



Environmental Assessment

US 59 Upgrade Project

From FM 2919 to FM 710

CSJ Number(s) 0089-08-094, 0089-07-145, & 0089-06-080

Wharton County, Texas

December 2016

The environmental review, consultation, and other actions required by applicable Federal environmental laws for this project are being, or have been, carried-out by TxDOT pursuant to 23 U.S.C. 327 and a Memorandum of Understanding dated December 16, 2014, and executed by FHWA and TxDOT.

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EXHIBITS

- Exhibit A: Project Location Map on a TxDOT County Map
- Exhibit B: Project Location Map on a USGS Map
- Exhibit C: Aerial, Floodplains and NWI Map
- Exhibit D: Project Layout Map
- Exhibit E: Existing and Proposed US 59 Typical Sections
- Exhibit F: Area of Influence Map

APPENDIX

- Appendix A: Coordination Letters

1.0 INTRODUCTION

The Texas Department of Transportation (TxDOT) proposes to upgrade United States (US) Highway 59 (US 59) through Wharton County to Interstate Highway (IH) standards. Although construction of the full freeway facility is from the Fort Bend/Wharton County Line to the Wharton/Jackson County Line, the actual construction limits would extend beyond each county line for transition purposes in order to transition back into the existing highway configuration. The transition would extend to approximately 2,600 feet south of FM 2919 in Fort Bend County and to CR 271 in Jackson County just south of the Wharton/Jackson County Line. The proposed construction area is approximately 39.5 miles in length. FM 2919 was selected as the northern project limit and FM 710 was selected as the southern project limit for logical termini purposes. **Exhibits A, B, and C** provides the project location on a TxDOT County map, a U.S. Geological Survey (USGS) topographic map, and an aerial of the overall project respectively.

US 59 is a north-south facility that serves as a major arterial for the distribution of traffic. Within the proposed construction limits, existing US 59 consists of a four-lane divided facility (two 12-foot lanes in each direction) with 6-foot inside shoulders and 10-foot outside shoulders divided by a depressed grass median that varies from 40 to 117 feet in width (see **Exhibits D** and **E**). The existing typical right-of-way (ROW) varies from 275 to 375 feet in width. The posted limit is 75 miles-per-hour (mph).

The proposed project would consist of a four-lane divided freeway facility (two 12-foot lanes in each direction) with 4-foot inside shoulders and 12-foot outside shoulders divided by a depressed grass median that varies from 34 to 62 feet in width. The freeway facility would have continuous frontage roads (two 12-foot lanes in each direction) with 10-foot outside shoulders and 4-foot inside shoulders. Drainage would be open ditch. The proposed ROW varies from a usual of 350 feet to 500 feet in width. Approximately 441 acres of additional ROW would be required. The proposed US 59 mainlane and intersection typical sections can be seen on **Exhibit E**, respectively. A project design map can be seen on **Exhibit D**.

The proposed project would not include the portion of US 59 from Business US 59 south to Business US 59 north within the City of El Campo. Two separate environmental assessments were approved for this portion of US 59. (See **Exhibit D**).

1.1 Need for the Proposed Project

US 59 is a major transportation route that needs to be upgraded to an interstate highway system to comply with federal legislation. The existing US 59 facility connects Texans and Texas businesses in Texarkana, Marshall, Nacogdoches, Lufkin, Houston, Wharton, Victoria, Laredo and dozens of smaller communities. US 59 through Texas was previously studied for the conversion to Interstate 69 (I-69). The proposed project was a part of Sections 1105(c) and 1105(e)(5) of the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA), as amended, which identified US 59 as part of the High Priority Corridor 18 and 20 systems to be designated as I-69. With the enactment of Moving Ahead for Progress in the 21st Century Act (MAP-21), sections of US 59 may be added to the interstate system when they meet the interstate design standards approved under section 109(b) of Title 23, United States Code and connect to, or are planned to connect to, an existing interstate system segment. When the project section of US 59 meets current interstate standards, it could be designated as part of the I-69 system in Texas, in accordance with Section 1105(e)(5) of ISTEA, as amended, because it could connect to an existing segment of the interstate system by July 1, 2037. This project is needed to bring existing US 59 up to interstate standards through Wharton County.

Numerous deficiencies have been identified thus far where the existing US 59 does not meet current interstate standards including but not limited to:

- Seven existing overpasses that do not meet minimum vertical clearance of 17'-0".
- There are 53 median openings between the northbound and southbound mainlanes throughout the corridor. These would have to be eliminated to meet interstate standards.
- US 59 does not have controlled access. There are 39 cross streets and 101 driveways that would need to be relocated or adjusted throughout the corridor to allow for controlled access in order to meet interstate standards.

US 59 is an established major transportation route connecting Mexico through Laredo north through Texas to Texarkana and on northward to Canada through Minnesota. The project segment of US 59 through Wharton County passes through or around the Cities of Hungerford, Wharton, Pierce, El Campo, and Louise. Increases in population and employment in Wharton County and the above-mentioned cities, coupled with ongoing and projected development in the project region, result in the need to upgrade US 59 to comply with federal legislation.

1.2 Purpose for the Proposed Project

The purpose of this project is to develop US 59 to an Interstate facility that would meet Interstate design standards as established in American Association of State Highway and Transportation Official's (AASHTO) *A Policy on Design Standards-Interstate System, 5th Edition* (2005). To accomplish this, the portion of US 59 from Fort Bend County line to Jackson County line would be upgraded to meet interstate standards with continuous frontage roads. Within the proposed construction limits, the intersections along existing US 59 would be given access to frontage roads or in some areas overpasses would be built.

1.3 Objectives of the Proposed Project

The objectives of the proposed project are to meet the project's need and purpose while minimizing environmental impacts. Specific objectives would be to:

- Update to improve the rural design facility to meet current FHWA interstate standards;
- Increase capacity by construction of the frontage roads to provide a more efficient transportation facility and to accommodate future traffic demands;
- Improve safety;
- Reduce travel times;
- Minimize the cost of the proposed project, ROW acquisitions and environmental impacts.

1.4 Planning Process

The project is in Wharton County which is included in the H-GAC 13-County Service Area but it is not within H-GAC's MPO area boundary and therefore not in the 2015-2018 TIP, the 2040 RTP, the Yoakum District FY 2013-2016 Rural Transportation Improvement Plan or the STIP. However, the entire proposed project through Wharton County is included in the Texas Rural Transportation Plan 2035 along with an additional project described as Construct Frontage Road from 0.17 miles west of SH 71 to 0.12 miles east of FM 1163. The statewide Long-Range Transportation Plan 2035 analyzed Texas Trunk System highways and interstate highways in three groups (Phase 1 Corridors, Interstate Highways, and Other Trunk System Corridors) with the same matrix and scoring criteria. Based on the analysis for Phase 1 Corridors, US 59 from H-GAC's MPO boundary to the Laredo MPO boundary, which includes the

proposed project area, was the second highest rated corridor in need of improvement. Current letting date for this project is in 2018.

1.5 Logical Termini and Independent Utility

The logical termini for the project would start in Kendleton, Texas at the intersection of FM 2919 and US 59 and end in Ganado, Texas at the intersection of FM 710 and US 59. The proposed project has independent utility in accordance with 23 CFR 771.111(f)(2) because it would serve the need and purpose by itself and have independent and usable functionality even if no additional adjacent transportation improvements were to be implemented.

1.6 Traffic

The traffic data analyzed for this document was obtained from TxDOT's Transportation Planning and Programming Division. The traffic projections reflect growth in the project area. Due to residential and business expansion within the proposed project area, traffic demands along US 59 have increased. The projected Average Annual Daily Traffic (AADT) for US 59 through Wharton County varies from 31,300 to 36,000 for the year 2019 and from 43,300 to 50,200 for the year 2039.

1.7 Project Funding

At this time this project is not funded. However, it is anticipated that both federal and state funding will be involved at some percentage split yet to be determined.

1.8 Alternative Analysis

This section describes the alternatives that were developed that meet the need and purpose for the project as described in Sections 1.1 and 1.2.

Two new location alternatives were examined, but dismissed early in the alternatives analysis process. The new location alternatives included 1) a new location roadway to the east of existing US 59 and 2) a new location alternative to the west of existing US 59. Both of these alternatives were dismissed early in the alternatives analysis process because both new location alternatives would result in substantially greater adverse social, economic, and environmental impacts than alternatives located along the existing US 59 alignment.

Three Build Alternatives (1 through 3) and the No Build Alternative were developed and analyzed at an equal level of detail. Criteria used in the alternatives analysis to eliminate some of the alternatives were displacement of residences and businesses, and other social, economic, and environmental impacts. The three Build Alternatives are described below:

Alternative 1 – Acquire all necessary ROW from either the east and/or west side of US 59 that would allow avoidance and minimization of social, economic and environmental impacts as well as avoidance of the Kansas City Southern Railroad (KCSRR) which runs parallel to US 59 on the east or west side for most of the project length.

Alternative 2 – Acquire all necessary ROW from the east side of US 59.

Alternative 2 was eliminated from further study due to the fact that this alternative would require more displacements of residences and businesses than Alternative 1 including the displacement and relocation of the KCSRR from just south of FM 961 south of the City of Wharton to just north of FM 960 north of the City of El Campo and from CR 307 south of the City of El Campo to the end of the project at

CR 271 just south of the Wharton/Jackson County Line. This in turn would result in a higher cost than Alternative 1.

Alternative 3 – Acquire all necessary ROW from the west side of US 59.

Alternative 3 was eliminated from further study due to the fact that this alternative would require more displacements of residences and businesses than Alternative 1 including the displacement and relocation of the KCSRR from the beginning of the project just north of the San Bernard River (Wharton/Fort Bend County Line) to just north of Hungerford. This in turn would result in a higher cost than Alternative 1.

Therefore, Alternative 1 was selected to be carried forward for further study as the Build Alternative.

1.8.1 Build Alternative

Alternative 1, the preferred Build Alternative, would consist of a four-lane divided freeway facility (two 12-foot lanes in each direction) with 4-foot inside shoulders and 12-foot outside shoulders divided by a depressed grass median that varies from 34 to 62 feet in width. The freeway facility would have continuous frontage roads (two 12-foot lanes in each direction) with 10-foot outside shoulders and 4-foot inside shoulders (See **Exhibit D and E** for the design and existing and proposed typical sections). Drainage would be open ditch. No designated bike lanes or sidewalks are planned however the outside shoulders of frontage roads can be utilized by cyclists and pedestrians.

1.8.2 No Build Alternative

The No Build Alternative assumes no transportation improvements on US 59. The No Build Alternative would not address existing or increased traffic demands or regional connectivity. This alternative would not meet the need and purpose of the project and would fail to meet interstate standards.

2.0 POTENTIAL SOCIAL, ECONOMIC, AND ENVIRONMENTAL EFFECTS OF THE PROPOSED ALTERNATIVE

This section describes the social, economic, and environmental setting of US 59 that could potentially be affected by the proposed project. It also provides information on the effects of the recommended Build Alternative on the natural and built environment. The No Build Alternative is brought forward in the analysis as a baseline for comparison purposes.

2.1 Right-of-Way Acquisition and Displacements

Approximately 441 acres of additional ROW would be required. It is estimated that the project would result in 21 displacements: six residences, six commercial and nine other. These properties are identified and discussed in Section 2.4.2 Community Impacts.

There are no temporary or permanent easements required for the proposed project.

The No Build Alternative would not require any ROW acquisitions and would leave the existing surrounding area intact. No displacements or relocations would occur under the No Build Alternative.

2.2 Utility Adjustments

Utilities such as water lines, sewer lines, gas lines, telephone cables, electrical lines, and other subterranean and aerial utilities would require adjustment. Aerial and/or underground utilities would be adjusted and the required adjustments may or may not be provided for by the affected utility company. The extent of utility adjustments is not known at this time and would be determined during final design.

Coordination of any utility adjustments would take place during the design phase or before construction begins. All utility adjustments would be in accordance with TxDOT, city, and county design policy guidelines. The adjustment and relocation of any utilities would be handled so that no substantial interruptions would take place while these adjustments are being made. One transmission tower is located inside the required additional ROW and would require relocation.

2.3 Land Use

Existing land use in the vicinity of the proposed project is almost entirely agricultural. Along the 79 miles of the project area's boundary (39.5 miles along each of the western and eastern corridor boundaries), only 3.4 miles (4.3%) of adjacent land is urbanized. With the exceptions of occasional individual commercial or light industrial properties and stream and river crossings, the remainder is cultivated farmland. Further away from US 59, urbanization becomes even sparser.

The current development trend in the Cities of Hungerford, Wharton, El Campo and Louise is a slow expansion of the existing communities' cores (both residential and commercial properties) outward into undeveloped rural areas. Areas of future development are expected to continue within the proposed project limits.

The project area is primarily undeveloped. Along the current US 59 alignment, the proposed project improvements may facilitate additional development, although the effect of the improved roadway is likely minor compared to that of larger social and demographic trends. Further development along US 59 is expected to occur due to population and employment growth in the area.

Wharton County does not have a comprehensive land use plan but relies on local municipalities to institute their own comprehensive plans. None of the cities in the project area maintain comprehensive plans, but instead follow state and federal regulations and ordinances for land use zoning. No adverse impact on community cohesion based on land use impacts is expected to occur. The proposed project is consistent with local planning efforts.

If the No Build Alternative were implemented, the proposed improvements would not be constructed. Scheduled maintenance on the existing facility would continue. Under the No Build Alternative, further development along US 59 is expected to occur due to population and employment growth in the area. The effect of not building the proposed improvements may in the long-term diminish the ability of the corridor to successfully meet the demands of the future regional growth as vehicle access becomes increasingly congested.

2.4 Socioeconomics Impacts

The FHWA Community Impact Assessment handbook defines community by geography or spatial components but also as group of people experiencing similar conditions or showing similar behavior patterns (FHWA 1996). Land use in and adjacent to and surrounding the project area can be primarily characterized as rural, used for agriculture and cattle ranching, with limited residential, infrastructure, and commercial purposes located in developed areas associated with the Cities of Hungerford, Wharton, Pierce, Hillje, and Louise.

A Socioeconomic Impacts Technical Report has been completed for the proposed project and is on file at TxDOT. The results are summarized below.

2.4.1 Socioeconomic Profile

Population Racial/Ethnic Composition

A minority population is defined as a group of people and/or community experiencing common conditions of exposure or impact that consists of persons classified by the U.S. Bureau of the Census as Black/African-American; Hispanic; Asian or Pacific Islander; American Indian, Eskimo, or Aleut; or other non-White persons. Data from the 2010 U.S. Census indicates that, of the 93 populated blocks within the project area, 53 blocks (approximately 58 percent) contain a total minority population greater than or equal to 50 percent. Of these 53 blocks, 31 are primarily Hispanic or Latino and 15 are primarily Black or African-American; the remaining seven blocks are either predominantly White or had an equal distribution between at least two racial/ethnic groups (see the Socioeconomic Impacts Technical Report for more detail).

Population Income/Poverty Level

According to the U.S. Census Bureau, a low-income population is defined as a group of people and/or a community, which, as a whole, lives below the national poverty level. The current (2016) poverty level in the 48 contiguous states and District of Columbia is \$11,880 for an individual and \$24,300 for a household of four (U.S. Department of Health and Human Services 2016). Data were collected from the 2009-2013 U.S. Census American Community Survey (ACS) regarding median household income and poverty within the project area (for more detail see Socioeconomic Impacts Technical Report) including median household income and the percent of families below the poverty level for the counties, cities, major census-designated places (CDP), and census tracts associated with the project area as well as for the entire state of Texas. Median household income averaged approximately \$43,238 across all block groups in the project area, which is \$18,988 above the national poverty level for a household of four. The average percentage of households below the poverty level within the project area census tracts is approximately 18.90 percent, with especially high percentages (over 40 percent) of impoverished households in census tract 7402, block group 2 of census tract 7402, block group 2 of census tract 7405, and block group 2 of census tract 7408; however, it should be noted that these indices are associated with very high margins of error (for more detail see the Socioeconomic Impacts Technical Report). The data generally indicate that there is not a substantial low-income population in the project vicinity, nor are there concentrations of poverty along the proposed ROW.

Limited English Proficiency

Executive Order (EO) 13166, "Improving Access to Services for Persons with Limited English Proficiency," requires federal agencies to examine the services they provide, identify any need for services to those with "Limited English Proficiency" (LEP), and develop and implement a system to provide those services so that LEP persons can have meaningful access to them. To determine if specific LEP populations may be affected by the proposed project, census data was collected from the 2009-2013 U.S. Census ACS for counties, cities, major CDP's, and census tracts associated with the project area. An LEP population is classified here as populations who speak a language other than English and speak English "less than very well." Data indicate that there is a relatively substantial Spanish-speaking LEP population dispersed throughout the project area. An average of 4.8 percent of the population within block groups associated with the project area is Spanish-speaking LEP. Percentages of Spanish-speaking LEP population relative to the total population within each block group range from 0 to 16.2 percent, with the highest percentages observed in block group 2 of census tract 7408 and block group 1 of census tract 7407 at 16.2 and 15.1 percent, respectively. LEP populations speaking 'other Indo-European languages,' 'Asian and Pacific Island languages,' or any 'other languages' within the project area block groups average 0.0 percent respectively. No indicators of LEP populations such as signage in languages other than English were observed during an August 2014 windshield survey.

Spanish-speaking translators were present at all public meetings. Future public involvement/outreach would continue to be conducted in a manner such that all interested parties would be given an opportunity to provide both verbal and written comments concerning the proposed project. This may include but is not limited to letters sent to adjacent property owners to notify them of the proposed project and invite them to any other public meetings, notices of public meetings published in English and Spanish, and public meeting handouts and comments in both English and Spanish.

2.4.2 Community Impacts

Changes in Access and Travel Patterns

Per interstate standard requirements, existing crossovers between northbound and southbound mainlanes would be removed and at grade intersections would be removed/replaced. These changes are not expected to significantly alter travel patterns and access to businesses would be maintained through frontage roads accessible via off and on ramps.

Although the proposed addition or alteration of frontage roads may alter access to some businesses and neighborhoods, the changes in access would be limited to the adjustment of existing entry and/or exit driveways.

Although two-way traffic would be maintained, temporary delays and increased travel times along the project corridor are expected during the construction phase of the project. Other short-term road closures and detours may be required; however, TxDOT would coordinate directly with property and business owners, emergency services, schools, and other entities to ensure access is maintained during and after construction.

Bicycle and Pedestrian Access

The existing US 59 facilities do not currently include sidewalks or bicycle lanes within the proposed project limits; the proposed design does not include sidewalks or other pedestrian and/or bicycle related shared-use facilities.

Displacements

The proposed improvements to US 59 would not separate or divide neighborhoods, as the proposed improvements are primarily within or along existing ROW and/or highway infrastructure. The upgrades would require 441 acres of additional ROW from 218 parcels. As stated in Section 2.1, it is estimated that the project would result in the displacement of six residences. These properties are listed in **Table 1** and mapped on **Exhibit D**. Assessed values of the displaced residences range from \$3,900-\$288,000. According to a December 2014 search of Zillow.com and Trulia.com, it appears that sufficient replacement single-family housing of comparable price would be available in the northern section of the project area, near the residential displacements in Hungerford and East Bernard. As of December, 2014, there were no listings for sufficient replacement housing in the direct vicinity of the residential displacement in Hillje or Pierce. However, on that date, several listings were available in the greater El Campo area. Further coordination between TxDOT right-of-way agents and the displaced residents in Hillje/Pierce may be required in order to identify suitable replacement housing.

Table 1: Potential Residential Displacements

Displacements (North to South)	Location	2014 Appraised Value ¹	Full Parcel Acreage	Acreage within Proposed ROW	Remaining Acreage
Residential Displacement	Hungerford	\$3,900 ¹	0.68	0.29	0.39
Residential Displacement	Hungerford	\$220,475 ¹	39.69	3.91	35.78
Residential Displacement	Pierce	\$288,000 ²	0.51	0.39	0.11
Residential Displacement	Hillje	\$116,484 ¹	2.05	0.88	1.16
Residential Displacement	Hillje	No information available	2.68	0.11	2.26
Residential Displacement	Hillje	No information available	2.23	0.14	8.81

Source: ¹ Wharton County Appraisal District, 2014; ² Zillow

An estimated six businesses would be potentially displaced as a result of the project, potentially affecting an estimated 83 employees: three gas stations, one restaurant, and two restaurants with associated gas stations. These properties are listed in **Table 2** and mapped on **Exhibit D**. Affected businesses are small and single-owner or family-owned, employing relatively few employees. Only the canopies and pumps at the Texaco Gas Station, the Chevron Gas Station, Junior's Smokehouse and Chevron Gas Station, and Mustang Creek BBQ Restaurant and Exxon Gas Station would be displaced; other structures on the property are not expected to be affected—the proposed ROW is approximately 79 feet, 30 feet, 28 feet, and eight feet from structures on each of the properties respectively. It is therefore very likely that these businesses would relocate their pump facilities on their respective existing properties and remain at their current locations. As of February 2015, the pump stations and canopy at Mustang Creek BBQ were not operational. However, due to the close proximity of the proposed ROW to the restaurant, Mustang Creek BBQ may still be displaced. All businesses, if displaced, have displayed interest in relocating along the new US 59 corridor, near their current location. Moreover, it is likely that successfully relocated businesses would provide services to the same communities, and that employees would continue being employed at the new locations. cursory searches of available properties zoned for commercial use on Loopnet.com in December 2014 and February 2015 indicated that there were several properties available for relocation in the project vicinity, including sites along US 59 in Wharton, Hungerford, and Beasley. It is therefore anticipated that displaced businesses would be relocated within the same jurisdiction and would not have difficulty finding an appropriate site to relocate. According to information on their website as well as local news reports, Hinze's BBQ, the potentially displaced business with the greatest number of employees (approximately 45), burned down on August 4, 2014. Hinze's BBQ is looking to potentially relocate near the intersection of US 59 and FM 102, which would likely occur before the proposed project would be constructed (if approved). The rest of the potential business displacements would affect an estimated 38 employees (see **Table 2**). Should these businesses choose not to relocate if displaced, employees would have to seek employment elsewhere.

Table 2 includes information regarding the number of similar businesses within the described communities that may be able to provide employment opportunities for displaced workers, as well as the number of currently advertised similar jobs within 10 miles of the potentially displaced business. It is likely that employees of businesses displaced by the proposed project would be able to find alternative employment, if necessary, and that effects to displaced employees would be temporary. Although only the gasoline pumps and canopy at Mustang Creek BBQ would be displaced by the proposed project, the business owners may choose to relocate. Relatively few positions are available within 10 miles of the restaurant. There are, however, five other businesses in the area that could potentially provide employment to the displaced employees if they seek to remain in the food service industry. As such, substantial economic effects would not be expected if displaced businesses chose not to relocate.

Table 2: Potential Business Displacements

Displacements (North to South)	Location	Full Parcel (Acres)	Area in Proposed ROW (Acres)	Remaining Area (Acres)	Estimated Number of Employees ¹	Similar Businesses within Community ²	Similar Advertised Job Openings ³
Texaco Gas Station	Hungerford	12.56	1.87	10.69	5	1	5
Chevron Gas Station	Hungerford	3.64	1.08	2.56	2	1	5
Quick And Easy #2 Gas Station	Wharton	1.44	0.87	0.57	5	13	8
Hinze's BBQ Restaurant	Wharton	1.66	0.63	1.03	45	36	6
Junior's Smokehouse and Chevron Gas Station	Wharton	4.57	0.88	3.70	18	13	8
Mustang Creek BBQ Restaurant and Exxon Gas Station	Louise	4.25	0.99	3.27	8	5	2

Source: ¹ Phone Interview with Business; ² YellowPages.com & Manta.com; ³ Indeed.com

In addition to commercial and residential displacements, the proposed project would displace a barn, a utility facility, a check station within existing US 59 ROW, an abandoned house, an oil well, a Texas Department of Public Safety building, a Rice Belt WHSE, Inc. warehouse, an abandoned trailer, and a farm accessory building. These properties are listed in **Table 3** and mapped on **Exhibit D**. The barn, utility facility, warehouse, and farm accessory building could potentially be relocated on each structure's existing parcel. The check station and Texas Department of Public Safety building are owned by the State of Texas and would likely be reconstructed within state ROW, if needed. Coordination with the owners of the oil well would be conducted to discuss the potential relocation of the well. No information was available regarding either the abandoned house or trailer.

Table 3: Other Potential Displacements

Displacements (North to South)	Location	Full Parcel (Acres)	Acreage in Proposed ROW (Acres)	Remnant Area (Acres)
Barn	Hungerford	8.55	3.75	4.79
Utility Facility	Hungerford	39.48	2.28	37.20
Check Station	Hungerford	N/A	N/A	N/A
Abandoned House	Wharton	0.71	0.26	0.45
Oil Well Site	Pierce	55.38	5.90	49.48
Texas Department of Public Safety Building	Pierce	4.04	0.96	3.08
Rice Belt WHSE, Inc. Structure Warehouse	El Campo	18.94	1.12	17.82
Abandoned Trailer	Louise	5.10	0.77	4.34
Farm Accessory Building	Louise	5.21	0.97	4.24

TxDOT would ensure that the needs of all displaced residents, including any disabled, minority, or elderly persons, are considered and accommodated to the extent practicable. Any ROW acquisition would be conducted in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended. The potential displacement of two gas stations, a Chevron and Texaco, located along US 59 near Hungerford, may require that residents travel farther to access businesses with similar services if the businesses do not remain at their current location. An Exxon mobile gas station is located approximately 2 and 4 miles from each of the stations, respectively and several additional gas stations are located less than 10 miles away, in the City of Wharton. Several gas stations are located throughout the City of Wharton. The potential displacement of the Quick and Easy #2 gas station as well as the Chevron at Jr's Smokehouse are not expected to impact access to the services each provides for nearby residents. The potentially displaced gas stations do not provide specialty products or unique services and are therefore not considered integral elements of the community's composition. Additionally, it is expected that these businesses, as well as the three restaurants potentially displaced by the proposed project, would be able to find appropriate sites to relocate nearby due to the amount of commercial property available in the project vicinity. Therefore, economic impacts within the community associated with relocations and/or job losses are expected to be minimal.

Community Cohesion

The proposed improvements would not separate or isolate any businesses, distinct neighborhoods, ethnic groups, or other specific groups, nor would access be denied to existing facilities. Frontage roads would maintain existing access to businesses and residences. Because US 59 is an existing transportation corridor, the proposed project would not result in new or additional barriers between communities and existing crossings would be maintained. Direct adverse impacts to the character or cohesion of communities in the project vicinity are not expected. Additionally, the proposed project is intended to

improve mobility along US 59, which would benefit all members of the public using the roadway. The increased roadway capacity and realignment of frontage roads included as part of this project are expected to benefit residents adjacent to the roadway by reducing congestion and improving roadway efficiency.

Community Impacts Conclusion

Upgrades to US 59 are expected to improve safety, congestion, and travel time reliability, providing a more efficient facility that would benefit local businesses, regional commuters, and area residents. The proposed improvements would alter (but not eliminate) access to some adjacent businesses and a residential street by the removal of existing crossovers between northbound and southbound mainlanes and alterations to at grade intersections. Temporary changes in access would also occur during construction. However, access to all adjacent neighborhoods and businesses would be maintained throughout construction and the project would not separate or isolate any businesses, distinct neighborhoods, ethnic groups, or other specific groups along the length of the project. The displacements outlined above are not expected to result in major changes to land use patterns, economic conditions, social interaction, or access to public facilities within the communities adjacent to US 59.

2.4.3 Environmental Justice

EO 12898 “Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations” requires each federal agency to “make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations.” FHWA has identified three fundamental principles of Environmental Justice (EJ):

1. To avoid, minimize, or mitigate disproportionately high and adverse human health or environmental effects, including social and economic effects, on minority populations and low-income populations;
2. To ensure the full and fair participation by all potentially affected communities in the transportation decision-making process; and
3. To prevent the denial of, reduction in, or significant delay in the receipt of benefits by minority populations and low-income populations.

Disproportionately high and adverse human health or environmental effects are defined by FHWA as adverse effects that:

1. are predominately borne by a minority population and/or a low-income population; or
2. will be suffered by the minority population and/or low-income population and are appreciably more severe or greater in magnitude than the adverse effects that will be suffered by the non-minority population and/or non-low-income population.

Of the 89 total Census Blocks that are in areas where additional ROW is required for proposed upgrades, 19 (approximately 21%) contain a total minority population greater than or equal to 50 percent. Of these, 13 are primarily Hispanic or Latino and five are primarily Black or African-American; the remaining

block has an equal distribution of White and Hispanic or Latino populations. Disproportionate displacement or relocation impacts to EJ populations are not anticipated. Of the 21 potential displacements in the project area, three are located in Block 1004, which is primarily Hispanic (42.6%) with a notable Black population (28.4%). These properties include one residence, a barn and a utility facility. TxDOT would ensure that the needs of all displaced residents, including any disabled, minority, or elderly persons, are considered and accommodated to the extent practicable. The ROW acquisition process would be conducted in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended.

Economic impacts to EJ populations are not expected to be substantial, and property values are not expected to increase. Although increased mobility due to facility upgrades, as well as the potential for construction of additional facilities along the subject portion of US 59, may make the US 59 travel corridor and adjacent properties more attractive for redevelopment, changes in land use are expected to be limited to increased transportation related developments (e.g. gas stations, truck stops, etc.). Tax rates are not expected to change substantially as a result of this project. Potential impacts to these populations would be limited to impacts associated with accessibility and mobility. Because the anticipated changes in access, travel patterns, and potential land use occur throughout the project length, and because the primary consequences of the proposed project are increased capacity and mobility, impacts to EJ populations were determined not to be disproportionately high compared to impacts to the general population. Therefore, while the temporary construction impacts would be adverse, the long-term impacts would be beneficial. The entire community, including EJ communities, would experience increased mobility; therefore, disproportionately high or adverse impacts to EJ communities are not anticipated.

2.4.4 Conclusion

Although EJ and LEP populations are present in the project area, the proposed improvements to US 59 would not result in disproportionately high adverse impacts to these populations and are not anticipated to substantially alter the overall character or cohesion of the adjacent communities. Disproportionately adverse direct or indirect impacts to minority, LEP, or low income populations as a result of this project are not anticipated. As such, cumulative impacts to these populations associated with the proposed project are expected to be minor to insignificant; therefore, a detailed analysis is not warranted. Any subsequent changes in design and additional information regarding proposed improvements may require reassessment of the preceding analysis.

2.5 Section 4(f) Properties

One Section 4(f) property is located near US 59. It is the King-Kennedy Memorial Park in Kendleton, Texas which is owned and operated by the City of Kendleton. A UPRR exists between the park and the west side of US 59. No additional ROW would be required from the park to implement the proposed US 59 upgrade project and there would be no physical use of King-Kennedy Memorial Park because no parkland would be permanently incorporated into a transportation facility.

The park is currently being impacted by traffic noise from traffic on the existing highway and the noise level is predicted to increase in the future (see Section 2.10 Noise for more information). The noise analysis determined that a noise barrier is not feasible and reasonable for the park. There would be no change in access for the park.

A constructive use of a Section 4(f) property can occur when no land from a Section 4(f) property would be permanently incorporated into a transportation facility, but the proximity impacts of a proposed

project result in substantial impairment to the property's activities, features or attributes that qualify the property for protection under Section 4(f). The potential for constructive use of King-Kennedy Memorial Park was analyzed.

The primary recreational activities occurring within the park is picnicking at the pavilions, basketball on the two basketball courts, and a children's playground. The closest recreation feature in King-Kennedy Memorial Park to US 59 is the basketball courts located approximately 195 feet from the nearest edge of pavement of US 59.

Users of the pavilions, the basketball courts and the playground are currently exposed to the existing visual presence of US 59 and noise from traffic on US 59. The only activity feature within the proposed project's 2039 66 dB(A) noise impact contour is the two basketball courts. The basketball courts are already being impacted from existing noise levels from the existing US 59 highway.

The noise analysis that was conducted for the US 59 upgrade project predicts an increase in traffic noise levels in 2039 for areas of the park that are within the 66 dB(A) noise impact contour. However, the increased traffic noise would not substantially impair the activities or features of the park as users of the facilities are accustomed to the current noise levels and the presence of a major highway near the park. In addition, the FHWA has determined that a constructive use does not occur when the projected noise levels exceed the FHWA noise abatement criteria because of high existing noise, but the increase in the projected noise levels if the proposed project is constructed, when compared with the projected noise levels if the project is not built, is barely perceptible (3 dB(A) or less) (23 CFR 774.15(f)(3)). Projected 2039 traffic volumes were modeled on the existing US 59 highway in order to determine the projected 2039 noise level for the park if the project is not built. The result was 68 dB(A) without the project which is a decrease of 1 dB(A) when compared to the projected 2039 noise level of 69 dB(A) with the project. Therefore, no constructive use would occur.

There are no other activities, features or attributes in the park that would incur substantial impairment as a result of the proposed project; therefore, no constructive use would occur. The proposed project would not require the permanent or temporary use of, or substantially impair the purposes of, any publicly owned land from a public park, recreational area, wildlife and waterfowl refuge lands or historic sites of national, state, or local significance; therefore, no additional Section 4(f) evaluation would be required.

King-Kennedy Memorial Park is not a Section 6(f) property; therefore, Section 6(f) of the Land and Water Conservation Fund Act does not apply to the proposed project.

2.6 Water Resources

A Water Resources Technical Report has been completed for the proposed project and is on file at TxDOT. The results are summarized below.

2.6.1 Section 404 of the Clean Water Act: Waters of the U.S.

Waters of the U.S. are regulated by the USACE under authority of Section 404 of the Clean Water Act (CWA). Section 404 of the CWA authorizes the USACE to issue permits for the discharge of dredged or fill material into waters of the U.S., including wetlands. The intent of this law is to protect the nation's waters from the indiscriminate discharge of material capable of causing pollution, and to restore and maintain their chemical, physical, and biological integrity. Any discharge into waters of the U.S. must be in accordance with Section 404(b)(1) guidelines developed by the EPA in conjunction with the USACE.

Wetland determinations were performed along the entire proposed project corridor using the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region (Version 2.0)* dated November, 2010 and the *U.S. Army Corps of Engineers (USACE) Wetlands Delineation Manual, Technical Report Y-87-1, January 1987, Final Report (1987 Manual)*. Normal environmental conditions were present within the proposed project and no atypical situations or problem areas were encountered.

The findings of the wetland determinations are summarized below. The complete analysis can be found in the Water Resources Technical Report completed for the proposed project and is on file at TxDOT.

Potentially jurisdictional wetlands are present at Crossing #2 (Middle Mustang Creek), Crossing #6 (Bosque Slough), Crossing #7 (shallow gully southwest of the Colorado River), Crossing #10 (Baughman Slough), Crossing #11 (Peach Creek), Crossing #13 (unnamed tributary of West Bernard Creek north of CR 148), and Crossing #16 (San Bernard River). Construction of improvements at each of these crossings is considered a single and complete project. As improvements at these stream crossings would not cause the loss of more than one-half of an acre of jurisdictional waters of the U.S., the proposed project would qualify for authorization under Nationwide Permit 14 (NWP 14), Linear Transportation Projects. Assuming the length of the culvert at Crossing #13 to be the same 38 feet as the proposed roadways, it would require the culvert to be approximately 115 feet long before the 0.1-acre minimum threshold for required Pre-Construction Notification (PCN) was reached. Because this culvert would be considerably less than 115 feet long, no PCN would be required. The design of the bridges and culverts would comply with the conditions required for use of NWP 14. No individual permitting would be required for any crossing.

The proposed project's impact on waters of the U.S., including wetlands, would be avoided or minimized by compliance with the USACE Permit program. The cumulative impact of reasonably foreseeable future actions to waters of the U.S. would be minimized by enforcement of applicable USACE, USFWS, and TPWD regulations.

Assuming appropriate implementation of regulation control strategies and policies, future potential impacts to the area's waters of the U.S., including wetlands could be expected to be reduced, or at a minimum have no net loss. The proposed project would not contribute to significant cumulative impacts to the area's waters of the U.S.

The No Build Alternative would involve no additional construction and would not require any permits.

2.6.2 Section 401 of the Clean Water Act: Water Quality Certification

The project would impact less than 1,500 linear feet of stream and/or 3 acres of waters of the U.S. and would not affect rare/ecologically significant wetlands. The Tier I 401 Certification requirements for the Nationwide Permit would be met by implementing approved erosion controls, sediment controls, and post-construction total suspended solids (TSS) controls.

The design and construction of the proposed improvements would include construction and post-construction Texas Commission on Environmental Quality (TCEQ) 401 Water Quality Best Management Practices (BMP's) to manage storm water runoff and control sediments.

A USACE NWP is required. BMPs would include temporary vegetation, blankets/matting and/or sod for erosion control, vegetative filter strips for post-construction TSS controls and silt fencing for sediment control.

No long-term water quality impacts are expected as a result of the proposed project. Subsurface water would not be required for this project; therefore, no adverse effects to groundwater are expected to occur. The proposed project is not expected to alter rainfall drainage patterns or contaminate or otherwise adversely affect the public water supply, water treatment facilities, or water distribution systems.

2.6.3 General Bridge Act of 1946 (Section 9)/Rivers and Harbors Act of 1899 (Section 10)

A coordination letter was sent to the U.S. Coast Guard to determine if the Colorado River and San Bernard River were navigable at the US 59 bridge crossing locations. A response letter was received dated March 13, 2014 indicating that both the San Bernard River and Colorado River are not navigable and that a Coast Guard Bridge Permit would not be required at these locations. Furthermore, the proposed bridges would not require navigational lighting. There are numerous other waterways along the project but because they are much smaller in size than the Colorado River and San Bernard River, it can be assumed that none of these are navigable as well. The coordination letters can be seen in **Appendix A**. There are also no rivers or other waterways crossed by US 59 within the project limits that are navigable under Section 10 of the Rivers and Harbors Act.

The proposed project does not involve work over any navigable waters; therefore Section 9 of the General Bridge Act and Section 10 of the Rivers and Harbors Act do not apply and no permits would be required.

2.6.4 Section 303(d) of the Clean Water Act: Impaired Streams

The Texas Surface Water Quality Standards (TSWQS), which apply to all surface water features in the State, are promulgated in Title 30, Chapter 307, of the Texas Administrative Code (TAC). These standards are approved by the EPA in accordance with Section 303C of the CWA and updated every three years to accommodate new developments or updated information. In the State of Texas, water quality inventory information provided by the TSWQS is assimilated and grouped by river basin. To track water quality and compliance with the standards, the TCEQ's Surface Water Quality Monitoring Program further divides the State's larger surface water features in those river basins into defined (classified) segments and assesses them according to the criteria specified in the TSWQS. Smaller features, although not defined as segments, are likewise monitored, but sufficient data are not available to develop the more conventional criteria.

Formerly called the "Texas Water Quality Inventory and 303(d) List," the 2014 "Texas Integrated Report for CWA Sections 305(b) and 303(d)" or known simply as the "Integrated Report", evaluates the quality of surface waters in Texas, and provides resource managers with a tool for making informed decisions when directing agency programs.

Runoff from this project would discharge directly into Segment 1302B_01 of West Bernard Creek which is listed as threatened/impaired for depressed dissolved oxygen on the 2014 EPA-approved 303(d) list and Segment 1302_02 of San Bernard River Above Tidal which is listed as threatened/impaired for bacteria.

Best Management Practices (BMPs) would include temporary vegetation, blankets/matting and/or sod for erosion control, vegetative filter strips for post-construction TSS controls and silt fencing for sediment control. These BMP's would be used to control the depressed dissolved oxygen at West Bernard Creek and bacteria at San Bernard River. This project is not expected to contribute to the depressed dissolved oxygen of West Bernard Creek and bacteria of San Bernard River.

Subsurface water would not be required for this project; therefore, no adverse effects to groundwater are anticipated. The proposed project is not expected to alter drainage patterns, contaminate or otherwise adversely affect the public water supply, water treatment facilities, or water distribution system.

The project engineer would ensure that appropriate steps are taken to control water pollution during construction. The amount of disturbed earth would be limited so that potential for excessive erosion is minimized and sedimentation outside the ROW is avoided. Existing vegetation would be preserved whenever possible. Temporary erosion and sedimentation control measures such as silt fences, rock berms, sedimentation basins, and/or soil retention blankets would be implemented as needed prior to the initiation of construction. Permanent soil erosion control features would be constructed as soon as feasible during the early stages of the contract through proper sodding and/or seeding techniques. Disturbed areas would be restored and stabilized as soon as the construction schedule permits, and temporary sodding would be considered where large areas of disturbed ground would be left bare for a considerable length of time. This proposed project is not expected to contribute to the constituent of concern to the impaired water body.

Since impaired waters were identified within the proposed project, TCEQ coordination will need to be completed. The contractor would take appropriate measures to prevent, minimize, and control spillage of hazardous materials in the construction staging area(s). All material being removed or disposed of by the contractor would be done in accordance with applicable State and Federal laws as not to degrade ambient water quality. All of these measures would be enforced under appropriate specifications in the plan, specification and estimate stage of project development.

The No Build Alternative would involve no additional construction activities and would not impact water quality.

2.6.5 Water Wells

A review of well records and published ground water reports from the Texas Water Development Board (TWDB) identified a total of 224 water supply wells in 168 locations within a one-half mile radius of the proposed project corridor. These wells consist of 12 public water supply wells, 191 domestic water supply wells, three industrial or rig supply wells, three irrigation wells, and 15 wells listed as other or unused. Information on the water supply wells can be seen in the Water Resources Technical Report.

2.6.6 Section 402 of the Clean Water Act: Texas Pollutant Discharge Elimination System Construction General Permit and Municipal Separate Storm Sewer System

This project would include five or more acres of earth disturbance. TxDOT would comply with the TCEQ Texas Pollutant Discharge Elimination System (TPDES) Construction General Permit (CGP). A Storm Water Pollution Prevention Plan (SW3P) would be implemented, and a construction site notice would be posted on the construction site. A Notice of Intent (NOI) would be required. This proposed project is not located within the boundaries of a regulated Municipal Separate Storm Sewer System.

The No Build Alternative would involve no additional construction activities and would not require a TPDES permit.

2.6.7 Floodplains

According to the Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Maps (FIRM) for Wharton County, the proposed construction limits are located within FEMA designated 100-year floodplains. Floodplains have been designated alongside all of the stream and river crossings in the proposed project corridor. A floodplain map for the project area is included in **Exhibit C**. As shown on this exhibit, nearly half of the proposed project area (931 acres out of a total of 2,007 acres) is located within 100-year floodplains. Wharton County is a participant in the National Flood Insurance Program (NFIP); coordination with the local Floodplain Administrator is required.

23 CFR 650.113 requires that encroachments on floodplains be the only practicable alternative and require that this determination be supported by the following information: 1) The reasons why the proposed action must be located in the floodplain, 2) The alternatives considered and why they were not practicable, and 3) A statement indicating whether the action conforms to applicable state or local floodplain protection standards. Since the proposed project currently crosses floodplains, the following support information is provided: 1) The proposed project must be located in floodplains because the proposed project would consist of upgrading an existing linear transportation facility that currently crosses floodplains, 2) The only alternative considered during the course of project development that would avoid encroachments on floodplains was the No-Build, which does not satisfy the purpose and need for the proposed project, and 3) The proposed project would conform to state floodplain protection standards. Therefore, the Build Alternative is the only practicable alternative that satisfies the purpose and need for the proposed project.

The No Build Alternative would not result in further encroachment on the floodplain.

2.6.8 Texas Coastal Management Program

This project is located within Wharton County but is not within the Texas Coastal Management Program (TCMP) boundary; therefore a consistency determination is not required.

2.6.9 Wild and Scenic Rivers

This project would not involve work near any designated Wild and Scenic River; therefore, no impacts would occur.

2.7 Biological Resources

A Biological Resources Technical Report, including the Biological Evaluation Form, has been completed for the proposed project and is on file at TxDOT. The results are summarized below.

2.7.1 Endangered Species Act

Field reconnaissance (June 2014), review of the USFWS Endangered Species List (September 2014), the TPWD Annotated County List of Rare Species for Wharton County (September 2014), and a search of the Natural Diversity Database (NDD), in conjunction with Geographic Information System (GIS), was conducted to determine the potential occurrence of State and Federally listed threatened and endangered species and their habitat (See the Biological Resources Technical Report for the complete list of species and habitat descriptions).

Based on the information provided in the Biological Resources Technical Report, the proposed project would have *no effect* on any population or individuals of federally listed threatened or endangered species. The proposed project would have *no impact* on any population or individuals of state listed threatened or endangered species. Consultation with the USFWS would not be required.

2.7.2 Essential fish Habitat (EFH)

Essential fish habitat is defined by the Magnuson-Stevens Fishery Conservation and Management Act as those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity.

Tidally influenced waters do not occur within the project area. Coordination with National Marine Fisheries Service (NMFS) is not required.

2.7.3 Coastal Barrier Resources Act (CBRA)

The Coastal Barrier Resources Act (CBRA) established the Coastal Barrier Resources System (CBRS) to protect a defined set of geographic units along the coast of the U.S.

This project is not located within a designated CBRA map unit. Coordination with the USFWS is not required.

2.7.4 Marine Mammal Protection Act (MMPA)

Marine mammals are protected under the Marine Mammal Protection Act (MMPA). The Texas coast provides suitable habitat and is within range of several marine mammals including the West Indian Manatee (*Trichechus manatus*), and bottlenose dolphin (*Tursiops truncatus*).

The project action area does not contain suitable habitat for marine mammals. Coordination with NMFS is not required.

2.7.5 Migratory Bird Treaty Act (MBTA)

The Migratory Bird Treaty Act (MBTA) states that it is unlawful to kill, capture, collect, possess, buy, sell, trade, or transport any migratory bird, nest, young, feather, or egg in part or in whole, without a federal permit issued in accordance within the Act's policies and regulations.

TxDOT will take all appropriate actions to prevent the take of migratory birds, their active nests, eggs, or young by the use of proper phasing of the project or other appropriate actions. A MBTA appropriate Environmental Permits, Issues and Commitments (EPIC) Sheet would be included in the final design plans.

2.7.6 Bald and Golden Eagle Protection Act (BGEPA)

The project is within range and suitable habitat for Bald or Golden Eagles but would not result in an incidental taking. The project would adhere to the National Bald Eagle Management guidelines of 2007. The proposed project activities would not occur within a minimum of 660 feet from an active or inactive eagle nest. No additional documentation would be required.

2.7.7 Executive Order 13112 on Invasive Species

Re-vegetation of disturbed areas would be in compliance with the Executive Order on Invasive Species (EO 13112). Regionally native and non-invasive plants would be used to the extent practicable in landscaping and re-vegetation.

2.7.8 Executive Memorandum on Environmentally and Economically Beneficial Landscaping

Landscaping would be a part of the proposed project activities. Re-vegetation of disturbed areas would be in compliance with the Executive Memorandum on Environmentally and Economically Beneficial Landscaping (April 26, 1994). Regionally native and non-invasive plants would be used to the extent practicable in landscaping and re-vegetation.

A mix of native grasses and native forbs would be used to revegetate the ROW where possible. Trees within the ROW, but not in the construction zone, would not be removed if possible and such areas would be preserved to try to minimize the impact to wildlife habitat in the area.

2.7.9 Farmland Protection Policy Act (FPPA)

The purpose of the Farmland Protection Policy Act (FPPA) is to minimize the extent to which federal programs contribute to the unnecessary and irreversible conversion of farmland to non-agricultural uses. The proposed project would convert farmland subject to the FPPA to a non-agricultural, transportation use, but the combined scores of the relative value of the farmland and the site assessment, as documented on the Natural Resources Conservation Service (NRCS) Form NRCS-CPA-106 and supporting documentation, are such that the site need not be given further consideration for protection and no additional sites need to be evaluated (See the Biological Resources Technical Report for the completed Form NRCS-CPA-106).

2.7.10 Fish and Wildlife Coordination Act (FWCA)

The Fish and Wildlife Coordination Act (FWCA) of 1958 requires that federal agencies obtain comments from USFWS and TPWD. This coordination is required whenever a project involves impounding, diverting, or deepening a stream channel or other body of water.

The proposed project would not impound, divert, or deepen a stream channel or other body of water; therefore, no coordination under FWCA would be required.

2.7.11 Texas Parks and Wildlife Department Coordination

In accordance with the TxDOT/TPWD MOU (effective September 1, 2013), a Tier I Site Assessment was conducted in order to define the amount and type of potential habitat within the project area and to determine the potential need for coordination with TPWD. The proposed project would disturb habitat that exceeds the amount indicated in the *Threshold Programmatic Agreement*, therefore, coordination with TPWD is required.

TxDOT Yoakum District initiated Early Project Coordination with TPWD via email on November 18, 2015. TPWD had three comments that have been addressed. Copies of this coordination and response to TPWD comments are included in **Appendix A** Coordination Letters.

2.7.12 Wildlife Habitat

Wildlife located within the vicinity of the project area may include those common species normally found in rural areas. The species for this area may include squirrels, rabbits, raccoons, migratory songbirds, and various rodents. Other species could include opossums, frogs, lizards, and snakes. Any disturbance beyond the normal conditions of the study area is expected to be limited to the immediate vicinity of construction of the proposed project.

The No Build Alternative would not require any removal or disturbance of vegetation or wildlife. The roadway would remain in its present condition and there would be no impacts to vegetation, or wildlife.

2.7.13 Vegetation

According to Texas Parks and Wildlife Department's (TPWD's) Ecological Mapping Systems of Texas (EMST), the project area consists of approximately 50% coastal grassland, 14% agriculture, 12% riparian habitat, 5% disturbed prairie, and 2% post oak savanna, with the remainder consisting of urbanized areas or very minor habitat types. The field investigation found that cropland was by far the most common vegetative community adjacent to the roadside right-of-way (ROW) through most of the project area. Crops are cultivated on over 90% of adjacent lands. The remaining vegetative communities consisted of woodlands, maintained ROW, and riparian vegetation at stream crossings.

The largest woodland areas within the proposed project corridor are located approximately two miles northeast of Pierce, at the interchange of US 59 and FM 961 southwest of Wharton, and between SH 60 and FM 1161 south of Hungerford. Typically these woodlands were dominated by American elm (*Ulmus americana*) and cedar elm (*Ulmus crassifolia*).

Areas of maintained ROW were largely covered by grasses, most commonly Bermuda grass (*Cynodon dactylon*) and Johnson grass (*Sorghum halpense*).

Under the Build Alternative, approximately 382.6 acres of cropland, 52.6 acres of woodlands, and 0.8 acres of riparian vegetation would be lost through their conversion to transportation infrastructure and maintained ROW. The proposed project would require approximately 441 additional acres of ROW.

2.8 Cultural Resources

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, the National Environmental Policy Act (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)/Texas State Historic Preservation Officer (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.

Not all cultural resources are afforded equal treatment in the planning process under applicable cultural resources laws. Historic properties and State Archeological Landmarks (SALs) are those objects, sites, and structures which have characteristics that require those resources to be given further consideration in the project planning process. Projects should avoid and minimize impacts to historic properties and SALs when possible. They should resolve the effects of impacts, usually through some mitigation measures, when avoidance is not possible. Review and coordination of this project followed approved procedures for compliance with Federal and State laws.

2.8.1 Historic Resources

A review of THC's Texas Historic Sites Atlas was conducted to identify resources listed on the National Register of Historic Places (NRHP) and designated as National Historic Landmarks (NHL), Recorded Texas Historic Landmarks (RTHL), standing structure SALs, and Official Texas Historical Markers (OTHM). No NRHP, NHL, RTHL, or SAL resources were identified within the 1,300-foot (0.25 mile) study area. There is one OTHM for the Site of the Pierce Hotel located within the study area, approximately 1,085 feet from US 59 at the intersection of Pierce Street and FM 526 in the community of Pierce. It is anticipated

through consultation with the SHPO that the Area of Potential Effects (APE) for the proposed project will be 150 feet from the existing and proposed ROW. A site visit to the project area and preliminary research revealed the presence of several historic-age resources (built prior to 1974) within the APE. As a result, it is anticipated that a reconnaissance survey will be conducted to determine if historic properties are located within the APE and if the proposed project activities have the potential to adversely affect them.

In a memo dated March 18, 2016, TxDOT performed an internal review of the proposed project under the Section 106 programmatic Agreement (Section 106 PA) among the TxDOT, SHPO, Advisory Council of Historic Preservation and FHWA; and the Memorandum of Understanding (MOU) between THC and TxDOT.

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 adverse effects to historic, non-archeological properties in the APE and that individual project coordination with SHPO is not required. The memo can be found in **Appendix A**.

2.8.2 Archeology

An interim intensive archeological survey was performed for the northern portion of the project under Texas Antiquities Permit No. 7306. The survey was submitted to THC for review and received concurrence April 22, 2016. The survey is on file at TxDOT and the results are summarized below.

A total of 70 acres were surveyed as an initial phase of the project between August 20 and September 13, 2015. The survey results described herein apply only to the northern segment of the overall project, which is situated between FM 2919 and the Colorado River primarily within Wharton County, Texas; a small portion of the survey was located in Fort Bend County. Of the total project area, 140 acres still need to be surveyed. This further fieldwork for the remainder of the project, particularly that south of the Colorado River and parcels where right of entry (ROE) was withheld during the current survey, is pending and will be detailed in a later comprehensive survey report.

Survey of this segment of the overall APE included 100 percent systematic inspection of the ground surface supplemented by shovel testing and mechanical trenching in areas identified as a high probability area (HPA) or historical high probability area (HHPA). A total of 192 shovel tests and 63 trenches were excavated.

Survey of the portions of the APE where ROE was granted resulted in the identification of one historic archeological site (41WH139), one prehistoric isolated artifact, and one roadside memorial within the APE. Site 41WH139, the isolated find, and the roadside memorial do not meet the eligibility criteria for inclusion in the NRHP or for designation as an SAL. Therefore, 41WH139, the isolated find, the historic structure, and roadside memorial are not recommended eligible for the NRHP under any criteria nor are they recommended eligible for designation as an SAL. No further work is recommended at these locations. One additional possible historic archeological site was identified as an HHPA but is outside of the APE.

Based on these findings, it is recommended that development within the northern portion of the US 59 project (between the Colorado River and FM 2919), where ROE was obtained, be allowed to proceed as planned without additional investigations with regard to cultural resources. Areas, where no ROE was granted as of August 2015, but which fall within HPA or HHPA, are recommended for survey when

access is granted to identify potential historic properties that may be impacted by the proposed undertaking.

If it is determined that the proposed construction requires additional ROW in this portion of the overall APE, then additional archeological investigations may be necessary. In the event that previously unidentified cultural materials are discovered during construction, work in the immediate area of discovery would cease and TxDOT will be contacted.

2.9 Air Quality

Wharton County is an area in attainment or unclassifiable of all National Ambient Air Quality Standards (NAAQS); therefore, transportation conformity rules do not apply.

2.9.1 Traffic Air Quality Analysis

Traffic data for the design year 2039 varies from 43,300 to 50,200 vehicles per day. A prior TxDOT modeling study and previous analyses of similar projects demonstrated that it is unlikely that a carbon monoxide 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 vehicles per day; therefore a Traffic Air Quality Analysis was not required.

2.9.2 Congestion Management Process

This project is not within a Transportation Management Area (a population greater than 200,000) and located in an attainment area; therefore a congestion management system analysis is not required.

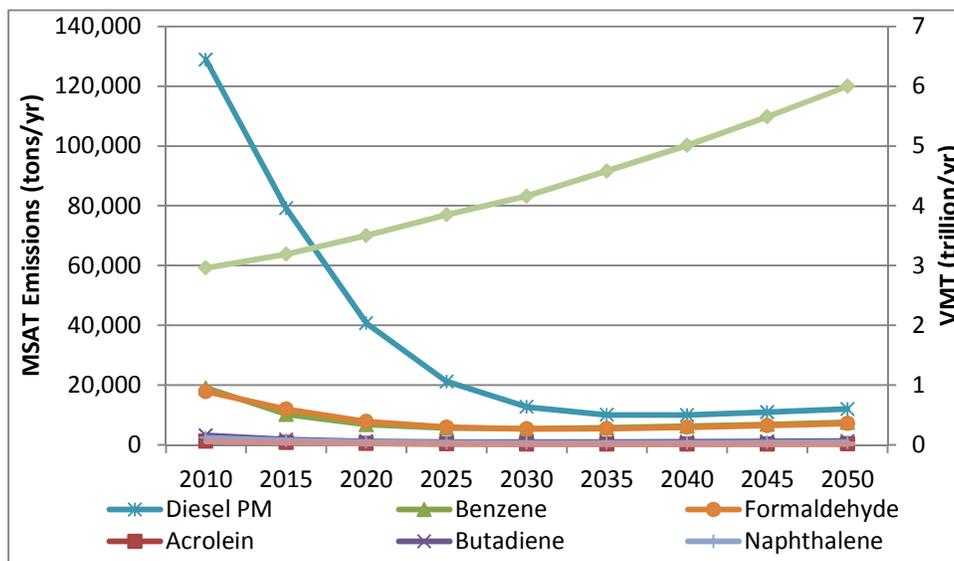
2.9.3 Mobile Source Air Toxics

Background

Controlling air toxic emissions became a national priority with the passage of the Clean Air Act Amendments (CAAA) of 1990, whereby Congress mandated that the U.S. Environmental EPA has assessed this expansive list in their latest rule on the Control of Hazardous Air Pollutants from Mobile Sources (Federal Register, Vol. 72, No. 37, page 8430, February 26, 2007), and identified a group of 93 compounds emitted from mobile sources that are listed in their Integrated Risk Information System (IRIS) (<http://www.epa.gov/iris/>). In addition, EPA identified seven compounds with significant contributions from mobile sources that are among the national and regional-scale cancer risk drivers from their 1999 National Air Toxics Assessment (NATA) (<http://www.epa.gov/ttn/atw/nata1999/>). These are acrolein, benzene, 1,3-butadiene, diesel particulate matter plus diesel exhaust organic gases (diesel PM), formaldehyde, naphthalene, and polycyclic organic matter. While FHWA considers these the priority mobile source air toxics, the list is subject to change and may be adjusted in consideration of future EPA rules.

The 2007 EPA Mobile Source Air Toxics (MSAT) rule mentioned above requires controls that will dramatically decrease MSAT emissions through cleaner fuels and cleaner engines. Based on an FHWA analysis using EPA's MOVES2010b model, as shown in **Figure 1** and **Table 4**, even if vehicle-miles travelled (VMT) increases by 102 percent as assumed from 2010 to 2050, a combined reduction of 83 percent in the total annual emissions for the priority MSAT is projected for the same time period.

**Figure 1:
PROJECTED NATIONAL MSAT EMISSION TRENDS 2010 – 2050
FOR VEHICLES OPERATING ON ROADWAYS
USING EPA’s MOVES2010b MODEL**



Source: Table 1 below.

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

**Table 4: Projected National MSAT Emission Trends 2010 – 2050 for Vehicles Operating on Roadways
Using EPA’s MOVES2010b Model**

Pollutant / VMT	Pollutant Emissions (tons) and VMT by Calendar Year									Change 2010 to 2050
	2010	2015	2020	2025	2030	2035	2040	2045	2050	
Acrolein	1,244	805	476	318	258	247	264	292	322	-74%
Benzene	18,995	10,195	6,765	5,669	5,386	5,696	6,216	6,840	7,525	-60%
Butadiene	3,157	1,783	1,163	951	890	934	1,017	1,119	1,231	-61%
Diesel PM	128,847	79,158	40,694	21,155	12,667	10,027	9,978	10,942	11,992	-91%
Formaldehyde	17,848	11,943	7,778	5,938	5,329	5,407	5,847	6,463	7,141	-60%
Naphthalene	2,366	1,502	939	693	607	611	659	727	802	-66%
Polycyclics	1,102	705	414	274	218	207	219	240	262	-76%
Trillions VMT	2.96	3.19	3.5	3.85	4.16	4.58	5.01	5.49	6	102%

Source: EPA MOVES2010b model runs conducted during May – June 2012 by FHWA.

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

research studies to try to more clearly define potential risks from MSAT emissions associated with highway projects. The FHWA will continue to monitor the developing research in this emerging field.

Project-Specific MSAT Information

A qualitative analysis provides a basis for identifying and comparing the potential differences among MSAT emissions, if any, from the various alternatives. The qualitative assessment presented below is derived in part from a study conducted by the FHWA entitled A Methodology for Evaluating Mobile Source Air Toxic Emissions Among Transportation Project Alternatives, found at: http://www.fhwa.dot.gov/environment/air_quality/air_toxics/research_and_analysis/mobile_source_air_toxics/msatemissions.pdf

For both alternatives in this document, the amount of MSAT emitted would be proportional to the VMT, assuming that other variables such as fleet mix are the same for both alternatives. The VMT estimated for the Build Alternative is slightly higher than that for the No Build Alternative, because the additional capacity increases the efficiency of the roadway and attracts rerouted trips from elsewhere in the transportation network. This increase in VMT would lead to higher MSAT emissions for the preferred action alternative along the highway corridor, along with a corresponding decrease in MSAT emissions along the parallel routes. The emissions increase is offset somewhat by lower MSAT emission rates due to increased speeds; according to EPA's MOVES2010b model, emissions of all of the priority MSAT decrease as speed increases. Also, regardless of the alternative chosen, emissions would likely be lower than present levels in the design year as a result of EPA's national control programs that are projected to reduce annual MSAT emissions by over 80 percent between 2010 and 2050. Local conditions may differ from these national projections in terms of fleet mix and turnover, VMT growth rates, and local control measures. However, the magnitude of the EPA-projected reductions is so great (even after accounting for VMT growth) that MSAT emissions in the study area are likely to be lower in the future in nearly all cases.

