Draft Environmental Assessment

State Highway (SH) 5, Dallas District

From SH 121 to County Road 375

CSJ Number 0047-04-022

Collin County, Texas

March 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.

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List of Acronymns

AC	Acre
ACS	American Community Survey
ADA	American with Disabilities Act
ADT	average daily traffic
AOI	Area of Interest
APE	Area of Potential Effects
BMP	Best Management Practice
CAD	County Appraisal District
CALF	Closed and Abandoned Landfill Inventory
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CIA	Community Impacts Assessment
CO	Carbon Monoxide
CR	County Road
CWA	Clean Water Act
EA	Environmental Assessment
EJ	Environmental Justice
EO	Executive Order
EPA	U.S. Environmental Protection Agency
EPIC	Environmental Permits, Issues, and Commitments
ESA	Endangered Species Act
FM	Farm-to-Market Road
FHWA	Federal Highway Administration
FONSI	Finding of No Significant Impact
FPPA	Farmland Protection Policy Act
FRSTX	Facility Registry System
ISA	Initial Site Assessment
LBP	Lead-Based Paint
LEP	Limited English Proficiency
LPST	Leaking Petroleum Storage Tanks
LWCF	Land and Water Conservation Fund
MBC	Multiple Box Culvert
MOU	Memorandum of Understanding
MS4	Municipal Separate Storm Sewer System
MSAT	Mobile Source Air Toxics
MTP	Metropolitan Transportation Plan
N/A	Not available
NAC	Noise Abatement Criteria
NCTCOG	North Central Texas Council of Governments
NEPA	National Environment Policy Act
NHPA	National Historic Preservation Act
NOI	Notice of Intent
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NWP	Nationwide Permit
PA	Programmatic Agreement
PCN	Preconstruction Notification
PM	Particulate Matter
PWC	Parks and Wildlife Code
RCB	Reinforced Concrete Box

RCP	Reinforced Concrete Pipe
ROW	Right-of-Way
RPST	Registered Petroleum Storage Tank
RSA	Resource Study Area
RTHL	Recorded Texas Historic Landmark
SAL	State Antiquities Landmark
SBC	Single Box Culvert
SGCN	Species of Greatest Conservation Need
SH	State Highway
SHPO	State Historic Preservation Officer
SW3P	Storm Water Pollution Prevention Plan
TBPR	Texas Blackland Prairies
TCEQ	Texas Commission on Environmental Quality
TERP	Texas Emissions Reduction Plan
THC	Texas Historical Commission
TIP	Transportation Improvement Program
TPDES	Texas Pollutant Discharge Elimination System
TPWD	Texas Parks and Wildlife Department
TRI	Toxic Release Inventory
TSS	Total Suspended Solids
TxDOT	Texas Department of Transportation
TXNDD	Texas Natural Diversity Database
USACE	U.S. Army Corps of Engineers
USCG	U.S. Coast Guard
USFWS	U.S. Fish and Wildlife Service

1. Introduction

The Texas Department of Transportation (TxDOT) is preparing an Environmental Assessment (EA) for the proposed reconstruction and widening of State Highway (SH) 5 from SH 121 to County Road (CR) 375 in the cities of Melissa and Anna, Collin County, Texas. SH 5 is an existing corridor and proposed improvements consist of widening from a two-lane rural section to a four-lane urban section for approximately 8.58 miles. See **Appendix A** for the Project Location Map. The purpose of this EA is to study the potential environmental consequences of the proposed project and determine whether such consequences warrant preparation of an Environmental Impact Statement. This EA is prepared to comply with TxDOT's environmental review rules and the National Environment Policy Act (NEPA). This EA will be made available for public review and following the comment period, TxDOT will consider any comments submitted. If TxDOT determines that there are no significant adverse effects, it will prepare and sign a Finding of No Significant Impact (FONSI), which will be made available to the public.

2. Project Description

2.1. Existing Facility

SH 5, from SH 121 to CR 375, a distance of approximately 8.58 miles, is currently an undivided two-lane roadway with 12-foot wide lanes and 8-foot wide shoulders. The existing right-of-way (ROW) width varies from 60 to 200 feet wide with a usual ROW width of 100 feet. There are currently no bicycle or pedestrian facilities associated with SH 5 within the project limits. There are eight water crossings along the length of the proposed project. Drainage structures associated with these eight water crossings include three reinforced concrete pipes (RCP), one multiple box culvert (MBC), and four single box culverts (SBC). There are no existing detention ponds associated with the existing facility. Refer to **Appendix B** for the Project Photos and **Appendix D** for the existing typical sections.

2.2. Proposed Project

SH 5 is identified in the North Central Texas Council of Government's (NCTCOG) *Mobility 2040: The Metropolitan Transportation Plan* (MTP) for North Central Texas as a regionally significant arterial. The proposed project limits extend from SH 121 to CR 375, for a distance of approximately 8.58 miles. The proposed project would expand SH 5 to a four-lane divided urban roadway. The improved roadway would have an inside 12-foot wide travel lane, 14-foot wide outside shared use lane, and five to six-foot wide sidewalks with curb and gutter in each direction. The traffic lanes would be separated by a 42-foot wide raised central median. The median would reduce to 18-feet wide where turn lanes are proposed at select location. Specific median opening and turn lanes are currently proposed at the following cross-streets: Melissa Road, Harrison Street, Plano Street, Scott Street, Highland Road/Pennsylvania Avenue, Keever Main, Throckmorton Road, Collin County Outer Loop, CR 365/CR 421, CR 423, CR 422, Farm-to-Market Road (FM) 455, W. 7th Street, City of Anna Fire Department, W. 4th Street, Hackberry Lane, City of Anna Public Works/Water Tower (S), Fern Street, Anna Middle School driveways (two locations), Rosamond Parkway, Meadow Ridge Drive, Meadow View Lane, CR 371/CR 376, Rhett Road, Magnolia Street, Wilkes Court, Butler Street, City of Anna Public Works/Water Tower (N), and CR 373/CR 1106. The proposed ROW width varies from 94 to 200 feet wide with a usual ROW width of 140 feet. The proposed project would require the acquisition of approximately 43 acres of new (additional) ROW and 0.24 acre for proposed drainage easements. Drainage structures proposed at the eight water crossings along the length of the proposed project include one culvert extension, three MBCs, one RCP, and three reinforced concrete boxes (RCB). Refer to **Appendix A** for the Project Location Map, **Appendix C** for the Schematics and **Appendix D** for the proposed typical sections.

Bicycle and pedestrian facilities would be constructed as part of the proposed project. A 14-foot wide shared-use outside lane with 1.5-foot wide outside curb offset and 5 to 6-foot wide American with Disabilities Act (ADA) compliant sidewalk in both directions would be included throughout the entire project limit.

Logical termini for the proposed improvements to SH 5 are from SH 121 to CR 375. Within the logical termini, SH 5 is of independent utility because the proposed improvements can be accomplished without additional improvements in the proposed project area. The project limits encompass the entire length of the project in which construction would take place and account for transitions into the existing roadway.

The estimated total cost for the proposed project is $65.3 million. Approximately 80 percent of the total cost would be federally funded and approximately 20 percent would be state funded.

The proposed action is consistent with the NCTCOG's financially constrained MTP *Mobility 2040* and the 2017-2020 Transportation Improvement Program (TIP), as amended. Copies of the MTP and TIP pages are included in **Appendix E**.

3. Purpose and Need

3.1. Need

The proposed project is needed because the existing SH 5 within the project limits does not meet current design standards. For instance, the existing facility does not have designated turn lanes and is inadequate to meet future traffic volumes resulting in congestion and reduced mobility. The additional travel lane in each direction and turn lanes at designated locations would help alleviate these congestion issues and improve operations.

3.2. Supporting Facts and/or Data

According to Census 2000, the population of the City of Anna was 1,225. In 2010, the census reported a total population of 8,249, an increase of 573 percent over the 10-year period. During the same time period, the City of Melissa increased its population from 1,350 to 4,695, an increase of 248 percent. According to the Texas Water Development Board water planning population projections for 2040, the City of Anna is expected to increase to 22,984 and the City of Melissa is expected to increase to 13,216, increasing by 179 and 182 percent, respectively.

The demand along SH 5 within the project limits has grown substantially over the years and is expected to grow from 15,800 average daily traffic (ADT) in 2016 to 23,500 ADT in 2036; an increase of 50 percent. Additional travel lanes would help alleviate congestion.

TxDOT's *Congestion 2012 Map* (*http://ftp.dot.state.tx.us/pub/txdot-info/tpp/maps/2012-congestion.pdf*) and *Congestion 2032 Map* (*http://ftp.dot.state.tx.us/pub/txdot-info/tpp/maps/2032-congestion.pdf*) identify SH 5, within the project limits, as moderately congested during the peak hour. As shown in **Table 1** below, the 2014 *Urban Saturation Maps* from TxDOT identified much higher traffic volumes along SH 5 from SH 121 to northern Anna which is home to several residential subdivisions. Based on the annual ADT's presented in **Table 1**, it appears that approximately one-half of the motorists that enter SH 5 from SH 121 use SH 5 to reach destinations in Melissa and Anna, and the other half use SH 5 to reach destinations beyond Anna and Collin County. The additional travel lane in each direction would help alleviate congestion along this stretch of SH 5.

Table 1: Traffic Volumes

Location along SH 5	Annual ADT
Just north of SH 121 in Melissa	7,444
Between Cooper Street and Harrison Street in Melissa	7,594
Just north of CR 365	6,646
Just south of FM 455 in Anna	6,637
Between W. 4th St. and W. 3rd St. in Anna	7,772
Just south of W. Rosamond Pkwy. in Anna	6,920
Just south of CR 375/CR 377	3,271

Source: 2014 Dallas District Urban Traffic Map (2015), http://ftp.dot.state.tx.us/pub/txdot-info/tpp/traffic_counts/saturation/2014/dal-base.pdf.

3.3. Purpose

The purpose of the proposed project is to reduce congestion and improve mobility.

4. Alternatives

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

4.1. Build Alternative

As currently proposed, the Build Alternative (**Section 2.2**) would involve the expansion of SH 5 from a two-lane rural roadway to a four-lane divided urban roadway with turn lanes, and bike and pedestrian facilities. Approximately 43 acres of additional ROW and 0.24 acre for drainage easements would be required for the Build Alternative. The Build Alternative would meet the proposed project's purpose and need by increasing capacity to accommodate current and future projected traffic volumes; therefore, facilitating congestion management and improving mobility in the proposed project area. Additionally, based on design year traffic volumes and coordination with local officials (City of Melissa, City of Anna, Melissa ISD, Anna ISD, and Collin County), specific median openings and right- and left-turn lanes would be incorporated into the Build Alternative at select cross streets mentioned in **Section 2.2**. These proposed improvements would allow the roadway to meet current design standards.

The major design features of the proposed project include:

- The construction of an additional lane in each direction of SH 5 with curb and gutter. The proposed design would include 14-foot wide outside lanes designed as a shared-use lane for vehicles and bicycles. The construction would also include five- to six-foot wide sidewalks throughout the length of the project on both sides.
- Some intersecting streets that have severe skews are being reconstructed to provide for a 90-degree (perpendicular) intersection for improved sight distance. Additional changes are proposed at the following locations:
  - Extension of Scott Street: Scott Street, in the City of Melissa, would be extended east of SH 5 on new location where it would terminate at its proposed intersection with N. Central Street. A median opening in SH 5 would be provided at Scott Street. This would provide access to and across SH 5 for those who utilize and/or are located along N. Central Street where the current access to SH 5 would be replaced with a cul-de-sac. The Scott Street extension is approximately 500 feet in length and would not result in any structural impacts or displacements.
  - Addition of a cul-de-sac on N. Central Street: As previously discussed, the current access to SH 5 would be replaced with a cul-de-sac. Existing through traffic at this location on N. Central Street is approximately 700 ADT. In order for motorists northbound on

N. Central Street to reach CR 365/Highland Road, they would take the proposed Scott Street extension to SH 5, turn right, and then take the first left at the median opening to CR 365/Highland Road. Those residing along N. Central Street between the Scott Street extension and SH 5 would have to travel a greater distance to reach CR 365/Highland Road. They would, on average, have to travel an additional 2,300 feet (0.4 mile) to reach CR 365/Highland Road.

- Reroute/intersection realignment at Highland Road/CR 365: The existing intersection between SH 5 and Highland Road/CR 365 would be realigned to remove the skewed intersection. The new intersection would be located approximately 200 feet north of its current location and provide improved visibility for those traveling between Highland Road/CR 365 and SH 5. The existing Highland Road/CR 365 pavement between SH 5 and the realigned portion of Highland Road/CR 365 would be removed. Note that while the schematic depicts a driveway between Highland Road/CR 365 and the Village of Melissa Town Center, it is not a valid/official driveway.
- Two reroutes/intersection realignments at CR 423: The existing intersections between SH 5 and CR 423 would be realigned to remove the skewed intersections. The southernmost new CR 423 intersection would be located approximately 700 feet north of its current location and the northernmost new CR 423 intersection would be located approximately 200 feet south of its current location. Both improved intersections would provide improved visibility for those traveling between CR 423 and SH 5. The existing CR 423 pavement between SH 5 and the realigned portions of CR 423 would be removed.

The proposed project is consistent with local and regional land use and transportation plans and policies in the area. It would improve mobility and reduce congestion in the proposed project area and facilitate reliable emergency response.

4.2. No-Build Alternative

Under the No-Build Alternative, the proposed SH 5 project would not be constructed. The No-Build Alternative would not require the conversion of approximately 43.24 acres from existing land uses to transportation use (ROW) nor would other project-related impacts occur. The No-Build Alternative would not aid in congestion management. Consequently, the anticipated mobility benefits of the proposed project would not be realized and conditions in the SH 5 corridor would continue to deteriorate. For this reason, the No-Build Alternative does not meet the need and purpose for the proposed improvements and is not the recommended alternative. However, the No-Build Alternative was carried forward for further analysis.

4.3. Preliminary Alternatives Considered but Eliminated from Further Consideration

No other alternatives were identified.

5. Affected Environment and Environmental Consequences

In support of this EA, the following technical reports and documents were prepared:

- Air Quality Assessment Technical Report
- Archeological Background Study
- Archeological Survey Report
- Biological Resources Technical Report
- Community Impacts Assessment Technical Report
- Hazardous Materials Initial Site Assessment Report
- Project Coordination Request for Historical Studies Project
- Report for Historical Studies Survey

- Indirect and Cumulative Impacts Analysis
- Traffic Noise Technical Report
- Water Resources Technical Report
- Checklist for Section 4(f) *De Minimis* for Public Parks, Recreation Lands, Wildlife & Waterfowl Refuges, and Historic Properties

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

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

5.1. Right-of-Way/Displacements

Build Alternative: The Build Alternative would require the acquisition of approximately 43 acres of additional ROW and 0.24 acre of proposed drainage easements (**Appendix C**). There would potentially be nine residential structures displacements (six single-family homes, one duplex, one manufactured home, and one mobile home), five commercial building displacements, two storage buildings (a shed and barn), one publicly owned structure, and two churches (Calvary Ministry Center and Mission Outreach and the Breaking Free Church) displacements associated with the Build Alternative (**Appendix F: Project Resource and Land Use Map**). The proposed project would convert approximately 43 acres of residential, commercial, agriculture, and undeveloped land into transportation ROW and 0.24 acres for drainage easements. Refer to the *Community Impacts Assessment Technical Report* for the detailed analysis of the potential displacements associated with the Build Alternative.

ROW acquisition would be limited to those properties required for roadway construction. Encroachment-alteration effects could include the loss of income from sales tax for the cities should the impacted businesses not relocate within their current community. In relation, should displaced persons choose to relocate elsewhere, local businesses would likely lose their patronage. Also, should an impacted business choose not to relocate, the community would lose access to the service provided by that business.

The following are the avoidance, minimization, or compensatory mitigation features or mitigations conducted/analyzed for the Build Alternative:

- Potential displacements were minimized by avoiding impacts to structures where possible and using available vacant or open land where practicable. Constraints were mapped and used in the planning process to avoid important resources such as cemeteries, places of worship, public facilities, and other various resources. ROW impacts were minimized, where possible, with the use of retaining walls and steeper side slopes.
- TxDOT offers relocation assistance to all individuals, families, businesses, farmers, ranchers and non-profit organizations displaced as a result of a state highway or other transportation project. In order to assist those who are required to move, TxDOT provides, through its relocation program, payments and services to aid in movement to a new location. This assistance applies to tenants as well as owners occupying the real property for an orderly, timely and efficient move. A relocation counselor would contact the affected property owners and tenants.
- ROW acquisition and relocation would be conducted in accordance with the Federal Uniform Relocation and Real Property Acquisition Policies Act of 1970 (Uniform Act).

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

5.2. Land Use

Along SH 5 within the City of Melissa, existing land use is vacant (agricultural), single-family residential, industrial, parks and open spaces, commercial, retail, and manufactured homes (*City of Melissa Existing Land Use Map*, 2005). Along SH 5 within the City of Anna, existing land use is agricultural, single-family residential, multi-family residential, mobile homes, public/semi-public, commercial, school lands, industrial, and vacant undeveloped (*City of Anna Existing Land Use Map*, 2010). Along SH 5 outside of city limits, land use types include agricultural, single-family residential and undeveloped or vacant land.

No cemeteries are located within the proposed project study area. Three Texas Historical Commission (THC) historical markers are found within the study area. The Saint Paul Baptist Church marker (No. 6198) is located on the southwest corner of SH 5 and East Melissa Road in Melissa. The Scott-Barker House marker (No. 13770) is located on the northwest corner of SH 5 and Harrison Street in Melissa. The Scott-Barker House is also a Recorded Texas Historic Landmark (RTHL). The Site of Collin McKinney Homestead marker (No. 11687) is located on the east side of SH 5, approximately 1,300 feet south of CR 373 in Anna. The historical markers are identified in **Appendix F**.

The Melissa Zadow Community Park is located in Melissa on the west side of SH 5. A park associated with the recently constructed Town Center in the Villages of Melissa is also found within the study area on the west side of SH 5 between Surrey Street and Scott Street. A covered seating area associated with the Melissa Hike & Bike Trail is located on the northwest corner of SH 5 and Fannin Road within the study area. In Anna, there are no existing parks or trails within the proposed project study. The parks and covered seating area are identified in **Appendix F**.

One school is located adjacent to SH 5. Anna Middle School is located on the west side of SH 5 between Fern Street and Rosamond Parkway. The school is identified in **Appendix F**.

A United States Post Office is located adjacent to the proposed improvements on the east side of SH 5, south of FM 455 in Anna. City facilities within the proposed project study area include the Melissa City Hall and Public Library; Anna Fire Department; Anna Police Department; Anna City Hall; and the Anna Public Works, Planning & Development, and Parks Departments facility. These facilities are identified in **Appendix F**.

There are eight water crossings within the proposed project corridor. Water bodies crossed by the proposed project include Fitzhugh Branch, as well as tributaries associated with Fitzhugh Branch, Clemons Creek, Throckmorton Creek, Slayter Creek, and Sweetwater Creek. The tributary to Slayter Creek crossing is within the 100-year floodplain. Water crossings and the 100-year floodplain are identified on **Appendix F**.

Two segments of SH 5 along the proposed project limits are paralleled by a 24-inch water transmission line. One segment is located north of Melissa, along the east side of SH 5 from approximately midway between Central Street/CR 365 and Private Road 5039 to just north of CR 422. The second segment is located north of Anna, along the east side of SH 5 from approximately midway between Meadow Ridge Drive and Meadow View Lane thru CR 375/CR 377. The water transmission line, which is operated by the Greater Texoma Utility Authority, is located approximately five feet east of the existing eastern ROW boundary along SH 5 for the duration of the two previously discussed segments.

Build Alternative: The proposed project was evaluated for consistency with the cities of Melissa and Anna's comprehensive plans, which identify SH 5 as a roadway "expansion corridor".

The proposed ROW acquisition and associated structural displacements could influence land use changes along the proposed project corridor. For example, should a residential or commercial structure be displaced, the remaining property may no longer identify with that land use, may be altered, or remain vacant.

The land use changes associated with the proposed project do not conflict with the goals of the City of Melissa's 2015 *Comprehensive Plan Update* or the City of Anna's *Comprehensive Plan 2010-2030,* would not delay or interfere with any other planned improvements, and are consistent with applicable laws; therefore, no mitigation is warranted.

No-Build Alternative: Under the No-Build Alternative, the additional ROW would not be obtained and there would be no SH 5-related land use impacts.

5.3. Farmlands

Observations made during the site reconnaissance on September 8, 2016 revealed that active agricultural lands exist adjacent the proposed project.

The Natural Resources Conservation Service (NRCS) Web Soil Survey was used to determine the soil types present within the proposed project area. Soils determined to be within the existing and proposed ROW, and proposed easements are listed in **Table 2**.

Table 2: Soil Types within Proposed Project Area

Soil Type	Farmland Classification
Austin silty clay, 1 to 3 percent slopes	Farmland of statewide importance
Austin silty clay, 2 to 5 percent slopes, eroded	Not prime farmland
Austin silty clay, 5 to 8 percent slopes, eroded	Not prime farmland
Eddy gravelly clay loam, 1 to 3 percent slopes	Not prime farmland
Eddy gravelly clay loam, 3 to 8 percent slopes, eroded	Not prime farmland
Houston Black clay, 0 to 1 percent slopes	All areas are prime farmland
Houston Black clay, 1 to 3 percent slopes	All areas are prime farmland
Stephen silty clay, 1 to 4 percent slopes	Not prime farmland
Stephen-Eddy complex, 2 to 5 percent slopes	Not prime farmland

Source: NRCS Web Soil Survey, http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx, accessed August 30, 2017.

Build Alternative: In compliance with the Farmland Protection Policy Act (FPPA) of 1981, Farmland Conversion Impact Rating Form NRCS-CPA-106 was completed because the proposed project would convert farmland subject to FPPA to a non-agricultural, transportation use. According to the NRCS, even though the proposed site involves areas for Prime Farmland, they now consider the location of the proposed corridor to be "land committed to urban development" due to its location within the city limits of Melissa and Anna, Texas. As a result, this project is exempt from provisions of the FPPA. Refer to the supporting documentation for the *Biological Evaluation Form* for a copy of Form NRCS-CPA-106.

Farmland impacts would be limited to areas directly adjacent to the existing SH 5 project corridor and would not result in the division or separation of existing agricultural land. Farmlands would continue to function as they do under existing conditions; therefore, encroachment-alteration effects stemming from farmland impacts are not anticipated as a result of the Build Alternative.

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

No-Build Alternative: Under the No-Build Alternative, the additional ROW/easement would not be obtained and there would be no SH 5-related farmland impacts.

5.4. Utilities/Emergency Services

The existing utilities along the proposed project include television cables, fiber optic cables, electrical cables, telephone cables, storm sewer lines, water lines, and gas lines. The proposed project area is currently served by the Melissa and Anna's Fire Departments and Police

Departments. Anna's Fire and Police stations are located along SH 5. There are no hospitals in the cities of Melissa and Anna. The closest hospital is located approximately seven miles south of Melissa and 12 miles south of Anna along SH 121 in the City of McKinney.

Build Alternative: At this time, utility adjustments are anticipated, but the exact locations of utilities have not yet been determined. Detailed information on the utility lines would be evaluated during the detailed 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 detailed design phase.

The proposed project would improve mobility and safety in the proposed project area and is anticipated to improve emergency response times. Changes in access to area hospitals as a result of the proposed improvements is not anticipated. While the additional travel lanes would be expected to improve mobility and therefore emergency response times, the introduction of a raised median may have an effect on response times. The distance between median openings varies from approximately 400 feet to 5,150 feet with a typical distance between 800 feet and 1,100 feet. Where median openings are not available, emergency response vehicles would have to continue to the next available median opening and conduct a U-turn. Median openings along the length of the proposed project area frequent, but depending on where an incident is located, the response time may be improved or slightly hindered. The cities of Melissa and Anna, and associated emergency responders, have been and will continue to be kept abreast of the progress of the proposed design and involved in public involvement activities. In all likelihood, emergency responders would be required to study the proposed improvements and associated median openings, roadway realignments and closures with cul-de-sac prior to project implementation.

During construction, project-related delays would be anticipated for emergency services; however, every reasonable effort would be made to minimize delays. Roadway closures are not anticipated; however, traffic patterns would be temporarily affected with alternating lane closures, temporary reductions in lane widths, and reduction in speed. During construction, temporary lane closures would be kept to a minimal length and time. Access would be maintained to adjacent properties during construction.

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

No-Build Alternative: Under the No-Build Alternative there would be no project-related impacts to utilities. Emergency service response would continue to be hindered by heavy congestion and unreliable travel times associated with congestion.

5.5. Bicycle and Pedestrian Facilities

Build Alternative: In accordance with TxDOT's policy for bicycle and pedestrian accommodation and a federal policy statement on Bicycle and Pedestrian Accommodations Regulations and Recommendations by the U.S. Department of Transportation signed on March 11, 2010, the inclusion of bicycle and pedestrian facilities would be considered as part of the proposed project. Bicycle and pedestrian facilities would be constructed as part of the 8.58-mile long proposed project (**Appendix C – Schematics** and **Appendix D – Typical Sections**). Bicycle traffic would be accommodated with 14-foot wide outside shared-use lanes with 1.5-foot wide outside curb offsets. Five to six-foot wide ADA-compliant sidewalks would be included along the entire project limit.

There is the potential for the proposed project area to experience changes in the mode(s) of transportation utilized by area residents and traffic volumes. Residents travelling locally may opt to take advantage of the new bike and pedestrian facilities in lieu of their driving their vehicle.

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

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

5.6. Community Impacts

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

The CIA study area is comprised of five census block groups that encompass the proposed project area. The CIA study area is in Collin County and is located in the municipalities of Melissa and Anna. The CIA study area is mostly residential and pasture/agricultural land.

The proposed improvements to SH 5 would increase capacity, improve mobility, alleviate congestion, and improve traffic safety. Additionally, bike/pedestrian facilities would be introduced along the proposed project, providing improved access/use of the proposed project area for members of the bike/pedestrian community. These proposed improvements would make it easier and safer for people to travel within their community and interact with other members of their community. These effects from the proposed project will lead to improved community cohesion because area residents and workers will be better able to venture out into their community, patronize local businesses, and interact with other community members and business patrons. Additionally, bike/pedestrian facilities in Melissa and Anna are limited primarily to residential subdivisions and streets in close proximity to schools. The introduction of bike/pedestrian facilities along SH 5 would make it easier for cyclists/pedestrians to reach existing bike/pedestrian facilities and connect with other community members. The introduction of bike/pedestrian facilities for the proposed SH 5 project in combination with city planned and existing bike/pedestrian facilities may help establish or enhance a bike/pedestrian community in Melissa and Anna, further improving cohesion among community members. Negative impacts to community cohesion resulting from the implementation of the proposed project are not anticipated.

Access and travel patterns along SH 5 would be permanently impacted for many adjacent properties and motorists due to the introduction of a raised median. This would permanently change the access, distance, and time traveled for many properties/residents along SH 5 within the project limits. Namely for those traveling on one side of the roadway but wanting to access a property on the opposite side of the roadway. In most cases, motorists would have to continue past their destination, then conduct a U-turn at the next available median opening and track back to their destination. The distance between median openings varies from approximately 400 feet to 5,150 feet with a typical distance between 800 feet and 1,100 feet. Note that exact locations of median openings are not finalized and will be determined during detailed design in cooperation with the project area municipalities. Additional access changes include the extension of Scott Street on new location east of SH 5 to Central Street; the termination of Central Street at SH 5 in the form of a cul-de-sac; the realignment of CR 365 and CR 423 intersections with SH 5; and the relocation/closure of various driveways to properties along SH 5. Note that all properties currently having access to SH 5 would continue to have access upon completion of the proposed expansion. This applies to all properties, including those used for agricultural purposes. Community facilities impacted by access and travel pattern changes include the Melissa Middle School, Zadow Park, Melissa City Hall, and Anna City Hall. The changes are a result of the raised median and would require employees, students, and other motorists destined for these facilities to alter their routes. Emergency responders would also have to become familiar with access and

travel pattern changes resulting from the proposed project. The additional travel lane in each direction is anticipated to improve response times, while the raised median may hamper response time, depending on where the incident is located. There are currently no bike/pedestrian facilities along SH 5. Few intersecting side/through streets have bike/pedestrian facilities. They would not be impacted by the proposed project. The proposed project would include bike/pedestrian facilities along the length of SH 5 within the project limits. This would improve access to the area for those that opt to walk/bike instead of drive. The proposed roadway would ultimately provide motorists, pedestrians, and cyclists a more efficient and safer route to move within and through the proposed project area.

The proposed project could also alter travel patterns to its surrounding region. Some area residents may avoid SH 5 in the project area due to poor traffic conditions. Motorists may instead utilize area roadways that parallel SH 5. The proposed project would improve traffic flow conditions in the area and may result in these motorists once again utilizing SH 5.

Substantial adverse impacts to the community resulting from the potential displacements associated with the proposed project are not anticipated. Nine residential, five commercial, two storage buildings (a shed and barn), one publicly owned structure, and two churches would potentially be displaced or relocated as a result of the proposed project. For the residents being displaced, there is comparable replacement housing available within the immediate surrounding community for them to relocate. One of the residential structures is a mobile home and another is a manufactured home, so the owners may choose to relocate those structures elsewhere in the community. Some potentially displaced structures may be able to be relocated elsewhere on the impacted properties. Also, opportunities exist within the communities for the potentially displaced residents and businesses to relocate. Melissa and Anna have several vacant parcels and structures that are available which gives the displaced residents and businesses options to rebuild within the CIA study area. All potential displacements are located adjacent to SH 5. If the businesses opt to relocate elsewhere, patrons of the impacted businesses will have other options and alternatives to patronize within the CIA study area. Although the cities of Melissa and Anna are smaller, they offer an array of commercial facilities comparative to the businesses potentially being displaced by the proposed project. Adversely, the potentially displaced residents and businesses may opt to relocate outside of the community and take their patronage and services elsewhere.

The property for Calvary Baptist Church has two structures. One that would potentially be displaced and one that would not. However, the church may be able to continue to operate as it does currently. The Calvary Ministry Center and Mission Outreach may be able to relocate to the church structure or elsewhere in the community. The food pantry is located in the northernmost, main building that is not a potential displacement. Additionally, the Calvary Baptist Church property would be bisected by the proposed realignment of CR 423 at SH 5. A median opening would be provided at this intersection. Southbound SH 5 motorists can access the church via a driveway from SH 5 to the parking lot. Northbound SH 5 motorists would turn left at the new intersection with CR 423. There would be a median opening and access the church via a driveway on CR 423. A portion of the parking lot would be impacted, but it is unknown how many spaces this parking area provides. The only parking spaces clearly marked are those for handicapped parking. These would not be impacted. Some parking would continue to be available on all sides of the building.

The Breaking Free Church currently rents the structure in which it is located. There are several residential and commercial properties available for sale and lease in Anna, should they opt to relocate within the same community. A small portion of the parking lot would be impacted, but it is unknown how many spaces this parking area provides. However, parking would continue to be available on the property. If these facilities opt to close or relocate outside of the community, there are approximately 10 other churches in Anna available for local members to attend, should they choose not to commute to the new location(s). Of these, one is Apostolic; five are Baptist; one is

Christian; two are non-denominational; and one is United Methodist. However, should the churches relocate outside of the community, members of the congregations may choose to endure a longer commute in order to stay with their church before they would consider switching churches.

The proposed improvements would not affect, separate, or isolate any distinct neighborhoods, ethnic groups, or other specific groups. No residential neighborhood would be separated or divided by the proposed project. Positive impacts to residential communities would include improved mobility and accessibility throughout the CIA study area and to surrounding communities.

The proposed project would provide a positive impact to the short-term employment opportunities in the area and future development of facilities that would provide long-term employment opportunities. In the long-term, the entire community would benefit from the proposed project with improved mobility and connectivity to surrounding areas.

Negative impacts to residential areas associated with the proposed project could be attributed to traffic noise impacts, changes in aesthetics, and/or temporary construction impacts. Project area residents not located directly adjacent to SH 5 may experience negative impacts associated with temporary construction impacts of the proposed improvements. Motorists travelling within or through the proposed project area may alter their existing routes to utilize parallel side streets in order to avoid SH 5 construction areas. This could lead to a temporary increase in traffic volumes on side streets.

Encroachment-alteration effects could include improved connectivity due to the introduction of shared-use lanes and sidewalks between rural areas and central Melissa and Anna. These would be beneficial for residents and non-residents that utilize non-motorized transportation. On a negative side, the improved connectivity may leave current residents with the concern that they are losing their rural, “country living” environment.

The proposed improvements to SH 5 do not conflict with the goals of the cities of Melissa and Anna’s Comprehensive Land Use Plans, would not delay or interfere with any other planned improvements, and are consistent with applicable laws. Therefore, no mitigation is warranted.

Everything possible would be done to minimize the inconvenience to motorists in the proposed project area during construction.

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

5.6.1. Environmental Justice

A detailed discussion of the Environmental Justice (EJ) can be found in the *CIA Technical Report* for the proposed project.

The 2010 Census data was utilized to identify minority populations. The smallest geography unit for which minority population data is available is the Census block. Within the CIA study area, 468 Census blocks were identified. Of the 468 blocks identified, 207 have no recorded population. The total recorded population of the 261 blocks is 13,856. Of these, 72 percent are White; 18.1 percent are Hispanic or Latino; 6.1 percent are Black alone; 2.0 percent are Two or More Races; 0.9 percent are American Indian alone; 0.7 percent are Asian alone; 0.1 percent Native Pacific Islander alone; and 0.1 percent are some other race alone.

The 2011-2016 American Community Survey (ACS) data was utilized to identify median household income. The smallest geography unit for which median household income data is available is the Census block group. Of the five Census block groups, none have a median household income below the Department of Health and Human Services poverty level of $25,100. Two of the block groups had no households with income below the poverty level. The median household incomes of the five Census blocks groups range from $63,165 to $125,556.

Build Alternative: The proposed project would be consistent with Executive Order (EO) 12898 and Federal Highway Administration (FHWA) Order 6640.23. In 2010, 21 blocks reported populations above 50 percent for minority populations. None of the CIA study area block groups and tracts reported populations above 50 percent for minority populations.

Two of the nine potential displacements occur within an EJ census block with predominantly minority population (greater than 50 percent). These potential displacements are the Calvary Ministry Center at 2710 S. Powell Parkway (Census block 4069) and the Mission Outreach and the Breaking Free Church at 501 N. Powell Parkway (Census block 1004). The building and parking spaces would be displaced at the Calvary Ministry Center and Mission Outreach. A front patio structure would be displaced at the Breaking Free Church. The structure is located within the proposed ROW. The minority population in the Census blocks in which these two properties are located is primarily Hispanic or Latino. However, based on information available on the church websites and observations made during site visits (no Spanish signage), these churches do not appear to specifically serve Hispanic or Latino populations.

There are several resources in the project area that serve vulnerable populations. According to a Calvary Baptist Church representative, their food pantry serves approximately 12 low-income families from area communities per month. The food pantry is located in the main, northernmost building that is not a potential displacement. The regeneration programs offered by Breaking Free Church are aimed at young men and women ages 18 to 25 who suffer from addiction. The programs are open to all races and income levels. Other programs offered, such as the Servant Leadership Training, are open to everyone.

It is anticipated that the project would have residential displacements but none are in census blocks reported to have minority populations. Changes to access and travel pattern would occur throughout the project area but are not concentrated in areas identified as EJ census blocks. Although there would be displacements and an increase in travel time and routes, there are many benefits anticipated for the community including the minority and low-income populations. The project would improve mobility, efficiency, and safety through the corridor and provide bicycle and pedestrian facilities that do not currently exist. Based on this information impacts from the project are not anticipated to be disproportionately high or adverse for EJ populations.

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

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

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

A detailed discussion of the Limited English Proficiency (LEP) populations can be found in the *CIA Technical Report* for the proposed project.

According to 2011-2016 ACS data four of the five Census block groups that comprise the CIA study area contain persons who speak English "less than very well". The percent LEP for the four block groups that contain persons who speak English "less than very well" ranges from 3.6 percent to 13.3 percent. In block groups 1, 2, and 4, all persons with LEP speak Spanish while in block group 3, all persons with LEP speak other Indo-European languages.

A windshield survey during the field visit on September 8, 2016 indicated signage within the CIA study area is presented in English. Signage in a non-English language was not observed.

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

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

Reasonable steps have been and will continue to be taken in the NEPA process to ensure that LEP persons have meaningful access to the programs, services, and information TxDOT provides. The legal notice for the July 15, 2014 public meeting was published in the Spanish language newspaper, *Al Día*, as well as two English language newspapers. All Legal Notices published in English language newspapers provided contact information for persons interested in attending the meeting who had special communication/accommodation needs. Meeting notices mailed to elected officials, adjacent property owners, and previous public involvement attendees were in both English and Spanish. A project team member fluent in Spanish was available at the public meeting to provide communication assistance to Spanish-speaking attendees. The public meeting comment form was provided in both English and Spanish. No requests for translation services or materials in other Indo-European languages was made. However, should these requests be made, TxDOT will make a reasonable effort to provide assistance in the appropriate other Indo-European language. The previously discussed accommodations would be repeated for the public hearing.

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

5.7. Visual/Aesthetics Impacts

SH 5 is an existing undivided two-lane roadway with no bicycle/pedestrian facilities within the project limits. Overhead lighting is present along SH 5 between W. Fannin Road to N. Central Street and from Cunningham Boulevard to W. Rosamond Parkway. Vegetation in the ROW consists primarily of maintained grasses with minimal tree cover. Aesthetic enhancement of the existing roadway is minimal. The roadway is a dominant visual feature in the proposed project area.

Build Alternative: The proposed project is not anticipated to impact existing landscaping or other aesthetic features. Landscaping would not be included as a part of the proposed project. Existing overhead lighting impacted by ROW acquisition and the widening of the existing roadway would be relocated.

The proposed project entails improvements/widening of an existing visual element (SH 5) rather than introducing a new visual element into the environment; thus, visual encroachment-alteration effects are not anticipated.

The proposed project is not anticipated to adversely affect aesthetics; therefore, mitigation is not warranted.

No-Build Alternative: The No-Build Alternative would not result in SH 5 project-related visual impacts along the existing corridor as the proposed improvements would not be constructed.

5.8. Cultural Resources

Cultural resources are structures, buildings, archeological sites, districts (a collection of related structures, buildings, and/or archeological sites), cemeteries and objects. Both federal and state laws require consideration of cultural resources during project planning. At the federal level, NEPA

and the National Historic Preservation Act (NHPA) of 1966, among others, apply to transportation projects such as this one. In addition, state laws such as the Antiquities Code of Texas apply to these projects. Compliance with these laws often requires consultation with the THC/Texas State Historic Preservation Officer (SHPO) and/or federally recognized tribes to determine the project's effects on cultural resources. Review and coordination of this project followed approved procedures for compliance with federal and state laws.

5.8.1. Archeology

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

Background research for this project consisted of an online records search through the THC's Archeological Sites Atlas (Atlas; 2016) and a review of historical maps and aerial photographs. Research focused on the identification of archeological sites, sites listed as SALs, RTHLs, sites listed on the NRHP, cemeteries, and previously conducted archeological surveys within 0.62 mile (one kilometer) of the Area of Potential Effects (APE). The APE for archeological resources is defined as the footprint of the proposed project to the maximum depth of impact, including all easements, and project specific locations. The search identified nine previously conducted archeological surveys, six documented archeological sites, two cemeteries, two RTHLs, and seven Historical Markers. The only resources immediately adjacent to the APE is the marker for the Saint Paul Baptist Church (recent land use mapping indicates this marker has been removed from its original location) and the RTHL marker which identifies the location of the Scott-Barker residence, now the Chamber of Commerce for the City of Melissa. Additionally, three archeological surveys cross the APE. See the *Archeological Background Study: State Highway 5* report for detailed information on the previously listed sites and surveys.

In March 2017, TxDOT-certified archeologists conducted an archeological survey along the proposed project limits. The archeological survey was conducted to comply with Section 106 of the NHPA and the Antiquities Code of Texas. Work was performed under Antiquities Permit No. 7889. Archeologists surveyed the entire existing ROW and the proposed new ROW on private property wherever access was available. Archeologists visually inspected the entire APE and excavated 50 shovel tests in support of the project. Six new archeological sites were documented: sites 41COL284, 41COL285, 41COL286, 41COL287, 41COL288, and 41COL289. In addition, three localities were located and described. All of the sites are historic-age, early to mid-twentieth century, and are associated with the communities of Melissa and Anna. Of the six sites, two (41COL287 and 41COL288) were identified in areas where access was unavailable due to lack of ROE. In these cases, each site was denoted by the presence of an intact building foundation in addition to vegetation and/or features that signaled a former building once stood in each location. The historic age of these buildings was confirmed by a review of a 1952 aerial photograph. The remaining sites were discovered through both a visual inspection of the ground surface and shovel testing. None of the sites are recommended for further NRHP or SAL eligibility evaluation within the APE for the proposed project, as no surface features or significant subsurface material was found within the proposed ROW or easements. The SHPO concurred with this assessment in a letter dated August 3, 2017 (**Appendix G**). See the *Archeological Survey: State Highway 5* report for detailed information.

Build Alternative: It is not anticipated that the proposed project would result in direct impacts to known archeological resources. In the unlikely event that cultural resources are discovered during construction of the proposed project, TxDOT would immediately initiate cultural resource discovery procedures. All work in the vicinity of the discovery would cease until a specialist from TxDOT

and/or the THC could arrive on site and assess the discovery's significance and the need, if any, for additional investigation.

Consultation with federally-recognized Native American tribes was initiated on April 27, 2016 and concluded May 11, 2016. No objections or expressions of concern were received. See **Appendix G** for the tribal coordination documentation.

Potential impacts to archeological resources would be limited to the construction phase of the project and confined to the existing and proposed ROW/easements; thus, encroachment-alteration effects would not occur.

No mitigation would be required. It is not anticipated that the proposed project would result in direct impacts to known archeological resources.

No-Build Alternative: As construction of the proposed SH 5 project would not occur, there would be no SH 5 project-related impacts on archaeological resources associated with the No-Build Alternative.

5.8.2. Historic Properties

TxDOT historians reviewed the NRHP, SAL, Recorded Texas Historic Landmarks (RTHL), and TxDOT files and found the Scott-Barker House to be previously documented as RTHL (1999) within the APE. The TxDOT Section 106 Programmatic Agreement (PA) APE for the proposed project is 150 feet from the proposed new ROW and easements.

Build Alternative: The *Report for Historical Studies Survey, CSJ 0047-04-022 State Highway (SH) 5 North, Collin County, Dallas District August 18, 2017* evaluated 21 historic age resources, including 94 residential properties (including former farmsteads no longer possessing an active agricultural component), three religious, 11 commercial, four civic, seven agricultural, and two industrial properties. TxDOT historians agree with the recommendations of the report and determine four properties as eligible:

- Anna Queen Anne House/#27, C-Architecture (NHRP Criterion)/Local (Level), No Impact
- Powell Cotton Gin/#44, A-Industry/Local, No Impact
- Melissa Queen Anne House/#94, C-Architecture/Local, No Impact
- Scott-Barker House/#102, C-Architecture/Local, Direct Impact

The remaining 107 historic age resources are determined not eligible.

NRHP eligible property
The Scott-Barker House (Map ID 102) is located at 1501 W. Harrison Street in Melissa, Texas. The circa 1875 two-story gable front and wing house (102A) has Queen Ann and "folk Victorian" details. The large house is of wood construction on a pier and beam foundation with wood horizontal siding. The NRHP eligible boundary is the current 1.6-acre parcel. The outhouse (102C) may be circa 1921 and contributes to the historic property. The gazebo (102B) and fencing (no ID) were reconstructed outside the historic period (1983) and are considered noncontributing features of the historic property.

The Scott-Barker House is determined eligible under Criterion C-Architecture at the local level. The Scott-Barker House retains integrity of the aspects of Location, Design, Materials and Workmanship. The Scott-Barker House no longer possesses the aspects of Setting, Feeling and Association. The Setting, Feeling and Association aspects are diminished because the surrounding land use patterns transitioned from rural agricultural to suburban single-family homes. Overall, the Scott-Barker House retains the satisfactory aspects for eligibility under Criterion C-Architecture at the local level.

The Scott-Barker House has no known associations with significant historic events, trends or people. The Scott and Barker families were prominent, but the family's associations to Melissa do not rise to the level required to be significant. The Scott-Barker House once belonged to a larger farmstead and reduced to its current 1.6 acres. The Scott-Barker House no longer possesses the tangible evidence of how the people occupied, developed, or used the land as a farmstead. Therefore, the Scott-Barker House is not eligible under Criteria A or B.

Determination of No Adverse Effect

Direct Effect: The NRHP eligible Scott-Barker House parcel would receive a direct effect due to the needed ROW for the proposed project. Currently the Scott-Barker House is located 40 feet from TxDOT ROW. TxDOT requires approximately 0.14 acre of proposed new ROW from the 1.6-acre parcel (8.8 percent of the total acreage) moving the roadway 20 feet closer along the side of the historic property. The roadway's movement closer to the property does not diminish the aspects of Location, Design, Material, and Workmanship, which are the aspects that support Its eligibility under Criterion C-Architecture. The Scott-Barker House no longer possesses the aspects of Setting, Feeling and Association.

Indirect Effect: The proposed project activities do not impair aesthetic features or attributes of the historic property in a substantially visual way. The construction of a roadway requiring the minor acreage (8.8 percent) and closer distance {20 feet) along the side of the property do not affect the aspects of Location, Design, Materials, or Workmanship for which the historic property is eligible. TxDOT place a noise receiver in close proximity to the Scott-Barker House and determined no noise effects.

Cumulative Effect: Project activities pose no foreseeable cumulative adverse effects to the Scott-Barker House again due to distance of approximately 20 feet from contributing resources. The expansion of SH 5 does not affect the aspects of integrity for which the historic property is eligible.

In accordance with 36 CFR 800 and Section 106 PA for Transportation Undertakings (December 2015), TxDOT initiated consultation with THC on February 15, 2018. The SHPO concurred with the determination of no adverse effect to the NRHP eligible Scott-Barker House on March 12, 2018. See **Appendix G** for the coordination documentation.

No-Build Alternative: As construction of the proposed SH 5 project would not occur, there would be no SH 5 project-related impacts on historic properties associated with the No-Build Alternative.

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

Build Alternative: The proposed project would not use any lands protected by Section 6(f) of the Land and Water Conservation Fund (LWCF) Act. There are no Section 6(f) properties present in the proposed project area.

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.

Historic Properties

As described in the previous section, four sites of potential historic significance are located adjacent to the proposed project. See **Section 5.8.2 - Historic Properties** for a summary on historic properties and the *Report for Historical Studies Survey* document for detailed information. Because the proposed project would have an adverse effect on a recommended NRHP-eligible property within the APE, a Section 4(f) *de minimis* coordination was initiated on February 15, 2018, pursuant to 23 U.S.C. 327 and MOU dated December 16, 2014. The SHPO indicated no comment on TxDOT's determination of a *de minimis* impact under the Section 4(f) regulation. A final *de minimis* impact finding will be completed prior to project approval. See **Appendix G** for the coordination documentation.

Parkland

The proposed project would impact Melissa Zadow Community Park, a 13.2-acre park located on the west side of SH 5 between Harrison Street to the south and Plano Street to the north. The park consists of a pavilion, public restrooms, picnic areas with grills, a children's playground with swing set, slides, and merry-go-round, a sand volleyball court, three baseball fields, two batting cages, two basketball/inline skate courts, and two parking areas.

Two Build Alternative alignments were considered to avoid or minimize impacts to Melissa Zadow Community Park. Both Build Alternatives require a minimum 128-foot ROW width to accommodate the proposed project.

East Centerline Alternative

Under this Alternative, the proposed roadway's centerline would be shifted to the east and all proposed ROW would be acquired from the east side of the existing roadway. Impacts to Melissa Zadow Community Park would be completely avoided; however, this Alternative would result in eight displacements consisting of five residential houses, one business building, and two out-building displacements.

Existing Centerline Alternative (Preferred Alternative)

Under this Alternative, the proposed roadway's centerline would follow the existing roadway's centerline. Proposed ROW would be acquired from the east and west sides of the existing roadway. To minimize impacts to Melissa Zadow Community Park, more ROW would be acquired from the east side of the existing roadway than from the west side; however, approximately 0.26 acre of ROW from the park would still be required. This Alternative results in four displacements consisting of four residential structures (two single-family homes, a duplex, and a manufactured home).

The transportation use of the Section 4(f) resource, Melissa Zadow Community Park, is not expected to adversely affect any of the activities, features, and attributes that qualify the resource for protection under Section 4(f). The total acreage of the Melissa Zadow Community Park is 13.2; however, the amount of parkland to be permanently incorporated by the project would be approximately 0.26 acre or two percent of the size of the park. No functions or attributes of the park would be disrupted because the proposed acquired portions of the park do not contain any park amenities. The proposed project would actually result in an increased benefit to public use for the park by constructing a six-foot wide sidewalk in the area between the park boundaries along SH 5.

The official(s) with jurisdiction over the Melissa Zadow Community Park property (City of Melissa) have been informed of TxDOT's intent to make the *de minimis* impact determination and will be coordinated with requesting written concurrence that the project will not adversely affect the activities, features, and attributes that qualify the property for protection under Section 4(f). Additionally, in the *City of Melissa's Resolution No. 13-18*, the City authorizes the construction of SH 5 within a portion of the City of Melissa parkland known as Zadow Park and declares that a portion of the parkland is necessary for the construction of SH 5.

The public will be afforded an opportunity to review and comment on the effects of the project on the protected activities, features, and attributes of the Section 4(f) resource. The finding will be released and made available for public comment for a period of 30 days, concurrent with the public comment period for the project's Notice of Availability of the Draft EA, which will include a combined public hearing and open house. TxDOT will consider all comments prior to making a final *de minimis* impact finding.

Based on the proposed findings to date, it is anticipated that the Build Alternative would result in *de minimis* impact at the Melissa Zadow Community Park. See **Appendix B** for photographs of the park, **Appendix F** for the location of the park, and **Appendix H** for the *City of Melissa's Resolution No. 13-18* regarding the park.

Potential impacts to Section 4(f) properties would be confined to the existing and proposed ROW/easements; thus, encroachment-alteration effects would not occur.

Mitigation efforts will be identified once determination of property(s) eligibility has been made.

No-Build Alternative: As construction of the proposed SH 5 project would not occur, there would be no SH 5 project-related impacts on Section 4(f) and PWC Chapter 26 properties associated with the No-Build Alternative.

5.10. Water Resources

The proposed project is in the East Fork Trinity River Subbasin, as detailed in the *Water Resources Technical Report*. The proposed project crosses eight streams. These streams consist of Fitzhugh Branch, a tributary to Fitzhugh Branch, a tributary to Clemons Creek, a tributary to Throckmorton Creek, three tributaries to Slayter Creek, and a tributary to Sweetwater Creek. **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 the applicable U.S. Army Corps of Engineers (USACE) permit.

Table 3: Potential Impacts to Waters of the U.S.

Crossing No.	Name of Water Body or other location indicator	Approximately OHWM (feet)	Existing Structure	Proposed Work or Structure	Permanent Fill		Temporary Fill		NWP	PCN (Y/N)
					Open Waters (acres and linear feet)	Wetlands or other Special Aquatic Sites (acres)	Open Waters (acres and linear feet)	Wetlands or other Special Aquatic Sites (acres)		
1	Fitzhugh Branch (intermittent)	2 (west of SH 5) 73 (east of SH 5)	RCPs	Culvert extension, Fill (by others)	0.075 ac 137 LF	-	-	-	14	N
2	Tributary to Fitzhugh Branch (intermittent)	2	MBC	MBC, Closed System Outlet	0.014 ac 92 LF	-	-	-	14	N
3	Tributary to Clemons Creek (intermittent)	2 (west of SH 5) 4 (east of SH 5)	SBC	1-8' x 4' MBC	0.004 ac 66 LF	-	-	-	14	N
4	Tributary to Throckmorton Creek (intermittent)	2	RCP	RCP, Closed System Outlet	0.005 ac 107 LF	-	-	-	14	N
5	Tributary to Slayter Creek (intermittent)	4	SBC	1-7' x 5' RCB	0.021 ac 165 LF	-	-	-	14	N
6	Tributary to Slayter Creek (intermittent)	4 (west of SH 5) 8 (east of SH 5)	SBC	1-12' x 9' RCB	0.027 ac 199 LF	-	-	-	14	N
7	Tributary to Slayter Creek (intermittent)	4	RCP	1-7' x 3' RCB	0.004 ac 44 LF	-	-	-	14	N
8	Tributary to Sweetwater Creek (intermittent)	4	SBC	2-7' x 5 MBC	0.004 ac 15 LF	-	-	-	14	N

NWP – Nationwide Permit
PCN – Preconstruction Notification
ac – acre
Y/N – Yes/No
LF – linear feet

According to the information presented in **Table 3**, impacts to Waters of the U.S. within the proposed project limits would result from the widening of the roadway, which include one culvert extension and seven culvert replacements. See the *Water Resources Technical Report* for detailed information and figures.

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. A PCN would not be required for the proposed project. The purpose of the proposed activity is to widen SH 5 at the water crossings along the length of the project. The impacts of the proposed project to the eight 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. If the project involves stream modification, stream channel modifications, including bank stabilization, would be limited to the minimum necessary to construct or protect the structure and the immediate vicinity of the project. The activity would comply with all general and regional conditions applicable to NWP 14.

The activities at water crossings 1 to 8 have been identified as single and complete projects as defined in the NWPs because each crossing occurs at a separate and distant location and would therefore be permitted under the same NWP 14.

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

Build Alternative: **Table 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 the applicable USACE permit. A PCN for NWP 14 at each of the eight water crossings would not be required because the impacts to Waters of the U.S. are less than 0.1 acre per crossing and no wetlands or other special aquatic sites would be impacted.

The potential for project-related encroachment-alteration effects on Waters of the U.S. would be mitigated through permanent (post-construction) Best Management Practices (BMPs) as described below. To minimize the potential for adverse impacts, BMPs would be regularly inspected and proactively maintained.

No mitigation would be required for this project.

No-Build Alternative: As construction of the proposed SH 5 project would not occur, there would be no SH 5 project-related impacts on Waters of the U.S. associated with 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 BMPs to manage water quality on construction sites. General Condition 12 also requires applicants using NWP 14 to use appropriate soil erosion and sedimentation controls.

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

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

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

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

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

No-Build Alternative: As construction of the proposed SH 5 project would not occur, there would be no SH 5 project-related impacts on water quality associated with the No-Build Alternative.

5.10.3. Executive Order 11990 Wetlands

Build Alternative: Pursuant to EO 11990 (Protection of Wetlands) and Section 404 of the CWA, a field reconnaissance was conducted to identify Waters of the U.S., including wetlands, within the proposed project limits on September 8, 2016. Results of the field investigation did not identify wetlands within the project limits.

No wetlands were identified within the project limits during the field investigation. If wetlands are later identified, the potential for project-related encroachment-alteration effects on wetlands 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.

If wetlands are later identified, mitigation would be further evaluated at that time. 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: As construction of the proposed SH 5 project would not occur, there would be no SH 5 project-related impacts on wetlands associated with the No-Build Alternative.

5.10.4. Rivers and Harbors Act

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

5.10.5. Clean Water Action Section 303(d)

Runoff from this project would discharge either directly into or within five stream miles upstream of a stream that is listed as threatened/impaired on the 2014 303(d) list. See **Table 4** for a description and location of the impaired water.

Table 4. 303(d) Threatened and Impaired Waters

Assessment Unit ID	Segment ID	Segment Name	Description	Constituent of Concern	Directly into or within 5 Stream miles upstream	Will project contribute to Constituent of Concern
0821D_01	0821D	East Fork Trinity River above Lake Lavon	A portion of the East Fork Trinity River extending from the confluence of Lake Lavon (Segment 0821) to the upper end of the water body (NHD RC 12030106000074) in Collin County, Texas	Bacteria	Yes	No

Sources: *2014 Texas Integrated Report - Texas 303(d) List (https://www.tceq.texas.gov/assets/public/waterquality/swqm/assess/14txir/2014_303d.pdf) and TCEQ Surface Water Quality Viewer (http://tceq.maps.arcgis.com/apps/webappviewer/index.html?id=b0ab6bac411a49189106064b70bbe778)*

The impaired water is located in the East Fork Trinity River – Lavon Lake watershed. The proposed project is located in the east-central portion of this watershed. BMPs that would be used to control discharge of pollutants form the project site include: temporary vegetation, blankets/matting, permanent seeding/sodding, stone outlet structures, silt fence, rock berms, stabilized construction exits, grass swales, and vegetative filter strips. Other approved methods would be substituted if necessary using one of the BMPs from the identical category.

