Draft
Environmental Assessment

FM 664, Dallas District

Project limits: From United States Highway (US) 287 to Westmoreland Road

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

Ellis County, Texas

May 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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List of Abbreviations and Acronyms

ACHP	Advisory Council for Historic Preservation
ACT	Antiquities Code of Texas
ACS	American Community Survey
ADA	American with Disabilities Act
ADT	Average Daily Traffic
AOI	Area of Interest
APE	Area of Potential Effects
BMP	Best Management Practice
CALF	Closed and Abandoned Landfill Inventory
CRTB	Cross Timbers
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CIA	Community Impacts Assessment
CO	Carbon Monoxide
CWA	Clean Water Act
CGP	Construction General Permit
EA	Environmental Assessment
EIS	Environmental Impact Statement
EJ	Environmental Justice
ETJ	Extraterrestrial Jurisdiction
EO	Executive Order
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
FAA	Federal Aviation Administration
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Map
FM	Farm-to-Market
FPPA	Farmland Policy Protection Act
FONSI	Finding of No Significant Impact
GLO	General Land Office
IBWC	International Boundary & Water Commission
IHWCA	Industrial Hazardous Waste Corrective Action Site
ISA	Initial Site Assessment
LBP	Lead-Based Paint
LF	Linear Feet
LEP	Limited English Proficiency
LWCF	Land and Water Conservation Fund
MOU	Memorandum of Understanding
MS4	Municipal Separate Storm Sewer System
MSAT	Mobile Source Air Toxics
MTP	Metropolitan Transportation Plan
NAAQS	National Ambient Air Quality Standard
NAC	Noise Abatement Criteria
NCTCOG	North Central Texas Council of Governments
NEPA	National Environment Policy Act
NHPA	National Historic Preservation Act
NOI	Notice of Intent
NRCS	Natural Resources Conservation Service

List of Acronyms (continued)

NRHP	National Register of Historic Places
NWP	Nationwide Permit
OHWM	Ordinary High Water Mark
PA	Programmatic Agreement
PALM	Potential Archeological Liability Map
PCN	Preconstruction Notification
PM	Particulate Matter
PWC	Parks and Wildlife Code
PS&E	Plans, Specifications, and Estimates
PSL	Project Specific Location
PST	Petroleum Storage Tank
RCB	Reinforced Concrete Box
RCP	Reinforced Concrete Pipe
RCRAGR06	Resource Conservation & Recovery Act Generator
ROE	Right of Entry
ROW	Right of Way
RSA	Resource Study Area
RTHL	Recorded Texas Historic Landmark
SAL	State Archeological Landmark
SEMS	Superfund Enterprise Management System
SEMSEARCH	Superfund Enterprise Management System Archival Site Inventory
SGCN	Species of Greatest Conservation Need
SH	State Highway
SHPO	State Historic Preservation Officer
SOC	Species of Concern
STIP	State Transportation Improvement Plan
SW3P	Storm Water Pollution Prevention Plan
TBPR	Texas Blackland Prairies
TFRLCP	Texas Farm & Ranch Land Conservation Program
TCEQ	Texas Commission on Environmental Quality
TERP	Texas Emissions Reduction Plan
THC	Texas Historical Commission
TIP	Transportation Improvement Program
TMDL	Total Maximum Daily Loads
TPDES	Texas Pollutant Discharge Elimination System
TPWD	Texas Parks and Wildlife Department
TSS	Total Suspended Solids
TxDOT	Texas Department of Transportation
TXNDD	Texas Natural Diversity Database
US	United States
USACE	U.S. Army Corps of Engineers
USCG	U.S. Coast Guard
USFWS	U.S. Fish and Wildlife Service
VPD	Vehicles per Day

1.0 Introduction

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 8.08 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. See **Appendix A** for the Project Location Map.

This Environmental Assessment (EA) evaluates the social, economic, and environmental impacts of the proposed project and determines whether such impacts warrant preparation of an Environmental Impact Statement (EIS). The planning process for this project follows TxDOT and Federal Highway Administration (FHWA) environmental policies and procedures in compliance with the National Environmental Policy Act (NEPA). The EA was made for public review and TxDOT considered all comments received. As a result, TxDOT has determined that there are no significant adverse effects as a result of the proposed project. A Finding of No Significant Impact (FONSI), will be prepared, signed, and be made available to the public.

2.0 Project Description

2.1 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 to 55 mph in other sections of the corridor. Refer to **Appendix B** for the project photos, **Appendix C** for the Schematics, and **Appendix D** for the existing typical sections.

2.2 Proposed Facility

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 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 proposed easement. Refer to **Appendix C** for the schematic and **Appendix D** for the proposed typical sections.

Federal regulations require that federally funded transportation projects have logical termini. 23CFR 771.111(f)(i). Simply stated, this means that a project must have rational beginning and endpoints. Those endpoints may not be created simply to avoid proper analysis of environmental impacts.

Logical termini for the proposed improvements to FM 664 are from US 287 (westbound frontage road) to Westmoreland Road. The reasons for the logical termini are as follows:

- US 287 – This is an access-controlled freeway with entrance and exit ramps to/from FM 664. The existing conditions, constraints, and roadway configuration are distinctly different between the north and south side of US 287. Also, south of US 287 there is a future feasibility study to be prepared by other which is reason it was intentionally excluded from this project by using US 287 as the southern limit.

- Westmoreland Road – FM 664 "connects" into Westmoreland Road where FM 664 ends. FM 664 does continue further east though the configuration is a current construction project that would widen the existing road from 2 lanes to 6-lanes divided for the next segment of FM 664 which extends approximately 3.1 miles to the east from where FM 664 intersects into Westmoreland Road.

Federal regulations require that a project have independent utility and be a reasonable expenditure even if no other transportation improvements are made in the area. 23CFR 771.111 (f) (2). This means a project must be able to provide benefit by itself, and that the project not compel further expenditures to make the project useful. Stated another way, a project must be able to satisfy its purpose and need with other projects being built.

Within the logical termini, FM 664 is of independent utility because the proposed improvements can be accomplished without additional improvements in the proposed project area. The project limits encompass the entire length of the project in which construction would take place and account for transitions into the existing roadway. Because the project stands alone, it cannot and does not irretrievably commit federal funds for other future transportation projects.

Federal law prohibits a project from restricting consideration of alternatives for other reasonably foreseeable transportation improvements. 23 CFR 771.111(f)(3). This means that a project must not dictate or restrict any future roadway alternatives. As proposed, the FM 664 project would in no way limit consideration of improvements, or alternatives for construction of such improvements, in adjoining sections of FM 664. For this reason, the proposed project does not foreclose consideration of alternatives for other reasonably foreseeable transportation improvements.

3.0 Purpose and Need

3.1 Need

The proposed project is needed because the existing FM 664 within the project limits (a) fails to meet current safety design standards (including no sidewalks for pedestrian traffic) and has hazardous 90-degree turns, and (b) is inadequate to meet current and future traffic volumes, resulting in congestion and reduced mobility.

3.2 Supporting Facts and/or Data

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.

3.3 Purpose

The purpose of the proposed project is 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.

4.0 Alternatives

This section discusses the following alternatives (1) Build Alternative, (2) No-Build Alternative, and (3) Preliminary Alternatives Considered but Eliminated from Further Consideration.

4.1 Build Alternative

Approximately 87.18 acres of new ROW and 0.61 acre of proposed permanent drainage easements would be required for the Build Alternative. The Build Alternative would meet the proposed project's purpose and need by providing a north-south roadway to meet traffic demand and connect local traffic to other roadways. These proposed improvements would allow the roadway to meet current design standards.

The major design features of the proposed project include:

- The construction of an additional lane in each direction of FM 664 with curb and gutter. The proposed design would include 14-foot wide outside lanes designed as a shared-use lane for vehicles and bicycles. The construction would also include six-foot wide sidewalks throughout the length of the project.

- The Build Alternative meets applicable vertical design criteria. It provides desirable sight distance as well as desirable geometry along the length of the proposed project.

The proposed project is consistent with local and regional land use and transportation plans and policies in the area. It would improve mobility and provide improved system connectivity in the proposed project area. FM 664 improvements would increase the capacity and driver delay would decrease. Safety for pedestrians by adding sidewalks, and drivers (by removing 90 degree turns) should also improve with the proposed project.

4.2 No-Build Alternative

Under the No-Build Alternative, the proposed FM 664 project would not be constructed. The No-Build Alternative would not require the conversion of approximately 87.18 acres of new ROW and 0.61 acre of easements from existing land uses to transportation use (ROW) nor would other project-related impacts occur. The No-Build Alternative would not aid in traffic demand and local traffic management. Consequently, the anticipated mobility benefits of the proposed project would not be realized. For this reason, the No-Build Alternative does not meet the need and purpose for the proposed improvements

and is not the recommended alternative. However, the No-Build Alternative was carried forward for further analysis.

4.3 Preliminary Alternatives Considered but Eliminated from Further Consideration

Reconfiguring two curves was considered at two locations. However, these two options impacted more property and included displacements. The proposed build alternative avoids these additional impacts.

5.0 Affected Environment and Environmental Consequences

In support of this EA, the following technical documentation was prepared:

- Air Quality Technical Report
- Archeological Background Study
- Report for Archeological Survey
- Surface Water Analysis Form
- Tier 1 Site Assessment
- Species Analysis Form
- Species Analysis Spread Sheet
- Community Impacts Assessment Technical Report Form
- Hazardous Materials Initial Site Assessment
- Project Coordination Request for Historical Studies Project
- Historic Resources Survey Report
- Checklist for Section 4(f) *De minimis*
- Letter for Official with Jurisdiction Notification to Pursue *De Minimis*
- Indirect and Cumulative Impacts Analysis
- Traffic Noise Analysis Technical Report
- Waters of the U.S. Delineation Report

The technical reports and documents may be inspected and copied upon request at the TxDOT Dallas District Office, 4777 E. Highway 80, Mesquite, Texas 75150.

The following sub-sections identify the environmental consequence of the Build and No-Build Alternative on each resource.

5.1 Right-of-Way/Displacements

Build Alternative: The Build Alternative would require the acquisition of approximately 87.18 acres of new ROW and 0.61 acre of permanent drainage easements (**Appendix C**). The proposed project would potentially displace one residential and one commercial property. The total area of additional ROW and easements needed for the proposed project is 87.79 acres.

The ROW acquisition would be limited to those properties required for roadway construction. Encroachment-alteration effects could include the loss of developable land for light industrial use. The following are the avoidance, minimization, or compensatory mitigation features or mitigations conducted/analyzed for the Build Alternative:

- Potential displacements were minimized by avoiding impacts to structures where possible and using available vacant or open land where practicable. Constraints were mapped and used in

the planning process to avoid important resources such as places of worship, public facilities, and other various resources.

- ROW acquisition would be conducted in accordance with the Federal Uniform Relocation and Real Property Acquisition Policy Act of 1970 (Uniform Act).

No-Build Alternative: Under the No-Build Alternative, no project-related ROW would be acquired.

5.2 Land Use

Developed and undeveloped lands are present within the proposed project area. Developed land includes single-family residences, retail, commercial, public facilities, city parks, and places of worship. These properties contain structures consisting of homes, farm buildings, commercial and retail structures, storage buildings/structures, schools, churches, and other structures. Undeveloped lands comprise vacant (not utilized), agriculture (ranch and pasture), woodlands, fence row vegetation, and streams. **Appendix C** shows the proposed project corridor.

The proposed project crosses six streams comprising a tributary to Irving Branch, South Grove Creek and two of its tributaries, and Red Oak Creek and one of its tributaries. A review of Federal Emergency Management Act (FEMA) Floodplain Insurance Rate Maps (FIRMs) indicate that the majority of the project area is outside the 100-year floodplain. A small portion along Red Oak Creek is situated within the 100-year floodplain. Stream crossings and the 100-year floodplain are identified on **Figures 1 and 4** in **Appendix F**.

Build Alternative: The land use changes associated with the proposed project do not conflict with the goals of the Cities of Waxahachie and Ovilla's Comprehensive *Plan,* would not delay or interfere with any other planned improvements, and are consistent with applicable laws; therefore, no mitigation is warranted.

No-Build Alternative: Under the No-Build Alternative, the additional ROW and easements would not be obtained and there would be no land use impacts from the proposed project.

5.3 Farmlands

The project location lies within the Dallas-Fort Worth-Arlington, TX Urbanized Area, and more specifically, crosses through the urban areas of Ovilla and Waxahachie. The majority but not all of the project location is located within these urban areas. Many of the adjacent parcels currently used for agriculture are included in areas labeled as urban.

The U.S. Department of Agriculture Natural Resources Conservation Service (NRCS) Web Soil Survey was used to determine the soil types present within the proposed project area. Soils determined to be within the existing and proposed ROW, and proposed easements are listed in **Table 1** (see **Figure 2** in **Appendix F**).

Table 1: Soil Types within the Proposed Project Area

Map Unit Name	Farmland Classification	Acres in AOI	Percent of AOI
Austin silty clay, 1 to 3 percent slopes	Farmland of statewide importance	91.2	47.7%
Austin silty clay, 2 to 5 percent slopes, moderately eroded	Not prime farmland	4.6	2.4%
Austin silty clay, 5 to 8 percent slopes, moderately eroded	Not prime farmland	2.2	1.2%
Whitewright and Austin soils, 2 to 5 percent slopes eroded	Not prime farmland	0.1	0.0%
Broken alluvial land, rarely flooded	Not prime farmland	2.7	1.4%
Eddy gravelly clay loam, 1 to 3 percent slopes	Not prime farmland	4.9	2.6%
Eddy soils, 3 to 8 percent slopes, eroded	Not prime farmland	11.4	5.9%
Eddy soils, 8 to 20 percent slopes	Not prime farmland	1.4	0.7%
Frio silty clay, 0 to 1 percent slopes, frequently flooded	Not prime farmland	1.5	0.8%
Frio silty clay, 0 to 1 percent slopes, occasionally flooded	Not prime farmland	1.2	0.7%
Houston Black clay, 1 to 3 percent slopes	All areas are prime farmland	62.9	32.9%
Stephen-Eddy complex, 1 to 3 percent slopes, eroded	Not prime farmland	3.5	1.8%
Stephen-Eddy complex, 2 to 5 percent slopes	Not prime farmland	1.3	0.7%
Stephen silty clay, 1 to 4 percent slopes	Not prime farmland	2.3	1.2%
	Total	**191.2**	**100.0%**

Source: NRCS Web Soil Survey, https://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx (accessed 12/11/19.)

Build Alternative: The Farmland Conversion Impact Rating for Corridor Type Projects was completed on October 28, 2019 and scored 62 (0 on Part IV) for Ellis County. The NRCS has identified the proposed corridor as containing areas of Prime Farmland. Because the project scored 62, two points beyond the 60-point threshold, coordination was triggered. Correspondence with the USDA/NCRS in November 2019 resulted in an exemption for the project, as it was within land committed to urban development due to its location within the city limits/urbanized area of Waxahachie and Dallas/Fort Worth Metroplex. Refer to the supporting coordination documentation in **Appendix G.**

Farmland impacts would not be limited to areas directly adjacent to the existing FM 664 project corridor. Certain areas of FM 664 would be realigned to eliminate dangerous 90 degree turns and would result in the division or separation of limited existing agricultural land. The majority of farmlands would continue to function as they do under existing conditions; therefore, encroachment-alteration effects stemming from farmland impacts are not significant as a result of the Build Alternative.

It is not possible to fully mitigate for the loss of agricultural acreage without bringing non-farmed land into production.

Observations made during the site reconnaissance on August 14, 2019, November 20, 2019, and December 24, 2019, revealed that active agricultural lands exist adjacent to the proposed project.

No-Build Alternative: Under the Build Alternative, the additional ROW would not be obtained and there would be no FM 664 related farmland impacts.

5.4 Utility Relocation

It is reasonably foreseeable that utilities will have to be relocated as a result of this project. The impacts resulting from removal of any utilities from within existing highway right-of-way have been considered as part of the project impacts under each of the resource area subheadings within this environmental assessment. Additionally, if utilities will be re-located within highway right-of-way, then the impacts resulting from re-installation of the utilities within highway right-of-way has also been considered as part of the project impacts under each of the resource area subheadings within this environmental assessment. To the extent that the owner of any displaced utility determines to re-install the displaced utility at a location outside of highway right-of-way, such location will be determined by the owner of the utility subject to the rules and policies governing the utility relocation process.

Build Alternative:
Required utility adjustments would occur prior to or during construction of the proposed project. Efforts would be made to minimize construction-related delays and to ensure emergency responders are aware of road conditions and lane closures. Given that both issues are limited to the construction phase and would be confined to the project area, encroachment-alteration effects are not applicable. The adjustments and relocation of any utilities would be managed so that no substantial interruptions would occur.

No-Build Alternative: Under the No-Build Alternative there would be no project-related impacts to utilities.

5.5 Bicycle and Pedestrian Facilities

Build Alternative: Bicycle and pedestrian facilities would be constructed as part of the proposed project in accordance with:

TxDOT's policy for bicycle and pedestrian accommodation and federal policy statement on Bicycle and Pedestrian Accommodations Regulations and Recommendations by the U.S. Department of Transportation signed on March 11, 2010.

- Bicycle traffic would be accommodated with 14-foot wide outside shared-use lanes with two-foot wide outside curb offsets. Six-foot wide ADA-compliant sidewalks would be included along the entire project limit (Appendix C – Schematics and Appendix D – Typical Sections).
- There is the potential for the proposed project area to experience changes in the mode(s) of transportation utilized by area residents and changes in traffic volumes. The introduction of new bike/pedestrian facilities in the immediate area may encourage people to pursue alternative modes of transportation. With improved access to bike/pedestrian facilities, people may have more desire to visit or use local services and facilities.

The addition of bicycle and pedestrian facilities is a positive benefit; therefore, mitigation is not warranted.

No-Build Alternative: Under the No-Build Alternative, bicycle and pedestrian facilities would not be constructed.

5.6 Community Impacts

Build Alternative: A detailed discussion of the community impacts can be found in the *Community Impacts Assessment Technical Report Form* for the proposed project.

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, bicyclists and pedestrians.

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 Plans, Specifications and Estimates (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.
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.

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.

No-Build Alternative: Under the No-Build Alternative, there would be no impacts to the community associated with the proposed project.

Environmental Justice

Refer to the *Community Impacts Assessment Technical Report Form* for the locations of the Environmental Justice (EJ – low income) blocks, (minority population greater than 50%) and the census data obtained from the American FactFinder.

EJ populations occur within the Community Impacts Assessment (CIA) study area. There are 30 out of 486 census blocks within the CIA study area that contain 50 percent 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 two census blocks have populations estimated to be over 100, with the combined population of all EJ census blocks being 594, 3.5 percent of the total CIA study area population. There are no EJ census block groups within the CIA study area. Four EJ census blocks are adjacent to the project (See **Figure 3** in **Appendix F**).

The 2020 Department of Health and Human Services (DHHS) poverty level for a family of four is $26,200.00. 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 (See **Figure 3** in **Appendix F**).

Build Alternative: The proposed project would be consistent with Executive Order (EO) 12898.

Disproportionately high and adverse impacts on any minority or low-income populations are not anticipated; therefore, mitigation measures for EJ populations were not considered. 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.

No-Build Alternative: Under the No-Build Alternative, there would be no impact, adverse or beneficial, to EJ populations.

Limited English Proficiency

A detailed discussion of the Limited English Proficiency (LEP) can be found in the *Community Impacts Assessment Technical Report Form* for the proposed project.

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 percent are LEP. 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 (See **Figure 3** in **Appendix F**).

No signage in non-English languages was observed within the study area during the windshield surveys conducted in August, November, and December 2019.

Build Alternative: Reasonable steps have been and would continue to be taken to ensure LEP persons have meaningful access to the programs, services, and information TxDOT provides. Persons who have special communication or accommodation needs, or need an interpreter, have been, and will continue to be encouraged to contact the TxDOT Dallas District Public Information Office for assistance. Therefore, the requirements of EO 13166, pertaining to LEP, appear to be satisfied.

LEP populations would realize the same benefits as non-LEP populations: reduced congestion and improved mobility. The improved mobility and reduced congestion would allow for more efficient travel through the surrounding area. No adverse encroachment-alteration effects LEP populations are anticipated.

The legal notice for the March 5, 2019 public meeting was published in the Spanish language newspaper, *Al Día*, as well as two English language newspapers. 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.

The previously discussed accommodations would be repeated for the public hearing.

No-Build Alternative: Under the No-Build Alternative, there would be no impacts to LEP populations as a result of the implementation of the proposed project.

5.7 Visual/Aesthetics Impacts

Build Alternative: FM 664 is an existing undivided two–lane roadway with one-foot wide shoulders and no bicycle/pedestrian facilities. Vegetation in the ROW consists primarily of maintained grasses with minimal tree cover at some of the stream crossings Aesthetic enhancement of the existing roadway is minimal. The Build Alternative would have minimal effect on the overall aesthetic quality along the project area. Visual impacts resulting from the Build Alternative would include roadway widening. Because this is a change from the existing condition, the viewsheds of existing residences and business facilities would be directly impacted. However, these impacts would not be considered as being detrimental to business operations. Landscaping would not be included as a part of the proposed project.

The proposed project may incorporate safety lighting, which could be considered as a positive effect for visual and aesthetic qualities for the proposed pedestrian and bicycle accommodations. During final design, the design of light fixtures would be completed. Local, state, and federal requirements would be reviewed during design and designation of additional lighting required for this project. The roadway lighting system could consist of low-impact, downward directional lighting to minimize impacts to adjacent properties.

Where reasonable and feasible, mitigation measures that would result in beneficial visual and aesthetic impacts may be programmed for this project. These measures may include aesthetic enhancements, such as lighting, and/or decorative details. Aesthetics treatments would be developed during final design and incorporated into the project design as appropriate.

No-Build Alternative: The No-Build Alternative would not result in FM 664 project-related visual impacts along the existing corridor as the proposed improvements would not be constructed.

5.8 Cultural Resources

Evaluation of impacts to cultural resources has been conducted under Section 106 of the National Historic Preservation Act in accordance with the Programmatic Agreement among FHWA, TxDOT, the Texas State Historic Preservation Officer (SHPO) and the Advisory Council on Historic Preservation (ACHP) Regarding the Implementation of Transportation Undertakings. Cultural resources are structures, buildings, archeological sites, districts (a collection of related structures, buildings, and/or archeological sites), cemeteries and objects. Both federal and state laws require consideration of cultural resources during project planning. At the federal level, NEPA and the National Historic Preservation Act (NHPA) of 1966, among others, apply to transportation projects such as this one. In addition, state laws such as the Antiquities Code of Texas apply to these projects. Compliance with these laws often requires consultation with the Texas Historical Commission (THC)/SHPO and/or federally recognized tribes to determine the project's effects on cultural resources. Review and coordination of this project followed approved procedures for compliance with federal and state laws.

5.8.1 Archeology

The purpose of the archeological investigation is to conduct an inventory or determine the presence/absence of archeological resources (36 Code of Federal Regulations [CFR] 800.4) and to evaluate identified resources for their eligibility for inclusion on the National Register of Historic Places (NRHP), per Section 106 (36 CFR 800) of the NHPA of 1966, as amended, or as a designated state archeological landmark (SAL) under the Antiquities Code of Texas (13 Texas Administrative Code 26.12).

Between November 18 and 21, 2019, TxDOT-certified archeologists conducted an intensive archeological survey with shovel testing and backhoe trenching of approximately 8.08 miles of FM 664 between US 287 and Westmoreland Road in Ellis County, Texas. The survey found one archeological site within the Area of Potential Effect (APE). A draft report of investigations was submitted to TxDOT in December of 2019.

Prior to fieldwork, the THC's Archeological Sites Atlas was consulted to identify previous work, documented, and potential archeological sites within and surrounding the APE. Research focused on the identification of archeological sites, sites listed as SALs, Recorded Texas Historic Landmarks (RTHLs), sites listed on the NRHP, cemeteries, and previously conducted archeological surveys within one kilometer (0.62 mile) of the APE.

The search identified five previously conducted surveys and three archeological sites, two cemeteries (each with a historical marker), and three additional historical markers within a kilometer of the APE. Of the five previous surveys within a kilometer of the project area, three overlap with the current APE. Two of the overlapping surveys have no information listed on the THC Atlas. The other was performed in July of 2014 for TxDOT. Of the three previously recorded archeological sites within a kilometer of the APE, only one, 41EL258, overlaps the APE. No information for site 41EL258 was available in the THC Atlas, other than that it is ineligible for NRHP. However, no evidence of the site at the mapped locations was encountered and maintains the prior recommendation of not eligible for NRHP and SAL listings.

For this project. TxDOT has conducted a survey. The enclosed report of investigations has more details regarding this work. The following bullets summarize the identification efforts.

- The investigations reported here concern portions of the APE that did not warrant survey and portions of the APE that were accessible during survey.
- Archeology personnel undertook a survey and identified 41EL281, a historic (early 20th century)
- farmstead within the APE (recommended not eligible).
- Identified archeological sites that are not eligible for inclusion in the NRHP and/or that do not warrant formal designation as SALs include: 41EL258 and 41EL28L. Previously recorded site 41EL258 is mapped as overlapping with the APE but was not relocated during this survey; it is recommended not eligible due to the lack of intact archeological deposits within the project ROW. Site 41EL281 is an early 20th century farmstead identified by a light artifact scatter detected within 16 out of 28 shovel tests. All artifacts were recovered less than 12 cm below the surface. The site lacks integrity and sufficient data to contribute important information about local history, and Is therefore recommended ineligible.

The proposed project would have direct effects resulting from ground-disturbing construction activities within the APE. Given the results of the identification efforts, TxDOT proposes that the project will have no effect on archeological historic properties as the APE does not contain sites that are eligible for inclusion in the NRHP or that warrant formal designation as SALs.

The project is compliant with Section 106 of the NHPA of 1966 (and subsequent amendments) and the Antiquities Code of Texas (ACT). Section 106 coordination will be conducted in accordance with the terms and conditions of the First Amended Programmatic Agreement (PA) among the FHWA, the THC, the ACHP, and TxDOT, as well as the Memorandum of Understanding (MOU) between TxDOT and the THC.

A TxDOT archeologist has reviewed the report and concurs with the results. The SHPO concurred with this assessment in a letter signed and dated January 23, 2020 (**Appendix G**). The identification efforts and analysis of effects completed to date are adequate. No further work or consultation is required

within the evaluated portions of the APE. Once access is obtained to areas for which access has been denied, TxDOT will complete required investigations and consultation prior to construction. In the event that unanticipated archeological deposits are encountered during construction, work in the immediate area will cease and TxDOT archeological staff will be contacted to initiate post-review discovery procedures under the provisions of the PA and MOU.

Build Alternative: It is not anticipated that the proposed project would result in direct impacts to known archeological resources. In the unlikely event that cultural resources are discovered during construction of the proposed project, TxDOT would immediately initiate cultural resource discovery procedures. All work in the vicinity of the discovery would cease until a specialist from TxDOT and/or the THC could arrive on site and assess the discovery's significance and the need, if any, for additional investigation.

Consultation with federally-recognized Native American tribes was initiated on October 4, 2019 and concluded on October 17, 2019 (within 30 days from the initiation date). No objections or expressions of concern were received. See **Appendix G** for the tribal coordination documentation.

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 would not occur.

Once access is obtained to areas for which access has been denied, TxDOT will make a determination if mitigation would be required. It is not anticipated that the proposed project would result in direct impacts to known archeological resources.

No-Build Alternative: As construction of the proposed project would not occur, there would be no project-related impacts on archaeological resources associated with the No-Build Alternative.

5.8.2 Historic Properties

TxDOT-certified historians surveyed the project APE on October 15 and 16, 2019. It was determined through consultation with the SHPO that the APE for the proposed project is 150 feet beyond the proposed ROW boundaries for existing alignment and within the ROW for areas with no new ROW. The APE includes all parcels of land that are partially or wholly contained within the limits of the APE. The reconnaissance survey of historic-age resources (defined here as all resources built in or before 1978) resulted in the identification of 41 properties with historic-age resources within the project APE. These resources primarily consisted of domestic/residential buildings (37), church property (1) and commercial buildings (3). The majority dated to the latter end of the historic period (1950-1975), nine constructed in the 1950s or early 1960s, and only a handful (6) constructed in the 1900-1930's.. Applying the Criteria for Evaluation and the aspects of integrity, project historians recommended that none of the surveyed historic-age properties are eligible for NRHP listing. Survey results and eligibility recommendations have been reviewed by TxDOT historians, and findings have been coordinated with the SHPO/THC. No finding of impacts to historic properties has been determined. See the *Historical Resources Survey Report* for FM 664 for detailed information.

Build Alternative: On January 22, 2020, TxDOT historians determined that there are no historic, non-archeological properties in the APE. Individual project coordination with SHPO is not required **(Appendix G).**

No-Build Alternative: No changes to existing conditions would occur in the No-Build Alternative scenario; therefore, no impacts to historic properties would be anticipated with the No Build Alternative.

5.9 Protected Lands

The proposed project would require ROW from Heritage Park. The park parcel is 3.3 acres (Ellis County property ID 187687). Proposed ROW acquisition from this parcel is a total of 0.15 acre, or 4.5% of the Heritage Park parcel. The improved FM 664 is proposed to be constructed on the southernmost edge of the Heritage Park parcel. At the particular location in which the 0.15 acre of proposed ROW is required, widening of FM 664 is primarily occurring on the north side of the road. Proposed ROW acquisition at this location would allow adequate space for widening. These improvements would not jeopardize the property's function as a city park. Parking and pedestrian access would not be compromised.

Section 4(f) protects publicly owned land from a public park, recreation area, or wildlife and waterfowl refuge of national, State or local significance, and any land from an historic site of national, State, or local significance. TxDOT is considering a Section 4(f) *de minimis* impact determination for impacts to Heritage Park, a designated public park in the City of Ovilla. A Section 4(f) *de minimis* finding means that the proposed project would not adversely affect the activities, features, or attributes that qualify Heritage Park for protection under Section 4(f). The City of Ovilla and TxDOT will consider comments received during the environmental process before making a final Section 4(f) *de minimis* determination.

The proposed project would not use any lands protected by Section 6(f) of the Land and Water Conservation Fund (LWCF) Act or Parks and Wildlife Code (PWC) Chapter 26 lands. There are no Section 6(f) resources in the project area.

Chapter 26 of the Texas Parks and Wildlife Code (PWC) protects the taking of public land designated and used prior to the arrangement of the project as a park, recreation area, scientific area, wildlife refuge, or historic site. One property in the project area (Heritage Park) would experience direct effects by the proposed project. Therefore, Chapter 26 does apply.

Section 4(f) protects publicly owned land from a public park, recreation area, or wildlife and waterfowl refuge of national, State or local significance, and any land from an historic site of national, State, or local significance.

Build Alternative

Historic Properties.

As described in the previous section, no sites of potential historic significance are located adjacent to the proposed project were identified. See Section 5.8.2 - Historic Properties for a summary on historic properties. No finding of impacts to historic properties has been determined. Refer to Section 5.8.2 - Historic Properties for a summary on historic properties. Individual project coordination with SHPO is not required. See **Appendix G** for the coordination documentation.

Parkland

TxDOT has initiated coordination with the City of Ovilla, as the Official with Jurisdiction. A letter of TxDOT's intent to seek a *de minimis* impact would be sent to the City of Ovilla for signature after any comments on project impacts to the property are received at the public hearing. The *de minimis* finding would be completed prior to project approval and attached in **Appendix F** once available.

No other Build Alternatives were considered due to the narrow roadway conditions at this location.

No-Build Alternative: As construction of the proposed FM 664 project would not occur, there would be no project-related impacts on Section 4(f), Section (6)f, and PWC Chapter 26 properties associated with the No-Build Alternative.

5.10 Water Resources

5.10.1 Clean Water Act Section 404

This project will involve regulated activity in jurisdictional waters and therefore will require authorization under Section 404 of the Clean Water Act (CWA). The following table shows the waters that are anticipated to be jurisdictional waters in which regulated activity is anticipated to take place. It also indicates whether the impacts are anticipated to be authorized under Section 404 by a non-reporting nationwide permit (i.e., no pre-construction notification required), or if it is anticipated that a nationwide permit with pre-construction notification, individual permit, letter of permission, or regional general permit will be required.

The proposed project crosses six streams comprising a tributary to Irving Branch, South Grove Creek and two of its tributaries, and Red Oak Creek and one of its tributaries. **Table 2** lists the Waters of the U.S. in the proposed project area, amount of impacts to the water bodies that would result from implementation of the proposed project, and the applicable U.S. Army Corps of Engineers (USACE) permit.

Table 2: Impacts to Waters of the U.S.

Crossing No.	Name of Water Body or other location indicator	Approx. OHWM (feet)	Existing Structure	Proposed Work or Structure	Permanent Fill		Temporary Fill		NWP	PCN (Y/N)
					Open Waters (acres and linear feet)	Wetlands or other Special Aquatic Sites (acres)	Open Waters (acres and linear feet)	Wetlands or other Special Aquatic Sites (acres)		
1	Intermittent Tributary to Irving Branch	10	Culvert	Culvert Replacement	270 LF 0.04 acre	-	67 LF 0.02 acre	-	14	No
2	Intermittent Tributary to South Grove Creek	8	Culvert	Culvert Replacement	21 LF 0.01 acre	-	0	-	14	No
3	Intermittent Tributary to South Grove Creek	8	Culvert	Culvert Replacement	83 LF 0.02 acre	-	55 LF 0.01 acre	-	14	No
4	South Grove Creek	10	None	Culvert Installation	158 LF 0.04 acre	-	0	-	14	No
5	Red Oak Creek	45	Bridge	Bridge Installation	0	-	114 LF 0.11 acre	-	14	No
6	Intermittent Tributary to	16	None	Culvert Installation	312 LF	-	0	-	14	Yes

Table 2: Impacts to Waters of the U.S.

Crossing No.	Name of Water Body or other location indicator	Approx. OHWM (feet)	Existing Structure	Proposed Work or Structure	Permanent Fill		Temporary Fill		NWP	PCN (Y/N)
					Open Waters (acres and linear feet)	Wetlands or other Special Aquatic Sites (acres)	Open Waters (acres and linear feet)	Wetlands or other Special Aquatic Sites (acres)		
	Red Oak Creek				0.13 acre					

LF – Linear Feet
OWHM – Ordinary High Water Mark
NWP – Nationwide Permit
PCN – Preconstruction Notification
RCP – Reinforced Concrete Pipe
RCB – Reinforced Concrete Box

Impacts to Waters of the U.S. within the proposed project limits would result from the widening of the roadway, which include culvert installation, culvert replacement, paved roadway construction, and bridge column and riprap installation (see **Table 2** and **Figure 4** in **Appendix F**). See the Waters of the U.S. Delineation Report for detailed information and figures.

"The need for an individual permit under Section 404 is not anticipated. If it is later determined that an individual permit under Section 404 is needed, compliance with EPA's Section 404(b)(1) Guidelines will be confirmed prior to submittal of the individual permit application.

Crossings 1 through 6 would be impacted by replacement/installation of culverts and bridge installation from the roadway pavement expansion. These crossings would utilize NWP 14 – *Linear Transportation Projects*. Each of the six crossings have been identified as single and complete projects.

Appropriate measures would be taken to maintain normal downstream flows and minimize flooding. Temporary fills would consist of clean materials and be placed in a manner that would not be eroded by expected high flows. Temporary fills would be removed in their entirety and the affected area returned to preconstruction elevations, and revegetated as appropriate. If the project involves stream modification, stream channel modifications, including bank stabilization, would be limited to the minimum necessary to construct or protect the structure and the immediate vicinity of the project. The activity would comply with all general and regional conditions applicable to NWP 14.

The activities at water crossings 1 through 6 have been identified as single and complete projects as defined in the NWPs because each crossing occurs at a separate and distant location and would therefore be permitted under the same NWP 14.

The proposed project would comply with U.S. Environmental Protection Agency's (EPA) Section 404(b)(1) Guidelines 40 CFR Part 230, allowing the discharge of dredged or fill material only if there is no practicable alternative that would have less adverse effects on the aquatic ecosystem. Since the proposed project would consist of extending an existing facility, and there are no other practicable build alternatives, the discharge of dredged or fill material into Waters of the U.S. is permissible.

Build Alternative: **Table 2** lists the Waters of the U.S. in the proposed project area, amount of impacts to the water bodies that would result from implementation of the proposed project, and the applicable USACE permit. A PCN would be required at Crossing 6 because the impact is greater than 0.10 acre

but less than 0.50 acre, and is greater than 300 linear feet (Regional Condition 12). Compensatory mitigation would be required for this project.

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) as described below. To minimize the potential for adverse impacts, BMPs would be regularly inspected and proactively maintained.

No-Build Alternative: As construction of the proposed project would not occur, there would be no project-related impacts on Waters of the U.S. associated with the No-Build Alternative.

5.10.2 Clean Water Act Section 401

For a project that will use a NWP under Section 404 or Section 10, regardless of whether the NWP is non-reporting (i.e., assumed) or reporting (i.e., requires submittal of a PCN), TxDOT complies with Section 401 of the CWA by implementing TCEQ's conditions for NWPs. For projects that require authorization under Section 404 or Section 10 beyond a NWP, TxDOT complies with Section 401 of the CWA by including a Tier I or Tier II checklist (depending upon the amount of disturbance/impact) in the individual permit, letter of permission, or regional general permit application that is submitted to the USACE, and then complying with the conditions of the Tier I or Tier II checklist

General Condition 25 of the NWP Program requires applicants using NWP 14 to comply with Section 401 of the CWA. Compliance with Section 401 requires the use of BMPs to manage water quality on construction sites. General Condition 12 also requires applicants using NWP 14 to use appropriate soil erosion and sedimentation controls.

Build Alternative: The Storm Water Pollution Prevention Plan (SW3P) would include at least one BMP from the 401 Water Quality Certification Conditions for NWPs as published by the Texas Commission on Environmental Quality (TCEQ). These BMPs would address each of the following categories:

- Category I Erosion Control would be addressed by using temporary vegetation, permanent seeding/sodding, and stone outlet structures such as stone riprap.
- Category II Sedimentation Control would be addressed by installing silt fence, rock berms, and mulch filter socks.
- Category III Post-Construction Total Suspended Solids (TSS) control would be addressed by installing vegetative-lined drainage ditches.
- Other approved methods would be substituted if necessary, using one of the BMPs from the identical category.

The potential for project-related encroachment-alteration effects on water quality would be mitigated through permanent (post-construction) BMPs as described above. To minimize the potential for adverse impacts, BMPs would be regularly inspected and proactively maintained.

BMPs would be implemented to ensure that water quality impacts would not be significant; therefore, mitigation is not considered.

No-Build Alternative: As construction of the proposed project would not occur, there would be no project-related impacts on Waters of the U.S. associated with the No-Build Alternative.

5.10.3 Executive Order 11990 Wetlands

Build Alternative: Pursuant to EO 11990 (Protection of Wetlands) and Section 404 of the CWA, field reconnaissance was conducted to identify Waters of the U.S., including wetlands, within the proposed project limits on November 20, 2019. Results of the reconnaissance did not identify wetlands within the project limits.

No-Build Alternative: As construction of the proposed project would not occur, there would be no project-related impacts on wetlands associated with the No-Build Alternative.

5.10.4 Rivers and Harbors Act

This project does not involve work in or over a navigable Water of the U.S.; therefore, Section 10 of the Rivers and Harbors Act does not apply. Likewise, a navigational clearance under the General Bridge Act of 1946, and Section 9 of the Rivers and Harbors Act (administered by the U.S. Coast Guard [USCG]) is not applicable. Coordination with the USCG (for Section 9 and the General Bridge Act) and the USACE (for Section 10) would not be required.

5.10.5 Clean Water Act Section 303(d)

The proposed project is within the Red Oak Creek watershed. However, it is not located within five linear miles of an impaired assessment unit.

5.10.6 Clean Water Act Section 402

Build Alternative: Since Texas Pollutant Discharge Elimination System (TPDES) 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 projects. The Project Development Process Manual and the PS&E Preparation Manual require an SW3P 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 [NOI] 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 SW3P and complete the appropriate authorization documents.

The southern half section (from Bob White Lane to US 287 in Waxahachie) of the proposed project is located outside the TxDOT's MS4 boundary area. The proposed project is located within the cities of Ovilla and Waxahachie and Ellis County Extraterrestrial Jurisdiction (ETJ) and would comply with the City of Waxahachie's applicable MS4 requirements.

No-Build Alternative: This alternative would not alter the amount of runoff generated within the proposed project area.

5.10.7 Floodplains

Ellis County and the cities of Ovilla and Waxahachie are participants in the National Flood Insurance Program. The study area is located on Flood Insurance Rate Map (FIRM) Panel Numbers

48139C0050F, 48139C0175F, 48139C0200F and 48139C0190F (effective June 3, 2013). See **Figure 4** in **Appendix F**.

Build Alternative: A review of FEMA FIRMs 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. This project is subject to and will comply with federal EO 11988 on Floodplain Management. The department implements this EO 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).

No-Build Alternative: This alternative would not alter the existing level of roadway encroachments into floodplains.

5.10.8 Wild and Scenic Rivers

The proposed project would not impact any present, proposed, or potential unit of the National Wild and Scenic Rivers System.

5.10.9 Coastal Barrier Resources

The Coastal Barrier Resources Act does not apply.

5.10.10 Coastal Zone Management

The proposed project is not located within the Texas Coastal Management Plan boundary. Therefore a consistency determination is not required.

5.10.11 Edwards Aquifer

The TCEQ Edwards Aquifer Rules and the EPA Edwards Aquifer MOU do not apply.

5.10.12 International Boundary and Water Commission (IBWC)

This proposed project does not cross or encroach upon the floodway of the IBWC ROW or an IBWC flood control project.

5.10.13 Drinking Water Systems

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.

5.11 Biological Resources

5.11.1 Texas Parks and Wildlife Coordination

A *TxDOT Species Analysis Spreadsheet, Tier 1 Site Assessment Form*, and supporting documents, was completed for the proposed project. It was determined that coordination with the Texas Parks and Wildlife Department (TPWD) was required per the 2013 TPWD-TxDOT MOU because:

1) The proposed project required an NWP with PCN from the USACE.
2) The proposed project may impact at least 0.10 acre of riparian vegetation, and
3) The proposed project disturbs habitat in an area equal to or greater than the area of disturbance indicated in the Threshold Table PA.

4) The proposed project may impact remnant vegetation according to NDD and TCAP review, similar to 3) above.
5) The proposed project includes more than 200-linear feet of stream channel at single and complete crossings.
6) The project is within the range of a state threatened species or SGCN as identified by the TPWD County list of Rare and Protected Species and there is suitable habitat, unless BMPs as defined in this MOU are implemented as provided by a PA.

Items in numbers 1 and 5 are discussed in **Section 5.10.1**, items in numbers 2, 3, and 4 are discussed further in **Section 5.11.2**, and item in number 6 is discussed in **Section 5.11.11**.

Early coordination with TPWD was initiated on April 10, 2020 and completed on May 21, 2020. See **Appendix G** for the coordination documentation. Documentation of the *Biological Resources Technical Report* is maintained in the project file at the TxDOT Dallas District Office.

5.11.2 Impacts on Vegetation

Build Alternative: 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 coralroot (*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 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 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.

The proposed project would directly impact the following MOU Type habitats: Edwards Plateau Savannah, Woodland, and Shrubland (3.0 acres); Disturbed Prairie (10.8 acres); Agriculture (34.7 acres); Riparian (3.4 acres); Urban (112.5 acres), and Open Water (0.4 acre). The vegetation impacted by the proposed project fits into the TBPR Ecoregion described in the Threshold Programmatic Agreement (PA) Under the 2013 MOU, 2017 Revision (MOU) (Threshold PA). The approximately 34.7 acres of Agriculture MOU Type habitat disturbance exceeds the 10-acre threshold described in the

Threshold PA. The 3.0 aces of impacts to Edwards Plateau Savannah, Woodland, and Shrubland MOU type exceeds the 1-acre threshold described in the Threshold PA. The 10.8-acre impact to the Disturbed Prairie MOU type exceeds the 3-acre threshold described in the Threshold PA. The approximately 3.4 acres of Riparian MOU Type habitat disturbance exceeds the 0.1-acre area of threshold described in the Threshold. The approximately 26.5 acres of Tallgrass Prairie, Grassland MOU Type habitat disturbance exceeds the 2-acre threshold indicated in the Threshold PA. As stated in the Threshold PA, there is no threshold for project impacts to areas classified as the Urban MOU type or areas classified as the Open Water MOU type. Refer to the Vegetation Map (See **Figure 5** in **Appendix F**).

Potential impacts to vegetation would be confined to the existing and proposed ROW and easements; thus, encroachment-alteration effects would not occur. Impacts to vegetation would be avoided or minimized by limiting disturbance to only that which is necessary to construct the proposed project. The removal of native vegetation, particularly mature native trees and shrubs, would be avoided to the greatest extent practicable. TxDOT-approved seed mixes that are in compliance with Executive Memorandum on Beneficial Landscaping would be used in the re-vegetation of disturbed areas.

No-Build Alternative: If the No-Build Alternative were implemented, the proposed project would not be constructed. No effects to vegetation related to the construction of the proposed project would occur. Existing land use and activities, including routine mowing, would continue to periodically affect vegetation communities.

5.11.3 Executive Order 13112 on Invasive Species

This project is subject to and would comply with EO 13112 on Invasive Species. The department implements the EO on a programmatic basis through its Roadside Vegetation Management Manual and Landscape and Aesthetics Design Manual. Accordingly, seeding and replanting with TxDOT-approved seed mixes containing native species would be done where possible. Soil disturbance would be minimized in the right of way in order to minimized invasive species establishment.

5.11.4 Executive Memorandum on Environmentally and Economically Beneficial Landscaping

This project is subject to and would comply with the federal Executive Memorandum on Environmentally and Economically Beneficial Landscaping, effective April 26, 1994. The department implements this Executive Memorandum on a programmatic basis through its Roadside Vegetation Management Manual and Landscape and Aesthetics Design Manual. Seeding and replanting of disturbed areas with TxDOT-approved seed mixes that are in compliance with Executive Memorandum on Beneficial Landscaping would be done where possible.

5.11.5 Impacts to Wildlife

The proposed project is located in Ellis County. Developed and undeveloped lands are present within the proposed project area. Developed land includes single-family residences, retail, commercial, public facilities, and places of worship. Undeveloped lands comprise vacant (not utilized), agriculture (ranch and pasture), woodlands, fence row vegetation, streams, and ponds. Wildlife species expected to inhabit the proposed project area are likely adapted to both a rural environment as well as an urban, developed environment.

Mammalian species that likely inhabit the area include the coyote (*Canis latrans*), Virginia opossum (*Didelphis virginiana*), raccoon (*Procyon lotor*), and eastern fox squirrel (*Sciurus niger*). Amphibian and reptilian species would also utilize the different available habitats. The species would include various snakes, turtles, lizards, and frogs native to north-central Texas. Examples would be the Texas rat snake

(*Elaphe obsolete lindheimen*), red-eared slider (*Trachemys scripta*), western ribbon snake (*Thamnophis proximus*), and the northern cricket frog (*Acris crepitans*). Various waterfowl species could utilize the aquatic habitat. The agricultural fields and pastures still serve as foraging areas for resident and migratory species. The presence of the following wildlife species was observed during field reconnaissance: crayfish (species unknown), eastern fox squirrel, and raccoon. There is suitable habitat present within the proposed project area for State-listed and SGCN species as discussed in Section 5.11.11

Build Alternative: Substantial impacts to wildlife are not anticipated. The proposed project is the widening of an existing roadway and therefore, is not newly bisecting continuous wildlife habitat. Terrestrial wildlife that does cross FM 664 would have to travel a greater distance when crossing the widened roadway upon project completion. This would result in their being exposed to predators, people, domestic pets, vehicles, etc. for a greater amount of time. Wildlife that does currently inhabit adjacent urban development and existing roadway structures (culverts, utility poles, etc.) would be temporarily impacted due to potential structural displacements/relocations and roadway structure reconstruction and relocation. It is likely that the impacted wildlife would recolonize the available habitat once construction of the proposed project is complete.

No-Build Alternative: Under the No-Build Alternative, the proposed project would not be constructed; thus, there would be no project-related impacts to wildlife.

5.11.6 Migratory Bird Protections

This project would comply with applicable provisions of the Migratory Bird Treaty Act and Texas 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 and FHWA policy. 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.

5.11.7 Fish and Wildlife Coordination Act

All impacts to Waters of the U.S. would be authorized by NWP 14 with a PCN. Therefore, the U.S. Fish and Wildlife Service (USFWS) consider Fish and Wildlife Coordination Act coordination to be complete as part of the NWPs review, which was last authorized and reissued on March 19, 2017.

5.11.8 Bald and Golden Eagle Protection Act of 2007

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

5.11.9 Magnuson-Stevens Fishery Conservation Management Act

There are no tidally influenced waters in Ellis County and the proposed project would not affect essential fish habitat. The Essential Fish Habitat/Magnuson-Stevens Fishery Conservation and Management Act does not apply.

5.11.10 Marine Mammal Protection Act

The project area does not contain suitable habitat for marine mammals.

5.11.11 Threatened, Endangered, and Candidate Species

Build Alternative: The TXNDD data obtained from TPWD on December 4, 2019 was reviewed along with the USFWS Official Species List, dated December 4, 2019. The TXNDD radius search was 1.5 and 10 miles from the proposed project. There were no known element occurrences of state or federally-listed species or managed areas within 1.5 miles of the proposed project area. Suitable habitat was also observed within the proposed project SGCN (as identified on TPWDs Annotated County of Rare Species for Ellis County on March 4, 2020. Based on field investigations conducted on August 4, 2019, November 20, 2019, and December 24, 2019 and as detailed in the *Species Analysis Spreadsheet* and *Species Analysis Form* the following were identified:

- Endangered Species Act

The 1973 Endangered Species Act (ESA) provides a means for the conservation of ecosystems upon which threatened and endangered species of fish, wildlife, and plants depend, and to provide a program for endangered and threatened species conservation. Section 7 of the ESA requires Federal agencies to ensure that any action authorized, funded or carried out by them is not likely to jeopardize the continued existence of listed species or modify their critical habitat. According to the USFWS Official Species List, dated December 4, 2019, the following federally protected species may occur or could potentially be affected by the proposed project: Least Tern (*Sterna antillarum*), Piping Plover (*Charadrius melodus*), Red Knot (*Calidris canutus rufa*), and Whooping Crane (*Grus americana*). USFWS designated Critical Habitat is not present within the proposed project action area.

The Official Species List states that Least Tern, Piping Plover, and Red Knot only need consideration for wind energy projects. For the Piping Plover and Red Knot, there is no suitable habitat present within the action area, such as beaches, sand, algal, or tidal flats, or sparsely vegetated shores and islands of shallow lakes, ponds, rivers, and impoundments. Effects to the Least Tern are not anticipated because there is no suitable habitat present within the action area, such as sand and gravel bars within braided streams and rivers. Therefore, TxDOT has determined that the proposed project would have no effect on Least Tern, Piping Plover, or Red Knot. There is no suitable habitat for the Whooping Crane, such as flooded agricultural fields or ponds, in the action area. Therefore, TxDOT has determined that the proposed project would have no effect on Whooping Crane.

- State-Listed Threatened Species

Suitable habitat was observed within the proposed project area for the following state-listed threatened species: Wood Stork (*Myceteria americana)*, sandbank pocketbook (*Lampsillis satura*), Texas heelsplitter (*Potamilus amphicaenus*), alligator snapping turtle (*Macrochelys temminckii*), Texas horned lizard (*Phrynosoma cornutum*), and timber rattlesnake (*Crotalus horridus*). It is not anticipated that the proposed project would result in the 'take' of state-listed threatened species. These species have species-specific BMPs included in the BMP PA. Refer to **Section 8** for BMPs or mitigation strategies that will be used to avoid or minimize impacts to these state-listed threatened species.

- Species of Greatest Conservation Need

Suitable habitat was observed within the proposed project for the following SGCN: Cajun chorus frog *(Pseudacris fouquettel),* 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 box turtle *(Terrapene ornata),* slender glass lizard *(Ophisaurus attenuatus), and* Texas garter snake *(Thamnophis sirtalis*

annectens). The list of species that do not have species-specific BMPs included in the BMP PA include the following: 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. TPWD coordination will be required and their BMPs would be developed during the coordination process. Refer to **Appendix G** for the coordination documentation and to **Section 8** for BMPs or mitigation strategies that will be used to avoid or minimize impacts to these SGCN.

No-Build Alternative: Under the No-Build Alternative, the proposed project would not be constructed; thus, there would be no effects to federally listed threatened, endangered, or candidate species.

5.12 Air Quality

For information regarding air quality refer to the Air Quality Technical Report available at the TxDOT Dallas District office.

Build Alternative:

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.

The proposed project is consistent with the NCTCOG's financially constrained Mobility 2045 and the 2019-2022 TIP, as amended, which were initially found to conform to the TCEQ State Implementation Plan (SIP) by FHWA and FTA on November 21, 2018. Copies of the Mobility Transportation Plan (MTP) and TIP pages are included in **Appendix E**. All projects in the 2019-2022 TIP that are proposed for federal or state funds were initiated in a manner consistent with federal guidelines in Section 450, of Title 23 CFR and Section 613.200, Subpart B, of Title 49 CFR. The total estimated cost of the proposed project is $108 million. Sources for the funding are Federal (60 percent), State (30 percent), and Local (10 percent).

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.

Traffic Air Quality Analysis

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.

