Draft
Environmental Assessment

IH 35, Dallas District

From US 380 to 0.7 Mile North of FM 3002

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Denton and Cooke Counties, Texas

March 2019

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

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List of Acronyms

AADT	Annual Average Daily Traffic
AOI	Area of Interest
APE	Area of Potential Effect
ASTM	American Society for Testing and Materials
BMP	Best Management Practice
BNSF	Burlington Northern Santa Fe
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CMAQ	Congestion Mitigation and Air Quality Improvement
CMP	Congestion Management Process
CO	Carbon Monoxide
CRTB	Cross Timbers
CSN	Construction Site Notice
CWA	Clean Water Act
CGP	Construction General Permit
DCAD	Denton Central Appraisal District
DCTA	Denton County Transit Authority
DFW	Dallas-Fort Worth
EA	Environmental Assessment
EDR	Environmental Data Resources, Inc.
EIS	Environmental Impact Statement
EJ	Environmental Justice
EMS	Emergency Medical Services
EMST	Ecological Mapping System of Texas
EO	Executive Order
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
ETJ	Extraterritorial Jurisdiction
ETR	Employer Trip Reduction
FHWA	Federal Highway Administration
FM	Farm to Market
FONSI	Finding of No Significant Impact
FPPA	Farmland Protection Policy Act
HEI	Health Effects Institute
HMIE	Hazardous Material Impact Evaluation
HRSR	Historic Resources Survey Report
IH	Interstate Highway
IRIS	Integrated Risk Information System
ISA	Initial Site Assessment
ITS	Intelligent Transportation System
LEP	Limited English Proficiency
LOS	Level of Service
LWCF	Land and Water Conservation Fund
MAPO	Meeting with Affected Property Owners
MBTA	Migratory Bird Treaty Act
MOU	Memorandum of Understanding
Mph	Miles per hour
MPO	Metropolitan Planning Organization
MS4	Municipal Separate Storm Sewer System
MSAT	Mobile Source Air Toxics

MTP	Metropolitan Transportation Plan
NAAQS	National Ambient Air Quality Standard
NAC	Noise Abatement Criteria
NATA	National Air Toxics Assessment
NCTCOG	North Central Texas Council of Governments
NEPA	National Environment Policy Act
NFIP	National Flood Insurance Program
NHPA	National Historic Preservation Act
NOI	Notice of Intent
NOT	Notice of Termination
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NWP	Nationwide Permit
PA	Programmatic Agreement
PCN	Preconstruction Notification
PM	Particulate Matter
PWC	Parks and Wildlife Code
ROE	Right of Entry
ROW	Right of Way
SGCN	Species of Greatest Conservation Need
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
SOV	Single Occupancy Vehicle
STIP	Statewide Transportation Improvement Program
SW3P	Storm Water Pollution Prevention Plan
TAC	Texas Administrative Code
TAQA	Traffic Air Quality Analysis
TCEQ	Texas Commission on Environmental Quality
TDM	Transportation Demand Management
TDWB	Texas Water Development Board
TERP	Texas Emissions Reduction Plan
THC	Texas Historical Commission
TIP	Transportation Improvement Program
TMA	Transportation Management Association
TPDES	Texas Pollutant Discharge Elimination System
TPWD	Texas Parks and Wildlife Department
TSM	Transportation System Management
TSS	Total Suspended Solids
TxDOT	Texas Department of Transportation
TXNDD	Texas Natural Diversity Database
USACE	U.S. Army Corps of Engineers
USC	United States Code
USFWS	U.S. Fish and Wildlife Service
VMT	vehicle miles traveled
VPD	Vehicles per Day

1.0 Introduction

The Texas Department of Transportation (TxDOT) is proposing to widen and reconstruct Interstate Highway 35 (IH 35) to six main lanes in Denton and Cooke counties, Texas, from United States Highway (US) 380 (University Drive West) to approximately 0.7 mile north of Farm to Market Road (FM) 3002 (Lone Oak Road). The proposed improvements would begin north of the IH 35 east/west split in the city of Denton and extend north along IH 35 through the city of Sanger to just north of FM 3002 in Cooke County, for a total distance of approximately 15.1 miles. The proposed action would construct three main lanes in each direction and two frontage road lanes in each direction along this section of IH 35. In addition, the existing interchanges would be reconstructed and the existing two-way frontage roads would be converted to one-way operation. The project location is shown on **Figure 1** below and in **Appendix A.**

This Environmental Assessment (EA) has been prepared in accordance with the National Environmental Policy Act (NEPA), as implemented by the Council on Environmental Quality's (CEQ) regulations,[1] to study the potential environmental consequences of the proposed project and determine if they warrant preparation of an Environmental Impact Statement (EIS)[2]. As the proposed project would be funded in part by the Federal Highway Administration (FHWA), this EA complies with FHWA's NEPA regulations[3] as well as relevant TxDOT rules for environmental review of projects and guidance for conducting NEPA studies on behalf of FHWA. 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. Code 327 and a Memorandum of Understanding (MOU) dated December 16, 2014, and executed by FHWA and TxDOT[4].

This Draft EA will be made available for public review during a public comment period; subsequently, TxDOT will consider any comments submitted before making a decision. If TxDOT determines that the proposed project would not result in significant adverse effects, it will prepare and sign a Finding of No Significant Impact (FONSI), which will be made available to the public.

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[1] The NEPA statute is codified in 42 U.S. Code (USC) Sections 4331-4375. CEQ's NEPA regulations are in 40 CFR Parts 1500-1508.
[2] An EIS is required if, upon completing an EA, a federal agency (or a delegated state agency, such as TxDOT) determines that a proposed major federal action would result in impacts that "significantly [affect] the quality of the human environment" (42 USC Section 4332), as that phrase has been interpreted by federal courts.
[3] FHWA's NEPA regulations are in 23 CFR Part 771. TxDOT regulations relevant to preparing an EA and associated public involvement activities are found in Title 43 Texas Administrative Code (TAC), Part 1, Chapter 2. TxDOT also maintains specialized instructional guidance for NEPA studies on the following website: https://www.txdot.gov/inside-txdot/division/environmental/compliance-toolkits.html. Accessed January 11, 2019.
[4] The FHWA-TxDOT MOU may be found here: https://www.fhwa.dot.gov/txdiv/finalnepa-mou.pdf. Accessed January 11, 2019.

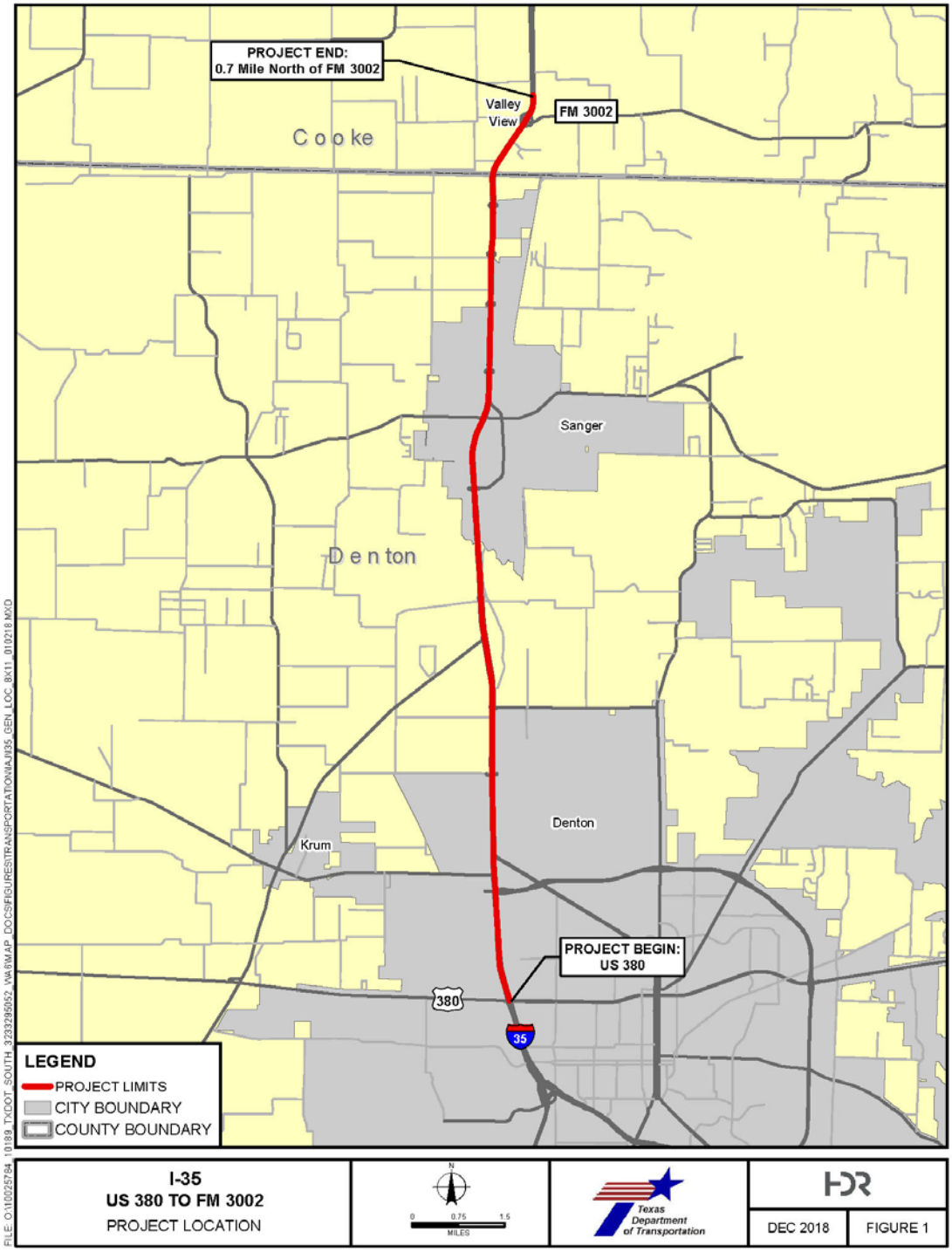

Figure 1. Project Location Map

2.0 Project Description

2.1. Existing Facility

The section of IH 35 proposed for improvement is currently a four-lane divided freeway with frontage roads in a usual right of way (ROW) width of 300 feet. The typical section consists of two 12-foot main lanes in each direction with 4-foot inside shoulders and 10-foot outside shoulders, divided by a usual 40-foot median. The frontage road lanes consist of two 10-foot lanes in each direction with 1-foot inside and outside shoulders. The frontage lanes are continuous within the project limits, except at two locations: over the Burlington Northern Santa Fe (BNSF) Railroad and over Duck Creek. Between Chisam Road and 0.7 mile north of FM 3002, the frontage operation is two-way.

Grade separations are provided at the following locations: US 380, Loop 288, US 77, Ganzer Road, Milam Road, the BNSF Railroad/FM 156, Rector Road, Business IH 35/5th Street, the pedestrian overpass in Sanger, FM 455, several frontage road turnarounds (north of Belz Road, north of Lois Road, north of View Road, and south of Chisam Road), and FM 3002. The posted speed limit is 65-75 miles per hour (mph) on the main lanes, 40 mph on the frontage roads through Sanger, and 50-55 mph on the frontage roads outside of Sanger.

Access to and from IH 35 in the vicinity of Sanger is provided through a series of northbound and southbound exit and entrance ramps. The existing facility provides northbound exit ramps to Business IH 35, FM 455, Belz Road, and Lois Road. Northbound entrance ramps are located north of Business IH 35, north of FM 455, north of Belz Road, and north of Lois Road. In the southbound direction, access to Sanger is provided by southbound exit ramps to Lois Road, Belz Road, FM 455, and Business IH 35. Southbound entrance ramps are located south of Lois Road, south of Belz Road, south of FM 455, and south of Business IH 35. At most of these locations connections between IH 35 and the east-west roadways are somewhat circuitous, as motorists must use “jug-handle” type ramps at the interchanges.

The southern terminus of the project area is in Denton, just north of the IH 35 split to Dallas (IH 35E) and Fort Worth (IH 35W). Less than forty miles north of Dallas and Fort Worth, Denton is closely associated with the Dallas-Fort Worth (DFW) metropolitan area. Aerial photographs of the project corridor are in **Appendix B.** Typical sections of the existing roadway are in **Appendix C.**

2.2. Proposed Facility

The proposed improvements would reconstruct and widen IH 35 to three main lanes in each direction and continuous two-lane, one-way frontage roads in each direction. The existing interchanges would be reconstructed and the existing two-way frontage roads would be converted to one-way operation. The improvements that are proposed at the cross streets would accommodate one-way frontage road operations and turnarounds. In addition, existing ramps would generally be reconfigured from a “diamond” to an “X” configuration at each

interchange. Overall, 13 intersections are proposed to be reconstructed and 47 ramps are proposed to be reversed, relocated, or modified to improve mobility and safety. The pedestrian overpass in Sanger would be reconstructed at approximately the same location in order to extend over the expanded main lanes and frontage road lanes. The grade-separated overpass of the BNSF Railroad/FM 156, approximately two miles south of Sanger, would be reconstructed with new frontage road overpasses and adequate clearances for train movements would be maintained. Additionally, the interchange at Loop 288 would be reconstructed with frontage road intersections and direct connectors.

The Build Alternative provides for 12-foot main lanes (three in each direction) with 12-foot inside and 10-foot outside shoulders. The frontage roads would feature curb and gutter. The proposed ROW is variable in width, ranging from 350 feet within the rural sections to 390 feet in the proposed urban sections. Additional ROW is also required at the cross-street interchanges. The project would make use of auxiliary lanes where needed, throughout the corridor. Design speeds are 70 mph for the main lanes, 50 mph for the ramps and 45 mph for the frontage roads. The proposed improvements include a 24-foot open median that would give TxDOT the flexibility to provide additional transportation capacity in the future as well as a 14-foot shared use lane on the frontage road and 5-foot sidewalks for the entire length of the project. Any future proposed transportation facilities within the median would be subject to TxDOT's project development policies and procedures. The proposed project location map is shown above in **Figure 1** and also included in **Appendix A.** Schematics and typical sections of the proposed facility are in **Appendix C**.

Federal regulations require that federally funded transportation projects have logical termini[5]. Simply stated, this means that a project must have rational beginning and end points. Those end points may not be created simply to avoid proper analysis of environmental impacts. The logical termini for this project are US 380 and FM 3002. US 380 was selected as the southern terminus because the proposed project would connect to the north end of the IH 35E project with limits from FM 2181 to US 380. The northern terminus, at FM 3002, will connect to the south end of the IH 35 Cooke County Improvement Project with limits from FM 3002 to Mile Marker 3 in Oklahoma. The construction limits for the project extend 0.7 mile beyond (north of) FM 3002 to allow for project transition.

Federal regulations require that a project have independent utility and be a reasonable expenditure even if no other transportation improvements are made in the area.[6] This means a project must be able to provide benefit by itself, and that the project not compel further expenditures to make the project useful. Stated another way, a project must be able to satisfy its purpose and need with no other projects being built. The proposed project would provide congestion relief between Denton and north of Sanger by adding capacity (main lanes and frontage roads) along this section of IH 35. Construction of the proposed project would satisfy

[5] 23 CFR 771.111(f)(1)
[6] 23 CFR 771.111(f)(2).

the need and purpose independent of additional improvements to adjacent roadways. Because the project stands alone, it cannot and does not irretrievably commit federal funds for other future transportation projects.

Federal law prohibits a project from restricting consideration of alternatives for other reasonably foreseeable transportation improvements[7]. This means a project must not dictate or restrict any future roadway alternatives. The proposed project would not dictate or restrict any future roadway alternatives for other foreseeable transportation improvements. Ongoing design coordination has occurred to accommodate projects by others in the area. An intersection and thoroughfare improvement project is currently under development at FM 455/Chapman Road and IH 35 and is expected to let in January 2022. The extension of Loop 288 at IH 35 is under development; an intersection and thoroughfare improvement project at FM 1173 and IH 35 is under development; the Denton County Outer Loop Extension is under development; and the IH 35 Improvement Project in Cooke County is under development. All of these projects have been coordinated and accommodated by the proposed IH 35 Project.

Both the North Central Texas Council of Governments' (NCTCOG) financially constrained Metropolitan Transportation Plan (MTP), *Mobility 2045,* and Appendix D of the fiscal years (FY) 2019-2022 Transportation Improvement Program (TIP) for the Dallas-Fort Worth Metropolitan Planning Organization, were initially found to conform to the TCEQ State Implementation Plan (SIP) by FHWA and FTA on November 21, 2018 and September 28, 2018, respectively; however, the proposed project is not consistent with this conformity determination, because the projects are currently pending approval by the Statewide Transportation Improvement Program (STIP). The proposed project has been submitted for the February 2019 revision cycle with expected approval in April/May 2019. TxDOT will not take final action on this environmental document until the proposed project is consistent with a currently conforming MTP and TIP. The proposed project is anticipated to cost approximately $2,500,000,000 and is expected to be financed with federal and state funds. See **Appendix E** for plan and program excerpts.

3.0 Purpose and Need

3.1. Need

IH 35 between US 380 and FM 3002 is a heavily traveled north-south corridor that is a major connector serving the interest of statewide and regional traffic as well as traffic between the cities of Sanger and Denton. Capacity along this section of the corridor is inadequate and would not accommodate 2040 traffic projections, due to the functionally deficient frontage road junctions, deficient mainlane geometry, and insufficient ramp acceleration and deceleration lengths.

[7] 23 CFR 771.111(f)(3).

3.2. Supporting Facts and/or Data

Due to the current and anticipated growth within the project area, it is anticipated that IH 35 will also increase in annual average daily traffic (AADT) volumes. As shown in **Table 1,** traffic on IH 35 within the project limits is expected to increase by 53 percent between years 2020 and 2040 (the design year). This projected growth in traffic volumes is a major factor in proposing to increase the number of main lanes on IH 35 from two to three in each direction. Without the proposed improvements, motorists by the year 2040 would experience level of service (LOS) "E" or LOS "F" throughout most of the project corridor. With the proposed improvements, the corridor would be majority LOS "C" or better by 2040. LOS is measured during peak hours on an "A" to "F" rating scale, where "A" is free flow and "F" is stopped traffic.

Table 1. Average Daily Traffic on IH 35

Limits	2020 AADT No Build	2040 AADT No Build	Percent Increase
US 380 to Business 35 (5th St.)	96,300	147,700	53%
Business 35 (5th St.)to 0.7 mile north of FM 3002	68,500	105,100	53%

Source: TxDOT TPP, September 2018 and Project Team, December 2017..

Crash data within the project limits was obtained from TxDOT in order to assess existing safety issues (**Table 2**). This analysis spanned a five-year period, from 2011 through 2015, and it was determined that the existing facility (including main lanes, frontage roads, and ramps) has approximately 15 percent fewer crashes than other similar freeway facilities. Although the project area has fewer crash occurrences, it is anticipated that the projected increase in traffic over the next twenty years will eventually lead to higher accident rates.

Table 2. Crash Type and Severity Summary, 2011-2015

Facility Type	Number of Crashes	Crash Severity			
		Fatality	Injury*	Non-Injury	No Information
Mainlanes	455	6	119	327	3
Frontage Road	192	2	46	140	4
Ramps	31	0	8	22	1
Other	5	0	3	2	0
Total	683	8	176	491	8

*Injury includes incapacitating crashes, non-incapacitating crashes, and possible injury cases.
Source: Texas Department of Transportation, Crash Report Information System (https://cris.dot.state.tx.us). Accessed December 22, 2016.

IH 35 was constructed as a rural interstate in the 1950s as part of the burgeoning interstate system, and roadway design standards have improved since its initial design and construction. The design of the supporting street network is not capable of meeting the design year 2040 demands due to the functionally inadequate frontage road junctions, poor geometry and inadequate ramp acceleration and deceleration lengths. Additionally, traffic from existing exit ramps spills back onto the IH 35 main lanes, creating capacity bottlenecks that hinder local and regional access. Improvements to all interchanges in conjunction with the conversion of two-way to one-way frontage roads (between Chisam Road and the northern terminus of the project) and relocation of exit ramps would better serve the current and future development in the area by reducing congestion and improving safety.

3.3. Purpose

The purpose of the proposed project is to improve traffic mobility, enhance access, reduce traffic congestion, and improve safety.

4.0 Alternatives

4.1. Build Alternative

The Build Alternative is the proposed project, as described in Section 2.2., which would widen and reconstruct IH 35 to reduce congestion. This alternative was determined to meet the need and purpose because construction of the Build Alternative would increase capacity, and address safety and mobility issues of this heavily traveled north-south corridor.

4.2. No Build Alternative

The No Build Alternative serves as both the baseline against which the Build Alternative is evaluated and as an actual option within the project limits. The No Build Alternative assumes no construction of any improvements within the project limits. The geometric configurations for the main lanes, frontage roads, and ramps will remain in their present state. The No Build Alternative would not improve traffic mobility, enhance access, reduce traffic congestion, or improve safety, and therefore, does not meet the purpose and need of the proposed improvements.

4.3. Preliminary Alternatives Considered but Eliminated from Further Consideration

Transportation System Management Alternatives

Transportation System Management (TSM) alternatives seek to mitigate traffic congestion by identifying operational movements. TSM improvements often improve traffic flow and safety by incorporating better-coordinated system management and operation. Operational improvements consist of arterial street improvements, intersection improvements, traffic signal improvements, and intelligent transportation system (ITS) deployment. The TSM

improvements described below are planned transportation improvements within the local area and may be implemented regardless of the chosen alternative.

- **Arterial Street Improvements:** The City of Denton's *2015 Mobility Plan;* the City of Sanger's *Comprehensive Land Use Plan;* TxDOT's 2015-2018 Statewide Transportation Improvement Program; and NCTCOG's *Mobility 2040* were examined to determine if there are any proposed arterial street improvements that intersect the project area. According to these plans, arterial street improvements have been identified at Loop 288, US 380 and various future locations within Denton, and at FM 455, Rector Road, Duck Creek Road, Lois Road, Union Road, and various future locations within Sanger.
- **Intersection Improvements:** Intersection improvements were evaluated as a part of the TSM strategies, including geometric enhancements that facilitate the movement of traffic through intersections. No intersection improvements have been identified in any of the state, regional or local planning documents; however, intersection improvements at Loop 288, US 77, Ganzer Road, FM 3163, FM 156, Rector Road, Business 35 (5th Street), FM 455, Belz Road, Lois Road, View Road, Chisam Road, and FM 3002 would be included at these intersections in the proposed project, as they are part of the operational improvements identified in the project limits.
- **Traffic Signal Improvements:** Signal improvements consist of modifications to traffic control devices to better accommodate traffic demand on the arterial and collector street networks. No intersection improvements have been identified in any of the state, regional or local planning documents; however, traffic signal improvements would be included at the intersections (described above) in the proposed project, as they are part of the operational improvements identified in the project limits.
- **Intelligent Transportation System (ITS) Improvements:** ITS improvements assist in relieving traffic congestion caused by incidents such as crashes and stalled vehicles by informing drivers of these potential problems in real time. TxDOT's *2015-2018 STIP* states that ITS improvements are scheduled to be implemented along IH 35 within the project limits, although the STIP was not specific in the type of improvements. However, the North Central Texas ITS Strategic Deployment Plan does mention future ITS deployments for the TxDOT Dallas District of wrong-way driver protection and motorist assistance patrol systems.

Transportation Demand Management Alternatives

Transportation Demand Management (TDM) improvements focus on reducing the number of vehicular demands and single occupancy vehicle (SOV) trips on the roadway by offering alternatives to driving alone. The TDM improvements listed below are planned transportation improvements within the local area and may be implemented regardless of the chosen alternative.

- **Employer Trip Reduction (ETR) Program:** The ETR program is a voluntary program targeted at employers with at least 100 employees in an effort to provide alternatives to driving alone. The NCTCOG has policies that encourage ETR programs and has developed toolkits to help employers develop and implement programs. Currently, there is no ETR program within the project limits (NCTCOG 2016, pp. 5-4).
- **Transportation Management Associations (TMAs):** TMAs are organizations made up of public/private employers, local government representatives, developers and building owners. At present, there are no TMAs within the project limits or plans discussed within *Mobility 2040*.
- **Bicycle and Pedestrian Facilities:** Regional and local plans were examined to determine if there are any proposed bicycle and pedestrian facility improvements within the project limits. *Mobility 2045* shows a planned community shared use path along Windsor Road that commences at IH 35 within the project limits (NCTCOG 2016, Appendix E, p. 21). The Bicycle and Pedestrian Linkage Component of Denton's 2015 mobility plan shows planned bicycle and pedestrian facilities along US 77 Windsor Road and US 380 (City of Denton 2012, p. 45). No planned bicycle facilities were identified in Sanger, but an existing pedestrian overpass at Bolivar Street would be reconstructed as a part of this project. In addition, the proposed one-way frontage roads along IH 35 would be constructed with an outside 14-foot lane for shared use and 5-foot sidewalks within the project limits.
- **Transit:** Trinity Metro (formerly Fort Worth Transportation Authority) and the Denton County Transit Authority (DCTA) have a bus service that connects Fort Worth and Denton with stops in Alliance (between Denton and Ft. Worth) as listed on the DCTA's routes and schedules web page. The service between Alliance and Denton is called North Texas Express. The northernmost part of this service uses US 380, which is directly adjacent to the project limits, as part of its route. In addition to this service, DCTA also has a local fixed route bus service that operates in the cities of Denton and Lewisville called DCTA Connect as listed on the DCTA's routes and schedules web page. Like the North Texas Express, this service also uses US 380 adjacent to the project limits as a part of its system. DCTA also offers a vanpool commuter program that groups must register for in advance. No additional local transit options exist within the project limits. At the regional planning-level, the NCTCOG has identified IH 35 as a "Candidate High-Intensity Bus Corridor" and a proposed corridor for high-speed rail (NCTCOG 2016, pp. 6-32). These corridor designations are located adjacent and within the project limits, respectively.

Stand-alone TSM or TDM strategies would not sufficiently improve the operational effectiveness or reduce travel demand associated with the projected 2040 mobility needs. This is due to the outdated design standards and functional deficiencies of the two-way frontage roads with yield control at the ramp junctions within the originally rural project limits. The rural design of the supporting street network is not capable of meeting the design year demands. The design year demand can only be addressed by modifying freeway access,

making interchange improvements, and converting one-way frontage roads to two-way. Strategies such as HOV lanes or ramp metering would not be adequate as they would not meet the needs of improved safety and access along the frontage roads nor would they update the corridor to current design standards.

5.0 Affected Environment and Environmental Consequences

In support of this EA, the following technical reports were prepared and are available for review at the TxDOT Dallas District Office located at 4777 E. Highway 80, Mesquite, Texas 75150-6643, upon request:

- Community Impacts Assessment Technical Report Form
- Archeological Background Study and Archaeological Resources Report
- Project Coordination Request for Historical Studies, Historic Resources Research Design and Historical Resources Survey Report
- Water Resources Report
- Biological Resources Evaluation Technical Report with Tier One Site Assessment
- Air Quality Technical Report with Congestion Management Process Forms (CMP), Carbon Monoxide Traffic Air Quality Assessment, Quantitative Mobile Source Air Toxic (MSAT) Analysis Technical Report, and Conformity Report
- Hazardous Materials Initial Site Assessment and Hazardous Materials Impact Evaluation
- Noise Analysis Technical Report
- Indirect Impacts Analysis

These technical reports and the detailed data and maps included within them are incorporated by reference, but are not included in this EA. Selected graphical information and summaries of data from these technical reports are included in this EA to assist in describing anticipated project-related environmental impacts. The complete technical reports may be reviewed and copied upon request at the TxDOT Dallas District office. The following subsections discuss the environmental consequences of the Build and No Build alternatives for each resource.

5.1. Right of Way/Displacements

Build Alternative: The typical existing width of IH 35 ROW within the project limits is 300 feet. Approximately 256 acres of additional ROW and 4.7 acres of permanent easements are required to accommodate the proposed improvements. No temporary easements are anticipated. This additional amount represents an increase of about 38 percent over the existing ROW within the project limits. Over 267 parcels of land would be involved in the acquisition of additional ROW. Schematics are available in **Appendix C.**

The primary exceptions to the average proposed 382-foot-wide project corridor width are:

- The project corridor would widen to approximately 390 feet from Loop 288 to the Sanger city limits.
- The project corridor would narrow to approximately 350 feet in width as it proceeds through Sanger.
- Several additional points along the project corridor broaden or narrow to facilitate grading for stable slope development, functional drainage and construction of travel lanes across the variable topography.

The proposed action would require residential relocations and business displacements, as discussed in the community and socioeconomic impacts section below. **Appendix E, Figure 1** shows the displacements. The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 as amended (Uniform Act) contains specific requirements that determine the manner in which a government entity acquires private property for public use when federal funds are used for a project. The purpose of this act is to provide a uniform policy for fair and equitable treatment of persons and businesses displaced as a result of federal and federally-assisted programs. Consistent with the U.S. Department of Transportation (DOT) policy as mandated by the Uniform Act, all property owners from whom property is needed are entitled to receive just compensation for their land. Just compensation is based on fair market value of the property. TxDOT would provide information and resources to the affected property owners.

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

5.2. Land Use

Land use surrounding IH 35 in this section includes a mix of commercial and retail businesses consisting of gas stations, restaurants and motels. North of Denton, IH 35 traverses a more rural, agricultural landscape that features crop and livestock production. Fields of wheat, oats, maize, millet, and cotton can be seen on both sides of IH 35 here, as well as improved pastures for cattle and other livestock production. Though more rural, numerous commercial businesses and isolated residences are scattered along the project corridor between Denton and Sanger. A large automobile junk yard sits on the west side of IH 35 just south of the BNSF Railroad.

Land along IH 35 is more densely developed within Sanger. Residential neighborhoods add to the mix of commercial and retail businesses that abut IH 35 through the city. Sanger is also home to a Wal-Mart Distribution Center located just north of Lois Road. North of Sanger and entering Cooke County, the project area again becomes more rural with agricultural fields, scattered businesses and isolated residences abutting the project corridor. Representative photographs of the project area are presented in **Appendix B.**

Build Alternative: The Build Alternative would convert 260.7 acres of land, of which 4.7 are drainage easements, to transportation use. This additional amount represents an increase of

about 38 percent over the existing ROW within the project limits. The acquisition of new ROW and easements would result in five residential displacements and 22 commercial displacements. Direct impacts of this conversion would not otherwise substantially alter the existing land use in the area.

No Build Alternative: Changes to land use would not occur under the No Build Alternative.

5.3. Farmlands

The Farmland Protection Policy Act (FPPA) is intended to minimize the impact federal programs have on the unnecessary and irreversible conversion of farmland to nonagricultural uses[8]. It assures that to the extent possible, federal programs are administered to be compatible with state, local units of government, and private programs and policies to protect farmland. For the purpose of FPPA, farmland includes prime farmland, unique farmland, and land of statewide or local importance. Projects are subject to FPPA requirements if they may irreversibly convert farmland (directly or indirectly) to nonagricultural use and are completed by a federal agency or with assistance from a federal agency.

Build Alternative: 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 with the appropriate NRCS form and supporting documentation, are such that the site need not be given further consideration for protection and no additional sites need to be evaluated. The NRCS-CPA-106 form is included in the Biological Evaluation Technical Report (TxDOT 2018a) on file with the TxDOT Dallas District.

No Build Alternative: The No Build Alternative would not require any ROW or convert any farmland to non-agricultural uses.

5.4. Utilities/Emergency Services

Existing utilities that parallel and cross the proposed project include television cables, fiber optic cables, electrical cables, high-tension power lines, telephone cables, storm sewer lines, water lines, and gas lines.

Build Alternative: Specific utility adjustment requirements within the proposed project have not been determined. Detailed information on utilities would be evaluated during the design phase of the project in order to evaluate the need to integrate the proposed improvements and utility systems into the design plans. Coordination with utility owners would take place during the design phase.

The Denton and Cooke County Emergency Medical Service (EMS) and Sheriff's Office, as well as the Fire and Police Departments of the surrounding communities would be notified of the construction start dates. Construction activities are not expected to cause substantial delays

[8] 7 U.S. Code Sections 4201-4209.

or access issues for emergency service vehicles. Construction of the proposed project could provide enhanced access and reduced response times for local emergency services.

No Build Alternative: Under the No Build Alternative there would be no impacts to utilities by the proposed project.

5.5. Bicycle and Pedestrian Facilities

Within the project limits there is a pedestrian overpass at IH 35 and Bolivar Street. There are no designated bicycle lanes or sidewalks along the facility. The proposed project would, as described in Section 2.2, comply with relevant federal policies that require accommodation for bicycle and pedestrian traffic.[9]

Build Alternative: The existing pedestrian overpass at Bolivar Street would be reconstructed as a part of this project. In addition, the proposed one-way frontage roads along IH 35 would be constructed with an outside 14-foot lane for shared use and 5-foot sidewalks within the project limits.

No Build Alternative: Under the No Build Alternative, no bicycle or pedestrian facilities would be built and no impacts would occur to the existing pedestrian overpass.

5.6. Community Impacts

The Community Impacts Assessment Technical Report Form (TxDOT 2018b) was completed for the project in November 2018 and is on file with the TxDOT Dallas District. This report form detailed the existing conditions within a 0.25-mile buffer of the corridor (study area) including community facilities, demographic characteristics, and economic conditions. A field visit to examine the community characteristics was conducted on January 31, 2018. The study area contained a mosaic of different land uses including single-family residential neighborhoods, agricultural, and industrial/commercial. The study area included portions of the cities of Denton and Sanger, and unincorporated areas within Denton and Cooke counties. The existing corridor connects the surrounding rural area and smaller communities to Denton, and provides an essential route between the cities of Denton and Gainesville.

As discussed in the Community Impacts Assessment Technical Report Form, the study area included 351 Census blocks; 220 were omitted because they had no population. Fourteen Census blocks had a minority population over 50 percent. Income data from study area Census block groups was reviewed, and it was shown that none of the Census block groups had a median income level below $25,100, which is the Department of Health and Human Services (DHHS) 2018 poverty level. Census block groups within the study area had a presence of people who speak English “less than very well” at levels similar to or less than

[9] See: U.S. Department of Transportation (USDOT) Policy Statement on Bicycle and Pedestrian Accommodation (3/11/2010). https://www.fhwa.dot.gov/environment/bicycle_pedestrian/guidance/policy_accom.cfm (accessed January 14, 2019).

the county percentages. According to the Census data, after English, Spanish was the most prevalent language spoken within the project corridor.

Build Alternative:

Displacements

The acquisition of new ROW and easements would result in five residential displacements and 22 commercial displacements, as shown on **Appendix E, Figure 1**. Residential displacements by the proposed project consist of single family homes on large rural lots. A meeting with each of these impacted property owners will be scheduled as part of the public involvement process. A search of homes for sale on realtor.com on May 29, 2018 showed 151 listings for homes and/or lots for sale within Sanger, and 772 listings in Denton. Some of these listings included additional acreage.

Commercial displacements by the proposed project include a variety of businesses. Many of the displaced businesses would have the opportunity to relocate within the community as there are many commercial real estate listings available for sale or lease within the project area. Employees who do lose their jobs due to business relocation would have the opportunity to find jobs within the nearby area as most of the businesses are not unique within the project area. There is one mortuary, which is more specialized, however, there is another mortuary within 0.6 miles of the one which would be displaced.

Additionally, sixteen commercial parcels would incur damage to parking lots or signs. For these parcels, the damage would not be expected to be severe enough to displace the business, but should be noted. If aerial and/or underground utilities require adjustments, they would be handled in a manner such that no significant disruption of service would take place while the adjustments are being made. Utility adjustments would occur according to standard TxDOT procedures.

Travel Patterns and Access

The community of Valley View would be affected by the conversion of two-way frontage roads to one-way frontage roads, and neighborhoods and businesses throughout the corridor from Denton to Sanger would be affected by changing the entrance/exit ramp patterns, as is proposed. These changes may require travelers to exit the main lanes earlier and in some cases travel through an intersection to access their destination. Frontage road access to two parcels would not be maintained, or would be modified (properties S158 and N166). Property S158 would have access to another roadway, and N166 would have frontage road access moved closer to the property's southern property line. Schematics are in **Appendix C.**

Reversing the entrance/exit ramps would affect travel patterns throughout the corridor, including traveling to schools, churches and other community facilities. This would not be expected to add an increase in time to trips accessing any essential services, and would have the benefit of increased mobility and safety. Reversal of entrance/exit ramps may cause a

driver, in some cases, to have to exit the highway earlier or travel longer on the frontage road to access the freeway entrance. The 13 reconfigured intersections, including 12 new turnarounds, would allow for easier and quicker access to the opposite frontage road, and help with access to the freeway facility. Existing intersections may be modified with the proposed project, but these modifications would serve to increase connectivity by adding turnarounds and would not be expected to negatively affect emergency response routes or times. Sidewalks and a shared use lane are proposed for the project and would increase pedestrian and bicycle connectivity within the corridor. There would be more connectivity and the IH 35 facility would provide less of a barrier to travel with the increased number of turnarounds.

The neighborhoods and community facilities within the study area would experience temporary effects related to construction activities, such as temporary changes in traffic patterns. A traffic control plan would be developed prior to construction to manage and route traffic safely and efficiently, and maintain access to local streets, businesses, and other facilities. The traffic control plan would detail how motorists would be alerted to the time and day of lane closures. Furthermore, construction activities would be scheduled accordingly to minimize traffic disruption within the corridor.

Community Cohesion

The proposed improvements to the existing facility would not be expected to adversely affect community cohesion. Displacements would not be expected to affect community cohesion. The commercial displacements include various business types such as gas stations, manufacturing, auto body and paint, storage facilities and offices. None of the displacements would be from areas where people congregate or that serve a specific community. The addition of a 14-foot shared use lane and 5-foot sidewalks along the northbound and southbound sides of the project corridor would provide pedestrian and bicycle connectivity within the corridor; this connectivity would improve access to schools, places of worship, neighborhoods, and shopping areas within the project area.

No encroachment alteration impacts on community cohesion are expected from the proposed project.

No Build Alternative: Under the No Build Alternative, there would be no impacts by the proposed project to the community in terms of displacements, travel patterns and access, or cohesion.

5.6.1. Environmental Justice

An Environmental Justice (EJ) analysis was completed in accordance with EO 12898.[10] Minority populations were present within the study area, primarily dispersed throughout the corridor with concentrations near the cities of Denton, Sanger and Valley View. Impacts to

[10] EO 12898 (2/11/1994): Federal Actions to Address EJ in Minority Populations and Low-Income Populations; https://www.archives.gov/files/federal-register/executive-orders/pdf/12898.pdf (accessed January 17, 2019).

minority populations would not be expected to be disproportionate or adverse, compared to the population as a whole. According to the most recently available Census information, no low-income populations were present within the study area based on federal guidelines (none of the Census block groups had a median household income below the 2018 federal poverty guideline for a family of four). However, there are low-income individuals and families living within the study area. No facilities specifically serving low income communities were noted within the study area.

Build Alternative: Twenty-two businesses and five residences would be displaced due to the Build Alternative. One of the proposed residential displacements is partially located within a predominately minority Census block. None of the other displacements would be located in areas that are predominantly minority or low-income. The proposed improvements would affect travel patterns and access within the corridor, however, they would not be expected to negatively affect community cohesion as travel times at certain locations would only be expected to increase by a few minutes. Furthermore, these impacts would occur throughout the corridor and not specifically in EJ areas. The shared use lanes and sidewalks would increase access to all pedestrians and bicyclists throughout the corridor, and the new turnarounds would benefit all users of the corridor. The main impacts to minority populations would be during construction, and would be experienced by all people (minority and non-minority) in the same way. Therefore, the proposed project would not be expected to have disproportionately high and adverse impacts on minority and/or low-income population.

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

5.6.2. Limited English Proficiency (LEP)

Build Alternative: LEP persons were given the opportunity to meaningfully participate in the NEPA process. A public meeting was held on June 22, 2017; this meeting was advertised in six papers, including *Al Dia,* a Spanish language newspaper. All meeting notices included the following statement: "The public meeting will be conducted in English. Persons interested in attending the meeting who have special communication or accommodation needs, or need an interpreter, are encouraged to contact the TxDOT Dallas District Public Information Office at (214) 320-4480 at least two working days prior to the public meeting. TxDOT will make every reasonable effort to accommodate these needs." The meetings and the public hearing will be advertised similarly. The project team will ensure that LEP individuals will continue to have the opportunity for meaningful involvement in the project by publishing notices in a language other than English, by including the statement indicating how to request a translator, and by providing translation services for Metropolitan Planning Organizations (MPOs), if necessary. There would be no impacts to the LEP community associated with the proposed project.

No Build Alternative: Under the No Build Alternative, there would be no impacts to LEP persons from the proposed project.

5.7. Visual/Aesthetics Impacts

The proposed project is located along an existing interstate. IH 35 was constructed in the 1950s as a rural highway. The general terrain along the project corridor consists of flat land with the lowest elevation at the center of the proposed corridor (about 628 feet above mean sea level), and the highest at the southern end of the project near US 380 (about 752 feet). The surrounding area is rural and includes farmland, residential properties, and ranchland. Vegetation in the project area consists largely of agricultural, riparian, disturbed prairie, and urban land uses. Notable features along the corridor include the Northstar Dragway, the John Porter Sports Complex and Clear Creek. At night, roadway lighting is the predominant light source in the corridor. Light poles are visible to motorists and are a consistent visual element above the tree line.

Build Alternative: The existing IH 35 corridor is the dominant visual element within the project area. The Build Alternative is expected to have minimal effect on the overall aesthetic quality along the project area. Visual impacts would include the addition of travel lanes and interchange construction. The majority of proposed crossings would be reconstructed at increases ranging from 8 to 15 feet higher than the existing condition. These alterations would be minor, considering the viewsheds are not unique within the project limits. The reconstruction of Loop 288 over IH 35 would increase by 64 feet over its current height. This is a significant increase; however, it is not expected to be detrimental to the visual and aesthetic quality of the area given the roadway here is already elevated (by approximately 22 feet) and the surroundings consist largely of vacant/ranch land and a modern commercial plaza. The crossover is needed to connect to the proposed extension of Loop 288 which is a separate project under development.

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

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

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

5.8. Cultural Resources

This section summarizes efforts to evaluate project impacts to cultural resources in accordance with the programmatic agreement regarding transportation undertakings (PA-TU) among FHWA, TxDOT, the Texas State Historic Preservation Officer (SHPO), and the Adviso

Council on Historic Preservation (ACHP),[11] and the MOU between TxDOT and the Texas Historical Commission (THC) relating to environmental review of transportation projects.[12] The evaluations of archeological and historic resources discussed in the two subsections below were carried out in compliance with the National Historic Preservation Act (NHPA) of 1966, as amended.[13]

5.8.1. Archaeology

The evaluation of potential impacts to archeological resources was initiated for the Build Alternative with the preparation of an Archeological Background Study (ABS) in February 2018 (TxDOT 2018c). The resulting archeological survey was conducted between April 9 and November 13, 2018, and was followed by the submittal of an Archeological Survey Report in November 2018 (TxDOT 2018d). The THC concurred with the project findings on December 20, 2018. Coordination is attached in **Appendix F.**

Build Alternative: After reviewing the proposed project designs and the results of the survey, TxDOT archeologists concluded that the proposed project would have no effect on archeological properties. In accordance with the PA-TU and the THC MOU, no further coordination regarding archeological resources is required. Access was denied on eight parcels and no response was received to ROE inquiries for the remaining 113 parcels, comprising a total of 126.4 acres of un-surveyed project ROW. Of these 121 parcels, 41 appear to have been previously disturbed, requiring no survey. A cultural resources survey is recommended for the remaining 80 parcels once ROE has been established. Additionally, if changes to the project design require additional APE adjacent to sites 41DN608 and 41DN609, further work is recommended to delineate and evaluate the possible extension of the site boundaries beyond the current APE.

Encroachment alteration effects on recorded archeological resources within or adjacent to the APE are not anticipated.

No Build Alternative: No construction would occur under the No Build Alternative and there would be no impacts to archeological resources.

5.8.2. Historic Properties

The evaluation of potential impacts to historic-age cultural resources was initiated for the Build Alternative with the Project Coordination Request for Historical Studies Project in February 2018 (TxDOT 2018e). The resulting research design was approved in May 2018 and was followed by a reconnaissance survey in June 2018. It was determined through consultation with TxDOT that the APE for the proposed project is variable, consisting of the

[11] PA among the FHWA, TxDOT, the Texas SHPO, and the ACHP Regarding the Implementation of Transportation Undertakings (2015); ftp://ftp.dot.state.tx.us/pub/txdot-info/env/tribal/section-106.pdf (accessed January 14, 2019).
[12] MOU with the THC regarding Environmental Review of Transportation Projects (effective 5/16/2013), 43 TAC Rule Sections 2.259 – 2.278.
[13] 54 USC Sections 300101 – 307108.

current ROW, where no new ROW or easements are proposed, and 150 feet from the proposed ROW, where new ROW and/or changes in elevation are proposed.

The APE was surveyed for all properties built in or before 1977 and identified 37 historic-age properties, consisting of rural agricultural resources, residential, commercial, and educational properties, as well as one cemetery. Among these 37 properties, two are recommended eligible for listing in the NRHP: Resource 6 is the Blue Mound Community Center and Resource 22 is the Lemons House. The two properties possess significance under Criterion C for Architecture. Resource 6 also possesses significance under Criterion A for its association with Education as an early rural school. The remaining 35 properties are recommended not eligible for inclusion in the NRHP due to either a lack of significance, or integrity concerns that prevent them from conveying their significance. The Historic Resources Survey Report (HRSR) (TxDOT 2018f) was submitted in December 2018 and is on file with the TxDOT Dallas District.

Build Alternative: Evaluation of effects to the properties recommended as eligible found that Resource 6 may experience indirect effects, and Resource 22 would experience direct effects. Letters were sent to consulting parties on November 30, 2018, to collect any comments on the proposed project. The APE intersects the parcel for Resource 6, but no work would occur here. An analysis of indirect effects found No Adverse Effect at this location and no "use" of the property as defined by Section 4(f).[14]

The project found direct effects to Resource 22: the project proposes ROW acquisition from the legal parcel that this property occupies. The ROW acquisition totals approximately 18% of the combined legal parcels that comprise the historic property. Effects to the resource are minimal and resulted in a finding of No Adverse Effect; however, the total property take of 18% constitutes a *de minimis* use of the property under Section 4(f). Coordination for Section 106 and Section 4(f) was initiated on January 9, 2019 by TxDOT. Concurrence was received for a Section 106 finding of No Adverse Effect and a determination of *de minimis* impact under Section 4(f) regulations, on January 28, 2019 (see **Appendix F**).

No Build Alternative: No construction would occur under the No Build Alternative and there would be no impacts to historic resources.

5.9. DOT Act Section 4(f), LWCF Act Section 6(F) and PWC Chapter 26

The proposed project would not use any lands protected by Section 6(f) of the Land and Water Conservation Fund (LWCF) Act[15] or Parks and Wildlife Code (PWC) Chapter 26 lands[16]. There are no Section 6(f) resources in the project area.

Chapter 26 protects the taking of public land designated and used prior to the arrangement of the project as a park, recreation area, scientific area, wildlife refuge, or historic site. One

[14] 49 U.S. Code Section 303 and 23 U.S. Code Section 138. Section 4(f) is implemented by FHWA through regulations at 23 CFR Part 774.
[15] 16 U.S. Code Section 4601.
[16] Texas Parks and Wildlife Code Chapter 26, Section 26.001.

property in the project area, a planned public park, would experience direct effects by the proposed project; however, the park is a planned facility and not currently used as a public park. Therefore, Chapter 26 does not apply.

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

Build Alternative:

Historic Properties

As described in the previous section, one historic property, Resource 22 would experience direct effects by the proposed project. Because the proposed project would take ROW from the recommended NRHP-eligible property, the project is subject to Section 4(f) coordination, pursuant to 23 U.S.C. 327. A letter of TxDOT's intent to seek a *de minimis* finding was sent to the SHPO for signature and concurrence was received of a Notice of Intent to Render *De Minimis* Section 4(f) Finding on January 28, 2019 (see **Appendix F**).

Parkland

The proposed project would also take ROW from a designated public park in Sanger. Improvements proposed to northbound IH 35 across from the John Porter Sports Complex, require acquisition of new ROW from a City-owned parcel designated as future parkland. The parcel is 74.54 acres (Denton County property ID 77924). ROW acquisition for this parcel is a total of 2.01 acres, or 2.7% of the parcel. The expansion of IH 35 south of Sanger is primarily occurring on the east side of the road and the proposed ROW acquisition at this location will allow adequate space for expansion. The improved frontage road is proposed to be constructed on the westernmost edge of the park parcel. TxDOT has initiated coordination with the City of Sanger, as the Official with Jurisdiction. A letter of TxDOT's intent to seek a *de minimis* impact would be sent to the City of Sanger for signature after any comments on project impacts to the property are received at the public hearing. The *de minimis* finding will be completed prior to project approval and attached in **Appendix F** once available.

No Build Alternative: There would be no project-related impacts to Section 4(f), Section 6(f), or PWC Chapter 26 properties under the No Build Alternative, as construction of the proposed project would not occur.

5.10. Water Resources

The proposed project is in the Trinity River watershed, as detailed in the Water Resources Technical Report (TxDOT 2018g). ROE was not granted on all parcels; therefore, a formal delineation has not been completed. **Table 3** lists the waters of the U.S. in the proposed project area, amount of impacts to the water bodies that would result from implementation of the proposed project, and whether or not the impact would require a pre-construction

notification (PCN) under Nationwide Permit (NWP) 14 of the U.S. Army Corps of Engineers (USACE). **Appendix E, Figure 2** shows the potential waters of the U.S. in the project area.

Table 3. Potentially Jurisdictional Waters of the U.S. in the Project Area

Label	Name	Feature Type	OHWM (ft)[1]	Estimated Permanent Impacts[2] [ac (LF)]	Estimated Temporary Impacts[2] [ac (LF)]	PCN Required Y/N[3]
S-1	Tributary to Pecan Creek	Ephemeral Stream	5	0.02 (136)	-	N
S-2	Unmapped Tributary to Pecan Creek	Ephemeral Stream	6	0.01 (107)	-	N
S-3E	Tributary to Milam Creek	Intermittent Stream	3	0.005 (70)	-	N
S-3W	Tributary to Milam Creek	Intermittent Stream	10	0.07 (302)	-	Y
S-4	Unmapped Tributary to Milam Creek	Ephemeral Stream	2	0.01 (258)	-	N
S-5	Tributary to Milam Creek	Intermittent Stream	10	0.02 (90)	-	N
S-6	Tributary to Milam Creek	Ephemeral Stream	6	0.01 (106)	-	N
S-7	Tributary to Milam Creek	Ephemeral Stream	3.5	0.02 (203)	-	N
S-8	Tributary to Milam Creek	Intermittent Stream	4	0.03 (316)	-	Y
S-9	Tributary to Milam Creek	Ephemeral Stream	6	0.03 (183)	-	N
S-10	Milam Creek	Ephemeral Stream	5	0.08 (687)	-	Y
S-11E	Tributary to Milam Creek	Ephemeral Stream	2	0.01 (240)	0.002 (45)	N
S-11W	Tributary to Milam Creek	Ephemeral Stream	2	0.003 (63)	-	N
S-12*	Moore's Branch	Perennial Stream	34	-	0.36 (463)	Y
S-13*	Tributary to Moore's Branch	Intermittent Stream	18.5	-	0.20 (477)	Y

Label	Name	Feature Type	OHWM (ft)[1]	Estimated Permanent Impacts[2] [ac (LF)]	Estimated Temporary Impacts[2] [ac (LF)]	PCN Required Y/N[3]
S-14	Tributary to Moore's Branch (Historic Channel)	Ephemeral Stream	15	0.02 (67)	0.03 (83)	N
S-15*	Clear Creek	Perennial Stream	47	-	0.46 (429)	Y
S-16	Tributary to Clear Creek	Ephemeral Stream	5	-	0.04 (317)	N
S-17	Unmapped Tributary to Duck Creek	Ephemeral Stream	5	0.02 (156)	-	N
S-18	Tributary to Ranger Branch	Ephemeral Stream	3	0.01 (91)	-	N
S-19	Tributary to Ranger Branch	Ephemeral Stream	7	0.03 (158)	-	N
S-20	Ranger Branch	Intermittent Stream	15	0.03 (75)	-	N
S-21	Tributary to Ranger Branch	Ephemeral Stream	4	0.01 (129)	-	N
S-22E	Ranger Branch	Intermittent Stream	5	0.03 (222)	-	N
S-22W	Ranger Branch	Intermittent Stream	7	0.08 (480)	-	Y
S-23	Tributary to Ranger Branch	Intermittent Stream	9	0.12 (595)	-	Y
S-24	Unmapped Tributary to Ranger Branch	Ephemeral Stream	2	0.01 (110)	-	N
S-25	Unknown Tributary	Ephemeral Stream	12	0.06 (267)	-	N
S-26E	Pond Creek	Ephemeral Stream	10	0.10 (420)	-	Y
S-26W	Pond Creek	Ephemeral Stream	10	0.04 (176)	-	N
S-27E	Tributary to Pond Creek	Ephemeral Stream	15	0.04 (114)	-	N

Label	Name	Feature Type	OHWM (ft)[1]	Estimated Permanent Impacts[2] [ac (LF)]	Estimated Temporary Impacts[2] [ac (LF)]	PCN Required Y/N[3]
S-27W	Tributary to Pond Creek	Ephemeral Stream	15	0.05 (154)	-	N
S-28E	Tributary to Pond Creek	Ephemeral Stream	10	0.06 (267)	-	N
S-28W	Tributary to Pond Creek	Ephemeral Stream	10	0.01 (59)	-	N
S-29E	Tributary to Pond Creek	Intermittent Stream	24	0.02 (38)	-	N
S-29W	Tributary to Pond Creek	Intermittent Stream	7	0.02 (154)	-	N
W-1	Unnamed	Palustrine Emergent Wetland	-	0.15	-	Y
W-2	Unnamed	Palustrine Emergent Wetland	-	0.04	-	Y
W-3	Unnamed	Palustrine Scrub-Shrub Wetland	-	0.21	-	Y
W-4	Duck Creek	Palustrine Emergent Wetland	-	0.15	-	Y
W-5	Unnamed	Palustrine Emergent Wetland	-	0.01	-	Y
OCP-1	Unnamed	On-channel Pond	-	0.06	-	N
-	-	Total	-	1.66 (6378)	1.09 (1814)	-

[1] OHWM: Ordinary High Water Mark (average width)
[2] Permanent and temporary impact acreages are based on project designs as of October 26, 2018, and applied to a preliminary waters assessment, not formal delineation.
[3] PCN will be required for waters of the U.S. with impacts >1/10th ac (NWP 14), impacts to wetlands or special aquatic sites (NWP 14), or loss of >1/10th ac of waters of the U.S. or >300 LF of stream (Regional Condition 12). PCN determination is based off of preliminary waters assessment, not formal delineation.
* These waters are currently bridged, and the proposed project would also bridge these features.

5.10.1. Clean Water Act Section 404

The placement of temporary or permanent dredge or fill material into potentially jurisdictional waters of the U.S. would be authorized under NWP 14. Environmental scientists identified 29

streams, one open water feature, and five wetlands that are potential waters of the U.S. within the project area.

The purpose of the proposed activity is to expand the roadway along the length of the project. The impacts of the proposed project to the water crossings are presented in **Table 3**. Appropriate measures would be taken to maintain normal downstream flows and minimize flooding. Temporary fills would consist of clean materials and be placed in a manner that would not be eroded by expected high flows. Temporary fills would be removed in their entirety and the affected area returned to preconstruction elevations, and revegetated as appropriate. Stream modification, including bank stabilization, would be limited to the minimum necessary to construct or protect the structure and the immediate vicinity of the project. The activity would comply with all general and regional conditions applicable to NWP 14.

Build Alternative: It is anticipated that the proposed project would result in fill within waters of the U.S., it would require Section 404 permitting for authorization. Based on the March 19, 2017, NWP 14, the USACE would likely consider the proposed project as having 22 single and complete projects for NWP authorization. An impact analysis would be completed after a formal delineation is performed for potentially jurisdictional features. Impacts to waters of the U.S. would be avoided and minimized to the extent practicable within the project area. For projects qualifying for use of a NWP 14 that impacts less than 0.1 acre of stream or result in the loss of less than 0.1 acre or 300 LF of stream, no PCN is required. A PCN will be required for impacts to a special aquatic site (NWP 14), impacts to waters of the U.S. features that are greater than 0.1 acre (NWP 14), or waters of the U.S. losses of greater than 0.1 acre or 300 LF (Regional Condition 12). The final determination of the need for a PCN would be conducted following a formal delineation and impact assessment.

No Build Alternative: No project-related impacts on waters of the U.S. would occur under the No Build Alternative.

5.10.2. Clean Water Act Section 401

General Condition 25 of the NWP Program requires applicants using NWP 14 to comply with Section 401 of the Clean Water Act (CWA). Compliance with Section 401 requires the use of best management practices (BMP) to manage water quality on construction sites. General Condition 12 also requires applicants using NWP 14 to use appropriate soil erosion and sedimentation controls.

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

- Category I Erosion Control would be addressed by using temporary vegetation, permanent seeding/sodding, and stone outlet structures such as stone riprap.

- Category II Sedimentation Control would be addressed by installing silt fence, rock berms, and mulch filter socks.
- Category III Post-Construction Total Suspended Solids (TSS) control would be addressed by installing vegetative-lined drainage ditches.

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

The potential for project-related encroachment-alteration effects on water quality would be mitigated through permanent (post-construction) BMPs as described above. To minimize the potential for adverse impacts, BMPs would be regularly inspected and proactively maintained. BMPs would be implemented to ensure that water quality impacts would not be significant; therefore, mitigation is not considered.

No Build Alternative: No project-related impacts to water quality would occur under the No Build Alternative.

5.10.3. Executive Order 11990 Wetlands

EO 11990 (Protection of Wetlands)[17] prohibits new construction in wetlands unless (1) there is no practicable alternative to such construction, and (2) the project includes all practicable measures to minimize harm to wetlands. The *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) defines wetlands based on three criteria: (1) hydrophytic vegetation, (2) hydric soils, and (3) wetland hydrology. In general, all three criteria must be present for an area to qualify as a wetland.

Build Alternative: During the field investigation for the proposed project, the construction footprint was examined for areas that would meet the definition of wetlands under EO 11990. Five wetlands were identified within the project area. When taking economic, environmental, and other pertinent factors into consideration, impacts to these features cannot be completely avoided. However, impacts to wetlands within the project area would be avoided and minimized to the greatest extent practicable and permitted through a NWP 14.

Typical mitigation for impacts to waters of the U.S. and wetlands includes the construction of mitigation areas or purchasing credits from a mitigation bank. Mitigation is frequently conducted as one of the requirements for obtaining a Section 404 permit. The USACE decides what the ratio of the mitigation area would be relative to the acreage of impacts to waters of the U.S. A typical mitigation ratio is three times the amount of acreage impacted, while the minimum mitigation ratio is one time the amount of acreage impacted (i.e. 1:1 ratio).

No Build Alternative: No project-related impacts on wetlands would occur under the No Build Alternative.

[17] EO 11990 – *Protection of Wetlands* (42 Federal Register 26961, May 24, 1977).

5.10.4. Rivers and Harbors Act

The proposed project does not involve the construction or modification, including changes to lighting, of a dam, dike, bridge or causeway, in or over a navigable water of the U.S.; nor does it involve work in a navigable water of the U.S. Therefore, Sections 9 and 10 of the Rivers and Harbors Act do not apply to the Build or No Build Alternative.

5.10.5. Clean Water Act Section 303(d)

The project area is located within the Trinity River watershed, draining east-southeast to the Elm Fork of the Trinity River. Run-off from the proposed project would not discharge directly into a Section 303(d)-listed threatened or impaired water, or into a stream within five miles upstream of a 303(d)-listed threatened or impaired water. The nearest impaired water is Grapevine Creek, approximately 22 miles south of the project area. The 2014 303(d) list was utilized in this assessment.

5.10.6. Clean Water Act Section 402

Build Alternative: The proposed project would be subject to Section 402 of the CWA, which in the state of Texas, is implemented via the TCEQ Texas Pollutant Discharge Elimination System (TPDES) Construction General Permit (CGP). The proposed project would include five or more acres of earth disturbance. As a result, the proposed project would require the TCEQ TPDES CGP. The proposed project corridor is also located within the boundaries and jurisdiction of the City of Denton Municipal Separate Storm Sewer System (MS4), and the City of Sanger and TxDOT MS4s in the TxDOT ROW at US 380.

Since TPDES CGP authorization and compliance (and the associated documentation) occur outside of the environmental clearance process, compliance is ensured by the policies and procedures that govern the design and construction phases of the project. The Project Development Process Manual and the Plans, Specifications, and Estimates (PS&E) Preparation Manual require a SWP3 be included in the plans of all projects that disturb one or more acres. The Construction Contract Administration Manual requires that the appropriate CGP authorization documents (notice of intent or site notice) be completed, posted, and submitted, when required by the CGP, to TCEQ and the MS4 operator. It also requires that projects be inspected to ensure compliance with the CGP.

The PS&E Preparation Manual requires that all projects include Standard Specification Item 506 (Temporary Erosion, Sedimentation, and Environmental Controls), and the "Required Specification Checklists" require Special Provision 506-003 on all projects that need authorization under the CGP. These documents require the project contractor to comply with the CGP and SWP3, and to complete the appropriate authorization documents.

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

5.10.7. Floodplains

This project is subject to and will comply with federal Executive Order 11988[18] on Floodplain Management. The department implements this Executive Order on a programmatic basis through its Hydraulic Design Manual. Design of this project will be conducted in accordance with the department's Hydraulic Design Manual. Adherence to the TxDOT Hydraulic Design Manual ensures that this project will not result in a "significant encroachment" as defined by FHWA's rules implementing Executive Order 11988 at 23 CFR 650.105(q). Executive Order 11988 on floodplain management requires that federal agencies avoid, to the extent possible, long and short-term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative. The proposed project corridor lies within the boundaries of Denton and Cooke counties, which is a participant in the National Flood Insurance Program (NFIP). Denton and Cooke counties have jurisdiction over floodplains within the project limits. Coordination with the local floodplain administrators would be necessary.

Build Alternative: The project corridor is situated within approximately 100 acres of FEMA-designated 100-year flood hazard area. These flood hazard areas are associated with Pond Creek, Clear Creek, Moore's Branch, and Milam Creek and some of their associated tributaries. The proposed project would be designed so that no increase in surface water elevations would occur during a base flood event.

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

5.10.8. Wild and Scenic Rivers

There are no wild and scenic rivers within or adjacent to the proposed project corridor. The Wild and Scenic Rivers Act would not be applicable. Therefore, neither the Build nor the No Build Alternative would impact wild or scenic rivers.

5.10.9. Coastal Barrier Resources

The proposed project corridor is not situated within a coastal county subject to the Coastal Barrier Resources Act of 1982. Therefore, neither the Build nor the No Build Alternative would impact coastal barrier resources.

5.10.10. Coastal Zone Management

The proposed project corridor is not situated within a Texas Coastal Management Area. Neither the Coastal Zone Management Act of 1972 nor the Texas Natural Resources Code 33.205(b) would be applicable to the project; therefore, neither the Build nor the No Build Alternative would impact coastal zone management areas.

[18] EO 11988 – *Floodplain Management* (42 Federal Register 26951, 5/24/1977).

5.10.11. Edwards Aquifer

The proposed project corridor is not situated over a recharge or contributing zone of the Edwards Aquifer; therefore, the TCEQ's Edwards Aquifer Rules would not apply. Therefore, neither the Build nor the No Build Alternative would impact the Edwards Aquifer.

5.10.12. International Boundary and Water Commission

The proposed project corridor is not situated along and would not encroach upon an international boundary or its floodplains. Project licensing and permitting would not be required under the U.S. Section International Boundary Water Commission. Neither the Build nor the No Build Alternative would impact any international boundary or its floodplains.

5.10.13. Drinking Water Systems

A search was made for water wells within and adjacent to the proposed project area. A review of the Texas Water Development Board (TWDB) records revealed five wells within the proposed project area or immediate vicinity. There are no source water protection areas located in the proposed project area. Impacts to water wells and source water protection areas as a result of the proposed project are not anticipated. Therefore, neither the Build nor the No Build Alternative would impact drinking water systems.

5.11. Biological Resources

The project area is located in the Cross Timbers (CRTB) ecological region which occurs in north-central Texas, central Oklahoma, and southeastern Kansas. This region is a transitional area between the once prairie, now winter wheat growing regions to the west, and the forested low mountains of eastern Oklahoma. Transitional "cross-timbers" vegetation consists of little bluestem (*Schizachyrium scoparium*)-dominated grassland with species such as big bluestem (*Andropogon gerardii*), Indiangrass (*Sorghastrum nutans*), and switchgrass (*Panicum virgatum*), with scattered blackjack oak (*Quercus marilandica*) and post oak (*Q. stellata*) trees. Other tree and woodland species include elm (*Ulmus* spp.), black hickory (*Carya* spp.), greenbriar (*Smilax* spp.), and Virginia creeper (*Parthenocissus quinquefolia*). A dense woody understory typically forms in the absence of fire.

A Biological Resources Technical Report (TxDOT 2018a), containing the Biological Evaluation Form, Tier 1 Site Assessment Form, and supporting documents, was completed for the proposed project and on file at the TxDOT Dallas District office. The Texas Parks and Wildlife Department (TPWD) maintains special species lists through the Texas Natural Diversity Database (TXNDD) by county. The TXNDD is a geo-referenced database of documented sightings of rare, threatened and endangered species of Texas. Data were obtained from TPWD on November 8, 2018.

5.11.1. Texas Parks and Wildlife Coordination

The inventory and evaluation of vegetation and potential impacts on wildlife for TxDOT projects is governed by the 2013 Memorandum of Understanding (MOU) (2017 Revision) with the

TPWD,[19] and implementing Programmatic Agreements (PA) between TxDOT and TPWD[20]. In accordance with the MOU, a Tier I Site assessment was prepared, and it was determined that early coordination with TPWD was required because the proposed project would disturb habitat in an area equal to or greater than the area of disturbance indicated in the Threshold Table PA for Riparian, Disturbed Prairie, Agriculture, and Western Wetlands/Riparian MOU Types. Additionally, two species of greatest conservation need (SGCN) have potential to occur in the project area: the Osage Plains false foxglove and the Sprague's pipit. Because neither of these SGCN are included in the TxDOT-TPWD BMP PA, this is another trigger for coordination with TPWD.

The project is also expected to impact over 200 feet of stream channel and cause isolation of wetlands outside of the existing ROW, which requires a NWP with PCN and is an additional trigger for TPWD coordination. Early coordination with TPWD was initiated on December 13, 2018 and is attached in **Appendix F**.

No Build Alternative: The proposed project would not be constructed; therefore, no coordination with TPWD would be required.

5.11.2. Impacts to Vegetation

The TPWD Ecological Mapping System of Texas (EMST) was reviewed for the project area. According to the EMST, 18 vegetation communities have been mapped within the project area. Based on the field surveys conducted on January 31 and February 1, 2018, adjustments were made to the EMST vegetation types to better reflect existing conditions. The resulting 13 EMST types were converted to six generalized habitat types—disturbed prairie, urban, agricultural, riparian, open water, and western wetlands/riparian— in accordance with the PA and MOU. These habitat types within the project area are described in the Biological Resources Technical Report (TxDOT 2018a). No remnant prairie or other unique vegetation communities were observed within the corridor.

Build Alternative: Impacts would occur to the following MOU Type habitats: approximately 160.2 acres of disturbed prairie, 21.5 acres of agricultural land, 82.4 acres of urban, 15.0 acres of riparian habitat, 1.6 acres of open water, and 0.7 acres of western wetlands/riparian. The habitat disturbance of Riparian, Agriculture, Disturbed Prairie, and Western Wetland/Riparian MOU Types are greater than the area of disturbance indicated in the PA Threshold Table for CRTB. Potential impacts to vegetation would be confined to the existing and proposed ROW/easements; thus, encroachment alteration impacts would not occur.

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[19] TxDOT-TPWD MOU, effective as of 9/1/2013 and is in 43 TAC Sections 2.201-2.214. See: http://texreg.sos.state.tx.us/public/readtac$ext.ViewTAC?tac_view=5&ti=43&pt=1&ch=2&sch=G&rl=Y (accessed January 16, 2019).

[20] Implementing PAs between TxDOT and TPWD under the 2013 MOU include the Threshold Table PA (2017) and the BMP PA (2017). See: https://www.txdot.gov/inside-txdot/division/environmental/compliance-toolkits/natural-resources.html (accessed January 16, 2019).

Impacts to vegetation would be avoided or minimized by limiting disturbance to only what is necessary to construct the proposed project. The removal of native vegetation, particularly mature native trees and shrubs would be minimized to the greatest extent practicable. Revegetation and reseeding would take place in areas disturbed during construction activities. Additional information about TPWD coordination is located in Section 5.11.1.

No Build Alternative: Under the No Build Alternative, the proposed project would not be constructed; therefore, no effects to vegetation related to construction would occur. Existing land use and activities, including routine mowing, would continue to periodically affect vegetation communities.

5.11.3. Executive Order 13112 on Invasive Species

Build Alternative: This project is subject to and will comply with Executive Order 13112[21] on Invasive Species. TxDOT implements this EO on a programmatic basis through its Roadside Vegetation Management Manual and Landscape and Aesthetics Design Manual.

No Build Alternative: The No Build Alternative would not require compliance with EO 13112.

5.11.4. Executive Memorandum on Environmentally and Economically Beneficial Landscaping

This project is subject to and will comply with the federal Executive Memorandum on Environmentally and Economically Beneficial Landscaping,[22] in effect since April 26, 1994. TxDOT implements this Executive Memorandum on a programmatic basis through its Roadside Vegetation Management Manual and Landscape and Aesthetics Design Manual.

No Build Alternative: The No Build Alternative would not require compliance with the federal Executive Memorandum on Environmentally and Economically Beneficial Landscaping.

5.11.5. Impacts to Wildlife

The project area is located in the Texan Biotic Province (Blair 1950). The Texan province is a broad ecotone between the southeastern forest and the semiarid grasslands to the west. It is characterized by the transition between forest and grassland associations and species. Common wildlife in this region includes white-tailed deer, bobcat, gray fox, raccoon, cottontail rabbit, striped skunk, mourning dove, eastern meadowlark, lark sparrow, box turtle, and rattlesnakes. Many of these species may still be found in the less developed areas especially along existing streams and creeks which are common wildlife corridors.