This project has been coordinated under TxDOT's Memorandum of Understanding (MOU) with the TCEQ. See **Appendix G** for the coordination documentation.

5.10.6. Clean Water Act Section 402

Build Alternative: Because this project would disturb more than five acres of surface area, TxDOT would comply with the requirements of the TCEQ Texas Pollutant Discharge Elimination System (TPDES) General Permit No. TxR150000. In order to comply with TPDES General Permit Number TxR150000 for Construction Activities requirements, a Notice of Intent (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 and Maintenance of Highways, Streets, and Bridges*. No permanent water quality impacts are expected as a result of the proposed project. Every effort would be made for proper soil conservation and preservation during the planning, development, and construction of this proposed project.

Sections of the Build Alternative are located within the boundaries of the cities of Melissa and Anna (Phase I) Municipal Separate Storm Sewer Systems (MS4) and would comply with the applicable MS4 requirements.

It is anticipated that implementation of the SW3P would reduce erosion and sedimentation from construction sites to a negligible level, such that migration of substantial amounts of sediment away from the project footprint would be unlikely.

Permanent water quality impacts are not expected as a result of the proposed project; therefore, mitigation is not proposed.

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

5.10.7. Floodplains

Collin County is a participant in the National Flood Insurance Program. The study area is located on Flood Insurance Rate Map, Map Numbers 48085C0165J dated June 2, 2009; -0170J dated June 2, 2009; -0160J dated June 2, 2009; 0070J dated June 2, 2009; and -0065J dated June 2, 2009.

Build Alternative: Crossing 5 - Tributary to Slayter Creek is located in Zone A. Zone A is the approximate 100-year floodplain for which base flood elevations have not been determined.

The hydraulic design for the proposed project would be in accordance with current FHWA and TxDOT design policies. The proposed project would be in compliance with 23 CFR 650 regarding location and hydraulic design of highway encroachments within the floodplains. The proposed project would comply with EO 11988, Floodplain Management, which requires federal agencies to avoid to the extent possible the 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. Since the proposed project would consist of expanding an existing facility, and there are no other practicable build alternatives. The facility would permit the conveyance of the 100-year flood, inundation of the roadway being acceptable, without causing significant damage to the facility, stream, or other property. The proposed project would not increase the base flood elevation to a level that would violate applicable floodplain regulations and ordinances. Coordination with the local floodplain administrator would be required.

Construction would be limited to the proposed project's existing/proposed ROW/easement areas and would have no effect on floodplain areas outside the construction area.

The proposed project would not increase the base flood elevation to a level that would violate applicable floodplain regulations and ordinances; therefore, mitigation is not proposed.

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

5.10.8. Wild and Scenic Rivers

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

5.10.9. Trinity River Corridor Development Certification

The proposed project is not within the Trinity River Corridor Development Regulatory Zone; therefore, a Corridor Development Certificate permit would not be required.

5.10.10. Coastal Barrier Resources

The proposed project is not located within a county subject to the requirements of the Coastal Barrier Resources Act.

5.10.11. Coastal Zone Management

The proposed project is not located within the Texas Coastal Management Area.

5.10.12. Edwards Aquifer

The proposed project is not located within the Edwards Aquifer Contributing or Recharge Zones; therefore, the Edwards Aquifer Rules do not apply.

5.10.13. International Boundary and Water Commission

This proposed project would not be located within the floodplain of the Rio Grande; therefore, coordination with the International Boundary Water Commission would not be required.

5.10.14. Drinking Water Systems

There are ground water wells located in the proposed project area; however, none are located within or adjacent to the proposed ROW and easements. There are no source water protection areas located in the proposed project area. Impacts to water wells and sources water protection areas as a result of the proposed project are not anticipated.

5.11. Biological Resources

5.11.1. Texas Parks and Wildlife Coordination

A *TxDOT Biological Resources Technical Report*, containing the *Biological Evaluation Form*, *Tier 1 Site Assessment Form*, and supporting documents, was completed for the proposed project. It was determined that coordination with the Texas Parks and Wildlife Department (TPWD) was required per the 2013 TPWD/TxDOT MOU because:

1) The proposed project may impact 0.10 acre of riparian vegetation, and
2) The proposed project disturbs habitat in an area equal to or greater than the area of disturbance indicated in the Threshold Table PA.

Items in numbers 1 and 2 are discussed further in Section 5.11.2.

The Texas Natural Diversity Database (TXNDD) data obtained from TPWD on September 14, 2016 was reviewed along with the USFWS list. The search radius was 1.5 miles from the proposed project. There were no known element occurrences of state or federally-listed species or managed areas within 1.5 miles of the proposed project area.

Suitable habitat was observed within the proposed project for the following Species of Greatest Conservation Need (SGCN) (as identified on TPWD's Annotated County List of Rare Species for Collin County): western burrowing owl (*Athene cunicularia hypugaea*), plains spotted skunk (*Spilogale putorius interrupta*), and Texas garter snake (*Thamnophis sirtalis annectens*). 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:

- Western burrowing owl (Bird BMPs): Prior to construction, perform daytime surveys for nests including under bridges and in culverts to determine if they are active before removal. Nests that are active should not be disturbed; 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 nest during the season on TxDOT owned and operated facilities and structures proposed for replacement or repair; and do not collect, capture, relocate, or transport birds, eggs, young, or active nests without a permit.
- 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.
- Texas garter snake (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 netting is preferred. Plastic netting should be avoided to the extent practicable; for open trenches and excavated pits, install escape ramps at an angle of less than 45 degrees

(1:1) in areas left uncovered. Visually inspect excavation areas for trapped wildlife prior to backfilling; 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; and contractors will be advised of potential occurrence in the project area, and to avoid harming the species if encountered.

Early coordination with TPWD was initiated on March 24, 2017 and completed on April 20, 2017. See **Appendix G** for the coordination documentation. Documentation of the *Biological Resources Technical Report* is maintained in the project file at the TxDOT Dallas District Office.

5.11.2. Impacts on Vegetation

Build Alternative: According to the MOU with TPWD, important remnant vegetation includes communities listed as suitable habitat and within the range of SGCN. General habitat types listed for Blackland Prairies Ecoregion SGCN present within the proposed project footprint include unmaintained vegetation, fencerow vegetation and riparian vegetation. The TXNDD identified an American Elm-chinkapin Oak-hackberry Series (*Ulmus americana-quercus muhlenbergia-celtis spp.* series) within 1.5 miles of the proposed project. The proposed project would not impact this community.

The proposed project would directly impact the following MOU Type habitats: Tallgrass Prairie, Grassland (8.13 acres); Agriculture (12.14 acres); Disturbed Prairie (3.39 acres); Edwards Plateau Savannah, Woodland, and Shrubland (2.09 acres); Floodplain (0.64 acre); Riparian (0.48 acre); and Urban (120.1 acres). The 8.13 acres of Tallgrass Prairie, Grassland MOU Type habitat disturbance is greater than the 2.0 acres area of disturbance indicated in the Threshold Table PA for Texas Blackland Prairies (TBPR). The 0.48 acre of Riparian MOU Type habitat disturbance is greater than the 0.1-acre area of disturbance indicated in the Threshold Table PA for TBPR. The 2.09 acres of Edwards Plateau, Savannah, Woodland, and Shrubland MOU Type habitat disturbance is greater than the 1.0-acre area of disturbance indicated in the Threshold Table PA for TBPR. The 3.39 acres of Disturbed Prairie MOU Type habitat disturbance is greater than the 3.0 acres area of disturbance indicated in the Threshold Table PA for TBPR. The 12.14 acres of Agriculture MOU Type habitat disturbance is greater than the 10.0 acres area of disturbance indicated in the Threshold Table PA for TBPR. The 0.64 acre of Floodplain MOU Type habitat disturbance is greater than the 0.5-acre area of disturbance indicated in the Threshold Table PA for TBPR. A threshold has not been established for Urban MOU Type habitat.

Potential impacts to vegetation would be confined to the existing and proposed ROW/easements; thus, encroachment-alteration effects would not occur.

Impacts to vegetation would be avoided or minimized by limiting disturbance to only that which is necessary to construct the proposed project. The removal of native vegetation, particularly mature native trees and shrubs, would be avoided to the greatest extent practicable. A native and locally adapted seed mix would be used in the re-vegetation of disturbed areas.

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

5.11.3. Executive Order 13112 on Invasive Species

In accordance with EO 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.

5.11.4. Executive Memorandum on Environmentally and Economically Beneficial Landscaping

Landscaping would not be included in the proposed project.

5.11.5. Impacts to Wildlife

The proposed project is located in north-central Collin County, in the cities of Melissa and Anna. Land adjacent to the proposed project is a mixture of developed and undeveloped. The portion of the proposed project between Melissa and Anna, and north of Anna, has some residential development and a small number of commercial/retail and manufacturing facilities. Much of the adjacent land in these areas is used for agriculture. The portions of the project in the vicinity of Melissa and Anna are more densely developed and include residential, commercial, retail, civic, and educational facilities. Agricultural land is also present. Wildlife species expected to inhabit the proposed project area are likely adapted to both a rural environment as well as an urban, developed environment. Mammalian species that likely inhabit the area include the coyote (*Canis latrans*), Virginia opossum (*Didelphis virginiana*), raccoon (*Procyon lotor*), and eastern gray squirrel (*Sciurus carolinensis*). Amphibian and reptilian species would also utilize the different available habitats. The species would include various snakes, turtles, lizards, and frogs native to north-central Texas. Examples would be the Texas rat snake (*Elaphe obsolete lindheimen*), red-eared slider (*Trachemys scripta*), western ribbon snake (*Thamnophis proximus*), and the northern cricket frog (*Acris crepitans*). Various waterfowl species could utilize the aquatic habitat. The agricultural fields and pastures still serve as foraging areas for resident and migratory species.

The presence of the following wildlife species was observed during field reconnaissance: crayfish (species unknown) and nine-banded Armadillo (*Dasypus novemcinctus*).

There is suitable habitat present within the proposed project area for the SGCN species identified in Section 5.11.1

Build Alternative: Substantial impacts to wildlife are not anticipated. The proposed project is the widening of an existing roadway and therefore, is not newly bisecting continuous wildlife habitat. It is likely that wildlife currently avoids the proposed project area due to the adjacent development and high-speed traffic. Terrestrial wildlife that does cross SH 5 would have to travel a greater distance when crossing the widened roadway upon project completion. This would result in their being exposed to predators, people, domestic pets, vehicles, etc. for a greater amount of time. Wildlife that does currently inhabit adjacent urban development and existing roadway structures (culverts, utility poles, etc.) would be temporarily impacted due to potential structural displacements/relocations and roadway structure reconstruction and relocation. It is likely that the impacted wildlife would recolonize the available habitat once construction of the proposed project is complete.

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

5.11.6. Migratory Bird Treaty Act

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 to 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, per the Environmental Permits, Issues, and Commitments (EPIC) plans.

5.11.7. Fish and Wildlife Coordination Act

All impacts to Waters of the U.S. would be authorized under a USACE Section 404 NWP. Therefore, the U.S. Fish and Wildlife Service (USFWS) consider Fish and Wildlife Coordination Act coordination to be complete as part of the NWPs review, which was last authorized and reissued on March 19, 2017.

5.11.8. Bald and Golden Eagle Protection Act of 2007

No eagles were observed during the September 8, 2016, site visit 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.

5.11.9. Magnuson-Stevens Fishery Conservation Management Act

There are no tidally influenced waters in Collin County 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.

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.

5.11.11. Endangered Species Act

The 1973 Endangered Species Act (ESA) provided for the conservation of ecosystems upon which threatened and endangered species of fish, wildlife, and plants depend. Section 7 of the ESA requires Federal agencies to ensure that any action authorized, funded or carried out by them is not likely to jeopardize the continued existence of listed species or modify their critical habitat.

Build Alternative: According to the USFWS Official Species List the following federally protected species may occur or could potentially be affected by the proposed project: Least Tern (*Sterna antillarum*), Piping Plover (*Charadrius melodus*), Red Knot (*Calidris canutus rufa*), and Whooping Crane (*Grus americana*).

For the Piping Plover and Red Knot, there is no suitable habitat present within the action area, such as beaches, sand, algal, or tidal flats, or sparsely vegetated shores and islands of shallow lakes, ponds, rivers, and impoundments. Impacts to the Least Tern are not anticipated because there is no suitable habitat present within the action area, such as sand and gravel bars within braided streams and rivers. Nor are there perennial waters with small fish and crustaceans for feeding. For the Whooping Crane, potential habitat within the action area includes ponds and agricultural fields. However, it is not suitable migratory or foraging habitat due to the proximity to a high-speed roadway and other developed areas. TxDOT has determined that the proposed project would have no effect on the Least Tern, Piping Plover, Red Knot, and Whooping Crane.

USFWS designated Critical Habitat is not present within the proposed project action area.

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

5.12. Air Quality

The proposed project is located in Collin County, which is part of the EPA's designated ten-county moderate nonattainment area for the 2008 eight-hour standard for the pollutant ozone; therefore, the transportation conformity rule applies.

The proposed action is consistent with the NCTCOG's financially constrained MTP *Mobility 2040* and the 2017-2020 TIP, as amended, which were initially found to conform to the TCEQ State Implementation Plan by the FHWA and Federal Transit Administration on September 7, 2016, and December 19, 2016, respectively. Copies of the MTP and TIP pages are included in **Appendix E**. 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 613.200, Subpart B, of Title 49 CFR.

Build Alternative: An *Air Quality Assessment Technical Report* was completed for the proposed project and is 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.

A Carbon Monoxide (CO) Traffic Air Quality Analysis was not required for the proposed project because the average annual daily traffic does not exceed 140,000 vehicles per day. A qualitative Mobile Source Air Toxics (MSAT) analysis was completed for the proposed project and found 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. 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. A Congestion Management Process was conducted to identify operational improvements and travel demand reduction strategies at the project level. Committed congestion reduction strategies and operational improvements within the study boundary would consist of access management improvements (turn lanes); addition of new lanes; intersection improvements; bicycle and pedestrian facility improvements; and traffic signal improvements. Lastly, it is not anticipated that emissions from construction of this project would have any significant impact on air quality in the area due to the use of fugitive dust control measures, the encouragement of the use of the Texas Emissions Reduction Plan (TERP), and compliance with applicable regulatory requirements.

Present and future vehicle miles travelled and the associated MSAT emissions and CO emissions resulting from the proposed project are considered a direct effect and were considered in the air quality analyses discussed above. Additional impacts, in the form of encroachment-alteration effects, would not occur.

The use of fugitive dust control measures, the encouragement of the use of TERP, and compliance with applicable regulatory requirements would mitigate impacts to air quality.

No-Build Alternative: Due to federal fuel and vehicle control programs, air quality would be expected to improve regardless of the Build or No-Build Alternative.

5.13. Hazardous Materials

An initial site assessment (ISA) including a visual survey of the project limits and surrounding area, research of existing and previous land use, and limited review of federal and state regulatory databases/lists was performed by Civil Associates, Inc. The purpose of the ISA is to identify possible hazardous materials within the project limits. A review of a regulatory database list was conducted as part of the ISA. Section 5.1 of the ISA lists the regulatory records that were reviewed. The SH 5 *Hazardous Materials Initial Site Assessment Report* is maintained in the TxDOT Dallas District project files.

Build Alternative: A summary of regulated sites of concern within the proposed project limits is provided in **Table 5**. These sites are discussed following the table and site locations are shown on the Project Resource and Land Use Map in **Appendix F**.

Table 5: Summary of Regulated Sites of Concern

Map ID*	Site Information	Database	Location Relative to Project
1	Coyote Den 601/600 S. Powell Parkway (SH 5) Anna, TX 75003	RPST Facility ID# 47316 FRSTX ID# 110034273881 LPST ID# 0047316 Site Visit Concerns: None	Adjacent (high risk site)
4	Thriftee 118 S. Powell Parkway (SH 5) Anna, TX 75409	RPST Facility ID# 9711 LPST ID# 0044005 Facility ID# 0009711 Site Visit Concerns: None	Adjacent (high risk site)
8	CMC Steel Fabricators 2202 McKinney Street Melissa, TX 75454	Tier II ID# 3K2GX2020859 TRI ID# 75454CMTMC2202M FRSTX ID# 110015679470 Site Visit Concerns: None	Adjacent (low risk site)
9	Unauthorized Landfill 700-1000 block of S. Powell Parkway (SH 5) Anna, TX 75409	CALF ID# 745 Site Visit Concerns: None	Adjacent (low risk site)

RPST: Registered Petroleum Storage Tank
FRSTX: Facility Registry System
LPST: Leaking Petroleum Storage Tank
TRI: Toxic Release Inventory
CALF: Closed and Abandoned Landfill Inventory
*: Map ID numbers correspond to those used in the ISA

Source: GeoSearch (January 27, 2016); Field Work (September 8, 2016).

Registered Petroleum Storage Tanks

Within the project limits, there are eight RPST facilities within the specified search distance for the radius report. Of these, five facilities are also listed as LPST sites. The site visit and research into the historical land use did not reveal any other abandoned and/or active gasoline service stations. ROW acquisition and easements are required for this project and considerable excavation is anticipated. Two of the RPST sites would potentially be acquired as part of the ROW requirements of the proposed project. District ROW would be notified of the RPST regulatory status and exact locations. The RPST sites of concern are included in **Table 5** and shown in **Appendix F**.

Leaking Petroleum Storage Tanks

A review of the hazardous materials database indicated six LPST sites within the proposed project area. Two of these sites are considered environmental concerns due to the age of the tanks and that both facilities would potentially be displaced. The LPST sites of concern are included in **Table 5** and shown in **Appendix F** and are discussed below in the order of the Map Identification Numbers for each LPST site.

Map ID 1 - Coyote Den (Map ID 1), 601/600 S. Powell Parkway (SH 5) in Anna, canopy and pump island are situated within the proposed ROW and would potentially be a displaced. The site is identified as a RPST and LPST site. The site currently utilizes three 9,700-gallon gasoline and one 9,700-gallon diesel underground RPSTs that were installed in 1988. A release was reported in 1996. Groundwater monitoring was performed through 2001 and the site received case closure in 2002. In addition, the facility has received two TCEQ violations related to failure to monitor the tanks for releases. Based on the facility still being an active gas station, the release and violation history of the facility, and the canopy and pumps islands potentially being displaced for the project, this facility is considered a high environmental risk.

Map ID 4 - Anna Thriftee (Map ID 4), 118 S. Powell Parkway (SH 5) in Anna, is within the proposed ROW and would potentially be displaced. The facility is identified as a RPST and LPST site. The site had two 2,000-gallon gasoline underground RPSTs removed in 1992 with a resulting release

reported as well. Only soils are reported as being affected. The case was subsequently closed in 2003. The facility is currently utilized as Anna Express food and convenience store. Based on the former use of the facility, previously reported release, and potential displacement of the facility, the site is considered a high environmental risk.

Toxic Release Inventory and TIER II

Map ID 8 - CMC Steel Fabricators (Map ID 8), 2202 McKinney Street in Melissa, is situated adjacent and east of the project, ROW would be required from the property. The site was identified as a TRI and TIER II facility and was reported to have released nickel compounds. However, no further information is provided. This facility has also reported utilizing large quantities of hazardous materials. However, it is not identified as requiring any remediation/corrective action activity. The building at the property sits approximately 215 feet east of project improvements and ROW acquisition. Based on the nature of business at the facility, the regulatory information, and distance between the facility and the project, the site is considered a low environmental risk.

Closed and Abandoned Landfill

Map ID 9 - Anna, approximately 0.25 mile south of city on SH 5. The CALF site is reported to be in the vicinity of the 700 to 1000 block of S. Powell Parkway (SH 5) adjacent to Slayter Creek. The location is approximately 170 feet west of the proposed ROW. This facility is reported as a 15-acre unauthorized landfill opened in approximately 1960 with no closure date reported. The site was reported to have accepted household, industrial, and hazardous wastes. Based at the estimated location, materials accepted, and distance between the facility and the project, this facility is considered a low environmental risk.

Utility Adjustments/Relocation

At this time, utility adjustment requirements have not been determined. There is a potential for contamination to be encountered during utility adjustments. Coordination with utility companies concerning this contamination would be addressed during the ROW stage of project development. It is anticipated that all utility adjustments or relocation would be completed prior to construction.

Storm Water Drainage Structures in Contamination

The proposed project does not require the installation of storm sewers.

Possible Asbestos-Containing Materials

The proposed project includes the demolition and/or relocation of building and bridge structures. The buildings and bridges may contain Asbestos-Containing Materials. Asbestos inspections, specification, notification, license, accreditation, abatement and disposal, as applicable, would comply with federal and state regulations. Asbestos issues would be addressed during the ROW process prior to construction.

Lead-Based Paint

The proposed project includes the demolition and/or relocation of building structures, some of which may contain Lead-Based Paint (LBP). Further examination of paint-bearing structures for LBP would be performed prior to demolition. Any waste materials and construction debris containing LBP would be disposed of according to current disposal regulations of the TCEQ and EPA.

Well Plugging (Water Quality)

Monitoring wells were observed within the project limits. Proper plugging of the wells would be addressed during the ROW negotiation and acquisition process. If not plugged prior to construction, the wells would be addressed per TxDOT Standard Specification Item 103 Disposal of Wells.

Active Pipelines

During the preliminary hazardous materials investigation, a pipeline was found to bisect the proposed project. The Railroad Commission of Texas Public GIS Viewer identified an in-service gas transmission pipeline that crosses the proposed project just south of CR 371/CR 376. Additional investigation may be required to determine if the pipeline would need adjustment due to the proposed project construction. The approximate location of the pipeline is shown in **Appendix F**.

Potential impacts to hazardous material 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.

Special provisions or contingency language would be included in the project's construction plans to handle hazardous materials and/or petroleum contamination according to applicable federal and state regulations. In addition, the construction contractor would take appropriate measures to prevent, minimize, and control spillage of hazardous materials in the construction staging area(s).

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

5.14. Traffic Noise

Build Alternative: A traffic noise analysis was conducted in accordance with TxDOT's *Guidelines for Analysis and Abatement of Roadway Traffic Noise* (2011). The proposed project would not result in traffic noise impacts. Refer to the SH 5 *Traffic Noise Technical Report* for a detailed discussion of the traffic noise analysis. 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." The FHWA has established Noise Abatement Criteria (NAC) for various land use activity areas that are used as one of two means to determine when a traffic noise impact would occur. A noise impact occurs when either the absolute or relative criterion is met:

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

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

When a traffic noise impact occurs, noise abatement measures must be considered. A noise abatement measure is any positive action taken to reduce the impact of traffic noise on an activity area. The FHWA traffic noise modeling software was used to calculate existing and predicted traffic noise levels. The model primarily considers the number, type and speed of vehicles; highway alignment and grade; cuts, fills and natural berms; surrounding terrain features; and the locations of activity areas likely to be impacted by the associated traffic noise. Existing and predicted traffic noise levels were modeled at receiver locations (**Table 6** and **Appendix F**) that represent the land use activity areas adjacent to the proposed project that might be impacted by traffic noise and potentially benefit from feasible and reasonable noise abatement.

Table 6: Traffic Noise Levels dB(A) Leq

Representative Receiver	NAC Category	NAC Level	Existing	Predicted 2040	Change (+/-)	Noise Impact
R1 - Single-family Residential	B	67	55	58	+3	No
R2 - Single-family Residential	B	67	60	63	+3	No
R3 - Single-family Residential	B	67	62	65	+3	No
R4 - St. Paul Baptist Church	C	67	61	63	+2	No
R5 - Single-family Residential	B	67	63	65	+2	No
R6 - Scott-Barker House	C	67	62	65	+3	No
R7 - Single-family Residential	B	67	62	65	+3	No
R8 - Single-family Residential	B	67	62	65	+3	No
R9 - Single-family Residential	B	67	62	64	+2	No
R10 - Single-family Residential	B	67	61	63	+2	No
R11 - Melissa Public Library (outdoor area)	C	67	61	62	+1	No
R12 - Single-family Residential	B	67	64	65	+1	No
R13 - Single-family Residential	B	67	64	63	-1	No
R14 - Single-family Residential	B	67	65	64	-1	No
R15 - Calvary Baptist Church	B	67	66	65	-1	No
R16 - Single-family Residential	B	67	64	64	0	No
R17 - Single-family Residential	B	67	64	64	0	No
R18 - Single-family Residential	B	67	65	65	0	No
R19 - Single-family Residential	B	67	63	63	0	No
R20 - Single-family Residential	B	67	65	65	0	No
R21 - Single-family Residential	B	67	56	59	+3	No
R22 - Single-family Residential	B	67	58	61	+3	No
R23 - Single-family Residential	B	67	62	64	+2	No
R24 - First Baptist Church	C	67	61	62	+1	No
R25 - Single-family Residential	B	67	56	59	+3	No
R26 - The Malt Shop	E	72	63	66	+3	No
R27 - Single-family Residential	B	67	57	58	+1	No
R28 - Single-family Residential	B	67	57	59	+2	No
R29 - Single-family Residential	B	67	58	58	0	No
R30 - Single-family Residential	B	67	61	61	0	No
R31 - Single-family Residential	B	67	59	59	0	No
R32 - Single-family Residential	B	67	61	61	0	No
R33 - Single-family Residential	B	67	59	60	+1	No
R34 - Anna Middle School	C	67	53	54	+1	No
R35 - Apartments	E	72	60	61	+1	No
R36 - Single-family Residential	B	67	55	55	0	No
R37 - Single-family Residential	B	67	62	62	0	No
R38 - Single-family Residential	B	67	53	54	+1	No
R39 - Single-family Residential	B	67	66	64	-2	No
R40 - Single-family Residential	B	67	63	62	-1	No
R41 - Single-family Residential	B	67	57	57	0	No
R42 - Christian Care Academy	C	67	65	63	-2	No
R43 - Single-family Residential	B	67	63	62	-1	No

As indicated in **Table 6**, the proposed project would not result in a traffic noise impact. However, to avoid noise impacts that may result from future development of properties adjacent to the project, local officials responsible for land use control programs must ensure, to the maximum extent possible, no new activities are planned or constructed along or within the following predicted (2040) noise impact contours (**Table 7**).

Table 7: Noise Impact Contours in the Project Study Area

Land Use	Impact Contour[1]	Distance from Proposed ROW Line
North of FM 455		
NAC category B & C	66 dB(A)	10 feet
NAC category E	71 dB(A)	Within ROW
South of FM 455		
NAC category B & C	66 dB(A)	70 feet
NAC category E	71 dB(A)	Within ROW

[1] – Impact contours are one dB(A) lower than the NAC per category to reflect impacts that would occur as a result of approaching the NAC for the respective contours.

A copy of this traffic noise analysis will be made 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. For more information about how traffic noise is evaluated for TxDOT projects, refer to ENV's *Environmental Handbook for Traffic Noise* and *Guidelines for Analysis and Abatement of Roadway Traffic Noise*, the latter of which has been approved by FHWA.

The analysis of traffic noise is by its nature an examination of encroachment-alteration indirect impacts. That is, traffic noise models predict the noise levels that would be perceived by people located away from newly-constructed transportation facilities. No attempt has been made to describe noise levels that may exist directly within the transportation facility by motorists, as noise is generally accepted as a necessary element that accompanies the use of roadways. Because the proposed project would not result in traffic noise impacts, there are no encroachment-alteration effects.

No noise barriers or other mitigative measures were evaluated because the proposed project would not result in traffic noise impacts.

No-Build Alternative: If the No-Build Alternative were implemented, traffic noise levels would be expected to increase with an associated increase in traffic volumes over time.

5.15. Induced Growth

The Council on Environmental Quality (CEQ) defines indirect effects as those "caused by the action and are later in time or 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 Section 1508.8).

Build Alternative: An analysis of indirect impacts followed the processes outlined in TxDOT's Indirect Impacts Analysis Guidance (July 2016). Refer to the SH 5 *Indirect and Cumulative Impacts Analysis* Technical Report for a detailed discussion of the indirect effects analysis.

Results of the analysis indicate that there is the potential for 2,015 acres of induced growth to occur as a result of the proposed project; all located within the limits of the City of Melissa. No induced growth was indicated in the City of Anna.

Water bodies that could be impacted by induced development include five acres of wetlands, 17 acres of open waters (freshwater ponds), and nine acres of riverine features.

Approximately 661 acres of Agriculture; 318 acres of Disturbed Prairie; 107 acres of Edwards Plateau Savannah, Woodland, and Shrubland; 89 acres of Riparian; 729 acres of Tallgrass Prairie, Grassland; and 111 acres of Urban vegetation would be potentially impacted by induced growth. The induced growth impacts on non-Urban vegetation and wildlife habitat in the Area of Interest (AOI) total approximately 1,904 acres. These impacts are not considered substantial.

Wildlife that may utilize the previously discussed vegetation and water bodies for food and habitat include the wildlife with the potential to occur within the AOI includes the American Peregrine Falcon (*Falco peregrinus anatum*), Bald Eagle (*Haliaeetus leucocephalus*), Henslow's Sparrow (*Ammodramus henslowii*), Peregrine Falcon (*Falco peregrinus*), Red Knot (*Calidris canutus*), Sprague's Pipit (*Anthus spragueii*), Western Burrowing Owl, Whooping Crane (*Grus americana*), Wood Stork (*Mycteria americana*), crayfish (species unknown), plains spotted skunk, Louisiana pigtoe, Texas heelsplitter, alligator snapping turtle (*Macrochelys temminckii*), Texas garter snake, Texas horned lizard (*Phrynosoma cornutum*), and the timber rattlesnake. Many other species also utilize the previously discussed vegetation in the AOI. The potential impacts to wildlife from induced growth could include the loss of habitat by the conversion of natural vegetation to urban conditions; habitat fragmentation by dividing the land with development resulting in animals not having large enough pieces of habitat to find food and mates; changes in storm drainage patterns; and wildlife disturbance from increased human activity levels, vehicular traffic, lighting, and noise.

Approximately 1.7 acres of the 100-year flood zone is located within the areas of potential induced development. However, floodplain regulations monitor and prohibit select types of development within the floodplain. No substantial indirect effects are anticipated.

Approximately 1,448 acres of prime farmland and farmland of statewide importance would be impacted by induced development. This represents approximately 10.1 percent of the 14,346 acres of prime farmland and farmland of statewide importance in the AOI and is not considered substantial.

Land development activities would be regulated by the City of Melissa Development and Neighborhood Services Department, which coordinates the planning, zoning, and permitting services, and Code Compliance, which monitors compliance with the City of Melissa's ordinances. Additional authority to a lesser extent, rests with the county. Other non-municipal agencies could also be involved in land development regulation depending on the circumstances. For example, the USACE has regulatory authority if land development activities impact Waters of the U.S. Mitigation of the potential development within the AOI considered for this assessment would be the responsibility of the agencies with the authority to implement such controls. Examples of City of Melissa regulations include a tree ordinance and development codes. City of Melissa subdivision regulations require the dedication of land for parks and open space. Additionally, developers often incorporate existing water and vegetation features, such as streams, ponds, and green belts, into their design plans; thus, maintaining some existing natural vegetation and wildlife habitat.

The responsibility of transportation providers such as TxDOT, local and regional transit agencies, and the local governments would be to implement a transportation system to complement the land use.

The induced growth associated with the proposed project does not conflict with study area goals, would not substantially worsen the conditions of a sensitive or vulnerable resource, would not delay or interfere with planned improvement of a resource, and is not inconsistent with any applicable laws; therefore, mitigation for the impacts to Waters of the U.S., vegetation/wildlife habitat, and farmland is not warranted.

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

5.16. Cumulative Impacts

The CEQ defines cumulative impacts as those which result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time (40 CFR §1508.7). As such, it may be difficult to understand the role that a proposed action may have in contributing to the overall or cumulative impacts to an area or resource.

Build Alternative: An analysis of cumulative impacts followed the processes outlined in TxDOT's *Cumulative Impacts Analysis Guidelines* (July 2016). Refer to the SH 5 *Indirect and Cumulative Impacts Analysis* Technical Report for a detailed discussion of the cumulative impacts analysis.

Cumulative impacts to vegetation and wildlife habitat were analyzed because the resource is in poor and/or declining health. The northward expansion of the Dallas-Fort Worth metroplex and associated expansion of the transportation network is reducing the available vegetation and wildlife habitat. As a result of a change in available vegetation and habitat, wildlife species in the area are shifting to species better able to adapt to a suburban environment and native, wild species are potentially being displaced, forced to relocate, or adapt to their new surroundings. For the cumulative impacts analysis, a resource study area (RSA) was selected which has both temporal and geographic components. For vegetation and wildlife habitat, the year 1995 was used as the beginning temporal boundary and 2040 was the end of temporal boundary. The geographical RSA for vegetation and wildlife used in this analysis consisted of the subbasins for Sweetwater Creek, Throckmorton Creek, Slayter Creek, Fitzhugh Branch, Clemons Creek and their associated tributaries. The RSA totals approximately 22,548 acres.

Results of the analysis indicate that the cumulative impacts on vegetation and wildlife habitat resulting from 47 acres of direct impacts, 1,904 acres of induced development impacts, and 4,557 acres of impacts from other past, present, and reasonably foreseeable actions would total 6,508 acres. Cumulative impacts to vegetation and wildlife habitat would affect 34.1 percent of the resource within the resource study area (RSA) and is considered substantial.

For vegetation and wildlife habitat, incorporating parks, open spaces, and riparian corridors around and within developed areas would provide wildlife habitat and shelter. This mitigation could be conducted by whoever is responsible for the impact such as a developer. Development within the associated municipalities within the RSA would be subject to the laws and ordinances regulating residential, commercial and industrial development set by the municipal government. Mitigation could include mandatory park areas or a limit on lot sizes.

No-Build Alternative: The implementation of this alternative would not contribute to cumulative impacts in the 22,548-acre RSA for vegetation and wildlife habitat.

5.17. Construction Phase Impacts

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

Construction Noise – There would be loud noise from heavy equipment during construction of the project. Noise associated with the construction is difficult to predict. Heavy machinery, the major source of noise in construction, is constantly moving in unpredictable patterns and would not be restricted to any specific location. Refer to the SH 5 *Traffic Noise Technical Report* for a detailed discussion of construction noise.

Construction normally occurs during daylight hours when occasional loud noises are more tolerable. None of the businesses and residences along the project is expected to be exposed to construction noise for a long duration; therefore, any extended disruption of normal activities is not expected.

Provisions would be included in the plans and specifications that require the contractor to make every reasonable effort to minimize construction noise through abatement measures such as work-hour controls and proper maintenance of muffler systems.

Fugitive Dust and Air Pollutants – During the construction phase of this project, temporary increases in particulate matter (PM) and MSAT emissions may occur from construction activities. The primary construction-related emissions of PM are fugitive dust from site preparation, and the primary construction-related emissions of MSAT are diesel PM from diesel powered construction equipment and vehicles. Refer to **Section 5.12** of this EA and the SH 5 *Air Quality Assessment Technical Report* for a detailed discussion of fugitive dust and air pollutants.

Construction-related pollutants that are not contained onsite are expected to dissipate readily in the normal course of atmospheric mixing. Considering the temporary and transient nature of construction-related emissions, as well as the mitigation actions to be utilized, it is not anticipated that emissions from construction of this project would have any substantial impact on air quality in the proposed project area.

The potential impacts of PM emissions would be minimized by using fugitive dust control measures contained in standard specifications, as appropriate. 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. Information about the TERP program can be found at: http://www.tceq.state.tx.us/implementation/air/terp/.

Light Pollution – Construction normally occurs during daylight hours; however, construction could occur during the night-time hours to minimize impacts to the traveling public during the daylight hours.

Due to the close proximity of businesses and residents to the project, if construction were to occur during the night-time hours, it would be of short duration and would not be conducted late in the evening.

Construction during the night-time hours would be of short duration and would follow any local policies and ordinances established for construction activities, such as light limitations.

Construction Activity Impacts – Construction activities would be limited to the proposed project footprint. Excessive vibration from construction equipment is not anticipated.

If there was excessive vibration from construction equipment, it would be of short duration.

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

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

Motorists would be inconvenienced during construction of the project due to lane and cross-street closures; however, these closures would be of short duration and alternate routes would be provided.

Residents and businesses in the immediate construction area would be notified in advance of proposed construction activity using a variety of techniques, including signage, electronic media, community newspapers, and other techniques. The proposed project would not restrict access to any existing public or community services, businesses, commercial areas, or employment centers.

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

6. Agency Coordination

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

7. Public Involvement

A public meeting was held at the Anna Middle School located at 1201 N. Powell Parkway, Anna, Texas 75409 on July 15, 2014. The meeting was held in an open house format from 5:30 p.m. to 7:30 p.m. to allow for questions and review of project exhibits. TxDOT and consultant personnel were available to answer questions during the open house. The total registered attendance at the public meeting was 207 persons, which was comprised of six elected officials and 201 members of the public. A total of 12 project staff members from TxDOT, two City of Anna employees, one Collin County employee, and four project consultants also attended. The meeting was held to share information about the project and seek input from area residents. There were 14 written comments received at the public meeting. Six additional written comments were received, five letters and one comment form, during the 10-day comment period that ended on July 25, 2014. Of these 20 comments, eight predominant issues were mentioned:

1. ROW acquisition
2. Property and business impacts
3. Design issues/alternatives
4. Traffic impacts
5. Displacement
6. Request pedestrian/bike paths as part of the proposed project
7. Noise impacts
8. Safety

The public meeting documentation may be inspected and copied upon request at the TxDOT Dallas District Office. A public hearing will be held following 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. Environmental Permits, Issues and Commitments (EPIC)

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, and relocation resources are available without discrimination to all facilities being relocated.

Limited English Proficiency

A Public Hearing would be conducted for the proposed project. Reasonable steps will be taken to ensure that LEP persons have meaningful access to the programs, services, and information TxDOT provides. During the Public Hearing, an interpreter for specific languages would be provided if requests are made prior to the event date.

Cultural Resources

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

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

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

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*.

Sections of the Build Alternative are located within the boundaries of the cities of Melissa and Anna (Phase I) MS4 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 only that which is necessary to construct the proposed project. The removal of native vegetation, particularly mature native trees and shrubs, would be avoided to the greatest extent practicable.

In accordance with the TxDOT-TPWD Memorandum of Agreement, BMPs would be implemented for the Western burrowing owl, plains spotted skunk, Texas garter snake, Timber rattlesnake, Louisiana pigtoe, and Texas heelsplitter.

Executive Order 13112 on Invasive Species

Seeding and replanting with TxDOT-approved seed mixes containing native species would be conducted where possible. Soil disturbance would be minimized in the ROW in order to minimize invasive species establishment. Preserve native vegetation to the extent practical. Contractor must adhere to Construction Specification Requirements Specs 162, 164, 192, 193, 506, 730, 751, and 752 in order to comply with the requirements for invasive species, beneficial landscaping, and tree/brush removal commitments.

Migratory Bird Treaty Act

The contractor would remove all old migratory bird nests between October 1 and February 15 from any structure where work will be done. In addition, the contractor would be prepared to prevent migratory birds from building nests between February 15 and October 1, per the EPIC plans.

Hazardous Materials or Contamination Issues

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 addressed during the ROW process prior to construction.

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

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

9. Conclusion

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

10. References

City of Anna

-2007. City of Anna, Texas Comprehensive Plan. Found at http://www.annatexas.gov/index.aspx?NID=911

-2010. Future Land Use Map. Found at

http://www.annatexas.gov/index.aspx?nid=899

City of Melissa

-2015. City of Melissa, Texas Comprehensive Plan Update. Found at 0047 http://www.cityofmelissa.com/document/Chapter_3___Future_Land_Use_Plan.pdf

Federal Highway Administration

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

North Central Texas Council of Governments

-2016. Mobility 2040 Metropolitan Transportation Plan. Found at http://www.nctcog.org/trans/mtp/2040/. (accessed January 18, 2017).

Railroad Commission of Texas

-Public GIS Viewer. Found at http://wwwgisp.rrc.texas.gov/GISViewer2/ (accessed April 20, 2016).

Texas Commission on Environmental Quality

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

Texas Department of Transportation

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

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

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

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

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

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

-2017. 2017-2020 Statewide Transportation Improvement Program, Latest Completed 2017-2020 STIP Revision. Found at https://www.dot.state.tx.us/apps/estip/index.aspx. (accessed January 18, 2017).

Texas Parks and Wildlife Department

-2016. Annotated County List of Rare Species for Collin County. Found at http://tpwd.texas.gov/gis/rtest/.

U.S. Census Bureau

-2016. Census 2010 Summary File 1. Found at https://factfinder.census.gov/faces/nav/jsf/pages/download_center.xhtml (accessed February 2, 2016).

-2016. Annual Estimates of the Resident Population: April 1, 2010 to July 1, 2015. Found at https://factfinder.census.gov/bkmk/table/1.0/en/PEP/2015/PEPANNRES/1620000US4865408.

-2016. Center for Economic Studies. OnTheMap Application. Found at http://onthemap.ces.census.gov (accessed April 28, 2016).

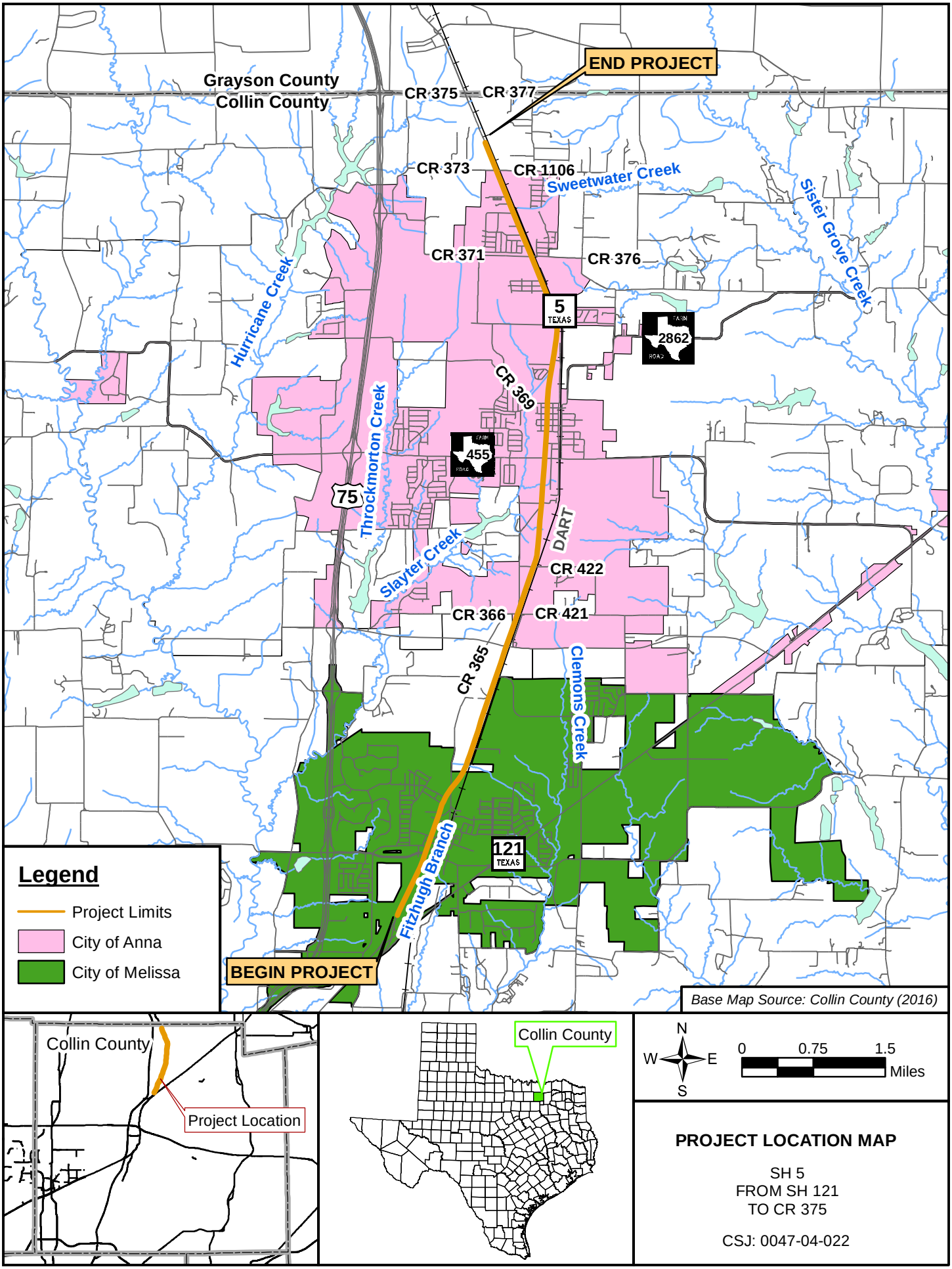
-2017. 2011-2015 American Community Survey 5-Year Estimates data. Found at https://factfinder.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t (accessed August 23, 2017).

U.S. Department of Agriculture

-Natural Resources Conservation Service Web Soil Survey. Found at http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx (accessed March 1, 2016).

11. Appendices

Appendix A – Project Location Map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Grayson County
Collin County
CR 375
CR 377
CR 373
CR 1106
Sweetwater Creek
Sister Grove Creek
CR 371
CR 376
Hurricane Creek
5
TEXAS
2862
CR 369
Throckmorton Creek
455
75
DART
Slayter Creek
CR 422
CR 366
CR 421
CR 365
Clemons Creek
121
TEXAS
Fitzhugh Branch
BEGIN PROJECT
Legend
Project Limits
City of Anna
City of Melissa
Base Map Source: Collin County (2016)
Collin County
Project Location
Collin County
N
W
E
S
0
0.75
1.5
Miles
PROJECT LOCATION MAP
SH 5
FROM SH 121
TO CR 375
CSJ: 0047-04-022

Appendix B – Project Photos

Photo 1: View looking northeast from the begin project limits.

Photo 2: View looking southwest along the west side of SH 5, south of Melissa.

Appendix B
Project Photos
SH 5
FROM SH 121 to CR 375
CSJ: 0047-04-022
Sheet 1 of 8

Photo 3: View looking west at Melissa City Hall from the west side of SH 5 between Scott Street and Surrey Street.

Photo 4: View looking north from the east side of SH 5, north of N. Central Street.

Photo 5: View looking north from the west of SH 5 at Crossing 4 – Tributary to Throckmorton Creek. The vegetation would be impacted by the proposed project.

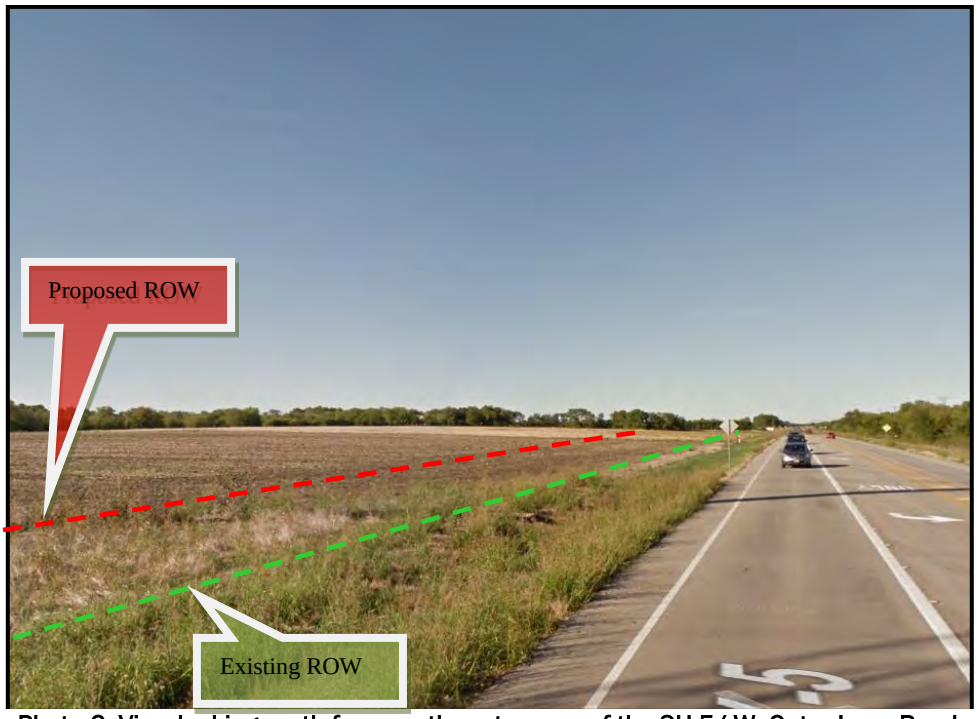


Photo 6: View looking north from northwest corner of the SH 5/ W. Outer Loop Road intersection.

Photo 7: View looking east from the east of SH 5 at Crossing 6 – Tributary to Slayter Creek.

Photo 8: View looking north from the centerline of SH 5, north of Rosamond Parkway.

Photo 9: View looking north from the centerline of SH 5, north of CR 371/CR 376.


Photo 10: View looking southwest from the east side of SH 5, opposite Butler Street.

Photo 11: View looking north from the centerline of SH 5 near the Anna Planning & Development, Public Works Department at the northern end of the proposed project limits.

Photo 12: View looking west-southwest from the west side of SH 5, north of CR 373/CR 1106. The vegetation would be impacted by the proposed project.

Photo 13: View looking southwest from the west side of SH 5 at Melissa Zadow Community Park in Melissa.

Photo 14: View looking west from the east side of SH 5 at Melissa Zadow Community Park in Melissa.

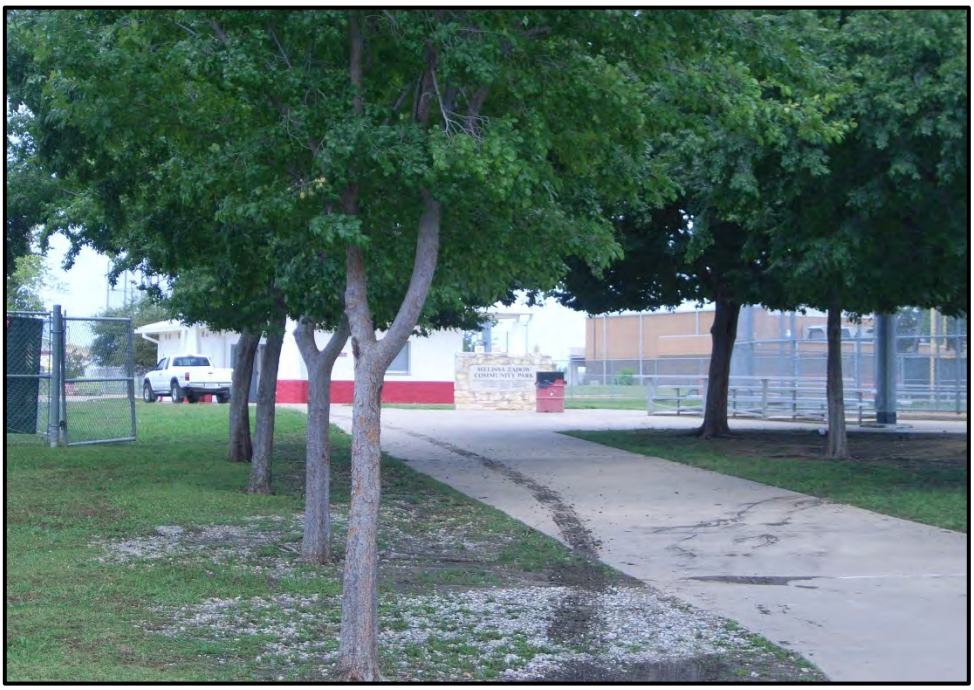


Photo 15: Melissa Zadow Community Park in Melissa.

Photo 16: View looking southeast towards SH 5 from the Melissa Zadow Community Park parking lot. Structure to the left in photograph is located in the park, but it's use is unknown. The structure is not a potential displacement.

