Environmental Assessment
US-277 - Cement to I-44

CADDO AND GRADY COUNTIES, OKLAHOMA

JP NO. 20953(04) AND JP 20962(04)

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US-277 FROM CEMENT TO I-44
CADDO AND GRADY COUNTIES, OKLAHOMA
From 2.57 Miles West of Grady County Line East 6.7 Miles

FEDERAL AID PROJECT No. J2-0953(004) AND J2-0962(008)
STATE J/P No. 20953(04) AND 20962(04)

ENVIRONMENTAL ASSESSMENT

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
AND
OKLAHOMA DEPARTMENT OF TRANSPORTATION

The proposed improvement includes reconstruction of US-277 in Caddo County from 2.58 miles west of the Grady County Line at the Town of Cement, extending east 6.7 miles to I-44 in Grady County. The preferred alternative is a new 2-lane roadway with shoulders on an offset alignment to the north.

This highway project is proposed for funding under Title 23, United States Code (USC). This statement for the improvement has been developed in consultation with the Federal Highway Administration and is submitted pursuant to 42 USC-4332(2)(c) and 49 USC 303.

Submitted:

Date: 04/14/16

for

Environmental Programs Division Engineer
Oklahoma Department of Transportation

Approved:

Date: 04/15/16

Division Administrator
Federal Highway Administration

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1.0 INTRODUCTION

The Oklahoma Department of Transportation (ODOT), in coordination with the Federal Highway Administration (FHWA), has conducted an environmental analysis to evaluate the potential social, economic, and environmental effects of the proposed improvements to the U.S. Highway 277 from the east side of the Town of Cement to I-44 in Caddo and Grady Counties.

The Environmental Assessment (EA) has been prepared to comply with the National Environmental Policy Act of 1969 (NEPA), the Federal Technical Advisory T-6640.8A, and Title 23 Code of Federal Regulations (CFR) Part 771-772, in anticipation of federal funding for this project. The analysis provides appropriate information regarding the project's social, economic, and environmental impacts.

The project limits begin at the east edge of Cement at E Avenue and extend approximately 6.7 miles east to the I-44 overpass bridge. The project corridor is broken into two construction job piece numbers: JP 20953(04), US-277 from 2.57 miles west of the Caddo County line, extending east approximately 4.0 miles (West Project), and JP 20962(04), US-277 from 1.45 miles east of the Caddo County line, extending east approximately 2.7 miles to the H. E. Bailey Turnpike (I-44) overpass (East Project). Both projects are included in this EA as both have similar transportation needs. Including both projects satisfies the requirement for independent utility and logical termini. A vicinity map of the project is provided below (**Figure 1**), and a map of the environmental study footprint is provided in **Appendix A**. The environmental study footprint included approximately 300 feet north and south of the proposed alignment of US-277 for the West Project (new alignment), and between 150 feet south and 350 feet north of the existing US-277 alignment for the East Project (north offset alignment). The existing US-277 right-of-way for the entire corridor was also included in the environmental study footprint.

1.1 Project Background and Previous Studies

In 2013, ODOT completed a Preliminary Alignment Study for the US-277 project. This document included information on the area's existing conditions, the proposed design criteria for the new US-277 highway, seven proposed alternatives for the West Project, two proposed alternatives for the East Project, an alternatives analysis, and a summary of public involvement. The Preliminary Alignment Study also documented the decision to eliminate all but one build alternative for each project. More information on the proposed alternatives is presented in Section 3.0 below; however, the bulk of the detailed analysis of the alternatives is included in the Preliminary Alignment Study and is not duplicated here. The Preliminary Alignment Study is available for review from ODOT.

1.2 Land Use and Setting

Existing land use in the project area is a mix of rural residential and rural agricultural land (mostly small farms with cattle and pasture). The western end of the study area is within the Town of Cement, a small community with a population of approximately 500 people. Development along US-277 through Cement (also called 1st Street) is primarily residential, with a few small businesses and a church. East of Cement, the project area quickly transitions to the rolling hills of the Northwestern Cross Timbers (Oklahoma Level IV Ecoregion 29h). The western project area is an active oil field and there are a number of oil and gas wells, tanks, and pipelines in the study area. Dirt roads traverse the area providing access to the oil and

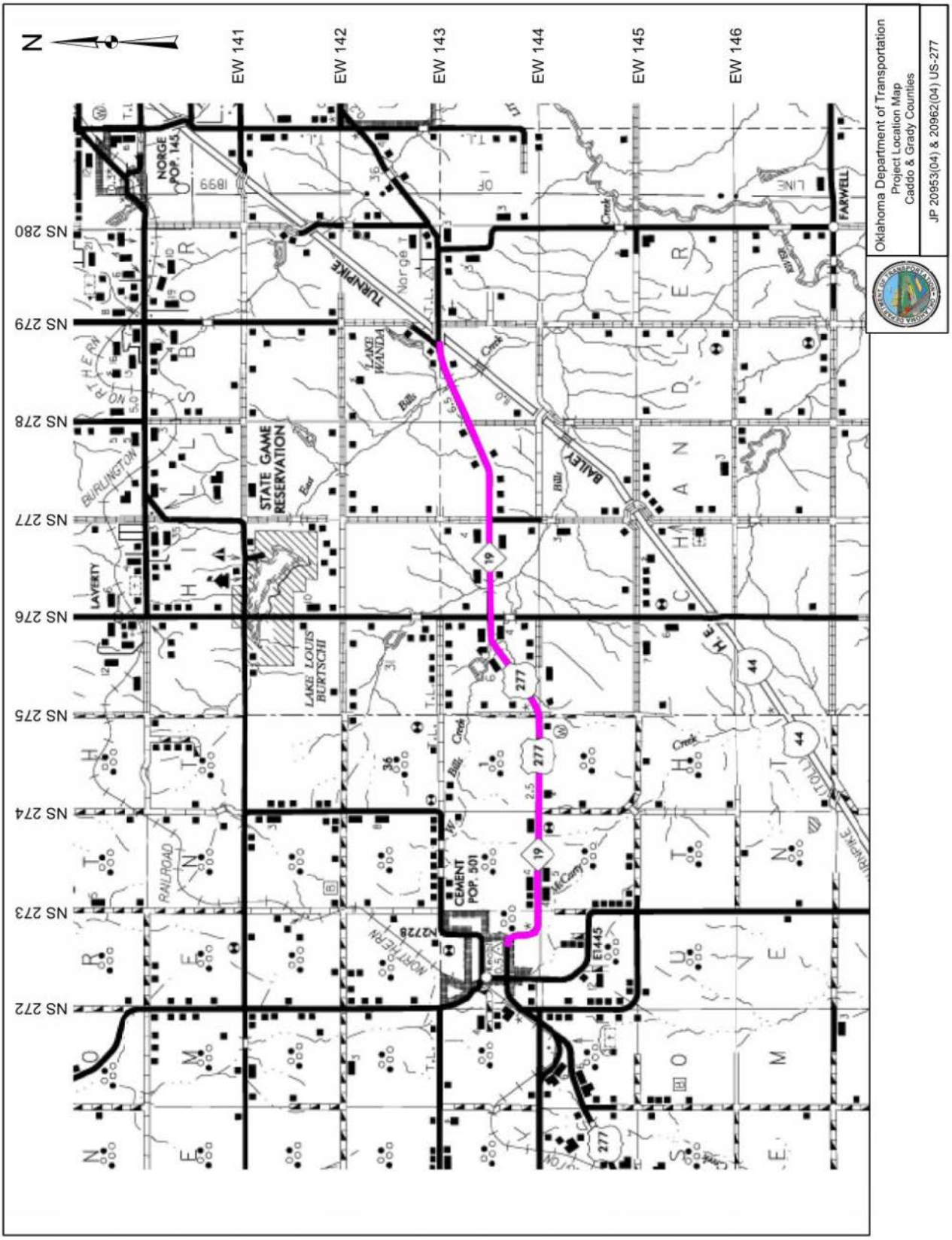


Figure 1: US-277 Location Map

gas facilities. Terrain is characterized by steep forested slopes and narrow drainages. East of Middle Bills Creek, the terrain is gentler, with more open fields used as pasture. There is scattered residential development along the existing highway. Drainage throughout the corridor runs primarily from northwest to southeast into West, Middle, and East Bills Creeks. Bills Creek eventually drains into the Washita River approximately 2.7 miles southeast of the study area.

1.3 Existing Facility

The subject portion of the US-277 roadway is approximately 6.75 miles in length and is classified as a Rural Collector with rolling terrain. The current roadway provides two 12-foot wide driving lanes and 3-foot wide sod shoulders. The corridor has a posted speed limit of 45 mph in Cement and through the two 90 degree horizontal curves east of Cement, then transitions to 65 mph through the remainder of the corridor. The existing highway has numerous vertical and horizontal curves, many of which are deficient under current design criteria. In 2012, the annual average daily traffic (AADT) was 2,100 vehicles per day (vpd), with a projected AADT in 2035 of 3,310 vpd, 15% of which is truck traffic. There are three bridge structures within the study corridor at West Bills Creek, Middle Bills Creek, and East Bills Creek. The existing bridge over West Bills Creek (NBI 02099) is an I-beam span bridge with a 31-foot clear roadway and a sufficiency rating of 73.5. The existing bridge over Middle Bills Creek (NBI 23976) is a concrete beam span bridge with a 40-foot clear roadway and a sufficiency rating of 94.1. The existing bridge over East Bills Creek (NBI 18275) is a concrete slab span bridge with a 32-foot clear roadway and a sufficiency rating of 93.0. None of these bridges is considered structurally deficient.

2.0 NEED AND PURPOSE FOR THE PROPOSED ACTION

The need for the proposed improvements explains why the action is being considered and what influences have affected the decision-making process during the project development phase. The need and purpose is the foundation of the NEPA decision-making process.

2.1 Need for the Proposed Action

The need for improvements on the subject portion of US-277 is to improve safety along the roadway. Traffic accident data collected from 2006 through 2015 show that 43 accidents occurred in the project area with 23 injury accidents, 18 property damage accidents, and 2 fatal accidents, with the majority of the accidents occurring in the Grady County portion of the project. The causes of the accidents were from unsafe speeds, centerline crossings, failure to yield/stop, improper turning/backing movements, driving while intoxicated, defective vehicles, and inattentive motorists. Accident rates for this portion of US-277 are approximately 33% higher than for similar facilities statewide, with the Grady County rate approximately 57% higher. Injury rates are 60% higher than the statewide average, with the Grady County injury rate more than double the state average. See the accident data contained in **Appendix B**.

The high accident rate on US-277 can be attributed to the numerous vertical and horizontal curves along the roadway, many of which are deficient under current design criteria. This segment of US-277 from Cement to I-44 is a major truck route with several sharp curves and rolling terrain, which results in inadequate sight distance to safely stop for turning vehicles or stopped vehicles. The stopping sight

distance is deficient for a majority of the vertical alignment. At Middle Bills Creek the highway does meet current design criteria, so the alignment requires no modifications at this location.

A major safety issue is the combination of the deficient vertical alignment with the numerous driveways/roadway connections which lead to higher than average accident rates. Several of the horizontal curves are also deficient with either an excessive degree of curve, deficient superelevation rate, or a combination thereof. Refer to the Preliminary Alignment Study for additional detail regarding the vertical and horizontal curve analyses.

US-277 currently has narrow shoulders and in some areas, steep side slopes that do not provide sufficient recovery area for vehicles that may drive off the roadway or need to pull over in the event of a break-down or emergency. Combined with the curve deficiencies and limited sight distance, the narrow shoulders also contribute to the accident rate on the highway.

2.2 Purpose for the Action

The purpose of the proposed project is to improve safety along the roadway by providing improved sight distance and shoulders that meet current design criteria. By fulfilling this purpose, the proposed improvements would meet the need to improve safety on this portion of US-277.

3.0 ALTERNATIVES AND INITIAL PUBLIC INVOLVEMENT

3.1 Design Criteria

As discussed, the Preliminary Alignment Summary report presented seven proposed alternatives for the West Project (Alternatives 1, 2, 2A, 3, 4, 5, and 6), and two proposed alternatives for the East Project (North and South Offset Alternatives). All of the proposed alignments were designed to minimize impacts to area constraints including residential structures, commercial facilities, pump jacks and storage tanks, rock cuts on steep grades, gullies, and wetlands. The alternatives were all designed with the following criteria:

- Two 12-foot lanes with 8-foot paved shoulders
- Design speed of 65 mph
- Clear zone of 30 feet with 1:6 side slopes
- Maximum superelevation of 8%
- Maximum grade of 6%

All of the alternatives would construct a new bridge at West Bills Creek. The bridge at Middle Bills Creek would remain, and the initial alternatives showed a widening of the existing bridge at East Bills Creek.

3.2 Initial Screening

Initial screening eliminated Alternatives 1, 2, 3, and 5 for the West Project. These alternatives were dropped due to one or more of the following: cost, constructability, and/or environmental impacts. Alternative 2A was added after the initial screening to combine the desirable geometric features of Alternatives 1 and 2 while minimizing impacts. This resulted in three alternatives for the West Project

(Alternatives 2A, 4, and 6) and two alternatives for the East Project (North and South Offsets) that were presented to the public. A detailed analysis of all of the alternatives evaluated is included in the Preliminary Alignment Summary report. Alternatives presented to the public are described below.

3.3 No Build Alternative

The No Build Alternative would leave US-277 in its existing location and configuration. The No Build Alternative would not correct the deficient curves or narrow shoulders. With increasing traffic, accident rates on US-277 would be expected to increase in the future. The No Build Alternative would not improve the safety of the roadway and it does not meet the need and purpose of the project.

3.4 Build Alternatives – West Project JP 20953(04)

The Build Alternatives for the West Project all begin at approximately E Street in Cement and tie back to the existing alignment at Middle Bills Creek. The bridge at Middle Bills Creek (NBI 23976) will remain in place under all of the build alternatives. A map showing the West Project Alternatives is included in **Appendix C.**

3.4.1 Alternative 2A

Alternative 2A was developed subsequent to the initial alternatives screening. It combines the desirable geometric features of Alternative 1 and Alternative 2. Alternative 2A follows the existing US-277 alignment east from just west of F Avenue in Cement. Alternative 2A continues east on new alignment past the first 90 degree curve, and follows a gentler curve southeastward towards the existing alignment. Alternative 2A then follows a parallel offset 100 feet south of the existing US-277 alignment for approximately 0.75 miles. East of NS-274 Road, Alternative 2A crosses to the north side of existing US-277, following a 100-foot parallel north offset to just west of Middle Bills Creek, where it ties back into the existing US-277. Because the majority of Alternative 2A utilizes the existing US-277 corridor, most of the existing highway would be removed and reconstructed.

3.4.2 Alternative 4

Alternative 4 follows the existing US-277 alignment east from just west of F Avenue in Cement. Alternative 4 continues east on new alignment past the first 90-degree curve, heading slightly northeastward to a point east of NS-274 Road, where it is offset approximately 1,650 feet north of the existing US-277. The alignment then curves slightly to the southeast and eventually ties back into the existing US-277 alignment just west of Middle Bills Creek**.** Because Alternative 4 is located on a new alignment, existing US-277 would remain in place as a local road.

3.4.3 Alternative 6

Alternative 6 follows the existing US-277 alignment east from just west of F Avenue in Cement. Alternative 6 continues east on new alignment past the first 90 degree curve, heading slightly southeast where it is offset approximately 1,400 feet north of the existing US-277. The alignment then curves southeast towards the existing alignment, where it then follows a parallel offset 100 feet north of the existing US-

277 until it ties back into the existing alignment just west of Middle Bills Creek. Alternative 6 is a combination of new alignment and utilization of the existing US-277 corridor.

3.5 Build Alternatives – East Project JP 20962(04)

The Build Alternatives for the East Project all begin at Middle Bills Creek and end just west of the I-44 overpass bridge. The East Project Alternatives can be attached to the West Project Alternatives interchangeably. For the East Project, a north and a south offset have been developed. A map showing the East Project alternatives is included in **Appendix C**.

3.5.1 North Offset

The North Offset begins at Middle Bills Creek on the existing centerline of US-277. The alignment then shifts to a 100-foot parallel north offset from the existing US-277 alignment. The alignment continues on this offset in an easterly direction until it ties back into the existing US-277 alignment approximately 0.75 miles west of I-44.

3.5.2 South Offset

The South Offset begins at Middle Bills Creek on the existing centerline of US-277. The alignment then shifts to a 100-foot parallel south offset from the existing US-277 alignment. The alignment continues on this offset in an easterly direction until it ties back into the existing US-277 alignment approximately 0.75 miles west of I-44.

3.6 Initial Agency Coordination

On March 14, 2013, a letter soliciting comments relating the social, economic, and environmental effects of the project was mailed to 81 local, state, and federal agencies, utility owners, and oil and gas operators. A copy of this letter, a list of the recipients, and all responses received are provided in **Appendix D**. None of the agencies had concerns specific to the US-277 study area. The Oklahoma State Department of Commerce had no comments. The Oklahoma Conservation Commission noted that Alternative 4 would appear to have fewer impacts to streams and wetlands than the other alternatives. One flood control structure was noted outside the area of the proposed alternatives. The Conservation Commission made several general recommendations to reduce siltation and preserve riparian habitat. The Natural Resources Conservation Service (NRCS) provided some preliminary farmland calculations for purposes of comparing the alternatives. Coordination with NRCS was also conducted under the Farmland Protection Policy Act (FPPA) – see Section 4.9 of this document. The Oklahoma Water Resources Board (OWRB) recommended coordination with the local floodplain administrator for impacts to floodplains on state property. The Bureau of Indian Affairs (BIA) indicated the location of tribal trust lands in the US-277 project area. The BIA Southern Plains Regional Office requested additional coordination as the project progresses to mitigate any historic properties that may be present. The BIA requested consultation with the Kiowa Tribe of Oklahoma, the Comanche Nation, the Apache Tribe of Oklahoma, and the Wichita and Affiliated Tribes of Oklahoma to determine if the project has a potential to impact sites of importance in their respective histories or cultural traditions. See Section 4.3 of this document for a discussion of the tribal consultation conducted for this project.

3.7 Initial Public Meeting

One public meeting was held in order to gather public input for the proposed project. The meeting was held in Cement on March 28, 2013. The meeting attendance roster was signed by 60 people. The meeting focused on demonstrating the need for the project, discussed the project development process, and presented the alternatives considered for the proposed improvements. Preliminary information about environmental impacts and the right-of-way acquisition process was also included. Alternatives 2A, 4, and 6 for the West Project and the North and South Offsets for the East Project were presented. No preferred alternative was identified at the meeting. The following types of comments were made at the meeting: (1) concern over property acquisition, (2) questions about access, (3) questions about on- and off-ramps at I-44, and (4) general acknowledgement of the need for the project.

Six written comments were received. Three comments supported Alternative 4 for the West Project and two comments were not in favor of Alternative 4. Reasons stated for preferring Alternative 4 were that it is the safest option, simplest, and easiest to maintain traffic. It affects the fewest residents and is the lowest cost. Reasons stated for disliking Alternative 4 were related to impacts to specific properties – bisecting them and making farming and ranching activities more difficult. Concerns were expressed over property values as well as family ties to the property. One comment stated a preference for the North Offset alternative in the East Project. The Public Meeting Summary for the project can be found in **Appendix D**.

3.8 Selection of the Preferred Alternatives

Based on the alternatives analysis which considered project costs, constructability, social and environmental impacts, and public and agency input, Alternative 4 was selected as the preferred alternative for the West Project, and the North Offset Alignment was selected as the preferred alternative for the East Project.

Alternative 4, because it follows primarily new alignment, minimizes impacts to residences. It also affects fewer oil and gas wells than the other alternatives. Alternative 4 provides the most desirable geometry because it utilizes fewer horizontal curves, provides better stopping sight distance for through traffic, and improves sight distances at intersections, county roads, and driveways to current standards. There was also positive response from the public for Alternative 4. The North Offset results in fewer relocations and right-of-way impacts than the South Offset and has an overall lower environmental impact.

The public was notified via mail on May 14, 2014 of ODOT's decision to select Alternative 4 and the North Offset as the preferred alternatives. This letter was sent to all agencies, utility owners, oil and gas operators, and property owners within the environmental study area, as well as to all members of the public that signed in for the public meeting. The Alternative Selection letter and list is included in **Appendix E**.

3.9 Description of the Preferred Alternative

The preferred alternative would reconstruct US-277 on a new alignment approximately 1,650 feet north of the existing roadway for a distance of approximately 3.1 miles, after which it would tie back to the existing alignment west of Middle Bills Creek. East of Middle Bills Creek, the preferred alternative would reconstruct US-277 on an offset alignment approximately 80 feet north of the existing roadway. The preferred alternative would tie back to the existing alignment just west of I-44. Refer the exhibit in **Appendix A**.

Generally, the typical section of the preferred alternative will have two 12-foot-wide driving lanes with 8-foot-wide shoulders and gentle side slopes and ditches for drainage, except at the western end of the project within the Town of Cement, where the proposed roadway will have two 12-foot-wide driving lanes and a 2-foot-wide shoulder with a 6-inch mountable curb and gutter (see **Figures 2 and 3**). This section is proposed to minimize impacts to adjacent properties and control storm water runoff. A barrier wall will also be constructed on the north side of US-277 east of F Avenue in front of the Church of Christ to avoid impacts to that property. A storm drain will be included in this section to collect roadway runoff. The typical section with the curb on the north side is proposed through Cement, and transitions to the full open shoulder section east of H Avenue.

A new intersection with US-277 will be constructed at H Avenue to provide a connection to the existing US-277 alignment to the south. New intersections will also be constructed at NS-275 Road, NS-276 Road, NS-277 Road, and NS-278 Road. A new intersection will also be required to tie the existing US-277 roadway into the new alignment west of West Bills Creek. Driveways will also be constructed to provide access to adjacent properties as well as to the numerous oil and gas field roads in the project area.

The existing bridge at West Bills Creek (NBI 02099) will be removed and replaced with a 190-foot long roadway-class reinforced concrete box (RCB). The bridge at Middle Bills Creek (NBI 23976) will remain. The existing bridge at East Bills Creek (NBI 18275) will be removed and replaced with an 86-foot long bridge-class RCB.

Existing US-277 will remain open to traffic during construction of the preferred alignment. In areas where the new alignment follows the existing alignment, temporary shoo-flys and/or pavement widening will be utilized to carry traffic while the new roadway is constructed.

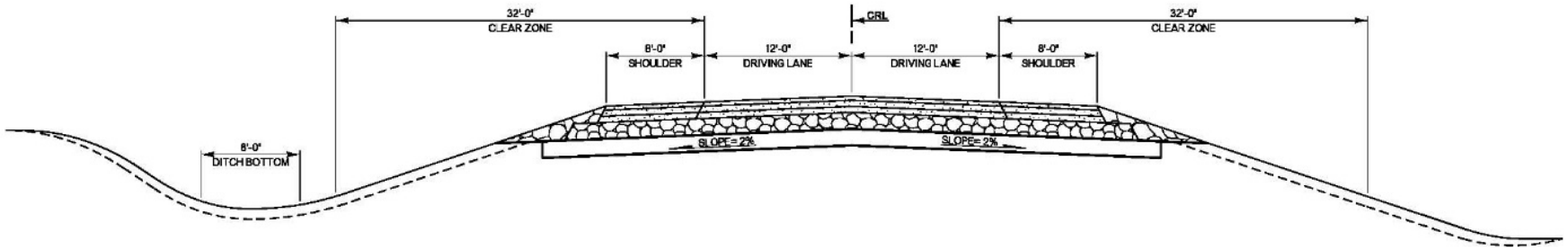


Figure 2: US-277 Typical Section

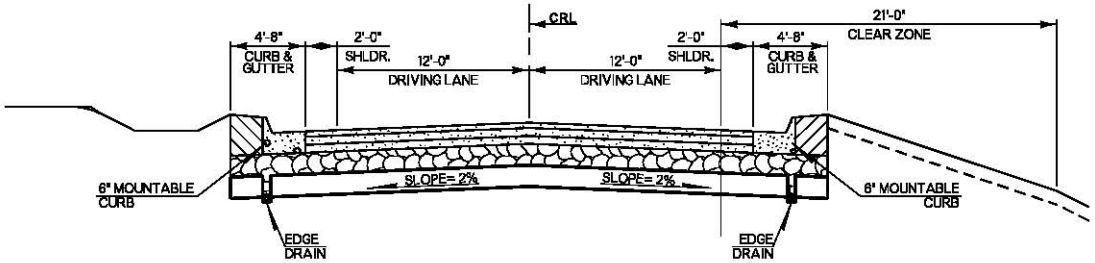


Figure 3: US-277 Typical Section (Cement)

4.0 PREFERRED ALTERNATIVE IMPACTS

4.1 Relocations

The Department completed a Relocation Plan for each of the West and East Projects, and the Plans identified four potential residential relocations and three potential commercial relocations in the West Project [JP 20953(04)], and one potential residential and one potential commercial relocation in the East Project [JP 20962(04)].