Mobile Source Air Toxics

A qualitative mobile source air toxics (MSAT) assessment has been conducted relative to the Build and No-Build Alternative. As documented in the technical report, all project alternatives may result in increased exposure to MSAT emissions in certain locations although the concentrations and duration of exposure are uncertain. Because of this uncertainty, the health effects from these emissions cannot be estimated. 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.

Congestion Management Process

The proposed project is adding single-occupant vehicle capacity and is a project with FHWA/FTA involvement; therefore, a Congestion Management Process (CMP) analysis is required. The proposed project is within the Dallas-Fort Worth Transportation Management Area (TMA).

A CMP analysis was prepared in accordance to the TxDOT's Standards Operating Procedure for Complying with CMP Requirements and Standard Operating Procedures for Preparing Air Quality Statements. Committed congestion reduction strategies and operational improvements within the study boundary would 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 3**.

Table 3: CMP 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. Accessed October 25, 2019.

Construction Air Emissions

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 particulate matter from diesel powered construction equipment and vehicles.

The potential impacts of particulate matter 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. TxDOT encourages construction contractors to use this and other local and federal incentive programs to the fullest extent possible to minimize diesel emissions. Information about the TERP program can be found at: https://www.tceq.texas.gov/airquality/terp.

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.

No-Build Alternative: This alternative would result in gradually increasing vehicle miles travelled as traffic volumes increase and traffic congestion worsens within the existing roadway system over time. Actual and predicted trends in both criteria pollutant and MSAT emissions would be expected to continue in the future, regardless of the alternative chosen.

5.13 Hazardous Materials

A Hazardous Materials Initial Site Assessment (ISA) was completed and approved on November 13, 2019 to summarize potential hazardous materials within and adjacent to the project corridor. The ISA included a site reconnaissance and environmental regulatory database search for the project area. The ISA was completed to identify sites or facilities that might pose a potential for hazardous materials impacts to the proposed project. The ISA is maintained in the TxDOT Dallas District project files.

Build Alternative: Based on an evaluation of the sites identified in the environmental regulatory database search, a brief summary of regulated sites of concern within the proposed project limits is provided in **Table 4.** These sites are discussed following the table and site locations are shown on the Hazardous Materials Site Location Map (see **Figure 6** in **Appendix F**).

Table 4: Summary of Regulated Sites of Concern

Map ID*	Site Information	Database	Location Relative to Project
2	Ovilla Market 3321 Ovilla Road Ovilla, TX 75154	PST Facility ID: 57352 Risk Level: Moderate.	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.
3	Former Gas Station (currently Ovilla Car Wash) 696 W. Main Street Ovilla, TX 75154	PST Facility ID: 73130 Risk Level: Low.	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.
N/A	Tote-A-Way 2 (currently Teachers Who Tutor) 3323 FM 664 Ovilla, TX 75154	PST Facility ID: 6280 Risk Level: Low.	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.
PST - Petroleum Storage Tanks *Map ID numbers correspond to those used in the ISA.			

Sources: GeoSearch (May 29, 2019) and Site Survey (November 20, 2019).

The proposed project would also include the demolition of buildings and bridges. Asbestos-containing materials (ACM) and lead-containing paint (LCP) may be present in the structures. Asbestos and LCP inspections, notification, and removal, as applicable, would be addressed prior to demolition in accordance with regulatory requirements. Detailed information about the hazardous materials evaluation conducted for the project can be found in the ISA available for review at the TxDOT Dallas District office.

No-Build Alternative: Under the No-Build Alternative, the proposed project would not be constructed; thus, project-related hazardous materials impacts would not occur.

5.14 Traffic Noise

A traffic noise analysis was prepared in accordance with TxDOT's (FHWA-approved) *Traffic Noise Policy* (2011). The *Traffic Noise Analysis Report* (2019), which includes details about the analysis, is available for public review at the TxDOT Dallas District office.

Build Alternative: Existing and predicted traffic noise levels were modeled at representative land use activity areas (receptors) adjacent to the project that might be impacted by traffic noise and would potentially benefit from feasible and reasonable noise abatement.

Modeled noise-sensitive locations were primarily residential, but also included a charter school and its associated baseball field, church, a church playground, and a medical facility gazebo area. The traffic noise analysis determined that out of 48 representative receptors, four were predicted to have noise levels that approach or exceed the FHWA noise abatement criteria or that substantially exceed the existing noise levels; therefore, the proposed project would result in traffic noise impacts (see **Figure 7** in **Appendix F**).

Noise abatement measures were considered and analyzed for each impacted receptor location. Abatement measures, typically noise barriers, must provide a minimum noise reduction, or benefit, at or above the threshold of 5 dB(A). A barrier is not acoustically feasible unless it reduces noise levels by at least 5 dB(A) at greater than 50% of first-row impacted receptors and benefits a minimum of two impacted receptors. To be reasonable, the barrier must not exceed the cost reasonableness allowance of $25,000 square feet per benefited receptor and must meet the noise reduction design goal of 7 dB(A) for at least one receptor.

Noise barriers were not reasonable and feasible for the impacted representative receivers, and abatement is not proposed for those locations. Additional details regarding the barrier analysis can be found in the *Traffic Noise Analysis Report* (2020). 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 all benefited and adjacent property owners and residents

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, that no new activities are planned or constructed along or within the following predicted (2045) noise impact contours (**Table 5**)..

Table 5: Noise Impact Contours in the Project Study Area

Operational Improvements in the Travel Corridor			
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

Table 5: Noise Impact Contours in the Project Study Area

Operational Improvements in the Travel Corridor			
Limits	Land Use NAC Category	Impact Contour[1]	Distance from Proposed ROW Line
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 receptors is 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 to assist in future land use planning. 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.

No-Build Alternative: Under the No Build Alternative, the proposed project would not be constructed. If the No Build Alternative were implemented, traffic noise levels would be expected to increase with an associated future increase in traffic volumes.

5.15 Induced Growth

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 CFR Section 1508.8).

Build Alternative: An analysis of indirect impacts followed the processes outlined in TxDOT's Indirect Impacts Analysis Guidance (January 2019). Refer to the FM 664 *Indirect and Cumulative Impacts Analysis* Technical Report for a detailed discussion of the indirect effects analysis.

Results of the analysis indicate that there is no potential induced growth to occur within the 25,584.7 acres of Area of Influence (AOI) as a result of the proposed project within the Cities of Waxahachie and Ovilla. No induced growth was indicated in the Cities of Cedar Hill, Glenn Heights, Midlothian, and Oak Leaf. The AOI map is provided as **Figure 8** in **Appendix F**.

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. 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. The proposed project would not result in any resources being impacted by induced growth impacts.

No-Build Alternative: This alternative would not result in induced growth.

5.16 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.

Build Alternative: An analysis of cumulative impacts followed the processes outlined in TxDOT's Cumulative Impacts Analysis Guidelines (January 2019). Refer to the FM 664 *Indirect and Cumulative Impacts Analysis* Technical Report for a detailed discussion of the cumulative impact analysis.

The Resource Study Area (RSA) totals 43,367.5 acres. A map of the RSA is provided as **Figure 9** in **Appendix F**.

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 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.

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. 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.

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.

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.

No-Build Alternative: The implementation of this alternative would not contribute to cumulative impacts in the 43,367.5-acre RSA for vegetation and wildlife habitat and prime farmland soils.

5.17 Construction Phase Impacts

Build Alternative: Depending on required traffic control and phasing, the construction phase of the proposed project, and associated construction impacts, is anticipated to be 24 to 36 months. During the construction phase of the proposed project, there is the potential for noise, dust or light pollution; impacts associated with physical construction activity and other traffic disruptions. These potential impacts are discussed as follows:

Construction Noise – 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 receptors is 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.

Fugitive Dust and Air Pollutants – "During the construction phase of this project, temporary increases in particulate matter (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 particulate matter 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. Considering the temporary and transient nature of construction-related emissions, as well as the mitigation actions to be utilized including compliance with applicable regulatory requirements, it is not anticipated that emissions from construction of this project will have a significant impact on air quality in the area.

Light Pollution – Construction normally occurs during daylight hours; however, construction could occur during the night-time hours to minimize impacts to the traveling public during the daylight hours. Due to the close proximity of residences and businesses to the project, if construction were to occur during the night-time hours, it would be of short duration and would not be conducted late in the evening. Construction during the night-time hours would follow any local policies and ordinances established for construction activities, such as light limitations.

Construction Activity Impacts – Construction activities would be limited to the proposed project footprint. Excessive vibration from construction equipment is not anticipated. If there was excessive vibration from construction equipment, it would be of short duration.

Traffic control plans would be prepared and implemented in coordination with the city and the county. Construction that would require cross street closures would be scheduled so only one crossing in an area is affected at one time. Where detours are required, clear and visible signage for an alternative route would be displayed. In residential areas, major activity would be limited to normal work hours whenever practicable, to avoid noise and related impacts to the local population.

Temporary Lane, Road or Bridge Closures (Including Detours) – Traffic control plans would be prepared and implemented in coordination with the city and the county. Construction that would require cross street closures would be scheduled so only one crossing in an area is affected at one time. Where detours are required, clear and visible signage for an alternative route would be displayed.

Motorists would be inconvenienced during construction of the project due to lane and cross-street closures; however, these closures would be of short duration and alternate routes would be provided. Residents and businesses in the immediate construction area would be notified in advance of proposed construction activity using a variety of techniques, including signage, electronic media, community newspapers, and other techniques. The proposed project would not restrict access to any existing public or community services, businesses, commercial areas, or employment centers.

No-Build Alternative: This alternative would not result in noise, dust or light pollution; impacts associated with physical construction activity, temporary lane, road closures; and other traffic disruptions associated with construction.

6.0 Agency Coordination

Coordination with the THC, FAA, TCEQ, TPWD, and federally-recognized tribes have occurred under TxDOT's respective MOUs and PA with these agencies/entities. See Appendix G for the written coordination exchanges.

7.0 Public Involvement

Public Meeting

A public meeting was held at Waxahachie Civic Center located at 2000 Civic Center Lane, Waxahachie, Texas 75168 on March 5, 20197. The meeting was held in an open house format from 6:00 p.m. to 8:00 p.m. to allow for questions and review of project exhibits. TxDOT and consultant personnel were available to answer questions during the open house. The total registered attendance at the public meeting was 176 persons, which was comprised of six elected official and 152 members of the public. A total of nine project staff members from TxDOT, and nine project consultants also attended. The meeting was held to share information about the project and seek input from area residents. Fifty-one

written comments were received at the public meeting. Three comments were received before the Public Meeting. Forty-two written comments were received during the 15-day comment period that ended on May 20, 2019. Primary issues raised at the Public Meeting were noise concerns, additional right-turn lanes recommended, and median openings. A noise analysis was conducted, right-turn lanes are being added at various locations, and median openings will be added where applicable.

The public meeting documentation may be inspected and copied upon request at the TxDOT Dallas District Office.

Public Hearing

A virtual public hearing will be scheduled once the Draft EA has been approved. The hearing will share information about the project and seek input from area residents. TxDOT and consultant personnel will be available to answer questions during the open house portion that took place from 6:00 p.m. to 7:00 p.m.

The Public Hearing Documentation may be inspected and copied upon request at the TxDOT Dallas District Office.

A notice of impending construction would be provided to owners of adjoining property and affected local governments and public officials. The notice may be provided via a sign or signs posted in the ROW, mailed notice, printed notice distributed by hand, or notice via website when the recipient has previously been informed of the relevant website address. This notice would be provided after the environmental decision (i.e. FONSI), but before earthmoving or other activities requiring the use of heavy equipment begin.

8.0 Post-Environmental Clearance Activities and Design/Construction Communities

8.1 Post-Environmental Clearance Activities

TxDOT would comply with the requirements of the TCEQ TPDES General Permit No. TxR150000. In order to comply with TPDES General Permit Number TxR150000 for Construction Activities requirements, a NOI would be filed with TCEQ stating that TxDOT would have a SW3P in place during construction of this project. A construction site notice would be posted on the construction site. This SW3P utilizes the temporary control measures as outlined in TxDOT's manual *Standard Specifications for the Construction of Highways, Streets, and Bridges*.

The Build Alternative is located outside the TxDOT's MS4 boundary area. The proposed project is located within the City of Ovilla and Waxahachie and would comply with their (Phase 4) applicable MS4 requirements.

The proposed project would be compliant with 23 CFR 650 regarding location and hydraulic design of highway encroachments within the floodplains, and the proposed project would comply with EO 11988, Floodplain Management. Local floodplain administrator coordination would be conducted. The placement of temporary or permanent dredge or fill material into potentially jurisdictional Waters of the U.S. at Crossings 1 through 6 would be authorized under NWP 14. A PCN would be required for the proposed project at Crossing 6. The PCN and required fulfillment of required compensatory mitigation will be completed prior to project construction.

8.2 Design/Construction Commitments

1.) Section 401 and 404

Appropriate measures would be taken to maintain normal downstream flows and minimize flooding. Temporary fills would consist of clean materials and be placed in a manner that would not be eroded by expected high flows. Temporary fills would be removed in their entirety and the affected area returned to preconstruction elevations, and revegetated as appropriate. If the project involves stream modification, stream channel modifications, including bank stabilization, would be limited to the minimum necessary to construct or protect the structure and the immediate vicinity of the project. The activity would comply with all general and regional conditions applicable to NWP 14.

General Condition 25 of the NWP Program requires applicants using NWP 14 to comply with Section 401 of the CWA. Compliance with Section 401 requires the use of BMPs to manage water quality on construction sites. General Condition 12 also requires applicants using NWP 14 to use appropriate soil erosion and sedimentation controls.

The SW3P would include at least one BMP from the 401 Water Quality Certification Conditions for NWPs as published by the TCEQ. These BMPs would address each of the following categories:

- Category I Erosion Control would be addressed by using temporary vegetation, blankets/matting, permanent seeding/sodding, and stone outlet structures.
- Category II Sedimentation Control would be addressed by installing silt fence, rock berms, and stabilized construction exits.
- Category III Post-Construction TSS control would be addressed by installing grass swales and vegetative filter strips.

Other approved methods would be substituted if necessary, using one of the BMPs from the identical category.

2.) Cultural Resources

In the unlikely event that cultural resources are discovered during construction of the proposed project, TxDOT would immediately initiate cultural resource discovery procedures. All work in the vicinity of the discovery would cease until a specialist from TxDOT and/or the THC could arrive on site and assess the discovery's significance and the need, if any, for additional investigation.

3.) Vegetation Resources

Impacts to vegetation would be avoided or minimized by limiting disturbance to only that which is necessary to construct the proposed project. The removal of native vegetation, particularly mature native trees and shrubs, would be avoided to the greatest extent practicable. Seeding and replanting with TxDOT-approved seed mixes containing native species would be conducted where possible. Soil disturbance would be minimized in the ROW in order to minimize invasive species establishment
.
The following fulfills commitments required by EO 13112 and the Executive Memorandum on Beneficial Landscaping and would be included in section IV of the EPIC sheet: Preserve native vegetation to the extent practical. The contractor must adhere to Construction Specification Requirements Specs 162, 164, 192, 193, 506, 730, 751, and 752 in order to comply with requirements for invasive species, beneficial landscaping, and tree/brush removal commitments.

4.) Federal Listed, Proposed Threatened, Endangered Species, Critical Habitat, State Listed Species, Candidate Species and Migratory Birds

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 SW3P 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, Texas garter snake, slender glass lizard, eastern box turtle, western box turtle - Terrestrial Reptile BMPs: a) Apply hydro-mulching 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, 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 and western hog-nosed 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.

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.

5.) Hazardous Materials or Contamination Issues

The proposed project includes the displacement of building structures and replacement of two bridges, FM 664 over Red Oak Creek and W. Main Street over Red Oak Creek Tributary. The building and bridge structures may contain asbestos containing materials. Asbestos inspections, specification, notification, license, accreditation, abatement and disposal, as applicable, would comply with federal and state regulations. Asbestos issues would be addressed during the ROW acquisition process for building structures and prior to construction for two bridge structures.

The building and bridge structures may contain LBP. Further examination of paint-bearing building and bridge structures for LBP would be performed prior to demolition. Any waste materials and construction debris containing LBP would be disposed of according to current disposal regulations of the TCEQ and EPA.

Any unanticipated hazardous materials encountered during construction would be handled according to applicable federal, state, and local regulations per TxDOT Standard Specifications. The contractor would take appropriate measures to prevent, minimize, and control the spill of hazardous materials in

the construction staging area. All construction materials used for this project would be removed as soon as the work schedules permit.

Should hazardous materials/substances be encountered, the TxDOT Dallas District Hazardous Materials Section would be notified and steps would be taken to protect personnel and the environment. If necessary, the plans, specifications, and estimates would include provisions for the appropriate soil and/or groundwater management plans for activities within these areas. The management plans would be initiated in accordance with all applicable federal, state and local regulations.

9.0 Conclusion

Implementation of the proposed project would not result in a significant impact on the human or natural environment; therefore, a FONSI is recommended.

10.0 References

City of Glenn Heights

-2010. Comprehensive Plan. Found at https://glennheightstx.gov/DocumentCenter/View/278/Comprehensive-Plan-2023-PDF

City of Midlothian

-2018. Comprehensive Plan. Found at https://www.midlothian.tx.us/515/Comprehensive-Plan

City of Ovilla

-2016. Comprehensive Plan. Found at http://www.cityofovilla.org/DocumentCenter/View/1720/2016-Comprehensive-Land-Use-Plan

City of Waxahachie

-2016. Comprehensive Plan. Found at http://www.waxahachie.com/departments/planning_department/comprehensive_plan.php

Federal Emergency Management Agency

-National Flood Hazard Layer. Found at https://www.fema.gov/national-flood-hazard-layer-nfhl

Federal Highway Administration

-2010. United States Department of Transportation Policy Statement on Bicycle and Pedestrian Accommodation Regulations and Recommendations. Found at http://www.fhwa.dot.gov/environment/bicycle_pedestrian/guidance/policy_accom.cfm.

National Resource Conservation Service

-Web Soil Survey. Found at https://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx (accessed 10/25/2019)

North Central Texas Council of Governments

-2019. Mobility 2045 Metropolitan Transportation Plan. Found at http://www.nctcog.org/trans/mtp/2040/. (accessed March 15, 2019).

-2010. Vision North Texas 2050. Found at https://www.nctcog.org/envir/development-excellence/vision-north-texas.

-2015. Regional Data Center. Found at http://data-nctcoggis.opendata.arcgis.com/

Railroad Commission of Texas

-Public GIS Viewer. Found at http://wwwgisp.rrc.texas.gov/GISViewer2/ (accessed August 23, 2017).

Texas Commission on Environmental Quality

-2015. 2014 Texas Integrated Report - Texas 303(d) List (Category 5). Found at https://www.tceq.texas.gov/assets/public/waterquality/swqm/assess/14txir/2014_303d.pdf (accessed March 15, 2019).

Texas Department of Transportation

-2011. Guidelines Emphasizing Bicycle and Pedestrian Accommodations Memorandum. Found at https://ftp.dot.state.tx.us/pub/txdot-info/env/toolkit/770.01.pol.pdf.

-2011. Guidelines for Analysis and Abatement of Roadway Traffic Noise. Found at http://ftp.dot.state.tx.us/pub/txdot-info/env/toolkit/730-02-gui.pdf.

-2014. Standard Specifications for the Construction and Maintenance of Highways, Streets, and Bridges. Found at ftp://ftp.dot.state.tx.us/pub/txdot-info/des/spec-book-1114.pdf.

-2016. Cumulative Impacts Analysis Guidelines (Version 2). Found at http://ftp.dot.state.tx.us/pub/txdot-info/env/toolkit/720-03-gui.pdf.

-2016. Environmental Handbook for Traffic Noise (Version 2). Found at http://ftp.dot.state.tx.us/pub/txdot-info/env/toolkit/730-01-gui.pdf

-2016. Indirect Impacts Analysis Guidance. Found at http://ftp.dot.state.tx.us/pub/txdot-info/env/toolkit/720-02-gui.pdf.

-2019. Statewide Transportation Improvement Program, Latest Completed 2019-2022 STIP Revision. Found at https://www.dot.state.tx.us/apps/estip/index.aspx (accessed March 1, 2019).

Texas Parks and Wildlife Department

-2018. Annotated County List of Rare Species for Kaufman County and Rockwall County. Found at http://tpwd.texas.gov/gis/rtest/.

-Texas Natural Diversity Database. How to order data found at https://tpwd.texas.gov/huntwild/wild/wildlife_diversity/txndd/data.phtml (received December 4, 2019)

U.S. Census Bureau

-2010. Census 2010 Summary File 1. Found at https://factfinder.census.gov/faces/nav/jsf/pages/download_center.xhtml (accessed May 30, 2019). American FactFinder has since been decommissioned and all data moved to https://data.census.gov/cedsci/

-2018. 2013-2017 American Community Survey 5-Year Estimates data. Found at https://factfinder.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t (accessed May 30, 2019).

U.S. Department of Agriculture

-Natural Resources Conservation Service Web Soil Survey. Found at http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx (accessed October 25, 2019).

U.S. Fish and Wildlife Service

-National Wetlands Inventory. Found at https://www.fws.gov/wetlands/data/Mapper.html (accessed December 5, 2019).

-Official Species List. Found at https://ecos.fws.gov/ipac/ (accessed December 4, 2019)

11.0 Appendices

Appendix A – Project Location Map

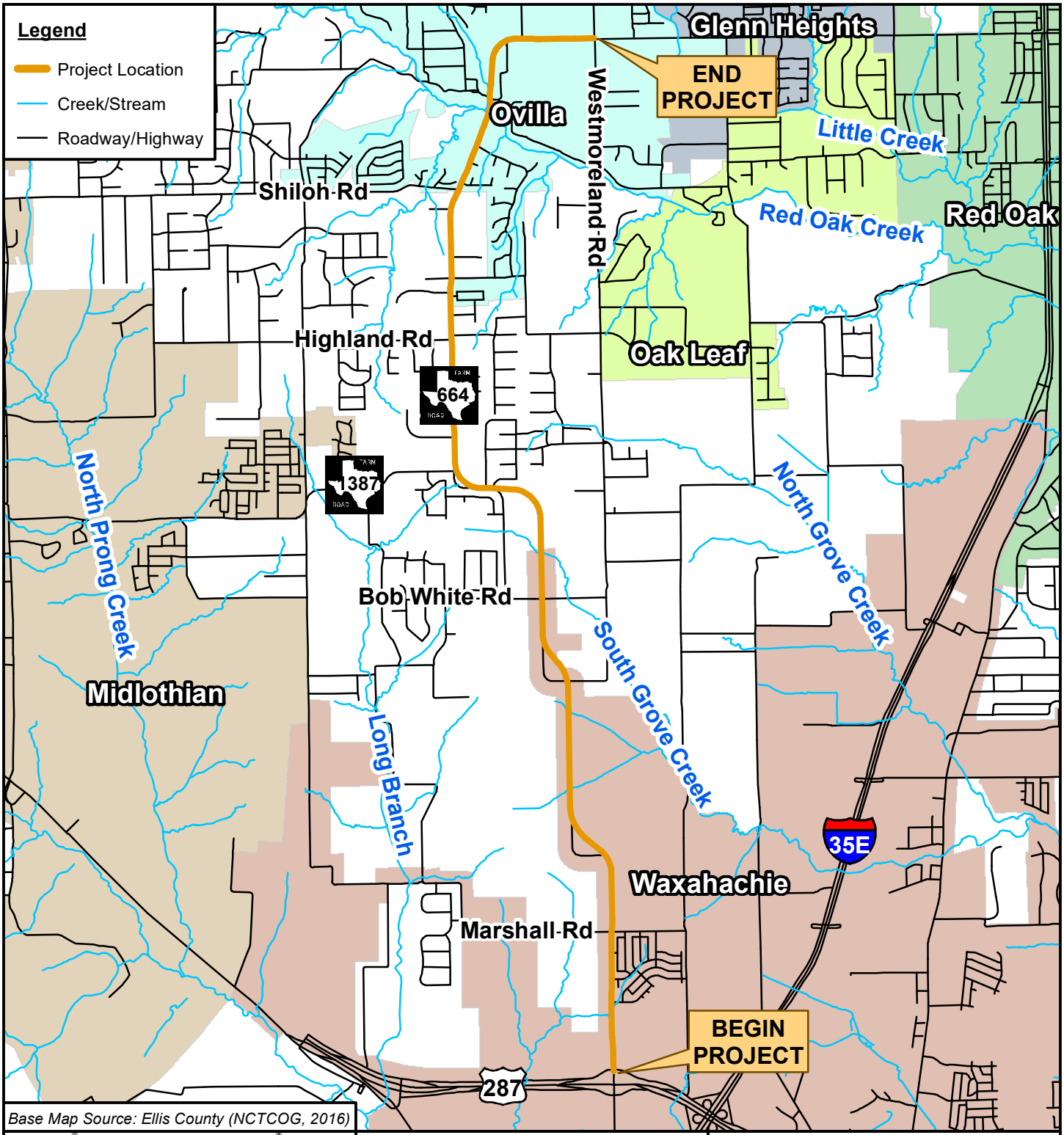


FIGURE 1
PROJECT LOCATION MAP

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

Appendix B – Project Photos

Photograph 1: View looking northeast from FM 664 bridge over US 287 at the beginning of the project. Date of photograph: 8/14/19.

Photograph 2: View looking north from FM 664 and its intersection with Valley View Dr, showing a typical residential neighborhood adjacent. Date of photograph: 8/14/19.

Photograph 3: View looking west from FM 664 towards a typical agricultural area. Agricultural areas make up approximately two-thirds of land adjacent to the project. Date of photograph: 8/14/19.

Photograph 4: View looking southwest from S Westmoreland Rd toward FM 664 and the end of the project. Date of photograph: 12/24/19.

Photograph 5: View looking southwest from FM 664 towards the Ovilla Road Christian School (ID 5) at 3251 Ovilla Rd, Red Oak, TX 75154. Date of photograph: 8/14/19.

Photograph 6: View looking east from FM 664 towards Fire House Kids Christian Child Care Center (ID 11) at 3325 Ovilla Rd, Ovilla, TX 75154. Date of photograph: 8/14/19.

Photograph 7: View looking southeast from FM 664 towards Vertical Church (ID 12) at 3325 Ovilla Rd, Ovilla, TX 75154. Date of photograph: 8/14/19.

Photograph 8: View looking south from West Main Street towards Heritage Park (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 (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 (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 (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 (ID 34) at 624 Ovilla Rd, Waxahachie, TX 75167. Date of photograph: 8/14/19.

Photograph 13: View looking south from the east ROW of FM 664 toward Crossing 3, an unnamed tributary of South Grove Creek. Date of photograph: 11/20/19.

Photograph 14: View looking southeast from the west ROW of FM 664 toward Crossing 5, Red Oak Creek. Date of photograph: 11/20/19.

Photograph 15: View looking north from Heritage Park, west of FM 664 toward Crossing 6, Red Oak Creek tributary. Date of photograph: 11/20/19.

Photograph 16: View looking north from FM 664 towards an area of dense riparian vegetation seen occasionally, especially surrounding water crossings such as this one, Crossing 2, an unnamed tributary to South Grove Creek. Date of photograph: 8/14/19.

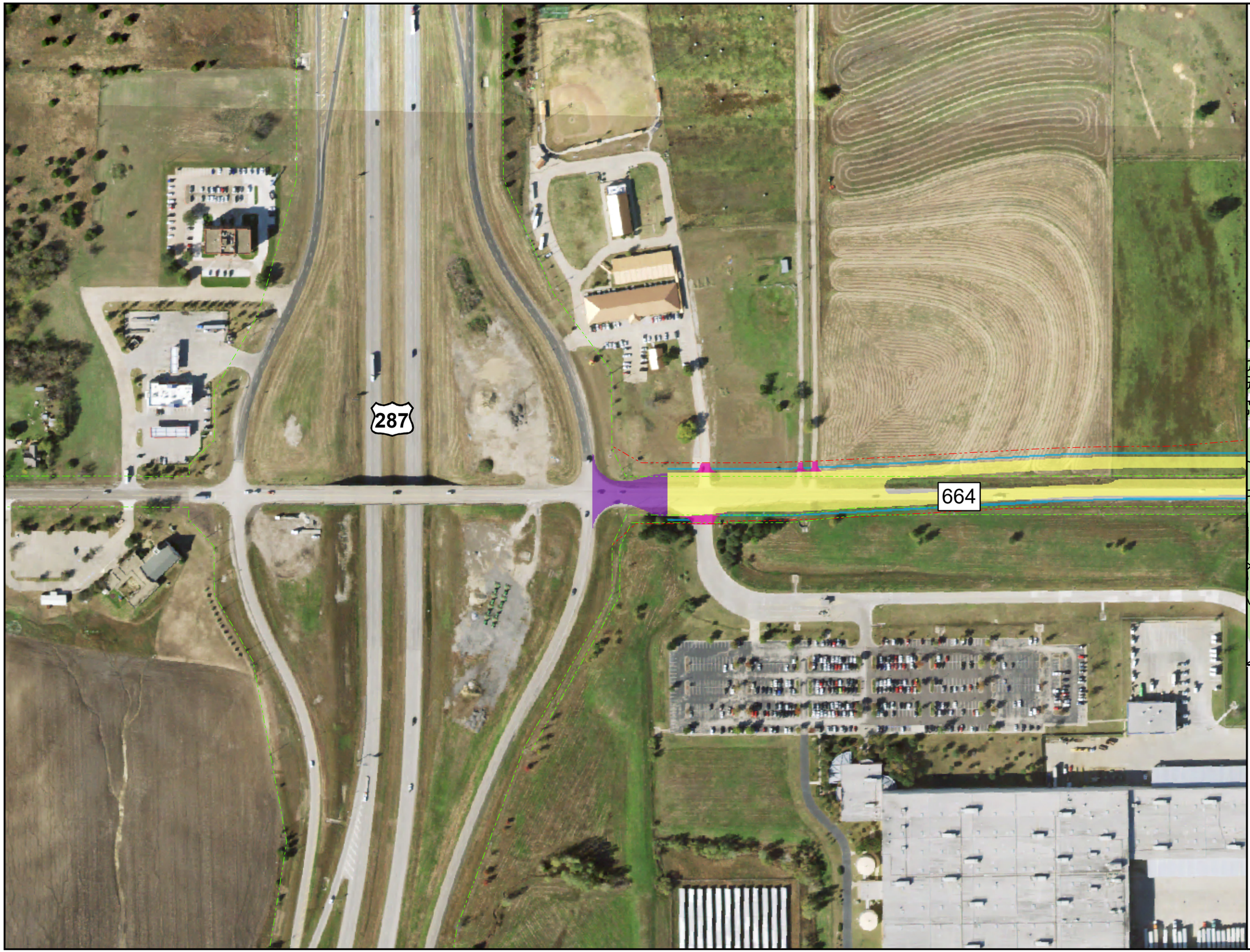
Photograph 17: View looking west at the intersection of Bob While Ln and FM 664, toward an area of riparian vegetation. Date of photograph: 8/14/19.

Photograph 18: View looking south from a parking lot towards the Ovilla Market (Map ID 2), located adjacent east of FM 664 at 3321 Ovilla Rd, Ovilla, TX 75154. Date of photograph: 8/14/19.

Photograph 19: View looking north from a parking lot towards a former gas station (Map ID 3), located just west of FM 664 at 696 W Main St, Ovilla, TX 75154. Date of photograph: 8/14/19.

Photograph 20: View looking south from a parking lot towards the Teachers Who Tutor, formerly Tote-A-Way, located adjacent east of FM 664 at 3323 Ovilla Rd, Red Oak, TX 75154. Date of photograph: 8/14/19.

Appendix C – Schematics



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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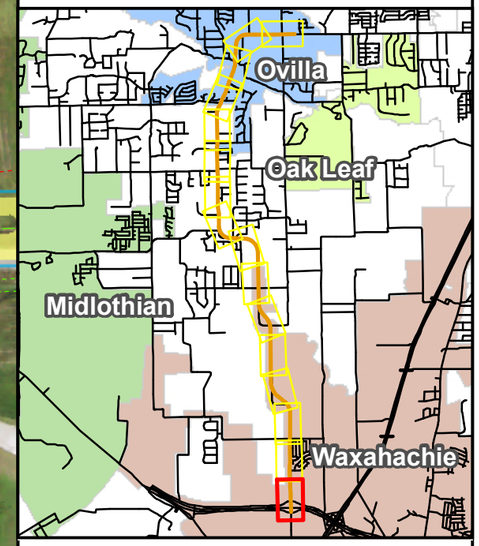

Legend

- Existing Right-of-Way
- Proposed Right-of-Way
- Proposed Easement
- Potential Displacement
- Proposed Bridge
- Cross Street
- Mainlanes
- Sidewalks
- Driveway
- Bridge Removal

Base Map Source: TNRIS (2018)

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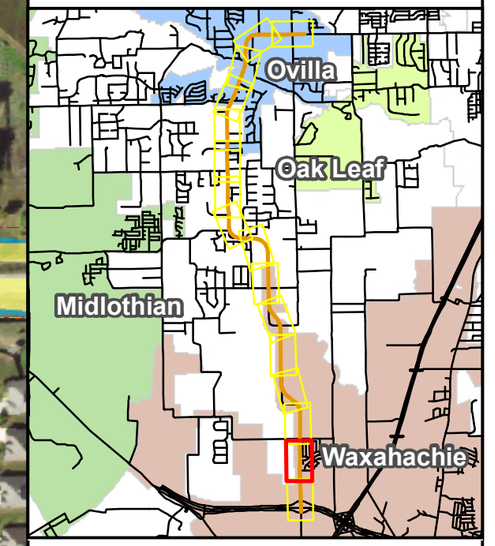

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Valley View Dr

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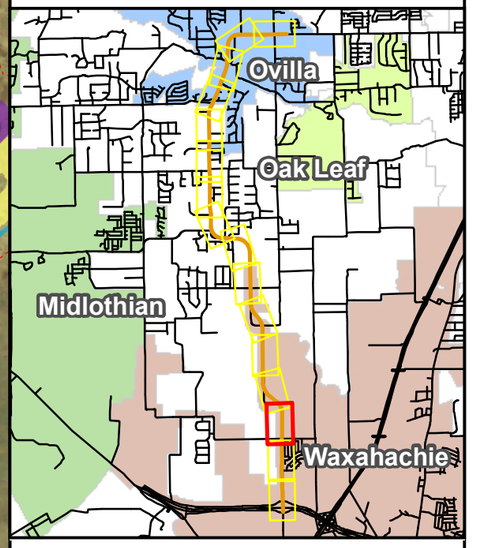

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Marshall Rd

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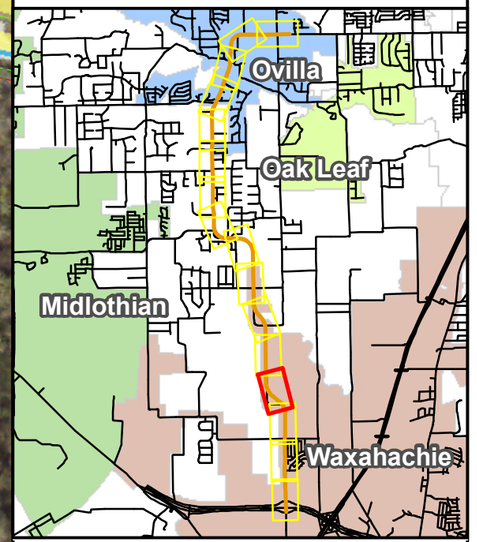

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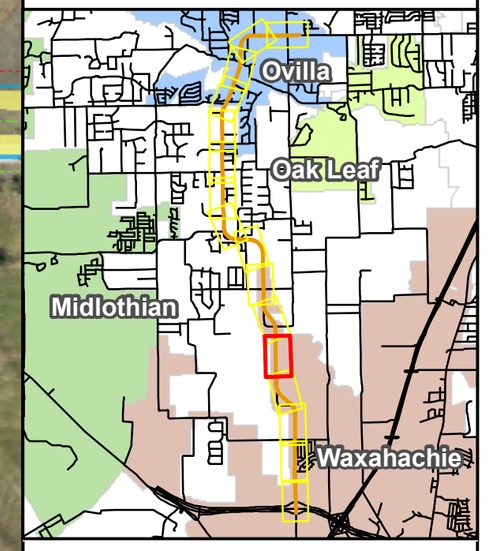

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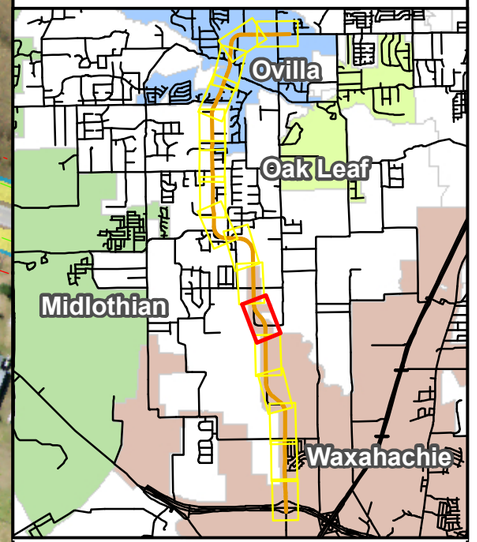

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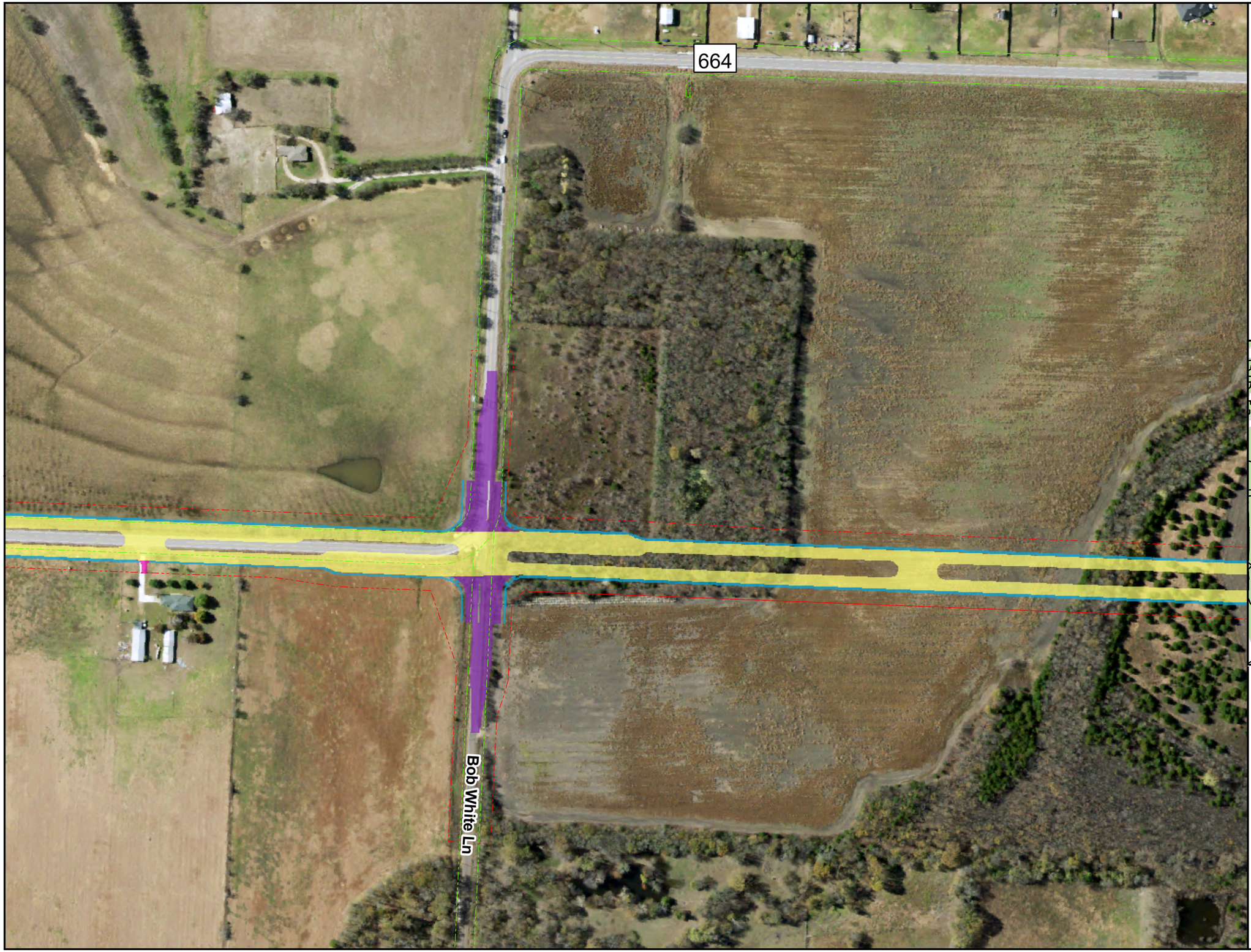

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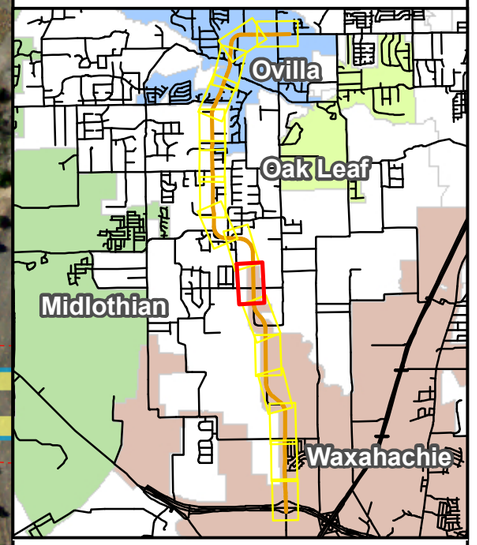

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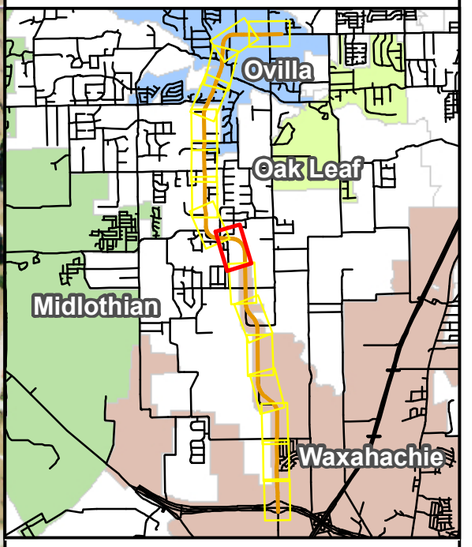

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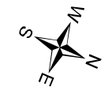

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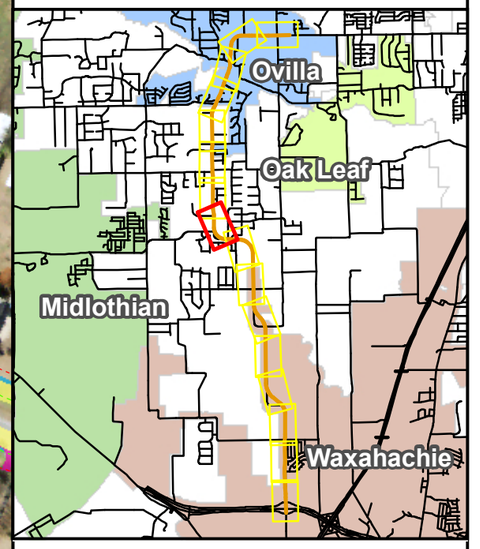

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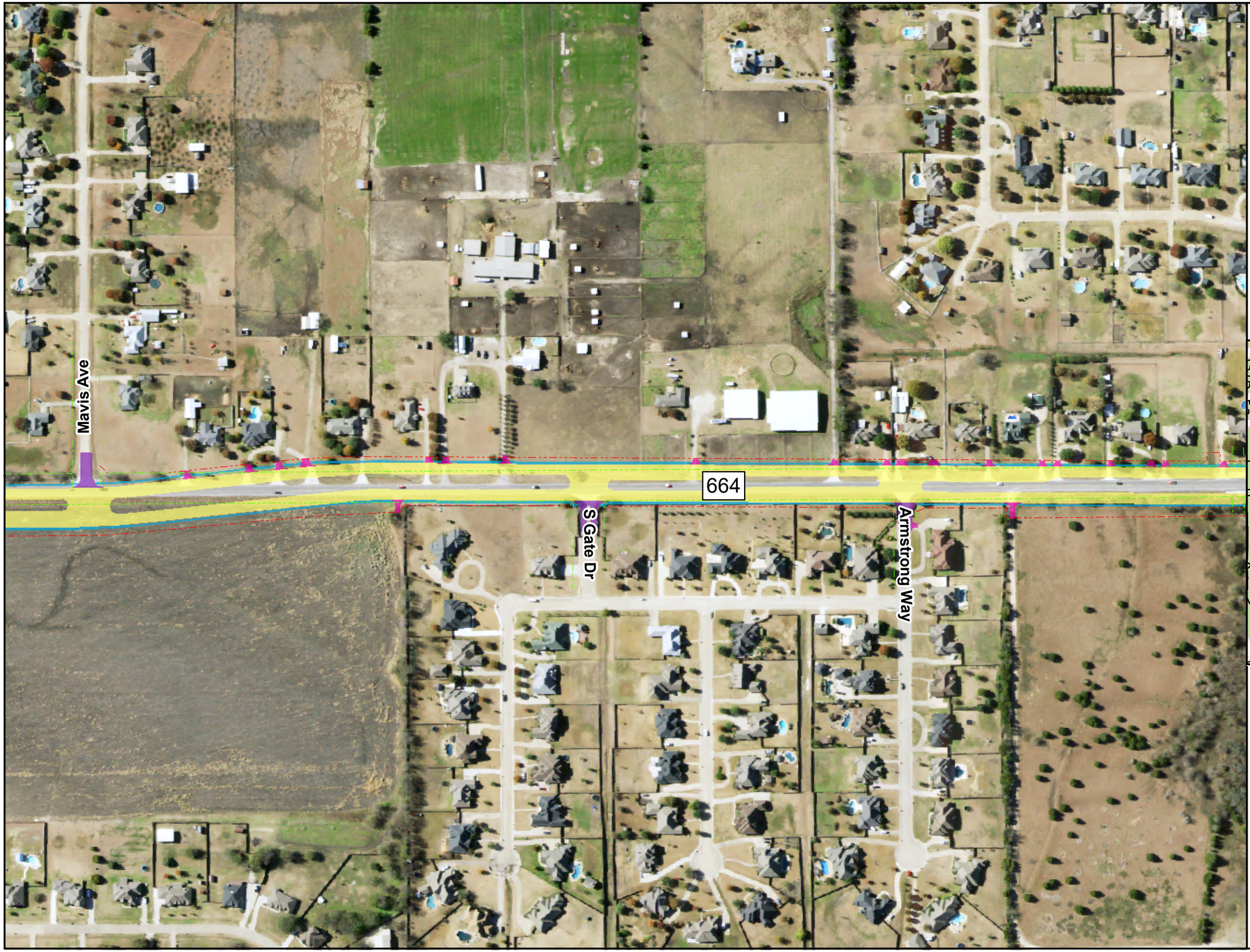

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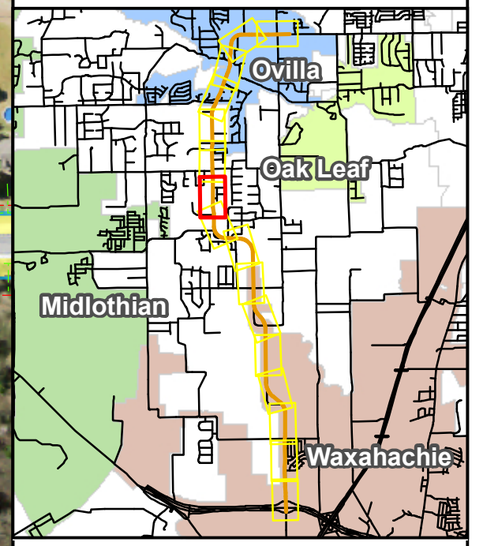

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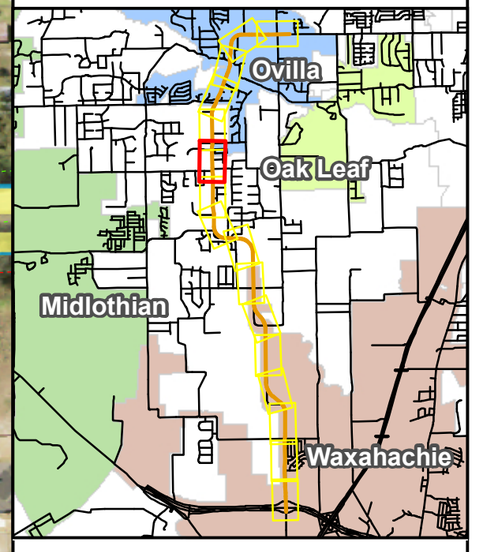

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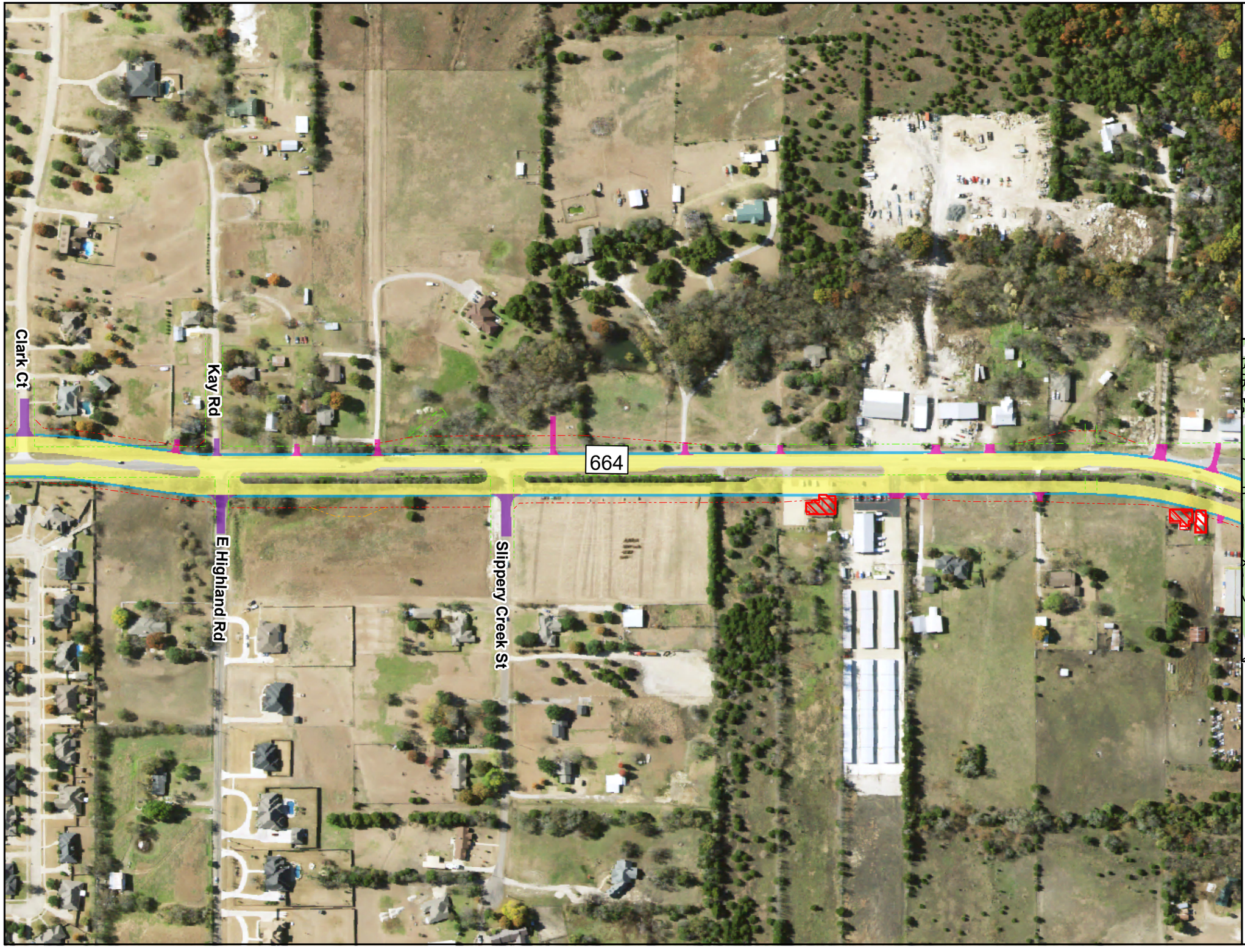

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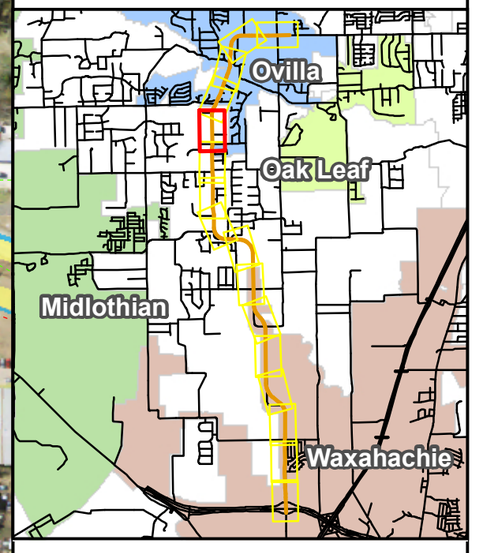