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

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

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

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

Other organizations are also active in the research and analyses of the human health effects of MSAT, including the Health Effects Institute (HEI). Two HEI studies are summarized in Appendix D of FHWA’s Interim Guidance Update on Mobile source Air Toxic Analysis in NEPA Documents. Among the adverse health effects linked to MSAT compounds at high exposures are; cancer in humans in occupational settings; cancer in animals; and irritation to the respiratory tract, including the exacerbation of asthma. Less obvious is the adverse human health effects of MSAT compounds at current environmental concentrations (HEI, <http://pubs.healtheffects.org/view.php?id=282>) or in the future as vehicle emissions substantially decrease (HEI, <http://pubs.healtheffects.org/view.php?id=306>).

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

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

There are considerable uncertainties associated with the existing estimates of toxicity of the various MSAT, because of factors such as low-dose extrapolation and translation of occupational exposure data to the general population, a concern expressed by HEI (<http://pubs.healtheffects.org/view.php?id=282>). As a result, there is no national consensus on air dose-response values assumed to protect the public health and welfare for MSAT compounds, and in particular for diesel PM. The EPA (http://www.epa.gov/risk_____/basicinformation.htm#g) and the HEI (<http://pubs.healtheffects.org/getfile.php?u=395>) have not established a basis for quantitative risk assessment of diesel PM in ambient settings.

There is also the lack of a national consensus on an acceptable level of risk. The current context is the process used by the EPA as provided by the Clean Air Act to determine whether more stringent controls are required in order to provide an ample margin of safety to protect public health or to prevent an adverse environmental effect for industrial sources subject to the maximum achievable control technology standards, such as benzene emissions from refineries. The decision framework is a two-step

process. The first step requires EPA to determine an “acceptable” level of risk due to emissions from a source, which is generally no greater than approximately 100 in a million. Additional factors are considered in the second step, the goal of which is to maximize the number of people with risks less than 1 in a million due to emissions from a source. The results of this statutory two-step process do not guarantee that cancer risks from exposure to air toxics are less than 1 in a million; in some cases, the residual risk determination could result in maximum individual cancer risks that are as high as approximately 100 in a million. In a June 2008 decision, the U.S. Court of Appeals for the District of Columbia Circuit upheld EPA’s approach to addressing risk in its two step decision framework.

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

Conclusion

In this document, a qualitative MSAT assessment has been provided relative to both the No Build and Build Alternative of MSAT emissions and has acknowledged that the Build Alternative of the project alternatives may result in increased exposure to MSAT emissions in certain locations, although the concentrations and duration of exposures are uncertain, and because of this uncertainty, the health effects from these emissions cannot be estimated.

2.10 Noise

This analysis was accomplished in accordance with TxDOT’s (FHWA approved) Guidelines for Analysis and Abatement of Roadway Traffic Noise (2011).

Sound from highway traffic is generated primarily from a vehicle’s tires, engine and exhaust. It is commonly measured in decibels and is expressed as "dB."

Sound occurs over a wide range of frequencies. However, not all frequencies are detectable by the human ear; therefore, an adjustment is made to the high and low frequencies to approximate the way an average person hears traffic sounds. This adjustment is called A-weighting and is expressed as "dB(A)."

Also, because traffic sound levels are never constant due to the changing number, type and speed of vehicles, a single value is used to represent the average or equivalent sound level and is expressed as " L_{eq} ."

The traffic noise analysis typically includes the following elements:

- Identification of land use activity areas that might be impacted by traffic noise.
- Determination of existing noise levels.
- Prediction of future noise levels.
- Identification of possible noise impacts.
- Consideration and evaluation of measures to reduce noise impacts.

The FHWA has established the following Noise Abatement Criteria (NAC) (**Table 5**) for various land use activity areas that are used as one of two means to determine when a traffic noise impact would occur.

Table 5: Noise Abatement Criteria

Activity Category	FHWA dB(A) L_{eq}	Description of Land Use Activity Areas
A	57 (exterior)	Lands on which serenity and quiet are of extra-ordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B	67 (exterior)	Residential
C	67 (exterior)	Active sport areas, amphitheaters, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreation areas, Section 4(f) sites, schools, television studios, trails, and trail crossings
D	52 (interior)	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, schools, and television studios
E	72 (exterior)	Hotels, motels, offices, restaurants/bars, and other developed lands, properties, or activities not included in A-D or F.
F	--	Agricultural, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources, water treatment, electrical), and warehousing.
G	--	Undeveloped lands that are not permitted.

A noise impact would occur when either the absolute or relative criterion is met:

Absolute criterion – the predicted noise level at a receiver approaches, equals or exceeds the NAC. “Approach” is defined as one dB(A) below the NAC. For example: a noise impact would occur at a Category B residence if the noise level is predicted to be 66 dB(A) or above.

Relative criterion – the predicted noise level substantially exceeds the existing noise level at a receiver even though the predicted noise level does not approach, equal or exceed the NAC. “Substantially exceeds” is defined as more than 10 dB(A). For example: a noise impact would occur at a Category B residence if the existing level is 54 dB(A) and the predicted level is 65 dB(A).

When a traffic noise impact occurs, noise abatement measures must be considered. A noise abatement measure is any positive action taken to reduce the impact of traffic noise on an activity area.

The FHWA traffic noise modeling software was used to calculate existing and predicted traffic noise levels. The model primarily considers the number, type and speed of vehicles; highway alignment and grade; cuts, fills and natural berms; surrounding terrain features; and the locations of activity areas likely to be impacted by the associated traffic noise.

Existing and predicted traffic noise levels were modeled at receiver locations (**Table 6** and **Exhibit D**) that represent the land use activity areas adjacent to the proposed project that might be impacted by

traffic noise and potentially benefit from feasible and reasonable noise abatement. Receivers were not placed at locations that were far outside of the noise impact contour for the category that each receiver would fall under.

Table 6: Traffic Noise Levels dB(A) L_{eq}

Receiver	NAC Category	NAC Level	Existing 2014	Predicted 2039	Change (+/-)	Noise Impact
R1 – Four Residences	B	67	62	65	+3	No
R2 – Residence	B	67	64	69	+5	Yes
R3 – Park	C	67	66	69	+3	Yes
R4 – Residence	B	67	63	68	+5	Yes
R5 – Residence	B	67	63	69	+6	Yes
R6 – Residence	B	67	61	63	+2	No
R7 – Residence	B	67	60	66	+6	Yes
R8 – Residence	B	67	60	63	+3	No
R9 – Residence	B	67	63	66	+3	Yes
R10 – Residence	B	67	64	65	+1	No
R11 – Cemetery	C	67	65	69	+4	Yes
R12 – Residence	B	67	67	70	+3	Yes
R13 – Residence	B	67	67	69	+2	Yes
R14 – Residence	B	67	67	70	+3	Yes
R15 – Residence	B	67	67	69	+2	Yes
R16 – Residence	B	67	62	65	+3	No
R17 – Residence	B	67	61	64	+3	No
R18 – Cemetery	C	67	61	65	+4	No
R19 – Restaurant	E	72	65	67	+2	No
R20 – Hospital	D	52	40	43	+3	No
R21 – Residence	B	67	64	66	+2	Yes
R22 – Residence	B	67	65	66	+1	Yes
R23 – Residence	B	67	63	62	-1	No
R24 – Residence	B	67	63	64	+1	No
R25 – Residence	B	67	66	66	0	Yes
R26 – Residence	B	67	65	68	+3	Yes
R27 – Residence	B	67	65	68	+3	Yes
R28 – Residence	B	67	64	67	+3	Yes
R29 – Residence	B	67	57	65	+8	No
R30 – Church	C	67	60	62	+2	No
R31 – Residence	B	67	63	64	+1	No
R32 – Cemetery	C	67	57	60	+3	No
R33 – Retirement Community	B	67	67	65	-2	No
R34 – Residence	B	67	68	69	+1	Yes
R35 – Residence	B	67	60	63	+3	No
R36 – Residence	B	67	57	61	+4	No
R37 – Two Residences	B	67	57	64	+7	No
R38 – Residence	B	67	57	63	+6	No
R39 – Residence	B	67	56	62	+6	No
R40 – Residence	B	67	62	64	+2	No
R41 – Residence	B	67	60	62	+2	No
R42 – Church	D	52	41	42	+1	No

Receiver	NAC Category	NAC Level	Existing 2014	Predicted 2039	Change (+/-)	Noise Impact
R43 – Residence	B	67	65	65	0	No
R44 – Residence	B	67	67	66	-1	Yes
R45 – Residence	B	67	66	65	-1	No
R46 – Residence	B	67	67	65	-2	No
R47 – Residence	B	67	61	62	+1	No
R48 – Residence	B	67	59	61	+2	No
R49 – Residence	B	67	64	67	+3	Yes

Some of the receivers (R23, R33, R44, R45 and R46) as shown in **Table 6** have a decrease in dB(A) between the existing 2014 and the proposed 2039 noise levels. This is caused by the existing mainlanes shifting from their current position further away from these receivers. As a result, the receivers' noise levels decreased even though the mainlane traffic increased.

As indicated in **Table 6**, the proposed project would result in traffic noise impacts and the following noise abatement measures were considered: traffic management, alteration of horizontal and/or vertical alignments, acquisition of undeveloped property to act as a buffer zone and the construction of noise barriers.

Before any abatement measure can be proposed for incorporation into the project, it must be both feasible and reasonable. In order to be "feasible," the abatement measure must be able to reduce the noise level at greater than 50% of impacted, first row receivers by at least five dB(A); and to be "reasonable," it must not exceed the cost-effectiveness criterion of \$25,000 for each receiver that would benefit by a reduction of at least five dB(A) and the abatement measure must be able to reduce the noise level at least one impacted, first row receiver by at least seven dB(A).

Traffic management – Control devices could be used to reduce the speed of the traffic; however, the minor benefit of one dB(A) per five mph reduction in speed does not outweigh the associated increase in congestion and air pollution. Other measures such as time or use restrictions for certain vehicles are prohibited on state highways.

Alteration of horizontal and/or vertical alignments – Any alteration of the existing alignment would displace existing businesses and residences, require additional right-of-way and not be cost effective/reasonable.

Buffer zone – The acquisition of undeveloped property to act as a buffer zone is designed to avoid rather than abate traffic noise impacts and, therefore, is not feasible.

Noise Barriers – This is the most commonly used noise abatement measure. Noise barriers were evaluated for each of the impacted receiver locations.

R2, R21, and R22 - these receivers are separate, individual residences. Noise barriers that would achieve the minimum feasible reduction of 5 dB(A) while achieving a 7 dB(A) noise reduction design goal at each of these receivers would exceed the reasonable, cost-effectiveness criterion of \$25,000.

R4, R5, R7, R9, R25, R34, and R49 - These receivers are separate individual residences. Noise barriers were considered for each of these receivers. These receivers represent a total of 7 residences with driveways connecting to US 59. A continuous noise barrier would restrict access to these residences. Gaps in a noise barrier would satisfy access requirements but the resulting non-continuous barrier segments would not be sufficient to achieve the minimum, feasible reduction of 5 dB(A) or the noise reduction design goal of 7 dB(A).

R3 - This receiver represents a park, which is a Category C receiver. According to TxDOT's *Guidelines for Analysis and Abatement of Roadway Traffic Noise*, for Category C land use facilities, the following procedure is used to determine the equivalent number of residences to assess cost effectiveness. Category C receivers require an equivalent number of residences in order to determine a noise barrier's cost effectiveness. To calculate an equivalent number of residences for this park, the land area of this park needs to be divided by the representative receptor single family residential lot size development within the study area. The land area for this park was determined using a method for finding the equivalent number of residences for a park that is described in the Federal Highway Administration's (FHWA) *Highway Traffic Noise Analysis and Abatement Guidance*. This approach involves dividing the land area of the portion of the park that is within the noise impact contour of 66 dB(A) by the representative receptor single family residential lot size. The 66 dB(A) noise impact contour was used because this is the noise impact for a Category C receiver. As shown in **Table 7**, the distance to the noise impact contour of 66 dB(A) for the area that contains this park is 270 feet from the existing US 59 ROW. However, between US 59 and this park, there is an existing railroad. The railroad ROW is 100 feet wide. Therefore, to calculate the land area of the park, the width of the park within the 66 dB(A) contour is 170 feet. The land area for this park that is within the 66 dB(A) contour is approximately 386,999 square feet. The representative receptor single family residential lot size development within the study area was determined to be 18,876 square feet. When 386,999 square feet is divided by 18,876 square feet, the equivalent number of residences for this park equates to 20.5. When rounded up to the nearest whole number, it was determined that the equivalent number of residences for this park is 21. This park represents a total of 21 receivers.

A 2,166 foot long noise barrier was modelled along the US 59 western ROW that is between US 59 and the park. A noise barrier 2,166 feet in length and 16 feet in height would reduce noise levels by the minimum feasible reduction of at least 5 dB(A) for 21 benefitted receivers and at least one of these receivers would have the noise reduction design goal of greater than 7 dB(A). However, based on preliminary calculations, a noise barrier 2,166 feet in length and 16 feet in height would cost \$623,808 or \$29,705 for each benefitted receiver. This noise barrier would exceed the cost-effectiveness criterion of \$25,000 for each benefitted receiver.

A 2,155 foot long noise barrier was modelled west of the railroad ROW that abuts the park. This noise barrier is on park property and is shorter in length than the noise barrier above to allow for an existing access road into the north end of the park. A noise barrier 2,155 feet in length and 14 feet in height would reduce noise levels by the minimum feasible reduction of at least 5 dB(A) for 21 benefitted receivers and at least one of these receivers would have the noise reduction design goal of greater than 7 dB(A). However, based on preliminary calculations, a noise barrier 2,155 feet in length and 14 feet in height would cost \$543,060 or \$25,860 for each benefitted receiver. This noise barrier would exceed the cost-effectiveness criterion of \$25,000 for each benefitted receiver.

R11 - This receiver represents a cemetery. This cemetery would be considered a second row receiver. Therefore, a noise barrier in front of this cemetery would not be able to reduce the noise level at greater

than 50% of impacted, first row receivers by the minimum feasible reduction of at least 5 dB(A) or by the noise reduction design goal of 7 dB(A) for at least one impacted first row receiver. Therefore, a noise barrier would not be feasible and reasonable.

R12, R13, R14 and R15 - These receivers are separate individual residences. Noise barriers were considered for this group of receivers. These receivers represent a total of four residences with driveways connecting to US 59. A continuous noise barrier would restrict access to these residences. Gaps in a noise barrier would satisfy access requirements but the resulting non-continuous barrier segments would not be sufficient to achieve the minimum, feasible reduction of 5 dB(A) or the noise reduction design goal of 7 dB(A).

R26, R27 and R28 - These receivers are separate individual residences. Noise barriers were considered for this group of receivers. These receivers represent a total of three residences with driveways connecting to US 59. A continuous noise barrier would restrict access to these residences. Gaps in a noise barrier would satisfy access requirements but the resulting non-continuous barrier segments would not be sufficient to achieve the minimum, feasible reduction of 5 dB(A) or the noise reduction design goal of 7 dB(A).

R44 - This receiver is located in a group of eight homes and one church (R40 – R48). Noise barriers were modeled along the ROW at this location. A noise barrier 1,341 feet in length and 16 feet in height would reduce noise levels by the minimum feasible reduction of at least 5 dB(A) for five benefitted receivers and at least one of these receivers would have the noise reduction design goal of greater than 7 dB(A). However, based on preliminary calculations, a noise barrier 1,341 feet in length and 16 feet in height would cost \$381,312 or \$76,262 for each benefitted receiver. This noise barrier would exceed the cost-effectiveness criterion of \$25,000 for each benefitted receiver.

None of the above noise abatement measures would be both feasible and reasonable: therefore, no abatement measures are proposed for this project.

To avoid noise impacts that may result from future development of properties adjacent to the project, local officials responsible for land use control programs must ensure, to the maximum extent possible, no new activities are planned or constructed along or within the following predicted 2039 noise impact contours.

Table 7: 2039 Noise Impact Contours

Land Use	Impact Contour	Distance from ROW
East side of US 59 from CR 271 to FM 647		
NAC Category B & C	66 dB(A)	210 feet ¹
NAC Category E	71 dB(A)	50 feet ^{1& 2}
East side of US 59 from FM 647 to FM 1160		
NAC Category B & C	66 dB(A)	90 feet ¹
NAC Category E	71 dB(A)	Inside ROW ¹
East side of US 59 from FM 1160 to FM 441		
NAC Category B & C	66 dB(A)	160 feet ¹
NAC Category E	71 dB(A)	55 feet ^{1& 2}
East side of US 59 from FM 441 to Business 59 south of El Campo		
NAC Category B & C	66 dB(A)	155 feet ¹
NAC Category E	71 dB(A)	40 feet ^{1& 2}
East side of US 59 from Business 59 north of El Campo to CR 456		

Land Use	Impact Contour	Distance from ROW
NAC Category B & C	66 dB(A)	210 feet ¹
NAC Category E	71 dB(A)	Inside ROW ¹
East side of US 59 from CR 456 to FM 961		
NAC Category B & C	66 dB(A)	210 feet ¹
NAC Category E	71 dB(A)	50 feet ^{1 & 2}
East side of US 59 from FM 961 to FM 102		
NAC Category B & C	66 dB(A)	150 feet ¹
NAC Category E	71 dB(A)	Inside ROW ¹
East side of US 59 from FM 102 to Business 59		
NAC Category B & C	66 dB(A)	150 feet ³
NAC Category E	71 dB(A)	Inside ROW ³
East side of US 59 from Business 59 to Wharton/Fort Bend County Line		
NAC Category B & C	66 dB(A)	210 feet ²
NAC Category E	71 dB(A)	20 feet ²
East side of US 59 from Wharton/Fort Bend County Line to FM 2919		
NAC Category B & C	66 dB(A)	325 feet ¹
NAC Category E	71 dB(A)	125 feet ¹
West side of US 59 from the CR 271 to FM 647		
NAC Category B & C	66 dB(A)	210 feet ³
NAC Category E	71 dB(A)	50 feet ³
West side of US 59 from FM 647 to FM 1160		
NAC Category B & C	66 dB(A)	200 feet ³
NAC Category E	71 dB(A)	50 feet ³
West side of US 59 from FM 1160 to FM 441		
NAC Category B & C	66 dB(A)	160 feet ³
NAC Category E	71 dB(A)	15 feet ³
West side of US 59 from FM 441 to Business 59 south of El Campo		
NAC Category B & C	66 dB(A)	190 feet ³
NAC Category E	71 dB(A)	40 feet ³
West side of US 59 from Business 59 north of El Campo to CR 456		
NAC Category B & C	66 dB(A)	150 feet ³
NAC Category E	71 dB(A)	Inside ROW ³
West side of US 59 from CR 456 to FM 961		
NAC Category B & C	66 dB(A)	165 feet ³
NAC Category E	71 dB(A)	18 feet ³
West side of US 59 from FM 961 to FM 102		
NAC Category B & C	66 dB(A)	150 feet ¹
NAC Category E	71 dB(A)	Inside ROW ¹
West side of US 59 from FM 102 to Business 59		
NAC Category B & C	66 dB(A)	35 feet ¹
NAC Category E	71 dB(A)	Inside ROW ¹
West side of US 59 from Business 59 to Wharton/Fort Bend County Line		
NAC Category B & C	66 dB(A)	210 feet ³
NAC Category E	71 dB(A)	20 feet ³
West side of US 59 from Wharton/Fort Bend County Line to FM 2919		
NAC Category B & C	66 dB(A)	270 feet ¹
NAC Category E	71 dB(A)	110 feet ¹

¹Distances are measured from the existing US 59 ROW. ²Locations are within existing railroad ROW adjacent to US 59 ROW.

³Distances are measured from the proposed US 59 ROW.

Noise associated with the construction of the project is difficult to predict. Heavy machinery, the major source of noise in construction, is constantly moving in unpredictable patterns. However, construction normally occurs during daylight hours when occasional loud noises are more tolerable. None of the receivers 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. 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.

2.11 Hazardous Materials

A Hazardous Materials Technical Report has been completed for the proposed project and is on file at TxDOT. The results are summarized below.

An initial hazardous materials assessment was conducted for the proposed project to identify sites within the project area that may have experienced soil and/or groundwater contamination by hazardous materials. The assessment consisted of a regulatory/governmental agency database records review and an onsite investigation.

Five active service stations, one active warehouse that formerly maintained PST's, and one oil/gas well would be displaced under the Build Alternative. ROW would be acquired without displacement of the facility from three other service stations and four other industrial or agricultural facilities maintaining PST's. There is no documented unresolved soil or groundwater contamination at any of these facilities; however, the presence of PST's on these facilities indicates that thus-far undetected contamination is possible. These sites are considered moderate risk to the proposed project. They would be further assessed by TxDOT prior to or during ROW acquisition to determine the likelihood of encountering contaminated soils and groundwater during construction activities. These assessments may include sampling of soil or groundwater in the vicinity of proposed excavations. If warranted, remediation activities would then be completed prior to construction to address contaminated soil/groundwater impacting the construction zone. Waste management plans would be in-place to address contamination during construction activities, if remediation is not complete prior to construction.

The proposed project would require the demolition of several structures, including both bridges and buildings. The Texas Department of State Health Services (DSHS) Texas Asbestos Health Protection Rules (25 TAC §295.31 through §295.73) and the US EPA 40 CFR 61, Subpart M – National Emissions Standards for Hazardous Air Pollutants (NESHAPS) require a survey for Asbestos Containing Materials (ACM) and a 10 working day, predemolition notification prior to the renovation or demolition of any public structure. The DSHS has determined that span bridges are public structures. As such, inspections for asbestos containing materials would be required. The structures would be surveyed for ACM and abated, if asbestos is present, by properly trained and licensed individuals prior to renovation or demolition.

The proposed project includes the demolition and removal of bridge and building structures. At this time no ACM or Lead-Based Paints (LBP) surveys are known to have been performed. Any LBP inspection, specification, notification, license, accreditation, abatement and disposal as applicable would be in compliance with Federal and State regulations. Coordination with DSHS may be required ten working days prior to construction.

During any construction project, there exists the potential to encounter contaminated soil or water. Included in the contract would be the TxDOT standard specifications for construction that require the contractor to be familiar with and comply with all federal, state, and local laws, ordinances, and regulations related to the treatment and disposal of hazardous materials. Should hazardous materials/substances be encountered, the TxDOT Yoakum District Office (dependent on location within the project area) would be notified and steps would be taken to protect personnel and the environment.

The contractor would respond appropriately to prevent, minimize, and control the spill of hazardous materials in the construction staging area. The use of construction equipment, particularly the storage of fuels and chemicals, within sensitive areas, including water resources such as floodplains and streams, would be minimized or eliminated. Any unanticipated hazardous materials and/or petroleum contamination encountered during construction would be handled according to applicable federal, state, and local regulations per TxDOT Standard Specifications. All construction materials used for this project would be removed as soon as work schedules permit.

2.12 Visual Impacts

Any environmental effects anticipated may result from elevating freeway lanes, additional highway lighting systems, and other visual elements introduced to the corridor. Elevated lanes may impact visual quality and aesthetics by blocking the line-of-sight for sensitive viewers and by increasing viewer exposure. Highway lighting systems sometimes cause disruptions to adjacent neighborhoods by creating unacceptable light levels at night. Any structure added to the US 59 infrastructure may create visual contrast if not designed to match or complement the appearance of existing structures.

Visual and aesthetic resources within the project area were identified through field survey. Most of the visual and aesthetic resources within the project area are undeveloped open spaces dedicated to farming. Woodlands are present along and in close proximity to the Colorado and San Bernard Rivers and the East Fork of Jones Creek, as well as along an approximately ½-mile segment immediately north of FM 961. Commercial/industrial areas are visible in the urbanized sections of the project area, and individual properties of these types occur occasionally throughout the corridor.

Temporary impacts on the visual character of the surrounding environment related to construction activities include those related to vehicle and equipment activity, construction staging, stockpiling of excavated material, temporary signage, and traffic congestion. Developed and naturally vegetated areas within the existing and proposed ROW may be cleared for the construction of the roadway lanes, and topography would be modified to fill slope and cut slopes for retaining walls. Construction activities would result in increased levels of dust, indirect transfer of dirt between locations, and localized glare from lighting sources assembled to ensure the safety of construction crews and vehicle drivers. Staging areas would be located away from visually sensitive areas where practicable and where land is available. Construction activities would be primarily limited to daylight hours to eliminate the need to use high-wattage lighting sources to operate during nighttime hours. Revegetation would take place in areas disturbed during construction.

The construction of the proposed project would permanently change views and the visual quality of the corridor due to an expanded roadway width and grade changes. Removal of vegetation in the form of scattered trees and hedges along the new ROW would result in a reduction of vegetative screening, as residences currently shielded from US 59 would have an unrestricted view of the newly-widened roadway. Additional light impacts may result from new illumination, particularly at interchanges with state highways.

Construction of the roadway in new ROW would possibly result in homes and businesses being located closer to the roadway. Commercial and residential structures located near elevated structures would have a new visual component introduced to their viewscape. The elevated structures that would be constructed as part of the proposed project would all consist of overpasses on the US 59 mainlanes at various intersecting roads. Proposed overpasses resulting in changes in local viewscales are listed in **Table 8**.

Table 8: Proposed Overpasses Altering Viewscales

Proposed Overpass on US 59	Addition of new structure to viewscape, or replacement of an existing structure?
FM 647, SW side of Louise	Replacement of existing overpass (FM 647 over US 59)
FM 1160 in Louise	Replacement of existing overpass (FM 1160 over US 59)
FM 441 in Hillje	Replacement of existing overpass (FM 441 over US 59)
CR 357 NE of Hillje	New structure
CR 456 in Pierce	New structure
Entrance to Wharton Municipal Airport	New structure
FM 1161 in Hungerford	Replacement of existing overpass (FM 1161 over US 59)
New access road NE of Hungerford @ check station	New structure

New bridges over waterways would be constructed at the same grade as the existing roadway; as such, they are not considered elevated structures for the purposes of the above discussion. At most crossings their visual impact would be the same as the new frontage road of which they would be a part. The viewscape of persons using the Colorado River or its shorelines near US 59 for recreation, however, would be altered by the addition of new frontage road bridges on either side of the existing bridges. Because these two bridges are part of the existing viewscape, however, the addition of two parallel frontage road bridges is not considered a substantial impact.

Overall, the proposed US 59 project would not have substantial impacts on visual quality and aesthetics.

The No-Build Alternative would not affect the existing visual quality and aesthetics of the US 59 corridor.

2.13 Construction Impacts

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: <http://www.tceq.state.tx.us/implementation/air/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.

2.14 Aviation Impacts

There is one airport located within close proximity to the proposed project. Wharton Regional Airport is located on the south side of Wharton on the east side of US 59 located off of Wharton Municipal Airport Road. Based on current design, none of the protected airspaces at Wharton Regional Airport such as the approach surfaces are anticipated to be impacted by the proposed US 59 project. Once a more detailed design is obtained, coordination with the Federal Aviation Administration (FAA) would be initiated with the submittal of the required FAA Form 7460-1.

2.15 Public Involvement

TxDOT conducted two public meetings concerning the proposed upgrade of US 59 through Wharton County to Interstate Highway standards from FM 2919 to FM 710. The first public meeting was held on May 6, 2014, at the El Campo Civic Center located at 2350 North Mechanic Street in El Campo, Texas. The second public meeting was held on May 8, 2014 at the City of Wharton Civic Center located at 1924 North Fulton Street in Wharton, Texas. The purpose of the meetings was to gather public input on the US 59 project.

The Notice of Public Meeting was published on April 9, 2014, and April 26, 2014, in the El Campo Leader-News and on April 5, 2014, and April 26, 2014, in the Wharton Journal-Spectator. A copy of the notice was mailed to adjacent property owners and other individuals who had expressed interest about the proposed project.

Both public meetings were held in an open house format from approximately 5:30 p.m. to 7:30 p.m. Registration desks were located at the entrances of the Civic Centers where attendees were invited to sign-in. Each person was provided with a pre-addressed comment form to share their thoughts regarding the proposed project and a project fact sheet which contained a brief project description, purpose and need of the proposed project, schedule and existing and proposed typical sections. Three elected officials, one representative from the media and 62 members of the public signed in at the El Campo public meeting. Four elected officials, one representative from the media and 61 members of the public signed in at the Wharton public meeting.

Citizens were given an opportunity to view the various exhibits that were on display. Exhibits included a welcome board, study area map, purpose and need, project description, typical sections, project schedule, how to make comments and large-scale schematic layouts of the proposed project overlaid onto aerial photographs. Additionally, project management staff was available to provide information and answer questions from citizens regarding the proposed project.

The public was encouraged to ask questions and make comments. All verbal questions and comments were immediately responded to at the meetings.

The comment forms and e-mails were received during the comment period following the public meetings. Although several comments stated support for the proposed project, many of the comments

received expressed concern about access to businesses and property. Common reasons for opposition included impacts to private property and impacts to businesses.

A public meeting summary for the proposed project containing all the public comments and TxDOT responses has been completed and filed with TxDOT.

3.0 INDIRECT AND CUMULATIVE IMPACT ANALYSIS

3.1 Indirect Impacts

Indirect impacts are defined as those caused by an action and are later in time or farther removed in distance, but still reasonably foreseeable. Indirect impacts are not directly associated with the construction and operation of the roadway and are often caused by related development and growth. This, in turn, can result in a variety of related impacts such as changes in land use, population density or growth rate, economic vitality, and impacts on air and water and other natural resources. Under the federal CEQ regulations, an indirect impacts analysis must identify and eliminate issues which are not significant or which have been covered by prior environmental review, while determining which issues should be analyzed in-depth. The analysis generally includes the following efforts:

1. Identifying the study area
2. Considering goals and directions of the study area
3. Identifying notable features within the study area
4. Evaluating project impact-causing activities
5. Assessing potentially significant indirect impacts
6. Assess consequences and consider mitigation (as appropriate)

Step 1 – Study Area

Conventional methods of determining the Area of Influence (AOI) usually include adopting political and/or geographical boundaries, using the project commutershed, or using the next major parallel roadway as an AOI boundary. These methods proved unreasonable for US 59 as there are no real natural or political boundaries that extended along the entire project; land use is primarily agricultural along the proposed project, the roadway has a small commutershed between the cities and towns; and the next major parallel roadways ranged from 7 to 32 miles away (US 90A) on the northside to 9 to 28 miles away on the south side (SH 111 and SH 36). Using conventional methods would make the AOI too large and unmanageable. The next step was to look at other projects that share similar characteristics as US 59 and how the AOI was determined for those projects.

One such project was US 77 from US 83 in Harlingen, Texas to IH 37 in Corpus Christi, Texas. US 77 is being upgraded to interstate standards and a large portion of the project exists in rural locations. Like US 59, US 77 had a small commutershed, no parallel roadways and no real natural or political boundaries that extended along the entire project. After discussion with local US 77 stakeholders via conference calls, the limit of the geographical boundaries of the indirect effects study area was determined to be up to 0.5 mile from the existing and proposed ROW. This distance takes into account any indirect impacts (i.e., encroachment alteration induced growth effects, and effects related to induced growth) that may occur to ecological resources and air quality. This methodology was reviewed and approved by FHWA in July 2012.

Since the two projects share extremely similar circumstances, the US 77 methodology was applied to the US 59 improvement project. Local officials and stakeholders were contacted and the AOI was presented for their comments. According to the officials and stakeholders, most areas along the corridor are

private rural ranch and agricultural lands where development is not anticipated nor desired in the foreseeable future. The consensus was that most direct and indirect impacts would occur close to the roadway corridor and that motorists using facilities outside of the AOI would not generally be influenced in their choice of routes by the proposed project. In addition, most commuters travel from town to town and make brief stops at gas stations/convenient stores and restaurants, or are trucks carrying goods from the northern United States and Mexico to various cities along the corridor. US 59 is primarily a through-traffic roadway. Based on the officials and stakeholders comments the 0.5 mile boundary was used for the AOI (see **Table 9** for a list of interview participants).

Table 9: Local Interview Participants

Community	Organizations
Wharton County	Wharton County Engineering Department
Wharton	Executive Director - Wharton Economic Development Corporation
El Campo	Executive Director - City Development Corporation
El Campo	President - El Campo Chamber of Commerce & Agriculture
Louise	Louise ISD

The AOI encompasses approximately 25,248 acres or approximately 39.45 square miles of land. **Exhibit F** depicts the AOI for the proposed project. **Table 10** below depicts the land use types within the AOI and their acreage amounts.

Table 10: Land Use Within the AOI

Land Use Type	Acres
Open Water	190
Developed	4,325
Barren Land	43
Forest	1,441
Shrub/Scrubland	1,033
Agriculture	17,401
Wetlands	815
Total:	25,248

Source: National Land Cover Dataset

The temporal boundary for the indirect impacts analysis was determined to be through the horizon year of 2035, consistent with other Texas regional transportation and planning organizations and planning horizons.

Step 2 – Goals and Directions of Study Area

The goals and directions of the study are independent of the proposed transportation project and typically concern social, economic, ecological and/or growth-related issues.

The AOI encompasses the Cities of Wharton, Hungerford, El Campo and Louise. The project area is primarily undeveloped land use with growing commercial and industrial development. The commercial development includes retail, restaurant and office space. Light industrial development is interspersed throughout the area.

Existing and platted subdivisions are located adjacent to the proposed project mostly around the cities and towns. The AOI is primarily rural, with higher density development located in Cities of Wharton and El Campo. In the past years, residential and commercial development has continued in the AOI. This region attracts both population and employment. According to local officials and stakeholders, future land development is expected to occur around the cities within the AOI especially the Cities of Wharton and El Campo.

Table 11 identifies the historical population for Wharton County and the Cities of Wharton, El Campo, Louise and Hungerford. From 2000 to 2010, the historical data identifies an increase in population growth for Wharton County, El Campo and Louise, but a decrease of population in the Cities of Wharton and Hungerford.

Table 11: Historical Population

Location	2000	2010	Percent Change
Wharton County	41,188	41,280	+0.2%
City of Wharton	9,237	8,832	-4.4%
City of El Campo	10,795	11,602	+6.9%
City of Louise	977	995	+1.8%
City of Hungerford	645	347	-46.2%

Source: 2010 US Census

Based on the goals and trend, the AOI is maintaining a mostly rural context with a majority of the land use being agricultural and ranch lands. Although there has been a decrease in population in some of the cities, the communities of this region of the AOI desire to maintain and grow the economy, through development of industry to meet the current and future needs of their populations.

Step 3 – Notable Features within Study Area

The AOI for the proposed project consists mostly of agricultural and vacant land, followed by residential land and commercial development. Notable features on the landscape are listed below:

1. There are six towns within the AOI. The towns are Louise, Hillje, El Campo, Pierce, Wharton, Hungerford and Kendleton.
2. There are two parks within the AOI. The parks are King-Kennedy Memorial Park and Harris Park.
3. There is one hospital located within the AOI. The hospital is the Gulf Coast Medical Center in the City of Wharton.
4. There is one school located within the AOI. The school is Louise High School.
5. There are six cemeteries located within the AOI. The cemeteries are St. John the Baptist Church Cemetery, Peach Creek Cemetery, Garden of Memories Cemetery, Little Zion Cemetery, St. Phillips Cemetery, and St. Andrews Church Cemetery.
6. There is a Texas Department of Public Safety station located within the AOI.
7. There is one airport located within the AOI. The airport is Wharton Regional Airport.
8. The project is within range and suitable habitat for Bald or Golden Eagles and habitat for the species may occur within the AOI.

Step 4 – Project Impact-Causing Activities

The proposed project consists of a four-lane divided freeway facility (two 12-foot lanes in each direction) with 4-foot inside shoulders and 12-foot outside shoulders divided by a depressed grass median that varies from 34 to 62 feet in width. The freeway facility would have continuous frontage roads (two 12-foot lanes in each direction) with 10-foot outside shoulders and 4-foot inside shoulders. Drainage would be open ditch. The following impact-causing activities were identified:

- *Land Transformation/Land Alternation and Construction* – The build alternative would require 441 acres of ROW and approximately 382.6 acres of cropland, 52.6 acres of woodlands, and 0.8 acres of riparian vegetation would be lost through their conversion to transportation infrastructure and maintained ROW.
- *Travel and Access Alteration* – Per interstate standard requirements, existing crossovers between northbound and southbound mainlanes would be removed and at grade intersections would be removed/replaced. These requirements would cause minor alterations to travel patterns. Access to businesses would be maintained through frontage roads accessible via off and on ramps. Although the proposed addition or alteration of frontage roads may alter access to some businesses and neighborhoods, the changes in access would be limited to the adjustment of existing entry and/or exit driveways.

Step 5 – Potentially Significant Indirect Impacts

According to National Cooperative Highway Research Program (NCHRP) Report 466, the CEQ defines three broad categories of indirect impacts:

1. Encroachment-Alteration: alteration of the behavior and functioning of the affected environment caused by project encroachment (physical, chemical, biological) on the environment;
2. Induced Growth: project-influenced development impacts (i.e., the land use effect); and
3. Impacts Related to Induced Growth: impacts related to project-influenced development impacts (i.e., impacts of the change in land use on the human and natural environment).

The planning judgment method used to identify indirect impacts was primarily qualitative. This technique focused on the elements or indicators that characterize the study area using ecological, economic, demographic, and social information and data from the baseline investigations.

Encroachment-Alteration Impacts

Encroachment-alteration impacts are defined as the alteration of the behavior and functioning of the affected environment caused by project encroachments.

Ecological Encroachment-Alteration Impacts

Potential indirect impacts were identified and examined for the potential to be substantial. The build alternative would require 441 acres of additional ROW and convert 382.6 acres of cropland, 52.6 acres of woodlands, and 0.8 acres of riparian vegetation to a transportation facility. The amount of ROW required is approximately 1.7 percent of the land within the AOI. Other than the acquisition of land for the proposed facility, land use in the project area is not anticipated to be substantially impacted. Project biologists and ecologists have determined that there would be no substantial ecological encroachment-alteration impacts as a result of the construction of the proposed project. The following details the findings of the ecological encroachment alteration impacts.

The loss of wildlife habitat from the project would occur within the proposed ROW. The proposed projects would require 441 acres of ROW, approximately 1.7 percent of the land within the AOI. The proposed project could increase the number of animals being struck by vehicles, as it would construct frontage roads where ones currently do not exist. No wildlife corridors were observed in the project area, but bridge structures and large culverts would provide safer crossing points for wildlife. The proposed project would be designed per current TxDOT standards and specifications requiring appropriate site distances and clear zones so that drivers could see deer and other large wildlife that may enter the ROW. While wildlife mortality is possible, for the above reasons it is not expected to be substantial. Based on site visits conducted, the proposed project is not anticipated to result in the take of Bald or Golden Eagles or their nests. No takes of any federally-listed threatened or endangered species or their habitat are anticipated.

Undeveloped areas within the AOI that are located near existing residential, retail/commercial, and other development would likely be the initial areas consumed to accommodate anticipated population and employment growth. Human disturbance and activity levels in these areas may not be conducive to supporting large numbers or diverse species of wildlife. Undeveloped areas that are more remote from existing development would not be expected to undergo major land use changes in the near term. Such areas, which may be only minimally disturbed by human activities, would continue to provide habitat for indigenous and migratory wildlife. However, regional population and economic growth may exert development pressure on many of these undeveloped tracts.

Any impacts to threatened and endangered species due to construction by others within the AOI would be addressed through compliance with the Endangered Species Act. Given the above-referenced information, fragmentation of habitat and impacts to threatened and endangered species are not considered substantial as a result of the proposed project and are not carried forward.

The wetland determinations resulted in the identification of sixteen potentially jurisdictional Waters of the U.S. water crossings. Seven of these contained potential wetlands. The proposed project would not alter the hydric regime or reduce diversity within the ecosystem. The roadway drainage for the proposed project would consist of open ditch channels. The proposed project could potentially impact up to sixteen water crossings which would be considered Waters of the U.S. and regulated by the USACE under authority of Section 404 of the CWA. A Nationwide Permit 14 is anticipated to be required for each single and complete crossing where impacts would occur below the ordinary high water mark. Storm water BMPs would be included in the design and construction of the proposed improvements in compliance with the TPDES storm water permit for construction activities, TXR150000. No long-term water quality impacts are expected as a result of the construction of the proposed project. Subsurface water would not be required for this project; therefore, no adverse impacts to groundwater are expected to occur. The proposed project is not expected to alter rainfall drainage patterns or contaminate or otherwise adversely affect the public water supply, water treatment facilities, or water distribution systems.

Segment 1302B_01 of West Bernard Creek which is listed as threatened/impaired for depressed dissolved oxygen on the 2012 EPA-approved 303(d) list exists with the AOI. Future development impacting West Bernard Creek would be expected to follow BMP's that would be used to control the depressed dissolved oxygen of the impaired water. Therefore, indirect impacts of existing and future development would not substantially contribute to the depressed dissolved oxygen of West Bernard Creek.

Impacts to water resources due to construction within the AOI would be addressed through compliance with local, state, and federal actions and policies. The following identifies the various actions and policies protecting water resources.

The USACE administers Section 404 of the CWA and operates under a “no net loss” policy for protected wetlands, requiring avoidance and minimization of impacts, and compensatory mitigation for unavoidable impacts. Executive Order 11990, Protection of Wetlands, directs federal agencies to minimize the destruction, loss, or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands. Public and private developers must identify impacts to jurisdictional wetlands and other jurisdictional waters of the U.S., in coordination with the USACE, prior to construction. Mitigation measures would be required to compensate for impacts to jurisdictional wetlands. Compensatory mitigation for non-jurisdictional waters of the U.S., including wetlands, would not be required as part of USACE permitting; therefore, functions provided by these waters may not be replaced. Because of the federal mandate with regard to wetlands, “no net loss” of wetlands is anticipated from any future land use.

In the State of Texas, the TPDES program implements the federal National Pollutant Discharge Elimination System (NPDES) program. The TCEQ administers storm water permits for construction projects disturbing at least five acres of land within the State of Texas. Therefore; any project that disturbs at least five acres of land would require a TPDES Construction General Permit (CGP) and a NOI would be required. Potential impacts to water quality would be mitigated through development and implementation of a SW3P, which would address measures to prevent or correct erosion that may develop during construction. Best Management Practices for temporary and permanent soil erosion and sedimentation controls would be implemented, along with measures to prevent/control hazardous material spills during construction. Storm water detention areas and vegetated open drainage ways with culverts would be designed to collect storm water discharges and to promote settling of suspended solids and reduce potential pollutant concentrations.

Future development that results in the conversion of agricultural and undeveloped land to residential, commercial, or industrial uses may require vegetation removal and result in increased erosion and water quality issues. Regardless of whether the forecasted development would be public or private, these activities may be required to coordinate with TCEQ and would have to comply with Sections 401 and 404 of the CWA, which regulates the fill or encroachment of these resources.

Future development within floodplains would be conducted in accordance with the National Flood Insurance Program (NFIP) and local regulations. Storm water detention facilities and hydraulic features would be used to offset potential increases in storm water flows due to the addition of impermeable cover, and to maintain the storage capacity of floodplains. Individual developments would be responsible for calculating and detaining additional runoff generated by the construction of impermeable surfaces, and maintaining conveyance capacities to accommodate expected flood flows.

Future developments would be expected to follow the guidelines of Section 305(B), Section 303(d), Section 401, and Section 404 of the CWA, which includes avoidance, minimization, and compensation; therefore, indirect impacts of future developments would not be substantially impacted. Future developments within floodplains would be expected to follow the guidelines of the NFIP; therefore, indirect impacts of existing and future development would not substantially impact the extent of the 100-year floodplain and therefore are not carried forward.

The proposed project is located in an area designated as in attainment or unclassifiable for all NAAQS. Based on the results of Steps 1 through 4 that evaluated the possible project-related actions that can indirectly impact air, it was anticipated that the proposed project would not cause substantial indirect air quality impacts in the AOI. No change in attainment status is anticipated within the study area as the result of emissions associated with the proposed project, which is projected to see annual average daily traffic of less than 140,000 vehicles in 2035. Indirect impacts on air quality and MSATs are primarily related to any expected development resulting from project's increased accessibility or capacity to the area. Any increased air pollutants or MSAT emissions resulting from the potential development of the area must meet regulatory emissions limits established by the TCEQ and EPA as well as obtain appropriate authorization from the TCEQ and therefore are not expected to result in any degradation of air quality or MSAT levels. No substantial indirect air quality impacts are anticipated.

Based on the information above, ecological encroachment-alteration impacts will not be carried forward to Step 6 for additional analysis.

Socioeconomic Encroachment-Alteration Impacts

Encroachment-alteration impacts to socioeconomic resources associated with the proposed project include impacts to land use, travel patterns and access. The proposed improvements of US 59 are expected to increase mobility and decrease travel time, which may lead to a potential growth of commercial business within the AOI. A decrease in traffic congestion, in conjunction with greater mobility, may lead economic growth for other businesses located along existing roadways within the AOI. The potential indirect economic impacts are not expected to disproportionately adversely affect low-income populations.

Based on the information above, socioeconomic encroachment-alteration impacts will not be carried forward to Step 6 for additional analysis.

Induced Growth Impacts and Impacts Related to Induced Growth

Induced growth impacts are those associated with new or improved access to adjacent land, as well as reduction in the time or cost of travel and other factors that may increase the attractiveness of adjacent land to developers and consumers. Impacts related to induced growth occur as a result of development induced by the proposed project. The proposed project will add continuous frontage roads the entire length of the project. Frontage roads are intended to facilitate local traffic moving through the project area from one side of US 59 to the other. The speed limit on the frontage roads would be 50 mph. According to officials and stakeholders, most areas along the corridor are private rural ranch and agricultural lands where development is not anticipated nor desired in the foreseeable future as a result of the proposed upgrades to US 59. Population growth within Wharton County is low with only 0.2 percent growth rate for the last ten years. Due to low-speed frontage roads, the rural nature of the area, and the county's low population growth rate, any indirect changes in land use would be expected to be localized around the cities and towns and are not anticipated to be regionally substantial. The frontage roads are anticipated to serve mainly local traffic and any induced growth impacts are anticipated to be minimal. Any expected development would most likely occur on parcels abutting the frontage roads and parcels within the cities and towns of the proposed project. Many of the parcels located adjacent to the proposed projects can be characterized as rural farm/ranch land, with scattered residential and commercial development around the cities and towns.

Eighty-three percent of AOI is agriculture/undeveloped land. Vegetation throughout the AOI consists primarily of agriculture with scattered forest, scrubland, and wetlands. Induced growth impacts to

vegetation would consist of converting farm and ranch land and undeveloped land into developed land uses, including commercial and residential development. Within the AOI, development along regional arterials and other area roadways is expected to trend towards residential development. As mobility and connectivity are improved within the AOI, reduced travel time to the southwest area of the Houston Metropolitan Area and other cities in the project area may result in growth in residential development serving those who wish to work in the city, but live in a more rural environment. Census data from 1960 to 2010 shows an approximate average percent increase in population of only 1.7 percent per decade. Based on analysis of the project area, forecasted development is expected to remain as scattered residential development within a rural landscape which would tend to preserve the natural surroundings within this portion of Wharton County. Impacts to vegetation would be assessed and addressed for future projects that might involve state and/or federal funds. Re-vegetation of state and federal roadway projects would occur through EO 13112 on Invasive Species and the Executive Memorandum on Beneficial Landscaping. Residential properties within the AOI trend toward wide-spread single family homes that tend to preserve the natural surroundings. Given the above-referenced information, indirect vegetation impacts are not considered substantial as a result of the proposed project and are not carried forward.

Although the proposed project is not considered to induce growth, but rather accommodate the already occurring and predicted population and employment growth in the area, the proposed project would provide increased mobility, which would facilitate the growth that is already occurring. Based on the information above, induced growth impacts and impacts related to induced growth will not be carried forward to Step 6 for additional analysis.

Step 6: Assess Consequences and Consider Mitigation (as appropriate)

Indirect impacts to land use are anticipated; however, they are not expected to be substantial. As determined in Step 5, none of the three indirect impact categories (encroachment-alteration, induced growth and impacts related to induced growth) are being carried forward for further analysis.

Frontage roads along US 59 would be constructed for the entire length of the project. Although they would make adjacent properties more accessible, the purpose of these frontage roads is to facilitate existing local traffic moving through the project area from one side of US 59 to the other. The speed limit on the frontage roads would be 50 mph. Due to the low-speed frontage roads and the rural nature of the area, any indirect changes in land use would be expected to be localized along US 59 and are not anticipated to be regionally substantial.

The proposed project would bring improvement to the project area's connectivity and travel safety and is also expected to improve regional connectivity within the AOI. These types of infrastructure improvements can stimulate growth in an area. A noise analysis has been conducted and noise impact contours have been developed. The noise analysis includes the distances from the ROW to the noise impact contours for residential and commercial land uses. A copy of the noise analysis will be available to local officials responsible for land use development permits to help ensure that no future development of incompatible land uses occur within the applicable noise impact contours.

Structures, paving, and other development components that may occur would introduce new visual elements into the viewshed. New structures would be more noticeable in areas that are currently undeveloped, as opposed to areas where existing development is present. Depending upon the type of proposed development and design specifications, visual mitigation measures could include the preservation of naturally vegetated areas or the incorporation of landscape features that might blend

with the existing landscape. The use of regionally native plants for landscaping could provide some continuity of vegetation between developed and undeveloped areas. There are no requirements that development projects mitigate for potential visual impacts. Incorporation of visual and aesthetic measures into development projects would be at the discretion of the individual developers.

It has been shown that Wharton County has been slowly increasing in population over the last several decades. Development and population growth are anticipated to continue to grow at that rate with or without the construction of US 59.

As stated previously, potential indirect impacts on vegetation, wildlife and threatened and endangered species, water resources, air quality, including MSATs, and many socioeconomic factors were evaluated and determined not to be substantial. Although there would be minor impacts to land use within the AOI, travel patterns and access, these impacts are a result of the existing population growth in the area, which is predicted to continue to increase in the future. Construction of the proposed project may facilitate the rate of the already occurring population and employment growth, as increased mobility and decreased travel time along regional arterials and other area roadways could lead to potential growth of residential and commercial businesses within the AOI.

Any impacts to jurisdictional waters associated with future development in the AOI would be documented, coordinated, and permitted through the USACE as necessary. The USACE would require consideration of compensatory mitigation in some instances. Also, any conversion of undeveloped land to residential, commercial, or industrial uses may require vegetation removal and could result in increased erosion and water quality issues. Private, government, and/or municipal entities may be required to coordinate with the TCEQ for impacts associated with water quality.

3.2 Cumulative Impacts

Cumulative impacts are those that 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. According to the CEQ's "*Considering Cumulative Effects under the National Environmental Policy Act*," an analysis of cumulative impacts generally includes scoping, identifying reasonably foreseeable actions, describing the effected environment, and determining the environmental consequences.

Scoping

As part of scoping, the cumulative impacts analysis must identify the significant cumulative impacts issues associated with the proposed action. Based on the guidance document titled *Revised Guidance on Preparing Indirect and Cumulative Impact Analyses* (TxDOT, 2010), if a project does not cause direct or indirect impacts on a resource, it would not contribute to a cumulative impact on the resource. The cumulative impact analysis should focus on: 1) those resources substantially impacted by the project; and 2) resources currently in poor or declining health or at risk even if the impact of the TxDOT's proposed action is minimal.

There are no resources that would be substantially impacted by the Recommended Alternative. Additionally, none of the resources in the project area are in poor or declining health. Based on the criteria laid out in TxDOT's guidance, no cumulative impacts analysis is warranted.

4.0 RECOMMENDATION OF THE PREFERRED ALTERNATIVE

4.1 Identification of the Preferred Alternative

TxDOT recommends the Build Alternative as the Preferred Alternative.

4.2 Support Rationale for Selecting the Preferred Alternative

The Build Alternative, the Preferred Alternative, would fulfill the stated needs for the transportation project and would satisfy the purpose of the proposed project.

The proposed improvements to US 59 would minimize and avoid, where possible, impacts to the natural and human environment. The proposed project would provide continuity with the continued growth in the area. Consideration of engineering, financial, and environmental constraints would result in acquiring 441 acres of additional ROW; 21 displacements: six residences, six commercial and nine other; and no impacts to federally listed threatened or endangered species.

As discussed in Chapter 1, the No Build Alternative would not meet interstate standards and would not safely and adequately accommodate existing and future traffic volumes on roadways within the study area. The No Build Alternative results in higher traffic volumes on existing roadways, which correlates to increased congestion and longer travel times on the existing roadways within the study area.

While construction costs for the No Build Alternative would be lower than the Build Alternative, the No Build Alternative would result in higher maintenance costs to existing roadways in the study area due to increased traffic volumes on those facilities. The No Build Alternative would also require additional short-term restoration and safety improvements to enhance the operation of the existing roadways. Additionally, compared to the Build Alternative, these maintenance improvements would have a greater increase in traffic disruptions along the existing roadways. For the No Build, traffic conditions would remain essentially unchanged, giving way to increasing traffic congestion and safety hazards.

The No Build Alternative would not offer a complete solution for improving mobility, safety, and network roadway system effectiveness and therefore does not meet the need and purpose of the proposed project.

4.3 Mitigation and Monitoring Commitments

Construction inspectors would monitor the construction phase of this proposed project. **Table 12** provides a list and brief explanation of the mitigation and monitoring activities that are part of the recommended Preferred Alternative.

Table 12: Mitigation and Monitoring Commitments

Project Issues and Resources	Type of Impact	Mitigation and Monitoring Commitments
Relevant Issues and Resources		
Right-of-Way	Acquisition of Additional ROW	TxDOT is responsible for acquiring real property in accordance with the provisions of Title III of the Uniform Act and Federal regulations which are based on Title III. Negotiations for right of way conducted by TxDOT personnel, or others on TxDOT's behalf, are subject to this law and these regulations.

Project Issues and Resources	Type of Impact	Mitigation and Monitoring Commitments
Relevant Issues and Resources		
Archeological Resources	Impacts to Archeological Deposits	Areas where no ROE was granted as of August 2015, but which fall within HPA or HHPA, are recommended for survey when access is granted to identify potential historic properties that may be impacted by the proposed undertaking. If it is determined that the proposed construction requires additional ROW in this portion of the overall APE, then additional archeological investigations may be necessary. In the event that previously unidentified cultural materials are discovered during construction, work in the immediate area of discovery would cease and TxDOT will be contacted.
Migratory Bird Treaty Act	Impacts to Habitat	The Migratory Bird Treaty Act of 1918 protects migratory birds, their nests, and eggs. Appropriate measures, including the following, would be taken to avoid adverse impacts on migratory birds. Between September 1 and February 15, the contractor would complete any necessary vegetation clearing. In addition, the contractor would be prepared to prevent migratory birds from building nests between February 15 and September 1, per the Environmental Permits, Issues and Commitments (EPIC) plan sheet. In the event that migratory birds are encountered onsite during project construction, adverse impacts on protected birds, active nests, eggs, and/or young would be avoided.
Threatened or Endangered Species	Impacts to Habitat	<p>The 2013 Memorandum of Understanding (MOU) between TxDOT and TPWD includes a Programmatic Agreement (PA) stipulating that Best Management Practices (BMPs) will be used to mitigate against possible impacts on species of concern. The following BMPs will be employed:</p> <p><u>Birds</u> (Bald Eagle, Western Burrowing Owl, Wood Stork):</p> <ul style="list-style-type: none"> -Not disturbing, destroying, or removing active nests, including ground nesting birds, during the nesting season; -Avoiding the removal of unoccupied, inactive nests, as practicable; -Preventing the establishment of active nests during the nesting season on TxDOT owned and operated facilities and structures proposed for replacement or repair; -Not collecting, capturing, relocating, or transporting birds, eggs, young, or active nests without a permit. <p>In addition, potential impacts on Bald Eagles will be further mitigated through compliance with the Bald and Golden Eagle Protection Act.</p> <p><u>Fish</u> (Blue Sucker): Coordinate with TPWD.</p> <p><u>Mammals</u> (Plains Spotted Skunk): Contractors will be advised of potential occurrence in the project area, and to avoid harming the species if encountered, and to avoid unnecessary impacts to dens.</p> <p><u>Freshwater Mussels</u> (Creeper [Squawfoot], False Spike Mussel, Smooth Pimpleback, Texas Fawnsfoot, Texas Pimpleback):</p> <ul style="list-style-type: none"> -When work is in the water; survey project footprints for state listed species where appropriate habitat exists. -When work is in the water and mussels are discovered during surveys; relocate state listed and SGCN mussels under TPWD permit and implement Water Quality BMPs.

Project Issues and Resources	Type of Impact	Mitigation and Monitoring Commitments
Relevant Issues and Resources		
Section 404	Impacts to Jurisdictional Waters	Sixteen potentially jurisdictional waters of the U.S. are present in the proposed project. Seven of these contained potential wetlands. Construction of improvements at each of these crossings is considered a single and complete project. As improvements at these stream crossings would not cause the loss of more than one-half of an acre of jurisdictional waters of the U.S., the proposed project would qualify for authorization under Nationwide Permit 14 (NWP 14), Linear Transportation Projects. The design of the bridges and culverts would comply with the conditions required for use of NWP 14. No individual permitting would be required for any crossing.
Water Quality	Storm Water Runoff from Construction	Runoff from this project would discharge directly into two impaired waters. At least one BMP from each of the three categories of onsite water quality management (erosion control, post-construction TSS control, and sedimentation control) would be used on the proposed project. Other approved BMPs may be substituted, if necessary, using one of the BMPs from the same category. Coordination with TCEQ will need to be completed for the proposed project.
Storm Water	Storm Water Runoff from Construction	The construction contractor would take appropriate measures to prevent, minimize and control the spill of fuels, lubricants, and hazardous materials in the construction staging area. BMP's would be implemented in accordance with the SW3P.
Texas Pollutant Discharge Elimination System	No Long-Term Water Quality Impacts	This project would include five or more acres of earth disturbance. TxDOT would comply with the TCEQ-TPDES-CGP. A SW3P would be implemented, and a construction site notice would be posted on the construction site. A NOI would be required.
Floodplains	Construction Impacts within the 100-year floodplain	Several areas of the proposed project are located in the 100-year floodplain. Coordination with the local Floodplain Administrator would be required.

Project Issues and Resources	Type of Impact	Mitigation and Monitoring Commitments
Relevant Issues and Resources		
Hazardous Materials	Accidental Disturbance of Hazardous Materials	<p>Five hazardous material sites are considered moderate risk to the proposed project. They will be further assessed by TxDOT prior to or during ROW acquisition to determine the likelihood of encountering contaminated soils and groundwater during construction activities. These assessments may include sampling of soil or groundwater in the vicinity of proposed excavations. If warranted, remediation activities would then be completed prior to construction to address contaminated soil/groundwater impacting the construction zone. Waste management plans would be in-place to address contamination during construction activities, if remediation is not complete prior to construction.</p> <p>The DSHS has determined that span bridges within the proposed project are public structures. As such, inspections for asbestos containing materials inspections would be required. The structures would be surveyed for ACM and abated, if asbestos is present, by properly trained and licensed individuals prior to renovation or demolition. LBP inspection, specification, notification, license, accreditation, abatement and disposal as applicable would be in compliance with Federal and State regulations. Coordination with Department of State Health Services (DSHS) may be required ten working days prior to construction.</p> <p>The contractor would take appropriate measures to prevent, minimize, and control spillage of hazardous materials in the construction staging area(s). All material being removed or disposed of by the contractor would be done in accordance with applicable State and Federal laws as not to degrade ambient water quality. All of these measures would be enforced under appropriate specifications in the plan, specification and estimate stage of project development.</p>
Construction	Traffic Detouring, Temporary Noise and Dust, etc.	Plans to ensure safe and efficient traffic flow during construction would be developed as part of the detailed construction plans for the proposed improvements. Other construction-related impacts (such as temporary air and noise effects) would be addressed in compliance with standard TxDOT policies and procedures.
Aviation	Protected Airspace	Once a more detailed design is obtained, coordination with the Federal Aviation Administration (FAA) would be initiated with the submittal of the required FAA Form 7460-1.
Invasive Species and Beneficial Landscaping	Beneficial	In accordance with the EO on Beneficial Landscaping Practices, landscaping would be limited to seeding and replanting the ROW with native plants where possible. The TxDOT-approved seeding specification that is in compliance with EO 13112 would be used to revegetate the ROW. As directed for all Federally assisted projects, regionally native plants would be used for landscaping where possible. Moreover, TxDOT would design and promote construction practices that minimize adverse effects on existing vegetation. Trees within the ROW, but not in the construction zone, would not be removed if possible and such areas would be preserved to try to minimize the impact to wildlife habitat in the area.

Project Issues and Resources	Type of Impact	Mitigation and Monitoring Commitments
Relevant Issues and Resources		
Invasive Species and Beneficial Landscaping	Beneficial	Permanent soil erosion control features would be constructed as soon as feasible during the early stages of construction through proper sodding and/or seeding techniques. Disturbed areas would be restored and stabilized as soon as the construction schedule permits and temporary sodding would be considered where large areas of disturbed ground would be left bare for a considerable length of time. In accordance with EO 13112 and the Executive Memorandum on Beneficial Landscaping, seeding and replanting with TxDOT approved seeding specifications that is in compliance with EO 13112 would be done where possible. Moreover, abutting turf grasses within the ROW are expected to re-establish throughout the project length. Soil disturbance would be minimized to ensure that invasive species would not establish in the ROW.

4.4 Recommendation for Alternative Selection and FONSI

The analysis of alternatives for the proposed project determined that improvements to US 59 proposed by the Build Alternative (the Preferred Alternative) would meet the need and purpose of the proposed project. Specifically, the Build Alternative would upgrade US 59 to interstate standards through Wharton County.

The engineering, social, economic, and environmental investigations conducted thus far on the proposed improvements to US 59, as proposed by the Build Alternative (the Preferred Alternative); indicate that the proposed project would result in no significant impacts of a level that would warrant an Environmental Impact Statement. Alternative selection would be finalized after completion of the public review period, which includes a public hearing. Unless significant impacts are identified as a result of public review or at the public hearing, a Finding of No Significant Impact (FONSI) would be prepared for this proposed project as a basis for Federal-aid corridor location approval.

