Public	Children	No
19	Shiloh Cumberland Presbyterian Church	Place of Worship	Public	No	No
20	T. E. Baxter Elementary School	Educational	Public	Children	No
21	Walnut Grove Middle School	Educational	Public	Children	No
22	Gateway Church of the Assemblies of God	Place of Worship	Public	No	No
23	Moonbow Field	Airport	Private	No	No
24	Longbranch Elementary School	Educational	Public	Children	No
25	Walnut Grove Child Care	Educational	Private	Children	No
26	Longbranch Community Baptist Church	Place of Worship	Public	No	No
27	Mid-Way Regional Airport	Airport	Private	No	No
28	Swagg Programs	Non-Profit	Public	Children	Yes
29	Ellis Baptist Association	Place of Worship	Public	No	No
30	Ellis County Expo Center	Recreational	Public	No	No
31	Cowboy Church of Ellis County	Place of Worship	Public	No	No
32	Faith Family Academy - Waxahachie	Educational	Private	Children	Yes
33	Sardis United Methodist Church	Place of Worship	Public	No	No
34	St. Paul Episcopal Church	Place of Worship	Public	No	No
35	Waxahachie High School	Educational	Public	No	No
36	Hillcrest Burial Park	Cemetery	Public	No	No
37	Rosemont Cemetery	Cemetery	Public	No	No
38	God's House in Lone Elm	Place of Worship	Public	No	No
39	Presbyterian Children's Homes and Services	Non-Profit	Public	Children	No
40	Bible Baptist Church	Place of Worship	Public	No	No

Attachment 3

Facilities Map





Facilities Map
FM 664

Farm-to-Market Road (FM) 664
Realignment, Reconstruction
& Widening
From
U.S. Highway (US) 287
To
Westmoreland Road
CSJs: 1051-01-038 & 1051-01-052
Ellis County, Texas

0 0.5 1 2 Miles

N
W E
S

Legend

- Project Location
- Study Area
- Texas County
- Airport
- Cemetery
- Educational
- Government
- Medical
- Non-Profit
- Place of Worship
- Recreational
- Retail

Attachment 4

Summary of Census Data

Summary of Census Data for the Community Impacts Assessment (CIA) Study Area

There are 486 census blocks and 9 block groups within the CIA study area. Because the census blocks and block groups share the same boundary, the total recorded population and percent of each race/ethnicity is the same.

The total recorded population of the CIA study area is 16,973. Of these, 79.96% are White alone; 10.75% are Hispanic or Latino; 6.78% are Black or African American alone; 0.72% are American Indian and Alaska Native alone; 0.47% are Asian alone; 0.05% Native Hawaiian and Other Pacific Islander alone; 0.11% are some other race alone; and 1.16% are two or more races.

Of the 486 census blocks in the CIA study area, 30 (6.2%) have a minority population greater than 50% accounting for approximately 20.0% of the population within the CIA study area.

There are 9 census block groups within the CIA study area. Of these block groups, none have a median household income less than the DHHS 2019 poverty level of $25,750 (for a family of four).The median household income in the study area ranges from $70,809 to $141,818.

There are 9 census block groups within the CIA study area. Of these block groups, 8 have populations who speak English "less than very well".

The total recorded population (age 5 years and over) for the CIA study area is 18,350. Of this population 599 (3.3%), speak English "less than very well". Of those that speak English "less than very well", 542 (3.0%) speak Spanish; 31 (0.2%) speak Asian and Pacific Island languages; 20 (0.1%) speak other Indo-European languages; and 6 (0.0%) speak other languages.

	Census Tracts		Block Groups		Blocks	
	Total	Percent	Total	Percent	Total	Percent
# of Geographies	4		9		486	
Population	22,681		16,973		16,973	

Race and Ethnicity Summary (2010 Census Summary File 1, Table P9)

P9: HISPANIC OR LATINO, AND NOT HISPANIC OR LATINO BY RACE - Universe: Total population

White alone	16,702	73.64%	13,572	79.96%	13,572	79.96%
Hispanic or Latino	2,944	12.98%	1,824	10.75%	1,824	10.75%
Black or African American alone	2,439	10.75%	1,151	6.78%	1,151	6.78%
American Indian and Alaska Native alone	160	0.71%	79	0.47%	122	0.72%
Asian alone	100	0.44%	122	0.72%	79	0.47%
Native Hawaiian and Other Pacific Islander alone	9	0.04%	9	0.05%	9	0.05%
Some Other Race alone	30	0.13%	19	0.11%	19	0.11%
Two or More Races	297	1.31%	197	1.16%	197	1.16%
Total Minority Population in Study Area	5,979	26.36%	3,401	20.0%	3,401	20.0%
Geographies with Minority Population > 50%	0	0.0%	0	0.0%	30	6.2%

Limited English Proficiency Summary (2013-2017 American Community Survey 5-Year Estimates)

B16004: AGE BY LANGUAGE SPOKEN AT HOME BY ABILITY TO SPEAK ENGLISH FOR THE POPULATION 5 YEARS AND OVER - Universe: Population 5 years and over

Estimated Population 5 years and older	24,373		18,350		No Data	
Geographies with LEP Population	4	100.0%	8	88.9%	No Data	No Data
Population of Geographies with LEP Population > 10%	0	0.0%	630	3.4%	No Data	No Data
Geographies with LEP Population > 10%	0	0.0%	1	11.1%	No Data	No Data
Spanish Speakers: Speak English "less than very well"	1,069	4.4%	542	3.0%	No Data	No Data
Other Indo-European Language Speakers: Speak English "less than very well"	20	0.1%	20	0.1%	No Data	No Data
Asian and Pacific Island Language Speakers: Speak English "less than very well"	31	0.1%	31	0.2%	No Data	No Data
Other Language Speakers: Speak English "less than very well"	6	0.0%	6	0.0%	No Data	No Data
Total LEP Population	1,126	4.6%	599	3.3%	No Data	No Data

Median Income Summary (2013-2017 American Community Survey 5-Year Estimates)

B19013: MEDIAN HOUSEHOLD INCOME IN THE PAST 12 MONTHS (IN 2017 INFLATION-ADJUSTED DOLLARS) - Universe: Households

2019 DHHS Poverty Threshold for a Family of Four	$25,750		$25,750		No Data	
Minimum Median Income in Study Area	$89,559		$70,809		No Data	
Maximum Median Income in Study Area	$108,304		$141,818		No Data	
Average Median Income in Study Area	$96,843		$97,932		No Data	
Geographies below Poverty Threshold	0	0%	0	0%	No Data	No Data

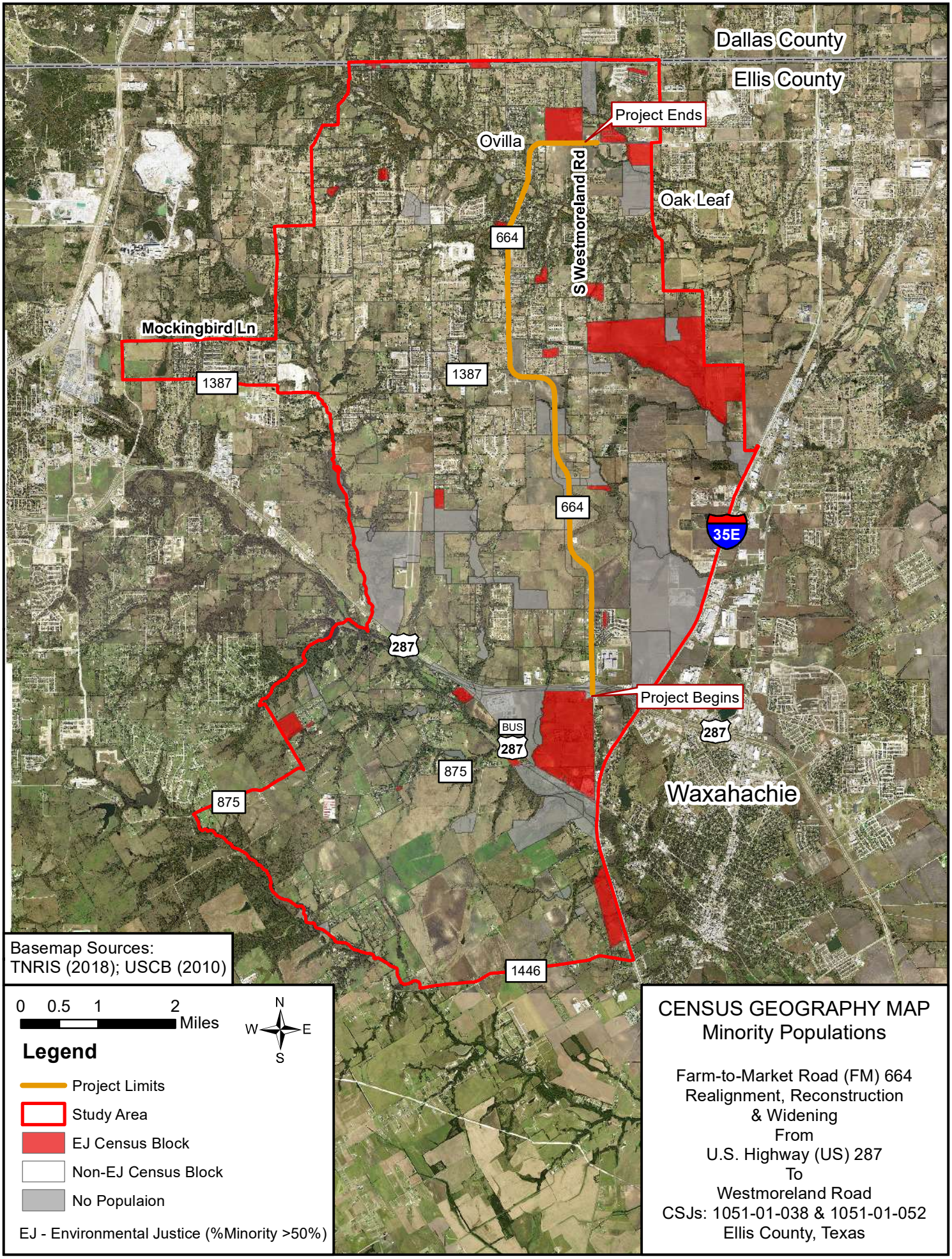
B17017: POVERTY STATUS IN THE PAST 12 MONTHS BY HOUSEHOLD TYPE BY AGE OF HOUSEHOLDER - Universe: Households

Households	8,338		6,432		No Data	
Households below Poverty Threshold	253	3%	152	2%	No Data	No Data

Attachment 5

Census Geography Map

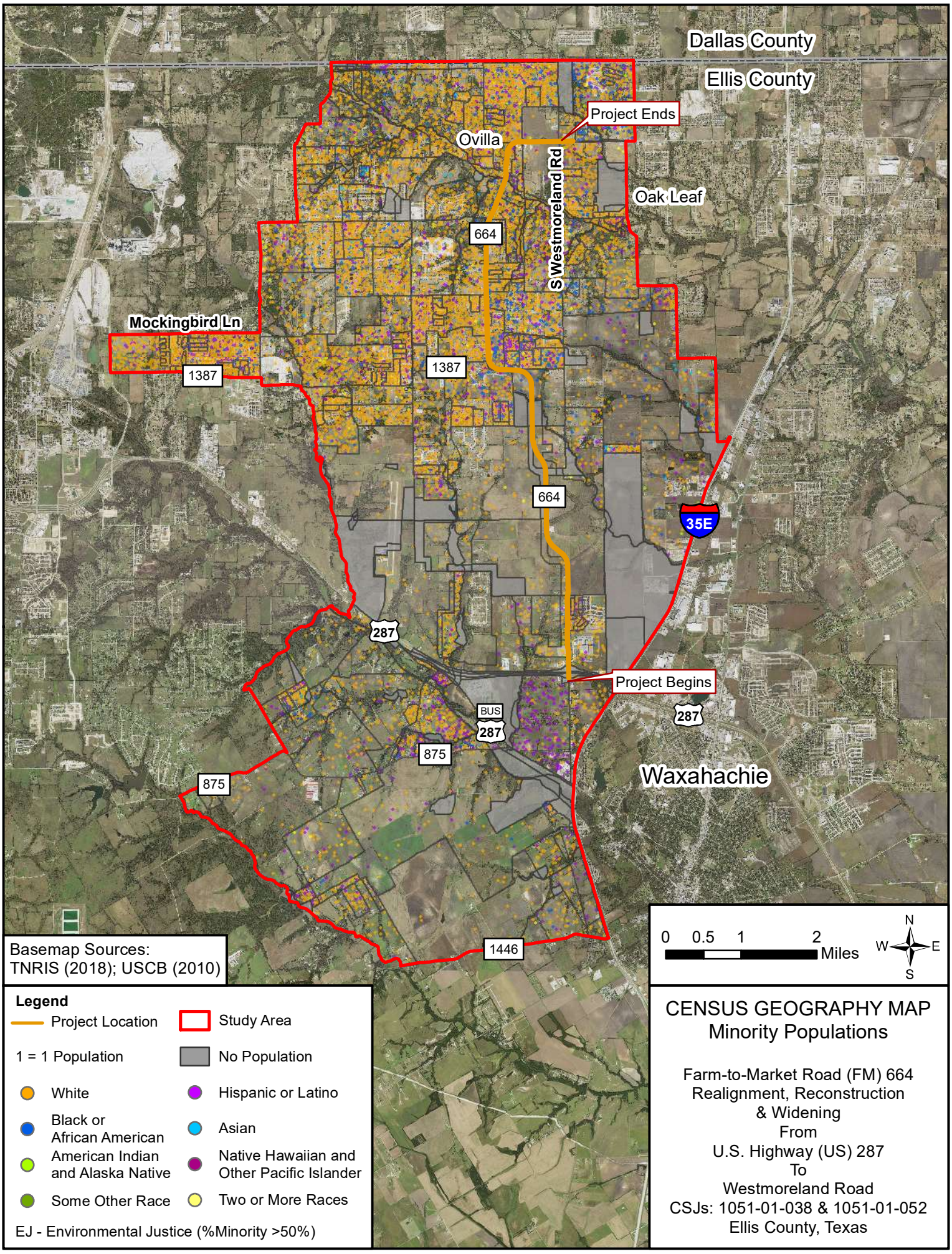
Minority Populations


Dallas County
Ellis County
Project Ends
Ovilla
S Westmoreland Rd
Oak Leaf
664
Mockingbird Ln
1387
1387
664
35E
287
Project Begins
BUS
287
287
875
875
Waxahachie
1446
Basemap Sources:
TNRIS (2018); USCB (2010)
0 0.5 1 2 Miles
N
W E
S
Legend
Project Limits
Study Area
EJ Census Block
Non-EJ Census Block
No Populaion
EJ - Environmental Justice (%Minority >50%)
CENSUS GEOGRAPHY MAP
Minority Populations
Farm-to-Market Road (FM) 664
Realignment, Reconstruction
& Widening
From
U.S. Highway (US) 287
To
Westmoreland Road
CSJs: 1051-01-038 & 1051-01-052
Ellis County, Texas

Attachment 6

Census Geography Map

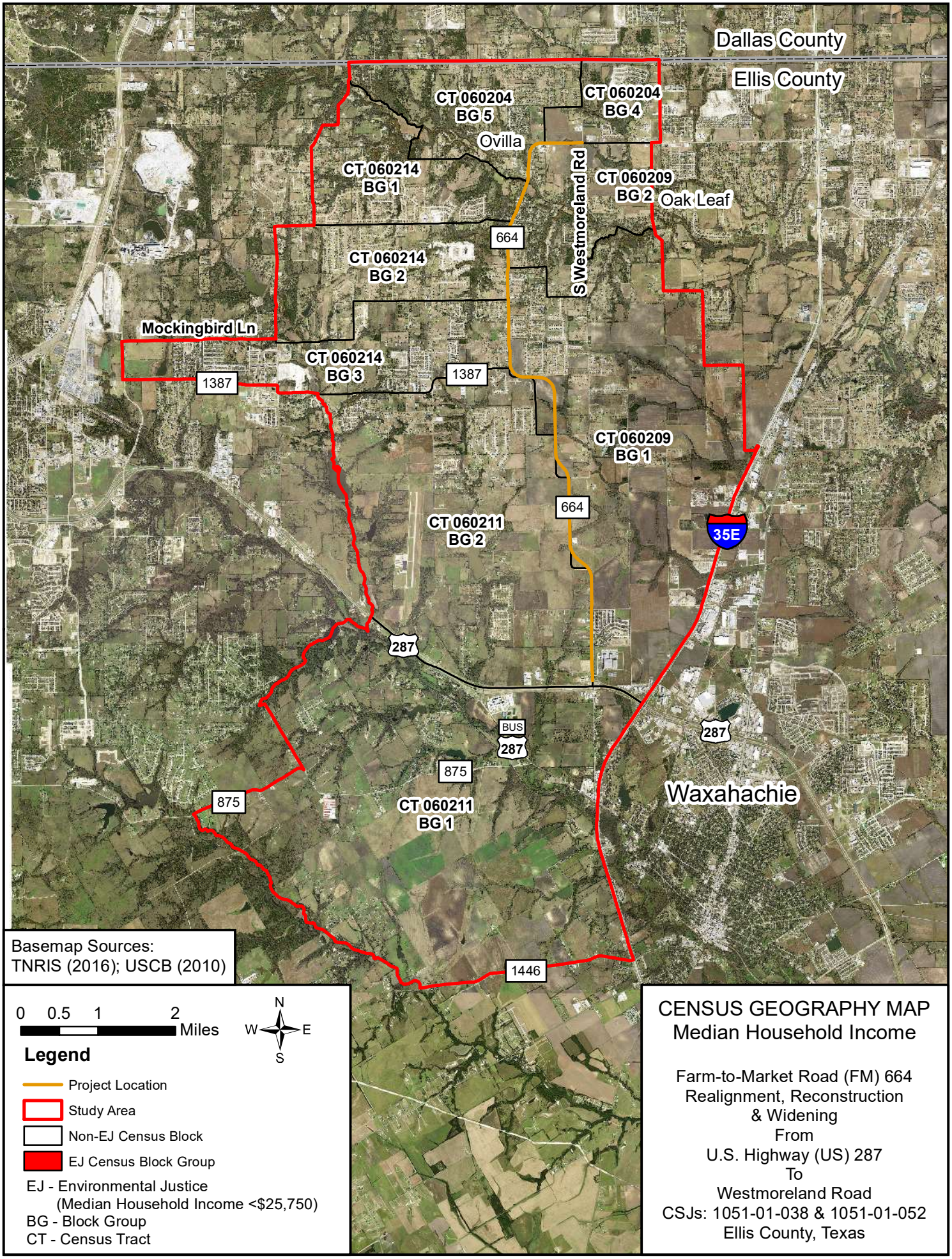
Minority Population Density


Dallas County
Ellis County
Project Ends
Ovilla
S Westmoreland Rd
Oak Leaf
664
Mockingbird Ln
1387
1387
664
35E
287
Project Begins
287
BUS
287
875
875
Waxahachie
1446
Basemap Sources:
TNRIS (2018); USCB (2010)
0 0.5 1 2 Miles
N
W E
S
Legend
Project Location
Study Area
1 = 1 Population
No Population
White
Hispanic or Latino
Black or African American
Asian
American Indian and Alaska Native
Native Hawaiian and Other Pacific Islander
Some Other Race
Two or More Races
EJ - Environmental Justice (%Minority >50%)
CENSUS GEOGRAPHY MAP
Minority Populations
Farm-to-Market Road (FM) 664
Realignment, Reconstruction
& Widening
From
U.S. Highway (US) 287
To
Westmoreland Road
CSJs: 1051-01-038 & 1051-01-052
Ellis County, Texas

Attachment 7

Census Geography Map

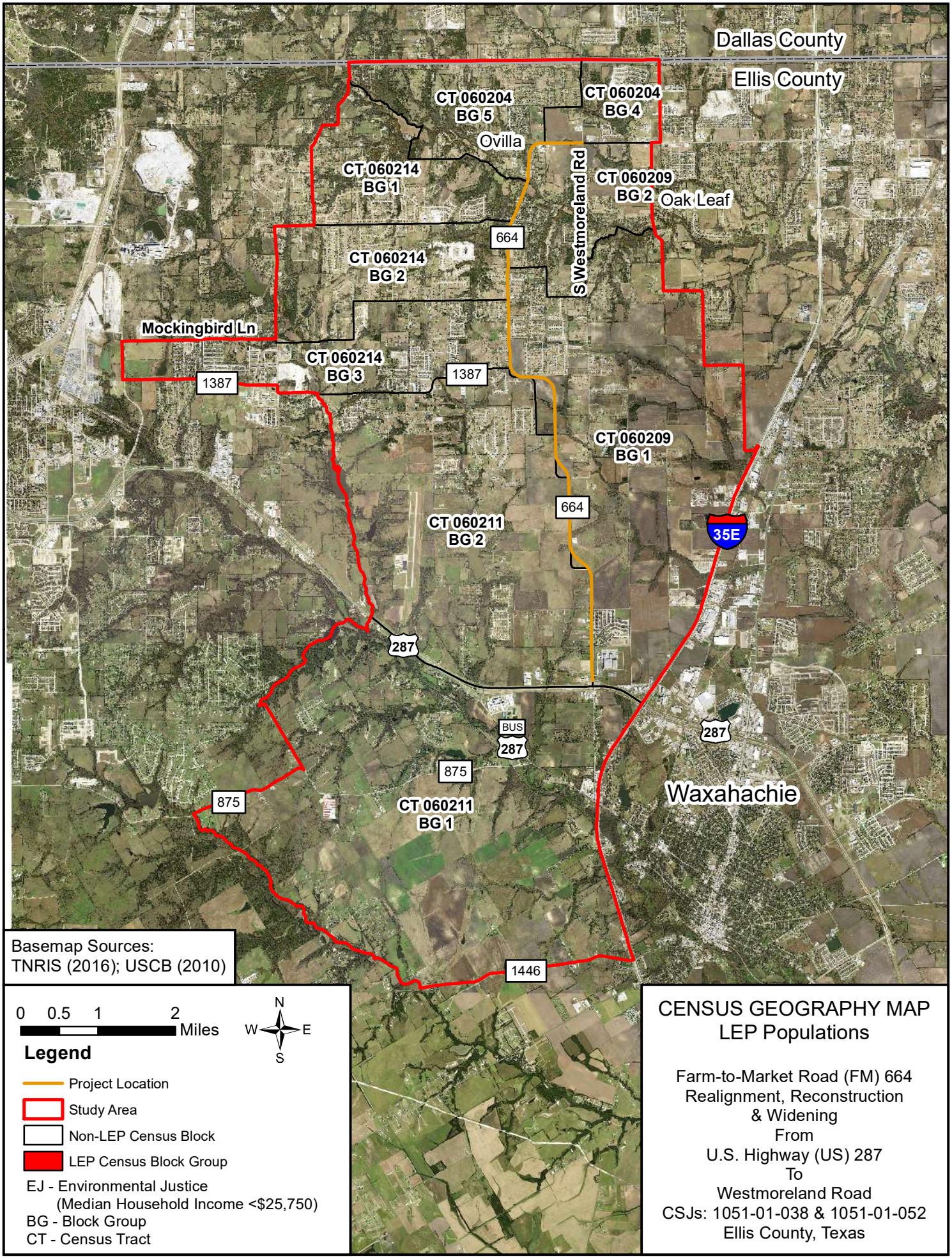
Median Household Income


Dallas County
Ellis County
CT 060204
BG 5
CT 060204
BG 4
Ovilla
CT 060214
BG 1
CT 060209
BG 2
Oak Leaf
S Westmoreland Rd
664
CT 060214
BG 2
Mockingbird Ln
CT 060214
BG 3
1387
1387
CT 060209
BG 1
664
CT 060211
BG 2
35E
287
BUS
287
875
875
CT 060211
BG 1
287
Waxahachie
1446
Basemap Sources:
TNRIS (2016); USCB (2010)
0 0.5 1 2
Miles
N
W
E
S
Legend
Project Location
Study Area
Non-EJ Census Block
EJ Census Block Group
EJ - Environmental Justice
(Median Household Income <$25,750)
BG - Block Group
CT - Census Tract
CENSUS GEOGRAPHY MAP
Median Household Income
Farm-to-Market Road (FM) 664
Realignment, Reconstruction
& Widening
From
U.S. Highway (US) 287
To
Westmoreland Road
CSJs: 1051-01-038 & 1051-01-052
Ellis County, Texas

Attachment 8

Census Geography Map

LEP Populations


Dallas County
Ellis County
CT 060204
BG 5
CT 060204
BG 4
Ovilla
CT 060214
BG 1
CT 060209
BG 2
Oak Leaf
S Westmoreland Rd
664
CT 060214
BG 2
Mockingbird Ln
CT 060214
BG 3
1387
1387
CT 060209
BG 1
664
CT 060211
BG 2
35E
287
BUS
287
875
875
CT 060211
BG 1
287
Waxahachie
1446
Basemap Sources:
TNRIS (2016); USCB (2010)
0 0.5 1 2
Miles
N
W
E
S
Legend
Project Location
Study Area
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LEP Census Block Group
EJ - Environmental Justice
(Median Household Income <$25,750)
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CENSUS GEOGRAPHY MAP
LEP Populations
Farm-to-Market Road (FM) 664
Realignment, Reconstruction
& Widening
From
U.S. Highway (US) 287
To
Westmoreland Road
CSJs: 1051-01-038 & 1051-01-052
Ellis County, Texas

Attachment 9

CIA Project Area Photographs

Photograph 1: View looking southwest from FM 664 towards the Ovilla Road Christian School (Map ID 5) at 3251 Ovilla Rd, Red Oak, TX 75154. Date of photograph: 8/14/19.

Photograph 2: View looking west from West Main Street towards the Ovilla City Hall, Fire/Police Department (Map ID 8) at 105 S Cockrell Hill Rd # 3, Ovilla, TX 75154. Date of photograph: 8/14/19.

Photograph 3: View looking east from FM 664 towards the Ovilla Market (Map ID 9) at 105 S Cockrell Hill Rd # 3, Ovilla, TX 75154. Date of photograph: 8/14/19.

Photograph 4: View looking west from West Main Street towards the U.S. Post Office (Map ID 10) at 711 W Main St, Ovilla, TX 75154. Date of photograph: 8/14/19.

Photograph 5: View looking east from FM 664 towards Fire House Kids Christian Child Care Center (Map ID 11) at 3325 Ovilla Rd, Ovilla, TX 75154. Date of photograph: 8/14/19.

Photograph 6: View looking southeast from FM 664 towards Vertical Church (Map ID 12) at 3325 Ovilla Rd, Ovilla, TX 75154. Date of photograph: 8/14/19.

Photograph 7: View looking southwest from West Main Street towards the Ovilla Medical Clinic (Map ID 13) at 675 W Main St, Red Oak, TX 75154. Date of photograph: 8/14/19.

Photograph 8: View looking south from West Main Street towards Heritage Park (Map ID 14) at 675 W Main St, Ovilla, TX 75154. Date of photograph: 8/14/19.

Photograph 9: View looking southwest from a parking lot towards the Ovilla Church of Christ (Map ID 17) at 3420 Ovilla Rd, Ovilla, TX 75154. Date of photograph: 8/14/19.

Photograph 10: View looking west from FM 664 towards the Swagg Programs Non-Profit (Map ID 28) at 1025 Ovilla Rd, Waxahachie, TX 75167. Date of photograph: 8/14/19.

Photograph 11: View looking northwest from Faith Family Academy – Waxahachie (Map ID 32) at 701 Ovilla Rd, Waxahachie, TX 75167. Date of photograph: 8/14/19.

Photograph 12: View looking north from a parking lot towards the St. Paul Episcopal Church (Map ID 34) at 624 Ovilla Rd, Waxahachie, TX 75167. Date of photograph: 8/14/19.

Report Version 5

Hazardous Materials Initial Site Assessment (ISA)

November 6, 2019

District: Dallas

1051-01-038 & 1051-01-052 FM 664

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 16, 2014, and executed by FHWA and TxDOT.

Hazardous Materials Initial Site Assessment (ISA) Report

This ISA complies with the Federal Highway Administration's (FHWA's) policy dealing with hazardous materials discussed in FHWA's *Supplemental Hazardous Waste Guidance* (January 16, 1997) located at http://www.environment.fhwa.dot.gov/guidebook/vol1/doc7b.pdf.

FHWA's policy emphasizes three objectives: 1) identify and assess potentially contaminated sites early in project development, 2) coordinate early with federal/ state/ local agencies to assess the contamination and the cleanup needed; and 3) determine and implement measures early to avoid or minimize involvement with substantially contaminated properties.

In addition, completing the ISA will aid in identifying hazardous material issues early, avoiding construction delays, and reducing the department's liability associated with the purchase of contaminated right of way.

Maintain a copy of the completed ISA report with all applicable attachments in the project file.

For additional information, refer to TxDOT's online manual: *Hazardous Materials in Project Development:* http://onlinemanuals.txdot.gov/txdotmanuals/haz/index.htm and the Hazardous Materials Toolkit Site: http://www.txdot.gov/inside-txdot/division/environmental/compliance-toolkits/haz-mat.html

Abbreviations and Acronyms

CALF	Closed and Abandoned Landfill
CERCLIS	Comprehensive Environmental Response Compensation and Liability Information System
EA	Environmental Assessment
EIS	Environmental Impact Statement
ECOS	Environmental Compliance Oversight System
ERNS	Emergency Response Notification System
EPA	Environmental Protection Agency
ESA	Environmental Site Assessment
HAZMAT	Hazardous Materials
MS4	Municipal Separate Storm Sewer System
MSWLF	Municipal Solid Waste Landfill
NPL	National Priorities List
RCRA	Resource Conservation and Recovery Act
ROW	Right of Way
SEMS	Superfund Enterprise Management System
TCEQ	Texas Commission on Environmental Quality
TRRC	Texas Railroad Commission
US	United States
USGS	United States Geological Survey
VCP	Voluntary Cleanup Program

TxDOT Hazardous Materials Initial Site Assessment (ISA) Report

Project Information			
CSJ No: 1051-01-038 and 1051-01-052	City: Ovilla and Waxahachie	Zip Code:75154, 75167, and 76065	County:Ellis
HWY:FM 664	Limits:From US 287 to Westmoreland Road		

Section 1: Identify Previously Completed Environmental Site Assessments, Known Hazmat Conditions, Preliminary Project Design, and Right-of-Way Requirements	
Note: Obtain information/comments from design, right-of-way, and/or environmental staff. Attach maps and/or details as appropriate.	
☐ Yes ☒ No ☐ Unknown	Are there any previous environmental assessments, testing, or studies performed within the proposed project area related to contamination issues (to include Phase I ESAs)? If yes, explain here if there are any concerns to the proposed project:
☒Yes ☐ No	Have the project schematics and/or plan-profile sheets (if available) been reviewed?* Look for substantial excavations (including utilities and storm sewer designs), new ROW and easements, and bridge demolitions or renovations.

* For consultants: this information shall be supplied by TxDOT.

Section 2: Demolition and Renovation Information Related to Asbestos and Lead-Containing-Paint	
☒Yes ☐No	Are there proposed bridges or building demolitions or renovations for this project?
Note: If "Yes" is selected, buildings or structures being acquired through the acquisition process are assessed and mitigated for asbestos, as needed, within the ROW process according to the TxDOT ROW Manual ROW Vol. 6 Miscellaneous -Chapter 1 Section 5. Bridge structures being demolished or renovated are assessed and mitigated for asbestos and lead-containing-paint, as needed, within the construction process according to Standard Specification Item 6.10 (and applicable Provisions), and the TxDOT guidance document: Guidance for Handling Asbestos in Construction Projects, dated January 26, 2007.	

Section 3: Project Screening	
Note: Section 3.1 is only applicable for Categorically Excluded (CE) projects. If you are uncertain of the project type, select "No" and continue to Section 3.2. **Section 3.1** Determine if the proposed project has a low potential to encounter contamination. Refer to the preliminary schematics for project limits and internet-based maps for surrounding land use.	
☐ Yes ☒ No or an EA or EIS Project	Are the limits of the proposed project within a historically undeveloped area and outside the boundaries of a designated MS4 permitted area? Historically undeveloped areas are locations where no commercial buildings are located within one-half (0.5) miles of the proposed project limits and the surrounding land use is historically agricultural, forest, or ranch lands.
If "Yes" is selected, the ISA is complete. The proposed project has a low potential to encounter contamination. Complete Sections 9 and 10 of this ISA and maintain a copy and all applicable attachments in the project file. If "No" is selected, proceed to Section 3.2 of this ISA.	
Section 3.2 **Note:** Determine if the project includes any of the activities listed below:	
☒ Yes ☐ No	**Project Excavations:** Will the work consist of substantial excavation operations. Substantial excavation includes, but is not necessarily limited to: • Underpass construction, • Storm sewer installations, and • Trenching or tunneling that would require temporary or permanent shoring.

☐ Yes ☒ No	**Dewatering of Groundwater:** Are there proposed de-watering operations. If yes, what is the estimated depth to groundwater?
☒ Yes ☐ No	**Encroachments:** Are there known or potential encroachments into the project area? Encroachments include soil and groundwater contamination, dump sites, tanks, and other issues in the ROW.
☒ Yes ☐ No	**ROW and Easements:** Are there any acquisitions of new ROW, easements, temporary construction easements planned for the project?

3.3 Complete the appropriate box below:

☒ If Section 3.2 contains any "Yes" answers, please proceed to Section 4.

☐ If Section 3.2 contains all "No" answers, proceed to Section 6, Site Survey. Please perform a site survey documenting the results in Section 6 and then mark the appropriate box below. If a Phase I ESA has been prepared for this project, you may use the applicable site survey information from the Phase I ESA.

☐ The site survey did not identify evidence of any environmental concerns listed in Section 6. The ISA is complete. Complete Sections 9 and 10 and maintain a copy of the ISA and all applicable attachments in the project file.

☐ The site survey identified evidence of environmental concerns listed in Section 6. Continue with Section 4.

Section 4: Current and Past Land Use Information

Note: Review and assess current and past land use (up to 50 years) in the project area. Document and attach sources that were reviewed. If one or more Phase I ESAs were prepared for this project, please use applicable information from the Phase I ESAs to help complete this section of the ISA.

☒ Yes
☐ No
☐ Not Available
☐ Not Applicable

4.1 Review Current and Past USGS 7.5 Minute Topographic Maps of the project area: Look for oil & gas pipelines, tanks, landfills, or other industrial features.

Describe any concerns: None.

List Topo Maps Reviewed:	Dates:	Comments:
Cedar Hill	1959, 1995, 2010, 2012, 2019	The 1978 Midlothian topo map shows a pipeline transecting the project area (approx. STA 197+80). Further investigation identified this pipeline as a main water line (road side markers were observed as well).
Lancaster	1959, 2010, 2012, 2016, 2019	
Midlothian	1961, 1978, 2010, 2012, 2016, 2019	
Waxahachie	1961, 2010, 2012, 2016, 2019	

☒ Yes
☐ No
☐ Not Available
☐ Not Applicable

4.2 Review Current and Past Aerial Photographs of the project area: Look for oil & gas pipelines, tanks, landfills, or other industrial features.

Describe any concerns: None.

List All Aerial Photos Reviewed:	Photo Dates:	Comments:

	historicaerials.com	1958, 1968, 1972, 1979, 1981, 1995, 2004, 2008, 2010, 2012, 2014	For years 1958-1979, there is only partial coverage of the project area. What appears to be an historic gas station was observed along the east side of FM 664 north of Main St. on years 1979-81. This feature is further discussed in Section 8.1.

☐ Yes ☐ No ☒ Not Available ☐ Not Applicable	**4.3 Review Current and Past Right-of-Way Maps/Files*:** Look for oil & gas pipelines, tanks, landfills, or other industrial features. Describe any concerns:	
	List Maps/ Files & Dates Reviewed:	Comments:
☐ Yes ☐ No ☒ Not Available ☐ Not Applicable	**4.4 Review Sanborn Fire Insurance Maps/Files:** Look for tanks, oil & gas pipelines, landfills, or other industrial features. Describe any concerns:	
	List Maps/ Files & Dates Reviewed:	Comments:
☐ Yes ☐ No ☒ Not Available ☐ Not Applicable	**4.5 Review TxDOT As-Built Plans*:** Were any concerns identified during previous work within the project limits? If yes, explain: If known, what is the previous Project CSJ:	
☐ Yes ☐ No ☒ Not Available ☐ Not Applicable	**4.6 Review TxDOT Geotechnical Soil Boring Logs*:** Were any concerns noted on the boring logs such as unusual odors, visible contamination, trash, waste or debris? If yes, explain:	
☐ Yes ☐ No ☒ Not Available	**4.7 Review TxDOT Temporary Use ROW Agreements (permits issued by the district to entities to occupy a portion of the ROW)*:** Were any concerns such as monitor wells or treatment systems identified within the ROW? For consultants: this information shall be supplied by TxDOT. If yes, explain:	
☐ Yes ☐ No ☒ Not Available	**4.8 Review Notifications of Contamination to TxDOT*** (These are typically letters from TCEQ or third parties explaining the presence of contamination on TxDOT ROW): Were any concerns regarding contamination of ROW from off-site sources? If yes, explain:	

* For consultants: this information shall be supplied by TxDOT. If no information is supplied by TxDOT, then select Not Available.

Section 5: Complete a Regulatory Records Review (Database Search)

Note: Use the comment field in Section 5.1 to provide a synopsis of the total number of sites identified within the search distances of the regulatory record reviewed. No comments are required when no sites were identified or the regulatory record was not reviewed.

Select the appropriate box below:

☒ A Database search was conducted through a contracted service. Indicate in Section 5.1, and if applicable, Section 5.2, the regulatory records searched. Maintain a complete copy of the database search findings (contractor's report deliverable) in the project file with the ISA.

☐ A Database search was conducted in-house. For in-house database searches, not all databases need to be reviewed, but at a minimum the databases listed in Section 5.1 marked in **bold with a star(*)** must be reviewed. Include database records that list potential issues in the project file with the ISA. It is not necessary to include records of negative findings.	
Section 5.1 Standard Database Sources of Environmental Information from Government Agency Records	
Findings	Regulatory Record
☐**Sites Identified** ☒**No Sites Identified**	**Federal Active NPL or Not NPL list (CERCLIS or SEMS sites)*** **https://cumulis.epa.gov/supercpad/CurSites/srchsites.cfm; and/or https://www.epa.gov/cleanups/cleanups-my-community** (1 mile minimum search distance from project limits)
Comments for Sites Identified:	
☐**Sites Identified** ☒**No Sites Identified**	**Federal Archived NPL or Not NPL list (CERCLIS or SEMS sites)*** **https://cumulis.epa.gov/supercpad/CurSites/srchsites.cfm** (0.5 mile minimum search distance from project limits)
Comments for Sites Identified:	
☐Sites Identified ☒No Sites Identified ☐Not Reviewed	US EPA Brownfield Properties **https://www.epa.gov/cleanups/cleanups-my-community** (0.5 mile minimum search distance from project limits)
Comments for Sites Identified:	
☐Sites Identified ☒No Sites Identified ☐Not Reviewed	Federal RCRA Corrective Action (CORRACTS) list https://www.epa.gov/cleanups/cleanups-my-community, and/or http://www.epa.gov/enviro/ (1 mile minimum search distance from project limits)
Comments for Sites Identified:	
☐Sites Identified ☒No Sites Identified ☐Not Reviewed	Federal RCRA non-CORRACTS Treatment Storage Disposal (TSD) facilities list http://www.envcap.org/statetools/tsdf/ and/or http://www.epa.gov/enviro/ (0.5 mile minimum search distance from project limits)
Comments for Sites Identified:	
☒Sites Identified ☐No Sites Identified ☐Not Reviewed	Federal RCRA generators http://www.epa.gov/enviro/ (acquired property and adjoining properties)
Comments for Sites Identified: One site, Walgreens Distribution Center (Map ID 5), was identified adjacent west of the project. This is a large property with the building facility situated approx. 685 ft east of proposed ROW. The facility is a small quantity generator with no releases reported. Based on the type of generator, no reported releases, and building location in relation to proposed ROW, this facility is not considered an environmental concern.	
☐Sites Identified ☒No Sites Identified ☐Not Reviewed	Federal ERNS (or Responses) https://www.epa.gov/cleanups/cleanups-my-community (acquired property and adjoining properties)
Comments for Sites Identified:	
☒**Sites Identified** ☐**No Sites Identified**	**TCEQ Industrial Hazardous Waste Corrective Action (IHWCA) sites only*** **http://www15.tceq.texas.gov/crpub/** (1 mile minimum search distance from project limits)
Comments for Sites Identified: Two listings at one location (Map ID# 8) were identified within the specified search radius on the regulatory database report. Saint Gobain Containers @ 2400 N IH 35E, Waxahachie, TX 75165 and Baylor Medical Center At Waxahachie east of I-35 and US 287 Bypass, Waxahachie, TX are listed as inactive. Corrective Action was completed June 6, 2013.	

Based on the distance of these facilities from the project area (0.895 mile/4,726 feet) and the regulatory status (Inactive - Corrective Action Complete), the facilities at this location are not considered an environmental concern.	
☐**Sites Identified** ☒**No Sites Identified**	**TCEQ Superfund sites*** **http://www15.tceq.texas.gov/crpub/ and/or** **https://www.tceq.texas.gov/remediation/superfund/sites/index.html** (1 mile minimum search distance from project limits)
Comments for Sites Identified:	
☐**Sites Identified** ☒**No Sites Identified**	**Closed and abandoned municipal solid waste landfill sites*** **http://www.tceq.texas.gov/permitting/waste_permits/msw_permits/msw-data** (0.5 mile minimum search distance from project limits)
Comments for Sites Identified:	
☒**Sites Identified** ☐**No Sites Identified**	**TCEQ leaking petroleum storage tank remediation lists (LPST)*** **http://www15.tceq.texas.gov/crpub/** (0.5 mile minimum search distance from project limits)
Comments for Sites Identified: One listing (Map ID #7) was identified in the regulatory database report. City of Red Oak Public Works 111 Water Street, Red Oak, TX is listed as a PST and LPST in the regulatory database. However, the regulatory database report incorrectly plots the location. The correct location of this site is approx. 4.8 miles east of the proposed project in the town of Red Oak. Based on the correct location, this facility is not an environmental concern.	
☒**Sites Identified** ☐**No Sites Identified**	**TCEQ registered petroleum storage tank lists (PST)*** **http://www15.tceq.texas.gov/crpub/** (acquired property and adjoining properties)
Comments for Sites Identified: Four sites (Map ID #'s 2, 3, 4, & 7) are listed on the regulatory database. Map IDs 4 and 7 are outside the specified search radius and are, therefore, not an environmental concern. The remaining two sites are discussed in Section 8.1.	
☐**Sites Identified** ☒**No Sites Identified**	**TCEQ voluntary cleanup program (VCP) sites*** **http://www15.tceq.texas.gov/crpub/** (0.5 mile minimum search distance from project limits)
Comments for Sites Identified:	
☐Sites Identified ☒No Sites Identified ☐Not Reviewed	TCEQ Innocent Owner/ Operator (IOP) sites http://www15.tceq.texas.gov/crpub/ (0.5 mile minimum search distance from project limits)
Comments for Sites Identified:	
☐**Sites Identified** ☒**No Sites Identified**	**TCEQ Dry Cleaners <u>remediation only</u> Database*** http://www15.tceq.texas.gov/crpub/ (0.5 mile minimum search distance from project limits)
Comments for Sites Identified:	
☐**Sites Identified** ☒**No Sites Identified**	**Texas Railroad Commission VCP sites*** **http://www.rrc.state.tx.us/oil-gas/environmental-cleanup-programs/site-remediation/voluntary-cleanup-program/** (0.5 mile minimum search distance from project limits)
Comments for Sites Identified:	
Section 5.2 List below other pertinent records reviewed such as local records and/or additional state records	
Record Source and Comments: A review of the Railroad Commission of Texas Public GIS Viewer (http://wwwgisp.rrc.state.tx.us/GISViewer2/), accessed 07/18/2019, did not reveal any oil or gas wells or oil/gas pipelines within the FM 664 project limits.	
Record Source and Comments:	

Section 6: Complete a Project Site Survey

Note: Do not document site survey concerns that were previously identified by the regulatory list search, by the Current and Past Land Use review, or both. In Section 6.1, describe the location and size of the concern. Attach site maps and photographs, as appropriate. If a Phase I ESA has been prepared for this project, you may use the applicable site survey information from the Phase I ESA and updated current site conditions, as needed.

Possible Site Survey Concerns: The following items are to be used as a guide to help identify potential hazardous material issues during a site survey.

- underground storage tanks
- aboveground storage tanks
- injection wells, cisterns, sumps, dry wells
- floor drains, walls stained by substances other than water or emitting foul odors
- stockpiling, storage of material
- surface dumping of trash, garbage, refuse, rubbish, debris half exposed/buried, etc.
- stained, discolored, barren, exposed or foreign (fill) soil
- oil sheen or film on surface water, seeps, lagoons, ponds, or drainage basins
- changes in drainage patterns from possible fill areas
- Dead animals (fish, birds, etc.)
- vent pipes, fill pipes, or access ways indicating a fill pipe protruding from the ground
- electrical and transformer equipment storage or evidence of release
- groundwater monitoring wells and groundwater treatment systems
- vats, 55-gallon drums (labeled/unlabeled), canisters, barrels, bottles, etc.
- evidence of liquid spills
- damaged or discarded automotive or industrial batteries
- dead, damaged, or stressed vegetation
- pits, ponds, or lagoons associated with waste treatment or waste disposal
- security fencing, protected areas, placards, warning signs

Site Survey Date(s): 08/14/2019

6.1 Describe Concerns Observed During the Site Survey. **Do not** include concerns previously identified during the regulatory list search, the current and past land use review or both. Indicate if the concern is associated with existing ROW, proposed ROW, adjacent property, or easements. Provide address location (or relative location) and any additional information about the evidence identified; include photographs as an attachment to the ISA.

Comments or Concerns Identified: Pole-mounted electrical transformers were observed along the project corridor on both sides of the roadway. No environmental concerns were observed. These transformers do not pose an environmental concern for the project.

Section 7: Interviews

Section 7.1 Were interviews conducted? ☐Yes ☒No

Possible interviewees include local residents, TxDOT staff, fire department personnel, city or county department of health/environmental staff, city or county planning staff, TCEQ staff, TRRC staff, and current and former property owners or operators.

If one or more Phase I ESAs were prepared for this project, please use applicable interview information from the Phase I ESAs to help complete this section of the ISA.

Section 7.2 Interview Summary: Complete this section if interviews were conducted. Add additional rows as needed. Attach record of communications to the ISA.

Name:	Title:	Date:
Describe any potential concerns:		

Name:	Title:	Date:
Describe any potential concerns:		
Name:	Title:	Date:
Describe any potential concerns:		

Section 8: Hazardous Material Concerns

On the list below, indicate if a concern is resolved or unresolved. "Unresolved" indicates additional investigation or research is required. "Resolved" indicates the concern has been resolved during the preparation of this ISA. If a concern is "Unresolved" or "Resolved", include a statement explaining the planned next steps to resolve the issue. If no concerns were identified, select "No Issue".

For additional information regarding scheduling considerations, internal/external coordination and recommended practices for resolving hazmat issues please refer to TxDOT's *Environmental Tool Kit* web site.

Contact TxDOT ENV Hazardous Material Management (HMM) for additional assistance.

8.1 Identify Type of Hazardous Material Concerns

Resolution	Type of Concern
☐**Unresolved** ☒**Resolved** ☐**No Issue**	**Current or Past Land Use Concerns:** These concerns are associated with hazardous material issues identified in Section 4 that were not discovered during the database search in Section 5.1 or during the Site Survey in Section 6.1. Note: *For ECOS IIR development, the Available Contaminated Media would be "Other".*
Explain Unresolved or Resolved Issues:What appears to be an historic gas station was observed along the east side of FM 664 north of Main St. on historic aerial years 1979-81. A search of the TCEQ Central Registry identified a possible PST site for this location, Tote-A-Way 2 (Map ID 9). This facility had used one 6,000-gallon and one 10,000-gallon gasoline underground PSTs. The tanks were installed in 1976 and removed in 1988. No releases are reported. An internet search for this facility was performed to attempt to identify the city. The former owner, Noel L Dickinson, was identified through an obituary which identified an Ovilla location for the Tote-A-Way. The Ellis County Appraisal District website identified Mr. Dickinson as having owned the location seen on historic aerials. The current address of this location is 3323 FM 664, Ovilla, TX 75154; the location is no longer utilized as a gas station and is currently Teachers Who Tutor. This site has a minor amount of ROW acquisition proposed. Based on the removal of the tanks, no reported releases, and reuse of the site, this location is considered a low environmental risk.	
☐**Unresolved** ☐**Resolved** ☒**No Issue**	**Site Visit Concerns:** These concerns are associated with hazardous material issues discovered following the completion of Section 6 that were not previously discovered during the database search in Section 5.1 or during the current and past land use review in Section 4. Note: *For ECOS IIR development, the Available Contaminated Media would be "Other".*
Explain Unresolved or Resolved Issues:	
☐**Unresolved** ☐**Resolved** ☐**No Issue** ☒**N/A**	**Interview Concerns:** These concerns are associated with any hazardous material issues discovered during an interview listed in Section 7, that were not previously discovered during the database search in Section 5.1, during the current and past land use review in Section 4, or during the Site Survey in Section 6.1. Note: *For ECOS IIR development, the Available Contaminated Media would be "Other".*
Explain Unresolved or Resolved Issues:	

☐**Unresolved** ☒**Resolved** ☐**No Issue**	**Petroleum Storage Tanks (PSTs) Concerns discovered during the database search:** PSTs are underground or aboveground storage tanks used to store fuel or other petroleum substances. Typically, these are found at gasoline and diesel refueling facilities. Select below all that apply.	
	☒Yes ☐No	ROW acquisition or partial acquisition of a parcel with one or more PSTs.
	☐Yes ☒No	Other- Describe:
Explain Unresolved or Resolved Issues:Ovilla Market 3321 Ovilla Road, Ovilla, TX 75154 (Map ID 2) was identified as a PST site. The site is situated adjacent east of the project. This site currently utilizes three 10,000-gallon gasoline underground PSTs installed in 1987. There is also one 8,000-gallon diesel underground PST installed in 1987 that is temporarily out of service as of August of 2018. The tank hold is approximately 50 feet east of the proposed ROW. No releases have been reported for the facility. According to the TCEQ Central Registry, the site received a Commissioner's Enforcement Order in 2012 for failure “to provide release detection for the pressurized piping associated with the UST system.” The status of the violation is “closed.” A minor amount of ROW acquisition is required for this site and is in close proximity to the fuel pump islands. Proposed work activity adjacent to this facility includes some excavation. Based on ROW acquisition, proposed work activity, the age of the tanks and close proximity of the tanks and fuel pump island to proposed ROW, this site is considered a moderate environmental risk. Former Gas Station 696 W. Main Street, Ovilla, TX 75154 (Map ID 3) was identifed as a PST site. The site is situated adjacent west of the project. This site formerly utilized one 500-gallon gasoline and one 1,000-gallon diesel underground PST, both installed in 1987 and removed from the ground in 2000. No releases have been reported for the facility. According to the TCEQ Central Registry, no violations, commissioners' enforcement actions, or effective enforcement orders were reported. Historic aerials show the site was redeveloped by 2001. The site is curently Ovilla Car Wash. ROW acquisition is proposed from the south and east sides of this property. Based on the removal of the tanks, no reported releases and redevelopment of the site, this site is considered a low environmental risk.		
☐**Unresolved** ☐**Resolved** ☒**No Issue**	**Leaking Petroleum Storage Tanks (LPSTs) Concerns discovered during the database search:** LPSTs are PSTs that have caused or are suspected to have caused a release of fuel or other petroleum substances to the environment.	
	☐Yes ☒No	Additional Research is needed or uncertain of impacts from one or more LPSTs. Request assistance from ENV.
	☐Yes ☒No	ROW acquisition or partial acquisition of a parcel with one or more LPSTs.
	☐Yes ☒No	One or more LPSTs are located within 0.25 miles of the project.
	☐Yes ☒No	Other- Describe:
Explain Unresolved or Resolved Issues:		
☐**Unresolved** ☐**Resolved** ☒**No Issue**	**Oil and Gas Activity Concerns**: TxDOT is concerned with the acquisition of oil and gas wells (and ancillary equipment) such as process, piping, production equipment, pipelines, etc. Select below all that apply.	
	☐Yes ☒No	Additional Research needed or uncertain of impacts. Request assistance from ENV.
	☐Yes ☒No	Database search identified TRRC VCP Site within 0.5 miles of project.
	☐Yes ☒No	Oil/ Gas Wells within future ROW.
	☐Yes ☒No	Spills or other Contamination Issues associated with ancillary equipment or pipelines.
	☐Yes ☒No	Other- Describe:
Explain Unresolved or Resolved Issues:		
☐**Unresolved** ☒**Resolved** ☐**No Issue**	**Non-LPST Source Contamination Concerns discovered during the database search**: These are sites or locations that have a potential for soil and groundwater contamination and are not associated with LPST sites. Select below all that apply.	
	☐Yes ☒No	Additional Research is needed or uncertain of impacts from a Non-LPST site. Request assistance from ENV.

	☐Yes ☒No	Database search identified SEMS Active NPL or Not NPL site(s) within 1 mile of the project. This may be identified on a database search as a CERCLIS or NPL site.
	☐Yes ☒No	Database search identified SEMS Archived NPL or Not NPL site(s) within 0.5 miles of the project. This may be identified on a database search as a CERCLIS NFRAP.
	☐Yes ☒No	Database search identified RCRA Corrective Action(s) site within 1 mile of project.
	☐Yes ☒No	Database search identified RCRA TSD facilities within 0.5 miles of project.
	☒Yes ☐No	Database search identified TCEQ IHW Corrective Action sites within 1 mile of project.
	☐Yes ☒No	Database search identified TCEQ Superfund sites within 1 mile of project.
	☐Yes ☒No	Database search identified TCEQ VCP sites within 0.5 miles of project.
	☐Yes ☒No	Database search identified TCEQ IOP sites within 0.5 miles of project.
	☐Yes ☒No	Other- Describe:
Explain Unresolved or Resolved Issues:Two listings at one location (Map ID# 8) were identified within the specified search radius on the regulatory database report. Saint Gobain Containers @ 2400 N IH 35E, Waxahachie, TX 75165 and Baylor Medical Center At Waxahachie east of I-35 and US 287 Bypass, Waxahachie, TX are listed as inactive. Corrective Action was completed June 6, 2013. Based on the distance of these facilities from the project area (0.895 mile/4,726 feet) and the regulatory status (Inactive - Corrective Action Complete), the facilities at this location are not considered an environmental concern.		
☐**Unresolved** ☐**Resolved** ☒**No Issue**	**Landfills/Waste Pits/Dump Site Concerns:** These concerns are associated with any known or suspected (based on visual observations) landfills, dump sites, or waste pits. These concerns may appear on a database search as CALF or MSWLF site. Additionally, the local Council of Governments (COG) maintains a list of closed and open landfills in your project area. Select below all that apply.	
	☐Yes ☒No	Additional research is needed or uncertain of impacts. Request assistance from ENV.
	☐Yes ☒No	Database search identified active/closed/abandoned CALF or MSWLF landfill sites within .5 miles of the project.
	☐Yes ☒No	Other- Describe:
Explain Unresolved or Resolved Issues:		

8.3 Did the ISA identify any Unresolved Hazardous Material concerns?

☐ No, unresolved hazardous materials concerns were identified and/or all potential concerns were resolved within the ISA. No further hazardous materials action is required. The ISA is complete for this project. Any unanticipated hazardous materials impacts encountered during the project construction phase shall be addressed in accordance with regulatory requirements and TxDOT standard specifications. Complete Sections 9 and 10 and maintain a copy of the ISA and all applicable attachments in the project file.

☒ Yes, the ISA identified one or more unresolved hazardous materials concerns requiring additional investigations or assessments. An Issues, Identification, and Resolution (IIR) form shalll be completed in ECOS to track the additional investigations and assessments. Complete Sections 9 and 10 and maintain a copy of the ISA and all applicable attachments in the project file.

Section 9: Reference Materials Utilized (Identify any referenced materials and attach them to the ISA or in the project file.			
Referenced Materials Used	☒ Project Map	☒ USGS Topo Maps	☒ Aerial Photographs
	☐ ROW Maps/Files	☐ Sanborn Fire Insurance Maps	☐ Temporary Use Agreements
	☐ TxDOT As-Built Plans	☐ Notifications	☒ Photographs
	☒ Project Schematics/Profiles	☒ Regulatory Database	☐ Record of Interviews
	☒ Other:Tote-A-Way supporting information.		

Section 10: Contact/Completed by		
Name:	Jonathan M. Stewart	**Tel: 214-703-5151**
Title:	Senior Environmental Scientist	
Firm (District Section):	Civil Associates, Inc.	
Address:	9330 LBJ Fwy., Ste. 1150, Dallas, TX 75243	
Signature:		**Date:11/06/2019**

Appendix A

The following table shows the revision history for this guidance document.

Revision History	
Effective Date	**Reason for and Description of the Change**
April 2017	Version 5 The cover page has additional fields related to specific project information. This is added to personalize the ISA to a project. Section 2 was modified to acknowledge that asbestos or lead-in-paint issues might exist on our construction projects, but the identification and resolution to these issues are outside of the ISA process and are handled programmatically by TxDOT (usually in CST or the ROW processes). Section 3 was modified by adding an additional screening option. You are now able to screen out of performing a full ISA if your project meets the parameters described. Section 6 was reformatted to remove the numerous selections related to the Possible Site Survey Concerns. Additionally, redundant questions were removed to make the section easier to use. Under the new format, the preparer is required to insert the survey dates and a description of what was identified during the survey. Minor changes were made to terminology throughout the ISA, this was performed to clarify and streamline the process. Section 8.1 has been modified to provide resolution to potential hazardous materials issues that can be resolved easily during the ISA process. Additionally, a comment field was added to provide direction related to issues requiring further action to resolve. This will streamline the process in reducing the amount of IIR entries requires in ECOS and will reduce the time required to review a project.
June 2016	Version 4 Modifications to Section 5: Web links and database names were modified based on changes made by regulatory agency websites.
October 2014	Version 3 Modifications to Section 2: Clarified this section to better define what are asbestos and lead-in-paint concerns. Changes were made due to numerous comments from the end-user. An additional note was added to this section. This note directs end-users to ENV-HMM for further assistance related to lead-in-paint issues. Modifications to Section 3: The question concerning Project Excavations in Section 3.1 was modified to match the definition used in Scoping Procedure for Categorically Excluded TxDOT Projects for Hazardous Materials found in the NEPA and Project Development Toolkit. Modifications to Section 5: Web links were modified based on changes made by regulatory agency websites. Modifications to 8.2: Clarified the “Yes” answer in 8.2 to remove the need for additional assessments for all identified hazardous materials concerns. The question was modified due to comments by the end-user.

August 2014	Version 2 Removed introductory note describing ISA threshold criteria. Note was removed because the ISA threshold criteria are located in other TxDOT guidance.
April 2014	Version 1 Released

LIST OF ATTACHMENTS

Description of Attachment	Number of Pages
Project Location Map	1
Project Location on USGS Topographic Map	1
Project Location on TNRIS Aerials	1
Hazardous Materials Site Map	16
Hazardous Materials Project Photographs	6
FM 664 Project Design Schematic	6
FM 664 Radius Report	71
Supporting Information	8

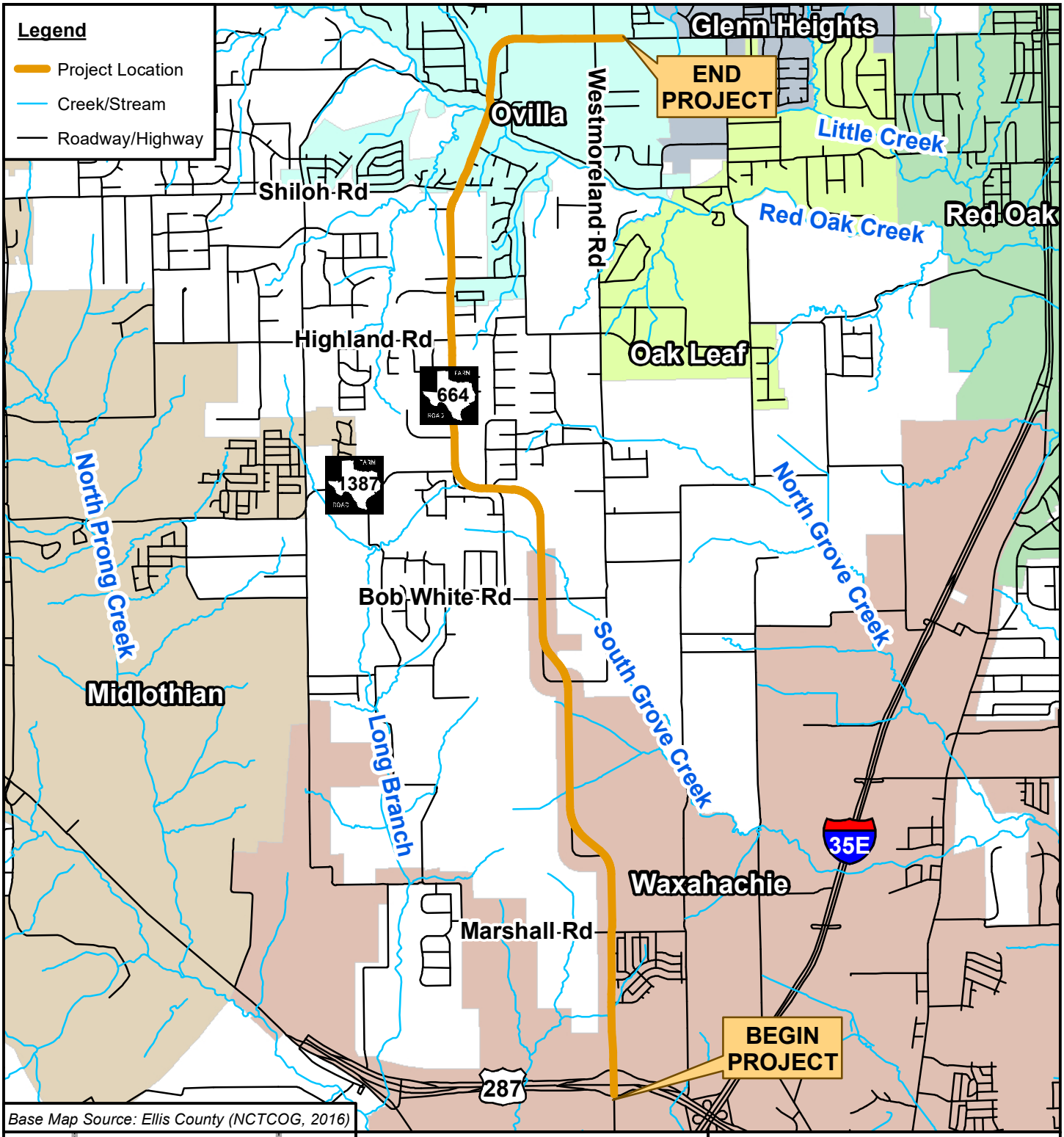
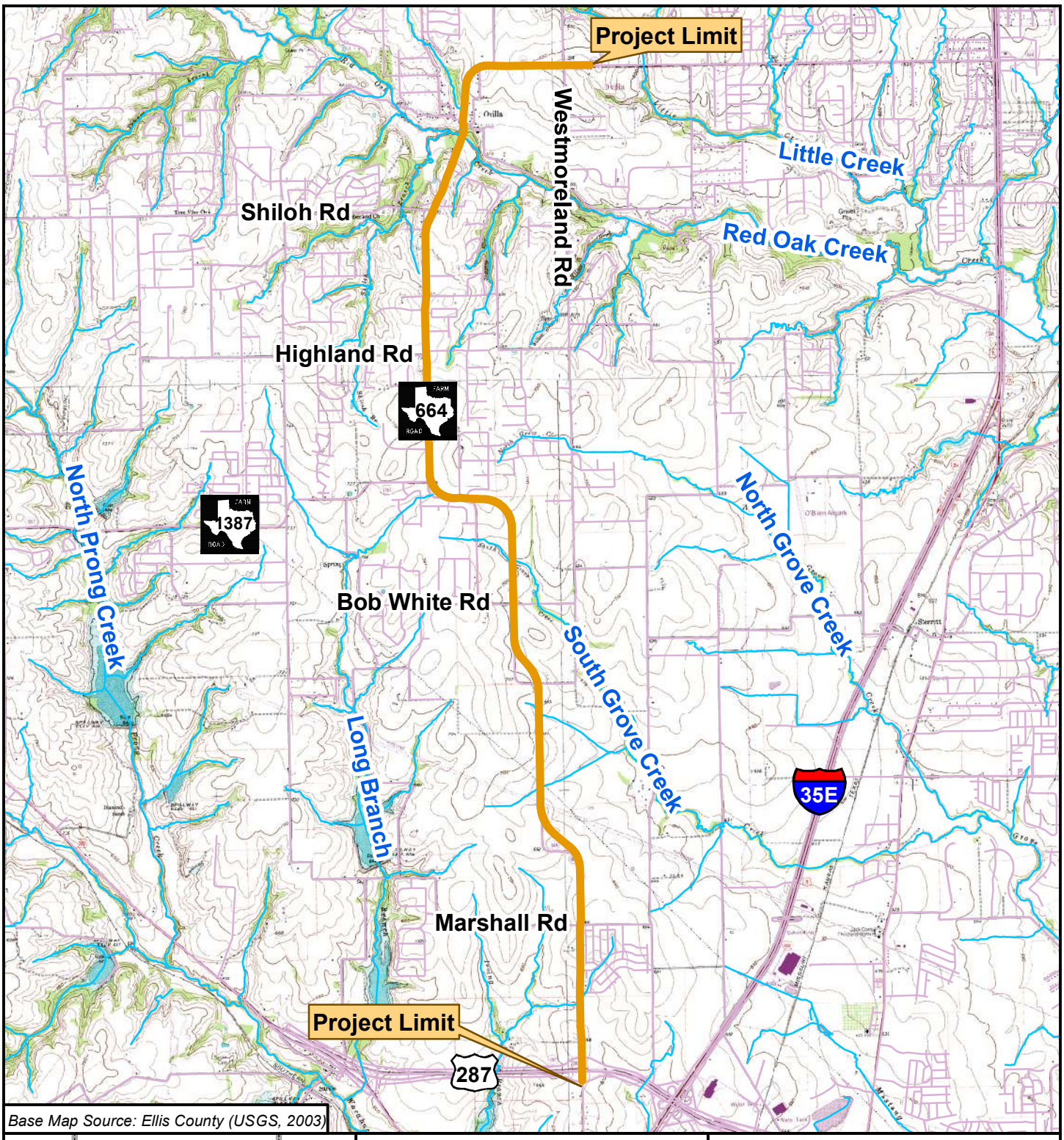


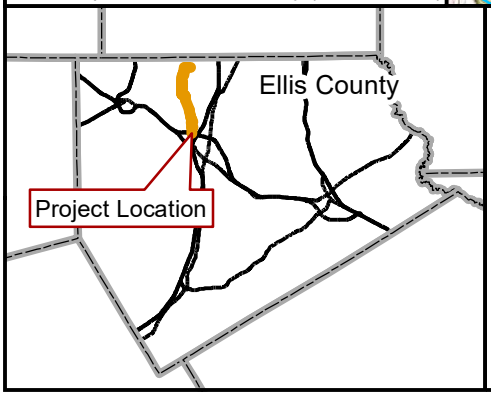
FIGURE 1
PROJECT LOCATION MAP

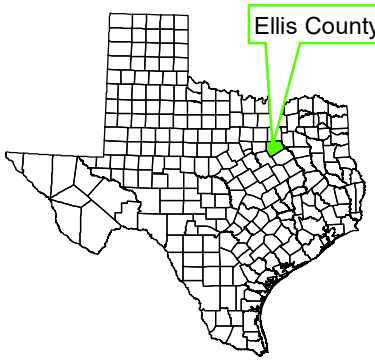
FARM-TO-MARKET ROAD (FM) 664
From U.S. Highway (US) 287
To Westmoreland Road
Ellis County

CSJs: 1051-01-038 and 1051-01-052



Base Map Source: Ellis County (USGS, 2003)





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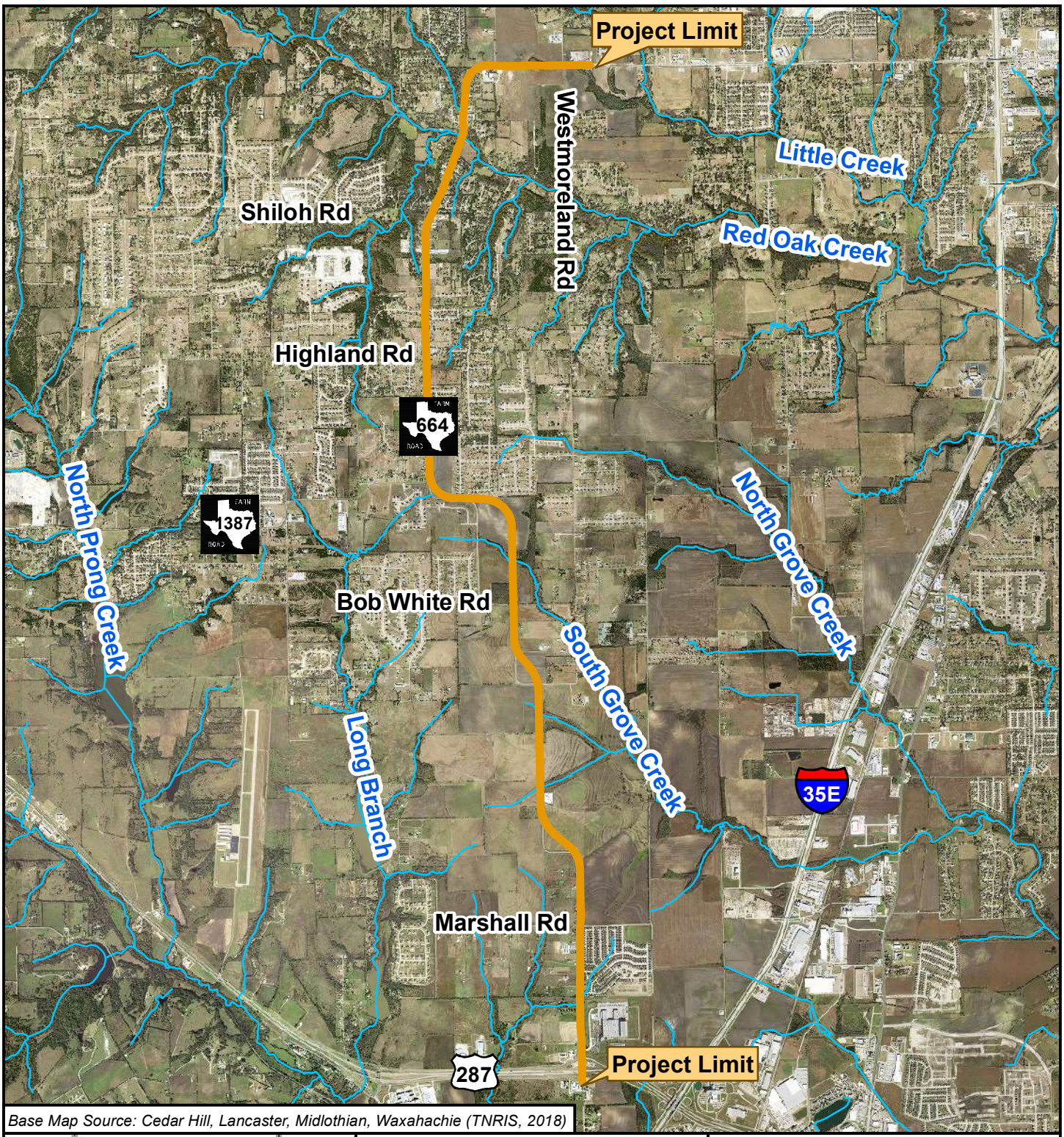
N W E S

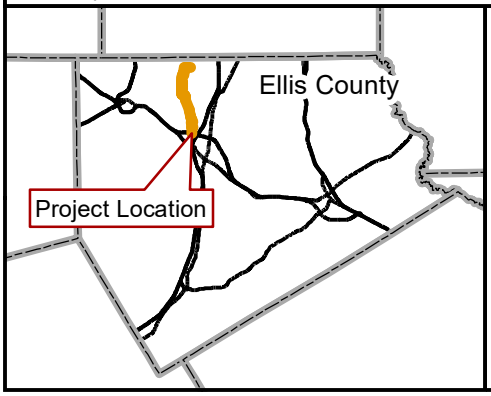
FIGURE 2
TOPOGRAPHIC MAP

FARM-TO-MARKET ROAD (FM) 664
From U.S. Highway (US) 287
To Westmoreland Road
Ellis County

CSJs: 1051-01-038 and 1051-01-052



Base Map Source: Cedar Hill, Lancaster, Midlothian, Waxahachie (TNRIS, 2018)



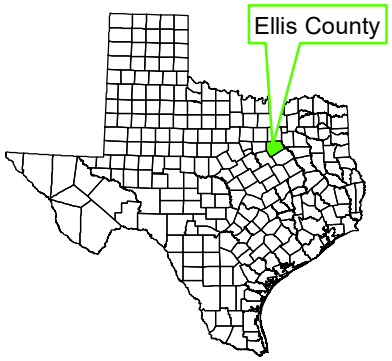


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FIGURE 3
AERIAL MAP

FARM-TO-MARKET ROAD (FM) 664
From U.S. Highway (US) 287
To Westmoreland Road
Ellis County

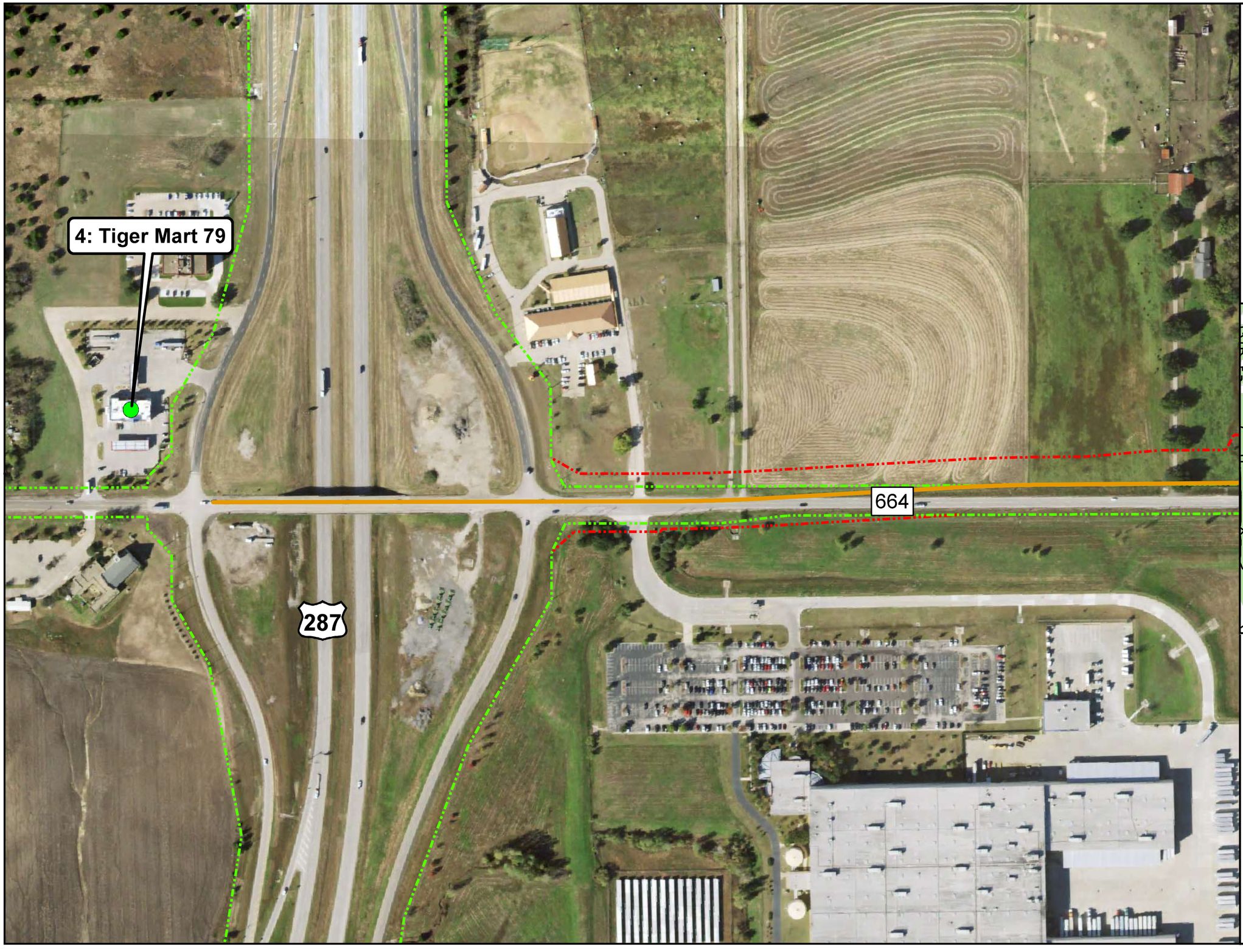
CSJs: 1051-01-038 and 1051-01-052

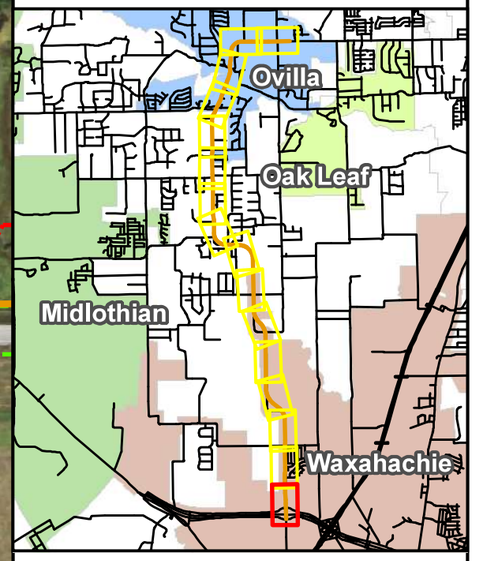
HAZARDOUS MATERIALS SITES MAP

Figure 4
FM 664

FARM-TO-MARKET ROAD (FM) 664
From U.S. Highway (US) 287
To Westmoreland Road
Ellis County

CSJs: 1051-01-038 and 1051-01-052





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Legend

- Project Location
- Existing Right-of-Way
- Proposed Right-of-Way

Hazardous Material Sites

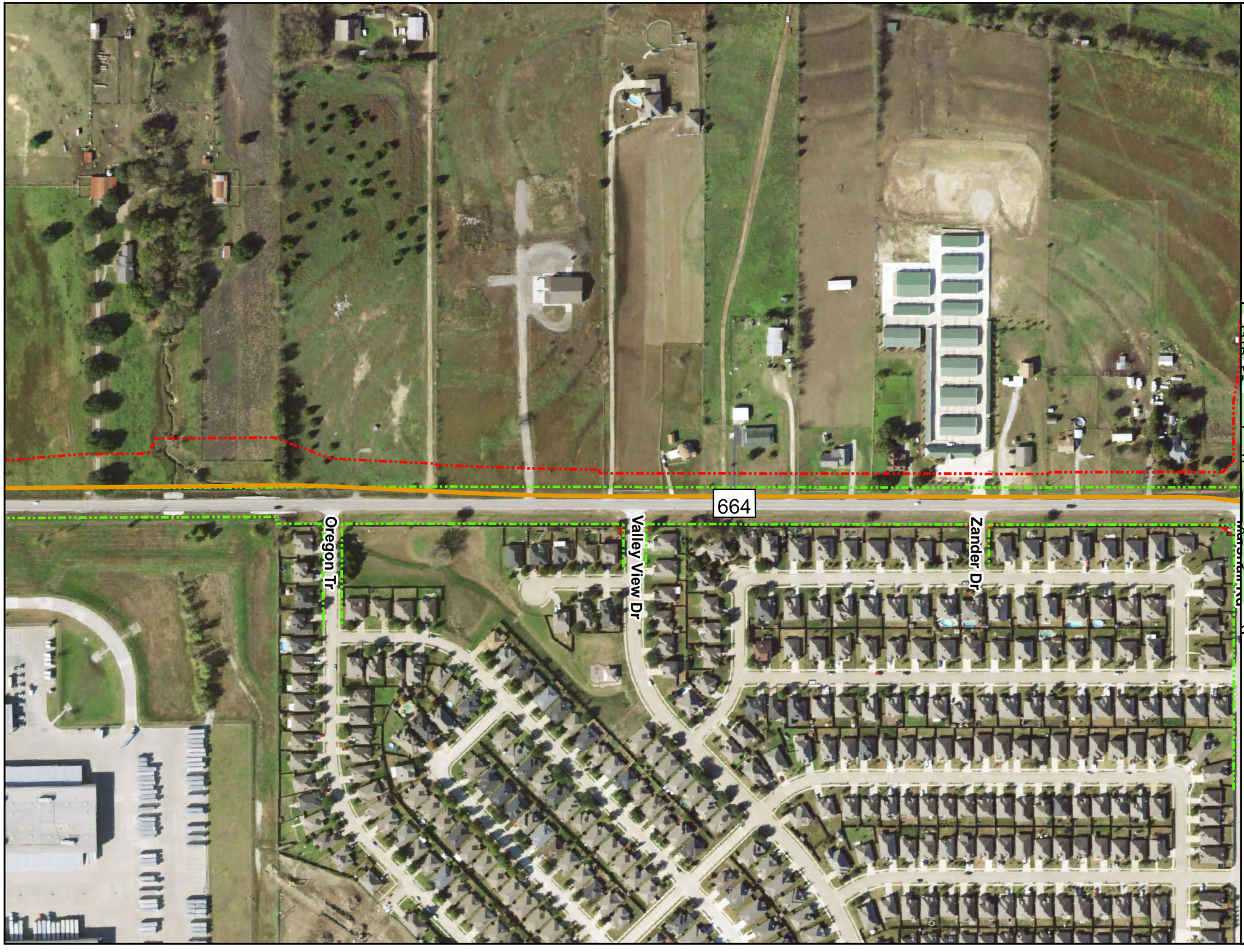
- Anticipated Project Impacts
- Possible Project Impacts
- Low Potential or No Potential Project Impacts

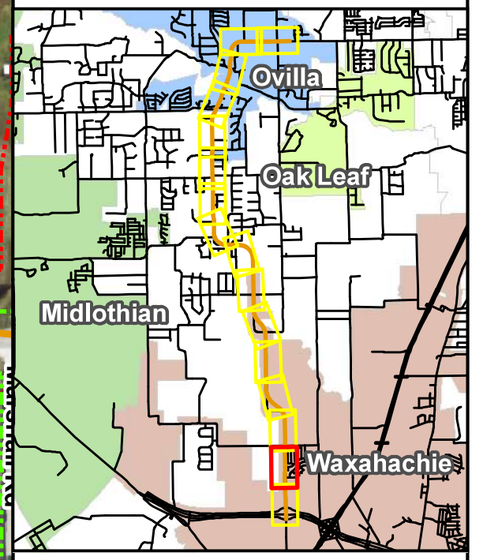
HAZARDOUS MATERIALS SITES MAP

Figure 4
FM 664

FARM-TO-MARKET ROAD (FM) 664
From U.S. Highway (US) 287
To Westmoreland Road
Ellis County

CSJs: 1051-01-038 and 1051-01-052





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Legend

- Project Location
- Existing Right-of-Way
- Proposed Right-of-Way

Hazardous Material Sites

- Anticipated Project Impacts
- Possible Project Impacts
- Low Potential or No Potential Project Impacts

HAZARDOUS MATERIALS SITES MAP

Figure 4
FM 664

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To Westmoreland Road
Ellis County

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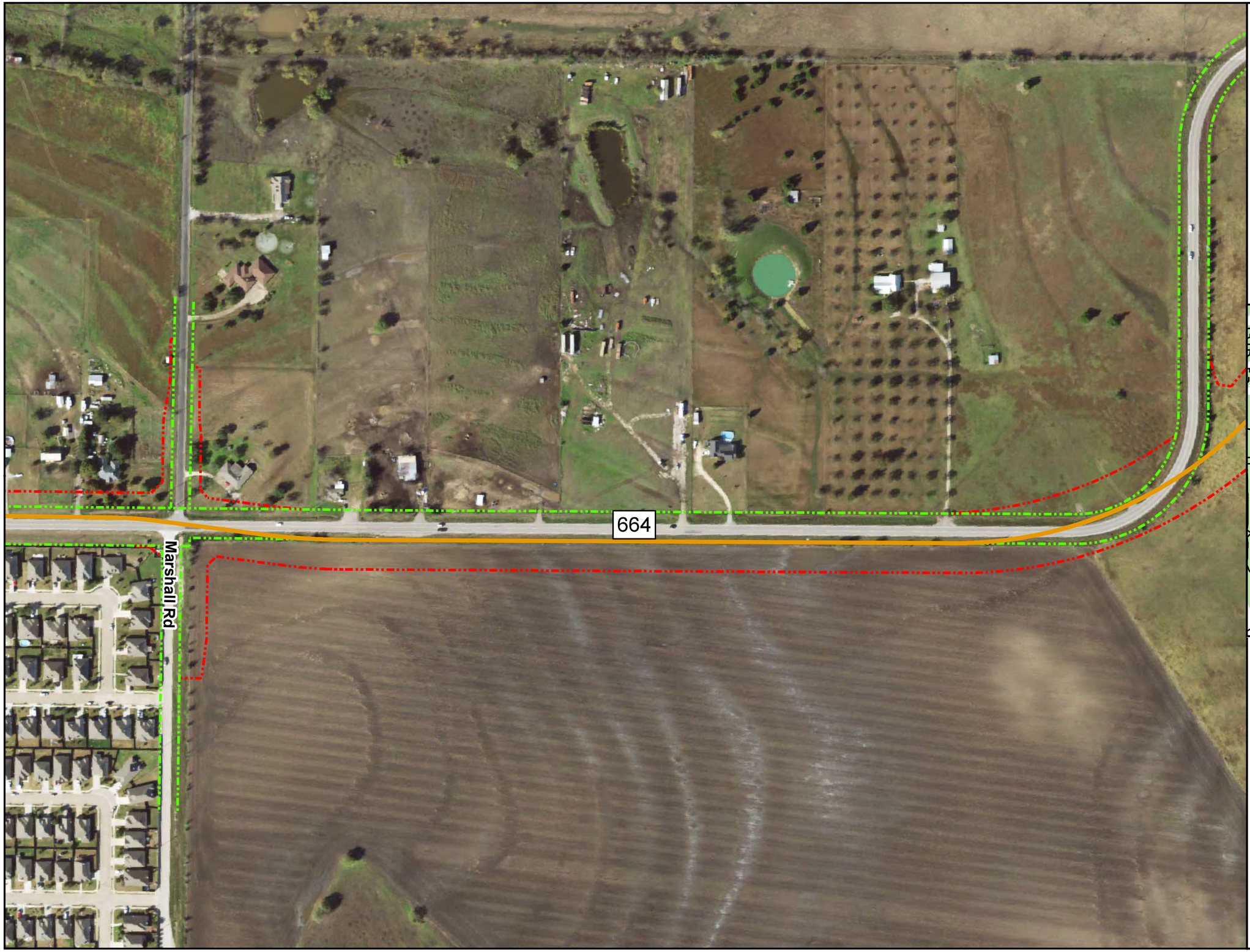

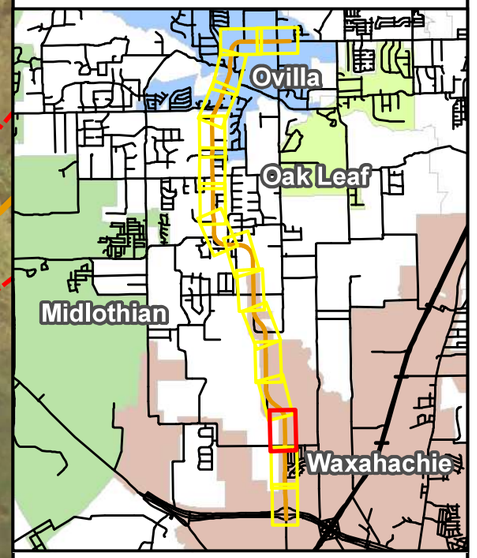

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Legend

- Project Location
- Existing Right-of-Way
- Proposed Right-of-Way

Hazardous Material Sites

- Anticipated Project Impacts
- Possible Project Impacts
- Low Potential or No Potential Project Impacts

HAZARDOUS MATERIALS SITES MAP

Figure 4
FM 664

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From U.S. Highway (US) 287
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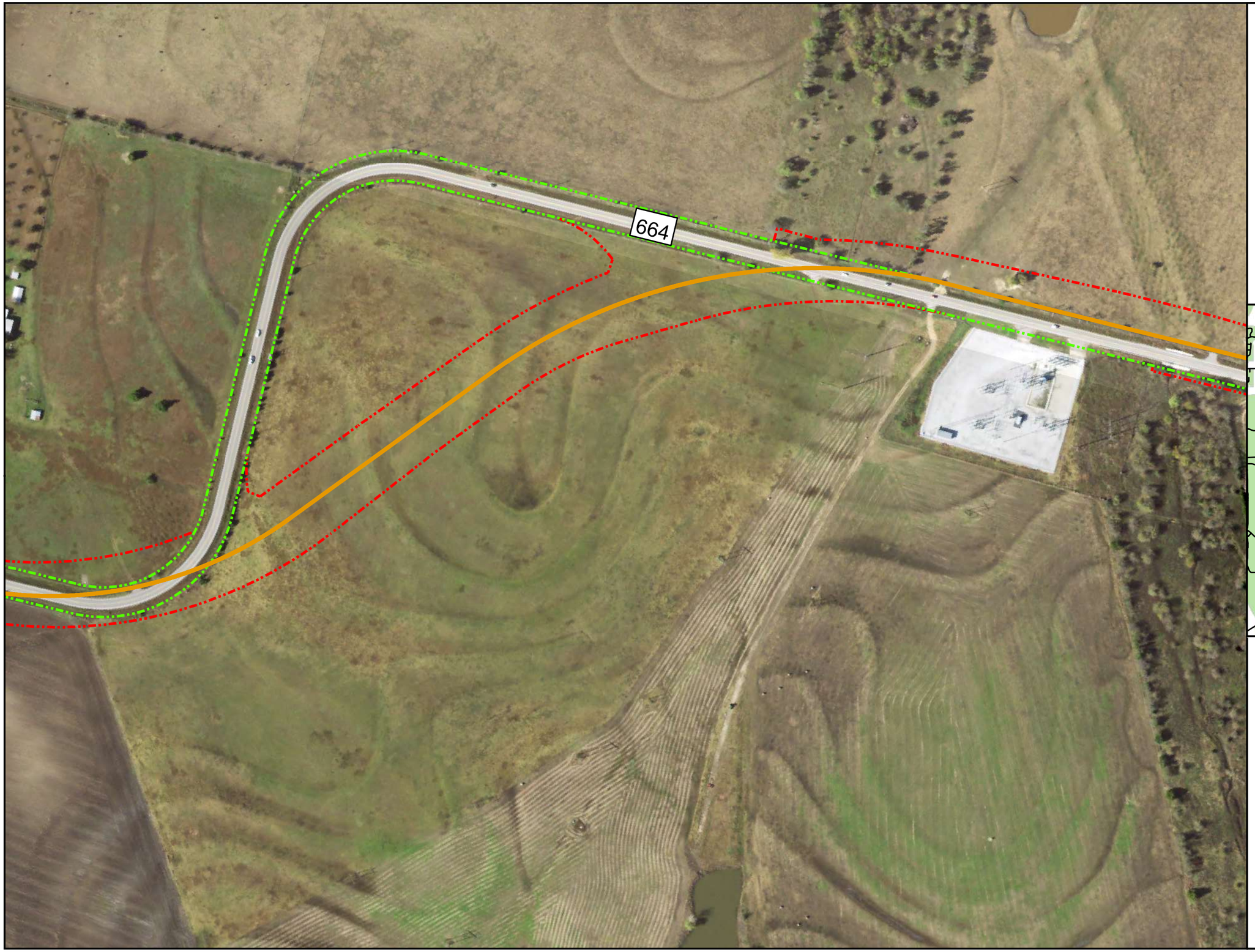

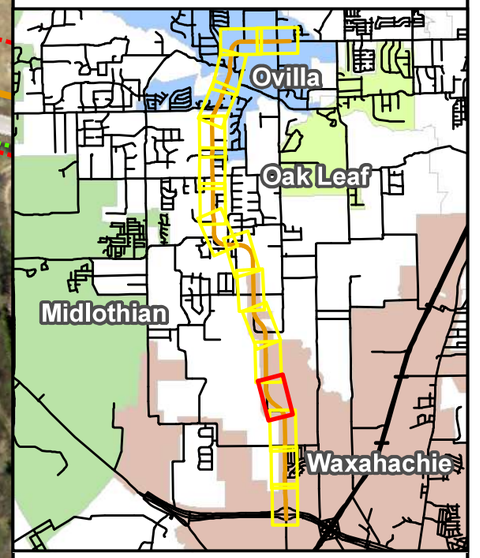

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Legend

- Project Location
- Existing Right-of-Way
- Proposed Right-of-Way

Hazardous Material Sites

- Anticipated Project Impacts
- Possible Project Impacts
- Low Potential or No Potential Project Impacts

HAZARDOUS MATERIALS SITES MAP

Figure 4
FM 664

FARM-TO-MARKET ROAD (FM) 664
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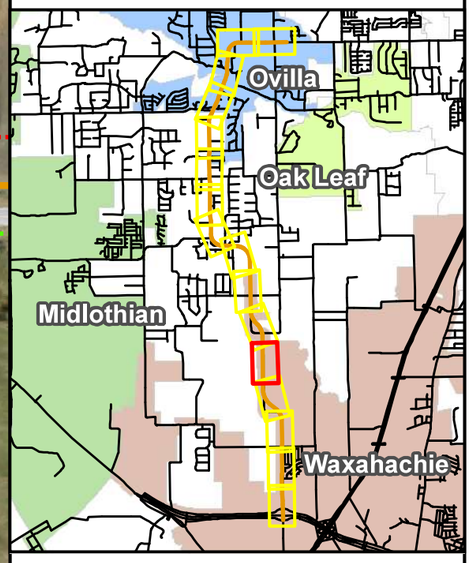
Ellis County

CSJs: 1051-01-038 and 1051-01-052



0 250 500 Feet

Legend

- Project Location
- Existing Right-of-Way
- Proposed Right-of-Way

Hazardous Material Sites

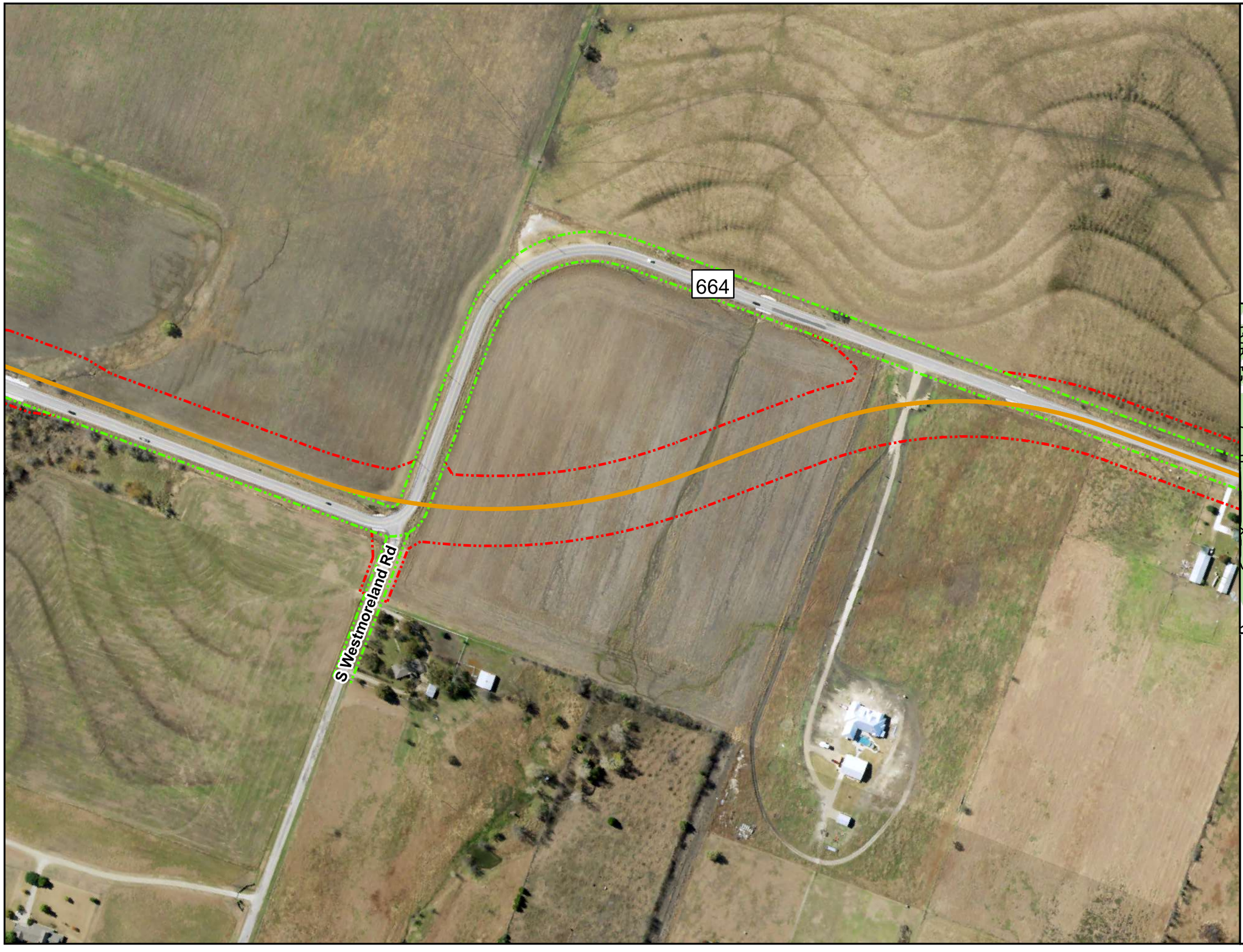
- Anticipated Project Impacts
- Possible Project Impacts
- Low Potential or No Potential Project Impacts

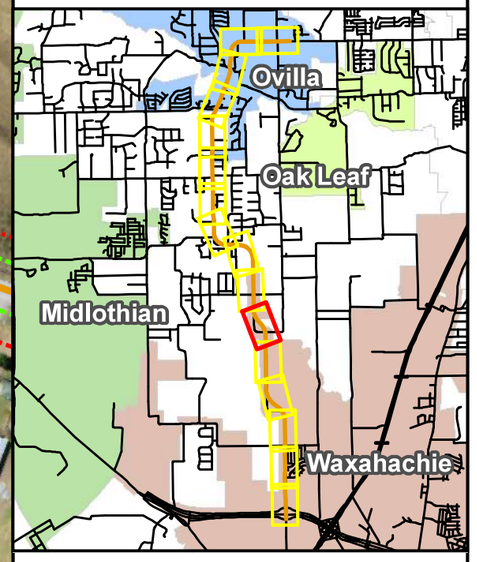
HAZARDOUS MATERIALS SITES MAP

Figure 4
FM 664

FARM-TO-MARKET ROAD (FM) 664
From U.S. Highway (US) 287
To Westmoreland Road
Ellis County

CSJs: 1051-01-038 and 1051-01-052





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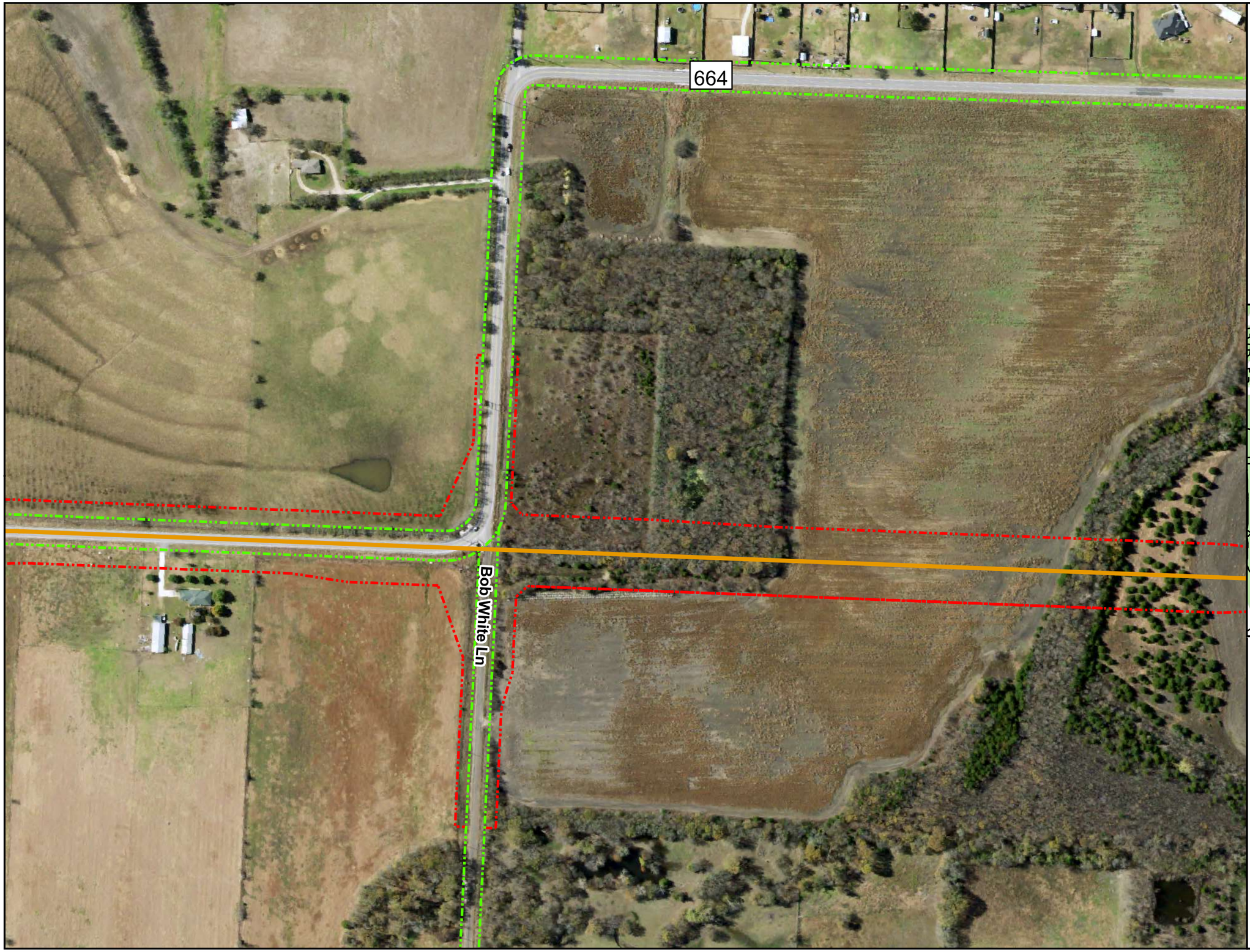