Acquisition and relocation assistance would be conducted in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended, effective February 3, 2005. Housing of last resort may be required and will be provided if sufficient comparable replacement housing is not available within the financial means of the displaced. Both Relocation Plans identified available properties for sale in the surrounding area and available decent, safe, and sanitary replacement housing. No relocation issues were identified. Given that suitable replacement property is available in the vicinity, the overall social and economic impact of the relocations is anticipated to be minor. A detailed discussion of the anticipated relocations is discussed in the Relocation Plan (**Appendix F**).

The project involves property in which another Federal Agency or Federally Recognized Tribe has ownership, oversight, or other encumbrance. The property in question is held in trust by the Bureau of Indian Affairs (BIA) for several individual members of the Comanche Tribe. The title status is listed as "restricted" on the Title Status Report obtained from the BIA (see **Appendix F**).

4.2 Social and Economic Impacts/Environmental Justice

The social and economic impacts of the US-277 project include both positive and negative impacts. This section presents the findings of the socioeconomic impact analysis conducted for the US-277 project. The goals of this analysis included:

- Identification of significant community and economic resources in the project vicinity and the likely impacts (both positive and negative);
- Identification of any defined ethnic, cultural, residential, disability, tribal, religious, or any other community in the project area and the likely impacts (both positive and negative);
- Identify the economic impacts on growth potential and quality of life in the project area (both positive and negative); and
- Evaluate the project's potential to disproportionately and adversely affect minority and low-income populations (Environmental Justice).

4.2.1 Existing Community

Existing land use in the US-277 project area is primarily rural. The project begins on the east side of the Town of Cement, a small community of approximately 500 people. The east side of Cement, where the project begins, contains a small number of homes, a church, and an oil storage facility. There are 3-4 vacant buildings on the south side of US-277 in Cement that appear to have been businesses and perhaps

a church at one time, but are no longer in use. Employment in Cement is primarily in natural resources/construction/maintenance, production/transportation/material moving, agriculture, and sales (2013 American Community Survey). While oil/gas employment is not listed specifically, it likely would fall into one of the first two categories. Because most of the residents in the US-277 study area have direct access to US-277, it is assumed they use the highway to commute to work as well as for non-work related trips.

Outside of Cement, land use in the project area consists of oil and gas fields, farms, and ranches. There are a number of homes, primarily located along the existing US-277 alignment with direct driveway access. Employment in the rural areas is higher in management/business/science/arts and sales as well as the natural resources and production categories. Economically, the most important activities within the study area are farming, cattle ranching, and oil/gas extraction, distribution, and storage. The area has been an active oilfield since the 1920s, with secondary extraction by the waterflood technique common since the early 1950s. Aerial photographs show numerous well locations in the study area dated back to the 1960s. Wells include production wells, injection wells, and disposal wells. Storage tanks hold water as well as extracted oil. There are a number of pipelines that carry oil and water to various aspects of the operation.

4.2.2 Demographic Profile

Demographics of the US-277 study area were developed from the American Community Survey (ACS), a yearly survey conducted and published by the U.S. Census Bureau. The ACS describes the US-277 study area geographically in terms of the Town of Cement and the remainder of the study area. Cement has a population of approximately 500 people. As of the 2014 ACS, the population was 78.6% white, with Native Americans at 9.1%. Hispanic residents in Cement total 11.5% of the population. Native American percentages are lower than average for Caddo County (23.4%), while the Hispanic percentage is slightly higher than Caddo County (10.6%). Compared to statewide averages, the population of Cement has slightly higher Native American and Hispanic percentages. Median annual income for the employed population in Cement is approximately $34,250, lower than Caddo County ($39,267) and State ($45,339) levels. Approximately 5% of families in Cement have incomes below the poverty level, which is lower than the Caddo County (15.9%) and Oklahoma (12.6%) percentages. So while incomes in Cement are on the low side, there is not widespread poverty.

Outside of Cement, demographics in the rural areas of Caddo and Grady County change somewhat, with higher median incomes and lower minority populations. Tract 1623 represents the rural population in the Caddo County portion of the study area, and Tract 6 represents the rural population in the Grady County portion of the study area. While the census tracts cover relatively large areas, they are considered representative of the study area. Tract 1623 (in Caddo County) has smaller Native American and Hispanic percentages than Caddo County as a whole. Hispanic percentages are lower than the state as a whole, and Native American percentages are roughly the same or slightly higher than the state averages. Median incomes in Tract 1623 are higher on average than in Caddo County, and just slightly lower than the statewide average. Poverty levels are lower than Caddo County or the state as a whole. Tract 6 (in Grady County) has slightly higher Native American and Hispanic populations than Grady County as a whole.

These averages are the same or lower than those for the state as a whole. Median incomes in Tract 6 are lower than those for Grady County and the state, although poverty levels are lower than the county and state averages.

While there are some areas within the US-277 study area (particularly in the Town of Cement) that have minority and low-income populations in greater proportions than Caddo County or the state of Oklahoma, most of the study area (in rural Caddo and Grady Counties) is similar to the counties and the state in terms of low-income and minority populations. See **Table 1** for a summary of the project area demographics.

Table 1: US-277 Demographic Data (2013 American Community Survey)

Geography	Population	Income Data		Race Data (%)					
		Median House hold Income	Percent of Families with Income Below the Poverty Line (2012)	White	Black or African American	American Indian & Alaska Native	Asian	Other Race	Hispanic (of any race)
Oklahoma	3,785,742	$45,339	12.6	73.5	7.2	7.0	1.8	2.5	9.1
Caddo County	29,605	$39,267	15.9	62.7	2.8	23.4	0.4	4.3	10.6
Grady County	52,855	$49,637	9.8	85.7	2.0	5.2	0.3	1.6	4.8
Town of Cement	501	$34,250	5.0	78.6	3.3	9.1	0	4.9	11.5
Tract 1623 (Caddo Co.)	2,915	$44,048	8.3	84.1	1.0	7.7	0.1	2.0	3.8
Tract 6 (Grady Co.)	5,481	$44,254	7.7	85.3	1.8	7.0	1.0	0.9	5.7

4.2.3 Economic Impacts

Economic impacts of the project will be primarily positive. The new US-277 alignment is expected to carry the majority (80%) of the future traffic and particularly the through-traffic on the highway, as well as oil and gas trucks and equipment destined for oilfield facilities near the new alignment. As a result, existing US-277, which will become a local road, will serve primarily local traffic and will likely become a lower speed roadway. Separating the local and through traffic will minimize potential conflicts between vehicles traveling at different speeds for different types of trips on the same roadway. Oil and gas vehicles and equipment will have enhanced access to the facilities north of US-277. Some vehicles will still likely use the existing roadway to access sites nearer to that alignment; however, the volume of truck traffic is expected to be greatly reduced.

The new US-277 will provide a new roadway that meets current design standards for geometry and safety and will allow traffic to travel at a higher rate of speed than is currently safe and practicable (65 mph). This will allow goods and freight to reach their destinations more quickly, reducing transportation costs.

Negative economic impacts include the relocation of up to five residences and up to three businesses, conversion of some farmland and ranchland for the new roadway, particularly on the east project, and the acquisition of three oil/gas wells. All relocations and acquisition for the project will be performed according to Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (Uniform Act), which provides important protections and assistance for people affected by the project. Because the individuals whose property will be acquired for the project will be compensated and given relocation assistance, long-term negative economic impacts are not anticipated.

The US-277 project is not anticipated to greatly affect the growth potential in the study area. The capacity of the roadway will not change, and the project is not expected to induce traffic or growth. The portion of US-277 on the new alignment could encourage new adjacent development given that direct access to the highway will be allowed; however, the challenging terrain in this area would likely discourage extensive residential or commercial development. Oilfield activity is anticipated to continue according to the strength of the energy market and is not greatly dependent on the US-277 improvements.

4.2.4 Environmental Justice

Executive Order 12898 – Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations directs federal agencies to identify and address any disproportionately high and adverse human health or environmental effects of their actions on minority and low-income populations, to the greatest extent practicable and permitted by law. The order is also intended to provide minority and low-income communities' access to public information and public participation.

The demographic profile of the US-277 study area (**Section 4.2.2, Table 1**), does not indicate any minority or low-income populations in significantly greater numbers than found in the counties and state as a whole. The Town of Cement does have a lower median income and a slightly larger (by percentage) Hispanic population than the Caddo County and Oklahoma averages, but given the overall small population of Cement, percentages have larger ranges of error. Impacts within the Town of Cement will be limited to a small number of buildings, only one of which appears occupied. These impacts are not anticipated to be disproportionate. Impacts in the rural areas of Caddo and Grady Counties are not expected to be disproportionate to low-income or minority populations.

4.3 Cultural Resources

On behalf of FHWA, ODOT has consulted with the Oklahoma State Historic Preservation Officer (SHPO) and the Oklahoma Archeological Survey (OAS) regarding the effects of this undertaking on historic properties. ODOT has also consulted with the Apache Tribe, the Caddo Nation, the Chickasaw Nation, the Comanche Nation, the Delaware Nation, the Fort Sill Apache Tribe, the Kiowa Tribe, the Osage Nation, and the Wichita and Affiliated Tribes and determined that no properties of traditional religious or cultural

significance will be affected by the undertaking. A cultural resources study, including archaeological investigations and an evaluation of properties of the built environment was conducted. During the investigations five archeological sites, 16 building complexes, one bridge, one culvert, and three erosion control structures were documented. Consultation with SHPO, OAS, and Native American Tribes resulted in concurrence that no historic properties are present in the project area of potential effects (APE). The complete Section 106 consultation record is available upon written request.

4.4 Effects on Public Parks, Wildlife and Waterfowl Refuges, and Historic Sites

There are no public parks, wildlife or waterfowl refuges, or significant historic sites within the project area. The action does not involve the use of properties protected by Section 4(f) of the U.S. Department of Transportation Act of 1966 (49 U.S.C. 303).

4.5 Noise

A traffic noise analysis was performed for this project using the FHWA Traffic Noise Model version 2.5 in accordance with FHWA regulations found in 23 CFR 772, and complies with the ODOT Policy Directive *Highway Noise Abatement C-201-03* dated July 13, 2011. Noise measurements were performed at three (3) locations along the existing highway for purposes of validating the noise model which proved satisfactory. The land uses along the project extent are predominantly residential and agricultural, with multiple active oils and gas operations scattered throughout the area. The noise sensitive land uses for this project are considered to be single family residential and two places of worship.

Based on a field inspection, aerial maps and design plans, forty-two (42) model receiver sites were analyzed. The existing noise levels for forty (40) receivers were determined by noise modeling, while noise measurements were performed at two (2) residential receivers (R-25 and R-43) in determining the ambient acoustic environment due to long distances from existing US-277. Under current conditions, one (1) residential receiver is impacted with a noise level of 66.2 dB(A) Leq(h). Based on the proposed project and future traffic volumes, no residential dwellings or places of worship will approach the 67 dB(A) Leq(h) for NAC Activities Categories B and C. Further, no receivers will experience future noise levels greater than 15 dB over the current condition, which is considered to be a substantial increase for noise impact determination. As planned, the proposed project will not have any noise impacts. See **Appendix G** for a copy of the approved Traffic Noise Assessment Report dated December 1, 2015.

4.6 Species and Habitat Assessment

A biological field review was performed for the project (**Appendix H**). The Department has determined that the project, as proposed, will have no effect on the federally-listed Interior Least Tern, Piping Plover, or Red Knot. The project, as proposed, is unlikely to adversely affect the Black-Capped Vireo, the Whooping Crane, and the Sprague's Pipit. The U.S. Fish and Wildlife Services (USFWS) has concurred with the Department's findings.

The project, as proposed, may impact the Bald Eagle. Suitable foraging and nesting habitat for this bird occurs within the immediate vicinity of the proposed project. There will be a plan note for the bald eagle

added to the plans, and a bald eagle survey will be conducted during the winter prior to the start of construction.

The project as proposed will likely impact Cliff Swallows, Barn Swallows, or other species protected by the Migratory Bird Treaty Act (MBTA), if construction activities occur during the nesting season of these species. A Cliff (and/or Barn) Swallow plan note requiring avoidance of demolition or construction of any existing structures with swallow use during the nesting season will be added to the final construction plans.

4.7 Jurisdictional Waters and Wetlands Assessment

This action involves work within several potentially jurisdictional waters, including two mapped intermittent streams (West Bills Creek and East Bills Creek), and seven mapped ephemeral streams (three unnamed tributaries to West Bills Creek and four unnamed tributaries to McCarty Creek). No jurisdictional wetlands were identified in the project area, although two non-jurisdictional wetlands were identified. Jurisdictional status will be confirmed with the U.S. Army Corps of Engineers, and the proposed construction activities will be evaluated to ensure that the appropriate Clean Water Act Section 404 permit application is made. The Waters & Wetlands Report is located in **Appendix H**.

4.8 Water Quality

The Town of Cement purchases its drinking water from the Grady County Rural Water District. The source is protected groundwater. No water supply wells are located within the study area. West Bills Creek is on the 2014 303(d) List of Impaired Waters. McCarty Creek is also on this list. While McCarty Creek itself is not within the project area there are several tributaries that cross US-277 that flow into McCarty Creek. A storm water pollution prevention plan (SWP3) will be developed for the project, and a temporary erosion and sediment control plan will be included in the construction plans to avoid or minimize impacts to water quality.

4.9 Prime Farmland

The action does pass through areas containing prime, unique, or farmlands of statewide importance. In accordance with the current 7 CFR Part 658 – Farmland Protection Policy Act (FPPA), Parts I and III of Form AD-1006 were completed and sent to the Natural Resources Conservation Service (NRCS). However, the site assessment score received a total score less than 160 points, so the FPPA does not apply. See **Appendix I** for a copy of the NRCS correspondence and completed AD-1006 form.

4.10 Floodplains

The project is not located in a regulatory floodway that will require a flood map revision as determined by the appropriate state or local authority. See **Appendix J** for copies of the FEMA Floodplain Insurance Rate Maps (FIRMs).

4.11 Hazardous Materials

An Initial Site Assessment (ISA) was performed for the subject project (dated January 2015, see **Appendix K**). Two Underground Storage Tank (UST) facilities were noted and plans requested in order to evaluate the environmental risk posed to the project. Preliminary plans indicate relatively shallow ground disturbance will occur at the toe of slope/top of cut, and during storm sewer installation. Tank closure documentation for Mac's Quick Mart is limited, and based on field observations, it is possible that product lines and potions of the dispenser system may still be present. Such features could affect this area of the project if acquired by ODOT, however, procedures are in place for such concerns to be handled through ODOT Right-of-Way Division.

The Consultant Report also noted that 20 oil and gas wells, multiple gas pipelines, pump stations and Above-Ground Storage Tanks (ASTs) were located within or adjoining the study area. Similar to the above underground storage tank concerns, these facilities will be handled via standard ODOT Right-of-Way Division procedures for clearing the right-of-way for the project.

4.12 Air Quality

The US-277 project area is in attainment of all transportation-related air quality criteria pollutant levels under National Ambient Air Quality Standards. The project will not have any impacts to air quality.

4.13 Pedestrian and Bicyclists

US-277 in the project area is primarily a rural highway with little pedestrian or bicycle use. There are no pedestrian or bicycle accommodations on the existing roadway. Public comment did not indicate a desire for pedestrian or bicycle accommodations in the project area. The proposed improvements to US-277 do not include any sidewalks or bicycle lanes; however, the project would provide 8-foot outside shoulders along the highway which would provide an area that bicyclists could use. The improved vertical geometry will improve the sight distance on the facility which will increase safety for bicyclists.

4.14 Airports

The action may require notifying the Federal Aviation Administration (FAA) of proposed construction via FAA Form 7460-1 prior to construction, in accordance with 14 CFR 77.13-77.17, due to the presence of Neil's Sky Ranch, which is located approximately 3.5 miles southeast of the east end of the US-277 project at I-44.

4.15 Access Control

Several access points to US-277 would be modified with the preferred alternative. Because the preferred alternative follows a new alignment north of the existing roadway, there would be a new intersection at H Avenue in Cement with a new leg extending south to connect to the existing US-277 roadway (**Figure 4**). New intersections will be constructed at US-277 and NS-275 Road, NS-276 Road, NS-277 Road, and NS-278 Road. A new intersection will also be required to tie the new US-277 roadway back to the existing alignment west of West Bills Creek (see **Appendix A**). Driveways will also be constructed to provide access to adjacent properties and the numerous oil and gas field roads in the project area. All properties that

currently have access to the existing US-277 alignment will either retain their existing access or will be given access to the new highway.

Figure 4: Proposed New Intersection East of Cement

4.16 Temporary Construction Impacts

US-277 will remain open to traffic during construction of the project. However, there will be temporary construction-related impacts, including traffic congestion on US-277 within the project limits, particularly east of West Bills Creek where temporary pavement and shoo-flys will be used to maintain traffic, temporary restricted access to homes and oil fields, and noise and dust associated with construction activity. Mitigation will include signage warning drivers of construction activities. Access to homes and businesses may be impacted during construction; however, all properties will remain accessible at all times.

4.17 Secondary and Cumulative Effects

Secondary effects are impacts caused by the action that are later in time or farther removed in distance, but still reasonably foreseeable. Reasonably foreseeable actions need to be considered even if they are not specific proposals or defined projects, though the criterion for excluding future actions is whether they are considered speculative. The Council on Environmental Quality (CEQ) provides guidance on evaluating cumulative effects in a documented entitled "Considering Cumulative Effects Under the National Environmental Policy Act, 1997." The geographic and temporal boundaries should be logical and sufficient to capture relevant cumulative effects. In addition, in order for future actions to not be considered speculative, they must have enough information for a meaningful analysis. For the purposes of this analysis, actions that are not included in any formal plans are considered speculative. These include short range and long transportation plans for the region, comprehensive plans, and proposed plats in the vicinity of the project. Oil and gas activity, because it is largely market driven, is considered speculative and is not considered in the secondary and cumulative effects analysis.

The primary planning document pertaining to the US-277 project and surrounding region is the ODOT 8-Year Construction Work Plan. ODOT has no future plans to widen the US-277 corridor. According to the FY 2016-2024 Construction Work Plan, no adjacent projects are planned that would improve US-277 outside the project limits. The closest project is US-277 over Smith Creek, a bridge and approach project currently programmed for construction in 2021. This project is approximately 2 miles east of the current US-277 project.

A potential secondary effect of the proposed action could be commercial and residential properties being constructed along the new US-277 alignment. However, this is considered unlikely in the western portion of the project, given that the terrain in the area of the proposed new alignment is fairly steep and not ideal for residential or commercial development. This new development is more likely in the eastern portion of the project area. An improved roadway may attract more traffic which may encourage more traffic-dependent businesses such as gas stations and convenience stores along the roadway.

4.18 Visual Impacts

The visual environment of the US-277 project area includes rolling hills, pasture, and farmland. There are no unique or high quality visual features within the study area.

The project would construct approximately 3 miles of new alignment roadway in the western portion of the project. This would entail some relatively large cuts and fills to negotiate the steep terrain. This earthwork would result in a new visual appearance for drivers and for viewers of the roadway. However, there are very few existing residents in this portion of the project area and visual impacts are not anticipated to be significant. One resident located just north of the proposed new alignment on the east side of NS-275 would experience a visual change with the new location of the roadway approximately 110 feet to the south. This property is the same one that would experience noise impacts as described in Section 4.5.

Visual changes would be more minor in the eastern portion of the project, where the new roadway would be constructed either on-alignment or offset approximately 80 feet north. In this area, the road would move closer to some properties and further away from others. No major visual impacts are anticipated.

5.0 PUBLIC HEARING

This section will be completed after the Public Hearing is held.

6.0 COMMITMENTS

- Plan notes requiring avoidance of cultural resources in off-project areas will be added to the final project plans under "Environmental Mitigation Notes" per policy Directive C-201-2D(2).

- Relocations are anticipated for the project. Acquisition and relocation assistance will be conducted in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended, effective February 3, 2005. Housing of last resort may be required and will be provided if sufficient comparable replacement housing is not available within the financial means of displacees.

- The Bald Eagle is a large bird of prey protected by the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act. Suitable foraging and nesting habitat for this bird occurs within the immediate vicinity of the proposed project. In order to avoid impacts to Bald Eagles, the ODOT Environmental Programs Division shall conduct a nesting survey during the winter (December 1 to February 28) within one year prior to the start of construction as currently listed in the 8 Year Construction Program. Plan notes will be provided to the Design Engineer to be added to the plans following the survey. If the project schedule should change, it is the responsibility of the Project Manager to contact the ODOT Biologist in writing to request a survey in time for the let date.

- Cliff Swallows and Barn Swallows are small colonial nesting birds protected by the federal Migratory Bird Treaty Act. These species commonly use bridges and culverts for nesting. The nesting season for the swallows runs from April 1 to August 31. Swallow use of bridge/culvert NBI Nos. 15810, 23946, and 02099 have been observed during the initial surveys conducted as part of the biological studies in 2014. Any activities which would destroy active nests or harm eggs or birds would violate the Migratory Bird Treaty Act. The Resident Engineer will evaluate the contractor's proposed work methods and conclude whether the proposed work would harm the nesting birds before work near the structure is authorized. If the proposed work will harm the nesting birds, the bridge may be netted prior to April 1 or the work delayed until the nesting season is complete. Methods other than netting must be pre-approved by the ODOT Biologist.

- The action may involve work in potentially jurisdictional waters and potentially jurisdictional wetlands. The Section 404 permit application form will be submitted by the Designer through Project Management Division to Environmental Programs Division at the time of right-of-way

submittal for evaluation and determination of the appropriate Clean Water Act Section 404 permit application for the project.

- The action may require notifying the Federal Aviation Administration (FAA) of proposed construction via FAA Form 7460-1 prior to construction, in accordance with 14 CFR 77.13-77.17, due to the location of Neil's Sky Ranch within four (4) miles of the project location.

- All properties will remain accessible during construction of the project.

- Additional commitments from the Public Hearing (if applicable).

7.0 LIST OF PREPARERS

Eric Fuselier, CWB – Garver, 2049 E. Joyce Blvd., Suite 400, Fayetteville, AR. Environmental Scientist. B.S., Environmental, Soil, and Waster Science – University of Arkansas. 1 year environmental experience (Noise).

Kirsten McCullough, AICP, RPA – Garver, 6450 S. Lewis Ave., Suite 300, Tulsa, OK. Project Manager. M.A., Anthropology – University of New Mexico. B.A., Anthropology – University of British Columbia. 17 years environmental experience (Project Management, Document Preparation, Socioeconomic Analysis, Public Involvement).

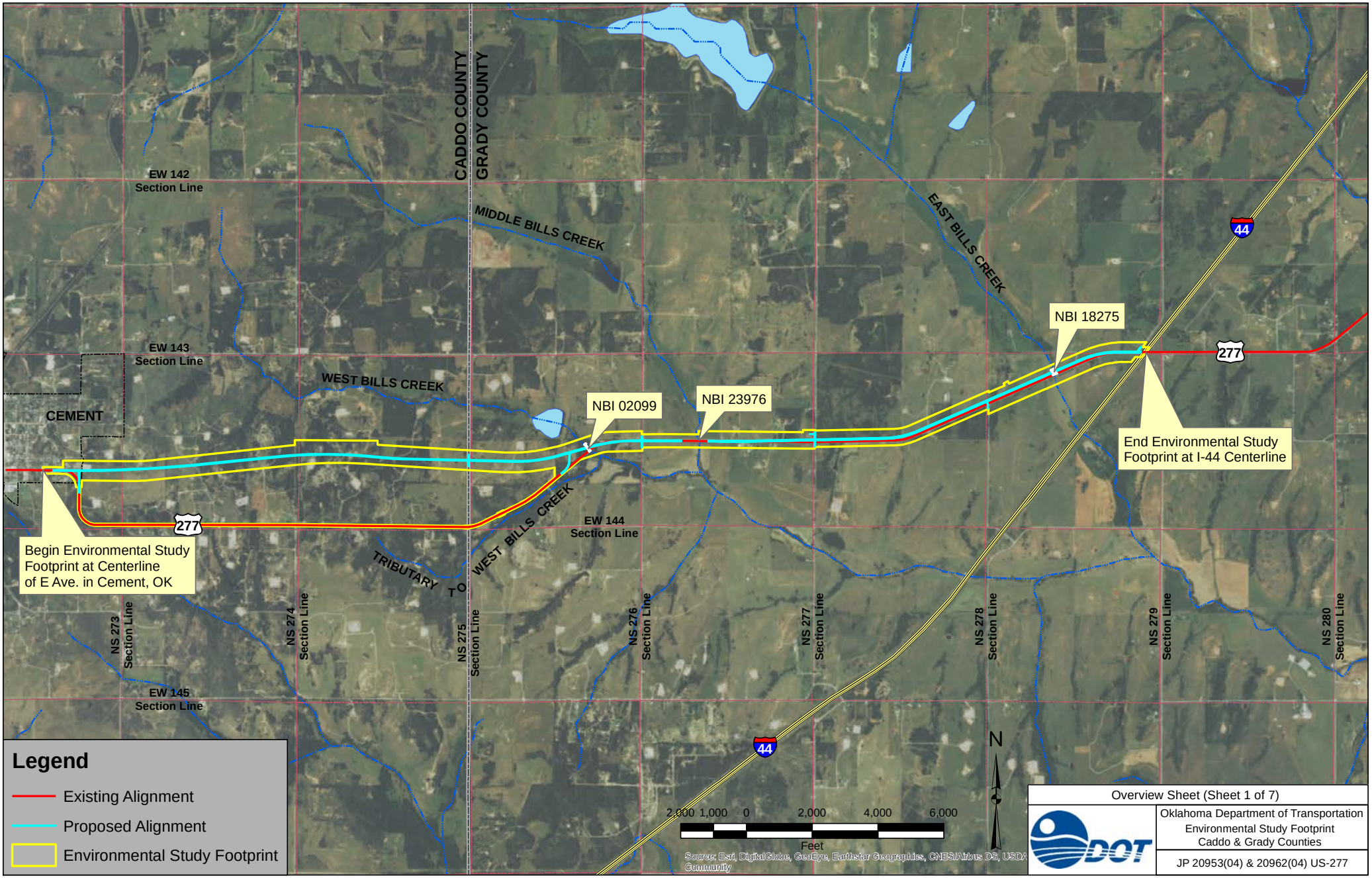
Kevin Moore, PE - Garver, 6450 S. Lewis Ave., Suite 300, Tulsa, OK. Lead Engineer. B.S., Civil Engineering, Oklahoma State University. 13 years engineering experience (Alternatives, QA/QC).