5.0 REFERENCES

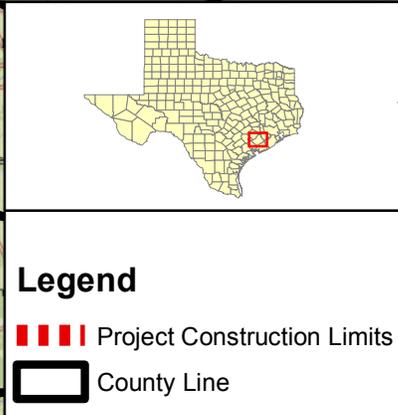
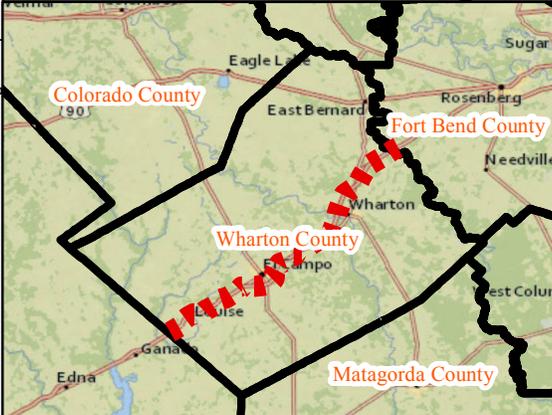
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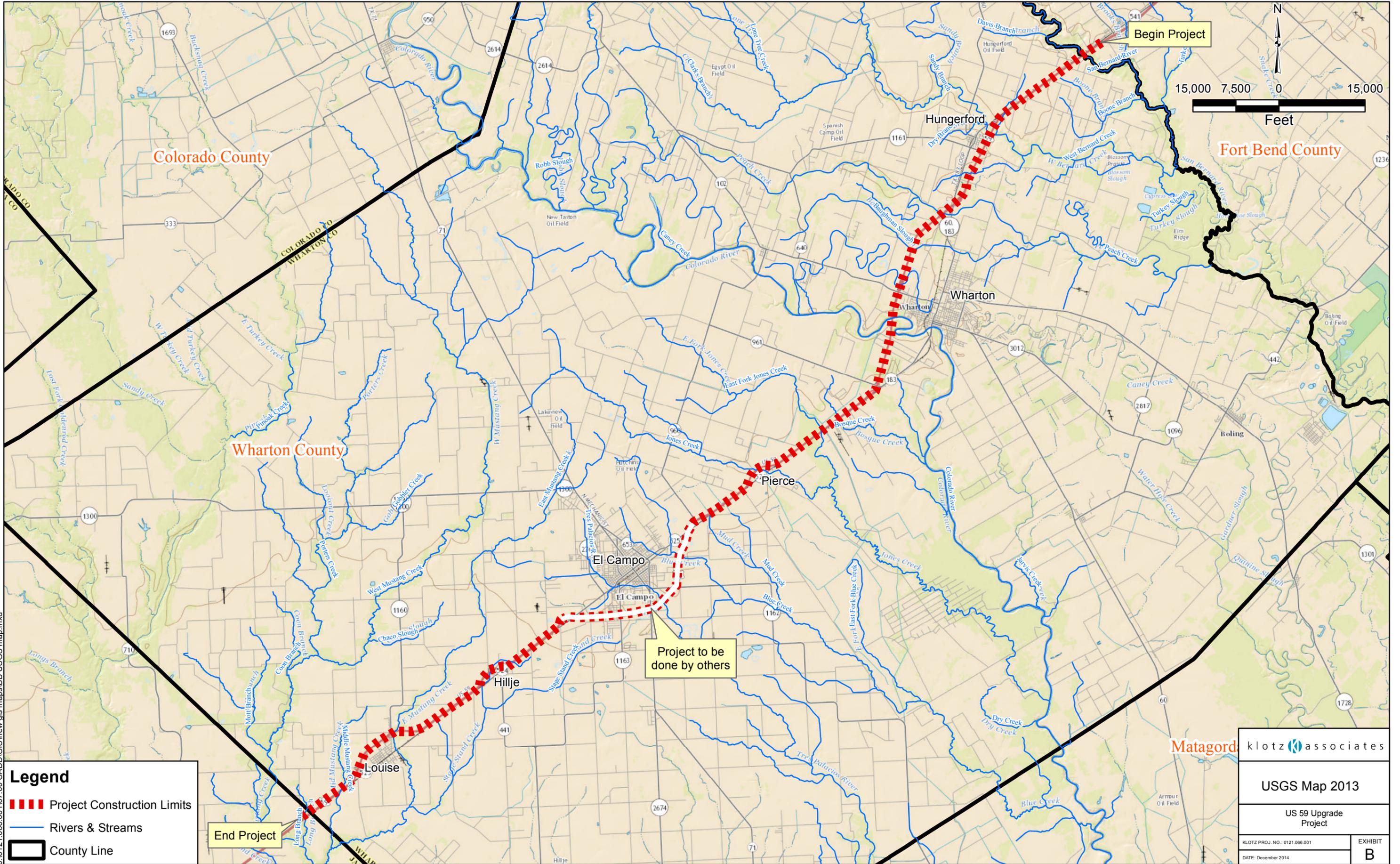
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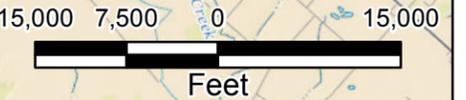
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Project Location Map	
US 95 Upgrade Project	
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DATE: December 2014	

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Source: National Geographic, ESRI (2012)



Begin Project



Feet

Fort Bend County

Colorado County

Wharton County

Hungerford

Wharton

Pierce

El Campo

El Campo

Hillje

Louise

Project to be done by others

End Project

Legend

- Project Construction Limits
- Rivers & Streams
- County Line

Matagorda klotz associates

USGS Map 2013

US 59 Upgrade Project

KLOTZ PROJ. NO.: 0121.066.001

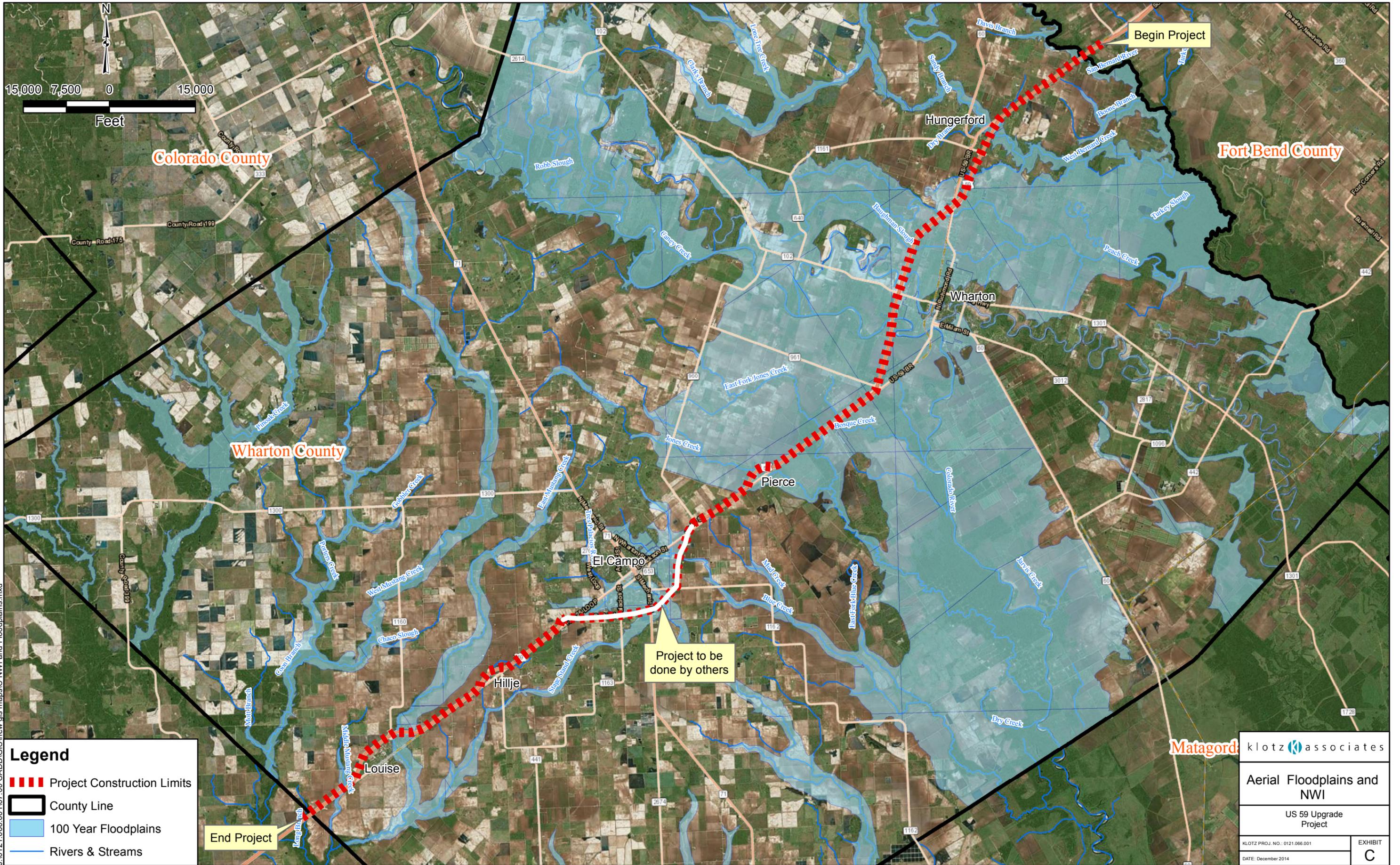
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EXHIBIT

B

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Source: USGS (2013)



Legend

- - - Project Construction Limits
- County Line
- 100 Year Floodplains
- Rivers & Streams

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Aerial Floodplains and NWI

US 59 Upgrade Project

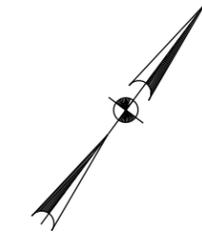
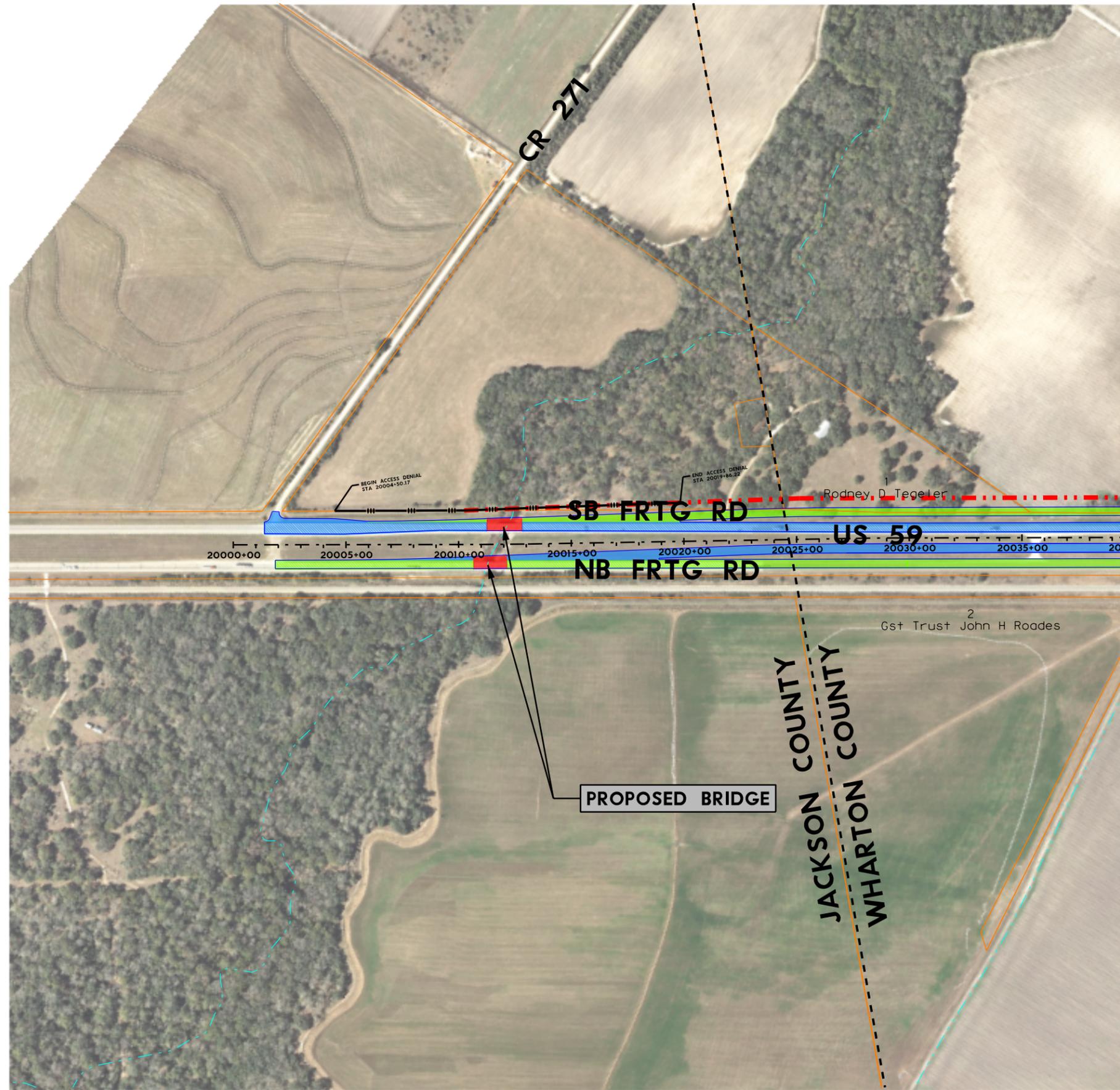
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EXHIBIT **C**

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Source: ESRI Aerial (2012), Web Soil Survey (2010)

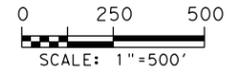


LEGEND

-  PROPOSED EDGE OF PAVEMENT
-  PROPOSED RETAINING WALL
-  EXISTING PROPERTY LINE/ROW
-  PROPOSED ROW
-  ACCESS DENIAL
-  MAINLANE
-  FRONTAGE ROAD
-  RAMP
-  BRIDGE
-  2-WAY STREET
-  EXISTING PAVEMENT TO REMAIN (AS MAINLANE)
-  EXISTING PAVEMENT TO REMAIN (AS FRONTAGE ROAD)
-  EXISTING BRIDGE TO REMAIN

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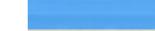
 1160 Dairy Ashford, Suite 500 Houston, Texas 77079 T 281.589.7257 F 281.589.7309 houston.office@klotz.com Texas PE Firm Reg. # F-929	
US 59 SCHEMATIC DESIGN WHARTON COUNTY	
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MATCH LINE STA 20040+00



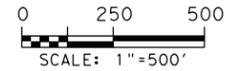
MATCH LINE STA 20090+00

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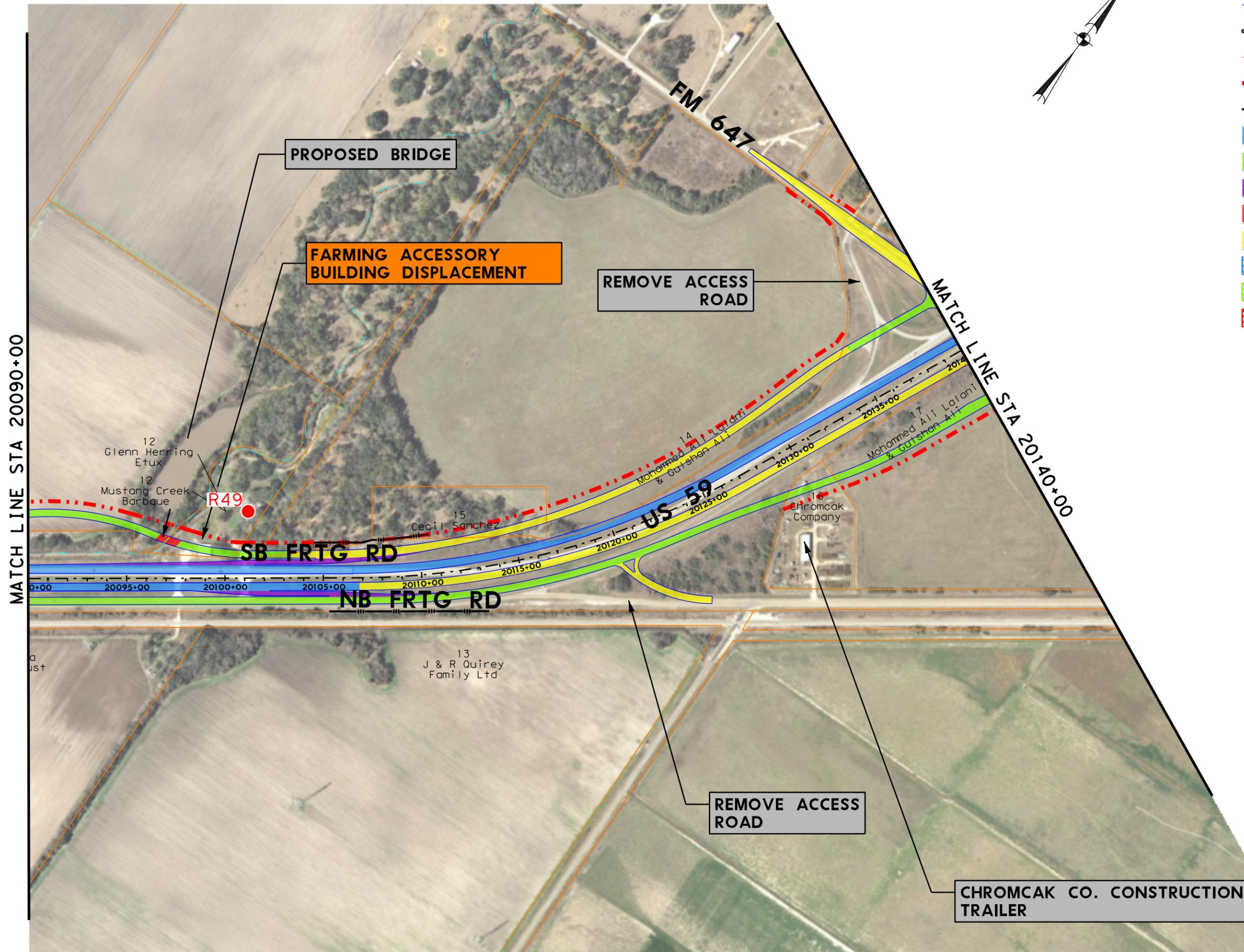
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-  EXISTING BRIDGE TO REMAIN

NOISE RECEIVERS

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- R2 ● IMPACTED



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US 59 SCHEMATIC DESIGN WHARTON COUNTY	
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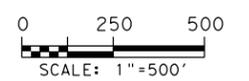


LEGEND

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- PROPOSED RETAINING WALL
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- PROPOSED ROW
- ACCESS DENIAL
- MAINLANE
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- EXISTING BRIDGE TO REMAIN

NOISE RECEIVERS

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**US 59 SCHEMATIC DESIGN
WHARTON COUNTY**

EXHIBIT D

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DATE: JULY 2016	

PROPOSED BRIDGE

FARMING ACCESSORY
BUILDING DISPLACEMENT

REMOVE ACCESS
ROAD

CHROMCAK CO. CONSTRUCTION
TRAILER

REMOVE ACCESS
ROAD

MATCH LINE STA 20090+00

MATCH LINE STA 20140+00

12 Glenn Herring
Etux
12 Mustang Creek
Barbque

R49

15 Cecil Sanchez

14 Mohammed Ali Lalani
& Gulshan Ali

16 Chromcak Company

17 Mohammed Ali Lalani
& Gulshan Ali

13 J & R Quirey
Family Ltd

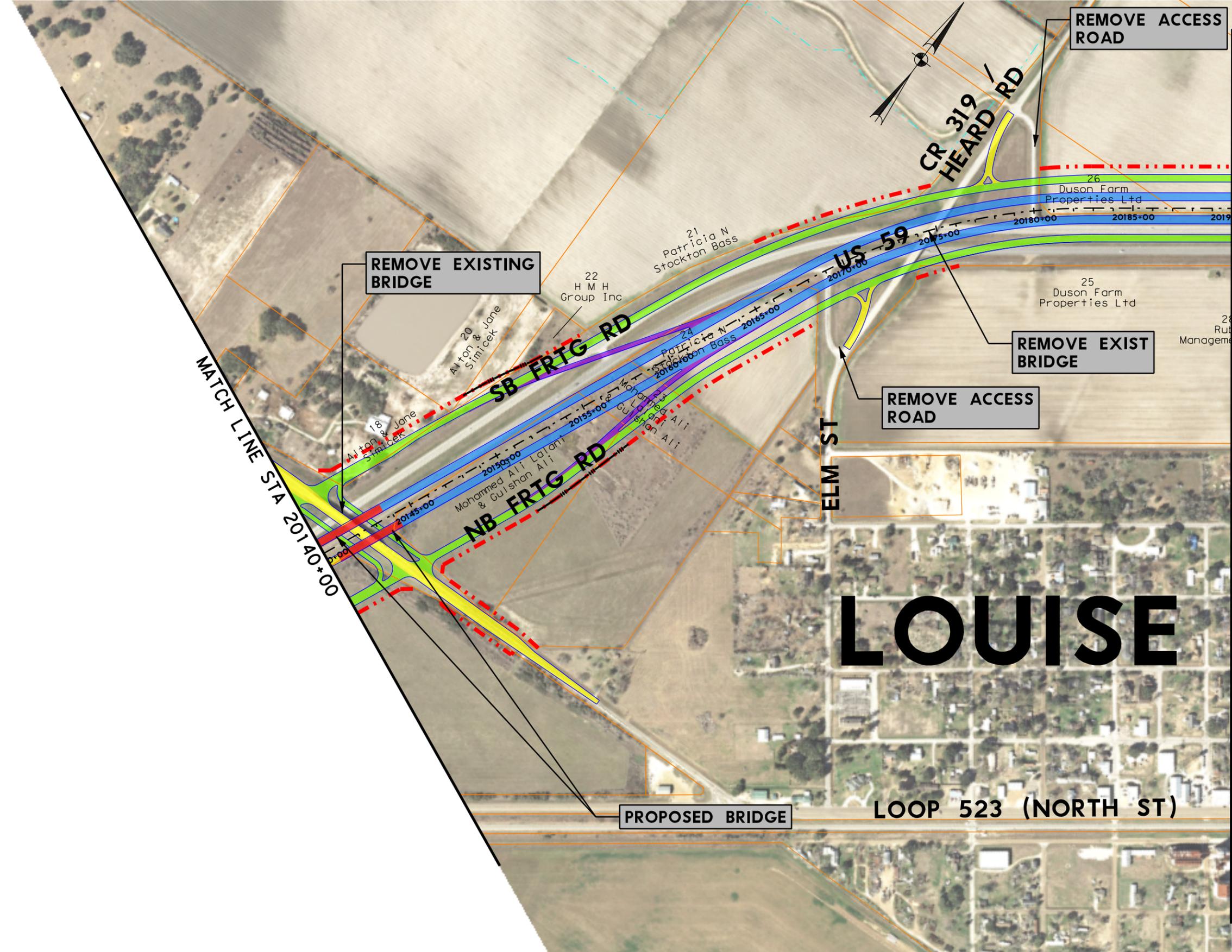
US 59

SB FRTG RD

NB FRTG RD

FM 647

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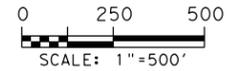


LEGEND

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- EXISTING BRIDGE TO REMAIN

NOISE RECEIVERS

- R1 NON-IMPACTED
- R2 IMPACTED



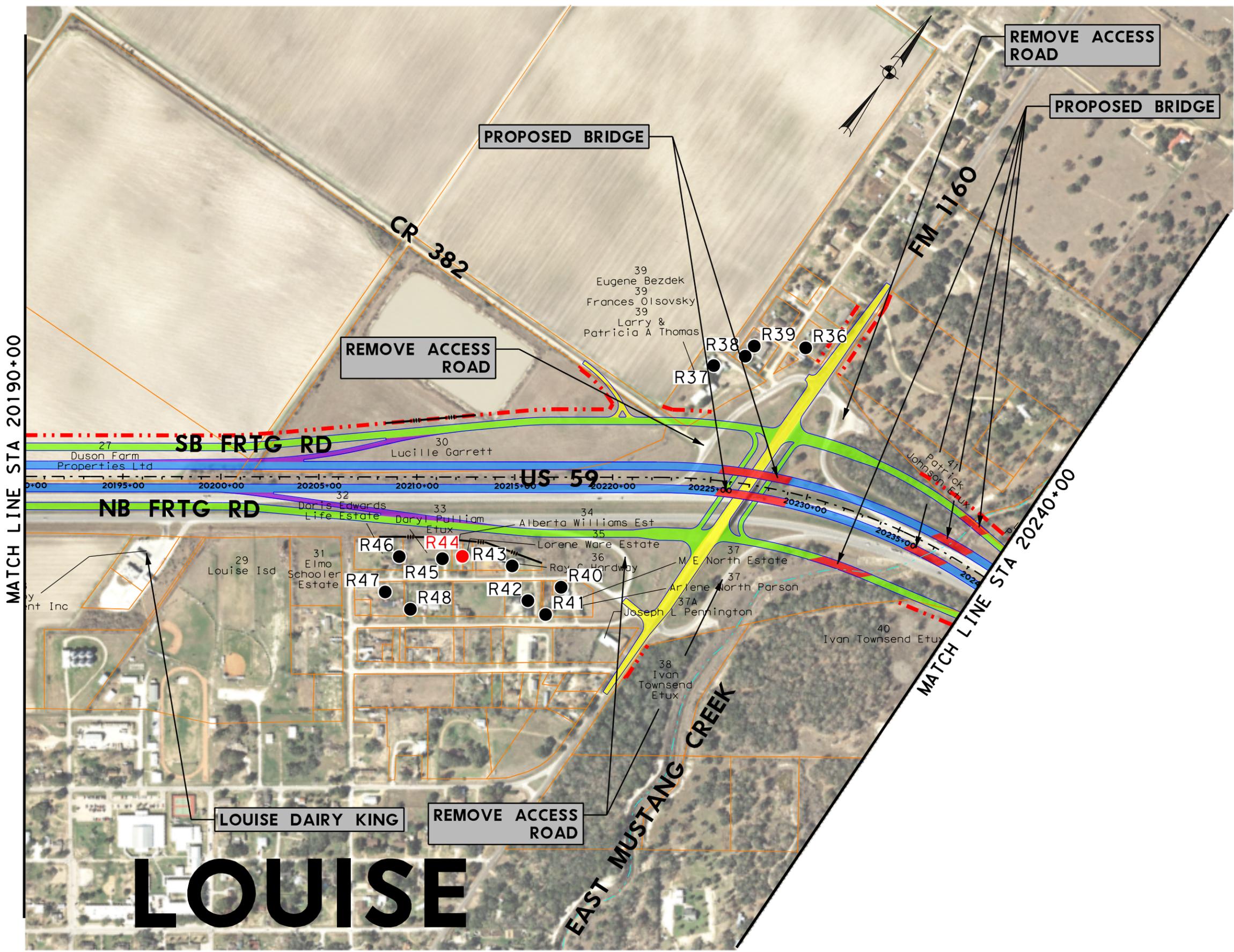
LOUISE

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 houston.office@klotz.com
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**US 59 SCHEMATIC DESIGN
 WHARTON COUNTY**

EXHIBIT D

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SCALE: 1"=500'	4
DATE: JULY 2016	

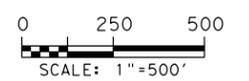


LEGEND

-  PROPOSED EDGE OF PAVEMENT
-  PROPOSED RETAINING WALL
-  EXISTING PROPERTY LINE/ROW
-  PROPOSED ROW
-  ACCESS DENIAL
-  MAINLANE
-  FRONTAGE ROAD
-  RAMP
-  BRIDGE
-  2-WAY STREET
-  EXISTING PAVEMENT TO REMAIN (AS MAINLANE)
-  EXISTING PAVEMENT TO REMAIN (AS FRONTAGE ROAD)
-  EXISTING BRIDGE TO REMAIN

NOISE RECEIVERS

-  R1 NON-IMPACTED
-  R2 IMPACTED



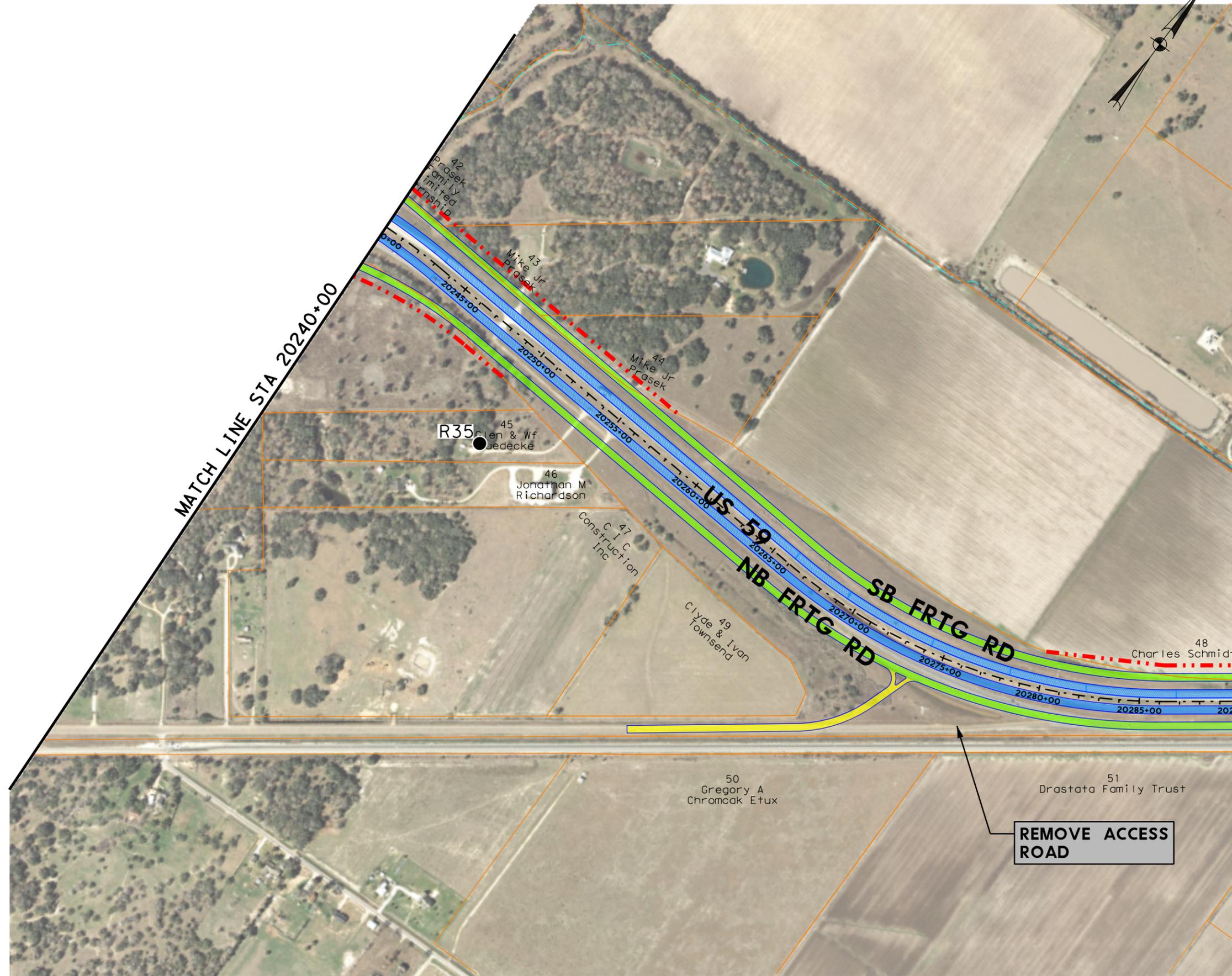
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**US 59 SCHEMATIC DESIGN
 WHARTON COUNTY**

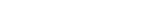
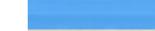
EXHIBIT D

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DATE: JULY 2016	

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LEGEND

-  PROPOSED EDGE OF PAVEMENT
-  PROPOSED RETAINING WALL
-  EXISTING PROPERTY LINE/ROW
-  PROPOSED ROW
-  ACCESS DENIAL
-  MAINLANE
-  FRONTAGE ROAD
-  RAMP
-  BRIDGE
-  2-WAY STREET
-  EXISTING PAVEMENT TO REMAIN (AS MAINLANE)
-  EXISTING PAVEMENT TO REMAIN (AS FRONTAGE ROAD)
-  EXISTING BRIDGE TO REMAIN

NOISE RECEIVERS

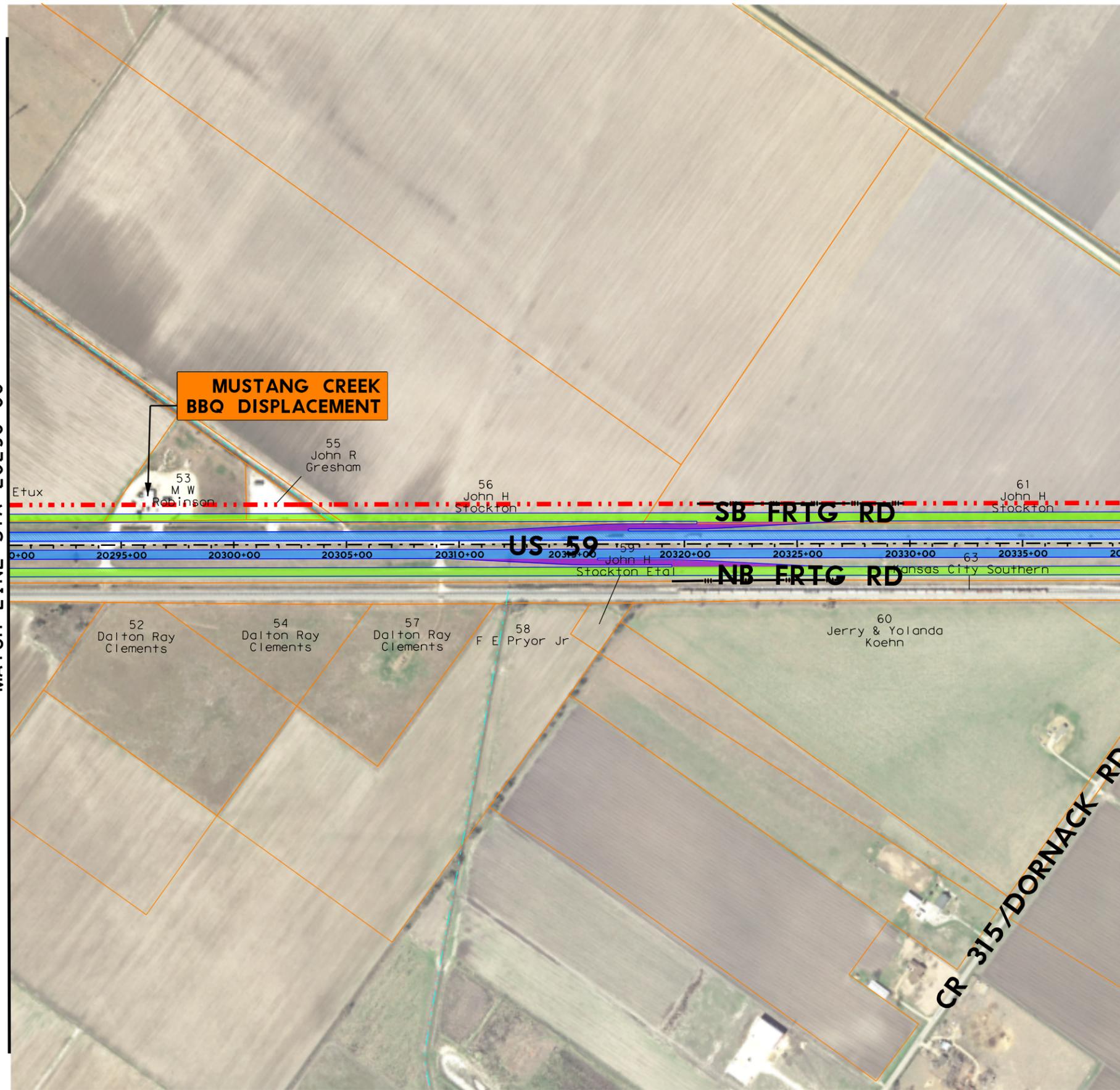
- R1  NON-IMPACTED
- R2  IMPACTED



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<p>US 59 SCHEMATIC DESIGN WHARTON COUNTY</p>	
<p>EXHIBIT D</p>	
<p>KLOTZ PROJ. No: 0121.066.001</p> <p>SCALE: 1"=500'</p> <p>DATE: JULY 2016</p>	<p>PAGE 6</p>

MATCH LINE STA 20290+00

MATCH LINE STA 20340+00



LEGEND

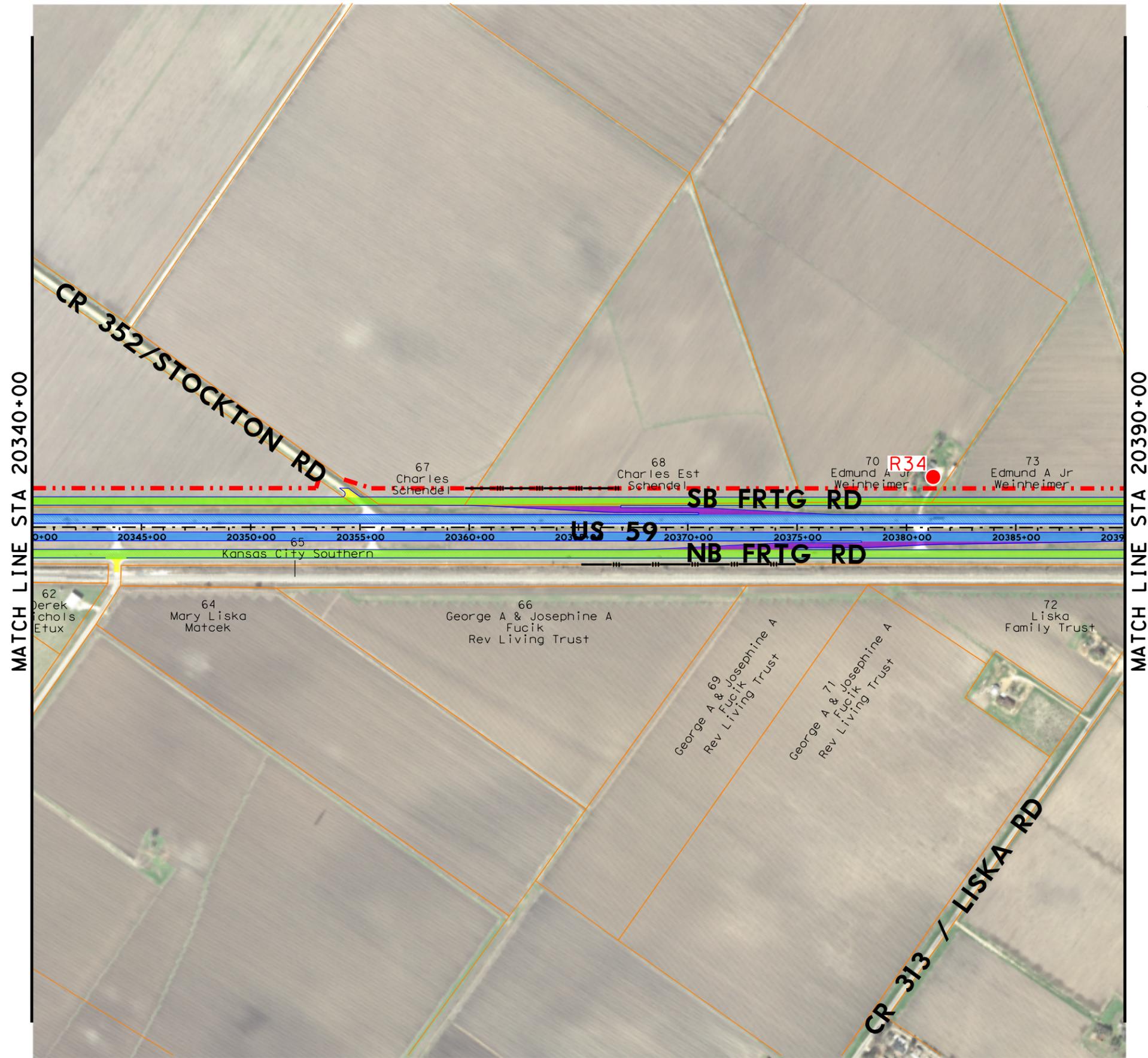
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-  EXISTING PROPERTY LINE/ROW
-  PROPOSED ROW
-  ACCESS DENIAL
-  MAINLANE
-  FRONTAGE ROAD
-  RAMP
-  BRIDGE
-  2-WAY STREET
-  EXISTING PAVEMENT TO REMAIN (AS MAINLANE)
-  EXISTING PAVEMENT TO REMAIN (AS FRONTAGE ROAD)
-  EXISTING BRIDGE TO REMAIN

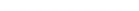
NOISE RECEIVERS

- R1 ● NON-IMPACTED
- R2 ● IMPACTED

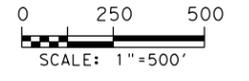


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US 59 SCHEMATIC DESIGN WHARTON COUNTY	
EXHIBIT D	
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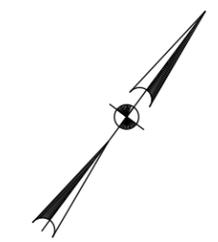
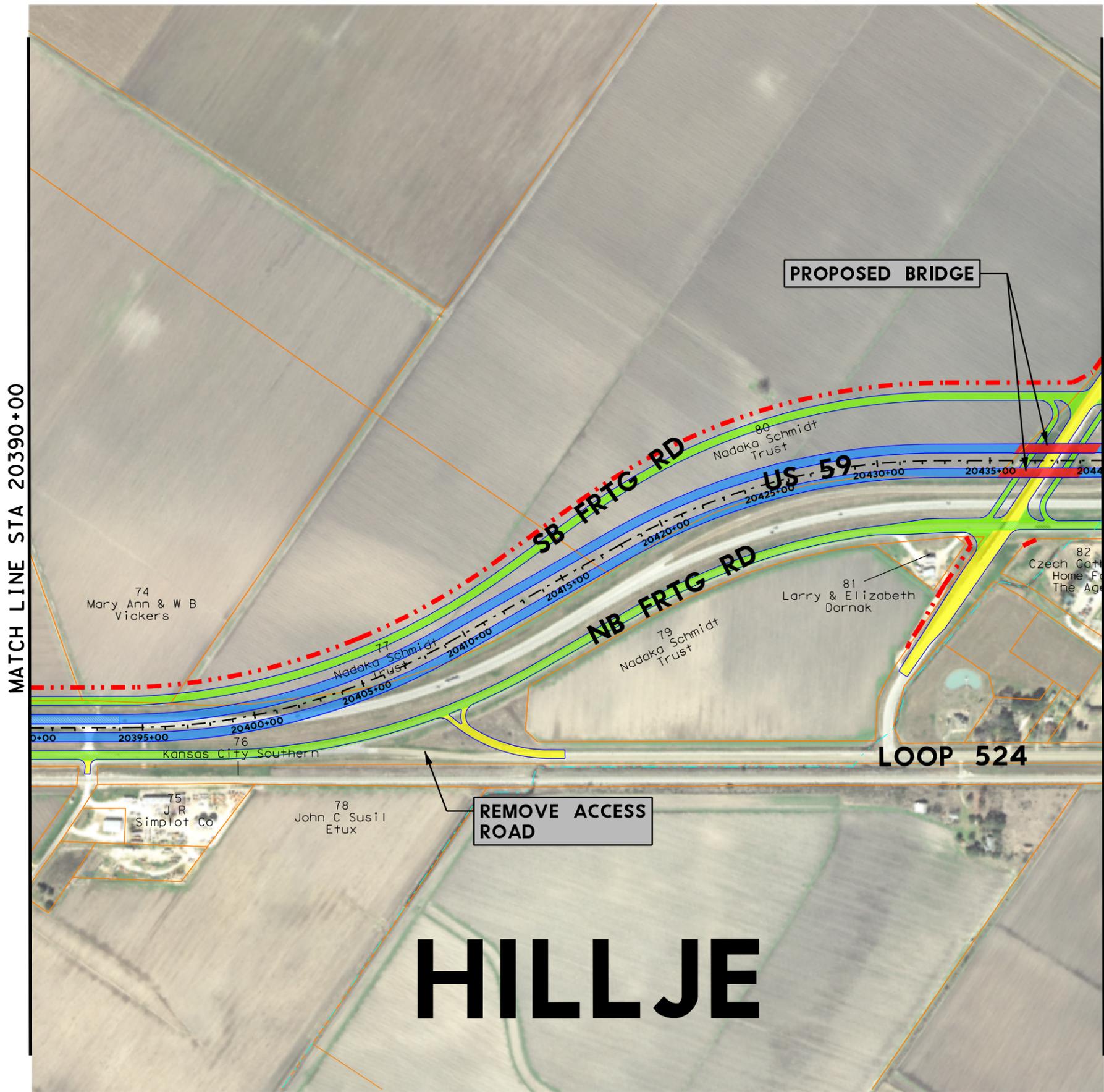


- LEGEND**
-  PROPOSED EDGE OF PAVEMENT
 -  PROPOSED RETAINING WALL
 -  EXISTING PROPERTY LINE/ROW
 -  PROPOSED ROW
 -  ACCESS DENIAL
 -  MAINLANE
 -  FRONTAGE ROAD
 -  RAMP
 -  BRIDGE
 -  2-WAY STREET
 -  EXISTING PAVEMENT TO REMAIN (AS MAINLANE)
 -  EXISTING PAVEMENT TO REMAIN (AS FRONTAGE ROAD)
 -  EXISTING BRIDGE TO REMAIN

- NOISE RECEIVERS**
- R1  NON-IMPACTED
 - R2  IMPACTED



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LEGEND

- PROPOSED EDGE OF PAVEMENT
- PROPOSED RETAINING WALL
- EXISTING PROPERTY LINE/ROW
- PROPOSED ROW
- ACCESS DENIAL
- MAINLANE
- FRONTAGE ROAD
- RAMP
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- 2-WAY STREET
- EXISTING PAVEMENT TO REMAIN (AS MAINLANE)
- EXISTING PAVEMENT TO REMAIN (AS FRONTAGE ROAD)
- EXISTING BRIDGE TO REMAIN

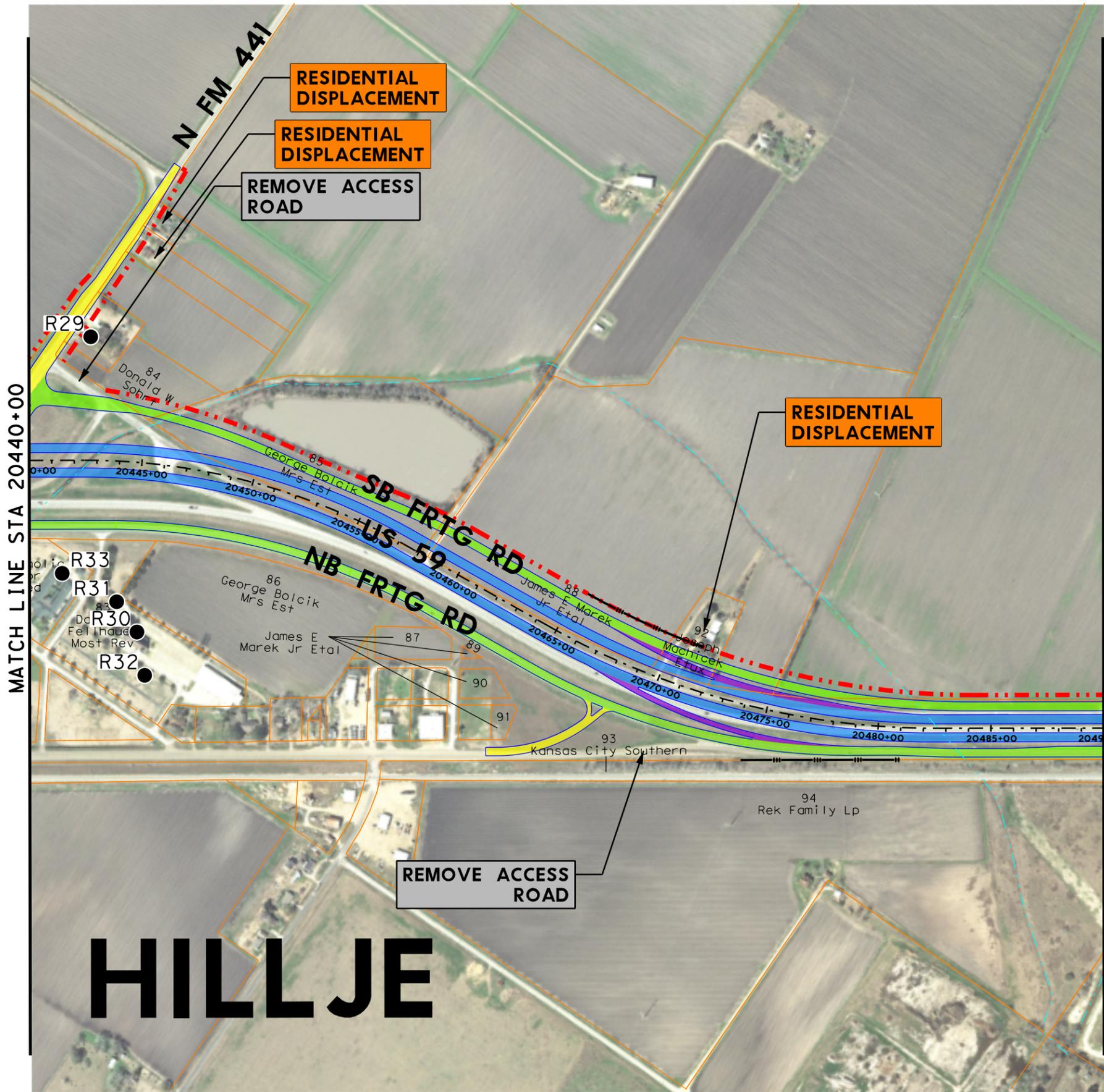
NOISE RECEIVERS

- R1 NON-IMPACTED
- R2 IMPACTED



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<p>US 59 SCHEMATIC DESIGN WHARTON COUNTY</p>	
<p>EXHIBIT D</p>	
<p>KLOTZ PROJ. No: 0121.066.001</p>	<p>PAGE</p>
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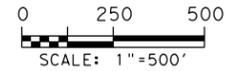


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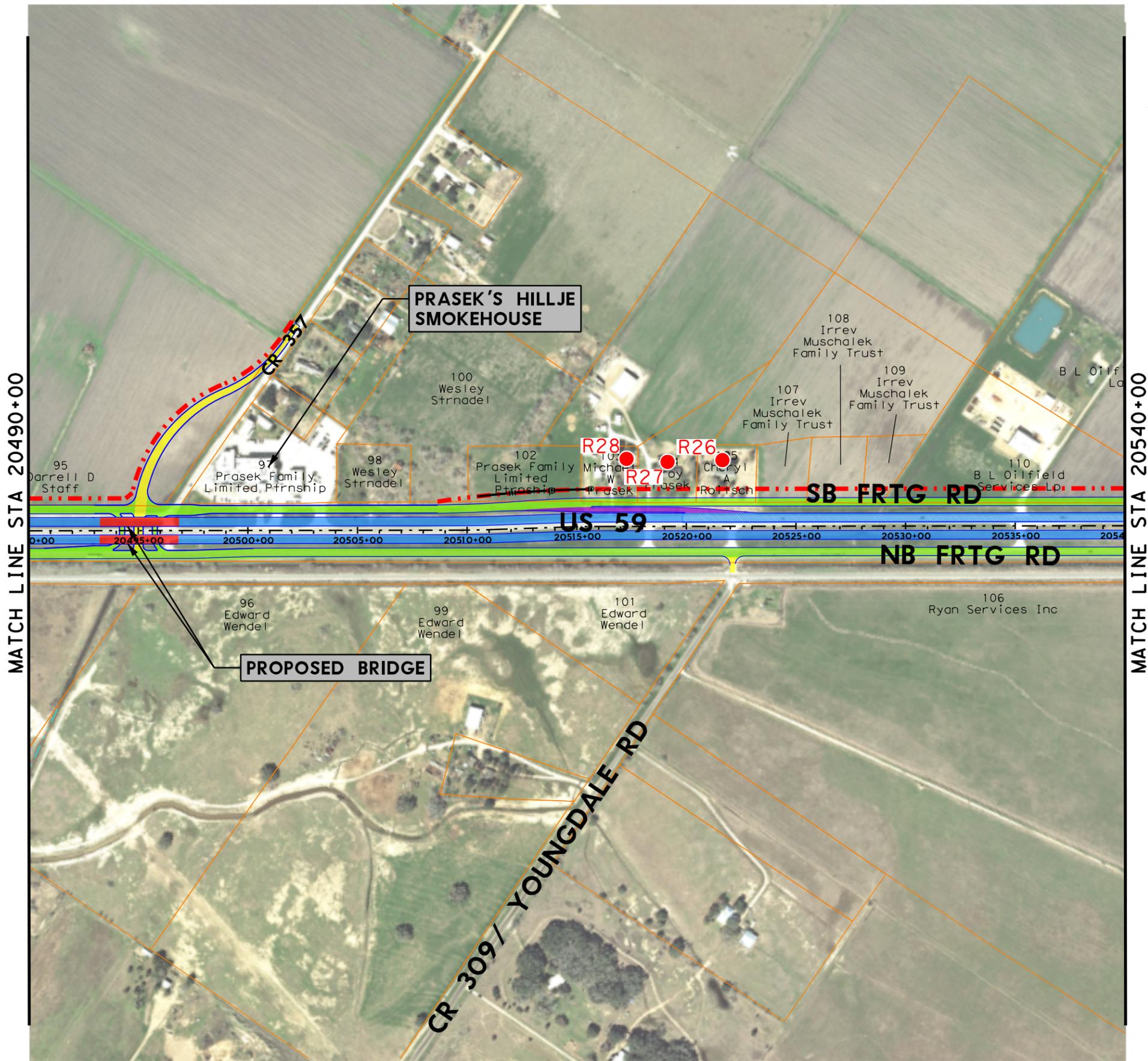
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-  PROPOSED RETAINING WALL
-  EXISTING PROPERTY LINE/ROW
-  PROPOSED ROW
-  ACCESS DENIAL
-  MAINLANE
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-  RAMP
-  BRIDGE
-  2-WAY STREET
-  EXISTING PAVEMENT TO REMAIN (AS MAINLANE)
-  EXISTING PAVEMENT TO REMAIN (AS FRONTAGE ROAD)
-  EXISTING BRIDGE TO REMAIN

NOISE RECEIVERS

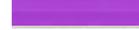
- R1 ● NON-IMPACTED
- R2 ● IMPACTED



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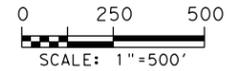


LEGEND

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-  PROPOSED RETAINING WALL
-  EXISTING PROPERTY LINE/ROW
-  PROPOSED ROW
-  ACCESS DENIAL
-  MAINLANE
-  FRONTAGE ROAD
-  RAMP
-  BRIDGE
-  2-WAY STREET
-  EXISTING PAVEMENT TO REMAIN (AS MAINLANE)
-  EXISTING PAVEMENT TO REMAIN (AS FRONTAGE ROAD)
-  EXISTING BRIDGE TO REMAIN

NOISE RECEIVERS

- R1  NON-IMPACTED
- R2  IMPACTED

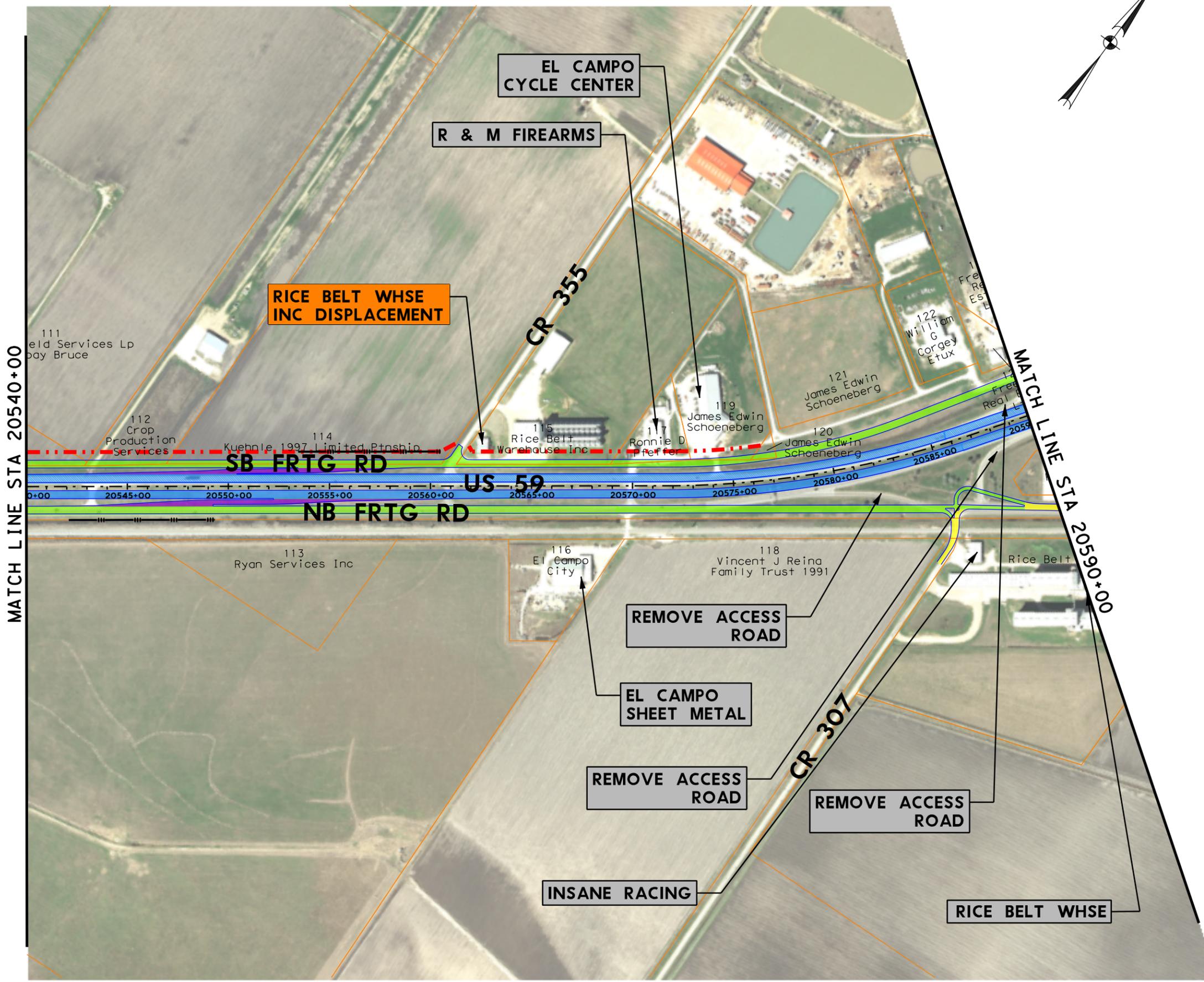


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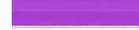
**US 59 SCHEMATIC DESIGN
WHARTON COUNTY**

EXHIBIT D

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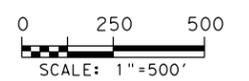


LEGEND

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-  PROPOSED RETAINING WALL
-  EXISTING PROPERTY LINE/ROW
-  PROPOSED ROW
-  ACCESS DENIAL
-  MAINLANE
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-  EXISTING PAVEMENT TO REMAIN (AS MAINLANE)
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-  EXISTING BRIDGE TO REMAIN