Appendix C – Schematics

TEXAS DEPARTMENT OF TRANSPORTATION
DALLAS DISTRICT

COLLIN COUNTY
DESIGN SCHEMATIC

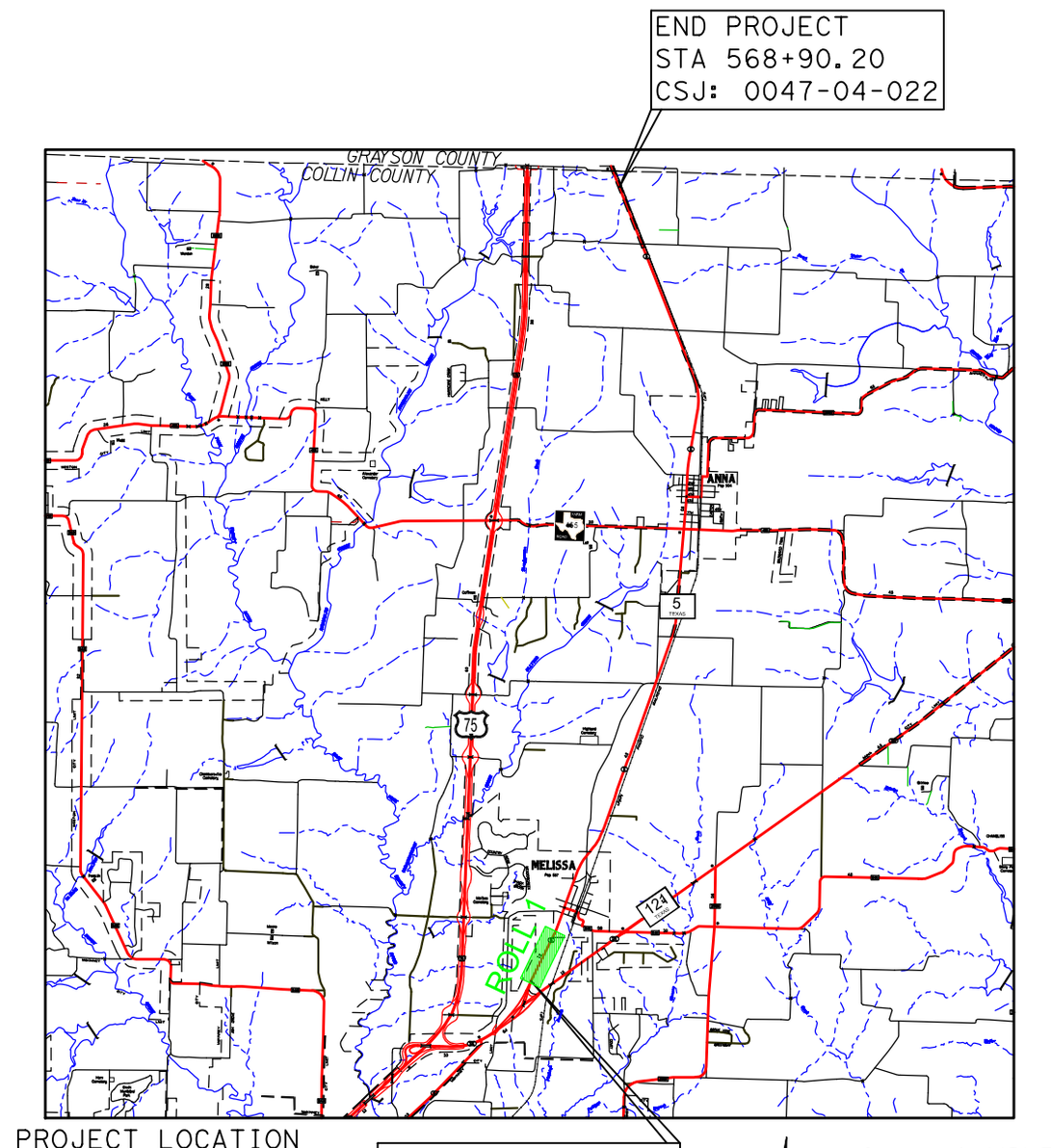
KELLY SELMAN, P.E.
DISTRICT ENGINEER

SH 5 RECONSTRUCTION PROJECT

CSJ: 0047-04-022
FROM: SH 121N
TO: CR 375
NET LENGTH OF PROJECT: 8.58 MILES
FUNCTIONAL CLASSIFICATION:
URBAN MINOR ARTERIAL
SH 5 DESIGN SPEED = 40 MPH
CR 423, CR 371/CR 376 DESIGN SPEED = 30 MPH
HIGHLAND RD & N CENTRAL ST DESIGN SPEED=30 MPH

TRAFFIC DATA

TRAFFIC VOLUMES BASED ON YEAR 2041 PROJECTIONS APPROVED BY TxDOT TP&P DIVISION DATED JUNE 8, 2016	SH 5 FROM SH 121 TO BUTLER ST	SH 5 FROM BUTLER ST TO CR 375
AVERAGE DAILY TRAFFIC - 2021(2041)	9,150(12,750)	4,150(5,775)
DIRECTIONAL DISTRIBUTION (%)	58 - 42	58 - 42
PERCENT TRUCKS OF DHV	11.1	10.1
K FACTOR	10.8	10.8



PROJECT LOCATION
COLLIN COUNTY
DALLAS DISTRICT

INDEX OF ROLLS

APPROVED
NOVEMBER 17, 2016

PREPARED BY:
CIVIL ASSOCIATES, INC.
TBPE REGISTRATION NO. F-006981

NASER ABUSAAD, P.E., AICP
LICENSE NO. 83200

GRANT WU, P.E.
LICENSE NO. 89529

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CIVIL ASSOCIATES, INC.
9330 LBJ Frwy, Ste. 1150
Dallas, Texas 75243
TBPE Firm Registration No. 6981

COUNTY: COLLIN
DATE: JANUARY 2017
DESIGN SCHEMATIC FOR SH 5 RECONSTRUCTION
ROLL 1 OF 11

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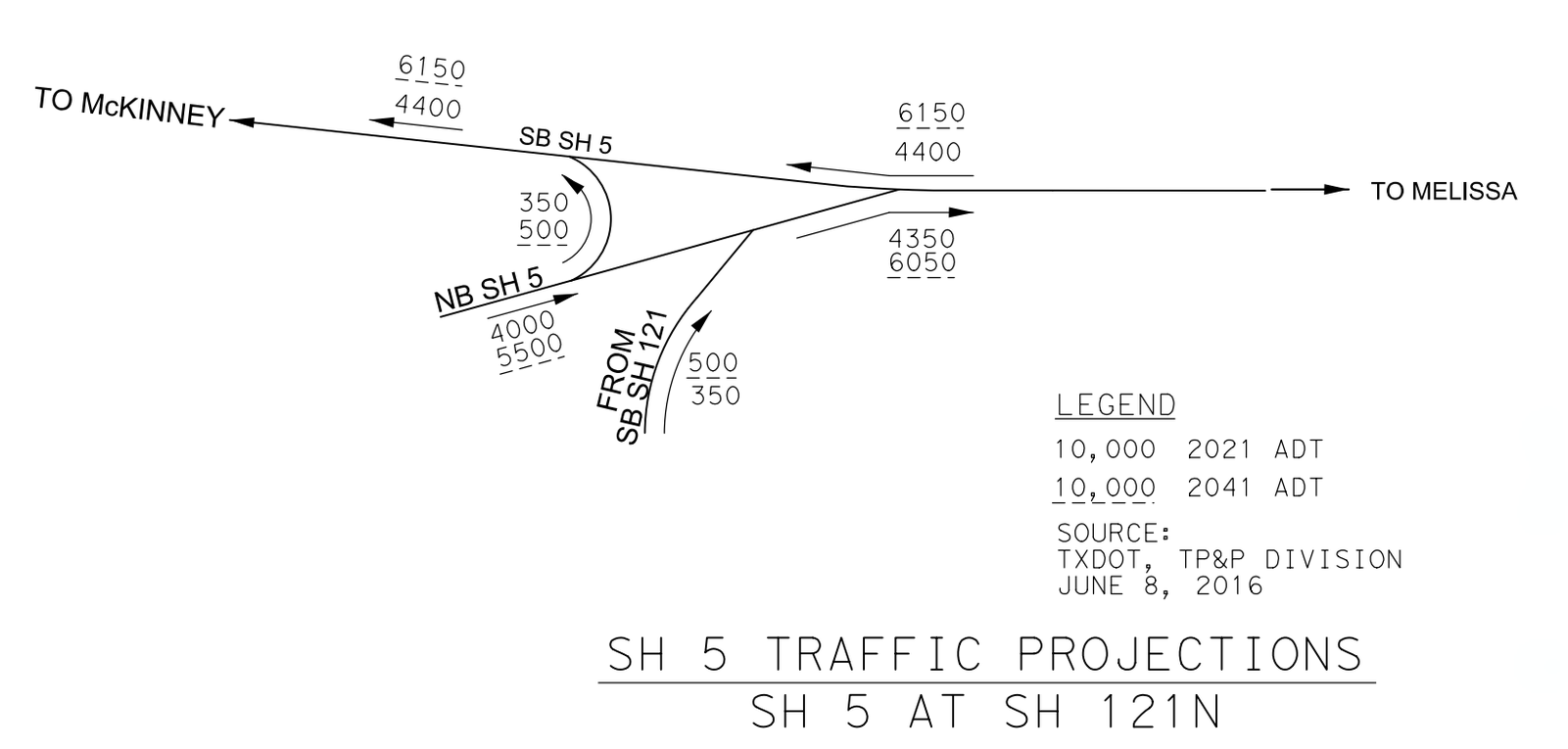

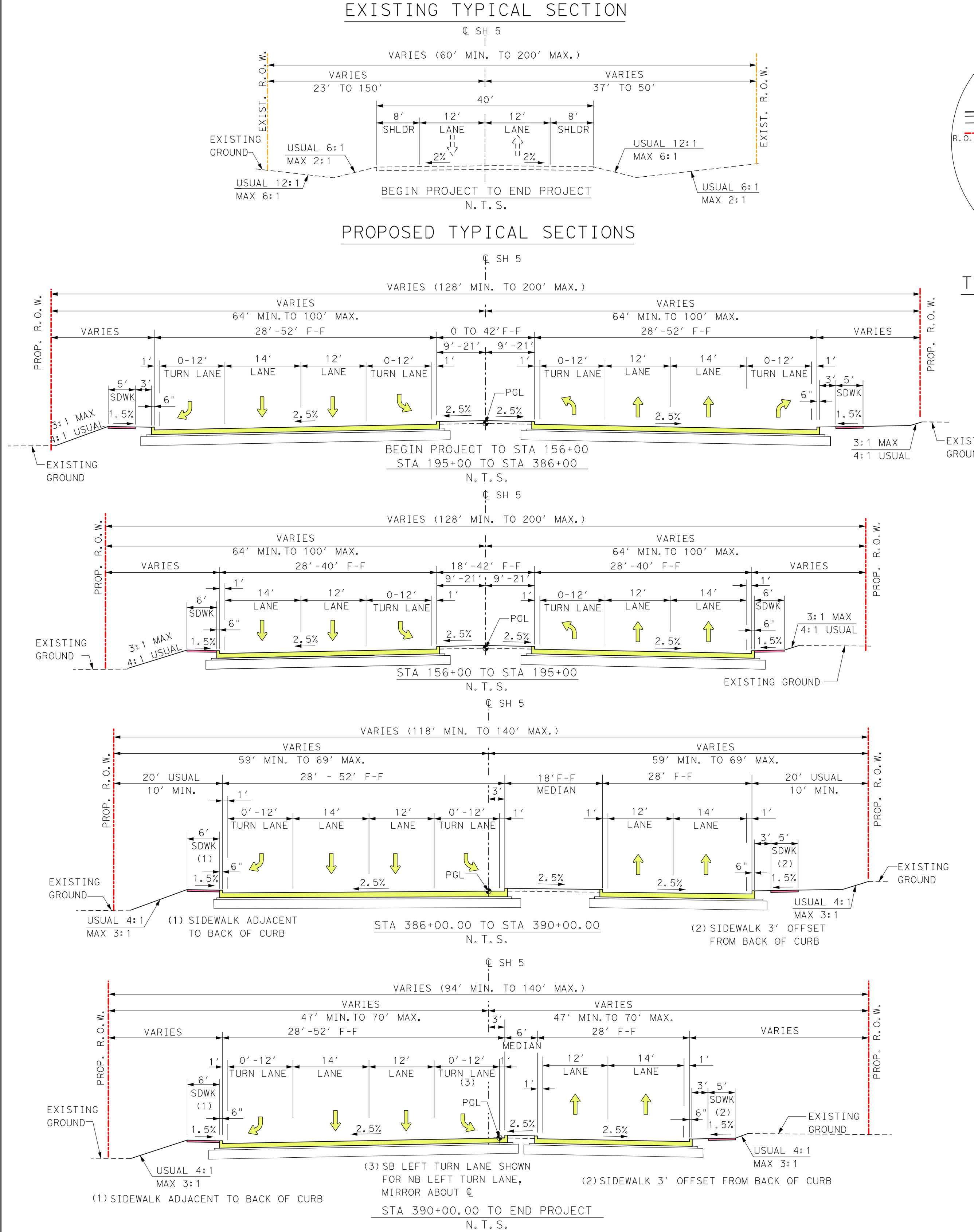

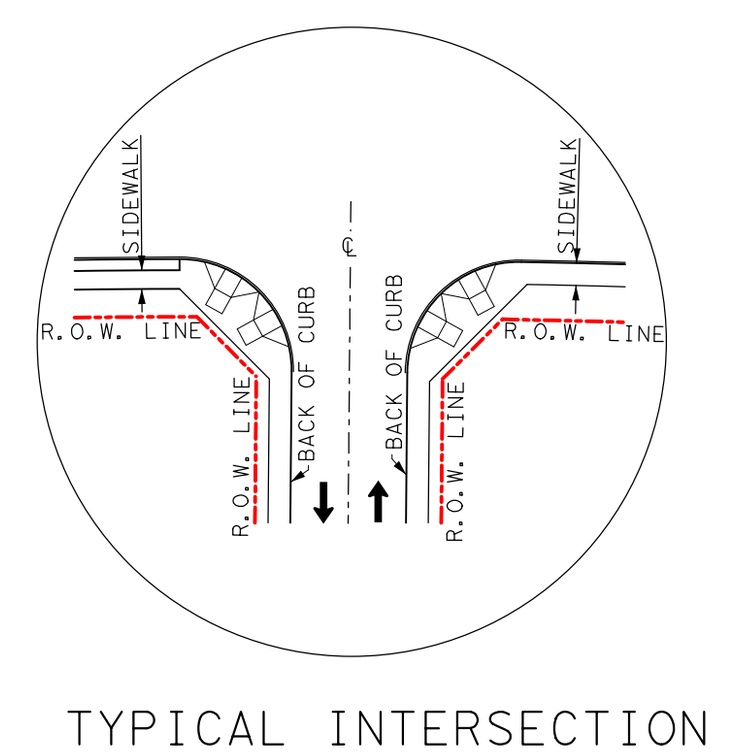

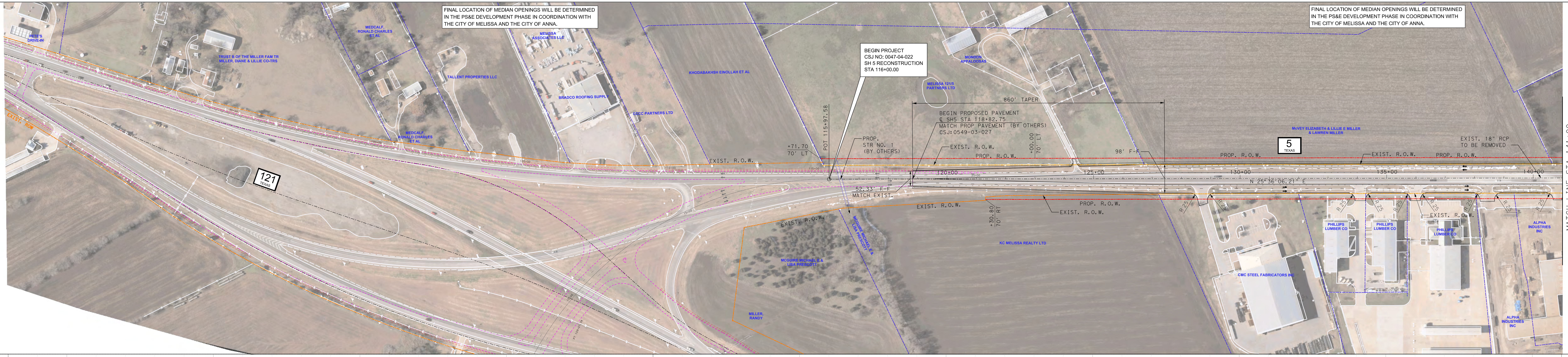

NOTES:

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4. ALL PRIVATE DRIVEWAYS HAVE CURB RETURN RADII OF 15 FEET, UNLESS OTHERWISE NOTED.
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7. PARCEL BOUNDARY LOCATIONS ARE APPROXIMATE AND SUBJECT TO VERIFICATION AND CHANGE.
8. ADDITIONAL ACCESS TO PROPOSED FACILITY BY PERMIT ONLY.

0 100 200 300
SCALE IN FEET

LEGEND

- PROPOSED RIGHT-OF-WAY
- EXISTING RIGHT-OF-WAY
- PARCEL BOUNDARY (APPROX.)
- CITY LIMITS (APPROX.)
- PERMANENT WATER EASEMENT
- PERMANENT DRAINAGE EASEMENT
- PROPOSED LANE
- EXISTING WATER LINE
- PROPOSED DRAINAGE STRUCTURE
- PROPOSED RETAINING WALL OR RIPRAP
- FUTURE ROADWAY (BY OTHERS)
- DISPLACEMENT
- DRAINAGE FLOW

TEXAS DEPARTMENT OF TRANSPORTATION
DALLAS DISTRICT
COLLIN COUNTY
DESIGN SCHEMATIC
KELLY SELMAN, P.E.
DISTRICT ENGINEER
SH 5 RECONSTRUCTION PROJECT
CSJ: 0047-04-022
FROM: SH 121N
TO: CR 375
NET LENGTH OF PROJECT: 8.58 MILES
APPROVED
NOVEMBER 17, 2016
COUNTY: COLLIN
DATE: JANUARY 2017
DESIGN SCHEMATIC FOR SH 5 RECONSTRUCTION
ROLL 1 OF 11

TEXAS DEPARTMENT OF TRANSPORTATION
DALLAS DISTRICT

COLLIN COUNTY
DESIGN SCHEMATIC

KELLY SELMAN, P.E.
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SH 5 RECONSTRUCTION PROJECT
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K FACTOR	10.8	10.8

END PROJECT
STA 168+90.20
CSJ: 0047-04-022

INDEX OF ROLLS

ROLL 1 - PLAN AND PROFILE - BEGIN PROJECT TO STA 141+00
ROLL 2 - PLAN AND PROFILE - STA 141+00 TO STA 155+50
ROLL 3 - PLAN AND PROFILE - STA 154+00 TO STA 321+00
ROLL 4 - PLAN AND PROFILE - STA 231+00 TO STA 399+00
ROLL 5 - PLAN AND PROFILE - STA 399+00 TO STA 521+00
ROLL 6 - PLAN AND PROFILE - STA 521+00 TO STA 563+00
ROLL 7 - PLAN AND PROFILE - STA 563+00 TO STA 614+00
ROLL 8 - PLAN AND PROFILE - STA 614+00 TO STA 659+00
ROLL 9 - PLAN AND PROFILE - STA 659+00 TO STA 705+00
ROLL 10 - PLAN AND PROFILE - STA 705+00 TO STA 751+00
ROLL 11 - PLAN AND PROFILE - STA 751+00 TO END OF PROJECT

APPROVED
NOVEMBER 17, 2016

PREPARED BY:
CIVIL ASSOCIATES, INC.
TBPE REGISTRATION NO. F-000981

NASER ABUSAAD, P.E., AICP
LICENSE NO. 83200

GRANT WU, P.E.
LICENSE NO. 99129

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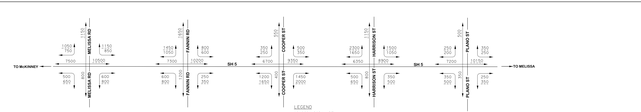
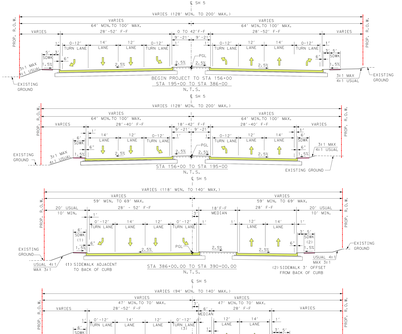


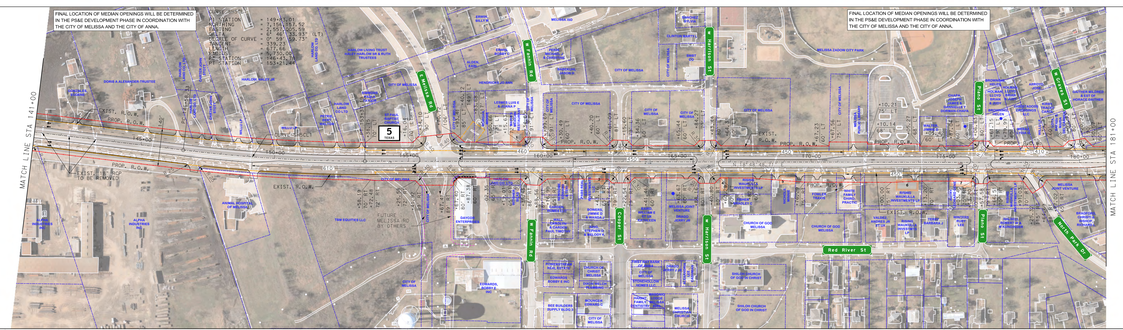
SH 5 TRAFFIC PROJECTIONS
MELISSA RD TO PLANO ST

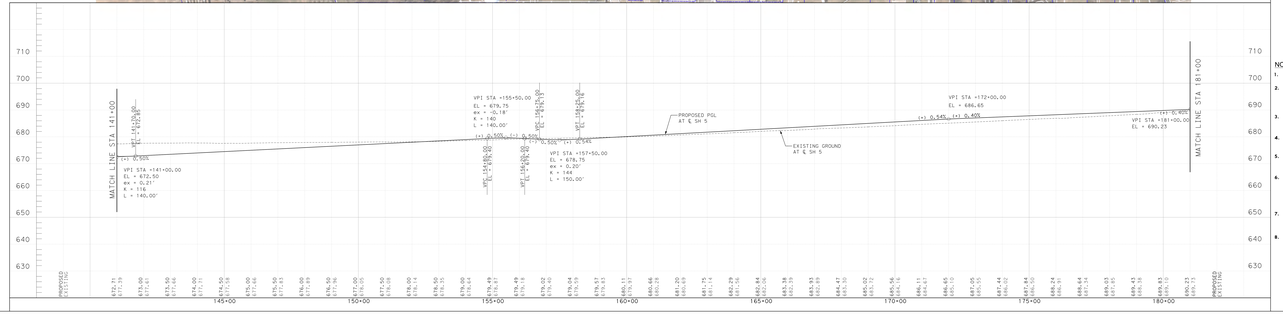
EXISTING TYPICAL SECTION

PROPOSED TYPICAL SECTIONS



TYPICAL INTERSECTION CURB RAMP LAYOUT
N. T. S.





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SCALE IN FEET
0 250 500

LEGEND

- PROPOSED RIGHT-OF-WAY
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- CITY LIMITS (APPROX.)
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- EXISTING WATER LINE
- PROPOSED DRAINAGE STRUCTURE
- PROPOSED RETAINING WALL OR SIMILAR
- FUTURE ROADWAY (BY OTHERS)
- 11 DISPLACEMENT
- DRAINAGE FLOW

TEXAS DEPARTMENT OF TRANSPORTATION
DALLAS DISTRICT

COLLIN COUNTY
DESIGN SCHEMATIC

KELLY SELMAN, P.E.
DISTRICT ENGINEER

SH 5 RECONSTRUCTION PROJECT
CSJ: 0047-04-022

FROM: SH 121N
TO: CR 375

NET LENGTH OF PROJECT: 8.58 MILES

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K FACTOR	10.8	10.8

END PROJECT
STA 168+90.20
CSJ: 0047-04-022

PROJECT LOCATION
COLLIN COUNTY
DALLAS DISTRICT
BEGIN PROJECT
STA 116+00.00
CSJ: 0047-04-022
MILE

INDEX OF ROLLS

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APPROVED
NOVEMBER 17, 2016

PREPARED BY:
CIVIL ASSOCIATES, INC.
TBPE REGISTRATION NO. F-000981

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LICENSE NO. 83200

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TEXAS DEPARTMENT OF TRANSPORTATION
DALLAS DISTRICT

COLLIN COUNTY

DESIGN SCHEMATIC

KELLY SELMAN, P.E.
DISTRICT ENGINEER

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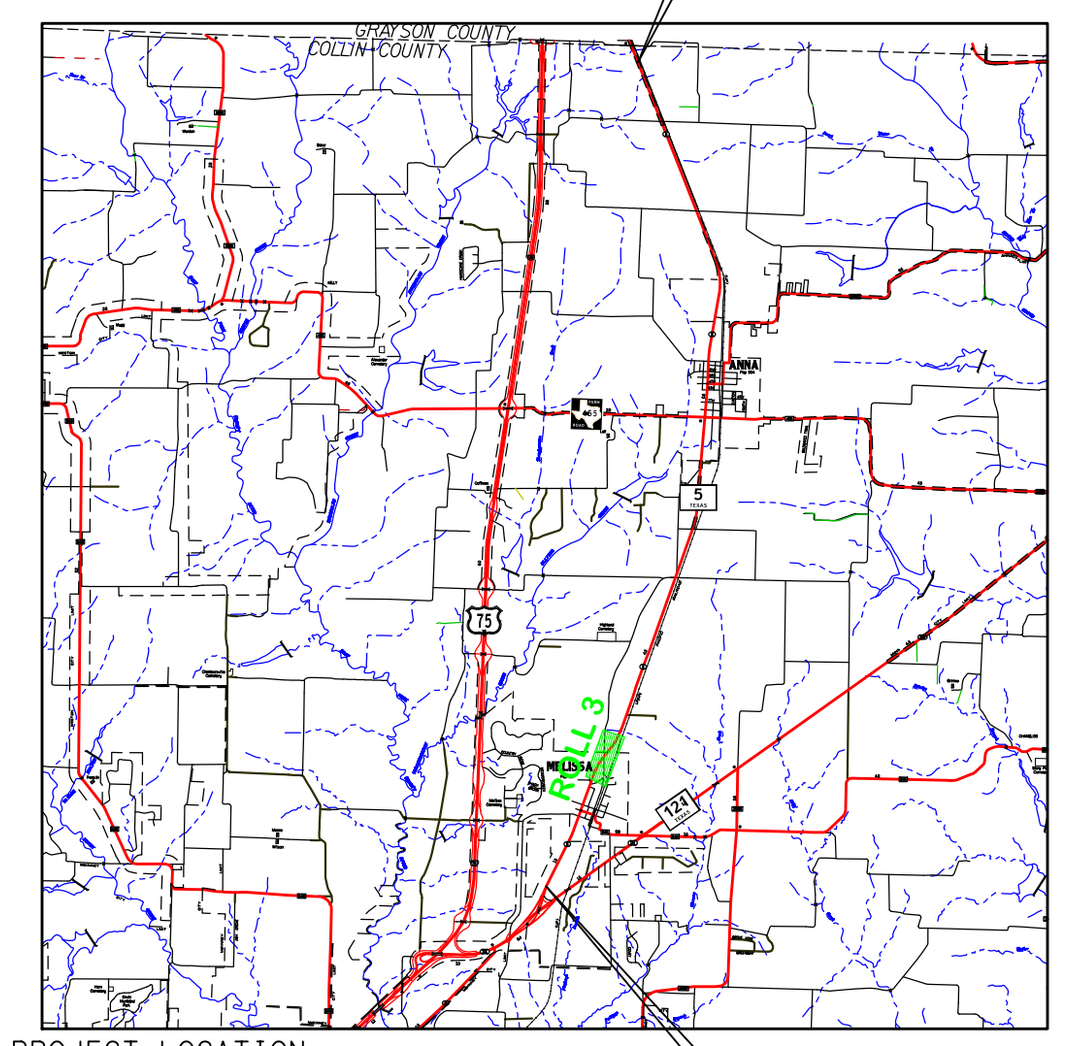
K FACTOR	10.8	10.8

END PROJECT
STA 568+90.20
CSJ: 0047-04-022



PROJECT LOCATION
COLLIN COUNTY
DALLAS DISTRICT

BEGIN PROJECT
STA 116+00.00
CSJ: 0047-04-022

0 1 MILE

INDEX OF ROLLS

APPROVED
NOVEMBER 17, 2016

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COUNTY: COLLIN
DATE: JANUARY 2017

DESIGN SCHEMATIC FOR SH 5 RECONSTRUCTION

ROLL 3 OF 11

CIVIL ASSOCIATES, INC.
9330 LBJ Frwy, Ste. 1150
Dallas, Texas 75243
TBPE Firm Registration No. 6981

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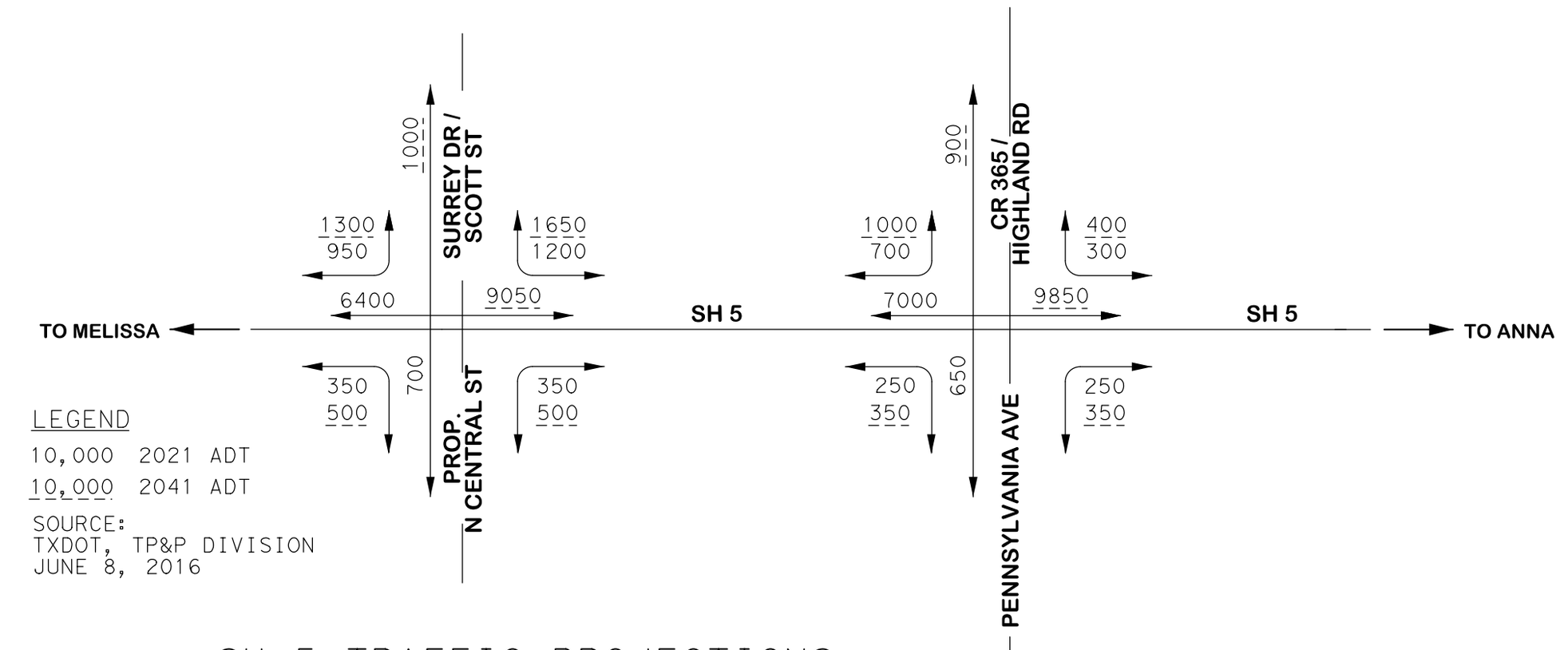
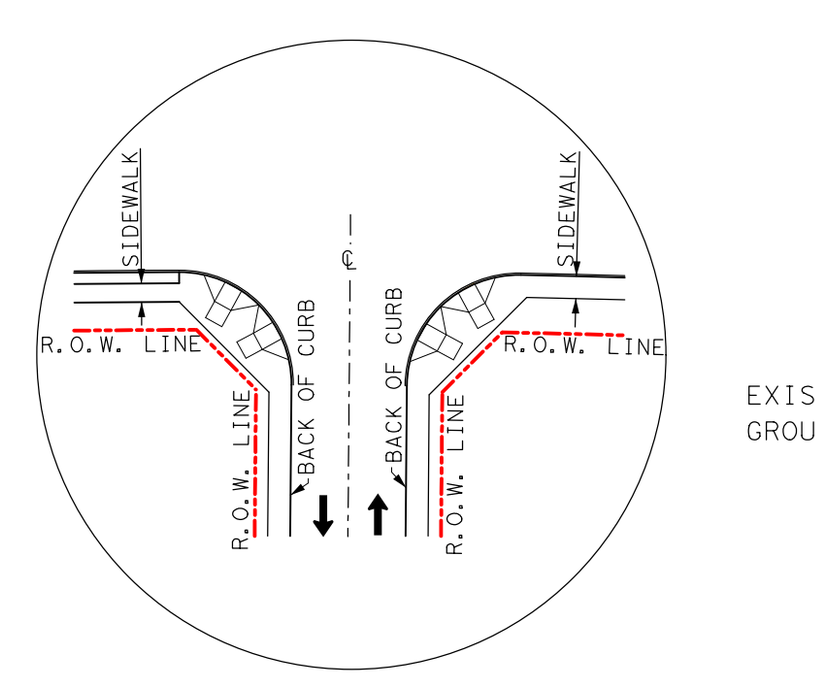
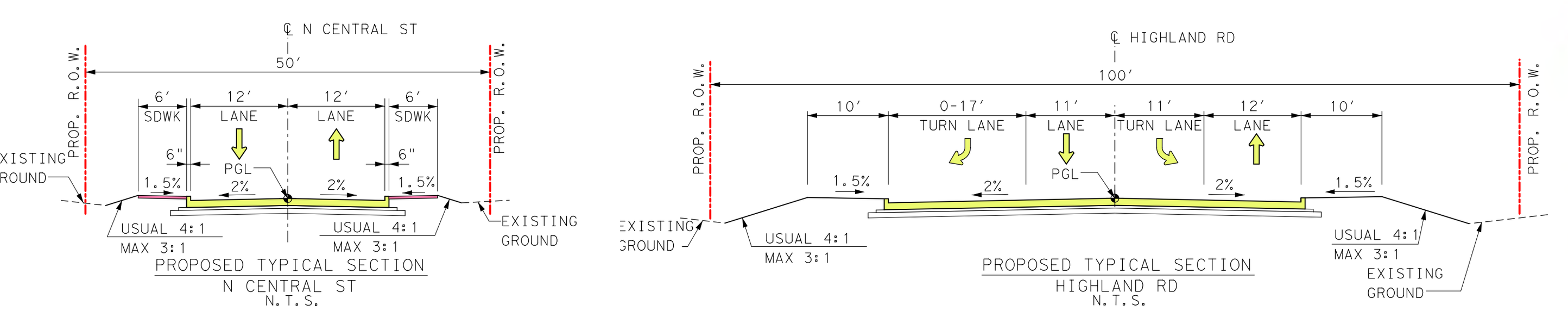


SH 5 TRAFFIC PROJECTIONS
SURREY DR/SCOTT ST TO CR 365/HIGHLAND RD

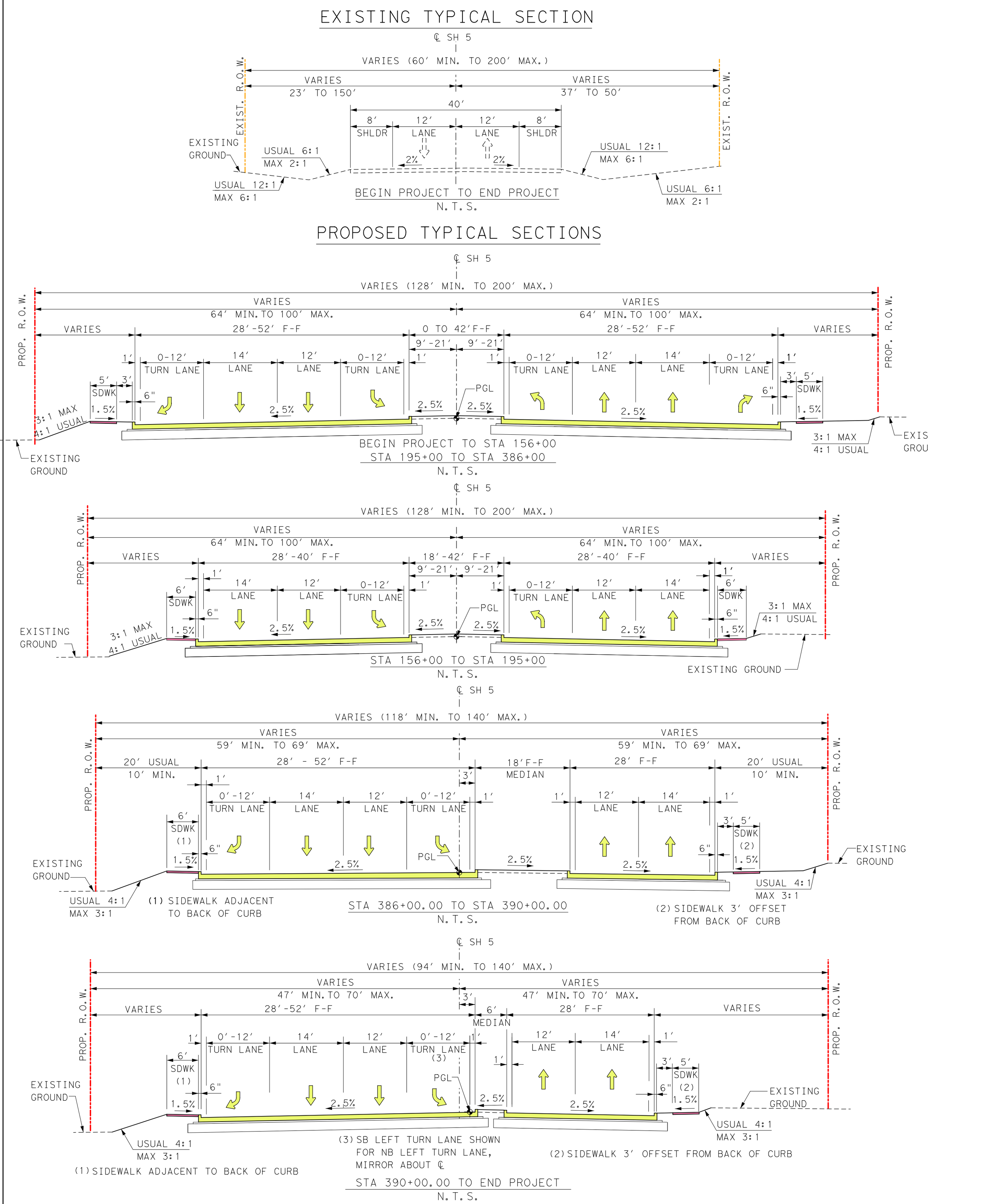


TYPICAL INTERSECTION
CURB RAMP LAYOUT
N.T.S.

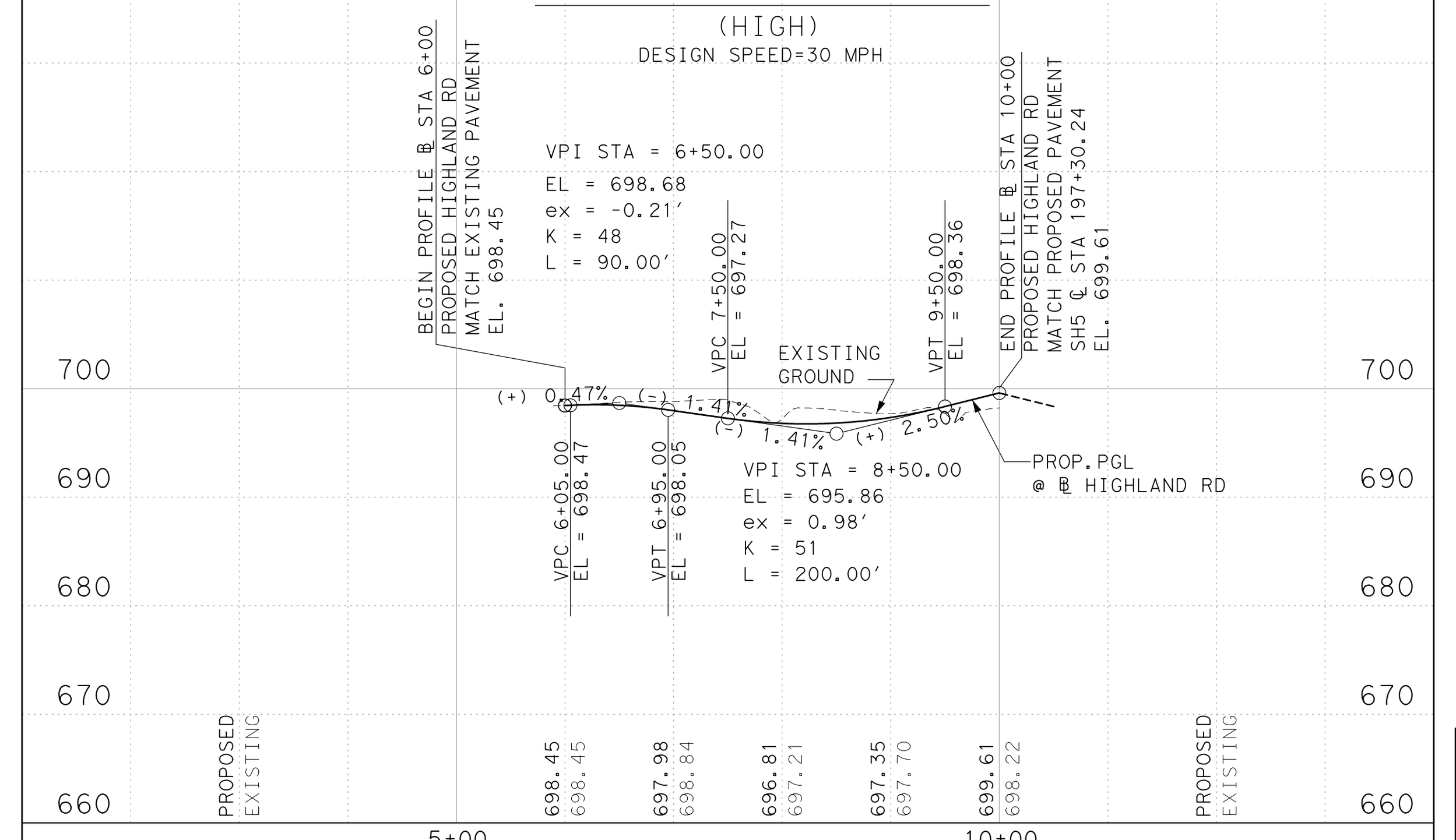


PROPOSED TYPICAL SECTION
N CENTRAL ST
N.T.S.

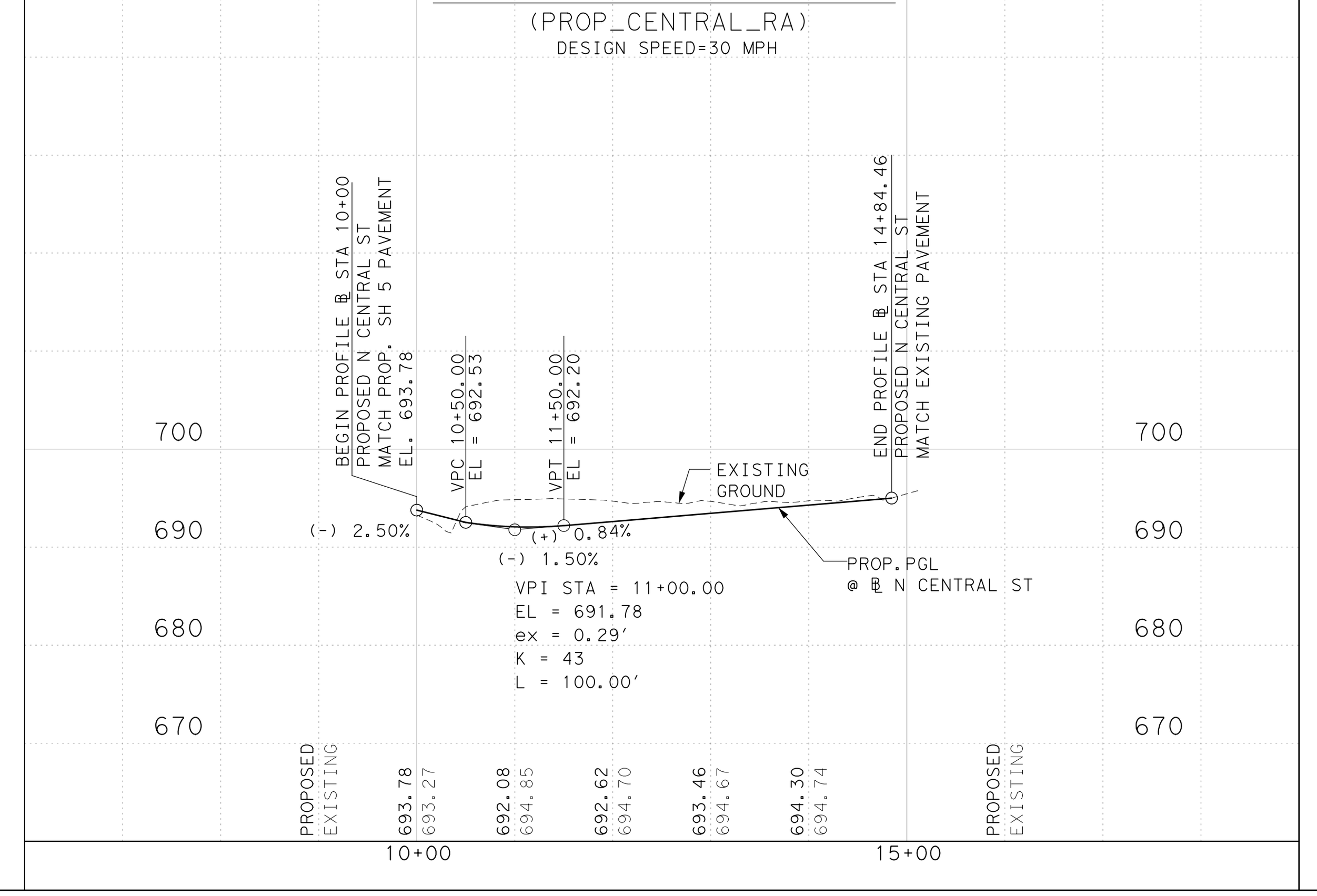
PROPOSED TYPICAL SECTION
HIGHLAND RD
N.T.S.



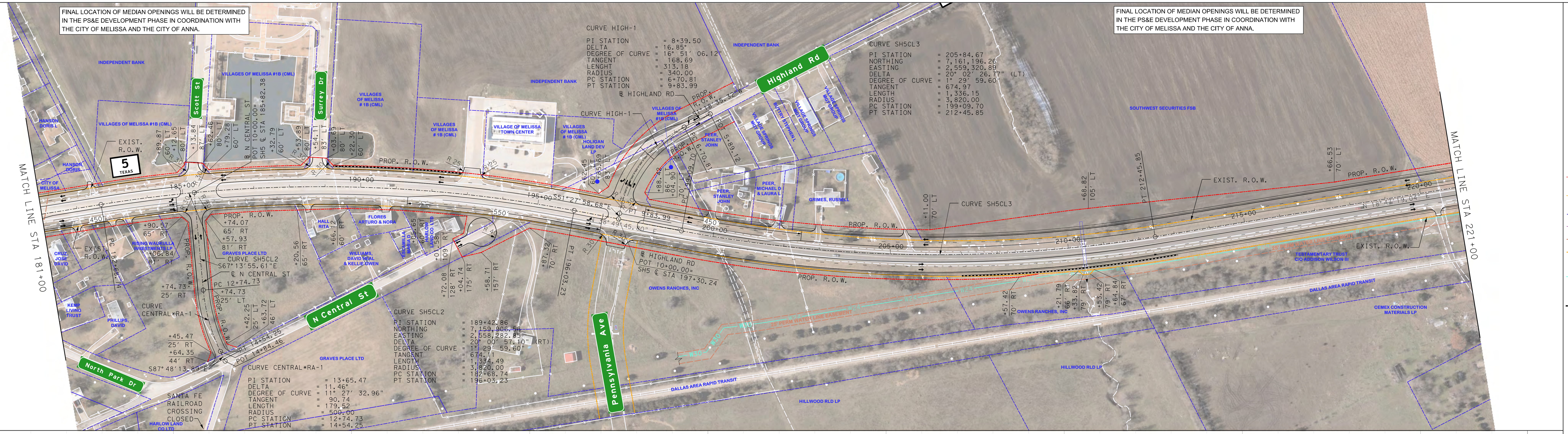
EXISTING TYPICAL SECTION
PROPOSED TYPICAL SECTIONS

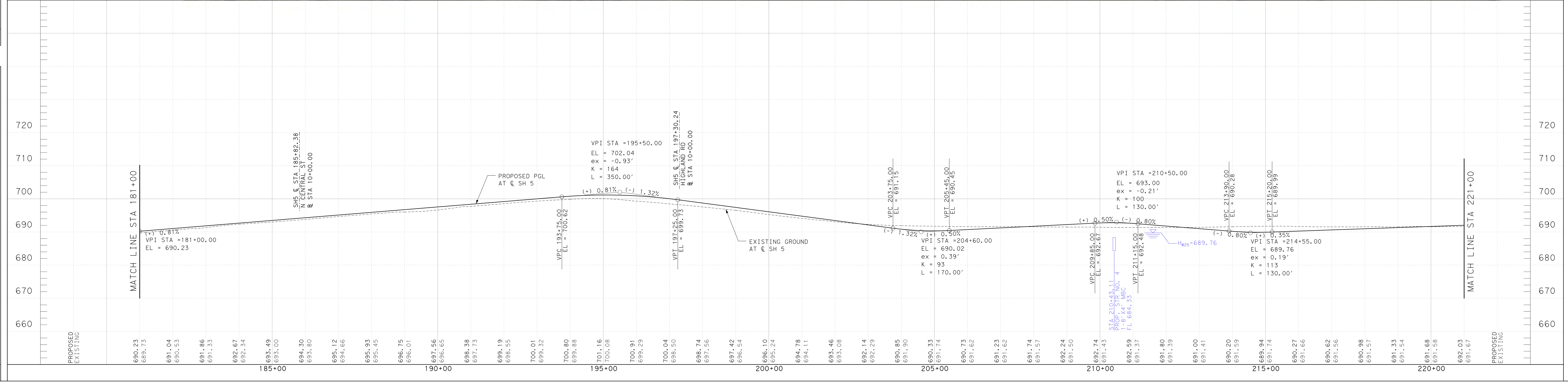


PROFILE - HIGHLAND RD
(HIGH)
DESIGN SPEED=30 MPH



PROFILE - N CENTRAL ST
(PROP. CENTRAL RA)
DESIGN SPEED=30 MPH





0 100 200 300
SCALE IN FEET

LEGEND

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- PARCEL BOUNDARY (APPROX.)
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TEXAS DEPARTMENT OF TRANSPORTATION
DALLAS DISTRICT
COLLIN COUNTY
DESIGN SCHEMATIC
KELLY SELMAN, P.E.
DISTRICT ENGINEER
SH 5 RECONSTRUCTION PROJECT
CSJ: 0047-04-022
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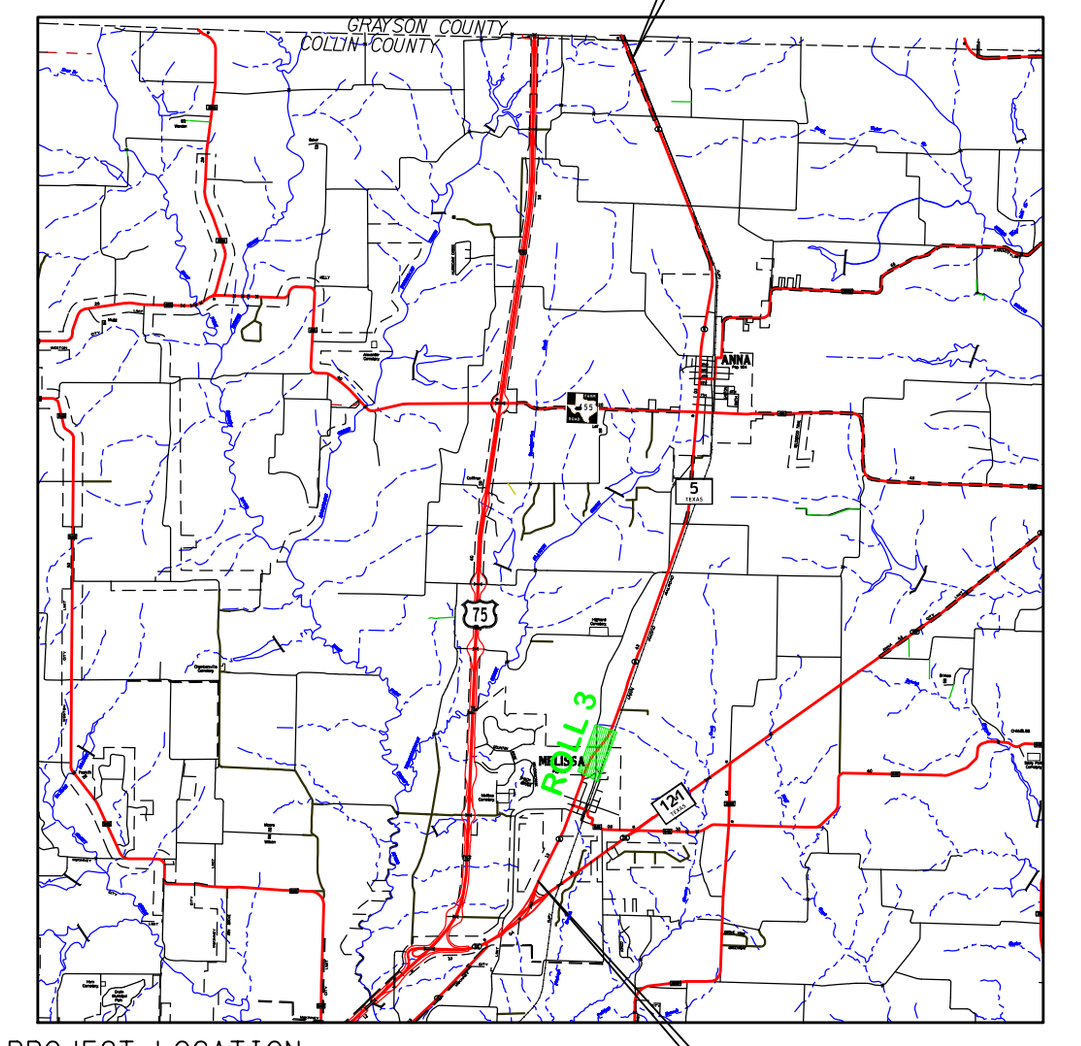

PROJECT LOCATION
COLLIN COUNTY
DALLAS DISTRICT
INDEX OF ROLLS
APPROVED
NOVEMBER 17, 2016
PREPARED BY:
CIVIL ASSOCIATES, INC.
TBPE REGISTRATION NO. F-006981
NASER ABUSAAD, P.E., AICP
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COUNTY: COLLIN
DATE: JANUARY 2017
DESIGN SCHEMATIC FOR SH 5 RECONSTRUCTION
ROLL 3 OF 11

TEXAS DEPARTMENT OF TRANSPORTATION
DALLAS DISTRICT

COLLIN COUNTY

DESIGN SCHEMATIC

KELLY SELMAN, P.E.
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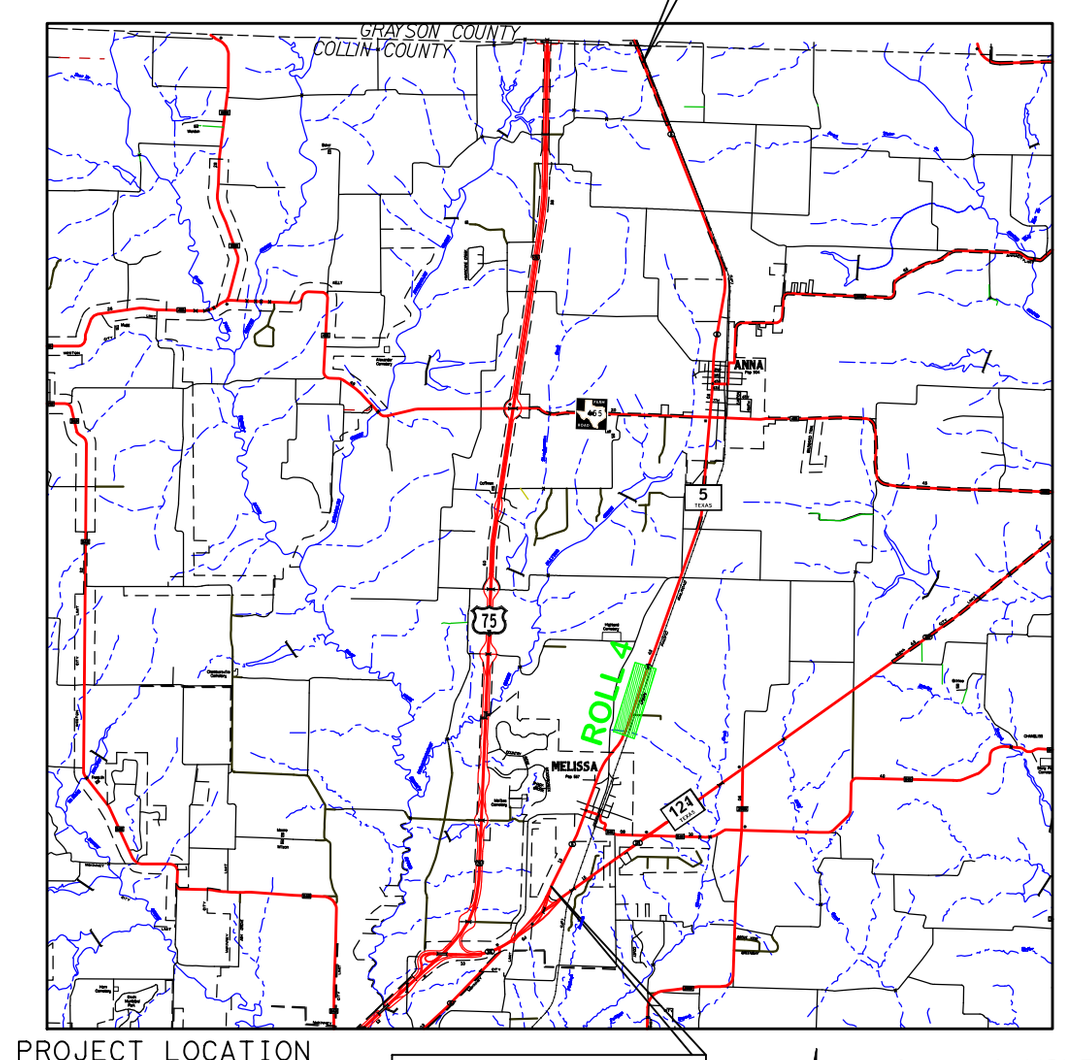
COUNTY: COLLIN
DATE: JANUARY 2017

