Final Environmental Assessment

SH 72: Karnes County Line to 0.25 miles east of FM 2980

TxDOT Yoakum District

CSJ Number 0270-02-041
DeWitt County, Texas

March 2019

Submitted pursuant to 49 U.S.C. 303 and 42 U.S.C. 4321 et seq.

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

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List of Acronyms

A list of common acronyms used throughout this document and their definitions is provided below.

AADT	average annual daily traffic
ACHP	Advisory Council on Historic Preservation
ACS	American Community Survey
ADT	Average Daily Traffic
APE	Area of Potential Effects
Atlas	Texas Archeological Sites Atlas
BMP	Best Management Practice
CAAA	Clean Air Act Amendments
CBRS	Coastal Barrier Resource System
CFR	Code of Federal Regulations
CMP	Congestion Management Process
CO	carbon monoxide
dB	decibels
dB(A)	decibels (A-weighted)
DHHS	Department of Health and Human Services
EA	Environmental Assessment
EPA	Environmental Protection Agency
EIS	Environmental Impact Statement
EMST	Ecological Mapping System of Texas
EO	Executive Order
EPIC	Environmental Permits, Issues, and Commitments
ETC	estimated time of completion
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Map
FM	Farm to Market Road
FONSI	Finding of No Significant Impact
FPPA	Farmland Protection Policy Act
HEI	Health Effects Institute
IBWC	International Boundary and Water Commission
IRIS	Integrated Risk Information System
ISA	Initial Site Assessment
LEP	Limited English Proficiency
MBTA	Migratory Bird Treaty Act
MOU	Memorandum of Understanding
MPO	Metropolitan Planning Organization
MSAT	Mobile Source Air Toxics
MTP	Metropolitan Transportation Plan
NAAQS	National Ambient Air Quality Standards
NAC	Noise Abatement Criteria
NEPA	National Environmental Policy Act
NATA	National Air Toxics Assessment
NETR	Nationwide Environmental Title Research
NOI	Notice of Intent
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NWP	Nationwide Permit
PA	Programmatic Agreement

PALM	Potential Archeological Liability Map
PCN	Pre-Construction Notification
PM	particulate matter
PSL	Project Specific Location
ROW	Right-of-Way
RTHL	Recorded Texas Historical Landmark
SAL	State Antiquities Landmark
SGCN	Species of Greatest Conservation Need
SH	State Highway
SHPO	State Historic Preservation Officer
STIP	Statewide Transportation Improvement Program
SW3P	Storm Water Pollution Prevention Plan
TARL	Texas Archeological Research Laboratory
TAQA	Traffic Air Quality Analysis
TCAP	Texas Conservation Action Plan
TCEQ	Texas Commission on Environmental Quality
TERP	Texas Emissions Reduction Plan
THC	Texas Historical Commission
TPDES	Texas Pollutant Discharge Elimination System
TPWD	Texas Parks and Wildlife Department
TSS	Total Suspended Solids
TWDB	Texas Water Development Board
TxDOT	Texas Department of Transportation
Uniform Act	Uniform Relocation Assistance and Real Properties Acquisition Policies Act of 1970 as amended in the Surface Transportation and Uniform Relocation Assistance Act of 1987
U.S.	United States of America
USACE	U.S. Army Corps of Engineers
U.S.C.	U.S. Code
USCB	U.S. Census Bureau
USFWS	U.S. Fish and Wildlife Service
VMT	vehicle miles travelled

1.0 Introduction

The Texas Department of Transportation (TxDOT) Yoakum District proposes to widen State Highway (SH) 72 from a two-lane to a four-lane undivided roadway in DeWitt County, Texas. The proposed project is located southeast of San Antonio, Texas and includes a rural section of SH 72, from the Karnes County line to 0.25 miles east of Farm to Market Road (FM) 2980. This section travels through the City of Nordheim and ends just west of the City of Yorktown. The total length of the proposed project is 10.27 miles (**Appendix A**).

This project is sponsored in part by federal funds. Pursuant to the 2014 Memorandum of Understanding (MOU) between the Federal Highway Administration (FHWA) and TxDOT, TxDOT has authority over approval of this project. Therefore, environmental documentation is being prepared to federal standards. This draft Environmental Assessment (EA) will evaluate the social, economic, and environmental impacts for the proposed project and determine whether such impacts warrant preparation of an Environmental Impact Statement (EIS). The planning process for this project follows TxDOT and FHWA environmental policies and procedures in compliance with the National Environmental Policy Act (NEPA). The EA will be made available for public review during a public comment period; subsequently, TxDOT will consider any comments submitted. Once the comment period is over, TxDOT will prepare a final EA. If TxDOT determines 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.

2.0 Project Description

2.1 Existing Facility

The existing roadway within the project limits consists of two 12-foot-wide travel lanes (one in each direction) with 4-foot-wide outside shoulders and open vegetated ditches or swales. The existing right-of-way (ROW) is approximately 80 feet in width. Refer to **Appendix B** for Project Photos.

2.2 Proposed Facility

The proposed improvements to SH 72 include the reconstruction and widening of the existing roadway from two lanes to four lanes. The improvements include the addition of one 12-foot-wide lane in each direction, a 4-foot-wide flush median, and 10-foot-wide shoulders. The existing ROW for the entire project is 123.0 acres. Approximately 98.24 acres of proposed ROW would be required for the proposed project. Due to extensive utility conflicts near the western end of the project, a one-mile section of SH 72 has been shifted slightly to the south adjacent to the existing roadway. The proposed ROW is approximately 130 feet in width. No sidewalks or easements are currently proposed. No temporary or permanent construction easements are currently proposed. Refer to **Appendix C** for the Project Schematic and **Appendix D** for existing and proposed typical section.

Federal regulations require that federally funded transportation projects have logical termini (23 Code of Federal Regulations [CFR] 771.111(f)(1)). Simply stated, this means that a project must have rational beginning and end points. Those end points may not be created simply to avoid proper analysis of environmental impacts. The logical termini for the project are the Karnes/DeWitt County Line and FM 2980, just west of Yorktown. The County Line is utilized as the western logical terminus due to an adjacent project in Karnes County (through Runge) currently under development by the adjacent TxDOT Corpus Christi District. This section of SH 72 would tie into the widening for the adjacent Karnes County project and would occur later in time. FM 2980 is the eastern logical terminus and is a north-south rural connection through DeWitt County. Widening through Yorktown is not currently planned due to limited ROW and the potential for numerous residential and commercial impacts. Refer to **Exhibit 1** for the location and status of both projects on the TxDOT Project Tracker website (http://apps.dot.state.tx.us/apps-cq/project_tracker/).

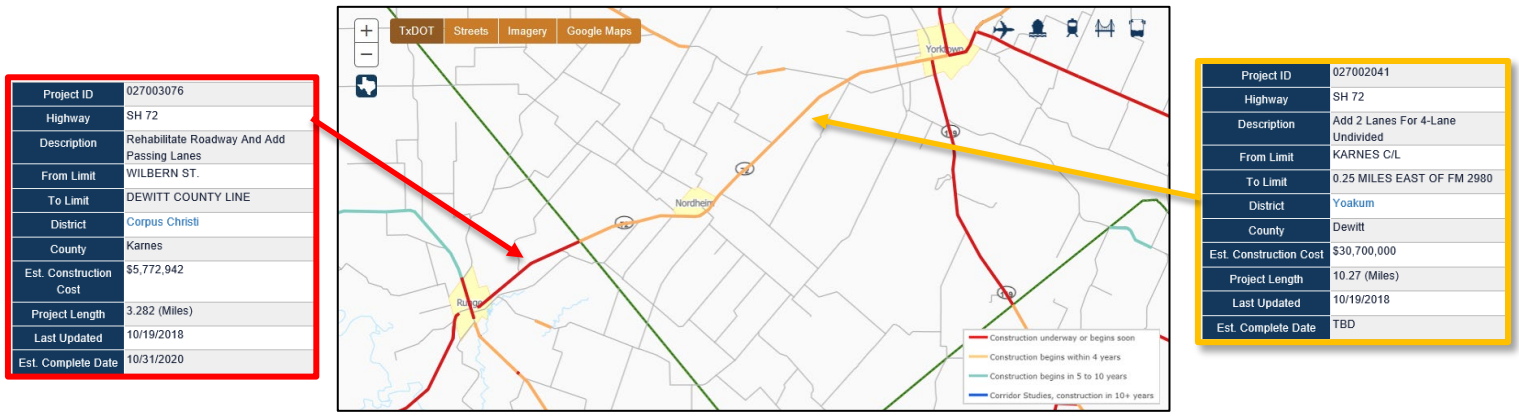


Exhibit 1: TxDOT Project Tracker Status

Federal regulations require that a project have independent utility and be a reasonable expenditure even if no other transportation improvements are made in the area (23 CFR 771.111 (f)(2)). This means a project must be able to provide benefit by itself, and that the project not compel further expenditures to make the project useful. Stated another way, a project must be able to satisfy its purpose and need with no other projects being built. The proposed project has independent utility and would not preclude other foreseeable transportation improvements within the project area. The project provides congestion relief between two major traffic generation points by constructing an alternative route, which satisfies the project's need, and this would be true even if no other roads were built nearby. Because the project stands alone, it cannot and does not irretrievably commit future federal funds.

Federal law prohibits a project from restricting consideration of alternatives for other reasonably foreseeable transportation improvements (23 CFR 771.111(f)(3)). This means that a project must not dictate or restrict any future roadway alternatives. While other transportation improvements are proposed on SH 72, this project has independent utility and would not restrict the consideration of alternatives for other foreseeable transportation improvements.

The proposed project is anticipated to cost approximately $38,500,00 with Category 11 – Energy Sector (21P11) federal and state funding (**Appendix E**). The proposed project is included in the November 2018 revision on the 2019-2022 Statewide Transportation Improvement Program (STIP).

3.0 Purpose and Need

3.1 Need

The proposed project is needed because the roadway's capacity is inadequate to safely meet current and future local and oilfield traffic within the project limits.

3.2 Supporting Facts and/or Data

The proposed project is located approximately 75 miles southeast of San Antonio in unincorporated DeWitt County. According to U.S. Census Bureau (USCB) population data and American Community Survey (ACS) estimates, DeWitt County has sustained a population of approximately 20,000 people since the year 2000, experiencing no substantial population growth or decline for over a decade. The population in DeWitt County is projected to grow from 20,855 in 2020 to 21,900 in 2040 (**Table 1**) (Texas Water Development Board [TWDB] 2018a).

Table 1: Population Projections for DeWitt County

County	2020	2030	2040
DeWitt	20,855	21,555	21,900

Source: TWDB 2018a

The project roadway passes through the City of Nordheim (population of 283, according to 2016 ACS estimates) and ends at the western edge of the City of Yorktown (population of 1,668). The community is rural and much of the land adjacent to the roadway is undeveloped or used for agricultural and oil and gas production.

The area is part of the Eagle Ford Shale region, which in recent years has experienced substantial growth in oil and gas production. There are several oil pad sites and a saltwater disposal plant along the roadway.

The community has experienced impacts from the oil and gas industry in terms of increased traffic and degradation of the project roadway. In 2016, a permit for a 143-acre oil and gas waste disposal plant was approved for construction just outside Nordheim on Hohn Road, approximately 0.3 miles from the project roadway. The permit application has generated community opposition since it was filed in 2014. Construction has not yet started at the time of this report. Increased heavy truck traffic along SH 72 is anticipated once construction for this facility has been completed. Traffic is anticipated to increase from 11,500 average daily traffic (ADT) in 2021 to 18,700 ADT in 2041.

3.3 Purpose

The purpose of the proposed project is to improve mobility, add capacity, and enhance safety for existing and future residences and businesses in the project vicinity by widening the roadway from two lanes to four lanes, installing a flush median to separate traffic traveling in opposite directions, and smoothing curves.

4.0 Alternatives

4.1 Build Alternative

The proposed project involves the widening of the existing SH 72 roadway. The Build Alternative includes:

- Reconstructing SH 72 from 2 lanes to 4 lanes
- Adding a 4-foot-wide flush median between oncoming lanes
- Adding left turn lanes at FM 2980, FM 952 (Old Nordheim Road), and FM 239 (Broadway)
- Adding 10 foot shoulders
- Improving safety of curves
- Realignment near the western end of the project to avoid major utility conflicts

The proposed Build Alternative meets the purpose and need by widening SH 72. The Build Alternative is the Preferred Alternative. The proposed project is anticipated to cost approximately $38,500,000 with Category 11 – Energy Sector (21P11) federal and state funding.

4.2 No-Build Alternative

Under the No-Build Alternative, the existing SH 72 would not be improved. The No-Build Alternative assumes that no transportation improvements beyond the continued maintenance of the existing facility would occur. This alternative would not alleviate congestion and facilitate movement within the study area; therefore, it would not meet the need and purpose of the project. The No-Build Alternative will be carried forward as a baseline by which to compare the recommended alternative.

4.3 Preliminary Alternatives Considered but Eliminated from Further Consideration

One preliminary alternative was considered and rejected for the proposed project. Detailed engineering and utility coordination efforts evaluated widening on the existing alignment of SH 72 for the entire project length, but due to extensive utility conflicts near the western end of the project, a one-mile new location portion was developed to minimize impacts to existing utilities while developing a cost effective design solution.

5.0 Affected Environment and Environmental Consequences

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

- *Community Impacts Assessment Form* (TxDOT 2018c)
- *Archeological Survey Report* (TxDOT 2018d)
- *Historical Resources Survey Report* (TxDOT 2018e)
- *Water Resources Technical Report* (TxDOT 2018f)
- *Tier 1 Site Assessment Form* (TxDOT 2018g)
- *Biological Evaluation Form* (TxDOT 2018h)
- *Air Quality Technical Report* (TxDOT 2018i)
- *Hazardous Materials Initial Site Assessment* (TxDOT 2018j)
- *Traffic Noise Technical Report* (TxDOT 2018k)
- *Risk Assessment for Indirect Impacts* (TxDOT 2018l)
- *Risk Assessment for Cumulative Impacts* (TxDOT 2018m)
- *Public Meeting Documentation* (TxDOT 2018n)
- *Public Hearing Documentation* (TxDOT 2019)

The technical reports may be inspected and copied upon request at the TxDOT Yoakum District office.

5.1 Right-of-Way/Displacements

Approximately 98.24 acres of proposed ROW would be required for the proposed project. Due to extensive utility conflicts near the western end of the project, a one-mile section of SH 72 has been shifted slightly to the south adjacent to the existing roadway. The proposed ROW is approximately 130 feet in width. Refer to **Appendix C** for the Project Schematic and **Appendix D** for existing and proposed Typical Section.

Two residential displacements and four "other" potential displacements have been identified. Other displacements include one oil valve, one RV/carport, and construction/oil and gas equipment that is located on two different sites (**Appendix F, Figure 2 – Land Use and Potential Displacements**). The anticipated residential displacements include one single-family residence and one mobile home. During a site visit in 2018, the mobile home appeared to be abandoned and unoccupied. It is anticipated that the facilities mentioned here would be able to be relocated within their existing parcels. Refer to *Community Impacts Assessment Form* (TxDOT 2018c) for additional information.

The impacts to the community from the anticipated residential displacements would be limited to the residents of the single-family residence and mobile home. The mobile home displacement would presumably not lead to any displaced residents. Comparable housing appears to not be available for the potential single-family residential displacement based on current market availability. The other non-residential and non-commercial displacements would likely be able to relocate within their existing parcels; impacts would be temporary. It is not anticipated that the proposed ROW encroachment would permanently impact the operations of these facilities.

TxDOT is committed to finding replacement housing in the same type of neighborhood that is equally accessible to public services and places of employment. If comparable housing is not available at the time of ROW acquisition, TxDOT would provide the required housing or, if necessary, provide housing supplement payments in excess of the standard payment limits to ensure that decent, safe, and sanitary dwellings are made available to all eligible persons displaced by the proposed project.

TxDOT provides relocation resources to all displaced persons without discrimination in a manner consistent with U.S. Department of Transportation policy as mandated by the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended in the Surface Transportation and Uniform Relocation Assistance Act of 1987 (the Uniform Act). All property owners from whom property is needed are entitled to receive just compensation for their land and property. Just compensation is based upon the fair market value of the property. TxDOT also provides, through its Relocation Assistance Program, payment and services to aid in movement to a new location.

Both the United States and Texas Constitutions provide that no private land may be taken for public purposes without adequate compensation being paid thereof. The TxDOT Right-of-Way Acquisition and Relocation Program would be conducted in accordance with the Uniform Act, and relocation resources are available to all residential and business relocatees without discrimination. Relocation assistance is available to all individuals, families, businesses, farmers, and nonprofit organizations displaced as a result of a state highway or other transportation project. This assistance applies to tenants as well as owners occupying the real property needed for the project. Replacement structures must be located in the same type of neighborhood and be equally accessible to public services and places of employment. The proposed project would proceed to construction only when all displaced persons have been provided the opportunity to be relocated to adequate replacement sites. The available structures must also be open to persons regardless of race, color, religion, or nationality and be within the financial means of those individuals affected.

With respect to displacements, encroachment-alteration impacts would be driven by the relocations of the buildings that would be displaced by the proposed project. Examples of encroachment-alteration impacts due to relocations and displacements include a minor reduction in the supply of affordable housing, changes in residential and commercial property values due to the proposed increase in access and mobility, changes in the local tax base due to the potential displacements and impacts to the residents (such as potential increased commuting time) who could be displaced

by the proposed improvements to SH 72. Residential and commercial properties located near SH 72 that are not physically impacted by the proposed project may experience a change in market value, either positive or negative.

Under the No-Build Alternative, the existing SH 72 would remain as-is and normal, routine maintenance would be conducted. No ROW acquisition would be required, and no displacements or relocations would occur.

5.2 Land Use

There are several oil pad sites and a saltwater disposal plant along the roadway (**Appendix F, Figure 2 – Land Use and Potential Displacements**). Refer to *Community Impacts Assessment Form* (TxDOT 2018c) for additional information.

Other land uses along the project roadway include residential, lodging for oil and gas workers, and commercial uses near the project end just west of Yorktown. While not immediately adjacent to the corridor, there are several schools, a church, a nursing and rehabilitation center, and the Nordheim City Hall within the Community Impacts study area.

Although the proposed project would change approximately 98.24 acres of land to transportation use, the proposed project would not substantially alter the existing land use in the area.

Under the No-Build Alternative, no impacts to land use would occur. Land use in the area would remain undeveloped with limited residential, commercial, and industrial uses.

5.3 Farmlands

The Farmland Protection Policy Act (FPPA), as detailed in Subtitle I of Title XV of the Agricultural and Food Act of 1981, provides protection to the following: (1) prime farmland, (2) unique farmland, and (3) farmland of local or statewide importance. Transportation projects conducted by a federal agency or with federal agency assistance that irreversibly convert protected farmland (directly or indirectly) to non-agricultural use are required to coordinate with the Natural Resources Conservation Service (NRCS) under the FPPA.

The Build Alternative would require approximately 98.24 acres of proposed ROW. Approximately 92.28 acres of farmlands would be converted by the proposed project. A total corridor assessment was completed on the Farmland Conversion Impact Rating Form for Corridor Type Project (Farmland Protection Policy Act [FPPA] Form NRCS-CPA-106) for the portion of the project. Based on the federal FPPA regulations, if a combined score of the total corridor assessment and the relative value of farmland are 160 or more, the project site should be given more consideration for protection. The resulting score was below 60; therefore, no coordination with the NRCS would be required (**Appendix G**).

Under the No-Build Alternative, no impacts to farmland would occur. Undeveloped lands used for agriculture would continue to be used as such.

5.4 Utilities/Emergency Services

The proposed project would require approximately 98.24 acres of proposed ROW. Implementation of the proposed project may require the relocation and adjustment of utilities such as water lines, sewer lines, gas lines, fiber optic lines, overhead electrical and telephone lines, and other subterranean and aerial utilities. The need for relocation and adjustment of any utilities would be determined during the detailed design phase and coordinated with the affected utility provider to ensure that no substantial interruption of service would take place.

The DeWitt County Emergency Medical Services and DeWitt County Sheriff's Office would be notified of the construction start dates and any potential detour routes. Construction activities are not expected to cause any delays or access issues for emergency service vehicles. Construction of the proposed roadway could provide enhanced access and reduced response times for local emergency services.

Construction of the proposed project would be phased in a manner that would allow the existing and cross-county road system to remain open to traffic during construction of the new roadway and would not require the use of detours except during daylight operations. Construction of the project would not prevent access to any adjacent properties, except for short durations (less than one day).

Under the No-Build Alternative, no impacts to utilities/emergency services would occur. Traffic patterns would remain unchanged and no detours would occur.

5.5 Bicycle and Pedestrian Facilities

Due to the rural nature of the project area, no bicycle or pedestrian facilities are currently proposed.

Under both the Build Alternative and the No-Build Alternative, pedestrians and cyclists would continue to use the existing transportation network as it is currently provided.

5.6 Community Impacts

A *Community Impact Assessment Form* was completed in accordance with TxDOT's *Community Impacts, Environmental Justice, Limited English Proficiency, and Title VI Compliance* guidance (TxDOT 2018b).

Although the project would require proposed ROW, the area around the route is mostly undeveloped. Some temporary delays are expected during the construction phase. Once the project is complete, an increase in commercial/industrial traffic is anticipated, but there would be no permanent adverse impacts to access or travel patterns for the local community.

No adverse impacts to community cohesion are anticipated. The proposed project would not affect, separate, or isolate any distinct neighborhoods, ethnic groups, or other specific groups. SH 72 is an existing barrier in a rural area where much of the adjacent land is undeveloped. The potential residential displacements could result in community members moving some distance from their present community; however, there is little existing cohesion. Further, cross streets would not be affected, and there are only two potential residential displacements. Mobility and safety for all members of the community would be improved by the addition of travel lanes, a flush median, and shoulders.

With respect to encroachment-alteration effects to socio-economic resources, indirect impacts would be driven by changes in travel patterns and access associated with the proposed project. The potential indirect impacts would include improved vehicular access to employment opportunities, markets, goods, services, residential uses, and public facilities due to increased vehicular mobility.

The No-Build Alternative would not result in any improvements to congestion, mobility, efficiency of access, or provide enhanced bicycle and pedestrian movements within the project area.

5.6.1 Environmental Justice

Fourteen of the 45 populated adjacent census blocks contain a population of more than 50 percent minority persons (18 of the census blocks adjacent to the project area are unpopulated). Note that due to the rural nature of the project area, the populated blocks contain low populations ranging from 1 to 79 persons. The minority population is predominantly Hispanic. Refer to *Community Impacts Assessment Form* (TxDOT 2018c) for additional information.

Though the median income for census geographies adjacent to the project area was above the 2018 Department of Health and Human Services (DHHS) poverty level, Nordheim and Yorktown have a lower median income than the state of Texas ($54,727) according to 2016 ACS data. Project-area block groups have median household incomes ranging from $32,121 to $55,833. None of the census block groups reflected a median income below the DHHS poverty level.

The proposed project would improve mobility, add capacity, and enhance safety for existing and future residences and businesses in the project vicinity. Environmental justice populations are present in the project area, but none of the potential displacements are located within census blocks that contain a majority of minority populations. No existing neighborhoods would be divided, and permanent disruptions to normal daily activities are not expected. Surrounding communities would benefit equally from increased mobility and safety along SH 72. No disproportionately high and adverse impacts on minority or low-income populations are anticipated as a result of the proposed project.

5.6.2 Limited English Proficiency

Limited English Proficiency (LEP) is defined as persons who speak English "less than very well." There are four census block groups adjacent to the proposed project and all four block groups contain LEP populations, ranging from 0.7 to 7.3 percent of the total population over the age of five. Of all the people over the age of five living in the four adjacent census block groups, approximately 5.2 percent (199 people) speak English "less than very well." The LEP population within the adjacent census block groups speaks predominantly Spanish, with small percentages of Indo-European language speakers. Refer to *Community Impacts Assessment Form* (TxDOT 2018c) for additional information.

An open house was held on April 24, 2018. During the preparation for the anticipated public meeting, LEP persons were given the opportunity for meaningful involvement in the NEPA process. Notices were sent to adjacent property owners, stakeholders, and elected officials, and published in several locally circulated newspapers. Public meeting notices included English and Spanish statements (on the same notice) encouraging those with special communication or accommodation needs to contact the Yoakum District. Members of the public provided input on the proposed project through comment forms available at the meeting, and coordination during the meeting led to an adjustment of the proposed alignment that was more favorable to both TxDOT and the property owners. Though no requests for assistance were received, reasonable steps will continue to be taken to ensure all persons have meaningful access to the programs, services, and information TxDOT provides.

A public hearing was held on January 10, 2019. During the preparation for the hearing, LEP persons were given the opportunity for meaningful involvement in the NEPA process. Notices were sent to adjacent property owners, stakeholders, and elected officials, and published in several locally circulated newspapers. Public notices included English and Spanish statements (on the same notice) encouraging those with special communication or accommodation needs to contact the Yoakum District. Members of the public provided input on the proposed project through comment forms available at the hearing. Though no requests for assistance were received, reasonable steps will continue to be taken to ensure all persons have meaningful access to the programs, services, and information TxDOT provides.

Under the No-Build Alternative, no ROW would be required; no environmental justice impacts would occur; no impacts to LEP populations would occur. However, the beneficial impacts of the Build Alternative (improved connectivity and mobility) would not be realized for the community living in the project area. The entire community, including minorities and low-income individuals, could be adversely impacted by the increasing congestion and low mobility in the project area that would occur under the No-Build Alternative.

5.7 Visual/Aesthetics Impacts

Although the proposed project consists of widening the existing SH 72 and extending it onto new location, adverse visual impacts are not anticipated as part of the proposed project. The area is

currently traversed by a network of transportation facilities, so the widening of SH 72 is not anticipated to appreciably change the visual environment.

Under the No-Build Alternative, the viewshed would not be altered by the introduction of a new transportation facility.

5.8 Cultural Resources

5.8.1 Archeology

An archeological survey was conducted for the area of potential effects (APE) (TxDOT 2018d). The archeological APE consists of the footprint for the entire project and consists of approximately 219.79 acres. Prior to the commencement of fieldwork, a review of Yoakum District Potential Archeological Liability Map (PALM) review was completed (Abbott and Pletka 2016). This review revealed that 99.27 acres (45.2 percent) of the total APE occurs in Map Units 2, 4, 5, 6, 8, or 9, all of which are considered to have at least moderate potential for archeological resources, whether shallow or deep. Approximately 24.33 acres across 14 parcels, or approximately 25 percent of the proposed ROW, was targeted for survey under the current Texas Antiquities Permit (#8500). The remaining acreage consisted of disturbed current ROW, fell in areas of low archeological probability, or occurred within properties to which right-of-entry had not been acquired.

A search of the Texas Archeological Sites Atlas (Atlas) maintained by the Texas Historical Commission (THC) and the Texas Archeological Research Laboratory (TARL) was conducted in order to identify previously conducted surveys and previously identified archeological sites, historical markers, Recorded Texas Historic Landmarks, properties or districts listed on the National Register of Historic Places (NRHP), State Antiquities Landmarks (SALs), and cemeteries within the APE and within a 0.62-mile contextual study area around it. Archeological sites 41DW306, 41DW307, and 41DW327 are the only previously identified cultural resources located within or adjacent to the APE. Site 41DW306 is located near the western terminus of the APE and is recorded as a lithic scatter of unknown age containing lithic flakes. Site 41DW307 is also located near the western terminus of the APE and is recorded as a lithic scatter of unknown age containing lithic flakes and cores.

According to the Atlas, both sites lie against the existing SH 72 facility. Site 41DW327 is located 0.75 miles south of the APE and is described as a small prehistoric occupation site of unknown age containing lithic flakes, debitage, mussel shell, and burned rock. All three sites are recommended ineligible for NRHP inclusion within the ROW. Other resources within the study area include the Nordheim Historical Museum and Texas Historical Markers for Jubilee Park Pavilion, Pilot Knob, Eckhardt Ranch House, Adolf Streiber, and H. W. Laging (THC 2018).

According to Atlas survey coverage data, several previous surveys have been conducted near the APE, including a 2011 areal survey by Lower Colorado River Authority, located south of the APE, and a 2012 areal survey for U.S. Army Corps of Engineers (USACE) Galveston District and ELG Utility by SWCA Environmental Consulting, located within, south of, and north of the APE.

A review of available historic aerial photographs and topographic maps on Google Earth™ and the Nationwide Environmental Title Research (NETR) website was also undertaken to determine how the corridor has been utilized over time. The earliest topographic map is from 1965, but this earliest version is largely similar to the 1982 and 1987 topographic maps.

Each map shows the town of Nordheim and SH 72 in its current alignment with very few structures near the APE outside the limits of Nordheim. The 1965 Runge 1:24,000 scale map shows the presence of a railroad line that lies within the proposed ROW of the APE that extends from a point approximately 3,281 feet west of Cabeza Creek to the western boundary of the City of Nordheim. In the 1987 update to the map, the railroad line is labeled as "old railroad grade" thus suggesting that the railroad tracks had been removed by this date.

Aerial imagery from 1995, 2004, 2008, and 2014 were reviewed; these images are largely similar and show that the predominant land use surrounding the APE is agricultural development, with residential and commercial development concentrated within the City of Nordheim (Google Earth 2018, NETR 2018). None of them show the presence of the abandoned railroad line mentioned above, which is consistent with its removal prior to 1987 as indicated by historic topographic maps.

Known and perceived disturbances within the APE include those associated with highway and access road construction and maintenance, installation of overhead and underground utilities, contoured and/or excavated drainages, ingress/egress driveways, clear cutting of vegetation, and residential and commercial development practices. These impacts are more prevalent near Nordheim and were observed during an initial environmental constraints field visit.

The majority of the surveyed area was located within relatively open and maintained grassland with some areas of mixed pine/hardwood forest near drainages and adjacent to agricultural pastureland. Pedestrian survey failed to relocate two previously recorded sites, 41DW306 and 41DW307, but did result in the identification of two isolated localities (remnants of historic bridges) and three isolated surface finds (historic concrete property markers). Sixty-three shovel test units were excavated where buried cultural deposits were deemed most likely to occur, resulting in the identification of a single isolated subsurface find: one piece of tan chert shatter. All cultural resources were documented but none were collected. Project records will be curated at the Center for Archeological Studies at Texas State University.

All observed resources were classified as Isolated Finds, are considered not eligible for inclusion on the NRHP, and no additional investigation is required. Sites 41DW306 and 41DW307 could not be re-located during survey and no new archeological sites were identified. No further work is recommended in areas that were surveyed; however, survey of medium-high probability areas to which ROW had not yet been granted is recommended if and when access becomes available, especially the areas surrounding Cabeza and Smith Creeks where deep impacts are anticipated and

deeply buried archeological resources may be present (**Appendix F, Figure 3 - Recommended Locations for Future Archeological Investigations**).

TxDOT initiated consultation under Section 106 of the National Historic Preservation Act; the Programmatic Agreement (PA) among TxDOT, the Texas State Historic Preservation Officer (SHPO), FHWA, and the Advisory Council on Historic Preservation (ACHP); and the Antiquities Code of Texas MOU between THC and TxDOT on June 6, 2016. TxDOT recommended that the project be allowed to proceed with construction. The THC/SHPO concurred with this recommendation on November 8, 2018. Tribal consultation with federally recognized Native American tribes with demonstrated historic interest in the area was initiated on January 6, 2018. No objections or expressions of concern were received within the comment period (**Appendix G**).

Under the Build Alternative, no impacts to significant or potentially NRHP/SAL-eligible archeological resources would occur. Thus, no further coordination would be required with the THC.

5.8.2 Historic Properties

According to the Atlas, the Eckhardt Ranch House Recorded Texas Historical Landmark (RTHL) is located in the study area. The Eckhardt Ranch House property is located within the APE and was documented as part of the survey. Based on the Atlas data, the study area does not include any other RTHLs, properties listed in the NRHP, properties designated as National Historic Landmarks, or State Antiquities Landmarks.

Cultural resources staff conducted a reconnaissance survey of the APE, which was defined as the project area plus the area extending 150 feet from proposed ROW and easements. Historians documented all resources constructed in 1975 or earlier (45 years prior to the let date). Refer to *Historical Resources Survey Report* (TxDOT 2018e) for additional information.

In all, 166 historic-age resources (constructed in 1975 or earlier) were documented (**Table 2 and Appendix F, Figure 4 – Historic Resources Study Area**). The documented, historic-age resources are categorized based on historic function/use as follows:

Table 2: Documented Historic-age Resources

Type	Number
Agriculture/Animal Facility	17
Agriculture/Outbuilding	47
Agriculture/Irrigation	1
Agriculture/Storage	3
Commerce/Business	4
Commerce/Restaurant	1
Commerce/Specialty Store	4

Type	Number
Domestic/Multiple Dwelling	1
Domestic/Single Dwelling	28
Domestic/Secondary Structure	36
Funerary/Cemetery	1
Industry/Energy Facility	18
Transportation/Road-related	4
Unknown	1

Source: TxDOT 2018e

Resource 20, Resource 43, and 2 districts (the Nordheim Commercial Historic District and the Eckhardt Ranch District) are recommended eligible for listing in the NRHP as a result of the survey. Resource 20 is recommended as contributing to the Nordheim Commercial Historic District, and Resource 43 is recommended as contributing to the Eckhardt Ranch Historic District.

The proposed project would not require ROW or permanent easements from Resource 20 or the Nordheim Commercial Historic District. Therefore, the proposed project would not have an adverse direct or indirect effect on the characteristics that make these two properties eligible for inclusion in the NRHP.

The proposed project would require approximately four acres of land from within the provisional NRHP boundary of the Eckhardt Ranch District, which is recommended to be considered eligible for the purposes of compliance with Section 106 of the National Historic Preservation Act. This area represents approximately 0.7 percent of the 536.6 acres within the provisional NRHP boundary. The proposed project would not have an adverse effect on the characteristics that make this property eligible for inclusion in the NRHP. However, because new ROW would be acquired, the proposed project constitutes a *de minimis* Section 4(f) use of a historic site.

Pursuant to Stipulation IX "Undertakings with Potential to Cause Effects" of the 2015 PA among FHWA, the Texas SHPO, the ACHP, and TxDOT, TxDOT coordinated the project with the SHPO/THC. The THC concurred with the finding of no adverse effect on November 5, 2018 (**Appendix G**).

Under the No-Build Alternative, no effects to historic resources would occur and no coordination with SHPO/THC would be required.

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

As previous discussed, the proposed project would require approximately four acres of land from within the provisional boundary of the Eckhardt Ranch District, which is recommended to be considered eligible for the purposes of compliance with Section 106 of the National Historic Preservation Act. This area represents approximately 0.7 percent of the 536.6 acres within the provisional NRHP boundary. The proposed project would not have an adverse effect on the

characteristics that make this property eligible for inclusion in the NRHP. However, because new ROW would be acquired, the proposed project constitutes a *de minimis* Section 4(f) use of a historic site. The SHPO had no comment on the determination of *de minimis* impact under Section 4(f) in the response issued on November 5, 2018 (**Appendix G**).

There are no Section 6(f) or Chapter 26 properties present along the project corridor.

5.10 Water Resources

Two potentially jurisdictional waters of the U.S. at three crossings were identified within the project limits. The potential waters of the U.S. consisted of Cabeza Creek and Smith Creek (**Appendix F, Figure 5 – Potential Waters of the U.S.**). Refer to the *Water Resources Technical Report* (TxDOT 2018f) for additional information.

No wetlands were identified within the project limits. It is anticipated that any impacts to waters of the U.S. would be authorized through Nationwide Permit (NWP) #14 (Linear Transportation Crossings). Because of these limited impacts to potential waters of the U.S., the project would likely be permitted under NWP #14 without a Pre-Construction Notification (PCN).

Encroachment-alteration effects to water quality occur primarily due to an increase in impervious surface area that could result in increased runoff and decreased water quality downstream. Construction of the proposed improvements would directly contribute to increases in impervious cover. Effects would also occur in areas where vegetation in the proposed project area is cleared during construction, which could accelerate off-site erosion due to runoff. Use of Best Management Practices (BMPs) within the proposed project area would minimize water quality effects downstream.

Under the No-Build Alternative, the existing drainage structures along and adjacent to the existing roadways would remain as is and only normal maintenance would be required. No impacts to waters of the U.S. would occur.

5.10.1 Clean Water Act Section 404

According to the Clean Water Act, coordination with the USACE would be required for this project. For single and complete crossings within public transportation projects, the maximum limit of impacts to non-tidal jurisdictional waters of the U.S. that would be covered under the NWP #14 is 0.5 acres. A PCN would be required if the impacts are greater than 0.1 acres or if there is any proposed discharge within special aquatic sites, including wetlands. The PCN must include a compensatory mitigation proposal to offset permanent losses of waters of the U.S. to ensure that those losses result only in minimal adverse effects to the aquatic environment and a statement describing how temporary losses of waters of the U.S. would be minimized to the maximum extent practicable. A NWP #14 without PCN would cover the construction, expansion, modification, and improvements associated with this linear transportation project. Impacts to waters of the U.S. would be minimized to the extent practicable under the Build Alternative.

Under the No-Build Alternative, no impacts to waters of the U.S. would occur and, as a result, no permitting would be required with the USACE.

5.10.2 Clean Water Act Section 401

The proposed project is a Tier I project. In order to comply with the Texas Commission on Environmental Quality's (TCEQ's) 401 Water Quality Certification Conditions for NWPs, at least one BMP from each of the following three categories of onsite water quality management practices must be used on the proposed project: erosion control, post-construction Total Suspended Solids (TSS) control, and sedimentation control. The BMPs to be used on the proposed project include temporary vegetation for erosion control, silt fences for sedimentation control, and vegetative filter strips for post-construction TSS control.

Under the No-Build Alternative, no impacts to waters of the U.S. would occur and, as a result, no 401 Certification would be required.

5.10.3 EO 11990 Wetlands

EO 11990 Protection of Wetlands (issued in 1977) requires federal agencies to minimize the destruction or modification of wetlands. The proposed project would have no impacts on wetlands; therefore, EO 11990 would not apply.

Under the No-Build Alternative, no impacts to wetlands would occur; therefore, EO 11990 would not apply.

5.10.4 Rivers and Harbors Act

Based on a project scoping analysis, it was determined that neither the Build nor the No-Build Alternative would have an impact on this resource category or subject matter.

5.10.5 Clean Water Act Section 303(d)

The project area is located within the Guadalupe and San Antonio River watersheds (HUC#12100204 and 12100304). Storm water runoff from the project area flows into Cabeza Creek, Smith Creek, Yorktown Creek, and Ojo de Agua Creek, which eventually drain to the Lower San Antonio River. Cabeza Creek is identified as an assessment segment by the TCEQ (Segment 1901B). The stream segment is listed as impaired due to elevated bacteria levels. Lower San Antonio River (Segment 1901) is also listed as impaired due to an impaired fish community.

The proposed project is not anticipated to contribute to the constituents of concern for these impaired waters. Drainage swales and vegetated ditches would serve as areas that would treat water quality prior to discharging into nearby streams. Swales and vegetated ditches decrease the velocity of runoff and increase sedimentation in these areas before flow discharges into nearby streams. The TCEQ 2014 303(d) list, approved on November 19, 2015, was utilized in this assessment. Coordination with the TCEQ would be required for this project.

Under the No-Build Alternative, no impacts to impaired water segments would occur and coordination with the TCEQ would not be required. Compliance with a Texas Pollutant Discharge Elimination System (TPDES) permit would not be required.

5.10.6 Clean Water Act Section 402

Because this project would disturb more than five acres, TxDOT would be required to comply with the TCEQ TPDES General Permit for Construction Storm Water Discharges. A Notice of Intent (NOI) stating that a Storm Water Pollution Prevention Plan (SW3P) has been developed would be filed with the TCEQ prior to the beginning of construction.

Permanent soil erosion control features would be constructed as soon as feasible during the early stages of construction. Disturbed areas would be restored and stabilized as soon as the construction schedule permits, and temporary sodding would be considered where large areas of disturbed ground would be left bare for a considerable length of time.

Under the No-Build Alternative, there would be no earth disturbance and compliance with the TPDES Construction General Permit would not be required.

5.10.7 Floodplains

EO 11988, Floodplain Management, requires federal agencies to avoid, to the extent possible, long- and short-term adverse impacts associated with the occupancy and modification of floodplains, and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative. The project is located in DeWitt County, Texas, which is a participant in the National Flood Insurance Program. The project corridor was investigated for encroachments into the 100-year floodplain. The project area is located within the Guadalupe and San Antonio River Basins. It lies within the Flood Insurance Rate Map (FIRM) Panels 48123C0525C and 48123C0550C and intersects the mapped 100-year Federal Emergency Management Agency (FEMA) floodplain associated with Smith Creek and Cabeza Creek (**Appendix F, Figure 6 – Water Resources**) (FEMA 2018).

The hydraulic design for this project would be in accordance with current FHWA and TxDOT design policies. The facility would permit the conveyance of the 100-year flood since inundation of the roadway is acceptable and would not cause 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 Administer would be required. The hydraulic design and analysis conducted for the proposed project would address any encroachment-alteration effects to the floodplain.

Under the No-Build Alternative, no impacts to floodplains would occur.

5.10.8 Wild and Scenic Rivers

This project would not involve work within a segment of any river designated as a Wild and Scenic River, and it would not harm the free-flowing condition, water quality, or outstanding resource values of any designated Wild and Scenic Rivers.

5.10.9 Coastal Barrier Resources

The proposed project is located within Dewitt County and is not located within a Coastal Barrier Resource System (CBRS) unit or otherwise protected area; therefore, CBRA is not applicable.

Based on a project scoping analysis, it was determined that neither the Build nor the No-Build Alternative would have an impact on this resource category or subject matter.

5.10.10 Coastal Zone Management

The project is located within DeWitt County, which is completely outside the Coastal Zone Boundary. The proposed project does not lie within the boundary. No coordination would be required.

Based on a project scoping analysis, it was determined that neither the Build nor the No-Build Alternative would have an impact on this resource category or subject matter.

5.10.11 Edwards Aquifer

Based on a project scoping analysis, it was determined that neither the Build nor the No-Build Alternative would have an impact on this resource category or subject matter.

5.10.12 International Boundary and Water Commission

The project would not be located within the floodplain of any international waters; therefore, coordination with the International Boundary and Water Commission (IBWC) would not be required.

5.10.13 Drinking Water Systems

The project area is located over the Gulf Coast Aquifer. A review of the TWDB Water Data Interactive Viewer indicated that seven water supply wells occur within one-quarter mile of the project area (TWDB 2018b). The proposed project is anticipated to affect one private water well on the western end of the project area; within the one-mile realignment section. In accordance with TxDOT's *Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges (Item 103, Disposal of Wells)*, this water well would need to be properly removed, sealed, and plugged during construction of the proposed project.

No public or other private water supply wells are anticipated to be impacted by the proposed improvements.

The No-Build Alternative would have no impacts to drinking water systems.

5.11 Biological Resources

5.11.1 Texas Parks and Wildlife Coordination

A Tier 1 Site Assessment was completed for the proposed project to determine if coordination with Texas Parks and Wildlife Department (TPWD) would be required (TxDOT 2018g).

The proposed project would disturb the following habitat types in an area equal to or greater than the area of disturbance indicated in the Threshold Table PA:

- Edwards Plateau Savanna, Woodland, and Shrubland (3.48 acres, threshold of 1.0)
- Disturbed Prairie (74.83 acres, threshold of 3.0)
- Tallgrass Prairie, Grassland (17.72 acres, threshold of 1.0)
- Riparian (2.23 acres, threshold of 0.1)

TPWD coordination is required because the threshold for impacts to the above listed habitat types would be exceeded.

The proposed project is within range with suitable habitat for the following Species of Greatest Conservation Need (SGCN): Florida pinkroot (*Spigelia texana*), Shinner's sunflower (*Helianthus occidentalis ssp. plantagineus*), Texas tauschia (*Tauschia texana*), Golden orb (*Quadrula aurea*), Texas pimpleback (*Quadrula petrina*), Western Burrowing Owl (*Athene cunicularia hypugea*), and plains spotted skunk (*Spilogale putorius interrupta*).

The proposed project is within range with suitable habitat for the following state threatened species: Texas horned lizard (*Phrynosoma cornutum*), Texas tortoise (*Gopherus berlandieri*), timber rattlesnake (*Crotalus horridus*), White-tailed Hawk (*Buteo albicaudatus*), and Wood Stork (*Mycteria americana*). Coordination with TPWD was completed on October 17, 2018 (**Appendix G**).

Under the No-Build Alternative, no coordination with TPWD would be required.

5.11.2 Vegetation

The project area is located within the East Central Texas Plains ecoregion of Texas, as described by Griffith et al. (2007) and mapped by the Ecological Mapping System of Texas (EMST) (Missouri Resource Assessment Partnership [MoRAP], 2013). The EMST identified several vegetation types within the project area, which were field verified by qualified biologists in March and July 2018. Refer to **Table 3** for a total of Observed EMST Vegetation and Acreage of Impacts within the Project Area and **Appendix F, Figure 7 – Observed Vegetation Types**. Refer to the *Tier 1 Site Assessment Form* (TxDOT 2018g) for additional information.

Table 3: Observed EMST Vegetation - Acreage of Impacts within the Project Area

MOU Habitat Type	EMST Vegetation Type	Acreage of Impacts	Threshold Value	Threshold Exceeded?
Edwards Plateau Savanna, Woodland, and Shrubland	Edwards Plateau: Savanna and Grassland	**3.48**	1.0	Yes
Disturbed Prairie	Native Invasive: Deciduous Woodland	36.0	3.0	Yes
	South Texas: Disturbance Grassland	38.83		
	MOU Total:	**74.83**		
Tallgrass Prairie, Grassland	South Texas: Sandy Mesquite Savanna Grassland	10.99	1.0	Yes
	South Texas: Sandy Mesquite Woodland and Shrubland	6.73		
	MOU Total:	**17.72**		
Riparian	Central Texas: Riparian Hardwood Forest	**2.23**	0.1	Yes
Urban	Urban Low Intensity	**73.16**	N/A	No
	Total Acreage:	**171.42**		

Source: TxDOT 2018g

The Disturbed Prairie and Urban Low Intensity types dominated the project area. These EMST vegetation types have been further grouped into generalized classification types which correspond to "Urban" and "Disturbed Prairie" habitat types identified in the 2013 TxDOT-TPWD MOU and Threshold PA (TxDOT and TPWD 2013). The MOU vegetation types have been assigned acreage thresholds which, if exceeded, would require coordination under the TxDOT-TPWD MOU.

Approximately 73.16 acres of Urban habitat and 74.83 acres of Disturbed Prairie habitat occur within the proposed project area (**Appendix F, Figure 7 – Observed Vegetation Types**) (MoRAP 2013). The Urban Low Intensity vegetation type was observed within areas of maintained vegetation in existing and proposed ROW along SH 72. The dominant species included Bermuda grass (*Cynodon dactylon*), and Johnson grass (*Sorghum halepense*).

The Disturbed Prairie vegetation type was observed in unmaintained portions of the project area, including the new location roadway. Vegetation consisted primarily of shrubs with interspersed grasses and forbs and scattered patches of trees. The shrub layer was dominated by small honey mesquite (*Prosopis glandulosa*) with an understory of bare ground, Bermuda grass, and Johnson grass. Tree species included honey mesquite, southern live oak (*Quercus virginiana*), and sugarberry (*Celtis laevigata*).

These habitat types are not considered rare or important remnant vegetation as mapped by the Texas Conservation Action Plan (TCAP). The project area was investigated for the presence of unusual vegetation features as identified by the TxDOT-TPWD MOU and none were identified. The project area was also investigated for the presence of special habitat features as identified by the TxDOT-TPWD MOU, though none were identified. For more information, refer to the *Tier 1 Site Assessment* (TxDOT 2018g), available in TxDOT's project files and located in TxDOT's Environmental Compliance Oversight System.

Under the No-Build alternative, the existing vegetation would remain as it is presently, except for those areas where a landowner could decide to either harvest or clear the land for other uses. The No-Build Alternative would not require any conversion of vegetation to a transportation facility, nor would it impact unusual vegetation or special habitat features.

5.11.3 EO 13112 on Invasive Species

This project is subject to and will comply with federal EO 13112 on Invasive Species. The department implements this EO on a programmatic basis through its *Roadside Vegetation Management Manual* and *Landscape and Aesthetics Design Manual*.

The No-Build Alternative would not be subject to the EO 13112 on Invasive Species.

5.11.4 Executive Memorandum on Environmentally and Economically Beneficial Landscaping

In accordance with the Executive Memorandum of August 10, 1995, all agencies shall comply with NEPA as it relates to vegetation management and landscape practices for all federally assisted projects. The Executive Memorandum directs that, where cost-effective and to the extent practicable, agencies would (1) use regionally native plants for landscaping; (2) design, use, or promote construction practices that minimize adverse effects on the natural habitat; (3) seed to prevent pollution by, among other things, reducing fertilizer and pesticide use; (4) implement water-efficient and runoff reduction practices; and (5) create demonstration projects employing these practices. Landscaping included with this project would be in compliance with the Executive Memorandum and the guidelines for environmentally and economically beneficial landscape practices.

The No-Build Alternative would not be subject to the Executive Memorandum on Environmentally and Economically Beneficial Landscaping.

5.11.5 Wildlife

The vegetation of the Gulf Coast Prairies and Marshes ecoregion provides habitat for a wide range of reptilian, avian, and mammalian species that are common to the environment. Common species include the western diamondback rattlesnake (*Crotalus atrox*), white-winged dove (*Zenaida asiatica*), coyote (*Canis latrans*), and white-tailed deer (*Odocoileus virginianus*). These and other common species have the potential to occur within the project area and adjacent undeveloped land.

It is anticipated that some wildlife species could occur within undeveloped portions of the existing and proposed ROW. Required clearing or other construction-related activities may directly or indirectly affect animals that reside on or adjacent to the project area ROW. Heavy machinery could kill small, low-mobility animals or could cause soil compaction, impacting animals that live underground. Larger, more-mobile species will typically avoid construction activities and move into adjacent areas.

With regard to encroachment-alteration effects under the Build Alternative, the effects of removing important wildlife habitat areas would not extend beyond the unmaintained vegetation and two water features present within the project construction. Accordingly, impacts to habitat would be limited to the area of direct impacts and no encroachment impacts are expected. The limited direct impacts on wildlife habitat are not expected to affect the populations of any rare species in the area, and no indirect impacts to such species elsewhere are expected as a result of habitat removal. Furthermore, the existing habitats are already fragmented by the original construction of SH 72, as well as construction of surrounding commercial and residential properties. Indirect effects to vegetation and wildlife habitat as a result of the proposed improvements are anticipated to be minimal.

Under the No-Build Alternative, no impacts to wildlife species or their habitats would occur.

5.11.6 Migratory Bird Treaty Act (MBTA)

The project area was investigated for any structures containing migratory birds or indications of nesting migratory birds. No migratory birds were observed nesting during the site visit. In accordance with the MBTA, the following commitments would be incorporated, where applicable:

- No active migratory bird nests (nests containing eggs and/or young) will be removed or destroyed at any time of the year.
- No colonial nests (swallows, for example) on or in structures will be removed until all nests in the colony become inactive.
- Measures, to the extent practicable, will be used to prevent or discourage migratory birds from building nests within portions of the project area planned for construction.
- Inactive nests will be removed from the project area to minimize the potential for reuse by migratory birds.
- Construction or demolition activities will be scheduled outside the typical nesting season (February 15 to October 1), and will comply with the previously listed prohibitive provisions of the MBTA, which apply year-round.

The No-Build Alternative would not require any removal or disturbance of migratory birds, their nests, or their young, and there would be no impacts to migratory birds.

5.11.7 Fish and Wildlife Coordination Act

The proposed project would not require an Individual Permit issued by the USACE; therefore, the Fish and Wildlife Coordination Act does not apply.

The No-Build Alternative would not be required to comply with the Fish and Wildlife Coordination Act.

5.11.8 Bald and Golden Eagle Protection Act

Bald and Golden Eagles are protected by the Bald and Golden Eagle Protection Act of 2007. No Bald or Golden Eagle habitat was observed within the proposed project area. The proposed project would have no impact on Bald or Golden Eagles.

The No-Build Alternative would have no impact on Bald or Golden Eagles.

5.11.9 Magnuson-Stevens Fishery Conservation Management Act

Based on a project scoping analysis, it was determined that neither the Build nor the No-Build Alternative would have an impact on this resource category or subject matter.

5.11.10 Marine Mammal Protection Act

Based on a project scoping analysis, it was determined that neither the Build nor the No-Build Alternative would have an impact on this resource category or subject matter.

5.11.11 Threatened, Endangered, Rare, and Candidate Species

The proposed project is within range of the federally endangered Whopping Crane (*Grus americana*). Least Tern (*Sterna antillarum*), Piping Plover (*Charadrius melodus*), and Red Knot (*Calidris canutus rufa*) are identified as within range of the proposed project. For the Least Tern, Piping Plover, and Red Knot, potential effects are only considered in cases of wind energy projects (**Appendix G**). No habitat was identified in the project area for any of the above listed species. The proposed project area is within range of two federally-listed candidates, the Golden Orb (*Quadrula aurea*) and the Texas Pimpleback (*Quadrula petrina*). Potential habitat may occur for these species in water features within the project area. No suitable habitat or mapped critical habitat for any federally protected species occurs within the project area. Refer to the *Biological Evaluation Form* (TxDOT 2018h) for additional information.

The proposed project is within range with suitable habitat for the following Species of Greatest Conservation Need (SGCNs): Florida pinkroot *(Spigelia texana*), Shinner's sunflower *(Helianthus occidentalis)*, Texas tauschia *(Tauschia texana)*, Western Burrowing Owl *(Athene cunicularia hypugaea)*, and Plains spotted skunk *(Spilogale putorius interrupta)*. The proposed project is also within range with suitable habitat for the following state threatened species: Texas horned lizard *(Phrynosoma cornutum)*, Texas tortoise *(Gopherus berlandieri)*, timber rattlesnake *(Crotalus horridus)*, White-tailed Hawk *(Buteo albicaudatus)*, and Wood Stork *(Mycteria Americana), Golden Orb (Quadrula aurea)*, and Texas Pimpleback *(Quadrula petrina)*.

Although the proposed project may result in the removal of potentially suitable habitat or the temporary disturbance of individuals of these species, the project is not anticipated to cause a substantial impact to any species. Any impact to individuals would be incidental in nature. The following BMPs would be implemented in an effort to avoid impacts to the state-listed and SGCN species:

BMPs for the golden orb and Texas pimpleback: When work is in the water; survey project footprints for state listed species where appropriate habitat exists. When work is in the water and mussels are discovered during surveys; relocate state listed and SGCN mussels under TPWD authorization and implement Water Quality BMPs.

BMPs for the Texas horned lizard: Contractors will be advised of potential occurrence in the project area, and to avoid harming the species if encountered. This should include avoiding harvester ant mounds in the selection of Project Specific Locations (PSLs) where feasible.

BMPs for the Texas tortoise: Contractors will be advised of potential occurrence in the project area, and to avoid harming the species if encountered. Utility trenches should be covered overnight or visually inspected before filling to avoid burial of the species. 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. 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. Contractors will be advised of potential occurrence in the project area, and to avoid harming the species if encountered.

BMPs for the timber rattlesnake: 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. 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. Contractors will be advised of potential occurrence in the project area, and to avoid harming the species if encountered.

BMPs for the Western Burrowing Owl, White-tailed Hawk, and Wood Stork: Not disturbing, destroying, or removing active nests, including ground nesting birds, during the nesting season; Avoid the

removal of unoccupied, inactive nests, as practicable; Preventing the establishment of active nests during the nesting season on TxDOT owned and operated facilities and structures proposed for replacement or repair; Not collecting, capturing, relocating, or transporting birds, eggs, young, or active nests without a permit.

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

Section 1: Species BMPS

Migratory Bird BMPs

- The disturbance, destruction, or removal of active nests, including ground nesting birds, during the nesting season would be prohibited;
- The removal of unoccupied, inactive nests would be avoided as practicable;
- The establishment of active nests during the nesting season on TxDOT owned and operated facilities and structures proposed for replacement or repair would be prevented; and
- The collection, capture, relocation, or transportation of birds, eggs, young, or active nests without a permit would be prohibited.

Section 2: Standard Recommendations

Vegetation BMPs

- Minimize the amount of vegetation cleared. Removal of native vegetation, particularly mature native trees and shrubs should be avoided to the greatest extent practicable.
- The use of any non-native vegetation in landscaping and revegetation is discouraged. Locally adapted native species should be used.

Water Quality BMPs

- Once construction is complete and disturbed areas have been revegetated, remove silt fence and accumulated sediment to reduce wildlife barriers and hazard.

Under the No-Build Alternative, no impacts to SGCNs or threatened or endangered species or their habitats would occur and, as a result, no coordination would be required with the U.S. Fish and Wildlife Service (USFWS) or TPWD.

With regard to encroachment-alteration effects under the Build Alternative, other than potential impacts to the species listed above, the proposed project would have no effect on any of the remaining listed species that may occur in DeWitt County, their habitats, or designated critical

habitats. The proposed project would not alter the hydric regime or reduce diversity within the ecosystem.

5.12 Air Quality

An air quality analysis was conducted for the proposed project in accordance with TxDOT's standard operating procedures for air quality compliance (TxDOT 2017a; TxDOT 2017b; TxDOT 2018i).

5.12.1 Conformity

This project is located in an area in attainment or unclassifiable for all national ambient air quality standards (NAAQS); therefore, the transportation conformity rules do not apply.

5.12.2 Hot-Spot Analysis

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

5.12.3 Carbon Monoxide Traffic Air Quality (TAQA)

Traffic data for the estimated time of completion (ETC) year 2021 and design year 2041 is 11,500 vehicles per day and 18,700 vehicles per day, respectively. A prior TxDOT modeling study and previous analyses of similar projects demonstrated that it is unlikely that the carbon monoxide standard would ever be exceeded as a result of any project with an average annual daily traffic (AADT) below 140,000. The AADT projections for the project do not exceed 140,000 vehicles per day; therefore, a Traffic Air Quality Analysis was not required.

5.12.4 Qualitative Mobile Source Air Toxics (MSAT) Analysis

Background

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

Motor Vehicle Emissions Simulator (MOVES)

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

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

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

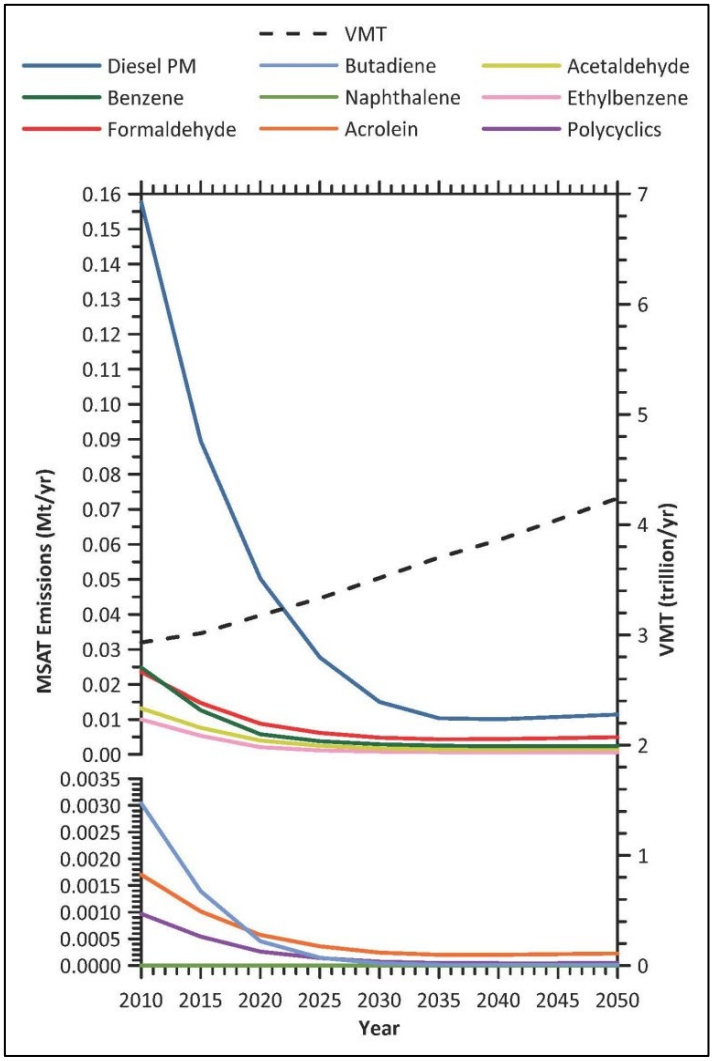
Since the release of MOVES2014, the EPA has released MOVES2014a. In the November 2015 MOVES2014a Questions and Answers Guide (https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P100NNR0.txt), the EPA states that for on-road emissions, MOVES2014a adds new options requested by users for the input of local VMT, includes minor updates to the default fuel tables, and corrects an error in MOVES2014 brake wear emissions. The change in brake wear emissions results in small decreases in PM emissions, while emissions for other criteria pollutants remain essentially the same as MOVES2014. Using EPA's MOVES2014a model, as shown in **Exhibit 2** below, FHWA estimates that even if VMT increases by 45 percent from 2010 to 2050 as forecast, a combined reduction of 91 percent in the total annual emissions for the priority MSAT is projected for the same time period.

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

Exhibit 2: Project National MSAT Emission Trends 2010-2050

FOR VEHICLES OPERATING ON ROADWAYS

USING EPA's Moves2014a Model



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

MSAT Research

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

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

Project Specific MSAT Information

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

For the Build Alternative for the proposed project, the amount of MSAT emitted would be proportional to the vehicle miles traveled, or VMT, assuming that other variables such as fleet mix are the same for each alternative. The VMT estimated for the Build Alternative is slightly higher than that for the No-Build Alternative, because the additional capacity increases the efficiency of the roadway and attracts rerouted trips from elsewhere in the transportation network. This increase in VMT would lead to higher MSAT emissions for the preferred action alternative along the highway corridor, along with a corresponding decrease in MSAT emissions along the parallel routes. The emissions increase is offset somewhat by lower MSAT emission rates due to increased speeds; according to EPA's MOVES2014 model, emissions of all of the priority MSAT decrease as speed increases. Also, regardless of the alternative chosen, emissions will likely be lower than present levels in the design year as a result of EPA's national control programs that are projected to reduce annual MSAT emissions by over 90 percent between 2010 and 2050 (Updated Interim Guidance on Mobile Source Air Toxic Analysis in NEPA Documents, FHWA, October 12, 2016 – http://www.fhwa.dot.gov/environment/air_quality/air_toxics/policy_and_guidance/msat/index.cfm). Local conditions may differ from these national projections in terms of fleet mix and turnover, VMT growth rates, and local control measures. However, the magnitude of the EPA-projected reductions is so great (even after accounting for VMT growth) that MSAT emissions in the study area are likely to be lower in the future in nearly all cases.

The additional travel lanes contemplated as part of the project will have the effect of moving some traffic closer to nearby homes, schools, and businesses; therefore, there may be localized areas where ambient concentrations of MSAT could be higher under certain Build Alternative than the No-Build Alternative. The localized increases in MSAT concentrations would likely be most pronounced along the expanded roadway sections that would be built on SH 72. The portion of the project with the largest population adjacent to it, is the area near Nordheim. However, the magnitude and the duration of these potential increases compared to the No-Build alternative cannot be reliably quantified due to incomplete or unavailable information in forecasting project-specific MSAT health impacts. In sum, when a highway is widened, the localized level of MSAT emissions for the Build Alternative could be higher relative to the No-Build Alternative, but this could be offset due to increases in speeds and reductions in congestion (which are associated with lower MSAT emissions).

Also, MSAT will be lower in other locations when traffic shifts away from them. However, on a regional basis, EPA's vehicle and fuel regulations, coupled with fleet turnover, will over time cause substantial reductions that, in almost all cases, will cause region-wide MSAT levels to be significantly lower than today.

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

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

The EPA is responsible for protecting the public health and welfare from any known or anticipated effect of an air pollutant. They are the lead authority for administering the Clean Air Act (CAA) and its amendments and have specific statutory obligations with respect to hazardous air pollutants and MSAT. The EPA is in the continual process of assessing human health effects, exposures, and risks posed by air pollutants. They maintain the IRIS, which is "a compilation of electronic reports on specific substances found in the environment and their potential to cause human health effects" (EPA, http://www.epa.gov/iris/). Each report contains assessments of non-cancerous and cancerous effects for individual compounds and quantitative estimates of risk levels from lifetime oral and inhalation exposures with uncertainty spanning perhaps an order of magnitude. Other organizations are also active in the research and analyses of the human health effects of MSAT, including the Health Effects Institute (HEI). A number of HEI studies are summarized in Appendix D of FHWA's Updated Interim Guidance on Mobile Source Air Toxic Analysis in NEPA Documents (http://www.fhwa.dot.gov/environment/air_quality/air_toxics/policy_and_guidance/msat/index.cfm) Among the adverse health effects linked to MSAT compounds at high exposures are; cancer in humans in occupational settings; cancer in animals; and irritation to the respiratory tract, including the exacerbation of asthma. Less obvious is the adverse human health effects of MSAT compounds at current environmental concentrations (HEI Special Report 16, https://www.healtheffects.org/publication/mobile-source-air-toxics-critical-review-literature-exposure-and-health-effects) or in the future as vehicle emissions substantially decrease.

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

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

There are considerable uncertainties associated with the existing estimates of toxicity of the various MSAT, because of factors such as low-dose extrapolation and translation of occupational exposure data to the general population, a concern expressed by HEI (Special Report 16, https://www.healtheffects.org/publication/mobile-source-air-toxics-critical-review-literature-exposure-and-health-effects). As a result, there is no national consensus on air dose-response values assumed to protect the public health and welfare for MSAT compounds, and in particular for diesel PM. The EPA states that with respect to diesel engine exhaust, "[t]he absence of adequate data to develop a sufficiently confident dose-response relationship from the epidemiologic studies has prevented the estimation of inhalation carcinogenic risk (EPA IRIS database, Diesel Engine Exhaust, Section II.C. https://cfpub.epa.gov/ncea/iris/iris_documents/documents/subst/0642.htm#quainhal)."