Five species (Sprague's pipit, Henslow's sparrow, cerulean warbler, Texas garter snake, Osage Plains false foxglove) are designated SGCN "vulnerable," "imperiled," or "critically imperiled;"

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[21] EO 13112 – Invasive Species (64 Federal Register 6183-6186, February 8, 1999). https://www.govinfo.gov/content/pkg/FR-1999-02-08/pdf/99-3184.pdf (accessed January 16, 2019).
[22] Executive Memorandum on Environmentally and Economically Beneficial Landscaping (42 Federal Register 26961, May 24, 1977). https://www.environment.fhwa.dot.gov/env_topics/ecosystems/roadside_use/vegmgmt_rdus3_10.aspx (accessed January 16, 2019).

one species (Plains spotted skunk) is designated SGCN "apparently secure;" and five species (Louisiana pigtoe, sandbank pocketbook, Texas heelsplitter, Texas pigtoe, and the timber/canebrake rattlesnake) are state listed as threatened. Federally threatened or endangered species are discussed below in Section 5.11.11. The implementation of the following BMPs eliminates the need for coordination for impacts to the above species as described in section 2.206(1) of the 2013 TPWD/TxDOT MOU:

- Louisiana pigtoe, sandbank pocketbook, Texas heelsplitter, and Texas pigtoe (Fresh Water Mussel BMPs): 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; when work is adjacent to the water, Water Quality BMPs implemented as part of the SWP3 for construction general permit or any conditions of the 401 water quality certification for the project will be implemented.
- Texas garter snake/Timber rattlesnake (Terrestrial Reptile BMPs): Per BMPs, contractors will be advised of potential occurrence in the project area, and to avoid harming the species if encountered. No species-specific BMPs have been approved for the Texas garter snake or timber rattlesnake; therefore, the terrestrial reptile BMPs would be implemented for the proposed project.
- Plains spotted skunk BMPs: 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.
- Sprague's pipit, Henslow's sparrow, and cerulean warbler (Bird BMPs): these three species may occur during the non-breeding season; therefore, no impacts to nests or breeding habitat are anticipated. No species-specific BMPs are approved for the Sprague's pipit; therefore, the bird BMPs would be implemented for the proposed project. The Bird BMPs are the approved measures for potential impacts to the cerulean warbler and Henslow's sparrow.

Build Alternative: The transportation improvements proposed are not expected to alter existing travel corridors of aquatic and terrestrial wildlife. The wooded riparian corridors containing streams are currently bridged and the proposed design would also bridge these areas. Impacts would occur to these riparian corridors during construction activities, including removal of some large trees and other vegetation. After construction is completed, the areas of bare ground resulting from the construction activity would be reseeded/revegetated in accordance with executive memoranda and TxDOT guidelines.

The existing highway currently serves as a barrier which local wildlife have acclimated to, so the widening of the existing corridor would not create a new barrier and would not create newly fragmented habitat. The proposed project is the expansion of an existing roadway in a rural area. It is likely that wildlife is currently acclimated to the existing barrier and traffic, and that

wildlife would continue to utilize adjacent available habitat once construction is complete. Therefore, significant adverse effects to the local wildlife community are not anticipated.

The project has the potential to impact five state-listed species (Louisiana pigtoe, Sandbank pocketbook, Texas heelsplitter, Texas pigtoe, and the timber/canebrake rattlesnake) and six SGCN species (Sprague's pipit, Henslow's sparrow, Cerulean warbler, Texas garter snake, Osage Plains false foxglove, and Plains Spotted skunk), but would have no effect on federally listed species, as discussed in Section 5.11.11.

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

5.11.6. Migratory Bird Protections

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

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

The MBTA makes it unlawful to kill, capture, collect, possess, buy, sell, trade, or transport any migratory bird, nest, young, feather, or egg in part or whole, without a Federal permit issued in accordance with the Act's policies and regulations. Between October 1 and February 15, the contractor would remove all old migratory bird nests from any structures that would be affected by the proposed project, and complete any bridge work and/or vegetation clearing. In addition, the contractor would be prepared to prevent migratory birds from building nests between February 15 and October 1. In the event that migratory birds are encountered on-site during project construction, adverse impacts on protected birds, active nests, eggs, and/or young would be avoided. In limited and relatively rare circumstances, purposefully removing active nests may be possible with special permitting from the United States Fish and Wildlife Service (USFWS) or another permitted entity.

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

5.11.7. Fish and Wildlife Coordination Act

Build Alternative: All impacts to waters of the U.S. would be authorized under NWP 14 with a PCN; therefore, the USFWS consider Fish and Wildlife Coordination Act coordination to be complete as part of the NWPs review.

No Build Alternative: Under the No Build Alternative, the proposed project would not be constructed; therefore, there the project would not need to comply with the Fish and Wildlife Coordination Act.

5.11.8. Bald and Golden Eagle Protection Act of 2007

Build Alternative: Although the TXNDD element occurrence report documents bald eagles within 10 miles of the project area, no eagles or eagle nests were observed during the January 31 and February 1, 2018 site visits, nor does the project area offer suitable eagle habitat. Therefore, no impact to bald or golden eagles or their habitat is anticipated as a result of the proposed project, as verified by a qualified biologist. The proposed project is not anticipated to impact Bald and Golden Eagles.

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

5.11.9. Magnuson-Stevens Fishery Conservation Management Act

There are no tidally influenced waters in Denton or Cooke Counties and the proposed project would not affect essential fish habitat; therefore, the project is not subject to the requirements of the Magnuson-Stevens Fishery Conservation Management Act. Neither the Build nor the No Build Alternative would need to comply with the Act.

5.11.10. Marine Mammal Protection Act

The proposed project would not affect marine mammals; therefore, the project is not subject to the requirements of the Marine Mammal Protection Act. Neither the Build nor the No Build Alternative would impact marine mammals.

5.11.11. Threatened, Endangered, and Candidate Species

The Endangered Species Act (ESA) of 1973 provides for the conservation of ecosystems upon which threatened and endangered species of fish, wildlife, and plants depend. Section 9 of the ESA states that it is unlawful for any individual to possess, sell or offer for sale, deliver, carry, transport, import, export, or "take" any species listed pursuant to Section 4 of the Act. "Take" is further defined as to "harm" or "harass" a species. Section 7 of the ESA mandates that a federal agency must consult with the USFWS to insure that any action authorized, funded, or carried out by such agency is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat of such species. Under FHWA NEPA Assignment, TxDOT is required to meet this obligation.

An official list of ESA-listed species was obtained from the USFWS on October 11, 2018. The USFWS lists two endangered species (whooping crane and interior least tern) and two threatened species (red knot and piping plover) as potentially occurring in the project area. However, for this project area, USFWS only requires consideration of red knot and piping plover for wind energy projects. In addition, the TPWD maintains county lists of rare and protected species. The TPWD lists for Denton and Cooke counties were reviewed. TPWD

identifies four federally listed endangered species (interior least tern, whooping crane, gray wolf, and red wolf) and one federally listed threatened species (red knot) as potentially occurring in the project area. However, the gray wolf and red wolf identified by TPWD as potentially occurring in the project area are extinct in Texas.

The detailed habitat descriptions, habitat assessment and effect determinations are included in the Biological Resources Technical Report (TxDOT 2018a) on file at the TxDOT Dallas District.

Build Alternative: No federally listed species have suitable habitat within the project area. There would be no effect to federally listed threatened, endangered, or candidate species.

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

5.12. Air Quality

The project is located in Denton and Cooke counties. Denton County has been designated by Environmental Protection Agency (EPA) as being in moderate nonattainment for the 2008 Ozone National Ambient Air Quality Standards (NAAQS); therefore, transportation conformity rules apply. (Cooke County is in attainment.) Effective August 3, 2018, the EPA designated Denton County as marginal nonattainment for the 2015 ozone NAAQS. In accordance with 40 CFR 93.109(c), transportation conformity to this new standard is required by August 3, 2019 (one year after the effective date).

Build Alternative: Both the North Central Texas Council of Government's (NCTCOG) financially constrained Metropolitan Transportation Plan (MTP) *Mobility 2045,* and the 2019-2022 Transportation Improvement Program (TIP) for the Dallas-Fort Worth Metropolitan Planning Organization, as amended, were initially found to conform to the TCEQ State Implementation Plan (SIP) by FHWA and FTA on November 21, 2018 and September 28, 2018, respectively; however, the proposed project is not consistent with this conformity determination, because the projects are currently pending approval in the Statewide Transportation Improvement Program (STIP). TxDOT will not take final action on this environmental document until the proposed project is consistent with a currently conforming MTP and TIP. Copies of the MTP and TIP pages are included in **Appendix D**. All projects in the NCTCOG's TIP that are proposed for federal or state funds were initiated in a manner consistent with federal guidelines in Section 450, of Title 23 CFR and Section 613.00, Subpart B, of Title 49 CFR.

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

A Carbon Monoxide Traffic Air Quality Assessment, Quantitative Mobile Source Air Toxic (MSAT) Analysis Technical Report, and Congestion Management Process (CMP) Technical

Report (TxDOT 2019) were completed for the proposed project and are maintained in the project file at the TxDOT Dallas District Office.

Because the proposed project would add capacity in a nonattainment area, it would be coordinated under TxDOT's MOU with TCEQ.

5.12.1. Carbon Monoxide Traffic Air Quality Assessment

Table 4 shows traffic data for the design year 2040 is estimated to be up to 175,700 vehicles per day (VPD), therefore triggering the need for a traffic air quality analysis (TAQA). Topography and meteorology of the proposed project area would not seriously restrict dispersion of the air pollutants. The traffic data used in the analysis was provided by HDR and approved by TxDOT in September 2018.

Table 4. Traffic Volumes

Roadway Link	2027 ETC Build		2040 Design Year Build	
	AADT	DHV*	AADT	DHV*
University Drive to Loop 288	137,800	13,230	175,700	16,970
Loop 288 to Barthold Road	129,300	12,420	163,600	15,700
Barthold Road to Ganzer Road	119,300	11,450	150,000	14,400
Ganzer Rd to Milam Road	122,900	11,800	154,200	14,800
Milam Rd to FM 156	105,200	10,100	134,100	12,870
FM 156 to Rector Road	102,500	9,840	131,300	12,600
Rector Road to Business 35	97,500	9,360	124,700	11,970
Business 35 to Chapman Drive	90,400	8,680	115,500	11,090
Chapman Drive to Belz Road	82,500	7,920	105,100	10,100
Belz Road to Lois Road	82,600	7,920	105,300	10,100
Lois Road to View Road	82,700	7,930	105,400	10,110
View Road to Chisam Road	80,600	7,730	102,800	9,870
Chisam Road to Loan Oak Road	79,900	7,670	102,000	9,790
Lone Oak Road to EOP	75,600	7,250	97,400	9,350

*DHV, or design hour volumes, were calculated by multiplying the segment AADT volumes by the project specific K-factor (0.096)

Source: TxDOT TPP, September 2018 and Project Team, December 2017.

Carbon monoxide concentrations for the proposed action were modeled using CAL3QHC and the Environmental Protection Agency's (EPA) Motor Vehicle Emissions Simulator (MOVE

model (2014), and factoring in adverse meteorological conditions and sensitive receptors at the ROW line in accordance with TxDOT's *Standard Operating Procedure for Complying with CO TAQA Requirements*.[23] Local concentrations of carbon monoxide are not expected to exceed national standards at any time. CO emissions were obtained from TxDOT's Emission Rate Lookup Table which was developed from MOVES2014. The CO emission rates used in this analysis are listed in **Table 5** for the ETC (2027) and design years (2040). Details of the full analysis can be found in the standalone CO TAQA Technical Report.

Table 5. Project Carbon Monoxide Concentrations

Year	1-hour CO Concentration*	1 HR % NAAQS	8-hour CO Concentration*	8-HR % NAAQS
2027	6.5	18.6%	2.5	27.8%
2040	6.4	18.3%	2.5	27.8%

Note: CO concentrations include the background concentrations of 6.1 ppm and 2.3 ppm for the 1-hr and 8-hr conditions, respectively.

5.12.2. Mobile Source Air Toxics Background

Controlling air toxic emissions became a national priority with the passage of the Clean Air Act Amendments of 1990, whereby Congress mandated that the Environmental Protection Agency (EPA) regulate 188 air toxics, also known as hazardous air pollutants. The EPA has assessed this expansive list in their latest rule on the Control of Hazardous Air Pollutants from Mobile Sources (Federal Register, Vol. 72, No. 37, page 8430, February 26, 2007) and identified a group of 93 compounds emitted from mobile sources that are listed in their Integrated Risk Information System (IRIS) (http://www.epa.gov/iris/). In addition, EPA identified nine compounds with significant contributions from mobile sources that are among the national and regional-scale cancer risk drivers or contributors and non-cancer hazard contributors from the 2011 National Air Toxics Assessment (NATA)[24]. These are 1,3-butadiene, acetaldehyde, acrolein, benzene, diesel particulate matter (diesel PM), ethylbenzene, formaldehyde, naphthalene, and polycyclic organic matter. While FHWA considers these the priority mobile source air toxics, the list is subject to change and may be adjusted in consideration of future EPA rules.

According to EPA, MOVES2014 is a major revision to MOVES2010 and improves upon it in many respects. MOVES2014 includes new data, new emissions standards, and new

[23] TxDOT 2015. Standard Operating Procedure for Complying with CO TAQA Requirements. http://ftp.dot.state.tx.us/pub/txdot-info/env/toolkit/220-01-sop.pdf (accessed January 17, 2019).
[24] National Air Toxics Assessment (NATA) 2011. https://www.epa.gov/national-air-toxics-assessment (accessed January 17, 2019).

functional improvements and features. It incorporates substantial new data for emissions, fleet, and activities developed since the release of MOVES2010.

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

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

Since the release of MOVES2014, EPA has released MOVES2014a. In the November 2015 MOVES2014a Questions and Answers Guide (EPA, 2015), EPA states that for on-road emissions, MOVES2014a adds new options requested by users for the input of local VMT, includes minor updates to the default fuel tables, and corrects an error in MOVES2014 brake wear emissions. The change in brake wear emissions results in small decreases in PM emissions, while emissions for other criteria pollutants remain essentially the same as MOVES2014. Using EPA's MOVES2014a model, as shown in **Figure 2,** FHWA estimates that even if VMT increases by 45 percent from 2010 to 2050 as forecast, a combined reduction of 91 percent in the total annual emissions for the priority MSATs is projected for the same time period.

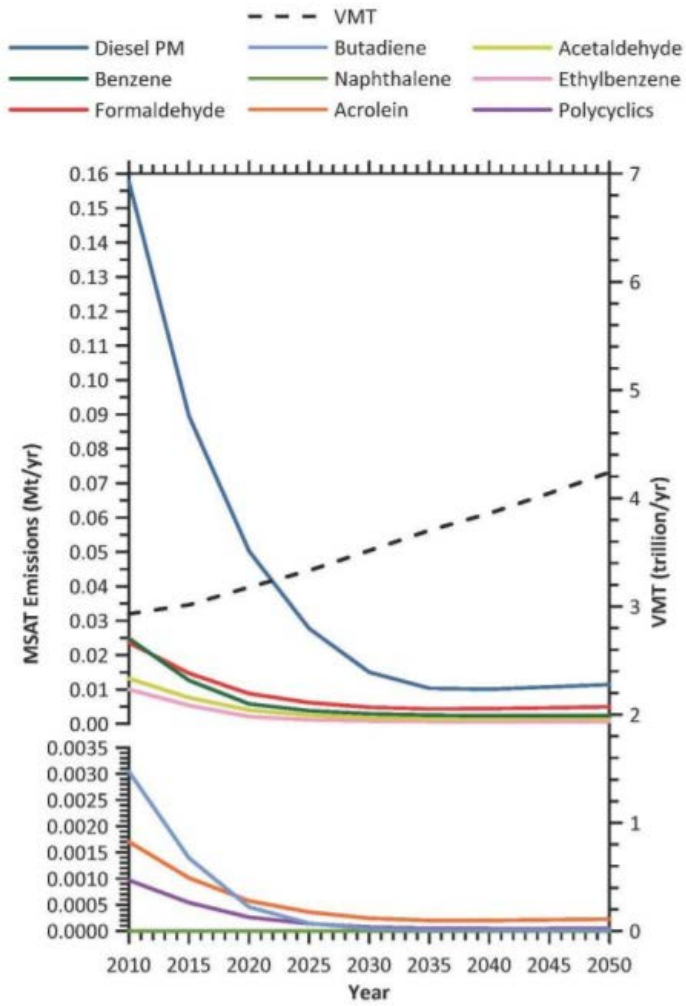


Figure 2: National Emissions Trends

Source: EPA MOVES2014a model runs conducted by FHWA, September 2016.
Note: Trends for specific locations may be different, depending on locally derived information representing vehicle-miles travelled, vehicle speeds, vehicle mix, fuels, emission control programs, meteorological, and other factors.

Diesel PM is the dominant component of MSAT emissions, making up 50 to 70 percent of all priority MSAT pollutants by mass, depending on calendar year. Users of MOVES2014a will notice some differences in emissions compared with MOVES2010b. MOVES2014a is based on updated data on some emissions and pollutant processes compared to MOVES2010b, and also reflects the latest Federal emissions standards in place at the time of its release. In addition, MOVES2014a emissions forecasts are based on lower VMT projections than MOVES2010b, consistent with recent trends suggesting reduced nationwide VMT growth compared to historical trends.

MSAT Research

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

Project Specific MSAT Information

For each alternative in this document, the amount of MSAT emitted would be proportional to the vehicle miles traveled, or VMT, assuming that other variables such as fleet mix are the same for each alternative. The VMT estimated for 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 MOVES2014 model, emissions of all of the priority MSAT decrease as speed increases. Also, regardless of the alternative chosen, emissions will likely be lower than present levels in the design year as a result of EPA's national control programs that are projected to reduce annual MSAT emissions by over 90 percent between 2010 and 2050 (Updated Interim Guidance on Mobile Source Air Toxic Analysis in NEPA Documents, Federal Highway Administration, October 12, 2016[25]). 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 alternative will have the effect of moving some traffic closer to nearby homes, schools, and businesses; therefore, under the Build Alternative there may be localized areas where ambient concentrations of MSAT could be higher than the No Build Alternative. The localized increases in MSAT concentrations would likely be most pronounced along the expanded roadway sections that would be built along IH 35 between Loop 288 and Barthold Road. However, the magnitude and the duration of these potential increases compared to the No Build Alternative cannot be reliably quantified due to

[25] FHWA. October 2016. Updated Interim Guidance on MSAT Analysis in NEPA Documents; https://www.fhwa.dot.gov/environment/air_quality/air_toxics/policy_and_guidance/msat/index.cfm (accessed January 17, 2019).

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 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 MSATs. The EPA is in the continual process of assessing human health effects, exposures, and risks posed by air pollutants. They maintain IRIS, which is "a compilation of electronic reports on specific substances found in the environment and their potential to cause human health effects" (EPA, 2017). 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 MSATs, including the Health Effects Institute (HEI). A number of HEI studies are summarized in Appendix D of FHWA's Updated Interim Guidance on Mobile Source Air Toxic Analysis in NEPA Documents (FHWA, 2016). 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 or in the future as vehicle emissions substantially decrease (HEI, 2007).

The methodologies for forecasting health impacts include emissions modeling, dispersion modeling, exposure modeling, and then final determination of health impacts; in this approach, each step in the process builds 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 alternative

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 MSATs because of factors such as low-dose extrapolation and translation of occupational exposure data to the general population, a concern expressed by HEI (HEI, 2007). As a result, there is no national consensus on air dose-response values assumed to protect the public health and welfare for MSAT compounds, and in particular for diesel PM. The EPA states that with respect to diesel engine exhaust, "[t]he absence of adequate data to develop a sufficiently confident dose-response relationship from the epidemiologic studies has prevented the estimation of inhalation carcinogenic risk" (EPA, 2017).

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 (US Court, 2008).

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, an

fatalities plus improving access for emergency response, that are better suited for quantitative analysis.

Analysis Methodology

MSAT analysis methodology, including determining and approving the analysis year, the affected transportation corridor (ATC), and the source(s) for traffic data used in the analysis, including emission factors, speeds, and traffic volumes, was coordinated on October 2, 2018 by a conference call among representatives of the NCTCOG, TxDOT Environmental Affairs Division (ENV), TxDOT Dallas District, and HDR. For the purpose of the MSAT analysis, the proposed project's base and design years were determined to be 2020 and 2040, respectively. An interim analysis year was determined to be unnecessary.

The MSAT analysis therefore comprises estimating the emissions from three scenarios and their respective ATC: Base Year 2020, Design Year (2040) No Build Alternative, and Design Year (2040) Build Alternative. The ATC is the set of roadway links from which emissions are estimated. This study uses two ATCs: 1) the ATC for the Base Year Existing and 2040 No Build scenarios, consisting of the current configuration of IH 35; and, 2) the ATC for the 2040 Build scenario, consisting of the mainlanes and frontage roads as delineated in the Build Alternative schematic. The base year Existing and Design Year No Build ATC is comprised of the existing IH 35 roadway within the project limits. The Design Year Build ATC is comprised of the proposed mainlanes and frontage roads. The TxDOT-TPP approved traffic was entered into the NCTCOG links within the project corridor for the two ATCs. Non-project related links were not analyzed.

Emission Calculations

MSAT emission factors for each of the nine priority MSATs were generated by the EPA's MOVES2014 emission model. Emission factors were taken from the TxDOT ERLT (http://ftp.dot.state.tx.us/pub/txdot-info/env/toolkit/230-01-fig.xlsx). All emission factors were composite emission factors calculated for the local vehicle fleet mix operating during the morning peak hour under local winter meteorological conditions.

VMT was calculated for each link in an ATC and then the links were assigned specific emission factors for each of the nine priority MSAT based on the link's MOVES2014a facility type, average speed, and analysis year. Priority MSAT emissions produced by each link were calculated as the product of the link specific VMT and the corresponding nine emission factors. Total ATC emissions for each of the nine priority MSATs were summed by the corresponding emissions from each of the ATCs links calculated to provide tons per year of MSAT emissions.

Analysis Results

The resulting emission inventory compiled for the nine priority MSATs for the proposed project are summarized in **Table 6** and **Figure 3.** The analysis indicates that a decrease in MSAT

emissions can be expected for both the Build and No Build Alternatives in 2040 when compared with the existing year of 2020. Under the Build Alternative, emissions of total MSAT are predicted to decrease by 59 percent from 2020 to 2040. This decrease is prevalent throughout the highest priority MSATs and the analyzed alternatives. This decrease is also consistent with the aforementioned EPA study that projects a substantial reduction in on-highway emissions of benzene, formaldehyde, 1,3-butadiene, and acetaldehyde between 2010 and 2050. As shown in Figure 4, if emissions are plotted over time, a decreasing level of MSAT emissions can be seen from the base year (2020), although overall VMT continues to rise.

Table 6. MSAT Emissions (tons/year)

Toxin	2020 Baseline	2040 No Build	2040 Build	Increase from 2020 Baseline	Increase from 2040 No Build
Benzene	0.472	0.188	0.218	-0.255	0.030
Naphthalene	0.088	0.050	0.057	-0.031	0.008
Butadiene	0.049	0.002	0.002	-0.047	0.000
Formaldehyde	0.863	0.627	0.727	-0.136	0.099
Acrolein	0.054	0.029	0.034	-0.020	0.005
DPM	4.626	1.136	1.316	-3.310	0.180
POM	0.033	0.010	0.011	-0.022	0.002
Acetaldehyde	0.372	0.208	0.241	-0.132	0.033
Ethylbenzene	0.288	0.171	0.198	-0.090	0.027
Total MSAT	6.846	2.421	2.804	-4.042	0.383
IH 35 Annual VMT	383,907,961	588,632,409	681,831,404	297,923,443	93,198,995

Source: Project Team, 2018.

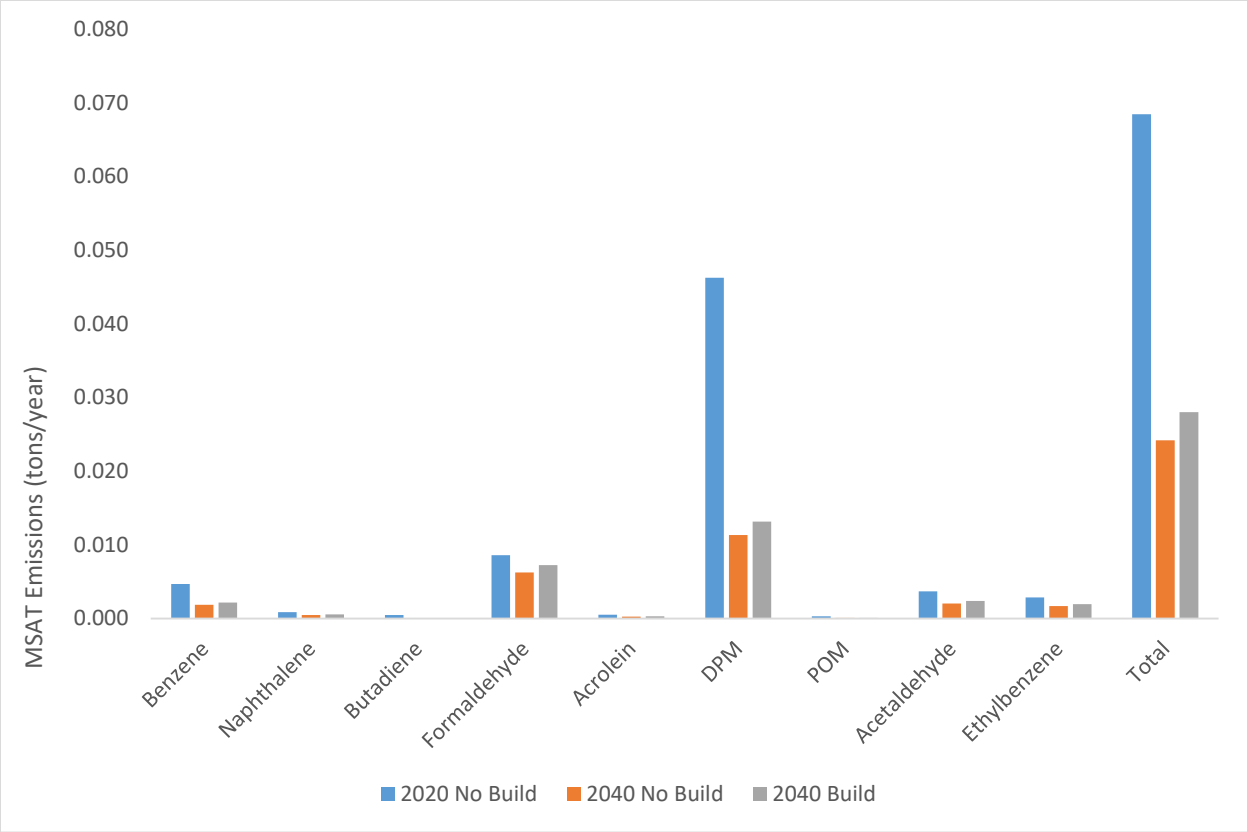


Figure 3. Projected Changes in MSAT Emissions over Time

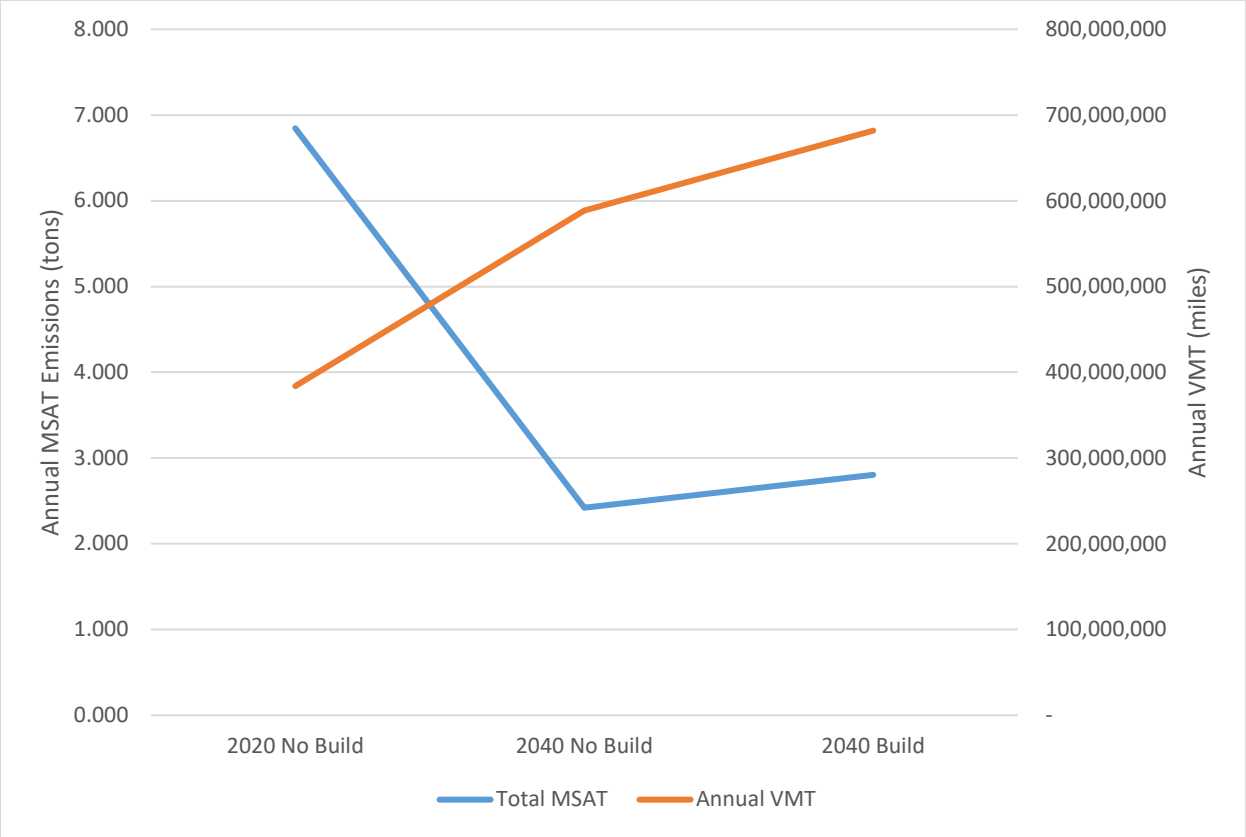


Figure 4. Comparison of MSAT Emissions vs. VMT

MSAT Conclusions

In summary, a quantitative assessment has been conducted, relative to the proposed project's No Build and Build Alternatives, for MSAT emissions. The qualitative assessment has acknowledged that the Build Alternative 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. Regardless of whether the No Build Alternative or the Build Alternative is selected for the proposed project, the quantitative assessment indicates that total MSAT emissions are expected to be lower in 2040 No Build and Build Alternatives versus 2020 base year.

5.12.3. Congestion Management Process (CMP)

The CMP is a systematic process for managing congestion that provides information on transportation system performance and on alternative strategies for alleviating congestion and enhancing the mobility of persons and goods to levels that meet state and local needs. The project was developed from the NCTCOG's CMP, which meets all requirements of 23 CFR 450.320 and 500.109, as applicable. The CMP was adopted by NCTCOG on July 2013.

The region commits to operational improvements and travel demand reduction strategies at two levels of implementation: program level and project level. Program level commitments are

inventoried in the regional CMP, which was adopted by NCTCOG; they are included in the financially constrained MTP, and future resources are reserved for their implementation.

The CMP element of the plan carries an inventory of all project commitments (including those resulting from major investment studies) that details type of strategy, implementing responsibilities, schedules, and expected costs. At the project's programming stage, travel demand reduction strategies and commitments will be added to the regional TIP or included in the construction plans. The regional TIP provides for programming of these projects at the appropriate time with respect to the single occupancy vehicle (SOV) facility implementation and project-specific elements.

Committed congestion reduction strategies and operational improvements of the proposed project within the study boundary will consist of the addition of travel lanes, frontage road reconstruction, and intersection and traffic signal improvements to address alternative roadway infrastructure deficiencies. Modal options deficiencies would be addressed by the inclusion of bicycle and pedestrian facility improvements via the addition of a 14-foot shared use lane on the frontage road and 5-foot sidewalks for the entire length of the project. Other individual projects in the area are listed in **Table 7.**

Table 7. Congestion Management Process Strategies

Project Location	Project Type	Implementation Year/Cost
IH 35 from IH 35E to US77	ITS	2014 / $270,000
IH 35 from US 77 to Cooke County line	ITS	2014 / $780,000
LOOP 288 FROM US 380 TO IH 35E	Addition of Lanes	2006 / $6,700,000
FM 455 from west of FM 2450 to east of Marion Road	Addition of Lanes	2021 / $63,917,890
SL 288 from IH 35 at SL 288 to US 380 west of Denton	New Roadway, Interchange	2018 / $2,532,590
US 77 from IH 35 north of Denton to US 380	Addition of Lanes	2002 / $12,674,127
Fiber Optic Trunk Lines	ITS	2015 / $1,964,500
US 380 from IH 35 to west of FM 156	Addition of Lanes	2012 / $66,500,000

Source: NCTCOG: TIPINS Interactive Map (online) and Query, http://www.nctcog.org/trans/tip/tipins/ (accessed January 2019).

In an effort to reduce congestion and the need for SOV lanes in the region, TxDOT and NCTCOG will continue to promote appropriate congestion reduction strategies through the Congestion Mitigation and Air Quality Improvement (CMAQ) program, the CMP and the MTP. The congestion reduction strategies considered for this project would help alleviate congestion in the SOV study boundary, but would not eliminate it. Therefore, the proposed project is justified. The CMP analysis for added SOV capacity projects in the TMA is on file and available for review at NCTCOG.

In July 2013, the RTC also adopted a policy that requires the review and application of congestion mitigation strategies to correct corridor deficiencies identified in the CMP when performing corridor and environmental studies and report findings back to NCTCOG. Therefore, NCTCOG has developed a project level CMP analysis. The analysis requires completion of the Project Implementation Form, and, if warranted, the Roadway Corridor Deficiency Form and Corridor Analysis Fact Sheet. The results of this analysis are included in the Air Quality Technical Report with CMP Implementation Forms (TxDOT 2019).

5.12.4. Construction Air Emissions

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

The potential impacts of particulate matter emissions will be minimized by using fugitive dust control measures contained in standard specifications, as appropriate. The Texas Emissions Reduction Plan (TERP)[26] 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.

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

No Build Alternative: The No Build Alternative would lead to increased traffic congestion and decreased mobility along IH 35, resulting in decreased vehicular speed and increased stop-and-go traffic. However, EPA's fuel and vehicle standards are projected to reduce emissions of air pollutants and MSAT and to contribute to continued maintenance and improvement of air quality regardless of the alternative chosen.

[26] Information about the TERP program can be found at: http://www.tceq.texas.gov/airquality/terp/.

5.13. Hazardous Materials

An Initial Site Assessment (ISA) with a Hazardous Materials Impact Evaluation (HMIE) (TxDOT 2018h) report was produced for the proposed project and documented hazardous materials sites within the project corridor. The ISA, including a visual survey of the existing and proposed ROW and surrounding area, and research into existing and previous land uses, was performed by HDR environmental scientists to identify possible hazardous materials issues within the project limits. The ISA and HMIE are maintained in the Dallas District project files.

Based on the site survey, the existing land use within the project corridor and surrounding area include transportation ROW and a mosaic of commercial warehousing and other commercial business, agricultural land, residential development, and industrial business. A review of historic aerial photographs and topographic maps of the project area indicated that IH 35 was constructed prior to 1964. With the exception of the small town of Sanger, the project area was primarily agricultural and undeveloped land through 1964 in the 1970s and early 1980s. There was limited residential and commercial development in Denton near the southern project terminus during this time. Aerial photographs from the mid-1990s to the 2010s showed additional development in Denton and along the IH 35 corridor. Aerial photographs from 1942, 1952, 1964, 1972, 1981, 1984, 1996, 2004, and 2014 were reviewed. The Valley View, Sanger, and Denton West U.S. Geological Survey topographic maps from 1960 and 1961 were reviewed.

A site reconnaissance of the project area was conducted January 30 and February 1, 2018 and focused on identifying hazardous materials issues within the project corridor, particularly the existing and proposed ROW and adjacent properties, as viewed from existing ROW. Several gas stations or potential former gas stations, an auto salvage yard, and automotive service facilities were identified during the site survey. Many typical municipal utilities, such as water, sewer, electrical, and/or telecommunications cables were noted within or adjacent to the project corridor. Pole-mounted transformers were located within the project corridor, but no large power substations or step-down transformers were present. No existing or historical indications of hazardous agricultural land uses were noted.

Review of Federal, State, and Supplemental Databases

A regulatory database search was performed by Environmental Data Resources, Inc. (EDR) on January 23, 2018 (EDR, 2018). The regulatory database search listed federal, state, and local American Society for Testing and Materials (ASTM) standard databases, as well as, supplemental and EDR proprietary databases. The HMIE, included in the ISA package in the Dallas District files, contains a summary of listings which were identified as “unresolved” hazardous materials concerns in the ISA. Each of these concerns was evaluated in the HMIE and their potential to impact the project was determined. The categories of potential impacts were:

- Low Potential or No Potential Project Impacts: The issue has a low potential to affect the proposed project and no further investigations are required.
- Moderate or Possible Project Impacts: Not enough information is currently known about the project and/or issue to determine potential impacts. Further investigation, and/or additional project design and ROW information is required.
- High or Anticipated Project Impacts: The issue has a high potential to impact the proposed project and further investigations, coordination, or contingencies may be required.

Thirteen regulatory sites were determined to be either possible (moderate) or anticipated (high) project impacts. **Table 8** presents a summary of sites determined to be moderate or high environmental risk. **Appendix E, Figure 3** shows the locations of these sites.

Further investigation was performed on the moderate and high risk sites in August 2018. TCEQ files for the sites were requested and reviewed by LCA Environmental. A File Review report, dated August 27, 2018, was submitted to TxDOT and provided additional information on the **Table 8** sites, with the exception of Chicken Express/Conoco which will be dealt with during the ROW acquisition process, and determined Phase II environmental investigations were warranted at all the sites. Information from the file review report is included in **Table 8** where appropriate.

Table 8. Summary of Moderate or High Risk Hazardous Materials Sites

Map ID	Site Information	Location in Reference to Project	Regulatory Database Listing(s)	Environmental Concern Summary	Potential to Impact Project
12	Snappy Check 1307 Interstate 35B (current address of location is 727 S Stemmons St.) Sanger, TX (currently RV sales)	Adjacent W, Displacement	LPST PST	The facility was listed as formerly utilizing one 8,000-gallon gasoline, one 6,000-gallon gasoline, and one 6,000-gallon diesel underground PSTs. The tanks were installed in 1973 and removed from the ground in 2009. A release was reported in 2009. Groundwater was impacted with no apparent threats or impacts to receptors. Final concurrence was issued in 2011. Proposed work activity for this area is grade separation. ROW acquisition is proposed from this site which will displace the on-site building. Based on the regulatory information and ROW acquisition, this facility is considered a moderate environmental risk.	Moderate
15	Sanger Texaco 1103 N Stemmons St. Sanger, TX (currently vacant lot)	Adjacent W, Proposed ROW Acquisition	Hist Auto	Based on historic aerials, TCEQ information and DCAD information, the facility's former location was identified as possibly being west of IH 35 across the highway from N 5th St. (Loop 138), approximately 1,100 ft north of FM 455, in Sanger. Historic aerials show a building at this location from at least 1964 to 1995. The site is currently a vacant lot and is shown on historic aerials to be a vacant lot since at least 2001. PST and/or LPST listings were not identified for this facility on the regulatory database report or the TCEQ Central Registry online. The August 2018 file review report identified this facility to also be the Sanger Texaco (Map ID 16) and the Former Sanger Texaco (Map ID 21).Based on the information for this former facility and proposed ROW acquisition, this site is considered a high environmental risk.	High
16	Gateway 18 (Hopkins Paul Fina) 800 N Stemmons St. Sanger, TX (current facility is Shell)	Adjacent E, Displacement	LPST PST (Hist Auto)	The facility is an active gas station utilizing two 8,000-gallon gasoline, one 6,000-gallon gasoline, and one 6,000-gallon diesel underground PSTs installed in 1984. A release was reported in 1998. Groundwater was impacted and monitoring performed through at least 2001. Final concurrence was issued in 2001. Proposed work activity for this area is grade separation. ROW acquisition is proposed from this site which will displace the entire facility. Based on the prior release and full facility displacement, the site is considered a high environmental risk.	High

Map ID	Site Information	Location in Reference to Project	Regulatory Database Listing(s)	Environmental Concern Summary	Potential to Impact Project
16	Snap Shop 1 902 N Stemmons St. Sanger, TX (currently Quick Track/Wayne's Quality Tires)	Adjacent E, Partial Displacement	LPST PST	The facility is an active gas station utilizing two 8,000-gallon gasoline and one 4,000-gallon gasoline underground PSTs installed in 1978. A release was reported in 1998. Groundwater was impacted and monitoring performed through at least 2003. Final concurrence was issued in 2003. Proposed work activity for this area is grade separation. ROW acquisition is proposed from this site which will displace the pump islands and canopy as well as the tank hold. Based on the prior release, age of the tanks still in use, and displacement, this facility is considered a high environmental risk.	High
16	Sanger Texaco IH 35 and FM 455 (currently vacant lot)	Adjacent W, Proposed ROW Acquisition	PST	The ISA and HMIE had originally determined the potential location of this site to be the same as the Horizon Chevron. The August 2018 file review report identified this facility to instead be the Sanger Texaco (Map ID 15) and the Former Sanger Texaco (Map ID 21). The Sanger Texaco is listed as formerly utilizing two 4,000-gallon gasoline, one 3,000-gallon diesel, one 560-gallon used oil underground PSTs installed in 1971 and one 55-gallon other petroleum substance underground PST installed in 1987. All tanks were removed in 1999. This PST listing has no associated releases reported. Based on this PST listing and associated Map ID 21 LPST listing, this PST listing is considered a moderate environmental risk.	Moderate
16	Horizon/Sanger Gulf 901 N Stemmons St. Sanger, TX (current facility is Chevron)	Adjacent W, Partial Displacement	LPST (2) PST	Horizon/Sanger Gulf is an active gas station utilizing three 10,000-gallon gasoline and one 4,000-gallon diesel underground PSTs installed in 1987. A release was reported in 1991. Groundwater was impacted and monitoring performed through at least 1996. Final concurrence was issued in 1996. A second release was reported in 2005. Groundwater was impacted with no apparent threats or impacts to receptors. Final concurrence was issued in 2007. The TCEQ Central Registry online shows an Enforcement Order against the facility in 2013 for failure to monitor the tanks for releases. The facility also has several Commissioner's Actions against it from 2002 to 2013 for various violations including failure to monitor the tanks and systems for releases. Proposed work activity for this area is grade separation. ROW acquisition is proposed from this site which would displace the pump	High

Map ID	Site Information	Location in Reference to Project	Regulatory Database Listing(s)	Environmental Concern Summary	Potential to Impact Project
				islands and canopy, as well as the tank hold. Based on the prior releases, age of the tanks still in use, and displacement, this facility is considered a high environmental risk.	
18	Chicken Express and Conoco 1406 W Chapman Dr. Sanger, TX (current facility)	Adjacent S, Partial Displacement	PST	The facility is an active gas station utilizing one 24,000-gallon split gasoline/diesel underground PST installed in 2002. No releases have been reported for the facility. ROW acquisition is proposed from this site which would displace the tank hold. Based on the displacement of the tank, this facility is considered a moderate environmental risk.	Moderate
21	Former Sanger Texaco 105 IH 35 Sanger, TX (currently vacant lot)	Adjacent W, Proposed ROW Acquisition	LPST	The ISA and HMIE had originally determined the potential location of this site to be the same as the Horizon Chevron. The Aug 2018 file review report identified this facility to instead be the Sanger Texaco (Map ID 15) and the Sanger Texaco (Map ID 16). The Former Sanger Texaco does not have associated PST listings. The Former Sanger Texaco reported a release in 1998. Groundwater was impacted and monitoring performed through 2004. The facility received final concurrence in 2004. Based on this LPST listing and associated Map ID 16 PST listing, this LPST listing is considered a moderate environmental risk.	Moderate
29	Loves Budget Fuel/Country Store 8900 Interstate 35 Denton, TX (current facility)	Adjacent E, Displacement	LPST (3) GCC PST SPILLS ENF Hist Auto	The facility is an active gas station utilizing two 12,000-gallon gasoline, one 20,000-gallon gasoline, and two 20,000-gallon diesel underground PSTs which were installed in 1986. The facility has three reported releases. The first was reported in 1993. Groundwater was impacted and monitoring performed. Free product was also reported and several recovery events performed. Final concurrence was issued in 1996. A second release was reported in 1998. Groundwater was impacted and monitoring performed. Free product was also reported and several recovery events performed. Final concurrence was issued in 2005. The third release was reported in June 2016 with final concurrence issued in Oct 2016. Groundwater was impacted however, additional information was not provided.	High

Map ID	Site Information	Location in Reference to Project	Regulatory Database Listing(s)	Environmental Concern Summary	Potential to Impact Project
				The facility has reported several spill incidents reported. All spill incidents occurred on the property and involved minor amounts of fuel, between 30-35 gallons. The facility also had two violations for failure to notify TCEQ within 24 hours of a discharge (spill). ROW acquisition is proposed from this site which will displace the entire facility. Based on the prior releases and the full displacement of the facility, this site is considered a high environmental risk.	
34	Howdy Doody Truck Stop/ C Store 6417 N IH 35 Denton, TX (currently being redeveloped)	Adjacent S, Proposed ROW Acquisition	LPST (2) PST	Based on DCAD information and historic aerials, the facility's former location was identified as being at the southwest corner area of Barthold Rd. and IH 35. The facility was formerly situated approx. 730 ft south of Barthold Rd. and adjacent west of IH 35. The property is shown on historic aerials as developed since at least 1981. Two facility buildings are noted at this location. One, adjacent to IH 35 frontage road and showing gas station pump canopies, is presumed to be associated with the former Howdy Doody Truck Stop; and the second building, situated slightly further west, is presumed to be associated with the former Denton Drive Train (also Map ID 34 on the regulatory database report). The property's buildings were razed in approximately 2016-2017. This site is under redevelopment for a Love's Travel Stop. The former Howdy Doody utilized one 12,000-gallon, two 8,000-gallon, and one 6,000-gallon underground PSTs which were removed from the ground in 2015. The contents of the tanks are not reported. The facility reported two releases. The first was reported in July 1994 and was associated with a tank closure (no tanks are reported as being removed in 1994). Groundwater was not impacted and final concurrence was issued in September 1994. The second release was reported in 1998. Groundwater was impacted and monitoring performed through at least 1999. Final concurrence was issued in 2000. Proposed ROW extends approximately 200 ft into this property from the existing ROW. Based on the regulatory information, ROW acquisition, and site redevelopment, this site is considered a moderate environmental risk.	Moderate
34, Orphan	Travel Centers of America/ Denton Interstate Co 6420 N IH 35	Adjacent E, Proposed ROW Acquisition	LPST (2) Hist Auto Tier 2 (3) SPILLS (2)	The site is an active gas station and semi-truck service/repair facility. The regulatory database report does not list the site as a PST facility however, the site is an active PST facility. The TCEQ Central Registry	High

Map ID	Site Information	Location in Reference to Project	Regulatory Database Listing(s)	Environmental Concern Summary	Potential to Impact Project
	Denton, TX (current facility)		ENF	online identifies the facility as formerly utilizing one 1,000-gallon used oil underground PST removed in 1996. The facility currently utilizes one 1,000-gallon used oil (installed 1996), two 20,000-gallon gasoline (installed 1972), and three 20,000-gallon diesel (installed 1972) underground PSTs. Two releases are reported for the facility. The first was reported in 1989. Groundwater was impacted and monitoring performed through at least 1999. Final concurrence was issued in 2000. The second release was reported in 2011 with impacts to groundwater. Final concurrence was issued in 2013. A minor amount of ROW acquisition is proposed from this site along US 77. The proposed ROW is within 20 ft of the tank hold. The facility is also reported as a Tier 2 facility for storing large quantities of diesel and gasoline fuel on-site. Spills have occurred within the property in amounts less than 100 gallons. Several violations have been issued for the facility, including violations for failing to provide corrosion protection for the tanks. Based on the prior releases, the age of the tanks in use, ROW acquisition and the distance of the tank hold from the proposed ROW, this facility is considered a high environmental risk.	
34	Sun Power Truck Stop/ Star Travel Plaza/ Dedicated Truck Rep. 6421 N IH 35 Denton, TX (currently Love's Travel Stop)	Adjacent W, Proposed ROW Acquisition	HMIRS (2) LPST (3) GCC PST SPILLS ENF Hist Auto	Based on DCAD information and historic aerials, the facility's former location was identified as being at the southwest corner area of Barthold Rd. and IH 35. The property is shown on historic aerials as developed since at least 1981. The property's buildings were razed between 2009 and 2017. This site is under redevelopment for a Love's Travel Stop. The facility formerly utilized three 10,000-gallon gasoline underground PSTs which were installed in 1980 and removed in 2006; four 10,000-gallon underground PSTs (contents not reported) which were installed in 1984 and removed in 2014; and one 30,000-gallon underground PST (contents not reported) which was installed in 2008 and removed in 2014. The former facility had several violations some of which included failure to monitor the USTs for releases and failure to inspect the cathodic protection system. Three releases were reported for the facility. The first was reported in 1990. Groundwater was impacted and monitoring performed through at	Moderate

Map ID	Site Information	Location in Reference to Project	Regulatory Database Listing(s)	Environmental Concern Summary	Potential to Impact Project
				least 2010. Free product was also reported and several recovery events performed. Final concurrence was issued in 2010. A second release was reported in 2005. Groundwater was reported as impacted. Final concurrence was issued in 2010. The third release was reported in 2007 with impacts to groundwater. Final concurrence was issued in 2010. The former facility also reported several spill incidents. The spills all occurred on the property and involved minor amounts of fuel. The Love's Travel Stop currently being developed on the property installed one 3,000-gallon other petroleum substance, one 8,000-gallon gasoline, one 12,000-gallon diesel, one 20,000-gallon gasoline, one 20,000-gallon diesel, and two 30,000-gallon diesel underground PSTs in July 2017 No releases were reported for the new facility. Since the facility construction was ongoing at the time of the ISA and HMIE, the new tank hold location was undetermined. However, the August 2018 file review report identified the new tank holds locations along Barthold Rd. The nearest being approximately 160 ft west of proposed ROW. Based on the former facility's releases, the new facility being an active gas station, and ROW acquisition, this property is considered a moderate environmental concern.	
39	Stemmons 12JWW/ 24 7 XPresway/ Shell Gas Station 4001 N Interstate 35 Denton, TX (current facility is Exxon and Brisket Burger)	Adjacent W	LPST PST Hist Auto	The listings for the Stemmons 12JWW and 24 7 XPresway, although both listed at 4001 N Interstate 35, appear to be two separate facilities based on DCAD information, TCEQ Central Registry information and historic aerial photos. The ISA and HMIE had determined the potential location of 12JWW to be the current Brisket Burger location (currently 4005 N Interstate 35) and the 24 7 XPresway to be the current Exxon location (currently 4001 N Interstate 35). The August 2018 file review report confirms these location determinations. The 12JWW PST listing (#17656) identifies the facility formerly utilized one 550-gallon used oil, one 4,000-gallon gasoline, and two 10,000-gallon gasoline underground PSTs installed in 1970 and 1973. The tanks were removed in 1988.	Moderate

Map ID	Site Information	Location in Reference to Project	Regulatory Database Listing(s)	Environmental Concern Summary	Potential to Impact Project
				The LPST (#91816) associated with 12JWW reports a release in 1988. Groundwater was impacted and monitoring performed through at least 1996. Final concurrence was issued in 1997. This location was redeveloped in approx. 2003/2004 with a Sonic fast food restaurant which is now Brisket Burger. This property is considered a low environmental risk. The 24 7 XPresway is the active Exxon gas station located at present day 4001 N Interstate 35. The facility's PST listing (#45370) indicates the facility currently utilizes three 10,000-gallon gasoline and one 10,000-gallon diesel underground PSTs installed in 1977. The tank hold is situated approximately 60 ft west of the project improvement area and existing ROW. LPST (#111665) associated with 24 7 XPresway reported a release in 1996. Groundwater was impacted and monitoring performed through at least 2001. Final concurrence was issued in 2001. No ROW acquisition is proposed from the site. Proposed work activity for this area includes slight grade change and culvert installation. Based on the age of the tanks in use, the location of the tank hold in relation to proposed work activity, and the prior release, this property is considered a moderate environmental risk.	

Build Alternative: The high and moderate risk sites are shown on **Figure 3** in **Appendix E.** As shown in **Table 8**, several sites were determined to have moderate or high potential to impact the project corridor based on the type of database listing, the information provided in the database report, and the distance and direction of the site from the corridor. Recommendations included in the HMIE included the following additional investigation and/or research.

1. Review of TCEQ data files, facility and property owner/operations records;
2. Interviews with current and past property owners/operators and adjoining property owners;
3. Review of final design, ROW acquisition and construction details to determine exactly where soil disturbance will occur.

The interviews with former and current property owners, facility operators, TCEQ regulators, and neighboring facilities are recommended to be conducted at the same time as more detailed records and property owner research is conducted to help formulate the need for site investigations. The goal would be to identify, more specifically, the possible hazardous materials concerns at each site and develop an understanding of the location of areas of past releases as well as the areas with planned construction involving soil removal and/or groundwater dewatering during construction.

Combined with the understanding of the depth and area of potential disturbance and history of site operations of concern, a plan for soil and groundwater testing could be developed as warranted. Using these results, the level of past and estimated potential contamination at each of the sites with unresolved potential hazardous materials concerns could be understood.

Should unanticipated hazardous materials/substances be encountered during construction, TxDOT and/or the contractor would be notified and steps would be taken to protect personnel and the environment. Any unanticipated hazardous materials encountered during construction would be handled according to applicable federal, state, and local regulations per TxDOT Standard Specifications. The contractor would take appropriate measures to prevent, minimize, and control the spill of hazardous materials in the construction staging area. All construction materials used for the proposed project would be removed as soon as the work schedules permit. The contractor would initiate early regulatory agency coordination during project development.

Potential impacts to hazardous materials sites would be limited to the construction phase of the project (when ground disturbing activities would occur) and confined to the existing and proposed ROW/easements. Thus, encroachment-alteration effects on hazardous materials would not occur.

No Build Alternative: Under the No Build Alternative, no construction or property acquisition associated with the project would occur and no project-related hazardous materials impacts would occur.

5.14. Traffic Noise

The proposed project would add through-traffic lanes and includes the addition or relocation of interchange lanes or ramps. Therefore, it is considered a Type I project and requires a traffic noise analysis. A traffic noise analysis was accomplished in accordance with TxDOT's *Guidelines for Analysis and Abatement of Roadway Traffic Noise*.[27]

Sound from highway traffic is generated primarily from a vehicle's tires, engine and exhaust. It is commonly measured in decibels and is expressed as "dB." Sound occurs over a wide range of frequencies. However, not all frequencies are detectable by the human ear; therefore, an adjustment is made to the high and low frequencies to approximate the way an average person hears traffic sounds. This adjustment is called A-weighting and is expressed as "dB(A)". Also, because traffic sound levels are never constant due to the changing number, type and speed of vehicles, a single value is used to represent the average or equivalent sound level and is expressed as "Leq".

The FHWA has established the Noise Abatement Criteria (NAC) listed in **Table 9** for various land use activity areas that are used as one of two means to determine when a traffic noise impact would occur.

Table 9. Noise Abatement Criteria

Activity Category	dB(A) Leq	Description of Activity Category
A	57 (exterior)	Lands on which serenity and quiet are of extraordinary 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

[27] Guidelines for Analysis and Abatement of Roadway Traffic Noise (2011); https://www.txdot.gov/inside-txdot/division/environmental/compliance-toolkits/traffic-noise.html (accessed January 17, 2019).

Activity Category	dB(A) Leq	Description of Activity Category
		or nonprofit institutional structures, radio studios, recording studios, schools, and television studios.
E	72 (exterior)	Hotels, motels, offices, restaurants/bars, and other developed lands, properties, or activities not included in A-D or F.
F	--	Agricultural, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources, water treatment, electrical), and warehousing.
G	--	Undeveloped lands that are not permitted.

A noise impact occurs when either the absolute or relative criterion is met.

Absolute criterion: The predicted noise level at a receiver approaches, equals, or exceeds the NAC. Approach is defined as 1 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 noise level is 54 dB(A) and the predicted noise level is 65 dB(A) (11dB(A) increase).

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.

Build Alternative: The proposed project would result in traffic noise impacts (detailed results and figures are located in the Noise Analysis Technical Report (TxDOT 2018i) on file with the TxDOT Dallas District, 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 traffic noise barriers.

Traffic noise barriers would be feasible and reasonable for 16 receivers representing a total of 25 residences. Based on preliminary calculations, a traffic noise barrier system (with openings for cross-streets) 1,094 feet in length and 16 feet in height would reduce noise levels by at least 5 dB(A) for 5 first-row impacted receptors (representing 8 first-row impacted residences) and 7 additional benefited receptors (representing 13 residences) at a total cost

of $315,072, or $15,003 for each benefited receiver. Five first-row impacted receptors (representing 8 residences) are predicted to meet the TxDOT noise reduction design goal of 7 dB(A) or more. **Appendix E, Figure 4** shows the locations of the noise receivers and proposed barriers.

Any subsequent project design changes may require a reevaluation of this preliminary traffic noise barrier proposal. The final decision to construct the proposed traffic noise barrier will not be made until completion of the project design, utility evaluation, and polling of adjacent property owners.

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.

No Build Alternative: Traffic noise levels would be expected to increase with an associated increase in traffic volumes on adjacent roadways under the No Build Alternative.

5.15. Induced Growth

Indirect impacts, as define by the CEQ, are effects that are caused by the action and are later in time and farther removed in distance, but are still reasonably foreseeable. Indirect impacts may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems (40 CFR § 1508.8).

The evaluation of indirect impacts followed TxDOT's *Guidance for Indirect Impacts Analysis* [28] and the National Cooperative Highway Research Program Report 466, *Desk Reference for Estimating the Indirect Effects of Proposed Transportation Projects*.[29] The Area of Influence (AOI) for the IH 35 project encompasses approximately 257,362 acres, with the following boundaries: on the west, the county line; on the north, FM 922/E. Obuch Street; on the east, the boundary roughly follows the west coastline of Lake Ray Roberts from FM 922 south to FM 455/Chapman Rd. and then follows FM 2153 to FM 428, finally connecting with US 77 in Denton and ending at West Oak Street; and on the south, the boundary is West Oak Street. The east and west boundaries represent approximately halfway to the next major north-south roadway, which on the east is US 377, and on the west, US 81. It is estimated that travelers living beyond these halfway boundaries would likely use US 377 or US 81 over IH 35 for north-south access. The eastern boundary is formed partially by Lake Ray Roberts which is a barrier to both travel and development. The north and south boundaries represent approximately half the distance to the next major intersection from the project limits. The AOI is shown in the

[28] Guidance: Indirect Impacts Analysis (2016); http://www.txdot.gov/inside-txdot/division/environmental/compliance-toolkits/impacts.html (accessed November 17, 2018).
[29] NCHRP Report 466 (2002); https://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_rpt_466.pdf (accessed November 17, 2018).

Indirect Impacts Analysis Technical Memorandum (TxDOT 2018j) on file with the TxDOT Dallas District.

Build Alternative: The analysis included discussions/interviews with local planners to determine the likelihood and location of potential induced growth by the proposed project. Approximately 125,190 acres of undeveloped land within the AOI could be subject to development in the foreseeable future. Based on the amount of developable land available in the AOI, the pace of development being documented in Denton and Cooke Counties, and the responses of local planning experts, the proposed project is not anticipated to generate substantial induced development. Factors such as the large amount of undevelopable land and local regulations that limit impervious land cover would constrain the amount of induced growth possible within the AOI. Local planning experts maintain that development will continue in the area regardless of whether the proposed project is constructed. Development projects that do occur within the planning horizons of the municipalities contacted would have to comply with the relevant land development code for projects within the city limits and ETJ (extraterritorial jurisdiction) boundaries, where applicable. Areas outside municipal limits would be subject to state and federal laws.

Although the proposed improvements to IH 35 in Denton and Cooke counties could potentially accelerate growth in planned developments and induce growth on other parcels, the more likely and significant factor in development within the AOI would be population growth in the region. The proposed improvements would improve mobility for existing residents and add capacity to accommodate the development along the corridor that is already planned or under construction. Induced growth impacts to vegetation, wildlife habitat, and water resources could be experienced; however, these impacts could be minimized/mitigated using appropriate BMPs. Any induced growth impacts to these resources would likely be minimal; therefore, considered unsubstantial. Additionally, the proposed improvements to IH 35 would not directly or indirectly impact resources in poor or declining health; therefore, a cumulative effects analysis is not required. Risk assessments for both induced and cumulative effects are included in Appendix A of the Indirect Impacts Analysis Technical Report (TxDOT 2018j).

No Build Alternative: The No Build Alternative would not result in indirect impacts or induced growth.

5.16. 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 or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

The proposed project would not have substantial direct or indirect impacts on any resource. The proposed project area has no resources in poor or declining health. According to the TxDOT Cumulative Impacts Decision Tree and the Cumulative Impacts Risk Assessment, if the proposed project meets these two criteria then a cumulative impact analysis is not required. The Risk Assessments are included in Appendix B of the Indirect Impacts Analysis Tech Report (TxDOT 2018j).

5.17. Construction Phase Impacts

Build Alternative

Traffic Closures and Detours

The proposed project construction would require traffic control. A traffic control plan would be implemented in coordination with the City/ies and County/ies to assure uninterrupted traffic flow during construction. Signs would be strategically placed as a method of controlling traffic during construction activities. Ingress and egress to any affected private, governmental, commercial, or retail establishments would not be impacted and therefore would be maintained throughout the construction period. Construction that would require cross street closures would be scheduled so only one crossing in an area is affected at one time. Where detours are required, clear and visible signage for an alternative route would be displayed. Every effort would be made to preserve as much vegetation as possible within the ROW. In residential areas, major activity would be limited to normal work hours whenever practicable to avoid noise and related impact to residents.

Noise

During the construction phase of the proposed project, due to operations normally associated with road construction, there is a possibility that noise levels would be greater than normal in the areas adjacent to the ROW. Construction is normally limited to daylight hours when occasional loud noises are better tolerated. Due to the relatively short-term exposure periods imposed on any one receiver, extended disruption of normal activities is not considered likely. Reasonable efforts would be made to minimize construction noise.

Dust Pollution

During the construction phase of the proposed project, temporary increases in air pollutant emissions may occur from construction activities. The primary construction-related emissions are particulate matter (fugitive dust) from site preparation. These emissions are temporary in nature (only occurring during tactual construction); it is not possible to reasonably estimate impacts from these emissions due to limitations of the existing models. However, the potential impacts of particulate matter emissions would be minimized by using fugitive dust control measures such as covering or treating disturbed areas with dust suppression techniques, sprinkling, covering loaded trucks, and other dust abatement controls, as appropriate.

Air Pollution

The construction phase of the proposed project may generate a temporary increase in MSAT emissions from equipment and related vehicles. The primary MSAT construction related emissions are particulate matter from site preparation and diesel particulate matter from diesel powered construction equipment and vehicles. The 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. However, considering the temporary and transient nature of construction related emissions, as well as the mitigation actions to be used, it is not anticipated that emissions from construction of the project would have a significant impact on air quality in the area.

Construction Activity Impacts and Traffic Disruptions

Construction normally occurs during daylight hours; however, construction could occur during the night to minimize impacts to the traveling public during daylight hours. Construction during the night would follow any local policies and ordinances established for construction activities, such as light limitations.

Reasonable measures would be taken to minimize the inconvenience to the vehicles using the roadway during the construction phase. Residential and business properties would be accessible during and after construction. The proposed project would improve the safety, efficiency, and operations of the roadway.

No Build Alternative: The No Build Alternative would not include construction activities and therefore would not have any project-related construction impacts.

6.0 Agency Coordination

A Tier I Site Assessment was completed in accordance with TxDOT's 2013 MOU with TPWD to determine if coordination with TPWD would be required for the proposed project. Triggers for TPWD coordination are discussed in Section 5.11.1. Coordination with TPWD was initiated on December 13, 2018 and is ongoing.

Coordination with TCEQ is required for compliance with the TCEQ TPDES General Permit No. TxR150000. A NOI would be filed with TCEQ stating that TxDOT would have a SW3P in place during construction of this project.

Coordination is also required with the SHPO for a *de minimis* finding for a historic property, and with the City of Sanger for a *de minimis* finding for a proposed park.

Coordination with all agencies to date is attached in **Appendix F** and will be updated as received.

7.0 Public Involvement

Public Meeting

TxDOT conducted a public meeting for the proposed IH 35 project on Thursday, June 22, 2017 at Sanger High School, 100 Indian Lane in Sanger, Texas. The Notice of Public Meeting was published on May 24, 2017 in the *Denton Record-Chronicle* and the *Dallas Morning News,* on May 25, 2017 in the *Sanger News,* on May 26, 2017 in the *Krum News,* on May 28, 2017 in the *Star Telegram,* and during the week of May 28, 2017 in the Spanish-language newspaper *Al Dia*. Information about the meeting was also available online at www.keepitmovingdallas.com under Upcoming Public Hearing/Meeting and at several government facilities in the area. Additionally, a mailing list was compiled from which three elected officials at the federal level, seven from the state level, 54 from the city/county level, three from the MPO/COG area, and 373 adjacent property owners were contacted in regards to the proposed project.

The meeting was held in an informal open house format from 6:00 p.m. to 8:00 p.m. to allow for questions and review of project exhibits. Proposed project location maps and schematic designs were available for viewing at the meeting. TxDOT and consultant personnel were available to answer questions during the open house. The total registered attendance at the public meeting was approximately 151 persons. The majority of the attendees were members of the public. Three elected officials were in attendance – two from the City of Sanger and one from Cooke County. A total of 13 staff members from TxDOT and seven consultants also attended. The purpose of the meeting was to share project information with the public and to seek input from area residents. There were 16 commenters and 28 total comments. Of these comments, one was submitted via email and the remaining 27 were received in letter format during the 15 day comment period that ended on July 7, 2017. Most concerns raised were in reference to modifying the Milam Road/Outer Loop interchange, providing improved access south of the BNSF railroad crossing, and addressing potential noise impact concerns. A Documentation of Public Meeting Report (TxDOT 2018k) for the proposed project containing all public comments and TxDOT responses has been completed and filed with TxDOT. The public meeting documentation may be inspected and copied upon request at the TxDOT Dallas District Office.

Meetings with Affected Property Owners (MAPOs)

A meeting with representatives from the cities of Denton and Sanger and Denton County was held on Thursday, July 21, 2016, to discuss the preliminary design, avoiding the water tower at IH 35 and Loop 288 and the travel center near US 77, as well as the cemetery, two sports complexes, and residential areas through Sanger.

Meetings were held on April 12, 2017 and April 28, 2017 with representatives from the City of Denton and Denton County regarding coordination of the Loop 288 project with the IH 35 project and water tower ROW coordination.

Meetings were held with the City of Sanger on June 9, 2017 and August 29, 2018, to discuss project coordination.

Public Hearing

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

8.0 Post-Environmental Clearance Activities and Contractor Communications

8.1. Post-Environmental Clearance Activities

Water Resources

It is anticipated that the proposed project would result in fill within waters of the U.S., and would require Section 404 permitting for authorization. Based on the March 19, 2017, NWP 14, the USACE would likely consider the proposed project as having 22 single and complete projects for NWP authorization. An impact analysis would be completed after a formal delineation is performed for potentially jurisdictional features. Impacts to waters of the U.S. would be avoided and minimized to the extent practicable within the project area. For projects qualifying for use of a NWP 14 that impacts less than 0.1 acre of stream or result in the loss of less than 0.1 acre or 300 LF of stream, no PCN is required. A PCN will be required for impacts to a special aquatic site (NWP 14), impacts to waters of the U.S. features that are greater than 0.1 acre (NWP 14), or waters of the U.S. losses of greater than 0.1 acre or 300 LF (Regional Condition 12). The final determination of the need for a PCN would be conducted following a formal delineation and impact assessment.

Archeological Resources

Access was denied on eight parcels and no response was received to ROE inquiries for the remaining 113 parcels, comprising a total of 126.4 acres of un-surveyed project ROW. Of these 121 parcels, 41 appear to have been previously disturbed, requiring no survey (TxDOT 2018d). A cultural resources survey is recommended for the remaining 80 parcels once ROE has been established. Additionally, if changes to the project design require additional APE

adjacent to sites 41DN608 and 41DN609, further work is recommended to delineate and evaluate the possible extension of the site boundaries beyond the current APE.

8.2. Contractor Communications

The list below identifies only the project-specific commitments for the proposed IH 35 Project.

ROW Acquisition and Relocation

The TxDOT ROW Acquisition and Relocation Assistance Program would be conducted in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policy Act of 1970, as amended, in the Uniform Relocation Assistance Act of 1987, relocation resources to all displaced persons would be provided without discrimination.

Limited English Proficiency

Reasonable steps will be taken to ensure the LEP persons have meaningful access to programs, information and services TxDOT provides. During the public hearing that will be held for this project, an interpreter for specific languages will be provided if requests are made prior to the hearing date.

Archeological Resources

In the event that any unanticipated archeological deposits are discovered during construction, work would cease in the immediate area, and TxDOT archeological staff will be contacted to initiate post-review discovery procedures.

Clean Water Act Section 401

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

- Category I Erosion Control would be addressed by using temporary vegetation, permanent seeding/sodding, and stone outlet structures such as stone riprap.
- Category II Sedimentation Control would be addressed by installing silt fence, rock berms, and mulch filter socks.
- Category III Post-Construction Total Suspended Solids (TSS) Control would be addressed by installing vegetative-lined drainage ditches.

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

Clean Water Act Section 402

TxDOT would comply with the requirements of the TCEQ TPDES General Permit No. TxR150000. In order to comply with TPDES General Permit Number TxR150000 for Construction Activities requirements, a NOI would be filed with TCEQ stating that TxDOT would have a SW3P in place during construction of this project. A construction site notice would be posted on the construction site. This SW3P utilizes the temporary control measures as outlined in TxDOT's manual Standard Specifications for the Construction of Highways, Streets, and Bridges.[30]

Sections of the Build Alternative are located within the boundaries and jurisdiction of the City of Denton MS4, and the City of Sanger and TxDOT MS4s in the TxDOT ROW at US 380, and would comply with the applicable MS4 requirements.

Executive Order 11988, Floodplain Management

The proposed project would be in compliance with 23 CFR 650 regarding location and hydraulic design of highway encroachments within the floodplains, and the proposed project would comply with EO 11988, Floodplain Management. Local floodplain administrator coordination would be conducted.

Biological Resources

Impacts to vegetation would be avoided or minimized by limiting disturbance to any extent practicable during construction. The removal of native vegetation, especially mature trees and shrubs, would also be limited to only that which is necessary to construct the proposed project.