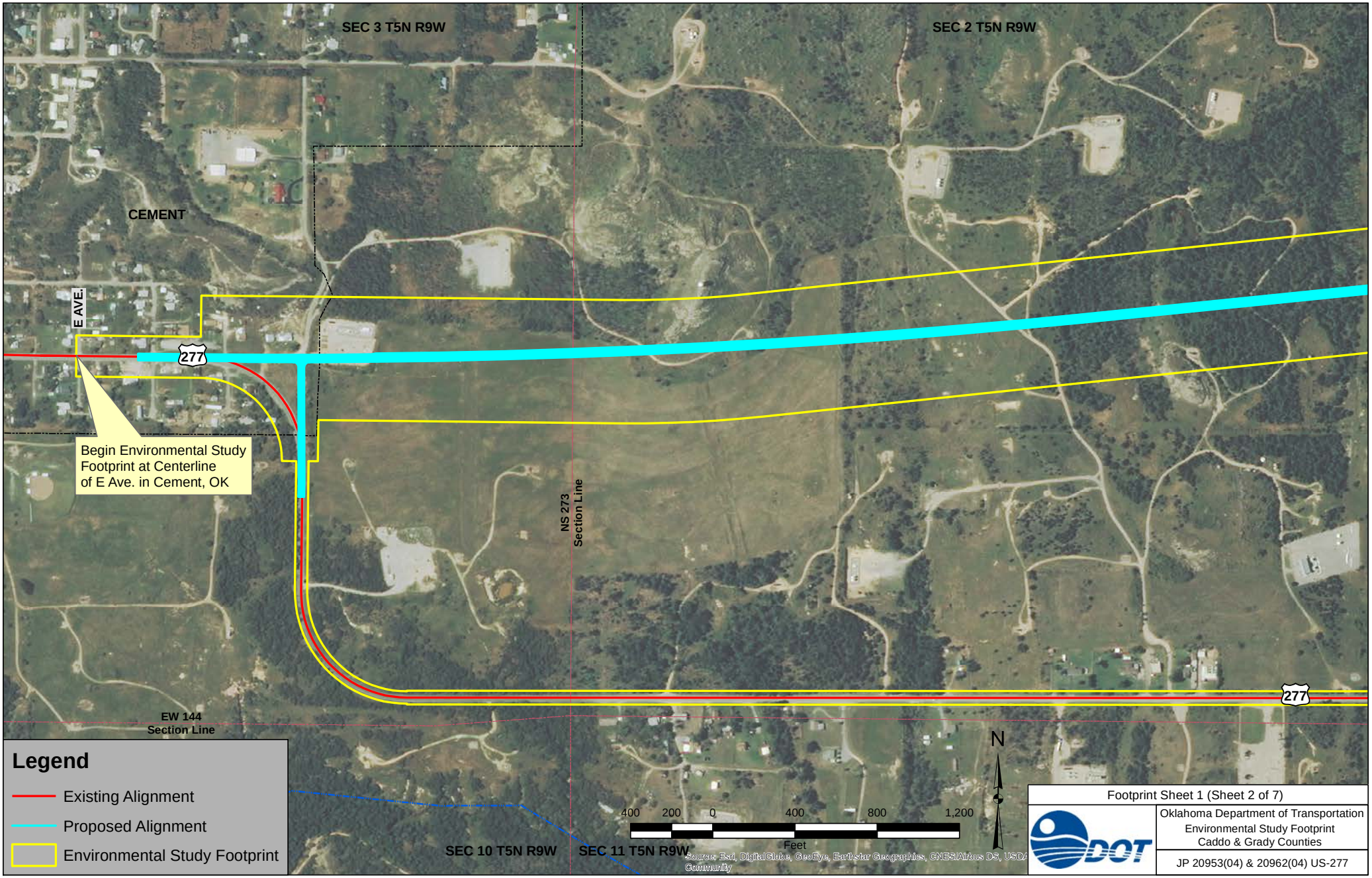
Ryan Mountain, WPIT – Garver, 2049 E. Joyce Blvd., Suite 400, Fayetteville, AR. Senior Environmental Scientist. B.S., Fisheries and Wildlife Management – Arkansas Tech University. 15 years environmental experience (Waters and Wetlands, Threatened and Endangered Species, Noise).

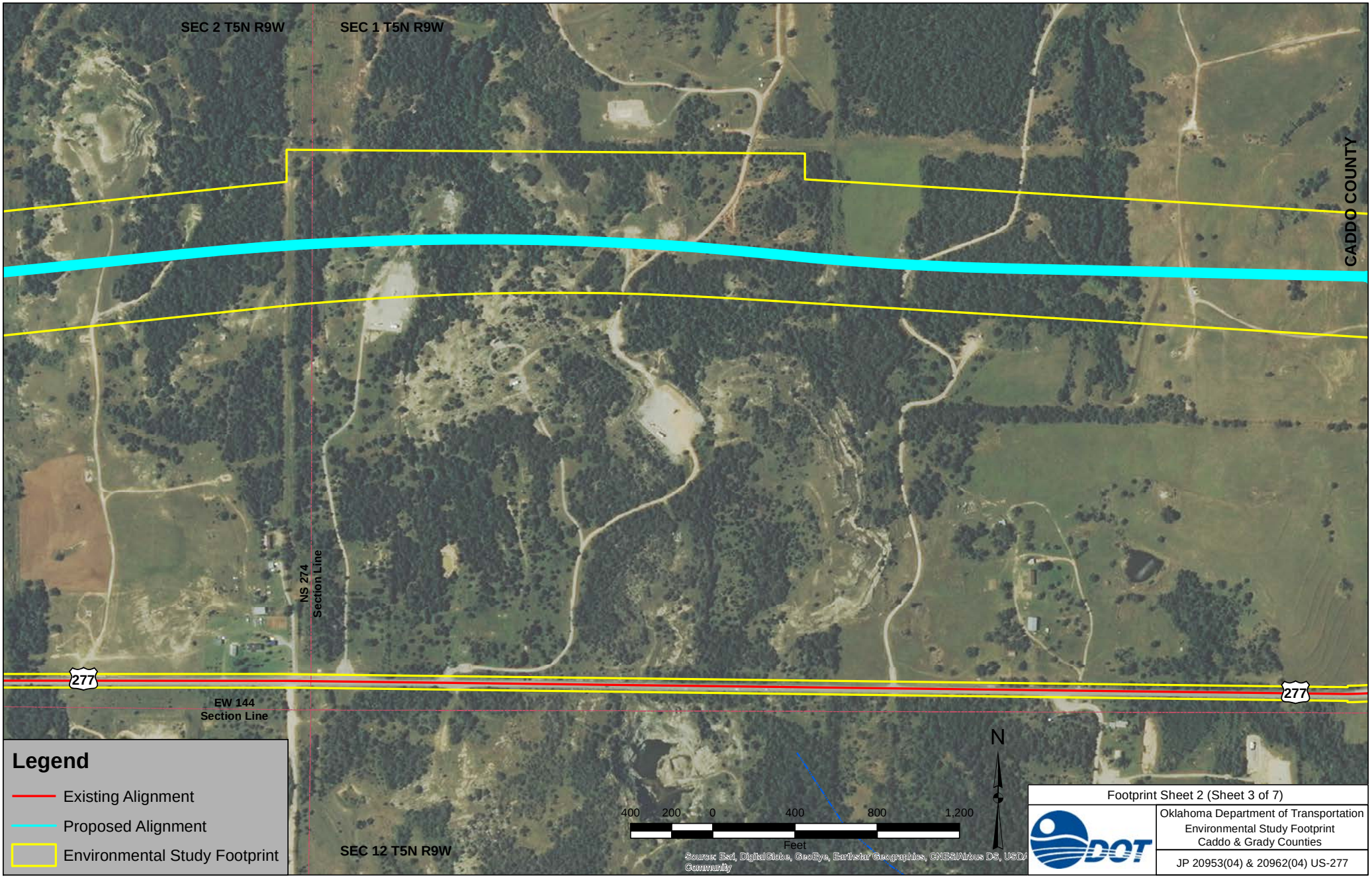
Lacee Stanley, EI – Garver, 6450 S. Lewis Ave., Suite 300, Tulsa, OK. Project Engineer. B.S., Civil Engineering – University of Oklahoma. 6 years environmental experience (Waters and Wetlands, Hydrology and Hydraulics, GIS Map Preparation and Figures).

APPENDIX A

ENVIRONMENTAL STUDY FOOTPRINT


CADDO COUNTY
GRADY COUNTY
EW 142
Section Line
MIDDLE BILLS CREEK
EAST BILLS CREEK
NBI 18275
44
277
EW 143
Section Line
WEST BILLS CREEK
CEMENT
NBI 02099
NBI 23976
End Environmental Study
Footprint at I-44 Centerline
277
Begin Environmental Study
Footprint at Centerline
of E Ave. in Cement, OK
TRIBUTARY TO WEST BILLS CREEK
EW 144
Section Line
NS 273
Section Line
NS 274
Section Line
NS 275
Section Line
NS 276
Section Line
NS 277
Section Line
NS 278
Section Line
NS 279
Section Line
NS 280
Section Line
EW 145
Section Line
44
N
2,000 1,000 0 2,000 4,000 6,000
Feet
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA Community
Legend
Existing Alignment
Proposed Alignment
Environmental Study Footprint
Overview Sheet (Sheet 1 of 7)
ODOT
Oklahoma Department of Transportation
Environmental Study Footprint
Caddo & Grady Counties
JP 20953(04) & 20962(04) US-277

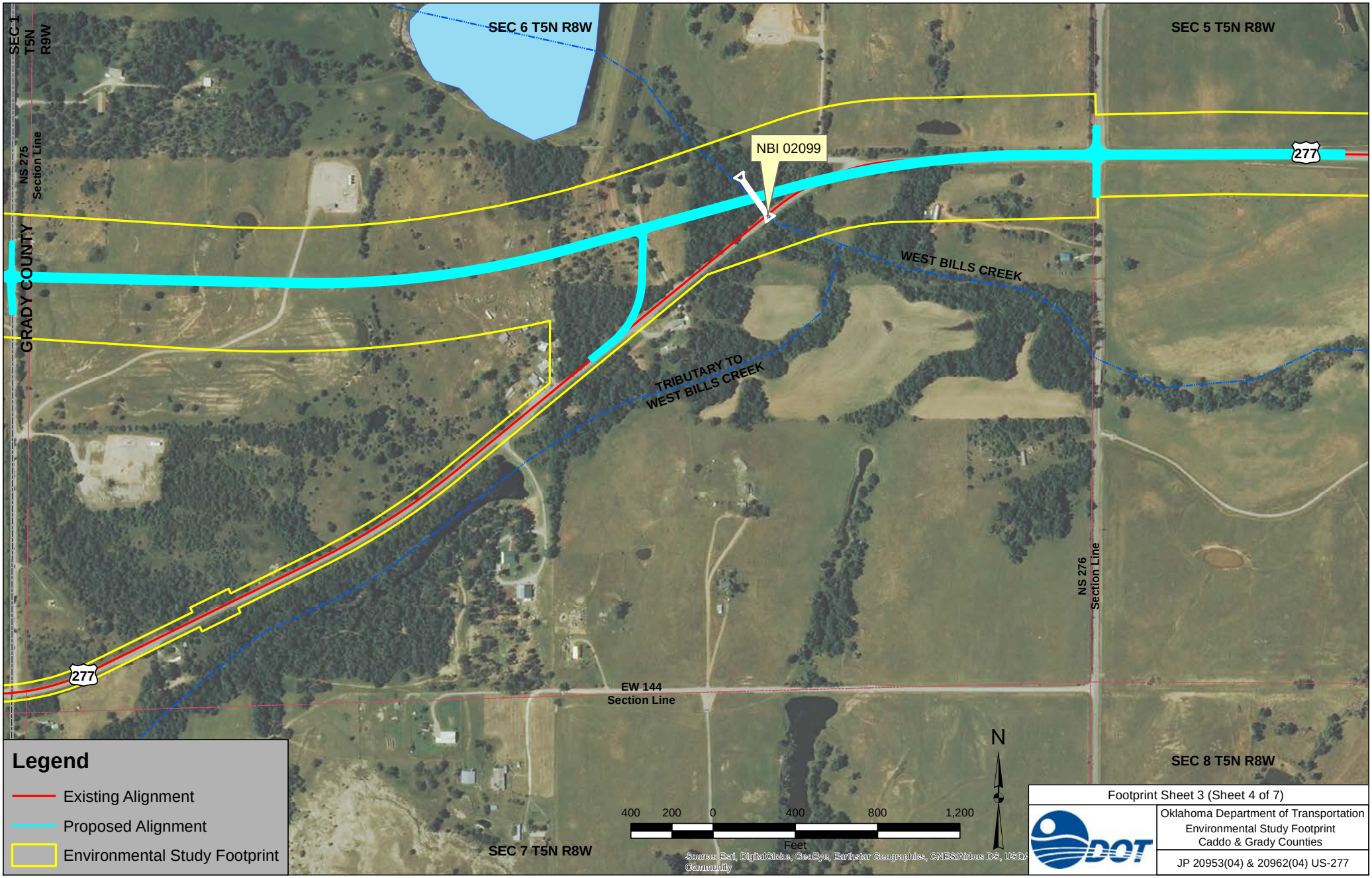

SEC 3 T5N R9W
SEC 2 T5N R9W
CEMENT
E AVE.
277
Begin Environmental Study Footprint at Centerline of E Ave. in Cement, OK
NS 273 Section Line
277
EW 144 Section Line
SEC 10 T5N R9W
SEC 11 T5N R9W
Legend
Existing Alignment
Proposed Alignment
Environmental Study Footprint
400 200 0 400 800 1,200
Feet
N
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA Community
Footprint Sheet 1 (Sheet 2 of 7)
Oklahoma Department of Transportation
Environmental Study Footprint
Caddo & Grady Counties
JP 20953(04) & 20962(04) US-277

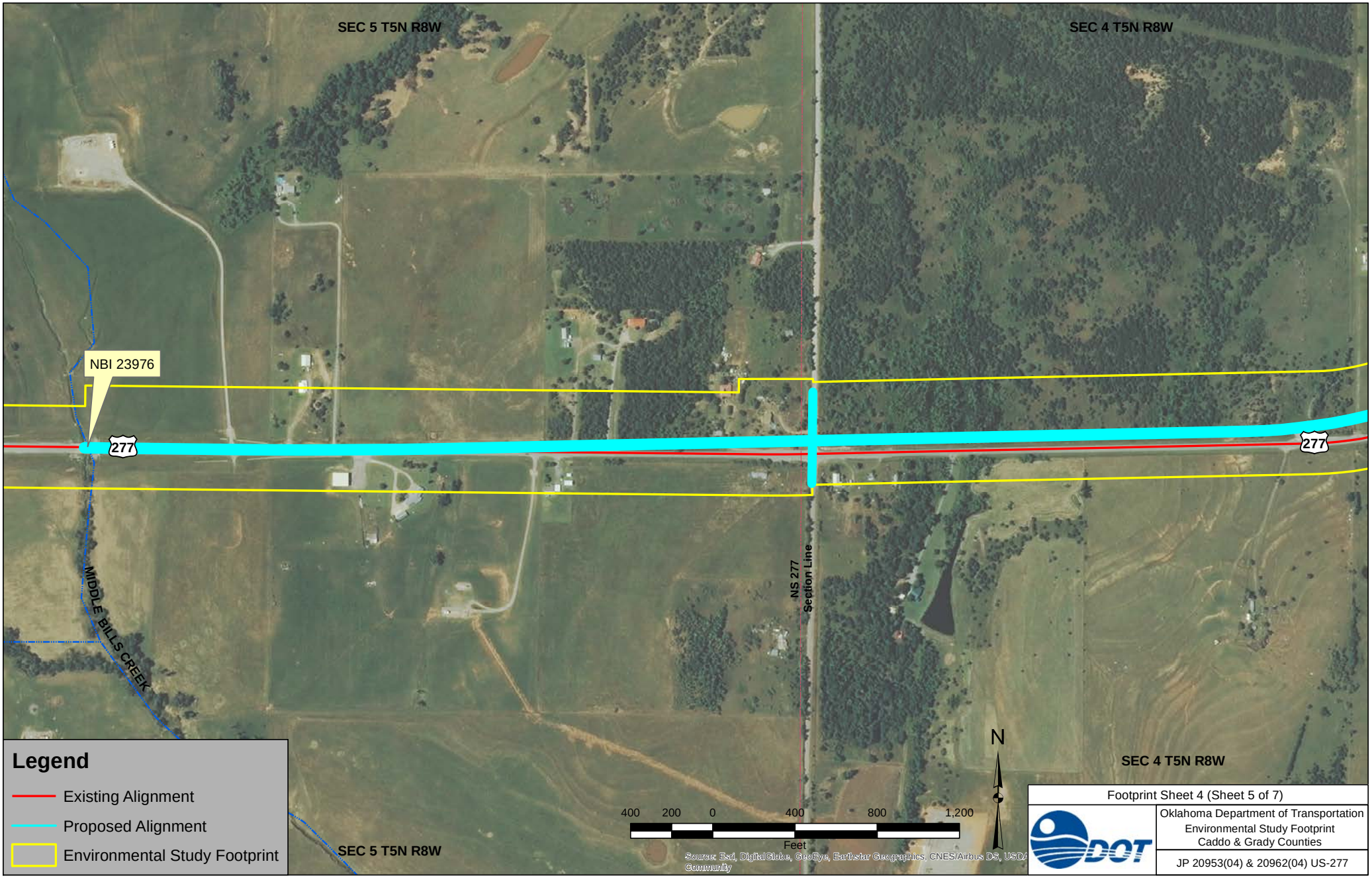


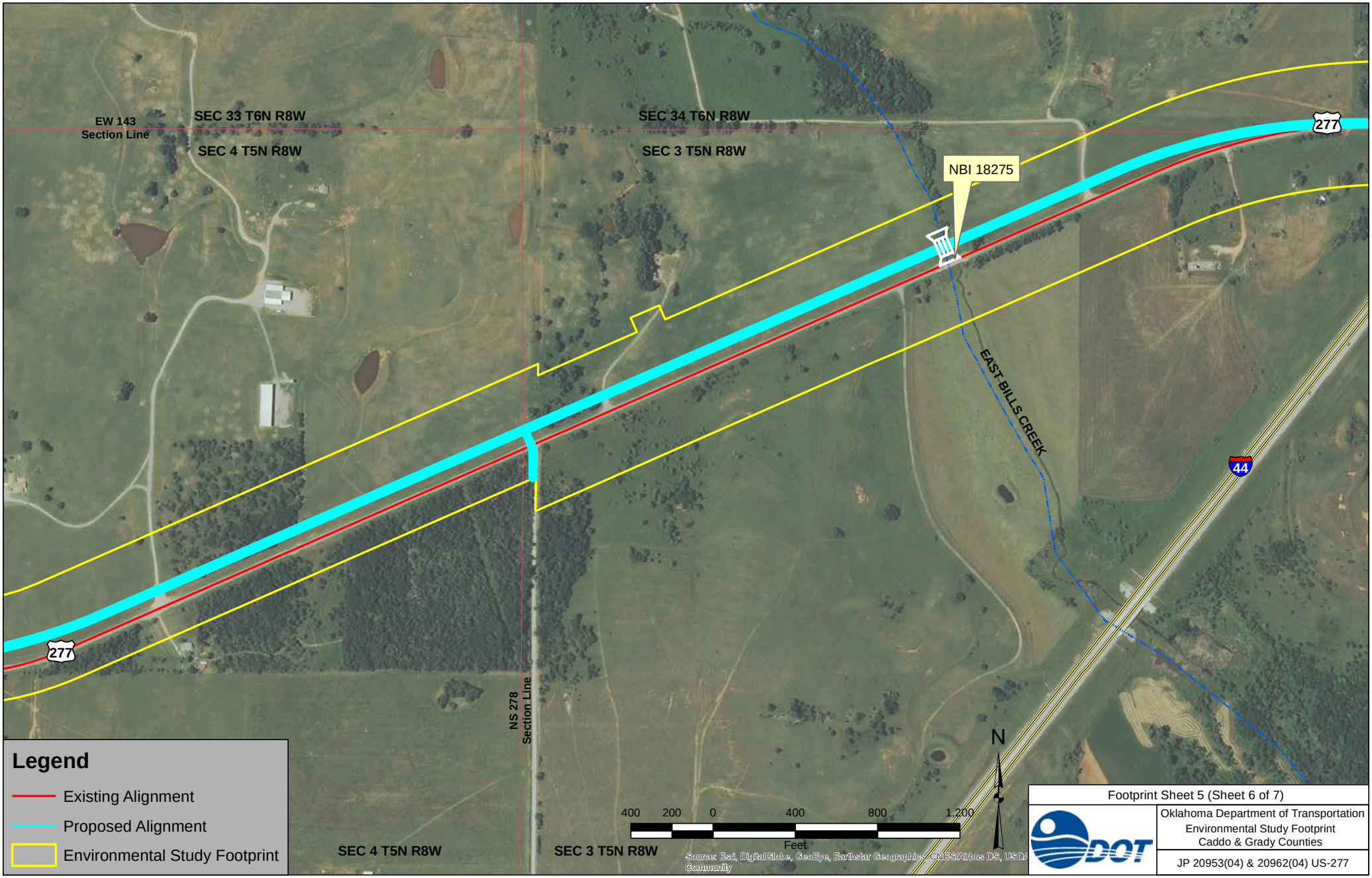
Footprint Sheet 2 (Sheet 3 of 7)

Oklahoma Department of Transportation
Environmental Study Footprint
Caddo & Grady Counties

JP 20953(04) & 20962(04) US-277


SEC 1
T5N
R9W
NS 275
Section Line
GRADY COUNTY
SEC 6 T5N R8W
SEC 5 T5N R8W
NBI 02099
277
WEST BILLS CREEK
TRIBUTARY TO
WEST BILLS CREEK
277
EW 144
Section Line
NS 276
Section Line
SEC 7 T5N R8W
SEC 8 T5N R8W
N
400 200 0 400 800 1,200
Feet
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA
Community
Legend
Existing Alignment
Proposed Alignment
Environmental Study Footprint
Footprint Sheet 3 (Sheet 4 of 7)
Oklahoma Department of Transportation
Environmental Study Footprint
Caddo & Grady Counties
JP 20953(04) & 20962(04) US-277


SEC 5 T5N R8W
SEC 4 T5N R8W
NBI 23976
277
277
MIDDLE BILLS CREEK
NS 277
Section Line
SEC 4 T5N R8W
SEC 5 T5N R8W
N
400 200 0 400 800 1,200
Feet
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, Community
Legend
Existing Alignment
Proposed Alignment
Environmental Study Footprint
Footprint Sheet 4 (Sheet 5 of 7)
Oklahoma Department of Transportation
Environmental Study Footprint
Caddo & Grady Counties
JP 20953(04) & 20962(04) US-277



Footprint Sheet 5 (Sheet 6 of 7)

Oklahoma Department of Transportation
Environmental Study Footprint
Caddo & Grady Counties