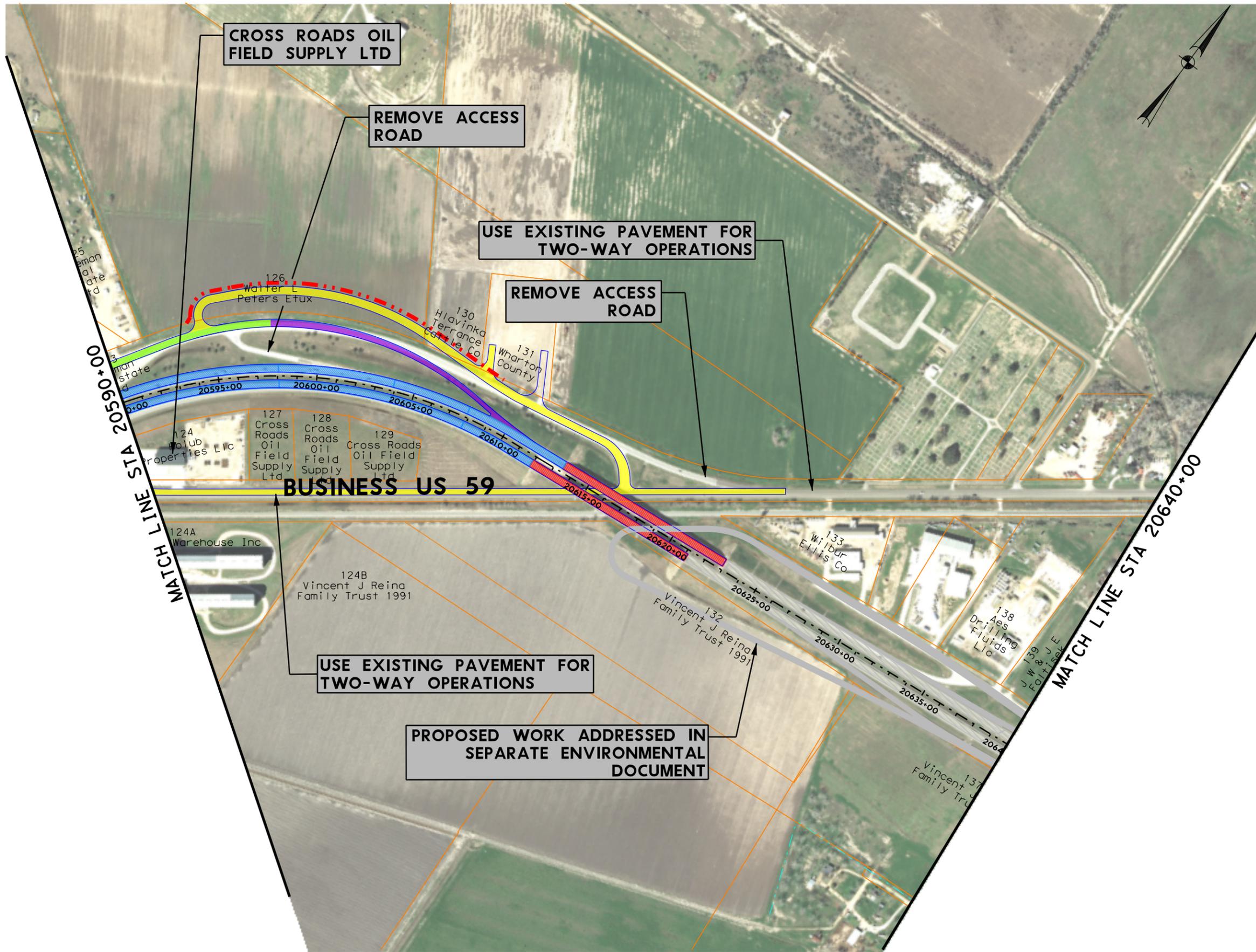
NOISE RECEIVERS

-  R1 NON-IMPACTED
-  R2 IMPACTED



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US 59 SCHEMATIC DESIGN WHARTON COUNTY	
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KLOTZ PROJ. No: 0121.066.001 SCALE: 1"=500' DATE: JULY 2016	PAGE 12

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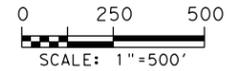


LEGEND

- PROPOSED EDGE OF PAVEMENT
- PROPOSED RETAINING WALL
- EXISTING PROPERTY LINE/ROW
- PROPOSED ROW
- ACCESS DENIAL
- MAINLANE
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- EXISTING PAVEMENT TO REMAIN (AS MAINLANE)
- EXISTING PAVEMENT TO REMAIN (AS FRONTAGE ROAD)
- EXISTING BRIDGE TO REMAIN

NOISE RECEIVERS

- R1 NON-IMPACTED
- R2 IMPACTED

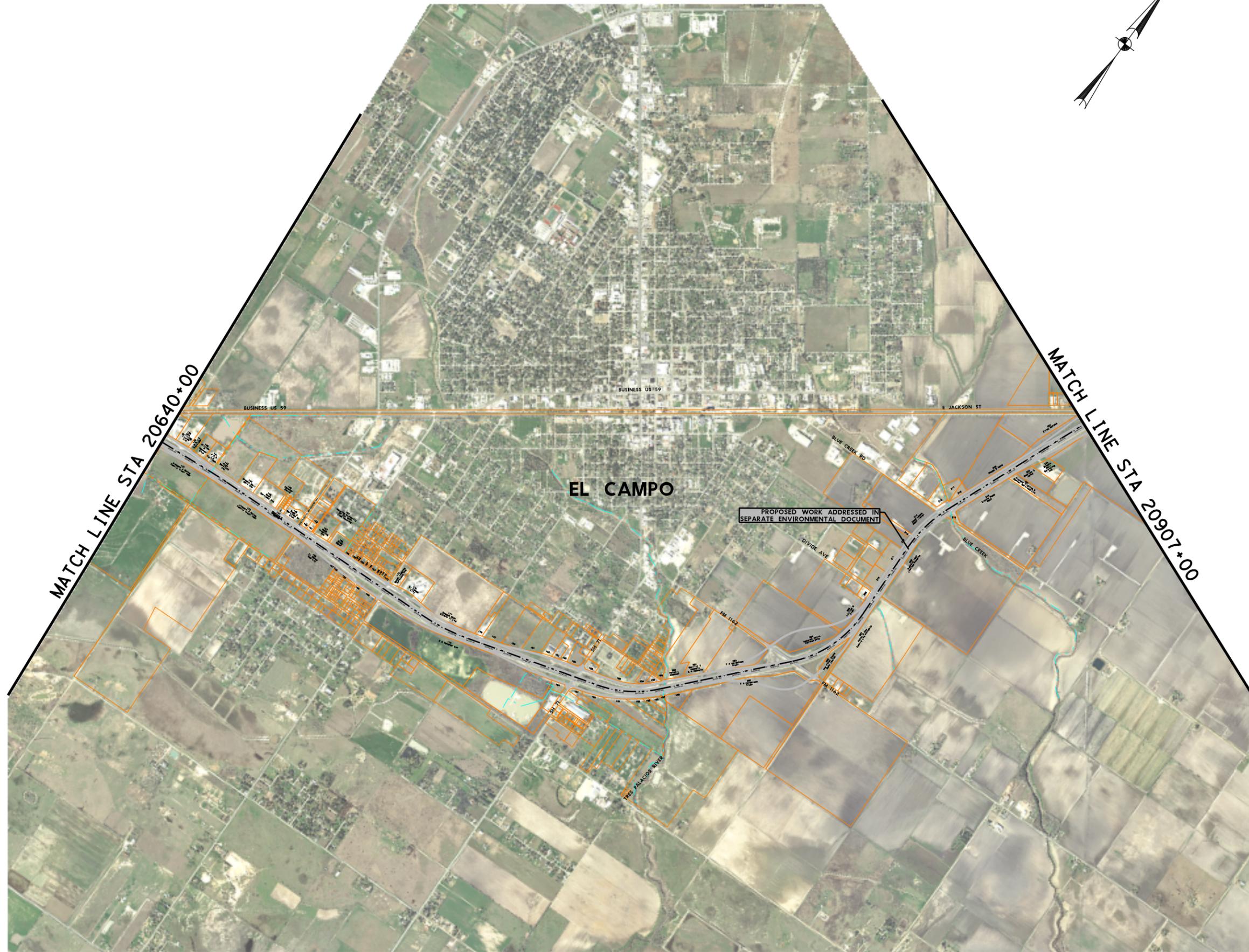


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**US 59 SCHEMATIC DESIGN
WHARTON COUNTY**

EXHIBIT D

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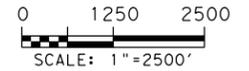


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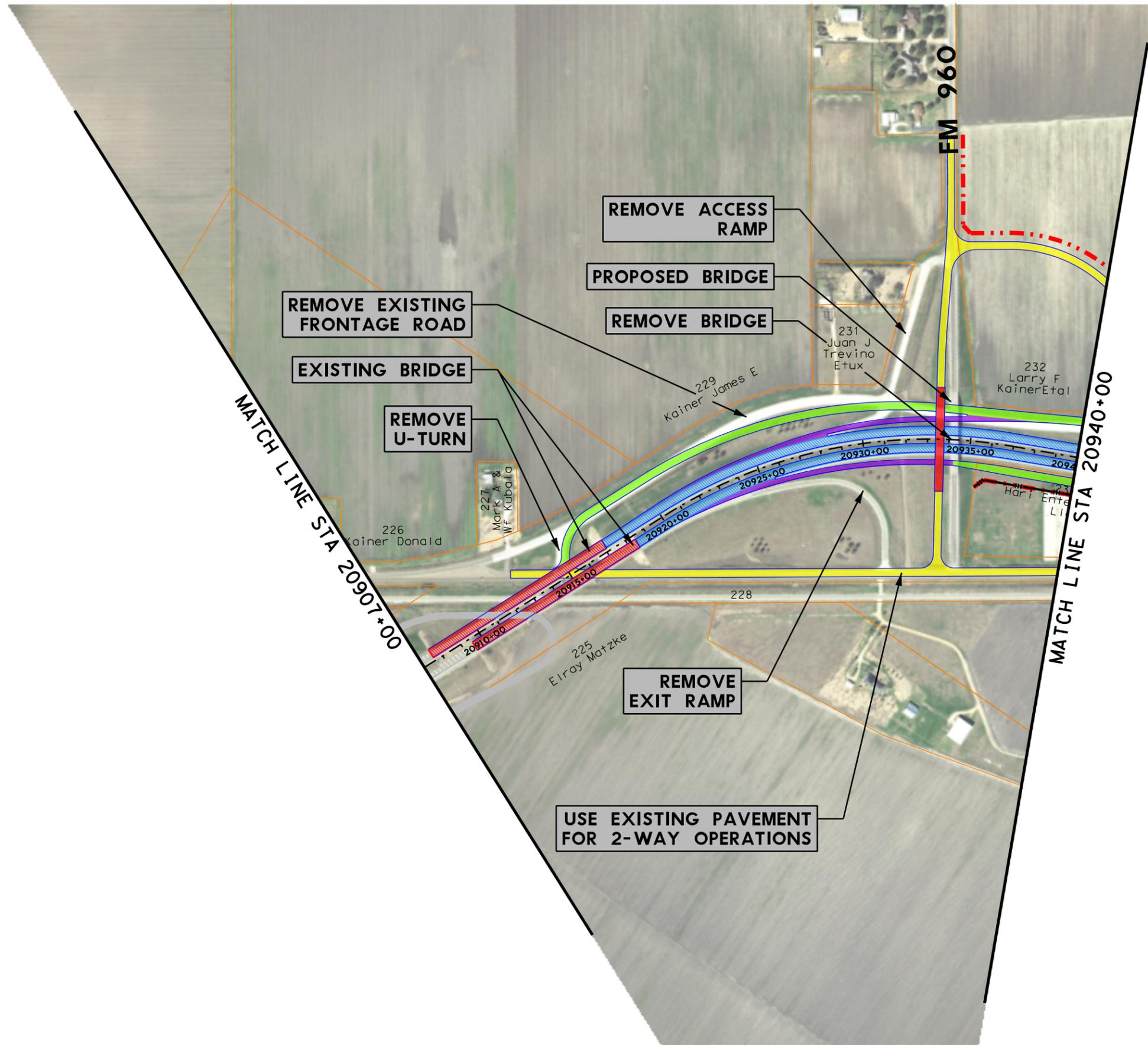
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-  PROPOSED RETAINING WALL
-  EXISTING PROPERTY LINE/ROW
-  PROPOSED ROW
-  ACCESS DENIAL
-  MAINLANE
-  FRONTAGE ROAD
-  RAMP
-  BRIDGE
-  2-WAY STREET
-  EXISTING PAVEMENT TO REMAIN (AS MAINLANE)
-  EXISTING PAVEMENT TO REMAIN (AS FRONTAGE ROAD)
-  EXISTING BRIDGE TO REMAIN

NOISE RECEIVERS

- R1  NON-IMPACTED
- R2  IMPACTED



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US 59 SCHEMATIC DESIGN WHARTON COUNTY	
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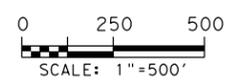


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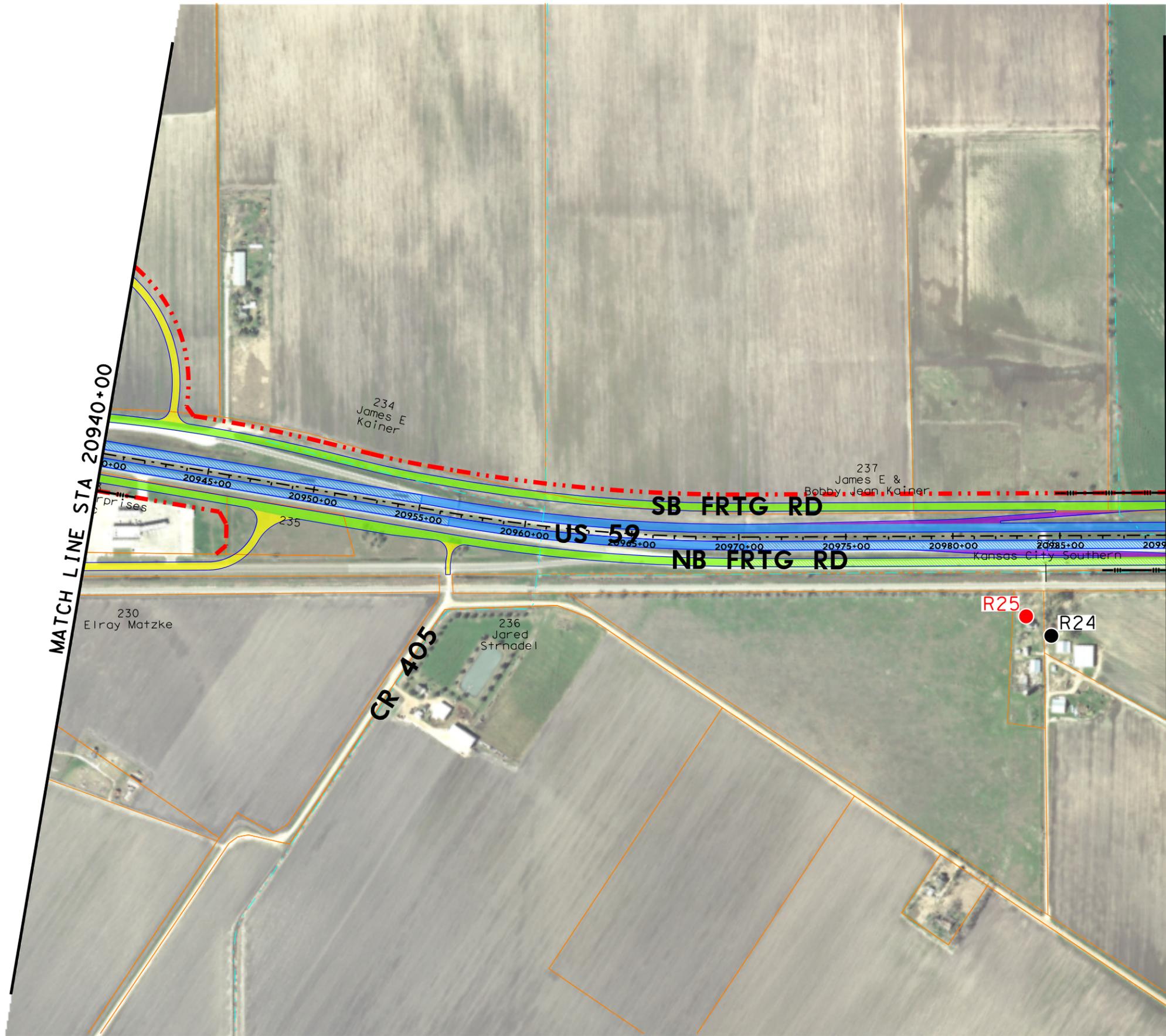
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-  EXISTING PROPERTY LINE/ROW
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-  RAMP
-  BRIDGE
-  2-WAY STREET
-  EXISTING PAVEMENT TO REMAIN (AS MAINLANE)
-  EXISTING PAVEMENT TO REMAIN (AS FRONTAGE ROAD)
-  EXISTING BRIDGE TO REMAIN

NOISE RECEIVERS

- R1 ● NON-IMPACTED
- R2 ● IMPACTED



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LEGEND

- PROPOSED EDGE OF PAVEMENT
- PROPOSED RETAINING WALL
- EXISTING PROPERTY LINE/ROW
- PROPOSED ROW
- ACCESS DENIAL
- MAINLANE
- FRONTAGE ROAD
- RAMP
- BRIDGE
- 2-WAY STREET
- EXISTING PAVEMENT TO REMAIN (AS MAINLANE)
- EXISTING PAVEMENT TO REMAIN (AS FRONTAGE ROAD)
- EXISTING BRIDGE TO REMAIN

NOISE RECEIVERS

- R1 NON-IMPACTED
- R2 IMPACTED

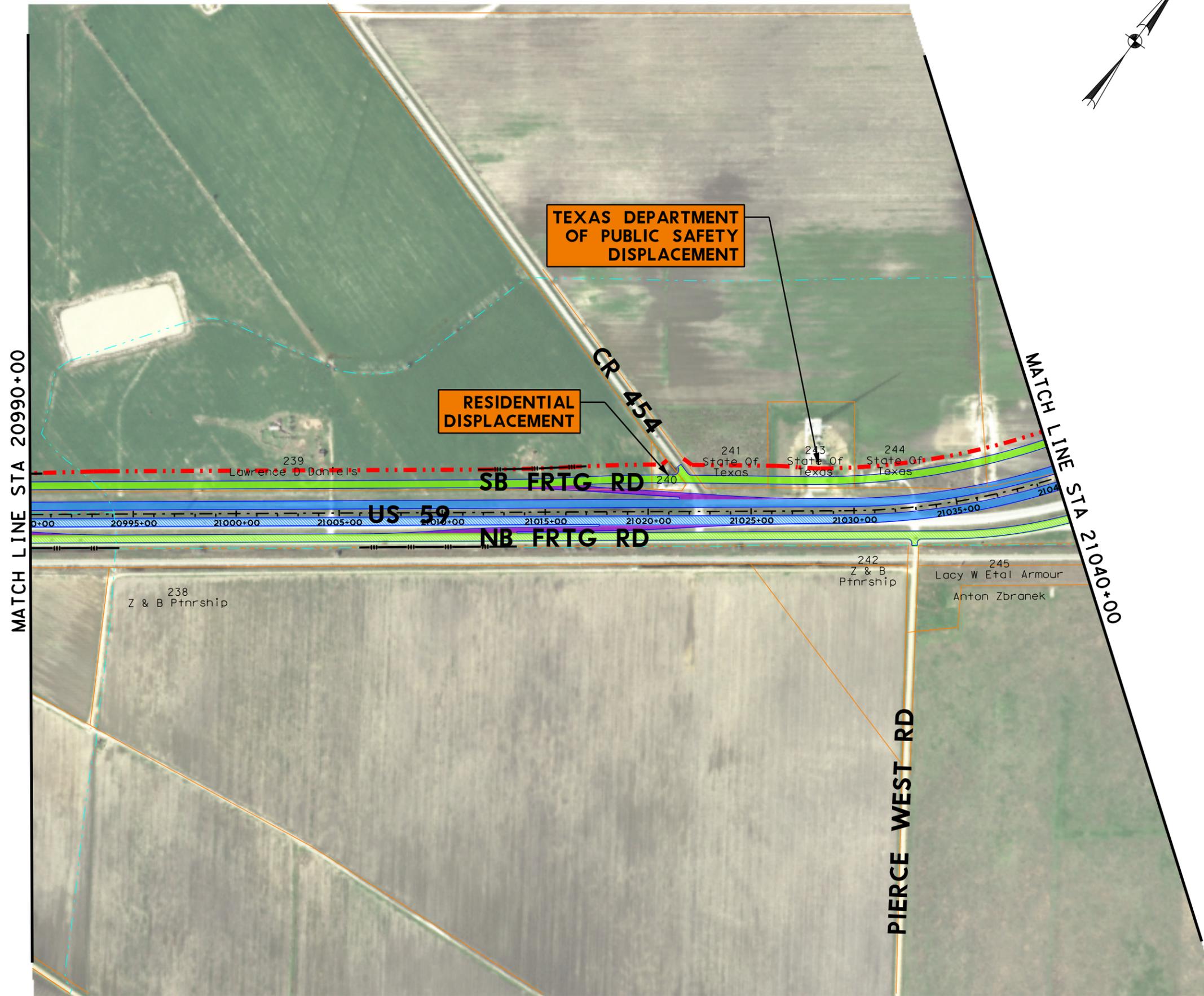


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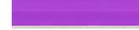
**US 59 SCHEMATIC DESIGN
 WHARTON COUNTY**

EXHIBIT D

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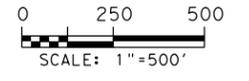


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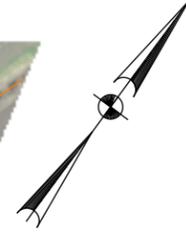
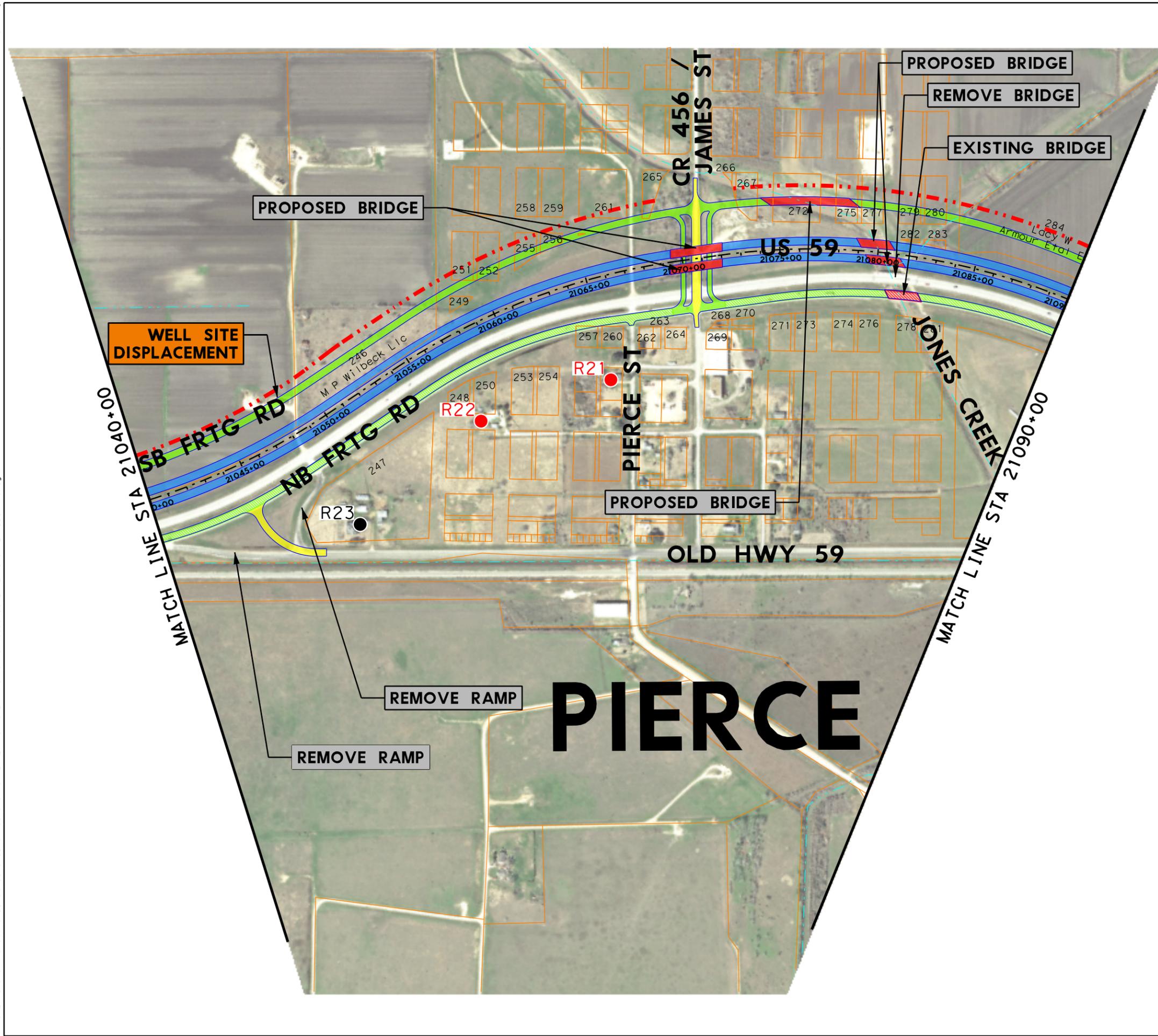
-  PROPOSED EDGE OF PAVEMENT
-  PROPOSED RETAINING WALL
-  EXISTING PROPERTY LINE/ROW
-  PROPOSED ROW
-  ACCESS DENIAL
-  MAINLANE
-  FRONTAGE ROAD
-  RAMP
-  BRIDGE
-  2-WAY STREET
-  EXISTING PAVEMENT TO REMAIN (AS MAINLANE)
-  EXISTING PAVEMENT TO REMAIN (AS FRONTAGE ROAD)
-  EXISTING BRIDGE TO REMAIN

NOISE RECEIVERS

- R1 ● NON-IMPACTED
- R2 ● IMPACTED



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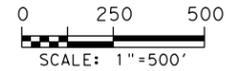


LEGEND

-  PROPOSED EDGE OF PAVEMENT
-  PROPOSED RETAINING WALL
-  EXISTING PROPERTY LINE/ROW
-  PROPOSED ROW
-  ACCESS DENIAL
-  MAINLANE
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-  EXISTING BRIDGE TO REMAIN

NOISE RECEIVERS

- R1  NON-IMPACTED
- R2  IMPACTED

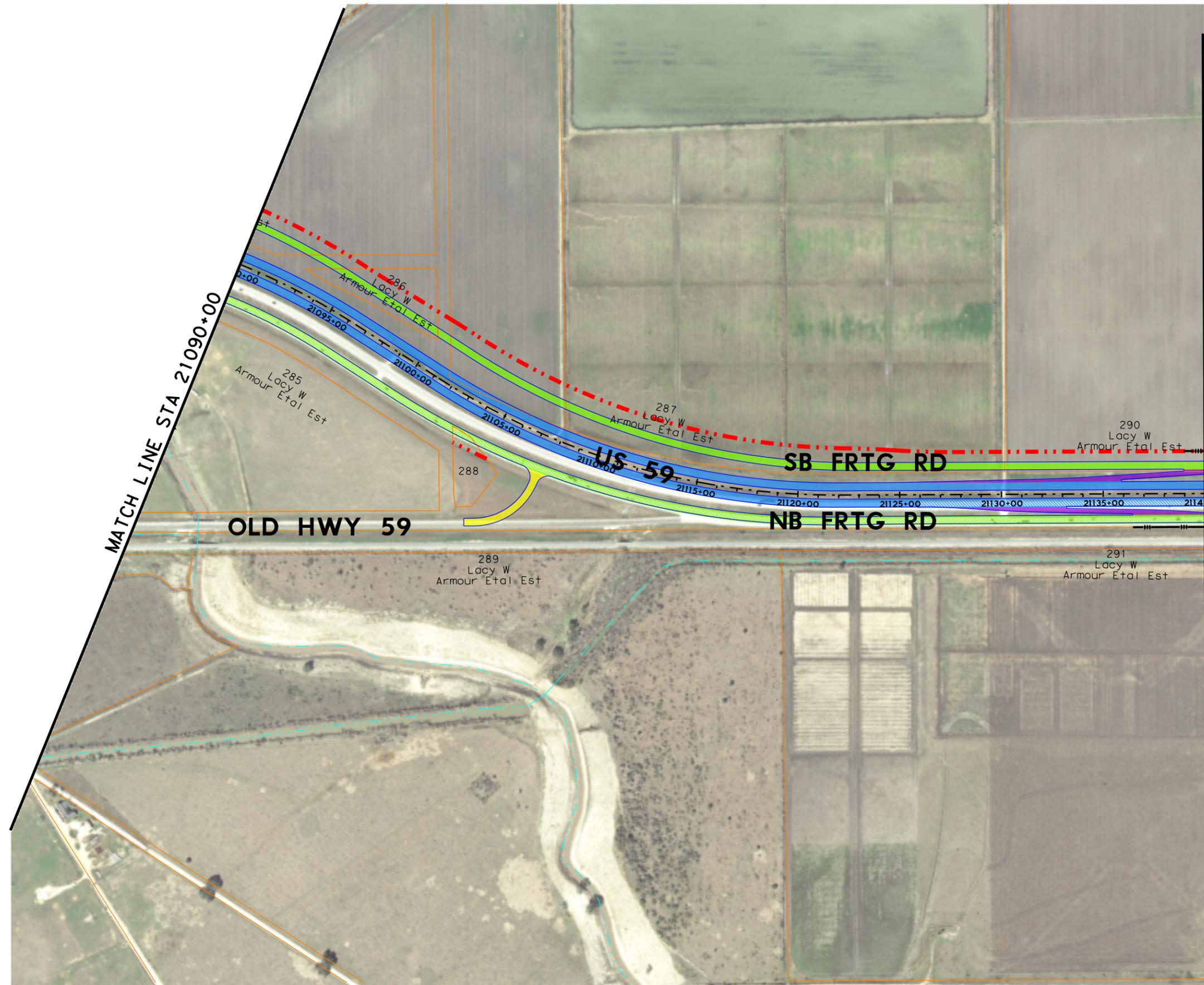


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**US 59 SCHEMATIC DESIGN
WHARTON COUNTY**

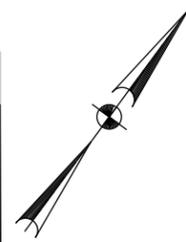
EXHIBIT D

KLOTZ PROJ. No: 0121.066.001
SCALE: 1"=500'
DATE: JULY 2016



MATCH LINE STA 21090+00

MATCH LINE STA 21140+00



LEGEND

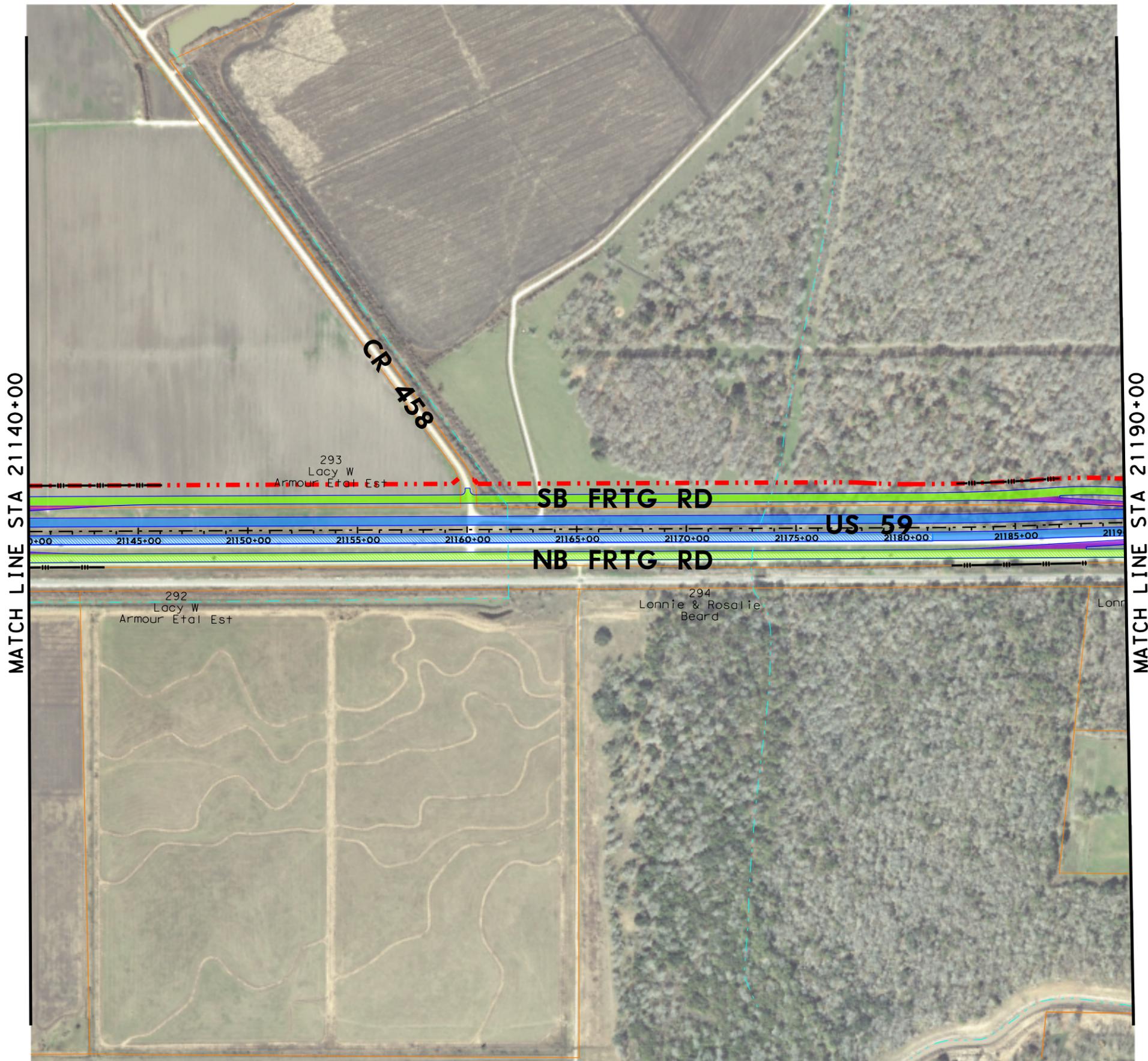
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-  PROPOSED RETAINING WALL
-  EXISTING PROPERTY LINE/ROW
-  PROPOSED ROW
-  ACCESS DENIAL
-  MAINLANE
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-  EXISTING PAVEMENT TO REMAIN (AS MAINLANE)
-  EXISTING PAVEMENT TO REMAIN (AS FRONTAGE ROAD)
-  EXISTING BRIDGE TO REMAIN

NOISE RECEIVERS

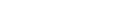
- R1 ● NON-IMPACTED
- R2 ● IMPACTED



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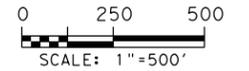


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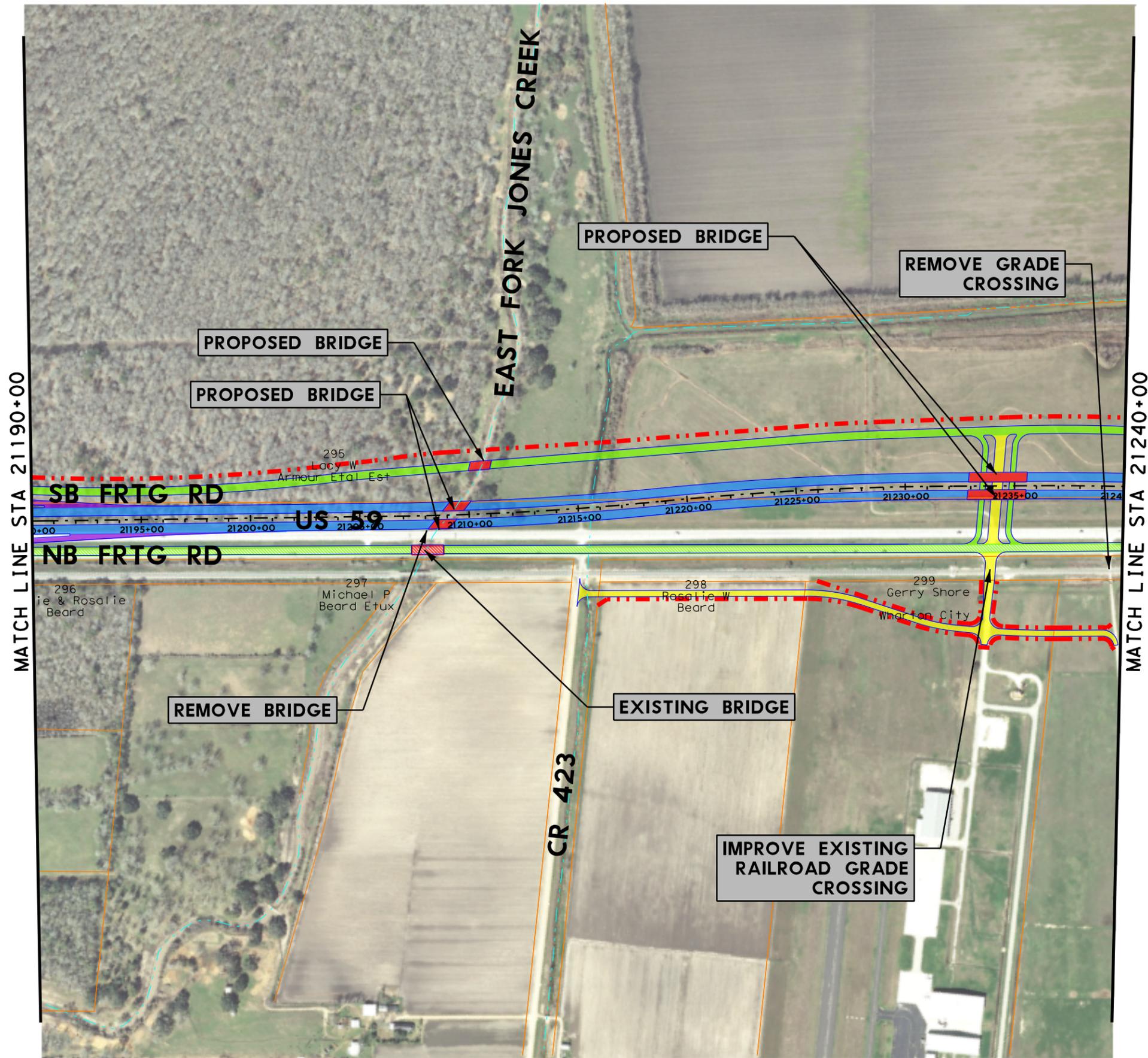
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-  PROPOSED RETAINING WALL
-  EXISTING PROPERTY LINE/ROW
-  PROPOSED ROW
-  ACCESS DENIAL
-  MAINLANE
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-  EXISTING PAVEMENT TO REMAIN (AS MAINLANE)
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-  EXISTING BRIDGE TO REMAIN

NOISE RECEIVERS

- R1 ● NON-IMPACTED
- R2 ● IMPACTED



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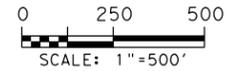


LEGEND

- PROPOSED EDGE OF PAVEMENT
- PROPOSED RETAINING WALL
- EXISTING PROPERTY LINE/ROW
- PROPOSED ROW
- ACCESS DENIAL
- MAINLANE
- FRONTAGE ROAD
- RAMP
- BRIDGE
- 2-WAY STREET
- EXISTING PAVEMENT TO REMAIN (AS MAINLANE)
- EXISTING PAVEMENT TO REMAIN (AS FRONTAGE ROAD)
- EXISTING BRIDGE TO REMAIN

NOISE RECEIVERS

- R1 ● NON-IMPACTED
- R2 ● IMPACTED



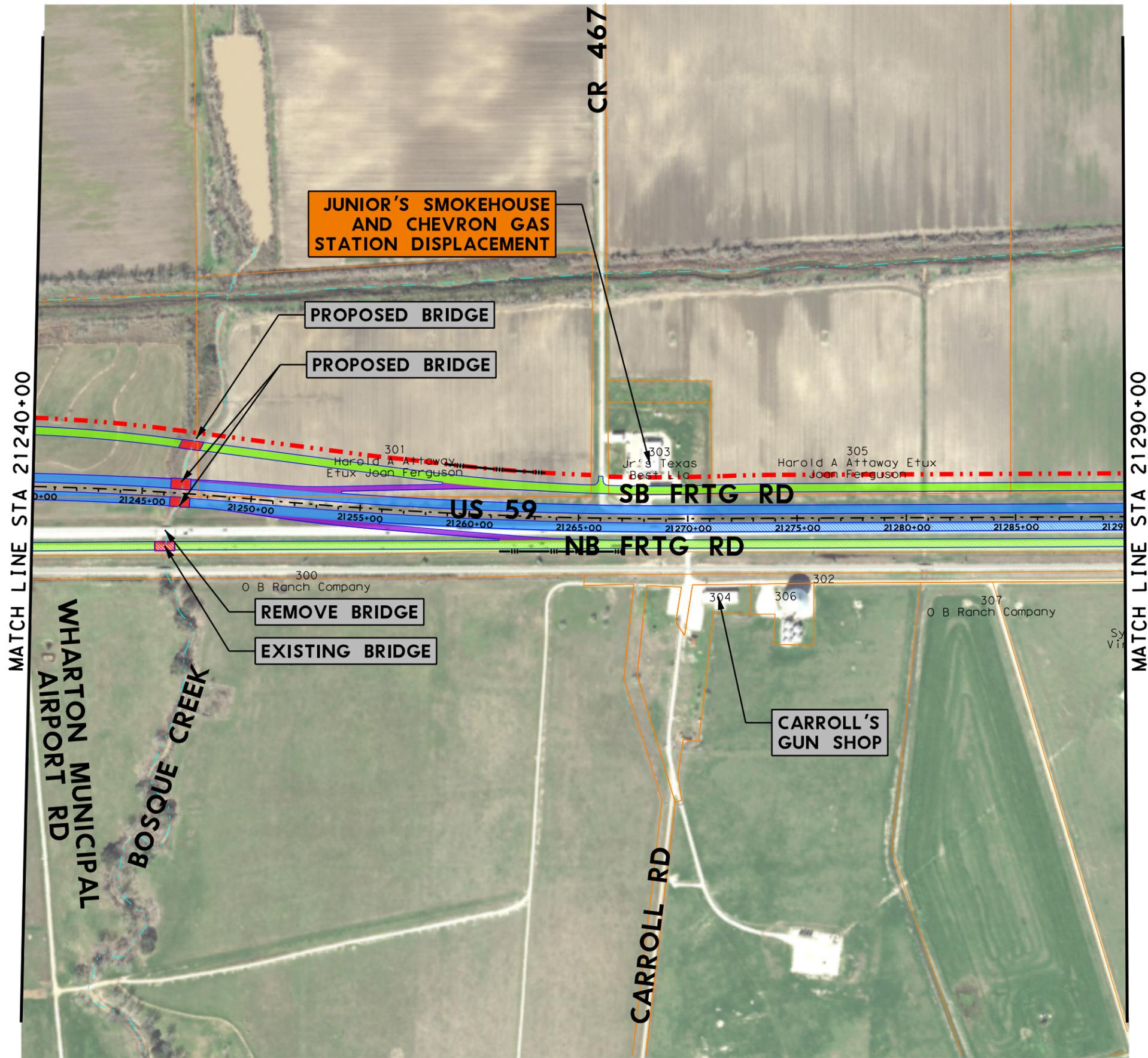
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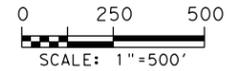


LEGEND

-  PROPOSED EDGE OF PAVEMENT
-  PROPOSED RETAINING WALL
-  EXISTING PROPERTY LINE/ROW
-  PROPOSED ROW
-  ACCESS DENIAL
-  MAINLANE
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-  RAMP
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-  2-WAY STREET
-  EXISTING PAVEMENT TO REMAIN (AS MAINLANE)
-  EXISTING PAVEMENT TO REMAIN (AS FRONTAGE ROAD)
-  EXISTING BRIDGE TO REMAIN

NOISE RECEIVERS

- R1 ● NON-IMPACTED
- R2 ● IMPACTED



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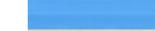
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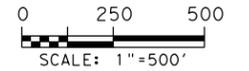


LEGEND

-  PROPOSED EDGE OF PAVEMENT
-  PROPOSED RETAINING WALL
-  EXISTING PROPERTY LINE/ROW
-  PROPOSED ROW
-  ACCESS DENIAL
-  MAINLANE
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-  EXISTING PAVEMENT TO REMAIN (AS MAINLANE)
-  EXISTING PAVEMENT TO REMAIN (AS FRONTAGE ROAD)
-  EXISTING BRIDGE TO REMAIN

NOISE RECEIVERS

- R1  NON-IMPACTED
- R2  IMPACTED

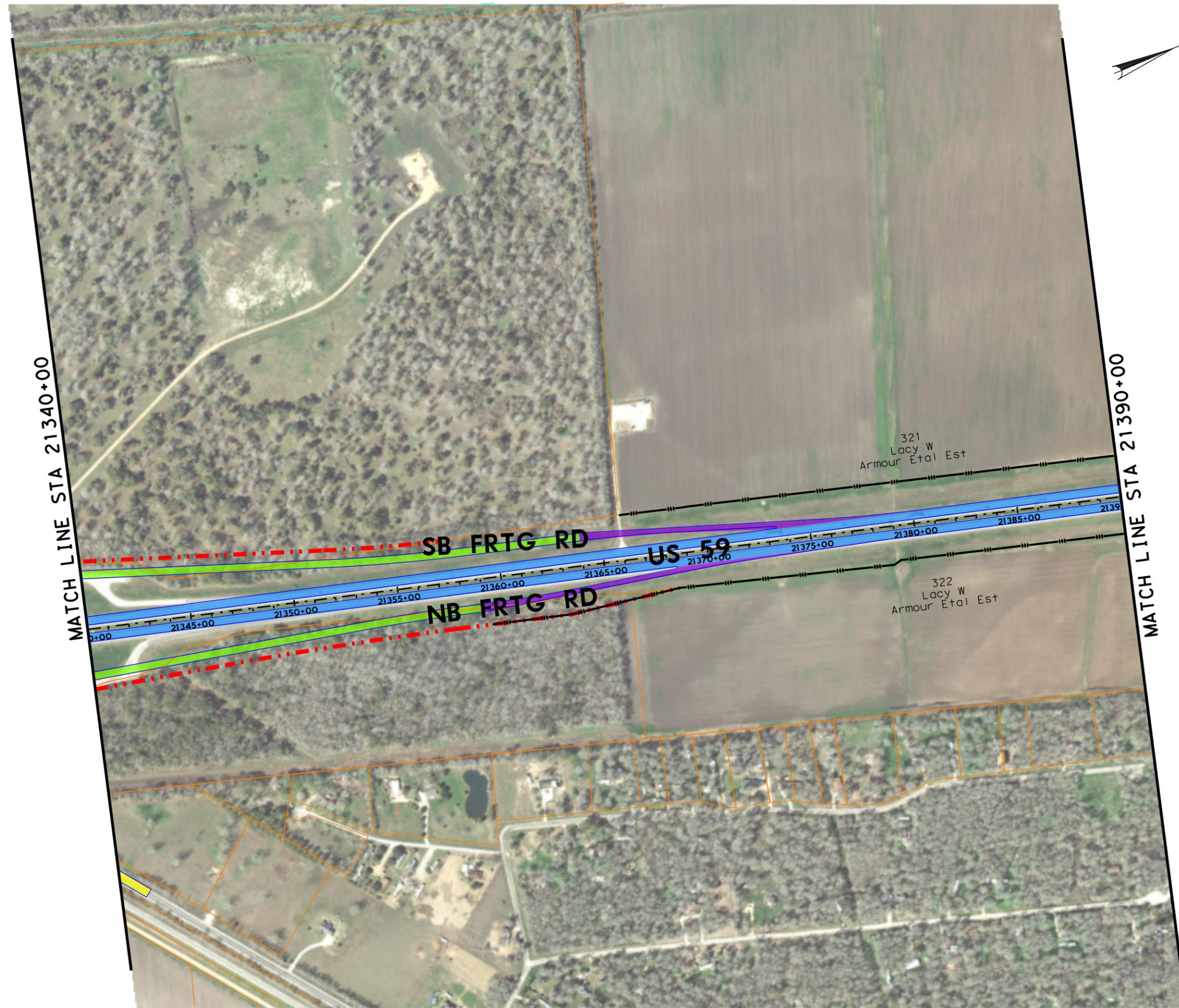


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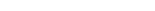
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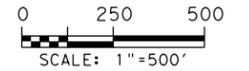


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-  PROPOSED RETAINING WALL
-  EXISTING PROPERTY LINE/ROW
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-  EXISTING PAVEMENT TO REMAIN (AS FRONTAGE ROAD)
-  EXISTING BRIDGE TO REMAIN

NOISE RECEIVERS

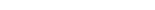
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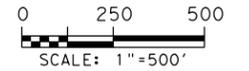


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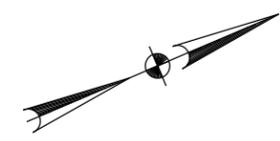
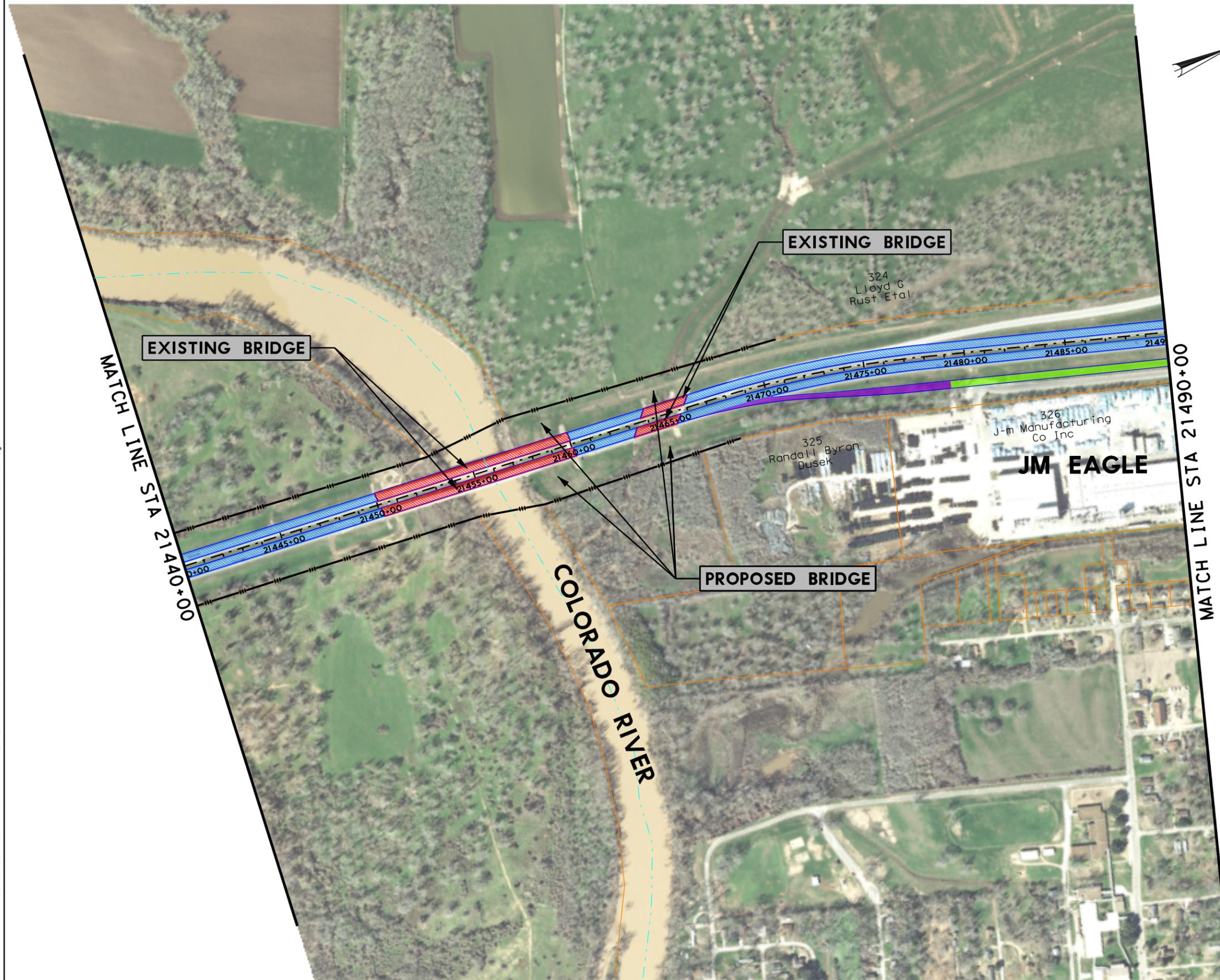
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-  EXISTING BRIDGE TO REMAIN

NOISE RECEIVERS

- R1  NON-IMPACTED
- R2  IMPACTED



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<p>EXHIBIT D</p>	
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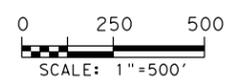


LEGEND

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- PROPOSED RETAINING WALL
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NOISE RECEIVERS

- R1 ● NON-IMPACTED
- R2 ● IMPACTED

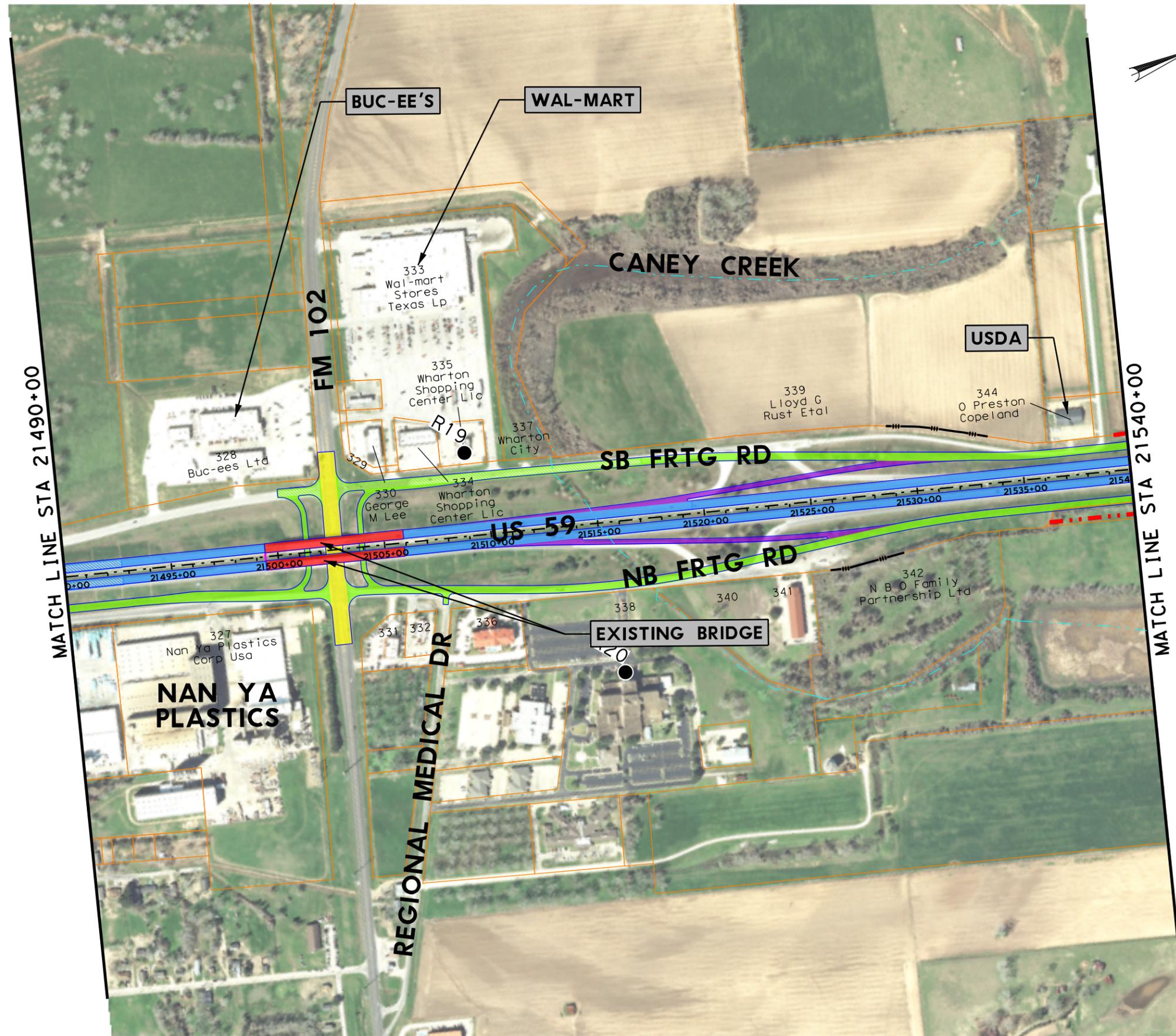


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-  PROPOSED RETAINING WALL
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NOISE RECEIVERS

-  R1 NON-IMPACTED
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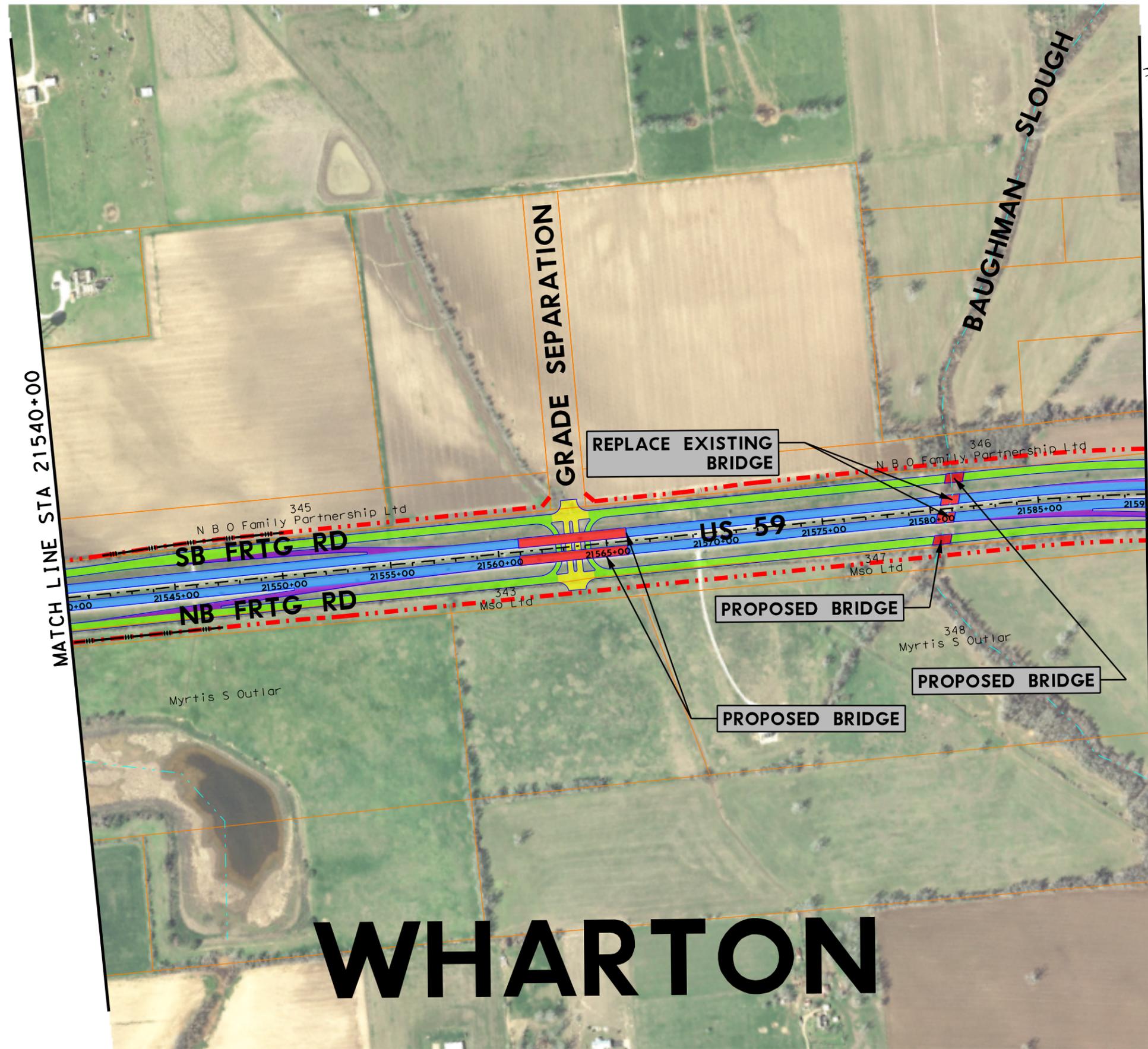
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**US 59 SCHEMATIC DESIGN
 WHARTON COUNTY**

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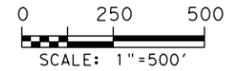
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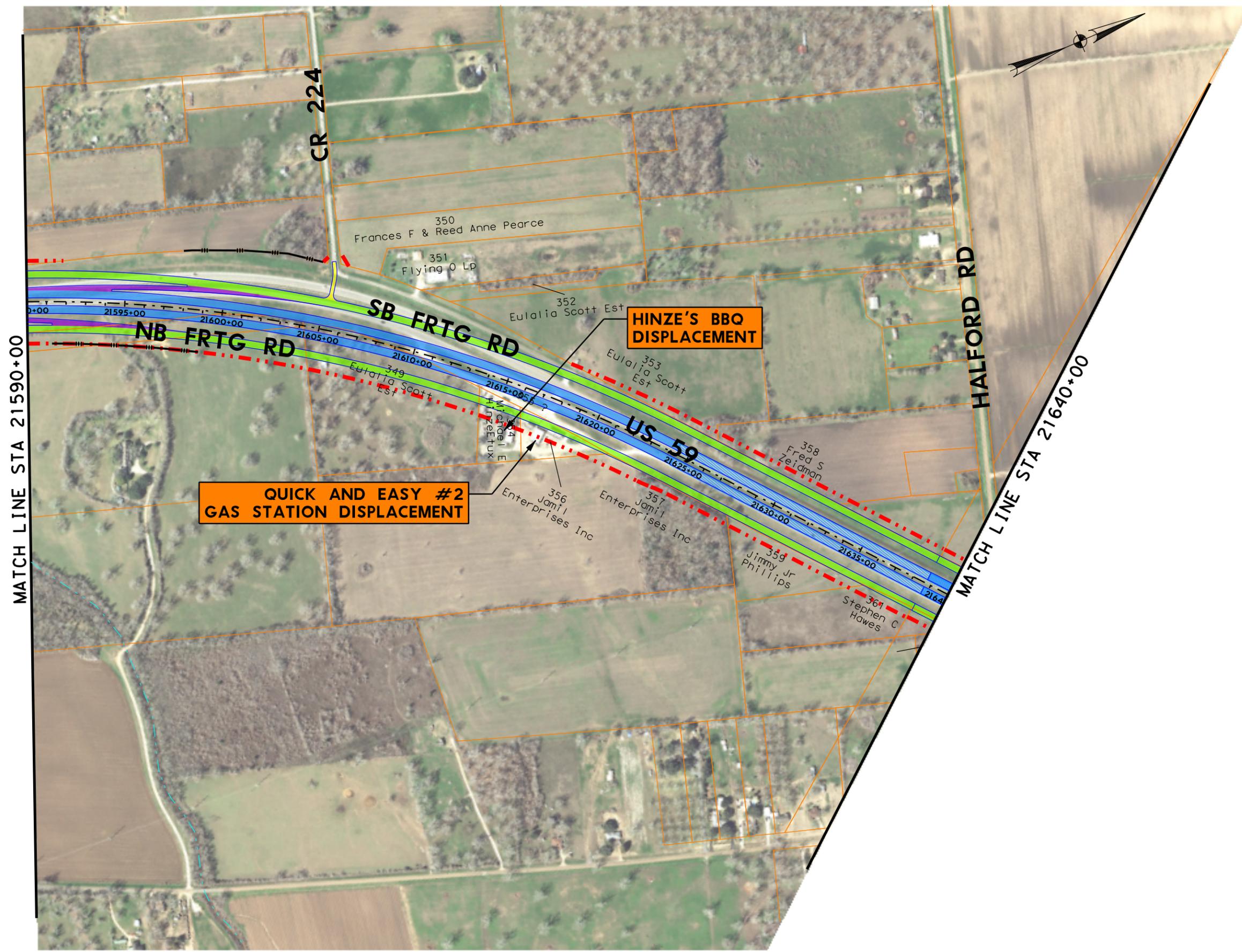
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NOISE RECEIVERS