In accordance with the TxDOT-TPWD MOU, the following BMPs would be implemented:

- Louisiana pigtoe, sandbank pocketbook, Texas heelsplitter, and Texas pigtoe – Freshwater Mussel BMPs: 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. When work is adjacent to the water, Water Quality BMPs implemented as part of the SWPPP for a construction general permit or any conditions of the 401 water quality certification for the project will be implemented.
- Texas garter snake and timber rattlesnake – Terrestrial Reptile BMPs: Apply hydromulching and/or hydroseeding in areas for soil stabilization and/or revegetation of disturbed areas where feasible. If hydromulching and/or hydroseeding are not feasible due to site conditions, utilize erosion control blankets or mats that contain no netting or contain loosely woven, natural fiber is preferred. Plastic netting should be avoided to the extent practicable. For open trenches and excavated pits, install escape

[30] TxDOT. Standard Specifications for the Construction of Highways, Streets, and Bridges; https://www.txdot.gov/business/resources/txdot-specifications.html (accessed January 17, 2019).

ramps at an angle of less than 45 degrees (1:1) in areas left uncovered. Visually inspect excavation areas for trapped wildlife prior to backfilling. Inform contractors that if reptiles are found on project site allow species to safely leave the project area. Avoid or minimize disturbing or removing downed trees, rotting stumps, and leaf litter where feasible. Contractors will be advised of potential occurrence in the project area, and to avoid harming the species if encountered.

- Plains spotted skunk – Contractors will be advised of the potential for occurrence in the area, to avoid harming the species if encountered, and to avoid any unnecessary impacts to dens.
- Sprague's pipit, Henslow's sparrow, and Cerulean warbler – Bird BMPs: Prior to construction, perform daytime nest surveys for nests including under bridges and in culverts to determine if they are active before removal. Nests that are active should not be disturbed. Do not disturb, destroy, or remove active nests, including ground nesting birds, during the nesting season. Avoid the removal of unoccupied, inactive nests, as practicable. Prevent the establishment of active nests during the nesting season on TxDOT owned and operated facilities and structures proposed for replacement or repair. Do not collect, capture, relocate, or transport birds, eggs, young, or active nests without a permit.

Migratory Bird Protections

The Migratory Bird Treaty Act of 1918 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. The contractor would remove all old migratory bird nests from any structure where work would be done from October 1 to February 15. In addition, the contractor would be prepared to prevent migratory birds from building nest(s) between February 15 and October 1. In the event that migratory birds are encountered on-site during project construction, efforts to avoid adverse impacts on protected birds, active nests, eggs, and/or young would be observed.

Executive Order 13112 on Invasive Species

In accordance with Executive Order 13112 on Invasive Species, seeding and replanting with TxDOT-approved seed mixes containing native species would be done where possible. Soil disturbance would be minimized in the ROW in order to minimize invasive species establishment in the ROW. Vegetation will be preserved to the extent practicable and revegetation/reseeding will take place where possible.

Hazardous Materials

The proposed project includes the demolition and/or relocation of building structures. Asbestos inspections, specification, notification, license, accreditation, abatement and disposal, as applicable, should comply with federal and state regulations. Asbestos issues should be addresses prior to construction during the ROW process. Forty bridges and bridge

class culverts will be replaced, and will require ACM/LBP testing and potential abatement prior to demolition.

Any unanticipated hazardous materials encountered during construction would be handled according to applicable federal and state regulations, per the TxDOT Standard Specifications. The contractor would take appropriate measures to prevent, minimize, and control the spill of hazardous materials in the construction area. All construction materials used for this project would be removed as soon as the work schedules permit.

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

9.0 Conclusion

The engineering, social, and environmental investigations conducted thus far indicate that the proposed project would not result in a significant impact on the human or natural environment; therefore, a FONSI is recommended.

10.0 References

In addition to the footnoted references, the unpublished TxDOT project-related technical reports cited throughout the document are listed below. These are on file with the TxDOT Dallas District.

TxDOT, 2018a. Biological Resources Technical Report (December 2018).

TxDOT, 2018b. Community Impacts Assessment Technical Report Form (November 2018).

TxDOT, 2018c. Archeological Background Study (February 2018).

TxDOT, 2018d. Archeological Survey Report (December 2018).

TxDOT, 2018e. Project Coordination Request for Historical Studies Project (February 2018).

TxDOT, 2018f. Historic Resources Survey Report (December 2018).

TxDOT, 2018g. Water Resources Technical Report (December 2018).

TxDOT, 2019. Carbon Monoxide Traffic Air Quality Assessment, Quantitative Mobile Source Air Toxic (MSAT) Analysis Technical Report, and Air Quality Technical Report with CMP (January 2019)

TxDOT, 2018h. Hazardous Materials ISA Report and Hazardous Materials Impact Evaluation (November 2018).

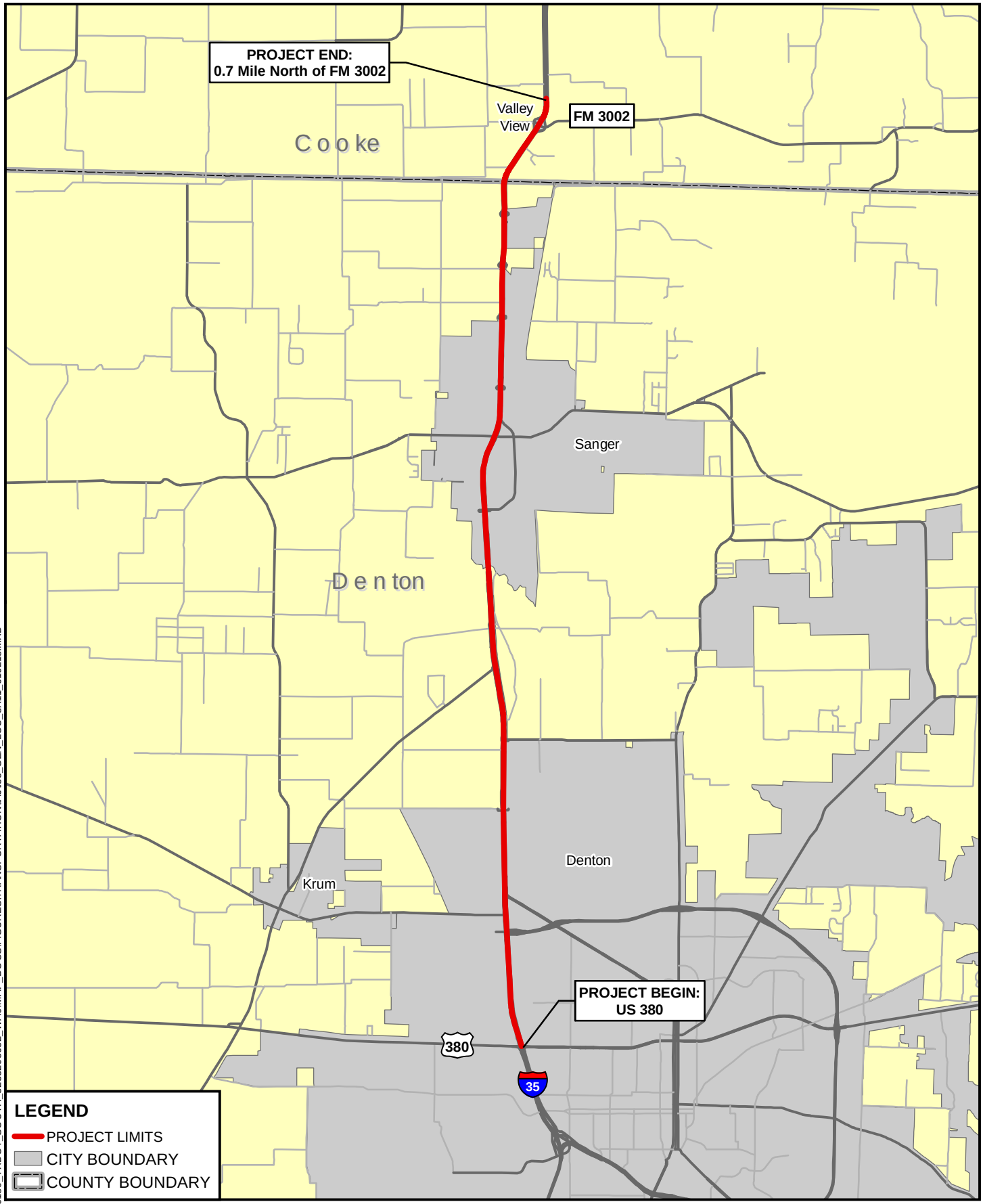
TxDOT, 2018i. Traffic Noise Analysis Technical Report (December 2018).

TxDOT, 2018j. Indirect Impact Analysis Technical Report (December 2018).

TxDOT, 2018k. Documentation of Public Meeting Report (June 2017).

Appendix A – Project Location Map

(1) Project Location on Street Map
(2) Project Location on Aerial Map



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I-35
US 380 TO FM 3002
PROJECT LOCATION

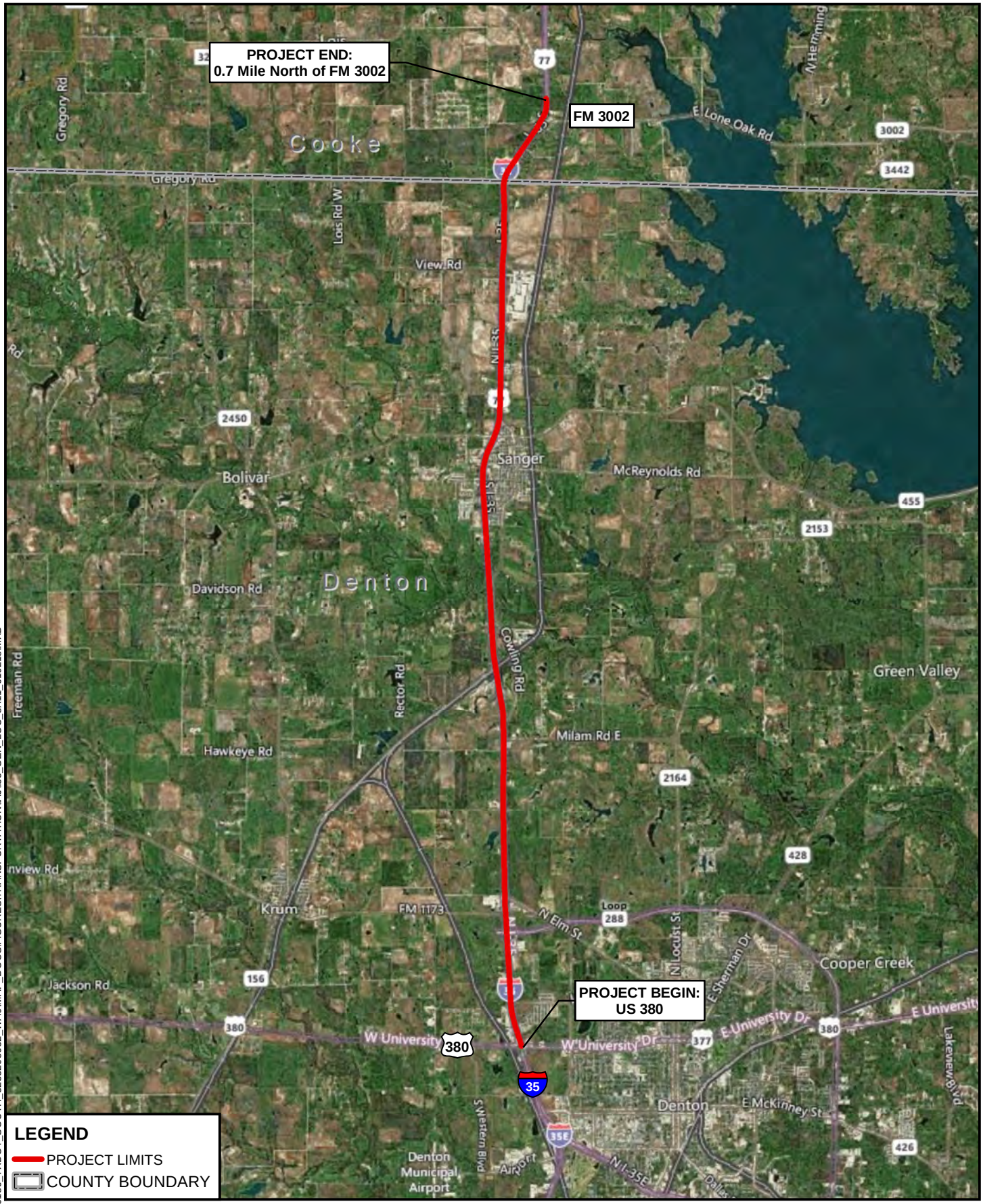
N
0 0.75 1.5
MILES

Texas Department of Transportation

HDR

DEC 2018

FIGURE 1



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I-35
US 380 TO FM 3002
PROJECT LOCATION

N
0 0.75 1.5
MILES

Texas Department of Transportation

HDR

JAN 2019

FIGURE 2

Appendix B – Project Photos

(1) Project Area Photos
(2) Hazardous Materials Field Photos

Project Area Photos

Photo 1 – View north of the southern project limit at IH 35 and US 380 (University Drive), northbound IH 35.

Photo 2 – View west of the southern project limit at IH 35 and US 380 (University Drive), northbound IH 35.

Photo 3 – View northwest of commercial buildings, northbound IH 35.

Photo 4 – View northwest of a modern commercial building abutting southbound IH 35.

Photo 5 – View east of a rural area with residences in the background, northbound IH 35.

Photo 6 – View north of the typical ROW along the project corridor, northbound IH 35.

Photo 7 – View south of a concrete culvert over a tributary to Milam Creek, northbound IH 35.

Photo 8 – View east of a tributary to Milam Creek, northbound IH 35.

Photo 9 – View north of the typical ROW along the project corridor, northbound IH 35.

Photo 10 – View north of Moore's Branch, northbound IH 35.

Photo 11 – View northeast of Moore's Branch, northbound IH 35.

Photo 12 – View west, northbound IH 35.

Photo 1. Former Snappy Check gas station (Map ID 12) situated adjacent west of IH 35. ROW is proposed from this property which will displace the building and canopy. The facility is considered a moderate environmental risk.

Photo 2. Gateway 18 (Map ID 16) situated adjacent east of IH 35. ROW is proposed from this property which will displace the entire facility. The facility is considered a high environmental risk.

Photo 3. Snap Shop 1 (Map ID 16) situated adjacent east of IH 35. ROW is proposed from this property which will displace the pump islands and canopy and the tank hold. The facility is considered a high environmental risk.

Photo 4. Horizon/Sanger Gulf, currently a Chevron (Map ID 16), situated adjacent west of IH 35. ROW is proposed from this property which will displace the pump islands and canopy and the tank hold. The current facility is considered a high environmental risk.

Photo 5. Love's Budget Fuel (Map ID 29) situated adjacent east of IH 35. ROW is proposed from this property which will displace the entire facility. The facility is considered a high environmental risk.

Photo 6. Former location of Sun Power Truck Stop/Star Travel Plaza. Current location of a new Love's Travel Stop (Map ID 34). The former Howdy Doody Truck Stop and Denton Drive Train were formerly located just to the left (south) of this location, out of photo view, on what is now a semi-truck parking lot. All properties are situated adjacent west of IH 35 and ROW is proposed from these sites. The former Sun Power and Howdy Doody are considered moderate environmental risks.

Photo 7. Travel Centers of America (Map ID 34) situated adjacent east of IH 35. ROW is proposed from this property in close proximity to the tank hold. The facility is considered a high environmental risk.

Photo 8. 24 7 XPressway (Map ID 39) situated adjacent west of IH 35. No ROW is proposed from this property. The facility is considered a moderate environmental risk.

Photo 9. Chicken Express/Conoco (Map ID 18) situated adjacent south of FM 455 (W Chapman Dr.). ROW is proposed from this property which will displace the tank hold. The facility is considered a moderate environmental risk.

Photo 10. Former location of Sanger Texaco (Map ID 15) situated adjacent west of IH 35. Also the Sanger Texaco (Map ID 16) and the Former Sanger Texaco (Map ID 21). ROW is proposed from this property. The property is considered a high environmental risk.

Photo 11. Former location of 12JWW PST and LPST (Map ID 39) on the west side of IH 35 and north of Bandera St. No ROW is proposed from this site, and this site is considered a low environmental risk.

Appendix C – Schematics and Typical Sections

Texas Department of Transportation

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Dallas District
Mohamed K. Bur, P.E.
Dallas District Engineer

IH 35

DESIGN SCHEMATIC

From: US 380

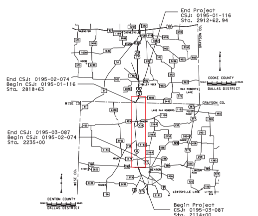
To: 0.7 mi North of FM 3002

CSJ: 0195-03-087
CSJ: 0195-02-074
CSJ: 0195-01-116

Denton and Cooke Counties
Functional Class: Interstate
Project Length: 15.13 Mile

Design Speed:

IH 35 Mainlanes:	70 mph
SL 288 Mainlanes:	70 mph
Ramps:	50 mph
Turnaround Ramps:	15 mph
Local Street Connector:	20 mph
Frontage Roads:	45 mph
Cross Streets:	40 mph
Direct Connectors:	40-50 mph



Scale: Horizontal 1"=200'
Scale: Vertical 1"=20'

JANUARY 2019

PRELIMINARY
SUBJECT TO REVISIONS
SCHEMATIC PREPARED BY OR UNDER THE DIRECT SUPERVISION OF:

NAME	P.E. NUMBER
BRIAN SWINDELL	80688
JASON A. RICHTER	114508

JANUARY 2019
DATE

100% FINAL
PRELIMINARY, SUBJECT TO CHANGE

NOT INTENDED FOR CONSTRUCTION, BIDDING, OR PERMIT PURPOSES

ROLL 1 OF 23

HDR
Firm Registration No. F-754
17111 Preston Road, Suite 300
Dallas, Texas 75248-1232
972.960.4400

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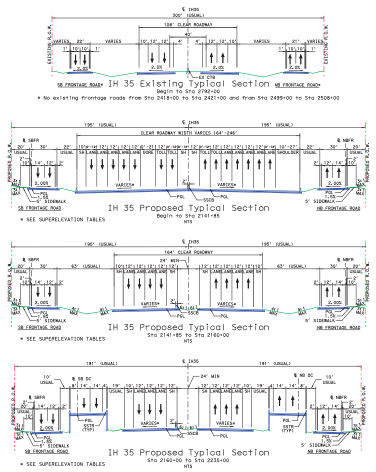
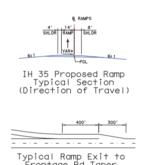




LEGEND

MAINLANES	MANAGED LANES
FRONTAGE ROADS	TRANSITION PAVEMENT
RAMPS	BY OTHERS
BRIDGES	PAVEMENT REMOVAL
CROSS STREETS/LOCAL ROADS	CONTROL OF ACCESS
LOCAL STREET CONNECTOR	PROPOSED RETAINING WALL
EXISTING RIGHT-OF-WAY	PROPOSED RIGHT-OF-WAY
PROPOSED DRAINAGE EASEMENT	FUTURE WORK BY OTHERS
PROPERTY LINES	

General Notes:

1. EXISTING FEATURES WERE NOT FIELD SURVEYED, SCHEMATICS ARE BASED ON AERIAL SURVEYS AND RECORD PLANS PROVIDED MARCH 2016 AND DECEMBER 2016.
2. TRAFFIC VOLUMES BASED ON NCTCOG MODEL AND WILL BE APPROVED BY TXDOT TP&P.
3. ADA RAMPS AND SIDEWALK ARE DESIGNED PER TEXAS ACCESSIBILITY STANDARDS. LOCATIONS ARE PRELIMINARY AND SUBJECT TO CHANGE. FINAL LOCATIONS TO BE DETERMINED DURING PS&E DEVELOPMENT.
4. ACCESS DENIAL LIMITS ARE DETERMINED PER TXDOT ACCESS MANAGEMENT MANUAL.
5. BUILDINGS ARE SHOWN AS POTENTIAL DISPLACEMENTS IF THE PROPOSED ROW PHYSICALLY INTERSECTS THE EXISTING BUILDING STRUCTURE.
6. DRIVEWAY LOCATIONS ARE PRELIMINARY AND WILL BE FURTHER DEVELOPED DURING PS&E DESIGN.
7. EXISTING PAVEMENT AND BRIDGES LOCATED WITHIN LIMITS OF PROPOSED RECONSTRUCTION WILL BE REMOVED (UNLESS OTHERWISE NOTED).
8. SUPER ELEVATION AXIS OF ROTATION IS ABOUT THE PGL'S AS SHOWN IN THE TYPICAL SECTIONS.
9. CURBS ON FRONTAGE ROADS AND CROSS STREETS ARE TYPE II (UNLESS NOTED OTHERWISE).
10. DIMENSIONS ARE TO THE EDGE OF PAVEMENT OR NOMINAL FACE OF CURB, RAIL, BARRIER, OR WALL (UNLESS NOTED OTHERWISE).
11. APPROXIMATE 100 YEAR FLOODPLAIN LIMITS ARE BASED UPON FEMA FLOOD INSURANCE RATE MAPS 48121C0360G, 48121C0220G, 48121C0210G, AND 48121C0070G (2011)
12. CONVENTIONAL ROADWAY SIGNAGE (SMALL SIGNS) ARE NOT SHOWN AND WILL BE DEVELOPED DURING THE PS&E PHASE OF THE PROJECT.
13. OWNERSHIP INFORMATION SHOWN ON SCHEMATIC OBTAINED FROM DENTON COUNTY APPRAISAL DISTRICT (NOVEMBER 2016) AND COOKE COUNTY APPRAISAL DISTRICT (OCTOBER 2016).

SUPERELEVATION DATA

CROSS SLOPE LT	STATION LT	CHAIN NAME	STATION RT	CROSS SLOPE RT
-2.50%	2114+00.00	IH35	2114+00.00	-2.50%
-2.50%	2160+00.00		2160+00.00	-2.50%

SUPERELEVATION DATA

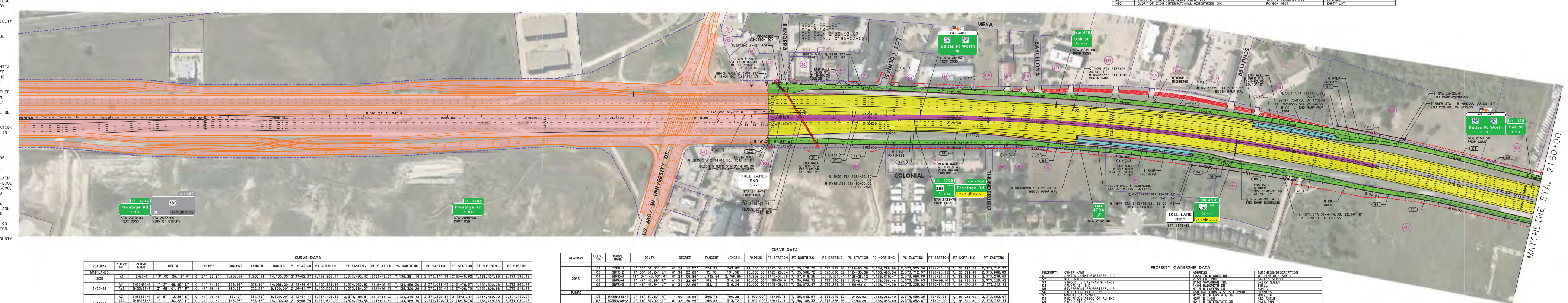
CHAIN NAME	STATION	CROSS SLOPE LT	CROSS SLOPE RT
RX35N288	21+04.00	2.50%	-2.50%
	21+25.00	2.00%	-2.00%
	28+01.27	2.00%	-2.00%

SUPERELEVATION DATA

CHAIN NAME	STATION	CROSS SLOPE LT	CROSS SLOPE RT
RN28835S	20+66.23	-2.50%	2.50%
	23+05.00	-2.50%	2.50%
	23+25.00	-2.00%	2.00%
	25+64.35	-2.00%	2.00%

PROPERTY OWNERSHIP DATA

PROPERTY	OWNER NAME	ADDRESS	BUSINESS/DESCRIPTION
N1	VICTRON STORES LP	PO BOX 2599	CHEVRON
N2	CBOCS TEXAS LTD P/S	PO BOX 787	CRACKER BARREL
N3	RAYZOR RANCH LAND ASSOCIATES LLC	5207 MCKINNEY AVE STE 22	COMMERCIAL
N4	GRAMAR CORP	4234 N I35 TX	COMMON AREA
N5	MEYER, ASHLEY N & RICH, MARGARET L	2101 COLONIAL ST	RESIDENTIAL
N6	WALTERS, BARRY R	2105 COLONIAL ST	RESIDENTIAL
N7	SOUTH STEMMONS PROP GROUP LTD	1801 HINKLE DR STE 150	PASTURE
N8	WINDSOR FARMS PARTNERS LP	2908 PENNSYLVANIA DR	EMPTY LOT
N9	THREE WILLOWS LAND DEVELOPMENT LLC	1625 N STEMMONS FWY	PASTURE
N10	GLORY OF ZION INTERNATIONAL MINISTRIES INC	PO BOX 1601	EMPTY LOT



CURVE DATA

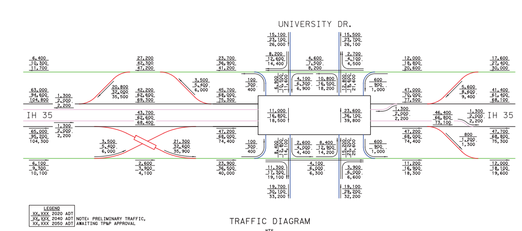
ROADWAY	CURVE NO.	CURVE NAME	DELTA	DEGREE	TANGENT	LENGTH	RADIUS	PI STATION	PI NORTHING	PI EASTING	PC STATION	PC NORTHING	PC EASTING	PT STATION	PT NORTHING	PT EASTING
MAINLANES																
IH35	A1	IH35-1	13° 00' 25.12" RT	0° 24' 22.87"	1,607.36'	3,200.91'	14,100.00'	2137+52.37	7,136,803.14	2,373,490.42	2121+45.01	7,135,261.16	2,373,944.19	2153+45.92	7,138,407.69	2,373,395.36
IH35NB1	AY1	IH35NB1-1	1° 27' 49.85" LT	0° 24' 24.12"	179.98'	359.93'	14,088.00'	2119+96.61	7,135,128.96	2,374,020.62	2118+16.63	7,134,956.30	2,374,071.43	2121+76.57	7,135,300.26	2,373,965.42
	AY2	IH35NB1-2	3° 45' 01.97" RT	0° 42' 26.48"	265.21'	530.22'	8,100.00'	2124+41.77	7,135,552.68	2,373,884.07	2121+76.57	7,135,300.26	2,373,965.42	2127+06.79	7,135,809.88	2,373,819.42
IH35SB1	AZ1	IH35SB1-1	0° 57' 12.38" LT	0° 42' 26.48"	67.40'	134.79'	8,100.00'	2112+54.41	7,134,405.37	2,374,190.81	2111+87.02	7,134,340.72	2,374,209.84	2113+21.81	7,134,469.70	2,374,170.71
	AZ2	IH35SB1-2	1° 11' 40.22" LT	0° 24' 22.87"	146.98'	293.96'	14,100.00'	2114+68.79	7,134,610.00	2,374,126.88	2113+21.81	7,134,469.70	2,374,170.71	2116+15.76	7,134,749.35	2,374,080.13
	AZ3	IH35SB1-3	2° 08' 52.60" RT	0° 24' 20.39"	264.78'	529.49'	14,124.00'	2118+80.54	7,135,000.38	2,373,995.91	2116+15.76	7,134,749.35	2,374,080.13	2121+45.25	7,135,254.38	2,373,921.17
FRONTAGE RDS																
NBFR	B1	NBFR-1	1° 43' 08.18" RT	0° 34' 22.65"	150.02'	300.01'	10,000.00'	3116+92.19	7,134,874.19	2,374,233.19	3115+42.18	7,134,730.27	2,374,275.54	3118+42.19	7,135,019.31	2,374,195.17
	B2	NBFR-2	1° 43' 08.18" LT	0° 34' 22.65"	150.02'	300.01'	10,000.00'	3119+92.21	7,135,164.43	2,374,157.16	3118+42.19	7,135,019.31	2,374,195.17	3121+42.20	7,135,308.34	2,374,114.81
	B3	NBFR-3	7° 03' 21.79" RT	2° 51' 53.24"	123.31'	246.30'	2,000.00'	3129+37.27	7,136,071.08	2,373,890.36	3128+13.97	7,135,952.79	2,373,925.17	3130+60.27	7,136,192.75	2,373,870.34
	B4	NBFR-4	2° 52' 50.35" LT	2° 51' 53.24"	50.29'	100.55'	2,000.00'	3131+10.56	7,136,242.37	2,373,862.18	3130+60.27	7,136,192.75	2,373,870.34	3131+60.82	7,136,291.52	2,373,851.53
	B5	NBFR-5	7° 20' 24.44" RT	0° 24' 40.19"	893.82'	1,785.20'	13,935.00'	3140+54.65	7,137,165.08	2,373,662.30	3131+60.82	7,136,291.52	2,373,851.53	3149+46.03	7,138,055.66	2,373,586.23
	B6	NBFR-6	4° 12' 55.22" LT	1° 54' 35.49"	110.41'	220.71'	3,000.00'	3150+56.43	7,138,165.67	2,373,576.84	3149+46.03	7,138,055.66	2,373,586.23	3151+66.74	7,138,274.69	2,373,559.38
	B7	NBFR-7	5° 42' 24.45" RT	1° 54' 35.49"	149.53'	298.81'	3,000.00'	3153+16.27	7,138,422.33	2,373,535.74	3151+66.74	7,138,274.69	2,373,559.38	3154+65.55	7,138,571.60	2,373,526.89

CURVE DATA

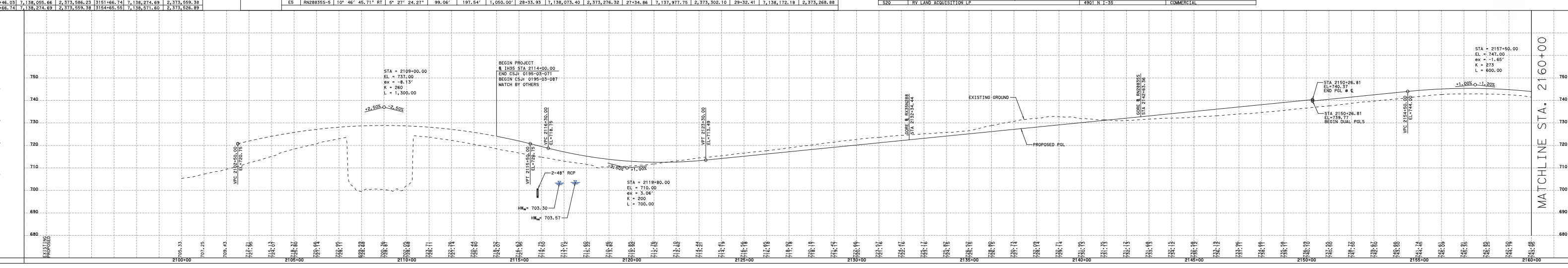
ROADWAY	CURVE NO.	CURVE NAME	DELTA	DEGREE	TANGENT	LENGTH	RADIUS	PI STATION	PI NORTHING	PI EASTING	PC STATION	PC NORTHING	PC EASTING	PT STATION	PT NORTHING	PT EASTING
SBFR	C1	SBFR-1	3° 01' 31.35" RT	0° 24' 12.57"	374.99'	749.80'	14,200.00'	1120+58.75	7,135,128.72	2,373,799.70	1116+83.76	7,134,768.98	2,373,905.56	1124+33.56	7,135,493.54	2,373,712.97
	C2	SBFR-2	1° 05' 51.24" LT	0° 34' 22.65"	95.78'	191.56'	10,000.00'	1125+29.34	7,135,586.72	2,373,690.82	1124+33.56	7,135,493.54	2,373,712.97	1126+25.12	7,135,679.47	2,373,666.89
	C3	SBFR-3	11° 04' 45.00" RT	0° 24' 06.86"	1,382.64'	2,756.65'	14,256.00'	1140+07.76	7,137,018.25	2,373,321.41	1126+25.12	7,135,679.47	2,373,666.89	1153+81.77	7,138,398.46	2,373,239.63
	C4	SBFR-4	1° 48' 42.89" RT	0° 34' 22.65"	158.13'	316.24'	10,000.00'	1155+39.91	7,138,556.32	2,373,230.28	1153+81.77	7,138,398.46	2,373,239.63	1156+98.01	7,138,714.39	2,373,225.92
	C5	SBFR-5	1° 48' 42.94" LT	0° 34' 22.65"	158.13'	316.24'	10,000.00'	1158+56.15	7,138,872.47	2,373,221.56	1156+98.01	7,138,714.39	2,373,225.92	1160+14.25	7,139,030.32	2,373,212.21
RAMPS																
RX35N288	D1	RX35N288-1	7° 56' 37.80" RT	1° 00' 18.68"	395.78'	790.28'	5,700.00'	13+95.78	7,135,643.57	2,373,919.32	10+00.00	7,135,266.40	2,374,039.25	17+90.28	7,136,033.69	2,373,852.67
	D2	RX35N288-2	2° 16' 31.00" LT	0° 43' 30.95"	156.88'	313.72'	7,900.00'	19+47.16	7,136,188.33	2,373,826.25	17+90.28	7,136,033.69	2,373,852.67	21+04.00	7,136,341.80	2,373,793.71
	D3	RX35N288-3	2° 51' 27.01" RT	0° 24' 35.32"	348.71'	697.27'	13,981.00'	24+52.71	7,136,682.92	2,373,721.38	21+04.00	7,136,341.80	2,373,793.71	28+01.27	7,137,027.23	2,373,666.15
	D4	RX35N288-4	8° 31' 50.02" RT	5° 27' 24.27"	78.31'	156.33'	1,050.00'	28+79.58	7,137,104.55	2,373,653.75	28+01.27	7,137,027.23	2,373,666.15	29+57.60	7,137,182.85	2,373,652.95
	D5	RX35N288-5	7° 20' 29.31" LT	5° 27' 24.27"	67.36'	134.54'	1,050.00'	30+24.96	7,137,250.21	2,373,652.27	29+57.60	7,137,182.85	2,373,652.95	30+92.14	7,137,316.93	2,373,642.98
RN28835S	E1	RN28835S-1	1° 59' 37.85" LT	1° 00' 18.68"	99.19'	198.36'	5,700.00'	10+99.19	7,136,367.75	2,373,580.52	10+00.00	7,136,270.76	2,373,601.29	11+98.36	7,136,463.95	2,373,556.38
	E2	RN28835S-2	6° 17' 39.74" RT	0° 43' 30.95"	434.37'	867.87'	7,900.00'	16+32.73	7,136,885.27	2,373,450.68	11+98.36	7,136,463.95	2,373,556.38	20+66.23	7,137,315.63	2,373,391.80
	E3	RN28835S-3	2° 00' 30.45" RT	0° 24' 11.55"	249.09'	498.12'	14,210.00'	23+15.32	7,137,562.42	2,373,358.04	20+66.23	7,137,315.63	2,373,391.80	25+64.35	7,137,810.24	2,373,332.95
	E4	RN28835S-4	9° 18' 16.34" LT	5° 27' 24.27"	85.45'	170.51'	1,050.00'	26+49.80	7,137,895.25	2,373,324.34	25+64.35	7,137,810.24	2,373,332.95	27+34.86	7,137,977.75	2,373,302.10
	E5	RN28835S-5	10° 46' 45.71" RT	5° 27' 24.27"	99.06'	197.54'	1,050.00'	28+33.93	7,138,073.40	2,373,276.32	27+34.86	7,137,977.75	2,373,302.10	29+32.41	7,138,172.18	2,373,268.88

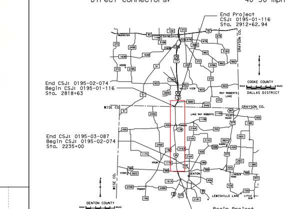
PROPERTY OWNERSHIP DATA

PROPERTY	OWNER NAME	ADDRESS	BUSINESS/DESCRIPTION
S1	DENTON JOINT PARTNERS LLC	1020 TWIN OAKS DR	MILLINEUM - SHELL
S2	WOLF RIDGE LP P/S	2763 FM 1200	SARA'S SECRET
S3	STROUD, J LAYTHAN & NANCY	2152 SAVANNAH TRL	DAIRY QUEEN
S4	KALYAN'S, INC	1404 HUDSPETH DR	SHELL
S5	RIVERFRONT PROPERTIES, LP	4713 W LOVERS LN	SONIC
S6	CALTEX EQUITIES P/S	650 CALIFORNIA ST STE 2940	DENNY'S
S7	MARUTI JALARAM LLC	4125 N INTERSTATE 35	MOTEL 6
S8	RED ANGUS ASSOC OF AM INC	4201 N I-35	RED ANGUS
S9	PACE HOTELS LLC	4211 N INTERSTATE 35	DAYS INN
S10	HEALTH SERVICES OF NORTH TEXAS	4401 N INTERSTATE 35 UNIT 312	COMMERCIAL
S11	BB RHINO PROPERTIES, LLC	4305 N INTERSTATE 35	RHINO STEEL
S12	PALLISTER, TERRY & KIM	1160 E LONE OAK RD	VACANT
S13	WESTGATE PROPERTIES LP	4401 N I-35 UNIT 107	NORTH POINT PLAZA
S14	WESTGATE PROPERTIES LP	4401 N I-35 UNIT 107	COMMERCIAL
S15	ANGEL HOSPITALITY DENTON LLC	14292 GILLIS RD	LA QUINTA INN & SUITES
S16	ANGEL HOSPITALITY DENTON LLC	14292 GILLIS RD	HOLIDAY INN EXPRESS
S17	FIVE VP TEXAS LP	17950 PRESTON RD STE 780	VALUE PLACE
S18	SALVAGING TEENS AT RISK INC D/B/A THE EDUCATION CENTER	4601 N INTERSTATE 35	TEXAS EDUCATION CENTERS
S19	MILLER, BESS SURVIVOR'S TRUST & MILLER, J A	1205 MEADOW RIDGE DR	COMMERCIAL
S20	RV LAND ACQUISITION LP	4901 N I-35	COMMERCIAL



TRAFFIC DIAGRAM
NTS





Texas Department of Transportation

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Dallas District
Mohamed K. Bur, P.E.
Dallas District Engineer

IH 35

DESIGN SCHEMATIC

From: US 380

To: 0.7 mi North of FM 3002

CSJ: 0195-03-087
CSJ: 0195-02-074
CSJ: 0195-01-116

Denton and Cooke Counties
Functional Class: Interstate
Project Length: 15.13 Mile

Design Speed:
IH 35 Mainlanes: 70 mph
SL 288 Mainlanes: 70 mph
Ramps: 50 mph
Turnaround Ramps: 15 mph
Local Street Connector: 20 mph
Frontage Roads: 45 mph
Cross Streets: 40 mph
Direct Connectors: 40-50 mph

Scale: Horizontal 1"=200'
Scale: Vertical 1"=20'

JANUARY 2019

PRELIMINARY
SUBJECT TO REVISIONS
SCHEMATIC PREPARED BY OR UNDER THE DIRECT SUPERVISION OF:
BRIAN SWINDELL 80688
JASON A. RICHTER 114508
JANUARY 2019

100% FINAL
PRELIMINARY, SUBJECT TO CHANGE

NOT INTENDED FOR CONSTRUCTION, BIDDING, OR PERMIT PURPOSES

ROLL 1 OF 23

HDR
Firm Registration No. F-754
17111 Preston Road, Suite 300
Dallas, Texas 75248-1232
972.960.4400

...\Schematic\IH35PRVPLOT01.dgn

Texas Department of Transportation

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Dallas District
Mohamed K. Burr, P.E.
Dallas District Engineer

IH 35

DESIGN SCHEMATIC

From: US 380

To: 0.7 mi North of FM 3002

CSJ: 0195-03-087
CSJ: 0195-02-074
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Denton and Cooke Counties
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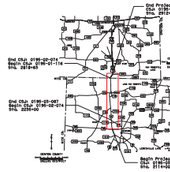


Scale: Horizontal 1"=200'
Scale: Vertical 1"=20'

JANUARY 2019

PRELIMINARY
SUBJECT TO REVISIONS
SCHEMATIC PREPARED BY OR UNDER THE DIRECT SUPERVISION OF:

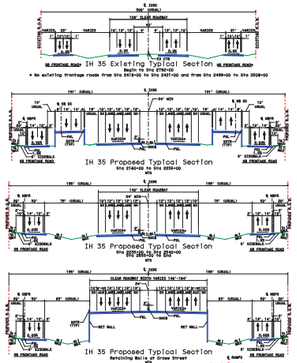
BRIAN MITCHELL — 8/16/2019
JASON M. ROUNTREE — 8/16/2019
JANUARY 2019

NOT INTENDED FOR CONSTRUCTION, BIDDING, OR PERMIT PURPOSES

100% FINAL
PRELIMINARY, SUBJECT TO CHANGE

ROLL 2 OF 23

HDR
Firm Registration No. F-754
17111 Preston Road, Suite 300
Dallas, Texas 75248-1232
972.992.6400



IH 35 Existing Typical Section
Begin to Sta 2780+00
* No existing frontage roads from Sta 2478+00 to Sta 2481+00 and from Sta 2499+00 to Sta 2508+00

IH 35 Proposed Typical Section
Sta 2740+00 to Sta 2250+00

IH 35 Proposed Typical Section
Sta 2250+00 to Sta 2160+00

IH 35 Proposed Typical Section
Retaining Walls at Cross Street

IH 35 Proposed Mainlane Bridge Typical Section
Sta 2251+56.50 to Sta 2254+85.50

IH 35 Proposed Ramp Typical Section
(Direction of Travel)

IH 35 Proposed Direct Connector Bridge Typical Section

Typical Intersection Approach

Typical U-Turn to Frontage Rd Taper

Typical Ramp Exit to Frontage Rd Taper

* SEE SUPERELEVATION TABLES

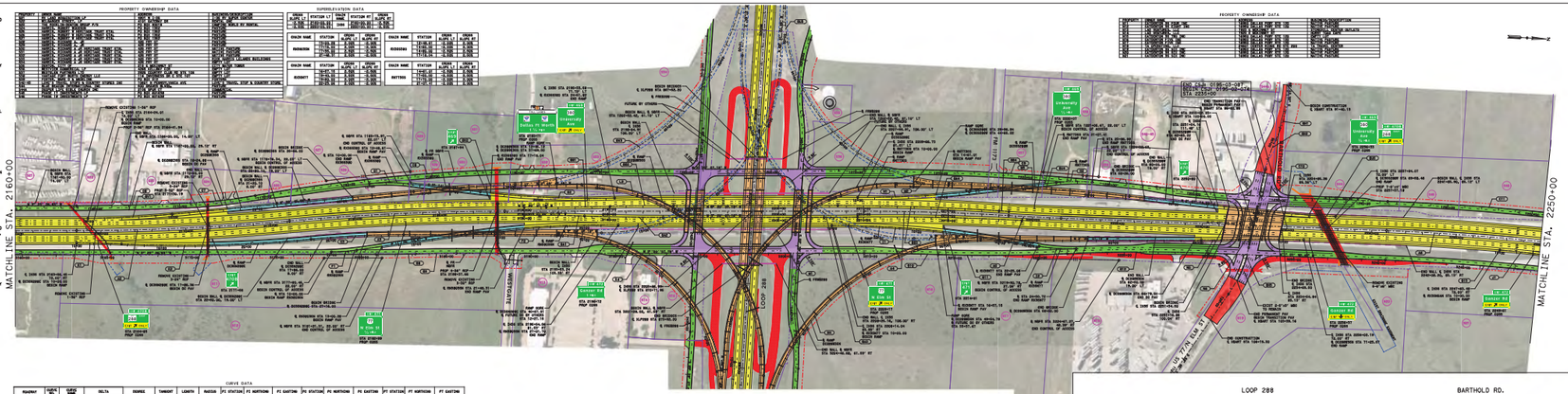
SEE ROLL 3 FOR XSTREET TYPICAL SECTIONS

LEGEND

- MAINLANES
- FRONTAGE ROADS
- RAMPS
- BRIDGES
- CROSS STREETS/LOCAL ROADS
- LOCAL STREET CONNECTOR
- MANAGED LANES
- TRANSITION PAVEMENT BY OTHERS
- PAVEMENT REMOVAL
- CONTROL OF ACCESS
- PROPOSED RETAINING WALL
- EXISTING RIGHT-OF-WAY
- PROPOSED RIGHT-OF-WAY
- PROPOSED DRAINAGE EASEMENT
- FUTURE WORK BY OTHERS
- PROPERTY LINES

General Notes:

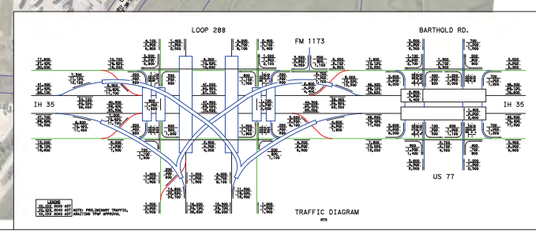
1. EXISTING FEATURES WERE NOT FIELD VERIFIED. TOPOGRAPHICS ARE BASED ON AERIAL SURVEYS AND RECORD PLANS PROVIDED MARCH 2014 AND MAY 2016 BY TNP.
2. TRAFFIC VOLUMES BASED ON METCOR MODEL AND WILL BE APPROVED BY TXDOT TPP.
3. ADA RAMPS AND SIDEWALK ARE PRELIMINARY AND SUBJECT TO ACCESSIBILITY STANDARDS. LOCATIONS ARE PRELIMINARY AND SUBJECT TO CHANGE. FINAL LOCATIONS TO BE DETERMINED DURING PSNC DESIGN PHASE.
4. ACCESS DENIAL LIMITS ARE DETERMINED PER TXDOT ACCESS MANAGEMENT MANUAL.
5. BUILDINGS ARE SHOWN AS POTENTIAL DISPLACEMENTS IF THE PROPOSED ROW PHYSICALLY INTERSECTS THE EXISTING BUILDING STRUCTURE. ROW LIMITS ARE STILL PRELIMINARY AND WILL BE FURTHER DEVELOPED DURING PSNC DESIGN.
7. EXISTING PAVEMENT AND BRIDGES LOCATED WITHIN LIMITS OF CONSTRUCTION WILL BE REMOVED UNLESS OTHERWISE NOTED.
8. SURVEY ELEVATION AXIS OF ROTATION IS ABOUT THE PGL'S AS SHOWN IN THE TYPICAL SECTIONS.
9. CURBS ON FRONTAGE ROADS AND CROSS STREETS ARE TYPE II UNLESS OTHERWISE NOTED.
10. SIDEWALKS ARE TO THE EDGE OF PAVEMENT OR NOMINAL FACE OF CURB. SEE TYPICAL SECTIONS AND SURFACE DETAILS.
11. APPROXIMATE 100 YEAR FLOODPLAIN LIMITS ARE BASED UPON FEMA FLOOD INSURANCE RATE MAPS 48121C0205G, EFFECTIVE 09/26/2008, AND 48121C0215H EFFECTIVE 04/18/2011.
12. CONVENTIONAL ROADWAY SIGNAGE (SIGNS, SIGNAL) ARE NOT SHOWN AND WILL BE DEVELOPED DURING THE PSNC DESIGN PHASE.
13. OWNERSHIP INFORMATION SHOWN ON SCHEMATIC OBTAINED FROM DENTON COUNTY APPRAISAL DISTRICT (DENTON COUNTY) AND COOKE COUNTY APPRAISAL DISTRICT (COOKE COUNTY 2014).



MATCHLINE STA. 2160+00

MATCHLINE STA. 2250+00

SEE ROLL 3 FOR PROFILE



TRAFFIC DIAGRAM

Texas Department of Transportation

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Dallas District
Mohamed K. Burr, P.E.
Dallas District Engineer

IH 35

DESIGN SCHEMATIC

From: US 380

To: 0.7 mi North of FM 3002

CSJ: 0195-03-087
CSJ: 0195-02-074
CSJ: 0195-01-116

Denton and Cooke Counties
Functional Class: Interstate
Project Length: 15.13 Mile

Design Speed:

IH 35 Mainlanes: 70 mph
SL 288 Mainlanes: 70 mph
Ramps: 50 mph
Turnaround Ramps: 15 mph
Local Street Connectors: 30 mph
Cross Streets: 40 mph
Frontage Roads: 40 mph
Direct Connectors: 40-50 mph

Scale: Horizontal 1"=200'
Scale: Vertical 1"=20'

JANUARY 2019

PRELIMINARY
SUBJECT TO REVISIONS
SCHEMATIC PREPARED BY OR UNDER THE DIRECT SUPERVISION OF:

BRIAN MITCHELL — 8/16/2019
JASON M. ROUNTREE — 8/16/2019
JANUARY 2019

NOT INTENDED FOR CONSTRUCTION, BIDDING, OR PERMIT PURPOSES

100% FINAL
PRELIMINARY, SUBJECT TO CHANGE

ROLL 2 OF 23

HDR
Firm Registration No. F-754
17111 Preston Road, Suite 300
Dallas, Texas 75248-1232
972.992.6400

Texas Department of Transportation

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Dallas District
Mohamed K. Burr, P.E.
Dallas District Engineer

IH 35

DESIGN SCHEMATIC

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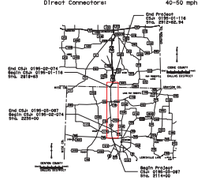


Scale: Horizontal 1"=200'
Scale: Vertical 1"=20'

JANUARY 2019

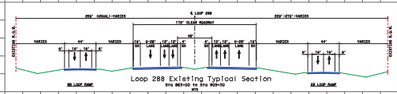
PRELIMINARY
SUBJECT TO REVISIONS
SCHEMATIC PREPARED BY OR UNDER THE DIRECT SUPERVISION OF:
BRIAN SENNELL P.E. 124604
JASON M. ROBERTSON P.E. 124604
JANUARY 2019
DATE

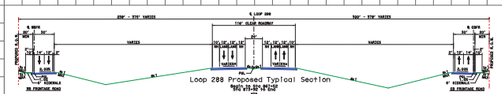
NOT INTENDED FOR CONSTRUCTION, BIDDING, OR PERMIT PURPOSES

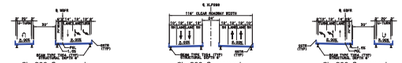
100% FINAL
PRELIMINARY, SUBJECT TO CHANGE

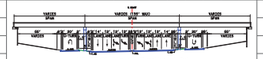
ROLL 3 OF 23

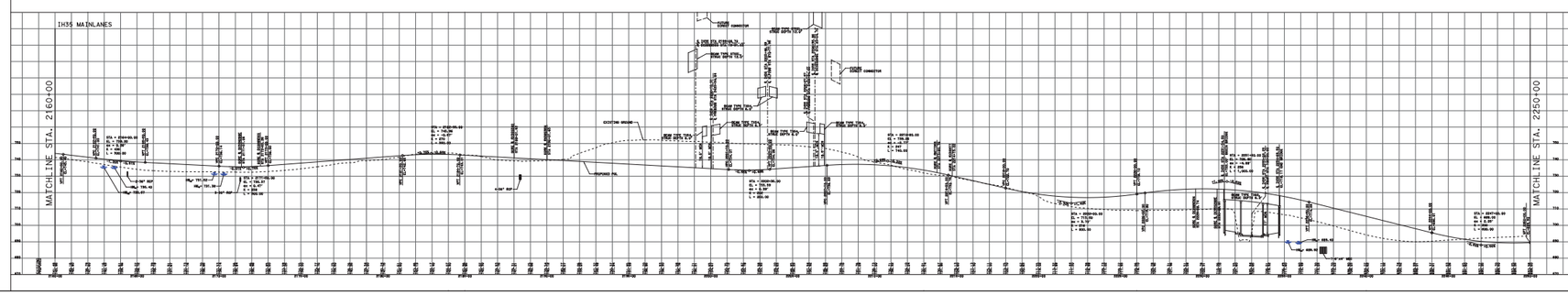
HDR
HDR Firm Registration No. F-754
17111 Preston Road, Suite 300
Dallas, Texas 75248-1232
972.992.6400











Texas Department of Transportation

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Dallas District
Mohamed K. Burr, P.E.
Dallas District Engineer

IH 35

DESIGN SCHEMATIC

From: US 380

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Denton and Cooke Counties
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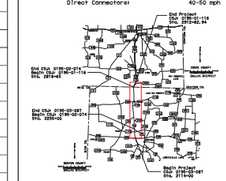

Scale: Horizontal 1"=200'
Scale: Vertical 1"=20'

JANUARY 2019

PRELIMINARY
SUBJECT TO REVISIONS
SCHEMATIC PREPARED BY OR UNDER THE DIRECT SUPERVISION OF:
BRIAN SENNELL P.E. 124604
JASON M. ROBERTSON P.E. 124604
JANUARY 2019
DATE

NOT INTENDED FOR CONSTRUCTION, BIDDING, OR PERMIT PURPOSES

100% FINAL
PRELIMINARY, SUBJECT TO CHANGE

ROLL 3 OF 23

HDR
HDR Firm Registration No. F-754
17111 Preston Road, Suite 300
Dallas, Texas 75248-1232
972.992.6400

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Dallas District
Mohamed K. Bur, P.E.
Dallas District Engineer

IH 35

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To: 0.7 mi North of FM 3002

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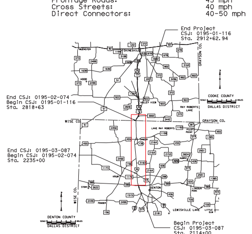


Scale: Horizontal 1"=200'
Scale: Vertical 1"=20'

JANUARY 2019

PRELIMINARY
SUBJECT TO REVISIONS
SCHEMATIC PREPARED BY OR UNDER THE DIRECT SUPERVISION OF:

NAME	P.E. NUMBER
BRIAN SWINDELL	80688
JASON A. RICHTER	114508

JANUARY 2019
DATE

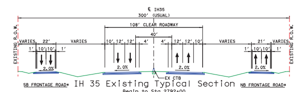
100% FINAL
PRELIMINARY, SUBJECT TO CHANGE

NOT INTENDED FOR CONSTRUCTION, BIDDING, OR PERMIT PURPOSES

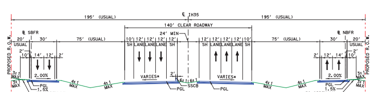
ROLL 4 OF 23

HDR
Firm Registration No. F-754
17111 Preston Road, Suite 300
Dallas, Texas 75248-1232
972.960.4400

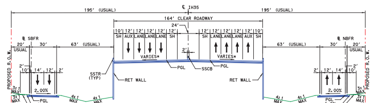
...\Schematic\IH35PRVPLOT04.dgn



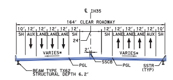
IH 35 Existing Typical Section
Begin to Sta 2792+00
* No existing frontage roads from Sta 2418+00 to Sta 2421+00 and from Sta 2499+00 to Sta 2508+00



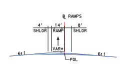
IH 35 Proposed Typical Section
Sta 2235+00 to Sta 2540+00
Sta 2655+00 to End
NTS



IH 35 Proposed Typical Section
Retaining Walls at Cross Street
NTS

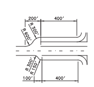


IH 35 Proposed Mainlane Bridge Typical Section
Sta 2302+13.00 to Sta 2305+45.00
NTS

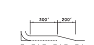


IH 35 Proposed Ramp Typical Section
(Direction of Travel)
NTS

* SEE SUPERELEVATION TABLES



Typical Intersection Approach
NTS



Typical U-Turn to Frontage Rd Taper
NTS

LEGEND

MAINLANES	MANAGED LANES	EXISTING RIGHT-OF-WAY
FRONTAGE ROADS	TRANSITION PAVEMENT	PROPOSED RIGHT-OF-WAY
RAMPS	BY OTHERS	PROPOSED DRAINAGE EASEMENT
BRIDGES	PAVEMENT REMOVAL	FUTURE WORK BY OTHERS
CROSS STREETS/LOCAL ROADS	CONTROL OF ACCESS	PROPERTY LINES
LOCAL STREET CONNECTOR	PROPOSED RETAINING WALL	

General Notes:

1. EXISTING FEATURES WERE NOT FIELD SURVEYED. SCHEMATICS ARE BASED ON AERIAL SURVEYS AND RECORD PLANS PROVIDED MARCH 2016 AND DECEMBER 2016.
2. TRAFFIC VOLUMES BASED ON NCTCOG MODEL AND WILL BE APPROVED BY TXDOT TP&P.
3. ADA RAMPS AND SIDEWALK ARE DESIGNED PER TEXAS ACCESSIBILITY STANDARDS. LOCATIONS ARE PRELIMINARY AND SUBJECT TO CHANGE. FINAL LOCATIONS TO BE DETERMINED DURING PS&E DEVELOPMENT.
4. ACCESS DENIAL LIMITS ARE DETERMINED PER TXDOT ACCESS MANAGEMENT MANUAL.
5. BUILDINGS ARE SHOWN AS POTENTIAL DISPLACEMENTS IF THE PROPOSED ROW PHYSICALLY INTERSECTS THE EXISTING BUILDING STRUCTURE.
6. DRIVEWAY LOCATIONS ARE PRELIMINARY AND WILL BE FURTHER DEVELOPED DURING PS&E DESIGN.
7. EXISTING PAVEMENT AND BRIDGES LOCATED WITHIN LIMITS OF PROPOSED RECONSTRUCTION WILL BE REMOVED (UNLESS OTHERWISE NOTED).
8. SUPER ELEVATION AXIS OF ROTATION IS ABOUT THE PGL'S AS SHOWN IN THE TYPICAL SECTIONS.
9. CURBS ON FRONTAGE ROADS AND CROSS STREETS ARE TYPE II (UNLESS NOTED OTHERWISE).
10. DIMENSIONS ARE TO THE EDGE OF PAVEMENT OR NOMINAL FACE OF CURB, RAIL, BARRIER, OR WALL (UNLESS NOTED OTHERWISE).
11. APPROXIMATE 100 YEAR FLOODPLAIN LIMITS ARE BASED UPON FEMA FLOOD INSURANCE RATE MAPS 48121C0360G, 48121C220G, 48121C0210G, AND 48121C0070G (2011)
12. CONVENTIONAL ROADWAY SIGNAGE (SMALL SIGNS) ARE NOT SHOWN AND WILL BE DEVELOPED DURING THE PS&E PHASE OF THE PROJECT.
13. OWNERSHIP INFORMATION SHOWN ON SCHEMATIC OBTAINED FROM DENTON COUNTY APPRAISAL DISTRICT (NOVEMBER 2016) AND COOKE COUNTY APPRAISAL DISTRICT (OCTOBER 2016).

CURVE DATA

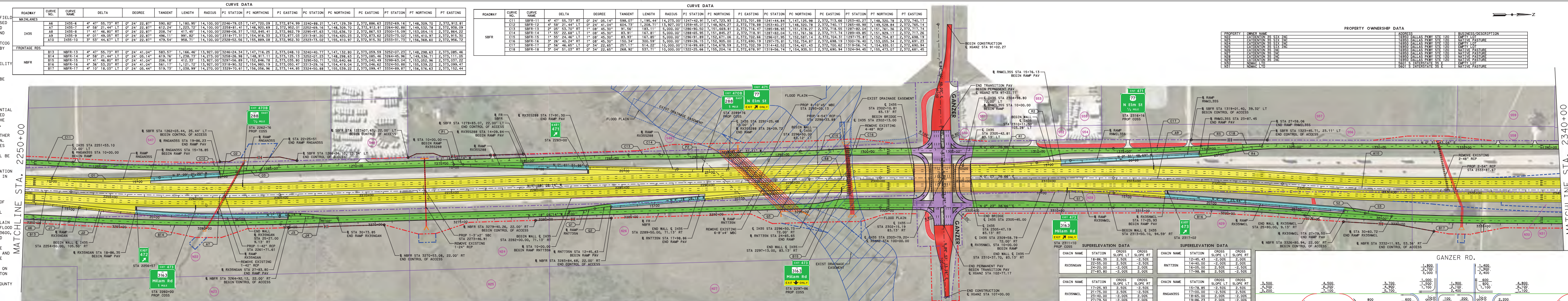
ROADWAY	CURVE NO.	CURVE NAME	DELTA	DEGREE	TANGENT	LENGTH	RADIUS	PI STATION	PI NORTHING	PI EASTING	PC STATION	PC NORTHING	PC EASTING	PT STATION	PT NORTHING	PT EASTING
MAINLANES																
IH35	A6	IH35-6	4° 47' 55.73" RT	0° 24' 22.87"	590.82'	1,180.95'	14,100.00'	2246+79.03	7,147,720.09	2,372,874.99	2240+88.21	7,147,129.39	2,372,886.63	2252+69.16	7,148,309.70	2,372,912.81
	A7	IH35-7	4° 58' 21.44" LT	0° 24' 22.87"	612.24'	1,223.72'	14,100.00'	2258+81.41	7,148,920.69	2,372,952.01	2252+69.16	7,148,309.70	2,372,912.81	2264+92.88	7,149,532.78	2,372,938.09
	A8	IH35-8	1° 41' 46.80" RT	0° 24' 22.87"	208.74'	417.45'	14,100.00'	2298+06.37	7,152,845.41	2,372,862.79	2295+97.63	7,152,636.72	2,372,867.53	2300+15.09	7,153,054.15	2,372,864.22
	A9	IH35-9	4° 01' 49.05" RT	0° 24' 22.87"	496.11'	991.82'	14,100.00'	2318+77.31	7,154,916.33	2,372,877.03	2313+81.20	7,154,420.23	2,372,873.62	2323+73.02	7,155,410.97	2,372,915.30
	A10	IH35-10	3° 53' 44.67" LT	0° 24' 22.87"	479.54'	958.71'	14,100.00'	2328+52.56	7,155,889.08	2,372,952.30	2323+73.02	7,155,410.97	2,372,915.30	2333+31.73	7,156,368.60	2,372,956.72
FRONTAGE RDS																
NBFR	B13	NBFR-13	4° 47' 55.73" RT	0° 24' 41.04"	583.57'	1,166.46'	13,927.00'	3246+24.34	7,147,716.25	2,373,048.10	3240+40.77	7,147,132.80	2,373,059.59	3252+07.23	7,148,298.63	2,373,085.46
	B14	NBFR-14	4° 58' 21.44" LT	0° 24' 05.14"	619.76'	1,238.73'	14,273.00'	3258+26.98	7,148,917.11	2,373,125.13	3252+07.23	7,148,298.63	2,373,085.46	3264+45.96	7,149,536.71	2,373,111.05
	B15	NBFR-15	1° 41' 46.80" RT	0° 24' 41.04"	206.18'	412.33'	13,927.00'	3297+56.89	7,152,846.78	2,373,035.80	3295+50.71	7,152,640.66	2,373,040.49	3299+63.04	7,153,052.96	2,373,037.22
	B16	NBFR-16	4° 36' 53.20" RT	0° 24' 41.04"	561.17'	1,121.72'	13,927.00'	3318+90.32	7,154,980.19	2,373,050.47	3313+29.16	7,154,419.04	2,373,046.62	3324+50.88	7,155,539.22	2,373,099.47
	B17	NBFR-17	4° 10' 18.03" LT	0° 24' 05.44"	519.73'	1,038.99'	14,270.00'	3329+70.61	7,156,056.96	2,373,144.85	3324+50.88	7,155,539.22	2,373,099.47	3334+89.87	7,156,576.63	2,373,152.44

CURVE DATA

ROADWAY	CURVE NO.	CURVE NAME	DELTA	DEGREE	TANGENT	LENGTH	RADIUS	PI STATION	PI NORTHING	PI EASTING	PC STATION	PC NORTHING	PC EASTING	PT STATION	PT NORTHING	PT EASTING
SBFR	C11	SBFR-11	4° 47' 55.73" RT	0° 24' 05.14"	598.07'	1,195.44'	14,273.00'	1247+42.91	7,147,723.93	2,372,701.88	1241+44.84	7,147,125.98	2,372,713.66	1253+40.27	7,148,320.78	2,372,740.17
	C12	SBFR-12	4° 58' 21.44" LT	0° 24' 41.04"	604.73'	1,208.71'	13,927.00'	1259+45.01	7,148,924.27	2,372,778.88	1253+40.27	7,148,320.78	2,372,740.17	1265+48.98	7,149,528.84	2,372,765.14
	C13	SBFR-13	2° 05' 53.70" RT	1° 08' 45.30"	91.56'	183.11'	5,000.00'	1286+90.50	7,151,669.81	2,372,716.47	1285+98.93	7,151,578.27	2,372,718.55	1287+82.04	7,151,761.36	2,372,717.74
	C14	SBFR-14	1° 55' 22.68" LT	1° 08' 45.30"	83.91'	167.81'	5,000.00'	1288+65.95	7,151,845.27	2,372,718.91	1287+82.04	7,151,761.36	2,372,717.74	1289+49.85	7,151,929.17	2,372,717.26
	C15	SBFR-15	1° 55' 24.46" LT	1° 08' 45.30"	83.93'	167.85'	5,000.00'	1296+91.89	7,152,671.06	2,372,702.66	1296+07.95	7,152,587.14	2,372,704.31	1297+75.81	7,152,754.87	2,372,698.19
	C16	SBFR-16	3° 26' 40.24" RT	1° 08' 45.30"	150.34'	300.59'	5,000.00'	1299+26.15	7,152,905.00	2,372,690.19	1297+75.81	7,152,754.87	2,372,698.19	1300+76.40	7,153,055.34	2,372,691.23
	C17	SBFR-17	2° 56' 46.65" LT	0° 34' 22.65"	257.17'	514.22'	10,000.00'	1316+99.69	7,154,678.59	2,372,702.39	1314+42.52	7,154,421.43	2,372,700.62	1319+56.74	7,154,935.51	2,372,690.94
	C18	SBFR-18	3° 04' 51.03" RT	0° 34' 22.65"	268.92'	537.71'	10,000.00'	1322+25.66	7,155,204.16	2,372,678.97	1319+56.74	7,154,935.51	2,372,690.94	1324+94.45	7,155,473.07	2,372,681.45

PROPERTY OWNERSHIP DATA

PROPERTY	OWNER NAME	ADDRESS	BUSINESS/DESCRIPTION
N22	CATDENTON 35 SIX INC	16950 DALLAS PKWY STE 120	EMPTY LOT
N23	CATDENTON 35 SIX INC	16950 DALLAS PKWY STE 120	NATIVE PASTURE
N24	CATDENTON 35 SIX INC	16950 DALLAS PKWY STE 120	EMPTY LOT
N25	CATDENTON 35 SIX INC	16950 DALLAS PKWY STE 120	EMPTY LOT
N26	CATDENTON 35 INC	16950 DALLAS PKWY STE 120	NATIVE PASTURE
N27	CATDENTON 35 INC	16950 DALLAS PKWY STE 120	NATIVE PASTURE
N28	CATDENTON 35 INC	16950 DALLAS PKWY STE 120	NATIVE PASTURE
N29	CATDENTON 35 INC	16950 DALLAS PKWY STE 120	NATIVE PASTURE
N30	NOMAC LTD	5601 S INTERSTATE 35 E	EMPTY LOT
N31	NOMAC LTD	5601 S INTERSTATE 35 E	NATIVE PASTURE



CURVE DATA

ROADWAY	CURVE NO.	CURVE NAME	DELTA	DEGREE	TANGENT	LENGTH	RADIUS	PI STATION	PI NORTHING	PI EASTING	PC STATION	PC NORTHING	PC EASTING	PT STATION	PT NORTHING	PT EASTING
RAMPS																
RX35NGAN	J1	RX35NGAN-1	5° 36' 34.06" RT	1° 00' 18.68"	279.25'	558.05'	5,700.00'	12+79.25	7,148,081.70	2,372,969.34	10+00.00	7,147,802.56	2,372,961.47	15+58.05	7,148,358.73	2,373,004.46
	J2	RX35NGAN-2	8° 31' 38.11" LT	0° 43' 30.95"	588.96'	1,175.75'	7,900.00'	21+47.01	7,148,943.01	2,373,078.53	15+58.05	7,148,358.73	2,373,004.46	27+33.80	7,149,531.82	2,373,065.15
	J3	RX35NGAN-3	7° 54' 49.89" RT	5° 27' 24.27"	72.63'	145.03'	1,050.00'	28+56.43	7,149,654.42	2,373,062.36	27+83.80	7,149,581.81	2,373,064.01	29+28.83	7,149,726.57	2,373,070.72
	J4	RX35NGAN-4	7° 54' 49.89" LT	5° 27' 24.27"	72.63'	145.03'	1,050.00'	30+01.46	7,149,798.71	2,373,079.09	29+28.83	7,149,726.57	2,373,070.72	30+73.85	7,149,871.32	2,373,077.43
RNGAN35S	O1	RNGAN35S-1	6° 21' 16.65" LT	1° 00' 18.68"	316.42'	632.18'	5,700.00'	13+16.42	7,148,513.79	2,372,851.63	10+00.00	7,148,197.86	2,372,833.97	16+32.18	7,148,829.72	2,372,834.21
	O2	RNGAN35S-2	5° 22' 46.55" LT	5° 27' 24.27"	49.33'	98.59'	1,050.00'	20+35.56	7,149,232.49	2,372,812.00	19+86.23	7,149,183.24	2,372,814.72	20+84.82	7,149,281.28	2,372,804.68
	O3	RNGAN35S-3	7° 40' 37.14" RT	5° 27' 24.27"	70.45'	140.69'	1,050.00'	21+55.27	7,149,350.95	2,372,794.22	20+84.82	7,149,281.28	2,372,804.68	22+25.51	7,149,421.39	2,372,793.17
RX35S288	P1	RX35S288-1	3° 00' 00.00" RT	5° 27' 24.27"	27.50'	54.98'	1,050.00'	10+27.50	7,150,581.42	2,372,767.22	10+00.00	7,150,553.93	2,372,767.84	10+54.98	7,150,608.90	2,372,768.03
	P2	RX35S288-2	3° 00' 00.00" LT	1° 00' 18.68"	149.26'	298.45'	5,700.00'	24+60.53	7,152,013.84	2,372,809.67	23+11.27	7,151,864.64	2,372,805.25	26+09.72	7,152,163.06	2,372,806.28