JP 20953(04) & 20962(04) US-277

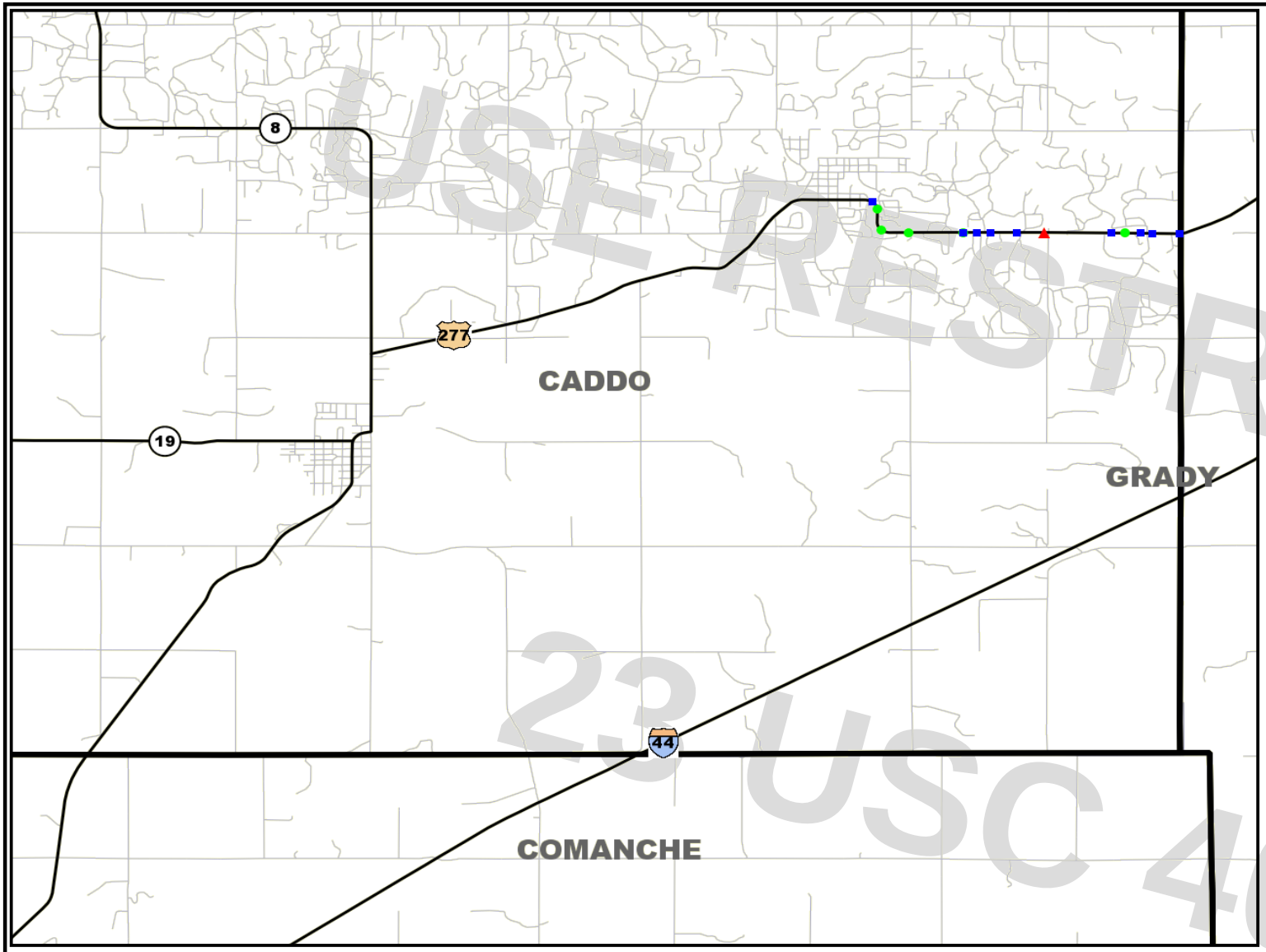
Footprint Sheet 6 (Sheet 7 of 7)

Oklahoma Department of Transportation
Environmental Study Footprint
Caddo & Grady Counties

JP 20953(04) & 20962(04) US-277

APPENDIX B

ACCIDENT DATA



Program Provided by:
Traffic Engineering Division
Collision Analysis and Safety Branch
(405) 522-0985
Created: 03/22/2016 by ODOT

Study Map & Totals

Legend

- Fatality
- Injury
- Property Damage

N
W E
S

Remarks:

PREPARED FOR MR. KYLE MCKINLEY, ODOT

JP 20953(04); US-277 FROM CEMENT TO GRADY COUNTY LINE

Date Range: 01-01-2006 thru 12-31-2015

	2006						2007						2008					
	Fat	Incap Inj	Non-Incap Inj	Poss Inj	PD	Tot	Fat	Incap Inj	Non-Incap Inj	Poss Inj	PD	Tot	Fat	Incap Inj	Non-Incap Inj	Poss Inj	PD	Tot
Collisions			1			1				1	1	2				1	1	2
Persons			1			1				1		1				1		1

JP 20953(04); US-277 FROM CEMENT TO GRADY COUNTY LINE

Date Range: 01-01-2006 Thru 12-31-2015

Program Provided by:
Traffic Engineering Division
Collision Analysis and Safety Branch
(405) 522-0985
Created: 03/22/2016 by ODOT

	2009						2010						2011					
	Fat	Incap Inj	Non-Incap Inj	Poss Inj	PD	Tot	Fat	Incap Inj	Non-Incap Inj	Poss Inj	PD	Tot	Fat	Incap Inj	Non-Incap Inj	Poss Inj	PD	Tot
Collisions				1		1			1		1	2	1		1			2
Persons				3		3			1			1	4	2	3			9

	2012						2013						2014					
	Fat	Incap Inj	Non-Incap Inj	Poss Inj	PD	Tot	Fat	Incap Inj	Non-Incap Inj	Poss Inj	PD	Tot	Fat	Incap Inj	Non-Incap Inj	Poss Inj	PD	Tot
Collisions			1	1	1	3			1			1				1		1
Persons			1	1		2			1	1		2				1		1

	2015*					
	Fat	Incap Inj	Non-Incap Inj	Poss Inj	PD	Tot
Collisions					1	1
Persons						0

* DENOTES A YEAR FOR WHICH DATA MAY BE INCOMPLETE.

	Study Total					
	Fatality	Incapacitating Injury	Non-Incapacitating Injury	Possible Injury	Property Damage	Total
Collisions	1		5	5	5	16
Persons	4	2	7	8		21

STUDY TOTALS - BY CITY AND HWY CLASS

JP 20953(04); US-277 FROM CEMENT TO GRADY COUNTY LINE

Date Range: 01-01-2006 Thru 12-31-2015

Program Provided by:
Traffic Engineering Division
Collision Analysis and Safety Branch
(405) 522-0985
Created: 03/22/2016 by ODOT

STUDY TOTALS

	HIGHWAY COLLISIONS				CITY STREET COLLISIONS				COUNTY ROAD COLLISIONS				TOTAL COLLISIONS			
Year	Fat	Inj *	PD	Tot	Fat	Inj *	PD	Tot	Fat	Inj *	PD	Tot	Fat	Inj *	PD	Tot
2006		1		1										1		1
2007		1	1	2										1	1	2
2008		1	1	2										1	1	2
2009		1		1										1		1
2010		1	1	2										1	1	2
2011	1	1		2									1	1		2
2012		2	1	3										2	1	3
2013		1		1										1		1
2014		1		1										1		1
2015 *			1	1											1	1
Total:	1	10	5	16				0				0	1	10	5	16

*** DENOTES A YEAR FOR WHICH DATA MAY BE INCOMPLETE.**

County: (08) CADDO

	HIGHWAY COLLISIONS				CITY STREET COLLISIONS				COUNTY ROAD COLLISIONS				TOTAL COLLISIONS			
	Fat	Inj *	PD	Tot	Fat	Inj *	PD	Tot	Fat	Inj *	PD	Tot	Fat	Inj *	PD	Tot
(00) - RURAL -	1	10	5	16									1	10	5	16

*** INCLUDES INCAPACITATING, NON-INCAPACITATING, AND POSSIBLE INJURIES.**

TABULATION OF COLLISIONS

JP 20953(04); US-277 FROM CEMENT TO GRADY COUNTY LINE

Date Range: 01-01-2006 Thru 12-31-2015

Program Provided by:
Traffic Engineering Division
Collision Analysis and Safety Branch
(405) 522-0985
Created: 03/22/2016 by ODOT

Collisions By Type Of Collision

Type Of Collision	2006				2007				2008				2009				2010			
	Fat	Inj *	PD	Tot	Fat	Inj *	PD	Tot	Fat	Inj *	PD	Tot	Fat	Inj *	PD	Tot	Fat	Inj *	PD	Tot
Rear-End (front-to-rear)																				
Head-On (front-to-front)																				
Right Angle																				
Angle Turning														1		1				
Other Angle																				
Sideswipe Same Direction																				
Sideswipe Opposite Direction																				
Fixed Object																				
Pedestrian																				
Pedal Cycle																				
Animal																			1	1
Overturn/Rollover						1		1		1	1	2						1		1
Vehicle-Train																				
Other Single Vehicle Crash		1		1			1	1												
Other																				
Total		1		1		1	1	2		1	1	2		1		1		1	1	2
Percent		6.3		6.3		6.3	6.3	12.5		6.3	6.3	12.5		6.3		6.3		6.3	6.3	12.5

Collisions By Type Of Collision

Type Of Collision	2011				2012				2013				2014				2015*			
	Fat	Inj *	PD	Tot	Fat	Inj *	PD	Tot	Fat	Inj *	PD	Tot	Fat	Inj *	PD	Tot	Fat	Inj *	PD	Tot
Rear-End (front-to-rear)														1		1				
Head-On (front-to-front)	1			1																
Right Angle																				
Angle Turning						1		1		1		1								
Other Angle																				
Sideswipe Same Direction																				
Sideswipe Opposite Direction																				
Fixed Object							1	1											1	1
Pedestrian																				
Pedal Cycle																				
Animal		1		1																
Overturn/Rollover						1		1												
Vehicle-Train																				
Other Single Vehicle Crash																				
Other																				
Total	1	1		2		2	1	3		1		1		1		1			1	1
Percent	6.3	6.3		12.5		12.5	6.3	18.8		6.3		6.3		6.3		6.3			6.3	6.3

*** INCLUDES INCAPACITATING, NON-INCAPACITATING, AND POSSIBLE INJURIES.**

Program Provided by:
Traffic Engineering Division
Collision Analysis and Safety Branch
(405) 522-0985
Created: 03/22/2016 by ODOT

Collisions By Type Of Collision

Type Of Collision	Total				
	Fat	Inj *	PD	Tot	Pct
Rear-End (front-to-rear)		1		1	6.3
Head-On (front-to-front)	1			1	6.3
Right Angle					
Angle Turning		3		3	18.8
Other Angle					
Sideswipe Same Direction					
Sideswipe Opposite Direction					
Fixed Object			2	2	12.5
Pedestrian					
Pedal Cycle					
Animal		1	1	2	12.5
Overturn/Rollover		4	1	5	31.3
Vehicle-Train					
Other Single Vehicle Crash		1	1	2	12.5
Other					
Total	1	10	5	16	100
Percent	6.3	62.5	31.3	100	

* INCLUDES INCAPACITATING, NON-INCAPACITATING, AND POSSIBLE INJURIES.

Program Provided by:
Traffic Engineering Division
Collision Analysis and Safety Branch
(405) 522-0985
Created: 03/22/2016 by ODOT

Units By Unit Type

Unit Type	2006				2007				2008				2009				2010			
	Fat	Inj *	PD	Tot	Fat	Inj *	PD	Tot	Fat	Inj *	PD	Tot	Fat	Inj *	PD	Tot	Fat	Inj *	PD	Tot
Train																				
Pedestrian																				
Animal																			1	1
Pedal Cycle																				
Parked Vehicle																				
CMV																				
Other Single Vehicle		1		1		1	1	2		1	1	2						1	1	2
Other Multi-Vehicle														2		2				
Total		1		1		1	1	2		1	1	2		2		2		1	2	3
Percent		4.2		4.2		4.2	4.2	8.3		4.2	4.2	8.3		8.3		8.3		4.2	8.3	12.5

Units By Unit Type

Unit Type	2011				2012				2013				2014				2015*			
	Fat	Inj *	PD	Tot	Fat	Inj *	PD	Tot	Fat	Inj *	PD	Tot	Fat	Inj *	PD	Tot	Fat	Inj *	PD	Tot
Train																				
Pedestrian														1		1				
Animal		1		1																
Pedal Cycle																				
Parked Vehicle														1		1				
CMV										1		1								
Other Single Vehicle		1		1		1	1	2											1	1
Other Multi-Vehicle	2			2		2		2		1		1		1		1				
Total	2	2		4		3	1	4		2		2		3		3			1	1
Percent	8.3	8.3		16.7		12.5	4.2	16.7		8.3		8.3		12.5		12.5			4.2	4.2

* INCLUDES INCAPACITATING, NON-INCAPACITATING, AND POSSIBLE INJURIES.

Program Provided by:
Traffic Engineering Division
Collision Analysis and Safety Branch
(405) 522-0985
Created: 03/22/2016 by ODOT

Units By Unit Type

Unit Type	Total				
	Fat	Inj *	PD	Tot	Pct
Train					
Pedestrian		1		1	4.2
Animal		1	1	2	8.3
Pedal Cycle					
Parked Vehicle		1		1	4.2
CMV		1		1	4.2
Other Single Vehicle		6	5	11	45.8
Other Multi-Vehicle	2	6		8	33.3
Total	2	16	6	24	100
Percent	8.3	66.7	25.0	100	

* INCLUDES INCAPACITATING, NON-INCAPACITATING, AND POSSIBLE INJURIES.

Program Provided by:
Traffic Engineering Division
Collision Analysis and Safety Branch
(405) 522-0985
Created: 03/22/2016 by ODOT

Vehicles By Vehicle Type

Vehice Type	2006				2007				2008				2009				2010			
	Fat	Inj *	PD	Tot	Fat	Inj *	PD	Tot	Fat	Inj *	PD	Tot	Fat	Inj *	PD	Tot	Fat	Inj *	PD	Tot
Passenger Vehicle-2 Door																				
Passenger Vehicle-4 Door							1	1						1		1		1		1
Passenger Vehicle-Convertible																				
Pickup Truck										1	1	2		1		1			1	1
Single-Unit Truck (2 axles)																				
Single-Unit Truck (3 or more axles)																				
School Bus																				
Truck/Trailer																				
Truck-Tractor (bobtail)																				
Truck-Tractor/Semi-Trailer																				
Truck-Tractor/Double																				
Truck-Tractor/Triple																				
Bus/Large Van (9-15 seats)																				
Bus (16+ seats)																				
Motorcycle		1		1																
Motor Scooter/Moped																				
Motor Home																				
Farm Machinery																				
ATV																				
Sport Utility Vehicle (SUV)						1		1												
Passenger Van																				
Truck More Than 10,000 lbs.																				
Van (10,000 lbs. or less)																				
Other																				
Total		1		1		1	1	2		1	1	2		2		2		1	1	2
Percent		4.8		4.8		4.8	4.8	9.5		4.8	4.8	9.5		9.5		9.5		4.8	4.8	9.5

* INCLUDES INCAPACITATING, NON-INCAPACITATING, AND POSSIBLE INJURIES.

Program Provided by:
Traffic Engineering Division
Collision Analysis and Safety Branch
(405) 522-0985
Created: 03/22/2016 by ODOT

Vehicles By Vehicle Type

Vehice Type	2011				2012				2013				2014				2015*			
	Fat	Inj *	PD	Tot	Fat	Inj *	PD	Tot	Fat	Inj *	PD	Tot	Fat	Inj *	PD	Tot	Fat	Inj *	PD	Tot
Passenger Vehicle-2 Door	1			1																
Passenger Vehicle-4 Door	1			1		1	2	3		1		1							1	1
Passenger Vehicle-Convertible																				
Pickup Truck															1	1				
Single-Unit Truck (2 axles)											1	1								
Single-Unit Truck (3 or more axles)																				
School Bus																				
Truck/Trailer																				
Truck-Tractor (bobtail)																				
Truck-Tractor/Semi-Trailer																				
Truck-Tractor/Double																				
Truck-Tractor/Triple																				
Bus/Large Van (9-15 seats)																				
Bus (16+ seats)																				
Motorcycle		1		1																
Motor Scooter/Moped																				
Motor Home																				
Farm Machinery																				
ATV																				
Sport Utility Vehicle (SUV)						1		1												
Passenger Van																				
Truck More Than 10,000 lbs.																				
Van (10,000 lbs. or less)																				
Other															1	1				
Total	2	1		3		2	2	4		1	1	2			2	2			1	1
Percent	9.5	4.8		14.3		9.5	9.5	19.0		4.8	4.8	9.5			9.5	9.5			4.8	4.8

* INCLUDES INCAPACITATING, NON-INCAPACITATING, AND POSSIBLE INJURIES.

Program Provided by:
Traffic Engineering Division
Collision Analysis and Safety Branch
(405) 522-0985
Created: 03/22/2016 by ODOT

Vehicles By Vehicle Type

Vehice Type	Total				
	Fat	Inj *	PD	Tot	Pct
Passenger Vehicle-2 Door	1			1	4.8
Passenger Vehicle-4 Door	1	4	4	9	42.9
Passenger Vehicle-Convertible					
Pickup Truck		2	3	5	23.8
Single-Unit Truck (2 axles)			1	1	4.8
Single-Unit Truck (3 or more axles)					
School Bus					
Truck/Trailer					
Truck-Tractor (bobtail)					
Truck-Tractor/Semi-Trailer					
Truck-Tractor/Double					
Truck-Tractor/Triple					
Bus/Large Van (9-15 seats)					
Bus (16+ seats)					
Motorcycle		2		2	9.5
Motor Scooter/Moped					
Motor Home					
Farm Machinery					
ATV					
Sport Utility Vehicle (SUV)		2		2	9.5
Passenger Van					
Truck More Than 10,000 lbs.					
Van (10,000 lbs. or less)					
Other			1	1	4.8
Total	2	10	9	21	100
Percent	9.5	47.6	42.9	100	

* INCLUDES INCAPACITATING, NON-INCAPACITATING, AND POSSIBLE INJURIES.

Program Provided by:
Traffic Engineering Division
Collision Analysis and Safety Branch
(405) 522-0985
Created: 03/22/2016 by ODOT

Day And Time Of Occurrence Of Collisions

Day	Hour Of The Day																								
	AM															PM									
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	Tot	Pcnt
Sunday					1											1				1					3	18.8
Monday							1											1					1	1	4	25.0
Tuesday																										
Wednesday																1			1						2	12.5
Thursday												1	2	1		1			1						6	37.5
Friday																								1	1	6.3
Saturday																										
	Early Morning - Sunrise						Morning Peak			Mid Morning/Afternoon						PM Peak			Evening - Late Night						Tot	100
Total	1						1			4						4			6						16	
Percent	6.3						6.3			25.0						25.0			37.5						100	

Roadway/Lighting

Roadway Conditions	Lighting Conditions					Total	Percent
	Daylight	Darkness	Twilight	Lighted	Unknown		
Dry	7	6				13	81.3
Wet (Water)	3					3	18.8
Ice, Snow, or Slush							
Mud, Dirt, Gravel, or Sand							
Other							
Total	10	6				16	100
Percent	62.5	37.5				100	

Weather Conditions

Weather Conditions	Total	Percent
Clear	6	37.5
Clouds Present	6	37.5
Raining/Fog	4	25.0
Snowing/Sleet/Hail		
Other		
Total	16	100

Program Provided by:
Traffic Engineering Division
Collision Analysis and Safety Branch
(405) 522-0985
Created: 03/22/2016 by ODOT

Drivers By Driver Conditions

Unsafe/Unlawful	Apparently Normal			Alcohol Involved						Sleep Suspected			Drug Use Indicated			Unknown Condition			Total				
				Ability Impaired			Odor Detected																
	Fat	Inj *	PD	Fat	Inj *	PD	Fat	Inj *	PD	Fat	Inj *	PD	Fat	Inj *	PD	Fat	Inj *	PD	Fat	Inj *	PD	Total	Pcnt
Failed to Yield																							
Failed to Stop																							
Failed to Signal																							
Improper Turn		2																		2		2	10.0
Improper Start																							
Improper Stop																							
Improper Backing		1																		1		1	5.0
Improper Parking																							
Improper Passing																							
Improper Lane Change																							
Left of Center	1																		1			1	5.0
Following Too Close																							
Unsafe Speed		3	3																	3	3	6	30.0
DWI						1															1	1	5.0
Inattention		1									1									2		2	10.0
Negligent Driving																							
Defective Vehicle																							
Wrong Way																							
No Improper Action	1	4	1		1														1	5	1	7	35.0
Other																							
Total	2	11	4		1	1					1								2	13	5	20	100
Percent	10.0	55.0	20.0		5.0	5.0					5.0								10.0	65.0	25.0	100	

Severities Indicate Highest Severity in Collision

Collisions By Special Feature

Special Feature	Total			
	Fat	Inj *	PD	Tot
Bridge				
Work Zone				
Cross Median				
Train Collision				

* INCLUDES INCAPACITATING, NON-INCAPACITATING, AND POSSIBLE INJURIES.

Program Provided by:
Traffic Engineering Division
Collision Analysis and Safety Branch
(405) 522-0985
Created: 03/22/2016 by ODOT

Collision Rate Analysis

JP 20953(04); US-277 FROM CEMENT TO GRADY COUNTY LINE
Time Period: 01-01-2006 to 12-31-2015 (3652 days)

RATE = No. of Collisions per 100 Million Vehicle Miles

Rate Type	Location Rates *	Statewide Rates ** (2011 - 2013)	
		Non-Int.	Total
Overall Collision:	69.3	63.37	82.23
Fatal Collision:	4.3	2.47	2.96
Vis. Injury Collision *:	21.6	19.38	24.59

Collision History Summary
(Number of Years = 10)

# Collisions		# People	
Involving Fatality:	1	Killed:	4
Vis. Injury *:	5	Vis. Injured *:	9
Poss. Injury:	5	Poss. Injured:	8
Property Damage Only:	5		
TOTAL:	16		

* Includes Incapacitating and Non-Incapacitating Injuries.

Road Characteristics

Roadway Length (miles):	02.53
Roadway Width (feet):	22 - 24
Avg. Daily Traffic (Veh/Day):	2500
Number of Lanes *:	TWO-LANES
Access Control *:	NONE
Urban Area Type *:	RURAL
Rural or Municipal *:	RURAL
Median Type *:	UNDIVIDED
Median Width (feet):	0

* Predominate value.

$$\text{RATE} = \frac{100{,}000{,}000 \times \text{NO. OF COLLISIONS}}{\text{ADT} \times \text{LENGTH} \times \text{NO. OF DAYS IN REPORT}}$$

** Statewide rates are computed based on similiar roadways pertaining to number of lanes, divided or undivided, rural or urban, and access control.

Program Provided by:
Traffic Engineering Division
Collision Analysis and Safety Branch
(405) 522-0985
Created: 03/22/2016 by ODOT

Cnty	City	CS #	Int. #	Mile Post	Location	Features	Int. Related	Dir. 1	Dir. 2	# Veh.	# Inj.*	# Fat.	Type of Collision	Unsafe Unlawful	Lighting Cond.	Roadway Cond.	Severity	Date
(08) CADDO				(00)	HWY: US-277						AT: 00.01 before BEG 45 MPH							
08		08		08.81			NO	E	-	1	1		ROLLOVER	UNSAF-SPD	DYLGT	WET	P INJ	12-03-2012
(08) CADDO				(00)	HWY: US-277						AT: 00.07 after BEG 45 MPH							
08		08		08.89			NO	W	-	1			F-O TREE	UNSAF-SPD	DYLGT	WET	PDO	03-25-2015
(08) CADDO				(00)	HWY: US-277						AT: 00.20 before BEG 50 MPH							
08		08		09.10			NO	W	-	1			F-O TREE	UNSAF-SPD	DARK	DRY	PDO	06-24-2012
(08) CADDO				(00)	HWY: US-277						AT: 00.01 after BEG 50 MPH							
08		08		09.31			NO	W	-	1			OTH-SINGLE-VEH	D-W-I	DARK	DRY	PDO	11-01-2007
(08) CADDO				(00)	HWY: US-277						AT: 00.09 before BEG 55 MPH							
08		08		09.71			NO	E	-	1			ROLLOVER	UNSAF-SPD	DYLGT	WET	PDO	04-09-2008
08		08		09.71			NO	W	W	2	3		ANGLE-TURNING	IMP-TURN	DYLGT	DRY	P INJ	01-25-2009
(08) CADDO				(00)	HWY: US-277						AT: 00.01 after BEG 55 MPH							
08		08		09.81			NO	W	-	2	1		REAR-END	OTHER	DYLGT	DRY	P INJ	01-30-2014
(08) CADDO				(00)	HWY: US-277						AT: 00.06 before BEG 65 MPH							
08		08		09.91		DRIVEWAY	NO	E	E	2	2		ANGLE-TURNING	INATT	DYLGT	DRY	N-I INJ	06-20-2013
(08) CADDO				(00)	HWY: US-277						AT: 00.14 after BEG 65 MPH							
08		08		10.11			NO	E	-	1	1		OTH-SINGLE-VEH	DEER	DARK	DRY	N-I INJ	03-13-2006
08		08		10.11			NO	E	-	1	1		ROLLOVER	UNSAF-SPD	DYLGT	DRY	P INJ	09-27-2007
(08) CADDO				(00)	HWY: US-277						AT: NS 274(57)							
08		08		10.31	NS 274(57)		YES	E	W	2	3	4	HEAD-ON	L-CENTER	DYLGT	DRY	FAT	04-07-2011
(08) CADDO				(00)	HWY: US-277						AT: 00.50 after NS 274(57)							
08		08		10.81			NO	E	-	1	1		ROLLOVER	SLEEPY	DARK	DRY	P INJ	07-14-2008
(08) CADDO				(00)	HWY: US-277						AT: 00.60 after NS 274(57)							
08		08		10.91			NO	W	-	1			ANIMAL	DOM-ANIMAL	DARK	DRY	PDO	11-26-2010
(08) CADDO				(00)	HWY: US-277						AT: 00.71 after NS 274(57)							
08		08		11.02			NO	E	-	1	1		ROLLOVER	UNSAF-SPD	DYLGT	DRY	N-I INJ	08-23-2010
(08) CADDO				(00)	HWY: US-277						AT: 00.80 after NS 274(57)							
08		08		11.11			NO	E	-	1	2		ANIMAL	DOM-ANIMAL	DARK	DRY	N-I INJ	09-18-2011
(08) CADDO				(00)	HWY: US-277						AT: 01.00 after NS 274(57)							
08		08		11.31			NO	W	W	2	1		ANGLE-TURNING	IMP-TURN	DYLGT	DRY	N-I INJ	08-16-2012

* INCLUDES INCAPACITATING, NON-INCAPACITATING, AND POSSIBLE INJURIES.