DESIGN SCHEMATIC FOR SH 5 RECONSTRUCTION

ROLL 4 OF 11

END PROJECT
STA 568+90.20
CSJ: 0047-04-022



PROJECT LOCATION
COLLIN COUNTY
DALLAS DISTRICT

BEGIN PROJECT
STA 116+00.00
CSJ: 0047-04-022

0 1 MILE

INDEX OF ROLLS

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$PLTDRV$
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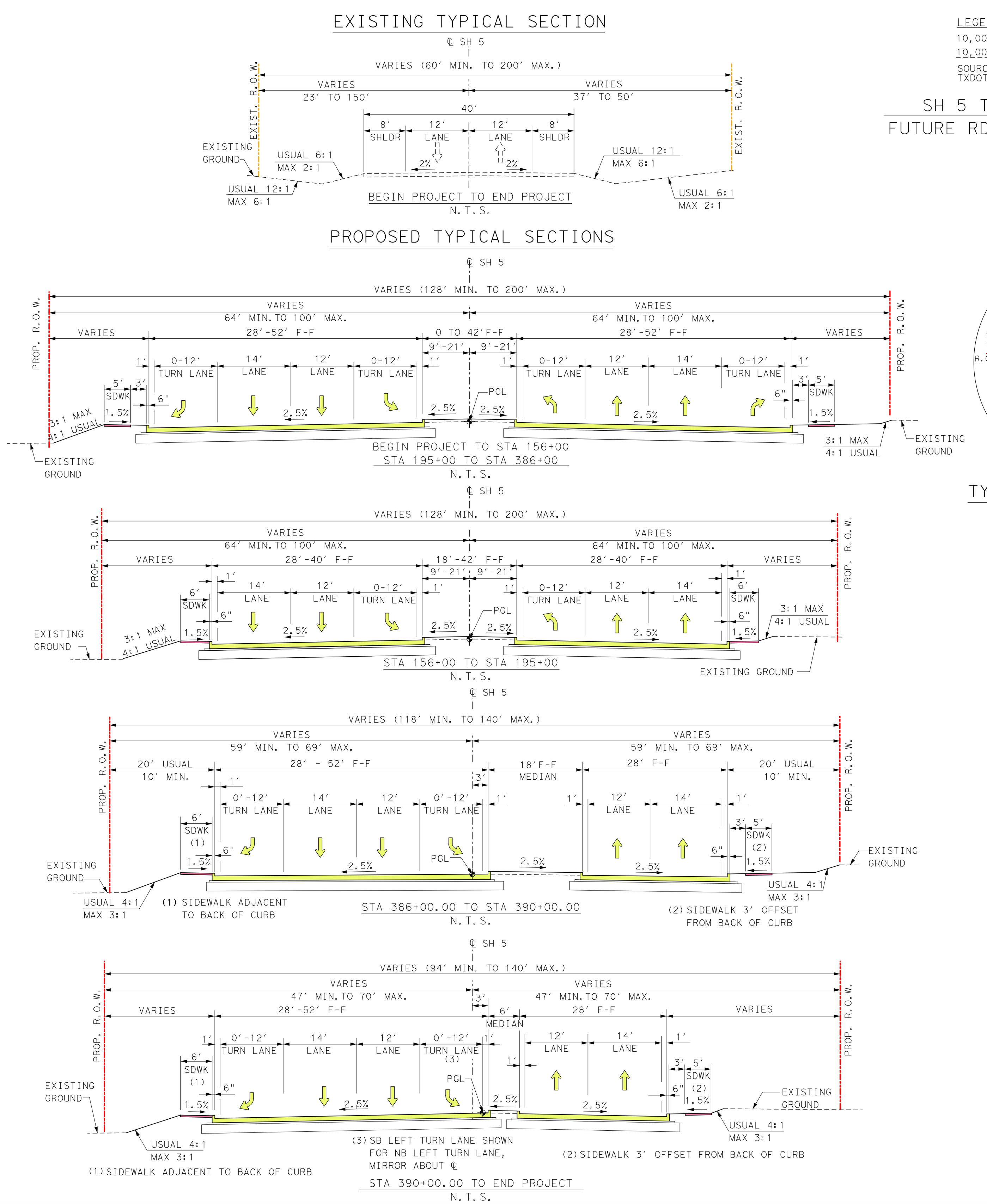
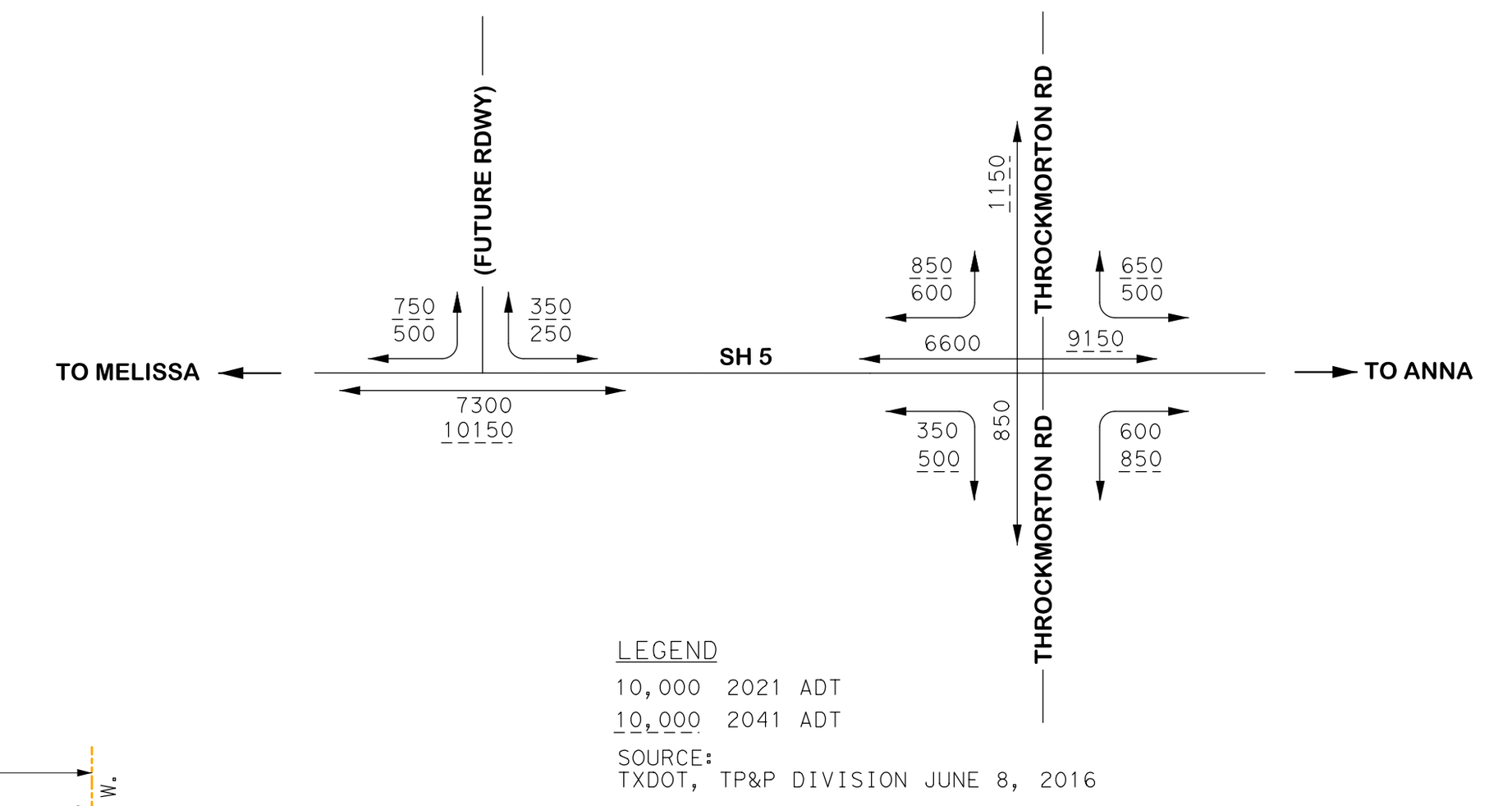
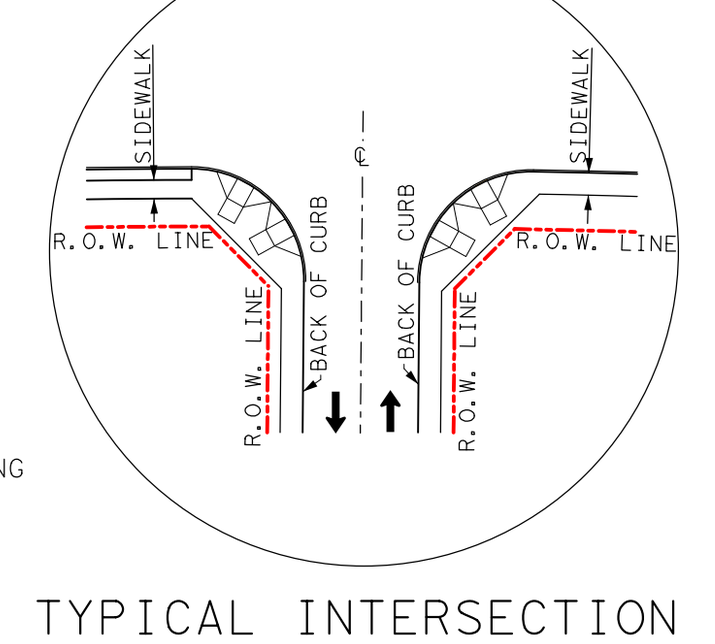
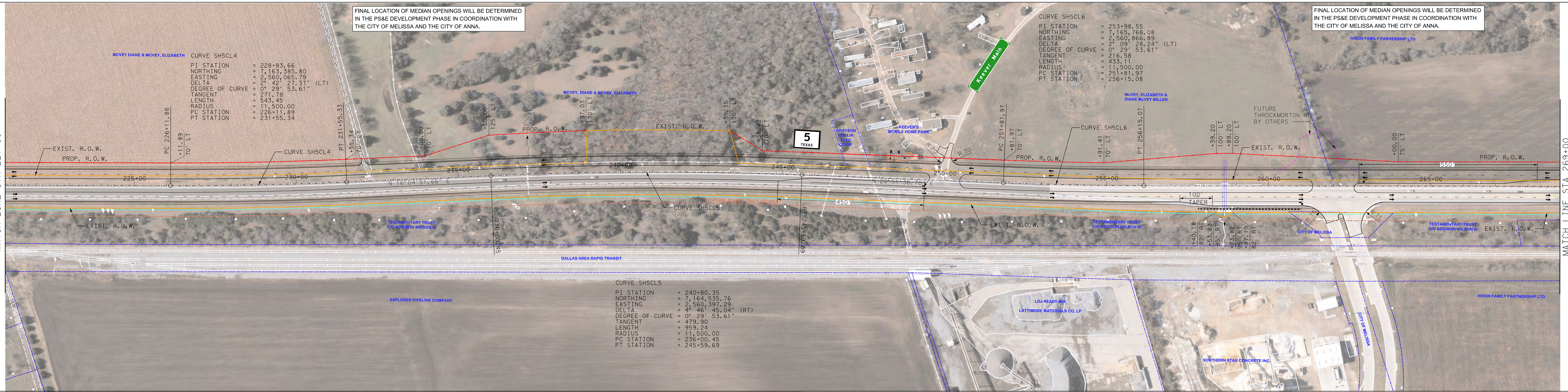




SH 5 TRAFFIC PROJECTIONS
FUTURE ROW@ TO THROCKMORTON RD



TYPICAL INTERSECTION
CURB RAMP LAYOUT
N.T.S.



SCALE IN FEET
0 100 200 300

LEGEND

- PROPOSED RIGHT-OF-WAY
- EXISTING RIGHT-OF-WAY
- PARCEL BOUNDARY (APPROX.)
- CITY LIMITS (APPROX.)
- PERMANENT WATER EASEMENT
- PERMANENT DRAINAGE EASEMENT
- PROPOSED LANE
- EXISTING WATER LINE
- PROPOSED DRAINAGE STRUCTURE
- PROPOSED RETAINING WALL OR RIPRAP
- FUTURE ROADWAY (BY OTHERS)
- DISPLACEMENT
- DRAINAGE FLOW

NOTES:

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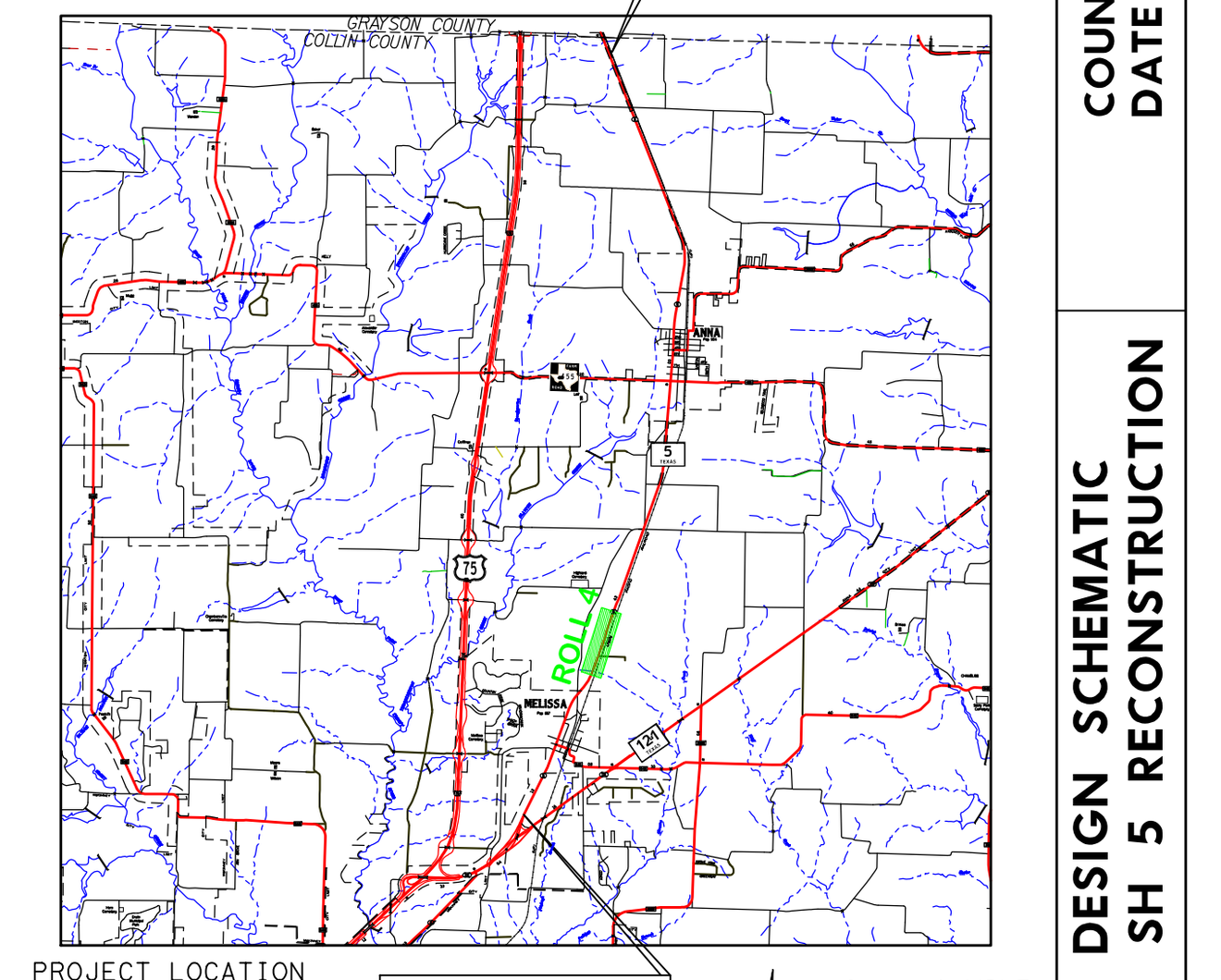
TEXAS DEPARTMENT OF TRANSPORTATION
DALLAS DISTRICT
COLLIN COUNTY
DESIGN SCHEMATIC
SH 5 RECONSTRUCTION PROJECT
CSJ: 0047-04-022
FROM: SH 121N
TO: CR 375
NET LENGTH OF PROJECT: 8.58 MILES
APPROVED
NOVEMBER 17, 2016



PROJECT LOCATION
COLLIN COUNTY
DALLAS DISTRICT

COUNTY: COLLIN
DATE: JANUARY 2017

DESIGN SCHEMATIC FOR SH 5 RECONSTRUCTION

ROLL 5 OF 11

TEXAS DEPARTMENT OF TRANSPORTATION
DALLAS DISTRICT

COLLIN COUNTY
DESIGN SCHEMATIC

KELLY SELMAN, P.E.
DISTRICT ENGINEER

SH 5 RECONSTRUCTION PROJECT

CSJ: 0047-04-022

FROM: SH 121N
TO: CR 375

NET LENGTH OF PROJECT: 8.58 MILES

FUNCTIONAL CLASSIFICATION:
URBAN MINOR ARTERIAL
SH 5 DESIGN SPEED = 40 MPH
CR 423, CR 371/CR 376 DESIGN SPEED = 30 MPH
HIGHLAND RD & N CENTRAL ST DESIGN SPEED=30 MPH

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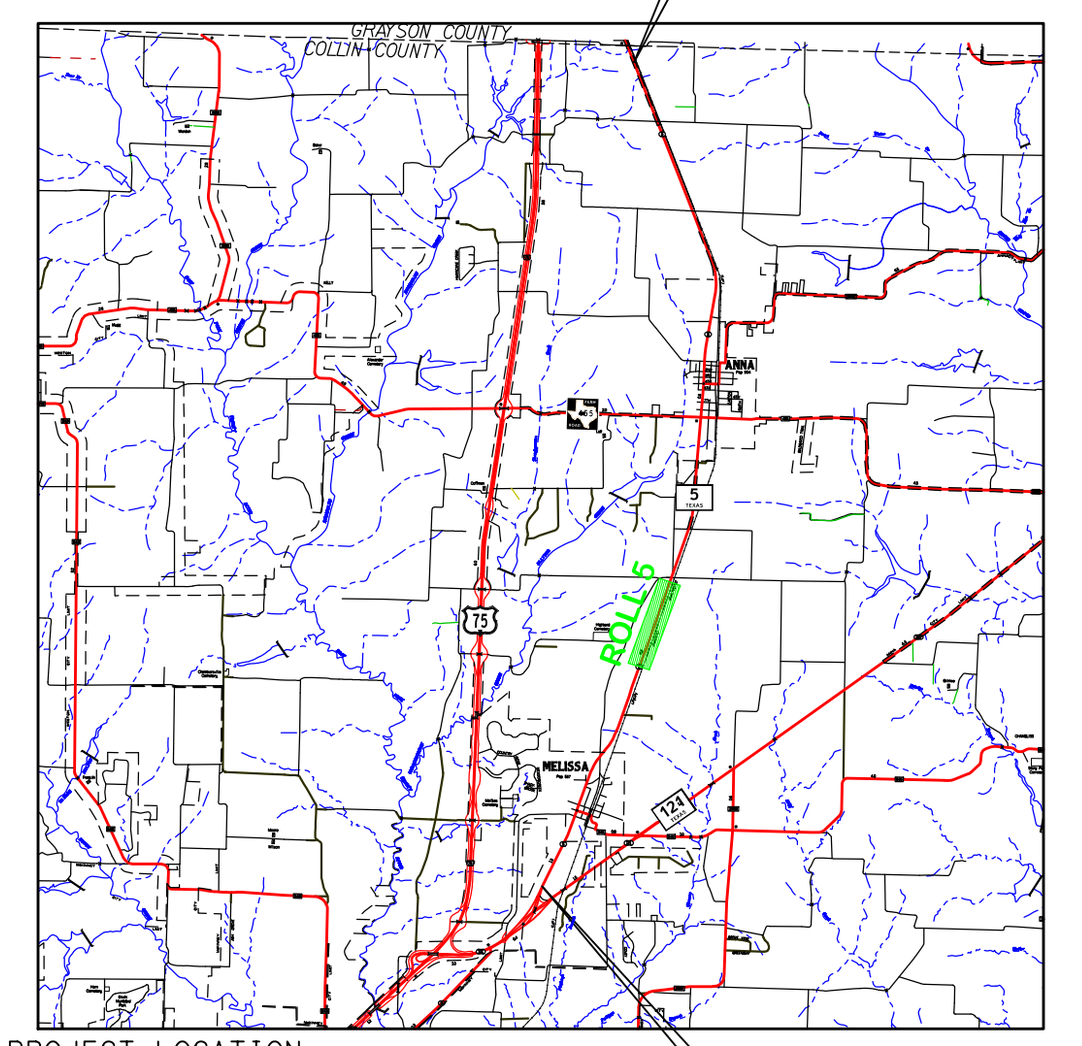
DIRECTIONAL DISTRIBUTION (%)	58 - 42	58 - 42
PERCENT TRUCKS OF DHV	11.1	10.1
K FACTOR	10.8	10.8

END PROJECT
STA 568+90.20
CSJ: 0047-04-022



PROJECT LOCATION
COLLIN COUNTY
DALLAS DISTRICT

BEGIN PROJECT
STA 116+00.00
CSJ: 0047-04-022

0 1 MILE

INDEX OF ROLLS

APPROVED
NOVEMBER 17, 2016

PREPARED BY:
CIVIL ASSOCIATES, INC.
TBPE REGISTRATION NO. F-006981

CIVIL ASSOCIATES, INC.
9330 LBJ Frwy, Ste. 1150
Dallas, Texas 75243
TBPE Firm Registration No. 6981

NASER ABUSAAD, P.E., AICP
LICENSE NO. 83200

GRANT WU, P.E.
LICENSE NO. 89529

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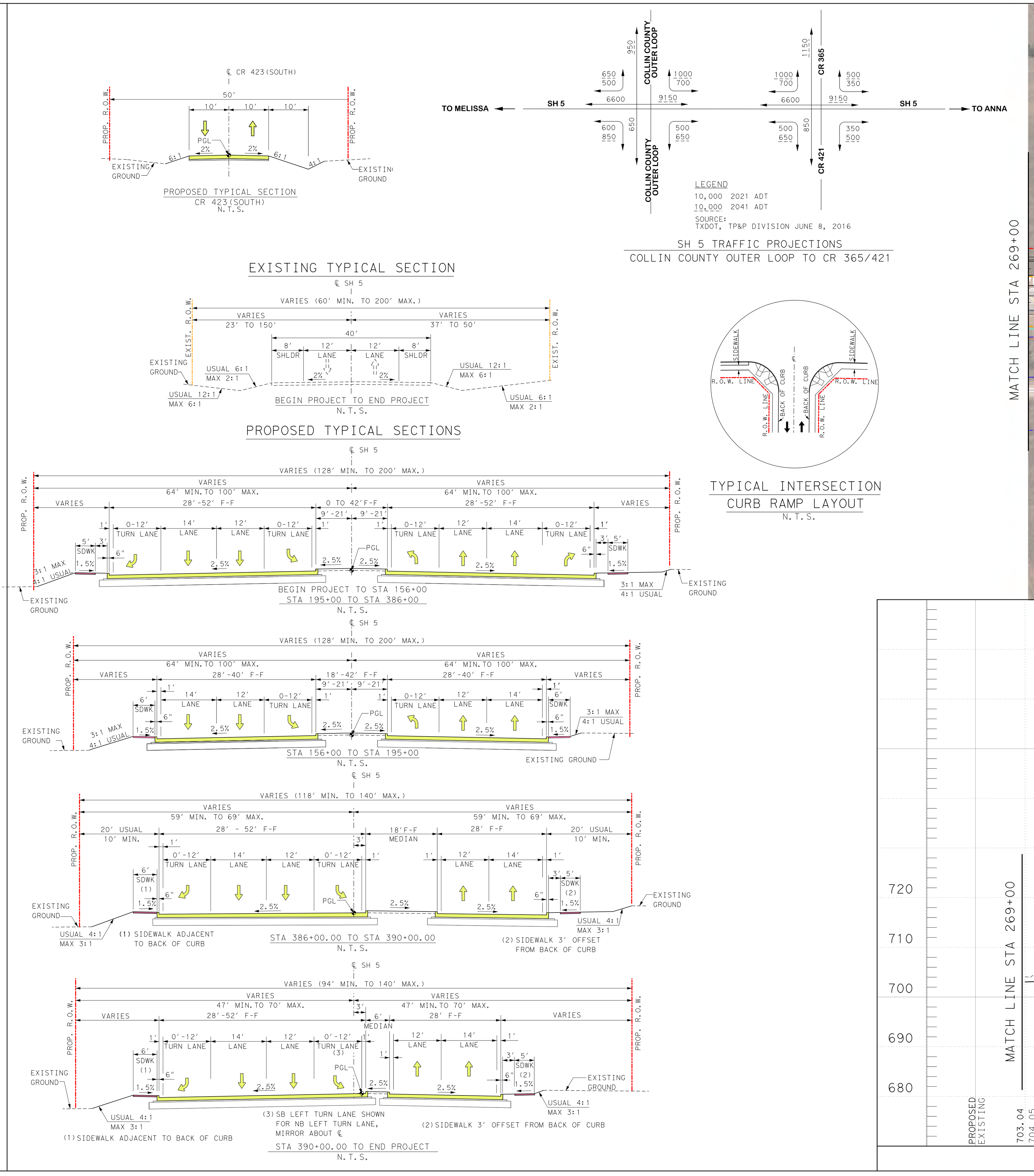

0 100 200 300
SCALE IN FEET

LEGEND

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TEXAS DEPARTMENT OF TRANSPORTATION
DALLAS DISTRICT
COLLIN COUNTY
DESIGN SCHEMATIC
SH 5 RECONSTRUCTION PROJECT
APPROVED
NOVEMBER 17, 2016

TEXAS DEPARTMENT OF TRANSPORTATION
DALLAS DISTRICT

COLLIN COUNTY

DESIGN SCHEMATIC

KELLY SELMAN, P.E.
DISTRICT ENGINEER

SH 5 RECONSTRUCTION PROJECT

CSJ: 0047-04-022
FROM: SH 121N
TO: CR 375

NET LENGTH OF PROJECT: 8.58 MILES
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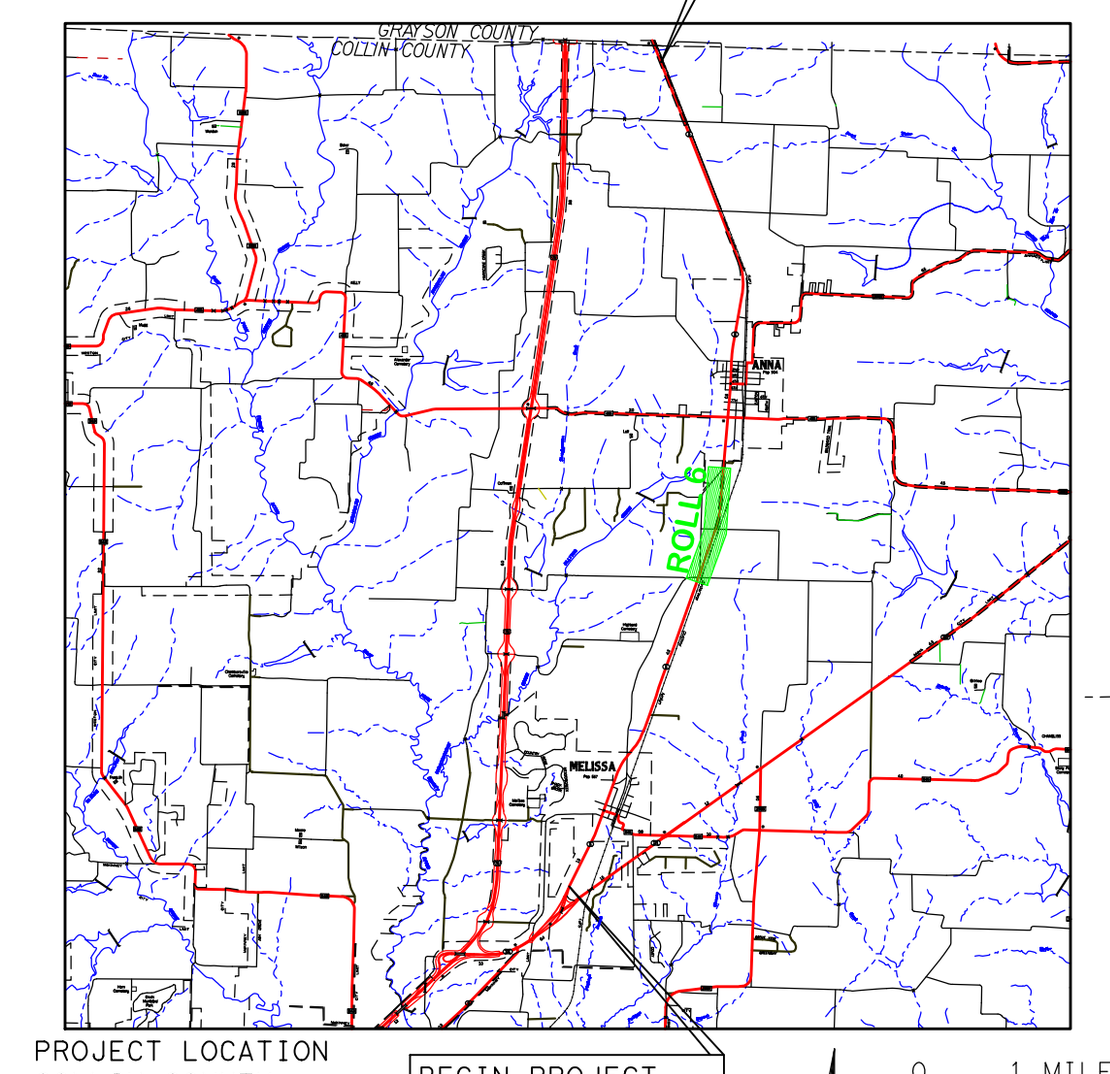
END PROJECT
STA 568+90.20
CSJ: 0047-04-022



PROJECT LOCATION
COLLIN COUNTY
DALLAS DISTRICT

BEGIN PROJECT
STA 116+00.00
CSJ: 0047-04-022

0 1 MILE

COUNTY: COLLIN
DATE: JANUARY 2017

DESIGN SCHEMATIC FOR SH 5 RECONSTRUCTION

ROLL 6 OF 11

INDEX OF ROLLS

ROLL 1 - PLAN AND PROFILE - BEGIN PROJECT TO STA 141+00
ROLL 2 - PLAN AND PROFILE - STA 141+00 TO STA 181+00
ROLL 3 - PLAN AND PROFILE - STA 181+00 TO STA 221+00
ROLL 4 - PLAN AND PROFILE - STA 221+00 TO STA 269+00
ROLL 5 - PLAN AND PROFILE - STA 269+00 TO STA 321+00
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ROLL 7 - PLAN AND PROFILE - STA 363+00 TO STA 411+00
ROLL 8 - PLAN AND PROFILE - STA 411+00 TO STA 459+00
ROLL 9 - PLAN AND PROFILE - STA 459+00 TO STA 505+00
ROLL 10 - PLAN AND PROFILE - STA 505+00 TO STA 550+00
ROLL 11 - PLAN AND PROFILE - STA 550+00 TO END OF PROJECT

APPROVED
NOVEMBER 17, 2016

PREPARED BY:
CIVIL ASSOCIATES, INC.
TBPE REGISTRATION NO. F-006981

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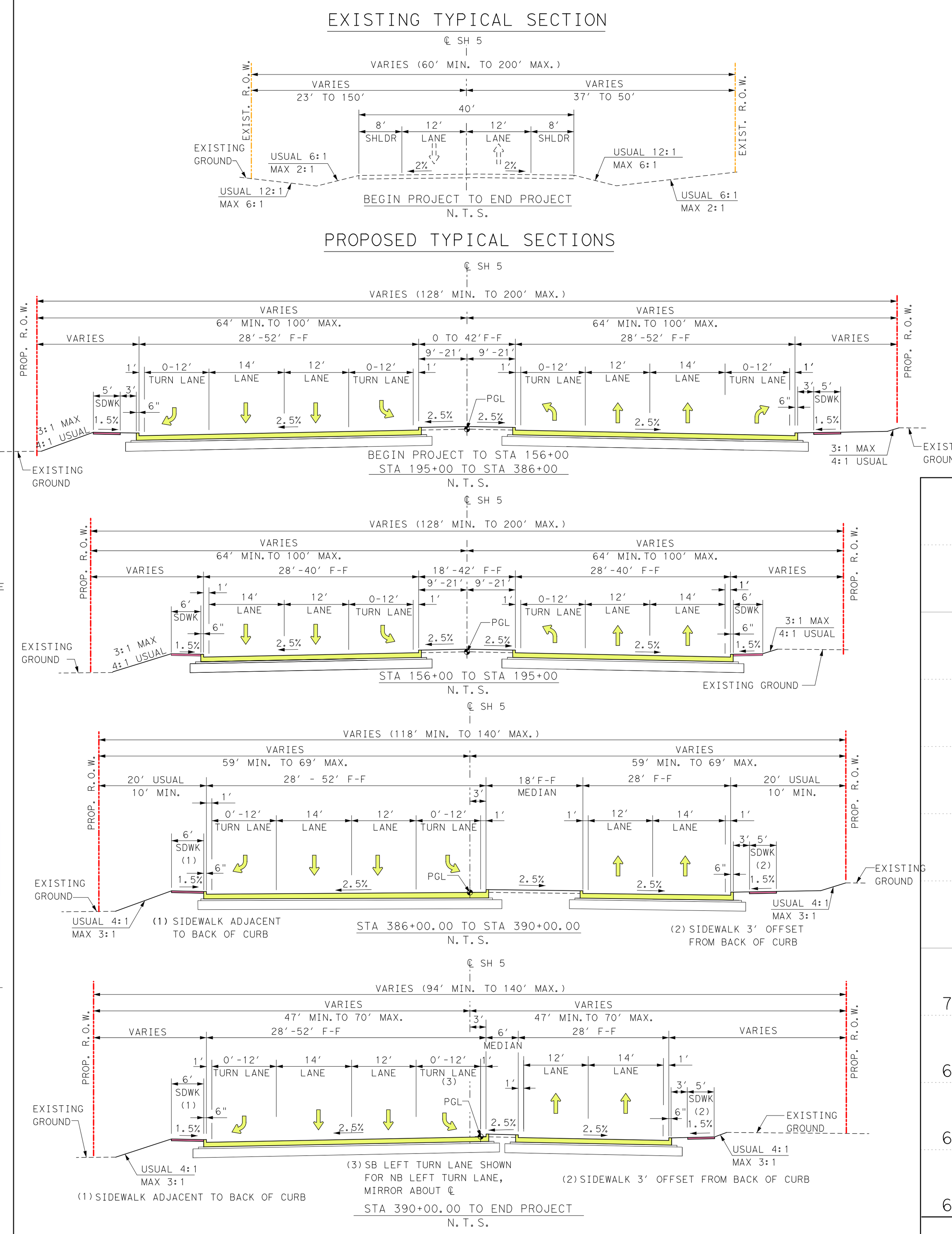

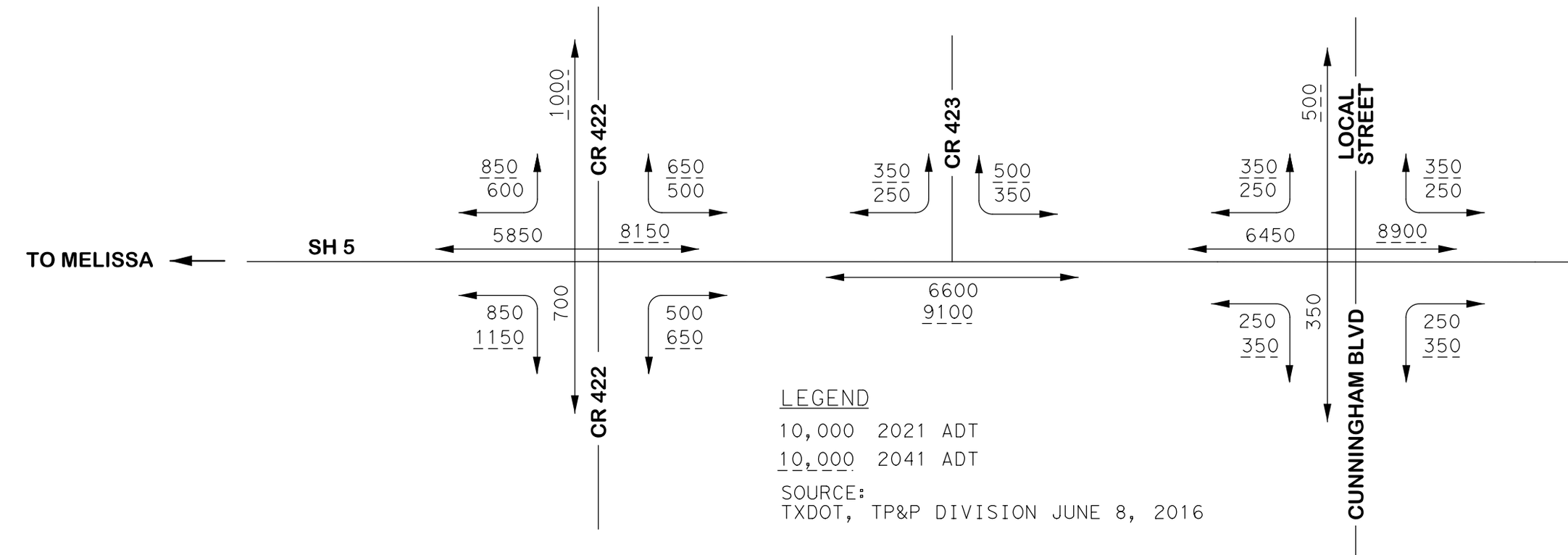

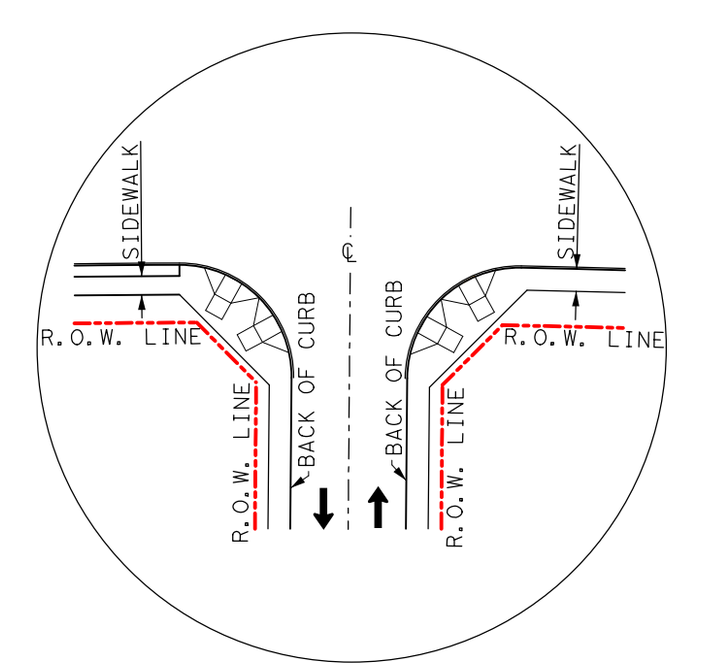

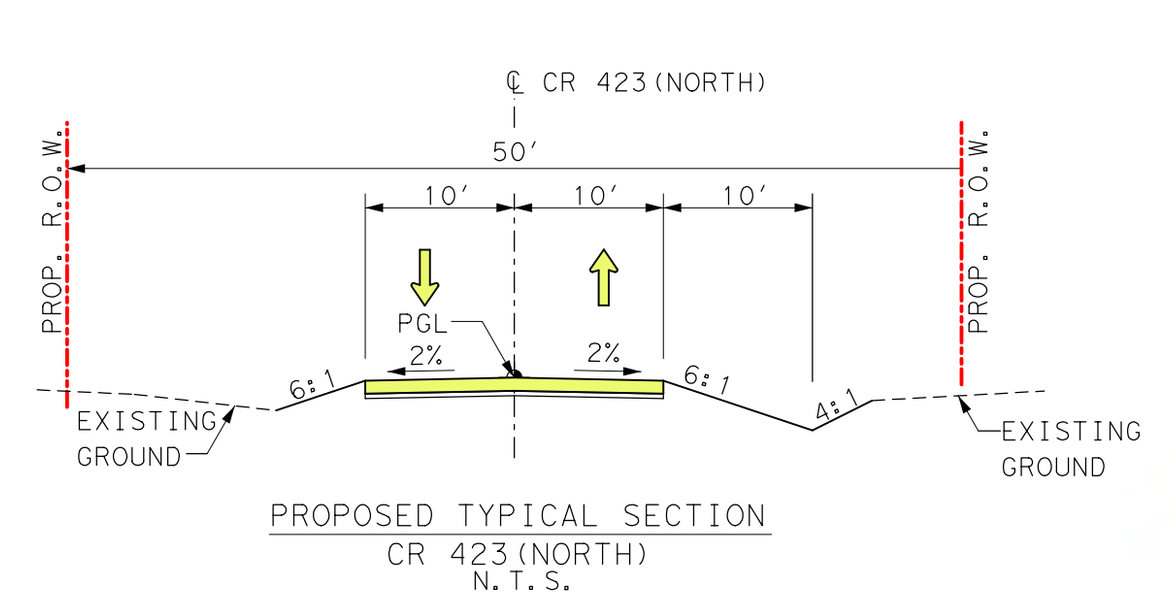

SCALE IN FEET
0 100 200 300

LEGEND

- PROPOSED RIGHT-OF-WAY
- EXISTING RIGHT-OF-WAY
- PARCEL BOUNDARY (APPROX.)
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TEXAS DEPARTMENT OF TRANSPORTATION
DALLAS DISTRICT
COLLIN COUNTY
DESIGN SCHEMATIC
KELLY SELMAN, P.E.
DISTRICT ENGINEER
SH 5 RECONSTRUCTION PROJECT
CSJ: 0047-04-022
FROM: SH 121N
TO: CR 375
NET LENGTH OF PROJECT: 8.58 MILES
APPROVED
NOVEMBER 17, 2016

TEXAS DEPARTMENT OF TRANSPORTATION
DALLAS DISTRICT

COLLIN COUNTY
DESIGN SCHEMATIC

KELLY SELMAN, P.E.
DISTRICT ENGINEER

SH 5 RECONSTRUCTION PROJECT

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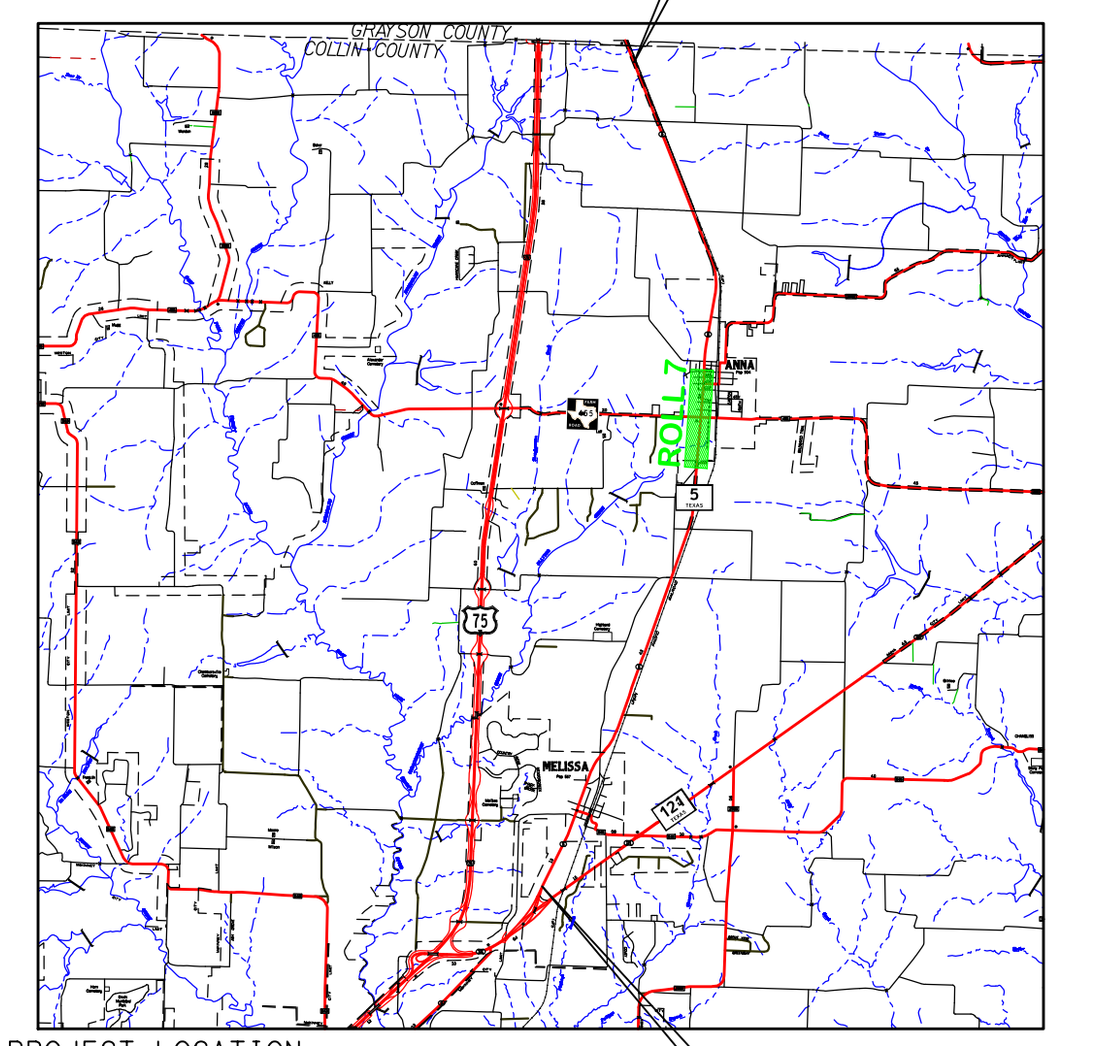
END PROJECT
STA 568+90.20
CSJ: 0047-04-022



PROJECT LOCATION
COLLIN COUNTY
DALLAS DISTRICT

BEGIN PROJECT
STA 116+00.00
CSJ: 0047-04-022

0 1 MILE

COUNTY: COLLIN
DATE: JANUARY 2017
DESIGN SCHEMATIC FOR SH 5 RECONSTRUCTION
ROLL 7 OF 11

INDEX OF ROLLS

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APPROVED
NOVEMBER 17, 2016

PREPARED BY:
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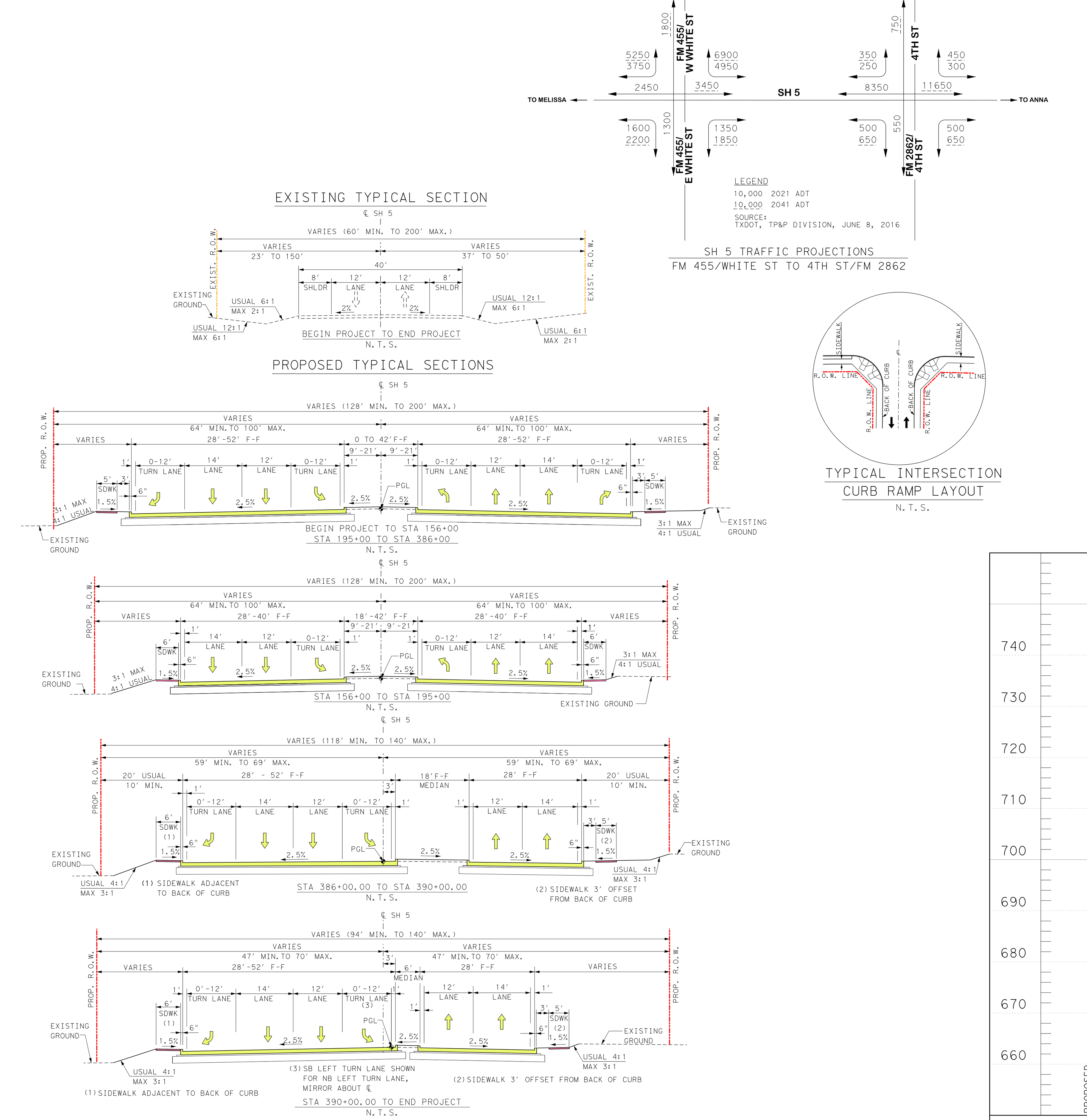

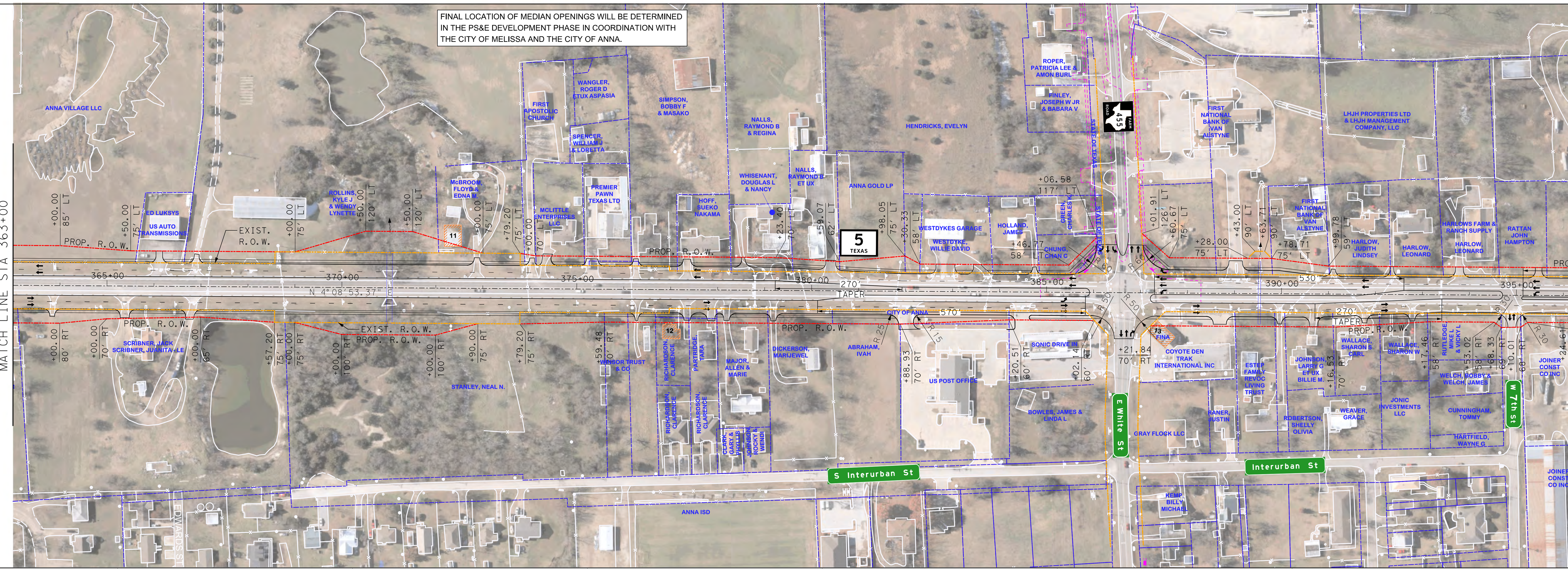

LEGEND

PROPOSED RIGHT-OF-WAY
EXISTING RIGHT-OF-WAY
PARCEL BOUNDARY (APPROX.)
CITY LIMITS (APPROX.)
PERMANENT WATER EASEMENT
PERMANENT DRAINAGE EASEMENT
PROPOSED LANE
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PROPOSED RETAINING WALL OR RIPRAP
FUTURE ROADWAY (BY OTHERS)
DISPLACEMENT
DRAINAGE FLOW

SCALE IN FEET

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DALLAS DISTRICT
COLLIN COUNTY
DESIGN SCHEMATIC
KELLY SELMAN, P.E.
DISTRICT ENGINEER
SH 5 RECONSTRUCTION PROJECT
CSJ: 0047-04-022
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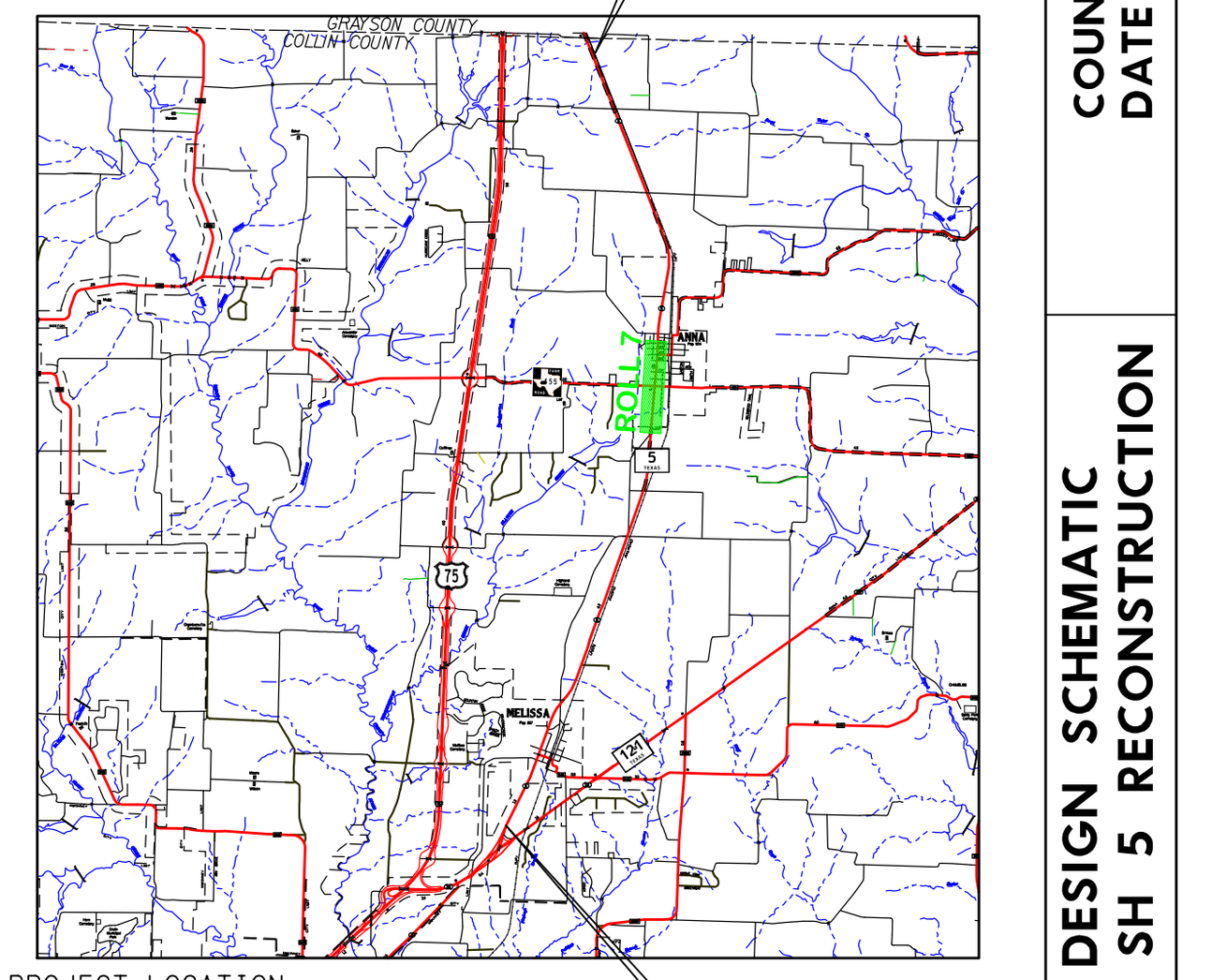

PROJECT LOCATION
COLLIN COUNTY
DALLAS DISTRICT
COUNTY: COLLIN
DATE: JANUARY 2017
DESIGN SCHEMATIC FOR SH 5 RECONSTRUCTION
ROLL 7 OF 11
APPROVED
NOVEMBER 17, 2016
PREPARED BY:
CIVIL ASSOCIATES, INC.
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DALLAS DISTRICT