Legend

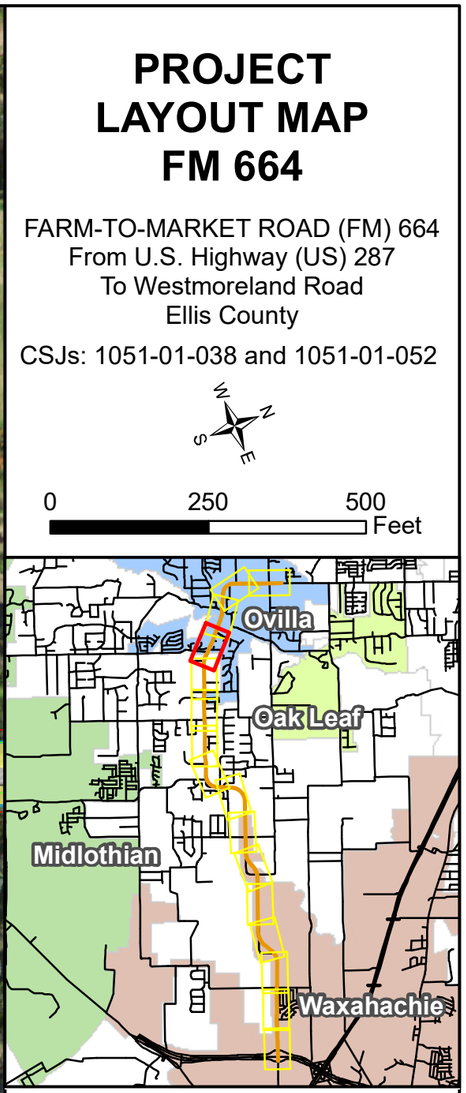
- Existing Right-of-Way
- Proposed Right-of-Way
- Proposed Easement
- Potential Displacement
- Proposed Bridge
- Cross Street
- Mainlanes
- Sidewalks
- Driveway
- Bridge Removal

Base Map Source: TNRIS (2018)

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



0 250 500 Feet

Legend

- Existing Right-of-Way
- Proposed Right-of-Way
- Proposed Easement
- Potential Displacement
- Proposed Bridge
- Cross Street
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PROJECT LAYOUT MAP FM 664

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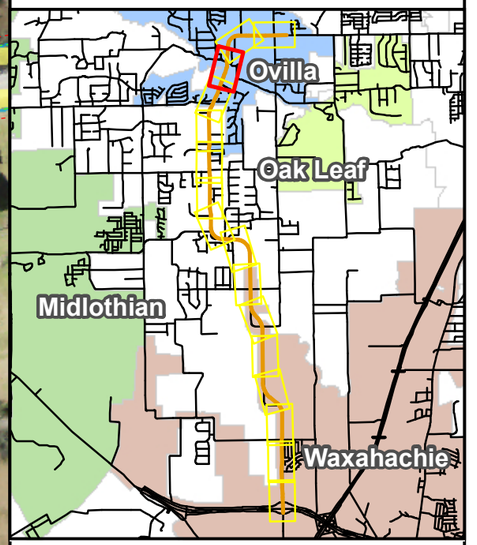
From U.S. Highway (US) 287
To Westmoreland Road
Ellis County

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

N
W
E
S

0 250 500 Feet



Legend

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Base Map Source: TNRIS (2018)

PROJECT LAYOUT MAP FM 664

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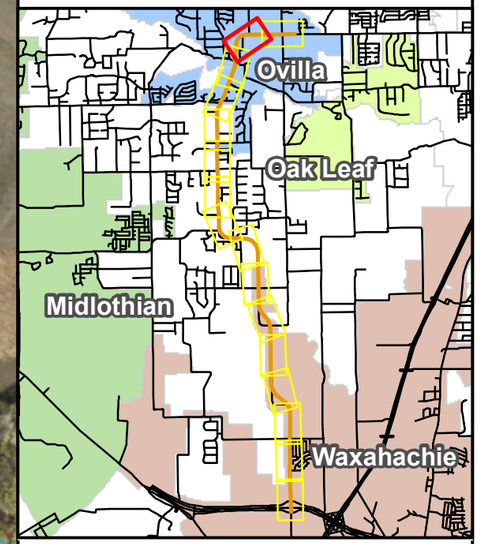
N
W
E
S

0 250 500 Feet



Legend

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Base Map Source: TNRIS (2018)

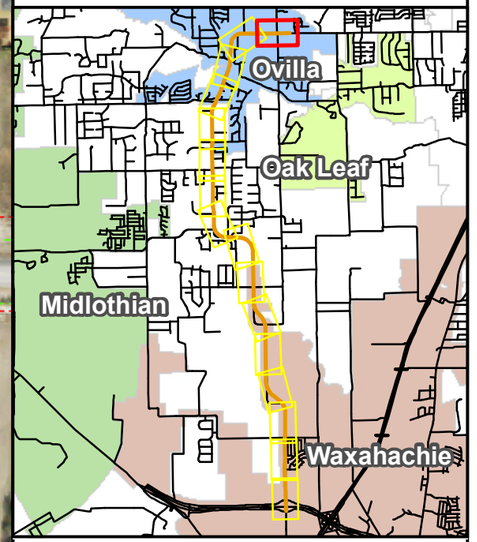
PROJECT LAYOUT MAP FM 664

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

N
W E
S

0 250 500 Feet



Legend

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- Proposed Right-of-Way
- Proposed Easement
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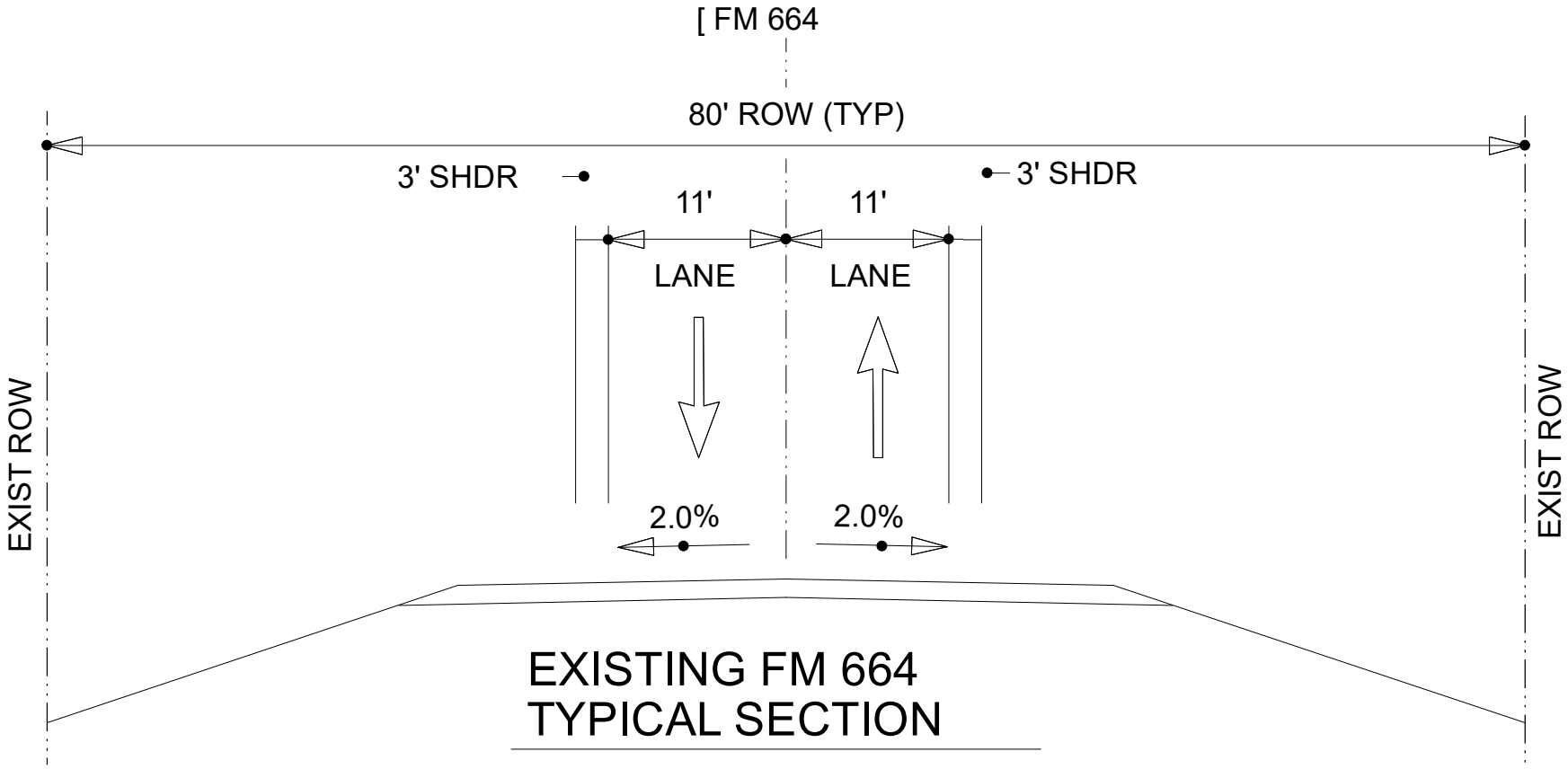
- Proposed Bridge
- Cross Street
- Mainlanes
- Sidewalks
- Driveway
- Bridge Removal

Base Map Source: TNRIS (2018)

Appendix D – Typical Sections



EXISTING FM 664 TYPICAL SECTION

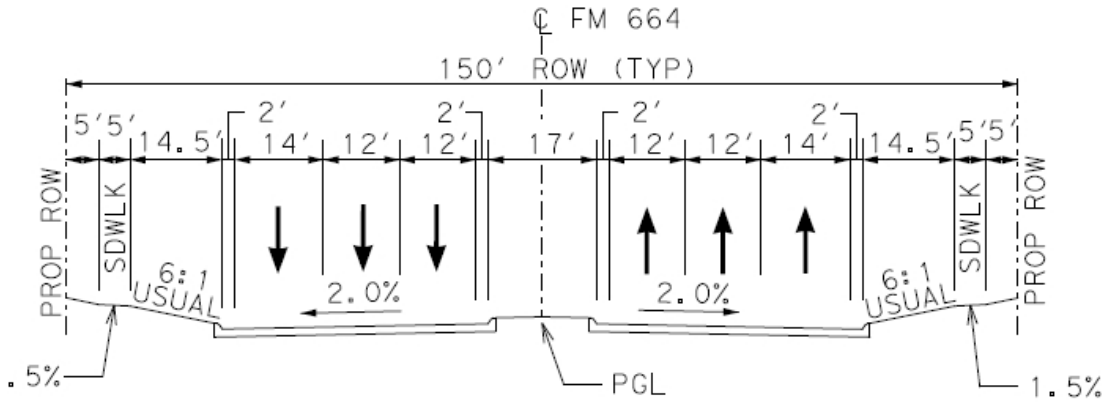
FOR REPORT PURPOSES ONLY

Not for construction, bidding, or permit purposes

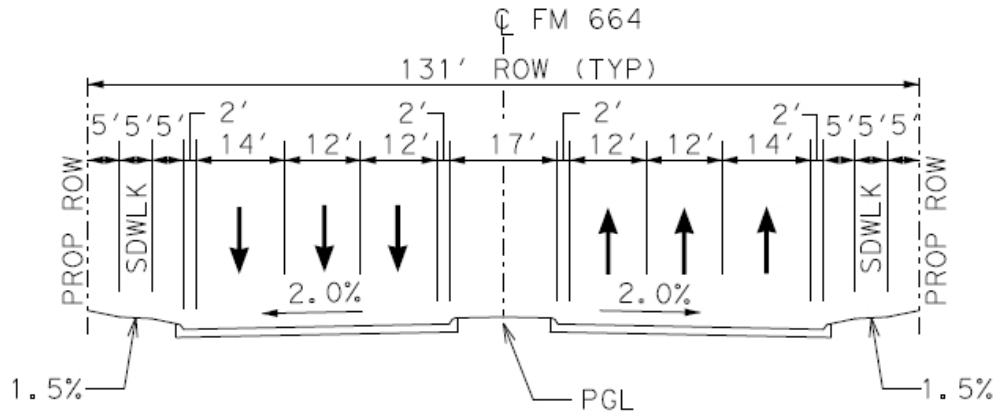
Appendix D
TYPICAL SECTIONS

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
PURPOSES ONLY

Not for construction, bidding,
or permit purposes

Appendix D
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

Appendix E – Plan and Program Excerpts

Mobility 2045
Regionally Significant Arterial Improvements

Revised March 30, 2020

RSA ID	Agency	County	Facility	From	To	2018*	2020*	2028	2037	2045	YOE Cost
2.150.375	TxDOT Dallas	Denton	Outer Loop Greenbelt Pkwy **	US 377	Legacy Drive	0	0	2	3/3	N/A	
2.205.425	TxDOT Dallas	Denton	SH 114 EB/SH 114 WB	County Line Road	West Of FM 156	2	2	2	2/2	2/2	$33,817,800
2.205.450	TxDOT Dallas	Denton	SH 114	West of FM 156	FM 156	2/2	2/2	2/2	2/2	2/2	$1,938,600
2.205.475	TxDOT Dallas	Denton	SH 114	FM 156	Double Eagle Blvd	2/2	2/2	N/A	N/A	N/A	
2.205.500	TxDOT Dallas	Denton	SH 114	Double Eagle Blvd	IH 35W	3/3	3/3	N/A	N/A	N/A	
2.205.600	TxDOT Dallas	Denton	SH 114	Labonte Drive	IH 35W	2/2	2/2	N/A	N/A	N/A	
2.205.625	TxDOT Dallas	Denton	SH 114	US 377	East Of US 377	2/2	2/2	N/A	N/A	N/A	
2.205.650	TxDOT Dallas	Denton	SH 114	East of US 377	SH 170	2/2	2/2	N/A	N/A	N/A	
2.325.500	TxDOT Dallas	Denton	SH 170 **	US 377	Roanoke Road	2/2	2/2	N/A	N/A	N/A	
2.325.550	TxDOT Dallas	Denton	SH 170 **	Roanoke Road	Jt Ottinger Road	2/2	N/A	N/A	N/A	N/A	
2.325.560	TxDOT Dallas	Denton	SH 170 **	Jt Ottinger Road	East Of Jt Ottinger Road	3/3	N/A	N/A	N/A	N/A	
2.325.575	TxDOT Dallas	Denton	SH 170 **	East Of Jt Ottinger Road	SH 114	2/2	N/A	N/A	N/A	N/A	
1.430.200	TxDOT Dallas	Denton	SL 288/ FM 2449	John Paine Road	Vintage Parkway	2	2	2	2/2	2/2	$5,898,590
1.523.110	TxDOT Dallas	Denton	US 377	North of E Northside Dr	S Washington Street	2	2	2	4	6	$20,678,165
1.523.120	TxDOT Dallas	Denton	US 377	S Washington Street	FM 428	2	2	2	4	6	$39,767,808
1.523.130	TxDOT Dallas	Denton	US 377	FM 428	US 380	2	2	2	4	6	$34,399,687
1.540.210	TxDOT Dallas	Denton	US 377	IH 35E	South of FM 1830 Country Club Road	2	2	6	6	6	$37,980,000
1.540.220	TxDOT Dallas	Denton	US 377	South of FM 1830	Crawford Road	2	2	2	6	6	$80,000,000
1.540.230	TxDOT Dallas	Denton	US 377	Crawford Road	Marshall Creek Road	2	2	4	4	4	$133,900,000
1.540.240	TxDOT Dallas	Denton	US 377	Marshall Creek Road	SH 114	4	4	4	4	4	$2,536,000
1.540.250	TxDOT Dallas	Denton	US 377	SH 114	North Of Byron Nelson Blvd	4	4	4	4	4	$1,040,000
1.540.260	TxDOT Dallas	Denton	US 377	North of Byron Nelson Blvd	Parish Lane	2	2	4	4	4	$12,050,000
2.225.300	TxDOT Dallas	Denton	US 380 University Drive	Bonnie Brae Street	Malone Street	6	6	6	6	6	$7,456,430
2.225.275	TxDOT Dallas	Denton	US 380	FM 156	IH 35	6	6	6	6	6	$45,700,000
2.225.425	TxDOT Dallas	Denton	US 380	East of Fish Trap Road	US 377	2/2	2/2	3/3	3/3	3/3	$3,340,000
2.225.440	TxDOT Dallas	Denton	US 380	US 377	Potter Shop Road	2/2	2/2	3/3	3/3	3/3	$760,000
2.225.445	TxDOT Dallas	Denton	US 380	Potter Shop Road	FM 720	4	4	6	6	6	$19,430,000
2.225.450	TxDOT Dallas	Denton	US 380	FM 720	FM 423	4	4	6	6	6	$96,280,000
2.225.475	TxDOT Dallas	Denton	US 380	FM 423	CR 26	4	4	3/3	3/3	3/3	$32,370,000
2.267.300	TxDOT Dallas	Denton	Valley Ridge Blvd	Mill Street	College Street	0	0	4	4	4	$17,770,000
1.430.225	TxDOT Dallas	Denton	Vintage Parkway	IH 35W	US 377	2	2	4	4	4	$11,344,400
2.787.250	TxDOT Dallas	Ellis	BU 287 BU 45	Paris Street	IH 45	2	2	4	4	4	$7,610,800
1.563.200	TxDOT Dallas	Ellis	FM 664 Ovilla Road	Ovilla Main Street	BU 287	2	2	4	4	6	$100,000,000
2.710.225	TxDOT Dallas	Ellis	FM 664 Ovilla Road	Westmoreland Road	Ovilla Main Street	2	2	4	4	6	$20,000,000
2.710.250	TxDOT Dallas	Ellis	FM 664	Westmoreland Road	IH 35E	2	2	6	6	6	$45,100,000
2.710.300	TxDOT Dallas	Ellis	FM 664	IH 35E	SH 342	4	4	6	6	6	$40,128,140
2.710.325	TxDOT Dallas	Ellis	FM 664	SH 342	IH 45	2	2	6	6	6	$192,371,860
1.840.750	TxDOT Dallas	Ellis	SH 34 Lake Bardwell Drive	SP 437 Clay Street	IH 35E	2	2	2	4	4	$141,087,000
1.840.650	TxDOT Dallas	Ellis	SH 34	FM 2451	Sunridge Drive	2	2	2	4	4	$18,452,600
1.840.655	TxDOT Dallas	Ellis	SH 34	Sunridge Drive	Sonoma Trail	2	2	2	4	4	$4,882,400
1.840.660	TxDOT Dallas	Ellis	SH 34	Sonoma Trail	IH 45	2	2	2	4	4	$2,656,600
1.840.700	TxDOT Dallas	Ellis	SH 34	FM 1181	Kaufman Street	2	2	4	4	4	$1,220,600
1.840.725	TxDOT Dallas	Ellis	SH 34	FM 1183	SP 437 Clay Street	2	2	2	4	4	$4,810,600
1.595.390	TxDOT Dallas	Ellis	SH 342	Loop 9	FM 664	2	2	2	4	4	$12,349,600
1.595.400	TxDOT Dallas	Ellis	SH 342	FM 664	US 77	2	2	2	4	4	$12,032,995
1.220.875	TxDOT Dallas	Ellis	US 287	SH 34	IH 45	2	2	N/A	N/A	N/A	
1.580.300	TxDOT Dallas	Ellis	US 77 Elm Street	Ferris Avenue	FM 66	2	2	4	4	4	$21,183,600
1.580.325	TxDOT Dallas	Ellis	US 77	FM 66	FM 877	2	2	4	4	4	$502,600
2.745.240	TxDOT Fort Worth	Hood	FM 4 FM 167 Fall Creek	FM 4 Acton Hwy	North Gate Road	2	2	2	4	4	$160,610
2.745.250	TxDOT Fort Worth	Hood	FM 4 FM 167 Fall Creek	North Gate Road	FM 167	2	2	2	4	4	$6,000,000
1.205.275	TxDOT Fort Worth	Hood	SH 144	Pear Orchard Road	North of US 67	2	2	2	2	4	$24,860,000
1.250.200	TxDOT Fort Worth	Hood	US 377 Bypass	North of SH 171	Old Granbury Road	0	0	2/2	2/2	2/2	$77,500,000
1.540.520	TxDOT Fort Worth	Hood	US 377 NB/US 377 SB	East of SH 144	FM 51	2/2	2/2	3/3	3/3	3/3	$13,900,000
1.540.455	TxDOT Fort Worth	Hood	US 377	BU 377	North of BU 377	2/2	2/2	4	4	4	$5,169,600
1.540.470	TxDOT Fort Worth	Hood	US 377	FM 167 S (Fall Creek Hwy)	FM 167 N (Temple Hall Hwy)	2/2	2/2	3/3	3/3	3/3	$53,800,000
1.540.480	TxDOT Fort Worth	Hood	US 377	FM 167 N (Temple Hall Hwy)	Mustang Trail	4	4	6	6	6	$12,161,541
1.540.490	TxDOT Fort Worth	Hood	US 377	Mustang Trail	Harbor Lakes Drive	2/2	2/2	3/3	3/3	3/3	$41,392,000
1.540.500	TxDOT Fort Worth	Hood	US 377	Harbor Lakes Drive	Old Cleburne Road	4	4	6	6	6	$2,465,777
1.540.510	TxDOT Fort Worth	Hood	US 377	Old Cleburne Road	East Of SH 144	2/2	2/2	3/3	3/3	3/3	$5,306,096
1.540.540	TxDOT Fort Worth	Hood	US 377	FM 51	BU 377	2/2	2/2	2/2	2/2	2/2	$43,107,000
1.540.550	TxDOT Fort Worth	Hood	US 377	BU 377	Holmes Dr.	1/2	1/2	1/2	2/2	2/2	$800,000
1.540.560	TxDOT Fort Worth	Hood	US 377	Holmes Dr.	Powell Cemetery Road	2	2	2	4	4	$40,680,000

* Attainment Years

**Stage facilities reported as 'N/A' indicate project is no longer classified as an arterial and will be reported in Freeway/Tollway Recommendations listing instead.

Note: '2/2' indicates facility operates as couplet.

2019-2022 STIP				11/2019 Revision: Approved 01/29/2020					
DISTRICT	**MPO**	**COUNTY**	**CSJ**	**TIP FY**	**HWY**	**PHASE**	**CITY**		**YOE COST**
DALLAS	NCTCOG	ELLIS	1051-01-038	2021	FM 664	E,ENG,R,ACQ	WAXAHACHIE	$	18,500,000

LIMITS FROM US 287 IN WAXAHACHIE
LIMITS TO FM 1387
PROJECT DESCR RECONSTRUCT AND WIDEN 2 LANE RURAL TO 4 LANE DIVIDED URBAN ROADWAY (ULTIMATE 6)
REMARKS P7 ADVANCE ENGINEERING AND ROW PHASES TO FY2021; ADD PROJECT TO THE 2019-2022 TIP/STIP; REVISE SCOPE
PROJECT HISTORY
PROJECT SPONSOR TXDOT-DALLAS
REVISION DATE 11/2019
MPO PROJ NUM 83223
FUNDING CAT(S) SW PE,SW ROW

TOTAL PROJECT COST INFORMATION

PREL ENG	$ 3,500,000
ROW PURCH	$ 15,000,000
CONSTR	$ 45,703,741
CONST ENG	$ 2,266,906
CONTING	$ 909,504
INDIRECT	$ 0
BOND FIN	$ 0
PT CHG ORD	$ 0
TOTAL CST	$ 67,380,151

COST OF APPROVED PHASES $ 18,500,000

AUTHORIZED FUNDING BY CATEGORY/SHARE

CATEGORY	FEDERAL	STATE	REGIONAL	LOCAL	LC	TOTAL
SW PE	$ 0	$ 3,500,000	$ 0	$ 0	$ 0	$ 3,500,000
SW ROW	$ 12,000,000	$ 1,500,000	$ 0	$ 1,500,000	$ 0	$ 15,000,000
TOTAL	$ 12,000,000	$ 5,000,000	$ 0	$ 1,500,000	$ 0	$ 18,500,000

2019-2022 STIP				11/2019 Revision: Approved 01/29/2020					
DISTRICT	**MPO**	**COUNTY**	**CSJ**	**TIP FY**	**HWY**	**PHASE**	**CITY**		**YOE COST**
DALLAS	NCTCOG	COLLIN	0918-47-965	2021	US 75	E,ENG	RICHARDSON	$	450,000

LIMITS FROM US 75 NORTHBOUND FRONTAGE ROAD FROM RENNER ROAD
LIMITS TO W CITY LINE DRIVE
PROJECT DESCR WIDEN US 75 NB FRONTAGE ROAD BRIDGE OVER SPRING CREEK TO CONSTRUCT SHARED-USE PATH
REMARKS P7 ADD PROJECT TO THE 2019-2022 TIP/STIP
PROJECT HISTORY 90,000 OF CAT 3 -TDC (MPO) UTILIZED IN LIEU OF A LOCAL MATCH AND ARE NOT CALCULATED IN FUNDING TOTAL
PROJECT SPONSOR RICHARDSON
REVISION DATE 11/2019
MPO PROJ NUM 14073
FUNDING CAT(S) 5,Other

TOTAL PROJECT COST INFORMATION

PREL ENG	$ 450,000
ROW PURCH	$ 25,000
CONSTR	$ 2,500,000
CONST ENG	$ 1,250
CONTING	$ 56,250
INDIRECT	$ 0
BOND FIN	$ 0
PT CHG ORD	$ 0
TOTAL CST	$ 3,032,500

COST OF APPROVED PHASES $ 450,000

AUTHORIZED FUNDING BY CATEGORY/SHARE

CATEGORY	FEDERAL	STATE	REGIONAL	LOCAL	LC	TOTAL
5	$ 450,000	$ 0	$ 0	$ 0	$ 0	$ 450,000
Other	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
TOTAL	$ 450,000	$ 0	$ 0	$ 0	$ 0	$ 450,000

2019-2022 STIP				11/2019 Revision: Approved 01/29/2020					
DISTRICT	**MPO**	**COUNTY**	**CSJ**	**TIP FY**	**HWY**	**PHASE**	**CITY**		**YOE COST**
DALLAS	NCTCOG	DALLAS	0918-47-296	2021	VA	C	DALLAS	$	15,500,000

LIMITS FROM CIRCUIT TRAIL CONNECTOR/KATY TRAIL EXTENSION FROM KATY TRAIL
LIMITS TO TRINITY STRAND TRAIL
PROJECT DESCR EXTEND TRINITY STRAND TRAIL TO THE KATY TRAIL VIA HI LINE DRIVE AND VICTORY AVENUE TO HOUSTON STREET
REMARKS P7 ADD PROJECT TO THE 2019-2022 TIP/STIP; LOCAL CONTRIBUTION PAID BY CITY OF DALLAS
PROJECT HISTORY
PROJECT SPONSOR DALLAS
REVISION DATE 11/2019
MPO PROJ NUM 14085
FUNDING CAT(S) 3LC,5

TOTAL PROJECT COST INFORMATION

PREL ENG	$ 2,500,000
ROW PURCH	$ 0
CONSTR	$ 15,500,000
CONST ENG	$ 621,550
CONTING	$ 220,100
INDIRECT	$ 0
BOND FIN	$ 0
PT CHG ORD	$ 0
TOTAL CST	$ 18,841,650

COST OF APPROVED PHASES $ 15,500,000

AUTHORIZED FUNDING BY CATEGORY/SHARE

CATEGORY	FEDERAL	STATE	REGIONAL	LOCAL	LC	TOTAL
3LC	$ 0	$ 0	$ 0	$ 0	$ 5,500,000	$ 5,500,000
5	$ 8,000,000	$ 0	$ 0	$ 2,000,000	$ 0	$ 10,000,000
TOTAL	$ 8,000,000	$ 0	$ 0	$ 2,000,000	$ 5,500,000	$ 15,500,000

2019-2022 STIP — **07/2018 Revision: Approved 09/28/2018**

DISTRICT	MPO	COUNTY	CSJ	TIP FY	HWY	PHASE	CITY	YOE COST
DALLAS	NCTCOG	ELLIS	2964-12-001	2019	SL 9	R,ACQ	VARIOUS	$ 26,000,000

LIMITS FROM IH 35E
LIMITS TO DALLAS COUNTY LINE
PROJECT DESCR CONSTRUCT 0 TO 2 LANE FRONTAGE ROADS (ULTIMATE 6) INCLUDING ITS, SIDEWALKS, AND TURN LANES
PROJECT SPONSOR TXDOT-DALLAS
REVISION DATE 07/2018
MPO PROJ NUM 54119.3
FUNDING CAT(S) S102
REMARKS P7
PROJECT HISTORY PART OF REGIONAL 10 YEAR PLAN

TOTAL PROJECT COST INFORMATION

PREL ENG	$ 500,000
ROW PURCH	$ 26,000,000
CONSTR	$ 9,014,060
CONST ENG	$ 441,650
CONTING	$ 112,666
INDIRECT	$ 0
BOND FIN	$ 0
PT CHG ORD	$ 0
TOTAL CST	$ 36,068,376

COST OF APPROVED PHASES $ 26,000,000

AUTHORIZED FUNDING BY CATEGORY/SHARE

CATEGORY	FEDERAL	STATE	REGIONAL	LOCAL	LC	TOTAL
SW ROW	$ 20,800,000	$ 2,600,000	$ 0	$ 2,600,000	$ 0	$ 26,000,000
TOTAL	$ 20,800,000	$ 2,600,000	$ 0	$ 2,600,000	$ 0	$ 26,000,000

2019-2022 STIP — **07/2018 Revision: Approved 09/28/2018**

DISTRICT	MPO	COUNTY	CSJ	TIP FY	HWY	PHASE	CITY	YOE COST
DALLAS	NCTCOG	ELLIS	1051-01-052	2019	FM 664	E,ENG,R,ACQ	MIDLOTHIAN	$ 6,500,000

LIMITS FROM FM 1387
LIMITS TO WESTMORELAND ROAD
PROJECT DESCR RECONSTRUCT AND WIDEN 2 LANE RURAL TO 4 LANE DIVIDED URBAN ROADWAY (ULTIMATE 6 LANE)
PROJECT SPONSOR TXDOT-DALLAS
REVISION DATE 07/2018
MPO PROJ NUM 13028
FUNDING CAT(S) S102,SBPE
REMARKS P7
PROJECT HISTORY PART OF REGIONAL 10 YEAR PLAN

TOTAL PROJECT COST INFORMATION

PREL ENG	$ 1,500,000
ROW PURCH	$ 5,000,000
CONSTR	$ 32,145,761
CONST ENG	$ 1,533,106
CONTING	$ 615,097
INDIRECT	$ 0
BOND FIN	$ 0
PT CHG ORD	$ 0
TOTAL CST	$ 40,793,964

COST OF APPROVED PHASES $ 6,500,000

AUTHORIZED FUNDING BY CATEGORY/SHARE

CATEGORY	FEDERAL	STATE	REGIONAL	LOCAL	LC	TOTAL
SW PE	$ 0	$ 1,500,000	$ 0	$ 0	$ 0	$ 1,500,000
SW ROW	$ 4,000,000	$ 500,000	$ 0	$ 500,000	$ 0	$ 5,000,000
TOTAL	$ 4,000,000	$ 2,000,000	$ 0	$ 500,000	$ 0	$ 6,500,000

2019-2022 STIP — **02/2019 Revision: Approved 04/04/2019**

DISTRICT	MPO	COUNTY	CSJ	TIP FY	HWY	PHASE	CITY	YOE COST
DALLAS	NCTCOG	ELLIS	1051-01-051	2019	FM 664	E,ENG,R,ACQ	VARIOUS	$ 40,000,000

LIMITS FROM IH 35E
LIMITS TO WEST OF FERRIS ROAD
PROJECT DESCR RECONSTRUCT AND WIDEN 2/4 LANE RURAL ROADWAY TO 6 LANE DIVIDED URBAN
PROJECT SPONSOR TXDOT-DALLAS
REVISION DATE 02/2019
MPO PROJ NUM 13035.1
FUNDING CAT(S) SBPE,S102
REMARKS P7 REVISE SCOPE; REVISE LIMITS; CHANGE TIP CODE FROM 13035 TO 13035.1
PROJECT HISTORY PART OF REGIONAL 10 YEAR PLAN; R PHASE IN FY 2019 IS FOR $30,000,000 FOR ROW; R PHASE IN FY 2021 IS FOR $2,000,000 FOR UTILITIES; RELATED TO TIP 13035.2/CSJ 1051-03-001

TOTAL PROJECT COST INFORMATION

PREL ENG	$ 10,000,000
ROW PURCH	$ 32,000,000
CONSTR	$ 182,391,982
CONST ENG	$ 5,814,359
CONTING	$ 2,332,777
INDIRECT	$ 0
BOND FIN	$ 0
PT CHG ORD	$ 0
TOTAL CST	$ 232,539,118

COST OF APPROVED PHASES $ 40,000,000

AUTHORIZED FUNDING BY CATEGORY/SHARE

CATEGORY	FEDERAL	STATE	REGIONAL	LOCAL	LC	TOTAL
SW PE	$ 0	$ 10,000,000	$ 0	$ 0	$ 0	$ 10,000,000
SW ROW	$ 24,000,000	$ 3,000,000	$ 0	$ 3,000,000	$ 0	$ 30,000,000
TOTAL	$ 24,000,000	$ 13,000,000	$ 0	$ 3,000,000	$ 0	$ 40,000,000

Appendix F – Resource-specific Maps

Figure 1 – Land Use and Community Facilities
Figure 2 – Project Area Soils
Figure 3 – Census Geographies
Figure 4 – Water Resources
Figure 5 – Observed Vegetation Types
Figure 6 – Hazardous Materials
Figure 7 – Noise Analysis Results
Figure 8 – Indirect Impact Area
Figure 9 – Cumulative Impact Area

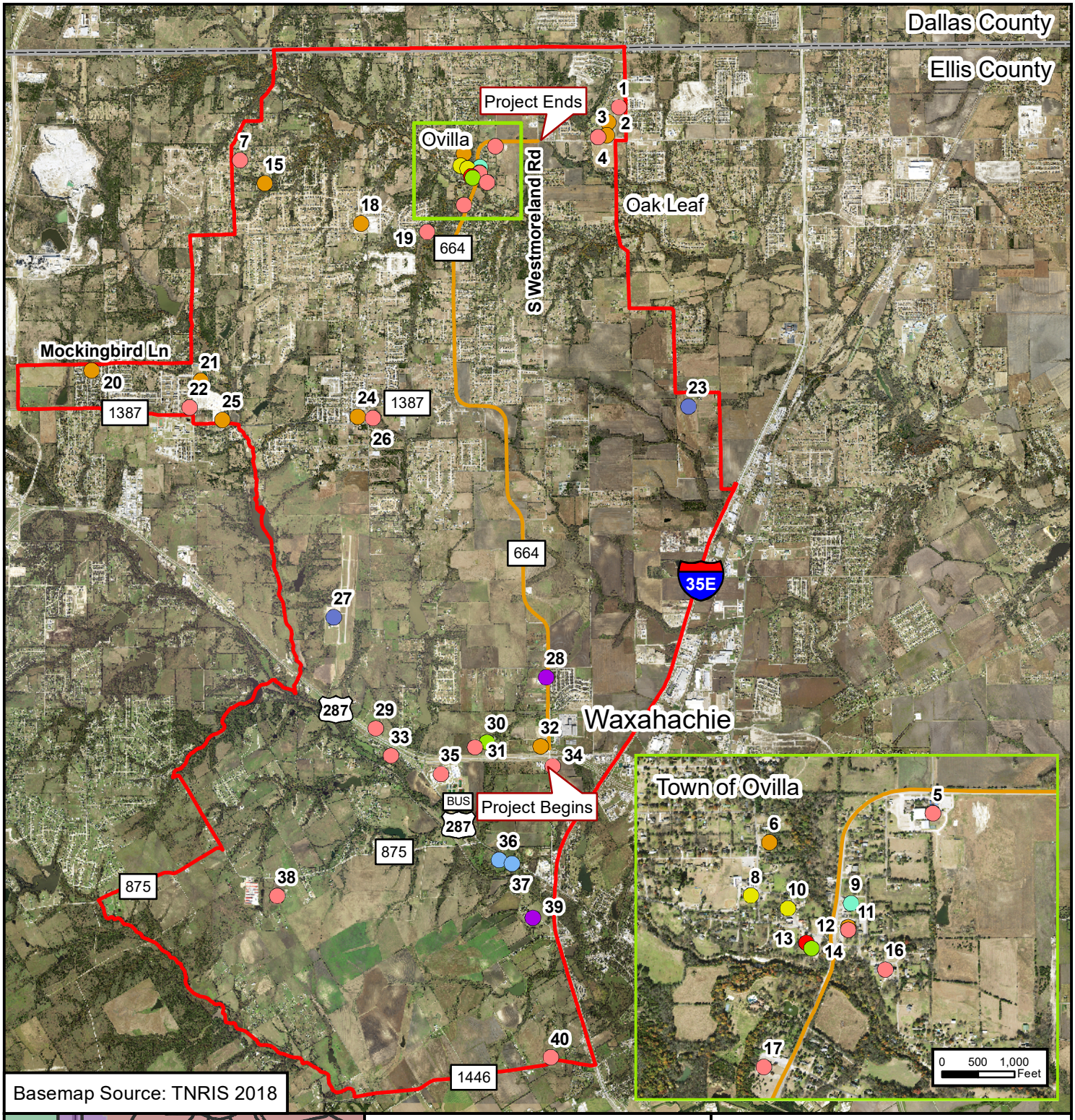


Figure 1
Facilities Map

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

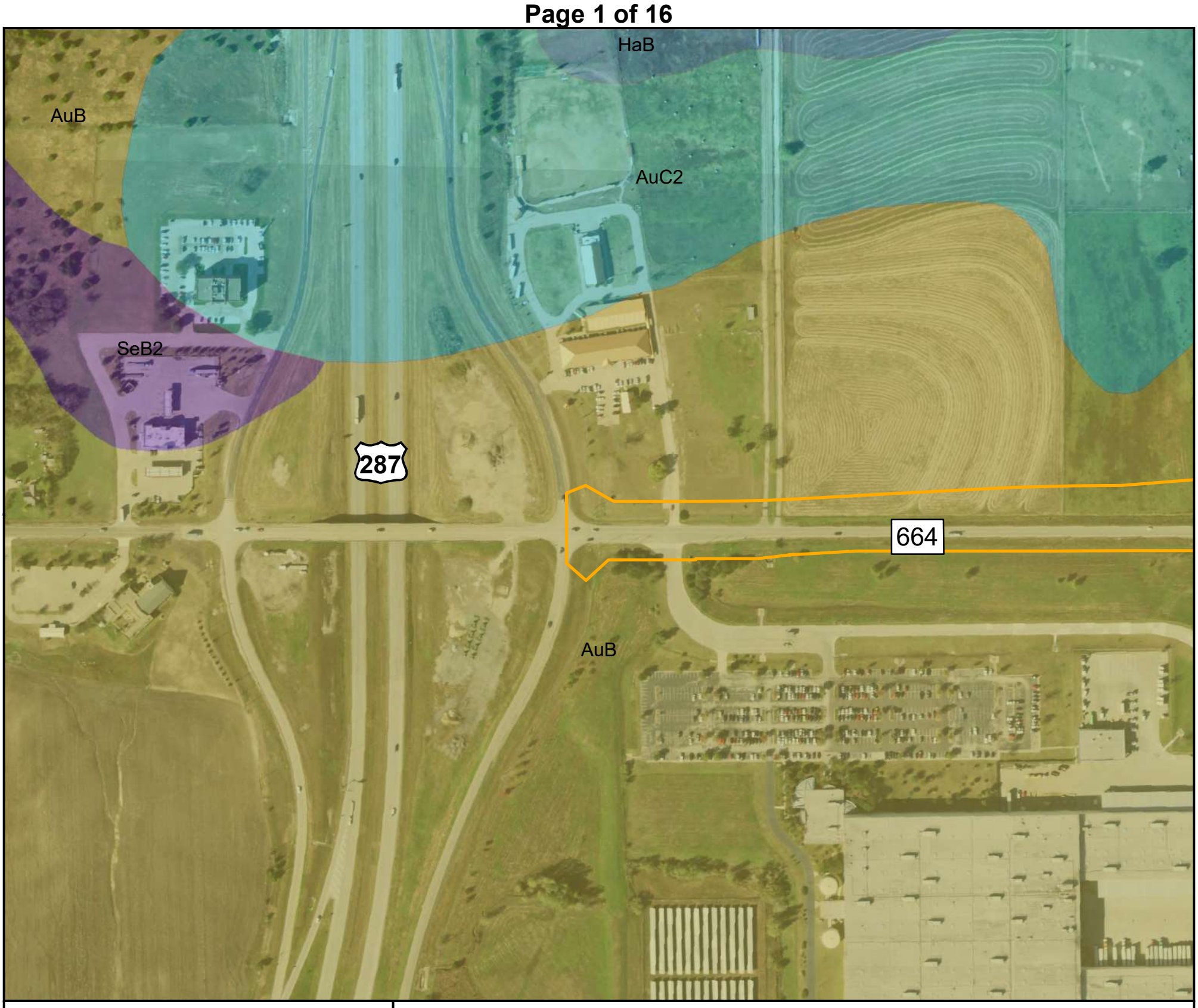


FIGURE 2

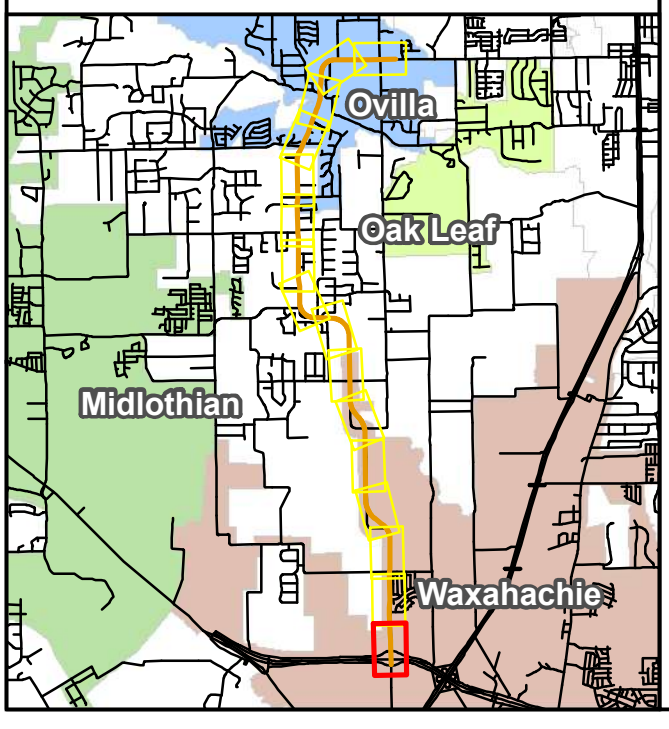
NRCS SOIL MAP
FM 664

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

W S N E

0 250 500 Feet



Legend

- Proposed Project Area
- Delineated Streams and Wetland
- 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
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- SeB2 - Stephen-Eddy complex, 1 to 3 percent slopes, eroded
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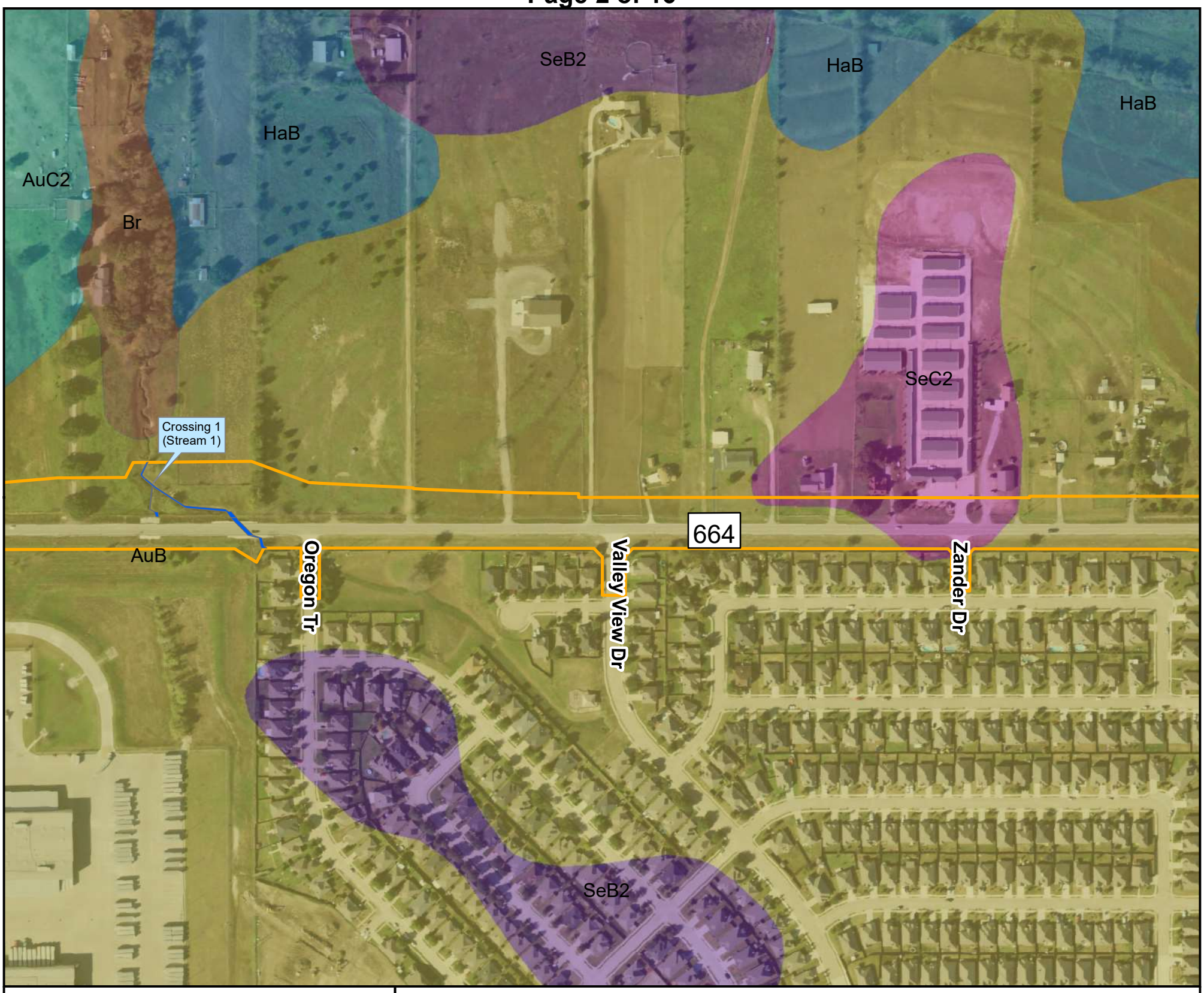
- W - Water

Base Map Sources: TNRIS (2018);
NRCS (accessed October 2019)



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Ellis County

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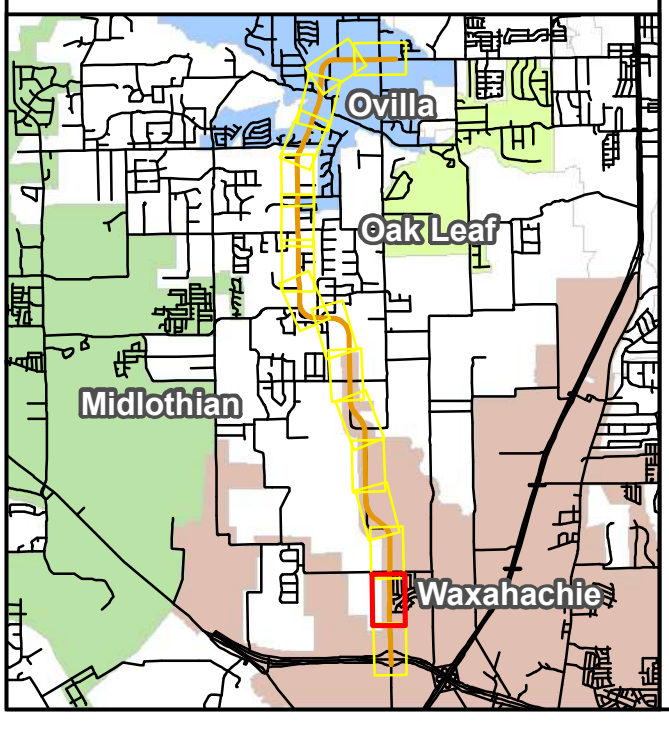

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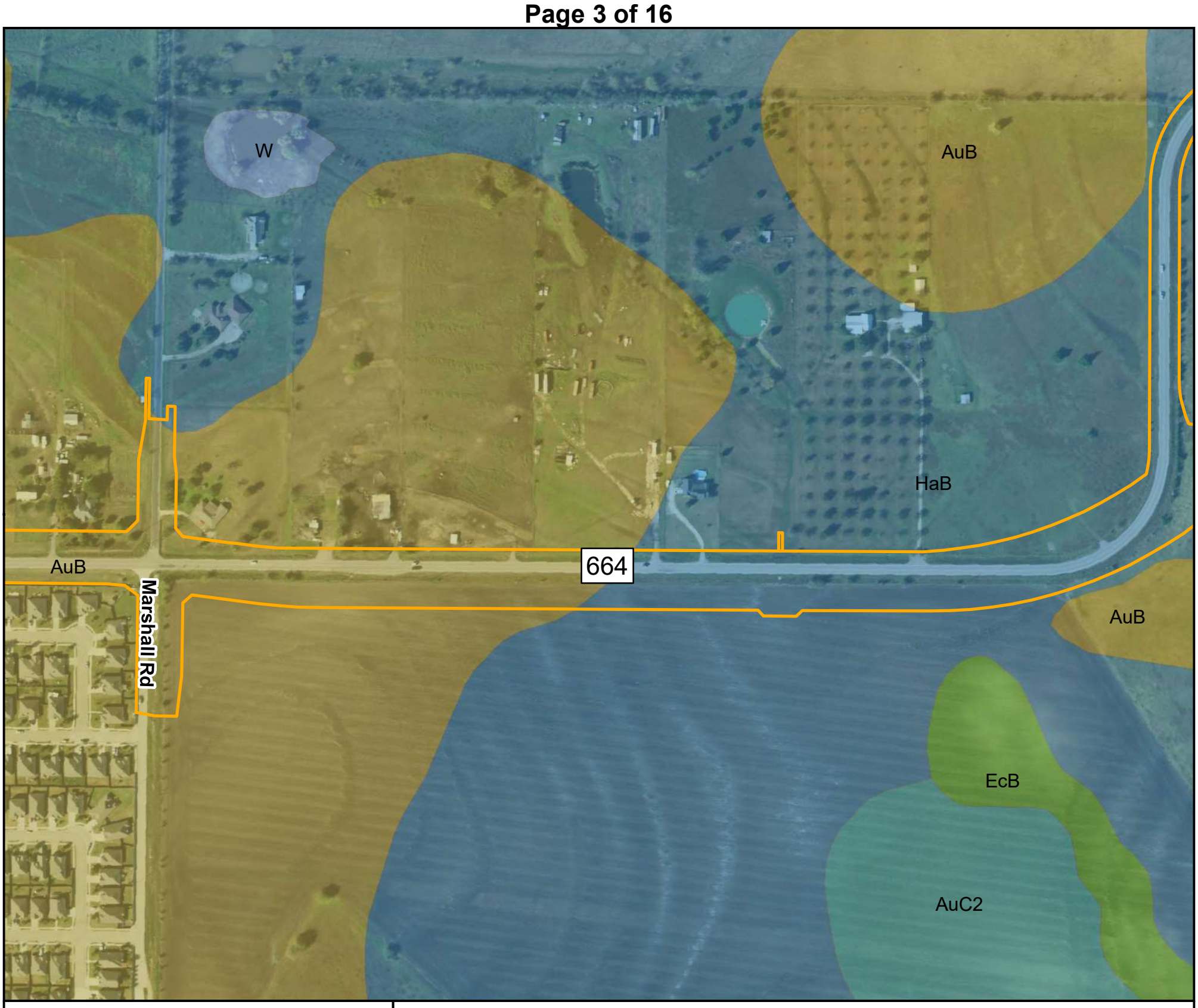

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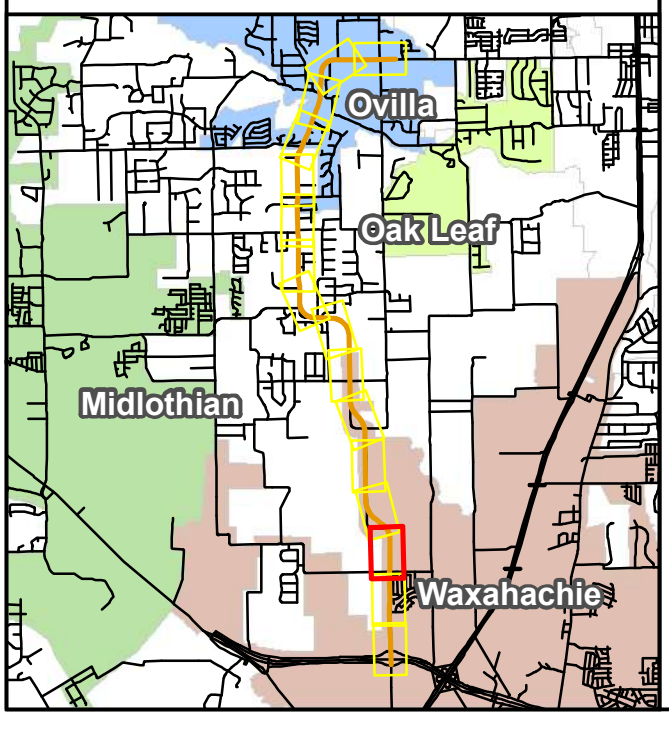