There is also the lack of a national consensus on an acceptable level of risk. The current context is the process used by the EPA as provided by the CAA to determine whether more stringent controls are required in order to provide an ample margin of safety to protect public health or to prevent an adverse environmental effect for industrial sources subject to the maximum achievable control technology standards, such as benzene emissions from refineries. The decision framework is a two-step process. The first step requires EPA to determine an "acceptable" level of risk due to emissions from a source, which is generally no greater than approximately 100 in a million. Additional factors are considered in the second step, the goal of which is to maximize the number of people with risks less than 1 in a million due to emissions from a source. The results of this statutory two-step process do not guarantee that cancer risks from exposure to air toxics are less than 1 in a million; in some cases, the residual risk determination could result in maximum individual cancer risks that are as high as approximately 100 in a million. In a June 2008 decision, the U.S. Court of Appeals for the District of Columbia Circuit upheld the EPA's approach to addressing risk in its two step decision framework. Information is incomplete or unavailable to establish that even the largest of highway projects would result in levels of risk greater than deemed acceptable (https://www.cadc.uscourts.gov/internet/opinions.nsf/284E23FFE079CD59852578000050C9DA/$file/07-1053-1120274.pdf).

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

5.12.5 Congestion Management Process (CMP)

This project is within an attainment or unclassifiable area for ozone and carbon monoxide (CO); therefore, a project level CMP analysis is not required.

5.12.6 Construction-Related Emissions

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

The potential impacts of PM emissions will be minimized by using fugitive dust control measures contained in standard specifications, as appropriate. The Texas Emissions Reduction Plan (TERP) provides financial incentives to reduce emissions from vehicles and equipment. TxDOT encourages construction contractors to use this and other local and federal incentive programs to the fullest extent possible to minimize diesel emissions. Information about the TERP program can be found at: https://www.tceq.texas.gov/airquality/terp.

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

Under the No-Build Alternative, property adjacent to the project area would not be exposed to potentially higher MSAT emissions; however, exposure to increased MSAT emissions could occur on other area roadways. Regardless of the build or no-build alternative, improving emission trends for the area would be expected to continue due to existing federal and state regulatory programs and requirements.

5.13 Hazardous Materials

A *Hazardous Materials Initial Site Assessment* (ISA) was completed for the proposed project to identify known and possibly unknown hazardous material contamination that may impact the proposed project (TxDOT 2018j). Site numbers referenced below correspond to the sites in the Hazardous Materials ISA available for review at the TxDOT Yoakum District office.

The Banks Environmental Database report identified a total of 31 hazardous material records within the project area. The majority of the records were determined to be of no concern to the proposed project. The ISA identified one site of concern that could require additional investigation (**Appendix F, Figure 8 – Hazardous Materials Sites of Concern**).

Banks Map ID 4 - Nordheim Farmers Co., EPA ID: TXD981600984, located at the southwest corner of SH 72 and FM 239. Nordheim Farmers Co. is currently registered as an archived superfund site

by the EPA and was under investigation between 1987 to 1990. The EPA identifies sites such as Nordheim Farmers Co. because they pose or had once posed a potential risk to human health and/or the environment due to contamination by one or more hazardous wastes. A review of the EPA website identifies the Nordheim Farmers Co. site as an archived superfund site which requires no cleanup or additional investigation at this time.

Pyote Reclamation Systems was issued a permit for a 204-acre site to dispose of petroleum production waste approximately one-quarter mile east of Nordheim (Site 8 in Figure 8). The disposal site permit was appealed to the Travis County District Court and the Judge ruled in the favor of Pyote. As of the writing of this report, the case has not been appealed. This site could pose a threat to future projects along SH 72 in this vicinity.

There was a large fire at a the Pyote Well Services facility on July 5, 2017 (Site 9 in Figure 8). The facility is located immediately adjacent to SH72. The extent of contamination along SH 72 from the fire has not been determined, but it is not expected to be of concern.

Under the No-Build Alternative, no impacts to pipelines or disturbance to any potentially contaminated sites would occur. The No-Build Alternative would not require any actions with regard to hazardous materials.

5.14 Traffic Noise

A traffic noise analysis was conducted for the proposed project in accordance with TxDOT's FHWA-approved *Guidelines for Analysis and Abatement of Roadway Traffic Noise* (TxDOT 2011, TxDOT 2018k).

Existing and predicted traffic noise levels were modeled at 27receiver locations (**Appendix F, Figure 9 – Location of Noise Receivers**) 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.

Due to considerable shifts in the roadway alignment, some receivers will experience higher than normal increases in noise levels while others would experience decreased future noise levels. The alignment near receiver R1, for example, is being shifted approximately 150 feet closer to the residence, which results in a future noise level increase of +9 decibels (dB). Several receivers in Nordheim; however, will have the alignment shifted away from them approximately 45 feet. This results in a decrease in noise levels for these receivers.

The proposed project would result in a traffic noise impact, and the following noise abatement measures were considered: traffic management, alteration of horizontal and/or vertical alignments, acquisition of undeveloped property to act as a buffer zone, and the construction of noise walls.

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

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

Alteration of horizontal and/or vertical alignments - Any alteration of the existing alignment could displace existing businesses and residences, require additional ROW, and is typically not cost effective/reasonable.

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

Noise walls - This is the most commonly used noise abatement measure. Noise walls were evaluated for each of the impacted receiver locations with the following results:

R1-R6, R16-R18, R20: These receivers represent separate, individual residences. Noise walls that would achieve the minimum feasible reduction of 5 dB(A) while achieving a 7dB(A) noise reduction design goal at each of these receivers would exceed the reasonable, cost-effectiveness criterion of $25,000.

R27: This receiver represents three mobile homes at the eastern end of the project limits. A 20-foot tall noise barrier modeled in this location would not achieve the minimum feasible reduction of 5 db(A) at any of the three receptors.

None of the above noise abatement measures would be both feasible and reasonable; therefore, no abatement measures are proposed for this project. To avoid noise impacts that may result from future development of properties adjacent to the project, local officials responsible for land use control programs must ensure, to the maximum extent possible, that no new activities are planned or constructed along or within the following predicted (2041) noise impact contours. **Table 4** provides predicted distances to noise contours for undeveloped areas adjacent to the project.

Table 4: Land Use Contour for Undeveloped Land

Noise Abatement Criteria (NAC)	Land Use Contour	Distance from ROW
Category B & C	66 dB(A)	108 feet
Category E	71 dB(A)	22 feet

Source: TxDOT 2018k

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. 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.

The No-Build Alternative may maintain existing noise levels or noise levels may change as traffic volumes increase with time.

5.15 Induced Growth

A *Risk Assessment for Indirect Impacts* (TxDOT 2018l) was prepared for the proposed project in accordance with TxDOT's *Indirect Impacts Analysis Guidance* (TxDOT 2016a). Although the project adds capacity to SH 72, the project is located in a rural area outside of a Metropolitan Planning Organization (MPO) boundary; therefore, an indirect impacts analysis is not required.

Under the No-Build Alternative, current development rates and patterns would remain constant and no induced growth would occur.

5.16 Cumulative Impacts

A *Risk Assessment for Cumulative Impacts* (TxDOT 2018m) was prepared for the proposed project in accordance with TxDOT's *Cumulative Impacts Analysis Guidelines* (TxDOT 2016b). The proposed project will not have substantial direct or indirect impacts on any resource; therefore, a cumulative impacts analysis is not required.

Under the No-Build Alternative, no cumulative impacts would be anticipated.

5.17 Construction Phase Impacts

Although temporary congestion may occur as a result of project construction, access to parcels in the project vicinity would be maintained during all phases of construction. All practicable steps would be taken to minimize the inconvenience to drivers using the intersecting roadways during the construction phase. People living and working in the immediate area of the proposed project may experience an increase in noise and dust due to the construction activities. Temporary detours would also be required in the project area to assist with diverting traffic through surrounding areas while certain areas are under construction. Refer to Section 5.12 for the discussion of construction-related air emissions. The following construction phase BMPs would be utilized:

- Vegetation BMPs
    - Minimize the amount of vegetation cleared. Removal of native vegetation, particularly mature native trees and shrubs, should be avoided to the greatest extent practicable.
    - The use of any non-native vegetation in landscaping and revegetation is discouraged. Locally adapted native species should be used.
- Water Quality BMPs
    - Once construction is complete and disturbed areas have been revegetated, remove silt fence and accumulated sediment to reduce wildlife barriers and hazards.

Under the No-Build Alternative, construction activities would not occur and temporary increases in traffic congestion, air pollution, and MSAT emissions would not occur.

6.0 Agency Coordination

TxDOT initiated consultation under Section 106 of the National Historic Preservation Act; the PA among TxDOT, the SHPO, FHWA, and the ACHP; and the Antiquities Code of Texas MOU between THC and TxDOT on June 6, 2016. TxDOT recommended that the project be allowed to proceed with construction. The THC/SHPO concurred with this recommendation on November 8, 2018. Tribal consultation with federally recognized Native American tribes with demonstrated historic interest in the area was initiated on January 6, 2018. No objections or expressions of concern were received within the comment period.

The proposed project would require approximately four acres of land from within the provisional NRHP boundary of the Eckhardt Ranch District, which is recommended to be considered eligible for the purposes of compliance with Section 106 of the National Historic Preservation Act. This area represents approximately 0.7 percent of the 536.6 acres within the provisional NRHP boundary. The proposed project would not have an adverse effect on the characteristics that make this property eligible for inclusion in the NRHP. However, because new ROW would be acquired, the proposed project constitutes a *de minimis* Section 4(f) use of a historic site.

Pursuant to Stipulation IX "Undertakings with Potential to Cause Effects" of the 2015 PA among FHWA, the Texas SHPO, the ACHP, and TxDOT, TxDOT coordinated the project with the SHPO/THC. The THC concurred with the finding of no adverse effect on November 5, 2018.

The proposed project would disturb several habitat types in an area equal to or greater than the area of disturbance indicated in the Threshold Table PA (Edwards Plateau Savanna, Woodland, and Shrubland - 3.48 acres; Disturbed Prairie - 74.83 acres; Tallgrass Prairie, Grassland - 17.72 acres; and Riparian - 2.23 acres). TPWD coordination is required because the threshold for impacts to the above listed habitat types would be exceeded. Coordination with TPWD was completed on October 17, 2018.

It is anticipated that any impacts to waters of the U.S. would be authorized through NWP #14 without a PCN. Coordination with the USACE is not anticipated at this time; however, if a NWP #14 with PCN or IP is required, this EA will be updated accordingly.

The proposed project includes work within a FEMA designated 100-year floodplain; therefore, coordination with the local Floodplain Administrator would be required.

Coordination with TCEQ regarding air quality in ongoing.

The resource agency coordination documentation is included in **Appendix G**.

7.0 Public Involvement

A public meeting was held on April 24, 2018 at the Yorktown Jr. High School. An open house format with exhibit boards and schematics was used to present the proposed project, and public input was invited regarding the need for the project and suggested alternatives for the project. Eleven comments were received as a result of the public meeting (TxDOT 2018n).

The Public Meeting Documentation may be inspected and copied upon request at the TxDOT Yoakum District office.

A Notice of Availability of the Draft EA and Public Hearing was published December 23, 2018 in the Victoria Advocate and on December 26, 2018 in the Cuero Record and the Yorktown News-View. A public hearing was held on January 10, 2019 at the Nordheim Shooting Club. An open house format with exhibit boards and schematics was used to present the proposed project, and public input was invited regarding the need for the project and suggested alternatives for the project. The public hearing had one speaker make a verbal comment. Eight written comments and one verbal comment were received as a result of the public hearing (TxDOT 2019).

Because the project involves construction of a highway, a notice of impending construction will 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 must be provided after the environmental decision (i.e., FONSI or recommendation to prepare an EIS), but before earthmoving or other activities requiring the use of heavy equipment begin.

8.0 Environmental Permits, Issues, and Commitments

All project-specific commitments and conditions of approval, including resource agency permitting compliance and monitoring requirements, would be incorporated in the project plan for the proposed project. These commitments and conditions of approval may vary depending on the project's final design and construction. Mitigation monitoring would be conducted by TxDOT and other federal, state, and local agencies to ensure compliance.

This section lists the elements that constitute the Environmental Permits, Issues, and Commitments (EPIC) sheet. The permits, impacts, and commitments relevant to the proposed project are as follows:

1. USACE NWP #14
2. TPDES, includes:
    a. Construction General Permit
    b. SW3P
    c. Site Notice
    d. NOI
    e. Implementation of erosion control, sedimentation control, and post-construction TSS control BMPs for the TCEQ's 401 Water Quality Certification Conditions for NWPs to prevent water quality impacts from occurring during and after construction.
3. Implementation of BMPs for state-listed species and SGCNs (including the Florida pinkroot, Shinner's sunflower, Texas tauschia, Golden orb, Texas pimpleback, Western Burrowing Owl, plains spotted skunk, Texas horned lizard, Texas tortoise, timber rattlesnake, White-tailed Hawk, and Wood Stork).
4. EO 13112 on Invasive Species
5. Executive Memorandum on Beneficial Landscaping
6. MBTA
7. In the event that unanticipated archeological deposits are encountered during construction, work in the immediate area will cease, and TxDOT archeological staff will be contacted to initiate post-review discovery procedures.
8. Any unanticipated hazardous materials and/or petroleum contamination encountered during construction would be handled according to applicable federal and state regulations per TxDOT Standard Specifications.
9. Implementation of fugitive dust control measures.
10. The traffic noise analysis and qualitative air quality analysis will be made available to local officials.

9.0 Conclusion

The engineering, social, economic, and environmental investigations conducted thus far indicate that implementation of the proposed project would result in no significant impacts on the human or natural environment. A FONSI is recommended.

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Appendix A

Project Location Map

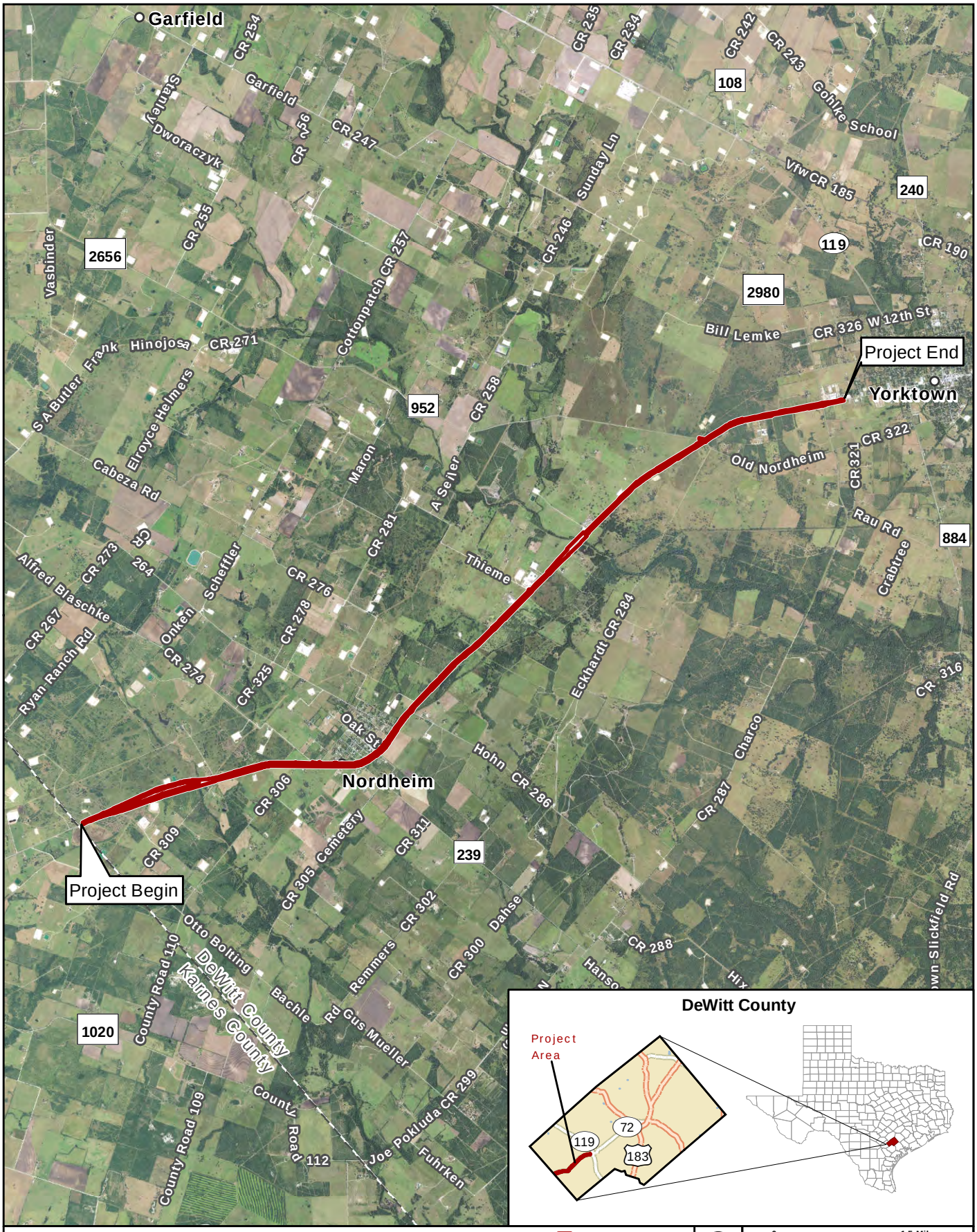

Figure 1

Project Location(Aerial Base)

SH 72 from Karnes County Line to 0.25 Miles East of FM 2980

Project Location

Aerial Source: NAIP (2016)

0 1.5 Miles

0 2 Kilometers

Prepared for: TxDOT	1 in = 1.5 miles
	Scale: 1:95,040
CSJ: 0270-02-041	Date: 7/6/2018

G:\Projects\TXDOT\SH72\JD_Figure 1_Project Location_aerial_20180622.mxd

Appendix B

Project Photos

SH 72: Karnes County Line to 0.25 Miles East of Farm-Market Road 2980
Dewitt County, Texas
CSJ: 0270-02-041

Project Photos

Photo 1: Proposed project eastern terminus near FM 2980; viewing west.

Photo 2: View north through Nordheim, north of SH 72.

Project Photos

Photo 3: View south of SH 72 and Broadway intersection in Nordheim.

Photo 4: View of typical vegetation seen in areas of proposed right-of-way; viewing west.

Project Photos

Photo 5: View northeast along SH 72 in areas of proposed right-of-way.

Photo 6: View north of Smith Creek bridge.

Project Photos

Photo 7: View north of the Cabeza Creek bridge.

Photo 8: Typical oil/gas equipment located along SH 72.

Project Photos

Photo 9: View south of oil/gas utilities located along SH 72.

Photo 10: View east of the proposed project western terminus near the Karnes/DeWitt County line.

Appendix C

Schematics

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Texas Department of Transportation

SH 72

CSJ: 0270-02-041

PRELIMINARY DESIGN SCHEMATIC
DEWITT COUNTY

LIMITS: 0.25 MILES EAST OF FM 2980
TO KARNES COUNTY LINE

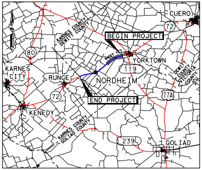
PROJECT LENGTH: 10.27 MILES

YOAKUM DISTRICT

YOAKUM DISTRICT ENGINEER

DIRECTOR OF TRANSPORTATION, PLANNING & DEVELOPMENT

DESGIN SPEED	FUNCTIONAL CLASS	ADT SH 72
70 MPH	MINOR ARTERIAL	2021 = 11,500
50 MPH (IN NORDHEIM AT 4.6% SUPER)		2041 = 18,700



CUERO
72
BEGIN PROJECT
KARNES COUNTY
DEWITT COUNTY
80
YORKTOWN
KARNES CITY
RUNGE
119
NORDHEIM
DEWITT COUNTY
VICTORIA COUNTY
72
77A
END PROJECT
KENEDY
KARNES COUNTY
GOLIAD COUNTY
239
GOLIAD

LOCATION MAP
N.T.S.

LEGEND

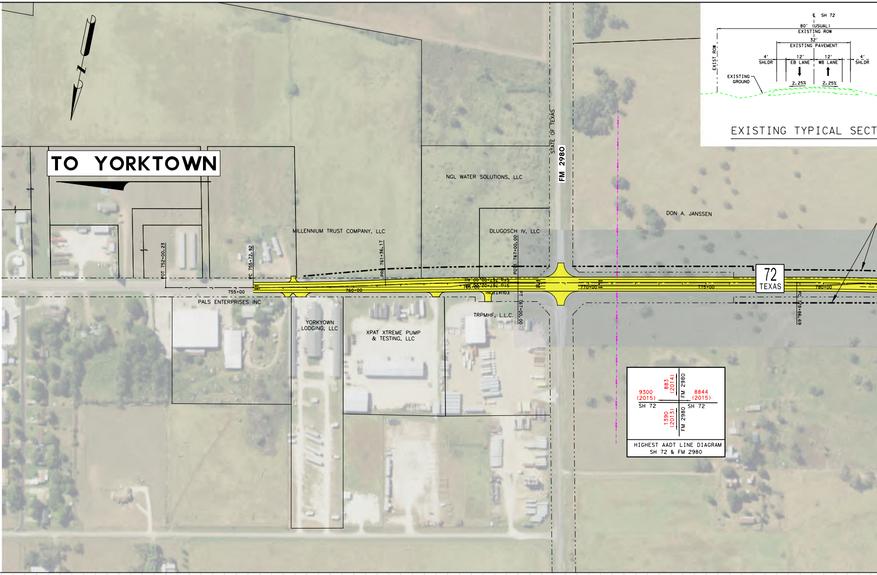
PROPOSED ROW	— · · — · · —
EXISTING ROW	— · — · — · —
EXISTING GAS PIPELINES	— · — GN —
TRAFFIC FLOW DIRECTION	➡
FEMA 100-YR FLOODPLAIN BOUNDARY	——
PARCEL BOUNDARY	——
PROPOSED BRIDGE	🟪
PROPOSED ROADWAY	🟨
PAVEMENT TO BE REMOVED	▨

PRELIMINARY
SUBJECT TO CHANGE

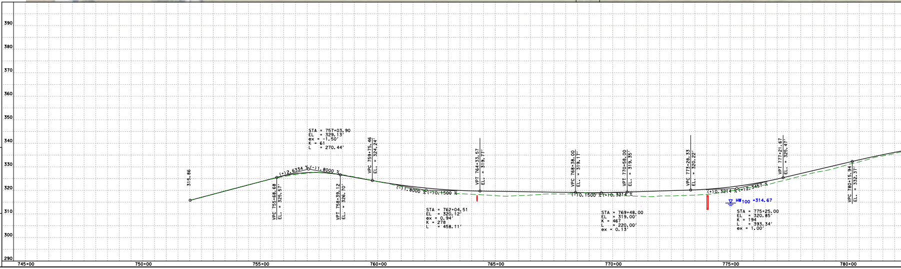
PROFILE LEGEND

PROPOSED SH 72 PROFILE GRADE LINE (PGL)	——
EXISTING NATURAL GROUND AT PROPOSED SH 72 CENTERLINE	– – – –
EXISTING CULVERT CROSSING	▯
EXISTING OIL/GAS PIPELINE CROSSING	●

0 100 200
SCALE: 1" = 200' H
1" = 20' V



TO YORKTOWN
NGL WATER SOLUTIONS, LLC
STATE OF TEXAS
FM 2980
DON A. JANSSEN
MILLENNIUM TRUST COMPANY, LLC
DLUGOSCH IV, LLC
POT 752+00.23
PC 755+72.92
PRC 761+36.17
POT 767+00.00
Sta 767+00.00 AH
Sta 767+02.00 BK
EQUATION:
PT 767+00.00
755+00
760+00
765+00
770+00
775+00
780+00
72
TEXAS
PC 778+86.69
PALS ENTERPRISES INC
YORKYOWN LODGING, LLC
XPAT XTREME PUMP & TESTING, LLC
TRPMHF, L.L.C.
℄ SH 72
80' (USUAL)
EXISTING ROW
32'
EXISTING PAVEMENT
EXIST ROW
4'
SHLDR
12'
EB LANE
12'
WB LANE
4'
SHLDR
EXISTING GROUND
2.25%
2.25%
EXISTING TYPICAL SECT
9300 (2015)
883 (2014)
FM 2980
8844 (2015)
SH 72
SH 72
1390 (2013)
FM 2980
HIGHEST AADT LINE DIAGRAM
SH 72 & FM 2980



PGAL

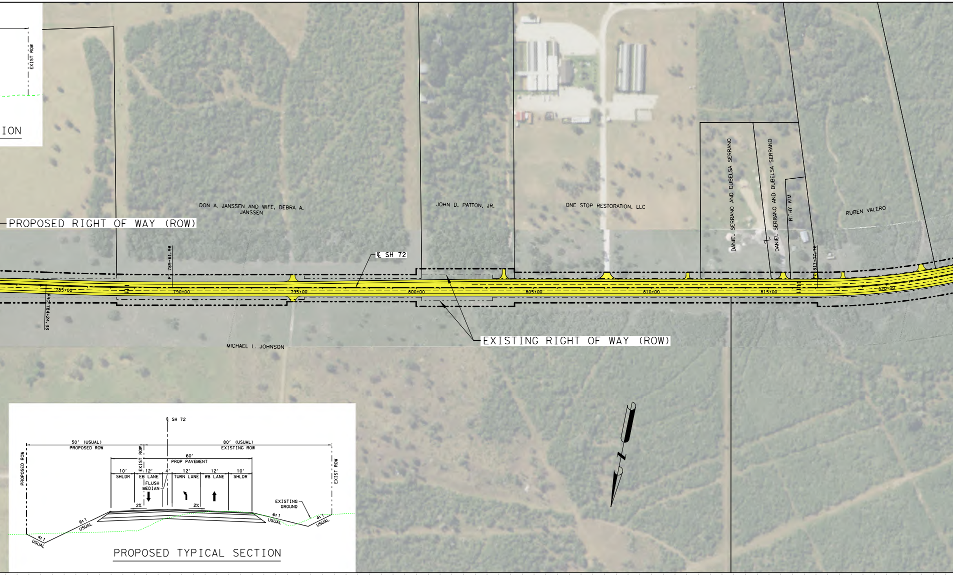
TBPE REG.
NO. F-2742

3131 BRIARPARK
Suite 200
Houston, Texas 77042
Phone (713) 622-1444
Fax (713) 968-9333

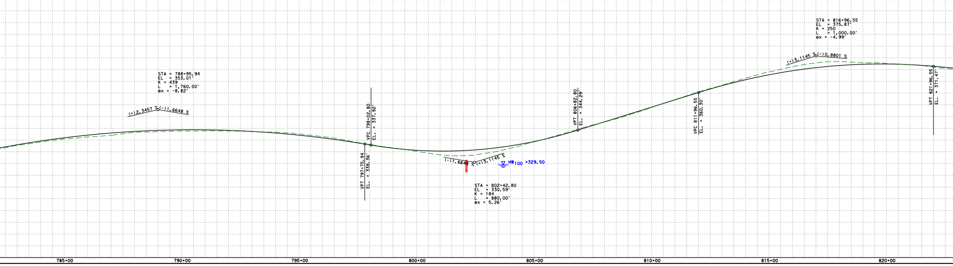
SH 72

SCHEMATIC LAYOUT

SHEET 1 OF 3


EXIST ROW
ION
PROPOSED RIGHT OF WAY (ROW)
DON A. JANSSEN AND WIFE, DEBRA A. JANSSEN
JOHN D. PATTON, JR.
ONE STOP RESTORATION, LLC
DANIEL SERRANO AND DUBELSA SERRANO
DANIEL SERRANO AND DUBELSA SERRANO
RITHY KIM
RUBEN VALERO
℄ SH 72
PI 789+61.98
PRC 784+24.33
817+07.76
785+00
790+00
795+00
800+00
805+00
810+00
815+00
820+00
MICHAEL L. JOHNSON
EXISTING RIGHT OF WAY (ROW)
℄ SH 72
50′ (USUAL)
PROPOSED ROW
80′ (USUAL)
EXISTING ROW
PROPOSED ROW
EXIST ROW
60′
PROP PAVEMENT
10′
SHLDR
12′
EB LANE
4′
FLUSH MEDIAN
12′
TURN LANE
12′
WB LANE
10′
SHLDR
EXIST ROW
2%
2%
EXISTING GROUND
6:1 USUAL
4:1 USUAL
6:1 USUAL
4:1 USUAL

PROPOSED TYPICAL SECTION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L = 1,760.00′
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VPT 797+75.94
EL. = 338.36′
VPC 798+02.80
EL. = 337.92′
(-)1.6648 %
(+)3.1145 %
HW100 =329.50
STA = 802+42.80
EL = 330.59′
K = 184
L = 880.00′
ex = 5.26′
VPT 806+82.80
EL. = 344.29′
VPC 811+96.55
EL. = 360.30′
STA = 816+96.55
EL = 375.87′
K = 250
L = 1,000.00′
ex = -4.99′
(+)3.1145 %
(-)0.8801 %
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790+00
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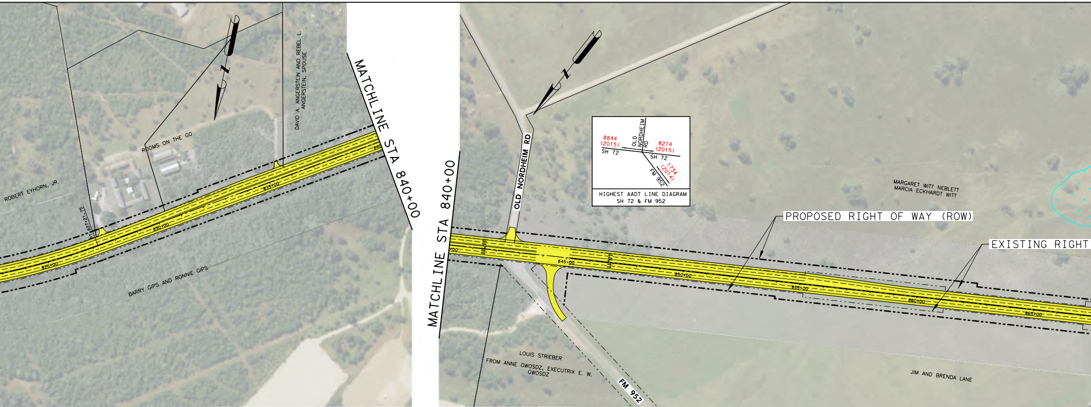
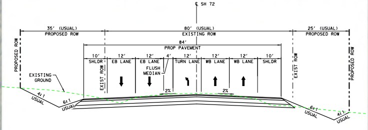
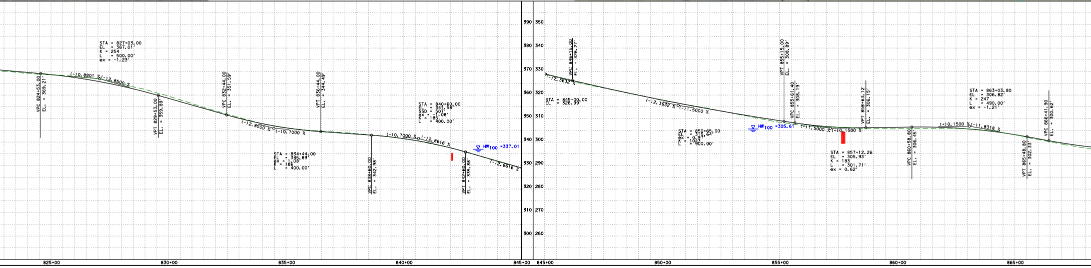
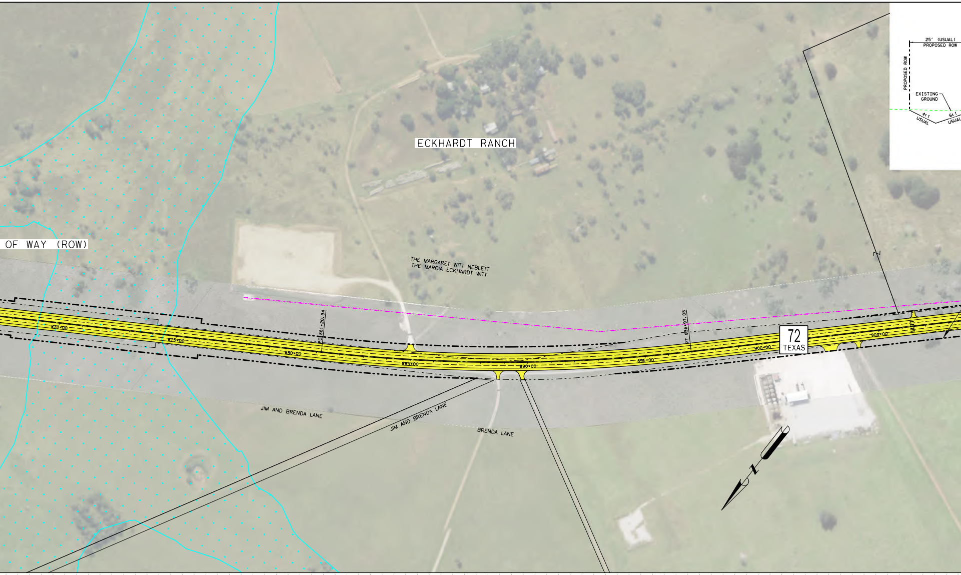
800+00
805+00
810+00
815+00
820+00

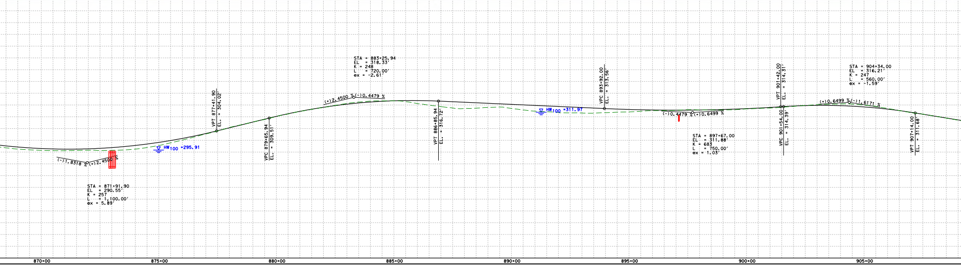

MATCHLINE STA 840+00
MATCHLINE STA 840+00
DAVID A. ANGERSTEIN AND REBEL L. ANGERSTEIN, SPOUSE
ROOMS ON THE GO
ROBERT EYHORN, JR.
BARRY GIPS AND RONNIE GIPS
825+00
830+00
835+00
840
STA 827+21.75
OLD NORDHEIM RD
845+00
850+00
855+00
860+00
865+00
8844 (2015)
SH 72
OLD NORDHEIM RD
8274 (2015)
SH 72
1734 (2014)
FM 952
HIGHEST AADT LINE DIAGRAM
SH 72 & FM 952
MARGARET WITT NEBLETT
MARCIA ECKHARDT WITT
PROPOSED RIGHT OF WAY (ROW)
EXISTING RIGHT
LOUIS STRIEBER
FROM ANNE GWOSDZ, EXECUTRIX E. W. GWOSDZ
FM 952
JIM AND BRENDA LANE


℄ SH 72
35' (USUAL)
PROPOSED ROW
80' (USUAL)
EXISTING ROW
25' (USUAL)
PROPOSED ROW
84'
PROP PAVEMENT
10'
SHLDR
12'
EB LANE
12'
EB LANE
4'
FLUSH MEDIAN
12'
TURN LANE
12'
WB LANE
12'
WB LANE
10'
SHLDR
PROPOSED ROW
EXIST ROW
EXIST ROW
PROPOSED ROW
EXISTING GROUND
2%
2%
4:1 USUAL
6:1 USUAL
6:1 USUAL
4:1 USUAL

PROPOSED TYPICAL SECTION




25' (USUAL)
PROPOSED ROW
PROPOSED ROW
EXISTING GROUND
4:1 USUAL
6:1 USUAL
ECKHARDT RANCH
OF WAY (ROW)
THE MARGARET WITT NEBLETT
THE MARCIA ECKHARDT WITT
PC 881+20.94
PT 896+97.08
870+00
875+00
880+00
885+00
890+00
895+00
900+00
905+00
72
TEXAS
JIM AND BRENDA LANE
JIM AND BRENDA LANE
BRENDA LANE
N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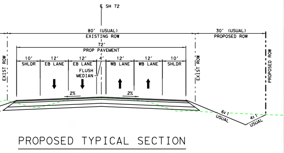
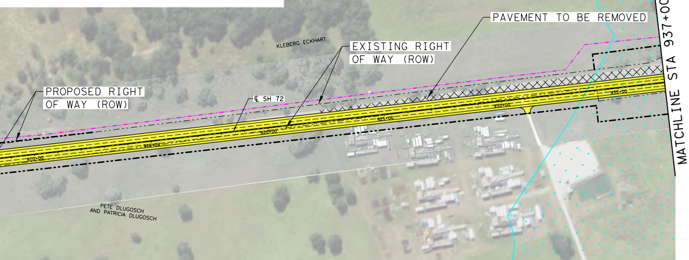
905+00


℄ SH 72
80′ (USUAL)
EXISTING ROW
30′ (USUAL)
PROPOSED ROW
72′
PROP PAVEMENT
10′
SHLDR
12′
EB LANE
12′
EB LANE
4′
FLUSH
MEDIAN
12′
WB LANE
12′
WB LANE
10′
SHLDR
EXIST ROW
EXIST ROW
PROPOSED ROW
2%
2%
6:1
USUAL
4:1
USUAL

PROPOSED TYPICAL SECTION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PAVEMENT TO BE REMOVED
KLEBERG ECKHART
EXISTING RIGHT
OF WAY (ROW)
PROPOSED RIGHT
OF WAY (ROW)
℄ SH 72
910+00
915+00
920+00
925+00
930+00
935+00
MATCHLINE STA 937+00
PETE DLUGOSCH
AND PATRICIA DLUGOSCH

PROJECT CURVE DATA

PI STATION = 764+18.12
DELTA = 2° 17′ 26.90" (RT)
DEGREE OF CURVE = 0° 24′ 22.66"
TANGENT = 281.95
LENGTH = 563.83
RADIUS = 14,102.00
PC STATION = 761+36.17
PT STATION = 767+00.00
NO SUPERELEVATION

PI STATION = 758+54.58
DELTA = 2° 17′ 19.57" (LT)
DEGREE OF CURVE = 0° 24′ 22.87"
TANGENT = 281.66
LENGTH = 563.25
RADIUS = 14,100.00
PC STATION = 755+72.92
PT STATION = 761+36.17
NO SUPERELEVATION

PI STATION = 781+55.54
DELTA = 2° 11′ 05.05" (RT)
DEGREE OF CURVE = 0° 24′ 22.87"
TANGENT = 268.85
LENGTH = 537.64
RADIUS = 14,100.00
PC STATION = 778+86.69
PT STATION = 784+24.33
NO SUPERELEVATION

PI STATION = 786+93.19
DELTA = 2° 11′ 05.05" (LT)
DEGREE OF CURVE = 0° 24′ 22.87"
TANGENT = 268.85
LENGTH = 537.64
RADIUS = 14,100.00
PC STATION = 784+24.33
PT STATION = 789+61.98
NO SUPERELEVATION

PI STATION = 822+20.12
DELTA = 20° 16′ 46.84" (LT)
DEGREE OF CURVE = 2° 00′ 00.00"
TANGENT = 512.35
LENGTH = 1,013.98
RADIUS = 2,864.79
PC STATION = 817+07.76
PT STATION = 827+21.75
SUPERELEVATION = 5.40%

PI STATION = 889+12.33
DELTA = 12° 50′ 44.83" (LT)
DEGREE OF CURVE = 0° 48′ 54.07"
TANGENT = 791.39
LENGTH = 1,576.13
RADIUS = 7,030.00
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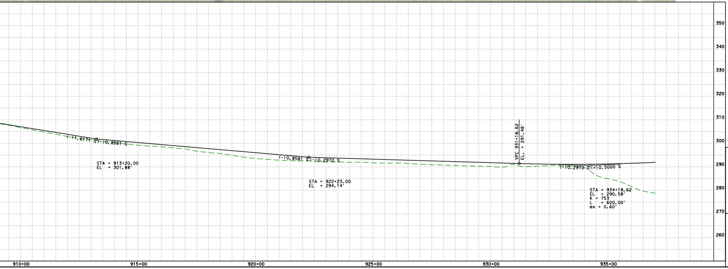

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Texas Department of Transportation

SH 72

CSJ: 0270-02-041

PRELIMINARY DESIGN SCHEMATIC
DEWITT COUNTY

LIMITS: 0.25 MILES EAST OF FM 2980
TO KARNES COUNTY LINE

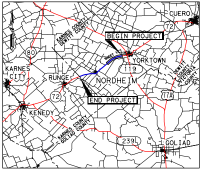
PROJECT LENGTH: 10.27 MILES

YOAKUM DISTRICT

YOAKUM DISTRICT ENGINEER

DIRECTOR OF TRANSPORTATION,
PLANNING & DEVELOPMENT

DESGIN SPEED	FUNCTIONAL CLASS	ADT SH 72
70 MPH	MINOR ARTERIAL	2021 = 11,500
50 MPH (IN NORDHEIM AT 4.6% SUPER)		2041 = 18,700


CUERO
72
BEGIN PROJECT
KARNES COUNTY
DEWITT COUNTY
YORKTOWN
80
119
KARNES CITY
RUNGE
NORDHEIM
72
END PROJECT
77A
DEWITT COUNTY
VICTORIA COUNTY
KENEDY
KARNES COUNTY
GOLIAD COUNTY
239
GOLIAD

LOCATION MAP
N.T.S.

LEGEND

PROPOSED ROW	— · · — · · —
EXISTING ROW	— · — · —
EXISTING GAS PIPELINES	— GS-1-G —
TRAFFIC FLOW DIRECTION	➡
FEMA 100-YR FLOODPLAIN BOUNDARY	——
PARCEL BOUNDARY	——
PROPOSED BRIDGE	🟪
PROPOSED ROADWAY	🟨
PAVEMENT TO BE REMOVED	▨

**PRELIMINARY
SUBJECT TO CHANGE**

PROFILE LEGEND

PROPOSED SH 72 PROFILE GRADE LINE (PGL)	——
EXISTING NATURAL GROUND AT PROPOSED SH 72 CENTERLINE	— — —
EXISTING CULVERT CROSSING	⬯ ▯
EXISTING OIL/GAS PIPELINE CROSSING	⬮

0 100 200
SCALE: 1" = 200′ H
1" = 20′ V

PGAL

TBPE REG.
NO. F-2742

3131 BRIARPARK
Suite 200
Houston, Texas 77042
Phone (713) 622-1444
Fax (713) 968-9333

SH 72

SCHEMATIC LAYOUT

SHEET 1 OF 3

JWatts
DATE: 1/7/2019

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SH 72

CSJ: 0270-02-041

PRELIMINARY DESIGN SCHEMATIC
DEWITT COUNTY

LIMITS: 0.25 MILES EAST OF FM 2980
TO KARNES COUNTY LINE

PROJECT LENGTH: 10.27 MILES

YOAKUM DISTRICT

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DIRECTOR OF TRANSPORTATION,
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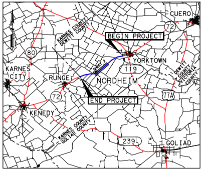
DESGIN SPEED	FUNCTIONAL CLASS	ADT SH 72
70 MPH	MINOR ARTERIAL	2021 ▪ 11,500
50 MPH (IN NORDHEIM AT 4.6% SUPER)		2041 ▪ 18,700

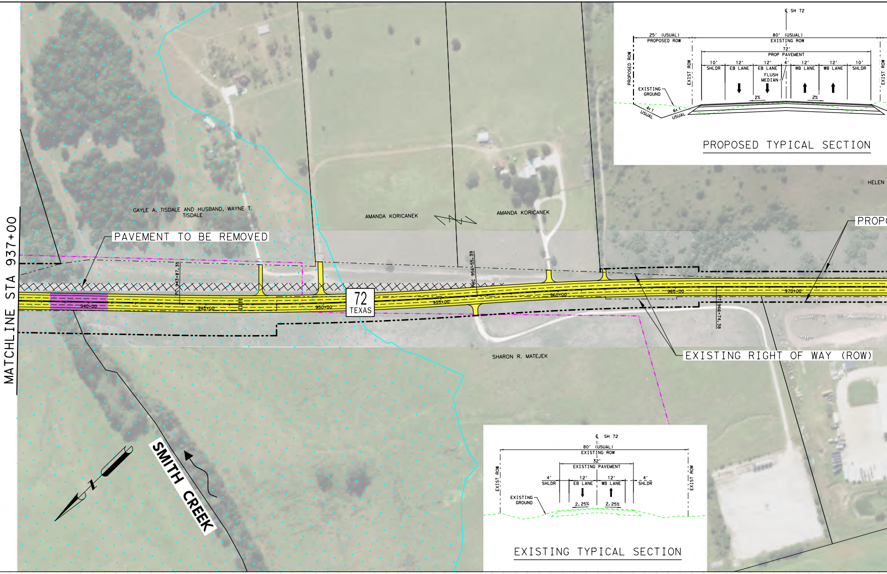

CUERO
72
BEGIN PROJECT
KARNES COUNTY
DEWITT COUNTY
80
YORKTOWN
KARNES CITY
119
RUNGE
NORDHEIM
72
77A
END PROJECT
KENEDY
KARNES COUNTY
GOLIAD COUNTY
239
GOLIAD
N

LOCATION MAP
N.T.S.

LEGEND

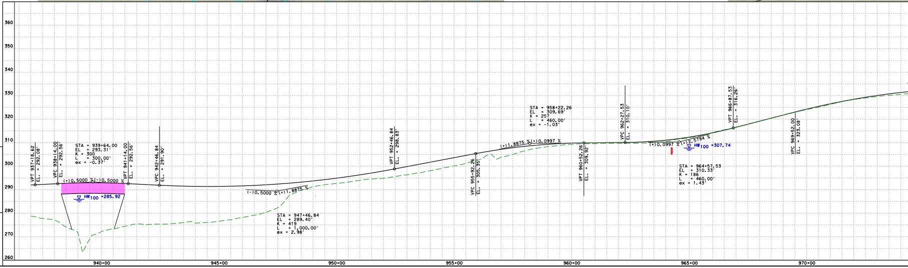
PROPOSED ROW	—·—·—·—
EXISTING ROW	—·—·—·—
EXISTING GAS PIPELINES	—·—·—·—
TRAFFIC FLOW DIRECTION	➡
FEMA 100-YR FLOODPLAIN BOUNDARY	——
PARCEL BOUNDARY	——
PROPOSED BRIDGE	🟪
PROPOSED ROADWAY	🟨
PAVEMENT TO BE REMOVED	▨

**PRELIMINARY
SUBJECT TO CHANGE**


MATCHLINE STA 937+00
GAYLE A. TISDALE AND HUSBAND, WAYNE T. TISDALE
AMANDA KORICANEK
AMANDA KORICANEK
HELEN
PAVEMENT TO BE REMOVED
PROPO
PC 943+87.35
PRC 956+55.39
PT 966+74.38
940+00
945+00
950+00
955+00
960+00
965+00
970+00
72
TEXAS
EXISTING RIGHT OF WAY (ROW)
SHARON R. MATEJEK
SMITH CREEK
N
℄ SH 72
25' (USUAL)
PROPOSED ROW
80' (USUAL)
EXISTING ROW
72'
PROP PAVEMENT
10'
SHLDR
12'
EB LANE
12'
EB LANE
4'
FLUSH MEDIAN
12'
WB LANE
12'
WB LANE
10'
SHLDR
PROPOSED ROW
EXIST ROW
EXIST ROW
EXISTING GROUND
2%
2%
4:1 USUAL
6:1 USUAL
PROPOSED TYPICAL SECTION
℄ SH 72
80' (USUAL)
EXISTING ROW
32'
EXISTING PAVEMENT
4'
SHLDR
12'
EB LANE
12'
WB LANE
4'
SHLDR
EXIST ROW
EXIST ROW
EXISTING GROUND
2.25%
2.25%
EXISTING TYPICAL SECTION

PROFILE LEGEND

PROPOSED SH 72 PROFILE GRADE LINE (PGL)	——
EXISTING NATURAL GROUND AT PROPOSED SH 72 CENTERLINE	– – – –
EXISTING CULVERT CROSSING	⬯ ▯
EXISTING OIL/GAS PIPELINE CROSSING	●


360
350
340
330
320
310
300
290
280
270
260
VPT 937+18.62
EL. = 292.08'
VPC 938+14.00
EL. = 292.56'
STA = 939+64.00
EL = 293.31'
K = 300
L = 300.00'
ex = -0.37'
(+)0.5000 %
(-)0.5000 %
VPT 941+14.00
EL. = 292.56'
VPC 942+46.84
EL. = 291.90'
HW100 =285.92
(-)0.5000 %
(+)1.8875 %
STA = 947+46.84
EL = 289.40'
K = 419
L = 1,000.00'
ex = 2.98'
VPT 952+46.84
EL. = 298.83'
VPC 955+92.26
EL. = 305.35'
STA = 958+22.26
EL. = 309.69'
K = 257
L = 460.00'
ex = -1.03'
(+)1.8875 %
(+)0.0997 %
VPT 960+52.26
EL. = 309.92
VPC 962+27.53
EL. = 310.10'
(+)0.0997 %
(+)2.5794 %
HW100 =307.74
STA = 964+57.53
EL. = 310.33'
K = 186
L = 460.00'
ex = 1.43'
VPT 966+87.53
EL. = 316.26'
VPC 969+52.00
EL. = 323.08'
940+00
945+00
950+00
955+00
960+00
965+00
970+00

0 100 200
SCALE: 1" = 200' H
1" = 20' V

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NO. F-2742

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Suite 200
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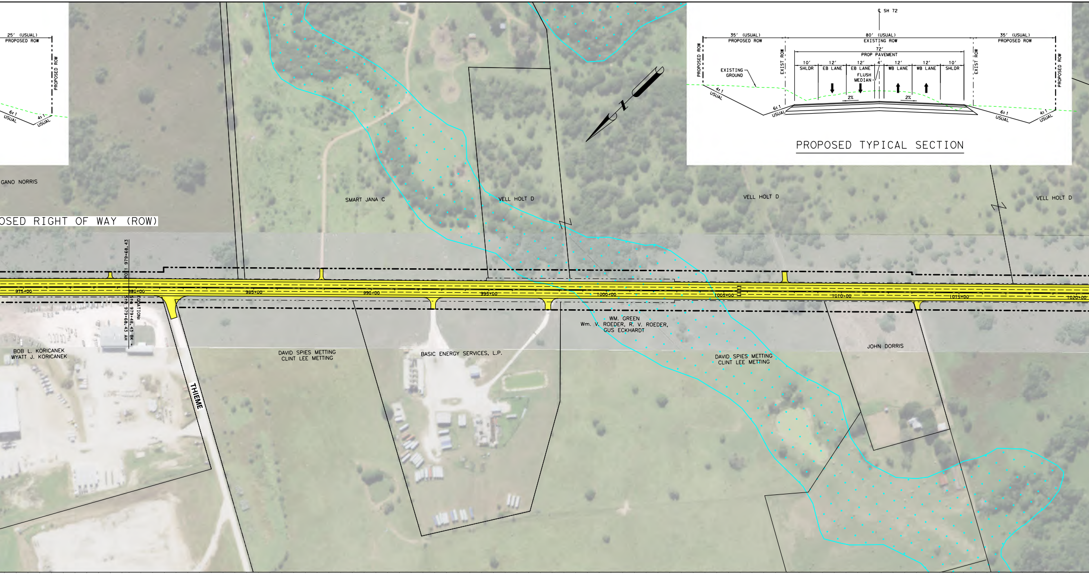
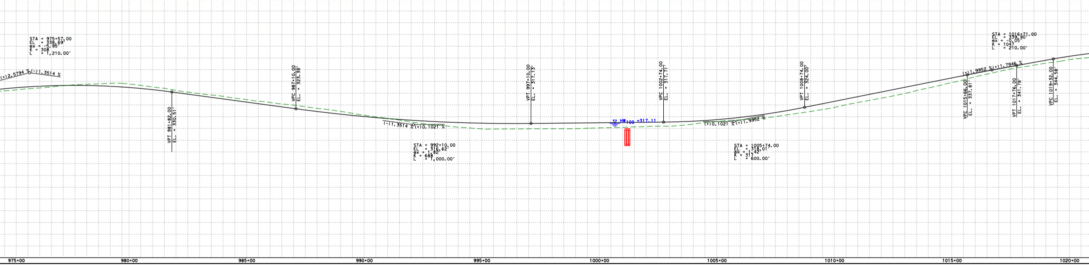
SH 72

SCHEMATIC LAYOUT

SHEET 2 OF 3

DATE: 1/7/2019


25' (USUAL)
PROPOSED ROW
PROPOSED ROW
6:1
USUAL
4:1
USUAL
GANO NORRIS
OSED RIGHT OF WAY (ROW)
SMART JANA C
VELL HOLT D
VELL HOLT D
VELL HOLT D
℄ SH 72
35' (USUAL)
PROPOSED ROW
80' (USUAL)
EXISTING ROW
35' (USUAL)
PROPOSED ROW
PROPOSED ROW
EXIST ROW
72'
PROP PAVEMENT
10'
SHLDR
12'
EB LANE
12'
EB LANE
4'
FLUSH MEDIAN
12'
WB LANE
12'
WB LANE
10'
SHLDR
EXIST ROW
PROPOSED ROW
EXISTING GROUND
2%
2%
4:1
USUAL
6:1
USUAL
6:1
USUAL
4:1
USUAL
PROPOSED TYPICAL SECTION
POT 979+68.43
STA 979+68.43 AH
STA 979+48.43 BK =
EQUATION:
975+00
980+00
985+00
990+00
995+00
1000+00
1005+00
1010+00
1015+00
1020+00
BOB L. KORICANEK
WYATT J. KORICANEK
THIEME
DAVID SPIES METTING
CLINT LEE METTING
BASIC ENERGY SERVICES, L.P.
WM. GREEN
Wm. V. ROEDER, R. V. ROEDER,
GUS ECKHARDT
DAVID SPIES METTING
CLINT LEE METTING
JOHN DORRIS



PROJECT CURVE DATA

PI STATION = 950+21.79
DELTA = 5° 09′ 09.75″ (LT)
DEGREE OF CURVE = 0° 24′ 22.87″
TANGENT = 634.45
LENGTH = 1,268.04
RADIUS = 14,100.00
PC STATION = 943+87.35
PT STATION = 956+55.39
NO SUPERELEVATION

PI STATION = 961+65.11
DELTA = 4° 08′ 26.59″ (RT)
DEGREE OF CURVE = 0° 24′ 22.87″
TANGENT = 509.72
LENGTH = 1,019.00
RADIUS = 14,100.00
PC STATION = 956+55.39
PT STATION = 966+74.38
NO SUPERELEVATION

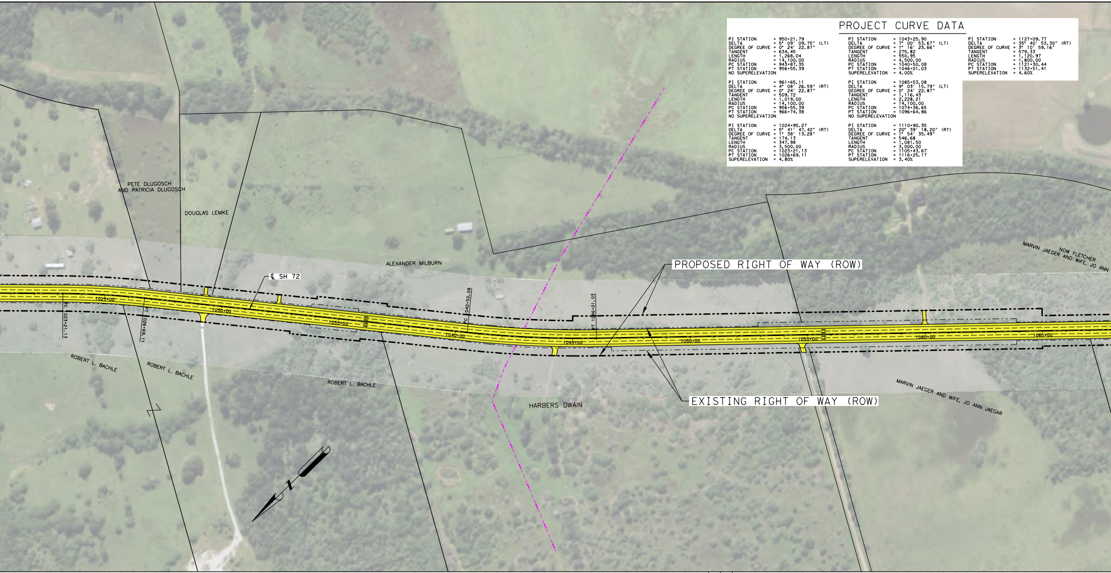
PI STATION = 1024+95.27
DELTA = 5° 41′ 47.42″ (RT)
DEGREE OF CURVE = 1° 38′ 13.28″
TANGENT = 174.13
LENGTH = 347.98
RADIUS = 3,500.00
PC STATION = 1023+21.13
PT STATION = 1026+69.11
SUPERELEVATION = 4.80%

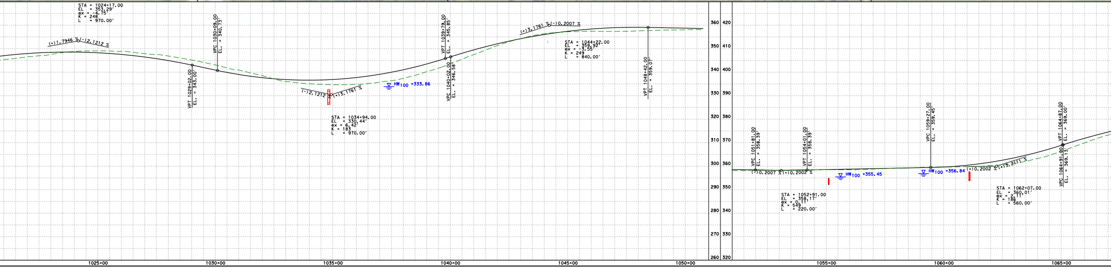
PI STATION = 1043+25.90
DELTA = 7° 00′ 53.67″ (LT)
DEGREE OF CURVE = 1° 16′ 23.66″
TANGENT = 275.82
LENGTH = 550.95
RADIUS = 4,500.00
PC STATION = 1040+50.08
PT STATION = 1046+01.03
SUPERELEVATION = 4.00%

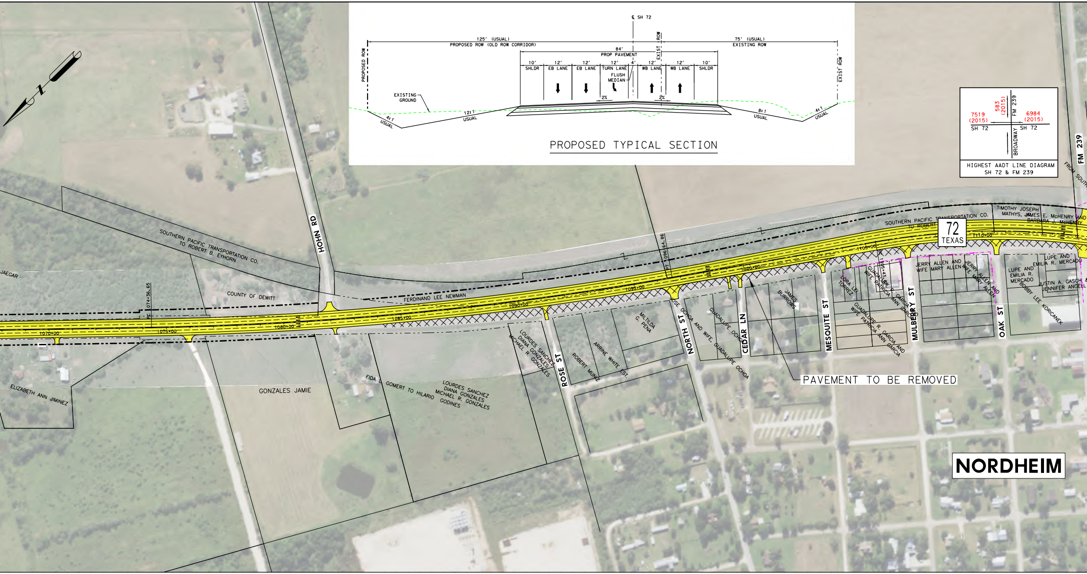
PI STATION = 1085+53.08
DELTA = 9° 03′ 15.79″ (LT)
DEGREE OF CURVE = 0° 24′ 22.87″
TANGENT = 1,116.43
LENGTH = 2,228.21
RADIUS = 14,100.00
PC STATION = 1074+36.65
PT STATION = 1096+64.86
NO SUPERELEVATION

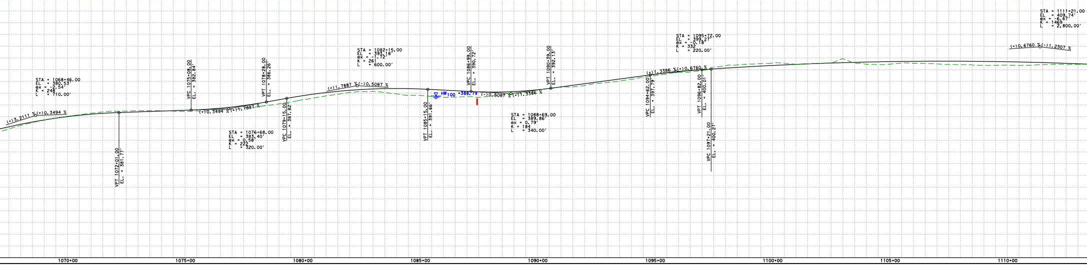
PI STATION = 1110+90.35
DELTA = 20° 39′ 18.20″ (RT)
DEGREE OF CURVE = 1° 54′ 35.49″
TANGENT = 546.68
LENGTH = 1,081.50
RADIUS = 3,000.00
PC STATION = 1105+43.67
PT STATION = 1116+25.17
SUPERELEVATION = 3.40%

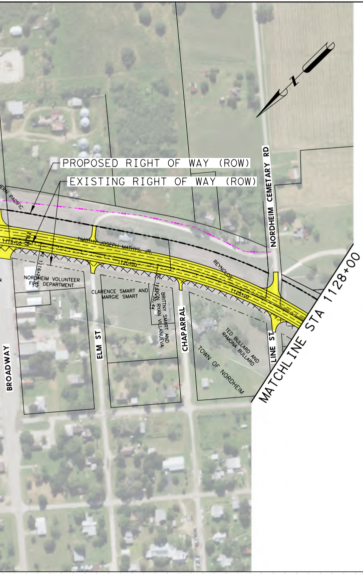
PI STATION = 1127+09.77
DELTA = 35° 40′ 53.30″ (RT)
DEGREE OF CURVE = 3° 10′ 59.16″
TANGENT = 579.33
LENGTH = 1,120.97
RADIUS = 1,800.00
PC STATION = 1121+30.44
PT STATION = 1132+51.41
SUPERELEVATION = 4.60%


PETE DLUGOSCH
AND PATRICIA DLUGOSCH
DOUGLAS LEMKE
ALEXANDER MILBURN
MARVIN JAEGER AND WIFE, JO ANN
NOW FLETCHER
℄ SH 72
PROPOSED RIGHT OF WAY (ROW)
EXISTING RIGHT OF WAY (ROW)
PC 1023+21.13
PT 1026+69.11
PC 1040+50.08
PT 1046+01.03
1025+00
1030+00
1035+00
1040+00
1045+00
1050+00
1055+00
1060+00
1065+00
ROBERT L. BACHLE
ROBERT L. BACHLE
ROBERT L. BACHLE
HARBERS DWAIN
MARVIN JAEGER AND WIFE, JO ANN JAEGAR


STA = 1024+17.00
EL = 353.29′
ex = -4.75′
K = 248
L = 970.00′
(+)1.7946 %
(-)2.1212 %
VPT 1029+02.00
EL. = 343.00′
VPC 1030+09.00
EL. = 340.73′
(-)2.1212 %
(+)3.1761 %
STA = 1034+94.00
EL = 330.44′
ex = 6.42′
K = 183
L = 970.00′
HW100 =333.86
VPT 1039+79.00
EL. = 345.85′
VPC 1040+02.00
EL. = 346.58′
(+)3.1761 %
(-)0.2007 %
STA = 1044+22.00
EL = 359.92′
ex = -3.55′
K = 249
L = 840.00′
VPT 1048+42.00
EL. = 359.07′
360 420
350 410
340 400
330 390
320 380
310 370
300 360
290 350
280 340
270 330
260 320
VPC 1051+81.00
EL. = 358.39′
(-)0.2007 %
(+)0.2002 %
VPT 1054+01.00
EL. = 358.39′
STA = 1052+91.00
EL = 358.17′
ex = 0.11′
K = 549
L = 220.00′
HW100 =355.45
VPC 1059+27.00
EL. = 359.45′
HW100 =356.84
(+)0.2002 %
(+)3.2111 %
STA = 1062+07.00
EL = 360.01′
ex = 2.11′
K = 186
L = 560.00′
VPT 1064+87.00
EL. = 369.00′
VPC 1064+91.00
EL. = 369.13′
1025+00
1030+00
1035+00
1040+00
1045+00
1050+00
1055+00
1060+00
1065+00


℄ SH 72
125' (USUAL)
PROPOSED ROW (OLD ROW CORRIDOR)
75' (USUAL)
EXISTING ROW
84'
PROP PAVEMENT
EXIST ROW
PROPOSED ROW
10'
SHLDR
12'
EB LANE
12'
EB LANE
12'
TURN LANE
4'
FLUSH MEDIAN
12'
WB LANE
12'
WB LANE
10'
SHLDR
EXIST ROW
EXISTING GROUND
2%
2%
4:1 USUAL
12:1 USUAL
8:1 USUAL
4:1 USUAL
PROPOSED TYPICAL SECTION
7519 (2015)
583 (2015)
6984 (2015)
FM 239
SH 72
SH 72
BROADWAY
HIGHEST AADT LINE DIAGRAM
SH 72 & FM 239
FM 239
FROM SOUTH
N
HOHN RD
SOUTHERN PACIFIC TRANSPORTATION CO. TO ROBERT B. EYHORN
JAEGAR
COUNTY OF DEWITT
FERDINAND LEE NEWMAN
ELIZABETH ANN JIMINEZ
GONZALES JAMIE
FIDA GOMERT TO HILARIO
LOURDES SANCHEZ DIANA GONZALES MICHAEL R. GONZALES GODINES
LOURDES SANCHEZ DIANA GONZALES MICHAEL R. GONZALES
PC 1074+36.65
PT 1096+64.86
1070+00
1075+00
1080+00
1085+00
1090+00
1095+00
1100+00
1105+00
1110+00
ROSE ST
ROBERT MUNIZ
ARRINE WHITE EST.
MILTILDA G. PENA
NORTH ST
JOSE OCHOA AND WIFE, GUADALUPE OCHOA
GUADALUPE OCHOA
CEDAR LN
JAMES BURROWS
MESQUITE ST
LORA LEI TORREZ
GUADALUPE R. GARCIA AND WIFE PATRICIA ANN GARCIA
GUADALUPE R. GARCIA AND WIFE PATRICIA ANN GARCIA
1105+43.88
MULBERRY ST
JERRY ALLEN AND WIFE MARY ALLEN
JERRY ALLEN AND WIFE MARY ALLEN
OAK ST
LUPE AND EMILIA R. MERCADO
LUPE AND EMILIA R. MERCADO
JUSTIN A. GASCH & JENNIFER ANGELL
BOBBY LEE KORICANEK
SOUTHERN PACIFIC TRANSPORTATION CO. TO ROBERT
TIMOTHY JOSEPH MATHYS, JR.
JAMES E. McHENRY AND BARBARA J. McHENRY
72 TEXAS
PAVEMENT TO BE REMOVED
NORDHEIM


STA = 1068+46.00
EL = 380.53'
ex = -2.54'
K = 248
L = 710.00'
(+)3.2111 %
(+)0.3494 %
VPT 1072+01.00 EL. = 381.77'
VPC 1075+08.00 EL. = 382.84'
(+)0.3494 %
(+)1.7887 %
STA = 1076+68.00
EL = 383.40'
ex = 0.58'
K = 222
L = 320.00'
VPT 1078+28.00 EL. = 386.26'
VPC 1079+15.00 EL. = 387.82'
STA = 1082+15.00
EL = 393.18'
ex = -1.72'
K = 261
L = 600.00'
(+)1.7887 %
(-)0.5087 %
VPT 1085+15.00 EL. = 391.66'
HW100 =388.79
VPC 1086+99.00 EL. = 390.72'
(-)0.5087 %
(+)1.3386 %
STA = 1088+69.00
EL = 389.86'
ex = 0.79'
K = 184
L = 340.00'
VPT 1090+39.00 EL. = 392.13'
VPC 1094+62.00 EL. = 397.79'
STA = 1095+72.00
EL = 399.27'
ex = -0.18'
K = 332
L = 220.00'
(+)1.3386 %
(+)0.6760 %
VPT 1096+82.00 EL. = 400.01'
VPC 1097+21.00 EL. = 400.27'
STA = 1111+21.00
EL = 409.74'
ex = -6.67'
K = 1469
L = 2,800.00'
(+)0.6760 %
(-)1.2307 %
1070+00
1075+00
1080+00
1085+00
1090+00
1095+00
1100+00
1105+00
1110+00


N
PROPOSED RIGHT OF WAY (ROW)
EXISTING RIGHT OF WAY (ROW)
ERN PACIFIC
1115+00
1116+2
TIMOTHY JOSEPH MATHYS, JR.
1120+00
REYNOLDS
1125+00
NORDHEIM CEMETARY RD
NORDHEIM VOLUNTEER FIRE DEPARTMENT
CLARENCE SMART AND MARGIE SMART
1120+30.44
BRITTNY SMART AND JON RYAN VILLANUEVA
TED BULLARD AND RAMONA BULLARD
TOWN OF NORDHEIM
BROADWAY
ELM ST
CHAPARRAL
LINE ST
MATCHLINE STA 1128+00

©2019

Texas Department of Transportation

SH 72

CSJ: 0270-02-041

PRELIMINARY DESIGN SCHEMATIC
DEWITT COUNTY

LIMITS: 0.25 MILES EAST OF FM 2980
TO KARNES COUNTY LINE

PROJECT LENGTH: 10.27 MILES

YOAKUM DISTRICT

YOAKUM DISTRICT ENGINEER

DIRECTOR OF TRANSPORTATION, PLANNING & DEVELOPMENT

DESGIN SPEED	FUNCTIONAL CLASS	ADT SH 72
70 MPH	MINOR ARTERIAL	2021 ▪ 11,500
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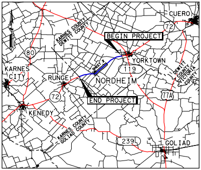
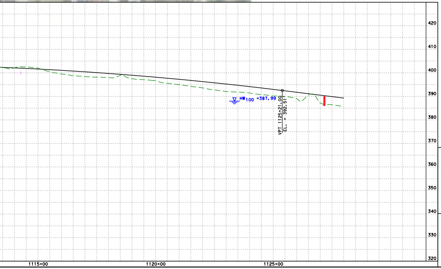

CUERO
72
BEGIN PROJECT
YORKTOWN
119
SHEET 2
NORDHEIM
END PROJECT
77A
KARNES COUNTY
DEWITT COUNTY
80
KARNES CITY
RUNGE
72
KENEDY
DEWITT COUNTY
VICTORIA COUNTY
KARNES COUNTY
GOLIAD COUNTY
239
GOLIAD

LOCATION MAP
N.T.S.