COLLIN COUNTY

DESIGN SCHEMATIC

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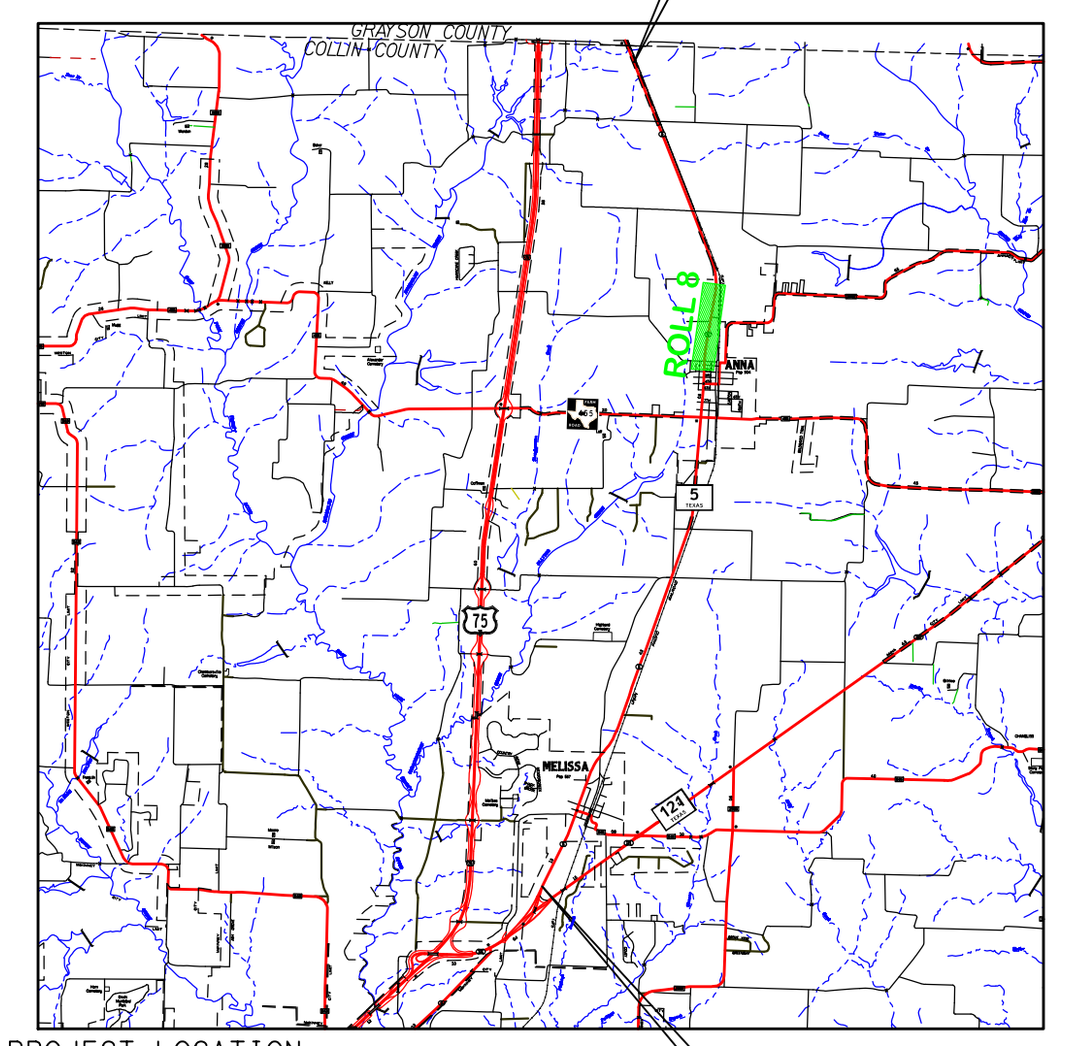

PROJECT LOCATION
COLLIN COUNTY
DALLAS DISTRICT

BEGIN PROJECT
STA 116+00.00
CSJ: 0047-04-022

0 1 MILE

INDEX OF ROLLS

APPROVED

NOVEMBER 17, 2016

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COUNTY: COLLIN
DATE: JANUARY 2017

DESIGN SCHEMATIC FOR SH 5 RECONSTRUCTION

ROLL 8 OF 11

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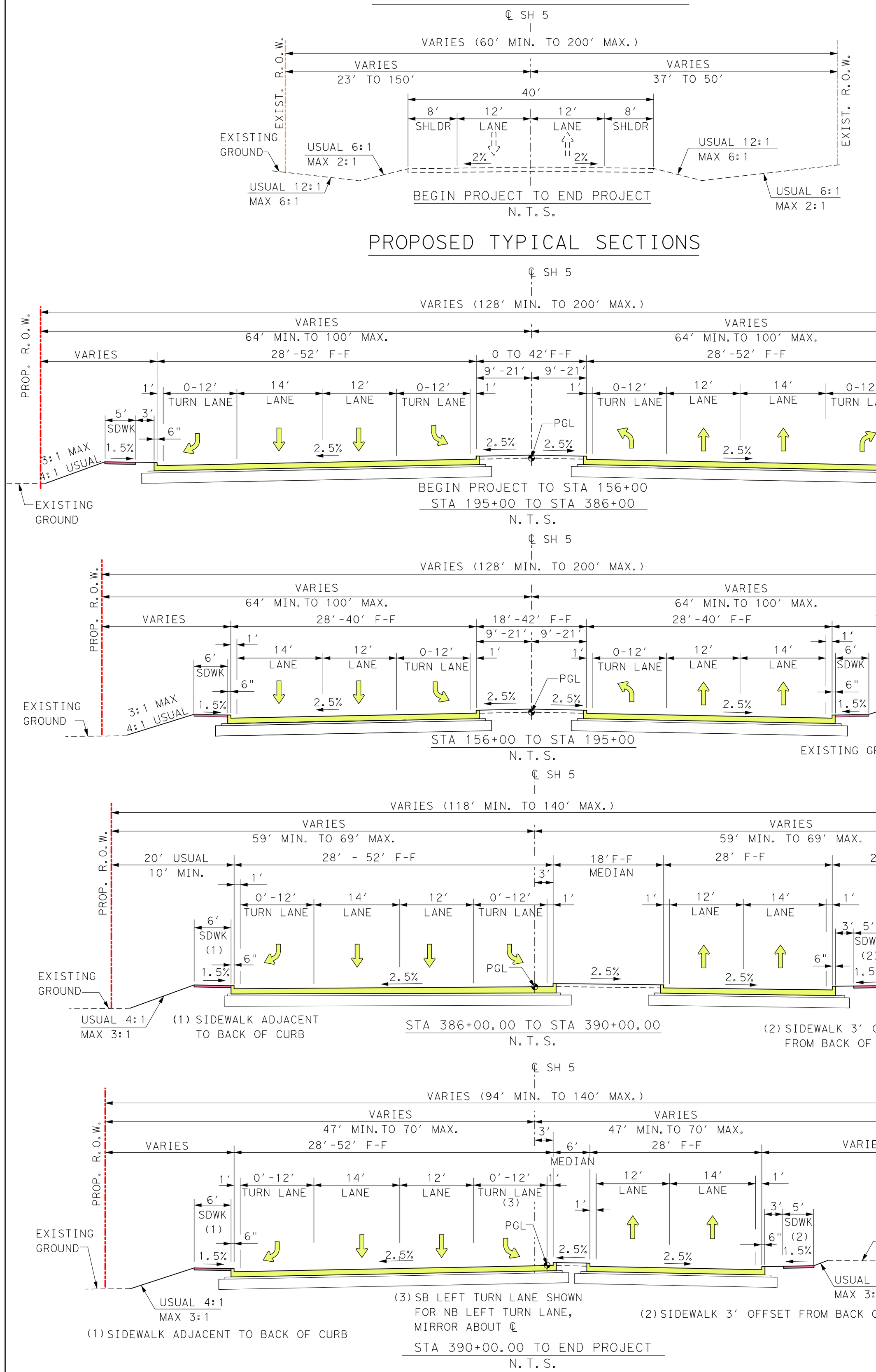
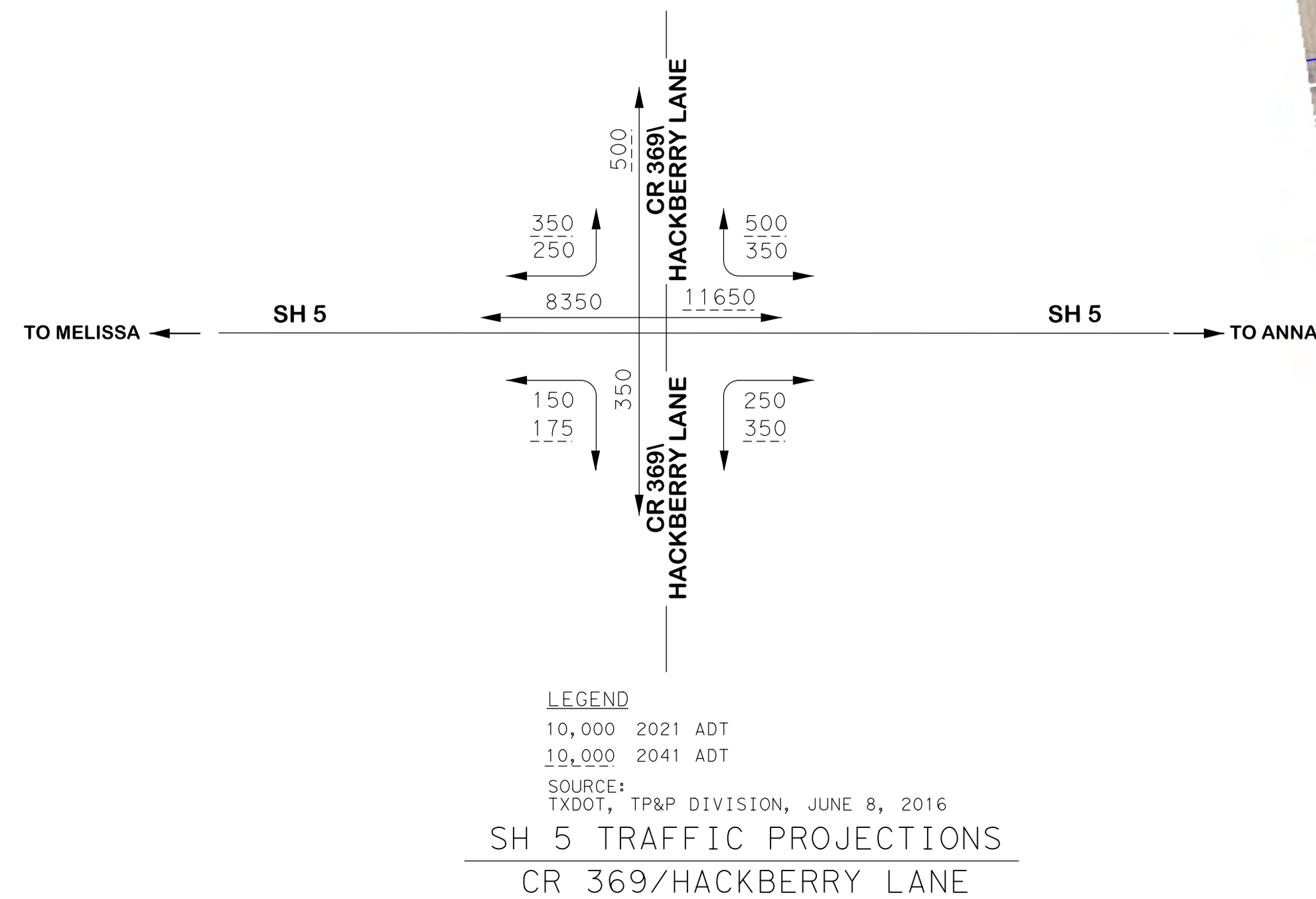
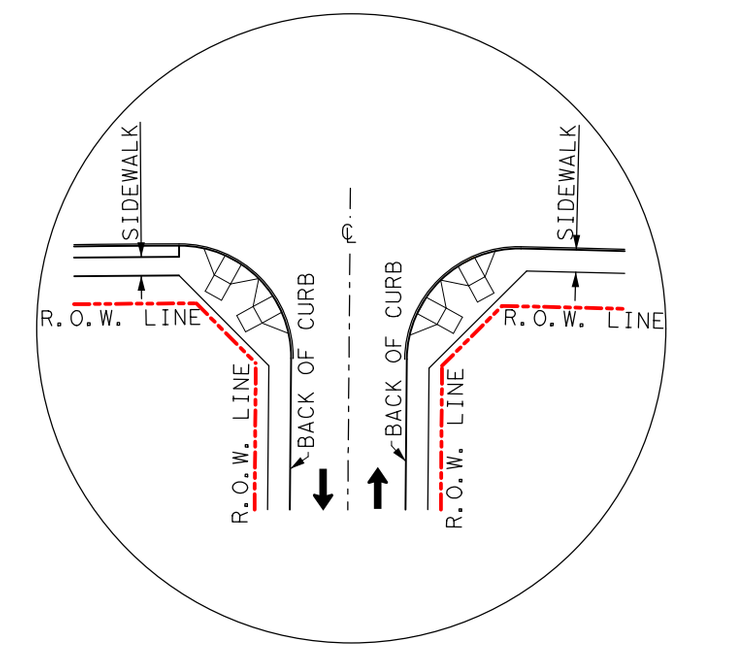
EXISTING TYPICAL SECTION

PROPOSED TYPICAL SECTIONS





SH 5 TRAFFIC PROJECTIONS
CR 369/HACKBERRY LANE



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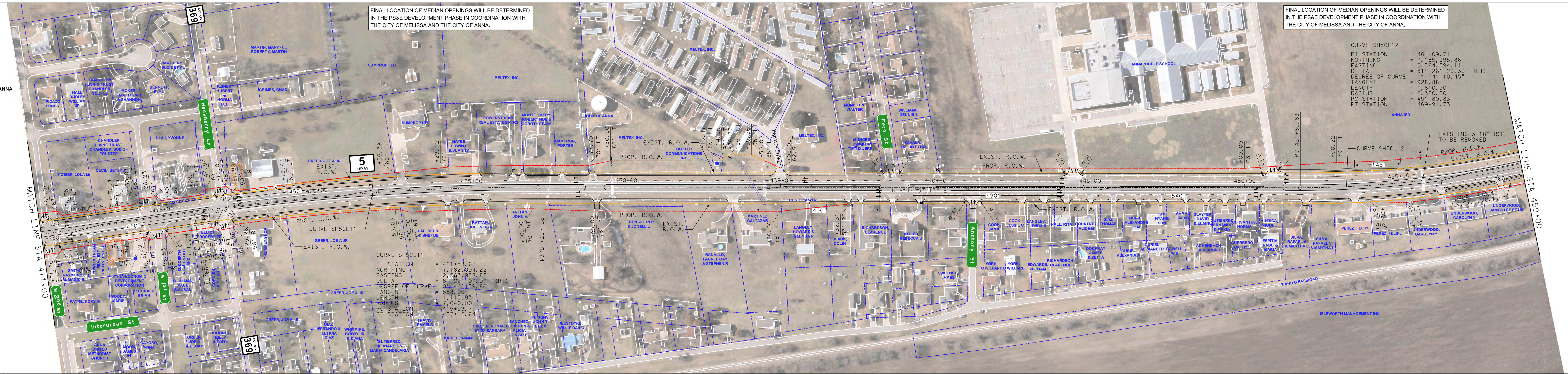
N.T.S.



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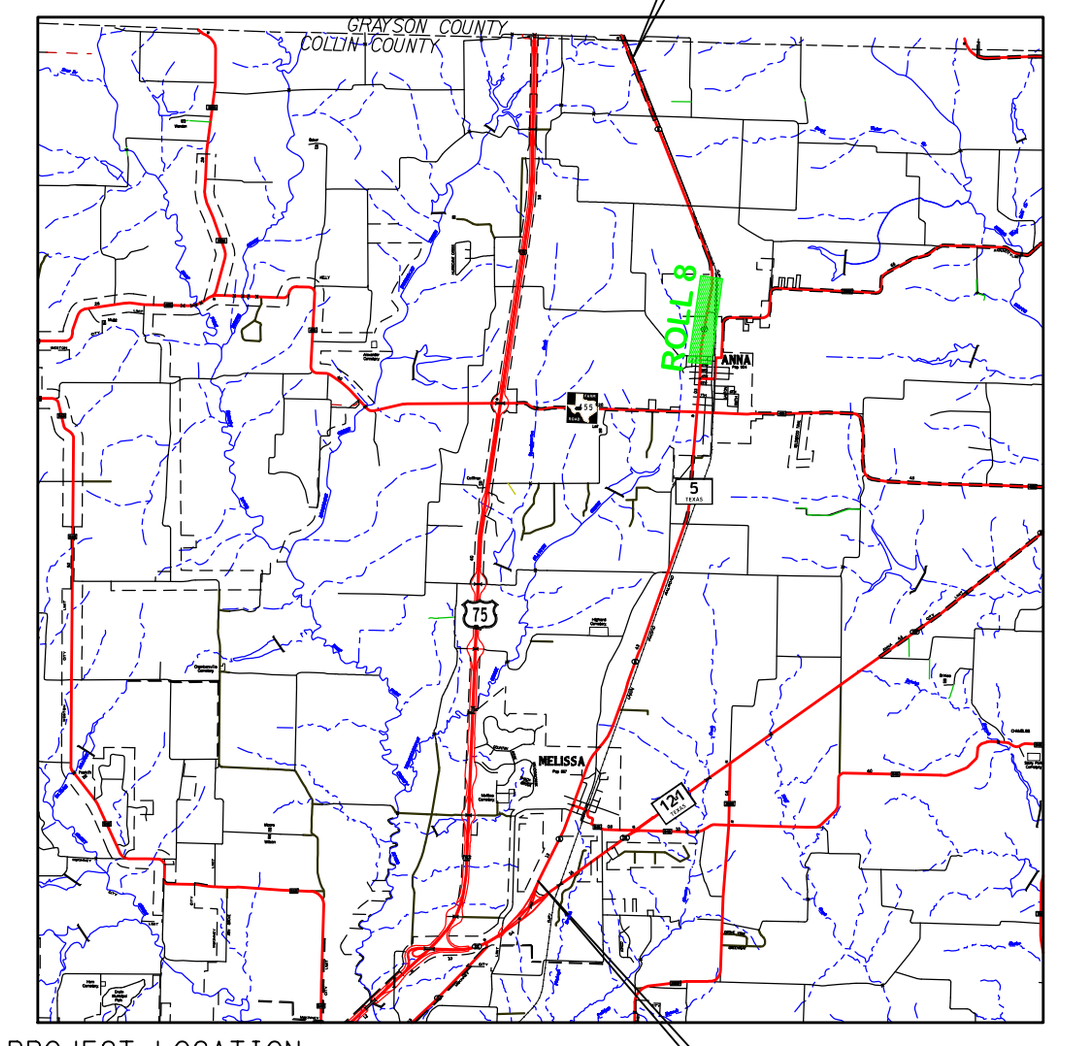
0 100 200 300
SCALE IN FEET

LEGEND

- PROPOSED RIGHT-OF-WAY
- EXISTING RIGHT-OF-WAY
- PARCEL BOUNDARY (APPROX.)
- CITY LIMITS (APPROX.)
- PERMANENT WATER EASEMENT
- PERMANENT DRAINAGE EASEMENT
- PROPOSED LANE
- EXISTING WATER LINE
- PROPOSED DRAINAGE STRUCTURE
- PROPOSED RETAINING WALL OR RIPRAP
- FUTURE ROADWAY (BY OTHERS)
- 11 DISPLACEMENT
- DRAINAGE FLOW

TEXAS DEPARTMENT OF TRANSPORTATION
DALLAS DISTRICT
COLLIN COUNTY
DESIGN SCHEMATIC
KELLY SELMAN, P.E.
DISTRICT ENGINEER
SH 5 RECONSTRUCTION PROJECT
CSJ: 0047-04-022
FROM: SH 121N
TO: CR 375
NET LENGTH OF PROJECT: 8.58 MILES
APPROVED
NOVEMBER 17, 2016
COUNTY: COLLIN
DATE: JANUARY 2017
DESIGN SCHEMATIC FOR SH 5 RECONSTRUCTION
ROLL 8 OF 11



TEXAS DEPARTMENT OF TRANSPORTATION
DALLAS DISTRICT

COLLIN COUNTY

DESIGN SCHEMATIC

KELLY SELMAN, P.E.
DISTRICT ENGINEER

SH 5 RECONSTRUCTION PROJECT

CSJ: 0047-04-022

FROM: SH 121N
TO: CR 375

NET LENGTH OF PROJECT: 8.58 MILES

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CR 423, CR 371/CR 376 DESIGN SPEED = 30 MPH
HIGHLAND RD & N CENTRAL ST DESIGN SPEED=30 MPH

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DIRECTIONAL DISTRIBUTION (%)	58 - 42	58 - 42
PERCENT TRUCKS OF DHV	11.1	10.1
K FACTOR	10.8	10.8

END PROJECT
STA 568+90.20
CSJ: 0047-04-022

PROJECT LOCATION
COLLIN COUNTY
DALLAS DISTRICT

BEGIN PROJECT
STA 116+00.00
CSJ: 0047-04-022

0 1 MILE

INDEX OF ROLLS

APPROVED
NOVEMBER 17, 2016

PREPARED BY:
CIVIL ASSOCIATES, INC.
TBPE REGISTRATION NO. F-006981

NASER ABUSAAD, P.E., AICP
LICENSE NO. 83200

GRANT WU, P.E.
LICENSE NO. 89529

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CAI
9330 LBJ Frwy, Ste. 1150
Dallas, Texas 75243
TBPE Firm Registration No. 6981

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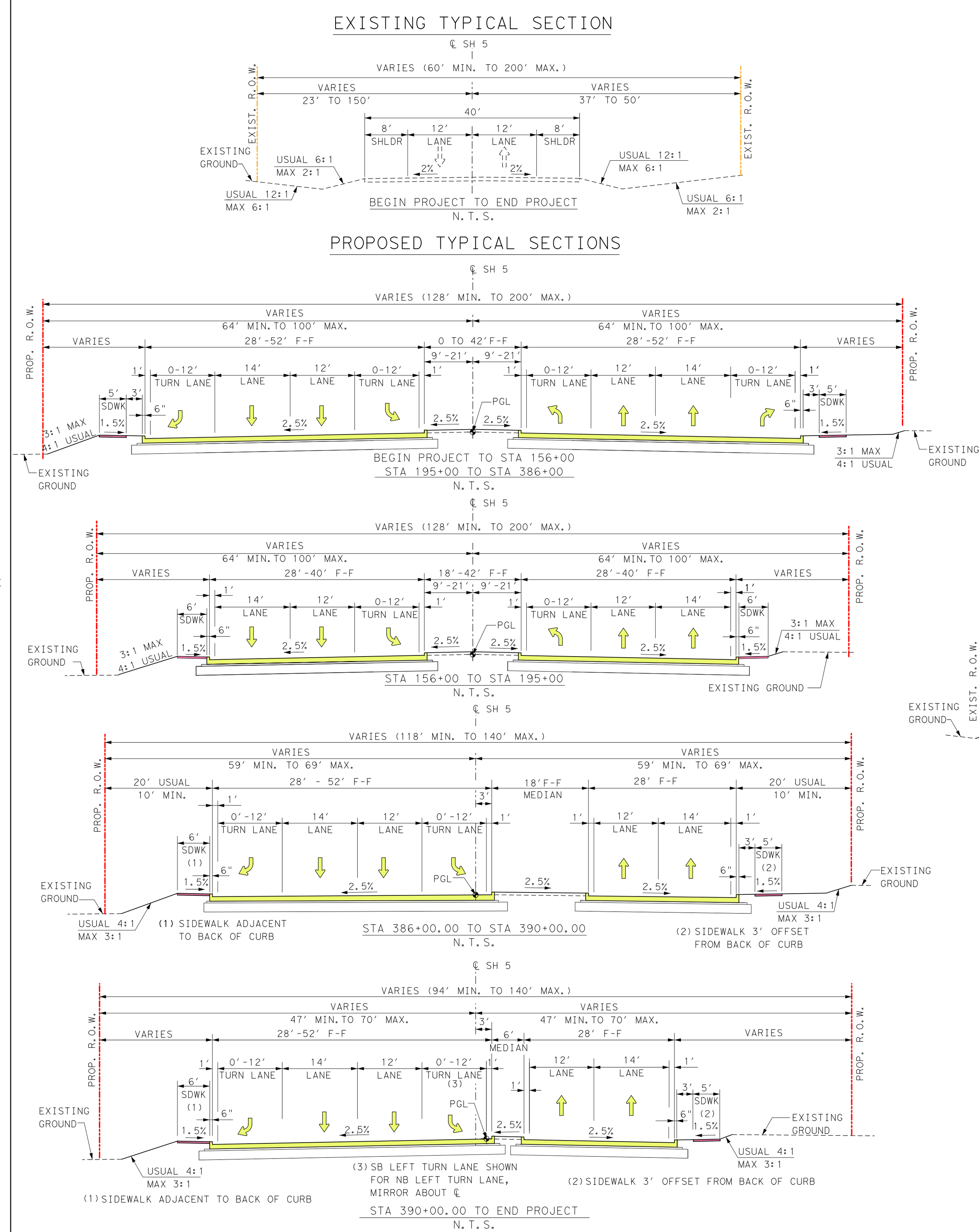
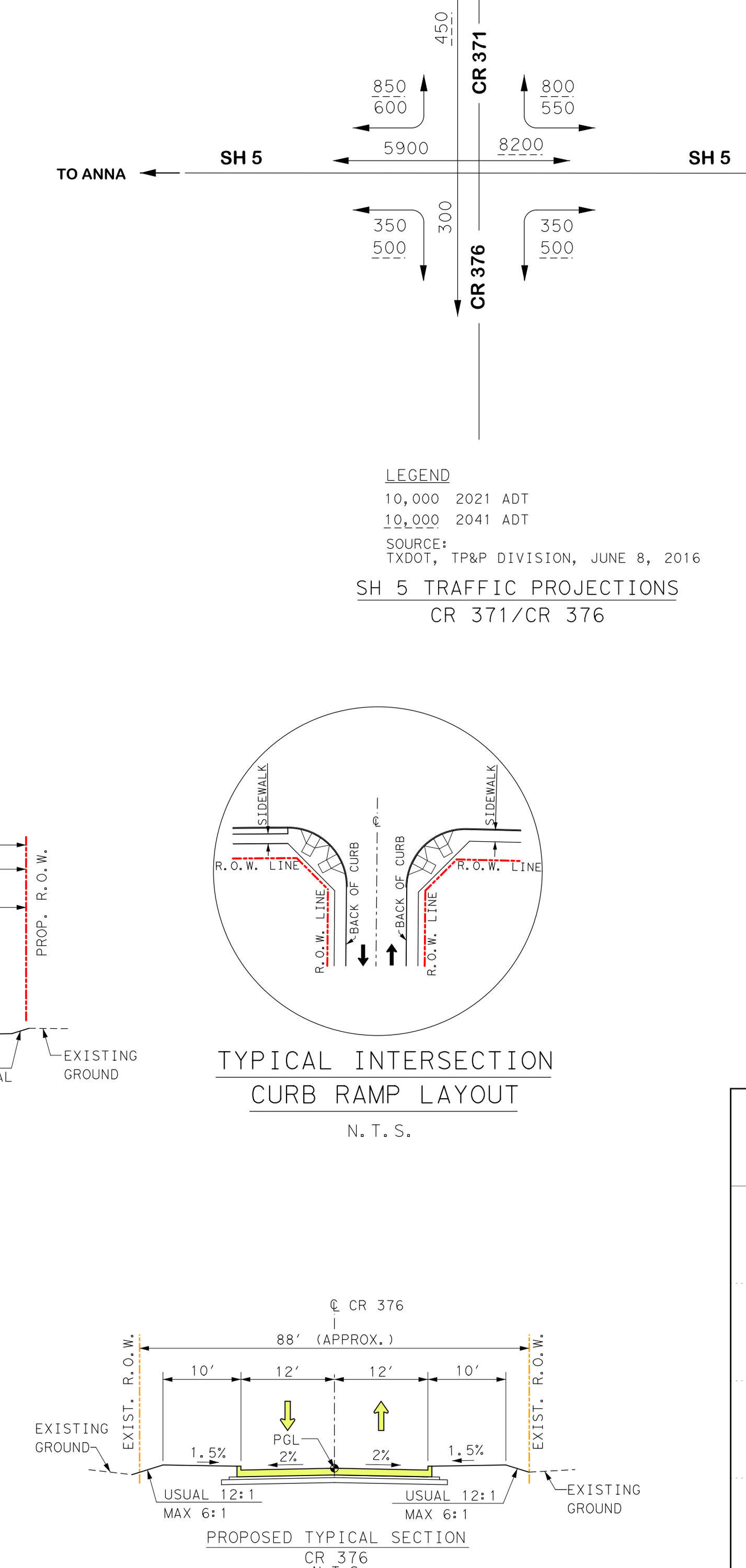
COUNTY: COLLIN
DATE: JANUARY 2017
DESIGN SCHEMATIC FOR SH 5 RECONSTRUCTION
ROLL 9 OF 11





0 100 200 300
SCALE IN FEET

LEGEND

- PROPOSED RIGHT-OF-WAY
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- DRAINAGE FLOW

NOTES:

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COLLIN COUNTY
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SH 5 RECONSTRUCTION PROJECT
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COUNTY: COLLIN
DATE: JANUARY 2017
DESIGN SCHEMATIC FOR SH 5 RECONSTRUCTION
ROLL 9 OF 11

Texas Department of Transportation

COUNTY: COLLIN
DATE: JANUARY 2017

DESIGN SCHEMATIC FOR SH 5 RECONSTRUCTION

ROLL 10 OF 11

TEXAS DEPARTMENT OF TRANSPORTATION
DALLAS DISTRICT

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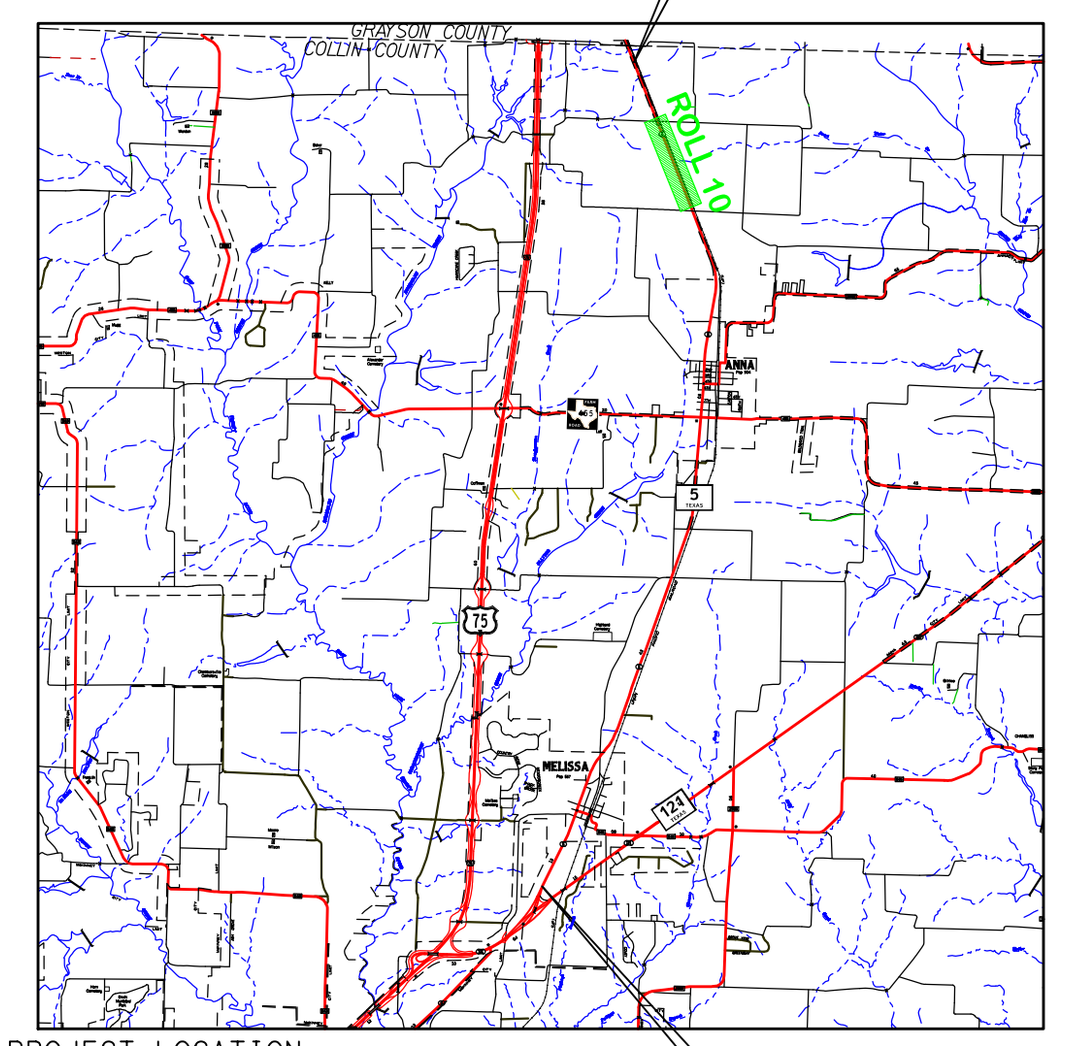
K FACTOR	10.8	10.8

END PROJECT
STA 568+90.20
CSJ: 0047-04-022



PROJECT LOCATION
COLLIN COUNTY
DALLAS DISTRICT

BEGIN PROJECT
STA 116+00.00
CSJ: 0047-04-022

0 1 MILE

INDEX OF ROLLS

APPROVED
NOVEMBER 17, 2016

PREPARED BY:
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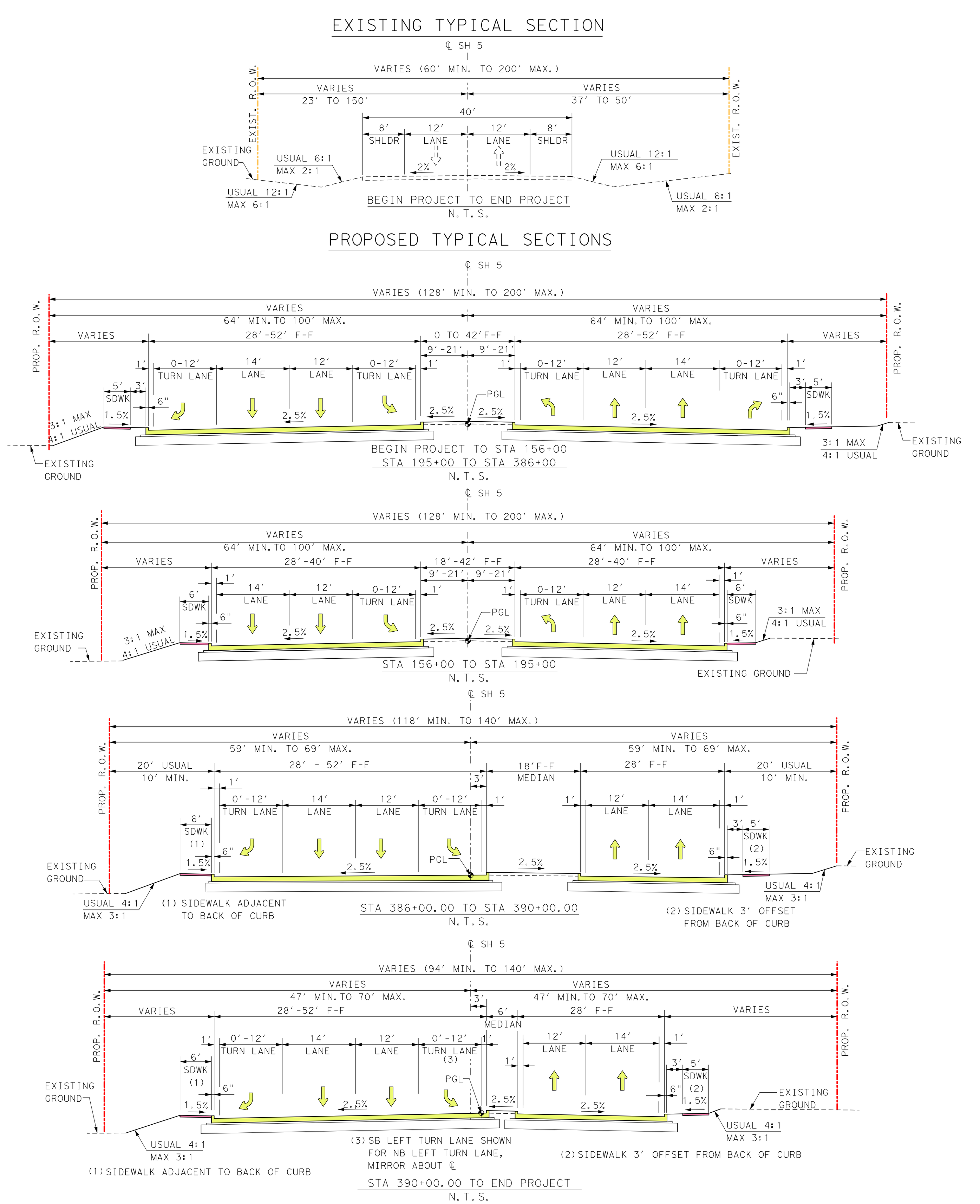
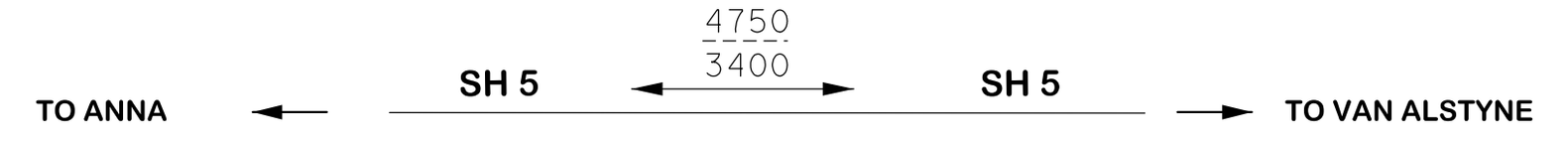
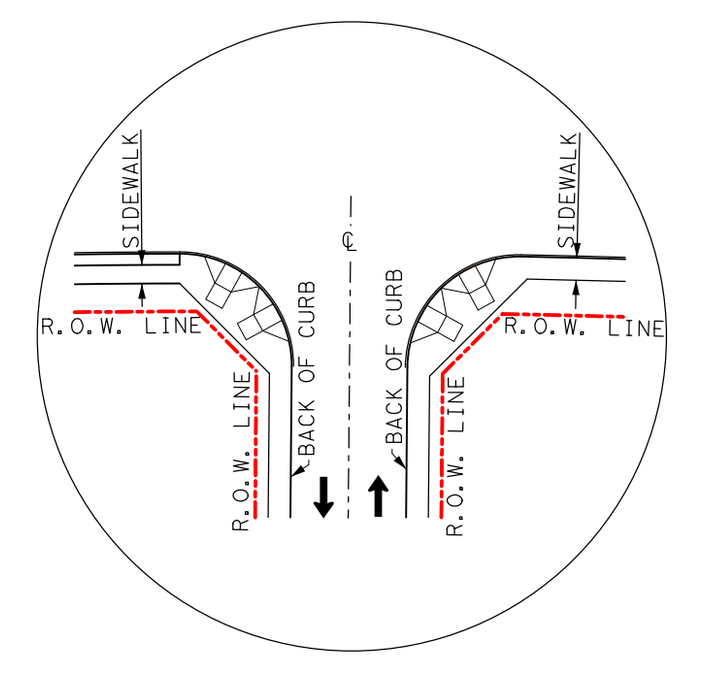


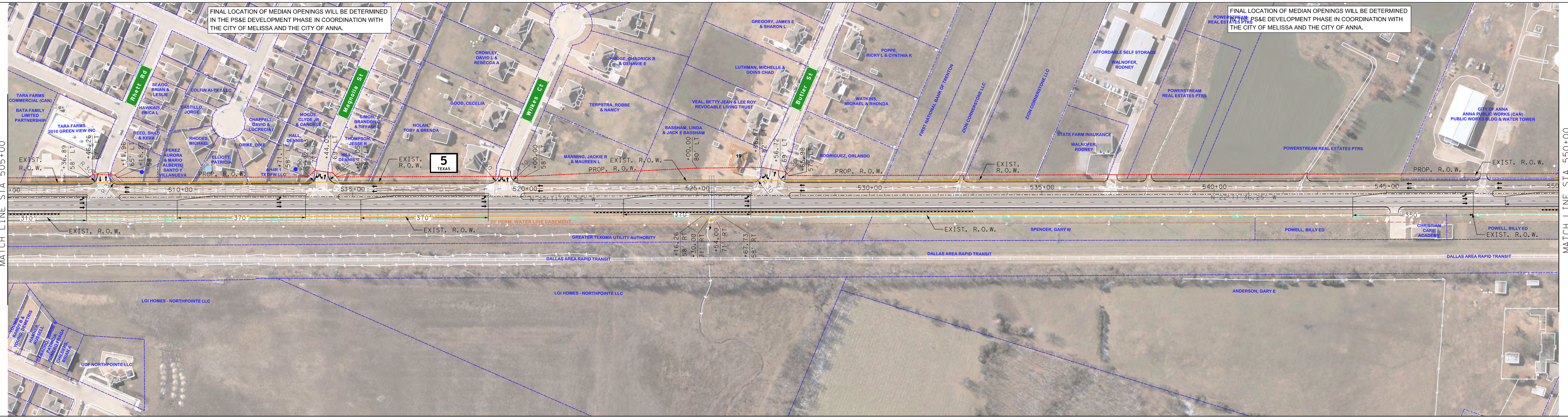


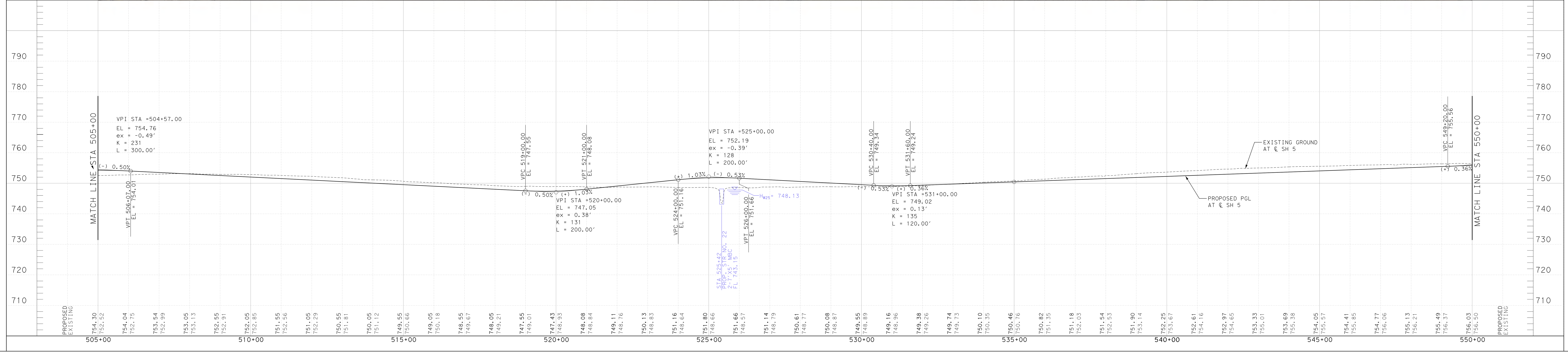
LEGEND
10,000 2021 ADT
10,000 2041 ADT
SOURCE:
TXDOT, TP&P DIVISION, JUNE 8, 2016

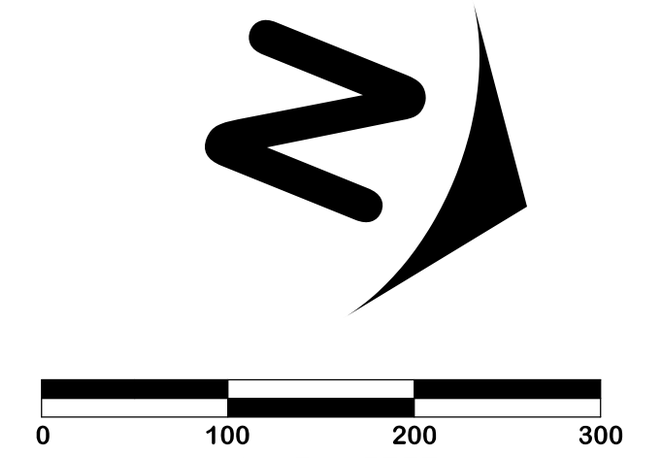
SH5 TRAFFIC PROJECTIONS
CR 371/CR 376



TYPICAL INTERSECTION
CURB RAMP LAYOUT
N.T.S.







SCALE IN FEET

LEGEND

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DALLAS DISTRICT
COLLIN COUNTY
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KELLY SELMAN, P.E.
DISTRICT ENGINEER
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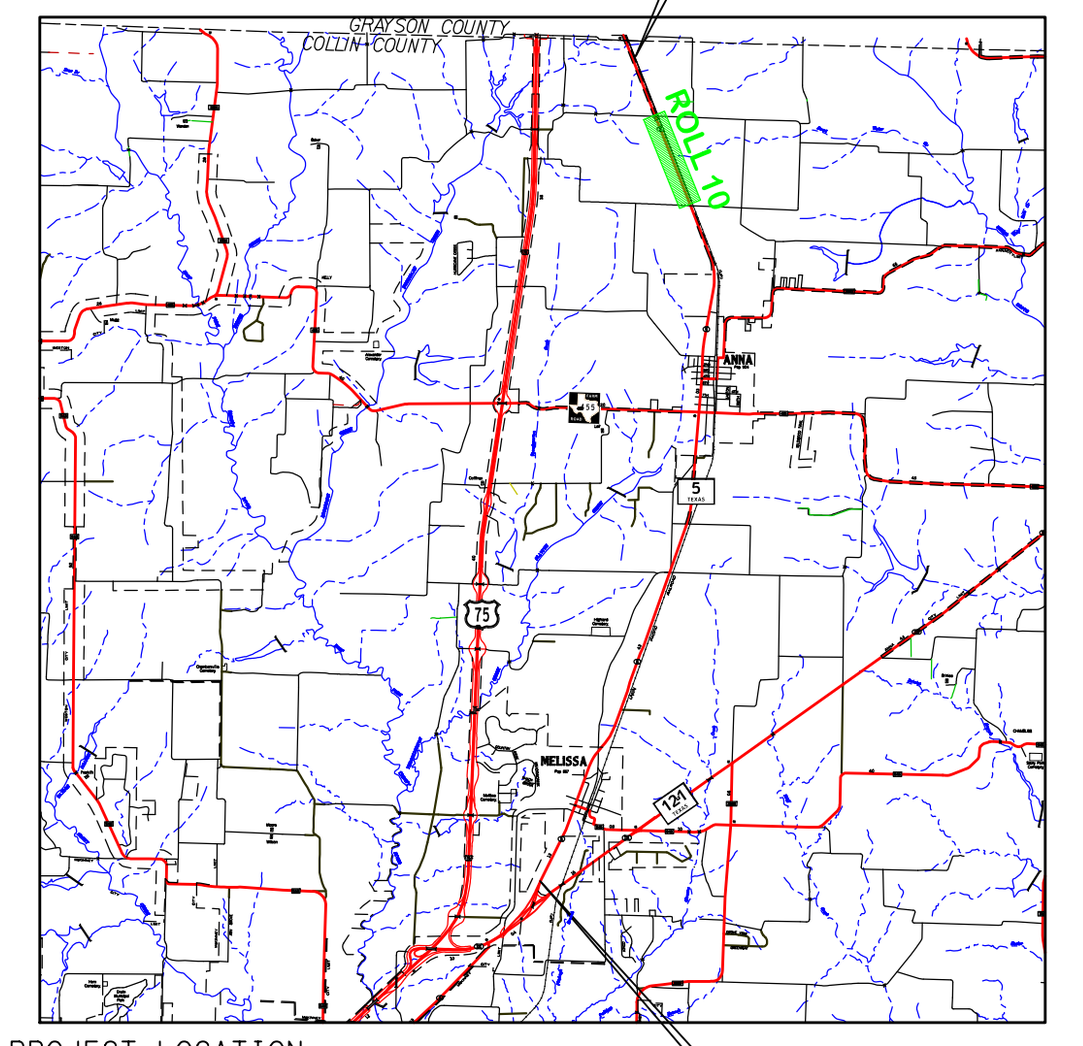
CSJ: 0047-04-022

PROJECT LOCATION
COLLIN COUNTY
DALLAS DISTRICT
BEGIN PROJECT
STA 116+00.00
CSJ: 0047-04-022
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COUNTY: COLLIN
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DESIGN SCHEMATIC FOR SH 5 RECONSTRUCTION
ROLL 10 OF 11

TEXAS DEPARTMENT OF TRANSPORTATION
DALLAS DISTRICT

COLLIN COUNTY

DESIGN SCHEMATIC

KELLY SELMAN, P.E.
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SH 5 RECONSTRUCTION PROJECT

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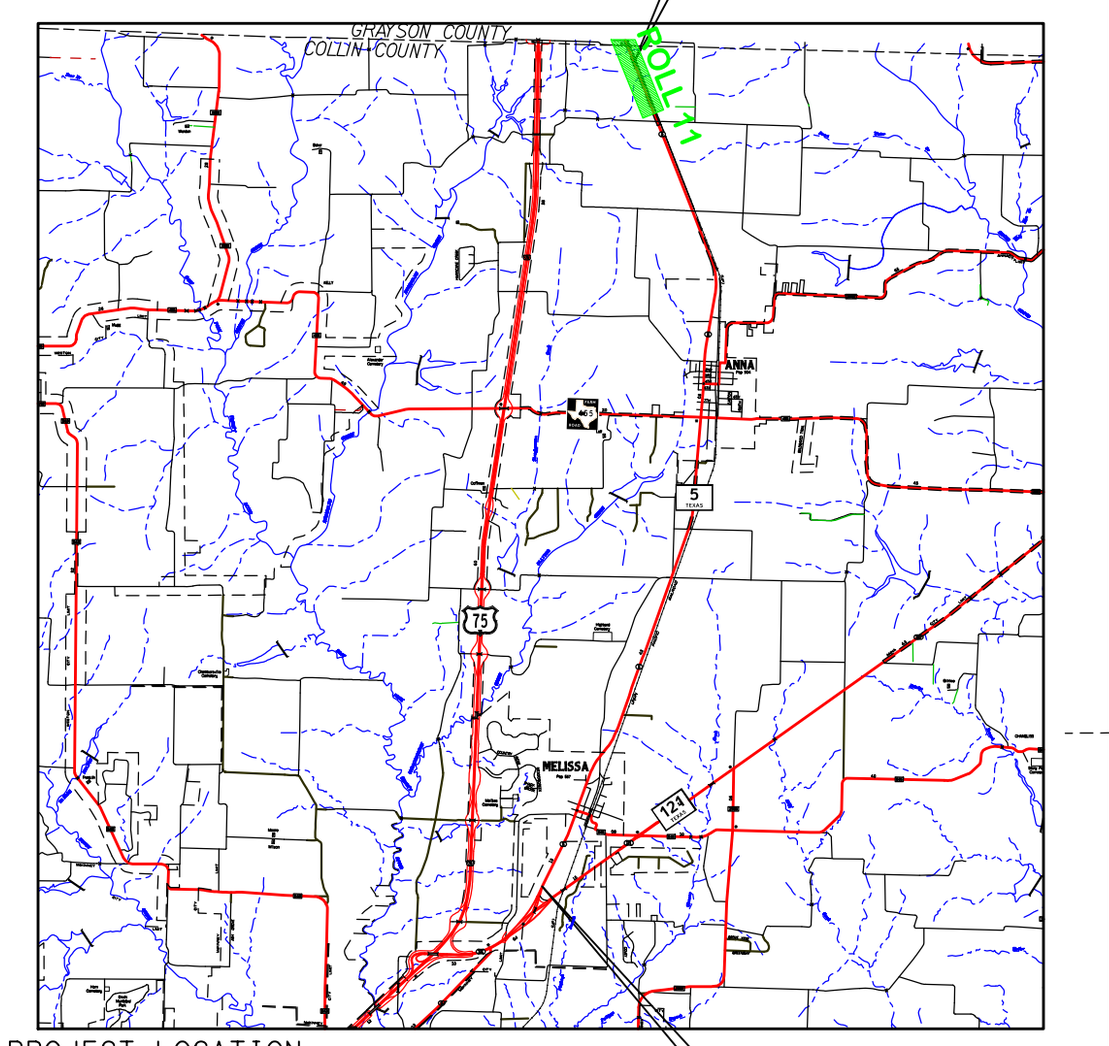

PROJECT LOCATION
COLLIN COUNTY
DALLAS DISTRICT

BEGIN PROJECT
STA 116+00.00
CSJ: 0047-04-022

0 1 MILE

INDEX OF ROLLS

ROLL 1 - PLAN AND PROFILE - BEGIN PROJECT TO STA 141+00
ROLL 2 - PLAN AND PROFILE - STA 141+00 TO STA 181+00
ROLL 3 - PLAN AND PROFILE - STA 181+00 TO STA 221+00
ROLL 4 - PLAN AND PROFILE - STA 221+00 TO STA 269+00
ROLL 5 - PLAN AND PROFILE - STA 269+00 TO STA 321+00
ROLL 6 - PLAN AND PROFILE - STA 321+00 TO STA 363+00
ROLL 7 - PLAN AND PROFILE - STA 363+00 TO STA 411+00
ROLL 8 - PLAN AND PROFILE - STA 411+00 TO STA 459+00
ROLL 9 - PLAN AND PROFILE - STA 459+00 TO STA 505+00
ROLL 10 - PLAN AND PROFILE - STA 505+00 TO STA 550+00
ROLL 11 - PLAN AND PROFILE - STA 550+00 TO END OF PROJECT

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COUNTY: COLLIN
DATE: JANUARY 2017
DESIGN SCHEMATIC FOR SH 5 RECONSTRUCTION
ROLL 11 OF 11

CIVIL ASSOCIATES, INC.
9330 LBJ Frwy, Ste. 1150
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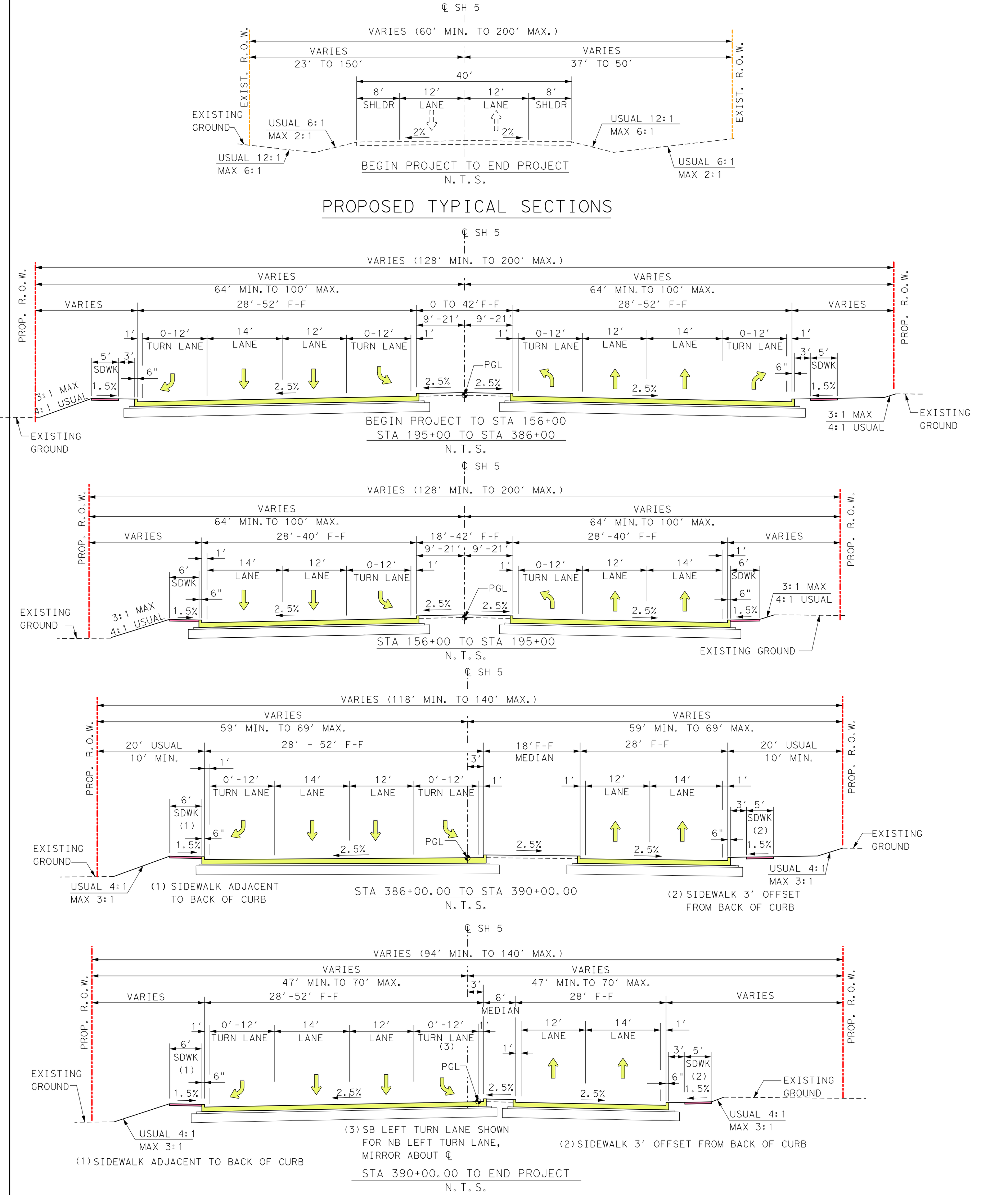
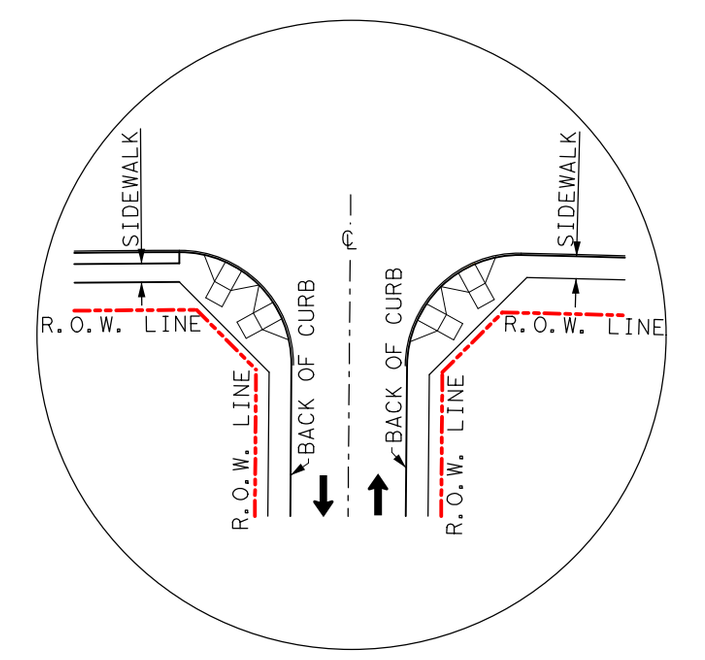
TBPE Firm Registration No. 6981