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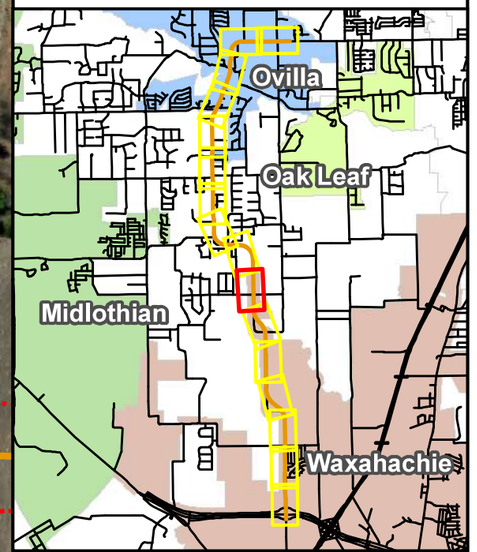

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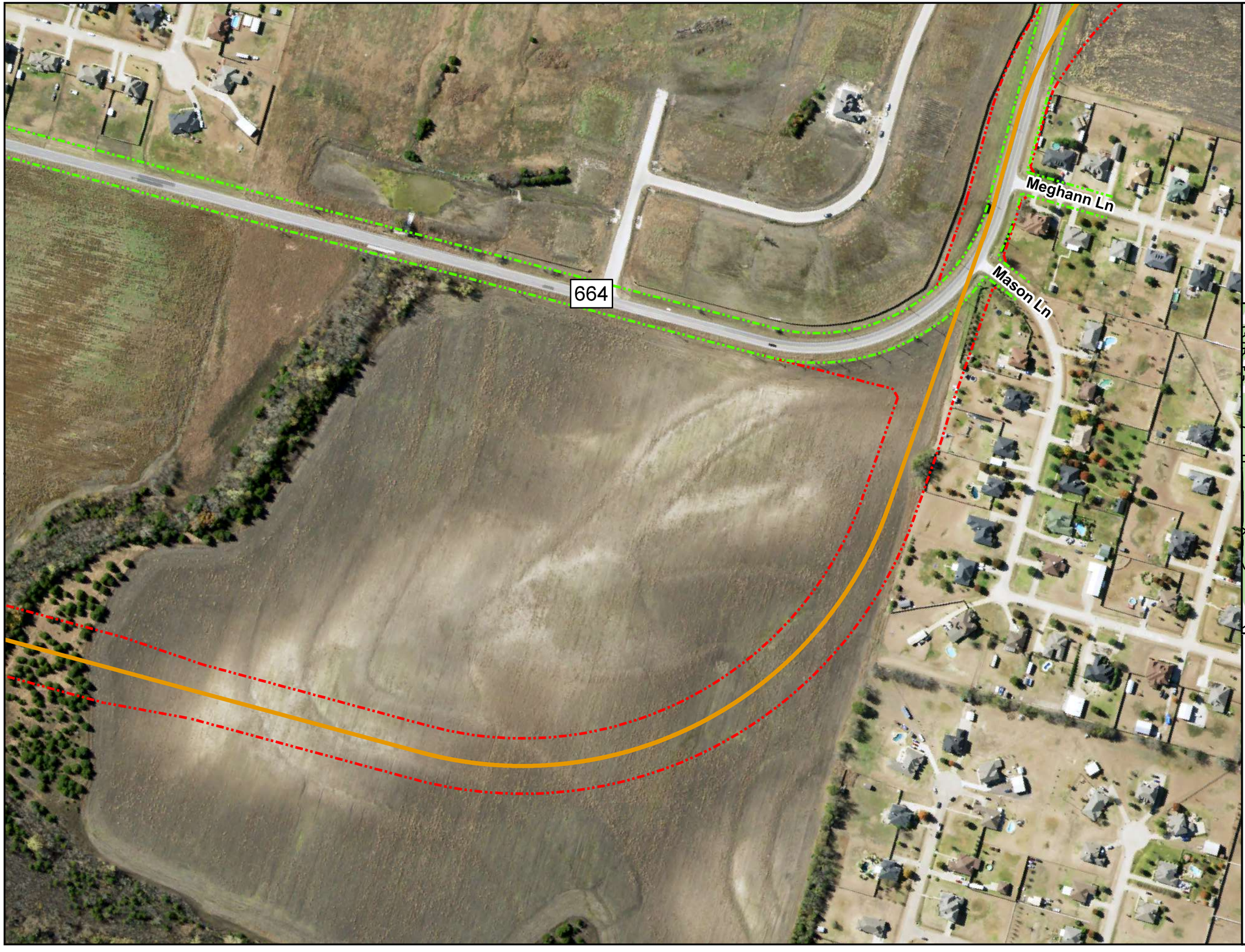

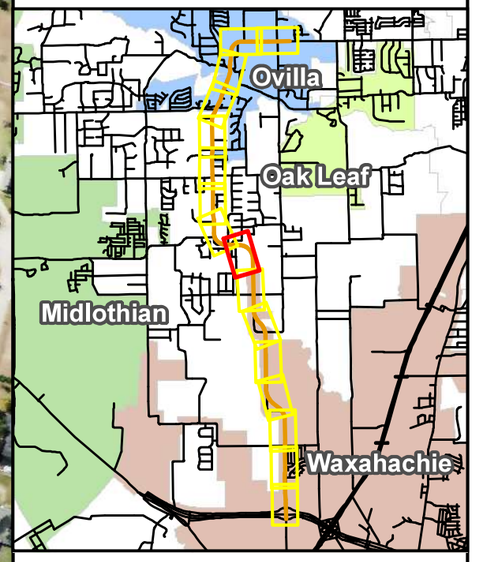

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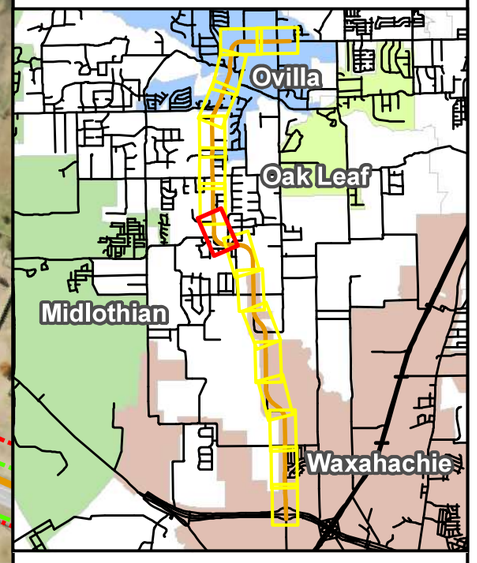

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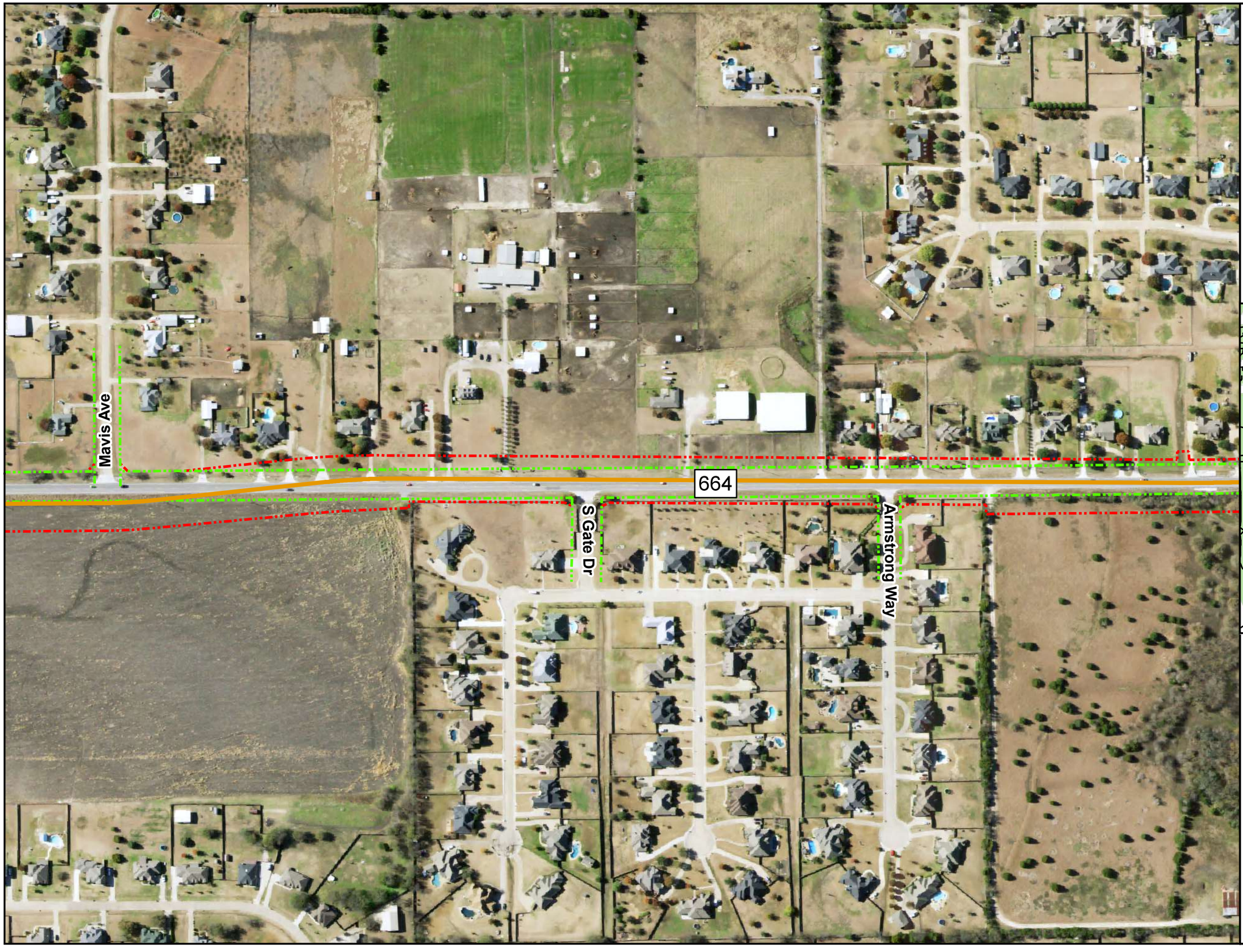

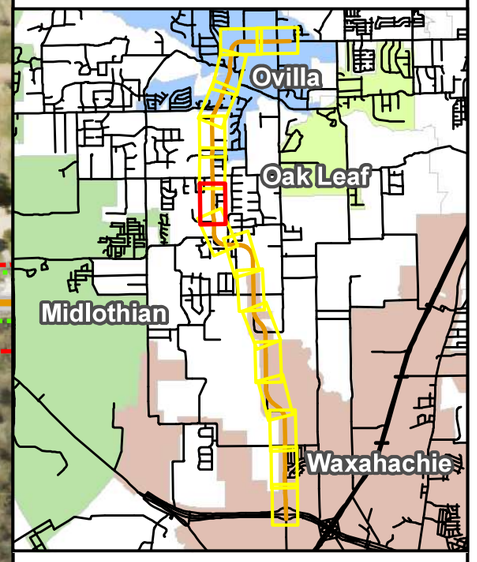

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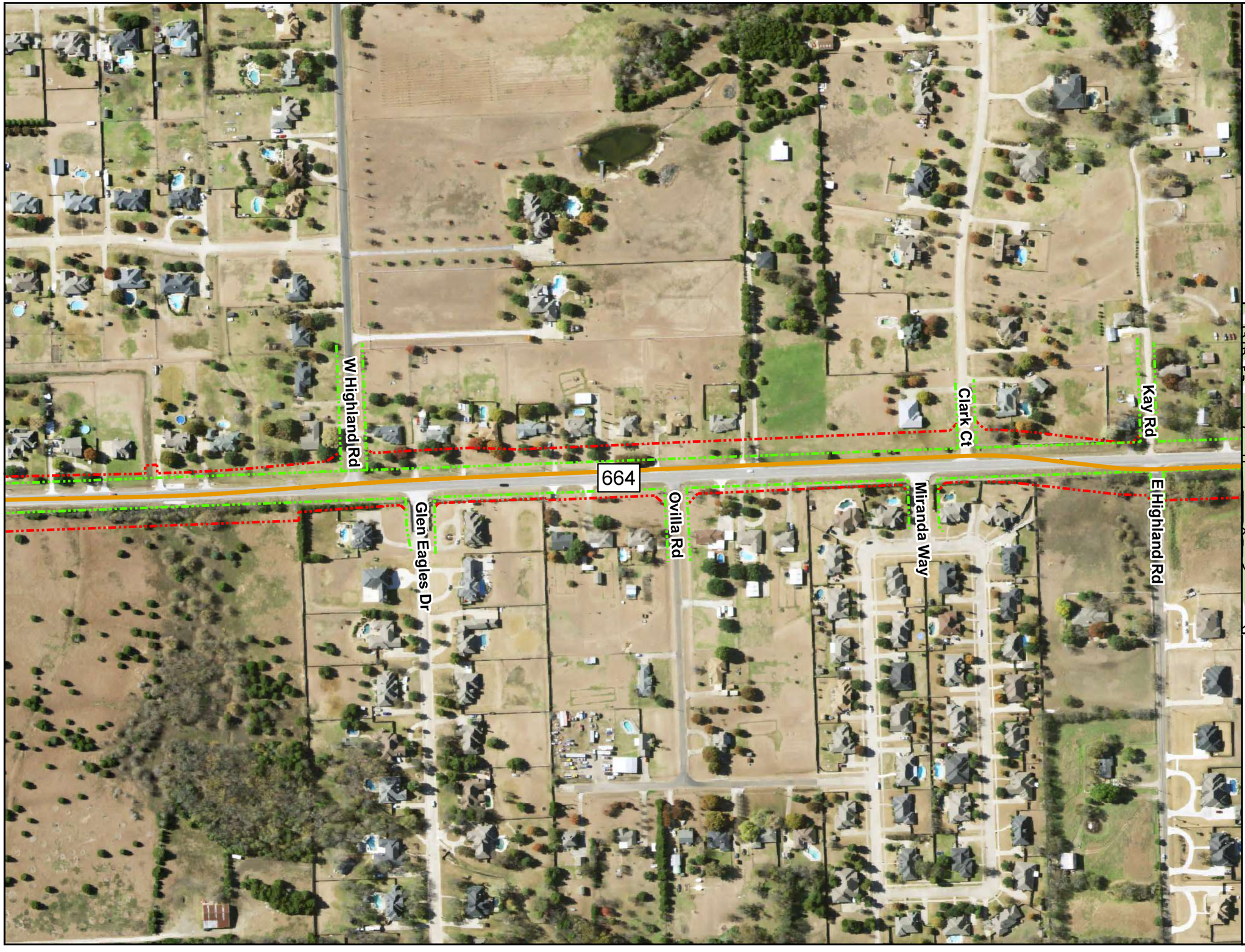

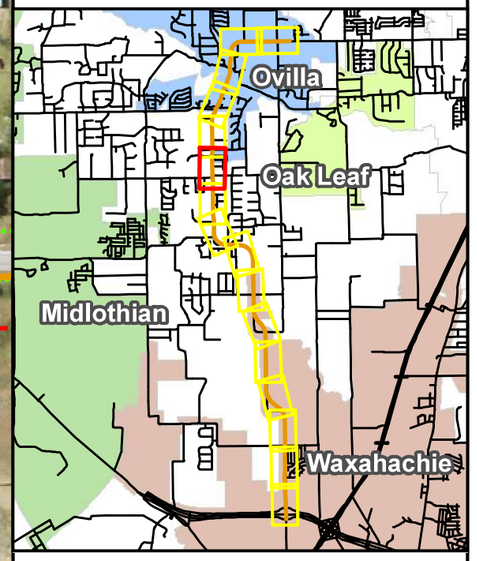

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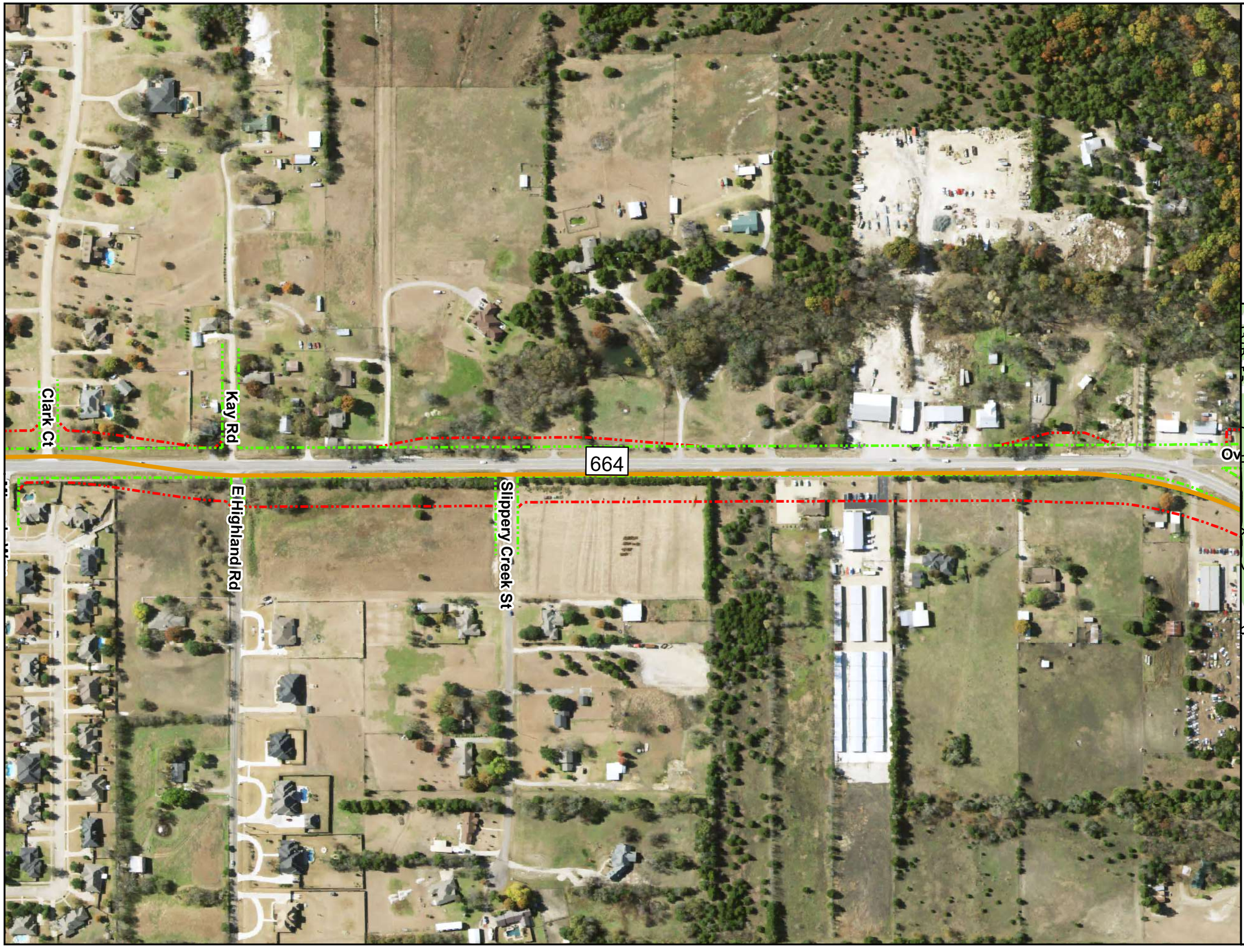

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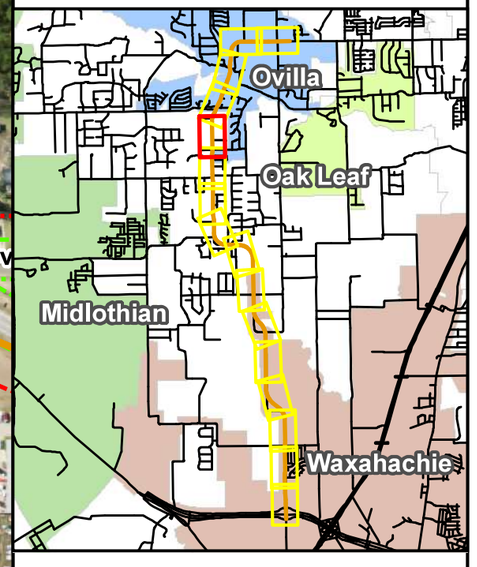

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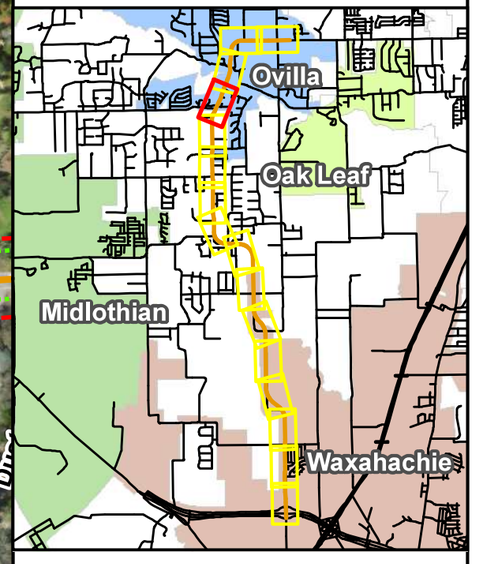

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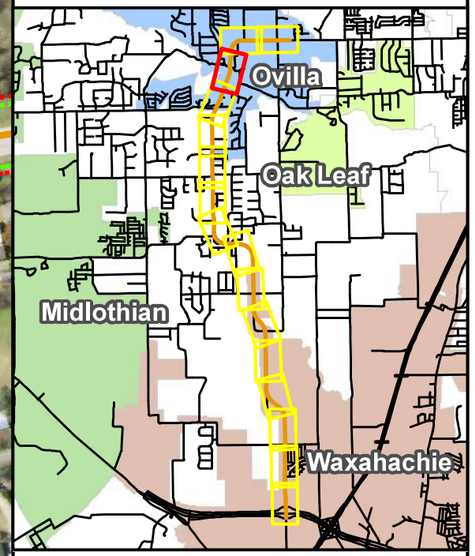

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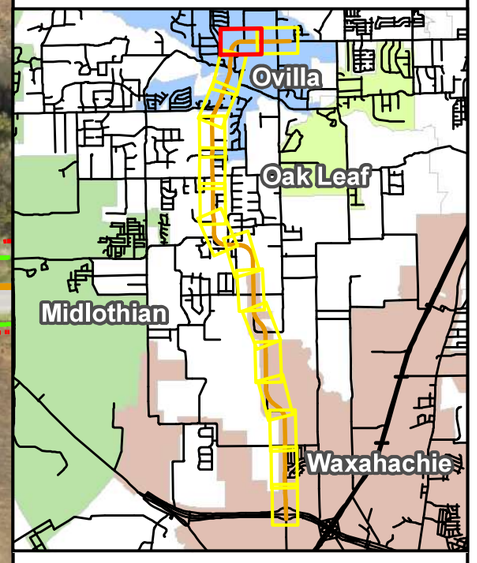

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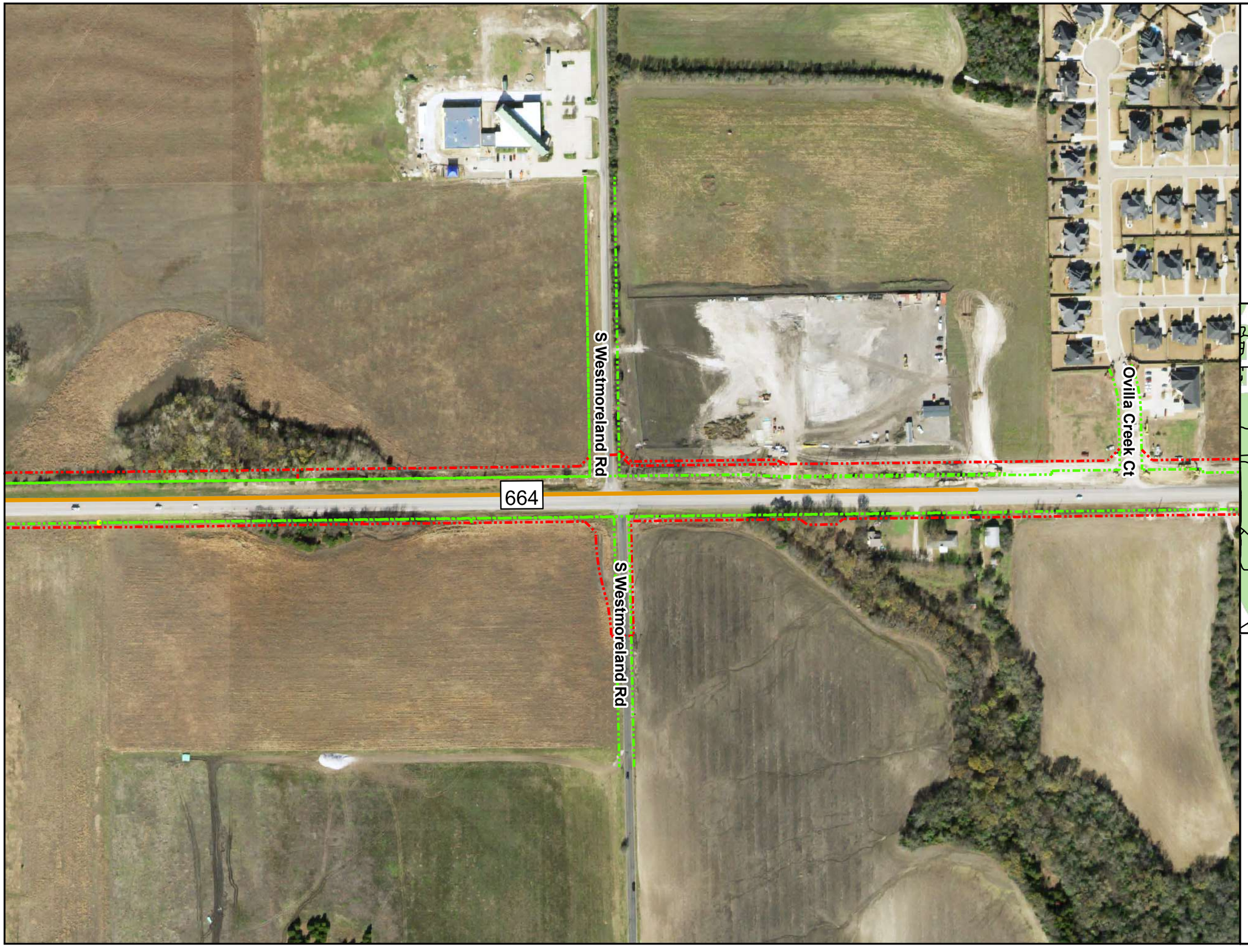

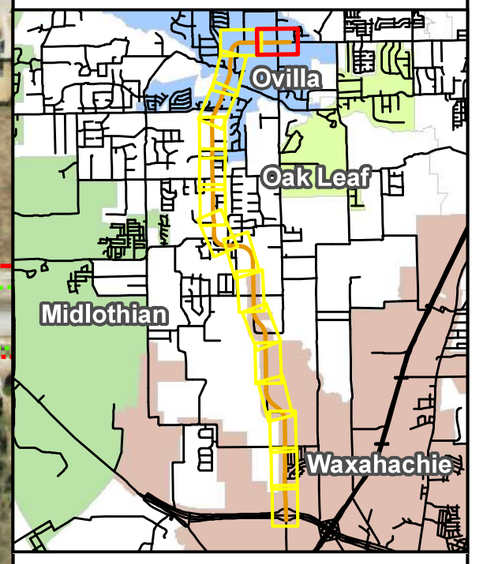

0 250 500 Feet

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Project Area Photographs

Farm-to-Market (FM) 664

United States Highway (US) 287 to Westmoreland Road

CSJ(s): 1051-01-038 and 1051-01-052
Ellis County, Texas

Dallas District
8/26/2019

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Photo ID: 1

Date Photo Taken: 8/14/2019

Coordinates: N 32° 31' 39.89" W 96° 53' 08.12"
Direction of View: South

Comments: Map ID: 2; Ovilla Market; 3321 Ovilla Rd, Ovilla, TX 75154

Photo ID: 2

Date Photo Taken: 8/14/2019

Coordinates: N 34° 08' 29.82" W 96° 53' 11.57"
Direction of View: North

Comments: Map ID: 3; Former Gas Station; 696 W Main St, Ovilla, TX 75154

Photo ID: 3

Date Photo Taken: 8/14/2019

Coordinates: N 32° 31' 38.77" W 96° 53' 7.85"
Direction of View: South

Comments: Map ID: 9; Teachers Who Tutor, Formerly Tote-A-Way; 3323 Ovilla Rd, Red Oak, TX 75154

Photo ID: 4

Date Photo Taken: 8/14/2019

Coordinates: N 32° 25' 45.60" W 96° 52' 24.90"
Direction of View: Northeast

Comments: Beginning of Project, bridge over US 287.

Photo ID: 5

Date Photo Taken: 8/14/2019

Coordinates: N 32° 26' 34.02" W 96° 52' 24.43"
Direction of View: North

Comments: Residential neighborhoods regularly adjacent to the project.

Photo ID: 6

Date Photo Taken: 8/14/2019

Coordinates: N 32° 31' 38.77" W 96° 53' 7.85"
Direction of View: West

Comments: Agricultural areas make up approximately two-thirds of land adjacent to the project.

Photo ID: 7

Date Photo Taken: 8/14/2019

Coordinates: N 32° 27' 29.97" W 96° 52' 40.71"
Direction of View: North

Comments: Areas of dense vegetation seen occasionally, especially surrounding water crossings.

Photo ID: 8

Date Photo Taken: 8/14/2019

Coordinates: N 32° 31' 55.10" W 96° 52' 24.92"
Direction of View: Southeast

Comments: Agricultural and Riparian areas near end of project.

GeoSearch
On time. On target. In touch.™

Radius Report

GeoLens by GeoSearch

Target Property:

2640.01

Waxahachie, Ellis County, Texas 75167

Prepared For:

Civil Associates

Order #: 127223

Job #: 296216

Project #: 2640.01

Date: 05/29/2019

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Unlocatable Report . . . . . See Attachment

Zip Report . . . . . See Attachment

Disclaimer

This report was designed by GeoSearch to meet or exceed the records search requirements of the All Appropriate Inquiries Rule (40 CFR ï¿½312.26) and the current version of the ASTM International E1527, Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process or, if applicable, the custom requirements requested by the entity that ordered this report. The records and databases of records used to compile this report were collected from various federal,state and local governmental entities. It is the goal of GeoSearch to meet or exceed the 40 CFR ï¿½312.26 and E1527 requirements for updating records by using the best available technology. GeoSearch contacts the appropriate governmental entities on a recurring basis. Depending on the frequency with which a record source or database of records is updated by the governmental entity, the data used to prepare this report may be updated monthly, quarterly, semi-annually, or annually.

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Target Property Summary

Target Property Information

2640.01
Waxahachie, Texas 75167

Coordinates
Corridor

USGS Quadrangle
Cedar Hill, TX
Lancaster, TX
Midlothian, TX
Waxahachie, TX

Geographic Coverage Information

County/Parish: Ellis (TX)
ZipCode(s):
Red Oak TX: 75154
Waxahachie TX: 75165, 75167
Midlothian TX: 76065

Database Summary

FEDERAL LISTING

Standard Environmental Records

Database	Acronym	Locatable	Unlocatable	Search Radius (miles)
EMERGENCY RESPONSE NOTIFICATION SYSTEM	ERNSTX	0	0	TP/AP
FEDERAL ENGINEERING INSTITUTIONAL CONTROL SITES	EC	0	0	TP/AP
LAND USE CONTROL INFORMATION SYSTEM	LUCIS	0	0	TP/AP
RCRA SITES WITH CONTROLS	RCRASC	0	0	TP/AP
RESOURCE CONSERVATION & RECOVERY ACT - GENERATOR	RCRAGR06	1	0	0.1250
RESOURCE CONSERVATION & RECOVERY ACT - NON-GENERATOR	RCRANGR06	1	0	0.1250
BROWNFIELDS MANAGEMENT SYSTEM	BF	0	0	0.5000
DELISTED NATIONAL PRIORITIES LIST	DNPL	0	0	0.5000
NO LONGER REGULATED RCRA NON-CORRACTS TSD FACILITIES	NLRRCRAT	0	0	0.5000
RESOURCE CONSERVATION & RECOVERY ACT - NON-CORRACTS TREATMENT, STORAGE & DISPOSAL FACILITIES	RCRAT	0	0	0.5000
SUPERFUND ENTERPRISE MANAGEMENT SYSTEM	SEMS	0	0	0.5000
SUPERFUND ENTERPRISE MANAGEMENT SYSTEM ARCHIVED SITE INVENTORY	SEMSARCH	0	0	0.5000
NATIONAL PRIORITIES LIST	NPL	0	0	1.0000
NO LONGER REGULATED RCRA CORRECTIVE ACTION FACILITIES	NLRRCRAC	0	0	1.0000
PROPOSED NATIONAL PRIORITIES LIST	PNPL	0	0	1.0000
RESOURCE CONSERVATION & RECOVERY ACT - CORRECTIVE ACTION FACILITIES	RCRAC	0	0	1.0000
RESOURCE CONSERVATION & RECOVERY ACT - SUBJECT TO CORRECTIVE ACTION FACILITIES	RCRASUBC	0	0	1.0000

SUB-TOTAL		2	0	

Additional Environmental Records

Database	Acronym	Locatable	Unlocatable	Search Radius (miles)
AEROMETRIC INFORMATION RETRIEVAL SYSTEM / AIR FACILITY SUBSYSTEM	AIRSAFS	0	0	TP/AP
BIENNIAL REPORTING SYSTEM	BRS	0	0	TP/AP
CERCLIS LIENS	SFLIENS	0	0	TP/AP
CLANDESTINE DRUG LABORATORY LOCATIONS	CDL	0	0	TP/AP
EPA DOCKET DATA	DOCKETS	0	0	TP/AP
ENFORCEMENT AND COMPLIANCE HISTORY INFORMATION	ECHOR06	0	0	TP/AP
FACILITY REGISTRY SYSTEM	FRSTX	1	0	TP/AP

Database Summary

Database	Acronym	Locatable	Unlocatable	Search Radius (miles)
HAZARDOUS MATERIALS INCIDENT REPORTING SYSTEM	HMIRSR06	0	0	TP/AP
INTEGRATED COMPLIANCE INFORMATION SYSTEM (FORMERLY DOCKETS)	ICIS	0	0	TP/AP
INTEGRATED COMPLIANCE INFORMATION SYSTEM NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM	ICISNPDES	0	0	TP/AP
MATERIAL LICENSING TRACKING SYSTEM	MLTS	0	0	TP/AP
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM	NPDESR06	0	0	TP/AP
PCB ACTIVITY DATABASE SYSTEM	PADS	0	0	TP/AP
PERMIT COMPLIANCE SYSTEM	PCSR06	0	0	TP/AP
SEMS LIEN ON PROPERTY	SEMSLIENS	0	0	TP/AP
SECTION SEVEN TRACKING SYSTEM	SSTS	0	0	TP/AP
TOXIC SUBSTANCE CONTROL ACT INVENTORY	TSCA	0	0	TP/AP
TOXICS RELEASE INVENTORY	TRI	0	0	TP/AP
ALTERNATIVE FUELING STATIONS	ALTFUELS	0	0	0.2500
FEMA OWNED STORAGE TANKS	FEMAUST	0	0	0.2500
HISTORICAL GAS STATIONS	HISTPST	0	0	0.2500
INTEGRATED COMPLIANCE INFORMATION SYSTEM DRYCLEANERS	ICISCLEANERS	0	0	0.2500
MINE SAFETY AND HEALTH ADMINISTRATION MASTER INDEX FILE	MSHA	0	0	0.2500
MINERAL RESOURCE DATA SYSTEM	MRDS	0	0	0.2500
OPEN DUMP INVENTORY	ODI	0	0	0.5000
SURFACE MINING CONTROL AND RECLAMATION ACT SITES	SMCRA	0	0	0.5000
URANIUM MILL TAILINGS RADIATION CONTROL ACT SITES	USUMTRCA	0	0	0.5000
DEPARTMENT OF DEFENSE SITES	DOD	0	0	1.0000
FORMER MILITARY NIKE MISSILE SITES	NMS	0	0	1.0000
FORMERLY USED DEFENSE SITES	FUDS	0	0	1.0000
FORMERLY UTILIZED SITES REMEDIAL ACTION PROGRAM	FUSRAP	0	0	1.0000
RECORD OF DECISION SYSTEM	RODS	0	0	1.0000

SUB-TOTAL		1	0	

Database Summary

STATE (TX) LISTING

Standard Environmental Records

Database	Acronym	Locatable	Unlocatable	Search Radius (miles)
STATE INSTITUTIONAL/ENGINEERING CONTROL SITES	SIEC01	0	0	TP/AP
PETROLEUM STORAGE TANKS	PST	4	1	0.2500
BROWNFIELDS SITE ASSESSMENTS	BSA	0	0	0.5000
CLOSED & ABANDONED LANDFILL INVENTORY	CALF	0	0	0.5000
LEAKING PETROLEUM STORAGE TANKS	LPST	1	0	0.5000
MUNICIPAL SOLID WASTE LANDFILL SITES	MSWLF	0	0	0.5000
RAILROAD COMMISSION VCP AND BROWNFIELD SITES	RRCVCP	0	0	0.5000
VOLUNTARY CLEANUP PROGRAM SITES	VCP	0	0	0.5000
STATE SUPERFUND SITES	SF	0	0	1.0000
SUB-TOTAL		5	1	

Additional Environmental Records

Database	Acronym	Locatable	Unlocatable	Search Radius (miles)
GROUNDWATER CONTAMINATION CASES	GWCC	0	0	TP/AP
HISTORIC GROUNDWATER CONTAMINATION CASES	HISTGWCC	0	0	TP/AP
LAND APPLICATION PERMITS	LANDAPP	0	0	TP/AP
MUNICIPAL SETTING DESIGNATIONS	MSD	0	0	TP/AP
NOTICE OF VIOLATIONS	NOV	0	0	TP/AP
SPILLS LISTING	SPILLS	0	0	TP/AP
TCEQ LIENS	LIENS	0	0	TP/AP
TIER I I CHEMICAL REPORTING PROGRAM FACILITIES	TIERII	0	0	TP/AP
DRY CLEANER REGISTRATION DATABASE	DCR	1	0	0.2500
INDUSTRIAL AND HAZARDOUS WASTE SITES	IHW	2	0	0.2500
PERMITTED INDUSTRIAL HAZARDOUS WASTE SITES	PIHW	0	0	0.2500
AFFECTED PROPERTY ASSESSMENT REPORTS	APAR	0	0	0.5000
DRY CLEANER REMEDIATION PROGRAM SITES	DCRPS	0	0	0.5000
INNOCENT OWNER / OPERATOR DATABASE	IOP	0	0	0.5000
RADIOACTIVE WASTE SITES	RWS	0	0	0.5000
RECYCLING FACILITIES	WMRF	0	0	0.5000
SALT CAVERNS FOR PETROLEUM STORAGE	STCV	0	0	0.5000
INDUSTRIAL AND HAZARDOUS WASTE CORRECTIVE ACTION SITES	IHWCA	2	0	1.0000

SUB-TOTAL		*5*	*0*	

TRIBAL LISTING

Standard Environmental Records

Database	Acronym	Locatable	Unlocatable	Search Radius (miles)
UNDERGROUND STORAGE TANKS ON TRIBAL LANDS	USTR06	0	0	0.2500
LEAKING UNDERGROUND STORAGE TANKS ON TRIBAL LANDS	LUSTR06	0	0	0.5000
OPEN DUMP INVENTORY ON TRIBAL LANDS	ODINDIAN	0	0	0.5000
SUB-TOTAL		0	0	

Additional Environmental Records

Database	Acronym	Locatable	Unlocatable	Search Radius (miles)
INDIAN RESERVATIONS	INDIANRES	0	0	1.0000
SUB-TOTAL		0	0	

TOTAL		13	1	

Database Radius Summary

FEDERAL LISTING

*Standard environmental records are displayed in **bold**.*

Acronym	Search Radius (miles)	TP/AP (0 - 0.02)	1/8 Mile (> TP/AP)	1/4 Mile (> 1/8)	1/2 Mile (> 1/4)	1 Mile (> 1/2)	> 1 Mile	Total
AIRSAFS	0.0200	0	NS	NS	NS	NS	NS	0
BRS	0.0200	0	NS	NS	NS	NS	NS	0
CDL	0.0200	0	NS	NS	NS	NS	NS	0
DOCKETS	0.0200	0	NS	NS	NS	NS	NS	0
EC	**0.0200**	**0**	**NS**	**NS**	**NS**	**NS**	**NS**	**0**
ECHOR06	0.0200	0	NS	NS	NS	NS	NS	0
ERNSTX	**0.0200**	**0**	**NS**	**NS**	**NS**	**NS**	**NS**	**0**
FRSTX	0.0200	1	NS	NS	NS	NS	NS	1
HMIRSR06	0.0200	0	NS	NS	NS	NS	NS	0
ICIS	0.0200	0	NS	NS	NS	NS	NS	0
ICISNPDES	0.0200	0	NS	NS	NS	NS	NS	0
LUCIS	**0.0200**	**0**	**NS**	**NS**	**NS**	**NS**	**NS**	**0**
MLTS	0.0200	0	NS	NS	NS	NS	NS	0
NPDESR06	0.0200	0	NS	NS	NS	NS	NS	0
PADS	0.0200	0	NS	NS	NS	NS	NS	0
PCSR06	0.0200	0	NS	NS	NS	NS	NS	0
RCRASC	**0.0200**	**0**	**NS**	**NS**	**NS**	**NS**	**NS**	**0**
SEMSLIENS	0.0200	0	NS	NS	NS	NS	NS	0
SFLIENS	0.0200	0	NS	NS	NS	NS	NS	0
SSTS	0.0200	0	NS	NS	NS	NS	NS	0
TRI	0.0200	0	NS	NS	NS	NS	NS	0
TSCA	0.0200	0	NS	NS	NS	NS	NS	0
RCRAGR06	**0.1250**	**0**	**1**	**NS**	**NS**	**NS**	**NS**	**1**
RCRANGR06	**0.1250**	**0**	**1**	**NS**	**NS**	**NS**	**NS**	**1**
ALTFUELS	0.2500	0	0	0	NS	NS	NS	0
FEMAUST	0.2500	0	0	0	NS	NS	NS	0
HISTPST	0.2500	0	0	0	NS	NS	NS	0
ICISCLEANERS	0.2500	0	0	0	NS	NS	NS	0
MRDS	0.2500	0	0	0	NS	NS	NS	0
MSHA	0.2500	0	0	0	NS	NS	NS	0
BF	**0.5000**	**0**	**0**	**0**	**0**	**NS**	**NS**	**0**
DNPL	**0.5000**	**0**	**0**	**0**	**0**	**NS**	**NS**	**0**
NLRRCRAT	**0.5000**	**0**	**0**	**0**	**0**	**NS**	**NS**	**0**
ODI	0.5000	0	0	0	0	NS	NS	0
RCRAT	**0.5000**	**0**	**0**	**0**	**0**	**NS**	**NS**	**0**

Database Radius Summary

Acronym	Search Radius (miles)	TP/AP (0 - 0.02)	1/8 Mile (> TP/AP)	1/4 Mile (> 1/8)	1/2 Mile (> 1/4)	1 Mile (> 1/2)	> 1 Mile	Total
SEMS	**0.5000**	**0**	**0**	**0**	**0**	**NS**	**NS**	**0**
SEMSARCH	**0.5000**	**0**	**0**	**0**	**0**	**NS**	**NS**	**0**
SMCRA	0.5000	0	0	0	0	NS	NS	0
USUMTRCA	0.5000	0	0	0	0	NS	NS	0
DOD	1.0000	0	0	0	0	0	NS	0
FUDS	1.0000	0	0	0	0	0	NS	0
FUSRAP	1.0000	0	0	0	0	0	NS	0
NLRRCRAC	**1.0000**	**0**	**0**	**0**	**0**	**0**	**NS**	**0**
NMS	1.0000	0	0	0	0	0	NS	0
NPL	**1.0000**	**0**	**0**	**0**	**0**	**0**	**NS**	**0**
PNPL	**1.0000**	**0**	**0**	**0**	**0**	**0**	**NS**	**0**
RCRAC	**1.0000**	**0**	**0**	**0**	**0**	**0**	**NS**	**0**
RCRASUBC	**1.0000**	**0**	**0**	**0**	**0**	**0**	**NS**	**0**
RODS	1.0000	0	0	0	0	0	NS	0
SUB-TOTAL		1	2	0	0	0	0	3

Database Radius Summary

STATE (TX) LISTING

*Standard environmental records are displayed in **bold**.*

Acronym	Search Radius (miles)	TP/AP (0 - 0.02)	1/8 Mile (> TP/AP)	1/4 Mile (> 1/8)	1/2 Mile (> 1/4)	1 Mile (> 1/2)	> 1 Mile	Total
GWCC	0.0200	0	NS	NS	NS	NS	NS	0
HISTGWCC	0.0200	0	NS	NS	NS	NS	NS	0
LANDAPP	0.0200	0	NS	NS	NS	NS	NS	0
LIENS	0.0200	0	NS	NS	NS	NS	NS	0
MSD	0.0200	0	NS	NS	NS	NS	NS	0
NOV	0.0200	0	NS	NS	NS	NS	NS	0
SIEC01	**0.0200**	**0**	**NS**	**NS**	**NS**	**NS**	**NS**	**0**
SPILLS	0.0200	0	NS	NS	NS	NS	NS	0
TIERII	0.0200	0	NS	NS	NS	NS	NS	0
DCR	0.2500	0	1	0	NS	NS	NS	1
IHW	0.2500	1	1	0	NS	NS	NS	2
PIHW	0.2500	0	0	0	NS	NS	NS	0
PST	**0.2500**	**0**	**4**	**0**	**NS**	**NS**	**NS**	**4**
APAR	0.5000	0	0	0	0	NS	NS	0
BSA	**0.5000**	**0**	**0**	**0**	**0**	**NS**	**NS**	**0**
CALF	**0.5000**	**0**	**0**	**0**	**0**	**NS**	**NS**	**0**
DCRPS	0.5000	0	0	0	0	NS	NS	0
IOP	0.5000	0	0	0	0	NS	NS	0
LPST	**0.5000**	**0**	**1**	**0**	**0**	**NS**	**NS**	**1**
MSWLF	**0.5000**	**0**	**0**	**0**	**0**	**NS**	**NS**	**0**
RRCVCP	**0.5000**	**0**	**0**	**0**	**0**	**NS**	**NS**	**0**
RWS	0.5000	0	0	0	0	NS	NS	0
STCV	0.5000	0	0	0	0	NS	NS	0
VCP	**0.5000**	**0**	**0**	**0**	**0**	**NS**	**NS**	**0**
WMRF	0.5000	0	0	0	0	NS	NS	0
IHWCA	1.0000	0	0	0	0	2	NS	2
SF	**1.0000**	**0**	**0**	**0**	**0**	**0**	**NS**	**0**

SUB-TOTAL		1	7	0	0	2	0	10

Database Radius Summary

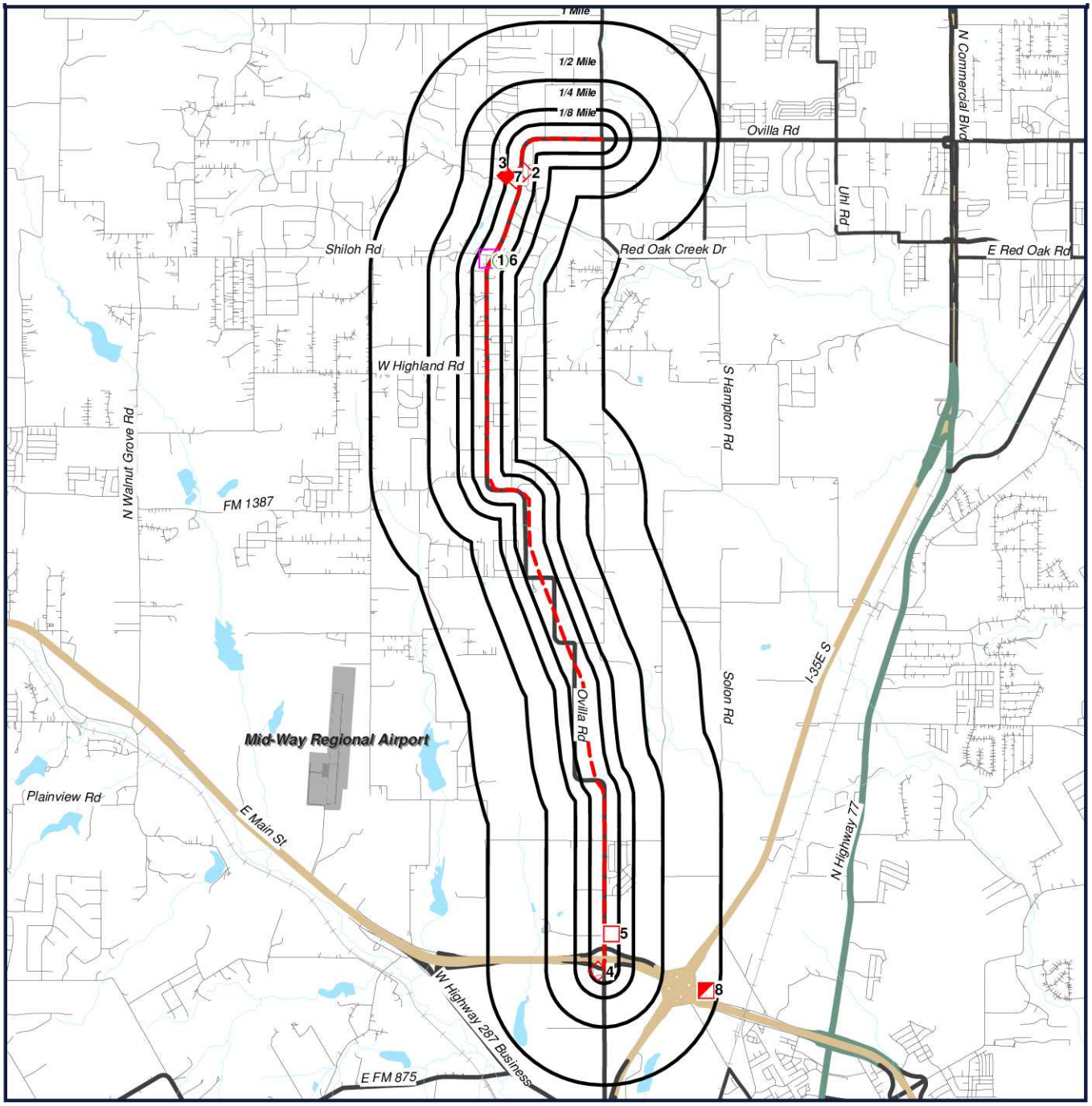
TRIBAL LISTING

*Standard environmental records are displayed in **bold**.*

Acronym	Search Radius (miles)	TP/AP (0 - 0.02)	1/8 Mile (> TP/AP)	1/4 Mile (> 1/8)	1/2 Mile (> 1/4)	1 Mile (> 1/2)	> 1 Mile	Total
USTR06	**0.2500**	**0**	**0**	**0**	**NS**	**NS**	**NS**	**0**
LUSTR06	**0.5000**	**0**	**0**	**0**	**0**	**NS**	**NS**	**0**
ODINDIAN	**0.5000**	**0**	**0**	**0**	**0**	**NS**	**NS**	**0**
INDIANRES	1.0000	0	0	0	0	0	NS	0
SUB-TOTAL		0	0	0	0	0	0	0
TOTAL		2	9	0	0	2	0	13

NOTES:
NS = NOT SEARCHED
TP/AP = TARGET PROPERTY/ADJACENT PROPERTY

Radius Map 1



Target Property (TP)
RCRANGR06
PST
RCRAGR06
IHW
LPST
IHWCA

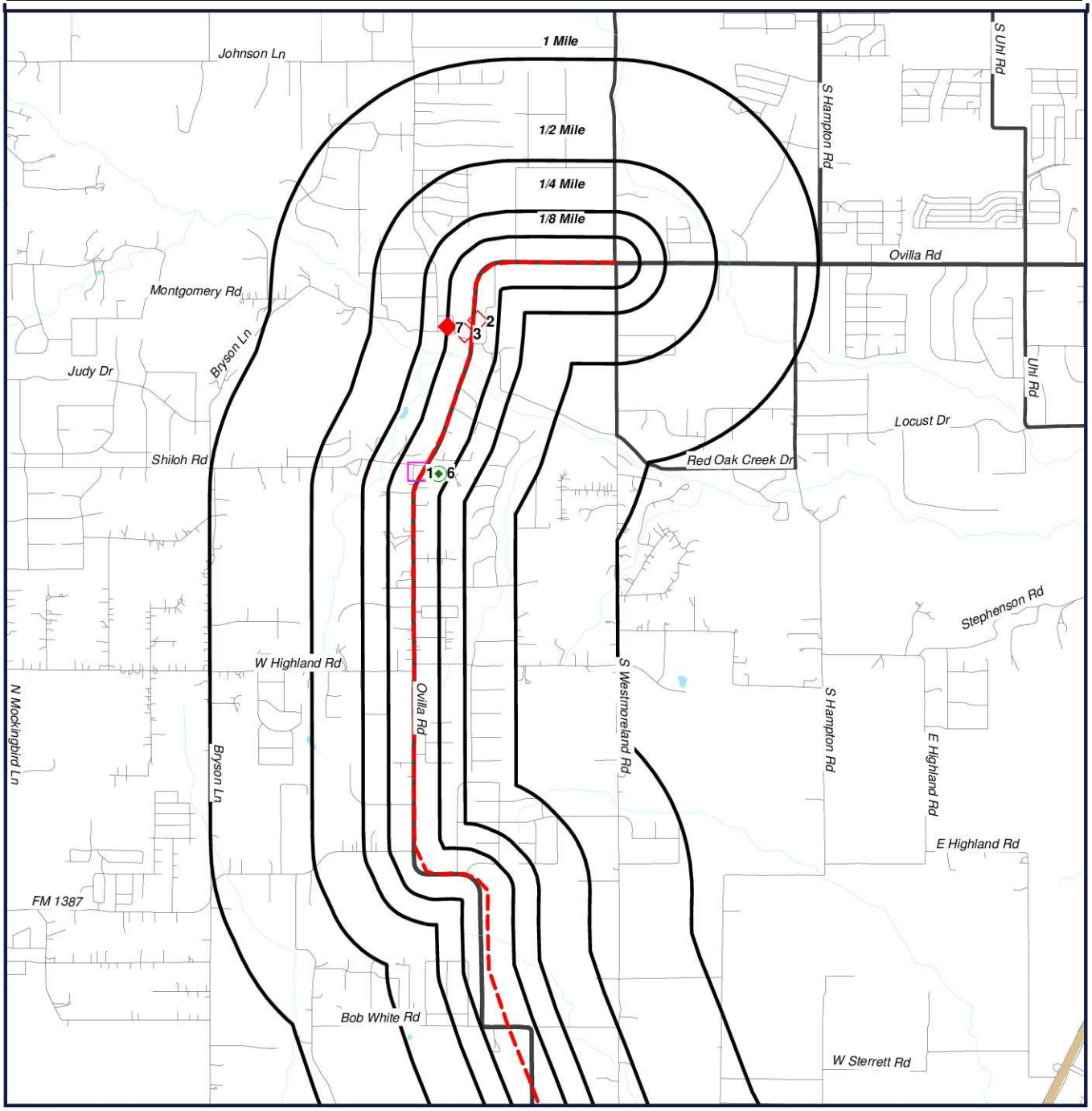
2640.01
Waxahachie, Texas
75167

N
W
E
S

0' 3500' 7000' 10500'
SCALE: 1" = 7000'

[Click here to access Satellite view]

Radius Map 2



Target Property (TP)
RCRANGR06
PST
RCRAGR06
IHW
LPST
IHWCA

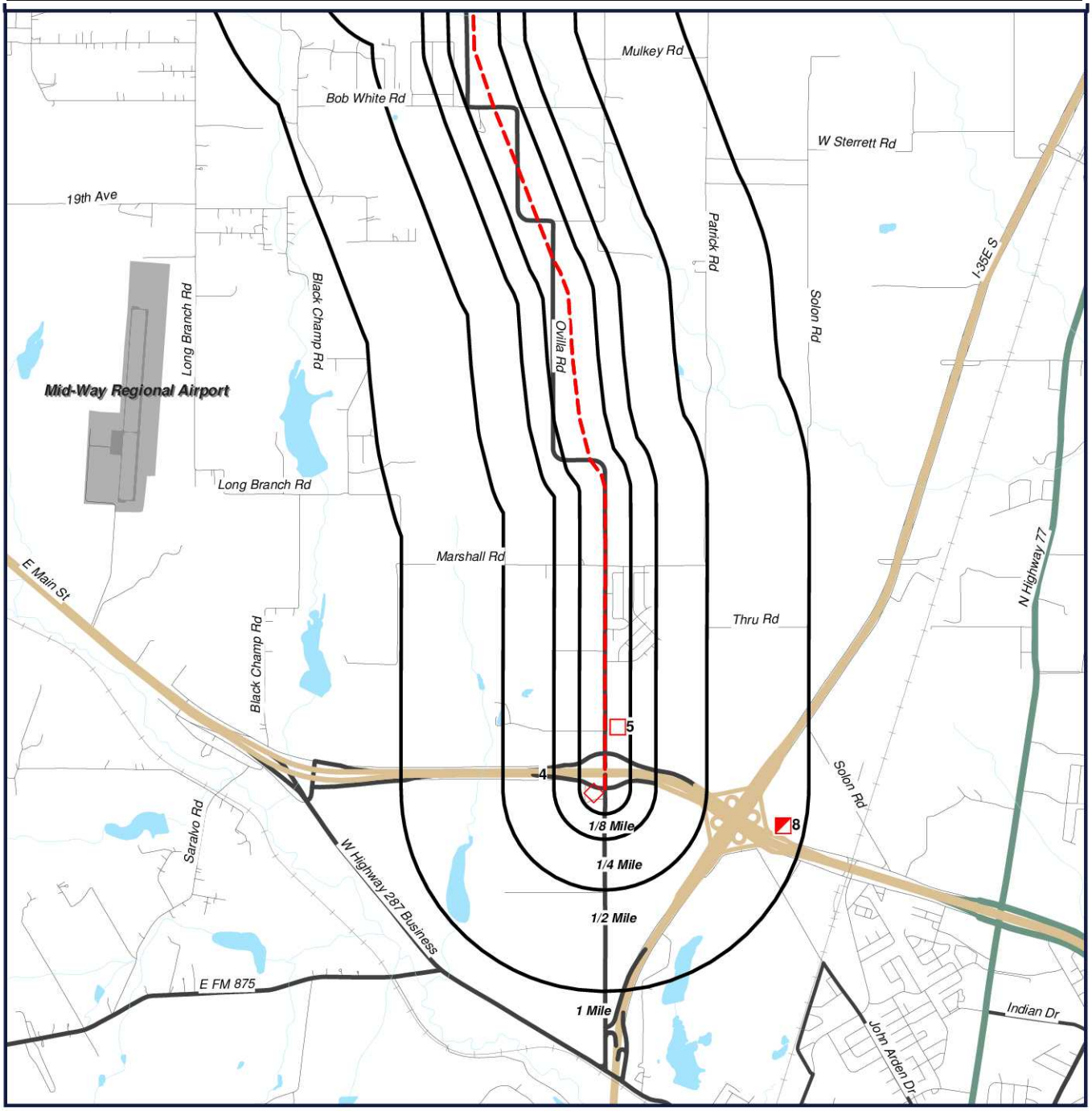
2640.01
Waxahachie, Texas
75167

N
W E
S

0' 2000' 4000' 6000'
SCALE: 1" = 4000'

[Click here to access Satellite view]

Radius1KA Map



Target Property (TP)
RCRANGR06
PST
RCRAGR06
IHW
LPST
IHWCA

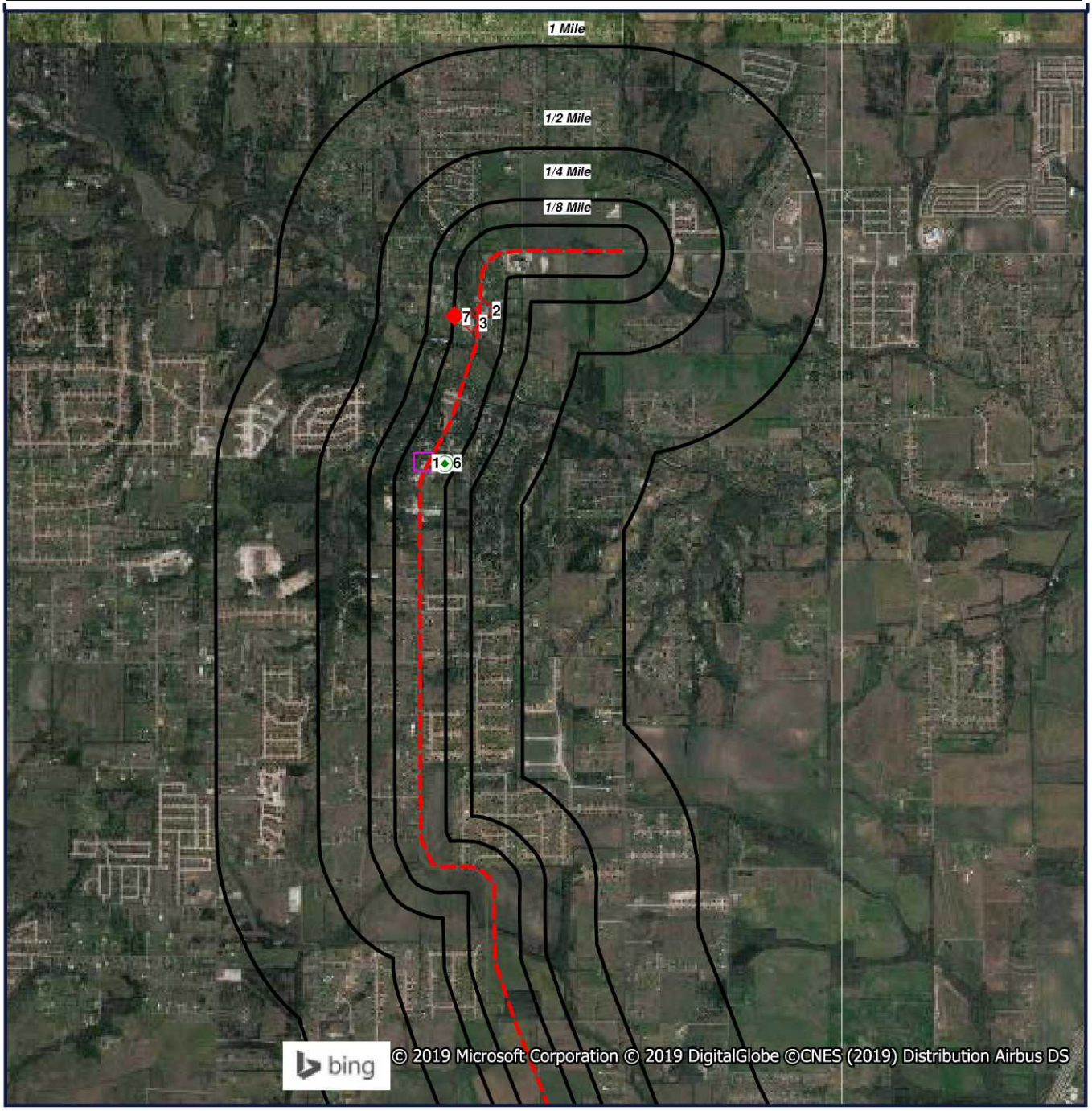
2640.01
Waxahachie, Texas
75167

N
W E
S

0' 2000' 4000' 6000'
SCALE: 1" = 4000'

[Click here to access Satellite view]

Ortho Map



Target Property (TP)
RCRANGR06
PST
RCRAGR06
IHW
LPST
IHWCA

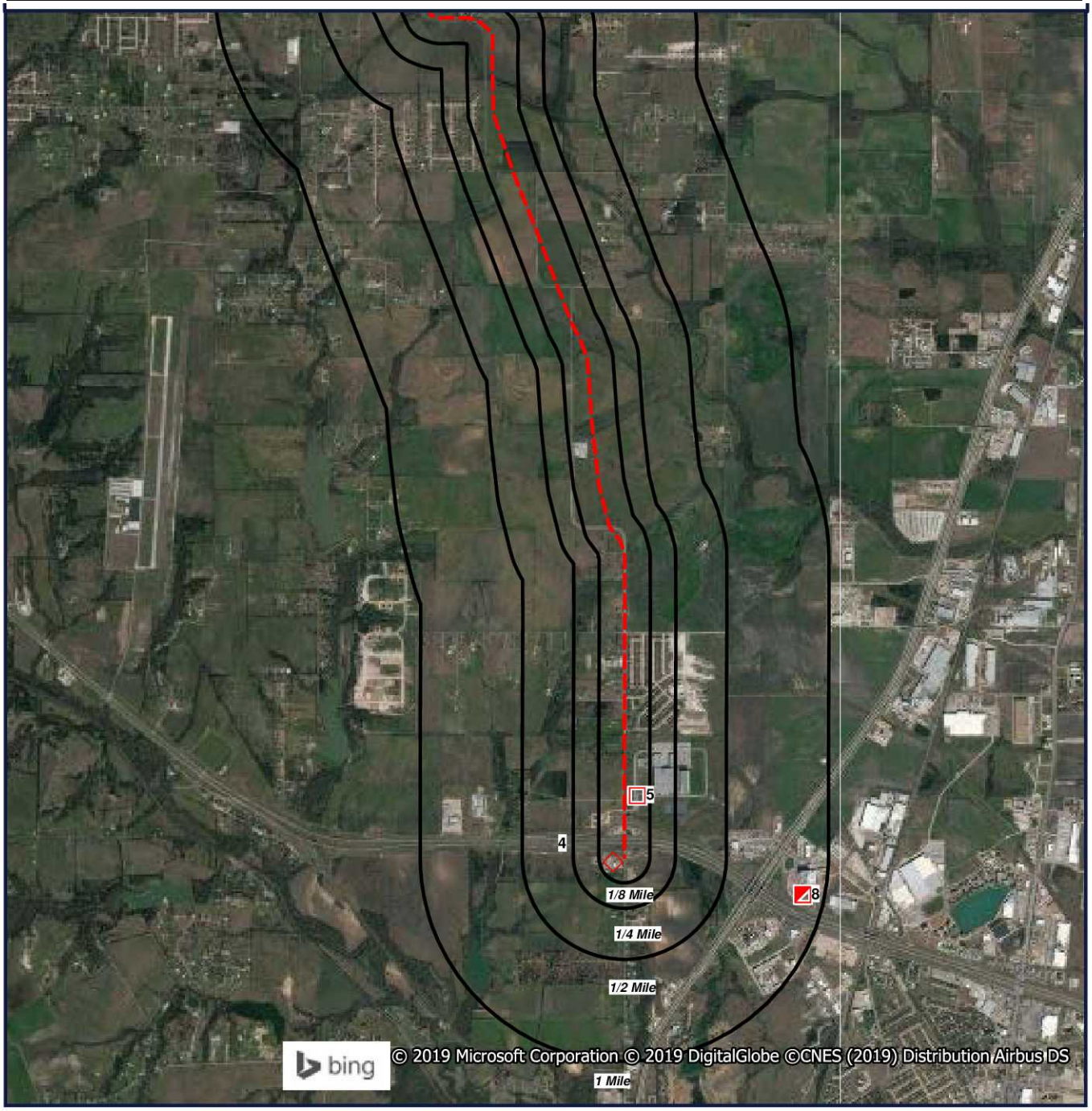
Quadrangle(s): Cedar Hill, Lancaster, Midlothian, Waxahachie
2640.01
Waxahachie, Texas
75167

N
W E
S

0' 2000' 4000' 6000'
SCALE: 1" = 4000'

[Click here to access Satellite view]

OrthoA Map



Target Property (TP)
RCRANGR06
PST
RCRAGR06
IHW
LPST
IHWCA

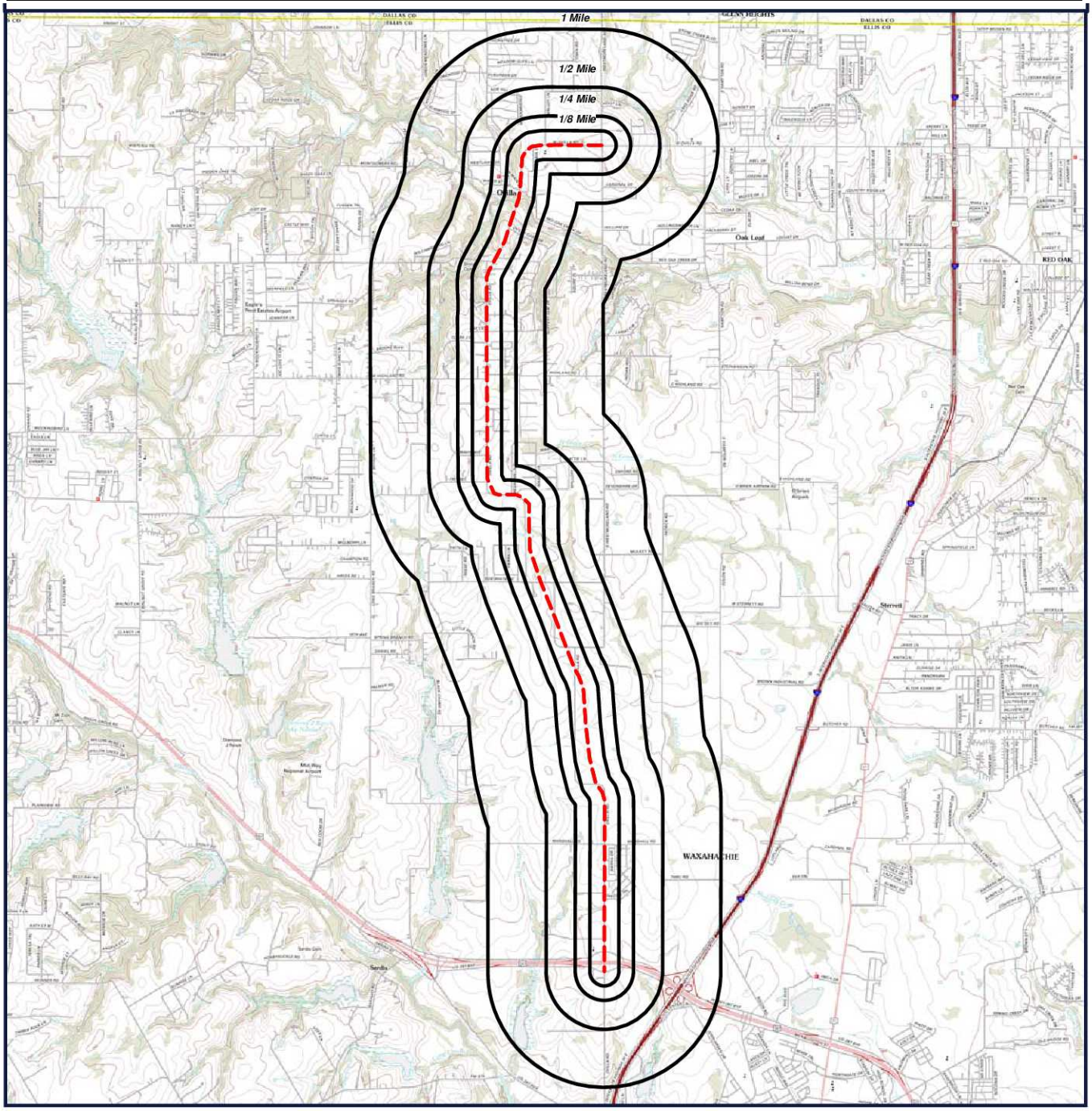
Quadrangle(s): Cedar Hill, Lancaster, Midlothian, Waxahachie
2640.01
Waxahachie, Texas
75167

N
W E
S

0' 2000' 4000' 6000'
SCALE: 1" = 4000'

[Click here to access Satellite view]

Topographic Map



Target Property (TP)

Quadrangle(s): Cedar Hill, Lancaster, Midlothian, Waxahachie
Source: USGS, 11/06/2012
2640.01
Waxahachie, Texas
75167

N
W E
S

0' 3500' 7000' 10500'
SCALE: 1" = 7000'

[Click here to access Satellite view]

Located Sites Summary

*NOTE: Standard environmental records are displayed in **bold**.*

Map ID#	Database Name	Site ID#	Elevation	Distance From Site	Site Name	Address	PAGE #
1	FRSTX	110005020379	681 ft.	0.017 mi. WNW (90 ft.)	MASTER CRAFT BODY SHOP	3602 OVILLA RD, OVILLA, TX 75154	18
1	IHW	82445	681 ft.	0.019 mi. WNW (100 ft.)	MASTER CRAFT BODY SHOP	3602 OVILLA RD, OVILLA, TX 75154	19
1	***RCRANGR06***	***TX0000831263***	***681 ft.***	***0.022 mi. WNW (116 ft.)***	***MASTER CRAFT BODY SHOP***	***3602 OVILLA RD, OVILLA, TX 75154***	***20***
2	***PST***	***57352***	***637 ft.***	***0.023 mi. E (121 ft.)***	***OVILLA MARKET***	***3321 OVILLA RD, OVILLA, TX 75154***	***22***
3	***PST***	***73130***	***621 ft.***	***0.037 mi. W (195 ft.)***	***FORMER GAS STATION***	***696 W MAIN ST, OVILLA, TX 75154***	***30***
4	***PST***	***86221***	***665 ft.***	***0.061 mi. WSW (322 ft.)***	***TIGER MART 79***	***625 FM 664, WAXAHACHIE, TX 75167***	***33***
5	***RCRAGR06***	***TXR000080278***	***658 ft.***	***0.065 mi. E (343 ft.)***	***WALGREEN DC 10***	***710 OVILLA RD, WAXAHACHIE, TX 75167***	***39***
6	IHW	78077	681 ft.	0.071 mi. ESE (375 ft.)	OVILLA INDUSTRIES	3601 OVILLA RD, OVILLA, TX 75154	41
7	DCR	RN106309693	638 ft.	0.111 mi. W (586 ft.)		711 W MAIN ST STE 100, OVILLA, TX 75154	42
7	***LPST***	***108805***	***638 ft.***	***0.123 mi. W (649 ft.)***	***CITY OF RED OAK PUBLIC WORKS***	***111 WATER ST, RED OAK, TX 75154***	***44***
7	***PST***	***56855***	***638 ft.***	***0.123 mi. W (649 ft.)***	***CITY OF RED OAK-PUBLIC WORKS***	***111 WATER ST, RED OAK, TX 75154***	***46***
8	IHWCA	33013	662 ft.	0.895 mi. E (4726 ft.)	SAINT GOBAIN CONTAINERS	2400 N IH 35 E, WAXAHACHIE, TX 75165	48
8	IHWCA	T3045	662 ft.	0.895 mi. E (4726 ft.)	BAYLOR MEDICAL CENTER AT WAXAHACHIE	EAST OF I-35 AND US-287 BYPASS, WAXAHACHIE, TX	49

MAP ID# 1

Distance from Property: 0.017 mi. (90 ft.) WNW
Elevation: 681 ft.

FACILITY INFORMATION

REGISTRY ID: **110005020379**

NAME: **MASTER CRAFT BODY SHOP**

LOCATION ADDRESS: **3602 OVILLA RD**
OVILLA, TX 75154

COUNTY: **ELLIS**

EPA REGION: **06**

FEDERAL FACILITY: **NOT REPORTED**

TRIBAL LAND: **NOT REPORTED**

ALTERNATIVE NAME/S:

MASTER CRAFT BODY SHOP

PROGRAM/S LISTED FOR THIS FACILITY

RCRAINFO - RESOURCE CONSERVATION AND RECOVERY ACT INFORMATION SYSTEM

STANDARD INDUSTRIAL CLASSIFICATION/S (SIC)

NO SIC DATA REPORTED

NORTH AMERICAN INDUSTRY CLASSIFICATION/S (NAICS)

336211 - MOTOR VEHICLE BODY MANUFACTURING.

Back to Report Summary

MAP ID# 1

Distance from Property: 0.019 mi. (100 ft.) WNW
Elevation: 681 ft.

FACILITY INFORMATION

REGISTRATION#: **82445** EPA ID: **TX0000831263**
TNRCC ID #: **98331**
NAME: **MASTER CRAFT BODY SHOP**
ADDRESS: **3602 OVILLA RD**
OVILLA, TX 75154
CONTACT: **ERIK CHOVANETZ**
PHONE: **214-6170507**
BUSINESS DESCRIPTION: **AUTOMOTIVE PAINT & BODY SHOP**
INDUSTRIAL WASTE PERMIT #: **NOT REPORTED**
MUNICIPAL WASTE PERMIT #: **NOT REPORTED**
SIC CODE: **NOT REPORTED**
WASTE GENERATOR: **YES**
WASTE RECEIVER: **NO**
WASTE TRANSPORTER: **NO**
TRANSFER FACILITY: **NO**
MAQUILADORA (MEXICAN FACILITY): **NO**
STATUS: **INACTIVE**
AMOUNT OF WASTE GENERATED: **CONDITIONALLY EXEMPT SMALL QUANTITY GENERATOR**
GENERATOR TYPE: **INDUSTRIAL**
THIS FACILITY IS A NOTIFIER
THIS FACILITY IS NOT A STEERS REPORTER - (STATE OF TEXAS ENVIRONMENTAL ELECTRONIC REPORTING SYSTEM)
THIS FACILITY IS NOT REQUIRED TO SUBMIT AN ANNUAL WASTE SUMMARY REPORT
THIS FACILITY IS NOT INVOLVED IN RECYCLING ACTIVITIES
LAST UPDATE TO TRACS (TCEQ REGULATORY ACTIVITIES AND COMPLIANCE SYSTEM): **06/03/2004**

OWNER INFORMATION

NAME: **MASTER CRAFT BODY SHOP**
ADDRESS: **3602 OVILLA RD**
RED OAK, TX 75154
PHONE: **1-214-6170507**

ACTIVITIES

ACTIVITY TYPE: **UNKNOWN**
ACTIVITY DESCRIPTION: **NOT REPORTED**

WASTE

WASTE ID: **89919**
WASTE CODE STATUS: **INACTIVE**
WASTE IS RADIOACTIVE: **NO**
WASTE IS TREATED OFF SITE: **YES**
GENERATOR'S DESCRIPTION OF WASTE: **WASTE PAINTS & SOLVENTS GENERATED FROM THE PAINTING OF AUTOMOBILES.**

Back to Report Summary

Resource Conservation & Recovery Act - Non-Generator (RCRANGR06)

MAP ID# 1

Distance from Property: 0.022 mi. (116 ft.) WNW
Elevation: 681 ft.

FACILITY INFORMATION

EPA ID#: **TX0000831263**
NAME: **MASTER CRAFT BODY SHOP**
ADDRESS: **3602 OVILLA RD**
OVILLA, TX 75154
CONTACT NAME: **ERIK CHOVANETZ**
CONTACT ADDRESS: **3602 OVILLA RD**
OVILLA TX 75154
CONTACT PHONE: **214-617-0507**
NON-NOTIFIER: **NOT A NON-NOTIFIER**
DATE RECEIVED BY AGENCY: **08/20/1999**
CERTIFICATION **- NO CERTIFICATION REPORTED -**
INDUSTRY CLASSIFICATION (NAICS)
336211 - MOTOR VEHICLE BODY MANUFACTURING

OWNER TYPE: **PRIVATE**
OWNER NAME: **MASTER CRAFT BODY SHOP**
OPERATOR TYPE: **PRIVATE**
OPERATOR NAME: **MASTER CRAFT BODY SHOP**

CURRENT ACTIVITY INFORMATION

GENERATOR STATUS: **NON-GENERATOR** LAST UPDATED DATE: **06/15/2004**
SUBJECT TO CORRECTIVE ACTION UNIVERSE: **NO**
TDSFs POTENTIALLY SUBJECT TO CORRECTIVE ACTION UNDER 3004 (u)/(v) UNIVERSE: **NO**
TDSFs ONLY SUBJECT TO CORRECTIVE ACTION UNDER DISCRETIONARY AUTHORITIES UNIVERSE: **NO**
NON TSDFs WHERE RCRA CORRECTIVE ACTION HAS BEEN IMPOSED UNIVERSE: **NO**
CORRECTIVE ACTION WORKLOAD UNIVERSE: **NO**

IMPORTER: **NO**
MIXED WASTE GENERATOR: **NO**
RECYCLER: **NO**
TRANSPORTER: **NO**
ONSITE BURNER EXEMPTION: **NO**
FURNACE EXEMPTION: **NO**
USED OIL REFINER: **NO**
USED OIL TRANSFER FACILITY: **NO**

UNDERGROUND INJECTION: **NO**
UNIVERSAL WASTE DESTINATION FACILITY: **NO**
TRANSFER FACILITY: **NO**
USED OIL FUEL BURNER: **NO**
USED OIL PROCESSOR: **NO**
USED OIL FUEL MARKETER TO BURNER: **NO**
SPECIFICATION USED OIL MARKETER: **NO**
USED OIL TRANSPORTER: **NO**

COMPLIANCE, MONITORING AND ENFORCEMENT INFORMATION

EVALUATIONS **- NO EVALUATIONS REPORTED -**
VIOLATIONS **- NO VIOLATIONS REPORTED -**
ENFORCEMENTS **- NO ENFORCEMENTS REPORTED -**

HAZARDOUS WASTE

D001 **IGNITABLE WASTE**

F003 **THE FOLLOWING SPENT NON-HALOGENATED SOLVENTS: XYLENE, ACETONE, ETHYL ACETATE, ETHYL BENZENE, ETHYL ETHER, METHYL ISOBUTYL KETONE, N-BUTYL ALCOHOL, CYCLOHEXANONE, AND METHANOL; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONLY THE ABOVE SPENT NONHALOGENATED SOLVENTS; AND ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONE OR MORE OF THE ABOVE NONHALOGENATED SOLVENTS, AND A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THOSE SOLVENTS LISTED IN F001, F002, F004, AND F005; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.**

F005 **THE FOLLOWING SPENT NONHALOGENATED SOLVENTS: TOLUENE, METHYL ETHYL KETONE,CARBON DISULFIDE, ISOBUTANOL, PYRIDINE,BENZENE, 2-ETHOXYETHANOL, AND 2-NITROPROPANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE NONHALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F001,F002, OR F004; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.**

UNIVERSAL WASTE **- NO UNIVERSAL WASTE REPORTED -**

CORRECTIVE ACTION AREA **- NO CORRECTIVE ACTION AREA INFORMATION REPORTED -**

CORRECTIVE ACTION EVENT

NO CORRECTIVE ACTION EVENT(S) REPORTED

Back to Report Summary

Petroleum Storage Tanks (PST)

MAP ID# 2

Distance from Property: 0.023 mi. (121 ft.) E
Elevation: 637 ft.

FACILITY INFORMATION

ID#: **57352**
NAME: **OVILLA MARKET**
ADDRESS: **3321 OVILLA RD**
OVILLA, TX 75154
COUNTY: **ELLIS**
REGION: **4**
TYPE: **RETAIL**
BEGIN DATE: **01/21/1991**
STATUS: **ACTIVE**
EXEMPT STATUS: **NO**
RECORDS OFF-SITE: **NO**
NUMBER OF ACTIVE UNDERGROUND TANKS: **4**
NUMBER OF ACTIVE ABOVEGROUND TANKS: **0**

CONTACT INFORMATION

NAME: **ADAM THIBIAN**
TITLE: **OWNER**
ORGANIZATION: **OVILLA MARKET**
MAIL ADDRESS: **MAILING ADDRESS NOT REPORTED**
CITY NOT REPORTED
PHONE: **(214) 5543224 0**

APPLICATION INFORMATION:

RECEIVED DATE ON EARLIEST REGISTRATION FORM: **08/15/2018**
SIGNATURE DATE ON EARLIEST REGISTRATION FORM: **08/10/2018**
SIGNATURE NAME & TITLE: **ADAM THIBIAN, OWNER**
ENFORCEMENT ACTION DATE: **NOT REPORTED**

OWNER

OWNER NUMBER: **CN604737023**
NAME: **OVILLA MARKET CORPORATION**
CONTACT ADDRESS: **PO BOX 2842**
RED OAK TX 75154
TYPE: **CORPORATION/COMPANY**
BEGIN DATE: **01/01/2015**
CONTACT ROLE: **OWNOPRCON**
CONTACT NAME: **ANES THIBIAN**
CONTACT TITLE: **NOT REPORTED**
ORGANIZATION: **OVILLA MARKET CORPORATION**
PHONE: **(214) 5543224 0**
FAX: **NOT REPORTED**
EMAIL: **THIBIAN@YAHOO.COM**
OWNER NUMBER: **CN600808349**
NAME: **ZEENA CORPORATION**
CONTACT ADDRESS: **PO BOX 2842**
RED OAK TX 75154
TYPE: **CORPORATION/COMPANY**
BEGIN DATE: **01/19/2001**
CONTACT ROLE: **OWNCON**
CONTACT NAME: **ADAM THIBIAN**
CONTACT TITLE: **VICE PRESIDENT**
ORGANIZATION: **ZEENA CORPORATION**
PHONE: **972-617-2300**

FAX: **NOT REPORTED**
EMAIL: **NOT REPORTED**

OPERATOR

OPERATOR NUMBER: **CN604737023**
NAME: **OVILLA MARKET CORPORATION**
CONTACT ADDRESS: **PO BOX 2842**
RED OAK TX 75154
TYPE: **CORPORATION/COMPANY**
BEGIN DATE: **01/01/2015**
CONTACT ROLE: **OWNOPRCON**
CONTACT NAME: **ANES THIBIAN**
CONTACT TITLE: **NOT REPORTED**
ORGANIZATION: **OVILLA MARKET CORPORATION**
PHONE: **(214) 5543224 0**
FAX: **NOT REPORTED**
EMAIL: **THIBIAN@YAHOO.COM**
OPERATOR NUMBER: **CN600808349**
NAME: **ZEENA CORPORATION**
CONTACT ADDRESS: **PO BOX 2842**
RED OAK TX 75154
TYPE: **CORPORATION/COMPANY**
BEGIN DATE: **01/19/2001**
CONTACT ROLE: **OPRCON**
CONTACT NAME: **ADAM THIBIAN**
CONTACT TITLE: **OWNER**
ORGANIZATION: **ZEENA CORPORATION**
PHONE: **(972) 6172300**
FAX: **NOT REPORTED**
EMAIL: **NOT REPORTED**

SELF-CERTIFICATION

SELF-CERTIFICATION ID: **308526**
SIGNATURE DATE: **08/10/2018**
SIGNATURE NAME & TITLE: **ADAM THIBIAN, OWNER**
FILING STATUS: **RENEWAL**
REGISTRATION FLAG: **YES**
SELF-CERTIFICATION ID: **292528**
SIGNATURE DATE: **09/01/2017**
SIGNATURE NAME & TITLE: **GINGER KELLEY, COMP SPECIALIST**
FILING STATUS: **RENEWAL**
REGISTRATION FLAG: **YES**
SELF-CERTIFICATION ID: **274922**
SIGNATURE DATE: **08/20/2016**
SIGNATURE NAME & TITLE: **ADAM THIBIAN, OWNER**
FILING STATUS: **RENEWAL**
REGISTRATION FLAG: **YES**
SELF-CERTIFICATION ID: **260259**
SIGNATURE DATE: **09/11/2015**

SIGNATURE NAME & TITLE: **GINGER KELLEY, COMP SPECIALIST**
FILING STATUS: **RENEWAL**
REGISTRATION FLAG: **YES**
SELF-CERTIFICATION ID: **248005**
SIGNATURE DATE: **01/03/2015**
SIGNATURE NAME & TITLE: **ANES THIBIAN, OWNER**
FILING STATUS: **INITIAL**
REGISTRATION FLAG: **YES**
SELF-CERTIFICATION ID: **230606**
SIGNATURE DATE: **01/12/2014**
SIGNATURE NAME & TITLE: **ADAM THIBIAN, OWNER**
FILING STATUS: **RENEWAL**
REGISTRATION FLAG: **YES**
SELF-CERTIFICATION ID: **142727**
SIGNATURE DATE: **12/28/2012**
SIGNATURE NAME & TITLE: **ADAM THIBIAN, OWNER**
FILING STATUS: **RENEWAL**
REGISTRATION FLAG: **YES**
SELF-CERTIFICATION ID: **142726**
SIGNATURE DATE: **12/20/2011**
SIGNATURE NAME & TITLE: **ADAM THIBIAN, OWNER**
FILING STATUS: **RENEWAL**
REGISTRATION FLAG: **YES**
SELF-CERTIFICATION ID: **142725**
SIGNATURE DATE: **12/10/2010**
SIGNATURE NAME & TITLE: **ADAM THIBIAN, OWNER**
FILING STATUS: **RENEWAL**
REGISTRATION FLAG: **YES**
SELF-CERTIFICATION ID: **142724**
SIGNATURE DATE: **12/20/2009**
SIGNATURE NAME & TITLE: **ADAM THIBIAN, OPER**
FILING STATUS: **RENEWAL**
REGISTRATION FLAG: **YES**
SELF-CERTIFICATION ID: **142723**
SIGNATURE DATE: **12/01/2008**
SIGNATURE NAME & TITLE: **ADAM THIBIAN, OWNER**
FILING STATUS: **RENEWAL**
REGISTRATION FLAG: **YES**
SELF-CERTIFICATION ID: **142722**
SIGNATURE DATE: **12/03/2007**
SIGNATURE NAME & TITLE: **ADAM THIBIAN, OPERATOR**
FILING STATUS: **RENEWAL**
REGISTRATION FLAG: **YES**
SELF-CERTIFICATION ID: **142721**
SIGNATURE DATE: **02/25/2006**
SIGNATURE NAME & TITLE: **ANES THIBIAN, OWNER**
FILING STATUS: **RENEWAL**

REGISTRATION FLAG: **YES**
SELF-CERTIFICATION ID: **142720**
SIGNATURE DATE: **12/20/2005**
SIGNATURE NAME & TITLE: **ADAM THIBIAN, OWNER**
FILING STATUS: **RENEWAL**
REGISTRATION FLAG: **YES**
SELF-CERTIFICATION ID: **142719**
SIGNATURE DATE: **12/15/2004**
SIGNATURE NAME & TITLE: **ANES THIBIAN, OWNER**
FILING STATUS: **RENEWAL**
REGISTRATION FLAG: **YES**
SELF-CERTIFICATION ID: **142718**
SIGNATURE DATE: **12/08/2003**
SIGNATURE NAME & TITLE: **ADAM THIBIAN, OWNER**
FILING STATUS: **RENEWAL**
REGISTRATION FLAG: **YES**
SELF-CERTIFICATION ID: **142717**
SIGNATURE DATE: **01/15/2003**
SIGNATURE NAME & TITLE: **ADAM THIBIAN, OPERATOR**
FILING STATUS: **RENEWAL**
REGISTRATION FLAG: **YES**
SELF-CERTIFICATION ID: **142716**
SIGNATURE DATE: **10/20/2002**
SIGNATURE NAME & TITLE: **AHMAD AL KHAWAM, NOT REPORTED**
FILING STATUS: **RENEWAL**
REGISTRATION FLAG: **YES**
SELF-CERTIFICATION ID: **142715**
SIGNATURE DATE: **01/19/2001**
SIGNATURE NAME & TITLE: **ANES THIBIAN, OWNER/MGR**
FILING STATUS: **INITIAL**
REGISTRATION FLAG: **YES**

CONSTRUCTION NOTIFICATION

NO CONSTRUCTION NOTIFICATION DATA REPORTED FOR THIS FACILITY

UNDERGROUND STORAGE TANK

TANK ID: **1**
NUMBER OF COMPARTMENTS: **1**
INSTALLATION DATE: **11/01/1987**
REGISTRATION DATE: **01/15/1991**
TANK CAPACITY (GAL): **10000**
EMPTY TANK: **NOT EMPTY**
STATUS: **IN USE**
STATUS BEGIN DATE: **11/01/1987**
INTERNAL PROTECTION DATE: **NOT REPORTED**
REGULATORY STATUS: **FULLY REGULATED**
TANK DESIGN SINGLE WALL: **YES**
TANK DESIGN DOUBLE WALL: **NO**
PIPE DESIGN SINGLE WALL: **YES**
PIPE DESIGN DOUBLE WALL: **NO**

TANK DETAILS

MATERIAL:
COMPOSITE
CORROSION PROTECTION:
CATHODIC PROTECTION - FACTORY INSTALLATION
EXTERNAL CONTAINMENT:

NOT REPORTED

TANK COMPLIANCE FLAG

CORROSION PROTECTION COMPLIANCE FLAG: **YES**

CORROSION PROTECTION VARIANCE: **NO VARIANCE**

COMPARTMENT DETAILS

UST COMPARTMENT ID: **147018**

TANK ID: **1**

COMPARTMENT LETTER: **A**

SUBSTANCES: **GASOLINE**

OTHER SUBSTANCES: **NOT REPORTED**

CAPACITY (GAL): **10000**

COMPARTMENT RELEASE DETECTION: **VAPOR MONITORING,GROUNDWATER MONITORING,AUTOMATIC TANK GAUGE TEST & INVENTORY CONTROL**

SPILL CONTAINMENT AND OVERFILL PREVENTION: **TIGHT-FILL FITTING CONTAINER/BUCKET/SUMP,FACTORY - BUILT SPILL CONTAINER/BUCKET/SUMP,DELIVERY SHUT-OFF VALVE,FLOW RESTRICTOR VALUE,ALARM (SET@<=90%) W3A OR 3B**

PIPING SYSTEMS

MATERIAL: **FRP**

CORROSION PROTECTION: **CATHODIC PROTECTION - FACTORY INSTALLATION,NONMETALLIC FLEXIBLE PIPING (NONCORRODIBLE)**

EXTERNAL CONTAINMENT: **NOT REPORTED**

CONNECTORS & VALVES:

NOT REPORTED

PIPING RELEASE DETECTION:

VAPOR MONITORING,GROUNDWATER MONITORING,MONTHLY PIPING TIGHTNESS TEST (@ 0.2 GPH)

PIPE COMPLIANCE FLAG

CORROSION PROTECTION COMPLIANCE FLAG: **YES**

CORROSION PROTECTION VARIANCE: **NO VARIANCE**

TANK ID: **2**

NUMBER OF COMPARTMENTS: **1**

INSTALLATION DATE: **11/01/1987**

REGISTRATION DATE: **01/15/1991**

TANK CAPACITY (GAL): **10000**

EMPTY TANK: **NOT EMPTY**

STATUS: **IN USE**

STATUS BEGIN DATE: **11/01/1987**

INTERNAL PROTECTION DATE: **NOT REPORTED**

REGULATORY STATUS: **FULLY REGULATED**

TANK DESIGN SINGLE WALL: **YES**

TANK DESIGN DOUBLE WALL: **NO**

PIPE DESIGN SINGLE WALL: **YES**

PIPE DESIGN DOUBLE WALL: **NO**

TANK DETAILS

MATERIAL:

COMPOSITE

CORROSION PROTECTION:

CATHODIC PROTECTION - FACTORY INSTALLATION

EXTERNAL CONTAINMENT:

NOT REPORTED

TANK COMPLIANCE FLAG

CORROSION PROTECTION COMPLIANCE FLAG: **YES**

CORROSION PROTECTION VARIANCE: **NO VARIANCE**

COMPARTMENT DETAILS

UST COMPARTMENT ID: **147017**

TANK ID: **2**
COMPARTMENT LETTER: **A**
SUBSTANCES: **GASOLINE**
OTHER SUBSTANCES: **NOT REPORTED**
CAPACITY (GAL): **10000**
COMPARTMENT RELEASE DETECTION: **VAPOR MONITORING,GROUNDWATER MONITORING,AUTOMATIC TANK GAUGE TEST & INVENTORY CONTROL**
SPILL CONTAINMENT AND OVERFILL PREVENTION: **TIGHT-FILL FITTING CONTAINER/BUCKET/SUMP,FACTORY - BUILT SPILL CONTAINER/BUCKET/SUMP,DELIVERY SHUT-OFF VALVE,FLOW RESTRICTOR VALUE,ALARM (SET@<=90%) W3A OR 3B**

PIPING SYSTEMS

MATERIAL: **FRP**
CORROSION PROTECTION: **CATHODIC PROTECTION - FACTORY INSTALLATION,NONMETALLIC FLEXIBLE PIPING (NONCORRODIBLE)**
EXTERNAL CONTAINMENT: **NOT REPORTED**
CONNECTORS & VALVES:
NOT REPORTED
PIPING RELEASE DETECTION:
VAPOR MONITORING,GROUNDWATER MONITORING,MONTHLY PIPING TIGHTNESS TEST (@ 0.2 GPH)
PIPE COMPLIANCE FLAG
CORROSION PROTECTION COMPLIANCE FLAG: **YES**
CORROSION PROTECTION VARIANCE: **NO VARIANCE**

TANK ID: **3**
NUMBER OF COMPARTMENTS: **1**
INSTALLATION DATE: **11/01/1987**
REGISTRATION DATE: **01/15/1991**
TANK CAPACITY (GAL): **10000**
EMPTY TANK: **NOT EMPTY**
STATUS: **IN USE**
STATUS BEGIN DATE: **11/01/1987**
INTERNAL PROTECTION DATE: **NOT REPORTED**
REGULATORY STATUS: **FULLY REGULATED**
TANK DESIGN SINGLE WALL: **YES**
TANK DESIGN DOUBLE WALL: **NO**
PIPE DESIGN SINGLE WALL: **YES**
PIPE DESIGN DOUBLE WALL: **NO**

TANK DETAILS

MATERIAL:
COMPOSITE
CORROSION PROTECTION:
CATHODIC PROTECTION - FACTORY INSTALLATION
EXTERNAL CONTAINMENT:
NOT REPORTED
TANK COMPLIANCE FLAG
CORROSION PROTECTION COMPLIANCE FLAG: **YES**
CORROSION PROTECTION VARIANCE: **NO VARIANCE**

COMPARTMENT DETAILS

UST COMPARTMENT ID: **147016**
TANK ID: **3**
COMPARTMENT LETTER: **A**
SUBSTANCES: **GASOLINE**
OTHER SUBSTANCES: **NOT REPORTED**
CAPACITY (GAL): **10000**
COMPARTMENT RELEASE DETECTION: **VAPOR MONITORING,GROUNDWATER MONITORING,AUTOMATIC TANK GAUGE**

TEST & INVENTORY CONTROL

SPILL CONTAINMENT AND OVERFILL PREVENTION: **TIGHT-FILL FITTING CONTAINER/BUCKET/SUMP,FACTORY - BUILT SPILL CONTAINER/BUCKET/SUMP,DELIVERY SHUT-OFF VALVE,FLOW RESTRICTOR VALUE,ALARM (SET@<=90%) W3A OR 3B**

PIPING SYSTEMS

MATERIAL: **FRP**

CORROSION PROTECTION: **CATHODIC PROTECTION - FACTORY INSTALLATION,NONMETALLIC FLEXIBLE PIPING (NONCORRODIBLE)**

EXTERNAL CONTAINMENT: **NOT REPORTED**

CONNECTORS & VALVES:

NOT REPORTED

PIPING RELEASE DETECTION:

VAPOR MONITORING,GROUNDWATER MONITORING,MONTHLY PIPING TIGHTNESS TEST (@ 0.2 GPH)

PIPE COMPLIANCE FLAG

CORROSION PROTECTION COMPLIANCE FLAG: **YES**

CORROSION PROTECTION VARIANCE: **NO VARIANCE**

TANK ID: **4**

NUMBER OF COMPARTMENTS: **1**

INSTALLATION DATE: **11/01/1987**

REGISTRATION DATE: **01/15/1991**

TANK CAPACITY (GAL): **8000**

EMPTY TANK: **NOT EMPTY**

STATUS: **IN USE**

STATUS BEGIN DATE: **11/01/1987**

INTERNAL PROTECTION DATE: **NOT REPORTED**

REGULATORY STATUS: **FULLY REGULATED**

TANK DESIGN SINGLE WALL: **YES**

TANK DESIGN DOUBLE WALL: **NO**

PIPE DESIGN SINGLE WALL: **YES**

PIPE DESIGN DOUBLE WALL: **NO**

TANK DETAILS

MATERIAL:

COMPOSITE

CORROSION PROTECTION:

CATHODIC PROTECTION - FACTORY INSTALLATION

EXTERNAL CONTAINMENT:

NOT REPORTED

TANK COMPLIANCE FLAG

CORROSION PROTECTION COMPLIANCE FLAG: **YES**

CORROSION PROTECTION VARIANCE: **NO VARIANCE**

COMPARTMENT DETAILS

UST COMPARTMENT ID: **147015**

TANK ID: **4**

COMPARTMENT LETTER: **A**

SUBSTANCES: **DIESEL**

OTHER SUBSTANCES: **NOT REPORTED**

CAPACITY (GAL): **8000**

COMPARTMENT RELEASE DETECTION: **VAPOR MONITORING,GROUNDWATER MONITORING,AUTOMATIC TANK GAUGE TEST & INVENTORY CONTROL**

SPILL CONTAINMENT AND OVERFILL PREVENTION: **TIGHT-FILL FITTING CONTAINER/BUCKET/SUMP,FACTORY - BUILT SPILL CONTAINER/BUCKET/SUMP,DELIVERY SHUT-OFF VALVE,FLOW RESTRICTOR VALUE,ALARM (SET@<=90%) W3A OR 3B**

PIPING SYSTEMS

MATERIAL: **FRP**

CORROSION PROTECTION: **CATHODIC PROTECTION - FACTORY INSTALLATION,NONMETALLIC FLEXIBLE PIPING**

(NONCORRODIBLE)

EXTERNAL CONTAINMENT: **NOT REPORTED**

CONNECTORS & VALVES:

NOT REPORTED

PIPING RELEASE DETECTION:

VAPOR MONITORING,GROUNDWATER MONITORING,MONTHLY PIPING TIGHTNESS TEST (@ 0.2 GPH)

PIPE COMPLIANCE FLAG

CORROSION PROTECTION COMPLIANCE FLAG: **YES**

CORROSION PROTECTION VARIANCE: **NO VARIANCE**

ABOVEGROUND STORAGE TANK INFORMATION

NO ABOVEGROUND STORAGE TANK DATA REPORTED FOR THIS FACILITY

Back to Report Summary

Petroleum Storage Tanks (PST)

MAP ID# 3

Distance from Property: 0.037 mi. (195 ft.) W
Elevation: 621 ft.