LEGEND

PROPOSED ROW	— · — · —
EXISTING ROW	- · - · -
EXISTING GAS PIPELINES	- · - GS-1-0 - · -
TRAFFIC FLOW DIRECTION	➡
FEMA 100-YR FLOODPLAIN BOUNDARY	——
PARCEL BOUNDARY	——
PROPOSED BRIDGE	🟪
PROPOSED ROADWAY	🟨
PAVEMENT TO BE REMOVED	☒

PRELIMINARY
SUBJECT TO CHANGE



PROFILE LEGEND

PROPOSED SH 72 PROFILE GRADE LINE (PGL)	——
EXISTING NATURAL GROUND AT PROPOSED SH 72 CENTERLINE	- - - -
EXISTING CULVERT CROSSING	⬯ ▯
EXISTING OIL/GAS PIPELINE CROSSING	●

0 100 200
SCALE: 1" = 200' H
1" = 20' V

PGAL

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NO. F-2742

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Suite 200
Houston, Texas 77042
Phone (713) 622-1444
Fax (713) 968-9333

SH 72

SCHEMATIC LAYOUT

SHEET 2 OF 3

FILE NAME: R:\1003700-1003099\1003178.00\WA1-SH7204_DOCUMENTS\CADD\Sheets\0415SCH_02.dgn JWatts
DATE: 1/7/2019

Texas Department of Transportation

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DEWITT COUNTY
LIMITS: 0.25 MILES EAST OF FM 2980
TO KARNES COUNTY LINE
PROJECT LENGTH: 10.27 MILES

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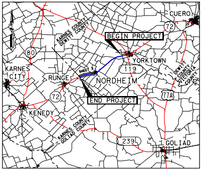
PLANNING & DEVELOPMENT

DESGIN SPEED	FUNCTIONAL CLASS	ADT SH 72
70 MPH	MINOR ARTERIAL	2021 ▪ 11,500
50 MPH (IN NORDHEIM AT 4.6% SUPER)		2041 ▪ 18,700


CUERO
72
BEGIN PROJECT
KARNES COUNTY
DEWITT COUNTY
80
YORKTOWN
119
KARNES CITY
RUNGE
NORDHEIM
DEWITT COUNTY
VICTORIA COUNTY
72
END PROJECT
77A
KENEDY
KARNES COUNTY
GOLIAD COUNTY
239
GOLIAD

LOCATION MAP
N.T.S.

LEGEND

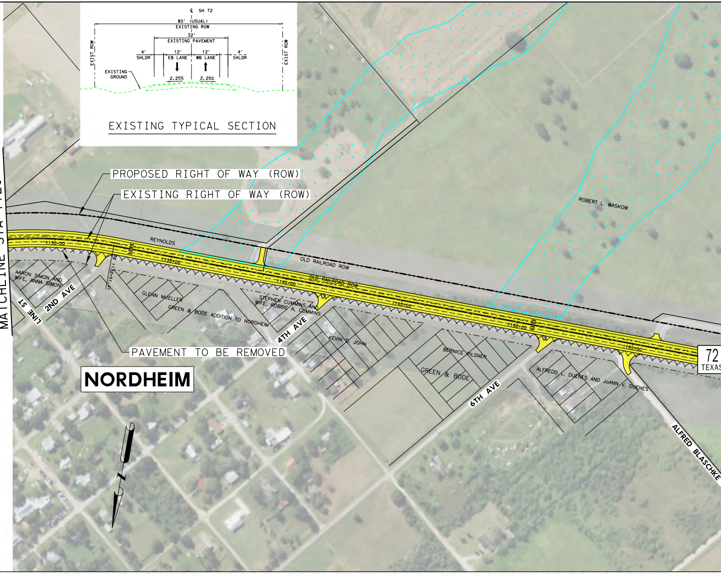
PROPOSED ROW	—·—·—·—
EXISTING ROW	—·—·—
EXISTING GAS PIPELINES	—·—·— 06-1-8
TRAFFIC FLOW DIRECTION	➡
FEMA 100-YR FLOODPLAIN BOUNDARY	——
PARCEL BOUNDARY	——
PROPOSED BRIDGE	🟪
PROPOSED ROADWAY	🟨
PAVEMENT TO BE REMOVED	▨

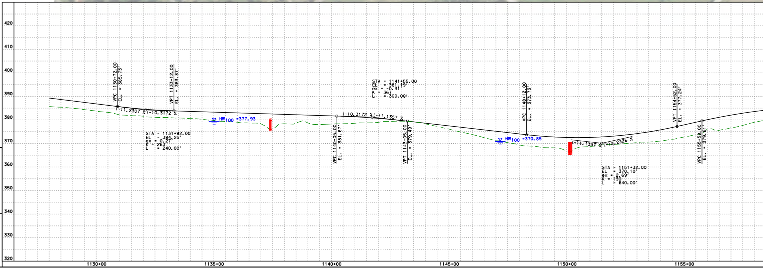
PRELIMINARY
SUBJECT TO CHANGE

PROFILE LEGEND

PROPOSED SH 72 PROFILE GRADE LINE (PGL)	——
EXISTING NATURAL GROUND AT PROPOSED SH 72 CENTERLINE	– – – –
EXISTING CULVERT CROSSING	○ ▯
EXISTING OIL/GAS PIPELINE CROSSING	●

SCALE: 1" = 200' H
1" = 20' V
0 100 200


℄ SH 72
80' (USUAL)
EXISTING ROW
32'
EXISTING PAVEMENT
4' SHLDR
12' EB LANE
12' WB LANE
4' SHLDR
EXIST ROW
EXIST ROW
EXISTING GROUND
2.25%
2.25%
EXISTING TYPICAL SECTION
PROPOSED RIGHT OF WAY (ROW)
EXISTING RIGHT OF WAY (ROW)
MATCHLINE STA 1128+00
1130+00
1135+00
1140+00
1145+00
1150+00
1155+00
1132+51.41
REYNOLDS
OLD RAILROAD ROW
OLD RAILROAD ROW
ROBERT L. WASKOW
AARON SIMON AND WIFE, ANNA SIMON
LINE ST
2ND AVE
GLENN MUELLER
GREEN & BODE ADDITION TO NORDHEIM
STEPHEN CUMMINS AND WIFE, ROBBIE A. CUMMINS
4TH AVE
KEVIN D. JOHN
BERNICE PILSNER
GREEN & BODE
6TH AVE
ALFREDO L. DUENES AND JoANN V. DUENES
ALFRED BLASCHKE
72 TEXAS
PAVEMENT TO BE REMOVED
NORDHEIM



PGAL

TBPE REG.
NO. F-2742

3131 BRIARPARK
Suite 200
Houston, Texas 77042
Phone (713) 622-1444
Fax (713) 968-9333

SH 72

SCHEMATIC LAYOUT

SHEET 3 OF 3

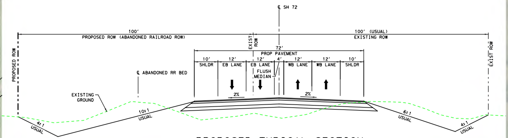
PROJECT CURVE DATA

PI STATION = 1180+73.61
DELTA = 17° 06′ 17.25″ (LT)
DEGREE OF CURVE = 1° 05′ 59.02″
TANGENT = 783.51
LENGTH = 1,555.37
RADIUS = 5,210.00
PC STATION = 1172+90.10
PT STATION = 1188+45.47
SUPERELEVATION = 3.60%

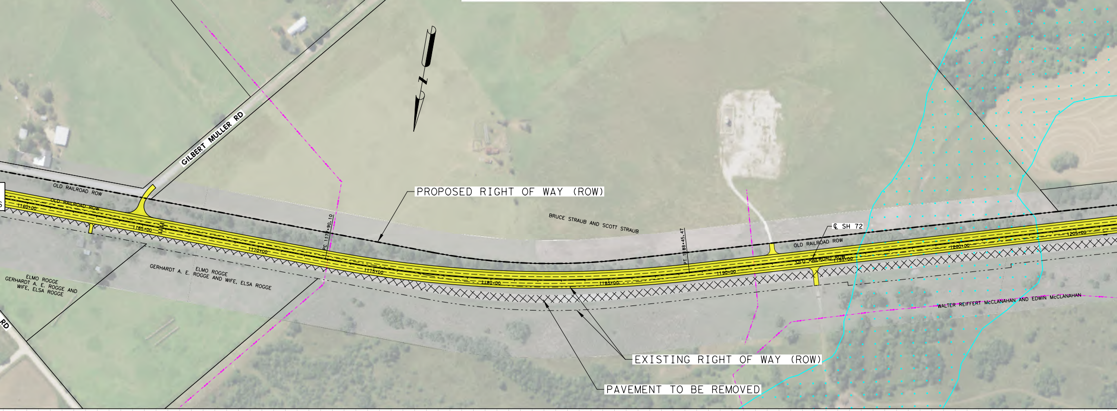
PI STATION = 1252+10.28
DELTA = 4° 47′ 48.95″ (LT)
DEGREE OF CURVE = 0° 37′ 51.64″
TANGENT = 380.32
LENGTH = 760.20
RADIUS = 9,080.00
PC STATION = 1248+29.96
PT STATION = 1255+90.16
SUPERELEVATION = 2.20%

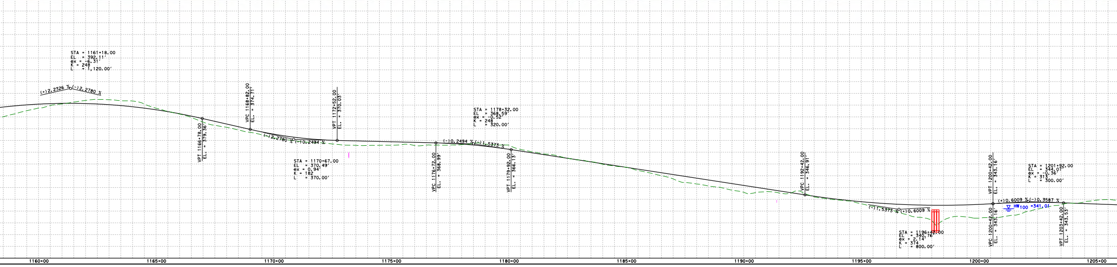
PI STATION = 1270+94.10
DELTA = 6° 56′ 48.43″ (RT)
DEGREE OF CURVE = 0° 41′ 01.39″
TANGENT = 508.64
LENGTH = 1,016.03
RADIUS = 8,380.00
PC STATION = 1265+85.47
PT STATION = 1276+01.49
SUPERELEVATION = 2.40%

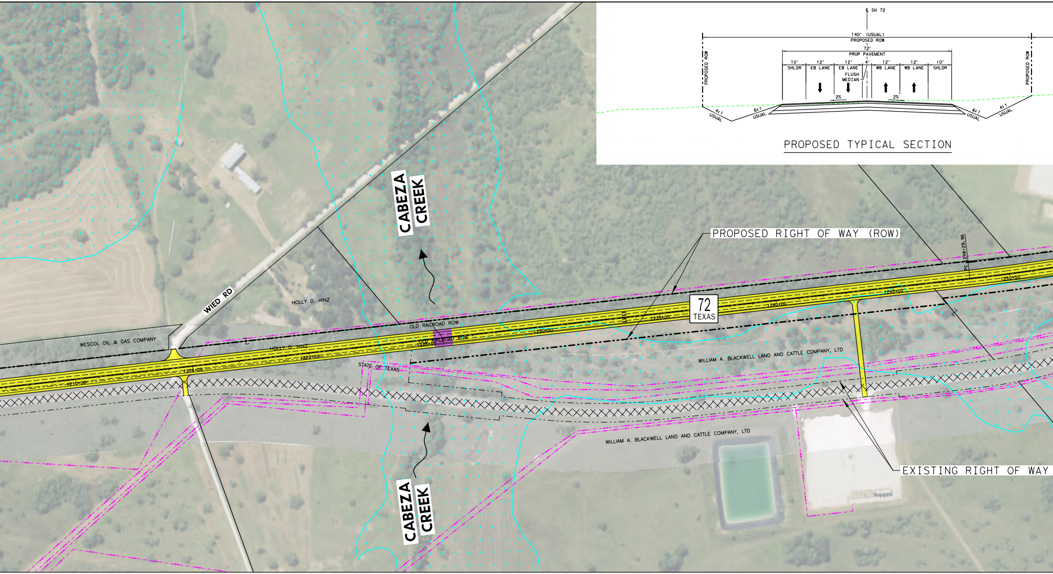
PI STATION = 1286+16.81
DELTA = 10° 07′ 27.56″ (LT)
DEGREE OF CURVE = 0° 41′ 01.39″
TANGENT = 742.32
LENGTH = 1,480.77
RADIUS = 8,380.00
PC STATION = 1278+74.49
PT STATION = 1293+55.26
SUPERELEVATION = 2.40%


℄ SH 72
100′
PROPOSED ROW (ABANDONED RAILROAD ROW)
100′ (USUAL)
EXISTING ROW
EXIST ROW
72′
PROP PAVEMENT
10′
12′
12′
4′
12′
12′
10′
SHLDR
EB LANE
EB LANE
FLUSH MEDIAN
WB LANE
WB LANE
SHLDR
PROPOSED ROW
EXIST ROW
℄ ABANDONED RR BED
EXISTING GROUND
2%
2%
4:1 USUAL
10:1 USUAL
6:1 USUAL
4:1 USUAL

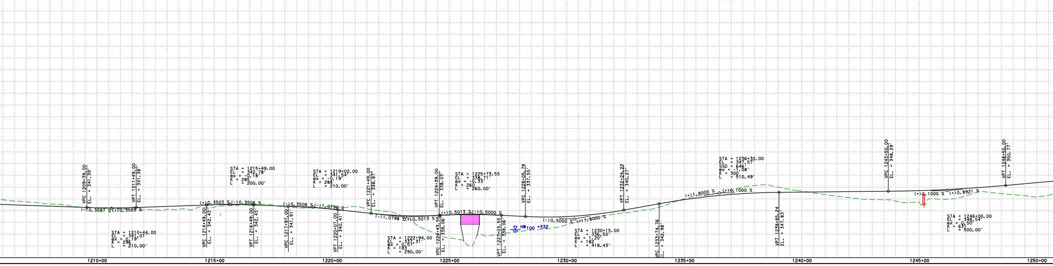
PROPOSED TYPICAL SECTION

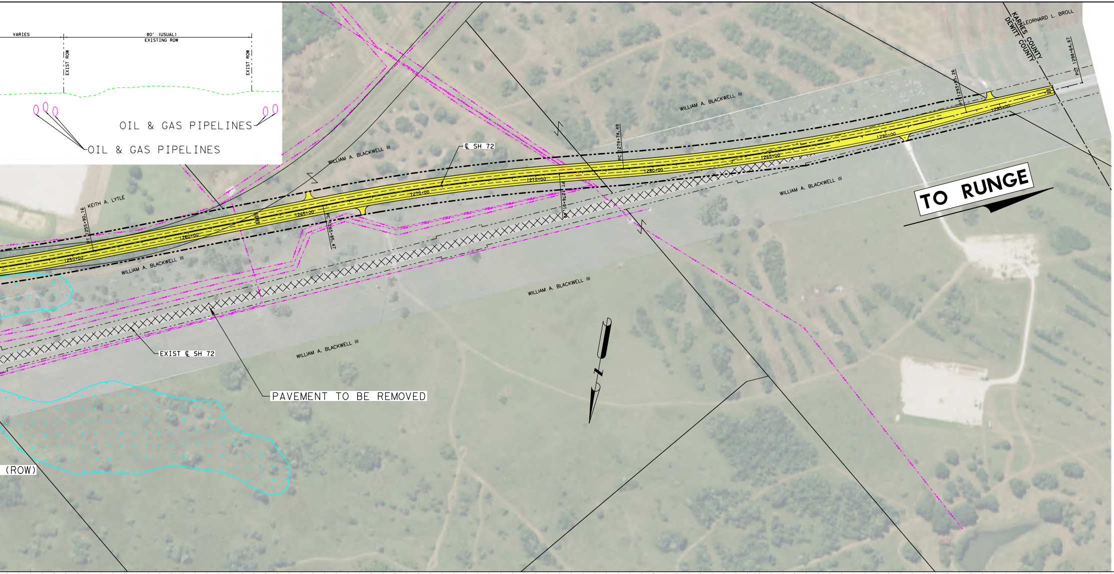

GILBERT MULLER RD
OLD RAILROAD ROW
OLD RAILROAD ROW
1160+00
1165+00
1170+00
1175+00
1180+00
1185+00
1190+00
1195+00
1200+00
1205+00
PC 1172+90.10
PT 1188+45.47
PROPOSED RIGHT OF WAY (ROW)
BRUCE STRAUB AND SCOTT STRAUB
℄ SH 72
OLD RAILROAD ROW
ELMO ROGGE
GERHARDT A. E. ROGGE AND WIFE, ELSA ROGGE
GERHARDT A. E. ROGGE AND WIFE, ELSA ROGGE
ELMO ROGGE
WALTER REIFFERT McCLANAHAN AND EDWIN McCLANAHAN
RD
EXISTING RIGHT OF WAY (ROW)
PAVEMENT TO BE REMOVED

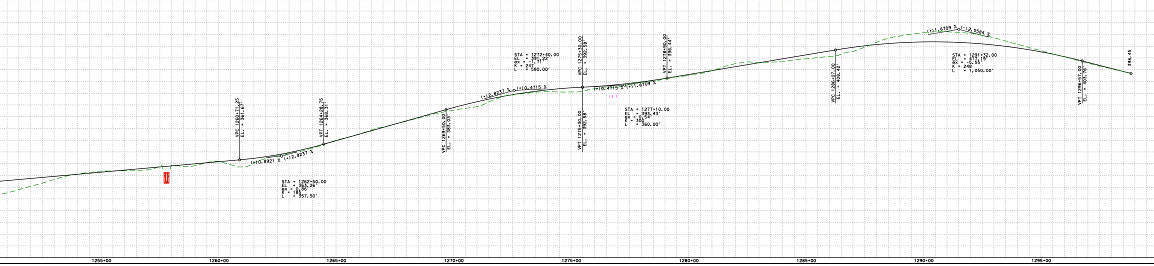

STA = 1161+18.00
EL = 392.11′
ex = -6.31′
K = 248
L = 1,120.00′
(+)2.2326 %
(-)2.2780 %
VPT 1166+78.00
EL. = 379.36′
VPC 1168+82.00
EL. = 374.71′
(-)2.2780 %
(-)0.2494 %
VPT 1172+52.00
EL. = 370.03′
STA = 1170+67.00
EL = 370.49′
ex = 0.94′
K = 182
L = 370.00′
STA = 1178+32.00
EL = 368.59′
ex = -0.52′
K = 248
L = 320.00′
(-)0.2494 %
(-)1.5373 %
VPC 1176+72.00
EL. = 368.99′
VPT 1179+92.00
EL. = 366.13′
VPC 1192+42.00
EL. = 346.91′
(-)1.5373 %
(+)0.6009 %
STA = 1196+42.00
EL = 340.76′
ex = 2.14′
K = 374
L = 800.00′
VPT 1200+42.00
EL. = 343.16′
VPC 1200+42.00
EL. = 343.16′
(+)0.6009 %
(-)0.3587 %
HW100 =341.01
STA = 1201+92.00
EL = 344.07′
ex = -0.36′
K = 313
L = 300.00′
VPT 1203+42.00
EL. = 343.53′
1160+00
1165+00
1170+00
1175+00
1180+00
1185+00
1190+00
1195+00
1200+00
1205+00


℄ SH 72
140' (USUAL)
PROPOSED ROW
72'
PROP PAVEMENT
10'
SHLDR
12'
EB LANE
12'
EB LANE
4'
FLUSH MEDIAN
12'
WB LANE
12'
WB LANE
10'
SHLDR
PROPOSED ROW
PROPOSED ROW
2%
2%
4:1 USUAL
6:1 USUAL
6:1 USUAL
4:1 USUAL
CABEZA CREEK
CABEZA CREEK
WIED RD
HOLLY D. HINZ
HOLLY D. HINZ
WESCOL OIL & GAS COMPANY
OLD RAILROAD ROW
OLD RAILROAD ROW
STATE OF TEXAS
WILLIAM A. BLACKWELL LAND AND CATTLE COMPANY, LTD
WILLIAM A. BLACKWELL LAND AND CATTLE COMPANY, LTD
PROPOSED RIGHT OF WAY (ROW)
EXISTING RIGHT OF WAY
72
TEXAS
PC 248+29.96
1210+00
1215+00
1220+00
1225+00
1230+00
1235+00
1240+00
1245+00
1250+00

PROPOSED TYPICAL SECTION


VPC 1209+39.00 EL. = 341.39'
VPT 1211+49.00 EL. = 341.38'
(-)0.3587 % (+)0.3503 %
STA = 1210+44.00
EL = 341.01'
ex = 0.19'
K = 296
L = 210.00'
STA = 1215+49.00
EL = 342.78'
ex = -0.18'
K = 285
L = 200.00'
(+)0.3503 % (-)0.3506 %
VPC 1214+49.00 EL. = 342.43'
VPT 1216+49.00 EL. = 342.43'
(-)0.3506 % (-)1.0798 %
VPC 1217+97.00 EL. = 341.91'
VPT 1220+07.00 EL. = 340.41'
STA = 1219+02.00
EL = 341.54'
ex = -0.19'
K = 288
L = 210.00'
VPC 1221+49.00 EL. = 338.87'
(-)1.0798 % (+)0.5013 %
STA = 1222+94.00
EL = 337.31'
ex = 0.57'
K = 183
L = 290.00'
VPT 1224+39.00 EL. = 338.03'
VPC 1224+43.55 EL. = 338.06'
(+)0.5013 % (-)0.5000 %
STA = 1225+73.55
EL = 338.71'
ex = -0.33'
K = 260
L = 260.00'
VPT 1227+03.55 EL. = 338.06'
HW100 =332
VPC 1228+05.78 EL. = 337.55'
(-)0.5000 % (+)1.8000 %
STA = 1230+15.00
EL = 336.50'
ex = 1.20'
K = 182
L = 418.43'
VPT 1232+24.22 EL. = 340.27'
VPC 1233+74.76 EL. = 342.98'
(+)1.8000 % (+)0.1000 %
STA = 1236+30.00
EL = 347.57'
SSD = 646'
ex = -1.08'
K = 300
L = 510.49'
VPT 1238+85.24 EL. = 347.83'
VPC 1243+50.00 EL. = 348.29'
(+)0.1000 % (+)0.8921 %
STA = 1246+00.00
EL = 348.54'
ex = 0.50'
K = 631
L = 500.00'
VPT 1248+50.00 EL. = 350.77'
1210+00
1215+00
1220+00
1225+00
1230+00
1235+00
1240+00
1245+00
1250+00


VARIES
80' (USUAL)
EXISTING ROW
EXIST ROW
EXIST ROW
OIL & GAS PIPELINES
OIL & GAS PIPELINES
LEORNARD L. BROLL
KARNES COUNTY
DEWITT COUNTY
POT 1298+64.67
PT 1293+85.26
1295+00
1290+00
WILLIAM A. BLACKWELL III
1285+00
PC 1278+74.49
1280+00
PT 1276+01.49
1275+00
℄ SH 72
1270+00
WILLIAM A. BLACKWELL III
1265+00
PC 1265+85.47
KEITH A. LYTLE
PT 1255+90.16
1260+00
1255+00
WILLIAM A. BLACKWELL III
WILLIAM A. BLACKWELL III
WILLIAM A. BLACKWELL III
WILLIAM A. BLACKWELL III
TO RUNGE
EXIST ℄ SH 72
PAVEMENT TO BE REMOVED
(ROW)


VPC 1260+71.25
EL. = 361.67'
(+)0.8921 %
(+)2.8237 %
STA = 1262+50.00
EL = 363.26'
ex = 0.86'
K = 185
L = 357.50'
VPT 1264+28.75
EL. = 368.31'
VPC 1269+50.00
EL. = 383.03'
(+)2.8237 %
(+)0.4715 %
STA = 1272+40.00
EL = 391.22'
ex = -1.71'
K = 247
L = 580.00'
VPC 1275+30.00
EL. = 392.58'
VPT 1275+30.00
EL. = 392.58'
(+)0.4715 %
(+)1.6709 %
STA = 1277+10.00
EL = 393.43'
ex = 0.54'
K = 300
L = 360.00'
VPT 1278+90.00
EL. = 396.44'
VPC 1286+07.00
EL. = 408.42'
(+)1.6709 %
(-)2.5584 %
STA = 1291+32.00
EL = 417.19'
ex = -5.55'
K = 248
L = 1,050.00'
VPT 1296+57.00
EL. = 403.76'
398.45
1255+00
1260+00
1265+00
1270+00
1275+00
1280+00
1285+00
1290+00
1295+00

©2019

Texas Department of Transportation

SH 72

CSJ: 0270-02-041

PRELIMINARY DESIGN SCHEMATIC
DEWITT COUNTY

LIMITS: 0.25 MILES EAST OF FM 2980
TO KARNES COUNTY LINE

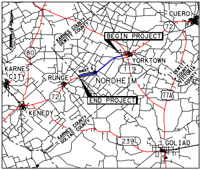
PROJECT LENGTH: 10.27 MILES

YOAKUM DISTRICT

YOAKUM DISTRICT ENGINEER

DIRECTOR OF TRANSPORTATION, PLANNING & DEVELOPMENT

DESGIN SPEED	FUNCTIONAL CLASS	ADT SH 72
70 MPH	MINOR ARTERIAL	2021 ▪ 11,500
50 MPH (IN NORDHEIM AT 4.6% SUPER)		2041 ▪ 18,700

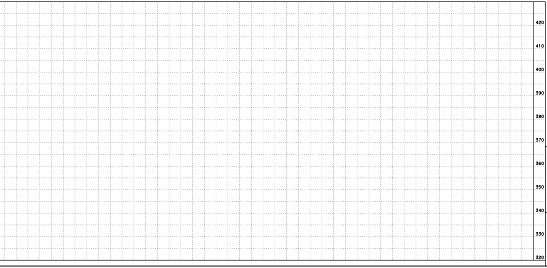

CUERO
72
BEGIN PROJECT
KARNES COUNTY
DEWITT COUNTY
80
YORKTOWN
119
KARNES CITY
RUNGE
NORDHEIM
SHEET
DEWITT COUNTY
VICTORIA COUNTY
END PROJECT
72
77A
KENEDY
KARNES COUNTY
GOLIAD COUNTY
239
GOLIAD

LOCATION MAP
N.T.S.

LEGEND

PROPOSED ROW	— - — - —
EXISTING ROW	- - - - -
EXISTING GAS PIPELINES	- · - · - GS-1-B
TRAFFIC FLOW DIRECTION	➡
FEMA 100-YR FLOODPLAIN BOUNDARY	—
PARCEL BOUNDARY	—
PROPOSED BRIDGE	🟪
PROPOSED ROADWAY	🟨
PAVEMENT TO BE REMOVED	▨

PRELIMINARY
SUBJECT TO CHANGE



PROFILE LEGEND

PROPOSED SH 72 PROFILE GRADE LINE (PGL)	—
EXISTING NATURAL GROUND AT PROPOSED SH 72 CENTERLINE	- - - - - -
EXISTING CULVERT CROSSING	⬯ ▯
EXISTING OIL/GAS PIPELINE CROSSING	●

0 100 200
SCALE: 1" = 200' H
1" = 20' V

PGAL

TBPE REG.
NO. F-2742

3131 BRIARPARK
Suite 200
Houston, Texas 77042
Phone (713) 622-1444
Fax (713) 968-9333

SH 72

SCHEMATIC LAYOUT

SHEET 3 OF 3

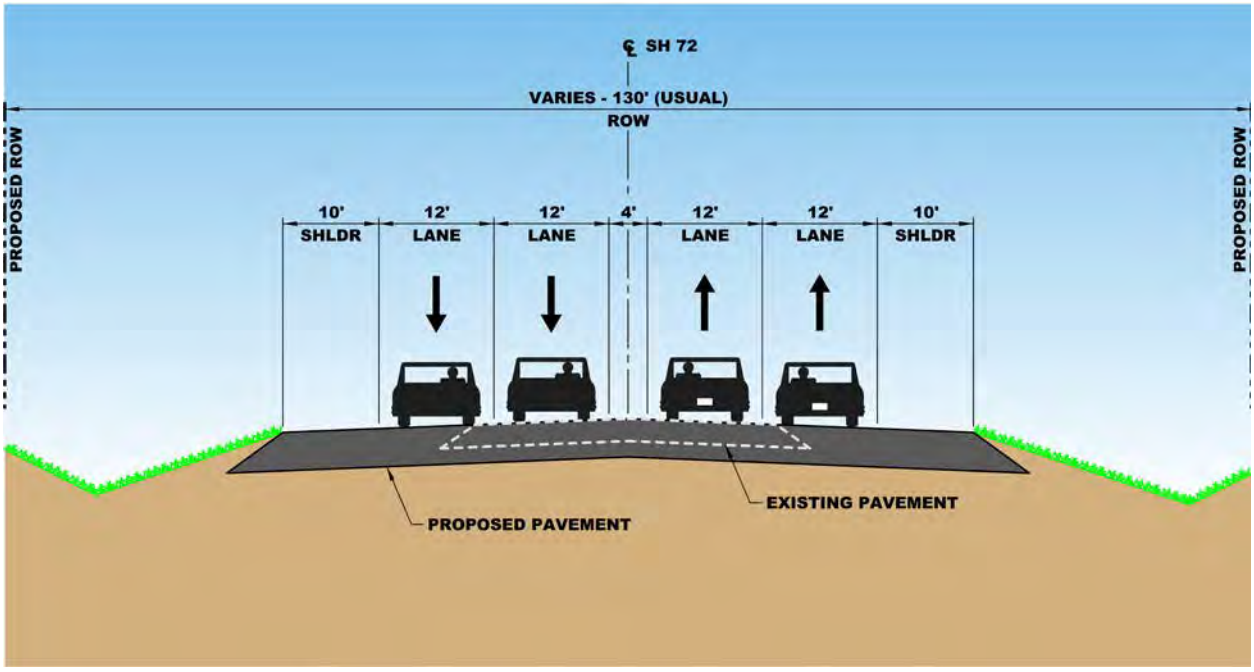
DATE: 1/7/2019

Appendix D

Typical Section

SH 72: Karnes County Line to 0.25 Miles East of Farm-Market Road 2980
Dewitt County, Texas
CSJ: 0270-02-041

Typical Section



Appendix E

Plan and Program Excerpts

2019-2022 STIP — **11/2018 (Current) Revision: Pending Review**

DISTRICT	MPO	COUNTY	CSJ	TIP FY	HWY	PHASE	CITY	YOE COST
YOAKUM		DE WITT	0270-02-041	2021	SH 72	C	OTHER	$ 30,700,000

LIMITS FROM: KARNES C/L

LIMITS TO: 0.25 MILES EAST OF FM 2980

PROJECT SPONSOR:

REVISION DATE: 11/2018

PROJECT DESCR: ADD 2 LANES FOR 4-LANE UNDIVIDED

MPO PROJ NUM:

FUNDING CAT(S): 11

REMARKS P7: CONSULTANT TO PREPARE PS and E-PGAL

PROJECT HISTORY:

TOTAL PROJECT COST INFORMATION

PRELIM ENG:	$ 1,632,164
ROW PURCH:	$ 5,857,080
CONST COST:	$ 30,700,000
CONST ENG:	$ 1,652,149
CONTING:	$ 662,858
INDIRECT:	$ 0
BOND FIN:	$ 0
POT CHG ORD:	$ 0
TOTAL COST:	$ 40,504,251

COST OF APPROVED PHASES
$ 30,700,000

AUTHORIZED FUNDING BY CATEGORY/SHARE

CATEGORY	FEDERAL	STATE	REGIONAL	LOCAL	LC	TOTAL
11	$ 24,560,000	$ 6,140,000	$ 0	$ 0	$ 0	$ 30,700,000
TOTAL	$ 24,560,000	$ 6,140,000	$ 0	$ 0	$ 0	$ 30,700,000

Appendix F

Resource-Specific Maps

Figure 2 – Land Use and Potential Displacements

Figure 3 – Recommended Locations for Future Archeological Investigations

Figure 4 – Historic Resources Study Area

Figure 5 – Potential Waters of the U.S.

Figure 6 – Water Resources

Figure 7 – Observed Vegetation Types

Figure 8 – Hazardous Materials Sites of Concern

Figure 9 – Location of Noise Receivers

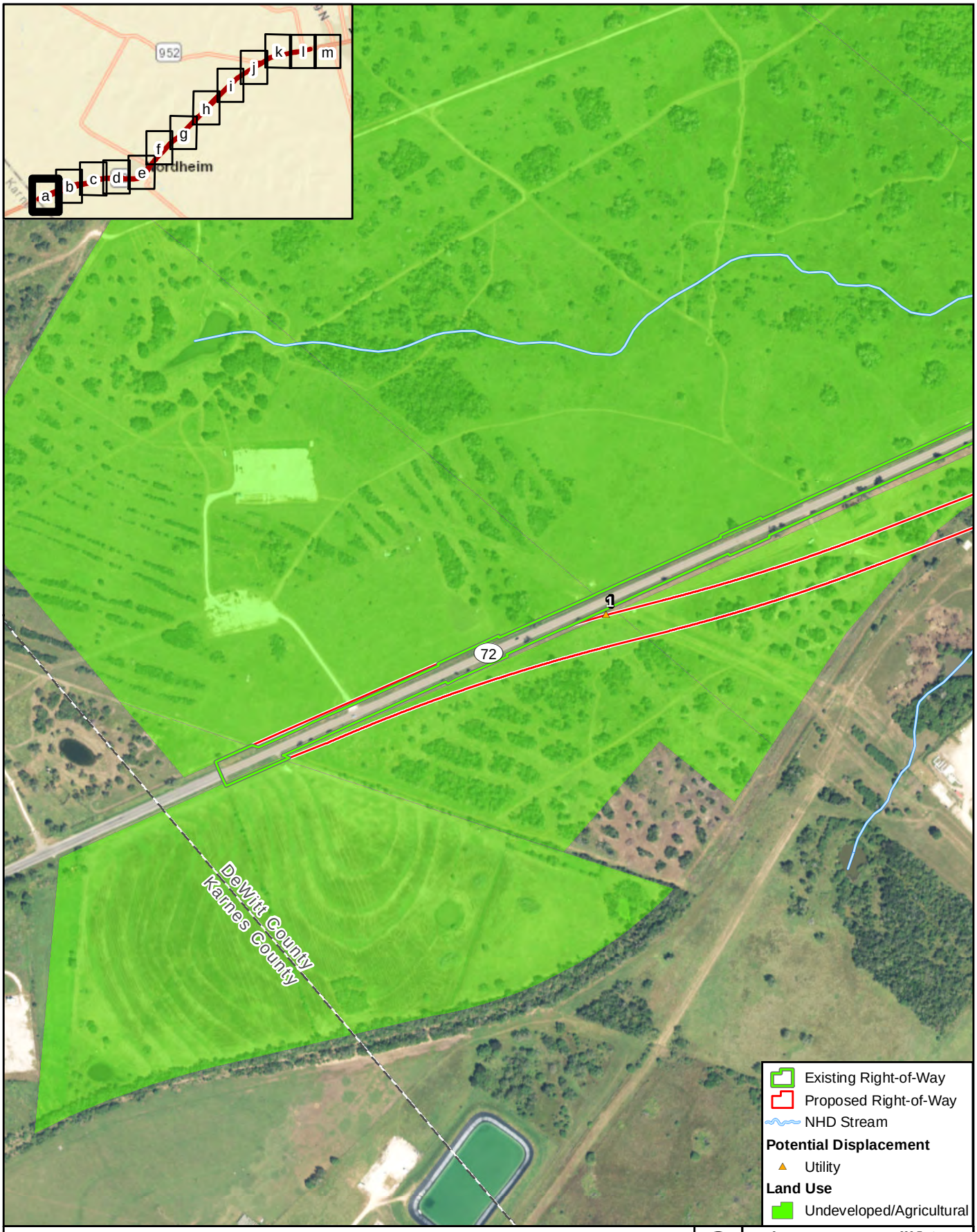


Figure **2**a

Land Use and Potential Displacements

SH 72 from Karnes County Line to 0.25 Miles East of FM 2980

Data Source: CMEC (2018)
Aerial Source: NAIP (2016)

0 600 Feet
0 160 Meters

Prepared for: TxDOT	1 in = 600 feet
	Scale: 1:7,200
CSJ: 0270-02-041	Date: 7/2/2018

G:\Projects\TXDOT\SH72\CIA_Figure 2_Landuse_20180125.mxd

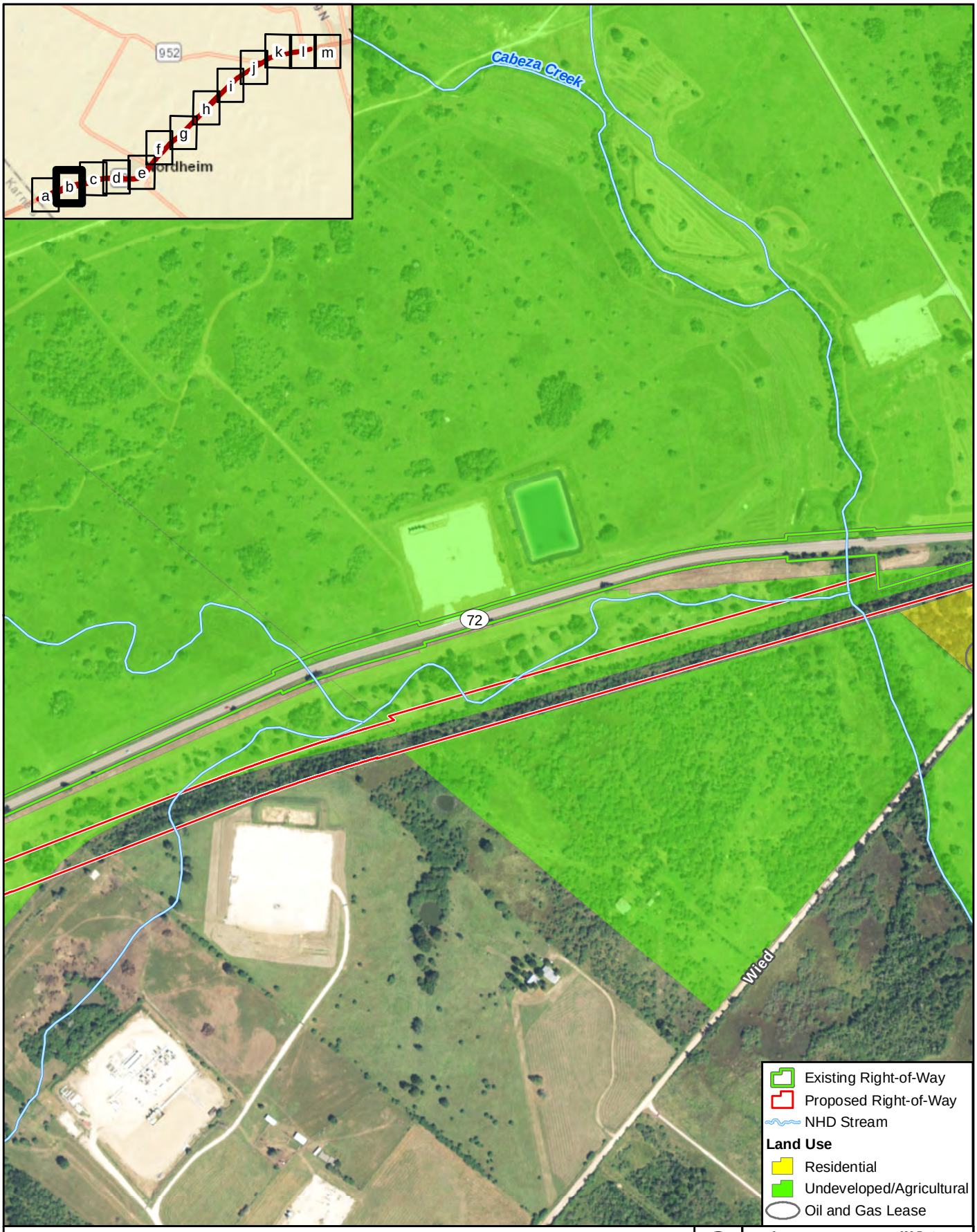


Figure **2**b

Land Use and Potential Displacements

SH 72 from Karnes County Line to 0.25 Miles East of FM 2980

Data Source: CMEC (2018)
Aerial Source: NAIP (2016)

0 600 Feet
0 160 Meters

Prepared for: TxDOT	1 in = 600 feet
	Scale: 1:7,200
CSJ: 0270-02-041	Date: 7/2/2018

G:\Projects\TXDOT\SH72\CIA_Figure 2_Landuse_20180125.mxd

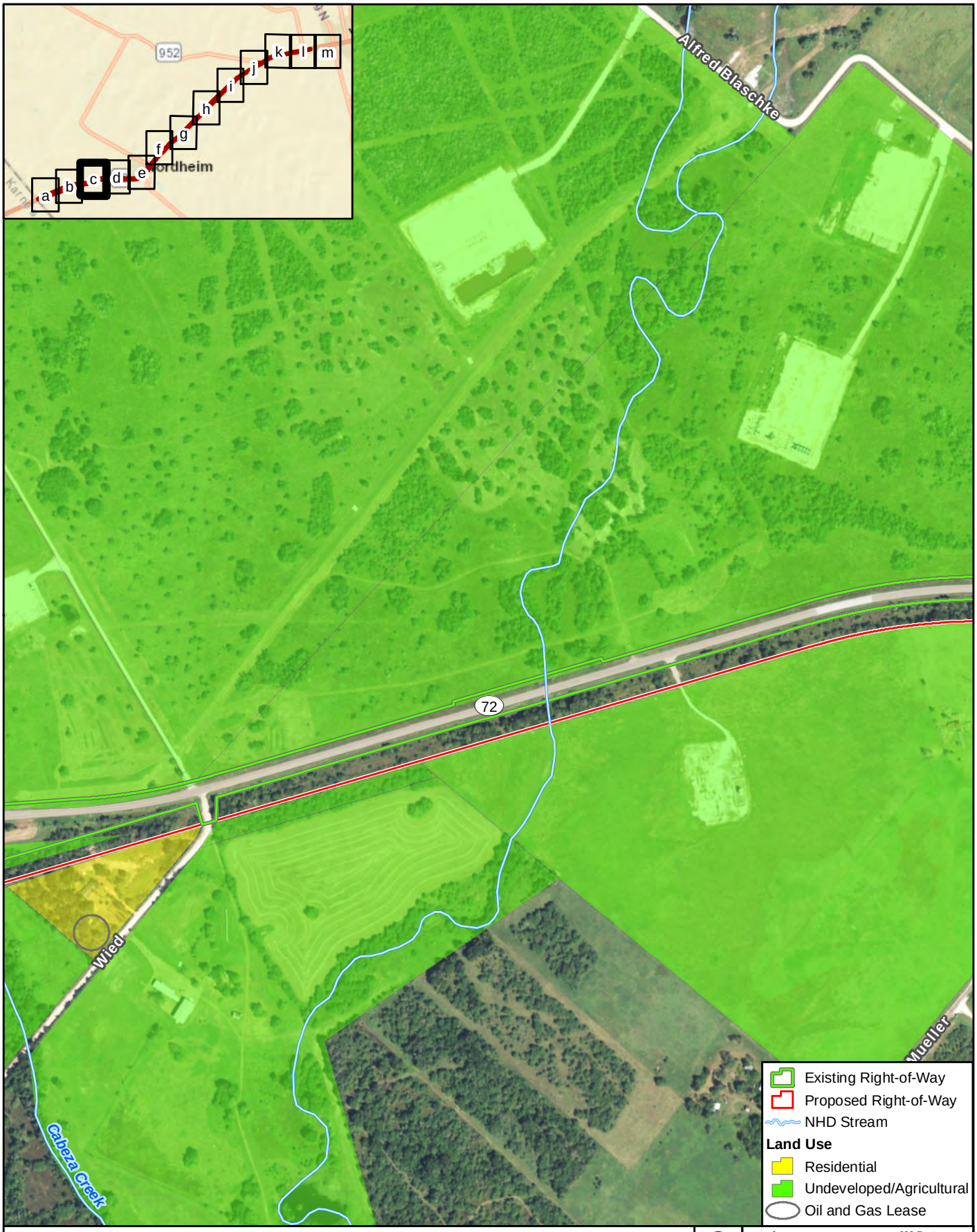


Figure **2**c

Land Use and Potential Displacements

SH 72 from Karnes County Line to 0.25 Miles East of FM 2980

Data Source: CMEC (2018)
Aerial Source: NAIP (2016)

0 600 Feet
0 160 Meters

Prepared for: TxDOT	1 in = 600 feet
	Scale: 1:7,200
CSJ: 0270-02-041	Date: 7/2/2018

G:\Projects\TXDOT\SH72\CIA_Figure 2_Landuse_20180125.mxd

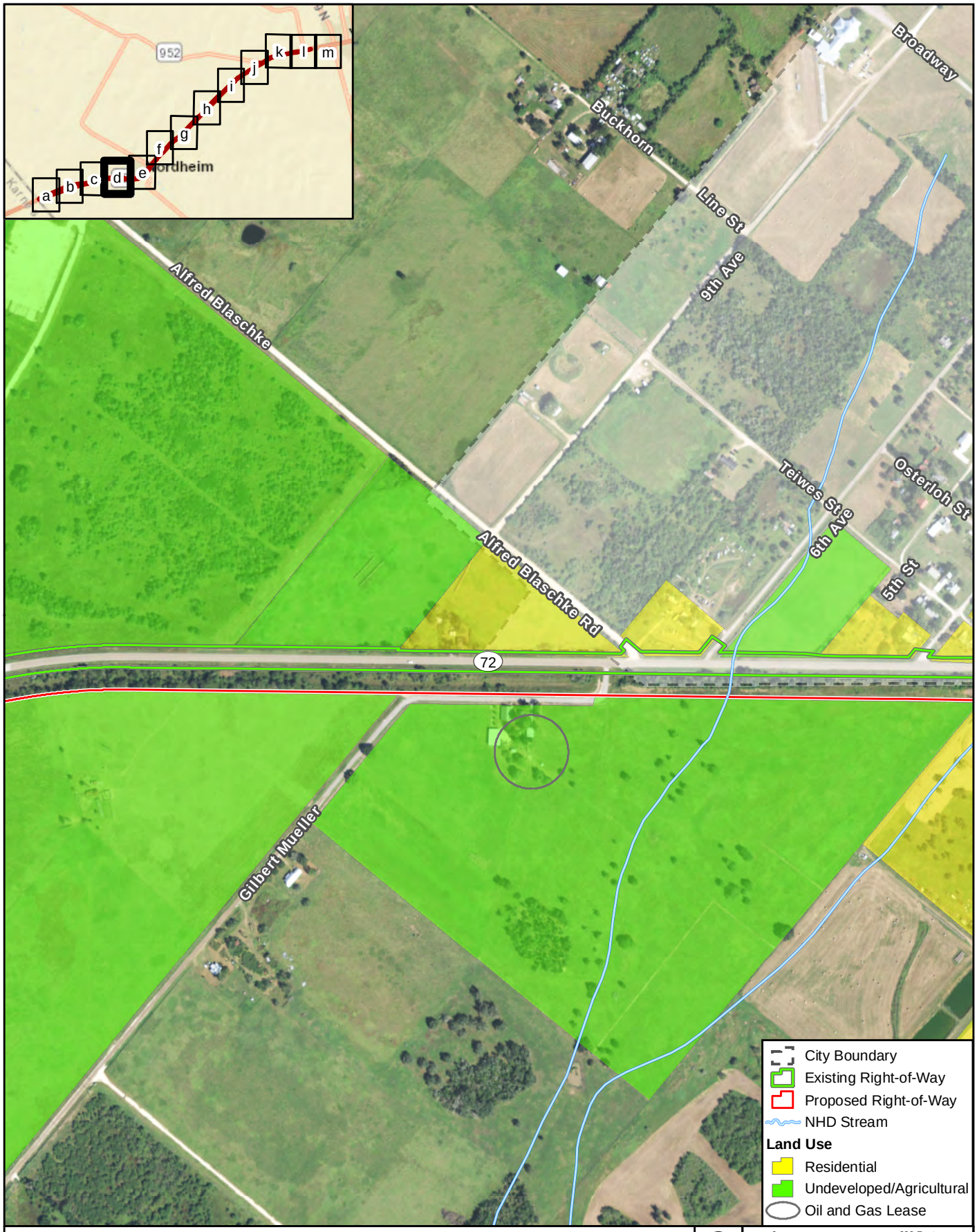


Figure **2**d

Land Use and Potential Displacements

SH 72 from Karnes County Line to 0.25 Miles East of FM 2980

Data Source: CMEC (2018)
Aerial Source: NAIP (2016)

Prepared for: TxDOT	1 in = 600 feet
	Scale: 1:7,200
CSJ: 0270-02-041	Date: 7/2/2018

G:\Projects\TXDOT\SH72\CIA_Figure 2_Landuse_20180125.mxd

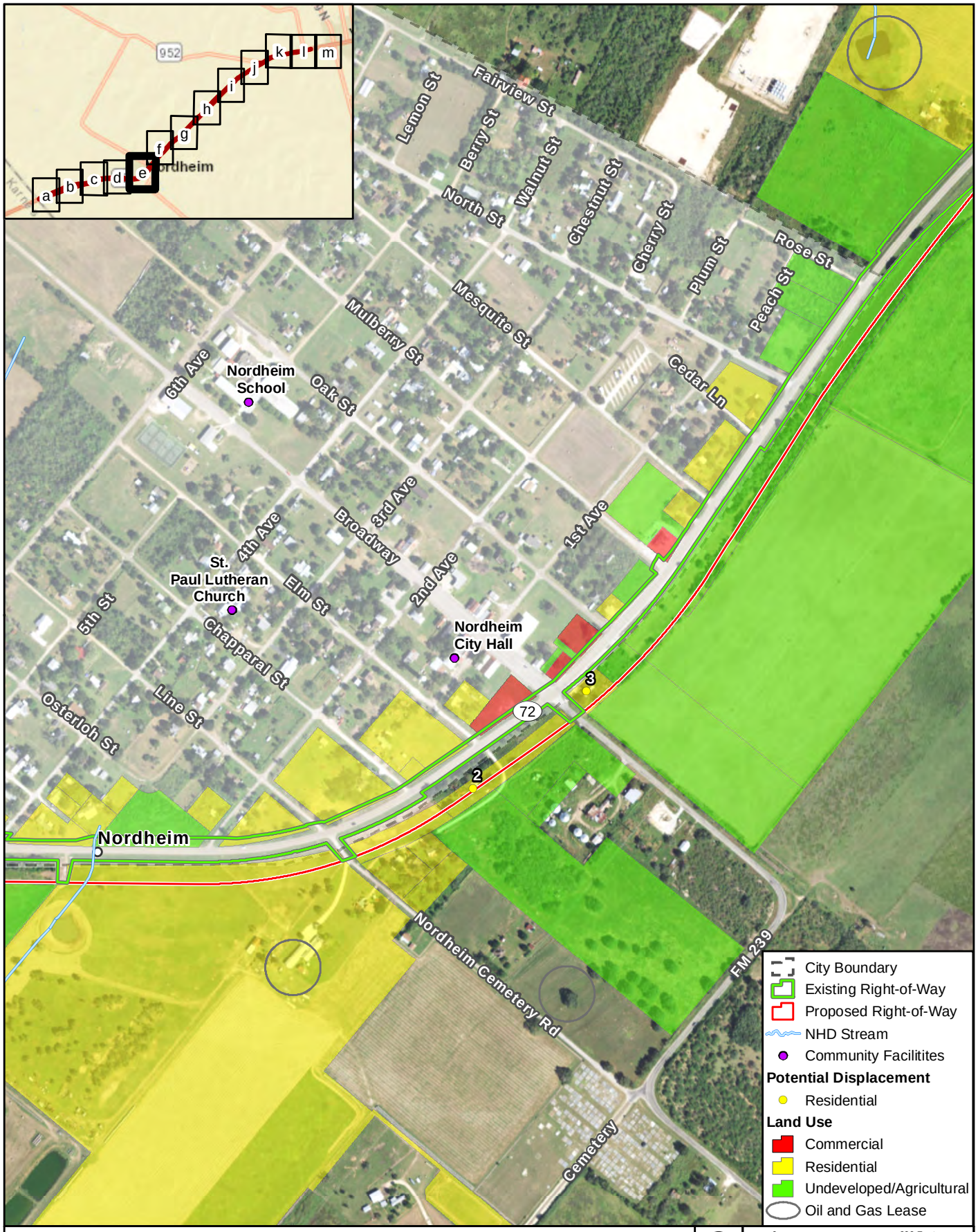


Figure **2**e

Land Use and Potential Displacements

SH 72 from Karnes County Line to 0.25 Miles East of FM 2980

Data Source: CMEC (2018)
Aerial Source: NAIP (2016)

Prepared for: TxDOT	1 in = 600 feet
	Scale: 1:7,200
CSJ: 0270-02-041	Date: 7/2/2018

G:\Projects\TXDOT\SH72\CIA_Figure 2_Landuse_20180125.mxd

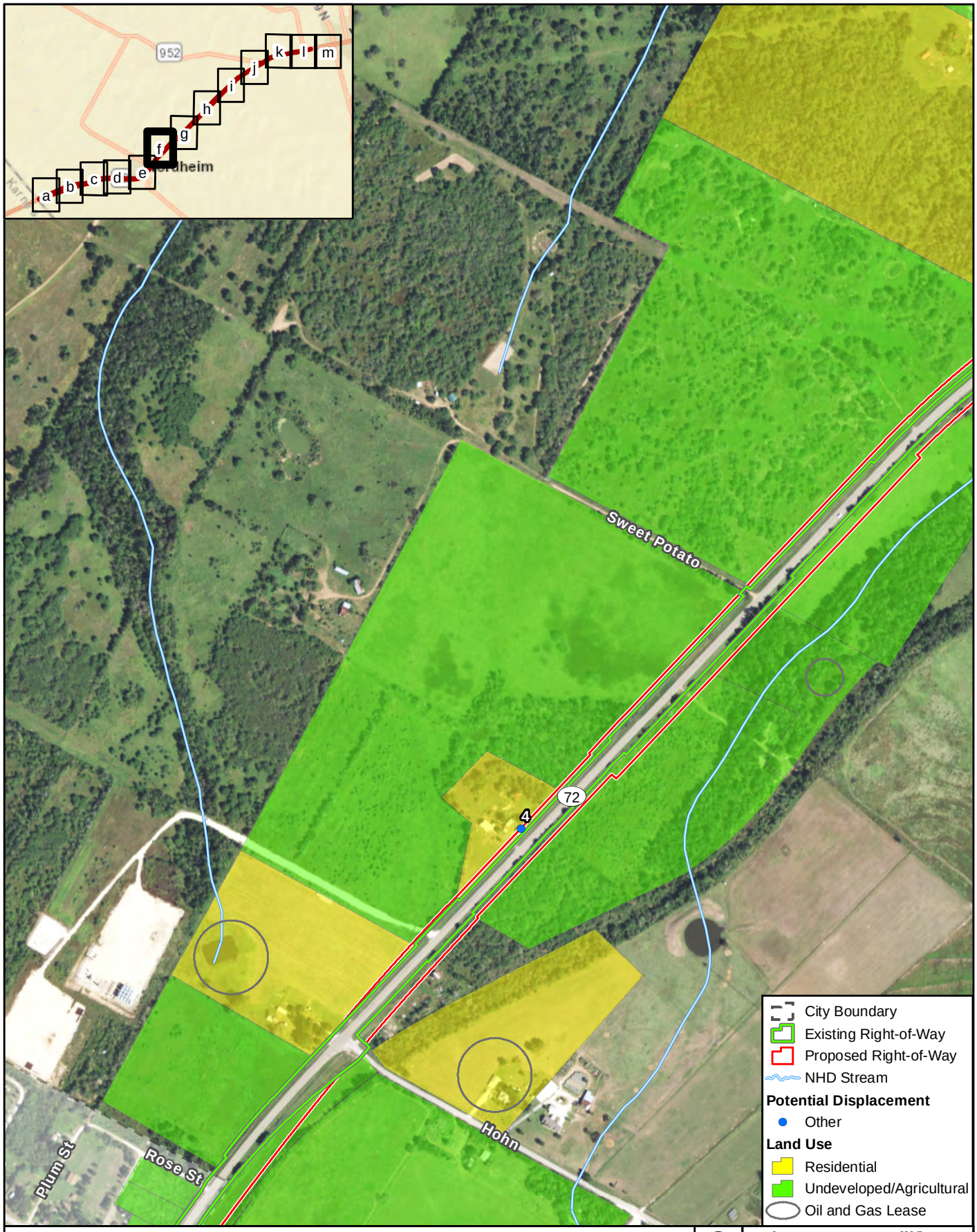


Figure **2**f

Land Use and Potential Displacements

SH 72 from Karnes County Line to 0.25 Miles East of FM 2980

Data Source: CMEC (2018)
Aerial Source: NAIP (2016)

0 600 Feet
0 160 Meters

Prepared for: TxDOT	1 in = 600 feet
	Scale: 1:7,200
CSJ: 0270-02-041	Date: 7/2/2018

G:\Projects\TXDOT\SH72\CIA_Figure 2_Landuse_20180125.mxd

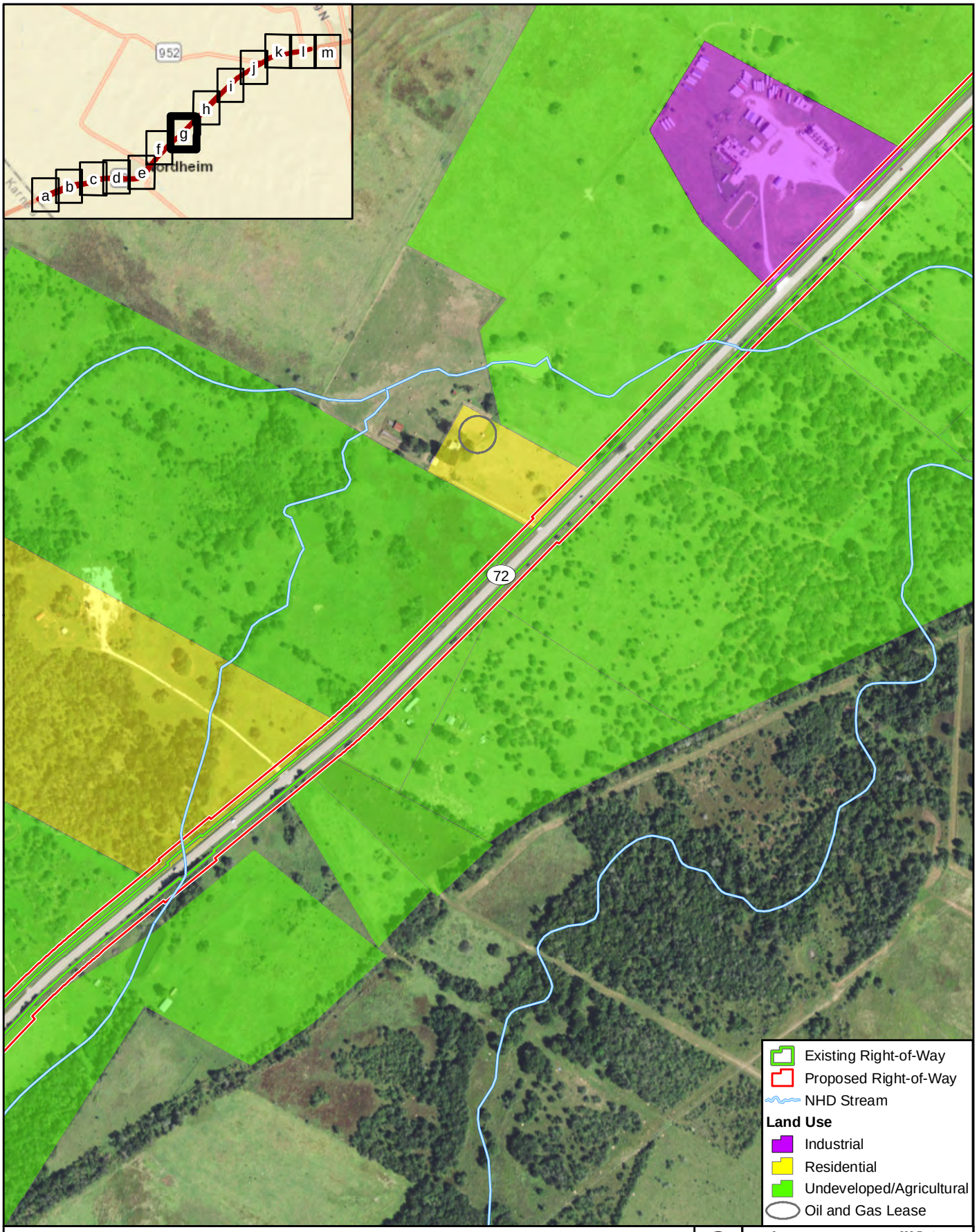


Figure **2**g

Land Use and Potential Displacements

SH 72 from Karnes County Line to 0.25 Miles East of FM 2980

Data Source: CMEC (2018)
Aerial Source: NAIP (2016)