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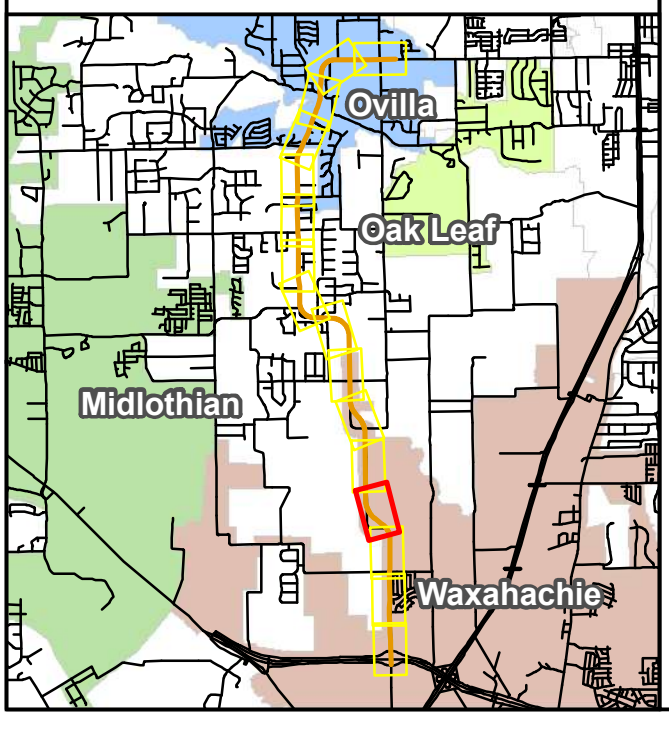

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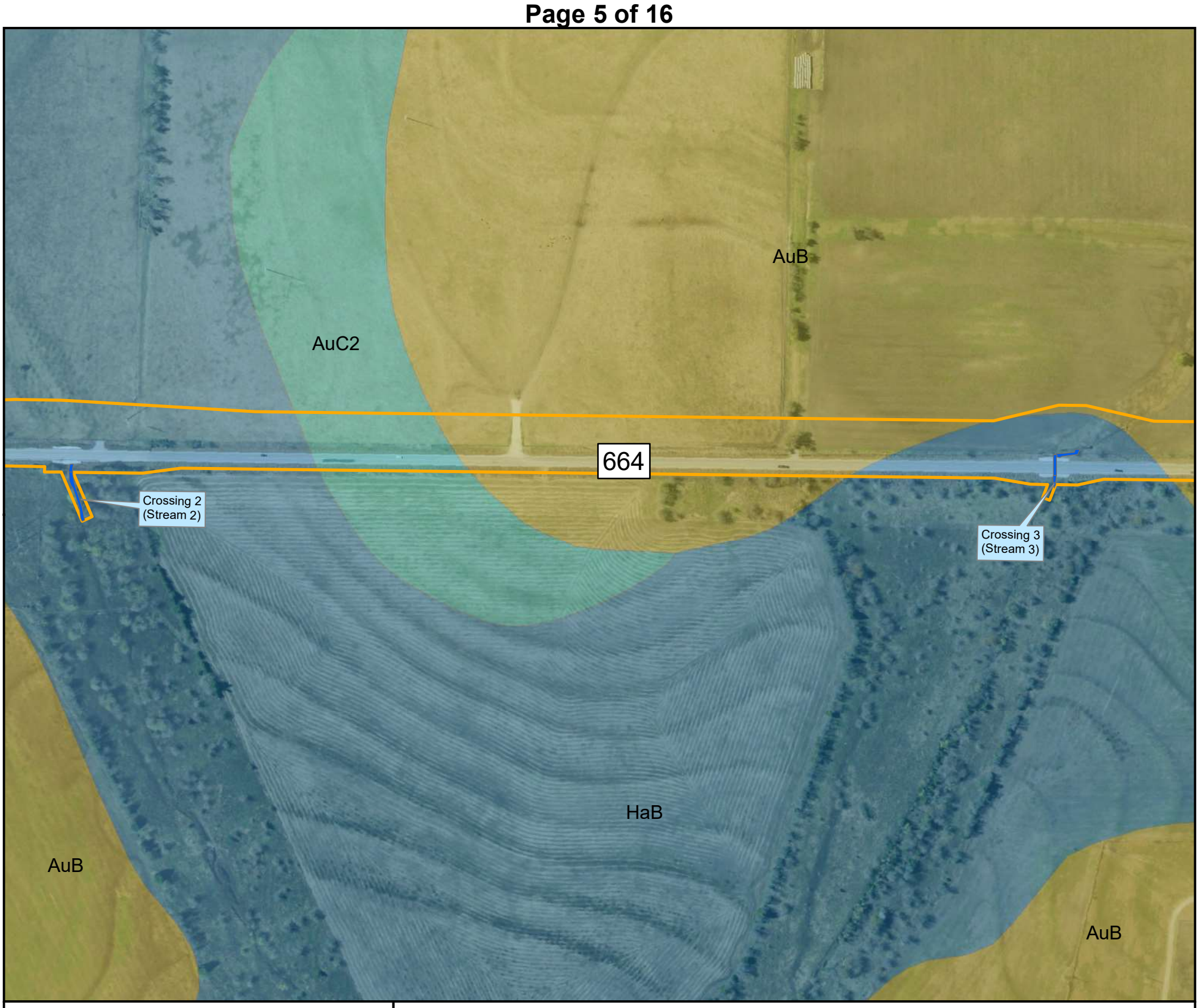

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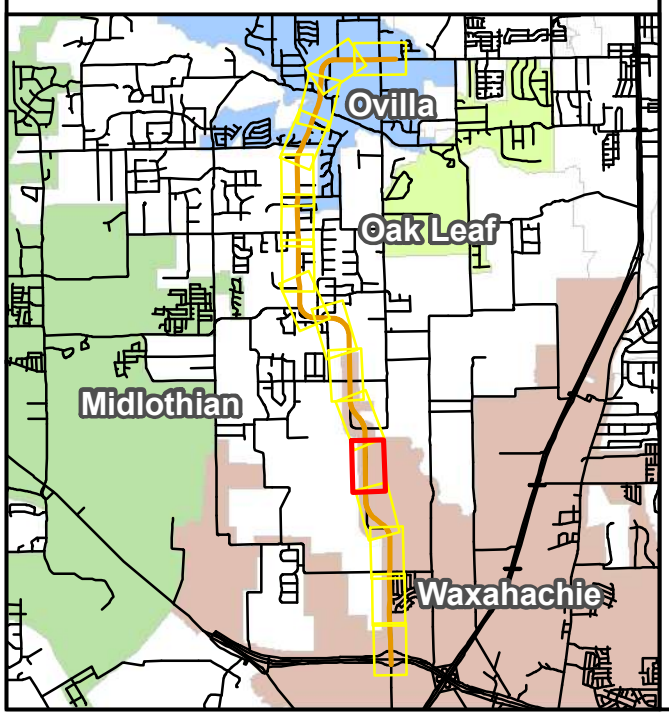

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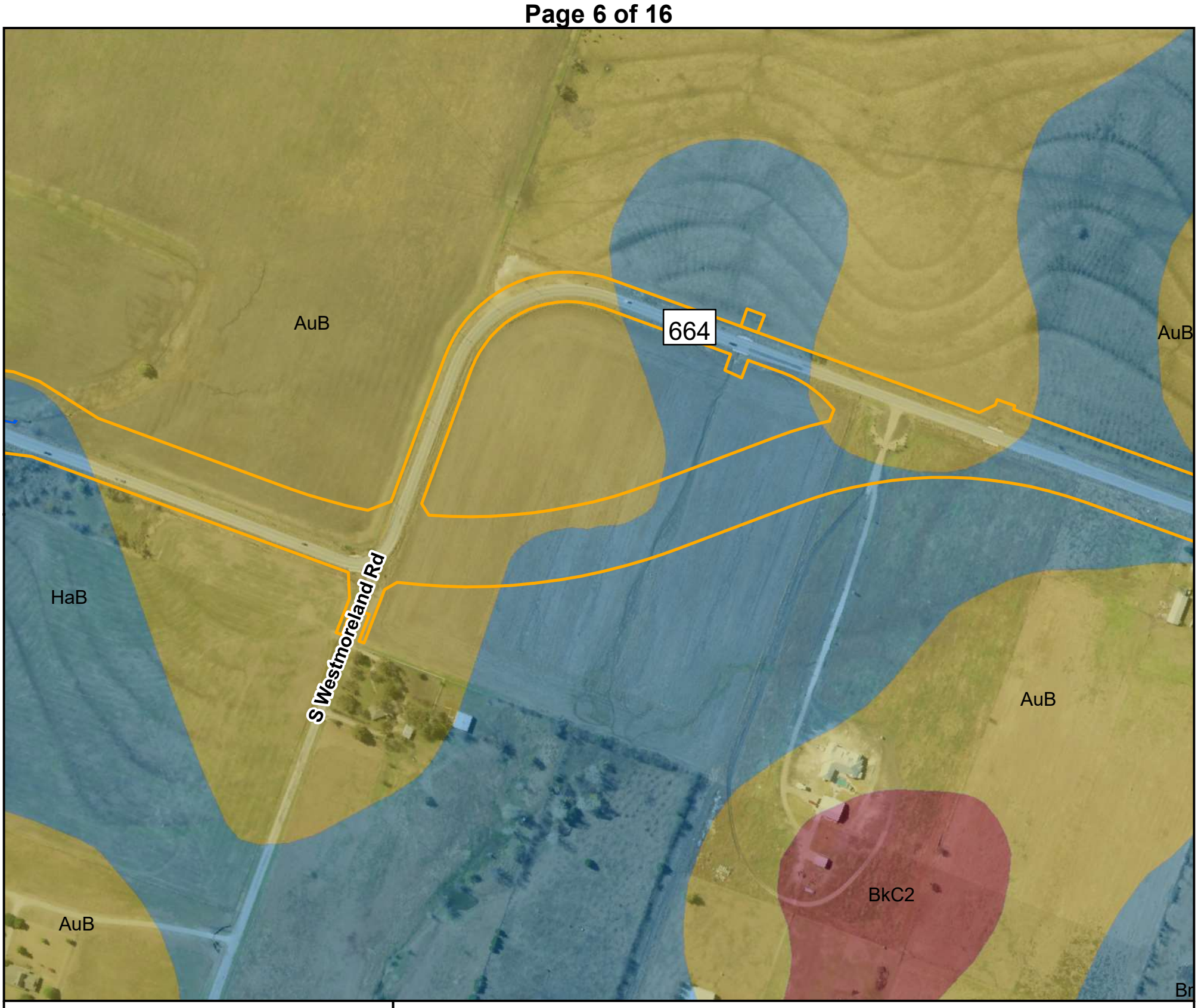

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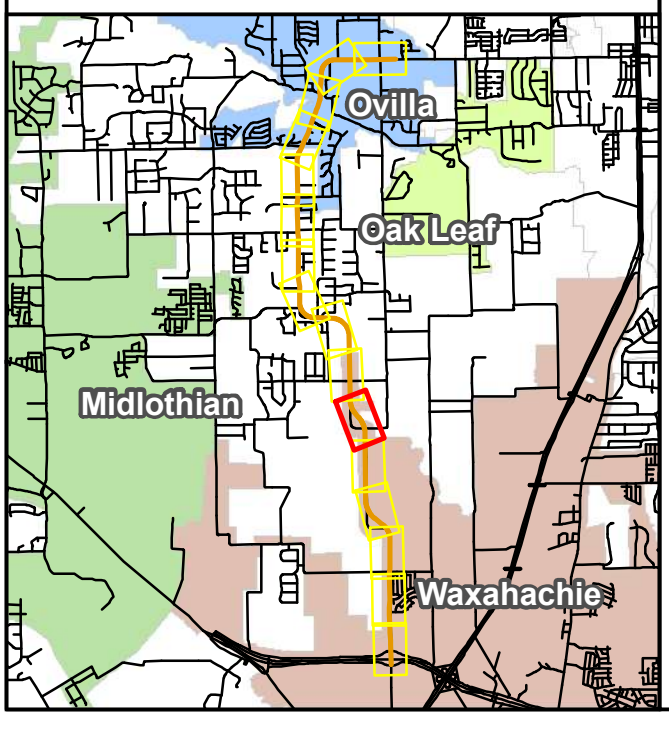

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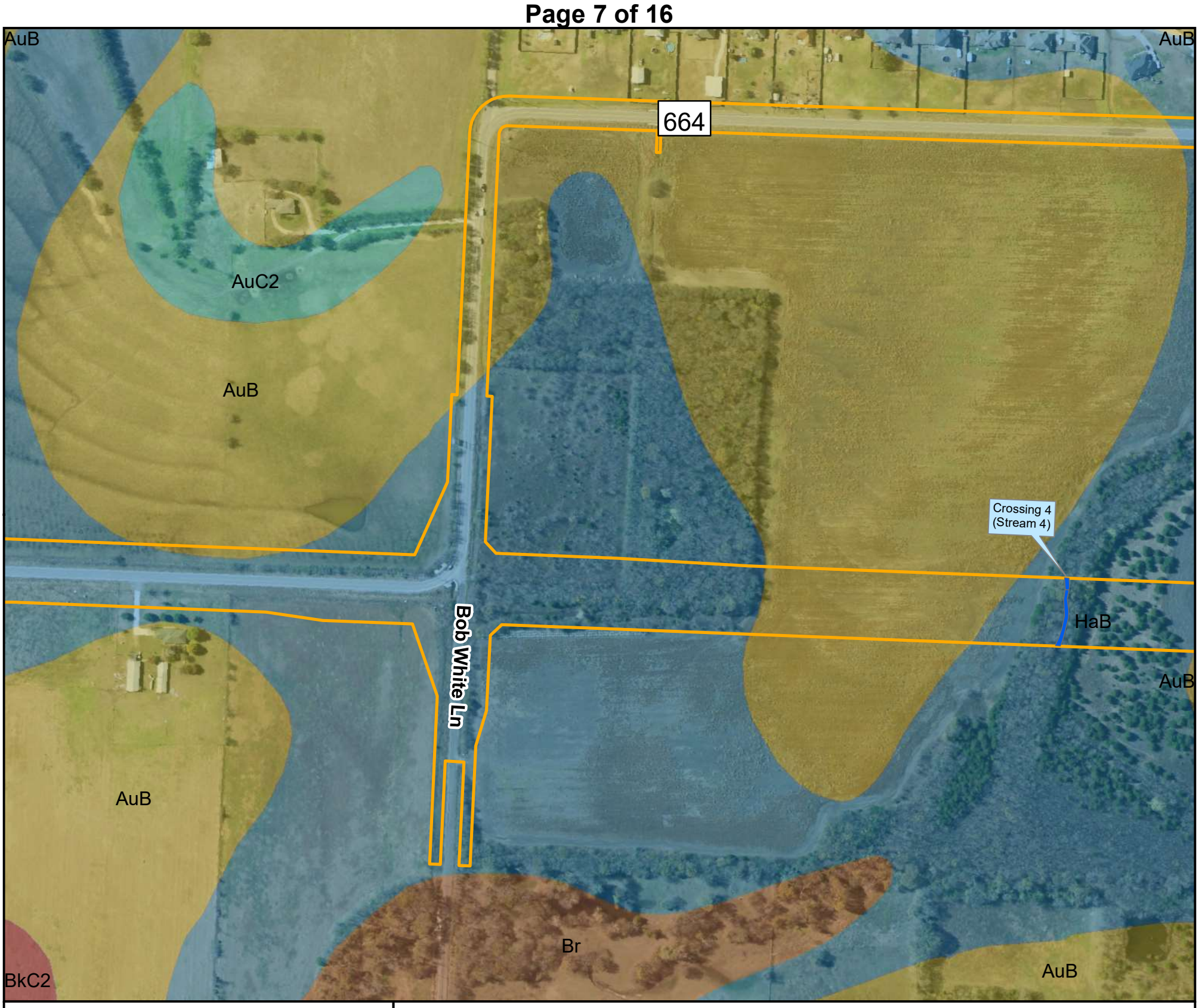

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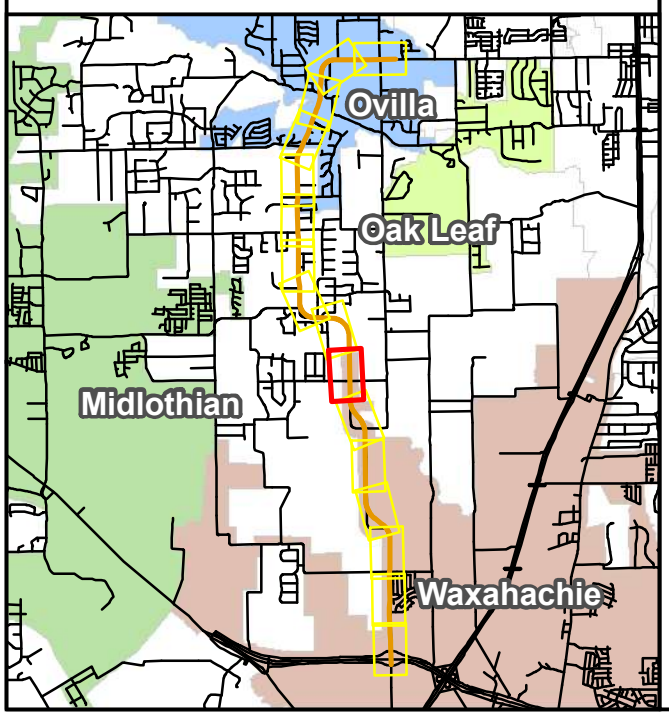

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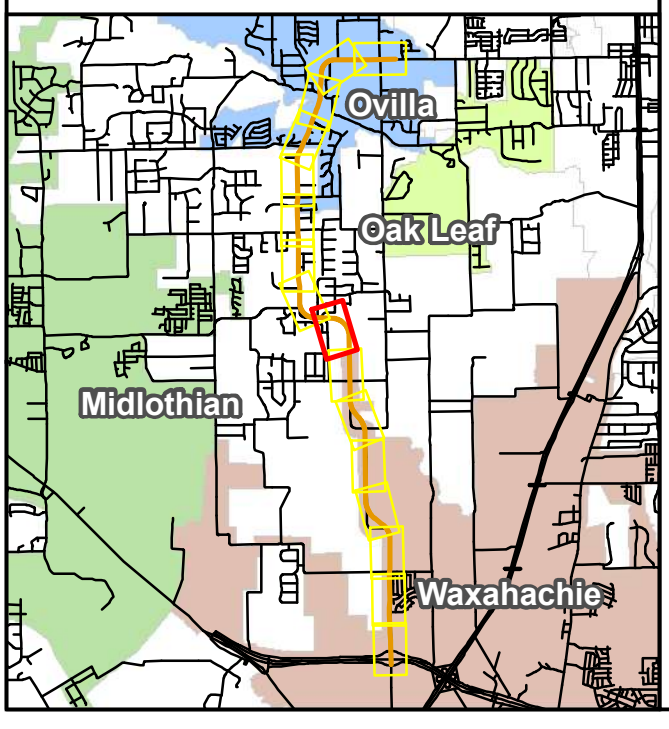

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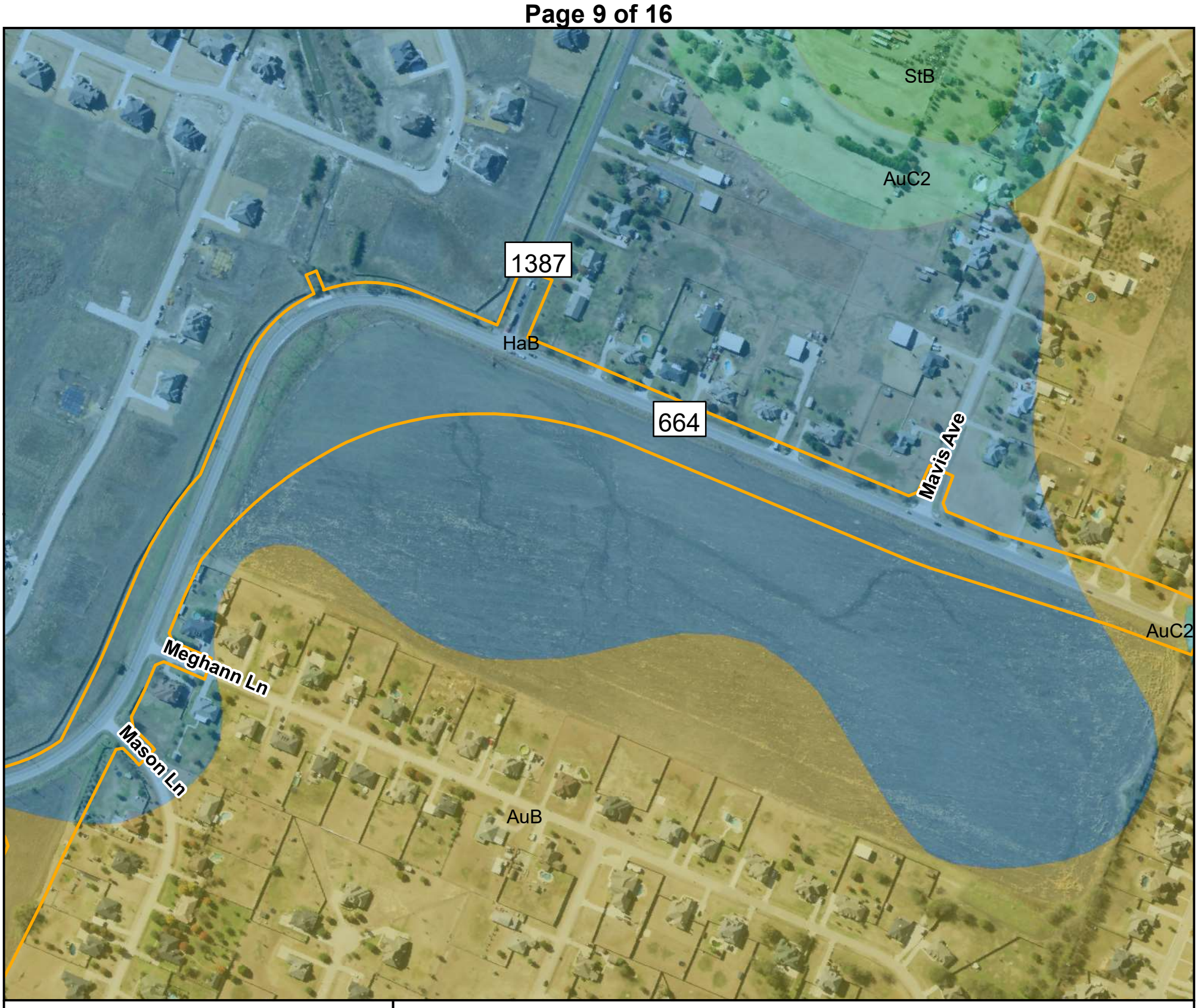

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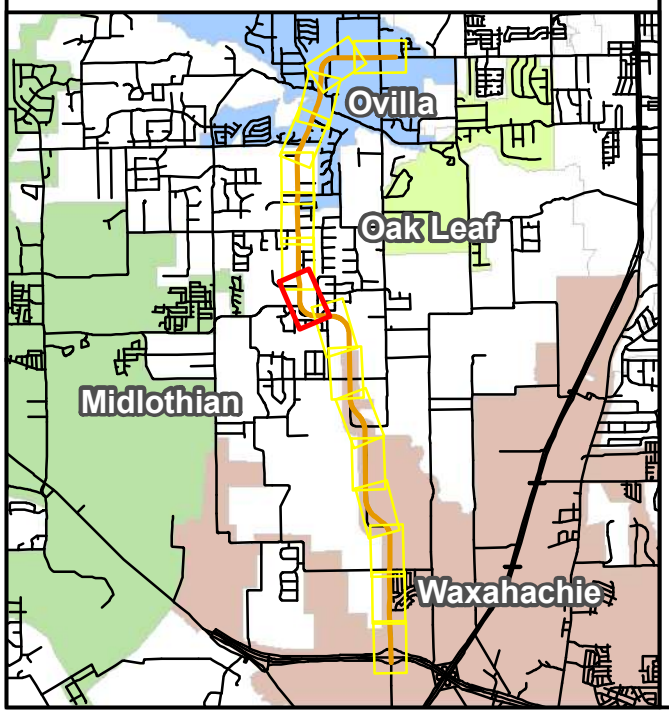

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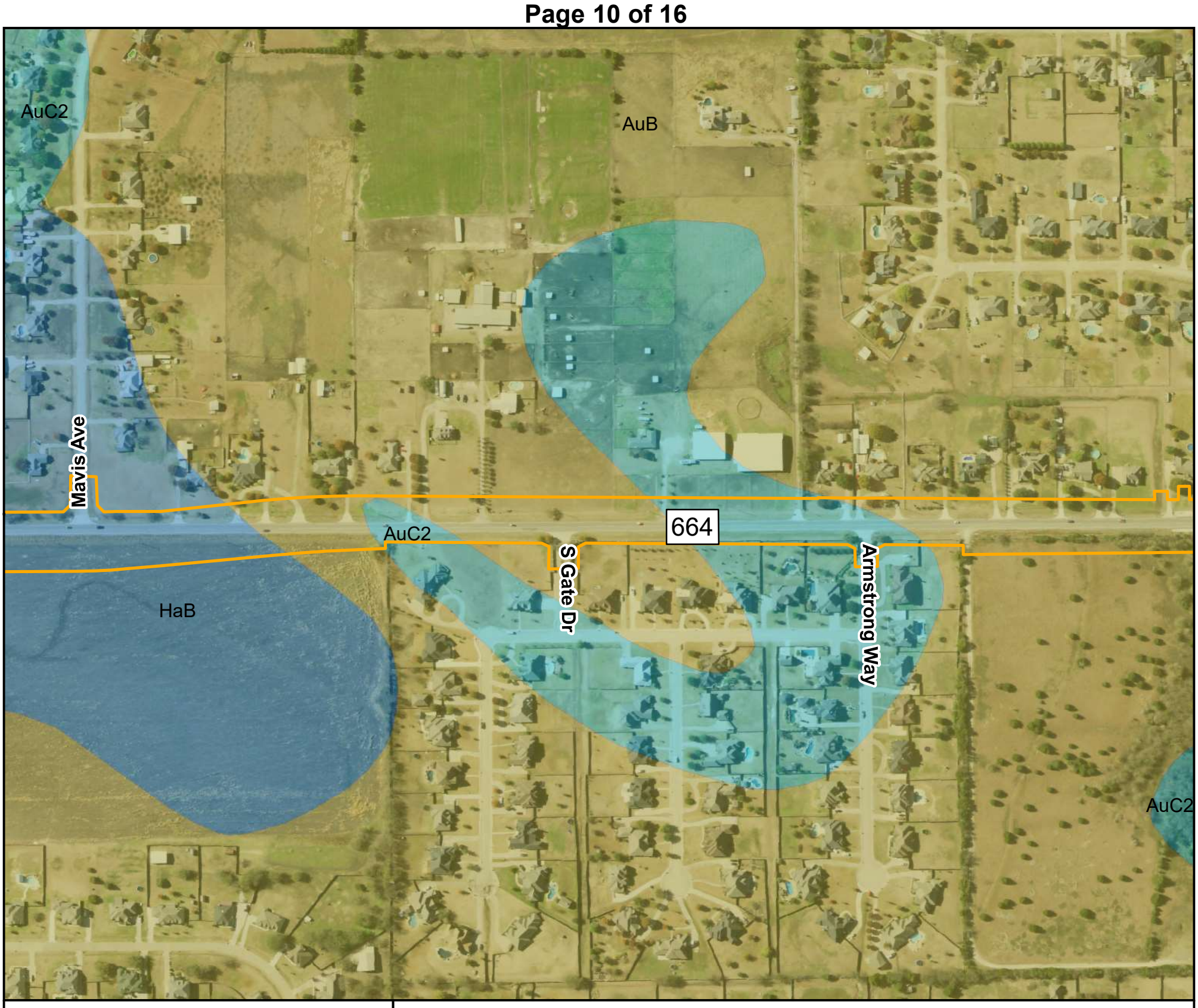

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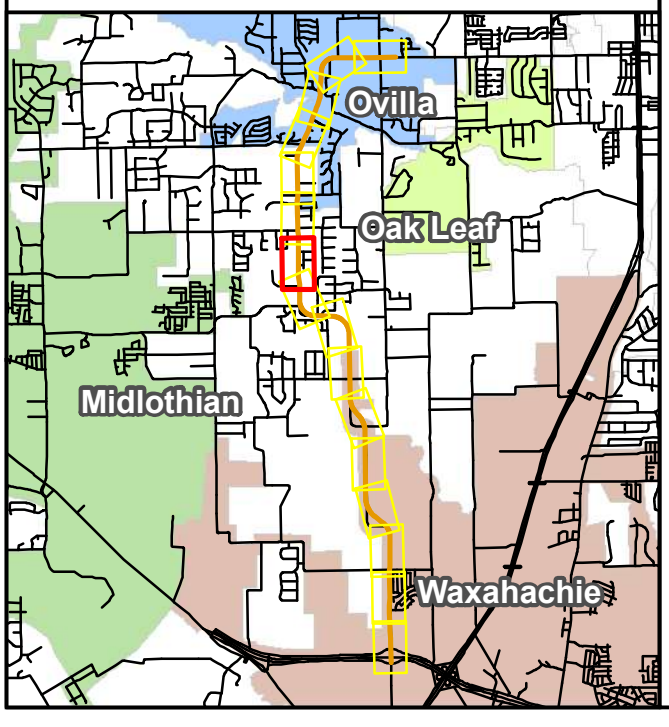

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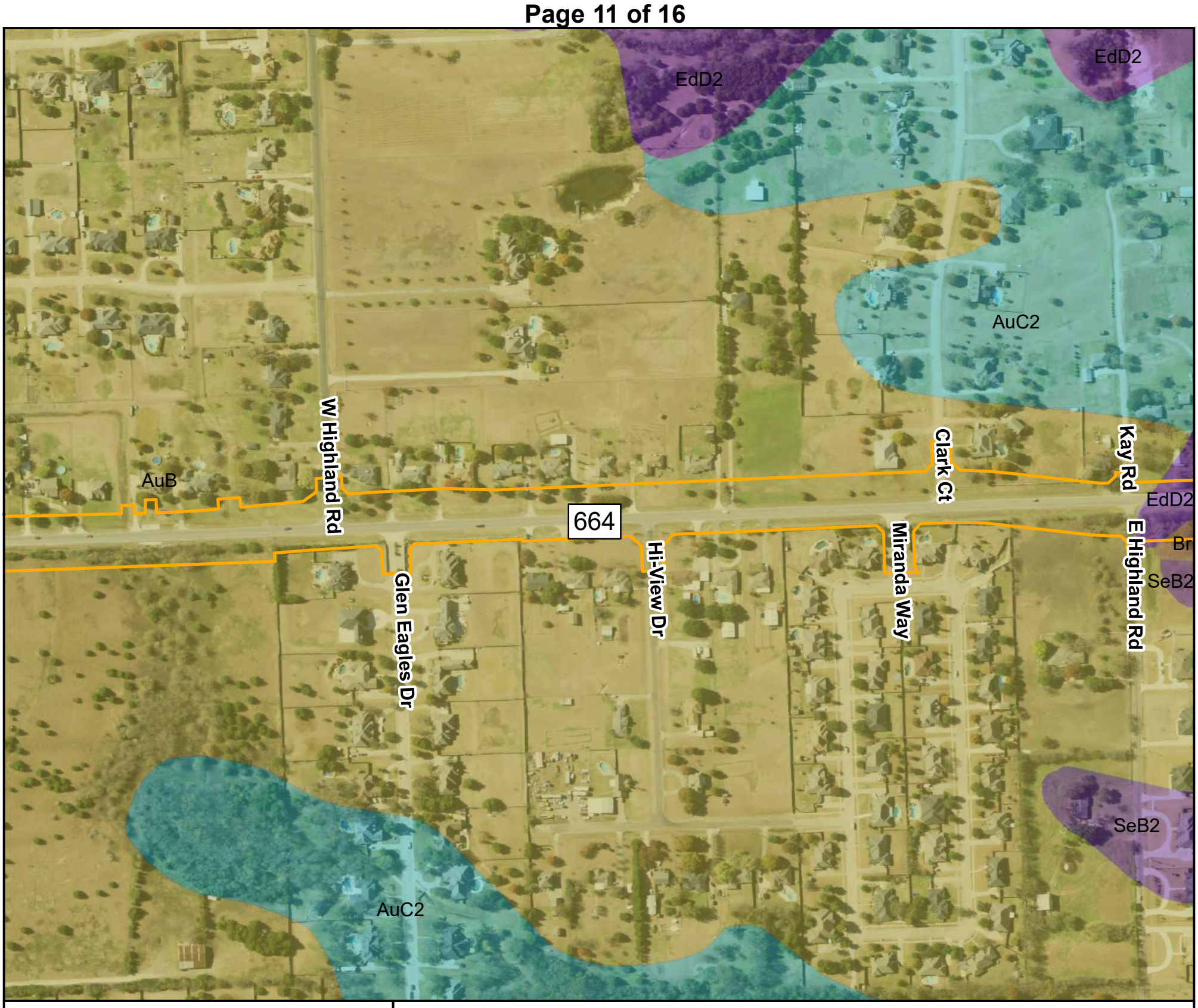

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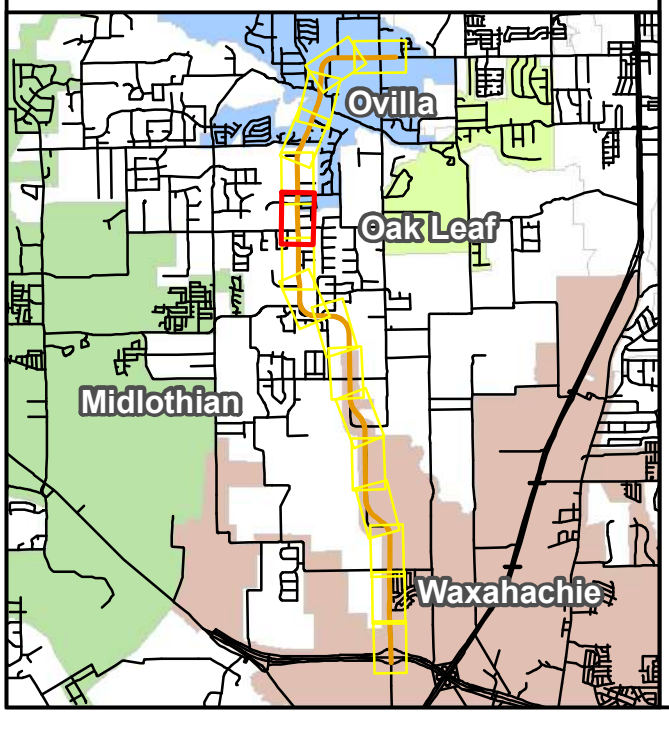

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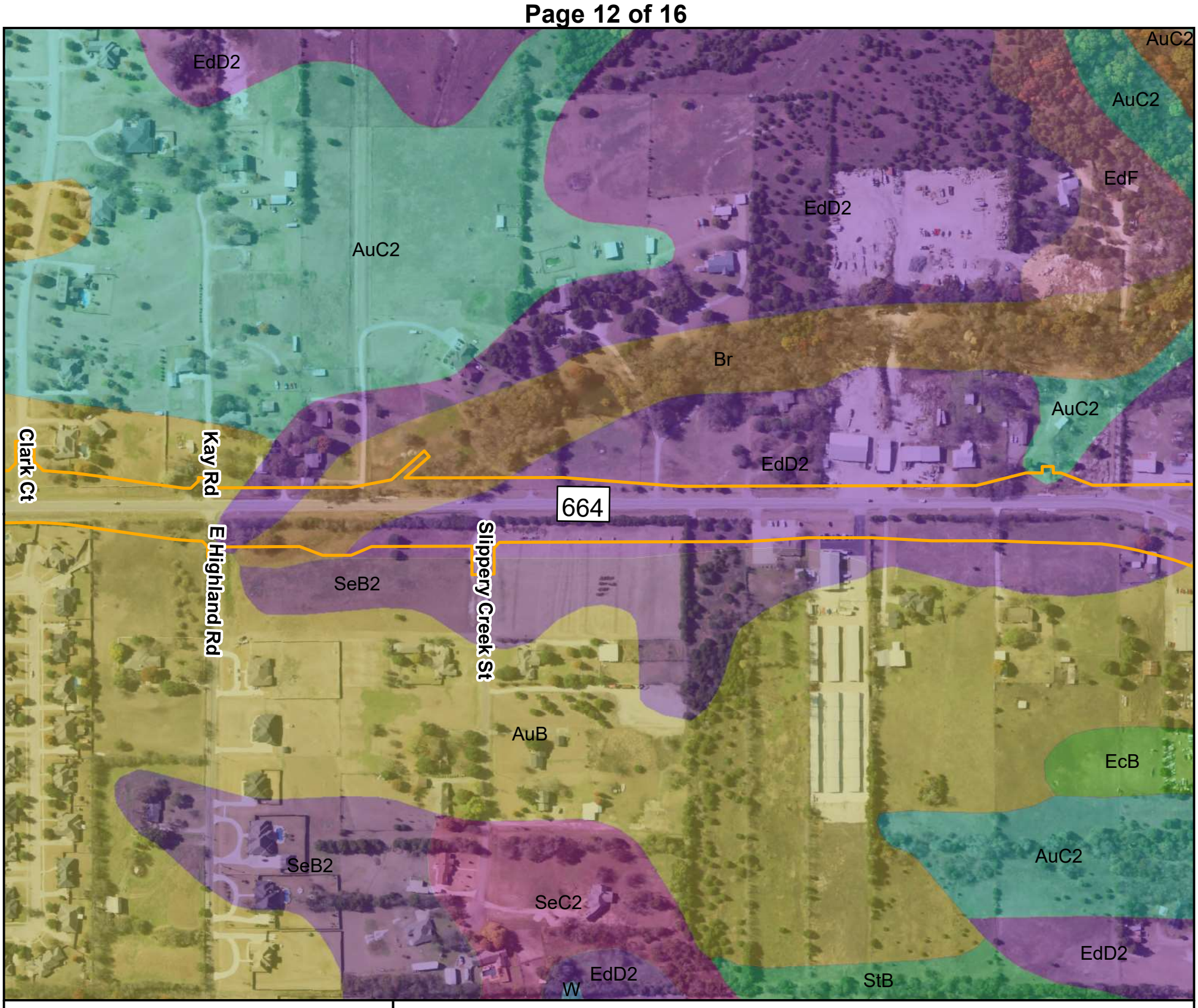

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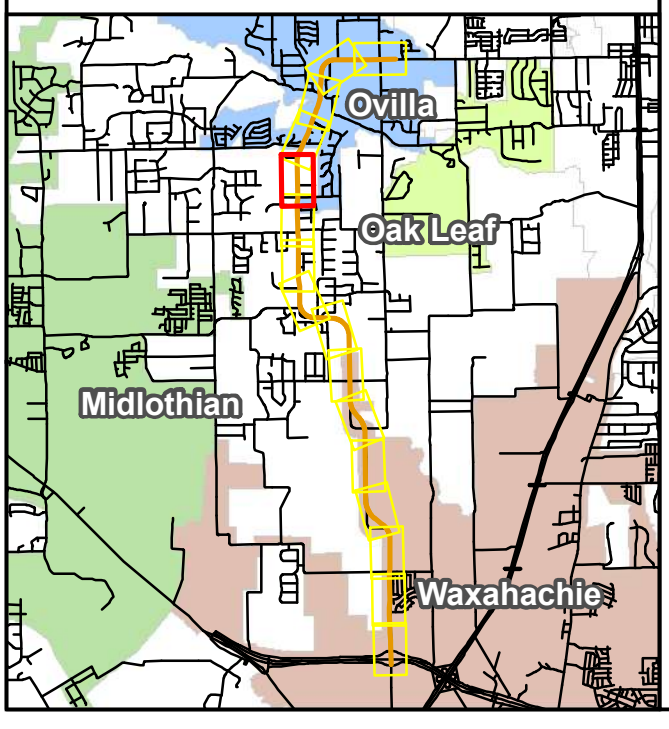

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Base Map Sources: TNRIS (2018);
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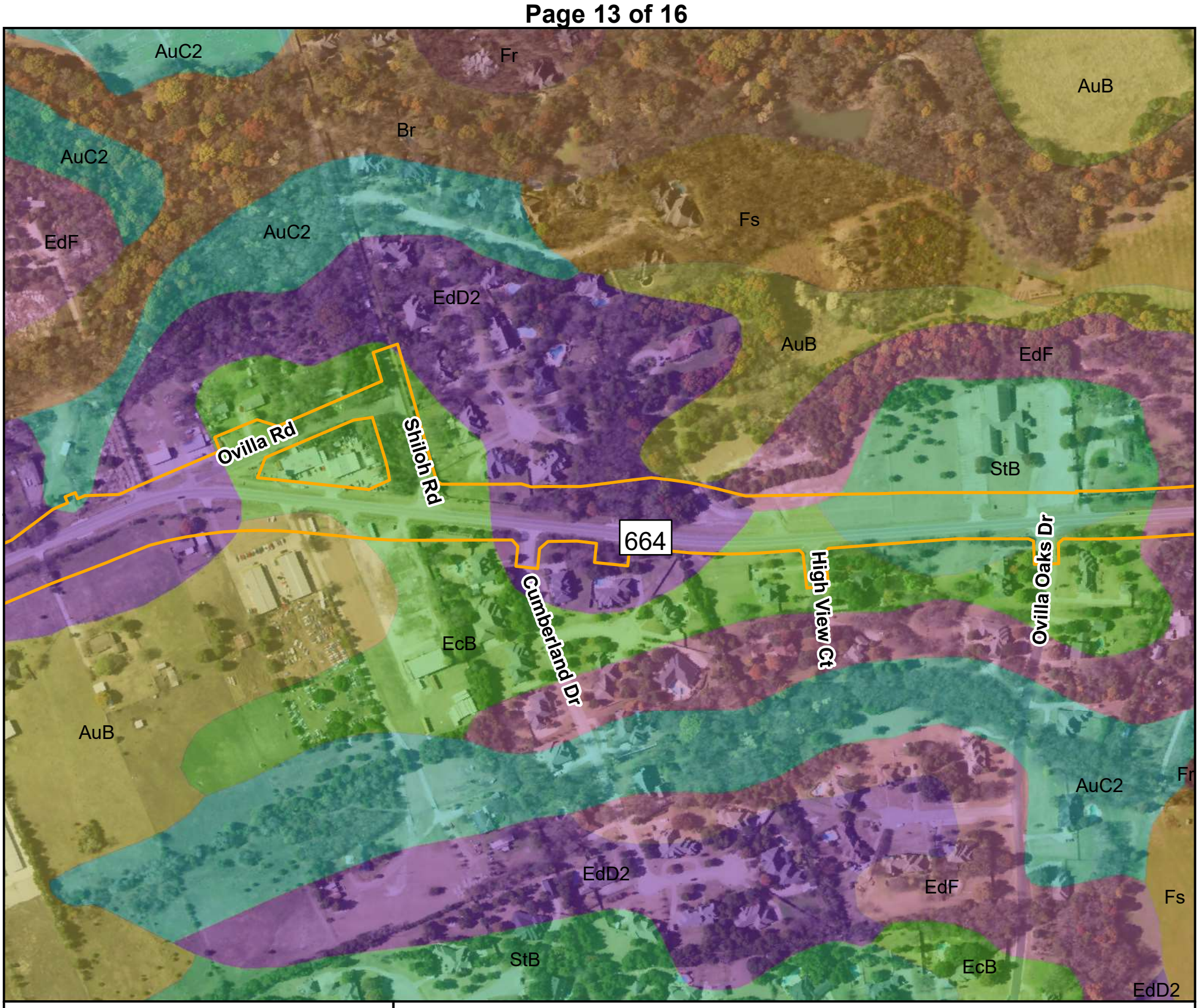


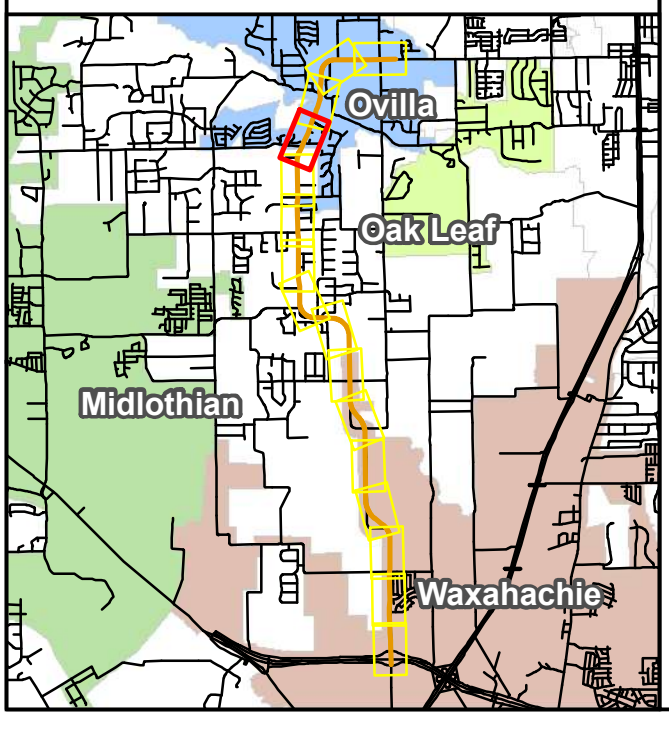
FIGURE 2

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 and Wetland
- 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)

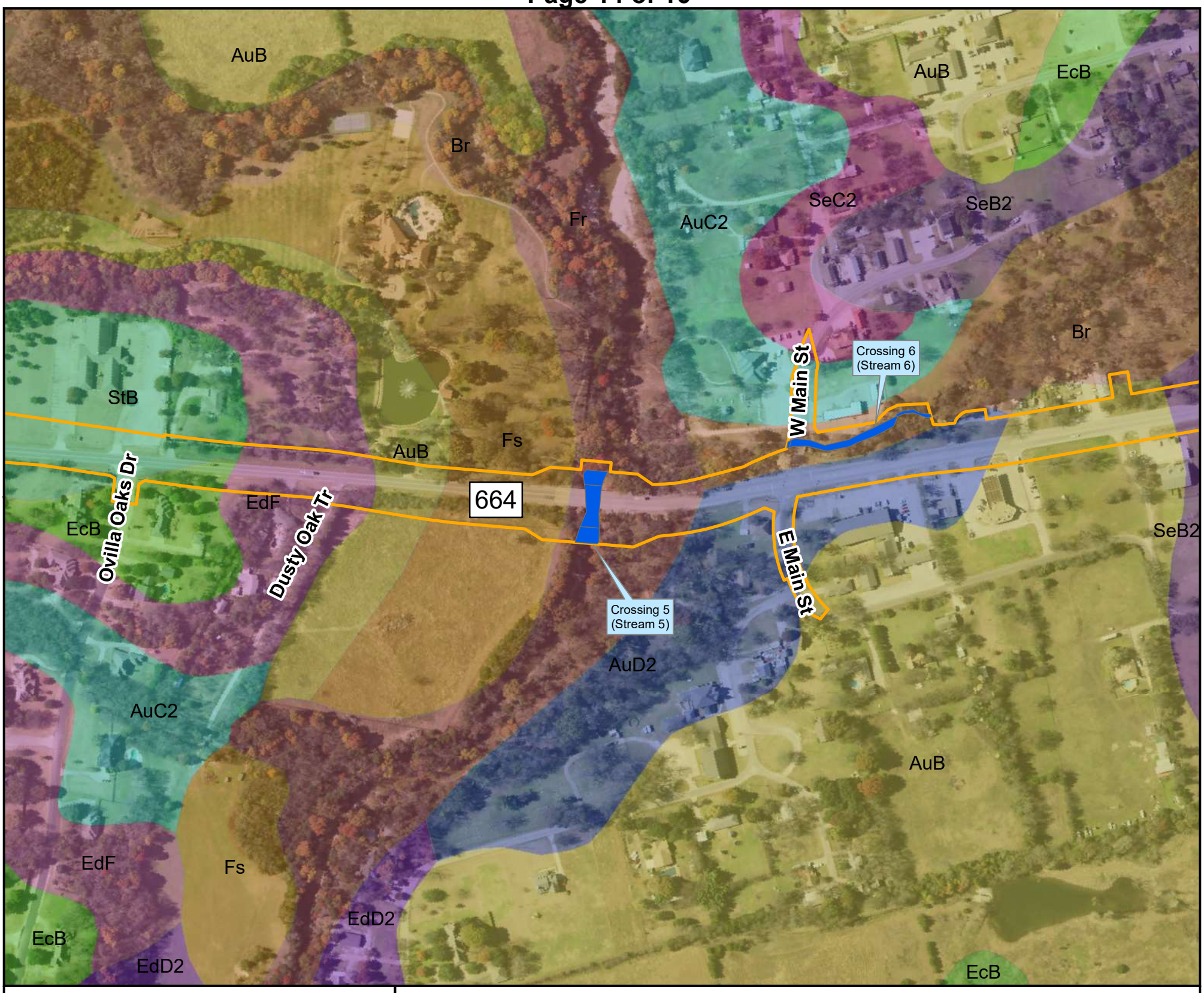


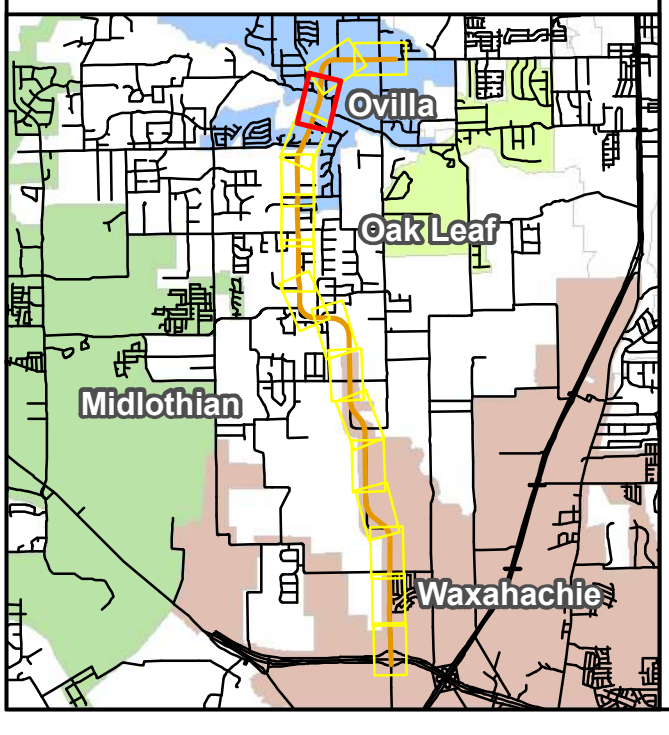
FIGURE 2

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

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- W - Water

Base Map Sources: TNRIS (2018);
NRCS (accessed October 2019)

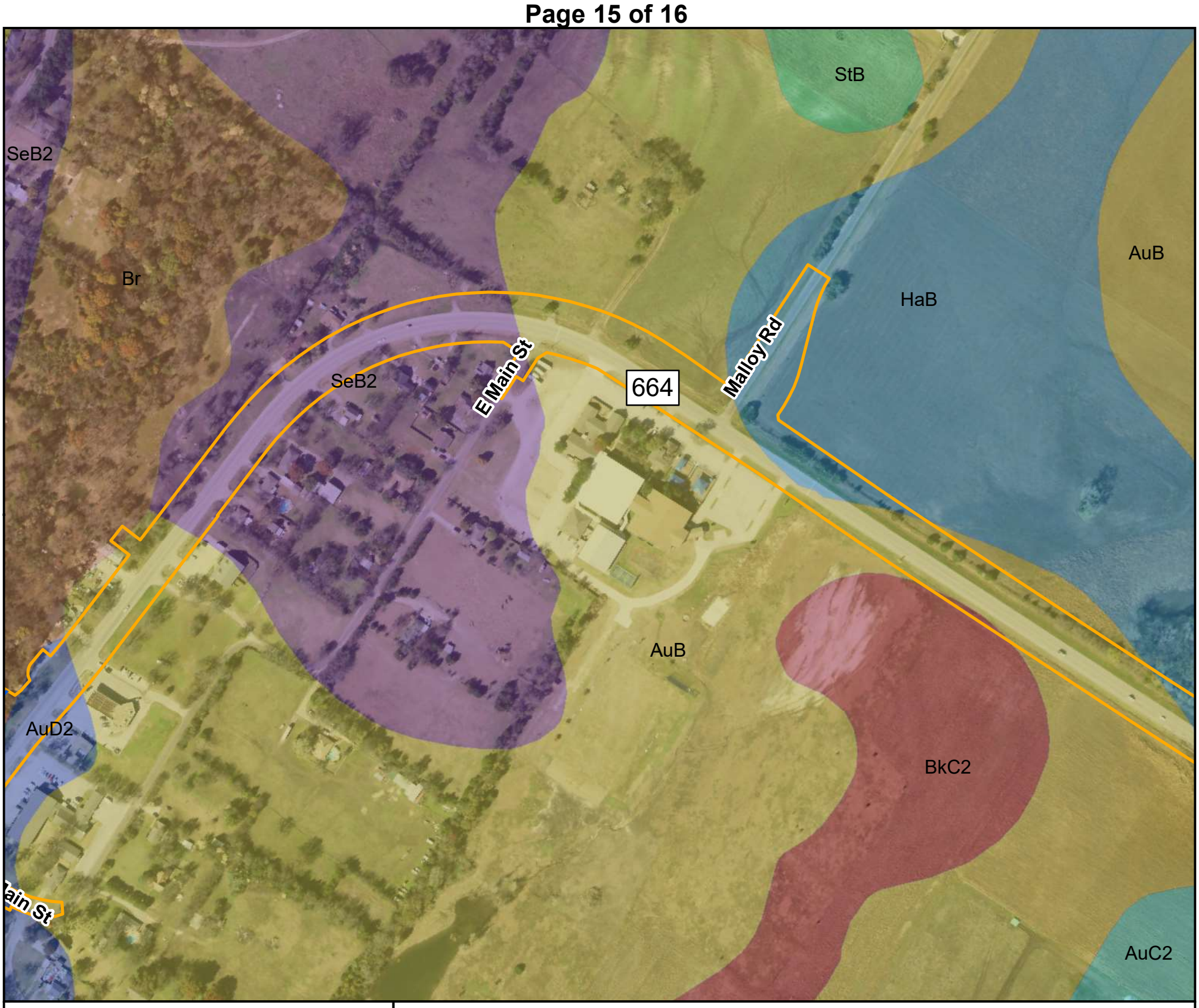


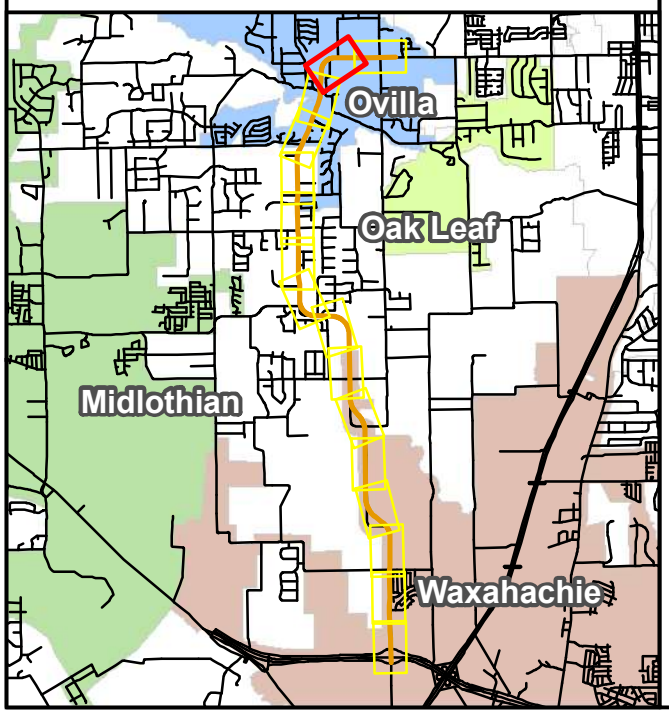
FIGURE 2

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

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- StB - Stephen silty clay, 1 to 4 percent slopes
- W - Water