FACILITY INFORMATION

ID#: **73130**
NAME: **FORMER GAS STATION**
ADDRESS: **696 W MAIN ST**
OVILLA, TX 75154
COUNTY: **ELLIS**
REGION: **4**
TYPE: **RETAIL**
BEGIN DATE: **08/31/1987**
STATUS: **INACTIVE**
EXEMPT STATUS: **YES**
RECORDS OFF-SITE: **NO**
NUMBER OF ACTIVE UNDERGROUND TANKS: **0**
NUMBER OF ACTIVE ABOVEGROUND TANKS: **0**

APPLICATION INFORMATION:

RECEIVED DATE ON EARLIEST REGISTRATION FORM: **05/01/2000**
SIGNATURE DATE ON EARLIEST REGISTRATION FORM: **04/26/2000**
SIGNATURE NAME & TITLE: **DONNIE PICKARD, OWNER**
ENFORCEMENT ACTION DATE: **NOT REPORTED**

CONTACT INFORMATION

NAME: **DONNIE PICKARD**
TITLE: **NOT REPORTED**
ORGANIZATION: **FORMER GAS STATION**
MAIL ADDRESS: **MAILING ADDRESS NOT REPORTED**
CITY NOT REPORTED
PHONE: **(972) 6172498 0**

OWNER

OWNER NUMBER: **CN601188147**
NAME: **PICKARD DONNIE**
CONTACT ADDRESS: **OWNER ADDRESS NOT REPORTED**
CITY NOT REPORTED
TYPE: **ORGANIZATION**
BEGIN DATE: **08/31/1987**
CONTACT ROLE: **NOT REPORTED**
CONTACT NAME: **NOT REPORTED**
CONTACT TITLE: **NOT REPORTED**
ORGANIZATION: **NOT REPORTED**
PHONE: **NOT REPORTED**
FAX: **NOT REPORTED**
EMAIL: **NOT REPORTED**

OPERATOR

NO OPERATOR INFORMATION REPORTED

SELF-CERTIFICATION

-**NO SELF-CERTIFICATION INFORMATION REPORTED-**

CONSTRUCTION NOTIFICATION

NOTIFICATION CONSTRUCTION ID: **17978**
APPLICATION RECEIVED DATE: **04/10/2000**
SCHEDULE CONSTRUCTION DATE: **05/10/2000**
GENERAL DESCRIPTION OF PROPOSED CONSTRUCTION:
NOT REPORTED

UNDERGROUND STORAGE TANK

TANK ID: **1**
NUMBER OF COMPARTMENTS: **1**
INSTALLATION DATE: **08/31/1987**
REGISTRATION DATE: **05/01/2000**
TANK CAPACITY (GAL): **500**
EMPTY TANK: **NOT EMPTY**
STATUS: **REMOVED FROM GROUND**
STATUS BEGIN DATE: **04/26/2000**
INTERNAL PROTECTION DATE: **NOT REPORTED**
REGULATORY STATUS: **EXEMPT NON-USE SINCE 1974**
TANK DESIGN SINGLE WALL: **NO**
TANK DESIGN DOUBLE WALL: **NO**
PIPE DESIGN SINGLE WALL: **NO**
PIPE DESIGN DOUBLE WALL: **NO**

TANK DETAILS

MATERIAL:
NOT REPORTED
CORROSION PROTECTION:
NOT REPORTED
EXTERNAL CONTAINMENT:
NOT REPORTED
TANK COMPLIANCE FLAG
CORROSION PROTECTION COMPLIANCE FLAG: **NO**
CORROSION PROTECTION VARIANCE: **NO VARIANCE**

COMPARTMENT DETAILS

UST COMPARTMENT ID: **170048**
TANK ID: **1**
COMPARTMENT LETTER: **A**
SUBSTANCES: **GASOLINE**
OTHER SUBSTANCES: **NOT REPORTED**
CAPACITY (GAL): **500**
COMPARTMENT RELEASE DETECTION: **NOT REPORTED**
SPILL CONTAINMENT AND OVERFILL PREVENTION: **NOT REPORTED**

PIPING SYSTEMS

MATERIAL: **NOT REPORTED**
CORROSION PROTECTION: **NOT REPORTED**
EXTERNAL CONTAINMENT: **NOT REPORTED**
CONNECTORS & VALVES:
NOT REPORTED
PIPING RELEASE DETECTION:
NOT REPORTED
PIPE COMPLIANCE FLAG
CORROSION PROTECTION COMPLIANCE FLAG: **NO**
CORROSION PROTECTION VARIANCE: **NO VARIANCE**

TANK ID: **2**
NUMBER OF COMPARTMENTS: **1**
INSTALLATION DATE: **08/31/1987**
REGISTRATION DATE: **05/01/2000**
TANK CAPACITY (GAL): **1000**
EMPTY TANK: **NOT EMPTY**
STATUS: **REMOVED FROM GROUND**
STATUS BEGIN DATE: **04/26/2000**
INTERNAL PROTECTION DATE: **NOT REPORTED**
REGULATORY STATUS: **EXEMPT NON-USE SINCE 1974**
TANK DESIGN SINGLE WALL: **NO**
TANK DESIGN DOUBLE WALL: **NO**
PIPE DESIGN SINGLE WALL: **NO**
PIPE DESIGN DOUBLE WALL: **NO**

TANK DETAILS

MATERIAL:
NOT REPORTED
CORROSION PROTECTION:
NOT REPORTED
EXTERNAL CONTAINMENT:
NOT REPORTED
TANK COMPLIANCE FLAG
CORROSION PROTECTION COMPLIANCE FLAG: **NO**
CORROSION PROTECTION VARIANCE: **NO VARIANCE**

COMPARTMENT DETAILS

UST COMPARTMENT ID: **170049**
TANK ID: **2**
COMPARTMENT LETTER: **A**
SUBSTANCES: **USED OIL**
OTHER SUBSTANCES: **NOT REPORTED**
CAPACITY (GAL): **1000**
COMPARTMENT RELEASE DETECTION: **NOT REPORTED**
SPILL CONTAINMENT AND OVERFILL PREVENTION: **NOT REPORTED**

PIPING SYSTEMS

MATERIAL: **NOT REPORTED**
CORROSION PROTECTION: **NOT REPORTED**
EXTERNAL CONTAINMENT: **NOT REPORTED**
CONNECTORS & VALVES:
NOT REPORTED
PIPING RELEASE DETECTION:
NOT REPORTED
PIPE COMPLIANCE FLAG
CORROSION PROTECTION COMPLIANCE FLAG: **NO**
CORROSION PROTECTION VARIANCE: **NO VARIANCE**

ABOVEGROUND STORAGE TANK INFORMATION

NO ABOVEGROUND STORAGE TANK DATA REPORTED FOR THIS FACILITY

Back to Report Summary

MAP ID# 4

Distance from Property: 0.061 mi. (322 ft.) WSW
Elevation: 665 ft.

FACILITY INFORMATION

ID#: **86221**
NAME: **TIGER MART 79**
ADDRESS: **625 FM 664**
WAXAHACHIE, TX 75167
COUNTY: **ELLIS**
REGION: **4**
TYPE: **RETAIL**
BEGIN DATE: **09/13/2013**
STATUS: **ACTIVE**
EXEMPT STATUS: **NO**
RECORDS OFF-SITE: **YES**
NUMBER OF ACTIVE UNDERGROUND TANKS: **2**
NUMBER OF ACTIVE ABOVEGROUND TANKS: **NOT REPORTED**

APPLICATION INFORMATION:

RECEIVED DATE ON EARLIEST REGISTRATION FORM: **03/12/2018**
SIGNATURE DATE ON EARLIEST REGISTRATION FORM: **03/09/2018**
SIGNATURE NAME & TITLE: **GINGER KELLEY, COMP SPECIALIST**
ENFORCEMENT ACTION DATE: **NOT REPORTED**

CONTACT INFORMATION

NAME: **EDDIE RAMMAL**
TITLE: **NOT REPORTED**
ORGANIZATION: **TIGER MART 79**
MAIL ADDRESS: **MAILING ADDRESS NOT REPORTED**
CITY NOT REPORTED
PHONE: **(214) 8693625 0**

OWNER

OWNER NUMBER: **CN603148107**
NAME: **SALDENA PROPERTIES LP**
CONTACT ADDRESS: **OWNER ADDRESS NOT REPORTED**
CITY NOT REPORTED
TYPE: **CORPORATION/COMPANY**
BEGIN DATE: **09/13/2013**
CONTACT ROLE: **NOT REPORTED**
CONTACT NAME: **NOT REPORTED**
CONTACT TITLE: **NOT REPORTED**
ORGANIZATION: **NOT REPORTED**
PHONE: **NOT REPORTED**
FAX: **NOT REPORTED**
EMAIL: **NOT REPORTED**

OPERATOR

OPERATOR NUMBER: **CN604525253**
NAME: **OVILLA PETROLEUM INC**
CONTACT ADDRESS: **OPERATOR ADDRESS NOT REPORTED**
CITY NOT REPORTED
TYPE: **CORPORATION/COMPANY**
BEGIN DATE: **09/13/2013**
CONTACT ROLE: **NOT REPORTED**
CONTACT NAME: **NOT REPORTED**
CONTACT TITLE: **NOT REPORTED**

ORGANIZATION: **NOT REPORTED**
PHONE: **NOT REPORTED**
FAX: **NOT REPORTED**
EMAIL: **NOT REPORTED**
OPERATOR NUMBER: **CN603148107**
NAME: **SALDENA PROPERTIES LP**
CONTACT ADDRESS: **OPERATOR ADDRESS NOT REPORTED**
CITY NOT REPORTED
TYPE: **CORPORATION/COMPANY**
BEGIN DATE: **09/13/2013**
CONTACT ROLE: **NOT REPORTED**
CONTACT NAME: **NOT REPORTED**
CONTACT TITLE: **NOT REPORTED**
ORGANIZATION: **NOT REPORTED**
PHONE: **NOT REPORTED**
FAX: **NOT REPORTED**
EMAIL: **NOT REPORTED**

SELF-CERTIFICATION

SELF-CERTIFICATION ID: **300935**
SIGNATURE DATE: **03/09/2018**
SIGNATURE NAME & TITLE: **GINGER KELLEY, COMP SPECIALIST**
FILING STATUS: **RENEWAL**
REGISTRATION FLAG: **YES**
SELF-CERTIFICATION ID: **283786**
SIGNATURE DATE: **03/09/2017**
SIGNATURE NAME & TITLE: **GINGER KELLEY, COMP SPECIALIST**
FILING STATUS: **RENEWAL**
REGISTRATION FLAG: **YES**
SELF-CERTIFICATION ID: **266428**
SIGNATURE DATE: **02/22/2016**
SIGNATURE NAME & TITLE: **GINGER KELLEY, COMP SPECIALIST**
FILING STATUS: **RENEWAL**
REGISTRATION FLAG: **YES**
SELF-CERTIFICATION ID: **248369**
SIGNATURE DATE: **02/02/2015**
SIGNATURE NAME & TITLE: **GINGER KELLEY, COMP SPECIALIST**
FILING STATUS: **RENEWAL**
REGISTRATION FLAG: **YES**
SELF-CERTIFICATION ID: **232055**
SIGNATURE DATE: **02/12/2014**
SIGNATURE NAME & TITLE: **GINGER KELLEY, COMP SPEC**
FILING STATUS: **INITIAL**
REGISTRATION FLAG: **YES**

CONSTRUCTION NOTIFICATION

NOTIFICATION CONSTRUCTION ID: **24423**
APPLICATION RECEIVED DATE: **07/26/2013**
SCHEDULE CONSTRUCTION DATE: **08/26/2013**

GENERAL DESCRIPTION OF PROPOSED CONSTRUCTION:

INSTALL (1) -30000 GALLON 3 COMP & (1) - 20000 GALLON SINGLE COMP. MODERN SECONDARY CONTAINED TANKS W/(3) TANK SUMPS.

UNDERGROUND STORAGE TANK

TANK ID: **1**
NUMBER OF COMPARTMENTS: **3**
INSTALLATION DATE: **09/13/2013**
REGISTRATION DATE: **02/12/2014**
TANK CAPACITY (GAL): **30000**
EMPTY TANK: **NOT EMPTY**
STATUS: **IN USE**
STATUS BEGIN DATE: **09/13/2013**
INTERNAL PROTECTION DATE: **NOT REPORTED**
REGULATORY STATUS: **FULLY REGULATED**
TANK DESIGN SINGLE WALL: **NO**
TANK DESIGN DOUBLE WALL: **YES**
PIPE DESIGN SINGLE WALL: **NO**
PIPE DESIGN DOUBLE WALL: **YES**

TANK DETAILS

MATERIAL:

COMPOSITE

CORROSION PROTECTION:

COMPOSITE TANK (STEEL W/FRP EXTERNAL LAMINATE)

EXTERNAL CONTAINMENT:

NOT REPORTED

TANK COMPLIANCE FLAG

CORROSION PROTECTION COMPLIANCE FLAG: **YES**

CORROSION PROTECTION VARIANCE: **NO VARIANCE**

COMPARTMENT DETAILS

UST COMPARTMENT ID: **186802**

TANK ID: **1**

COMPARTMENT LETTER: **A**

SUBSTANCES: **GASOLINE**

OTHER SUBSTANCES: **NOT REPORTED**

CAPACITY (GAL): **18000**

COMPARTMENT RELEASE DETECTION: **MONITORING OF SECONDARY CONTAINMENT BARRIER,AUTOMATIC TANK GAUGE TEST & INVENTORY CONTROL,INTERSTITIAL MONITORING WITHIN SECONDARY WALL/JACKET**

SPILL CONTAINMENT AND OVERFILL PREVENTION: **TIGHT-FILL FITTING CONTAINER/BUCKET/SUMP,FACTORY - BUILT SPILL CONTAINER/BUCKET/SUMP,FLOW RESTRICTOR VALUE,ALARM (SET@<=90%) W3A OR 3B**

PIPING SYSTEMS

MATERIAL: **NONMETALLIC FLEXIBLE PIPING**

CORROSION PROTECTION: **NONMETALLIC FLEXIBLE PIPING (NONCORRODIBLE),ISOLATED IN OPEN AREA/2ND CONTAINMENT**

EXTERNAL CONTAINMENT: **NOT REPORTED**

CONNECTORS & VALVES:

NOT REPORTED

PIPING RELEASE DETECTION:

MONITORING OF SECONDARY CONTAINMENT BARRIER,INTERSTITIAL MONITORING WITHIN SECONDARY WALL/JACKET,ANNUAL PIPING TIGHTNESS TEST / ANNUAL ELECTRONIC MONITORING (@ 0.1 GPH),AUTO. LINE LEAK DETECTOR (3.0 GPH FOR PRESSURE PIPING)

PIPE COMPLIANCE FLAG

CORROSION PROTECTION COMPLIANCE FLAG: **YES**

CORROSION PROTECTION VARIANCE: **NO VARIANCE**

TANK ID: **1**
NUMBER OF COMPARTMENTS: **3**
INSTALLATION DATE: **09/13/2013**
REGISTRATION DATE: **02/12/2014**
TANK CAPACITY (GAL): **30000**
EMPTY TANK: **NOT EMPTY**
STATUS: **IN USE**
STATUS BEGIN DATE: **09/13/2013**
INTERNAL PROTECTION DATE: **NOT REPORTED**
REGULATORY STATUS: **FULLY REGULATED**
TANK DESIGN SINGLE WALL: **NO**
TANK DESIGN DOUBLE WALL: **YES**
PIPE DESIGN SINGLE WALL: **NO**
PIPE DESIGN DOUBLE WALL: **YES**

TANK DETAILS

MATERIAL:
COMPOSITE
CORROSION PROTECTION:
COMPOSITE TANK (STEEL W/FRP EXTERNAL LAMINATE)
EXTERNAL CONTAINMENT:
NOT REPORTED
TANK COMPLIANCE FLAG
CORROSION PROTECTION COMPLIANCE FLAG: **YES**
CORROSION PROTECTION VARIANCE: **NO VARIANCE**

COMPARTMENT DETAILS

UST COMPARTMENT ID: **186803**
TANK ID: **1**
COMPARTMENT LETTER: **B**
SUBSTANCES: **GASOLINE**
OTHER SUBSTANCES: **NOT REPORTED**
CAPACITY (GAL): **6000**
COMPARTMENT RELEASE DETECTION: **MONITORING OF SECONDARY CONTAINMENT BARRIER,AUTOMATIC TANK GAUGE TEST & INVENTORY CONTROL,INTERSTITIAL MONITORING WITHIN SECONDARY WALL/JACKET**
SPILL CONTAINMENT AND OVERFILL PREVENTION: **TIGHT-FILL FITTING CONTAINER/BUCKET/SUMP,FACTORY - BUILT SPILL CONTAINER/BUCKET/SUMP,FLOW RESTRICTOR VALUE,ALARM (SET@<=90%) W3A OR 3B**

PIPING SYSTEMS

MATERIAL: **NONMETALLIC FLEXIBLE PIPING**
CORROSION PROTECTION: **NONMETALLIC FLEXIBLE PIPING (NONCORRODIBLE),ISOLATED IN OPEN AREA/2ND CONTAINMENT**
EXTERNAL CONTAINMENT: **NOT REPORTED**
CONNECTORS & VALVES:
NOT REPORTED
PIPING RELEASE DETECTION:
MONITORING OF SECONDARY CONTAINMENT BARRIER,INTERSTITIAL MONITORING WITHIN SECONDARY WALL/JACKET,ANNUAL PIPING TIGHTNESS TEST / ANNUAL ELECTRONIC MONITORING (@ 0.1 GPH),AUTO. LINE LEAK DETECTOR (3.0 GPH FOR PRESSURE PIPING)
PIPE COMPLIANCE FLAG
CORROSION PROTECTION COMPLIANCE FLAG: **YES**
CORROSION PROTECTION VARIANCE: **NO VARIANCE**

TANK ID: **1**
NUMBER OF COMPARTMENTS: **3**
INSTALLATION DATE: **09/13/2013**
REGISTRATION DATE: **02/12/2014**
TANK CAPACITY (GAL): **30000**
EMPTY TANK: **NOT EMPTY**
STATUS: **IN USE**
STATUS BEGIN DATE: **09/13/2013**

INTERNAL PROTECTION DATE: **NOT REPORTED** REGULATORY STATUS: **FULLY REGULATED**
TANK DESIGN SINGLE WALL: **NO** TANK DESIGN DOUBLE WALL: **YES**
PIPE DESIGN SINGLE WALL: **NO** PIPE DESIGN DOUBLE WALL: **YES**

TANK DETAILS

MATERIAL:
COMPOSITE
CORROSION PROTECTION:
COMPOSITE TANK (STEEL W/FRP EXTERNAL LAMINATE)
EXTERNAL CONTAINMENT:
NOT REPORTED
TANK COMPLIANCE FLAG
CORROSION PROTECTION COMPLIANCE FLAG: **YES**
CORROSION PROTECTION VARIANCE: **NO VARIANCE**

COMPARTMENT DETAILS

UST COMPARTMENT ID: **186804**
TANK ID: **1**
COMPARTMENT LETTER: **C**
SUBSTANCES: **DIESEL**
OTHER SUBSTANCES: **NOT REPORTED**
CAPACITY (GAL): **6000**
COMPARTMENT RELEASE DETECTION: **MONITORING OF SECONDARY CONTAINMENT BARRIER,AUTOMATIC TANK GAUGE TEST & INVENTORY CONTROL,INTERSTITIAL MONITORING WITHIN SECONDARY WALL/JACKET**
SPILL CONTAINMENT AND OVERFILL PREVENTION: **TIGHT-FILL FITTING CONTAINER/BUCKET/SUMP,FACTORY - BUILT SPILL CONTAINER/BUCKET/SUMP,FLOW RESTRICTOR VALUE,ALARM (SET@<=90%) W3A OR 3B**

PIPING SYSTEMS

MATERIAL: **NONMETALLIC FLEXIBLE PIPING**
CORROSION PROTECTION: **NONMETALLIC FLEXIBLE PIPING (NONCORRODIBLE),ISOLATED IN OPEN AREA/2ND CONTAINMENT**
EXTERNAL CONTAINMENT: **NOT REPORTED**
CONNECTORS & VALVES:
NOT REPORTED
PIPING RELEASE DETECTION:
MONITORING OF SECONDARY CONTAINMENT BARRIER,INTERSTITIAL MONITORING WITHIN SECONDARY WALL/JACKET,ANNUAL PIPING TIGHTNESS TEST / ANNUAL ELECTRONIC MONITORING (@ 0.1 GPH),AUTO. LINE LEAK DETECTOR (3.0 GPH FOR PRESSURE PIPING)
PIPE COMPLIANCE FLAG
CORROSION PROTECTION COMPLIANCE FLAG: **YES**
CORROSION PROTECTION VARIANCE: **NO VARIANCE**

TANK ID: **2** NUMBER OF COMPARTMENTS: **1**
INSTALLATION DATE: **09/13/2013** REGISTRATION DATE: **02/12/2014**
TANK CAPACITY (GAL): **20000** EMPTY TANK: **NOT EMPTY**
STATUS: **IN USE** STATUS BEGIN DATE: **09/13/2013**
INTERNAL PROTECTION DATE: **NOT REPORTED** REGULATORY STATUS: **FULLY REGULATED**
TANK DESIGN SINGLE WALL: **NO** TANK DESIGN DOUBLE WALL: **YES**
PIPE DESIGN SINGLE WALL: **NO** PIPE DESIGN DOUBLE WALL: **YES**

TANK DETAILS

MATERIAL:

COMPOSITE

CORROSION PROTECTION:

COMPOSITE TANK (STEEL W/FRP EXTERNAL LAMINATE)

EXTERNAL CONTAINMENT:

NOT REPORTED

TANK COMPLIANCE FLAG

CORROSION PROTECTION COMPLIANCE FLAG: **YES**

CORROSION PROTECTION VARIANCE: **NO VARIANCE**

COMPARTMENT DETAILS

UST COMPARTMENT ID: **186805**

TANK ID: **2**

COMPARTMENT LETTER: **A**

SUBSTANCES: **DIESEL**

OTHER SUBSTANCES: **NOT REPORTED**

CAPACITY (GAL): **20000**

COMPARTMENT RELEASE DETECTION: **MONITORING OF SECONDARY CONTAINMENT BARRIER,AUTOMATIC TANK GAUGE TEST & INVENTORY CONTROL,INTERSTITIAL MONITORING WITHIN SECONDARY WALL/JACKET**

SPILL CONTAINMENT AND OVERFILL PREVENTION: **TIGHT-FILL FITTING CONTAINER/BUCKET/SUMP,FACTORY - BUILT SPILL CONTAINER/BUCKET/SUMP,FLOW RESTRICTOR VALUE,ALARM (SET@<=90%) W3A OR 3B**

PIPING SYSTEMS

MATERIAL: **NONMETALLIC FLEXIBLE PIPING**

CORROSION PROTECTION: **NONMETALLIC FLEXIBLE PIPING (NONCORRODIBLE),ISOLATED IN OPEN AREA/2ND CONTAINMENT**

EXTERNAL CONTAINMENT: **NOT REPORTED**

CONNECTORS & VALVES:

NOT REPORTED

PIPING RELEASE DETECTION:

MONITORING OF SECONDARY CONTAINMENT BARRIER,INTERSTITIAL MONITORING WITHIN SECONDARY WALL/JACKET,ANNUAL PIPING TIGHTNESS TEST / ANNUAL ELECTRONIC MONITORING (@ 0.1 GPH),AUTO. LINE LEAK DETECTOR (3.0 GPH FOR PRESSURE PIPING)

PIPE COMPLIANCE FLAG

CORROSION PROTECTION COMPLIANCE FLAG: **YES**

CORROSION PROTECTION VARIANCE: **NO VARIANCE**

ABOVEGROUND STORAGE TANK INFORMATION

NO ABOVEGROUND STORAGE TANK DATA REPORTED FOR THIS FACILITY

Back to Report Summary

Resource Conservation & Recovery Act - Generator (RCRAGR06)

MAP ID# 5

Distance from Property: 0.065 mi. (343 ft.) E
Elevation: 658 ft.

FACILITY INFORMATION

EPA ID#: **TXR000080278**
NAME: **WALGREEN DC 10**
ADDRESS: **710 OVILLA RD**
WAXAHACHIE, TX 75167-9644
CONTACT NAME: **TODD POLAROLO**
CONTACT ADDRESS: **710 OVILLA RD**
WAXAHACHIE TX 75167-9644
CONTACT PHONE: **321-217-1796**
NON-NOTIFIER: **NOT A NON-NOTIFIER**
DATE RECEIVED BY AGENCY: **02/26/2019**

OWNER TYPE: **PRIVATE**
OWNER NAME: **WALGREEN CO**
OPERATOR TYPE: **PRIVATE**
OPERATOR NAME: **WALGREEN CO**

CERTIFICATION

CERTIFICATION NAME:	CERTIFICATION TITLE:	CERTIFICATION SIGNED DATE:
TODD POLAROLO	**AREA DIRECTOR DISTRIBUTION CENTERS**	**02/26/2019**
TODD POLAROLO	**AREA DIRECTOR DISTRIBUTION CENTERS**	**03/26/2018**
TODD POLAROLO	**AUTHORIZED COMPANY AGENT**	**03/01/2018**
JOE YOUSEF	**AUTHORIZED COMPANY AGENT**	**03/01/2014**
JOE YOUSEF	**MAINTENANCE MANAGER**	**02/26/2014**
JOE YOUSEF	**MAINTENANCE MANAGER**	**08/15/2013**
DANIEL P FITZGERALD	**UNKNOWN**	**02/24/2011**

INDUSTRY CLASSIFICATION (NAICS)

42421 - DRUGS AND DRUGGISTS' SUNDRIES MERCHANT WHOLESALERS
49311 - GENERAL WAREHOUSING AND STORAGE
493110 - GENERAL WAREHOUSING AND STORAGE

CURRENT ACTIVITY INFORMATION

GENERATOR STATUS: **SMALL QUANTITY GENERATOR** LAST UPDATED DATE: **03/11/2019**
SUBJECT TO CORRECTIVE ACTION UNIVERSE: **NO**
TDSFs POTENTIALLY SUBJECT TO CORRECTIVE ACTION UNDER 3004 (u)/(v) UNIVERSE: **NO**
TDSFs ONLY SUBJECT TO CORRECTIVE ACTION UNDER DISCRETIONARY AUTHORITIES UNIVERSE: **NO**
NON TSDFs WHERE RCRA CORRECTIVE ACTION HAS BEEN IMPOSED UNIVERSE: **NO**
CORRECTIVE ACTION WORKLOAD UNIVERSE: **NO**

IMPORTER: **NO**
MIXED WASTE GENERATOR: **NO**
RECYCLER: **NO**
TRANSPORTER: **NO**
ONSITE BURNER EXEMPTION: **NO**
FURNACE EXEMPTION: **NO**
USED OIL REFINER: **NO**
USED OIL TRANSFER FACILITY: **NO**

UNDERGROUND INJECTION: **NO**
UNIVERSAL WASTE DESTINATION FACILITY: **NO**
TRANSFER FACILITY: **NO**
USED OIL FUEL BURNER: **NO**
USED OIL PROCESSOR: **NO**
USED OIL FUEL MARKETER TO BURNER: **NO**
SPECIFICATION USED OIL MARKETER: **NO**
USED OIL TRANSPORTER: **NO**

COMPLIANCE, MONITORING AND ENFORCEMENT INFORMATION

EVALUATIONS **- NO EVALUATIONS REPORTED -**

VIOLATIONS **- NO VIOLATIONS REPORTED -**

ENFORCEMENTS **- NO ENFORCEMENTS REPORTED -**

HAZARDOUS WASTE

D001	**IGNITABLE WASTE**
D002	**CORROSIVE WASTE**
D007	**CHROMIUM**
D009	**MERCURY**
D010	**SELENIUM**
D024	**M-CRESOL**
P001	**2H-1-BENZOPYRAN-2-ONE, 4-HYDROXY-3-(3-OXO-1-PHENYLBUTYL)-, & SALTS, WHEN PRESENT AT CONCENTRATIONS GREATER THAN 0.3%**
P001	**WARFARIN, & SALTS, WHEN PRESENT AT CONCENTRATIONS GREATER THAN 0.3%**
P075	**NICOTINE, & SALTS**
P075	**PYRIDINE, 3-(1-METHYL-2-PYRROLIDINYL)-,(S)-, & SALTS**
U002	**2-PROPANONE (I)**
U002	**ACETONE (I)**

UNIVERSAL WASTE **- NO UNIVERSAL WASTE REPORTED -**

CORRECTIVE ACTION AREA **- NO CORRECTIVE ACTION AREA INFORMATION REPORTED -**

CORRECTIVE ACTION EVENT

NO CORRECTIVE ACTION EVENT(S) REPORTED

Back to Report Summary

MAP ID# 6

Distance from Property: 0.071 mi. (375 ft.) ESE
Elevation: 681 ft.

FACILITY INFORMATION

REGISTRATION#: **78077** EPA ID: **NOT REPORTED**
TNRCC ID #: **32300**
NAME: **OVILLA INDUSTRIES**
ADDRESS: **3601 OVILLA RD**
OVILLA, TX 75154
CONTACT: **AUSTIN GUEST**
PHONE: **214-6178735**
BUSINESS DESCRIPTION: **NOT REPORTED**
INDUSTRIAL WASTE PERMIT #: **NOT REPORTED**
MUNICIPAL WASTE PERMIT #: **NOT REPORTED**
SIC CODE: **NOT REPORTED**
WASTE GENERATOR: **YES**
WASTE RECEIVER: **NO**
WASTE TRANSPORTER: **NO**
TRANSFER FACILITY: **NO**
MAQUILADORA (MEXICAN FACILITY): **NO**
STATUS: **INACTIVE**
AMOUNT OF WASTE GENERATED: **SMALL QUANTITY GENERATOR**
GENERATOR TYPE: **NON-INDUSTRIAL AND/OR MUNICIPAL**
THIS FACILITY IS A NOTIFIER
THIS FACILITY IS NOT A STEERS REPORTER - (STATE OF TEXAS ENVIRONMENTAL ELECTRONIC REPORTING SYSTEM)
THIS FACILITY IS NOT REQUIRED TO SUBMIT AN ANNUAL WASTE SUMMARY REPORT
THIS FACILITY IS NOT INVOLVED IN RECYCLING ACTIVITIES
LAST UPDATE TO TRACS (TCEQ REGULATORY ACTIVITIES AND COMPLIANCE SYSTEM): **05/24/2004**

OWNER INFORMATION

NAME: **OVILLA INDUSTRIES**
ADDRESS: **3601 OVILLA RD**
RED OAK, TX 75154
PHONE: **1-214-6178735**

ACTIVITIES

ACTIVITY TYPE: **UNKNOWN**
ACTIVITY DESCRIPTION: **NOT REPORTED**

WASTE

WASTE ID: **61712**
WASTE CODE STATUS: **INACTIVE**
WASTE IS RADIOACTIVE: **NO**
WASTE IS TREATED OFF SITE: **YES**
GENERATOR'S DESCRIPTION OF WASTE: **NOT REPORTED**

WASTE ID: **61713**
WASTE CODE STATUS: **INACTIVE**
WASTE IS RADIOACTIVE: **NO**
WASTE IS TREATED OFF SITE: **YES**
GENERATOR'S DESCRIPTION OF WASTE: **NOT REPORTED**

Back to Report Summary

MAP ID# 7

Distance from Property: 0.111 mi. (586 ft.) W
Elevation: 638 ft.

FACILITY INFORMATION

REGISTRATION #: **RN106309693**
CUSTOMER #: **CN604015222**
NAME: **NOT REPORTED**
ADDRESS: **711 W MAIN ST STE 100**
OVILLA, TX 75154
ACCOUNT NUMBER: **24006487**
PRINCIPAL NAME: **JIMMIE & JAMES ENTERPRISES INC**
PHONE NUMBER: **972-7048011**
SITE TYPE: **DROP STATION REGISTRATION**
FISCAL YEAR: **FY2018**
SOLVENT: **NOT REPORTED**
QUANTITY: **NOT REPORTED**

FISCAL YEAR: **FY2017**
SOLVENT: **NOT REPORTED**
QUANTITY: **NOT REPORTED**

FISCAL YEAR: **FY2017**
SOLVENT: **NOT REPORTED**
QUANTITY: **NOT REPORTED**

FISCAL YEAR: **FY2016**
SOLVENT: **NOT REPORTED**
QUANTITY: **NOT REPORTED**

FISCAL YEAR: **FY2016**
SOLVENT: **NOT REPORTED**
QUANTITY: **NOT REPORTED**

FISCAL YEAR: **FY2015**
SOLVENT: **NOT REPORTED**
QUANTITY: **NOT REPORTED**

FISCAL YEAR: **FY2014**
SOLVENT: **NOT REPORTED**
QUANTITY: **NOT REPORTED**

FISCAL YEAR: **FY2013**
SOLVENT: **NOT REPORTED**
QUANTITY: **NOT REPORTED**

FISCAL YEAR: **FY2012**
SOLVENT: **NOT REPORTED**

QUANTITY: **NOT REPORTED**

FISCAL YEAR: **FY2011**
SOLVENT: **NOT REPORTED**
QUANTITY: **NOT REPORTED**

FISCAL YEAR: **FY2010**
SOLVENT: **NOT REPORTED**
QUANTITY: **NOT REPORTED**

FISCAL YEAR: **FY2009**
SOLVENT: **NOT REPORTED**
QUANTITY: **NOT REPORTED**

FISCAL YEAR: **FY2008**
SOLVENT: **NOT REPORTED**
QUANTITY: **NOT REPORTED**

Back to Report Summary

MAP ID# 7

Distance from Property: 0.123 mi. (649 ft.) W
Elevation: 638 ft.

FACILITY INFORMATION

GEOSEARCH ID: **108805**
LPST ID: **108805**
FACILITY ID: **0056855**
NAME: **CITY OF RED OAK PUBLIC WORKS**
ADDRESS: **111 WATER ST**
RED OAK, TX 75154

LEAKING TANK DETAILS

LPST ID: **108805**
NAME: **CITY OF RED OAK PUBLIC WORKS**
FACILITY LOCATION: **NOT REPORTED**
PRIORITY CODE: **4.2 - NO GW IMPACT NO APPARENT THREATS OR IMPACTS TO RECEPTORS**
CORRECTIVE ACTION STATUS CODE: **6A - FINAL CONCURRENCE ISSUED**
CORRECTIVE ACTION START DATE: **3/1/95**
REPORTED DATE: **02/10/1995**
ENTERED DATE: **03/01/1995**
CLOSURE DATE: **07/17/1996**

PRP INFORMATION

NAME: **CITY OF RED OAK**
ADDRESS: **ADDRESS NOT REPORTED**
RED OAK TX 75154
CONTACT: **NOT REPORTED**
PHONE: **NOT REPORTED**

UNDERGROUND STORAGE TANK

TANK ID: **1**
NUMBER OF COMPARTMENTS: **1**
INSTALLATION DATE: **08/31/1987**
REGISTRATION DATE: **11/20/1990**
TANK CAPACITY (GAL): **6000**
EMPTY TANK: **NOT EMPTY**
STATUS: **REMOVED FROM GROUND**
STATUS BEGIN DATE: **02/11/1991**
INTERNAL PROTECTION DATE: **NOT REPORTED**
REGULATORY STATUS: **FULLY REGULATED**
TANK DESIGN SINGLE WALL: **NO**
TANK DESIGN DOUBLE WALL: **NO**
PIPE DESIGN SINGLE WALL: **NO**
PIPE DESIGN DOUBLE WALL: **NO**

TANK DETAILS

MATERIAL:
NOT REPORTED
CORROSION PROTECTION:
NOT REPORTED
EXTERNAL CONTAINMENT:
NOT REPORTED

TANK COMPLIANCE FLAG

CORROSION PROTECTION COMPLIANCE FLAG: **NO**
CORROSION PROTECTION VARIANCE: **NO VARIANCE**

COMPARTMENT DETAILS

UST COMPARTMENT ID: **125974**

TANK ID: **1**

COMPARTMENT LETTER: **A**

SUBSTANCES: **EMPTY**

OTHER SUBSTANCES: **NOT REPORTED**

CAPACITY (GAL): **6000**

COMPARTMENT RELEASE DETECTION: **VAPOR MONITORING**

SPILL CONTAINMENT AND OVERFILL PREVENTION: **NOT REPORTED**

PIPING SYSTEMS

MATERIAL: **NOT REPORTED**

CORROSION PROTECTION: **NOT REPORTED**

EXTERNAL CONTAINMENT: **NOT REPORTED**

CONNECTORS & VALVES:

NOT REPORTED

CORROSION PROTECTION: **NOT REPORTED**

PIPE COMPLIANCE FLAG

CORROSION PROTECTION COMPLIANCE FLAG: **NO**

CORROSION PROTECTION VARIANCE: **NO VARIANCE**

ABOVEGROUND STORAGE TANK INFORMATION

NO ABOVEGROUND STORAGE TANK DATA REPORTED FOR THIS FACILITY

Back to Report Summary

MAP ID# 7

Distance from Property: 0.123 mi. (649 ft.) W
Elevation: 638 ft.

FACILITY INFORMATION

ID#: **56855**
NAME: **CITY OF RED OAK-PUBLIC WORKS**
ADDRESS: **111 WATER ST**
RED OAK, TX 75154
COUNTY: **ELLIS**
REGION: **4**
TYPE: **FLEET REFUELING**
BEGIN DATE: **11/28/1990**
STATUS: **INACTIVE**
EXEMPT STATUS: **NO**
RECORDS OFF-SITE: **NO**
NUMBER OF ACTIVE UNDERGROUND TANKS: **0**
NUMBER OF ACTIVE ABOVEGROUND TANKS: **0**

CONTACT INFORMATION

NAME: **NOT REPORTED**
TITLE: **NOT REPORTED**
ORGANIZATION: **CITY OF RED OAK-PUBLIC WORKS**
MAIL ADDRESS: **MAILING ADDRESS NOT REPORTED**
CITY NOT REPORTED
PHONE: **(214) 6173638 0**

APPLICATION INFORMATION:

RECEIVED DATE ON EARLIEST REGISTRATION FORM: **11/20/1990**
SIGNATURE DATE ON EARLIEST REGISTRATION FORM: **11/08/1990**
SIGNATURE NAME & TITLE: **CHARLEY SULLINS, ACTING CITY SECRE**
ENFORCEMENT ACTION DATE: **NOT REPORTED**

OWNER

OWNER NUMBER: **CN600437677**
NAME: **CITY OF RED OAK**
CONTACT ADDRESS: **OWNER ADDRESS NOT REPORTED**
CITY NOT REPORTED
TYPE: **CITY GOVERNMENT**
BEGIN DATE: **11/28/1990**
CONTACT ROLE: **NOT REPORTED**
CONTACT NAME: **NOT REPORTED**
CONTACT TITLE: **NOT REPORTED**
ORGANIZATION: **NOT REPORTED**
PHONE: **NOT REPORTED**
FAX: **NOT REPORTED**
EMAIL: **NOT REPORTED**

OPERATOR

NO OPERATOR INFORMATION REPORTED

SELF-CERTIFICATION

-**NO SELF-CERTIFICATION INFORMATION REPORTED-**

CONSTRUCTION NOTIFICATION

NO CONSTRUCTION NOTIFICATION DATA REPORTED FOR THIS FACILITY

UNDERGROUND STORAGE TANK

TANK ID: **1**
INSTALLATION DATE: **08/31/1987**
TANK CAPACITY (GAL): **6000**
NUMBER OF COMPARTMENTS: **1**
REGISTRATION DATE: **11/20/1990**
EMPTY TANK: **NOT EMPTY**

STATUS: **REMOVED FROM GROUND**
STATUS BEGIN DATE: **02/11/1991**
INTERNAL PROTECTION DATE: **NOT REPORTED**
REGULATORY STATUS: **FULLY REGULATED**
TANK DESIGN SINGLE WALL: **NO**
TANK DESIGN DOUBLE WALL: **NO**
PIPE DESIGN SINGLE WALL: **NO**
PIPE DESIGN DOUBLE WALL: **NO**

TANK DETAILS

MATERIAL:
NOT REPORTED
CORROSION PROTECTION:
NOT REPORTED
EXTERNAL CONTAINMENT:
NOT REPORTED
TANK COMPLIANCE FLAG
CORROSION PROTECTION COMPLIANCE FLAG: **NO**
CORROSION PROTECTION VARIANCE: **NO VARIANCE**

COMPARTMENT DETAILS

UST COMPARTMENT ID: **125974**
TANK ID: **1**
COMPARTMENT LETTER: **A**
SUBSTANCES: **EMPTY**
OTHER SUBSTANCES: **NOT REPORTED**
CAPACITY (GAL): **6000**
COMPARTMENT RELEASE DETECTION: **VAPOR MONITORING**
SPILL CONTAINMENT AND OVERFILL PREVENTION: **NOT REPORTED**

PIPING SYSTEMS

MATERIAL: **NOT REPORTED**
CORROSION PROTECTION: **NOT REPORTED**
EXTERNAL CONTAINMENT: **NOT REPORTED**
CONNECTORS & VALVES:
NOT REPORTED
PIPING RELEASE DETECTION:
NOT REPORTED
PIPE COMPLIANCE FLAG
CORROSION PROTECTION COMPLIANCE FLAG: **NO**
CORROSION PROTECTION VARIANCE: **NO VARIANCE**

ABOVEGROUND STORAGE TANK INFORMATION

NO ABOVEGROUND STORAGE TANK DATA REPORTED FOR THIS FACILITY

Back to Report Summary

MAP ID# 8

Distance from Property: 0.895 mi. (4,726 ft.) E
Elevation: 662 ft.

PROGRAM ID: **33013**
RN NUMBER: **RN100585918**
NAME: **SAINT GOBAIN CONTAINERS**
ADDRESS: **2400 N IH 35 E**
WAXAHACHIE, TX 75165
STATUS: **INACTIVE**
STATUS DATE: **6/6/13**
PHASE: **COMPLETED WORKLOAD**
LOCATION DESCRIPTION:
NORTHEAST CORNER OF INTERSECTION OF RT 287 & I-35

Back to Report Summary

MAP ID# 8

Distance from Property: 0.895 mi. (4,726 ft.) E
Elevation: 662 ft.

PROGRAM ID: **T3045**
RN NUMBER: **RN106509805**
NAME: **BAYLOR MEDICAL CENTER AT WAXAHACHIE**
ADDRESS: **EAST OF I-35 AND US-287 BYPASS**
WAXAHACHIE, TX
STATUS: **INACTIVE**
STATUS DATE: **1/25/13**
PHASE: **TRANSFERRED**
LOCATION DESCRIPTION:
EAST OF I-35 AND US-287 BYPASS

Back to Report Summary

Unlocated Sites Summary

This list contains sites that could not be mapped due to limited or incomplete address information.

Database Name	Site ID#	Site Name	Address	City/State/Zip/County
PST	55531	BULLDOG TRUCKING	HWY 287	MIDLOTHIAN 76065 Ellis

AIRSAFS Aerometric Information Retrieval System / Air Facility Subsystem

VERSION DATE: 10/20/14

The United States Environmental Protection Agency (EPA) modified the Aerometric Information Retrieval System (AIRS) to a database that exclusively tracks the compliance of stationary sources of air pollution with EPA regulations: the Air Facility Subsystem (AFS). Since this change in 2001, the management of the AIRS/AFS database was assigned to EPA's Office of Enforcement and Compliance Assurance.

BRS Biennial Reporting System

VERSION DATE: 12/31/15

The United States Environmental Protection Agency (EPA), in cooperation with the States, biennially collects information regarding the generation, management, and final disposition of hazardous wastes regulated under the Resource Conservation and Recovery Act of 1976 (RCRA), as amended. The Biennial Report captures detailed data on the generation of hazardous waste from large quantity generators and data on waste management practices from treatment, storage and disposal facilities. Currently, the EPA states that data collected between 1991 and 1997 was originally a part of the defunct Biennial Reporting System and is now incorporated into the RCRAInfo data system.

CDL Clandestine Drug Laboratory Locations

VERSION DATE: 10/05/17

The U.S. Department of Justice ("the Department") provides this information as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments. The Department does not establish, implement, enforce, or certify compliance with clean-up or remediation standards for contaminated sites; the public should contact a state or local health department or environmental protection agency for that information.

DOCKETS EPA Docket Data

VERSION DATE: 12/22/05

The United States Environmental Protection Agency Docket data lists Civil Case Defendants, filing dates as far back as 1971, laws broken including section, violations that occurred, pollutants involved, penalties assessed and superfund awards by facility and location. Please refer to ICIS database as source of current data.

EC Federal Engineering Institutional Control Sites

VERSION DATE: 08/03/15

This database includes site locations where Engineering and/or Institutional Controls have been identified as part

of a selected remedy for the site as defined by United States Environmental Protection Agency official remedy decision documents. A site listing does not indicate that the institutional and engineering controls are currently in place nor will be in place once the remedy is complete; it only indicates that the decision to include either of them in the remedy is documented as of the completed date of the document. Institutional controls are actions, such as legal controls, that help minimize the potential for human exposure to contamination by ensuring appropriate land or resource use. Engineering controls include caps, barriers, or other device engineering to prevent access, exposure, or continued migration of contamination. The data included in this report was extracted from the final CERCLIS dataset (CERCLIS was a Superfund data system that EPA decommissioned in 2014 following its deployment of the Superfund Enterprise Management System), which represents program progress as of the end of fiscal year 2013.

ECHOR06 Enforcement and Compliance History Information

VERSION DATE: 03/09/19

The U.S. Environmental Protection Agency's Enforcement and Compliance History Online (ECHO) database, provides compliance and enforcement information for facilities nationwide. This database includes facilities regulated as Clean Air Act stationary sources, Clean Water Act direct dischargers, Resource Conservation and Recovery Act hazardous waste handlers, Safe Drinking Water Act public water systems along with other data, such as Toxics Release Inventory releases.

ERNSTX Emergency Response Notification System

VERSION DATE: 04/07/19

This National Response Center database contains data on reported releases of oil, chemical, radiological, biological, and/or etiological discharges into the environment anywhere in the United States and its territories. The data comes from spill reports made to the U.S. Environmental Protection Agency, U.S. Coast Guard, the National Response Center and/or the U.S. Department of Transportation.

FRSTX Facility Registry System

VERSION DATE: 04/05/19

The United States Environmental Protection Agency's Office of Environmental Information (OEI) developed the Facility Registry System (FRS) as the centrally managed database that identifies facilities, sites or places subject to environmental regulations or of environmental interest. The Facility Registry System replaced the Facility Index System or FINDS database.

HMIRSR06 Hazardous Materials Incident Reporting System

VERSION DATE: 04/14/19

The HMIRS database contains unintentional hazardous materials release information reported to the U.S. Department of Transportation located in EPA Region 6. This region includes the following states: Arkansas, Louisiana, New Mexico, Oklahoma, and Texas.

ICIS Integrated Compliance Information System (formerly DOCKETS)

VERSION DATE: 03/09/19

ICIS is a case activity tracking and management system for civil, judicial, and administrative federal Environmental Protection Agency enforcement cases. ICIS contains information on federal administrative and federal judicial cases under the following environmental statutes: the Clean Air Act, the Clean Water Act, the Resource Conservation and Recovery Act, the Emergency Planning and Community Right-to-Know Act - Section 313, the Toxic Substances Control Act, the Federal Insecticide, Fungicide, and Rodenticide Act, the Comprehensive Environmental Response, Compensation, and Liability Act, the Safe Drinking Water Act, and the Marine Protection, Research, and Sanctuaries Act.

ICISNPDES Integrated Compliance Information System National Pollutant Discharge Elimination System

VERSION DATE: 07/09/17

Authorized by the Clean Water Act, the National Pollutant Discharge Elimination System (NPDES) permit program controls water pollution by regulating point sources that discharge pollutants into waters of the United States. This database is provided by the U.S. Environmental Protection Agency.

LUCIS Land Use Control Information System

VERSION DATE: 09/01/06

The LUCIS database is maintained by the U.S. Department of the Navy and contains information for former Base Realignment and Closure (BRAC) properties across the United States.

MLTS Material Licensing Tracking System

VERSION DATE: 06/29/17

MLTS is a list of approximately 8,100 sites which have or use radioactive materials subject to the United States Nuclear Regulatory Commission (NRC) licensing requirements. Disclaimer: Due to agency regulations and policies, this database contains applicant/licensee location information which may or may not be related to the physical location per MLTS site.

NPDESR06 National Pollutant Discharge Elimination System

VERSION DATE: 04/01/07

Authorized by the Clean Water Act, the National Pollutant Discharge Elimination System (NPDES) permit program controls water pollution by regulating point sources that discharge pollutants into waters of the United States. The NPDES database was collected from the U.S. Environmental Protection Agency (EPA) from December 2002 through April 2007. Refer to the PCS and/or ICIS-NPDES database as source of current data. This database includes permitted facilities located in EPA Region 6. This region includes the following states: Arkansas, Louisiana, New Mexico, Oklahoma, and Texas.

PADS PCB Activity Database System

VERSION DATE: 09/14/18

PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the U.S. Environmental Protection Agency of such activities.

PCSR06 Permit Compliance System

VERSION DATE: 08/01/12

The Permit Compliance System is used in tracking enforcement status and permit compliance of facilities controlled by the National Pollutant Discharge Elimination System (NPDES) under the Clean Water Act and is maintained by the United States Environmental Protection Agency's Office of Compliance. PCS is designed to support the NPDES program at the state, regional, and national levels. This database includes permitted facilities located in EPA Region 6. This region includes the following states: Arkansas, Louisiana, New Mexico, Oklahoma, and Texas. PCS has been modernized, and no longer exists. National Pollutant Discharge Elimination System (ICIS-NPDES) data can now be found in Integrated Compliance Information System (ICIS).

RCRASC RCRA Sites with Controls

VERSION DATE: 02/22/19

The Resource Conservation and Recovery Act (RCRA) gives the U.S. Environmental Protection Agency (EPA) the authority to control hazardous waste from the "cradle-to-grave." This includes the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA also set forth a framework for the management of non-hazardous solid wastes. The 1986 amendments to RCRA enabled EPA to address environmental problems that could result from underground tanks storing petroleum and other hazardous substances. This listing refers to facilities with institutional controls in place.

SEMSLIENS SEMS Lien on Property

VERSION DATE: 08/13/18

The U.S. Environmental Protection Agency's (EPA) Office of Solid Waste and Emergency Response, Office of Superfund Remediation and Technology Innovation (OSRTI), has implemented The Superfund Enterprise Management System (SEMS), formerly known as CERCLIS (Comprehensive Environmental Response, Compensation and Liability Information System) to track and report on clean-up and enforcement activities taking place at Superfund sites. SEMS represents a joint development and ongoing collaboration between Superfund's Remedial, Removal, Federal Facilities, Enforcement and Emergency Response programs. This is a listing of SEMS sites with a lien on the property.

SFLIENS CERCLIS Liens

VERSION DATE: 06/08/12

A Federal CERCLA ("Superfund") lien can exist by operation of law at any site or property at which United States

Environmental Protection Agency has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties. This database contains those CERCLIS sites where the Lien on Property action is complete. Please refer to the SEMSLIENS database as source of current data.

SSTS Section Seven Tracking System

VERSION DATE: 02/01/17

The United States Environmental Protection Agency tracks information on pesticide establishments through the Section Seven Tracking System (SSTS). SSTS records the registration of new establishments and records pesticide production at each establishment. The Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) requires that production of pesticides or devices be conducted in a registered pesticide-producing or device-producing establishment. ("Production" includes formulation, packaging, repackaging, and relabeling.)

TRI Toxics Release Inventory

VERSION DATE: 12/31/16

The Toxics Release Inventory, provided by the United States Environmental Protection Agency, includes data on toxic chemical releases and waste management activities from certain industries as well as federal and tribal facilities. This inventory contains information about the types and amounts of toxic chemicals that are released each year to the air, water, and land as well as information on the quantities of toxic chemicals sent to other facilities for further waste management.

TSCA Toxic Substance Control Act Inventory

VERSION DATE: 12/31/12

The Toxic Substances Control Act (TSCA) was enacted in 1976 to ensure that chemicals manufactured, imported, processed, or distributed in commerce, or used or disposed of in the United States do not pose any unreasonable risks to human health or the environment. TSCA section 8(b) provides the United States Environmental Protection Agency authority to "compile, keep current, and publish a list of each chemical substance that is manufactured or processed in the United States." This TSCA Chemical Substance Inventory contains non-confidential information on the production amount of toxic chemicals from each manufacturer and importer site.

RCRAGR06 Resource Conservation & Recovery Act - Generator

VERSION DATE: 04/01/19

The Resource Conservation and Recovery Act (RCRA) gives the U.S. Environmental Protection Agency (EPA) the authority to control hazardous waste from the "cradle-to-grave." This includes the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA also set forth a framework for the management of non-hazardous solid wastes. The 1986 amendments to RCRA enabled EPA to address environmental problems that could result from underground tanks storing petroleum and other hazardous substances. This listing refers to facilities currently generating hazardous waste. EPA region 6 includes the following states: Arkansas,

Louisiana, New Mexico, Oklahoma, and Texas.

RCRANGR06 Resource Conservation & Recovery Act - Non-Generator

VERSION DATE: 04/01/19

The Resource Conservation and Recovery Act (RCRA) gives the U.S. Environmental Protection Agency (EPA) the authority to control hazardous waste from the "cradle-to-grave." This includes the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA also set forth a framework for the management of non-hazardous solid wastes. The 1986 amendments to RCRA enabled EPA to address environmental problems that could result from underground tanks storing petroleum and other hazardous substances. This listing refers to facilities classified as non-generators. Non-Generators do not presently generate hazardous waste. EPA Region 6 includes the following states: Arkansas, Louisiana, New Mexico, Oklahoma, and Texas.

ALTFUELS Alternative Fueling Stations

VERSION DATE: 03/01/19

Nationwide list of alternative fueling stations made available by the U.S. Department of Energy's Office of Energy Efficiency & Renewable Energy. Includes Bio-diesel stations, Ethanol (E85) stations, Liquefied Petroleum Gas (Propane) stations, Ethanol (E85) stations, Natural Gas stations, Hydrogen stations, and Electric Vehicle Supply Equipment (EVSE).

FEMAUST FEMA Owned Storage Tanks

VERSION DATE: 12/01/16

This is a listing of FEMA owned underground and aboveground storage tank sites. For security reasons, address information is not released to the public according to the U.S. Department of Homeland Security.

HISTPST Historical Gas Stations

VERSION DATE: NR

This historic directory of service stations is provided by the Cities Service Company. The directory includes Cities Service filling stations that were located throughout the United States in 1930.

ICISCLEANERS Integrated Compliance Information System Drycleaners

VERSION DATE: 03/09/19

This is a listing of drycleaner facilities from the Integrated Compliance Information System (ICIS). The U.S. Environmental Protection Agency (EPA) tracks facilities that possess NAIC and SIC codes that classify businesses as drycleaner establishments.

MRDS Mineral Resource Data System

VERSION DATE: 03/15/16

MRDS (Mineral Resource Data System) is a collection of reports describing metallic and nonmetallic mineral resources throughout the world. Included are deposit name, location, commodity, deposit description, geologic characteristics, production, reserves, resources, and references. This database contains the records previously provided in the Mineral Resource Data System (MRDS) of USGS and the Mineral Availability System/Mineral Industry Locator System (MAS/MILS) originated in the U.S. Bureau of Mines, which is now part of USGS.

MSHA Mine Safety and Health Administration Master Index File

VERSION DATE: 03/15/19

The Mine dataset lists all Coal and Metal/Non-Metal mines under MSHA's jurisdiction since 1/1/1970. It includes such information as the current status of each mine (Active, Abandoned, NonProducing, etc.), the current owner and operating company, commodity codes and physical attributes of the mine. Mine ID is the unique key for this data. This information is provided by the United States Department of Labor - Mine Safety and Health Administration (MSHA).

BF Brownfields Management System

VERSION DATE: 03/31/19

Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. The United States Environmental Protection Agency maintains this database to track activities in the various brown field grant programs including grantee assessment, site cleanup and site redevelopment. This database included tribal brownfield sites.

DNPL Delisted National Priorities List

VERSION DATE: 04/09/19

This database includes sites from the United States Environmental Protection Agency's Final National Priorities List (NPL) where remedies have proven to be satisfactory or sites where the original analyses were inaccurate, and the site is no longer appropriate for inclusion on the NPL, and final publication in the Federal Register has occurred.

NLRRCRAT No Longer Regulated RCRA Non-CORRACTS TSD Facilities

VERSION DATE: 04/01/19

This database includes RCRA Non-Corrective Action TSD facilities that are no longer regulated by the United States Environmental Protection Agency or do not meet other RCRA reporting requirements. This listing includes facilities that formerly treated, stored or disposed of hazardous waste.

ODI Open Dump Inventory

VERSION DATE: 06/01/85

The open dump inventory was published by the United States Environmental Protection Agency. An “open dump” is defined as a facility or site where solid waste is disposed of which is not a sanitary landfill which meets the criteria promulgated under section 4004 of the Solid Waste Disposal Act (42 U.S.C. 6944) and which is not a facility for disposal of hazardous waste. This inventory has not been updated since June 1985.

RCRAT Resource Conservation & Recovery Act - Non-CORRACTS Treatment, Storage & Disposal Facilities

VERSION DATE: 04/01/19

The Resource Conservation and Recovery Act (RCRA) gives the U.S. Environmental Protection Agency (EPA) the authority to control hazardous waste from the "cradle-to-grave." This includes the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA also set forth a framework for the management of non-hazardous solid wastes. The 1986 amendments to RCRA enabled EPA to address environmental problems that could result from underground tanks storing petroleum and other hazardous substances. This listing refers to facilities recognized as hazardous waste treatment, storage, and disposal sites (TSD).

SEMS Superfund Enterprise Management System

VERSION DATE: 03/11/19

The U.S. Environmental Protection Agency's (EPA) Office of Solid Waste and Emergency Response, Office of Superfund Remediation and Technology Innovation (OSRTI), has implemented The Superfund Enterprise Management System (SEMS), formerly known as CERCLIS (Comprehensive Environmental Response, Compensation and Liability Information System) to track and report on clean-up and enforcement activities taking place at Superfund sites. SEMS represents a joint development and ongoing collaboration between Superfund's Remedial, Removal, Federal Facilities, Enforcement and Emergency Response programs.

SEMSARCH Superfund Enterprise Management System Archived Site Inventory

VERSION DATE: 03/11/19

The U.S. Environmental Protection Agency’s (EPA) Superfund Enterprise Management System Archived Site Inventory (List 8R Archived) replaced the CERCLIS NFRAP reporting system in 2015. This listing reflects sites at which the EPA has determined that assessment has been completed and no further remedial action is planned under the Superfund program.

SMCRA Surface Mining Control and Reclamation Act Sites

VERSION DATE: 03/19/19

An inventory of land and water impacted by past mining (primarily coal mining) is maintained by the Office of Surface Mining Reclamation and Enforcement (OSMRE) to provide information needed to implement the Surface Mining Control and Reclamation Act of 1977 (SMCRA). The inventory contains information on the location, type,

and extent of AML impacts, as well as, information on the cost associated with the reclamation of those problems. The inventory is based upon field surveys by State, Tribal, and OSMRE program officials. It is dynamic to the extent that it is modified as new problems are identified and existing problems are reclaimed.

USUMTRCA Uranium Mill Tailings Radiation Control Act Sites

VERSION DATE: 03/04/17

The Legacy Management Office of the Department of Energy (DOE) manages radioactive and chemical waste, environmental contamination, and hazardous material at over 100 sites across the U.S. The L.M. Office manages this database of sites registered under the Uranium Mill Tailings Control Act (UMTRCA).

DOD Department of Defense Sites

VERSION DATE: 12/01/14

This information originates from the National Atlas of the United States Federal Lands data, which includes lands owned or administered by the Federal government. Army DOD, Army Corps of Engineers DOD, Air Force DOD, Navy DOD and Marine DOD areas of 640 acres or more are included.

FUDS Formerly Used Defense Sites

VERSION DATE: 06/01/15

The Formerly Used Defense Sites (FUDS) inventory includes properties previously owned by or leased to the United States and under Secretary of Defense Jurisdiction, as well as Munitions Response Areas (MRAs). The remediation of these properties is the responsibility of the Department of Defense. This data is provided by the U.S. Army Corps of Engineers (USACE), the boundaries/polygon data are based on preliminary findings and not all properties currently have polygon data available. DISCLAIMER: This data represents the results of data collection/processing for a specific USACE activity and is in no way to be considered comprehensive or to be used in any legal or official capacity as presented on this site. While the USACE has made a reasonable effort to insure the accuracy of the maps and associated data, it should be explicitly noted that USACE makes no warranty, representation or guaranty, either expressed or implied, as to the content, sequence, accuracy, timeliness or completeness of any of the data provided herein. For additional information on Formerly Used Defense Sites please contact the USACE Public Affairs Office at (202) 528-4285.

FUSRAP Formerly Utilized Sites Remedial Action Program

VERSION DATE: 03/04/17

The U.S. Department of Energy (DOE) established the Formerly Utilized Sites Remedial Action Program (FUSRAP) in 1974 to remediate sites where radioactive contamination remained from the Manhattan Project and early U.S. Atomic Energy Commission (AEC) operations. The DOE Office of Legacy Management (LM) established long-term surveillance and maintenance (LTS&M) requirements for remediated FUSRAP sites. DOE evaluates the final site conditions of a remediated site on the basis of risk for different future uses. DOE then confirms that LTS&M requirements will maintain protectiveness.

NLRRCRAC No Longer Regulated RCRA Corrective Action Facilities

VERSION DATE: 04/01/19

This database includes RCRA Corrective Action facilities that are no longer regulated by the United States Environmental Protection Agency or do not meet other RCRA reporting requirements.

NMS Former Military Nike Missile Sites

VERSION DATE: 12/01/84

This information was taken from report DRXTH-AS-IA-83A016 (Historical Overview of the Nike Missile System, 12/1984) which was performed by Environmental Science and Engineering, Inc. for the U.S. Army Toxic and Hazardous Materials Agency Assessment Division. The Nike system was deployed between 1954 and the mid-1970's. Among the substances used or stored on Nike sites were liquid missile fuel (JP-4); starter fluids (UDKH, aniline, and furfuryl alcohol); oxidizer (IRFNA); hydrocarbons (motor oil, hydraulic fluid, diesel fuel, gasoline, heating oil); solvents (carbon tetrachloride, trichloroethylene, trichloroethane, stoddard solvent); and battery electrolyte. The quantities of material a disposed of and procedures for disposal are not documented in published reports. Virtually all information concerning the potential for contamination at Nike sites is confined to personnel who were assigned to Nike sites. During deactivation most hardware was shipped to depot-level supply points. There were reportedly instances where excess materials were disposed of on or near the site itself at closure. There was reportedly no routine site decontamination.

NPL National Priorities List

VERSION DATE: 04/09/19

This database includes United States Environmental Protection Agency (EPA) National Priorities List sites that fall under the EPA's Superfund program, established to fund the cleanup of the most serious uncontrolled or abandoned hazardous waste sites identified for possible long-term remedial action.

PNPL Proposed National Priorities List

VERSION DATE: 04/09/19

This database contains sites proposed to be included on the National Priorities List (NPL) in the Federal Register. The United States Environmental Protection Agency investigates these sites to determine if they may present long-term threats to public health or the environment.

RCRAC Resource Conservation & Recovery Act - Corrective Action Facilities

VERSION DATE: 04/01/19

The Resource Conservation and Recovery Act (RCRA) gives the U.S. Environmental Protection Agency (EPA) the authority to control hazardous waste from the "cradle-to-grave." This includes the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA also set forth a framework for the management of non-hazardous solid wastes. The 1986 amendments to RCRA enabled EPA to address environmental problems

that could result from underground tanks storing petroleum and other hazardous substances. This listing refers to facilities with corrective action activity.

RCRASUBC Resource Conservation & Recovery Act - Subject to Corrective Action Facilities

VERSION DATE: 04/01/19

The Resource Conservation and Recovery Act (RCRA) gives the U.S. Environmental Protection Agency (EPA) the authority to control hazardous waste from the "cradle-to-grave." This includes the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA also set forth a framework for the management of non-hazardous solid wastes. The 1986 amendments to RCRA enabled EPA to address environmental problems that could result from underground tanks storing petroleum and other hazardous substances. This listing refers to facilities subject to corrective actions.

RODS Record of Decision System

VERSION DATE: 02/06/19

These decision documents maintained by the United States Environmental Protection Agency describe the chosen remedy for NPL (Superfund) site remediation. They also include site history, site description, site characteristics, community participation, enforcement activities, past and present activities, contaminated media, the contaminants present, and scope and role of response action.

GWCC Groundwater Contamination Cases

VERSION DATE: 12/31/17

This is a Joint Groundwater Monitoring and Contamination Report provided by the Texas Commission on Environmental Quality (TCEQ). The annual report describes the status of groundwater monitoring activities conducted or required by each agency at regulated facilities or associated with regulated activities. The report provides a general overview of groundwater monitoring by participating members on a program by program basis. Groundwater contamination is broadly defined in the report as any detrimental alteration of the naturally occurring quality of groundwater.

HISTGWCC Historic Groundwater Contamination Cases

VERSION DATE: 12/31/16

This is a Joint Groundwater Monitoring and Contamination Report provided by the Texas Commission on Environmental Quality (TCEQ) that includes historic groundwater contamination cases reported since 1994. These cases have been closed by a program area or agency, such as the TCEQ, the Railroad Commission of Texas, and/or the Texas Alliance of Groundwater Districts. According to the TCEQ report, although enforcement actions may be closed on these cases, the Activity Status Code descriptions allow that groundwater contamination may still be present at the site and may therefore be of interest to regulatory agencies and the general public.

LANDAPP Land Application Permits

VERSION DATE: 01/03/19

Texas Land Application Permits are a requirement from the Texas Commission on Environmental Quality for any domestic facility that disposes of treated effluent by land application such as surface irrigation, evaporation, drainfields or subsurface land application.

LIENS TCEQ Liens

VERSION DATE: 06/06/18

Liens filed upon State and/or Federal Superfund Sites by the Texas Commission on Environmental Quality.

MSD Municipal Setting Designations

VERSION DATE: 01/16/19

The Texas Commission on Environmental Quality (TCEQ) defines an MSD as an official state designation given to property within a municipality or its extraterritorial jurisdiction that certifies that designated groundwater at the property is not used as potable water, and is prohibited from future use as potable water because that groundwater is contaminated in excess of the applicable potable-water protective concentration level. The prohibition must be in the form of a city ordinance, or a restrictive covenant that is enforceable by the city and filed in the property records. The MSD property can be a single property, multi-property, or a portion of property.

Environmental Records Definitions - STATE (TX)

TCEQ Disclaimer: This data is for informational purposes and may not have been prepared for or be suitable for legal, engineering, or surveying purposes. It does not represent an on-the-ground survey and represents only the approximate relative location of property boundaries.

NOV Notice of Violations

VERSION DATE: 02/24/16

This database containing Notice of Violations (NOV) is maintained by the Texas Commission on Environmental Quality. An NOV is a written notification that documents and communicates violations observed during an inspection to the business or individual inspected.

SIEC01 State Institutional/Engineering Control Sites

VERSION DATE: 01/01/19

The Texas Risk Reduction Program (TRRP) requires the placement of institutional controls (e.g., deed notices or restrictive covenants) on affected property in different circumstances as part of completing a response action. In its simplest form, an institutional control (IC) is a legal document that is recorded in the county deed records. In certain circumstances, local zoning or ordinances can serve as an IC. This listing may also include locations where Engineering Controls are in effect, such as a cap, barrier, or other engineering device to prevent access, exposure, or continued migration of contamination. The sites included on this list are regulated by various programs of the Texas Commission on Environmental Quality (TCEQ).

SPILLS Spills Listing

VERSION DATE: 02/07/19

This Texas Commission on Environmental Quality database includes releases of hazardous or potentially hazardous materials into the environment.

TIERII Tier I I Chemical Reporting Program Facilities

VERSION DATE: 12/31/12

The Texas Tier II Chemical Reporting Program in the Department of State Health Services (DSHS) is the state repository for EPCRA-required Emergency Planning Letters (EPLs), which are one-time notifications to the state from facilities that have certain extremely hazardous chemicals in specified amounts. The Program is also the state repository for EPCRA/state-required hazardous chemical inventory reports called Texas Tier Two Reports. This data contains those facility reports for the 2005 through the 2012 calendar years. Please contact the Texas Commission on Environmental Quality Tier II Chemical Reporting Division as the current source for this data, due to confidentiality and safety reasons details such as the location and capacity of on-site hazardous chemicals is only available to local emergency planning agencies, fire departments, and/or owners.

DCR Dry Cleaner Registration Database

VERSION DATE: 02/01/19

The database includes dry cleaning drop stations and facilities registered with the Texas Commission on Environmental Quality.

IHW Industrial and Hazardous Waste Sites

VERSION DATE: 01/04/19

Owner and facility information is included in this database of permitted and non-permitted industrial and hazardous waste sites. Industrial waste is waste that results from or is incidental to operations of industry, manufacturing, mining, or agriculture. Hazardous waste is defined as any solid waste listed as hazardous or possesses one or more hazardous characteristics as defined in federal waste regulations. The IHW database is maintained by the Texas Commission on Environmental Quality.

PIHW Permitted Industrial Hazardous Waste Sites

VERSION DATE: 01/04/19

Owner and facility information is included in this database of all permitted industrial and hazardous waste sites. Industrial waste is waste that results from or is incidental to operations of industry, manufacturing, mining, or agriculture. Hazardous waste is defined as any solid waste listed as hazardous or possesses one or more hazardous characteristics as defined in federal waste regulations. Permitted IHW facilities are regulated under 30 Texas Administrative Code Chapter 335 in addition to federal regulations. The IHW database is maintained by the Texas Commission on Environmental Quality.

PST Petroleum Storage Tanks

VERSION DATE: 02/01/19

The Petroleum Storage Tank database is administered by the Texas Commission on Environmental Quality (TCEQ). Both Underground storage tanks (USTs) and Aboveground storage tanks (ASTs) are included in this report. Petroleum Storage Tank registration has been a requirement with the TCEQ since 1986.

APAR Affected Property Assessment Reports

VERSION DATE: 04/05/19

As regulated by the Texas Commission on Environmental Quality, an Affected Property Assessment Report is required when a person is addressing a release of chemical of concern (COC) under 30 TAC Chapter 350, the Texas Risk Reduction Program (TRRP). The purpose of the APAR is to document all relevant affected property information to identify all release sources and COCs, determine the extent of all COCs, identify all transport/exposure pathways, and to determine if any response actions are necessary. The Texas Administrative Code Title 30 §350.4(a)(1) defines affected property as the entire area (i.e. on-site and off-site; including all environmental media) which contains releases of chemicals of concern at concentrations equal to or greater than the assessment level applicable for residential land use and groundwater classification.

BSA Brownfields Site Assessments

VERSION DATE: 03/05/19

The Brownfields Site Assessments database is maintained by the Texas Commission on Environmental Quality (TCEQ). The TCEQ, in close partnership with the U.S. Environmental Protection Agency (EPA) and other federal, state, and local redevelopment agencies, and stakeholders, is facilitating cleanup, transferability, and revitalization of brownfields through the development of regulatory, tax, and technical assistance tools.

CALF Closed & Abandoned Landfill Inventory

VERSION DATE: 11/01/05

The Texas Commission on Environmental Quality, under a contract with Texas State University, and in cooperation with the 24 regional Council of Governments (COGs) in the State, has located over 4,000 closed and abandoned municipal solid waste landfills throughout Texas. This listing contains "unauthorized sites". Unauthorized sites have no permit and are considered abandoned. The information available for each site varies in detail and this historical information is not updated. Please refer to the specific regional COG for the most current information.

DCRPS Dry Cleaner Remediation Program Sites

VERSION DATE: 03/01/19

This list of DCRP sites is provided by the Texas Commission on Environmental Quality (TCEQ). According to the TCEQ, the Dry Cleaner Remediation Program (DCRP) establishes a prioritization list of dry cleaner sites and administers the Dry Cleaning Remediation fund to assist with remediation of contamination caused by dry cleaning solvents.

IOP Innocent Owner / Operator Database

VERSION DATE: 01/01/19

Texas Innocent Owner / Operator (IOP), created by House Bill 2776 of the 75th Legislature, provides a certificate to an innocent owner or operator if their property is contaminated as a result of a release or migration of contaminants from a source or sources not located on the property, and they did not cause or contribute to the source or sources of contamination. The IOP database is maintained by the Texas Commission on Environmental Quality.

LPST Leaking Petroleum Storage Tanks

VERSION DATE: 03/07/19

The Leaking Petroleum Storage Tank listing is derived from the Petroleum Storage Tank (PST) database and is maintained by the Texas Commission on Environmental Quality. This listing includes aboveground and underground storage tank facilities with reported leaks.

MSWLF Municipal Solid Waste Landfill Sites

VERSION DATE: 03/01/19

The municipal solid waste landfill database is provided by the Texas Commission on Environmental Quality. This database includes active landfills and inactive landfills, where solid waste is treated or stored.

RRCVCP Railroad Commission VCP and Brownfield Sites

VERSION DATE: 04/18/19

According to the Railroad Commission of Texas, their Voluntary Cleanup Program (RRC-VCP) provides an incentive to remediate Oil & Gas related pollution by participants as long as they did not cause or contribute to the contamination. Applicants to the program receive a release of liability to the state in exchange for a successful cleanup.

RWS Radioactive Waste Sites

VERSION DATE: 07/11/06

This Texas Commission on Environmental Quality database contains all sites in the State of Texas that have been designated as Radioactive Waste sites.

STCV Salt Caverns for Petroleum Storage

VERSION DATE: 09/01/06

The salt caverns for petroleum storage database is provided by the Railroad Commission of Texas.

VCP Voluntary Cleanup Program Sites

VERSION DATE: 05/17/19

The Texas Voluntary Cleanup Program (VCP) provides administrative, technical, and legal incentives to encourage the cleanup of contaminated sites in Texas. Since all non-responsible parties, including future lenders and landowners, receive protection from liability to the state of Texas for cleanup of sites under the VCP, most of the constraints for completing real estate transactions at those sites are eliminated. As a result, many unused or underused properties may be restored to economically productive or community beneficial uses. The VCP database is maintained by the Texas Commission on Environmental Quality.

WMRF Recycling Facilities

VERSION DATE: 11/01/12

This listing of recycling facilities is provided by the Texas Commission on Environmental Quality's Recycle Texas Online service. The company information provided in this database is self-reported. Since recyclers post their own information, a facility or company appearing on the list does not imply that it is in compliance with TCEQ

regulations or other applicable laws. This database is no longer maintained and includes the last compilation of the program participants before the Recycle Texas Online program was closed.

IHWCA Industrial and Hazardous Waste Corrective Action Sites

VERSION DATE: 04/05/19

This database is provided by the Texas Commission on Environmental Quality (TCEQ). According to the TCEQ, the mission of the industrial and hazardous waste corrective action program is to oversee the cleanup of sites contaminated from industrial and municipal hazardous and industrial nonhazardous wastes. The goals of this program are to: Ensure that sites are assessed and remediated to levels that protect human health and the environment; Verify that waste management units or facilities are taken out of service and closed properly; and to Facilitate revitalization of contaminated properties.

SF State Superfund Sites

VERSION DATE: 10/26/18

The state Superfund program mission is to remediate abandoned or inactive sites within the state that pose an unacceptable risk to public health and safety or the environment, but which do not qualify for action under the federal Superfund program (NPL - National Priority Listing). As required by the Texas Solid Waste Disposal Act, Texas Health and Safety Code, Chapter 361, the Texas Commission on Environmental Quality identifies and evaluates these facilities for inclusion on the state Superfund registry. This registry includes any recent developments and the anticipated action for these sites as documented in the annual state Superfund registry publication of the Texas Register.

Environmental Records Definitions - TRIBAL

USTR06 Underground Storage Tanks On Tribal Lands

VERSION DATE: 11/01/18

This database, provided by the United States Environmental Protection Agency (EPA), contains underground storage tanks on Tribal lands located in EPA Region 6. This region includes the following states: Arkansas, Louisiana, New Mexico, Oklahoma, and Texas.

LUSTR06 Leaking Underground Storage Tanks On Tribal Lands

VERSION DATE: 11/01/18

This database, provided by the United States Environmental Protection Agency (EPA), contains leaking underground storage tanks on Tribal lands located in EPA Region 6. This region includes the following states: Arkansas, Louisiana, New Mexico, Oklahoma, and Texas.

ODINDIAN Open Dump Inventory on Tribal Lands

VERSION DATE: 11/08/06

This Indian Health Service database contains information about facilities and sites on tribal lands where solid waste is disposed of, which are not sanitary landfills or hazardous waste disposal facilities, and which meet the criteria promulgated under section 4004 of the Solid Waste Disposal Act (42 U.S.C. 6944).

INDIANRES Indian Reservations

VERSION DATE: 01/01/00

The Department of Interior and Bureau of Indian Affairs maintains this database that includes American Indian Reservations, off-reservation trust lands, public domain allotments, Alaska Native Regional Corporations and Recognized State Reservations.

Central Registry

The Customer Name displayed may be different than the Customer Name associated to the Additional IDs related to the customer. This name may be different due to ownership changes, legal name changes, or other administrative changes.

Detail of: **Petroleum Storage Tank Registration 6280**
For: **TOTE-A-WAY 2 (RN102475548)**
FM 664
Registration Status: **INACTIVE**
Held by: **TRIPLE A FUELS INC (CN600505481)** View 'Issued To' History
OWNER Since 07/02/1986
Now Known As: **Triple A Fuels, Inc.**
Mailing Address: 12342 INWOOD RD DALLAS, TX 75244 -8023

Financial Assurance

None

Self-Certification Status by Compartment

None

Registered Tanks and Their Associated Systems

Table 1. Underground Storage Tank Summary

Tank	Capacity (Gallon)	Date Installed	Status	Substance Stored	Related Information
1	6000	01/01/1976	Removed from Ground (07/31/1988)	A:Gasoline	Tank Details Compartment Piping Vapor Recovery
2	10000	01/01/1976	Removed from Ground (07/31/1988)	A:Gasoline	Tank Details Compartment Piping Vapor Recovery

Table 2. Tank Details

Tank	Design & Materials	Corrosion Protection	Release Detection	Spill Containment and Overfill Prevention	Installation Contractor	Installer	Test Result	Related Information
1	(Steel)						Tank Tested	Tank Summary Compartment Piping Vapor Recovery
2	(Steel)						Tank Tested	Tank Summary Compartment Piping

Table 3. Compartment Details

Tank	Compartment	Capacity (gallons)	Principal Substance	Other Substance	Release Detection	Spill Containment and Overfill Prevention	Related Information
1	A	6000	Gasoline				Tank Summary Tank Details Piping Vapor Recovery

Table 4. Piping Systems

Tank	Type of Piping	Piping Material	Design and External Containment	Connectors and valves	Corrosion Protection	Release Detection	Related Infor
1		Steel					Tank Summar Tank Details Compartment Vapor Recove
2		Steel					Tank Summar Tank Details

Table 5. Vapor Recovery Systems

Tank	Type of Stage 1	Date Installed	Type of Stage 2	Date Installed	Related Information
1	Not Reported				Tank Summary Tank Details Compartment Piping
2	Not Reported				Tank Summary Tank Details Compartment Piping

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Statewide Links: Texas.gov | Texas Homeland Security | TRAIL Statewide Archive | Texas Veterans Portal

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WAXAHACHIETX.COM
DAILY LIGHT

Noel L. 'N.L.' Dickinson

Posted Mar 26, 2018 at 9:40 AM
Updated Mar 26, 2018 at 9:42 AM

Noel L." N.L." Dickinson, 82, of Dallas, passed away early Monday morning, March 19, 2018 in Dallas. He was born October 12, 1935 in Shelbyville, Texas to Willie and Casselle (Grubbs) Dickinson. N.L. was an alumni of Forest Ave. High School and graduated from East Texas State University with a Bachelors in Science. He got his start in the grocery business with Abe Meyer and later owned his own stores in the Fair Park area of Dallas until he moved to Red Oak where he opened stores, Tote A Way, in Ovilla, Red Oak and Rockett. He was a 32nd Degree Mason and a Shriner, he was a member of the Ellis County Tax Appraisal Board and a past board president of the Red Oak ISD. N.L. was funny and caring and a talker who never met a stranger. He was quite a character. He loved flowers and was able to turn any object into a pot of flowers. He enjoyed going to the lake, fishing and politics.

Survivors include his wife of 61 years, Jane Dickinson; two children, Del Dickinson and Donna Anthony and husband Jeff; six grandchildren, Candice Dickinson, Kindra Garcia and husband Joe, Kellyn Garcia and husband Gilbert, Kimberly Morin and husband Sid, Erin Pope and husband Andrew and Jake Anthony; nine great grandchildren, Jordan, Brennah, Noah, Lillian, Gabriel, Kaleb, Madalynn, Gracelyn and Mickael. He was preceded in death by his parents.

Visitation for family and friends will be 6 to 8PM Friday, March 23, 2018 at the Boze-Mitchell-McKibbin Funeral Home.

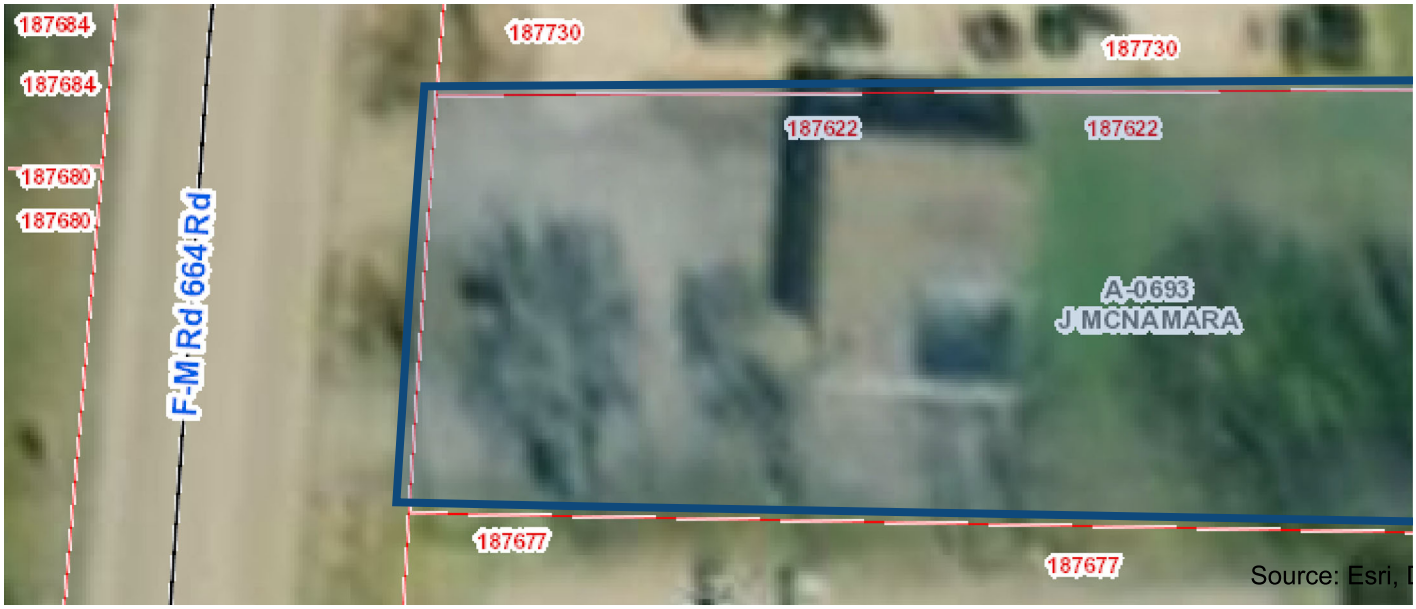
Funeral services will be 10AM Saturday, March 24, 2018 in the chapel of the Boze-Mitchell-McKibbin Funeral Home. Interment will follow at the Shiloh Cemetery.

To view an obituary or sign the guest book, please visit www.bozemitchellmckibbin.com.

Ellis CAD Property Search

Property ID: 187622 For Year 2019

Map



Property Details

Account	
Property ID:	187622
Legal Description:	693 J MCNAMARA 0.605 ACRES
Geographic ID:	62.0693.000.023.00.108
Agent Code:	
Type:	Real
Location	
Address:	3323 FM 664 OVILLA, TX 75154
Map ID:	13-3
Neighborhood CD:	COMM
Owner	
Owner ID:	133271
Name:	OVILLA MARKET CORP
Mailing Address:	PO BOX 2842 RED OAK, TX 75154
% Ownership:	100.0%
Exemptions:	For privacy reasons not all exemptions are shown online.

Property Values

Improvement Homesite Value:	$0
Improvement Non-Homesite Value:	$56,870
Land Homesite Value:	$0
Land Non-Homesite Value:	$52,710
Agricultural Market Valuation:	$0
Market Value:	$109,580
Ag Use Value:	$0
Appraised Value:	$109,580
Homestead Cap Loss:	$0
Assessed Value:	$109,580

DISCLAIMER Information provided for research purposes only. Legal descriptions and acreage amounts are for appraisal district use only and should be verified prior to using for legal purpose and or documents. Please contact the Appraisal District to verify all information for accuracy.

Property Taxing Jurisdiction

Entity	Description	Tax Rate	Market Value	Taxable Value	Estimated Tax	Freeze Ceiling
070	ELLIS COUNTY	0.329557	$109,580	$109,580	$361.13	
208	MIDLOTHIAN ISD	1.470000	$109,580	$109,580	$1,610.83	
362	CITY OF OVILLA	0.660000	$109,580	$109,580	$723.23	
R70	ELLIS COUNTY LATERAL ROAD	0.030976	$109,580	$109,580	$33.94	

Total Tax Rate: 2.490533 **Estimated Taxes With Exemptions:** $2,729.13 **Estimated Taxes Without Exemptions:** $2,729.13

Property Improvement - Building

Description: Appr type: RS **Type:** Commercial **State Code:** F1 **Living Area:** 2,000.00sqft **Value:** $0

Type	Description	Class CD	Year Built	SQFT
COMM	COMMERCIAL	MRPF	1970	2,000.00
CP	COVERED PORCH	*	2006	300.00

Description: ASPHALT **Type:** Commercial **State Code:** F1 **Living Area:** 0.00sqft **Value:** $0

Type	Description	Class CD	Year Built	SQFT
ASPH	ASPHALT	UNIMPROVED	1978	8,500.00

Property Land

Type	Description	Acres	Sqft	Eff Front	Eff Depth	Market Value	Prod. Value
SQFT	PER SQUARE FOOT	0.605	26,353.80	0.00	0.00	$0	$0

Property Roll Value History

Year	Improvements	Land Market	Ag Valuation	Appraised	HS Cap Loss	Assessed
2020	N\A	N\A	N\A	N\A	N\A	N\A
2019	$56,870	$52,710	$0	$109,580	$0	$109,580
2018	$18,290	$52,710	$0	$71,000	$0	$71,000
2017	$18,290	$52,710	$0	$71,000	$0	$71,000
2016	$18,290	$52,710	$0	$71,000	$0	$71,000
2015	$18,290	$52,710	$0	$71,000	$0	$71,000
2014	$18,290	$52,710	$0	$71,000	$0	$71,000
2013	$18,290	$52,710	$0	$71,000	$0	$71,000
2012	$48,020	$13,480	$0	$61,500	$0	$61,500
2011	$48,020	$13,480	$0	$61,500	$0	$61,500

Property Deed History

Deed Date	Type	Description	Grantor	Grantee	Volume	Page	Number
12/4/2012	35	DEED	DICKINSON NOEL L	OVILLA MARKET CORP	2672	0622	SS
	OT	DO NOT USE	DICKINSON NOEL L	DICKINSON NOEL L	00000	00000	0
	OT	DO NOT USE	PREVIOUS OWNER UNKNOWN	DICKINSON NOEL L	00000	00000	0

DISCLAIMER

DISCLAIMER Information provided for research purposes only. Legal descriptions and acreage amounts are for appraisal district use only and should be verified prior to using for legal purpose and or documents. Please contact the Appraisal District to verify all information for accuracy.

Project Coordination Request for Historical Studies Project

Reset Form

Main CSJ: 1051-01-038 and 1051-01-052

Child CSJs: N/A

District(s): Dallas

County(ies): Ellis

Roadway Name: FM 664

Limits From: US 287

Limits To: Westmoreland Road

Project Description: The existing FM 664 facility between US 287 in Waxahachie and Westmoreland Road in Ovilla, TX mostly consists of two undivided 11-foot (ft) wide lanes and 3-ft wide shoulders within an existing right-of-way (ROW) width that varies between 80 ft and 100 ft. There is an existing bridge over Red Oak Creek, and there are ditches along both sides of the roadway to provide surface drainage as well as culverts crossing along the existing roadway at multiple locations. Stormwater runoff within the limits is conveyed through an open ditch drainage system. The facility is intersected by four major collectors, including Marshall Road, Bob White Road and FM 1387 in Waxahachie, and Shiloh Road in Ovilla, and other minor collectors and local roads. Existing posted speed limits are 30 mph at school zone, and 45, 55 mph in other section of the corridor.

The proposed project consists of the reconstruction, realigning, and widening of FM 664 from US 287 to Westmoreland Road for approximately 8.08 miles. Improvements would include the expansion of the current 2-lane rural roadway to a 4-lane urban roadway (ultimate 6-lanes) with a raised median to provide additional capacity and improve safety. Improvements would consist of 12-foot-wide travel lanes, and 14-foot-wide outside shared-use lanes, 6-foot sidewalks with ADA curb ramps in both directions. Other improvements would include eliminating 90-degree turns along FM 664 between FM 1387 and Marshall Road. The proposed design speed is 40 mph. The existing ROW width will increase with the proposed project to the typical 150-foot ROW footprint. The proposed project is anticipated to require 82.75 acres of additional ROW and 0.94 acres of easement.

District personnel should complete this form with all appropriate documentation attached. ENV-HIST staff review is contingent on provision of an active CSJ (or equivalent if the project is not a construction project) against which environmental work can be charged. District-provided responses should reflect known data about the project and identify any limitations that hindered provision of the requested information. ENV-HIST staff will review the PCR form and attached information per established Documentation Standards. This review will result in:

- ENV-HIST environmental clearance of the project; OR
- ENV-HIST identification of additional technical studies required for clearance; OR
- ENV-HIST rejection of the PCR for failure to meet specific Documentation Standards and instructions on how to redress the rejection.

This form specifies minimally required information needed to properly facilitate ENV-HIST's review process. Please submit all relevant documentation with this PCR at one time.

NOTE: * If this project information changes over the course of design OR if the funding source changes, then HIST requires re-coordination and a revised PCR in ECOS.

Reset Form

Information Required to Process Historic Resources Coordination and Consultation

1. Targeted ENV clearance date: October 1, 2020

2. *Anticipated letting date: January 2025

3. "Historic-age" date (let date minus 45 years): 1980

4. Yes *The proposed action is subject to federal permitting (i.e. Corps of Engineers, Coast Guard, IBWC, etc.).

   Describe:

   U.S. Army Corps of Engineers Nationwide Permit 14 may be required.

5. Yes *The proposed action requires additional ROW (purchased or donated) or easements?

Parcel ID		Required New ROW (acres)	Required New Easements	
			Temporary	*Permanent*
See Appendix A		82.89	0	0.92
Add Row	**Total:**	**82.89**	**0**	**0.92**

Delete

6. The following maps, tables or equivalents been uploaded to ECOS?

Yes/No/NA	Map Type	
Yes	Existing and proposed ROW boundaries.	ECOS File Name:
Yes	Area of Potential Effects (APE) appropriate for project type.	ECOS File Name:
Yes	Parcel boundaries for properties within the APE.	ECOS File Name:
Yes	Results of the Texas Historic Sites Atlas search, identifying NHL, NRHP, SAL, and RTHL resources located within one-quarter mile of the project area listed in a table format and identified on color aerial map(s) or equivalent.	ECOS File Name:

Comments: See Appendix B and C: Project Area Maps

Yes	Results of Google Earth search with HIST-provided eligibility and historic bridge layers.	ECOS File Name:

Comments: See Appendix C: Project Area Maps

Reset Form

7. Yes — Representative and dated photographs of the project area are uploaded to ECOS.

Note: Photographs should include the following elements:

1. Buildings/structures in the APE and those adjacent.
2. Road Features (culverts, bridges, landscaping, etc.
3. Areas of proposed construction.

File Name in ECOS:

8. Yes — Preliminary plans are uploaded to ECOS.

File Name in ECOS:

9. No — Historic-age bridges are within the project area.

10. No — Rock masonry features (culverts, ditches, walls, etc.) are within the project area.

11. No — Historic-age rest area(s) are located within the project area.

12. Yes — The proposed action involves the relocation of historical markers.

12.1 — The markers proposed to be relocated are clearly identified in maps and or plans identified above.

File Name in ECOS containing the identified historical markers:

File Name in ECOS containing map of new marker location(s):

13. Yes — Additional consulting parties (other than the THC) may be involved in this project.

Consulting Party Name	Representing	Contact Information	
Shannon Simpson	Ellis County Museum, Inc.	ecmuseum@sbcglobal.net	Delete

Add Row

Additional Project Comments:

District Personnel Certification

I reviewed all submitted documents for quality assessment and control.

District Personnel Name

Date:

Reset Form

The following table shows the revision history for this document.

Revision History	
Effective Date Month, Year	Reason for and Description of Change
December 2013	Version 1 released.
June 2015	Version 2 released. The form was converted to a PDF format. Form level validations were installed to ensure that all certified forms contained the minimum required information. Various questions were modified to accommodate the improved functionality of the PDF format.
August 2015	Version 3 released. Revised the form to make it compatible with Adobe Acrobat Reader DC. No changes were made to the question sequence or form logic.

Historical Resources Survey Report

Reconnaissance Survey

Project Name: FM 664

Project Limits: From US 287 to Westmoreland Road

District(s): Dallas

County(s): Ellis

CSJ Number(s): 1051-01-038, 1051-01-052

Principal Investigator: Lindsey Allen, Senior Architectural Historian, JMT

Report Completion Date: December 2019

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 12-16-2014, and executed by FHWA and TxDOT.

This historical resources survey report is produced for the purposes of meeting requirements under Section 106 of the National Historic Preservation Act, the Antiquities Code of Texas, and other cultural resource legislation related to environmental clearance as applicable.

Abstract

The Texas Department of Transportation (TxDOT) Dallas District proposes improvements to FM 664 (Ovilla Road) in Ellis County. The proposed project consists of the reconstruction, realigning, and widening of FM 664 from US 287 to Westmoreland Road for approximately 8.08 miles. Improvements would include expanding the current two-lane rural roadway to a four-lane urban roadway (ultimately six-lanes) with a raised median to provide additional capacity and improve safety. Improvements would consist of 12-foot-wide travel lanes, 14-foot-wide outside shared-use lanes, and 6-foot sidewalks with ADA curb ramps in both directions. Other improvements would include eliminating 90-degree turns along FM 664 between FM 1387 and Marshall Road. The proposed design speed is 40 mph. The existing right-of-way (ROW) width will increase with the proposed project to the typical 150-foot ROW footprint. The proposed project will likely require 82.75 acres of additional ROW and 0.94 acres of easement.

JMT architectural historians conducted a reconnaissance level survey of the project area in October 2019 to identify above-ground historic resources located within the project's Area of Potential Effect (APE). The APE encompasses a 150-foot buffer from the proposed project ROW. JMT identified 41 total historic-age resources. Due to a lack of significance and integrity, JMT does not recommend any of the surveyed properties as eligible for listing in the National Register of Historic Places (NRHP). Therefore, JMT recommends that the project would have **No Effect** on NRHP listed or eligible above-ground historic resources.

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Project Identification

- **Report Completion Date:** 12/05/2019
- **Date(s) of Fieldwork:** 10/15/2019 to 10/16/2019
- **Survey Type:** ☐ Windshield ☒ Reconnaissance ☐ Intensive
- **Report Version:** ☐ Draft ☒ Final
- **Regulatory Jurisdiction:** ☐ Federal ☒ State
- **TxDOT Contract Number:** 57810SH003
- **District or Districts:** Dallas
- **County or Counties:** Ellis
- **Highway or Facility:** FM 664
- **Project Limits:**
    - **From:** US 287
    - **To:** Westmoreland Road
- **Main CSJ Number** 1051-01-038
- **Report Author(s):** Ben Buckley
- **Principal Investigator:** Lindsey Allen
- **List of Preparers:** Ben Buckley (author)
  Stephanie Sperber (technical editor)

Project Description

- **Project Type:** Highway realigning and widening
- **Proposed Project Activities:**

  The proposed project consists of the reconstruction, realigning, and widening of FM 664 from US 287 to Westmoreland Road for approximately 8.08 miles. Improvements include expanding the current two-lane rural roadway to a four-lane urban roadway (ultimately six-lanes) with a raised median to provide additional capacity and improve safety. Improvements would consist of 12-foot-wide travel lanes, 14-foot-wide outside shared-use lanes, and 6-foot sidewalks with ADA curb ramps in both directions. Other improvements would include eliminating 90-degree turns along FM 664 between FM 1387 and Marshall Road. The proposed design speed is 40 mph. The existing ROW width will increase with the proposed project to the typical 150-foot ROW footprint. The proposed project will likely require 82.75 acres of additional ROW and 0.94 acres of easement.

- **Total Project Length:** 8.08 miles
- **New Right of Way (ROW):** 82.89 acres
- **Permanent Easement Acreage:** 0.92 acres
- **Temporary Easement Acreage:** 0 acres
- **Area of Potential Effects (APE):**

  ☐ Existing ROW

  ☒ 150’ from Proposed ROW and Easements

  ☐ 300’ from Proposed ROW and Easements

  ☐ Custom: <0'> from Proposed ROW and Easements

  The APE is 150’ in each direction of the proposed ROW.

- **Historic-Age Survey Cut-Off Date:** 1978 (Anticipated 2023 let date minus 45 years)
- **Study Area** The study area extends 1,300 feet in each direction from the edge of the APE. The northern portion of the study area passes through the village of Ovilla, which has low density, mixed-use development. The

area south of Ovilla consists of agricultural fields interspersed with dense clusters of suburban development. Some modern warehouse facilities, churches, and schools are at the southern end of the project area at the intersection of Ovilla Road and US 287.

Section 106 Consulting Parties

- Public Involvement Outreach Efforts:

TxDOT officials conducted a public meeting on March 5, 2019, to inform the public about the project and seek comments on historic resources in the study area. TxDOT received two comments about historic markers along the project route and no comments concerning physical resources.

- Identification of Section 106 Consulting Parties:

JMT identified representatives from the following organizations as potential consulting parties:

Justin Kockritz
Texas Historical Commission
1511 Colorado Street
Austin, TX 78701

Kathleen Bowen (President)
Historic Waxahachie, Inc.
P.O. Box 22
Waxahachie, TX, 75168

Anita Brown
Director of Downtown Development (Main Street Program), Waxahachie
abrown@waxahachie.com

Glinda Felty (President)
Ellis County Museum
P.O. Box 706
Waxahachie, TX, 75168

Sylvia Stanford-Smith

Ellis County Historical Commission

P.O. Box 1754

Waxahachie, TX, 75168

- **Summary of Consulting Parties Comments:**

Becky Kauffman, a representative from Historic Waxahachie, contacted TxDOT on December 3, 2019 and mentioned four potential historic resources in the project area. The row of 1950s residences and one of the Victorian dwellings identified by Kaufmann are outside the APE to the south. The geodesic dome dwelling was constructed ca. 1984 (according to tax records), after the historic-age survey cutoff date of 1978. The fourth property is a Victorian dwelling, which was recorded during the survey (resource 040).

Anita Simpson of the Waxahachie Main Street Program replied to the comment response letter on November 5, 2018. Simpson agreed with TxDOT's findings and informed TxDOT that she reviewed the portion of the project within Waxahachie city limits and did not identify any historic resources.

Glinda Felty of the Ellis County Museum replied to the comment response letter on November 5, 2019. Felty agreed with TxDOT's findings and had no further comments.

A letter sent to the Ellis County Historical Commission returned as undeliverable.

Stakeholders

- **Stakeholder Outreach Efforts:**

JMT identified the following list of potential stakeholders. JMT sent a letter to the Ellis County Historic Commission in Waxahachie in early October informing them of the potential project and inviting comment on historic properties in the project area. JMT surveyors also visited the Ellis County Museum in Waxahachie to speak with local experts and view literature and exhibits regarding the history of the study area. Museum guides did not point out any specific resources in the project area, but provided better historic context for the project area.

- **Identification of Stakeholder Parties:**

Kathleen Bowen (President)

Historic Waxahachie, Inc.

P.O. Box 22

Waxahachie, TX, 75168

Anita Brown
Director of Downtown Development (Main Street Program), Waxahachie
abrown@waxahachie.com

Glinda Felty (President)
Ellis County Museum
P.O. Box 706
Waxahachie, TX, 75168

- Summary of Stakeholder Comments:

As of the date of this report, JMT has not received stakeholder comments on the project.