0 600 Feet
0 160 Meters

Prepared for: TxDOT	1 in = 600 feet
	Scale: 1:7,200
CSJ: 0270-02-041	Date: 7/2/2018

G:\Projects\TXDOT\SH72\CIA_Figure 2_Landuse_20180125.mxd

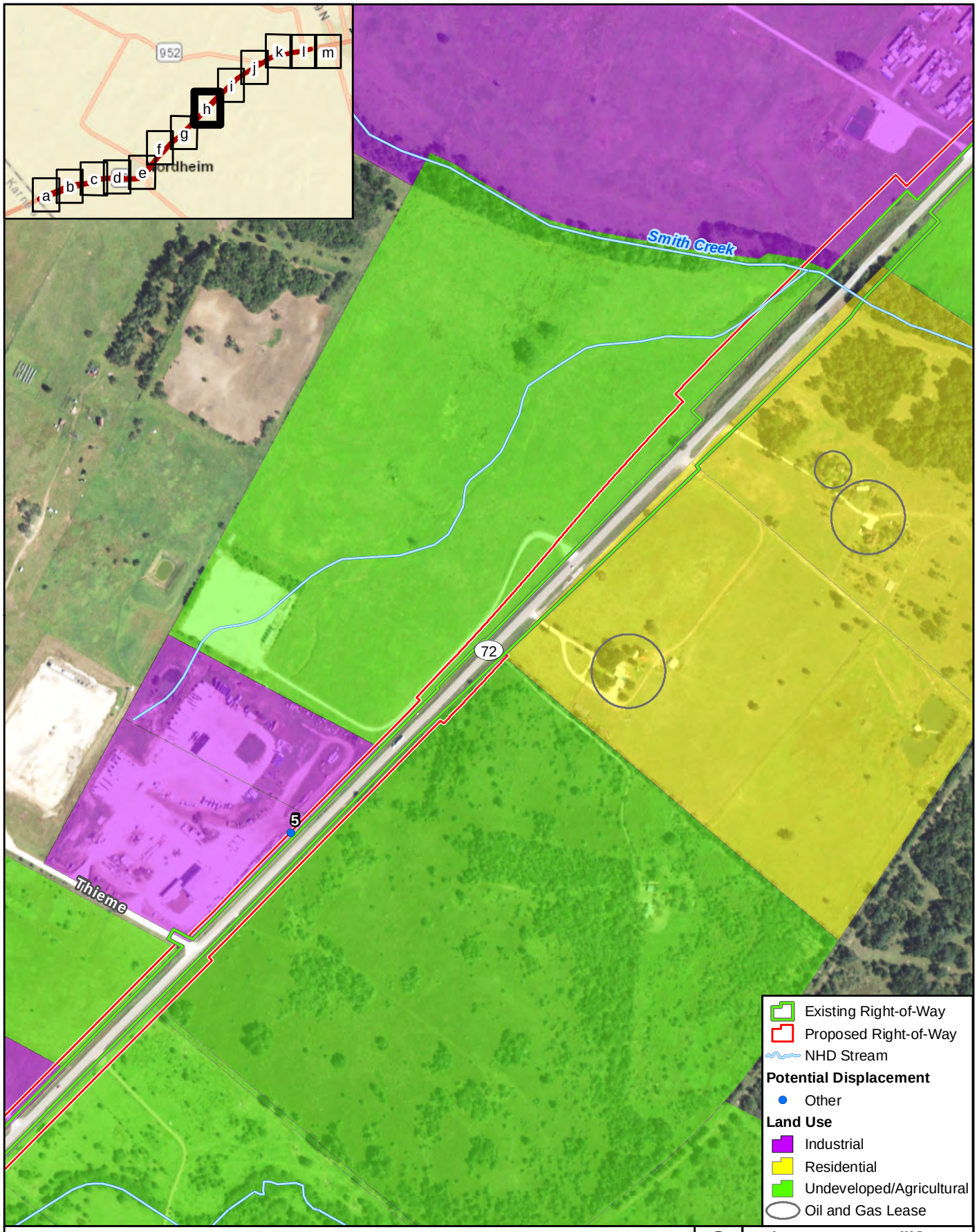


Figure **2**h

Land Use and Potential Displacements

SH 72 from Karnes County Line to 0.25 Miles East of FM 2980

Data Source: CMEC (2018)
Aerial Source: NAIP (2016)

0 600 Feet
0 160 Meters

Prepared for: TxDOT	1 in = 600 feet
	Scale: 1:7,200
CSJ: 0270-02-041	Date: 7/2/2018

G:\Projects\TXDOT\SH72\CIA_Figure 2_Landuse_20180125.mxd

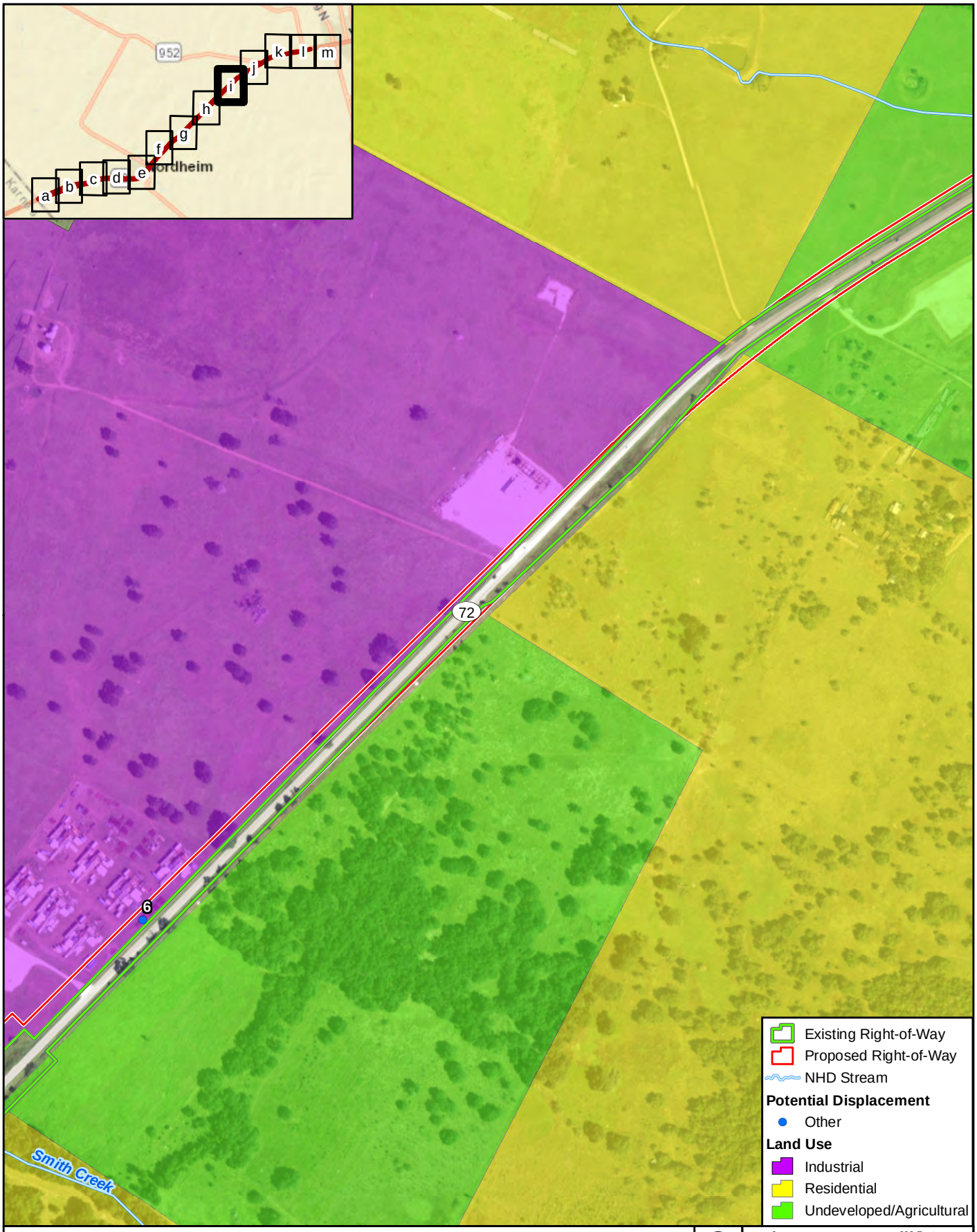


Figure **2**i

Land Use and Potential Displacements

SH 72 from Karnes County Line to 0.25 Miles East of FM 2980

Data Source: CMEC (2018)
Aerial Source: NAIP (2016)

0 600 Feet
0 160 Meters

Prepared for: TxDOT	1 in = 600 feet
	Scale: 1:7,200
CSJ: 0270-02-041	Date: 7/2/2018

G:\Projects\TXDOT\SH72\CIA_Figure 2_Landuse_20180125.mxd

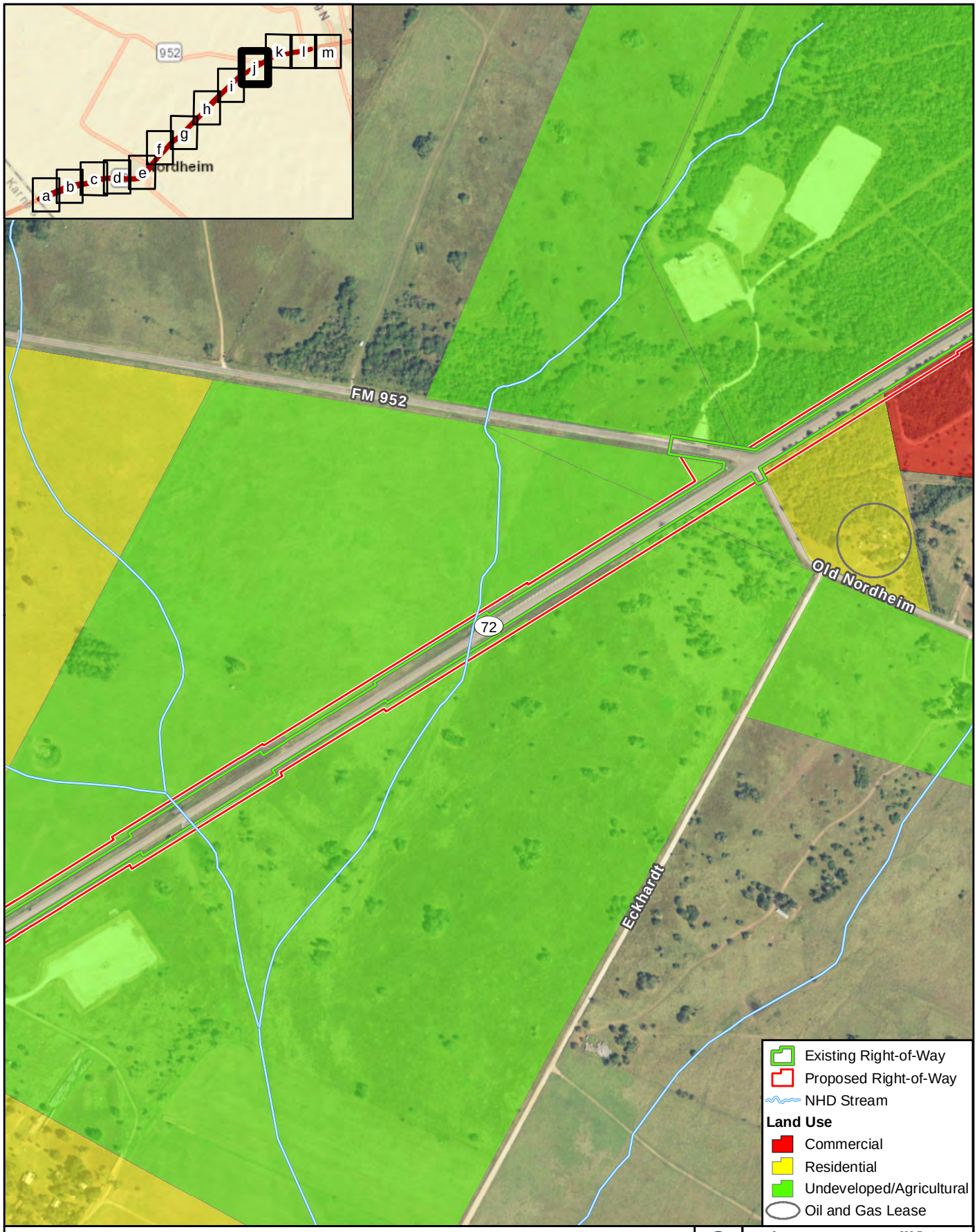


Figure **2**j

Land Use and Potential Displacements

SH 72 from Karnes County Line to 0.25 Miles East of FM 2980

Data Source: CMEC (2018)
Aerial Source: NAIP (2016)

0 600 Feet
0 160 Meters

Prepared for: TxDOT	1 in = 600 feet
	Scale: 1:7,200
CSJ: 0270-02-041	Date: 7/2/2018

G:\Projects\TXDOT\SH72\CIA_Figure 2_Landuse_20180125.mxd

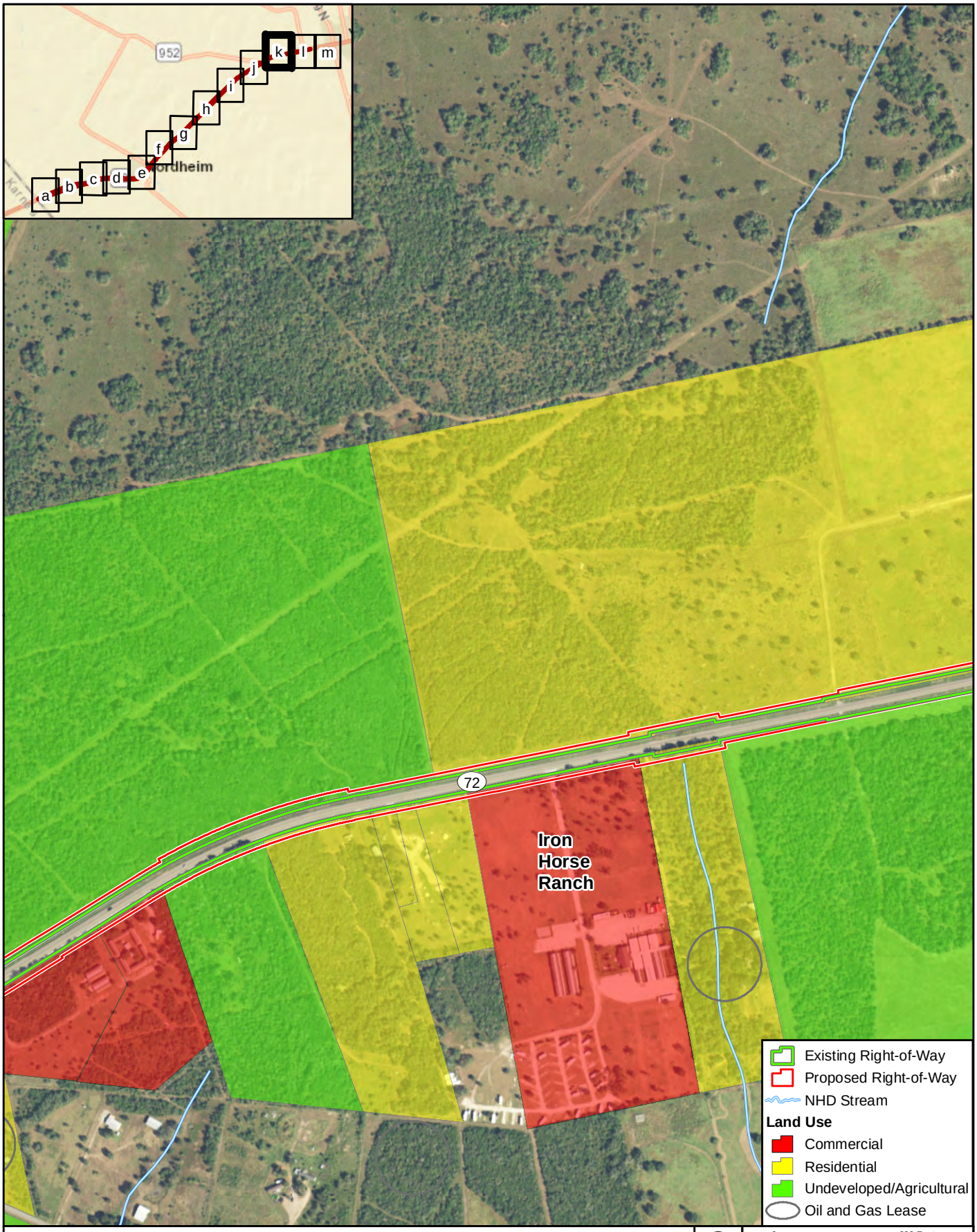


Figure **2**k

Land Use and Potential Displacements

SH 72 from Karnes County Line to 0.25 Miles East of FM 2980

Data Source: CMEC (2018)
Aerial Source: NAIP (2016)

0 600 Feet
0 160 Meters

Prepared for: TxDOT	1 in = 600 feet
	Scale: 1:7,200
CSJ: 0270-02-041	Date: 7/2/2018

G:\Projects\TXDOT\SH72\CIA_Figure 2_Landuse_20180125.mxd

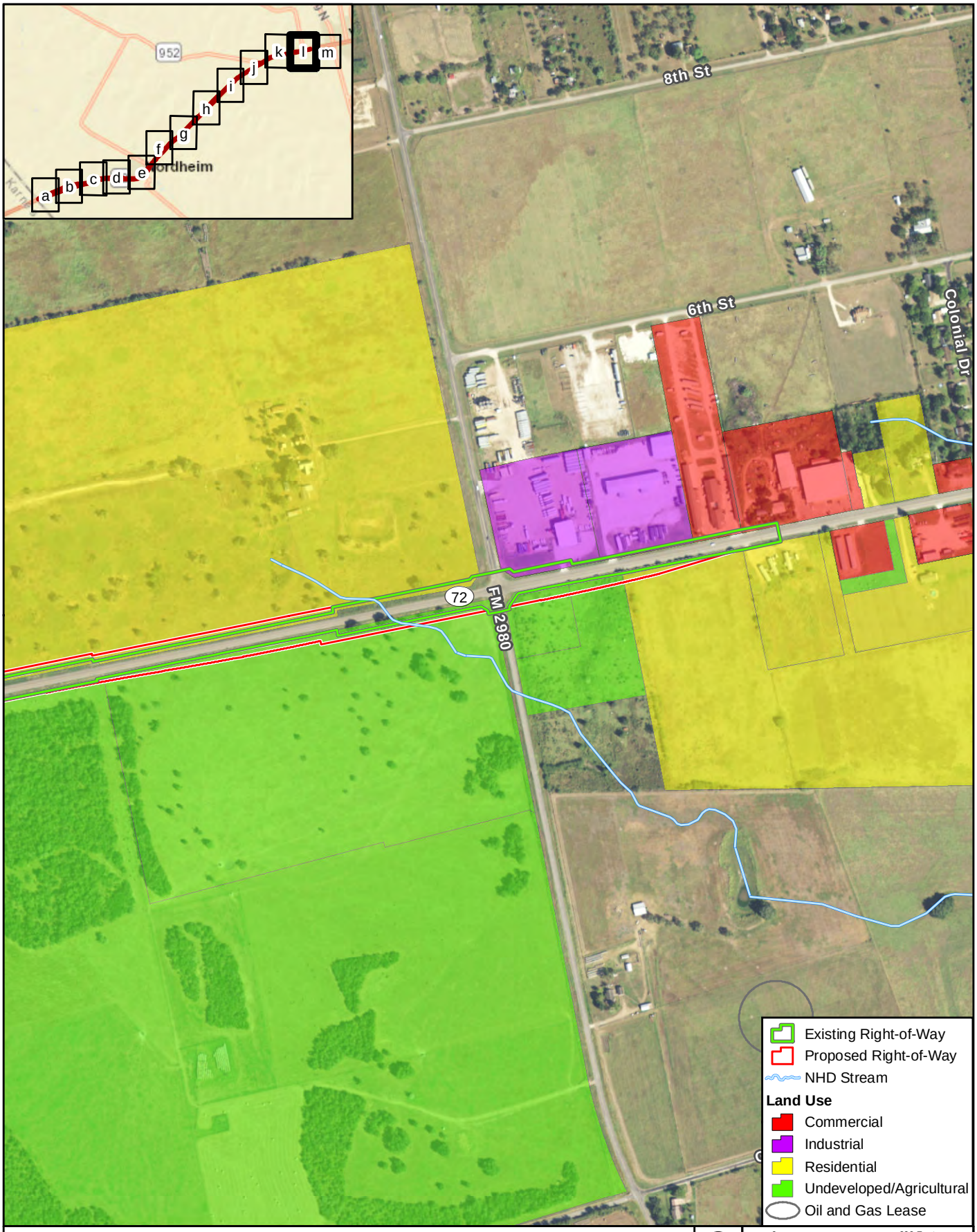


Figure **2**l

Land Use and Potential Displacements

SH 72 from Karnes County Line to 0.25 Miles East of FM 2980

Data Source: CMEC (2018)
Aerial Source: NAIP (2016)

0 600 Feet
0 160 Meters

Prepared for: TxDOT	1 in = 600 feet
	Scale: 1:7,200
CSJ: 0270-02-041	Date: 7/2/2018

G:\Projects\TXDOT\SH72\CIA_Figure 2_Landuse_20180125.mxd

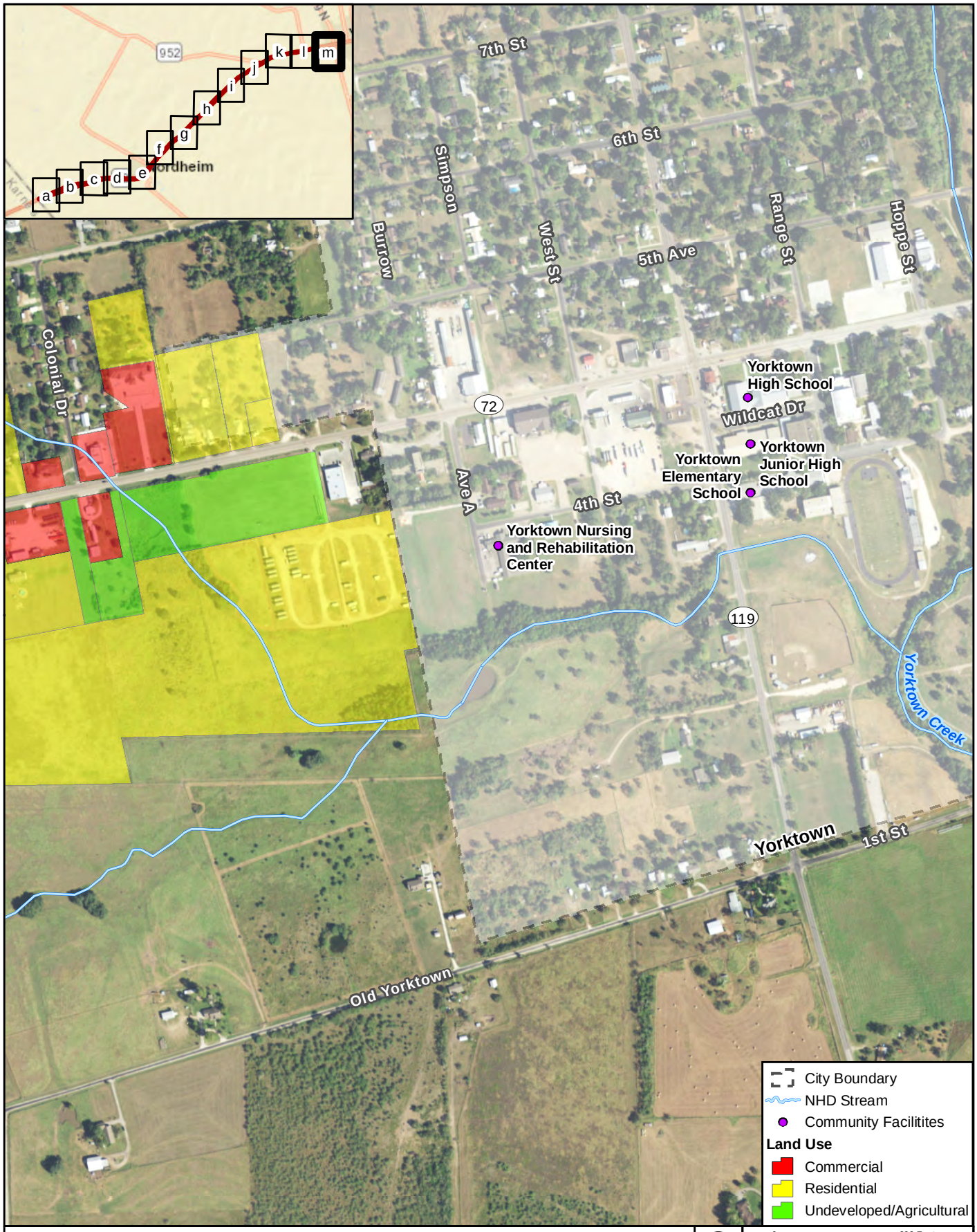


Figure **2**m

Land Use and Potential Displacements

SH 72 from Karnes County Line to 0.25 Miles East of FM 2980

Data Source: CMEC (2018)
Aerial Source: NAIP (2016)

0 600 Feet
0 160 Meters

Prepared for: TxDOT	1 in = 600 feet
	Scale: 1:7,200
CSJ: 0270-02-041	Date: 7/2/2018

G:\Projects\TXDOT\SH72\CIA_Figure 2_Landuse_20180125.mxd

Figure 3 - Recommended Locations For Future Archeological Investigations

Sheet 1 of 18

SH 72 from Karnes County Line to 0.25 Miles East of FM 2980

Data Sources: NHD (2014), TxDOT (2016)
Aerial Source ESRI: (2017)

0 200 Feet
0 60 Meters

Prepared for: TxDOT	1 in = 200 feet
	Scale: 1:2,400
CSJ: 0270-02-041	Date: 10/24/2018

G:\Projects\TXDOT\SH72\Figure 5. Recommended locations for future_20181024.mxd

Figure 3 - Recommended Locations For Future Archeological Investigations

Sheet 2 of 18

SH 72 from Karnes County Line to 0.25 Miles East of FM 2980

Data Sources: NHD (2014), TxDOT (2016)
Aerial Source ESRI: (2017)

0 200 Feet
0 60 Meters

Prepared for: TxDOT	1 in = 200 feet
	Scale: 1:2,400
CSJ: 0270-02-041	Date: 10/24/2018

G:\Projects\TXDOT\SH72\Figure 5. Recommended locations for future_20181024.mxd

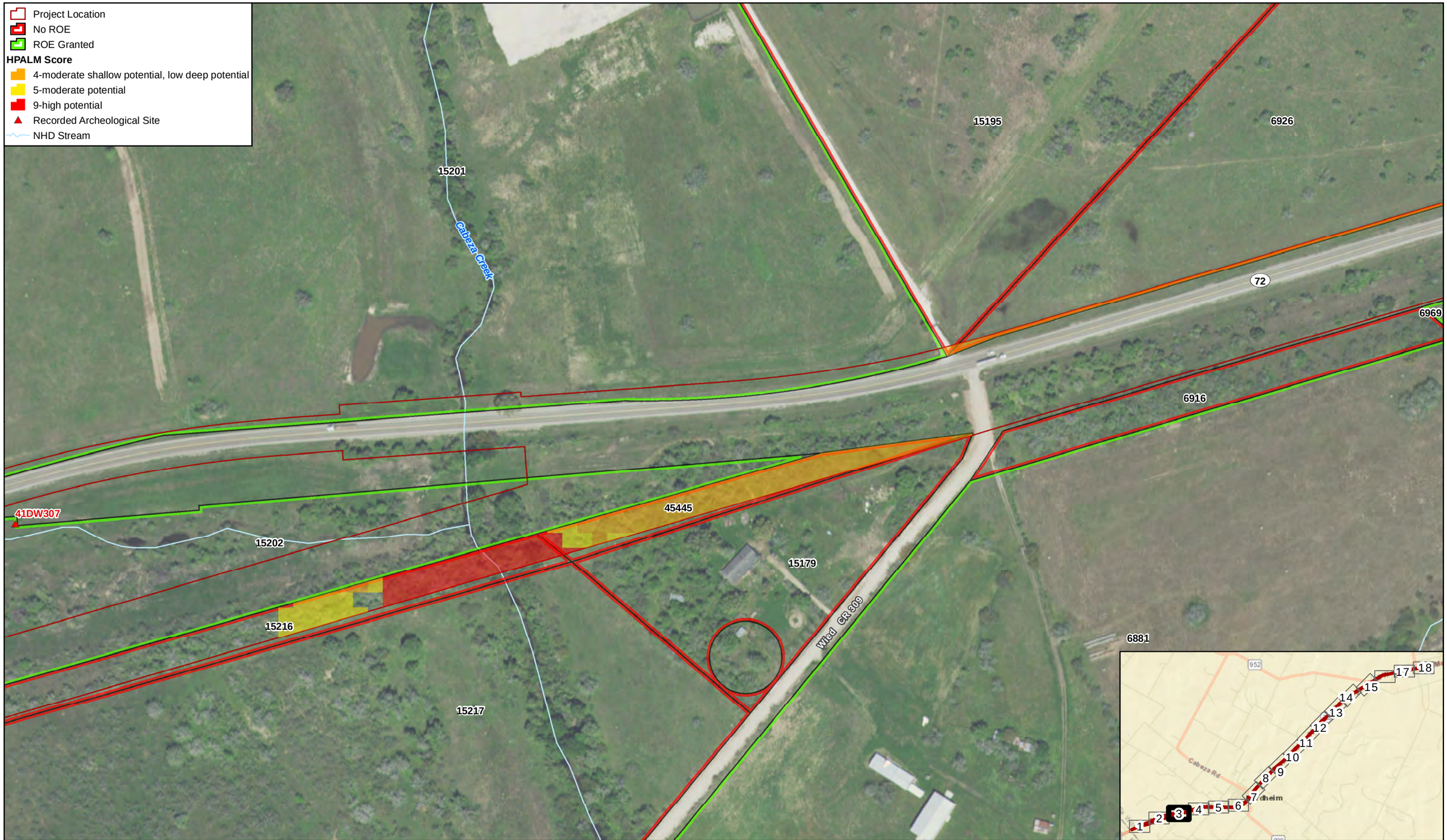


Figure 3 - Recommended Locations For Future Archeological Investigations

Sheet 3 of 18

SH 72 from Karnes County Line to 0.25 Miles East of FM 2980

Data Sources: NHD (2014), TxDOT (2016)
Aerial Source ESRI: (2017)

0 200 Feet
0 60 Meters

Prepared for: TxDOT	1 in = 200 feet
	Scale: 1:2,400
CSJ: 0270-02-041	Date: 10/24/2018

G:\Projects\TXDOT\SH72\Figure 5. Recommended locations for future_20181024.mxd

Figure 3 - Recommended Locations For Future Archeological Investigations

Sheet 4 of 18

SH 72 from Karnes County Line to 0.25 Miles East of FM 2980

Data Sources: NHD (2014), TxDOT (2016)
Aerial Source ESRI: (2017)

0 200 Feet
0 60 Meters

Prepared for: TxDOT	1 in = 200 feet
	Scale: 1:2,400
CSJ: 0270-02-041	Date: 10/24/2018

G:\Projects\TXDOT\SH72\Figure 5. Recommended locations for future_20181024.mxd

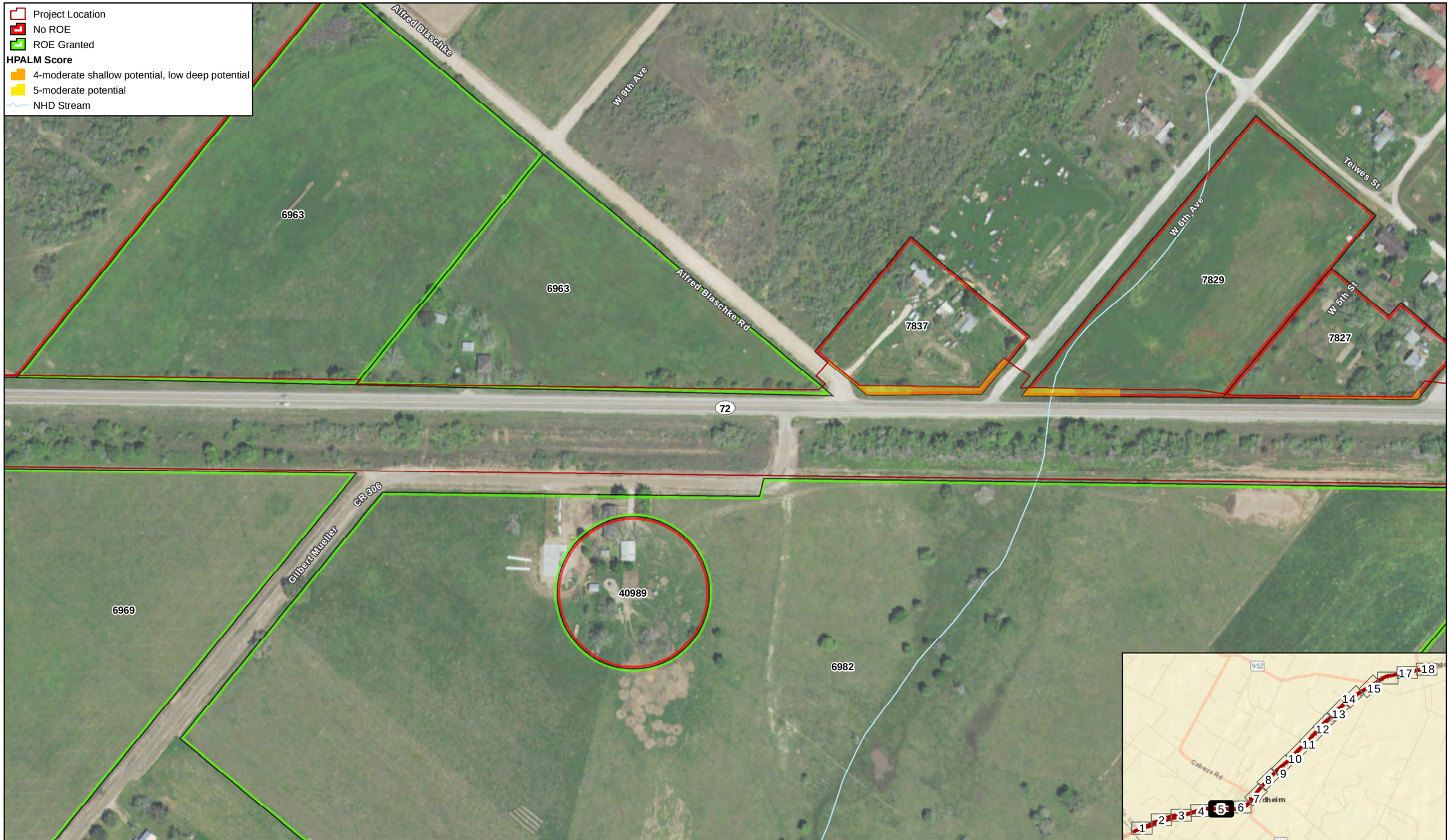


Figure 3 - Recommended Locations For Future Archeological Investigations

Sheet 5 of 18

SH 72 from Karnes County Line to 0.25 Miles East of FM 2980

Data Sources: NHD (2014), TxDOT (2016)
Aerial Source ESRI: (2017)

0 200 Feet
0 60 Meters

Prepared for: TxDOT	1 in = 200 feet
	Scale: 1:2,400
CSJ: 0270-02-041	Date: 10/24/2018

G:\Projects\TXDOT\SH72\Figure 5. Recommended locations for future_20181024.mxd

Figure 3 - Recommended Locations For Future Archeological Investigations

Sheet 6 of 18

SH 72 from Karnes County Line to 0.25 Miles East of FM 2980

Data Sources: NHD (2014), TxDOT (2016)
Aerial Source ESRI: (2017)

0 200 Feet
0 60 Meters

Prepared for: TxDOT	1 in = 200 feet
	Scale: 1:2,400
CSJ: 0270-02-041	Date: 10/24/2018

G:\Projects\TXDOT\SH72\Figure 5. Recommended locations for future_20181024.mxd

Figure 3 - Recommended Locations For Future Archeological Investigations

Sheet 7 of 18

SH 72 from Karnes County Line to 0.25 Miles East of FM 2980

Data Sources: NHD (2014), TxDOT (2016)
Aerial Source ESRI: (2017)

0 200 Feet
0 60 Meters

Prepared for: TxDOT	1 in = 200 feet
	Scale: 1:2,400
CSJ: 0270-02-041	Date: 10/24/2018

G:\Projects\TXDOT\SH72\Figure 5. Recommended locations for future_20181024.mxd

Figure 3 - Recommended Locations For Future Archeological Investigations

Sheet 8 of 18

SH 72 from Karnes County Line to 0.25 Miles East of FM 2980

Data Sources: NHD (2014), TxDOT (2016)
Aerial Source ESRI: (2017)

0 200 Feet
0 60 Meters

Prepared for: TxDOT	1 in = 200 feet
	Scale: 1:2,400
CSJ: 0270-02-041	Date: 10/24/2018

G:\Projects\TXDOT\SH72\Figure 5. Recommended locations for future_20181024.mxd

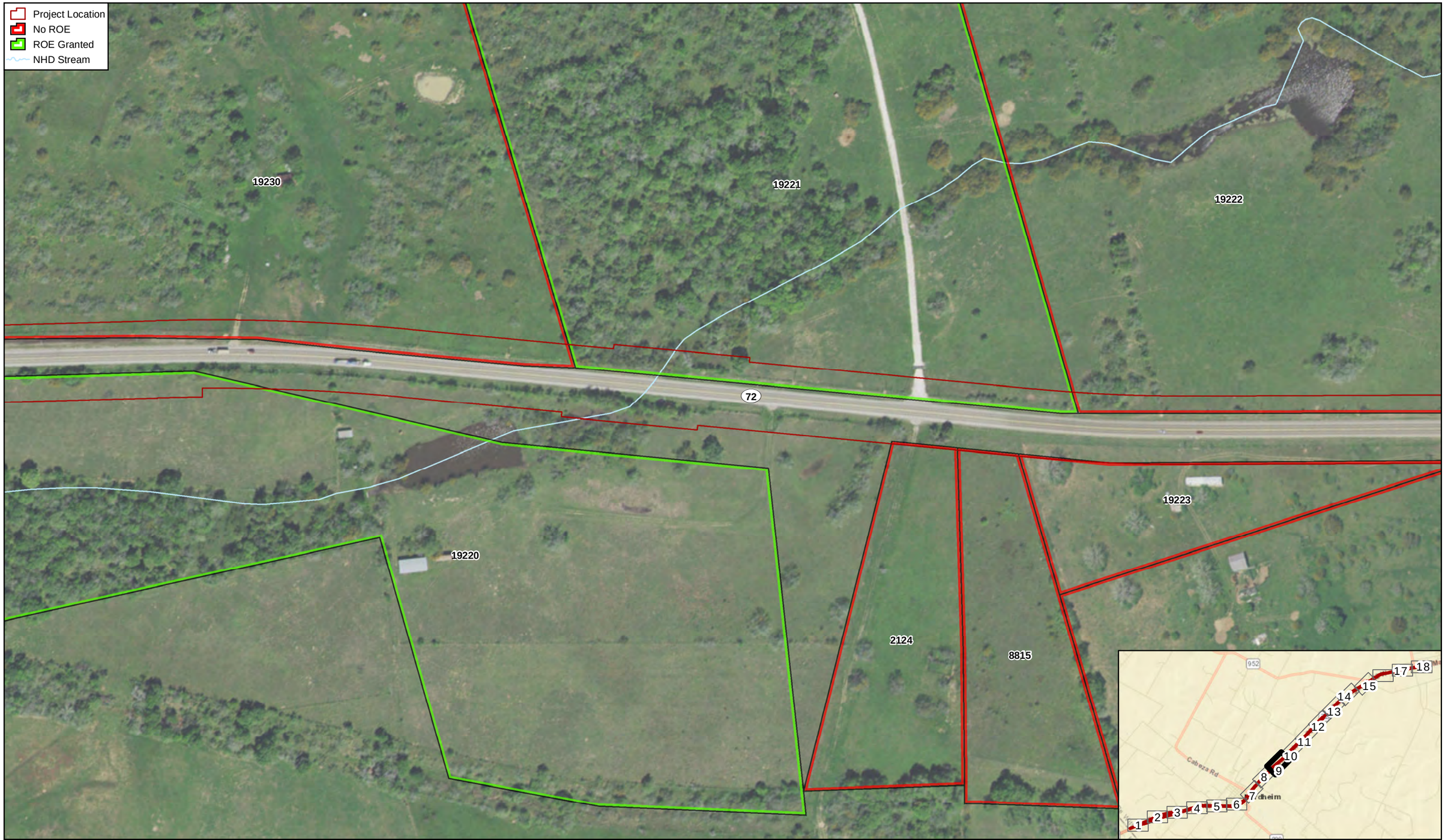


Figure 3 - Recommended Locations For Future Archeological Investigations

Sheet 9 of 18

SH 72 from Karnes County Line to 0.25 Miles East of FM 2980

Data Sources: NHD (2014), TxDOT (2016)
Aerial Source ESRI: (2017)

0 200 Feet
0 60 Meters

Prepared for: TxDOT	1 in = 200 feet
	Scale: 1:2,400
CSJ: 0270-02-041	Date: 10/24/2018

G:\Projects\TXDOT\SH72\Figure 5. Recommended locations for future_20181024.mxd

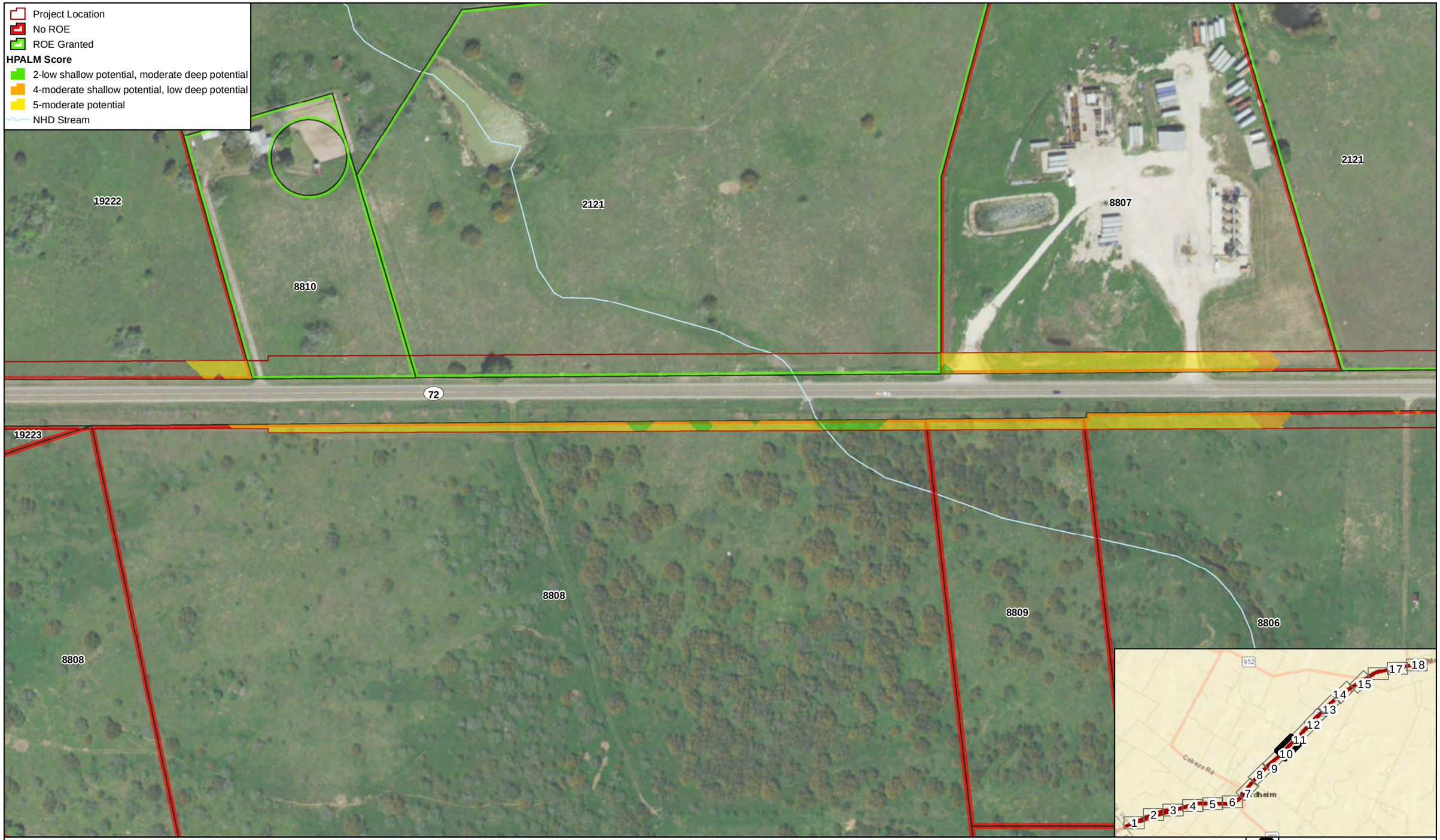


Figure 3 - Recommended Locations For Future Archeological Investigations

Sheet 10 of 18

SH 72 from Karnes County Line to 0.25 Miles East of FM 2980

Data Sources: NHD (2014), TxDOT (2016)
Aerial Source ESRI: (2017)

0 200 Feet
0 60 Meters

Prepared for: TxDOT	1 in = 200 feet
	Scale: 1:2,400
CSJ: 0270-02-041	Date: 10/24/2018

G:\Projects\TXDOT\SH72\Figure 5. Recommended locations for future_20181024.mxd

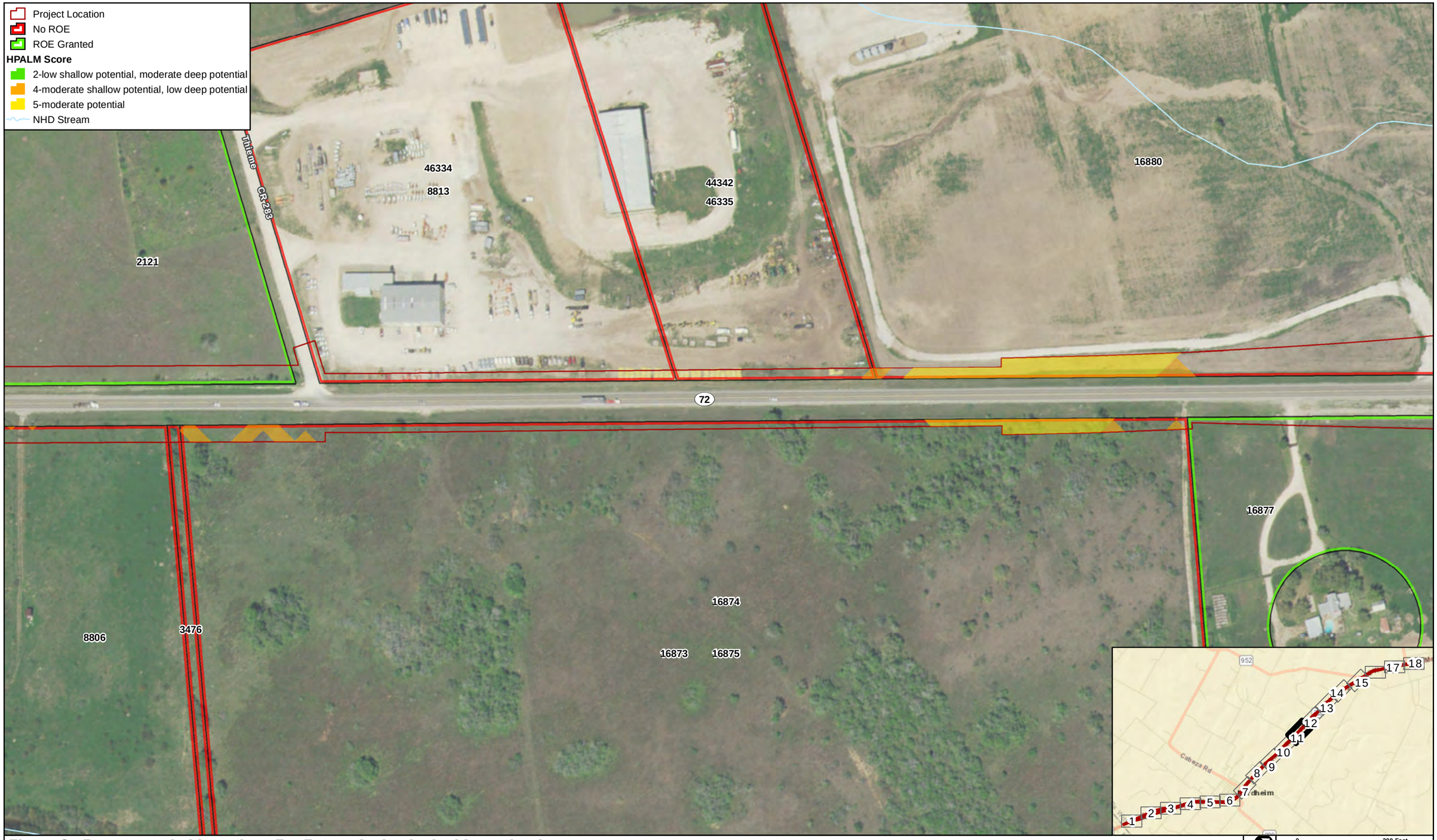


Figure 3 - Recommended Locations For Future Archeological Investigations

Sheet 11 of 18

SH 72 from Karnes County Line to 0.25 Miles East of FM 2980

Data Sources: NHD (2014), TxDOT (2016)
Aerial Source ESRI: (2017)

0 200 Feet
0 60 Meters

Prepared for: TxDOT	1 in = 200 feet
	Scale: 1:2,400
CSJ: 0270-02-041	Date: 10/24/2018

G:\Projects\TXDOT\SH72\Figure 5. Recommended locations for future_20181024.mxd

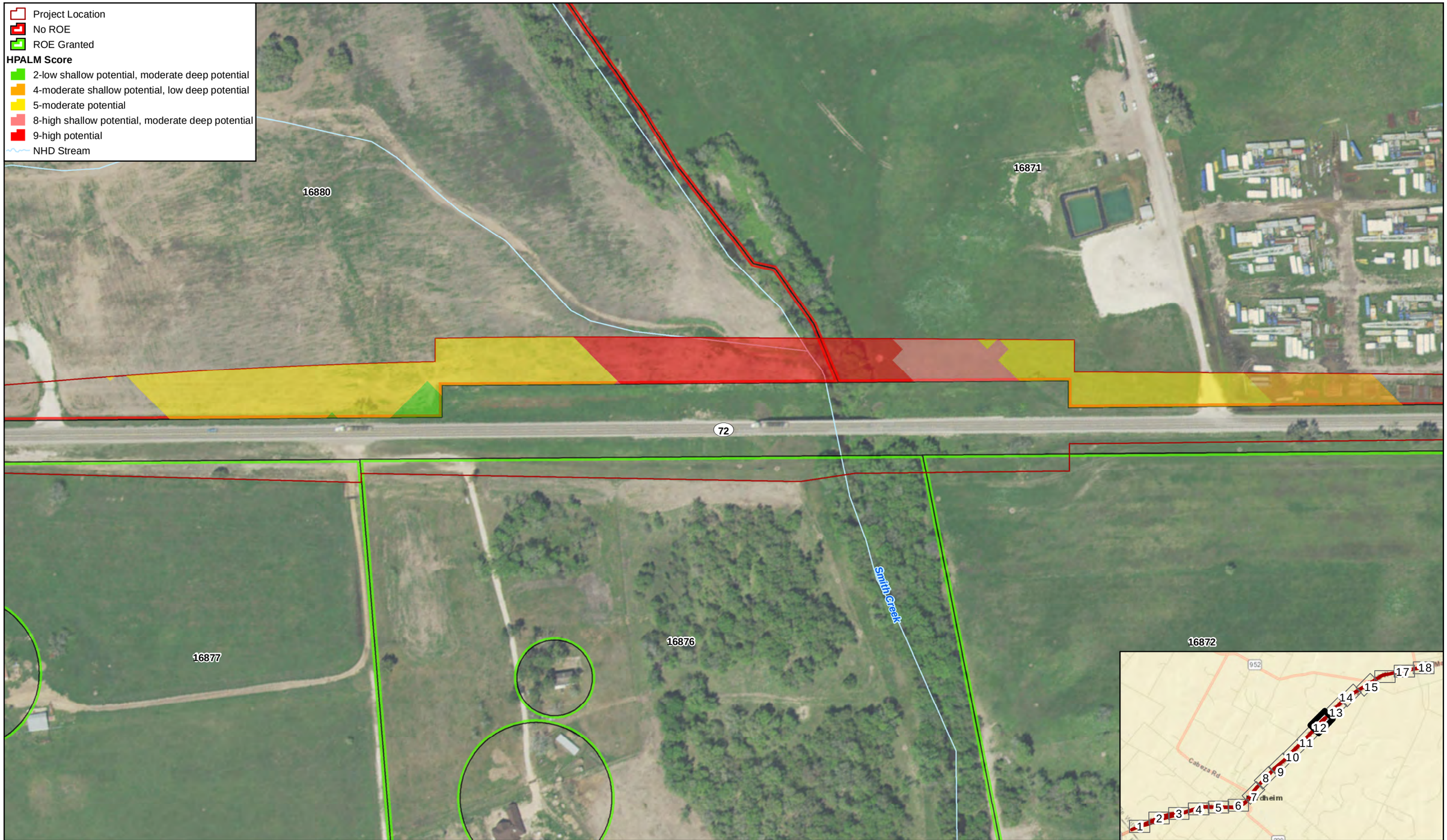


Figure 3 - Recommended Locations For Future Archeological Investigations

Sheet 12 of 18

SH 72 from Karnes County Line to 0.25 Miles East of FM 2980

Data Sources: NHD (2014), TxDOT (2016)
Aerial Source ESRI: (2017)

0 200 Feet
0 60 Meters

Prepared for: TxDOT	1 in = 200 feet
	Scale: 1:2,400
CSJ: 0270-02-041	Date: 10/24/2018

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Figure 3 - Recommended Locations For Future Archeological Investigations

Sheet 13 of 18

SH 72 from Karnes County Line to 0.25 Miles East of FM 2980

Data Sources: NHD (2014), TxDOT (2016)
Aerial Source ESRI: (2017)

0 200 Feet
0 60 Meters

Prepared for: TxDOT	1 in = 200 feet
	Scale: 1:2,400
CSJ: 0270-02-041	Date: 10/24/2018

G:\Projects\TXDOT\SH72\Figure 5. Recommended locations for future_20181024.mxd

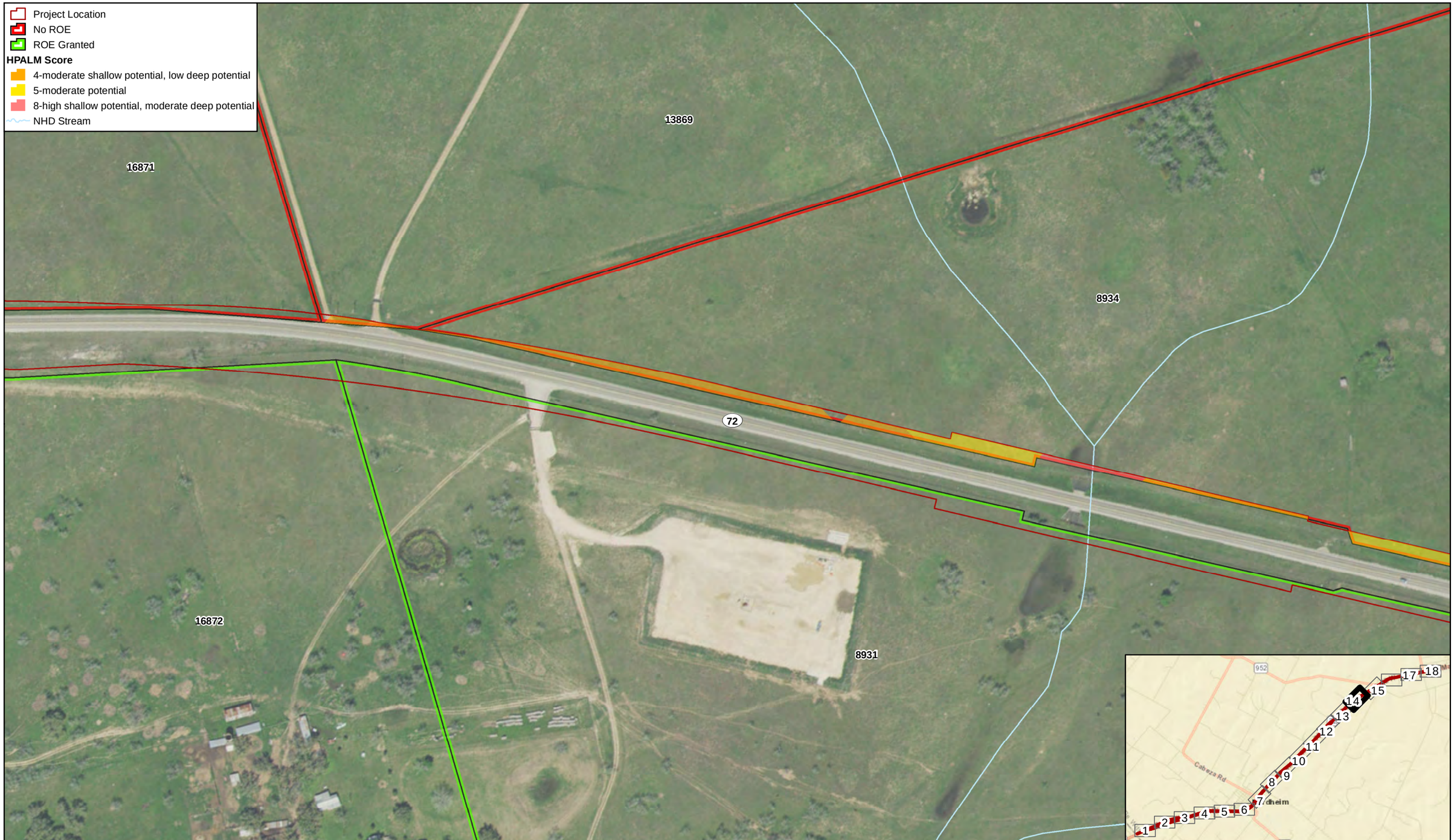

Figure 3 - Recommended Locations For Future Archeological Investigations

Sheet 14 of 18

SH 72 from Karnes County Line to 0.25 Miles East of FM 2980

Data Sources: NHD (2014), TxDOT (2016)
Aerial Source ESRI: (2017)

0 200 Feet
0 60 Meters

Prepared for: TxDOT	1 in = 200 feet
	Scale: 1:2,400
CSJ: 0270-02-041	Date: 10/24/2018

G:\Projects\TXDOT\SH72\Figure 5. Recommended locations for future_20181024.mxd

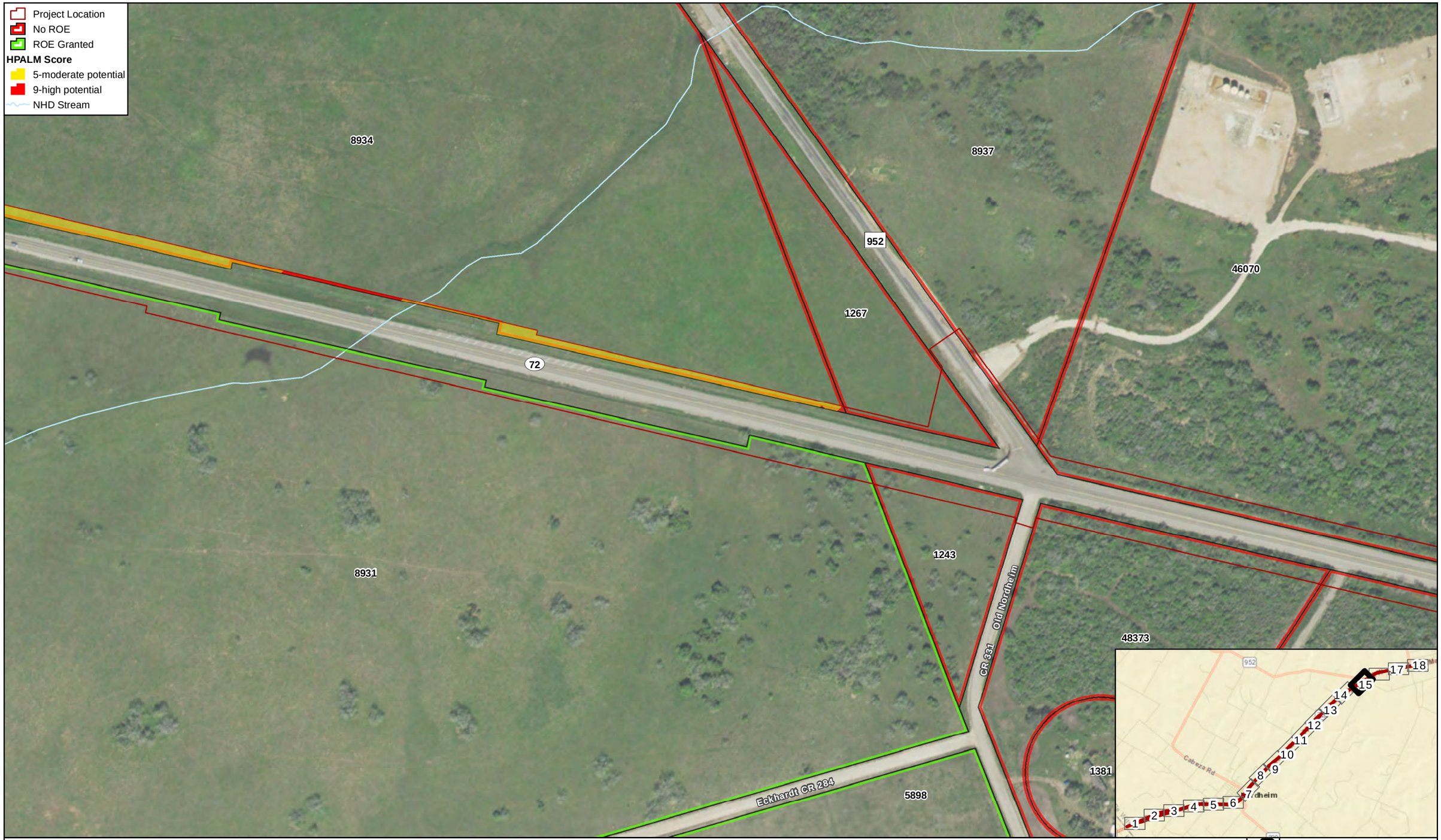

Figure 3 - Recommended Locations For Future Archeological Investigations

Sheet 15 of 18

SH 72 from Karnes County Line to 0.25 Miles East of FM 2980

Data Sources: NHD (2014), TxDOT (2016)
Aerial Source ESRI: (2017)

0 200 Feet
0 60 Meters

Prepared for: TxDOT	1 in = 200 feet
	Scale: 1:2,400
CSJ: 0270-02-041	Date: 10/24/2018

G:\Projects\TXDOT\SH72\Figure 5. Recommended locations for future_20181024.mxd

Figure 3 - Recommended Locations For Future Archeological Investigations

Sheet 16 of 18

SH 72 from Karnes County Line to 0.25 Miles East of FM 2980

Data Sources: NHD (2014), TxDOT (2016)
Aerial Source ESRI: (2017)

0 200 Feet
0 60 Meters

Prepared for: TxDOT	1 in = 200 feet
	Scale: 1:2,400
CSJ: 0270-02-041	Date: 10/24/2018

G:\Projects\TXDOT\SH72\Figure 5. Recommended locations for future_20181024.mxd

Figure 3 - Recommended Locations For Future Archeological Investigations

Sheet 17 of 18

SH 72 from Karnes County Line to 0.25 Miles East of FM 2980

Data Sources: NHD (2014), TxDOT (2016)
Aerial Source ESRI: (2017)

0 200 Feet
0 60 Meters

Prepared for: TxDOT	1 in = 200 feet
	Scale: 1:2,400
CSJ: 0270-02-041	Date: 10/24/2018