CURVE DATA

ROADWAY	CURVE NO.	CURVE NAME	DELTA	DEGREE	TANGENT	LENGTH	RADIUS	PI STATION	PI NORTHING	PI EASTING	PC STATION	PC NORTHING	PC EASTING	PT STATION	PT NORTHING	PT EASTING
RN7735N	Q1	RN7735N-1	8° 11' 46.26" RT	5° 27' 24.27"	75.23'	150.20'	1,050.00'	10+75.23	7,151,305.18	2,373,044.84	10+00.00	7,151,229.97	2,373,046.55	11+50.20	7,151,379.38	2,373,032.42
	Q2	RN7735N-2	5° 11' 46.26" RT	5° 27' 24.27"	47.65'	95.23'	1,050.00'	11+97.85	7,151,426.37	2,373,024.56	11+50.20	7,151,379.38	2,373,032.42	12+45.43	7,151,473.88	2,373,020.99
	Q3	RN7735N-3	3° 12' 56.70" RT	1° 00' 18.68"	160.00'	319.91'	5,700.00'	23+05.73	7,152,531.20	2,372,941.45	21+45.73	7,152,371.65	2,372,953.45	24+65.65	7,152,691.17	2,372,938.41
RNMIL35S	R1	RNMIL35S-1	4° 21' 28.11" LT	1° 00' 18.68"	216.87'	433.53'	5,700.00'	12+16.87	7,153,755.21	2,372,797.04	10+00.00	7,153,538.35	2,372,795.55	14+33.53	7,153,971.56	2,372,782.05
	R2	RNMIL35S-2	1° 26' 00.76" RT	0° 43' 30.95"	98.83'	197.66'	7,900.00'	15+32.37	7,154,070.16	2,372,775.22	14+33.53	7,153,971.56	2,372,782.05	16+31.19	7,154,168.90	2,372,770.86
	R3	RNMIL35S-3	9° 06' 03.57" LT	5° 27' 24.27"	83.57'	166.78'	1,050.00'	24+71.01	7,155,007.90	2,372,733.78	23+87.45	7,154,924.42	2,372,737.47	25+54.23	7,155,089.75	2,372,716.93
	R4	RNMIL35S-4	11° 07' 20.45" RT	5° 27' 24.27"	102.24'	203.83'	1,050.00'	26+56.47	7,155,189.89	2,372,696.32	25+54.23	7,155,089.75	2,372,716.93	27+58.06	7,155,292.12	2,372,695.41
RX35NMIL	S1	RX35NMIL-1	4° 16' 44.97" RT	1° 00' 18.68"	212.95'	425.71'	5,700.00'	12+12.95	7,154,210.28	2,372,944.18	10+00.00	7,153,997.34	2,372,942.71	14+25.71	7,154,422.53	2,372,961.53
	S2	RX35NMIL-2	6° 48' 48.19" RT	5° 27' 24.27"	62.50'	124.86'	1,050.00'	28+42.04	7,155,834.16	2,373,076.92	27+79.54	7,155,771.86	2,373,071.83	29+04.40	7,155,895.41	2,373,089.37
	S3	RX35NMIL-3	8° 31' 46.85" LT	5° 27' 24.27"	78.30'	156.31'	1,050.00'	29+82.70	7,155,972.14	2,373,104.96	29+04.40	7,155,895.41	2,373,089.37	30+60.72	7,156,050.34	2,373,109.00

SUPERELEVATION DATA

CROSS SLOPE LT	STATION LT	CHAIN NAME	STATION RT	CROSS SLOPE RT
-2.50%	2250+00.00	IH35	2250+00.00	-2.50%
-2.50%	2340+00.00		2340+00.00	-2.50%

SUPERELEVATION DATA

CHAIN NAME	STATION	CROSS SLOPE LT	CROSS SLOPE RT
RX35NGAN	18+86.35	2.50%	-2.50%
	22+55.00	2.50%	-2.50%
	24+20.00	-2.00%	2.00%
	27+83.80	-2.00%	2.00%

CHAIN NAME	STATION	CROSS SLOPE LT	CROSS SLOPE RT
RX35NMIL	17+25.93	2.50%	-2.50%
	21+75.00	2.50%	-2.50%
	23+40.00	-2.00%	2.00%
	27+79.50	-2.00%	2.00%

CHAIN NAME	STATION	CROSS SLOPE LT	CROSS SLOPE RT
RX35S288	14+09.84	2.00%	-2.00%
	15+20.00	2.00%	-2.00%
	16+85.00	-2.50%	2.50%
	17+91.30	-2.50%	2.50%

SUPERELEVATION DATA

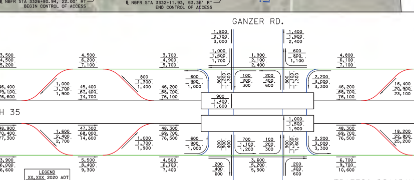
CHAIN NAME	STATION	CROSS SLOPE LT	CROSS SLOPE RT
RN7735N	12+45.43	-2.00%	2.00%
	14+40.00	-2.00%	2.00%
	16+05.00	2.50%	-2.50%
	17+98.86	2.50%	-2.50%

CHAIN NAME	STATION	CROSS SLOPE LT	CROSS SLOPE RT
RNGAN35S	15+78.85	-2.50%	2.50%
	17+00.00	-2.50%	2.50%
	18+65.00	2.00%	-2.00%
	19+86.23	2.00%	-2.00%

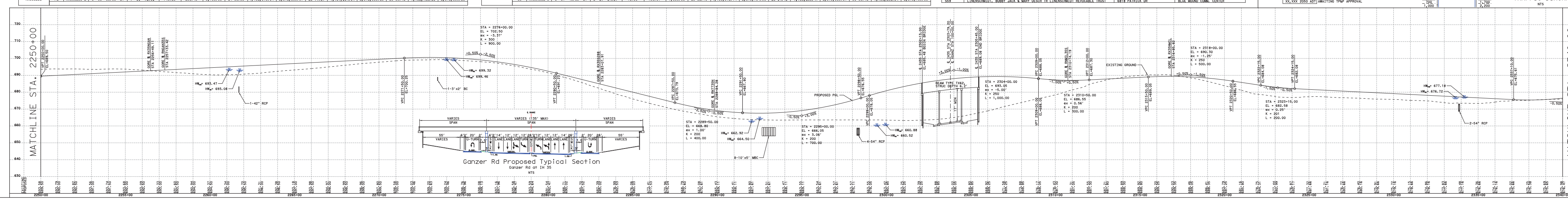
CHAIN NAME	STATION	CROSS SLOPE LT	CROSS SLOPE RT
RNMIL35S	15+76.13	-2.50%	2.50%
	19+00.00	-2.50%	2.50%
	20+65.00	2.00%	-2.00%
	23+87.45	2.00%	-2.00%

PROPERTY OWNERSHIP DATA

PROPERTY	OWNER NAME	ADDRESS	BUSINESS/DESCRIPTION
S47	NEW FARMS LLC	3311 N INTERSTATE 35 STE 150	PASTURE
S48	LINKEN REAL ESTATE LP	11399 US HIGHWAY 380 W	BEST VALUE RV
S49	CATDENTON 35 SEVEN INC	16950 DALLAS PKWY STE 120	NATIVE PASTURE
S50	SMITH, JAMES D	7833 N INTERSTATE 35	COMMERCIAL
S51	SMITH, JAMES D	7833 N INTERSTATE 35	CATALYST OILFIELD SERVICES
S52	SMITH, JAMES D	7833 N INTERSTATE 35	COMMERCIAL
S53	SMITH, JAMES D	7833 N INTERSTATE 35	SMITH BROTHERS
S54	SMITH, JAMES D	7833 N INTERSTATE 35	NATIVE PASTURE
S55	SKD FAMILY PARTNERS LTD	11584 EAGLE VIEW DR	NATIVE PASTURE
S56	AMERICAN REIT INC	3170 GANZER RD W	COMMERCIAL
S57	AMERICAN REIT INC	3170 GANZER RD W	RESIDENTIAL
S58	LINENSCHMIDT, BOBBY JACK & MARY OESCH TR LINENSCHMIDT REVOCABLE TRUST	6818 PATRICK DR	NATIVE PASTURE
S59	LINENSCHMIDT, BOBBY JACK & MARY OESCH TR LINENSCHMIDT REVOCABLE TRUST	6818 PATRICK DR	BLUE MOUND COMM. CENTER



TRAFFIC DIAGRAM
NTS



Ganzer Rd Proposed Typical Section
Ganzer Rd at IH 35
NTS

Texas Department of Transportation
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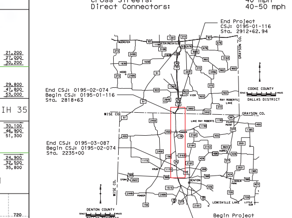
Dallas District
Mohamed K. Bur, P.E.
Dallas District Engineer
IH 35
DESIGN SCHEMATIC
From: US 380
To: 0.7 mi North of FM 3002
CSJ: 0195-03-087
CSJ: 0195-02-074
CSJ: 0195-01-116
Denton and Cooke Counties
Functional Class: Interstate
Project Length: 15.13 Mile
Design Speed:
IH 35 Mainlanes: 70 mph
SL 288 Mainlanes: 70 mph
Ramps: 50 mph
Turnaround Ramps: 15 mph
Local Street Connector: 20 mph
Frontage Roads: 45 mph
Cross Streets: 40 mph
Direct Connectors: 40-50 mph



Scale: Horizontal 1"=200'
Scale: Vertical 1"=20'
JANUARY 2019
PRELIMINARY
SUBJECT TO REVISIONS
SCHEMATIC PREPARED BY OR UNDER THE DIRECT SUPERVISION OF:
BRIAN SWINDELL 80688
JASON A. RICHTER 114508
JANUARY 2019
100% FINAL
PRELIMINARY, SUBJECT TO CHANGE
NOT INTENDED FOR CONSTRUCTION, BIDDING, OR PERMIT PURPOSES
ROLL 4 OF 23
HDR
Firm Registration No. F-754
17111 Preston Road, Suite 300
Dallas, Texas 75248-1232
972.960.4400
...\Schematic\IH35PRVPLOT04.dgn

Texas Department of Transportation

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Dallas District
Mohamed K. Burr, P.E.
Dallas District Engineer

IH 35

DESIGN SCHEMATIC

From: US 380

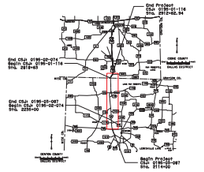
To: 0.7 mi North of FM 3002

CSJ: 0195-03-087
CSJ: 0195-02-074
CSJ: 0195-01-116

Denton and Cooke Counties
Functional Class: Interstate
Project Length: 15.13 Mile

Design Speed:

IH 35 Mainlanes:	70 mph
SL 288 Mainlanes:	70 mph
Ramps:	50 mph
Turnaround Ramps:	15 mph
Local Street Connectors:	30 mph
Cross Streets:	40 mph
Frontage Roads:	30 mph
Direct Connectors:	40-50 mph



Scale: Horizontal 1"=200'
Scale: Vertical 1"=20'

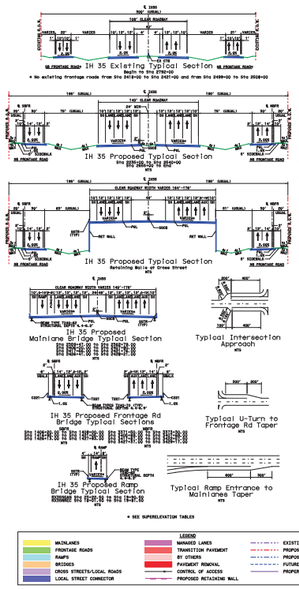
JANUARY 2019

PRELIMINARY
SUBJECT TO REVISIONS
HYDRAULICS PREPARED BY OR UNDER THE DIRECT SUPERVISION OF:
BRIAN MENDELL — DATE
JASON A. ROUNTER — LICENSE P.E. NUMBER
JANUARY 2019 — DATE
NOT INTENDED FOR CONSTRUCTION, BIDDING, OR PERMIT PURPOSES

100% FINAL
PRELIMINARY, SUBJECT TO CHANGE

ROLL 5 OF 23

HDR
Firm Registration No. F-754
17111 Preston Road, Suite 300
Dallas, Texas 75248-1232
972.992.6400



* SEE SUPERELEVATION TABLES

LEGEND

MAINLANES	MANAGED LANES	EXISTING RIGHT-OF-WAY
FRONTAGE ROADS	TRANSITION PAVEMENT	PROPOSED RIGHT-OF-WAY
RAMPS	BY OTHERS	PROPOSED DRAINAGE EASEMENT
BRIDGES	PAVEMENT REMOVAL	FUTURE WORK BY OTHERS
CROSS STREETS/LOCAL ROADS	CONTROL OF ACCESS	PROPERTY LINES
LOCAL STREET CONNECTOR	PROPOSED RETAINING WALL	

General Notes

1. EXISTING FEATURES WERE NOT FIELD VERIFIED. CHARACTERISTICS ARE BASED ON AERIAL SURVEYS AND RECORD PLANS PROVIDED MARCH 2014 AND MAY 2016 BY TXDOT.
2. TRAFFIC VOLUMES BASED ON METRON MODEL AND WILL BE APPROVED BY TXDOT TPAD.
3. ADA RAMPS AND SIDEWALK ARE PRELIMINARY AND SUBJECT TO ACCESSIBILITY STANDARDS. LOCATIONS ARE PRELIMINARY AND SUBJECT TO CHANGE. FINAL LOCATIONS TO BE DETERMINED DURING FINAL DESIGN PHASE.
4. ACCESS DENIAL LIMITS ARE DETERMINED PER TXDOT ACCESS MANAGEMENT MANUAL.
5. BUILDINGS ARE SHOWN AS POTENTIAL DISPLACEMENTS IF THE PROPOSED ROW PHYSICALLY INTERSECTS THE EXISTING BUILDING STRUCTURE. ROW LINES ARE SHOWN AS PRELIMINARY AND WILL BE FURTHER DEVELOPED DURING FINAL DESIGN.
7. EXISTING PAVEMENT AND BRIDGES LOCATED WITHIN LIMITS OF CONSTRUCTION WILL BE REMOVED UNLESS OTHERWISE NOTED.
8. ROADWAY ELEVATION AXIS OF ROTATION IS ABOUT THE PGL'S AS SHOWN IN THE TYPICAL SECTIONS.
9. CURBS ON FRONTAGE ROADS AND CROSS STREETS ARE TYPE II UNLESS OTHERWISE NOTED.
10. SIDEWALKS ARE TO THE EDGE OF PAVEMENT OR NOMINAL FACE OF CURB, NOT INCLUDING ANY WALL, GUARDRAIL OR RAILING.
11. APPROXIMATE 100 YEAR FLOODPLAIN LIMITS ARE BASED UPON FEMA FLOOD INSURANCE RATE MAPS 48121C0260G, EFFECTIVE 09/26/2008, AND 48121C0255G EFFECTIVE 09/26/2008.
12. CONVENTIONAL ROADWAY SIGNAGE (SIGNS, SIGNAL ARM) ARE NOT SHOWN AND WILL BE DEVELOPED DURING THE FINAL DESIGN PHASE.
13. OWNERSHIP INFORMATION SHOWN ON SCHEMATIC OBTAINED FROM DENTON COUNTY APPRAISAL DISTRICT (DENTON COUNTY ACCESS, 2019) AND COOKE COUNTY APPRAISAL DISTRICT (OCTOBER 2014).

PROPERTY OWNERSHIP DATA

PARCEL #	OWNER	DESCRIPTION
1	[illegible]	[illegible]
2	[illegible]	[illegible]
3	[illegible]	[illegible]
4	[illegible]	[illegible]
5	[illegible]	[illegible]

Texas Department of Transportation
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Dallas District
Mohamed K. Bur, P.E.
Dallas District Engineer

IH 35
DESIGN SCHEMATIC

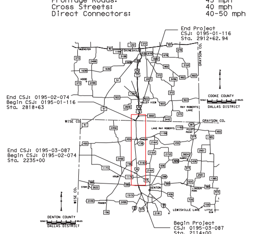
From: US 380
To: 0.7 mi North of FM 3002

CSJ: 0195-03-087
CSJ: 0195-02-074
CSJ: 0195-01-116

Denton and Cooke Counties
Functional Class: Interstate
Project Length: 15.13 Mile

Design Speed:

IH 35 Mainlanes:	70 mph
SL 288 Mainlanes:	70 mph
Ramps:	50 mph
Turnaround Ramps:	15 mph
Local Street Connector:	20 mph
Frontage Roads:	45 mph
Cross Streets:	40 mph
Direct Connectors:	40-50 mph



Scale: Horizontal 1"=200'
Scale: Vertical 1"=20'
JANUARY 2019

PRELIMINARY
SUBJECT TO REVISIONS
SCHEMATIC PREPARED BY OR UNDER THE DIRECT SUPERVISION OF:

NAME	P.E. NUMBER
BRIAN SWINDELL	80688
JASON A. RICHTER	114508

JANUARY 2019
DATE

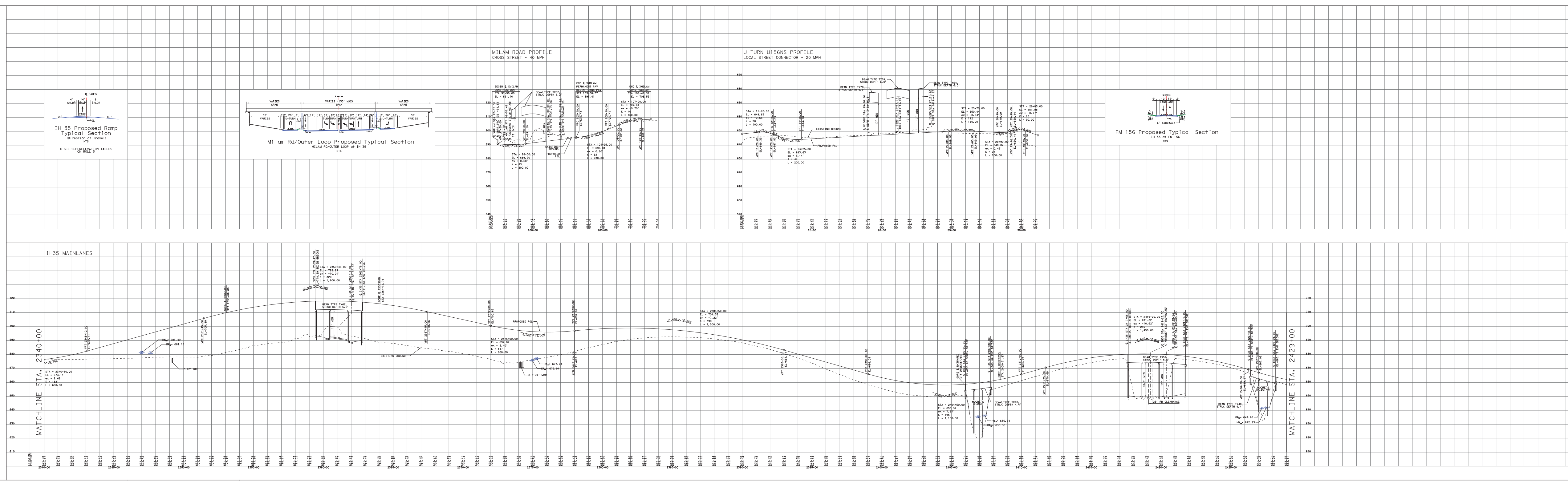
100% FINAL
PRELIMINARY, SUBJECT TO CHANGE

NOT INTENDED FOR CONSTRUCTION, BIDDING, OR PERMIT PURPOSES

ROLL 6 OF 23

HDR
Firm Registration No. F-754
17111 Preston Road, Suite 300
Dallas, Texas 75248-1232
972.960.4400

...\Schematic\IH35PRVPLOT06.dgn



Texas Department of Transportation
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Dallas District
Mohamed K. Bur, P.E.
Dallas District Engineer
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CSJ: 0195-03-087
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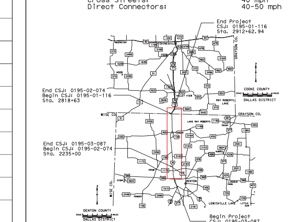
Denton and Cooke Counties
Functional Class: Interstate
Project Length: 15.13 Mile
Design Speed:
IH 35 Mainlanes: 70 mph
SL 288 Mainlanes: 70 mph
Ramps: 50 mph
Turnaround Ramps: 15 mph
Local Street Connector: 20 mph
Frontage Roads: 45 mph
Cross Streets: 40 mph
Direct Connectors: 40-50 mph



Scale: Horizontal 1"=200'
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JANUARY 2019
PRELIMINARY
SUBJECT TO REVISIONS
SCHEMATIC PREPARED BY OR UNDER THE DIRECT SUPERVISION OF:
BRIAN SWINDELL 80688
JASON A. RICHTER 114508
JANUARY 2019
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Dallas District
Mohamed K. Burr, P.E.
Dallas District Engineer

IH 35

DESIGN SCHEMATIC

From: US 380

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CSJ: 0195-03-087
CSJ: 0195-02-074
CSJ: 0195-01-116

Denton and Cooke Counties
Functional Class: Interstate
Project Length: 15.13 Mile

Design Speed:

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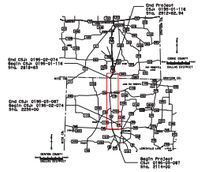
SL 288 Mainlanes:	70 mph
Ramps:	50 mph
Turnaround Ramps:	15 mph
Local Street Connectors:	30 mph
Cross Streets:	40 mph
Frontage Roads:	40 mph
Direct Connectors:	40-50 mph


END PROJECT
END STA. 2519+00
BEGIN STA. 2429+00
SH 121
SH 121
SH 121

Texas Department of Transportation

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Dallas District
Mohamed K. Burr, P.E.
Dallas District Engineer

IH 35

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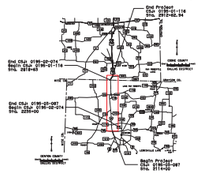
Cross Streets:	40 mph
Frontage Roads:	30 mph
Direct Connectors:	40-50 mph



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Scale: Vertical 1"=20'
JANUARY 2019

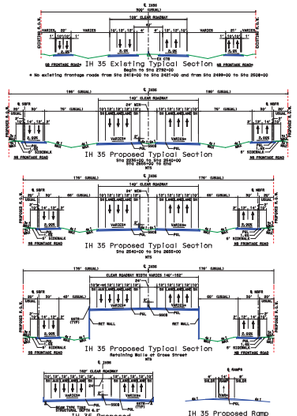
PRELIMINARY SUBJECT TO REVISIONS
SCHEMATIC PREPARED BY OR UNDER THE DIRECT SUPERVISION OF:
BRIAN SEMMELL — NAME — P.E. NUMBER
JASON A. ROUNTREE — 119008 — P.E. NUMBER
JANUARY 2019 — DATE

NOT INTENDED FOR CONSTRUCTION, BIDDING, OR PERMIT PURPOSES

100% FINAL
ALL DESIGN SUBJECT TO CHANGE

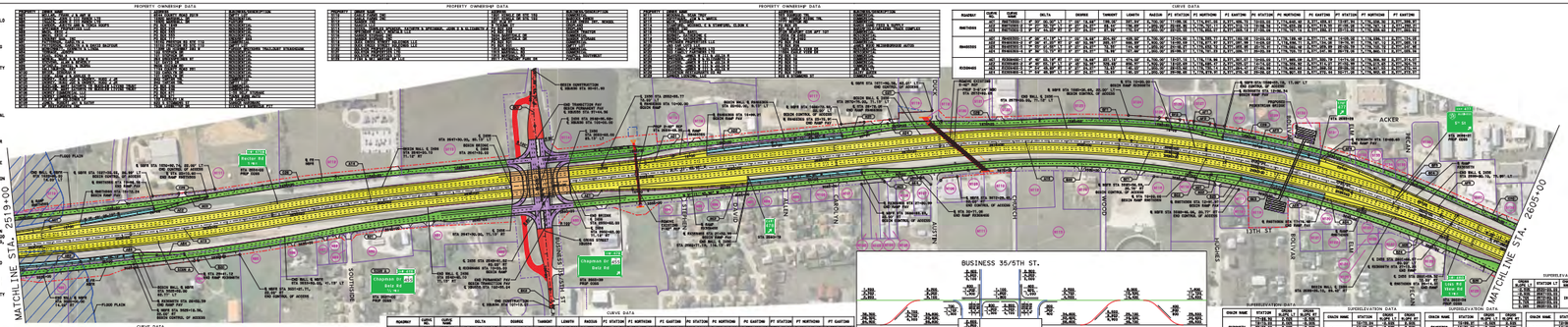
ROLL 8 OF 23

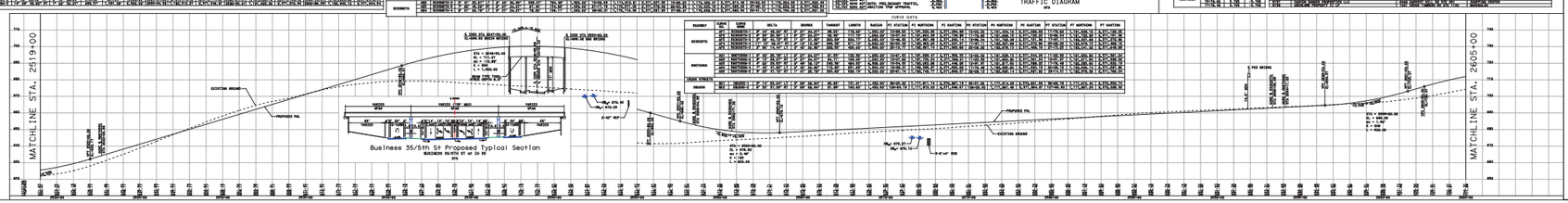
HDR
Firm Registration No. F-754
17111 Preston Road, Suite 300
Dallas, Texas 75248-1232
972.992.6400

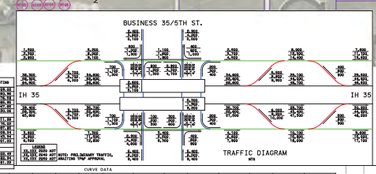


General Notes:

1. EXISTING FEATURES WERE NOT FIELD VERIFIED. CHARACTERISTICS ARE BASED ON AERIAL SURVEYS AND RECORD PLANS PROVIDED MARCH 2014 AND MAY 2016 BY TXDOT.
2. TRAFFIC VOLUMES BASED ON METRON MODEL AND WILL BE APPROVED BY TXDOT TPP.
3. ADA RAMPS AND SIDEWALK ARE SHOWN TO ADDRESS ACCESSIBILITY STANDARDS. LOCATIONS ARE PRELIMINARY AND SUBJECT TO CHANGE. FINAL LOCATIONS TO BE DETERMINED DURING PSNC DESIGN PHASE.
4. ACCESS DENIAL LIMITS ARE DETERMINED PER TXDOT ACCESS MANAGEMENT MANUAL.
5. BUILDINGS ARE SHOWN AS POTENTIAL DISPLACEMENTS IF THE PROPOSED ROW PHYSICALLY INTERSECTS THE EXISTING BUILDING STRUCTURE. ALL ROW LIMITS SHOWN ARE PRELIMINARY AND WILL BE FURTHER DEVELOPED DURING PSNC DESIGN.
6. EXISTING PAVEMENT AND BRIDGES LOCATED WITHIN LIMITS OF CONSTRUCTION WILL BE REMOVED UNLESS OTHERWISE NOTED.
7. ROADWAY ELEVATION AXIS OF ROTATION IS ABOUT THE PGL'S AS SHOWN IN THE TYPICAL SECTIONS.
8. CURBS ON FRONTAGE ROADS AND CROSS STREETS ARE TYPE II UNLESS OTHERWISE NOTED.
9. SIDEWALKS ARE TO THE EDGE OF PAVEMENT OR NOMINAL FACE OF CURB, WITHOUT BARRIER, OR WALL, UNLESS OTHERWISE NOTED.
10. APPROXIMATE 100 YEAR FLOODPLAIN LIMITS ARE BASED UPON FEMA FLOOD INSURANCE RATE MAPS 48121C0505G, EFFECTIVE SEPTEMBER 26, 2008 AND REVISED SEPTEMBER 26, 2008.
12. CONVENTIONAL ROADWAY SIGNAGE (SIGNS, SIGNAL AND HOT SHOWN AND WILL BE DEVELOPED DURING THE PSNC DESIGN PHASE.
13. OWNERSHIP INFORMATION ASSIGN ON SCHEMATIC OBTAINED FROM DENTON COUNTY APPRAISAL DISTRICT (NOVEMBER 2014) AND COOKE COUNTY APPRAISAL DISTRICT (OCTOBER 2014).
14. ROW CONVEYANCE TO BE DETERMINED DURING PSNC DESIGN PHASE.
15. ROW CONVEYANCE TO BE DETERMINED DURING PSNC DESIGN PHASE.







Texas Department of Transportation
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Dallas District
Mohamed K. Burr, P.E.
Dallas District Engineer
IH 35
DESIGN SCHEMATIC
From: US 380
To: 0.7 mi North of FM 3002
CSJ: 0195-03-087
CSJ: 0195-02-074
CSJ: 0195-01-116
Denton and Cooke Counties
Functional Class: Interstate
Project Length: 15.13 Mile
Design Speed:
IH 35 Mainlanes: 70 mph
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Local Street Connector: 30 mph
Cross Streets: 40 mph
Frontage Roads: 30 mph
Direct Connectors: 40-50 mph
Scale: Horizontal 1"=200'
Scale: Vertical 1"=20'
JANUARY 2019
PRELIMINARY SUBJECT TO REVISIONS
SCHEMATIC PREPARED BY OR UNDER THE DIRECT SUPERVISION OF:
BRIAN SEMMELL — NAME — P.E. NUMBER
JASON A. ROUNTREE — 119008 — P.E. NUMBER
JANUARY 2019 — DATE
NOT INTENDED FOR CONSTRUCTION, BIDDING, OR PERMIT PURPOSES
100% FINAL
ALL DESIGN SUBJECT TO CHANGE
ROLL 8 OF 23
HDR
Firm Registration No. F-754
17111 Preston Road, Suite 300
Dallas, Texas 75248-1232
972.992.6400

Texas Department of Transportation

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Dallas District
Mohamed K. Burr, P.E.
Dallas District Engineer

IH 35

DESIGN SCHEMATIC

From: US 380

To: 0.7 mi North of FM 3002

CSJ: 0195-03-087
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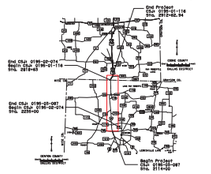

Scale: Horizontal 1"=200'
Scale: Vertical 1"=20'
JANUARY 2019

PRELIMINARY
SUBJECT TO REVISIONS
HORIZONTAL PROJECTION OF OR UNDER THE DIRECT SUPERVISION OF:

BRIAN SEYMOUR	BOYKIN
NAME	P.E. NUMBER
JASON A. SCOUTEN	114500
NAME	P.E. NUMBER
JANUARY 2019	
DATE	

NOT INTENDED FOR CONSTRUCTION, BIDDING, OR PERMIT PURPOSES

100% FINAL
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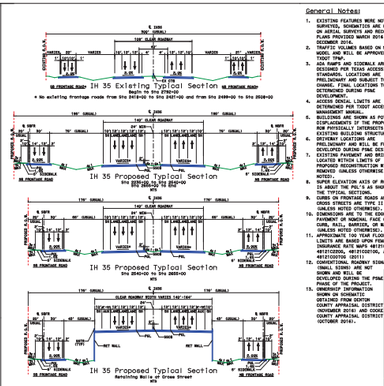
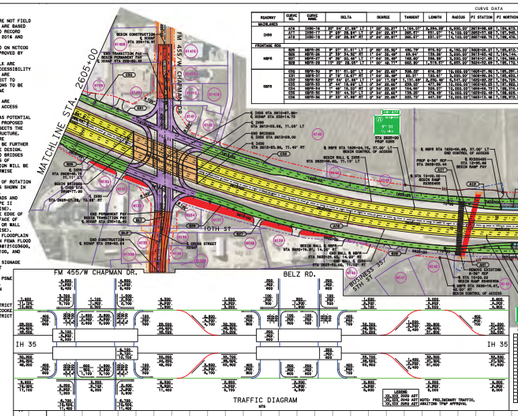
ROLL 9 OF 23

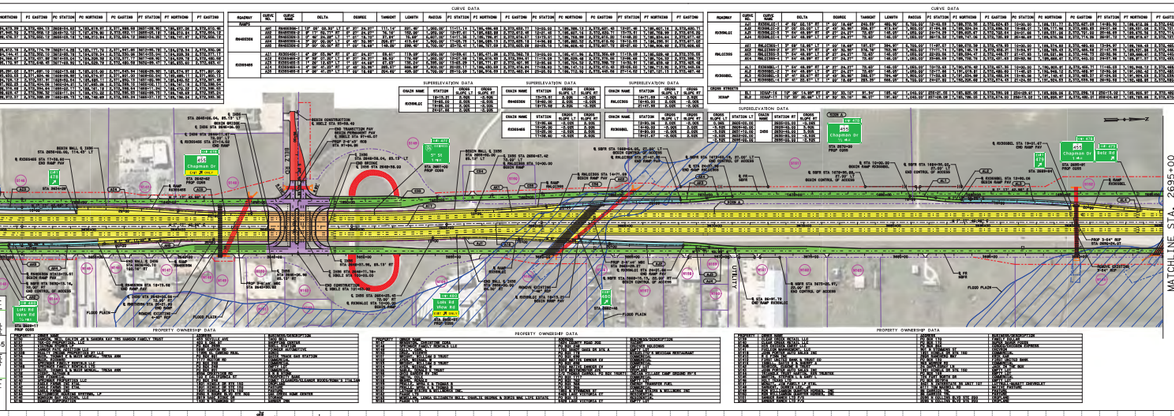
HDR
Firm Registration No. F-754
17111 Preston Road, Suite 300
Dallas, Texas 75248-1232
972.961.8400

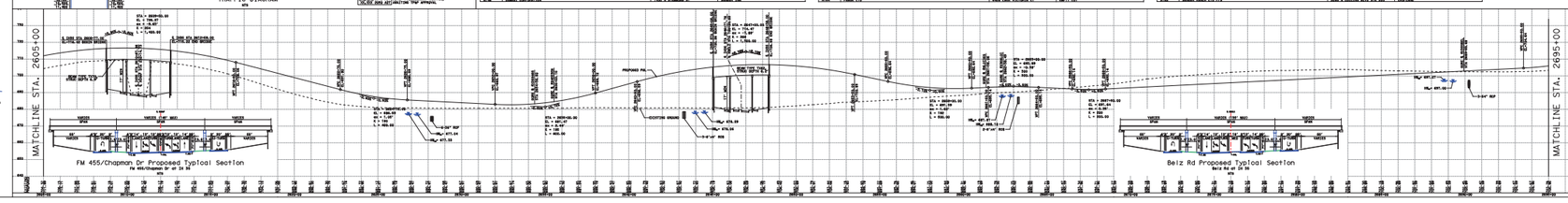


General Notes

1. EXISTING FEATURES WERE NOT FIELD VERIFIED. CHARACTERISTICS ARE BASED ON AERIAL SURVEYS AND RECORD PLANS PROVIDED MARCH 2014 AND OCTOBER 2016.
2. TRAFFIC VOLUMES BASED ON METRON MODEL AND WILL BE APPROVED BY TODOT TPAD.
3. ADA RAMPS AND SIDEWALK ARE SHOWN FOR ADA ACCESSIBILITY STANDARDS. LOCATIONS ARE PRELIMINARY AND SUBJECT TO CHANGE. FINAL LOCATIONS TO BE DETERMINED DURING PSNC DESIGN PHASE.
4. ACCESS BOXCUL LENGTH ARE DETERMINED PER TODOT ACCESS MANAGEMENT MANUAL.
5. BUILDINGS ARE SHOWN AS POTENTIAL DISPLACEMENTS OF THE PROPOSED ROW PHYSICALLY INTERSECTS THE EXISTING BUILDING STRUCTURE. ROW LINES ARE SHOWN AS PRELIMINARY AND WILL BE FURTHER DEVELOPED DURING PSNC DESIGN.
6. EXISTING PAVEMENT AND BRIDGES LOCATED WITHIN LIMITS OF CONSTRUCTION WILL BE REMOVED UNLESS OTHERWISE NOTED.
7. ROADWAY ELEVATION AXIS OF ROTATION IS ABOUT THE PGL'S AS SHOWN IN THE TYPICAL SECTIONS.
8. CURBS ON FRONTAGE ROADS AND CROSS STREETS ARE TYPE II UNLESS OTHERWISE NOTED.
9. SIDEWALKS ARE TO THE EDGE OF PAVEMENT OR NOMINAL FACE OF CURB, NOT INCLUDING ANY GUTTER OR FLARE.
10. APPROXIMATE 100 YEAR FLOODPLAIN LIMITS ARE BASED UPON FEMA FLOOD INSURANCE RATE MAPS 48121C0260G, EFFECTIVE SEPTEMBER 26, 2008.
11. CONVENTIONAL ROADWAY SIGNAGE (SMALL SIGNS) ARE NOT SHOWN AND WILL BE PROVIDED AT THE PSNC PHASE OF THE PROJECT.
15. OWNERSHIP INFORMATION SHOWN ON THIS PLAN WAS OBTAINED FROM DENTON COUNTY APPRAISAL DISTRICT (NOVEMBER 2014) AND COOKE COUNTY APPRAISAL DISTRICT (OCTOBER 2016).







Texas Department of Transportation

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Dallas District
Mohamed K. Burr, P.E.
Dallas District Engineer

IH 35

DESIGN SCHEMATIC

From: US 380

To: 0.7 mi North of FM 3002

CSJ: 0195-03-087
CSJ: 0195-02-074
CSJ: 0195-01-116

Denton and Cooke Counties
Functional Class: Interstate
Project Length: 15.13 Mile

Design Speed:

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SL 288 Mainlanes: 70 mph
Ramps: 50 mph
Turnaround Ramps: 15 mph
Local Street Connectors: 30 mph
Cross Streets: 40 mph
Frontage Roads: 40 mph
Direct Connectors: 40-50 mph

Scale: Horizontal 1"=200'
Scale: Vertical 1"=20'
JANUARY 2019

PRELIMINARY
SUBJECT TO REVISIONS
HORIZONTAL PROJECTION OF OR UNDER THE DIRECT SUPERVISION OF:

BRIAN SEYMOUR BOYKIN
JASON A. SCOUTEN 114500
JANUARY 2019

NOT INTENDED FOR CONSTRUCTION, BIDDING, OR PERMIT PURPOSES

100% FINAL
PRELIMINARY, SUBJECT TO CHANGE

ROLL 9 OF 23

HDR
Firm Registration No. F-754
17111 Preston Road, Suite 300
Dallas, Texas 75248-1232
972.961.8400

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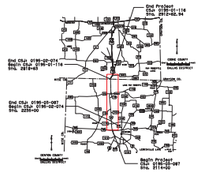

Scale: Horizontal 1"=200'
Scale: Vertical 1"=20'

JANUARY 2019

PRELIMINARY
SUBJECT TO REVISIONS
HORIZONTAL PREPARED BY OR UNDER THE DIRECT SUPERVISION OF:

BRIAN MITCHELL — 3/14/2019
NAME — P.E. NUMBER

JASON A. ROUNTREE — 3/14/2019
NAME — P.E. NUMBER

JANUARY 2019 ●
DATE

NOT APPROVED FOR CONSTRUCTION, BIDDING, OR PERMIT PURPOSES

100% FINAL
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ROLL 10 OF 23

HDR
HDR Firm Registration No. F-754
17111 Preston Road, Suite 300
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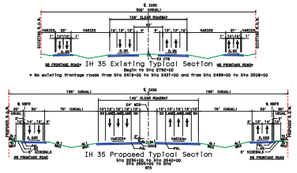
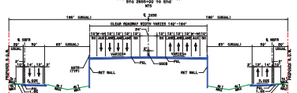
972.450.6400





* SEE SUPERELEVATION TABLES

General Notes

1. EXISTING FEATURES WERE NOT FIELD VERIFIED. INFORMATION WAS BASED ON AERIAL SURVEYS AND RECORD PLANS PROVIDED MARCH 2014 AND MARCH 2015.
2. TRAFFIC VOLUMES BASED ON METCON MODEL AND WILL BE APPROVED BY TXDOT TPAD.
3. ADA RAMPS AND SIDEWALK ARE SHOWN FOR ADA ACCESSIBILITY STANDARDS. LOCATIONS ARE PRELIMINARY AND SUBJECT TO BE DETERMINED DURING FINAL DESIGN PHASE.
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5. BUILDINGS ARE SHOWN AS POTENTIAL DISPLACEMENTS IF THE PROPOSED ROW PHYSICALLY INTERSECTS THE EXISTING BUILDING STRUCTURE. ROW LINES SHOWN ARE PRELIMINARY AND WILL BE FURTHER DEVELOPED DURING FINAL DESIGN.
6. EXISTING PAVEMENT AND BRIDGES LOCATED WITHIN LIMITS OF CONSTRUCTION WILL BE REMOVED UNLESS OTHERWISE NOTED.
7. ROADWAY ELEVATION AXIS OF ROTATION IS ABOUT THE PGL'S AS SHOWN IN THE TYPICAL SECTIONS.
8. CURBS ON FRONTAGE ROADS AND CROSS STREETS ARE TYPE II UNLESS OTHERWISE NOTED.
9. SIDEWALKS ARE TO THE EDGE OF PAVEMENT OR NOMINAL FACE OF CURB, NOT INCLUDING ANY WALL, UNLESS OTHERWISE NOTED.
10. APPROXIMATE 100 YEAR FLOODPLAIN LIMITS ARE BASED UPON FEMA FLOOD INSURANCE RATE MAPS 48121C0205G, EFFECTIVE SEPTEMBER 26, 2008.
11. CONVENTIONAL ROADWAY SIGNAGE (SIGNS, SIGNAL) ARE NOT SHOWN AND WILL BE DEVELOPED DURING THE FINAL DESIGN PHASE.
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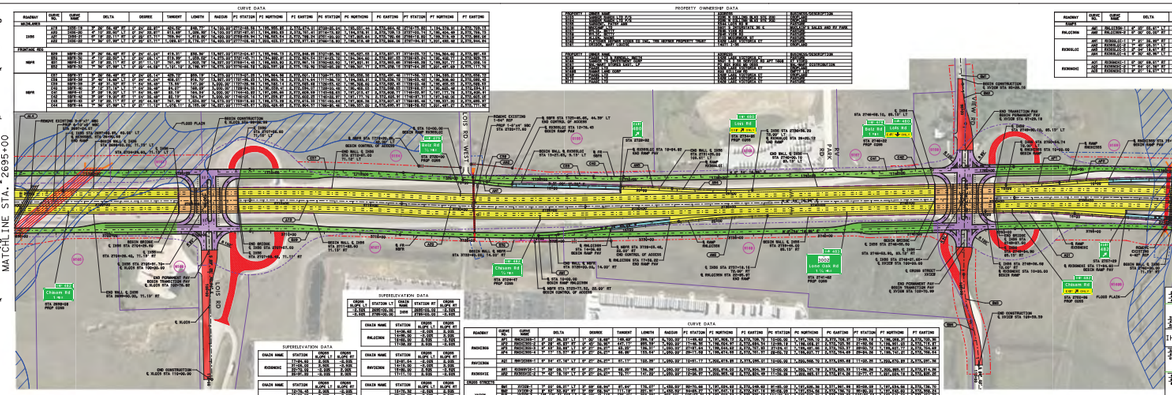
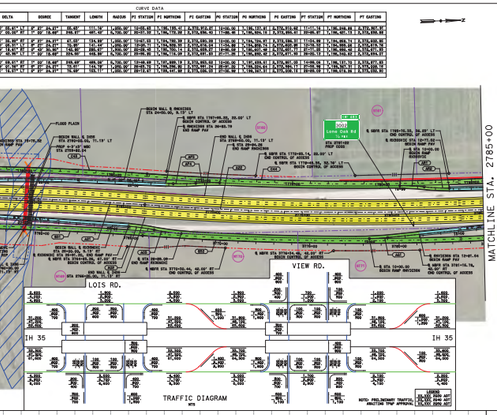
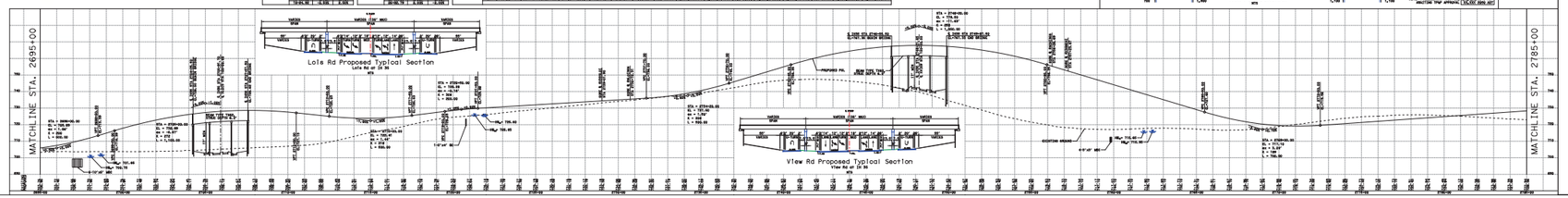




TRAFFIC DIAGRAM



Lois Rd Proposed Typical Section

View Rd Proposed Typical Section

LEGEND

MAINLANES	MANAGED LANES	EXISTING RIGHT-OF-WAY
FRONTAGE ROADS	TRANSITION PAVEMENT	PROPOSED RIGHT-OF-WAY
RAMPS	BY OTHERS	PROPOSED DRAINAGE EASEMENT
BRIDGES	PAVEMENT REMOVAL	FUTURE WORK BY OTHERS
CROSS STREETS/LOCAL ROADS	CONTROL OF ACCESS	PROPERTY LINES
LOCAL STREET CONNECTOR	PROPOSED RETAINING WALL	

Texas Department of Transportation

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Dallas District
Mohamed K. Burr, P.E.
Dallas District Engineer

IH 35

DESIGN SCHEMATIC

From: US 380

To: 0.7 mi North of FM 3002

CSJ: 0195-03-087
CSJ: 0195-02-074
CSJ: 0195-01-116

Denton and Cooke Counties
Functional Class: Interstate
Project Length: 15.13 Mile

Design Speed:

IH 35 Mainlanes: 70 mph
SL 288 Mainlanes: 50 mph
Ramps: 50 mph
Turnaround Ramps: 15 mph
Local Street Connectors: 30 mph
Cross Streets: 40 mph
Frontage Roads: 40 mph
Direct Connectors: 40-50 mph

Scale: Horizontal 1"=200'
Scale: Vertical 1"=20'

JANUARY 2019

PRELIMINARY
SUBJECT TO REVISIONS
HORIZONTAL PREPARED BY OR UNDER THE DIRECT SUPERVISION OF:

BRIAN MITCHELL — 3/14/2019
NAME — P.E. NUMBER

JASON A. ROUNTREE — 3/14/2019
NAME — P.E. NUMBER

JANUARY 2019 ●
DATE

NOT APPROVED FOR CONSTRUCTION, BIDDING, OR PERMIT PURPOSES

100% FINAL
PRELIMINARY, SUBJECT TO CHANGE

ROLL 10 OF 23

HDR
HDR Firm Registration No. F-754
17111 Preston Road, Suite 300
Dallas, Texas 75248-1232
972.450.6400

Texas Department of Transportation

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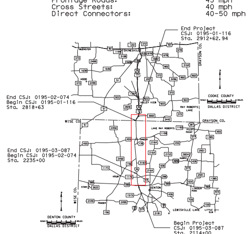

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JANUARY 2019

PRELIMINARY
SUBJECT TO REVISIONS
SCHEMATIC PREPARED BY OR UNDER THE DIRECT SUPERVISION OF:

NAME	P.E. NUMBER
BRIAN SWINDELL	80688
JASON A. RICHTER	114508

JANUARY 2019
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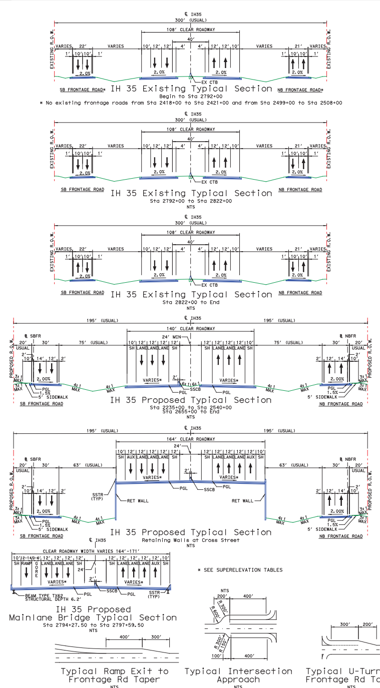
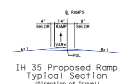


General Notes:

1. EXISTING FEATURES WERE NOT FIELD SURVEYED, SCHEMATICS ARE BASED ON AERIAL SURVEYS AND RECORD PLANS PROVIDED MARCH 2016 AND DECEMBER 2016.
2. TRAFFIC VOLUMES BASED ON NCTCOG MODEL AND WILL BE APPROVED BY TXDOT TP&P.
3. ADA RAMPS AND SIDEWALK ARE DESIGNED PER TEXAS ACCESSIBILITY STANDARDS. LOCATIONS ARE PRELIMINARY AND SUBJECT TO CHANGE. FINAL LOCATIONS TO BE DETERMINED DURING PS&E DEVELOPMENT.
4. ACCESS DENIAL LIMITS ARE DETERMINED PER TXDOT ACCESS MANAGEMENT MANUAL.
5. BUILDINGS ARE SHOWN AS POTENTIAL DISPLACEMENTS IF THE PROPOSED ROW PHYSICALLY INTERSECTS THE EXISTING BUILDING STRUCTURE.
6. DRIVEWAY LOCATIONS ARE PRELIMINARY AND WILL BE FURTHER DEVELOPED DURING PS&E DESIGN.
7. EXISTING PAVEMENT AND BRIDGES LOCATED WITHIN LIMITS OF PROPOSED RECONSTRUCTION WILL BE REMOVED (UNLESS OTHERWISE NOTED).
8. SUPER ELEVATION AXIS OF ROTATION IS ABOUT THE PGL'S AS SHOWN IN THE TYPICAL SECTIONS.
9. CURBS ON FRONTAGE ROADS AND CROSS STREETS ARE TYPE II (UNLESS NOTED OTHERWISE).
10. DIMENSIONS ARE TO THE EDGE OF PAVEMENT OR NOMINAL FACE OF CURB, RAIL, BARRIER, OR WALL (UNLESS NOTED OTHERWISE).
11. APPROXIMATE 100 YEAR FLOODPLAIN LIMITS ARE BASED UPON FEMA FLOOD INSURANCE RATE MAPS 48121C0360G, 48121C220G, 48121C0210G, AND 48121C0070G (2011)
12. CONVENTIONAL ROADWAY SIGNAGE (SMALL SIGNS) ARE NOT SHOWN AND WILL BE DEVELOPED DURING THE PS&E PHASE OF THE PROJECT.
13. OWNERSHIP INFORMATION SHOWN ON SCHEMATIC OBTAINED FROM DENTON COUNTY APPRAISAL DISTRICT (NOVEMBER 2016) AND COOKE COUNTY APPRAISAL DISTRICT (OCTOBER 2016).

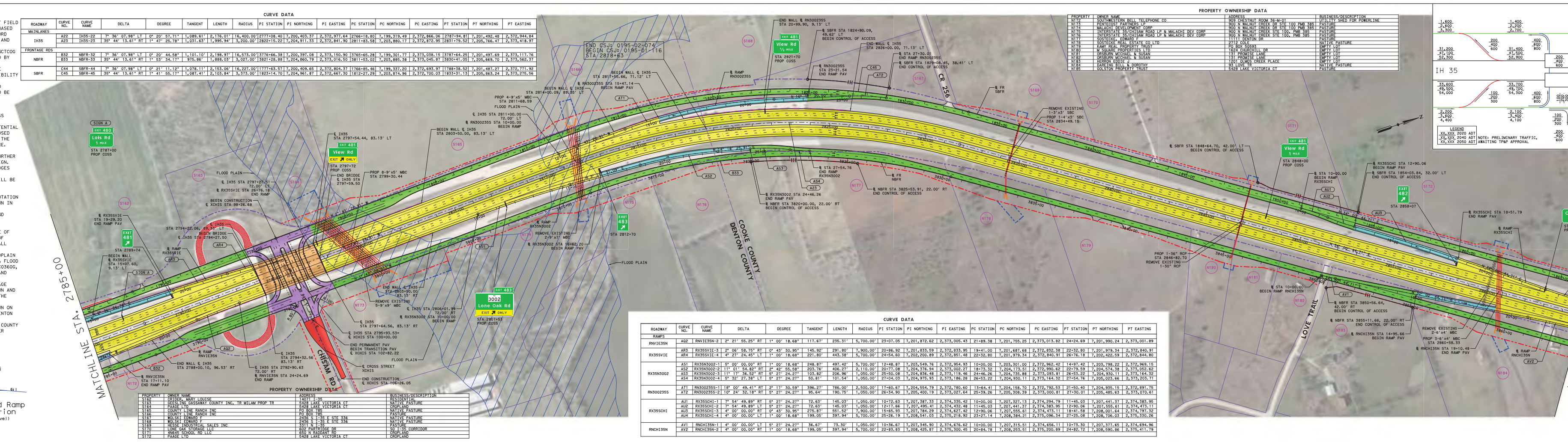


LEGEND

MAINLANES	MANAGED LANES
FRONTAGE ROADS	TRANSITION PAVEMENT
RAMPS	BY OTHERS
BRIDGES	PAVEMENT REMOVAL
CROSS STREETS/LOCAL ROADS	CONTROL OF ACCESS
LOCAL STREET CONNECTOR	PROPOSED RETAINING WALL
EXISTING RIGHT-OF-WAY	PROPOSED RIGHT-OF-WAY
PROPOSED DRAINAGE EASEMENT	FUTURE WORK BY OTHERS
PROPERTY LINES	

CURVE DATA

ROADWAY	CURVE NO.	CURVE NAME	DELTA	DEGREE	TANGENT	LENGTH	RADIUS	PI STATION	PI NORTHING	PI EASTING	PC STATION	PC NORTHING	PC EASTING	PT STATION	PT NORTHING	PT EASTING
MAINLANES																
IH35	A22	IH35-22	7° 36' 07.98" LT	0° 20' 57.71"	1,089.61'	2,176.01'	16,400.00'	2777+08.40	7,200,403.37	2,372,977.64	2766+18.80	7,199,319.49	2,372,866.06	2787+94.81	7,201,492.48	2,372,944.84
	A23	IH35-23	35° 44' 13.61" RT	1° 47' 25.78"	1,031.63'	1,995.94'	3,200.00'	2822+15.22	7,204,911.33	2,372,841.90	2811+83.58	7,203,880.17	2,372,872.95	2831+79.52	7,205,766.47	2,373,418.97
FRONTAGE RDS																
NBFR	B32	NBFR-32	7° 36' 07.98" LT	0° 20' 44.58"	1,101.10'	2,198.97'	16,573.00'	3776+66.38	7,200,397.08	2,373,150.90	3765+65.28	7,199,301.77	2,373,038.15	3787+64.25	7,201,497.69	2,373,117.76
	B33	NBFR-33	35° 44' 13.61" RT	1° 53' 34.17"	975.86'	1,888.03'	3,027.00'	3821+28.88	7,204,860.79	2,373,016.50	3811+53.02	7,203,885.38	2,373,045.87	3830+41.05	7,205,669.70	2,373,562.37
SBFR	C44	SBFR-44	7° 36' 07.98" LT	0° 21' 11.12"	1,078.11'	2,153.06'	16,227.00'	1777+63.57	7,200,409.65	2,372,804.37	1766+85.46	7,199,337.20	2,372,693.97	1788+38.52	7,201,487.27	2,372,771.92
	C45	SBFR-45	35° 44' 13.61" RT	1° 41' 55.17"	1,087.41'	2,103.84'	3,373.00'	1823+14.70	7,204,961.87	2,372,667.30	1812+27.29	7,203,874.96	2,372,700.03	1833+31.13	7,205,863.24	2,373,275.56



PROPERTY OWNERSHIP DATA

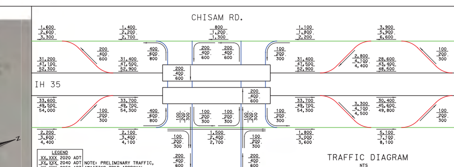
PROPERTY	OWNER NAME	ADDRESS	BUSINESS/DESCRIPTION
S162	CRIDER, MARY LOUISE	14071 I-35	RESIDENTIAL
S163	GEESLING GASSAWAY COUNTY INC, TR MILAM PROP TR	5428 LAKE VICTORIA CT	NATIVE PASTURE
S164	PAAGE LTD	5428 LAKE VICTORIA CT	CROPLAND
S165	COUNTY LINE RANCH INC	PO BOX 785	NATIVE PASTURE
S166	COUNTY LINE RANCH INC	PO BOX 785	PASTURE
S167	WOLSKI EDWARD F	2436 S I-35 E STE 336	NATIVE PASTURE
S168	WOLSKI EDWARD F	2436 S I-35 E STE 336	NATIVE PASTURE
S169	HESSE INDUSTRIAL SALES INC	3311 N I-35	PASTURE
S170	LONE OAK STORAGE LLC	602 PARTRIDGE DR	SO I-35 CORRIDOR
S171	4N645 SCHOOL RD LLC	650 N RADDANT RD	CROPLAND
S172	PAAGE LTD	5428 LAKE VICTORIA CT	CROPLAND

PROPERTY OWNERSHIP DATA

PROPERTY	OWNER NAME	ADDRESS	BUSINESS/DESCRIPTION
N172	SOUTHWESTERN BELL TELEPHONE CO	909 CHESTNUT ROOM 36-M-01	UTILITY SHED FOR POWERLINE
N173	PENTECOST PARTNERS LP	900 N WALNUT CREEK DR STE 100 PMB 385	PASTURE
N174	MALACHI DEVELOPMENT CORP	900 N WALNUT CREEK DR STE 100 PMB 385	PASTURE
N175	INTERSTATE 35/CHISAM ROAD LP & MALACHI DEV CORP	900 N WALNUT CREEK STE 100, PMB 385	PASTURE
N176	INTERSTATE 35/CHISAM ROAD LP & MALACHI DEV CORP	900 N WALNUT CREEK STE 100, PMB 385	PASTURE
N177	SOSTECKE, EDWARD F	11111 DENTON DR	PASTURE
N178	SOSTECKE REAL ESTATE CO LTD	2712 COLE	NATIVE PASTURE
N179	KAMY REAL PROPERTY TRUST	PO BOX 50593	EMPTY LOT
N180	M SQUARE PROPERTIES LTD	1624 CHURCHILL DR	EMPTY LOT
N181	ORSBURN MICHAEL & SUSAN	131 PROMISE LANE	EMPTY LOT
N182	ORSBURN MICHAEL & SUSAN	131 PROMISE LANE	EMPTY LOT
N183	HERRON EDDIE J	1201 OLMOS CREEK PLACE	EMPTY LOT
N184	DARING BILL & DOROTHY	93 LOVE TR	NATIVE PASTURE
N185	GOLSTON PROPERTY TRUST	5428 LAKE VICTORIA CT	PASTURE

CURVE DATA

ROADWAY	CURVE NO.	CURVE NAME	DELTA	DEGREE	TANGENT	LENGTH	RADIUS	PI STATION	PI NORTHING	PI EASTING	PC STATION	PC NORTHING	PC EASTING	PT STATION	PT NORTHING	PT EASTING
RAMPS																
RNVIE35N	AQ2	RNVIE35N-2	2° 21' 55.25" RT	1° 00' 18.68"	117.67'	235.31'	5,700.00'	23+07.05	7,201,872.62	2,373,005.43	21+89.38	7,201,755.25	2,373,013.82	24+24.69	7,201,990.24	2,373,001.89
RX35SVIE	AR3	RX35SVIE-3	2° 06' 58.75" RT	0° 43' 30.95"	145.92'	291.80'	7,900.00'	20+86.92	7,201,833.59	2,372,833.95	19+41.00	7,201,687.68	2,372,832.38	22+32.80	7,201,979.34	2,372,840.91
	AR4	RX35SVIE-4	4° 27' 24.45" LT	1° 00' 18.68"	221.80'	443.38'	5,700.00'	24+54.60	7,202,200.89	2,372,851.48	22+32.80	7,201,979.34	2,372,840.91	26+76.18	7,202,422.59	2,372,844.80
RX35N3002	AS1	RX35N3002-1	5° 00' 00.00" RT	1° 00' 18.68"	248.87'	497.42'	5,700.00'	12+48.87	7,203,549.76	2,372,954.93	10+00.00	7,203,301.00	2,372,962.42	14+97.42	7,203,798.22	2,372,969.15
	AS2	RX35N3002-2	11° 01' 54.82" RT	2° 42' 55.58"	203.76'	406.27'	2,110.00'	20+77.08	7,204,376.94	2,373,002.27	18+73.32	7,204,173.51	2,372,990.62	22+79.59	7,204,574.38	2,373,052.62
	AS3	RX35N3002-3	11° 17' 36.52" RT	5° 27' 24.27"	103.82'	206.96'	1,050.00'	25+50.08	7,204,836.48	2,373,119.46	24+46.26	7,204,735.88	2,373,093.81	26+53.22	7,204,930.11	2,373,164.32
	AS4	RX35N3002-4	5° 32' 27.38" LT	5° 27' 24.27"	50.81'	101.54'	1,050.00'	27+04.03	7,204,975.93	2,373,186.28	26+53.22	7,204,930.11	2,373,164.32	27+54.76	7,205,023.66	2,373,203.71
RN300235S	AT1	RN300235S-1	18° 00' 49.41" RT	2° 17' 30.59"	396.27'	786.00'	2,500.00'	17+60.67	7,204,554.79	2,372,780.60	13+64.41	7,204,158.70	2,372,792.53	21+50.40	7,204,935.15	2,372,891.75
	AT2	RN300235S-2	10° 24' 32.18" RT	5° 27' 24.27"	95.64'	190.75'	1,050.00'	26+34.90	7,205,400.19	2,373,027.64	25+39.26	7,205,308.39	2,373,000.81	27+30.01	7,205,485.63	2,373,070.61
RX35SCHI	AU1	RX35SCHI-1	7° 54' 49.89" RT	5° 27' 24.27"	72.63'	145.03'	1,050.00'	10+72.63	7,207,387.33	2,374,335.42	10+00.00	7,207,327.13	2,374,294.79	11+45.03	7,207,441.37	2,374,383.95
	AU2	RX35SCHI-2	7° 54' 49.89" LT	5° 27' 24.27"	72.63'	145.03'	1,050.00'	12+17.66	7,207,495.41	2,374,432.48	11+45.03	7,207,441.37	2,374,383.95	12+90.06	7,207,555.61	2,374,473.11
	AU3	RX35SCHI-3	4° 00' 00.00" RT	0° 43' 30.95"	275.87'	551.52'	7,900.00'	15+65.93	7,207,784.29	2,374,627.42	12+90.06	7,207,555.61	2,374,473.11	18+41.58	7,208,001.64	2,374,797.32
	AU4	RX35SCHI-4	4° 00' 00.00" LT	1° 00' 18.68"	199.05'	397.94'	5,700.00'	25+26.19	7,208,541.03	2,375,218.92	23+27.14	7,208,384.21	2,375,096.34	27+25.08	7,208,706.03	2,375,330.26
RNCHI35N	AV1	RNCHI35N-1	4° 00' 00.00" LT	5° 27' 24.27"	36.67'	73.30'	1,050.00'	10+36.67	7,207,345.90	2,374,676.62	10+00.00	7,207,315.51	2,374,656.11	10+73.30	7,207,377.65	2,374,694.96
	AV2	RNCHI35N-2	4° 00' 00.00" RT	1° 00' 18.68"	199.05'	397.94'	5,700.00'	22+83.83	7,208,425.87	2,375,300.45	20+84.78	7,208,253.51	2,375,200.89	24+82.72	7,208,590.86	2,375,411.79



SUPERELEVATION DATA

CROSS SLOPE LT	STATION LT	CHAIN NAME	STATION RT	CROSS SLOPE RT
-2.50%	2785+00.00	IH35	2785+00.00	-2.50%
-2.50%	2805+00.00		2809+75.00	-2.50%
5.10%	2811+90.00		2812+15.00	-5.10%
5.10%	2830+80.00		2831+45.00	-5.10%
-2.50%	2837+65.00		2833+80.00	-2.50%
-2.50%	2865+00.00		2865+00.00	-2.50%

CHAIN NAME	STATION	CROSS SLOPE LT	CROSS SLOPE RT
RX35SVIE	12+77.52	2.00%	-2.00%
	15+20.00	2.00%	-2.00%
	16+85.00	-2.50%	2.50%
	19+29.20	-2.50%	2.50%

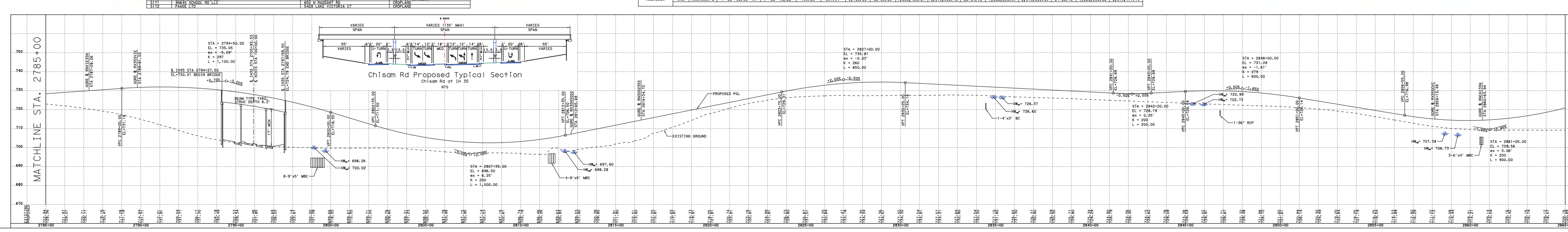
CHAIN NAME	STATION	CROSS SLOPE LT	CROSS SLOPE RT
RN300235S	15+47.14	5.10%	-5.10%
	15+85.00	3.80%	-3.80%
	21+35.00	3.80%	-3.80%
	21+90.00	2.00%	-2.00%
	23+21.54	2.00%	-2.00%

CHAIN NAME	STATION	CROSS SLOPE LT	CROSS SLOPE RT
RX35SCHI	12+90.06	2.00%	-2.00%
	16+85.00	2.00%	-2.00%
	18+51.79	-2.50%	2.50%

SUPERELEVATION DATA

CHAIN NAME	STATION	CROSS SLOPE LT	CROSS SLOPE RT
RX35N3002	16+62.20	5.10%	-5.10%
	17+50.00	5.10%	-5.10%
	18+00.00	4.20%	-4.20%
	22+55.00	4.20%	-4.20%
	24+30.00	-2.00%	2.00%
	24+46.26	-2.00%	2.00%

CHAIN NAME	STATION	CROSS SLOPE LT	CROSS SLOPE RT
RNCHI35N	14+95.66	-2.00%	2.00%
	16+25.00	-2.00%	2.00%
	17+90.00	2.50%	-2.50%
	19+10.48	2.50%	-2.50%



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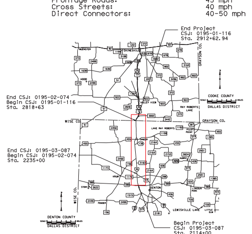

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JASON A. RICHTER	114508

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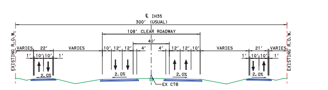
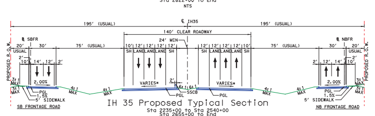
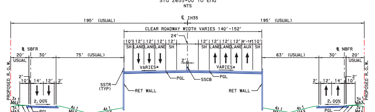


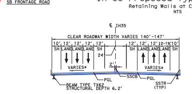
IH 35 Existing Typical Section
Sta 2822+00 to End
NTS



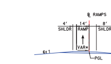
IH 35 Proposed Typical Section
Sta 2235+00 to Sta 2540+00
Sta 2655+00 to End
NTS



IH 35 Proposed Typical Section
Retaining Walls at Cross Street
NTS

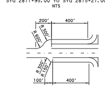


IH 35 Proposed
Mainlane Bridge Typical Section
Sta 2871+95.00 to Sta 2875+27.00
NTS

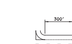


IH 35 Proposed Ramp
Typical Section
(Direction of Travel)
NTS

* SEE SUPERELEVATION TABLES



Typical Intersection
Approach
NTS



Typical U-Turn to
Frontage Rd Taper
NTS

Typical Ramp Entrance to
Mainlanes Taper
NTS

LEGEND

MAINLANES	MANAGED LANES	EXISTING RIGHT-OF-WAY
FRONTAGE ROADS	TRANSITION PAVEMENT	PROPOSED RIGHT-OF-WAY
RAMPS	BY OTHERS	PROPOSED DRAINAGE EASEMENT
BRIDGES	PAVEMENT REMOVAL	FUTURE WORK BY OTHERS
CROSS STREETS/LOCAL ROADS	CONTROL OF ACCESS	PROPERTY LINES
LOCAL STREET CONNECTOR	PROPOSED RETAINING WALL	

General Notes:

1. EXISTING FEATURES WERE NOT FIELD SURVEYED. SCHEMATICS ARE BASED ON AERIAL SURVEYS AND RECORD PLANS PROVIDED MARCH 2016 AND DECEMBER 2016.
2. TRAFFIC VOLUMES BASED ON NCTCOG MODEL AND WILL BE APPROVED BY TXDOT TP&P.
3. ADA RAMPS AND SIDEWALK ARE DESIGNED PER TEXAS ACCESSIBILITY STANDARDS. LOCATIONS ARE PRELIMINARY AND SUBJECT TO CHANGE. FINAL LOCATIONS TO BE DETERMINED DURING PS&E DEVELOPMENT.
4. ACCESS DENIAL LIMITS ARE DETERMINED PER TXDOT ACCESS MANAGEMENT MANUAL.
5. BUILDINGS ARE SHOWN AS POTENTIAL DISPLACEMENTS IF THE PROPOSED ROW PHYSICALLY INTERSECTS THE EXISTING BUILDING STRUCTURE.
6. DRIVEWAY LOCATIONS ARE PRELIMINARY AND WILL BE FURTHER DEVELOPED DURING PS&E DESIGN.
7. EXISTING PAVEMENT AND BRIDGES LOCATED WITHIN LIMITS OF PROPOSED RECONSTRUCTION WILL BE REMOVED (UNLESS OTHERWISE NOTED).
8. SUPER ELEVATION AXIS OF ROTATION IS ABOUT THE PGL'S AS SHOWN IN THE TYPICAL SECTIONS.
9. CURBS ON FRONTAGE ROADS AND CROSS STREETS ARE TYPE II (UNLESS NOTED OTHERWISE).
10. DIMENSIONS ARE TO THE EDGE OF PAVEMENT OR NOMINAL FACE OF CURB, RAIL, BARRIER, OR WALL (UNLESS NOTED OTHERWISE).
11. APPROXIMATE 100 YEAR FLOODPLAIN LIMITS ARE BASED UPON FEMA FLOOD INSURANCE RATE MAPS 48121C0360G, 48121C220G, 48121C0210G, AND 48121C0070G (2011)
12. CONVENTIONAL ROADWAY SIGNAGE (SMALL SIGNS) ARE NOT SHOWN AND WILL BE DEVELOPED DURING THE PS&E PHASE OF THE PROJECT.
13. OWNERSHIP INFORMATION SHOWN ON SCHEMATIC OBTAINED FROM DENTON COUNTY APPRAISAL DISTRICT (NOVEMBER 2016) AND COOKE COUNTY APPRAISAL DISTRICT (OCTOBER 2016).