Project Setting/Study Area

- Previously Evaluated Historic Resources

JMT's architectural historians consulted the Texas Historical Commission's online Atlas database, as well as the TxDOT Historic Districts and Properties Map, and Historic Bridges map to locate previously evaluated historic resources. No formally evaluated resources are present in the APE or the 1,300-foot study area. Surveys have occurred in portions of the village of Ovilla along Water and Main streets but no evaluations for NRHP eligibility have occurred according to the consulted maps. Five historic markers are in the study area; the Village of Ovilla, the First Baptist Church of Ovilla, the First Baptist Church cemetery, the Shiloh Cumberland Presbyterian Church, and the Shiloh Presbyterian Church Cemetery.

- Previously Designated Historic Properties

JMT's architectural historians consulted the Texas Historical Commission's online Atlas database, as well as the TxDOT Historic Districts and Properties Map, and Historic Bridges map to locate previously designated historic properties; none are within the project APE or the 1,300-foot study area.

- Previously Designated Historic Districts

JMT's architectural historians consulted the Texas Historical Commission's online Atlas database, as well as the TxDOT Historic Districts and Properties Map, and Historic Bridges map to locate previously designated historic districts; none are within the project APE or 1300-foot study area.

- Historic Land Use

Agriculture was the dominant land use type in the project area since settlement in the mid-19th century until suburban development began to encroach on farmland in the mid-20th century. Minor commercial and institutional development occurred in Ovilla around the intersection of FM 664 and Main Street.

- Current Land Use and Environment

Land use varies along the project route. The southern terminus of the project at the juncture with US 287 contains large warehouses, institutional buildings, and car dealerships built in the late 20th and early 21st centuries. The middle of the project area supports two primary land uses: agriculture and 21st-century dense suburban development. Mid-20th-century ranch style homes are scattered throughout the central portion of the project area. The northern portion of the project passes through the village of Ovilla, which contains mixed-use but low-density development dating from the early to late 20th century.

- Historic Period(s) and Property Types

The period of significance is defined as the span of time during which significant events and activities occurred within the project area. Agriculture was the earliest and most significant economic activity in the study area. Since the area's settlement in the mid-19th century, cattle, cotton, corn, and other small grain products formed the backbone of the local economy. By the 1960s, the growth of the Dallas-Fort Worth metro area reached the project area, bringing with it suburban residential sprawl and the loss of agricultural land. Therefore, the period of significance is 1840, representing the earliest period of settlement in the area, to 1960, when traditional farmland began to subdivide for residential and commercial use. Surveyors anticipated recording former historic farmsteads leftover from the region's agricultural era. Resource 005 was the only historic farmstead with associated agricultural land located in the project area. The resource is vacant and in poor condition.

The northern portion of the study area passes through the village of Ovilla. Ovilla was the earliest settlement in the project area, and one of the first in Ellis County. The village established as a fortified community in 1847 but was in decline by the turn of the 20th century. The post office closed in 1906, and catastrophic fires in 1918 and 1926 destroyed most of the original structures in the community. The period of significance for the village of Ovilla is 1847 to 1918, representing the earliest settlement to the date of the first fire, well into the community's decline. Surveys identified two properties associated with the village of Ovilla. These resources include an early 20th-century commercial structure (018) and dwelling with Queen Anne detailing (020).

- Integrity of Historic Setting

The historic setting of the survey area has low integrity. Little agricultural activity occurs along the project route. Surveys found no active farmsteads or ranches dating to the period of significance during the survey. Dense residential suburban development now dominates the area with some large warehouse facilities located at the southern end of the survey area. The village of Orvilla does not retain integrity of setting due to the early 20th century fires and the subsequent infill with mid- and late 20th-century development.

Survey Methods

- Methodological Description

In 2019, TxDOT contracted JMT to perform a reconnaissance level survey of properties within the 150-foot APE of the FM 664 widening and realignment project. JMT architectural historians conducted historical research of the study area utilizing resources available online and project information provided by TxDOT. They used this information to develop a research design document that TxDOT approved prior to the survey. The architectural historians used historic maps and aerial photographs to screen the project area for historic age resources and produce maps to aid in the field survey.

JMT architectural historians then traveled to Waxahachie and visited the Ellis County Museum to view their exhibits and consult with local experts about potential historic resources in the project area. JMT conducted the reconnaissance survey on October 15 and 16, 2019, and documented each property within or bisected by the APE that contained structures dating to 1978 or earlier. JMT found 41 historic-age resources. This report summarizes the results of the survey.

- Comments on Methods

Surveyors did not have access to any of the properties. All surveys of the properties occurred from the public ROW. Mature trees, brush, and foliage partially obscured some resources. Five of the 41 surveyed properties could not be seen or adequately assessed from the ROW.

Survey Results

- Literature Review

Maps and Atlases

General Land Office Maps of Ellis County from 1857, 1879, 1889.

USGS Maps from 1954, 1958, 1959, 1961, 1968, 1973, 1978, 1982, 1985, 1986.

Aerial Photographs

National Environmental Title and Research (NETR), LLC., 1956, 1958, 1968, 1972, 1979, 1981.

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Historical Context Statement

The Texas legislature created Ellis County in 1849 from a portion of Navarro County. The earliest permanent settlers in Ellis county were primarily farmers moving west from

southeastern states, along with European immigrants. The landscape of Ellis County was primarily grass prairie, and cattle raising became the primary economic activity, supplemented by minor grain and cotton production (Haaser).

Ovilla, located at the north end of the project area, was one of the earliest settlements in Ellis County. Settlers founded Ovilla as a fortified encampment in 1844. The Shiloh Cumberland Presbyterian Church, founded in 1847 near Ovilla, became a prominent local institution (Stewart). After the creation of Ellis County in 1849, residents established Waxahachie as the county seat, and it quickly grew to be the economic and cultural hub of the emerging county.

Ellis County remained sparsely populated into the Civil War period. County residents strongly supported the Confederacy during the war, and Federal troops occupied the county after the conclusion of the war. The county grew rapidly after the Civil War, and cotton farming replaced cattle ranching as the primary form of agriculture. Texas became the largest producer of cotton in the United States by the end of the 19th century, and Ellis was one of the most productive areas of the state (McMichael Scott, 8). The growth of the cash crop necessitated better options for transporting the cotton to larger markets.

The Waxahachie Tap was the first railroad in the project area. Constructed in 1875, it ran east out of Waxahachie and allowed local farmers to transport their products to Garrett and Ennis (Felty). Additional railroad companies established lines in the county by the end of the 19th century. Ellis County continued to grow steadily over the first decades of the 20th century, but it remained rural and agricultural. The wealth generated by cotton production helped Waxahachie develop into a major cultural, commercial, and transportation hub. Bypassed by the rail lines and improved roads, the village of Ovilla was in decline by the first decade of the 20th century. The post office closed in 1906, and fires devastated the village in 1918 and 1926 (Stewart).

Ellis county entered an extended period of decline beginning with the Great Depression. The number of farms drastically declined, and thousands of county residents received government relief in the 1930s (Haaser). Waxahachie also suffered through the Depression, but a stronger base of institutions and industries helped the city better survive the crisis. World War II did not bring substantial recovery to the county, as population loss and general economic stagnation continued into the 1960s (Felty). Ellis County experienced an economic revival in the second half of the 20th century as the growth of the Dallas-Fort Worth metro area to the north began to push into portions of the county. The population increased as farms subdivided into suburban-style residential development and diverse industries established facilities in the area. In response to this growth, the state realigned and regularized portions of Ovilla Road in the 1960s. Prior to this realignment, the road generally followed along the borders of farms, making sharp right turns along property lines and preventing high-speed traffic.

In the late 1980s, local politicians and business interests successfully lobbied the federal government to locate a particle accelerator, named the Superconducting Super Collider (SSC), in Ellis County. The complex would have been the world's largest, with a 54-mile tunnel dug around Waxahachie, and passing under the project area. The project ended in 1993, before completion, due to political pressure regarding the high cost of the project. Nearly 15 miles of the tunnel still exists, and the above-ground structures are repurposed for office and laboratory use.

As the Dallas metro area experienced rapid and sustained growth at the end of the 20th century, development pressure increased in Ellis County. Residential development in the mid-20th century took the form of modern ranch homes built on lots with spacious yards that occasionally allowed for minor agricultural production. These homes are in clusters along existing roads. The 21st-century suburban development took a much different form. Developers purchased large tracts of the remaining farmland and laid out new cul-de-sacs ringed by large homes with small yards. Tall fences and walls generally separate these developments from the surrounding area.

National Register Eligibility Recommendations

- Eligible Properties/Districts

JMT Identified no NRHP eligible historic properties or districts during the reconnaissance survey.

- Ineligible Properties/Districts

JMT recorded 41 historic-age properties during the reconnaissance survey. JMT recommends 36 resources not eligible for listing on the NRHP. Five resources were not visible for survey.

Early 20th Century Dwellings

(Resources 001, 005, 019, 020, 033, 040)

The survey recorded six early 20th-century dwellings (ca. 1900-1930). With the exception resource 019, historic aerial photographs indicate they once functioned as farmsteads, but are now primarily residences. Resource 019 was a residence in the village of Ovilla. Two of the resources (001, 033) resemble shotgun-style dwellings; rectangular frame structures with recessed front porches and front gable roofs. These two buildings exhibit craftsman inspired details, including simple wood brackets in the façade gable ends and overhanging eaves with exposed rafter ends. Resource 005 is a former farmstead with an associated barn. The barn and dwelling are vacant, and the dwelling is nearing collapse. Resource 040 is a two-story, L-shaped building with Victorian architectural

influences. Resource 020 is a two-story dwelling with Queen Anne architectural details.

The integrity of the early 20th century dwellings in the survey area varies. Except for resource 019, all the resources appear to have lost significant agricultural land since the suburbanization of the area in the mid-to-late 20th century. The buildings are generally simple, vernacular structures with stylistic influences reflective of the era in which they were built. None have the features or integrity to be architecturally significant. Although these dwellings are among the oldest in the project area, they do not have the integrity or significance for individual listing on the NRHP. These resources lie along the length of the project area, interspersed by large areas of modern development, are not recommended eligible as a district.

Mid-20th-Century Vernacular Dwellings

(Resources 003, 006, 007, 012, 019, 024, 029, 034, 037)

The survey identified nine mid-20th-century vernacular dwellings (ca. 1935-1960). These buildings are typical to the era and do not display significant architectural detail. The mid-century dwellings are all one-story tall wood buildings. They generally have steeper pitched hip or gable roofs than the later ranch homes. A few of the resources display minor details from earlier architectural styles, such as exposed rafter tails and turned porch columns.

The mid-century vernacular dwellings retain varying degrees of integrity. They were often originally associated with agricultural land, but most of the land is now suburban development or consolidated with larger plots of pasture. The homes date to the period of significance for agriculture in the project area, but only very minor, if any, agricultural activities occur on the properties today. None of the mid-century dwellings carry sufficient architectural significance for individual listing on the NRHP.

Ranch Dwellings

(Resources 002, 010, 013, 014, 015, 016, 021, 023, 025, 036, 038, 039)

Ranch dwellings are the most common resource in the survey area; surveyors recorded 12 of this property type. They represent the first wave of suburban-style development in the project area (ca. 1950-1975). These single-story buildings have shallow-pitched roofs and rectangular or L-shaped plans. The front entrances are commonly recessed into the façade of the building and protected by overhanging eaves or front porches. Many of the ranch dwellings in the study area are clad in beige or yellow brick and feature brick sills, lintels, and soldier courses at the cornice. They have small attached garages now used as storage or domestic space. As cars and trucks became larger over the course of the 20th century, owners often added detached garages or carports to the property.

The ranch houses recorded in the survey generally retain a high degree of integrity in materials, design, and workmanship. However, many of these buildings date after the

period of significance in the study area and do not reflect significant historical associations on their own. They represent an era of rapid suburbanization that occurred throughout the country and they do not possess the characteristics that would distinguish them from other developments, such as early master-planned communities or architect-designed buildings. Ranch homes with similar design characteristics and integrity are common throughout the United States. None of the resources recorded were individually significant examples of the type. The homes are associated with the first wave of suburban development in the project area but are not associated with any significant historical themes.

Vernacular Rural Residences

(Resources 008, 009, 022, 028, 030)

The survey recorded five vernacular rural residences that did not display architectural characteristics attributable to a specific style of architecture. These resources date between 1965 and 1975. They are all single-story homes without architecturally significant features. None of the homes carry significant historic associations, and JMT recommends the resources are not eligible for listing in the NRHP.

Other

Four resources in the survey area did not fit into the above-described categories.

- 004: Ovilla Road Baptist Church and School: This complex of connected structures has an office building and student center that date to the early 1970s. However, several modern additions dwarf the historic-age buildings. The complex no longer conveys its status as an historic-age resource.
- 017: Teachers who Tutor: The resource is a simple commercial structure from the mid-1970s that was likely a small convenience store. The structure does not carry architectural or historic significance.
- 018: Crouch Property: The resource is an early 20th-century, one-story, vernacular commercial building with a false façade featuring a stepped gable. The Crouch property is one of the older and among the few remaining commercial properties in Ovilla. Although it retains most aspects of integrity, it does not appear to carry enough historical or architectural significance as an individual property for listing on the NRHP.
- 027: MC Body Works: The resource consists of a 1970s pole barn and a modern pole barn. The autobody garage is a typical industrial structure without architecturally significant features. JMT does not recommend it eligible for listing on the NRHP.

- Recommendations for Further Study

Five properties (026, 031, 032, 035, 041) were not visible for survey from the ROW. Based on an analysis of maps and aerial photographs, four of the five properties appear to contain residential dwellings dating to the second half of the 20th century. One of the properties (035) is a 24-acre wood and pasture lot that appears to contain an agricultural outbuilding located at the rear. It is surrounded by 21st-century residential development and not visible from the ROW. All five of these resources sit far removed from the ROW, and the project would not likely affect the them. Access to the properties would allow for a complete survey.

Three resources (018, 019, 020) at the edge of the APE appear to be early buildings associated with the village of Ovilla. Surveyors noted the presence of additional early 20th century resources in the study area, particularly on West Main Street west of Ovilla Road, including commercial buildings with false parapets. Further research is needed to determine if there are enough resources with sufficient integrity to comprise an historic commercial district, especially given the history of early 20th-century fires and decline. However, the resources sit at the edge or outside of the APE and should not be affected by the project.

Determination of Section 106 Effects Recommendations

- Direct Effects

JMT did not find any surveyed property in the APE eligible for or listed in the NRHP. JMT recommends that the FM 664 widening project will have **No Direct Effect** on historic resources.

- Indirect, Cumulative or Reasonable Foreseeable Effects

JMT did not find any surveyed property in the APE or study area eligible for or listed in the NRHP. Therefore, JMT recommends that the project will have **No Indirect, Cumulative or Reasonable Foreseeable Effect** on historic resources.

U.S. DOT Section 4(f) Applicability Statement

There are no Section 4(f) historic properties in the APE. Heritage Park, at the intersection of FM 664 and Main Street, is a public park and possibly subject to Section 4(f). It is not a historic property and therefore outside the scope of this evaluation.

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Handbook of Texas. Felty, Margaret L. “Waxahachie, TX.” Accessed September 4, 2019.

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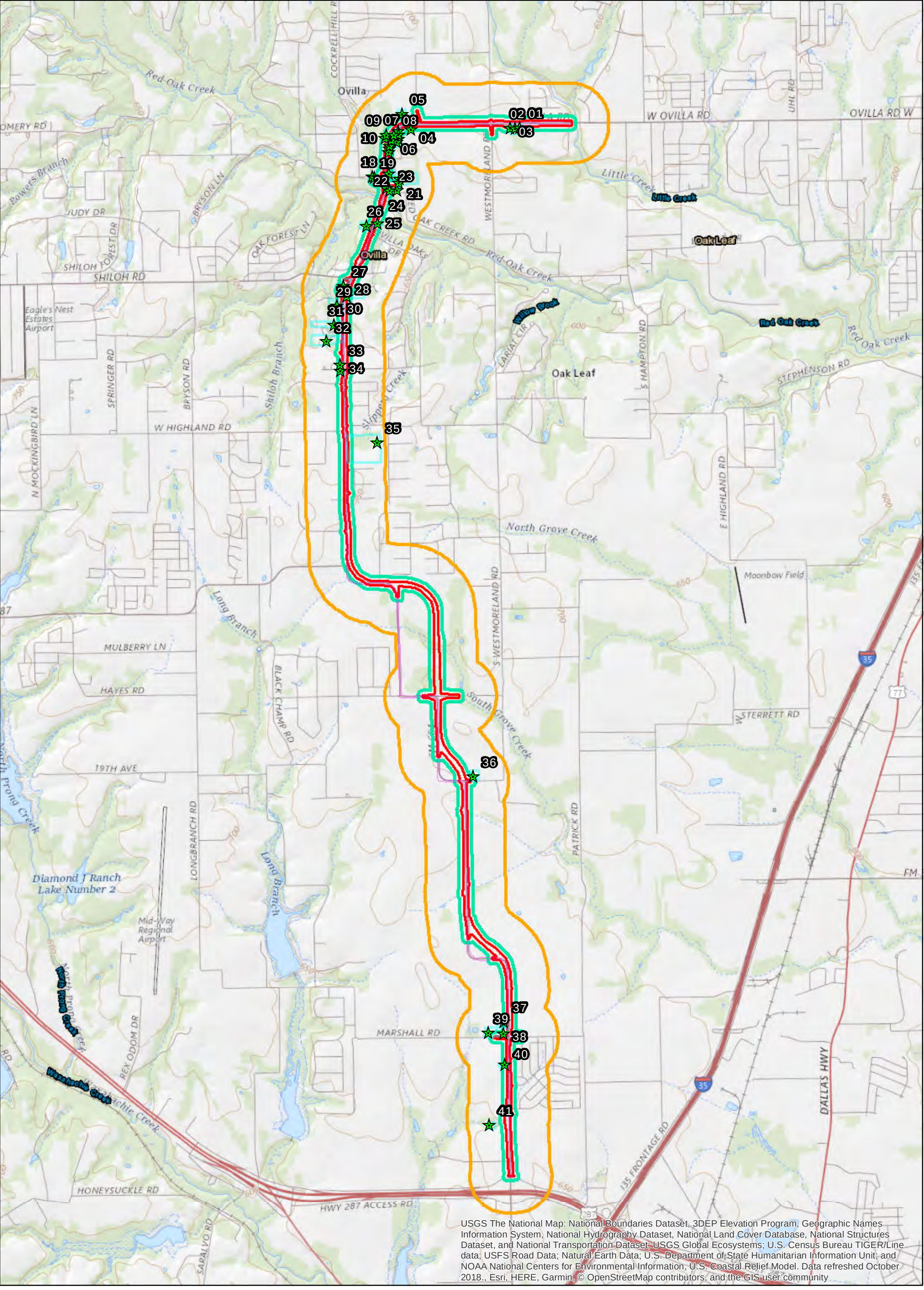
Appendix C: Figures



USGS The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; USGS Global Ecosystems; U.S. Census Bureau TIGER/Line data; USFS Road Data; Natural Earth Data; U.S. Department of State Humanitarian Information Unit; and NOAA National Centers for Environmental Information, U.S. Coastal Relief Model. Data refreshed October 2018., Esri, HERE, Garmin, © OpenStreetMap contributors, and the GIS user community

FM 664 Project: USGS Topographic Map

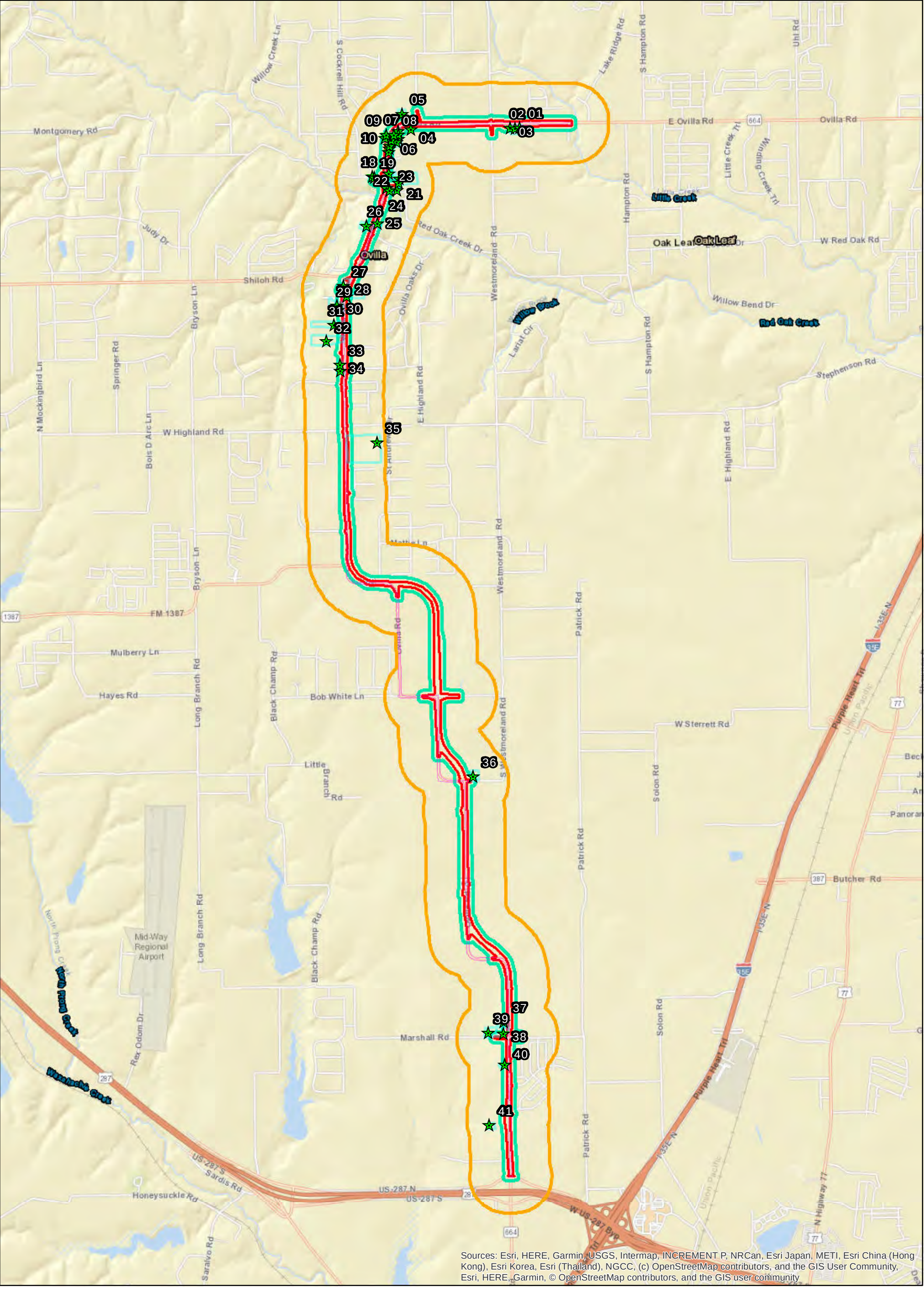
Legend

- Resources
- Existing ROW
- Parcel Boundary
- Study Area
- 150' APE
- Prop. ROW

N

0 0.15 0.3 0.6 0.9 1.2 Miles

FM 664 Project: Street Map



Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community, Esri, HERE, Garmin, © OpenStreetMap contributors, and the GIS user community

Legend

- Resources
- Existing ROW
- Parcel Boundary
- Study Area
- 150' APE
- Prop. ROW

N

0 0.15 0.3 0.6 0.9 1.2 Miles

Indirect and Cumulative Impacts Analysis

Farm-to-Market Road 664 (FM 664)

From: United States Highway 287 (US 287)
To: Westmoreland Road

Ellis County, Texas

Control-Section-Job (CSJ): 1051-01-038 & 1051-01-052

Date: February 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.

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Project Location Map

USGS Topographic Map

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Indirect Impacts Area of Influence Map

Cumulative Impacts Resource Study Area Map

I. INTRODUCTION

The Texas Department of Transportation (TxDOT) Dallas District proposes the widening of Farm-to-Market (FM) 664 from United States Highway 287 (US 287) to Westmoreland Road in Ellis County, Texas; a distance of approximately 8.1 miles. The proposed project would reconstruct, realign and widen this section of FM 664 from a 2-lane rural roadway configuration to a 4-lane urban roadway (ultimate 6-lanes) with a raised median. See **Appendix A** for the **Project Location Map, USGS Topographic Map,** and **Aerial Map**.

A. Need and Purpose

The proposed project is needed because FM 664 fails to meet current design standards, contains 90-degree turns, and cannot accommodate current or future traffic volumes.

The purpose of the project is to improve roadway geometry, provide bicycle and pedestrian accommodations, and increase traffic capacity.

B. Existing Facility

The existing FM 664 facility between US 287 in Waxahachie and Westmoreland Road in Ovilla, Texas mostly consists of two undivided 11-foot (ft) wide lanes and 3-ft wide shoulders within an existing right-of-way (ROW) width that varies between 80 ft and 100 ft. There is an existing bridge over Red Oak Creek, and there are ditches along both sides of the roadway to provide surface drainage as well as culverts crossing along the existing roadway at multiple locations. Stormwater runoff within the limits is conveyed through an open ditch drainage system. The facility is intersected by four major collectors, including Marshall Road, Bob White Road and FM 1387 in Waxahachie, and Shiloh Road in Ovilla, and other minor collectors and local roads. Existing posted speed limits are 30 miles per hour (mph) at school zones, and 45-55 mph in other sections of the corridor.

C. Proposed Facility

The proposed project consists of the reconstruction, realigning, and widening of FM 664 from US 287 to Westmoreland Road for approximately 8.1 miles. Improvements would include the expansion of the current 2-lane rural roadway to a 4-lane urban roadway (ultimate 6-lanes) with a raised median to provide additional capacity and improve safety. Improvements would consist of 12-foot-wide travel lanes, and 14-foot-wide outside shared-use lanes, 6-foot sidewalks with American Disabilities Act (ADA) curb ramps in both directions. Other improvements would include eliminating 90-degree turns along FM 664 between FM 1387 and Marshall Road. The proposed design speed is 40 mph. The existing ROW width would increase with the proposed project to the typical 150-foot ROW footprint. The proposed project is anticipated to require 87.18 acres of additional ROW and 0.61 acre of easement.

II. INDIRECT IMPACTS

The Council on Environmental Quality (CEQ) defines indirect effects as those caused by the action and occur later in time or farther removed in distance than direct effects but are still reasonably foreseeable. Indirect impacts may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems (40 Code of Federal Regulations [CFR] Section 1508.8). Indirect effects differ from the direct impacts associated with the construction and operation of the Build Alternative and are caused by another action or actions that have an established relationship or connection to the Build Alternative. These induced actions are those that would not or could not occur without the implementation of the Build Alternative.

The encroachment-alteration component of indirect impacts is discussed in tandem with direct impacts that were addressed in the resource specific technical reports. These technical reports are available for review at the TxDOT Dallas District office.

The analysis of indirect impacts discussed in this document follows the six-step process outlined in TxDOT's Indirect Impacts Analysis Guidance (January 2019). The six steps in the TxDOT Indirect Impacts Analysis Guidance consist of the following:

1. Define the Methodology
2. Define the Area of Influence (AOI) and Study Timeframe
3. Identify Areas Subject to Induced Growth in the AOI
4. Determine if Growth is Likely to Occur in the Induced Growth Areas
5. Identify Resources Subject to Induced Growth Impacts
6. Identify Mitigation if Applicable

Step 1: Define the Methodology

The potential for induced growth impacts was determined using a planning judgment approach consisting of an interview with the City of Waxahachie Planning Department and email correspondence with the City of Ovilla Planning Department.

Cartographic techniques using map overlays of environmental constraints such as cemeteries, floodplains, and parks were used to identify areas where potential induced growth would not likely occur.

Step 2: Define the Area of Influence and Study Timeframe

The basic objective in creating an indirect impacts AOI is to delineate a study area in which project-related indirect induced growth may occur. According to TxDOT's Indirect Impacts Analysis Guidance, there are four preferred methods for determining the AOI:

1. Adopting political/geographic boundaries;

2. Using the project's commute-shed;
3. Using the location of next major parallel roadway; and/or
4. Incorporating data from stakeholder interviews or public involvement.

The AOI for the proposed project was established using census block groups refined based on city borders and parallel roadways. First the proposed project's preliminary AOI was established using eight census block groups which encompass the project location. The census block groups encompass portions of the Cities of Cedar Hill, Glenn Heights, Midlothian, Oak Leaf, Ovilla and Waxahachie. The southern end of the preliminary AOI was then extended to Business US 287 to include the entire area around the FM 664/US 287 intersection. Finally, a portion of Census Block Group 3 of Census Tract 602.14, which extended beyond the other selected block groups, was pulled back to Walnut Grove Road to align with the other census block groups and make the AOI more uniform.

The Planning Departments of the Cities of Waxahachie and Ovilla agreed that the AOI would encompass any induced growth effects associated with the proposed project. Other cities within the AOI were not directly contacted due to both their distance from the project, and the results of discussions with Waxahachie and Ovilla planners. The AOI encompasses approximately 25,584.7 acres and can be viewed on the **Indirect Impacts Area of Influence Map**.

The area within the AOI encompasses the entire Build Alternative and adjacent areas where development or accelerated rates of development could potentially occur. Extending the AOI out farther would encompass areas unlikely to be affected by the proposed project.

Temporal boundaries for the indirect effect analysis extend from construction of the Build Alternative (2028) until 2045, the end of the proposed Metropolitan Transportation Plan (MTP) planning cycle.

Step 3: Identify Areas Subject to Induced Growth in the AOI

Cartographic techniques using overlays showing potential constraints such as cemeteries, existing development, floodplains, surface wells, parks, and water bodies were used to identify which areas within the AOI would be most likely to experience induced growth. Utilities are available to the entire AOI. A discussion of the land uses within the AOI and whether they would be subject to induced growth is as follows:

Areas Without Potential for Induced Growth

The land uses within the AOI that have no potential for induced growth are discussed in this section. The areas with no potential for induced growth, excluding areas of existing development, are shown on the **Indirect Impacts Area of Influence Map.**

Floodplain

A portion of the AOI contains South Grove Creek, Red Oak Creek, and their associated tributaries and floodplains. The floodplain areas total approximately 1,642.8 acres and depending on specific site conditions, would generally not experience induced growth. These floodplain areas (100-year flood zones) are shown on the **Indirect Impacts Area of Influence Map**. Federal Emergency Management Agency (FEMA) National Flood Hazard Layer (NFHL) geographic information system (GIS) data was utilized to identify 100-year flood zones within the AOI.[1] This constraint is unlikely to undergo induced growth due to regulatory protections.

Waters of U.S.

The National Wetlands Inventory (NWI) Wetlands Mapper was utilized to determine potential open water, riverine and wetland acreages in the AOI along with aerial imagery analysis.[2]

There are approximately 377.6 acres of Waters of U.S. in the AOI and consist of approximately 124.3 acres of open water (freshwater ponds and lakes), 117.2 acres of riverine features and 136.1 acres of potential wetlands. These constraints are unlikely to undergo induced growth due to regulatory protections. These water features are shown on the **Indirect Impacts Area of Influence Map**.

Cemeteries

Cemeteries were identified using North Central Texas Council of Governments (NCTCOG) Land Use data for 2015.[3] There are two cemeteries, Ovilla Cemetery and Shiloh Cemetery, which encompass approximately 12.6 acres of land within the AOI.

Parkland/Green Belts

These areas were identified using NCTCOG Land Use data for 2015. Approximately 82.7 acres of parkland and green belts are located within the AOI. Land identified as parkland/green space is shown on the **Indirect Impacts Area of Influence Map**. This constraint is unlikely to undergo induced growth due to regulatory protections.

Roadways and Railroads

The AOI contains approximately 874.1 acres of existing roadways and associated transportation ROW.[4] These roadways are unlikely to undergo induced growth. There are no railroads in the AOI.

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[1] https://www.fema.gov/faq-details/GIS-Data/

[2] https://www.fws.gov/wetlands/data/Mapper.html

[3] http://data-nctcoggis.opendata.arcgis.com/datasets/2015-land-use

[4] http://data-nctcoggis.opendata.arcgis.com/datasets/roads-2017

Proposed Project

The existing and proposed project footprint is approximately 198.4 acres and is not developable. The proposed project would not undergo induced growth because the footprint would be utilized for FM 664.

Existing Development

There are approximately 23,180.7 acres of existing development within the AOI.[5] This development primarily consists of agriculture and single-family residential land uses, along with commercial/retail services, industrial, civic/institutional facilities, utilities and places of worship. The majority of existing land use in the AOI is agriculture. This agricultural land totals approximately 12,636.2 acres with much of it potentially being subject to planned development as indicated by planners during interviews. Areas of planned redevelopment were also identified by City of Waxahachie planning representatives and through available on-line documents.

Planned Development Not Dependent on Proposed Project

Currently planned and foreseeable development and redevelopment were identified using information gathered at the planner interview with Waxahachie and from planning documents later discussed. Planned development is identified in **Table 1** and is shown on the **Indirect Impacts Area of Influence Map.**

Table 1: Planned Development within the AOI

Map ID No.	City	Development Type	Name	Area (acres)[1]
1	Waxahachie	Residential	Steeple Chase	79.3
2	Waxahachie	Residential	Shepard Place	121.5
3	Waxahachie	Residential	The Mark on Conquest	9.8
4	Waxahachie	Mixed Use	Lonesome Dove	453.5
5	Waxahachie	Commercial	Buc-ee's Convenience Store	57.2
6	Ellis County	Residential	Cross Creek	59.2
7	Ellis County	Residential	Bryson Springs	159.5
8	Midlothian	Residential	Mockingbird Springs	145.1
9	Oak Leaf	Residential	Chapman Ranch	143.6
10	Ovilla	Residential	Hollywood Estates	65.8
11	Ovilla	Residential	Wildwood	390.5
			Total	**1,685.0**

Sources: Interview with planners from the City of Waxahachie (9/12/19); Waxahachie online documents/maps.
[1] The area of proposed roadways within planned developments are included in the area (acreage) of the planned development.

[5] http://data-nctcoggis.opendata.arcgis.com/datasets/2015-land-use

The 1,685.0 acres of planned and foreseeable development and redevelopment listed in **Table 1** are not dependent on the proposed project.

Vacant Land Not Influenced by the Proposed Project

Approximately 390.6 acres of vacant land is located within the AOI that does not fall under the other categories discussed in Step 3. The professional opinion of the preparers and of those interviewed was that any new development of these vacant lands would be associated with the other roadways, economic conditions, and population demand of the project area cities and counties.

Summary

Table 2 shows a summary of the areas without the potential for induced growth within the AOI.

Table 2: Summary of the Areas Without the Potential for Induced Growth Within the AOI

Land Use	Acres
Floodplain*	1,642.8
Open Water*	124.3
Riverine Features*	117.2
Wetlands*	136.1
Cemeteries	12.6
Parkland/Green Belts	82.7
Existing Roadways	874.1
Proposed FM 664 Project*	198.4
Existing Development Excluding Planned and Potential Redevelopment	23,180.7
Planned Development Not Dependent on Proposed Project	1,685.0
Vacant Land Not Influenced by the Proposed Project	390.6
Total	**28,444.5**

*Overlaps other areas of land use.
Sources: FEMA NFHL GIS data (2018); USFWS GIS data (2019); NCTCOG GIS Data (2015); TNRIS and Google Maps aerial imagery (2018, 2019).

As shown in **Table 2**, there are approximately 28,444.5 acres of land without the potential for induced growth within the AOI.

Areas with Potential for Induced Growth

Based on discussions with planning representatives from the Cities of Waxahachie and Ovilla, there are no identified areas with potential for induced growth. The planning representatives did not believe that the proposed project would create substantial enough changes to drive growth in the area, but it would help to address the already growing transportation demands and general growth trends of the region. Due to the lack of induced growth within the Cities of

Waxahachie and Ovilla, the only two cities with borders encompassing the project location, it was not deemed necessary to contact cities further away.

Step 4: Determine if Growth is Likely to occur in the Induced Growth Areas

The purpose of this step is to analyze the likelihood for induced growth to occur on the areas with potential induced growth identified in Step 3. Discussions with planning representatives from the Cities of Waxahachie and Ovilla is what was used to determine that induced growth resulting from the proposed project is not anticipated.

Planner Information

Waxahachie

A meeting was held with City of Waxahachie planning representatives on September 12, 2019. The City indicated a number of planned residential and commercial developments along and nearby FM 664, but they did not foresee any induced growth resulting from the proposed project because the project would not provide any new areas of access. The planned residential and commercial developments would occur with or without the project.

Ovilla

Email correspondence occurred between September 24 and 30, 2019. The planning representative did not anticipate any induced growth as a result of the project.

Based on the recommendations of the planners of the City of Waxahachie and Town of Ovilla, there are no areas of potential induced growth.

Planning Documents

There are numerous planning documents that cover the AOI. Representative applicable planning documents are listed in **Table 3**.

Table 3: Planning Documents

Document	Entity
Mobility 2045: The Metropolitan Transportation Plan for North Central Texas	NCTCOG
Vision North Texas 2050 (2010)	NCTCOG
City of Glenn Heights Comprehensive Plan 2023 (2010)	City of Glenn Heights
Envision Midlothian A Comprehensive Plan (2018)	City of Midlothian
City of Ovilla Comprehensive Land Use Plan (2016)	City of Ovilla
Waxahachie 2016 Comprehensive Plan Addendum	City of Waxahachie

Details from various planning documents that support the induced growth discussion in the coming steps are summarized below:

- *Mobility 2045: The Metropolitan Transportation Plan for North Central Texas* was adopted in June 2018 by the Regional Transportation Council, which serves as the policy body for the Metropolitan Planning Organization for North Central Texas. The Plan is the defining vision for the multimodal transportation system in the Dallas-Fort Worth Metropolitan Planning Area and guides the implementation of multimodal transportation improvements, policies, and programs in the 12-county Metropolitan Planning Area through the year 2045. Appendix E. Mobility Options under the Regionally Significant Arterials Improvements Summary recommends the expansion of the current 2-lane road to a 4-lane road by 2028, and ultimately a 6-lane road by 2045.
- *Vision North Texas 2050* (2010) was a collaborative planning effort conducted in the late 2000s to educate elected officials and regional leaders on growth trends in the North Texas region. The Plan acknowledges that North Texas is the fastest-growing region in the country and the increasing growth is putting pressure on the region's natural resources (especially water) and infrastructure (especially transportation).
- City of Glenn Heights *Comprehensive Plan 2023* (2010) includes a Future Land Use Plan map that shows how the area next to FM 664 will be built out, including retail stores along FM 664. Looking at the Existing Land Use map, currently the City contains a total of 4,683 acres of land, of which 2,643 acres are vacant.
- City of Midlothian *Envision Midlothian A Comprehensive Plan* (2018) sets a course to manage growth, promote reinvestments, and improve quality of life for the next two decades. The Future Land Use Plan map shows the areas near the project limits on FM 664 already designated for land use modules.
- City of Ovilla *Comprehensive Land Use Plan* (2016) recognizes that FM 664 is the major transportation spine for Ovilla and FM 664 is considered the City's principal arterial. The City acknowledges that the FM 664 corridor offers the most potential for commercial and sales tax growth for the City. The traffic counts on FM 664 will continually increase and the visibility of the adjacent commercial areas will allow them to attract customers from outside of the normal Ovilla market. The City should aggressively pursue the corridor principles of shared access, increased landscaping, and coordination of building façades to transform these existing commercial areas into more aesthetically pleasing spaces, which will encourage repeat business and improve the economic viability of the businesses.
- City of Waxahachie *2016 Comprehensive Plan Addendum* has designated some Highway Commercial areas near the FM 664 and US 287 intersection in the Future Land Use Plan; however, this land use would be developed as Highway Commercial with or without the project.

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Population and Employment Trends and Forecasts

Population

According to *Mobility 2045*, the 12-county Dallas-Fort Worth (DFW) MPA had a 2010 population of approximately 6.4 million persons. By 2045, the population of the 12-county DFW MPA is projected to be 11.2 million persons; an increase in growth of approximately 75 percent.[6]

According to NCTCOG population projections, the 2017 population of Ellis County was 163,695 persons and the 2045 population is projected to be 300,954 persons; an increase in growth of approximately 84 percent. Transportation Serial Zones (TSZ) created by the NCTCOG provide area-specific population and employment trends from 2005 to 2045 as based on *Mobility 2045*. These zones follow roadways, and consequently the AOI contains exactly 18 TSZs. The combined populations for these TSZs show 15,432 persons for 2005 and 55,699 persons for 2045.[7] Compared to the county or individual city levels, this is an approximate 261 percent increase in population relative to the 2005 population. This is likely due to a number of planned and potential developments in heavily agricultural areas outside of city limits and shows how necessary this project is for the region.

The Texas Water Development Board (TWDB) conducts population projections to assist in regional water planning. The projected population for Ellis County in 2020 is 191,638 persons and 280,745 persons in 2040. This is an approximate 46 percent increase in population. **Table 4** shows the projected populations of the six cities within the FM 664 project Resource Study Area for the years 2020 and 2040.

Table 4: Projected Populations for the Cities in the FM 664 Area of Influence

City	2020	2040	Percent Increase
City of Cedar Hill	53,200	77,038	44.8
City of Glenn Heights	17,323	29,590	70.8
City of Midlothian	18,025	31,011	72.0
City of Oak Leaf	1,350	1,750	29.6
City of Ovilla	4,525	7,249	60.2
City of Waxahachie	37,700	52,800	40.1

Sources: TWDB 2016 Regional Water Plan. http://www.twdb.texas.gov/waterplanning/rwp/plans/2016/ (Accessed 1/28/20)

As shown in **Table 4**, the 2020 projected populations for the six cities in the FM 664 AOI are projected to grow between 29.6 percent and 72 percent by 2040.

[6] https://www.nctcog.org/trans/plan/mtp/2045

[7] http://data-nctcoggis.opendata.arcgis.com/datasets/c8ab64bc19eb4878b659bdf50710c036_11

Employment

According to the NCTCOG, 4,584,235 persons were employed in the 12-county DFW MPA in 2017. By 2045, 7,024,227 persons are projected to be employed in the 12- county DFW MPA; an increase in growth of approximately 53.2 percent. In Ellis County, 68,913 persons were forecast to be employed in 2017. By 2045, Ellis County employment is projected to be 102,692 persons; an increase in growth of approximately 49 percent. TSZs within the AOI project an approximate 35 percent increase in employment between 2005 and 2045, from 3,602 to 10,298 persons employed there.[8]

Access to Development in the Project Corridor

The FM 664 corridor will remain the major commercial corridor for the City of Ovilla. In Waxahachie, FM 664 intersects with US 287 and the City is planning to utilize this as a highway commercial area. Existing and planned residential and commercial developments are under construction or are pending along or near the FM 664 corridor. These developments would be constructed with or without the project and include the following:

- The Mark on Conquest – Will be a multi-family apartment complex of 140 units in the City of Waxahachie.
- Lonesome Dove – Currently in the planning phase, this development would be mixed use and include parks, community areas and a school.
- Legacy Estates – This is an approximate 200-acre residential single-family community in the City of Waxahachie.
- Wildwood – A large single-family residential neighborhood in the planning phase along the north end of the project limits totaling nearly 400 acres.

Although the existing and planned developments discussed above are not dependent on the proposed project, the widening on FM 664 would allow better access for these future residential communities to US 287 and IH 35E.

Summary

Based on the information from the planning departments of the Cities of Ovilla and Waxahachie, planning documents, land use and zoning maps, thoroughfare plans, and population, employment and housing trend data, there is no potential for induced growth, as identified in **Step 3.**

Step 5: Identify Resources Subject to Induced Growth Impacts

The proposed project would not result in any resources being impacted by induced growth impacts.

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[8] http://data-nctcoggis.opendata.arcgis.com/datasets/c8ab64bc19eb4878b659bdf50710c036_11

Step 6: Identify Mitigation

No induced growth associated with the proposed project was identified; therefore, there would be no mitigation for induced growth impacts.

III. CUMULATIVE IMPACTS

The CEQ defines cumulative impacts as those which result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time (40 CFR §1508.7). As such, it may be difficult to understand the role that a proposed action may have in contributing to the overall or cumulative impacts to an area or resource. In accordance with TxDOT's *Cumulative Impacts Analysis Guidelines* (January 2019), this analysis includes the five steps, listed below, to adequately consider the cumulative effects of the proposed project.

1. Resource Study Area, Conditions, and Trends
2. Direct and Indirect Effects on each Resource from the Proposed Project
3. Other Actions – Past, Present, and Reasonably Foreseeable – and their Effect on each Resource
4. The Overall Effects of the Proposed Project Combined with other Actions
5. Mitigation of Cumulative Impacts

Step 1: Resource Study Area, Conditions and Trends

The proposed project's cumulative impacts were identified by carrying forward the direct and indirect impacts that may contribute to a cumulative impact. The cumulative impacts analysis focused on resources substantially impacted by the proposed project and resources in poor or declining health or at risk that are directly or indirectly impacted by the proposed project. The resources which were evaluated for direct and indirect impacts are listed in **Table 6**. The table summarizes the direct and indirect impacts anticipated for each resource and identifies whether or not the resource is carried forward for cumulative impacts analysis.

Table 6: Resources to be Evaluated in the Cumulative Impacts Analysis

Resource or Topic Evaluated	Direct Impacts	Indirect Effects	Carried Forward for Cumulative Effects Analysis	Reason for Elimination
Community Cohesion, Acquisitions, Relocations and Displacements	One residential and one commercial displacement will occur as a result of the proposed project. The proposed improvements would not affect, separate, or isolate any distinct neighborhoods, ethnic groups, or other specific groups. No residential neighborhoods would be separated or divided by the proposed project. Positive impacts to residential communities would include improved mobility and accessibility throughout the project study area and to surrounding communities. Negative impacts to access and travel patterns resulting from the implementation of the proposed project are not anticipated.	No indirect effects are anticipated.	No	Direct impacts to community cohesion are not anticipated. The indirect effects would provide a positive benefit to the community.
Environmental Justice	No disproportionately high or adverse direct impacts. No adverse encroachment-alteration effects on EJ and LEP populations are anticipated.	No indirect effects are anticipated.	No	No adverse direct impacts or indirect effects are anticipated.
Economy	The proposed improvements would benefit the economy due to safer access to adjacent property and from improved mobility in the project corridor through increased lane capacity. No adverse encroachment-alteration effects on the economy are anticipated.	No indirect effects are anticipated.	No	No adverse direct impacts or indirect effects are anticipated.
Section 4(f) and Section 6(f) Resources	No Section 4(f) or 6(f) resources would be impacted by the proposed project. Any potential impacts to historic properties would be confined to the existing and proposed ROW/easements; thus, encroachment-alteration effects are not anticipated.	No indirect effects are anticipated.	No	No direct impacts or indirect effects are anticipated, and the resource is not in poor and/or declining health.

Table 6: Resources to be Evaluated in the Cumulative Impacts Analysis

Resource or Topic Evaluated		Direct Impacts	Indirect Effects	Carried Forward for Cumulative Effects Analysis	Reason for Elimination
Cultural Resources	Historic Structures	No impacts to historic structures would result from the proposed project. Any potential impacts to historic properties would be confined to the existing and proposed ROW/easements; thus, encroachment-alteration effects are not anticipated.	No indirect effects are anticipated.	No	No direct impacts or indirect effects are anticipated, and the resource is not in poor and/or declining health.
	Archeological Resources	No direct impacts are anticipated to occur. Any potential impacts to archeological resources would be limited to the construction phase of the project and confined to the existing and proposed ROW/easements; thus, encroachment-alteration effects are not anticipated.	No indirect effects are anticipated.	No	No substantial adverse direct impacts or indirect effects are anticipated, and the resource is not in poor and/or declining health.
Vegetation and Wildlife Habitat		Approximately 18.7 acres of Agriculture; 7.4 acres of Disturbed Prairie; 4.1 acres of Edwards Plateau Savannah, Woodland, and Shrubland; 1.5 acres of Riparian; 2.0 acres of Tallgrass Prairie, Grassland; and 53.6 acres of Urban MOU Habitat-type vegetation would be directly impacted by the proposed project. Non-Urban vegetation impacts total approximately 33.7 acres. Potential impacts to vegetation would be confined to the existing and proposed ROW/easements; thus, encroachment-alteration effects are not anticipated.	No indirect effects are anticipated.	Yes. There are direct impacts, and the resource is in poor and/or declining health.	Not Applicable.

Table 6: Resources to be Evaluated in the Cumulative Impacts Analysis

Resource or Topic Evaluated	Direct Impacts	Indirect Effects	Carried Forward for Cumulative Effects Analysis	Reason for Elimination
Migratory Birds	No impacts to migration patterns or migratory bird habitat are anticipated. Expected impacts to migratory birds would be associated with construction activity within the project footprint, no encroachment-alteration indirect impacts to birds are likely.	No indirect effects are anticipated.	No	There are no direct impacts, the indirect effects are not substantial, and the resource is not in poor and/or declining health.
Waters of the U.S.	The proposed project crosses 5 streams at 7 crossings. All combined, the proposed project would permanently impact approximately 0.24 acres of Waters of the U.S. The potential for project-related encroachment-alteration effects on Waters of the U.S. would be mitigated through permanent (post-construction) Best Management Practices (BMPs).	No indirect effects are anticipated.	No	The direct impacts and indirect effects are not substantial, and the resource is not in poor and/or declining health.
Water Quality	Potential impacts would be minimized by BMPs associated with Tier I projects and are not anticipated to be substantial. The potential for project-related encroachment-alteration effects on water quality would be mitigated through permanent (post-construction) BMPs. To minimize the potential for adverse impacts, the BMPs would be regularly inspected and proactively maintained.	No indirect effects are anticipated.	No	The direct impacts and indirect effects are not substantial, and the resource is not in poor and/or declining health.

Table 6: Resources to be Evaluated in the Cumulative Impacts Analysis

Resource or Topic Evaluated	Direct Impacts	Indirect Effects	Carried Forward for Cumulative Effects Analysis	Reason for Elimination
Floodplains	The proposed project crosses 0.7 acres of FEMA designated 100-year floodplain. The project would permit the conveyance of the 100-year flood, inundation of the roadway being acceptable, without causing significant damage to the facility, stream, or other property. The proposed project would not increase the base flood elevation to a level that would violate applicable floodplain regulations and ordinances. Coordination with the local Floodplain Administrator would be required. Construction would be limited to the proposed project's existing/proposed ROW/easement areas and would have no effect on floodplains outside of the construction area.	No indirect effects are anticipated.	No	The direct impacts and indirect effects are not substantial, and the resource is not in poor and/or declining health.
Farmland (Soils)	The proposed project would convert 94.1 acres of farmland subject to the FPPA to a non-agricultural, transportation use; however, the impacts are not substantial and the resulting score of the FPPA Form SCS-CPA 106 was below that required for coordination with the Natural Resources Conservation Service. Farmland impacts would be limited to areas directly adjacent to the existing project corridor and would not result in the division or separation of existing agricultural land. Farmlands would continue to function as they do under existing conditions; therefore, encroachment-alteration effects stemming from farmland impacts are not anticipated	No indirect effects are anticipated.	Yes. There are direct impacts, and the resource is in poor and/or declining health.	Not Applicable.
Air Quality	The project is consistent with the MTP, which conforms to the Transportation Improvement Plan; therefore, air quality impacts are not expected related to ozone.	No indirect effects are anticipated.	No	The direct impacts and indirect effects are not substantial, and the resource is not in poor and/or declining health.

Table 6: Resources to be Evaluated in the Cumulative Impacts Analysis

Resource or Topic Evaluated	Direct Impacts	Indirect Effects	Carried Forward for Cumulative Effects Analysis	Reason for Elimination
Visual/Aesthetics	The proposed project improvements would be expected to blend with the general character of the area. The proposed project entails improvements/widening of an existing visual element FM 664 with raised median which would likely include improvements to adjacent or median landscaping which would improve the general character of the project area.	No indirect effects are anticipated.	No	No direct impacts or indirect effects are anticipated.

Source: Study Team (January 2020).

As shown in **Table 6**, vegetation, wildlife habitat and farmland soils will be analyzed to identify effects from cumulative impacts.

Resource Study Area

A Resource Study Area (RSA) has both temporal and geographic components. The temporal component of the RSA is the timeframe in which effects to resources are expected to occur. For vegetation and wildlife habitat, the year 2001 was used as the beginning temporal boundary because it corresponds to the end of the longest period of economic expansion in recent U.S. history. The temporal boundary extends to 2045, the end of the current MTP planning cycle.

Due to laws and regulations concerning Waters of the U.S. and associated floodplains, agricultural practices and residential/commercial development usually avoid streams and their associated floodplains and can leave portions of pristine habitat in place. For this reason, quality wildlife habitat and vegetation are usually found within stream systems, adjacent to intermittent and perennial streams. The proposed project is located within the Upper Trinity and Chambers subbasins. The geographical RSA for vegetation and wildlife used in this analysis consist of these subbasins because they support the vegetation, wildlife habitat, and waters most likely to be affected by the proposed project. The Upper Trinity and Chambers subbasins RSA is also the geographical RSA for farmland (soils). The RSA boundary follows topographical highs. Topography affects soil formation and development, and the chemical and physical properties of soil. These factors play a part in determining soil quality. Therefore, using the subbasins RSA for farmland (soils) is admissible.

The RSA captures portions of the Cities of Cedar Hill, Glenn Heights, Midlothian, Oak Leaf, Ovilla, and Waxahachie and unincorporated areas of Ellis and Dallas Counties. The RSA totals approximately 43,367.5 acres. A map of the RSA is shown on the **Cumulative Impacts Resource Study Area Map**.

Conditions and Trends

The RSA is located within the Blackland Prairie Ecological Region, which was historically dominated by deep, fertile black soils which once supported vast tallgrass prairies. Because of these fertile soils, over time agriculture has come to dominate the region leading to fragmentation of once continuous habitat, with only an approximate 5,000 of the original 12 million acres remaining in true prairie condition. With competition for food and cover as farmlands and urban and rural developments overtook prairies, varying levels of decline in the density and diversity of wildlife can be seen today.[9]

[9] https://tpwd.texas.gov/huntwild/wild/wildlife_diversity/wildscapes/ecoregions/ecoregion_4.phtml

Historic aerial photographs and topographic maps were reviewed to determine the development trend in the RSA in 2001. At that time, the developed properties in the RSA included areas of single-family residential, commercial/retail services and shopping centers, industrial facilities, and mobile homes. These developed areas are separated by large tracts of agricultural and undeveloped land, especially west of the project. By 2019, many of the large tracts of land have been developed into residential subdivisions, most notably in Midlothian where there are now large subdivisions. Other areas where rural development already existed have seen some redevelopment to higher density residential neighborhoods.

The expanding development and associated transportation network have reduced the available wildlife habitat in the RSA. Much of this habitat is constrained to riparian corridors and floodplains. These areas have remained relatively unchanged over the years and continue to provide habitat for wildlife and ecological benefits from water features. Other areas consist of ranch land. As a result of the change in vegetation and habitat, wildlife in more developed areas of the RSA has shifting to species better able to adapt to a suburban environment. The current condition of the vegetation and wildlife habitat within the RSA is considered "in decline."

Vegetation and Wildlife Habitat

Aerial photography of the RSA from 2018 indicates that the primary vegetation types within the RSA are forest, prairie, and maintained vegetation. Large riparian areas are found adjacent to Little Creek, North Prong Creek, Red Oak Creek, Waxahachie Creek, Willow Brook, and their associated tributaries. Dense wooded areas are interspersed around riparian zones, near larger water bodies, and surrounding large agricultural pastures among other locations.

According to TPWD's TESCP - Phase 1 vegetation data,[10] existing potential wildlife habitat includes approximately 3,658 acres of Disturbed Prairie; 12,061 acres of Edwards Plateau Savannah, Woodland, and Shrubland; 4,308 acres of Riparian; 12,834 acres of Tallgrass Prairie, Grassland; 4,694 acres of Agriculture; and 5,819 acres of Urban MOU Habitat-type vegetation within the RSA. Based on the above, non-Urban MOU Habitat-type vegetation within the RSA totals approximately 37,555 acres. However, overlaying this data over aerial photographs shows vegetation inaccuracies around suburban residential areas, especially areas that are more recently developed.

Based upon the combined 2018 aerial photography and 2015 Land Use GIS data from the NCTCOG,[11] approximately 31 percent (13,557 acres) of the RSA is urban or developed with an additional 60 percent (25,804 acres) of the RSA being rural residential or agricultural use (primarily ranch land).

[10] Texas Parks and Wildlife's (TPWD) Phase 1 Texas Ecological Systems Classification Project (TESCP)

[11] http://data-nctcoggis.opendata.arcgis.com/datasets/2015-land-use

Wooded areas can be found along portions of almost all major streams within the RSA as well as various tributaries and other water bodies. The largest wooded areas can be found in the northern and southern portions of the RSA along Red Oak Creek, Waxahachie Creek, and their associated tributaries and riparian areas. These wooded areas serve as a buffer to development and as a sanctuary for vegetation and wildlife. Some undeveloped areas beyond the wooded corridors consist of forest, pasture/prairie, agriculture, and scrub/shrub vegetation. Overall, the riparian and floodplain corridors provide a protected environment for native and sensitive wildlife and plant species to live and grow with minimal disturbance.

Farmland (Soils)

According to GIS data for soils obtained from the USDA and the Web Soil Survey,[12] there are approximately 20,012 acres of prime farmland soils and farmland soils of statewide importance in the RSA. Of this, 11,195 acres are located outside of the USCB 2010 Dallas-Fort Worth-Arlington, Texas Urban Areas and are potentially subject to the FPPA.

Based upon 2001 aerial photography and 2000 land use GIS data from the NCTCOG, approximately 75 percent (32,363 acres) of the RSA was used for agricultural purposes in 2001. Of the 32,363 acres of agricultural land, approximately 62 percent (19,965 acres) was underlaid by prime farmland soils and farmland soils of statewide importance. Of the 19,965 acres, approximately 72 percent (14,322 acres) were located outside of the USCB 2000 Dallas-Fort Worth-Arlington, Texas Urban Areas and potentially subject to the FPPA.

Currently, approximately 50 percent (21,938 acres) of the RSA is used for agricultural purposes. Of the 21,938 acres, approximately 48 percent (10,422 acres) is underlain by prime farmland soils and farmland soils of statewide importance. Of the 10,422 acres, 77 percent (8,033 acres) are located outside of the USCB 2010 Dallas-Fort Worth-Arlington, TX Urban Areas and are potentially subject to the FPPA.

As the DFW Metroplex continues expanding along the FM 664 corridor, existing ranchlands are being converted to residential, commercial and other developed land uses as the population grows.

Step 2: Direct and Indirect Effects on each Resource from the Proposed Project

Vegetation and Wildlife Habitat

Approximately 18.7 acres of Agriculture; 7.4 acres of Disturbed Prairie; 4.1 acres of Edwards Plateau Savannah, Woodland, and Shrubland; 1.5 acres of Riparian; 2.0 acres of Tallgrass Prairie, Grassland; and 53.6 acres of Urban MOU Habitat-type vegetation would be directly

[12] http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx

impacted by the proposed project. Non-Urban vegetation impacts total approximately 33.7 acres. No indirect effects are anticipated as no potential induced growth was identified.

Farmland (Soils)

Approximately 94.1 acres of prime farmland or farmland of statewide importance subject to FPPA would be directly impacted by the proposed project. No indirect effects are anticipated as no potential induced growth was identified.

Step 3: Other Actions – Past, Present and Reasonably Foreseeable – and their Effect on each Resource

The cumulative impacts analysis considers the combined effects of past, present, and reasonably foreseeable actions on the resources analyzed. To identify other past, present, and reasonably foreseeable actions within the RSA, NCTCOG 2000 and 2015 Land Use data and aerial imagery dating back to 2001 and 2018, planned development information provided by the Cities of Ovilla and Waxahachie, and available planning documents were used. The past, present, and reasonably foreseeable actions identified are listed in **Table 7**.

Table 7: Other Past, Present, and Reasonably Foreseeable Actions (2001-2045)[1]

Development	Past, Present, or Reasonably Foreseeable Action	Area (acres)
Airport	Past	15.0
Commercial	Past	291.5
Industrial	Past	421.9
Medium Density Residential	Past	15.3
Parks/Recreation	Past	6.5
Public/Semi-Public	Past	365.4
Single-family/Rural Residential	Past	6,222.0
Utilities	Past	21.6
Commercial	Reasonably Foreseeable Action	3,212.2
High Density Residential	Reasonably Foreseeable Action	84.2
Industrial	Reasonably Foreseeable Action	855.8
Medium Density Residential	Reasonably Foreseeable Action	436.7
Mixed Use	Reasonably Foreseeable Action	446.5
Parks/Recreation	Reasonably Foreseeable Action	536.2
Public/Semi-Public	Reasonably Foreseeable Action	174.1
Roadway	Reasonably Foreseeable Action	144.8
Single-family/Rural Residential	Reasonably Foreseeable Action	13,094.7
	Total	**26,344.4**

[1] The area of proposed roadways within planned developments is included in the area (acreage) of the planned development.
Some areas of foreseeable actions overlap areas of past action where redevelopment is expected.
Sources: Interview with planners from the City of Waxahachie (9/12/19); Planning documents available online from the Cities of Cedar Hill, Glenn Heights, Midlothian, Oak Leaf, Ovilla, and Waxahachie; NCTCOG Land Use Data for 2000 and 2015 http://data-nctcoggis.opendata.arcgis.com/datasets

As shown in **Table 7**, the other past, present and reasonably foreseeable actions total approximately 26,344.4 acres.

Vegetation and Wildlife Habitat

Potential cumulative impacts considered and discussed include direct impacts to vegetation and wildlife habitat as a result of implementation of the proposed project in combination with the past, present, and reasonably foreseeable actions. The approximately 43,367.5-acre RSA was considered sufficient to capture the cumulative effects of the proposed project on vegetation and wildlife habitat because the Upper Trinity and Chambers subbasins contain the streams and associated vegetative habitat that wildlife depends on for food, water, and shelter. Acreages of vegetation types in the RSA were determined from the TPWD's TESCP - Phase 1 vegetation data. For the purposes of this analysis, it was assumed that any of the past, present, and reasonably foreseeable actions would displace all of the native vegetation and wildlife habitat within the confines of the development.

Table 8 lists the vegetation that has been/will be impacted by past, present, and reasonably foreseeable actions in the RSA.

Table 8: Vegetation Impacts by Other Past, Present, and Reasonably Foreseeable Actions

Vegetation Classification[1]	Acres
Agriculture	4,280.3
Disturbed Prairie	1,922.5
Edwards Plateau Savannah, Woodland, and Shrubland	7,652.1
Riparian	1,521.7
Tallgrass Prairie, Grassland	9,323.2
Urban	1,926.7
Total	**26,626.5[2]**

[1] Per TPWD's Texas Ecological Systems Classification Project - Phase 1 vegetation data.
[2] This acreage includes the proposed project.

As shown in **Table 8**, the vegetation impacts by other past, present and reasonably foreseeable actions (including the proposed project) total approximately 26,626.5 acres. Impacts to non-urban vegetation total approximately 24,699.8 acres.

The vegetation and streams surrounding the proposed project are connected to other nearby vegetated areas, creating open corridors that can be used by aerial and terrestrial animals. Development within the RSA could fragment existing vegetation into small, distinct segments surrounded by manmade structures instead of the existing continuous corridors, effectively removing travel corridors for any animals.

Farmland (Soils)

Potential cumulative impacts considered and discussed include direct impacts to farmland as a result of implementation of the proposed project in combination with the effects of potential induced growth and other past, present, and reasonably foreseeable actions. The approximately 43,367.5-acre RSA was considered sufficient to capture the cumulative effects of the proposed project on farmland because the RSA boundary follows topographical highs. Topography affects soil formation and development, and the chemical and physical properties of soil. These factors play a part in determining soil quality.

According to GIS data for soils obtained from the USDA and the Web Soil Survey,[13] there are approximately 20,011.9 acres of prime farmland and farmland of statewide importance in the RSA. Approximately 13,680.7 acres of prime farmland soils and farmland soils of statewide importance have/would be impacted by other past, present and reasonably foreseeable actions. This represents approximately 68 percent of the 20,011.9 acres of prime farmland soils and farmland soils of statewide importance in the RSA.

Of the 13,680.7 acres of prime farmland potentially impacted by other past, present and reasonably foreseeable actions, 62 percent (8,506.1 acres) are located outside of the USCB 2010 Dallas-Fort Worth-Arlington, TX Urban Area and are potentially subject to the FPPA.

Step 4: The Overall Effects of the Proposed Project Combined with Other Actions

Vegetation and Wildlife Habitat

The cumulative impacts on non-urban vegetation and wildlife habitat resulting from the approximately 33.7 acres of direct impacts, 0 acres from induced growth impacts, and 24,666.1 acres of impacts from the past, present, and reasonably foreseeable actions would total approximately 24,699.8 acres. The cumulative impacts to vegetation and wildlife habitat would affect approximately 66 percent of the approximately 37,555.4 acres of non-Urban MOU Habitat-type vegetation within the RSA.

While cumulative impacts would affect approximately 24,699.8 acres of non-Urban MOU Habitat-type vegetation and potential wildlife habitat, it is likely that much of the wildlife that resides in the RSA would migrate to other areas of available non-human-altered habitat such as those protected within floodplain areas near rivers, streams and lakes. In addition, riparian areas are known to be migration corridors for wildlife. It is expected that these areas would not be adversely affected due to municipal protections to riparian resources within floodplains. That is, restrictions on construction within floodplains and tree preservation regulations make it probable that most of the riparian habitat within the RSA would not be subject to widespread removal. Based on the continued availability of protected habitat areas, the potential cumulative impact occurring over a 44-year period, allowing for resource

[13] http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx

recovery; and assuming appropriate implementation of regulated avoidance, minimization, and mitigation strategies for vegetation and habitat impacts, the proposed project would not contribute to substantial cumulative impacts to the area's vegetation and habitat.

Farmland (Soils)

The cumulative impact on prime farmland soils subject to the FPPA resulting from the approximately 94.1 acres of direct impacts, 0 acres from induced growth impacts, and 8,506.1 acres of impacts from the previously described other past, present, and reasonably foreseeable actions would total 8,600.2 acres. The cumulative impacts to prime farmland soils subject to the FPPA would affect approximately 77 percent of the approximately 11,195.3 acres of prime farmland soils subject to FPPA within the RSA.

Summary

Table 9 summarizes the information gathered in Steps 1 through 4 and presents the potential cumulative impacts to vegetation and wildlife habitat and farmland (soils) subject to the FPPA.

Table 9: Potential Cumulative Impacts to Vegetation and Wildlife Habitat and Farmland (Soils)

Vegetation Classification/Resource	Direct Impact (Acres)	Indirect Impact (Acres)	Past, Present, and Reasonably Foreseeable Projects (Acres)	Cumulative Impacts (Acres)
Agriculture	18.7	0	4,261.6	4,280.3
Disturbed Prairie	7.4	0	1,915.1	1,922.5
Edwards Plateau Savannah, Woodland, and Shrubland	4.1	0	7,648.0	7,652.1
Riparian	1.5	0	1,520.2	1,521.7
Tallgrass Prairie, Grassland	2.0	0	9,321.2	9,323.2
Urban	53.6	0	1,873.1	1,926.7
Non-Urban Vegetation and Wildlife Habitat	**33.7**	**0**	**24,666.1**	**24,699.8**
Farmland (Soils) subject to FPPA	**94.1**	**0**	**8,506.1**	**8,600.2**

Source: Study Team (January 2020).

Step 5: Mitigation of Cumulative Effects

Farmland (Soils)

Private developers would not be subject to the FPPA for impacts to prime farmland soils and farmland soils of statewide importance. The Texas Farm and Ranch Lands Conservation Program (TFRLCP), created in 2005, is a grant-making program that provides landowners with financial incentives to conserve their land and productivity through Agricultural Conservation Easements. These easements restrict all future development while allowing the landowner to continue farming or ranching (American Farmland Trust, 2009). The TFRLCP was transferred from the Texas General Land Office (GLO) to TPWD in 2016. Approved grant projects awarded

by the Texas GLO range in size from 175 acres to 2,995 acres and by the TPWD range in size from 144 acres to 7,229 acres. This type of program could be effective mitigation within the Farmland (Soils) RSA. The average farm size in Ellis County is 209 acres.[14]

Incorporated areas can manage growth issues through local ordinances, such as zoning and subdivision ordinances. Development activities outside of the incorporated areas are under the jurisdiction of Ellis and Dallas Counties, which use subdivision ordinances primarily to regulate lot sizes and density.

Vegetation and Wildlife Habitat

Incorporating parks, open spaces, and riparian corridors around and within developed areas would provide wildlife habitat and shelter. Planting these areas with native fruit or nut-bearing trees and shrubs, and native grain-bearing grasses would provide food for wildlife and would help to mitigate impacts to habitat used by wildlife. This mitigation could be conducted by whoever is responsible for the impact such as a city or a developer. Private development within the associated municipalities within the RSA (Cedar Hill, Glenn Heights, Midlothian, Oak Leaf, Ovilla, and Waxahachie and, to a lesser extent, Ellis and Dallas Counties) would be subject to the laws and ordinances regulating residential, commercial and industrial development set by each municipal government. Examples of municipal government regulations include the City of Waxahachie's Landscape Requirements, and the City of Midlothian's Landscape Requirements and Tree Credits.[15] Mitigation could include mandatory park areas or a limit on lot sizes. State and federal entities protect the quality of water and wildlife habitat in the area and additional development would follow the requirements of state and federal regulations.

[14] https://www.nass.usda.gov/Publications/AgCensus/2012/Online_Resources/County_Profiles/Texas/cp48139.pdf

[15] https://library.municode.com/tx/waxahachie/codes/code_of_ordinances

https://www.cityofovilla.org/DocumentCenter/View/109/ORD2010013Zoning?bidId=

https://z2.franklinlegal.net/franklin/Z2Browser2.html?showset=midlothianset

Appendix
Figures

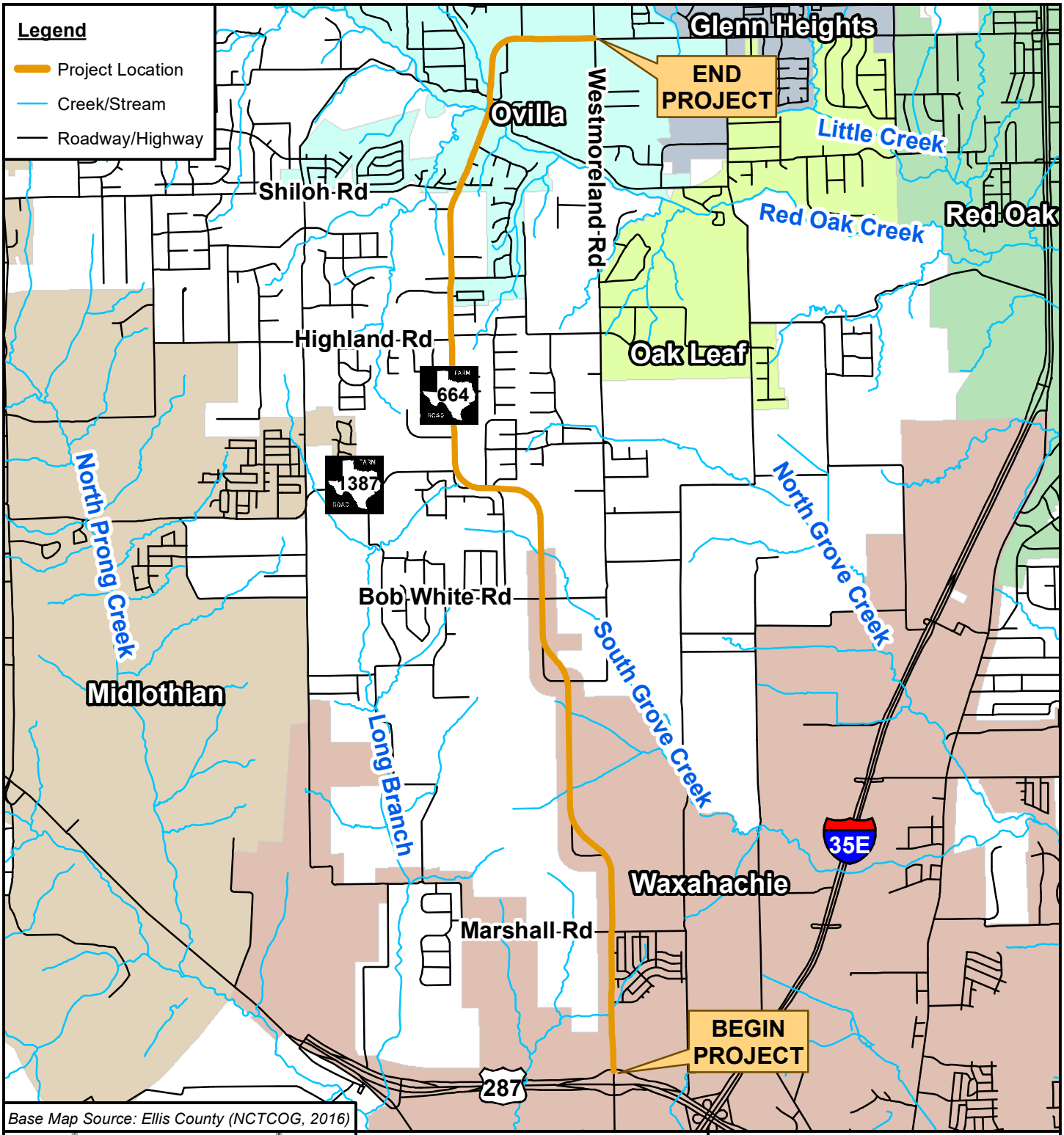
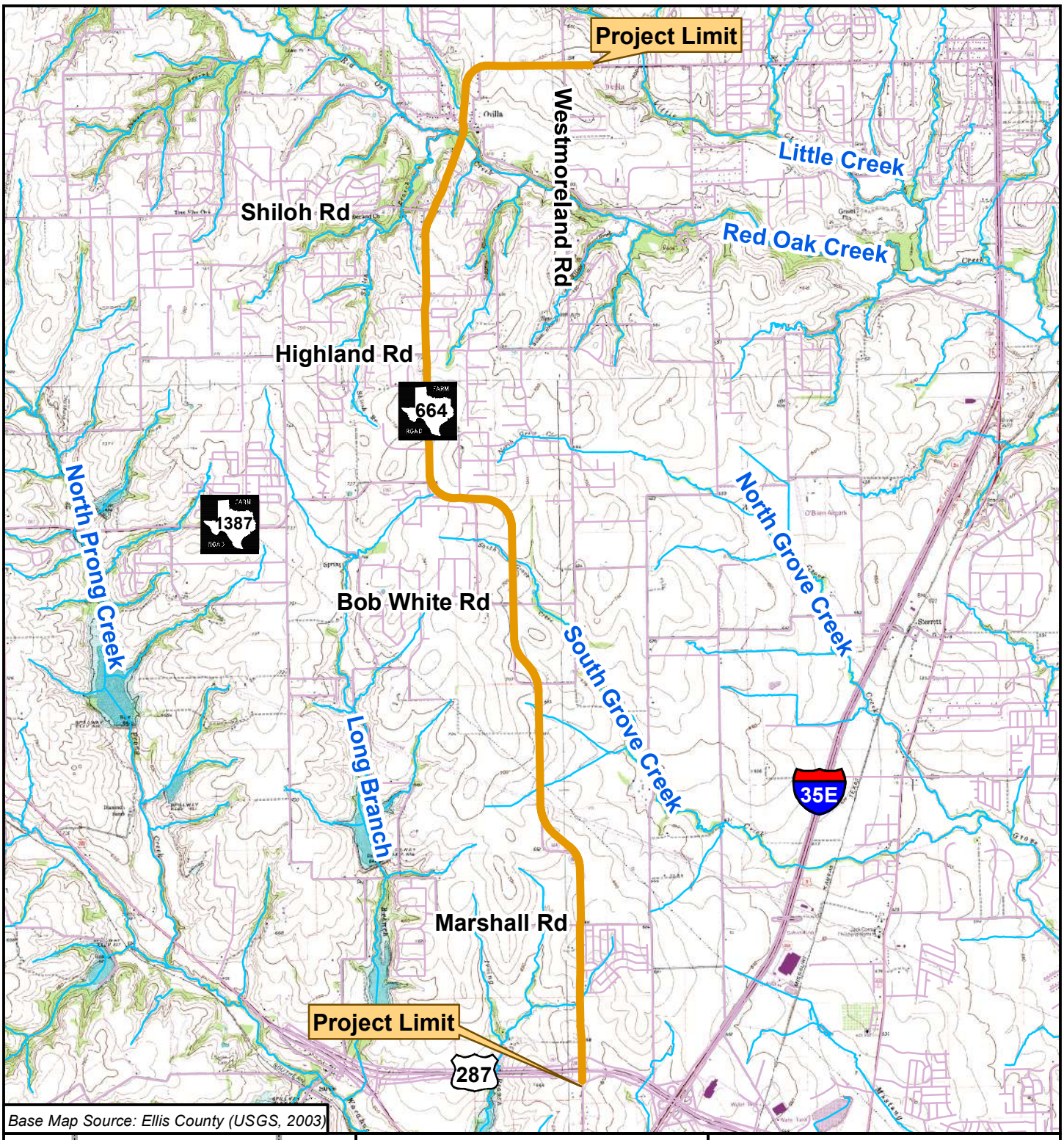


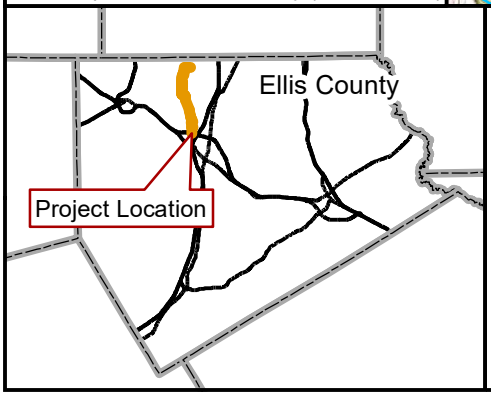
FIGURE 1
PROJECT LOCATION MAP

FARM-TO-MARKET ROAD (FM) 664
From U.S. Highway (US) 287
To Westmoreland Road
Ellis County

CSJs: 1051-01-038 and 1051-01-052



Base Map Source: Ellis County (USGS, 2003)



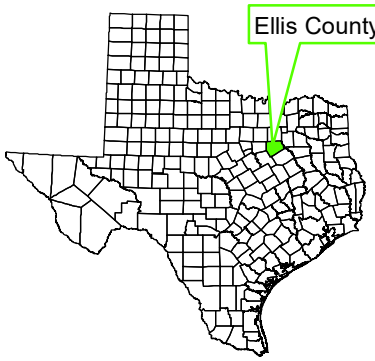


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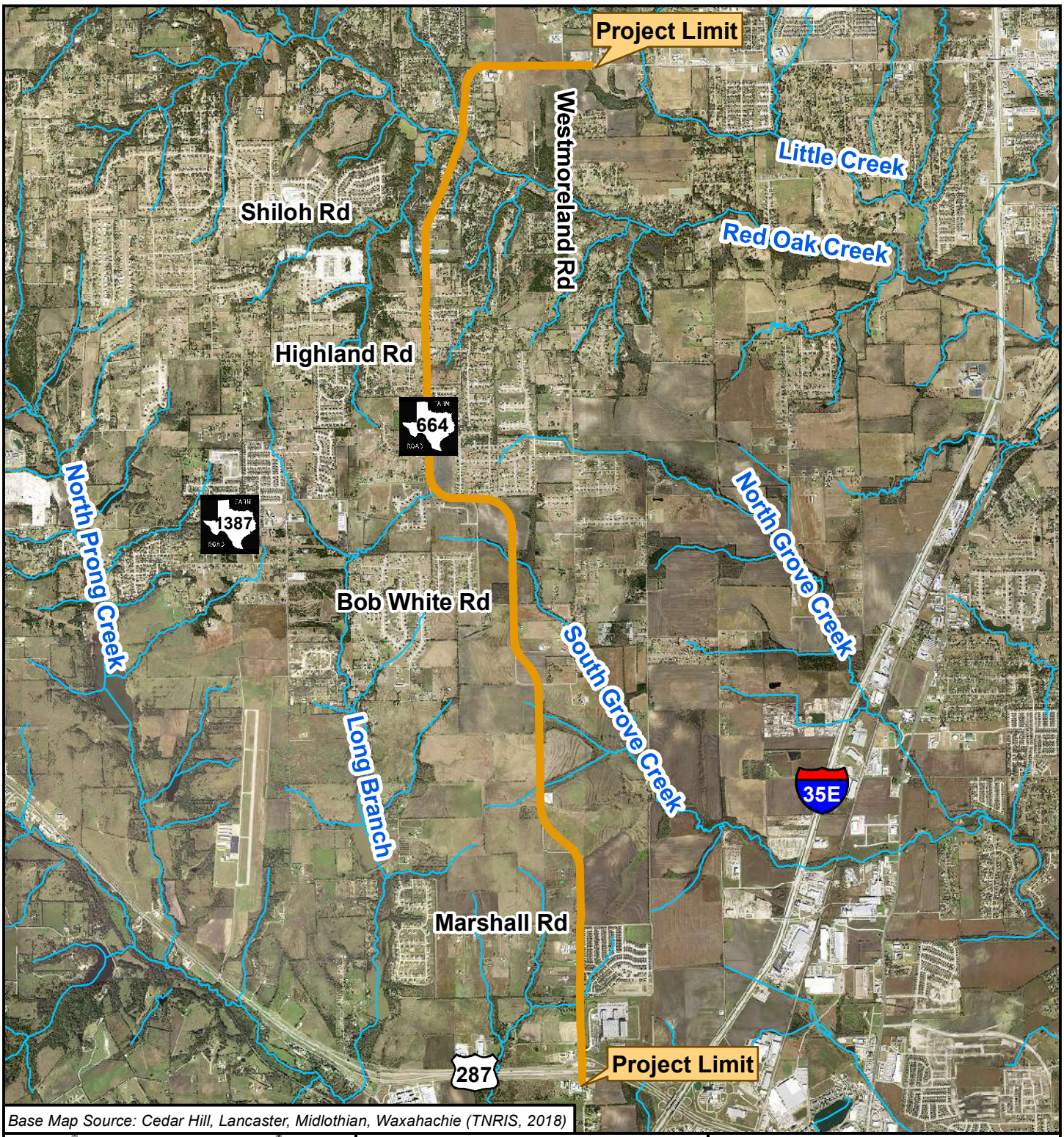
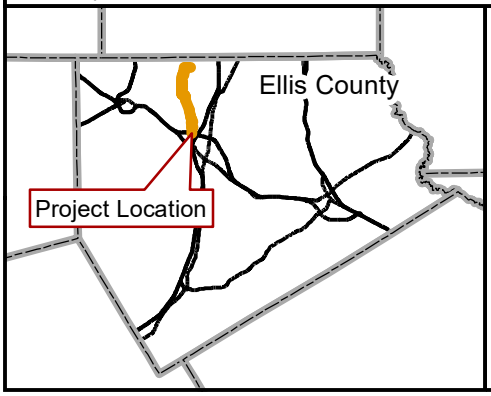
FIGURE 2
TOPOGRAPHIC MAP

FARM-TO-MARKET ROAD (FM) 664
From U.S. Highway (US) 287
To Westmoreland Road
Ellis County

CSJs: 1051-01-038 and 1051-01-052



Base Map Source: Cedar Hill, Lancaster, Midlothian, Waxahachie (TNRIS, 2018)



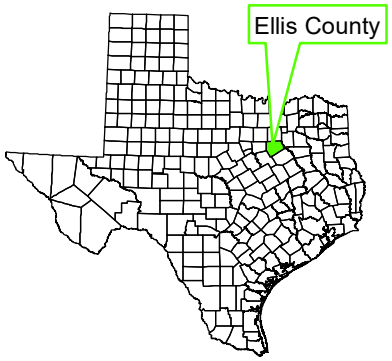


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FIGURE 3
AERIAL MAP

FARM-TO-MARKET ROAD (FM) 664
From U.S. Highway (US) 287
To Westmoreland Road
Ellis County

CSJs: 1051-01-038 and 1051-01-052

Planned Developments		
Map ID No.	Name	Development Type
1	Steeple Chase	Residential
2	Shepard Place	Residential
3	The Mark on Conquest	Residential
4	Lonesome Dove	Mixed Use
5	Buc-ee's Convenience Store	Commercial
6	Cross Creek	Residential
7	Bryson Springs	Residential
8	Mockingbird Springs	Residential
9	Chapman Ranch	Residential
10	Hollywood Estates	Residential
11	Wildwood	Residential

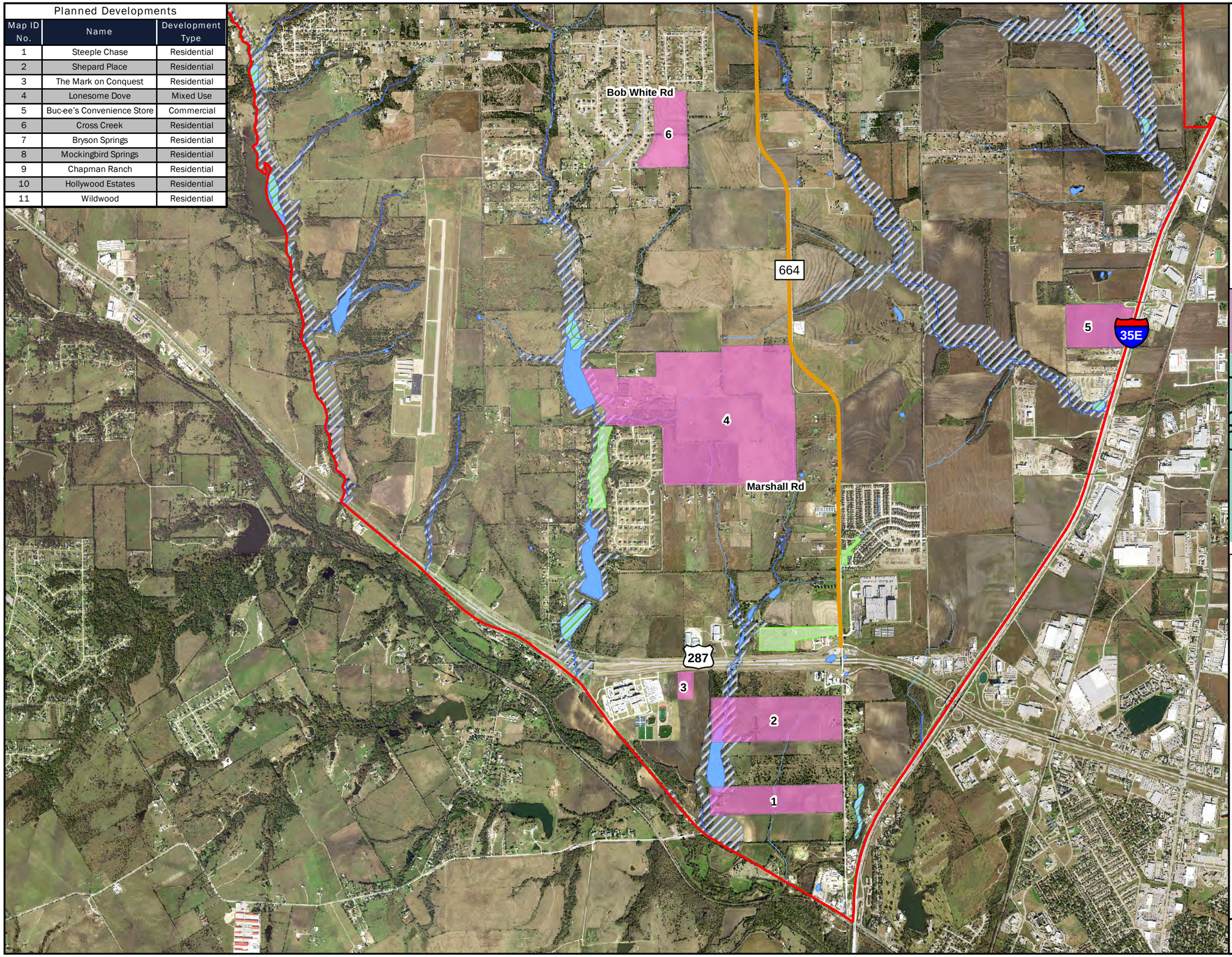


FIGURE 3

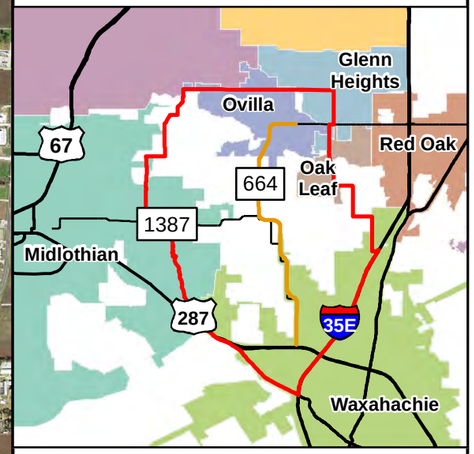
INDIRECT IMPACTS
AREA OF INFLUENCE MAP

Farm-to-Market (FM) 664

From U.S. Highway (US) 287
To Westmoreland Road
Ellis County

CSJs: 1051-01-038
and 1051-01-052

Page 1 of 2



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Legend

- Project Location
- Area of Influence
- Cemetery
- Recreational
- Planned Development
- Potential Wetlands
- Waters of the U.S.
- 100-year Floodplains

Base Map Source: TNRIS (2018)

Planned Developments		
Map ID No.	Name	Development Type
1	Steeple Chase	Residential
2	Shepard Place	Residential
3	The Mark on Conquest	Residential
4	Lonesome Dove	Mixed Use
5	Buc-ee's Convenience Store	Commercial
6	Cross Creek	Residential
7	Bryson Springs	Residential
8	Mockingbird Springs	Residential
9	Chapman Ranch	Residential
10	Hollywood Estates	Residential
11	Wildwood	Residential

FIGURE 3

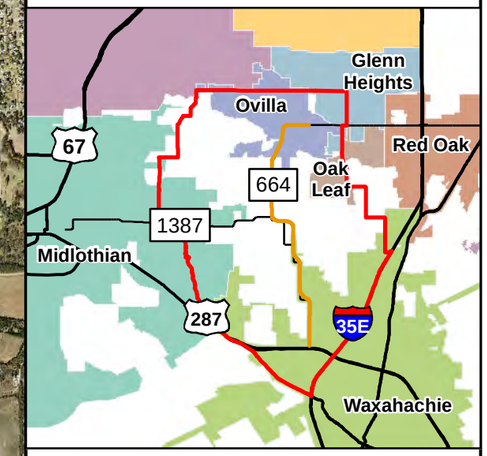
INDIRECT IMPACTS
AREA OF INFLUENCE MAP

Farm-to-Market (FM) 664

From U.S. Highway (US) 287
To Westmoreland Road
Ellis County

CSJs: 1051-01-038
and 1051-01-052

Page 2 of 2



0 1,500 3,000 Feet

N W E S

Legend

- Project Location
- Area of Influence
- Cemetery
- Recreational
- Planned Development
- Potential Wetlands
- Waters of the U.S.
- 100-year Floodplains

Base Map Source: TNRIS (2018)

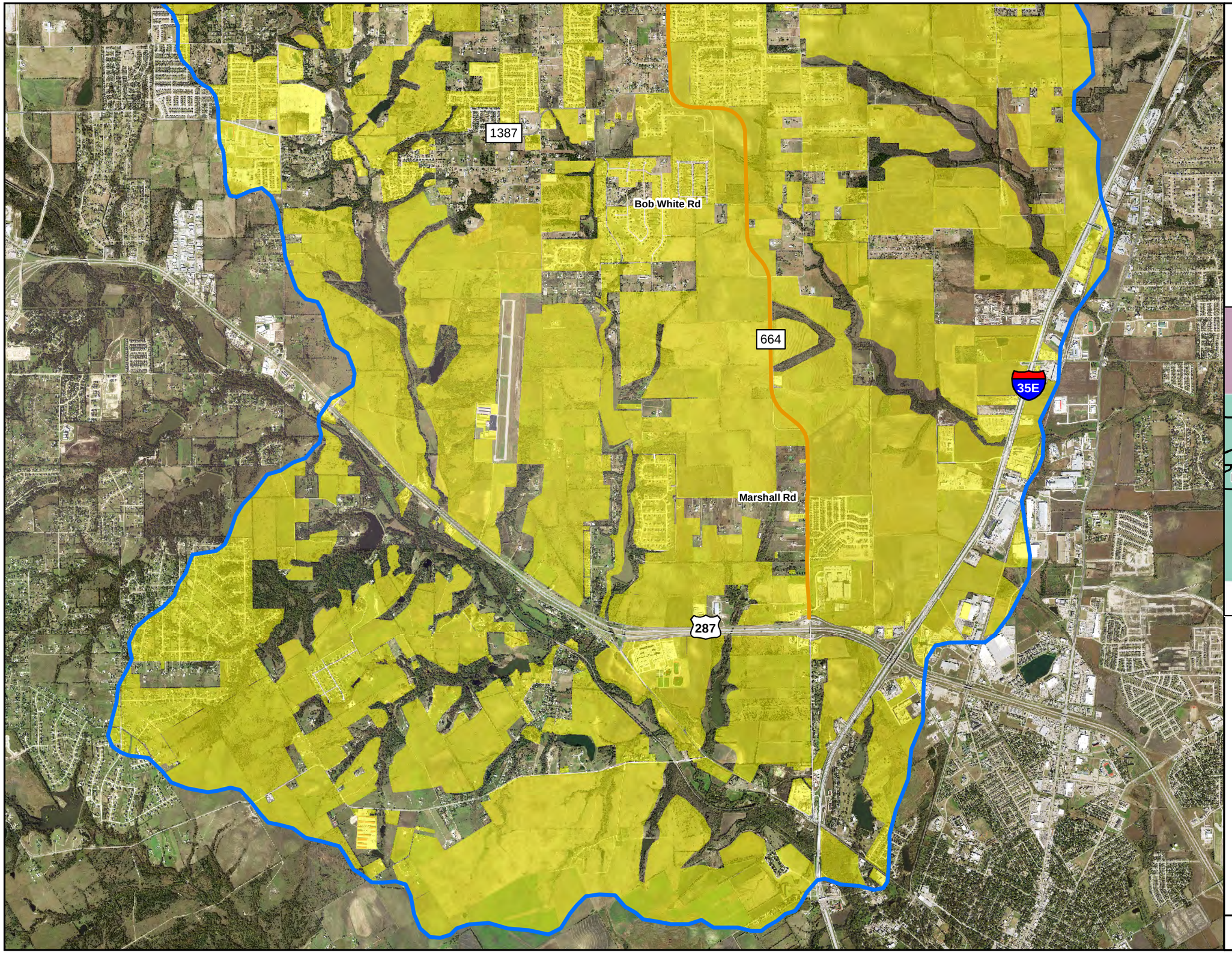
FIGURE 4

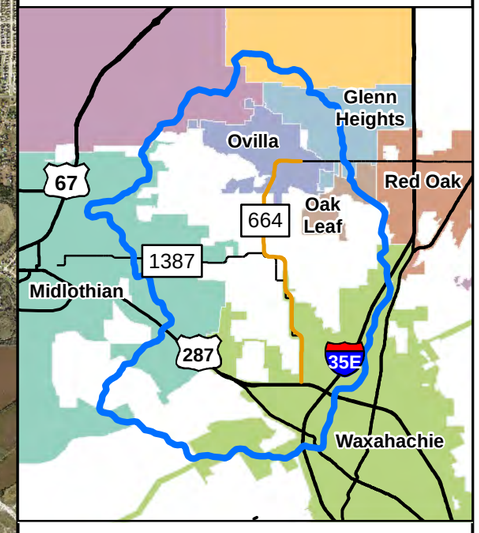
CUMULATIVE IMPACTS
RESOURCE STUDY AREA MAP

Farm-to-Market (FM) 664

From U.S. Highway (US) 287
To Westmoreland Road
Ellis County

CSJs: 1051-01-038
and 1051-01-052





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Legend

- Project Location
- Resource Study Area
- Past, Present, and Reasonably Foreseeable Actions

Base Map Source: TNRIS (2018)

FIGURE 4

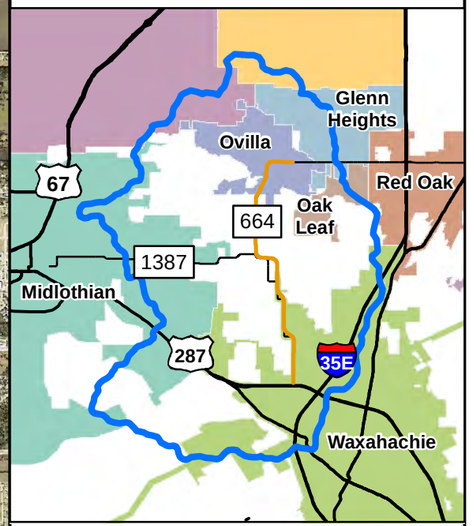
CUMULATIVE IMPACTS
RESOURCE STUDY AREA MAP

Farm-to-Market (FM) 664

From U.S. Highway (US) 287
To Westmoreland Road
Ellis County

CSJs: 1051-01-038
and 1051-01-052

Page 2 of 2



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Legend

- Project Location
- Resource Study Area
- Past, Present, and Reasonably Foreseeable Actions

Base Map Source: TNRIS (2018)

Traffic Noise Analysis Technical Report

FARM TO MARKET 664

FROM UNITED STATES HIGHWAY 287 TO WESTMORELAND ROAD

CSJs: 1051-01-038 and 1051-01-052
Cities of Ovilla and Waxahachie, Ellis County
Dallas District

Date: October 2019

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 16, 2014, and executed by FHWA and TxDOT

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Figure 2: USGS Topographic Map

Figure 3: Aerial Map

Figure 4: Project Schematic

Figure 5: Noise Receiver Location Map

Appendix

TxDOT Transportation Planning and Programming Division approved Traffic (September 10, 2018)

I. INTRODUCTION

1. Project Description

The Texas Department of Transportation (TxDOT) Dallas District Office proposes the widening of existing Farm to Market (FM) 664 from United States (US) 287 to Westmoreland Road in Ellis County, Texas. This would include widening approximately 8.071 miles of FM 664. The proposed project would reconstruct, realign, and widen this section of FM 664 from a 2-lane rural roadway to a 4-lane urban roadway (ultimate 6-lanes) with a raised median.

The existing FM 664 facility between US 287 in Waxahachie and Westmoreland Road in Ovilla, Texas mostly consists of two undivided 11-foot (ft) wide lanes and 3-ft wide shoulders within an existing right-of-way (ROW) width that varies between 80 ft and 100 ft. There is an existing bridge over Red Oak Creek, and there are ditches along both sides of the roadway to provide surface drainage as well as culverts crossing along the existing roadway at multiple locations. Stormwater runoff within the limits is conveyed through an open ditch drainage system. The facility is intersected by four major collectors, including Marshall Road, Bob White Road and FM 1387 in Waxahachie, and Shiloh Road in Ovilla, and other minor collectors and local roads. Existing posted speed limits are 30 miles per hour (mph) at school zones, and 45 to 55 mph in other sections of the corridor.

The proposed project consists of the reconstruction, realigning, and widening of FM 664 from US 287 to Westmoreland Road for approximately 8.071 miles. Improvements would include the expansion of the current 2-lane rural roadway to a 4-lane urban roadway (ultimate 6-lanes) with a raised median to provide additional capacity and improve safety. Improvements would consist of 12-foot-wide travel lanes, and 14-foot-wide outside shared-use lanes, 6-foot sidewalks with American Disabilities Act curb ramps in both directions. Other improvements would include eliminating 90-degree turns along FM 664 between FM 1387 and Marshall Road. The proposed design speed is 40 mph. The existing ROW width will increase with the proposed project to the typical 150-foot ROW footprint. The proposed project is anticipated to require 87.18 acres of additional ROW and 0.61 acre of easement.

Refer to Appendix A for the following: The location of the proposed project is provided on **Figures 1 to 3.** Typical sections of the existing and proposed project are included in the design schematic, **Figure 4**.

II. NOISE ASSESSMENT

This analysis was accomplished in accordance with TxDOT's (Federal Highway Administration [FHWA] approved) Guidelines for Analysis and Abatement of Roadway Traffic Noise (2011).

Sound from highway traffic is generated primarily from a vehicle's tires, engine and exhaust. It is commonly measured in decibels and is expressed as "dB."

Sound occurs over a wide range of frequencies. However, not all frequencies are detectable by the human ear; therefore, an adjustment is made to the high and low frequencies to approximate the way an average person hears traffic sounds. This adjustment is called A-weighting and is expressed as "dB(A)."

Also, because traffic sound levels are never constant due to the changing number, type and speed of vehicles, a single value is used to represent the average or equivalent sound level and is expressed as "Leq."

The traffic noise analysis typically includes the following elements:

- Identification of land use activity areas that might be impacted by traffic noise.
- Determination of existing noise levels.
- Prediction of future noise levels.
- Identification of possible noise impacts.
- Consideration and evaluation of measures to reduce noise impacts.

The FHWA has established the following Noise Abatement Criteria (NAC) for various land use activity areas that are used as one of two means to determine when a traffic noise impact would occur (**Table 1**).

Table 1: FHWA Noise Abatement Criteria

Activity Category	dB(A) Leq	Description of Land Use Activity Areas
A	57 (exterior)	Lands on which serenity and quiet are of extra-ordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B	67 (exterior)	Residential
C	67 (exterior)	Active sport areas, amphitheaters, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreation areas, Section 4(f) sites, schools, television studios, trails, and trail crossings.
D	52 (interior)	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, schools, and television studios.
E	72 (exterior)	Hotels, motels, offices, restaurants/bars, and other developed lands, properties, or activities not included in A-D or F.
F	--	Agricultural, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources, water treatment, electrical), and warehousing.
G	--	Undeveloped lands that are not permitted.

A noise impact occurs when either the absolute or relative criterion is met:

Absolute criterion - The predicted noise level at a receiver approaches, equals or exceeds the NAC. "Approach" is defined as one dB(A) below the NAC. For example, a noise impact would occur at a Category B residence if the noise level is predicted to be 66 dB(A) or above.

Relative criterion - The predicted noise level substantially exceeds the existing noise level at a receiver even though the predicted noise level does not approach, equal or exceed the NAC. “Substantially exceeds” is defined as more than 10 dB(A). For example, a noise impact would occur at a Category B residence if the existing level is 54 dB(A) and the predicted level is 65 dB(A).