G:\Projects\TXDOT\SH72\Figure 5. Recommended locations for future_20181024.mxd

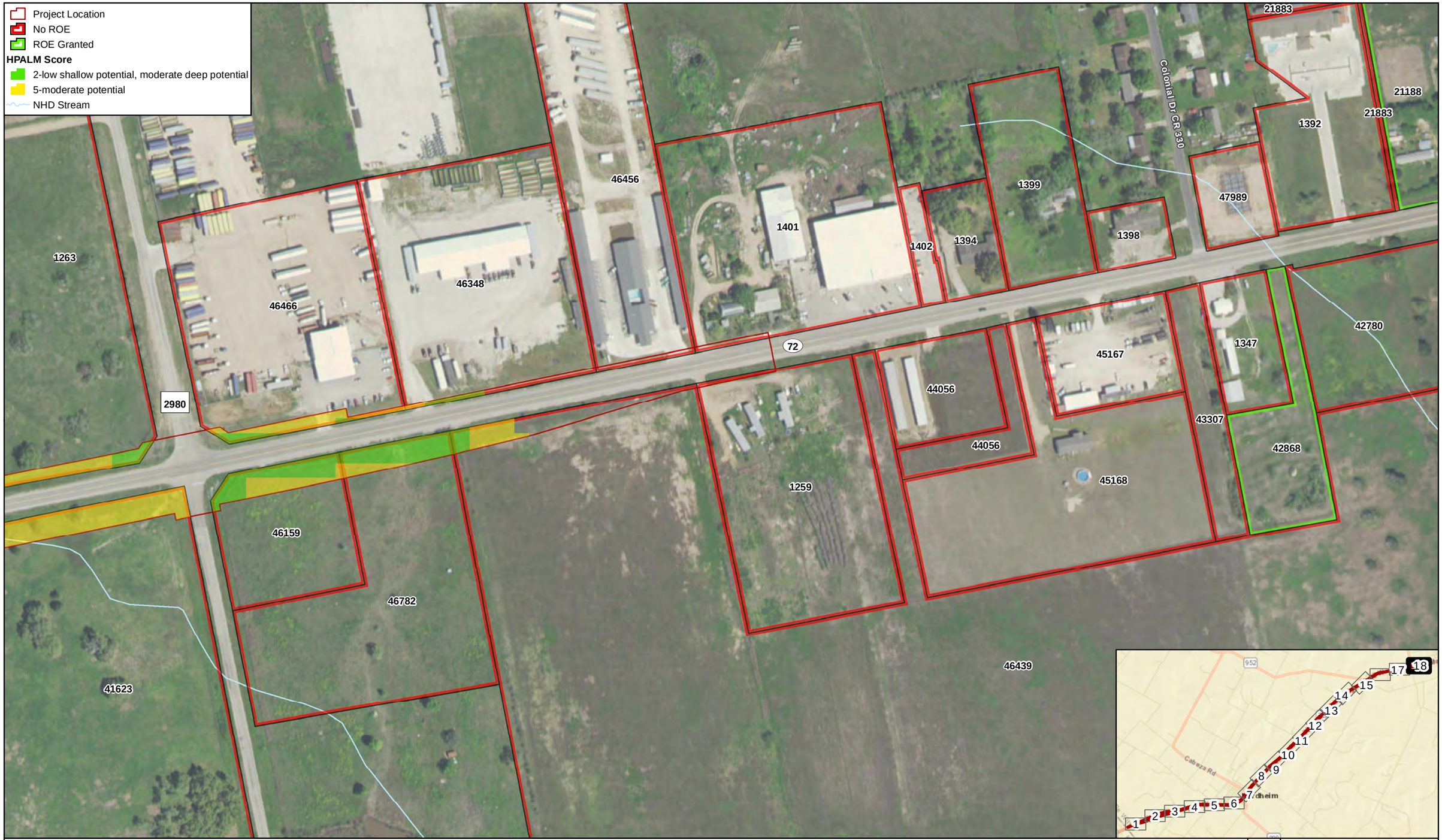

Figure 3 - Recommended Locations For Future Archeological Investigations

Sheet 18 of 18

SH 72 from Karnes County Line to 0.25 Miles East of FM 2980

Data Sources: NHD (2014), TxDOT (2016)
Aerial Source ESRI: (2017)

0 200 Feet
0 60 Meters

Prepared for: TxDOT	1 in = 200 feet
	Scale: 1:2,400
CSJ: 0270-02-041	Date: 10/24/2018

G:\Projects\TXDOT\SH72\Figure 5. Recommended locations for future_20181024.mxd

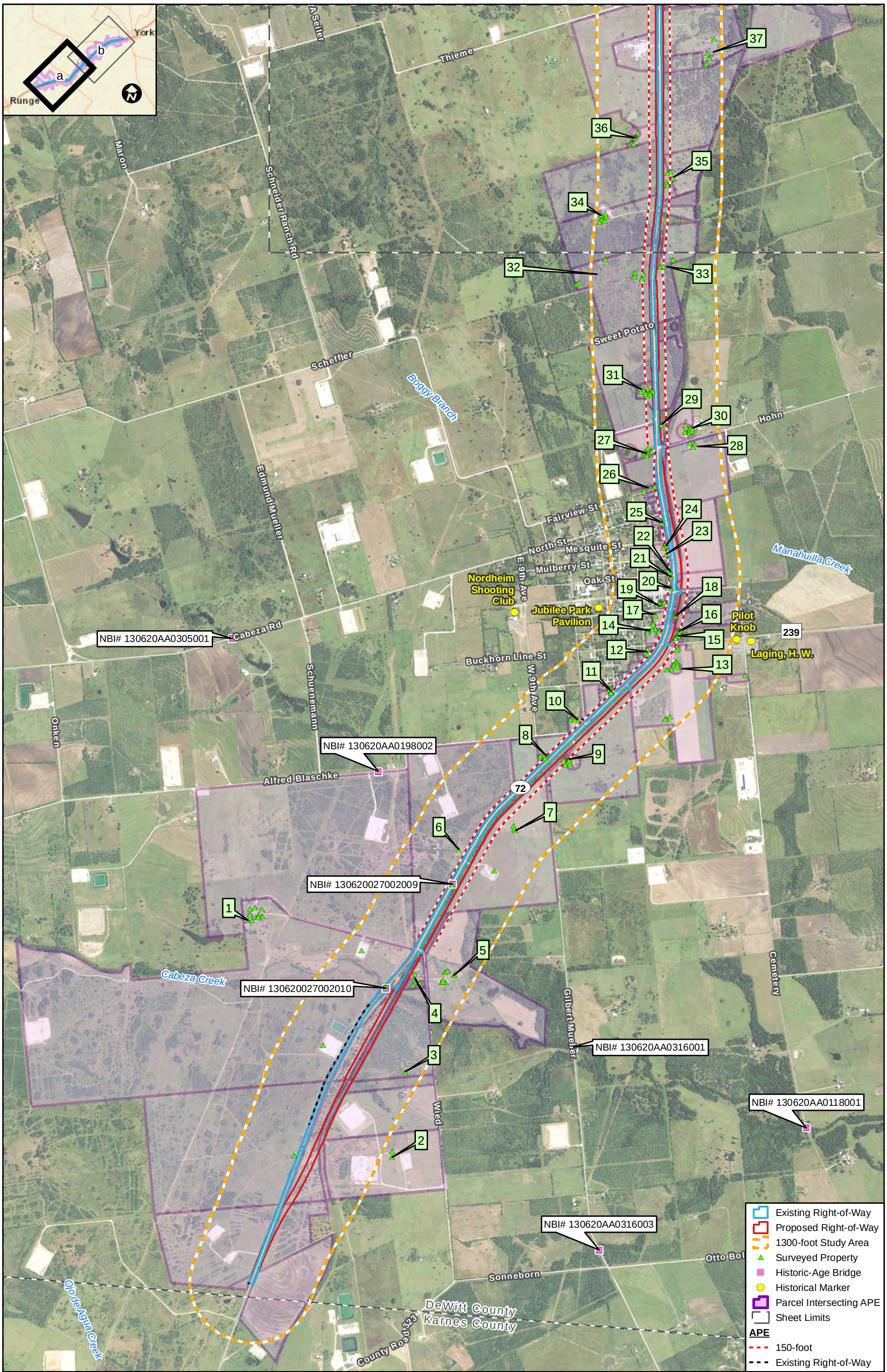

Figure 4a
Historic Resources Study Area
SH 72 from Karnes County Line to 0.25 Miles East of FM 2980

Data Sources: CMEC (2018), DeWitt CAD (2017), FHWA (2018)
Aerial Source: NAIP (2016)

Prepared for: TxDOT	1 in = 2,000 feet
	Scale: 1:24,000
CSJ: 0270-02-041	Date: 8/16/2018

G:\Projects\TXDOT\SH72\Hist_Figure 2_Hist Resources Study Area_20180809.mxd

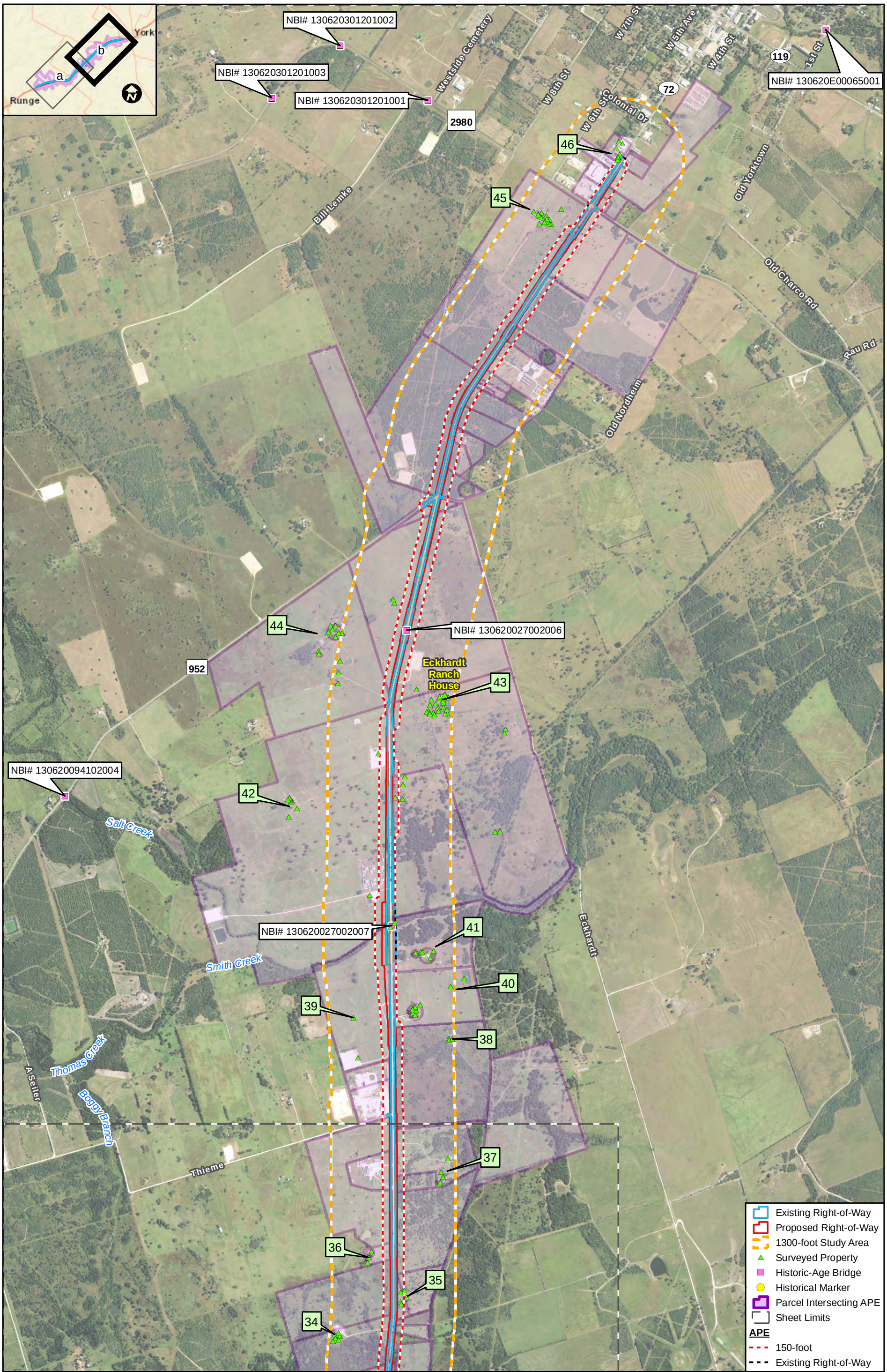

Figure 4b
Historic Resources Study Area
SH 72 from Karnes County Line to 0.25 Miles East of FM 2980

Data Sources: CMEC (2018), DeWitt CAD (2017), FHWA (2018)
Aerial Source: NAIP (2016)

Prepared for: TxDOT	1 in = 2,000 feet
	Scale: 1:24,000
CSJ: 0270-02-041	Date: 8/16/2018

G:\Projects\TXDOT\SH72\Hist_Figure 2_Hist Resources Study Area_20180809.mxd

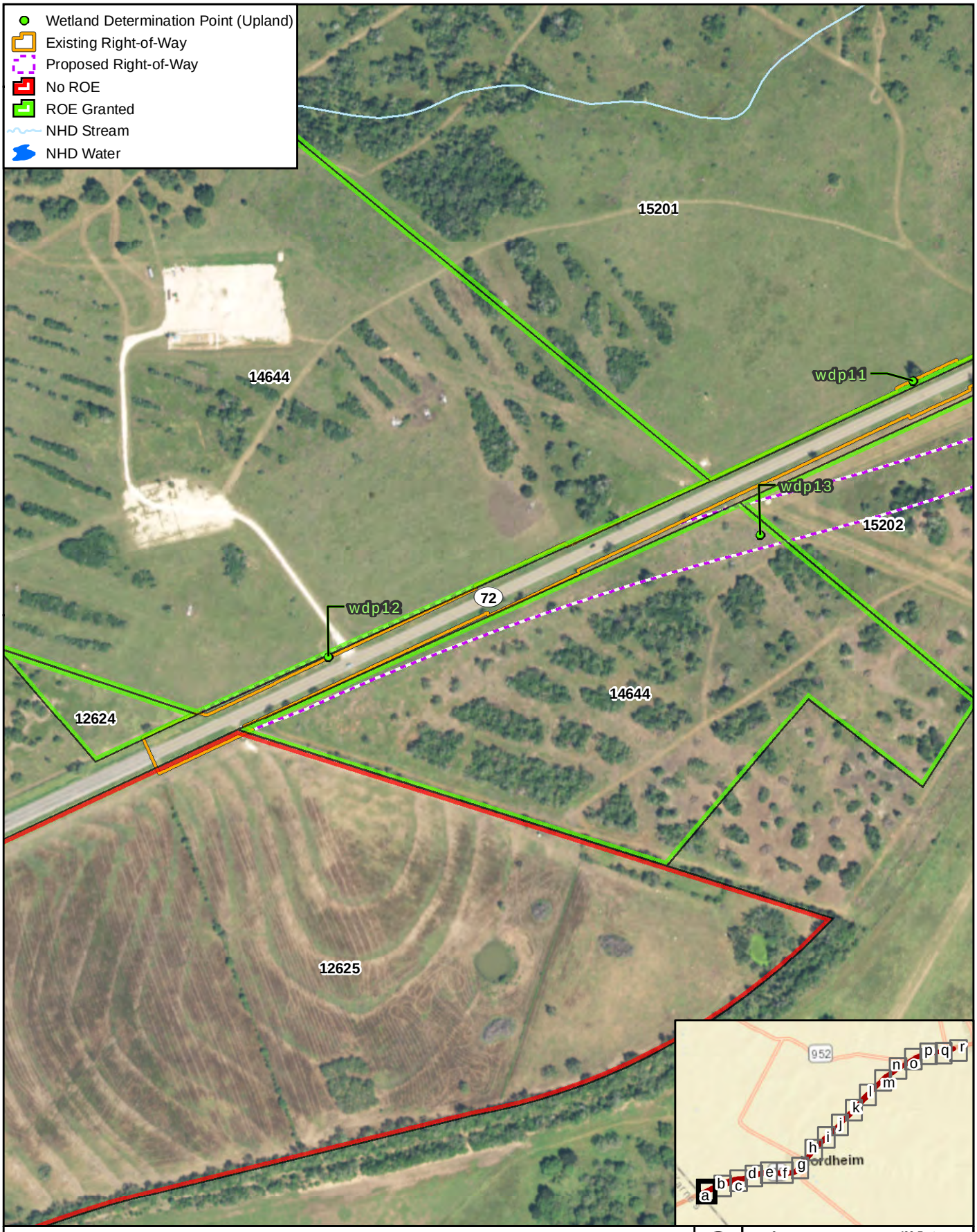

Figure **5**a

Potential Waters of the U.S.

SH 72 from Karnes County Line to 0.25 Miles East of FM 2980

No WOUS on this sheet

Data Sources: NHD (2014), FEMA NFHL (2018), CMEC (2018)
Aerial Source: NAIP (2016)

0 400 Feet
0 100 Meters

Prepared for: TxDOT	1 in = 400 feet
	Scale: 1:4,800
CSJ: 0270-02-041	Date: 7/16/2018

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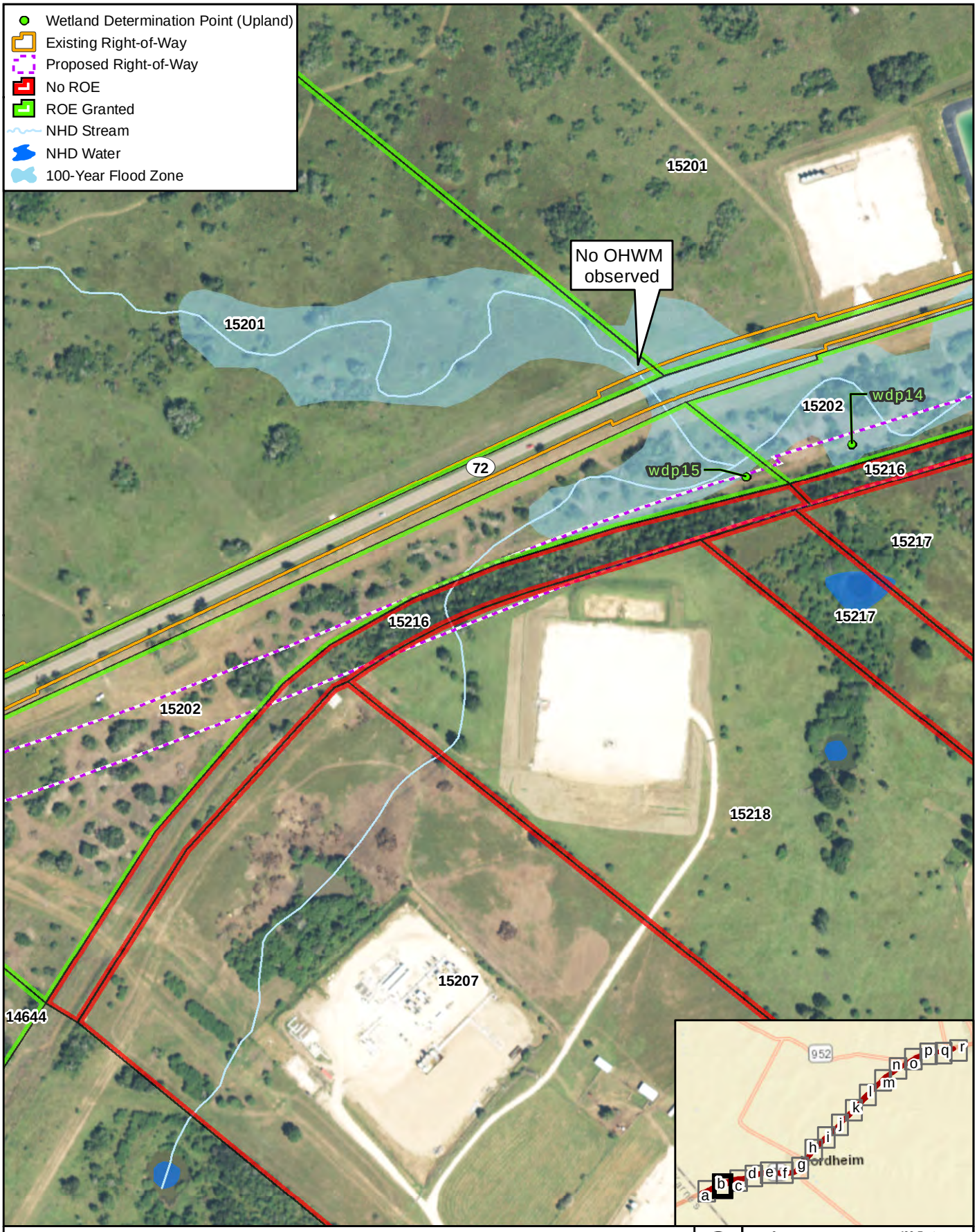

Figure **5**b

Potential Waters of the U.S.

SH 72 from Karnes County Line to 0.25 Miles East of FM 2980

No WOUS on this sheet

Data Sources: NHD (2014), FEMA NFHL (2018), CMEC (2018)
Aerial Source: NAIP (2016)

0 400 Feet
0 100 Meters

Prepared for: TxDOT	1 in = 400 feet
	Scale: 1:4,800
CSJ: 0270-02-041	Date: 7/16/2018

G:\Projects\TXDOT\SH72\JD_Figure 6_Crossings_20180622.mxd

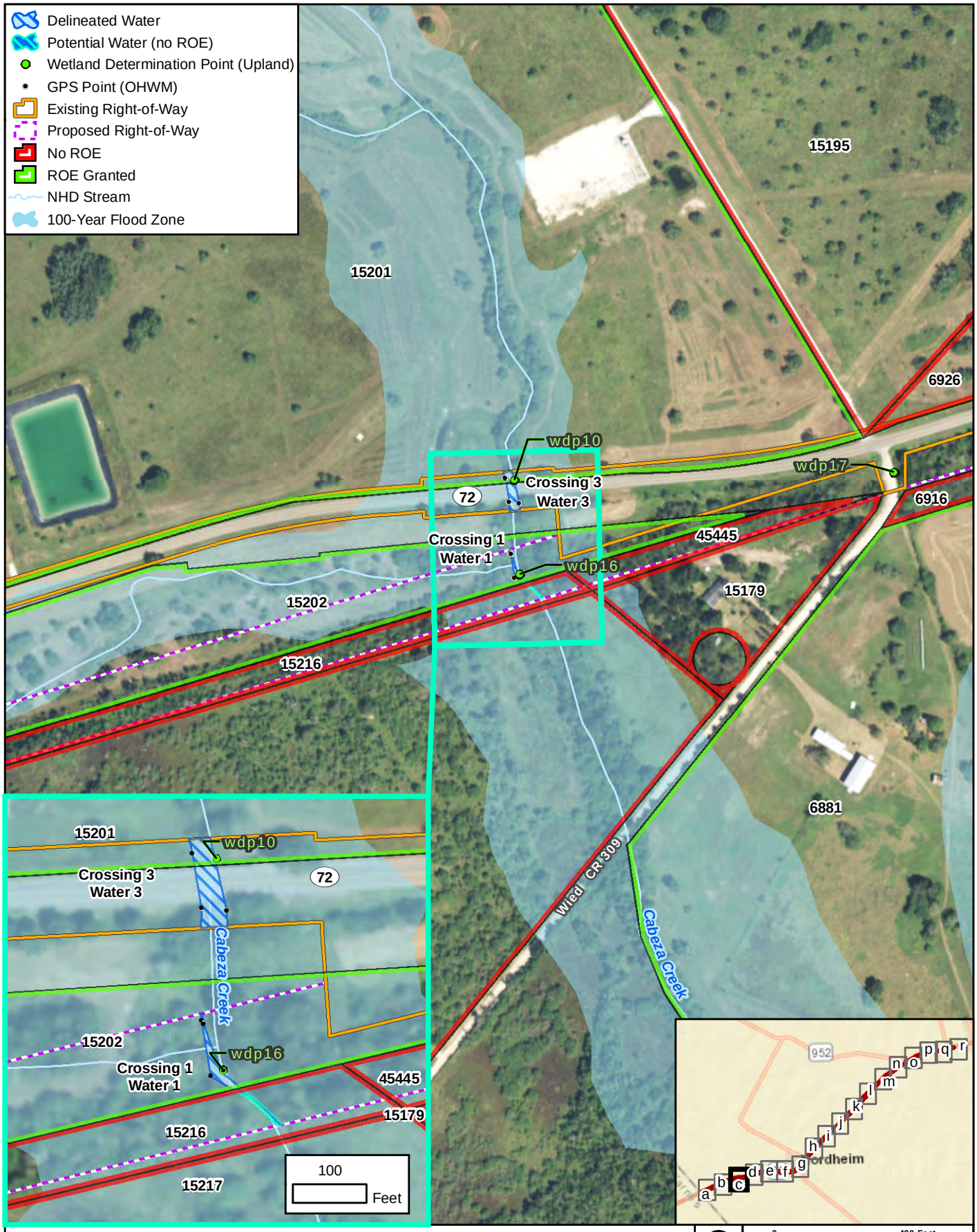

Figure **5**c

Potential Waters of the U.S.

SH 72 from Karnes County Line to 0.25 Miles East of FM 2980

Data Sources: NHD (2014)
FEMA NFHL (2018), CMEC (2018)
Aerial Source: NAIP (2016)

0 400 Feet
0 100 Meters

Prepared for: TxDOT	1 in = 400 feet
	Scale: 1:4,800
CSJ: 0270-02-041	Date: 7/16/2018

G:\Projects\TXDOT\SH72\JD_Figure 6C__20180622.mxd

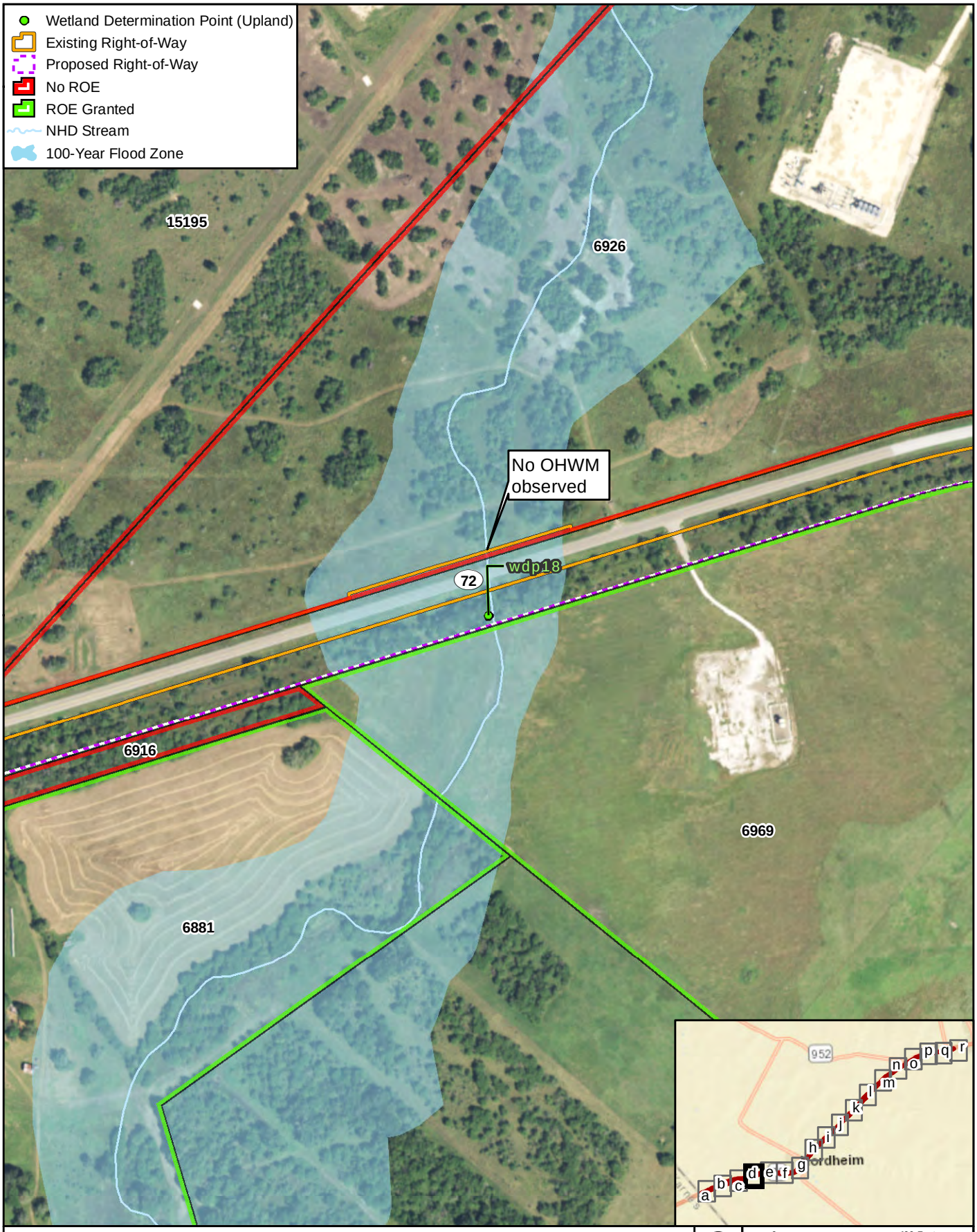

Figure **5**d

Potential Waters of the U.S.

SH 72 from Karnes County Line to 0.25 Miles East of FM 2980

No WOUS on this sheet

Data Sources: NHD (2014), FEMA NFHL (2018), CMEC (2018)
Aerial Source: NAIP (2016)

0 400 Feet
0 100 Meters

Prepared for: TxDOT	1 in = 400 feet
	Scale: 1:4,800
CSJ: 0270-02-041	Date: 7/16/2018

G:\Projects\TXDOT\SH72\JD_Figure 6_Crossings_20180622.mxd

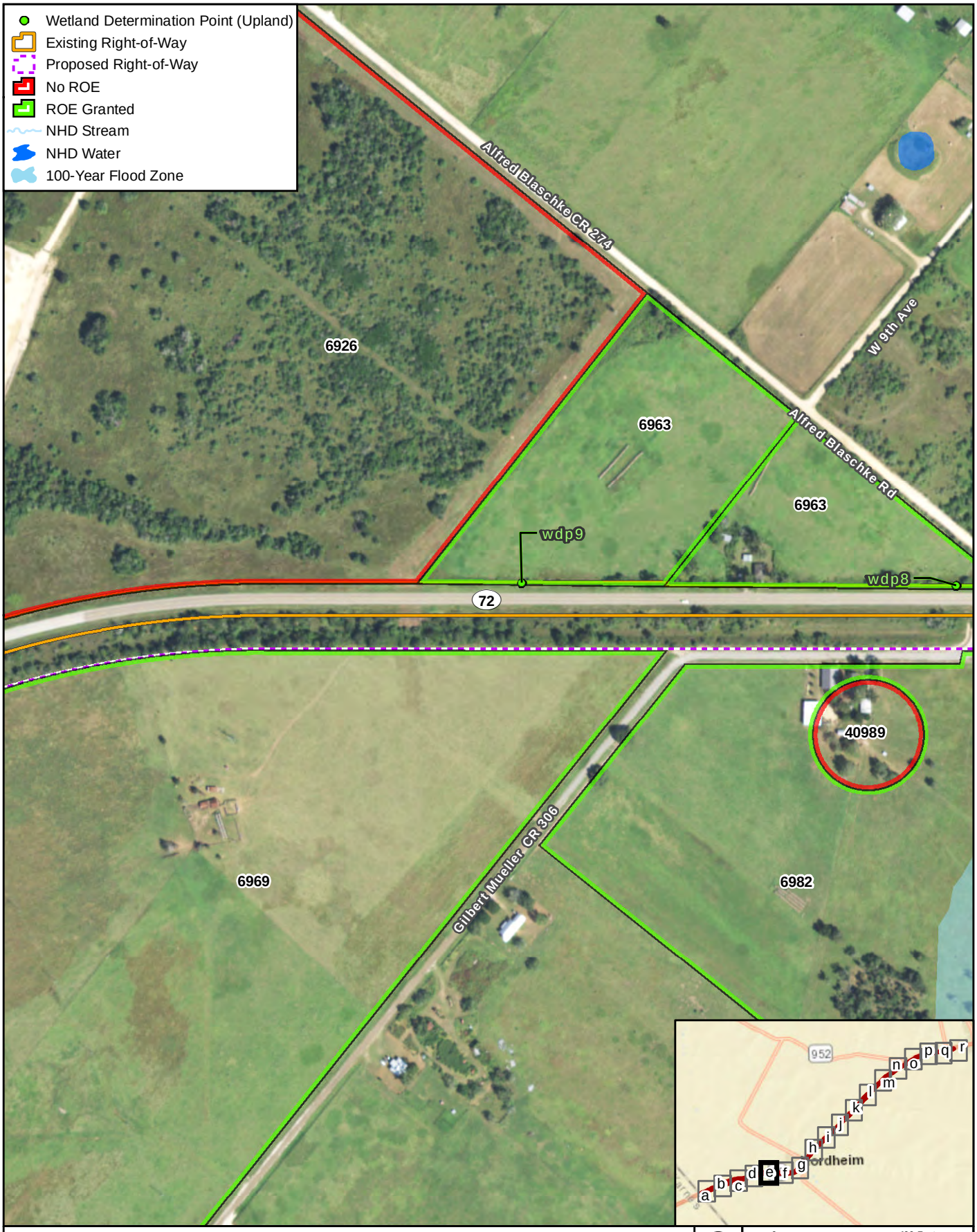

Figure **5**e

Potential Waters of the U.S.

SH 72 from Karnes County Line to 0.25 Miles East of FM 2980

No WOUS on this sheet

Data Sources: NHD (2014), FEMA NFHL (2018), CMEC (2018)
Aerial Source: NAIP (2016)

0 400 Feet
0 100 Meters

Prepared for: TxDOT	1 in = 400 feet
	Scale: 1:4,800
CSJ: 0270-02-041	Date: 7/16/2018

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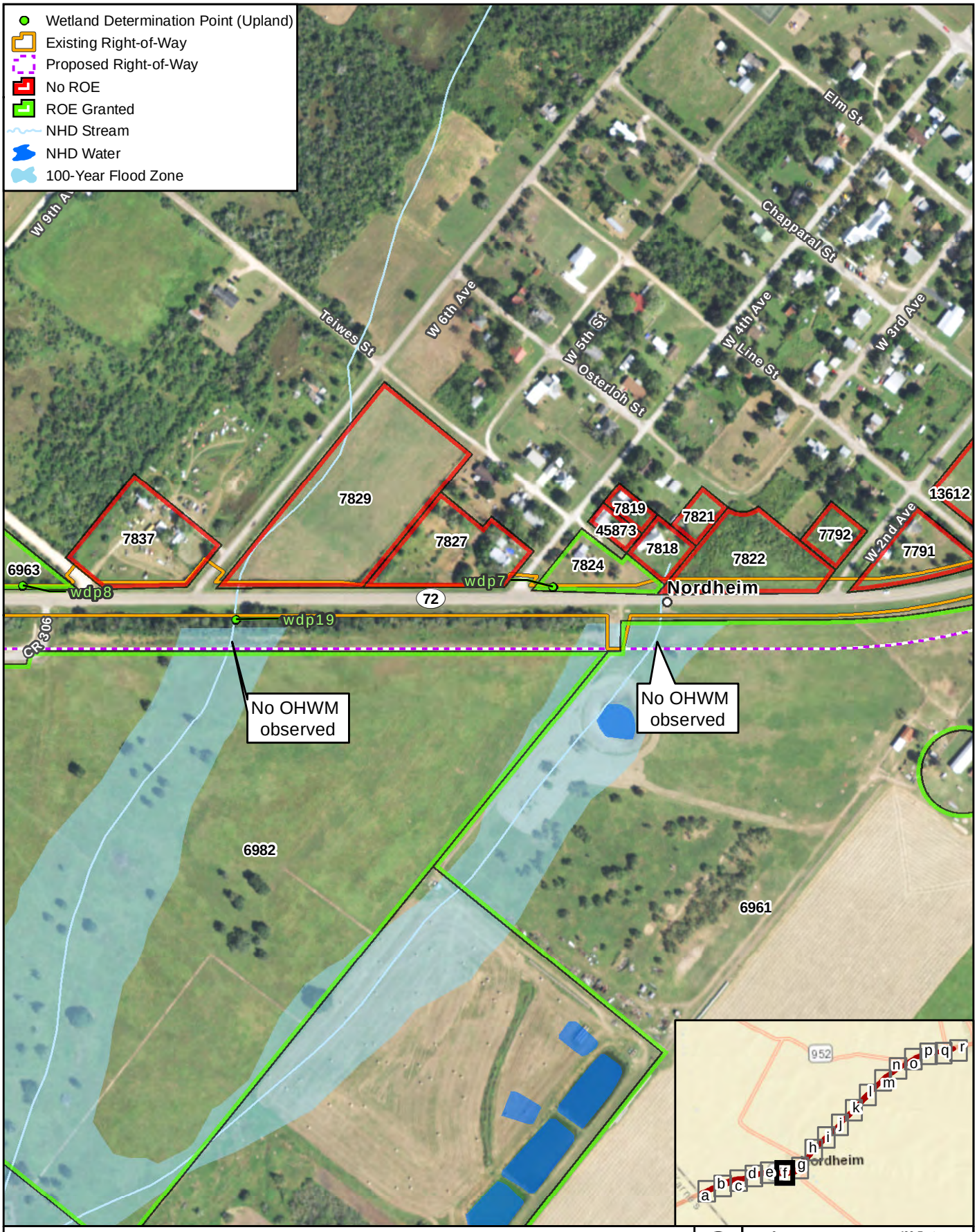

Figure **5**f

Potential Waters of the U.S.

SH 72 from Karnes County Line to 0.25 Miles East of FM 2980

No WOUS on this sheet

Data Sources: NHD (2014), FEMA NFHL (2018), CMEC (2018)
Aerial Source: NAIP (2016)

0 400 Feet
0 100 Meters

Prepared for: TxDOT	1 in = 400 feet
	Scale: 1:4,800
CSJ: 0270-02-041	Date: 7/16/2018

G:\Projects\TXDOT\SH72\JD_Figure 6_Crossings_20180622.mxd

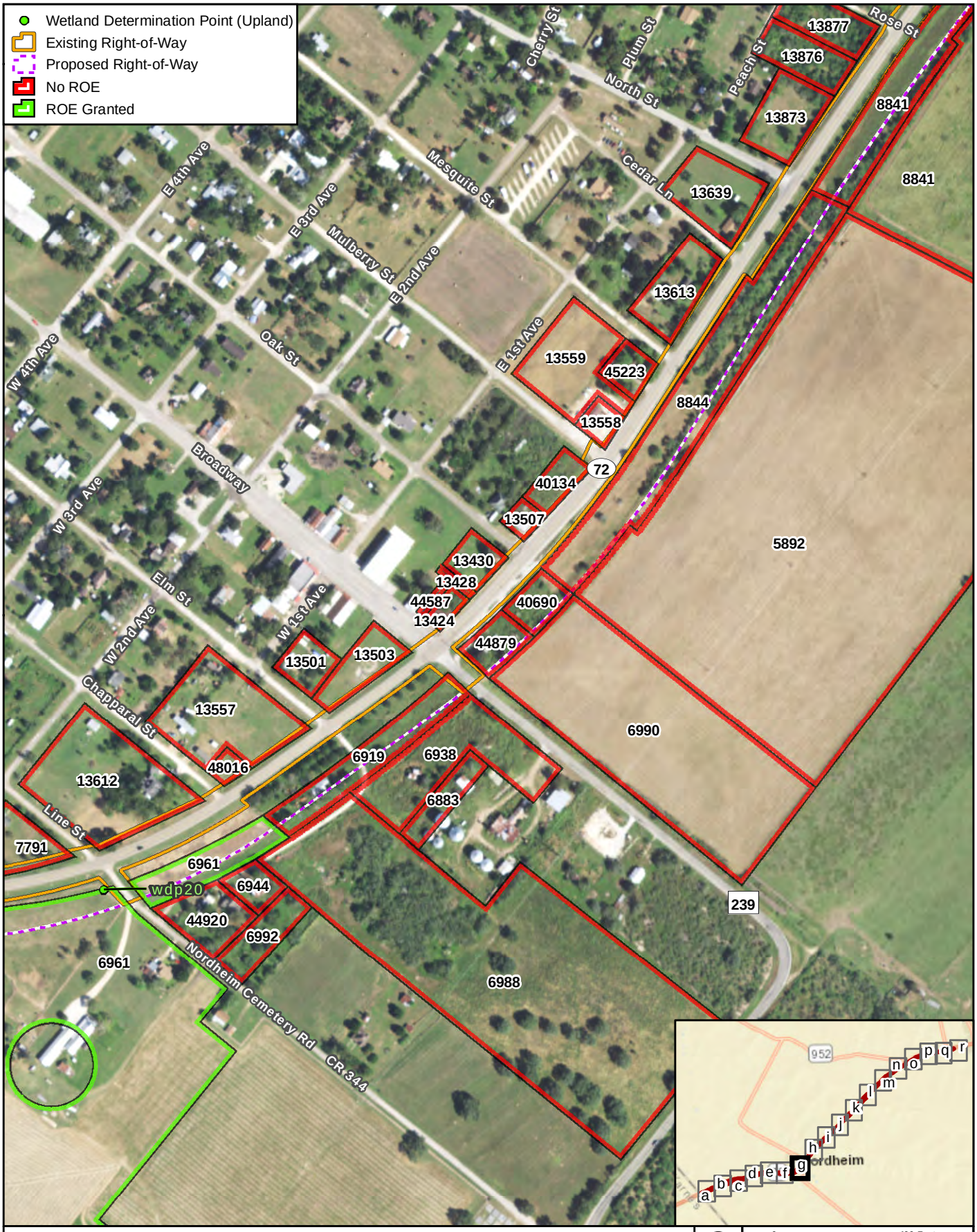

Figure **5**g

Potential Waters of the U.S.

SH 72 from Karnes County Line to 0.25 Miles East of FM 2980

No WOUS on this sheet

Data Sources: NHD (2014), FEMA NFHL (2018), CMEC (2018)
Aerial Source: NAIP (2016)

0 400 Feet
0 100 Meters

Prepared for: TxDOT	1 in = 400 feet
	Scale: 1:4,800
CSJ: 0270-02-041	Date: 7/16/2018

G:\Projects\TXDOT\SH72\JD_Figure 6_Crossings_20180622.mxd

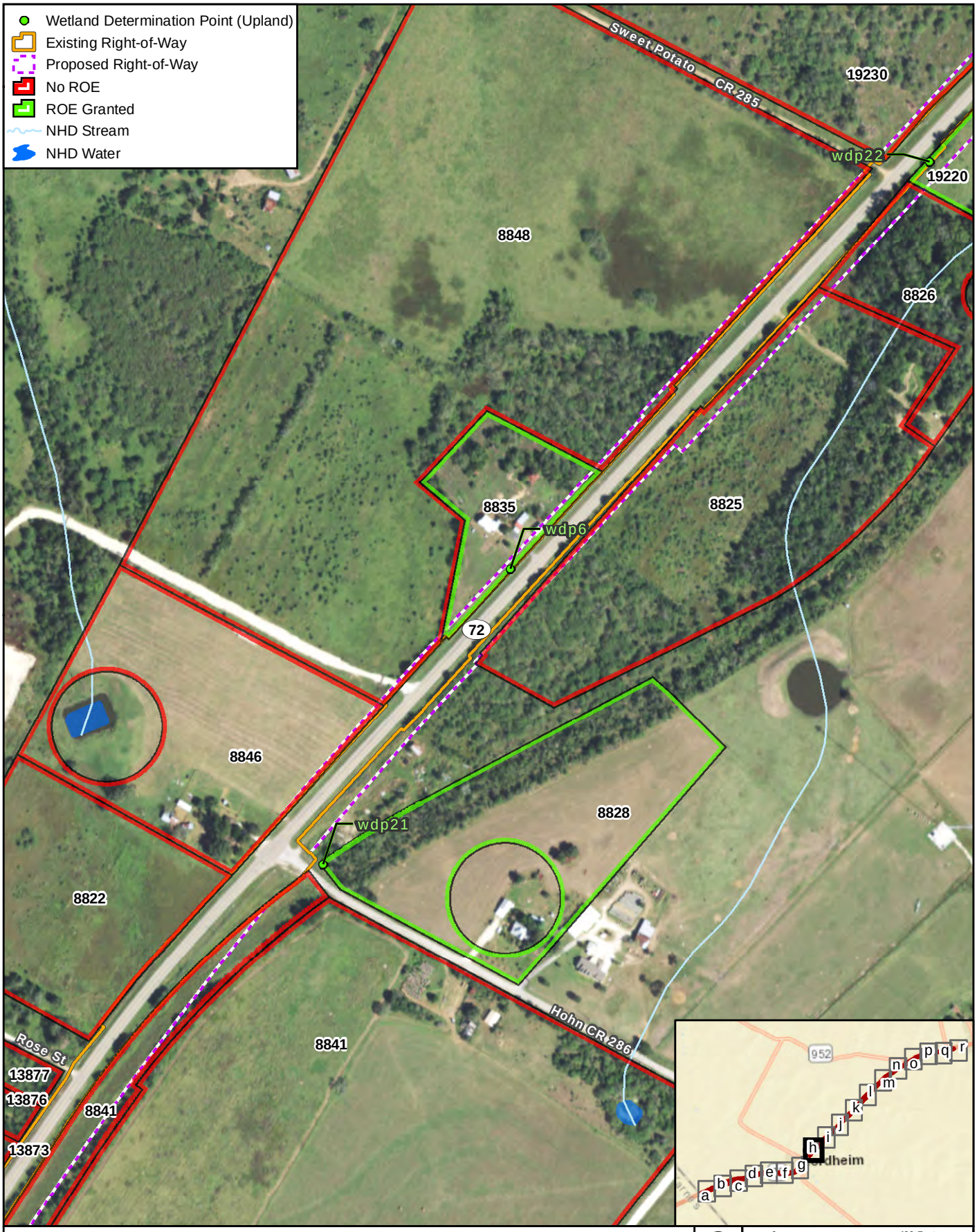

Figure **5**h

Potential Waters of the U.S.

SH 72 from Karnes County Line to 0.25 Miles East of FM 2980

No WOUS on this sheet

Data Sources: NHD (2014), FEMA NFHL (2018), CMEC (2018)
Aerial Source: NAIP (2016)

0 400 Feet
0 100 Meters

Prepared for: TxDOT	1 in = 400 feet
	Scale: 1:4,800
CSJ: 0270-02-041	Date: 7/16/2018

G:\Projects\TXDOT\SH72\JD_Figure 6_Crossings_20180622.mxd

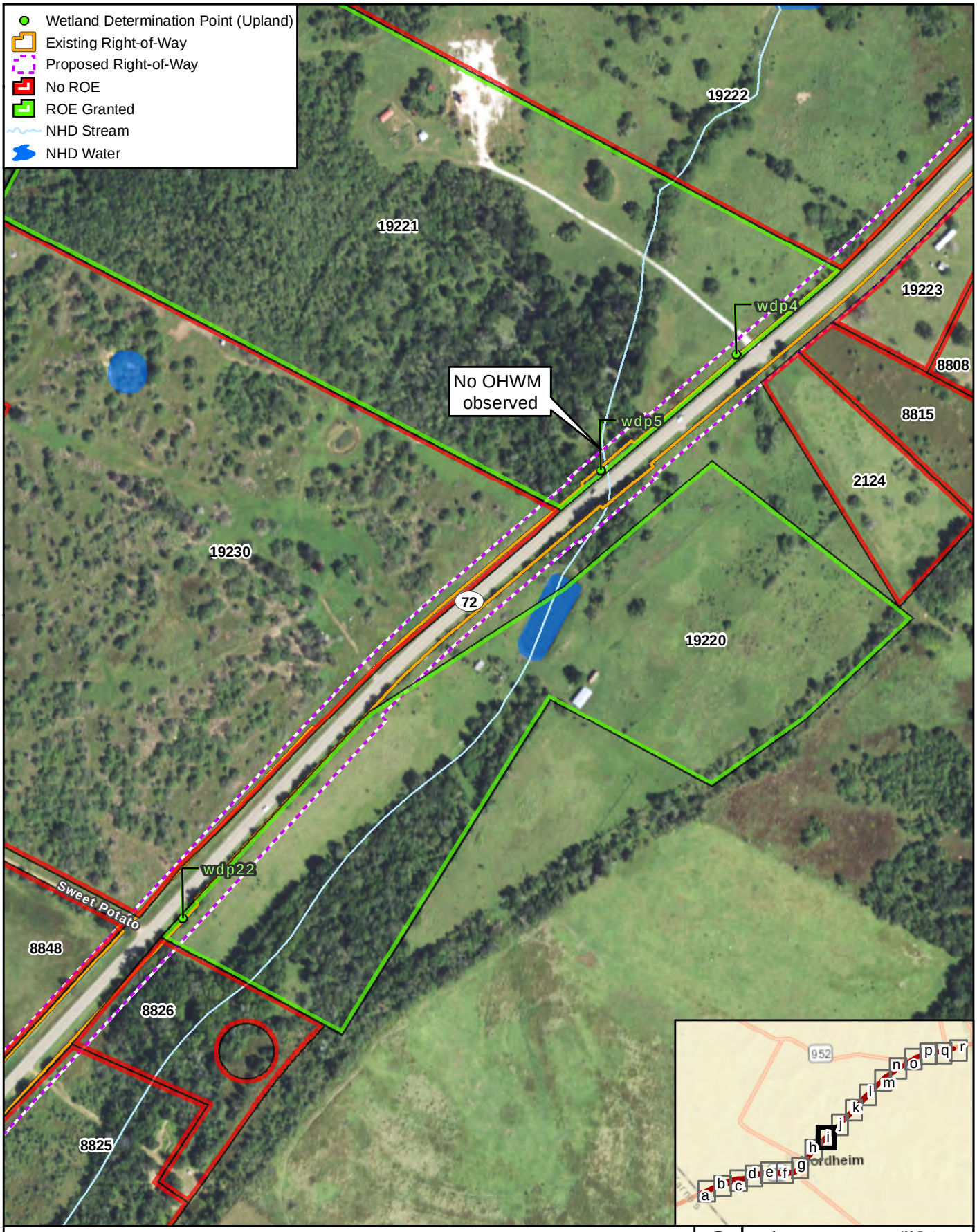

Figure **5**i

Potential Waters of the U.S.

SH 72 from Karnes County Line to 0.25 Miles East of FM 2980

No WOUS on this sheet

Data Sources: NHD (2014), FEMA NFHL (2018), CMEC (2018)
Aerial Source: NAIP (2016)

0 400 Feet
0 100 Meters

Prepared for: TxDOT	1 in = 400 feet
	Scale: 1:4,800
CSJ: 0270-02-041	Date: 7/16/2018

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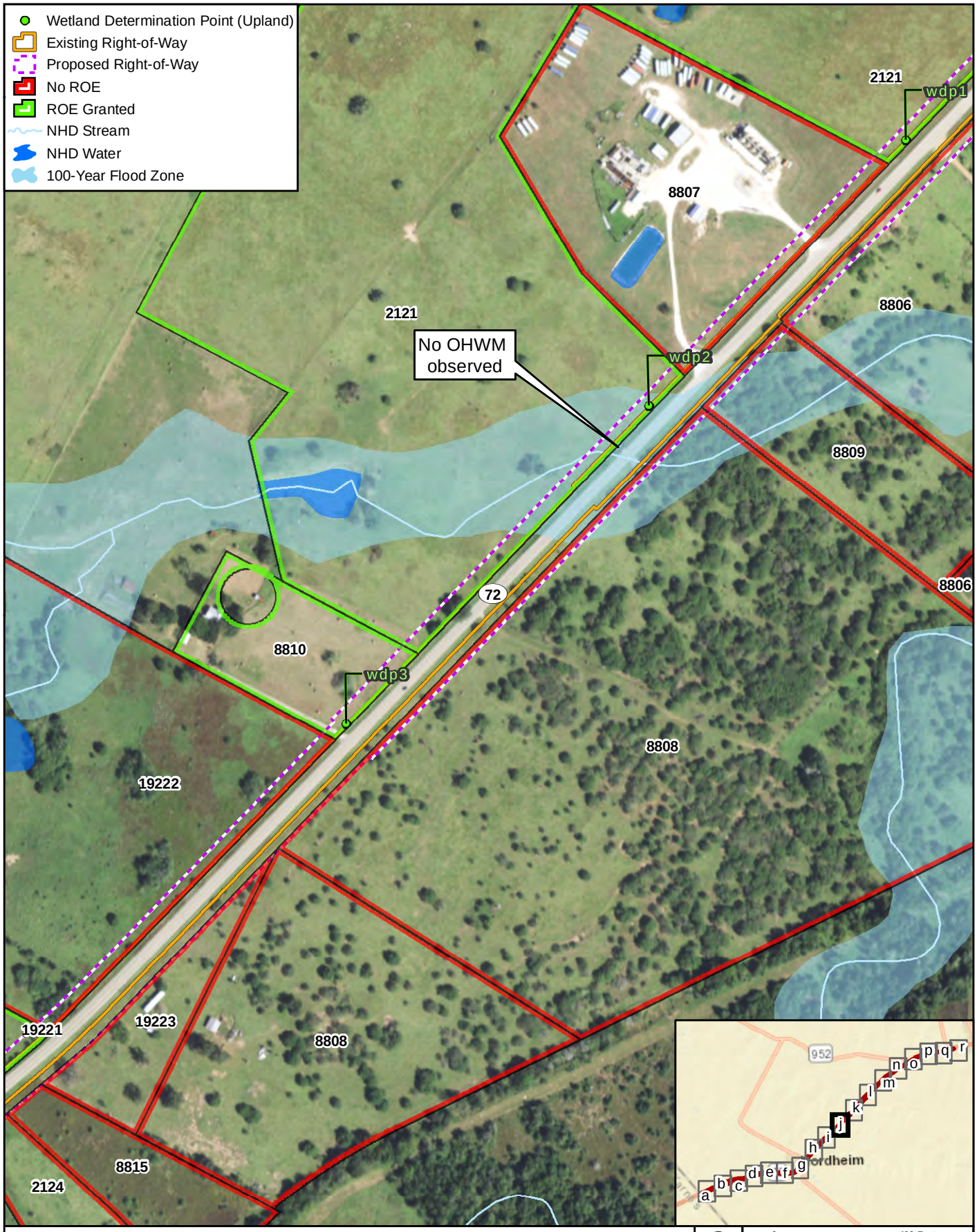

Figure **5**j

Potential Waters of the U.S.

SH 72 from Karnes County Line to 0.25 Miles East of FM 2980

No WOUS on this sheet

Data Sources: NHD (2014), FEMA NFHL (2018), CMEC (2018)
Aerial Source: NAIP (2016)

0 400 Feet
0 100 Meters

Prepared for: TxDOT	1 in = 400 feet
	Scale: 1:4,800
CSJ: 0270-02-041	Date: 7/16/2018

G:\Projects\TXDOT\SH72\JD_Figure 6_Crossings_20180622.mxd

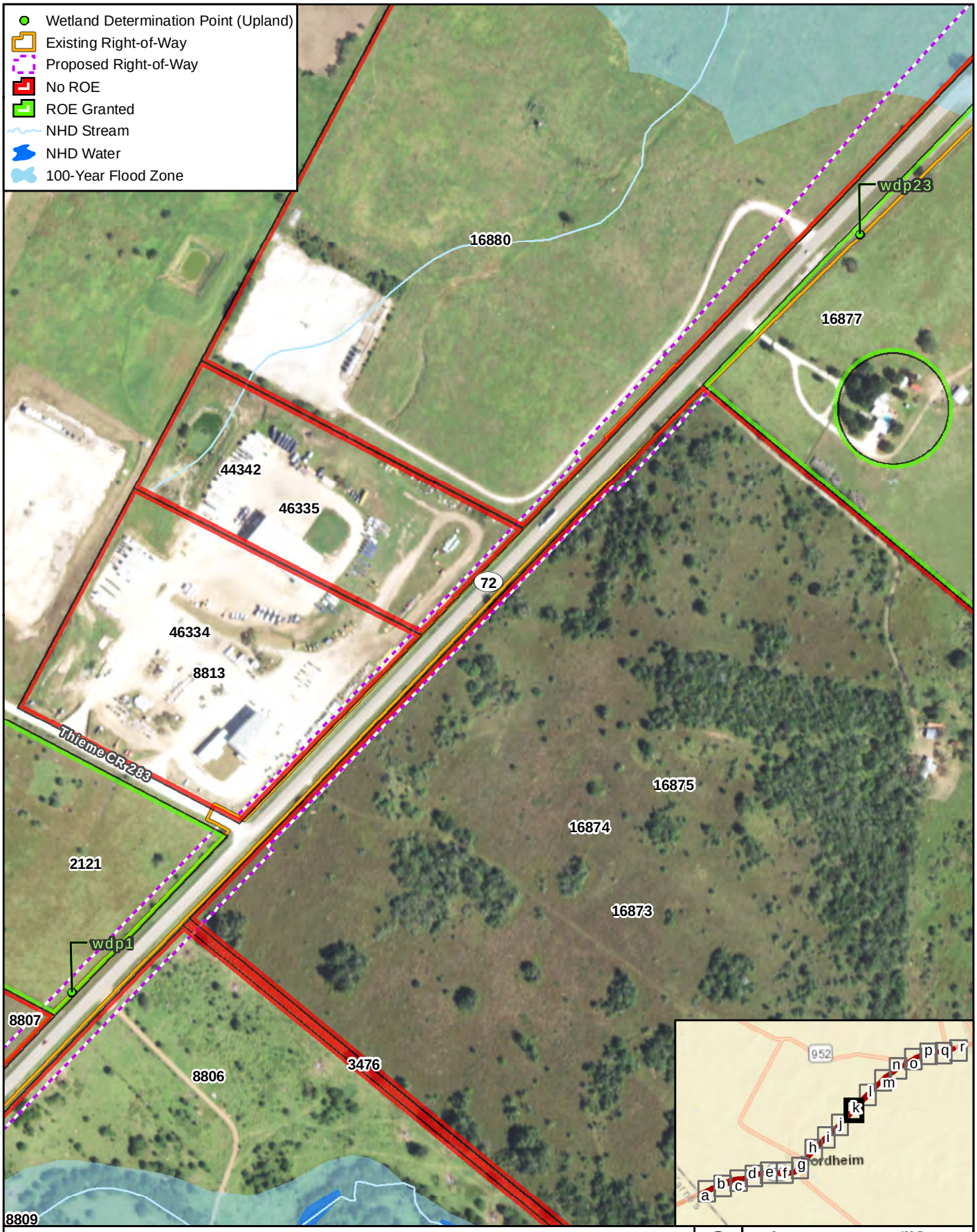

Figure **5**k

Potential Waters of the U.S.

SH 72 from Karnes County Line to 0.25 Miles East of FM 2980

No WOUS on this sheet

Data Sources: NHD (2014), FEMA NFHL (2018), CMEC (2018)
Aerial Source: NAIP (2016)

0 400 Feet
0 100 Meters

Prepared for: TxDOT	1 in = 400 feet
	Scale: 1:4,800
CSJ: 0270-02-041	Date: 7/16/2018

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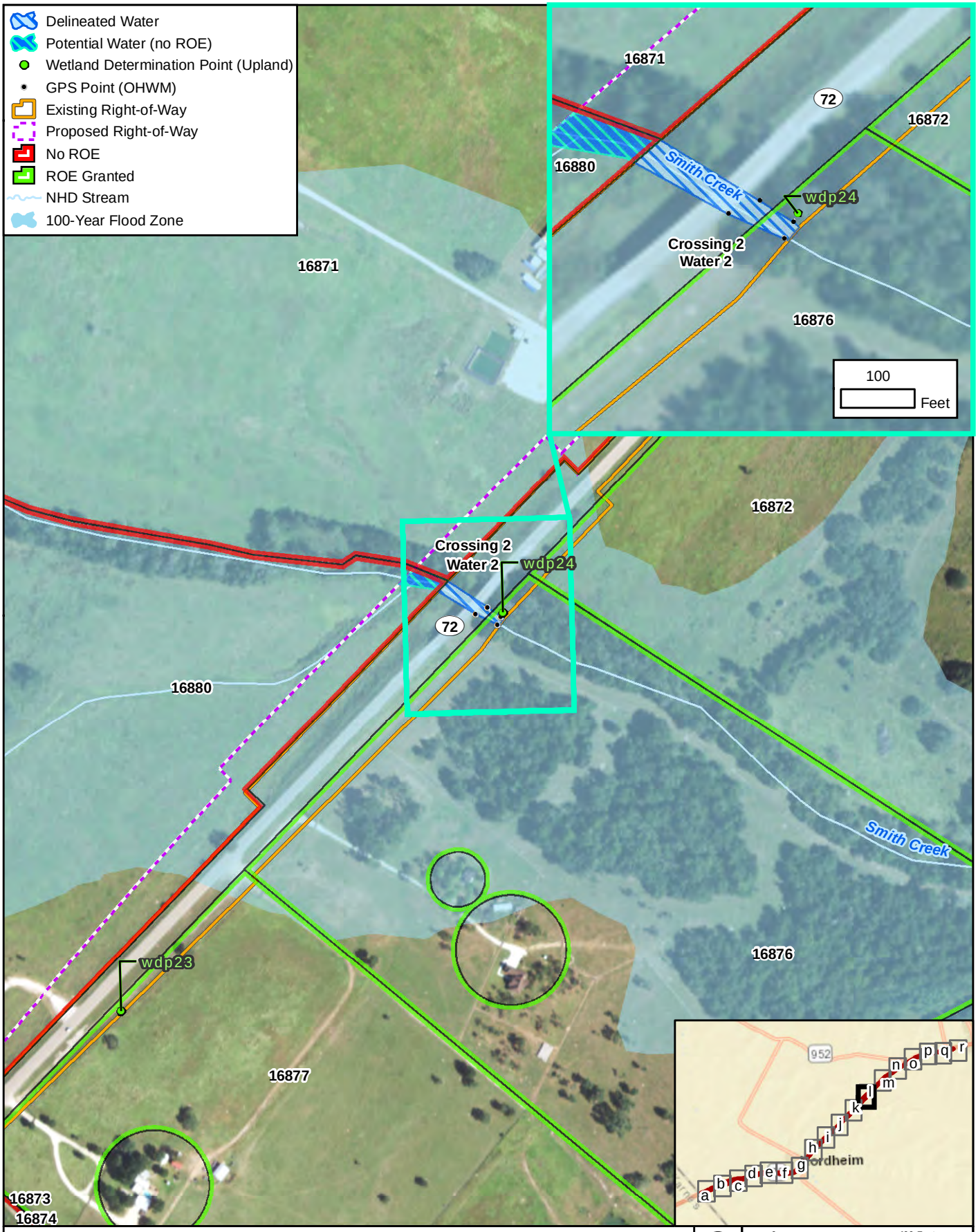

Figure **5**l

Potential Waters of the U.S.

SH 72 from Karnes County Line to 0.25 Miles East of FM 2980

Data Sources: NHD (2014)
FEMA NFHL (2018), CMEC (2018)
Aerial Source: NAIP (2016)

0 400 Feet
0 100 Meters

Prepared for: TxDOT	1 in = 400 feet
	Scale: 1:4,800
CSJ: 0270-02-041	Date: 7/17/2018

G:\Projects\TXDOT\SH72\JD_Figure 6L__20180622.mxd

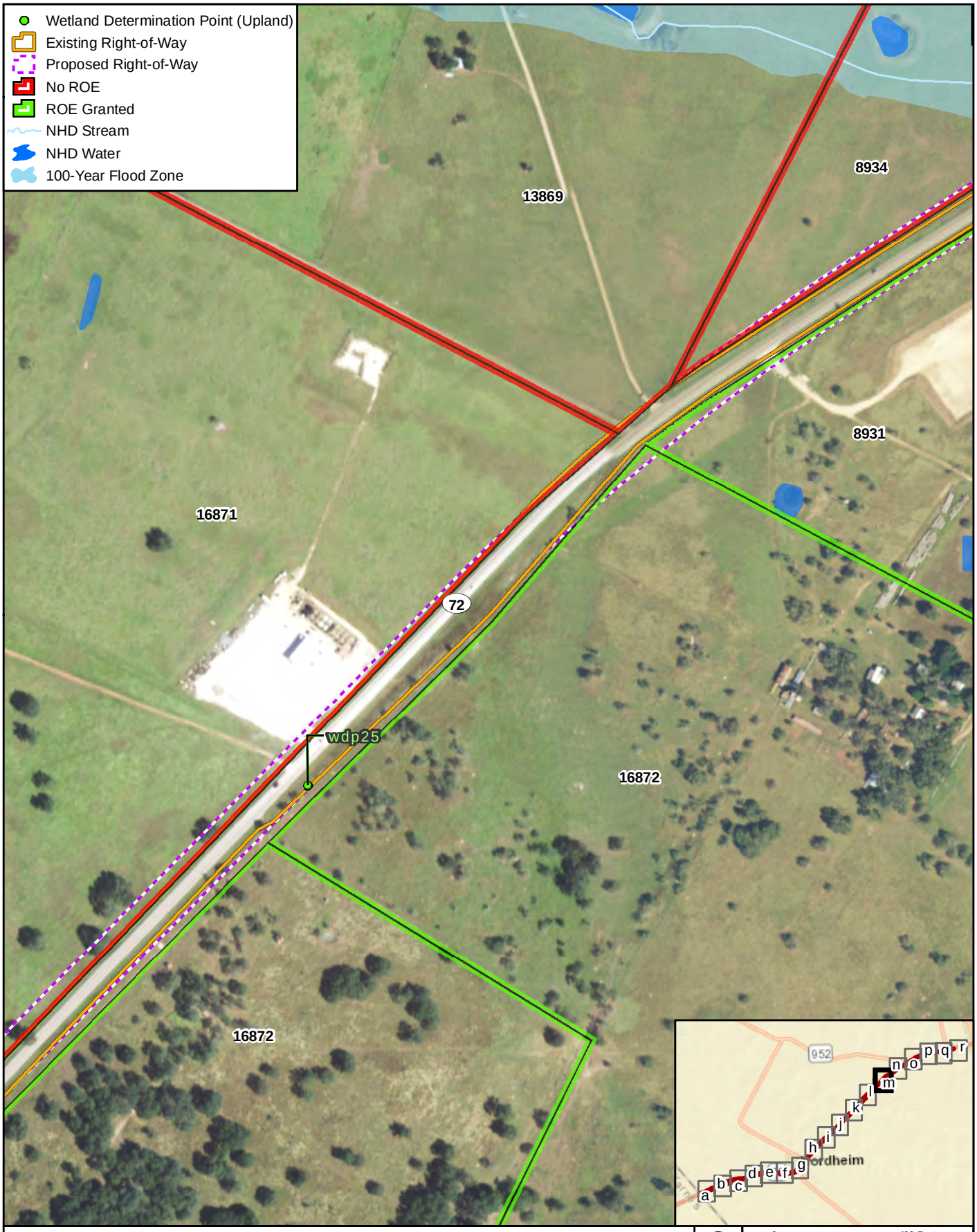

Figure **5**m

Potential Waters of the U.S.