Base Map Sources: TNRIS (2018);
NRCS (accessed October 2019)

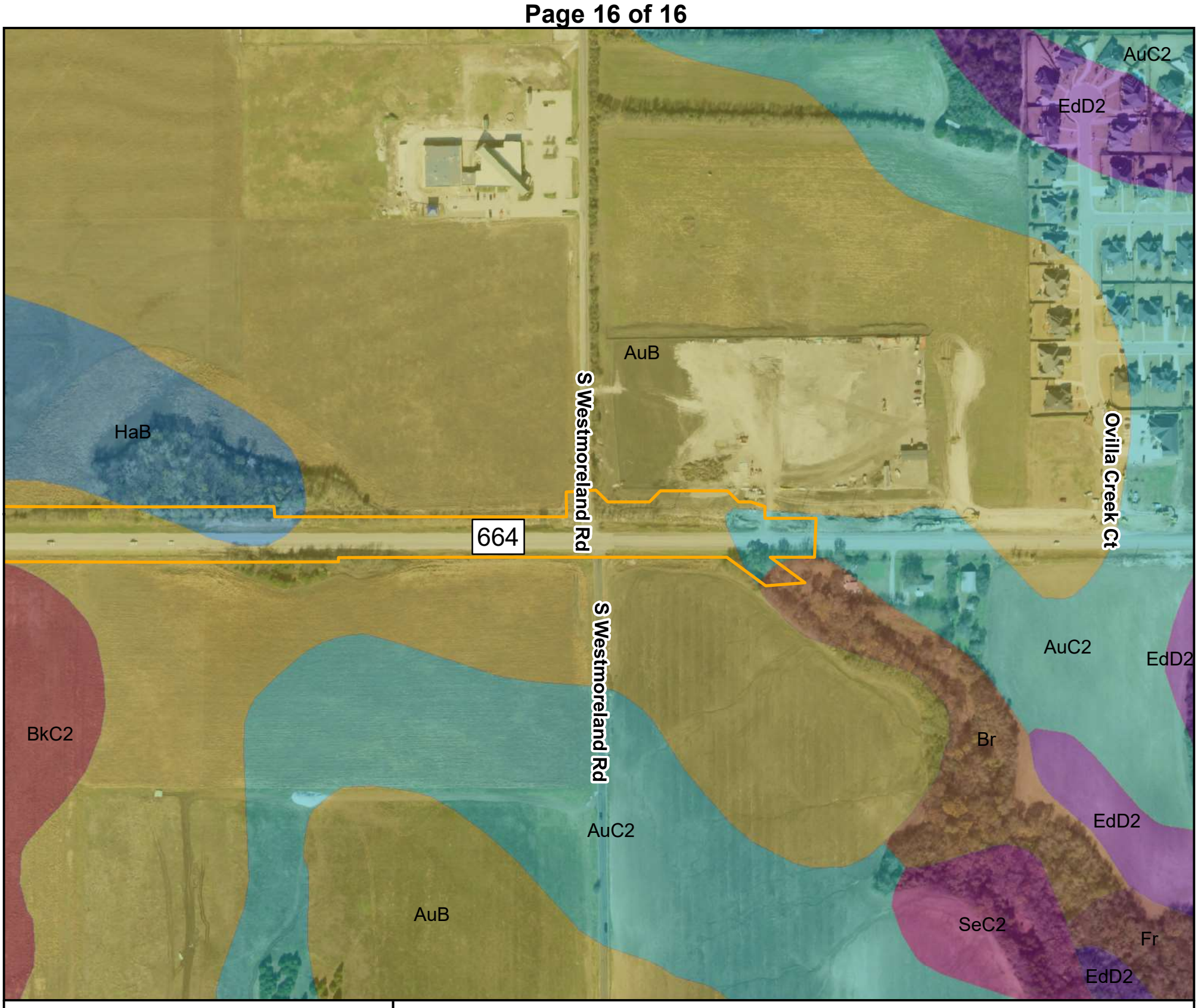


FIGURE 2

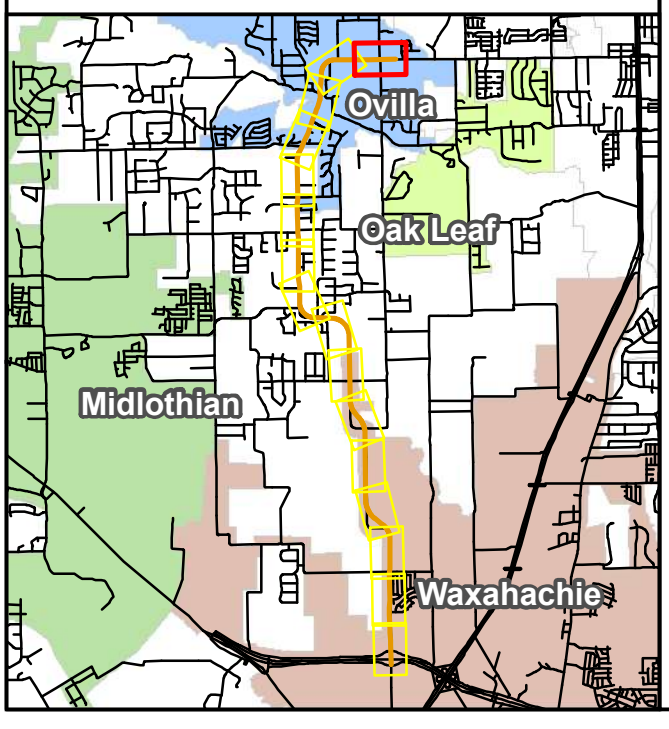
NRCS SOIL MAP
FM 664

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

N
W E
S

0 250 500
Feet



Legend

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- AuC2 - Austin silty clay, 2 to 5 percent slopes, moderately eroded
- AuD2 - Austin silty clay, 5 to 8 percent slopes, moderately eroded
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- StB - Stephen silty clay, 1 to 4 percent slopes
- W - Water

Base Map Sources: TNRIS (2018);
NRCS (accessed October 2019)

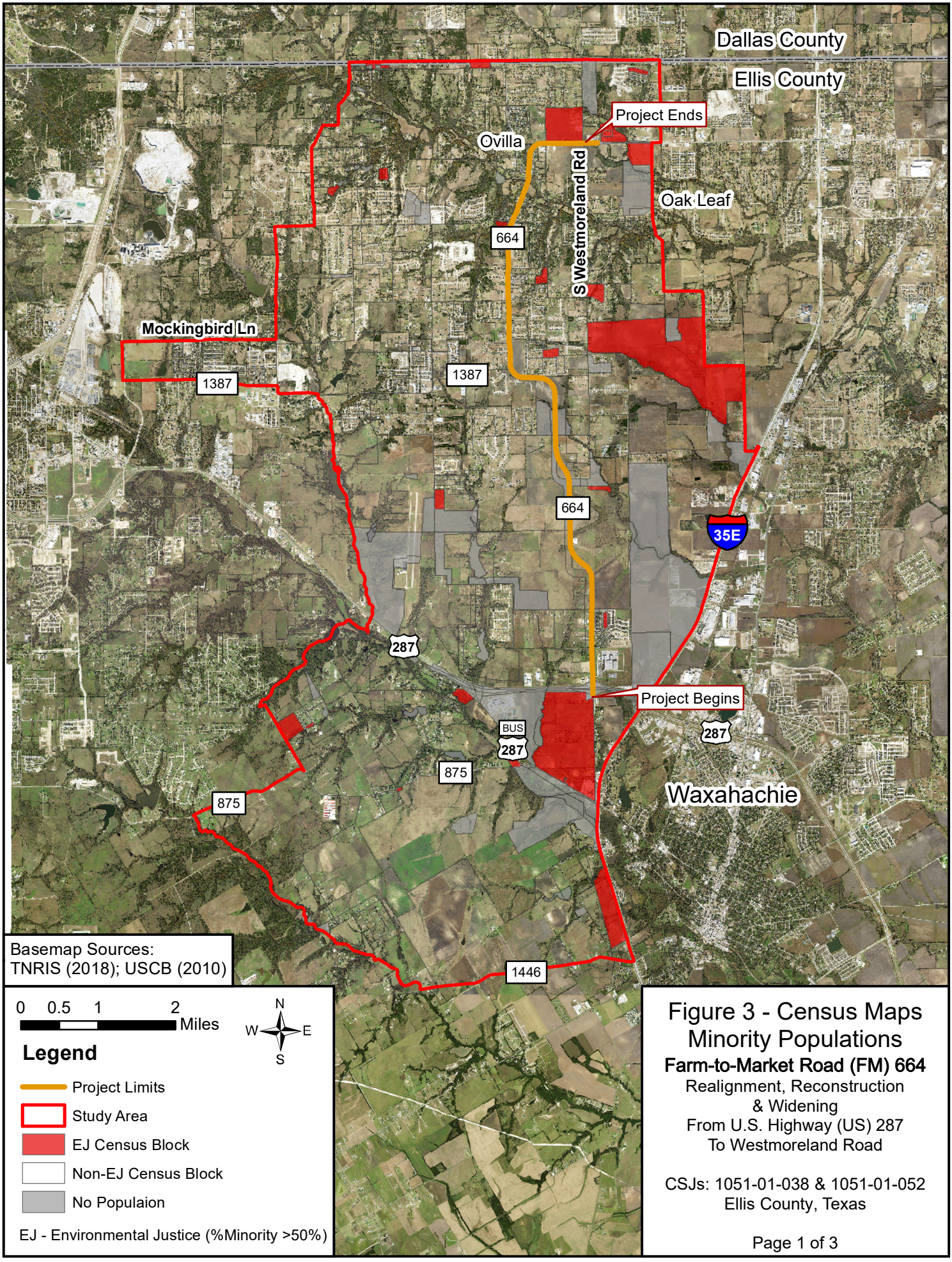


Figure 3 - Census Maps Minority Populations

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

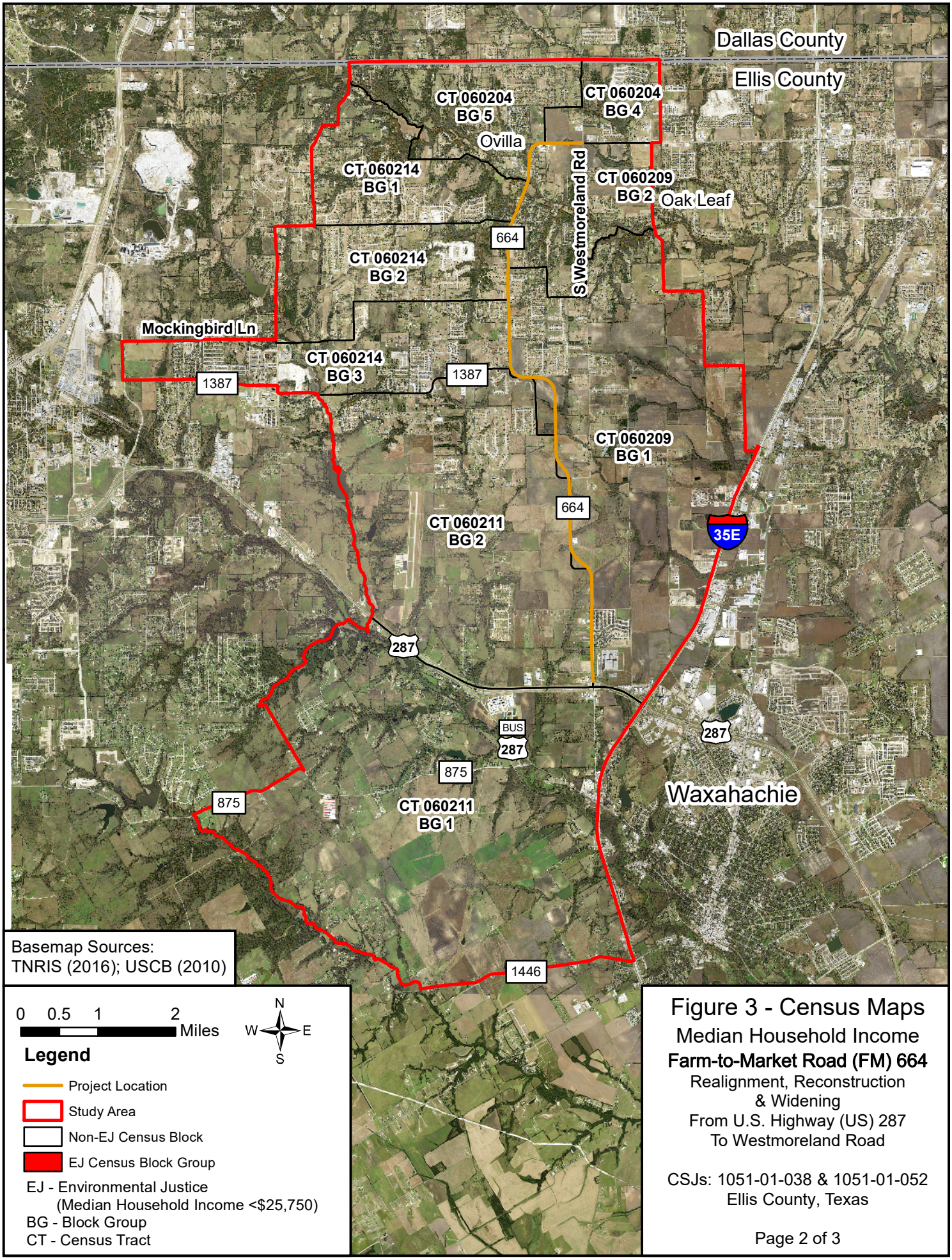


Figure 3 - Census Maps

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

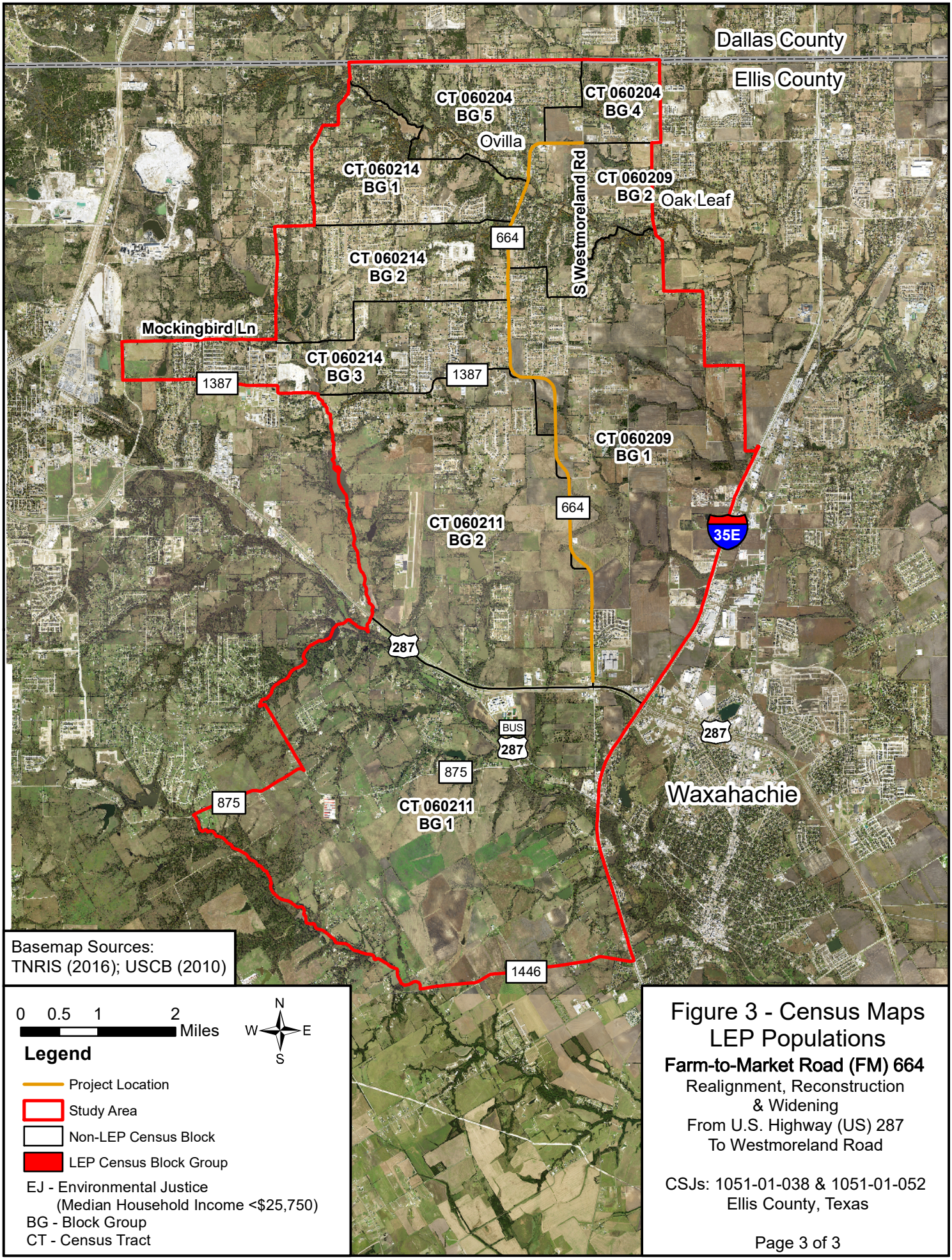


Figure 3 - Census Maps LEP Populations

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

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)

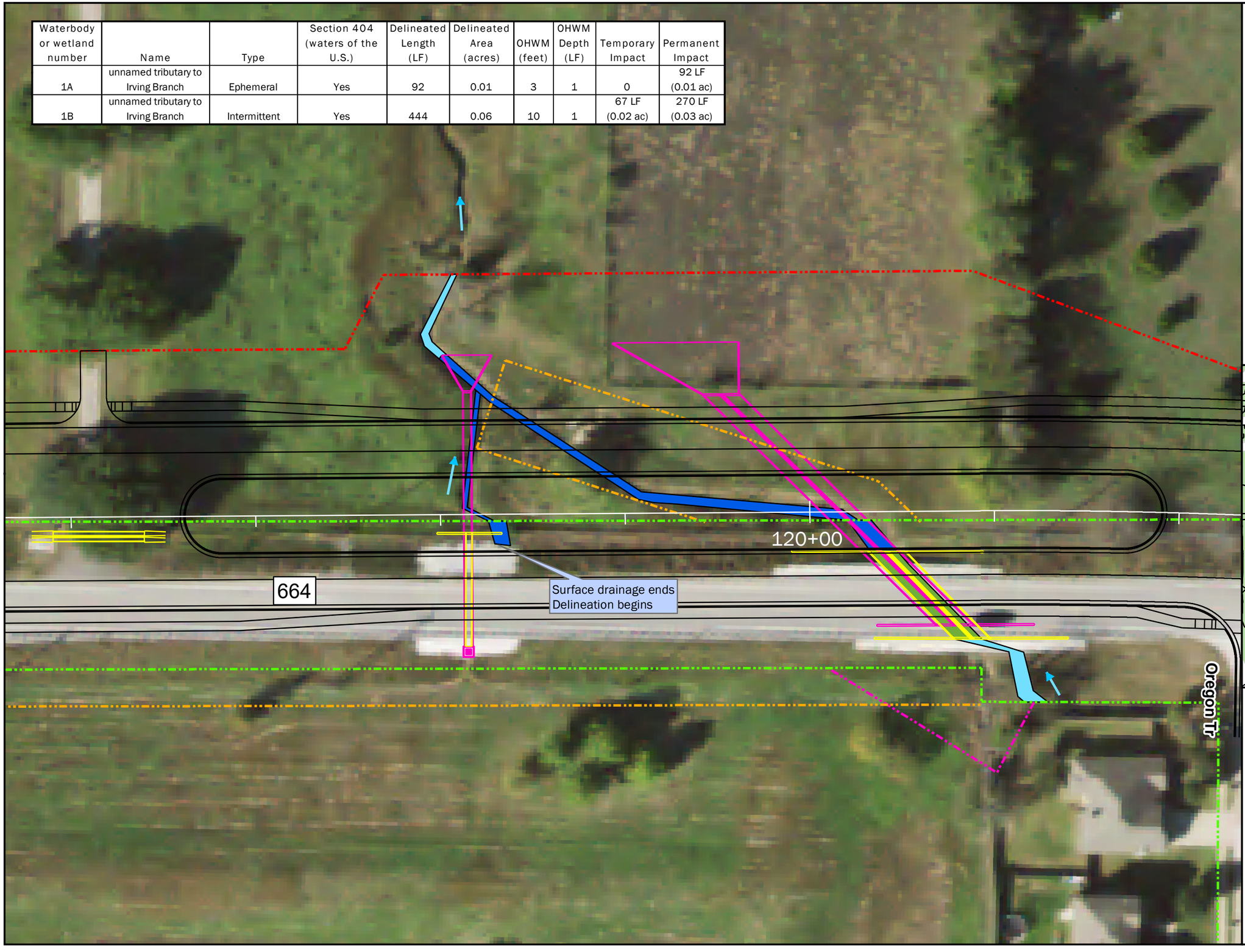


FIGURE 4

PROJECT LAYOUT MAP
CROSSING 1

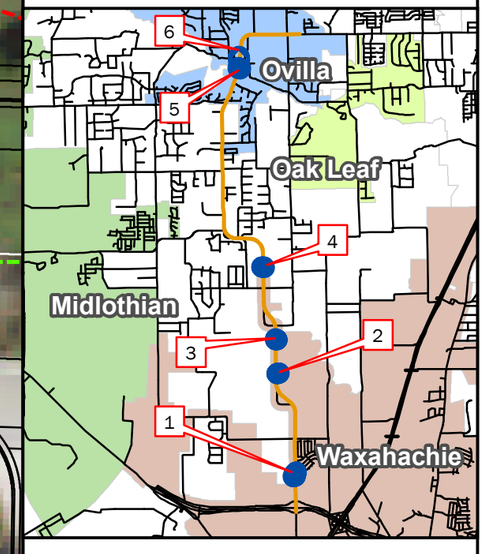
FARM-TO-MARKET ROAD (FM) 664
From U.S. Highway (US) 287
To Westmoreland Road
Ellis County
CSJs: 1051-01-038 and 1051-01-052

SHEET 1 of 6

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
2	unnamed tributary to South Grove Creek	Intermittent	Yes	158	0.3	8	6	0	21 LF (0.01 ac)

205+00

664

Surface drainage ends
Delineation begins

FIGURE 4

PROJECT LAYOUT MAP
CROSSING 2

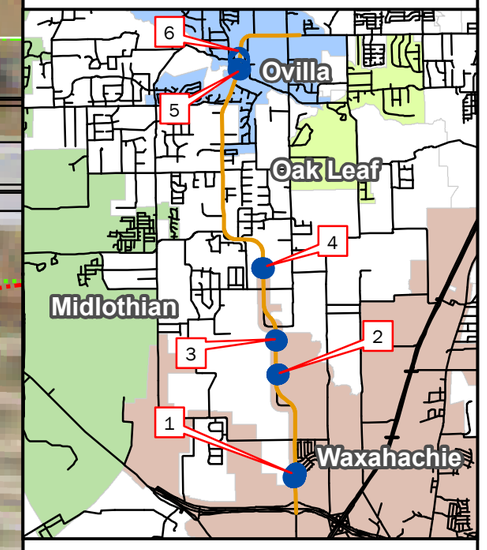
FARM-TO-MARKET ROAD (FM) 664
From U.S. Highway (US) 287
To Westmoreland Road
Ellis County
CSJs: 1051-01-038 and 1051-01-052

SHEET 2 of 6

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
3	unnamed tributary to South Grove Creek	Intermittent	Yes	158	0.3	8	6	55 LF (0.01 ac)	83 LF (0.02 ac)

Surface drainage ends
Delineation begins

230+00

664

FIGURE 4

PROJECT LAYOUT MAP
CROSSING 3

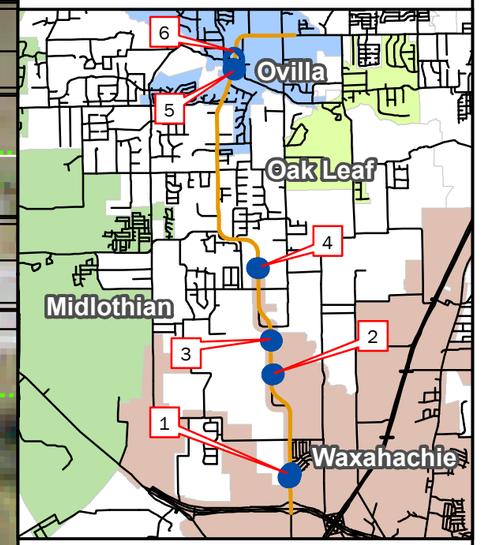
FARM-TO-MARKET ROAD (FM) 664
From U.S. Highway (US) 287
To Westmoreland Road
Ellis County
CSJs: 1051-01-038 and 1051-01-052

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)

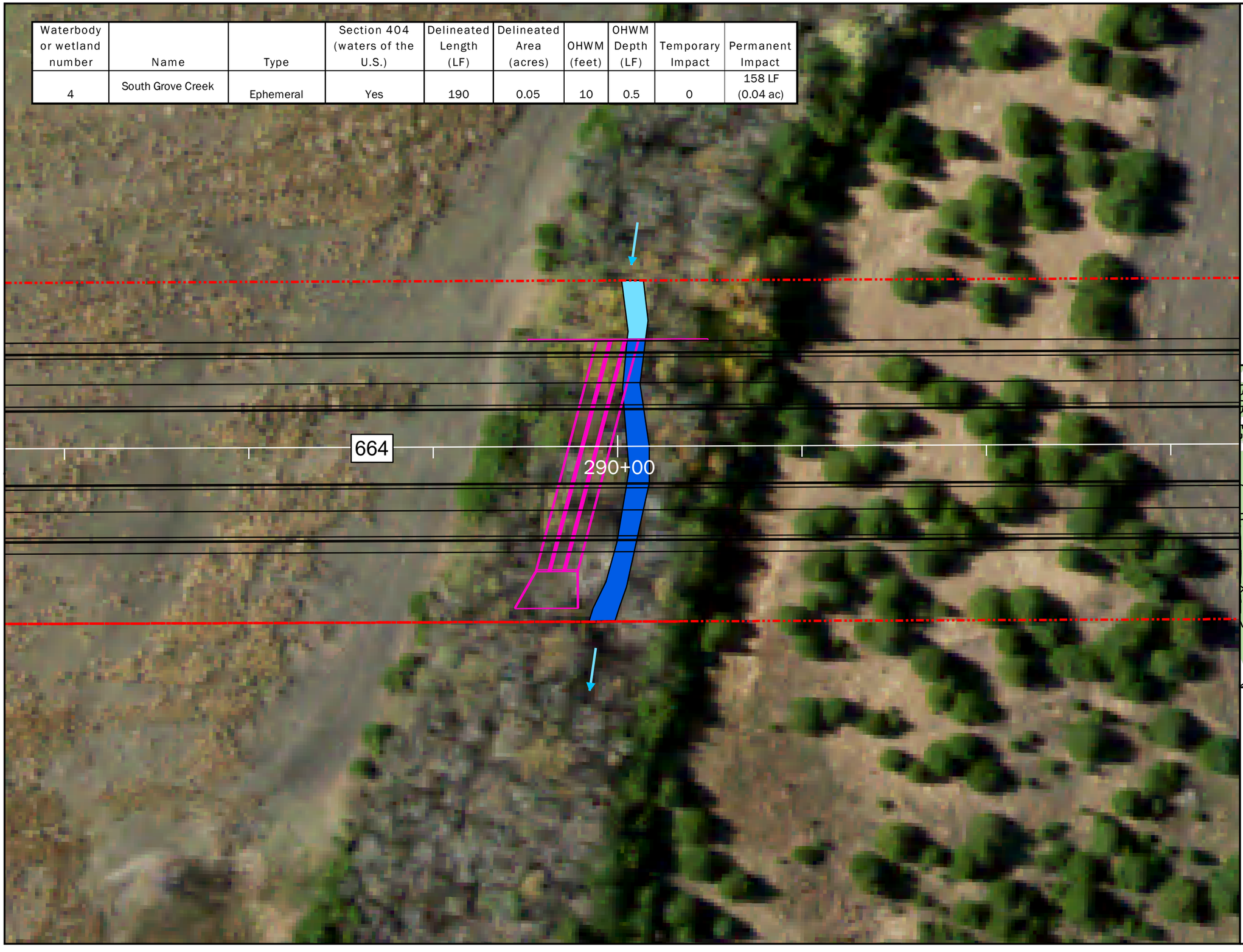
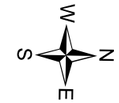


FIGURE 4

PROJECT LAYOUT MAP
CROSSING 4

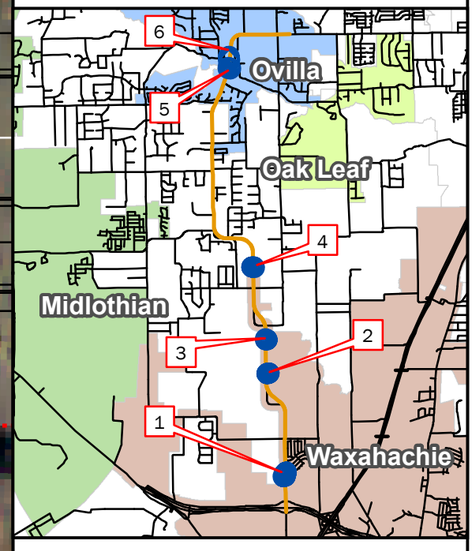
FARM-TO-MARKET ROAD (FM) 664
From U.S. Highway (US) 287
To Westmoreland Road
Ellis County
CSJs: 1051-01-038 and 1051-01-052

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

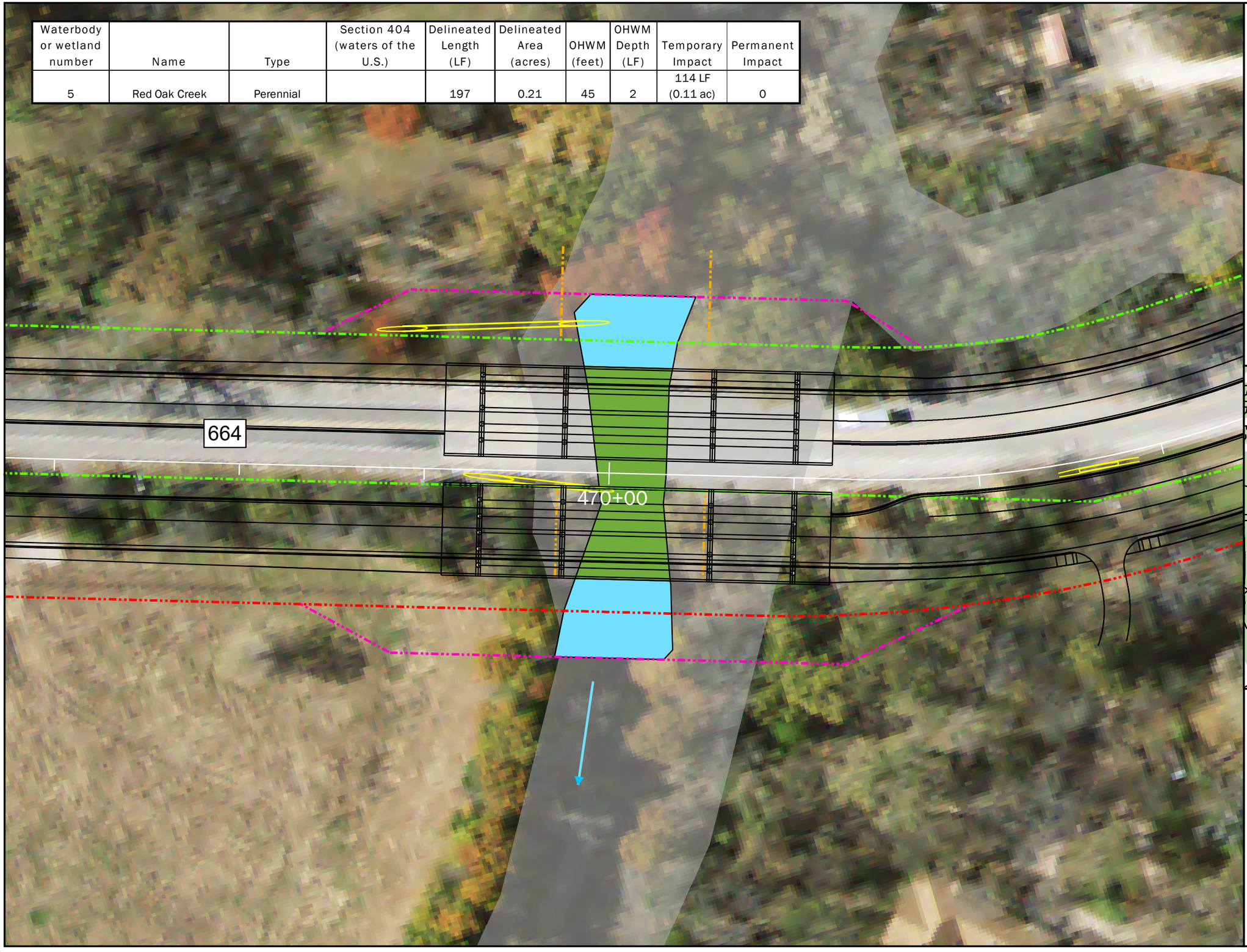


FIGURE 4

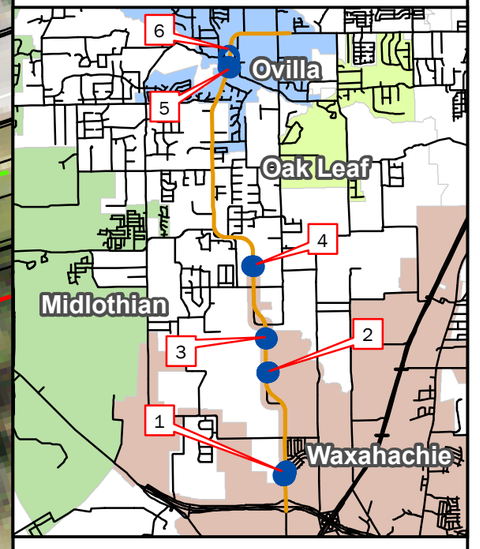
PROJECT LAYOUT MAP
CROSSING 5

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

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)

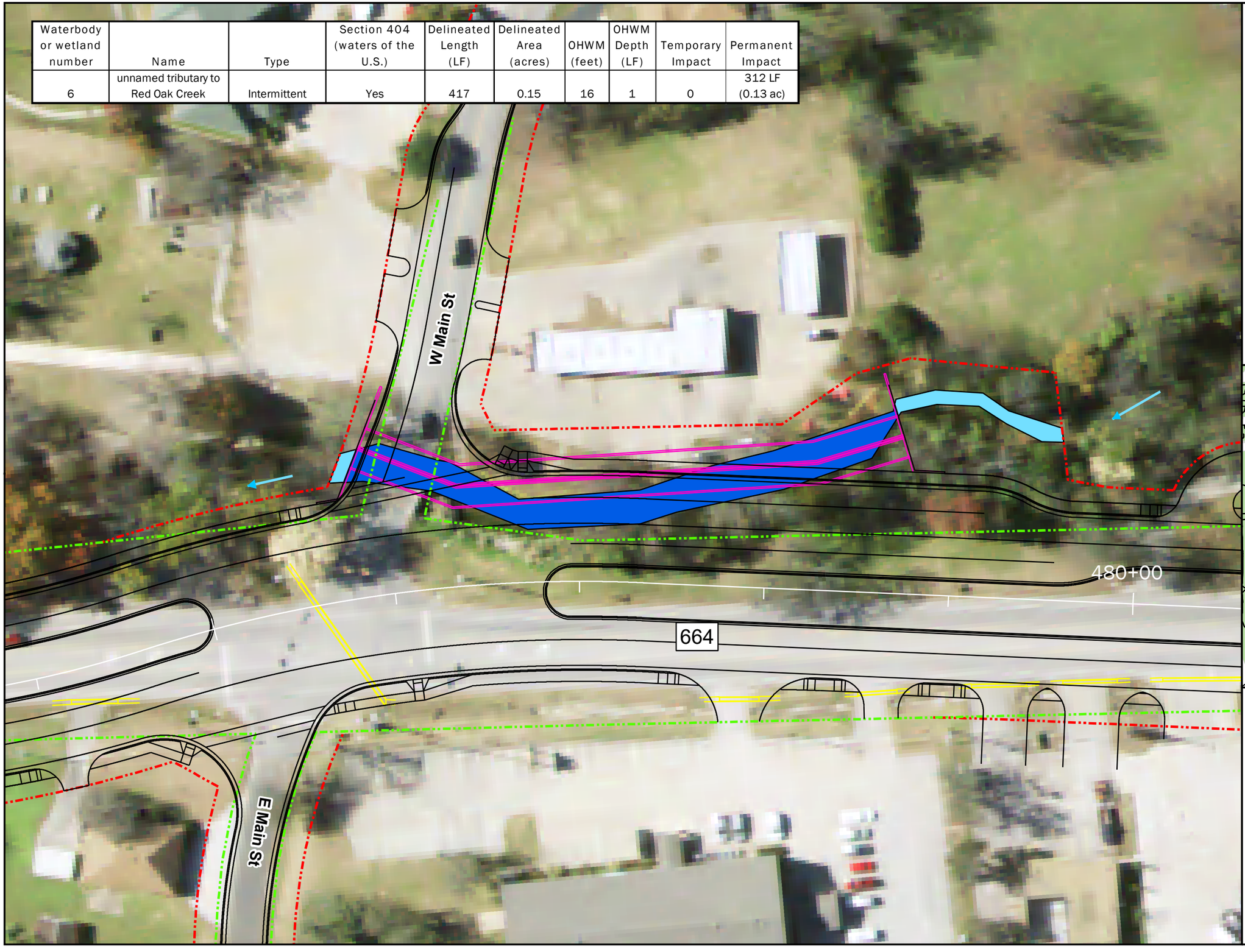


FIGURE 4

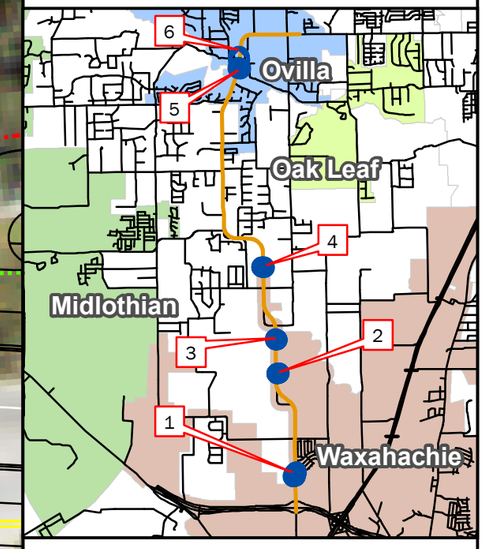
PROJECT LAYOUT MAP
CROSSING 6

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

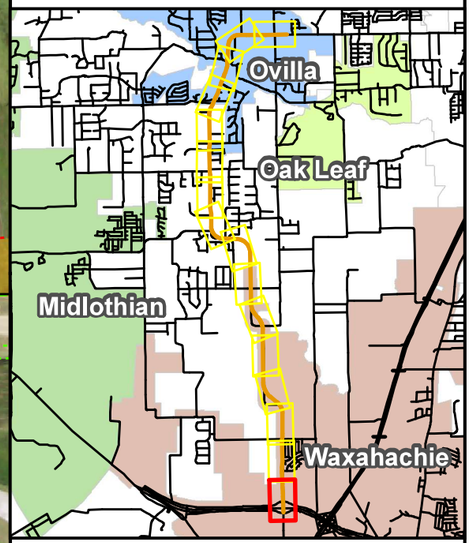
- Existing ROW
- Proposed ROW
- Existing Easement
- Proposed Drainage Easement
- Existing Culvert
- Proposed Culvert
- Proposed Pavement/Bridge
- Stream (No Impact)
- Stream (Permanent Impact)
- Stream (Temporary Impact)
- 100-Year Floodplain
- Flow Direction
- Proposed Bridge Column

FIGURE 5
ACTUAL 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
- Open Water
- Riparian
- Tallgrass Prairie, Grassland
- Urban

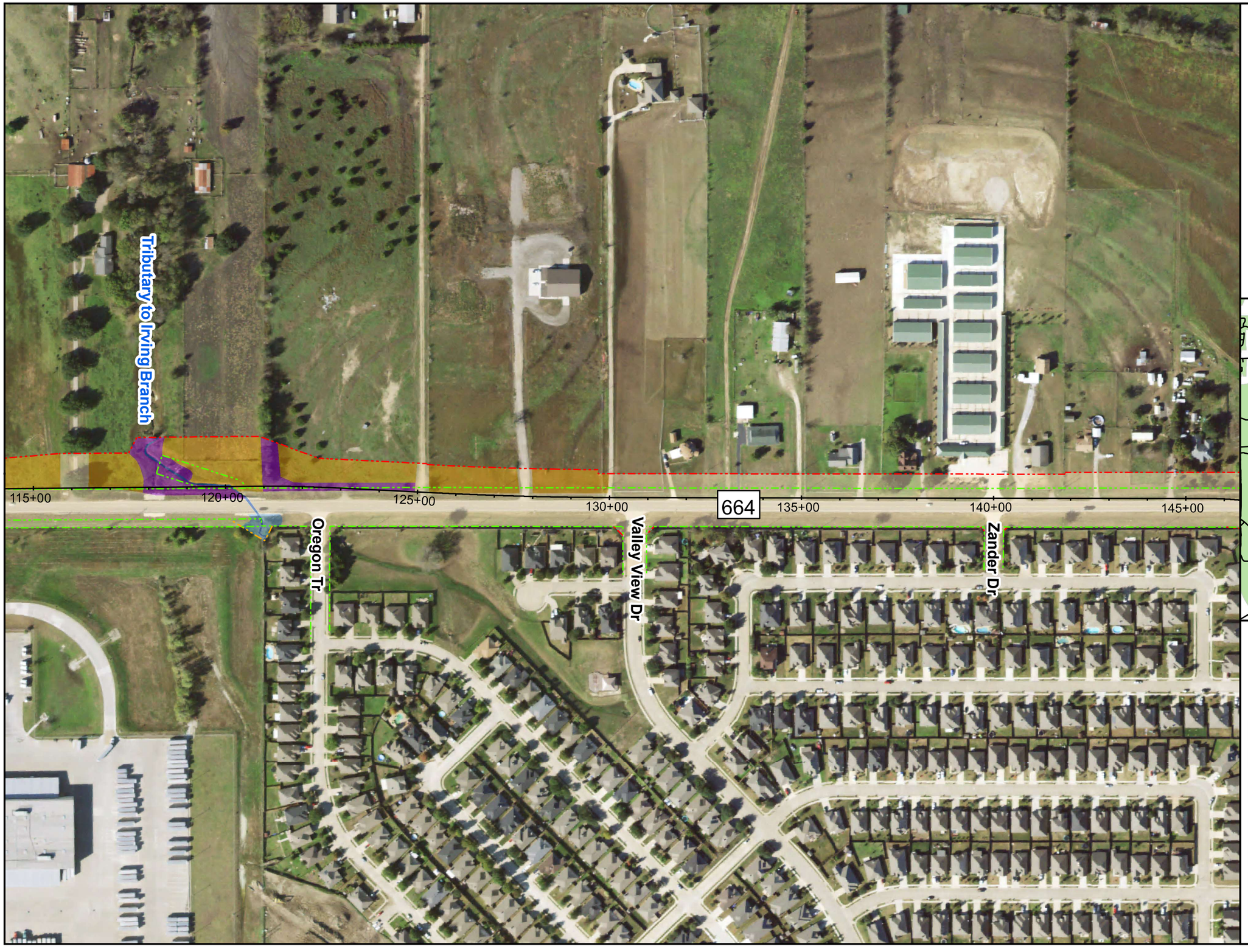
Base Map Source: TNRIS (2018)

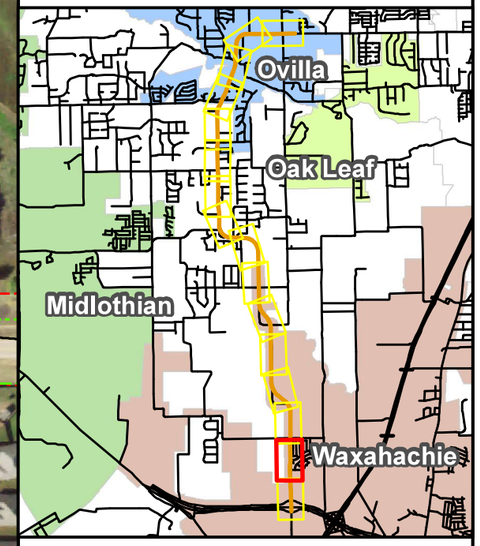
FIGURE 5
ACTUAL VEGETATION MAP

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
- Open Water
- Riparian
- Tallgrass Prairie, Grassland
- Urban

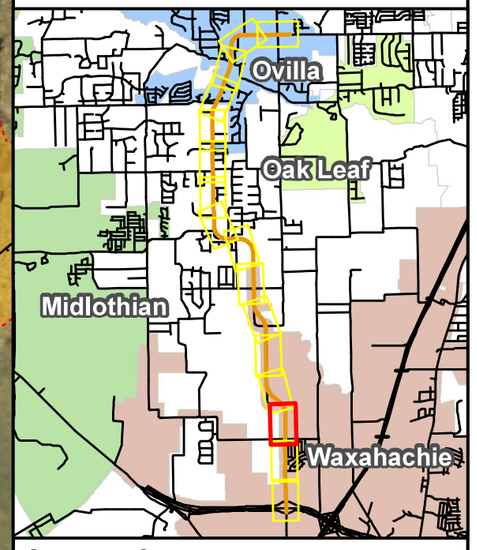
Base Map Source: TNRIS (2018)

FIGURE 5
ACTUAL 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
- Open Water
- Riparian
- Tallgrass Prairie, Grassland
- Urban

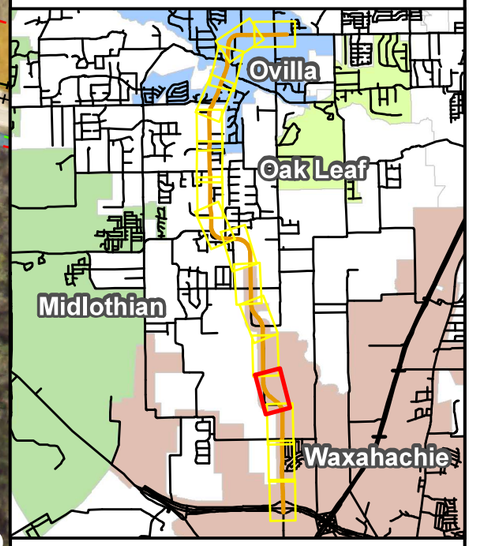
Base Map Source: TNRIS (2018)

FIGURE 5
ACTUAL 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



664
195+00
190+00
185+00
180+00
175+00
200+00
205+
Tributary to South Grove Creek

Legend

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

Base Map Source: TNRIS (2018)

FIGURE 5
ACTUAL VEGETATION MAP

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

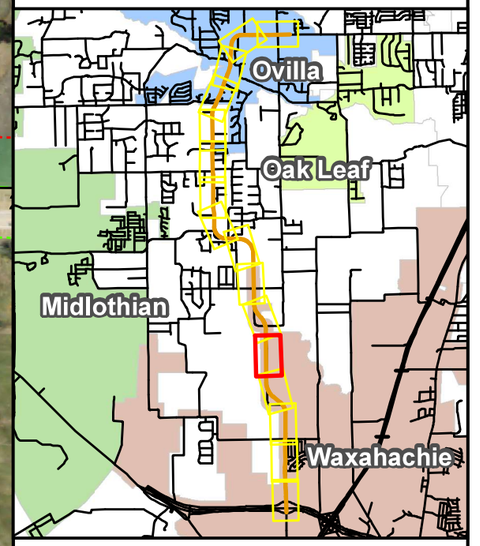
CSJs: 1051-01-038 and 1051-01-052

0 250 500 Feet

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

Tributary to South Grove Creek

Tributary to South Grove Creek



Legend

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

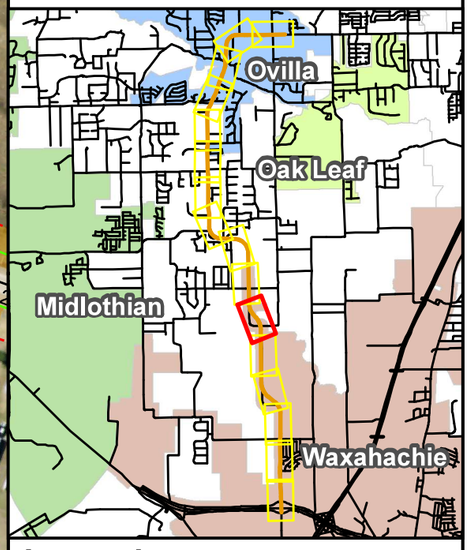
Base Map Source: TNRIS (2018)

FIGURE 5
ACTUAL 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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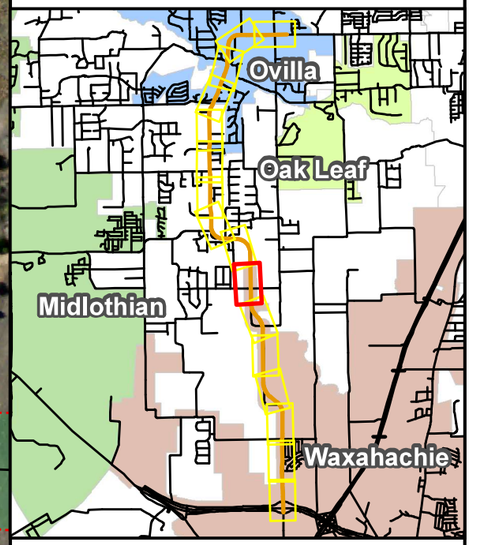
0 250 500 Feet

664

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

Bob White Ln

South Grove Creek



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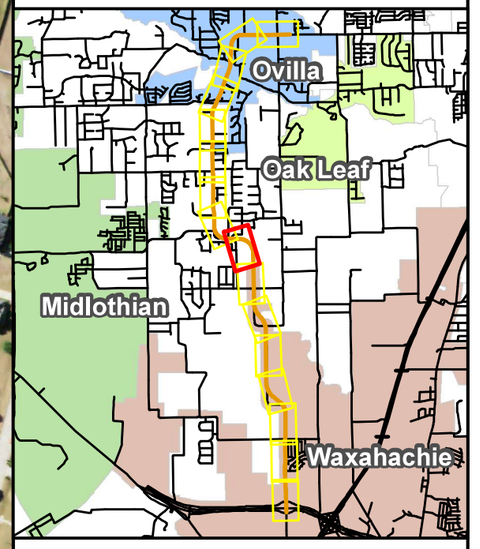