When a traffic noise impact occurs, noise abatement measures must be considered. A noise abatement measure is any positive action taken to reduce the impact of traffic noise on an activity area.

The FHWA traffic noise modeling software was used to calculate existing and predicted traffic noise levels. The model primarily considers the number, type and speed of vehicles; highway alignment and grade; cuts, fills and natural berms; surrounding terrain features; and the locations of activity areas likely to be impacted by the associated traffic noise. Existing year traffic volumes utilized in the model were approved by TxDOT – Transportation Planning and Programing Division (TPP) and 2045 volumes were extrapolated utilizing the TxDOT-TPP approved data.

Existing and predicted traffic noise levels were modeled at receiver locations (**Table 2** and **Figure 5**) that represent the land use activity areas adjacent to the proposed project that might be impacted by traffic noise and potentially benefit from feasible and reasonable noise abatement.

Table 2: Traffic Noise Levels dB(A) Leq

Representative Receiver	NAC Category	NAC Level	Existing	Predicted 2045	Change (+/-)	Noise Impact
R1 - Faith Family Academy (interior)	D	52	40	40	0	No
R2 - Faith Family Academy (Baseball Field)	C	67	49	52	+3	No
R3 - Single-family Residential	B	67	47	52	+5	No
R4 - Single-family Residential	B	67	66	64	-2	No
R5 - Single-family Residential	B	67	56	59	+3	No
R6 - Single-family Residential	B	67	60	62	+2	No
R7 - Single-family Residential	B	67	56	59	+3	No
R8 - Single-family Residential	B	67	62	63	+1	No
R9 - Single-family Residential	B	67	53	56	+3	No
R10 - Single-family Residential	B	67	56	59	+3	No
R11 - Single-family Residential	B	67	56	59	+3	No
R12 - Single-family Residential	B	67	59	59	0	No
R13 - Single-family Residential	B	67	60	60	0	No
R14 - Single-family Residential	B	67	57	61	+4	No
R15 - Single-family Residential	B	67	58	58	0	No
R16 - Single-family Residential	B	67	52	53	+1	No
R17 - Single-family Residential	B	67	49	52	+3	No
R18 - Single-family Residential	B	67	55	57	+2	No
R19 - Single-family Residential	B	67	54	61	+7	No
R20 - Single-family Residential	B	67	56	59	+3	No
R21 - Single-family Residential	B	67	61	54	-7	No
R22 - Single-family Residential	B	67	61	60	-1	No
R23 - Single-family Residential	B	67	57	59	+2	No
R24 - Single-family Residential	B	67	69	72	+3	Yes
R25 - Single-family Residential	B	67	54	56	+2	No
R26 - Single-family Residential	B	67	62	66	+4	Yes
R27 - Single-family Residential	B	67	60	62	+2	No
R28 - Single-family Residential	B	67	57	59	+2	No

Table 2: Traffic Noise Levels dB(A) Leq

Representative Receiver	NAC Category	NAC Level	Existing	Predicted 2045	Change (+/-)	Noise Impact
R29 - Single-family Residential	B	67	62	64	+2	No
R30 - Single-family Residential	B	67	58	61	+3	No
R31 - Single-family Residential	B	67	55	57	+2	No
R32 - Single-family Residential	B	67	66	67	+1	Yes
R33 - Single-family Residential	B	67	59	62	+3	No
R34 - Single-family Residential	B	67	60	60	0	No
R35 - Single-family Residential	B	67	53	56	+3	No
R36 - Single-family Residential	B	67	59	59	0	No
R37 - Single-family Residential	B	67	55	55	0	No
R38 - Single-family Residential	B	67	62	64	+2	No
R39 - Single-family Residential	B	67	62	63	+1	No
R40 - Single-family Residential	B	67	60	60	0	No
R41 - Ovilla Church of Christ	C	67	58	60	+2	No
R42 - Single-family Residential	B	67	58	61	+3	No
R43 - Ovilla Medical Clinic (gazebo)	C	67	57	59	+2	No
R44 - Fire House Kids (play area)	C	67	58	60	+2	No
R45 - Single-family Residential	B	67	59	61	+2	No
R46 - Single-family Residential	B	67	63	64	+1	No
R47 - Single-family Residential	B	67	64	72	+8	Yes
R48 - Ovilla Road Baptist Church (playground)	C	67	60	61	+1	No

[1] – Sound levels are predicted by the traffic noise modeling software to perceptibly increase, remain the same or decrease due to a change in roadway geometry (moving the traffic to/from the receiver).

As indicated in **Table 2**, the proposed project would result in traffic noise impact to the four receivers. The following noise abatement measures were considered: traffic management; alteration of horizontal and/or vertical alignments; acquisition of undeveloped property to act as a buffer zone; and the construction of noise barriers.

Before any abatement measure can be proposed for incorporation into the project, it must be both feasible and reasonable. In order to be "feasible," the abatement measure must be able to reduce the noise level at greater than 50% of impacted, first row receivers by at least five dB(A); in order to be "reasonable," it must not exceed the cost-effectiveness criterion of $25,000 for each receiver that would benefit by a reduction of at least five dB(A) and the abatement measure must be able to reduce the noise level at least one impacted, first row receiver by at least seven dB(A).

Traffic management - Control devices could be used to reduce the speed of the traffic; however, the minor benefit of one dB(A) per five miles per hour reduction in speed does not outweigh the associated increase in congestion and air pollution. Other measures such as time or use restrictions for certain vehicles are prohibited on state highways.

Alteration of horizontal and/or vertical alignments - Any alteration of the existing alignment would displace existing businesses and residences, require additional right of way (ROW) and not be cost effective/reasonable.

Buffer zone: the acquisition of undeveloped property to act as a buffer zone is designed to avoid rather than abate traffic noise impacts and, therefore, is not feasible.

Noise barriers - This is the most commonly used noise abatement measure. Noise barriers were evaluated for each of the impacted receiver locations.

Noise barriers would not be feasible and reasonable for the following impacted receivers and, therefore, are not proposed for incorporation into the project:

R24 and **R26**– These receivers represent two residences of a subdivision (nine first row receivers total, including R27). Three 10-foot tall noise barriers (238, 769, and 444 feet in length) would achieve the minimum feasible reduction of 5 dBA at each of these receivers while meeting the 7dB(A) design goal; however, they would exceed the reasonable, cost-effectiveness criterion of $25,000 per benefitted receiver.

R32 – This receiver represents two residences of a subdivision (four first row receivers total, including R31). Two 10-foot tall noise barriers (261 and 275 feet in length) would achieve the minimum feasible reduction of 5 dBA at each of these receivers, but would fail to meet the 7 dB(A) design goal. In addition, the noise barriers would exceed the reasonable, cost-effectiveness criterion of $25,000 per benefitted receiver.

R47 - This receiver represents two single-family residences. A continuous noise barrier along the ROW would restrict access to these residences. Gaps in the noise barriers would satisfy access requirements but the resulting four 20-foot tall non-continuous noise barrier segments (155, 74, 110, and 88 feet in length) would not be sufficient to achieve the minimum, feasible reduction of 5 dB(A) or the 7 dB(A) design goal.

None of the above noise abatement measures would be both feasible and reasonable; therefore, no abatement measures are proposed for this project.

Any subsequent project design changes may require a reevaluation of this preliminary noise barrier proposal. The final decision to construct the proposed noise barrier will not be made until completion of the project design, utility evaluation, and polling of adjacent property owners.

However, to avoid noise impacts that may result from future development of properties adjacent to the project, local officials responsible for land use control programs must ensure, to the maximum extent possible, no new activities are planned or constructed along or within the following predicted (2045) noise impact contours (**Table 3**).

Table 3: Noise Impact Contours in the Project Study Area

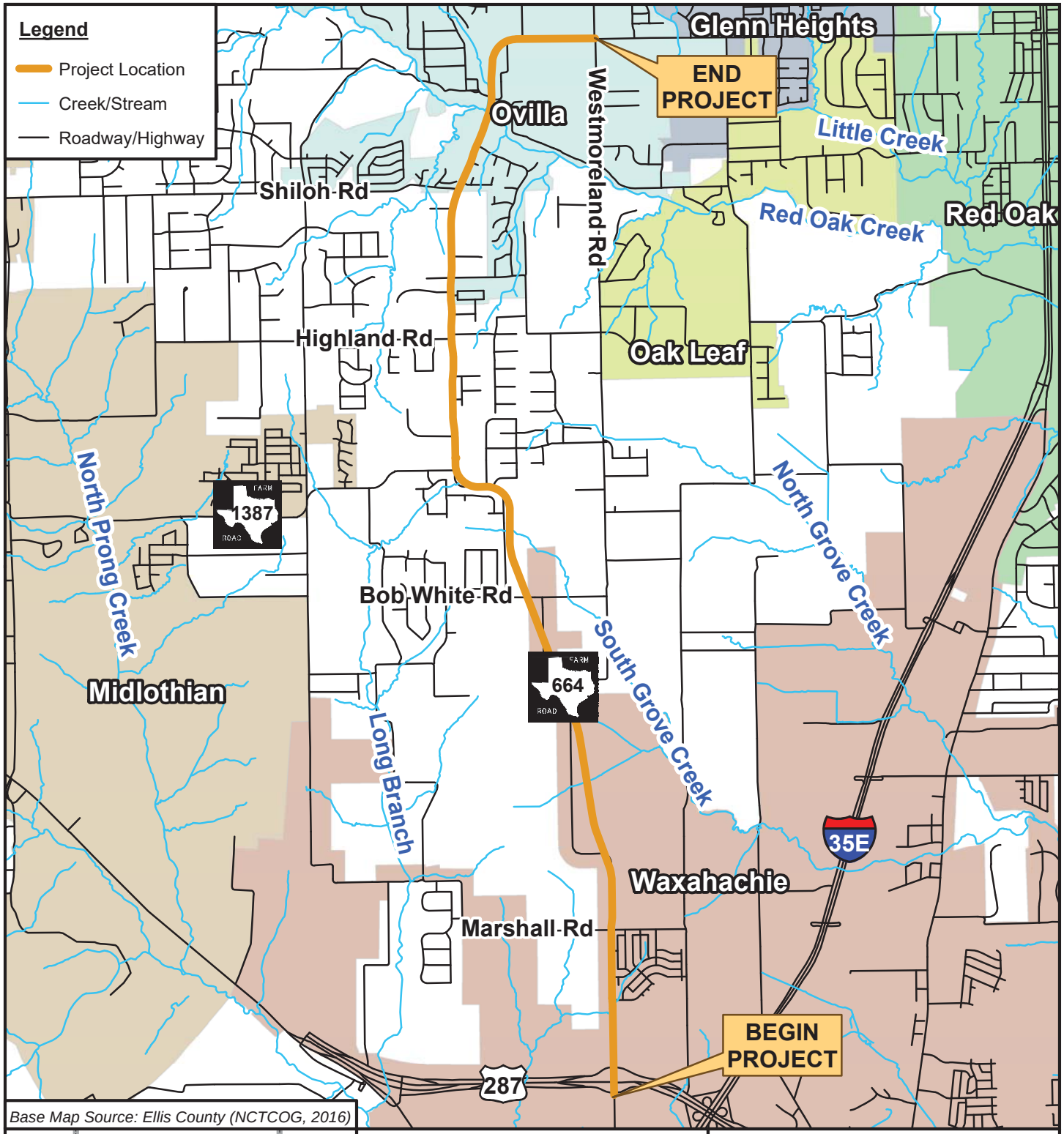
Limits	Land Use NAC Category	Impact Contour[1]	Distance from Proposed ROW Line
US 287 to Valley View Drive	B & C	66 dB(A)	55 feet
	E	71 dB(A)	15 feet
Valley View Drive to Marshall Road	B & C	66 dB(A)	35 feet
	E	71 dB(A)	Within ROW
Marshall Road to FM 1387	B & C	66 dB(A)	25 feet
	E	71 dB(A)	Within ROW
FM 1387 to Shiloh Road	B & C	66 dB(A)	20 feet
	E	71 dB(A)	Within ROW
Shiloh Road to Westmoreland Road	B & C	66 dB(A)	55 feet
	E	71 dB(A)	15 feet

[1] – Impact contours are one dB(A) lower than the NAC per category to reflect impacts that would occur as a result of approaching the NAC for the respective contours.

Noise associated with the construction of the project is difficult to predict. Heavy machinery, the major source of noise in construction, is constantly moving in unpredictable patterns. However, construction normally occurs during daylight hours when occasional loud noises are more tolerable. None of the receivers are expected to be exposed to construction noise for a long duration; therefore, any extended disruption of normal activities is not expected. Provisions will be included in the plans and specifications that require the contractor to make every reasonable effort to minimize construction noise through abatement measures such as work-hour controls and proper maintenance of muffler systems.

A copy of this traffic noise analysis will be available to local officials. On the date of approval of this document (Date of Public Knowledge), FHWA and TxDOT are no longer responsible for providing noise abatement for new development adjacent to the project.

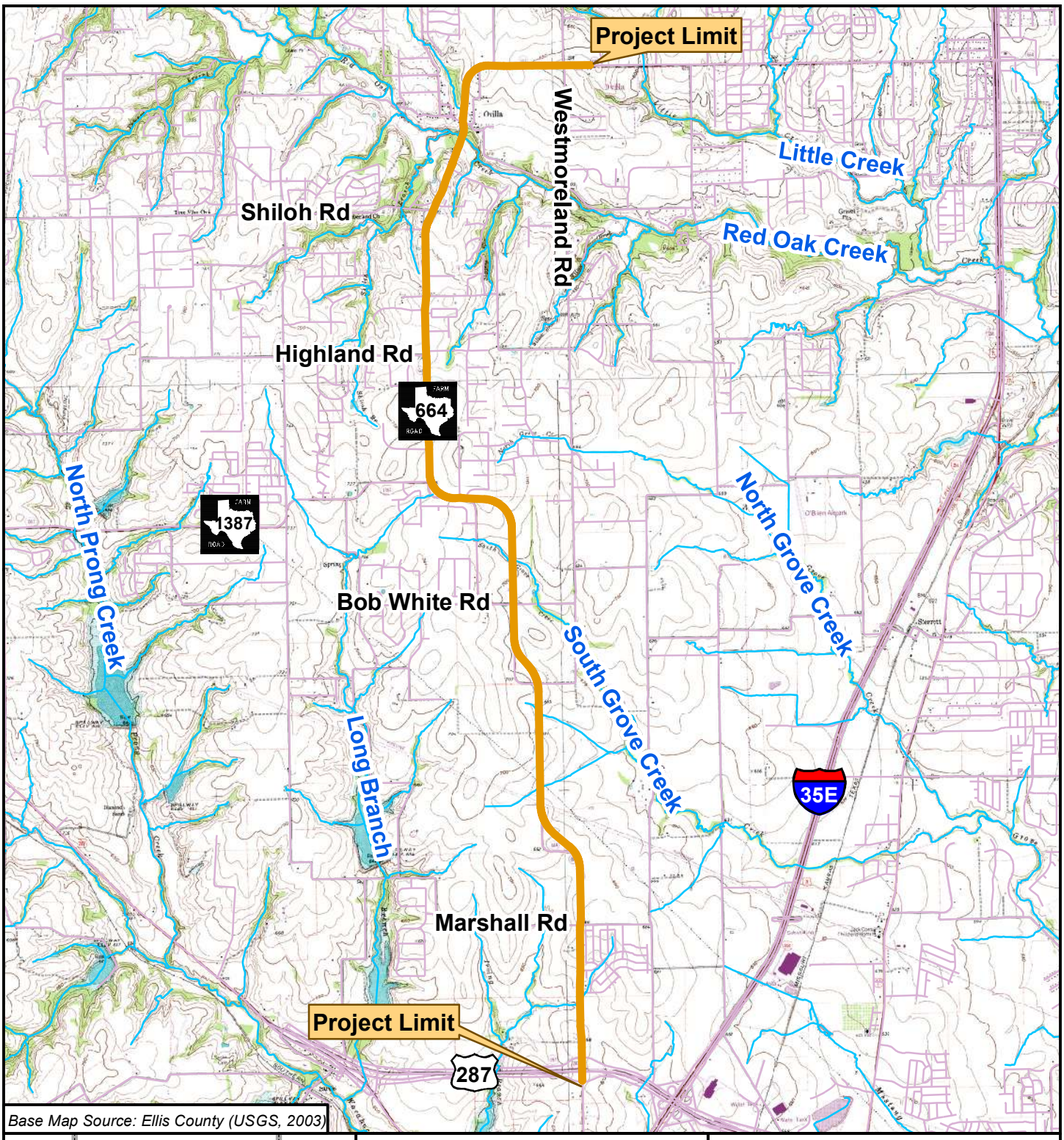
FIGURES



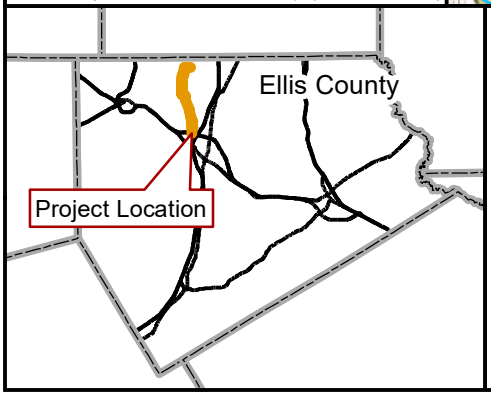
PROJECT LOCATION MAP

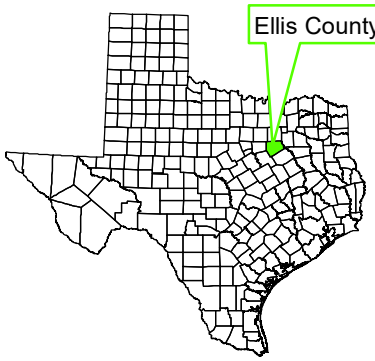
FARM-TO-MARKET ROAD (FM) 664
From U.S. Highway (US) 287
To Westmoreland Road
Ellis County

CSJs: 1051-01-038 and 1051-01-052



Base Map Source: Ellis County (USGS, 2003)





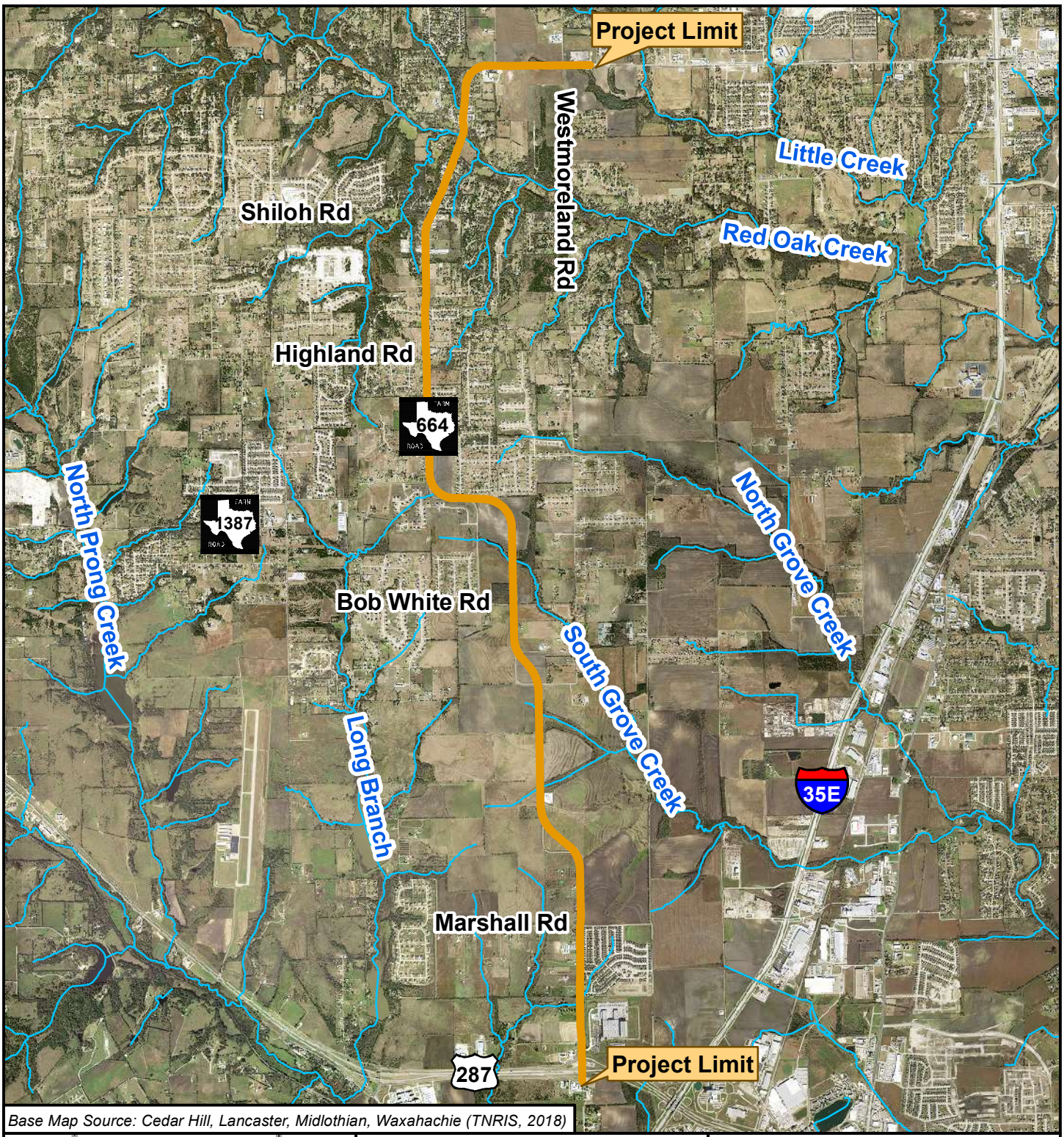
0 5,000 Feet

N W E S

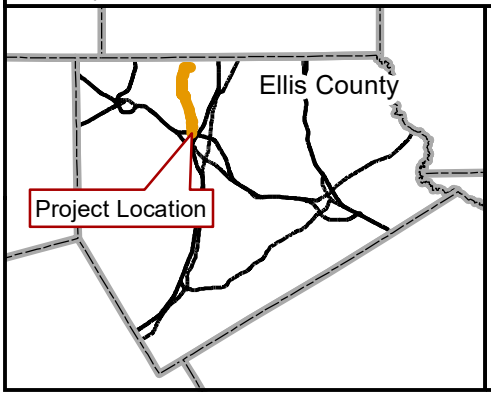
FIGURE 2
TOPOGRAPHIC MAP

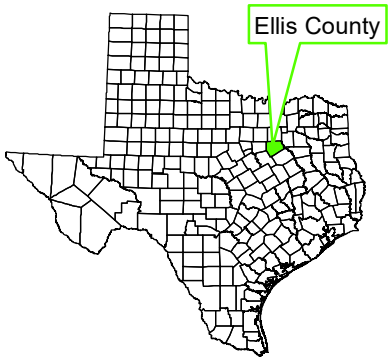
FARM-TO-MARKET ROAD (FM) 664
From U.S. Highway (US) 287
To Westmoreland Road
Ellis County

CSJs: 1051-01-038 and 1051-01-052



Base Map Source: Cedar Hill, Lancaster, Midlothian, Waxahachie (TNRIS, 2018)





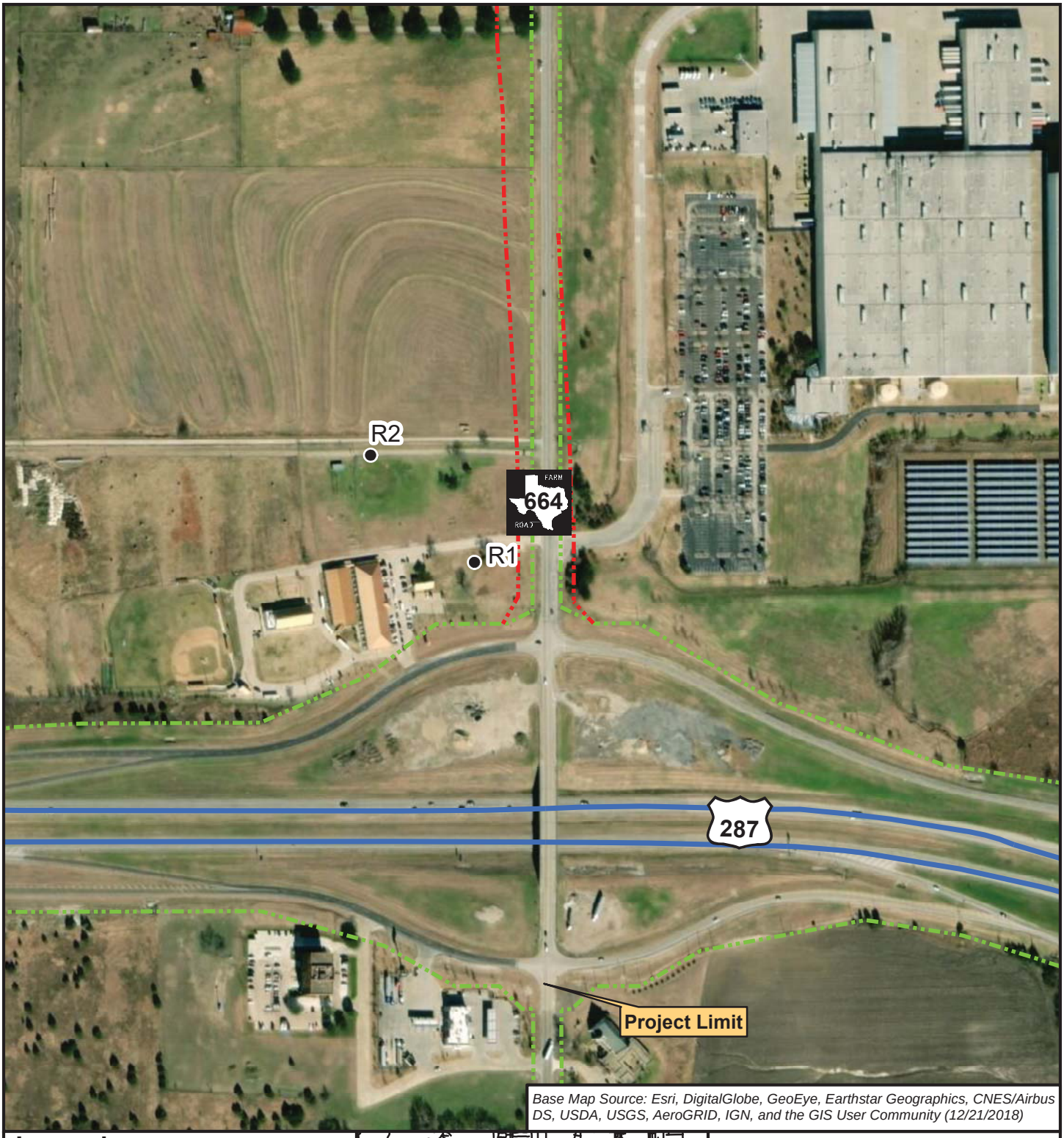
0 5,000 Feet

N W E S

FIGURE 3
AERIAL MAP

FARM-TO-MARKET ROAD (FM) 664
From U.S. Highway (US) 287
To Westmoreland Road
Ellis County

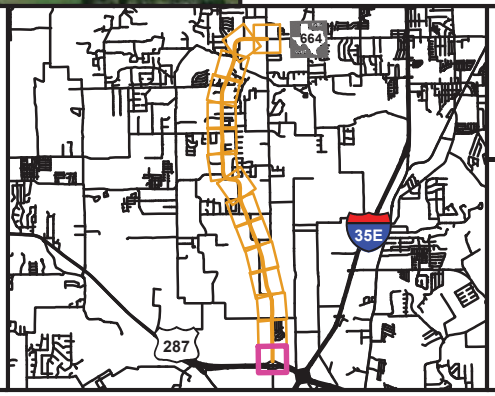
CSJs: 1051-01-038 and 1051-01-052



Base Map Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community (12/21/2018)

Legend

- Proposed ROW
- Existing ROW
- Non-impacted Receiver
- Impacted Receiver



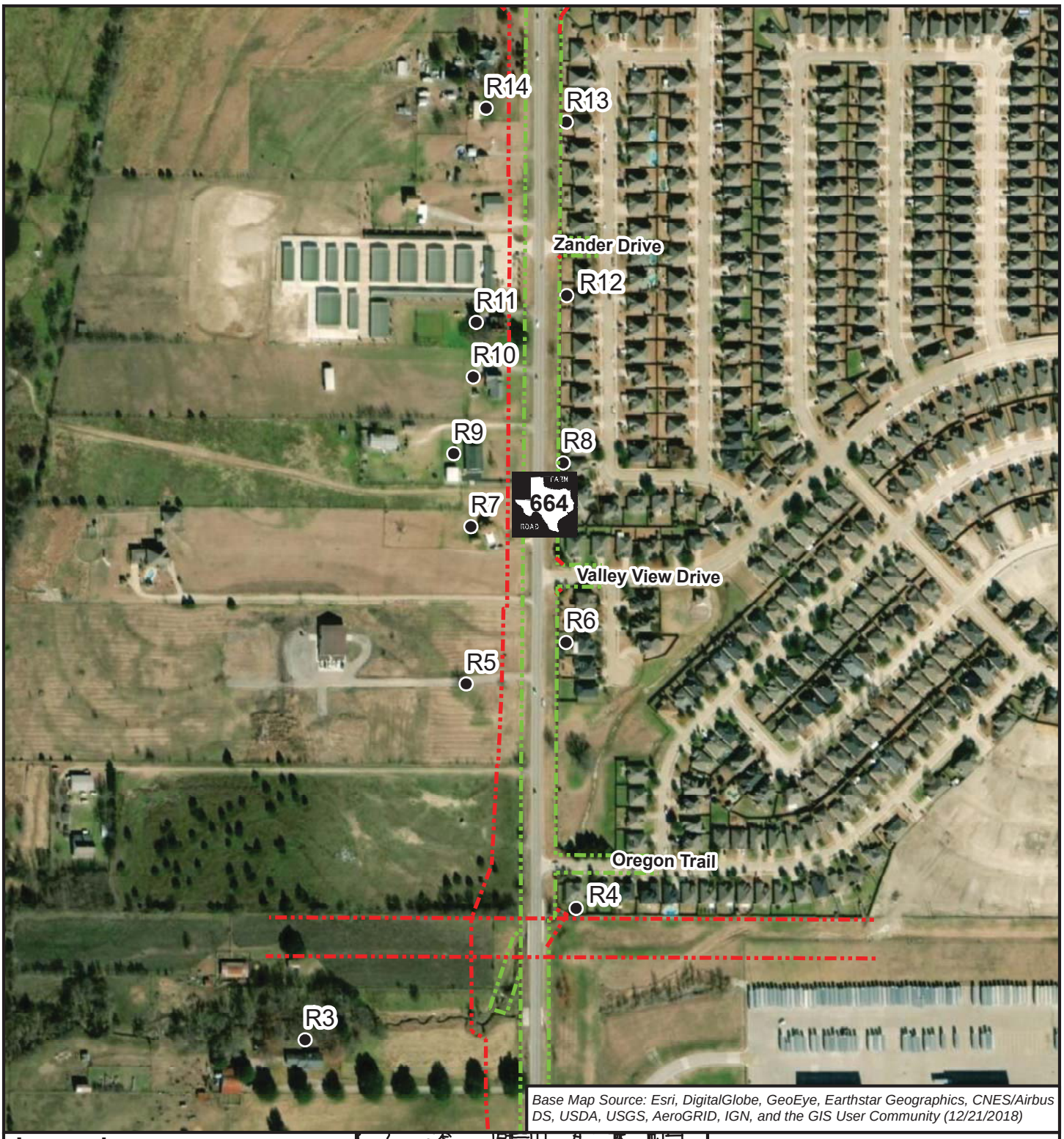
0 235 470 Feet

N W E S

FIGURE 5
NOISE RECEIVER LOCATION MAP

From US Highway 287
To Westmoreland Road

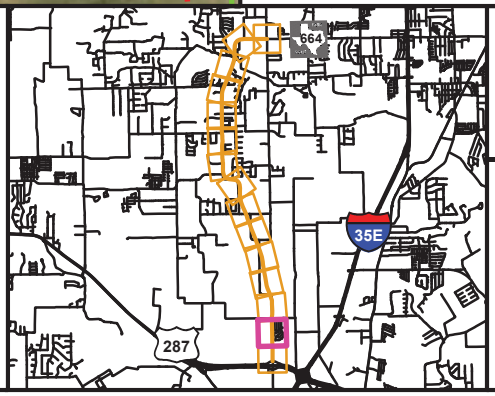
CSJs: 1051-01-038, 1051-01-052



Base Map Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community (12/21/2018)

Legend

- Proposed ROW
- Existing ROW
- Non-impacted Receiver
- Impacted Receiver



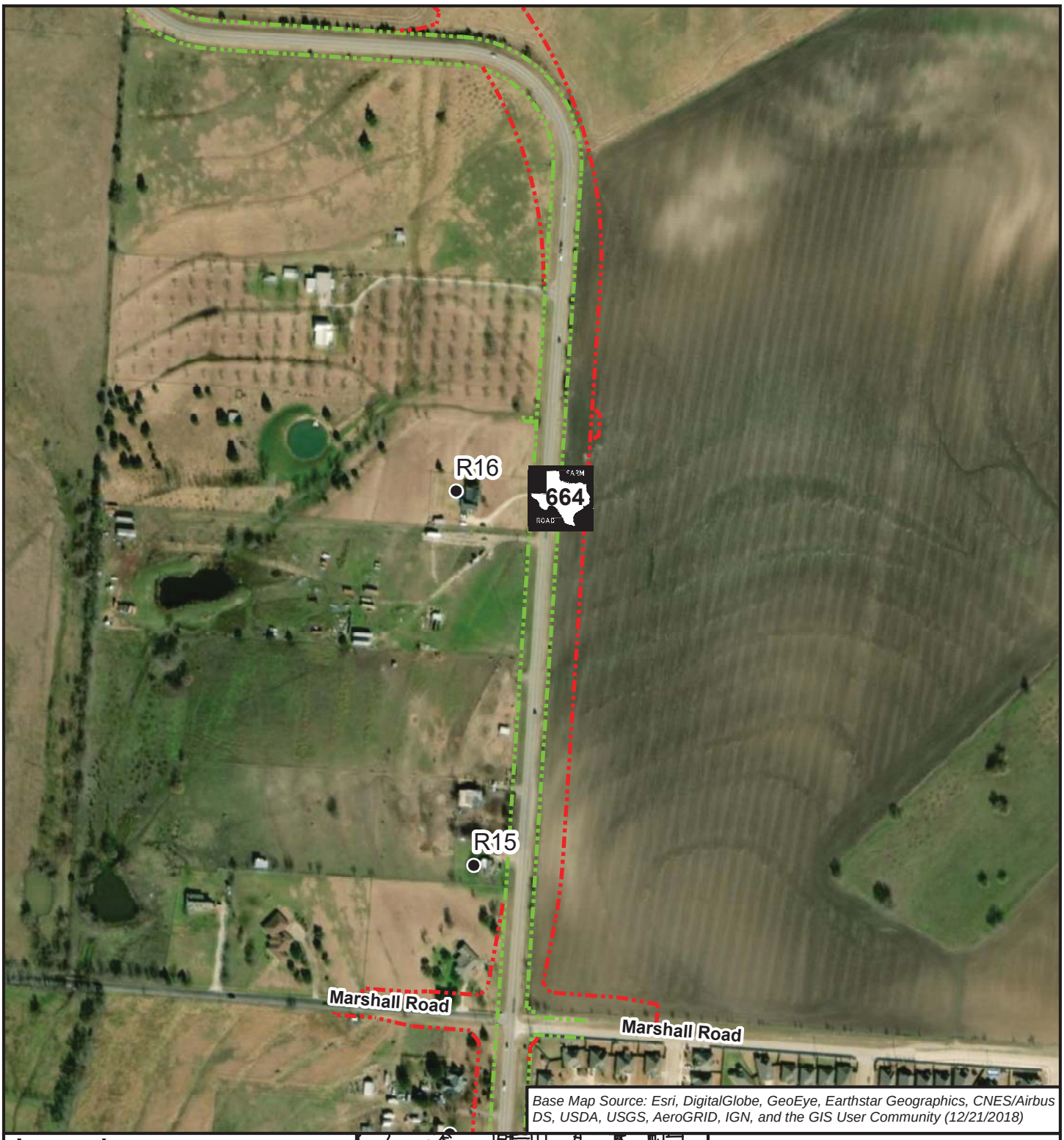
0 235 470 Feet

N W E S

FIGURE 5
NOISE RECEIVER LOCATION MAP

From US Highway 287
To Westmoreland Road

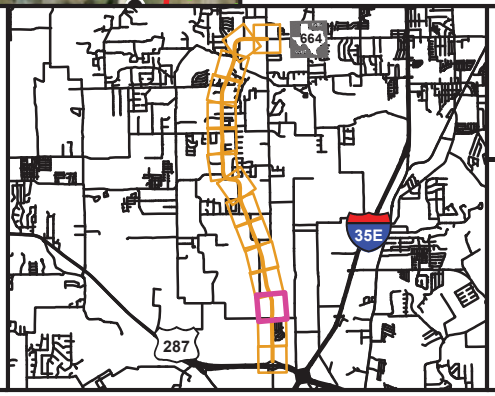
CSJs: 1051-01-038, 1051-01-052



Base Map Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community (12/21/2018)

Legend

- Proposed ROW
- Existing ROW
- Non-impacted Receiver
- Impacted Receiver



0 235 470 Feet

N W E S

FIGURE 5
NOISE RECEIVER LOCATION MAP

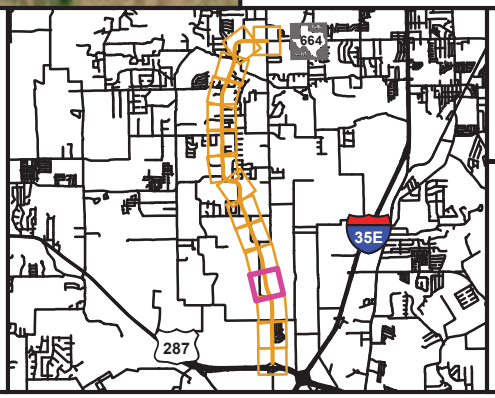
From US Highway 287
To Westmoreland Road

CSJs: 1051-01-038, 1051-01-052

Base Map Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community (12/21/2018)

Legend

- Proposed ROW
- Existing ROW
- Non-impacted Receiver
- Impacted Receiver



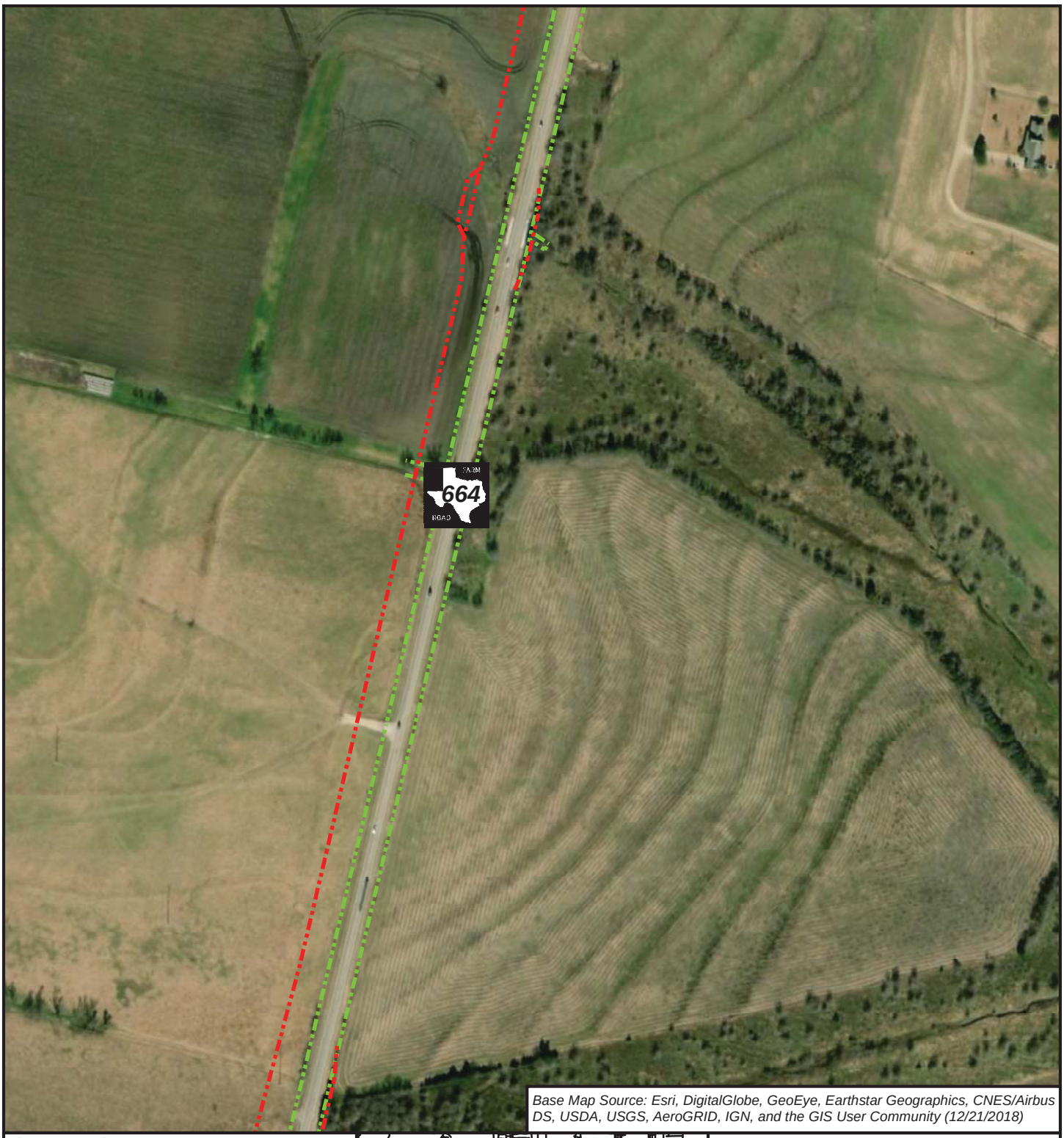
0 235 470 Feet

N W E S

FIGURE 5
NOISE RECEIVER LOCATION MAP

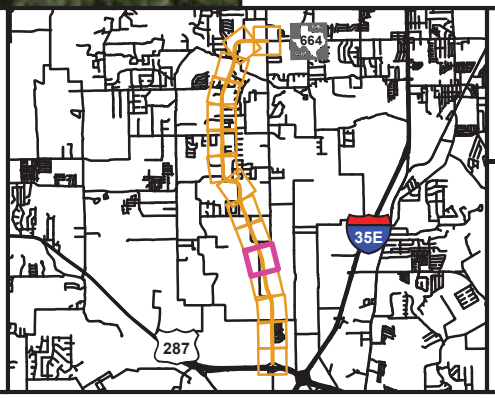
From US Highway 287
To Westmoreland Road

CSJs: 1051-01-038, 1051-01-052



Legend

- Proposed ROW
- Existing ROW
- Non-impacted Receiver
- Impacted Receiver



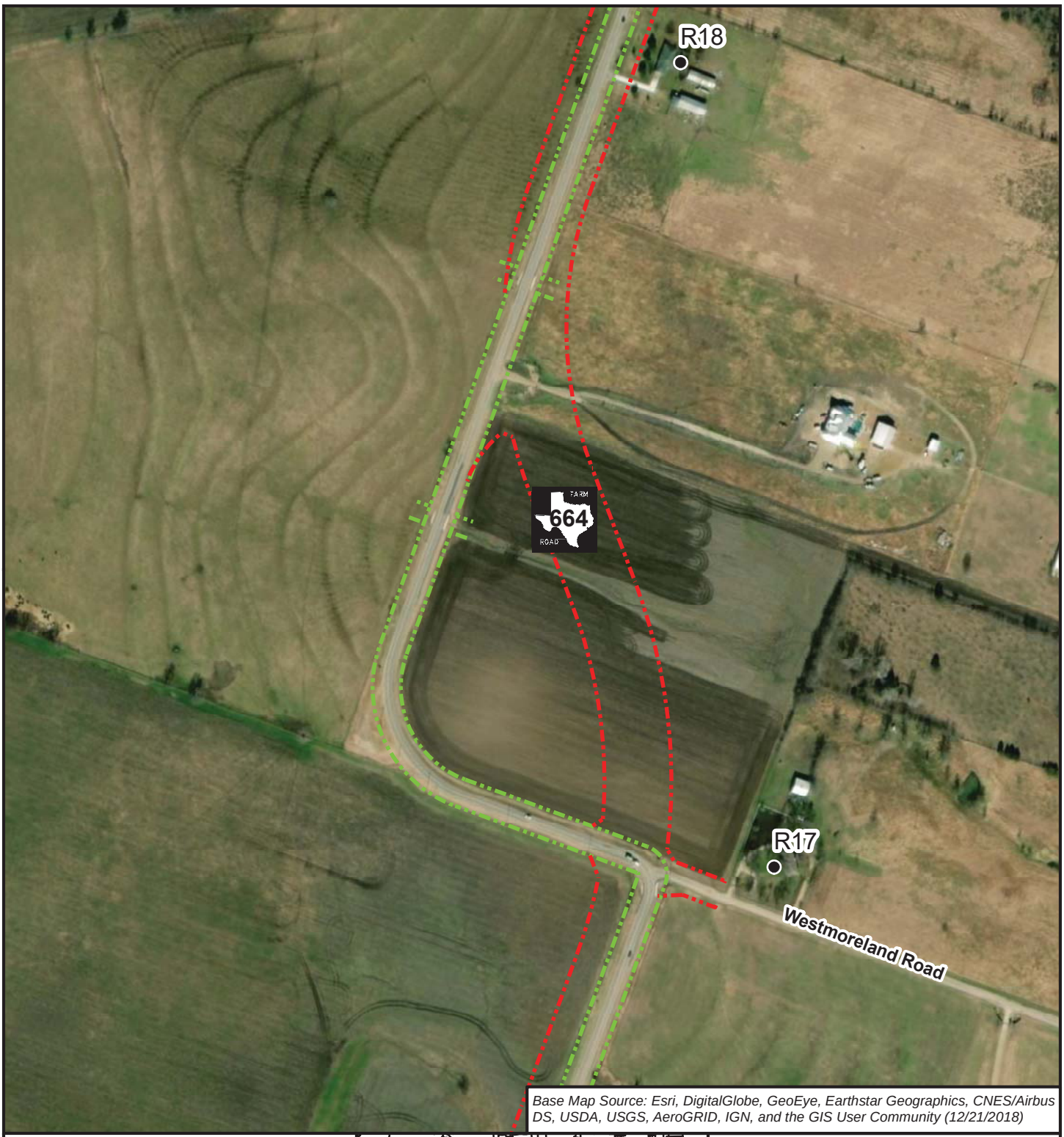
0 235 470 Feet

N W E S

FIGURE 5
NOISE RECEIVER LOCATION MAP

From US Highway 287
To Westmoreland Road

CSJs: 1051-01-038, 1051-01-052



Base Map Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community (12/21/2018)

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- Proposed ROW
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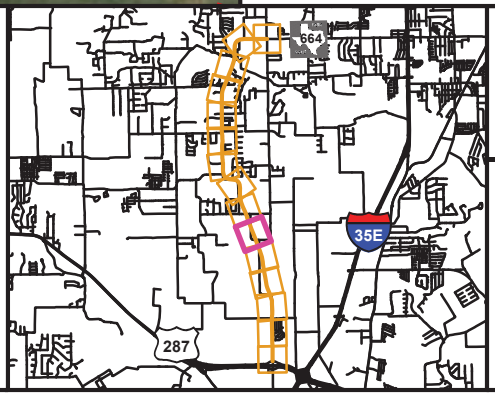


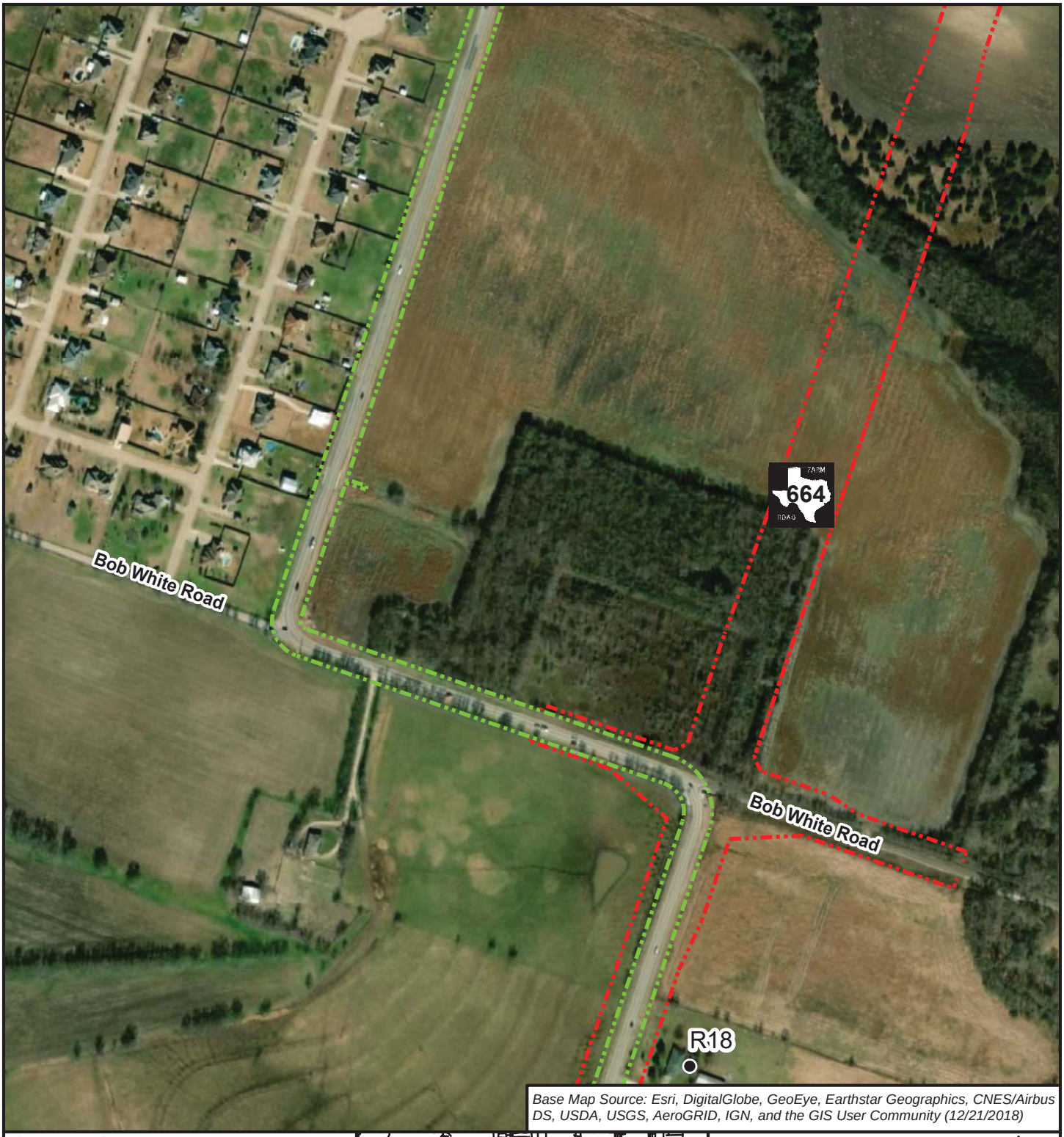
0 235 470 Feet

N W E S

FIGURE 5
NOISE RECEIVER LOCATION MAP

From US Highway 287
To Westmoreland Road

CSJs: 1051-01-038, 1051-01-052



Base Map Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community (12/21/2018)

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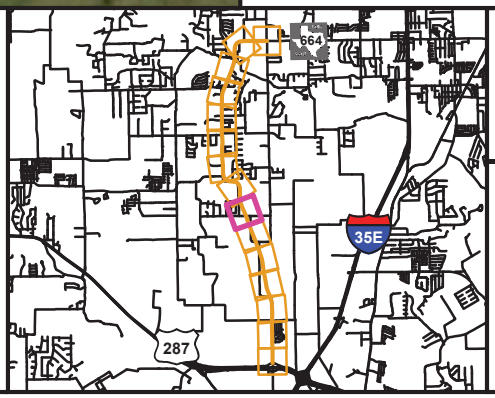


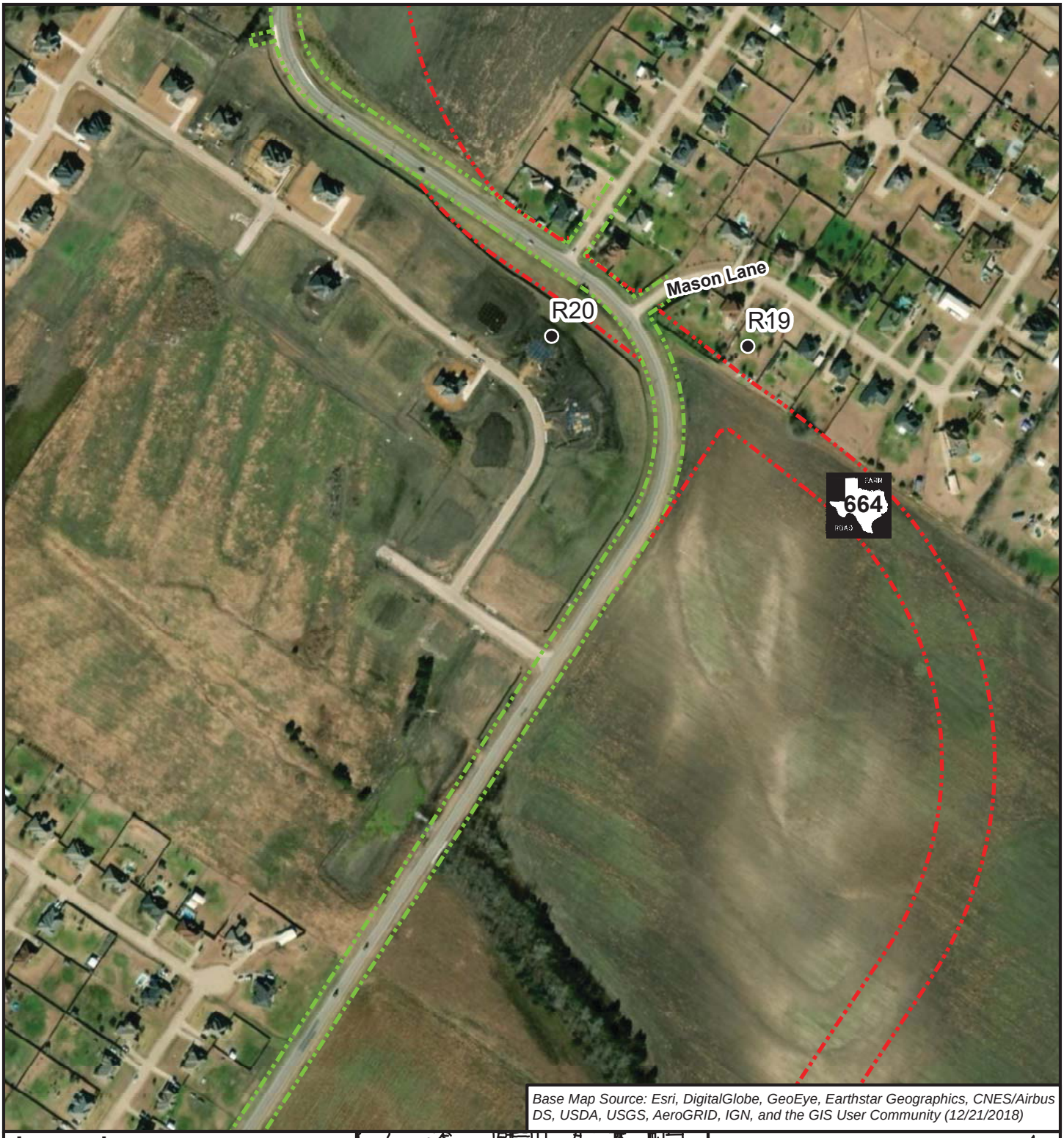
0 235 470 Feet

N W E S

FIGURE 5
NOISE RECEIVER LOCATION MAP

From US Highway 287
To Westmoreland Road

CSJs: 1051-01-038, 1051-01-052



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Legend

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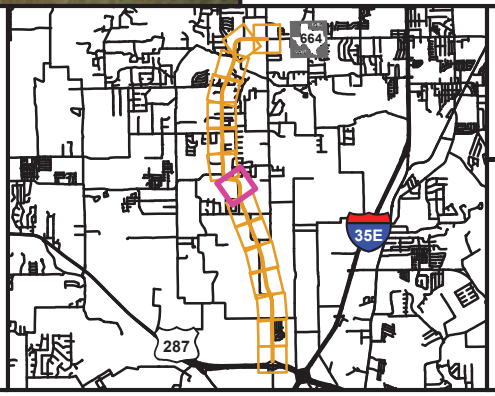


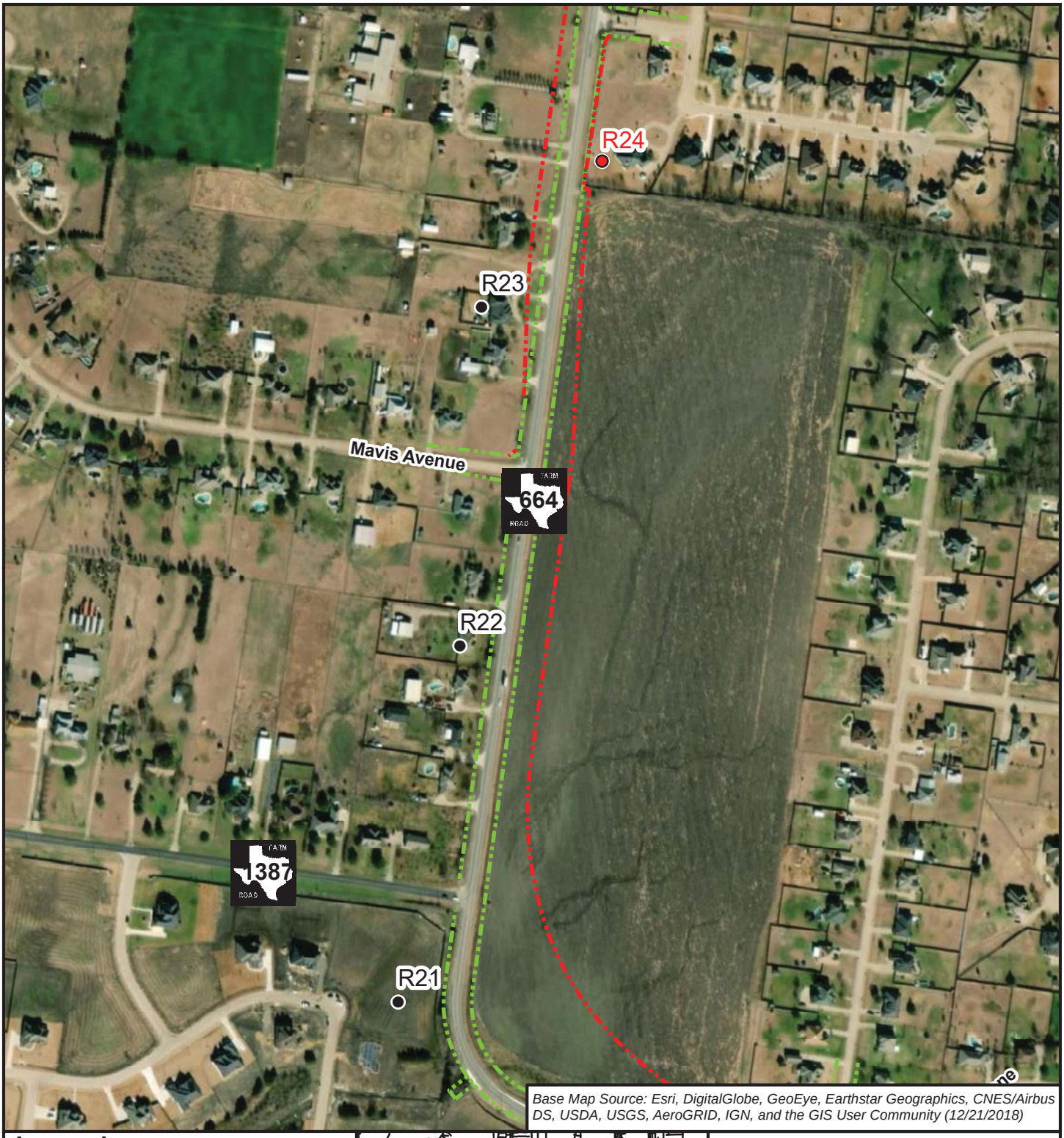
0 235 470 Feet

N W E S

FIGURE 5
NOISE RECEIVER LOCATION MAP

From US Highway 287
To Westmoreland Road

CSJs: 1051-01-038, 1051-01-052



Base Map Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community (12/21/2018)

Legend

- Proposed ROW
- Existing ROW
- Non-impacted Receiver
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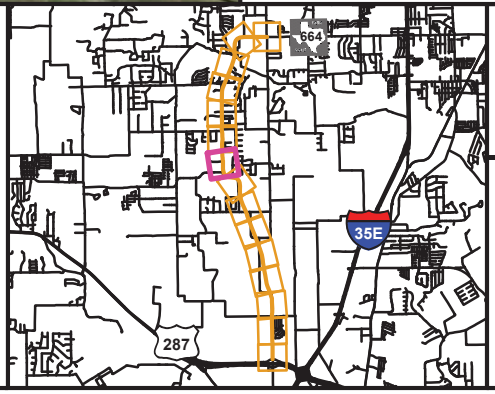


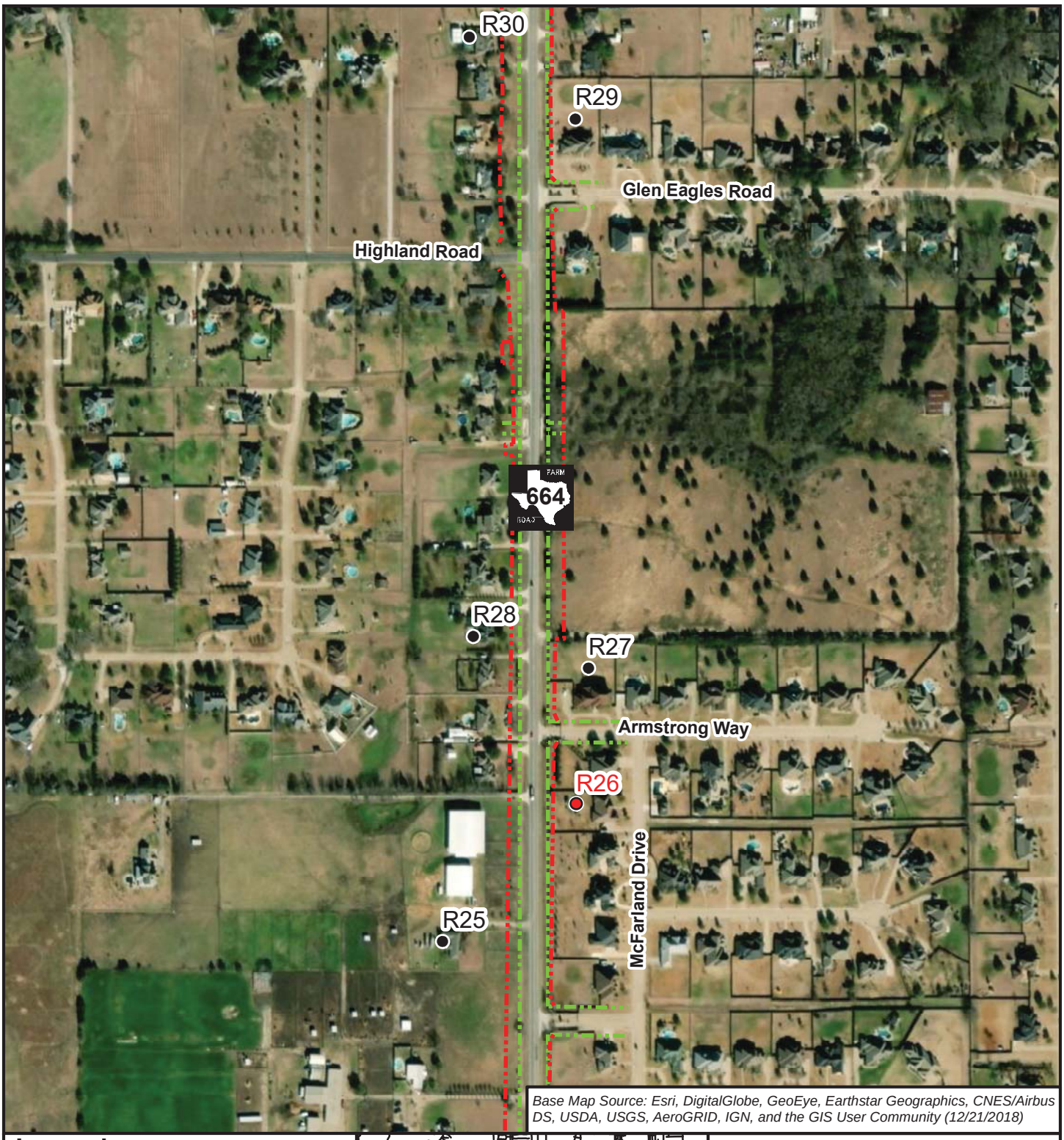
0 235 470 Feet

N W E S

FIGURE 5
NOISE RECEIVER LOCATION MAP

From US Highway 287
To Westmoreland Road

CSJs: 1051-01-038, 1051-01-052



Base Map Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community (12/21/2018)

Legend

- Proposed ROW
- Existing ROW
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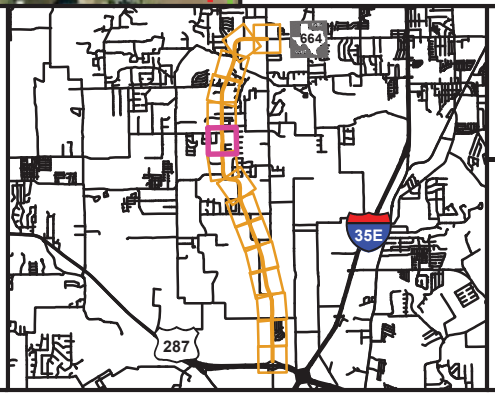

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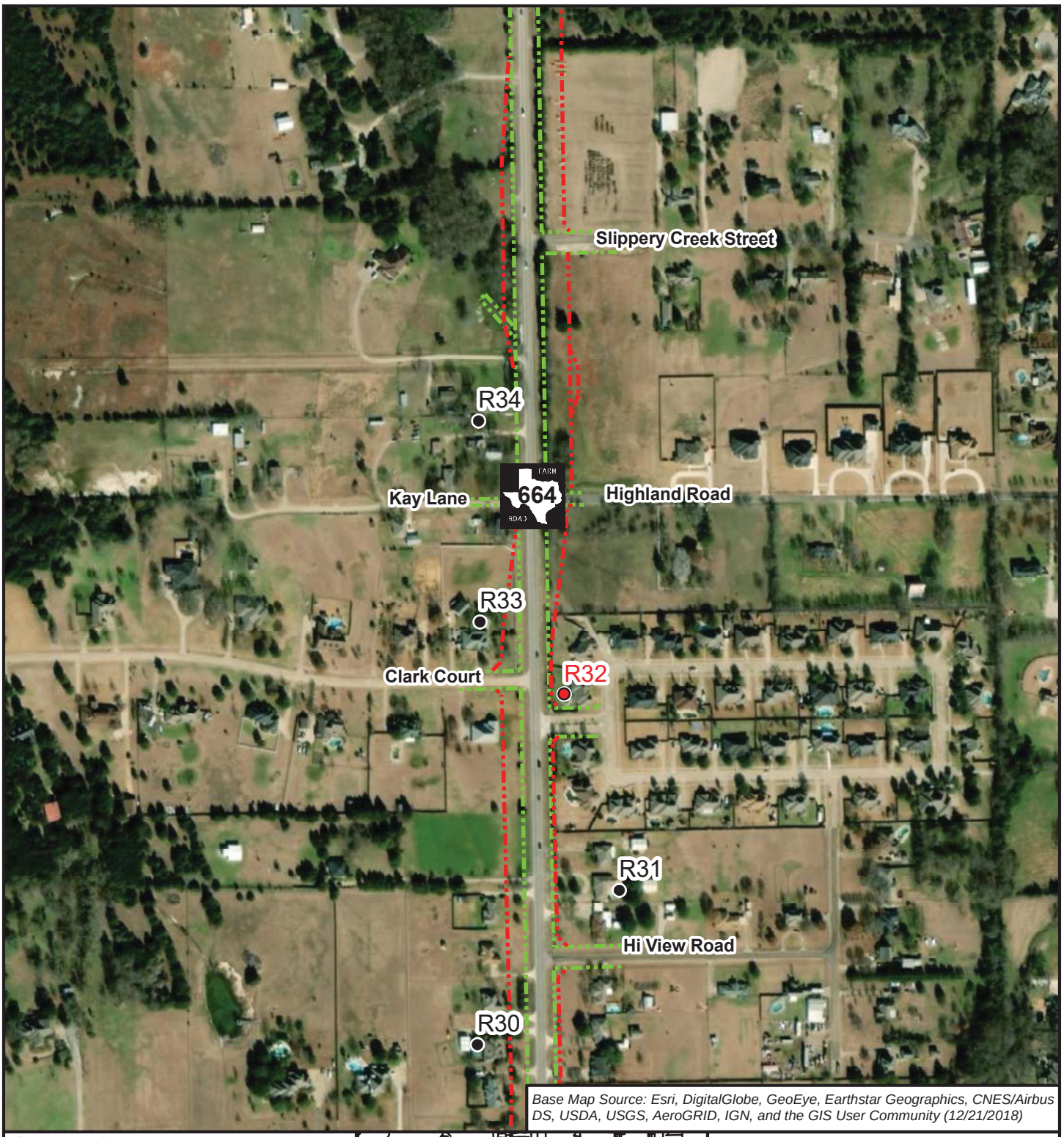
N W E S

FIGURE 5
NOISE RECEIVER LOCATION MAP

From US Highway 287
To Westmoreland Road

CSJs: 1051-01-038, 1051-01-052



Base Map Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community (12/21/2018)

Legend

- Proposed ROW
- Existing ROW
- Non-impacted Receiver
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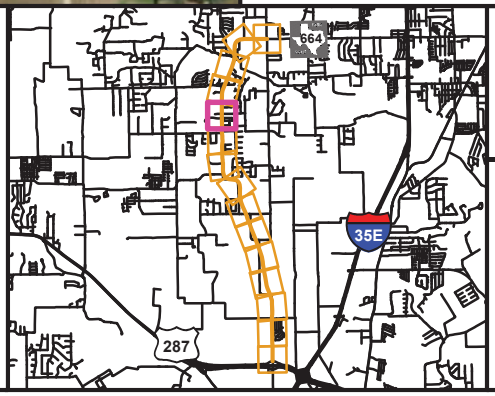


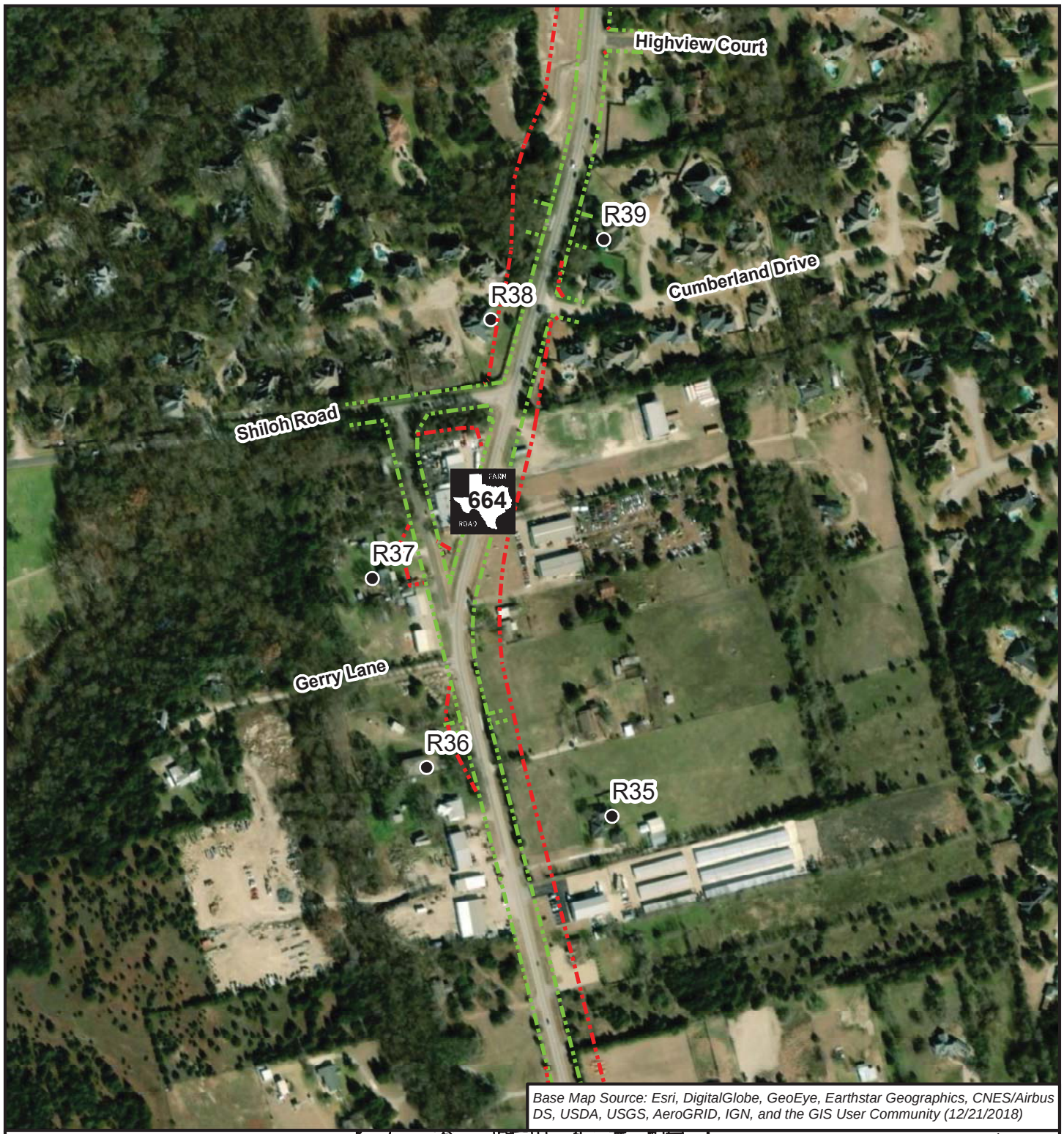
0 235 470 Feet

N W E S

FIGURE 5
NOISE RECEIVER LOCATION MAP

From US Highway 287
To Westmoreland Road

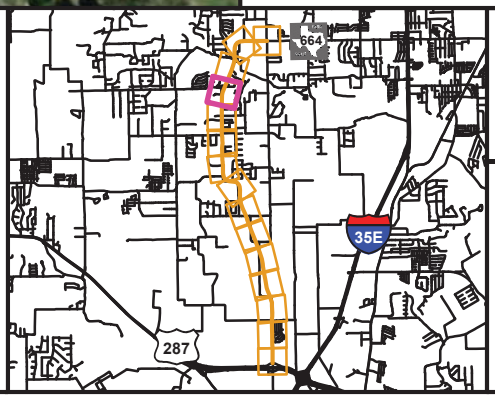
CSJs: 1051-01-038, 1051-01-052



Base Map Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community (12/21/2018)

Legend

- Proposed ROW
- Existing ROW
- Non-impacted Receiver
- Impacted Receiver



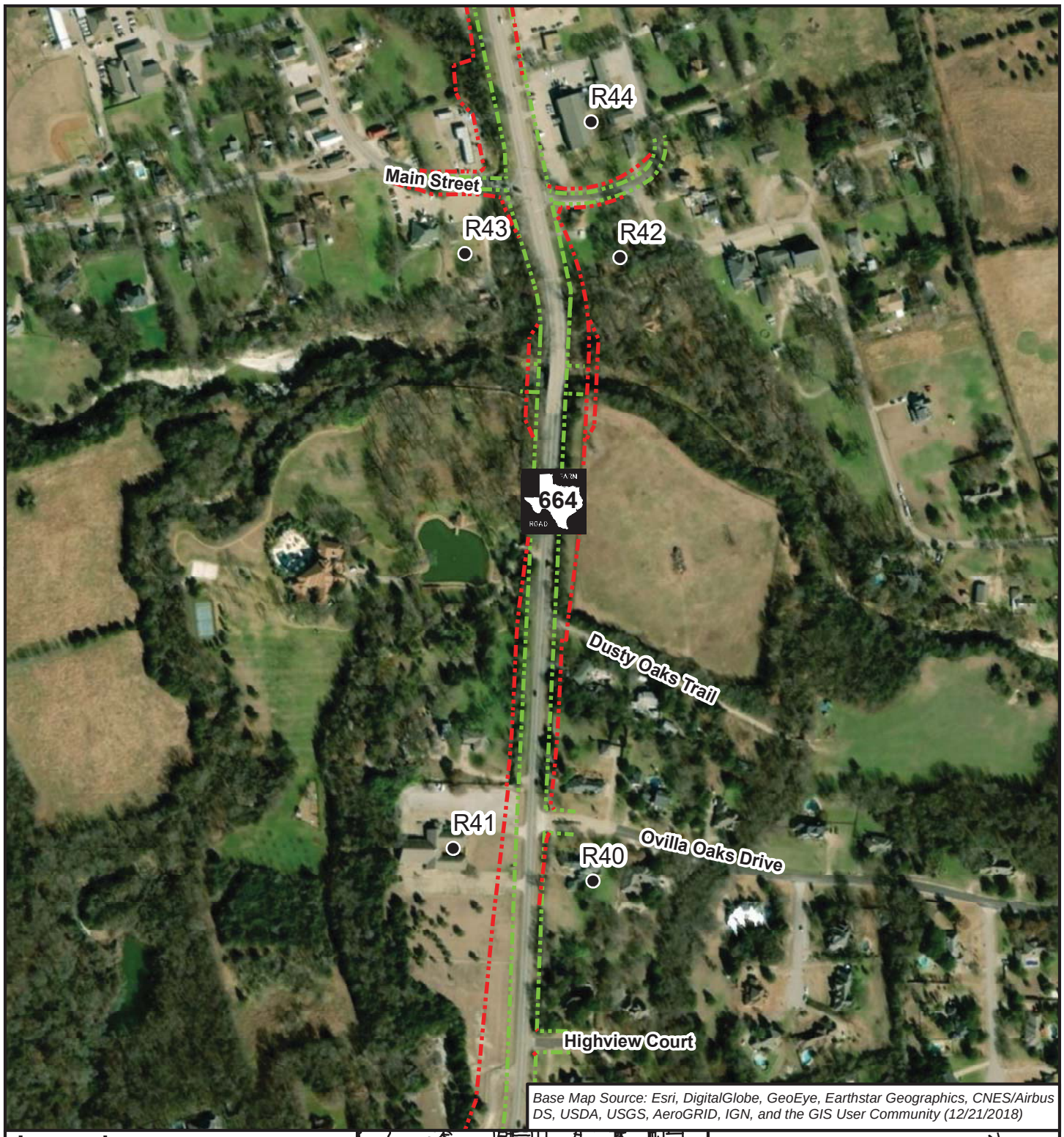
0 235 470 Feet

N E S W

FIGURE 5
NOISE RECEIVER LOCATION MAP

From US Highway 287
To Westmoreland Road

CSJs: 1051-01-038, 1051-01-052



Base Map Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community (12/21/2018)

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- Proposed ROW
- Existing ROW
- Non-impacted Receiver
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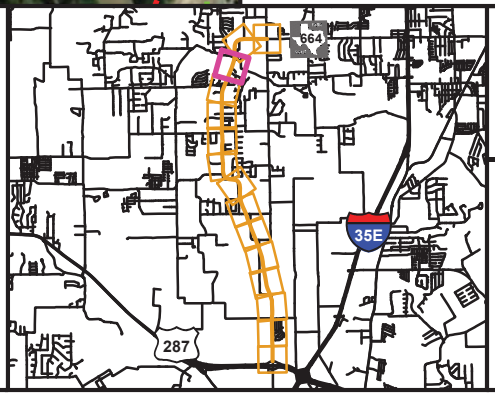


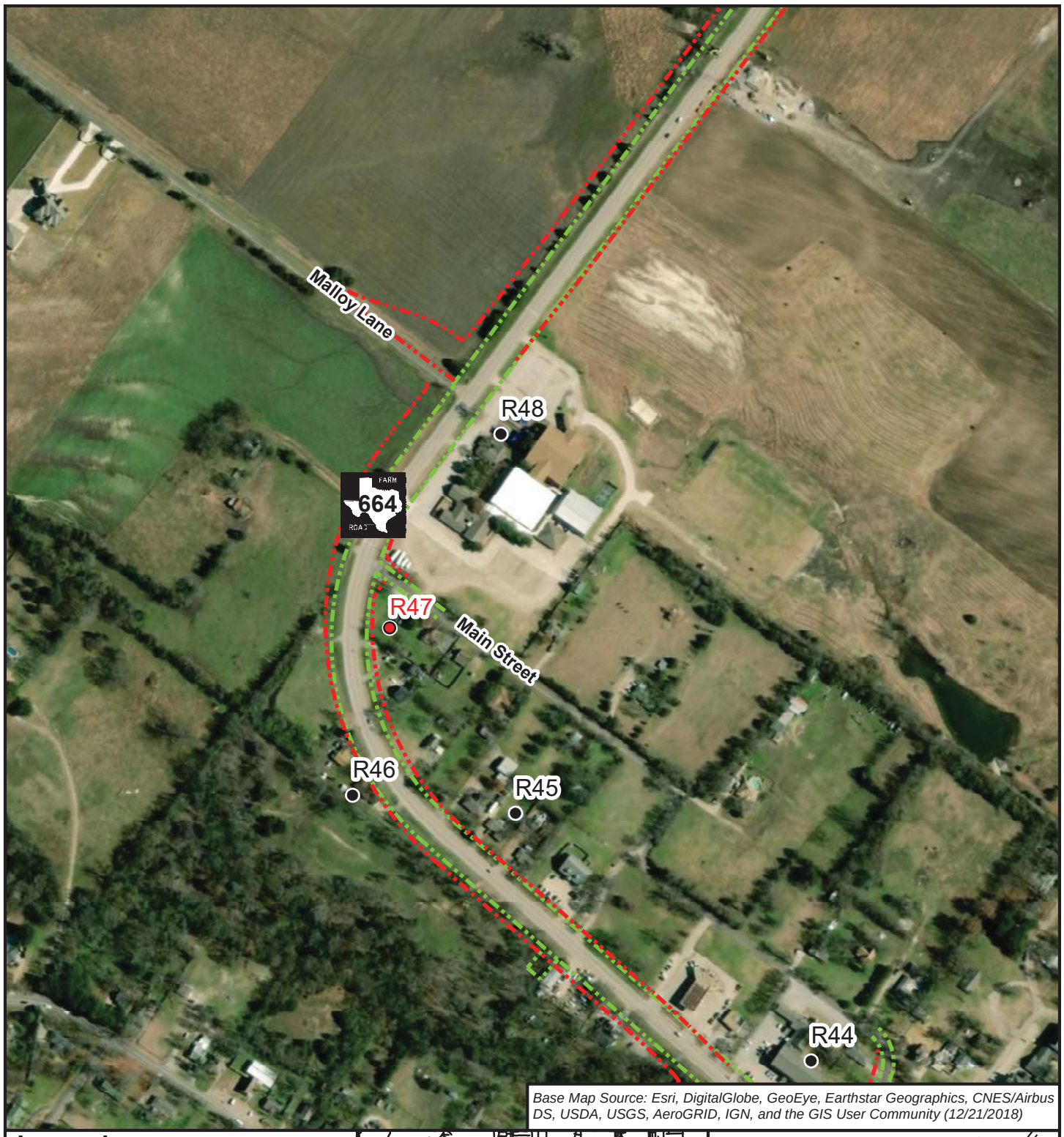
0 235 470 Feet

N E S W

FIGURE 5
NOISE RECEIVER LOCATION MAP

From US Highway 287
To Westmoreland Road

CSJs: 1051-01-038, 1051-01-052



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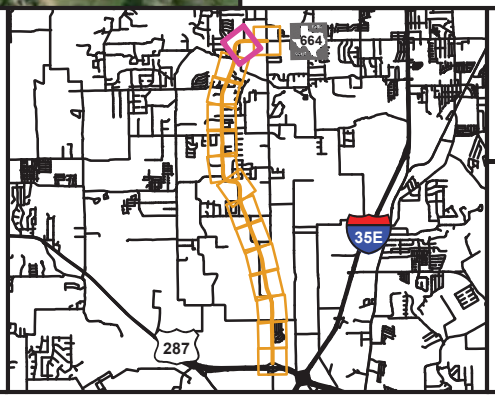


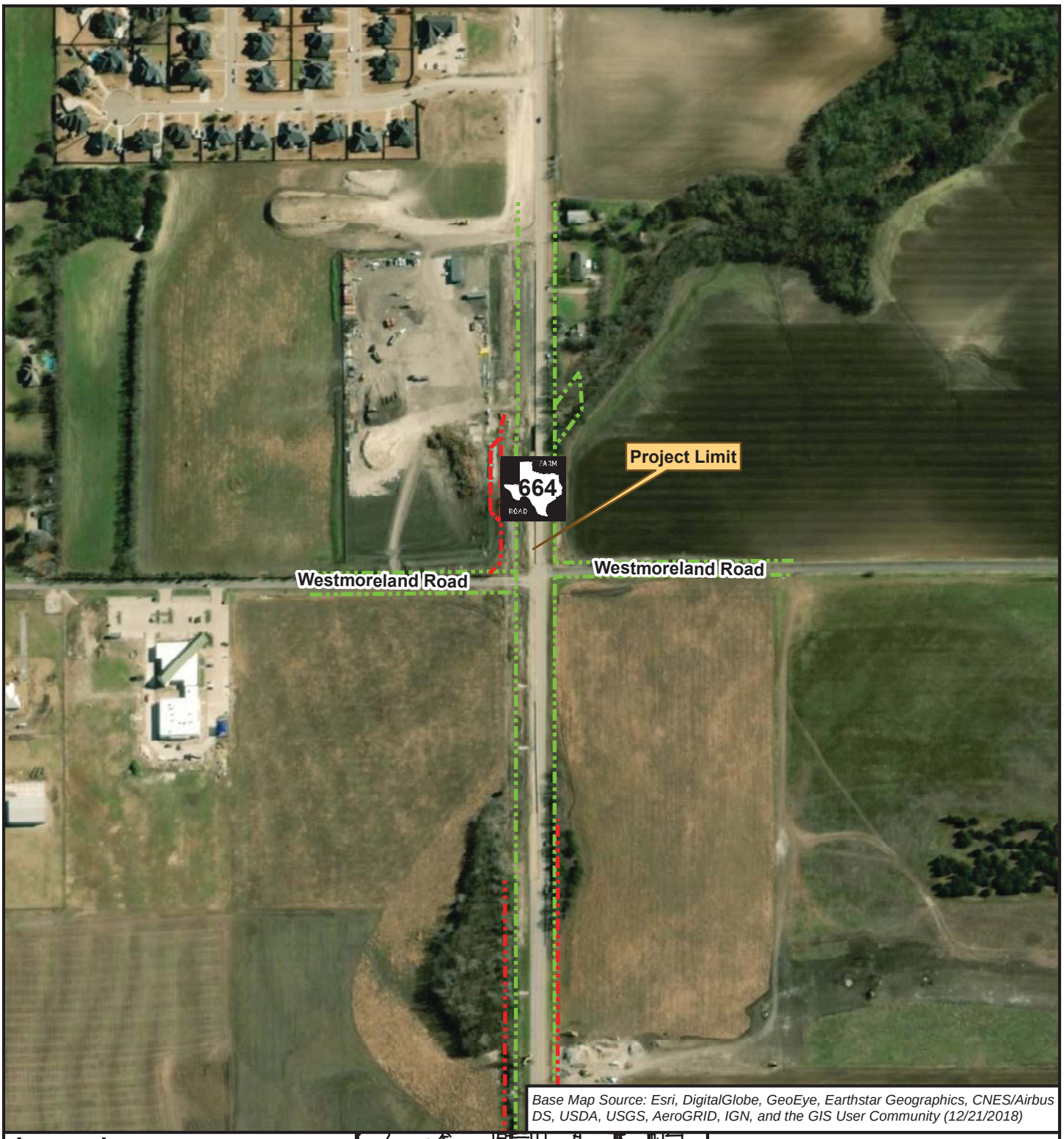
0 235 470 Feet

N E S W

FIGURE 5
NOISE RECEIVER LOCATION MAP

From US Highway 287
To Westmoreland Road

CSJs: 1051-01-038, 1051-01-052



Base Map Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community (12/21/2018)

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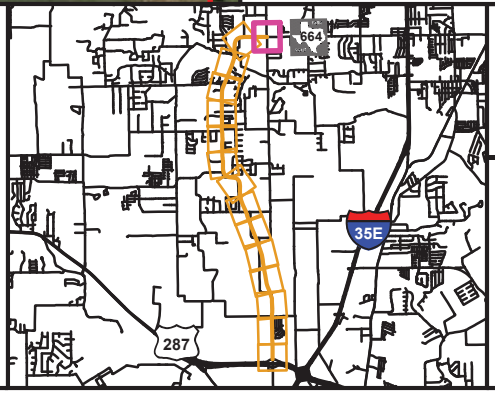


0 235 470 Feet

N E S W

FIGURE 5
NOISE RECEIVER LOCATION MAP

From US Highway 287
To Westmoreland Road

CSJs: 1051-01-038, 1051-01-052

APPENDIX

Texas Department of Transportation

MEMO

September 10, 2018

To: Transportation Planning & Programming Division
William E. Knowles, P.E.

Through: Dan Perge, P.E.
Advance Project Development Engineer

From: Rakhshanda Mahar, P.E.
Project Manager/Transportation Engineer

Subject: Traffic Projections Approval
CSJ: 1051-01-038, 1051-01-052
FM 664
Ellis County

The attached Traffic Projection & Methodology report with traffic diagrams were reviewed by TTI and TxDOT Dallas District. The traffic diagrams depict the 2025, 2045 and 2055 anticipated average daily traffic and turning movements for the proposed FM 664 from US 287 in Waxahachie to Westmoreland Drive.

Please develop the noise, air and pavement data for this project.

The current RTL date is: **October 2023**

If any additional information or clarification is needed, please contact Rakhshanda Mahar, P.E. at (214)-320-6244 or Godfrey Sendawula at (214)-320-6266.