- R1 NON-IMPACTED
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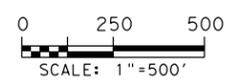


LEGEND

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NOISE RECEIVERS

- R1 NON-IMPACTED
- R2 IMPACTED

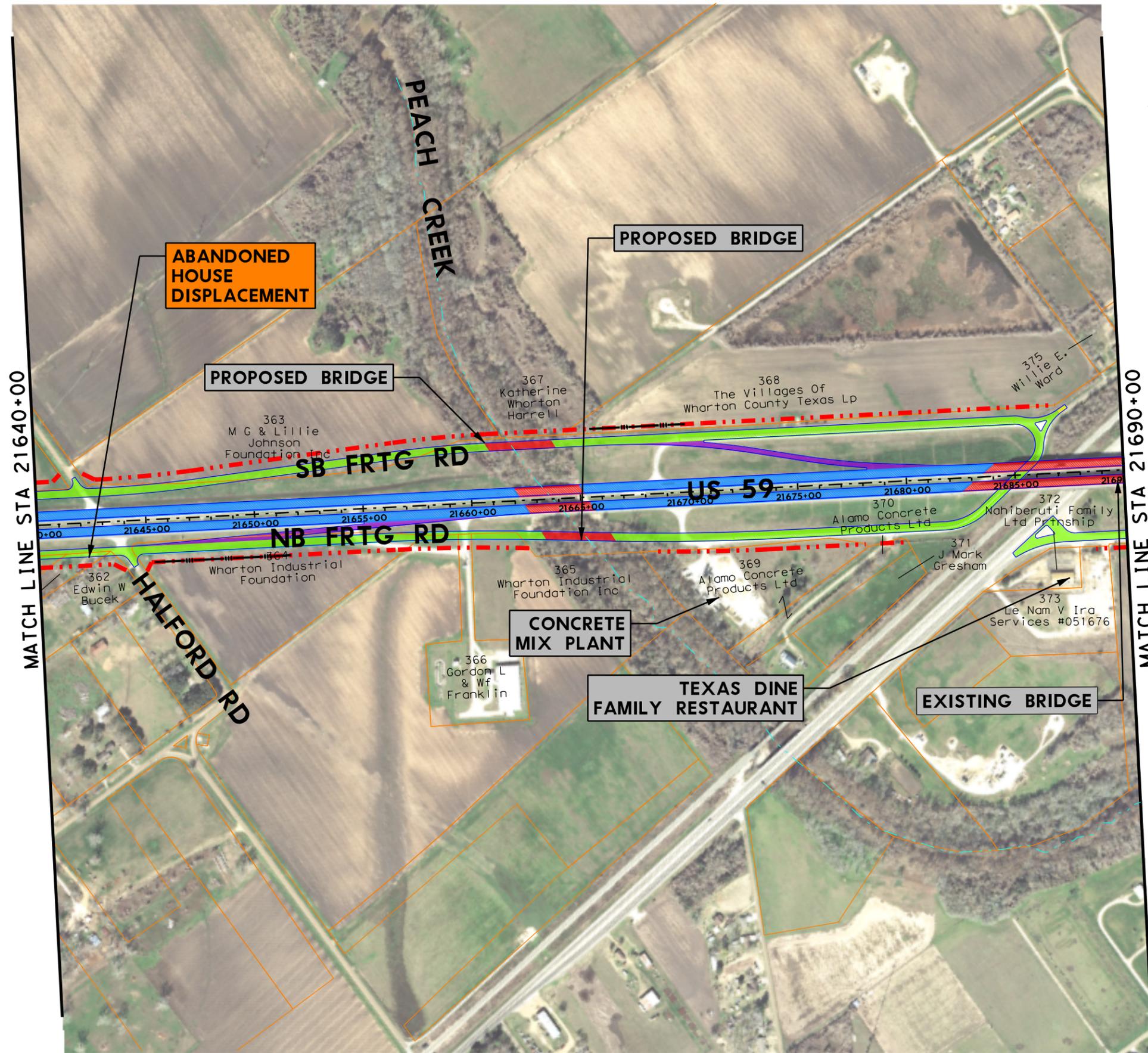


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LEGEND

- PROPOSED EDGE OF PAVEMENT
- PROPOSED RETAINING WALL
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- EXISTING BRIDGE TO REMAIN

NOISE RECEIVERS

- R1 NON-IMPACTED
- R2 IMPACTED



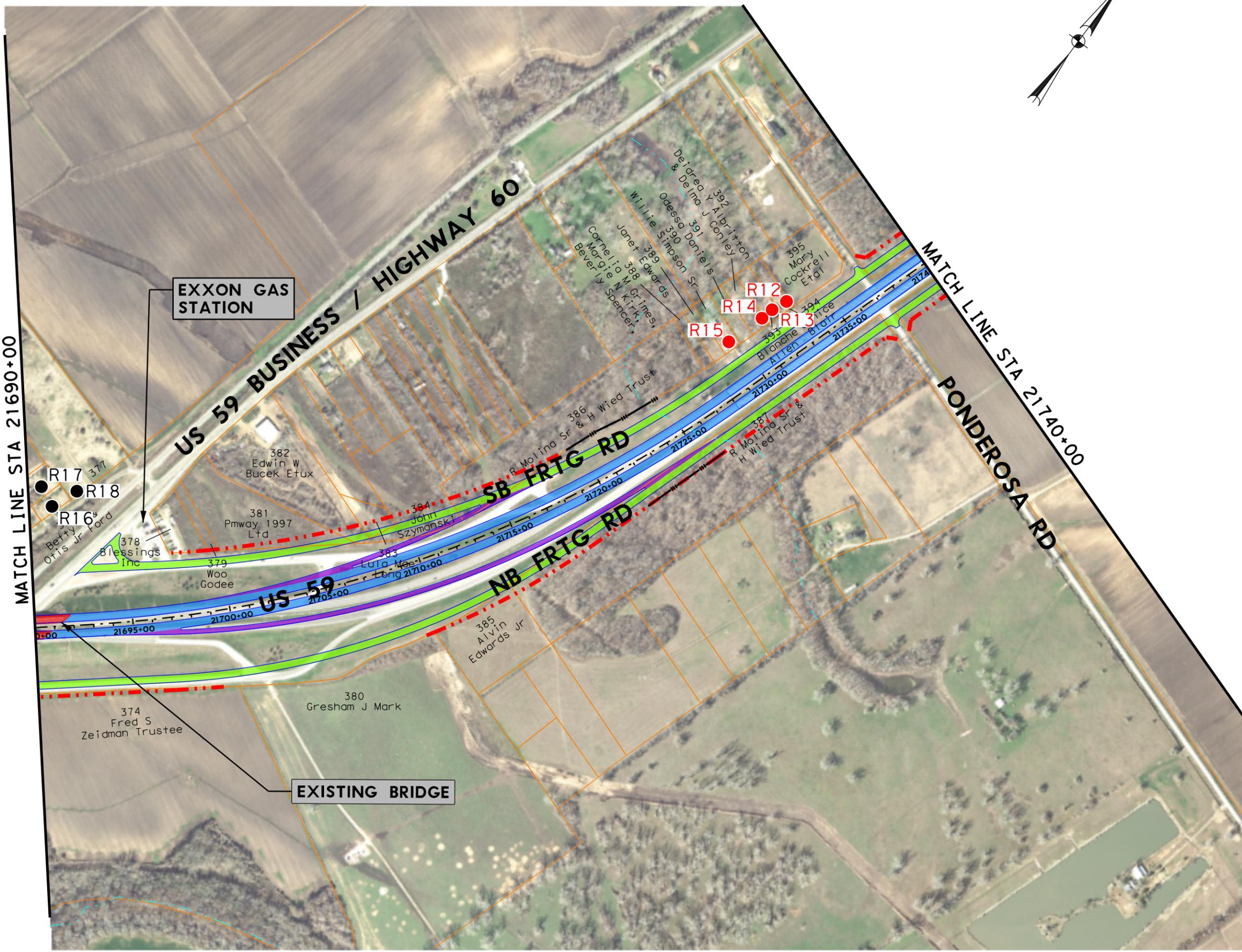
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**US 59 SCHEMATIC DESIGN
 WHARTON COUNTY**

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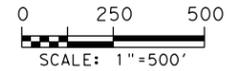


LEGEND

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NOISE RECEIVERS

- R1 ● NON-IMPACTED
- R2 ● IMPACTED

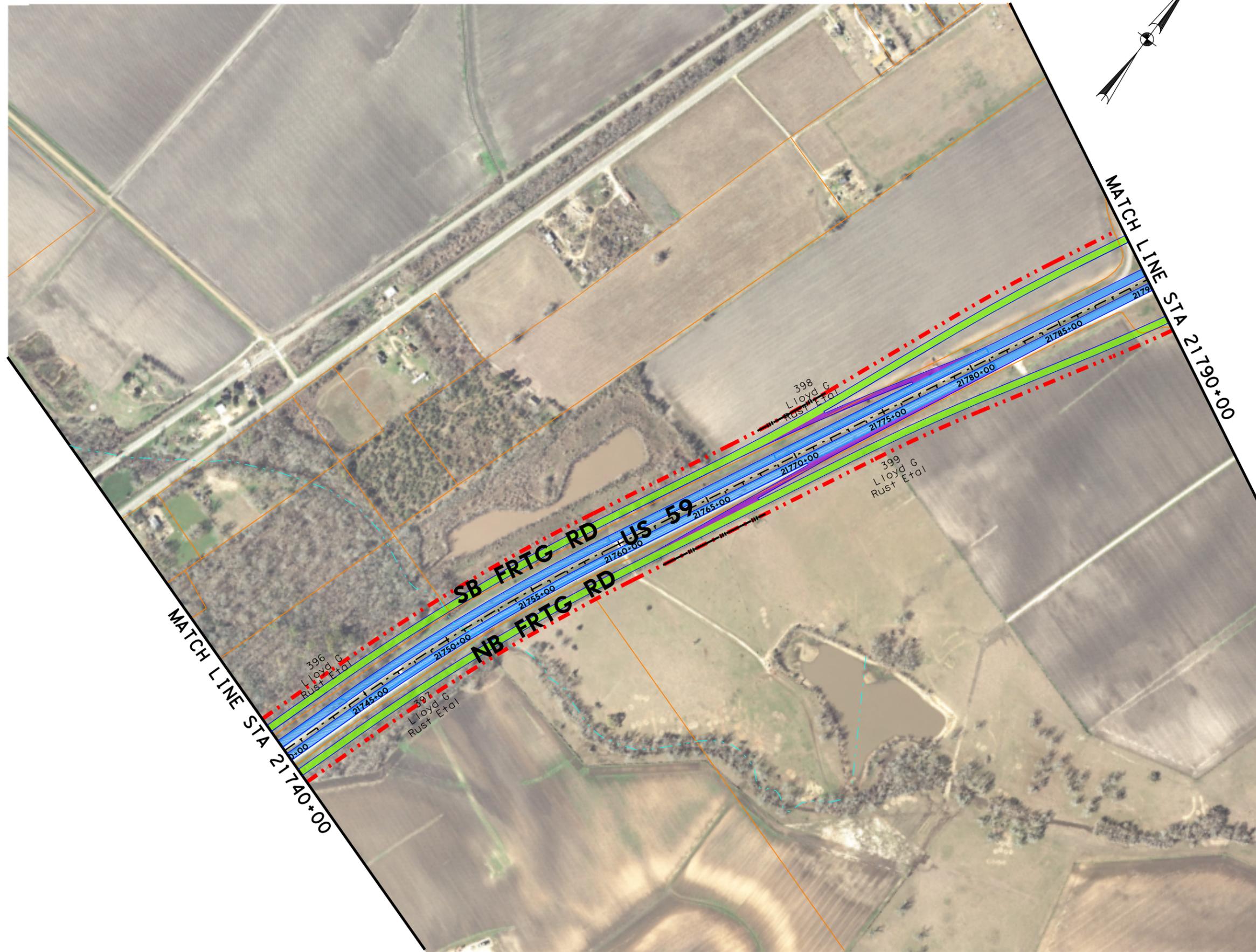


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WHARTON COUNTY**

EXHIBIT D

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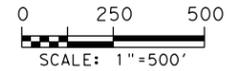


LEGEND

-  PROPOSED EDGE OF PAVEMENT
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NOISE RECEIVERS

- R1  NON-IMPACTED
- R2  IMPACTED



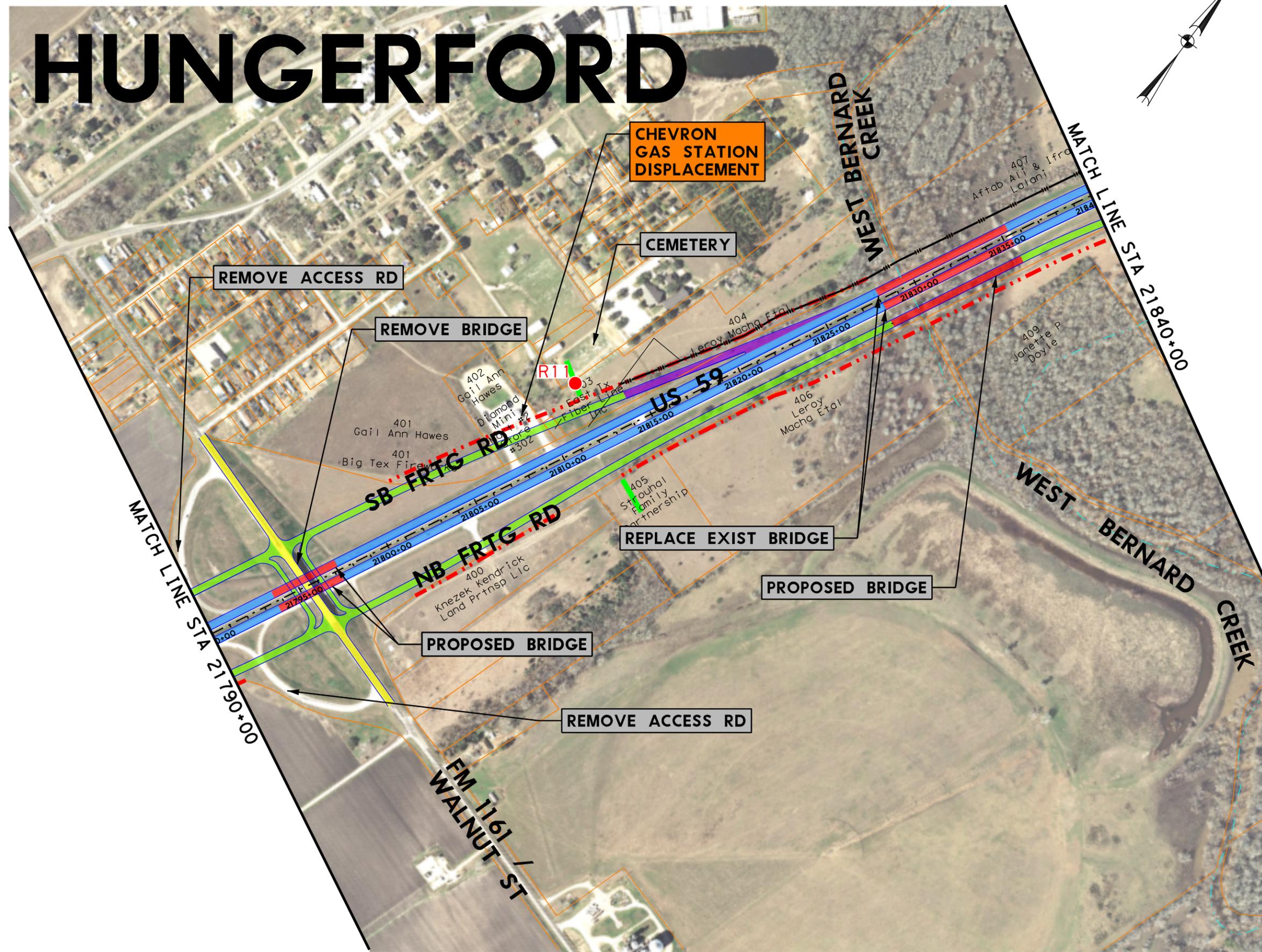
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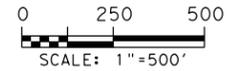


LEGEND

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NOISE RECEIVERS

- R1 NON-IMPACTED
- R2 IMPACTED



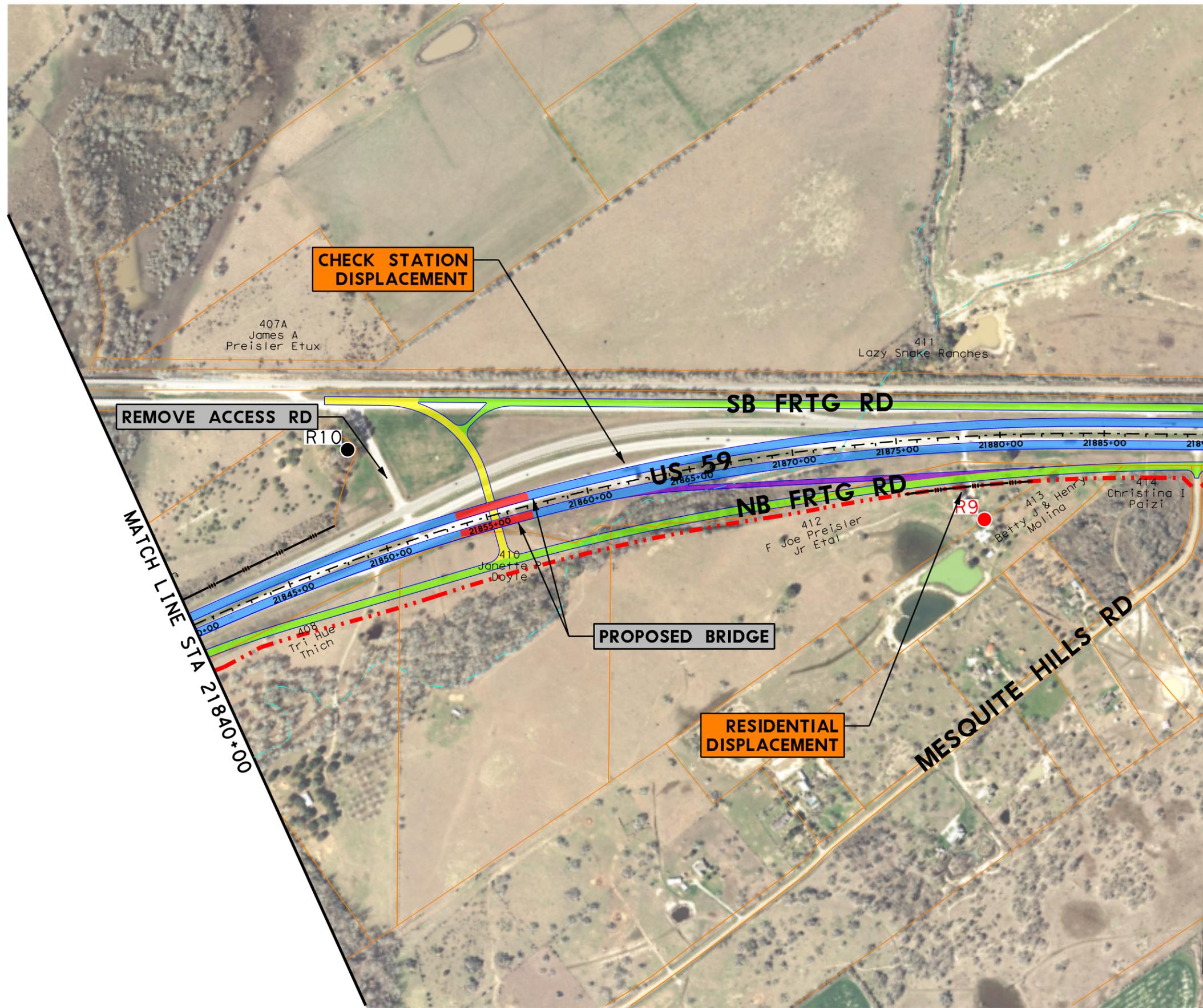
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LEGEND

- PROPOSED EDGE OF PAVEMENT
- PROPOSED RETAINING WALL
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NOISE RECEIVERS

- R1 ● NON-IMPACTED
- R2 ● IMPACTED

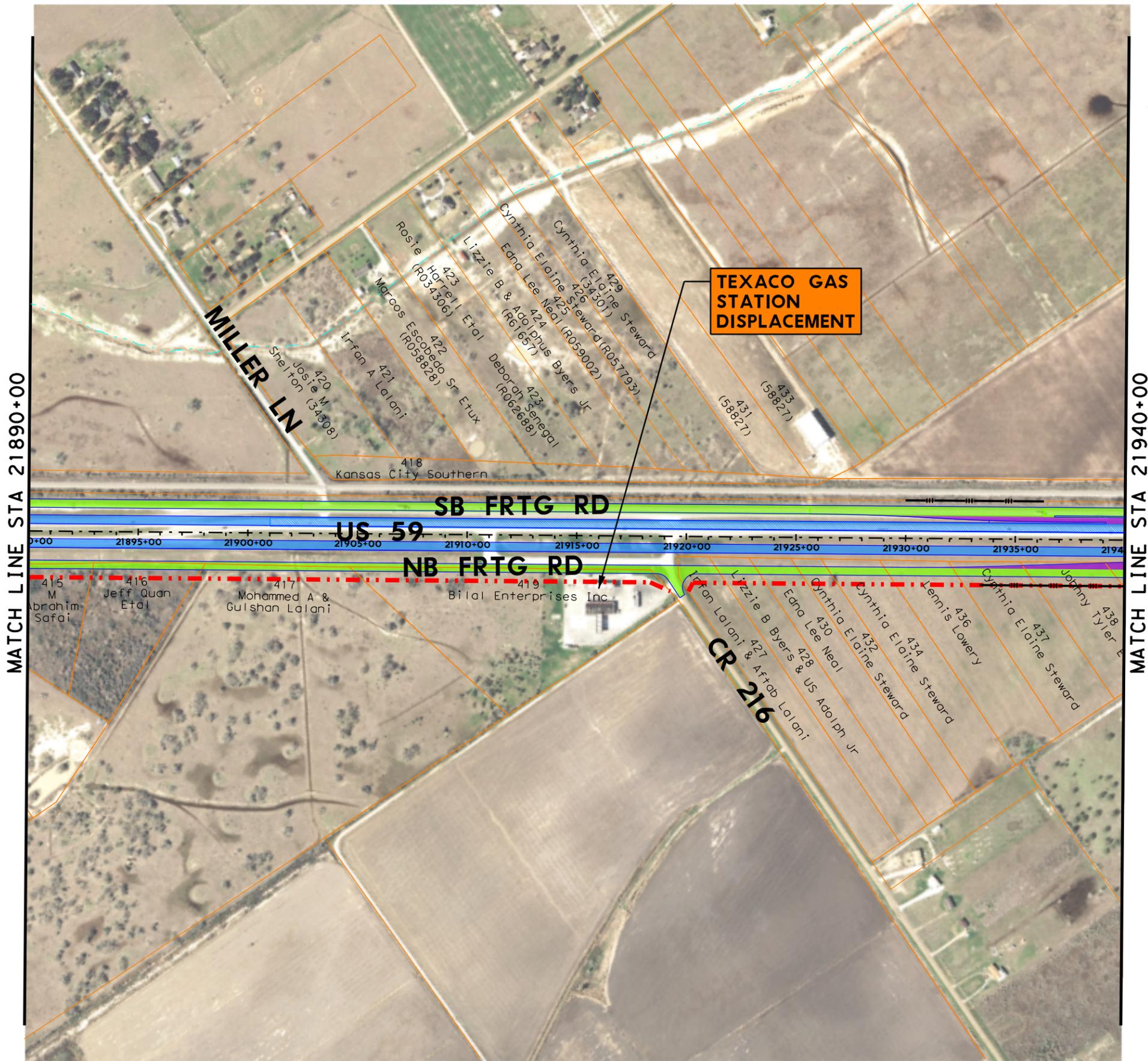


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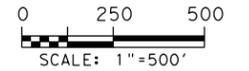


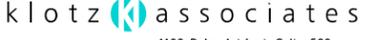
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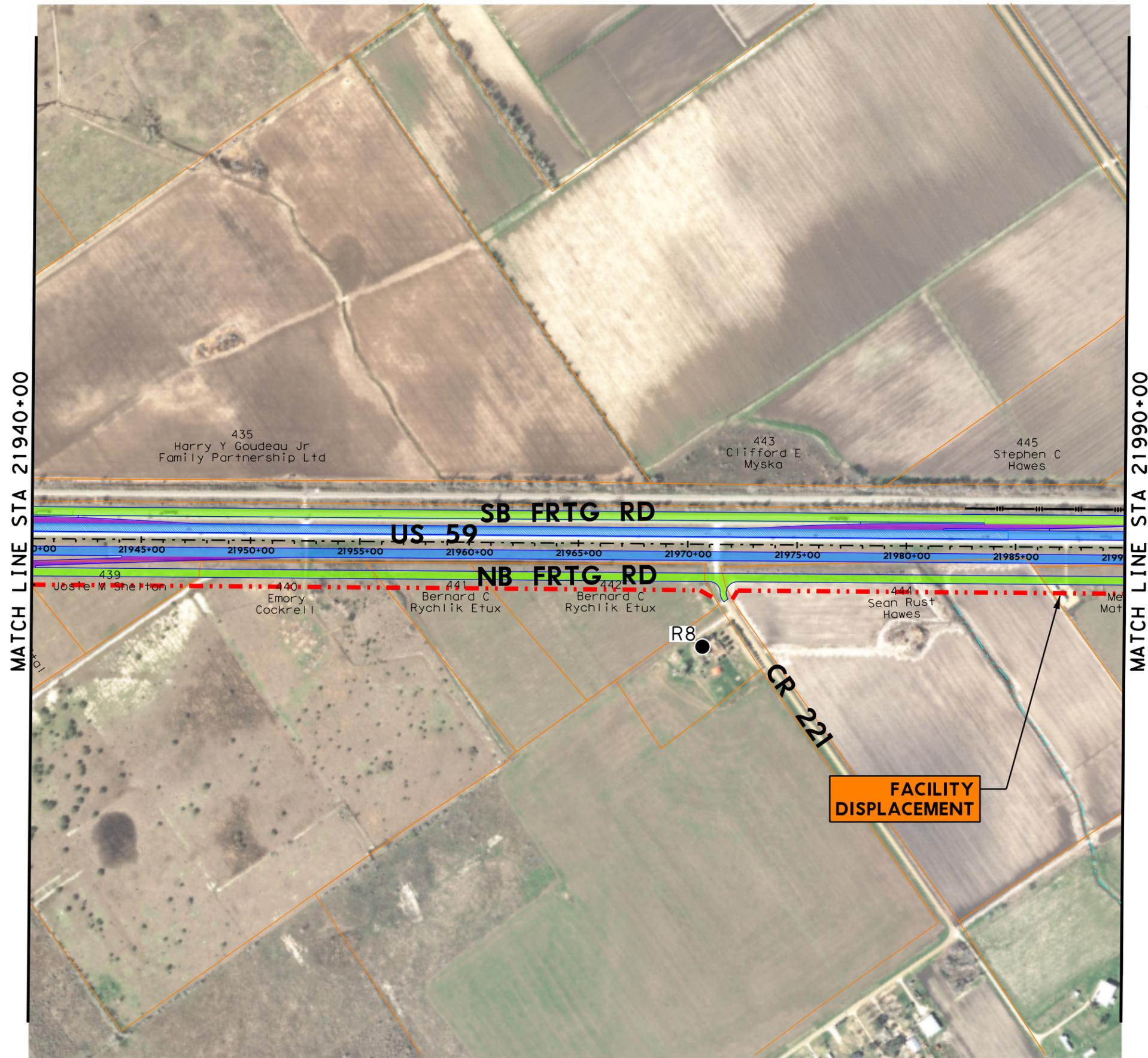
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NOISE RECEIVERS

- R1  NON-IMPACTED
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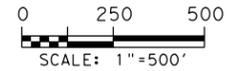


LEGEND

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NOISE RECEIVERS

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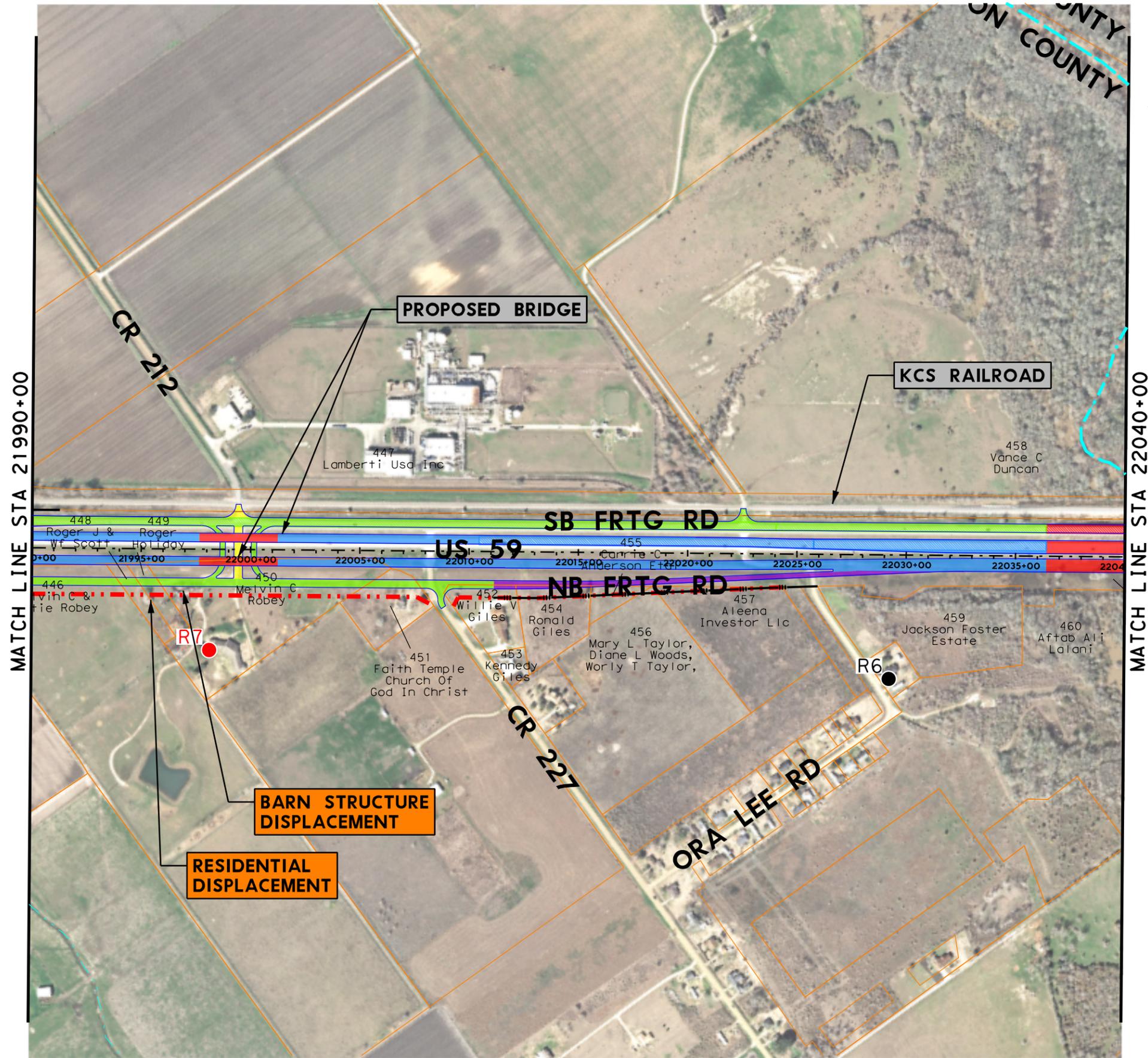


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 WHARTON COUNTY**

EXHIBIT D

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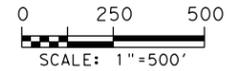


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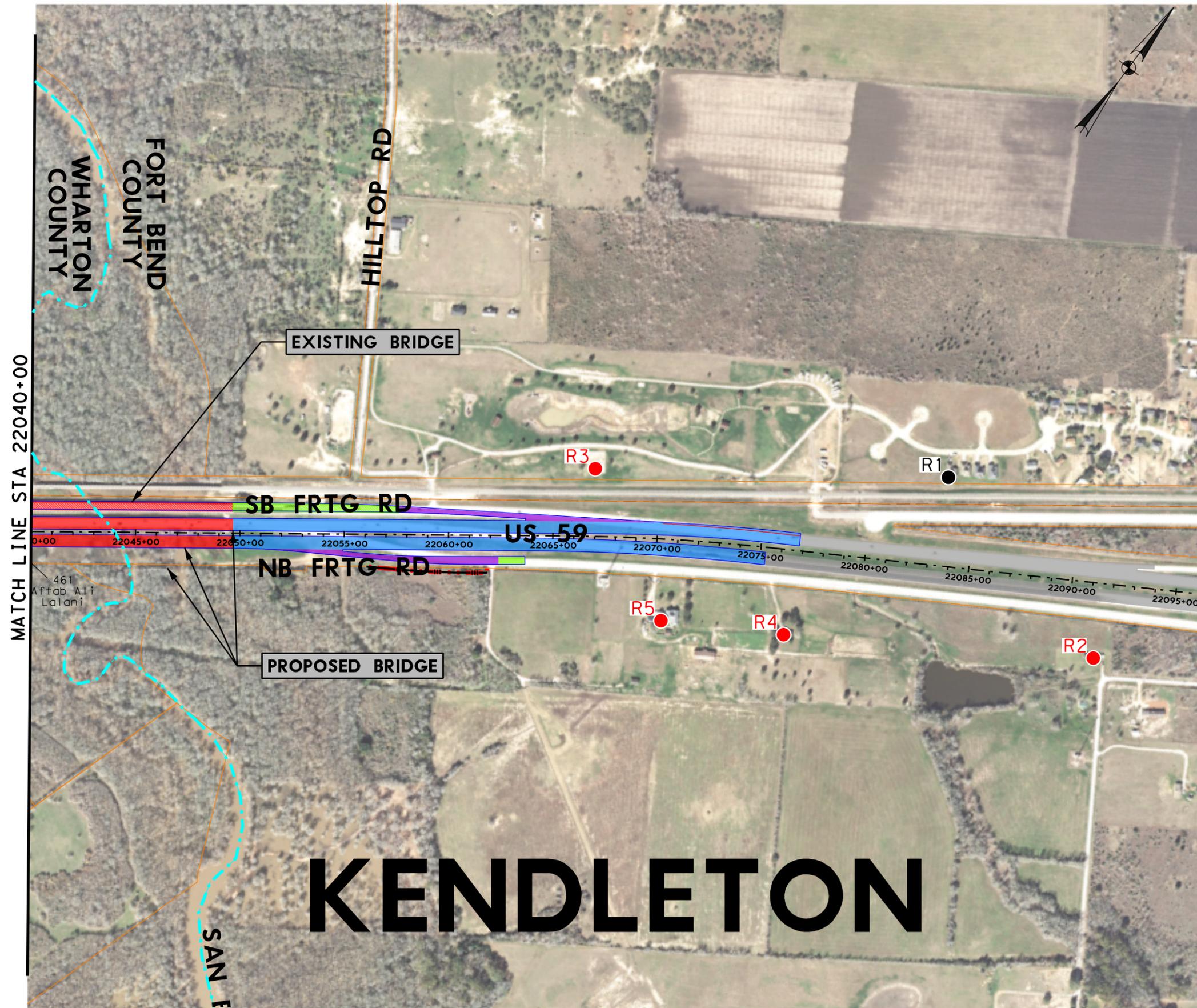
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NOISE RECEIVERS

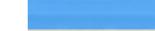
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EXHIBIT D	
KLOTZ PROJ. No: 0121.066.001	PAGE
SCALE: 1"=500'	37
DATE: JULY 2016	

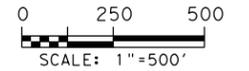


LEGEND

-  PROPOSED EDGE OF PAVEMENT
-  PROPOSED RETAINING WALL
-  EXISTING PROPERTY LINE/ROW
-  PROPOSED ROW
-  ACCESS DENIAL
-  MAINLANE
-  FRONTAGE ROAD
-  RAMP
-  BRIDGE
-  2-WAY STREET
-  EXISTING PAVEMENT TO REMAIN (AS MAINLANE)
-  EXISTING PAVEMENT TO REMAIN (AS FRONTAGE ROAD)
-  EXISTING BRIDGE TO REMAIN

NOISE RECEIVERS

- R1 ● NON-IMPACTED
- R2 ● IMPACTED



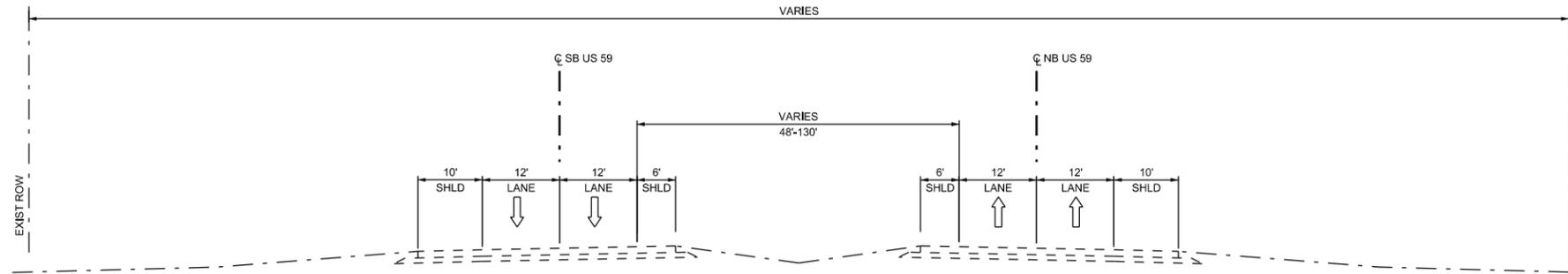
klotz associates
 1160 Dairy Ashford, Suite 500
 Houston, Texas 77079
 T 281.589.7257 F 281.589.7309
 houston.office@klotz.com
 Texas PE Firm Reg. # F-929

**US 59 SCHEMATIC DESIGN
 WHARTON COUNTY**

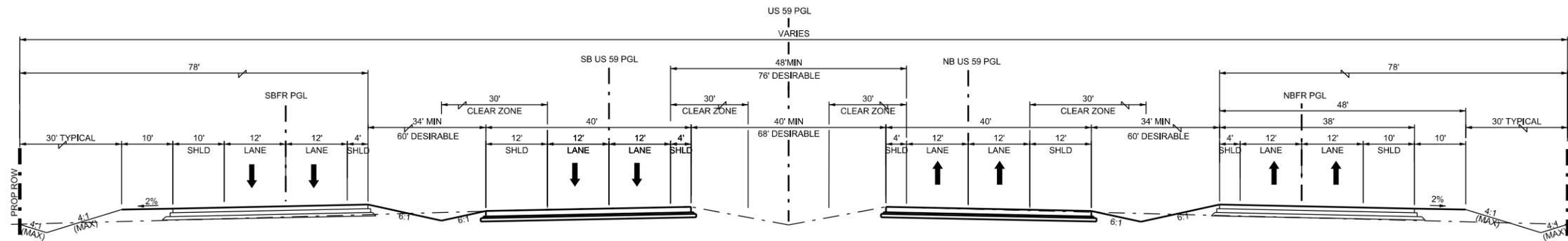
EXHIBIT D

KLOTZ PROJ. No: 0121.066.001
 SCALE: 1"=500'
 DATE: OCTOBER 2016

PAGE
38



TYPICAL SECTION - EXISTING US 59
DIVIDED HIGH SPEED SEPARATION
WITH NON CONTINUOUS RURAL FRTG ROADS
(NTS)



TYPICAL SECTION
DIVIDED HIGH SPEED SEPARATION
W/ RURAL FRTG ROADS
(NTS)

klotz associates
1160 Dairy Ashford, Suite 500
Houston, Texas 77079
T 281.589.7257 F 281.589.7309
houston.office@klotz.com
Texas PE Firm Reg. # F-929

US 59 SCHEMATIC DESIGN
WHARTON COUNTY

TYPICAL SECTIONS

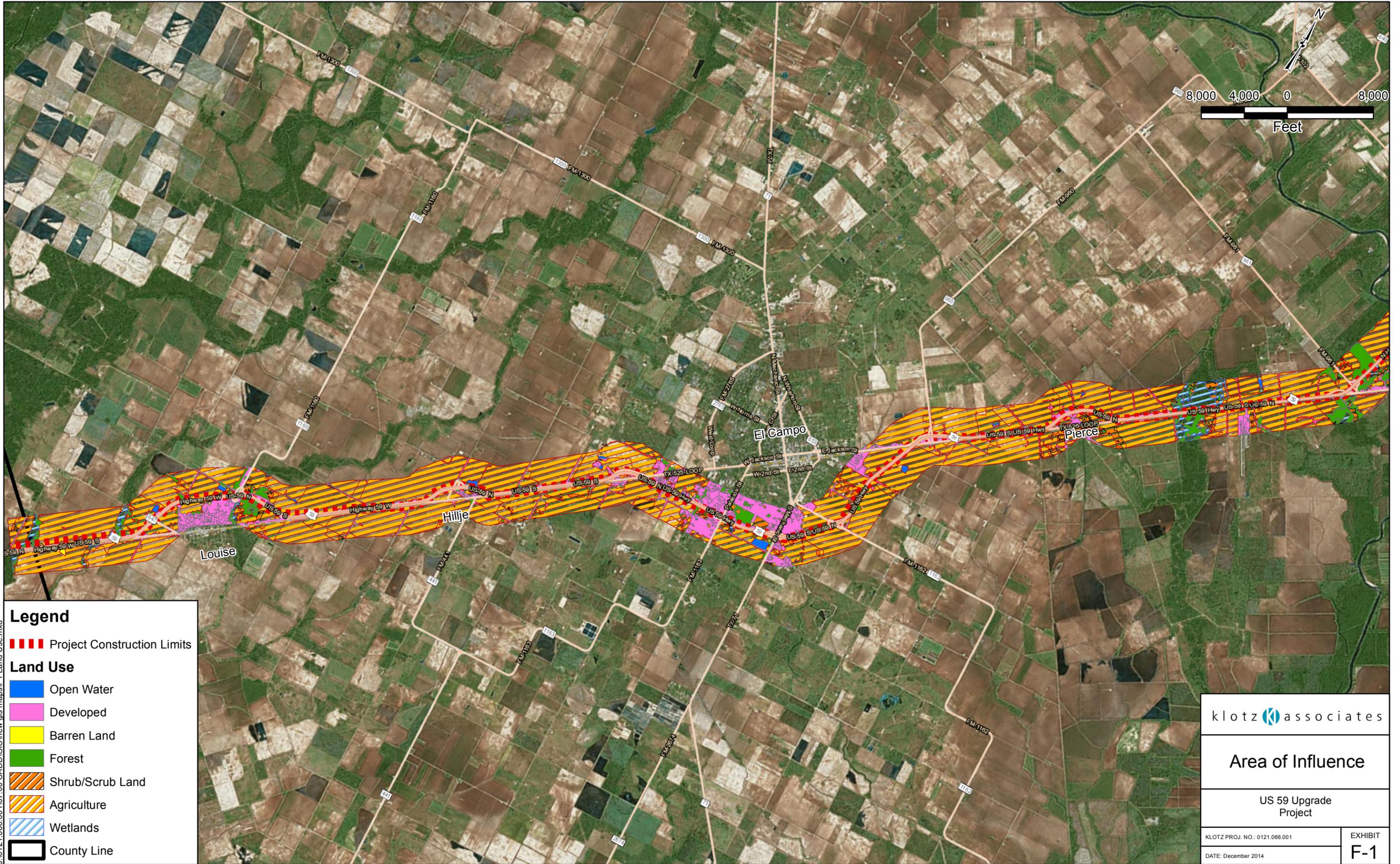
KLOTZ PROJ. No: 0121.066.001

SCALE: N.T.S.

DATE: DECEMBER 2014

EXHIBIT

E



Legend

- Project Construction Limits
- Land Use**
- Open Water
- Developed
- Barren Land
- Forest
- Shrub/Scrub Land
- Agriculture
- Wetlands
- County Line

klotz associates

Area of Influence

US 59 Upgrade Project

KLOTZ PROJ. NO.: 0121.066.001	EXHIBIT
DATE: December 2014	F-1

J:\0121.066.001\07.00_CADD\GIS\new gis maps\F1_Land Use.mxd

Source: 2011 NLCD (National Land Cover Dataset)

APPENDIX A
COORDINATION LETTERS

February 24, 2014

Mr. David Frank
United States Coast Guard
500 Poydras Street Rm 1313
New Orleans, Louisiana 70130-3310

Re: US 59 Upgrade to Interstate Standards through Wharton County, Texas
Klotz Associates Project No. 0121.066.001

Dear Mr. Frank:

The Texas Department of Transportation (TxDOT) is proposing to upgrade US 59 to meet interstate standards through Wharton County from the Fort Bend County Line to the Jackson County Line. Attached to this letter are two Bridge Project Questionnaires for the proposed crossings at the San Bernard River and Colorado River.

Klotz Associates, Inc. is under contract with TxDOT to perform environmental and design services for this proposed highway project. We have just started the project and would like to know whether or not the San Bernard River and the Colorado River are considered navigable at the US 59 crossing locations. If you need any additional information or have any questions regarding this project, please feel free to contact me at (281) 589-7257.

Sincerely,



Cody Bathe
Environmental Planner

CB:ng

Attachments

Cc: Mr. Alan Migl (w/Attachments)
403 Huck Street
Yoakum, Texas 77995



BRIDGE PROJECT QUESTIONNAIRE

CTRL # 14-0004

Waterways between Wharton/Fort Bend County line and Wharton/Jackson County line.

Please provide the following information:

A. NAVIGATION DATA:

1. Name of Waterway: San Bernard River _____

1a. Mileage along waterway measured from mouth or confluence. Approximately 73 miles from mouth of the river at Gulf Intracoastal Waterway.

1b. Tributary of: _____

2. Geographic Location: At US 59 (the Wharton/Fort Bend County Line), just south of Kendleton, Texas (see attached location map).

(Road Number, City, County, State) and (Latitude and Longitude in NAD 83 form)

3. Township, section and range, if applicable: N/A _____

4. Tidally influenced at proposed bridge site? Yes ___ No x
Range of tide: _____
Tidal data source: _____

5. Depth and width of waterway at proposed bridge site:

	Depths	Widths
At Mean High Tide	_____	_____
At Mean Low Tide	_____	_____

6. Character of present vessel traffic on waterway. If none, so state: None _____
Canoe x Rowboat x Small Motorboat _____ Cabin Cruiser _____
Houseboat _____ Pontoon Boat _____ Sailboat _____

Note: These types of vessels have not been observed but they could possibly use the San Bernard River at the US 59 crossing location.

6a. Provide vertical clearance requirement for largest vessel using the waterway: 5 feet

6b. Provide photograph of each type of vessel using the waterway.

7. Are these waters used to transport interstate or foreign commerce?

Yes _____ No x

- 7a. Are these waters susceptible to use in their natural condition or by reasonable improvement as a means to support interstate or foreign commerce?
Yes _____ No x
- 7b. Any planned water way improvements to permit larger vessels to navigate (to your knowledge)? No If so, what are they? _____
8. Any natural or manmade obstructions, bridges, dams, weirs, etc. downstream or upstream? Yes x No _____
- 8a. If yes, provide upstream/downstream location with relation to the proposed bridge. (1) Private landowner one lane bridge approximately 5.8 miles downstream with extremely low vertical clearance. (2) Private landowner one lane bridge approximately 7.2 miles downstream with extremely low vertical clearance. (3) Private landowner one lane bridge approximately 8.2 miles downstream with extremely low vertical clearance. (4) Private landowner one lane bridge approximately 1.8 miles downstream of FM 442 with very low vertical clearance. (5) Railroad bridge crossing approximately 4.1 miles downstream of FM 442 with over 10 feet vertical clearance. (6) Bridge crossing on Schleys Crossing Rd (FM 442) downstream. (7) FM 1301 bridge crossing approximately 33 miles downstream. (8) Dam approximately 2 miles upstream of SH 35. (9) SH 35 bridge crossing approximately 43 miles downstream. (10) FM 522 bridge crossing approximately 47 miles downstream. (11) Railroad bridge crossing approximately 6.1 miles downstream of FM 522. (12) FM 521 bridge crossing approximately 56 miles downstream. (13) FM 2611 bridge crossing approximately 63 miles downstream. (14) There are also numerous locations along the river where fallen trees and debris block the river making it impassable by boat.
- 8b. If bridges are located upstream or downstream, provide vertical clearance at mean high water and mean low water and horizontal clearance normal to the axis of the channel.
- 8c. Provide a photograph of the bridge from the waterway showing channel spans.
Attached
9. Will the structure replace an existing bridge? Yes _____ No _____
We are in the beginning stage of the project and that has not been determined yet.
- 9a. Provide permit number and issuing agencies of permits for bridge(s) to be replaced.

Coordination with the Corps of Engineers may be required however we are still in the beginning stages of the project and that has not yet been determined.
- 9b. Provide vertical clearance at mean high water and mean low water and horizontal clearance normal to the axis of the channel for the proposed bridge.

If either, or both, of existing two bridges are replaced, the proposed bridge(s) would provide the same or greater vertical clearance.

10. List names and addresses of persons whose property adjoins bridge right-of-way.
We are in the beginning of the project and have not obtained this information yet.
11. List names and addresses/location of marinas, marine repair facilities, public boat ramps, private piers/docks along the waterway within ½ mile of the bridge site.
None of these exist within 0.5 mile upstream or downstream of the US 59 bridge crossing.
12. Attach location map and plans for the proposed bridge; including vertical clearances above mean high water and mean low water and horizontal clearance normal to axis of the waterway. Location Map attached
13. Attach three (3) photographs taken at the proposed bridge site: one looking upstream, one looking downstream, and one looking along the alignment centerline across the bridge site. Photographs attached.

Name of applicant: Texas Department of Transportation Yoakum District

Name of agent completing questionnaire: Cody Bathe

Name of agent's firm: Klotz Associates, Inc.

Agent's telephone number: 281-589-7257

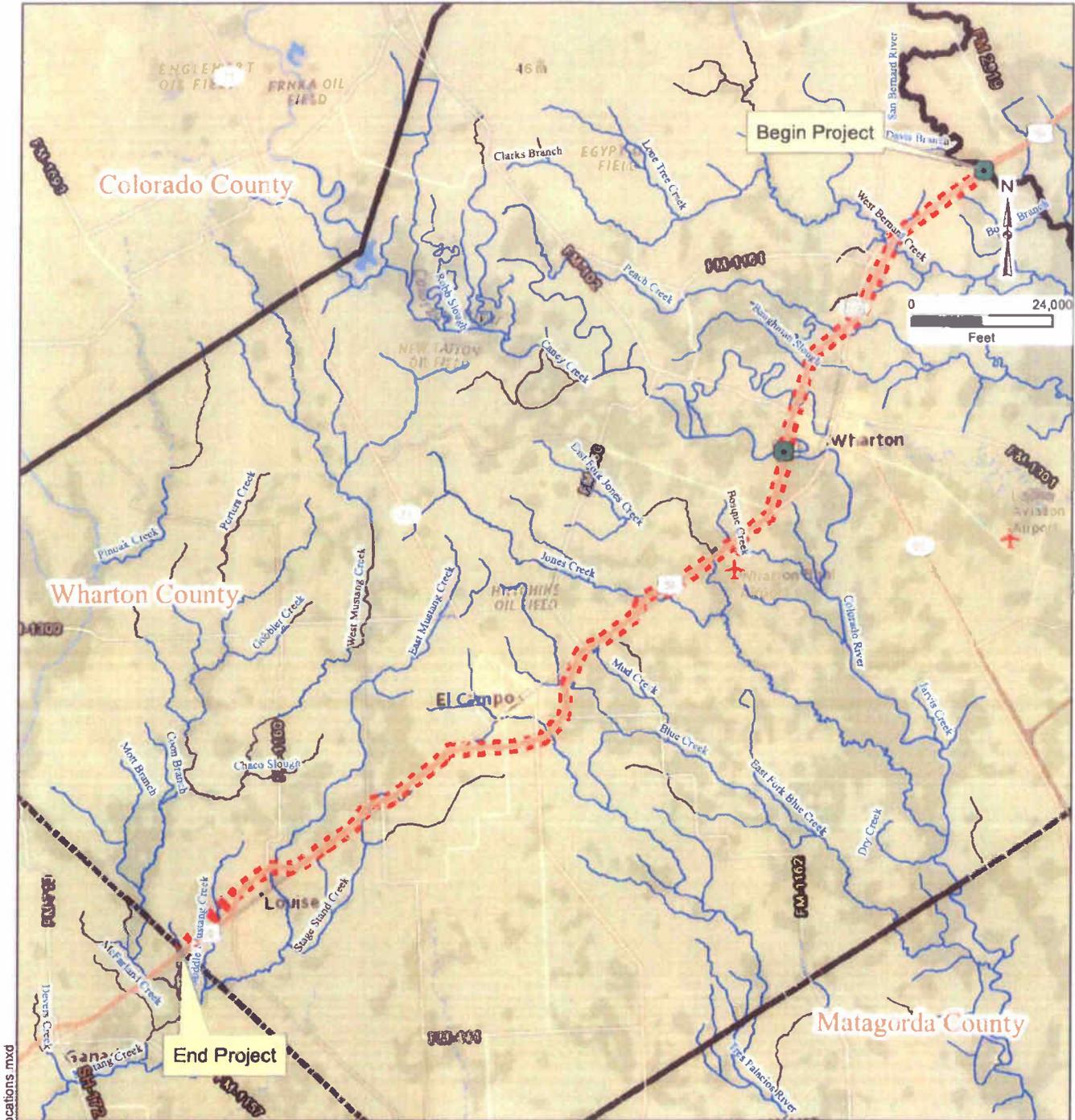
Address for correspondence: 1160 Dairy Ashford, Suite 500, Houston, Texas 77079

Applicant's telephone number: _____

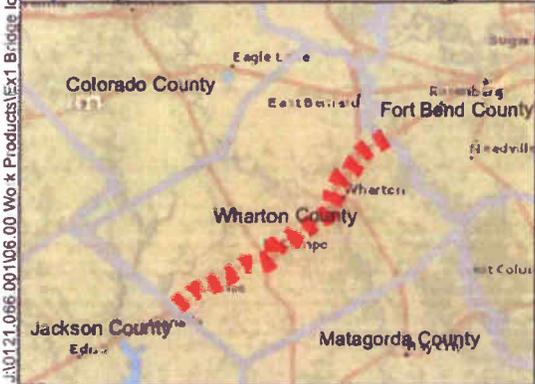
Date: 2/13/14 Signature: _____

**PLEASE NOTE: MISSING INFORMATION AND REQUIRED SIGNATURES WILL
DELAY PROCESSING**

Attachments: Location Map, Bridge Photographs



J:\0121.066.00\Work Products\Ex1 Bridge locations.mxd



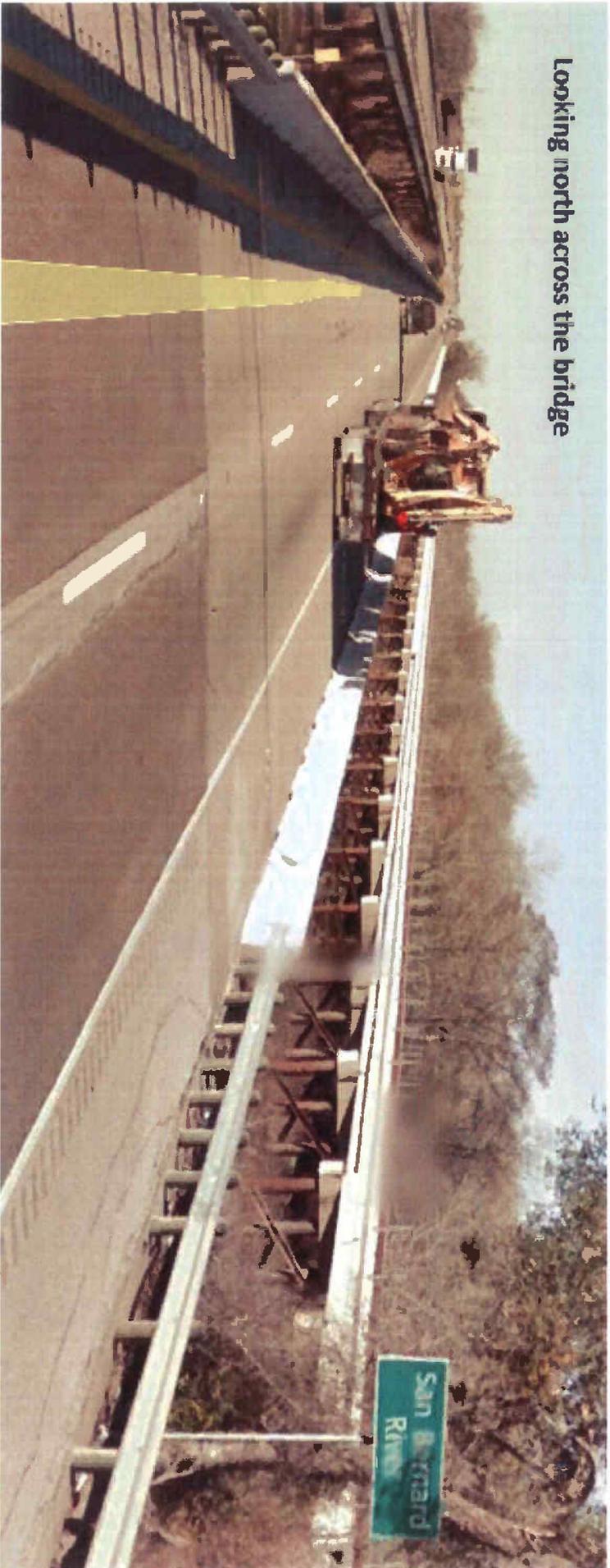
Legend

- Bridge Locations
- Project Construction Limits
- County Line
- Rivers & Streams

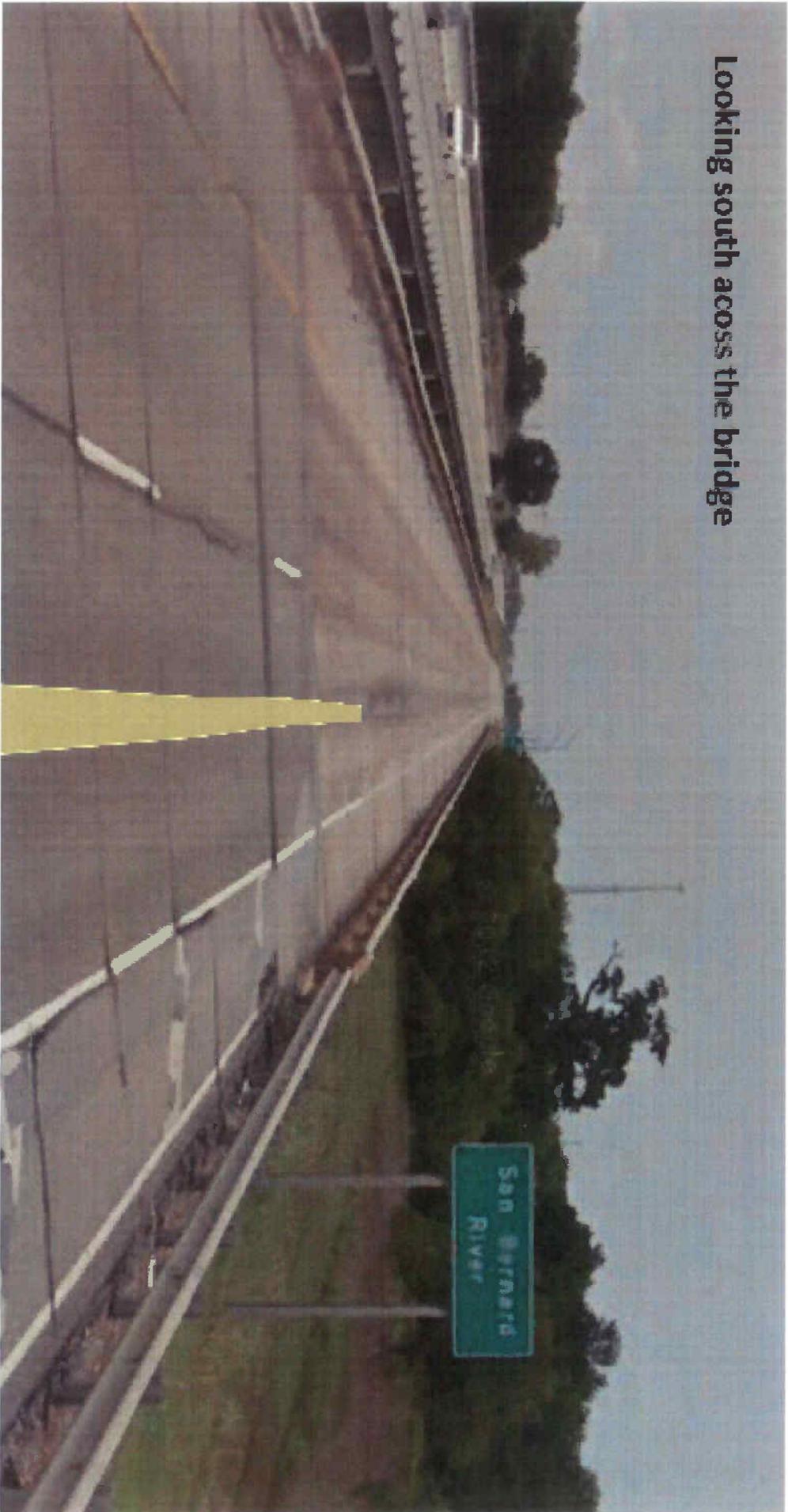
Bridge Location Map	
US 59 From FM 2919 To SH 172	
KLOTZ PROJ NO. 0121 066 000	EXHIBIT A
DATE January 2014	

Source: National Geographic, ESRI (2012)

Looking north across the bridge



Looking south across the bridge





San Bernard River looking up river

San Bernard River looking down river





BRIDGE PROJECT QUESTIONNAIRE

CTRL # 14-0004

Waterways between Wharton/Fort Bend County line and Wharton/Jackson County line.