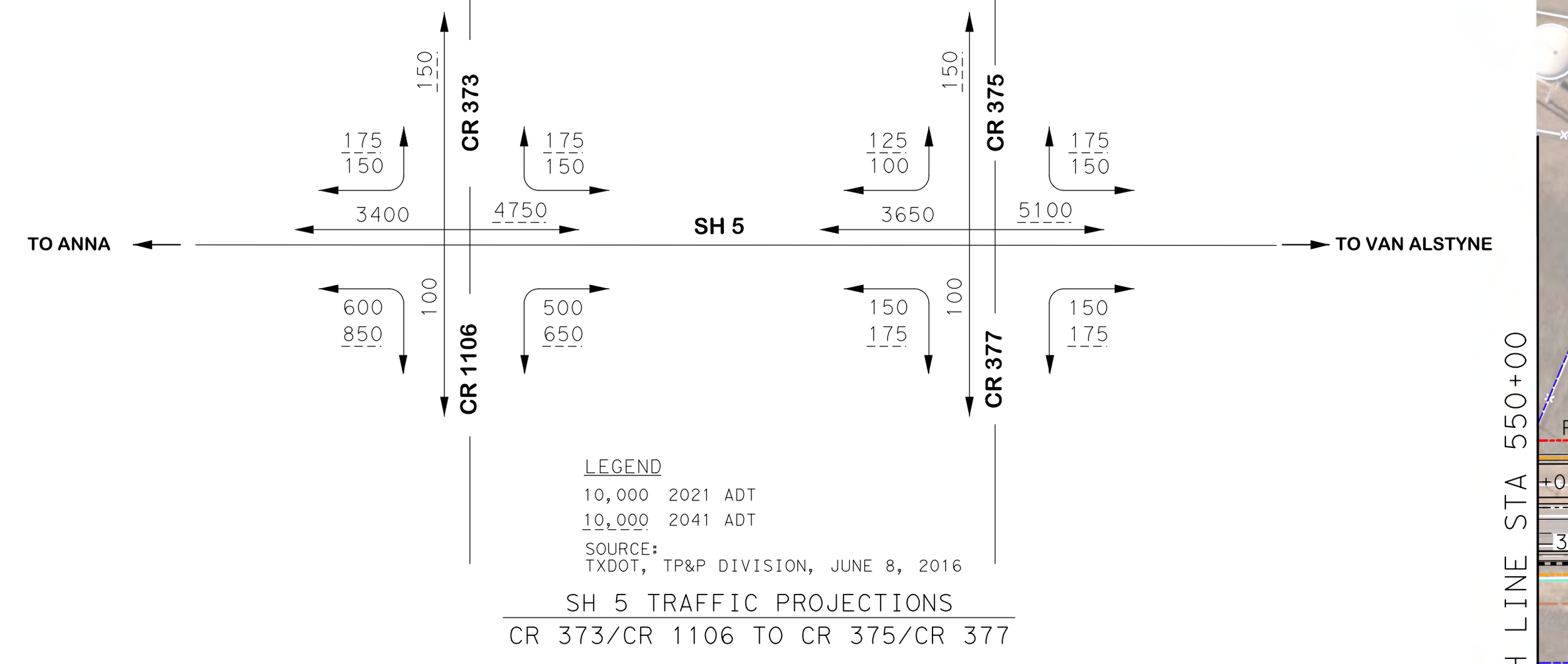


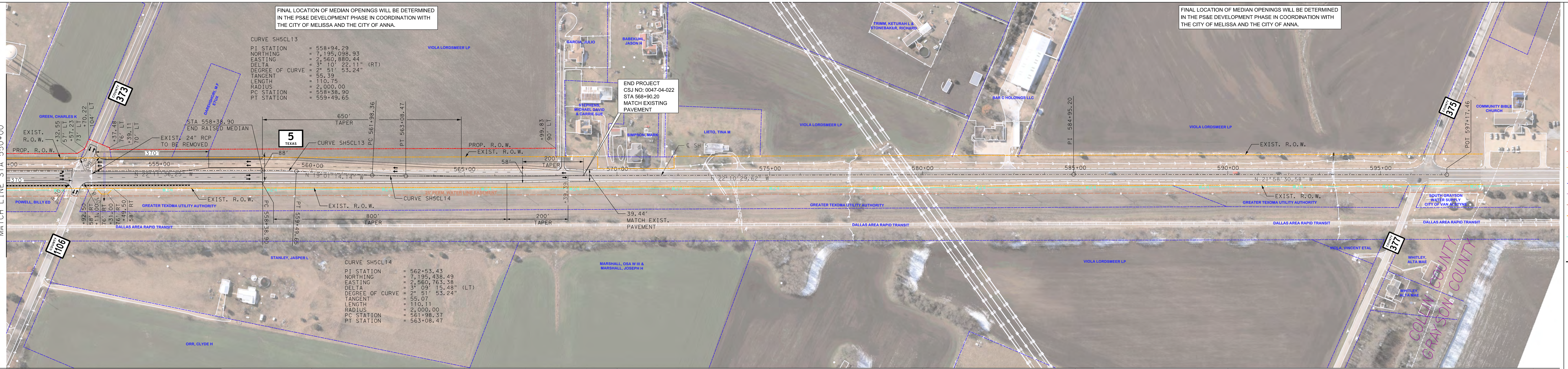
EXISTING TYPICAL SECTION

PROPOSED TYPICAL SECTIONS



TYPICAL INTERSECTION CURB RAMP LAYOUT





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0 100 200 300
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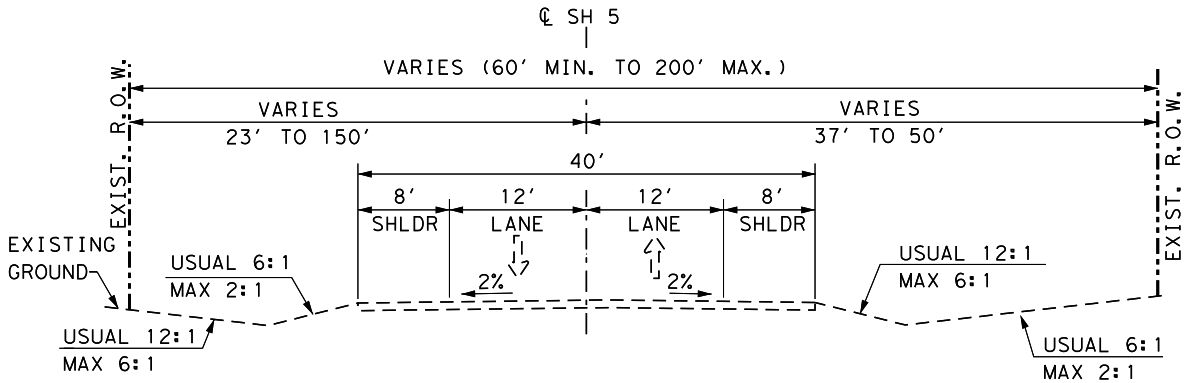
ROLL 11 OF 11

Appendix D – Typical Sections

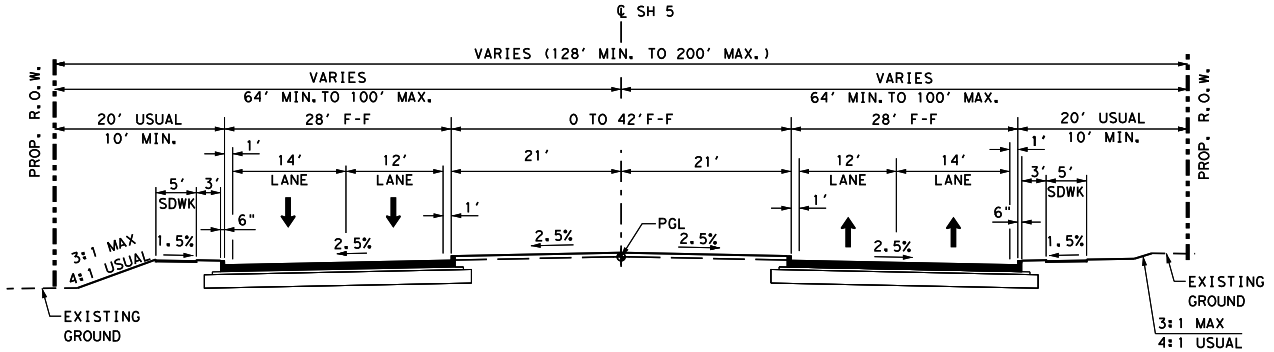


EXISTING SH 5 TYPICAL SECTION

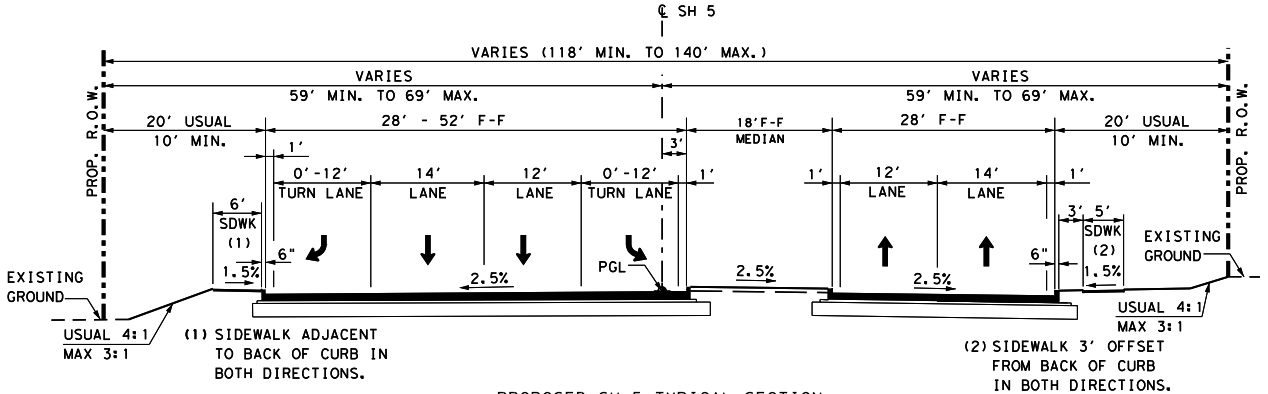
FOR REPORT PURPOSES
ONLY
Not for construction, bidding, or permit purpose

FIGURE 4
TYPICAL SECTIONS

SH5
FROM SH 121
TO CR 375
CSJ: 0047-04-022
SHEET 1 OF 2



PROPOSED SH 5 TYPICAL SECTION



PROPOSED SH 5 TYPICAL SECTION
WITH LEFT & RIGHT TURN LANE

FOR REPORT PURPOSES
ONLY
Not for construction, bidding, or permit purpose

FIGURE 4
TYPICAL SECTIONS

SH5
FROM SH 121
TO CR 375
CSJ: 0047-04-022
SHEET 2 OF 2

Appendix E – Plan and Program Excerpts

DISTRICT	COUNTY	CSJ	HWY	PHASE	CITY	PROJECT SPONSOR
DALLAS	DENTON	0000-18-031	CS	C	FLOWER MOUND	FLOWER MOUND
LIMITS FROM:	DENTON CREEK BLVD AT IH 35W					REV DATE: 07/2016
LIMITS TO:						MPO PROJECT ID: 83129.2
TIP DESCRIPTION:	INTERCHANGE					MTP REFERENCE: NRSA1-DAL-178
REMARKS:						
						Project History:

DALLAS	COLLIN	0047-04-022	SH 5	E	MELISSA	TXDOT-DALLAS
LIMITS FROM:	SH 121					REV DATE: 07/2016
LIMITS TO:	CR 375					MPO PROJECT ID: 20085
TIP DESCRIPTION:	ENGINEERING TO RECONSTRUCT AND WIDEN 2 LANE RURAL TO 4 LANE URBAN					MTP REFERENCE: RSA1-1.680.200
REMARKS:						
						Project History:

DALLAS	COLLIN	0047-06-145	US 75	E	VARIOUS	TXDOT-DALLAS
LIMITS FROM:	DALLAS COUNTY LINE					REV DATE: 07/2016
LIMITS TO:	SH 121/SPUR 399					MPO PROJECT ID: 20201
TIP DESCRIPTION:	HOV ACCESS RAMPS STUDY (COLLIN CO SECTION)					MTP REFERENCE: FT3-011, FT1-23.50.1, FT1-23.40.5, FT1-23.40.4, FT1-23.40.3, FT1-23.40.2, FT1-23.40.1
REMARKS:	RTR 121-CC1					
						Project History:

DALLAS	DALLAS	0047-07-219	US 75	E	VARIOUS	TXDOT-DALLAS
LIMITS FROM:	HOV ACCESS RAMPS STUDY FROM IH 635					REV DATE: 07/2016
LIMITS TO:	DALLAS/COLLIN COUNTY LINE					MPO PROJECT ID: 20217
TIP DESCRIPTION:	HOV ACCESS RAMPS STUDY (DALLAS COUNTY PORTION)					MTP REFERENCE: FT3-011, FT1-23.50.1
REMARKS:	RTR 121-DA2					
						Project History:

DALLAS	ELLIS	0048-04-090	IH 35E	E,R	WAXAHACHIE	TXDOT-DALLAS
LIMITS FROM:	US 77 SOUTH					REV DATE: 07/2016
LIMITS TO:	US 77 NORTH					MPO PROJECT ID: 55092
TIP DESCRIPTION:	RECONSTRUCT 5 INTERCHANGES (BUS 287/US 287 BYPASS/LOFLAND/BUTCHER [FM 387]/STERRET RD) AND 4 TO 4 LANE FRONTAGE ROADS AND RAMP MODIFICATIONS					MTP REFERENCE: FT1-7.100.5, FT3-007
REMARKS:						
						Project History:

DALLAS	DENTON	0081-03-047	US 377	C	ARGYLE	DENTON CO
LIMITS FROM:	SOUTH OF FM 1171					REV DATE: 07/2016
LIMITS TO:	CRAWFORD ROAD					MPO PROJECT ID: 20115
TIP DESCRIPTION:	RECONSTRUCT AND WIDEN ROADWAY FROM 2 LANE RURAL TO 4 LANE DIVIDED URBAN					MTP REFERENCE: RSA1-1.540.230
REMARKS:	RTR 121-DE1					
						Project History:

DALLAS	DENTON	0081-03-049	US 377	C	ROANOKE	TXDOT-DALLAS
LIMITS FROM:	SH 114					REV DATE: 07/2016
LIMITS TO:	SOUTH OF FM 1171					MPO PROJECT ID: 20123
TIP DESCRIPTION:	WIDEN 2 LANE ROADWAY TO 4 LANE DIVIDED URBAN					MTP REFERENCE: RSA1-1.540.240, RSA1-1.540.230
REMARKS:	RTR 121-DE2					
						Project History:

DALLAS	DENTON	0081-03-054	US 377	E	VARIOUS	DENTON CO
LIMITS FROM:	CRAWFORD RD					REV DATE: 07/2016
LIMITS TO:	NORTH OF HICKORY CREEK					MPO PROJECT ID: 55002
TIP DESCRIPTION:	RECONSTRUCT AND WIDEN 2 LANE RURAL HIGHWAY AS A 4 LANE DIVIDED URBAN					MTP REFERENCE: RSA1-1.540.220
REMARKS:	PASS THROUGH FINANCE PROJECT					
						Project History:

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

Mobility 2040
Regionally Significant Arterials

County	MTP ID	Facility	From Street	To Street	2017 Lanes	2027 Lanes	2037 Lanes	2040 Lanes	YOE Cost *
Collin	RSA1-1.557.200	Dallas North Tollway	CR 60	North Of FM 428	0	2	2	2	$ 54.42
Collin	RSA1-1.557.225	Dallas North Tollway	.16 Mile North Of FM 428	FM 428	0	1/1	1/1	1/1	$ 1.15
Collin	RSA1-1.557.450	Dallas North Tollway **	North Of US 380	South Of US 380	2/2	N/A	N/A	N/A	N/A
Collin	RSA1-1.557.250	Dallas Parkway **	FM 428	North Of US 380	2	N/A	N/A	N/A	N/A
Collin	RSA1-2.215.575	Eldorado Parkway	FM 2478 Custer Road	US 75	4	6	6	6	$ 39.78
Collin	RSA1-1.660.225	FM 1378 Country Club Road	.6 Mile North Of Stacy Lane	FM 2786 Stacy Road	2	4	4	4	$ 4.52
Collin	RSA1-1.660.250	FM 1378 Country Club Road	FM 2786 Stacy Rd	Rock Ridge Road	2	6	6	6	$ 6.42
Collin	RSA1-1.660.275	FM 1378 Country Club Road	Rock Ridge Road	FM 2514 Parker Road	2	6	6	6	$ 86.16
Collin	RSA1-1.615.200	FM 2478 Custer Road	US 380	Stonebridge Drive	6	6	6	6	$ 29.55
Collin	RSA1-1.615.225	FM 2478 Custer Road	Stonebridge Drive	SH 121	4	6	6	6	$ 7.27
Collin	RSA1-2.130.360	FM 455 Anna Weston Road	CR 286	US 75	4	4	4	4	$ 2.00
Collin	RSA1-2.130.375	FM 455 Anna Weston Road	US 75	SH 5	4	4	4	6	$ 13.00
Collin	RSA1-1.742.100	Outer Loop	FM 981	CR 637	0	0	2	2/2	$ 271.98
Collin	RSA1-1.742.200	Outer Loop	CR 637	FM 2755	0	2	2	2/2	$ 50.98
Collin	RSA1-2.150.710	Outer Loop	West Of SH 121	SH 121	2	2/2	3/3	3/3	$ 8.40
Collin	RSA1-2.150.715	Outer Loop	SH 121	East Of SH 121	0	0	1/1	2/2	$ 3.73
Collin	RSA1-2.150.720	Outer Loop	East Of SH 121	FM 981	0	0	2	2/2	$ 164.71
Collin	RSA1-2.150.600	Outer Loop **	FM 428	West Of Dallas North Tollway	0	2	3/3	N/A	N/A
Collin	RSA1-2.150.650	Outer Loop **	Dallas North Tollway	US 75	0	2/2	N/A	N/A	N/A
Collin	RSA1-2.150.700	Outer Loop **	US 75	West Of SH 121	2	2/2	N/A	N/A	N/A
Collin	RSA1-1.745.200	SH 121	Fannin County Line	SH 160	2	2	2/2	2/2	$ 9.41
Collin	RSA1-1.745.250	SH 121	SH 160	CR 509	2	2	2/2	2/2	$ 58.01
Collin	RSA1-1.745.260	SH 121	CR 509	FM 455	2	2	2/2	2/2	$ 3.30
Collin	RSA1-1.745.280	SH 121	FM 455	Outer Loop	2	2	2/2	2/2	$ 50.33
Collin	RSA1-1.745.300	SH 121	Outer Loop	Berry Road	2	2/2	2/2	2/2	$ 38.18
Collin	RSA1-1.745.325	SH 121	Berry Road	East Of SH 5	2	2/2	2/2	2/2	$ 3.95
Collin	RSA1-1.745.350	SH 121	East Of SH 5	SH 5	1/1	2/2	2/2	2/2	$ 2.23
Collin	RSA1-1.745.375	SH 121	SH 5	Fannin Road	2/2	3/2	3/2	3/2	$ 1.44
Collin	RSA1-1.715.200	SH 205	SH 78	John King Blvd	2	4	6	6	$ 44.23
Collin	RSA1-1.605.200	SH 289 Preston Road	CR 107/CR 60	BU 289	2	4	4	4	$ 16.66
Collin	RSA1-1.605.225	SH 289 Preston Road	BU 289	FM 455	2	4	6	6	$ 18.50
Collin	RSA1-1.605.240	SH 289 Preston Road	FM 455	FM 1461	4	4	6	6	$ 29.94
Collin	RSA1-1.605.425	SH 289 Preston Road	Plano Parkway	President George Bush Turnpike	6	6	8	8	$ 1.65
Collin	RSA1-1.605.475	SH 289 Preston Road	Mapleshade Drive	Frankford Road	6	8	8	8	$ 5.39
Collin	RSA1-1.680.200	SH 5	CR 375 (Grayson County)	SH 121	2	4	4	4	$ 65.34
Collin	RSA1-1.680.225	SH 5	SH 121	Tennessee Street	2	4	4	4	$ 27.50
Collin	RSA1-1.680.300	SH 5	FM 546 Industrial Blvd	SP 399	4	6	6	6	$ 5.39
Collin	RSA1-1.680.310	SH 5	SP 399	Frisco Road	2	2	4	4	$ 3.16
Collin	RSA1-1.680.350	SH 5	Indian Springs Rd	FM 2786 Stacy Road	2	4	4	4	$ 1.44
Collin	RSA1-1.740.200	SH 78	.81 Mile East Of SH 160	SH 160	2	4	4	4	$ 5.82
Collin	RSA1-1.740.300	SH 78	SH 160	FM 6	4	6	6	6	$ 174.90
Collin	RSA1-1.645.200	Shiloh Road	Spring Creek Parkway	FM 544 14th Street	2	4	4	4	$ 14.93
Collin	RSA1-2.218.300	Stacy Road	Angel Parkway	FM 1378	2	4	4	6	$ 14.50
Collin	RSA1-2.225.500	US 380	Legacy Drive	.4 Mile East Of Dallas North Tollway	4	4/4	4/4	4/4	$ 20.97
Collin	RSA1-2.225.525	US 380	.4 Mile East Of Dallas North Tollway	.4 Mile West Of SH 289	4	3/3	3/3	3/3	$ 2.58
Collin	RSA1-2.225.550	US 380	.4 Mile West Of Sh289	Coit Road	4	3/3	3/3	3/3	$ 62.78
Collin	RSA1-2.225.575	US 380	Coit Road	FM 2478 Custer Road	4	6	6	6	$ 31.12
Collin	RSA1-2.225.700	US 380	Floyd Street	CR 698	2	4	4	4	$ 17.57
Dallas	RSA1-1.515.375	Belt Line Road	Conflans Road	Rock Island Road	6	8	8	8	$ 3.02
Dallas	RSA1-1.655.275	Belt Line Road	Lake June Road	Pioneer Road	2	6	6	6	$ 14.93
Dallas	RSA1-1.655.400	Belt Line Road	Simonds Road	Post Oak Road	2	4	4	4	$ 15.72
Dallas	RSA1-1.655.425	Belt Line Road	Post Oak Road	IH 45	2	4	4	4	$ 17.38
Dallas	RSA1-2.330.250	Belt Line Road	Southwestern Blvd	Moore Road	4	6	6	6	$ 8.26
Dallas	RSA1-2.330.275	Belt Line Road	Moore Road	Macarthur Blvd	4	6	6	6	$ 7.97
Dallas	RSA1-2.330.360	Belt Line Road	Dallas North Tollway	Prestonwood Blvd	3/4	8	8	8	$ 14.86
Dallas	RSA1-2.330.375	Belt Line Road	Prestonwood Blvd	Meadowcreek Drive	6	8	8	8	$ 9.69
Dallas	RSA1-2.330.475	Belt Line Road	Abrams Road	Frances Way	4	6	6	6	$ 8.11
Dallas	RSA1-2.665.350	Belt Line Road	Bluegrove Road	Main Street	2	6	6	6	$ 13.35

County	MTP ID	Facility	From Street	To Street	2017 Lanes	2027 Lanes	2037 Lanes	2040 Lanes	YOE Cost*
Collin	RSA1-1.680.200	SH 5	CR 375 (Grayson County)	SH 121	2	4	4	4	$ 65.34
Collin	RSA1-1.680.225	SH 5	SH 121	Tennessee Street	2	4	4	4	$ 27.50
Collin	RSA1-1.680.300	SH 5	FM 546/Industrial Blvd.	Spur 399	4	6	6	6	$ 5.39
Collin	RSA1-1.680.310	SH 5	Spur 399	Frisco Road	2	2	4	4	$ 3.16
Collin	RSA1-1.680.350	SH 5	Indian Springs Road	FM 2786/Stacy Road	2	4	4	4	$ 1.44
Collin	RSA1-1.740.200	SH 78	0.81 miles east of SH 160	SH 160	2	4	4	4	$ 5.82
Collin	RSA1-1.740.300	SH 78	SH 160	FM 6	4	6	6	6	$ 174.90
Collin	RSA1-1.645.200	Shiloh Road	Spring Creek Parkway	FM 544/14th Street	2	4	4	4	$ 14.93
Collin	RSA1-2.218.300	Stacy Road	Angel Parkway	FM 1378	2	4	4	6	$ 14.50
Collin	RSA1-2.225.500	US 380	Legacy Drive	0.4 miles east of Dallas North Tollway	4	4/4	4/4	4/4	$ 20.97
Collin	RSA1-2.225.525	US 380	0.4 miles east of Dallas North Tollway	0.4 miles west of SH 289	4	3/3	3/3	3/3	$ 2.58
Collin	RSA1-2.225.550	US 380	0.4 miles west of SH 289	Coit Road	4	3/3	3/3	3/3	$ 62.78
Collin	RSA1-2.225.575	US 380	Coit Road	FM 2478/Custer Road	4	6	6	6	$ 31.12
Collin	RSA1-2.225.700	US 380	Floyd Street	CR 698	2	4	4	4	$ 17.57
Dallas	RSA1-1.515.375	Belt Line Road	Conflans Road	Rock Island Road	6	8	8	8	$ 3.02
Dallas	RSA1-1.655.275	Belt Line Road	Lake June Road	Pioneer Road	2	6	6	6	$ 14.93
Dallas	RSA1-1.655.400	Belt Line Road	Simonds Road	Post Oak Road	2	4	4	4	$ 15.72
Dallas	RSA1-1.655.425	Belt Line Road	Post Oak Road	IH 45	2	4	4	4	$ 17.38
Dallas	RSA1-2.330.250	Belt Line Road	Southwestern Blvd.	Moore Road	4	6	6	6	$ 8.26
Dallas	RSA1-2.330.275	Belt Line Road	Moore Road	Macarthur Blvd.	4	6	6	6	$ 7.97
Dallas	RSA1-2.330.360	Belt Line Road	Dallas North Tollway	Prestonwood Blvd.	3/4	8	8	8	$ 14.86
Dallas	RSA1-2.330.375	Belt Line Road	Prestonwood Blvd.	Meadowcreek Drive	6	8	8	8	$ 9.69
Dallas	RSA1-2.330.475	Belt Line Road	Abrams Road	Frances Way	4	6	6	6	$ 8.11
Dallas	RSA1-2.665.350	Belt Line Road	Bluegrove Road	Main Street	2	6	6	6	$ 13.35
Dallas	RSA1-2.665.375	Belt Line Road	Main Street	Summers Road	2	4	4	4	$ 35.68
Dallas	RSA1-2.670.250	Belt Line Road	Mansfield Road	US 67	4	4	4	6	$ 12.71
Dallas	RSA1-2.670.275	Belt Line Road	US 67	FM 1382	4	4	4	6	$ 4.16
Dallas	RSA1-1.640.225	Big Town Blvd.	Samuell Blvd.	Forney Road	4	6	6	6	$ 7.40
Dallas	RSA1-2.615.375	Camp Wisdom Road	Robinson Road	FM 1382	2	4	4	4	$ 13.70
Dallas	RSA1-2.615.400	Camp Wisdom Road	FM 1382	Camp Wisdom Road	4	4	6	6	$ 2.37
Dallas	RSA1-2.615.425	Camp Wisdom Road	0.3 miles east of FM 1382	Clark Road	2	2	6	6	$ 29.29
Dallas	RSA1-2.305.275	Campbell Road	Jupiter Road	Shiloh Road	6	6	8	8	$ 2.30
Dallas	RSA1-2.305.325	Campbell Road	Jupiter Road	President George Bush Turnpike	4	4	6	6	$ 10.34
Dallas	RSA1-1.590.200	Cesar Chavez Blvd.	Commerce Street	Crockett Street	4	6	8	8	$ 2.01
Dallas	RSA1-1.590.325	Cesar Chavez Blvd.	Corinth Street	Grand Avenue	4	6	6	6	$ 3.09

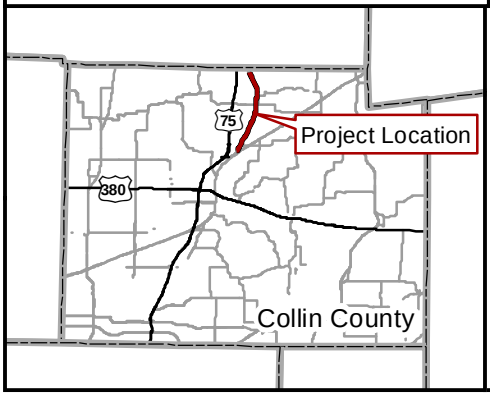
*Year of Expenditure Cost (millions)
**Staged facilities reported as 'Not Applicable' (N/A) indicates that the project is no longer classified as an arterial and lanes will be reported in the Freeway/Tollway Recommendations listing instead.

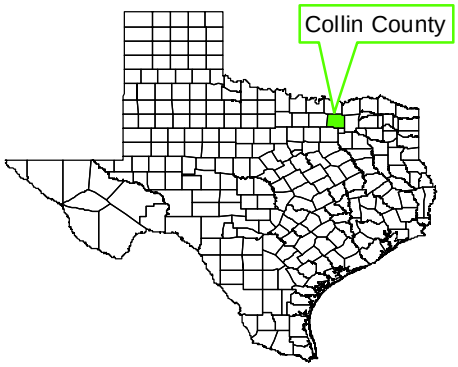
NOTE: lanes reported as '2/2' indicates the facility operates as a couplet with 2 lanes per direction.

Appendix F – Project Resource and Land Use Map

Legend

- Existing Right-of-Way
- Proposed Right-of-Way
- Proposed Drainage Easement
- Proposed Pavement
- Proposed Culvert
- Stream
- Pipeline
- Historical Marker
- Post Office
- Haz-Mat Site of Concern
- Public/Civic Facility
- Recorded Texas Historic Landmark (RTHL)
- School
- Potential 4(f) Property
- Potential Displacement
- 100-Year Floodplain
- Railroad
- Non-Impacted Noise Receiver





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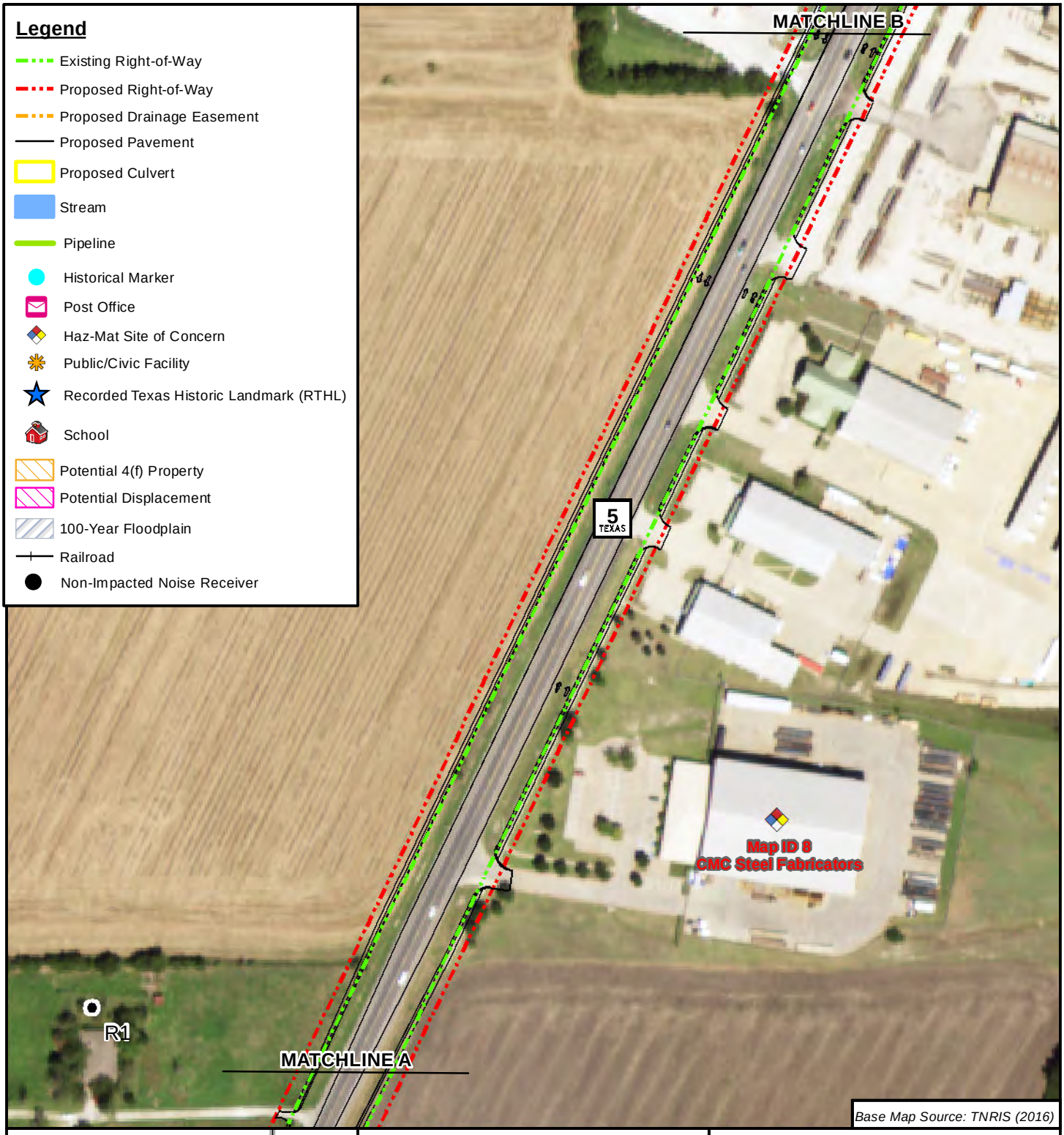
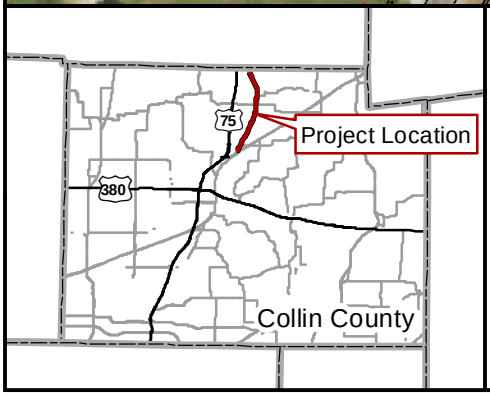
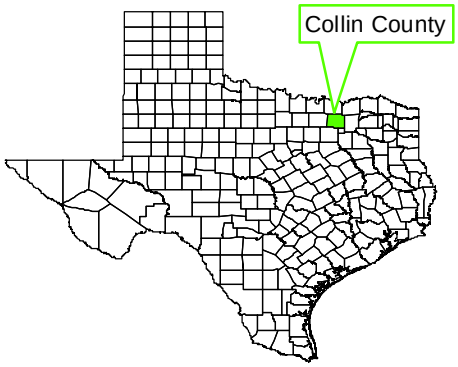
PROJECT RESOURCE AND LAND USE MAP

State Highway (SH) 5
From SH 121
To County Road (CR) 375
Collin County
CSJ: 0047-04-022
Sheet 1 of 31







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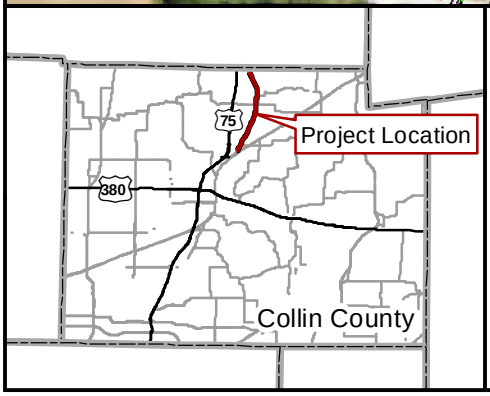
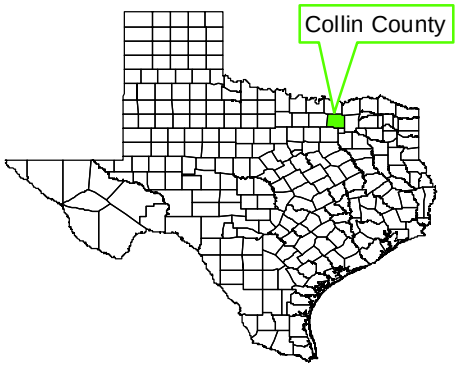
PROJECT RESOURCE AND LAND USE MAP

State Highway (SH) 5
From SH 121
To County Road (CR) 375
Collin County
CSJ: 0047-04-022
Sheet 2 of 31





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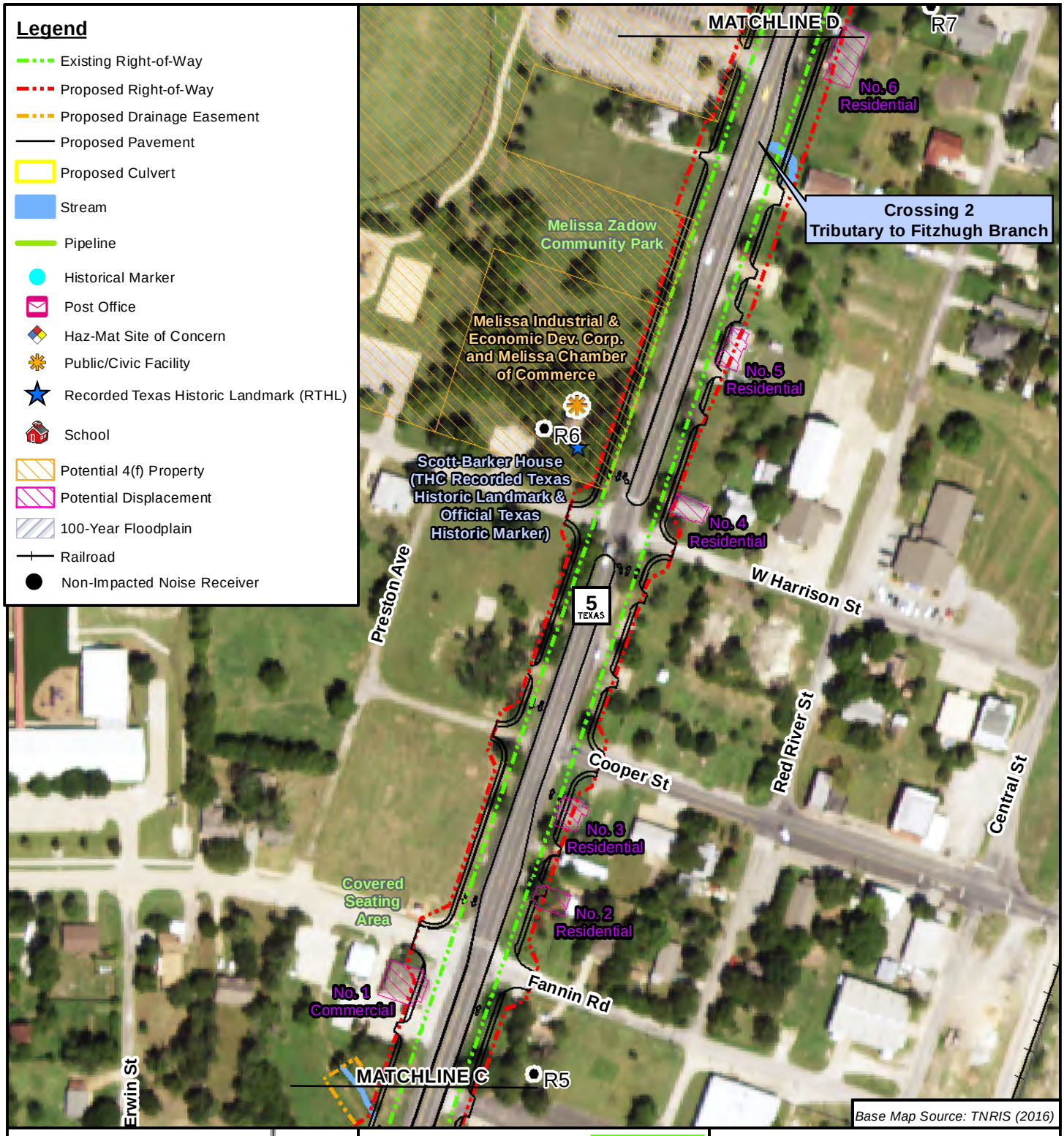
PROJECT RESOURCE AND LAND USE MAP

State Highway (SH) 5
From SH 121
To County Road (CR) 375
Collin County
CSJ: 0047-04-022
Sheet 3 of 31


Legend
Existing Right-of-Way
Proposed Right-of-Way
Proposed Drainage Easement
Proposed Pavement
Proposed Culvert
Stream
Pipeline
Historical Marker
Post Office
Haz-Mat Site of Concern
Public/Civic Facility
Recorded Texas Historic Landmark (RTHL)
School
Potential 4(f) Property
Potential Displacement
100-Year Floodplain
Railroad
Non-Impacted Noise Receiver
MATCHLINE D
R7
No. 6 Residential
Crossing 2
Tributary to Fitzhugh Branch
Melissa Zadow Community Park
Melissa Industrial & Economic Dev. Corp. and Melissa Chamber of Commerce
No. 5 Residential
R6
Scott-Barker House (THC Recorded Texas Historic Landmark & Official Texas Historic Marker)
No. 4 Residential
Preston Ave
5 TEXAS
W Harrison St
Red River St
Central St
Cooper St
No. 3 Residential
Covered Seating Area
No. 2 Residential
No. 1 Commercial
Fannin Rd
Erwin St
MATCHLINE C
R5
Base Map Source: TNRIS (2016)
75
380
Project Location
Collin County
Collin County
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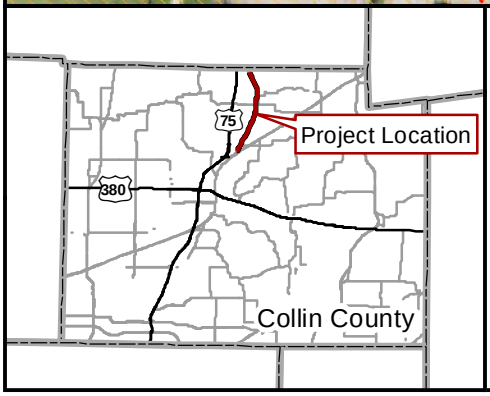
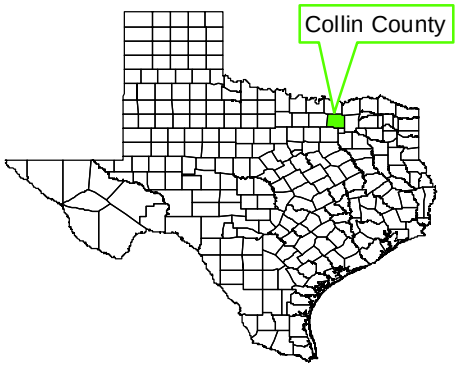
PROJECT RESOURCE AND LAND USE MAP
State Highway (SH) 5
From SH 121
To County Road (CR) 375
Collin County
CSJ: 0047-04-022
Sheet 4 of 31





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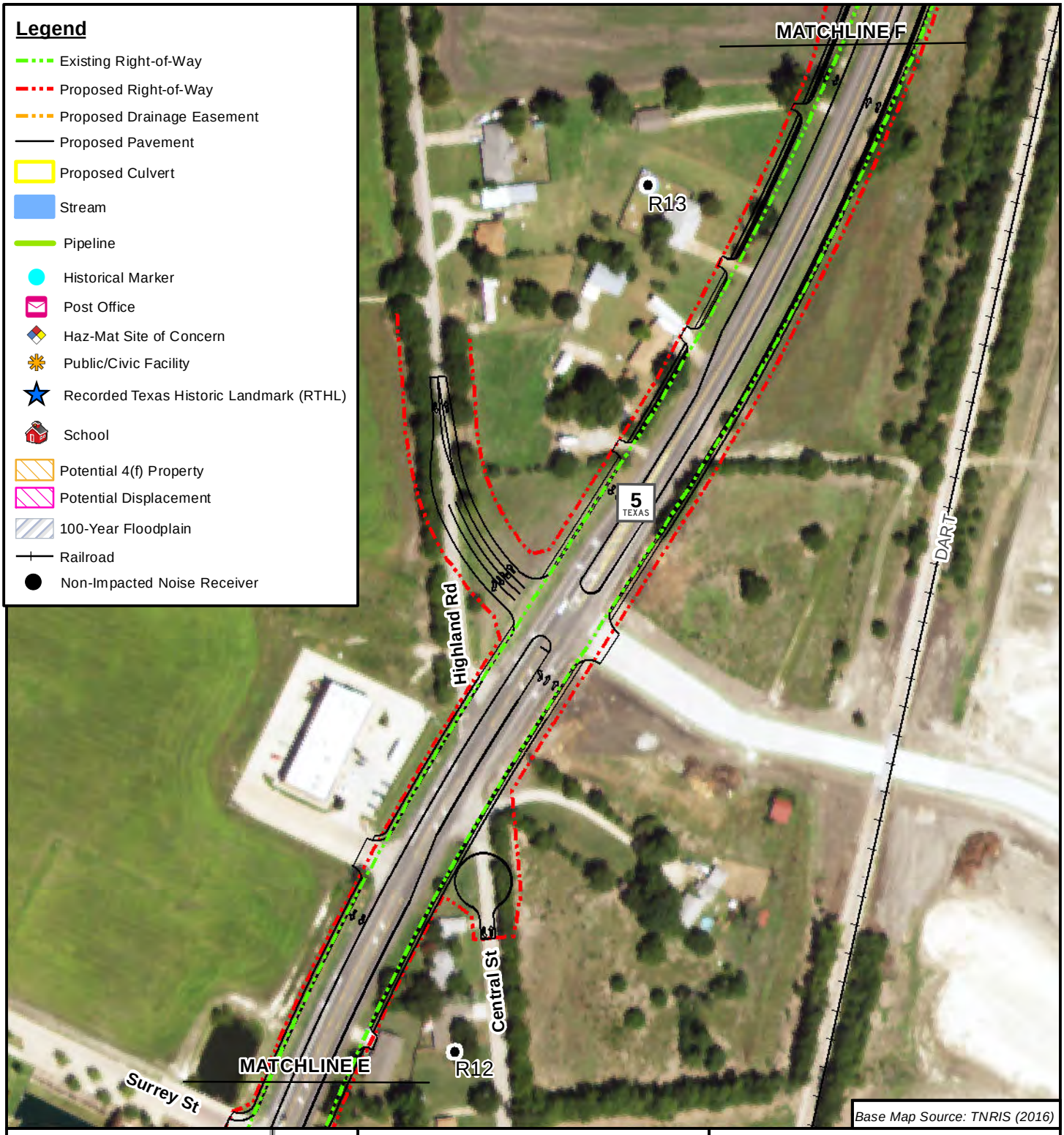
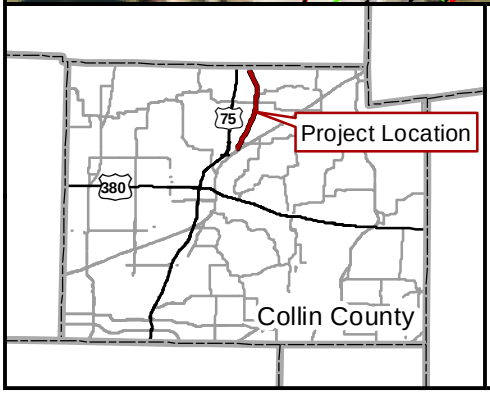
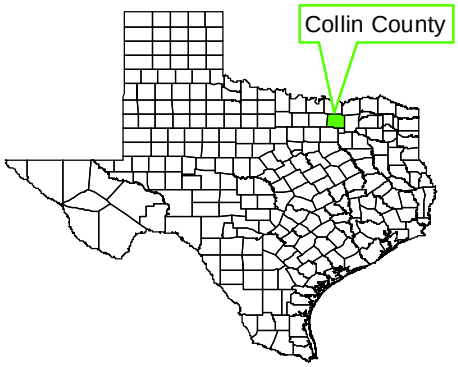
PROJECT RESOURCE AND LAND USE MAP

State Highway (SH) 5
From SH 121
To County Road (CR) 375
Collin County
CSJ: 0047-04-022
Sheet 5 of 31







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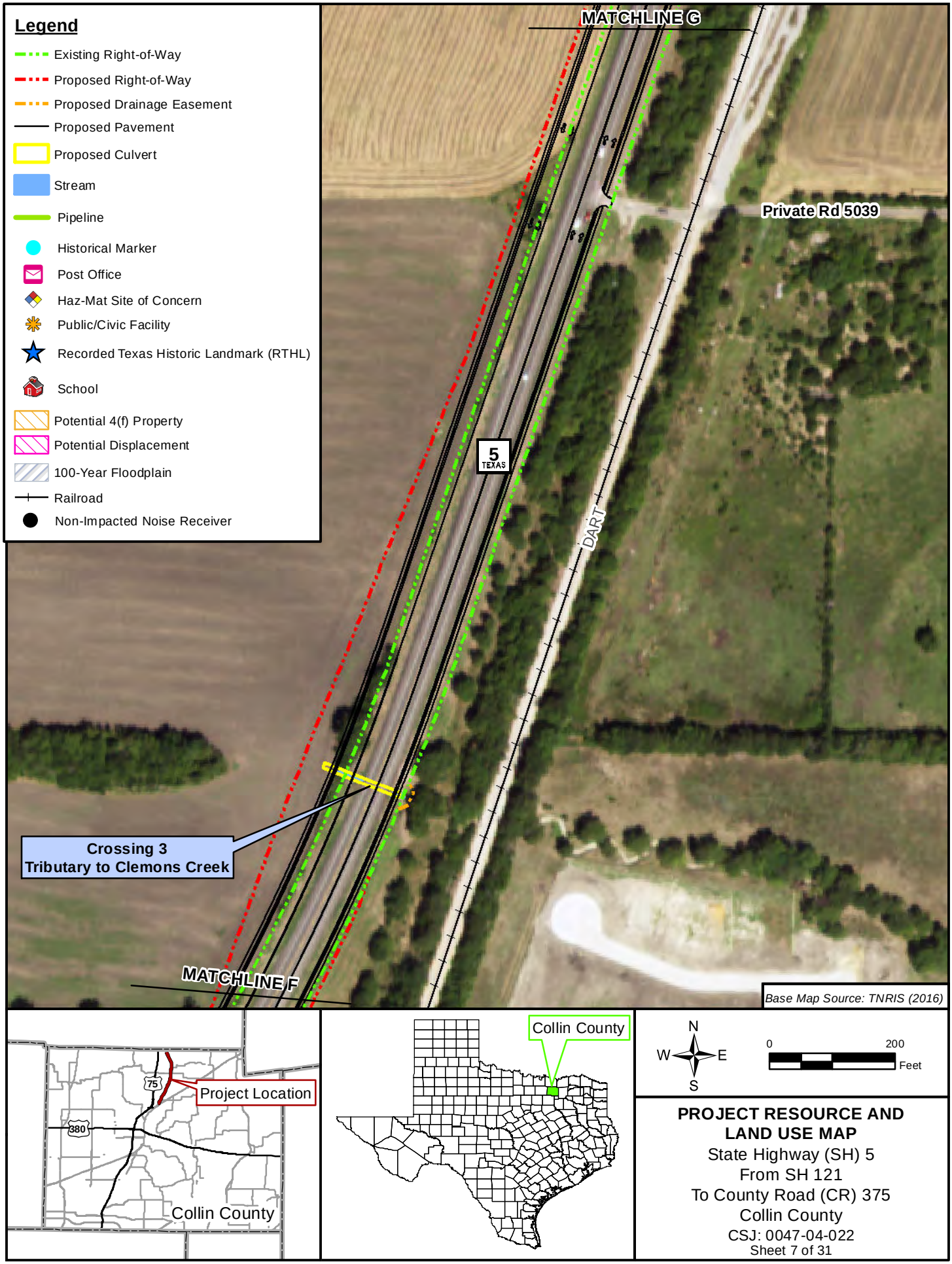
PROJECT RESOURCE AND LAND USE MAP

State Highway (SH) 5
From SH 121
To County Road (CR) 375
Collin County
CSJ: 0047-04-022
Sheet 6 of 31