Attachments:

1 Copy of the Traffic Projections Methodology report with traffic diagrams.
1 Copy of TTI's QA/QC of Traffic Forecast Methodology

SR:sr
cc: **Godfrey Sendawula**
C-5E, 11-1, CSJ: 1051-01-038 and 1051-01-052 FM 664, Traffic Approval to TPP Division

TRAFFIC ANALYSIS FOR HIGHWAY DESIGN

Dallas District

January 25, 2019

Project FM 664 Corridor (No-Build Conditions)

Description of Location	Average Daily Traffic 2025	Average Daily Traffic 2045	Base Year Dir Dist %	Base Year K Factor	Base Year Percent Trucks ADT	Base Year Percent Trucks DHV	ATHWLD	Percent Tandem Axles in ATHWLD	Total Number of Equivalent 18k Single Axle Load Applications One Direction Expected for a 20 Year Design Period (2025 to 2045) Flexible Pavement	SN	Rigid Pavement	SLAB
FM 664												
Section 1: From US 287 in Waxahachie To Marshall Rd Ellis County	10,800	15,525	60-40	11.4	4.1	3.1	10,900	20	1,275,000	3	1,389,000	8"

Data for Use in Air & Noise Analysis

Vehicle Class	Base Year % of ADT	Base Year % of DHV
Light Duty	95.9	96.9
Medium Duty	2.7	2.0
Heavy Duty	1.4	1.1

Project FM 664 Corridor (No-Build Conditions)

Description of Location	Average Daily Traffic 2025	Average Daily Traffic 2055	Base Year Dir Dist %	Base Year K Factor	Base Year Percent Trucks ADT	Base Year Percent Trucks DHV	ATHWLD	Percent Tandem Axles in ATHWLD	Total Number of Equivalent 18k Single Axle Load Applications One Direction Expected for a 20 Year Design Period (2025 to 2055) Flexible Pavement	SN	Rigid Pavement	SLAB
FM 664												
Section 1: From US 287 in Waxahachie To Marshall Rd Ellis County	10,800	17,325	60-40	11.4	4.1	3.1	10,900	20	2,044,000	3	2,226,000	8"

TRAFFIC ANALYSIS FOR HIGHWAY DESIGN

Dallas District

January 25, 2019

Project FM 664 Corridor (No-Build Conditions)

Description of Location	Average Daily Traffic 2025	Average Daily Traffic 2045	Base Year Dir Dist %	Base Year K Factor	Base Year Percent Trucks ADT	Base Year Percent Trucks DHV	ATHWLD	Percent Tandem Axles in ATHWLD	Total Number of Equivalent 18k Single Axle Load Applications One Direction Expected for a 20 Year Design Period (2025 to 2045) Flexible Pavement	SN	Rigid Pavement	SLAB
FM 664 Section 2: From Marshall Rd To FM 1387 Ellis County	4,950	7,150	60-40	11.4	6.1	4.6	10,600	30	865,000	3	945,000	8"

Data for Use in Air & Noise Analysis

Vehicle Class	Base Year % of ADT	Base Year % of DHV
Light Duty	93.9	95.4
Medium Duty	4.0	3.0
Heavy Duty	2.1	1.6

Project FM 664 Corridor (No-Build Conditions)

Description of Location	Average Daily Traffic 2025	Average Daily Traffic 2055	Base Year Dir Dist %	Base Year K Factor	Base Year Percent Trucks ADT	Base Year Percent Trucks DHV	ATHWLD	Percent Tandem Axles in ATHWLD	Total Number of Equivalent 18k Single Axle Load Applications One Direction Expected for a 20 Year Design Period (2025 to 2055) Flexible Pavement	SN	Rigid Pavement	SLAB
FM 664 Section 2: From Marshall Rd To FM 1387 Ellis County	4,950	7,950	60-40	11.4	6.1	4.6	10,700	30	1,384,000	3	1,512,000	8"

TRAFFIC ANALYSIS FOR HIGHWAY DESIGN

Dallas District

January 25, 2019

Project FM 664 Corridor (No-Build Conditions)

Description of Location	Average Daily Traffic 2025	Average Daily Traffic 2045	Base Year Dir Dist %	Base Year K Factor	Base Year Percent Trucks ADT	Base Year Percent Trucks DHV	ATHWLD	Percent Tandem Axles in ATHWLD	Total Number of Equivalent 18k Single Axle Load Applications One Direction Expected for a 20 Year Design Period (2025 to 2045) Flexible Pavement	SN	Rigid Pavement	SLAB
FM 664 Section 3: From FM 1387 To S Westmoreland Rd (N. Jnctn.) Ellis County	11,050	15,875	60-40	11.4	4.1	3.1	10,900	20	1,304,000	3	1,421,000	8"

Data for Use in Air & Noise Analysis

Vehicle Class	Base Year % of ADT	Base Year % of DHV
Light Duty	95.9	96.9
Medium Duty	2.7	2.0
Heavy Duty	1.4	1.1

Project FM 664 Corridor (No-Build Conditions)

Description of Location	Average Daily Traffic 2025	Average Daily Traffic 2055	Base Year Dir Dist %	Base Year K Factor	Base Year Percent Trucks ADT	Base Year Percent Trucks DHV	ATHWLD	Percent Tandem Axles in ATHWLD	Total Number of Equivalent 18k Single Axle Load Applications One Direction Expected for a 20 Year Design Period (2025 to 2055) Flexible Pavement	SN	Rigid Pavement	SLAB
FM 664 Section 3: From FM 1387 To S Westmoreland Rd (N. Jnctn.) Ellis County	11,050	17,700	60-40	11.4	4.1	3.1	10,900	20	2,089,000	3	2,275,000	8"

TRAFFIC ANALYSIS FOR HIGHWAY DESIGN

Dallas District

January 25, 2019

Project FM 664 Corridor (Build Conditions)

Description of Location	Average Daily Traffic 2025	Average Daily Traffic 2045	Base Year Dir Dist %	Base Year K Factor	Base Year Percent Trucks ADT	Base Year Percent Trucks DHV	ATHWLD	Percent Tandem Axles in ATHWLD	Total Number of Equivalent 18k Single Axle Load Applications One Direction Expected for a 20 Year Design Period (2025 to 2045) Flexible Pavement	SN	Rigid Pavement	SLAB
FM 664 Section 1: From US 287 in Waxahachie To S Westmoreland Rd (S. Jnctn.) Ellis County	10,800	15,525	60-40	11.4	4.1	3.1	10,900	20	1,275,000	3	1,389,000	8"

Data for Use in Air & Noise Analysis

Vehicle Class	Base Year % of ADT	Base Year % of DHV
Light Duty	95.9	96.9
Medium Duty	2.7	2.0
Heavy Duty	1.4	1.1

Project FM 664 Corridor (Build Conditions)

Description of Location	Average Daily Traffic 2025	Average Daily Traffic 2055	Base Year Dir Dist %	Base Year K Factor	Base Year Percent Trucks ADT	Base Year Percent Trucks DHV	ATHWLD	Percent Tandem Axles in ATHWLD	Total Number of Equivalent 18k Single Axle Load Applications One Direction Expected for a 20 Year Design Period (2025 to 2055) Flexible Pavement	SN	Rigid Pavement	SLAB
FM 664 Section 1: From US 287 in Waxahachie To S Westmoreland Rd (S. Jnctn.) Ellis County	10,800	17,325	60-40	11.4	4.1	3.1	10,900	20	2,044,000	3	2,226,000	8"

TRAFFIC ANALYSIS FOR HIGHWAY DESIGN

Dallas District

January 25, 2019

Project FM 664 Corridor (Build Conditions)

Description of Location	Average Daily Traffic		Base Year Dir Dist %	K Factor	Percent Trucks ADT	Percent Trucks DHV	ATHWLD	Percent Tandem Axles in ATHWLD	Total Number of Equivalent 18k Single Axle Load Applications One Direction Expected for a 20 Year Design Period (2025 to 2045) Flexible Pavement	SN	Rigid Pavement	SLAB
	2025	2045										
FM 664 Section 2: From S Westmoreland Rd (S. Jnctn.) To FM 1387 Ellis County	4,825	6,900	60-40	11.4	6.2	4.7	10,600	30	852,000	3	931,000	8"

Data for Use in Air & Noise Analysis

Vehicle Class	Base Year % of ADT	Base Year % of DHV
Light Duty	93.8	95.3
Medium Duty	4.0	3.0
Heavy Duty	2.2	1.7

Project FM 664 Corridor (Build Conditions)

Description of Location	Average Daily Traffic		Base Year Dir Dist %	K Factor	Percent Trucks ADT	Percent Trucks DHV	ATHWLD	Percent Tandem Axles in ATHWLD	Total Number of Equivalent 18k Single Axle Load Applications One Direction Expected for a 20 Year Design Period (2025 to 2055) Flexible Pavement	SN	Rigid Pavement	SLAB
	2025	2055										
FM 664 Section 2: From S Westmoreland Rd (S. Jnctn.) To FM 1387 Ellis County	4,825	7,700	60-40	11.4	6.2	4.7	10,700	30	1,365,000	3	1,492,000	8"

TRAFFIC ANALYSIS FOR HIGHWAY DESIGN

Dallas District

January 25, 2019

Project FM 664 Corridor (Build Conditions)

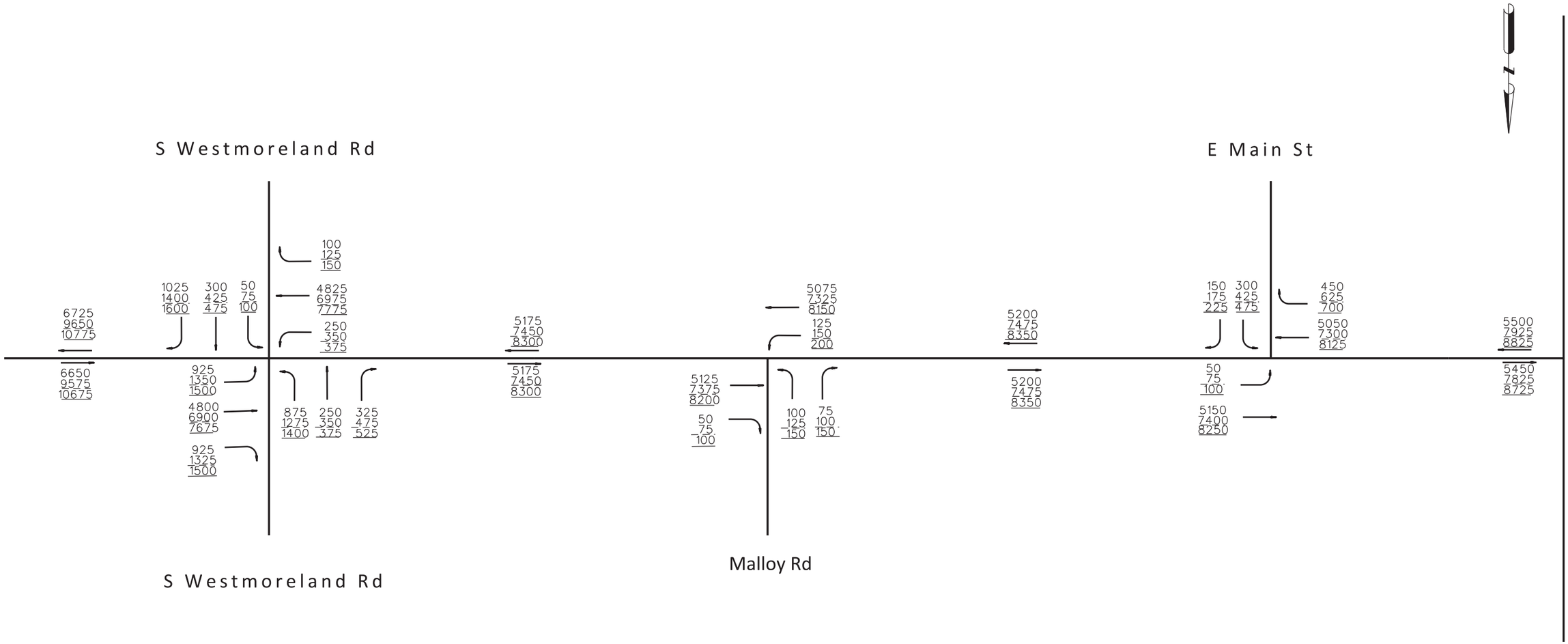
Description of Location	Average Daily Traffic		Base Year Dir Dist %	K Factor	Percent Trucks ADT	Percent Trucks DHV	ATHWLD	Percent Tandem Axles in ATHWLD	Total Number of Equivalent 18k Single Axle Load Applications One Direction Expected for a 20 Year Design Period (2025 to 2045) Flexible Pavement	SN	Rigid Pavement	SLAB
	2025	2045										
FM 664 Section 3: From FM 1387 To S Westmoreland Rd (N. Jnctn.) Ellis County	11,050	15,875	60-40	11.4	4.1	3.1	10,900	20	1,304,000	3	1,421,000	8"

Data for Use in Air & Noise Analysis

Vehicle Class	Base Year % of ADT	Base Year % of DHV
Light Duty	95.9	96.9
Medium Duty	2.7	2.0
Heavy Duty	1.4	1.1

Project FM 664 Corridor (Build Conditions)

Description of Location	Average Daily Traffic		Base Year Dir Dist %	K Factor	Percent Trucks ADT	Percent Trucks DHV	ATHWLD	Percent Tandem Axles in ATHWLD	Total Number of Equivalent 18k Single Axle Load Applications One Direction Expected for a 20 Year Design Period (2025 to 2055) Flexible Pavement	SN	Rigid Pavement	SLAB
	2025	2055										
FM 664 Section 3: From FM 1387 To S Westmoreland Rd (N. Jnctn.) Ellis County	11,050	17,700	60-40	11.4	4.1	3.1	10,900	20	2,089,000	3	2,275,000	8"



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TRAVEL DIRECTION
XX,XXX 2025 ADT
XX,XXX 2045 ADT
XX,XXX 2055 ADT

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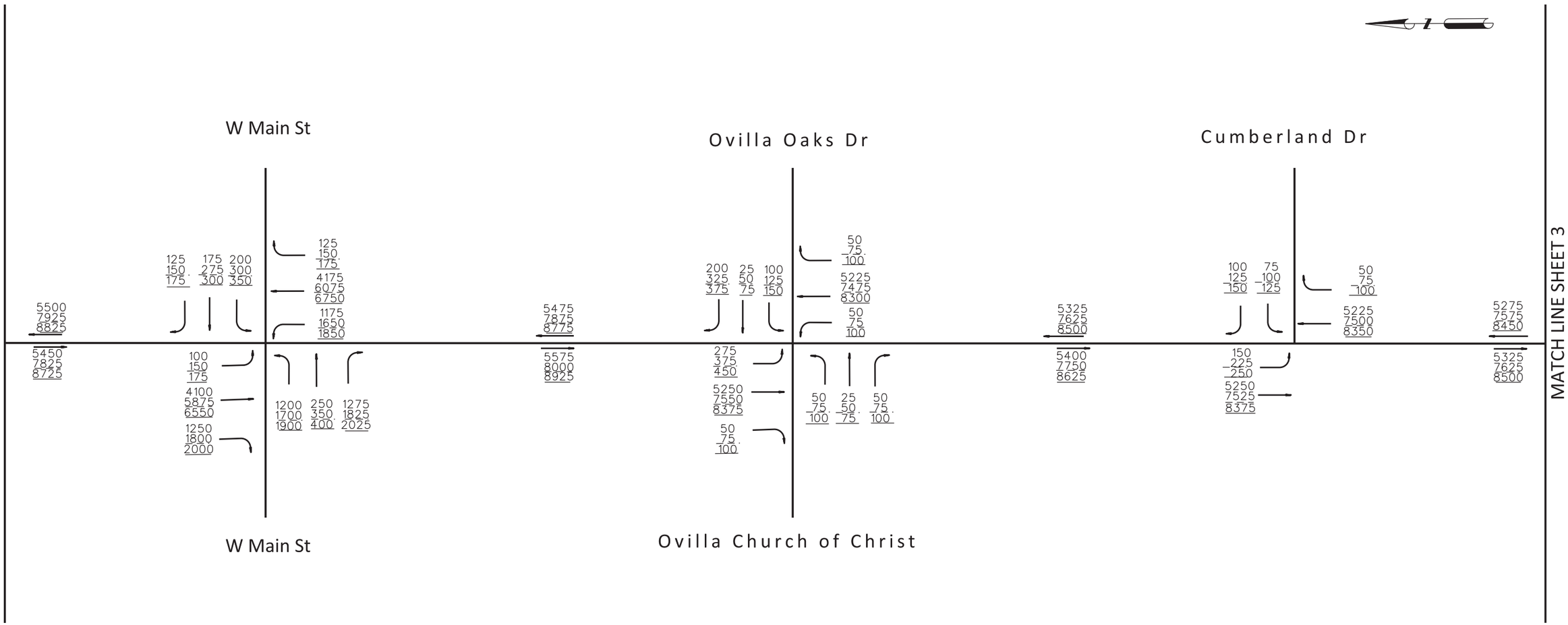
US 287 TO WESTMORELAND ROAD

NO-BUILD LINE DIAGRAM

SEPTEMBER 2018



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XX,XXX 2055 ADT

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NO-BUILD LINE DIAGRAM
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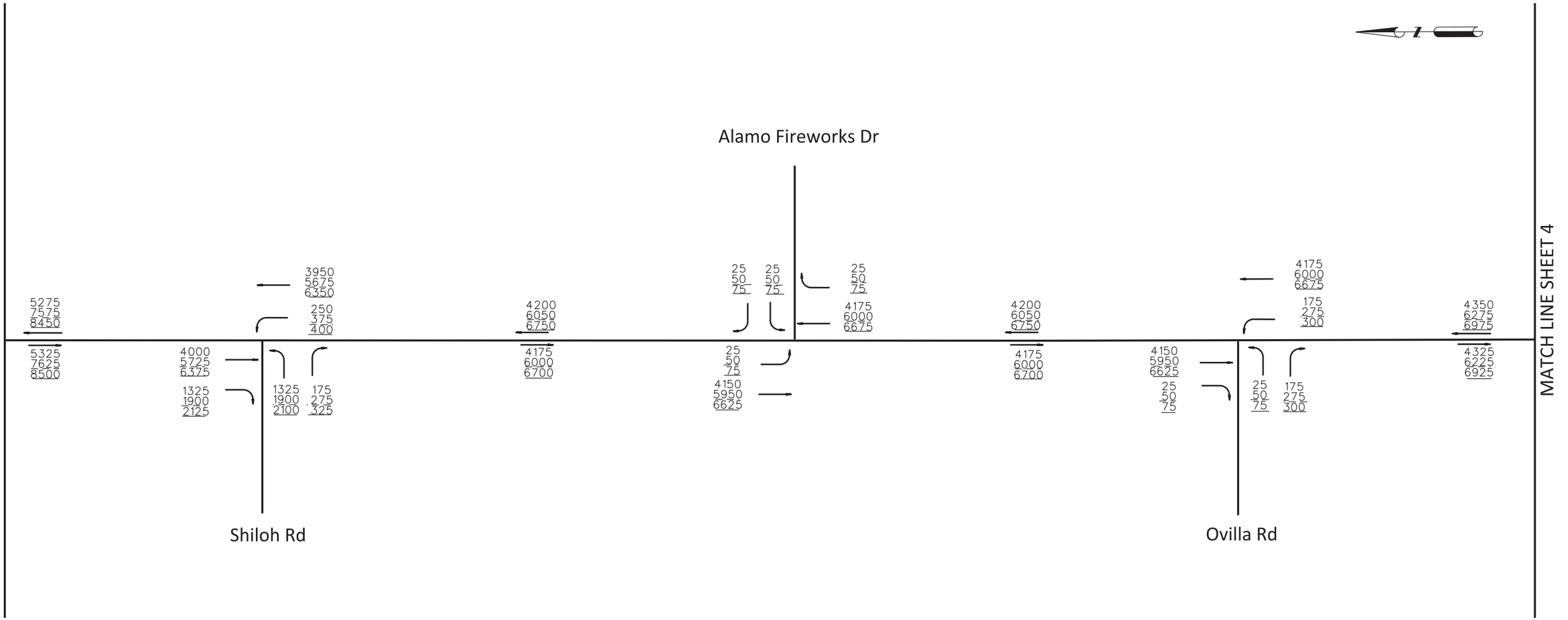

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XX,XXX 2055 ADT

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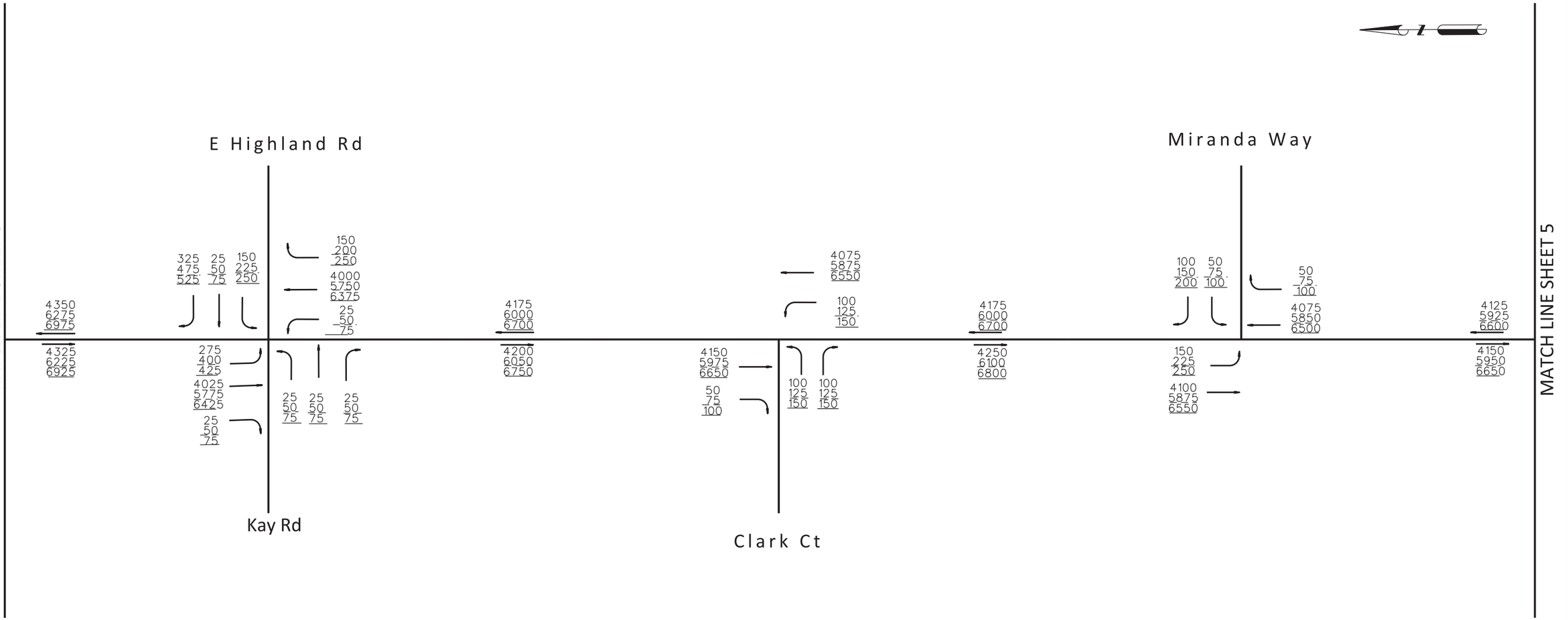

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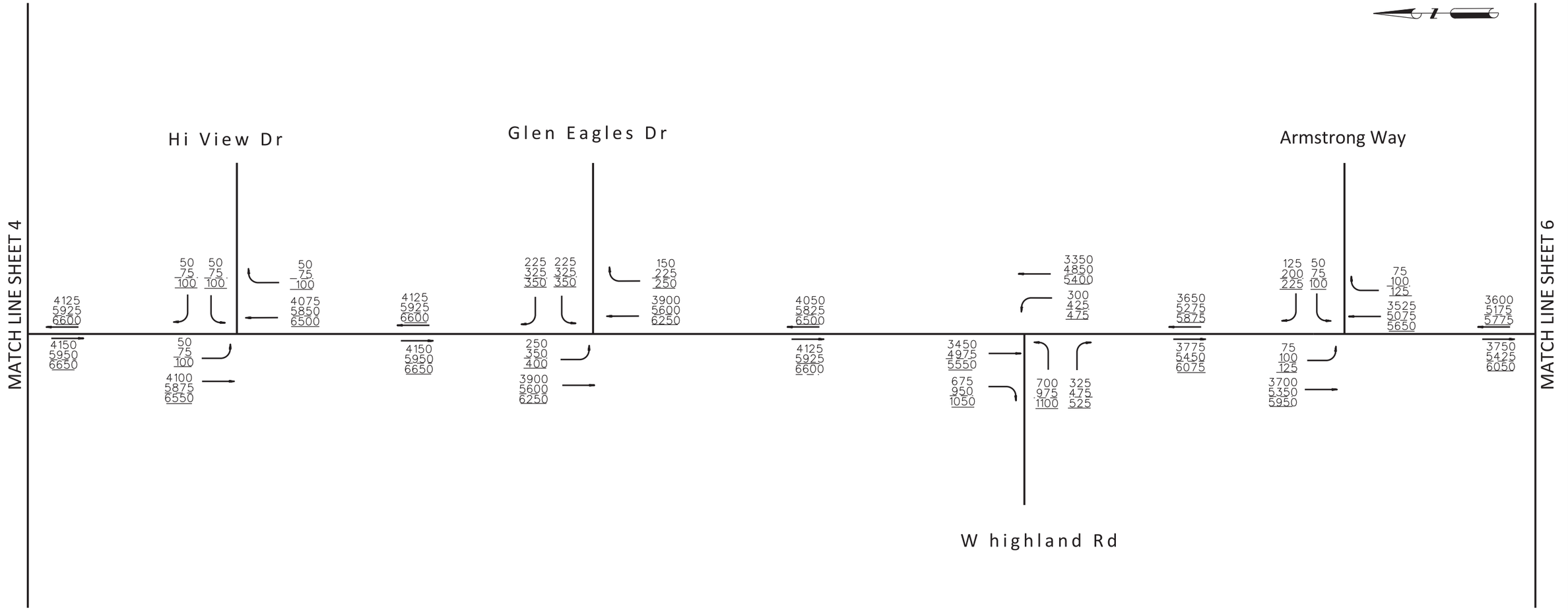

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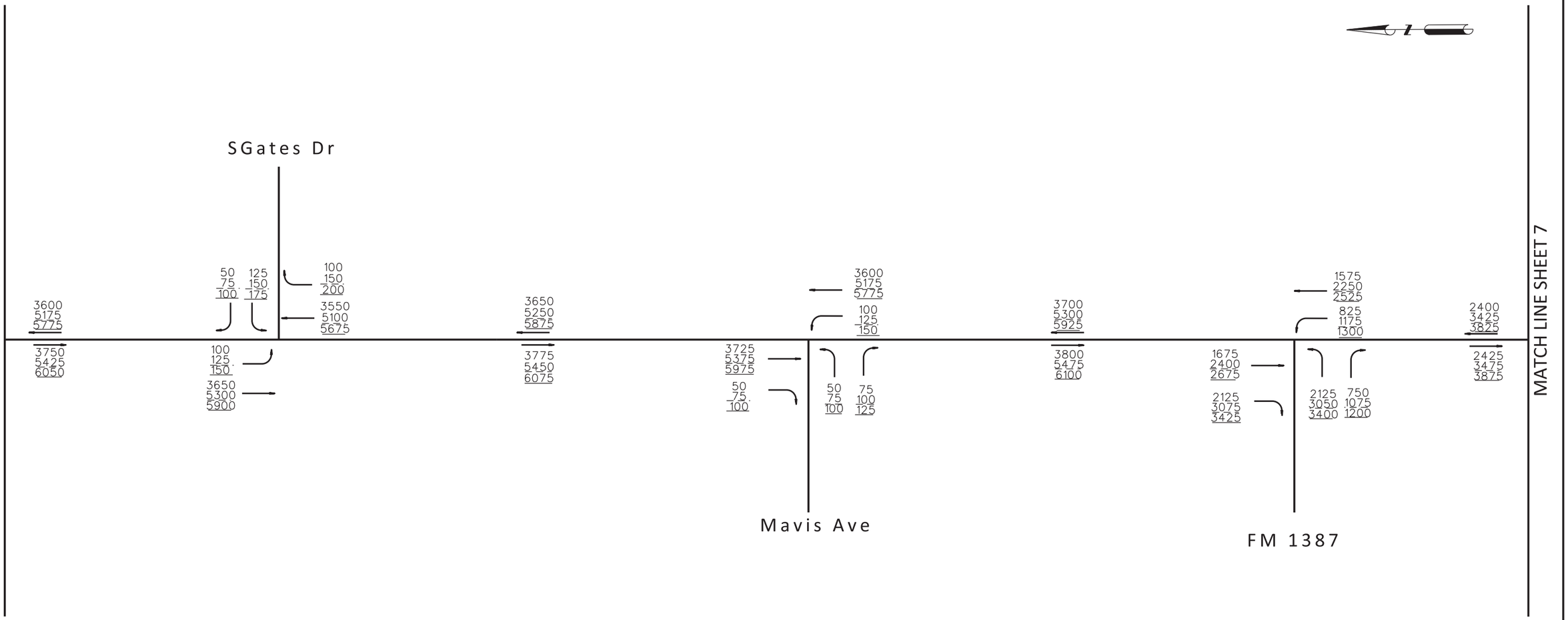

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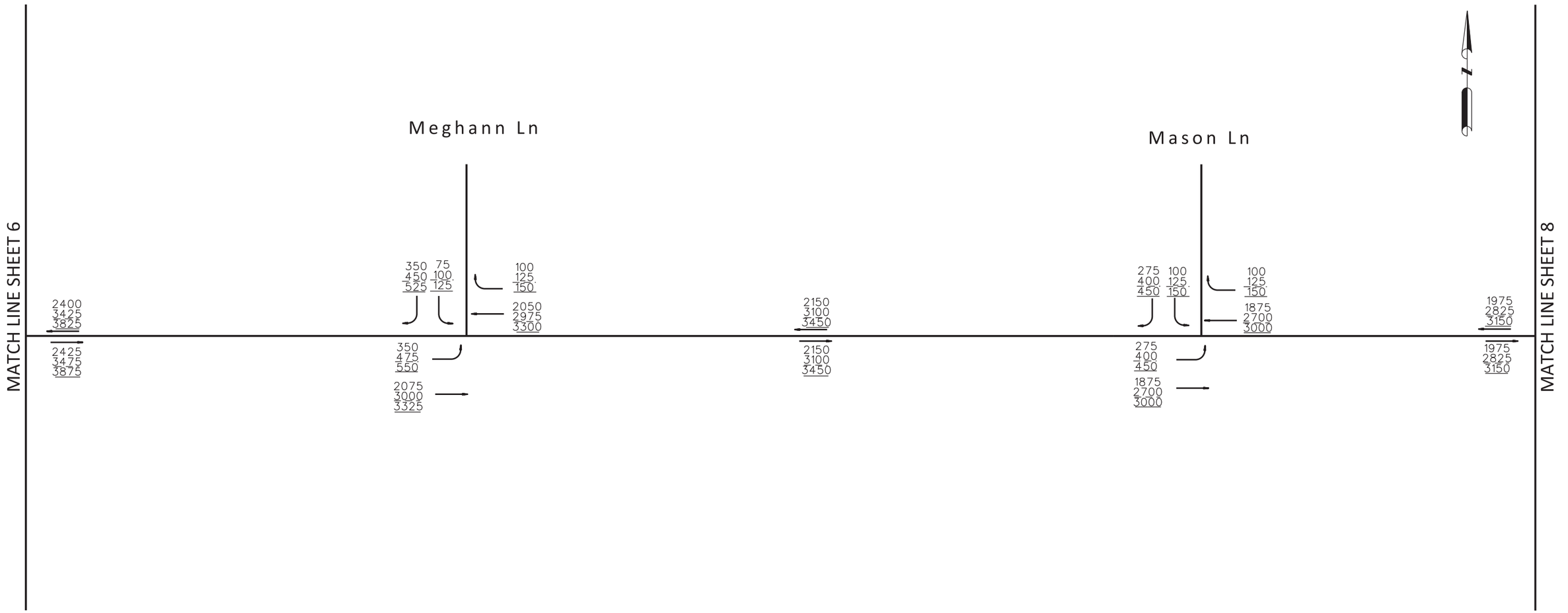

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→ TRAVEL DIRECTION
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XX,XXX 2055 ADT

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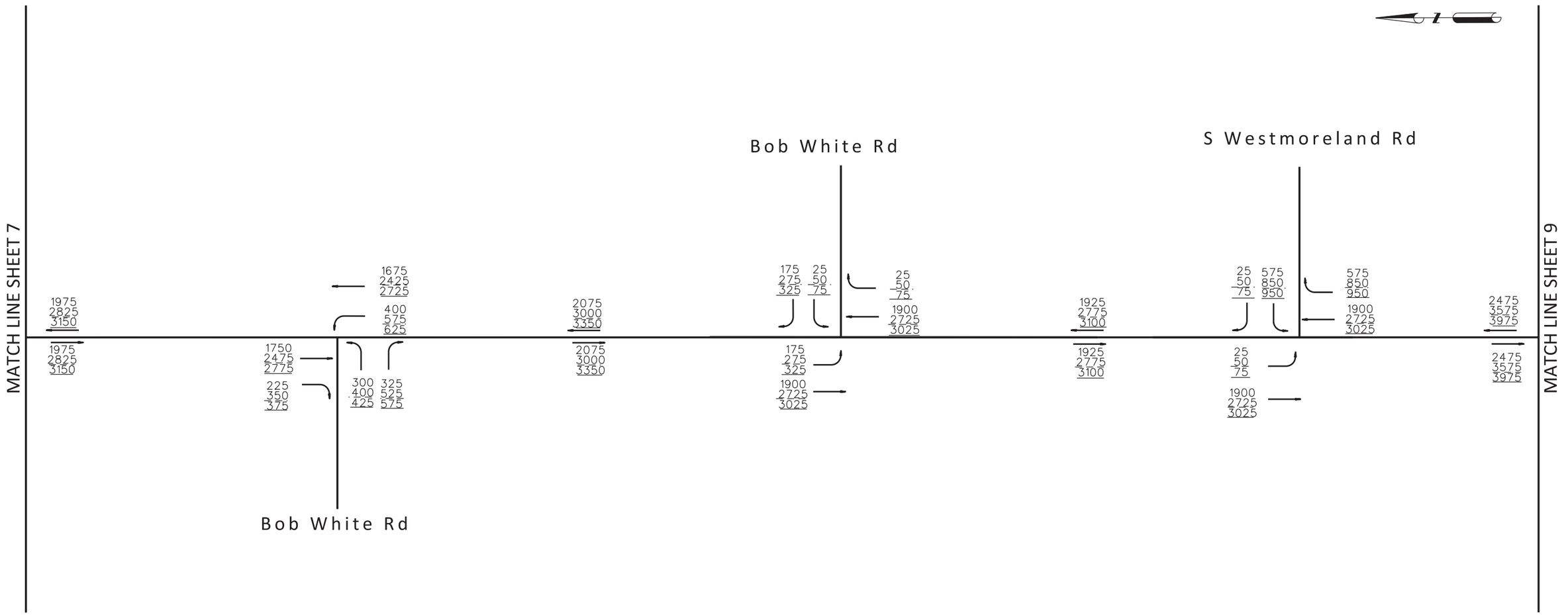

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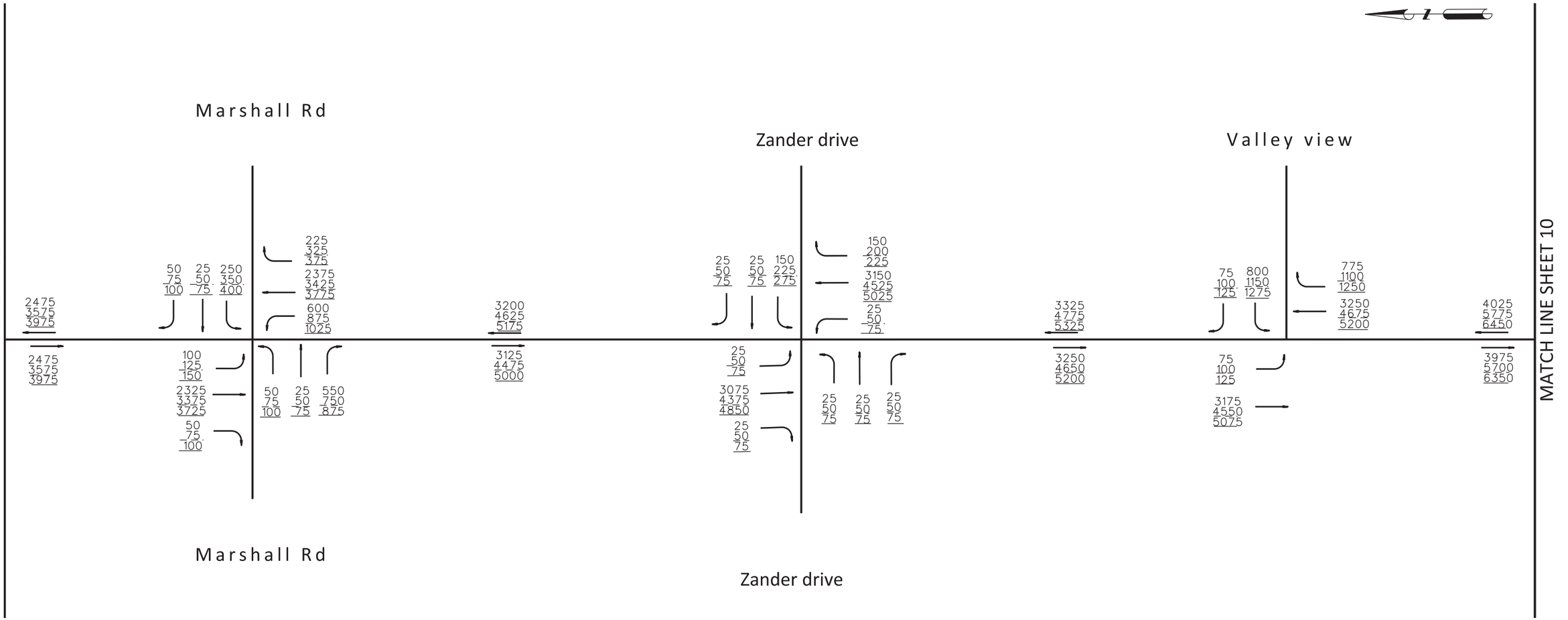

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XX,XXX 2055 ADT

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NO-BUILD LINE DIAGRAM
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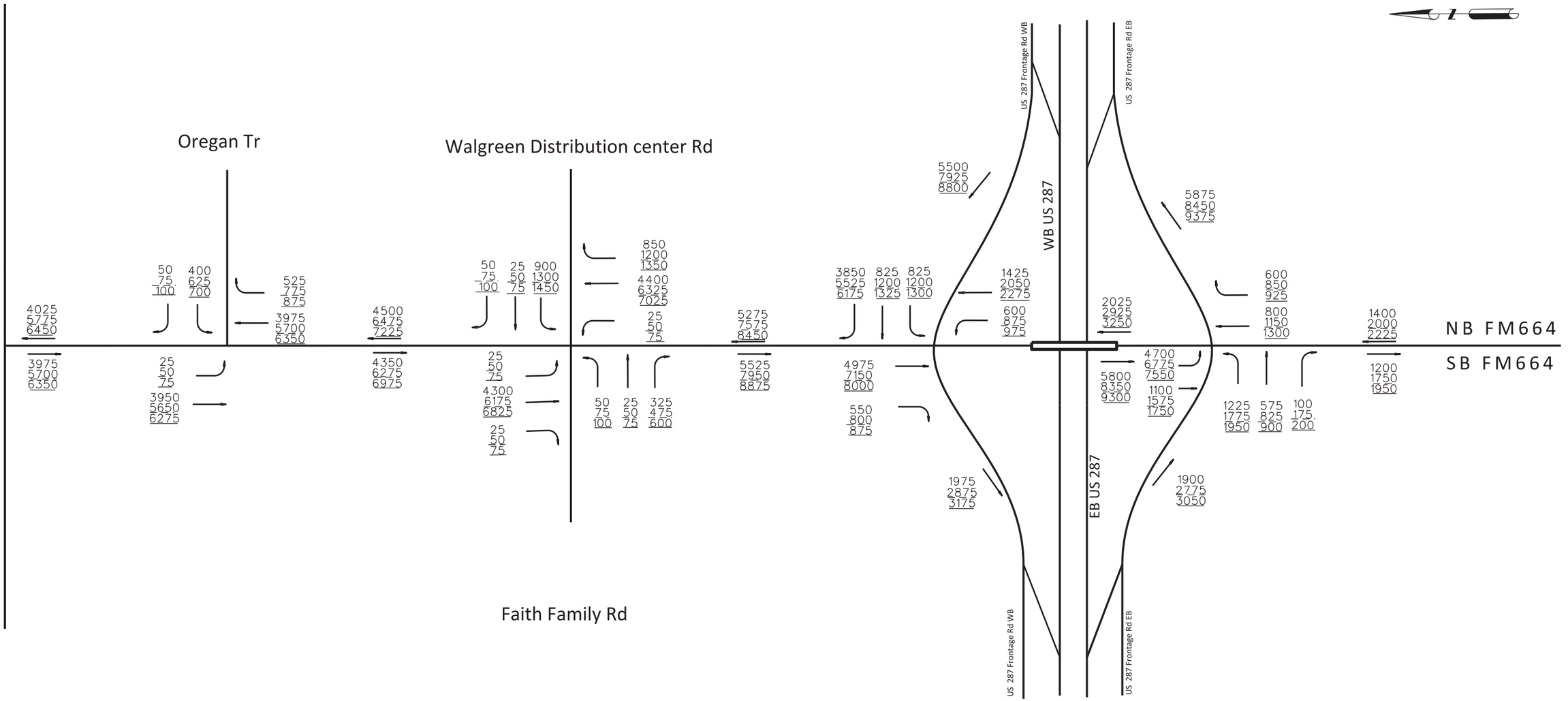

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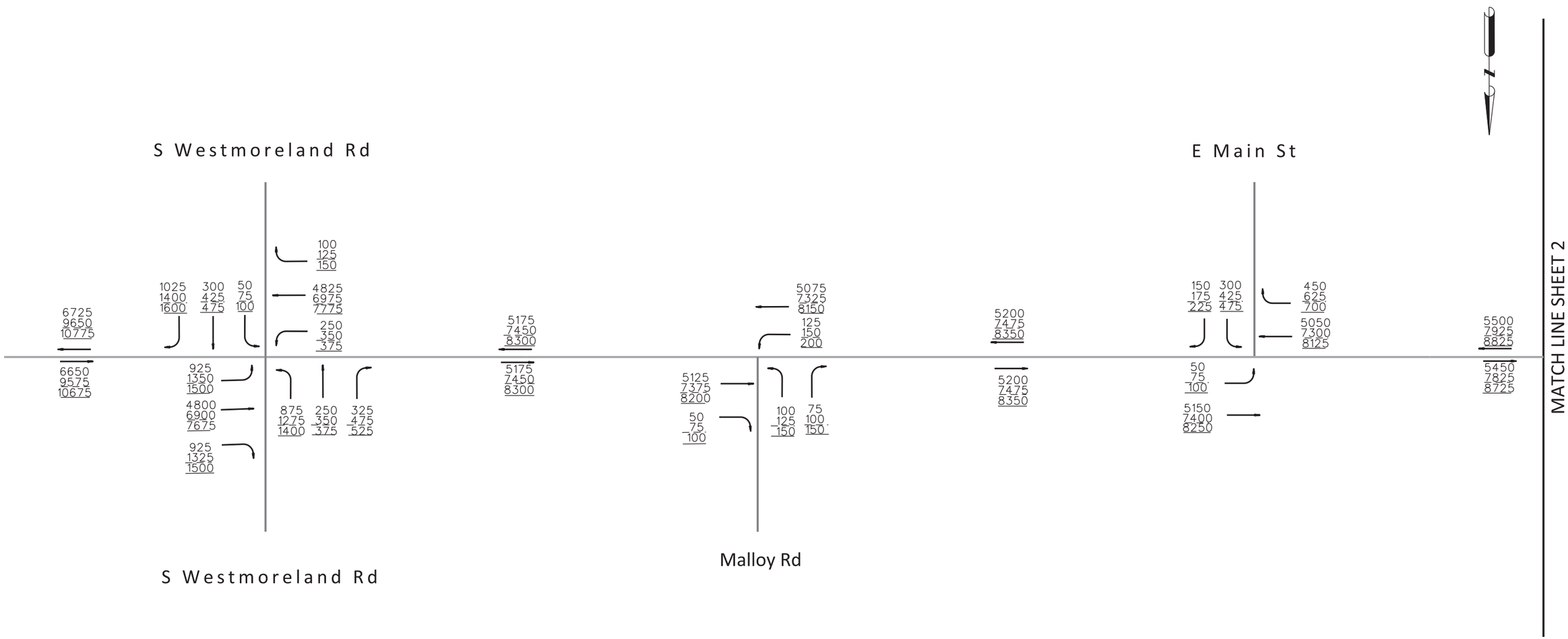

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BUILD LINE DIAGRAM

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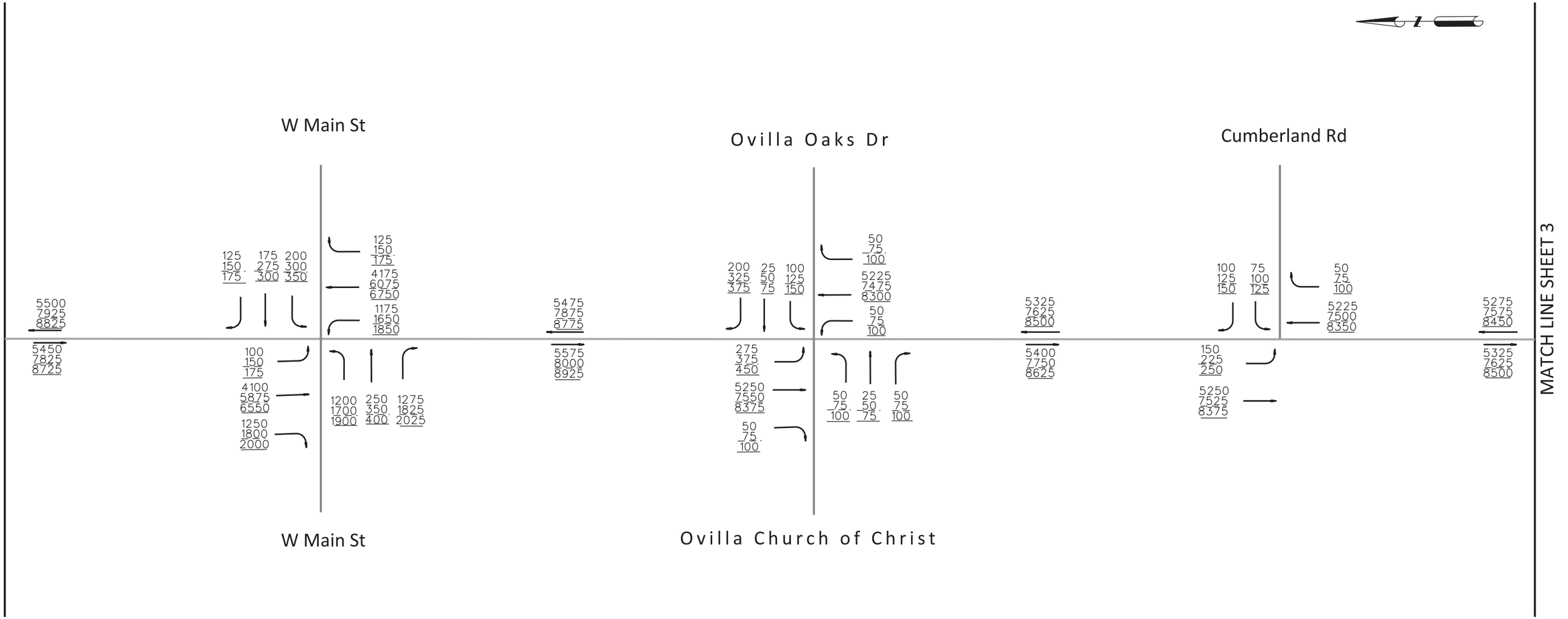

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TRAVEL DIRECTION
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XX,XXX 2055 ADT

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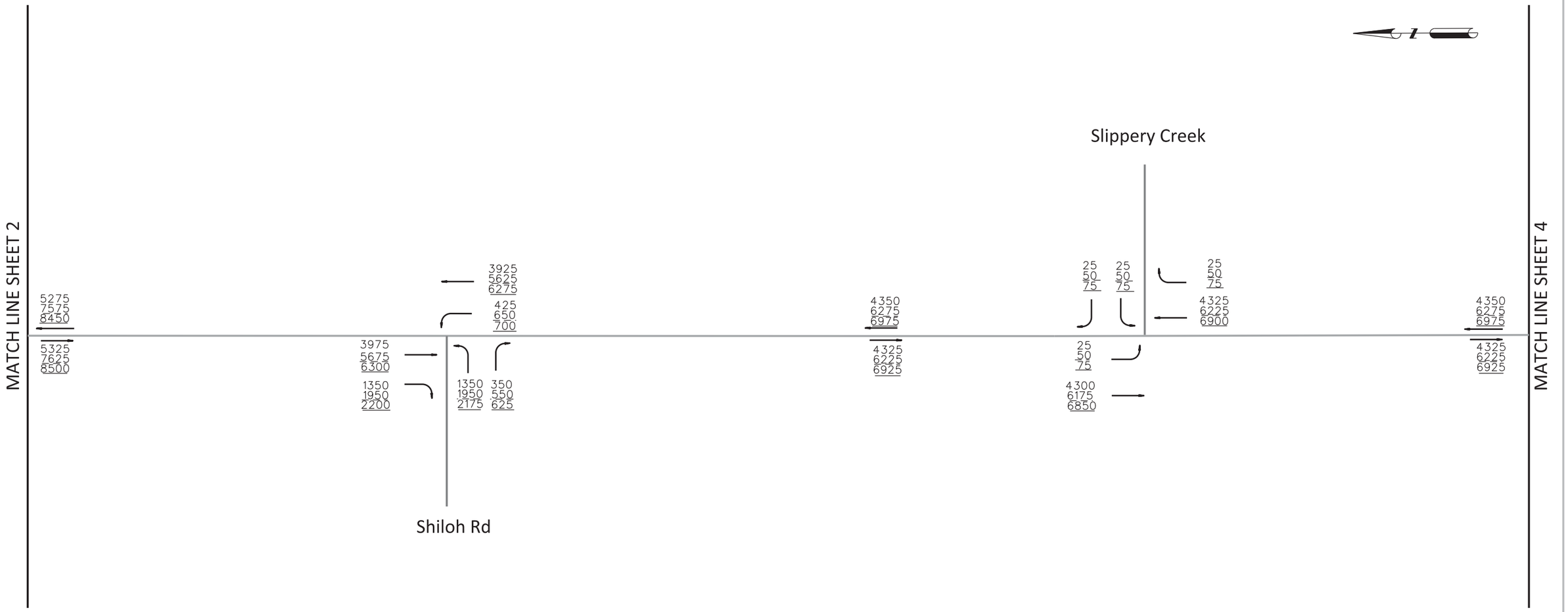

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TRAVEL DIRECTION
XX,XXX 2025 ADT
XX,XXX 2045 ADT
XX,XXX 2055 ADT

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US 287 TO WESTMORELAND ROAD

BUILD LINE DIAGRAM

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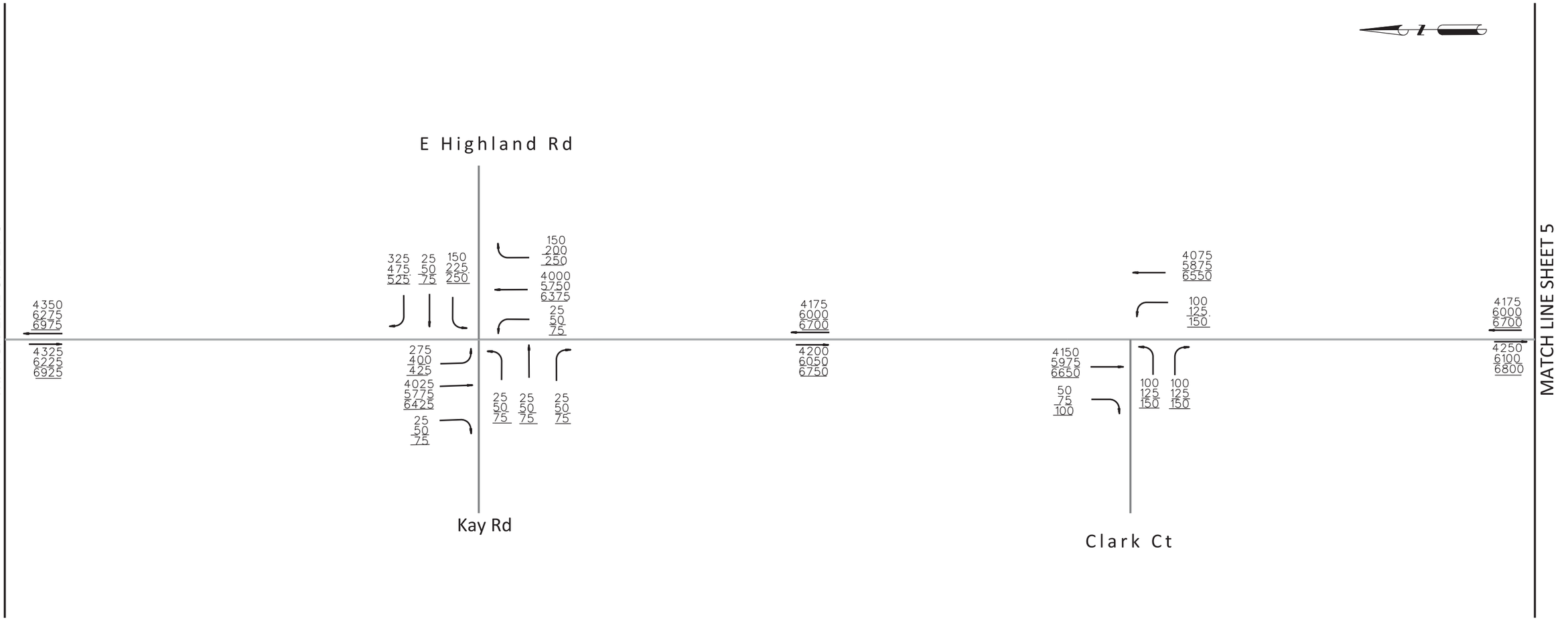

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TRAVEL DIRECTION
XX,XXX 2025 ADT
XX,XXX 2045 ADT
XX,XXX 2055 ADT

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BUILD LINE DIAGRAM

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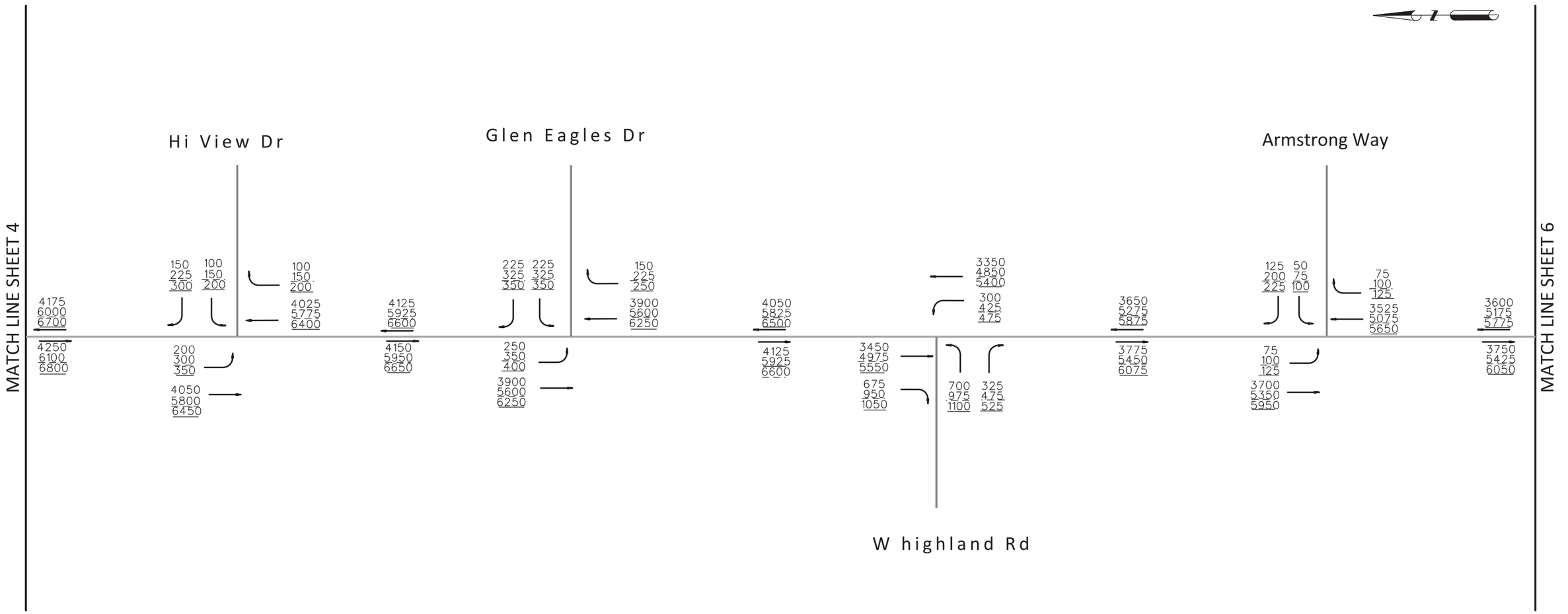

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TRAVEL DIRECTION
XX,XXX 2025 ADT
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XX,XXX 2055 ADT

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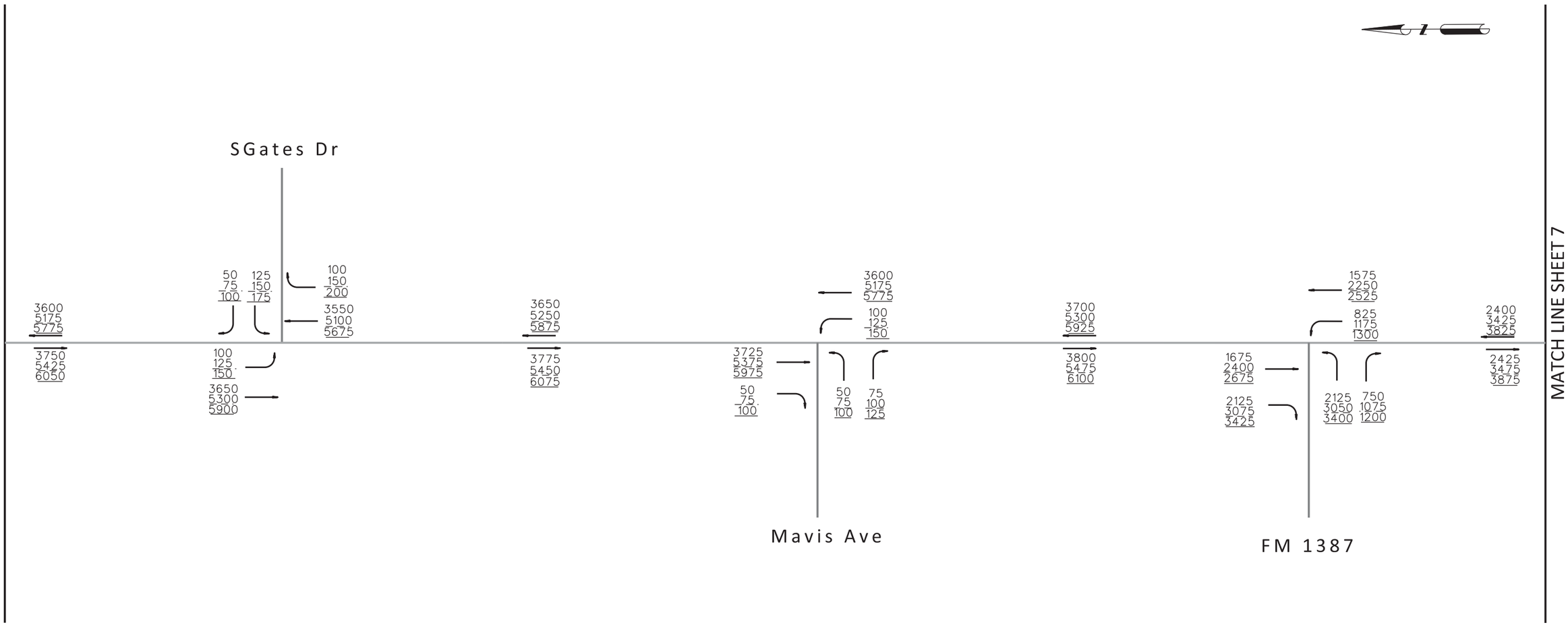
FM 664
US 287 TO WESTMORELAND ROAD

BUILD LINE DIAGRAM

OCTOBER 2018



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SHEET 6 OF 10

FM 664
US 287 TO WESTMORELAND ROAD
BUILD LINE DIAGRAM
OCTOBER 2018

LEGEND

→	TRAVEL DIRECTION
XX,XXX	2025 ADT
XX,XXX	2045 ADT
XX,XXX	2055 ADT

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BIDDING OR PERMIT PURPOSES

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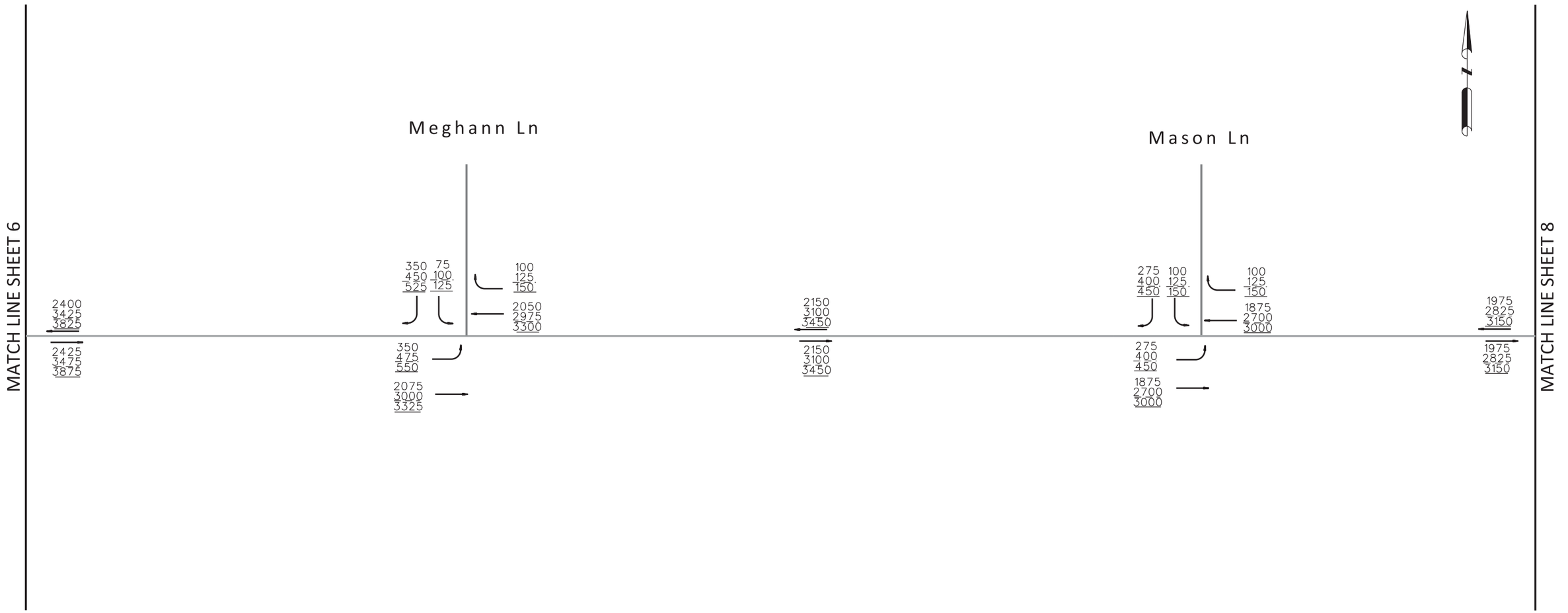

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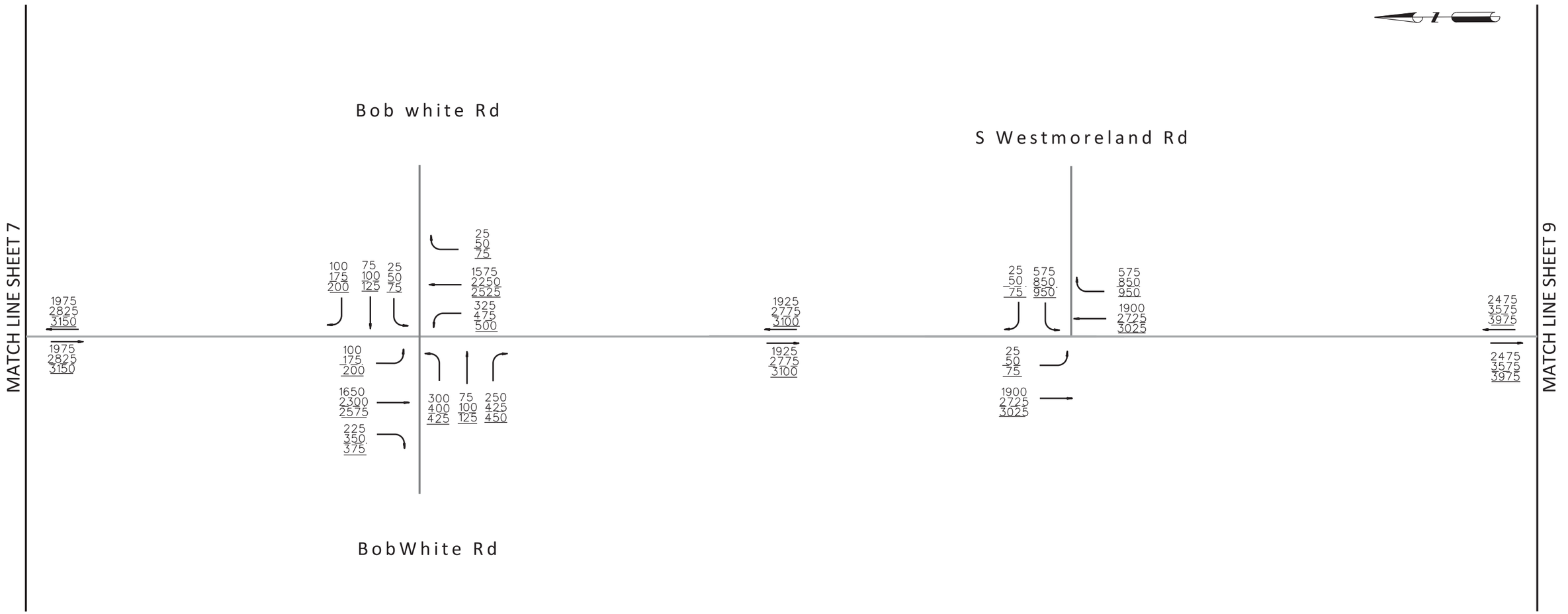

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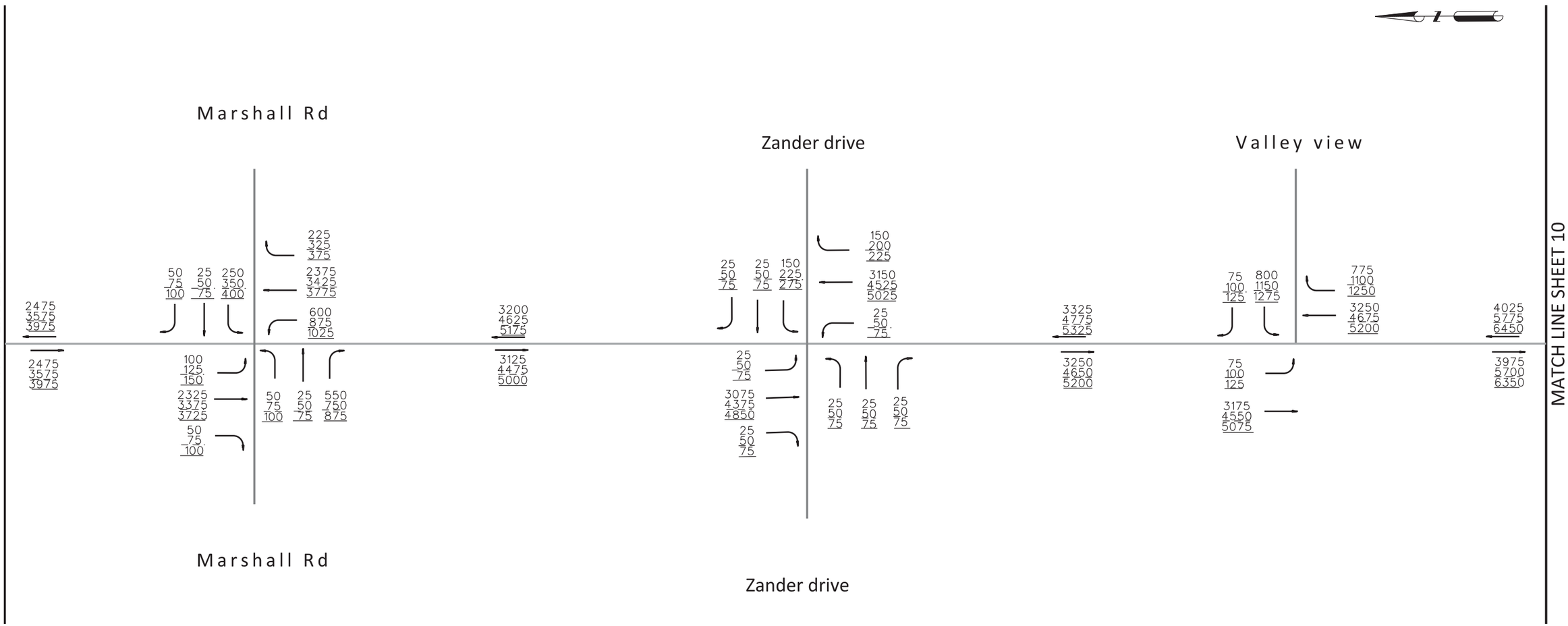

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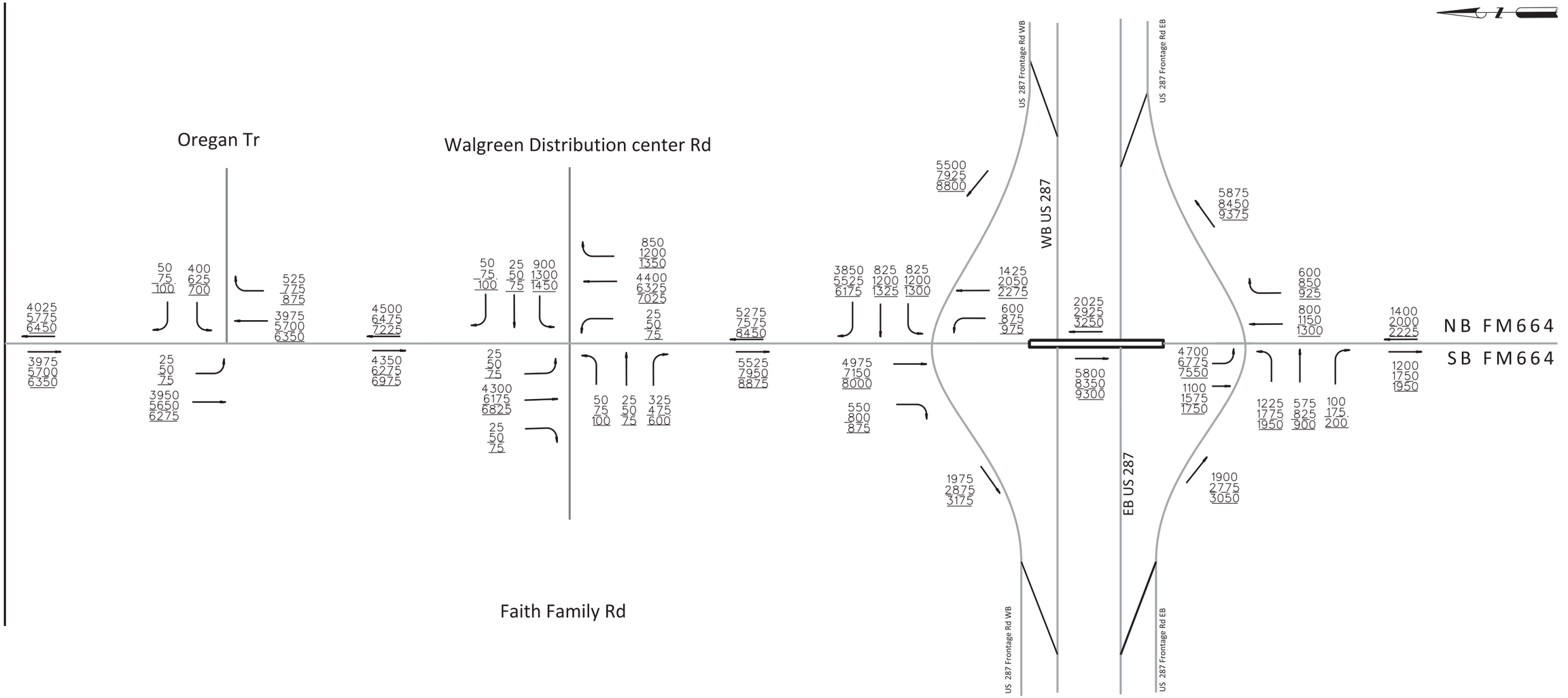

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SHEET 10 OF 10

FM 664
US 287 TO WESTMORELAND ROAD

BUILD LINE DIAGRAM

OCTOBER 2018

Project Name: **Farm-to-Market (FM) Road 664 From United States (US) 287 to Westmoreland Drive**

CSJ(s): **1051-01-032 and 1051-01-052**

County(ies): **Ellis**

Date Analysis Completed: **1/23/2019**

Prepared by: **J. Stewart and A. Canning, Civil Associates, Inc.**

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.

I. Section 402 of the Clean Water Act

No project-specific analysis is required as part of the environmental review process under Section 402 of the Clean Water Act for the reasons provided below:

> Since TPDES Construction General Permit (CGP) authorization and compliance (and the associated documentation) occur outside of the environmental clearance process, compliance is ensured by the policies and procedures that govern the design and construction phases of the project. The Project Development Process Manual and the Plans, Specifications, and Estimates (PS&E) Preparation Manual require a storm water pollution prevention plan (SWP3) be included in the plans of all projects that disturb one or more acres. The Construction Contract Administration Manual requires that the appropriate CGP authorization documents (notice of intent or site notice) be completed, posted, and submitted, when required by the CGP, to TCEQ and the municipal separate storm sewer system (MS4) operator. It also requires that projects be inspected to ensure compliance with the CGP.
>
> The PS&E Preparation Manual requires that all projects include Standard Specification Item 506 (Temporary Erosion, Sedimentation, and Environmental Controls), and the "Required Specification Checklists" require Special Provision 506-003 on all projects that need authorization under the CGP. These documents require the project contractor to comply with the CGP and SWP3, and to complete the appropriate authorization documents.

For more information regarding Section 402 of the Clean Water Act, see **ENV's Water Resources Handbook**.

II. Section 404 of the Clean Water Act

Select the appropriate statement(s) below:

☐ This project will not involve any regulated activity in any jurisdictional waters and therefore does not require a United States Army Corps of Engineers (USACE) "dredge and fill" permit under Section 404 of the Clean Water Act.

☐ Some or all regulated activity in jurisdictional waters will be authorized under a non-reporting nationwide permit (i.e., no pre-construction notification required). If this statement applies, indicate which non-reporting nationwide permit(s) will be used below.

Non-reporting NWP no(s): **<enter non-reporting NWP no(s)>**

☒ Some or all regulated activity in jurisdictional waters cannot be authorized under a non-reporting nationwide permit; therefore, a nationwide permit with pre-construction notification, individual permit, letter of permission, or regional general permit will be required.

For more information regarding Section 404 of the Clean Water Act, see **ENV's Water Resources Handbook**.

III. Section 14 of the Rivers and Harbors Act (33 USC 408)

No project-specific analysis is required as part of the environmental review process under Section 14 of the Rivers and Harbors Act (33 USC 408) ("Section 408") for the reasons provided below:

> Any project that involves alterations to, or will temporarily or permanently occupy or use, a USACE federally authorized civil works project (e.g., sea walls, bulkheads, reservoirs, levees, wharfs, or other federal civil works projects, or associated federal land (fee simple) or easements) will require USACE authorization under Section 408 prior to construction of the project. Obtaining any required authorization under Section 408 from the USACE is generally handled by hydraulic and/or design engineers. For any project that requires authorization under both Section 404 and Section 408, the Section 404 authorization cannot be issued until the Section 408 authorization is issued.

For more information regarding Section 408, see **ENV's Water Resources Handbook**.

IV. Section 303(d) of the Clean Water Act

For a CE project, no project-specific analysis is required as part of the environmental review process under Section 303(d) of the Clean Water Act for the reasons provided below:

> To date, TCEQ has not identified (through either a total maximum daily load (TMDL) or the review of projects under the TCEQ MOU) a need to implement control measures beyond those required by the construction general permit (CGP) on road construction projects. Therefore, compliance with the project's CGP, along with coordination under the TCEQ MOU for certain transportation projects, collectively meets the need to address impaired waters during the environmental review process. As required by the CGP, the project and associated activities will be implemented, operated, and maintained using best management practices to control the discharge of pollutants from the project site.

For an EA or EIS project, further analysis regarding impaired waters is required under TxDOT's MOU with TCEQ for inclusion in the body of the environmental assessment or environmental impact statement. To do this further analysis, determine whether the project is located within five linear miles (not stream miles) of, is within the watershed of, and drains to, an impaired assessment unit under Section 303(d) of the federal Clean Water Act.

Provide the date of the Section 303(d) list consulted: **<enter date, for EAs and EISs only>**

Check the appropriate box below (EAs and EISs only):

☒ This project is not located within five linear miles (not stream miles) of, is not within the watershed of, or does not drain to, an impaired assessment unit under Section 303(d) of the federal Clean Water Act.

☐ This project is located within five linear miles (not stream miles) of, is within the watershed of, and drains to, an impaired assessment unit under Section 303(d) of the federal Clean Water Act.

If the second box is checked, fill-in the table below for any impaired assessment units within five miles of the project and within the same watershed as the project:

Watershed	Segment name	Segment number	Assessment unit number
<enter text>	**<enter text>**	**<enter text>**	**<enter text>**
<enter text>	**<enter text>**	**<enter text>**	**<enter text>**
<enter text>	**<enter text>**	**<enter text>**	**<enter text>**
<enter text>	**<enter text>**	**<enter text>**	**<enter text>**
<enter text>	**<enter text>**	**<enter text>**	**<enter text>**
<enter text>	**<enter text>**	**<enter text>**	**<enter text>**

For more information regarding Section 303(d) of the Clean Water Act, see **ENV's Water Resources Handbook**.

V. General Bridge Act/Section 9 of the Rivers and Harbors Act

Select the appropriate statement below:

☒ This project will not require a permit, bridge lighting authorization, or exemption from the United States Coast Guard under Section 9 of the Rivers and Harbors Act, which outlines the requirements for approval to construct dams, dikes, bridges, or causeways in or over a navigable waterway.

☐ This project will require a permit, bridge lighting authorization, or exemption from the United States Coast Guard under Section 9 of the Rivers and Harbors Act, which outlines the requirements for approval to construct dams, dikes, bridges, or causeways in or over a navigable waterway.

For more information regarding the General Bridge Act/Section 9 of the Rivers and Harbors Act, see **ENV's Water Resources Handbook**.

VI. Section 10 of the Rivers and Harbors Act

Select the appropriate statement(s) below:

☒ This project does not require authorization from the USACE under Section 10 of the Rivers and Harbors Act, which outlines the requirements for approval to construct smaller structures in a navigable waterway.

☐ This project does require authorization from the USACE under Section 10 of the Rivers and Harbors Act. Some or all regulated activity in a navigable waterway will be authorized under a non-reporting nationwide permit (i.e., no pre-construction notification required). If this statement applies, indicate which non-reporting nationwide permit(s) will be used below.

Non-reporting NWP no(s): **<enter number or numbers of any non-reporting NWPs used>**

☐ This project does require authorization from the USACE under Section 10 of the Rivers and Harbors Act. Some or all regulated activity in a navigable waterway cannot be authorized under a non-reporting nationwide permit; therefore, a nationwide permit with pre-construction notification, individual permit, letter of permission, regional general permit, or individual Section 10 permit will be required.

For more information regarding Section 10 of the Rivers and Harbors Act, see **ENV's Water Resources Handbook**.

VII. Section 401 of the Clean Water Act

Select the appropriate statement below:

☐ This project will not require authorization under Section 404 of the federal Clean Water Act, Section 10 of the Rivers and Harbors Act, or the General Bridge Act/Section 9 of the Rivers and Harbors Act. Therefore, this project is not required to comply with TCEQ's Water Quality Certification Program, established under Section 401 of the Clean Water Act.

☒ This project will require authorization under Section 404 of the federal Clean Water Act, Section 10 of the Rivers and Harbors Act, or the General Bridge Act/Section 9 of the Rivers and Harbors Act. Therefore, this project is required to comply with TCEQ's Water Quality Certification Program, established under Section 401 of the Clean Water Act.

If the project is required to comply with TCEQ's Water Quality Certification Program, established under Section 401 of the Clean Water Act, then select the appropriate statement below:

☐ This project will comply with conditions set by TCEQ for projects authorized by certain nationwide permits.

☒ This project will use BMPs required by TCEQ for Tier I projects.

☐ A Tier II Certification Questionnaire and Alternative Analysis Checklist will be submitted to TCEQ.

For more information regarding Section 401 of the Clean Water Act, see **ENV's Water Resources Handbook**.

VIII. Executive Order 11990, Protection of Wetlands

Select the appropriate statement below:

☐ This project is not federally funded and therefore is not subject to Executive Order 11990, Protection of Wetlands.

☒ This project is federally funded and therefore is subject to Executive Order 11990, Protection of Wetlands, and will not involve construction in any wetlands.

☐ This project is federally funded and therefore is subject to Executive Order 11990, Protection of Wetlands, and will involve construction in one or more wetlands. Explanation of how the project will comply with Executive Order 11990 is provided below.

Explanation of why there is no practicable alternative to such construction:

<enter explanation, if applicable>

Explanation of how the project includes all practicable measures to minimize harm to wetlands:

<enter explanation, if applicable>

For more information regarding Executive Order 11990, Protection of Wetlands, see **ENV's Water Resources Handbook**.

IX. Executive Order 11988, Floodplain Management

No project-specific analysis is required as part of the environmental review process under Executive Order 11988, Floodplain Management for the reasons provided below:

The department implements this Executive Order on a programmatic basis through its Hydraulic Design Manual. Design of this project will be conducted in accordance with the department's Hydraulic Design Manual. Adherence to the TxDOT Hydraulic Design Manual ensures that this project will not result in a "significant encroachment" as defined by FHWA's rules implementing Executive Order 11988 at 23 CFR 650.105(q).

For more information regarding Executive Order 11988, Floodplain Management, see **ENV's Water Resources Handbook**.

X. Drinking Water Systems

No project-specific analysis is required as part of the environmental review process for drinking water systems for the reasons provided below:

In accordance with TxDOT's Standard Specifications for Construction and Maintenance of Highways, Streets and Bridges (Item 103, Disposal of Wells), any drinking water wells would need to be properly removed and disposed of during construction of the project.

XI. Resources Consulted

Indicate which resources were consulted/actions were taken to make the surface water determinations recorded in this form (DO NOT ATTACH TO THIS FORM OR UPLOAD TO ECOS ANY RESOURCES CONSULTED – JUST CHECK THE APPROPRIATE BOX(ES)):

☒ Aerial Photography (list dates mm/yyyy): 1958, 1968,1972, 1979, 1981, 1989, 1995, 2001, 2003-2005, 2008 - 2019

☒ Topographic Maps	☒ Floodplain Maps	
☒ Site Visit	☒ USFWS NWI Maps	☒ NRCS Soil Survey
☐ NHD	☒ TCEQ Streams/Waterbodies	☐ LIDAR
☐ USACE Approved JDs	☐ USACE Section 10 waters	☐ USACE 408 data

☒ TCEQ 303(d) Impaired Waters

☐ Contacted resource agency (list agency and reason):_____

☐ Other (list):_____

Section 404/10 Impacts Table

Farm-to-Market (FM) Road 664 From United States (US) 287 to Westmoreland Drive

CSJs: 1051-01-032 and 1051-01-052

2/5/2020

Waterbody or wetland characteristics							Potentially Jurisdictional?		Total Section 404 impacts for WATERBODY OR WETLAND						Total section 404 impacts for CROSSING						Authorization			
									Temporary			Permanent			Temporary			Permanent						
Crossing number	Waterbody or wetland number	Name	Type	Latitude, Longitude	Acres within project area (all waterbodies and wetlands)	Linear feet within project area (streams only)	Section 404 (waters of the U.S.)	Section 10 (navigable waters)	Temporary waterbody or wetland impacts (acres)	Temporary stream impacts (linear feet/acres)	Cubic yards (CY) of fill material to be temporarily discharged	Permanent waterbody or wetland impacts (acres)	Permanent stream impacts (linear feet/acres)	Cubic yards (CY) of fill material to be permanently discharged	Temporary waterbody or wetland impacts (acres)	Temporary stream impacts (linear feet/acres)	Cubic yards (CY) of fill material to be temporarily discharged	Permanent waterbody or wetland impacts (acres)	Permanent stream impacts (linear feet/acres)	Cubic yards (CY) of fill material to be permanently discharged	Authorization Type	Number (NWP and RGP only)	Reason (PCN only)	Mitigation Required?
1	1A	unnamed tributary to Irving Branch	Ephemeral stream	32.4374658284705 -96.8736120092086	0.01	92	No	No	0	0	0	0	92/0.01	135.07	0	67/0.02	313.3	0	270/0.03	741.05	NWP - No PCN	14	N/A	No
1	1B	unnamed tributary to Irving Branch	Intermittent stream	32.4367764318668 -96.8738790321173	0.06	444	Yes	No	0	67/0.02	313.3	0	270/0.03	605.98										
2	2	unnamed tributary to South Grove Creek	Intermittent stream	32.4589681438742 -96.8779069422242	0.03	158	Yes	No	0	0	0	0	21/0.01	96.8	0	0	0	0	21/0.01	96.8	NWP - No PCN	14	N/A	No
3	3	unnamed tributary to South Grove Creek	Intermittent stream	32.4662927483066 -96.8780101764119	0.03	150	Yes	No	0	55/0.01	99.03	0	83/0.02	164.56	0	55/0.01	99.03	0	83/0.02	164.56	NWP - No PCN	14	N/A	No
4	4	South Grove Creek	Ephemeral stream	32.4819620116414 -96.8810107358557	0.05	190	Yes	No	0	0	0	0	158/0.04	358.65	0	0	0	0	158/0.04	358.65	NWP - No PCN	14	N/A	No
5	5	Red Oak Creek	Perennial stream	32.5248961748511 -96.8863565003493	0.21	197	Yes	No	0	114/0.11	4179	0	0	0	0	114/0.11	4179	0	0	0	NWP - No PCN	14	N/A	No
5	5	unnamed tributary to Red Oak Creek	Intermittent stream	32.5268455548779 -96.8862645706927	0.15	417	Yes	No	0	0	0	0	312/0.13	2,505.58	0	0	0	0	312/0.13	2,505.58	NWP - PCN	14	exceeds 300 linear feet (RC	Yes

Waters of the U.S. Delineation Report-Draft

Farm-to-Market (FM) Road 664 From United States (US) 287 to Westmoreland Road (CSJs 1052-01-038 and 1051-01-052)

Texas Department of Transportation, Dallas District

February 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.

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1.0 Introduction

The Texas Department of Transportation (TxDOT) conducted a waters of the U.S. (WOTUS) delineation for a proposed road project on Farm-to-Market (FM) Road 664 from United States (US) 287 to Westmoreland Road in Waxahachie and Ovilla, Texas, Ellis County, Texas (CSJ 1051-01-038 and 1051-01-052). The delineation was completed on November 20, 2019.

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 WOTUS DR 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) (March 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 March 2010 Regional Supplement. The March 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 – Historical Aerial Photographs: contains historical aerial imagery, starting with the oldest photographs first
- Attachment 3 - Site Photographs: contains photographs taken during the site visit
- Attachment 4 – Stream Data Forms

2.0 Project Overview

The proposed project is a reconstruction, realignment and widening of FM 664 from US 287 to Westmoreland Road, Ellis County. The project is 8.084 miles long. Approximately 93.4 acres of new right-of-way (ROW) and 0.60 acre of permanent easement would be required to complete the project.

Attachment 1 - Figures contains seven maps of the project area. Figure 1 provides a vicinity map that depicts the location of the project area, Figure 2 is a 7.5-minute series United States Geological Survey (USGS) topographic overview map, Figure 3 is an aerial overview map of the project area, Figure 4 is the NWI overview map, Figure 5 is the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) soil overview map of the project area, Figure 6 is the Federal Emergency Management Agency (FEMA) flood insurance rate map (FIRM) overview map of the project area, and Figure 7 provides the project layout of the proposed project in relation to the potential jurisdictional WOTUS.

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) 86A (Texas Blackland Prairie). This area is characterized by mostly Urban, Native Invasive Shrub and Woodland, Riparian, Tallgrass Prairie, and Edwards Plateau Savannah, Woodland, and Shrub ecological systems.

Construction activities would occur within the existing and proposed ROW. Approximately 94 acres of proposed ROW and easements would be acquired for the proposed improvements. Land use changes would result in some agriculture acreage converting to roadway.

Currently, the project area consists primarily of existing roadways (FM 664, FM 1378 and crossroads), single-family residential properties, agriculture, municipal, commercial/retail facilities, schools, and some undeveloped properties (Attachment 1, Figures 3 and 7).

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 2003 Midlothian and Waxahachie, Texas, USGS Quad maps were reviewed to determine the likelihood of the project area containing jurisdictional waterbodies.

4.1.2 USFWS NWI Data

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

4.1.3 NRCS Soil Survey Data

The USDA NRCS maintains an online Web Soil Survey database. The data provided in the Web Soil Survey provides a good basis for the soil textures and types one can expect to find at a particular delineation area. NRCS-mapped soil types 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 FEMA maintains the 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 not available for 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. With respect to any tidal waterbodies located within the site, biologists identified the MHT line by observing changes in vegetation, drift deposits of shells and debris, and physical markings or characteristics along the shoreline that may indicate the general height reached by a rising tide.

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

Any wetland delineation was conducted based on the 1987 Manual and the March 2010 Regional Supplement, as well as the three 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 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 Pathfinder Pro XH Global Positioning System (GPS) receiver and Ranger data logger with sub-meter accuracy.

4.2.1 Hydrology

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

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

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

4.2.2 Vegetation

In accordance with the procedure set forth in the 1987 Manual and the March 2010 Regional Supplement, 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)
- A no indicator (NI) status is recorded for those species for which insufficient information is available to determine an indicator status.

Hydrophytic (wetland) vegetation is considered prevalent where more than 50% of the dominant species in a plant community have an indicator status of OBL, FACW, or FAC. However, in cases where the vegetation community does not meet this hydrophytic threshold, but indicators of hydric soils and wetlands hydrology are present, the prevalence index can be applied. Calculation of this index is based on consideration of both dominant and non-dominant plants in the vegetation community, whereby each indicator status category is given a numeric code and weighted by absolute percent cover. No wetlands are present within the proposed project area. Information about each crossing is provided on the Stream Data Forms in Attachment 4.

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. No wetlands are present within the proposed project area. Therefore, no sample points were collected.

5.0 Results

5.1 Map and Database Review

5.1.1 USGS Topographic Maps

A review of the 2003 Midlothian and Waxahachie, Texas topographic maps showed the proposed project is located west-northwest area of Ellis County. Red Oak Creek, South Grove Creek and various tributaries cross the proposed project. The elevation varies in the project area from 680 to 830 feet above sea level (Attachment 1, Figure 2).

5.1.2 USFWS NWI Data

NWI features were identified within the project area. The table below summarizes the 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
PFO1C	Palustrine, Forested, Broad-Leaved Deciduous, Seasonally Flooded	Freshwater Forested/Shrub Wetland
R4SBC	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
AuB	Austin silty clay, 1 to 3 percent slopes	The Austin series consists of moderately deep, well drained, moderately slowly permeable soils that formed in residuum weathered from chalk. These soils are on nearly level to sloping erosional uplands. Slopes range from 0 to 8 percent.	Non-hydric
AuC2	Austin silty clay, 2 to 5 percent slopes, moderately eroded		
AuD2	Austin silty clay, 5 to 8 percent slopes, moderately eroded		
Br	Broken alluvial land, rarely flooded	Occurs in drainageways; well drained; flooding rare; not hydric	Non-hydric
EcB	Eddy gravelly clay loam, 1 to 3 percent slopes	The Eddy series consists of soils that are shallow to very shallow, well drained, moderately permeable soils that formed in residuum from chalky limestone. These soils are on gently sloping to moderately steep uplands.	Non-hydric
EdD2	Eddy soils, 3 to 8 percent slopes, eroded		
EdF	Eddy soils, 8 to 20 percent slopes		
Fr	Frio silty clay, 0 to 1 percent slopes, frequently flooded	The Frio series 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 percent.	Hydric
Fs	Frio silty clay, 0 to 1 percent slopes, occasionally flooded		Non-hydric
HaB	Houston Black clay, 1 to 3 percent slopes	The Houston series consists of moderately well drained, slowly permeable, cyclic soils that formed in alkaline clays and chalk of the Blackland Prairies. These clayey soils have very high shrink-swell potential. Slope ranges from 0 to 8 percent.	Non-hydric
SeB2	Stephen-Eddy complex, 1 to 3 percent slopes, eroded	The Stephen series consists of shallow, well drained, moderately slowly permeable soils formed in residuum weathered from chalk. These soils are on gently sloping to sloping uplands. Slopes are mainly 1 to 5 percent but range from 1 to 8 percent.	Non-hydric
SeC2	Stephen-Eddy complex, 2 to 5 percent slopes		
StB	Stephen silty clay, 1 to 4 percent slopes		
BkC2	Whitewright and Austin soils, 2 to 5 percent slopes eroded	The Whitewright series consists of shallow to paralithic contact. These well drained soils formed in residuum derived from weakly cemented chalk and marl of Upper Cretaceous Age. These gently sloping to moderately steep soils are on convex ridges on dissected plains. Slopes are dominantly 4 to 10 percent, but range from 1 to 15 percent.	Non-hydric

5.1.4 Aerial Photography

Historic aerial imagery for the project and surrounding areas was evaluated using images provided by Google Earth. The table below summarizes observations for the project area for each year reviewed. Attachment 2 contains copies of the historic aerial photographs reviewed for the project area.

Table 3: Historic Aerial Photography Observations

Year	Observations
1958	Earliest available aerial photographs for northern portion of the project. FM 664 not present at the north end of Ovilla in its present location. Various residential and commercial buildings present.
1968	FM 664 in its present location, as well as various new residential and commercial buildings within the town of Ovilla.
1972	No change.
1979	New development with connecting road Slippery Creek St under construction.
1981	Earliest available aerial photographs for southern portion of the project. FM 664 present.
1989	Ovilla Oaks Dr and Gerry Dr constructed. New commercial locations in Ovilla built.
1995	Development with connecting road Slippery Creek St fully built out.
2001	New development with connecting roads Meghann Ln. and Mason Ln. under construction. Walgreens Distribution Center under construction at US 287 intersection. New private school built adjacent to US 287.
2003	New development with connecting road Miranda Way under construction.
2004	New development with connecting roads Armstrong Way and S Gate Dr, under construction. Development with connecting roads Meghann Ln and Mason Ln expanded with former lots built out. New development with connecting roads Oregon Tr And Valley View Dr under construction. Walgreens Distribution Center completed at US 287 intersection.
2005	No Change.
2008	Development with connecting roads Armstrong Way and S Gate Dr fully built out. Development with connecting roads Oregon Tr Valley View Dr while under construction, expanded northward to new Marshall Rd Development with connecting road Miranda Way completed by 2008.
2009	No change.

Year	Observations
2010	No change.
2011	No change.
2012	No change.
2013	No change.
2014	No change.
2015	No change.
2016	No change.
2017	No change.
2018	New development with connecting road Stonewall Dr under construction.
2019	Development with connecting road Stonewall Dr. mostly built out.

5.1.5 FEMA FIRM

A review of FEMA FIRMs 48139C0050F, 48139C0175F, 48139C0200F and 48139C0190F (effective 6/3/2013) indicate that the majority of the project area is outside the 100-year floodplain. A small portion along Red Oak Creek is situated within Zone AE (areas subject to inundation by the 1-percent-annual-chance flood event generally determined using approximate methodologies. Because detailed hydraulic analyses have not been performed, no base flood elevations or flood depths are shown. Mandatory flood insurance purchase requirements and floodplain management standards apply). Refer to Figure 6 in Attachment 1 for an illustration of the FEMA FIRM data within and surrounding the project area.

5.1.6 LiDAR

LiDAR data was not available for the project area.

5.2 Waters of the U.S. Delineation

The table below summarizes the waterbodies identified within the project area. No wetland data points were collected. Refer to Attachment 4, Stream Data Forms for information on each crossing. Along the proposed project. Refer to Figure 7 in Attachment 1 for a depiction of the boundaries of each waterbody as well as the location within the project area. Refer to Attachment 3, Site Photographs, for additional photographs of each waterbody 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)?
1A	Unnamed tributary to Irving Branch	Ephemeral stream	32.4374658284705 -96.8736120092086	0.01	92	No	No
1B	Unnamed tributary to Irving Branch	Intermittent stream	32.4367764318668 -96.8738790321173	0.06	444	Yes	No
2	unnamed tributary to South Grove Creek	Intermittent stream	32.4589681438742 -96.8779069422242	0.03	158	Yes	No
3	unnamed tributary to South Grove Creek	Intermittent stream	32.4662927483066 -96.8780101764119	0.03	150	Yes	No
4	South Grove Creek	Ephemeral stream	32.4819620116414 -96.8810107358557	0.05	190	Yes	No
5	Red Oak Creek	Perennial stream	32.5248961748511 -96.8863565003493	0.21	197	Yes	No
6	unnamed tributary to Red Oak Creek	Intermittent stream	32.5268455548779 -96.8862645706927	0.15	417	Yes	No

5.2.1 Hydrology

No wetlands were identified.

5.2.2 Vegetation

Normal circumstances were present within the project area. Representative dominant taxa for each distinct habitat type encountered within the project area as are listed in the tables below and documented in the Stream Data Forms (Attachment 4). Indicator status for each species was obtained from the current NWPL.

Table 5: Upland Dominant Plant Species

Strata	Scientific Name	Common Name	NWPL Classification
Tree	*Celtis laevigata*	Sugar-Berry	FAC
Tree	*Ulmus crassifolia*	Cedar Elm	FAC

Tree	*Ulmus americana*	American Elm	FAC
Sapling/Shrub	*Ulmus crassifolia*	Cedar Elm	FAC
Sapling/Shrub	*Celtis laevigata*	Sugar-Berry	FAC
Herb	*Sorghum halepense*	Johnson grass	FACU
Herb	*Ambrosia trifida*	Great Ragweed	FAC
Woody Vine	*Smilax bona-nox*	Fringed Greenbrier	FACU
Woody Vine	*Toxicodendron radicans*	Eastern Poison Ivy	FAC

Table 6: Palustrine forested Dominant Plant Species

Strata	Scientific Name	Common Name	NWPL Classification
Tree	*Ulmus americana*	American Elm	FAC
Sapling/Shrub	*Cornus drummondii*	Rough-Leaf Dogwood	FAC
Herb	*Chasmanthium latifolium*	Indian Sea oats	FAC

Table 7: Riverine Dominant Plant Species

Strata	Scientific Name	Common Name	NWPL Classification
Tree	*Quercus shumardi*	Shumard Oak	FAC
Sapling/Shrub	*Acer negundo*	Ash-leaf Maple	FACW
Herb	*Ambrosia trifida*	Great Ragweed	FAC

5.2.3 Soils

No wetlands identified.

6.0 Conclusion

A WOTUS delineation was conducted for FM 664 (from US 287 to Westmoreland Road in Waxahachie and Ovilla, Ellis County, Texas (CSJs 1051-01-038 and 052)). The field delineation was completed on November 20, 2019. Refer to Section 5.2, above, for a table summarizing the aquatic resources (i.e., waterbodies) identified within the project area.

Streams 1, 2, 3, 4, and 5 are relatively permanent waters that exhibit a direct downstream connection to a traditional navigable water (TNW). Streams 1B, 2, and 3 are tributaries to the Trinity River, a TNW. Due to Streams 1, 2, 3, 4, and 5's continuous surface connection to a TNW, the USACE will likely assert jurisdiction over these features.

Numerous drainage ditches were observed to be excavated wholly in and draining only uplands (adjacent to the roadway) and that do not carry a relatively permanent flow of water. These features drain into the five streams and are located outside of the 100-year floodplain; therefore, the professional opinion offered in this report is that the above referenced features would likely not be considered jurisdictional by the USACE.