Please provide the following information:

A. NAVIGATION DATA:

1. Name of Waterway: Colorado River _____

1a. Mileage along waterway measured from mouth or confluence. Approximately 65 miles from mouth of the river at Matagorda Bay.

1b. Tributary of: _____

2. Geographic Location: At US 59 located south of the City of Wharton and in Wharton County, Texas

(Road Number, City, County, State) and (Latitude and Longitude in NAD 83 form)

3. Township, section and range, if applicable: _____

4. Tidally influenced at proposed bridge site? Yes ___ No x .
Range of tide: _____
Tidal data source: _____

5. Depth and width of waterway at proposed bridge site:

	Depths	Widths
At Mean High Tide	_____	_____.
At Mean Low Tide	_____	_____.

6. Character of present vessel traffic on waterway. If none , so state: None _____.
Canoe x Rowboat x Small Motorboat _____ Cabin Cruiser
Houseboat _____ Pontoon Boat _____ Sailboat .

Note: These types of vessels have not been observed but they could possibly use the Colorado River at the US 59 crossing location.

6a. Provide vertical clearance requirement for largest vessel using the waterway: 5 feet

6b. Provide photograph of each type of vessel using the waterway.

7. Are these waters used to transport interstate or foreign commerce?

Yes _____ No _____ .

- 7a. Are these waters susceptible to use in their natural condition or by reasonable improvement as a means to support interstate or foreign commerce?
Yes _____ No _____ .
- 7b. Any planned waterway improvements to permit larger vessels to navigate (to your knowledge)? No _____ If so, what are they? _____
8. Any natural or manmade obstructions, bridges, dams, weirs, etc. downstream or upstream? Yes No _____ .
- 8a. If yes, provide upstream/downstream location with relation to the proposed bridge. (1) Railroad bridge crossing is approximately 2.4 miles downstream. (2) Bus 59 bridge crossing is approximately 2.6 miles downstream. (3) There is a pipeline crossing approximately 8.6 miles downstream. (4) Dam approximately 13.3 miles downstream. (5) Power line crossing approximately 18.2 miles downstream. (6) Power line crossing approximately 19 miles downstream. (7) There is another pipeline crossing approximately 34.1 miles downstream. (8) SH 35 bridge crossing approximately 34.9 miles downstream. (9) Dam approximately 35.8 miles downstream. (10) Railroad bridge crossing approximately 41.9 miles downstream. (11) FM 521 bridge crossing approximately 51.4 miles downstream.
- 8b. If bridges are located upstream or downstream, provide vertical clearance at mean high water and mean low water and horizontal clearance normal to the axis of the channel.
- 8c. Provide a photograph of the bridge from the waterway showing channel spans.
Attached
9. Will the structure replace an existing bridge? Yes _____ No _____ .
We are in the beginning stage of the project and that has not been determined yet.
- 9a. Provide permit number and issuing agencies of permits for bridge(s) to be replaced.

Coordination with the Corps of Engineers may be required however we are still in the beginning stages of the project and that has not yet been determined.
- 9b. Provide vertical clearance at mean high water and mean low water and horizontal clearance normal to the axis of the channel for the proposed bridge.

If either, or both, of the existing two bridges are replaced, the proposed bridge(s) would provide the same or greater vertical clearance.
10. List names and addresses of persons whose property adjoins bridge right-of-way.
We are in the beginning of the project and have not obtained this information yet.

11. List names and addresses/location of marinas, marine repair facilities, public boat ramps, private piers/docks along the waterway within ½ mile of the bridge site. None of these exist within 0.5 mile upstream or downstream of the US 59 bridge crossing.
12. Attach location map and plans for the proposed bridge; including vertical clearances above mean high water and mean low water and horizontal clearance normal to axis of the waterway.
13. Attach three (3) photographs taken at the proposed bridge site: one looking upstream, one looking downstream, and one looking along the alignment centerline across the bridge site.

Name of applicant: Texas Department of Transportation Yoakum District

Name of agent completing questionnaire: Cody Bathe

Name of agent's firm: Klotz Associates, Inc.

Agent's telephone number: 281-589-7257

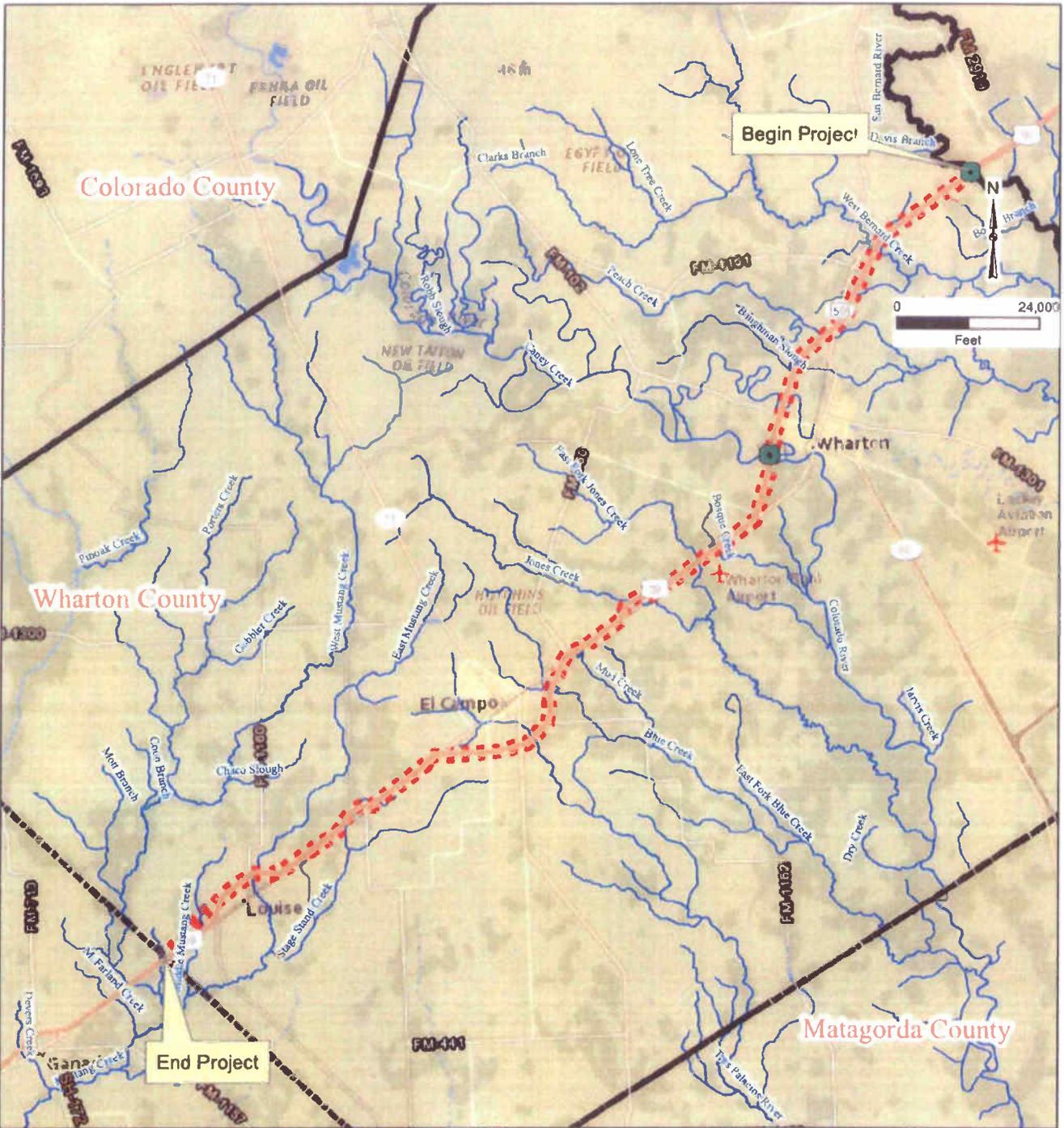
Address for correspondence: 1160 Dairy Ashford, Suite 500, Houston, Texas 77079

Applicant's telephone number: _____

Date: 2/13/14 Signature: _____

**PLEASE NOTE: MISSING INFORMATION AND REQUIRED SIGNATURES WILL
DELAY PROCESSING**

Attachments: Location Map, Bridge Photos



J:\10121.066.00\106.00\Work Products\Ex1 Bridge locations.mxd



Legend

- Bridge Locations
- Project Construction Limits
- County Line
- Rivers & Streams

klotz associates

Bridge Location Map

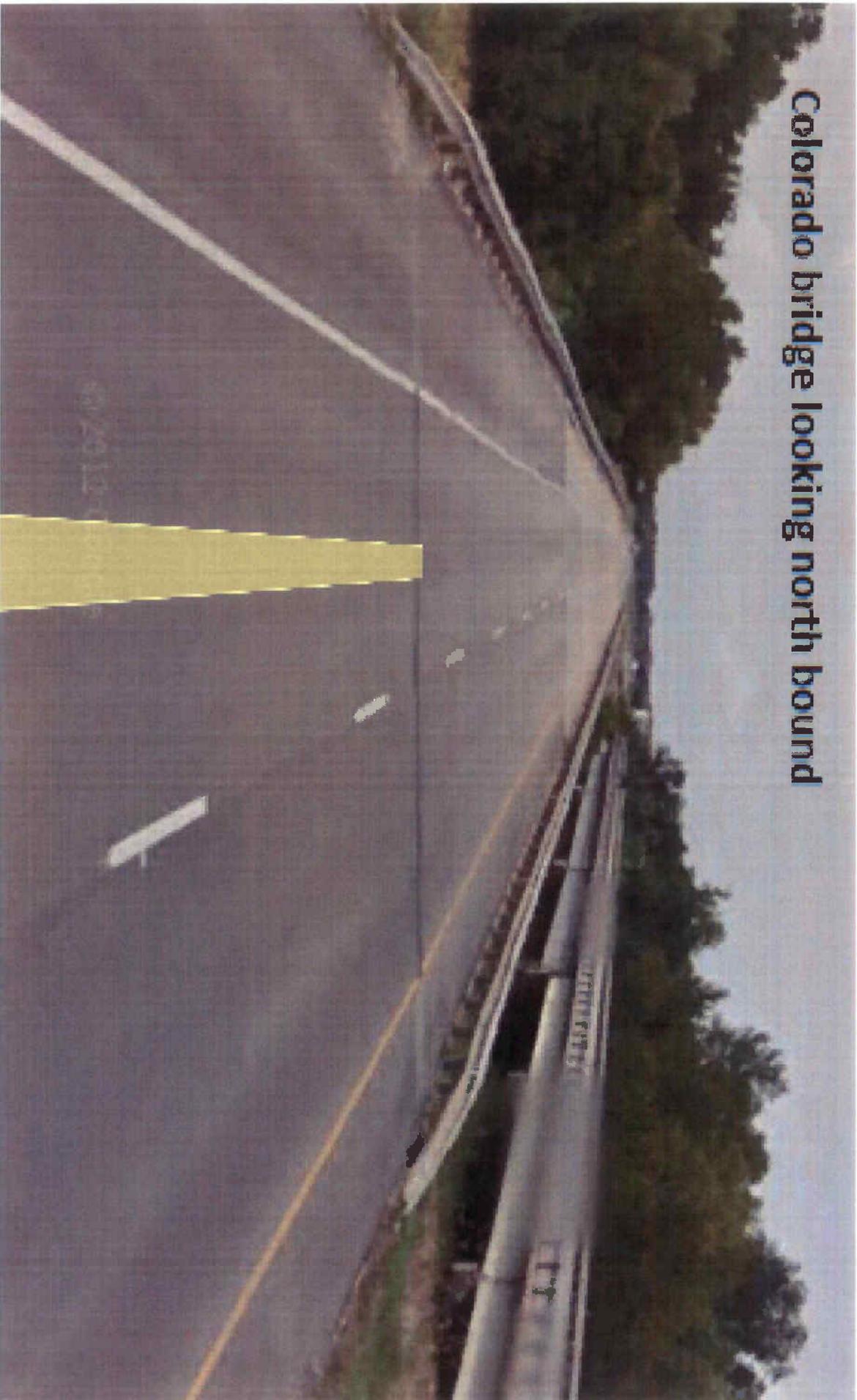
US 59 From FM 2919
To SH 172

KLOTZ PROJ NO.: 0121.066.000
DATE: January 2014

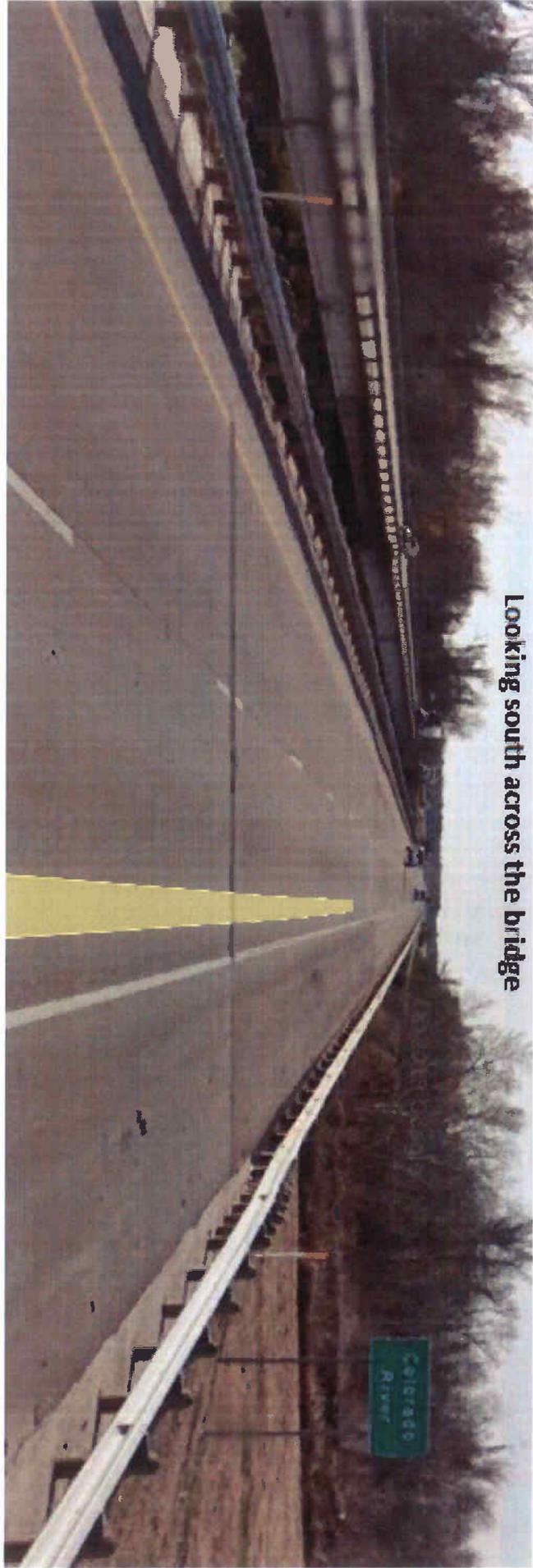
EXHIBIT
A

Source: National Geographic, ESRI (2012)

Colorado bridge looking north bound



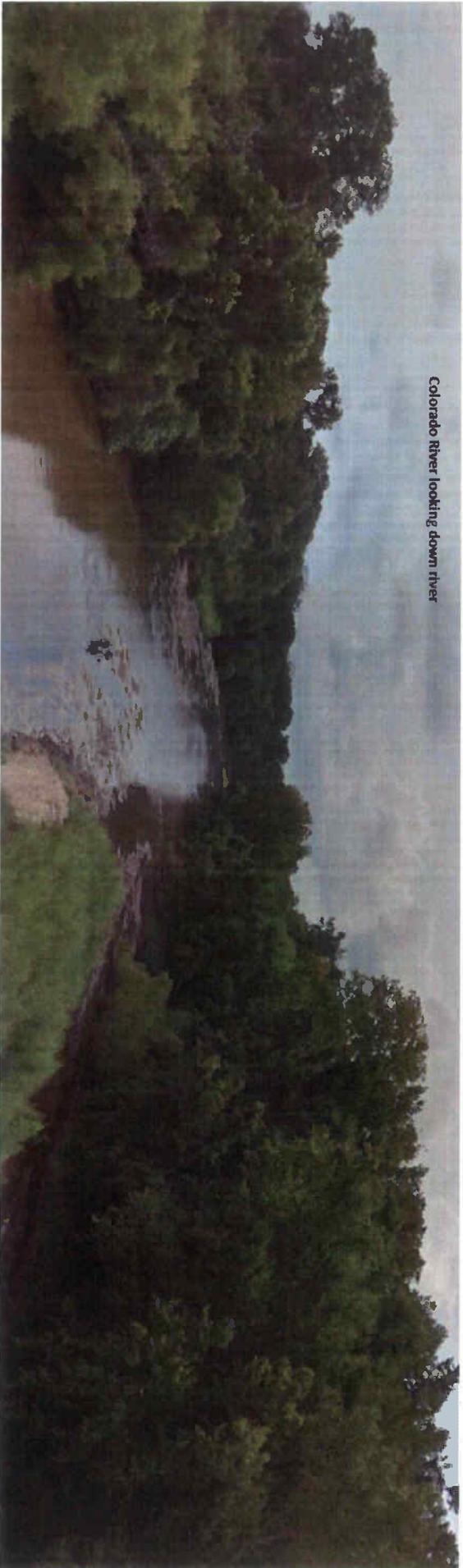
Looking south across the bridge



Colorado River looking up river



Colorado River looking down river



U.S. Department of
Homeland Security

United States
Coast Guard



Commander
Eighth Coast Guard District
Hale Boggs Federal Building

500 Poydras Street, Rm. 1313
New Orleans, LA 70130-3310
Staff Symbol: (djb)
Phone: (504) 671-2128
Fax: (504) 671-2133
d8dpball@uscg.mil

ROUTE:	
CLB	

MAR 22 11A

PROJECT NO. _____
FILE INDEX _____
KLOTZ ASSOCIATES, INC.

16591C
March 13, 2014

Klotz Associates, Inc.
Attn: Mr. Cody Bathe
1160 Dairy Ashford, Suite 500
Houston, Texas 77079

Dear Mr. Bathe,

We have received your Bridge Project Questionnaires dated February 13, 2014 the proposed upgrades to US 59 to meet interstate standards crossing San Bernard River and Colorado River, Wharton / Fort Bend County, Texas.

At the site of the proposed project crossings, the San Bernard River and Colorado River are not influenced by tidal action. They are not used for commercial navigation nor are they susceptible to use for commercial navigation by reasonable improvement. No commercial facilities exist along the waterways, nor is there a likelihood that future commercial development will occur. Therefore, the waterways, at the proposed project sites, meet the criteria for the Coast Guard Authorization Act of 1982, Public Law 97-322 for the construction of bridges. Accordingly, a specific Coast Guard Bridge Permit for these crossings will not be required. Furthermore, since no significant nighttime navigation occurs at these locations, the structures are exempt from Coast Guard navigational lighting requirements pursuant to Title 33 of the Code of Federal Regulations, Part 118.

Please be advised that plans for the proposed upgrades should provide adequate clearances to pass existing and future navigation and have no significant impact on the environment.

Upon construction of these projects, maintenance of the bridges are the responsibility of the present owner or future owners. If the bridges fall into disrepair or if they are no longer used for the intended purpose, they must be removed by and at the expense of the owner in their entirety. These bridges are subject to future review by the Coast Guard to ensure that conditions do not change which may render this determination invalid. Should construction of these bridges not be commenced within two years and completed within three years from the date of this letter, you must reapply for Coast Guard approval.

This determination does not relieve you of your responsibility to obtain appropriate permits from any other federal or state and local agencies having jurisdiction in this matter.

16591C
March 13, 2014

If you have any questions, please contact this office.

Sincerely,

A handwritten signature in black ink, appearing to read "David M. Frank". The signature is fluid and cursive, with the first name "David" being the most prominent.

DAVID M. FRANK
Chief, Bridge Administration Branch
U. S. Coast Guard
By direction

Copy: TXDOT, Mr. Alan Migl

Matthew Clinton

From: Alan Migl <Alan.Migl@txdot.gov>
Sent: Wednesday, March 09, 2016 9:45 AM
To: Sue Reilly
Cc: Jeff Anderson; Matthew Clinton; Alan Migl
Subject: RE: US 59 Wharton County TPWD Early Coordination
Attachments: EForkJones.pdf; Stream Data Forms.pdf

Sue, please see the responses to your comments below as well as the attachments supporting the responses.

1. There have been 3 plant species added to the Wharton County list since the list that was used in the Biological Resources Report was obtained. There is no need to update your list, but these 3 plants are possible in the project area. If you do add them to the list or to the report, (or even if you don't) I would just request that if the plants are observed that reports be submitted to TxNDD for those populations. The species are awnless bluestem, Texas tauschia (aka Texas umbrellawort), and South Texas spikesedge.

Response: None of these three plants were observed within the proposed project area during field surveys. However, if any of these plants are observed their populations and locations will be submitted to the TXNDD. If any of the three species are observed, they will be reported to the TXNDD.

2. There are some frontage roads that cross East Fork Jones Creek and Peach Creek that are somewhat far away from the main lanes and will result in fragmentation of riparian zones along those creeks. Keeping the frontage roads closer to the mainlanes would reduce fragmentation of the riparian zone and in the streams. Is it possible to move the lanes closer together?

Response:

East Fork Jones Creek Bridge: The SB FRTG road will be moved closer to the mainlanes to reduce riparian zone impacts (see attached exhibit).

Peach Creek Bridge: The extension of the SB FRTG road matches the existing SB FRTG road alignment. In order to mitigate the impact to riparian zones the bridge length would have to be modified and the SB FRTG road would have to be realigned from the existing southbound frontage road resulting in additional construction cost.

3. The water resources report focuses on wetlands even within the stream OHWM, but does not discuss stream types (perennial or intermittent). It does not describe stream impacts or stream mitigation. Is there a way to get an assessment of stream impacts including culverts and bridges?

Response: Attached with this email is Stream Assessment Forms for the proposed project discussing the stream types. The project would impact less than 1,500 linear feet of stream and/or 3 acres of waters of the U.S. and would not affect rare/ecologically significant wetlands. The Tier I 401 Certification requirements for the Nationwide Permit would be met by implementing approved erosion controls, sediment controls, and post-construction TSS controls. The design and construction of the proposed improvements would include construction and post-construction TCEQ 401 Water Quality Best Management Practices (BMP's) to manage storm water runoff and control sediments.

The proposed project would qualify for authorization under a Nationwide Permit 14, Linear Transportation Projects. Should a Preconstruction Notification (PCN) be required, mitigation for the streams would be assessed at that time.

If you have any questions or comments please contact me.

Thank you,
Alan

Alan Migl
Environmental Specialist
TxDOT - Yoakum District
361-293-4424

From: Sue Reilly [mailto:Sue.Reilly@tpwd.texas.gov]
Sent: Tuesday, March 01, 2016 10:38 AM
To: Alan Migl
Subject: RE: US 59 Wharton County TPWD Early Coordination

Alan,
I just wanted to check in on this project. Any word?

Thank you,

Sue Reilly
Transportation Assessment Liaison
TPWD Wildlife Division
512-389-8021

From: Alan Migl [mailto:Alan.Migl@txdot.gov]
Sent: Tuesday, January 12, 2016 8:28 AM
To: Sue Reilly
Subject: RE: US 59 Wharton County TPWD Early Coordination

Thanks Sue. I will discuss your comments and questions with the consultant designing the project as well as their environmental staff to address these issues. I appreciate the response and look forward to working with you on this.

alan

Alan Migl
Environmental Specialist
TxDOT - Yoakum District
361-293-4424

From: Sue Reilly [mailto:Sue.Reilly@tpwd.texas.gov]
Sent: Friday, January 08, 2016 5:00 PM
To: Alan Migl
Subject: RE: US 59 Wharton County TPWD Early Coordination

Alan,

Thank you for sending the reports. Here are my comments (and a question):

1. There have been 3 plant species added to the Wharton County list since the list that was used in the Biological Resources Report was obtained. There is no need to update your list, but these 3 plants are possible in the project area. If you do add them to the list or to the report, (or even if you don't) I would just request that if the plants are observed that reports be submitted to TxNDD for those populations. The species are awnless bluestem, Texas tauschia (aka Texas umbrellawort), and South Texas spikesedge.
2. There are some frontage roads that cross East Fork Jones Creek and Peach Creek that are somewhat far away from the main lanes and will result in fragmentation of riparian zones along those creeks. Keeping the frontage roads closer to the mainlanes would reduce fragmentation of the riparian zone and in the streams. Is it possible to move the lanes closer together?
3. The water resources report focuses on wetlands even within the stream OHWM, but does not discuss stream types (perennial or intermittent). It does not describe stream impacts or stream mitigation. Is there a way to get an assessment of stream impacts including culverts and bridges?

Thank you,

Sue Reilly
Transportation Assessment Liaison
TPWD Wildlife Division
512-389-8021

From: Alan Migl [<mailto:Alan.Migl@txdot.gov>]
Sent: Tuesday, January 05, 2016 10:48 AM
To: Sue Reilly
Subject: RE: US 59 Wharton County TPWD Early Coordination

Please see the attached. If you need any more information let me know.

Thanks,
alan

*Alan Migl
Environmental Specialist
TxDOT - Yoakum District
361-293-4424*

From: Sue Reilly [<mailto:Sue.Reilly@tpwd.texas.gov>]
Sent: Tuesday, January 05, 2016 10:26 AM
To: Alan Migl
Subject: RE: US 59 Wharton County TPWD Early Coordination

Do you have drafts of the Biology or Water chapters of the EA available for review?

Thanks!

From: Alan Migl [<mailto:Alan.Migl@txdot.gov>]
Sent: Monday, January 04, 2016 9:10 AM
To: Sue Reilly
Subject: RE: US 59 Wharton County TPWD Early Coordination

Sue,

Klotz & Associates are developing an EA for TxDOT for the proposed project.

Thanks,
alan

*Alan Migl
Environmental Specialist
TxDOT - Yoakum District
361-293-4424*

From: Sue Reilly [<mailto:Sue.Reilly@tpwd.texas.gov>]
Sent: Tuesday, December 29, 2015 4:20 PM
To: Alan Migl
Subject: FW: US 59 Wharton County TPWD Early Coordination

Alan,
Sorry it's taken me a while to respond to this project.

Can you tell me if you are doing an EA or EIS for this project?

Thank you,

Sue

From: WHAB_TxDOT
Sent: Thursday, November 19, 2015 9:43 AM
To: Alan Migl; WHAB_TxDOT
Cc: Mark Fisher; Sue Reilly
Subject: RE: US 59 Wharton County TPWD Early Coordination

Good morning,

The TPWD Wildlife Habitat Assessment Program has received your request for Early Coordination and has assigned it project ID #35794. The Habitat Assessment Biologist who will complete your project review is copied on this email.

*Thank you,
Gloria Garza
Administrative Assistant
Texas Parks and Wildlife Dept
Wildlife Division - [Habitat Assessment Program](#)
4200 Smith School Rd
Austin, TX 78744*

Office: (512) 389-4571

Fax: (512) 389-4599

gloria.garza@tpwd.texas.gov

Support Texas Wildlife!

Order a conservation license plate today at www.conservationplate.org



From: Alan Migl [<mailto:Alan.Migl@txdot.gov>]
Sent: Wednesday, November 18, 2015 4:57 PM
To: WHAB_TxDOT
Cc: Laura Zebehazy; Mark Fisher; Alan Migl
Subject: US 59 Wharton County TPWD Early Coordination

TxDOT would like to request that Early Project Coordination for US 59 in Wharton County, CSJ 0089-08-094, 0089-07-145, and 0089-06-080, be initiated upon the receipt of this e-mail. The following list of documents are attached for your review and approval.

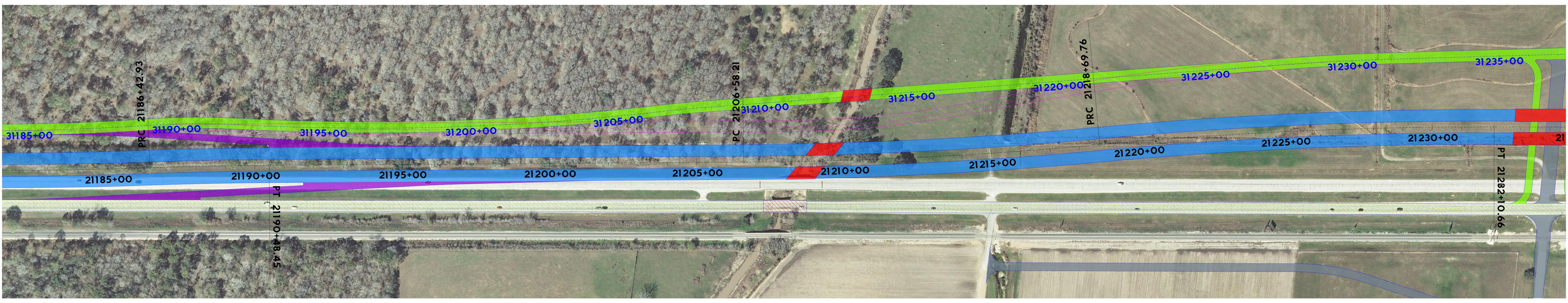
- Biological Technical Report and Tier I Site Assessment
- Project Location Map

The proposed project would upgrade US 59 through Wharton County to Interstate Highway standards. The project limits extend from the Fort Bend County line to the Jackson County line for a distance of approximately 39.5 miles. A small length of US 59 around the city of El Campo will be excepted out of the project limits. The project would be constructed within existing right-of-way and would also require new right-of-way throughout the project limits.

If you have any questions regarding this project please feel free to contact me.

Thanks,
alan





Stream Data Form #: 001
Project Name: US 59 EA
CSJ: 0089-06-080; 0089-07-145; 0089-08-094

Stream Data Form

Surveyor(s): B. Hamer, B. Darnell, E. Pinto-Torres
USGS Stream Name: Long Branch, West Mustang
USGS Topo Quad Name: Louise, TX Creek
Associated Wetland(s): None

Date of Field Work: 6/18-6/20, 2014
County/State: Wharton, TX Jackson, TX
Stream Number [303(d) List]: Not listed
GPS Data: N29°04'53.4" W096°27'08.8"

Stream Type: Intermittent Characteristics

Manipulated/Altered. Explain: Channelized with other structural modifications within US 59 ROW

Bank Stability (e.g. highly eroding, sloughing banks, etc.):

Stream Flow Direction: South

OHWM Width (ft): 13' (N side), 7-10' (S side)

OHWM Height (in): 12"

Stream Bottom composition:

- Silts
 - Sands
 - Gravel
 - Cobbles
 - Bedrock
 - Vegetation
 - Concrete
 - Muck
 - Other:
- Type: <Select Veg. Type> Percent Cover Herbaceous aquatic 15%

Aquatic Habitat: Indicate all types present within proposed ROW/project limits.

- Sand bar
- Sand/Gravel beach/bar
- Gravel riffles
- Aquatic vegetation
- Overhanging trees/shrubs
- Deep pool/ hole/ channel
- Other:

Stream has the following characteristics:

- Bed and banks
- OHWM (check all indicators that apply):
 - clear, natural line impressed on the bank
 - changes in the character of soil
 - shelving
 - vegetation matted down, bent, or absent
 - leaf litter disturbed or washed away
 - sediment deposition
 - water staining
 - other (list): down-cutting or incising of streambed
- the presence of litter and debris
- destruction of terrestrial vegetation
- the presence of wrack line
- sediment sorting
- scour
- multiple observed or predicted flow events
- abrupt change in plant community

Water Quality:

- Clear
- Slightly Turbid
- Turbid
- Very Turbid
- Oily film
- High organic content
- Other characteristics (pollutants, etc.) Creek bed muddy, with a few pools of standing water north of crossing; water clear and slightly turbid on south side

Aquatic Organisms: List all species observed. This would include waterfowl, fish, snakes, turtles, frogs, invertebrates, etc.

small fish, bivalve

Riparian Vegetation: List species observed.

Melia azedarach, Fraxinus pennsylvanica, Cephalanthus occidentalis, Ulmus americana, Ilex vomitoria, Quercus virginiana, vitis spp.

T&E Species/Suitable Habitat: List T&E species observed or which species the habitat is suitable for.

None observed. Habitat may be suitable for crayfish (Cambarellus texanus) and timber rattlesnake (Crotalus horridus).

Stream Data Form #: 001
 Project Name: US 59 EA
 CSJ: 0089-06-080; 0089-07-145; 0089-08-094

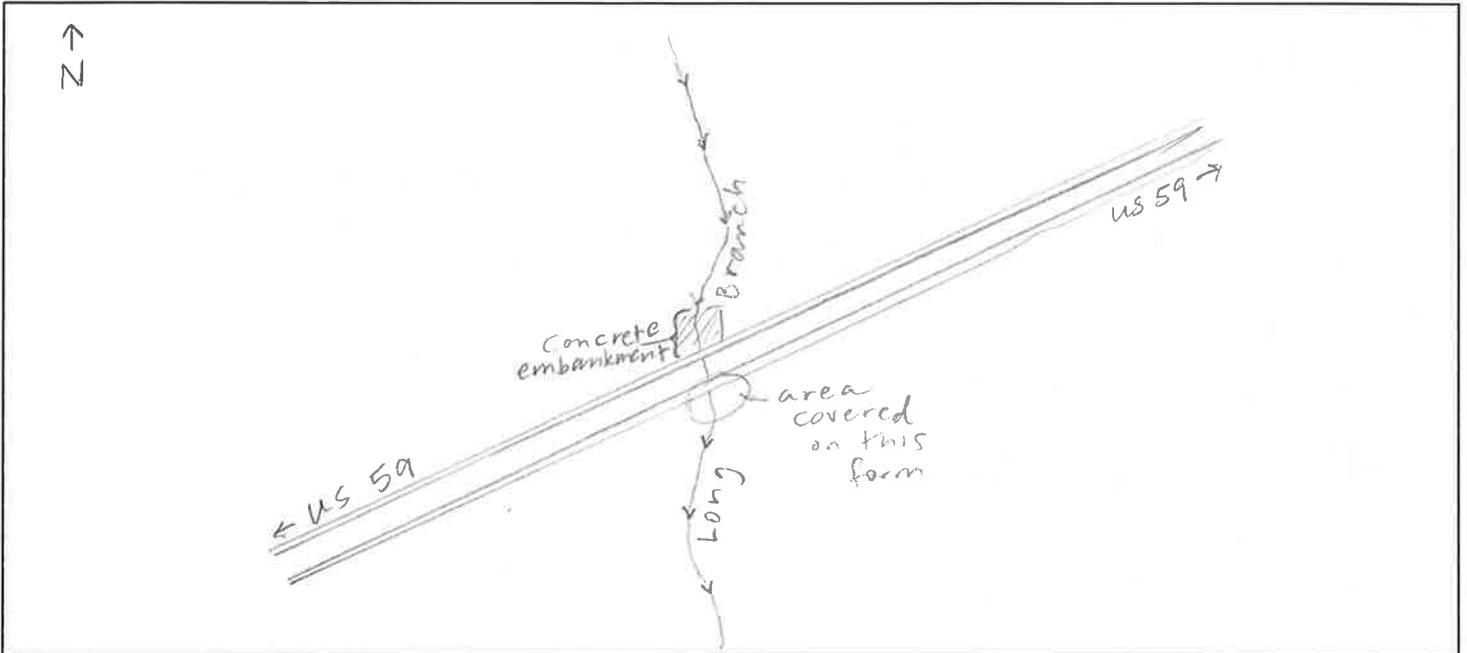
Stream Data Form (continued)

Please provide a plan and section view sketch of the stream channel.

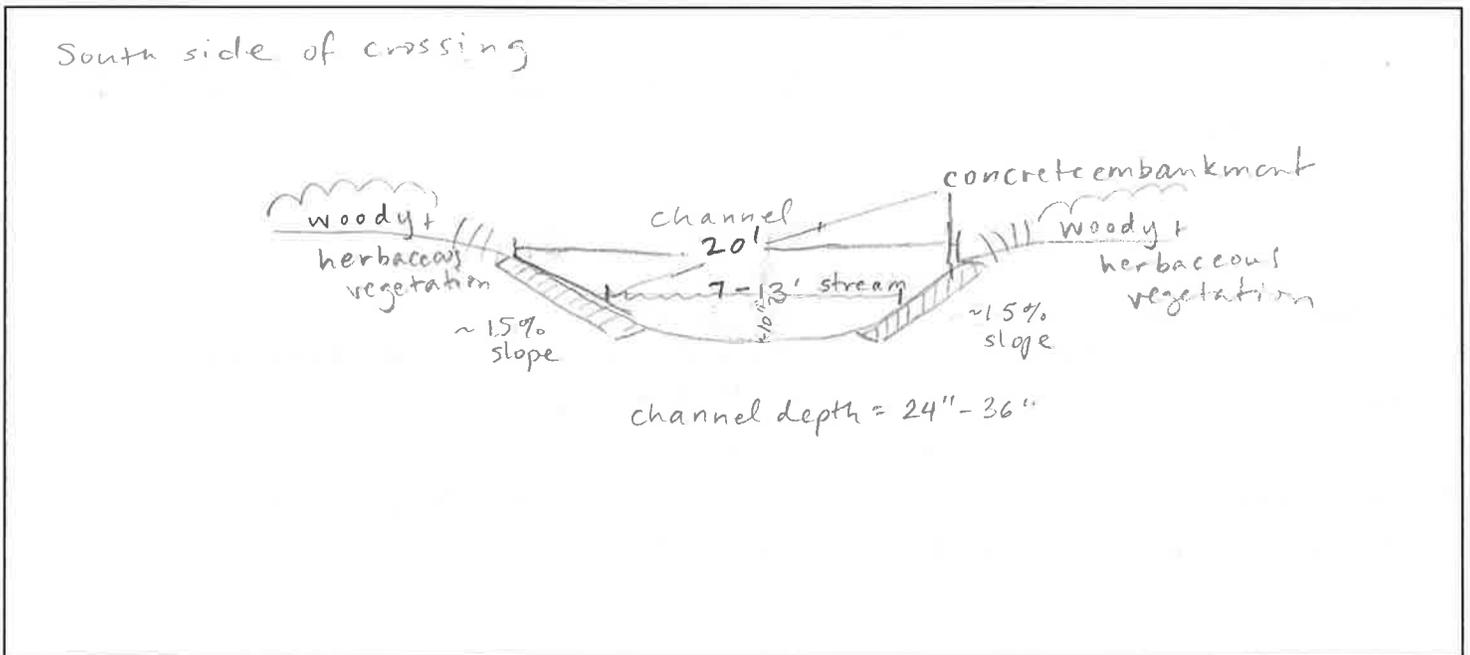
Sketch should include:

- Directional arrow;
- Width of channel from top of bank to top of bank;
- Depth of channel,
- Approximate side slope; and,
- Width of stream from water edge to water edge.

Plan View



Sectional View



Stream Data Form #: 001 002
Project Name: US 59 EA
CSJ: 0089-06-080; 0089-07-145; 0089-08-094
Date of Field Work: 6/18 - 6/20, 2014
County/State: Wharton, TX. Jackson, TX
Stream Number [303(d) List]: Not listed
GPS Data: N29°04'53.4"W 096°27'08.8"

Stream Data Form

Surveyor(s): B. Hamer, B. Darnell, E. Pinto-Torres
USGS Stream Name: Long Branch
USGS Topo Quad Name: Louise, TX
Associated Wetland(s): None

Manipulated/Altered. Explain: Channelized with other structural modifications within US 59 ROW

Stream Type: Intermittent Characteristics

Bank Stability (e.g. highly eroding, sloughing banks, etc.):

Stream Flow Direction: South
OHWM Width (ft): 5' - 15''

OHWM Height (in): 12''

Stream Bottom composition:

Silts Cobbles Concrete Other: Asphalt
 Sands Bedrock Muck
 Gravel Vegetation Type: <Select Veg. Type> Percent Cover Herbaceous, 10%

Aquatic Habitat: Indicate all types present within proposed ROW/project limits.

Sand bar Sand/Gravel beach/bar Gravel riffles Aquatic vegetation
 Overhanging trees/shrubs Deep pool/ hole/ channel Other: Alternanthera philoxeroides (noxious weed)

Stream has the following characteristics:

Bed and banks
 OHWM (check all indicators that apply):
 clear, natural line impressed on the bank the presence of litter and debris
 changes in the character of soil destruction of terrestrial vegetation
 shelving the presence of wrack line
 vegetation matted down, bent, or absent sediment sorting
 leaf litter disturbed or washed away scour
 sediment deposition multiple observed or predicted flow events
 water staining abrupt change in plant community
 other (list): down-cutting or incising of streambed

Water Quality:

Clear Slightly Turbid Turbid Very Turbid Oily film High organic content
 Other characteristics (pollutants, etc.) _____

Aquatic Organisms: List all species observed. This would include waterfowl, fish, snakes, turtles, frogs, invertebrates, etc.

small fish, bivalves

Riparian Vegetation: List species observed. Deciduous riparian woodland composed mostly of Melia azedarach and Triadica sebifera, with native spp (Quercus nigra, Salix nigra, Fraxinus pennsylvanica) occasional (not common). Ampelopsis arborea + Saplings in understory.

T&E Species/Suitable Habitat: List T&E species observed or which species the habitat is suitable for.

None observed. Habitat may be suitable for crayfish (Cambarillus texanus) and Timber rattlesnake (Crotalus horridus)

Stream Data Form #: 002
 Project Name: US 59 EA
 CSJ: 0089-06-080; 0089-07-145; 0089-08-094

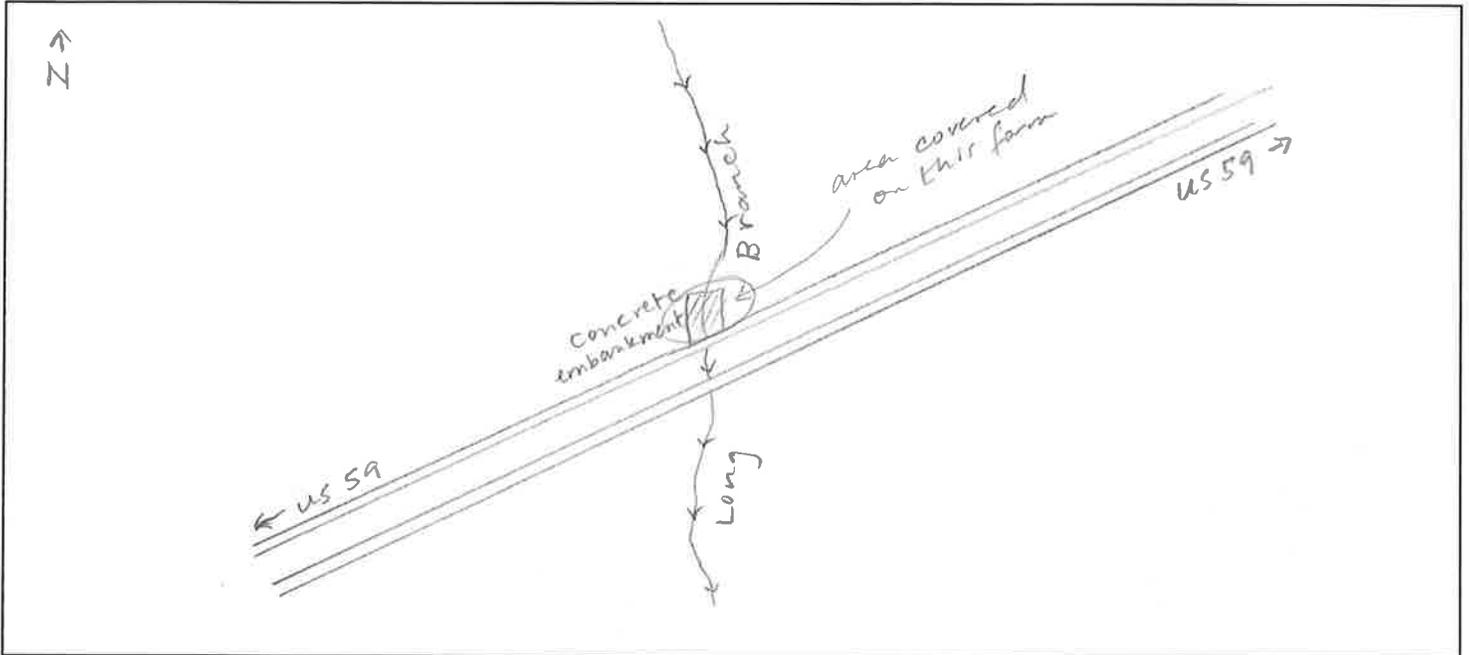
Stream Data Form (continued)

Please provide a plan and section view sketch of the stream channel.

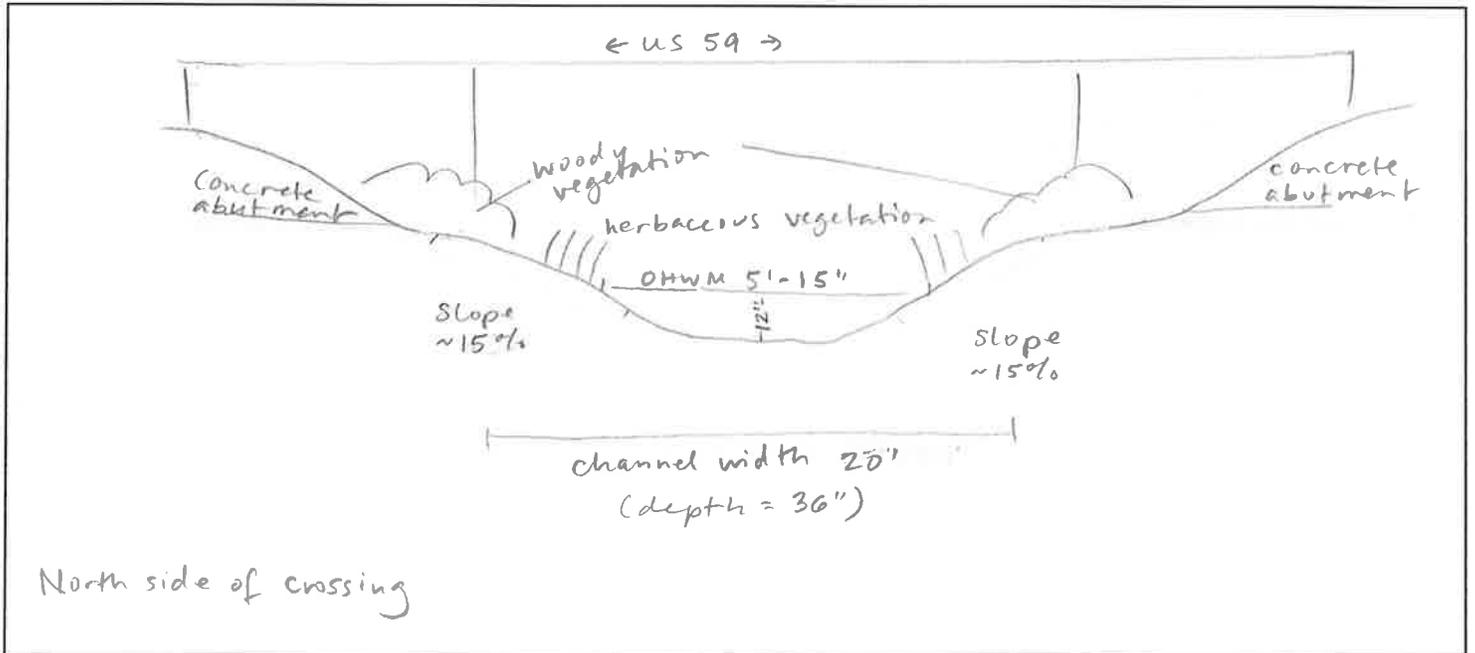
Sketch should include:

- Directional arrow;
- Width of channel from top of bank to top of bank;
- Depth of channel,
- Approximate side slope; and,
- Width of stream from water edge to water edge.

Plan View



Sectional View



Stream Data Form #: 001 003
Project Name: US 59 EA
CSJ: 0089-06-080; 0089-07-145; 0089-08-094
Date of Field Work: 6/18 - 6/20, 2014
County/State: Wharton, TX
Stream Number [303(d) List]: Not listed
GPS Data: N29°05'39.0"W 096°25'58.2"

Stream Data Form

Surveyor(s): B. Hamer, B. Darnell, E. Pinto-Torres
USGS Stream Name: Middle Mustang Creek
USGS Topo Quad Name: Louise, TX
Associated Wetland(s): None

Stream Type: Perennial Characteristics

Bank Stability (e.g. highly eroding, sloughing banks, etc.):

Stream Flow Direction: South

OHWM Width (ft): 8' - 25'

Stream Bottom composition:

- Silts Cobbles Concrete Other: _____
 Sands Bedrock Muck
 Gravel Vegetation

Type: <Select Veg. Type> Percent Cover 15% herbaceous vegetation

Manipulated/Altered. Explain: Channelized with other structural modifications within US 59 ROW

Good stability, not visibly eroding, vegetated

OHWM Height (in): 20"

Aquatic Habitat: Indicate all types present within proposed ROW/project limits.

- Sand bar Sand/Gravel beach/bar Gravel riffles Aquatic vegetation
 Overhanging trees/shrubs Deep pool/ hole/ channel Other: _____

in channel (Alternanthera philoxeroides)

Stream has the following characteristics:

- Bed and banks
 OHWM (check all indicators that apply):
 clear, natural line impressed on the bank the presence of litter and debris
 changes in the character of soil destruction of terrestrial vegetation
 shelving the presence of wrack line
 vegetation matted down, bent, or absent sediment sorting
 leaf litter disturbed or washed away scour
 sediment deposition multiple observed or predicted flow events
 water staining abrupt change in plant community
 other (list): down-cutting or incising of streambed

Water Quality:

- Clear Slightly Turbid Turbid Very Turbid Oily film High organic content
 Other characteristics (pollutants, etc.) _____

Aquatic Organisms: List all species observed. This would include waterfowl, fish, snakes, turtles, frogs, invertebrates, etc.

Small fish, same large bivalve found at crossing #1, crayfish, alligator

Riparian Vegetation: List species observed.

No trees; only dense herbaceous cover, including Cynodon dactylon, Ambrosia trifida, Panicum maximum, Toxicodendron radicans, Alternanthera philoxeroides, Sorghum halepense, Echinochloa colona, Cyperus entriarianus

T&E Species/Suitable Habitat: List T&E species observed or which species the habitat is suitable for.

None observed. Habitat may be suitable for crayfish (Cambarellus texanus), Smooth pimpleback (Quadrula houstonensis), Texas pimpleback (Q. petrina), White-faced Ibis (Plegadis chihui)

Stream Data Form #: 003

Project Name: US 59 EA

CSJ: 0089-06-080; 0089-07-145; 0089-08-094

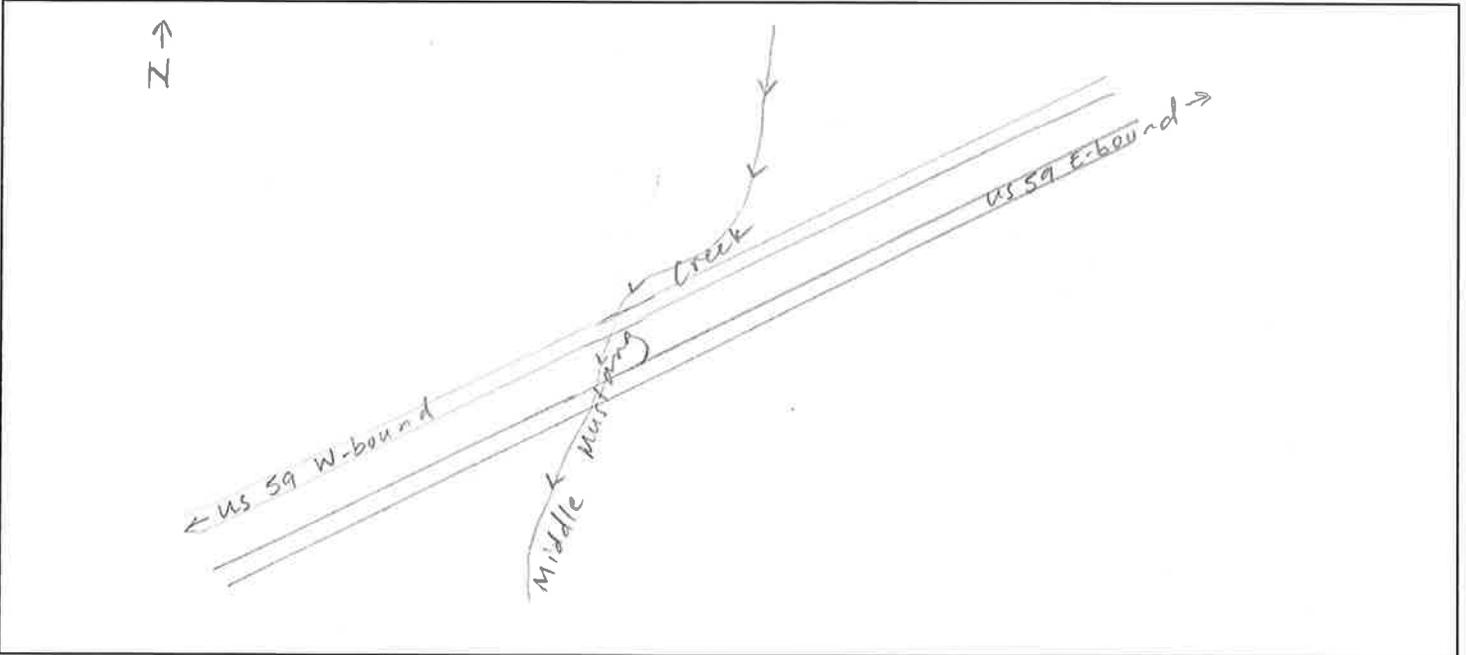
Stream Data Form (continued)

Please provide a plan and section view sketch of the stream channel.

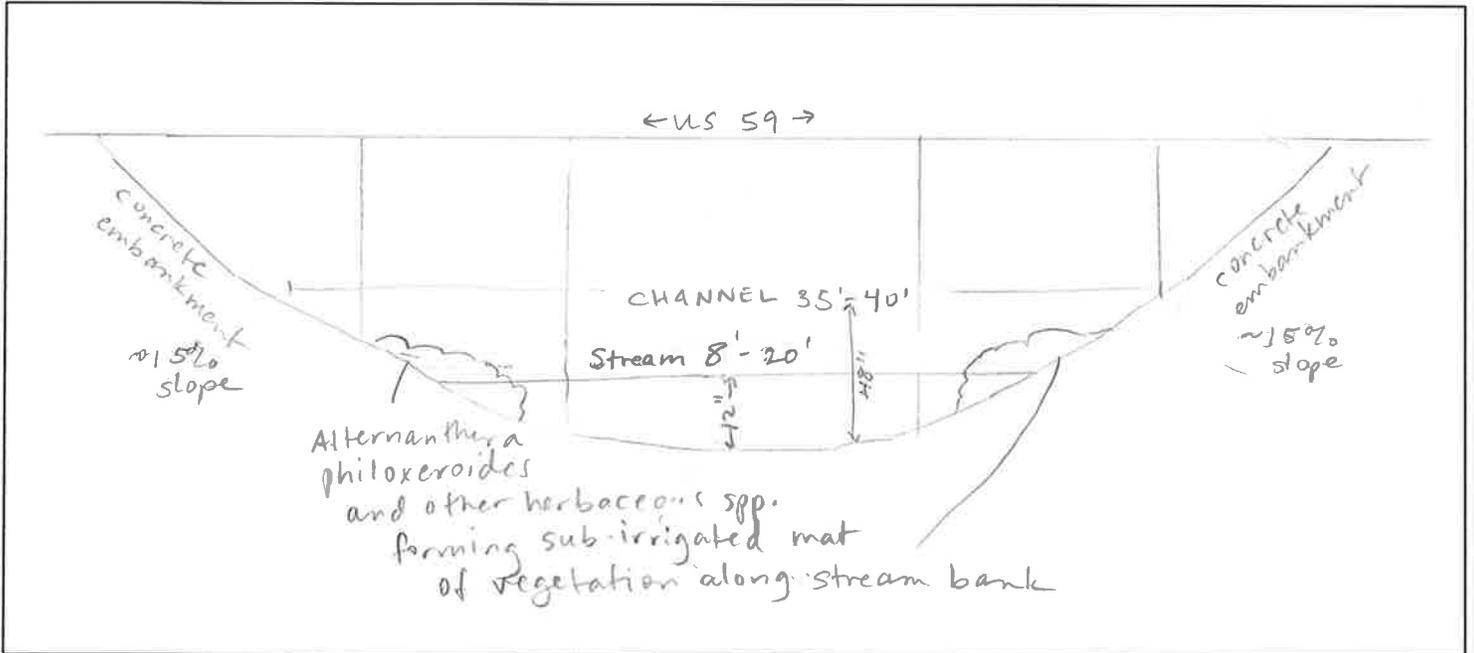
Sketch should include:

- Directional arrow;
- Width of channel from top of bank to top of bank;
- Depth of channel,
- Approximate side slope; and,
- Width of stream from water edge to water edge.

Plan View



Sectional View



Stream Data Form #: 001 004
Project Name: US 59 EA
CSJ: 0089-06-080; 0089-07-145; 0089-08-094

Stream Data Form

Surveyor(s): B. Hamer, B. Darnell, E. Pinto-Torres
USGS Stream Name: Middle Mustang Creek
USGS Topo Quad Name: Louise, TX
Associated Wetland(s): None

Date of Field Work: 6/18 - 6/20, 2014
County/State: Wharton, TX
Stream Number [303(d) List]: Not listed
GPS Data: N29°05'43.5"W 096°25'50.5"

Stream Type: Perennial Characteristics

Manipulated/Altered. Explain: Channelized with other structural modifications within US 59 ROW

Bank Stability (e.g. highly eroding, sloughing banks, etc.):

stable, vegetated

Stream Flow Direction: South

OHWM Width (ft): 15' - 20'

OHWM Height (in): 12" - 36"

Stream Bottom composition:

- Silts Cobbles Concrete Other: _____
 Sands Bedrock Muck
 Gravel Vegetation Type: <Select Veg. Type> Percent Cover 20-30%

Aquatic Habitat: Indicate all types present within proposed ROW/project limits.

- Sand bar Sand/Gravel beach/bar Gravel riffles Aquatic vegetation
 Overhanging trees/shrubs Deep pool/ hole/ channel Other: _____

Stream has the following characteristics:

- Bed and banks
 OHWM (check all indicators that apply):
 clear, natural line impressed on the bank the presence of litter and debris
 changes in the character of soil destruction of terrestrial vegetation
 shelving the presence of wrack line
 vegetation matted down, bent, or absent sediment sorting
 leaf litter disturbed or washed away scour
 sediment deposition multiple observed or predicted flow events
 water staining abrupt change in plant community
 other (list): down-cutting or incising of streambed

Water Quality:

- Clear Slightly Turbid Turbid Very Turbid Oily film High organic content
 Other characteristics (pollutants, etc.) _____

Aquatic Organisms: List all species observed. This would include waterfowl, fish, snakes, turtles, frogs, invertebrates, etc.

Fish, alligator

Riparian Vegetation: List species observed.

Concrete banks covered with herbaceous vegetation including Rosa bracteata, Campsis radicans, and Sorghum jalepense; channel with Alternanthera philoxeroides

T&E Species/Suitable Habitat: List T&E species observed or which species the habitat is suitable for.