Legend
Existing Right-of-Way
Proposed Right-of-Way
Proposed Drainage Easement
Proposed Pavement
Proposed Culvert
Stream
Pipeline
Historical Marker
Post Office
Haz-Mat Site of Concern
Public/Civic Facility
Recorded Texas Historic Landmark (RTHL)
School
Potential 4(f) Property
Potential Displacement
100-Year Floodplain
Railroad
Non-Impacted Noise Receiver
MATCHLINE G
Private Rd 5039
5
TEXAS
DART
Crossing 3
Tributary to Clemons Creek
MATCHLINE F
Base Map Source: TNRIS (2016)
75
380
Project Location
Collin County
Collin County
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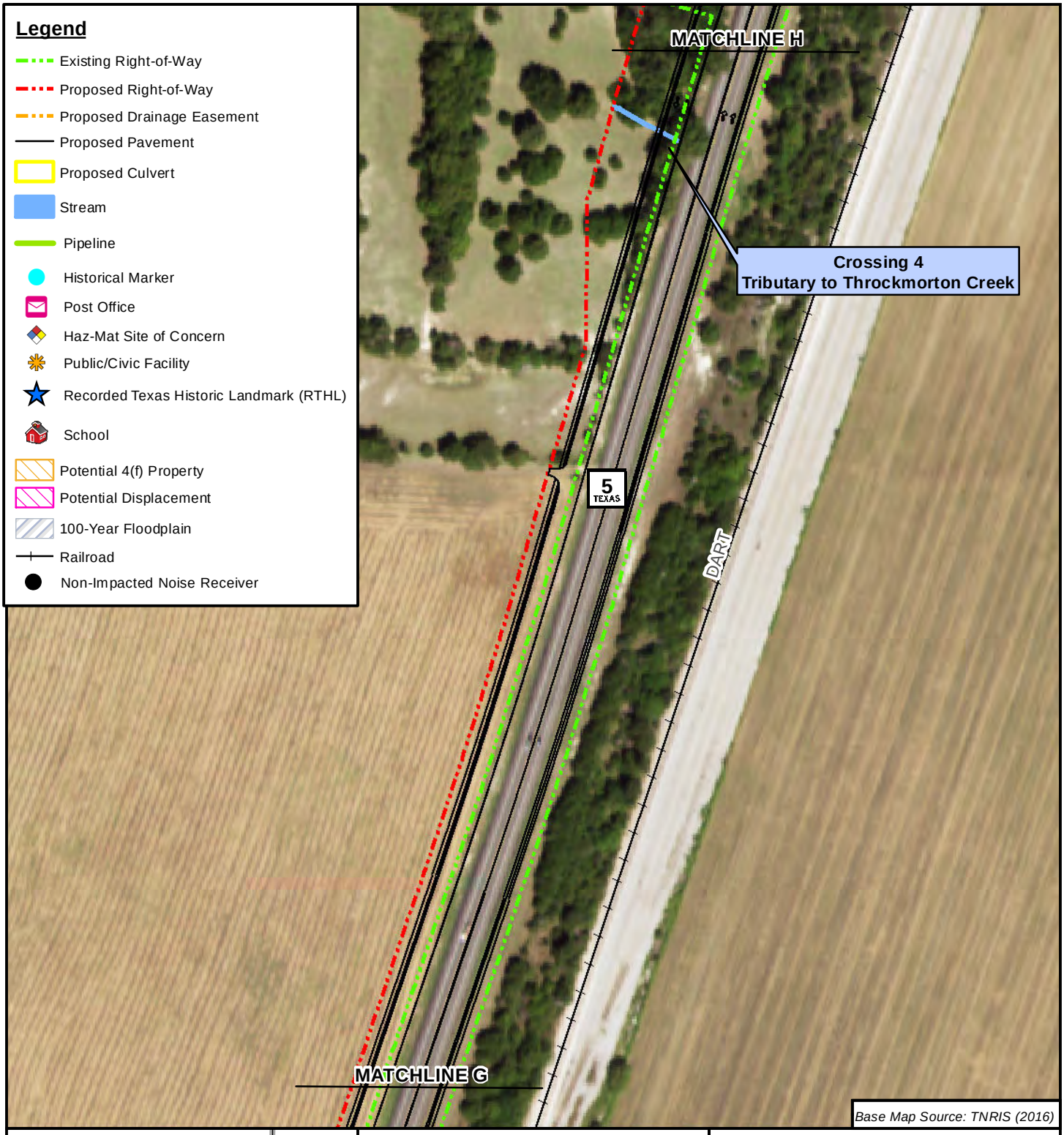
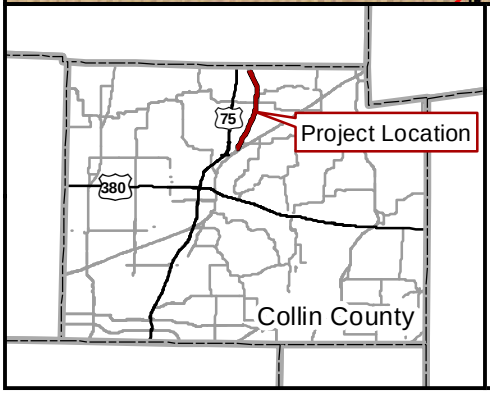
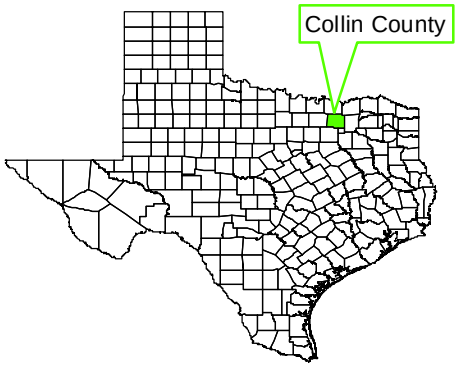
PROJECT RESOURCE AND LAND USE MAP
State Highway (SH) 5
From SH 121
To County Road (CR) 375
Collin County
CSJ: 0047-04-022
Sheet 7 of 31







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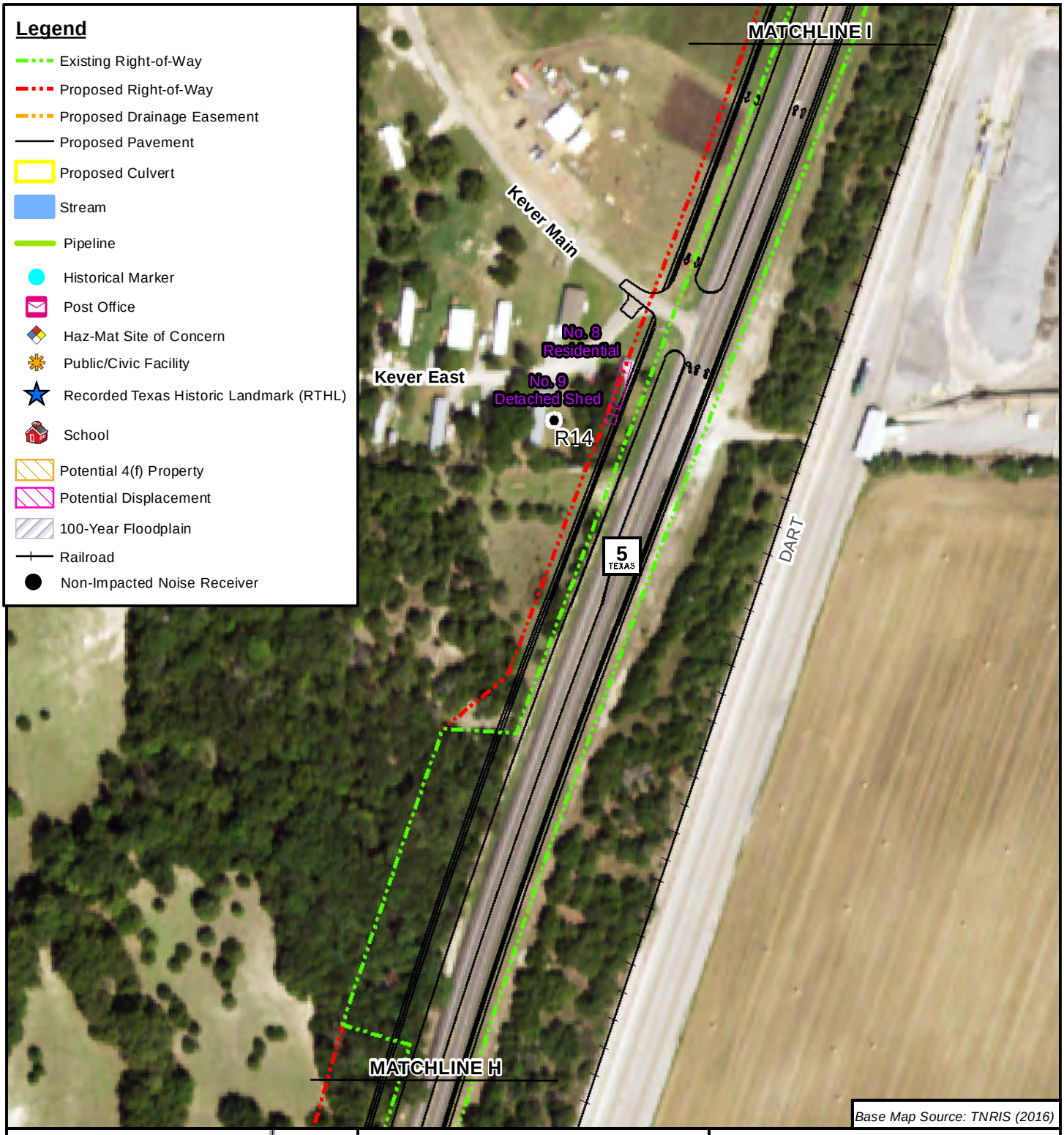
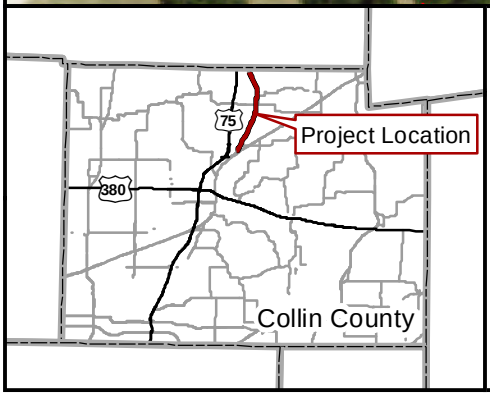
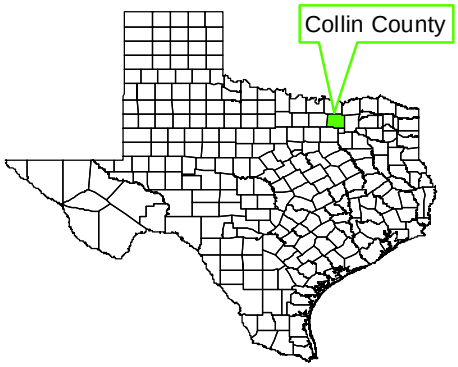
PROJECT RESOURCE AND LAND USE MAP

State Highway (SH) 5
From SH 121
To County Road (CR) 375
Collin County
CSJ: 0047-04-022
Sheet 8 of 31







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PROJECT RESOURCE AND LAND USE MAP

State Highway (SH) 5
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To County Road (CR) 375
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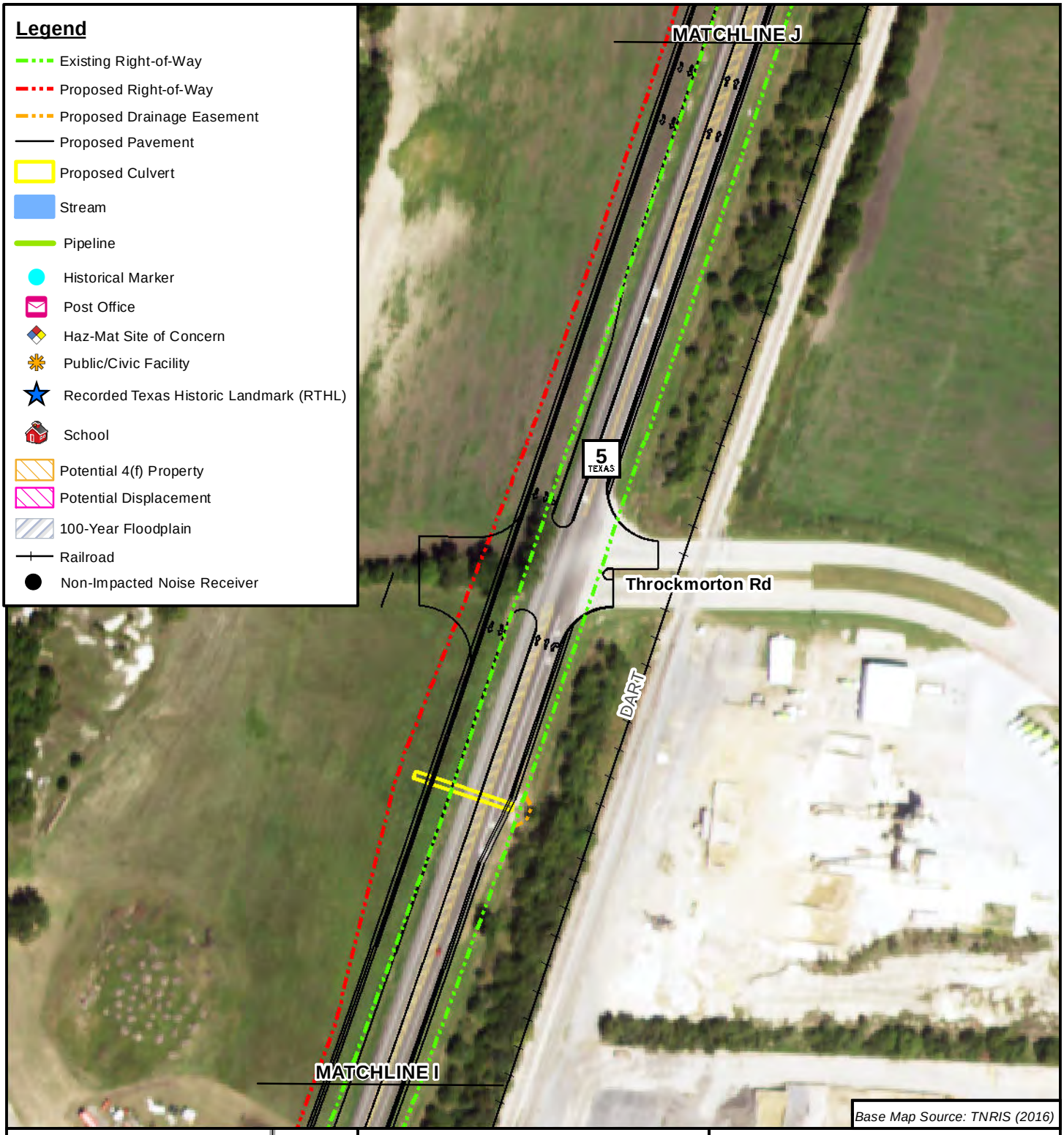

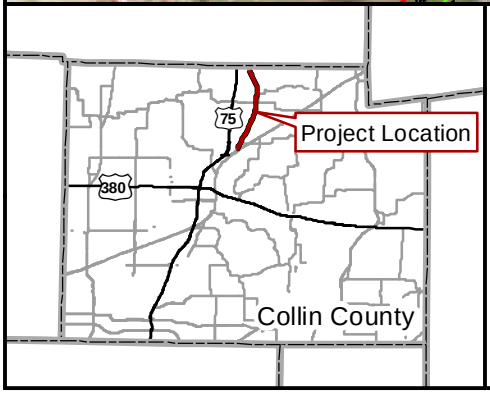

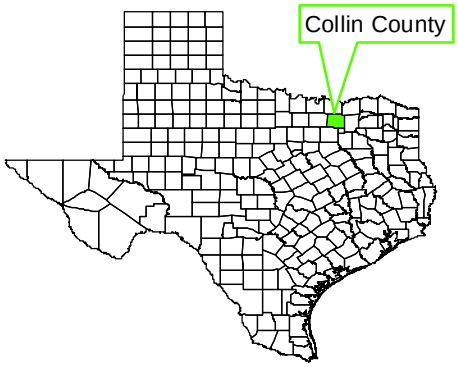

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PROJECT RESOURCE AND LAND USE MAP

State Highway (SH) 5
From SH 121
To County Road (CR) 375
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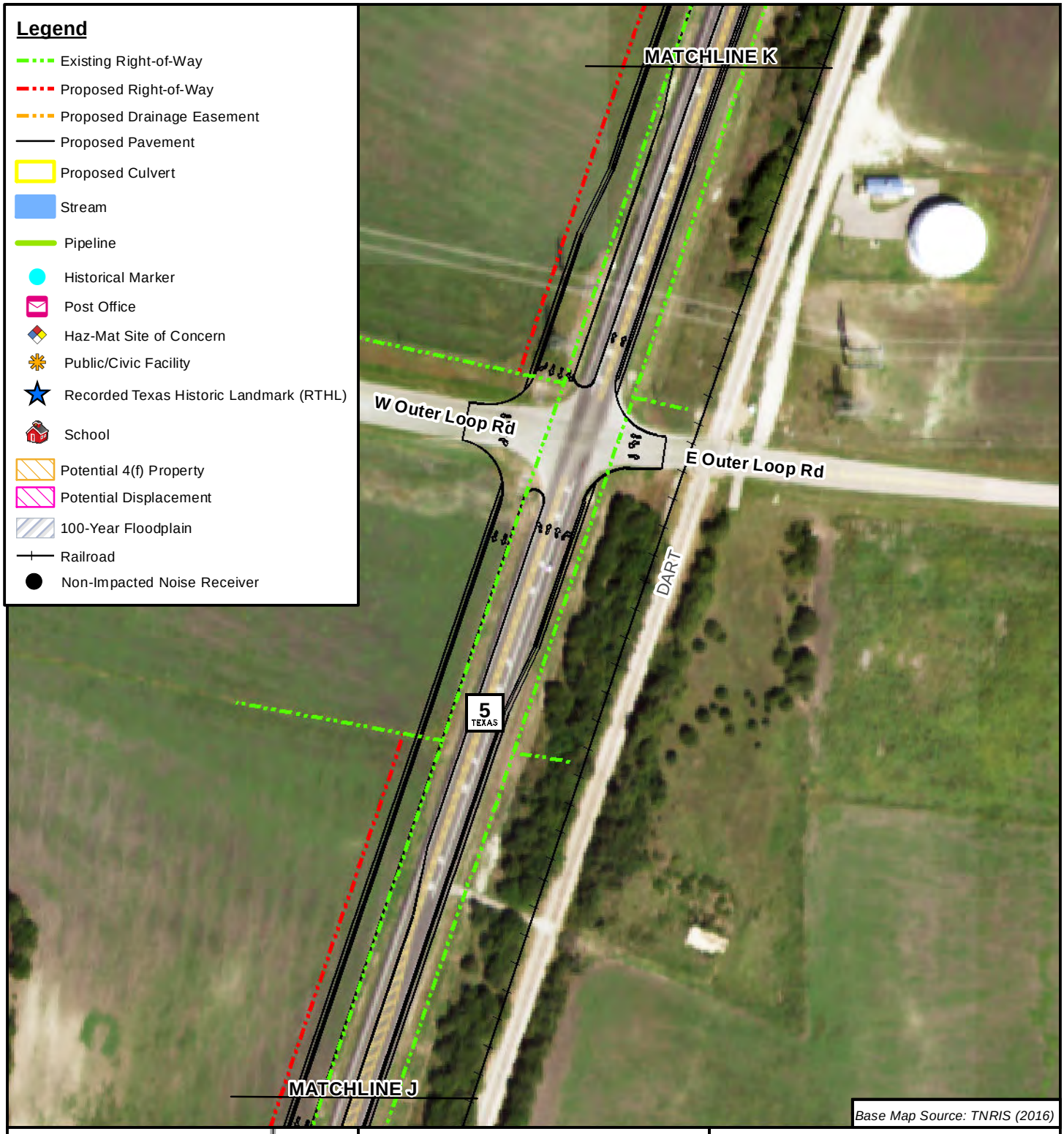

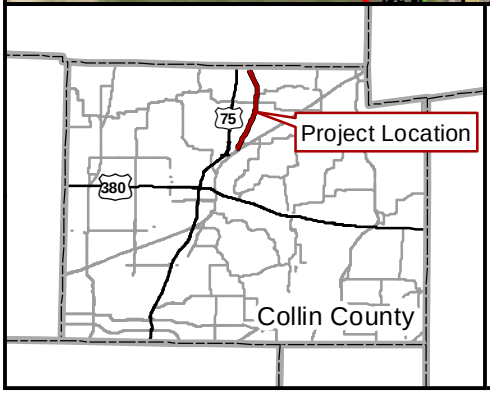

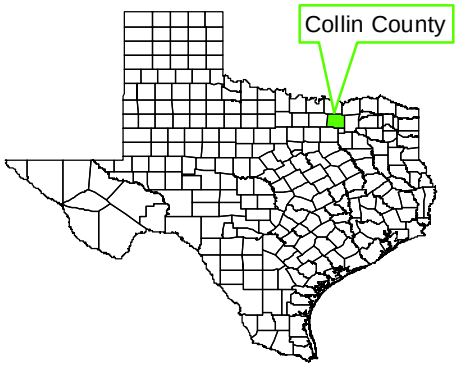

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PROJECT RESOURCE AND LAND USE MAP

State Highway (SH) 5
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To County Road (CR) 375
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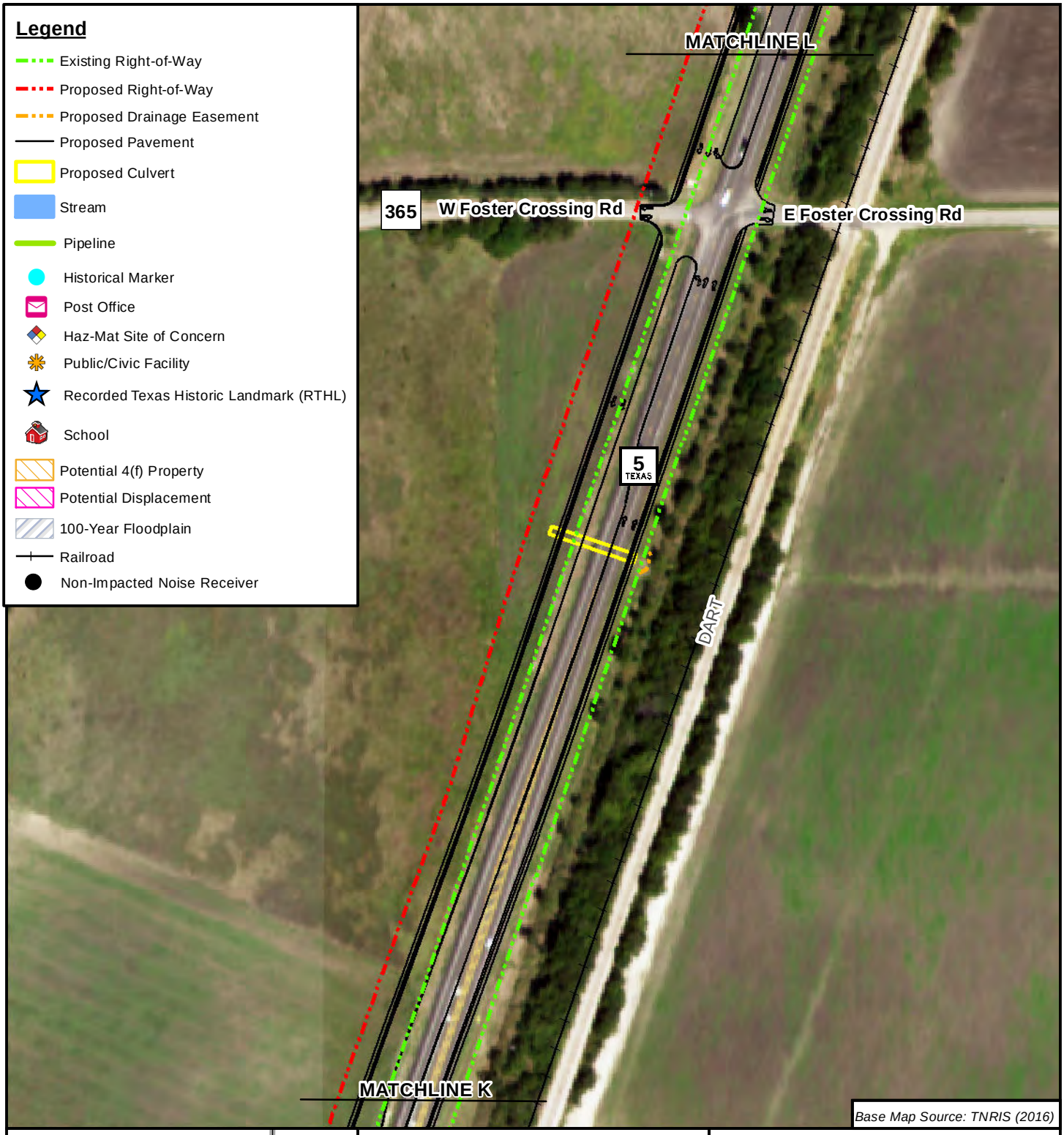

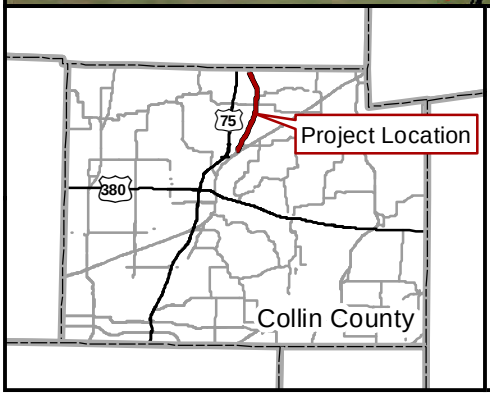

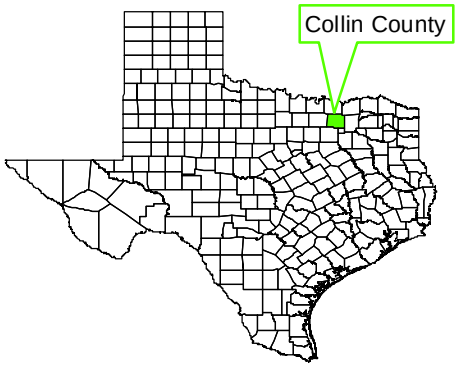

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PROJECT RESOURCE AND LAND USE MAP

State Highway (SH) 5
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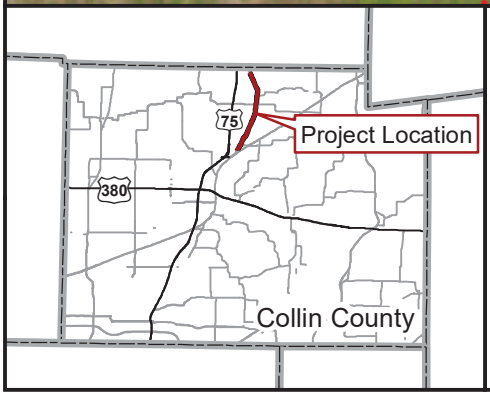

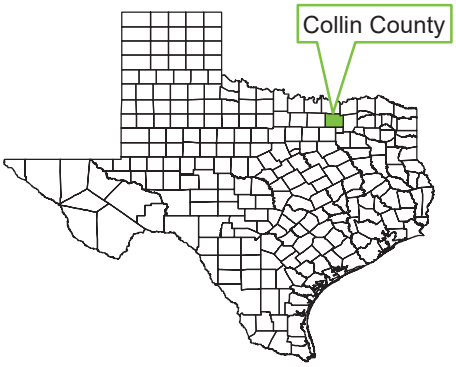

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PROJECT RESOURCE AND LAND USE MAP

State Highway (SH) 5
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To County Road (CR) 375
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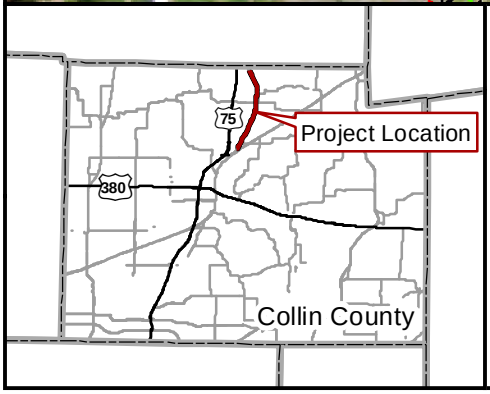

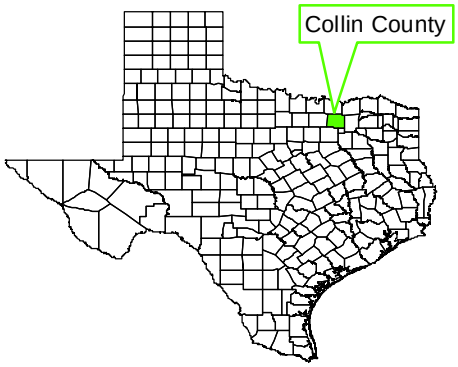

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PROJECT RESOURCE AND LAND USE MAP

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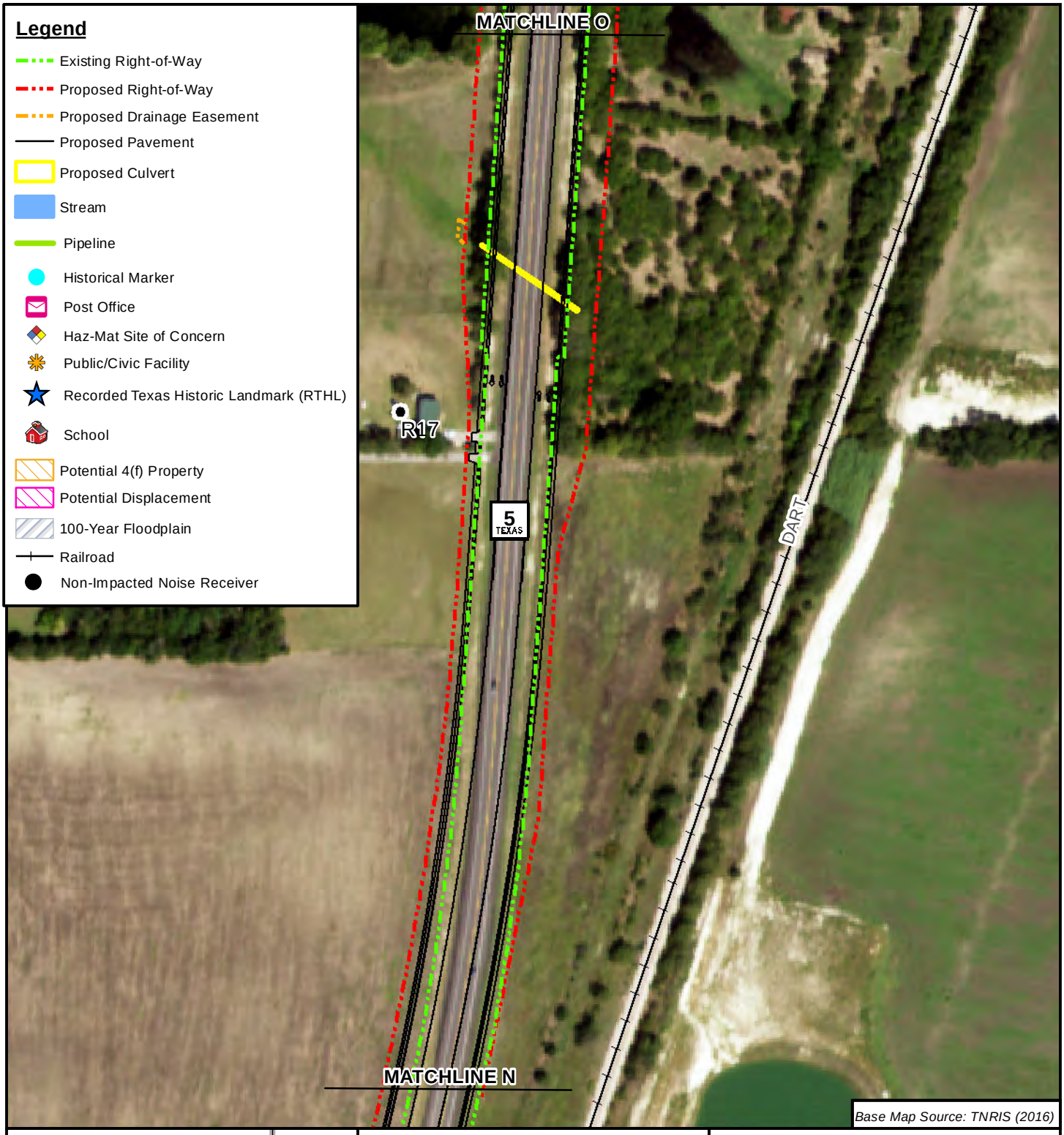

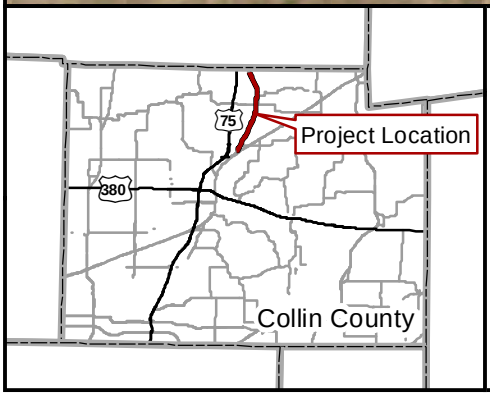

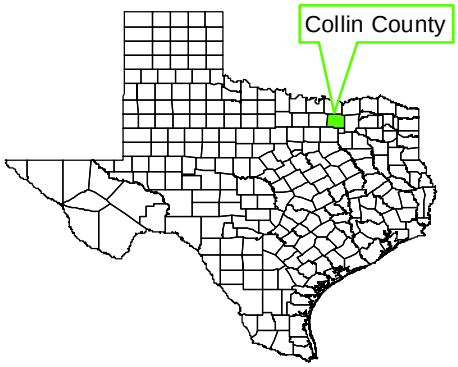

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PROJECT RESOURCE AND LAND USE MAP

State Highway (SH) 5
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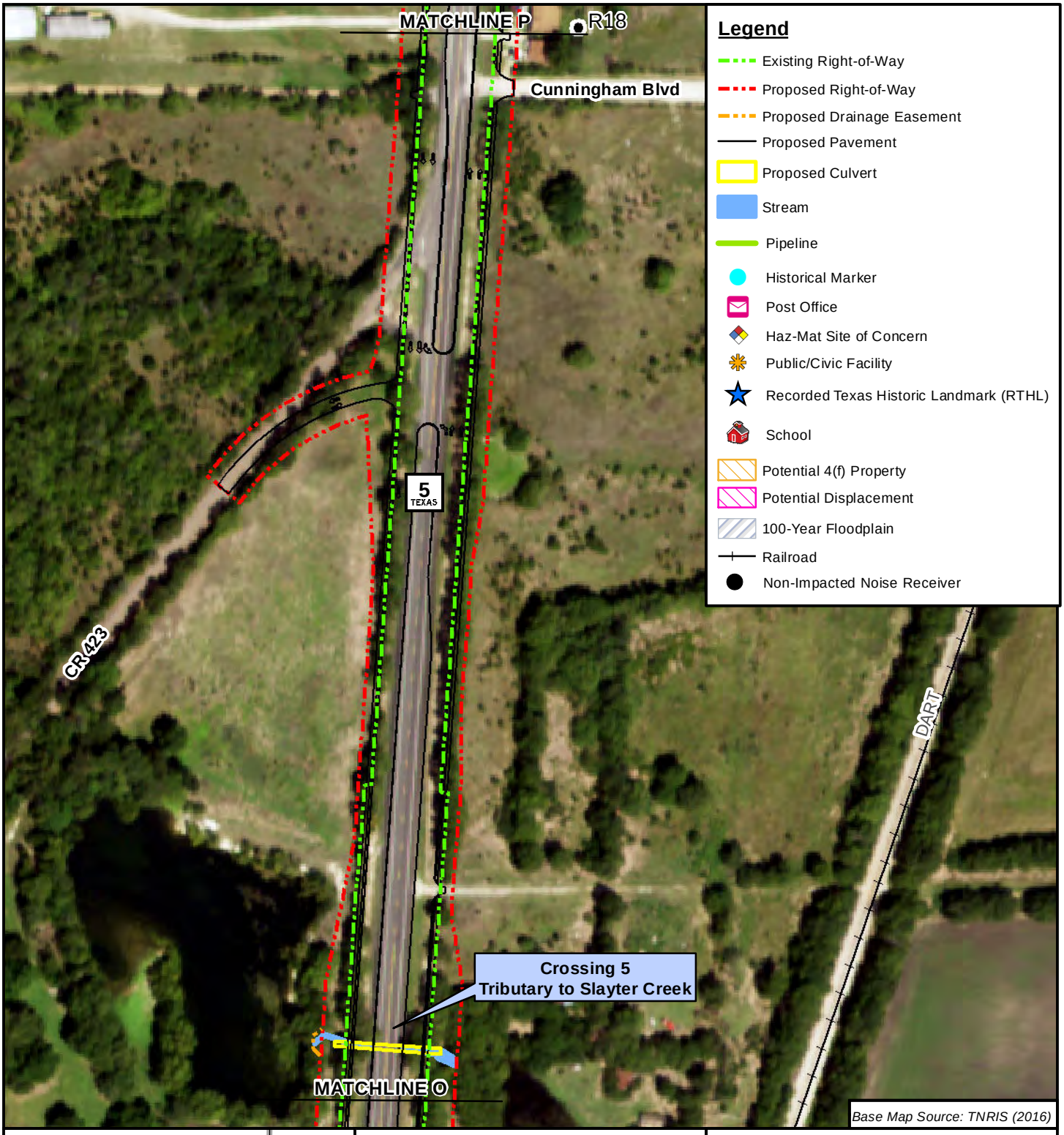

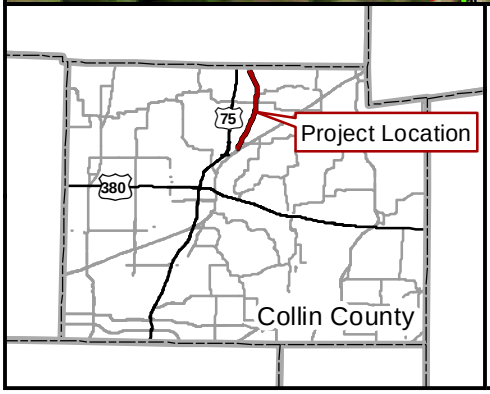

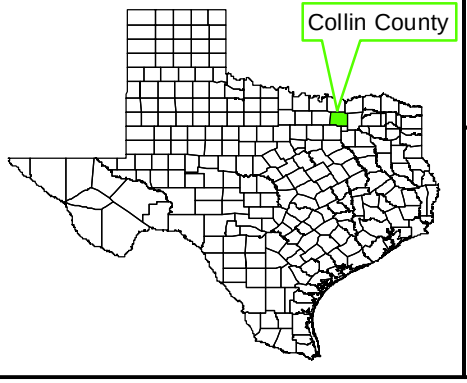

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PROJECT RESOURCE AND LAND USE MAP

State Highway (SH) 5
From SH 121
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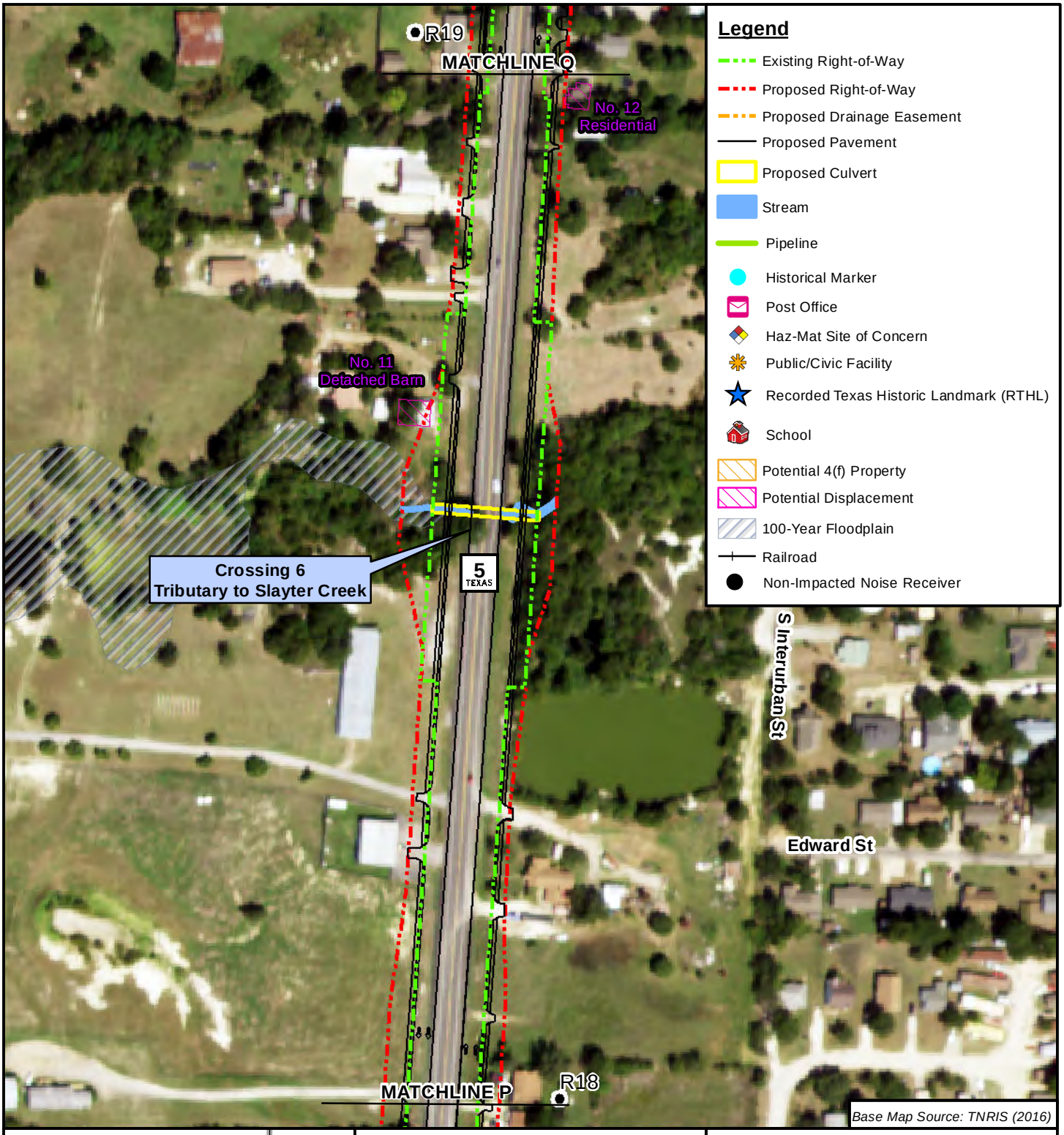

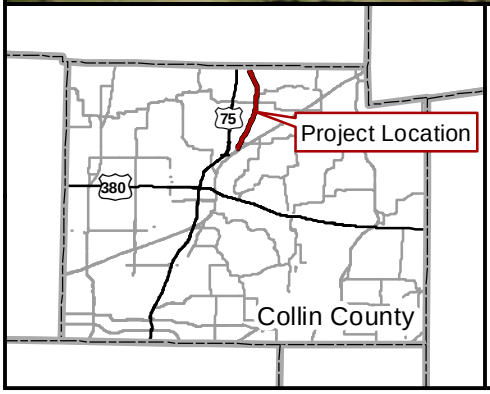

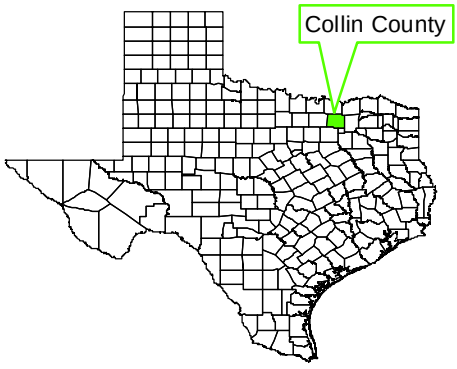

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PROJECT RESOURCE AND LAND USE MAP

State Highway (SH) 5
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To County Road (CR) 375
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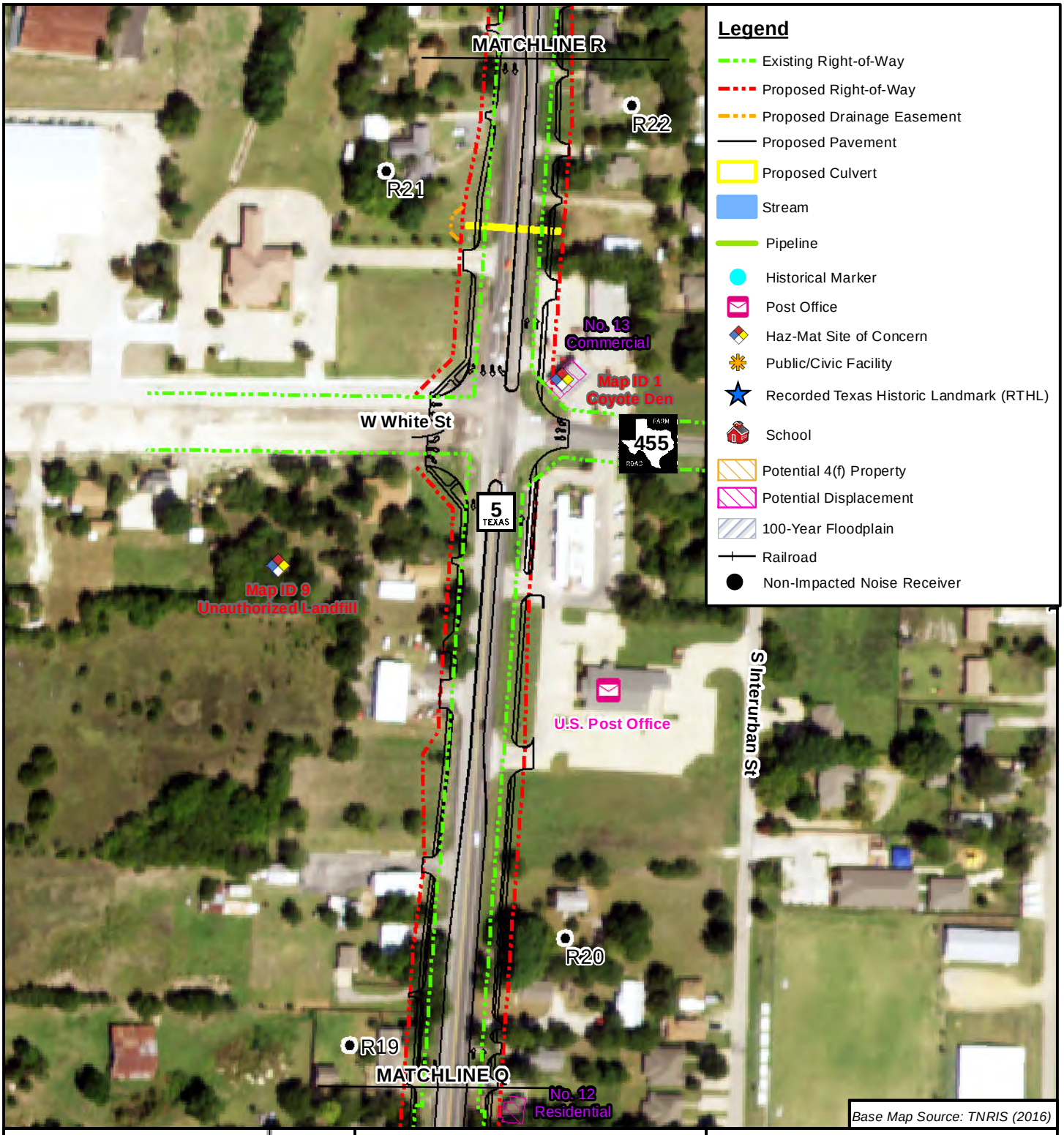

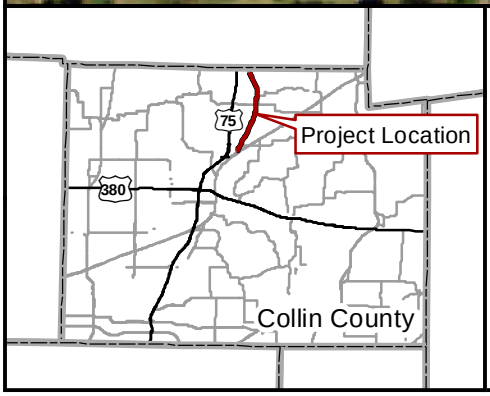

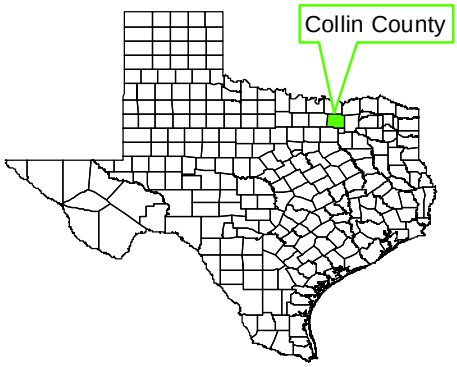

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PROJECT RESOURCE AND LAND USE MAP

State Highway (SH) 5
From SH 121
To County Road (CR) 375
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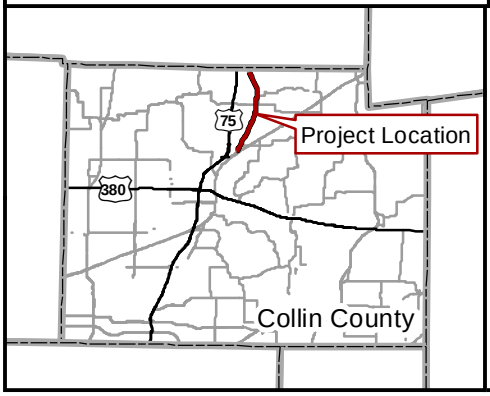
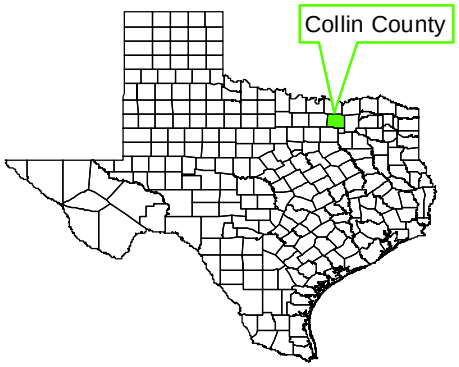
Legend

- Existing Right-of-Way
- Proposed Right-of-Way
- Proposed Drainage Easement
- Proposed Pavement
- Proposed Culvert
- Stream
- Pipeline
- Historical Marker
- Post Office
- Haz-Mat Site of Concern
- Public/Civic Facility
- Recorded Texas Historic Landmark (RTHL)
- School
- Potential 4(f) Property
- Potential Displacement
- 100-Year Floodplain
- Railroad
- Non-Impacted Noise Receiver





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PROJECT RESOURCE AND LAND USE MAP

State Highway (SH) 5
From SH 121
To County Road (CR) 375
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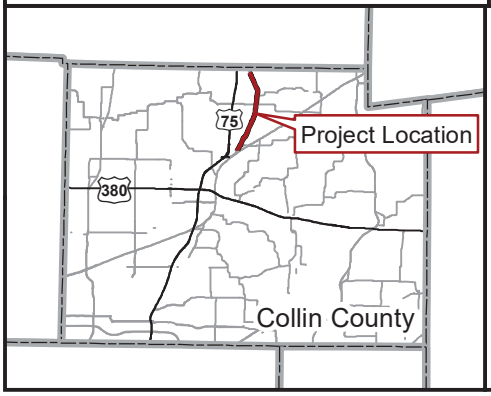

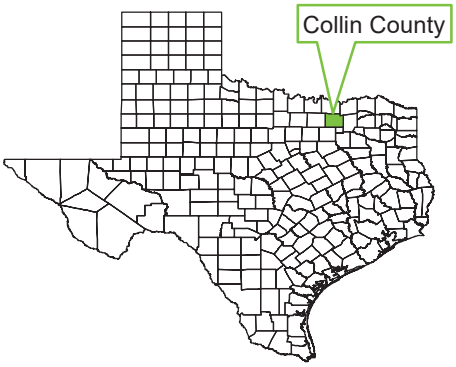

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PROJECT RESOURCE AND LAND USE MAP

State Highway (SH) 5
From SH 121
To County Road (CR) 375
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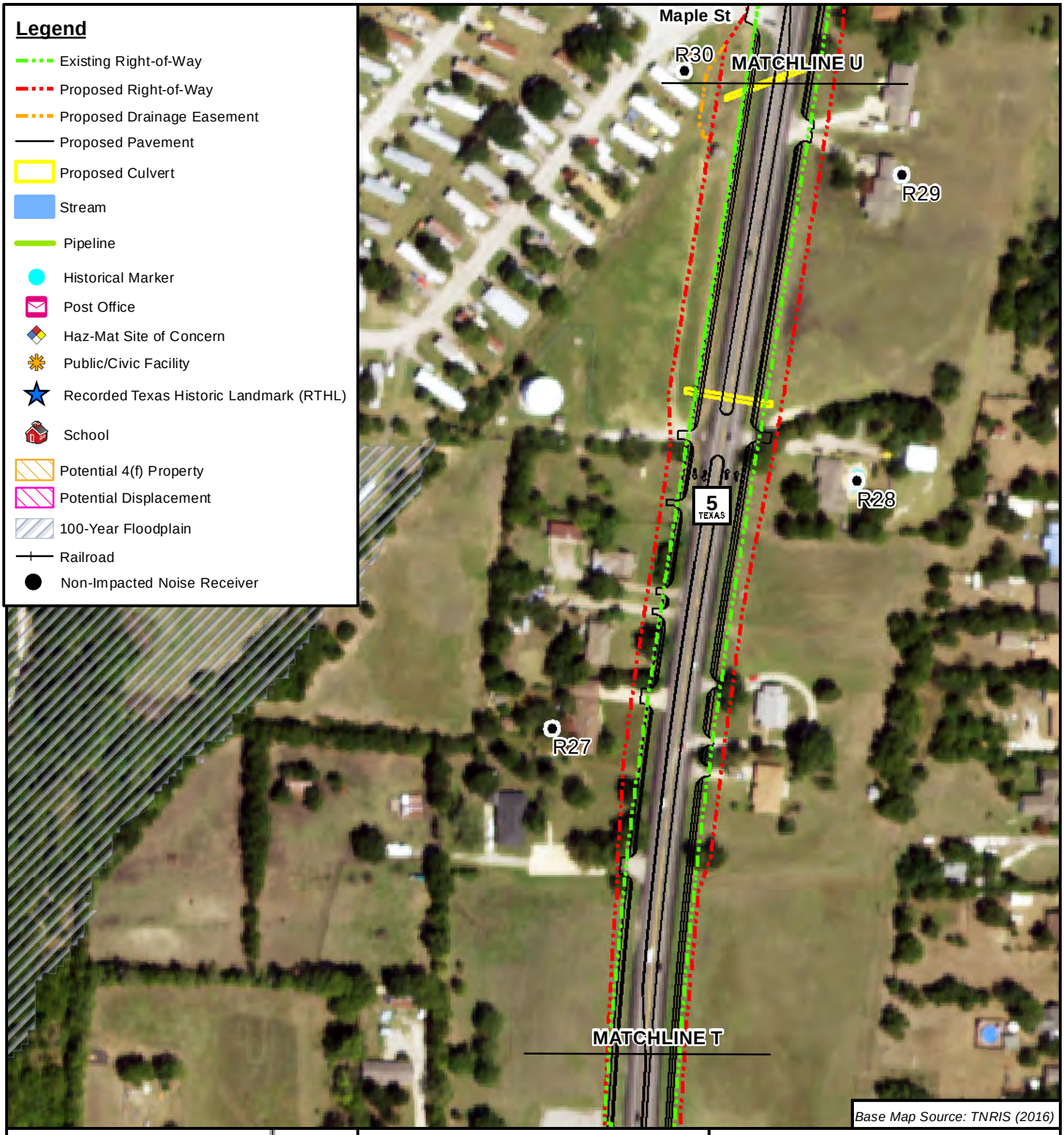

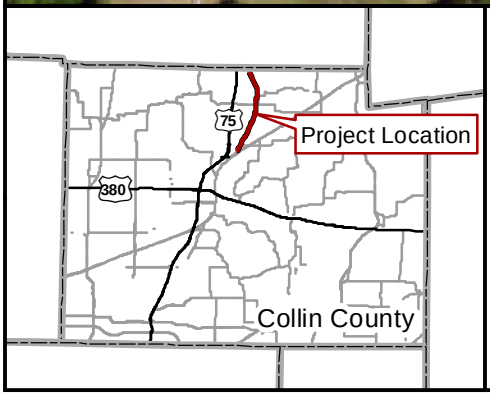

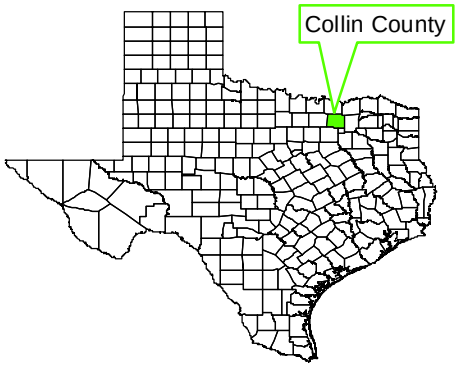

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PROJECT RESOURCE AND LAND USE MAP