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

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8.0 Attachments

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

Attachment 1 - Figures

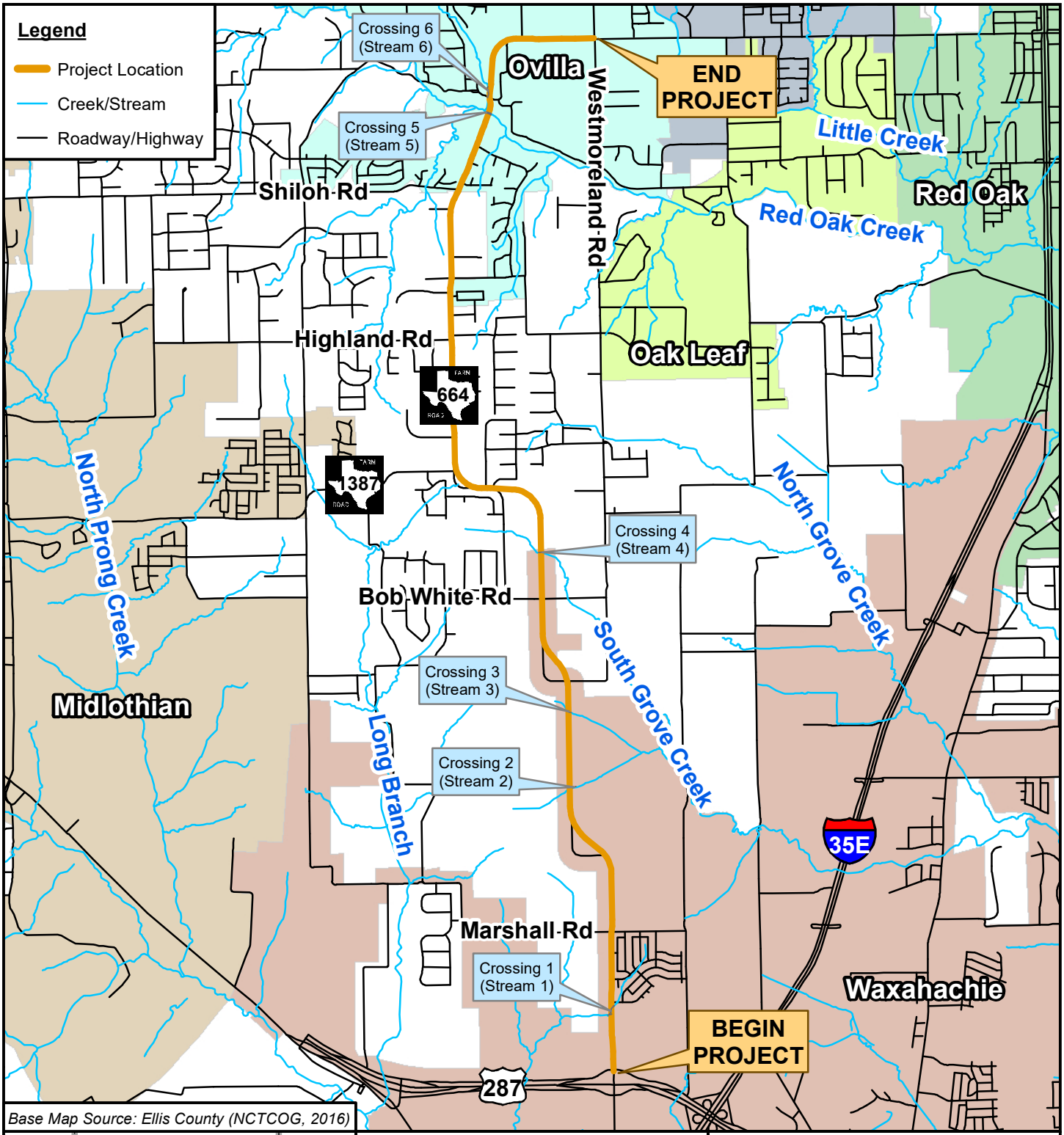
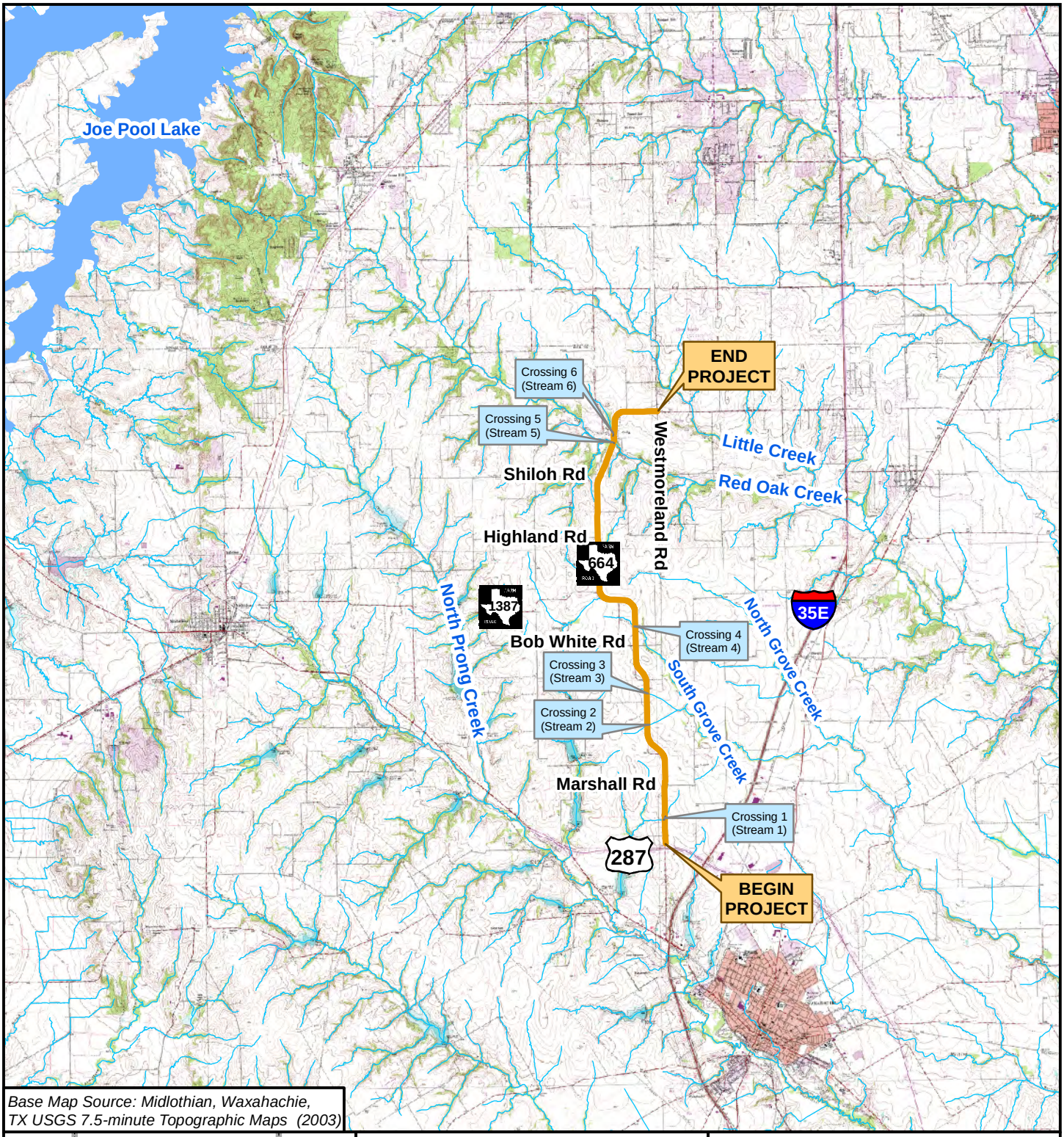


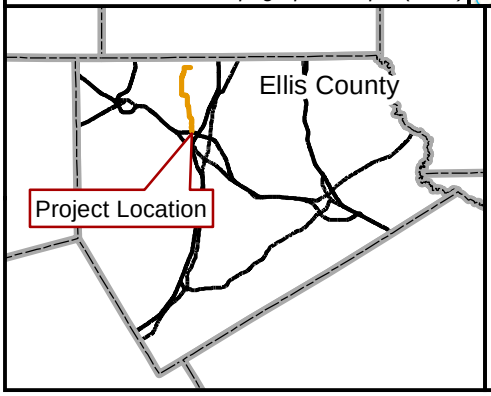
FIGURE 1
PROJECT LOCATION MAP

FARM-TO-MARKET ROAD (FM) 664
From U.S. Highway (US) 287
To Westmoreland Road
Ellis County

CSJs: 1051-01-038 and 1051-01-052



Base Map Source: Midlothian, Waxahachie, TX USGS 7.5-minute Topographic Maps (2003)



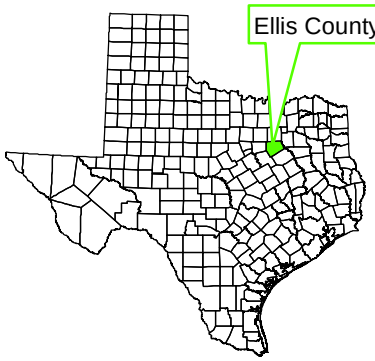


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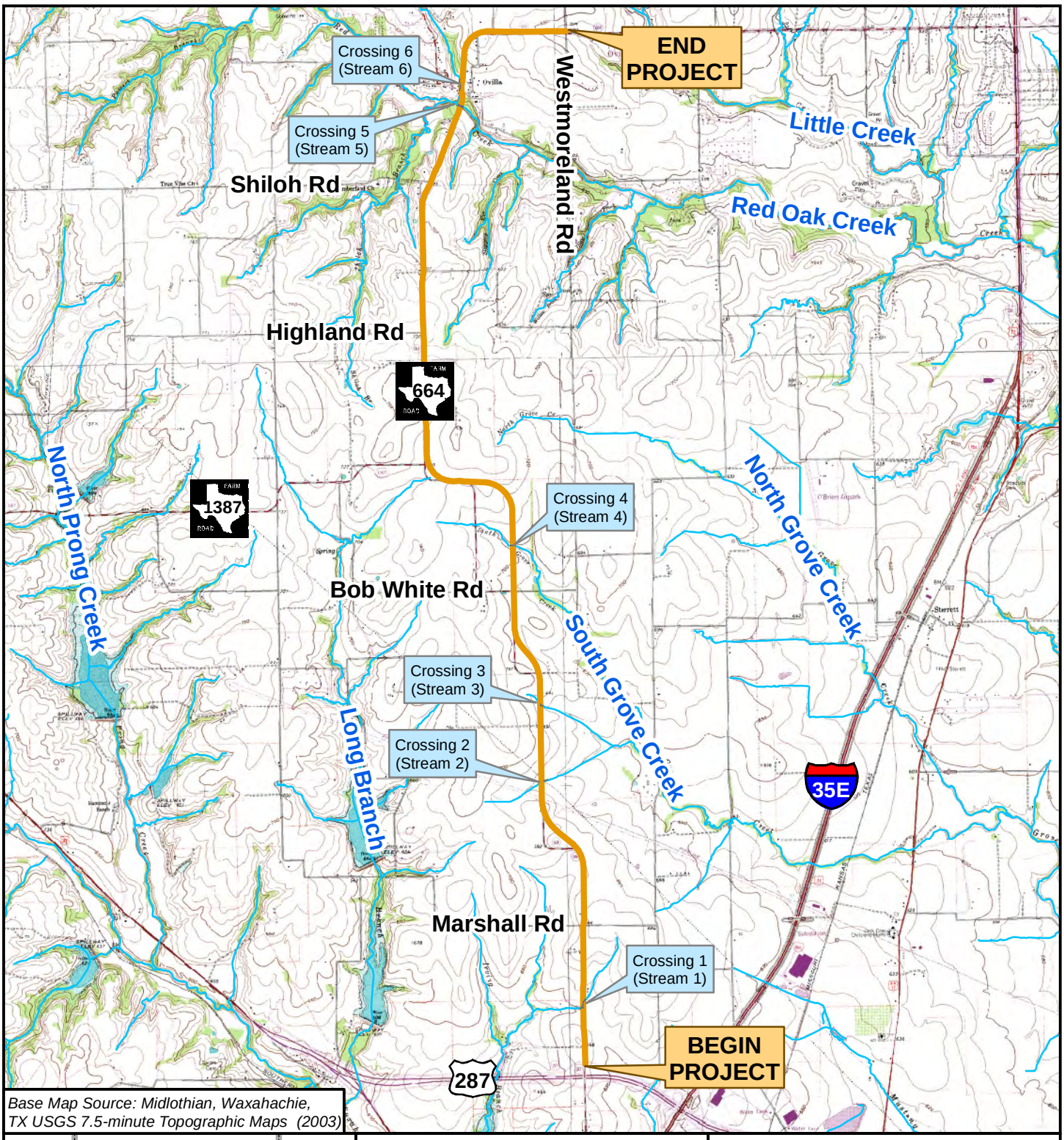
FIGURE 2
TOPOGRAPHIC MAP
FARM-TO-MARKET ROAD (FM) 664
From U.S. Highway (US) 287
To Westmoreland Road
Ellis County
CSJs: 1051-01-038 and 1051-01-052



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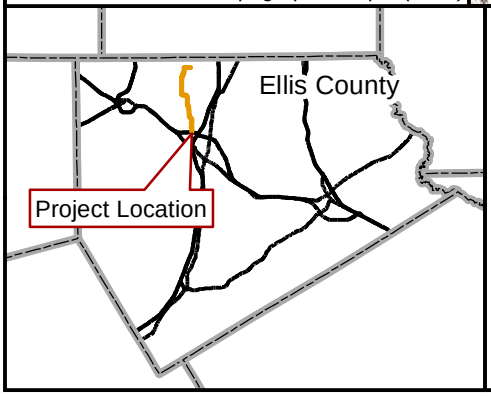

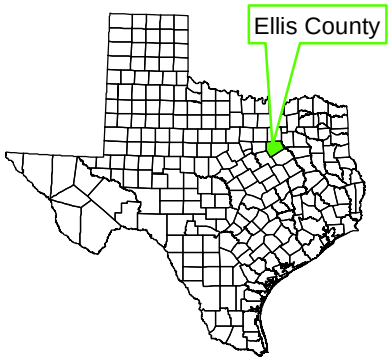

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N W E S

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TOPOGRAPHIC MAP
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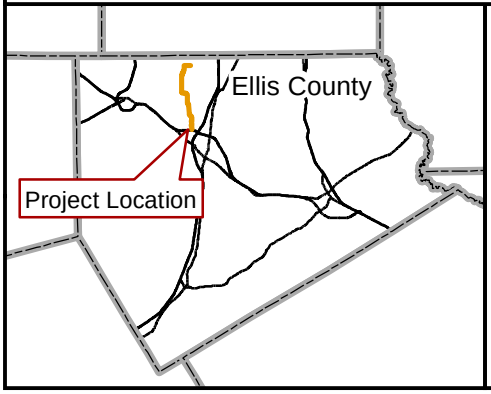
Ellis County
CSJs: 1051-01-038 and 1051-01-052



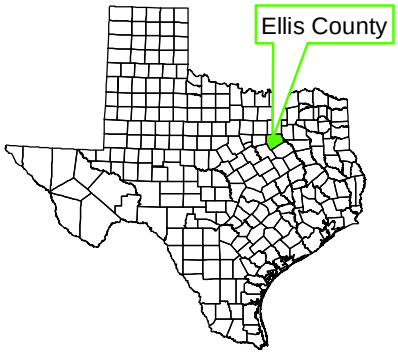


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FIGURE 3
AERIAL MAP

FARM-TO-MARKET ROAD (FM) 664
From U.S. Highway (US) 287
To Westmoreland Road
Ellis County

CSJs: 1051-01-038 and 1051-01-052

FIGURE 4

NATIONAL WETLANDS INVENTORY MAP
FM 664

FARM-TO-MARKET ROAD (FM) 664
From U.S. Highway (US) 287
To Westmoreland Road
Ellis County
CSJs: 1051-01-038 and 1051-01-052

Page 1 of 16

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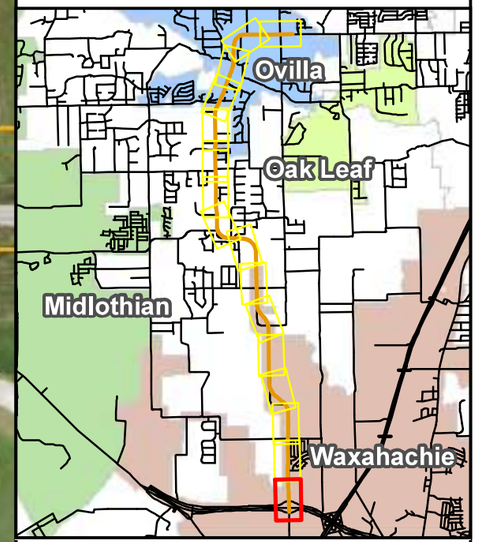

Legend

- Proposed Project Area
- Delineated Streams
- Freshwater Emergent or Forested/Shrub Wetland
- Freshwater Lake or Pond
- Riverine

Base Map Sources: TNRIS (2018); USFWS NWI (accessed October 2019)

FIGURE 4

NATIONAL WETLANDS INVENTORY MAP
FM 664

FARM-TO-MARKET ROAD (FM) 664
From U.S. Highway (US) 287
To Westmoreland Road
Ellis County
CSJs: 1051-01-038 and 1051-01-052

Page 2 of 16

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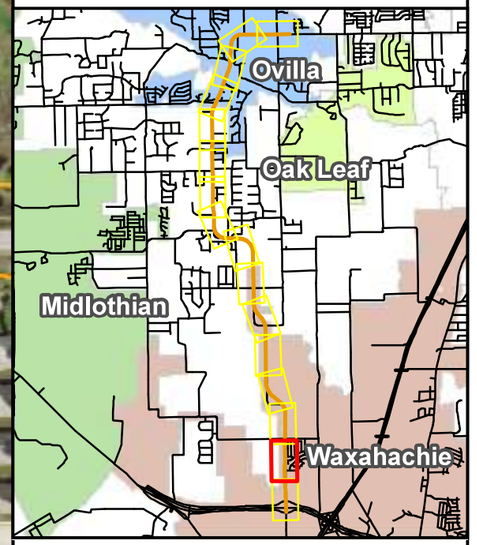

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FM 664

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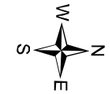

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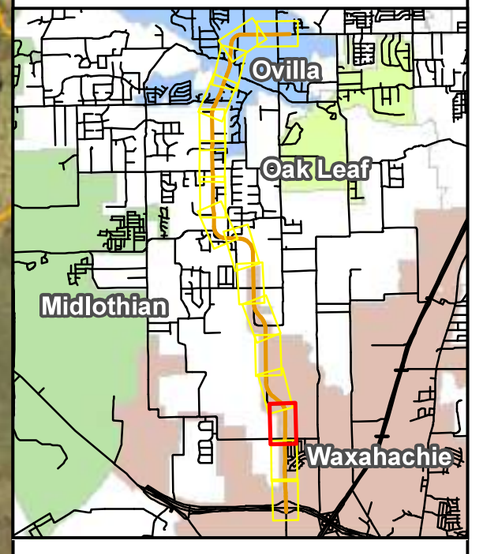

Legend

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- Freshwater Lake or Pond
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Base Map Sources: TNRIS (2018);
USFWS NWI (accessed October 2019)

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FM 664

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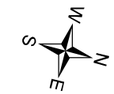
To Westmoreland Road
Ellis County
CSJs: 1051-01-038 and 1051-01-052



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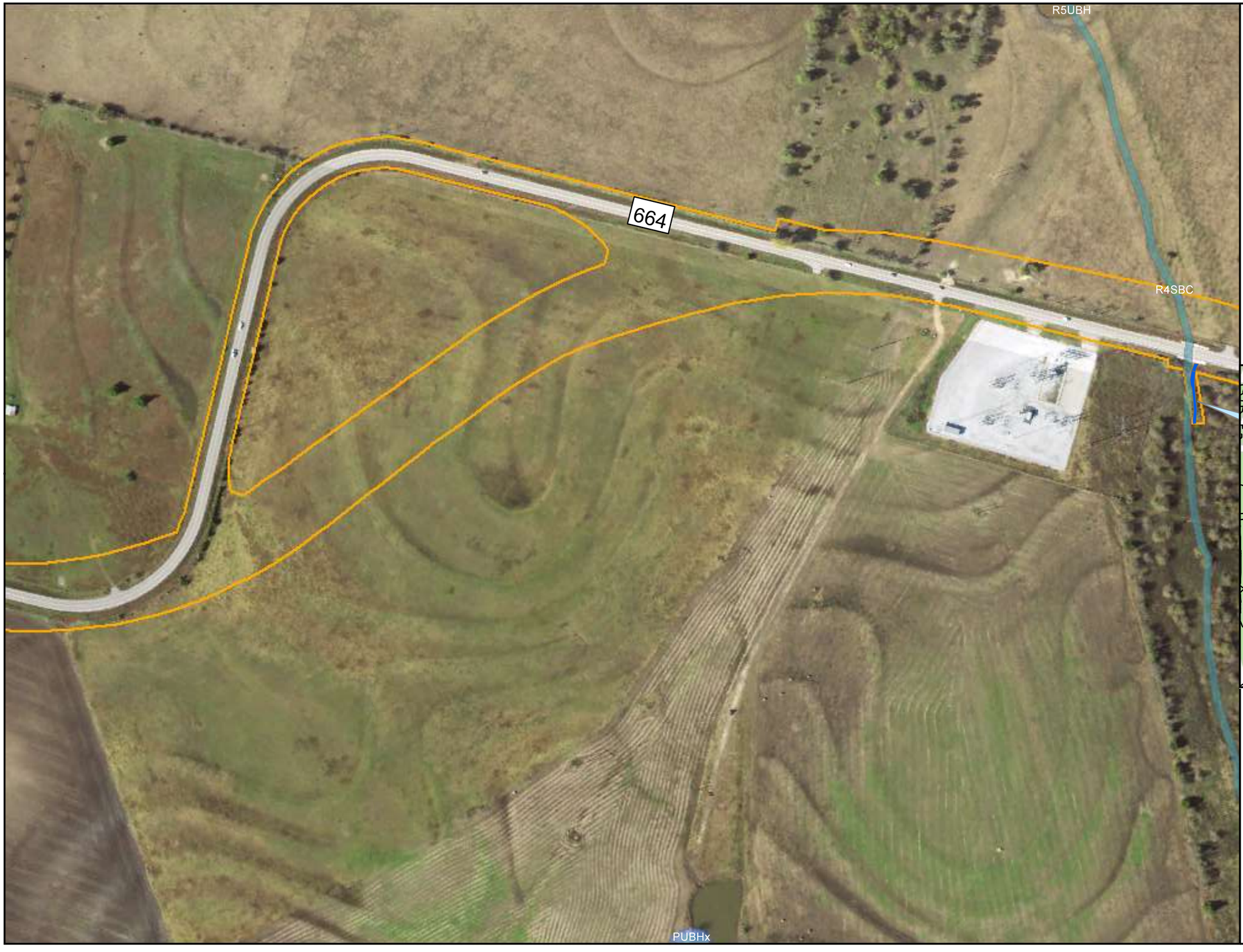
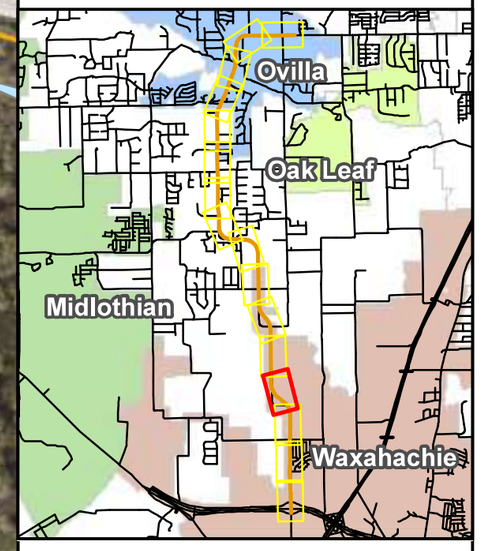




Legend

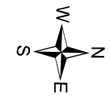
- Proposed Project Area
- Delineated Streams
- Freshwater Emergent or Forested/Shrub Wetland
- Freshwater Lake or Pond
- Riverine

Base Map Sources: TNRIS (2018); USFWS NWI (accessed October 2019)

FIGURE 4

NATIONAL WETLANDS INVENTORY MAP
FM 664

FARM-TO-MARKET ROAD (FM) 664
From U.S. Highway (US) 287
To Westmoreland Road
Ellis County
CSJs: 1051-01-038 and 1051-01-052



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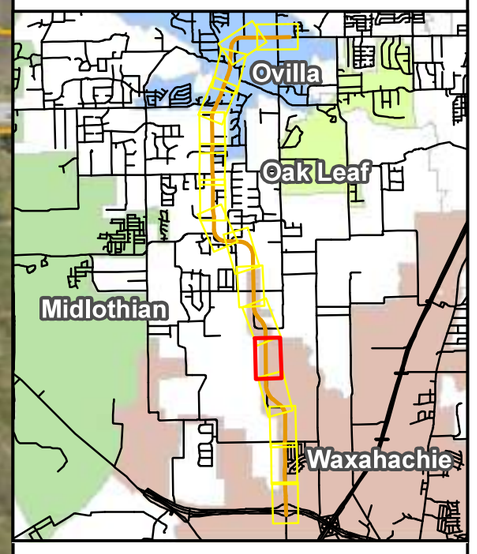

Legend

- Proposed Project Area
- Delineated Streams
- Freshwater Emergent or Forested/Shrub Wetland
- Freshwater Lake or Pond
- Riverine

Base Map Sources: TNRIS (2018); USFWS NWI (accessed October 2019)

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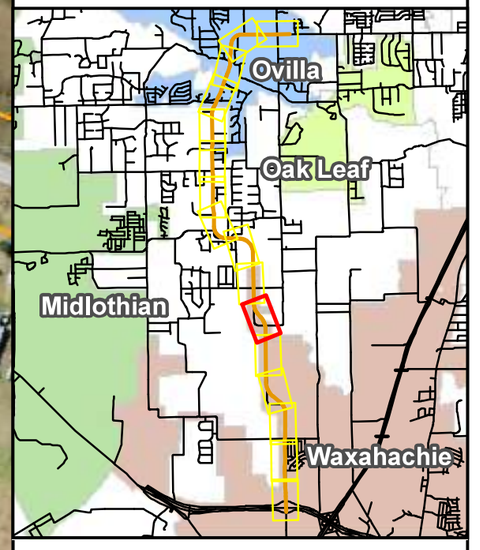

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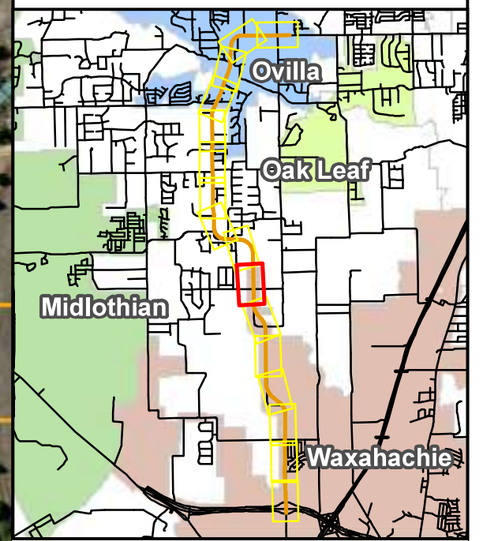
0 250 500 Feet



664

Crossing 4
(Stream 4)

Bob White Ln

PFO1C

PUBHh

R5UBH

Legend

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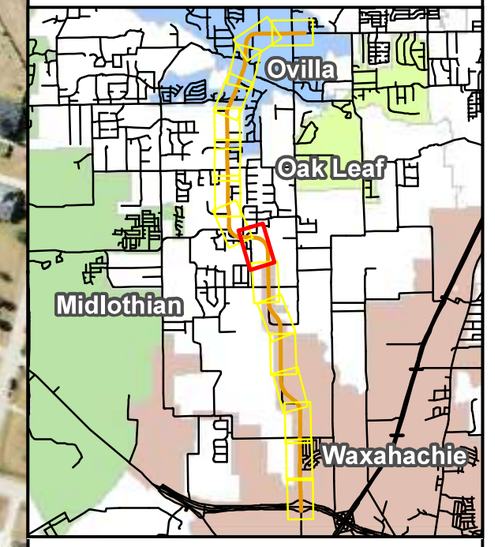

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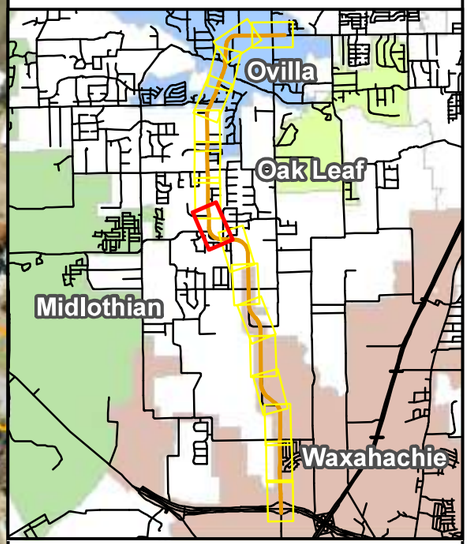

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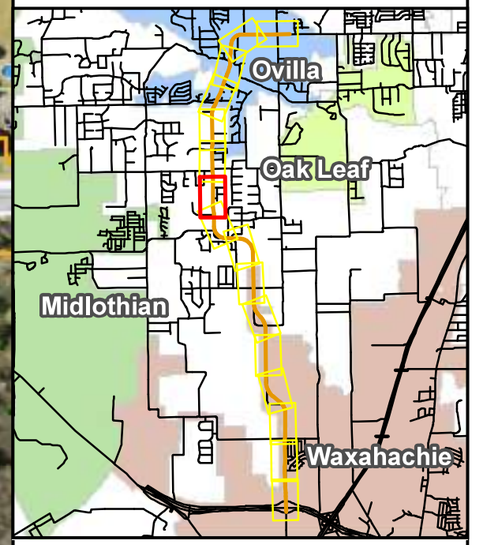

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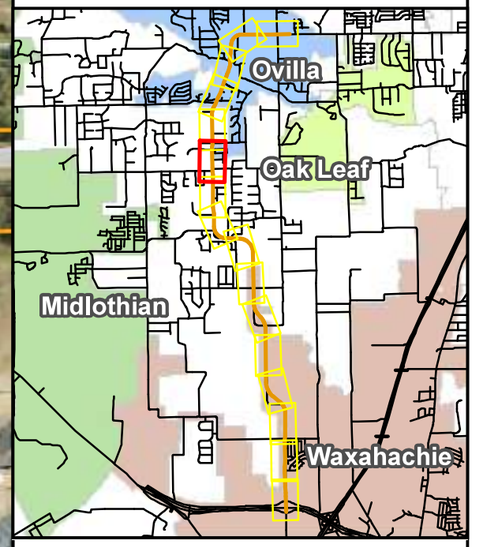

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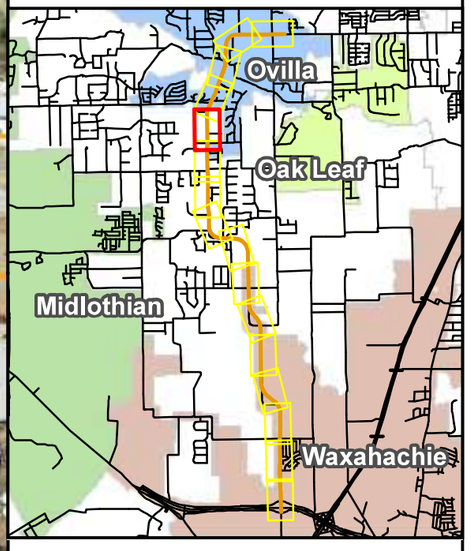

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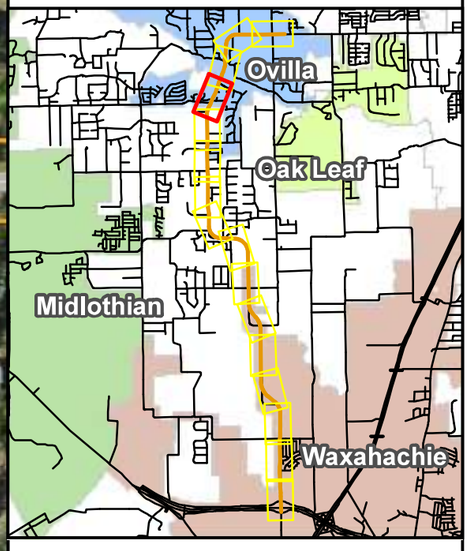
0 250 500 Feet



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From U.S. Highway (US) 287
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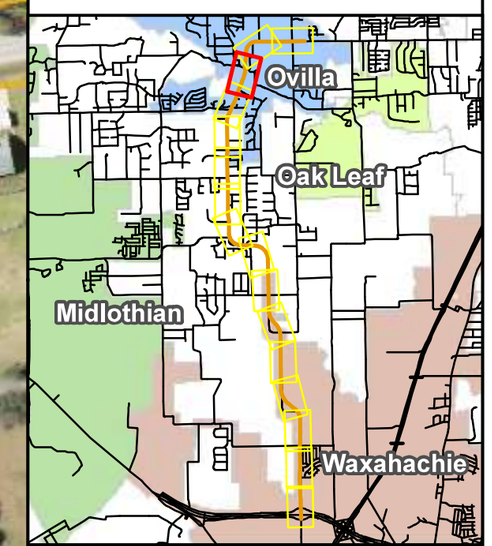
Ellis County
CSJs: 1051-01-038 and 1051-01-052

0 250 500 Feet



PFO1C
R4SBC
R4SBC
W Main St
Crossing 6
(Stream 6)
R4SBC
664
Ovilla Oaks Dr
Dusty Oak Tr
E Main St
Crossing 5
(Stream 5)
R4SBC

Legend

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To Westmoreland Road
Ellis County
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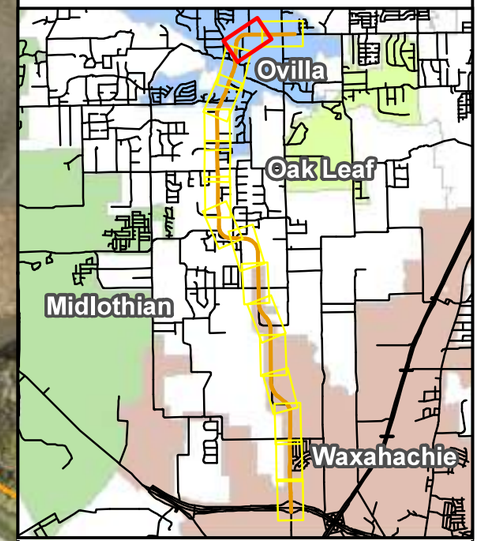
0 250 500 Feet



Legend

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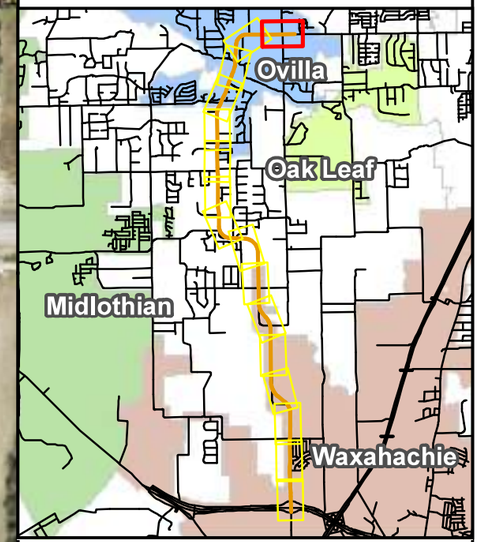
From U.S. Highway (US) 287
To Westmoreland Road
Ellis County
CSJs: 1051-01-038 and 1051-01-052

N
W E
S

0 250 500 Feet



Legend

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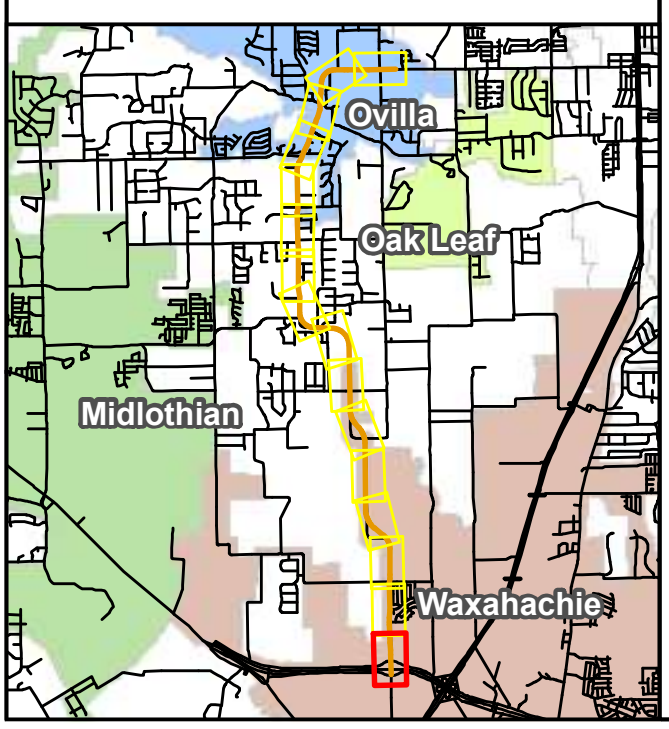
Base Map Sources: TNRIS (2018);
USFWS NWI (accessed October 2019)

FIGURE 5

NRCS SOIL MAP
FM 664

FARM-TO-MARKET ROAD (FM) 664
From U.S. Highway (US) 287
To Westmoreland Road
Ellis County
CSJs: 1051-01-038 and 1051-01-052

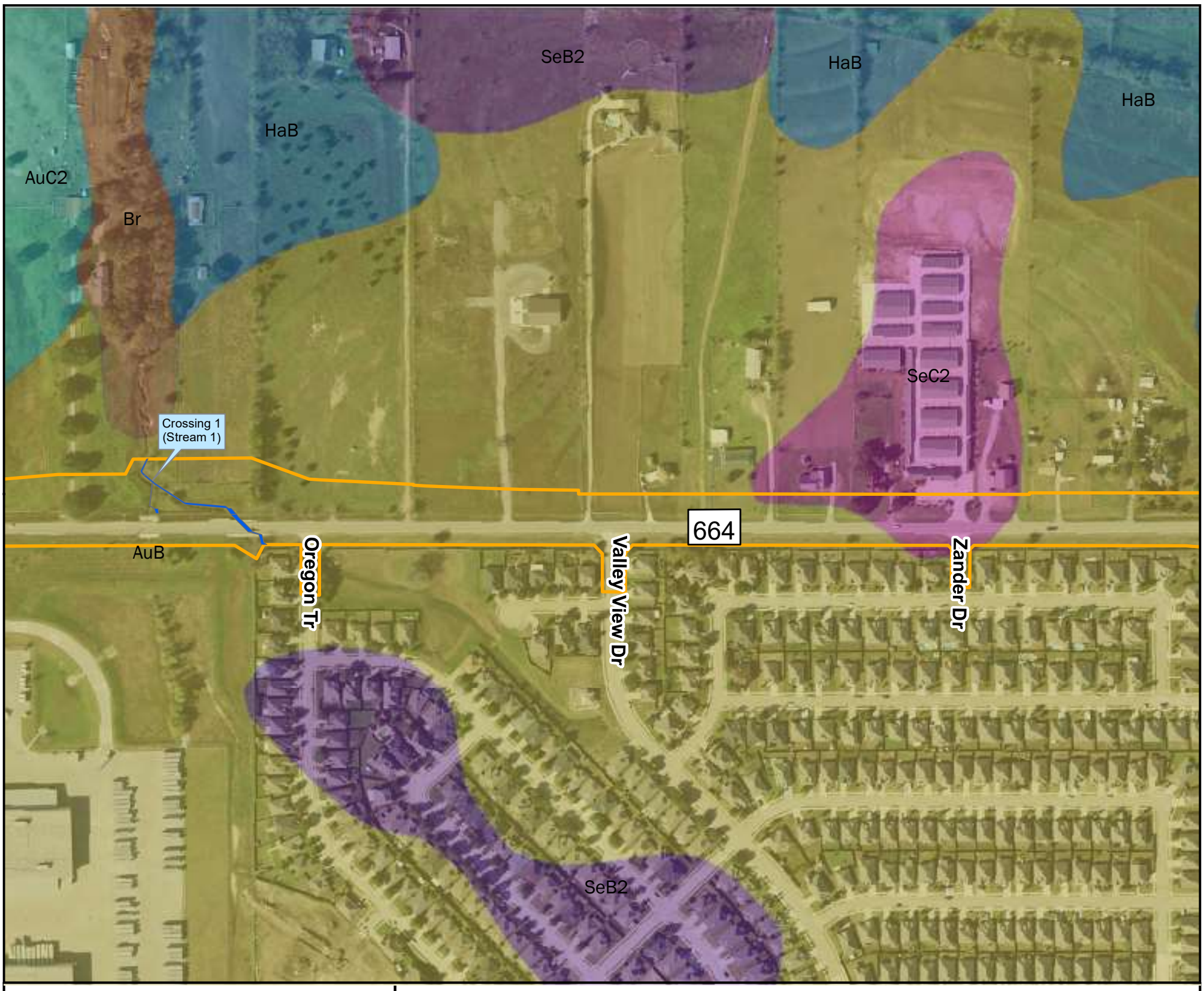
0 250 500 Feet



Legend

- Proposed Project Area
- Delineated Streams
- AuB - Austin silty clay, 1 to 3 percent slopes
- AuC2 - Austin silty clay, 2 to 5 percent slopes, moderately eroded
- AuD2 - Austin silty clay, 5 to 8 percent slopes, moderately eroded
- BkC2 - Whitewright and Austin soils, 2 to 5 percent slopes eroded
- Br - Broken alluvial land, rarely flooded
- EcB - Eddy gravelly clay loan, 1 to 3 percent slopes
- EdD2 - Eddy soils, 3 to 8 percent slopes, eroded
- EdF - Eddy soils, 8 to 20 percent slopes
- Fr - Frio silty clay, 0 to 1 percent slopes, frequently flooded
- Fs - Frio silty clay, 0 to 1 percent slopes, occasionally flooded
- HaB - Houston Black clay, 1 to 3 percent slopes
- SeB2 - Stephen-Eddy complex, 1 to 3 percent slopes, eroded
- SeC2 - - Stephen-Eddy complex, 2 to 5 percent slopes
- StB - Stephen silty clay, 1 to 4 percent slopes
- W - Water

Base Map Sources: TNRIS (2018);
NRCS (accessed October 2019)



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NRCS SOIL MAP
FM 664

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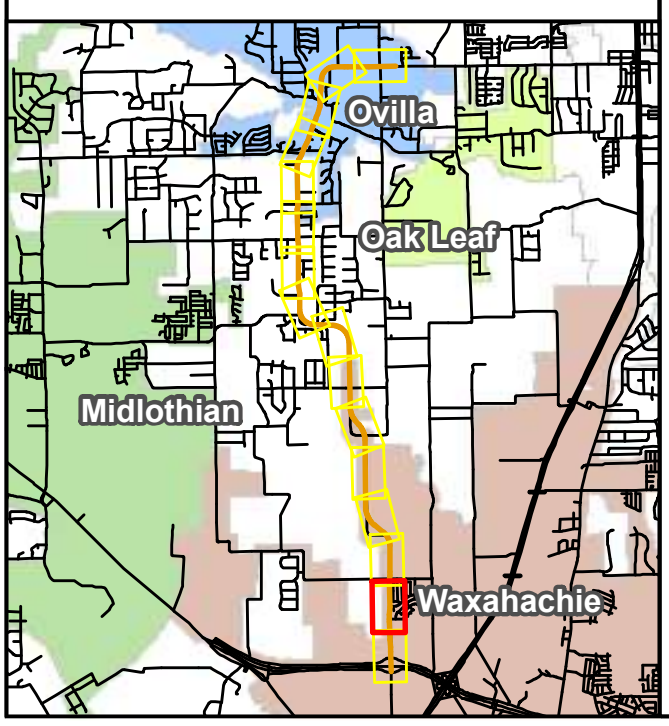
From U.S. Highway (US) 287
To Westmoreland Road
Ellis County
CSJs: 1051-01-038 and 1051-01-052

0 250 500 Feet



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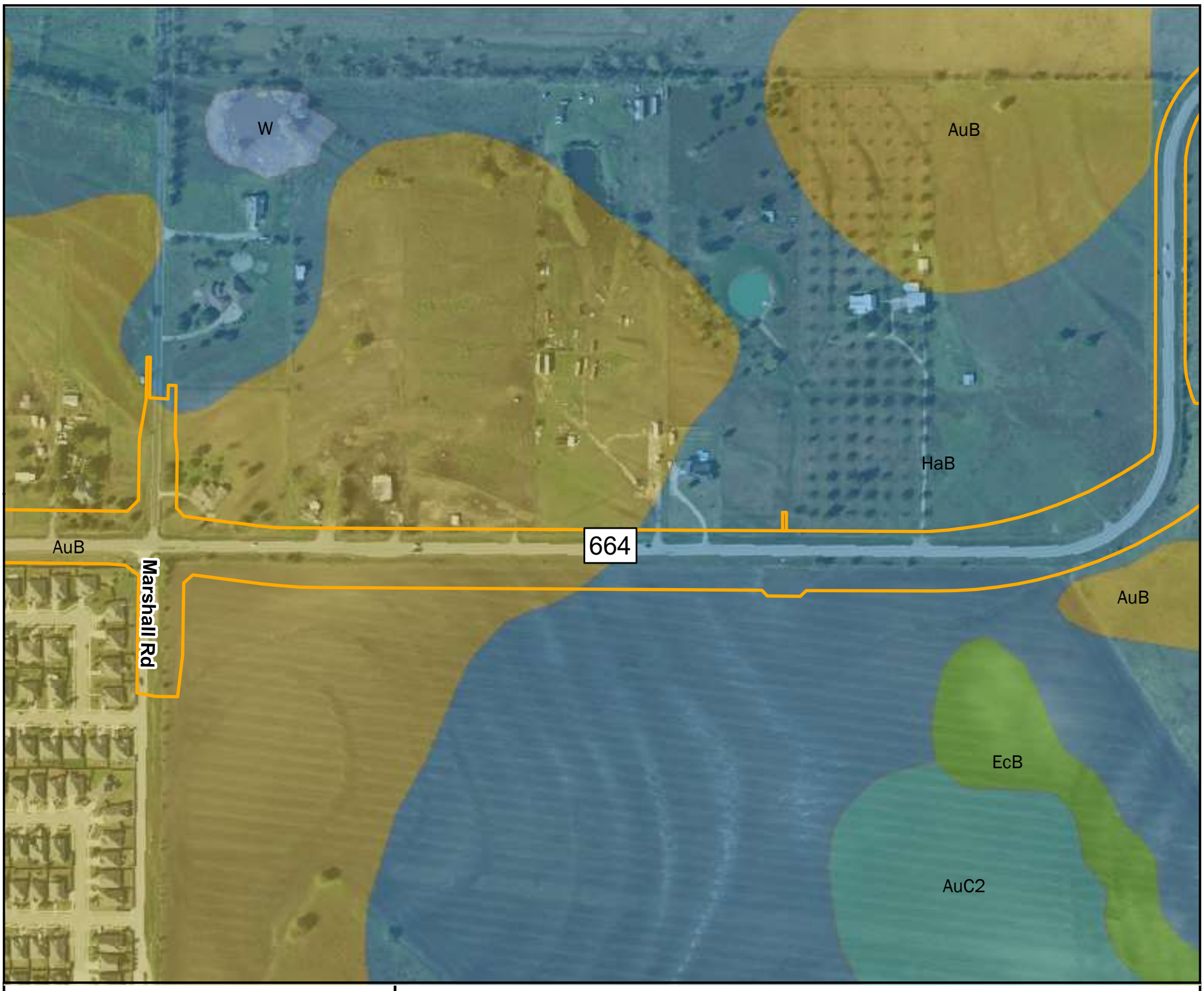

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NRCS SOIL MAP
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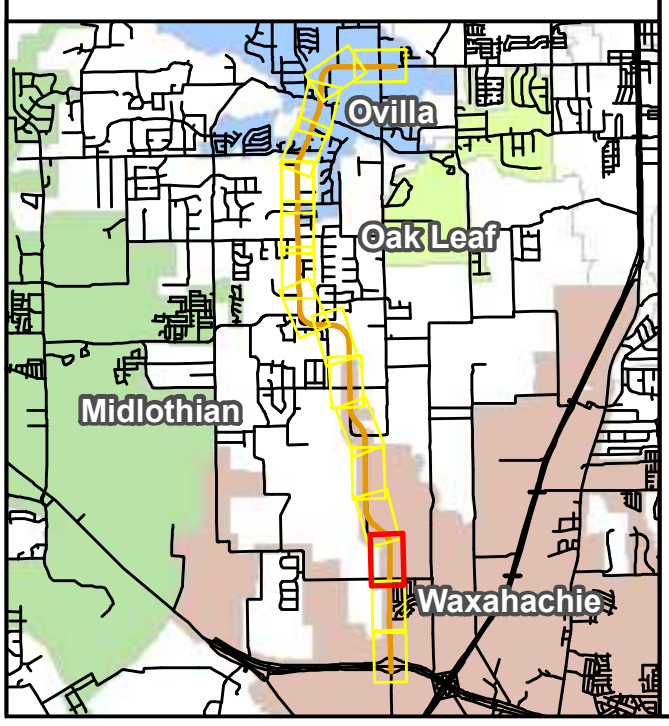
Ellis County
CSJs: 1051-01-038 and 1051-01-052

0 250 500 Feet



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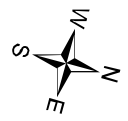

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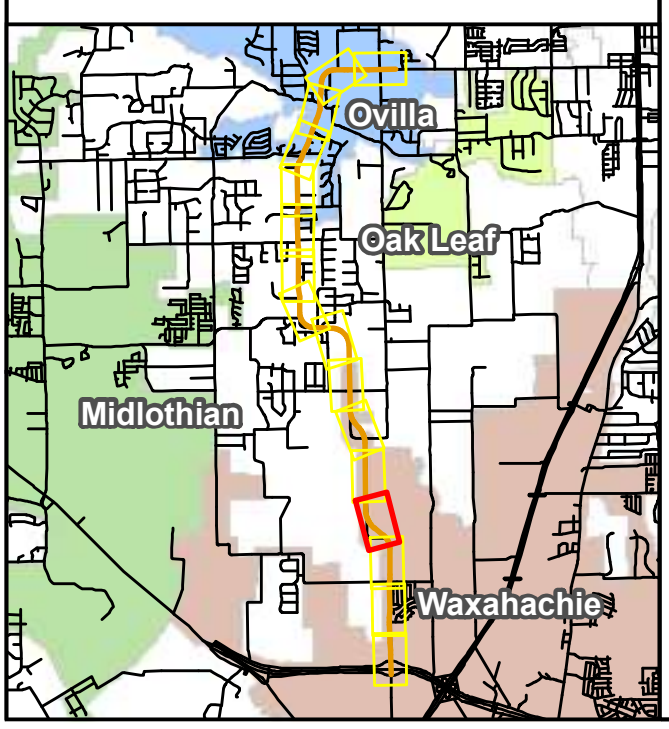

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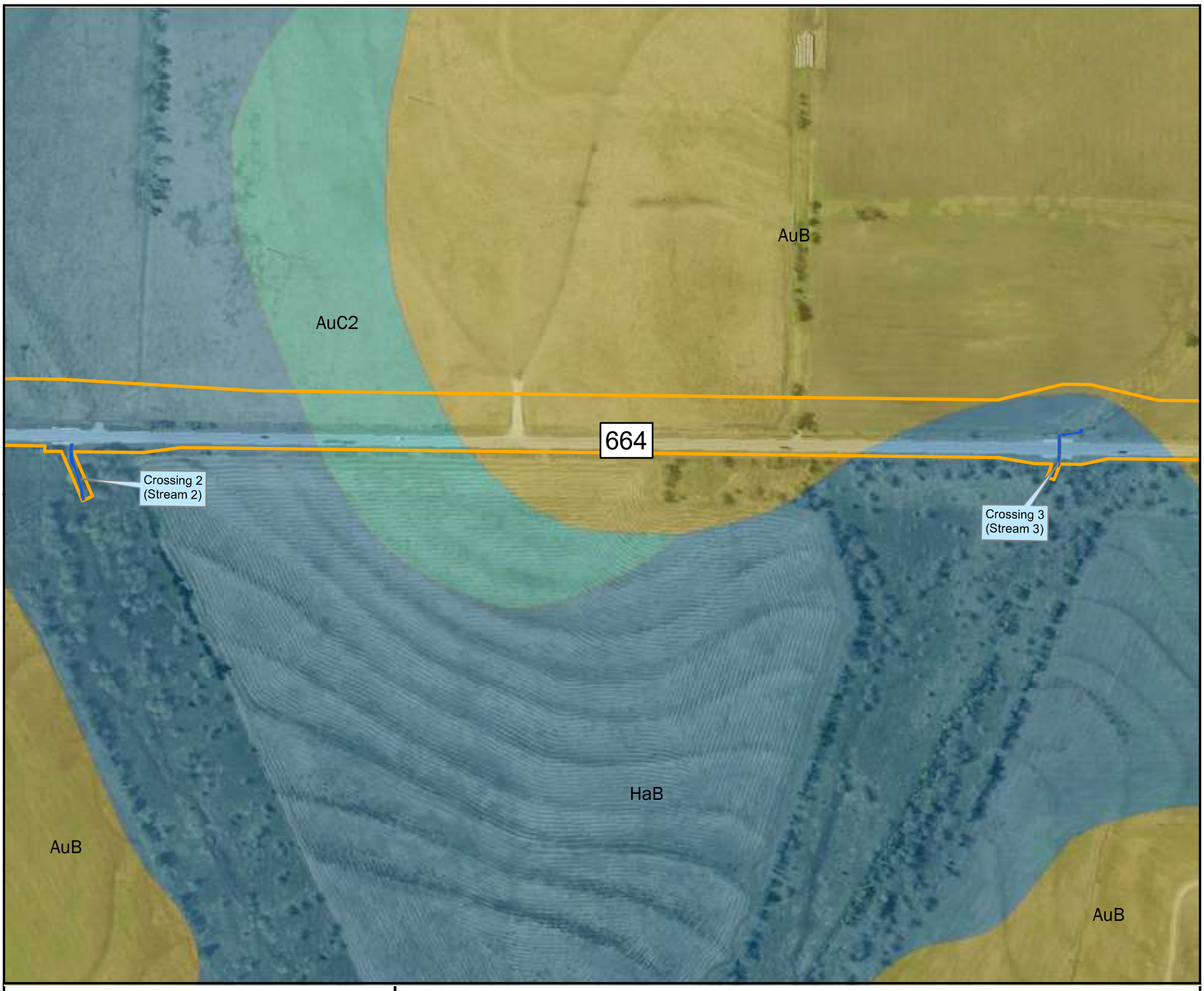

FIGURE 5

NRCS SOIL MAP
FM 664

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To Westmoreland Road
Ellis County
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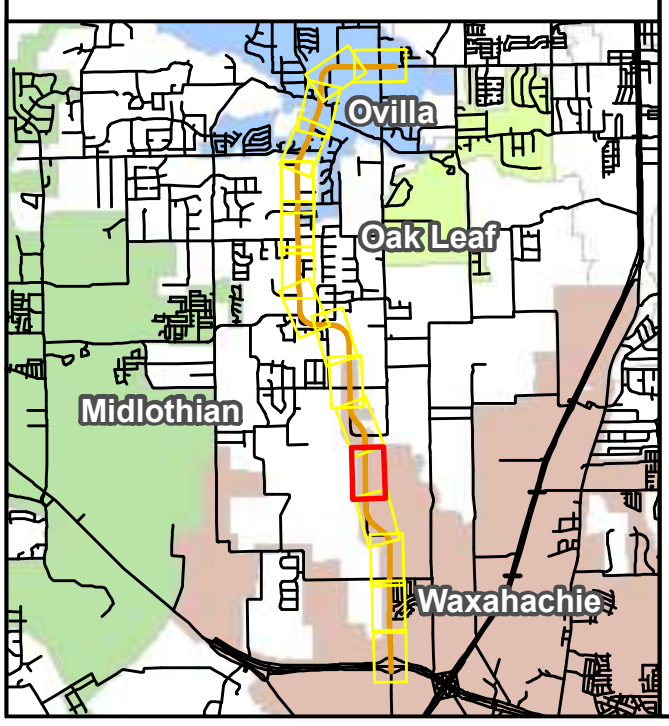
0 250 500 Feet



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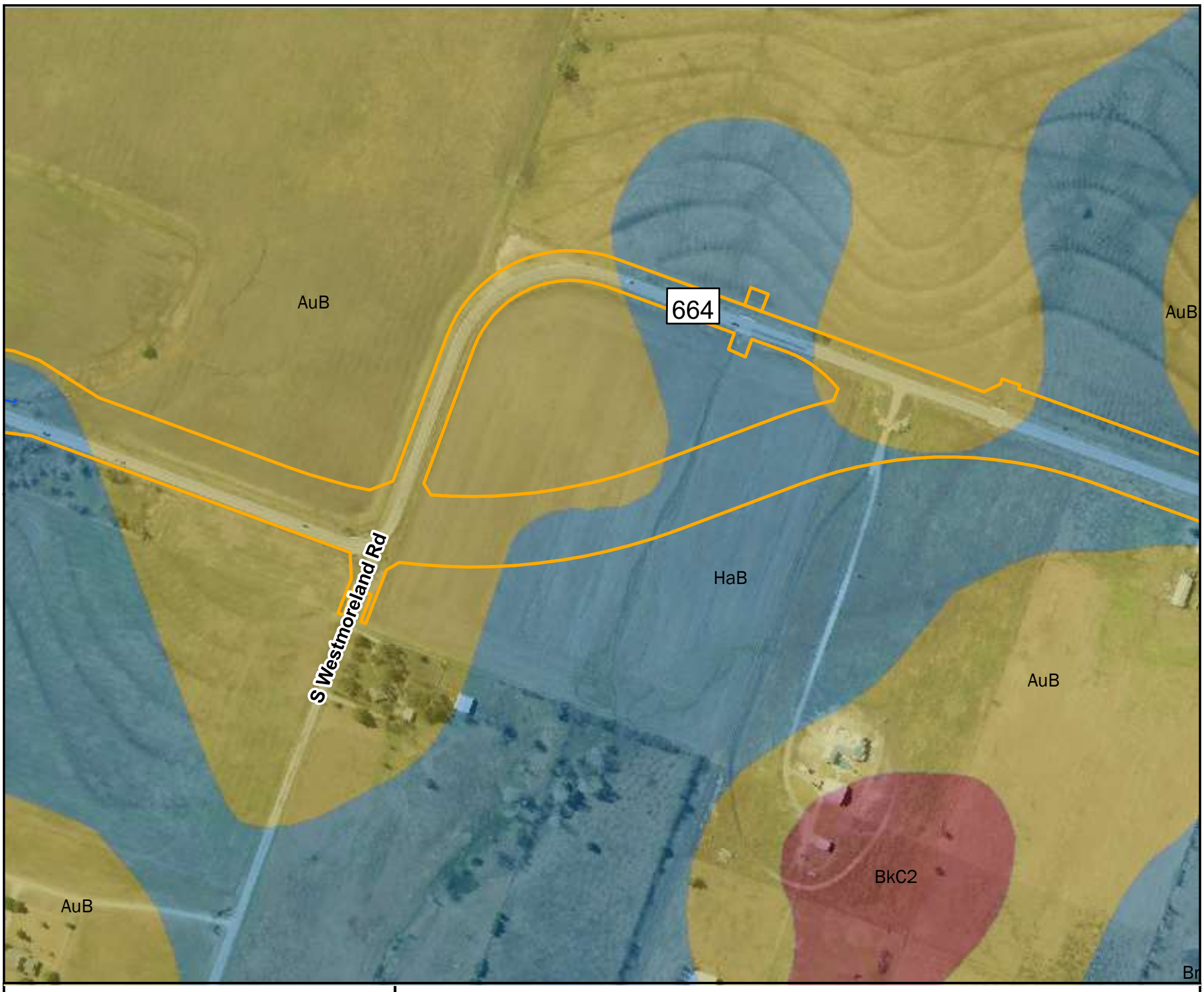

FIGURE 5

NRCS SOIL MAP
FM 664

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To Westmoreland Road
Ellis County
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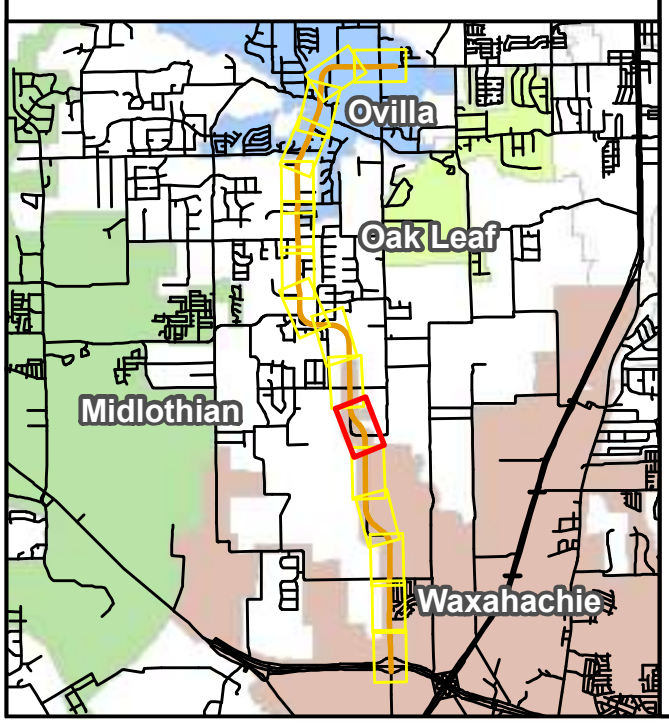
0 250 500 Feet



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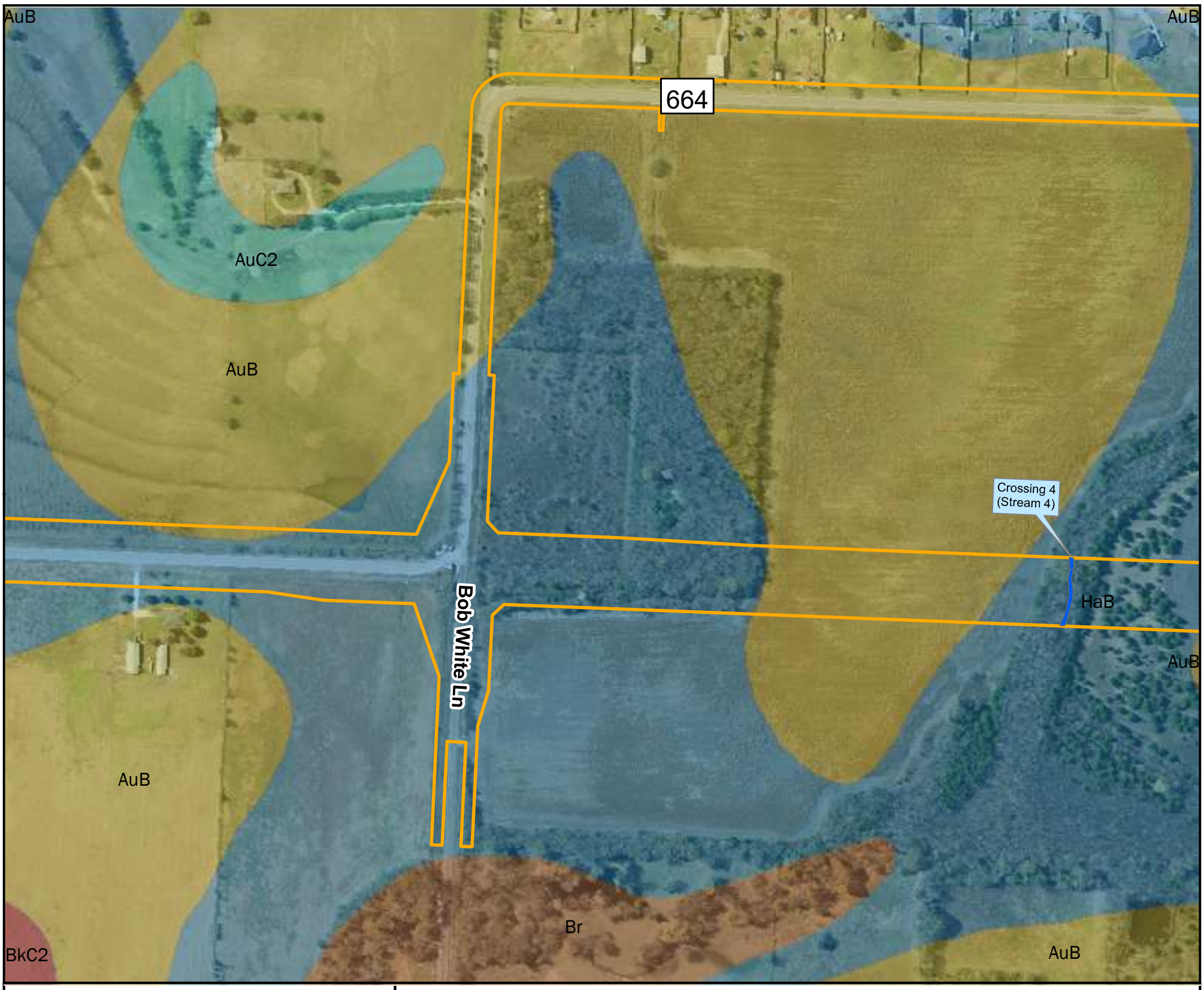

FIGURE 5

NRCS SOIL MAP
FM 664

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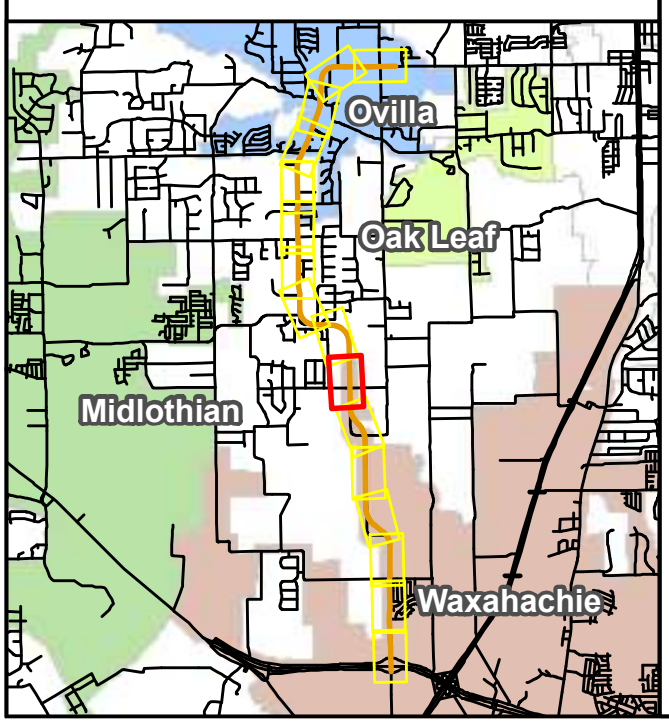
From U.S. Highway (US) 287
To Westmoreland Road
Ellis County
CSJs: 1051-01-038 and 1051-01-052

0 250 500 Feet



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- BkC2 - Whitewright and Austin soils, 2 to 5 percent slopes eroded
- Br - Broken alluvial land, rarely flooded
- EcB - Eddy gravelly clay loan, 1 to 3 percent slopes
- EdD2 - Eddy soils, 3 to 8 percent slopes, eroded
- EdF - Eddy soils, 8 to 20 percent slopes
- Fr - Frio silty clay, 0 to 1 percent slopes, frequently flooded
- Fs - Frio silty clay, 0 to 1 percent slopes, occasionally flooded
- HaB - Houston Black clay, 1 to 3 percent slopes
- SeB2 - Stephen-Eddy complex, 1 to 3 percent slopes, eroded
- SeC2 - - Stephen-Eddy complex, 2 to 5 percent slopes
- StB - Stephen silty clay, 1 to 4 percent slopes
- W - Water

Base Map Sources: TNRIS (2018);
NRCS (accessed October 2019)

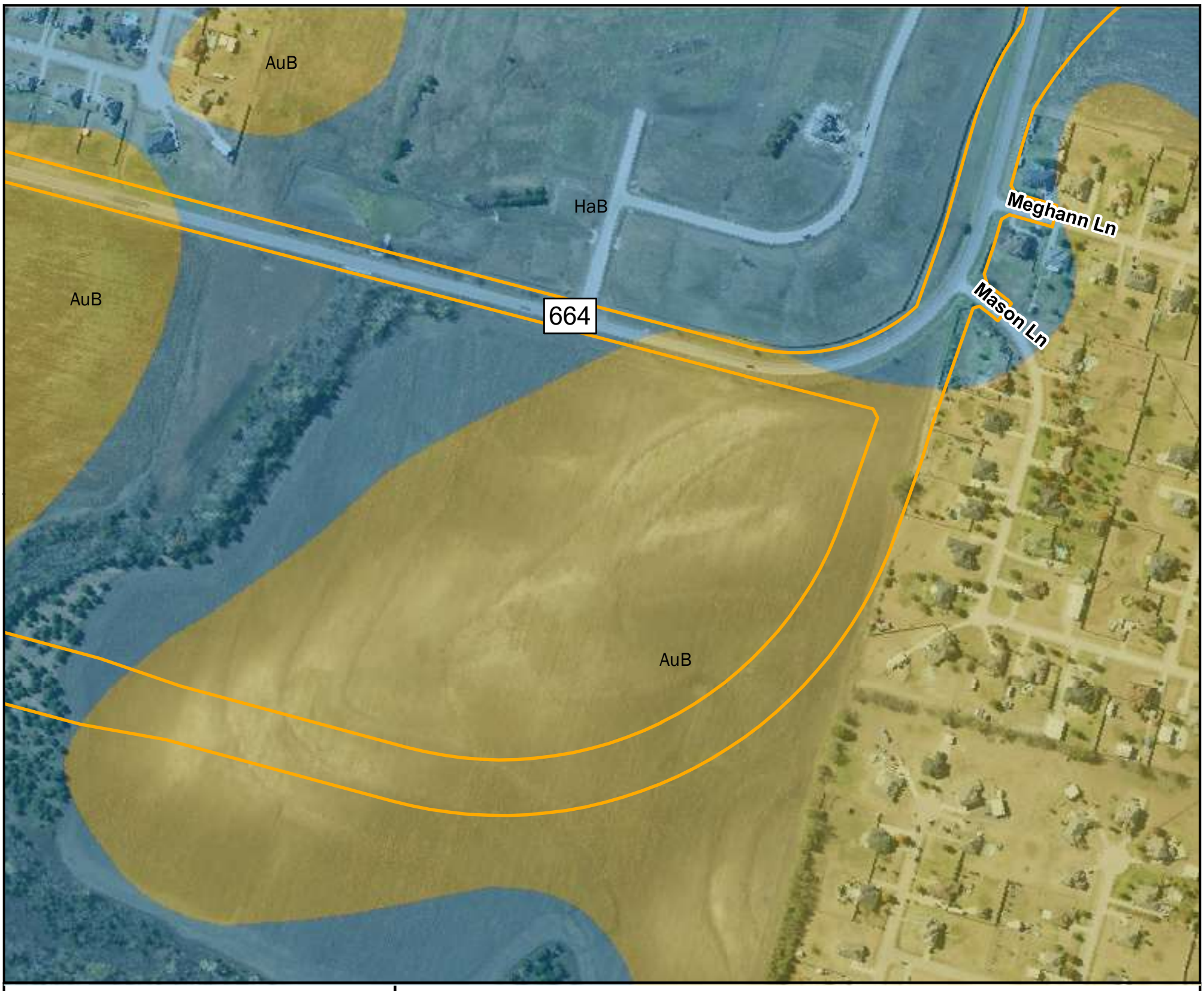
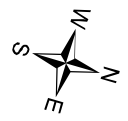


FIGURE 5

NRCS SOIL MAP
FM 664

FARM-TO-MARKET ROAD (FM) 664
From U.S. Highway (US) 287
To Westmoreland Road
Ellis County
CSJs: 1051-01-038 and 1051-01-052



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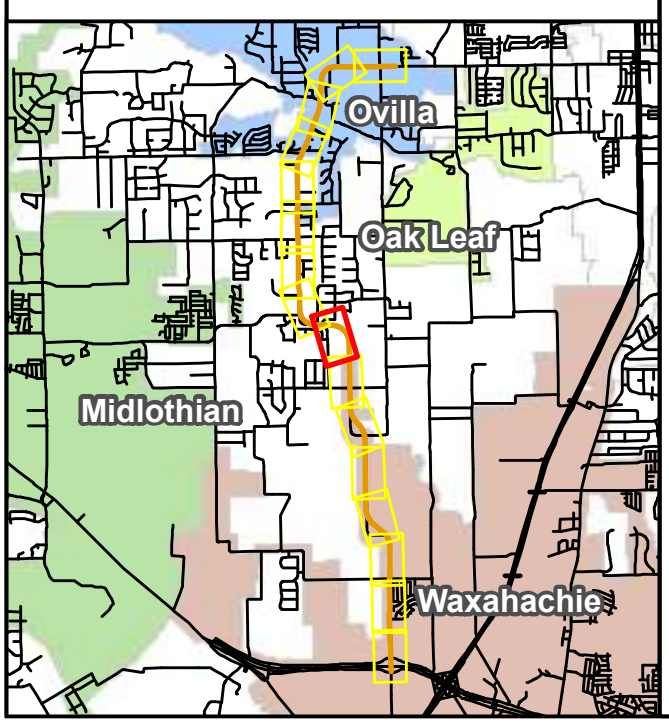

Legend

- Proposed Project Area
- Delineated Streams
- AuB - Austin silty clay, 1 to 3 percent slopes
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Base Map Sources: TNRIS (2018);
NRCS (accessed October 2019)

FIGURE 5

NRCS SOIL MAP
FM 664

FARM-TO-MARKET ROAD (FM) 664
From U.S. Highway (US) 287
To Westmoreland Road
Ellis County
CSJs: 1051-01-038 and 1051-01-052

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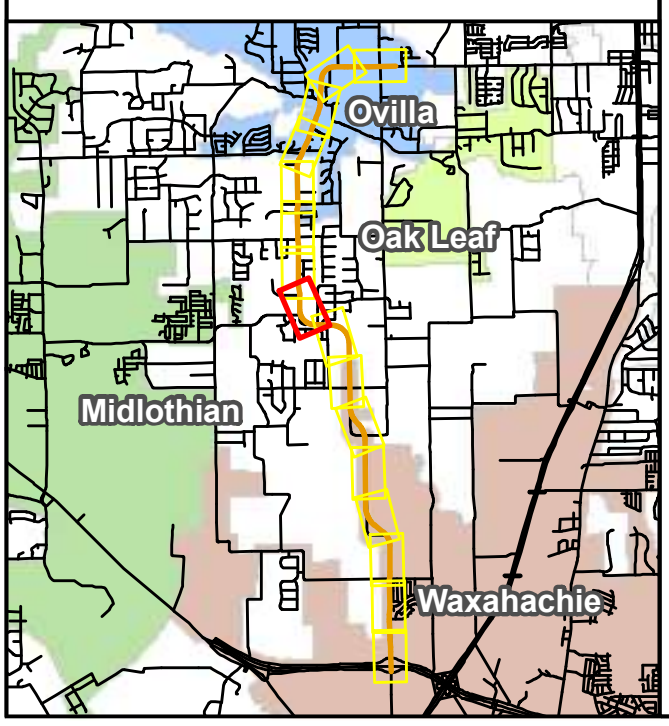

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Base Map Sources: TNRIS (2018);
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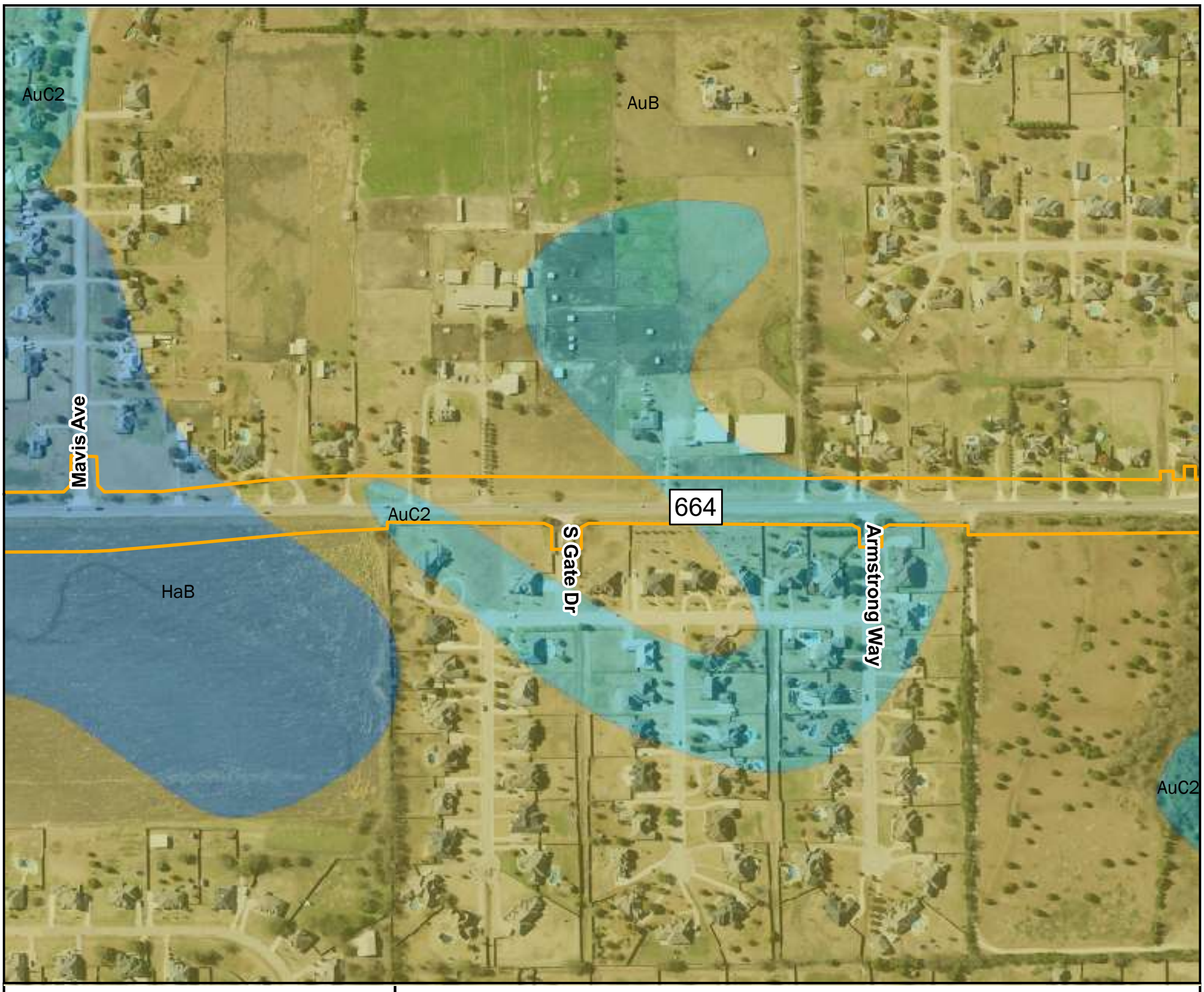

FIGURE 5

NRCS SOIL MAP
FM 664

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From U.S. Highway (US) 287
To Westmoreland Road
Ellis County
CSJs: 1051-01-038 and 1051-01-052

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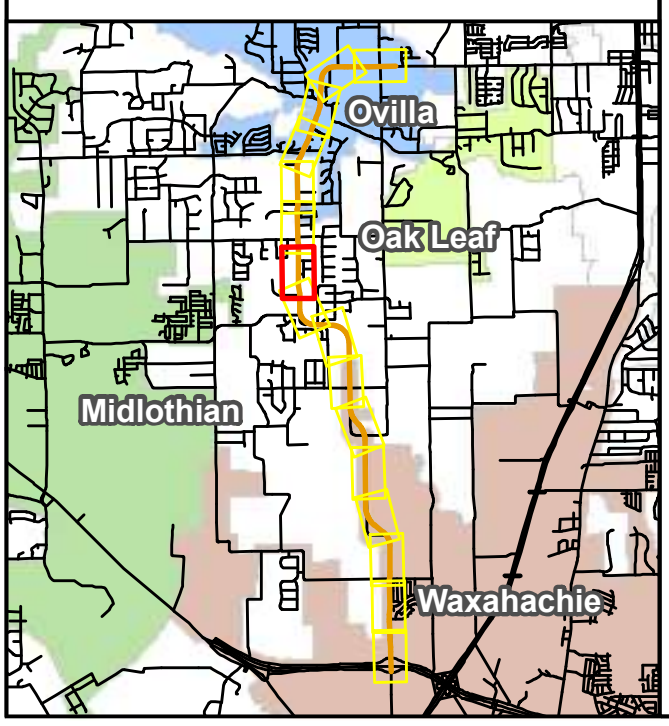

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NRCS SOIL MAP
FM 664

FARM-TO-MARKET ROAD (FM) 664
From U.S. Highway (US) 287
To Westmoreland Road
Ellis County
CSJs: 1051-01-038 and 1051-01-052

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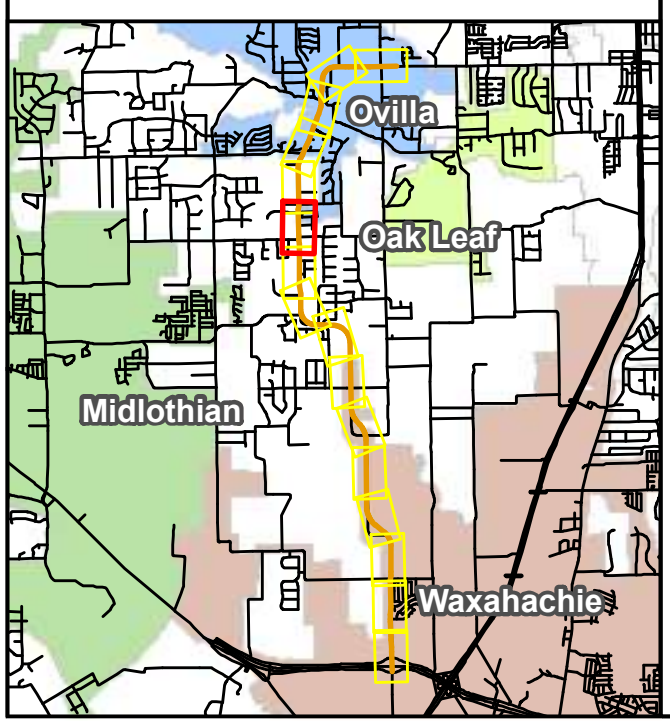

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FM 664

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From U.S. Highway (US) 287
To Westmoreland Road
Ellis County
CSJs: 1051-01-038 and 1051-01-052

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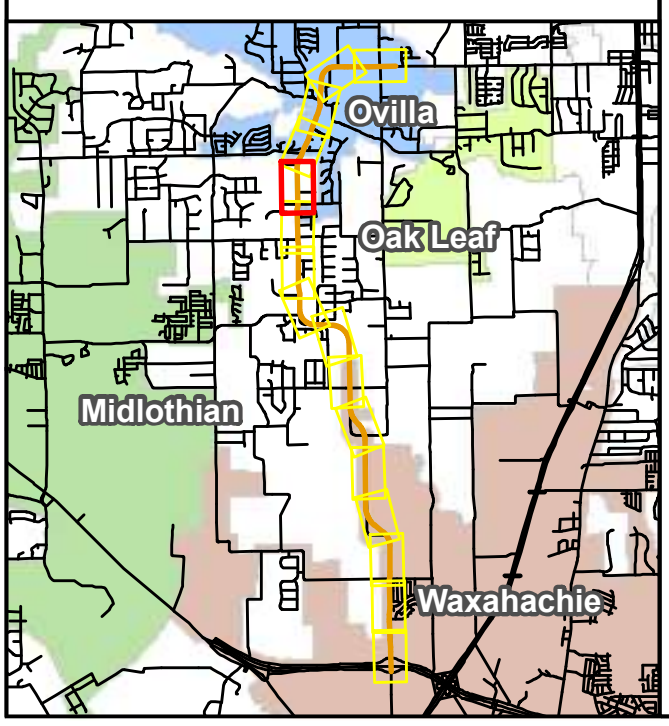

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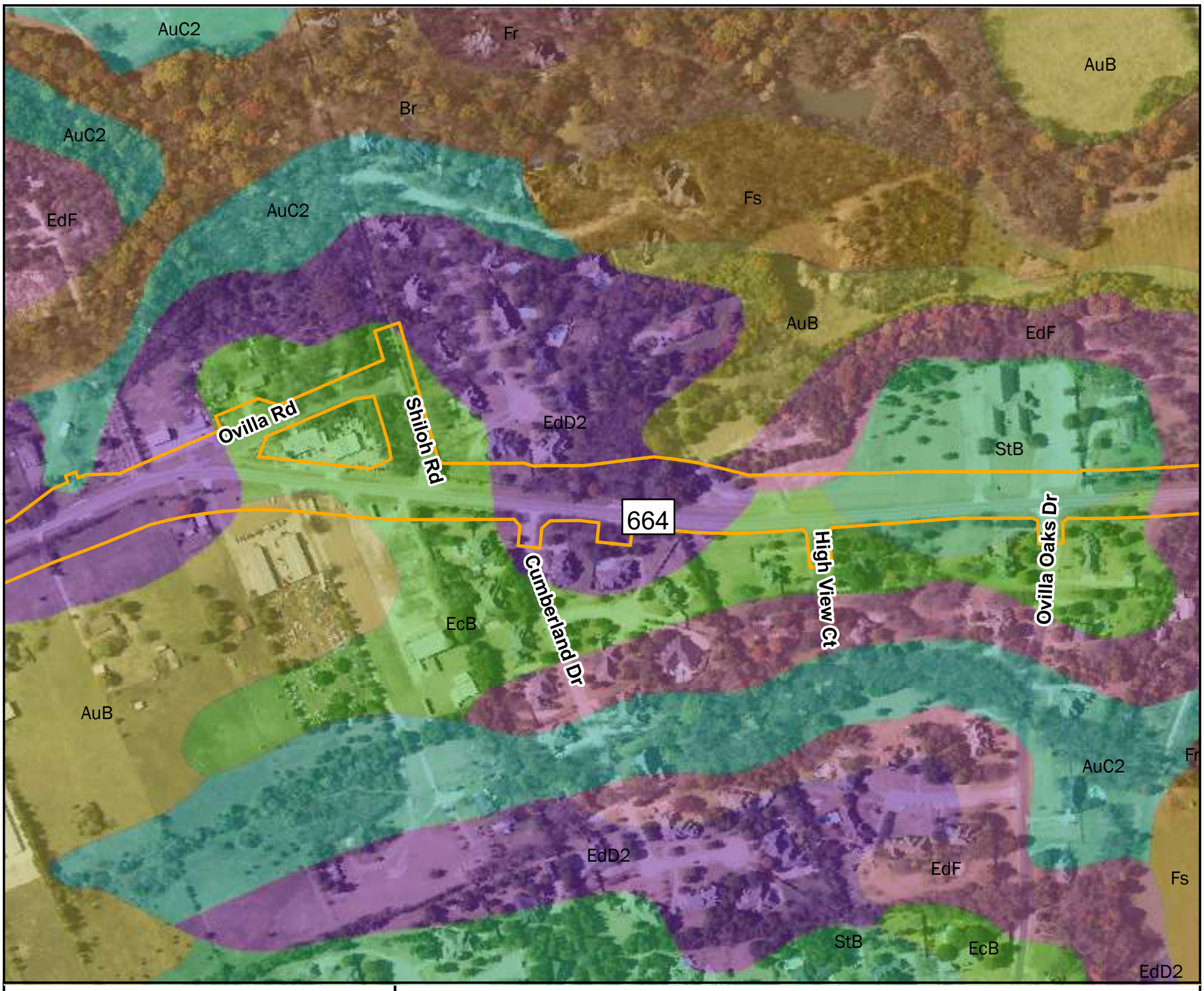

FIGURE 5

NRCS SOIL MAP
FM 664

FARM-TO-MARKET ROAD (FM) 664
From U.S. Highway (US) 287
To Westmoreland Road
Ellis County
CSJs: 1051-01-038 and 1051-01-052

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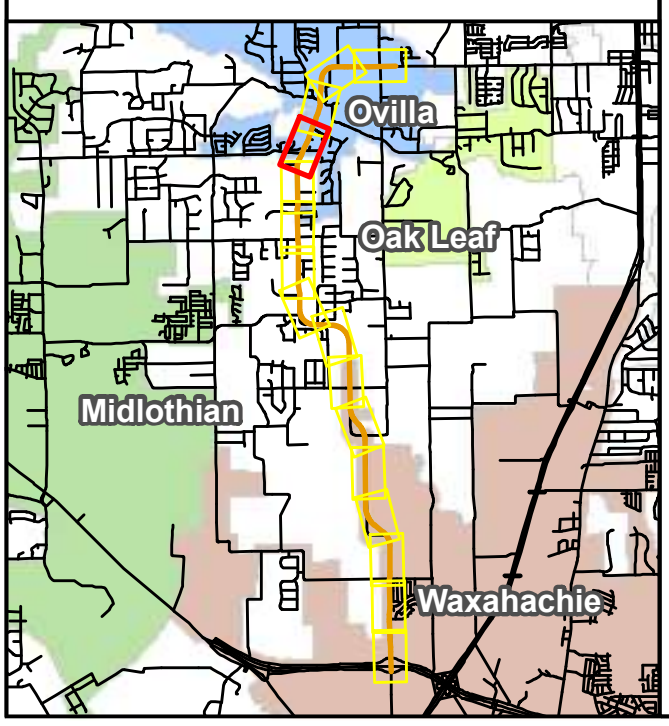

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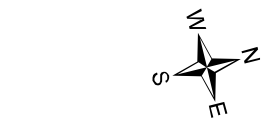

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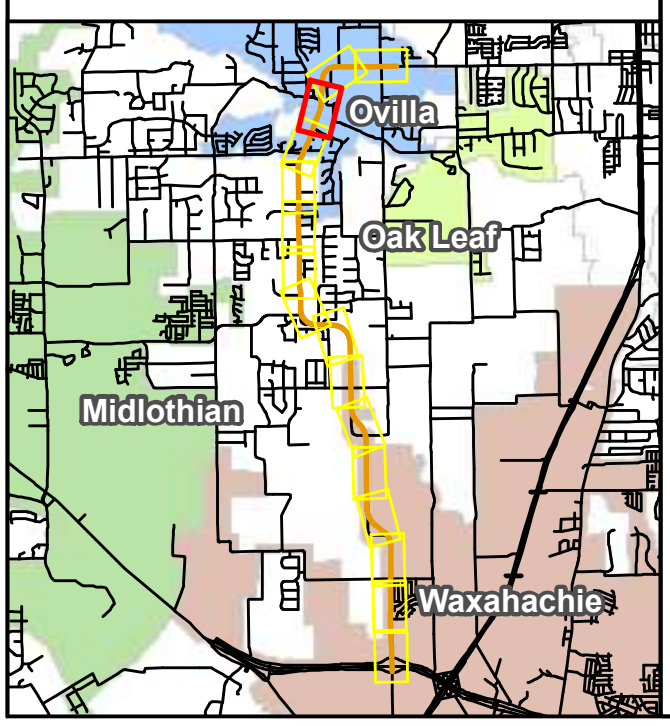

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NRCS SOIL MAP
FM 664

FARM-TO-MARKET ROAD (FM) 664
From U.S. Highway (US) 287
To Westmoreland Road
Ellis County
CSJs: 1051-01-038 and 1051-01-052

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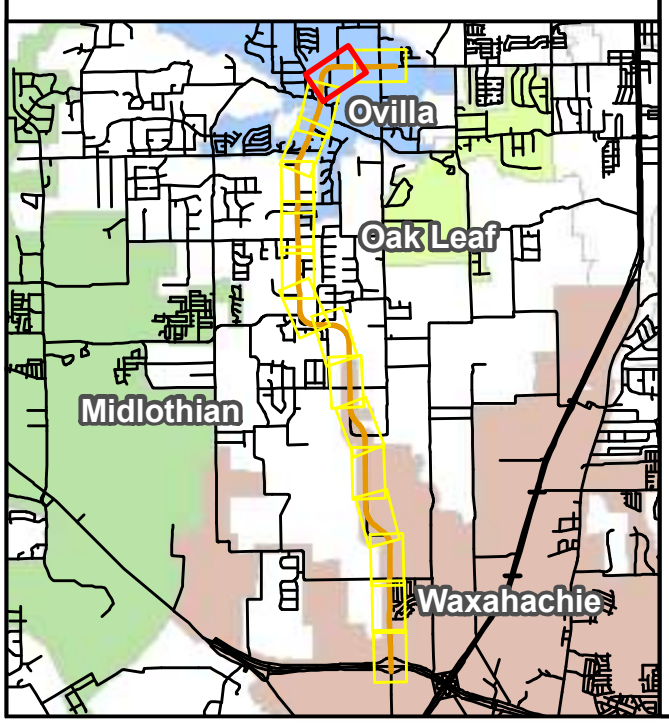

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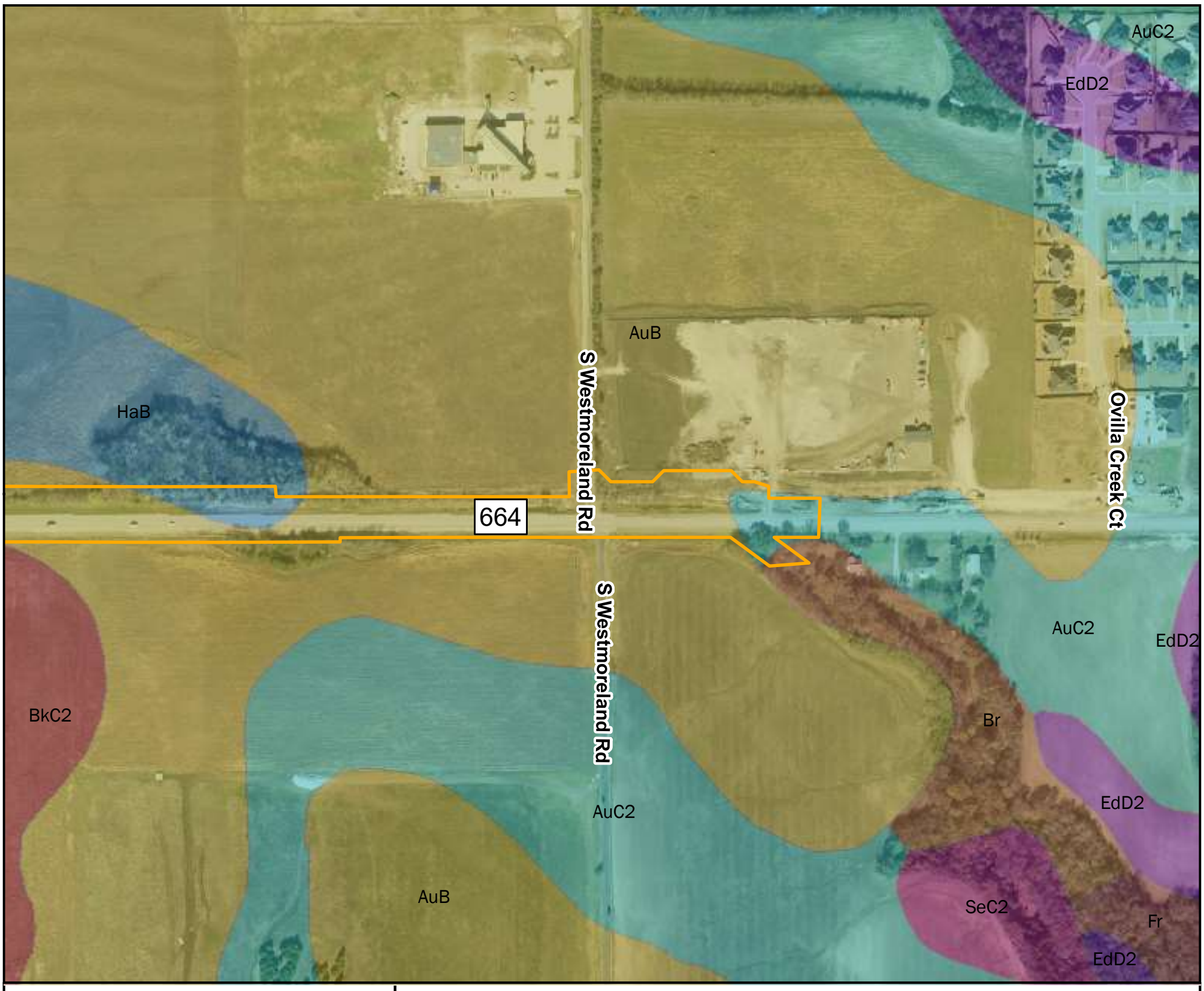

FIGURE 5

NRCS SOIL MAP
FM 664

FARM-TO-MARKET ROAD (FM) 664
From U.S. Highway (US) 287
To Westmoreland Road
Ellis County
CSJs: 1051-01-038 and 1051-01-052

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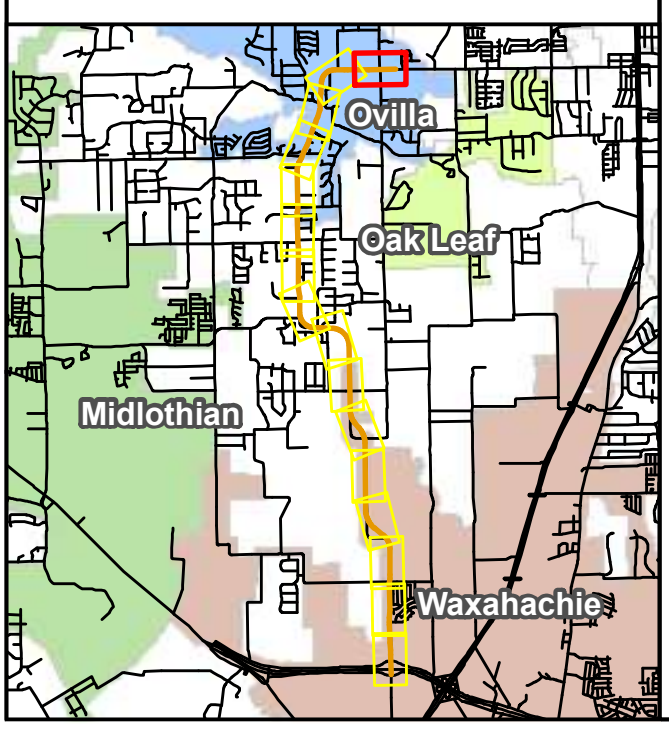

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FIGURE 6

FEMA FIRM MAP

FARM-TO-MARKET ROAD (FM) 664
From U.S. Highway (US) 287
To Westmoreland Road
Ellis County
CSJs: 1051-01-038 and 1051-01-052

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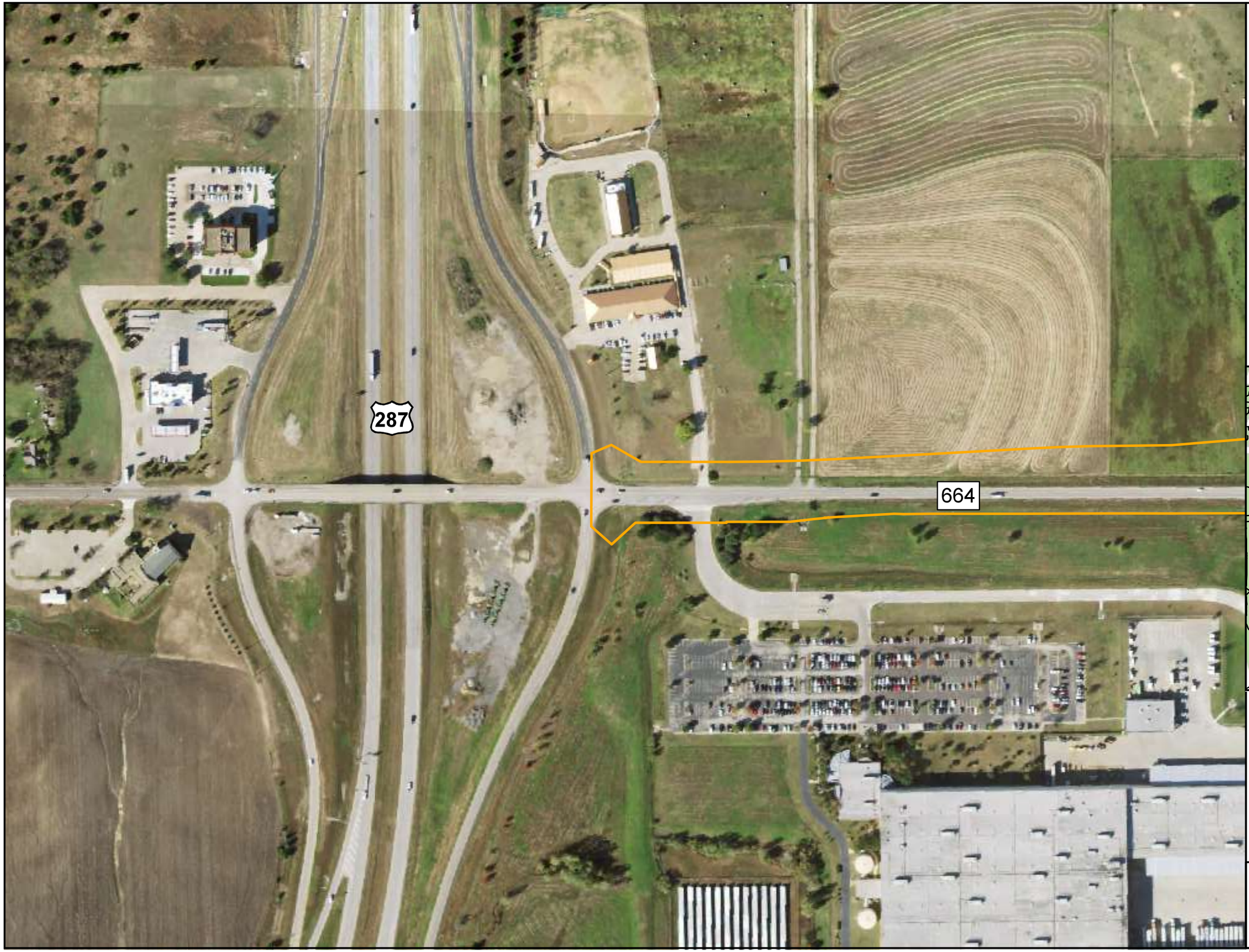
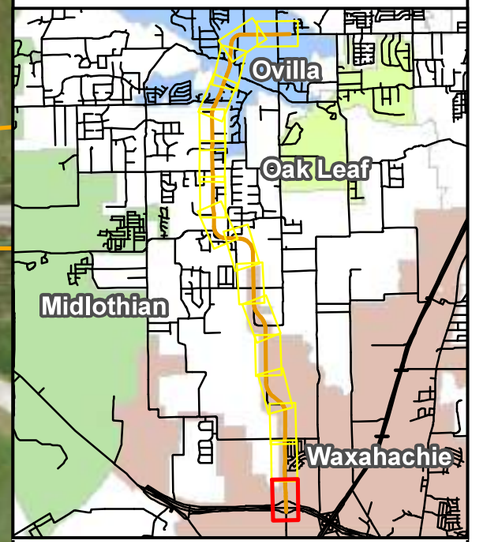
0 250 500 Feet





Legend

- Proposed Project Area
- Delineated Streams
- Zone AE Floodplain Area

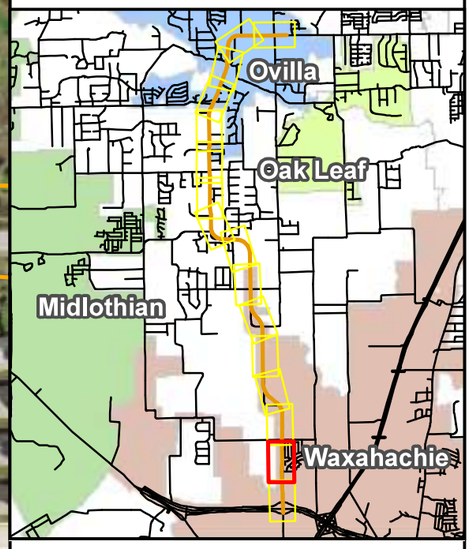
Base Map Sources: TNRIS (2018); FEMA FIRM Panels 48139C0050F, 48139C0175F, 48139C0200F and 48139C0190F (effective 6/3/2013)

FIGURE 6

FEMA FIRM MAP

FARM-TO-MARKET ROAD (FM) 664
From U.S. Highway (US) 287
To Westmoreland Road
Ellis County
CSJs: 1051-01-038 and 1051-01-052

Page 2 of 16



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Legend

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FARM-TO-MARKET ROAD (FM) 664
From U.S. Highway (US) 287
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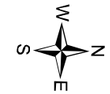
Ellis County
CSJs: 1051-01-038 and 1051-01-052

Page 3 of 16



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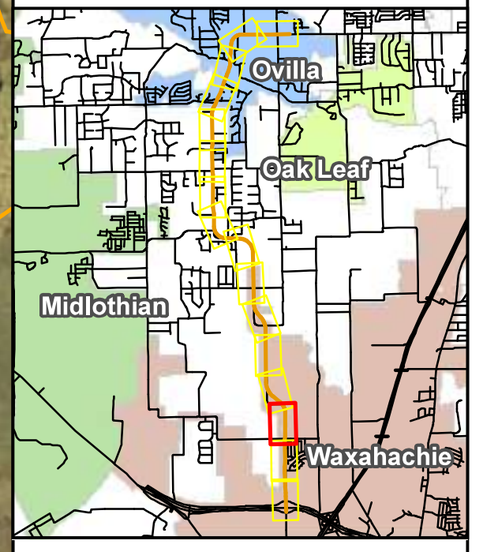

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Ellis County
CSJs: 1051-01-038 and 1051-01-052

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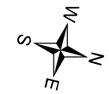

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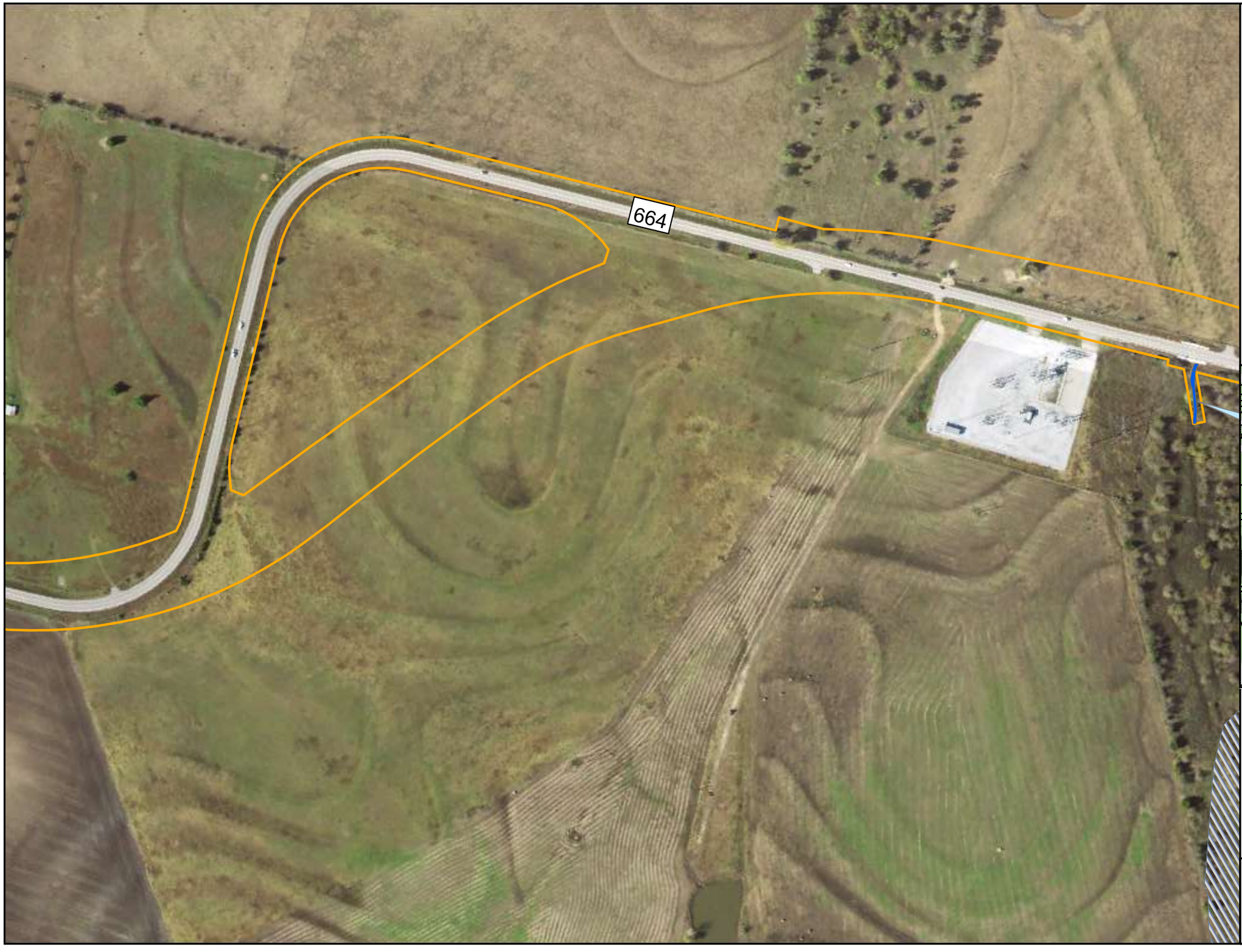

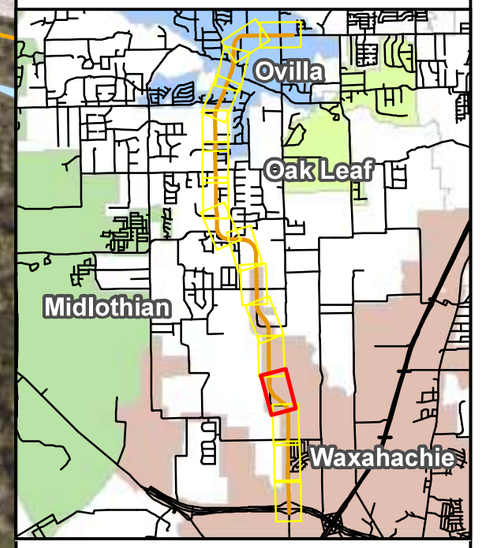

Legend

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- Delineated Streams
- Zone AE Floodplain Area

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Ellis County
CSJs: 1051-01-038 and 1051-01-052

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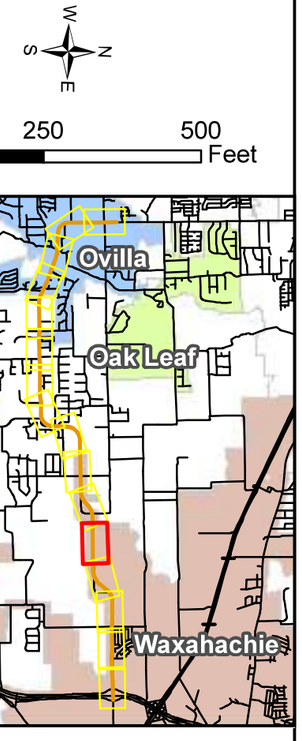

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Legend

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FARM-TO-MARKET ROAD (FM) 664
From U.S. Highway (US) 287
To Westmoreland Road
Ellis County
CSJs: 1051-01-038 and 1051-01-052

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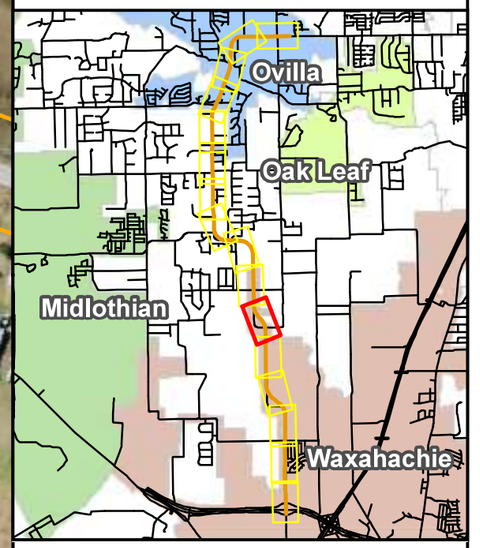
0 250 500 Feet



664

S Westmoreland Rd

Legend

- Proposed Project Area
- Delineated Streams
- Zone AE Floodplain Area

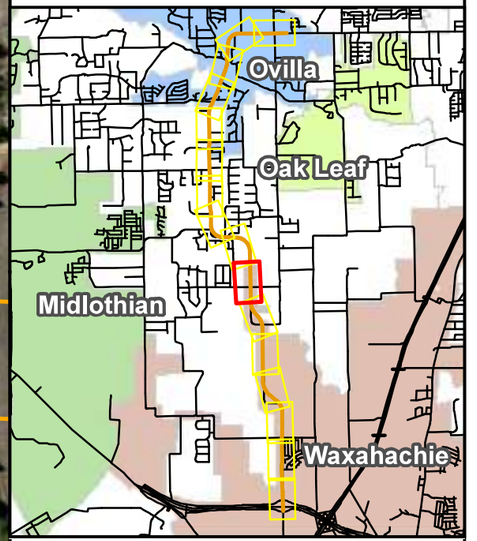
Base Map Sources: TNRIS (2018); FEMA FIRM Panels 48139C0050F, 48139C0175F, 48139C0200F and 48139C0190F (effective 6/3/2013)

FIGURE 6

FEMA FIRM MAP

FARM-TO-MARKET ROAD (FM) 664
From U.S. Highway (US) 287
To Westmoreland Road
Ellis County
CSJs: 1051-01-038 and 1051-01-052