None observed. Habitat may be suitable for White-faced Ibis (Plegadis chihii), crayfish (Cambarillus texanus), Smooth pimple back (Quadrula houstonensis), Texas pimpleback (Q. petrina), Rumex crispus, + Paspalum pubiflorum

Stream Data Form #: 004

Project Name: US 59 EA

CSJ: 0089-06-080; 0089-07-145; 0089-08-094

004

US 59 EA

0089-06-080; 0089-07-145; 0089-08-094

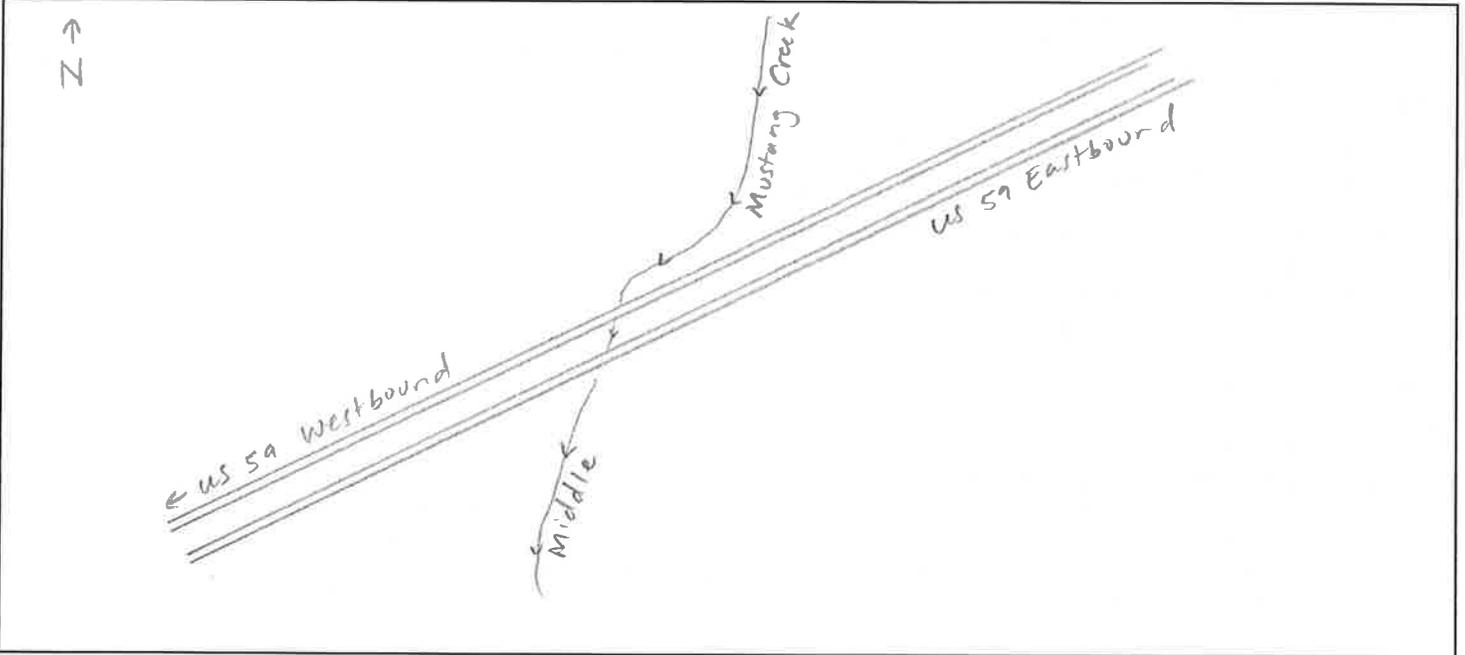
Stream Data Form (continued)

Please provide a plan and section view sketch of the stream channel.

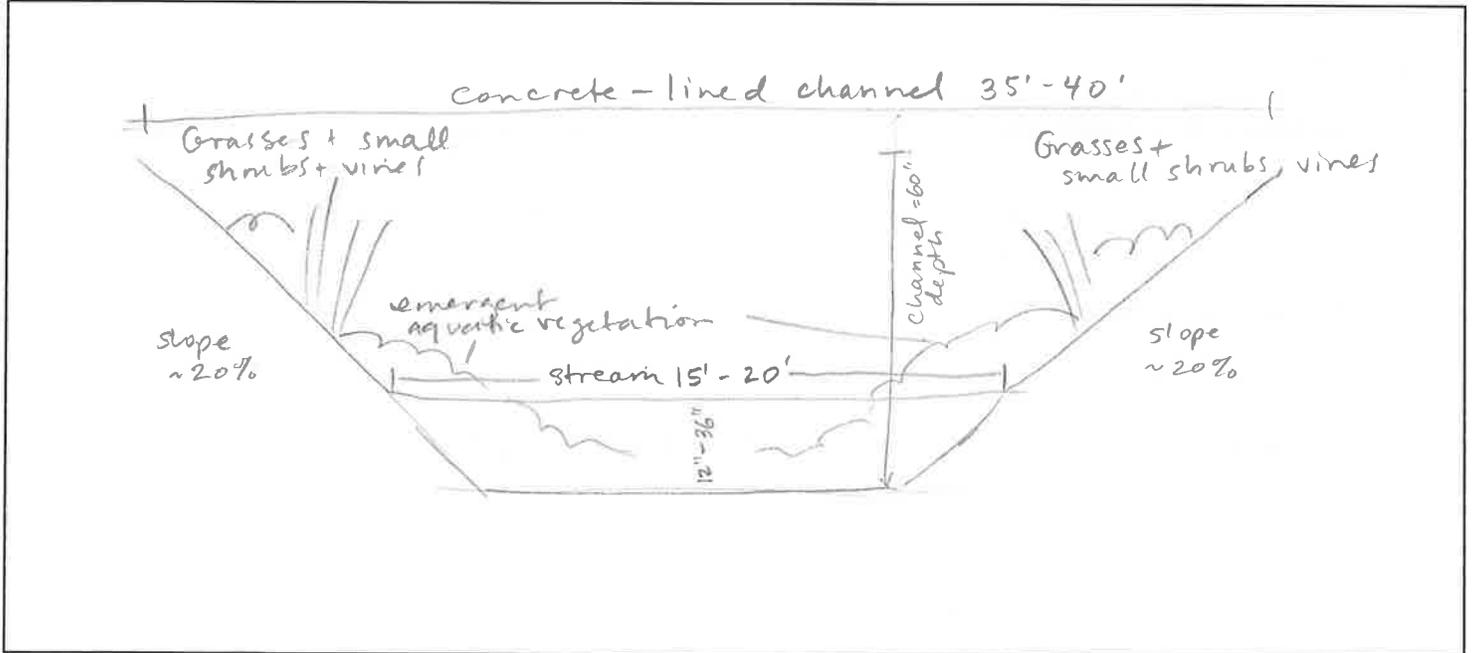
Sketch should include:

- Directional arrow;
- Width of channel from top of bank to top of bank;
- Depth of channel,
- Approximate side slope; and,
- Width of stream from water edge to water edge.

Plan View



Sectional View



Stream Data Form #: -001 005
Project Name: US 59 EA
CSJ: 0089-06-080; 0089-07-145; 0089-08-094

Stream Data Form

Surveyor(s): B. Hamer, B. Darnell, E. Pinto-Torres
USGS Stream Name: East Mustang Creek
USGS Topo Quad Name: Louise, TX
Associated Wetland(s): None

Date of Field Work: 6/18 - 6/20, 2014
County/State: Wharton, TX
Stream Number [303(d) List]: Not listed
GPS Data: N29°07'17.4" W096°24'05.2"

Stream Type: Perennial Characteristics

Manipulated/Altered. Explain: Channelized with other structural modifications within US 59 ROW

Bank Stability (e.g. highly eroding, sloughing banks, etc.):

Stable, vegetated

Stream Flow Direction: South

OHWM Width (ft): 3' - 10'

OHWM Height (in): 5" - 18"

Stream Bottom composition:

Silts Cobbles Concrete Other: _____
 Sands Bedrock Muck
 Gravel Vegetation Type: <Select Veg. Type> Percent Cover Herbaceous 10-15% cover

Aquatic Habitat: Indicate all types present within proposed ROW/project limits.

Sand bar Sand/Gravel beach/bar Gravel riffles Aquatic vegetation
 Overhanging trees/shrubs Deep pool/ hole/ channel Other: _____

Stream has the following characteristics:

Bed and banks
 OHWM (check all indicators that apply):
 clear, natural line impressed on the bank
 changes in the character of soil
 shelving
 vegetation matted down, bent, or absent
 leaf litter disturbed or washed away
 sediment deposition
 water staining
 other (list): down-cutting or incising of streambed
 the presence of litter and debris
 destruction of terrestrial vegetation
 the presence of wrack line
 sediment sorting
 scour
 multiple observed or predicted flow events
 abrupt change in plant community

Water Quality:

Clear Slightly Turbid Turbid Very Turbid Oily film High organic content
 Other characteristics (pollutants, etc.) _____

Aquatic Organisms: List all species observed. This would include waterfowl, fish, snakes, turtles, frogs, invertebrates, etc.

Bivalves, small fish

Riparian Vegetation: List species observed.

Quercus nigra, Q. phellos

T&E Species/Suitable Habitat: List T&E species observed or which species the habitat is suitable for.

None observed. Habitat may be suitable for crayfish (Cambarellus texanus), Smooth pimpleback (Quadrula houstonensis), Texas pimpleback (Quadrula petrina) and timber rattlesnake (Crotalus horridus).

Stream Data Form #:	<u>005</u>
Project Name:	<u>US 59 EA</u>
CSJ:	<u>0089-06-080; 0089-07-145; 0089-08-094</u>

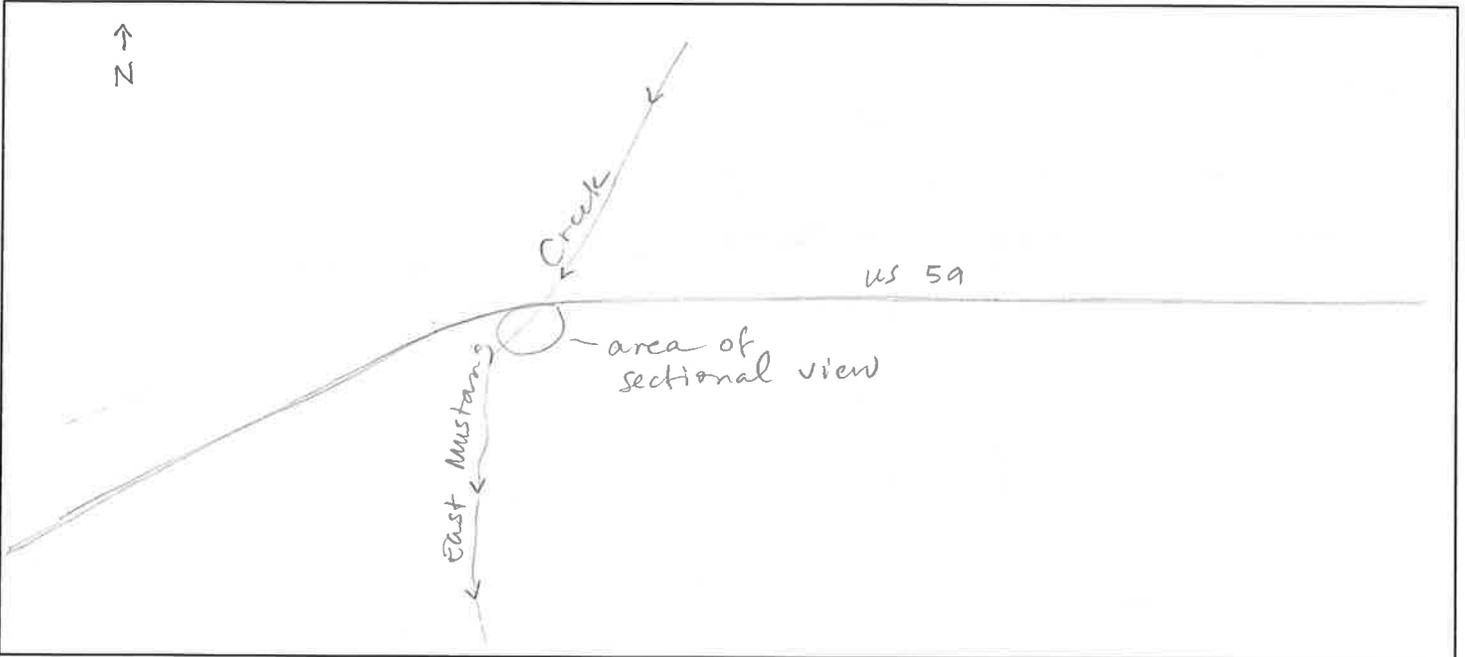
Stream Data Form (continued)

Please provide a plan and section view sketch of the stream channel.

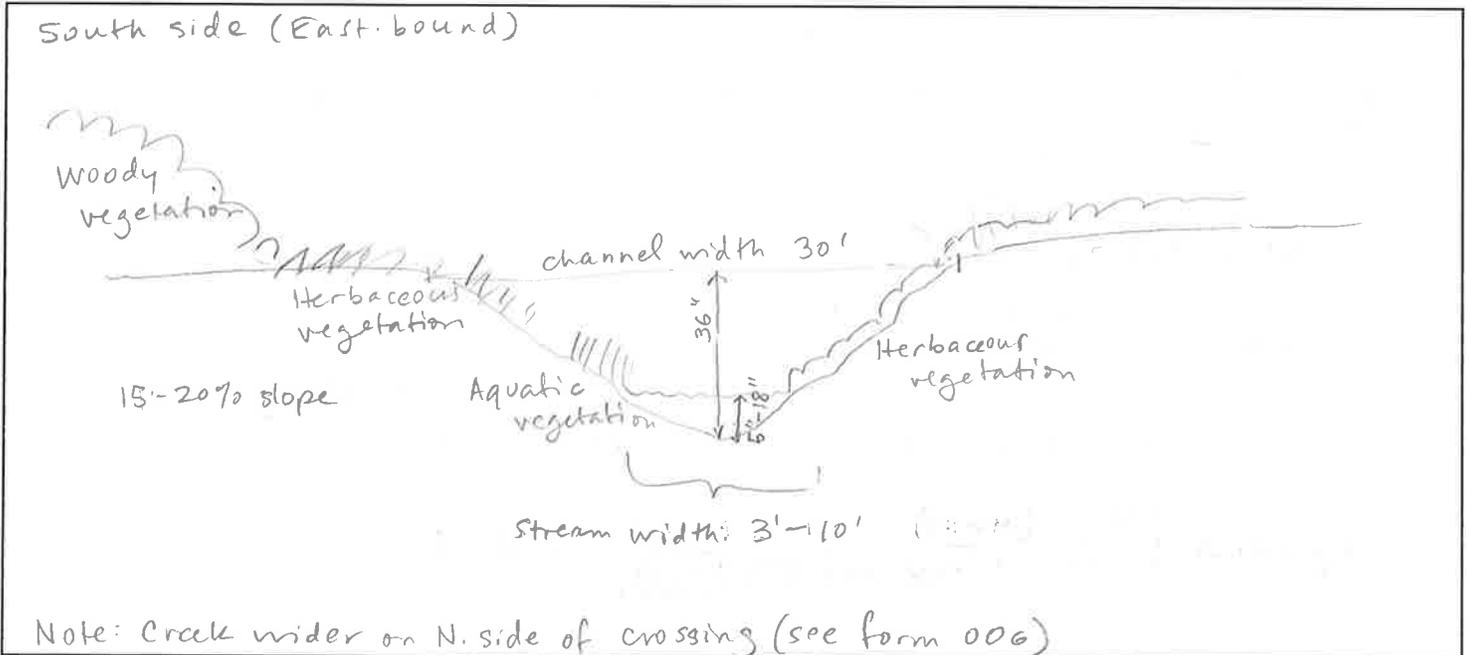
Sketch should include:

- Directional arrow;
- Width of channel from top of bank to top of bank;
- Depth of channel,
- Approximate side slope; and,
- Width of stream from water edge to water edge.

Plan View



Sectional View



Stream Data Form #: 001 006
Project Name: US 59 EA
CSJ: 0089-06-080; 0089-07-145; 0089-08-094

Stream Data Form

Surveyor(s): B. Hamer, B. Darnell, E. Pinto-Torres
USGS Stream Name: East Mustang Creek
USGS Topo Quad Name: Louise, TX
Associated Wetland(s): None

Date of Field Work: 6/18 - 6/20, 2014
County/State: Wharton, TX
Stream Number [303(d) List]: Not listed
GPS Data: N29°07'17.4" W096°24'05.2"

Stream Type: Perennial Characteristics

Manipulated/Altered. Explain: Channelized with other structural modifications within US 59 ROW

Bank Stability (e.g. highly eroding, sloughing banks, etc.):

Stable

Stream Flow Direction: South

OHWM Width (ft): 15' - 20'

OHWM Height (in): 12" - 36"

Stream Bottom composition:

Silts Cobbles Concrete Other: _____
 Sands Bedrock Muck
 Gravel Vegetation Type: <Select Veg. Type> Percent Cover herbaceous 10%

Aquatic Habitat: Indicate all types present within proposed ROW/project limits.

Sand bar Sand/Gravel beach/bar Gravel riffles Aquatic vegetation
 Overhanging trees/shrubs Deep pool/ hole/ channel Other: _____

Stream has the following characteristics:

Bed and banks
 OHWM (check all indicators that apply):
 clear, natural line impressed on the bank
 changes in the character of soil
 shelving
 vegetation matted down, bent, or absent
 leaf litter disturbed or washed away
 sediment deposition
 water staining
 other (list): down-cutting or incising of streambed
 the presence of litter and debris
 destruction of terrestrial vegetation
 the presence of wrack line
 sediment sorting
 scour
 multiple observed or predicted flow events
 abrupt change in plant community

Water Quality:

Clear Slightly Turbid Turbid Very Turbid Oily film High organic content
 Other characteristics (pollutants, etc.) _____

Aquatic Organisms: List all species observed. This would include waterfowl, fish, snakes, turtles, frogs, invertebrates, etc.

Small fish, bivalves (shells observed)

Riparian Vegetation: List species observed.

Fraxinus pennsylvanica, Sabal minor, Charmanthium latifolium, Smilax bona-nox

T&E Species/Suitable Habitat: List T&E species observed or which species the habitat is suitable for.

None observed. Habitat may be suitable for crayfish (Cambarellus texanus), smooth pimpleback (Quadrula houstonensis), Texas pimpleback (Q. petrina), and timber rattlesnake (Crotalus horridus)

Stream Data Form #: 006

Project Name: US 59 EA

CSJ: 0089-06-080; 0089-07-

145; 0089-08-094

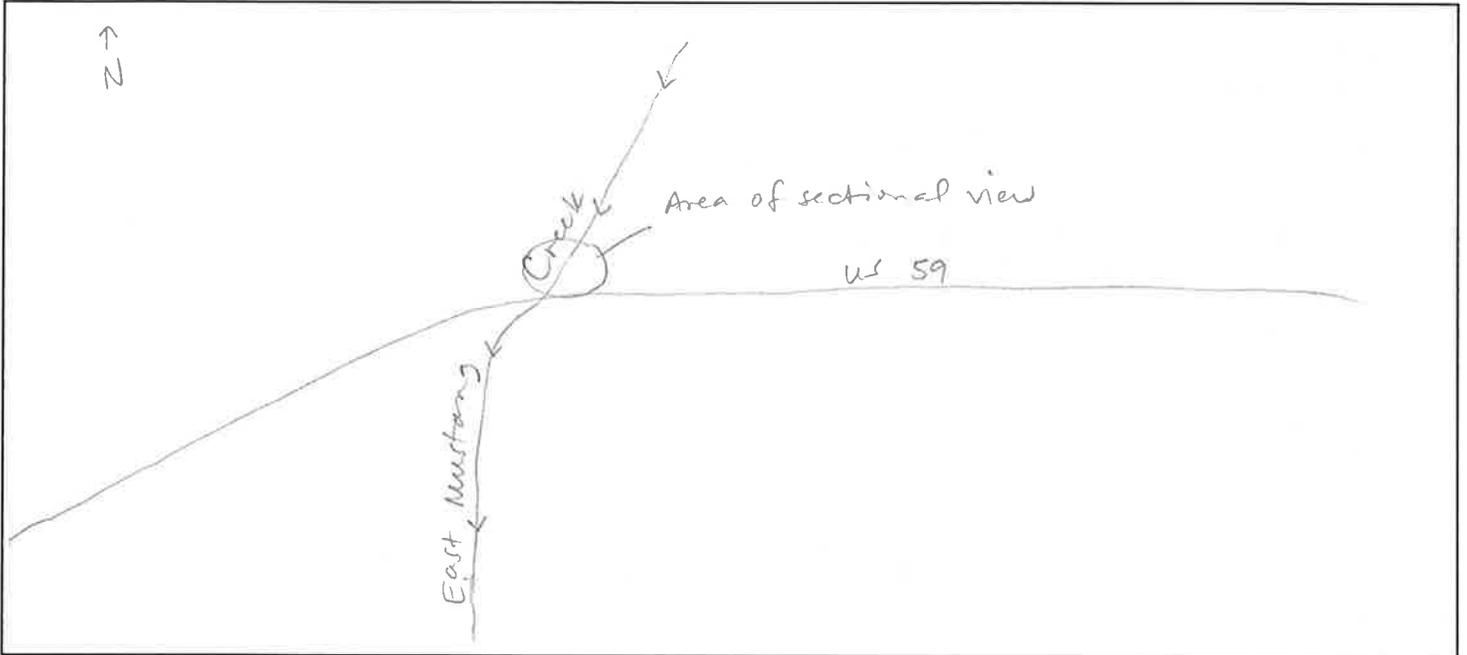
Stream Data Form (continued)

Please provide a plan and section view sketch of the stream channel.

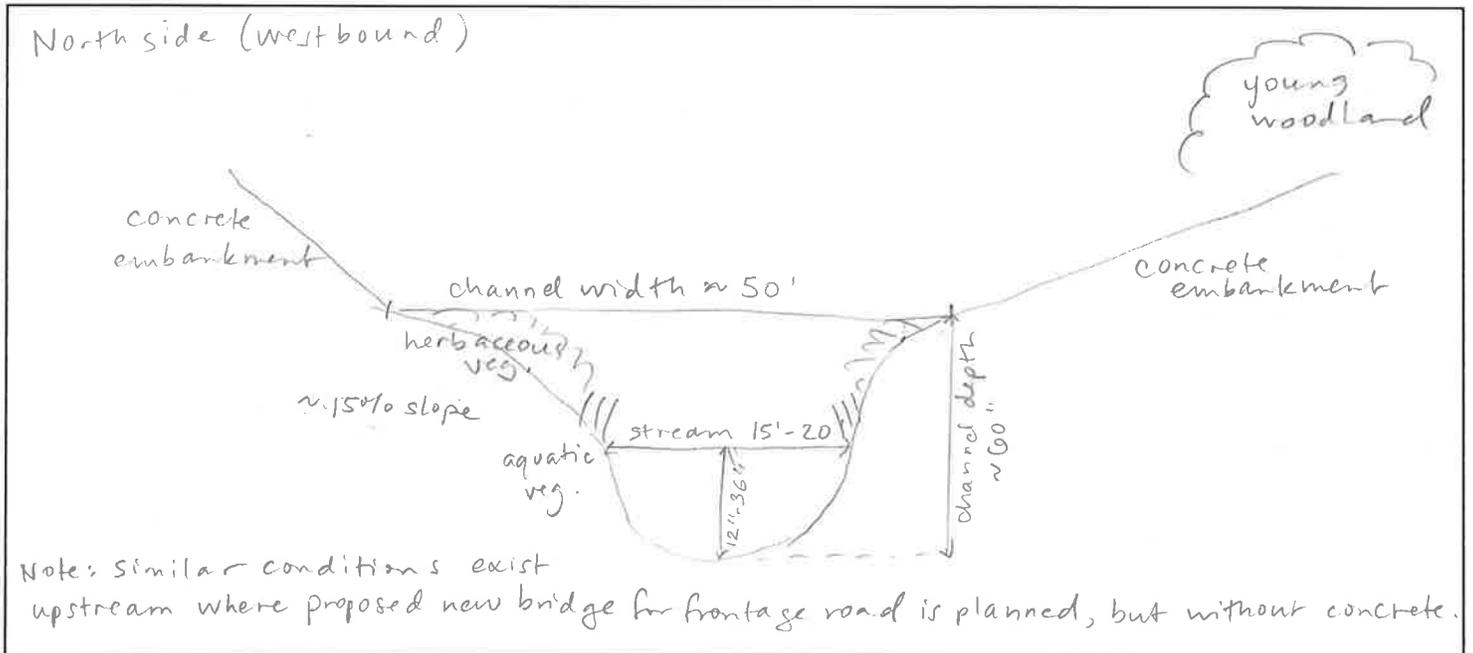
Sketch should include:

- Directional arrow;
- Width of channel from top of bank to top of bank;
- Depth of channel;
- Approximate side slope; and,
- Width of stream from water edge to water edge.

Plan View



Sectional View



Stream Data Form #: 001 007
Project Name: US 59 EA
CSJ: 0089-06-080; 0089-07-145; 0089-08-094

Stream Data Form

Surveyor(s): B. Hamer, B. Darnell, E. Pinto-Torres
USGS Stream Name: Jones Creek
USGS Topo Quad Name: Pierce, TX
Associated Wetland(s):

Date of Field Work: 6/18 - 6/20, 2014
County/State: Wharton, TX
Stream Number [303(d) List]: Not listed
GPS Data: N29°14'35.7"W 096°11'58.2"

Stream Type: Perennial Characteristics

Manipulated/Altered. Explain: Channelized with other structural modifications within US 59 ROW

Bank Stability (e.g. highly eroding, sloughing banks, etc.):

Stable; concrete apron/embankment

Stream Flow Direction: South

OHWM Width (ft): 20'

OHWM Height (in): 12" - 36"

Stream Bottom composition:

Silts Cobbles Concrete Other: mud
 Sands Bedrock Muck
 Gravel Vegetation Type: <Select Veg. Type> Percent Cover 0% vegetation cover

Aquatic Habitat: Indicate all types present within proposed ROW/project limits.

Sand bar Sand/Gravel beach/bar Gravel riffles Aquatic vegetation
 Overhanging trees/shrubs Deep pool/ hole/ channel Other: _____

Stream has the following characteristics:

Bed and banks
 OHWM (check all indicators that apply):
 clear, natural line impressed on the bank
 changes in the character of soil
 shelving
 vegetation matted down, bent, or absent
 leaf litter disturbed or washed away
 sediment deposition
 water staining
 other (list): down-cutting or incising of streambed
 the presence of litter and debris
 destruction of terrestrial vegetation
 the presence of wrack line
 sediment sorting
 scour
 multiple observed or predicted flow events
 abrupt change in plant community

Water Quality:

Clear Slightly Turbid Turbid Very Turbid Oily film High organic content
 Other characteristics (pollutants, etc.) _____

Aquatic Organisms: List all species observed. This would include waterfowl, fish, snakes, turtles, frogs, invertebrates, etc.

Invertebrates (odonata), crayfish, amphibians

Riparian Vegetation: List species observed.

None observed; upland and aquatic herbaceous species only.

T&E Species/Suitable Habitat: List T&E species observed or which species the habitat is suitable for.

None observed. Habitat may be suitable for mollusks, including Creeper (Strophitus undulatus), Smooth pimpleback (Aquadula houstonensis) and Texas pimpleback (A. petrina), crayfish (Cambarellus texanus)

Stream Data Form #: 007
 Project Name: US 59 EA
 CSJ: 0089-06-080; 0089-07-145; 0089-08-094

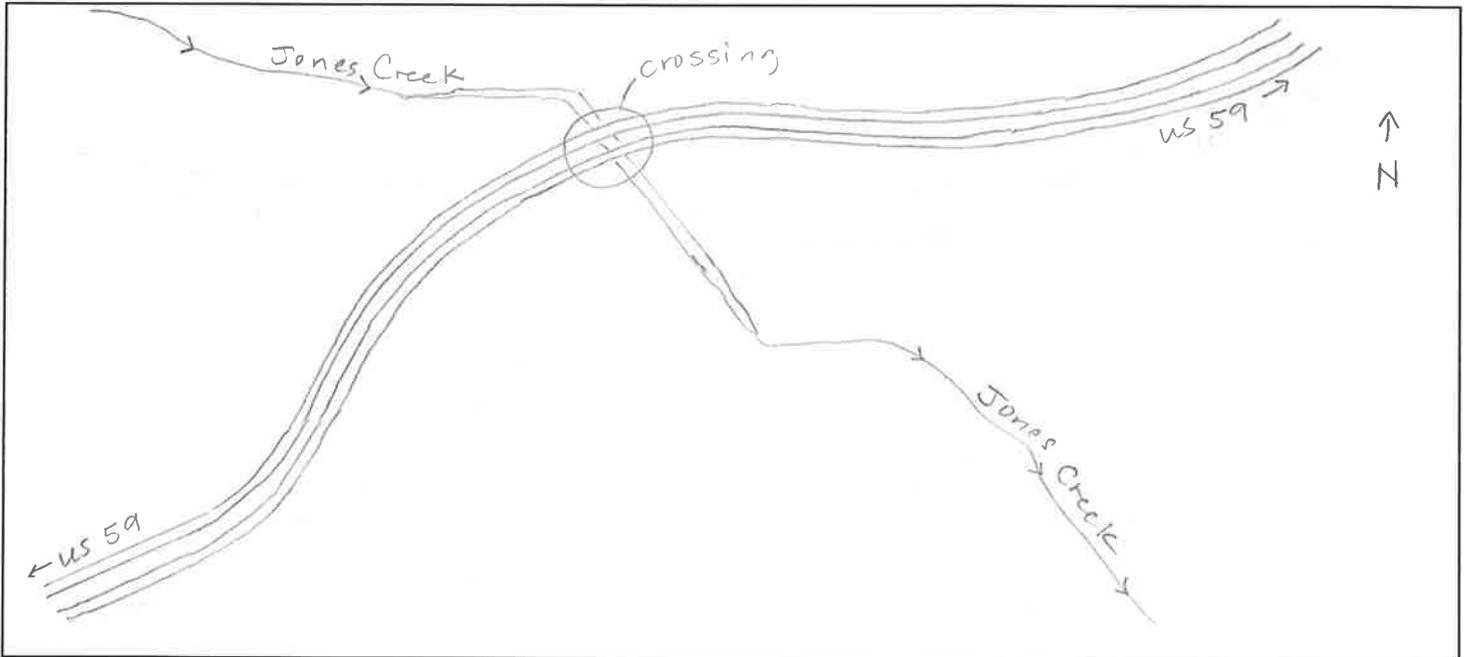
Stream Data Form (continued)

Please provide a plan and section view sketch of the stream channel.

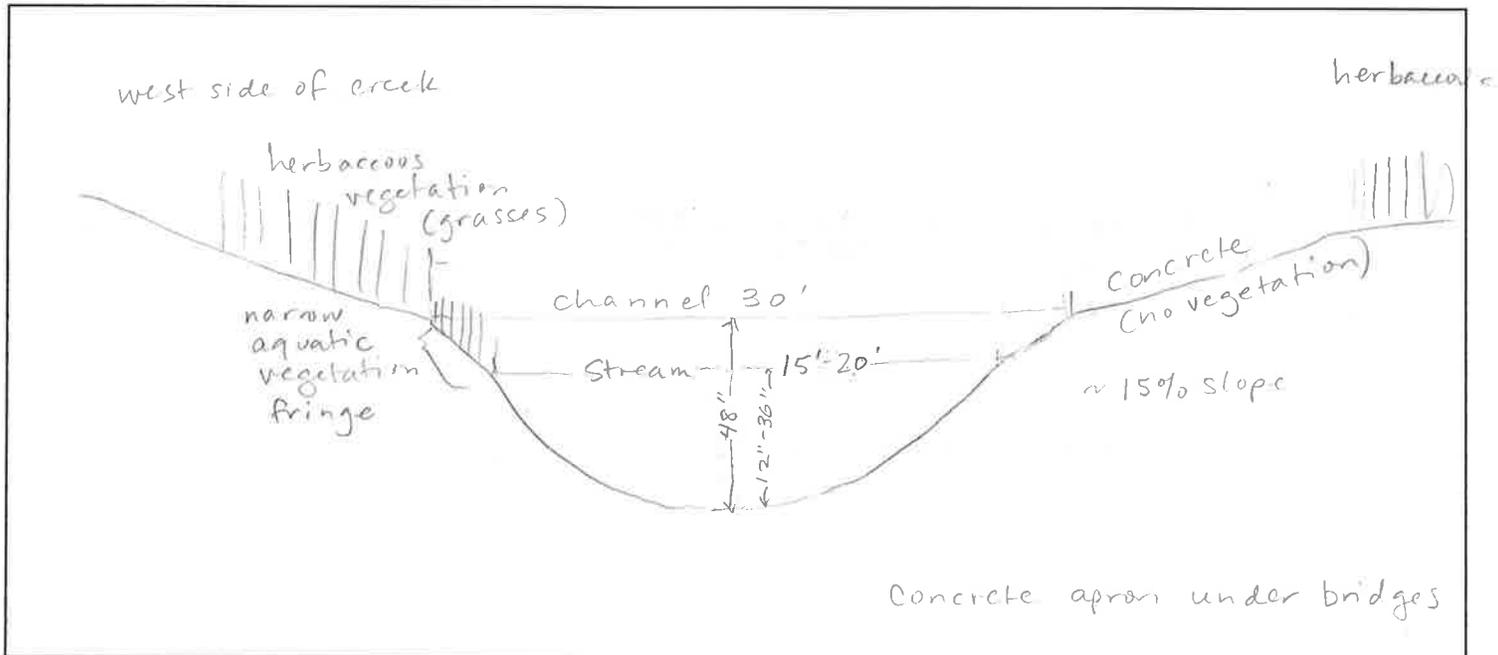
Sketch should include:

- Directional arrow;
- Width of channel from top of bank to top of bank;
- Depth of channel,
- Approximate side slope; and,
- Width of stream from water edge to water edge.

Plan View



Sectional View



Stream Data Form #: 001 008
Project Name: US 59 EA
CSJ: 0089-06-080; 0089-07-145; 0089-08-094

Stream Data Form

Surveyor(s): B. Hamer, B. Darnell, E. Pinto-Torres
USGS Stream Name: East Fork Jones Creek
USGS Topo Quad Name: Pierce, TX
Associated Wetland(s): _____

Date of Field Work: 6/18 - 6/20, 2014
County/State: Wharton, TX
Stream Number [303(d) List]: Not listed
GPS Data: N29°15'36.3" W096°09'55.7"

Stream Type: Perennial Characteristics

Manipulated/Altered. Explain: Channelized with other structural modifications within US 59 ROW

Bank Stability (e.g. highly eroding, sloughing banks, etc.):

Somewhat eroding

Stream Flow Direction: South

OHWM Width (ft): 15'

OHWM Height (in): 12" - 24"

Stream Bottom composition:

Silts Cobbles Concrete Other: _____
 Sands Bedrock Muck
 Gravel Vegetation Type: <Select Veg. Type> Percent Cover _____

Aquatic Habitat: Indicate all types present within proposed ROW/project limits.

Sand bar Sand/Gravel beach/bar Gravel riffles Aquatic vegetation
 Overhanging trees/shrubs Deep pool/ hole/ channel Other: _____

Stream has the following characteristics:

Bed and banks
 OHWM (check all indicators that apply):
 clear, natural line impressed on the bank
 changes in the character of soil
 shelving
 vegetation matted down, bent, or absent
 leaf litter disturbed or washed away
 sediment deposition
 water staining
 other (list): down-cutting or incising of streambed
 the presence of litter and debris
 destruction of terrestrial vegetation
 the presence of wrack line
 sediment sorting
 scour
 multiple observed or predicted flow events
 abrupt change in plant community

Water Quality:

Clear Slightly Turbid Turbid Very Turbid Oily film High organic content
 Other characteristics (pollutants, etc.) _____

Aquatic Organisms: List all species observed. This would include waterfowl, fish, snakes, turtles, frogs, invertebrates, etc.

Large bivalve shells, Odonata, crayfish

Riparian Vegetation: List species observed.

Ulmus americana, U. crassifolia, Elymus virginicus, Chasmanthium latifolium

T&E Species/Suitable Habitat: List T&E species observed or which species the habitat is suitable for.

Crayfish (Cambarillus texanus), Texas pimpleback (Quadrula petrina) habitat may occur; no T+E species observed.

Stream Data Form #: 008
 Project Name: US 59 EA
 CSJ: 0089-06-080; 0089-07-145; 0089-08-094

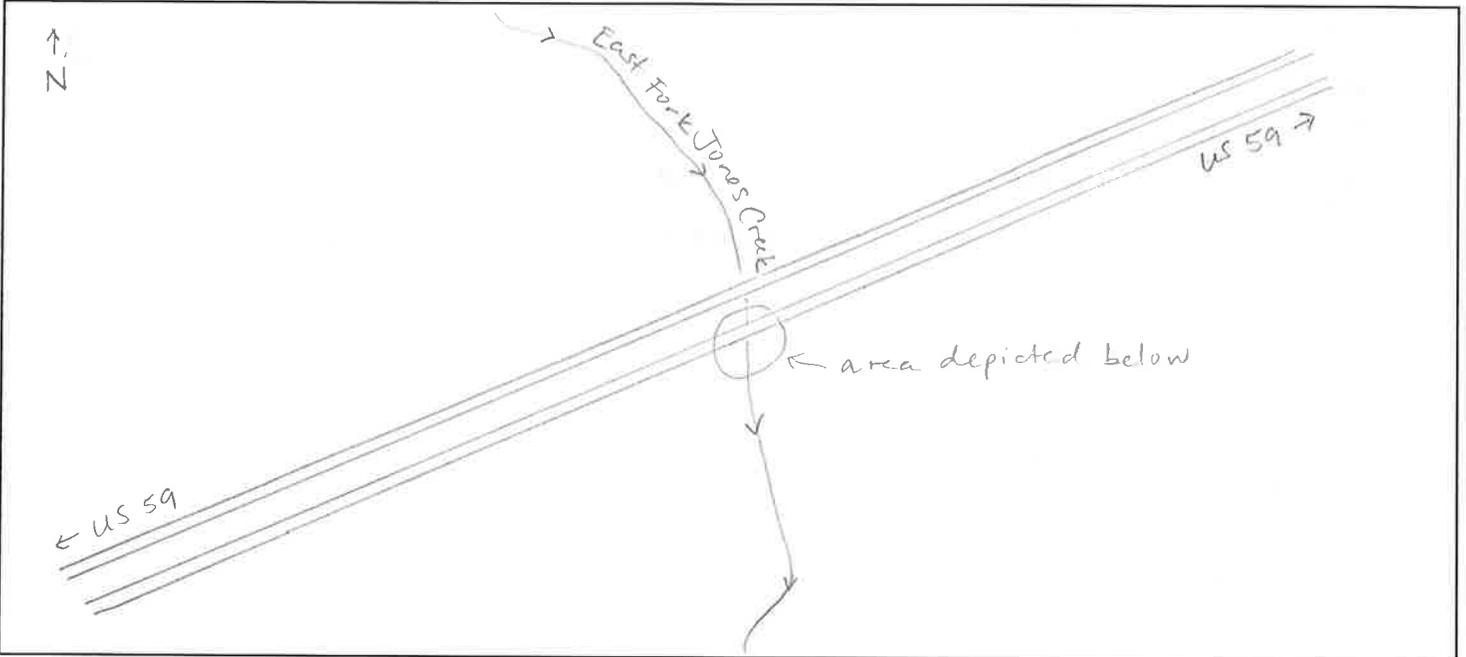
Stream Data Form (continued)

Please provide a plan and section view sketch of the stream channel.

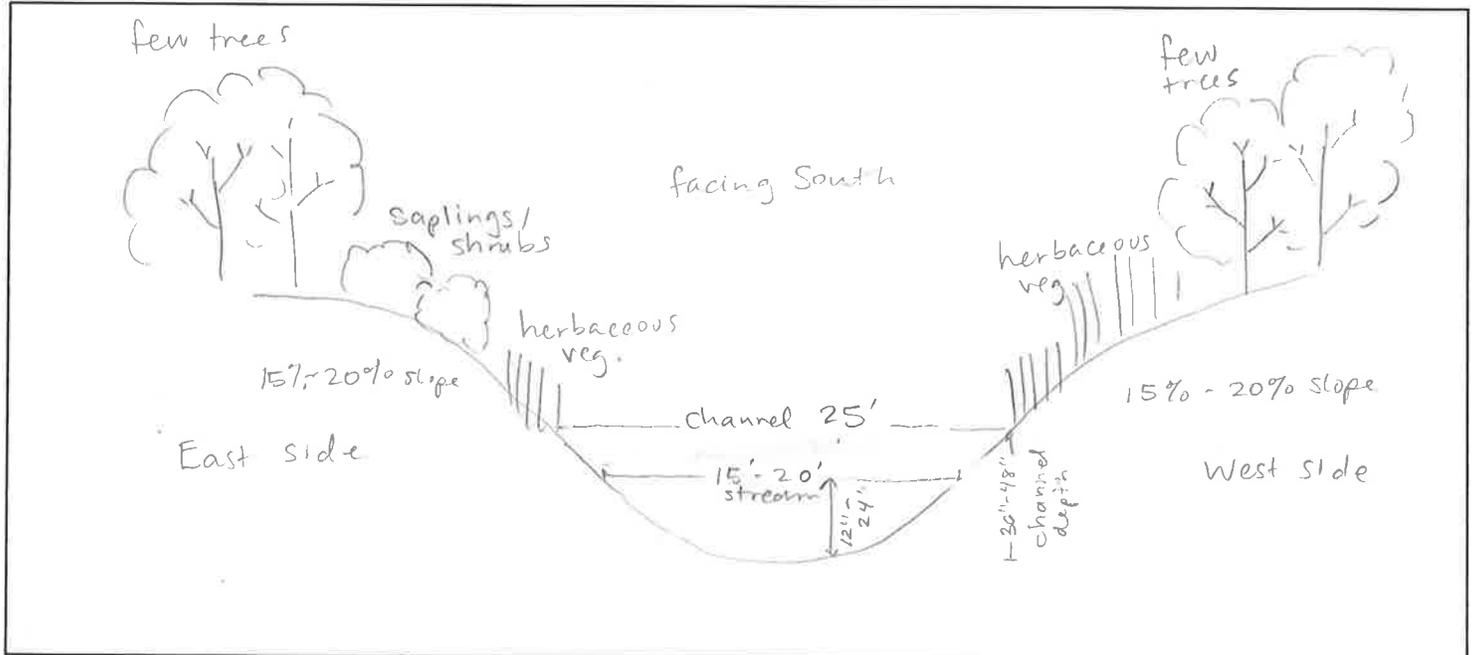
Sketch should include:

- Directional arrow;
- Width of channel from top of bank to top of bank;
- Depth of channel,
- Approximate side slope; and,
- Width of stream from water edge to water edge.

Plan View



Sectional View



Stream Data Form #: 001009
Project Name: US 59 EA
CSJ: 0089-06-080; 0089-07-145; 0089-08-094

Stream Data Form

Surveyor(s): B. Hamer, B. Darnell, E. Pinto-Torres
USGS Stream Name: East Fork Jones Creek
USGS Topo Quad Name: Pierce, TX
Associated Wetland(s): _____

Date of Field Work: 6/18 - 6/20, 2014
County/State: Wharton, TX
Stream Number [303(d) List]: Not listed
GPS Data: N29°15'36.3" W096°09'55.7"

Stream Type: Perennial Characteristics

Manipulated/Altered. Explain: Channelized with other structural modifications within US 59 ROW

Bank Stability (e.g. highly eroding, sloughing banks, etc.):

Somewhat eroding/stable

Stream Flow Direction: South

OHWM Width (ft): 20'

OHWM Height (in): 12" - 36"

Stream Bottom composition:

- | | | | |
|--|-------------------------------------|--|---------------------------------------|
| <input checked="" type="checkbox"/> Silts | <input type="checkbox"/> Cobbles | <input type="checkbox"/> Concrete | <input type="checkbox"/> Other: _____ |
| <input checked="" type="checkbox"/> Sands | <input type="checkbox"/> Bedrock | <input type="checkbox"/> Muck | |
| <input checked="" type="checkbox"/> Gravel | <input type="checkbox"/> Vegetation | Type: <Select Veg. Type> Percent Cover _____ | |

Aquatic Habitat: Indicate all types present within proposed ROW/project limits.

- | | | | |
|--|--|---|---|
| <input type="checkbox"/> Sand bar | <input type="checkbox"/> Sand/Gravel beach/bar | <input type="checkbox"/> Gravel riffles | <input type="checkbox"/> Aquatic vegetation |
| <input checked="" type="checkbox"/> Overhanging trees/shrubs | <input checked="" type="checkbox"/> Deep pool/ hole/ channel | <input type="checkbox"/> Other: _____ | |

Stream has the following characteristics:

- | | |
|--|---|
| <input checked="" type="checkbox"/> Bed and banks | |
| <input checked="" type="checkbox"/> OHWM (check all indicators that apply): | |
| <input type="checkbox"/> clear, natural line impressed on the bank | <input checked="" type="checkbox"/> the presence of litter and debris |
| <input type="checkbox"/> changes in the character of soil | <input type="checkbox"/> destruction of terrestrial vegetation |
| <input type="checkbox"/> shelving | <input type="checkbox"/> the presence of wrack line |
| <input checked="" type="checkbox"/> vegetation matted down, bent, or absent | <input type="checkbox"/> sediment sorting |
| <input type="checkbox"/> leaf litter disturbed or washed away | <input type="checkbox"/> scour |
| <input type="checkbox"/> sediment deposition | <input type="checkbox"/> multiple observed or predicted flow events |
| <input type="checkbox"/> water staining | <input checked="" type="checkbox"/> abrupt change in plant community |
| <input type="checkbox"/> other (list): down-cutting or incising of streambed | |

Water Quality:

- | | | | | | |
|---|--|--|--------------------------------------|------------------------------------|---|
| <input type="checkbox"/> Clear | <input type="checkbox"/> Slightly Turbid | <input checked="" type="checkbox"/> Turbid | <input type="checkbox"/> Very Turbid | <input type="checkbox"/> Oily film | <input type="checkbox"/> High organic content |
| <input type="checkbox"/> Other characteristics (pollutants, etc.) _____ | | | | | |

Aquatic Organisms: List all species observed. This would include waterfowl, fish, snakes, turtles, frogs, invertebrates, etc.

Invertebrates (odonata)

Riparian Vegetation: List species observed.

Herbaceous upland vegetation only; no riparian species observed on north side of crossing.

T&E Species/Suitable Habitat: List T&E species observed or which species the habitat is suitable for.

NO T + E species observed. Habitat may be suitable for crayfish (Cambarillus texanus) + Texas pimpleback (Quadrula petrina)

Stream Data Form #: 009
 Project Name: US 59 EA
 CSJ: 0089-06-080; 0089-07-145; 0089-08-094

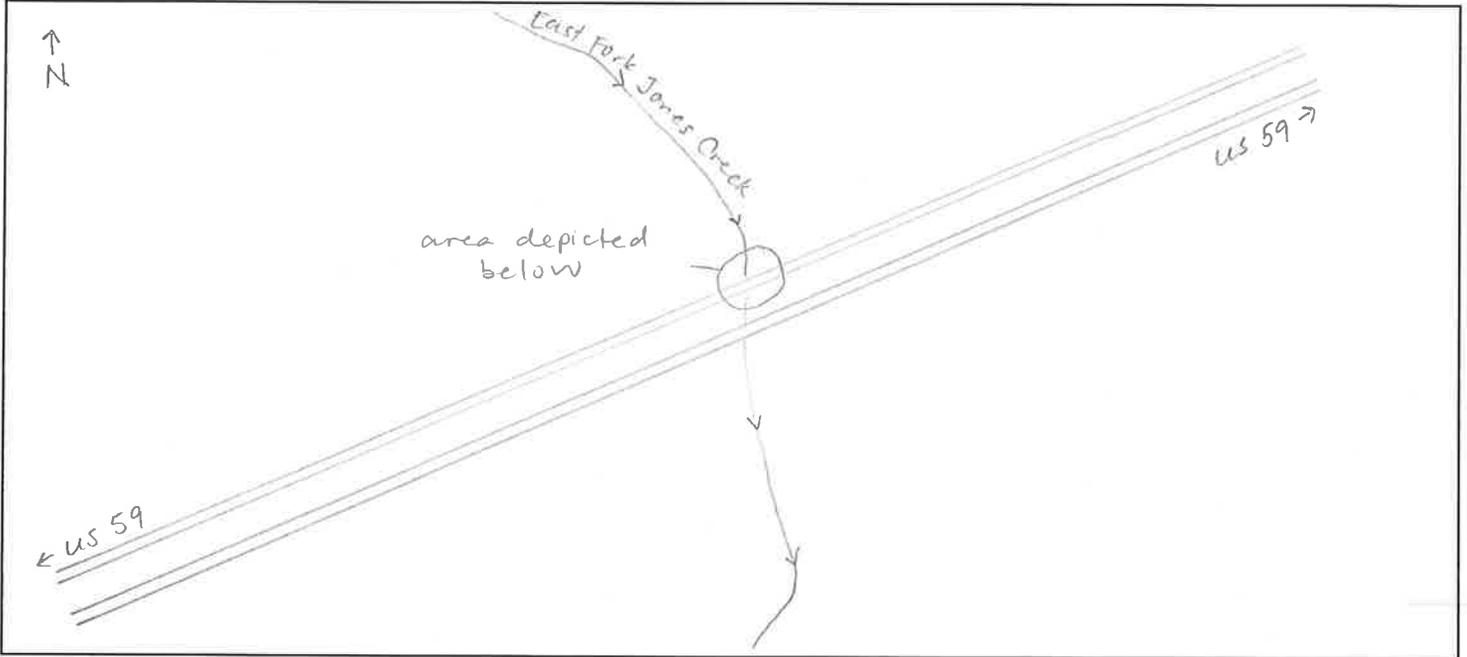
Stream Data Form (continued)

Please provide a plan and section view sketch of the stream channel.

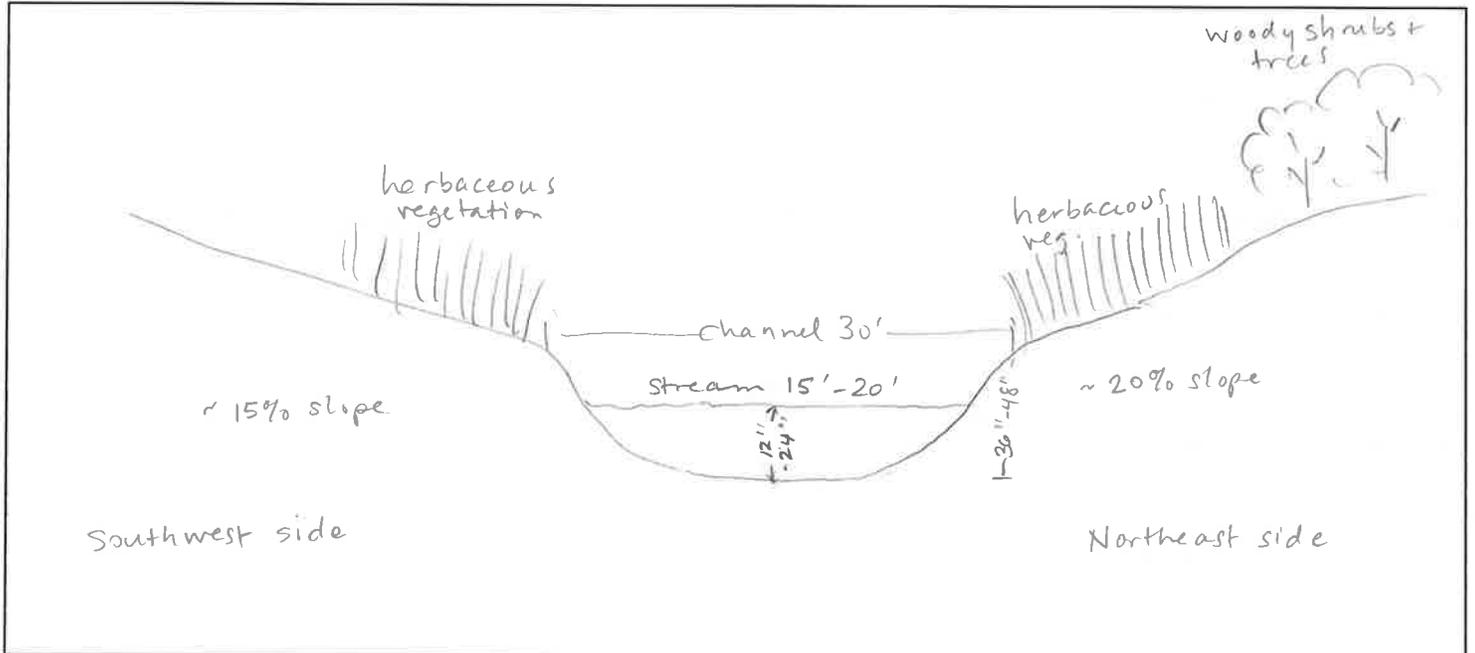
Sketch should include:

- Directional arrow;
- Width of channel from top of bank to top of bank;
- Depth of channel,
- Approximate side slope; and,
- Width of stream from water edge to water edge.

Plan View



Sectional View



Stream Data Form #: 001 010
Project Name: US 59 EA
CSJ: 0089-06-080; 0089-07-145; 0089-08-094

Stream Data Form

Surveyor(s): B. Hamer, B. Darnell, E. Pinto-Torres
USGS Stream Name: Basque Slough
USGS Topo Quad Name: Glen Flora, TX
Associated Wetland(s): in channel, herbaceous

Date of Field Work: 6/18 - 6/20, 2014
County/State: Wharton, TX
Stream Number [303(d) List]: Not listed
GPS Data: N 29°15' 58.1" W 096°09' 20.9"

Stream Type: Perennial Characteristics

Manipulated/Altered. Explain: Channelized with other structural modifications within US 59 ROW

Bank Stability (e.g. highly eroding, sloughing banks, etc.):

Stream Flow Direction: South

OHWM Width (ft): 20' - 25'

OHWM Height (in): 12"

Stream Bottom composition:

Silts Cobbles Concrete Other: _____
 Sands Bedrock Muck
 Gravel Vegetation Type: <Select Veg. Type> Percent Cover 10%-40% herbaceous vegetation

Aquatic Habitat: Indicate all types present within proposed ROW/project limits.

Sand bar Sand/Gravel beach/bar Gravel riffles Aquatic vegetation
 Overhanging trees/shrubs Deep pool/ hole/ channel Other: _____

Stream has the following characteristics:

Bed and banks Not well defined beyond bridges
 OHWM (check all indicators that apply):
 clear, natural line impressed on the bank
 changes in the character of soil
 shelving
 vegetation matted down, bent, or absent
 leaf litter disturbed or washed away
 sediment deposition
 water staining
 other (list): down-cutting or incising of streambed
 the presence of litter and debris
 destruction of terrestrial vegetation
 the presence of wrack line
 sediment sorting
 scour
 multiple observed or predicted flow events
 abrupt change in plant community

Water Quality:

Clear Slightly Turbid Turbid Very Turbid Oily film High organic content
 Other characteristics (pollutants, etc.) tannins

Aquatic Organisms: List all species observed. This would include waterfowl, fish, snakes, turtles, frogs, invertebrates, etc.

small fish, invertebrates (odonata)

Riparian Vegetation: List species observed.

No significant woody vegetation; wetland herbaceous species present

T&E Species/Suitable Habitat: List T&E species observed or which species the habitat is suitable for.

No T + E species observed. Habitat may be suitable for crayfish (Cambarillus texanus), Texas pimpleback (Quadrula petrina), and smooth pimpleback (Q. houstonensis).

Stream Data Form #: 010
 Project Name: US 59 EA
 CSJ: 0089-06-080; 0089-07-145; 0089-08-094

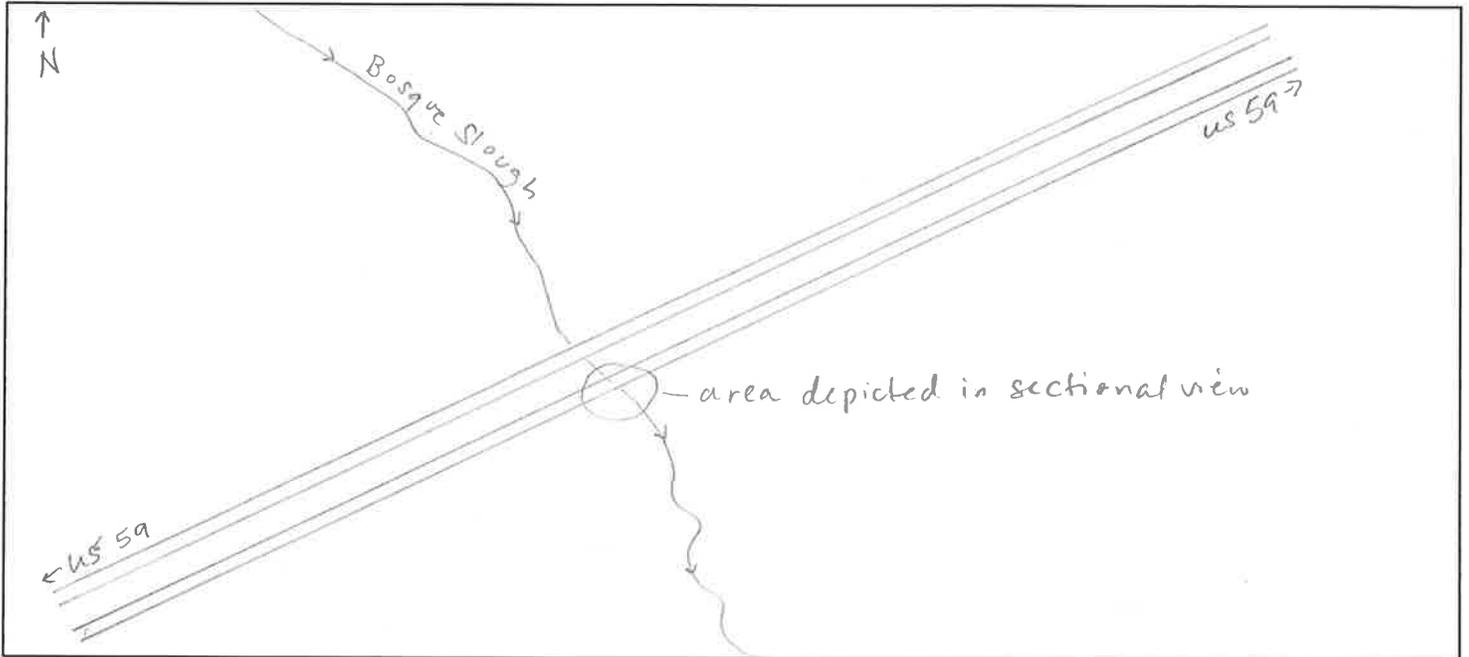
Stream Data Form (continued)

Please provide a plan and section view sketch of the stream channel.

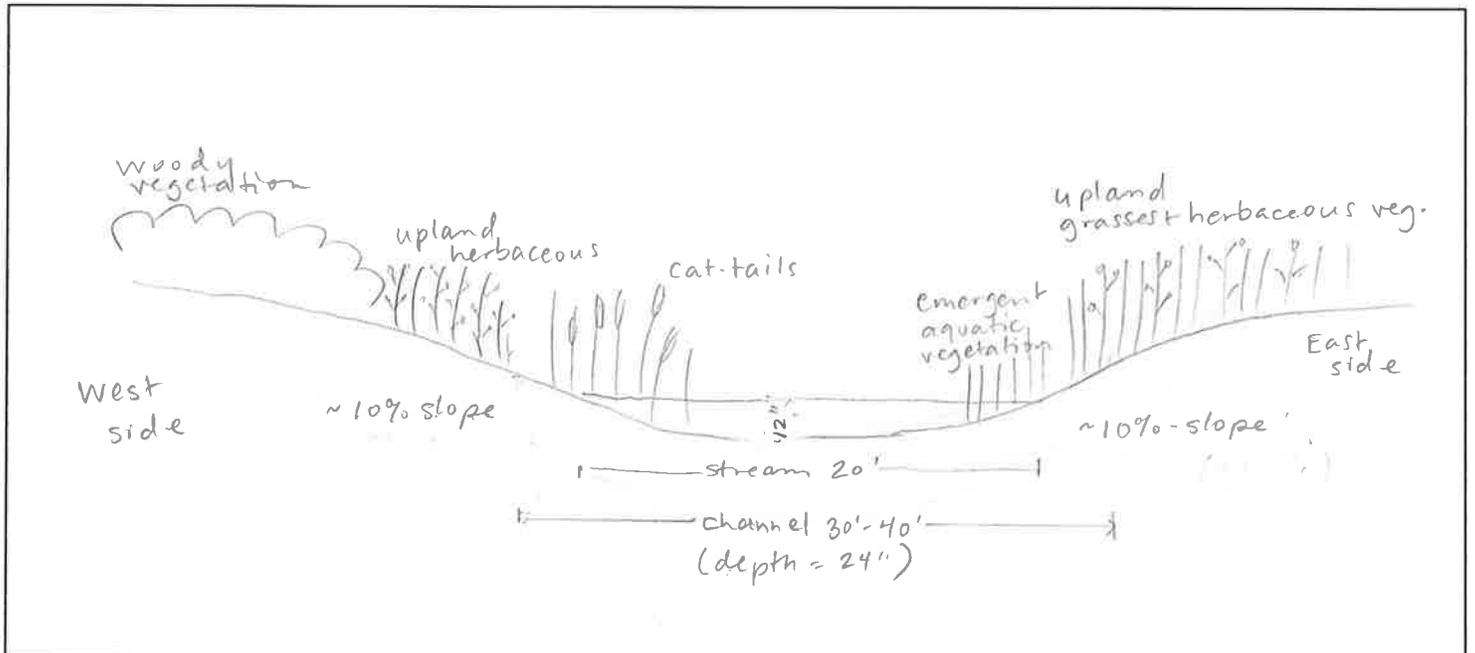
Sketch should include:

- Directional arrow;
- Width of channel from top of bank to top of bank;
- Depth of channel;
- Approximate side slope; and,
- Width of stream from water edge to water edge.