STUDY CRITERIA

JP 20953(04); US-277 FROM CEMENT TO GRADY COUNTY LINE

Date Range: 01-01-2006 Thru 12-31-2015

Program Provided by:
Traffic Engineering Division
Collision Analysis and Safety Branch
(405) 522-0985
Created: 03/22/2016 by ODOT

ROADWAY / REGION

QUERY OVER	SELECTIONS
Control Section	County: 8, Control Section: 8, CS Type: hwy, CS Query On: range, Mile Start: 08.79, Mile End: 11.32

DATE

Date Range	01-01-2006 to 12-31-2015

FILTER COLLISIONS

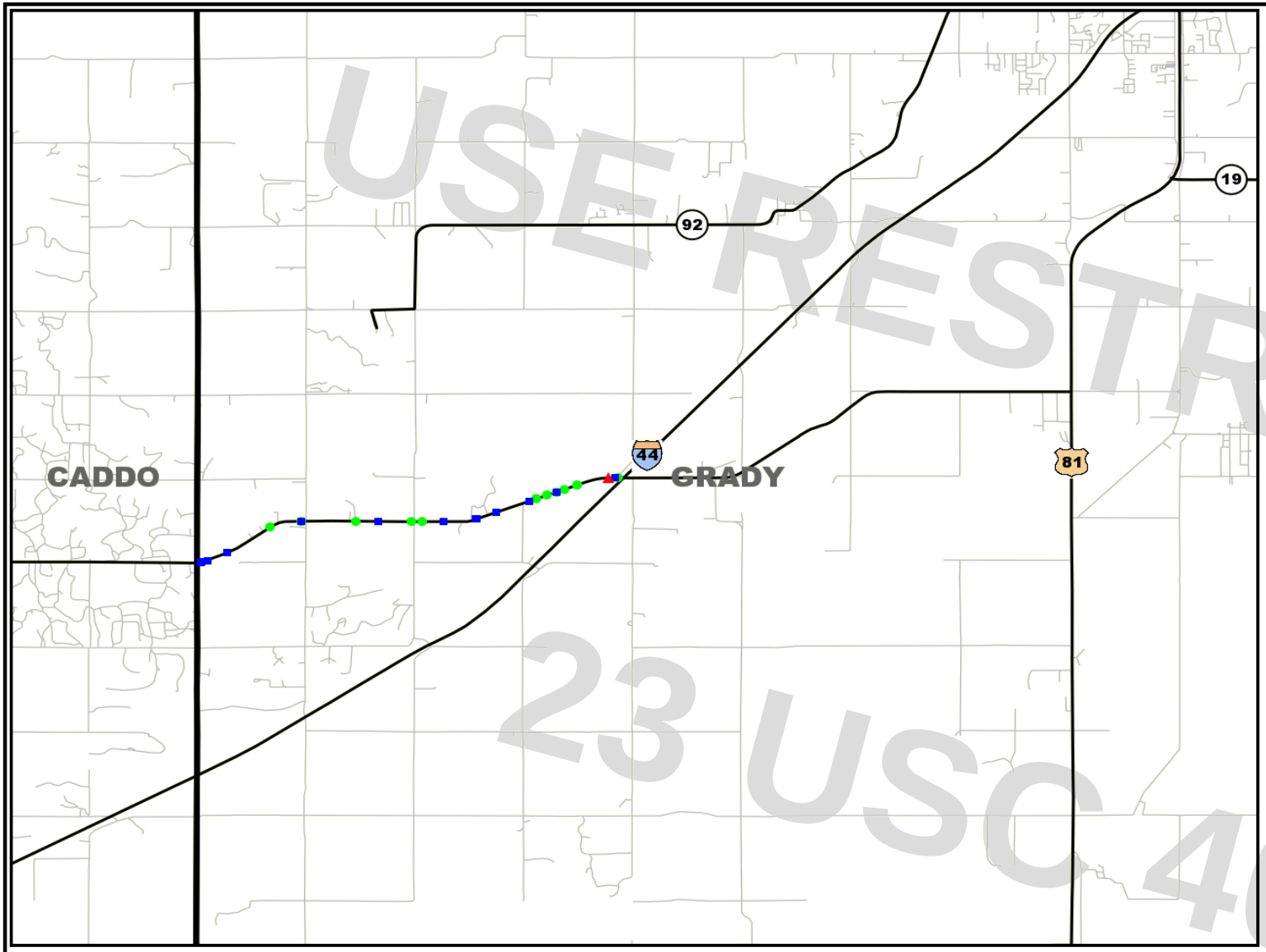
Roadway Type	All Collision Data
Incl. Crashes Assoc. w/ Every Int.	Checked

REPORT SECTIONS

Collision Map & Study Totals	(Included)
Collision Analysis Tables	(Included)
- Totals By City, Hwy Class	Checked
- Other Analysis Tables	Checked
Rate Analysis	(Included)
Collision Listing	(Included)
- Highway Collision Listing	Checked, By Control Section
- City Street Collision Listing	Checked
- County Road Collision Listing	Checked
Query Criteria	(Included)

REPORT FORMAT OPTIONS

Print Watermark	Checked
Print DPS Case Numbers	Unchecked



Program Provided by:
Traffic Engineering Division
Collision Analysis and Safety Branch
(405) 522-0985
Created: 03/22/2016 by ODOT

Study Map & Totals

Legend

- Fatality
- Injury
- Property Damage

N
W E
S

Remarks:

PREPARED FOR MR. KYLE MCKINLEY, ODOT

JP 20962(04); US-277 FROM CADDO COUNTY LINE TO I-44

Date Range: 01-01-2006 thru 12-31-2015

	2006						2007						2008					
	Fat	Incap Inj	Non-Incap Inj	Poss Inj	PD	Tot	Fat	Incap Inj	Non-Incap Inj	Poss Inj	PD	Tot	Fat	Incap Inj	Non-Incap Inj	Poss Inj	PD	Tot
Collisions			2		3	5		1		1	1	3					2	2
Persons			2			2		1		1		2						0

JP 20962(04); US-277 FROM CADDO COUNTY LINE TO I-44

Date Range: 01-01-2006 Thru 12-31-2015

Program Provided by:
Traffic Engineering Division
Collision Analysis and Safety Branch
(405) 522-0985
Created: 03/22/2016 by ODOT

	2009						2010						2011					
	Fat	Incap Inj	Non-Incap Inj	Poss Inj	PD	Tot	Fat	Incap Inj	Non-Incap Inj	Poss Inj	PD	Tot	Fat	Incap Inj	Non-Incap Inj	Poss Inj	PD	Tot
Collisions			1			1					1	1			2		1	3
Persons			1			1						0			3			3

	2012						2013						2014					
	Fat	Incap Inj	Non-Incap Inj	Poss Inj	PD	Tot	Fat	Incap Inj	Non-Incap Inj	Poss Inj	PD	Tot	Fat	Incap Inj	Non-Incap Inj	Poss Inj	PD	Tot
Collisions			1		1	2			1		2	3			2	1	1	4
Persons			2			2			1			1			2	1		3

	2015*					
	Fat	Incap Inj	Non-Incap Inj	Poss Inj	PD	Tot
Collisions	1		1		1	3
Persons	1	2	2			5

* DENOTES A YEAR FOR WHICH DATA MAY BE INCOMPLETE.

	Study Total					
	Fatality	Incapacitating Injury	Non-Incapacitating Injury	Possible Injury	Property Damage	Total
Collisions	1	1	10	2	13	27
Persons	1	3	13	2		19

STUDY TOTALS - BY CITY AND HWY CLASS

JP 20962(04); US-277 FROM CADDO COUNTY LINE TO I-44

Date Range: 01-01-2006 Thru 12-31-2015

Program Provided by:
Traffic Engineering Division
Collision Analysis and Safety Branch
(405) 522-0985
Created: 03/22/2016 by ODOT

STUDY TOTALS

	HIGHWAY COLLISIONS				CITY STREET COLLISIONS				COUNTY ROAD COLLISIONS				TOTAL COLLISIONS			
Year	Fat	Inj *	PD	Tot	Fat	Inj *	PD	Tot	Fat	Inj *	PD	Tot	Fat	Inj *	PD	Tot
2006		2	3	5										2	3	5
2007		2	1	3										2	1	3
2008			2	2											2	2
2009		1		1										1		1
2010			1	1											1	1
2011		2	1	3										2	1	3
2012		1	1	2										1	1	2
2013		1	2	3										1	2	3
2014		3	1	4										3	1	4
2015 *	1	1	1	3									1	1	1	3
Total:	1	13	13	27				0				0	1	13	13	27

*** DENOTES A YEAR FOR WHICH DATA MAY BE INCOMPLETE.**

County: (26) GRADY

	HIGHWAY COLLISIONS				CITY STREET COLLISIONS				COUNTY ROAD COLLISIONS				TOTAL COLLISIONS			
	Fat	Inj *	PD	Tot	Fat	Inj *	PD	Tot	Fat	Inj *	PD	Tot	Fat	Inj *	PD	Tot
(00) - RURAL -	1	13	13	27									1	13	13	27

*** INCLUDES INCAPACITATING, NON-INCAPACITATING, AND POSSIBLE INJURIES.**

Program Provided by:
Traffic Engineering Division
Collision Analysis and Safety Branch
(405) 522-0985
Created: 03/22/2016 by ODOT

Collisions By Type Of Collision

Type Of Collision	2006				2007				2008				2009				2010			
	Fat	Inj *	PD	Tot	Fat	Inj *	PD	Tot	Fat	Inj *	PD	Tot	Fat	Inj *	PD	Tot	Fat	Inj *	PD	Tot
Rear-End (front-to-rear)																				
Head-On (front-to-front)																				
Right Angle																				
Angle Turning			1	1																
Other Angle																				
Sideswipe Same Direction																				
Sideswipe Opposite Direction																				
Fixed Object						1	1	2			1	1		1		1				
Pedestrian																				
Pedal Cycle																				
Animal		1	2	3							1	1							1	1
Overturn/Rollover		1		1		1		1												
Vehicle-Train																				
Other Single Vehicle Crash																				
Other																				
Total		2	3	5		2	1	3			2	2		1		1			1	1
Percent		7.4	11.1	18.5		7.4	3.7	11.1			7.4	7.4		3.7		3.7			3.7	3.7

Collisions By Type Of Collision

Type Of Collision	2011				2012				2013				2014				2015*			
	Fat	Inj *	PD	Tot	Fat	Inj *	PD	Tot	Fat	Inj *	PD	Tot	Fat	Inj *	PD	Tot	Fat	Inj *	PD	Tot
Rear-End (front-to-rear)																				
Head-On (front-to-front)																				
Right Angle																		1		1
Angle Turning															1	1				
Other Angle						1		1												
Sideswipe Same Direction																				
Sideswipe Opposite Direction																	1			1
Fixed Object			1	1										1		1				
Pedestrian																				
Pedal Cycle																				
Animal							1	1												
Overturn/Rollover		2		2						1	1	2		2		2			1	1
Vehicle-Train																				
Other Single Vehicle Crash											1	1								
Other																				
Total		2	1	3		1	1	2		1	2	3		3	1	4	1	1	1	3
Percent		7.4	3.7	11.1		3.7	3.7	7.4		3.7	7.4	11.1		11.1	3.7	14.8	3.7	3.7	3.7	11.1

* INCLUDES INCAPACITATING, NON-INCAPACITATING, AND POSSIBLE INJURIES.

Program Provided by:
Traffic Engineering Division
Collision Analysis and Safety Branch
(405) 522-0985
Created: 03/22/2016 by ODOT

Collisions By Type Of Collision

Type Of Collision	Total				
	Fat	Inj *	PD	Tot	Pct
Rear-End (front-to-rear)					
Head-On (front-to-front)					
Right Angle		1		1	3.7
Angle Turning			2	2	7.4
Other Angle		1		1	3.7
Sideswipe Same Direction					
Sideswipe Opposite Direction	1			1	3.7
Fixed Object		3	3	6	22.2
Pedestrian					
Pedal Cycle					
Animal		1	5	6	22.2
Overturn/Rollover		7	2	9	33.3
Vehicle-Train					
Other Single Vehicle Crash			1	1	3.7
Other					
Total	1	13	13	27	100
Percent	3.7	48.1	48.1	100	

* INCLUDES INCAPACITATING, NON-INCAPACITATING, AND POSSIBLE INJURIES.

Program Provided by:
Traffic Engineering Division
Collision Analysis and Safety Branch
(405) 522-0985
Created: 03/22/2016 by ODOT

Units By Unit Type

Unit Type	2006				2007				2008				2009				2010			
	Fat	Inj *	PD	Tot	Fat	Inj *	PD	Tot	Fat	Inj *	PD	Tot	Fat	Inj *	PD	Tot	Fat	Inj *	PD	Tot
Train																				
Pedestrian																				
Animal		1	2	3							1	1							1	1
Pedal Cycle																				
Parked Vehicle																				
CMV																				
Other Single Vehicle		2	2	4		2	1	3			2	2		1		1			1	1
Other Multi-Vehicle			2	2																
Total		3	6	9		2	1	3			3	3		1		1			2	2
Percent		7.9	15.8	23.7		5.3	2.6	7.9			7.9	7.9		2.6		2.6			5.3	5.3

Units By Unit Type

Unit Type	2011				2012				2013				2014				2015*			
	Fat	Inj *	PD	Tot	Fat	Inj *	PD	Tot	Fat	Inj *	PD	Tot	Fat	Inj *	PD	Tot	Fat	Inj *	PD	Tot
Train																				
Pedestrian																				
Animal							1	1												
Pedal Cycle																				
Parked Vehicle																				
CMV			1	1											1	1				
Other Single Vehicle		2		2			1	1		1	2	3		3		3			1	1
Other Multi-Vehicle						2		2							1	1	2	2		4
Total		2	1	3		2	2	4		1	2	3		3	2	5	2	2	1	5
Percent		5.3	2.6	7.9		5.3	5.3	10.5		2.6	5.3	7.9		7.9	5.3	13.2	5.3	5.3	2.6	13.2

* INCLUDES INCAPACITATING, NON-INCAPACITATING, AND POSSIBLE INJURIES.

Program Provided by:
Traffic Engineering Division
Collision Analysis and Safety Branch
(405) 522-0985
Created: 03/22/2016 by ODOT

Units By Unit Type

Unit Type	Total				
	Fat	Inj *	PD	Tot	Pct
Train					
Pedestrian					
Animal		1	5	6	15.8
Pedal Cycle					
Parked Vehicle					
CMV			2	2	5.3
Other Single Vehicle		11	10	21	55.3
Other Multi-Vehicle	2	4	3	9	23.7
Total	2	16	20	38	100
Percent	5.3	42.1	52.6	100	

* INCLUDES INCAPACITATING, NON-INCAPACITATING, AND POSSIBLE INJURIES.

Program Provided by:
Traffic Engineering Division
Collision Analysis and Safety Branch
(405) 522-0985
Created: 03/22/2016 by ODOT

Vehicles By Vehicle Type

Vehice Type	2006				2007				2008				2009				2010			
	Fat	Inj *	PD	Tot	Fat	Inj *	PD	Tot	Fat	Inj *	PD	Tot	Fat	Inj *	PD	Tot	Fat	Inj *	PD	Tot
Passenger Vehicle-2 Door														1		1				
Passenger Vehicle-4 Door		1	4	5															1	1
Passenger Vehicle-Convertible																				
Pickup Truck		1		1		2	1	3			2	2								
Single-Unit Truck (2 axles)																				
Single-Unit Truck (3 or more axles)																				
School Bus																				
Truck/Trailer																				
Truck-Tractor (bobtail)																				
Truck-Tractor/Semi-Trailer																				
Truck-Tractor/Double																				
Truck-Tractor/Triple																				
Bus/Large Van (9-15 seats)																				
Bus (16+ seats)																				
Motorcycle																				
Motor Scooter/Moped																				
Motor Home																				
Farm Machinery																				
ATV																				
Sport Utility Vehicle (SUV)																				
Passenger Van																				
Truck More Than 10,000 lbs.																				
Van (10,000 lbs. or less)																				
Other																				
Total		2	4	6		2	1	3			2	2		1		1			1	1
Percent		6.3	12.5	18.8		6.3	3.1	9.4			6.3	6.3		3.1		3.1			3.1	3.1

* INCLUDES INCAPACITATING, NON-INCAPACITATING, AND POSSIBLE INJURIES.

Program Provided by:
Traffic Engineering Division
Collision Analysis and Safety Branch
(405) 522-0985
Created: 03/22/2016 by ODOT

Vehicles By Vehicle Type

Vehice Type	2011				2012				2013				2014				2015*			
	Fat	Inj *	PD	Tot	Fat	Inj *	PD	Tot	Fat	Inj *	PD	Tot	Fat	Inj *	PD	Tot	Fat	Inj *	PD	Tot
Passenger Vehicle-2 Door																				
Passenger Vehicle-4 Door		2		2		2	1	3			1	1		1	1	2	1	2	1	4
Passenger Vehicle-Convertible																				
Pickup Truck										1	1	2		2		2				
Single-Unit Truck (2 axles)																				
Single-Unit Truck (3 or more axles)																				
School Bus																				
Truck/Trailer																				
Truck-Tractor (bobtail)																				
Truck-Tractor/Semi-Trailer			1	1											1	1				
Truck-Tractor/Double																				
Truck-Tractor/Triple																				
Bus/Large Van (9-15 seats)																				
Bus (16+ seats)																				
Motorcycle																				
Motor Scooter/Moped																				
Motor Home																				
Farm Machinery																				
ATV																				
Sport Utility Vehicle (SUV)																		1		1
Passenger Van																				
Truck More Than 10,000 lbs.																				
Van (10,000 lbs. or less)																				
Other																				
Total		2	1	3		2	1	3		1	2	3		3	2	5	1	3	1	5
Percent		6.3	3.1	9.4		6.3	3.1	9.4		3.1	6.3	9.4		9.4	6.3	15.6	3.1	9.4	3.1	15.6

* INCLUDES INCAPACITATING, NON-INCAPACITATING, AND POSSIBLE INJURIES.

Program Provided by:
Traffic Engineering Division
Collision Analysis and Safety Branch
(405) 522-0985
Created: 03/22/2016 by ODOT

Vehicles By Vehicle Type

Vehice Type	Total				
	Fat	Inj *	PD	Tot	Pct
Passenger Vehicle-2 Door		1		1	3.1
Passenger Vehicle-4 Door	1	8	9	18	56.3
Passenger Vehicle-Convertible					
Pickup Truck		6	4	10	31.3
Single-Unit Truck (2 axles)					
Single-Unit Truck (3 or more axles)					
School Bus					
Truck/Trailer					
Truck-Tractor (bobtail)					
Truck-Tractor/Semi-Trailer			2	2	6.3
Truck-Tractor/Double					
Truck-Tractor/Triple					
Bus/Large Van (9-15 seats)					
Bus (16+ seats)					
Motorcycle					
Motor Scooter/Moped					
Motor Home					
Farm Machinery					
ATV					
Sport Utility Vehicle (SUV)		1		1	3.1
Passenger Van					
Truck More Than 10,000 lbs.					
Van (10,000 lbs. or less)					
Other					
Total	1	16	15	32	100
Percent	3.1	50.0	46.9	100	

* INCLUDES INCAPACITATING, NON-INCAPACITATING, AND POSSIBLE INJURIES.

Program Provided by:
Traffic Engineering Division
Collision Analysis and Safety Branch
(405) 522-0985
Created: 03/22/2016 by ODOT

Day And Time Of Occurrence Of Collisions

Day	Hour Of The Day																									
	AM												PM													
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	Tot	Pcnt
Sunday		1				1																			2	7.4
Monday							1															2	1		4	14.8
Tuesday	1										1			2									1		5	18.5
Wednesday							1	1										1			1				4	14.8
Thursday								1						1		1		1							4	14.8
Friday	1		1							1							1								4	14.8
Saturday			1										1					1			1				4	14.8
	Early Morning - Sunrise						Morning Peak			Mid Morning/Afternoon						PM Peak			Evening - Late Night						Tot	100
Total	6						4			6						5			6						27	
Percent	22.2						14.8			22.2						18.5			22.2						100	

Roadway/Lighting

Roadway Conditions	Lighting Conditions					Total	Percent
	Daylight	Darkness	Twilight	Lighted	Unknown		
Dry	12	9	2	1		24	88.9
Wet (Water)	1	2				3	11.1
Ice, Snow, or Slush							
Mud, Dirt, Gravel, or Sand							
Other							
Total	13	11	2	1		27	100
Percent	48.1	40.7	7.4	3.7		100	

Weather Conditions

Weather Conditions	Total	Percent
Clear	13	48.1
Clouds Present	11	40.7
Raining/Fog	3	11.1
Snowing/Sleet/Hail		
Other		
Total	27	100

TABULATION OF COLLISIONS

JP 20962(04); US-277 FROM CADDO COUNTY LINE TO I-44

Date Range: 01-01-2006 Thru 12-31-2015

Program Provided by:
Traffic Engineering Division
Collision Analysis and Safety Branch
(405) 522-0985
Created: 03/22/2016 by ODOT

Drivers By Driver Conditions

Unsafe/Unlawful	Apparently Normal			Alcohol Involved – Ability Impaired			Alcohol Involved – Odor Detected			Sleep Suspected			Drug Use Indicated			Unknown Condition			Total				
	Fat	Inj *	PD	Fat	Inj *	PD	Fat	Inj *	PD	Fat	Inj *	PD	Fat	Inj *	PD	Fat	Inj *	PD	Fat	Inj *	PD	Total	Pcnt
Failed to Yield		1	2																	1	2	3	9.4
Failed to Stop																							
Failed to Signal																							
Improper Turn			2																		2	2	6.3
Improper Start																							
Improper Stop																							
Improper Backing																							
Improper Parking																							
Improper Passing																							
Improper Lane Change																							
Left of Center																1			1			1	3.1
Following Too Close																							
Unsafe Speed		4	2																	4	2	6	18.8
DWI					1															1		1	3.1
Inattention		3			1						1	1								5	1	6	18.8
Negligent Driving																							
Defective Vehicle			2																		2	2	6.3
Wrong Way																							
No Improper Action	1	4	6																1	4	6	11	34.4
Other																							
Total	1	12	14		2						1	1				1			2	15	15	32	100
Percent	3.1	37.5	43.8		6.3						3.1	3.1				3.1			6.3	46.9	46.9	100	

Severities Indicate Highest Severity in Collision

Collisions By Special Feature

Special Feature	Total			
	Fat	Inj *	PD	Tot
Bridge			1	1
Work Zone				
Cross Median				
Train Collision				

* INCLUDES INCAPACITATING, NON-INCAPACITATING, AND POSSIBLE INJURIES.

Program Provided by:
Traffic Engineering Division
Collision Analysis and Safety Branch
(405) 522-0985
Created: 03/22/2016 by ODOT

Collision Rate Analysis

JP 20962(04); US-277 FROM CADDO COUNTY LINE TO I-44
Time Period: 01-01-2006 to 12-31-2015 (3652 days)

RATE = No. of Collisions per 100 Million Vehicle Miles

Rate Type	Location Rates *	Statewide Rates ** (2011 - 2013)	
		Non-Int.	Total
Overall Collision:	99.7	63.37	82.23
Fatal Collision:	3.7	2.47	2.96
Vis. Injury Collision *:	40.6	19.38	24.59

Collision History Summary
(Number of Years = 10)

# Collisions		# People	
Involving Fatality:	1	Killed:	1
Vis. Injury *:	11	Vis. Injured *:	16
Poss. Injury:	2	Poss. Injured:	2
Property Damage Only:	13		
TOTAL:	27		

* Includes Incapacitating and Non-Incapacitating Injuries.