SH 72 from Karnes County Line to 0.25 Miles East of FM 2980

No WOUS on this sheet

Data Sources: NHD (2014), FEMA NFHL (2018), CMEC (2018)
Aerial Source: NAIP (2016)

0 400 Feet
0 100 Meters

Prepared for: TxDOT	1 in = 400 feet
	Scale: 1:4,800
CSJ: 0270-02-041	Date: 7/16/2018

G:\Projects\TXDOT\SH72\JD_Figure 6_Crossings_20180622.mxd

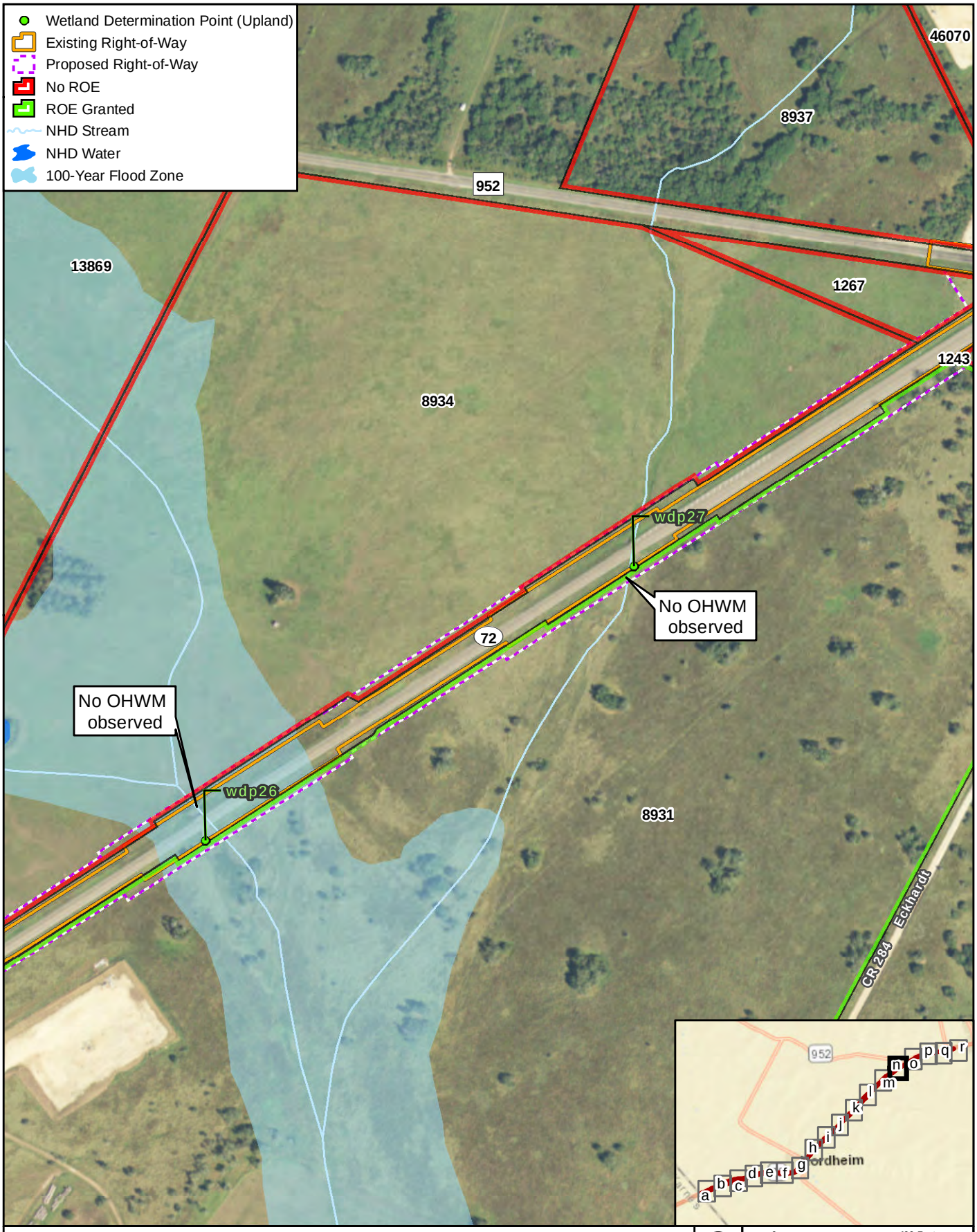

Figure **5**n

Potential Waters of the U.S.

SH 72 from Karnes County Line to 0.25 Miles East of FM 2980

No WOUS on this sheet

Data Sources: NHD (2014), FEMA NFHL (2018), CMEC (2018)
Aerial Source: NAIP (2016)

0 400 Feet
0 100 Meters

Prepared for: TxDOT	1 in = 400 feet
	Scale: 1:4,800
CSJ: 0270-02-041	Date: 7/16/2018

G:\Projects\TXDOT\SH72\JD_Figure 6_Crossings_20180622.mxd

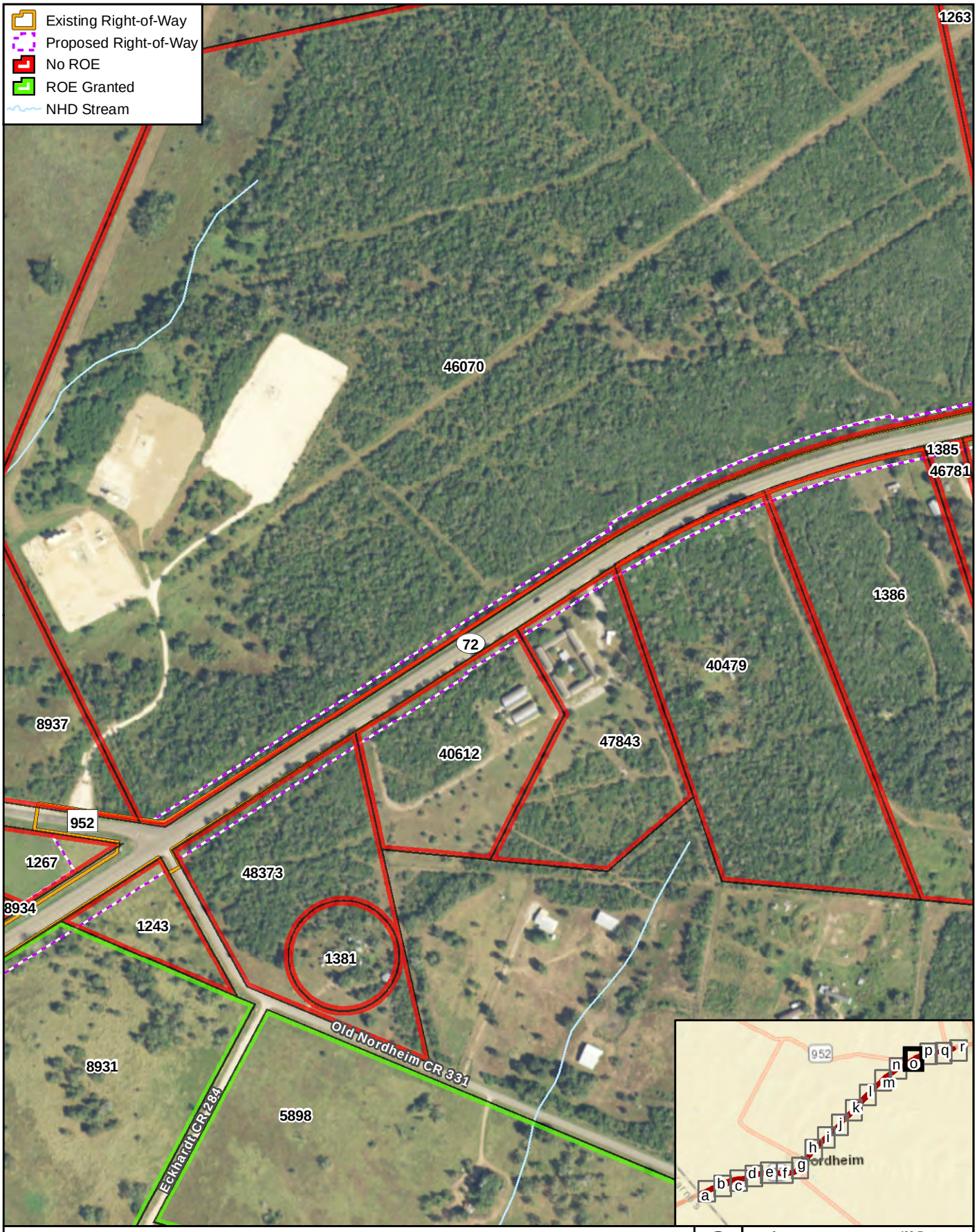

Figure **5**o

Potential Waters of the U.S.

SH 72 from Karnes County Line to 0.25 Miles East of FM 2980

No WOUS on this sheet

Data Sources: NHD (2014), FEMA NFHL (2018), CMEC (2018)
Aerial Source: NAIP (2016)

0 400 Feet
0 100 Meters

Prepared for: TxDOT	1 in = 400 feet
	Scale: 1:4,800
CSJ: 0270-02-041	Date: 7/16/2018

G:\Projects\TXDOT\SH72\JD_Figure 6_Crossings_20180622.mxd

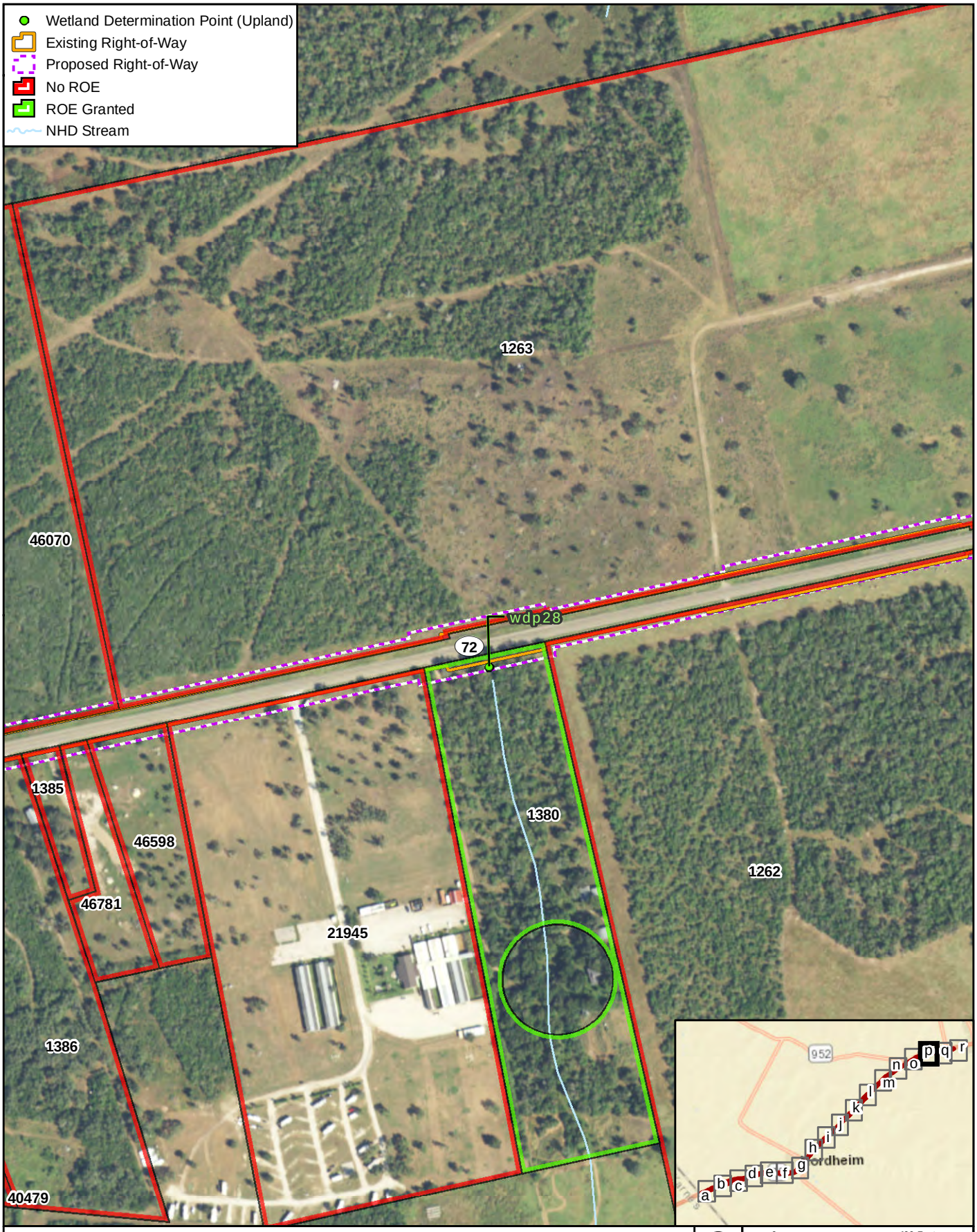

Figure **5**p

Potential Waters of the U.S.

SH 72 from Karnes County Line to 0.25 Miles East of FM 2980

No WOUS on this sheet

Data Sources: NHD (2014), FEMA NFHL (2018), CMEC (2018)
Aerial Source: NAIP (2016)

0 400 Feet
0 100 Meters

Prepared for: TxDOT	1 in = 400 feet
	Scale: 1:4,800
CSJ: 0270-02-041	Date: 7/16/2018

G:\Projects\TXDOT\SH72\JD_Figure 6_Crossings_20180622.mxd

Figure **5**q

Potential Waters of the U.S.

SH 72 from Karnes County Line to 0.25 Miles East of FM 2980

No WOUS on this sheet

Data Sources: NHD (2014), FEMA NFHL (2018), CMEC (2018)
Aerial Source: NAIP (2016)

0 400 Feet
0 100 Meters

Prepared for: TxDOT	1 in = 400 feet
	Scale: 1:4,800
CSJ: 0270-02-041	Date: 7/16/2018

G:\Projects\TXDOT\SH72\JD_Figure 6_Crossings_20180622.mxd

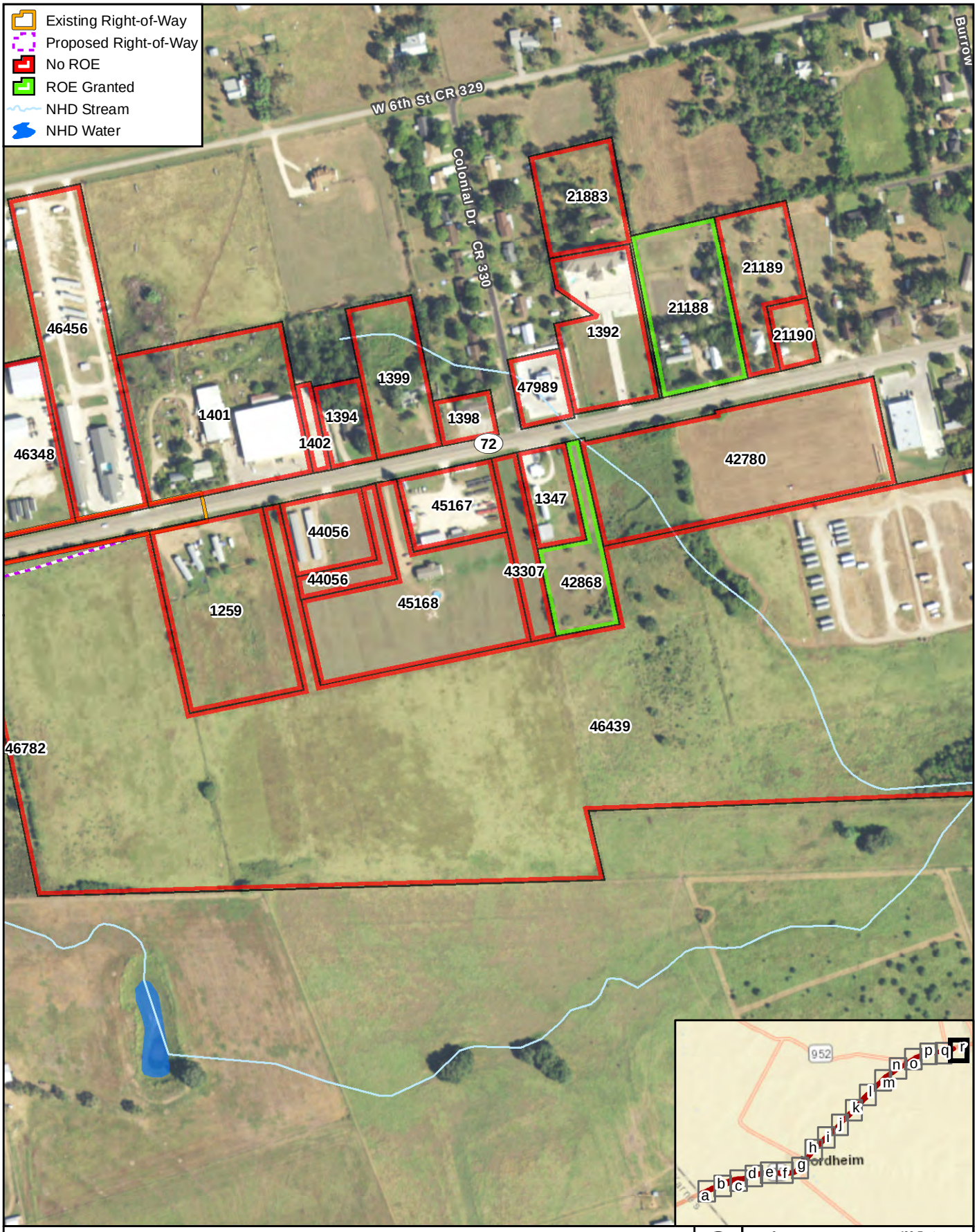

Figure **5**r

Potential Waters of the U.S.

SH 72 from Karnes County Line to 0.25 Miles East of FM 2980

No WOUS on this sheet

Data Sources: NHD (2014), FEMA NFHL (2018), CMEC (2018)
Aerial Source: NAIP (2016)

0 400 Feet
0 100 Meters

Prepared for: TxDOT	1 in = 400 feet
	Scale: 1:4,800
CSJ: 0270-02-041	Date: 7/16/2018

G:\Projects\TXDOT\SH72\JD_Figure 6_Crossings_20180622.mxd

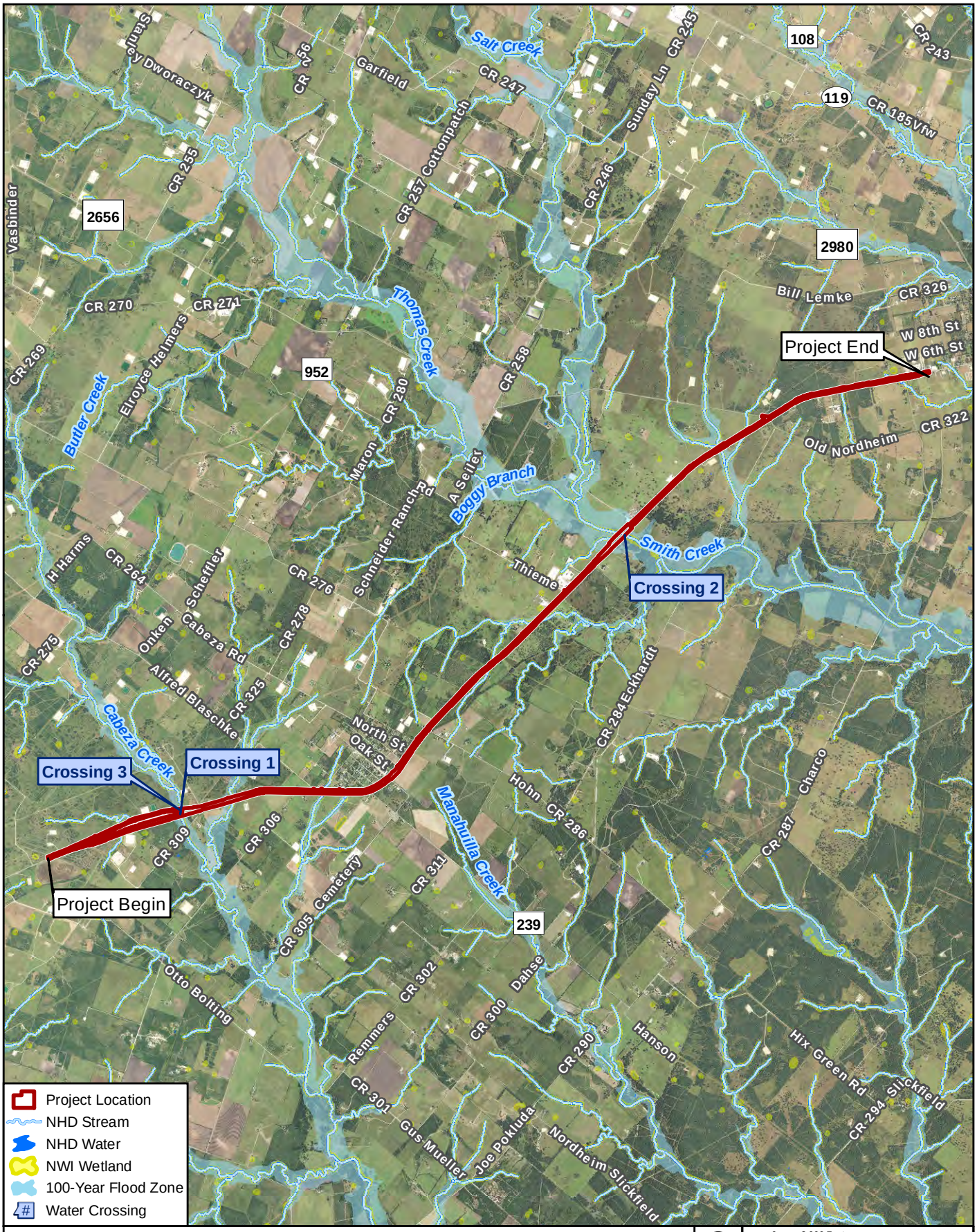

Figure 6

Water Resources

SH 72 from Karnes County Line to 0.25 Miles East of FM 2980

Data Sources: NHD (2014), NWI (2016), FEMA NFHL (2018), CMEC (2018)
Aerial Source: NAIP (2016)

0 2,000 Feet
0 600 Meters

Prepared for: TxDOT	1 in = 6,867.72 feet
	Scale: 1:82,413
CSJ: 0270-02-041	Date: 7/6/2018

G:\Projects\TXDOT\SH72\JD_Figure 5_Water Resources_20180622.mxd

Figure 7 - Observed Vegetation Types

Sheet 1 of 18

SH 72 from Karnes County Line to 0.25 Miles East of FM 2980

Data Sources: NHD (2014), CMEC (2018)
Aerial Source: TNRIS (2015)

0 200 Feet
0 60 Meters

Prepared for: TxDOT	1 in = 200 feet
	Scale: 1:2,400
CSJ: 0270-02-041	Date: 7/5/2018

G:\Projects\TXDOT\SH72\BEF_Observed_Veg_20180615.mxd

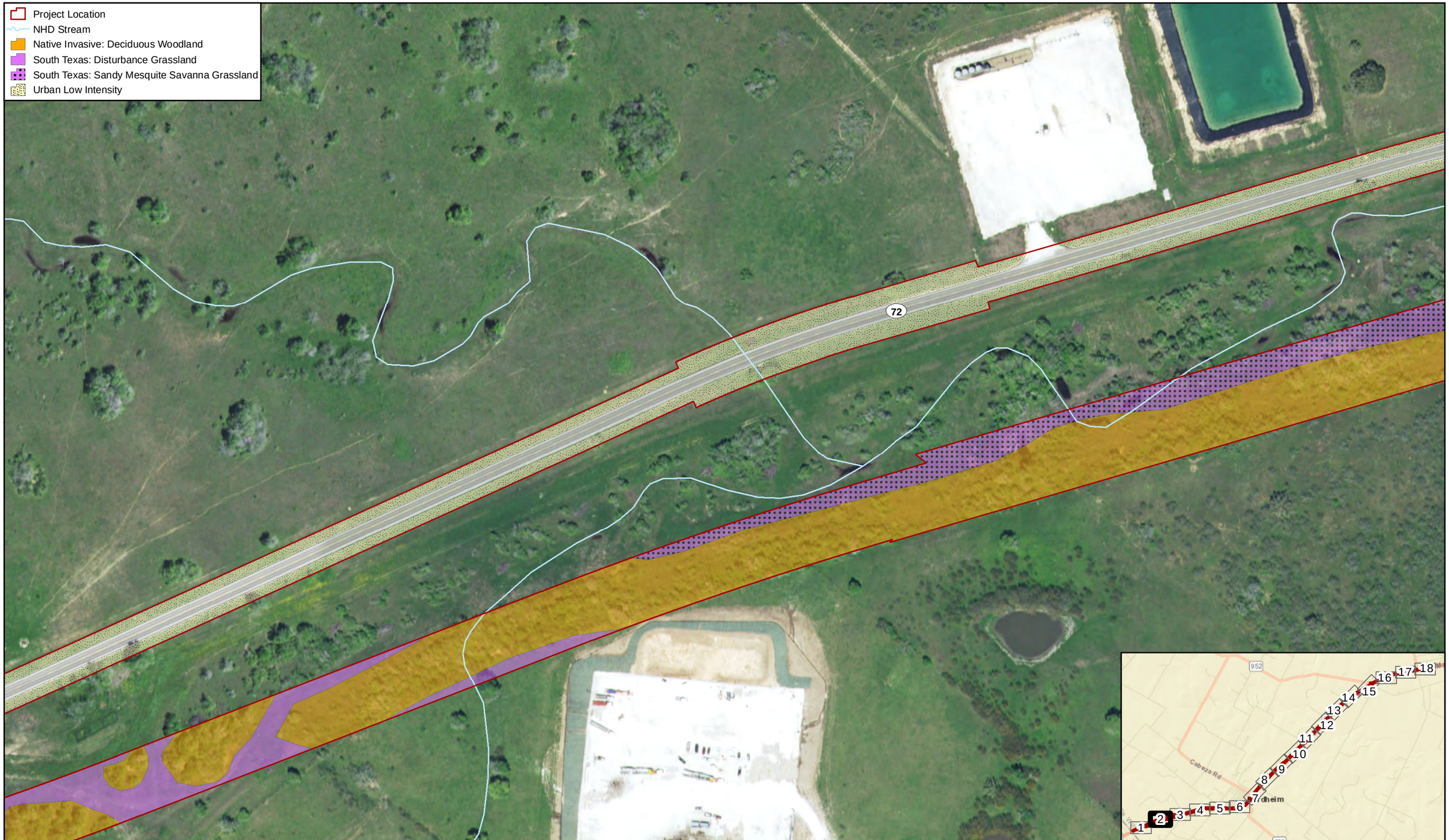

Figure 7 - Observed Vegetation Types

Sheet 2 of 18

SH 72 from Karnes County Line to 0.25 Miles East of FM 2980

Data Sources: NHD (2014), CMEC (2018)
Aerial Source: TNRIS (2015)

0 200 Feet
0 60 Meters

Prepared for: TxDOT	1 in = 200 feet
	Scale: 1:2,400
CSJ: 0270-02-041	Date: 7/5/2018

G:\Projects\TXDOT\SH72\BEF_Observed_Veg_20180615.mxd

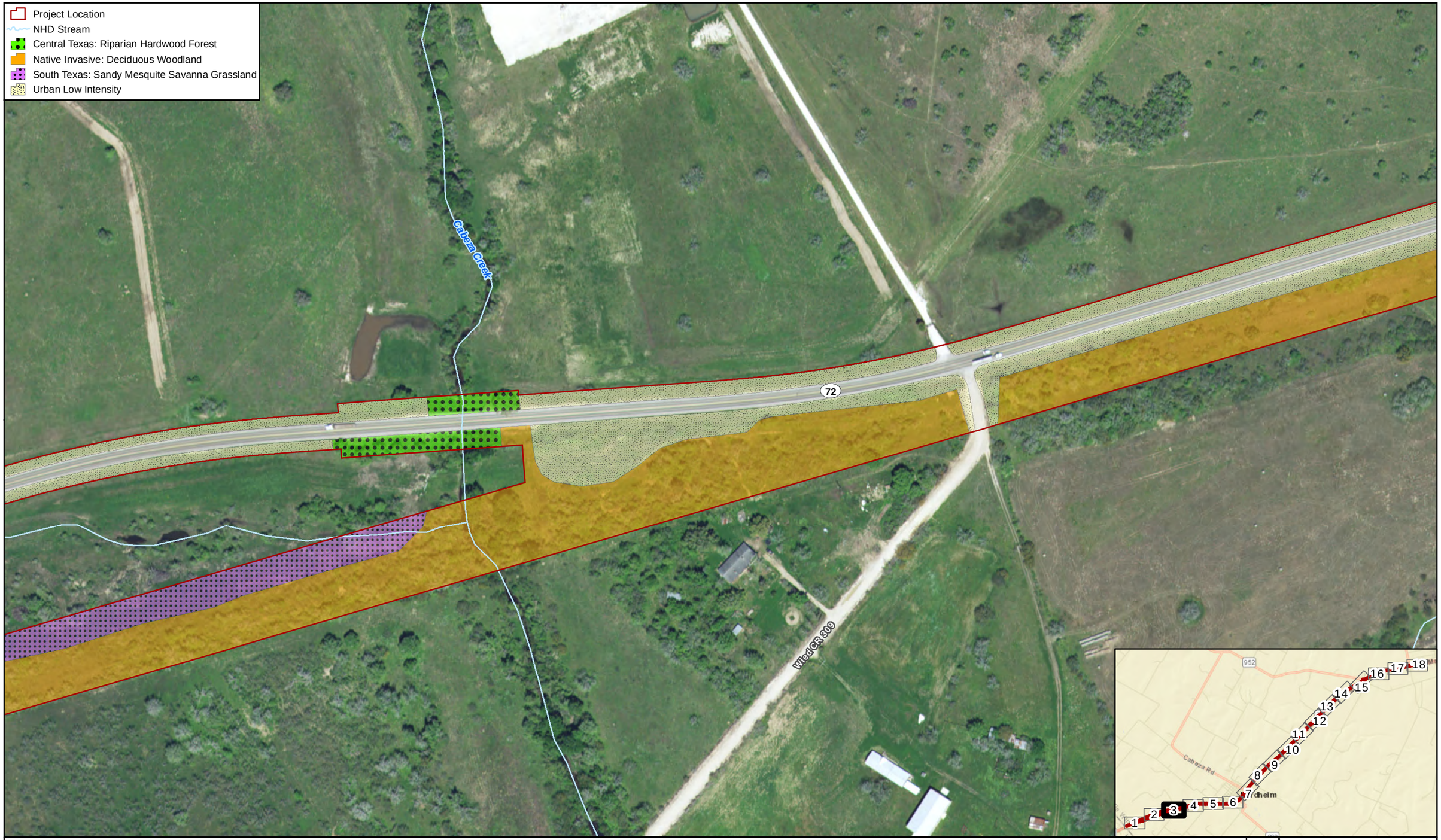

Figure 7 - Observed Vegetation Types

Sheet 3 of 18

SH 72 from Karnes County Line to 0.25 Miles East of FM 2980

Data Sources: NHD (2014), CMEC (2018)
Aerial Source: TNRIS (2015)

0 200 Feet
0 60 Meters

Prepared for: TxDOT	1 in = 200 feet
	Scale: 1:2,400
CSJ: 0270-02-041	Date: 7/5/2018

G:\Projects\TXDOT\SH72\BEF_Observed_Veg_20180615.mxd

Figure 7 - Observed Vegetation Types

Sheet 4 of 18

SH 72 from Karnes County Line to 0.25 Miles East of FM 2980

Data Sources: NHD (2014), CMEC (2018)
Aerial Source: TNRIS (2015)

0 200 Feet
0 60 Meters

Prepared for: TxDOT	1 in = 200 feet
	Scale: 1:2,400
CSJ: 0270-02-041	Date: 7/5/2018

G:\Projects\TXDOT\SH72\BEF_Observed_Veg_20180615.mxd

Figure 7 - Observed Vegetation Types

Sheet 5 of 18

SH 72 from Karnes County Line to 0.25 Miles East of FM 2980

Data Sources: NHD (2014), CMEC (2018)
Aerial Source: TNRIS (2015)

0 200 Feet
0 60 Meters

Prepared for: TxDOT	1 in = 200 feet
	Scale: 1:2,400
CSJ: 0270-02-041	Date: 7/5/2018

G:\Projects\TXDOT\SH72\BEF_Observed_Veg_20180615.mxd

Figure 7 - Observed Vegetation Types

Sheet 6 of 18

SH 72 from Karnes County Line to 0.25 Miles East of FM 2980

Data Sources: NHD (2014), CMEC (2018)
Aerial Source: TNRIS (2015)

0 200 Feet
0 60 Meters

Prepared for: TxDOT	1 in = 200 feet
	Scale: 1:2,400
CSJ: 0270-02-041	Date: 7/5/2018

G:\Projects\TXDOT\SH72\BEF_Observed_Veg_20180615.mxd

Figure 7 - Observed Vegetation Types

Sheet 7 of 18

SH 72 from Karnes County Line to 0.25 Miles East of FM 2980

Data Sources: NHD (2014), CMEC (2018)
Aerial Source: TNRIS (2015)

0 200 Feet
0 60 Meters

Prepared for: TxDOT	1 in = 200 feet
	Scale: 1:2,400
CSJ: 0270-02-041	Date: 7/5/2018

G:\Projects\TXDOT\SH72\BEF_Observed_Veg_20180615.mxd

Figure 7 - Observed Vegetation Types

Sheet 8 of 18

SH 72 from Karnes County Line to 0.25 Miles East of FM 2980

Data Sources: NHD (2014), CMEC (2018)
Aerial Source: TNRIS (2015)

0 200 Feet
0 60 Meters

Prepared for: TxDOT	1 in = 200 feet
	Scale: 1:2,400
CSJ: 0270-02-041	Date: 7/5/2018

G:\Projects\TXDOT\SH72\BEF_Observed_Veg_20180615.mxd

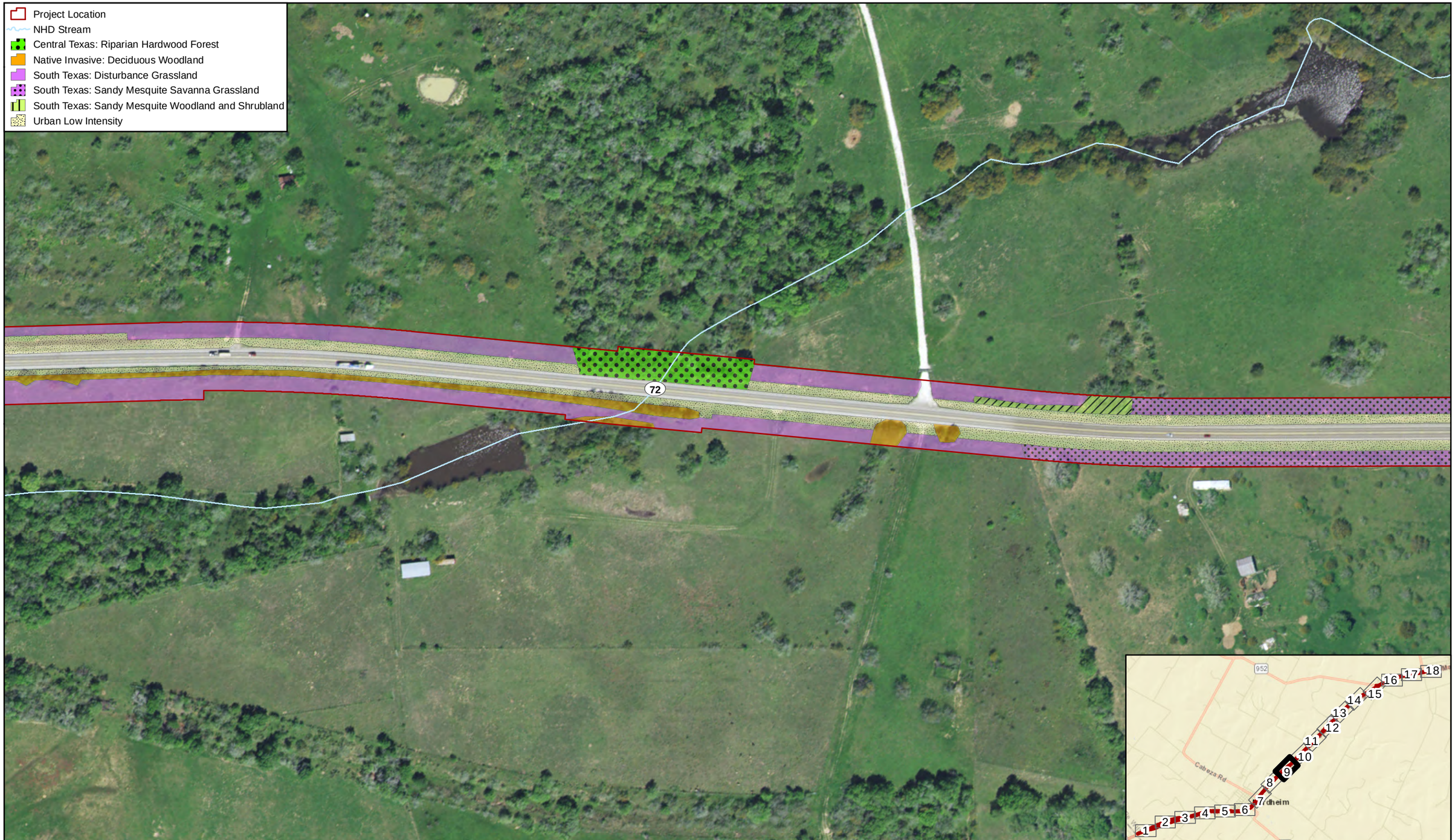

Figure 7 - Observed Vegetation Types

Sheet 9 of 18

SH 72 from Karnes County Line to 0.25 Miles East of FM 2980

Data Sources: NHD (2014), CMEC (2018)
Aerial Source: TNRIS (2015)

0 200 Feet
0 60 Meters

Prepared for: TxDOT	1 in = 200 feet
	Scale: 1:2,400
CSJ: 0270-02-041	Date: 7/5/2018

G:\Projects\TXDOT\SH72\BEF_Observed_Veg_20180615.mxd

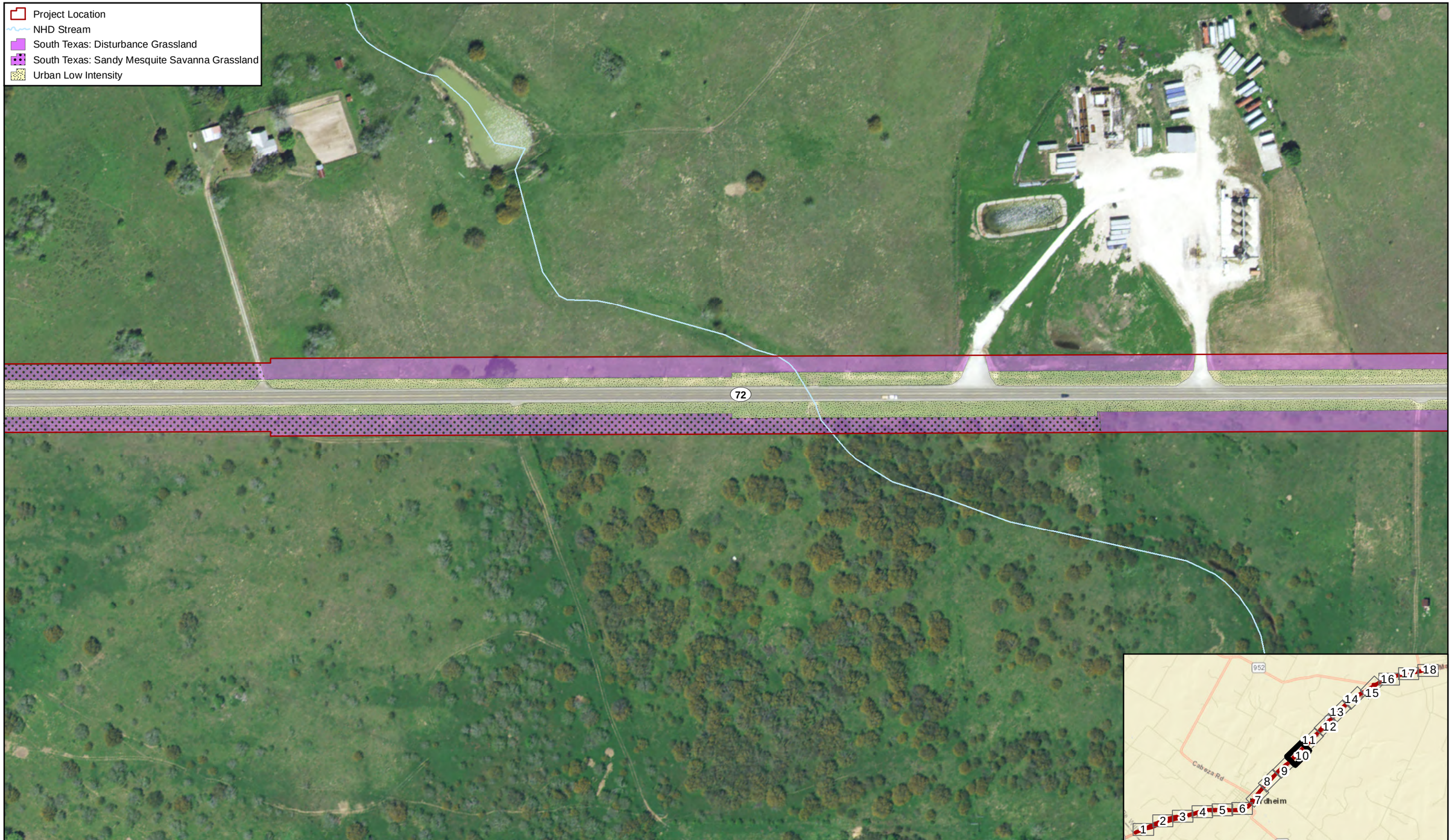

Figure 7 - Observed Vegetation Types

Sheet 10 of 18

SH 72 from Karnes County Line to 0.25 Miles East of FM 2980

Data Sources: NHD (2014), CMEC (2018)
Aerial Source: TNRIS (2015)

0 200 Feet
0 60 Meters

Prepared for: TxDOT	1 in = 200 feet
	Scale: 1:2,400
CSJ: 0270-02-041	Date: 7/5/2018

G:\Projects\TXDOT\SH72\BEF_Observed_Veg_20180615.mxd

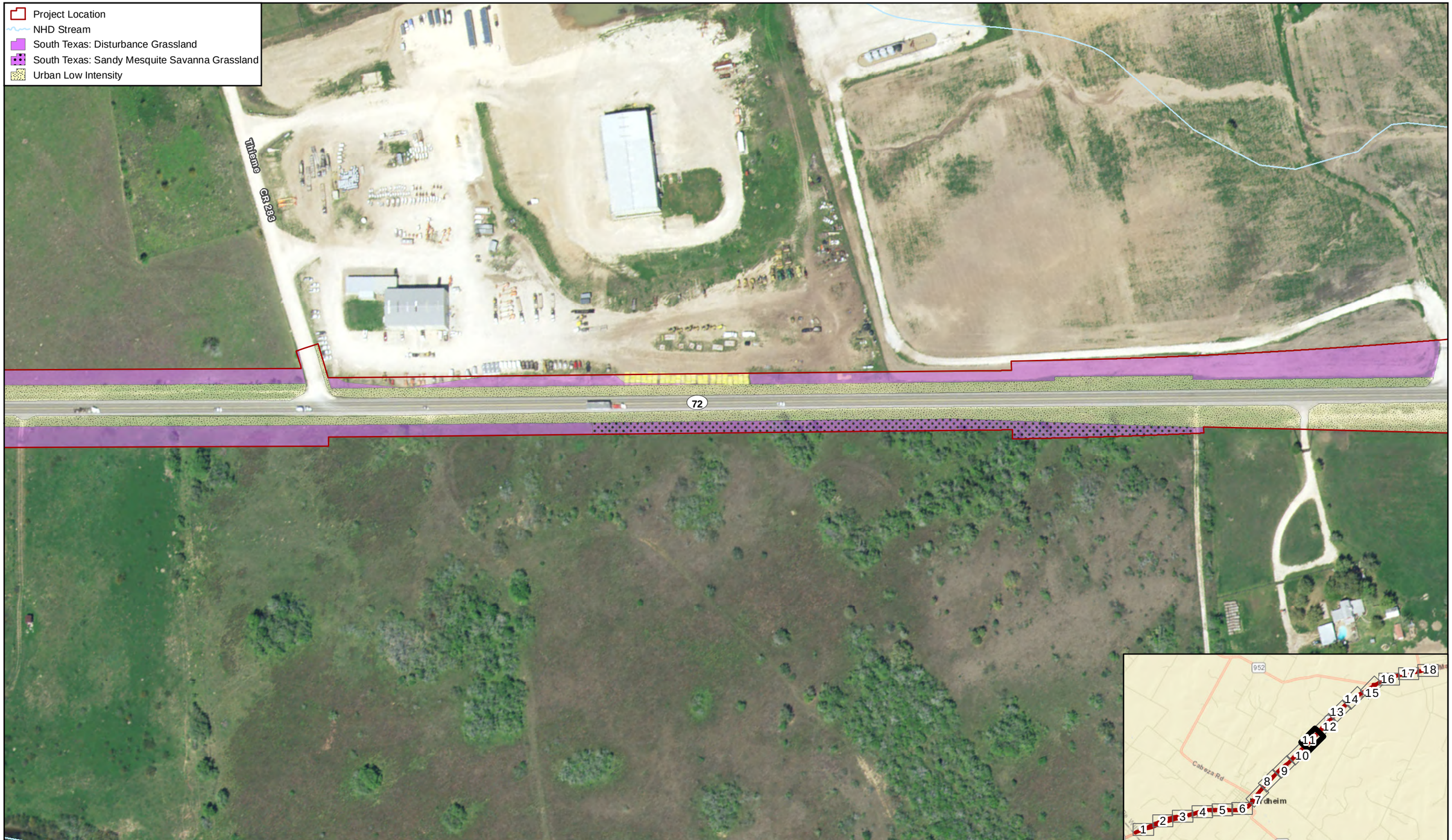

Figure 7 - Observed Vegetation Types

Sheet 11 of 18

SH 72 from Karnes County Line to 0.25 Miles East of FM 2980

Data Sources: NHD (2014), CMEC (2018)
Aerial Source: TNRIS (2015)

0 200 Feet
0 60 Meters

Prepared for: TxDOT	1 in = 200 feet
	Scale: 1:2,400
CSJ: 0270-02-041	Date: 7/5/2018

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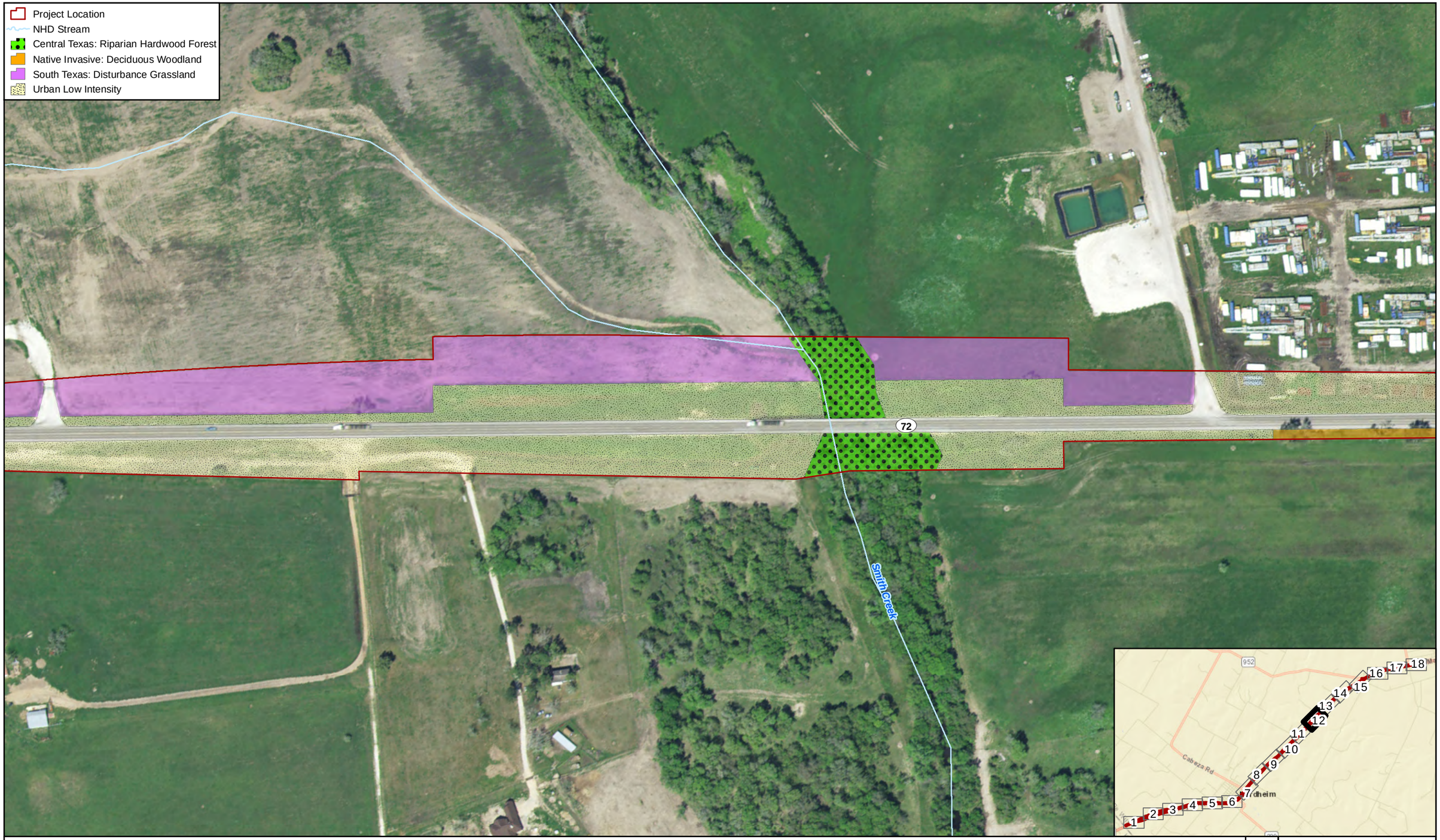

Figure 7 - Observed Vegetation Types

Sheet 12 of 18

SH 72 from Karnes County Line to 0.25 Miles East of FM 2980

Data Sources: NHD (2014), CMEC (2018)
Aerial Source: TNRIS (2015)

0 200 Feet
0 60 Meters

Prepared for: TxDOT	1 in = 200 feet
	Scale: 1:2,400
CSJ: 0270-02-041	Date: 7/5/2018

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Figure 7 - Observed Vegetation Types

Sheet 13 of 18

SH 72 from Karnes County Line to 0.25 Miles East of FM 2980

Data Sources: NHD (2014), CMEC (2018)
Aerial Source: TNRIS (2015)

0 200 Feet
0 60 Meters

Prepared for: TxDOT	1 in = 200 feet
	Scale: 1:2,400
CSJ: 0270-02-041	Date: 7/5/2018

G:\Projects\TXDOT\SH72\BEF_Observed_Veg_20180615.mxd

Figure 7 - Observed Vegetation Types

Sheet 14 of 18

SH 72 from Karnes County Line to 0.25 Miles East of FM 2980

Data Sources: NHD (2014), CMEC (2018)
Aerial Source: TNRIS (2015)

0 200 Feet
0 60 Meters

Prepared for: TxDOT	1 in = 200 feet
	Scale: 1:2,400
CSJ: 0270-02-041	Date: 7/5/2018

G:\Projects\TXDOT\SH72\BEF_Observed_Veg_20180615.mxd

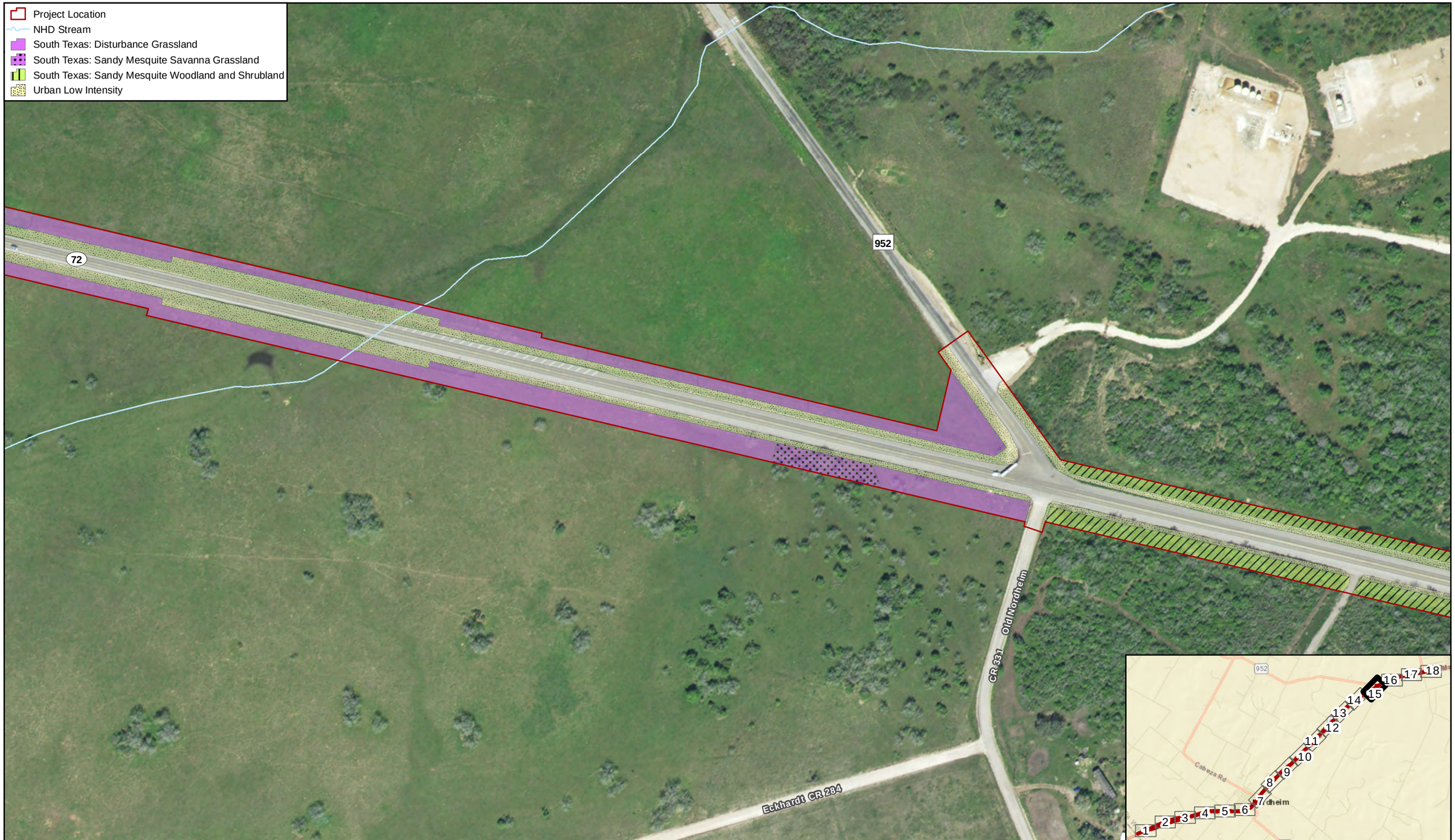

Figure 7 - Observed Vegetation Types

Sheet 15 of 18

SH 72 from Karnes County Line to 0.25 Miles East of FM 2980

Data Sources: NHD (2014), CMEC (2018)
Aerial Source: TNRIS (2015)

0 200 Feet
0 60 Meters

Prepared for: TxDOT	1 in = 200 feet
	Scale: 1:2,400
CSJ: 0270-02-041	Date: 7/5/2018

G:\Projects\TXDOT\SH72\BEF_Observed_Veg_20180615.mxd

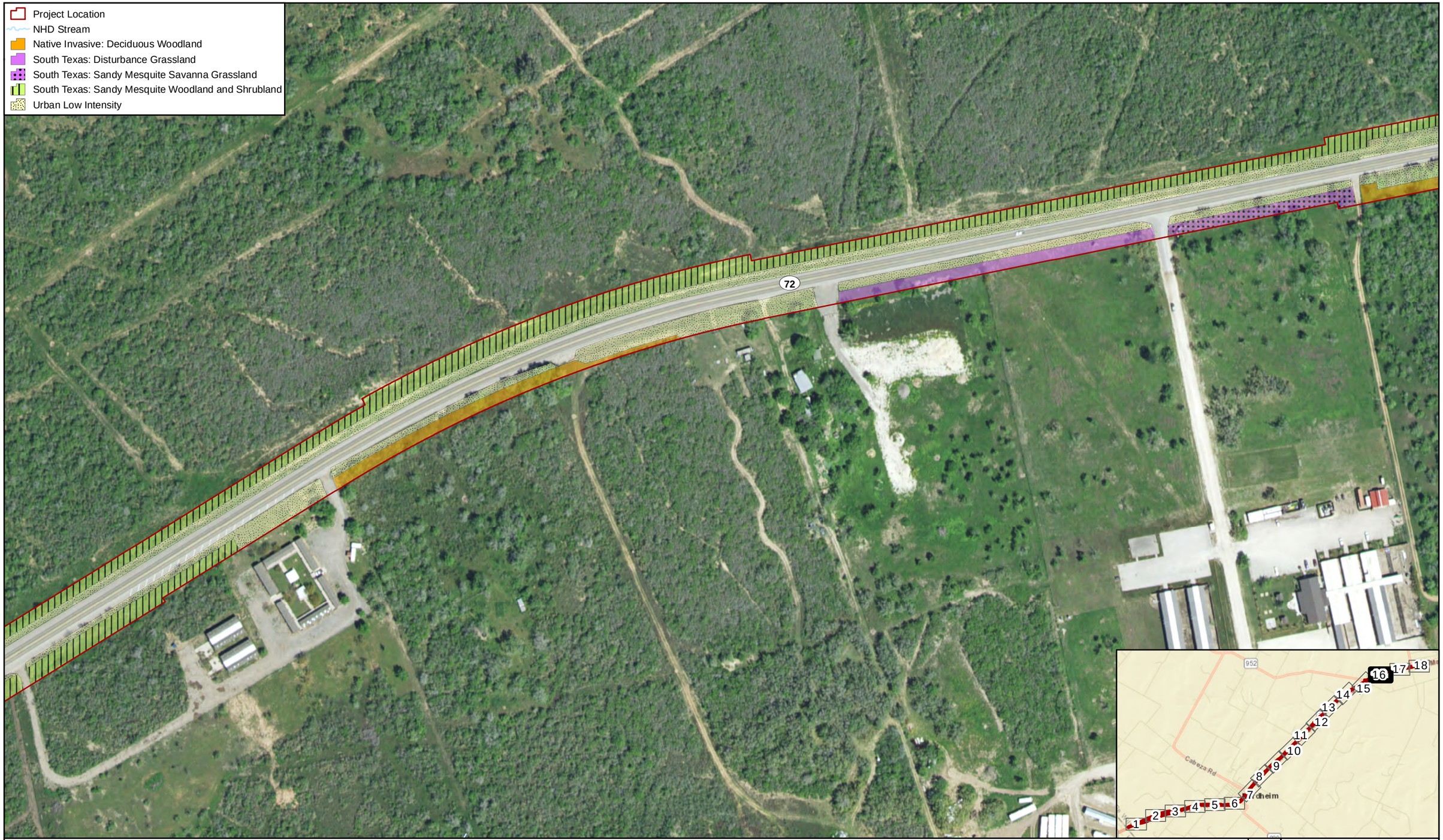

Figure 7 - Observed Vegetation Types

Sheet 16 of 18

SH 72 from Karnes County Line to 0.25 Miles East of FM 2980

Data Sources: NHD (2014), CMEC (2018)
Aerial Source: TNRIS (2015)

0 200 Feet
0 60 Meters

Prepared for: TxDOT	1 in = 200 feet
	Scale: 1:2,400
CSJ: 0270-02-041	Date: 7/5/2018

G:\Projects\TXDOT\SH72\BEF_Observed_Veg_20180615.mxd

Figure 7 - Observed Vegetation Types

Sheet 17 of 18

SH 72 from Karnes County Line to 0.25 Miles East of FM 2980

Data Sources: NHD (2014), CMEC (2018)
Aerial Source: TNRIS (2015)

0 200 Feet
0 60 Meters

Prepared for: TxDOT	1 in = 200 feet
	Scale: 1:2,400
CSJ: 0270-02-041	Date: 7/5/2018

G:\Projects\TXDOT\SH72\BEF_Observed_Veg_20180615.mxd

Figure 7 - Observed Vegetation Types

Sheet 18 of 18

SH 72 from Karnes County Line to 0.25 Miles East of FM 2980

Data Sources: NHD (2014), CMEC (2018)
Aerial Source: TNRIS (2015)

0 200 Feet
0 60 Meters

Prepared for: TxDOT	1 in = 200 feet
	Scale: 1:2,400
CSJ: 0270-02-041	Date: 7/5/2018

G:\Projects\TXDOT\SH72\BEF_Observed_Veg_20180615.mxd

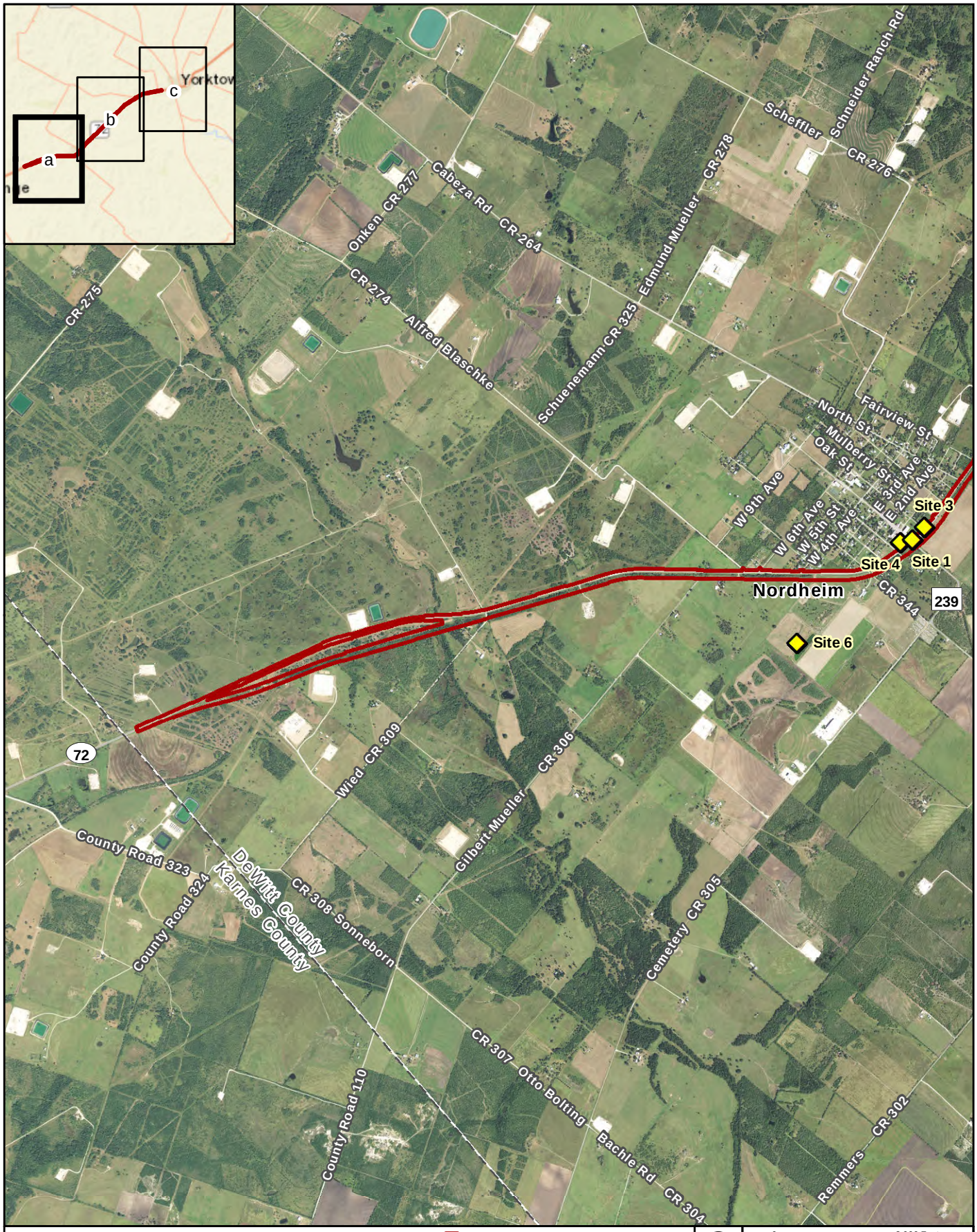

Figure **8**a

Hazardous Materials Sites of Concern

SH 72 from Karnes County Line to 0.25 Miles East of FM 2980

Project Location

Potential Hazardous Material Site

Data Source: Banks (2017), TCEQ (2017)
Aerial Source: NAIP (2016)