State Highway (SH) 5
From SH 121
To County Road (CR) 375
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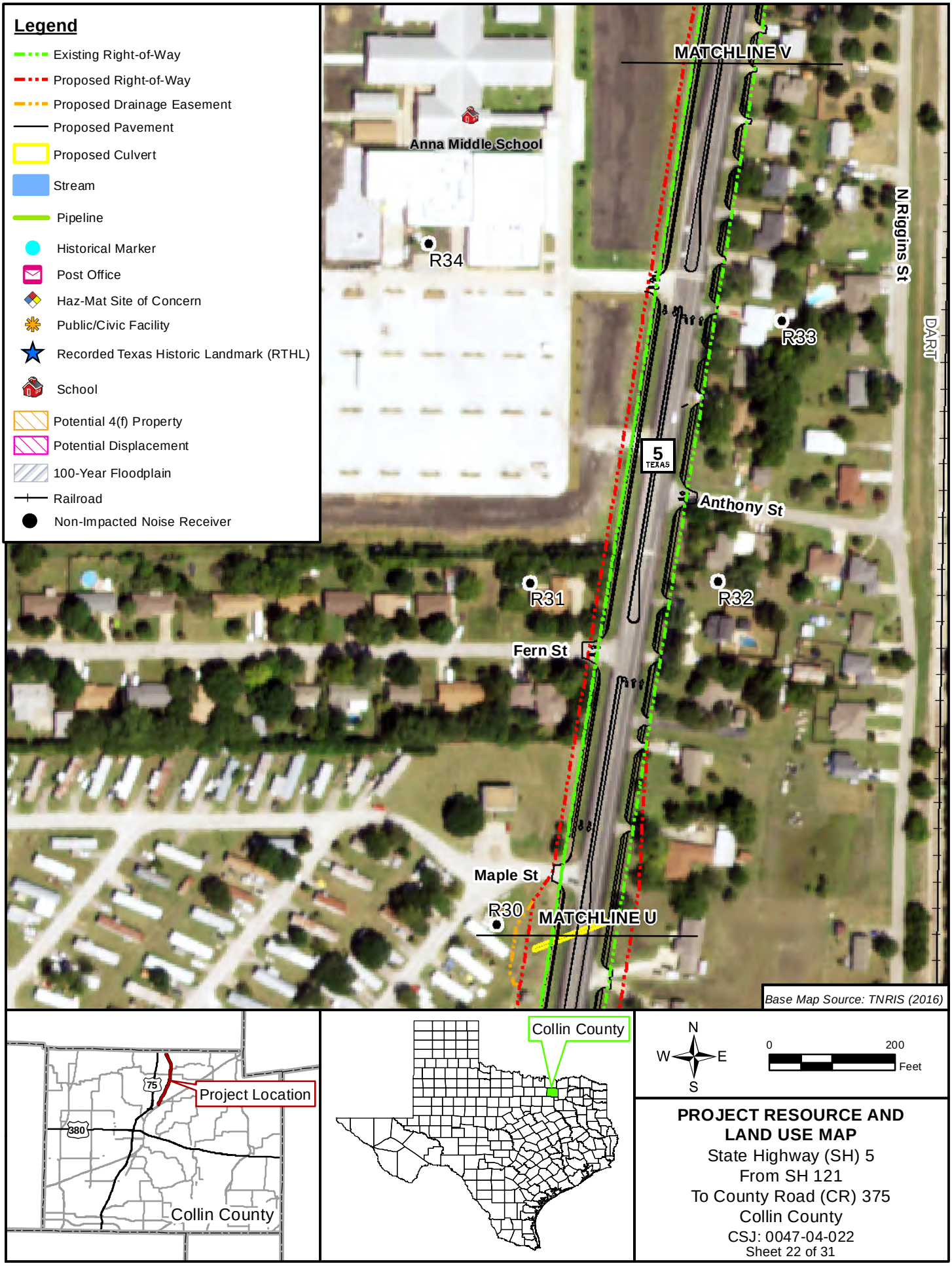

PROJECT RESOURCE AND LAND USE MAP

State Highway (SH) 5
From SH 121
To County Road (CR) 375
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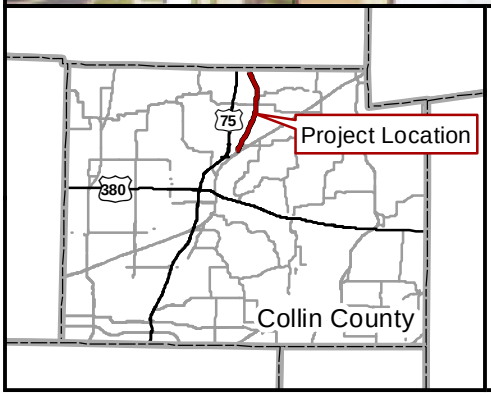

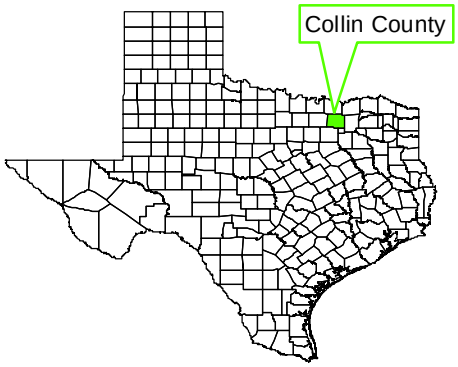

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PROJECT RESOURCE AND LAND USE MAP

State Highway (SH) 5
From SH 121
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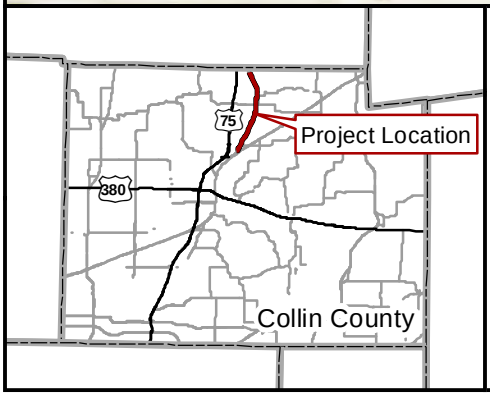

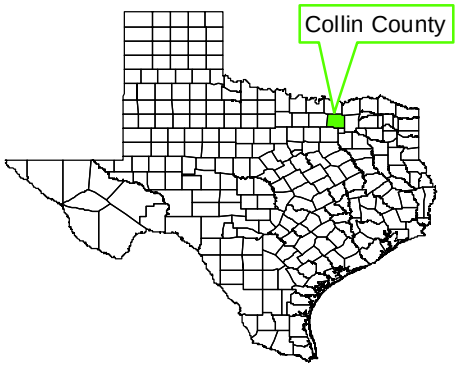

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PROJECT RESOURCE AND LAND USE MAP

State Highway (SH) 5
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To County Road (CR) 375
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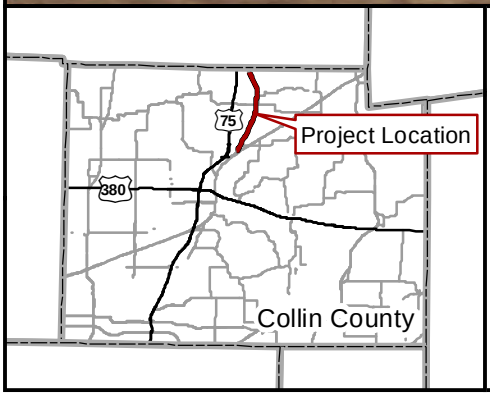

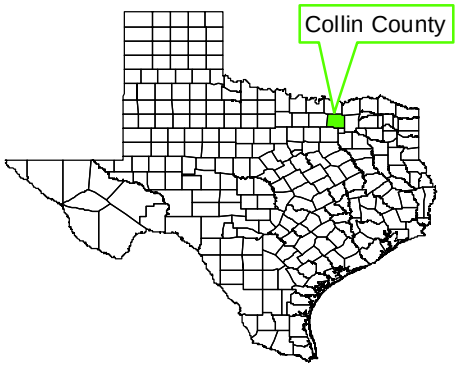

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PROJECT RESOURCE AND LAND USE MAP

State Highway (SH) 5
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Legend

- Existing Right-of-Way
- Proposed Right-of-Way
- Proposed Drainage Easement
- Proposed Pavement
- Proposed Culvert
- Stream
- Pipeline
- Historical Marker
- Post Office
- Haz-Mat Site of Concern
- Public/Civic Facility
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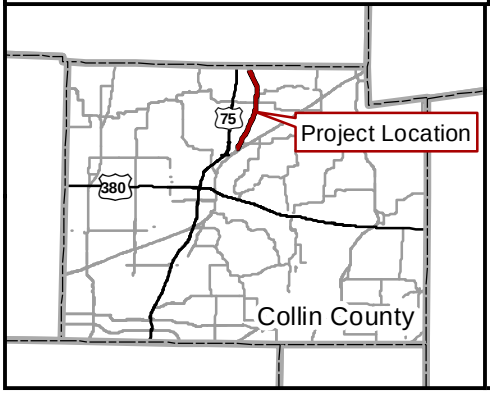
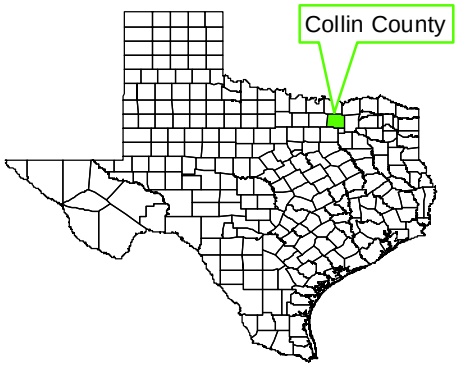
- School
- Potential 4(f) Property
- Potential Displacement
- 100-Year Floodplain
- Railroad
- Non-Impacted Noise Receiver





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PROJECT RESOURCE AND LAND USE MAP

State Highway (SH) 5
From SH 121
To County Road (CR) 375
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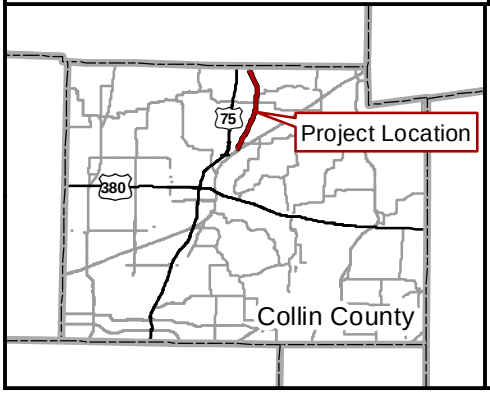

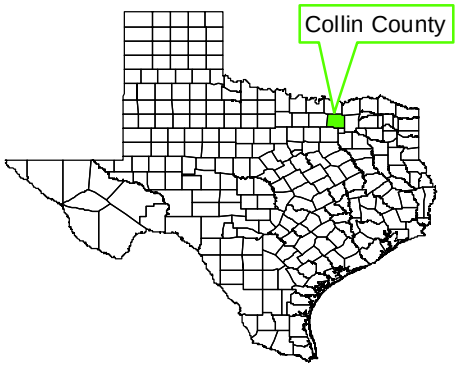

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State Highway (SH) 5
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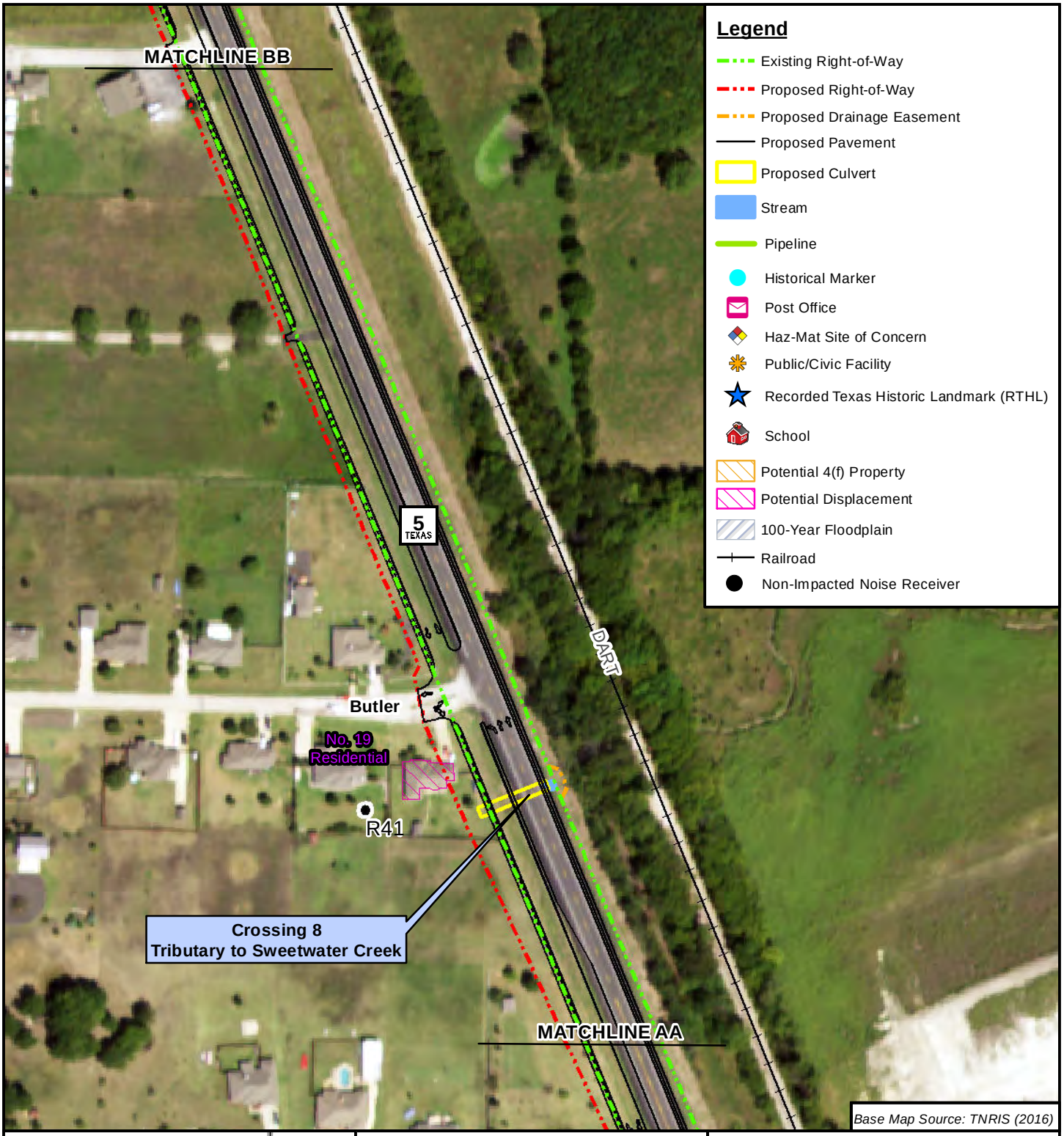

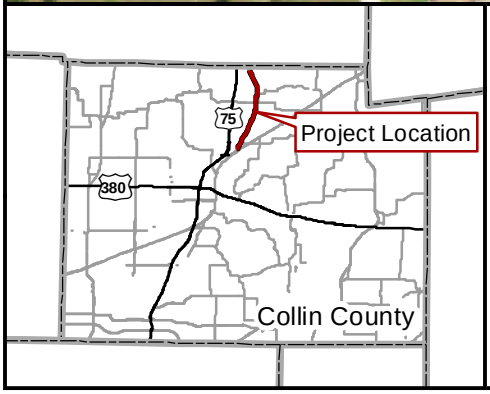

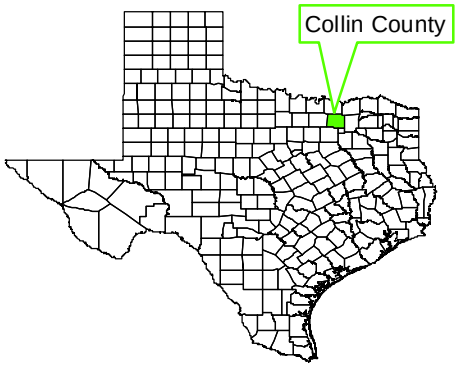

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PROJECT RESOURCE AND LAND USE MAP

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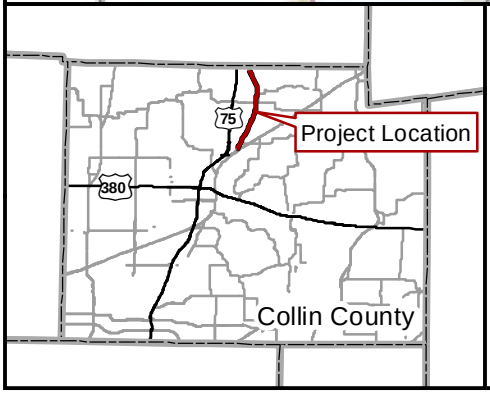
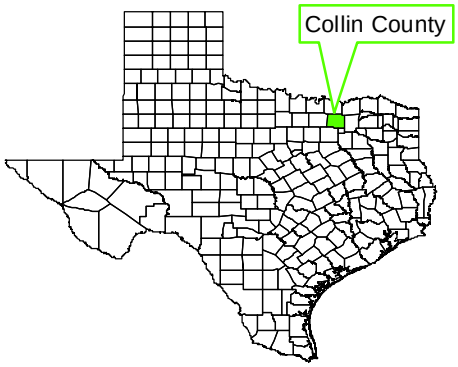
Sheet 28 of 31





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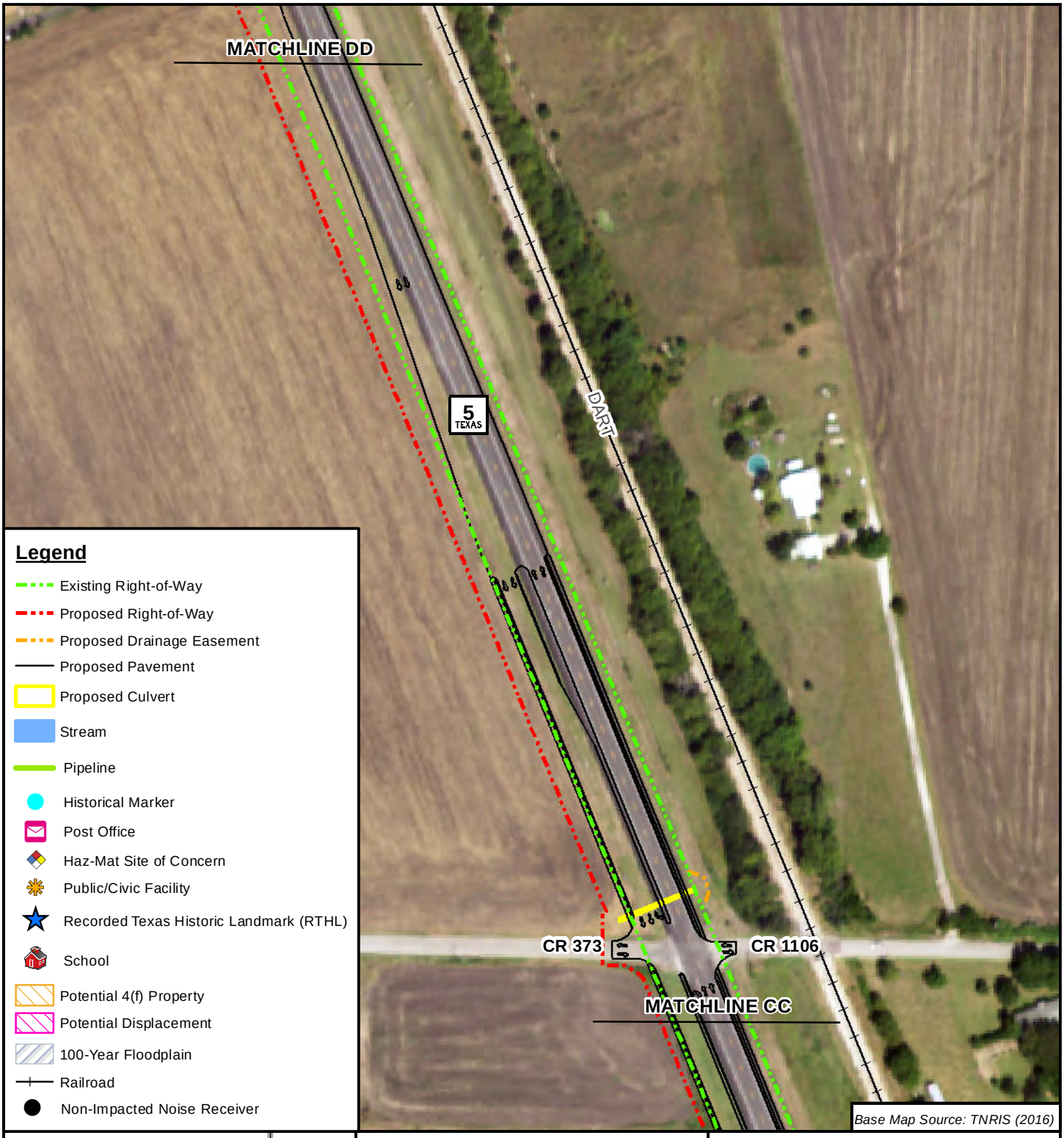
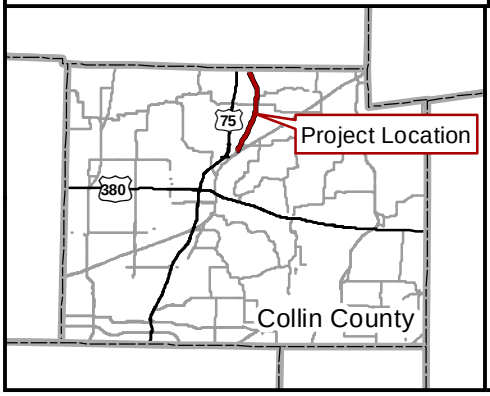
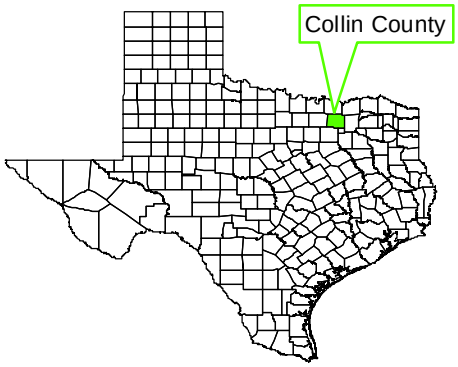
PROJECT RESOURCE AND LAND USE MAP

State Highway (SH) 5
From SH 121
To County Road (CR) 375
Collin County
CSJ: 0047-04-022
Sheet 29 of 31







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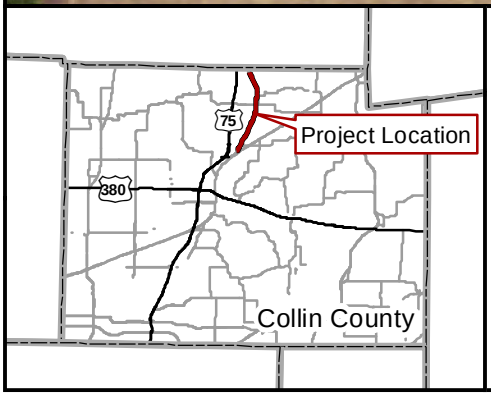
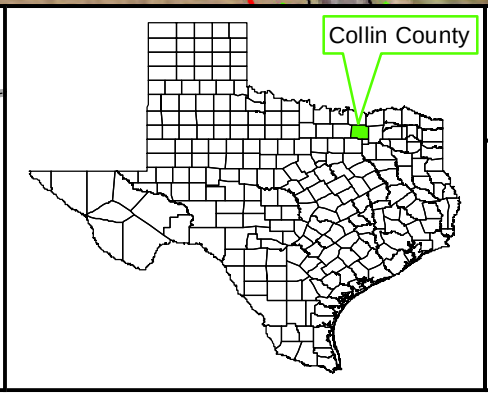
PROJECT RESOURCE AND LAND USE MAP

State Highway (SH) 5
From SH 121
To County Road (CR) 375
Collin County
CSJ: 0047-04-022
Sheet 30 of 31





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PROJECT RESOURCE AND LAND USE MAP

State Highway (SH) 5
From SH 121
To County Road (CR) 375
Collin County
CSJ: 0047-04-022
Sheet 31 of 31

Appendix G – Resource Agency Coordination

RECEIVED
AUG 0 3 2017

Texas Department of Transportation

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

August 3, 2017

Transmittal of AmaTerra Environmental, Inc. Draft Report: *Intensive Archeological Survey: State Highway 5, from State Highway 121 to County Road 375.*
Collin County, Dallas District, CSJ: 0047-04-022
THC Antiquities Permit No. 7889

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 First Amended Programmatic Agreement (PA, 2005) 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 AmaTerra Environmental, Inc. (AmaTerra) for the undertaking.

Under contract to Civil Associates, Inc. and on behalf of the Texas Department of Transportation (TxDOT) Dallas District, AmaTerra conducted intensive archeological survey within the area of potential effects (APE) of a proposed widening of State Highway (SH) 5 in Collin County, Texas, from SH 121to about 0.5 mile south of County Road (CR) 375 near the Collin/Grayson County line. 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 improvements include the expansion of SH 5 from a two-lane rural roadway to a four-lane divided urban roadway with turn lanes and raised medians. Permanent water line and drainage easements are planned for specific locations. The total project APE is approximately 8.58 miles in length, with an average width of about 130 feet. The total project APE spans about 154.9 acres consisting of 111.7 acres of existing right-of-way (ROW), 43 acres of proposed new ROW, and 0.24 acre of proposed drainage easements. The vertical APE would extend less than four feet deep throughout the project area, except at the drainage easements, where the impacts could be up to eight feet.

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. AmaTerra surveyed the entire existing ROW and proposed new ROW where access was available. A total of 50 shovel tests were excavated. Although access was available to only about 30 percent of the new proposed ROW, investigators could adequately assess potential

for intact archeological deposits in inaccessible areas through visual inspection. A significant portion of the proposed new ROW was obviously disturbed by new residential and commercial development. Six new archeological sites (41COL284, 41COL285, 41COL286, 41COL287, 41COL288, 41COL289) were documented, and three localities were located and described. The latter are defined by visible historic structures (e.g., foundations) in inaccessible ROW, but the presence of cultural deposits could not be verified by shovel testing and thus could not be formally designated as archeological sites. All documented sites and localities are historic period residential or commercial properties related to the early twentieth century settlement of Anna and Melissa. With very limited portions of the properties within or abutting the TxDOT APE and clear heavy disturbances apparent throughout the APE, none are recommended for further National Register of Historic Places (NRHP) or State Antiquities Landmark (SAL) eligibility testing **in areas that will be affected by the SH-5 expansion**. This recommendation does not apply to portions of the sites and localities that fall outside of the project APE.

AmaTerra concludes that the SH 5 improvement project will not affect any NRHP- or SAL-eligible archaeological properties, and recommends that the project may proceed without further consultation. This assessment includes those portions of the APE within private property not directly accessible for subsurface examination, as well as those examined by pedestrian inspection and shovel testing.

A TxDOT archeologist has reviewed the report by AmaTerra 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 the 154.94 acres of APE examined by AmaTerra.

2. 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. 7889. 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 Mindy Bonine at (512) 329-0031. If you have any other questions or have need of further information, please contact me at (512) 416-2639. Thank you for your consideration in this matter.

Sincerely,

J. Kevin Hanselka

J. Kevin Hanselka, Archeological Studies Program
Environmental Affairs Division

Draft Report: *Intensive Archeological Survey: SH 5 from SH 121 to CR 375.*
Collin County, Dallas District, CSJ: 0047-04-022
THC Antiquities Permit No. 7889

Cc w/attachment: Sandra Williams, TxDOT Dallas District Environmental Coordinator; Scott Ford, ENV-PD; Kevin Hanselka, ENV-Arch; ENV Arch Project File

Cc w/o attachments: ECOS Scan

Concurrence By:

William A. Martin 8/3/17

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

DRAFT REPORT ACCEPTABLE
by
for Mark Wolfe
Executive Director, THC
Date 8/3/17
Track#

Texas Department of Transportation

Archeological Survey: State Highway 5

from State Highway 121 to County Road 375, Collin County, Texas

CSJ: 0047-04-022

Prepared by: Amy M. Goldstein, James J. Hill, and Mindy Bonine

Date: April 2017

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.

Re: Section 106 Consultation, National Historic Preservation Act;
Proposed Texas Department of Transportation Project
CSJ: 0047-04-022; SH 5, Highway Widening, Collin County

Thank you for your attention to this matter. If you have questions, please contact Kevin Hanselka (TxDOT Archeologist) at 512/416-2639 (email: Kevin.Hanselka@txdot.gov) or Scott Pletka at 512/416-2631 (email: Scott.Pletka@txdot.gov). When replying to this correspondence by US Mail, please ensure that the envelope address includes reference to the Archeological Studies Branch, Environmental Affairs Division.

Sincerely,

Scott Pletka, Supervisor
Archeological Studies Branch
Environmental Affairs Division

Concurrence by: _____ Date: 4/27/16

Attachments
cc w/attachments: ENV-ARCH ECOS

Scott Pletka

From: Theodore Villacana <theodorev@comanchenation.com>
Sent: Wednesday, May 11, 2016 10:22 AM
To: Scott Pletka
Subject: Consult Response for - RE: Section 106 Consultation, Texas Department of Transportation; CSJ 004704022

Dear Mr. Pletka :

In response to your request, the above reference project has been reviewed by staff of this office to identify areas that may potentially contain prehistoric or historic archeological materials. The location of your project has been cross referenced with the Comanche Nation site files, an Comanche Nation ***"Concur"*** with your finding.

Please contact this office at (580) 595-9960/9618 if you require additional information on this project.

This review is performed in order to identify and preserve the Comanche Nation and State cultural heritage, in conjunction with the State Historic Preservation Office.

Regards

Comanche Nation Historic Preservation Office
Theodore E. Villicana ,Technician
#6 SW "D" Avenue , Suite C
Lawton, OK. 73502

From: Jimmy Arterberry
Sent: Wednesday, April 27, 2016 11:00 AM
To: Theodore Villacana
Subject: FW: Section 106 Consultation, Texas Department of Transportation; CSJ 004704022

From: Scott Pletka [mailto:Scott.Pletka@txdot.gov]
Sent: Wednesday, April 27, 2016 10:50 AM
To: Amie R. Tah-Bone (atahbone@kiowatribe.org) <atahbone@kiowatribe.org>; Gary McAdams (Gary.McAdams@wichitatribe.com) <Gary.McAdams@wichitatribe.com>; Holly Houghten (holly@mathpo.org) <holly@mathpo.org>; Jason Ross (jross@delawarenation.com) <jross@delawarenation.com>; Jimmy Arterberry <jimmya@comanchenation.com>; Miranda Myer (mallen@tonkawatribe.com) <mallen@tonkawatribe.com>; Nekole Alligood (NAlligood@delawarenation.com) <NAlligood@delawarenation.com>; Terri Parton (Terri.Parton@wichitatribe.com) <Terri.Parton@wichitatribe.com>
Subject: Section 106 Consultation, Texas Department of Transportation; CSJ 004704022

Good morning,

We kindly request your comments regarding a proposed undertaking. Please see the attached letter for project details and information.

Thank you in advance for your consideration.

Regards,

Scott Pletka
Supervisor, Archeological Studies Branch
Texas Department of Transportation

From: NEPA
To: Sonya Hernandez
Subject: RE: Revised: Collin County, SH 5, TxDOT Dallas District, TCEQ Coordination (CSJ: 0047-04-022)
Date: Tuesday, April 18, 2017 8:44:03 AM
Attachments: TxDOT Response 17-09.docx

Ms. Hernandez:

Attached is the response to your request. If you are in need of further assistance, please feel free to contact me.

Thank you,

Chikaodi Agumadu
NEPA Coordinator
Texas Commission on Environmental Quality Intergovernmental Relations
12100 Park 35 Circle Bldg. F | Mail Code 119 | Austin, TX 78753
(512) 239-3500

From: Sonya Hernandez [mailto:Sonya.Hernandez@txdot.gov]
Sent: Tuesday, April 11, 2017 4:15 PM
To: NEPA <NEPA@tceq.texas.gov>
Subject: Revised: Collin County, SH 5, TxDOT Dallas District, TCEQ Coordination (CSJ: 0047-04-022)

To Whom It May Concern:
Please disregard the previous email with the same subject line and see the following revised email.

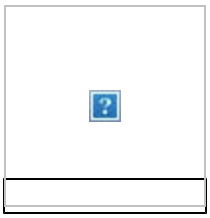
TxDOT requests the TCEQ evaluate the SH 5 project per 43 TAC 2.305. The proposed improvements would widen approximately 9 miles, proposing added capacity and other improvements to the facility between SH 121 to County Road (CR) 375.

We are requesting this/these TCEQ reviews since the project meets MOU triggers related to air impairment and water quality impairment.

An electronic version of the Air Quality Technical Report (SH 5_AQ Tech Report_2.28.17_CSJ 004704022.pdf) and Water Quality Technical Report (SH 5_Water Tech Report_10.13.16_CSJ 004704022.pdf) will be transmitted to your office using our FTP system. Please let me know if you have any questions.
Thank you,
Sonya Hernandez

Sonya Y. Hernandez
Project Delivery Manager
Environmental Affairs Division
Texas Department of Transportation

512-416-2579
Sonya.Hernandez@txdot.gov



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: Collin County, SH 5, TxDOT Dallas District, TCEQ Coordination (CSJ: 0047-04-022)

In accordance with the Memorandum of Understanding between TxDOT and TCEQ addressing environmental reviews, which is codified in Chapter 43, Subchapter I of the Texas Administrative Code (TAC) and 30 TAC § 7.119, TCEQ is responding to your request for review by providing the below comments:

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. Air Quality staff has reviewed the document in accordance with transportation and general conformity regulations codified in 40 Code of Federal Regulations Part 93 Subparts A and B. We concur with TxDOT's assessment.

The Office of Water does not anticipate significant long term environmental impacts from this project as long as construction and waste disposal activities associated with it are completed in accordance with applicable local, state, and federal environmental permits, statutes, and regulations. We recommend that the applicant take necessary steps to ensure that best management practices are used to control runoff from construction sites to prevent detrimental impact to surface and ground water.

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.

Chikaodi Agumadu
NEPA Coordinator
TCEQ, MC-119
NEPA@tceq.texas.gov
512-239-3500

From: Leslie Mirise
Sent: Friday, April 21, 2017 11:00 AM
To: Sandra Williams
Cc: Mike Renfrow; Dan Perge; Jan Heady; Lani Marshall
Subject: CSJ: 0047-04-022 SH 5 Reconstruct/Widening Project - BIO CLEARANCE

Sandra,

The Bio Resources tasks, including early coordination with TPWD, have been completed in ECOS as of 4-20-17. The following summary is applicable to the PS&E EPIC sheet:

1. Vegetation Resources – No action required. Standard language applies.
2. Listed species – Action required.
    a. Western Burrowing Owl may be present on-site. Avoid nests. Also see Special Note on the MBTA.
    b. Plains spotted skunk may be present on-site. Avoid dens.
    c. Timber rattlesnake may be present on-site.
    d. Texas garter snake may be present on-site.
    e. Louisiana pigtoe & Texas heelsplitter may be present on-site. Mussel surveys/relocation must be complete approx. 6-months prior to start of construction.
3. Migratory Bird Treaty Act – Standard language applies.

Please let me know if you have any questions.

Thanks,

Leslie Mirise
Environmental Specialist
Dallas District – Advance Planning
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: Monday, April 17, 2017 2:50 PM
To: Leslie Mirise; Sandra Williams; Dan Perge; Jan Heady
Subject: RE: CSJ 0047-04-022 SH 5 Reconstruct/Widening Project - Request for Early Coordination

Leslie,

I do not have any comments on this project.

Thank you for submitting the following project for early coordination: SH 5 widening project (CSJ 0047-04-022). TPWD appreciates TxDOT's commitment to implement the practices listed in the Biological Evaluation form submitted on March 24, 2017. 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
TPWD Wildlife Division
512-389-8021

From: WHAB_TxDOT
Sent: Saturday, March 25, 2017 12:18 AM
To: Leslie Mirise; Sandra Williams; Dan Perge; Jan Heady
Cc: Sue Reilly
Subject: RE: CSJ 0047-04-022 SH 5 Reconstruct/Widening Project - Request for Early Coordination

The TPWD Wildlife Habitat Assessment Program has received your request and has assigned it project ID # 37770. 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: Friday, March 24, 2017 3:57 PM
To: WHAB_TxDOT <WHAB_TxDOT@tpwd.texas.gov>
Cc: Sandra Williams <Sandra.Williams2@txdot.gov>; Dan Perge <Dan.Perge@txdot.gov>; Jan Heady <Jan.Heady@txdot.gov>
Subject: CSJ 0047-04-022 SH 5 Reconstruct/Widening Project - Request for Early Coordination

Hello,

TxDOT requests early coordination for the FM 148 widening project in Kaufman County, Texas. I have attached the following:

1. The Biological Evaluation Form;
2. Tier 1 Site Assessment Form, including BMPs to be implemented;
3. Supporting Documents, including but not limited to, project description, project location map, species lists from TPWD and USFWS/IPaC, EMST documentation, species impact table, and site photos;
4. The EMST and observed vegetation Excel spreadsheet; and
5. A separate file containing NDD and EOID information.

These documents, along with other project-related information, are also available in ECOS under the CSJ: 0047-04-022. The Biological Resources Technical Report is currently being finalized. Once finalized, it will be emailed to the assigned TPWD biologist and uploaded to ECOS.

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

Thank you,

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

Texas Department of Transportation

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

February 15, 2018

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: Collin
CSJ#: 0047-04-022
Highway: State Highway (SH) 5
Project Limits: SH 121 (North of McKinney) to County Road (CR) 375
Section 4(f) Property: Scott-Barker House, eligible on NRHP

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 the National Register of Historic Places (NRHP) eligible Scott-Barker House property.

Project Description
The Texas Department of Transportation (TxDOT) proposes improvements to SH 5 from SH 121 to CR 375 in Collin County, Texas. Roadway improvements include widening the roadway, adding bicycle and pedestrian accommodations and drainage facilities. TxDOT requires forty-three acres of additional right-of-way (ROW) and approximately 0.24 acres of proposed drainage easement.

Determination of Eligibility
TxDOT historians reviewed the National Register of Historic Places (NRHP), the list of State Antiquities Landmarks (SAL), the list of Recorded Texas Historic Landmarks (RTHL), and TxDOT files and found the Scott-Barker House previously documented as a RTHL (1999) within the area of potential effects (APE). The TxDOT Section 106 Programmatic Agreement APE for this proposed project is 150 feet from proposed new ROW and easements.

The *Report for Historical Studies Survey, CSJ 0047-04-022 State Highway (SH) 5 North, Collin County, Dallas District August 18, 2017* evaluated 121 historic age resource, including 94 residential properties (including former farmsteads no longer possessing an active agricultural component), 3 religious, 11 commercial, 4 civic, 7 agricultural and 2 industrial properties. TxDOT historians agree with the recommendations of the report and determine the four properties below as eligible.

Resource Name/#	NRHP Criterion/Level	Impacts
Anna Queen Anne House/#27	C-Architecture/Local	None
Powell Cotton Gin/#44	A-Industry/Local	None
Melissa Queen Anne House/#94	C-Architecture/Local	None
Scott-Barker House /#102	C-Architecture/Local	Direct

The remaining 107 historic age resources are determined **not eligible**.

NRHP eligible property

The Scott-Barker House (Map ID 102) is located at 1501 W. Harrison Street in Melissa, Texas. The circa 1875 two-story gable front and wing house (102A) has Queen Ann and "folk Victorian" details. The large house is of wood construction on a pier and beam foundation with wood horizontal siding. The NRHP eligible boundary is the current 1.6-acre parcel.

The outhouse (102C) may be circa 1921 and contributes to the historic property. The gazebo (102B) and fencing (no ID) were reconstructed outside the historic period (1983) and are considered noncontributing features of the historic property.

The Scott-Barker House is determined **eligible** under Criterion C-Architecture at the local level. The Scott-Barker House retains integrity of the aspects of Location, Design, Materials and Workmanship. The Scott-Barker House no longer possesses the aspects of Setting, Feeling and Association. The Setting, Feeling and Association aspects are diminished because the surrounding land use patterns transitioned from rural agricultural to suburban single-family homes. Overall, the Scott-Barker House retains the satisfactory aspects for eligibility under Criterion C-Architecture at the local level.

The Scott-Barker House has no known associations with significant historic events, trends or people. The Scott and Barker families were prominent, but the family's associations to Melissa do not rise to the level required to be significant. The Scott-Barker House once belonged to a larger farmstead and reduced to its current 1.6 acres. The Scott-Barker House no longer possesses the tangible evidence of how the people occupied, developed, or used the land as a farmstead. Therefore, the Scott-Barker House is **not eligible** under Criteria A or B.

Determination of No Adverse Effect

Direct Effect:

The NRHP eligible Scott-Barker House parcel will receive a direct effect due to the needed ROW for the proposed project. Currently the Scott-Barker House is located 40 ft. from TxDOT ROW. TxDOT requires approximately 0.14 acres of proposed new ROW from the 1.6-acre parcel (8.8 percent of the total acreage) moving the roadway 20 ft. closer along the side of the

historic property. The roadway's movement closer to the property does not diminish the aspects of Location, Design, Materials and Workmanship, which are the aspects that support its eligibility under Criterion C-Architecture. The Scott-Barker House no longer possesses the aspects of Setting, Feeling and Association.

Indirect Effect:
The proposed project activities do not impair aesthetic features or attributes of the historic property in a substantially visual way. The construction of a roadway requiring the minor acreage (8.8 %) and closer distance (20ft) along the side of the property do not affect the aspects of Location, Design, Materials or Workmanship for which the historic property is eligible. TxDOT place a noise receiver in close proximity to the Scott-Barker House and determined no noise effects.

Cumulative Effect: Project activities pose no foreseeable cumulative adverse effects to the Scott-Barker House again due to distance of approximately 20 ft. from contributing resources. The expansion of SH 5 does not affect the aspects of integrity for which the historic property is eligible.

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 that the use for Scott-Barker House amounts to 8.8% of the property's overall acreage. Construction activities are limited to the side of the historic property, not along the front. Construction activities do not affect the aspects and features for which it conveys its historic significance. The proposed project will have **no adverse effect** on the NRHP-eligible property. The function of the Scott-Barker House will not be impaired, nor will it cease.

Conclusion
In accordance with 36 CFR 800 and our Section 106 Programmatic Agreement for Transportation Undertakings (December 2015), I hereby request your signed concurrence with TxDOT's finding of **no adverse effect** to the NRHP eligible Scott Barker House. 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.

This Historic Resources Survey Report and coordination uses schematics subject to field verification and additional engineering considerations by TxDOT engineers. *Any resultant design changes to this project that exceed the parameters established through this current consultation would require re-coordination with your agency.* Please be advised that such circumstances would require TxDOT to request adoption of an expedited review. If you have any questions or comments regarding this project, please contact me at 512-416-2555.

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) 416-2555 or Carolyn.Nelson@txdot.gov.

Sincerely,

Carolyn A. Nelson, MS

Cc: Bruce Jensen, Cultural Resource Management Section Director: BJ

Rebekah Dobrasko, Lead RD

CONCURRENCE WITH NON-ARCHEOLOGICAL SECTION 106 FINDINGS:
HISTORIC PROPERTY PRESENT: NRHP-ELIGIBLE SCOTT-BARKER HOUSE

NAME: _____ DATE: 3/12/2018
for Mark Wolfe, State Historic Preservation Officer

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

NAME: _____ DATE: 3/12/2018
for Mark Wolfe, State Historic Preservation Officer

Appendix H – Section 4(f) Documentation

CITY OF MELISSA, TEXAS RESOLUTION NO. 13-18

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF MELISSA, TEXAS, AUTHORIZING THE CONSTRUCTION OF STATE HIGHWAY 5 LOCATED WITHIN A PORTION OF THE CITY OF MELISSA PARKLAND KNOWN AS ZADOW PARK; DECLARING A PORTION OF THE PARKLAND NECESSARY FOR THE CONSTRUCTION OF STATE HIGHWAY 5; PROVIDING FOR REPEALING, SAVINGS AND SEVERABILITY CLAUSES; AND PROVIDING FOR AN EFFECTIVE DATE.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF MELISSA, TEXAS:

WHEREAS, the City Council of the City of Melissa, Texas ("City Council") investigated and determined that it is in the best interest of the City of Melissa, Texas ("Melissa") and its citizens to allow the reconstruction and expansion of State Highway 5 in and through a portion of land dedicated for the use of a park in Melissa, located adjacent to State Highway 5 and known as Zadow Community Park ("Parkland"), as more generally depicted on and described in *Exhibits "A" and "B"*, attached hereto and incorporated herein for all purposes ("Project"); and

WHEREAS, the City Council has further investigated and determined that there is no feasible and prudent alternative to the use of the Parkland; that the Project includes all reasonable planning to minimize harm to the Parkland as a park which may result from the Project; that the Project will provide for the reconstruction and expansion of State Highway 5 in Melissa; that the Project is needed to provide capacity on State Highway 5 for projected traffic volumes; that the Parkland will still be utilized as a park; and that the Project will more safely convey traffic in the area in and around the Parkland; and

WHEREAS, the City Council has further investigated and determined that it has complied with all requirements set forth in Chapter 26, Texas Parks and Wildlife Code, as amended; and

WHEREAS, the City Council has investigated and determined that it will be advantageous and beneficial to Melissa and its inhabitants to undertake and allow the Project as set forth below.

NOW THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF MELISSA, TEXAS:

SECTION 1: Findings Incorporated. The findings set forth above are incorporated into the body of this Resolution as if fully set forth herein.

SECTION 2. Necessity of Project. The City Council hereby finds and declares that the portion of the Parkland Property depicted on and described in *Exhibits "A" and "B"*, attached hereto, for the reconstruction and expansion of the Project, is necessary for the reconstruction and expansion of the Project and is based on the findings set forth above, including but not limited to, the fact that there is no feasible and prudent alternative to the use of the Parkland; that the Project includes all reasonable planning to minimize harm to the Parkland as a park which may result from the Project; that the Project will provide for the reconstruction and expansion of State Highway 5 in Melissa; that the Project is needed to provide capacity on State Highway 5 for projected traffic volumes; that the Parkland will still be utilized as a park; and that the Project will more safely convey traffic in the area in and around the Parkland.

SECTION 3: Savings/Repealing Clause. All provisions of any resolution in conflict with this Resolution are hereby repealed; but such repeal shall not abate any pending matters of the repealed resolution. Any remaining portions of conflicting resolutions shall remain in full force an effect.

SECTION 4: Severability. Should any section, subsection, sentence, clause or phrase of this Resolution be declared unconstitutional or invalid by a court of competent jurisdiction, it is expressly provided that any and all remaining portions of this Resolution shall remain in full force and effect. Melissa hereby declares that it would have passed this Resolution, and each section, subsection, clause or phrase thereof irrespective of the fact that any one or more sections, subsections, sentences, clauses, and phrases be declared unconstitutional or invalid.

SECTION 5: Effective Date. This Resolution shall take effect immediately from and after its passage.

RESOLVED THIS the 8 day of January, 2013.

REED GREER, Mayor

ATTEST TO:

City of MELISSA • TEXAS

Linda Bannister, City Secretary

FIELD NOTES DESCRIPTION
PORTION OF LOT 1, BLOCK 1 MELISSA ZADOW CITY PARK
RECORDED IN CAB. N, PG. 271

TRACT 3:

PART of the D.E.W. Babb Survey, Abstract No. 33, situated in the City of Melissa, Collin County, Texas, embracing a portion of Lot 1, Block 1 Melissa Zadow City Park, an addition to the City of Melissa recorded in Cabinet N, Page 271 of the Plat Records of Collin County, Texas, and being more particularly described as follows:

BEGINNING at the most easterly northeast corner of said Melissa Zadow City Park, also lying on the westerly line of State Highway No. 5 a variable width right-of-way from which a 1/2 inch iron rod found at an ell corner of said Melissa Zadow City Park, lying on the southerly line of Plano Street a 50.00 feet right-of-way bears North 15 degrees 25 minutes 57 seconds West, 243.20 feet;

THENCE South 18 degrees 51 minutes 59 seconds West, along the westerly line of said State Highway No. 5 and the easterly line of said Melissa Zadow City Park, a distance of 197.14 feet to a point for an ell corner of same;

THENCE North 71 degrees 14 minutes 43 seconds West, along said Melissa Zadow City Park line, passing at a distance of 10.00 feet a 3/4 inch iron rod found for the northeast corner of a tract of land described by deed to the City of Melissa recorded in Volume 5680, Page 4250 of the Deed Records of Collin County, Texas, and continuing along the common line of said City of Melissa tract and Melissa Zadow City Park, for a total distance of 20.00 feet to a point for corner;

THENCE North 18 degrees 51 minutes 59 seconds East, through the interior of said Melissa Zadow City Park, a distance of 197.14 feet to a point lying on the common line of same with the southerly line of Lot 6, Block 4, of Merritt's Addition, an addition to the City of Melissa recorded in Volume 1, Page 42 of the Map Records of Collin County, Texas;

THENCE South 71 degrees 14 minutes 43 seconds East, along the common line of said Melissa Zadow City Park and said Lot 6, Block 4, a distance of 20.00 feet to the **POINT OF BEGINNING** and containing 3,943 square feet or 0.091 of an acre of land.

The Basis of Bearings for this survey is based on the State Plane Coordinate System NAD83, Texas - North Central Zone 4202.

Surveyors Certification

I, **Brian J. Maddox**, Registered Professional Land Surveyor Number 5430, State of Texas, do hereby certify to that this description and the sketch attached hereto were prepared from the public records and from an actual survey made on the ground.

Brian J. Maddox, R.P.L.S.
November 30, 2012

FIELD NOTES DESCRIPTION
PORTION OF LOT 1, BLOCK 1 MELISSA ZADOW CITY PARK
RECORDED IN CAB. N, PG. 271

TRACT 2:

PART of the D.E.W. Babb Survey, Abstract No. 33, situated in the City of Melissa, Collin County, Texas, embracing a portion of Lot 1, Block 1 Melissa Zadow City Park, an addition to the City of Melissa recorded in Cabinet N, Page 271 of the Plat Records of Collin County, Texas, and being more particularly described as follows:

BEGINNING at a 1/2 inch iron rod found for the most southerly east corner of said Melissa Zadow City Park also for the northeast corner of a tract of land described by deed to the City of Melissa recorded in Instrument No. 20120816001086670 of the official Public Records of Collin County, Texas, also lying on the westerly line of State Highway No. 5 a variable width right-of-way;

THENCE North 71 degrees 09 minutes 13 seconds West, along the common line of said City of Melissa tract and said Melissa Zadow City Park, a distance of 20.00 feet to a point for corner;

THENCE North 18 degrees 50 minutes 47 seconds East, through the interior of said Melissa Zadow City Park, a distance of 157.91 feet to a point for corner lying on the common line of same with the southerly line of a tract of land described by deed to the City of Melissa recorded in Volume 5680, Page 4250 of the Deed Records of Collin County, Texas;

THENCE South 71 degrees 09 minutes 13 seconds East, along the common line of last mentioned City of Melissa tract and said Melissa Zadow City Park, a distance of 20.00 feet to a 3/4 inch iron rod found for the southeast corner of said City of Melissa tract and a northeast corner of said Melissa Zadow Park, and also lying on the aforementioned westerly line of State Highway No. 5;

THENCE South 18 degrees 50 minutes 47 seconds West, along the westerly line of said State Highway No. 5 and an easterly line of said Melissa Zadow City Park, a distance of 157.91 feet to the POINT OF BEGINNING and containing 3,158 square feet or 0.072 of an acre of land.

EXHIBIT "B"

FIELD NOTES DESCRIPTION
PORTION OF CITY OF MELISSA TRACT
RECORDED IN INST. NO. 20120816001086 70

TRACT 1:

PART of the D.E.W. Babb Survey, Abstract No. 33, situated in the City of Melissa, Collin County, Texas, embracing a portion of a tract of land described in the deed to City of Melissa recorded in Instrument No. 20120816001086 70 of the Official Public Records of Collin County, Texas, and being more particularly described as follows:

BEGINNING at a point for corner at the southeast corner of said City of Melissa tract, also lying on the westerly line of State Highway No. 5 a variable width right-of-way with the northerly line of Harrison Street a 60.00 feet wide right-of-way, and from which a 1/2 inch iron rod found for the southwest corner of said City of Melissa tract bears North 71 degrees 13 minutes 08 seconds West, 275.87 feet;

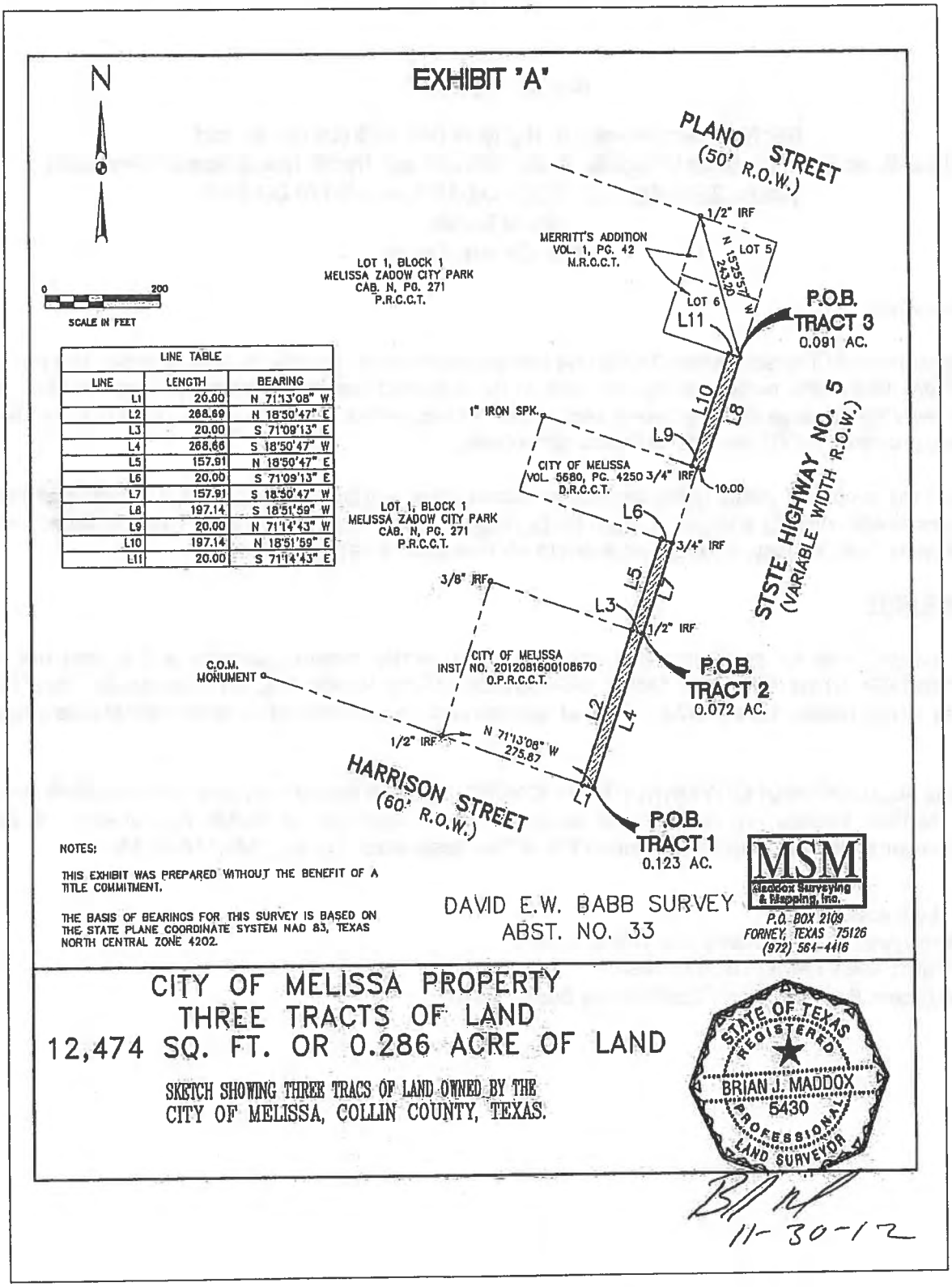
THENCE North 71 degrees 13 minutes 08 seconds West, along the northerly line of said Harrison Street and the southerly line of said City of Melissa tract, a distance of 20.00 feet to a point for corner;

THENCE North 18 degrees 50 minutes 47 seconds East, through the interior of said City of Melissa tract, a distance of 268.69 feet to a point lying on the northerly line of same, also lying on a southerly line of Lot 1, Block 1, Melissa Zadow City Park, an addition to the City of Melissa recorded in Cabinet N., Page 271 of the Plat Records of Collin County, Texas;

THENCE South 71 degrees 09 minutes 13 seconds East, along the common line of said City of Melissa tract and said Melissa Zadow City Park, a distance of 20.00 feet to a 1/2 inch iron rod found for the northeast corner of said City of Melissa tract and the most southerly east corner of said Melissa Zadow Park, and also lying on the aforementioned westerly line of State Highway No. 5;

THENCE South 18 degrees 50 minutes 47 seconds West, along the westerly line of said State Highway No. 5 and the easterly line of said City of Melissa tract, a distance of 268.66 feet to the POINT OF BEGINNING and containing 5,373 square feet or 0.123 of an acre of land.

Depiction and Description of the Project



LINE TABLE		
LINE	LENGTH	BEARING
L1	20.00	N 71°13'08" W
L2	268.69	N 18°50'47" E
L3	20.00	S 71°09'13" E
L4	268.66	S 18°50'47" W
L5	157.91	N 18°50'47" E
L6	20.00	S 71°09'13" E
L7	157.91	S 18°50'47" W
L8	197.14	S 18°51'59" W
L9	20.00	N 71°14'43" W
L10	197.14	N 18°51'59" E
L11	20.00	S 71°14'43" E