SUPERELEVATION DATA

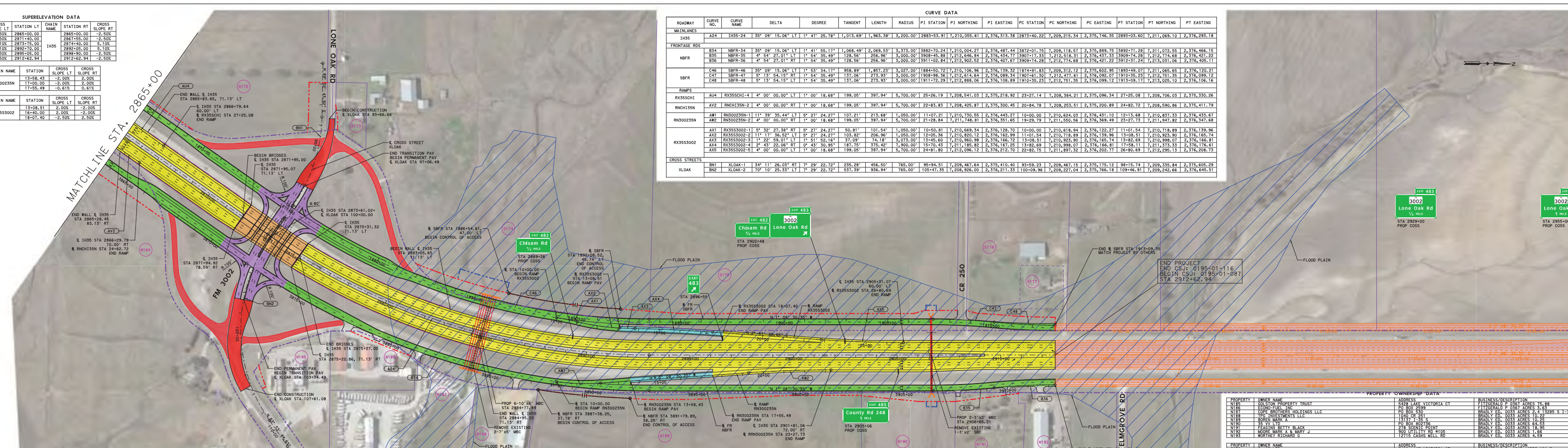
CROSS SLOPE LT	STATION LT	CHAIN NAME	STATION RT	CROSS SLOPE RT
-2.50%	2865+00.00	IH35	2865+00.00	-2.50%
-2.50%	2871+40.00		2867+55.00	-2.50%
-5.10%	2873+75.00		2874+40.00	5.10%
-5.10%	2892+70.00		2892+05.00	5.10%
-2.50%	2895+05.00		2898+90.00	-2.50%
-2.50%	2912+62.94		2912+62.94	-2.50%

CHAIN NAME	STATION	CROSS SLOPE LT	CROSS SLOPE RT
RN300235N	13+58.43	-2.00%	2.00%
	17+00.00	-2.00%	2.00%
	17+55.49	-0.61%	0.61%

CHAIN NAME	STATION	CROSS SLOPE LT	CROSS SLOPE RT
RX35S3002	13+08.51	2.00%	-2.00%
	16+40.00	2.00%	-2.00%
	18+07.40	-2.50%	2.50%

CURVE DATA

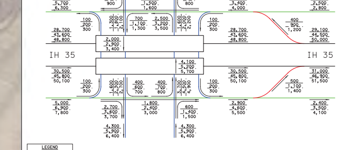
ROADWAY	CURVE NO.	CURVE NAME	DELTA	DEGREE	TANGENT	LENGTH	RADIUS	PI STATION	PI NORTHING	PI EASTING	PC STATION	PC NORTHING	PC EASTING	PT STATION	PT NORTHING	PT EASTING
MAINLANES																
IH35	A24	IH35-24	35° 09' 15.06" LT	1° 47' 25.78"	1,013.69'	1,963.38'	3,200.00'	2883+53.91	7,210,055.61	2,376,313.38	2873+40.22	7,209,215.34	2,375,746.35	2893+03.60	7,211,069.10	2,376,293.18
FRONTAGE RDS																
NBFR	B34	NBFR-34	35° 09' 15.06" LT	1° 41' 55.17"	1,068.49'	2,069.53'	3,373.00'	3882+70.24	7,210,004.27	2,376,487.44	3872+01.75	7,209,118.57	2,375,889.75	3892+71.28	7,211,072.55	2,376,466.15
	B35	NBFR-35	4° 54' 27.01" LT	1° 54' 35.49"	128.56'	256.96'	3,000.00'	3908+45.88	7,212,646.84	2,376,434.77	3907+17.33	7,212,518.31	2,376,437.33	3909+74.28	7,212,774.68	2,376,421.22
	B36	NBFR-36	4° 54' 27.01" RT	1° 54' 35.49"	128.56'	256.96'	3,000.00'	3911+02.84	7,212,902.52	2,376,407.67	3909+74.28	7,212,774.68	2,376,421.22	3912+31.24	7,213,031.06	2,376,405.11
SBFR	C46	SBFR-46	35° 09' 15.06" LT	1° 53' 34.17"	958.89'	1,857.23'	3,027.00'	1884+50.72	7,210,106.96	2,376,139.32	1874+91.83	7,209,312.12	2,375,602.95	1893+49.07	7,211,065.65	2,376,120.21
	C47	SBFR-47	5° 13' 54.15" RT	1° 54' 35.49"	137.06'	273.93'	3,000.00'	1908+98.36	7,212,614.64	2,376,089.34	1907+61.30	7,212,477.61	2,376,092.07	1910+35.23	7,212,751.35	2,376,099.12
	C48	SBFR-48	5° 13' 54.15" LT	1° 54' 35.49"	137.06'	273.93'	3,000.00'	1911+72.29	7,212,888.06	2,376,108.89	1910+35.23	7,212,751.35	2,376,099.12	1913+09.17	7,213,025.10	2,376,106.16
RAMPS																
RX35SCHI	AU4	RX35SCHI-4	4° 00' 00.00" LT	1° 00' 18.68"	199.05'	397.94'	5,700.00'	25+26.19	7,208,541.03	2,375,218.92	23+27.14	7,208,384.21	2,375,096.34	27+25.08	7,208,706.03	2,375,330.26
RNCHI35N	AV2	RNCHI35N-2	4° 00' 00.00" RT	1° 00' 18.68"	199.05'	397.94'	5,700.00'	22+83.83	7,208,425.87	2,375,300.45	20+84.78	7,208,253.51	2,375,200.89	24+82.72	7,208,590.86	2,375,411.79
RN300235N	AW1	RN300235N-1	11° 39' 35.44" LT	5° 27' 24.27"	107.21'	213.68'	1,050.00'	11+07.21	7,210,730.55	2,376,443.27	10+00.00	7,210,624.03	2,376,431.10	12+13.68	7,210,837.33	2,376,433.67
	AW2	RN300235N-2	4° 00' 00.00" RT	1° 00' 18.68"	199.05'	397.94'	5,700.00'	21+28.84	7,211,748.81	2,376,351.65	19+29.79	7,211,550.56	2,376,369.49	23+27.73	7,211,947.82	2,376,347.68
RX35S3002	AX1	RX35S3002-1	5° 32' 27.38" RT	5° 27' 24.27"	50.81'	101.54'	1,050.00'	10+50.81	7,210,669.34	2,376,128.70	10+00.00	7,210,618.94	2,376,122.27	11+01.54	7,210,718.89	2,376,139.96
	AX2	RX35S3002-2	11° 17' 36.52" LT	5° 27' 24.27"	103.82'	206.96'	1,050.00'	12+05.36	7,210,820.12	2,376,162.99	11+01.54	7,210,718.89	2,376,139.96	13+08.51	7,210,923.90	2,376,165.74
	AX3	RX35S3002-3	1° 22' 59.01" LT	1° 51' 52.16"	37.09'	74.18'	3,073.00'	13+45.60	7,210,960.98	2,376,166.72	13+08.51	7,210,923.90	2,376,165.74	13+82.69	7,210,998.07	2,376,166.81
	AX4	RX35S3002-4	2° 43' 22.06" RT	0° 43' 30.95"	187.75'	375.42'	7,900.00'	15+70.43	7,211,185.82	2,376,167.25	13+82.69	7,210,998.07	2,376,166.81	17+58.11	7,211,373.33	2,376,176.61
	AX5	RX35S3002-5	4° 00' 00.00" LT	1° 00' 18.68"	199.05'	397.94'	5,700.00'	24+81.80	7,212,096.12	2,376,212.70	22+82.75	7,211,897.32	2,376,202.77	26+80.69	7,212,295.13	2,376,208.73
CROSS STREETS																
XLOAK	BN1	XLOAK-1	34° 11' 26.03" RT	7° 29' 22.72"	235.28'	456.50'	765.00'	95+94.51	7,209,467.64	2,375,410.40	93+59.23	7,209,467.15	2,375,175.12	98+15.74	7,209,335.84	2,375,605.29
	BN2	XLOAK-2	70° 10' 25.33" LT	7° 29' 22.72"	537.39'	936.94'	765.00'	105+47.35	7,208,926.00	2,376,211.33	100+09.96	7,209,227.04	2,375,766.18	109+46.91	7,209,242.66	2,376,645.51



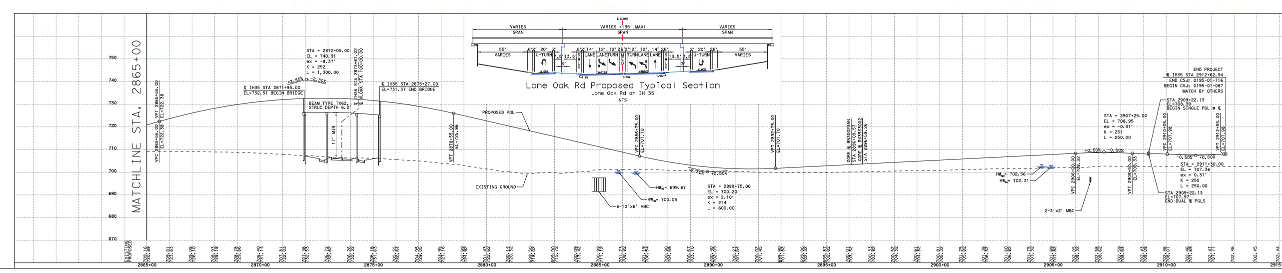
PROPERTY OWNERSHIP DATA

PROPERTY	OWNER NAME	ADDRESS	BUSINESS/DESCRIPTION
N185	COLSTON PROPERTY TRUST	5428 LAKE VICTORIA CT	FITZGERALD P 0367 ACRES 75.88
N186	ECONO-FUEL INC	PO BOX 2599	FITZGERALD P 0367 ACRES 3.63
N187	COPE BROTHERS HOLDINGS LLC	PO BOX 530	BRADLY ED, 0033 ACRES 2.4 13285 S I-35
N188	TPG INVESTMENTS LLC	1040 CR 251	BRADLY ED, 0033 ACRES 10.22
N189	BOREN MARK A	13137 I-35 S	BRADLY ED, 0033 ACRES 10.25
N190	35 VV LTD	PO BOX 802736	BRADLY ED, 0033 ACRES 64.53
N191	FEAGINS BETTY BLACK	278 SCENIC POINT	BRADLY ED, 0033 ACRES 18.95
N192	MOORE MARK A & MARY J	900 UTILITY RD #105	BRADLY ED, 0033 ACRES 1.66
N193	WORTHEY RICHARD G	12715 CASHS MILL RD	BRADLY ED, 0033 ACRES 4.59

PROPERTY	OWNER NAME	ADDRESS	BUSINESS/DESCRIPTION
S172	PAAGE LTD	5428 LAKE VICTORIA CT	FITZGERALD P, 0367 ACRES 121.7
S173	HATCHEL HILL LLC	304 ACKER ST STE 104	BRADLY ED 0033 ACRES 1.0
S174	HATCHEL HILL LLC	304 ACKER ST STE 104	BRADLY ED 0033 ACRES 109.82
S175	I-35 & MCGEE LP	9780 WALNUT ST #405	BRADLY ED, 0033 ACRES 59.62
S176	MCGEE REALTY LTD	1850 MCGEE LANE	BRADLY ED, 0033 ACRES 20.41, 12650 S I-35
S177	MCGEE REALTY LTD	1850 MCGEE LANE	BRADLY ED, 0033 ACRES 1.0, 12650 S I-35



TRAFFIC DIAGRAM
NTS



Texas Department of Transportation

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Dallas District
Mohamed K. Bur, P.E.
Dallas District Engineer

IH 35

DESIGN SCHEMATIC

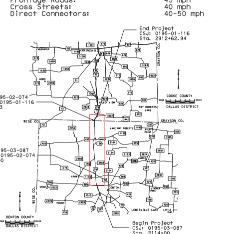
From: US 380
To: 0.7 mi North of FM 3002

CSJ: 0195-03-087
CSJ: 0195-02-074
CSJ: 0195-01-116

Denton and Cooke Counties
Functional Class: Interstate
Project Length: 15.13 Mile

Design Speed:

IH 35 Mainlanes:	70 mph
SL 288 Mainlanes:	70 mph
Ramps:	50 mph
Turnaround Ramps:	15 mph
Local Street Connector:	20 mph
Frontage Roads:	45 mph
Cross Streets:	40 mph
Direct Connectors:	40-50 mph



Scale: Horizontal 1"=200'
Scale: Vertical 1"=20'

JANUARY 2019

PRELIMINARY
SUBJECT TO REVISIONS
SCHEMATIC PREPARED BY OR UNDER THE DIRECT SUPERVISION OF:

NAME	P.E. NUMBER
BRIAN SWINDELL	80688
JASON A. RICHTER	114508

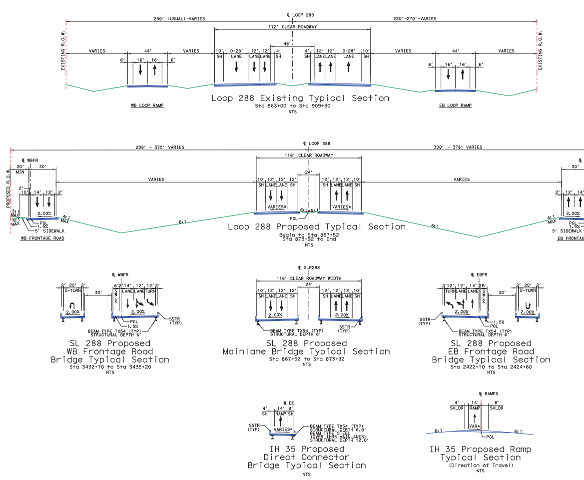
JANUARY 2019
DATE

100% FINAL
PRELIMINARY, SUBJECT TO CHANGE

NOT INTENDED FOR CONSTRUCTION, BIDDING, OR PERMIT PURPOSES

ROLL 13 OF 23

HDR
Firm Registration No. F-754
17111 Preston Road, Suite 300
Dallas, Texas 75248-1232
972.960.4400



* SEE SUPERELEVATION TABLES

1. EXISTING FEATURES WERE NOT FIELD SURVEYED, SCHEMATICS ARE BASED ON AERIAL SURVEYS AND RECORD PLANS PROVIDED MARCH 2016 AND DECEMBER 2016.
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12. CONVENTIONAL ROADWAY SIGNAGE (SMALL SIGNS) ARE NOT SHOWN AND WILL BE DEVELOPED DURING THE PS&E PHASE OF THE PROJECT.
13.

LEGEND

MAINLANES	MANAGED LANES	EXISTING RIGHT-OF-WAY
FRONTAGE ROADS	TRANSITION PAVEMENT	PROPOSED RIGHT-OF-WAY
RAMPS	BY OTHERS	PROPOSED DRAINAGE EASEMENT
BRIDGES	PAVEMENT REMOVAL	FUTURE WORK BY OTHERS
CROSS STREETS/LOCAL ROADS	CONTROL OF ACCESS	PROPERTY LINES
LOCAL STREET CONNECTOR	PROPOSED RETAINING WALL	

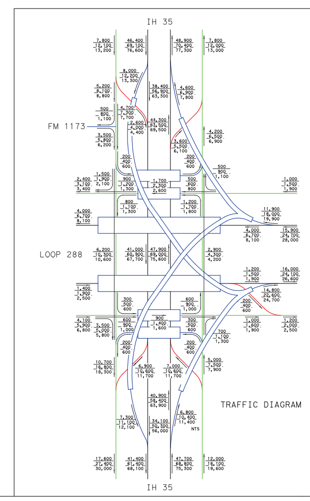
SUPERELEVATION DATA

CROSS SLOPE LT	STATION LT	CHAIN NAME	STATION RT	CROSS SLOPE RT
-2.50%	856+60.00	XLP288	851+20.00	-2.50%
-2.50%	882+80.00		879+40.00	-2.50%
-3.30%	883+50.00		884+35.00	3.30%
-3.30%	904+55.00		903+95.00	3.30%
-2.50%	905+05.00		907+45.00	-2.50%
-2.50%	905+70.00		908+95.00	-2.50%
3.50%	909+30.00		909+30.00	-3.07%

CHAIN NAME	STATION	CROSS SLOPE LT	CROSS SLOPE RT
DC288W35N	21+74.99	3.30%	-3.30%
	24+00.00	3.30%	-3.30%
	24+50.00	2.00%	-2.00%
	31+55.00	2.00%	-2.00%
	32+80.00	4.80%	-4.80%
	51+95.00	4.80%	-4.80%
	53+20.00	2.00%	-2.00%
	61+55.00	2.00%	-2.00%
	61+75.00	2.50%	-2.50%
	64+79.19	2.50%	-2.50%
DC288W35S	12+50.22	-4.80%	4.80%
	14+85.00	4.80%	-4.80%
	30+70.00	4.80%	-4.80%
	33+05.01	-4.80%	4.80%
DC288E35S	18+25.11	-2.50%	2.50%
	21+85.00	-2.50%	2.50%
	22+05.00	-2.00%	2.00%
	34+25.00	-2.00%	2.00%
	35+50.00	-4.80%	4.80%
	37+74.58	-4.80%	4.80%
RX288E77	18+71.22	-3.30%	3.30%
	19+75.00	-3.30%	3.30%
	21+25.00	2.00%	-2.00%
	22+34.54	2.00%	-2.00%

SUPERELEVATION DATA

CHAIN NAME	STATION	CROSS SLOPE LT	CROSS SLOPE RT
DC35N288E	17+86.65	2.50%	-2.50%
	22+40.00	2.50%	-2.50%
	22+60.00	2.00%	-2.00%
	37+45.00	2.00%	-2.00%
	38+70.00	5.00%	-5.00%
	53+75.00	5.00%	-5.00%
	55+00.00	2.00%	-2.00%
	68+40.00	2.00%	-2.00%
	70+35.00	-3.30%	3.30%
	72+56.22	-3.30%	3.30%
DC35S288E	12+17.04	-4.94%	4.94%
	14+55.00	4.80%	-4.80%
	28+05.00	4.80%	-4.80%
	29+90.62	-2.89%	2.89%
DC35S288W	44+59.05	-4.80%	4.80%
	46+45.00	-4.80%	4.80%
	47+65.00	-2.00%	2.00%
	60+30.00	-2.00%	2.00%
	60+50.00	-2.50%	2.50%
	62+62.65	-2.50%	2.50%

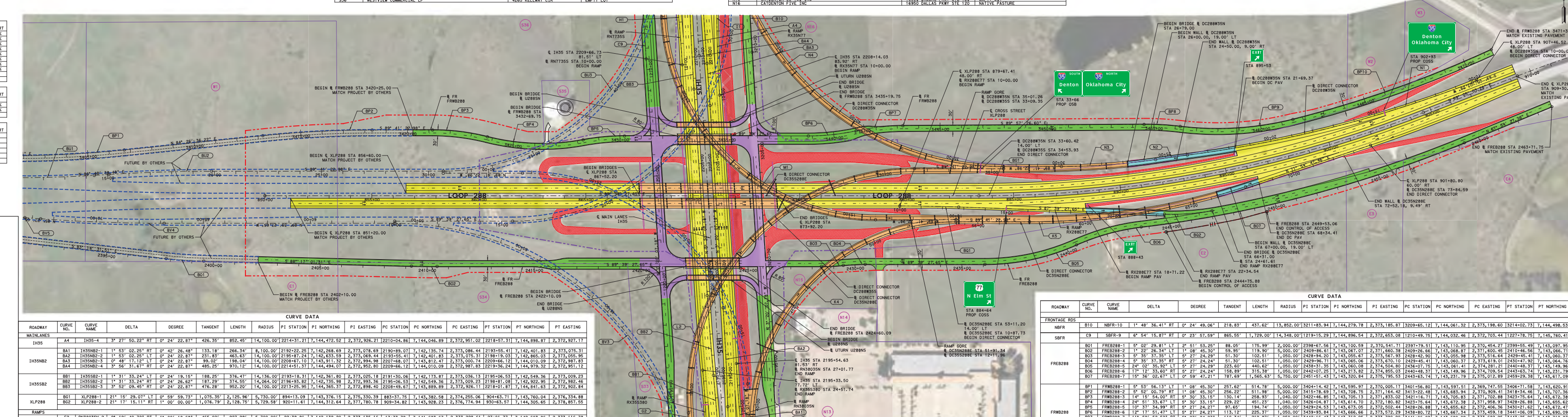


PROPERTY OWNERSHIP DATA

PROPERTY	OWNER NAME	ADDRESS	BUSINESS/DESCRIPTION
W1	WESTVIEW COMMERCIAL LP	4265 KELLWAY CIR	PASTURE
W2	MORGAN, DEBRA JOHNSON TR HAZEL K KING LAND TRUST	1903 WILLIAMSBURG ROW	NATIVE PASTURE
W3	HILLWOOD INVESTMENT LAND LP	9800 HILLWOOD PKWY STE 300	CROPLAND
S33	HARRIS, RICHARD A JR HERITAGE TRUST ETAL	425 FRY ST	RICK HARRIS LELANDS BUILDINGS
S34	HARRIS, RICHARD A JR HERITAGE TRUST ETAL	425 FRY ST	EMPTY LOT
S35	DENTON, CITY OF	215 E MCKINNEY ST	CITY WATER TOWER
S36	WESTVIEW COMMERCIAL LP	4265 KELLWAY CIR	EMPTY LOT

PROPERTY OWNERSHIP DATA

PROPERTY	OWNER NAME	ADDRESS	BUSINESS/DESCRIPTION
E1	HARRIS, RICHARD A JR HERITAGE TRUST ETAL	425 FRY ST	NATIVE PASTURE
E2	CATDENTON 35 THREE INC	16950 DALLAS PKWY STE 120	NATIVE PASTURE
E3	MORGAN, DEBRA JOHNSON TR HAZEL K KING LAND TRUST	1903 WILLIAMSBURG ROW	NATIVE PASTURE
E4	HILLWOOD INVESTMENT LAND LP	9800 HILLWOOD PKWY STE 300	NATIVE PASTURE
N13	LAD VENTURES, LLC	7923 E MCKINNEY ST	STONEHILL CENTER OUTLETS
N14	LAD VENTURES, LLC	7923 E MCKINNEY ST	HORNY TOAD CAFE
N15	CATDENTON 35 TWO INC	16950 DALLAS PKWY STE 120	EMPTY LOT
N16	CATDENTON FIVE INC	16950 DALLAS PKWY STE 120	NATIVE PASTURE

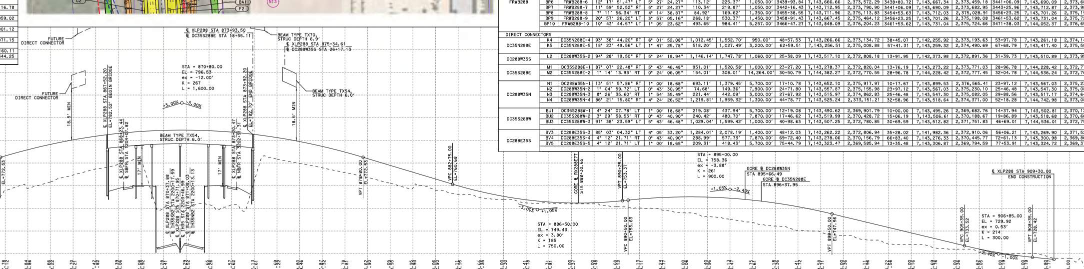


CURVE DATA

ROADWAY	CURVE NO.	CURVE NAME	DELTA	DEGREE	TANGENT	LENGTH	RADIUS	PI STATION	PI NORTHING	PI EASTING	PC STATION	PC NORTHING	PC EASTING	PT STATION	PT NORTHING	PT EASTING
MAINLANES																
IH35	A4	IH35-4	3° 27' 50.22" RT	0° 24' 22.87"	426.35'	852.45'	14,100.00'	2214+31.21	7,144,472.52	2,372,926.21	2210+04.86	7,144,046.89	2,372,951.02	2218+57.31	7,144,898.87	2,372,927.17
IH35NB2	BA1	IH35NB2-1	1° 53' 02.25" RT	0° 42' 26.48"	133.18'	266.34'	8,100.00'	2192+22.25	7,142,268.69	2,373,078.69	2190+89.07	7,142,135.74	2,373,086.44	2193+55.41	7,142,401.83	2,373,075.31
	BA2	IH35NB2-2	1° 53' 02.25" LT	0° 24' 22.87"	231.83'	463.63'	14,100.00'	2195+87.24	7,142,633.59	2,373,069.44	2193+55.41	7,142,401.83	2,373,075.31	2198+19.03	7,142,865.03	2,373,055.95
	BA3	IH35NB2-3	0° 48' 17.12" LT	0° 24' 22.87"	99.02'	198.04'	14,100.00'	2208+67.10	7,143,911.32	2,372,994.98	2207+68.07	7,143,812.47	2,373,000.74	2209+66.12	7,144,010.09	2,372,987.83
	BA4	IH35NB2-4	3° 56' 31.67" RT	0° 24' 22.87"	485.25'	970.12'	14,100.00'	2214+51.37	7,144,494.07	2,372,952.80	2209+66.12	7,144,010.09	2,372,987.83	2219+36.24	7,144,979.32	2,372,951.12
IH35SB2	BB1	IH35SB2-1	1° 31' 33.24" LT	0° 24' 19.15"	188.25'	376.47'	14,136.00'	2193+18.31	7,142,361.80	2,373,025.18	2191+30.06	7,142,173.87	2,373,036.13	2195+06.53	7,142,549.36	2,373,009.23
	BB2	IH35SB2-2	1° 31' 33.24" RT	0° 24' 26.62"	187.29'	374.55'	14,064.00'	2196+93.82	7,142,735.98	2,372,993.36	2195+06.53	7,142,549.36	2,373,009.23	2198+81.08	7,142,922.95	2,372,982.46
	BB3	IH35SB2-3	3° 52' 09.45" RT	0° 24' 22.87"	476.28'	952.20'	14,100.00'	2213+25.95	7,144,365.37	2,372,898.40	2208+49.67	7,143,889.89	2,372,926.11	2218+01.87	7,144,841.63	2,372,902.84
XLP288	BG1	XLP288-1	21° 15' 29.07" LT	0° 59' 59.73"	1,075.35'	2,125.96'	5,730.00'	894+13.09	7,143,376.15	2,375,330.39	883+37.75	7,143,382.58	2,374,255.06	904+63.71	7,143,760.04	2,376,334.88
	BG2	XLP288-2	21° 17' 15.11" RT	1° 00' 00.00"	1,076.79'	2,128.75'	5,729.58'	920+11.61	7,144,312.64	2,377,780.78	909+34.82	7,143,928.23	2,376,774.94	930+63.57	7,144,305.65	2,378,857.55
RAMPS																
RN38035N	F2	RN38035N-2	9° 19' 40.72" RT	1° 00' 18.68"	465.02'	927.98'	5,700.00'	22+38.81	7,142,139.20	2,373,135.16	17+73.79	7,141,683.67	2,373,228.61	27+01.77	7,142,603.86	2,373,116.78
RX35S380	G2	RX35S380-2	7° 58' 48.41" LT	1° 00' 18.68"	397.59'	793.89'	5,700.00'	20+55.52	7,142,177.35	2,372,991.92	16+57.93	7,141,780.39	2,372,969.49	24+51.82	7,142,573.58	2,372,959.02
RN7735S	H1	RN7735S-1	6° 37' 08.69" LT	1° 00' 18.68"	329.61'	658.49'	5,700.00'	13+29.61	7,144,333.28	2,372,855.41	10+00.00	7,144,004.08	2,372,871.86	16+58.49	7,144,658.40	2,372,801.12
RX35N77	I1	RX35N77-1	9° 57' 57.89" RT	1° 00' 18.68"	496.99'	991.46'	5,700.00'	14+96.99	7,144,357.31	2,373,015.37	10+00.00	7,143,861.26	2,373,045.90	19+91.46	7,144,851.15	2,373,071.15
RX288E77	BQ1	RX288E77-1	2° 00' 00.00" RT	0° 43' 30.95"	137.90'	275.76'	7,900.00'	11+37.90	7,143,335.96	2,374,022.33	10+00.00	7,143,336.79	2,373,884.44	12+75.76	7,143,330.33	2,374,160.11
	BQ2	RX288E77-2	12° 12' 54.20" LT	5° 27' 24.27"	112.35'	223.85'	1,050.00'	23+50.10	7,143,286.42	2,375,233.56	22+37.75	7,143,291.01	2,375,121.30	24+61.61	7,143,305.68	2,375,344.25

CURVE DATA

ROADWAY	CURVE NO.	CURVE NAME	DELTA	DEGREE	TANGENT	LENGTH	RADIUS	PI STATION	PI NORTHING	PI EASTING	PC STATION	PC NORTHING	PC EASTING	PT STATION	PT NORTHING	PT EASTING
FRONTAGE RDS																
NBFR	B10	NBFR-10	1° 48' 36.41" RT	0° 24' 49.06"	218.83'	437.62'	13,852.00'	3211+83.94	7,144,279.78	2,373,185.87	3209+65.12	7,144,061.32	2,373,198.60	3214+02.73	7,144,498.53	2,373,180.04
SBFR	C9	SBFR-9	6° 54' 15.87" RT	0° 23' 57.59"	865.55'	1,729.00'	14,348.00'	1219+15.29	7,144,896.54	2,372,653.08	1210+49.75	7,144,032.46	2,372,703.44	1227+78.75	7,145,760.41	2,372,706.96
FREB288	BO1	FREB288-1	5° 02' 29.81" LT	2° 51' 53.25"	88.05'	175.99'	2,000.00'	2398+67.56	7,143,100.59	2,370,541.71	2397+79.51	7,143,110.95	2,370,454.27	2399+55.49	7,143,097.95	2,370,629.72
	BO2	FREB288-2	1° 22' 26.34" LT	1° 08' 45.30"	59.95'	119.90'	5,000.00'	2409+86.61	7,143,067.07	2,371,660.38	2409+26.66	7,143,068.87	2,371,600.45	2410+46.56	7,143,066.71	2,371,720.33
	BO3	FREB288-3	5° 35' 37.35" LT	5° 27' 24.29"	51.30'	102.51'	1,050.00'	2428+94.20	7,143,055.67	2,373,567.93	2428+42.90	7,143,055.98	2,373,516.64	2429+45.41	7,143,060.37	2,373,619.01
	BO4	FREB288-4	5° 35' 37.35" RT	5° 27' 24.24"	51.30'	102.51'	1,050.00'	2429+96.71	7,143,065.06	2,373,670.10	2429+45.41	7,143,060.37	2,373,619.01	2430+47.92	7,143,064.76	2,373,721.39
	BO5	FREB288-5	24° 02' 35.92" LT	5° 27' 24.29"	223.60'	440.62'	1,050.00'	2438+31.35	7,143,060.08	2,374,504.80	2436+07.75	7,143,061.41	2,374,281.21	2440+48.37	7,143,149.96	2,374,709.54
	BO6	FREB288-6	17° 12' 33.60" RT	5° 27' 24.24"	158.89'	315.38'	1,050.00'	2442+07.25	7,143,213.82	2,374,855.03	2440+48.37	7,143,149.96	2,374,709.54	2443+63.74	7,143,231.79	2,375,012.89
	BO7	FREB288-7	15° 36' 02.67" LT	0° 59' 47.21"	787.69'	1,565.63'	5,750.00'	2451+51.43	7,143,320.84	2,375,795.53	2443+63.74	7,143,231.79	2,375,012.89	2459+29.38	7,143,617.09	2,376,525.39
FRWB288	BP1	FRWB288-1	5° 53' 56.13" LT	1° 08' 45.30"	257.62'	514.78'	5,000.00'	3404+14.42	7,143,595.97	2,370,005.17	3401+56.80	7,143,597.51	2,369,747.55	3406+71.58	7,143,620.91	2,370,261.57
	BP2	FRWB288-2	5° 52' 00.79" RT	1° 08' 45.30"	256.22'	511.98'	5,000.00'	3415+78.69	7,143,708.75	2,371,164.42	3413+22.48	7,143,683.94	2,370,909.41	3418+34.46	7,143,707.36	2,371,420.64
	BP3	FRWB288-3	14° 15' 54.00" RT	5° 30' 33.15"	130.14'	258.93'	1,040.00'	3422+46.85	7,143,705.13	2,371,833.02	3421+16.71	7,143,705.83	2,371,702.88	3423+75.64	7,143,672.38	2,371,958.97
	BP4	FRWB288-4	24° 51' 33.67" LT	5° 30' 33.15"	229.22'	451.23'	1,040.00'	3426+04.87	7,143,614.70	2,372,180.82	3423+75.64	7,143,672.38	2,371,958.97	3428+26.88	7,143,655.62	2,372,406.36
	BP5	FRWB288-5	10° 37' 34.99" RT	5° 27' 24.27"	97.65'	194.74'	1,050.00'	3429+24.53	7,143,673.05	2,372,502.44	3428+26.88	7,143,655.62	2,372,406.36	3430+21.62	7,143,672.47	2,372,600.09
	BP6	FRWB288-6	12° 17' 51.47" LT	5° 27' 24.27"	113.12'	225.37'	1,050.00'	3439+93.84	7,143,666.66	2,373,572.29	3438+80.72	7,143,667.34	2,373,459.18	3441+06.09	7,143,690.09	2,373,682.95
	BP7	FRWB288-7	11° 59' 52.52" RT	5° 27' 24.27"	110.34'	219.87'	1,050.00'	3442+16.43	7,143,712.95	2,373,790.90	3441+06.09	7,143,690.09	2,373,682.95	3443+25.96	7,143,712.87	2,373,901.24
	BP8	FRWB288-8	7° 11' 56.34" RT	4° 14' 38.87"	84.92'	169.62'	1,350.00'	3455+38.55	7,143,711.96	2,375,113.83	3454+53.63	7,143,712.03	2,375,028.91	3456+23.25	7,143,701.26	2,375,198.08
	BP9	FRWB288-9	20° 57' 26.20" LT	3° 57' 05.16"	268.18'	530.37'	1,450.00'	3458+91.43	7,143,667.45	2,375,464.12	3456+23.25	7,143,701.26	2,375,198.08	3461+53.62	7,143,731.04	2,375,724.66
	BP10	FRWB288-10	10° 43' 44.57" LT	1° 05' 23.62"	493.65'	984.41'	5,257.00'	3466+47.27	7,143,848.09	2,376,204.23	3461+53.62	7,143,731.04	2,375,724.66	3471+38.03	7,144,052.37	2,376,653.63
DIRECT CONNECTORS																
DC35N288E	K4	DC35N288E-4	93° 38' 44.20" RT	6° 01' 52.08"	1,012.45'	1,552.70'	950.00'	48+57.53	7,143,266.66	2,373,134.72	38+45.07	7,142,255.92	2,373,193.63	53+97.78	7,143,261.18	2,374,147.16
	K5	DC35N288E-5	18° 23' 49.56" LT	1° 47' 25.78"	518.20'	1,027.49'	3,200.00'	62+59.51	7,143,256.51	2,375,008.88	57+41.31	7,143,259.32	2,374,490.69	67+68.79	7,143,417.40	2,375,501.48
DC288W35S	L2	DC288W35S-2	94° 28' 19.50" RT	5° 24' 18.94"	1,146.14'	1,747.78'	1,060.00'	25+38.09	7,143,517.10	2,372,808.18	13+91.95	7,142,373.98	2,372,891.36	31+39.73	7,143,510.89	2,373,954.30
DC35S288E	M1	DC35S288E-1	87° 07' 22.48" LT	5° 43' 46.48"	951.01'	1,520.58'	1,000.00'	23+27.20	7,143,278.37	2,372,820.04	13+76.19	7,143,273.22	2,373,771.03	28+96.78	7,144,228.42	2,372,777.45
	M2	DC35S288E-2	1° 14' 13.93" RT	0° 24' 06.05"	154.01'	308.01'	14,264.00'	30+50.79	7,144,382.27	2,372,770.55	28+96.78	7,144,228.42	2,372,777.45	32+04.78	7,144,536.24	2,372,766.97
DC288W35N	N1	DC288W35N-1	13° 51' 57.86" RT	1° 00' 18.68"	693.11'	1,379.45'	5,700.00'	17+10.78	7,143,652.10	2,375,917.97	10+17.67	7,143,899.53	2,376,565.41	23+97.12	7,143,567.03	2,375,230.10
	N2	DC288W35N-2	1° 04' 59.72" LT	0° 43' 30.95"	74.68'	149.36'	7,900.00'	24+71.80	7,143,557.87	2,375,155.98	23+97.12	7,143,567.03	2,375,230.10	25+46.48	7,143,547.30	2,375,082.05
	N3	DC288W35N-3	8° 26' 35.60" RT	1° 54' 35.49"	221.44'	442.09'	3,000.00'	27+67.92	7,143,515.97	2,374,862.83	25+46.48	7,143,547.30	2,375,082.05	29+88.56	7,143,517.17	2,374,641.39
	N4	DC288W35N-4	86° 21' 15.80" RT	4° 24' 26.52"	1,219.81'	1,959.32'	1,300.00'	44+78.77	7,143,525.24	2,373,151.21	32+58.96	7,143,518.64	2,374,371.00	52+18.28	7,144,742.98	2,373,080.24
DC35S288W	BU1	DC35S288W-1	4° 24' 07.78" LT	1° 00' 18.68"	219.08'	437.94'	5,700.00'	12+19.08	7,143,490.62	2,369,901.79	10+00.00	7,143,495.26	2,369,682.76	14+37.94	7,143,502.81	2,370,120.53
	BU2	DC35S288W-2	3° 29' 58.53" RT	0° 43' 40.90"	240.42'	480.70'	7,870.00'	17+46.62	7,143,519.99	2,370,428.72	15+06.19	7,143,506.61	2,370,188.67	19+86.89	7,143,518.68	2,370,669.14
	BU3	DC35S288W-3	91° 38' 23.59" LT	5° 43' 46.48"	1,029.04'	1,599.42'	1,000.00'	40+98.63	7,143,507.25	2,372,780.85	30+69.59	7,143,512.82	2,371,751.83	46+69.01	7,144,536.01	2,372,756.98
DC288E35S	BV3	DC288E35S-3	85° 03' 04.32" LT	4° 05' 33.20"	1,284.01'	2,078.19'	1,400.00'	48+12.03	7,143,262.22	2,372,806.94	35+28.02	7,141,982.36	2,372,910.06	56+06.21	7,143,269.90	2,371,522.95
	BV4	DC288E35S-4	4° 12' 21.71" RT	0° 43' 40.90"	288.99'	577.73'	7,870.00'	69+72.40	7,143,278.06	2,370,156.79	66+83.40	7,143,276.33	2,370,445.77	72+61.13	7,143,300.98	2,369,868.70
	BV5	DC288E35S-5	4° 12' 21.71" LT	1° 00' 18.68"	209.31'	418.43'	5,700.00'	75+44.79	7,143,323.47	2,369,585.94	73+35.48	7,143,306.87	2,369,794.59	77+53.91	7,143,324.72	2,369,376.63



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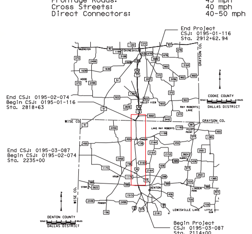
Dallas District
Mohamed K. Bur, P.E.
Dallas District Engineer
IH 35
DESIGN SCHEMATIC
From: US 380
To: 0.7 mi North of FM 3002
CSJ: 0195-03-087
CSJ: 0195-02-074
CSJ: 0195-01-116
Denton and Cooke Counties
Functional Class: Interstate
Project Length: 15.13 Mile
Scale: Horizontal 1"=200'
Scale: Vertical 1"=20'
JANUARY 2019
ROLL 13 OF 23



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Dallas District
Mohamed K. Burr, P.E.
Dallas District Engineer

IH 35

DESIGN SCHEMATIC

From: US 380

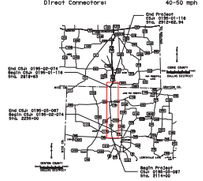
To: 0.7 mi North of FM 3002

CSJ: 0195-03-087
CSJ: 0195-02-074
CSJ: 0195-01-116

Denton and Cooke Counties
Functional Class: Interstate
Project Length: 15.13 Mile

Design Speed:

IH 35 Mainlanes:	70 mph
SL 288 Mainlanes:	70 mph
Ramps:	50 mph
Turnaround Ramps:	15 mph
Local Street Connectors:	30 mph
Frontage Roads:	40 mph
Cross Streets:	40 mph
Direct Connectors:	40-50 mph



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Scale: Vertical 1"=20'

JANUARY 2019

PRELIMINARY
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SCHEMATIC PREPARED BY OR UNDER THE DIRECT SUPERVISION OF:

BRIAN CRAWELL P.E. 125 DATE
JASON ALL ROSTER P.E. 125 DATE
JANUARY 2019
DATE

NOT INTENDED FOR CONSTRUCTION, BIDDING, OR PERMIT PURPOSES

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ROLL 14 OF 23

HDR
Firm Registration No. F-754
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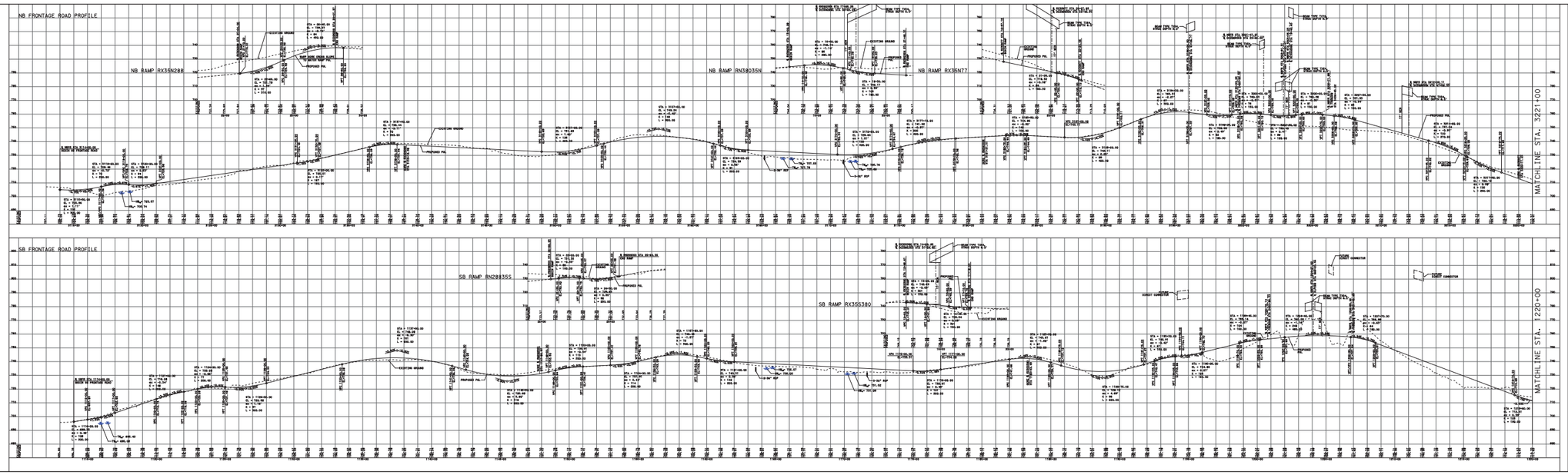
Dallas, Texas 75248-1232
972.992.6400



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Dallas District
Mohamed K. Burr, P.E.
Dallas District Engineer

IH 35

DESIGN SCHEMATIC

From: US 380

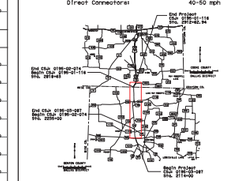
To: 0.7 mi North of FM 3002

CSJ: 0195-03-087
CSJ: 0195-02-074
CSJ: 0195-01-116

Denton and Cooke Counties
Functional Class: Interstate
Project Length: 15.13 Mile

Design Speed:

IH 35 Mainlanes:	70 mph
SL 288 Mainlanes:	70 mph
Ramps:	50 mph
Turnaround Ramps:	15 mph
Local Street Connectors:	30 mph
Frontage Roads:	40 mph
Cross Streets:	40 mph
Direct Connectors:	40-50 mph



Scale: Horizontal 1"=200'
Scale: Vertical 1"=20'

JANUARY 2019

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SUBJECT TO REVISIONS
SCHEMATIC PREPARED BY OR UNDER THE DIRECT SUPERVISION OF:

BRIAN CRAWELL P.E. 125 DATE
JASON ALL ROSTER P.E. 125 DATE
JANUARY 2019
DATE

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ROLL 14 OF 23

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Dallas District
Mohamed K. Burr, P.E.
Dallas District Engineer

IH 35

DESIGN SCHEMATIC

From: US 380

To: 0.7 mi North of FM 3002

CSJ: 0195-03-087
CSJ: 0195-02-074
CSJ: 0195-01-116

Denton and Cooke Counties
Functional Class: Interstate
Project Length: 15.13 Mile

Design Speed:

IH 35 Mainlanes:	70 mph
SL 288 Mainlanes:	70 mph
Ramps:	50 mph
Turnaround Ramps:	15 mph
Local Street Connectors:	30 mph
Frontage Roads:	40 mph
Cross Streets:	40 mph
Direct Connectors:	40-50 mph

Scale: Horizontal 1"=200'
Scale: Vertical 1"=20'

JANUARY 2019

PRELIMINARY
SUBJECT TO REVISIONS
SCHEMATIC PREPARED BY OR UNDER THE DIRECT SUPERVISION OF:
BRIAN CRUMBELL P.E. 124 DATE
JASON A. ROBERTSON 119408 P.E. LICENSE
JANUARY 2019
DATE

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PRELIMINARY, SUBJECT TO CHANGE

ROLL 15 OF 23

HDR
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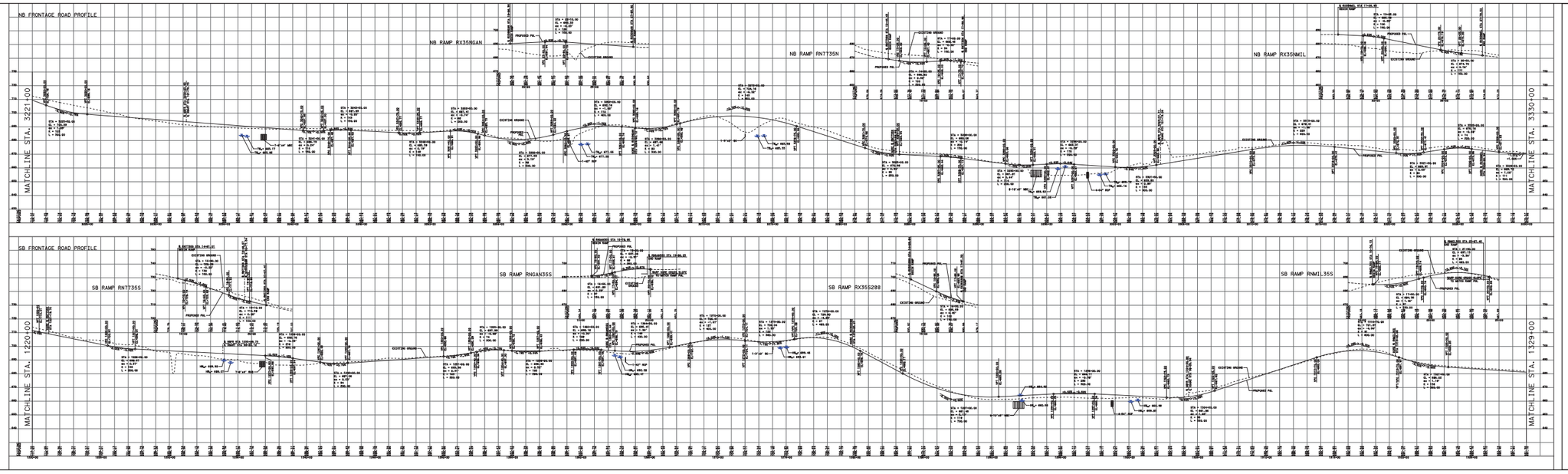
Dallas, Texas 75248-1232
972.450.6400



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Dallas District
Mohamed K. Burr, P.E.
Dallas District Engineer

IH 35

DESIGN SCHEMATIC

From: US 380

To: 0.7 mi North of FM 3002

CSJ: 0195-03-087
CSJ: 0195-02-074
CSJ: 0195-01-116

Denton and Cooke Counties
Functional Class: Interstate
Project Length: 15.13 Mile

Design Speed:

IH 35 Mainlanes:	70 mph
SL 288 Mainlanes:	70 mph
Ramps:	50 mph
Turnaround Ramps:	15 mph
Local Street Connectors:	30 mph
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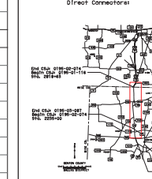

Scale: Horizontal 1"=200'
Scale: Vertical 1"=20'

JANUARY 2019

PRELIMINARY
SUBJECT TO REVISIONS
SCHEMATIC PREPARED BY OR UNDER THE DIRECT SUPERVISION OF:
BRIAN CRUMBELL P.E. 124 DATE
JASON A. ROBERTSON 119408 P.E. LICENSE
JANUARY 2019
DATE

NOT INTENDED FOR CONSTRUCTION, BIDDING, OR PERMIT PURPOSES

100% FINAL
PRELIMINARY, SUBJECT TO CHANGE

ROLL 15 OF 23

HDR
Firm Registration No. F-754
17111 Preston Road, Suite 300
Dallas, Texas 75248-1232
972.450.6400

Texas Department of Transportation

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Dallas District
Mohamed K. Burr, P.E.
Dallas District Engineer

IH 35

DESIGN SCHEMATIC

From: US 380

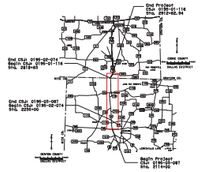
To: 0.7 mi North of FM 3002

CSJ: 0195-03-087
CSJ: 0195-02-074
CSJ: 0195-01-116

Denton and Cooke Counties
Functional Class: Interstate
Project Length: 15.13 Mile

Design Speed:

IH 35 Mainlanes:	70 mph
SL 288 Mainlanes:	70 mph
Ramps:	50 mph
Turnaround Ramps:	15 mph
Local Street Connectors:	30 mph
Cross Streets:	40 mph
Frontage Roads:	40 mph
Direct Connectors:	40-50 mph



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JANUARY 2019

PRELIMINARY
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SCHEMATIC PREPARED BY OR UNDER THE DIRECT SUPERVISION OF:

BRIAN CRUMBELL — P.E. 124604
JASON A. ROBERTSON — LICENSE 124604
JANUARY 2019

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ROLL 16 OF 23

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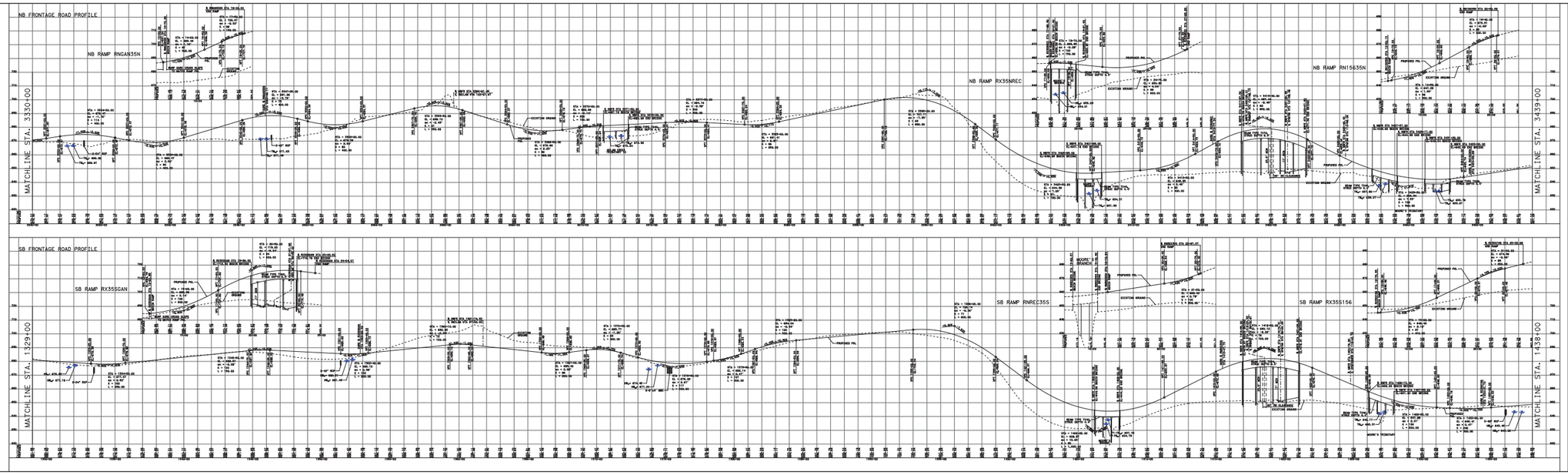

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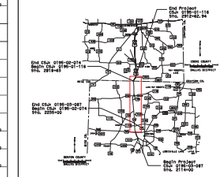

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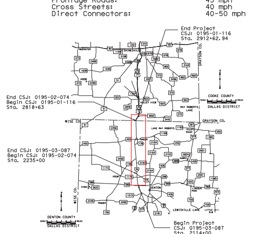

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JANUARY 2019

PRELIMINARY
SUBJECT TO REVISIONS
SCHEMATIC PREPARED BY OR UNDER THE DIRECT SUPERVISION OF:

NAME	P.E. NUMBER
BRIAN SWINDELL	80688
JASON A. RICHTER	114508

JANUARY 2019
DATE

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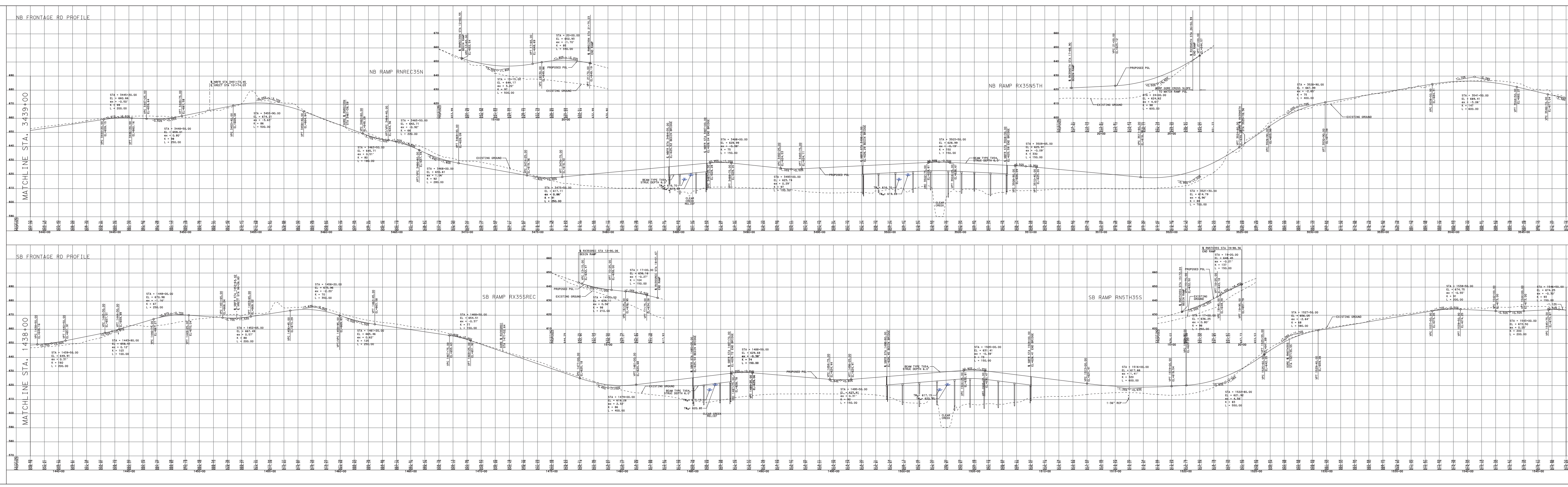
972.960.4400

...\Schematic\IH35PRVPLOT17.dgn



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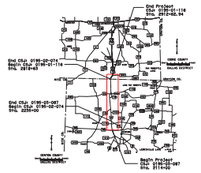

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SCHEMATIC PREPARED BY OR UNDER THE DIRECT SUPERVISION OF:
BRIAN MENDELL P.E. 124004
JASON AL-KOOTAR P.E. 124008
JANUARY 2019

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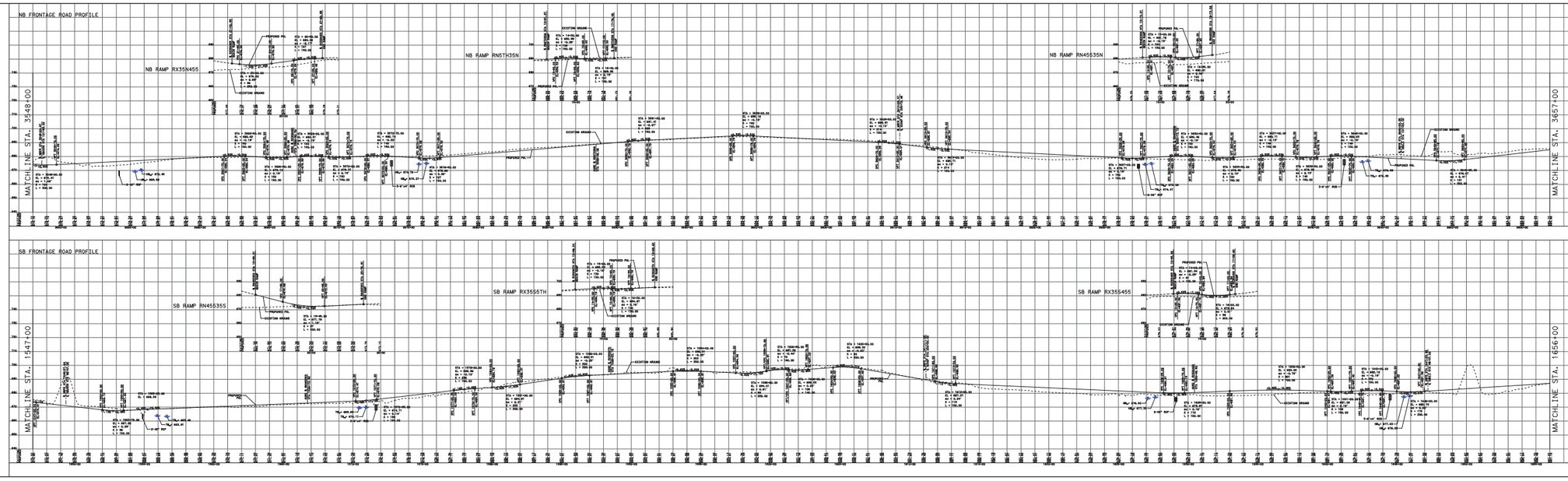

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Mohamed K. Burr, P.E.
Dallas District Engineer

IH 35

DESIGN SCHEMATIC

From: US 380

To: 0.7 mi North of FM 3002

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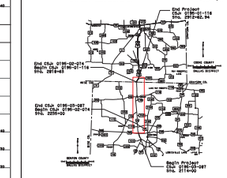

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End Project CSJ: 0195-01-116 Sta. 2912+62.94
End CSJ: 0195-02-074 Begin CSJ: 0195-01-116 Sta. 2818+63
End CSJ: 0195-03-087 Begin CSJ: 0195-02-074 Sta. 2235+00
Begin Project CSJ: 0195-03-087 Sta. 2114+00

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JANUARY 2019

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ROLL 19 OF 23

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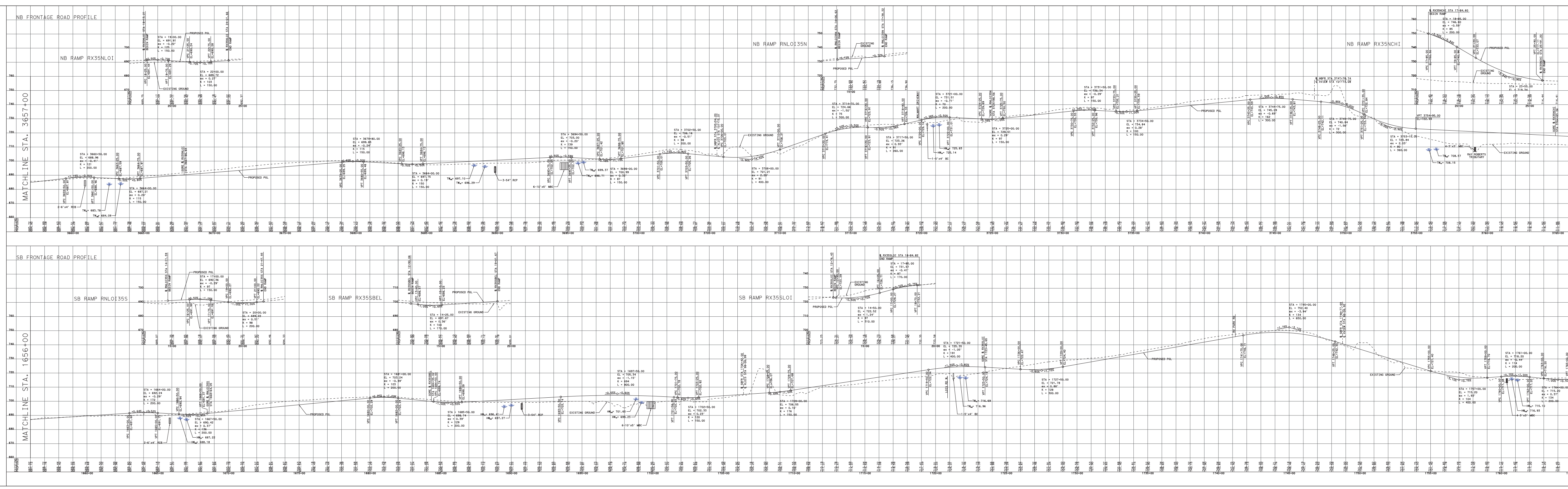

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Mohamed K. Bur, P.E.
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IH 35
DESIGN SCHEMATIC
From: US 380
To: 0.7 mi North of FM 3002
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JANUARY 2019
ROLL 19 OF 23
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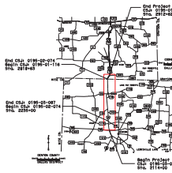

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JANUARY 2019

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SCHEMATIC PREPARED BY OR UNDER THE DIRECT SUPERVISION OF:
BRIAN BENNELL — P.E. LICENSE NO.
JASON A. ROSTOW — LICENSED P.E. LICENSE
JANUARY 2019
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ROLL 20 OF 23

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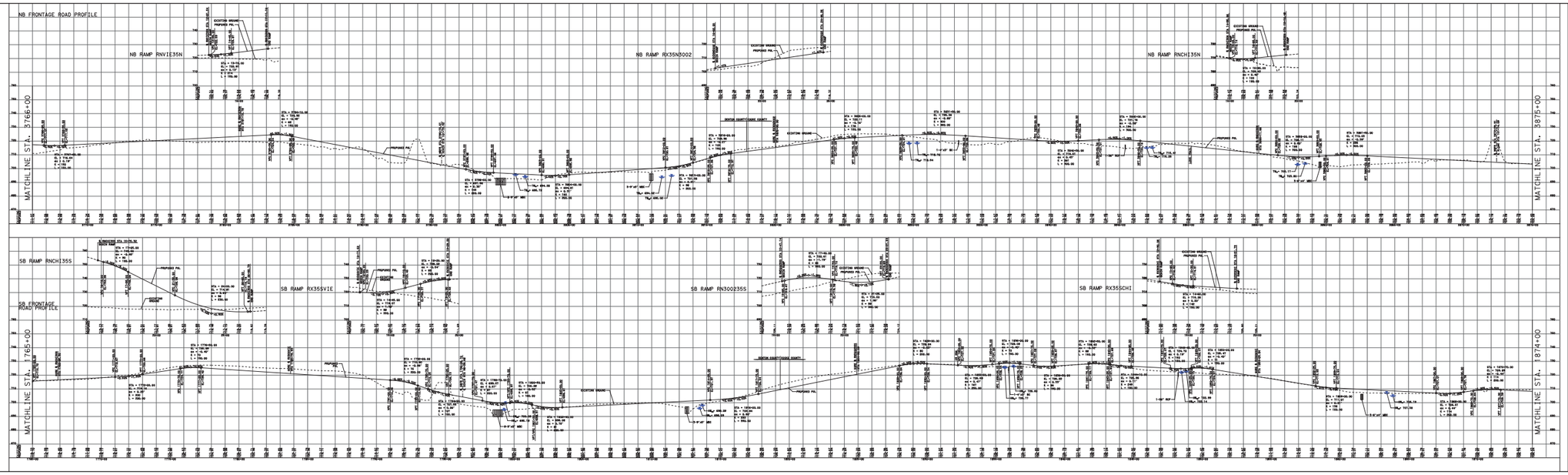
972.992.6400



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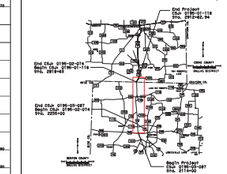

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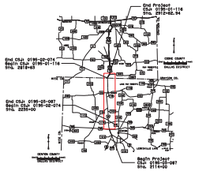

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BRIAN CARROLL P.E. 87555
JASON M. SCOTTER P.E. 87555

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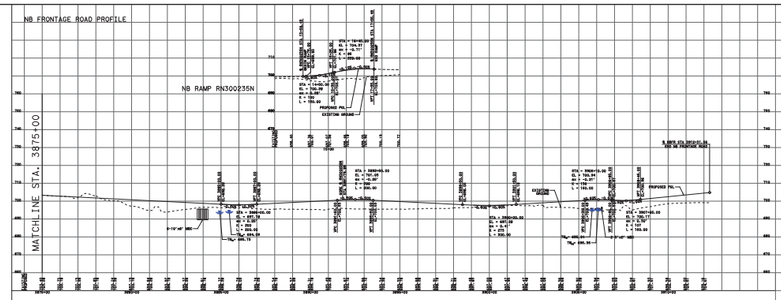

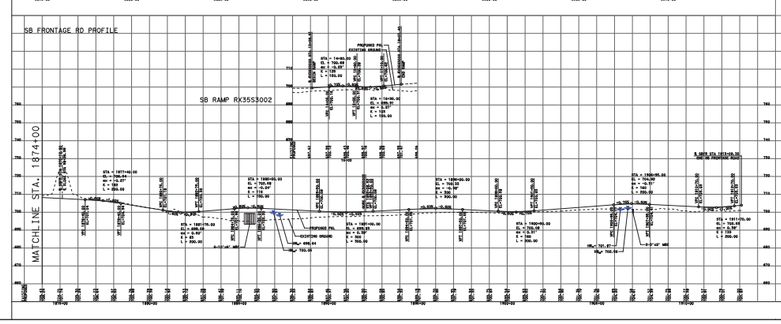

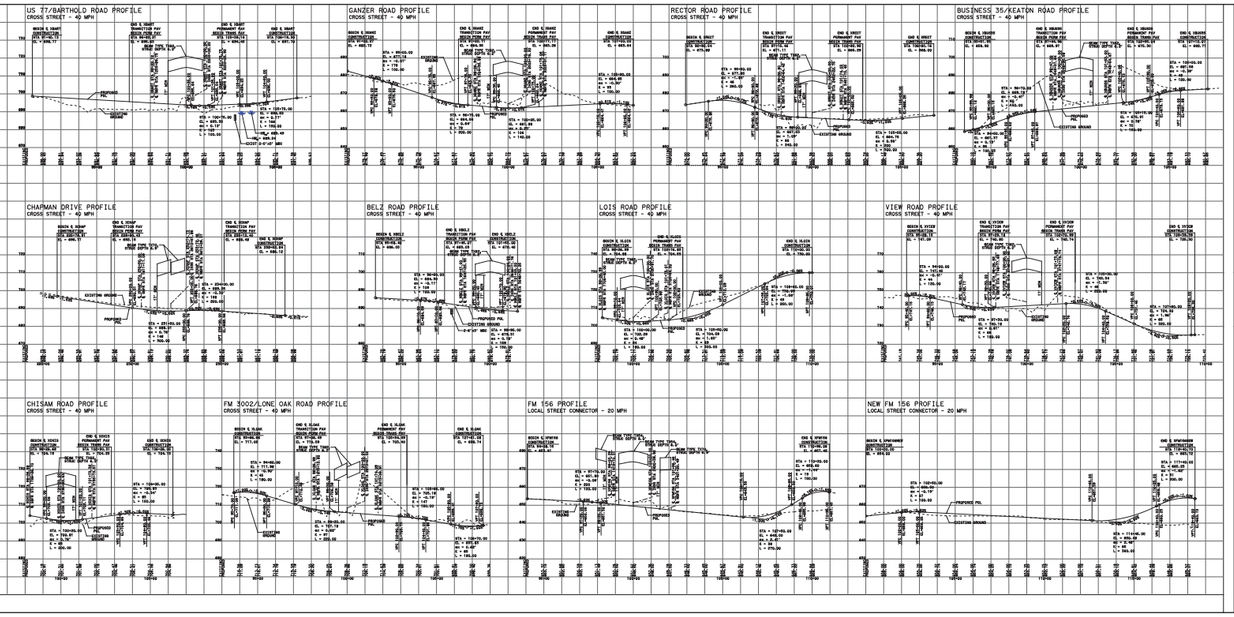

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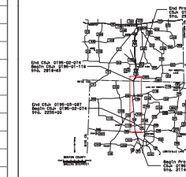

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ROLL 21 OF 23

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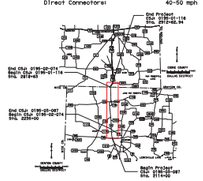