0 3,000 Feet
0 800 Meters

Prepared for: TxDOT	1 in = 3,000 feet
	Scale: 1:36,000
CSJ: 0270-02-041	Date: 7/5/2018

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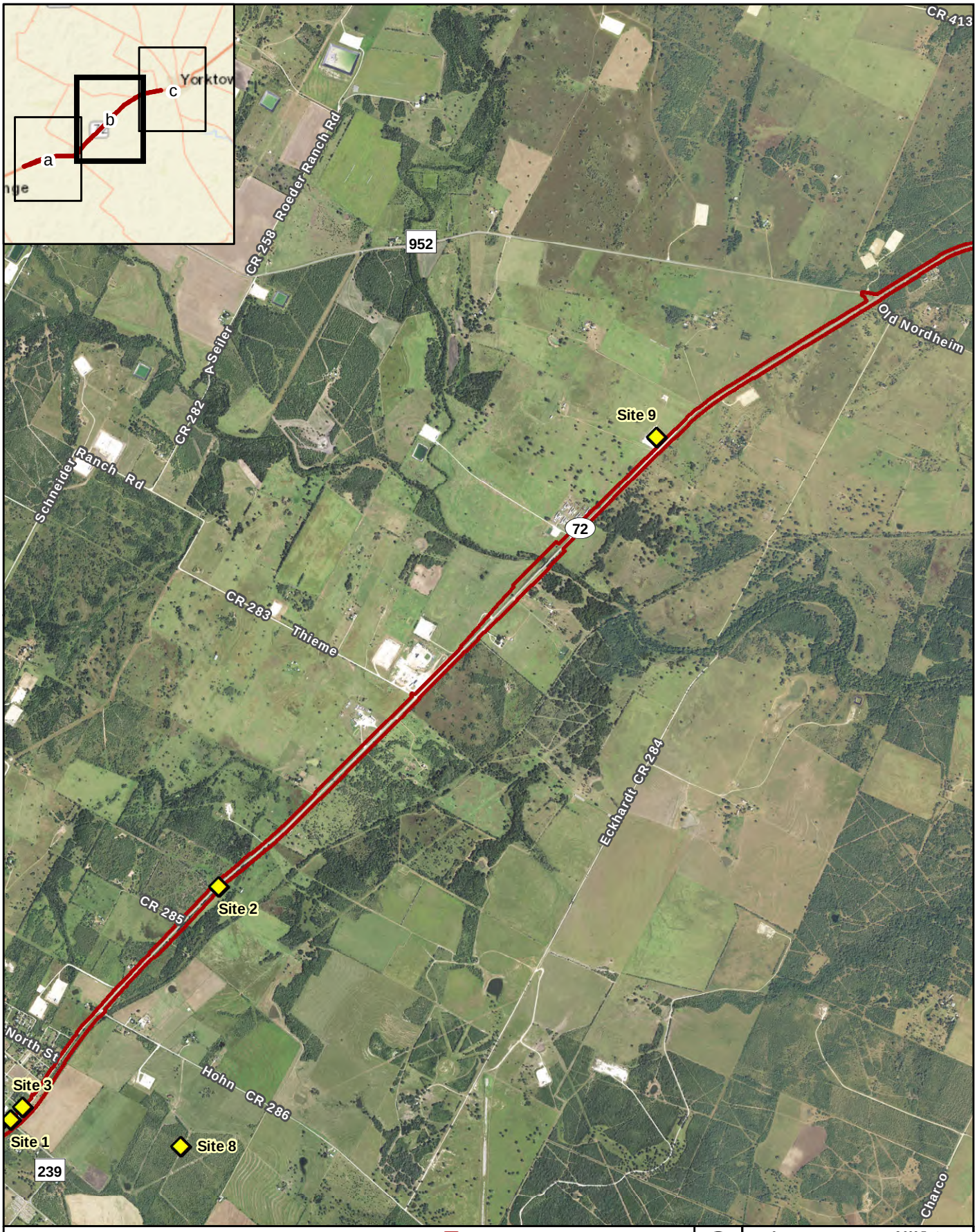

Figure **8**b

Hazardous Materials Sites of Concern

SH 72 from Karnes County Line to 0.25 Miles East of FM 2980

Project Location

Potential Hazardous Material Site

Data Source: Banks (2017), TCEQ (2017)
Aerial Source: NAIP (2016)

0 3,000 Feet
0 800 Meters

Prepared for: TxDOT	1 in = 3,000 feet
	Scale: 1:36,000
CSJ: 0270-02-041	Date: 7/5/2018

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Figure **8**c

Hazardous Materials Sites of Concern

SH 72 from Karnes County Line to 0.25 Miles East of FM 2980

Project Location

Potential Hazardous Material Site

Data Source: Banks (2017), TCEQ (2017)
Aerial Source: NAIP (2016)

0 3,000 Feet
0 800 Meters

Prepared for: TxDOT	1 in = 3,000 feet
	Scale: 1:36,000
CSJ: 0270-02-041	Date: 7/5/2018

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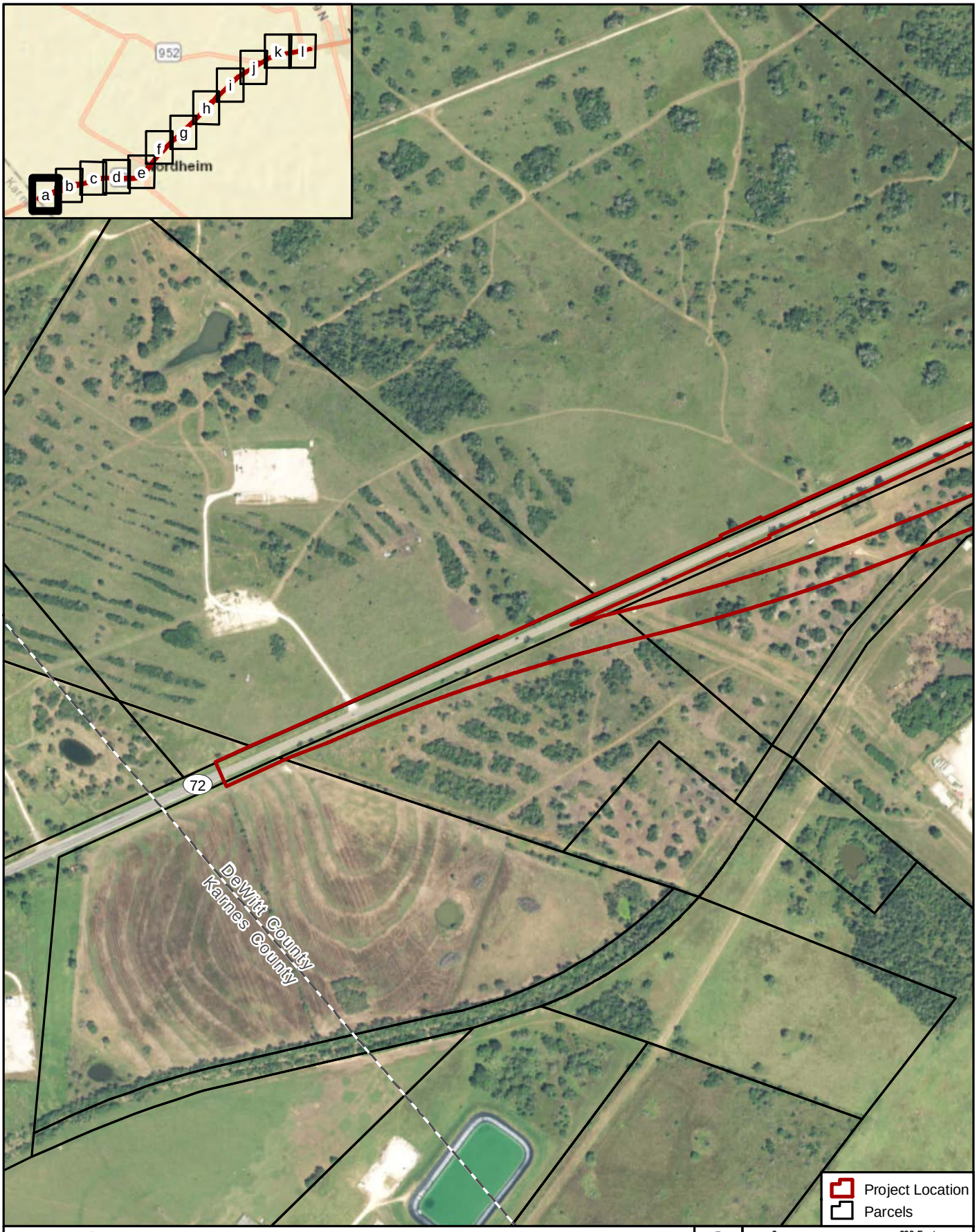

Figure **9**a

Location of Noise Receivers

SH 72 from Karnes County Line to 0.25 Miles East of FM 2980

Data Source: CMEC (2018)
Aerial Source: NAIP (2016)

Prepared for: TxDOT	1 in = 600 feet
	Scale: 1:7,200
CSJ: 0270-02-041	Date: 7/31/2018

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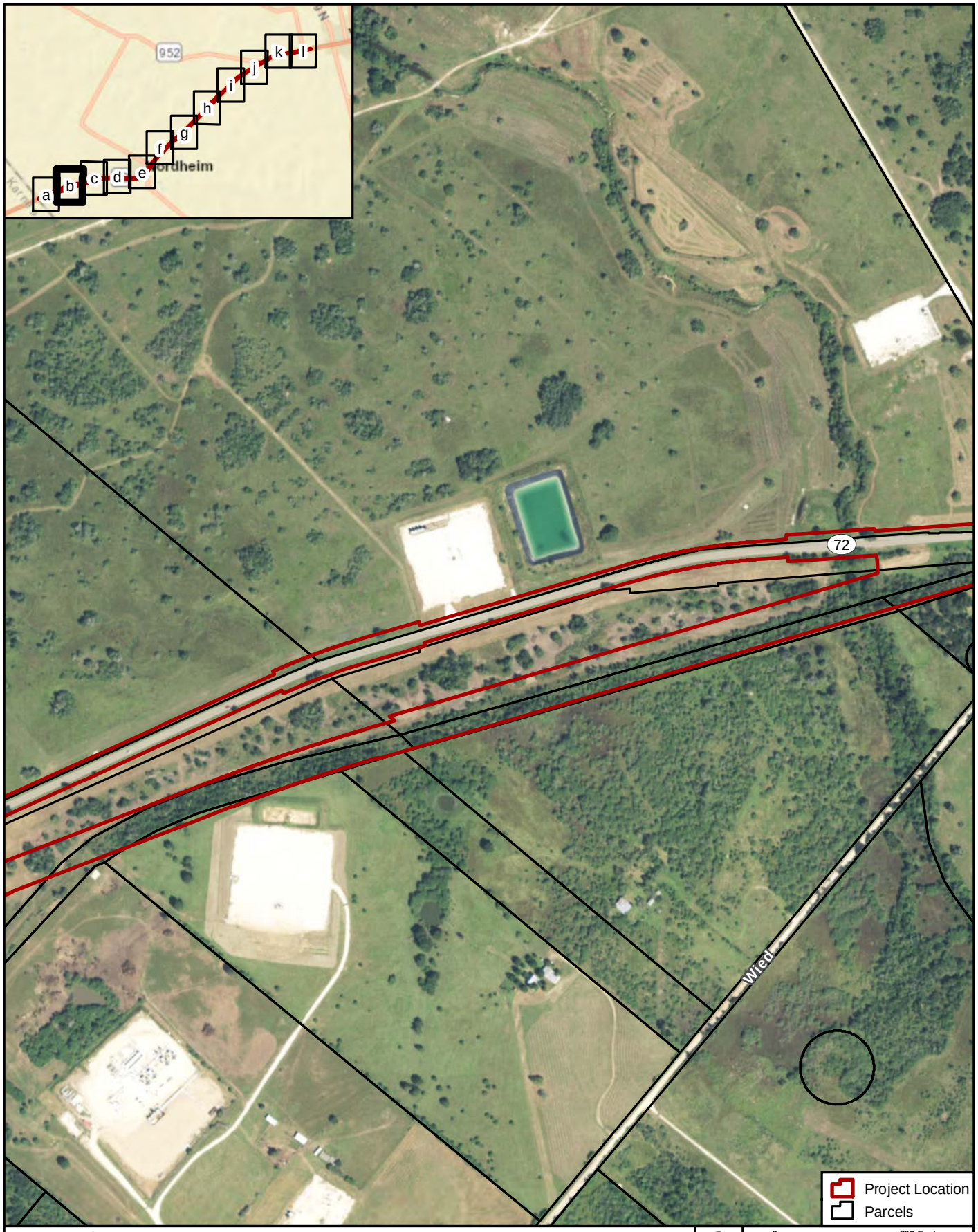

Figure **9**b

Location of Noise Receivers

SH 72 from Karnes County Line to 0.25 Miles East of FM 2980

Data Source: CMEC (2018)
Aerial Source: NAIP (2016)

0 600 Feet
0 160 Meters

Prepared for: TxDOT	1 in = 600 feet
	Scale: 1:7,200
CSJ: 0270-02-041	Date: 7/31/2018

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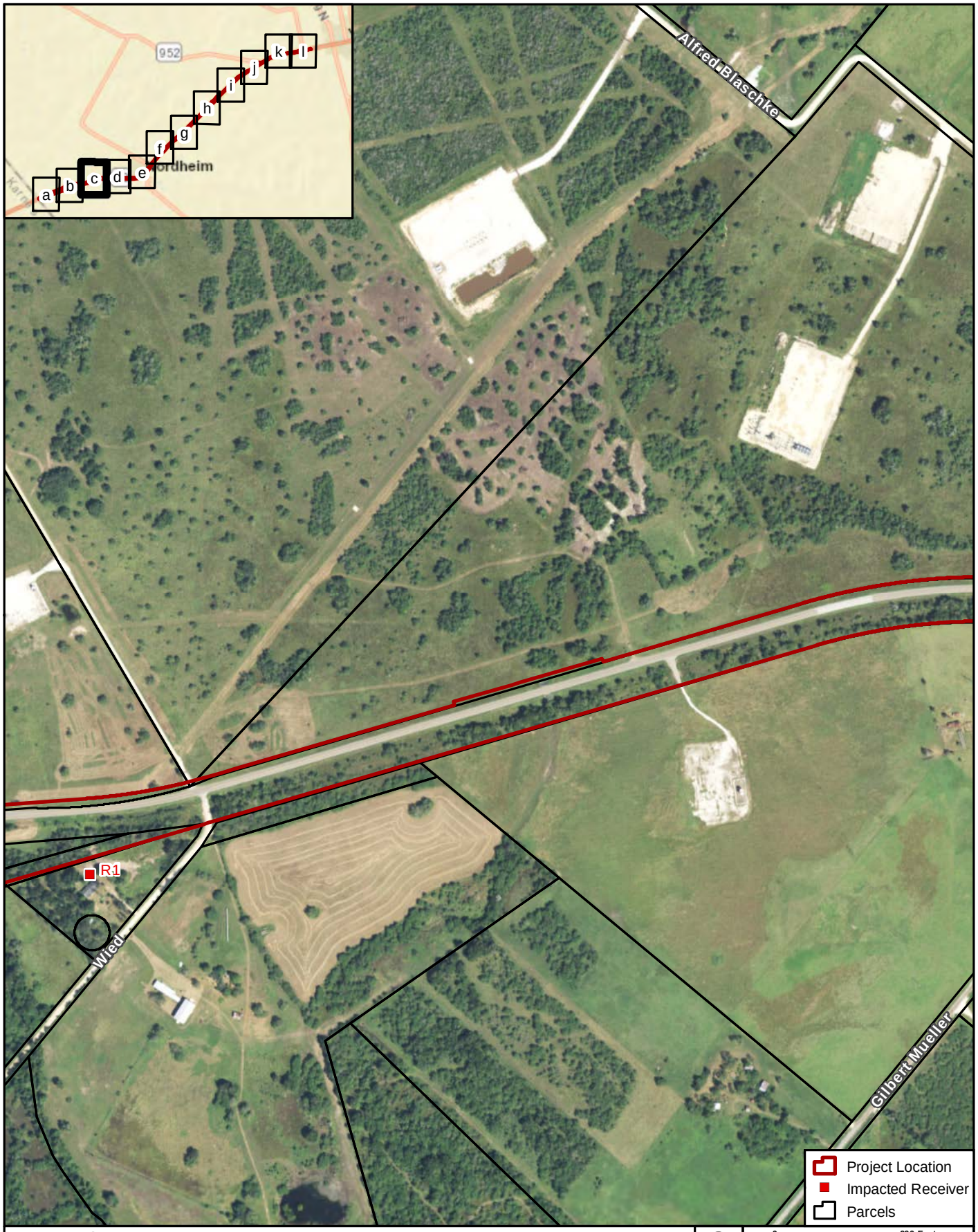

Figure 9c

Location of Noise Receivers

SH 72 from Karnes County Line to 0.25 Miles East of FM 2980

Data Source: CMEC (2018)
Aerial Source: NAIP (2016)

0 600 Feet
0 160 Meters

Prepared for: TxDOT	1 in = 600 feet
	Scale: 1:7,200
CSJ: 0270-02-041	Date: 7/31/2018

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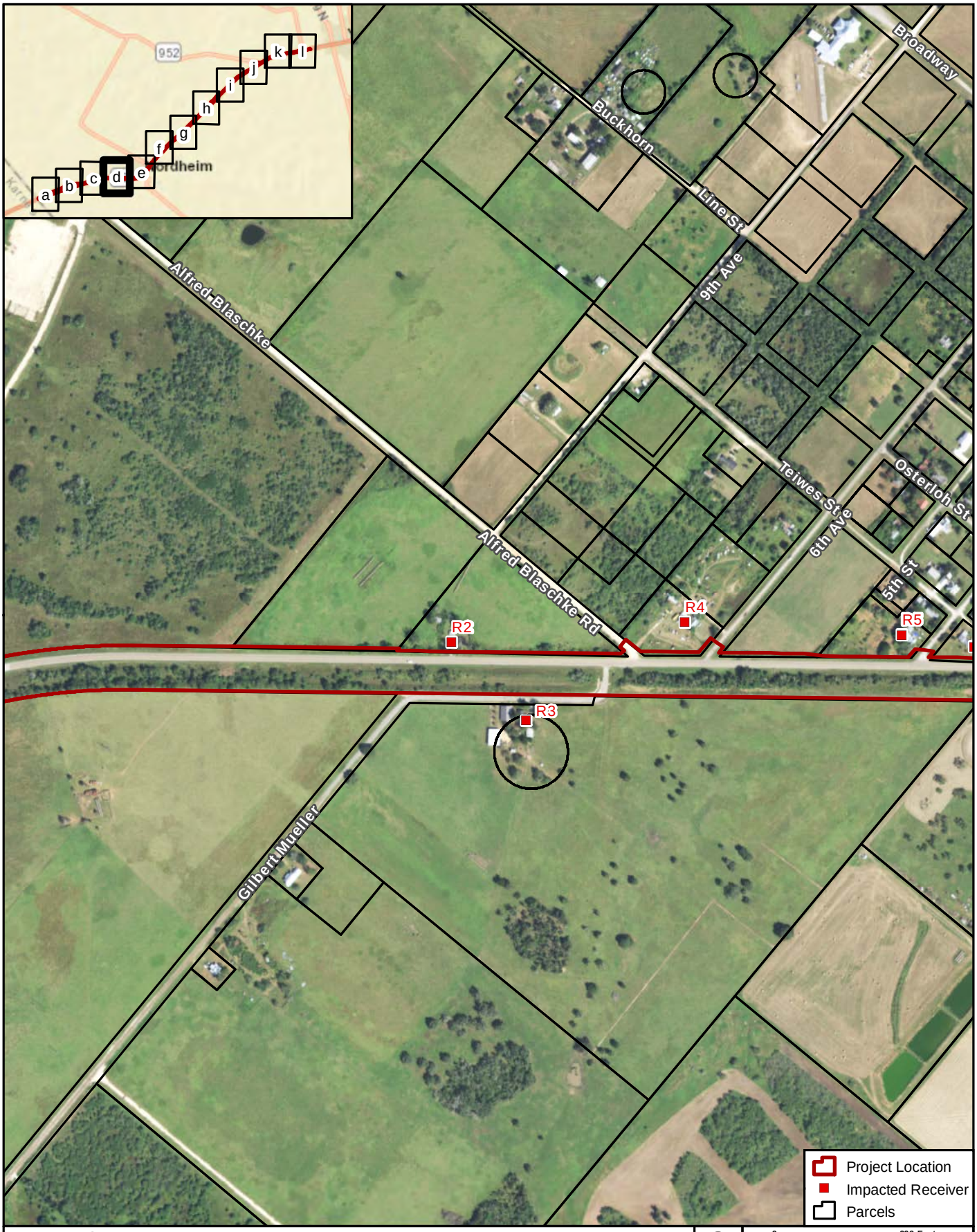

Figure **9**d

Location of Noise Receivers

SH 72 from Karnes County Line to 0.25 Miles East of FM 2980

Data Source: CMEC (2018)
Aerial Source: NAIP (2016)

0 600 Feet
0 160 Meters

Prepared for: TxDOT	1 in = 600 feet
	Scale: 1:7,200
CSJ: 0270-02-041	Date: 7/31/2018

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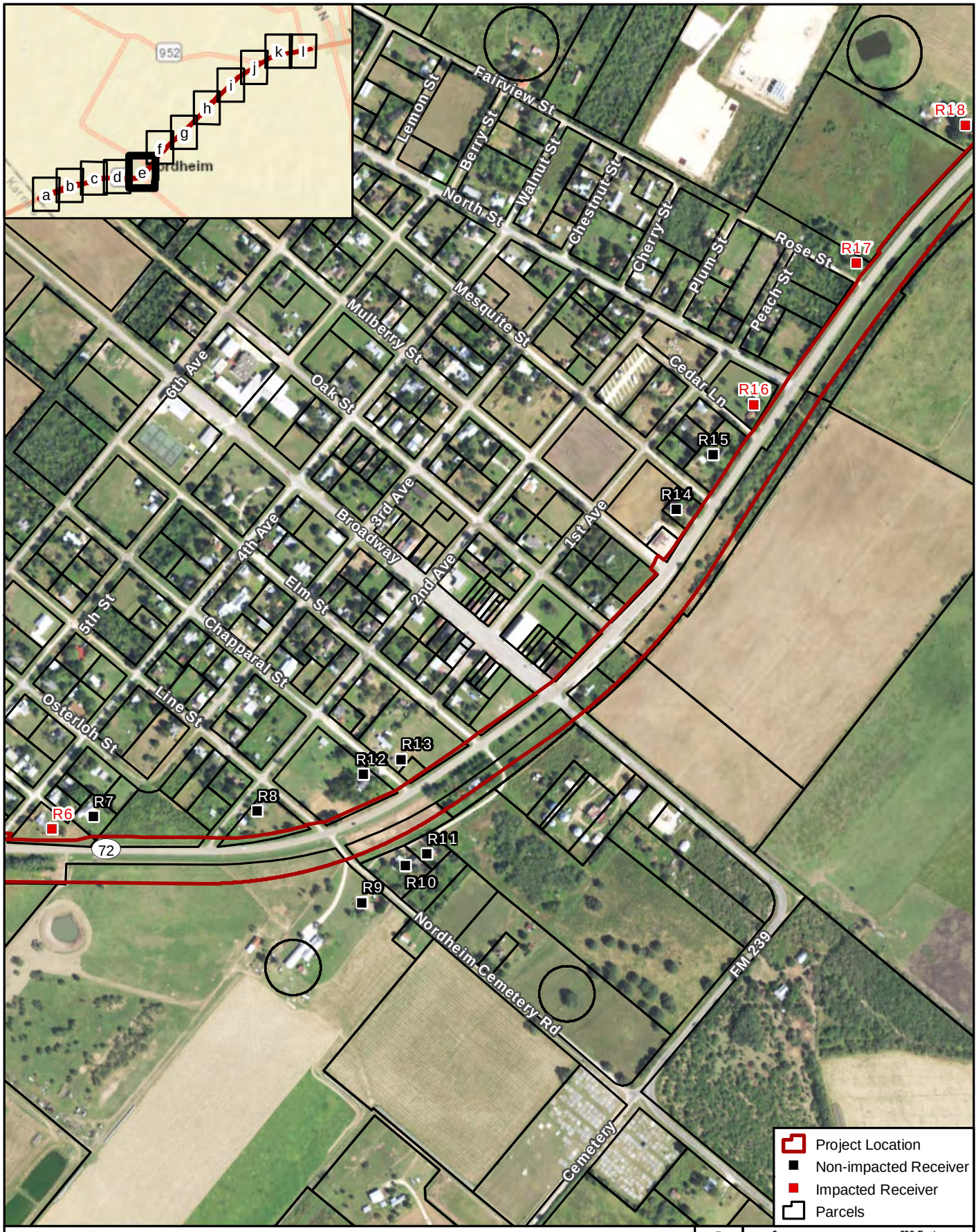

Figure 9e

Location of Noise Receivers

SH 72 from Karnes County Line to 0.25 Miles East of FM 2980

Data Source: CMEC (2018)
Aerial Source: NAIP (2016)

0 600 Feet
0 160 Meters

Prepared for: TxDOT	1 in = 600 feet
	Scale: 1:7,200
CSJ: 0270-02-041	Date: 7/31/2018

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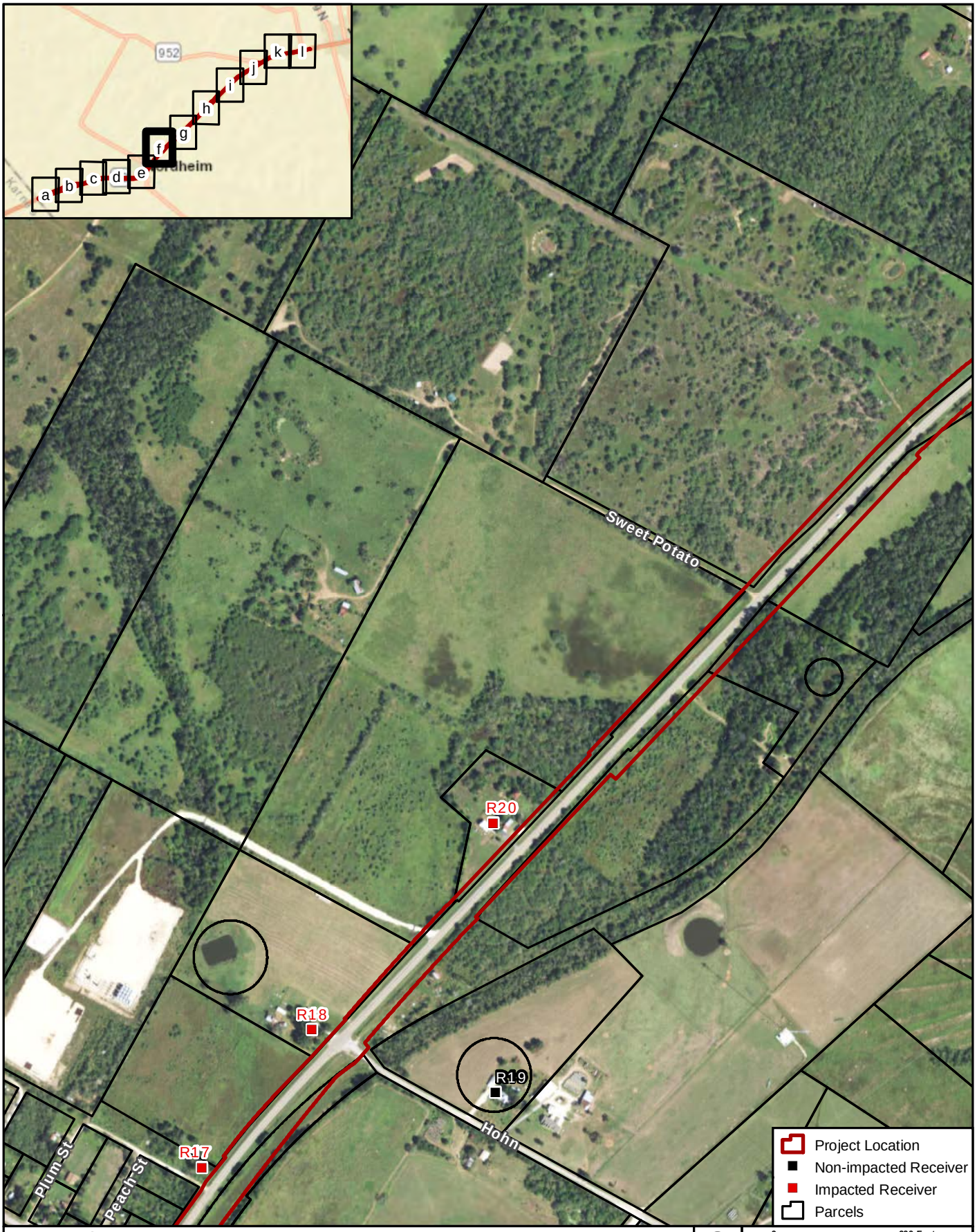

Figure **9**f

Location of Noise Receivers

SH 72 from Karnes County Line to 0.25 Miles East of FM 2980

Data Source: CMEC (2018)
Aerial Source: NAIP (2016)

0 600 Feet
0 160 Meters

Prepared for: TxDOT	1 in = 600 feet
	Scale: 1:7,200
CSJ: 0270-02-041	Date: 7/31/2018

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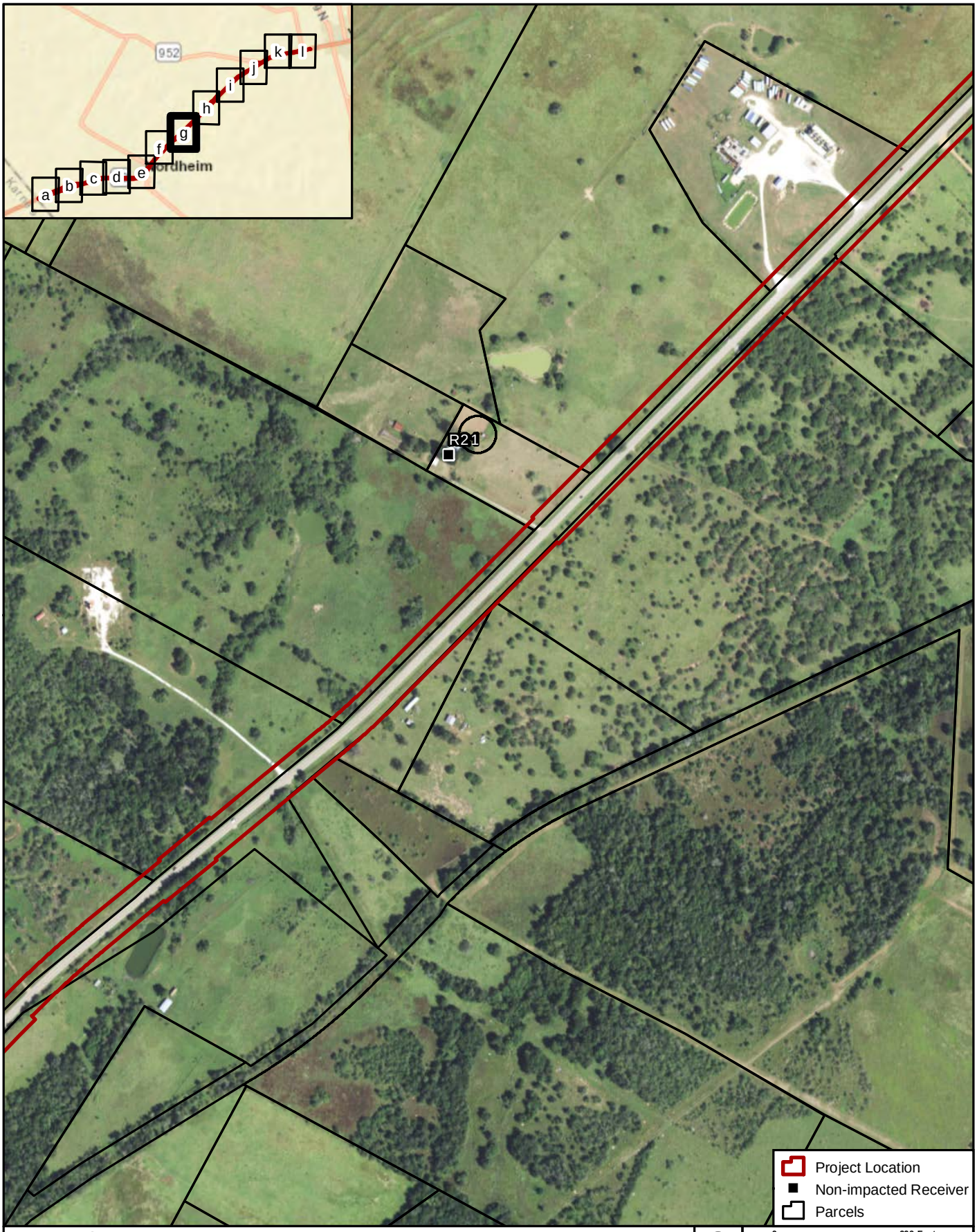

Figure **9**g

Location of Noise Receivers

SH 72 from Karnes County Line to 0.25 Miles East of FM 2980

Data Source: CMEC (2018)
Aerial Source: NAIP (2016)

0 600 Feet
0 160 Meters

Prepared for: TxDOT	1 in = 600 feet
	Scale: 1:7,200
CSJ: 0270-02-041	Date: 7/31/2018

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Figure **9**h

Location of Noise Receivers

SH 72 from Karnes County Line to 0.25 Miles East of FM 2980

Data Source: CMEC (2018)
Aerial Source: NAIP (2016)

0 600 Feet
0 160 Meters

Prepared for: TxDOT	1 in = 600 feet
	Scale: 1:7,200
CSJ: 0270-02-041	Date: 7/31/2018

G:\Projects\TXDOT\SH72\Noise_Figure 2_20180719.mxd

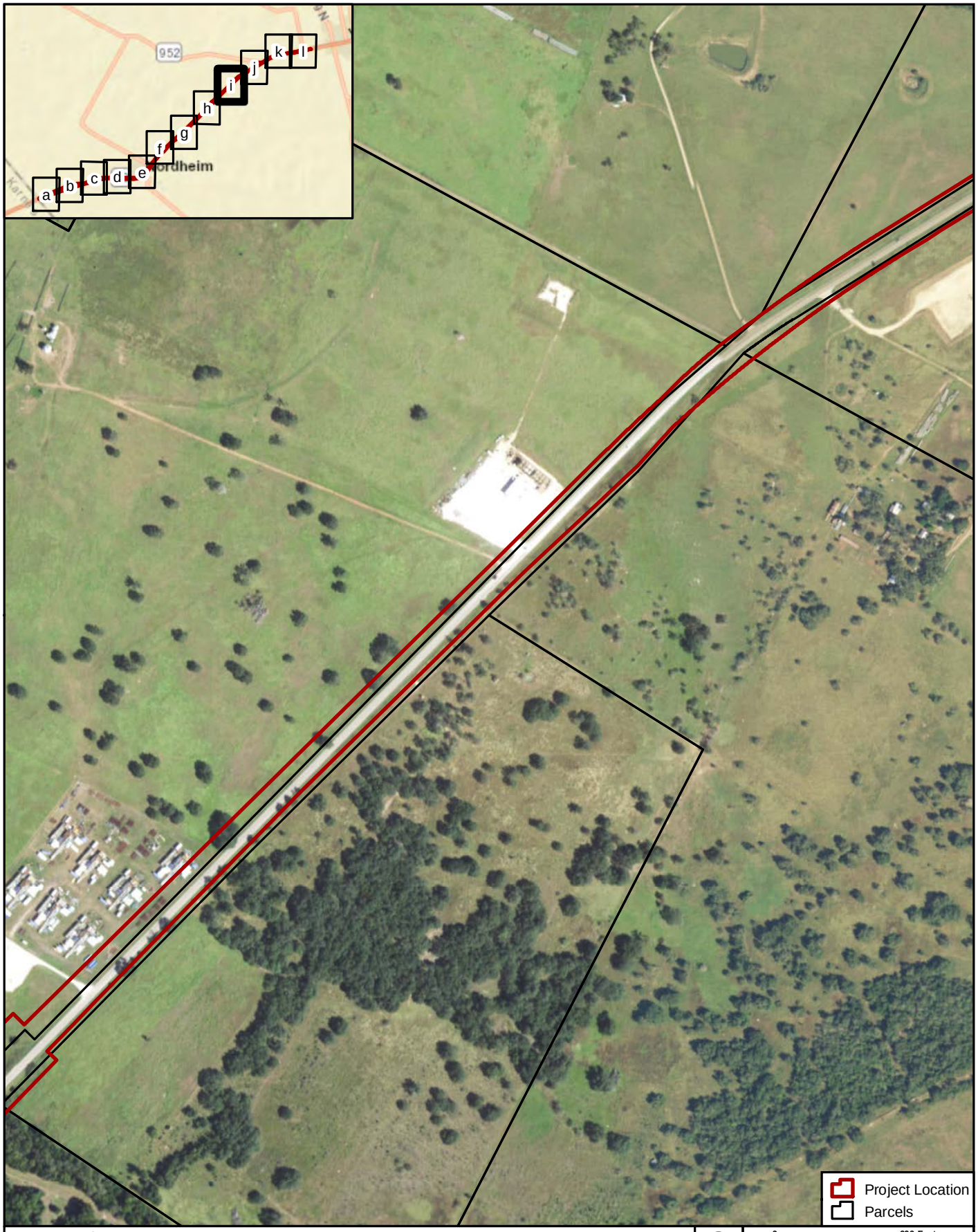

Figure **9**i

Location of Noise Receivers

SH 72 from Karnes County Line to 0.25 Miles East of FM 2980

Data Source: CMEC (2018)
Aerial Source: NAIP (2016)

0 600 Feet
0 160 Meters

Prepared for: TxDOT	1 in = 600 feet
	Scale: 1:7,200
CSJ: 0270-02-041	Date: 7/31/2018

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Figure **9**j

Location of Noise Receivers

SH 72 from Karnes County Line to 0.25 Miles East of FM 2980

Data Source: CMEC (2018)
Aerial Source: NAIP (2016)

0 600 Feet
0 160 Meters

Prepared for: TxDOT	1 in = 600 feet
	Scale: 1:7,200
CSJ: 0270-02-041	Date: 7/31/2018

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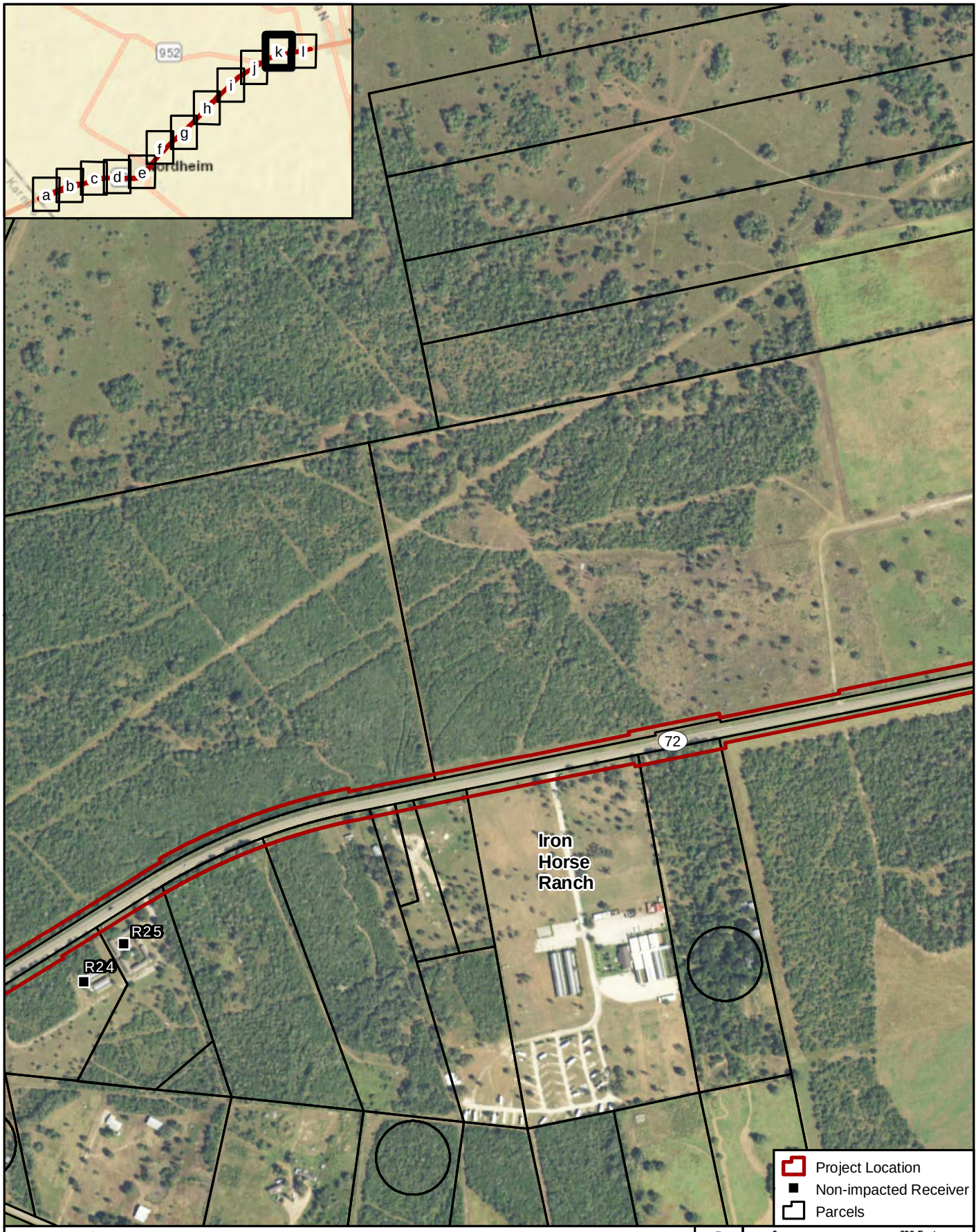

Figure **9**k

Location of Noise Receivers

SH 72 from Karnes County Line to 0.25 Miles East of FM 2980

Data Source: CMEC (2018)
Aerial Source: NAIP (2016)

0 600 Feet
0 160 Meters

Prepared for: TxDOT	1 in = 600 feet
	Scale: 1:7,200
CSJ: 0270-02-041	Date: 7/31/2018

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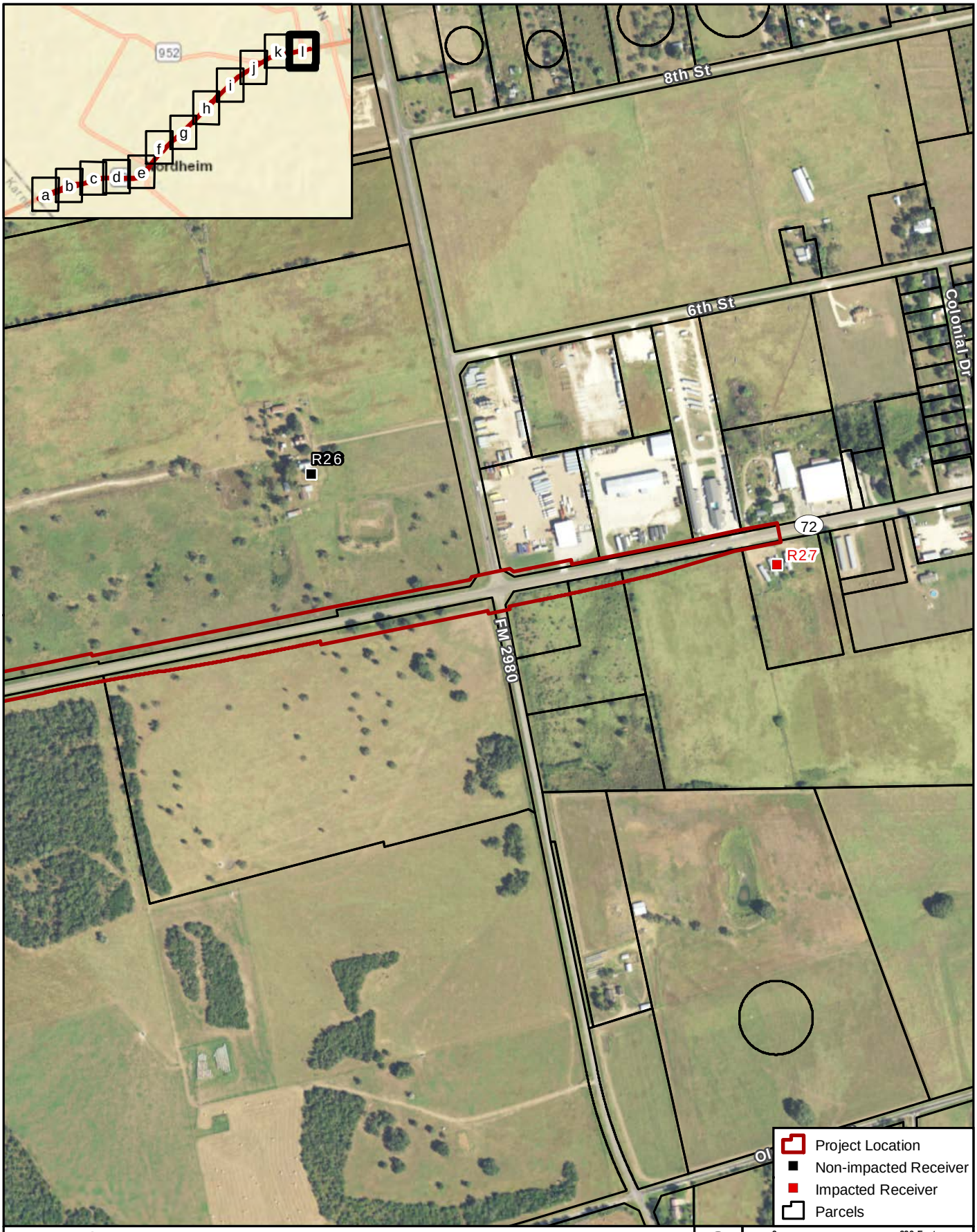

Figure **9**l

Location of Noise Receivers

SH 72 from Karnes County Line to 0.25 Miles East of FM 2980

Data Source: CMEC (2018)
Aerial Source: NAIP (2016)

Prepared for: TxDOT	1 in = 600 feet
	Scale: 1:7,200
CSJ: 0270-02-041	Date: 7/31/2018

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Appendix G

Resource Agency Coordination

U.S. DEPARTMENT OF AGRICULTURE
Natural Resources Conservation Service

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

FARMLAND CONVERSION IMPACT RATING FOR CORRIDOR TYPE PROJECTS

PART I *(To be completed by Federal Agency)*	3. Date of Land Evaluation Request 5/1/18	4. Sheet 1 of 1
1. Name of Project State Highway 72	5. Federal Agency Involved FHWA	
2. Type of Project Linear Transportation	6. County and State Dewitt, Texas	
PART II *(To be completed by NRCS)*	1. Date Request Received by NRCS	2. Person Completing Form
3. Does the corridor contain prime, unique statewide or local important farmland? (If no, the FPPA does not apply - Do not complete additional parts of this form). YES ☐ NO ☐		4. Acres Irrigated / Average Farm Size
5. Major Crop(s)	6. Farmable Land in Government Jurisdiction Acres: %	7. Amount of Farmland As Defined in FPPA Acres: %
8. Name Of Land Evaluation System Used	9. Name of Local Site Assessment System	10. Date Land Evaluation Returned by NRCS

PART III *(To be completed by Federal Agency)*		Alternative Corridor For Segment			
		Corridor A	Corridor B	Corridor C	Corridor D
A. Total Acres To Be Converted Directly		92.28			
B. Total Acres To Be Converted Indirectly, Or To Receive Services		0			
C. Total Acres In Corridor		219.79			
PART IV *(To be completed by NRCS) Land Evaluation Information*					
A. Total Acres Prime And Unique Farmland					
B. Total Acres Statewide And Local Important Farmland					
C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted					
D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value					
PART V *(To be completed by NRCS) Land Evaluation Information Criterion Relative value of Farmland to Be Serviced or Converted (Scale of 0 - 100 Points)*					
PART VI *(To be completed by Federal Agency) Corridor Assessment Criteria (These criteria are explained in 7 CFR 658.5(c))*	Maximum Points				
1. Area in Nonurban Use	15	10			
2. Perimeter in Nonurban Use	10	8			
3. Percent Of Corridor Being Farmed	20	0			
4. Protection Provided By State And Local Government	20	0			
5. Size of Present Farm Unit Compared To Average	10	5			
6. Creation Of Nonfarmable Farmland	25	0			
7. Availablility Of Farm Support Services	5	3			
8. On-Farm Investments	20	5			
9. Effects Of Conversion On Farm Support Services	25	0			
10. Compatibility With Existing Agricultural Use	10	5			
TOTAL CORRIDOR ASSESSMENT POINTS	160	36			
PART VII *(To be completed by Federal Agency)*					
Relative Value Of Farmland (From Part V)	100				
Total Corridor Assessment (From Part VI above or a local site assessment)	160				
TOTAL POINTS *(Total of above 2 lines)*	260	36			

1. Corridor Selected:	2. Total Acres of Farmlands to be Converted by Project: 92.28	3. Date Of Selection:	4. Was A Local Site Assessment Used? YES ☐ NO ☑

5. Reason For Selection:

Signature of Person Completing this Part: Claire Parra

DATE 6/20/18

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

CORRIDOR - TYPE SITE ASSESSMENT CRITERIA

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

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

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

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

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

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

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

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

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

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

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

Texas Department of Transportation

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

October 10, 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: Yoakum
County: DeWitt
CSJ#: 0270-02-041
Highway: SH 72
Project Limits: Karnes County Line to 0.25 miles east of FM 2980
Section 4(f) Property: Eckhardt Ranch Historic District

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

Dear Mr. Kockritz:

The environmental review, consultation, and other actions required by applicable Federal environmental laws for this project are being, or have been, carried out by TxDOT pursuant to 23 U.S.C. 327 and a Memorandum of Understanding dated December 16, 2014, and executed by FHWA and TxDOT. As a consequence of these agreements, TxDOT's regulatory role for this project is that of the Federal action agency. In accordance with 36 CFR 800 and our Section 106 Programmatic Agreement for Transportation Undertakings (December 2015), this letter initiates Section 106 consultation on the effect the proposed undertaking poses for a National Register of Historic Places (NRHP) eligible property in the area of potential effects (APE) for the project.

Project Description

The TxDOT Yoakum District proposes to widen 10.27 miles of existing SH 72 roadway from the Karnes County line to 0.25 miles east of FM 2980 in DeWitt County, Texas. The proposed project will take the road from a two-lane to a four-lane undivided roadway through the cities of Nordheim and Yorktown. The road will include a median and 10-foot shoulders. TxDOT proposes to acquire approximately 99 acres of new right-of-way (ROW) to complete this project.

Survey Methods

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

1. Eckhardt Ranch House, Eckhardt Road—RTHL

Per the 2015 Section 106 Programmatic Agreement among our offices, TxDOT set the APE for this project as 150 feet from all existing and proposed new ROW. If a parcel intersects within that 150-foot APE, TxDOT identified all historic-age resources on that parcel, even if those resources were not within the 150-foot APE itself.

Consultation with Interested Parties
TxDOT held a public meeting on April 24, 2018 to generally inform the public about the project. At that time, the results of any historic property research were unknown. TxDOT did not receive any public comments related to history or historic properties from the public at this meeting.

TxDOT also consulted with the Yorktown Museum and the Nordheim Museum as part of its historic property identification efforts. Both museums provided useful local sources, and the Nordheim Museum also identified the Eckhardt Ranch as a historic property. TxDOT also contacted the DeWitt County Historical Commission about any historic properties in the project area, and was unsuccessful in contacting that group.

Determinations of Eligibility
TxDOT historians conducted a historic resources reconnaissance survey of the APE to identify any additional historic properties. TxDOT determined 159 historic-age (built pre-1975) properties on 42 parcels (consisting of residential, transportation and government types) within the APE **not eligible** for NRHP-listing under any criteria. TxDOT ENV historians determined that the properties are common designs that lack architectural merit, are not works of a master, and have no known historic associations with important events or persons.

TxDOT also finds that, based on the information provided in the historic resources survey, that the residence at 609 West Fourth Street in Nordheim (Resource 11A-C) may have additional historic significance that is unknown at this time. While the property is within the APE of the project, it does not front SH 72, nor will TxDOT acquire any right-of-way from the property. Therefore, a full assessment of the property's eligibility for the NRHP is outside the scope of the project, as it currently stands. However, if the scope of the project changes to affect this property, TxDOT will conduct additional research into its historic significance and integrity.

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

1. Gas Station, 100 SH 72 East, Nordheim (Resource 20), eligible under Criterion A at the local level for Community Planning and Development and Transportation
2. Eckhardt Ranch House and Historic District, Eckhardt Road near Old Nordheim Road (Resource 43A-EE), eligible under Criterion A at the local level for Agriculture and Ranching, eligible under Criterion B at the local level for its association with Robert Eckhardt. The ranch house itself, Resource 43A, is also individually eligible for the NRHP. The proposed boundaries of this historic district encompass the parcels appearing to be historically associated with the ranch property. See Figure 6 of the attached reconnaissance survey for these boundaries.
3. Nordheim Downtown Historic District, Broadway Street (not individually surveyed), eligible under Criterion A at the local level for Commerce as a relatively intact grouping of retail stores.

Determination of No Adverse Effect

As of this letter, only two historic properties are within TxDOT's APE for the SH 72 Widening project:

1. Gas Station, 100 SH 72 East, Nordheim
2. Eckhardt Ranch House and Historic District, Eckhardt Road near Old Nordheim Road

Currently, TxDOT proposes to acquire approximately 4 acres of new ROW from the Eckhardt Ranch Historic District. The ROW will be acquired as a strip ranging from approximately 20 to 100 feet wide at the edge of the property adjacent to the existing SH 72 roadway. The ROW acquisition is approximately 0.7 percent of the overall acreage of the historic district.

Most of the resources on the Eckhardt Ranch are clustered around the main house, which is approximately 1,150 feet, or 0.22 miles, from the current SH 72. The proposed project will move the roadway approximately 50 feet closer to the main resource cluster. The historic building closest to the road is still approximately 800 feet from the proposed new roadway. Therefore, the proposed project will **not adversely affect** the property's integrity of location, setting, feeling, association, design, materials or workmanship.

There will be no direct or indirect effects to the gas station at 100 SH 72 East, as TxDOT proposes to shift the new alignment of SH 72 away from this historic property.

Determination of *De Minimis* Finding

As part of this coordination, TxDOT determined that the proposed project meets the requirements for a Section 4(f) *de minimis* impact finding under 23 CFR 774. TxDOT based its determination on the fact that the use for the Eckhardt Ranch Historic District is minimal and the project will have **no adverse effect** on the NRHP-eligible property. The function of the property will not be impaired, nor will it cease. The work would take place a significant distance from the historic resources on the ranch and will not introduce any adverse visual or noise effects to the property.

Conclusion

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

We look forward to further consultation with your staff and hope to maintain a partnership that will foster effective and responsible solutions for improving transportation, safety and mobility in the state of Texas. Thank you for your cooperation in this federal review process. If you have

any questions or comments concerning these evaluations, please contact me at (512) 416-2611 or rebekah.dobrasko@txdot.gov.

Sincerely,

RMDobrasko

Rebekah Dobrasko
Historic Preservation Specialist
Environmental Affairs

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

CONCURRENCE WITH NON-ARCHEOLOGICAL SECTION 106 FINDINGS:
HISTORIC PROPERTIES PRESENT
NO ADVERSE EFFECT: ECKHARDT RANCH HISTORIC DISTRICT

NAME: _____ DATE: 11/5/2018
for Mark Wolfe, State Historic Preservation Officer

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

NAME: _____ DATE: 11/5/2018
for Mark Wolfe, State Historic Preservation Officer

THC notes that the Nordheim Downtown Historic District is also within the project's APE, but THC concurs per email correspondence of 11/5/2018, the project will have no effect on this historic property. JDK

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

Main CSJ: 0270-02-041
District(s): Yoakum
County(ies): DeWitt
Property ID: 43A-EE
Property Name: Eckhardt Ranch House and Historic District

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.

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

What Type of Property is Being Evaluated?

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

Section 4(f) Defining Criteria for Historic Properties

1. Yes — Is the property listed or eligible for the NRHP or NHL?

Establishing Section 4(f) Use of the Property

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

Establishing Section 4(f) *De Minimis* Eligibility

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

Documentation

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

1. Brief project description
2. Explanation of how the property will be used.
3. A detailed map of the Section 4(f) property including:
   a. Current and proposed ROW
   b. Property boundaries
   c. Existing and planned facilities
4. Concurrence letter with the Official with Jurisdiction

TxDOT Approval Signatures

ENV Technical Expert Reviewer Certification

I reviewed this checklist and all attached documentation and confirm that the above property and proposed project meet the requirements of 23 CFR 774 for a Section 4(f) *De Minimis* finding.

Bruce Jensen — Digitally signed by Bruce Jensen DN: cn=Bruce Jensen, o=TxDOT, ou=CRM Section Director Environmental Affairs, email=bruce.jensen@txdot.gov, c=US Date: 2018.11.13 11:10:18 -06'00'

ENV Personnel Name

November 13, 2018

Date

TxDOT-ENV Section 4(f) *De Minimis* Final Approval

Based upon the above considerations, this Section 4(f) *De Minimis* satisfies the requirements of 23 CFR 774.

Jenise Walton — Digitally signed by Jenise Walton DN: cn=Jenise Walton, o=TxDOT, ou=ENV Division, email=JENISE.WALTON@TXDOT.GOV, c=US Date: 2018.11.14 10:06:31 -06'00'

TxDOT-ENV, PD Director or designee

November 14, 2018

Date

Project Description

TxDOT proposes to widen 10.27 miles of the existing SH 72 roadway from the Karnes County line to 0.25 miles east of FM 2980 in DeWitt County, Texas. The proposed project will take the road from a two-lane to a four-lane undivided roadway through the cities of Nordheim and Yorktown. The road will include a median and 10-foot shoulders. TxDOT proposes to acquire approximately 99 acres of new right-of-way (ROW) to complete this project.

Description of Section 4(f) Use

The Eckhardt Ranch House and Historic District is located on Eckardt Road near Old Nordheim Road in the project's Area of Potential Effect (APE). The Eckhard Ranch House is a Recorded Texas Historic Landmark, and is eligible for listing in the National Register of Historic Places under Criterion B for its association with Robert Eckhardt. The Eckhardt Ranch itself is also eligible for listing in the NRHP under Criterion A for is local significance in the Agriculture of the area. The proposed boundaries of the historic district encompass the parcels appearing to be historically associated with the ranch property. There are a number of domestic, work, and agricultural buildings, structures, and features that contribute to the significance of this historic property.

TxDOT proposes to acquire approximately 4 acres of new ROW from the Eckhardt Ranch Historic District to accommodate the SH 72 widening. The necessary ROW is a strip ranging from 20 to 100 feet wide along the edge of the historic district directly adjoining the current SH 72 ROW. The ROW acquisition is approximately 0.7 percent of the overall acreage of the historic district.

Most of the historic resources within the Eckhardt Ranch are clustered around the main house, which is approximately 1,150 feet from the current SH 72. The proposed project will move the roadway approximately 50 feet closer to the main resource cluster. The historic building closest to the new ROW is still approximately 800 feet away. The use for the Eckhardt Ranch House and Historic District is minimal and the project will have no adverse effect on the NRHP-eligible property. The function of the property will not be impaired, nor will it cease. The work will take place a significant distance from the historic resources on the ranch and will not introduce any adverse visual or noise effects to the property.