Road Characteristics

Roadway Length (miles):	04.12
Roadway Width (feet):	24
Avg. Daily Traffic (Veh/Day):	1800
Number of Lanes *:	TWO-LANES
Access Control *:	NONE
Urban Area Type *:	RURAL
Rural or Municipal *:	RURAL
Median Type *:	UNDIVIDED
Median Width (feet):	0

* Predominate value.

$$\text{RATE} = \frac{100{,}000{,}000 \times \text{NO. OF COLLISIONS}}{\text{ADT} \times \text{LENGTH} \times \text{NO. OF DAYS IN REPORT}}$$

** Statewide rates are computed based on similiar roadways pertaining to number of lanes, divided or undivided, rural or urban, and access control.

Program Provided by:
Traffic Engineering Division
Collision Analysis and Safety Branch
(405) 522-0985
Created: 03/22/2016 by ODOT

Cnty	City	CS #	Int. #	Mile Post	Location	Features	Int. Related	Dir. 1	Dir. 2	# Veh.	# Inj.*	# Fat.	Type of Collision	Unsafe Unlawful	Lighting Cond.	Roadway Cond.	Severity	Date
(26) GRADY				(00)	HWY: US-277						AT: 00.04 after NS 275							
26		14		00.04			NO	W	-	1	1		F-O TREE	SLEEPY	DARK	WET	I INJ	04-14-2007
(26) GRADY				(00)	HWY: US-277						AT: 00.05 after NS 275							
26		14		00.05			NO	E	-	1	1		ROLLOVER	INATT	DYLGT	DRY	N-I INJ	06-01-2011
(26) GRADY				(00)	HWY: US-277						AT: 00.10 after NS 275							
26		14		00.10			NO	E	-	1	1		ROLLOVER	UNSAF-SPD	DARK	DRY	N-I INJ	11-07-2014
(26) GRADY				(00)	HWY: US-277						AT: 00.30 after NS 275							
26		14		00.30			NO	W	-	1	1		F-O TREE	SLEEPY	DAWN	DRY	N-I INJ	02-23-2014
(26) GRADY				(00)	HWY: US-277						AT: 00.02 before W. BILL CR.							
26		14		00.80			NO	W	-	1			ROLLOVER	UNSAF-SPD	DARK	DRY	PDO	10-16-2015
(26) GRADY				(00)	HWY: US-277						AT: LAKE BIRCHI/276(01							
26		14		01.10	LAKE BIRCHI/276(01		YES	E	-	1			F-O FENCE-POLE	IMP-TURN	DYLGT	DRY	PDO	01-03-2008
26		14		01.10	LAKE BIRCHI/276(01		YES	S	E	2	2		RIGHT-ANGLE	F-YIELD	DARK	DRY	N-I INJ	12-02-2015
(26) GRADY				(00)	HWY: US-277						AT: 00.14 after MIDDLE BILL CR.							
26		14		01.60		DRIVEWAY	NO	E	E	2			ANGLE-TURNING	IMP-TURN	DYLGT	DRY	PDO	01-14-2014
(26) GRADY				(00)	HWY: US-277						AT: 00.30 before NS 277(03)							
26		14		01.80			NO	E	-	1	1		ROLLOVER	UNSAF-SPD	DYLGT	DRY	P INJ	03-03-2007
(26) GRADY				(00)	HWY: US-277						AT: NS 277(03)							
26		14		02.10	NS 277(03)		YES	SW	W	2			ANGLE-TURNING	F-YIELD	DYLGT	DRY	PDO	12-14-2006
(26) GRADY				(00)	HWY: US-277						AT: 00.10 after NS 277(03)							
26		14		02.20			NO	W	-	1			ANIMAL	DOM-ANIMAL	DYLGT	DRY	PDO	02-04-2012
(26) GRADY				(00)	HWY: US-277						AT: 00.30 after NS 277(03)							
26		14		02.40			NO	E	-	1	1		ROLLOVER	INATT	DARK	DRY	N-I INJ	06-24-2013
(26) GRADY				(00)	HWY: US-277						AT: 00.50 before NS 278(05)							
26		14		02.70			NO	E	-	1	2		ROLLOVER	UNSAF-SPD	DYLGT	DRY	N-I INJ	08-30-2011
26		14		02.70			NO	E	-	1	1		ROLLOVER	UNSAF-SPD	DYLGT	WET	P INJ	05-12-2014
(26) GRADY				(00)	HWY: US-277						AT: 00.30 before NS 278(05)							
26		14		02.90			NO	E	W	2	2		ANGLE-OTHER	D-W-I	DYLGT	DRY	N-I INJ	07-12-2012
(26) GRADY				(00)	HWY: US-277						AT: 00.03 after NS 278(05)							
26		14		03.23			NO	W	-	1	1		ROLLOVER	OTH-ANIMAL	DARK	DRY	N-I INJ	12-19-2006
(26) GRADY				(00)	HWY: US-277						AT: 00.10 after NS 278(05)							
26		14		03.30			NO	W	-	1			ROLLOVER	UNSAF-SPD	DARK	WET	PDO	01-27-2013
26		14		03.30			NO	W	-	1			OTH-SINGLE-VEH	DEF-VEH	DARK	DRY	PDO	05-18-2013
(26) GRADY				(00)	HWY: US-277						AT: 00.18 before E. BILL CR.							
26		14		03.40			NO	E	-	1			F-O UTIL-POLE	DEF-VEH	DYLGT	DRY	PDO	03-22-2011
(26) GRADY				(00)	HWY: US-277						AT: 00.08 before E. BILL CR.							
26		14		03.50			NO	W	-	1			ANIMAL	OTH-ANIMAL	DARK	DRY	PDO	08-21-2006
26		14		03.50			NO	E	-	1	1		ANIMAL	OTH-ANIMAL	DARK	DRY	N-I INJ	08-21-2006
(26) GRADY				(00)	HWY: US-277						AT: E. BILL CR.							

* INCLUDES INCAPACITATING, NON-INCAPACITATING, AND POSSIBLE INJURIES.

HIGHWAY SYSTEM COLLISION LISTING

JP 20962(04); US-277 FROM CADDO COUNTY LINE TO I-44

Date Range: 01-01-2006 Thru 12-31-2015

Program Provided by:
Traffic Engineering Division
Collision Analysis and Safety Branch
(405) 522-0985
Created: 03/22/2016 by ODOT

		HIGHWAY COLLISIONS		CITY STREET COLLISIONS		COUNTY ROAD COLLISIONS				TOTAL COLLISIONS							
Cnty	City	CS #	Int. #	Mile Post	Location	Features	Int. Related	Dir. 1	Dir. 2	# Veh.	# Inj.*	# Fat.	Type of Collision	Unsafe Unlawful	Lighting Cond.	Roadway Cond.	Severity	Date
26		14		03.58	E. BILL CR.	BRIDGE	NO	W	-	1			ANIMAL	OTH-ANIMAL	DARK	DRY	PDO	09-16-2008
(26) GRADY				(00)	HWY: US-277								AT: 00.12 after E. BILL CR.					
26		14		03.70			NO	W	-	1			F-O TREE	SLEEPY	DYLGT	DRY	PDO	06-13-2007
26		14		03.70			NO	E	-	1			ANIMAL	DOM-ANIMAL	DYLGT	DRY	PDO	10-08-2010
(26) GRADY				(00)	HWY: US-277								AT: 00.10 before CO. RD.					
26		14		04.00			NO	E	W	2	2	1	SIDESWIPE-OPP	L-CENTER	DUSK	DRY	FAT	12-11-2015
(26) GRADY				(00)	HWY: US-277								AT: 00.03 before CO. RD.					
26		14		04.07			NO	E	-	1	1		F-O FENCE	INATT	DYLGT	DRY	N-I INJ	05-07-2009
(26) GRADY				(00)	HWY: US-277								AT: 00.01 before CO. RD.					
26		14		04.09			NO	E	-	1			ANIMAL	DEER	DARK	DRY	PDO	09-20-2006

*** INCLUDES INCAPACITATING, NON-INCAPACITATING, AND POSSIBLE INJURIES.**

STUDY CRITERIA

JP 20962(04); US-277 FROM CADDO COUNTY LINE TO I-44

Date Range: 01-01-2006 Thru 12-31-2015

Program Provided by:
Traffic Engineering Division
Collision Analysis and Safety Branch
(405) 522-0985
Created: 03/22/2016 by ODOT

ROADWAY / REGION

QUERY OVER	SELECTIONS
Control Section	County: 26, Control Section: 14, CS Type: hwy, CS Query On: range, Mile Start: 00.00, Mile End: 04.12

DATE

Date Range	01-01-2006 to 12-31-2015

FILTER COLLISIONS

Roadway Type	All Collision Data
Incl. Crashes Assoc. w/ Every Int.	Checked

REPORT SECTIONS

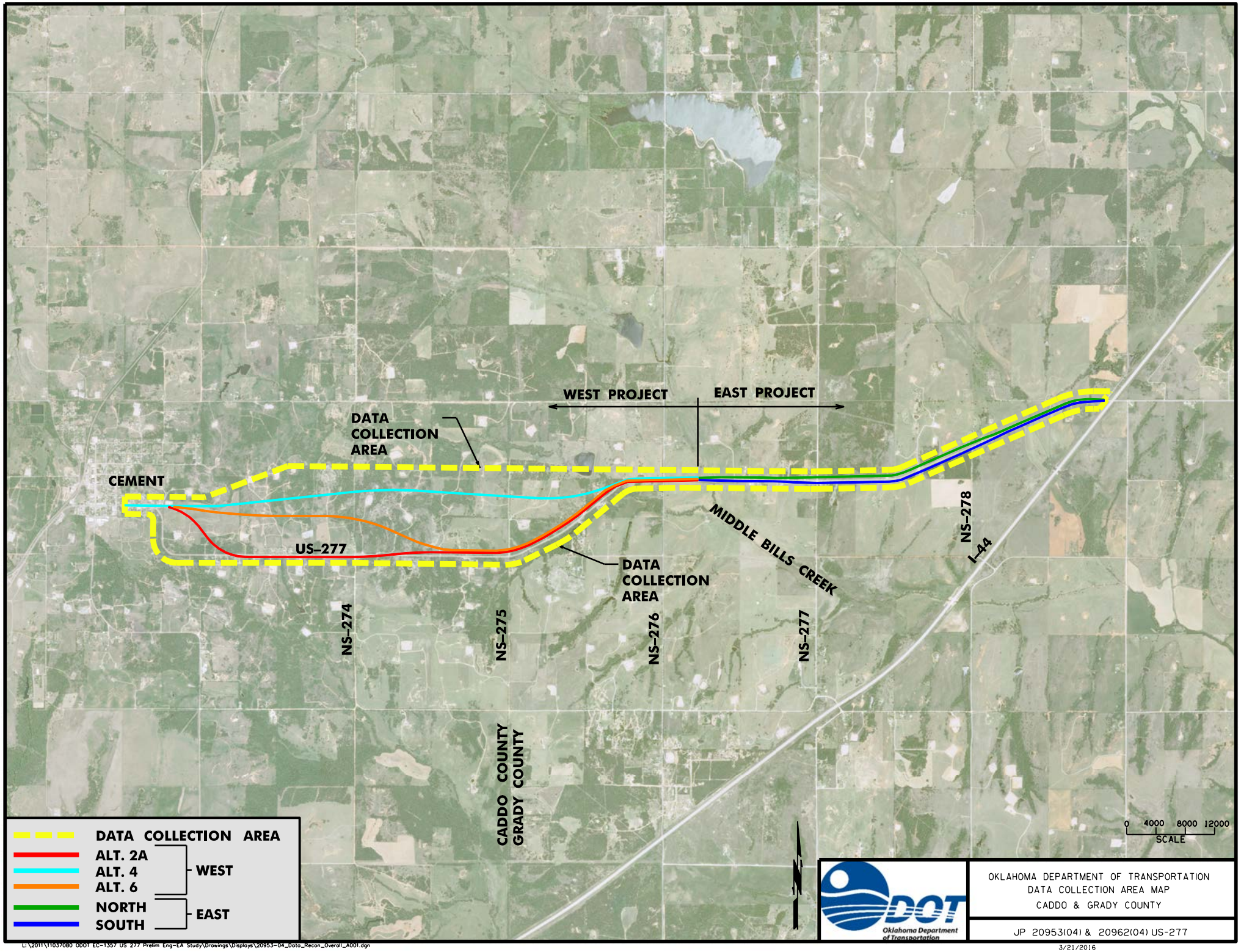
Collision Map & Study Totals	(Included)
Collision Analysis Tables	(Included)
- Totals By City, Hwy Class	Checked
- Other Analysis Tables	Checked
Rate Analysis	(Included)
Collision Listing	(Included)
- Highway Collision Listing	Checked, By Control Section
- City Street Collision Listing	Checked
- County Road Collision Listing	Checked
Query Criteria	(Included)

REPORT FORMAT OPTIONS

Print Watermark	Checked
Print DPS Case Numbers	Unchecked

APPENDIX C

ALIGNMENTS CONSIDERED


WEST PROJECT
EAST PROJECT
DATA COLLECTION AREA
CEMENT
US-277
MIDDLE BILLS CREEK
DATA COLLECTION AREA
NS-278
I-44
NS-274
NS-275
NS-276
NS-277
CADDO COUNTY
GRADY COUNTY
DATA COLLECTION AREA
ALT. 2A
ALT. 4
ALT. 6
WEST
NORTH
SOUTH
EAST
0 4000 8000 12000
SCALE
OKLAHOMA DEPARTMENT OF TRANSPORTATION
DATA COLLECTION AREA MAP
CADDO & GRADY COUNTY
JP 20953(04) & 20962(04) US-277
3/21/2016
L:\2011\11037080 0001 EC-1357 US 277 Prelim Eng-EA Study\Drawings\Displays\20953-04_Data_Recon_Overall_A001.dgn

APPENDIX D

INITIAL AGENCY COORDINATION AND PUBLIC INVOLVEMENT

Public Meeting Summary – March 28, 2013

JP 20953(04) & JP 20962(04) US-277 Cement to I-44, Caddo and Grady Counties

This document summarizes the public involvement efforts conducted to date for the US-277 project from Cement to I-44 in Caddo and Grady Counties, Oklahoma [JP 20953(04) & JP 20962(04)]. These efforts have included agency solicitation and a public meeting.

Agency Solicitation

Agency solicitation letters were mailed on March 14, 2013. These letters provided a short project description and an overview of the alternatives under consideration and requested that recipients provide input by April 12, 2013. Enclosed with the letter was a copy of the project location map and a map of the alternatives under consideration. This letter was sent to resource agencies, Indian Tribes, County Commissioners, utility owners, and oil and gas lease operators in the study area. A copy of the agency solicitation letter and the mailing list is included in Appendix A.

Public Meeting

Meeting Notification

Notice of the public meeting was sent by postcard to all property owners in the study area Postcards were mailed on March 14, 2013 (CONFIRM DATE WITH FRANK). A copy of the postcard and the mailing list is included in Appendix B.

Letters describing the project and the public meeting were sent to all elected officials in the study area as well as local government representatives, schools, emergency service providers, and medical facilities. These letters were mailed on March 14, 2013. A copy of the letter and the mailing list is included in Appendix C.

Meeting Information and Format

The public meeting was held on March 28, 2013, at 6:00 PM at the Cement High School Auditorium, 201 S. Main Street in Cement. Approximately 60 people signed in for the meeting (Appendix D). The meeting consisted of a presentation by ODOT and Garver followed by a question and answer (Q&A) period. After the Q&A, several members of the public stayed to discuss individual issues with the ODOT and Garver team members. Display boards were also available showing the study area and the alternatives under consideration.

The presentation began at 6:00 PM. A copy is included in Appendix E. The presentation covered:

- Team Introductions
- Purpose of the Meeting

- Purpose of the Project
- General Project Information
- Need for the Project
- Development of Alternatives
- Alternative Overviews
- Environmental Impacts
- Alternative Summary
- Next Steps

Summary of Comments

After the presentation, the audience was then given opportunity to ask questions and make comments. Points raised included the following:

1. Many attendees were concerned about how the various alternates will affect their properties. Several attendees stated that the parallel offset alignments would likely have more impacts to properties and structures.

    Concerned about homes and structures being impacted
    Concerns about properties being bisected

2. How wide will the new right-of-way be?

    This is not known yet as we are still in the early stages. For the offset alignments it needs to be wide enough so the new facility can be constructed without affecting traffic on the existing highway during construction. Once the new roadway is constructed (for the parallel offset alignments) the existing roadway pavement will be removed and the existing right-of-way may be used to complete items such as ditches and drainage. Right-of-way will be minimized as much as possible.

3. Will impacted property owners along the highway still have access after and during construction?

    Existing access locations will be maintained with temporary drives throughout construction & will be reconstructed upon mainline completion. If new access is desired, a driveway permit could be issued or a request could be negotiated through the right-of-way acquisition process.

4. How were the future traffic numbers determined?

    Through application of growth factors to the existing traffic counts.

5. Is there a preferred alternate?

    At this early study phase we are still evaluating all alternatives shown. The purpose of this meeting is to raise awareness and gather public input, thus, allowing for further development and selection of a preferred alternate.

6. What is the offset on the North and South options for the east portion of the project?

    The offset was from centerline of the existing roadway to the centerline of the proposed roadway. The offsets allowed for flattening of the hills (crest vertical curves) and improving driver sight distance, and therefore, safety. The approximate offset distance is 70 to 80 feet.

7. Audience recognized Alternate 4 would minimize impacts to homes; however, there was one attendee with his home directly impacted by the alignment.

8. If none of the three west projects are preferred by the public, will the project still be built?
   The larger US-277 corridor from US-81 to Porter Hill has been a major focus of improvement for safety reasons. The US-277 corridor is heavily traveled and is hazardous. It has been on ODOT's Top 25 list for traffic incidents for many years. ODOT intends to construct the piece from Cement to I-44 in 2016 or 2017. After that ODOT will look at the piece from I-44 to US-81. These projects, along with the piece from Porter Hill to Elgin (scheduled for construction in 2013), will complete the improvements for the entire corridor. ODOT does intend to build the project.

9. Will there be on/off ramps are at the turnpike?
   The study did not include this improvement. The Oklahoma Turnpike Authority (OTA) determines interchange locations for the turnpikes. These decisions are based in part on the potential to generate income at an interchange location. We don't expect US-277 would generate enough traffic to warrant an interchange.

10. Currently there are driveway locations that have poor sight visibility. Will this be corrected?
    Sight distance will be improved with all of the proposed alternates.

11. How close will construction need to be before a home is purchased by ROW?
    It is dependent on proximity and a case by case basis. ODOT provided hard copy materials to attendees on the ROW process.

12. What will be the time frame for construction?
    Each project will likely take approximately a year. The west project would be constructed first. Upon completion of the west project, the east project would follow.

13. I will be affected either way but we need this project.
    Thank you for your comment.

General Observations:
Overall the audience was receptive and understanding of the need for corridor safety improvements.

After the open call for questions, Garver and ODOT staff were available to discuss questions on a one and one basis. The following were a few of the items discussed:

Should we wait on making improvements to property (new pipe corral) until an alternate is selected?

Landowners should not wait to make their improvements, and if impacted, they would be compensated during the right of way process.

Several attendees expressed a preference for Alternate 4 because it goes "straight across" to make the connection at Middle Bills.

Alternate 4 would be going thru severe terrain and would require filling in of several deep canyons.

Numerous attendees mentioned having witnessed accidents or close calls themselves or knowing of fatal accidents on the roadway over the years.

Written comments were requested prior to April 11, 2013. Two comments from agencies and six comment forms from members of the public were received. Appendix F contains the written comments. One member of the public mentioned the presence of an Indian Burial ground at the public meeting. Dr. Rhonda Fair, ODOT Tribal Liaison, contacted the property owner and was able to determine a general location. According to the area indicated by Dr. Fair, the reported burial ground is outside of the current study area.

The written comments included:

From Agencies:

1. **Oklahoma State Department of Commerce:** The Oklahoma State Energy Office has no comments on any potential social, environmental, or economic impacts with this action.
2. **Oklahoma Conservation Commission:** Partially hydric soils are indicated on the soil survey map through several small areas. Wetlands are not indicated within the study area. However, streams do occur within the study area and riparian areas have the potential to contain wetland ecosystems.

   One flood control structure is located in the northwest quarter of Section 6, T5N R8W. This structure appears to be bisected by the study area but outside of any of the proposed alternatives. Any disturbance that could compromise the integrity of this structure should be avoided.

   It appears Alternative 4 would be least likely to impact wetland areas and would have the least impact on stream crossings.

   The OCC has several general concerns:

   - Disturbance and siltation of riparian areas – recommend that disturbance be reduced and that erosion and sediment control plans are sufficient to minimize sedimentation impacts from construction activities outside the stream channel.
   - Disturbance in streams, whether for construction or “redesigning” the channels – recommend these be minimized and that if redesign is necessary that natural designs be used to reshape/stabilize streams. If this method cannot be used, recommend that permanent mitigation be implemented possibly through a conservation easement.
   - Reduction of stream cross-sections and reduced drainage capacity – recommend use of sufficient cross-sectional drainage area to allow for maximum periodic flood drainage.

Following the project, streams should remain free-flowing with naturally vegetated stable banks and with substrate free of excess sedimentation.

3. **Natural Resources Conservation Service:** NRCS has performed a preliminary review of the impacts to prime farmlands by the alternatives shown on the exhibit. This review indicates the following impacts:
    - Alternative 2A: 3 acres prime farmland (31% of site)
    - Alternative 4: 5.1 acres prime farmland (9% of site)
    - Alternative 6: 2.4 acres prime farmland (7% of site)

    Once an alternative is chosen NRCS will prepare more accurate values in terms of prime farmland conversion and complete their portion of the AD-1006 form.

4. **Oklahoma Water Resources Board:** The OWRB recommends coordination with the local floodplain administrator regarding permitting requirements for this project. If any development occurs on state owned or operated property, a floodplain development permit would be required from OWRB.

5. **Bureau of Indian Affairs**: The BIA has reviewed their maps of the study area which indicate tribal or individual Indian trust lands within the project area. The BIA has jurisdiction over these areas. The Southern Plains Regional Office requests additional coordination as the project progresses to mitigate any historic properties that may be present. A map of the trust lands was included with the letter. The BIA requests consultation with the Kiowa Tribe of Oklahoma, the Comanche Nation, the Apache Tribe of Oklahoma, and the Wichita and Affiliated Tribes of Oklahoma to determine if the project has a potential to impact sites of importance in their respective histories or cultural traditions. Contact information for additional information was provided.

From the Public:

1. Alternate 4 would cut my property in half – this property has been in my family for generations and is important for sentimental reasons and not just financial. Please don't choose Alternate 4.
2. Prefer Alternative 4. Hope the project will employ Americans (Oklahomans).
3. Could an exit be made at I-44 even if it was not cost efficient? The area is about halfway from Elgin to Chickasha and an exit would help truckers avoid the slow down around Chickasha.
4. Alternative 4 is the best choice – it avoids the dangerous curves and hills and is not much more expensive. Choose the safest option. Do everything you can to save lives.
5. Alternative 4 would divide our property, greatly reducing the value and hampering our cow/calf operation. Alternative 4 would put all of the working facilities on the north side and grazing land on both sides. We would need to build additional facilities or construct a

passageway for cattle. Neither seem economically feasible. Alternatives 2A and 6 would have no adverse effect.

6. The project is needed – I have lived in the area all my life and have lost many friends to this roadway.
7. Alternative 4 would be the simplest and easiest to maintain traffic during construction. It is the best for the community since it is straighter, impacts the fewest residences, has the lowest cost, and may be safest. However, this route crosses deep canyons and very difficult terrain. There are many canyons and timber.
8. I feel Alternative 4 is the best option, but it cuts our ranch in half. This will make moving cattle and horses more difficult as the alignments splits our winter and summer pastures.
9. Alternative 4 will disrupt our quiet, peaceful environment and will create more access points to our pastures. I spent my life building this property and Alternative 4 would change all that.
10. I favor the north offset on the East Project due to the least encroachment on homes, least right-of-way cost, and least environmental impacts.