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JASON W. ROBERTSON 119008 P.E. TEXAS
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ROLL 22 OF 23

HDR
Firm Registration No. F-754
17111 Preston Road, Suite 300
Dallas, Texas 75248-1232
972.992.6400

EB FRONTAGE ROAD FRE@288

EB RAMP RX28BE77

WB FRONTAGE ROAD FRW@288

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Dallas District Engineer

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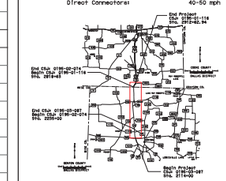

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BRIAN CROSSELL P.E. 92 TEXAS
JASON W. ROBERTSON 119008 P.E. TEXAS
JANUARY 2019
DATE
NOT INTENDED FOR CONSTRUCTION, BIDDING, OR PERMIT PURPOSES

100% FINAL
PRELIMINARY, SUBJECT TO CHANGE

ROLL 22 OF 23

HDR
Firm Registration No. F-754
17111 Preston Road, Suite 300
Dallas, Texas 75248-1232
972.992.6400

Texas Department of Transportation

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Dallas District

Mohamed K. Burr, P.E.
Dallas District Engineer

IH 35

DESIGN SCHEMATIC

From: US 380

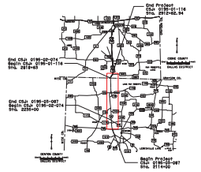
To: 0.7 mi North of FM 3002

CSJ: 0195-03-087
CSJ: 0195-02-074
CSJ: 0195-01-116

Denton and Cooke Counties
Functional Class: Interstate
Project Length: 15.13 Miles

Design Speed:

IH 35 Mainlanes:	70 mph
SL 288 Mainlanes:	70 mph
Ramps:	50 mph
Turnaround Ramps:	15 mph
Local Street Connectors:	30 mph
Frontage Roads:	40 mph
Cross Streets:	40 mph
Direct Connectors:	40-50 mph



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JANUARY 2019

PRELIMINARY
SUBJECT TO REVISIONS
SCHEMATIC PREPARED BY OR UNDER THE DIRECT SUPERVISION OF:
BRIAN CROSSELL, P.E.
JASON A. ROSTOW, P.E.
JANUARY 2019

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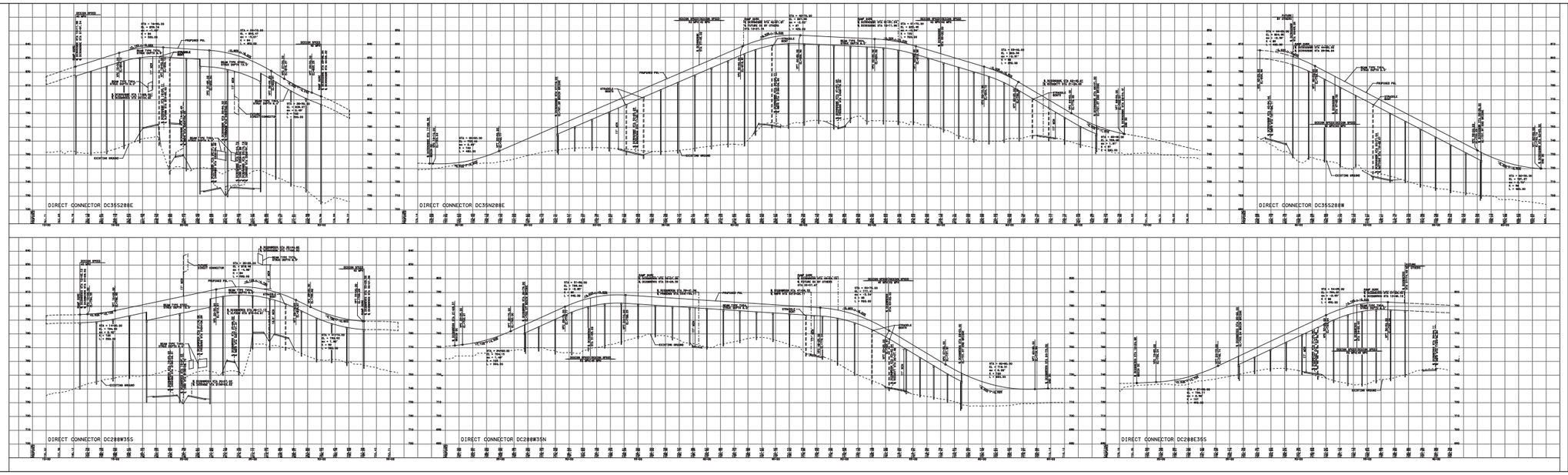

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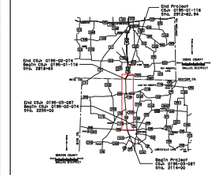
CSJ: 0195-03-087
CSJ: 0195-02-074
CSJ: 0195-01-116

Denton and Cooke Counties
Functional Class: Interstate
Project Length: 15.13 Miles

Design Speed:

IH 35 Mainlanes:	70 mph
SL 288 Mainlanes:	70 mph
Ramps:	50 mph
Turnaround Ramps:	15 mph
Local Street Connectors:	30 mph
Frontage Roads:	40 mph
Cross Streets:	40 mph
Direct Connectors:	40-50 mph



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Appendix D – Plan and Program Excerpts

(1) NCTCOG MTP Mobility 2045
(2) 2019-2022 Dallas-Fort Worth MPO TIP
(3) FY 2019 STIP (Pending)
(4) Cooke County/Wichita Falls District Listing

Mobility 2045
Freeway/Tollway Summary Table

FT Corridor	ID	Facility	From	To	2018 (Attainment Year)	2020 (Attainment Year)	2028	2037	2045	Type	YOE Cost
14 - IH 30 (Tarrant County)	28.30.3	IH 30	Oakland Blvd	IH 820	6 (Frwy)	6 (Frwy)	6 (Frwy)	8 (Frwy) + 2 (ML/T-C)	8 (Frwy) + 2 (ML/T-C)		$555,600,000
14 - IH 30 (Tarrant County)	28.40.1	IH 30	IH 820	Cooks Ln	6 (Frwy)	6 (Frwy)	6 (Frwy)	10 (Frwy) + 1 (ML/T-R)	10 (Frwy) + 1 (ML/T-R)		included w/ 28.30.3
14 - IH 30 (Tarrant County)	28.40.2	IH 30	Cooks Ln	Cooper St	6 (Frwy)	6 (Frwy)	6 (Frwy)	10 (Frwy) + 1 (ML/T-R)	10 (Frwy) + 1 (ML/T-R)		included w/ 28.30.3
14 - IH 30 (Tarrant County)	28.40.3	IH 30	Cooper St	Duncan Perry Rd	6 (Frwy) + 2 (ExL-C) + 3 WB CD, 4/6 (Frtg-D)	6 (Frwy) + 2 (ExL-C) + 3 WB CD, 4/6 (Frtg-D)	8 (Frwy) + 2/3 (ExL-C) + 3 WB CD, 4/6 (Frtg-D)	8 (Frwy) + 2/3 (ExL-C) + 3 WB CD, 4/6 (Frtg-D)	8 (Frwy) + 2/3 (ExL-C) + 3 WB CD, 4/6 (Frtg-D)		included w/ 28.30.3
14 - IH 30 (Tarrant County)	28.40.4	IH 30	Duncan Perry Rd	PGBT WE (SH161)	6 (Frwy) + 2 (ExL-R)	6 (Frwy) + 2 (ExL-R)	8 (Frwy) + 2 (ExL-R), 4 (Frtg-C)	8 (Frwy) + 2 (ExL-R), 4 (Frtg-C)	8 (Frwy) + 2 (ExL-R), 4 (Frtg-C)		included w/ 28.30.3
15 - IH 30 Canyon	28.60.1	IH 30	IH 35E (East)	Cesar Chavez Blvd	6 (Frwy) + 4 WB CD, 2/6 (Frtg-D)	6 (Frwy) + 4 WB CD, 2/6 (Frtg-D)	12 (Frwy), 2/8 (Frtg-D)	12 (Frwy), 2/8 (Frtg-D)	12 (Frwy), 2/8 (Frtg-D)		$300,000,000
15 - IH 30 Canyon	28.60.2	IH 30	Cesar Chavez Blvd	IH 45	6 (Frwy)	6 (Frwy)	12 (Frwy), 4/8 (Frtg-D)	12 (Frwy), 4/8 (Frtg-D)	12 (Frwy), 4/8 (Frtg-D)		included w/ 28.60.1
16 - IH 30 West Freeway	28.10.3	IH 30	Spur 580/Camp Bowie W Blvd	IH 820	4 (Frwy), 4 (Frtg-D)	4 (Frwy), 4 (Frtg-D)	6 (Frwy), 4/6 (Frtg-C)	6 (Frwy), 4/6 (Frtg-C)	6 (Frwy), 4/6 (Frtg-C)	Operational Improvements/ Bottleneck Removal	$95,000,000
16 - IH 30 West Freeway	28.20.1	IH 30	IH 820	Camp Bowie Blvd	6 (Frwy), 2/8 (Frtg-D)	6 (Frwy), 2/8 (Frtg-D)	8 (Frwy), 2/8 (Frtg-D)	8 (Frwy), 2/8 (Frtg-D)	8 (Frwy), 2/8 (Frtg-D)		$800,000,000
17 - IH 35	3.10.1	IH 35	Denton Co Line (N) FM156	FM 156	4 (Frwy), 4 (Frtg-C)	4 (Frwy), 4 (Frtg-C)	6 (Frwy), 4/6 (Frtg-C)	6 (Frwy), 4/6 (Frtg-C)	6 (Frwy), 4/6 (Frtg-C)		$2,500,000,000
17 - IH 35	3.20.1	IH 35	FM 156	Loop 288 (N of Denton)	4 (Frwy), 4 (Frtg-C)	4 (Frwy), 4 (Frtg-C)	6 (Frwy), 4/6 (Frtg-C)	6 (Frwy), 4/6 (Frtg-C)	6 (Frwy), 4/6 (Frtg-C)		included w/ 3.10.1
17 - IH 35	3.20.2	IH 35	Loop 288 (N of Denton)	US 380	4 (Frwy), 4 (Frtg-C)	4 (Frwy), 4 (Frtg-C)	6 (Frwy), 4 (Frtg-C)	6 (Frwy), 4 (Frtg-C)	6 (Frwy), 4 (Frtg-C)		included w/ 3.10.1
18 - IH 35E (Ellis County)	7.100.5	IH 35E	US 77 (N of Waxahachie)	Bigham Road (US 77 South)	4 (Frwy), 4 (Frtg-D)	6 (Frwy), 4 (Frtg-D)	6 (Frwy), 4/6 (Frtg-C)	6 (Frwy), 4/6 (Frtg-C)	6 (Frwy), 4/6 (Frtg-C)	Operational Improvements/ Bottleneck Removal	$450,000,000

(HOV/ExL) - HOV/Tolled Express Lanes
(HOV) - HOV Lanes
(ExL) - Express Lanes
(ML/T) - Tolled Managed Lanes
(-C) - Concurrent Lanes
(-R) - Reversible Lanes

*Interim Pk-Hr Lanes
**Technology Lanes

DISTRICT	COUNTY	CSJ	HWY	PHASE	CITY	PROJECT SPONSOR
DALLAS	DALLAS	0095-10-033	US 80	E,R	MESQUITE	TXDOT-DALLAS

LIMITS FROM: IH 30
REV DATE: 07/2018
LIMITS TO: EAST OF TOWN EAST BLVD
MPO PROJECT ID: 53108
TIP DESCRIPTION: RECONSTRUCT AND WIDEN 4 TO 6 MAIN LANES, RECONSTRUCT AND WIDEN 2/6 CONTINUOUS FRONTAGE ROADS TO 4/8 CONTINUOUS FRONTAGE ROADS
MTP REFERENCE: FT1-32.10.1
REMARKS:
Project History:

DALLAS	DALLAS	0095-13-038	IH 20	E,R	MESQUITE	TXDOT-DALLAS

LIMITS FROM: LAWSON ROAD
REV DATE: 07/2018
LIMITS TO: KAUFMAN COUNTY LINE
MPO PROJECT ID: 55232
TIP DESCRIPTION: ADD 0 TO 4 LANE CONTINUOUS FRONTAGE ROADS
MTP REFERENCE: NRSA1-30.90.2
REMARKS:
Project History:

DALLAS	KAUFMAN	0095-14-027	IH 20	E,R	VARIOUS	TXDOT-DALLAS

LIMITS FROM: DALLAS COUNTY LINE
REV DATE: 07/2018
LIMITS TO: SP 557
MPO PROJECT ID: 55219
TIP DESCRIPTION: ADD 0 TO 4 CONTINUOUS FRONTAGE ROADS
MTP REFERENCE: AO1-30.100.1, AO1-30.100.2
REMARKS:
Project History:

DALLAS	COLLIN	0135-03-046	US 380	E,R	PRINCETON	TXDOT-DALLAS

LIMITS FROM: AIRPORT ROAD
REV DATE: 07/2018
LIMITS TO: 4TH STREET
MPO PROJECT ID: 55233
TIP DESCRIPTION: WIDEN 4 LANE ROADWAY TO 6 LANE DIVIDED
MTP REFERENCE: RSA1-2.225.660
REMARKS:
Project History:

DALLAS	COLLIN	0135-04-033	US 380	E,R	PRINCETON	TXDOT-DALLAS

LIMITS FROM: 4TH STREET
REV DATE: 07/2018
LIMITS TO: CR 458
MPO PROJECT ID: 55234
TIP DESCRIPTION: WIDEN 4 LANE ROADWAY TO 6 LANES DIVIDED
MTP REFERENCE: RSA1-2.225.660
REMARKS:
Project History:

DALLAS	DENTON	0195-02-074	IH 35	E,R	VARIOUS	TXDOT-DALLAS

LIMITS FROM: US 77 (NORTH OF DENTON)
REV DATE: 07/2018
LIMITS TO: COOKE COUNTY LINE
MPO PROJECT ID: 55197
TIP DESCRIPTION: RECONSTRUCT AND WIDEN 4 TO 6 LANE RURAL FREEWAY WITH RAMP MODIFICATIONS AND RECONSTRUCT 4 TO 4/6 LANE FRONTAGE ROADS
MTP REFERENCE: FT1-3.10.1, FT1-3.20.1
REMARKS:
Project History:

DALLAS	DENTON	0195-03-087	IH 35	E,R	DENTON	TXDOT-DALLAS

LIMITS FROM: US 380
REV DATE: 07/2018
LIMITS TO: US 77 NORTH OF DENTON
MPO PROJECT ID: 55198
TIP DESCRIPTION: RECONSTRUCT AND WIDEN 4 TO 6 LANE RURAL FREEWAY WITH RAMP MODIFICATIONS AND 4 LANE TO 4/6 LANE FRONTAGE ROADS
MTP REFERENCE: FT1-3.20.1, FT1-3.20.2
REMARKS:
Project History:

DALLAS	DENTON	0196-01-108	IH 35E	E,R	VARIOUS	TXDOT-DALLAS

LIMITS FROM: TURBEVILLE RD
REV DATE: 07/2018
LIMITS TO: US 77
MPO PROJECT ID: 25033.1
TIP DESCRIPTION: RECONSTRUCT EXISTING 6/8 INTERIM GP LANES TO 8 GP LANES; RECONSTRUCT AND CONVERT 2 INTERIM REVERSIBLE TO 4 CONCURRENT MANAGED LANES
MTP REFERENCE: FT1-7.10.3, FT1-7.10.4, FT1-7.10.5
REMARKS:
Project History: PART OF REGIONAL 10 YEAR PLAN

PHASE: C=CONSTRUCTION, E = ENGINEERING, R = ROW, T = TRANSFER

2019-2022 STIP — **02/2019 Revision: Pending Approval**

DISTRICT	MPO	COUNTY	CSJ	TIP FY	HWY	PHASE	CITY	YOE COST
DALLAS	NCTCOG	DENTON	0195-03-087	2019	IH 35	E,ENG,R,ACQ	DENTON	$ 31,213,510

LIMITS FROM US 380
LIMITS TO US 77 NORTH OF DENTON
PROJECT SPONSOR TXDOT-DALLAS
REVISION DATE 02/2019
MPO PROJ NUM 55198
FUNDING CAT(S) S102,SBPE

PROJECT DESCR RECONSTRUCT AND WIDEN 4 TO 6 LANE RURAL FREEWAY WITH RAMP MODIFICATIONS AND 4 LA NE TO 4/6 LANE FRONTAGE ROADS

REMARKS P7 ADVANCE ENGINEERING AND ROW PHASES TO FY2019; INCRE ASE ENGINEERING AND ROW FUNDS IN FY2019

PROJECT HISTORY ROW CSJ 0195-03-091

TOTAL PROJECT COST INFORMATION

PREL ENG	$ 10,248,220		
ROW PURCH	$ 20,965,290	COST OF	
CONSTR	$ 208,183,295	APPROVED	
CONST ENG	$ 8,951,882	PHASES	
CONTING	$ 374,730		$ 31,213,510
INDIRECT	$ 0		
BOND FIN	$ 0		
PT CHG ORD	$ 0		
TOTAL CST	$ 248,723,417		

AUTHORIZED FUNDING BY CATEGORY/SHARE

CATEGORY	FEDERAL	STATE	REGIONAL	LOCAL	LC	TOTAL
S102	$ 18,868,761	$ 2,096,529	$ 0	$ 0	$ 0	$ 20,965,290
SBPE	$ 0	$ 10,248,220	$ 0	$ 0	$ 0	$ 10,248,220
TOTAL	$ 18,868,761	$ 12,344,749	$ 0	$ 0	$ 0	$ 31,213,510

2019-2022 STIP — **02/2019 Revision: Pending Approval**

DISTRICT	MPO	COUNTY	CSJ	TIP FY	HWY	PHASE	CITY	YOE COST
DALLAS	NCTCOG	DENTON	0195-02-074	2019	IH 35	E,ENG,R,ACQ	VARIOUS	$ 79,673,101

LIMITS FROM US 77 (NORTH OF DENTON)
LIMITS TO COOKE COUNTY LINE
PROJECT SPONSOR TXDOT-DALLAS
REVISION DATE 02/2019
MPO PROJ NUM 55197
FUNDING CAT(S) S102,SBPE

PROJECT DESCR RECONSTRUCT AND WIDEN 4 TO 6 LANE RURAL FREEWAY WITH RAMP MODIFICATIONS AND RECO NSTRUCT 4 TO 4/6 LANE FRONTAGE ROADS

REMARKS P7 ADVANCE ENGINEERING AND ROW PHASES TO FY2019; INCRE ASE ENGINEERING FUNDS AND DECREASE ROW FUNDS IN FY2 019

PROJECT HISTORY ROW CSJ 0195-02-079

TOTAL PROJECT COST INFORMATION

PREL ENG	$ 33,378,077		
ROW PURCH	$ 46,295,024	COST OF	
CONSTR	$ 601,984,920	APPROVED	
CONST ENG	$ 25,885,352	PHASES	
CONTING	$ 1,083,573		$ 79,673,101
INDIRECT	$ 0		
BOND FIN	$ 0		
PT CHG ORD	$ 0		
TOTAL CST	$ 708,626,946		

AUTHORIZED FUNDING BY CATEGORY/SHARE

CATEGORY	FEDERAL	STATE	REGIONAL	LOCAL	LC	TOTAL
S102	$ 41,665,522	$ 4,629,502	$ 0	$ 0	$ 0	$ 46,295,024
SBPE	$ 0	$ 33,378,077	$ 0	$ 0	$ 0	$ 33,378,077
TOTAL	$ 41,665,522	$ 38,007,579	$ 0	$ 0	$ 0	$ 79,673,101

2019-2022 STIP — **02/2019 Revision: Pending Approval**

DISTRICT	MPO	COUNTY	CSJ	TIP FY	HWY	PHASE	CITY	YOE COST
DALLAS	NCTCOG	DALLAS	0047-07-236	2019	US 75	C	RICHARDSON	$ 265,650

LIMITS FROM AT CAMPBELL ROAD
LIMITS TO
PROJECT SPONSOR RICHARDSON
REVISION DATE 02/2019
MPO PROJ NUM 11794.3
FUNDING CAT(S) 5

PROJECT DESCR EXTEND SB RIGHT TURN LANE ON FRONTAGE ROAD AT CAMPBELL; ADD SB LEFT TURN LANE ON FRONTAGE ROAD AT CAMPBELL

REMARKS P7 SPLIT FROM TIP 11794.2; ADD PROJECT TO THE 2019-202 2 TIP/STIP

PROJECT HISTORY ON-SYSTEM PROJECT RELATED TO OFF-SYSTEM PROJECT TIP 11794 .2/CSJ 0918-47-074

TOTAL PROJECT COST INFORMATION

PREL ENG	$ 0		
ROW PURCH	$ 0	COST OF	
CONSTR	$ 265,650	APPROVED	
CONST ENG	$ 14,655	PHASES	
CONTING	$ 7,372		$ 265,650
INDIRECT	$ 0		
BOND FIN	$ 0		
PT CHG ORD	$ 0		
TOTAL CST	$ 287,677		

AUTHORIZED FUNDING BY CATEGORY/SHARE

CATEGORY	FEDERAL	STATE	REGIONAL	LOCAL	LC	TOTAL
5	$ 212,520	$ 53,130	$ 0	$ 0	$ 0	$ 265,650
TOTAL	$ 212,520	$ 53,130	$ 0	$ 0	$ 0	$ 265,650

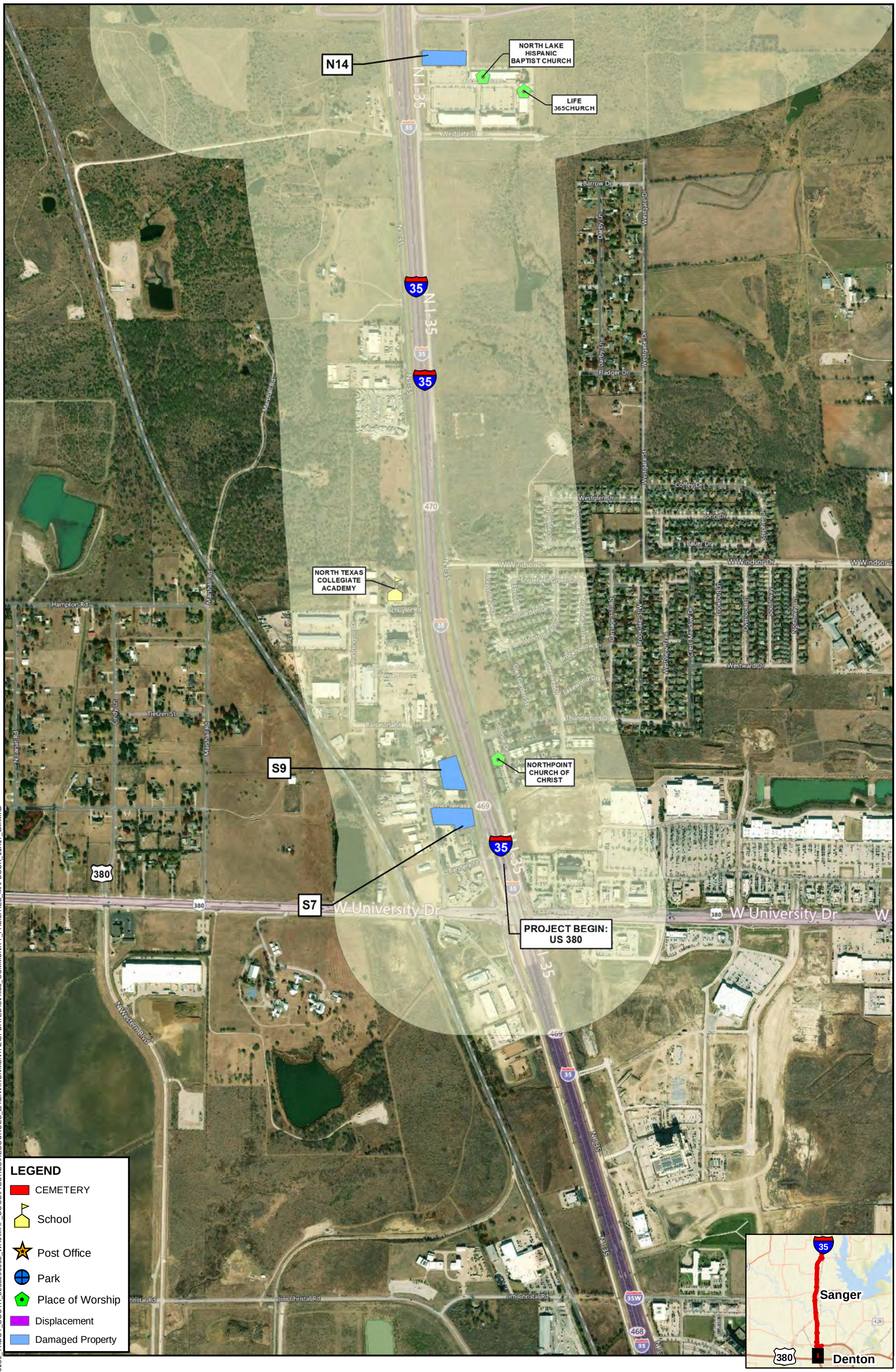
PENDING REVIEW

Active Rural DA Projects (with charges in last 24 months)

CSJ	District	County	Highway Number	Limits From	Limits To	Description	FY	DA Type	Authorized Amt	District Est
004404048	WICHITA FALLS	MONTAGUE	US 82	CLAY C/L	APPROX 0.5 MI. E OF US 81 (RINGGOLD	UPGRADE TO 4 LANE DIVIDED FACILITY	2023	DDA	$8,194,492	$13,800,000
012404038	WICHITA FALLS	WILBARGER	US 183	BEAVER CREEK	BAYLOR COUNTY LINE	UPGRADE TO SUPER-2	2022	DDA	$4,200,000	$10,991,305
012405025	WICHITA FALLS	BAYLOR	US 183	WILBARGER CL	WICHITA RIVER	UPGRADE TO SUPER 2	2022	DDA	$3,827,701	$5,000,000
015608001	WICHITA FALLS	WICHITA	SH 240	FM 369 AT SH 240	GRESHAM ROAD AT LOOP 267	REHAB AND WIDEN ROADWAY	2028	DDA	$1,750,000	$6,000,000
019401010	WICHITA FALLS	COOKE	IH 35	ON IH 35 AT THE RED RIVER BRIDGE	.	WIDEN TO 8 LANE FREEWAY FACILITY	2023	SWDA	$15,100,000	$41,000,000
019501116	WICHITA FALLS	COOKE	IH 35	DENTON COUNTY LINE	NORTH OF FM 3002	WIDEN 4 TO 6 LANE RURAL FREEWAY	2023	DDA	$2,000,000	$73,770,000
090315100	WICHITA FALLS	COOKE	VA	ON IH 35 AT TEXAS/OKLAHOMA STATE LN	EXIT 1 IN OKLAHOMA	GRADING, CONCRETE PAVEMENT AND STRUCTURES	2023	SWDA	$6,400,000	$15,000,000
090315101	WICHITA FALLS	COOKE	VA	NEAR VALLEY VIEW	.	RELOCATE EXISTING RAILROAD	2021	SWDA	$40,000,000	$40,000,000
135201021	WICHITA FALLS	MONTAGUE	FM 677	FM 1630	FORESTBURG	PROVIDE ADDITIONAL PAVED SURFACE WIDTH	2022	DDA	$2,200,000	$2,200,000
008907154	YOAKUM	WHARTON	US 59	0.26 MI. NORTH OF FM 102	2.0 MI. S OF FM 102(PUMP STATION RD	UPGRADE TO RURAL FREEWAY	2025	DDA	$80,000,000	$80,000,000
008908100	YOAKUM	WHARTON	US 59	SH 60	0.26 MI. N. OF FM 102	UPGRADE TO RURAL FREEWAY	2025	DDA	$88,000,000	$88,000,000
014403036	YOAKUM	CALHOUN	US 87	.	@ FM 2433	GRADE SEPERATION	2024	8DA	$12,000,000	$12,000,000

Appendix E – Resource-specific Maps

(1) Figure 1 - Community Facilities and Displacements
(2) Figure 2 - Waters of the U.S.
(3) Figure 3 - Hazardous Materials Sites
(4) Figure 4 - Noise Receiver Locations



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IH-35
US 380 TO FM 3002 - Denton and Cooke Counties
COMMUNITY FACILITIES

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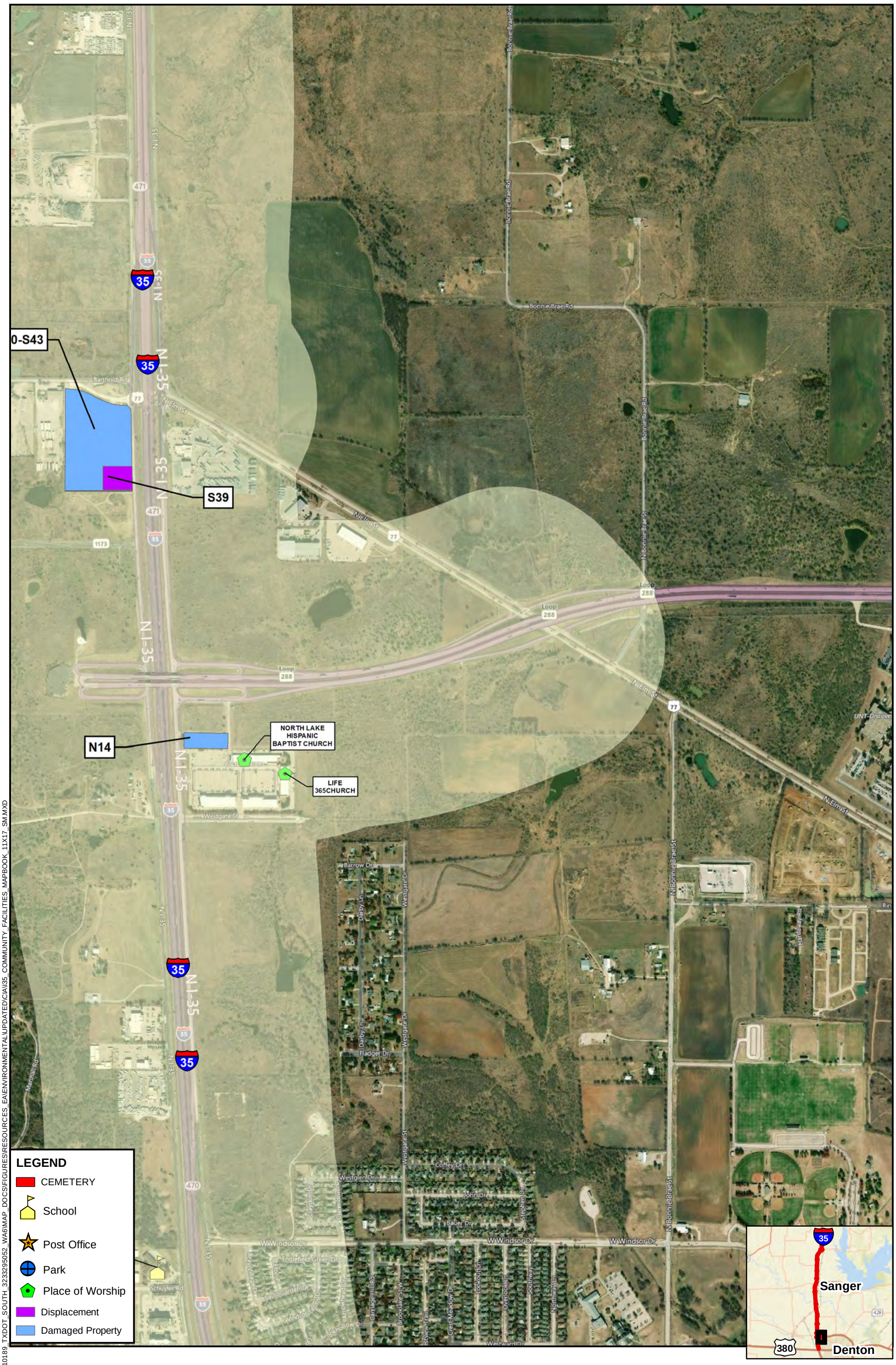
FEET

Texas Department of Transportation

Figure 1

NOV 2018



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IH-35
US 380 TO FM 3002 - Denton and Cooke Counties
COMMUNITY FACILITIES

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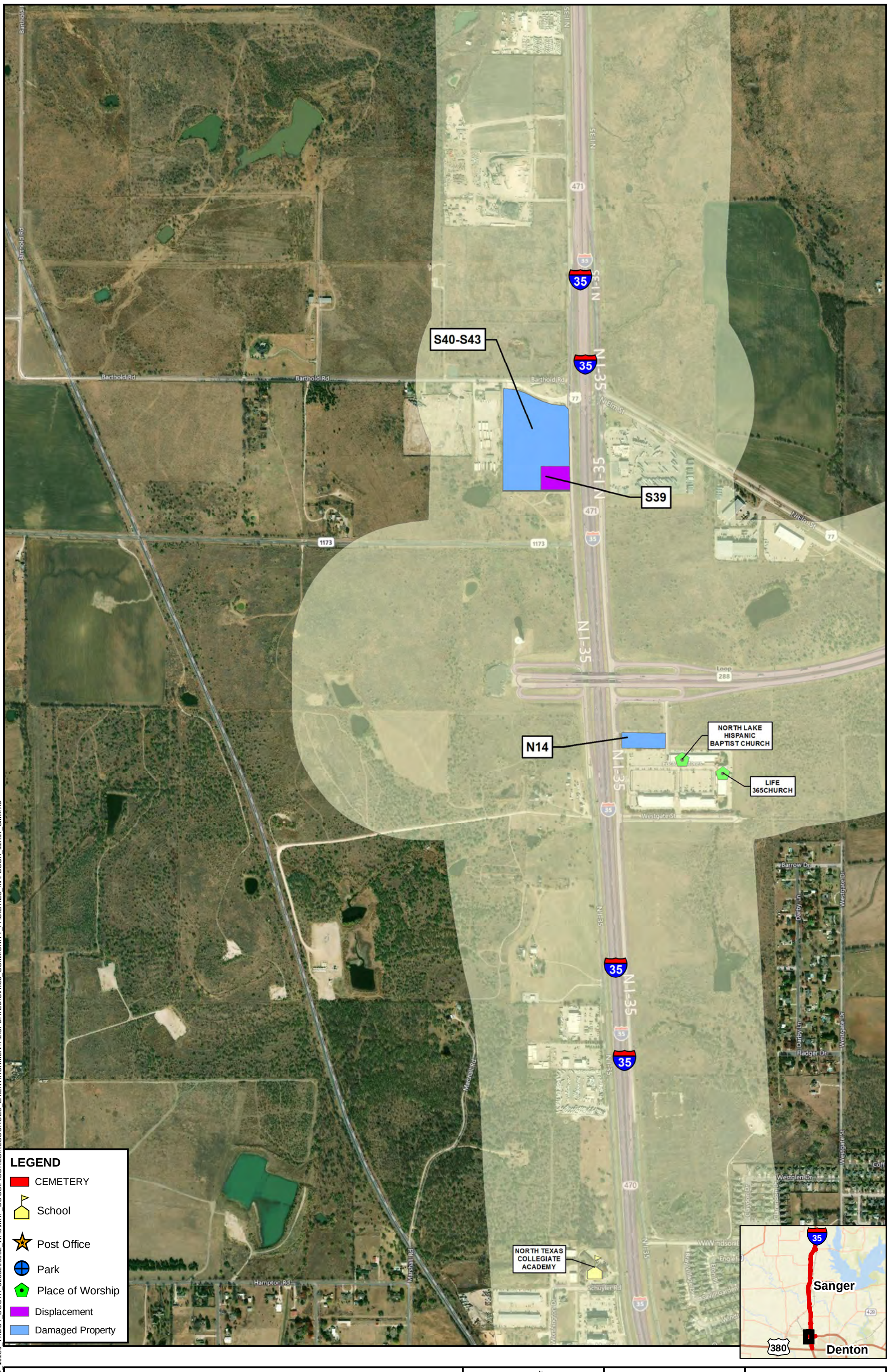
FEET

Texas Department of Transportation

Figure 1

NOV 2018



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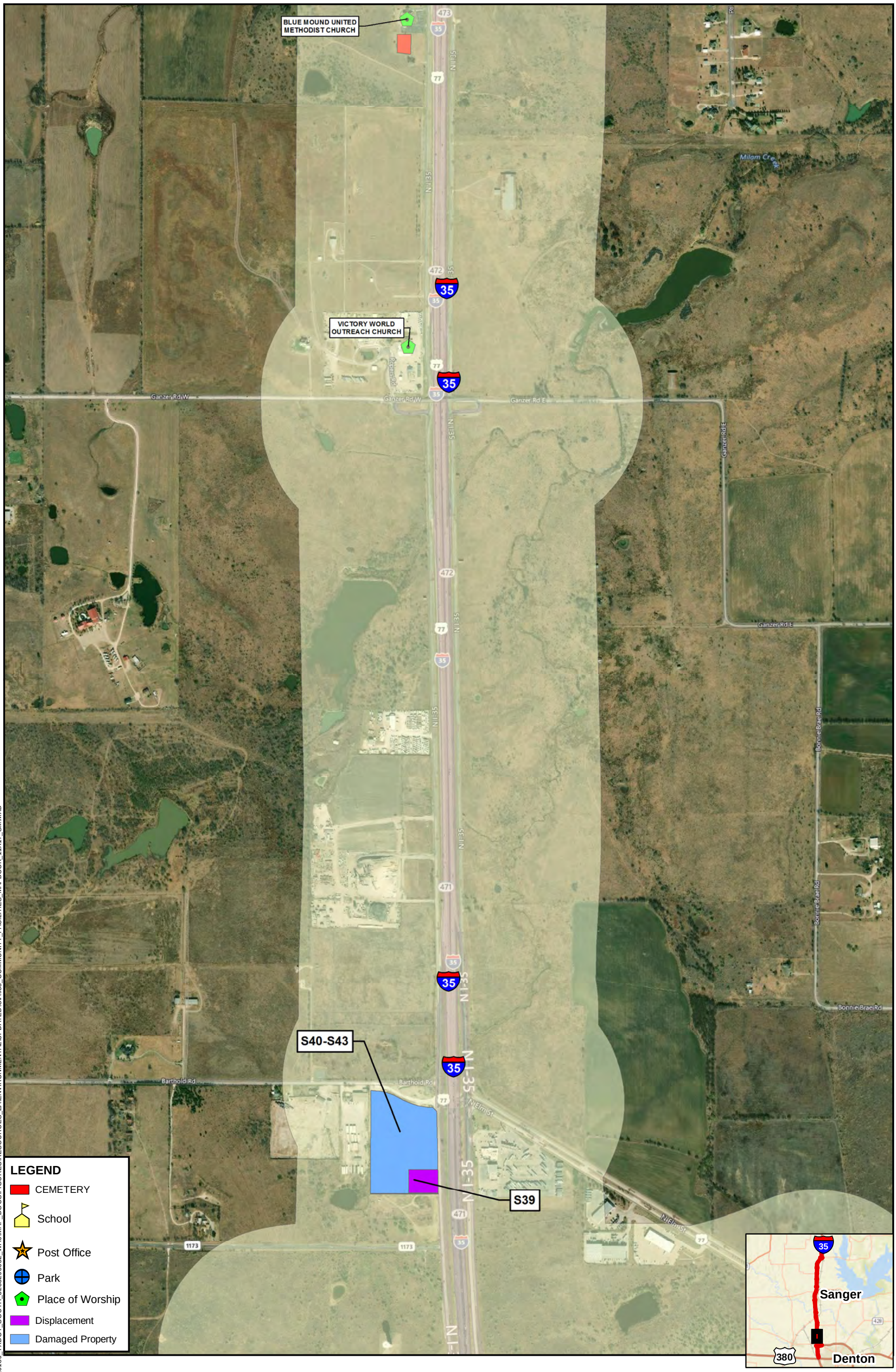
IH-35
US 380 TO FM 3002 - Denton and Cooke Counties
COMMUNITY FACILITIES

N
0 250 500
FEET

Texas Department of Transportation

Figure 1

NOV 2018



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IH-35
US 380 TO FM 3002 - Denton and Cooke Counties
COMMUNITY FACILITIES

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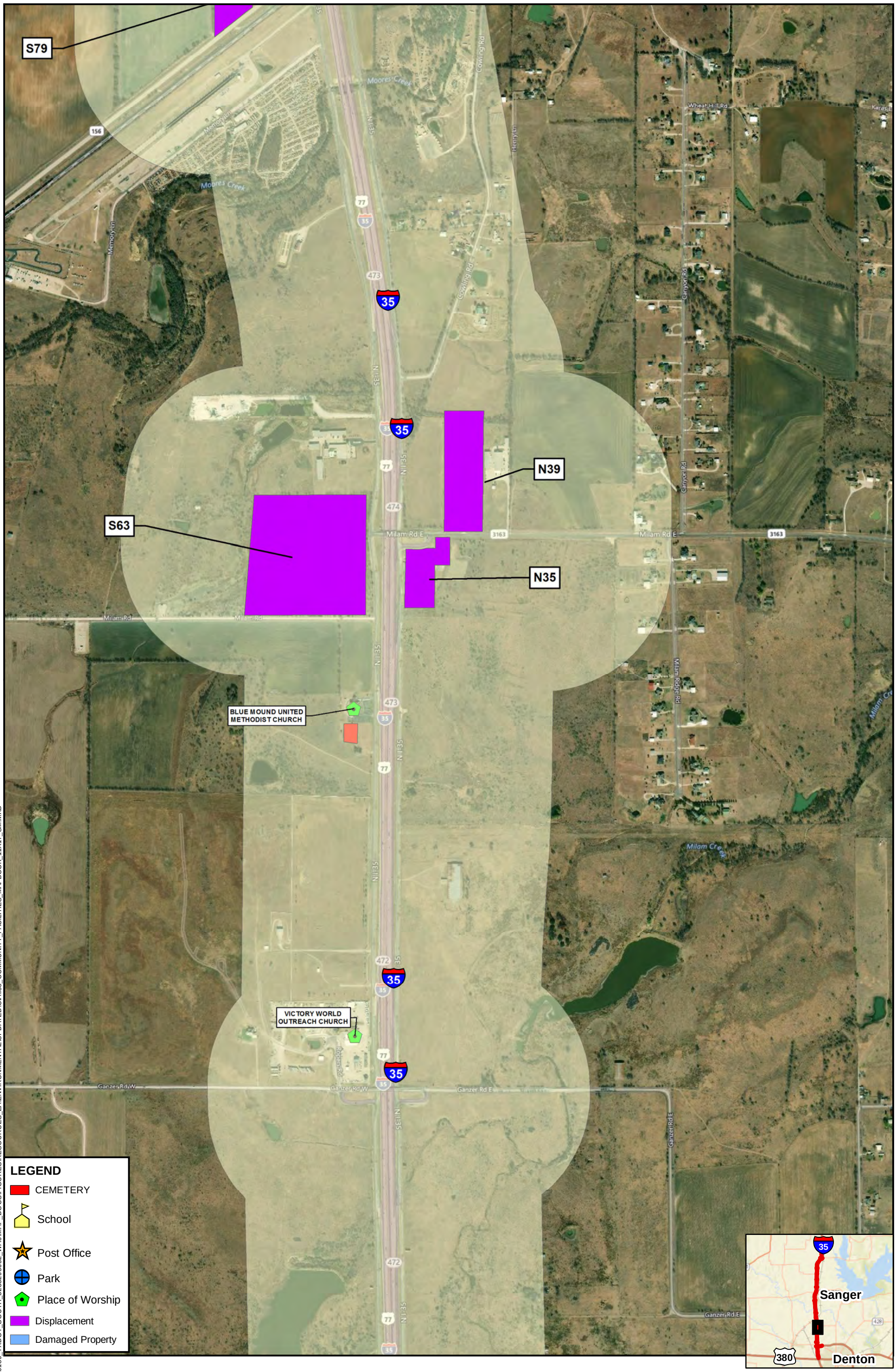
0 250 500
FEET

Texas Department of Transportation

Figure 1

NOV 2018



IH-35

US 380 TO FM 3002 - Denton and Cooke Counties

COMMUNITY FACILITIES

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Texas Department of Transportation

Figure 1

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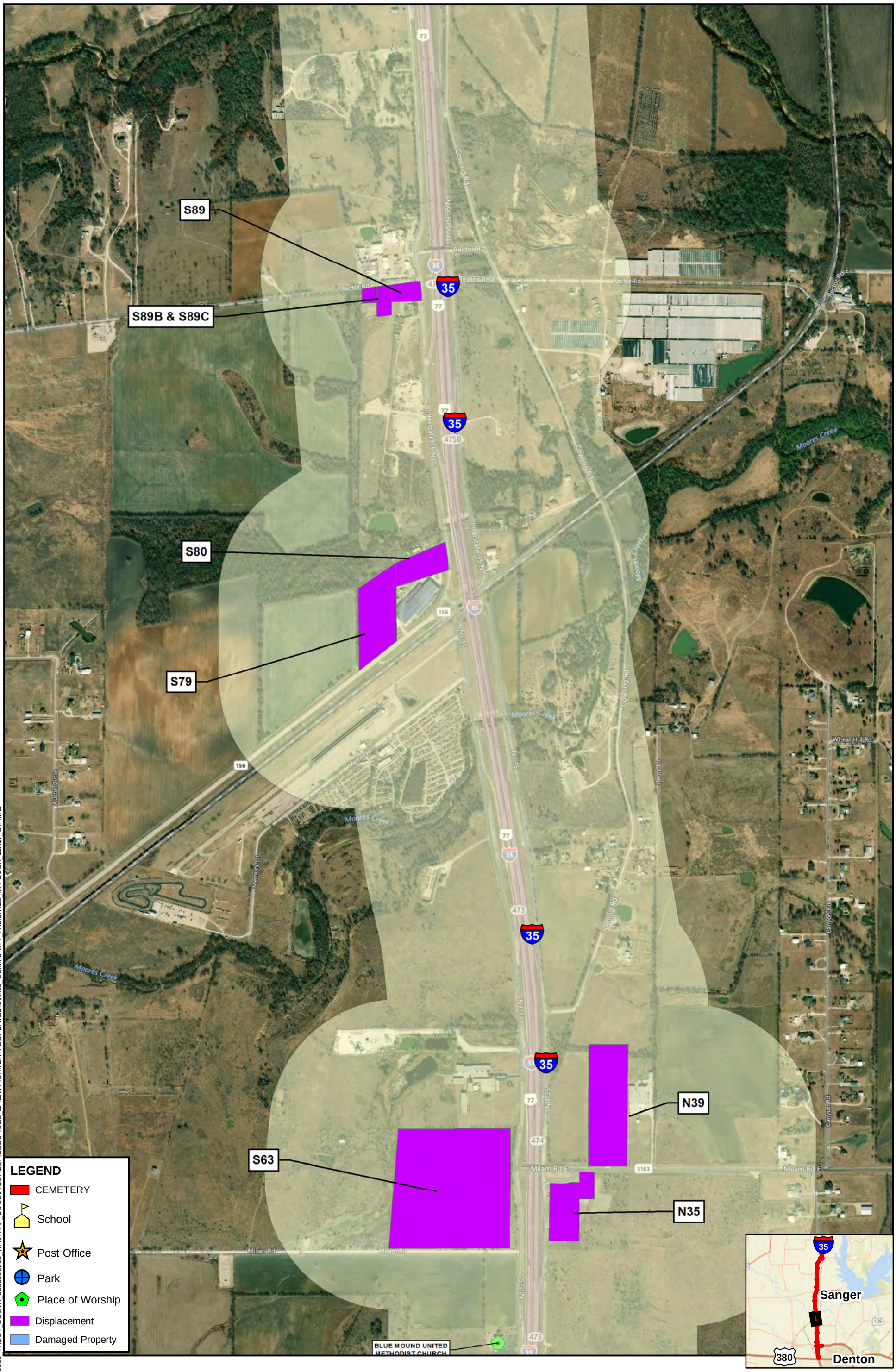

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IH-35
US 380 TO FM 3002 - Denton and Cooke Counties
COMMUNITY FACILITIES

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Texas Department of Transportation

Figure 1

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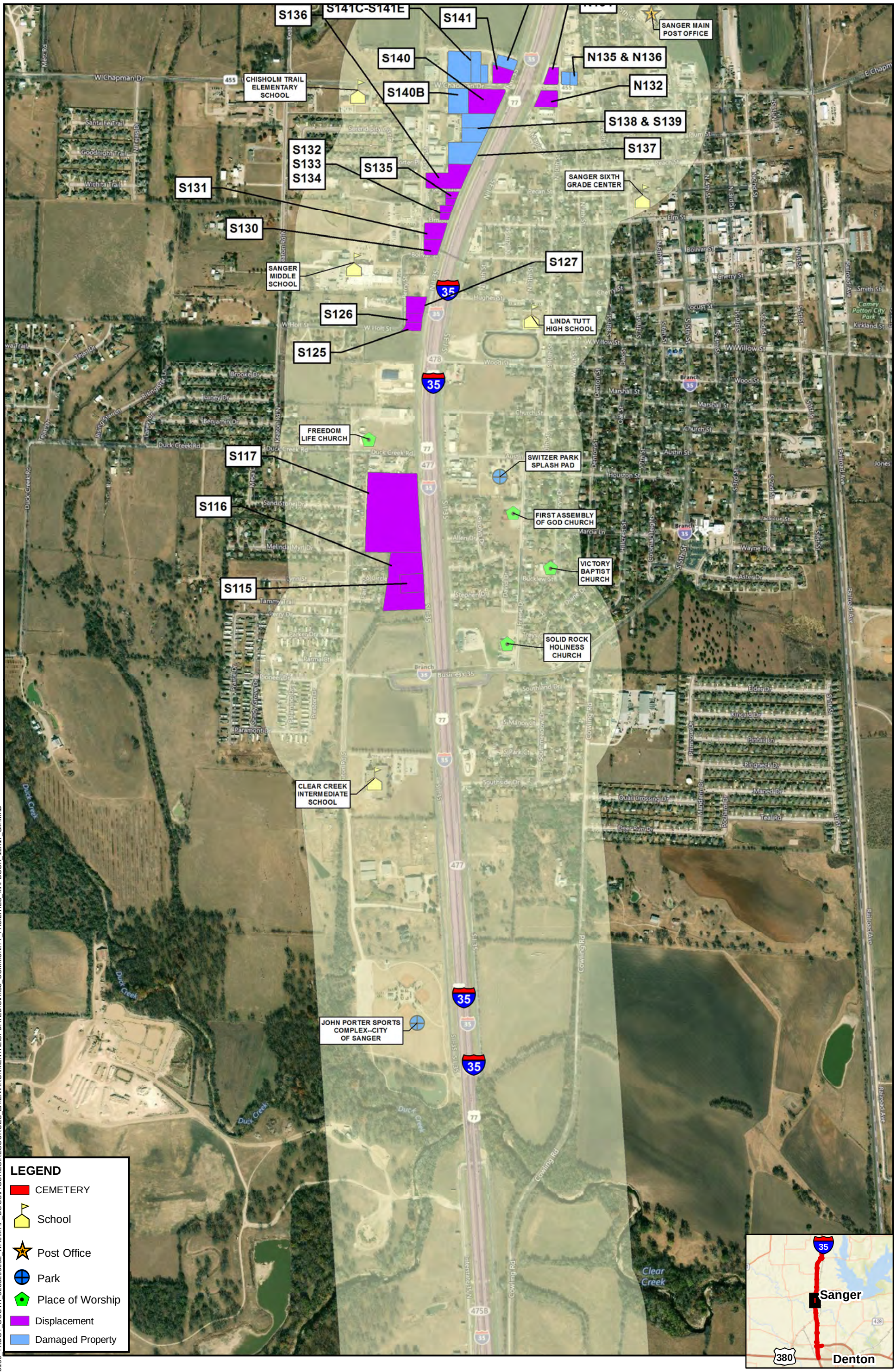

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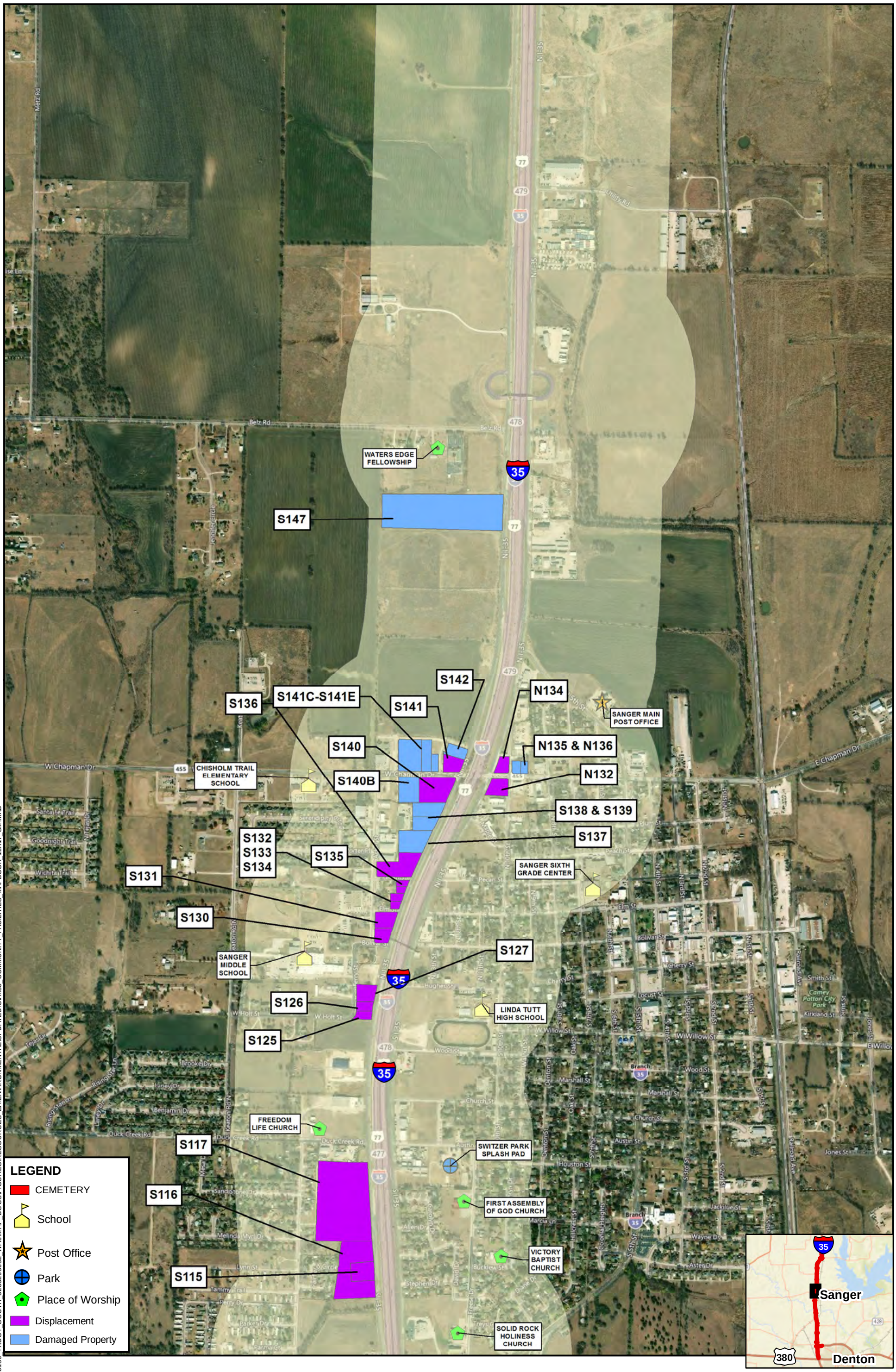

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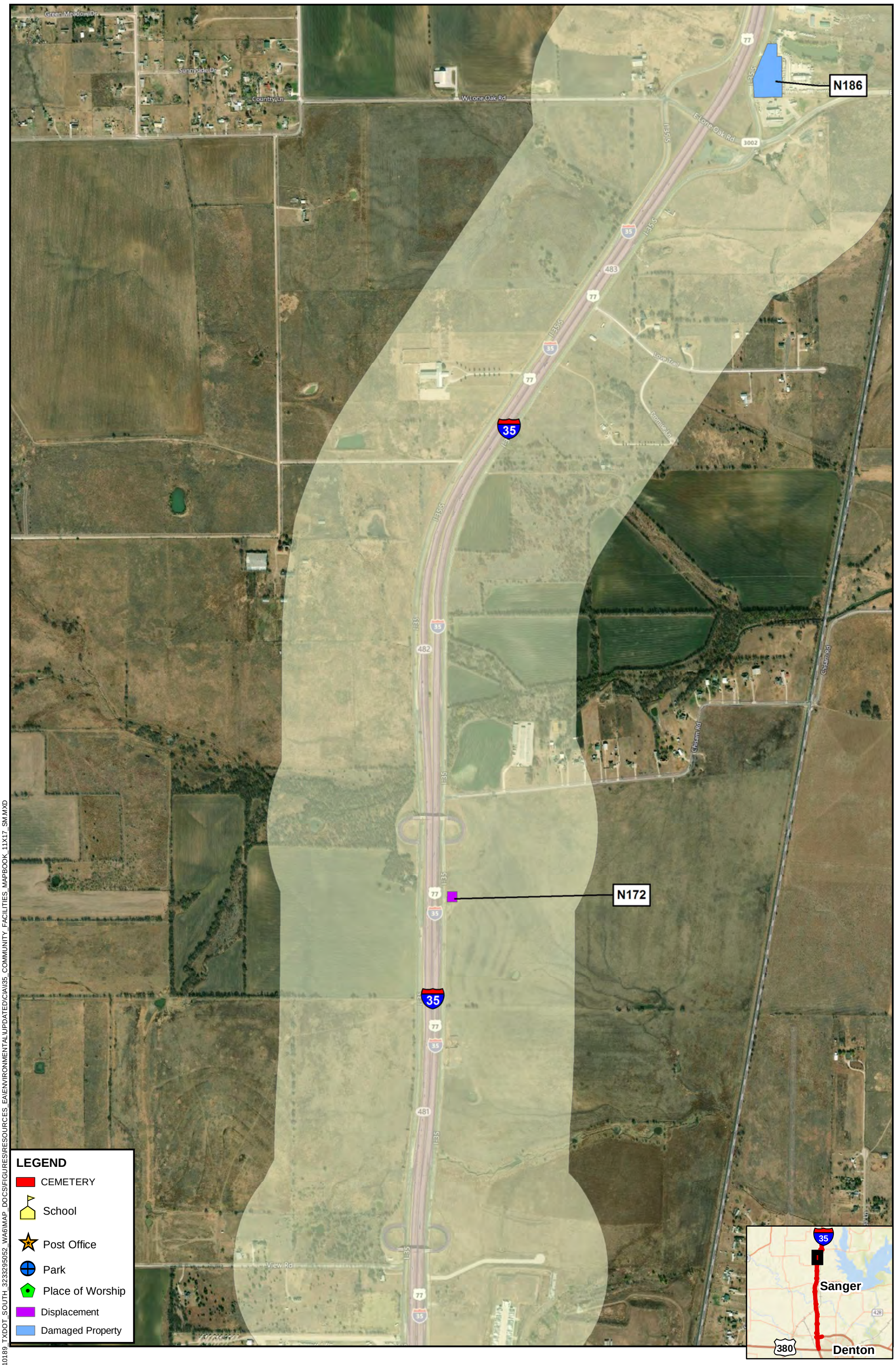

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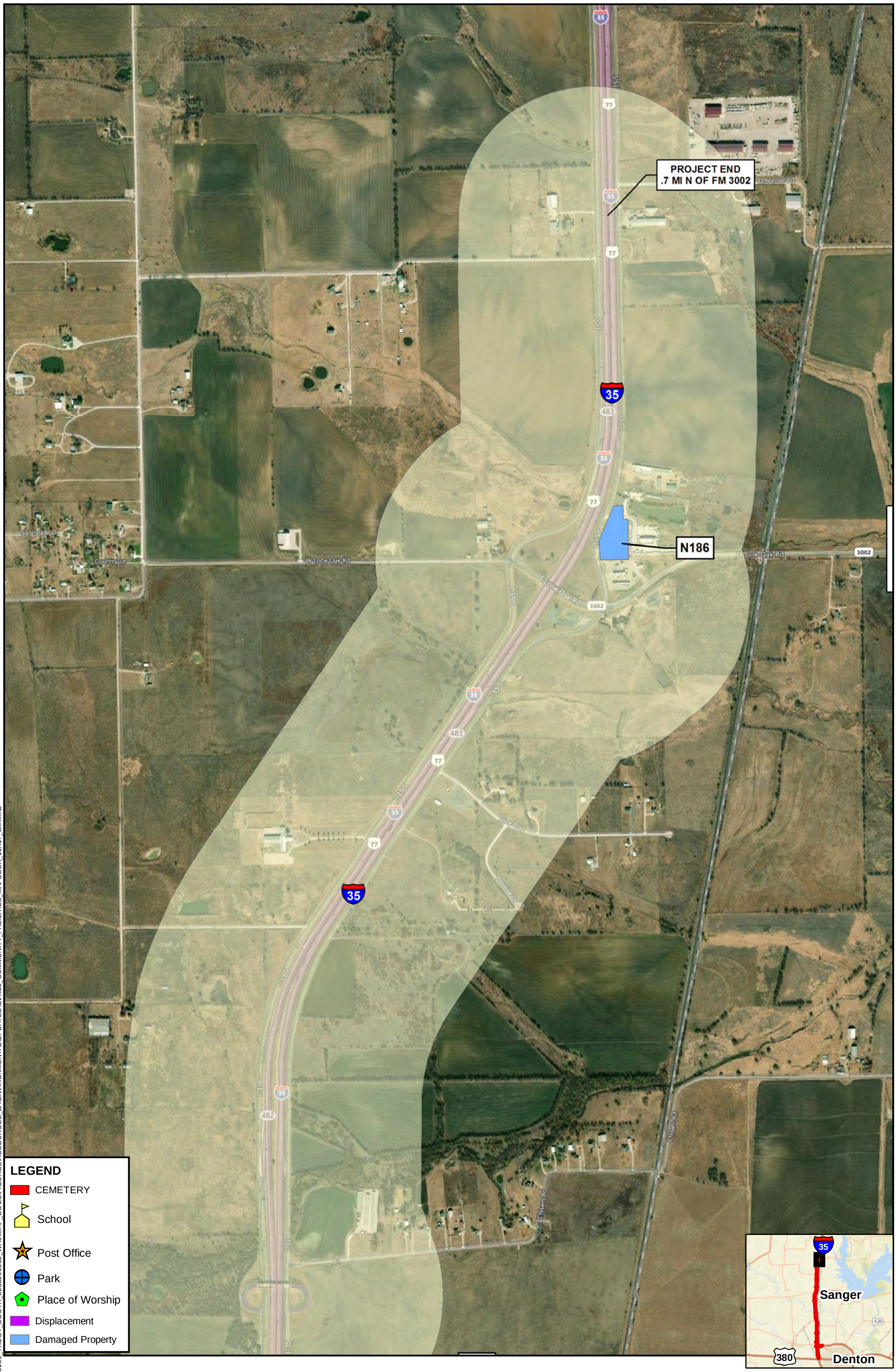

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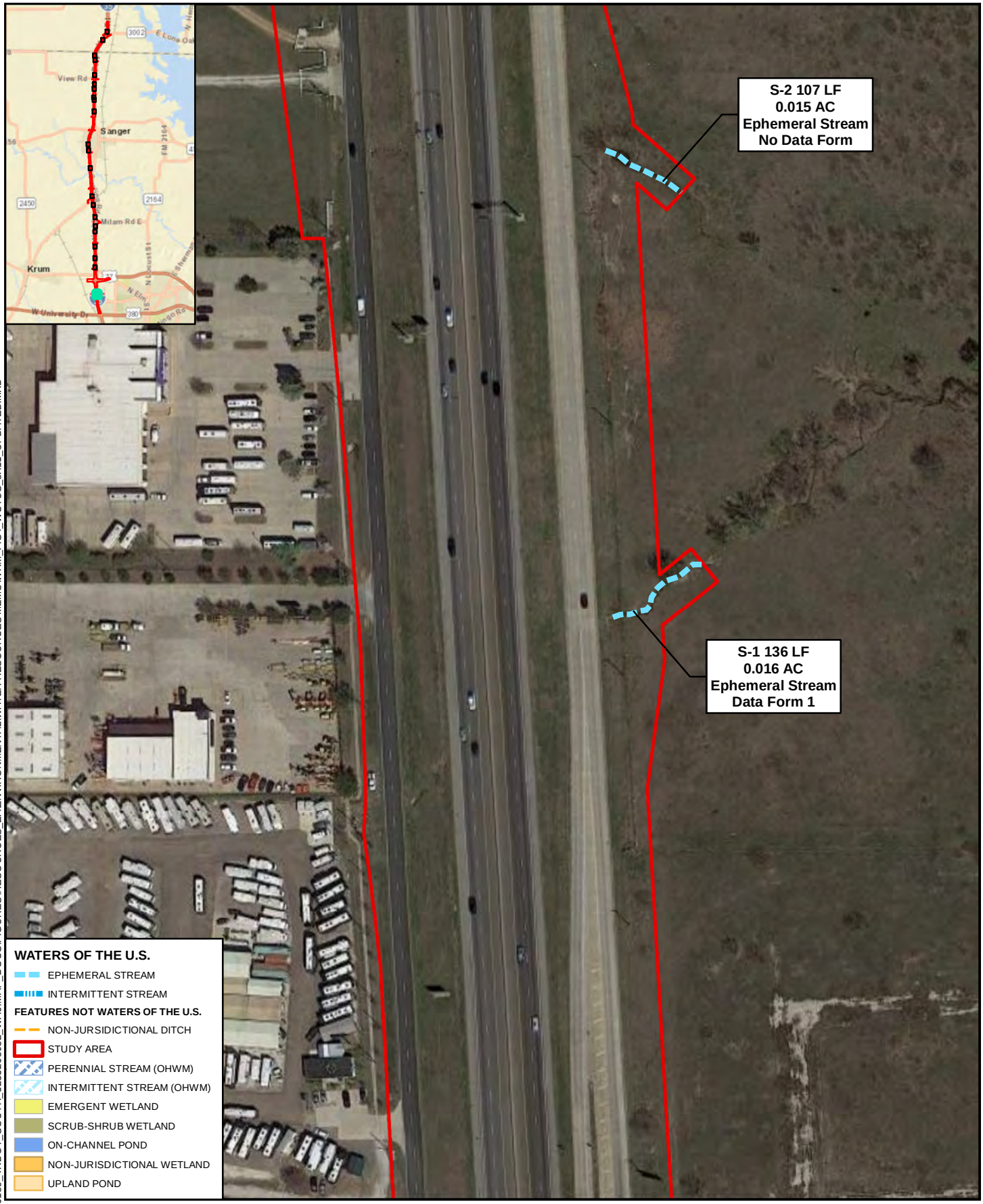

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US 380 TO 0.7 MI NORTH OF FM 3002
DENTON AND COOKE COUNTIES
WATERS OF THE U.S.