Plan View



Sectional View



Stream Data Form #: 001 011
Project Name: US 59 EA
CSJ: 0089-06-080; 0089-07-145; 0089-08-094

Stream Data Form

Surveyor(s): B. Hamer, B. Darnell, E. Pinto-Torres
USGS Stream Name: Colocado River
USGS Topo Quad Name: Wharton, TX
Associated Wetland(s): _____

Date of Field Work: 6/18 - 6/20, 2014
County/State: Wharton, TX
Stream Number [303(d) List]: Not listed
GPS Data: N W

Stream Type: Perennial Characteristics

Manipulated/Altered. Explain: Channelized with other structural modifications within US 59 ROW (just bridge span; no channelization)

Bank Stability (e.g. highly eroding, sloughing banks, etc.):

Stream Flow Direction: Southeast

OHWB Width (ft): 230' - 240'

OHWB Height (in): 84" - 120"

Stream Bottom composition:

- Silts Cobbles Concrete Other: _____
 Sands Bedrock Muck
 Gravel Vegetation Type: <Select Veg. Type> Percent Cover _____

Aquatic Habitat: Indicate all types present within proposed ROW/project limits.

- Sand bar Sand/Gravel beach/bar Gravel riffles Aquatic vegetation
 Overhanging trees/shrubs Deep pool/ hole/ channel Other: _____

Stream has the following characteristics:

- Bed and banks
 OHWB (check all indicators that apply):
 clear, natural line impressed on the bank
 changes in the character of soil
 shelving
 vegetation matted down, bent, or absent
 leaf litter disturbed or washed away
 sediment deposition
 water staining
 other (list): down-cutting or incising of streambed
 the presence of litter and debris
 destruction of terrestrial vegetation
 the presence of wrack line
 sediment sorting
 scour
 multiple observed or predicted flow events
 abrupt change in plant community

Water Quality:

- Clear Slightly Turbid Turbid Very Turbid Oily film High organic content
 Other characteristics (pollutants, etc.) _____

Aquatic Organisms: List all species observed. This would include waterfowl, fish, snakes, turtles, frogs, invertebrates, etc.

Turtles, fish, bivalves

Riparian Vegetation: List species observed.

Salix nigra, Populus deltoides, carya illinoensis, Fraxinus pennsylvanica, Celtis laevigata, Ulmus spp.

T&E Species/Suitable Habitat: List T&E species observed or which species the habitat is suitable for.

No T&E species observed. Habitat may be suitable for Bald Eagle (Haliaeetus leucocephalus), A crayfish (Cambarellus texanus), blue sucker (Cycleptus elongatus), sharpnose shiner (Notropis oxyrinchus), Creeper (Squawfoot, Strophitus undulatus), False spike mussel (Quadrula mitchelli), Smooth pimpleback (Q. houstonensis), Texas fawnsfoot (Truncilla macrodon), Texas pimpleback (Q. petrina), timber rattlesnake (Crotalus horridus).

Stream Data Form #:	011
Project Name:	US 59 EA
CSJ:	0089-06-080; 0089-07-145; 0089-08-094

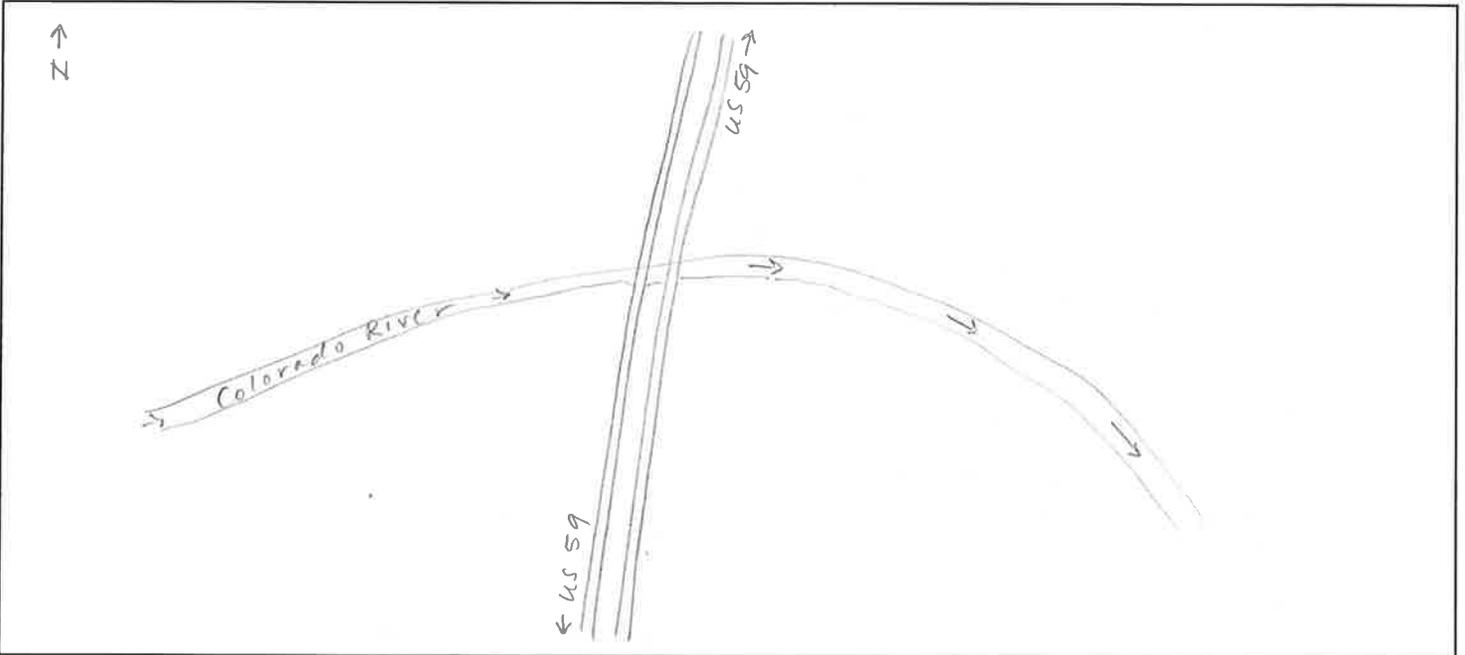
Stream Data Form (continued)

Please provide a plan and section view sketch of the stream channel.

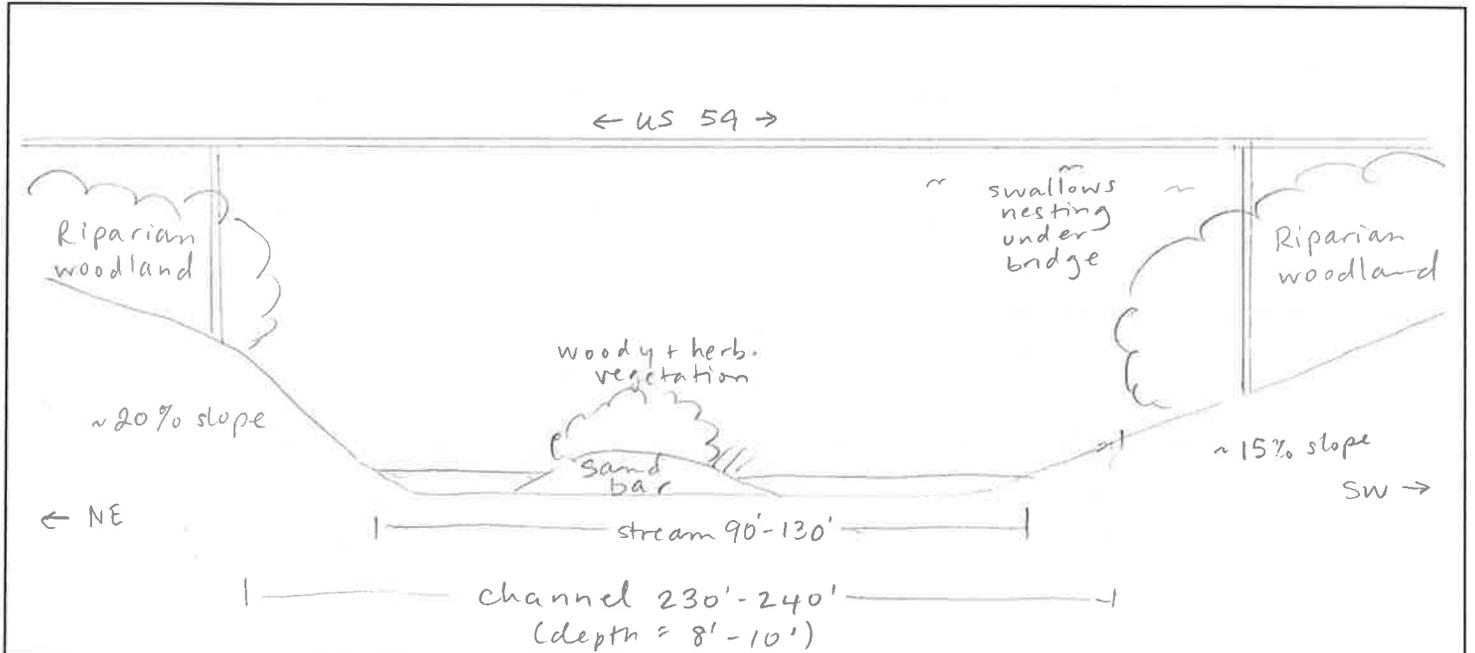
Sketch should include:

- Directional arrow;
- Width of channel from top of bank to top of bank;
- Depth of channel;
- Approximate side slope; and,
- Width of stream from water edge to water edge.

Plan View



Sectional View



Stream Data Form #: 001 012
Project Name: US 59 EA
CSJ: 0089-06-080; 0089-07-145; 0089-08-094

Stream Data Form

Surveyor(s): B. Hamer, B. Darnell, E. Pinto-Torres
USGS Stream Name: Tributary to Colorado River
USGS Topo Quad Name: Wharton, TX
Associated Wetland(s): _____

Date of Field Work: 6/18 - 6/20, 2014
County/State: Wharton, TX
Stream Number [303(d) List]: Not listed
GPS Data: N29°18'51.9"W 096°07'28.2"

Stream Type: Intermittent Characteristics

Manipulated/Altered. Explain: Channelized with other structural modifications within US 59 ROW

Bank Stability (e.g. highly eroding, sloughing banks, etc.):

highly eroding

Stream Flow Direction: Southeast

OHWM Width (ft): 10'

OHWM Height (in): 6" - 12"

Stream Bottom composition:

- | | | | |
|--|---|--|---------------------------------------|
| <input checked="" type="checkbox"/> Silts | <input checked="" type="checkbox"/> Cobbles | <input type="checkbox"/> Concrete | <input type="checkbox"/> Other: _____ |
| <input checked="" type="checkbox"/> Sands | <input type="checkbox"/> Bedrock | <input type="checkbox"/> Muck | |
| <input checked="" type="checkbox"/> Gravel | <input type="checkbox"/> Vegetation | Type: <Select Veg. Type> Percent Cover _____ | |

Aquatic Habitat: Indicate all types present within proposed ROW/project limits.

- | | | | |
|--|---|---|---|
| <input type="checkbox"/> Sand bar | <input type="checkbox"/> Sand/Gravel beach/bar | <input type="checkbox"/> Gravel riffles | <input type="checkbox"/> Aquatic vegetation |
| <input checked="" type="checkbox"/> Overhanging trees/shrubs | <input type="checkbox"/> Deep pool/ hole/ channel | <input type="checkbox"/> Other: _____ | |

Stream has the following characteristics:

- | | |
|--|--|
| <input checked="" type="checkbox"/> Bed and banks | |
| <input checked="" type="checkbox"/> OHWM (check all indicators that apply): | |
| <input type="checkbox"/> clear, natural line impressed on the bank | <input type="checkbox"/> the presence of litter and debris |
| <input type="checkbox"/> changes in the character of soil | <input type="checkbox"/> destruction of terrestrial vegetation |
| <input type="checkbox"/> shelving | <input type="checkbox"/> the presence of wrack line |
| <input checked="" type="checkbox"/> vegetation matted down, bent, or absent | <input type="checkbox"/> sediment sorting |
| <input type="checkbox"/> leaf litter disturbed or washed away | <input checked="" type="checkbox"/> scour |
| <input type="checkbox"/> sediment deposition | <input type="checkbox"/> multiple observed or predicted flow events |
| <input type="checkbox"/> water staining | <input checked="" type="checkbox"/> abrupt change in plant community |
| <input type="checkbox"/> other (list): down-cutting or incising of streambed | |

Water Quality:

- | | | | | | |
|--|--|---------------------------------|--------------------------------------|------------------------------------|---|
| <input type="checkbox"/> Clear | <input type="checkbox"/> Slightly Turbid | <input type="checkbox"/> Turbid | <input type="checkbox"/> Very Turbid | <input type="checkbox"/> Oily film | <input type="checkbox"/> High organic content |
| <input checked="" type="checkbox"/> Other characteristics (pollutants, etc.) | <u>Dry, littered (old tires, trash)</u> | | | | |

Aquatic Organisms: List all species observed. This would include waterfowl, fish, snakes, turtles, frogs, invertebrates, etc.

No aquatic organisms observed. Swallows nesting under bridge.

Riparian Vegetation: List species observed.

Acer negundo, Carya illinoensis, Celtis laevigata, Ulmus crassifolia

T&E Species/Suitable Habitat: List T&E species observed or which species the habitat is suitable for.

No T&E species observed. Habitat may be suitable for Bald Eagle (Haliaeetus leucocephalus), timber rattlesnake (Crotalus horridus)

Stream Data Form #: 012
 Project Name: US 59 EA
 CSJ: 0089-06-080; 0089-07-145; 0089-08-094

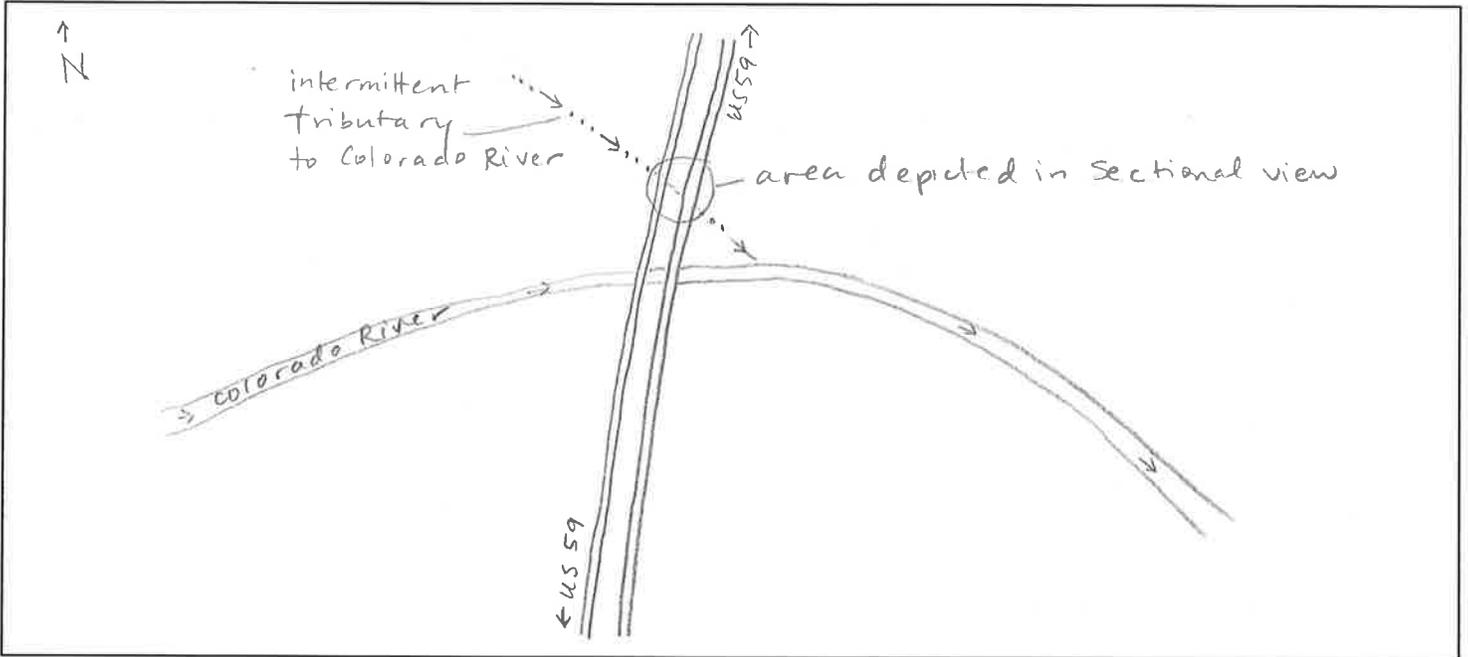
Stream Data Form (continued)

Please provide a plan and section view sketch of the stream channel.

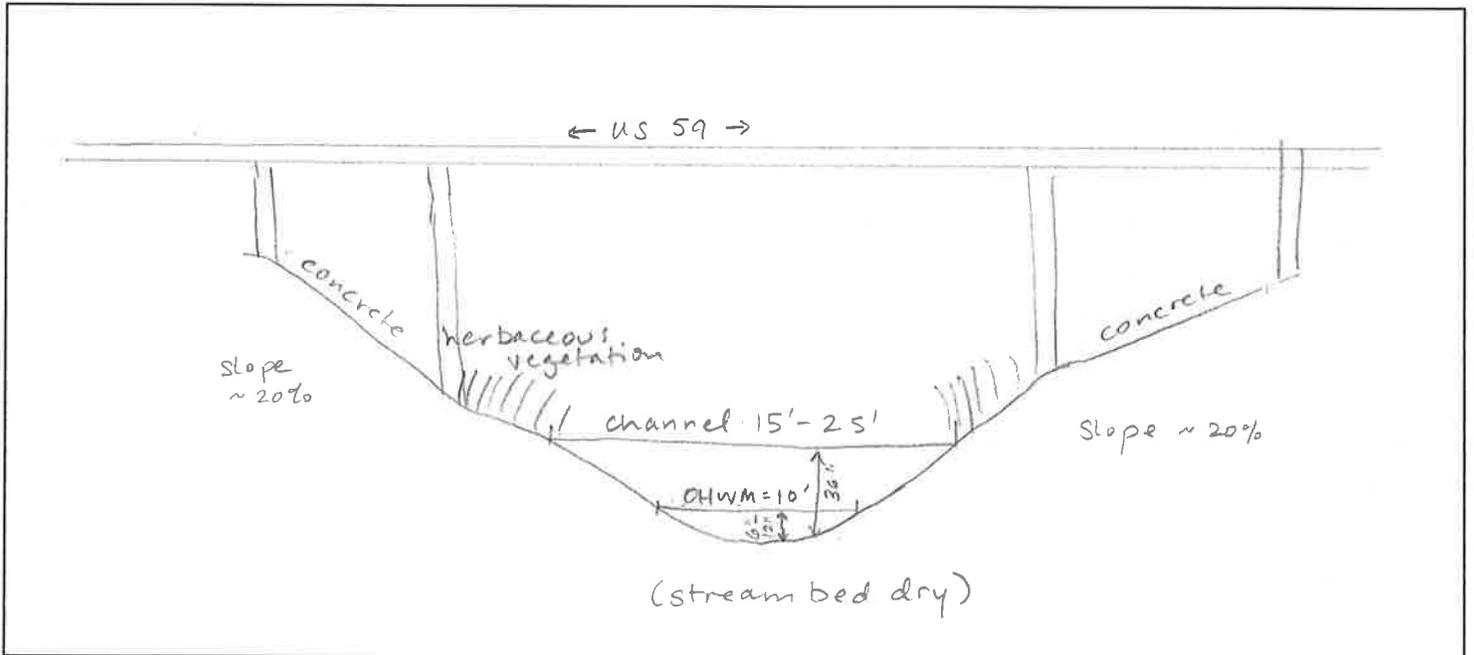
Sketch should include:

- Directional arrow;
- Width of channel from top of bank to top of bank;
- Depth of channel;
- Approximate side slope; and,
- Width of stream from water edge to water edge.

Plan View



Sectional View



Stream Data Form #: 001 013
Project Name: US 59 EA
CSJ: 0089-06-080; 0089-07-145; 0089-08-094

Stream Data Form

Surveyor(s): B. Hamer, B. Darnell, E. Pinto-Torres
USGS Stream Name: Baughman Slough
USGS Topo Quad Name: Wharton, TX
Associated Wetland(s): _____

Date of Field Work: 6/18 - 6/20, 2014
County/State: Wharton, TX
Stream Number [303(d) List]: Not listed
GPS Data: N29°20'47.6"W 096°06'49.2"

Stream Type: Intermittent Characteristics

Manipulated/Altered. Explain: Channelized with other structural modifications within US 59 ROW

Bank Stability (e.g. highly eroding, sloughing banks, etc.):

stable, vegetated

Stream Flow Direction: South

OHWM Width (ft): 25'

OHWM Height (in): 12"

Stream Bottom composition:

Silts Cobbles Concrete Other: _____
 Sands Bedrock Muck
 Gravel Vegetation Type: <Select Veg. Type> Percent Cover Aquatic herbaceous, 15%

Aquatic Habitat: Indicate all types present within proposed ROW/project limits.

Sand bar Sand/Gravel beach/bar Gravel riffles Aquatic vegetation
 Overhanging trees/shrubs Deep pool/ hole/ channel Other: _____

Stream has the following characteristics:

Bed and banks
 OHWM (check all indicators that apply):
 clear, natural line impressed on the bank the presence of litter and debris
 changes in the character of soil destruction of terrestrial vegetation
 shelving the presence of wrack line
 vegetation matted down, bent, or absent sediment sorting
 leaf litter disturbed or washed away scour
 sediment deposition multiple observed or predicted flow events
 water staining abrupt change in plant community
 other (list): down-cutting or incising of streambed

Water Quality:

Clear Slightly Turbid Turbid Very Turbid Oily film High organic content
 Other characteristics (pollutants, etc.) _____

Aquatic Organisms: List all species observed. This would include waterfowl, fish, snakes, turtles, frogs, invertebrates, etc.

Crayfish, Green Heron, swallows (nesting)

Riparian Vegetation: List species observed.

Salix nigra, Carya illinoensis, Ulmus americana, Fraxinus pennsylvanica, Cephalanthus occidentalis, Cornus drummondii, Triadica sebifera

T&E Species/Suitable Habitat: List T&E species observed or which species the habitat is suitable for.

No T+E species observed. Habitat may be suitable for White-faced Ibis (Plegadis chini), a crayfish (Cambarellus texanus), Smooth pimpleback (Quadrula houstonensis), Texas pimpleback (Q. petrina), timber rattlesnake (Crotalus horridus).

Stream Data Form #: 013
 Project Name: US 59 EA
 CSJ: 0089-06-080; 0089-07-145; 0089-08-094

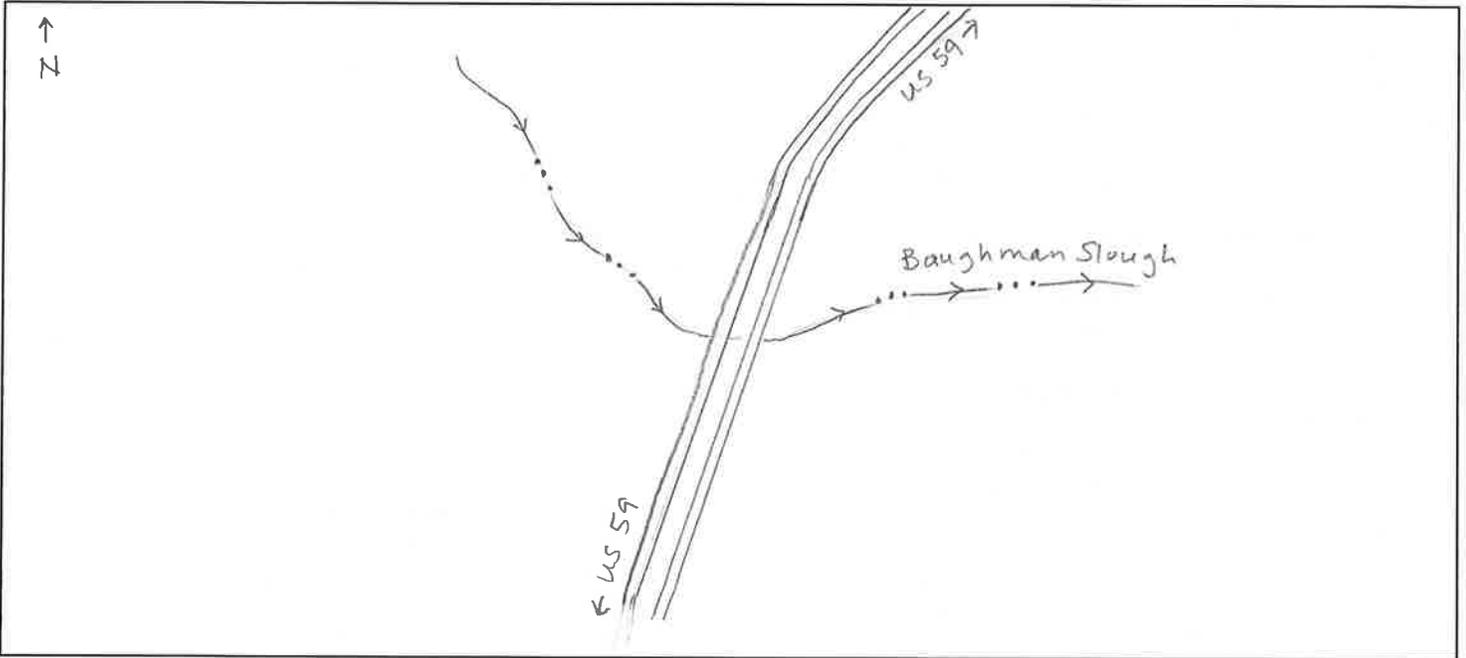
Stream Data Form (continued)

Please provide a plan and section view sketch of the stream channel.

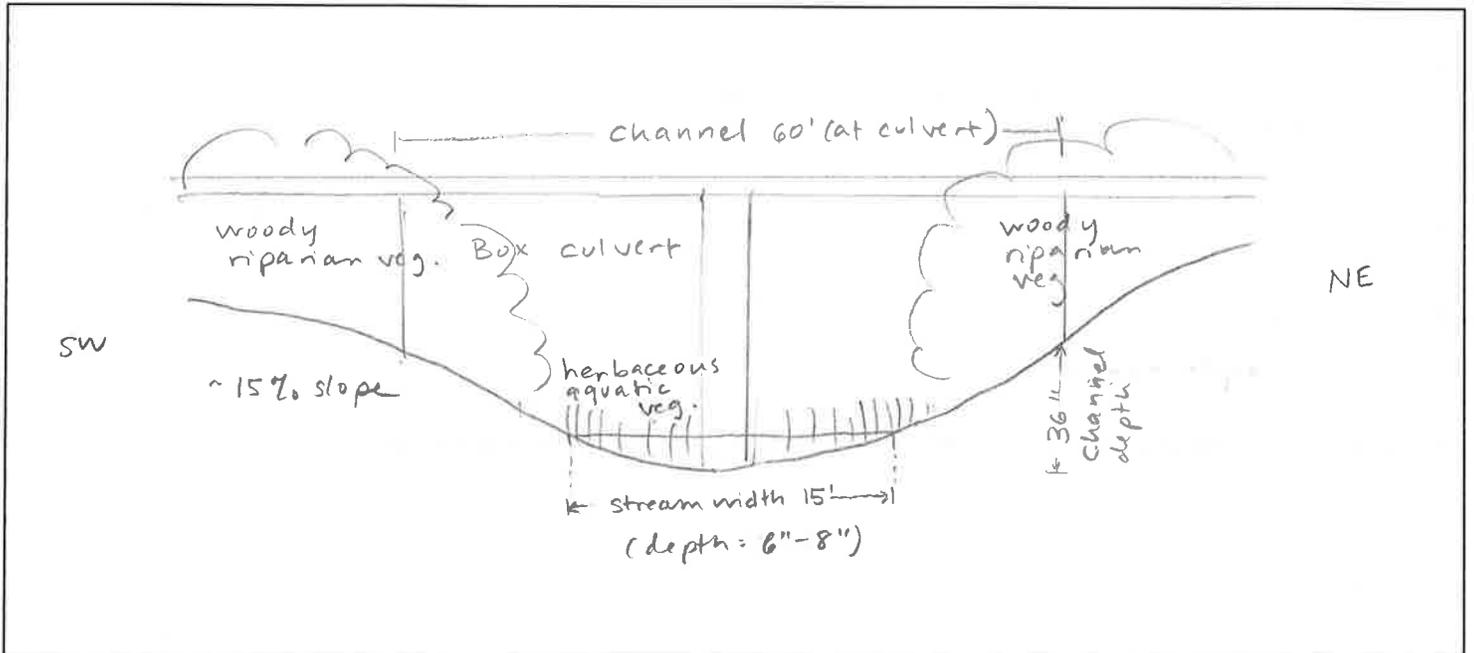
Sketch should include:

- Directional arrow;
- Width of channel from top of bank to top of bank;
- Depth of channel;
- Approximate side slope; and,
- Width of stream from water edge to water edge.

Plan View



Sectional View



Stream Data Form #: 001 014
Project Name: US 59 EA
CSJ: 0089-06-080; 0089-07-145; 0089-08-094

Stream Data Form

Surveyor(s): B. Hamer, B. Darnell, E. Pinto-Torres
USGS Stream Name: Peach Creek
USGS Topo Quad Name: Wharton, TX
Associated Wetland(s): _____

Date of Field Work: 6/18 - 6/20, 2014
County/State: Wharton, TX
Stream Number [303(d) List]: Not listed
GPS Data: N29°21'45.7"W 096°05'46.2"

Stream Type: perennial Characteristics _____

Manipulated/Altered. Explain: Channelized with other structural modifications within US 59 ROW

Bank Stability (e.g. highly eroding, sloughing banks, etc.): stable

Stream Flow Direction: South East

OHWM Width (ft): 20'

OHWM Height (in): 24"

Stream Bottom composition:

- | | | | |
|---|-------------------------------------|--|---------------------------------------|
| <input checked="" type="checkbox"/> Silts | <input type="checkbox"/> Cobbles | <input type="checkbox"/> Concrete | <input type="checkbox"/> Other: _____ |
| <input type="checkbox"/> Sands | <input type="checkbox"/> Bedrock | <input type="checkbox"/> Muck | |
| <input type="checkbox"/> Gravel | <input type="checkbox"/> Vegetation | Type: <Select Veg. Type> Percent Cover _____ | |

Aquatic Habitat: Indicate all types present within proposed ROW/project limits.

- | | | | |
|--|---|---|---|
| <input type="checkbox"/> Sand bar | <input type="checkbox"/> Sand/Gravel beach/bar | <input type="checkbox"/> Gravel riffles | <input type="checkbox"/> Aquatic vegetation |
| <input checked="" type="checkbox"/> Overhanging trees/shrubs | <input type="checkbox"/> Deep pool/ hole/ channel | <input type="checkbox"/> Other: _____ | |

Stream has the following characteristics:

- | | |
|---|---|
| <input checked="" type="checkbox"/> Bed and banks | <input checked="" type="checkbox"/> the presence of litter and debris |
| <input checked="" type="checkbox"/> OHWM (check all indicators that apply): | <input type="checkbox"/> destruction of terrestrial vegetation |
| <input checked="" type="checkbox"/> clear, natural line impressed on the bank | <input type="checkbox"/> the presence of wrack line |
| <input type="checkbox"/> changes in the character of soil | <input type="checkbox"/> sediment sorting |
| <input checked="" type="checkbox"/> shelving | <input checked="" type="checkbox"/> scour |
| <input checked="" type="checkbox"/> vegetation matted down, bent, or absent | <input type="checkbox"/> multiple observed or predicted flow events |
| <input type="checkbox"/> leaf litter disturbed or washed away | <input type="checkbox"/> abrupt change in plant community |
| <input type="checkbox"/> sediment deposition | |
| <input type="checkbox"/> water staining | |
| <input type="checkbox"/> other (list): down-cutting or incising of streambed | |

Water Quality:

- | | | | | | |
|---|---|---------------------------------|--------------------------------------|------------------------------------|---|
| <input type="checkbox"/> Clear | <input checked="" type="checkbox"/> Slightly Turbid | <input type="checkbox"/> Turbid | <input type="checkbox"/> Very Turbid | <input type="checkbox"/> Oily film | <input type="checkbox"/> High organic content |
| <input type="checkbox"/> Other characteristics (pollutants, etc.) _____ | | | | | |

Aquatic Organisms: List all species observed. This would include waterfowl, fish, snakes, turtles, frogs, invertebrates, etc.

Crayfish, fish, frogs, invertebrates (odonata), nesting swallows

Riparian Vegetation: List species observed.

Fraxinus pennsylvanica, Carya illinoensis, Salix nigra, Acer negundo, Taxodium distichum, Ulmus crassifolia, Cornus drummondii, Ilex decidua

T&E Species/Suitable Habitat: List T&E species observed or which species the habitat is suitable for.

No T+E species observed. Habitat may be suitable for Crayfish (Cambarellus texanus), Smooth pimpleback (Quadrula houstonensis), Texas pimpleback (Q. petrina), timber rattlesnake (Crotalus horridus)

Stream Data Form #: 014

Project Name: US 59 EA

CSJ: 0089-06-080; 0089-07-

145; 0089-08-094

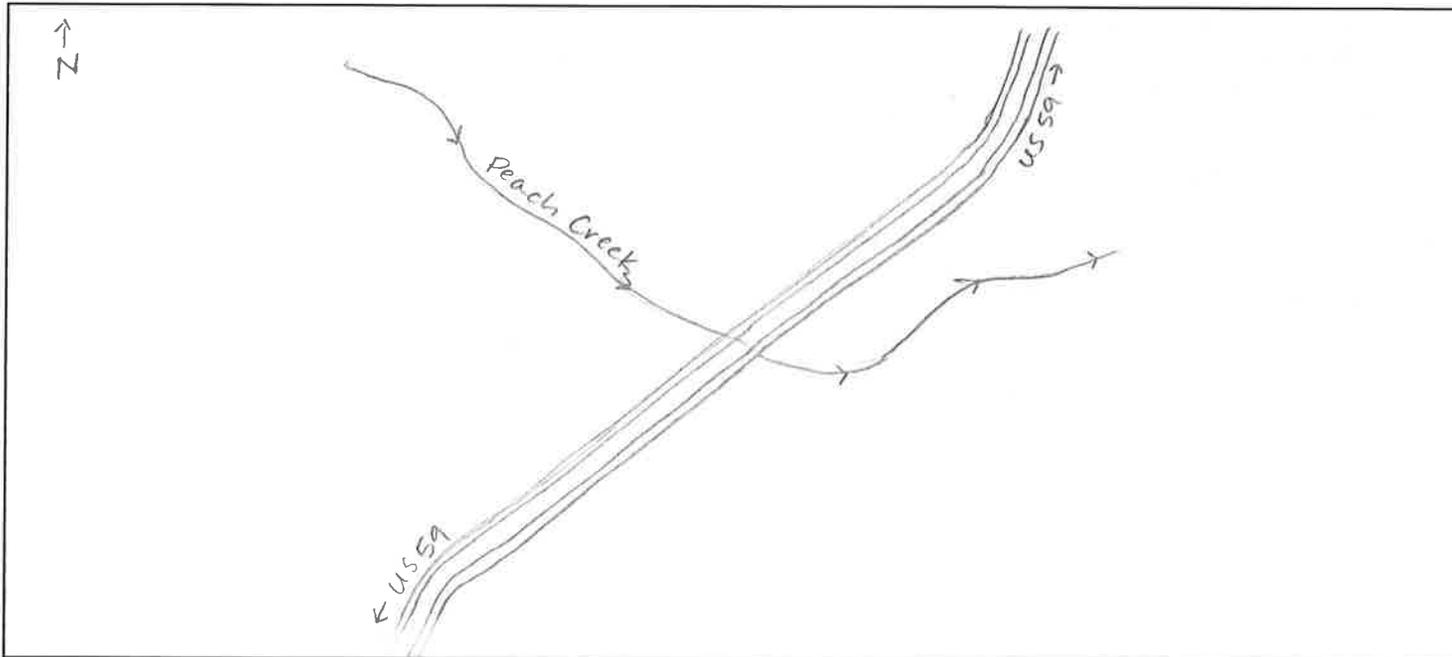
Stream Data Form (continued)

Please provide a plan and section view sketch of the stream channel.

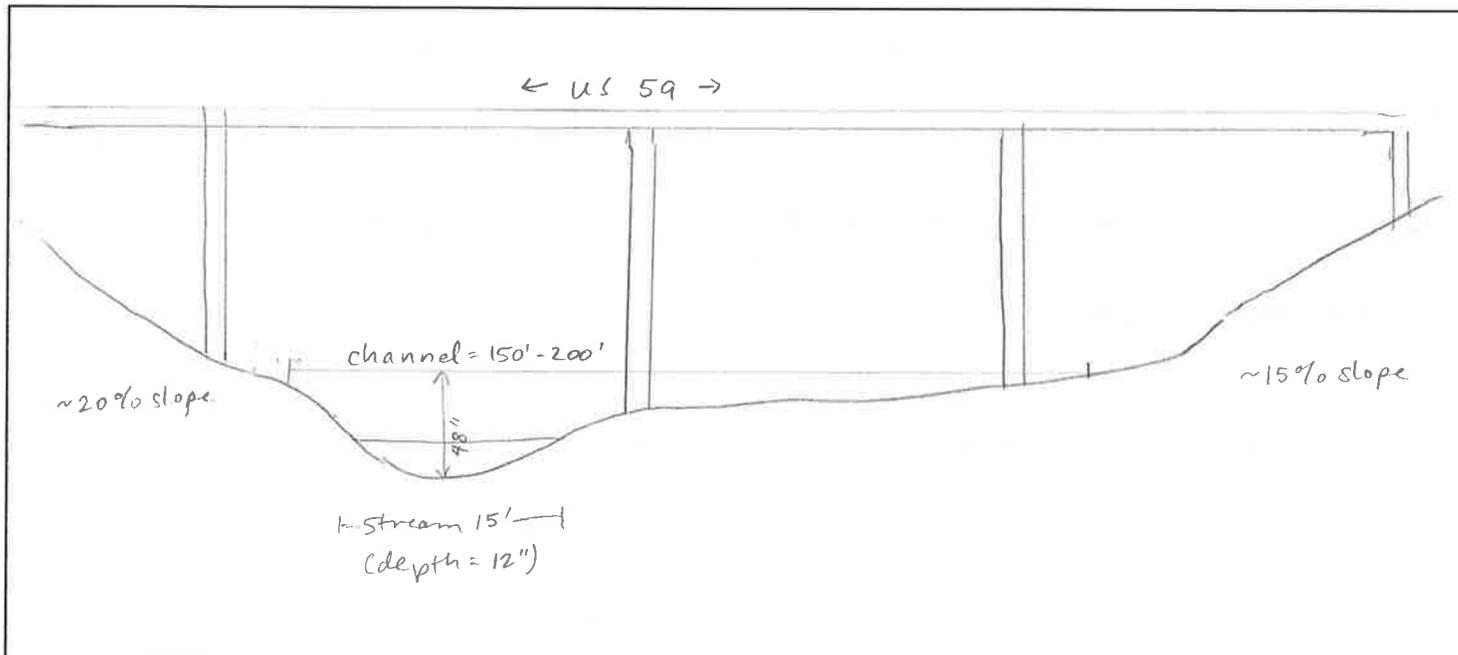
Sketch should include:

- Directional arrow;
- Width of channel from top of bank to top of bank;
- Depth of channel,
- Approximate side slope; and,
- Width of stream from water edge to water edge.

Plan View



Sectional View



Stream Data Form #: 001 015
Project Name: US 59 EA
CSJ: 0089-06-080; 0089-07-145; 0089-08-094

Stream Data Form

Surveyor(s): B. Hamer, B. Darnell, E. Pinto-Torres
USGS Stream Name: West Bernard Creek
USGS Topo Quad Name: Hungerford, TX
Associated Wetland(s): _____

Date of Field Work: 6/18 - 6/20, 2014
County/State: Wharton, TX
Stream Number [303(d) List]: Not listed 1302B-01
GPS Data: N29°24'00.0"W 096°04'05.9"

Stream Type: perennial Characteristics

Manipulated/Altered. Explain: Channelized with other structural modifications within US 59 ROW

Bank Stability (e.g. highly eroding, sloughing banks, etc.): Highly eroding

Stream Flow Direction: Southeast

OHWM Width (ft): 15' - 30'

OHWM Height (in): 6" - 18"

Stream Bottom composition:

Silts Cobbles Concrete Other: _____
 Sands Bedrock Muck
 Gravel Vegetation Type: <Select Veg. Type> Percent Cover Herbaceous aquatic, 5%

Aquatic Habitat: Indicate all types present within proposed ROW/project limits.

Sand bar Sand/Gravel beach/bar Gravel riffles Aquatic vegetation
 Overhanging trees/shrubs Deep pool/ hole/ channel Other: _____

Stream has the following characteristics:

Bed and banks
 OHWM (check all indicators that apply):
 clear, natural line impressed on the bank
 changes in the character of soil
 shelving
 vegetation matted down, bent, or absent
 leaf litter disturbed or washed away
 sediment deposition
 water staining
 other (list): down-cutting or incising of streambed
 the presence of litter and debris
 destruction of terrestrial vegetation
 the presence of wrack line
 sediment sorting
 scour
 multiple observed or predicted flow events
 abrupt change in plant community

Water Quality:

Clear Slightly Turbid Turbid Very Turbid Oily film High organic content
 Other characteristics (pollutants, etc.) CaH₂

Aquatic Organisms: List all species observed. This would include waterfowl, fish, snakes, turtles, frogs, invertebrates, etc.

crayfish, aquatic insects (water striders, damselflies), swallows nesting

Riparian Vegetation: List species observed.

Taxodium distichum, Ulmus americana, Fraxinus pennsylvanica

T&E Species/Suitable Habitat: List T&E species observed or which species the habitat is suitable for.

No T+E species observed. Habitat may be suitable for crayfish (Cambarillus texanus), smooth pimpleback (Quadrula howtonensis), Texas pimpleback (Q. petrina).

Stream Data Form #:	015
Project Name:	US 59 EA
CSJ:	0089-06-080; 0089-07-145; 0089-08-094

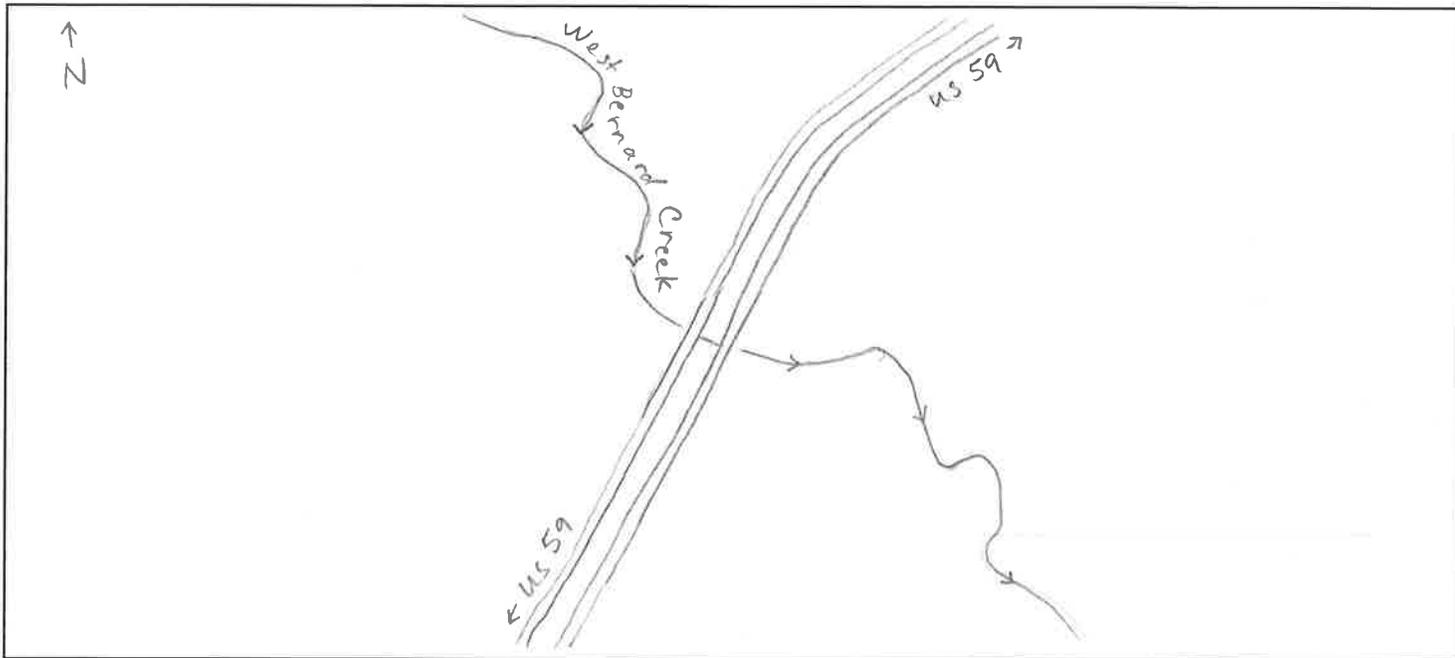
Stream Data Form (continued)

Please provide a plan and section view sketch of the stream channel.

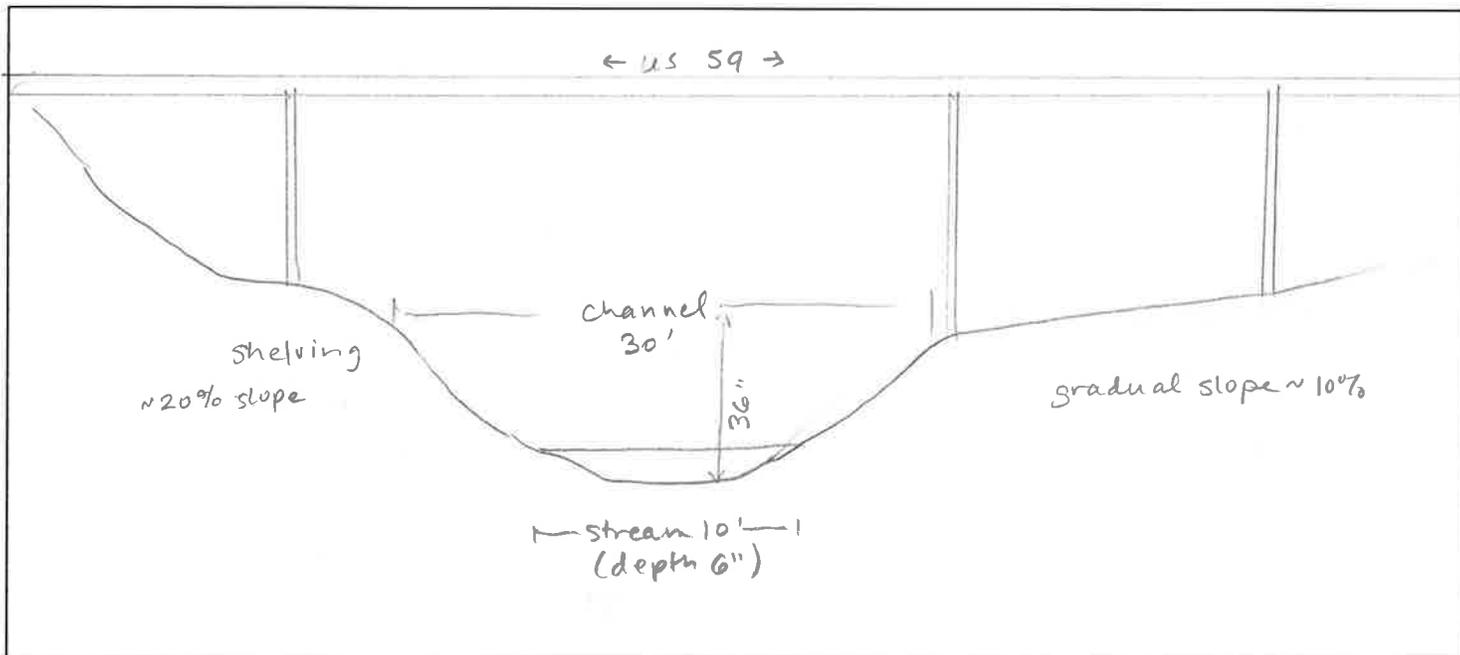
Sketch should include:

- Directional arrow;
- Width of channel from top of bank to top of bank;
- Depth of channel,
- Approximate side slope; and,
- Width of stream from water edge to water edge.

Plan View



Sectional View



Stream Data Form #: 001 016
Project Name: US 59 EA
CSJ: 0089-06-080; 0089-07-145; 0089-08-094

Stream Data Form

Surveyor(s): B. Hamer, B. Darnell, E. Pinto-Torres
USGS Stream Name: San Bernard River
USGS Topo Quad Name: Hungerford TX
Associated Wetland(s): _____

Date of Field Work: 6/18 - 6/20, 2014
County/State: Wharton, TX / Fort Bend, TX
Stream Number [303(d) List]: Not listed
GPS Data: N W

Stream Type: Perennial Characteristics

Manipulated/Altered. Explain: Channelized with other structural modifications within US 59 ROW

Bank Stability (e.g. highly eroding, sloughing banks, etc.):

Somewhat eroding, vegetated

Stream Flow Direction: South

OHWM Width (ft): 60' - 65'

OHWM Height (in): 36"

Stream Bottom composition:

Silts Cobbles Concrete Other: _____
 Sands Bedrock Muck
 Gravel Vegetation Type: <Select Veg. Type> Percent Cover

Aquatic Habitat: Indicate all types present within proposed ROW/project limits.

Sand bar Sand/Gravel beach/bar Gravel riffles Aquatic vegetation
 Overhanging trees/shrubs Deep pool/ hole/ channel Other: _____

Stream has the following characteristics:

Bed and banks
 OHWM (check all indicators that apply):
 clear, natural line impressed on the bank the presence of litter and debris
 changes in the character of soil destruction of terrestrial vegetation
 shelving the presence of wrack line
 vegetation matted down, bent, or absent sediment sorting
 leaf litter disturbed or washed away scour
 sediment deposition multiple observed or predicted flow events
 water staining abrupt change in plant community
 other (list): down-cutting or incising of streambed

Water Quality:

Clear Slightly Turbid Turbid Very Turbid Oily film High organic content
 Other characteristics (pollutants, etc.) _____

Aquatic Organisms: List all species observed. This would include waterfowl, fish, snakes, turtles, frogs, invertebrates, etc.

crayfish, fish, frogs, insects (water striders, odonata)

Riparian Vegetation: List species observed.

Taxodium distichum, Triadica sebifera, Ulmus crassifolia, sabal minor, Celtis laevigata

T&E Species/Suitable Habitat: List T&E species observed or which species the habitat is suitable for.

No T+E species observed. Habitat may be suitable for a crayfish (Cambarellus texanus), Bald Eagle (Haliaeetus leucocephalus), sharpnose shiner (Notropis oxyrinchus), Louisiana black bear (Ursus americanus luteolus), Creeper (squawfoot, Strophitus undulatus), false spike mussel (Quadrula mitchelli), Smooth pimpleback (@.houstonensis), Texas fawnsfoot (Truncilla macrodon), Texas pimpleback (@.petrina), timber rattlesnake (Crotalus horridus)

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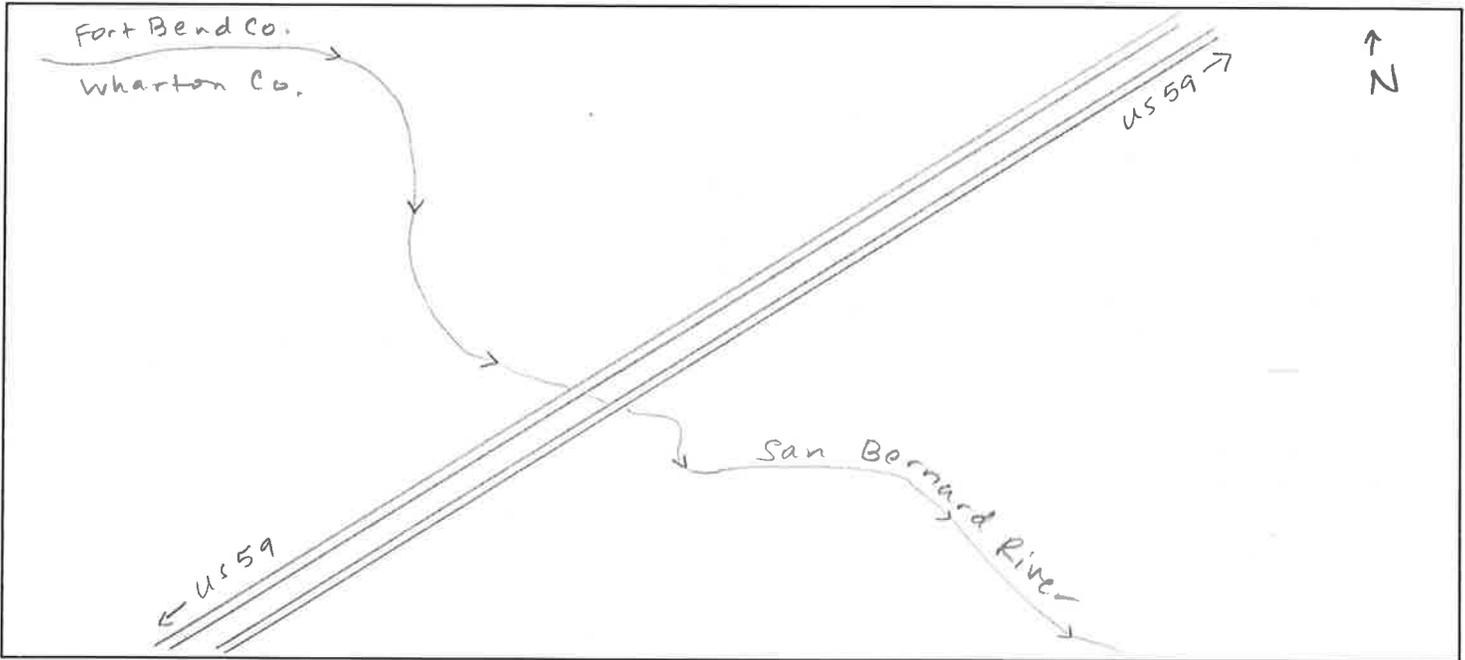
Stream Data Form (continued)

Please provide a plan and section view sketch of the stream channel.

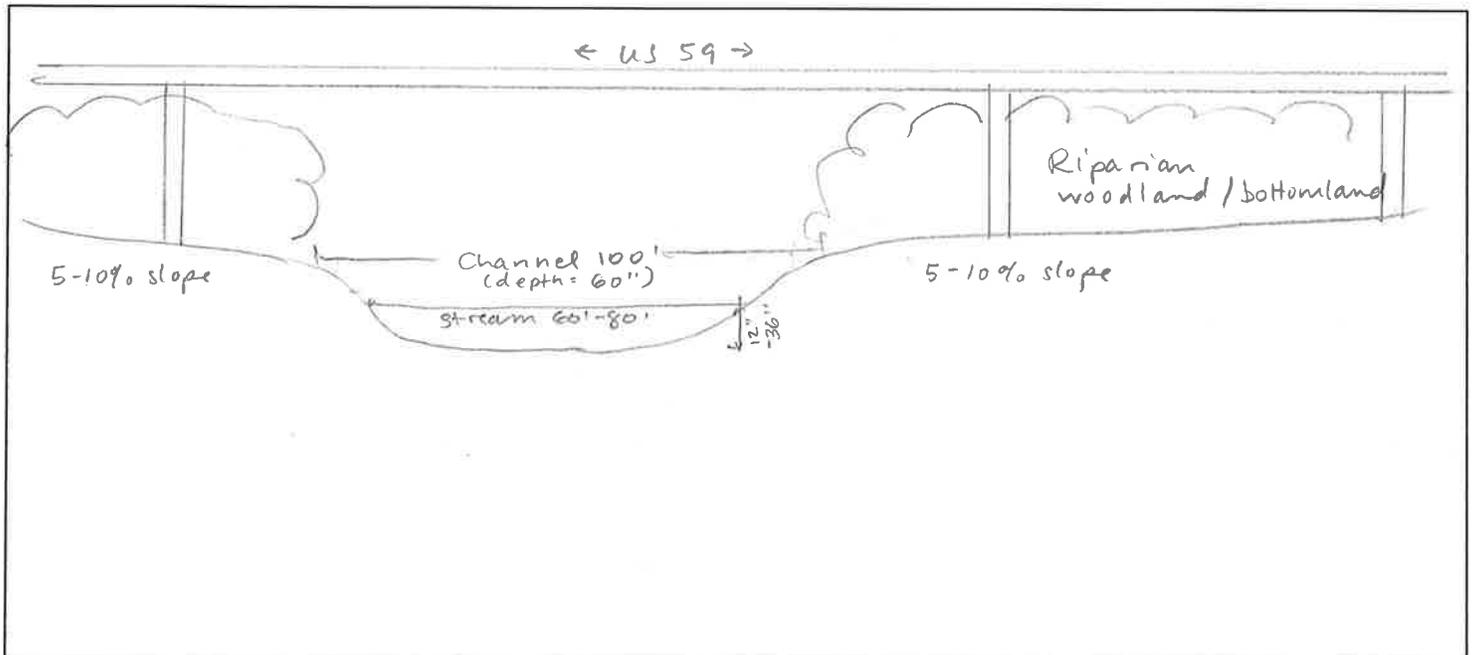
Sketch should include:

- Directional arrow;
- Width of channel from top of bank to top of bank;
- Depth of channel;
- Approximate side slope; and,
- Width of stream from water edge to water edge.

Plan View



Sectional View





MEMO

March 18, 2016

TO: Administrative File
From: Carolyn A. Nelson

District: Yoakum
County: Wharton
CSJ#: 0089-08-094, 0089-07-145, 0089-06-080
Highway: US 59
Let Date: August 2017
Project Limits: FM 2919 to FM 710

Project Description: Stipulation IX, Appendix 6. Upgrade existing rural freeway facility to Interstate facility. 445 acres of new ROW. No adverse effects to historic properties.

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 16, 2014, and executed by FHWA and TxDOT.

Introduction

The Texas Department of Transportation – Yoakum District proposes to upgrade a four-lane rural freeway facility to an Interstate facility with the addition of frontage roads and grade-separated interchanges in Wharton County.

Survey Methods

A review of the NRHP, the list of State Antiquities Landmarks (SAL), and the list of Recorded Texas Historic Landmarks (RTHL) indicated no historic properties documented within the area of potential effects (APE).

It has been determined through consultation with the State Historic Preservation Officer (SHPO) that the APE for the proposed project is 150' from the proposed new right-of-way.

Determinations of NRHP Eligibility

Based on the August 2015 Reconnaissance level Historic Resources Survey Report (HRSR), 214 Resources at 131 locations (built prior to 1974) are located within the APE. One property is determined to be eligible for listing to the NRHP:

- ID #60 - The Pierce Ranch is eligible under Criterion A and B at the local level for its association with renowned cattleman A. H. "Shanghai" Pierce and for its role in the agricultural development of the surrounding area.

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The Pierce Ranch is the most representative surviving example of the historic agricultural landscape conveying patterns emblematic of the region's 19th and early 20th century agrarian heritage.

The remaining 213 historic age resources were determined not eligible for the NRHP.

The proposed project area was evaluated for a rural historic landscape and determined not eligible for the NRHP because modern commercial infill disrupts the historic regional pattern of farmsteads. Many of the historic age farmsteads individually experienced changing patterns of rural landscape processes and components outside the period of significance established in the historic context. Individual farmsteads consolidated into large scale agribusinesses and introduced new land uses outside the historic period as they evolved to remain sustainable. In addition, where individual farmsteads appear to have remaining intact work zones, circulation networks and clusters experienced changes out of keeping with patterns from the period of significance. A more detailed examination starts on page 47 of the historic survey.

Two mid-twentieth century churches (Resources 33 & 116) are determined not eligible because they do not meet criteria consideration A: Religious Properties for architectural or artistic distinction or historical significance detailed in the historic context. See the detailed observations on page 43 of the historic survey.

CHC Consultation

CHC members from Wharton County were consulted about the project and helped to provide information about the Pierce Ranch. In addition the Fort Bend and Jackson Country CHC members were consulted and offered no comments or concerns regarding the proposed project.

Determination of Effects:

Staff determined that the project poses no adverse effect to historic properties in the APE, given the following factors:

- There are no direct effects to NRHP eligible Pierce Ranch (Resource 60) as no new ROW will be needed from the parcel. Construction activities requiring 445 acres of new ROW along the 38.1 mile proposed project are from parcels where no historic properties are present.
- There are no indirect adverse effects to historic properties. The eligible property will continue to convey its significance and its integrity of setting, design, workmanship, and materials will not be affected.
- There are no reasonably foreseeable cumulative effects now or in the future given the roadway's current alignment and the area's already built up modern development.

Any design changes to this project will require re-coordination with THC and the consulting parties particularly those that may have an impact to the Pierce Ranch (Resource 60) such as new ROW or easements needed.

Conclusion

Therefore, 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 adverse effects to historic, non-archeological properties in the APE. Individual project coordination with SHPO is not required.

CSJ:0089-08-094, etc
YKM/Wharton

Lead Reviewer RM Dobrasko for TxDOT 5/17/16
Rebekah Dobrasko Date

Approved by Bruce Jensen for TxDOT 5.13.16
Bruce Jensen Date