Appendix A

Agency Solicitation List and Letter

J/P 20953(04) & J/P 20962(04) Caddo & Grady Cos. US-277 Agency Solicitation List

Rev. 3/14/2013

Title	First Name	Last Name	Job Title	Agency	Street	City	State	Zip
Mr.	Richard	Fields	Assistant Field Office Manager - Multi Resources Oklahoma Field Off	Bureau of Land Management	7906 E. 33rd Street, Suite 101	Tulsa	Oklahoma	74145-1352
Mr.	Gary D.	Corino	Division Administrator	Federal Highway Administration	5801 N. Broadway Extension, Suite 300	Oklahoma City	Oklahoma	73118
Mr.	Andrew	Comer	Regulatory Branch Chief (Attn: Environmental Analysis Section)	Tulsa District Corps of Engineers	1645 S. 101 E. Avenue	Tulsa	Oklahoma	74128-4629
Colonel	Anthony	Funkhouser	District Engineer	Tulsa District Corps of Engineers	1645 S. 101 E. Avenue	Tulsa	Oklahoma	74128-4629
Mr.	Steve	Nolen	Planning & Environmental (PER) Division	Tulsa District Corps of Engineers	1645 S. 101 E. Avenue	Tulsa	Oklahoma	74128-4629
Mr.	Dan	Deerinwater	Director, Southern Plains Regional Office	Bureau of Indian Affairs	WCD Office Complex, P.O. Box 368	Anadarko	Oklahoma	73005
Ms.	Dixie	Bounds	Field Supervisor (ES)	U.S. Fish & Wildlife Service	9014 East 21st Street	Tulsa	Oklahoma	74129-1428
Mr.	Ron L.	Hilliard	State Conservationist	Natural Resources Conservation Service	100 USDA, Suite 206	Stillwater	Oklahoma	74074-2655
Mr.	Jerry	Hayden	Field Office Director	U.S. Housing & Urban Development	301 W. 6th Street, Suite 200	Oklahoma City	Oklahoma	73102
			Environmental Review Coordinator	DEQ Customer Assistance Program	P.O. Box 1677	Oklahoma City	Oklahoma	73101-1677
Ms.	Carolyn	Sullivan	Energy Program Manager	Oklahoma Department of Commerce	P.O. Box 26980, 900 North Stiles	Oklahoma City	Oklahoma	73104
Mr.	Richard	Hatcher	Director	Department of Wildlife Conservation	1801 North Lincoln Blvd., P.O. Box 53465	Oklahoma City	Oklahoma	73152-8804
Mr.	Mike	Thralls	Executive Director	Oklahoma Conservation Commission	2800 North Lincoln Blvd., Ste. 160	Oklahoma City	Oklahoma	73105
Commissioner	Jim	Reese	Secretary of Agriculture	Department of Agriculture	2800 N. Lincoln Blvd., P.O. Box 54298	Oklahoma City	Oklahoma	73105-4298
Mr.	J.D.	Strong		Oklahoma Water Resources Board	3800 North Classen	Oklahoma City	Oklahoma	73118
Dr.	G. Randy	Keller	Director	Oklahoma Geological Survey	100 East Boyd, Room N-131	Norman	Oklahoma	73019-0628
Dr.	Robert L.	Brooks	State Archaeologist	Oklahoma Archaeological Survey	111 East Chesapeake, Building 134	Norman	Oklahoma	73019-5111
Ms.	Janet	Barresi	State Superintendent	State Department of Education	2500 North Lincoln Blvd., Rm. 121	Oklahoma City	Oklahoma	73105-4599
Mr.	Blaine H.	Smith, Jr.	Executive Director	Association of South Central OK Governments	802 Main Street, P.O. Box 1647	Duncan	Oklahoma	73534-1647
Chairman	Donald, Jr.	Cabaniss		APACHE TRIBE	P.O. Box 1330	Anadarko	Oklahoma	73005
Chairman	Wallace	Coffey		COMANCHE NATION	P.O. Box 908	Lawton	Oklahoma	73502
Chairperson	Jeff	Houser		FORT SILL APACHE TRIBE	Route 2, Box 121	Apache	Oklahoma	73006
Chairman	Ron	Two Hatchet		KIOWA TRIBE	P.O. Box 369	Carnegie	Oklahoma	73015
Commissioner	Bradley W.	Burgess		OK Transportation Commission	21 NW 44th Street, Suite 201	Lawton	Oklahoma	73505
Commissioner	Benny	Bowling		Caddo County	18042 County Road 1180	Binger	Oklahoma	73009
Commissioner	Randy	McLemore		Caddo County	Rt 1 Box 220D	Gracemont	Oklahoma	73042
Commissioner	Brent	Kinder		Caddo County	523 S. Ruth Drive	Carnegie	Oklahoma	73015
Commissioner	Windle	Hardy		Grady County	326 W. Choctaw	Chickasha	Oklahoma	73018
Commissioner	Michael	Lennier		Grady County	326 W. Choctaw	Chickasha	Oklahoma	73018
Commissioner	Jack	Porter		Grady County	326 W. Choctaw	Chickasha	Oklahoma	73018

Utility Owners

Rev. 3/14/2013

Mr.	Rick	Williamson	City of Cement - Water	Cement City Hall	411 N. Main St	Cement	OK	73005
Mr.	Donny	Cosby	Grady County RWD #7	P O Box 51		Ninnekah	OK	73067
Mr.	Tommy	Brown	ONG Transportation	5848 E. 15th Street		Tulsa	OK	74112
Mr.	Steve	Thompson	DCP Midstream	P. O. Box 590		Tuttle	OK	73089
Mr.	Brandon	Johnson	ONEOK Gas Transportation Company	100 W. 5th St.		Tulsa	OK	74103
Mr.	Paul	Henderson	ONEOK Field Services	P.O. Box 871		Tulsa	OK	74101
Mr.	Josh	Caldwell	ENOGEX	P. O. Box 24300		Oklahoma City	OK	73124-0300
Mr.	Jeff	Stovall	CenterPoint Energy Oklahoma Gas	109 NW 50th St.		Oklahoma City	OK	73118
Mr.	Daniel	So	Plains Pipeline	740306 S. 3510 Rd		Cushing	OK	74023
			Lumen Energy Corp.	4200 E. Skelly Drive		Tulsa	OK	74135
Mr.	Daryl	Williams	R. L. Bolin Properties	P.O. Box 91		Cement	OK	73005
Mr.	Richard	Forney	PSO Distribution	P.O. Box 201		Tulsa	OK	74001
Mr.	Mike	Treadwell	Rural Electric Cooperative, Inc	P.O. Box 609		Lindsay	OK	73052
Mr.	Oscar	Codopony	Caddo Electric Cooperative, Inc.	P.O. Box 70		Binger	OK	73009
Mr.	Woody	Hario	AT&T	7001 NW 23rd St.	Rm. 335	Bethany	OK	73008
Mr.	John	Striplin	Chesapeake Operating, Inc.	P.O. Box 18496		Oklahoma City	OK	73154-0491
Mr.	Rod	Smith	Citation Oil & Gas Corp.	3501 South Lakeside Drive		Oklahoma City	OK	73179
			Superior Oil & Gas, LLC	844 South Walbaum Road		Calumet	OK	73014-8528
			Cement Oil Company	3284 County Street		Cement	OK	73017
Mr.	Tim	Suttle	TEPPCO Crude Pipeline Company	210 Park Ave	Ste. #1600	Oklahoma City	OK	73102
			Marathon Oil	1516 Lera		Weatherford	OK	73096
			Ward Petroleum Corporation	502 S. Fillmore	P O Box 1187	Enid	OK	73702

Oil & Gas Operators

Rev. 3/14/2013

Mr.	Mike	Schulte	Stephens Production Company	623 Garrison Ave.		Fort Smith	AR	72902-2407
Ms.	Treva	Kigar	Marathon Oil Company	5555 San Felipe Rd.		Houston	TX	77253-3128
Mr.	Mike	Chambers	MAC Energy, LLC	3695 Merlin Ct.		Newcastle	OK	73065-1385
Mr.	Wayne	McPherson	Liberty Operating, Inc.	1827 Atchison Dr.		Norman	OK	73069-8225
Mr.	Stacy	Phillips	Superior Oil & Gas, LLC	RR 2 Box 61		Ringwood	OK	73768-9717
Mr.	Jim	Johnson	Johnson E Lyle	7100 NW 63rd St., Suite 1703		Bethany	OK	73008-5008
Mr.	Gary	Hatchell	Bolin R L Properties LP	4245 Kemp Blvd, Suite 316		Wichita Falls	TX	76308-2829
Ms.	Candy	Knight	Cemoil, Inc.	2931 County Rd 2773		Chickasha	OK	73018
Ms.	Becky	Sanner	Jones L E Operating, Inc.	15 S. 10th St.		Duncan	OK	73534-1185
Mr.	Dexter	Holleyman	Crown Energy Company	333 N. Portland Ave.		Oklahoma City	OK	73107-6107
Mr.	J. E.	Epperson	Ouachita Exploration, Inc.	402 W. Chickasha Ave.		Chickasha	OK	73023-0926
Ms.	Laurie	Kilbridge	Exxon Mobile Oil Corporation	14950 Heathrow Forest Pkwy		Houston	TX	77210-4358
Mr.	Mike	McCaughtry	Jac-Mac Energy Corporation	1301 SW 116th Pl.		Oklahoma City	OK	73170-2612
Ms.	Jeanette	Simmons	T-D Oil, Inc.	14414 CR 2730		Cement	OK	73017-0065
Mr.	Bary	Hilty	Caddo-Marchand, LLC	12221 Merit Dr., Suite 930		Dallas	TX	75251-2202
Ms.	Genea	Holloway	Cimarex Energy Company of Colorado	15 E. 5th St., Suite 1000		Tulsa	OK	74103-4311
Ms.	Annabel	Jones	Samson Resources Company	2 W. 2nd St, Suite 1500		Tulsa	OK	74103-3103
Mr.	Cliff	Marshall	CFC Oil, Inc.	RR 1 Box 32A		Cyril	OK	73029-9704
Mr.	Ken	Kinnear	Kaiser Francis Oil Company	PO Box 21468		Tulsa	OK	74121-1468
Mr.	Jerry	Ray	Dead Horse Oil & Gas, LLC	4455 Hobby Horse Ln.		Skiatook	OK	74070-9343
Mr.	William	Ward	Ward Petroleum Corporation	PO Box 1187		Enid	OK	73702-1187
Mr.	Jeff	Dillard	Cobra Oil & Gas Corporation	PO Box 8206		Wichita Falls	TX	76307-8206

Title	First Name	Last Name	Job Title	Agency	Street	City	State	Zip
Ms.	Laura	Hanson	BTA Oil Producers, LLC	104 S. Pecos St.		Midland	TX	79701-5099
Mr.	J.R.	Sorrels	Cheyenne Oil Properties, inc.	107 N. 4th St., Suite 209		Ponca City	OK	74601-4529
Mr.	John	Donnellan	Kechi Energy, LLC	PO Box 1433		Chickasha	OK	73023-1433
			Enogex Gathering & Processing, LLC	PO Box 24300		Oklahoma City	OK	73124-0300
			Jennings Hallett Gas Auth. Co.	1400 S. Boston, Suite 680		Tulsa	OK	74119
Ms.	Donna	Williams	Conoco Phillips Company	PO Box 51810		Midland	TX	79710-1810

OKLAHOMA DEPARTMENT OF TRANSPORTATION
200 N. E. 21st Street
Oklahoma City, OK 73105-3204

March 12, 2013

Jennings Hallett Gas Auth. Co.
1400 S. Boston Avenue, Suite 680
Tulsa, OK 74119

RE: Solicitation for input for US-277 from Cement to I-44 in Caddo and Grady Counties, Oklahoma

Dear Mr. Sir/Madam:

The Oklahoma Department of Transportation (ODOT), in cooperation with the Federal Highway Administration (FHWA) is proposing to improve US-277 from the east edge of Cement in Caddo County to I-44 in Grady County. Existing US-277 is a major truck route but has several sharp curves and rolling terrain which results in inadequate sight distance to safely stop vehicles for turning or stopped vehicles or to pass slow moving vehicles. These factors contribute to a substantial accident history.

ODOT has recently tasked a Consultant to look at alternatives for improving the highway while taking into consideration construction costs, right-of-way costs and environmental constraints. The Consultant looked at six alternatives for the west segment from Cement to Middle Bills Creek in Caddo County and two alternatives for the segment from Middle Bills Creek to I-44 in Grady County. The west segment alternatives were narrowed down to three alternatives after further analysis. Please see the enclosed figures which depict the areas associated with the improvements to US-277 and the alternatives being considered.

The project is currently programmed for construction in FY 2016 in the current Statewide Transportation Improvement Program (STIP), FY 2013-2016. A public meeting to present initial project information and receive public input will be held at 6:00 PM on March 28, 2013 at the Cement High School Auditorium, 201 S. Main Street in Cement, OK 73017. The purpose of the meeting is to aid ODOT in selecting a preferred alternative to move forward with design and construction.

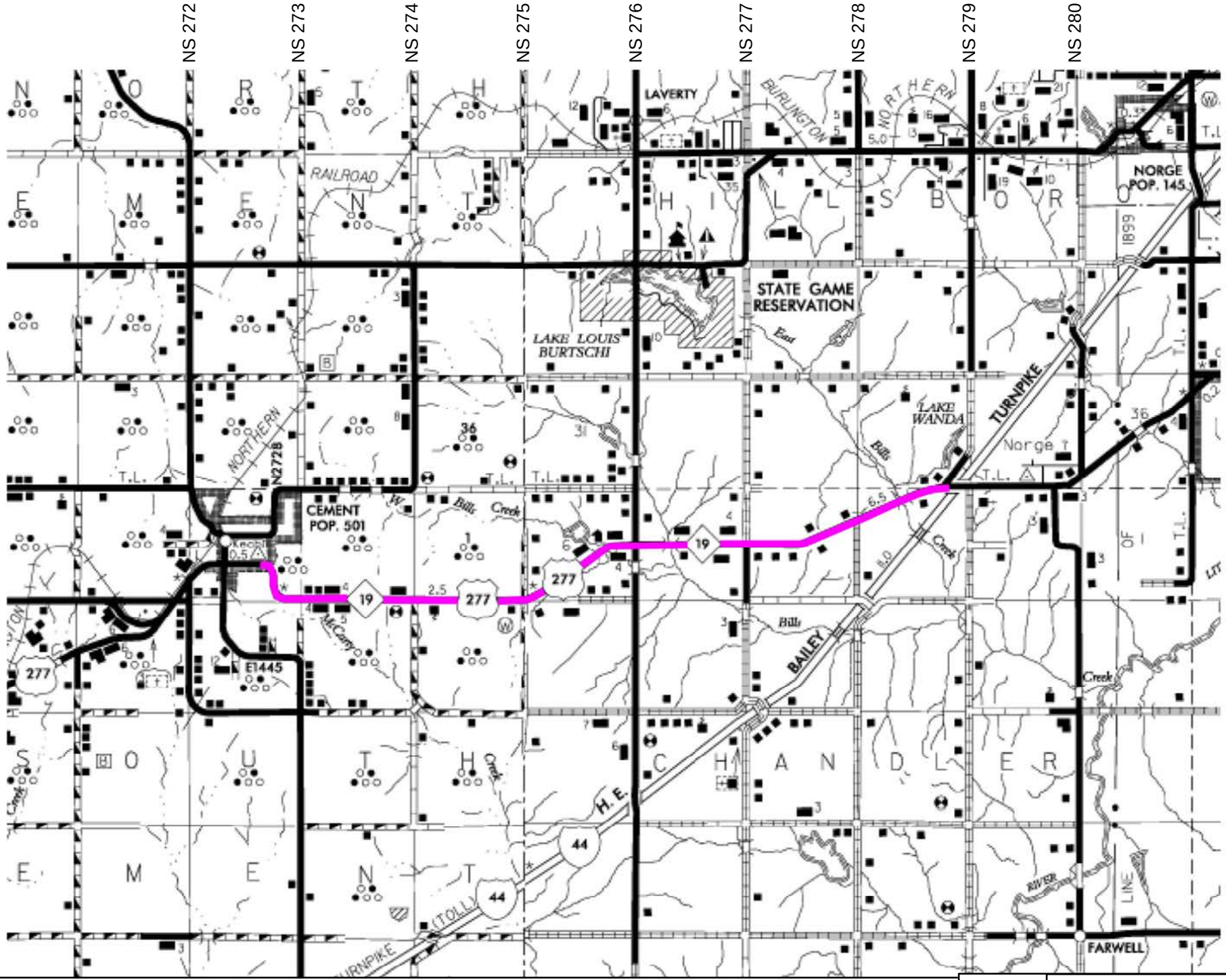
This project is in the early developmental stages and any comments relative to the social, economic, or environmental effects of this proposal will be appreciated. To allow adequate time for evaluation of your comments, we would appreciate receiving a response by April 12, 2013. Your written comments should be directed to the Environmental Programs Division Engineer, Oklahoma Department of Transportation, 200 NE 21st Street, Oklahoma City, Oklahoma 73105.

We sincerely appreciate your cooperation in this matter. ODOT has contracted with Garver on this project. For further information or if you have any questions, please contact any of the following:
Brent Schniers, Project Manager, Garver (918) 250-5922, bsschniers@garverusa.com
Greg Worrell, Environmental Project Manager, ODOT (405) 522-8014, gworrell@odot.org

Sincerely,

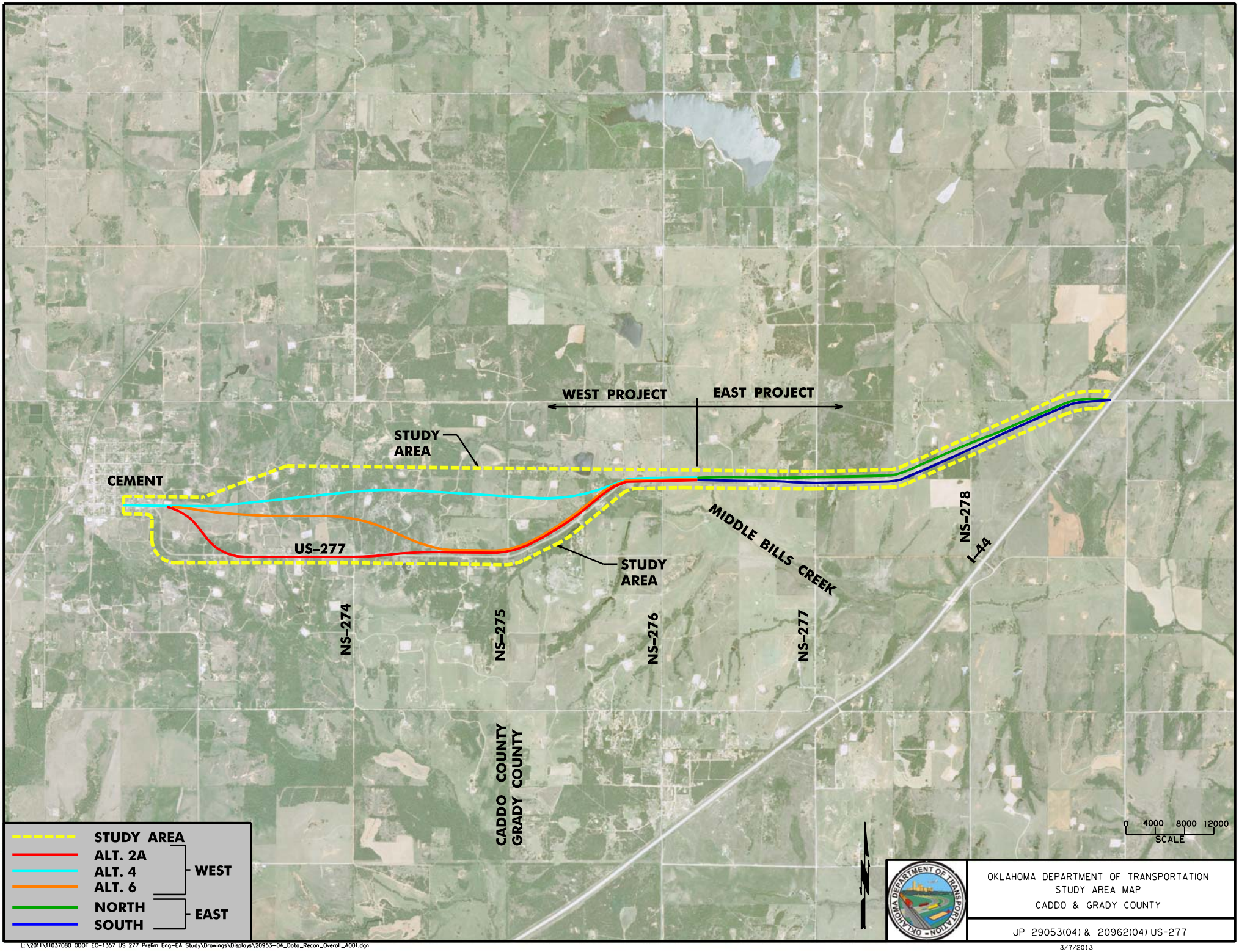
for Dawn R. Sullivan, P.E.
Environmental Programs Division Engineer

DRS:GW:Garver
Enclosures: Project Location Map
Project Study Area and Alignment Alternatives



Oklahoma Department of Transportation
Project Location Map
Caddo & Grady Counties

JP 20953(04) & 20962(04) US-277


WEST PROJECT
EAST PROJECT
STUDY AREA
CEMENT
US-277
STUDY AREA
MIDDLE BILLS CREEK
NS-278
I-44
NS-274
NS-275
NS-276
NS-277
CADDO COUNTY
GRADY COUNTY
STUDY AREA
ALT. 2A
ALT. 4
ALT. 6
WEST
NORTH
SOUTH
EAST
0 4000 8000 12000
SCALE
OKLAHOMA DEPARTMENT OF TRANSPORTATION
STUDY AREA MAP
CADDO & GRADY COUNTY
JP 29053(04) & 20962(04) US-277
3/7/2013
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Appendix B

Postcard and Mailing List

J/P 20953(04) & J/P 20962(04) Caddo & Grady Cos. US-277 Postcard Mailing List

Rev. 3/14/2013

FIRSTNAME	LASTNAME	BUSINESS NAME	ADDRESS	ADDRESS2	CITY	STATE	ZIP
Michelle Ra-Ann	Allen		20521 98TH Ave Ct E		Graham	WA	98338-0000
Resident			102 NE Ave		Cement	OK	73017
Ivy & Elanor	Amaon	Amaon Trust	12861 Corbett Ct		San Diego	CA	92130-0000
L S & Frankie	Baxter		PO Box 163		Cement	OK	73017-0000
L S & Frankie	Baxter		108 SE E		Cement	OK	73017
Marilyn	Bernard	Marilyn R Bernard Revocable Trust	330 Morgan Street	Unit 203	New Orleans	LA	70114-0
Kenneth & Angela	Bivens		719 W Rollingwood St		Pinehurst	TX	77362-3517
Resident			112 SE E		Cement	OK	73017
Resident			110 SE E		Cement	OK	73017
Gerald & Joni	Blakley		903 N.H. Street		Cement	OK	73017-0000
Resident			112 S G		Cement	OK	73017
James & James Brian	Botts	C/O Elizabeth Botts	PO Box 648		Cyril	OK	73029-0000
Julie & David W	Bowlin	C/O Jennifer Bowlin	RT 1 Box 1340		Cement	OK	73017-0000
Lee R & Margaret	Brandon		PO Box 295		Cement	OK	73017-0000
Jeffery & Candance	Briscoe		PO Box 161		Cement	OK	73017-0000
Eugene R	Brooks		PO Box 376		Cement	OK	73018-0000
B Gail	Buckmater		5803 Russel Rd		Durham	NC	27712-1945
Bobby L. & Tena M.	Buffington		272 US Highway 277		Cement	OK	73017-0000
David O. & et al.	Burns		RT 1 Box 80A		Cyril	OK	73029-0000
Charles E.& Angela D.	Burruss		201 St. James Place		Chickasha	OK	73108-0000
Thelma D.	Ball		201 St. James Place		Chickasha	OK	73108-0000
Mike	Cates		PO Box 301		Cement	OK	73017-0000
Betty Jo	Chambers		PO Box 31		Cement	OK	73017-0000
Resident			104 NE E		Cement	OK	73017-0000
Resident			106 NE F		Cement	OK	73017-0000
Francis & Linda	Chapman		153 US Hwy 277		Cement	OK	73017
Resident			150 County Road 1440		Cement	OK	73017-0000
Damon Scott & Pamela	Charlson		PO Box 1832		Chickasha	OK	73023-0000
Annetta	Charlson		PO Box 1832		Chickasha	OK	73023-0000
Resident			102 N G		Cement	OK	73017
Church of Christ			PO Box 282		Cement	OK	73017-0000
Resident			102 N F		Cement	OK	73017
Church of Christ			PO Box 282		Cement	OK	73017-0000
Resident			601 NE 1st		Cement	OK	73017
Charles	Clark		RT 1 Box 995		Cement	OK	73017-0000
Arthur Houston	Cogburn		RT 1 Box 1688 A		Cement	OK	73017-0000
Houston & Arda	Cogburn		RT 1 Box 1688 A		Cement	OK	73017-0000
Resident			104 SE 1st		Cement	OK	73017
Leon & Juanita	Cogburn		PO Box 283		Cement	OK	73017-0000
		D.B. Land Company	PO Box 55		Cement	OK	73017-0000
Jerry L. & Wanda J.	Dallas		RT 1 Box 1370		Cement	OK	73017-0000
Danny & Leah	Davidson		8822 N. Memorial		Owasso	OK	74055-0000