664
Meghann Ln
Mason Ln
330+00
325+00
320+00
315+00
310+00
305+00
300+00
295+00

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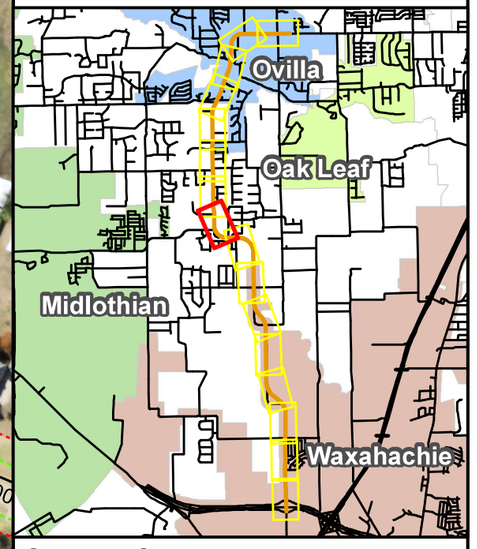

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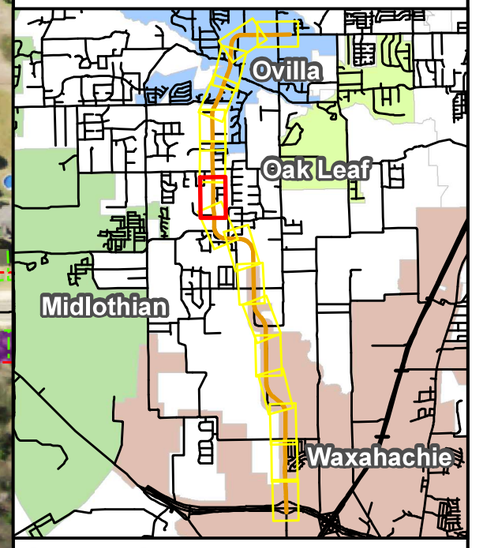

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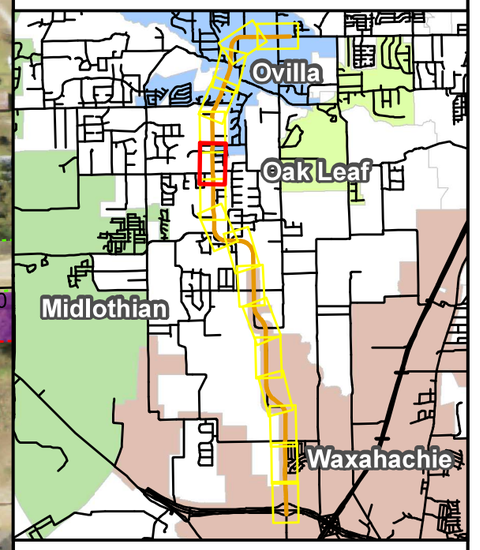

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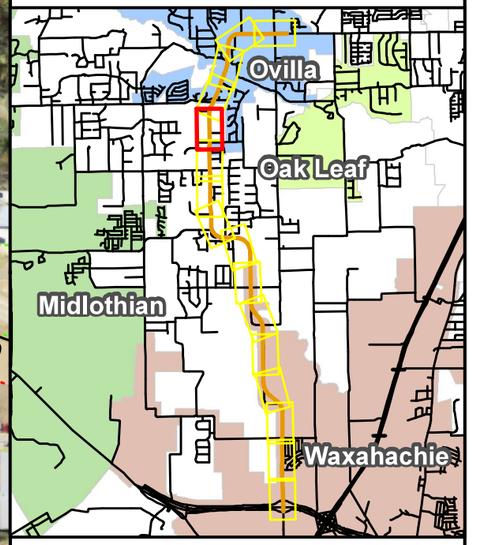
Ellis County

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

W
S N
E

0 250 500
Feet



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

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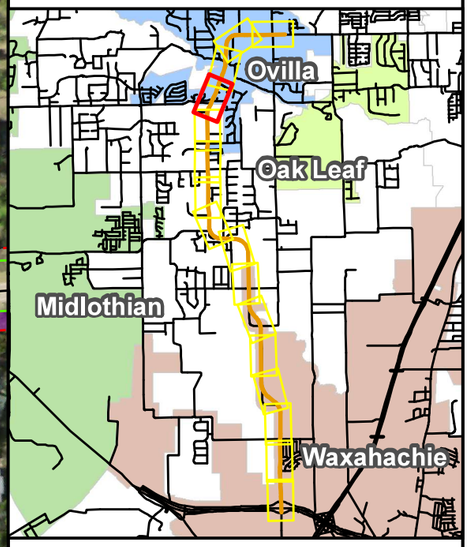

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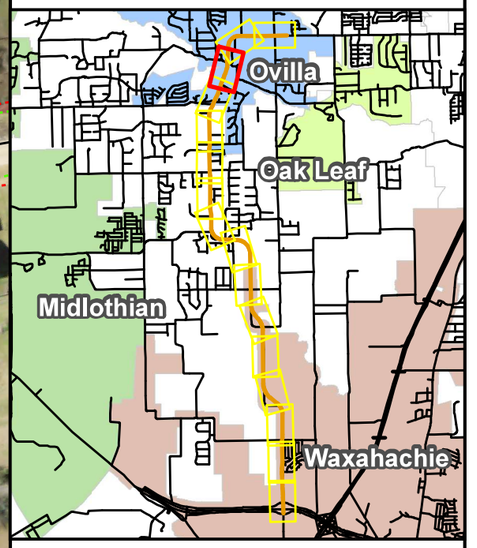

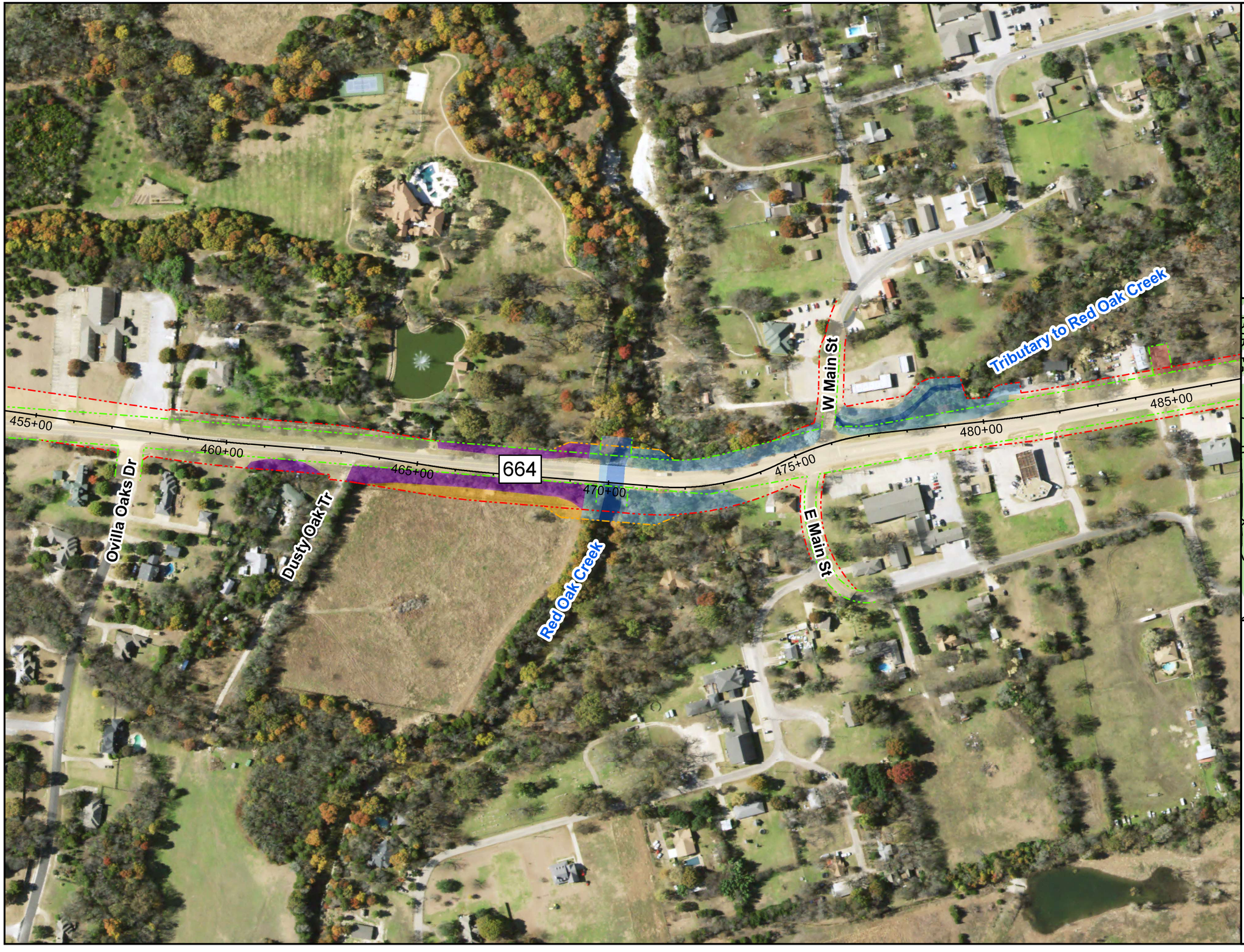

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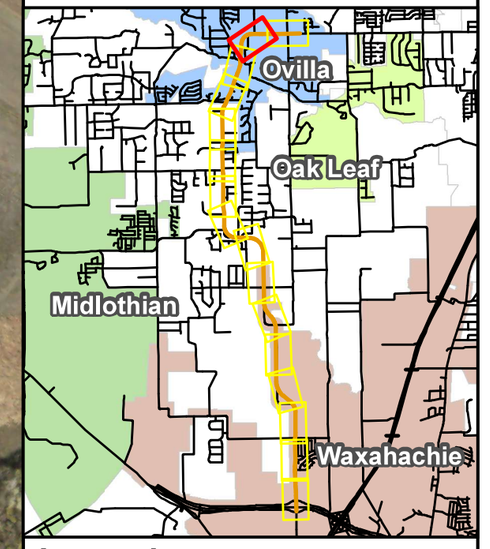
Ellis County

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

0 250 500 Feet



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Ellis County

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

N
W E
S

0 250 500 Feet

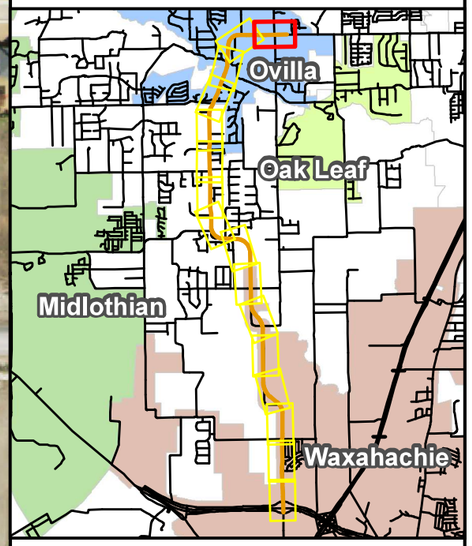

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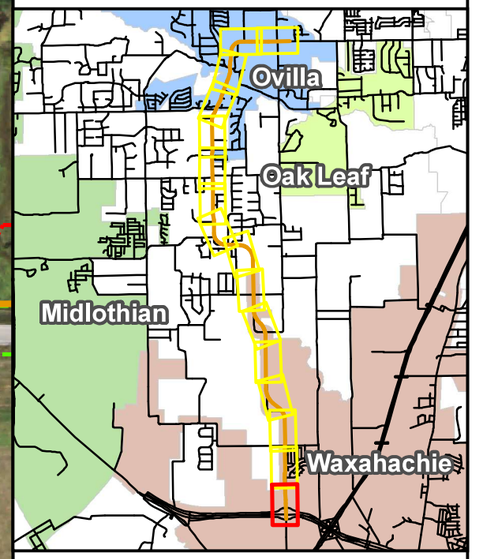
FIGURE 6
FM 664
HAZARDOUS MATERIALS SITES MAP

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

- 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

FIGURE 6
FM 664
HAZARDOUS MATERIALS SITES MAP

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

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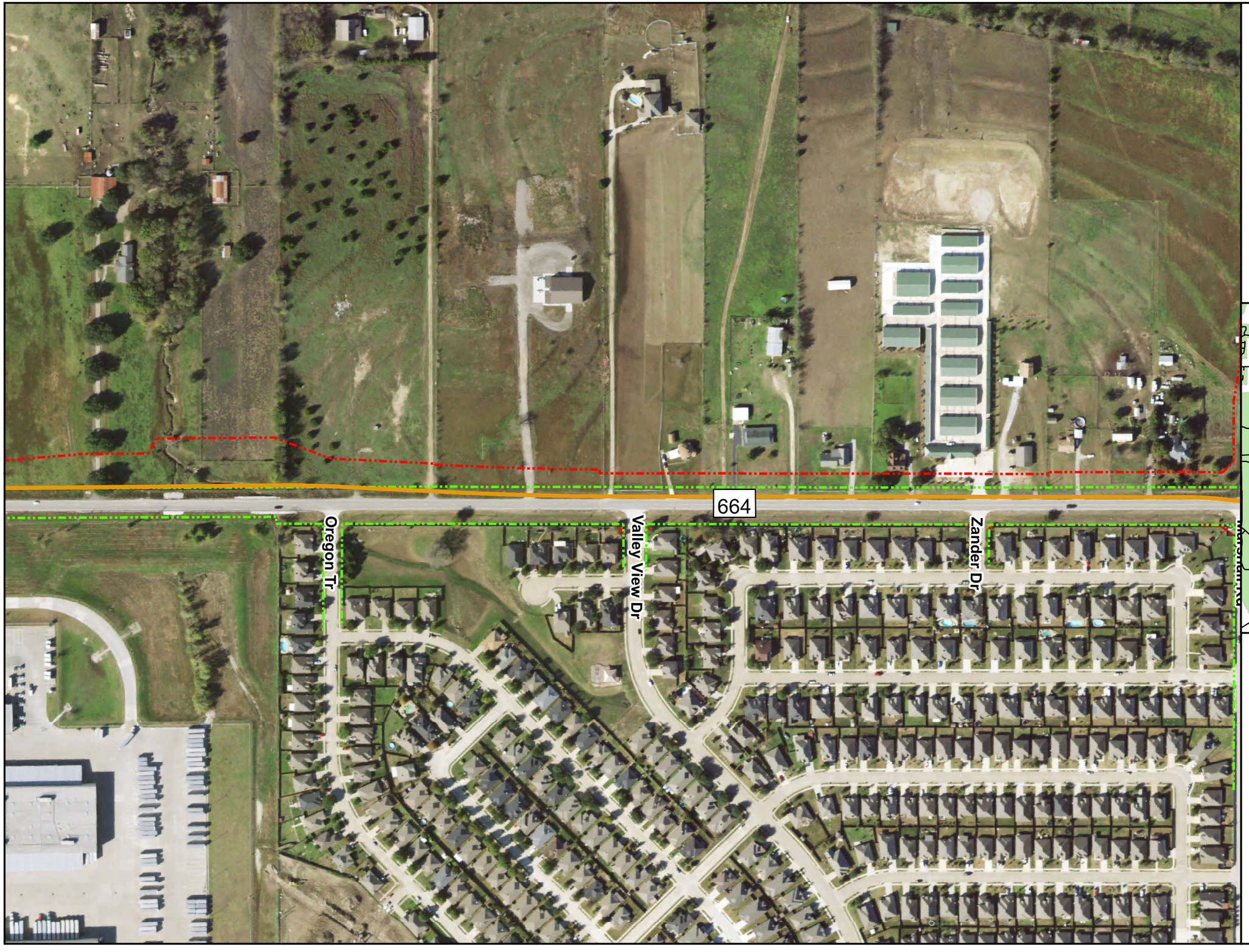

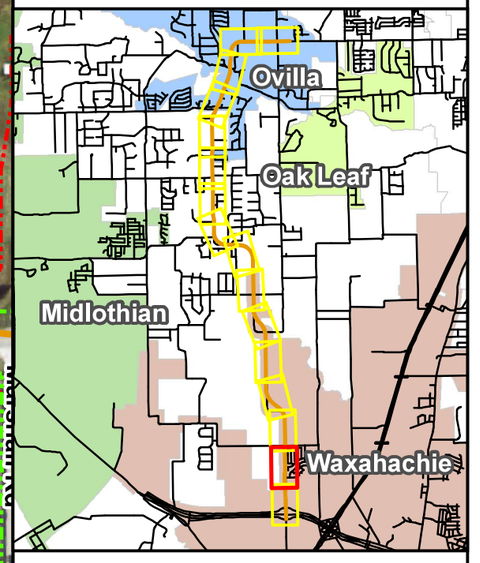

0 250 500 Feet

Legend

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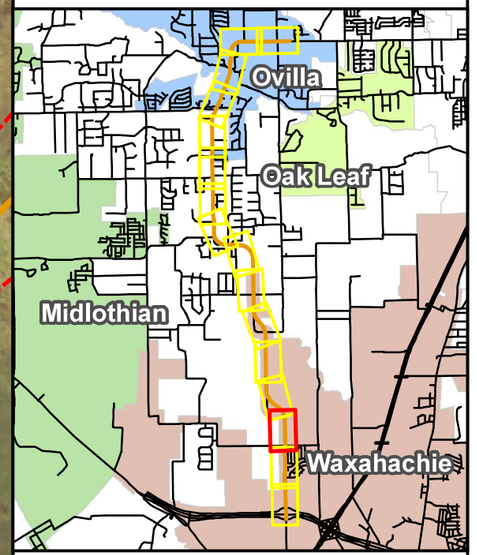

0 250 500 Feet

Legend

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Hazardous Material Sites

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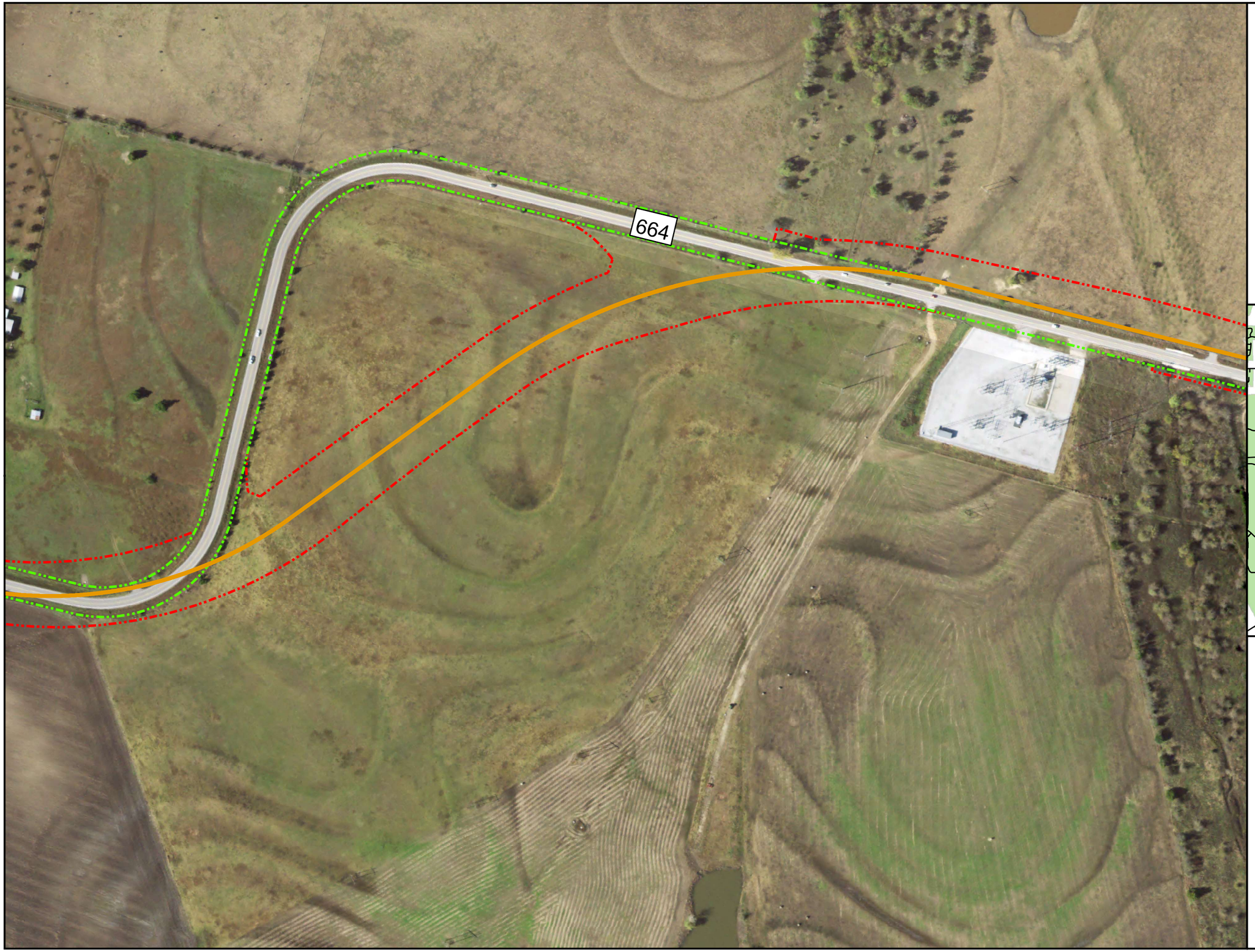

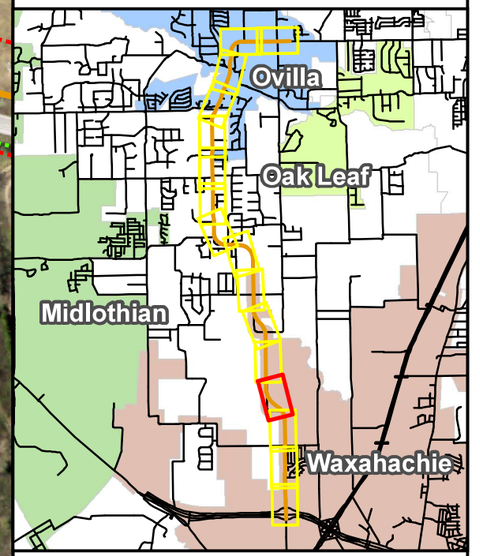

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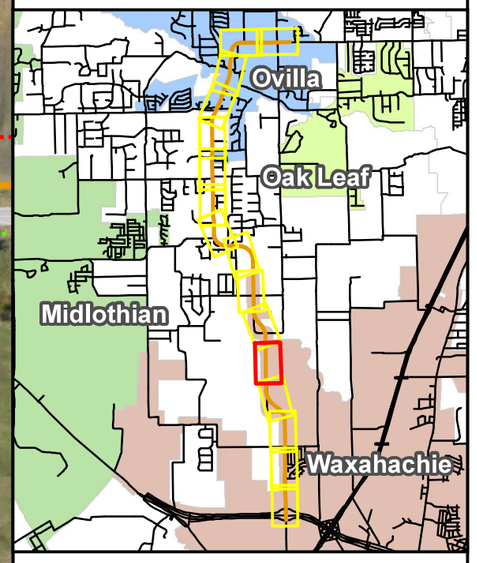

0 250 500
Feet

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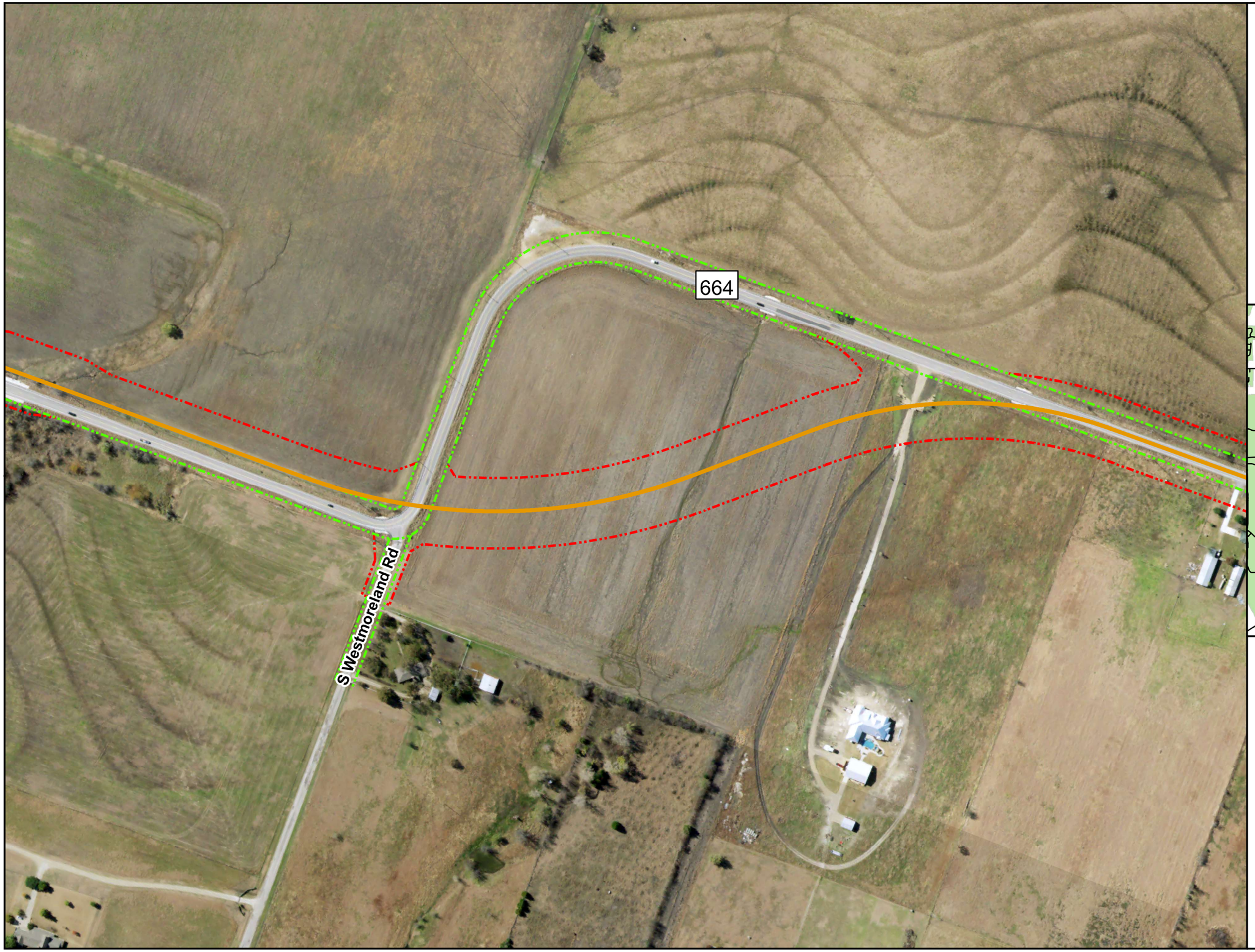

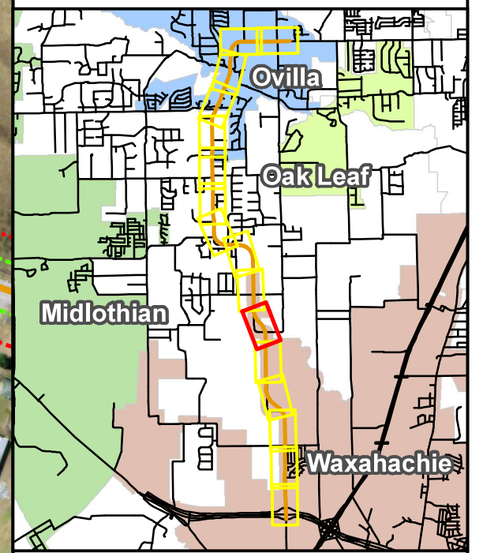

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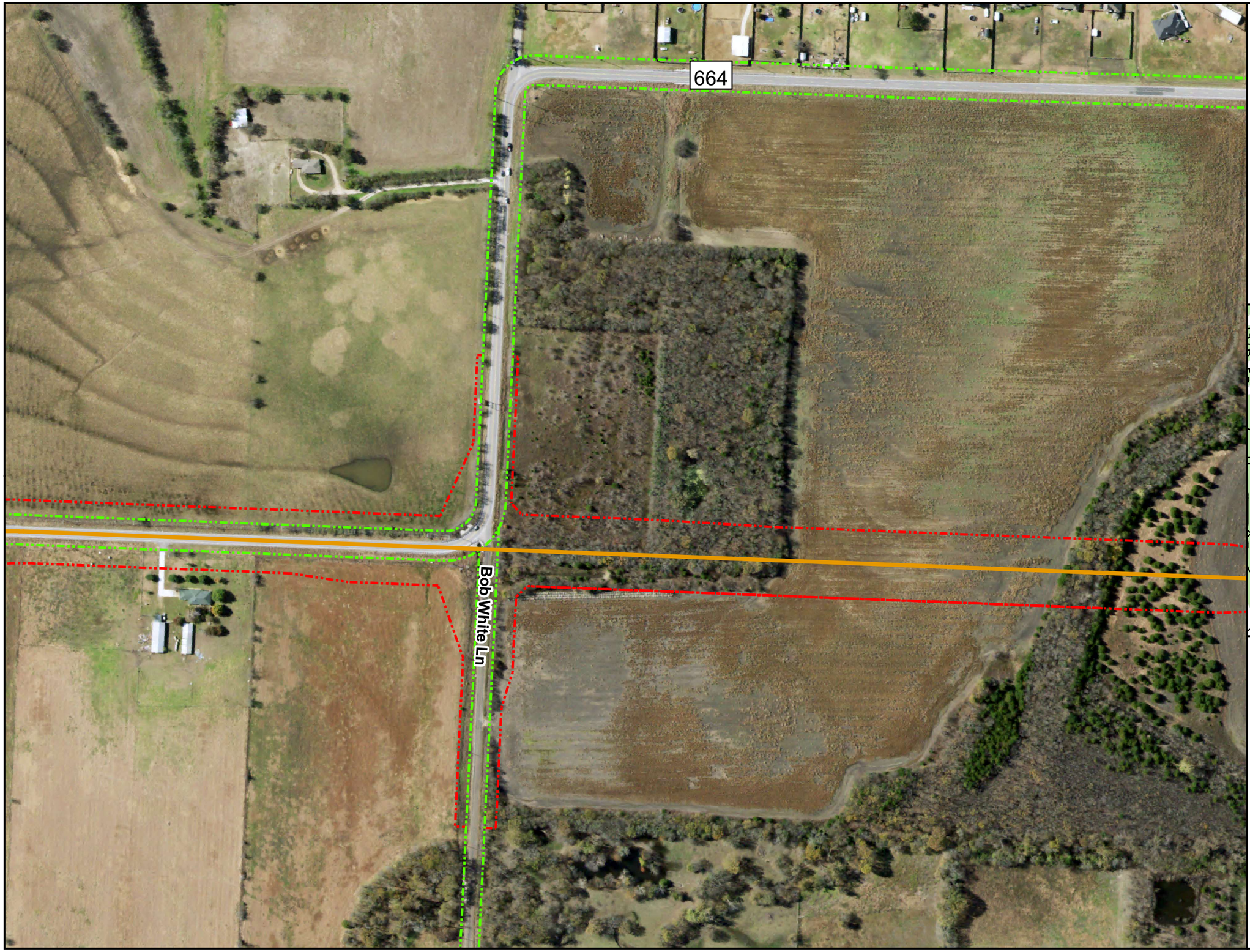

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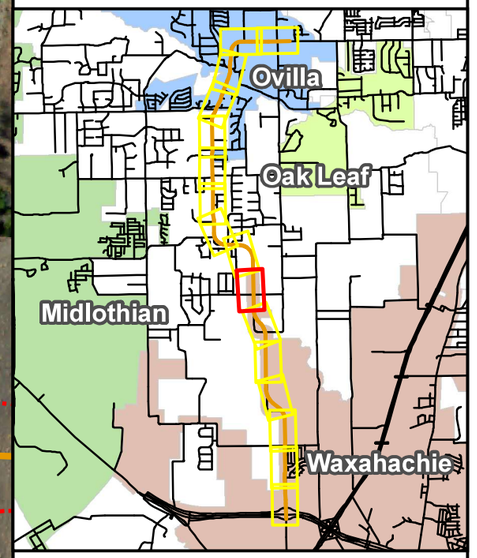

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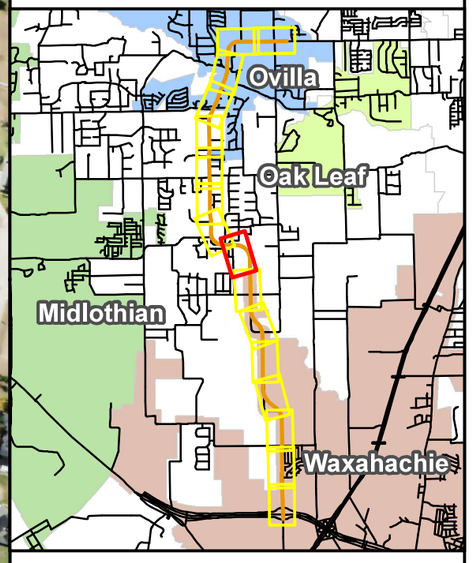

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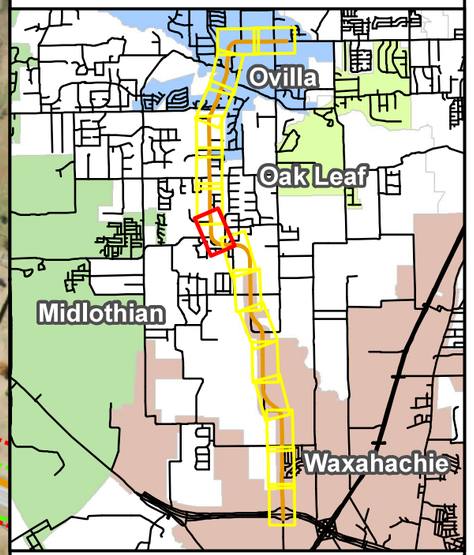

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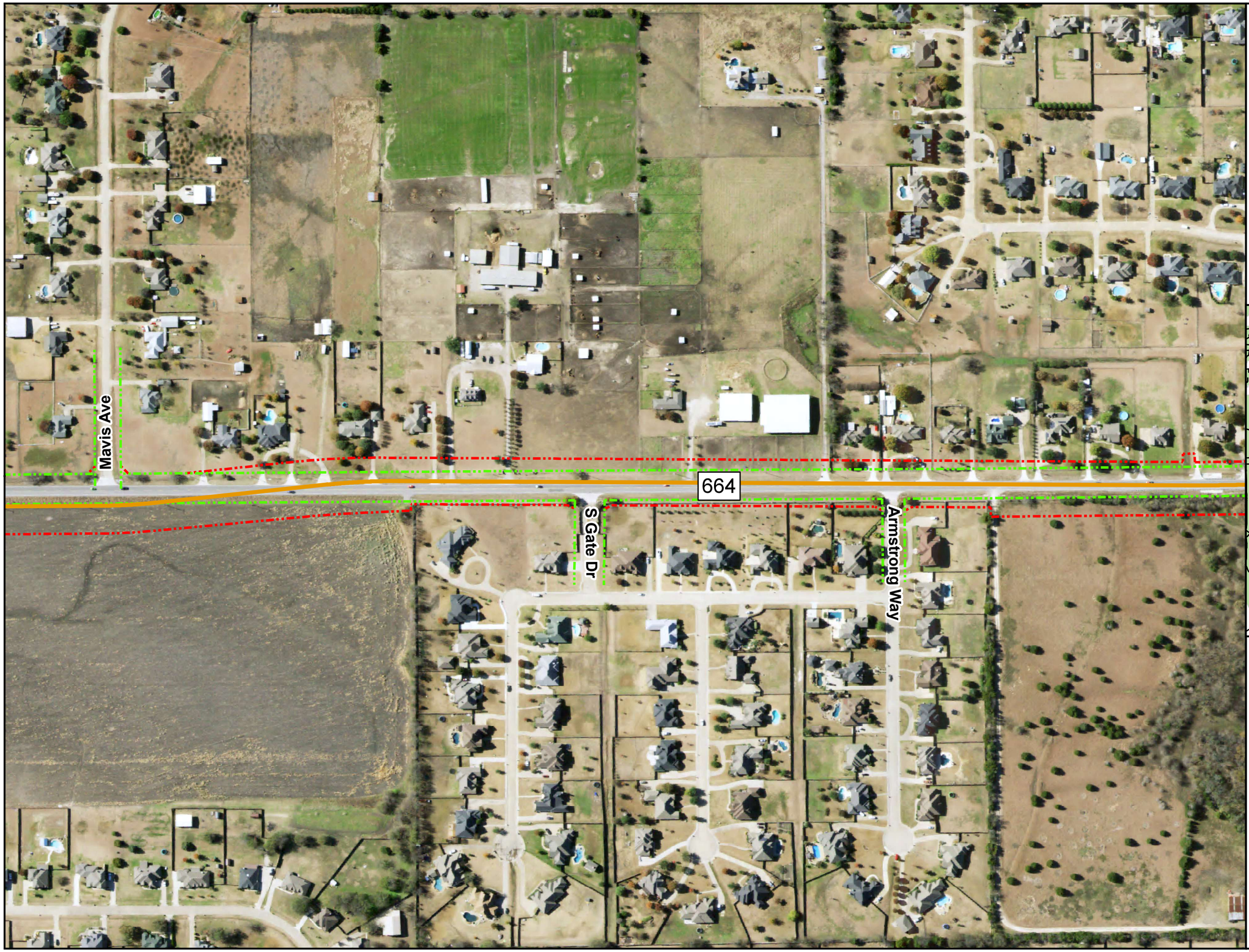

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HAZARDOUS MATERIALS SITES MAP

FARM-TO-MARKET ROAD (FM) 664
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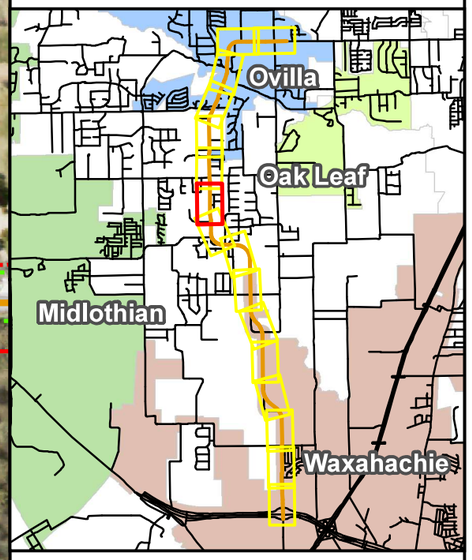

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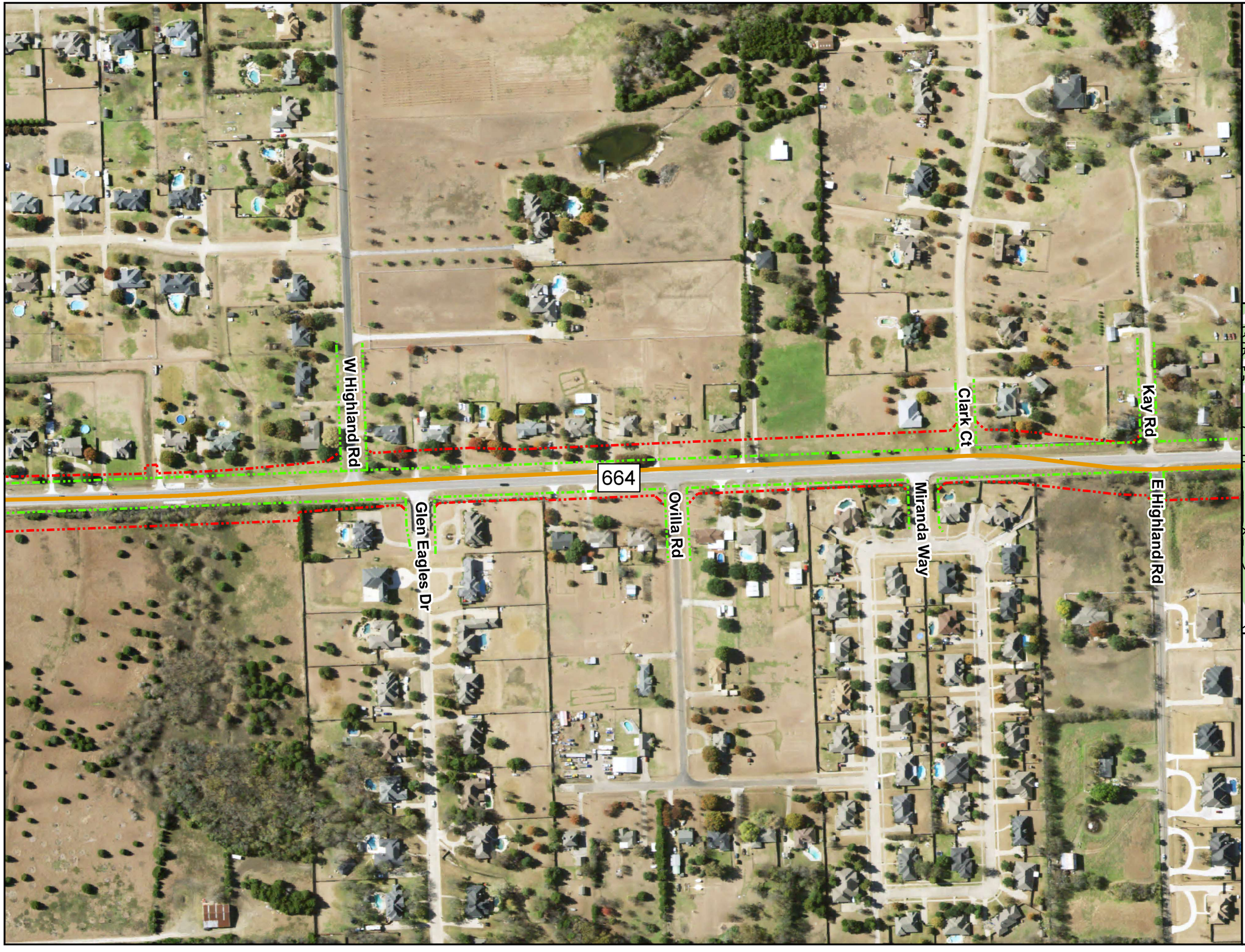

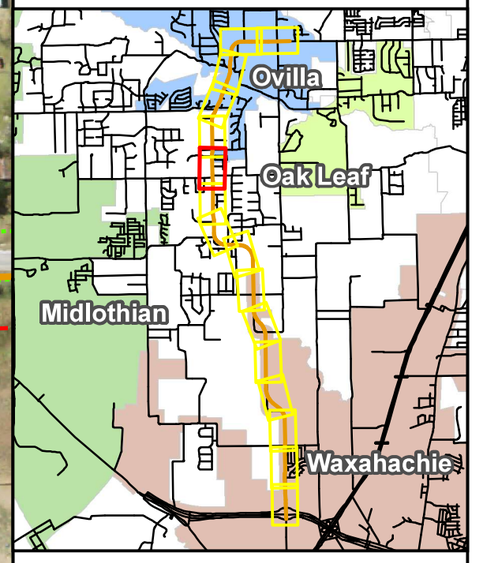

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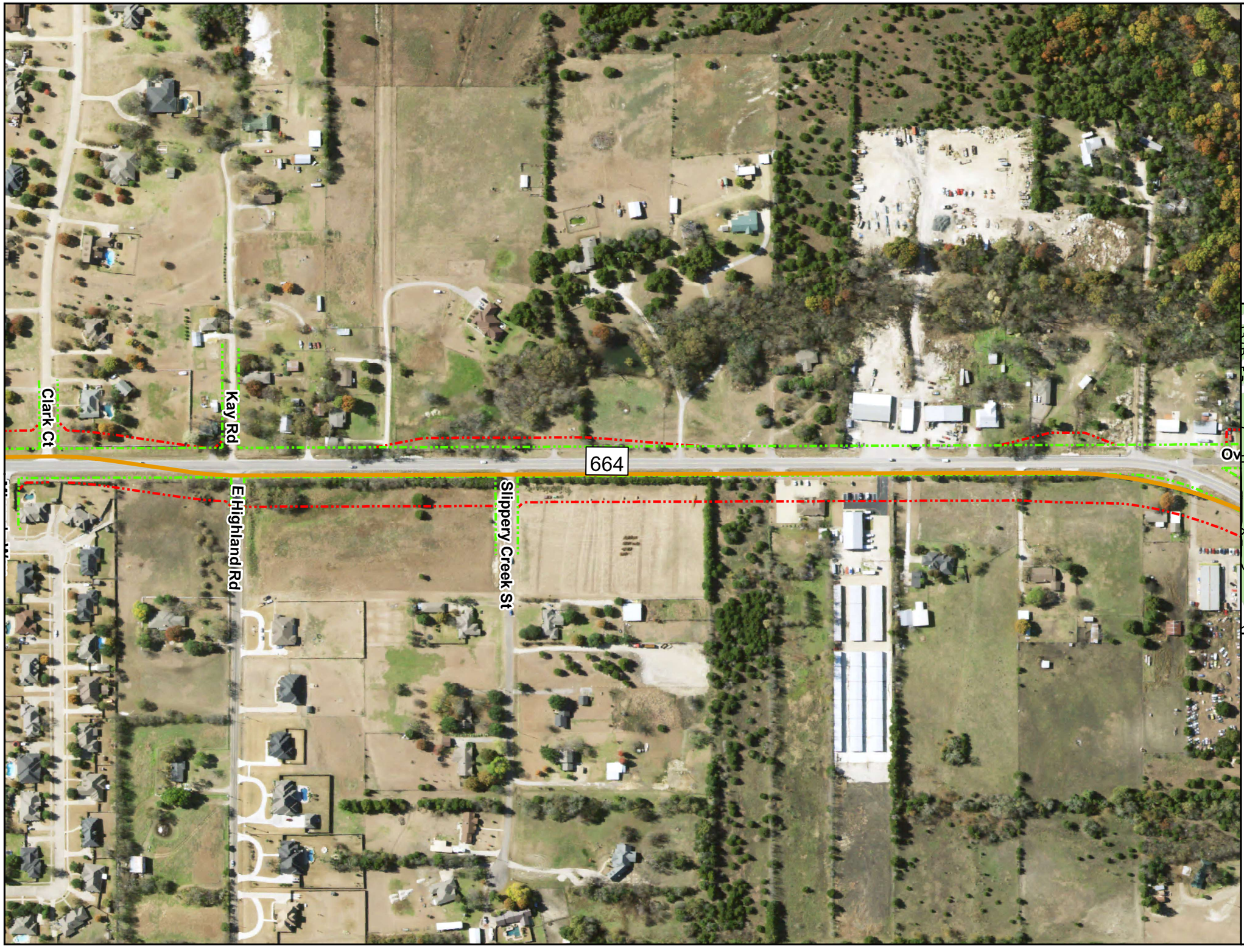
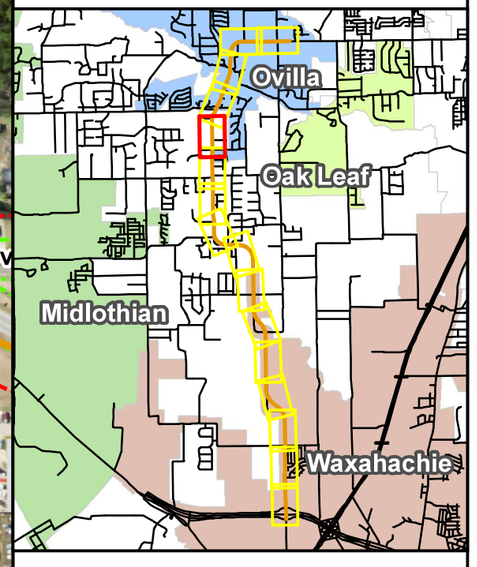
CSJs: 1051-01-038 and 1051-01-052





0 250 500 Feet

Legend

- Project Location
- Existing Right-of-Way
- Proposed Right-of-Way

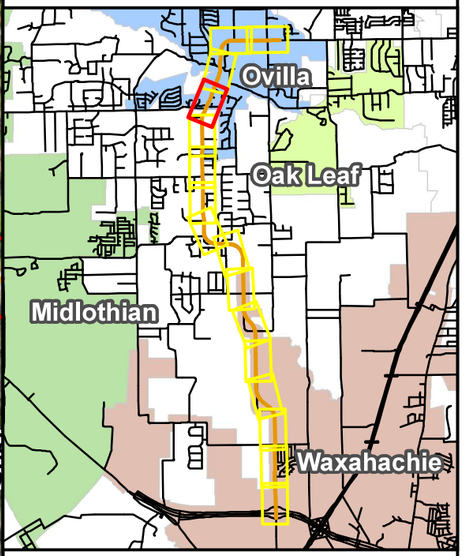
Hazardous Material Sites

- Anticipated Project Impacts
- Possible Project Impacts
- Low Potential or No Potential Project Impacts

FIGURE 6
FM 664
HAZARDOUS MATERIALS SITES 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

- Project Location
- Existing Right-of-Way
- Proposed Right-of-Way

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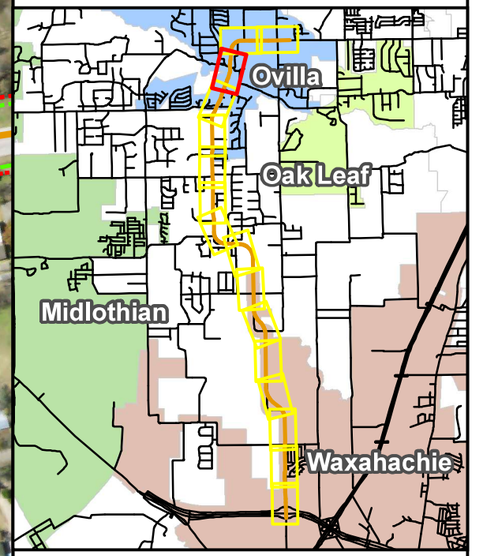

Legend

- Project Location
- Existing Right-of-Way
- Proposed Right-of-Way

Hazardous Material Sites

- Anticipated Project Impacts
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Ellis County

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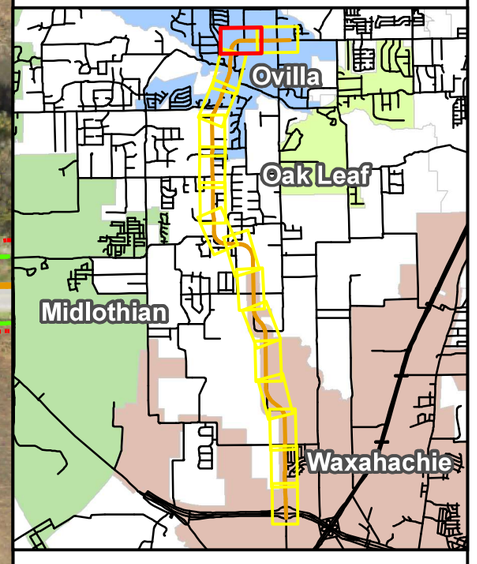

0 250 500 Feet

Legend

- Project Location
- Existing Right-of-Way
- Proposed Right-of-Way

Hazardous Material Sites

- Anticipated Project Impacts
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From U.S. Highway (US) 287
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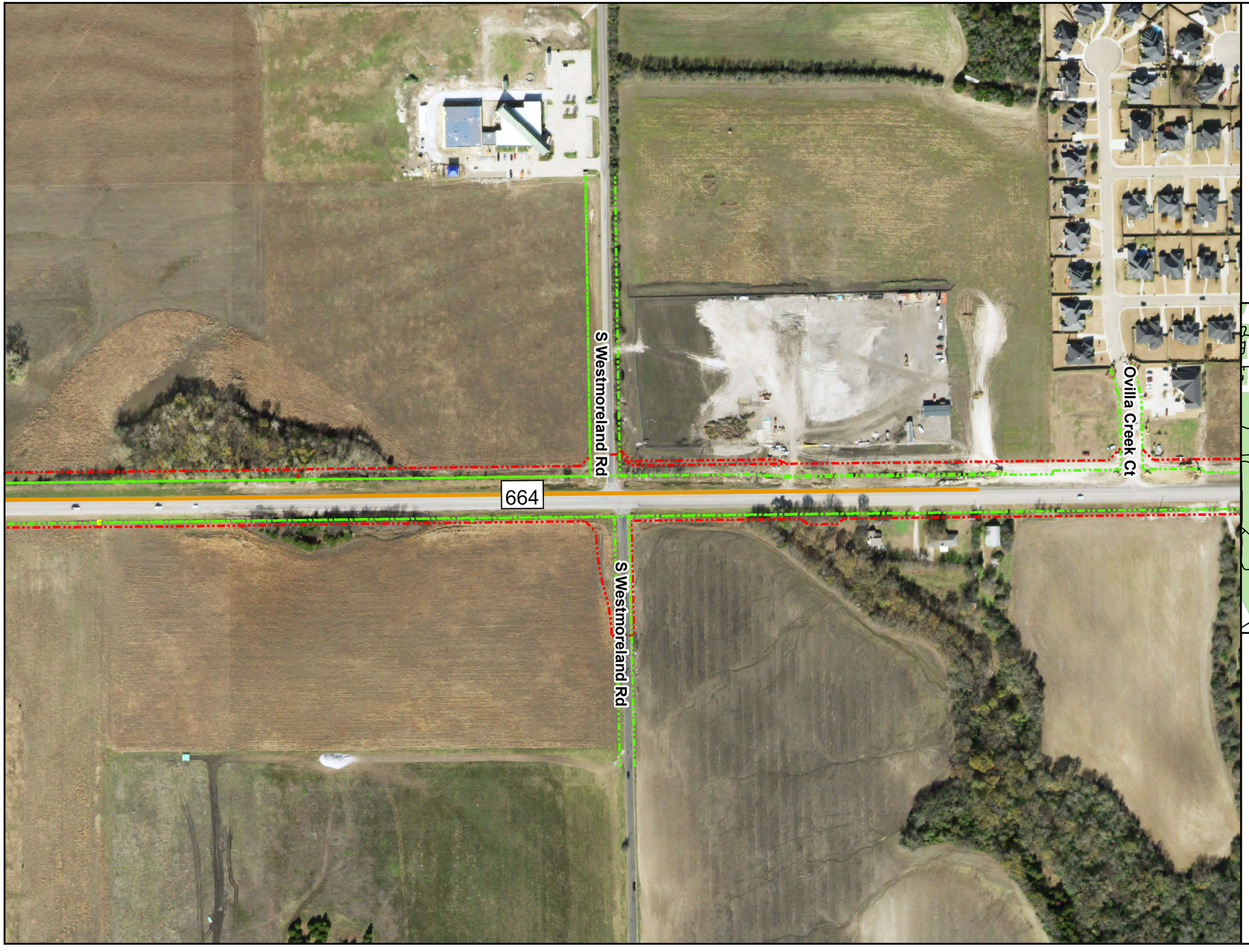
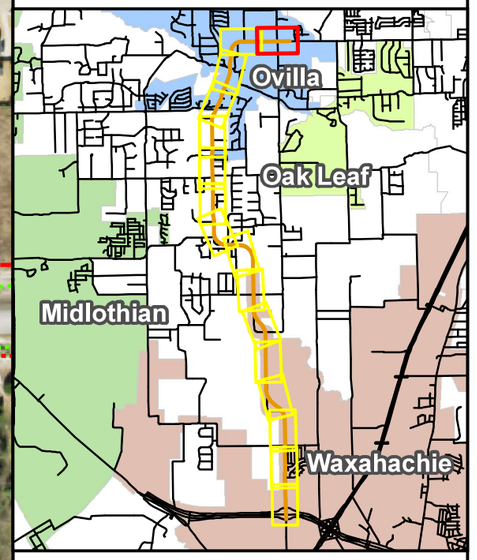
Ellis County