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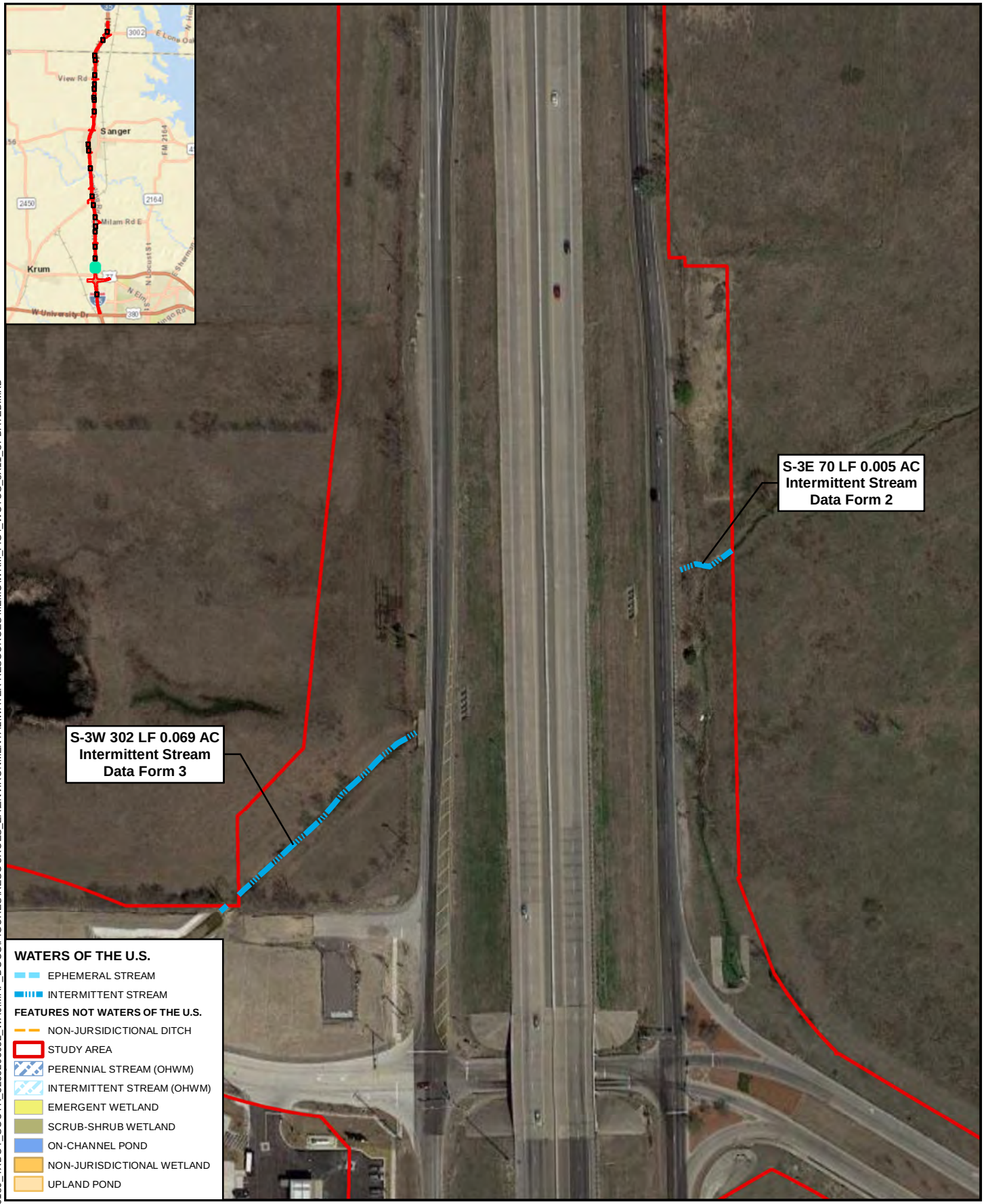

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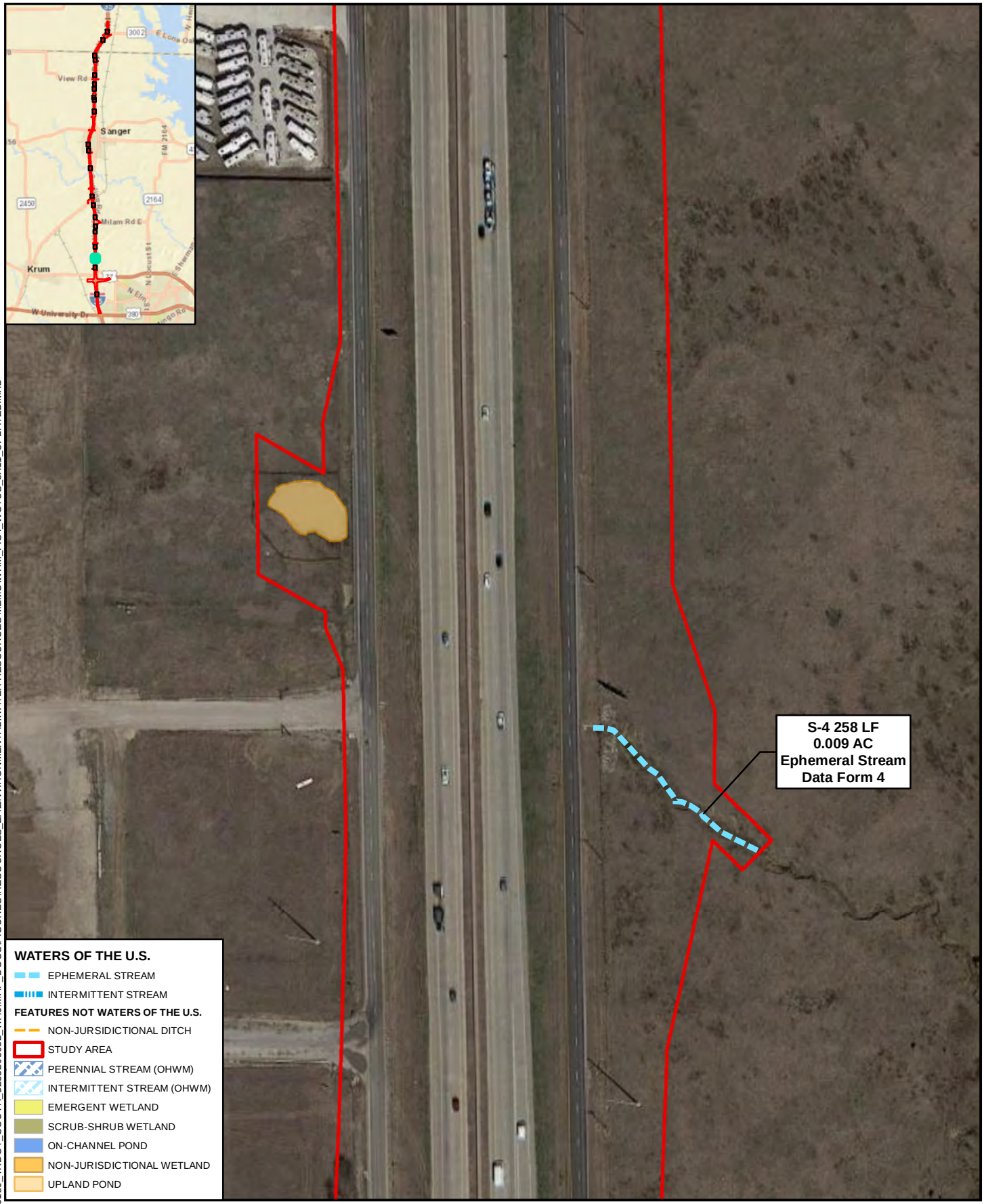

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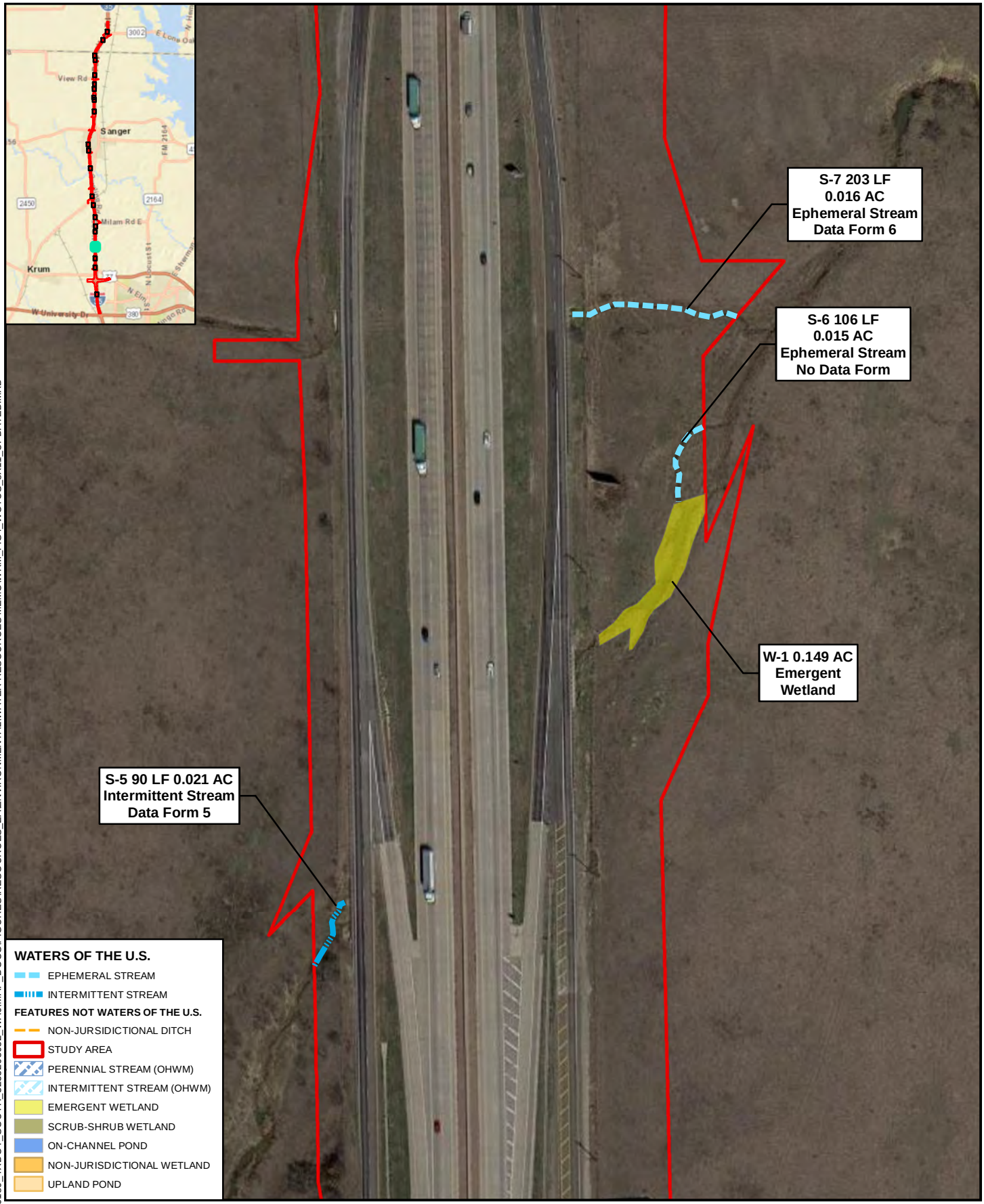

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WATERS OF THE U.S.

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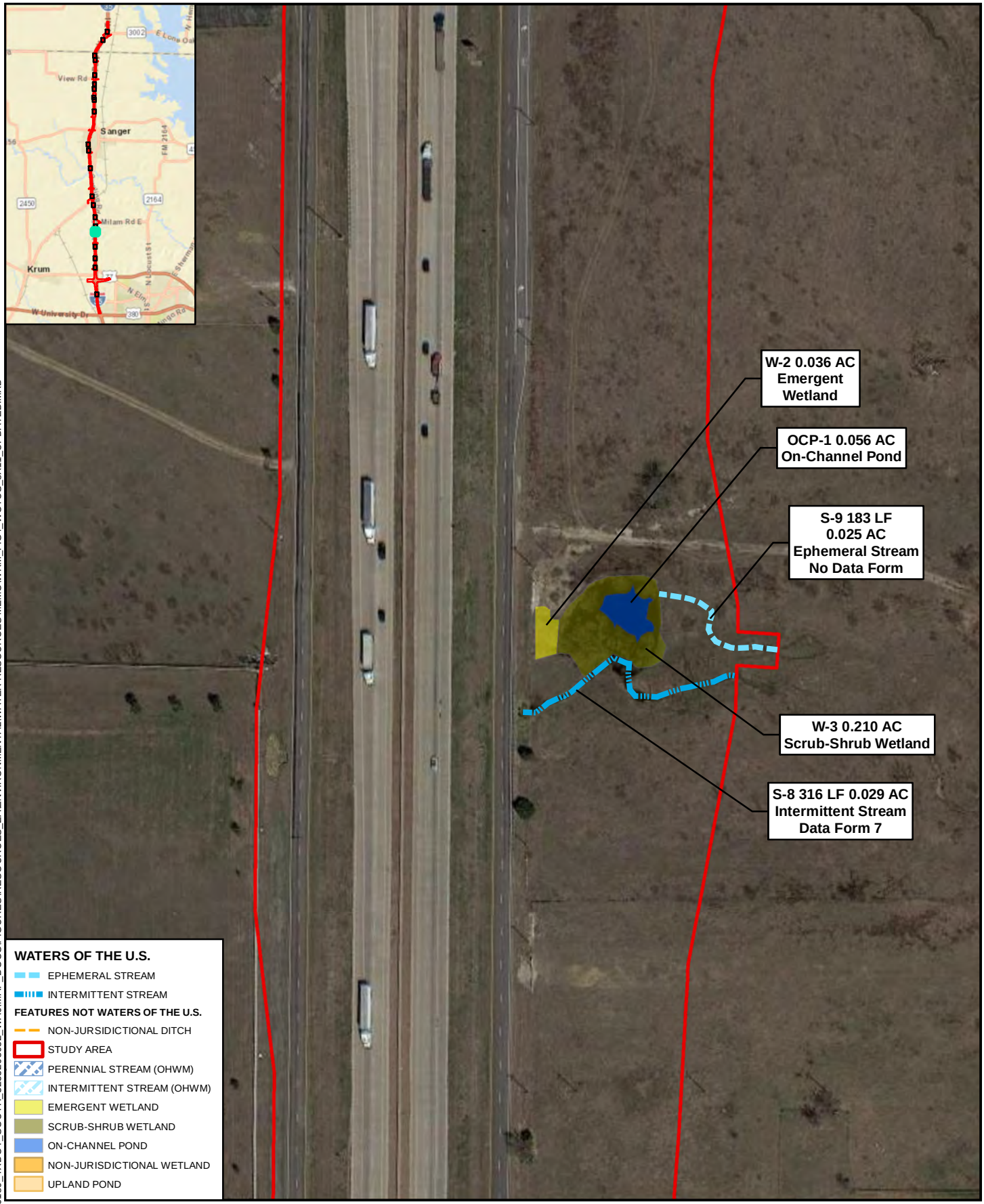

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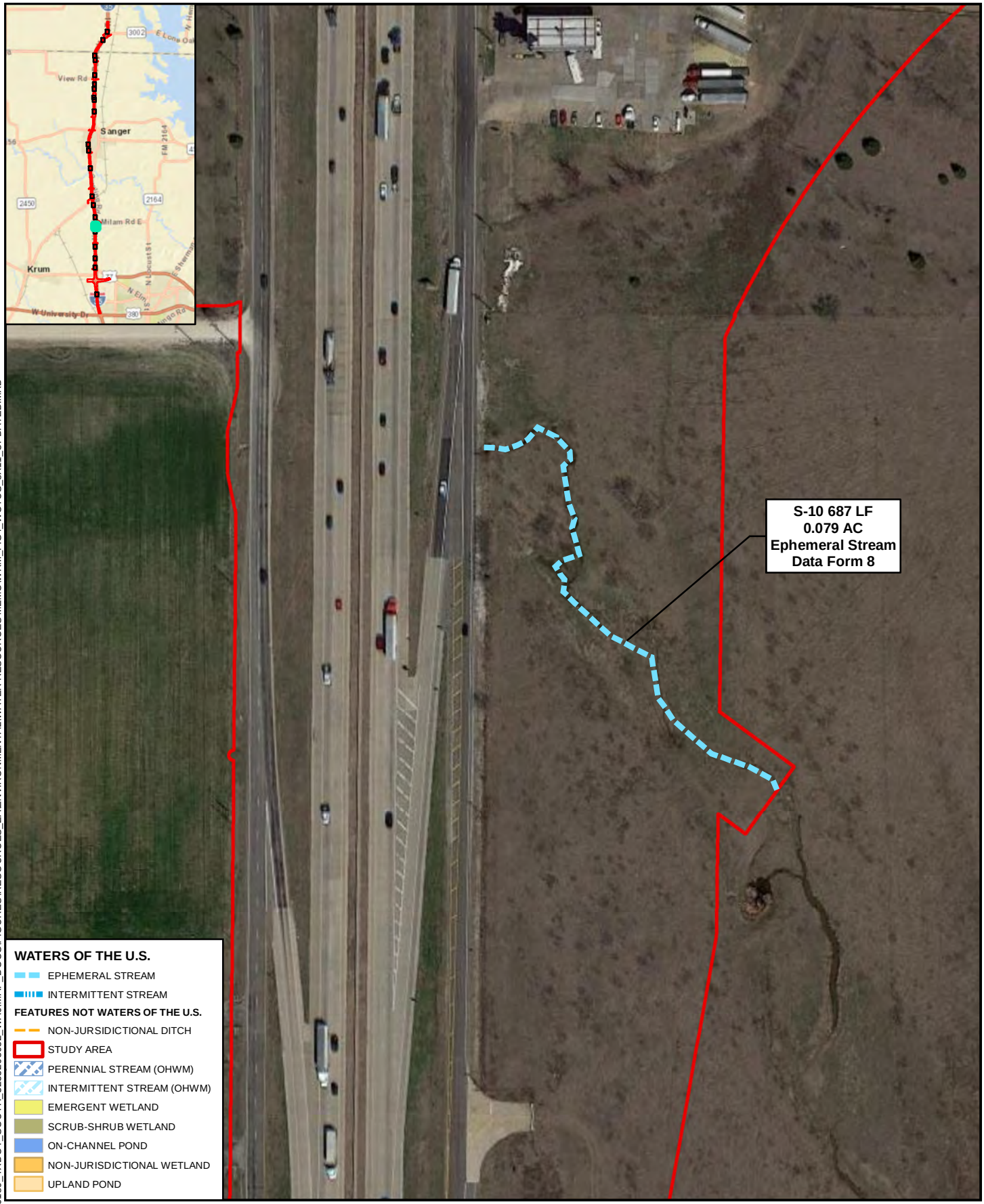

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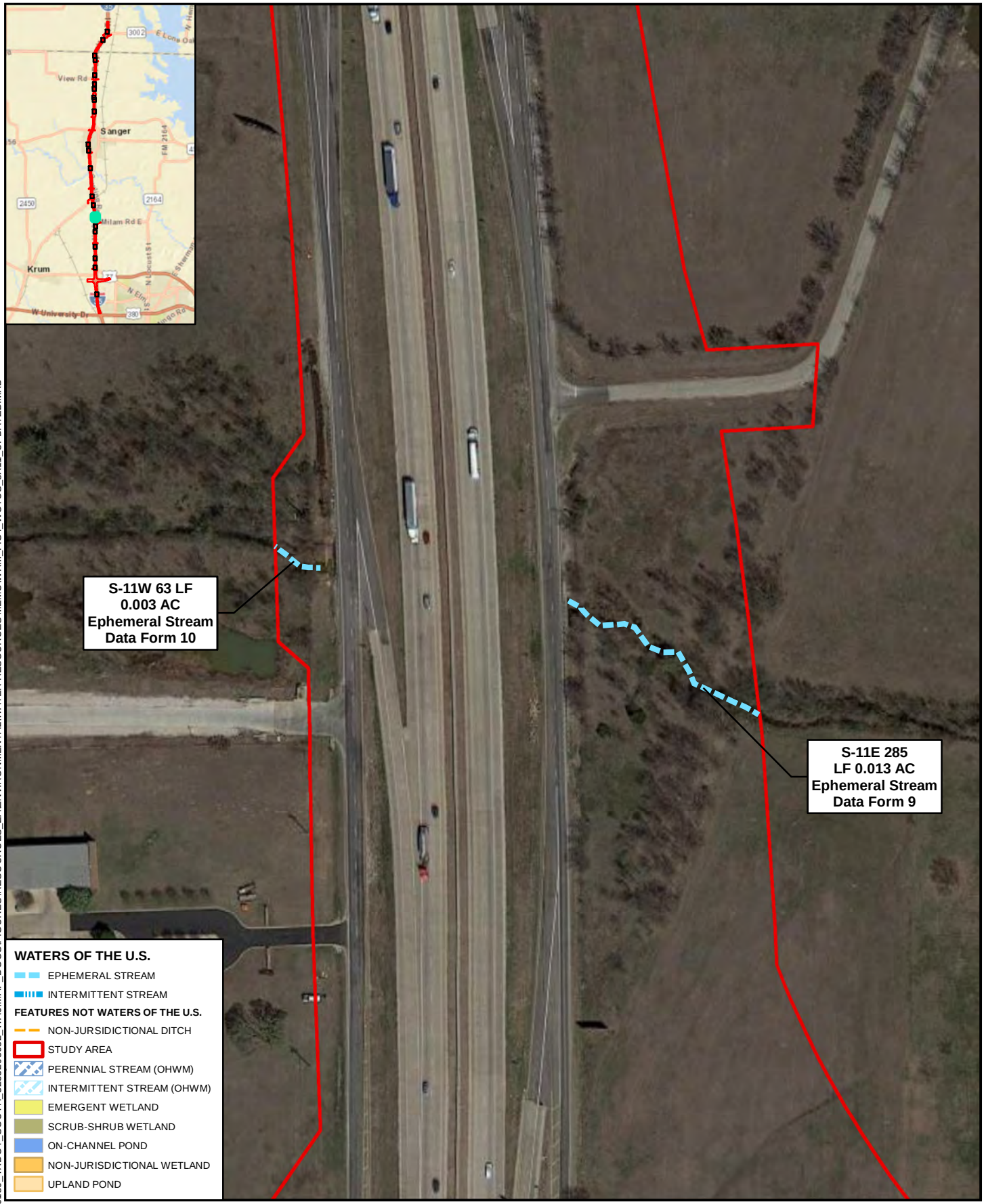

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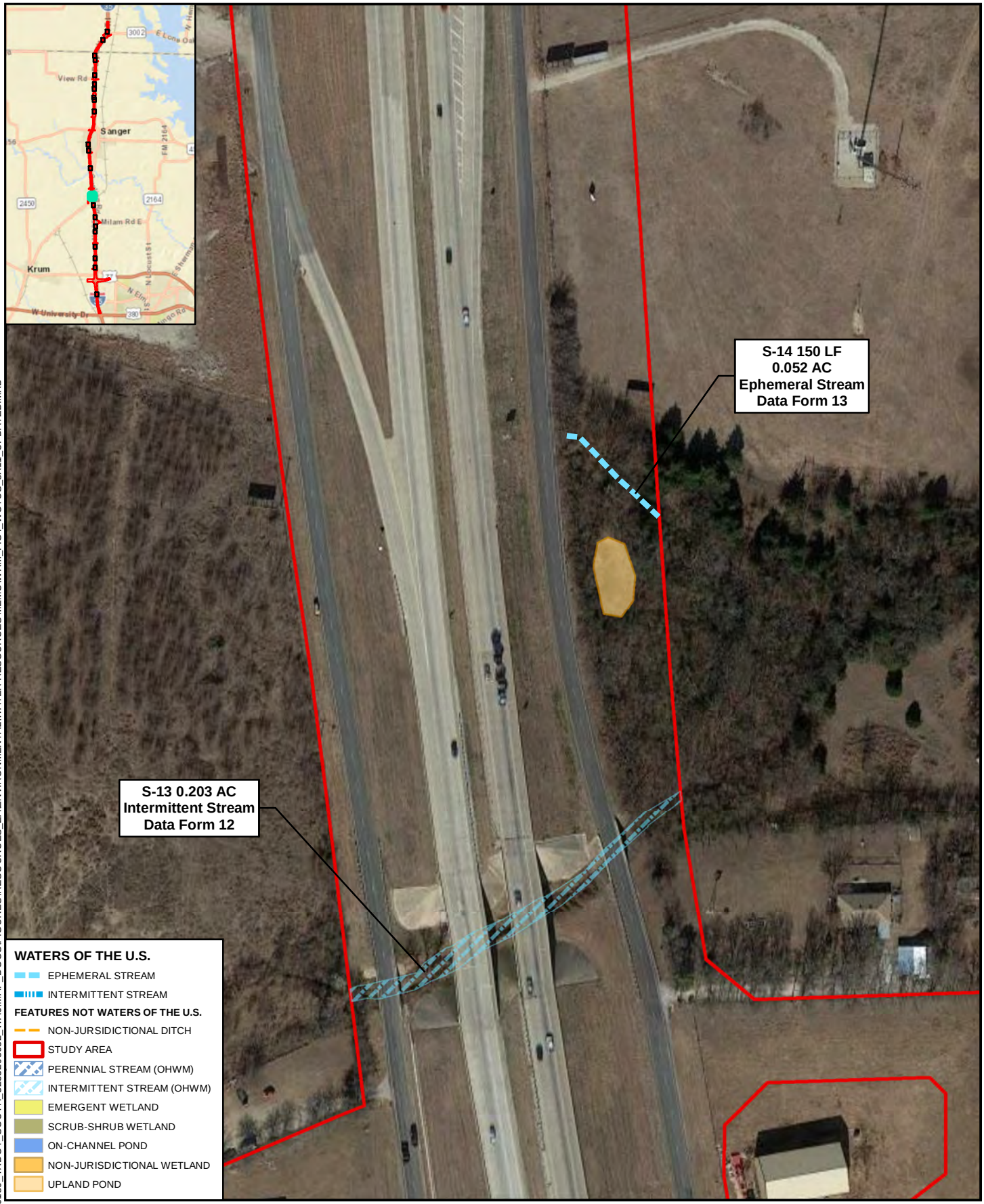

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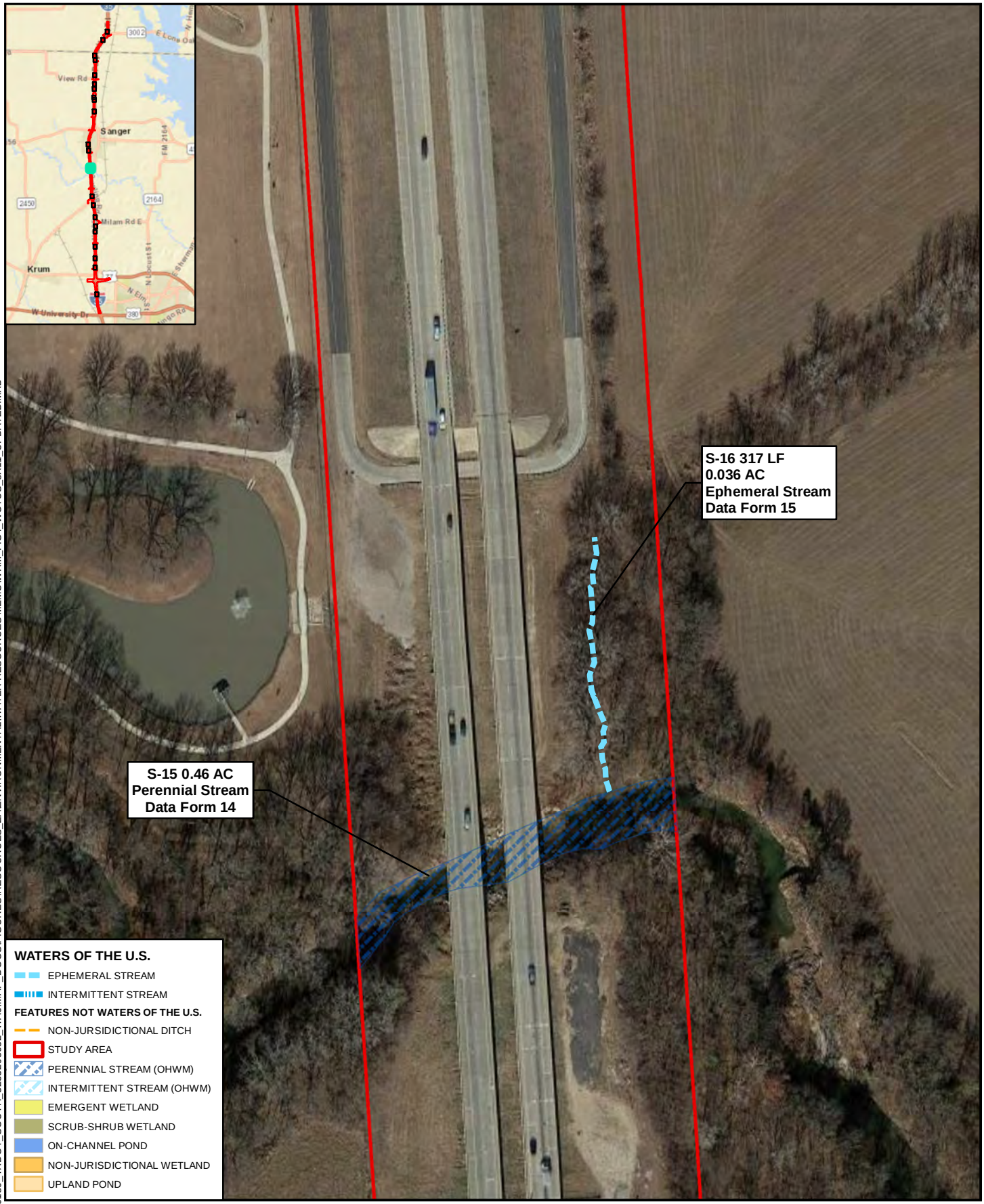

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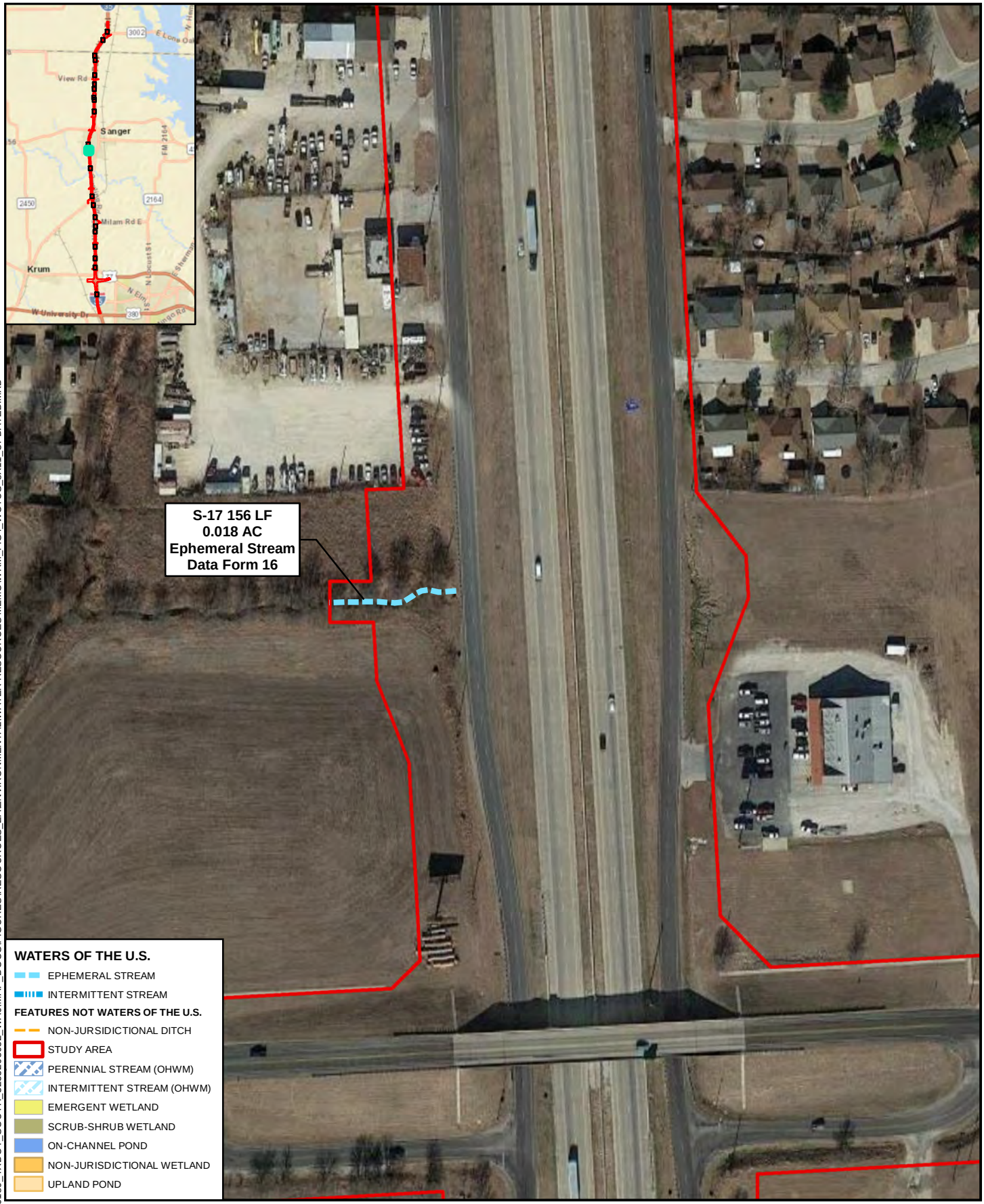

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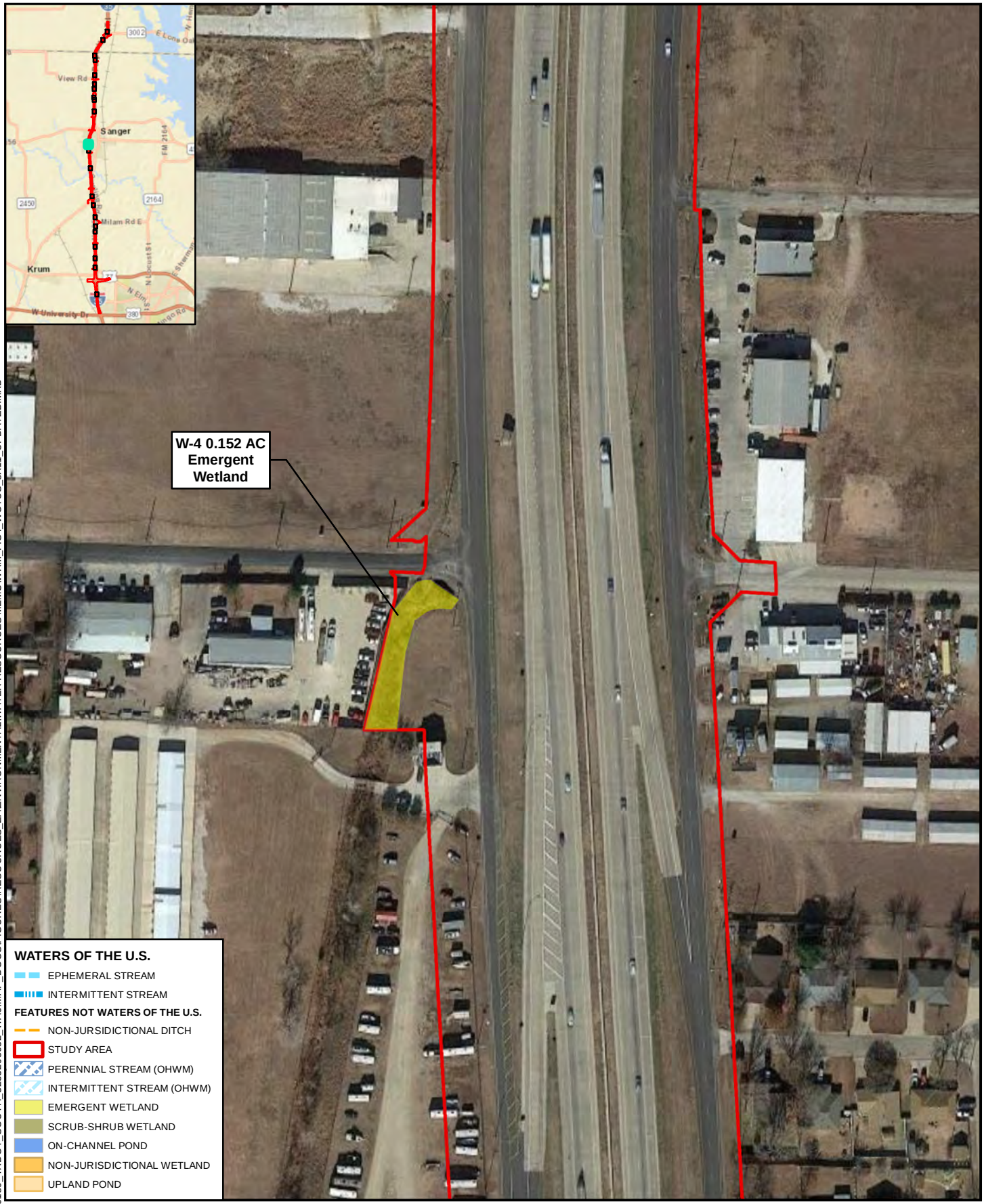

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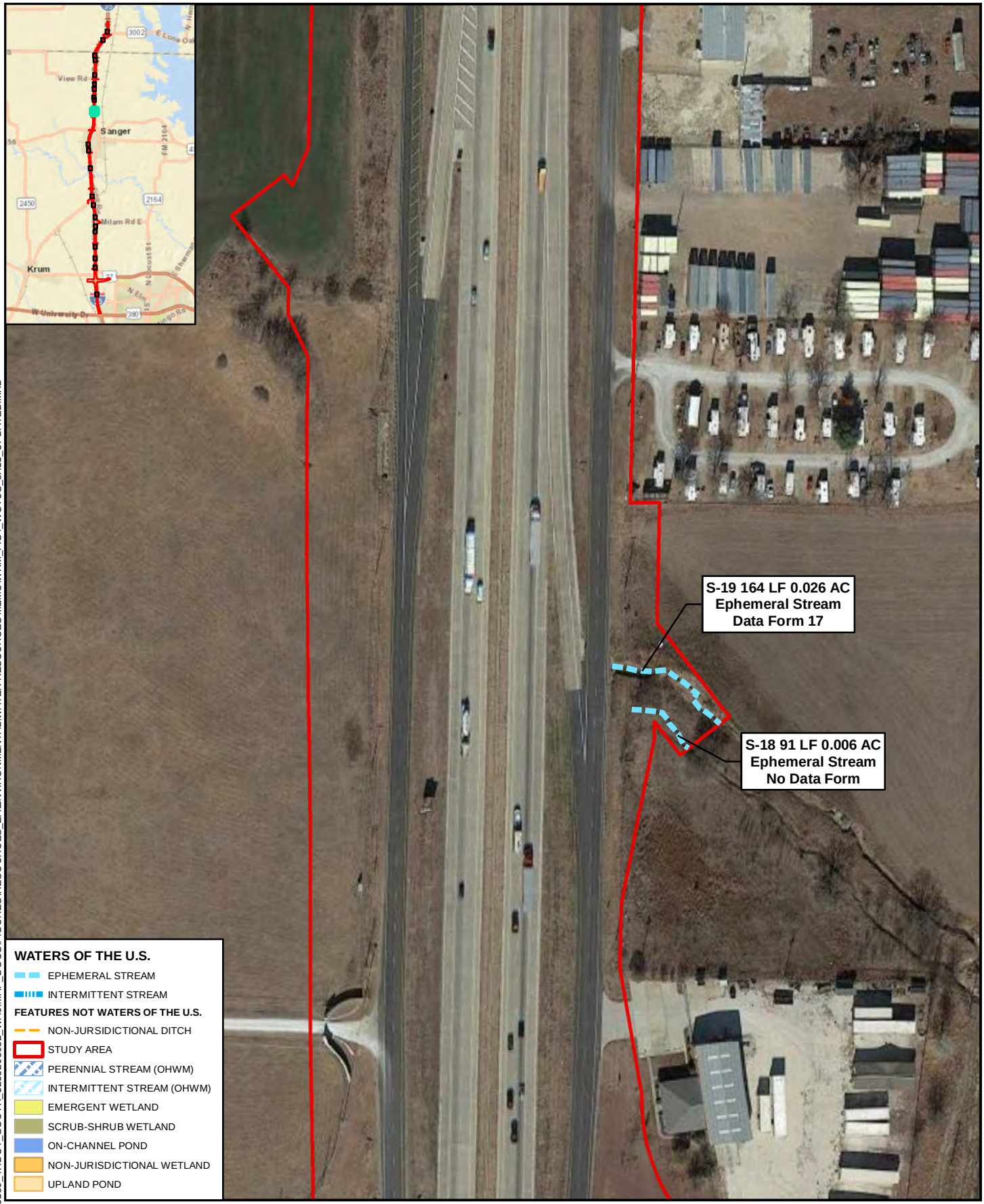

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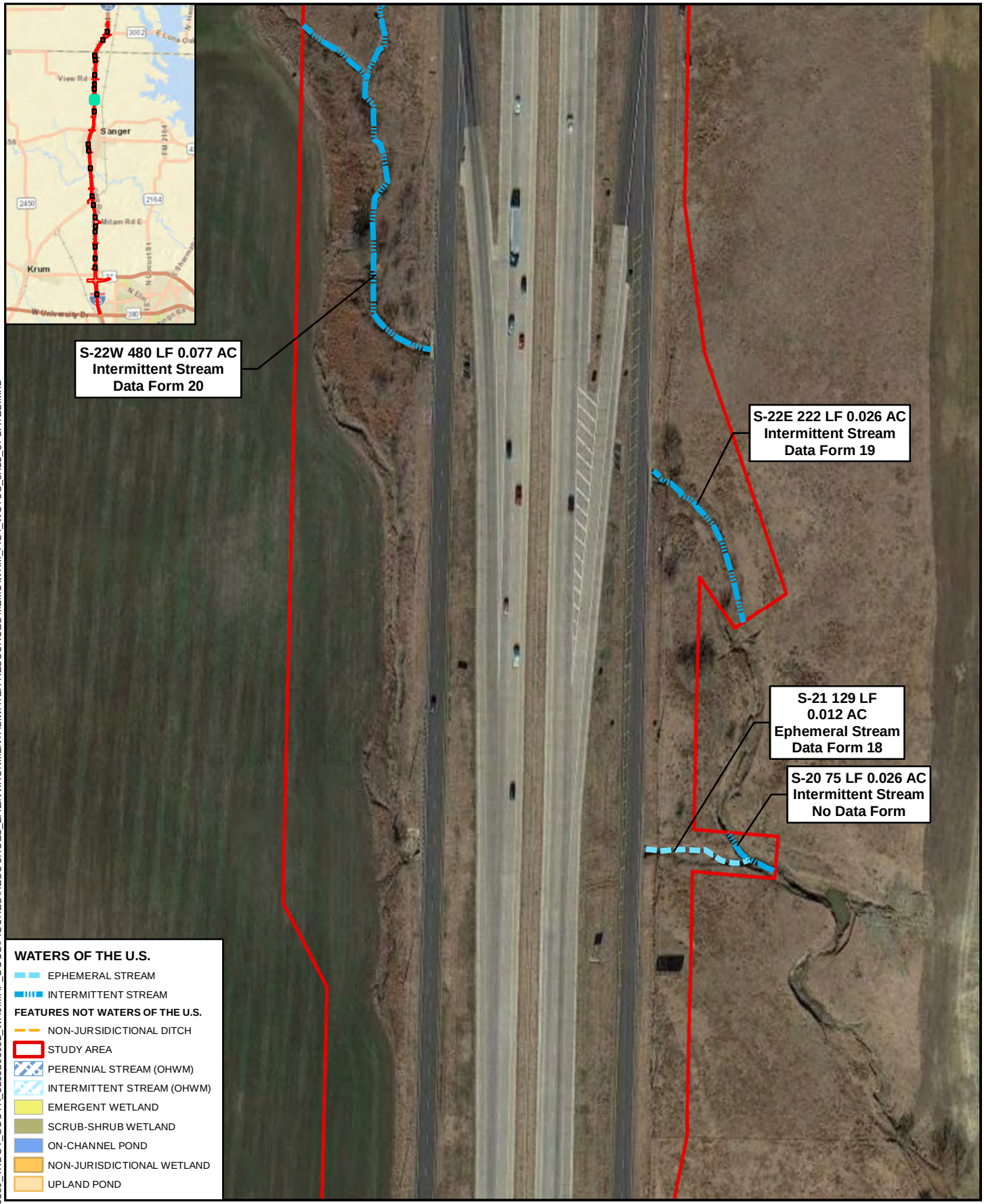

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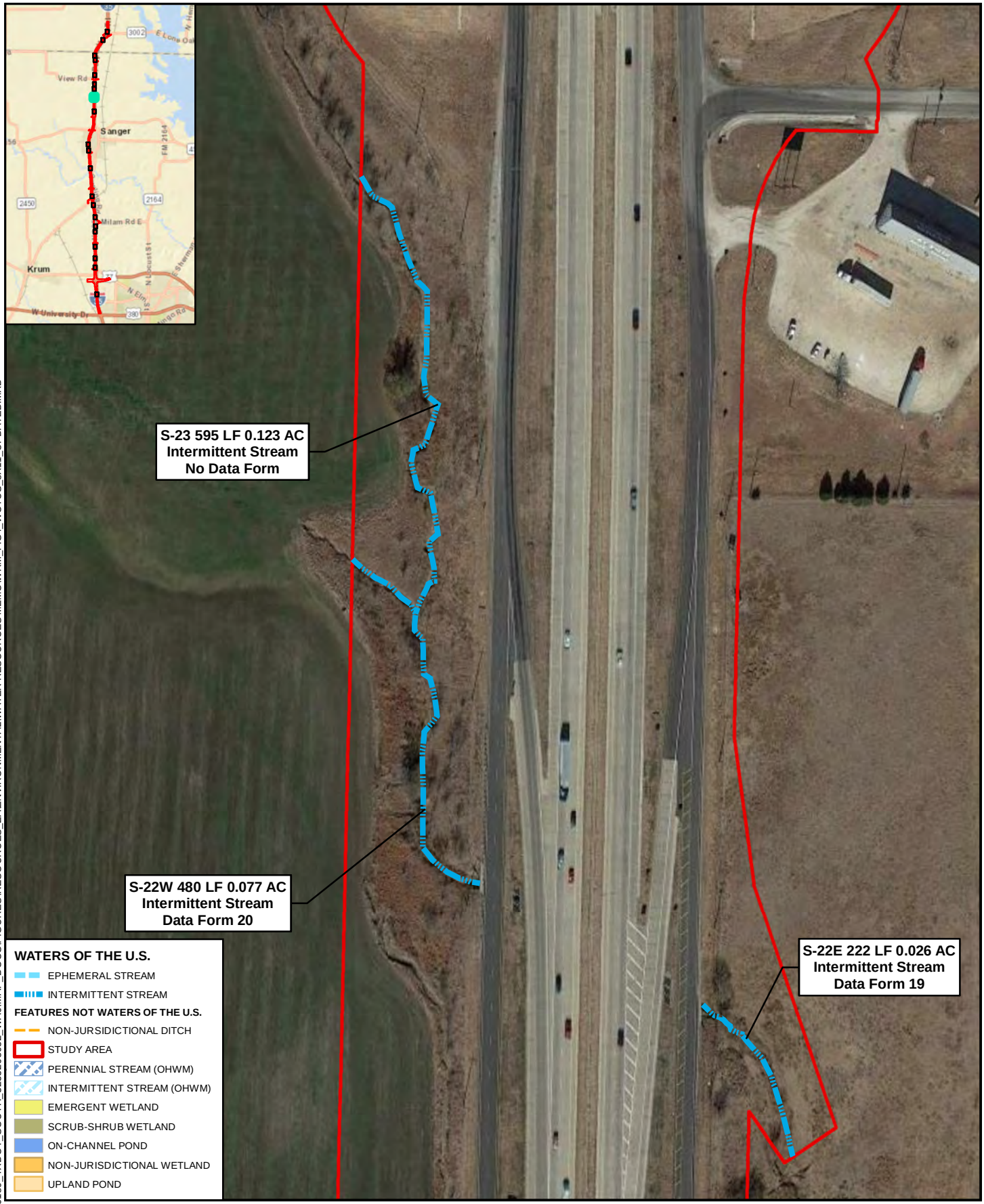

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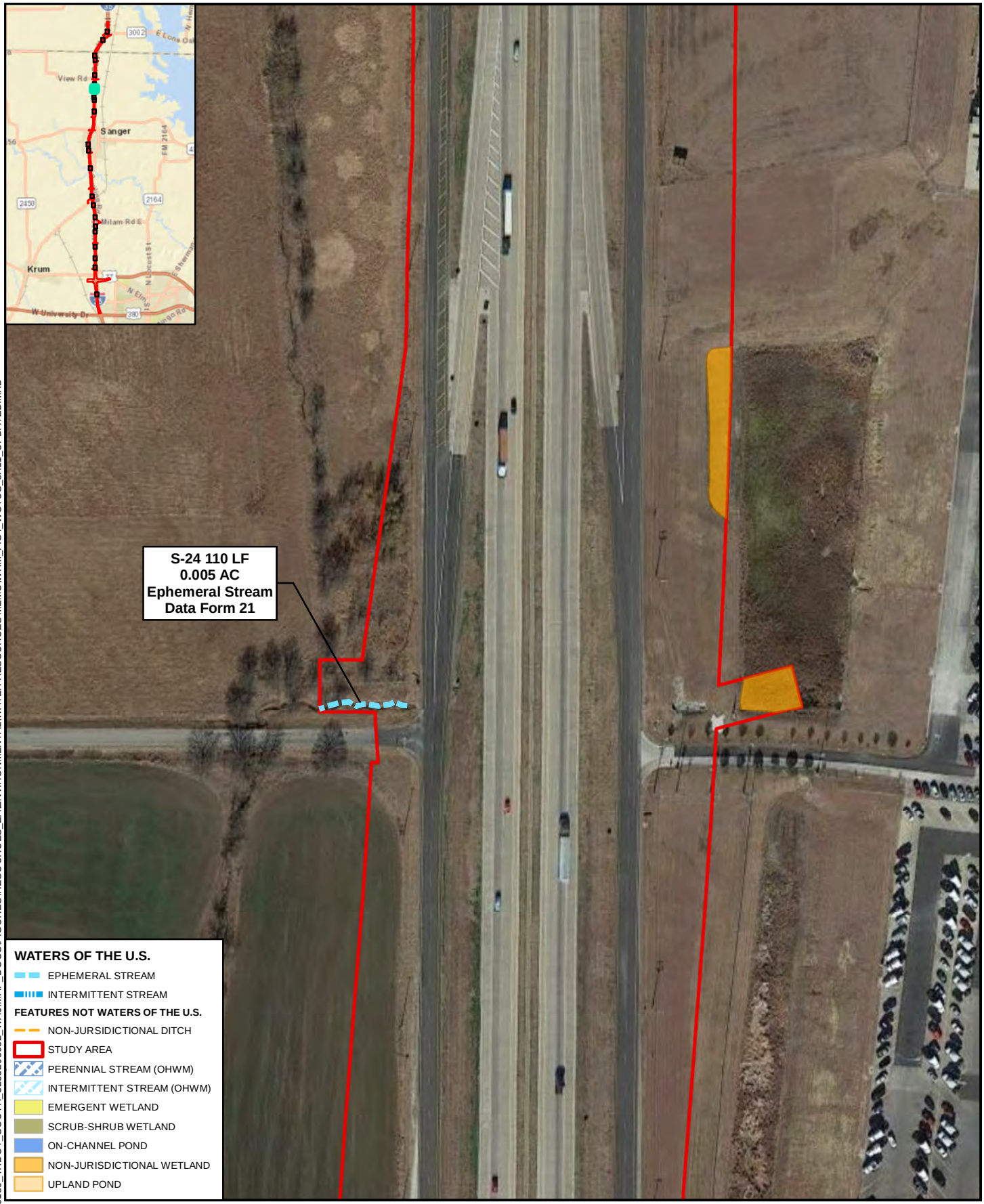

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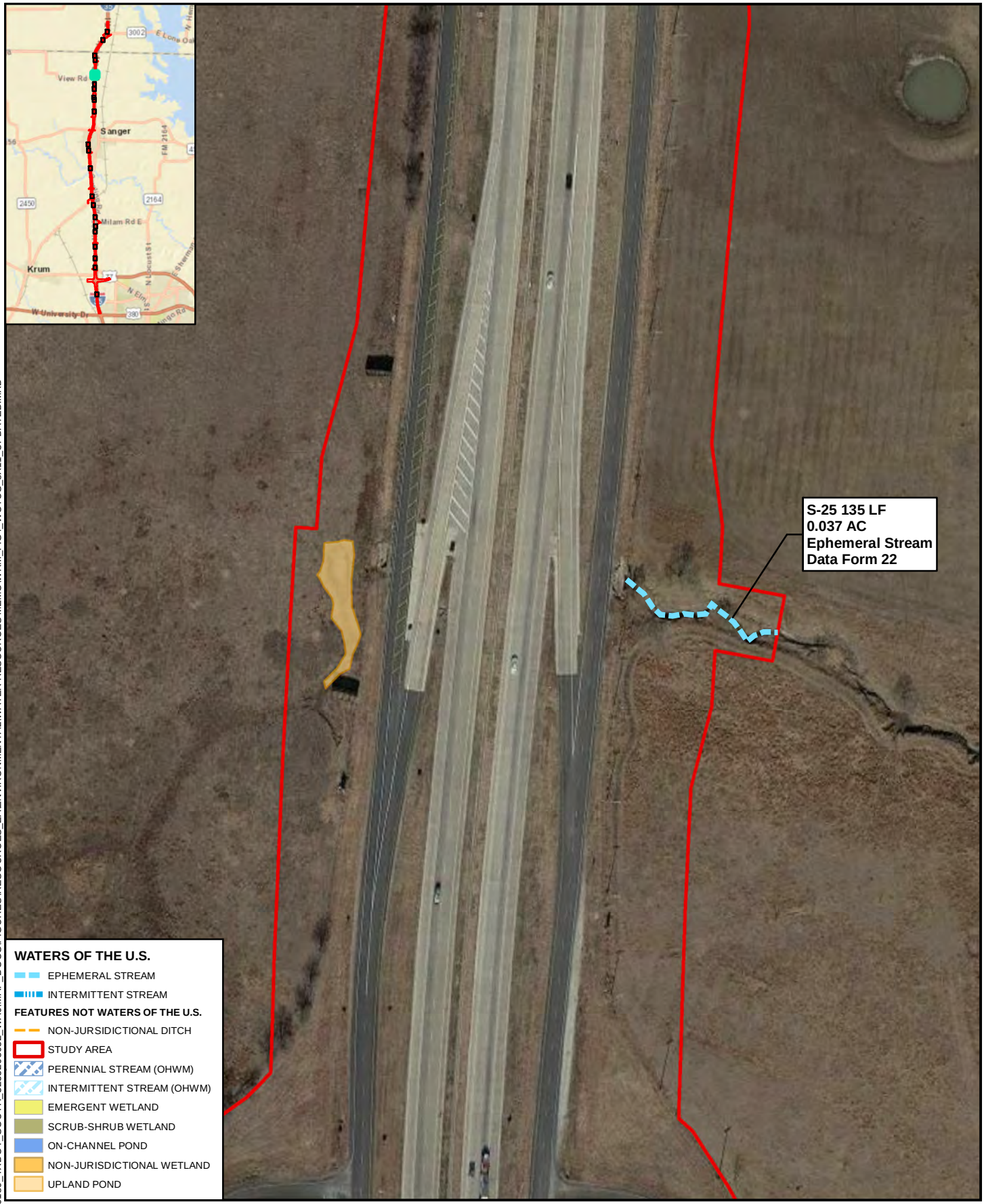

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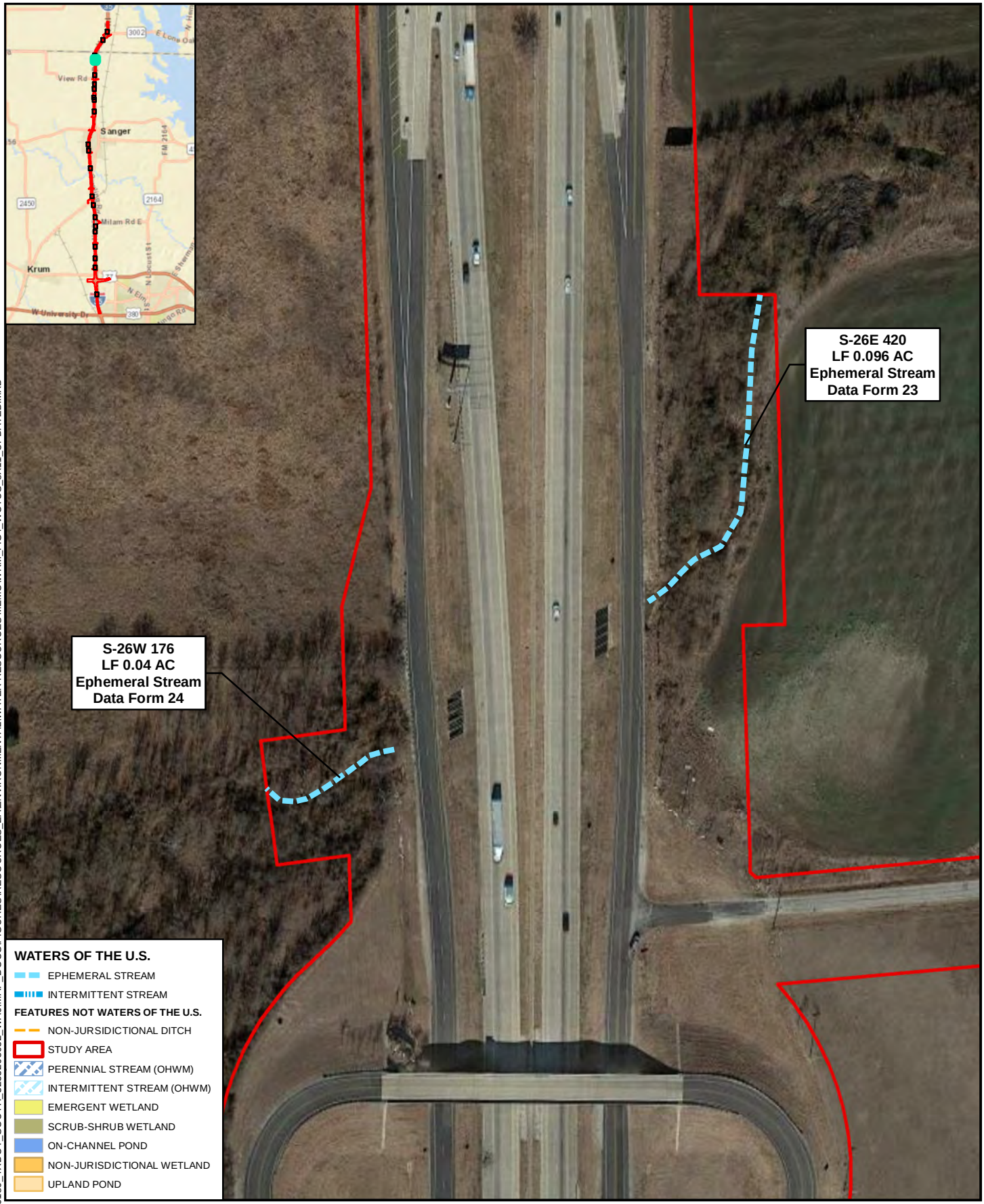

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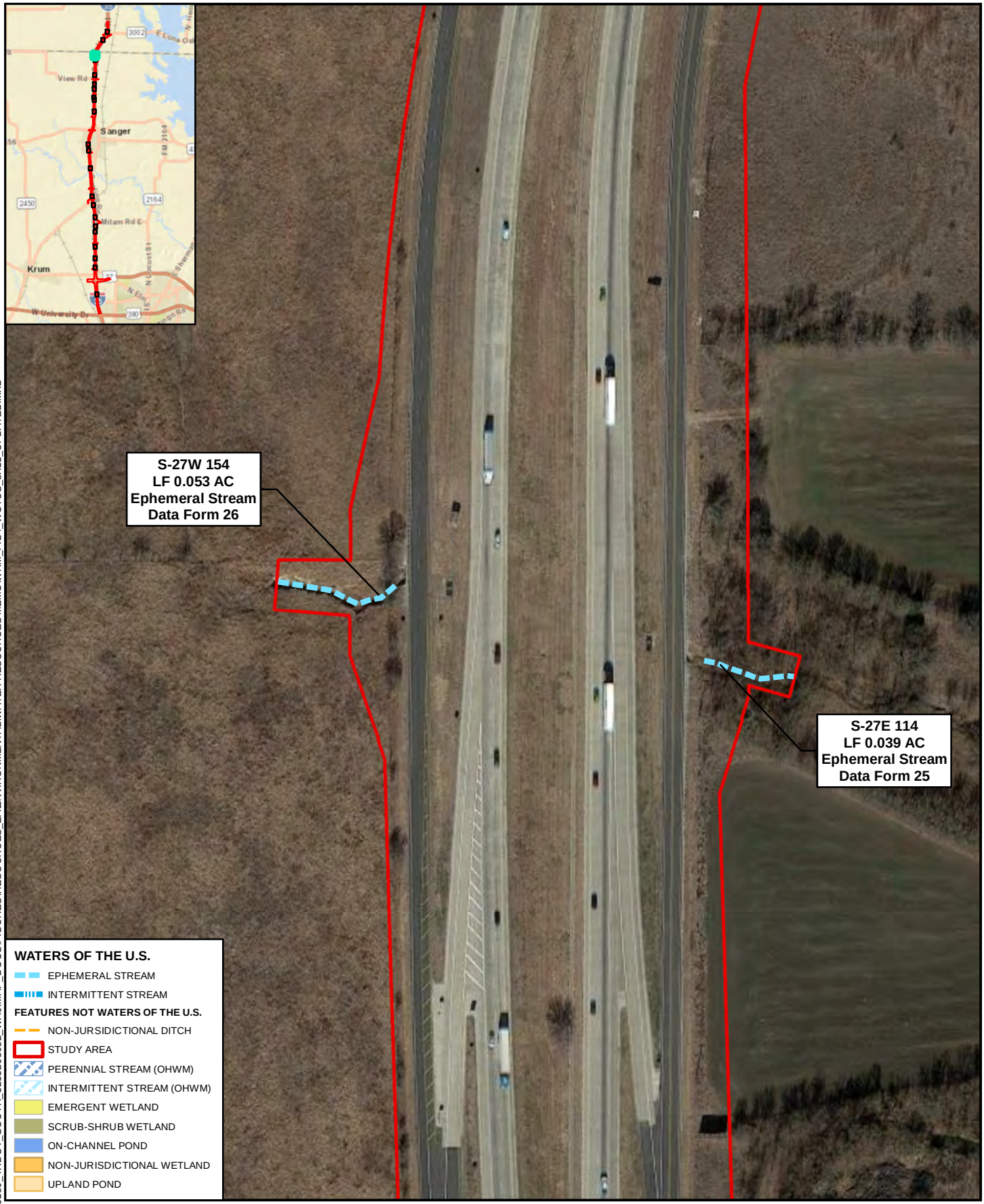

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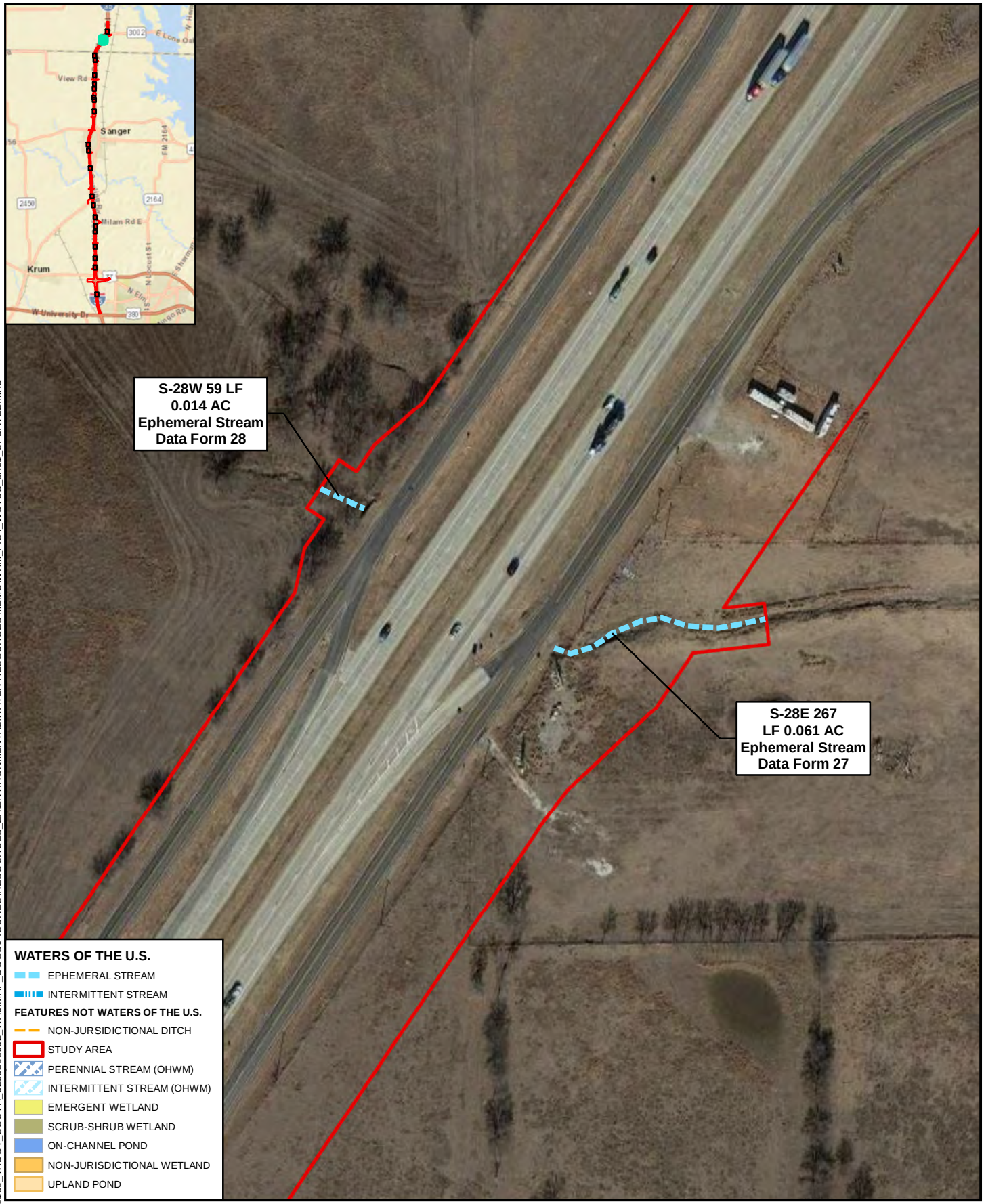

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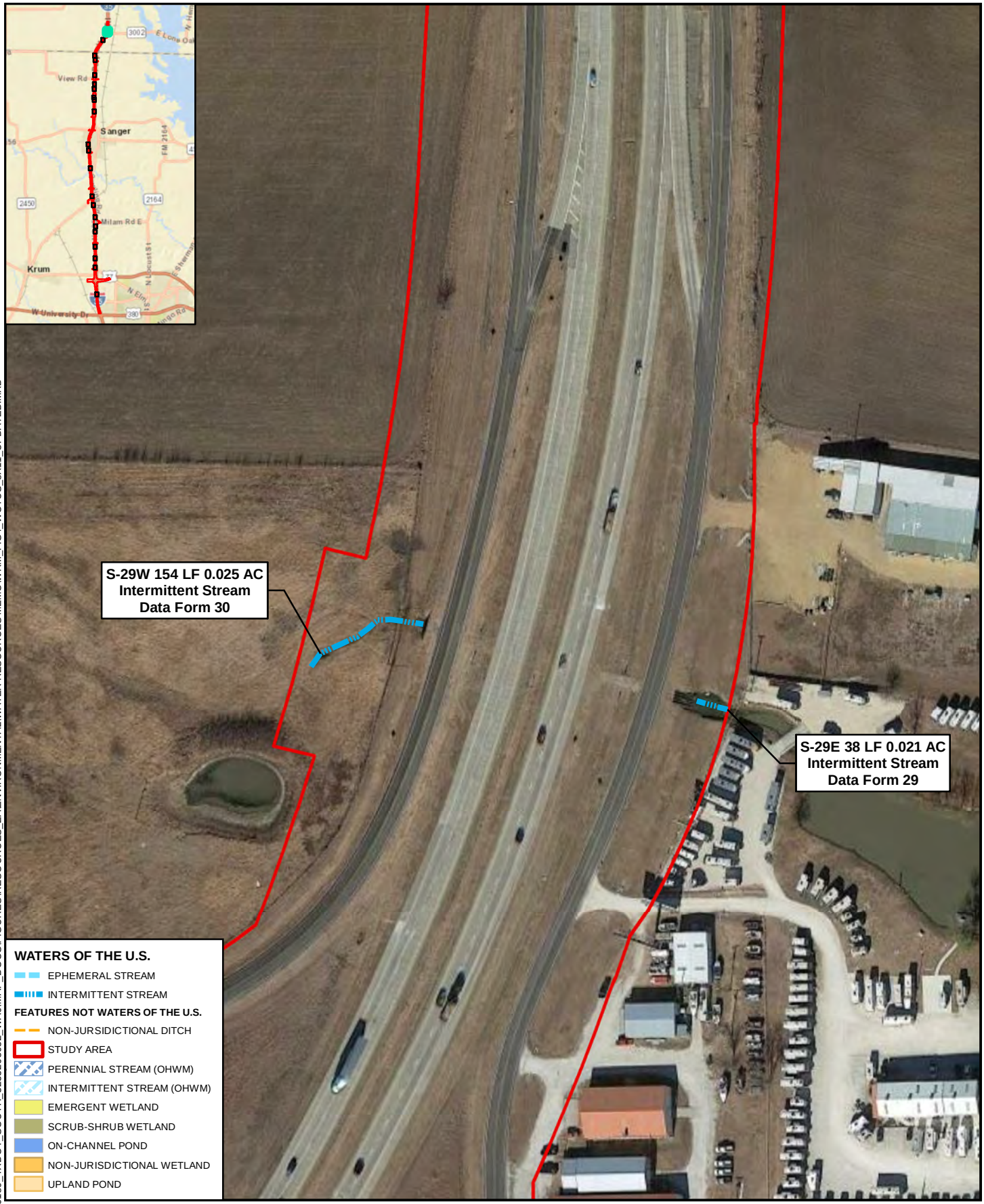

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US 380 TO 0.7 MI NORTH OF FM 3002
DENTON AND COOKE COUNTIES
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Figure 2

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POTENTIAL HAZARDOUS MATERIALS SITES

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Figure 3

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POTENTIAL HAZARDOUS MATERIALS SITES

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Texas Department of Transportation

Figure 3

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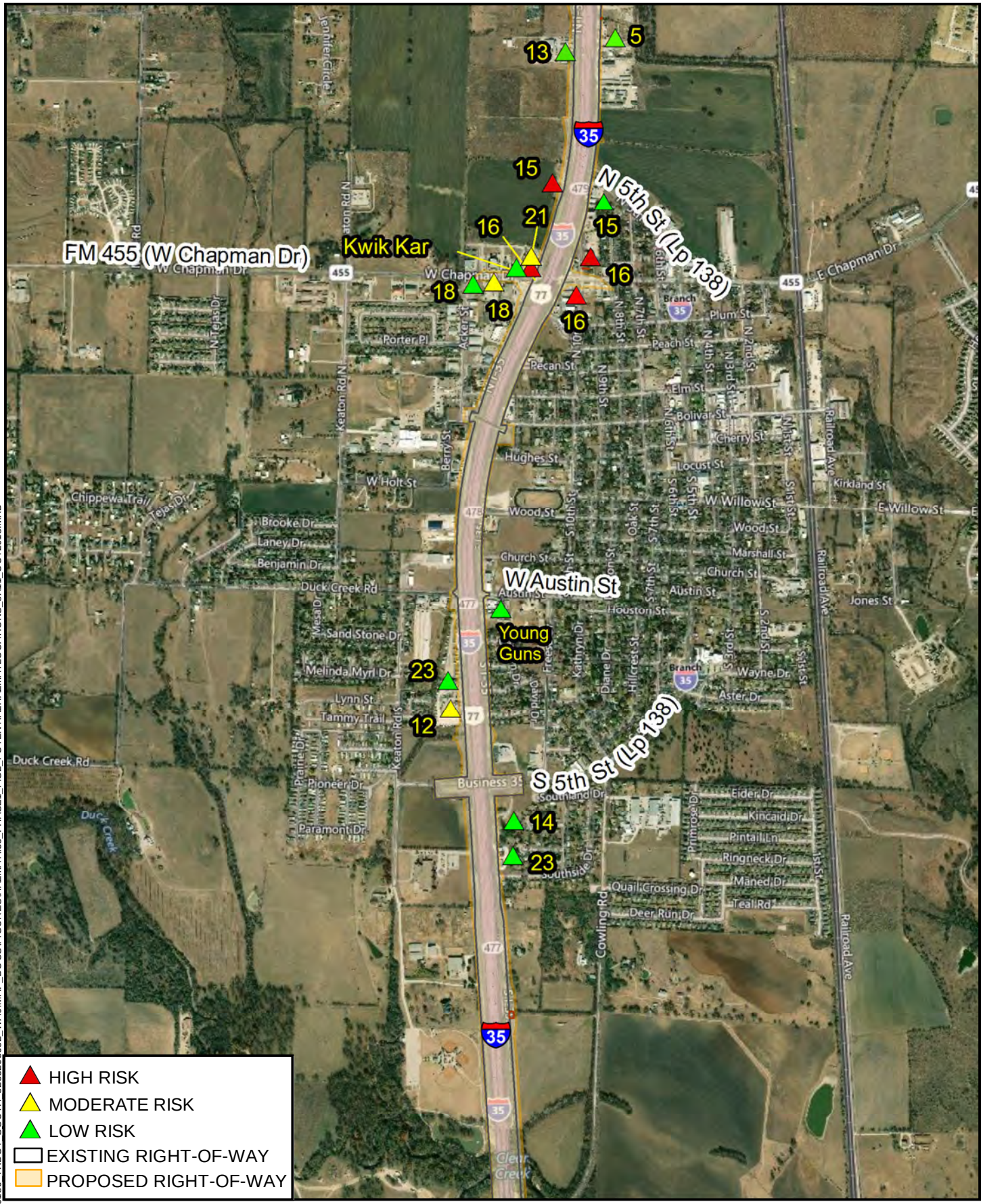