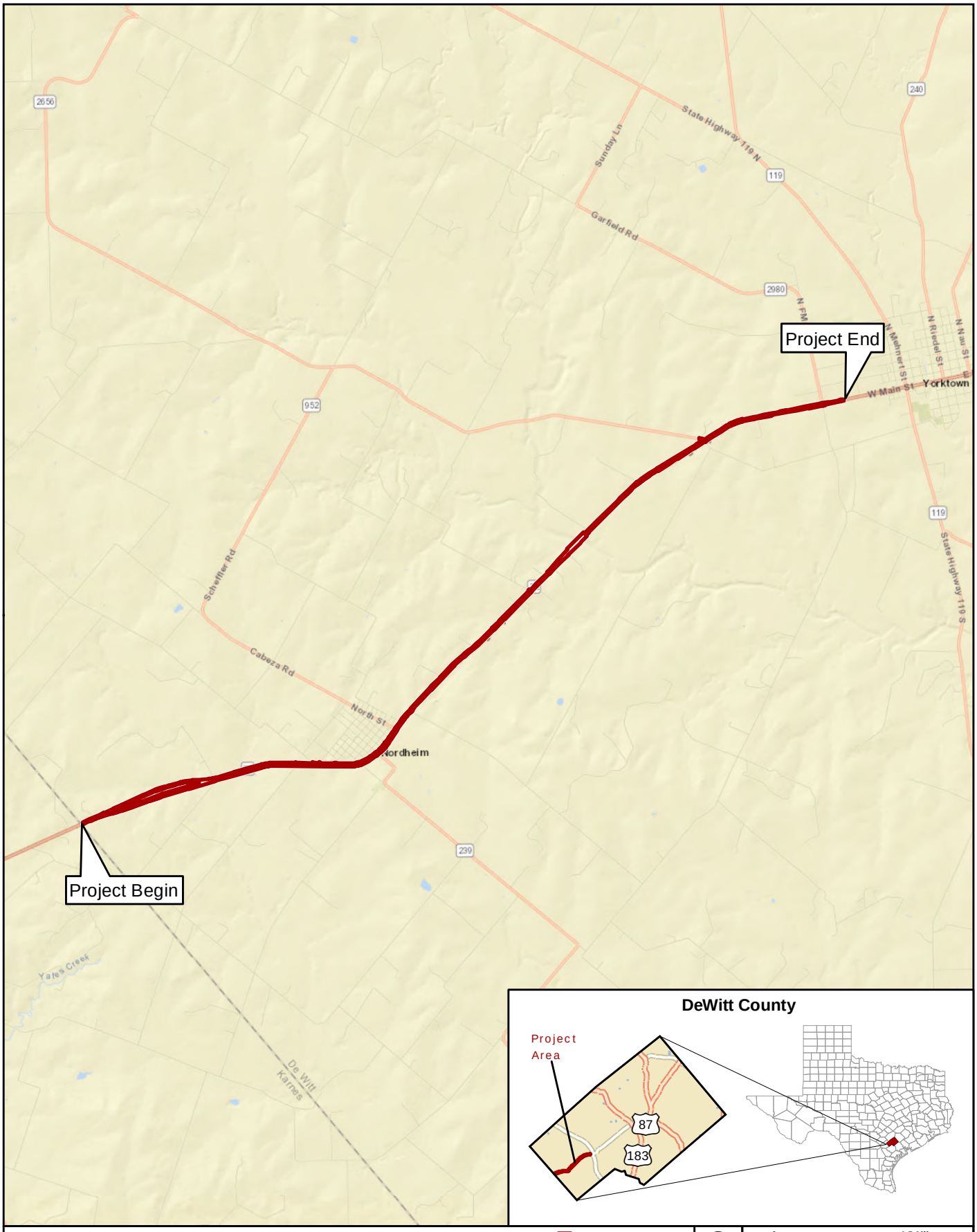


Figure 1

Project Location (Road Base)

SH 72 from Karnes County Line to 0.25 Miles East of FM 2980

Project Location

Basemap Source: ESRI (2018)

0 1.5 Miles

0 2 Kilometers

Prepared for: TxDOT	1 in = 1.5 miles
	Scale: 1:95,040
CSJ: 0270-02-041	Date: 7/5/2018

G:\Projects\TXDOT\SH72\all_Figure 1_Project Location_Road_20180705.mxd

Resource ID: 43A-EE
Parcel ID: 16872; 8931

Address: ECKHARDT ROAD NEAR OLD NORDHEIM ROAD

2016 aerial of the property with the primary parcel outlined in red; the domestic and agricultural work zones are clustered at top/center; image from Google Earth

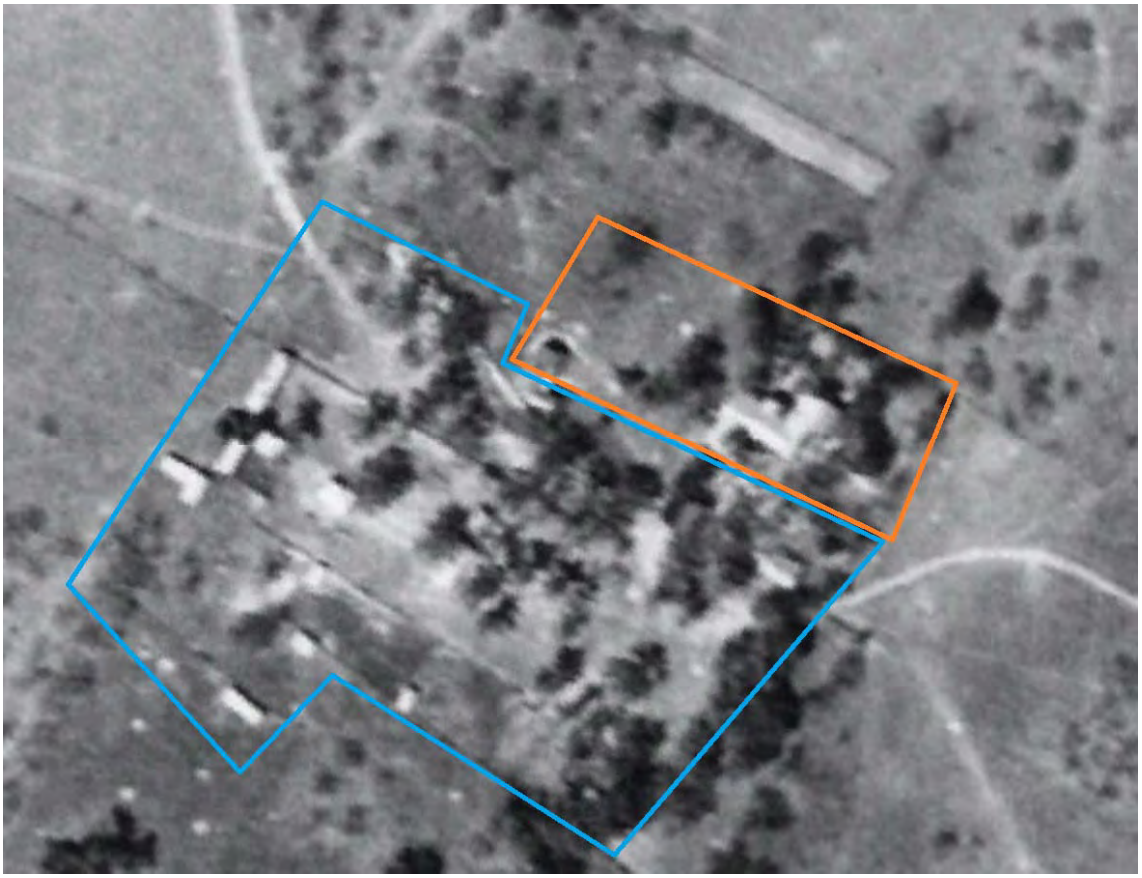
1962 aerial image of the property; image from USGS

Resource ID: 43A-EE
Parcel ID: 16872; 8931

Address: ECKHARDT ROAD NEAR OLD NORDHEIM ROAD

2016 aerial of the domestic work zone (orange) and agricultural work zone (blue); red line is the parcel line; image from Google Earth

1948 aerial of the domestic work zone (orange) and agricultural work zone (blue); image from USGS; (the image quality is poor because of the resolution of the original image)



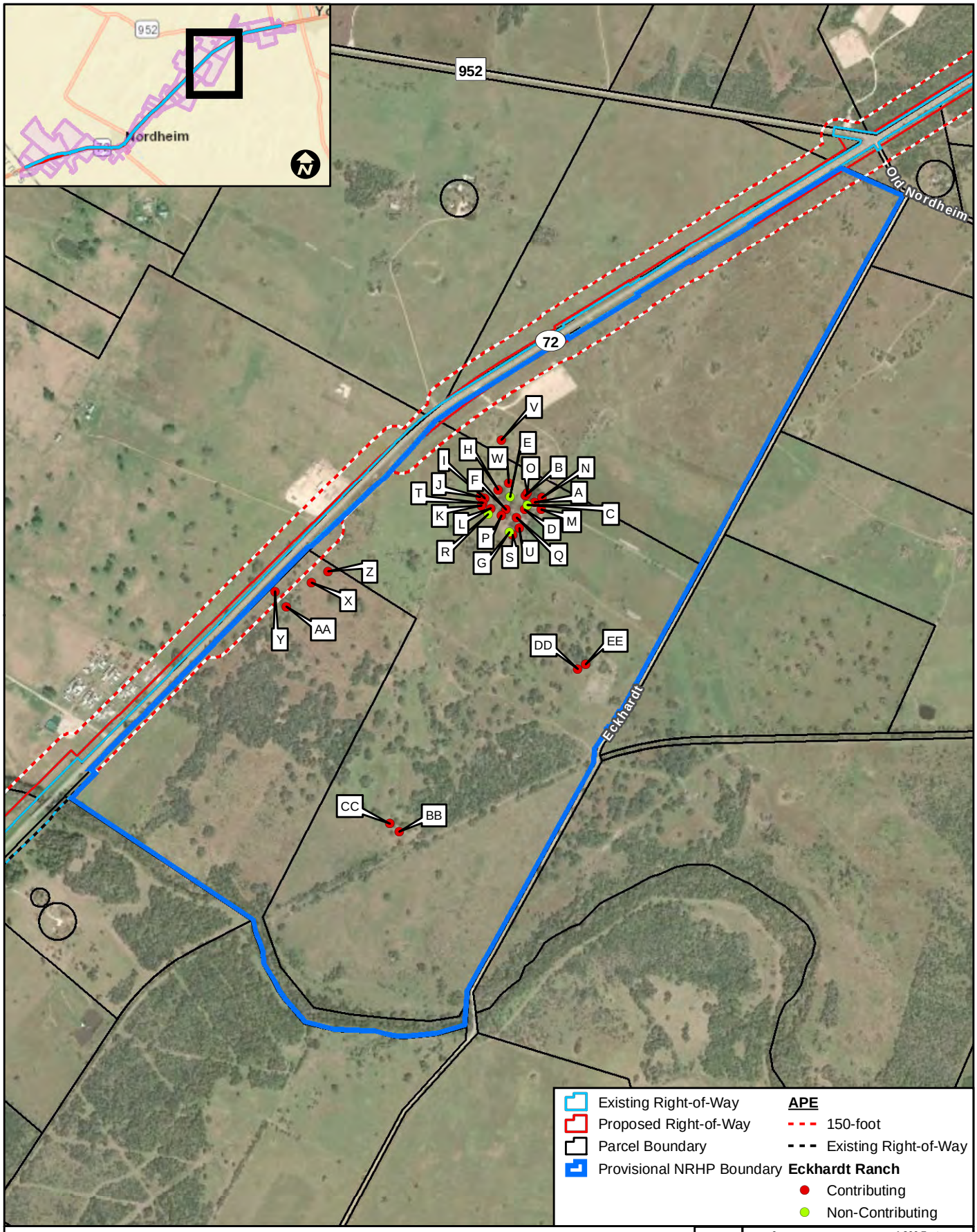


Figure 6
Eckhardt Ranch (Resource 43) Provisional NRHP Boundary
SH 72 from Karnes County Line to 0.25 Miles East of FM 2980

Data Sources: CMEC (2018), DeWitt CAD (2017)
Aerial Source: TOP (2015)

Prepared for: TxDOT	1 in = 1,200 feet
	Scale: 1:14,400
CSJ: 0270-02-041	Date: 8/16/2018

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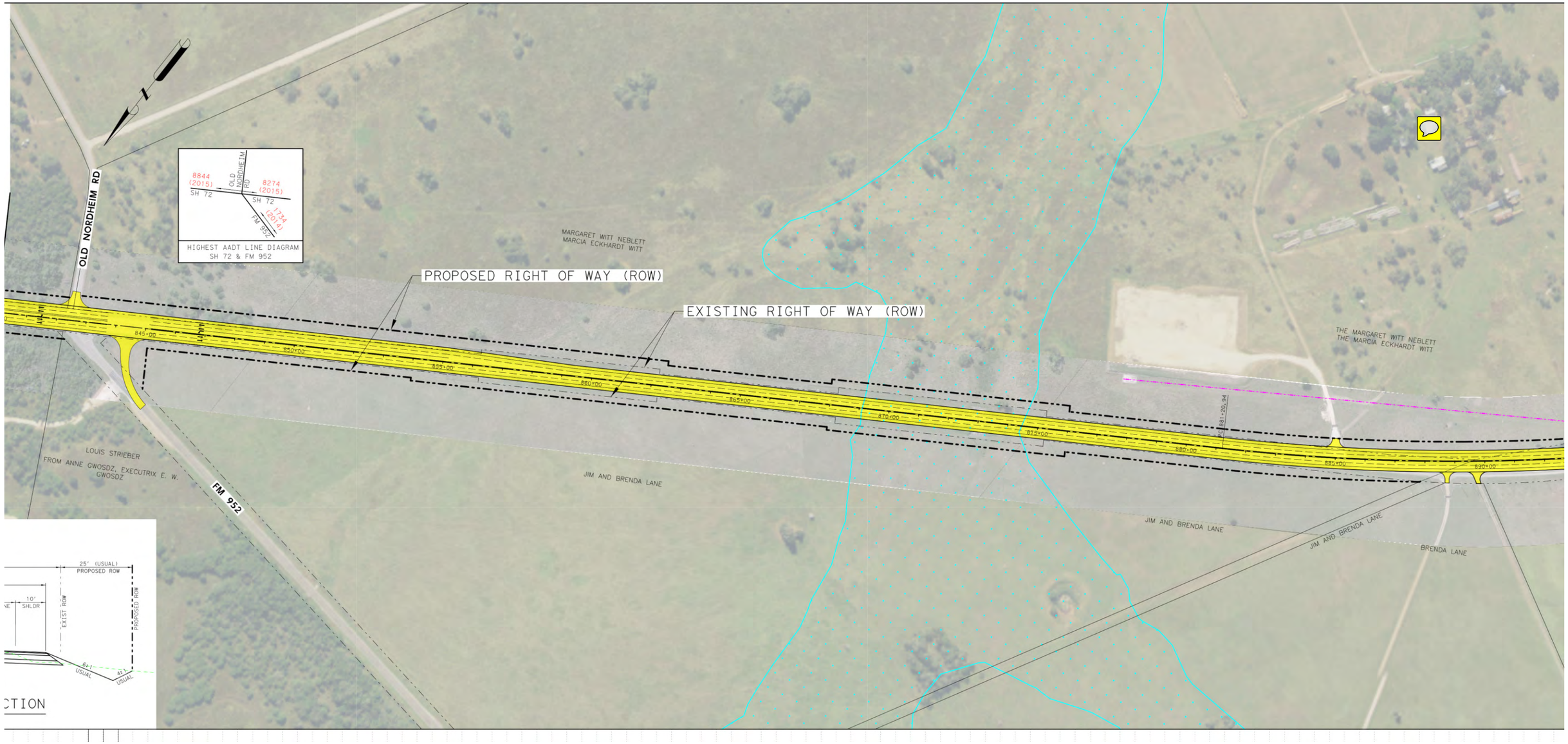


LEGEND

PROPOSED ROW	
EXISTING ROW	
EXISTING GAS PIPELINES	
TRAFFIC FLOW DIRECTION	
FEMA 100-YR FLOODPLAIN BOUNDARY	
PARCEL BOUNDARY	
PROPOSED BRIDGE	
PROPOSED ROADWAY	

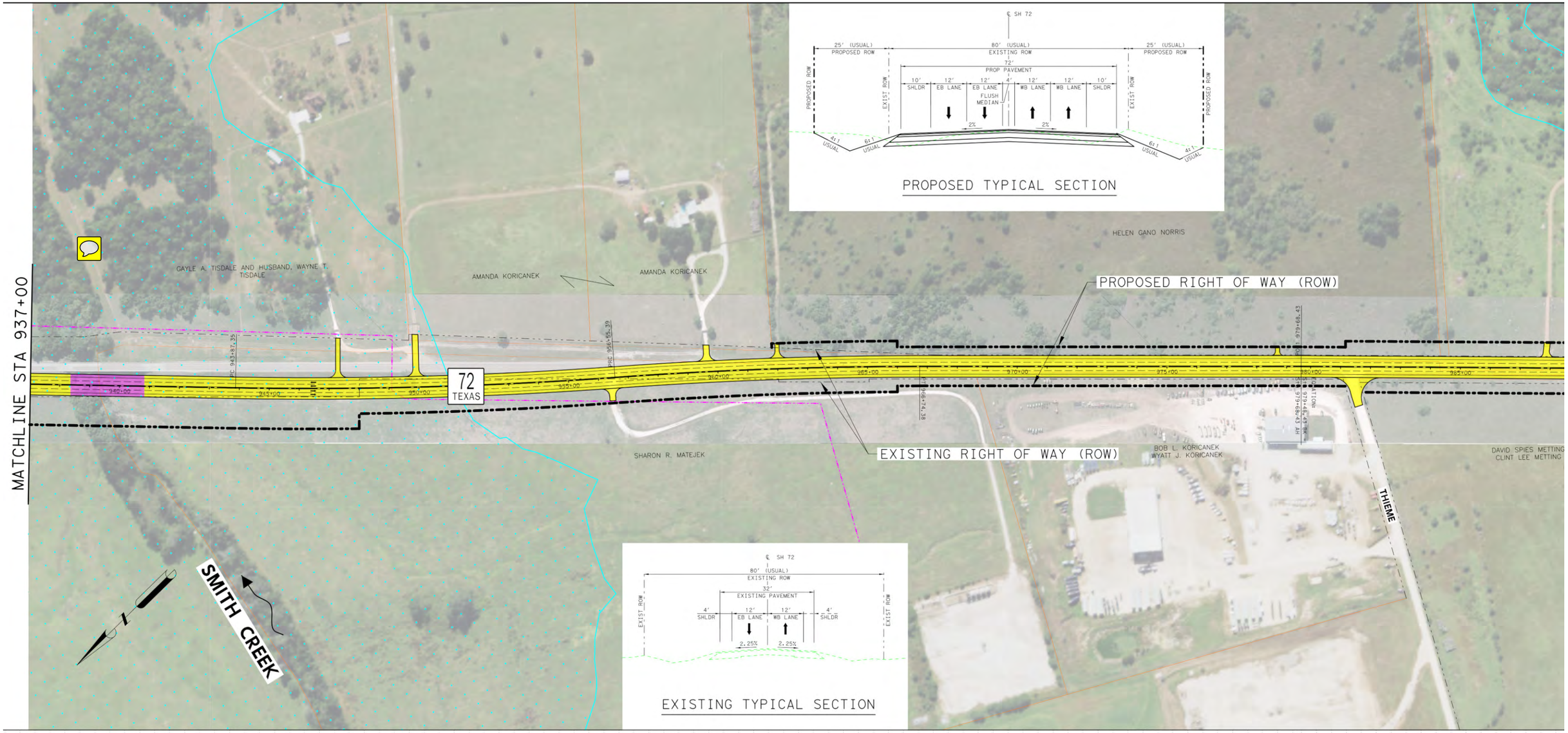
0 500

SH 72 from the Karnes County Line to 0.25 miles east of FM 2980

Project Layout

CSJ: 0270-02-041

Sheet 3



LEGEND

PROPOSED ROW	
EXISTING ROW	
EXISTING GAS PIPELINES	
TRAFFIC FLOW DIRECTION	
FEMA 100-YR FLOODPLAIN BOUNDARY	
PARCEL BOUNDARY	
PROPOSED BRIDGE	
PROPOSED ROADWAY	

0 500

SH 72 from the Karnes County Line to 0.25 miles east of FM 2980

Project Layout

CSJ: 0270-02-041

Sheet 4

Texas Department of Transportation

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

RECEIVED
NOV - 8 2018

November 7, 2018

Section 106/Antiquities Code of Texas: Archeological Review and Comments
State Highway 72 Yorktown Add Two Lanes: Proposed Road Widening Draft Survey Report
Yoakum District; De Witt County (0270-02-041)

Ms. Patricia A. Mercado-Allinger
Division Director/State Archeologist
Archeology Division
Texas Historical Commission
PO Box 12276
Austin, TX 78711-2276

Dear Ms. Mercado-Allinger:

The proposed project will be undertaken with Federal funding. In accordance with Section 106 (and the Programmatic Agreement among the Texas Department of Transportation [TxDOT], the Texas State Historical Preservation Officer [TSHPO], the Federal Highway Administration [FHWA], and the Advisory Council on Historic Preservation) and the Antiquities Code of Texas (and the Memorandum of Understanding between the Texas Historical Commission [THC] and TxDOT), this letter initiates consultation for the proposed undertaking.

The following proposed project would improve the existing roadway of State Highway (SH) 72 in DeWitt County, Texas in TxDOT's Yoakum District. The proposed project consists of widening the existing SH 72 from the Karnes County line through the City of Nordheim to 0.25 miles east of Farm-to-Market Road (FM) 2980 immediately west of the City of Yorktown located in the southwestern part of DeWitt County, Texas (see attached draft report). The proposed 10.27 mile long project would include widening the existing SH 72 roadway from a two-lane undivided roadway to a four-lane undivided roadway. The improvements include the addition of one 12-foot-wide lane in each direction, a 4-foot-wide flush median, and 10-foot-wide shoulders. The existing right of way (ROW) for the entire project is 123.0 acres. Approximately 98.24 acres of proposed ROW would be required for the proposed project. Due to extensive utility conflicts near the western end of the project, a one mile section of SH 72 has been realigned on new location. The proposed ROW is approximately 130 feet in width. No sidewalks or easements are currently proposed. No temporary or permanent construction easements are currently proposed.

Archeologists from Cox/McLain Environmental Consulting, Inc. (Cox/McLain), on behalf of TxDOT's Yoakum District, conducted an intensive survey of the above proposed project, approximately 219.79 acres total under Permit #8500 that was completed in August 2018. The intensive survey consisted of pedestrian survey and shovel-testing of 24.33 targeted acres (across 14 parcels) of moderate to high probability areas within the area of potential effect (APE). Approximately 31.61 acres of proposed ROW were denied right of entry (ROE) and the remainder of the APE were determined to be disturbed within the depth of construction impacts and did not warrant an intensive survey. Archival review determined that three recorded archeological sites were located possibly within, adjacent to, or in close proximity to the APE for this proposed project. Sites 41DW306 and 41DW307, both small prehistoric lithic scatters, were mapped possibly within and adjacent to the existing ROW of SH 72 and 41DW327 is located 0.75 mile south of the proposed project APE. Neither, Site 41DW306 or Site 41DW307, could be located within the APE. There are several archeological

surveys located within close proximity of the APE, but none within the APE. Cox/McLain was unable to conduct mechanical trenching at either Cabeza Creek or Smith Creek due to a lack of ROE. The majority of deposits along FM 2429 were found to be extensively disturbed within the uppermost portions of the APE with modern debris encountered. No archeological materials other than two isolated localities (remnants of historic bridges), three isolated surface finds (historic concrete property markers), and a single sub-surface isolated find (one piece of tan chert) were encountered during the intensive survey. Based on the above information, ***TxDOT recommends and requests your concurrence that the archeological inventory under Permit #8500 is adequate and complete. TxDOT further recommends that since no archeological sites were recorded and the APE was found to be predominately disturbed, the portion of the proposed project APE that was surveyed and determined to not warrant an intensive survey should be allowed to proceed to construction. TxDOT further requests your concurrence that the remainder of the intensive survey on the 31.61 acres that were denied ROE be deferred at this time allowing the NEPA process and property acquisition to proceed. Once these parcels have been acquired or access obtained, TxDOT shall be obligated to complete the remainder of this intensive survey and all coordination with your office.***

Please find attached for your review and comments the Cox/McLain draft survey report; *Archeological Survey Report: Intensive Archeological Survey for Improvements to SH 72 from Karnes County Line to 0.25 Miles East of FM 2980, DeWitt County, Texas.* If you have no objections to the recommendations made or any comments on this report and find it acceptable, please sign below to indicate your concurrence and stamp the draft cover as acceptable.

Thank you for your consideration in this matter. If you have any questions or further need of assistance, please contact Allen Bettis of the TxDOT Archeological Studies Program at (512) 416-2747.

Sincerely,

Allen C. Bettis Jr.
Archeological Studies Program
Environmental Affairs Division

Attachment
cc w/o attachments:

Alan Migl, Yoakum District Office
Scotty Moore, Cox/McLain Environmental Consulting, Inc., Houston
ACB PA File

Concurrence by:
for Mark S. Wolfe, State Historic Preservation Officer

11/8/18
Date

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

DRAFT REPORT
ACCEPTABLE
by William A. Martin
for Mark Wolfe
Executive Director, THC
Date 11/8/18
Track#

Texas Department of Transportation

Archeological Survey Report

Intensive Archeological Survey for Improvements to SH 72 from Karnes County Line to 0.25 Miles East of FM 2980

DeWitt County

CSJ: 0270-02-041
Yoakum District

Principal Investigator: Scotty Moore, MA, RPA
Cox|McLain Environmental Consulting, Inc.

August 2018

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

Texas Department of Transportation

MEMO

September 5, 2018

To: ECOS
Project file, CSJ 0270-02-041, SH 72: Karnes C/L – 0.25 mi E of FM 2980, DeWitt County, Yoakum District

From: Allen Bettis
Archeologist III, Environmental Affairs Division

Subject: Internal review under the Programmatic Agreement (PA) Among the Federal Highway Administration, Texas State Historic Preservation Office, Advisory Council on Historic Preservation, and the Texas Department of Transportation; and the Memorandum of Understanding (MOU) Between the Texas Historical Commission and the Texas Department of Transportation

---

Project Description: The proposed project would widen State Highway (SH) 72 from two lanes to four lanes in DeWitt County.

APE Definition: The APE extends from approximately 10.27 miles from the Karnes County Line to 0.25 mile east of Farm-to-Market Road (FM) 2980. The APE encompasses 281.4 acres of existing and new right-of-way. The existing ROW on SH 72 is approximately 120 feet in width. The existing ROW encompasses 149.4 acres along SH 72. A total of 132 acres of new ROW is needed along SH 72. Depth of construction impacts are a minimum of 1.75 feet usual for the roadway and a maximum of 35 feet for the bridges.

Records Search Results: Archival background study by third-party archeological consultant indicates a moderate to high potential for prehistoric-age archeological materials along SH 72, particularly at drainage crossings within the APE. The Hybrid Potential Archeological Liability Map (HPALM) map units 2, 4, 5, 6, 8, and 9 warrant archeological survey; all of which are considered to have at least moderate potential for archeological resources, whether shallow or deep. The intensive survey could not be completed due to a lack of right-of-entry (ROE). Archeological consultant recommends intensive survey of those mapped within the above HPALM units that were denied ROE.

Justification for Further Work: Moderate to high potential for prehistoric-age archeological materials, particularly in the soils around the two major drainages to cross the APE, Cabeza Creek and Smith Creek.

Permission to conduct archeological investigations was denied by at least one landowner. Thus, as provided under Stipulation IX.B.3 of the PA, this undertaking may proceed with further project development, including completion of the environmental process and right of way acquisition without the concurrence of the SHPO. After obtaining access to the proposed right of way, TxDOT will complete the inventory on unsurveyed properties and conclude any additional work that may be required under the terms of the PA and MOU.

Approved by Scott Pletka for TxDOT September 5, 2018
Scott Pletka, Ph.D. Date

Attachments (e.g., Property or Parcel Map)

CC: Alan Migl
Project Manager, Environmental, Yoakum District

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.

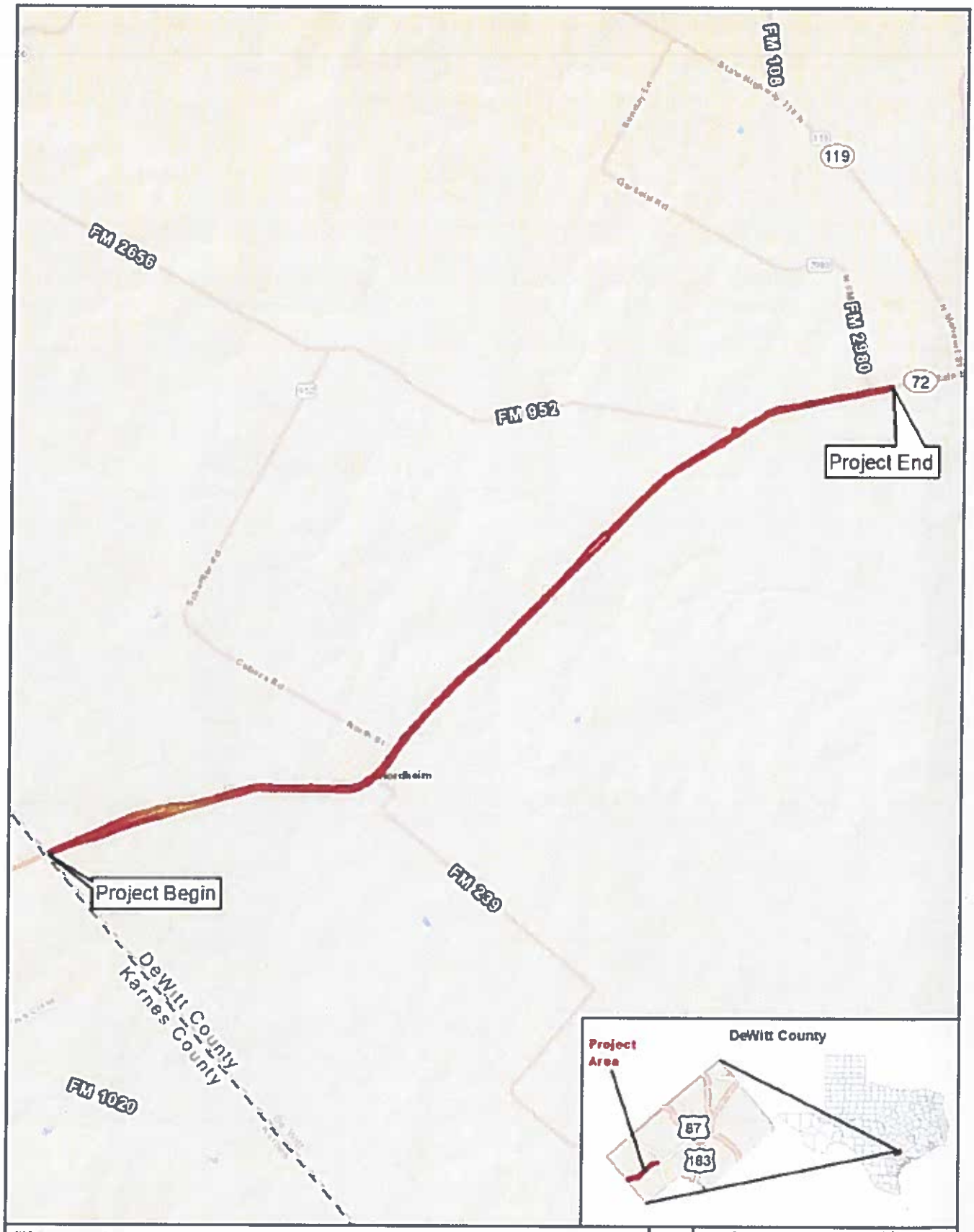


Figure 1

Project Location

SH 72 from Karnes County Line to 0.25 Miles East of FM 2980

Project Location/APE

Basemap Source ESRI (2018)

Prepared for TxDOT	1 in = 1.5 miles
	Scale 1:95,000
CSJ 0270-02-041	Date 6/27/2018

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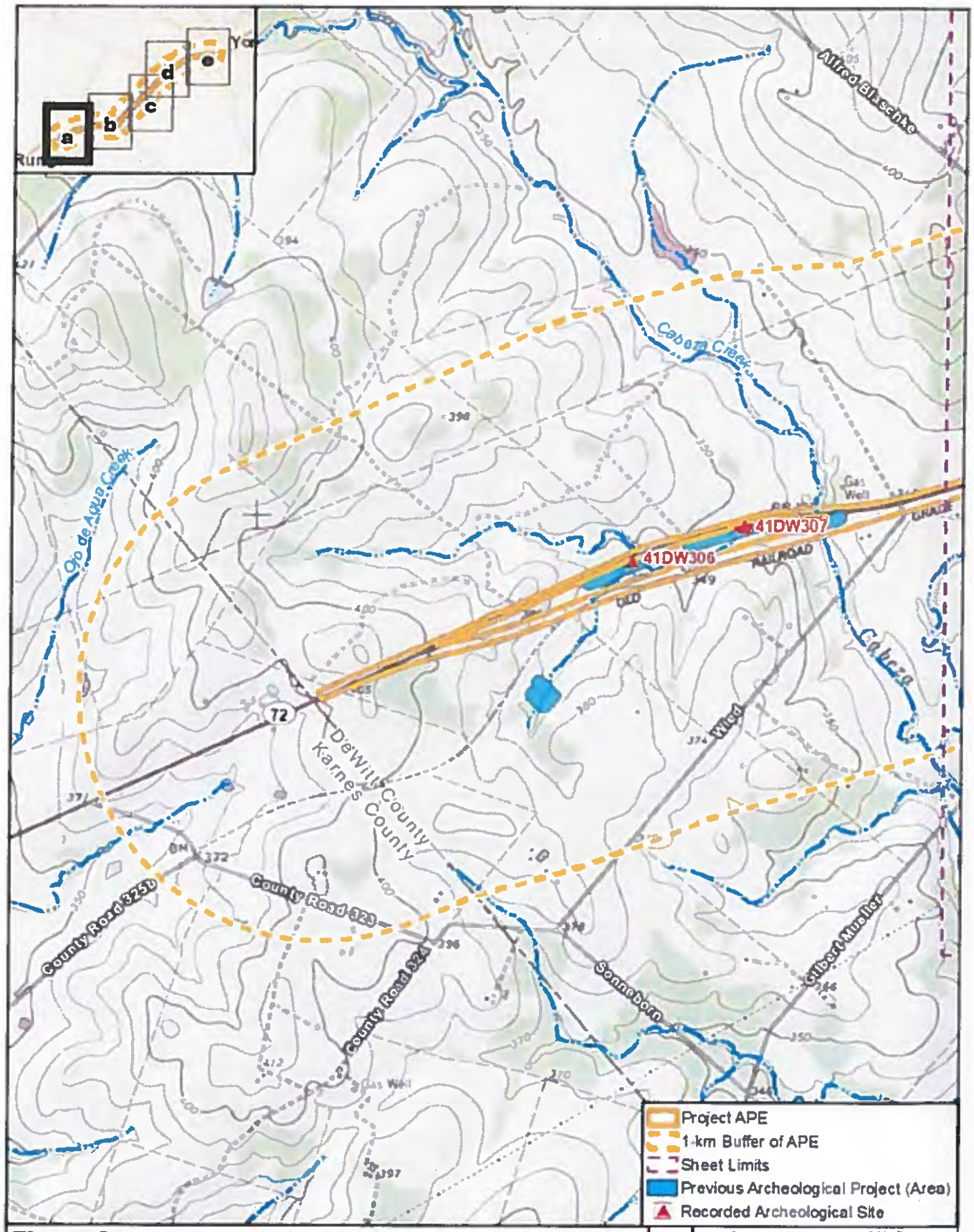

Figure 2a
Location of Archeological APE
SH 72 from Karnes County Line to 0.25 Miles East of FM 2980

Data Sources: THC (2018), TARL (2018), NHD (2014)
Topographic Source: USGS Yorktown West, Yorktown East, Blackwell Lake, New Davy and Runge 7.5' Quadrangles (1957)

2,000 Feet
600 Meters

Prepared for: TxDOT	1 in = 3,000 feet
	Scale 1:24,000
CSJ: 0270-02-041	Date 6/27/2018

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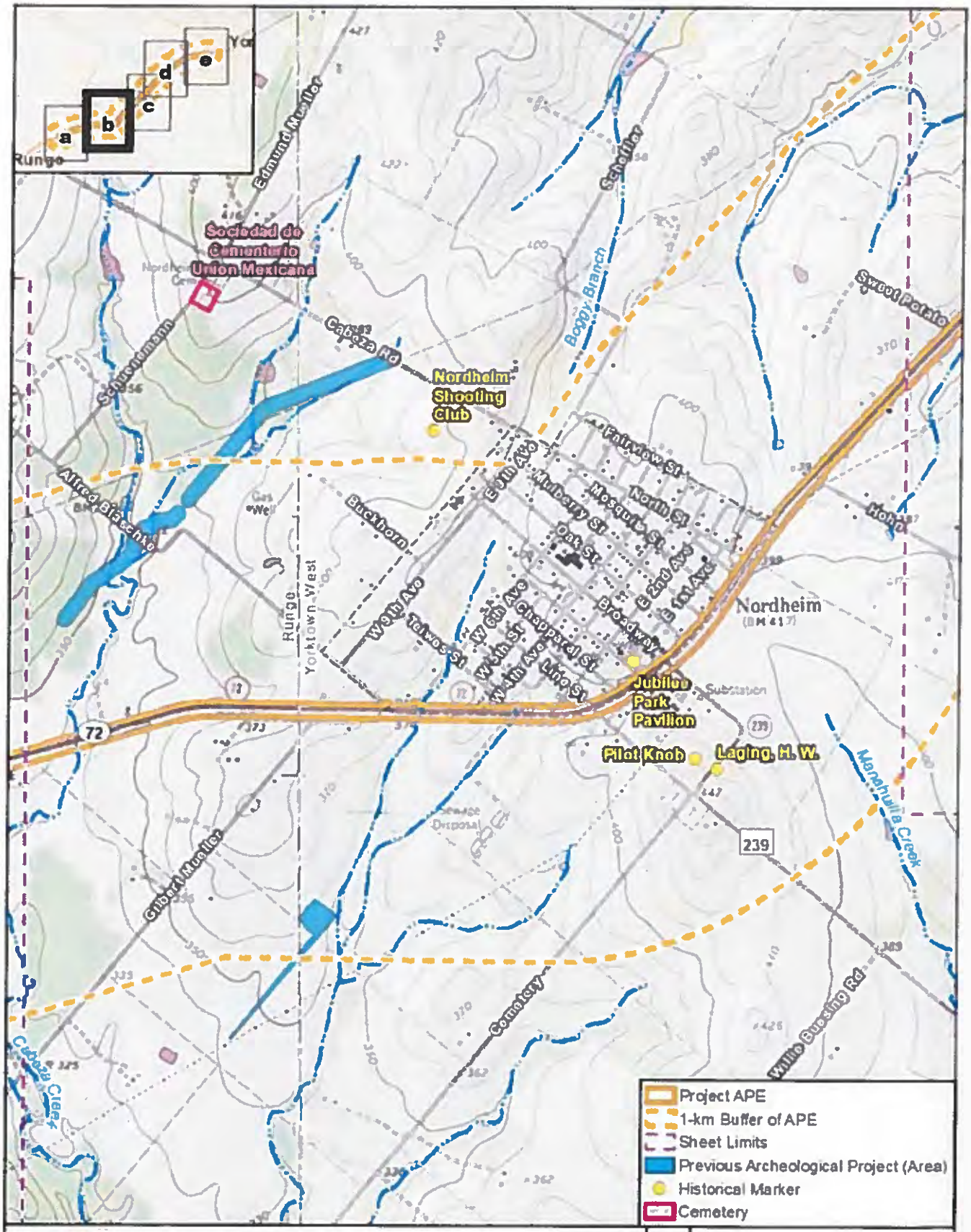

Figure 2b
Location of Archeological APE
SH 72 from Karnes County Line to 0.25 Miles East of FM 2980

Data Sources: THC (2018), TARL (2018), NHD (2014)
Topographic Source: USGS Yorktown West, Yorktown East, Blackwell Lake, New Davy, and Runge 7.5' Quadrangles (1987)

Prepared for: TxDOT	1 in = 2,000 feet
	Scale: 1:24,000
CSJ: 0270-02-041	Date: 6/27/2018

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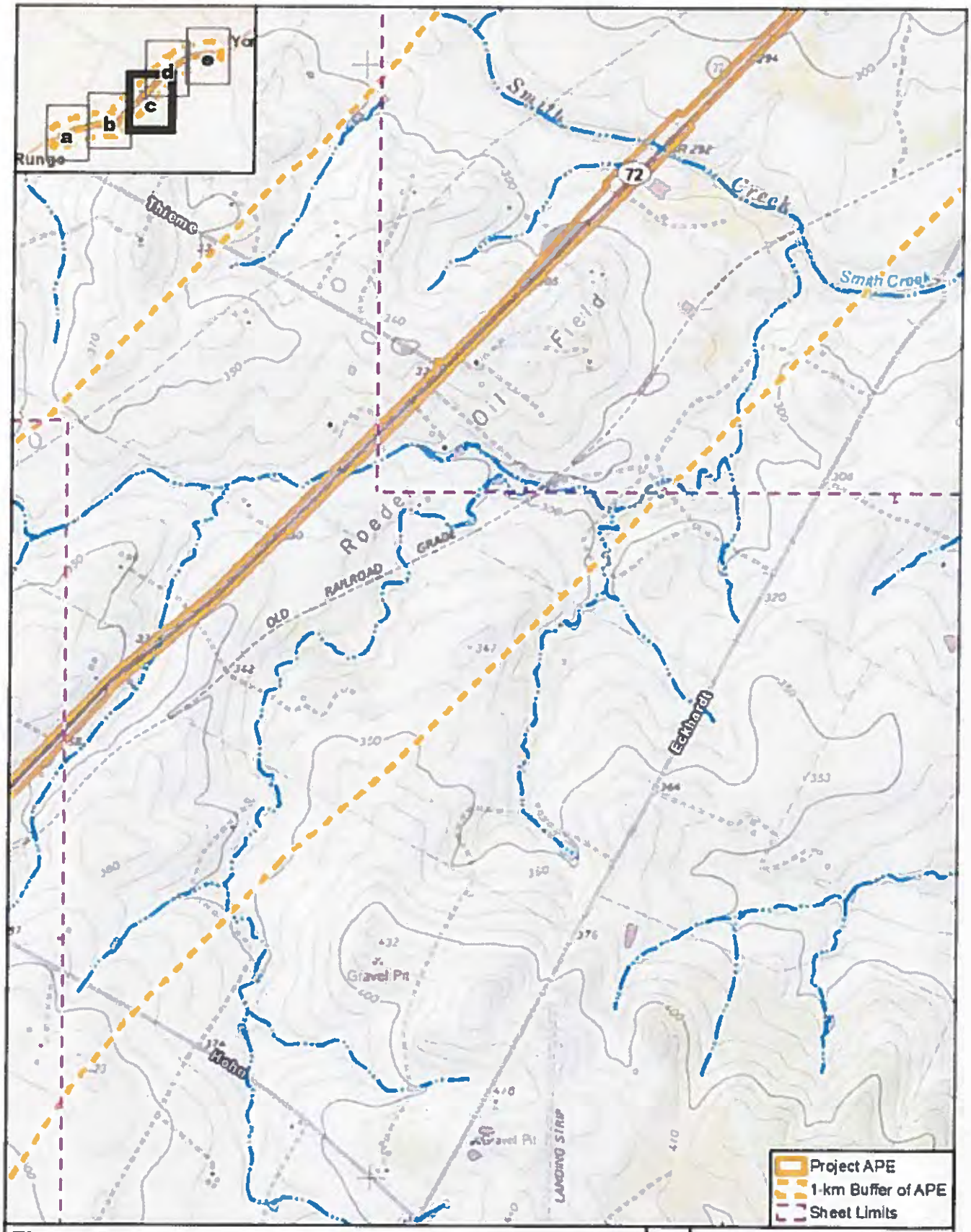

Figure 2c
Location of Archeological APE
SH 72 from Karnes County Line to 0.25 Miles East of FM 2980

Data Sources: TNC (2018), TARL (2018), NHD (2014)
Topographic Source: USGS Yorktown West, Yorktown East, Blackwell Lake, New Davy, and Runge 7.5' Quadrangles (1997)

Prepared for: TxDOT	1 in = 2,000 feet
	Scale 1:24,000
CSJ: 0270-02-041	Date 6/27/2018

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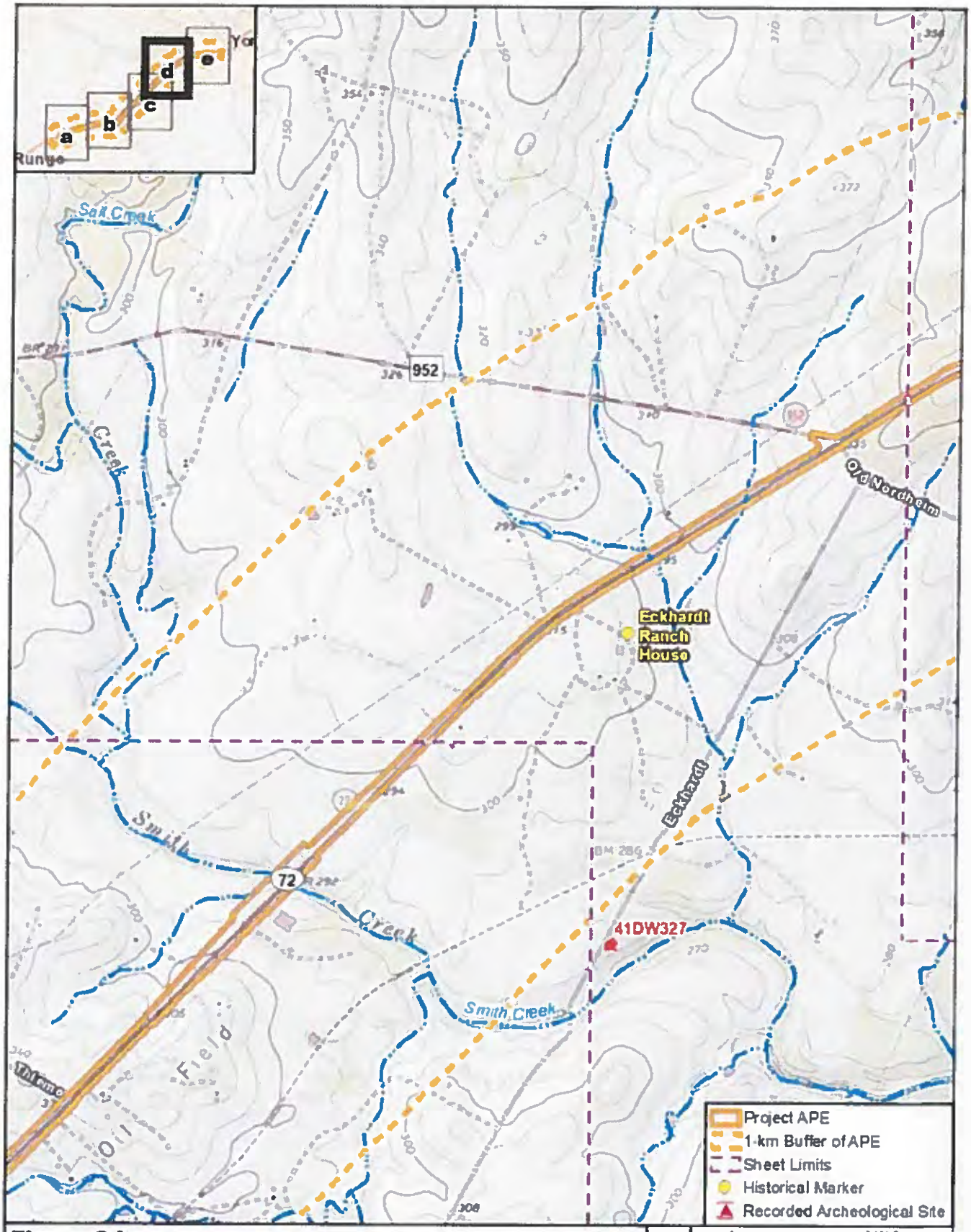

Figure 2d
Location of Archeological APE
SH 72 from Karnes County Line to 0.25 Miles East of FM 2980

Data Sources: THC (2018), TARL (2018), NHD (2014)
Topographic Source: USGS Yorktown West, Yorktown East, Blackwell Lake, New Davy, and Runge 7.5' Quadrangles (1987)

Prepared for: TxDOT	1 in = 2,000 feet
	Scale: 1:24,000
CSJ: 0270-02-041	Date: 6/27/2018

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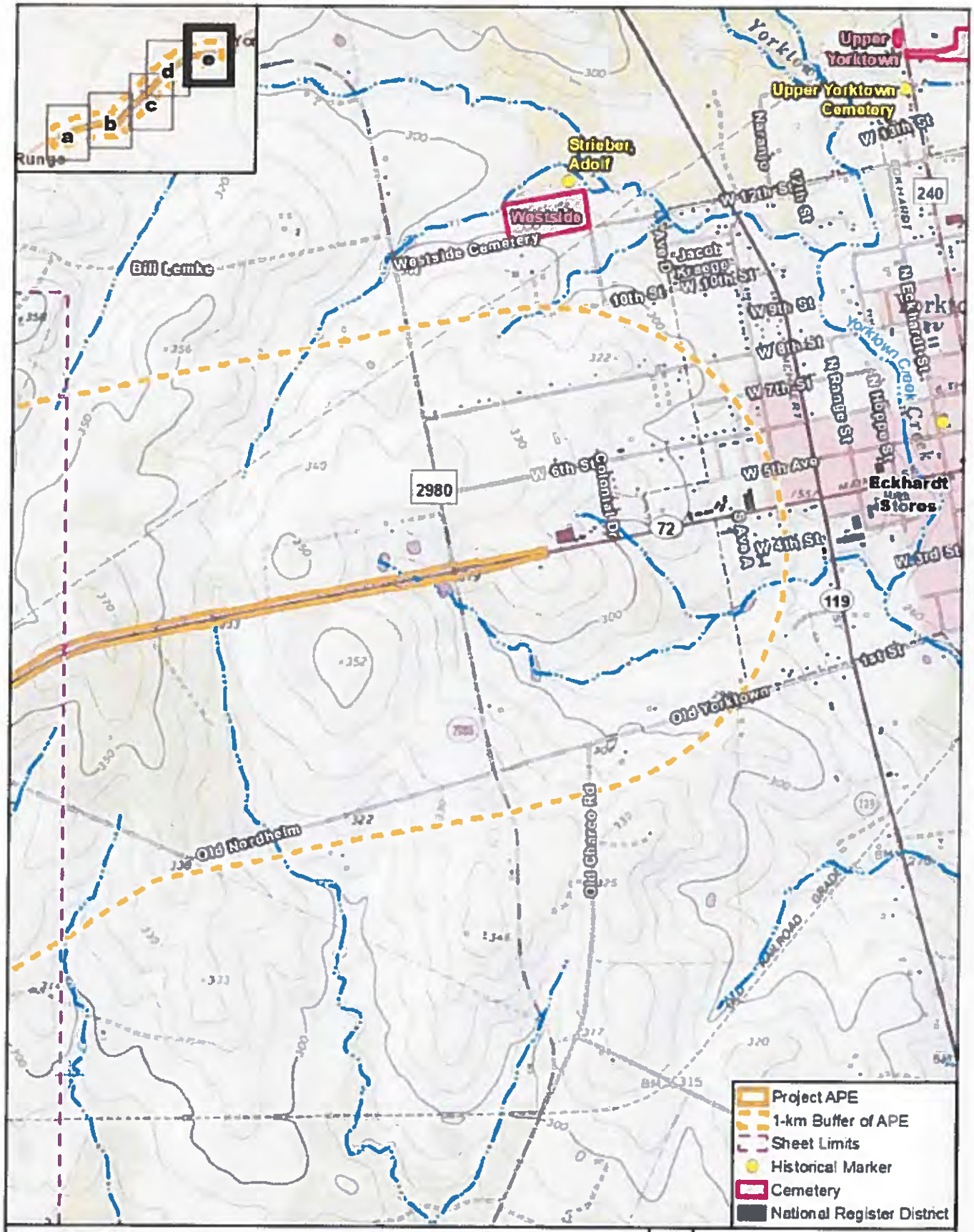

Figure 2e
Location of Archeological APE
SH 72 from Karnes County Line to 0.25 Miles East of FM 2980

Data Sources: THC (2018), TARL (2018), NHD (2014)
Topographic Source: USGS Yorktown West, Yorktown East, Blackwell Lake, New Davy, and Runge 7.5' Quadrangles (1987)

Prepared for: TxDOT
CSJ: 0270-02-041
1 in = 2,000 feet
Scale 1:24,000
Date 6/27/2018

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United States Department of the Interior

FISH AND WILDLIFE SERVICE
Texas Coastal Ecological Services Field Office
17629 El Camino Real #211
Houston, TX 77058
Phone: (281) 286-8282 Fax: (281) 488-5882
http://www.fws.gov/southwest/es/TexasCoastal/
http://www.fws.gov/southwest/es/ES_Lists_Main2.html

In Reply Refer To: November 28, 2018
Consultation Code: 02ETTX00-2018-SLI-0479
Event Code: 02ETTX00-2019-E-00811
Project Name: State Highway 72

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

To Whom It May Concern:

The U.S. Fish and Wildlife Service (Service) field offices in Clear Lake, Tx, and Corpus Christi, Tx, have combined administratively to form the Texas Coastal Ecological Services Field Office. A map of the Texas Coastal Ecological Services Field Office area of responsibility can be found at: http://www.fws.gov/southwest/es/TexasCoastal/Map.html. All project related correspondence should be sent to the field office responsible for the area in which your project occurs. For projects located in southeast Texas please write to: Field Supervisor; U.S. Fish and Wildlife Service; 17629 El Camino Real Ste. 211; Houston, Texas 77058. For projects located in southern Texas please write to: Field Supervisor; U.S. Fish and Wildlife Service; P.O. Box 81468; Corpus Christi, Texas 78468-1468. For projects located in six counties in southern Texas (Cameron, Hidalgo, Starr, Webb, Willacy, and Zapata) please write: Santa Ana NWR, ATTN: Ecological Services Sub Office, 3325 Green Jay Road, Alamo, Texas 78516.

The enclosed species list identifies federally threatened, endangered, and proposed to be listed species; designated critical habitat; and candidate species that may occur within the boundary of your proposed project and/or may be affected by your proposed project.

New information from updated surveys, changes in the abundance and distribution of species, changes in habitat conditions, or other factors could change the list. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. The Service recommends that verification be completed by visiting the ECOS-IPaC website http://ecos.fws.gov/ipac/ at regular intervals during project planning and implementation for updates to species list and information. An updated list may be

requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

Candidate species have no protection under the Act but are included for consideration because they could be listed prior to the completion of your project. The other species information should help you determine if suitable habitat for these listed species exists in any of the proposed project areas or if project activities may affect species on-site, off-site, and/or result in "take" of a federally listed species.

"Take" is defined as harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. In addition to the direct take of an individual animal, habitat destruction or modification can be considered take, regardless of whether it has been formally designated as critical habitat, if the activity results in the death or injury of wildlife by removing essential habitat components or significantly alters essential behavior patterns, including breeding, feeding, or sheltering.

Section 7

Section 7 of the Act requires that all Federal agencies consult with the Service to ensure that actions authorized, funded or carried out by such agencies do not jeopardize the continued existence of any listed threatened or endangered species or adversely modify or destroy critical habitat of such species. It is the responsibility of the Federal action agency to determine if the proposed project may affect threatened or endangered species. If a "may affect" determination is made, the Federal agency shall initiate the section 7 consultation process by writing to the office that has responsibility for the area in which your project occurs.

Is not likely to adversely affect - the project may affect listed species and/or critical habitat; however, the effects are expected to be discountable, insignificant, or completely beneficial. Certain avoidance and minimization measures may need to be implemented in order to reach this level of effects. The Federal agency or the designated non-Federal representative should seek written concurrence from the Service that adverse effects have been eliminated. Be sure to include all of the information and documentation used to reach your decision with your request for concurrence. The Service must have this documentation before issuing a concurrence.

Is likely to adversely affect - adverse effects to listed species may occur as a direct or indirect result of the proposed action or its interrelated or interdependent actions, and the effect is not discountable, insignificant, or beneficial. If the overall effect of the proposed action is beneficial to the listed species but also is likely to cause some adverse effects to individuals of that species, then the proposed action "is likely to adversely affect" the listed species. An "is likely to adversely affect" determination requires the Federal action agency to initiate formal section 7 consultation with this office.

No effect - the proposed action will not affect federally listed species or critical habitat (i.e., suitable habitat for the species occurring in the project county is not present in or adjacent to the action area). No further coordination or contact with the Service is necessary. However, if the

project changes or additional information on the distribution of listed or proposed species becomes available, the project should be reanalyzed for effects not previously considered.

Regardless of your determination, the Service recommends that you maintain a complete record of the evaluation, including steps leading to the determination of affect, the qualified personnel conducting the evaluation, habitat conditions, site photographs, and any other related articles.

Please be advised that while a Federal agency may designate a non-Federal representative to conduct informal consultations with the Service, assess project effects, or prepare a biological assessment, the Federal agency must notify the Service in writing of such a designation. The Federal agency shall also independently review and evaluate the scope and contents of a biological assessment prepared by their designated non-Federal representative before that document is submitted to the Service.

The Service's Consultation Handbook is available online to assist you with further information on definitions, process, and fulfilling Act requirements for your projects at: http://www.fws.gov/endangered/esa-library/pdf/esa_section7_handbook.pdf

Section 10

If there is no federal involvement and the proposed project is being funded or carried out by private interests and/or non-federal government agencies, and the project as proposed may affect listed species, a section 10(a)(1)(B) permit is recommended. The Habitat Conservation Planning Handbook is available at: http://www.fws.gov/endangered/esa-library/pdf/HCP_Handbook.pdf

Service Response

Please note that the Service strives to respond to requests for project review within 30 days of receipt, however, this time period is not mandated by regulation. Responses may be delayed due to workload and lack of staff. Failure to meet the 30-day timeframe does not constitute a concurrence from the Service that the proposed project will not have impacts to threatened and endangered species.

Proposed Species and/or Proposed Critical Habitat

While consultations are required when the proposed action may affect listed species, section 7(a)(4) was added to the ESA to provide a mechanism for identifying and resolving potential conflicts between a proposed action and proposed species or proposed critical habitat at an early planning stage. The action agency should seek conference from the Service to assist the action agency in determining effects and to advise the agency on ways to avoid or minimize adverse effect to proposed species or proposed critical habitat.

Candidate Species

Candidate species are species that are being considered for possible addition to the threatened and endangered species list. They currently have no legal protection under the ESA. If you find you have potential project impacts to these species the Service would like to provide technical

assistance to help avoid or minimize adverse effects. Addressing potential impacts to these species at this stage could better provide for overall ecosystem healh in the local area and ay avert potential future listing.

Several species of freshwater mussels occur in Texas and four are candidates for listing under the ESA. The Service is also reviewing the status of six other species for potential listing under the ESA. One of the main contributors to mussel die offs is sedimentation, which smothers and suffocates mussels. To reduce sedimentation within rivers, streams, and tributaries crossed by a project, the Service recommends that that you implement the best management practices found at: http://www.fws.gov/southwest/es/TexasCoastal/FreshwaterMussels.html.

Candidate Conservation Agreements (CCAs) or Candidate Conservation Agreements with Assurances (CCAAs) are voluntary agreements between the Service and public or private entities to implement conservation measures to address threats to candidate species. Implementing conservation efforts before species are listed increases the likelihood that simpler, flexible, and more cost-effective conservation options are available. A CCAA can provide participants with assurances that if they engage in conservation actions, they will not be required to implement additional conservation measures beyond those in the agreement. For additional information on CCAs/CCAAs please visit the Service's website at http://www.fws.gov/endangered/what-we-do/cca.html.

Migratory Birds

The Migratory Bird Treaty Act (MBTA) implements various treaties and conventions for the protection of migratory birds. Under the MBTA, taking, killing, or possessing migratory birds is unlawful. Many may nest in trees, brush areas or other suitable habitat. The Service recommends activities requiring vegetation removal or disturbance avoid the peak nesting period of March through August to avoid destruction of individuals or eggs. If project activities must be conducted during this time, we recommend surveying for active nests prior to commencing work. A list of migratory birds may be viewed at http://www.fws.gov/migratorybirds/regulationspolicies/mbta/mbtandx.html.

The bald eagle (*Haliaeetus leucocephalus*) was delisted under the Act on August 9, 2007. Both the bald eagle and the goden eagle (*Aquila chrysaetos*) are still protected under the MBTA and BGEPA. The BGEPA affords both eagles protection in addition to that provided by the MBTA, in particular, by making it unlawful to "disturb" eagles. Under the BGEPA, the Service may issue limited permits to incidentally "take" eagles (e.g., injury, interfering with normal breeding, feeding, or sheltering behavior nest abandonment). For more information on bald and golden eagle management guidlines, we recommend you review information provided at http://www.fws.gov/midwest/eagle/pdf/NationalBaldEagleManagementGuidelines.pdf.

The construction of overhead power lines creates threats of avian collision and electrocution. The Service recommends the installation of underground rather than overhead power lines whenever possible. For new overhead lines or retrofitting of old lines, we recommend that project

developers implement, to the maximum extent practicable, the Avian Power Line Interaction Committee guidelines found at http://www.aplic.org/.

Meteorological and communication towers are estimated to kill millions of birds per year. We recommend following the guidance set forth in the Service Interim Guidelines for Recommendations on Communications Tower Siting, Constructions, Operation and Decommissioning, found online at: http://www.fws.gov/habitatconservation/communicationtowers.html, to minimize the threat of avian mortality at these towers. Monitoring at these towers would provide insight into the effectiveness of the minimization measures. We request the results of any wildlife mortality monitoring at towers associated with this project.

We request that you provide us with the final location and specifications of your proposed towers, as well as the recommendations implemented. A Tower Site Evaluation Form is also available via the above website; we recommend you complete this form and keep it in your files. If meteorological towers are to be constructed, please forward this completed form to our office.

More information concerning sections 7 and 10 of the Act, migratory birds, candidate species, and landowner tools can be found on our website at: http://www.fws.gov/southwest/es/TexasCoastal/ProjectReviews.html.

Wetlands and Wildlife Habitat

Wetlands and riparian zones provide valuable fish and wildlife habitat as well as contribute to flood control, water quality enhancement, and groundwater recharge. Wetland and riparian vegetation provides food and cover for wildlife, stabilizes banks and decreases soil erosion. These areas are inherently dynamic and very sensitive to changes caused by such activities as overgrazing, logging, major construction, or earth disturbance. Executive Order 11990 asserts that each agency shall provide leadership and take action to minimize the destruction, loss or degradation of wetlands, and to preserve and enhance the natural and beneficial value of wetlands in carrying out the agency's responsibilities. Construction activities near riparian zones should be carefully designed to minimize impacts. If vegetation clearing is needed in these riparian areas, they should be re-vegetated with native wetland and riparian vegetation to prevent erosion or loss of habitat. We recommend minimizing the area of soil scarification and initiating incremental re-establishment of herbaceous vegetation at the proposed work sites. Denuded and/or disturbed areas should be re-vegetated with a mixture of native legumes and grasses. Species commonly used for soil stabilization are listed in the Texas Department of Agriculture's (TDA) Native Tree and Plant Directory, available from TDA at P.O. Box 12847, Austin, Texas 78711. The Service also urges taking precautions to ensure sediment loading does not occur to any receiving streams in the proposed project area. To prevent and/or minimize soil erosion and compaction associated with construction activities, avoid any unnecessary clearing of vegetation, and follow established rights-of-way whenever possible. All machinery and petroleum products should be stored outside the floodplain and/or wetland area during construction to prevent possible contamination of water and soils.

Wetlands and riparian areas are high priority fish and wildlife habitat, serving as important sources of food, cover, and shelter for numerous species of resident and migratory wildlife. Waterfowl and other migratory birds use wetlands and riparian corridors as stopover, feeding, and nesting areas. We strongly recommend that the selected project site not impact wetlands and riparian areas, and be located as far as practical from these areas. Migratory birds tend to concentrate in or near wetlands and riparian areas and use these areas as migratory flyways or corridors. After every effort has been made to avoid impacting wetlands, you anticipate unavoidable wetland impacts will occur; you should contact the appropriate U.S. Army Corps of Engineers office to determine if a permit is necessary prior to commencement of construction activities.

If your project will involve filling, dredging, or trenching of a wetland or riparian area it may require a Clean Water Act Section 404 permit from the U.S. Army Corps of Engineers (COE). For permitting requirements please contact the U.S. Corps of Engineers, District Engineer, P.O. Box 1229, Galveston, Texas 77553-1229, (409) 766-3002.

Beneficial Landscaping

In accordance with Executive Order 13112 on Invasive Species and the Executive Memorandum on Beneficial Landscaping (42 C.F.R. 26961), where possible, any landscaping associated with project plans should be limited to seeding and replanting with native species. A mixture of grasses and forbs appropriate to address potential erosion problems and long-term cover should be planted when seed is reasonably available. Although Bermuda grass is listed in seed mixtures, this species and other introduced species should be avoided as much as possible. The Service also recommends the use of native trees, shrubs, and herbaceous species that are adaptable, drought tolerant and conserve water.

State Listed Species

The State of Texas protects certain species. Please contact the Texas Parks and Wildlife Department (Endangered Resources Branch), 4200 Smith School Road, Austin, Texas 78744 (telephone 512/389-8021) for information concerning fish, wildlife, and plants of State concern or visit their website at: http://www.tpwd.state.tx.us/huntwild/wild/wildlife_diversity/texas_rare_species/listed_species/.

If we can be of further assistance, or if you have any questions about these comments, please contact 281/286-8282 if your project is in southeast Texas, or 361/994-9005, ext. 246, if your project is in southern Texas. Please refer to the Service consultation number listed above in any future correspondence regarding this project.

Attachment(s):

- Official Species List

Official Species List

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

This species list is provided by:

Texas Coastal Ecological Services Field Office
17629 El Camino Real #211
Houston, TX 77058
(281) 286-8282

Project Summary

Consultation Code: 02ETTX00-2018-SLI-0479

Event Code: 02ETTX00-2019-E-00811

Project Name: State Highway 72

Project Type: TRANSPORTATION

Project Description: The proposed project is located southeast of San Antonio. The project includes a rural section of SH 72, from the Karnes County line to just east of FM 2980. This section travels through the city of Nordheim and ends just east of the city of Yorktown. The total length of the proposed project is approximately 10.27 miles. The proposed project adds two lanes to create a four-lane undivided roadway.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/28.944413428412552N97.58353933910402W

Counties: DeWitt, TX

Endangered Species Act Species

There is a total of 6 threatened, endangered, or candidate species on this species list.

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

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

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

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

Birds

NAME	STATUS
Least Tern *Sterna antillarum* Population: interior pop. No critical habitat has been designated for this species. This species only needs to be considered under the following conditions: ▪ Wind Related Projects Within Migratory Route Species profile: https://ecos.fws.gov/ecp/species/8505	Endangered
Piping Plover *Charadrius melodus* Population: [Atlantic Coast and Northern Great Plains populations] - Wherever found, except those areas where listed as endangered. There is **final** critical habitat for this species. Your location is outside the critical habitat. This species only needs to be considered under the following conditions: ▪ Wind related projects within migratory route. Species profile: https://ecos.fws.gov/ecp/species/6039	Threatened
Red Knot *Calidris canutus rufa* No critical habitat has been designated for this species. This species only needs to be considered under the following conditions: ▪ Wind Related Projects Within Migratory Route Species profile: https://ecos.fws.gov/ecp/species/1864	Threatened
Whooping Crane *Grus americana* Population: Wherever found, except where listed as an experimental population There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/758	Endangered

Clams

NAME	STATUS
Golden Orb *Quadrula aurea* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9042	Candidate
Texas Pimpleback *Quadrula petrina* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/8966	Candidate

Critical habitats

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

From: Sue Reilly
To: Alan Migl
Subject: RE: TPWD Early Coordination for SH 72 Add Lanes, CSJ 0270-02-041
Date: Wednesday, October 17, 2018 2:28:02 PM

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

Alan,

My apologies, I thought I had closed this already!

Thank you for submitting the following project for early coordination: SH 72 widening southwest of Yorktown (CSJ 0270-02-041). TPWD appreciates TxDOT's commitment to implement the practices listed in the Tier I Site Assessment submitted August 6, 2018 and in subsequent communications. Based on a review of the documentation, the avoidance and mitigation efforts described, and provided that project plans do not change, TPWD considers coordination to be complete. However, please note it is the responsibility of the project proponent to comply with all federal, state, and local laws that protect plants, fish, and wildlife.

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

Thank you,

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

From: Alan Migl <Alan.Migl@txdot.gov>
Sent: Tuesday, August 28, 2018 11:24 AM
To: Sue Reilly <Sue.Reilly@tpwd.texas.gov>
Subject: RE: TPWD Early Coordination for SH 72 Add Lanes, CSJ 0270-02-041

Sue, I just sent the documents via dropbox again. I couldn't find the originals either so I may have not sent them as planned.

Also, did you see my email response comment regarding SH 80 over the Guadalupe? You mentioned something about reducing the riparian vegetation gap and I was unclear on what exactly you meant.

Thanks,
alan

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

From: Sue Reilly [mailto:Sue.Reilly@tpwd.texas.gov]
Sent: Monday, August 27, 2018 4:31 PM
To: Alan Migl
Subject: RE: TPWD Early Coordination for SH 72 Add Lanes, CSJ 0270-02-041

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

Hi Alan,

I can't find the Dropbox email. I can dig things out of ECOS if you don't want to re-send it, is everything under Biology?

Thanks,
Sue

From: Alan Migl <Alan.Migl@txdot.gov>
Sent: Monday, August 6, 2018 11:54 AM
To: Sue Reilly <Sue.Reilly@tpwd.texas.gov>
Subject: RE: TPWD Early Coordination for SH 72 Add Lanes, CSJ 0270-02-041

I've sent the supplemental attachments via TxDOTs dropbox service due to the size of the file. Please let me know if you have any issues receiving the file.

Thanks
alan

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

From: Alan Migl
Sent: Monday, August 06, 2018 11:42 AM
To: 'Sue Reilly'
Subject: FW: TPWD Early Coordination for SH 72 Add Lanes, CSJ 0270-02-041

Attached is the supporting documentation file. I apologize for any confusion this may have caused.

Thanks,
alan

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

From: Alan Migl
Sent: Monday, August 06, 2018 11:35 AM
To: 'WHAB_TxDOT'
Cc: 'Sue Reilly'
Subject: RE: TPWD Early Coordination for SH 72 Add Lanes, CSJ 0270-02-041

TxDOT Yoakum District would like to request that Early Coordination be initiated upon receipt of this email for the proposed widening of SH 72 from 2 lanes to 4 lanes in DeWitt County (CSJ 0270-02-041). The following documents are included in the attached file for your review:

- TPWD Tier I Site Assessment

The proposed project would construct two additional lanes (one in each direction) on SH 72 in DeWitt County in order to widen the existing roadway from two lanes to a four lane undivided facility. The proposed project is approximately 10.27 miles in length and would require approximately 98.24 acres of new ROW. The project is scheduled to let in September 2020.

Due to the size of the attachments file, I will send in a separate email. If you have any questions please feel free to contact me.

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

In 2017, alcohol-related traffic crash fatalities represented 28 percent of total traffic crash fatalities in Texas.