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





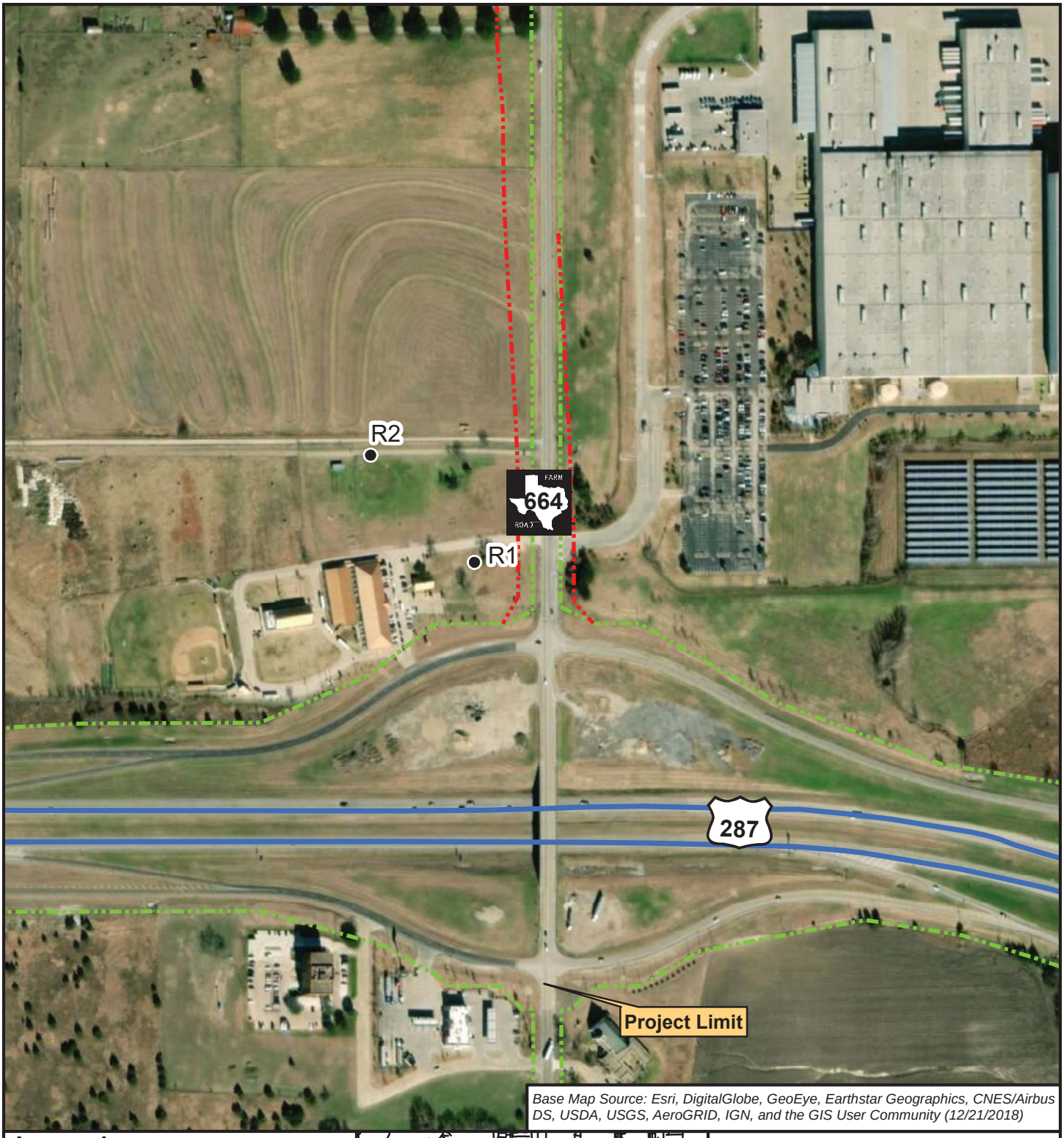
0 250 500 Feet

Legend

- Project Location
- Existing Right-of-Way
- Proposed Right-of-Way

Hazardous Material Sites

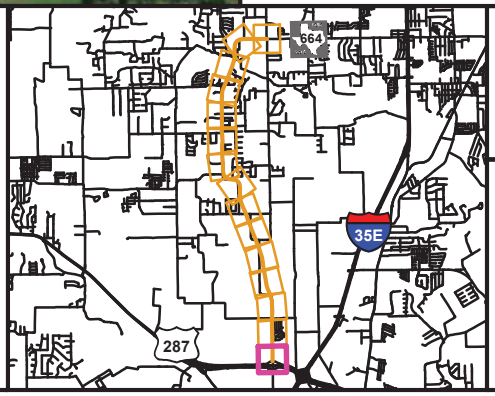
- Anticipated Project Impacts
- Possible Project Impacts
- Low Potential or No Potential Project Impacts



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



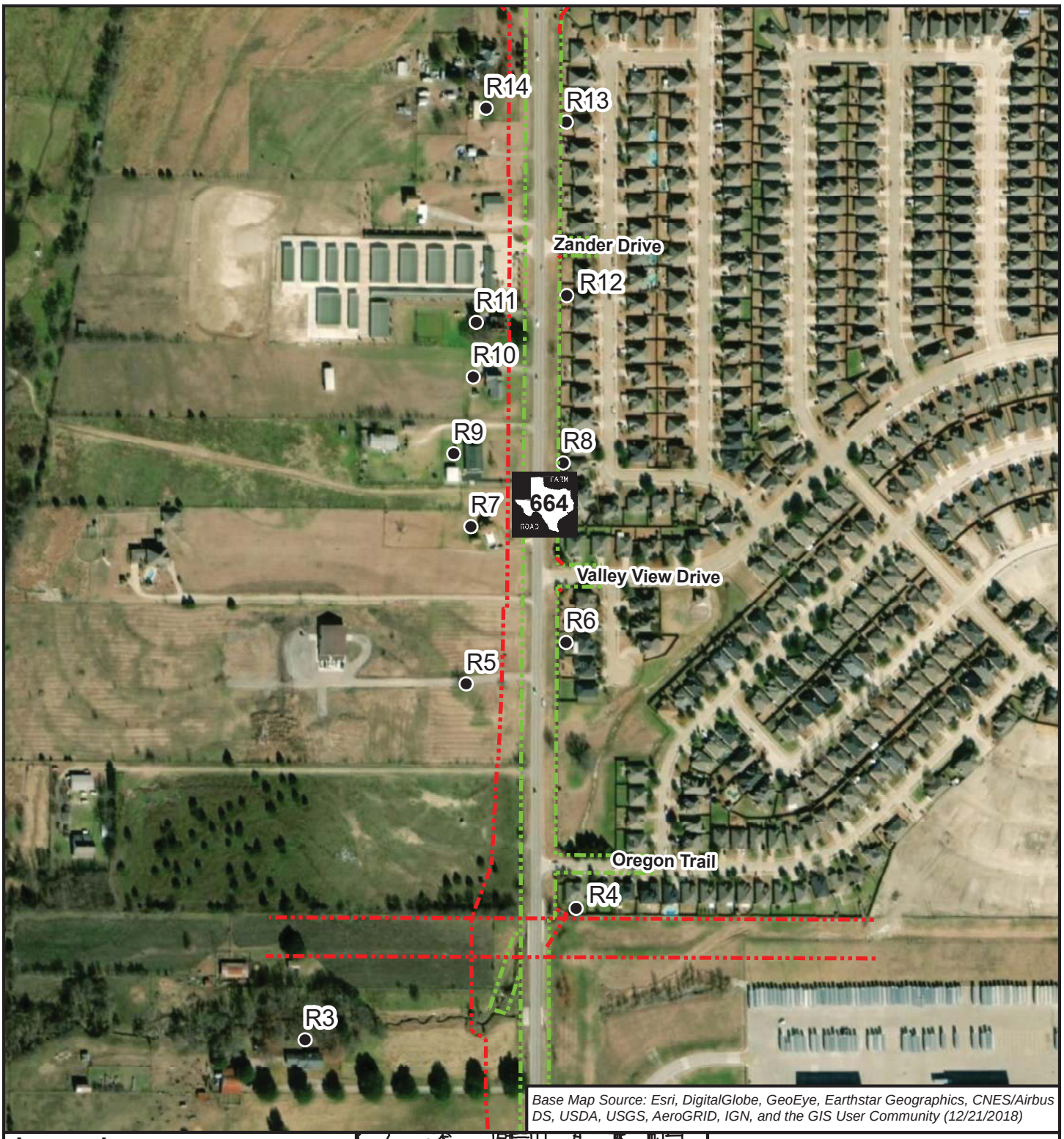
0 235 470 Feet

N W E S

FIGURE 7
NOISE RECEIVER LOCATION MAP

From US Highway 287
To Westmoreland Road

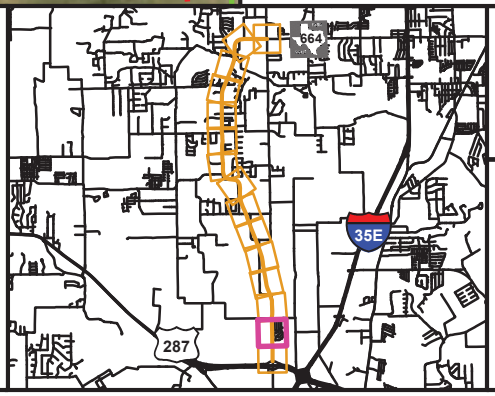
CSJs: 1051-01-038, 1051-01-052



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



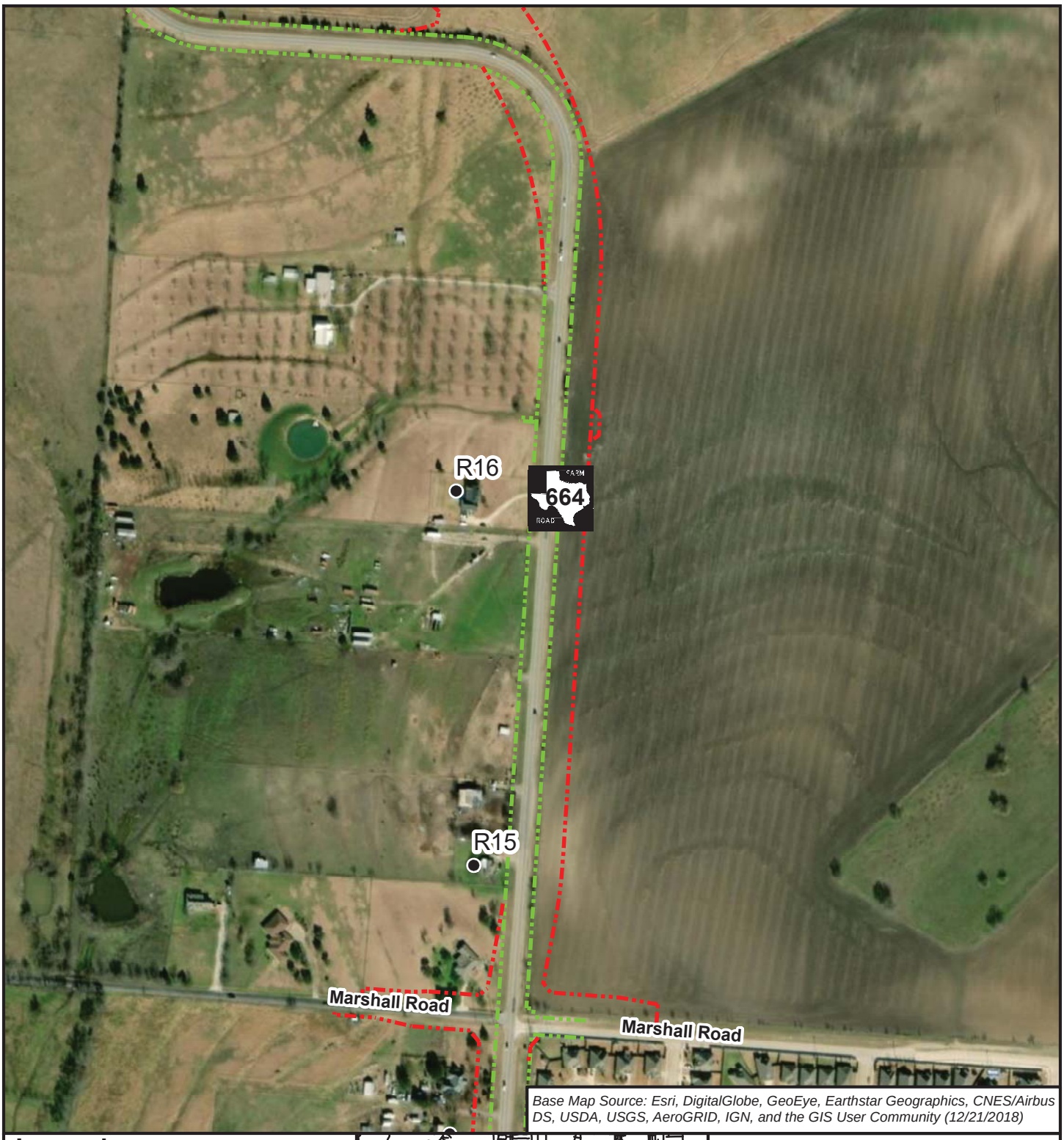
0 235 470 Feet

N W E S

FIGURE 7
NOISE RECEIVER LOCATION MAP

From US Highway 287
To Westmoreland Road

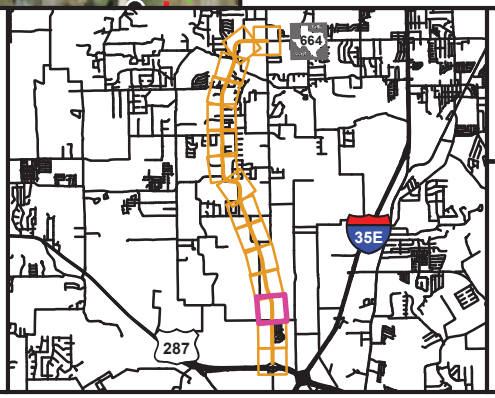
CSJs: 1051-01-038, 1051-01-052



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 7
NOISE RECEIVER LOCATION MAP

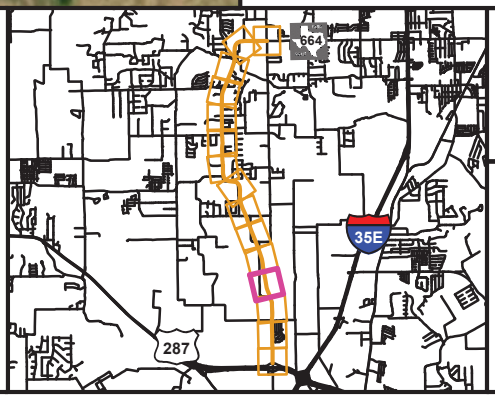
From US Highway 287
To Westmoreland Road

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



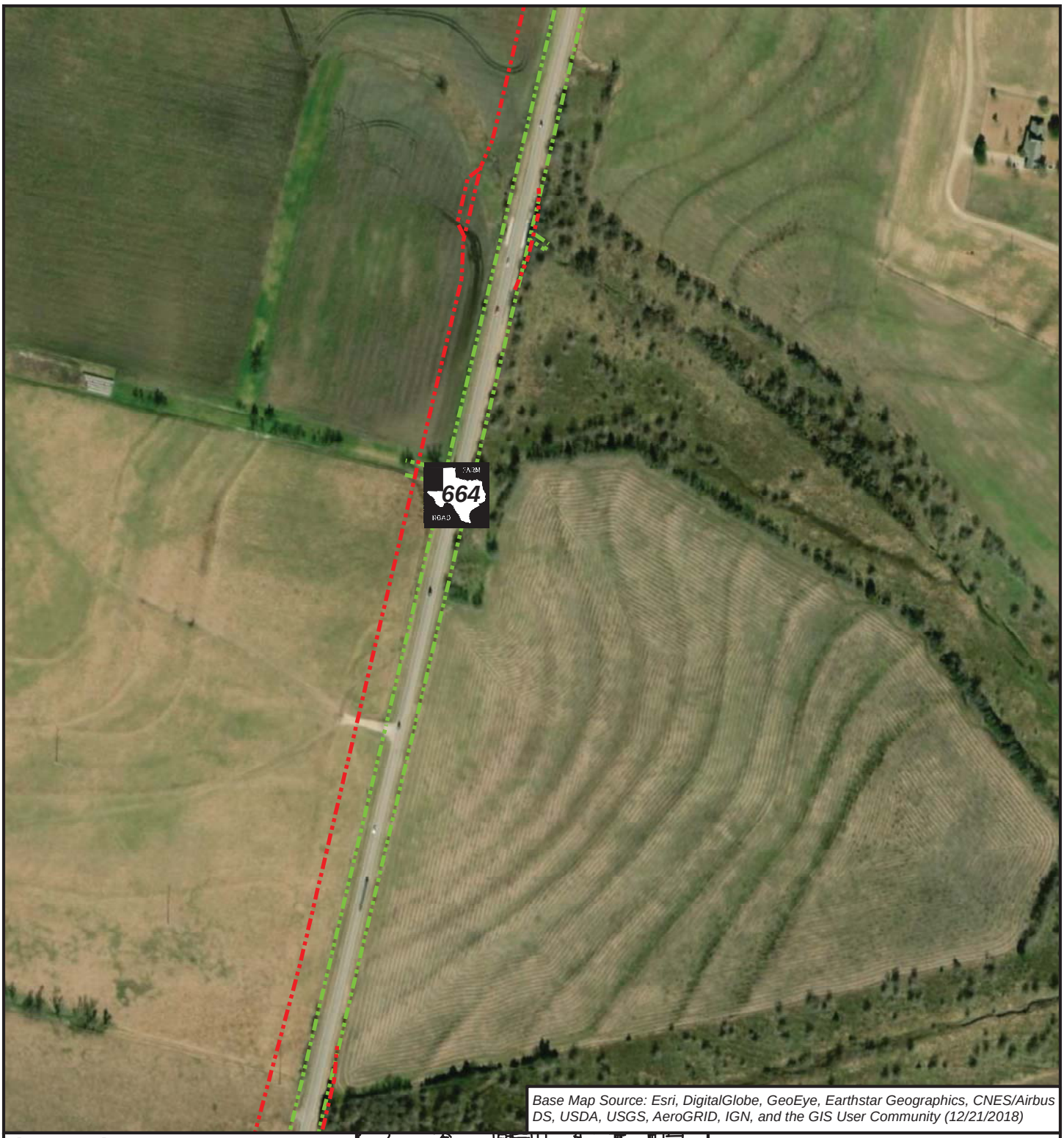
0 235 470 Feet

N W E S

FIGURE 7
NOISE RECEIVER LOCATION MAP

From US Highway 287
To Westmoreland Road

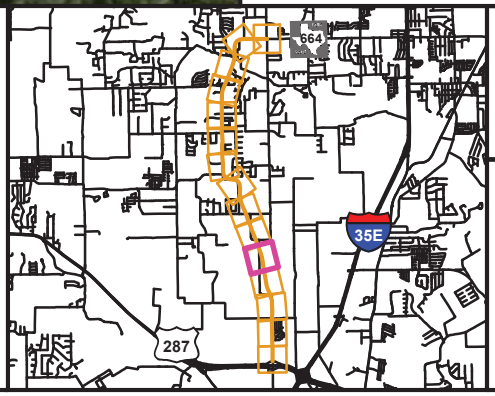
CSJs: 1051-01-038, 1051-01-052



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 7
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
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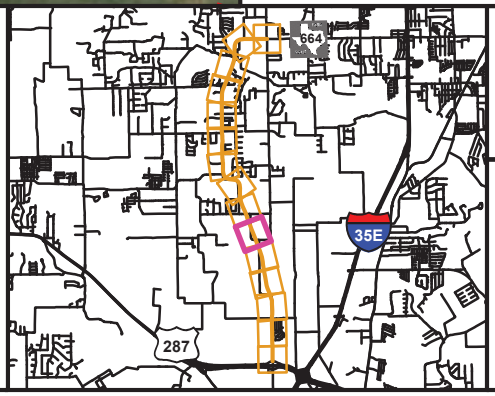


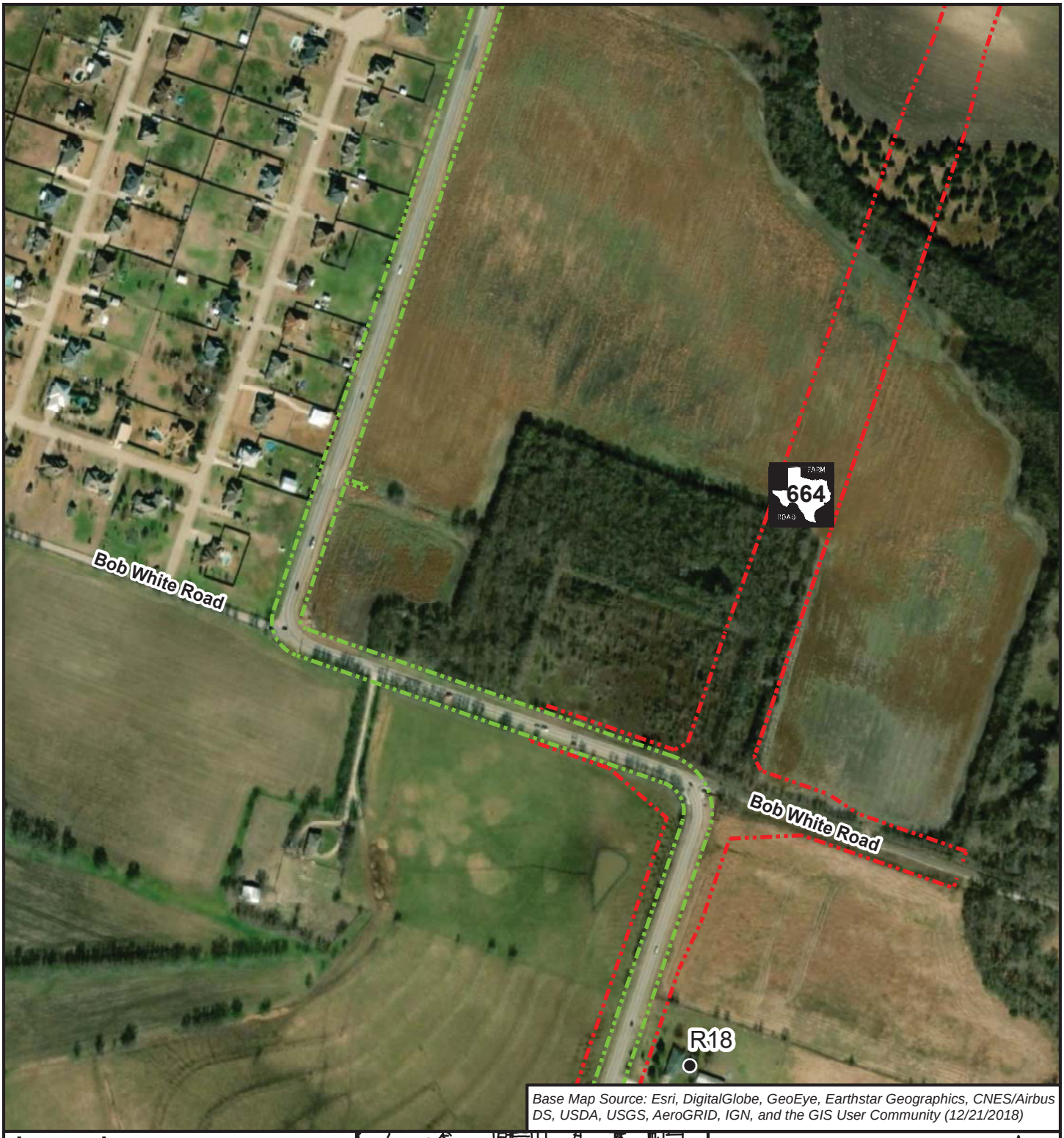
0 235 470 Feet

N W E S

FIGURE 7
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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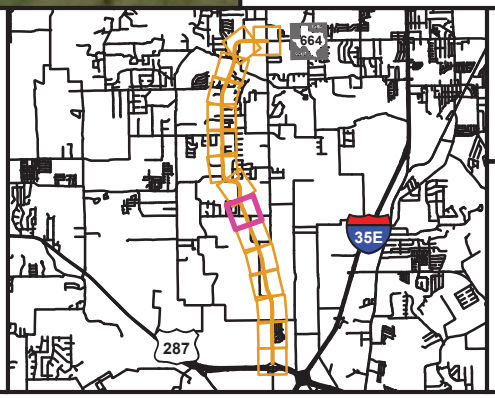

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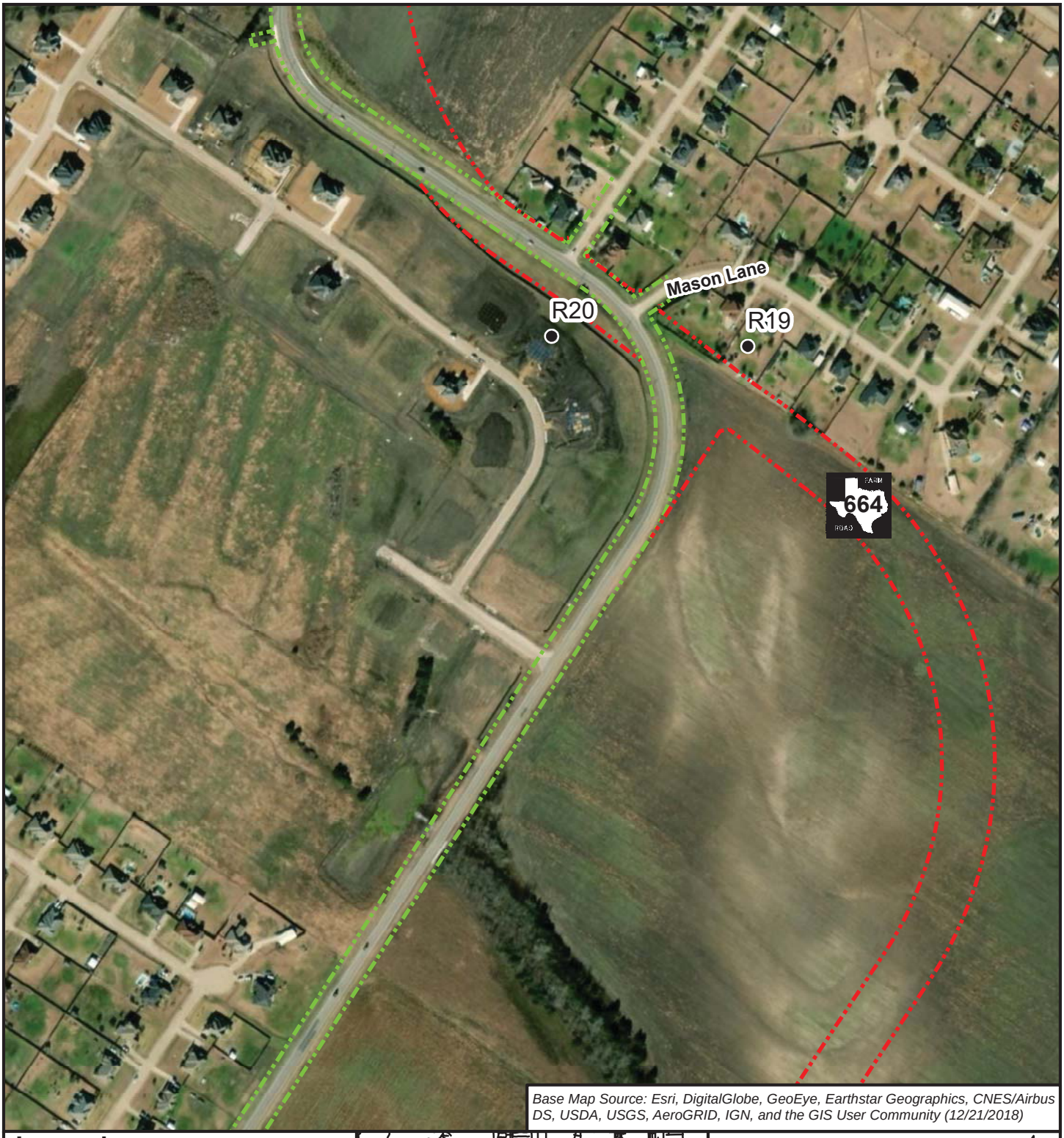
N W E S

FIGURE 7
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

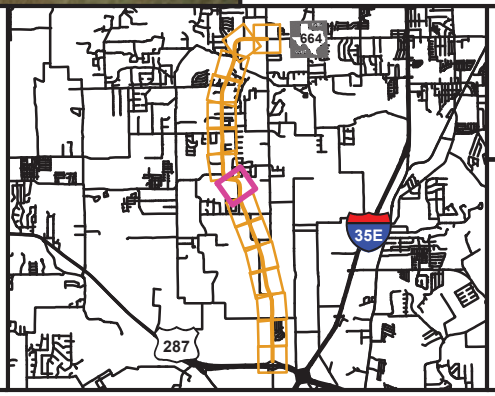


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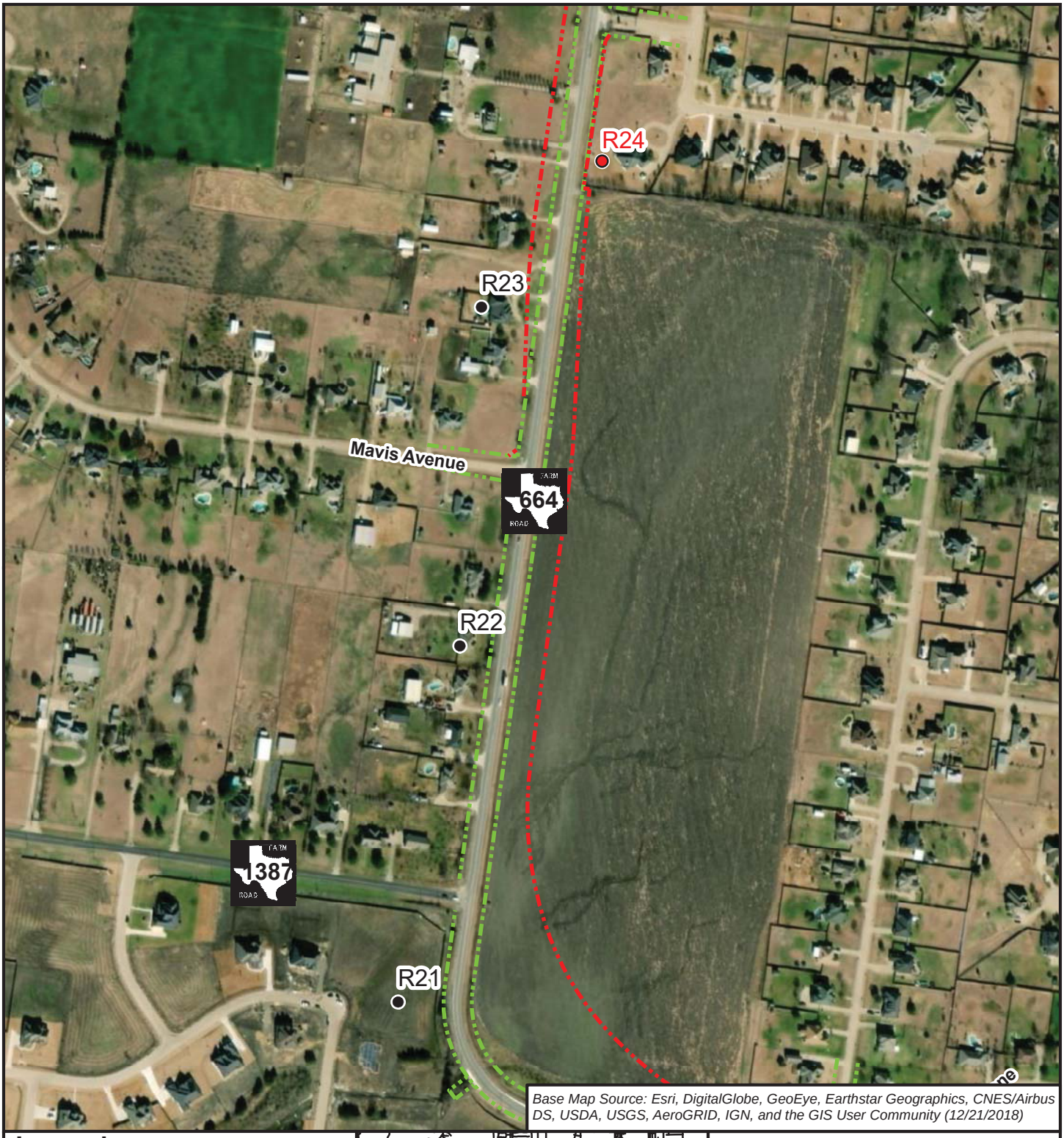
FIGURE 7
NOISE RECEIVER LOCATION MAP

From US Highway 287
To Westmoreland Road

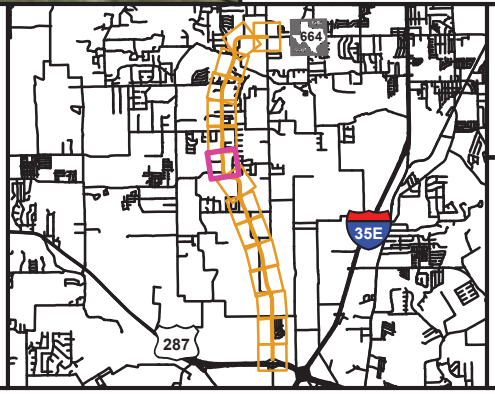
CSJs: 1051-01-038, 1051-01-052



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



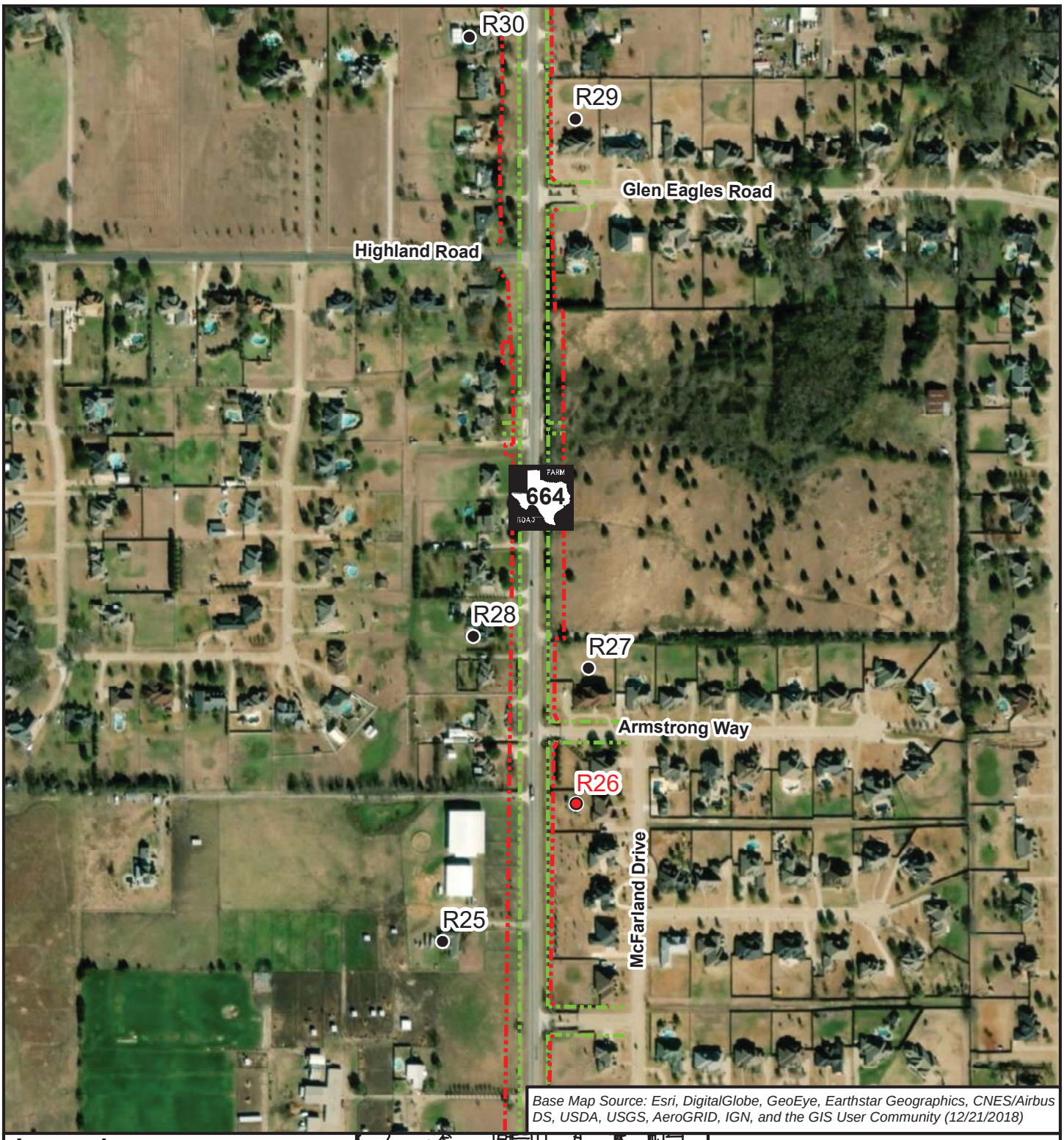
0 235 470 Feet

N W E S

FIGURE 7
NOISE RECEIVER LOCATION MAP

From US Highway 287
To Westmoreland Road

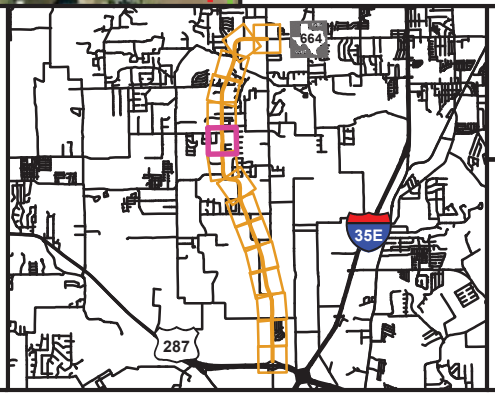
CSJs: 1051-01-038, 1051-01-052



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



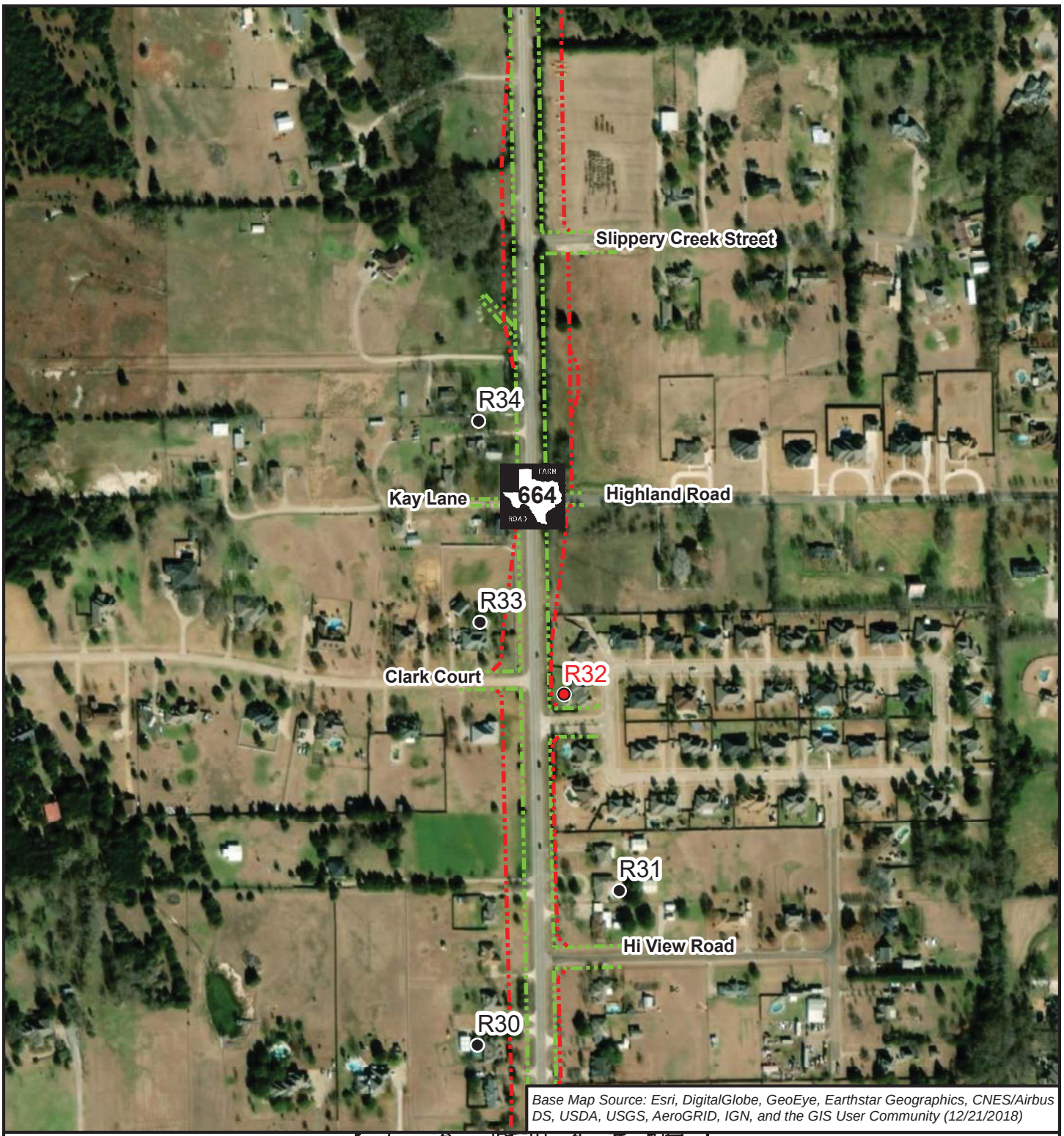
0 235 470 Feet

N W E S

FIGURE 7
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
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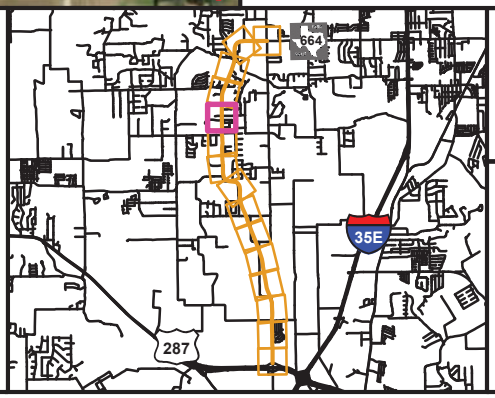