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Figure 3

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POTENTIAL HAZARDOUS MATERIALS SITES

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Texas Department of Transportation

Figure 3

OCT 2018

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IH-35 ISA
CSJ: 0195-03-087/0195-02-074/0195-01-116
POTENTIAL HAZARDOUS MATERIALS SITES

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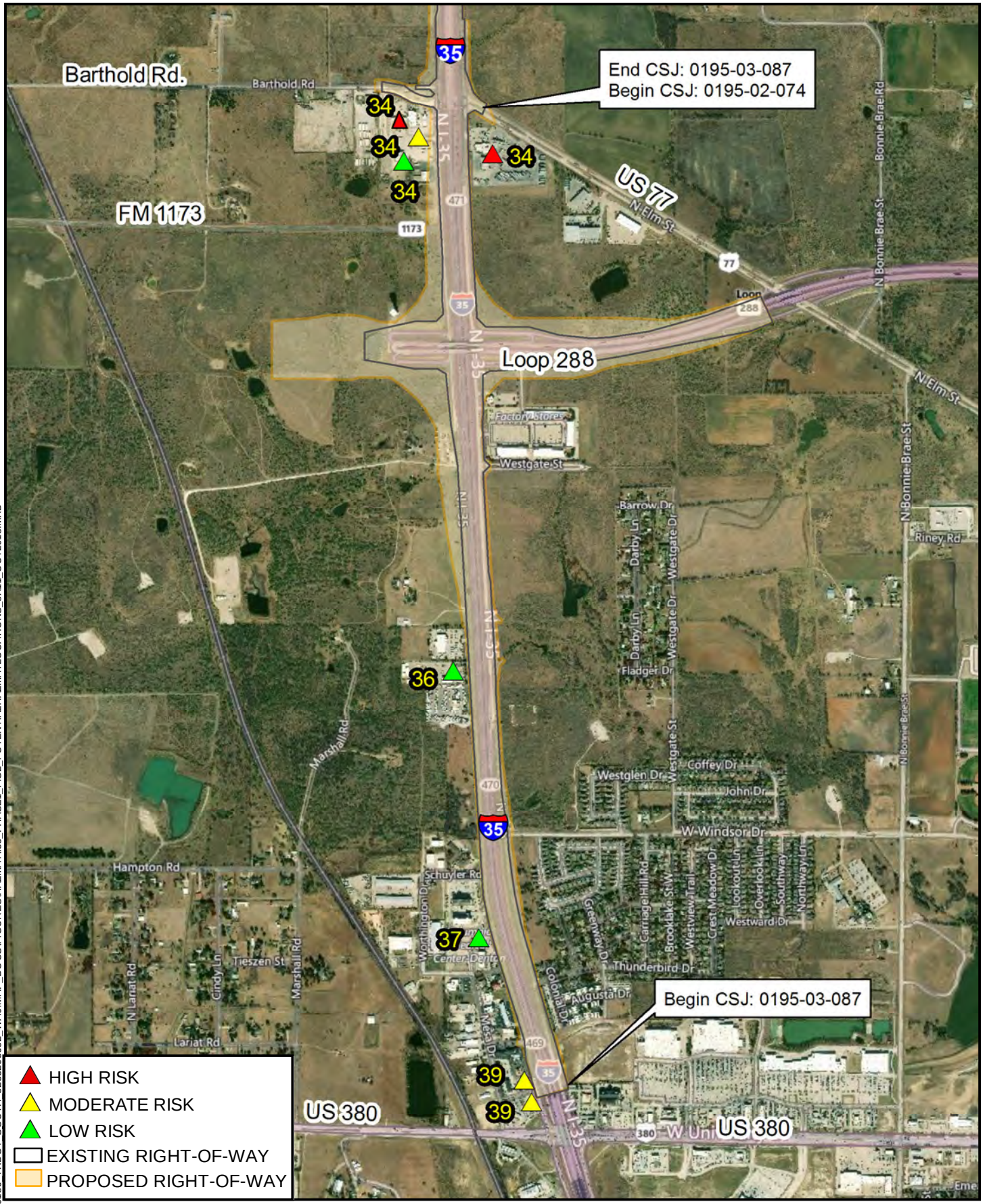
Figure 3

OCT 2018

Page 5 of 6



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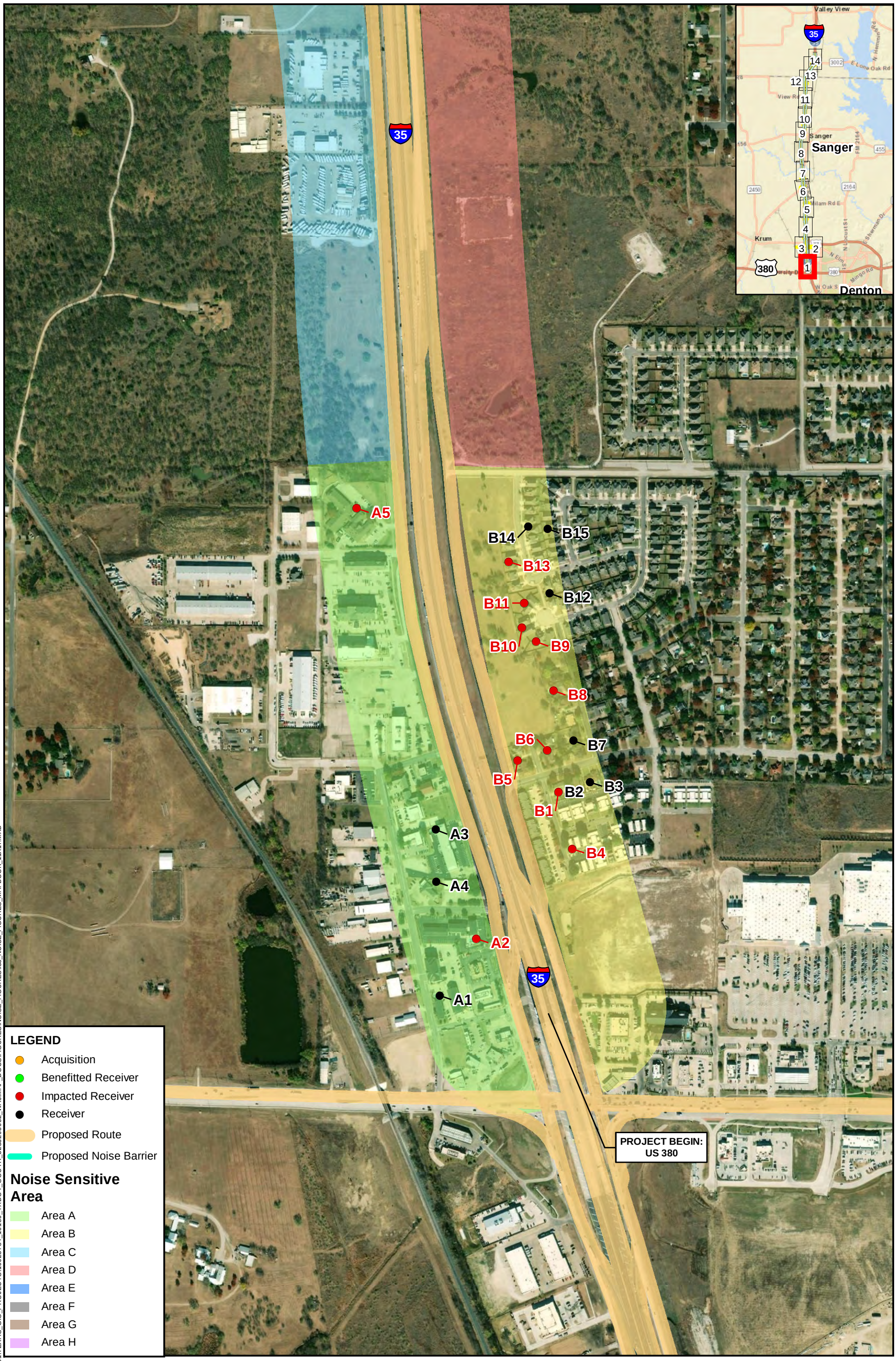

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IH-35
US 380 TO FM 3002 - Denton and Cooke Counties
RECEIVER LOCATION MAP

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Texas Department of Transportation

Figure 4

DEC 2018

PAGE 1 of 14

IH-35
US 380 TO FM 3002 - Denton and Cooke Counties
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Texas Department of Transportation

Figure 4

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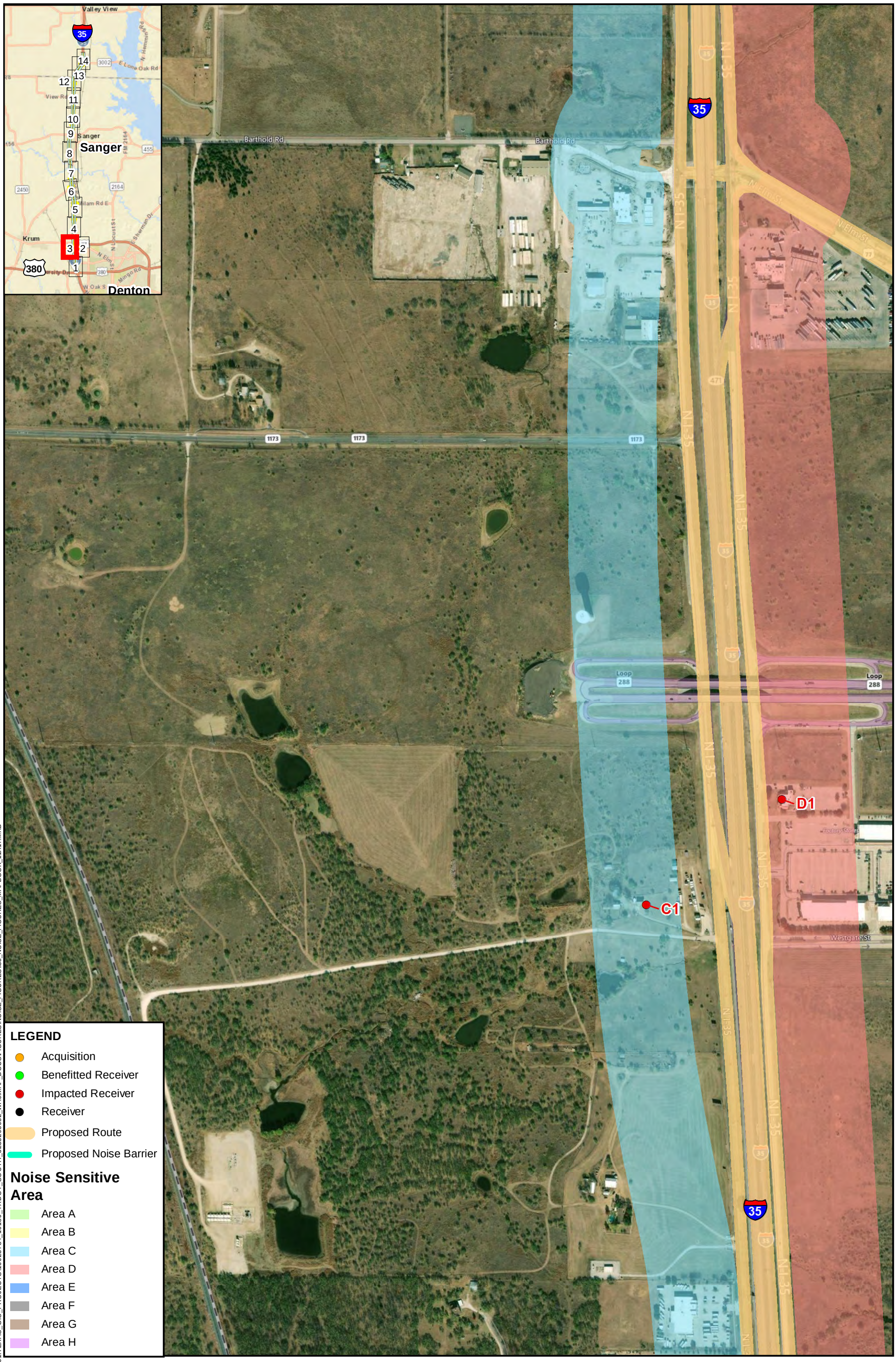

IH-35
US 380 TO FM 3002 - Denton and Cooke Counties
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PAGE 3 of 14

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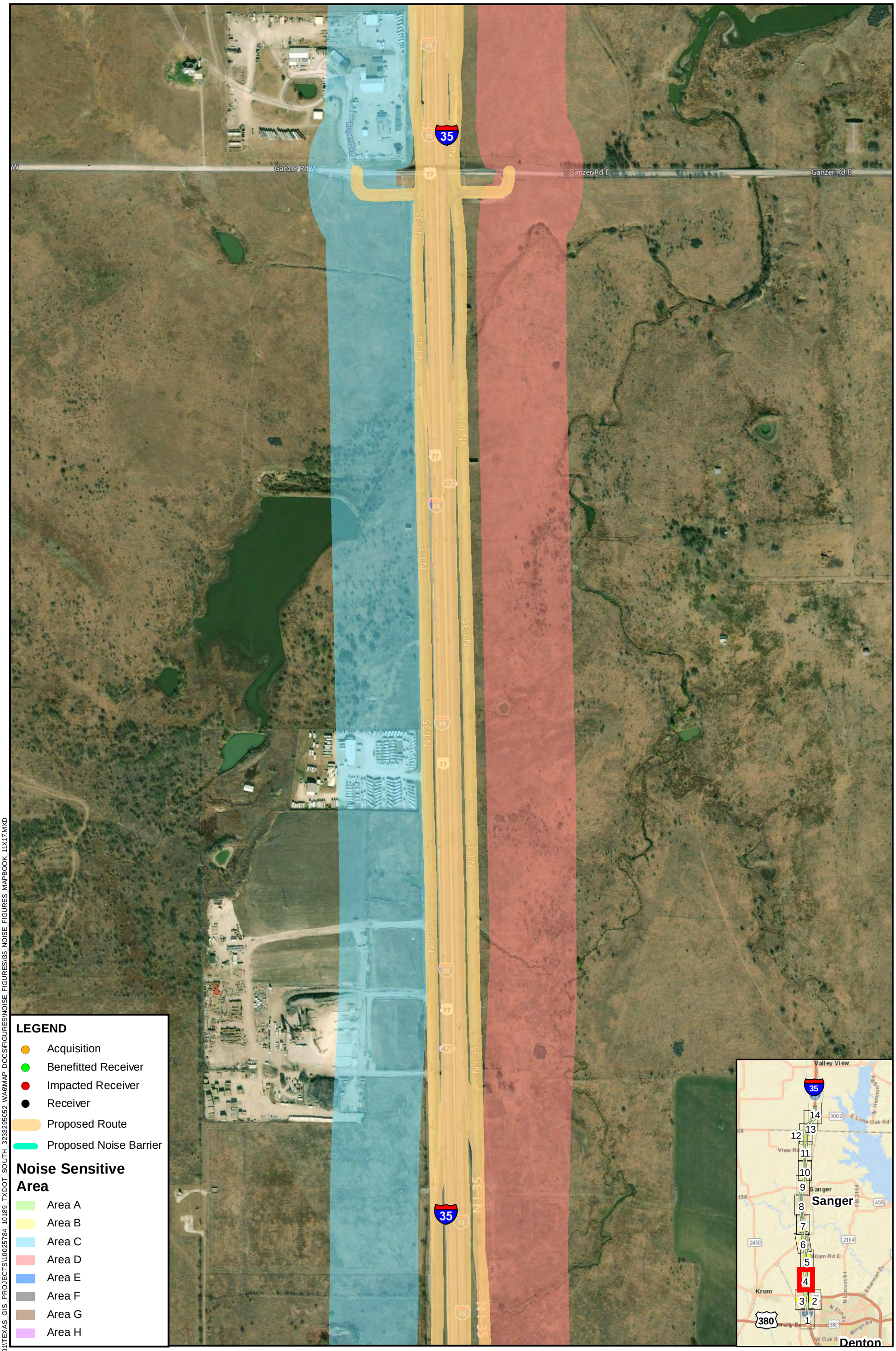

IH-35

US 380 TO FM 3002 - Denton and Cooke Counties

RECEIVER LOCATION MAP

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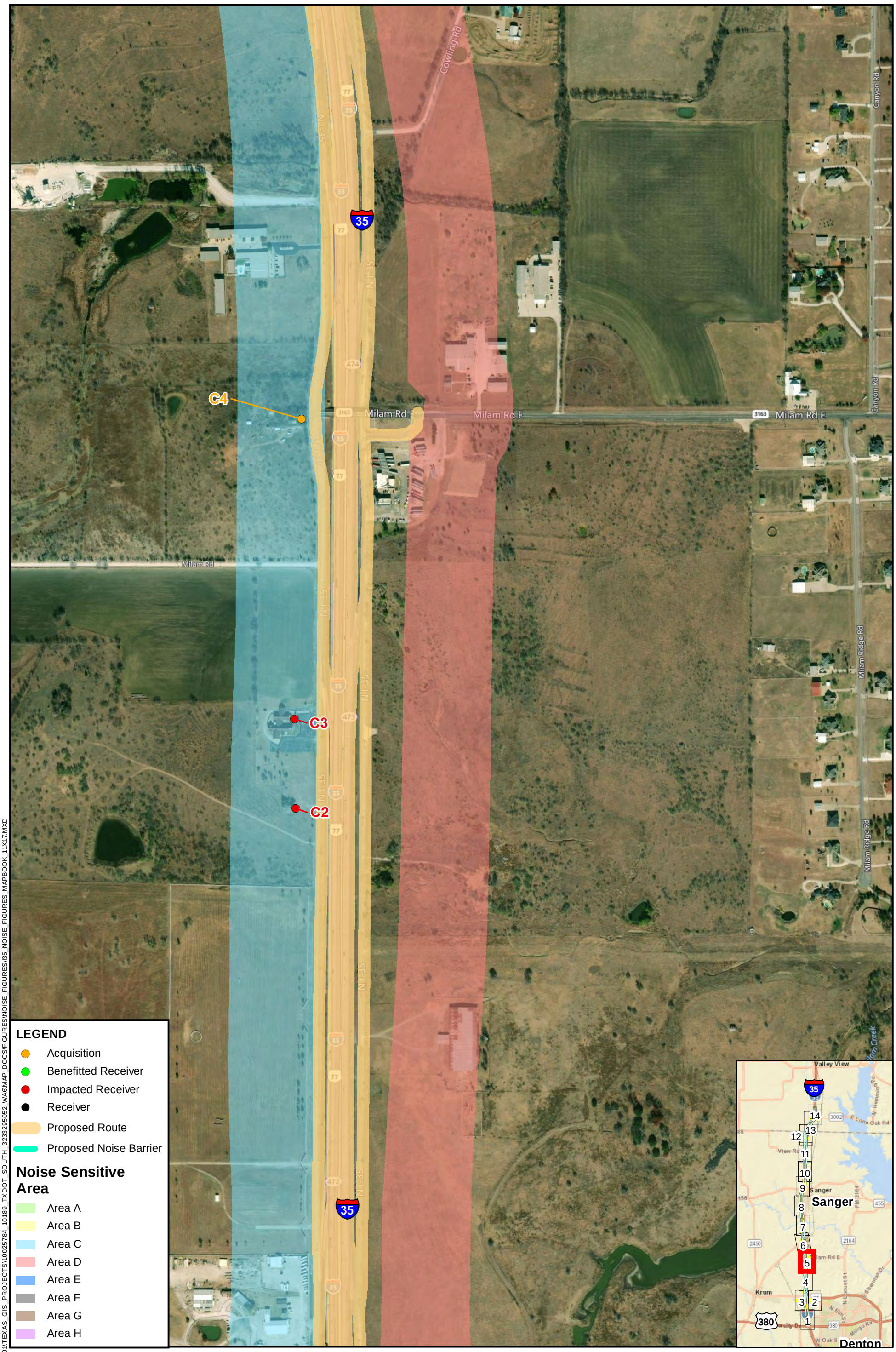

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Texas Department of Transportation

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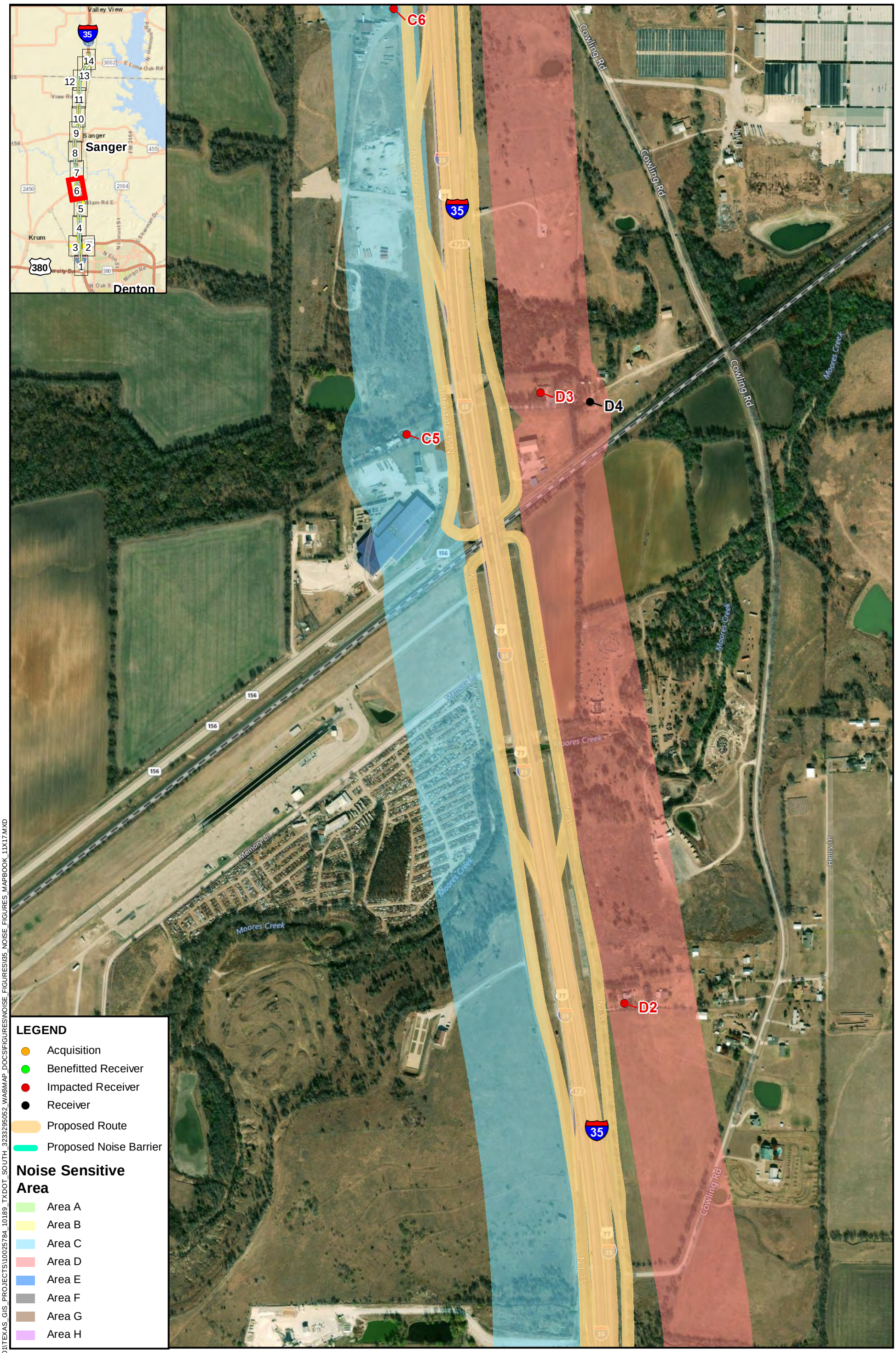

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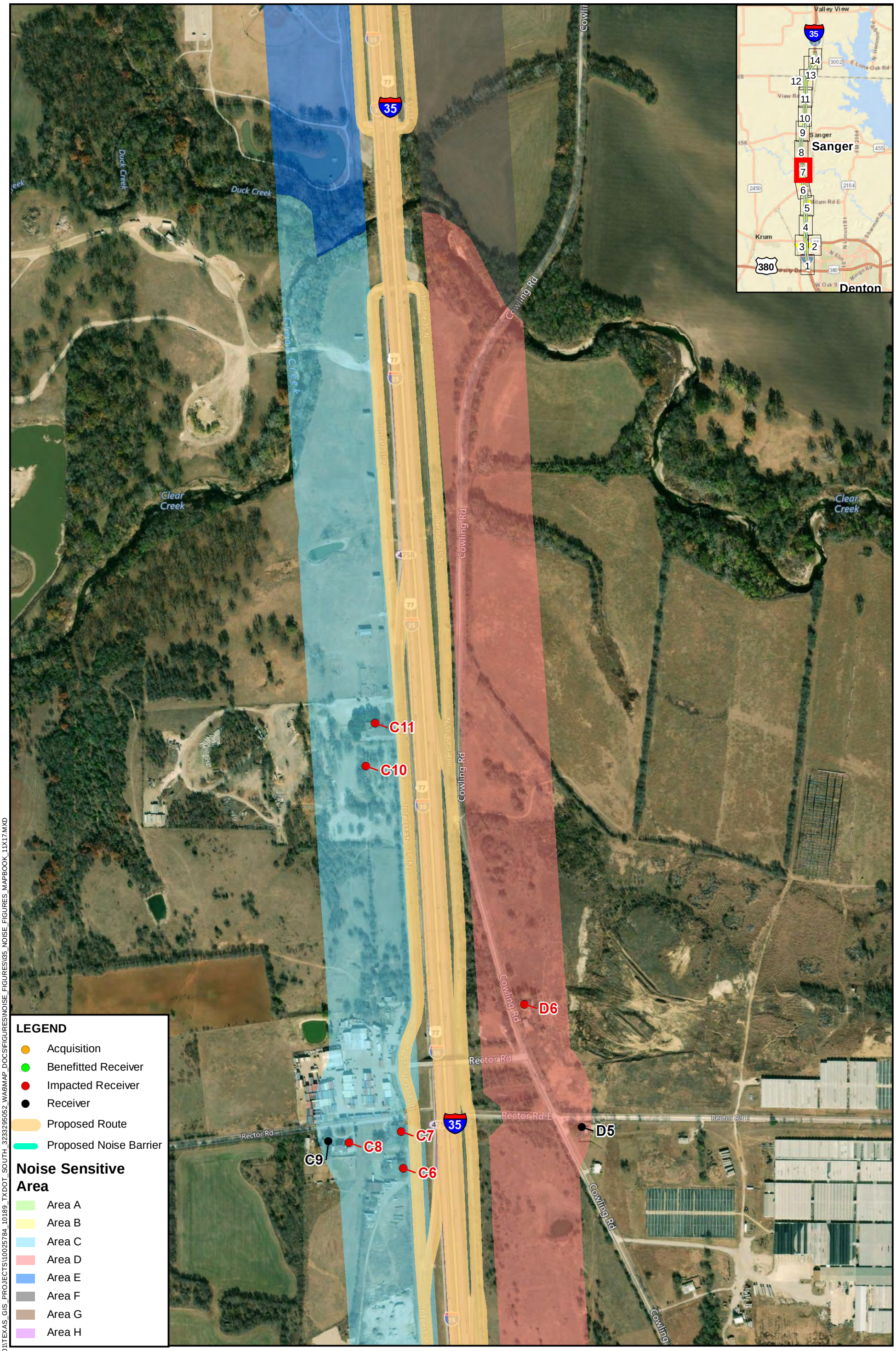

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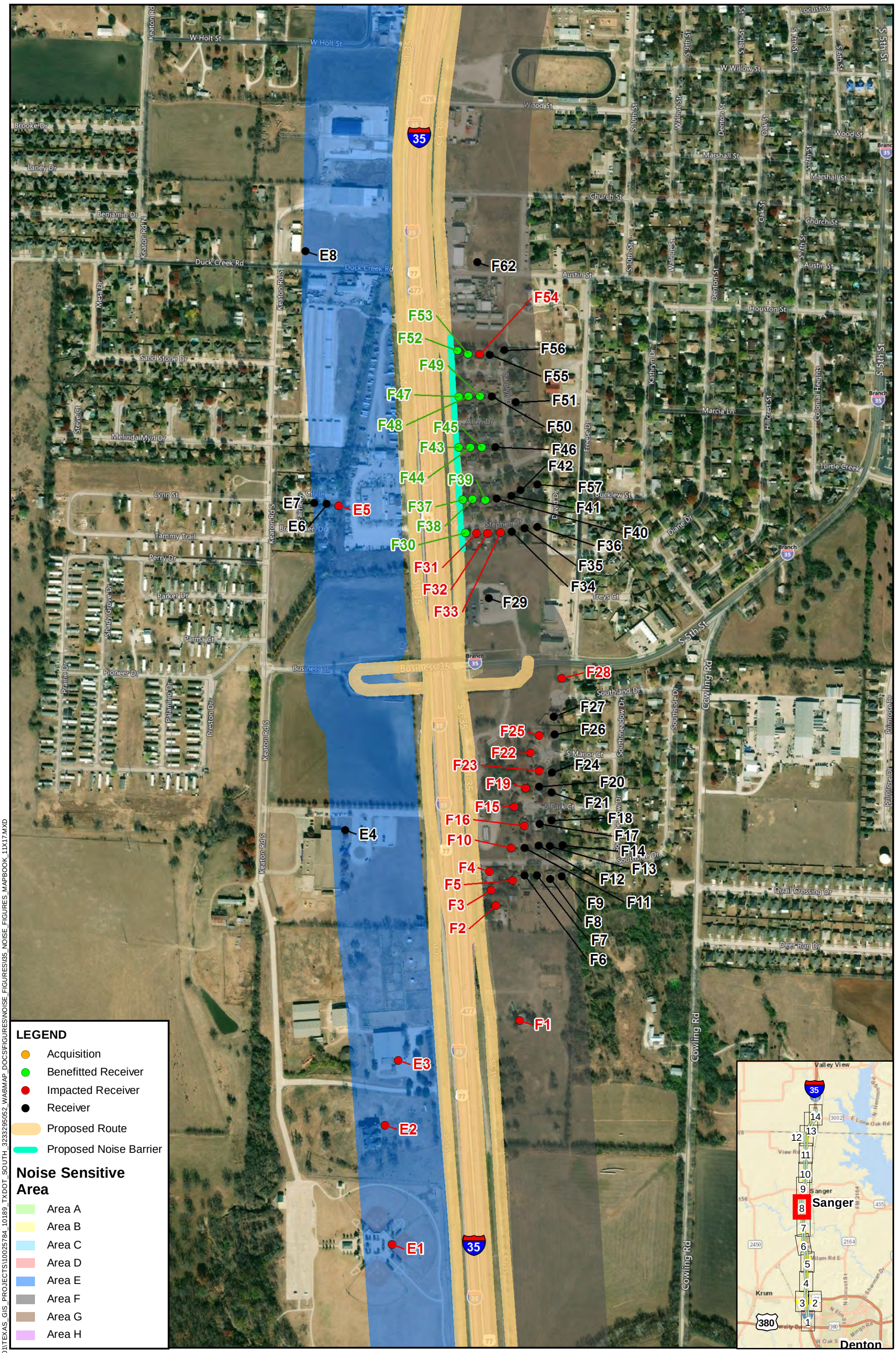

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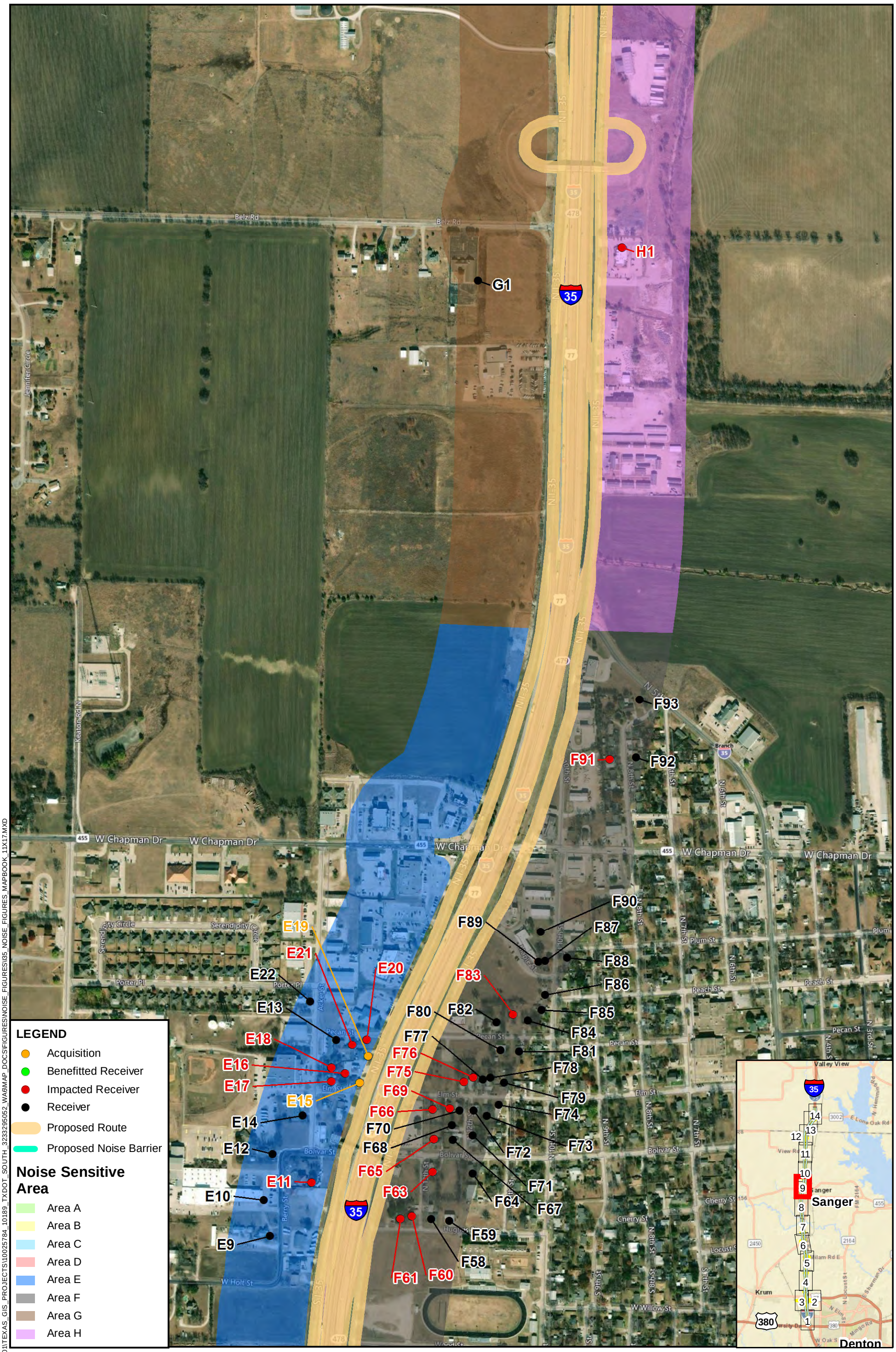

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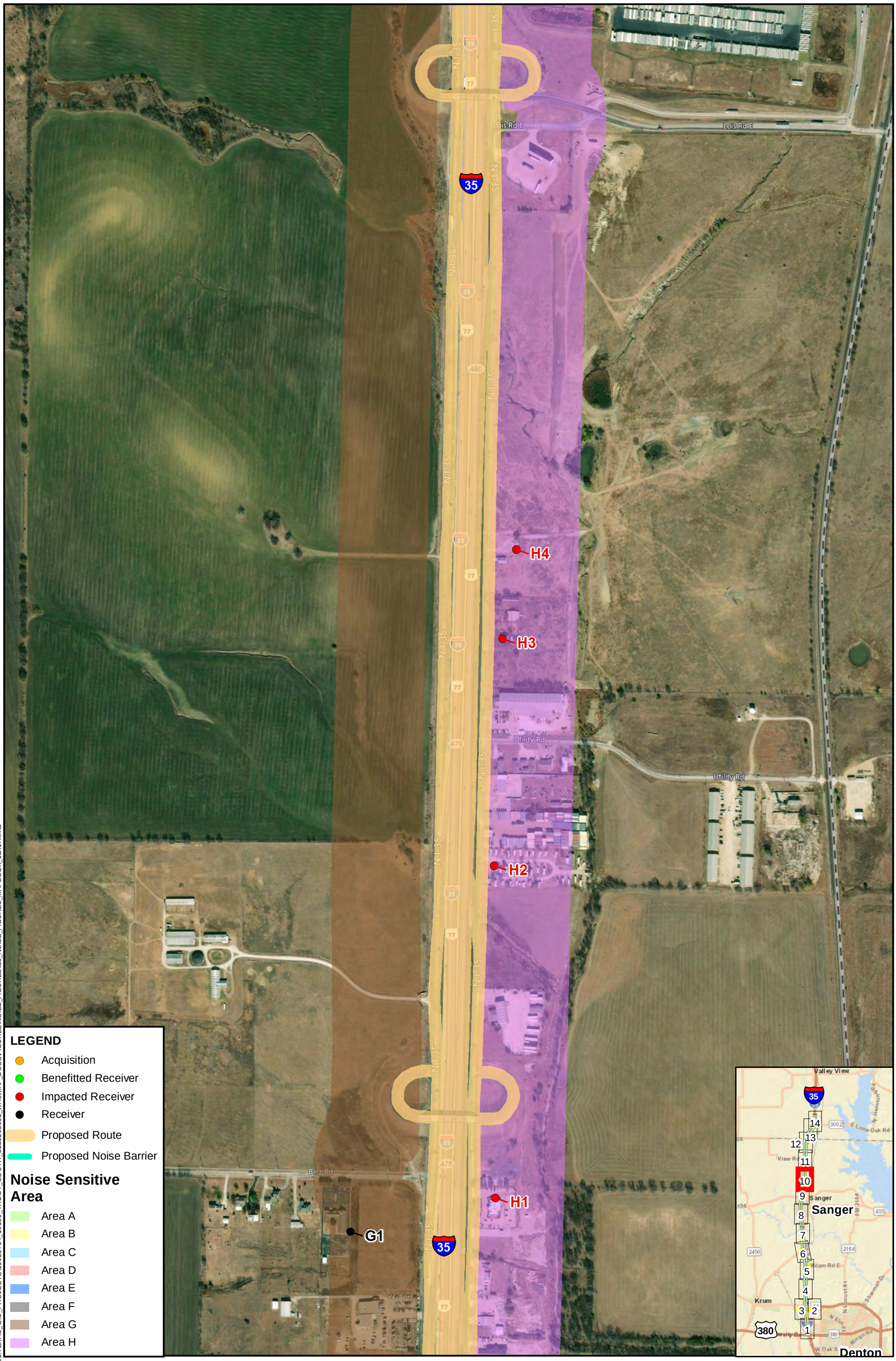

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US 380 TO FM 3002 - Denton and Cooke Counties
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Figure 4

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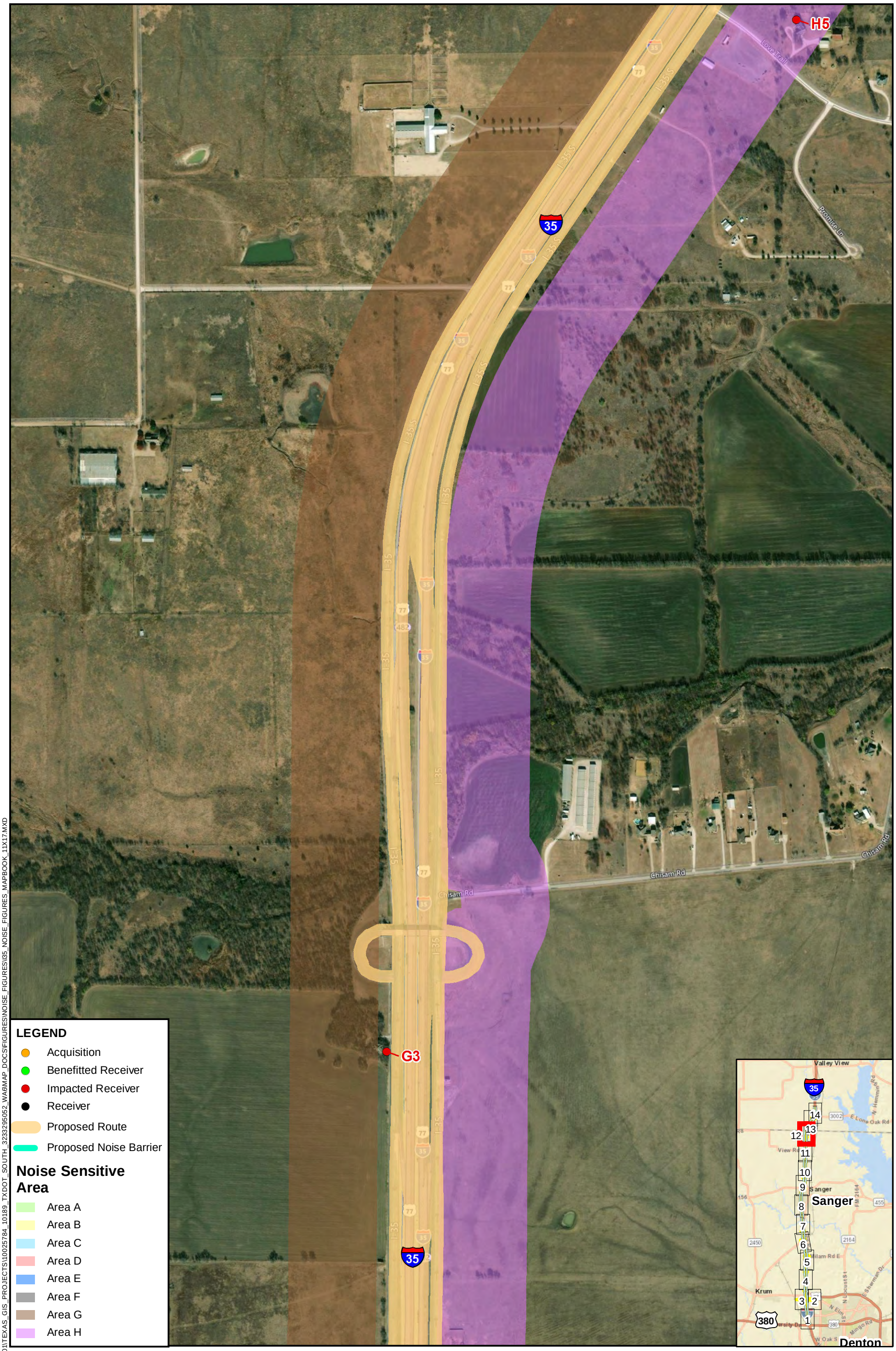

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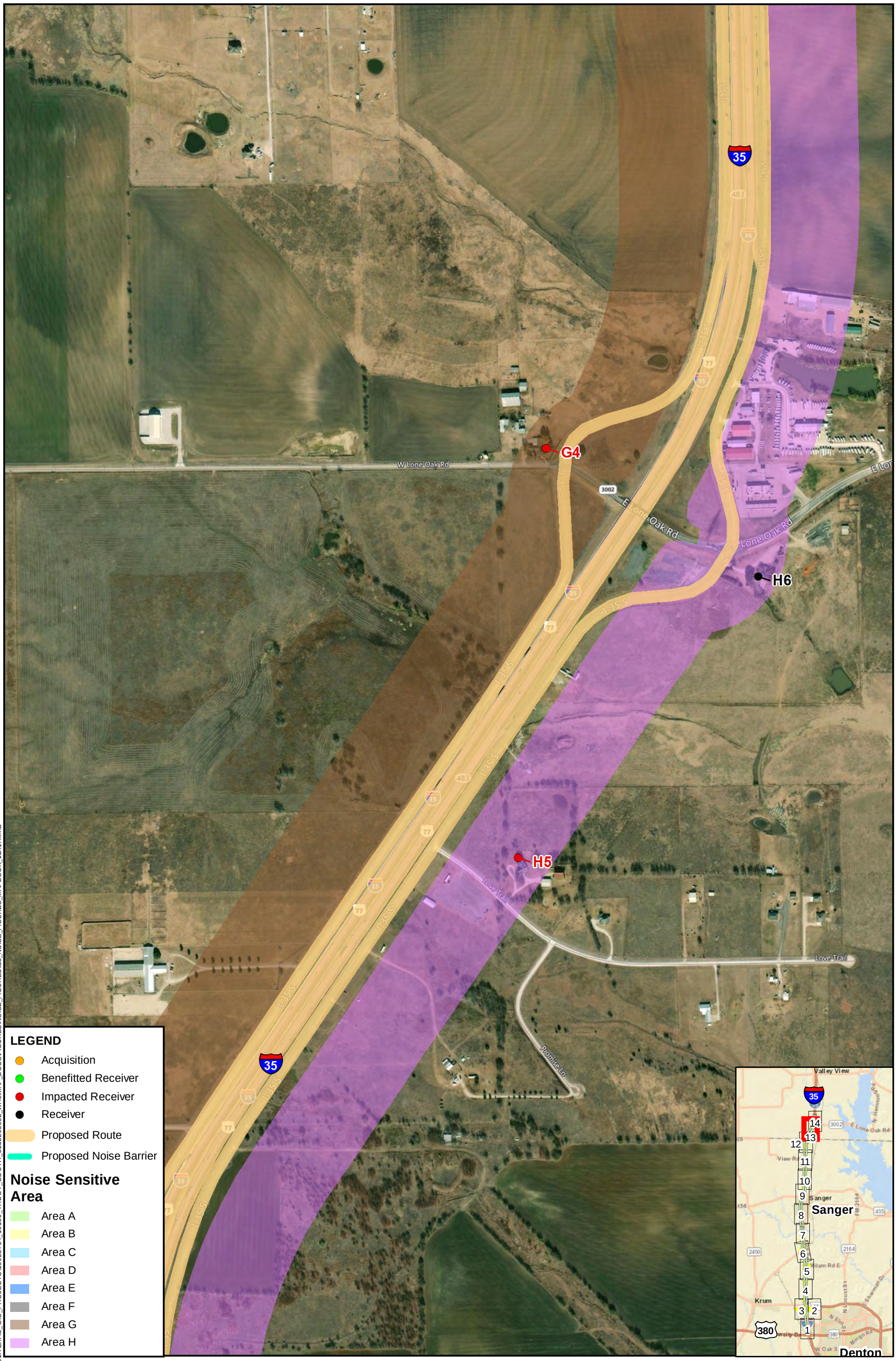

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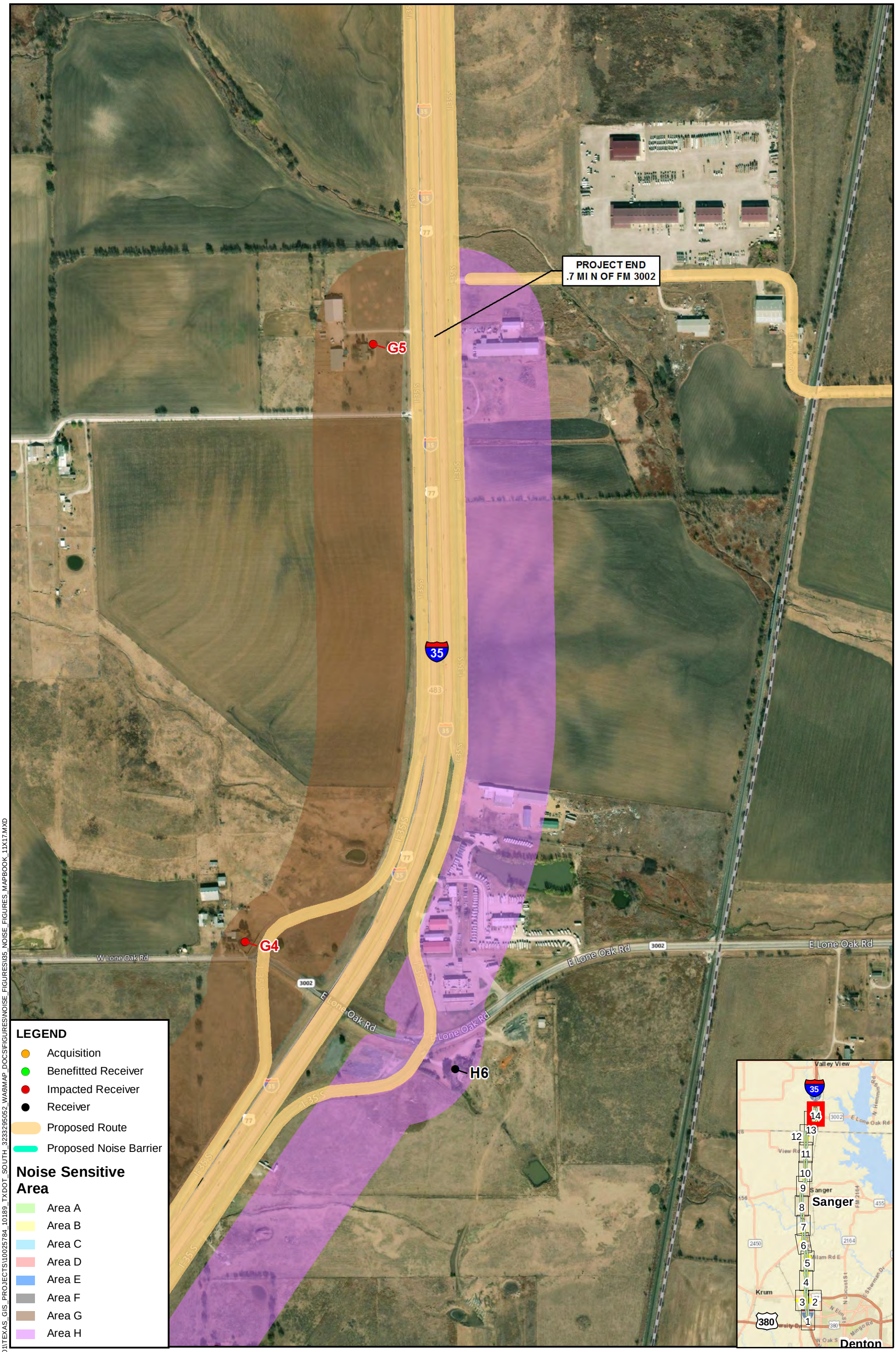

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US 380 TO FM 3002 - Denton and Cooke Counties
RECEIVER LOCATION MAP

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Texas Department of Transportation

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Appendix F – Resources Agency Coordination

(1) SHPO Coordination for Archeological Resources (December 2018)
(2) Section 106 Determination of No Adverse Effect and Section 4(f) Notification of Intent to Render *De Minimis* Section 4(f) Finding (January 2019)
(3) TPWD Coordination (February 2019)
(4) TCEQ Coordination (February 2019)

Texas Department of Transportation

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

RECEIVED
DEC 20 2018

December 19, 2018

Transmittal of HDR, Engineering Draft Report: *Report for Archeological Survey: CSJ 0195-03-087, 0195-02-074, 0195-01-116, IH 35 from US 380 to 0.7 mi North of FM 3002.*
Denton and Cooke Counties, Dallas District, CSJs: 0195-03-087, 0195-02-074, 0195-01-116
THC Antiquities Permit No. 8383

Ms. Pat Mercado-Allinger,
Division of Archeology, Texas Historical Commission
P.O. Box 12276
Austin, Texas 78711

Dear Ms. Mercado-Allinger:

The above proposed project will be undertaken with federal and state funds. As required by the Programmatic Agreement (PA, 2015) and the Memorandum of Understanding with your agency, we are continuing consultation with your office on this project and are enclosing for your review and processing a draft report of an archeological survey recently conducted by HDR, Engineering (HDR) for the undertaking.

On behalf of the Texas Department of Transportation (TxDOT) Dallas District, HDR conducted intensive archeological survey within the area of potential effects (APE) of a proposed widening of Interstate Highway (IH) -35 from four to six main lanes between US 380 and 0.7 mile north of FM 3002 in Denton and Cooke Counties, Texas. Archeological survey work was performed in compliance with the National Environmental Policy Act, National Historic Preservation Act § 106 and associated federal regulations (36 CFR 800), as well as the Texas Antiquities Code (9 TNRC 191) and associated state regulations (13 TAC 26). The proposed action would construct three main lanes in each direction and two frontage road lanes in each direction. Auxiliary lanes would be constructed between some ramp entrances and exits. The existing interchanges would be reconstructed, and the existing two-way frontage roads would be converted to one-way operation. Improvements at cross streets would accommodate one-way frontage road operations and turnarounds. The archeological area of potential effects (APE) is approximately 15.1 miles in length and spans about 935 acres, with 256 acres of new right-of-way (ROW) and 4.7 acres of easements. Typical roadway construction would occur within 5 feet, with impacts up to 60 feet expected at drill shaft locations.

Survey methods complied with applicable standards outlined and defined in 13 TAC 26.15 and policies of the Texas Historical Commission, as well as guidelines of the Council of Texas Archeologists. HDR excavated 231 shovel tests over a total of 129.6 acres of proposed ROW.

Draft Report: *Report for Archeological Survey: Report for Archeological Survey: CSJ 0195-03-087, 0195-02-074, 0195-01-116, IH 35 from US 380 to 0.7 mi North of FM 3002.*
Denton and Cooke Counties, Dallas District, CSJs: 0195-03-087, 0195-02-074, 0195-01-116
THC Antiquities Permit No. 8383

Only new ROW parcels where right of entry (ROE) was granted were surveyed. The survey resulted in discovery of two historic sites, 41DN608 and 41DN609, within in a plowed field about 360 m apart. Artifacts include historic glass, metal, ceramics, and brick dating to the 20th century. Both sites are recommended not eligible within the proposed ROW as a State Antiquities Landmark or for inclusion in the National Register of Historic Places due to the paucity of artifacts and general lack of site integrity. No further work is recommended within the 129.6 acre surveyed. However, access was not granted to an additional 126.4 acres (121 parcels; see Appendix D and Figure 7 in the attached report). Of these, 41 appear heavily disturbed and require no survey. Cultural resources survey is recommended for the remaining 80 parcels once ROE has been established.

A TxDOT archeologist has reviewed the report by HDR and concurs with the results. **TxDOT seeks THC concurrence that**:

1. No archeological historic properties (36 CFR Part 800.16(1) or State Archeological Landmarks (13 TAC 26.12) are present within existing ROW and the 129.6 acres of APE examined by HDR.

2. Cultural resources survey is recommended for an additional 80 parcels once ROE has been established.

3. Since the survey was conducted under an individual THC Antiquities Permit, we are forwarding the draft for your review and processing in partial fulfillment of THC Antiquities Permit No. 8383. TxDOT finds the report acceptable as a draft and pending any final report review comments from your office, we request your concurrence that the report may proceed toward production.

Thank you for your consideration of this matter. If you have any questions regarding the survey report, please contact Melanie Johnson (972) 732-2022. If you have any other questions or have need of further information, please contact me at (214) 320-4472. Thank you for your consideration in this matter.

Sincerely,

J. Kevin Hanselka

J. Kevin Hanselka, Archeological Studies Program
Environmental Affairs Division

Cc w/attachment: Mohammed Shaikh, TxDOT Dallas District Environmental Coordinator; Michelle Lueck, ENV-PD; Kevin Hanselka, ENV-Arch; ENV Arch Project File

Cc w/o attachments: ECOS Scan

Draft Report: *Report for Archeological Survey: Report for Archeological Survey: CSJ 0195-03-087, 0195-02-074, 0195-01-116, IH 35 from US 380 to 0.7 mi North of FM 3002.*
Denton and Cooke Counties, Dallas District, CSJs: 0195-03-087, 0195-02-074, 0195-01-116
THC Antiquities Permit No. 8383

Concurrence By:

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

12/20/18
Date

Environmental studies are in the process of being conducted for this process. 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.

DRAFT REPORT
ACCEPTABLE
by
for Mark Wolfe
Executive Director, THC
Date 12/20/18
Track#

Texas Department of Transportation

Report for Archeological Survey

CSJ 0195-03-087, 0195-02-074, 0195-01-116, IH 35 from US 380 to 0.7 mi North of FM 3002

Denton and Cooke Counties, Dallas District

Melanie Johnson, Principal Investigator; Antiquities Permit No. 8383

December 2018

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.

Texas Department of Transportation

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January 9, 2019

SECTION 106 REVIEW: DETERMINATION OF NO ADVERSE EFFECT
SECTION 4(f) REVIEW: NOTIFICATION OF INTENT TO RENDER *DE MINIMIS* SECTION 4(f) FINDING
District: Dallas
County: Denton and Cooke
CSJ#: 0195-02-074, 0195-03-087, 0195-01-116
Highway: IH 35
Project Limits: US 380 to 0.7 miles north of FM 3002
Section 4(f) Property: Lemons House (201 N. Stemmons Freeway)

Mr. Justin Kockritz
History Programs
Texas Historical Commission
Austin, Texas 78711

Dear Mr. Kockritz:

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. As a consequence of these agreements, TxDOT's regulatory role for this project is that of the Federal action agency. In accordance with 36 CFR 800 and our Section 106 Programmatic Agreement for Transportation Undertakings (December 2015), this letter initiates Section 106 consultation on the effect the proposed undertaking poses for a National Register of Historic Places (NRHP) eligible property in the area of potential effects (APE) for the project.

Project Description

The TxDOT Dallas District proposes to widen and reconstruct Interstate 35 in Denton and Cooke Counties. The proposed project will be approximately 15.1 miles long, from US 380 to 0.7 miles north of FM 3002. The project proposes to widen the interstate from four main lanes to six main lanes, including frontage roads. TxDOT will need approximately 256 acres of new ROW and 4.7 acres of permanent easements to construct this project.

Survey Methods

TxDOT historians reviewed the National Register of Historic Places (NRHP), the list of State Antiquities Landmarks (SAL), the list of Recorded Texas Historic Landmarks (RTHL), and TxDOT files and found one historically significant resources previously documented within the area of potential effects (APE):

1. Lemons House, 201 N. Stemmons Street in Sanger. TxDOT previously determined this house eligible for the NRHP under Criteria A and C.

TxDOT used a standard APE for this project, which was the existing ROW where no new ROW or easements are necessary, and a 150-foot APE around new ROW.

Determinations of Eligibility

TxDOT determined 35 historic-age (pre-1977) properties within the APE **not eligible** for NRHP-listing under any criteria, including the former mill building at 917 10th Street in Sanger. TxDOT ENV historians determined that the properties are common designs that lack architectural merit, are not works of a master, and have no known historic associations with important events or persons. While conversations with the owner of the former mill building (Resource 28) indicated the building was 100 years old, additional research in historic aerial photographs completed after the reconnaissance survey indicated that the mill building was constructed between 1952 and 1958 (see attached photographs). Therefore, this building is not associated with any significant historic context for Sanger or the surrounding area.

TxDOT finds the following properties to be **eligible** for listing in the NRHP:

1. Blue Mound Community Center (Resource 5), 8413 N. IH 35, significant under Criterion A and C at the local level
2. Lemons House and Carriage House (Resource 22), 201 N. Stemmons Freeway, significant under Criterion C at the local level.

Determination of No Adverse Effect

Currently, TxDOT proposes to acquire a small amount of new ROW from the Lemons House and Carriage House property. The new ROW is located on the front of the property, adjacent to the existing IH 35. These changes pose no adverse effect to the historic character of the residence and its outbuilding, as the property would still possess its significance following completion of the project. The proposed project would not adversely affect the property's integrity of location, setting, feeling, association, design, materials or workmanship.

The proposed new ROW will be approximately 43 feet closer to the front of the Lemons House, and 42 feet closer to the carriage house. The proposed edge of the pavement will be within that ROW, but will be 96 feet from the front of the house. While the new ROW is closer to the historic property than is current, the acquisition will not encompass any historic character-defining features of the property, as there are none in that area. Therefore, the proposed project will have **no adverse effect** to the Lemons House.

TxDOT's proposed work adjacent to the Blue Mound Community Center occurs mostly within current ROW. TxDOT does not propose to acquire any land from the community center for its project. While the work may have visual effects on the community center building, they will be minor. Therefore, TxDOT finds there will be **no adverse indirect effects** to the Blue Mound Community Center.

Determination of *De Minimis* Finding

As part of this coordination, TxDOT determined that the proposed project meets the requirements for a Section 4(f) *de minimis* impact finding under 23 CFR 774. TxDOT based its

determination on the fact that the use for the Lemons House is minimal and the project will have **no adverse effect** on the NRHP-eligible property. The function of the property will not be impaired, nor will it cease. The work would take place on existing curb, sidewalk, and parking. This *de minimis* finding does not require the traditional second step of including all possible planning to minimize harm because avoidance, minimization, mitigation, or enhancement measures are included as part of this determination.

Conclusion

In accordance with 36 CFR 800 and our Section 106 Programmatic Agreement for Transportation Undertakings (December 2015), we hereby request your signed concurrence with TxDOT's findings of eligibility as well as our findings of **no adverse effect** to the NRHP-eligible Lemons House and Carriage House and the Blue Mound Community Center. We additionally notify you that SHPO is the designated official with jurisdiction over Section 4(f) resources protected under the provisions of 23 CFR 774 and that your comments on our Section 106 findings will be integrated into decision-making regarding prudent and feasible alternatives for purposes of Section 4(f) evaluations. Final determinations for the Section 4(f) process will be rendered by TxDOT pursuant to 23 U.S.C. 327 and the afore-mentioned MOU dated December 16, 2014.

We look forward to further consultation with your staff and hope to maintain a partnership that will foster effective and responsible solutions for improving transportation, safety and mobility in the state of Texas. Thank you for your cooperation in this federal review process. If you have any questions or comments concerning these evaluations, please contact me at (512) 416-2611 or rebekah.dobrasko@txdot.gov.

Sincerely,

RMDobrasko

Rebekah Dobrasko
Historic Preservation Specialist
Environmental Affairs

cc: Bruce Jensen, Cultural Resource Management Section Director: BDJ

CONCURRENCE WITH NON-ARCHEOLOGICAL SECTION 106 FINDINGS:
HISTORIC PROPERTIES PRESENT
NO ADVERSE EFFECT: LEMONS HOUSE AND CARRIAGE HOUSE;
BLUE MOUND COMMUNITY CENTER

NAME: _____ DATE: 1/28/2019
for Mark Wolfe, State Historic Preservation Officer

NO COMMENTS ON DETERMINATION OF DE MINIMIS IMPACT UNDER SECTION 4(F) REGULATIONS

NAME: _____ DATE: 1/28/2019
for Mark Wolfe, State Historic Preservation Officer

Leslie Mirise

From: Sue Reilly <Sue.Reilly@tpwd.texas.gov>
Sent: Monday, February 25, 2019 4:12 PM
To: Leslie Mirise
Subject: RE: CSJ 0195-02-074, etc. IH 35 Widening Project (Denton & Cooke counties) - Request for Early Coordination

This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Leslie,

Thank you for the reply, I hope you're feeling better! I am going to close the project, with the note that I hope that TxDOT can minimize the temporary impacts to those perennial streams and riparian areas. I know that doesn't always work, so I'm not expecting a response on this comment, but any effort to keep contractors out of riparian areas is appreciated.

Thank you for submitting the following project for early coordination: IH-35 widening project in Denton and Cooke counties (CSJ 0195-02-074 and others). TPWD appreciates TxDOT's commitment to implement the practices listed in the Tier I Site Assessment submitted on December 13, 2018 and in subsequent emails. Based on a review of the documentation, the avoidance and mitigation efforts described, and provided that project plans do not change, TPWD considers coordination to be complete. However, please note it is the responsibility of the project proponent to comply with all federal, state, and local laws that protect plants, fish, and wildlife.
According to §2.204(g) of the 2013 TxDOT-TPWD MOU, TxDOT agreed to provide TXNDD reporting forms for observations of tracked SGCN (which includes federal- and state-listed species) occurrences within TxDOT project areas. Please keep this mind when completing project due diligence tasks. For TXNDD submission guidelines, please visit the following link: http://tpwd.texas.gov/huntwild/wild/wildlife_diversity/txndd/submit.phtml

Thank you,

Sue Reilly
Transportation Assessment Liaison
Texas Parks and Wildlife
Wildlife Division
512-389-8021

From: Leslie Mirise <Leslie.Mirise@txdot.gov>
Sent: Monday, February 25, 2019 3:12 PM
To: Sue Reilly <Sue.Reilly@tpwd.texas.gov>
Subject: RE: CSJ 0195-02-074, etc. IH 35 Widening Project (Denton & Cooke counties) - Request for Early Coordination

Sue,

My apologies for the delayed response due to illness. Thanks for your comments. TxDOT's responses are included below:

TPWD comment #1: Will TxDOT be doing stream mitigation?
TxDOT response #1: Yes, stream and wetland mitigation is expected for multiple crossings and wetland features in the proposed project area. TxDOT would coordinate required mitigation with the USACE and would likely include purchase of mitigation bank credits. The Water Resources Technical Report uploaded in ECOS under the filename CSJ 0195-02-074 – I-35 Water Resources TM 12.17.19_Approved.pdf
Table 1 contains a good summary of feature impacts.

TPWD comment #2: What are the temporary impacts are expected at the perennial stream crossings at Moore's Branch and Clear Creek?
TxDOT response #2: According to the Water Resources TM, 0.36 acre (463 linear feet) of temporary impacts and 0 acre permanent impacts are expected at Moore's Branch. Vegetation impacts at Moore's Branch are expected to be from proposed ROW line to proposed ROW line. At Clear Creek, 0.46 acre (429 linear feet) of temporary impacts and 0 acre permanent impacts are expected at Clear Creek. Similarly, vegetation impacts at Clear Creek are also expected to extend from proposed ROW line to proposed ROW line.

Please let me know if you have any additional questions.

Thanks!

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

From: Sue Reilly [mailto:Sue.Reilly@tpwd.texas.gov]
Sent: Wednesday, February 20, 2019 2:38 PM
To: Leslie Mirise
Subject: RE: CSJ 0195-02-074, etc. IH 35 Widening Project (Denton & Cooke counties) - Request for Early Coordination

This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Leslie,

Thank you for sending in the IH-35 project for coordination. My main questions are about impacts at water crossings. Will TxDOT be doing stream mitigation?

Also, can you tell me what temporary impacts are expected at the perennial stream crossings at Moore's Branch and Clear Creek?

Thank you,

Sue Reilly
Transportation Assessment Liaison
Texas Parks and Wildlife
Wildlife Division
512-389-8021

From: WHAB_TxDOT
Sent: Thursday, December 13, 2018 2:15 PM
To: Leslie Mirise <Leslie.Mirise@txdot.gov>; Dan Perge <Dan.Perge@txdot.gov>; Christine Polito <Christine.Polito@txdot.gov>; Mohammed Shaikh <Mohammed.Shaikh@txdot.gov>
Cc: Sue Reilly <Sue.Reilly@tpwd.texas.gov>
Subject: RE: CSJ 0195-02-074, etc. IH 35 Widening Project (Denton & Cooke counties) - Request for Early Coordination

The TPWD Wildlife Habitat Assessment Program has received your request and has assigned it project ID # 41149. The Habitat Assessment Biologist who will complete your project review is copied on this email.

Thank you,

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

From: Leslie Mirise [mailto:Leslie.Mirise@txdot.gov]
Sent: Thursday, December 13, 2018 12:59 PM
To: WHAB_TxDOT <WHAB_TxDOT@tpwd.texas.gov>
Cc: Mohammed Shaikh <Mohammed.Shaikh@txdot.gov>; Christine Polito <Christine.Polito@txdot.gov>; Dan Perge <Dan.Perge@txdot.gov>
Subject: CSJ 0195-02-074, etc. IH 35 Widening Project (Denton & Cooke counties) - Request for Early Coordination

Hello,

TxDOT requests early coordination for the IH 35 Widening Project in Dallas and Rockwall counties, Texas. I have attached the following:

1. The Tier 1 Site Assessment Form, including BMPs to be implemented;

2. The Biological Evaluation Form, for the purpose of reviewing the analyses performed on federally listed species that share state-listing status;
3. Supporting Documents including but not limited to location map, species lists from TPWD and USFWS/IPaC, EMST documentation, and site photos;
4. The EMST and Observed Vegetation Excel spreadsheet; and
5. A separate NDD information file.

These documents, along with other project-related information, are also available in ECOS under the CSJ: 0195-02-074. The project's schematic can be sent to the assigned biologist in a separate email (or dropbox depending on file size). It is also available in ECOS under the CCSJ in the Documents/Project section with the following filenames:

CSJ 0195-02-074 ETC., _IH35_Schematic_20181108_11x17_Approved.pdf
CSJ 0195-02-074 ETC., _IH35_Schematic_April 2018_11x17.pdf

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

Thank you,

Leslie Mirise
Environmental Specialist

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

A Texas Department of Transportation (TxDOT) message

BE SAFE. DRIVE SMART.

From: NEPA
To: Michelle Lueck
Subject: RE: EA Review - IH 35 - Denton and Cooke Counties (CSJ 0195-02-074 etc.)
Date: Tuesday, February 26, 2019 9:15:09 AM

This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Re: Response to Request for TCEQ Environmental Review

The Texas Commission on Environmental Quality (TCEQ) received a request from the Texas Department of Transportation (TxDOT) regarding the following project: EA Review - IH 35 - Denton and Cooke Counties (CSJ 0195-02-074 etc.)

This project is in an area of Texas classified by the United States Environmental Protection Agency as moderate nonattainment for the 2008 ozone National Ambient Air Quality Standard (NAAQS) and marginal nonattainment for the 2015 ozone NAAQS. Air Quality staff has reviewed the document in accordance with transportation and general conformity regulations codified in 40 Code of Federal Regulations Part 93. We concur with TxDOT's assessment.

TxDOT will still need to follow all other applicable laws related to this project, including applying for applicable permits.

If you have any questions, please feel free to contact the NEPA Coordinator at (512) 239-3500 or NEPA@tceq.texas.gov.

Violet Mendoza
NEPA Coordinator
TCEQ, MC-119
NEPA@tceq.texas.gov

From: Michelle Lueck <Michelle.Lueck@txdot.gov>
Sent: Thursday, February 21, 2019 8:32 AM
To: NEPA <NEPA@tceq.texas.gov>
Subject: EA Review - IH 35 - Denton and Cooke Counties (CSJ 0195-02-074 etc.)

TxDOT requests the TCEQ review the IH 35 project per 43 TAC 2.305. The proposed project would include widening of existing IH 35 in Denton and Cooke Counties, Texas. We are requesting TCEQ review since the project meets MOU triggers related to **air quality**.

An electronic version of the Draft Environmental Assessment will be transmitted to your office using our FTP system. Let me know if you have any questions.

Michelle Lueck
TxDOT-Environmental Affairs Division
Project Delivery Section
512-416-2644