Page 7 of 16



Legend

- Proposed Project Area
- Delineated Streams
- Zone AE Floodplain Area

Base Map Sources: TNRIS (2018); FEMA FIRM Panels 48139C0050F, 48139C0175F, 48139C0200F and 48139C0190F (effective 6/3/2013)

FIGURE 6

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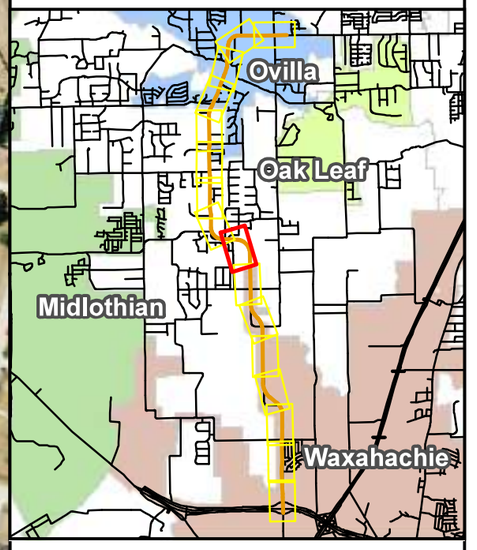
FARM-TO-MARKET ROAD (FM) 664
From U.S. Highway (US) 287
To Westmoreland Road
Ellis County
CSJs: 1051-01-038 and 1051-01-052



0 250 500 Feet

Legend

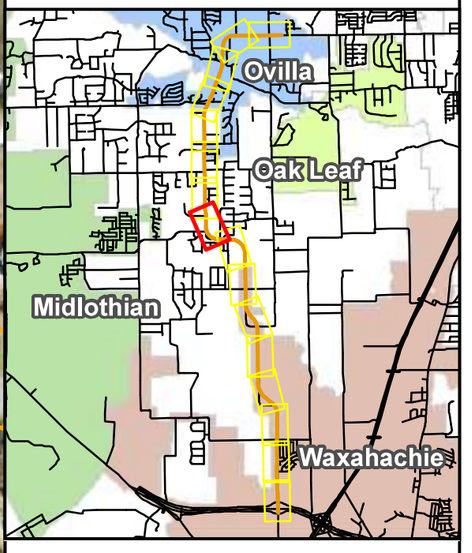
- Proposed Project Area
- Delineated Streams
- Zone AE Floodplain Area

Base Map Sources: TNRIS (2018); FEMA FIRM Panels 48139C0050F, 48139C0175F, 48139C0200F and 48139C0190F (effective 6/3/2013)

FIGURE 6

FEMA FIRM MAP

FARM-TO-MARKET ROAD (FM) 664
From U.S. Highway (US) 287
To Westmoreland Road
Ellis County
CSJs: 1051-01-038 and 1051-01-052



0 250 500 Feet

Legend

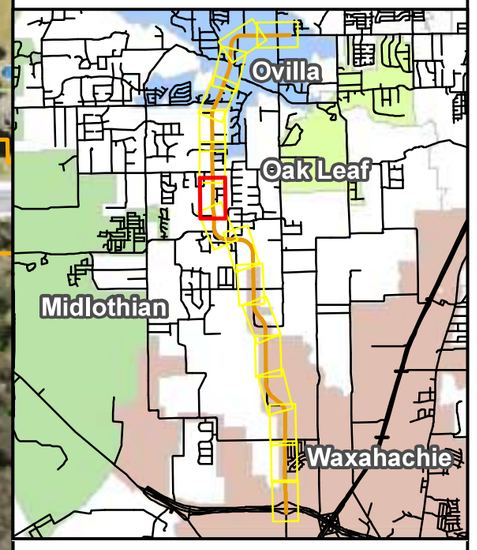
- Proposed Project Area
- Delineated Streams
- Zone AE Floodplain Area

Base Map Sources: TNRIS (2018); FEMA FIRM Panels 48139C0050F, 48139C0175F, 48139C0200F and 48139C0190F (effective 6/3/2013)

FIGURE 6

FEMA FIRM MAP

FARM-TO-MARKET ROAD (FM) 664
From U.S. Highway (US) 287
To Westmoreland Road
Ellis County
CSJs: 1051-01-038 and 1051-01-052



W S N E

0 250 500 Feet

Legend

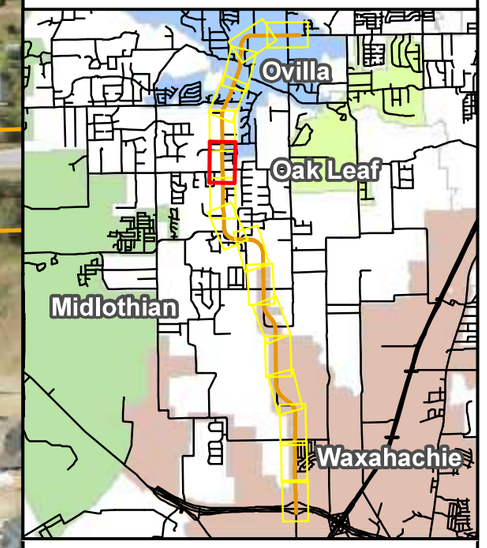
- Proposed Project Area
- Delineated Streams
- Zone AE Floodplain Area

Base Map Sources: TNRIS (2018); FEMA FIRM Panels 48139C0050F, 48139C0175F, 48139C0200F and 48139C0190F (effective 6/3/2013)

FIGURE 6

FEMA FIRM MAP

FARM-TO-MARKET ROAD (FM) 664
From U.S. Highway (US) 287
To Westmoreland Road
Ellis County
CSJs: 1051-01-038 and 1051-01-052



0 250 500 Feet

Legend

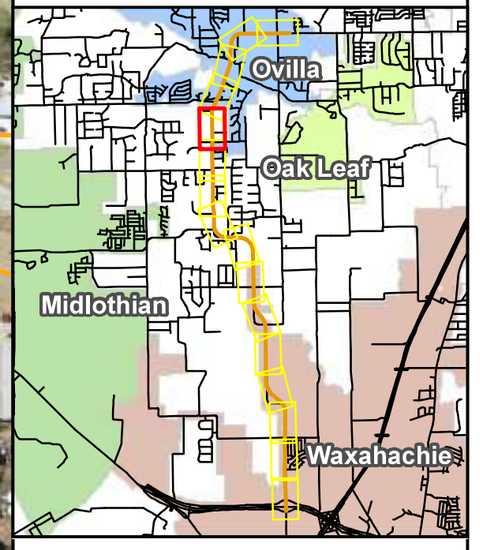
- Proposed Project Area
- Delineated Streams
- Zone AE Floodplain Area

Base Map Sources: TNRIS (2018); FEMA FIRM Panels 48139C0050F, 48139C0175F, 48139C0200F and 48139C0190F (effective 6/3/2013)

FIGURE 6

FEMA FIRM MAP

FARM-TO-MARKET ROAD (FM) 664
From U.S. Highway (US) 287
To Westmoreland Road
Ellis County
CSJs: 1051-01-038 and 1051-01-052



W
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0 250 500 Feet

Legend

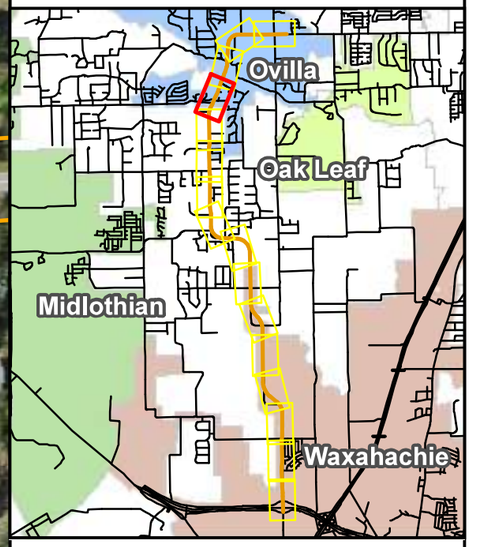
- Proposed Project Area
- Delineated Streams
- Zone AE Floodplain Area

Base Map Sources: TNRIS (2018); FEMA FIRM Panels 48139C0050F, 48139C0175F, 48139C0200F and 48139C0190F (effective 6/3/2013)

FIGURE 6

FEMA FIRM MAP

FARM-TO-MARKET ROAD (FM) 664
From U.S. Highway (US) 287
To Westmoreland Road
Ellis County
CSJs: 1051-01-038 and 1051-01-052



0 250 500 Feet

Legend

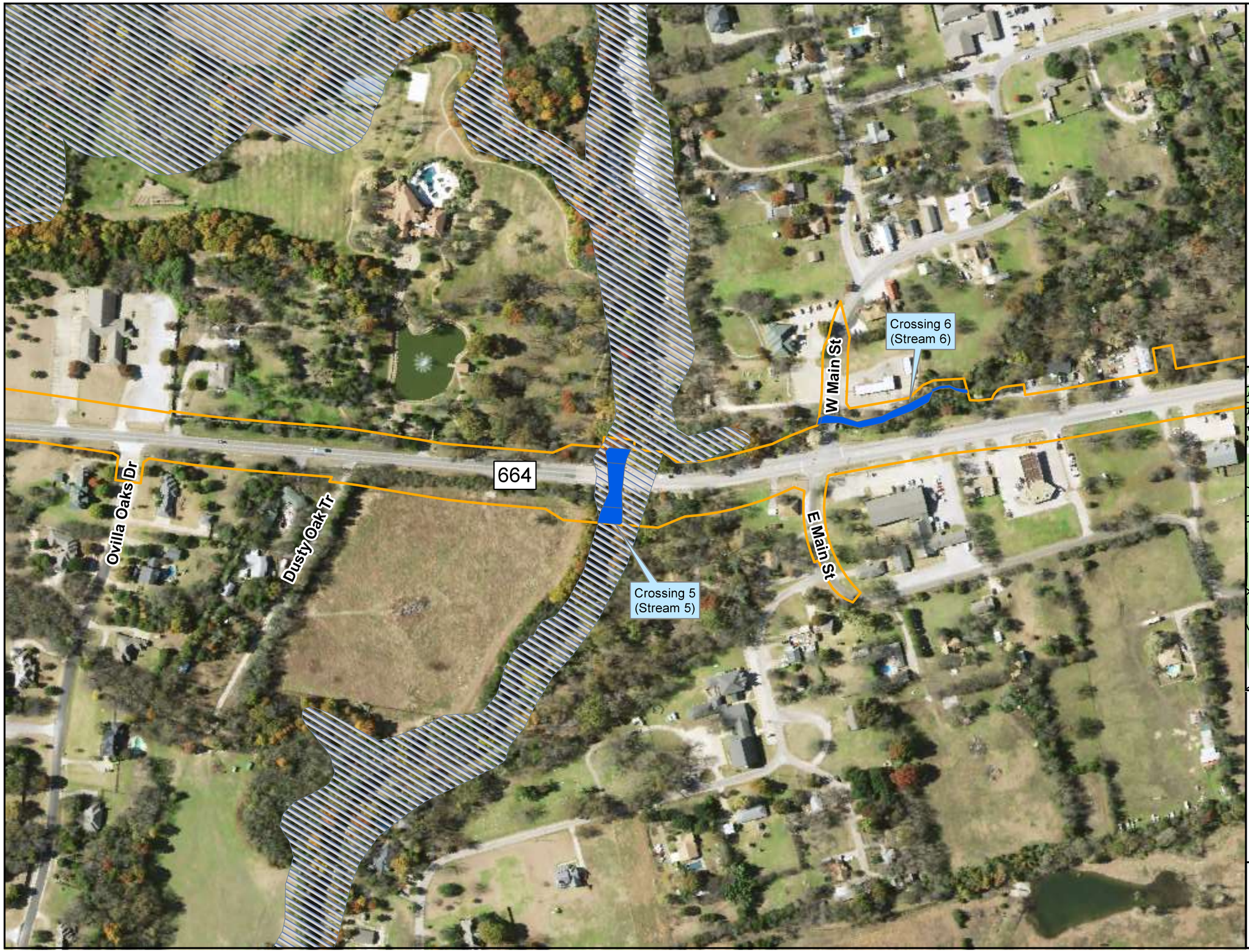
- Proposed Project Area
- Delineated Streams
- Zone AE Floodplain Area

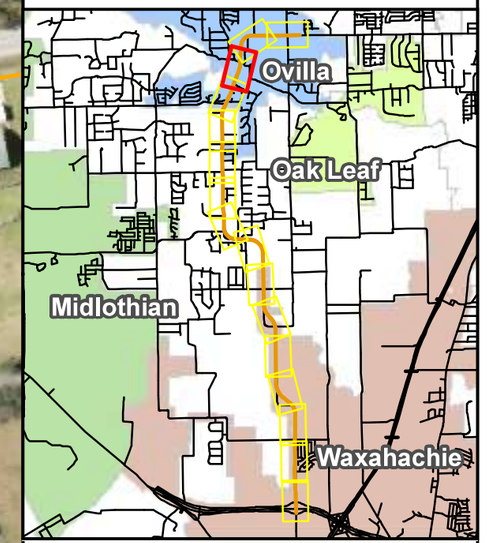
Base Map Sources: TNRIS (2018); FEMA FIRM Panels 48139C0050F, 48139C0175F, 48139C0200F and 48139C0190F (effective 6/3/2013)

FIGURE 6

FEMA FIRM MAP

FARM-TO-MARKET ROAD (FM) 664
From U.S. Highway (US) 287
To Westmoreland Road
Ellis County
CSJs: 1051-01-038 and 1051-01-052





0 250 500 Feet

Legend

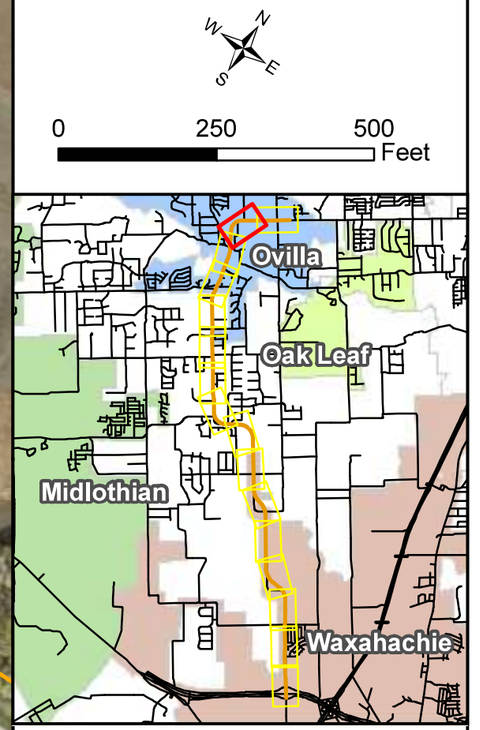
- Proposed Project Area
- Delineated Streams
- Zone AE Floodplain Area

Base Map Sources: TNRIS (2018); FEMA FIRM Panels 48139C0050F, 48139C0175F, 48139C0200F and 48139C0190F (effective 6/3/2013)

FIGURE 6

FEMA FIRM MAP

FARM-TO-MARKET ROAD (FM) 664
From U.S. Highway (US) 287
To Westmoreland Road
Ellis County
CSJs: 1051-01-038 and 1051-01-052



0 250 500 Feet

Legend

- Proposed Project Area
- Delineated Streams
- Zone AE Floodplain Area

Base Map Sources: TNRIS (2018); FEMA FIRM Panels 48139C0050F, 48139C0175F, 48139C0200F and 48139C0190F (effective 6/3/2013)

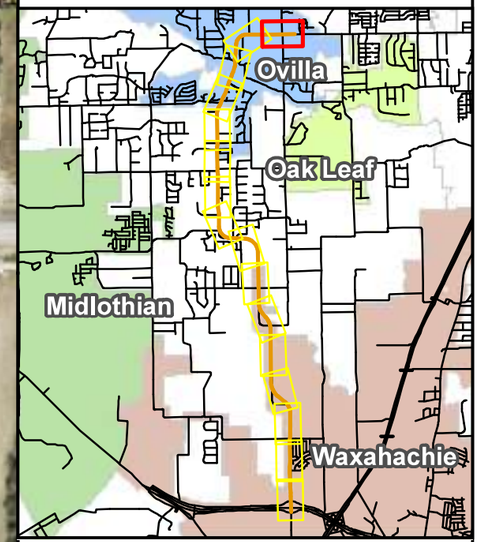
FIGURE 6

FEMA FIRM MAP

FARM-TO-MARKET ROAD (FM) 664
From U.S. Highway (US) 287
To Westmoreland Road
Ellis County
CSJs: 1051-01-038 and 1051-01-052

N
W E
S

0 250 500 Feet



Legend

- Proposed Project Area
- Delineated Streams
- Zone AE Floodplain Area

Base Map Sources: TNRIS (2018); FEMA FIRM Panels 48139C0050F, 48139C0175F, 48139C0200F and 48139C0190F (effective 6/3/2013)

Waterbody or wetland number	Name	Type	Section 404 (waters of the U.S.)	Delineated Length (LF)	Delineated Area (acres)	OHWM (feet)	OHWM Depth (LF)	Temporary Impact	Permanent Impact
1A	unnamed tributary to Irving Branch	Ephemeral	Yes	92	0.01	3	1	0	92 LF (0.01 ac)
1B	unnamed tributary to Irving Branch	Intermittent	Yes	444	0.06	10	1	67 LF (0.02 ac)	270 LF (0.03 ac)

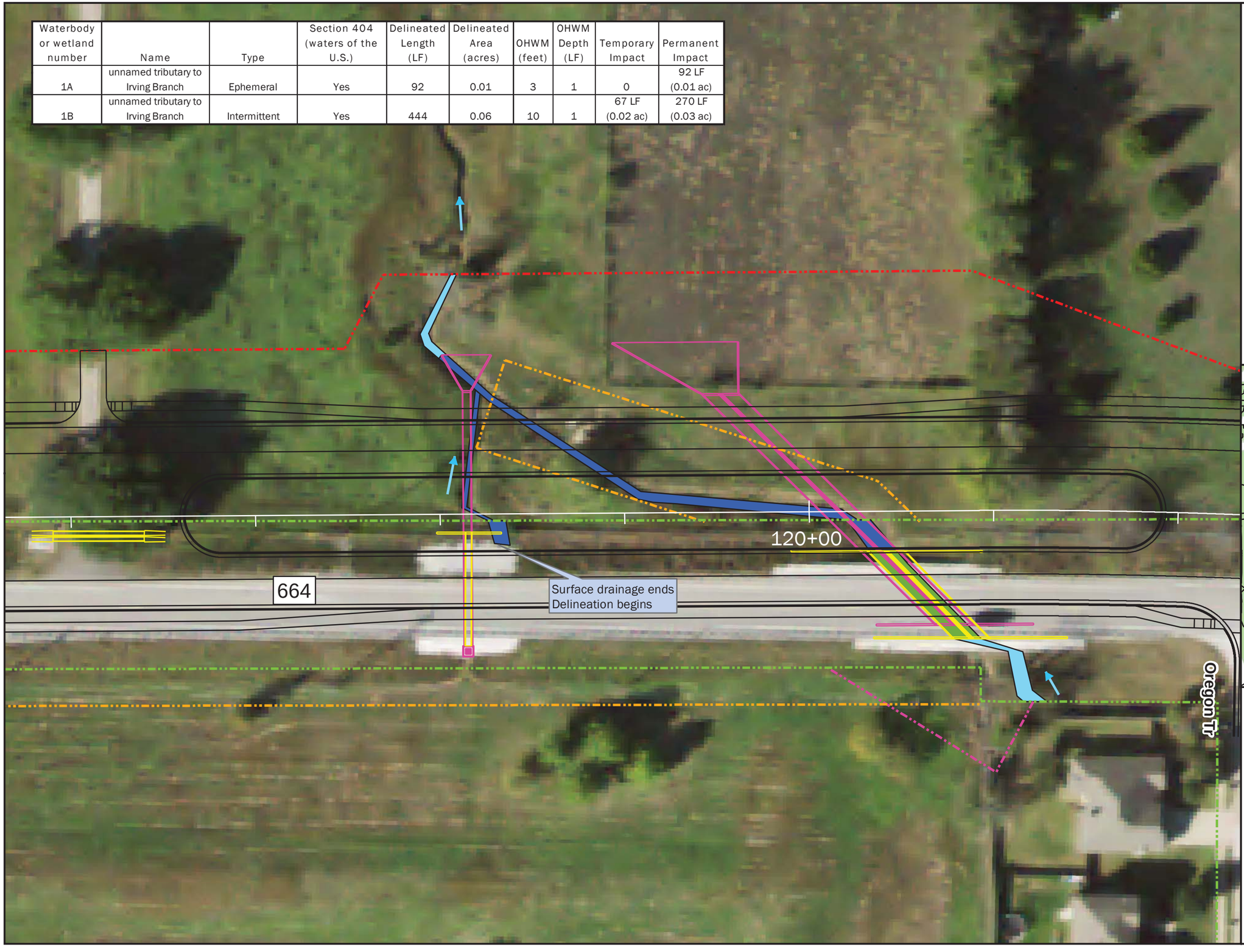


FIGURE 7

PROJECT LAYOUT MAP
CROSSING 1

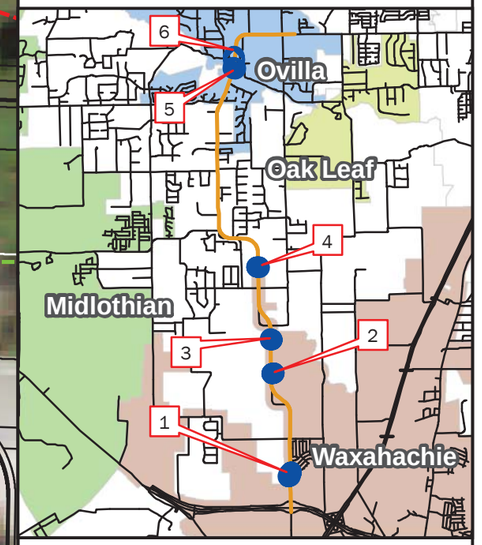
FARM-TO-MARKET ROAD (FM) 664
From U.S. Highway (US) 287
To Westmoreland Road
Ellis County
CSJs: 1051-01-038 and 1051-01-052

SHEET 1 of 6

W
S N
E

0 50 100
Feet

Base Map Source: TNRIS (2018)



Legend
- Existing ROW
- Proposed ROW
- Existing Easement
- Proposed Drainage Easement
- Existing Culvert
- Proposed Culvert
- Proposed Pavement/Bridge
- Stream (No Impact)
- Stream (Permanent Impact)
- Stream (Temporary Impact)
- 100-Year Floodplain
- Flow Direction
- Proposed Bridge Column

Waterbody or wetland number	Name	Type	Section 404 (waters of the U.S.)	Delineated Length (LF)	Delineated Area (acres)	OHWM (feet)	OHWM Depth (LF)	Temporary Impact	Permanent Impact
2	unnamed tributary to South Grove Creek	Intermittent	Yes	158	0.3	8	6	0	21 LF (0.01 ac)

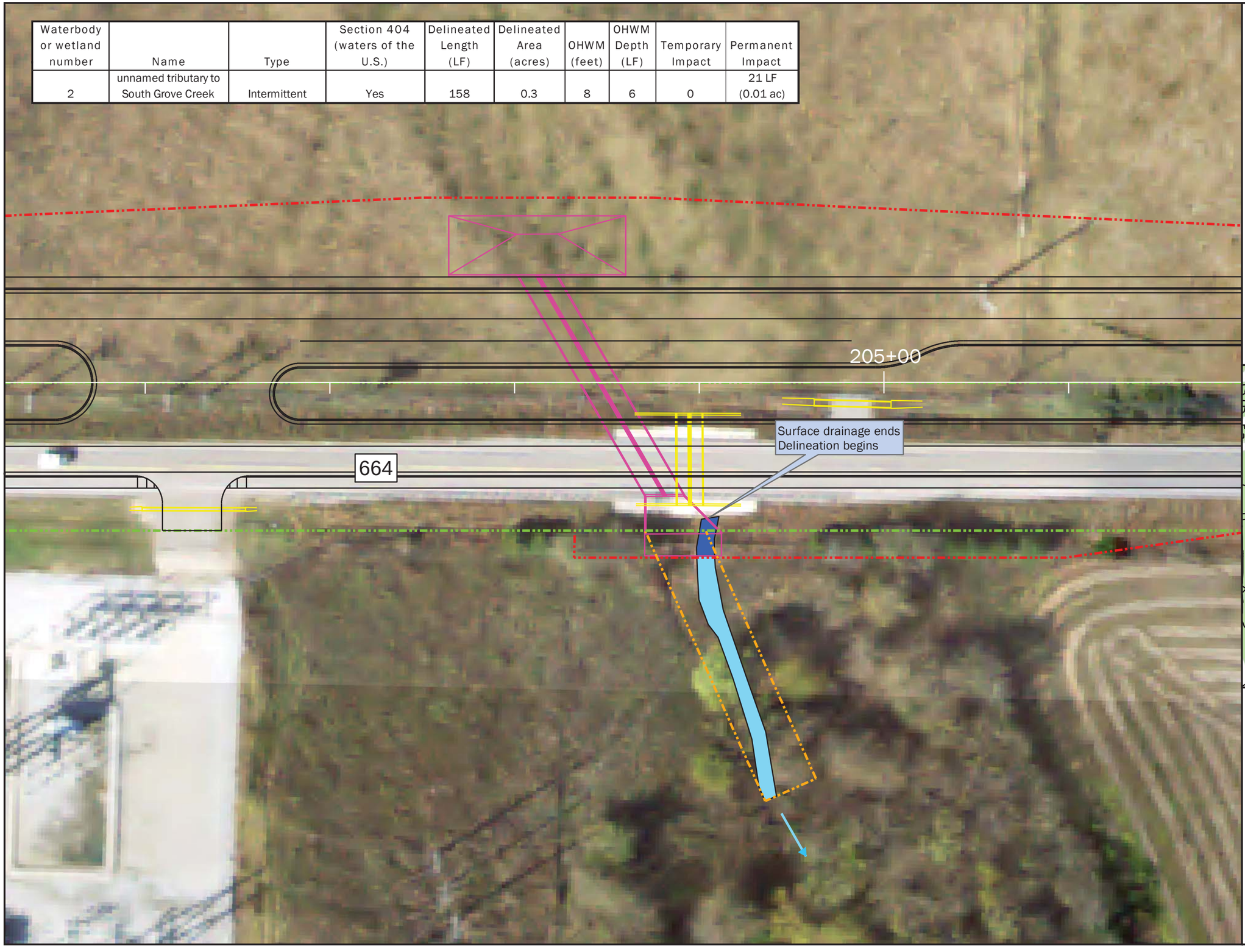


FIGURE 7

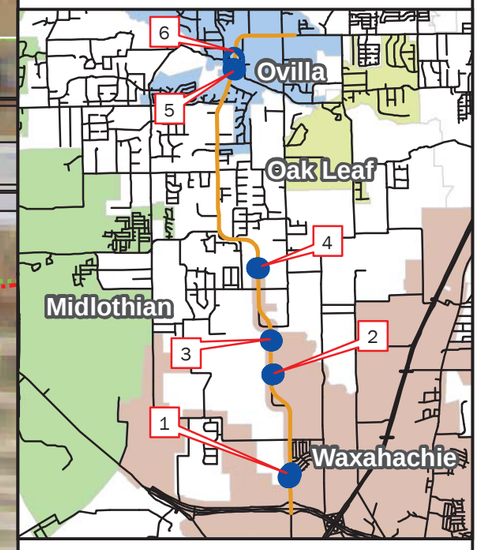
PROJECT LAYOUT MAP
CROSSING 2

FARM-TO-MARKET ROAD (FM) 664
From U.S. Highway (US) 287
To Westmoreland Road
Ellis County
CSJs: 1051-01-038 and 1051-01-052

SHEET 2 of 6

0 50 100 Feet

Base Map Source: TNRIS (2018)



Legend

- Existing ROW
- Proposed ROW
- Existing Easement
- Proposed Drainage Easement
- Existing Culvert
- Proposed Culvert
- Proposed Pavement/Bridge
- Stream (No Impact)
- Stream (Permanent Impact)
- Stream (Temporary Impact)
- 100-Year Floodplain
- Flow Direction
- Proposed Bridge Column

Waterbody or wetland number	Name	Type	Section 404 (waters of the U.S.)	Delineated Length (LF)	Delineated Area (acres)	OHWM (feet)	OHWM Depth (LF)	Temporary Impact	Permanent Impact
3	unnamed tributary to South Grove Creek	Intermittent	Yes	158	0.3	8	6	55 LF (0.01 ac)	83 LF (0.02 ac)

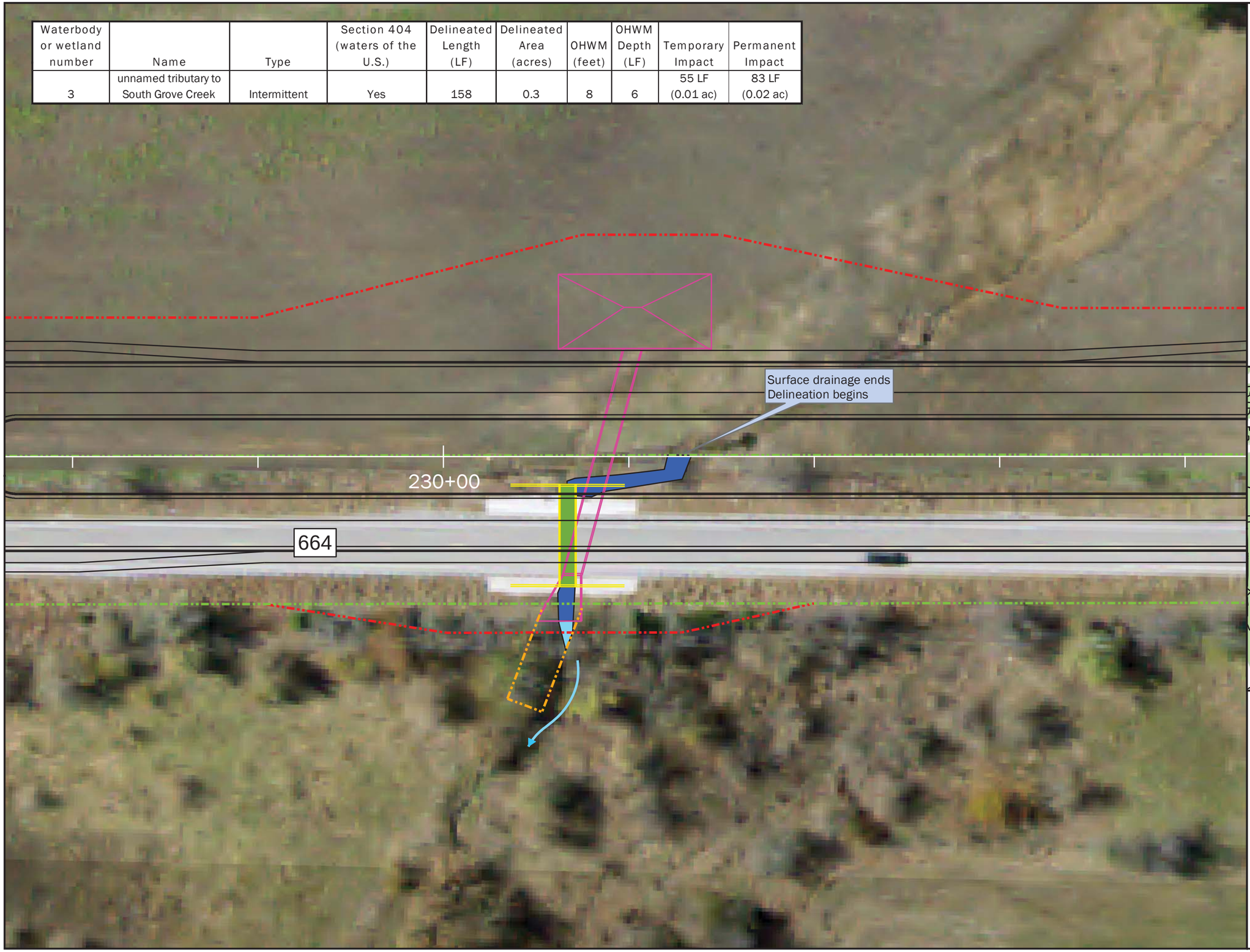


FIGURE 7

PROJECT LAYOUT MAP
CROSSING 3

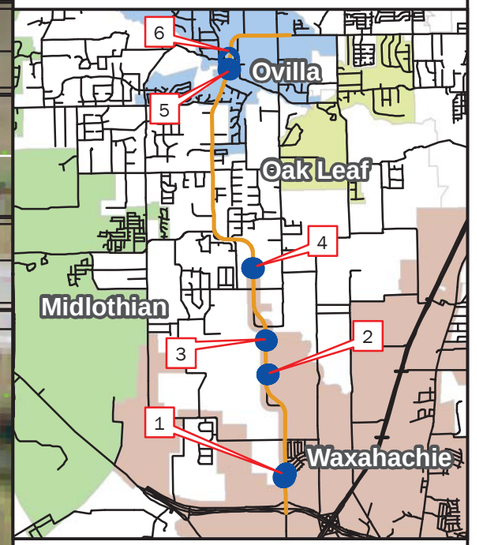
FARM-TO-MARKET ROAD (FM) 664
From U.S. Highway (US) 287
To Westmoreland Road
Ellis County
CSJs: 1051-01-038 and 1051-01-052

SHEET 3 of 6

W
S
N
E

0 50 100 Feet

Base Map Source: TNRIS (2018)



Legend
- Existing ROW
- Proposed ROW
- Existing Easement
- Proposed Drainage Easement
- Existing Culvert
- Proposed Culvert
- Proposed Pavement/Bridge
- Stream (No Impact)
- Stream (Permanent Impact)
- Stream (Temporary Impact)
- 100-Year Floodplain
- Flow Direction
- Proposed Bridge Column

Waterbody or wetland number	Name	Type	Section 404 (waters of the U.S.)	Delineated Length (LF)	Delineated Area (acres)	OHWM (feet)	OHWM Depth (LF)	Temporary Impact	Permanent Impact
4	South Grove Creek	Ephemeral	Yes	190	0.05	10	0.5	0	158 LF (0.04 ac)

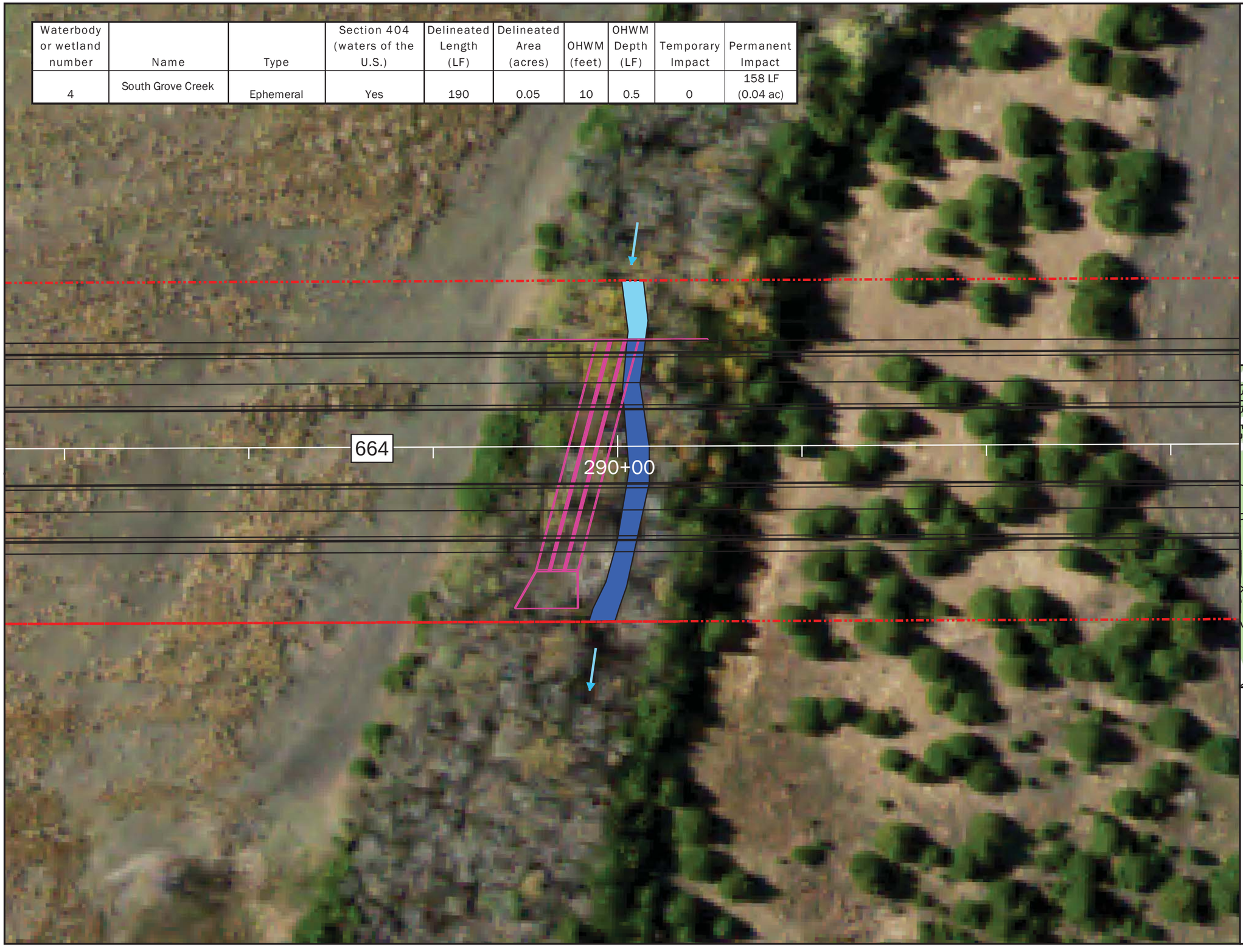


FIGURE 7

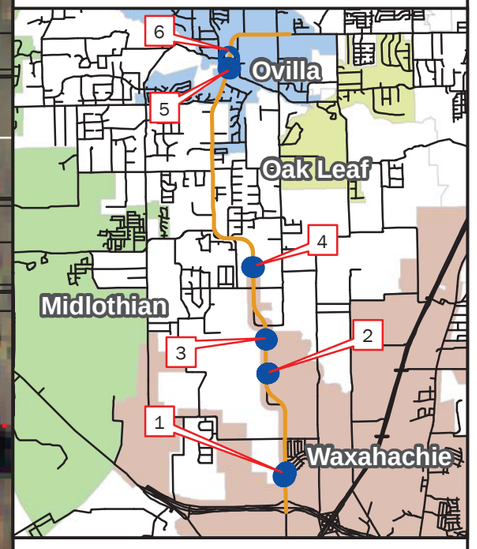
PROJECT LAYOUT MAP
CROSSING 4

FARM-TO-MARKET ROAD (FM) 664
From U.S. Highway (US) 287
To Westmoreland Road
Ellis County
CSJs: 1051-01-038 and 1051-01-052

SHEET 4 of 6

0 50 100 Feet

Base Map Source: TNRIS (2018)



Legend

- Existing ROW
- Proposed ROW
- Existing Easement
- Proposed Drainage Easement
- Existing Culvert
- Proposed Culvert
- Proposed Pavement/Bridge
- Stream (No Impact)
- Stream (Permanent Impact)
- Stream (Temporary Impact)
- 100-Year Floodplain
- Flow Direction
- Proposed Bridge Column

Waterbody or wetland number	Name	Type	Section 404 (waters of the U.S.)	Delineated Length (LF)	Delineated Area (acres)	OHWM (feet)	OHWM Depth (LF)	Temporary Impact	Permanent Impact
5	Red Oak Creek	Perennial		197	0.21	45	2	114 LF (0.11 ac)	0

664

470+00

FIGURE 7

PROJECT LAYOUT MAP
CROSSING 5

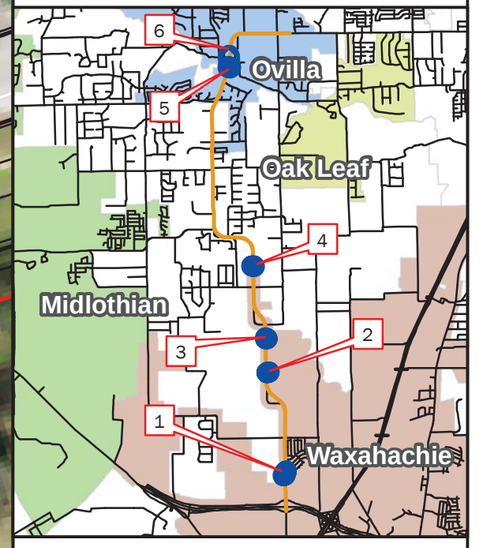
FARM-TO-MARKET ROAD (FM) 664
From U.S. Highway (US) 287
To Westmoreland Road
Ellis County
CSJs: 1051-01-038 and 1051-01-052

SHEET 5 of 6

N
W
E
S

0 50 100 Feet

Base Map Source: TNRIS (2018)



Legend

- Existing ROW
- Proposed ROW
- Existing Easement
- Proposed Drainage Easement
- Existing Culvert
- Proposed Culvert
- Proposed Pavement/Bridge
- Stream (No Impact)
- Stream (Permanent Impact)
- Stream (Temporary Impact)
- 100-Year Floodplain
- Flow Direction
- Proposed Bridge Column

Waterbody or wetland number	Name	Type	Section 404 (waters of the U.S.)	Delineated Length (LF)	Delineated Area (acres)	OHWM (feet)	OHWM Depth (LF)	Temporary Impact	Permanent Impact
6	unnamed tributary to Red Oak Creek	Intermittent	Yes	417	0.15	16	1	0	312 LF (0.13 ac)

W Main St

480+00

664

E Main St

FIGURE 7

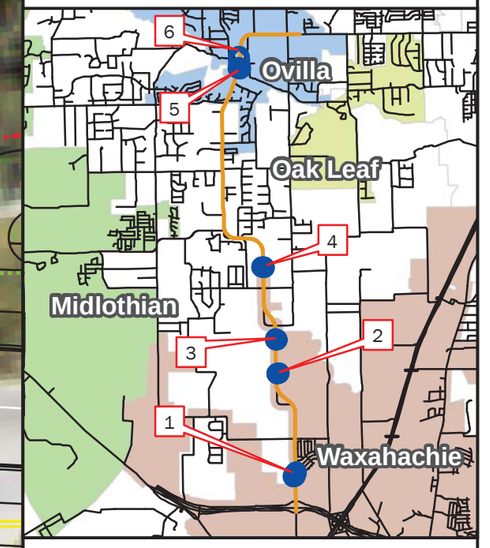
PROJECT LAYOUT MAP
CROSSING 6

FARM-TO-MARKET ROAD (FM) 664
From U.S. Highway (US) 287
To Westmoreland Road
Ellis County
CSJs: 1051-01-038 and 1051-01-052

SHEET 6 of 6

0 50 100 Feet

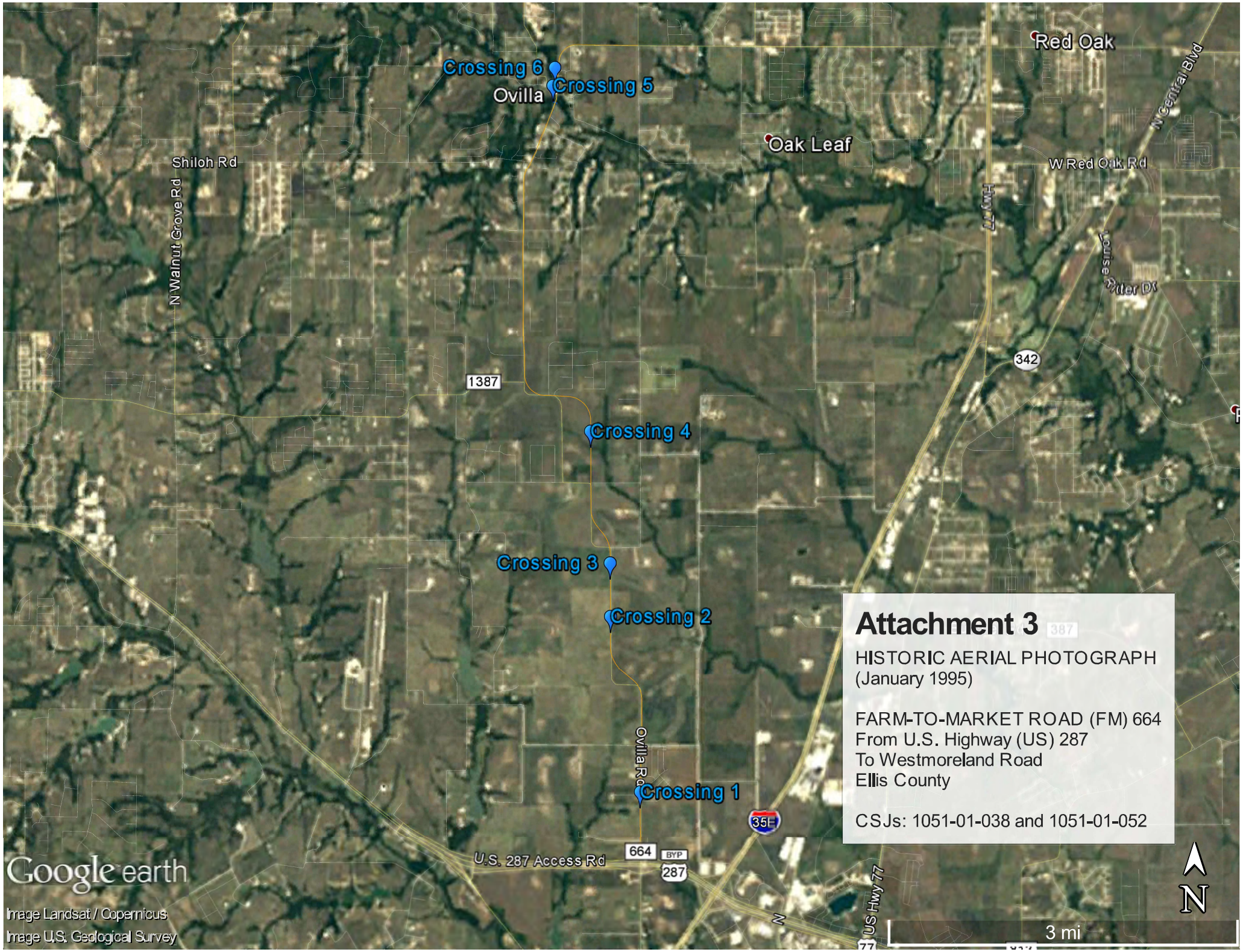
Base Map Source: TNRIS (2018)

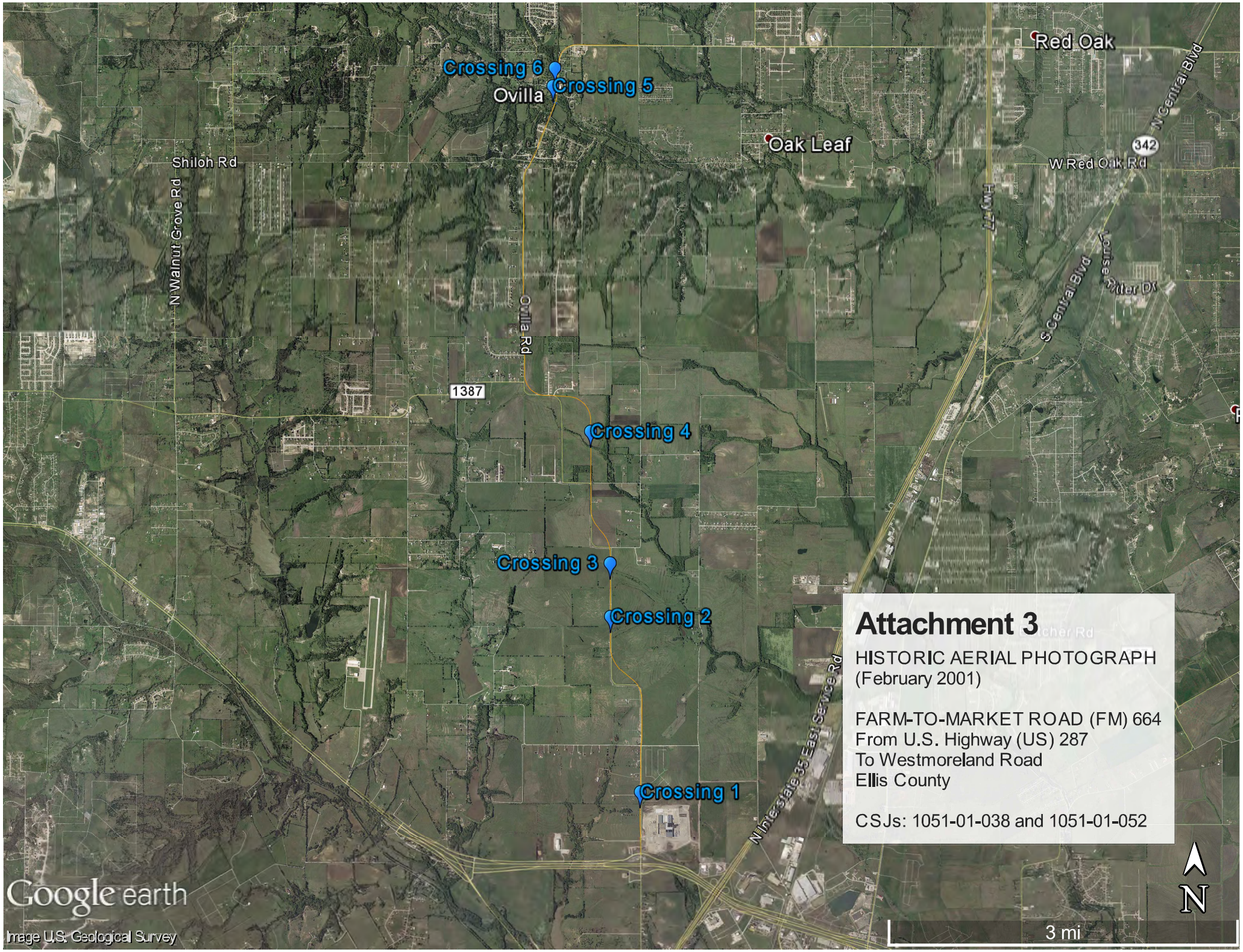


Legend

- Existing ROW
- Proposed ROW
- Existing Easement
- Proposed Drainage Easement
- Existing Culvert
- Proposed Culvert
- Proposed Pavement/Bridge
- Stream (No Impact)
- Stream (Permanent Impact)
- Stream (Temporary Impact)
- 100-Year Floodplain
- Flow Direction
- Proposed Bridge Column

Attachment 2 – Historical Aerial Photographs


Crossing 6
Crossing 5
Ovilla
Red Oak
Oak Leaf
Shiloh Rd
N Walnut Grove Rd
W Red Oak Rd
N Central Blvd
Hwy 77
Louise Ryder Dr
342
1387
Crossing 4
Crossing 3
Crossing 2
Ovilla Rd
Crossing 1
35E
664
BYP
287
U.S. 287 Access Rd
US Hwy 77
Attachment 3
HISTORIC AERIAL PHOTOGRAPH
(January 1995)
FARM-TO-MARKET ROAD (FM) 664
From U.S. Highway (US) 287
To Westmoreland Road
Ellis County
CSJs: 1051-01-038 and 1051-01-052
N
3 mi
Google earth
Image Landsat / Copernicus
Image U.S. Geological Survey

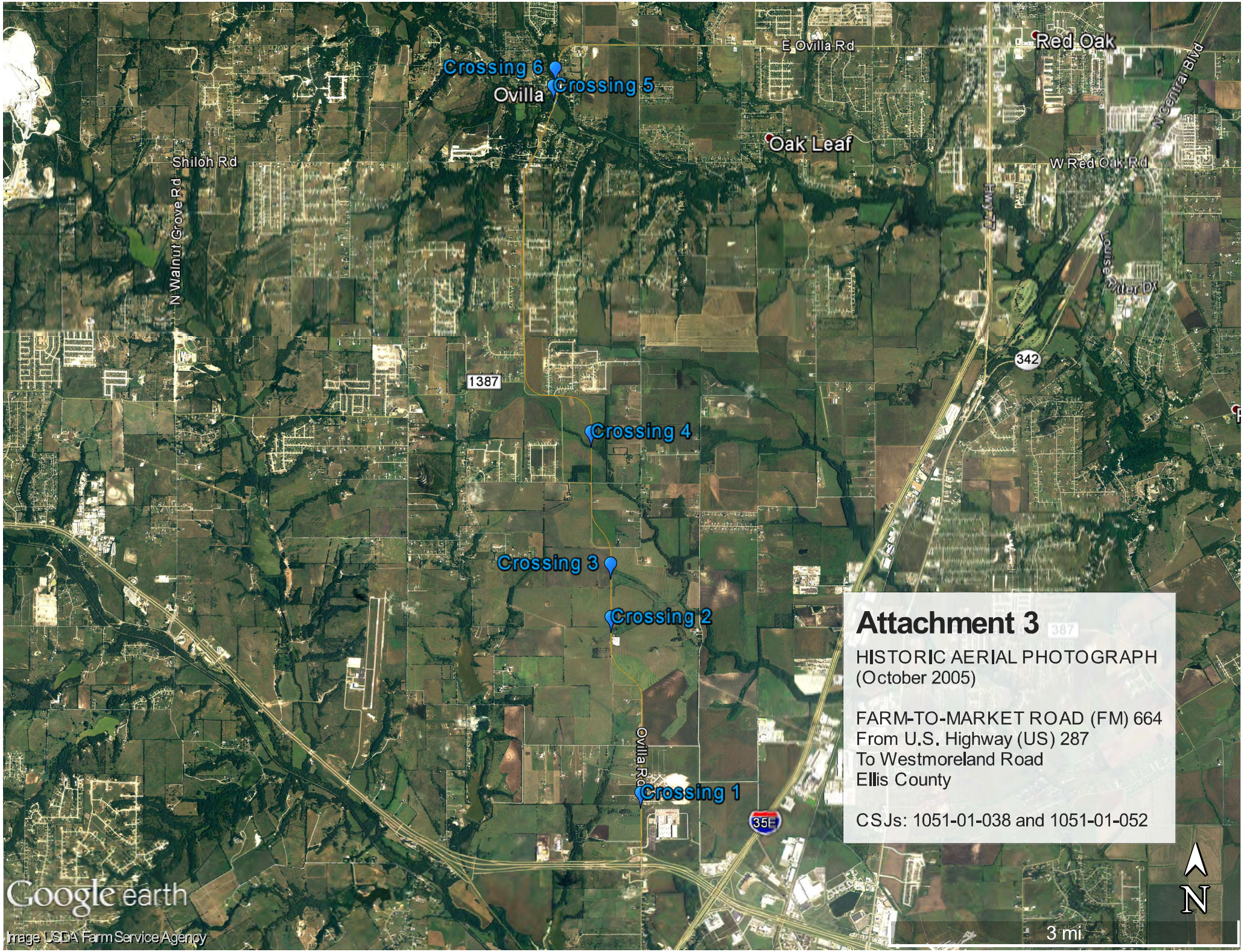


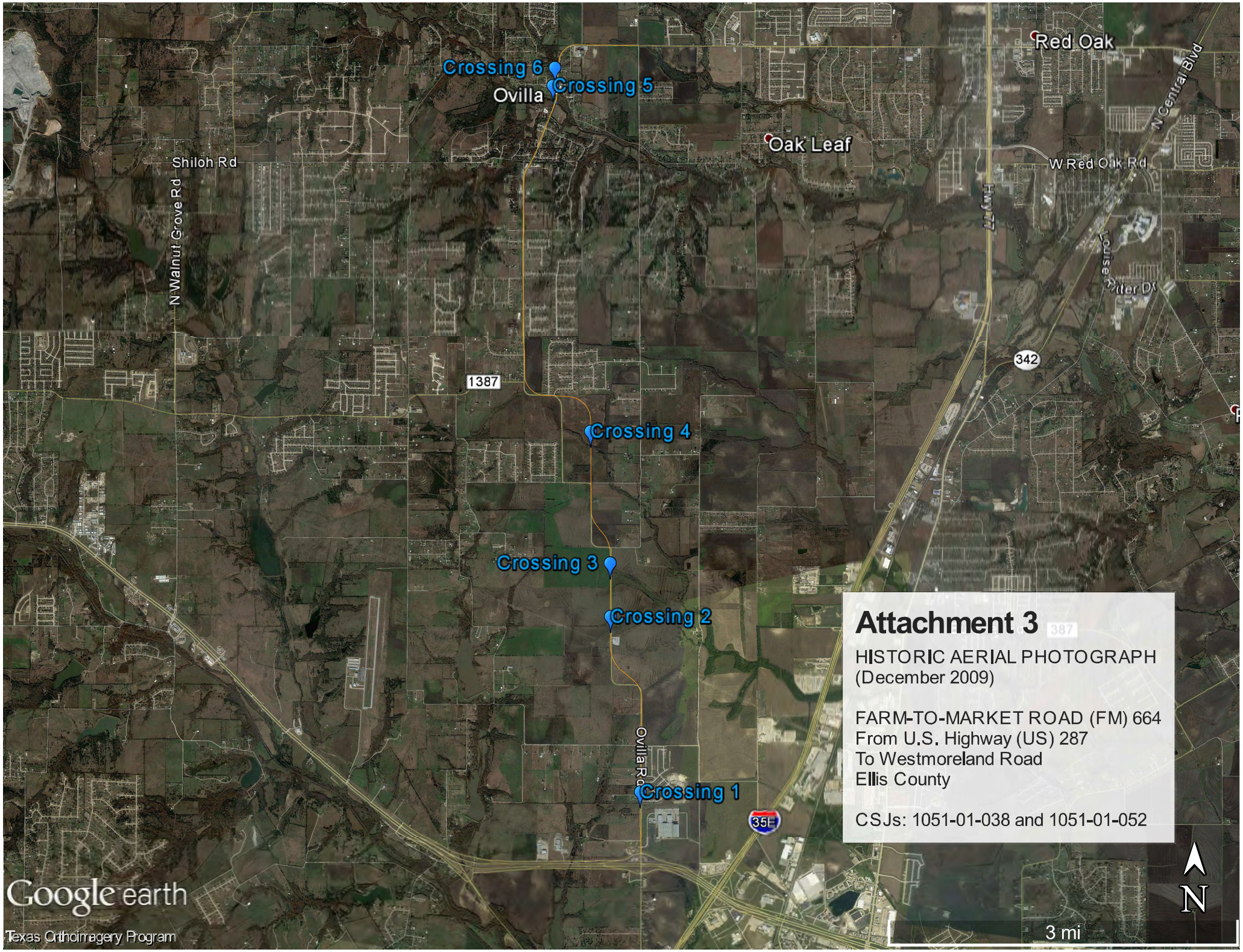
Attachment 3

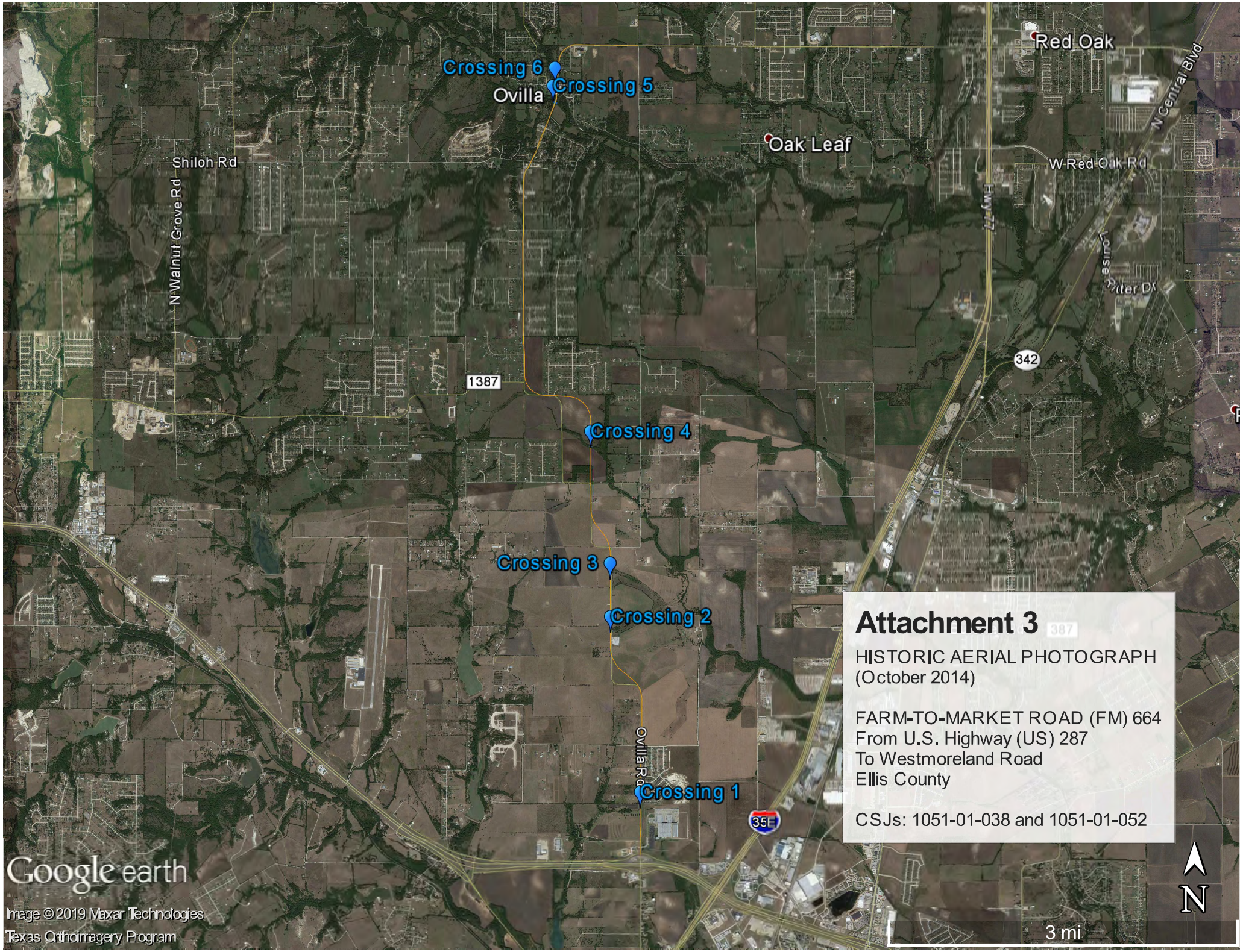
HISTORIC AERIAL PHOTOGRAPH
(February 2001)

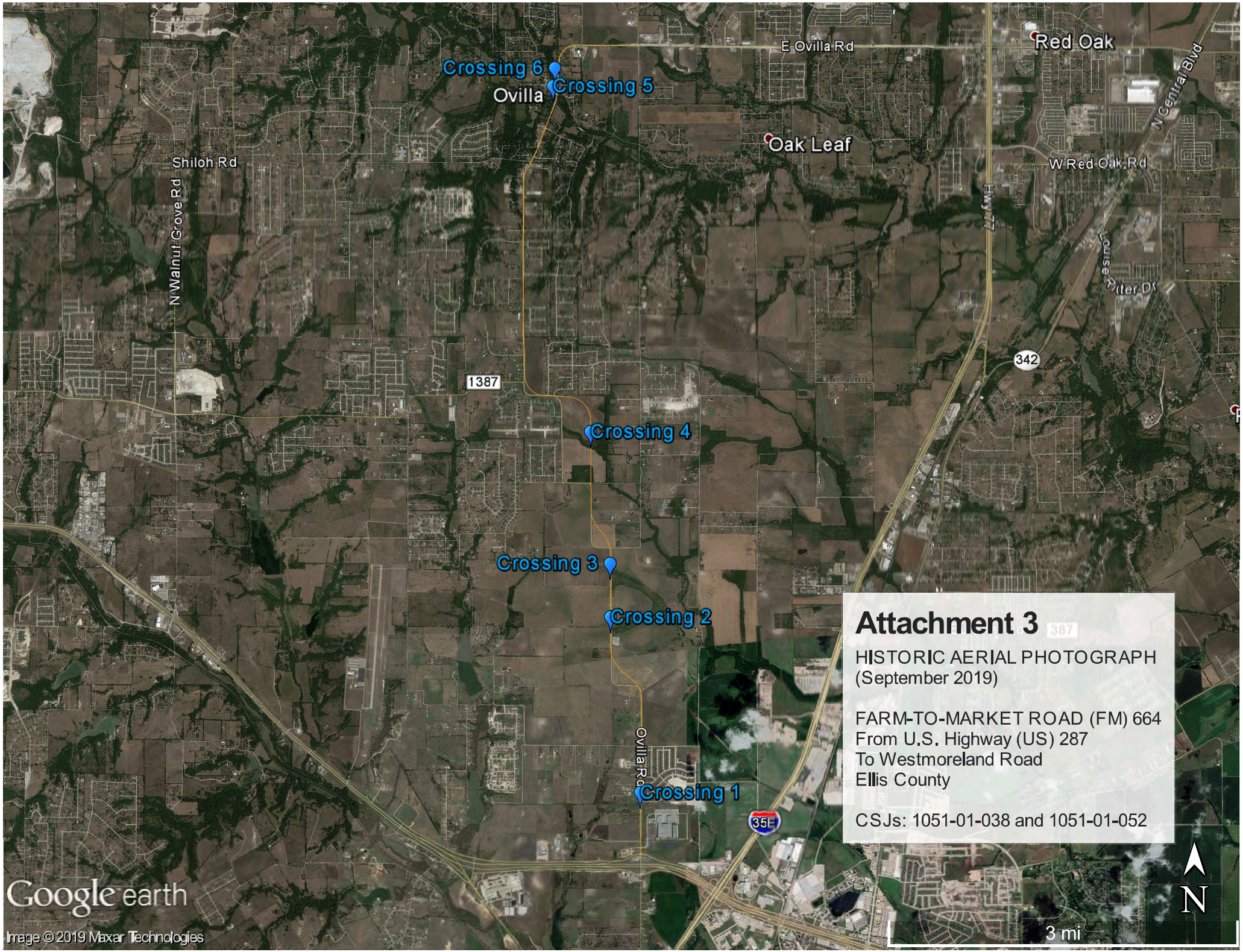
FARM-TO-MARKET ROAD (FM) 664
From U.S. Highway (US) 287
To Westmoreland Road
Ellis County

CSJs: 1051-01-038 and 1051-01-052


Crossing 6
Crossing 5
Ovilla
E Ovilla Rd
Red Oak
N Central Blvd
Oak Leaf
W Red Oak Rd
Shiloh Rd
N Walnut Grove Rd
1387
342
Crossing 4
Crossing 3
Crossing 2
Ovilla Rd
Crossing 1
35E
Attachment 3
HISTORIC AERIAL PHOTOGRAPH
(October 2005)
FARM-TO-MARKET ROAD (FM) 664
From U.S. Highway (US) 287
To Westmoreland Road
Ellis County
CSJs: 1051-01-038 and 1051-01-052
Google earth
Image USDA Farm Service Agency
N
3 mi


Crossing 6
Crossing 5
Ovilla
Red Oak
Oak Leaf
Shiloh Rd
N Walnut Grove Rd
W Red Oak Rd
N Central Blvd
Hwy 77
Louise Carter Dr
342
1387
Crossing 4
Crossing 3
Crossing 2
Ovilla Rd
Crossing 1
35E
Attachment 3
HISTORIC AERIAL PHOTOGRAPH
(December 2009)
FARM-TO-MARKET ROAD (FM) 664
From U.S. Highway (US) 287
To Westmoreland Road
Ellis County
CSJs: 1051-01-038 and 1051-01-052
N
3 mi
Google earth
Texas Orthoimagery Program


Crossing 6
Crossing 5
Ovilla
Red Oak
Oak Leaf
Shiloh Rd
N Walnut Grove Rd
W Red Oak Rd
N Central Blvd
1387
342
Crossing 4
Crossing 3
Crossing 2
Ovilla Rd
Crossing 1
35E
Attachment 3
HISTORIC AERIAL PHOTOGRAPH
(October 2014)
FARM-TO-MARKET ROAD (FM) 664
From U.S. Highway (US) 287
To Westmoreland Road
Ellis County
CSJs: 1051-01-038 and 1051-01-052
Google earth
Image © 2019 Maxar Technologies
Texas Orthoimagery Program
N
3 mi


Crossing 6
Crossing 5
Ovilla
E Ovilla Rd
Red Oak
N Central Blvd
Oak Leaf
W Red Oak Rd
Shiloh Rd
N Walnut Grove Rd
FM 664
Louise Carter Dr
342
1387
Crossing 4
Crossing 3
Crossing 2
Ovilla Rd
Crossing 1
35E
Attachment 3
HISTORIC AERIAL PHOTOGRAPH
(September 2019)
FARM-TO-MARKET ROAD (FM) 664
From U.S. Highway (US) 287
To Westmoreland Road
Ellis County
CSJs: 1051-01-038 and 1051-01-052
N
3 mi
Google earth
Image © 2019 Maxar Technologies

Attachment 3 – Site Photographs

Photograph 1: View looking southwest toward Crossing 1A - unnamed tributary of Irving Branch.

Photograph 2: View looking west toward Crossing 1 Stream 1A - unnamed tributary of Irving Branch.

Photograph 3: View looking west toward Crossing 1 Stream 1B - unnamed tributary of Irving Branch.

Photograph 4: View looking southwest toward Crossing 2 - unnamed tributary of South Grove Creek.

Photograph 5: View looking south toward Crossing 3 - unnamed tributary of South Grove Creek.

Photograph 6: View looking west toward Crossing 4 - South Grove Creek

Photograph 7: View looking southeast toward Crossing 5 – Red Oak Creek.

Photograph 8: View looking south-southeast toward Crossing 5 – Red Oak Creek.

Photograph 9: View looking north toward Crossing 6 – unnamed tributary of Red Oak Creek.

Photograph 10: View looking south toward Crossing 6 – unnamed tributary of Red Oak Creek.

Attachment 4 – Stream Data Forms

Stream Data Form #: 1
Project Name: FM 664
CSJ: 1051-01-038 & 1051-01-052

Stream Data Form

Surveyor(s): JS, AG, JL, AC
Date of Field Work: 11-20-19
USGS Stream Name: unnamed tributary of Irving Branch
County/State: Ellis, TX
USGS Topo Quad Name: Waxahachie, TX
Stream Number [303(d) List]: N/A
Associated Wetland(s): None
GPS Data: 32.4374658284705 N -96.8736120092086 W

Stream Type: Intermittent Characteristics: Natural
Bank Stability (e.g. highly eroding, sloughing banks, etc.): Slightly eroding
Stream Flow Direction: SW
OHWM Width (ft): 10
OHWM Height (in): 12
Stream Bottom composition:

- ☒ Silts ☐ Cobbles ☐ Concrete ☐ Other:
- ☒ Sands ☐ Bedrock ☐ Muck
- ☐ Gravel ☒ Vegetation Type: Herbaceous Percent Cover: <1%

Aquatic Habitat: Indicate all types present within proposed ROW/project limits.

- ☐ Sand bar ☐ Sand/Gravel beach/bar ☐ Gravel riffles ☐ Aquatic vegetation
- ☒ Overhanging trees/shrubs ☐ Deep pool/ hole/ channel ☐ Other:

Stream has the following characteristics:

- ☐ Bed and banks
- ☒ OHWM (check all indicators that apply):
  - ☒ clear, natural line impressed on the bank
  - ☐ changes in the character of soil
  - ☐ shelving
  - ☐ vegetation matted down, bent, or absent
  - ☐ leaf litter disturbed or washed away
  - ☐ sediment deposition
  - ☐ water staining
  - ☐ other (list):
  - ☐ the presence of litter and debris
  - ☐ destruction of terrestrial vegetation
  - ☐ the presence of wrack line
  - ☐ sediment sorting
  - ☐ scour
  - ☐ multiple observed or predicted flow events
  - ☐ abrupt change in plant community

Water Quality:

- ☒ Clear ☐ Slightly Turbid ☐ Turbid ☐ Very Turbid ☐ Oily film ☐ High organic content
- ☐ Other characteristics (pollutants, etc.)

Aquatic Organisms: List all species observed. This would include waterfowl, fish, snakes, turtles, frogs, invertebrates, etc.
None observed.

Riparian Vegetation: List species observed.
Black willow (*Salix nigra*), great ragweed (*Ambrosia trifida*), Johnson grass (*Sorghum halepense*), tall goldenrod (*Solidago altissima*), curly dock (*Rumex crispus*)

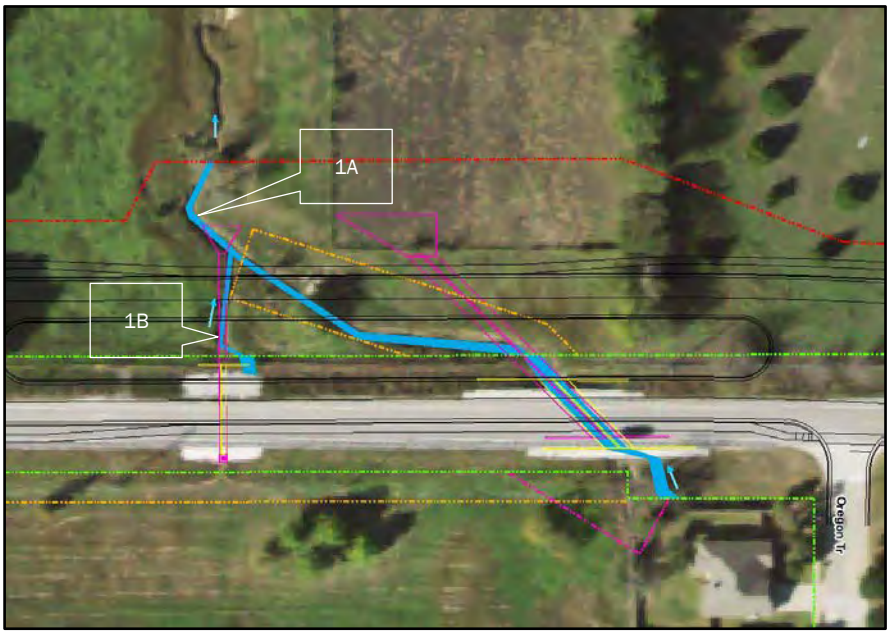
T&E Species/Suitable Habitat: List T&E species observed or which species the habitat is suitable for.
None.

Stream Data Form #:	1
Project Name:	FM 664
CSJ:	1051-01-038 & 1051-01-052

Stream Data Form (continued)
Please provide a plan and section view sketch of the stream channel.
Sketch should include:

- Directional arrow;
- Width of channel from top of bank to top of bank;
- Depth of channel,
- Approximate side slope; and,
- Width of stream from water edge to water edge.

Plan View (NTS)



Sectional View (NTS)

View looking southwest toward Crossing 1 - unnamed tributary of Irving Branch

OHWM ≈ 10 feet
Depth of channel ≈ 12 inches

Stream Data Form #: 2
Project Name: FM 664
CSJ: 1051-01-038 & 1051-01-052

Stream Data Form

Surveyor(s): JS, AG, JL, AC
Date of Field Work: 11-20-19
USGS Stream Name: unnamed tributary of South Grove Creek
County/State: Ellis, TX
USGS Topo Quad Name: Midlothian, TX
Stream Number [303(d) List]: N/A
Associated Wetland(s): None
GPS Data: 32.4589681438742 N -96.8779069422242 W

Stream Type: Intermittent Characteristics: Natural
Bank Stability (e.g. highly eroding, sloughing banks, etc.): Stable
Stream Flow Direction: NE
OHWM Width (ft): 8
OHWM Height (in): 6
Stream Bottom composition:

- ☒ Silts ☒ Cobbles ☐ Concrete ☐ Other:
- ☒ Sands ☐ Bedrock ☐ Muck
- ☒ Gravel ☐ Vegetation Type: N/A Cover: N/A

Aquatic Habitat: Indicate all types present within proposed ROW/project limits.

- ☐ Sand bar ☐ Sand/Gravel beach/bar ☐ Gravel riffles ☐ Aquatic vegetation
- ☒ Overhanging trees/shrubs ☐ Deep pool/ hole/ channel ☒ Other: No water observed at the time of the field visit.

Stream has the following characteristics:

- ☐ Bed and banks
- ☒ OHWM (check all indicators that apply):
  - ☒ clear, natural line impressed on the bank
  - ☐ changes in the character of soil
  - ☐ shelving
  - ☐ vegetation matted down, bent, or absent
  - ☐ leaf litter disturbed or washed away
  - ☐ sediment deposition
  - ☐ water staining
  - ☐ other (list):
  - ☐ the presence of litter and debris
  - ☐ destruction of terrestrial vegetation
  - ☐ the presence of wrack line
  - ☐ sediment sorting
  - ☐ scour
  - ☐ multiple observed or predicted flow events
  - ☐ abrupt change in plant community

Water Quality:

- ☐ Clear ☐ Slightly Turbid ☐ Turbid ☐ Very Turbid ☐ Oily film ☐ High organic content
- ☒ Other characteristics (pollutants, etc.) No water present at the time of the field visit.

Aquatic Organisms: List all species observed. This would include waterfowl, fish, snakes, turtles, frogs, invertebrates, etc.
None observed.

Riparian Vegetation: List species observed.
Black willow (*Salix nigra*), ash-leaf maple (*Acer negundo*), Eastern red-cedar (*Juniperus virginiana*), great ragweed (*Ambrosia trifida*), Johnson grass (*Sorghum halepense*)

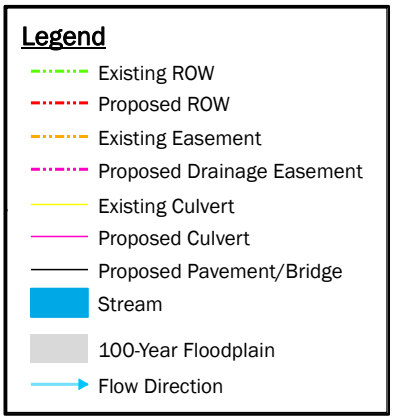
T&E Species/Suitable Habitat: List T&E species observed or which species the habitat is suitable for.
None.

Stream Data Form #:	2
Project Name:	FM 664
CSJ:	1051-01-038 & 1051-01-052

Stream Data Form (continued)
Please provide a plan and section view sketch of the stream channel.
Sketch should include:

- Directional arrow;
- Width of channel from top of bank to top of bank;
- Depth of channel,
- Approximate side slope; and,
- Width of stream from water edge to water edge.

Plan View (NTS)



Sectional View (NTS)

View looking southwest toward Crossing 2 - unnamed tributary of South Grove Creek

OHWM ≈ 8 feet
Depth of channel ≈ 6 inches

Stream Data Form #: 3
Project Name: FM 664
CSJ: 1051-01-038 & 1051-01-052

Stream Data Form

Surveyor(s): JS, AG, JL, AC
Date of Field Work: 11-20-19
USGS Stream Name: unnamed tributary of South Grove Creek
County/State: Ellis, TX
USGS Topo Quad Name: Midlothian, TX
Stream Number [303(d) List]: N/A
Associated Wetland(s): None
GPS Data: 32.4662927483066 N -96.8780101764119 W

Stream Type: Intermittent Characteristics: Natural
Bank Stability (e.g. highly eroding, sloughing banks, etc.): Slightly eroding
Stream Flow Direction: SE
OHWM Width (ft): 8
OHWM Height (in): 6
Stream Bottom composition:

- ☒ Silts ☒ Cobbles ☐ Concrete ☐ Other:
- ☒ Sands ☐ Bedrock ☐ Muck
- ☒ Gravel ☐ Vegetation Type: N/A Cover: N/A

Aquatic Habitat: Indicate all types present within proposed ROW/project limits.

- ☐ Sand bar ☐ Sand/Gravel beach/bar ☐ Gravel riffles ☐ Aquatic vegetation
- ☒ Overhanging trees/shrubs ☐ Deep pool/ hole/ channel ☒ Other: No water observed at the time of the field visit.

Stream has the following characteristics:

- ☐ Bed and banks
- ☒ OHWM (check all indicators that apply):
  - ☒ clear, natural line impressed on the bank
  - ☐ changes in the character of soil
  - ☐ shelving
  - ☐ vegetation matted down, bent, or absent
  - ☐ leaf litter disturbed or washed away
  - ☐ sediment deposition
  - ☐ water staining
  - ☐ other (list):
  - ☒ the presence of litter and debris
  - ☐ destruction of terrestrial vegetation
  - ☐ the presence of wrack line
  - ☐ sediment sorting
  - ☐ scour
  - ☐ multiple observed or predicted flow events
  - ☐ abrupt change in plant community

Water Quality:

- ☐ Clear ☐ Slightly Turbid ☐ Turbid ☐ Very Turbid ☐ Oily film ☐ High organic content
- ☒ Other characteristics (pollutants, etc.) No water present at the time of the field visit.

Aquatic Organisms: List all species observed. This would include waterfowl, fish, snakes, turtles, frogs, invertebrates, etc.
None observed.

Riparian Vegetation: List species observed.
Eastern red-cedar (*Juniperus virginiana*), Osage-orange (*Maclura pomifera*), sugar-berry (*Celtis laevigata*), great ragweed (*Ambrosia trifida*), Virginia wild rye (*Elymus virginicus*)

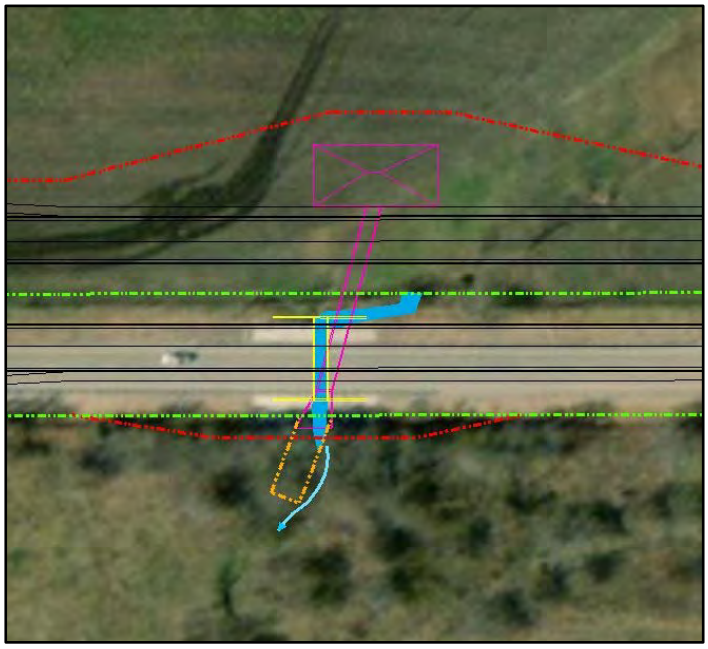
T&E Species/Suitable Habitat: List T&E species observed or which species the habitat is suitable for.
None.

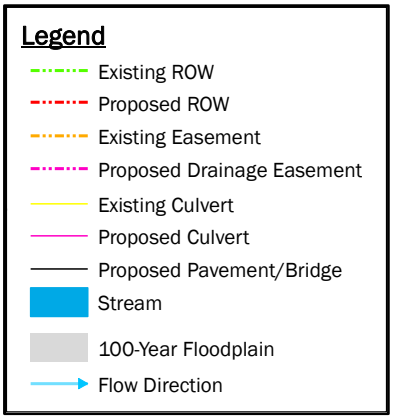
Stream Data Form #:	3
Project Name:	FM 664
CSJ:	1051-01-038 & 1051-01-052

Stream Data Form (continued)
Please provide a plan and section view sketch of the stream channel.
Sketch should include:

- Directional arrow;
- Width of channel from top of bank to top of bank;
- Depth of channel,
- Approximate side slope; and,
- Width of stream from water edge to water edge.

Plan View (NTS)





Sectional View (NTS)

View looking south toward Crossing 3 - unnamed tributary of South Grove Creek

OHWM ≈ 8 feet
Depth of channel ≈ 6 inches

Stream Data Form #: 4
Project Name: FM 664
CSJ: 1051-01-038 & 1051-01-052

Stream Data Form

Surveyor(s): JS, AG, JL, AC
Date of Field Work: 11-20-19
USGS Stream Name: South Grove Creek
County/State: Ellis, TX
USGS Topo Quad Name: Midlothian, TX
Stream Number [303(d) List]: N/A
Associated Wetland(s): None
GPS Data: 32.4819620116414 N -96.8810107358557 W

Stream Type: Ephemeral Characteristics: Natural
Bank Stability (e.g. highly eroding, sloughing banks, etc.): Slightly eroding
Stream Flow Direction: E
OHWM Width (ft): 10
OHWM Height (in): 6
Stream Bottom composition:

- ☒ Silts ☐ Cobbles ☐ Concrete ☐ Other:
- ☒ Sands ☐ Bedrock ☐ Muck
- ☐ Gravel ☐ Vegetation Type: N/A Cover: N/A

Aquatic Habitat: Indicate all types present within proposed ROW/project limits.

- ☐ Sand bar ☐ Sand/Gravel beach/bar ☐ Gravel riffles ☐ Aquatic vegetation
- ☒ Overhanging trees/shrubs ☐ Deep pool/ hole/ channel ☒ Other: No water observed at the time of the field visit.

Stream has the following characteristics:

- ☐ Bed and banks
- ☒ OHWM (check all indicators that apply):
  - ☒ clear, natural line impressed on the bank
  - ☐ changes in the character of soil
  - ☐ shelving
  - ☐ vegetation matted down, bent, or absent
  - ☐ leaf litter disturbed or washed away
  - ☐ sediment deposition
  - ☐ water staining
  - ☐ other (list):
  - ☒ the presence of litter and debris
  - ☐ destruction of terrestrial vegetation
  - ☐ the presence of wrack line
  - ☐ sediment sorting
  - ☐ scour
  - ☐ multiple observed or predicted flow events
  - ☐ abrupt change in plant community

Water Quality:

- ☐ Clear ☐ Slightly Turbid ☐ Turbid ☐ Very Turbid ☐ Oily film ☐ High organic content
- ☒ Other characteristics (pollutants, etc.) No water present at the time of the field visit.

Aquatic Organisms: List all species observed. This would include waterfowl, fish, snakes, turtles, frogs, invertebrates, etc.
None observed.

Riparian Vegetation: List species observed.
Sugar-berry (*Celtis laevigata*), American elm (*Ulmus americana*), rough-leaf dogwood (*Cornus drummondii*), Eastern red-cedar (*Juniperus virginiana*), great ragweed (*Ambrosia trifida*), tall goldenrod (*Solidago altissima*), Eastern poison ivy (*Toxicodendron radicans*), muscadine (*Vitis rotundifolia*)

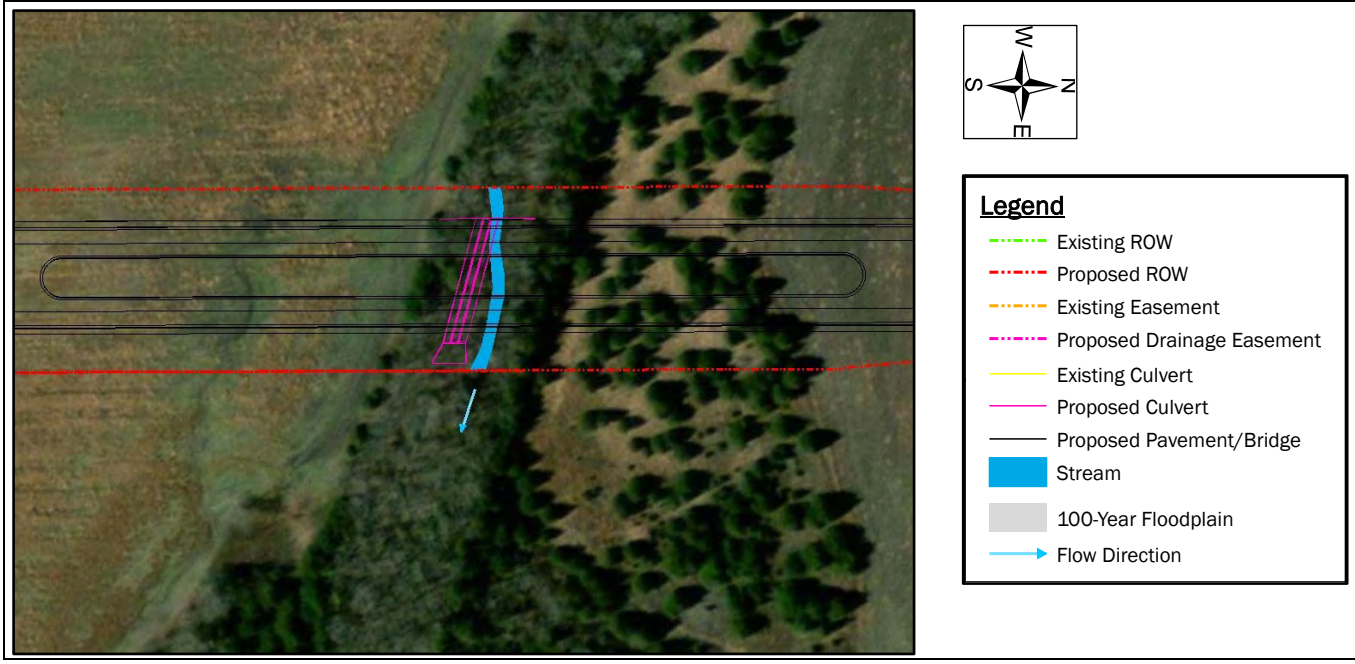
T&E Species/Suitable Habitat: List T&E species observed or which species the habitat is suitable for.
None.

Stream Data Form #:	4
Project Name:	FM 664
CSJ:	1051-01-038 & 1051-01-052

Stream Data Form (continued)
Please provide a plan and section view sketch of the stream channel.
Sketch should include:

- Directional arrow;
- Width of channel from top of bank to top of bank;
- Depth of channel,
- Approximate side slope; and,
- Width of stream from water edge to water edge.

Plan View (NTS)



Sectional View (NTS)

View looking west toward Crossing 4 - South Grove Creek

OHWM ≈ 10 feet
Depth of channel ≈ 6 inches

Stream Data Form #: 5
Project Name: FM 664
CSJ: 1051-01-038 & 1051-01-052

Stream Data Form

Surveyor(s): JS, AG, JL, AC
Date of Field Work: 11-20-19
USGS Stream Name: Red Oak Creek
County/State: Ellis, TX
USGS Topo Quad Name: Cedar Hill, TX
Stream Number [303(d) List]: N/A
Associated Wetland(s): None
GPS Data: 32.5268455548779 N -96.8862645706927 W

Stream Type: Perennial Characteristics Natural
Bank Stability (e.g. highly eroding, sloughing banks, etc.): Stable
Stream Flow Direction: SE
OHWM Width (ft): 45 OHWM Height (in): 24
Stream Bottom composition:

- ☒ Silts ☐ Cobbles ☐ Concrete ☐ Other:
- ☒ Sands ☒ Bedrock ☐ Muck
- ☒ Gravel ☐ Vegetation Type: N/A Cover: N/A

Aquatic Habitat: Indicate all types present within proposed ROW/project limits.

- ☐ Sand bar ☐ Sand/Gravel beach/bar ☐ Gravel riffles ☐ Aquatic vegetation
- ☒ Overhanging trees/shrubs ☐ Deep pool/ hole/ channel ☐ Other:

Stream has the following characteristics:

- ☒ Bed and banks
- ☒ OHWM (check all indicators that apply):
  - ☒ clear, natural line impressed on the bank
  - ☐ changes in the character of soil
  - ☐ shelving
  - ☐ vegetation matted down, bent, or absent
  - ☒ leaf litter disturbed or washed away
  - ☒ sediment deposition
  - ☐ water staining
  - ☐ other (list):
  - ☒ the presence of litter and debris
  - ☐ destruction of terrestrial vegetation
  - ☐ the presence of wrack line
  - ☐ sediment sorting
  - ☒ scour
  - ☐ multiple observed or predicted flow events
  - ☐ abrupt change in plant community

Water Quality:

- ☒ Clear ☐ Slightly Turbid ☐ Turbid ☐ Very Turbid ☐ Oily film ☐ High organic content
- ☐ Other characteristics (pollutants, etc.)

Aquatic Organisms: List all species observed. This would include waterfowl, fish, snakes, turtles, frogs, invertebrates, etc.
None observed.

Riparian Vegetation: List species observed.
Burr oak (*Quercus macrocarpa*), Shumard's oak (*Quercus shumardi*), ash-leaf maple (*Acer negundo*), rough-leaf dogwood (*Cornus drummondii*), giant cane (*Arundinaria gigantea*), Indian wood-oats (*Chasmanthium latifolium*), fringed greenbrier (*Smilax bona-nox*)

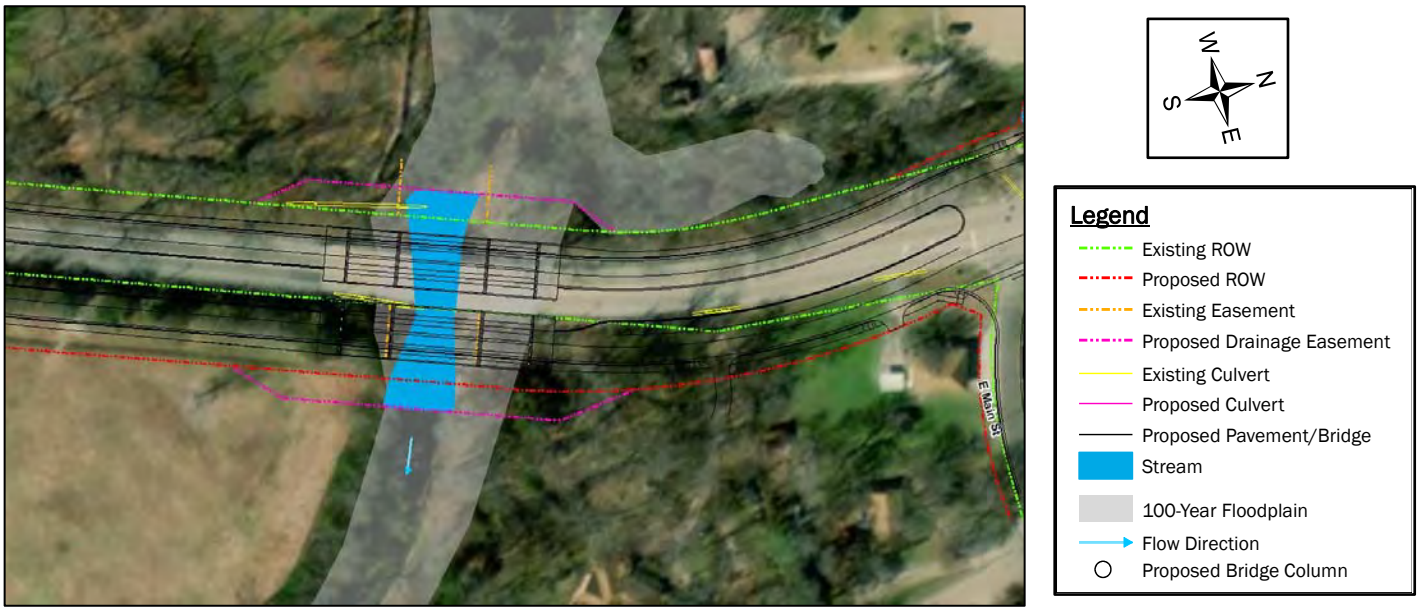
T&E Species/Suitable Habitat: List T&E species observed or which species the habitat is suitable for.
Sandbank pocketbook (*Lampsilis satura*), Texas heelsplitter (*Potamilus amphichaenus*), alligator snapping turtle (*Macrochelys temminckii*), timber (canebrake) rattlesnake (*Crotalus horridus*)

Stream Data Form #:	5
Project Name:	FM 664
CSJ:	1051-01-038 & 1051-01-052

Stream Data Form (continued)
Please provide a plan and section view sketch of the stream channel.
Sketch should include:

- Directional arrow;
- Width of channel from top of bank to top of bank;
- Depth of channel,
- Approximate side slope; and,
- Width of stream from water edge to water edge.

Plan View (NTS)



Sectional View (NTS)

View looking southeast toward
Crossing 5 – Red Oak Creek

OHWM ≈ 45 feet
Depth of channel ≈ 24 inches

Stream Data Form #: 6
Project Name: FM 664
CSJ: 1051-01-038 & 1051-01-052

Stream Data Form

Surveyor(s): JS, AG, JL, AC
Date of Field Work: 11-20-19
USGS Stream Name: unnamed tributary of Red Oak Creek
County/State: Ellis, TX
USGS Topo Quad Name: Cedar Hill, TX
Stream Number [303(d) List]: N/A
Associated Wetland(s): None
GPS Data: 32.5268455548779 N -96.8862645706927 W

Stream Type: Intermittent Characteristics: Natural
Bank Stability (e.g. highly eroding, sloughing banks, etc.): Stable
Stream Flow Direction: S
OHWM Width (ft): 16
OHWM Height (in): 12
Stream Bottom composition:

- ☒ Silts ☐ Cobbles ☐ Concrete ☒ Other: limestone
- ☒ Sands ☒ Bedrock ☐ Muck
- ☒ Gravel ☐ Vegetation Type: N/A Cover: N/A

Aquatic Habitat: Indicate all types present within proposed ROW/project limits.

- ☐ Sand bar ☐ Sand/Gravel beach/bar ☐ Gravel riffles ☐ Aquatic vegetation
- ☒ Overhanging trees/shrubs ☐ Deep pool/ hole/ channel ☐ Other:

Stream has the following characteristics:

- ☒ Bed and banks
- ☒ OHWM (check all indicators that apply):
  - ☒ clear, natural line impressed on the bank
  - ☐ changes in the character of soil
  - ☐ shelving
  - ☐ vegetation matted down, bent, or absent
  - ☒ leaf litter disturbed or washed away
  - ☐ sediment deposition
  - ☐ water staining
  - ☐ other (list):
  - ☒ the presence of litter and debris
  - ☐ destruction of terrestrial vegetation
  - ☐ the presence of wrack line
  - ☐ sediment sorting
  - ☒ scour
  - ☐ multiple observed or predicted flow events
  - ☐ abrupt change in plant community

Water Quality:

- ☒ Clear ☐ Slightly Turbid ☐ Turbid ☐ Very Turbid ☐ Oily film ☐ High organic content
- ☒ Other characteristics (pollutants, etc.) Portions of the stream is without water at the time of the field visit.

Aquatic Organisms: List all species observed. This would include waterfowl, fish, snakes, turtles, frogs, invertebrates, etc.
Frogs

Riparian Vegetation: List species observed.
Shumard's oak (*Quercus shumardi*), Eastern red-cedar (*Juniperus virginiana*), wing-leaf soapberry (*Sapindus saponaria*), American elm (*Ulmus americana*), black willow (*Salix nigra*), pecan (*Carya illinoinensis*), ash-leaf maple (*Acer negundo*), Chinese privet (*Ligustrum sinense*), sugar-berry (*Celtis laevigata*), cedar elm (*Ulmus crassifolia*), Johnson grass (*Sorghum halepense*), fringed greenbrier (*Smilax bona-nox*), muscadine (*Vitis rotundifolia*)

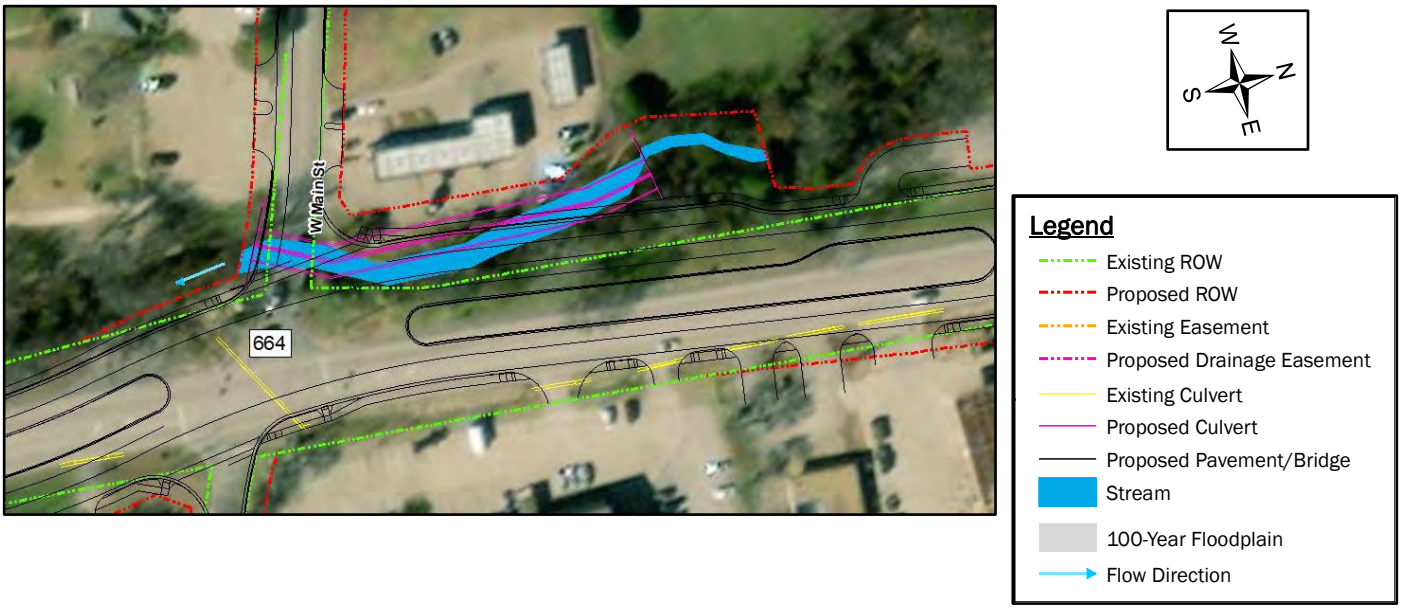
T&E Species/Suitable Habitat: List T&E species observed or which species the habitat is suitable for.
Timber (canebrake) rattlesnake (*Crotalus horridus*)

Stream Data Form #:	6
Project Name:	FM 664
CSJ:	1051-01-038 & 1051-01-052

Stream Data Form (continued)
Please provide a plan and section view sketch of the stream channel.
Sketch should include:

- Directional arrow;
- Width of channel from top of bank to top of bank;
- Depth of channel,
- Approximate side slope; and,
- Width of stream from water edge to water edge.

Plan View (NTS)



Sectional View (NTS)

View looking south toward Crossing 6 – unnamed tributary of Red Oak Creek

OHWM ≈ 16 feet
Depth of channel ≈ 12 inches