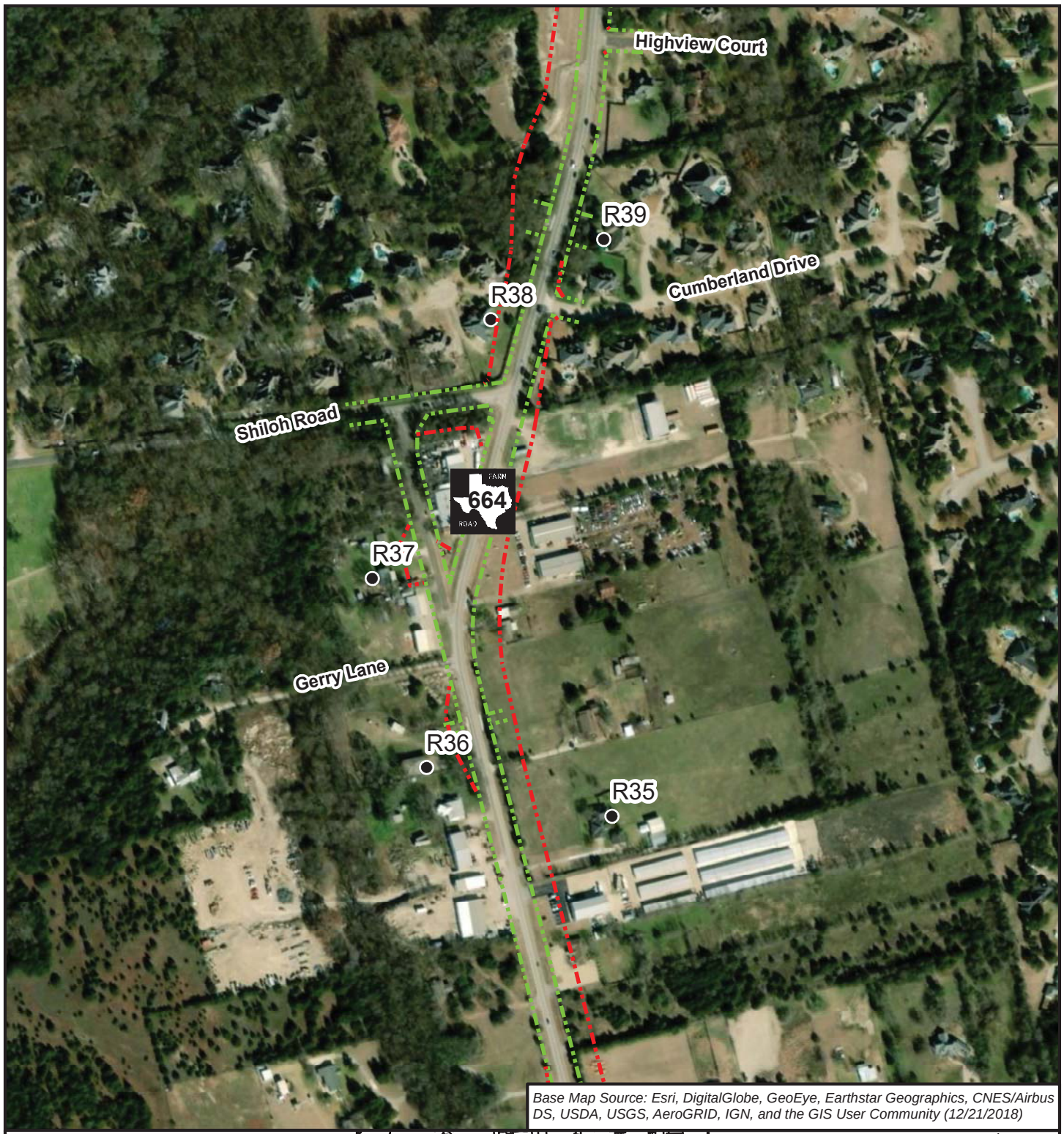
0 235 470 Feet

N W E S

FIGURE 7
NOISE RECEIVER LOCATION MAP

From US Highway 287
To Westmoreland Road

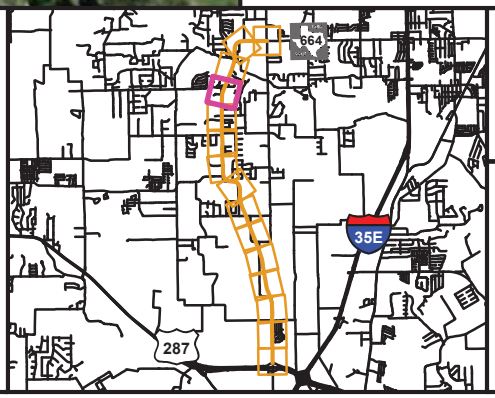
CSJs: 1051-01-038, 1051-01-052



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



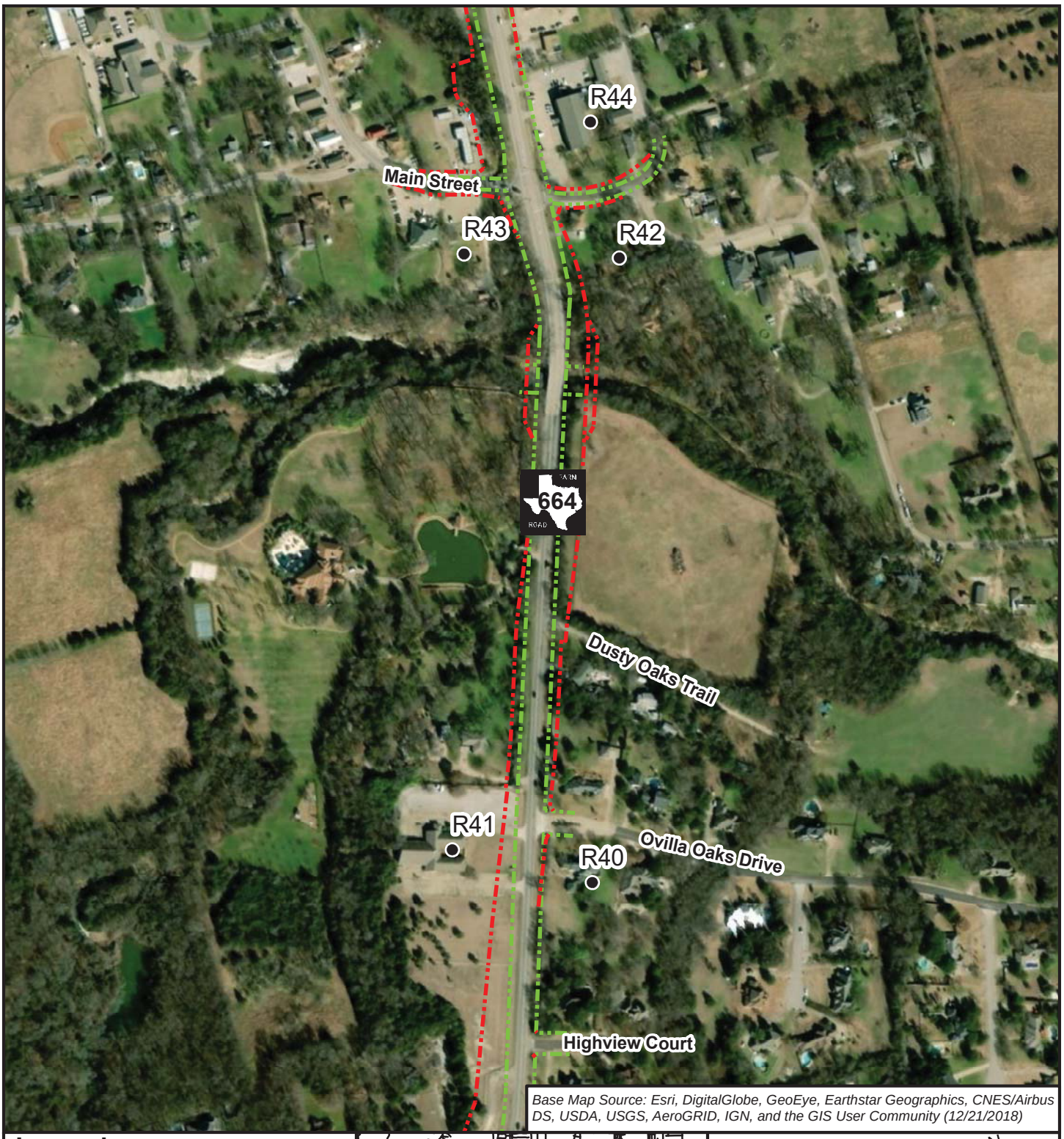
0 235 470 Feet

N E S W

FIGURE 7
NOISE RECEIVER LOCATION MAP

From US Highway 287
To Westmoreland Road

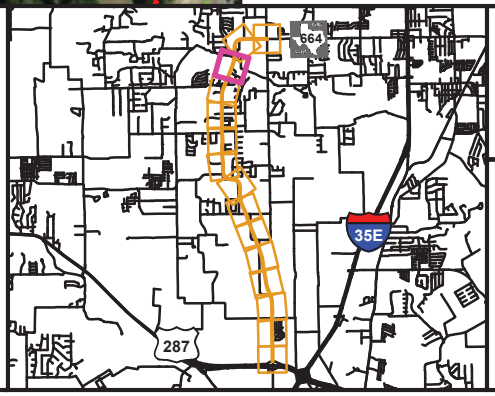
CSJs: 1051-01-038, 1051-01-052



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



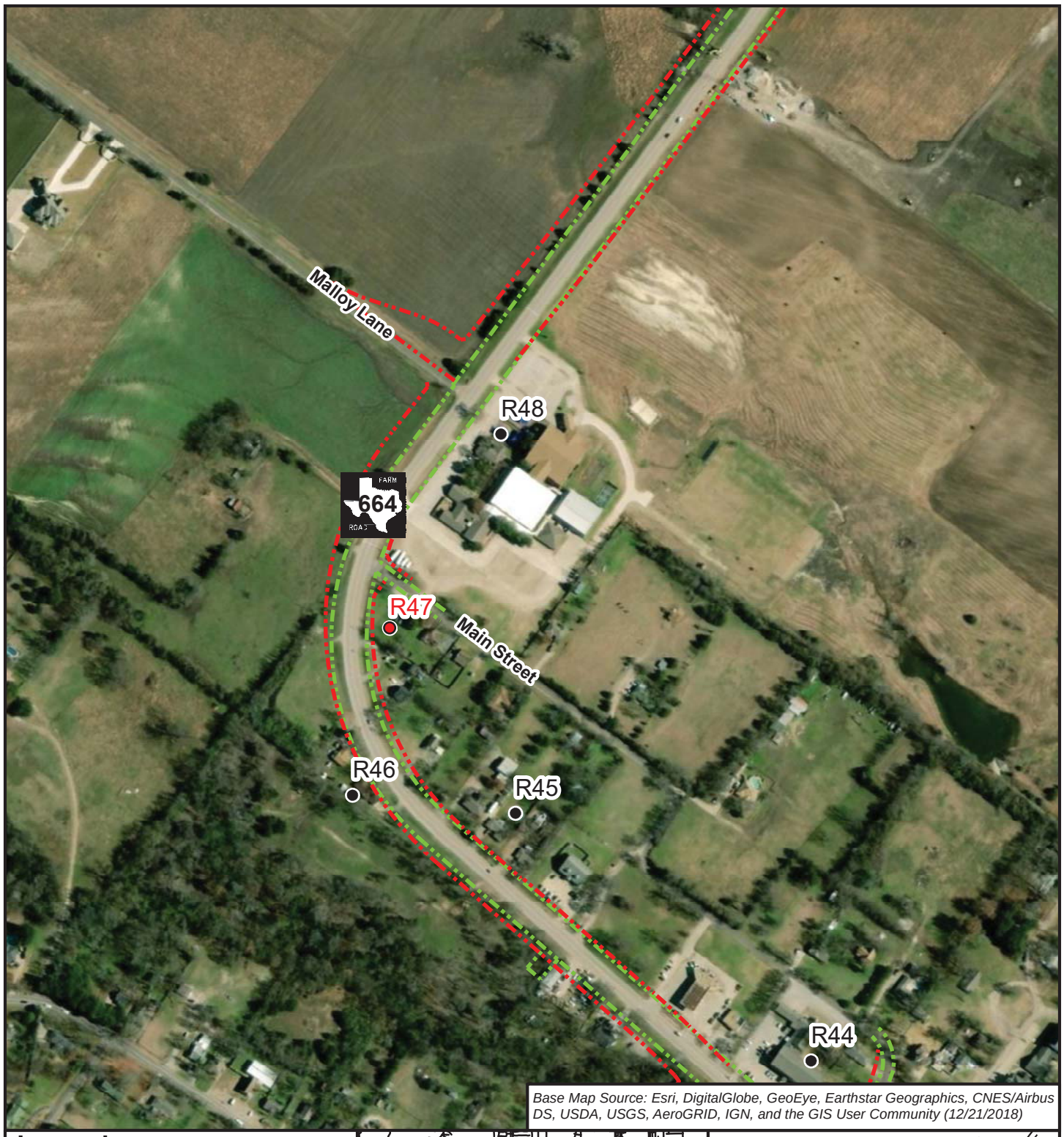
0 235 470 Feet

N E S W

FIGURE 7
NOISE RECEIVER LOCATION MAP

From US Highway 287
To Westmoreland Road

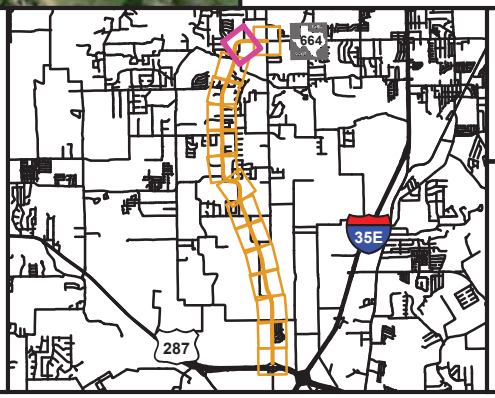
CSJs: 1051-01-038, 1051-01-052



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



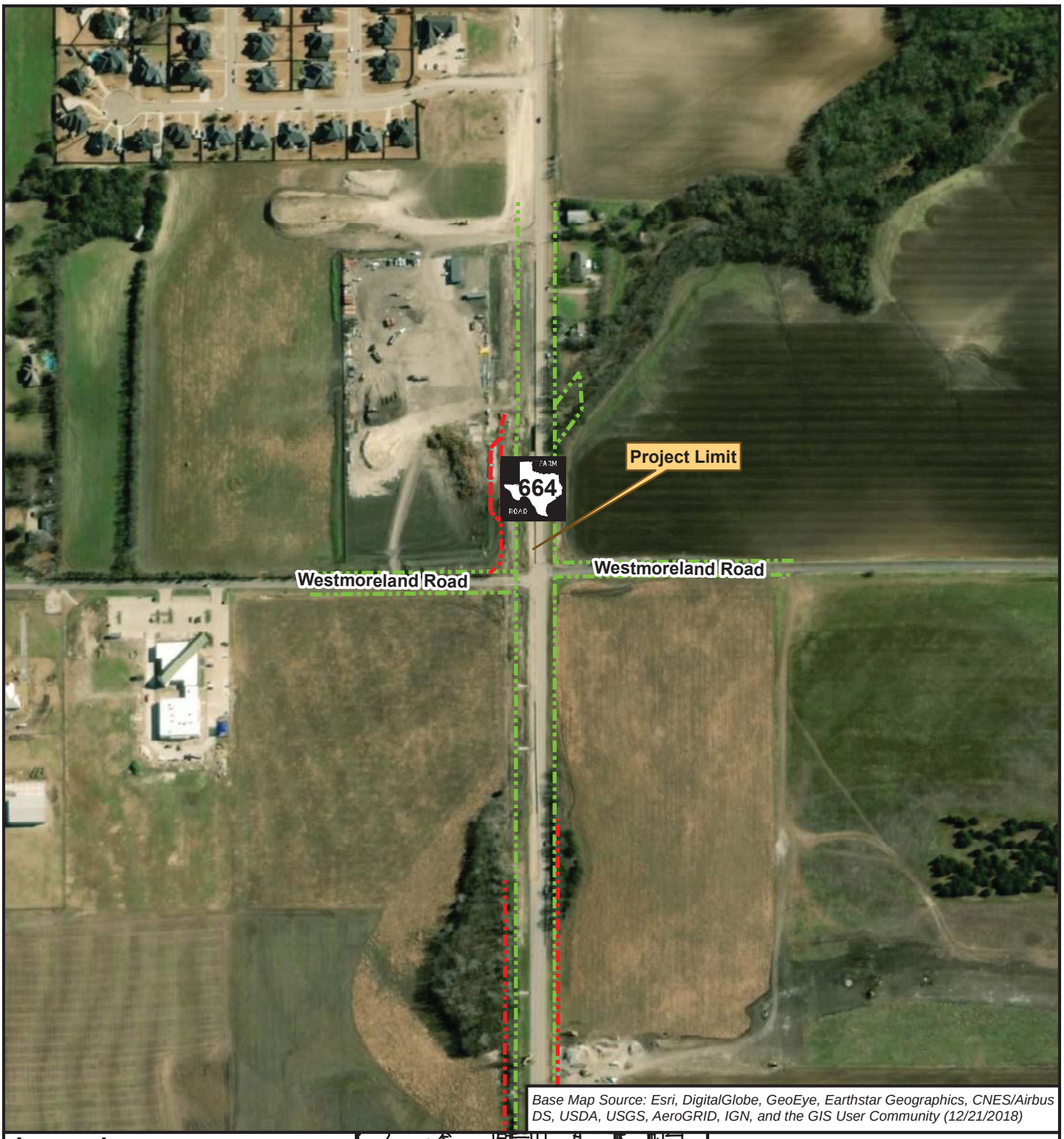
0 235 470 Feet

N E S W

FIGURE 7
NOISE RECEIVER LOCATION MAP

From US Highway 287
To Westmoreland Road

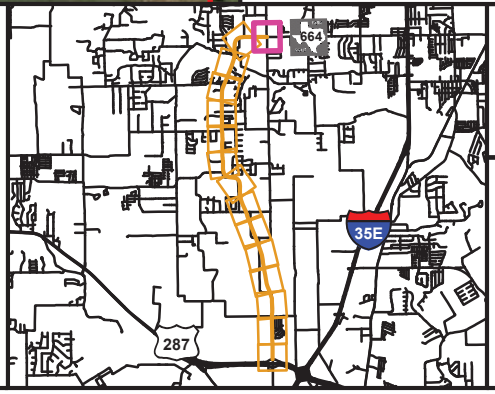
CSJs: 1051-01-038, 1051-01-052



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 7
NOISE RECEIVER LOCATION MAP

From US Highway 287
To Westmoreland Road

CSJs: 1051-01-038, 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

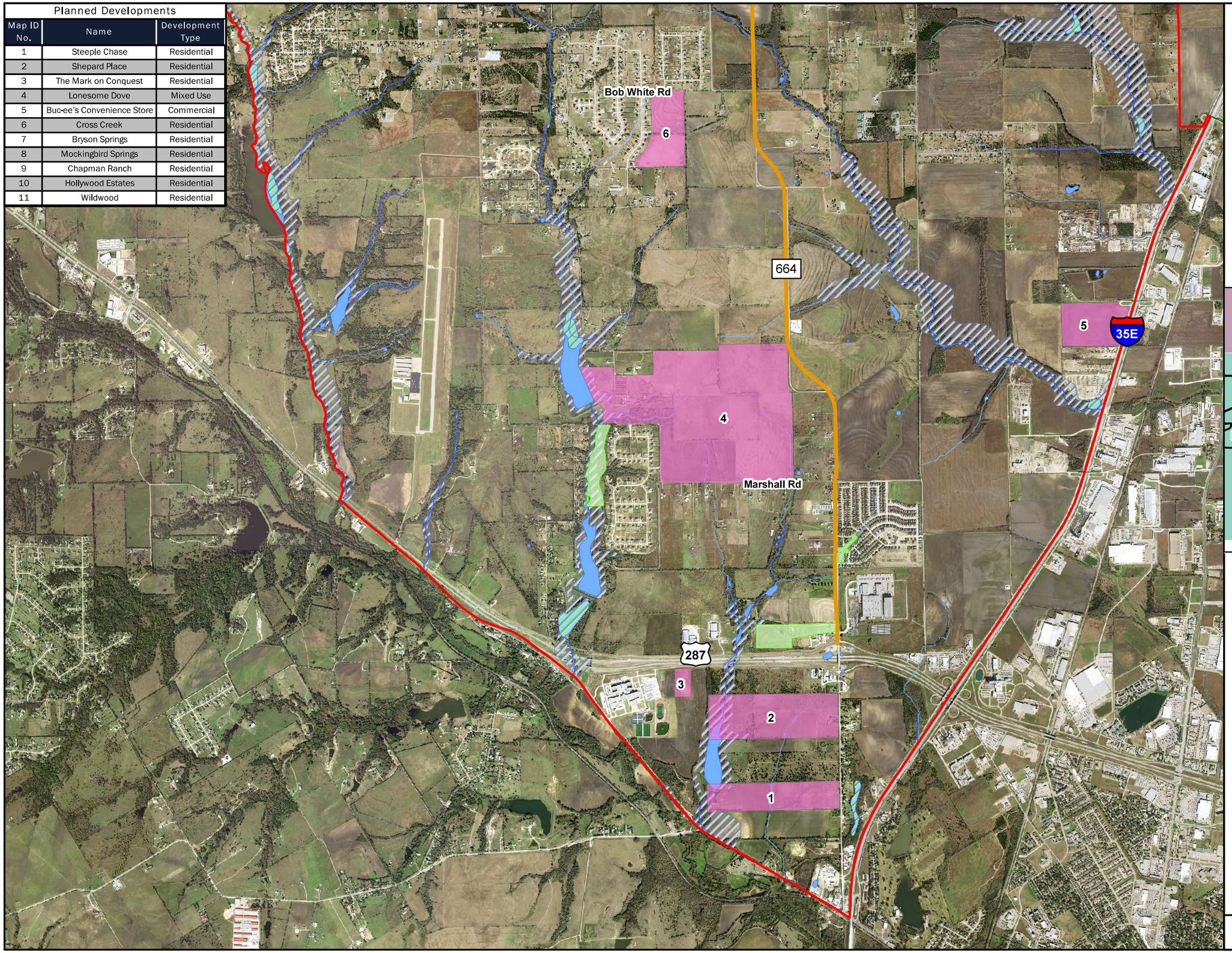
FIGURE 8

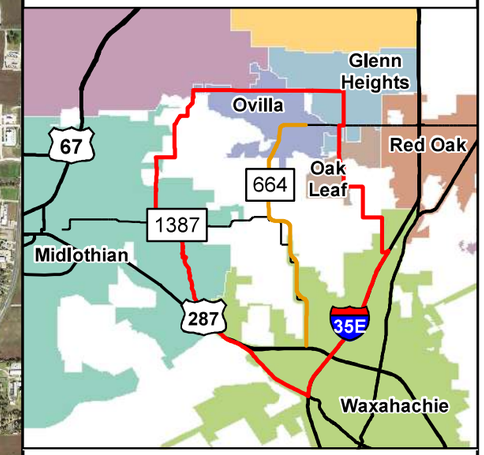
INDIRECT IMPACTS
AREA OF INFLUENCE MAP

Farm-to-Market (FM) 664

From U.S. Highway (US) 287
To Westmoreland Road
Ellis County

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





0 1,500 3,000 Feet

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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 8

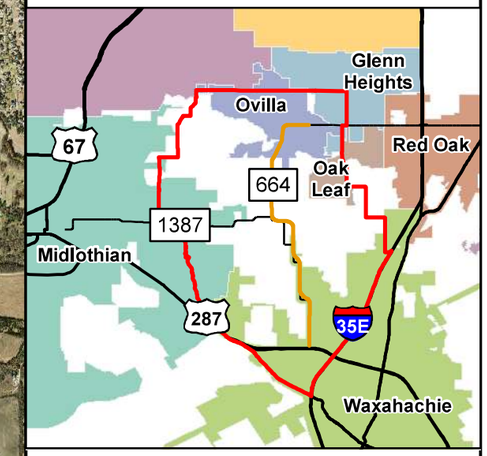
INDIRECT IMPACTS
AREA OF INFLUENCE MAP

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 9

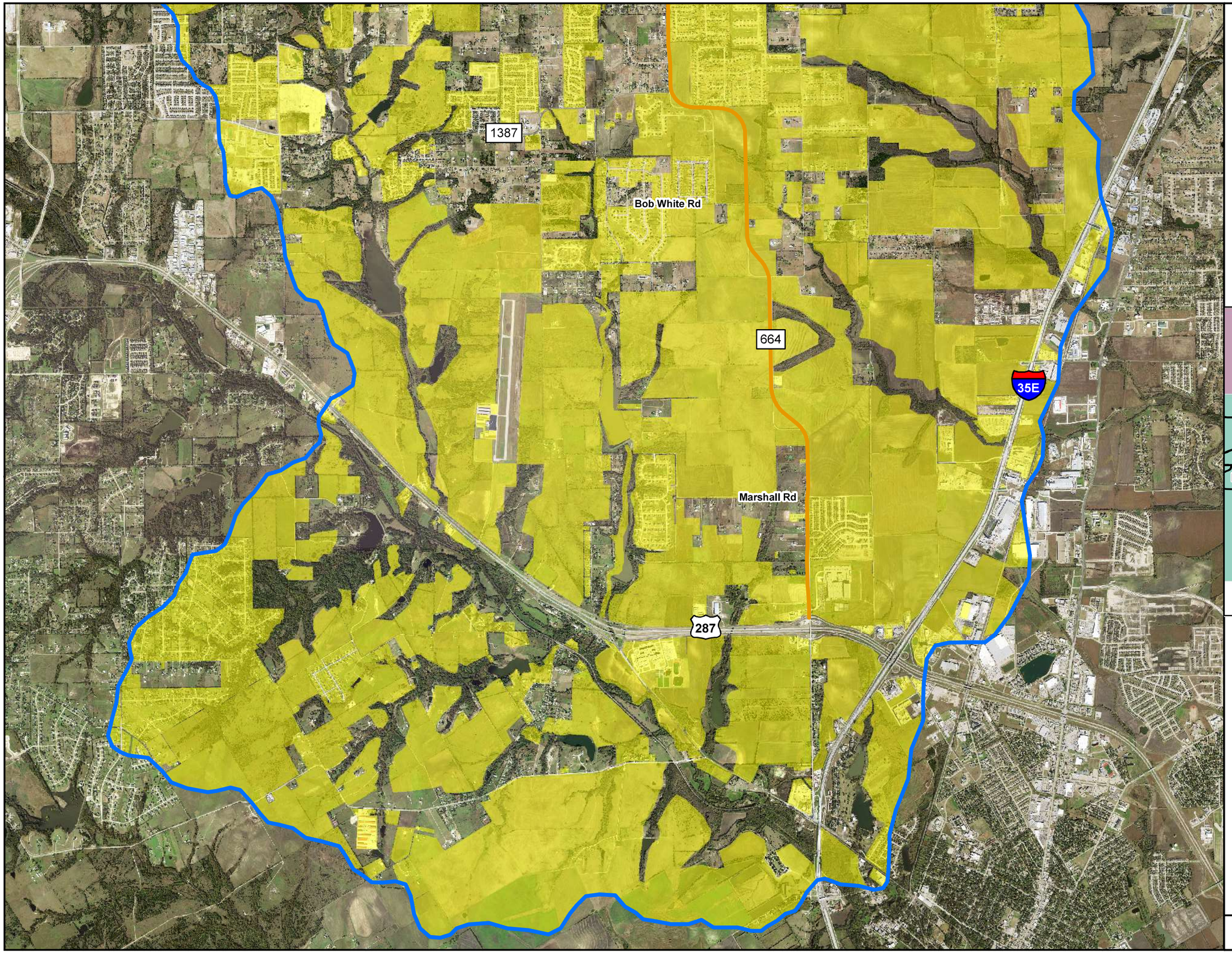
CUMULATIVE IMPACTS
RESOURCE STUDY AREA MAP

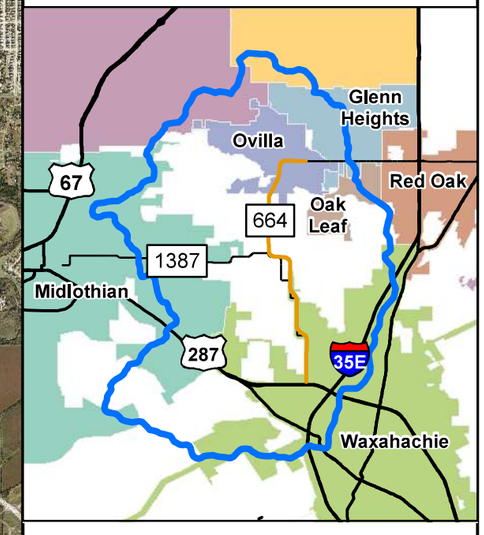
Farm-to-Market (FM) 664

From U.S. Highway (US) 287
To Westmoreland Road
Ellis County

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

Page 1 of 2





0 2,000 4,000 Feet

N
W E
S

Legend

- Project Location
- Resource Study Area
- Past, Present, and Reasonably Foreseeable Actions

Base Map Source: TNRIS (2018)

FIGURE 9

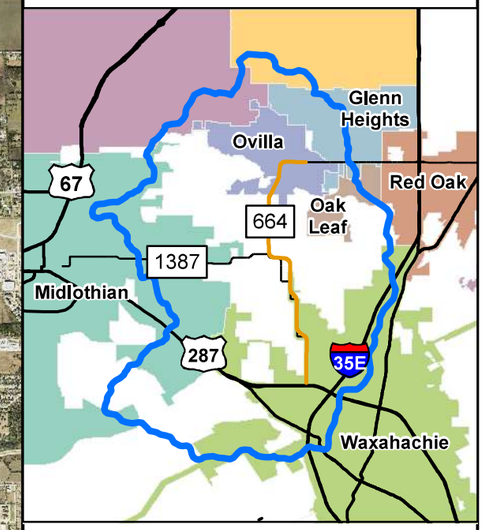
CUMULATIVE IMPACTS
RESOURCE STUDY AREA MAP

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



0 2,000 4,000 Feet

N
W E
S

Legend

- Project Location
- Resource Study Area
- Past, Present, and Reasonably Foreseeable Actions

Base Map Source: TNRIS (2018)

Appendix G – Resource Agency Coordination

Leslie Mirise

From: Suzanne Walsh <Suzanne.Walsh@tpwd.texas.gov>
Sent: Thursday, May 21, 2020 4:53 PM
To: Leslie Mirise
Cc: Mohammed Shaikh; Dan Perge; Christine Polito
Subject: RE: CSJ 1051-01-038, etc. FM 664 Widening Project, Ellis County - Request for Early Coordination

Leslie,

Thank you for submitting the following project for early coordination: FM 664 from US 287 to FM 1387 (CSJ: 1051-01-038). TPWD appreciates TxDOT's commitment to implement the practices listed in the Tier I Site Assessment form submitted on April 13, 2020 and emails below. Based on a review of the documentation, the avoidance and mitigation efforts described, and provided that project plans do not change, TPWD considers coordination to be complete. However, please note it is the responsibility of the project proponent to comply with all federal, state, and local laws that protect plants, fish, and wildlife.

According to §2.204(g) of the 2013 TxDOT-TPWD MOU, TxDOT agreed to provide TXNDD reporting forms for observations of tracked SGCN (which includes federal- and state-listed species) occurrences within TxDOT project areas. Please keep this mind when completing project due diligence tasks. For TXNDD submission guidelines, please visit the following link: http://tpwd.texas.gov/huntwild/wild/wildlife_diversity/txndd/submit.phtml

Sincerely,

Suzanne Walsh
Transportation Conservation Coordinator
(512) 389-4579

From: Leslie Mirise <Leslie.Mirise@txdot.gov>
Sent: Thursday, May 21, 2020 12:33 PM
To: Suzanne Walsh <Suzanne.Walsh@tpwd.texas.gov>
Cc: Mohammed Shaikh <Mohammed.Shaikh@txdot.gov>; Dan Perge <Dan.Perge@txdot.gov>; Christine Polito <Christine.Polito@txdot.gov>
Subject: RE: CSJ 1051-01-038, etc. FM 664 Widening Project, Ellis County - Request for Early Coordination

Hi Suzanne,

Yes, I've noticed the same inconsistencies – thank you! The problem started with the Draft EA being completed prior to the Bio Resources documents being approved. The inconsistencies between the Draft EA and the Approved Bio Resources documents are actively being addressed.

TPWD comment #1: Cave myotis bat – species was not included on Tier I form; however, the species analysis spreadsheet for SGCN 4-10-20 stated that the project had suitable habitat, and the draft EA 4-16-20 stated that there was suitable habitat and Bat BMPs from Section 1 of the 2017 BMP PA and Additional Bat BMPs from Section 2 of the 2017 BMP will be implemented for the project. Please confirm whether there is suitable habitat for the cave myotis bat and BMPs will be implemented.
TxDOT Response #1: The draft EA was released prior to the finalization of the Species Analysis Form and the Tier 1 Site Assessment Form. This discrepancy is an artifact of that. The Tier 1 Site Assessment Form and Species Analysis Form are correct. Suitable habitat for cave myotis bat could be present at one bridge as described in the Spp Analysis Spreadsheet; however, it was easily observed that there was no of guano, odor, staining, etc. Therefore, the bridge is presumed unoccupied and BMPs would not be implemented. It should be noted that the bridge includes open beam construction, with no observed cavities. The Approved Tier 1 Site Assessment Form and the Species Analysis Spreadsheet are correct. The EA will be edited to reflect this information.

TPWD comment #2: Southern crawfish frog – species was not included on the Tier I form and species analysis spreadsheet for SGCN 4-10-20 stated that there was no suitable habitat; however, the draft EA 4-16-20 indicated that there was suitable habitat and that the species-specific BMPs from Section 1 of the 2017 BMP PA would be implemented. Please confirm whether there is suitable habitat for the southern crawfish frog and BMPs will be implemented.
TxDOT Response #2: The draft EA was released prior to the finalization of the Species Analysis Form and the Tier 1 Site Assessment Form. This discrepancy is an artifact of that. Suitable habitat was initially considered but then refined to not present in the project area. The reason behind this is based on site observations and that the project area is not in a Post Oak Woodland. Tipton, et al. 2012 indicates the species range does not include Dallas County and that suitable habitat is most commonly seen within the Post Oak Savannah Ecoregion and includes wet woodlands, wooded valleys, prairies, river floodplains, pine forests or meadows. BMPs would not be implemented for this particular species. The EA will be edited to agree with the approved Tier 1 Site Assessment Form and Species Analysis Spreadsheet.

TPWD comment #3: Woodhouse's toad – Tier I form and species analysis spreadsheet for SGCN 4-10-20 stated that there was suitable habitat; however, species was not included in draft EA 4-16-20. Please confirm whether there is suitable habitat for the Woodhouse's toad and BMPs will be implemented.
TxDOT response #3: The draft EA was released prior to the finalization of the Species Analysis Form and the Tier 1 Site Assessment Form. This discrepancy is an artifact of that. Suitable habitat is present in the project area, and BMPs would be implemented. The EA will be edited to reflect this information.

TPWD comment #4: Mink - Tier I form and species analysis spreadsheet for SGCN 4-10-20 stated that there was suitable habitat; however, species was not included in draft EA 4-16-20. Please confirm whether there is suitable habitat for mink and proposed BMP will be implemented for contractors to be advised of potential occurrence in the project area, and to avoid harming the species if encountered.
TxDOT response #4: The draft EA was released prior to the finalization of the Species Analysis Form and the Tier 1 Site Assessment Form. This discrepancy is an artifact of that. Yes, suitable habitat is present in the project area. BMPs would be implemented and include the following, as they are grouped with other mammals: 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. The EA will be edited to include this information.

Please let me know if you have any questions or require additional information.

Thanks,

Leslie Mirise

Environmental Specialist
Dallas District – DAL-ENV
Texas Department of Transportation
4777 East Highway 80
Mesquite, Texas 75150
(214) 320-6162 office
(214) 320-4470 FAX

From: Suzanne Walsh [mailto:Suzanne.Walsh@tpwd.texas.gov]
Sent: Wednesday, May 13, 2020 5:43 PM
To: Leslie Mirise <Leslie.Mirise@txdot.gov>
Subject: RE: CSJ 1051-01-038, etc. FM 664 Widening Project, Ellis County - Request for Early Coordination

Hi Leslie,

I noticed some inconsistencies in environmental documents for the project regarding species and BMPs planned for implementation:

- Cave myotis bat – species was not included on Tier I form; however, the species analysis spreadsheet for SGCN 4-10-20 stated that the project had suitable habitat, and the draft EA 4-16-20 stated that there was suitable habitat and Bat BMPs from Section 1 of the 2017 BMP PA and Additional Bat BMPs from Section 2 of the 2017 BMP will be implemented for the project. Please confirm whether there is suitable habitat for the cave myotis bat and BMPs will be implemented.

- Southern crawfish frog – species was not included on the Tier I form and species analysis spreadsheet for SGCN 4-10-20 stated that there was no suitable habitat; however, the draft EA 4-16-20 indicated that there was suitable habitat and that the species-specific BMPs from Section 1 of the 2017 BMP PA would be implemented. Please confirm whether there is suitable habitat for the southern crawfish frog and BMPs will be implemented.

- Woodhouse's toad – Tier I form and species analysis spreadsheet for SGCN 4-10-20 stated that there was suitable habitat; however, species was not included in draft EA 4-16-20. Please confirm whether there is suitable habitat for the Woodhouse's toad and BMPs will be implemented.

- Mink - Tier I form and species analysis spreadsheet for SGCN 4-10-20 stated that there was suitable habitat; however, species was not included in draft EA 4-16-20. Please confirm whether there is suitable habitat for mink and proposed BMP will be implemented for contractors to be advised of potential occurrence in the project area, and to avoid harming the species if encountered.

If dewatering is needed for the project, please contact our Kast and Spills Team (KAST) to coordinate with them. TPWD KAST Region 2 contact information can be found at the following weblink: https://tpwd.texas.gov/landwater/water/environconcerns/kills_and_spills/regions/kas_r2.phtml.

Please let me know if you need any assistance with USACE mitigation.

Thanks,
Suzanne

From: Suzanne Walsh
Sent: Tuesday, May 5, 2020 9:39 AM
To: Leslie Mirise <Leslie.Mirise@txdot.gov>
Subject: RE: CSJ 1051-01-038, etc. FM 664 Widening Project, Ellis County - Request for Early Coordination

Thanks, Leslie. I will let you know if I have any questions.

Suzanne

From: Leslie Mirise <Leslie.Mirise@txdot.gov>
Sent: Tuesday, May 5, 2020 9:05 AM
To: Suzanne Walsh <Suzanne.Walsh@tpwd.texas.gov>
Subject: RE: CSJ 1051-01-038, etc. FM 664 Widening Project, Ellis County - Request for Early Coordination

Hi Suzanne,

The schematic has been uploaded in ECOS in the Documents/Project section with the filename: 1051-01-038etc_FM 664_Schematic_100% Final Submittal_F.pdf

Thanks,

Leslie Mirise
Environmental Specialist
Dallas District – DAL-ENV
Texas Department of Transportation
4777 East Highway 80
Mesquite, Texas 75150
(214) 320-6162 office
(214) 320-4470 FAX

From: Suzanne Walsh [mailto:Suzanne.Walsh@tpwd.texas.gov]
Sent: Monday, May 4, 2020 4:04 PM
To: Leslie Mirise <Leslie.Mirise@txdot.gov>
Subject: RE: CSJ 1051-01-038, etc. FM 664 Widening Project, Ellis County - Request for Early Coordination

Hi Leslie,

Do you have a schematic available for the project? I did not see a file in ECOS.

Thanks,
Suzanne

Suzanne Walsh

Transportation Conservation Coordinator
(512) 389-4579

From: WHAB_TxDOT <WHAB_TxDOT@tpwd.texas.gov>
Sent: Monday, April 13, 2020 2:05 PM
To: Leslie Mirise <Leslie.Mirise@txdot.gov>; WHAB_TxDOT <WHAB_TxDOT@tpwd.texas.gov>
Cc: Suzanne Walsh <Suzanne.Walsh@tpwd.texas.gov>
Subject: RE: CSJ 1051-01-038, etc. FM 664 Widening Project, Ellis County - Request for Early Coordination

The TPWD Wildlife Habitat Assessment Program has received your request and has assigned it project ID # 43649. The Habitat Assessment Biologist who will complete your project review is copied on this email.

Thank you,

John Ney
Administrative Assistant
Texas Parks & Wildlife Department
Wildlife Diversity Program – Habitat Assessment Program
4200 Smith School Road
Austin, TX 78744
Office: (512) 389-4571

From: Leslie Mirise <Leslie.Mirise@txdot.gov>
Sent: Friday, April 10, 2020 5:48 PM
To: WHAB_TxDOT <WHAB_TxDOT@tpwd.texas.gov>
Subject: CSJ 1051-01-038, etc. FM 664 Widening Project, Ellis County - Request for Early Coordination

Hello,

TxDOT requests early coordination for the FM 664 Widening Project in Ellis County, Texas. Please see ECOS for the project description. The project is classified as an EA. Project documents include the following, and those of appropriate file size are attached:

1. Species Analysis Spreadsheet
2. Species Analysis Spreadsheet – SGCN
3. Species Analysis Form
4. Tier 1 Site Assessment Form
5. USFWS IPaC Resource List

6. TPWD RTEST List for Collin County
7. NDD figure
8. EMST Figures
9. Actual Veg Figures
10. EMST and Observed Veg Spreadsheet
11. Photos (uploaded in ECOS)

These documents, along with other project-related information, are available in ECOS under the CSJ: 1051-01-038.

The letting date is currently September 2025. However, the planned NEPA clearance date for this project is August 2020. Please provide comments or complete coordination on or before May 29, 2020 if possible.

Please feel free to contact me with any questions or if you need any additional information.

Thank you,

Leslie Mirise
Environmental Specialist
Dallas District – DAL-ENV
Texas Department of Transportation
4777 East Highway 80
Mesquite, Texas 75150
(214) 320-6162 office
(214) 320-4470 FAX

From:	Laura Cruzada
To:	holly@mathpo.org; gary.mcadams@wichitatribe.com; Terri.Parton@wichitatribe.com; dhill@mycaddonation.com; caddochair.cn@gmail.com; section106@mcn-nsn.gov; lbrown@tonkawatribe.com; mallen@tonkawatribe.com; martinac@comanchenation.com; theodorev@comanchenation.com
Cc:	Kevin Hanselka
Subject:	TxDOT Sec. 106 Consultation - CSJ: 1015-01-038, FM 664, Roadway Widening, Ellis County, Dallas District
Date:	Friday, October 4, 2019 2:45:00 PM

Good afternoon,
Please find details for the above project, which will include a survey in the future. If you would like to participate, let me know!

Sec. 106 Consultation

OCTOBER 4, 2019

Contacts:

Laura Cruzada
512-416-2638

We kindly request your comments on historic properties of cultural or religious significance to your Tribe that may be affected by the proposed project. Please see the following summary for project details and information. To access the associated reports, which include a detailed project description, APE definition and identification efforts, use the attached link. After 21 days, the link will expire. We will provide an updated link upon request. This project will also be included during our monthly Sec. 106 conference call every third Wednesday of the month at 2 p.m.

Summary:

Project ID (CSJ), County and TxDOT District	*CSJ: 1015-01-038, Ellis County, Dallas District*
Project Sponsor:	*TxDOT*
Consultation Status:	☒*Initial Consultation* ☐*Continuation of Consultation*
Short Description:	*FM 664, Roadway Widening*
Lat/Longs:	*32.431346, -96.873610 to 32.531952, -96.872218*
New Right of Way:	*83.69 acres (new ROW: 82.75 acres; proposed easement: 0.94 acres)*
Depth of Impacts:	*Typical: four feet (utilities, road grading); Maximum: 50 feet (bridge construction at Red Oak Creek)*
Known Archeological	*41EL258 (unspecified Historic, ineligible)*

Sites or Properties in project area:	
Identification Efforts:	*Background Study*
Recommendations:	*Archeological survey is recommended, based on potential for buried archeological sites where the APE intersects Red Oak Creek and South Grove Creek floodplains.*
Link to detailed report:	https://ftp.dot.state.tx.us/dropbox/dropoff.php

Please provide any comments that you may have on the TxDOT findings and recommendations. Please provide your comments within 30 days of receipt of this letter. Any comments provided after that time will be addressed to the fullest extent possible.

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.

Laura Cruzada
Public Involvement Specialist & Tribal Liaison
Environmental Affairs Division
125 E. 11th Street, Austin TX 78701
512-416-2638
laura.cruzada@txdot.gov

MEMO

January 22, 2020

TO: Administrative File
From: Rebekah Dobrasko

District: Dallas
County: Ellis
CSJ#: 1051-01-038, etc.
Highway: FM 664
Project Limits: From US 287 to Westmoreland Road
Let Date: September 2025

SUBJECT: Internal review under the Section 106 Programmatic Agreement (Section 106 PA) among the Texas Department of Transportation, Texas State Historic Preservation Officer, Advisory Council on Historic Preservation, and Federal Highway Administration; and the Memorandum of Understanding (MOU) between the Texas Historical Commission and the Texas Department of Transportation

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.

Project Description
See the attachment from TxDOT's Environmental Compliance Oversight System (ECOS) that describes the project, setting, and amount of right-of-way (ROW) and easements necessary for the project.

Determination of Eligibility:
TxDOT historians reviewed the National Register of Historic Places (NRHP), the list of State Antiquities Landmarks (SAL), the list of Recorded Texas Historic Landmarks (RTHL), and TxDOT files and found no historically significant resources previously documented within the area of potential effects (APE). The TxDOT Section 106 Programmatic Agreement defines the APE for this project as 150' from the ROW.

TxDOT historians conducted a reconnaissance survey of the APE. As a result of that survey, TxDOT identified 41 historic-age (built prior to 1980) properties. Based on the historic context, TxDOT finds that none of the historic-age properties have any historic significance to the area and therefore are **not eligible** for the NRHP.

Consultation:
TxDOT consulted on the identification efforts of the project with Historic Waxahachie, the Waxahachie Main Street Program, the Ellis County Museum, and the Ellis County Historical Commission. Historic Waxahachie identified four potential historic properties within the project area.

After analysis of the properties, TxDOT found that two of the resources, the row of 1950s residences and a Victorian residence, are outside of the project's APE. The geodesic dome identified was constructed c. 1984 and is outside the period of significance and the survey cut-off date. TxDOT surveyed one Victorian residence (Resource 40) and found it to lack significance and historic integrity.

The Waxahachie Main Street program and the Ellis County Museum did not have any comments for TxDOT. TxDOT did not receive a response from the Ellis County Historical Commission.

Determination of Effects:
Pursuant to Stipulation IX, Appendix 6 "Undertakings with the Potential to Cause Effects per 36 CFR 800.16(i)" of the Section 106 PA and the MOU, TxDOT historians determined that there are no effects to historic, non-archeological properties in the APE. In compliance with the Antiquities Code of Texas and the MOU, TxDOT historians determined project activities have no potential for adverse effects. Individual project coordination with SHPO is not required.

Lead Reviewer DocuSigned by: Rebekah Dobrasko 0F414A49C0E44B3... for TxDOT 1/22/2020

Rebekah Dobrasko — Date

Approved by DocuSigned by: 7EBA09BEBA8043B... for TxDOT 1/22/2020

Bruce Jensen — Date

Back To List

WPD Section I - Project Definition | WPD Section II - Tool | WPD Section III - Project Work Plan | WPD Section IV - Findings

Archived WPD I | Print this Page

Project Definition

Project Name: CSJ 1051-01-038 - FM 664

CSJ: 1051 - 01 - 038

Anticipated Environmental Classification: EA

No — Is this an FHWA project that normally requires an EIS per 23 CFR 771.115(a)?

Project Association(s)

DCIS Project Funding and Location

DCIS & P6 Letting Dates

DCIS Project Description

Jurisdiction

No — Does the project cross a state boundary, or require a new Presidential Permit or modification of an existing Presidential Permit?

Who is the lead agency responsible for the approval of the entire project?

☑ FHWA - Assigned to TxDOT ☐ TxDOT - No Federal Funding ☐ FHWA - Not Assigned to TxDOT

TXDOT — Who is the project sponsor as defined by 43 TAC 2.7?

No — Is a local government's or a private developer's own staff or consultant preparing the CE documentation, EA or EIS?

Yes — Does the project require any federal permit, license, or approval?

☑ USACE ☐ IBWC ☐ USCG ☐ NPS ☐ IAJR ☐ Other NWP W/O PCN

No — Does the project occur, in part or in total, on federal or tribal lands?

Environmental Clearance Project Description

Project Area

Typical Depth of Impacts: 4 (Feet) Maximum Depth of Impacts: 50 (Feet)

New ROW Required: 83 (Acres)

New Perm. Easement Required: 1 (Acres) New Temp. Easement Required: 0 (Acres)

Project Description

Describe Limits of All Activities: Spell

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

Describe Project Setting: Spell

The project limits are located within the cities of Ovilla and Waxahachie within Ellis County, Texas. The environmental setting is primarily rural with commercial business and isolated residence scattered throughout the project and landscape that features crop and livestock production. Improved pastures are located along side the roadway for cattle and other live stock production.

Describe Existing Facility: Spell

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.

Describe Proposed Facility: Spell

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 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 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 acre of easement.

Yes **Would the project add capacity?**

Transportation Planning

Environmental Clearance Information

Project Contacts

Last Updated By: System Admin **Last Updated Date:** 09/12/2019 07:16:47

C

Texas Department of Transportation

125 EAST 11TH STREET, AUSTIN, TEXAS 78701-2483 | 512.463.8588 | WWW.TXDOT.GOV

RECEIVED
JAN 23 2020

January 23, 2020

RE: CSJ: 1051-01-038; FM 664, Widen Non-Freeway, Ellis County, Dallas District; Section 106 Consultation and Antiquities Code Coordination; Texas Antiquities Permit No. 9156

Mr. Mark Wolfe
Texas Historical Commission
P.O. Box 12276
Austin, Texas 78711

Dear Mr. Wolfe:

As required by the Programmatic Agreement and the Memorandum of Understanding with your agency, we are initiating consultation on this project. Environmental studies are in the process of being conducted for this project. 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. We have enclosed for your review a draft report of archeological investigations for this undertaking.

Undertaking Description

The proposed project will be undertaken with federal funds and will occur in part or in whole on non-federal public lands. TxDOT is proposing improvements to FM 664 in Ellis County, Texas. The proposed project would widen the existing FM 664 facility from an undivided two-lane road to a divided four-lane road. Additional improvements include eliminating turns between Marshall Road and FM 1387 by realigning and constructing new roadway.

Area of Potential Effects

The project's area of potential effects (APE) comprises the following area.

- The project limits extend from US 287 in Waxahachie to Westmoreland Road in Ovilla along FM 664. The total project length is thus about eight miles, and the APE includes any existing ROW within these limits.
- The existing ROW comprises approximately 60 acres.
- The proposed project would require 82.75 acres of new right of way.
- The proposed project would require 0.94 acres of new easements.

- The estimated depth of impacts is typically four feet with a maximum depth of impacts of 50 feet.
- The APE is further detailed and illustrated in the attached report.

Identification Efforts

For this project, TxDOT has conducted a survey. The enclosed report of investigations has more details regarding this work. The following bullets summarize the identification efforts.

- The investigations reported here concern portions of the APE that did not warrant survey and portions of the APE that were accessible during survey.
- Archeologists undertook a survey. For this survey,
    - 42.23 acres were identified as not requiring field survey, due to existing conditions of the setting identified through background research and described in the attached report;
    - 33.9 acres were surveyed and described in the attached report;
    - 6.62 acres still require survey due to access issues;
    - previous investigation within the APE identified 41EL258 (ineligible; no other information available) as overlapping with the APE; and
    - the current survey identified 41EL281, a historic (early 20th century) farmstead within the APE (recommended not eligible).
- Identified archeological sites that are not eligible for inclusion in the National Register of Historic Places and/or that do not warrant formal designation as State Antiquities Landmarks include: 41EL258 and 41EL281. Previously recorded site 41EL258 is mapped as overlapping with the APE but was not relocated during this survey; it is recommended not eligible due to the lack of intact archeological deposits within the project ROW. Site 41EL281 is an early 20th century farmstead identified by a light artifact scatter detected within 16 out of 28 shovel tests. All artifacts were recovered less than 12 cm below the surface. The site lacks integrity and sufficient data to contribute important information about local history, and is therefore recommended ineligible.

Effects Determination

The proposed project would have direct effects resulting from ground-disturbing construction activities within the APE. Given the results of the identification efforts, TxDOT proposes that the project will have no effect on archeological historic properties as the APE does not contain sites that are eligible for inclusion in the National Register of Historic Places or that warrant formal designation as State Antiquities Landmarks. The next section identifies the steps recommended by TxDOT based on the results of the identification efforts and this effects analysis.

Recommendations

TxDOT seeks your concurrence on the following points:

- The identification efforts and analysis of effects completed to date are adequate.
- No further work or consultation is required within the evaluated portions of the APE. Once access is obtained to areas for which access has been denied, TxDOT will complete required investigations and consultation prior to construction.
- The attached draft report meets the reporting requirements of the Texas Antiquities Permit issued for the investigation.

Thank you for your consideration of this matter. If you have any questions or have need of further information, please contact me at 214-320-4472.

Sincerely,

J. Kevin Hanselka

J. Kevin Hanselka
Archeological Studies Branch
Environmental Affairs Division

Cc w/o attachments: ECOS Scan

Concurrence By:

for: Mark Wolfe, Executive Director and SHPO
Texas Historical Commission

1/23/20
Date

DRAFT REPORT
ACCEPTABLE
by
for Mark Wolfe
Executive Director, THC
Date 1/23/20
Track #

Texas Department of Transportation

Report for Archeological Survey (Draft)

Proposed Roadway Expansion for Farm to Market Road 664, From US 287 to Westmoreland Road, Ellis County, Dallas District CSJ 1051-01-038

Kevin Hanselka, Principal Investigator; Antiquities Permit No. 9156

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 16, 2014, and executed by FHWA and TxDOT.

Austin Gibson

From: Austin Gibson
Sent: Thursday, November 14, 2019 1:22 PM
To: carlos.villarreal@tx.usda.gov
Cc: Jonathan Stewart
Subject: NRCS-CPA-106 Form for FM 664
Attachments: Farmland Conversion Impact Rating FM 664.pdf; FM_664_ROW_20191029_Reduced.pdf; FM664_PROW_20191021.zip

Mr. Villareal,

Attached is a the NRCS-CPA-106 form for your review, for the FM 664 Roadway Project in Ellis County, TX. I have also attached a map of the project and the Proposed ROW and Easements in a zipped folder. Please let me know if you need any additional information.

Thank you,
Austin

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

Appendix H – Section 4(f) Documentation

Checklist for Section 4(f) *De Minimis* for Public Parks, Recreation Lands, Wildlife & Waterfowl Refuges, and Historic Properties

Main CSJ: 1051-01-038 and 1051-01-052
District(s): Dallas
County(ies): Ellis
Property ID: 187687
Property Name: Heritage Park, Ovilla

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.

The following checklist was developed as a tool to assist in streamlining the Section 4(f) *De Minimis* process and to ensure that all necessary information is documented in the File of Record (ECOS).

What Type of Property is Being Evaluated?

- ☒ A park, recreation land, or wildlife/waterfowl refuge
- ☐ A historic property

Section 4(f) Defining Criteria for Parks, Recreation, and Refuge Properties

1. Yes — Is the property publicly owned?
2. Yes — Is the property open to the public (except in certain cases for refuges)?
3. Yes — Is the property's major purpose for park, recreation, or refuge activities?
4. Yes — Is the property significant?

Defining the Property's Significance

Note: Significance is presumed in the absence of a determination with the official with jurisdiction.

1. Yes — Does the property play an important role in meeting the park, recreation, or refuge objectives for the official with jurisdiction?
2. Yes — Is the property's major purpose for park, recreation, or refuge activities?

Establishing Section 4(f) Use of the Property

1. Yes — Does the project require a use (i.e., new right of way, new easement(s), etc.)?

Establishing Section 4(f) *De Minimis* Eligibility

1. Yes — Was it determined that the project will not adversely affect the activities, features, or attributes that make the property eligible for Section 4(f) protection?

2. Yes — Was a public notice and an opportunity for public review and comment provided?
(This requirement can be satisfied in conjunction with other public involvement procedures, such as those for NEPA process)

3. Yes — Did the Official with Jurisdiction concur that the property was significant and that the proposed project meets ALL conditions of items above?

Section 4(f) Use:

The Texas Department of Transportation (TxDOT) proposes to reconstruct, realign, and widen 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 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 miles per hour. The existing right of way (ROW) width would 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 acre of easement.

Mitigative actions taken to reach a no adverse effect determination are as follows:
• Added retaining walls along the southbound lanes 500 feet north and south of the Main Street intersection to minimize encroachments to Heritage Park.
• Optimized the minimum horizontal alignment radius to shift impacts away from the area.
• Maintained the existing design speed for the Main Street crossing to limit the fill in the area of Heritage Park.

Documentation

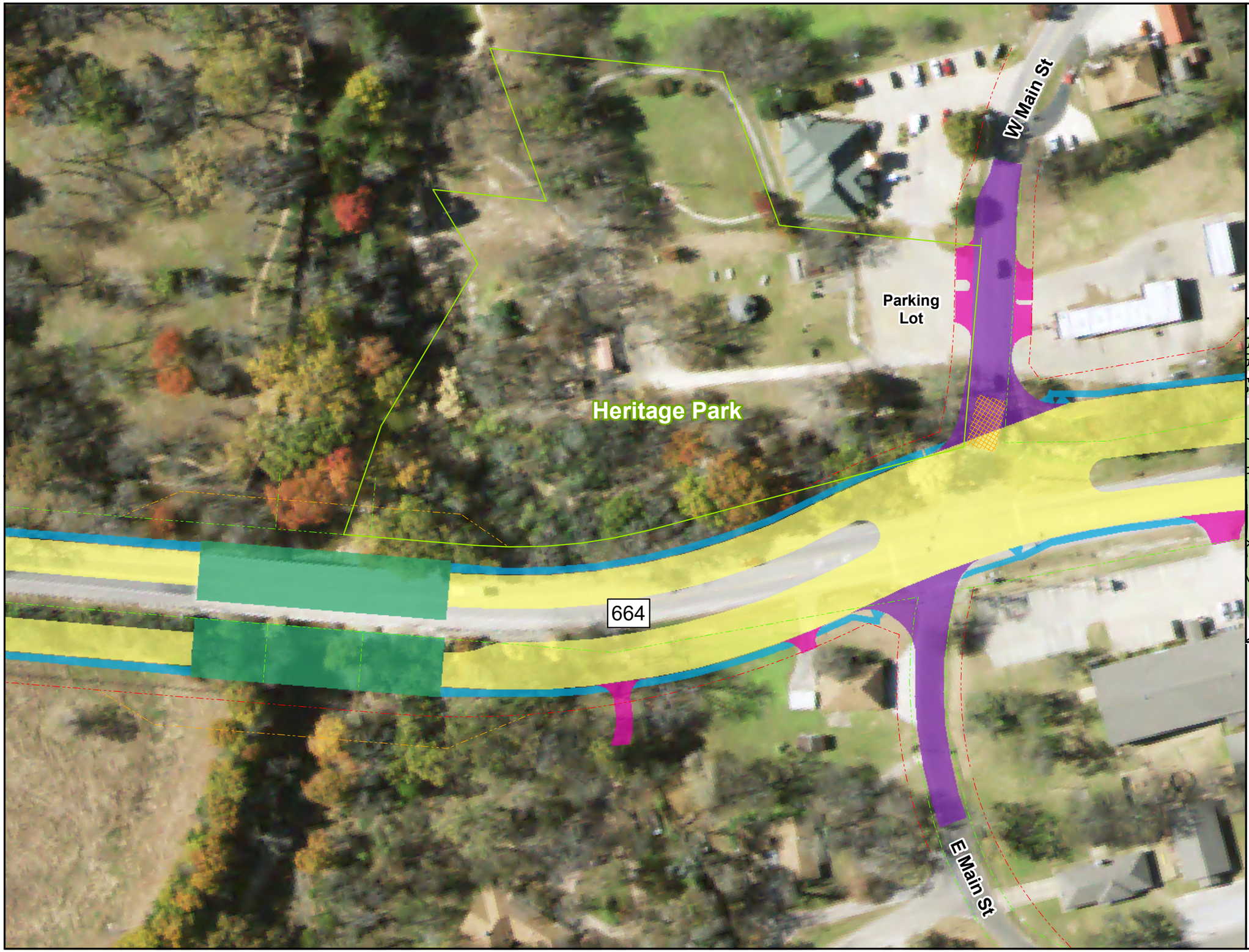
The following **MUST** be attached to this checklist to ensure proper documentation of the Section 4(f) *De Minimis*:

- ☑ A detailed map of the Section 4(f) Property including current and proposed ROW; property boundaries; access points for pedestrians and vehicles and existing and planned facilities.
- ☑ Street level photograph of the property
- ☑ Concurrence letter from Official with Jurisdiction
- ☑ Copy of WPD I Screen from ECOS.

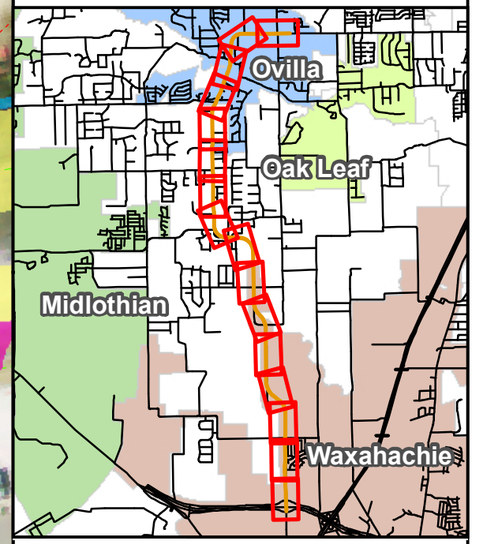
Heritage Park Overview FM 664

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 75 150 Feet



Legend

- Existing Right-of-Way
- Proposed Right-of-Way
- Proposed Easement
- Potential Displacement
- Heritage Park
- Proposed Bridge
- Cross Street
- Mainlanes
- Sidewalks
- Driveway
- Bridge Removal

Base Map Source: TNRIS (2018)

Photograph 1: Heritage Park looking south from Main Street. Parking lot in foreground.

Photograph 2: Heritage Park looking south. Tributary to Red Oak Creek with pedestrian bridge in background. Picnic area to the right.