George A. & Delores J.	Davidson		3143 County Street 2750		Cement	OK	73017-0000
Dale L. & Donna L.	Dekinder		PO Box 1229		Chickasha	OK	73023-0000
Dwayne & Jeanette	Doss		406 County Road 1440		Cement	OK	73017-9235
Joyce Larue	Dowd	Trustee	1207 Steele		Scott City	KS	67871-0000
		Glen Williams Ennens Trust	8565 Trinity Cr	Unit 822B	Huntington Beach	CA	92646-0000
		Federal Nat'l Mort Assoc. Nationstar	350 Highland Dr		Lewisville	TX	75067-0000
Resident			147 County Road 1440		Cement	OK	73017-0000
Resident			102 SE E		Cement	OK	73017-0000
Samuel Lee	Fike		PO Box 532		Cement	OK	73017-0000
Paul M .	Fondren		PO Box 746		Crescent	OK	73072-0000
Larry Dean & Shirley	Ford		8121 Turtle Dove Dr.		Oklahoma City	OK	73132-0000
Troy M.	Ford		3098 County Street 2770		Cement	OK	73017-9231
Opal	Galle Estate	C/O Gilbert E Galle	PO Box 21617		Charleston	SC	29413-1617
Joseph M.	Garis		292 US Highway 277		Cement	OK	73017-9230
		Garrett & Co (A Gen Part)	9701 N Broadway Ext		Oklahoma City	OK	73114-0000
Linda D. (Ross)	Gilleland		PO Box 496		Cement	OK	73017-0000
Resident			109 NE F		Cement	OK	73017-0000
Karen J. & Danny	Glass		154 County Road 1440		Cement	OK	73017-0000
Jessie A & Stephanie A.	Gonzales		PO Box 431		Cement	OK	73017-0000
Resident			160 US Highway 277		Cement	OK	73017-0000
Michael & Rosa Lee	Halcomb		268 US Hwy 277		Cement	OK	73017-0000
Barry W. & Cynthia S.	Hall		101 US Highway 277		Cement	OK	73017-0000
Dock B. & Norma	Haney		PO Box 208		Cement	OK	73017-0000
Dock B. & Ollie	Haney		PO Box 208		Cement	OK	73017-0000
Mathieu & Ashley	Haney		RT 1 Box 1337		Cement	OK	73017-0000
Mark & Donna	Hargus		PO Box 115		Cement	OK	73017-0000
Weston M. & Kalie	Hargus		29116 State Highway 19		Cement	OK	73017-0000
Billy & Melva	Harris		2919 County Street 2773		Chickasha	OK	73018-0000
Resident			412 E 2nd		Cement	OK	73017
Billy L	Holmes		PO Box 32		Cement	OK	73017-0000
Resident			105 NE E		Cement	OK	73017-0000
Evalee F.	Houtz		147 County Road 1430		Cement	OK	73017-9231
Jani Lynn	Houtz		113 County Road 1430		Cement	OK	73017-0000
Warren	Hughes	C/O Leroy Hughes	18133 Sycamore Ave		Hesperia	CA	92345-0000
Eugene	Hulsey	Nicole Mar (F/D)	PO Box 395		Cement	OK	73017-0000
Resident			104 NE Ave		Cement	OK	73017-0000
Gayla S.	Hunter		PO Box 622		Cement	OK	73017-0622
Resident			402 NE 1st		Cement	OK	73017
Lenora	Hussey		2723 Valley View Dr.	Apt # 1	Chickasha	OK	73018-0000
Annette	Jackson		PO Box 333		Cyril	OK	73029-0000
Resident			112 NE E		Cement	OK	73017
Larry A. & Tracy	Jackson		364 CR 4856		Newark	TX	76071-0000
Wanda Gayetta	Johnson	C/O Deedra Johnson	PO BOX 1154		Chickasha	OK	73023-0000
Kurt	Kinder		PO Box 41		Cement	OK	73017-0000
Resident			112 F		Cement	OK	73017

Harold E. & Rose M.	Koehler		PO Box 532	Cement	OK	73017-0053
Resident			501 E 1st	Cement	OK	73017
Alice L	Ladymon		PO Box 66	Cement	OK	73017-0000
Earl & Sharon L	Livingston	Livingston Family Rev. Trust	PO Box 48	Ninnekah	OK	73067-0000
Clifford & Ladonna	Marshall		RT 1 Box 32-A	Cyril	OK	73017-0000
Raymond & Debi	McPherson		PO Box 117	Cement	OK	73017-0000
Resident			100 NE 1st	Cement	OK	73017
Raymond & Debi	McPherson		PO Box 117	Cement	OK	73017-0000
Mary K	Mehler		10313 Parker Rd	Marlow	OK	73055-0000
Michael & Beverly	Montgomery		3284 County St 2770	Cement	OK	73017-0000
Jody	Nix		PO Box 345	Cement	OK	73017-0000
Resident			110 F	Cement	OK	73017
AJ & Mary	Nowlin		2450 Hand Rd	Midwest City	OK	73130-8024
Resident			311 E 1St	Cement	OK	73017
Resident			100 NE E	Cement	OK	73017
Raymond Earl	Parks		PO Box 73	Cement	OK	73017-0000
Jose	Paukume					
C E & Gracie	Powell		PO Box 391	Cement	OK	73017
Roy Emmett	Powell		PO Box 391	Cement	OK	73017
John Ray	Pyzner		230 N Main Street	Ada	OK	74820
G H & Juanita M	Ray		924 S 12th	Chickasha	OK	73018-0000
		Red Sky LLC	RT 4 Box 105	Anadarko	OK	73005-0000
Resident			411 NE 1st	Cement	OK	73017
Victor & Tamie	Remy		PO Box 386	Cement	OK	73017-0000
Resident			113 NE E	Cement	OK	73017
Agnes Rider	Rieck	C/O Adonna Bridges	PO Box 875	Fletcher	OK	73541-0000
Richard D. & Elizabeth	Riley		PO Box 503	Cement	OK	73017-0000
Ronald & Debra	Roberts		PO Box 281	Cement	OK	73017-0000
Linda Darline	Ross		PO Box 496	Cement	OK	73017-0000
Resident			305 NE F	Cement	OK	73017
Linda Darline	Ross		PO Box 496	Cement	OK	73017-0000
Bobby E. & Nancy G.	Ryans		331 US Highway 277	Cement	OK	73017-0000
David & Lori	Salyer		30146 State Highway 19	Cement	OK	73017-0000
Freeman	Salyer		505 N 1st St	Cyril	OK	73029-9794
Melford L. & Margaret L.	Scott	Revocable Trust	271 US Hwy 277	Cement	OK	73017-0000
Robert & Chalene	Self		PO Box 411	Cement	OK	73017-0000
Bobby R. & Rita	Shepard		RT 1 Box 1350	Cement	OK	73017-0000
T.B. & Rena I.	Simmons		RT 1 Box 1300	Cement	OK	73017-0000
Harry E. & Peggy M.	Sites		3130 County Street 2770	Cement	OK	73017-0000
Omar Allen & Carol Forrest	Sites		124 Ruskin Pl	Chickasha	OK	73018-7732
Lawrence Dwain & Harriet J	Smiley		172 US Hwy 277	Cement	OK	73017-0000
Michael & Lavonna	Smith		141 County Road 1440	Cement	OK	73017-0000
Pauline	Smith		RT 1 Box 13565	Cement	OK	73017-0000
Marvin & Sandra G	Snider		RT 1 Box 167	Cyril	OK	73029-0000
Rusty Joe	Snider		Rt 1 Box 237	Cement	OK	73017-0000

Jason	Stamper		169 US Hwy 277	Cement	OK	73017-0000
Eleanor B	Stephens		PO Box 15	Peirce City	MO	65723-0000
Elaine	Surbeck		4561 West Flint	Chandler	AZ	85226-0000
Henry W.	Surbeck		2212 Alder St NE	Tacoma	WA	98422-0000
Gary	Thoma		1906 Louisana	Chickasha	OK	73018-0000
Jack Curtis & Bette Jeanne	Thomas		3094 County Street 2790	Cement	OK	73017-0000
		Trace Ranch LP	2931 County Street 2773	Chickasha	OK	73018-0000
Keith, Kent, Kevin, Karl & Kr	Veldhuizen		917 SW 36th Street	Lawton	OK	73505-0000
Larry & Carla	Wasson		119 Farris Pl	Chickasha	OK	73018-0000
Oneta J	West		PO Box 111	Cement	OK	73017-0000
Resident			105 NE E	Cement	OK	73017
Ed	White		PO Box 561	Cement	OK	73017-0000
Resident			105 S F	Cement	OK	73017
Edward	White	C/O Doris Potter	PO Box 561	Cement	OK	73017-0000
James E	White		PO Box 561	Cement	OK	73017-0000
James Edward	White		PO Box 61	Cement	OK	73017-0000
Resident			110 NE F	Cement	OK	73017
Carl G & Mary E	Whitt		PO Box 387	Cement	OK	73017-0000
Susan	Wigley	C/O Beulah Roberts Reece	1714 21st St	Chickasha	OK	73018-5225
Marvin D. & Nora J.	Wilkinson		291 US Highway 277	Cement	OK	73017-0000
Bobby	Wilkinson		PO Box 1	Cement	OK	73017-0000
Resident			105 South G	Cement	OK	73017
Donald	Wilkinson		PO Box 336	Cement	OK	73017-0000
Zane	Wilkinson		317 US Hwy 277	Cement	OK	73017-0000
Pamela Ann	Worbes		PO Box 85	Cement	OK	73017-0000
Resident			100 NE E	Cement	OK	73017
Linda S	Youngblood		PO Box 374	Cement	OK	73017-0000
Resident			108 F	Cement	OK	73017
Robert & Donna	Youngblood		PO Box 574	Cement	OK	73017-0000
Resident			106 F	Cement	OK	73017

OKLAHOMA DEPARTMENT OF TRANSPORTATION
Planning & Research Div.
200 N.E. 21st St.,
Oklahoma City, OK 73105

UNITED STATES POSTAGE
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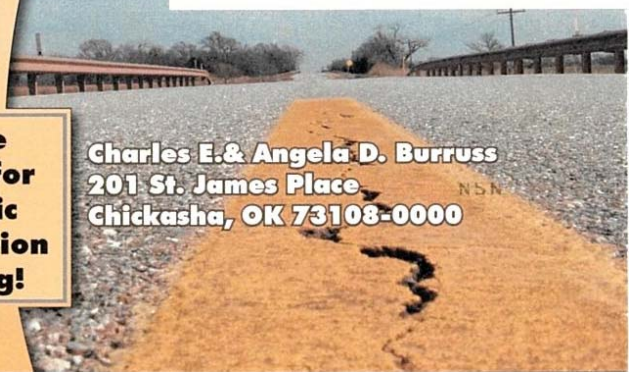


Please join us for a Public Information Meeting!

Charles E.& Angela D. Burruss
201 St. James Place
Chickasha, OK 73108-0000
NSN

NOTICE OF PUBLIC MEETING

PLEASE TELL YOUR FRIENDS & NEIGHBORS

The Oklahoma Department of Transportation (ODOT), in cooperation with the Federal Highway Administration (FHWA) proposes to improve US-277 from the east edge of Cement in Caddo County to I-44 in Grady County. US-277 is a major truck route with several sharp curves and rolling terrain which results in inadequate sight distance to safely stop vehicles for turning or stopped vehicles or pass slow moving vehicles. These factors contribute to a substantial accident history.

As part of our efforts to keep the public informed of this project and involved in the decision process, ODOT has scheduled a public meeting. The meeting will include a presentation/open house about the proposed improvements to US-277 including why the improvements are needed, the type of improvements proposed, and the expected impacts to motorists and the surrounding community. The purpose of this meeting is to present these alternatives to the public and get input to aid ODOT in selecting a preferred alternative to move forward with the completion of the detailed environmental studies, design and construction.

The date, time, & location of the public meeting is below:

DATE:	March 28, 2013
TIME:	6:00 PM
PLACE:	Cement High School Auditorium 201 S. Main Street Cement, Oklahoma

Additional information about the project and the upcoming meeting can be obtained from the following:

Greg Worrell, ODOT Environmental Project Manager
(405) 522-8014 or ***gworrell@odot.org***
or
Brent Schniers, Project Manager, Garver
(918) 250-5922 or BSSchniers@GarverUSA.com

If you require special accommodations for the meeting, please direct your request to the following at least three (3) working days in advance of the meeting date:

Frank Roesler, III, ODOT Public Involvement Specialist
(405) 521-2350 or ***froesler@odot.org***

WE LOOK FORWARD TO SEEING YOU THERE

Appendix C

Public Meeting List and Letter

J/P 20953(04) & J/P 20962(04) Caddo & Grady Cos. US-277 Public Meeting List

Rev.3/14/2013

Title	First Name	Last Name	Job Title	Agency	Street	City	State	Zip
Mr.	Mike	Patterson	Director	Oklahoma Department of Transportation	200 N.E. 21st Street	Oklahoma City	Oklahoma	73105
Mr.	Gary	Evans	Chief Engineer	Oklahoma Department of Transportation	200 N.E. 21st Street	Oklahoma City	Oklahoma	73105
Mr.	Tim	Gatz	Director of Administration	Oklahoma Department of Transportation	200 N.E. 21st Street	Oklahoma City	Oklahoma	73105
Mr.	David	Streb	Director of Engineering	Oklahoma Department of Transportation	200 N.E. 21st Street	Oklahoma City	Oklahoma	73105
Mr.	Cassey	Shell	Director of Operations	Oklahoma Department of Transportation	200 N.E. 21st Street	Oklahoma City	Oklahoma	73105
Ms.	John	Bowman	Planning & Research Division Engineer	Oklahoma Department of Transportation	200 N.E. 21st Street	Oklahoma City	Oklahoma	73105
Mr.	Ray	Sanders	Project Management Division Manager	Oklahoma Department of Transportation	200 N.E. 21st Street	Oklahoma City	Oklahoma	73105
Mr.	Tim	Tegeler	Roadway Design Engineer	Oklahoma Department of Transportation	200 N.E. 21st Street	Oklahoma City	Oklahoma	73105
Ms.	Dawn	Sullivan	Environmental Programs Division Engineer	Oklahoma Department of Transportation	200 N.E. 21st Street	Oklahoma City	Oklahoma	73105
Mr.	Kurt	Harms	Chief of Right of Way	Oklahoma Department of Transportation	200 N.E. 21st Street	Oklahoma City	Oklahoma	73105
Mr.	Harold	Smart	Traffic Division Engineer	Oklahoma Department of Transportation	200 N.E. 21st Street	Oklahoma City	Oklahoma	73105
Mr.	Shannon	Sheffert	Local Government Division Engineer	Oklahoma Department of Transportation	200 N.E. 21st Street	Oklahoma City	Oklahoma	73105
Mr.	Larry	Reser	Chief of Survey	Oklahoma Department of Transportation	200 N.E. 21st Street	Oklahoma City	Oklahoma	73105
Mr.	Bob	Rusch	Bridge Division Engineer	Oklahoma Department of Transportation	200 N.E. 21st Street	Oklahoma City	Oklahoma	73105
Ms.	Terri	Angier	Chief of Media & Public Relations	Oklahoma Department of Transportation	200 N.E. 21st Street	Oklahoma City	Oklahoma	73105
Mr.	Bob	Rose	Division VII Engineer		P.O. Box 460	Duncan	Oklahoma	73534
Mr.	Gary	Corino	Division Administrator	Federal Highway Administration (FHWA)	5801 N Broadway Extension, Suite 300	Oklahoma City	Oklahoma	73118
Mr.	Bradley W.	Burgess	District VII	Oklahoma Transportation Commissioner	21 NW 44th Street, Suite 201	Lawton	Oklahoma	73505
Congressman	Frank	Lucas	U.S. House of Representatives	Oklahoma District 3	2311 Rayburn HOB	Washington	DC	20515
Congressman	Frank	Lucas	U.S. House of Representatives	Oklahoma District 3	10952 NW Expressway, Suite B	Yukon	Oklahoma	73099
Congressman	Tom	Cole	U.S. House of Representatives	Oklahoma District 4	2458 Rayburn HOB	Washington	DC	20515
Congressman	Tom	Cole	U.S. House of Representatives	Oklahoma District 4	711 SW D Avenue, Suite 201	Lawton	Oklahoma	73501
Senator	Tom	Ivester	State Senate	District 26	2300 N. Lincoln Blvd, Rm. 529A	Oklahoma City	Oklahoma	73105
Senator	Tom	Ivester	State Senate	District 26	PO Box 1950	Elk City	Oklahoma	73648
Senator	Ron	Justice	State Senate	District 23	2300 N. Lincoln Blvd., Rm 423	Oklahoma City	Oklahoma	73105
Senator	Ron	Justice	State Senate	District 23	2209 County Street 2880	Chickasha	Oklahoma	73018
Representative	Scott	Biggs	State Representaive	District 51	2300 N. Lincoln Blvd., Rm 320	Oklahoma City	Oklahoma	73105
Representative	Joe	Dorman	State Representaive	District 65	2300 N. Lincoln Blvd., Rm 540	Oklahoma City	Oklahoma	73105
Representative	Joe	Dorman	State Representaive	District 65	PO Box 559	Rush Springs	Oklahoma	73082
Senator	Jim	Inhofe	U.S. Senate		205 Russell Senate Office Building	Washington	DC	20510-3603
Senator	Jim	Inhofe	U.S. Senate		1900 NW Expressway, Suite 1210	Oklahoma City	Oklahoma	73118
Senator	Tom	Coburn	U.S. Senate		172 Russell Senate Office Building	Washington	DC	20510
Senator	Tom	Coburn	U.S. Senate		100 North Broadway, Suite 1820	Oklahoma City	Oklahoma	73102
Mr.	Blaine H.	Smith, Jr.	Executive Director	Association of South Central OK Governments	802 Main Street, P.O. Box 1647	Duncan	Oklahoma	73534-1647
Vice Mayor	Kathy	Harris	Town of Cement		411 N. Main	Cement	Oklahoma	73017
Mr.	Bill	Pascoe	Superintendent	Cement Public Schools	201 S. Main	Cement	Oklahoma	73017
Mr.	Todd	Bunch	Superintendent	Ninnekah Public Schools	PO Box 275	Ninnekah	Oklahoma	73067
Mr.	Ted	Key	Fire Chief	Town of Cement	411 N. Main	Cement	Oklahoma	73017
Mr.	Everett	Hart	Chief of Police	Town of Cement	411 N. Main	Cement	Oklahoma	73017
Mr.	Gene	Cain	Sheriff	Caddo County	102 Southwest Oklahoma	Anadarko	Oklahoma	73005
Mr.	Larry	McDuffey	Emergency Management Director	Caddo County	102 Southwest Oklahoma	Anadarko	Oklahoma	73005
Mr.	Art	Kell	Sheriff	Grady County	326 W. Choctaw	Chickasha	Oklahoma	73018
Mr.	Dale	Thompson	Emergency Management Director	Grady County	326 W. Choctaw	Chickasha	Oklahoma	73018
			Administrator	Southern Plains Medical Center	PO Box 1069	Chickasha	Oklahoma	73023
Mr.	Doug	Riebel	Chairman of the Board	Oklahoma Turnpike Authority	4401 W. Memorial Rd., Suite 130	Oklahoma City	Oklahoma	73134
Mr.	Tim	Stewart	Deputy Director	Oklahoma Turnpike Authority	3500 Martin Luther King Avenue	Oklahoma City	Oklahoma	73136
Mr.	Jack	Damrill		Oklahoma Turnpike Authority	3500 Martin Luther King Avenue	Oklahoma City	Oklahoma	73136

OKLAHOMA DEPARTMENT OF TRANSPORTATION
200 N. E. 21st Street
Oklahoma City, OK 73105-3204

March 12, 2013

Mr. Gary Corino
Division Administrator
Federal Highway Administration
5801 N. Broadway Extension, Suite 300
Oklahoma City, OK 73118

RE: US-277 east of Cement, JP 20953(04) and JP 20962(04), Caddo and Grady Counties

Dear Mr. Corino:

The Oklahoma Department of Transportation (ODOT), in cooperation with the Federal Highway Administration (FHWA) is proposing to improve US-277 from the east edge of Cement in Caddo County to the I-44 Junction in Grady County. See enclosed figure of project area and location map. Existing US-277 is a major truck route but has several sharp curves and rolling terrain which results in inadequate sight distance to safely stop vehicles for turning or stopped vehicles or to pass slow moving vehicles. These factors contribute to a substantial accident history.

ODOT has recently tasked a Consultant to look at alternatives for improving the highway while taking into consideration construction costs, right-of-way costs and environmental constraints. A public meeting to present initial project information and receive public input will be held at 6:00 PM on March 28, 2013 at the Cement High School, 201 S. Main Street in Cement, OK 73017. The purpose of the meeting is to aid ODOT in selecting a preferred alternative to move forward with design and construction.

If you require special accommodations for the meeting, please direct your request to Frank Roesler, III, ODOT Public Involvement Specialist, at 200 NE 21st, Oklahoma City, OK 73105, (405) 521-2350 or froesler@odot.org at least three (3) working days in advance of the meeting date.

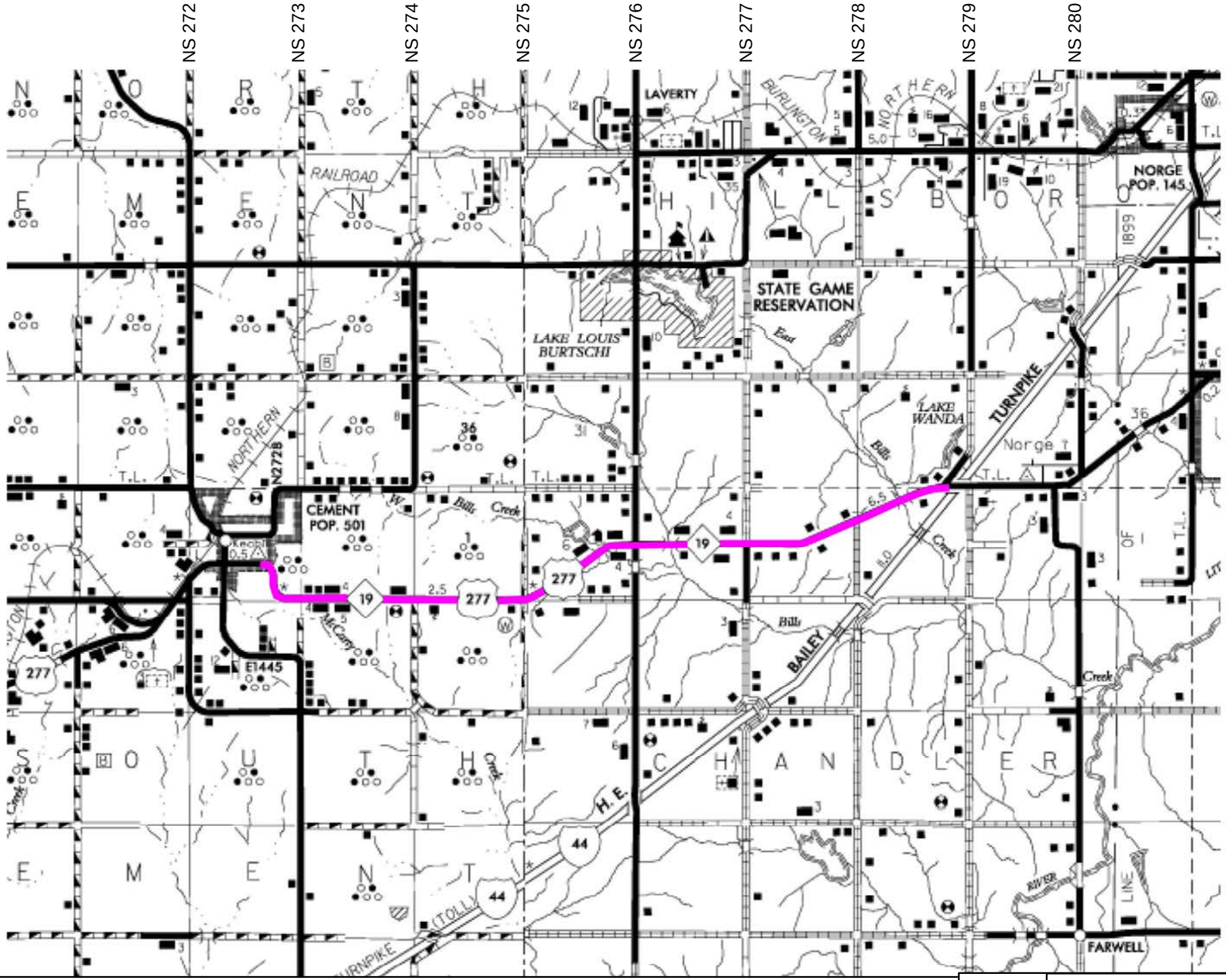
Should you have any questions regarding the project, please contact Brent Schniers, Garver, at (918) 250-5922 or bsschniers@garverusa.com, or Greg Worrell, ODOT Environmental Project Manager, at 200 NE 21st Street, Oklahoma City, OK, 73105, (405) 522-8014 or gworrell@odot.org.

Sincerely,

for Dawn R. Sullivan, P.E.
Environmental Programs Division Engineer

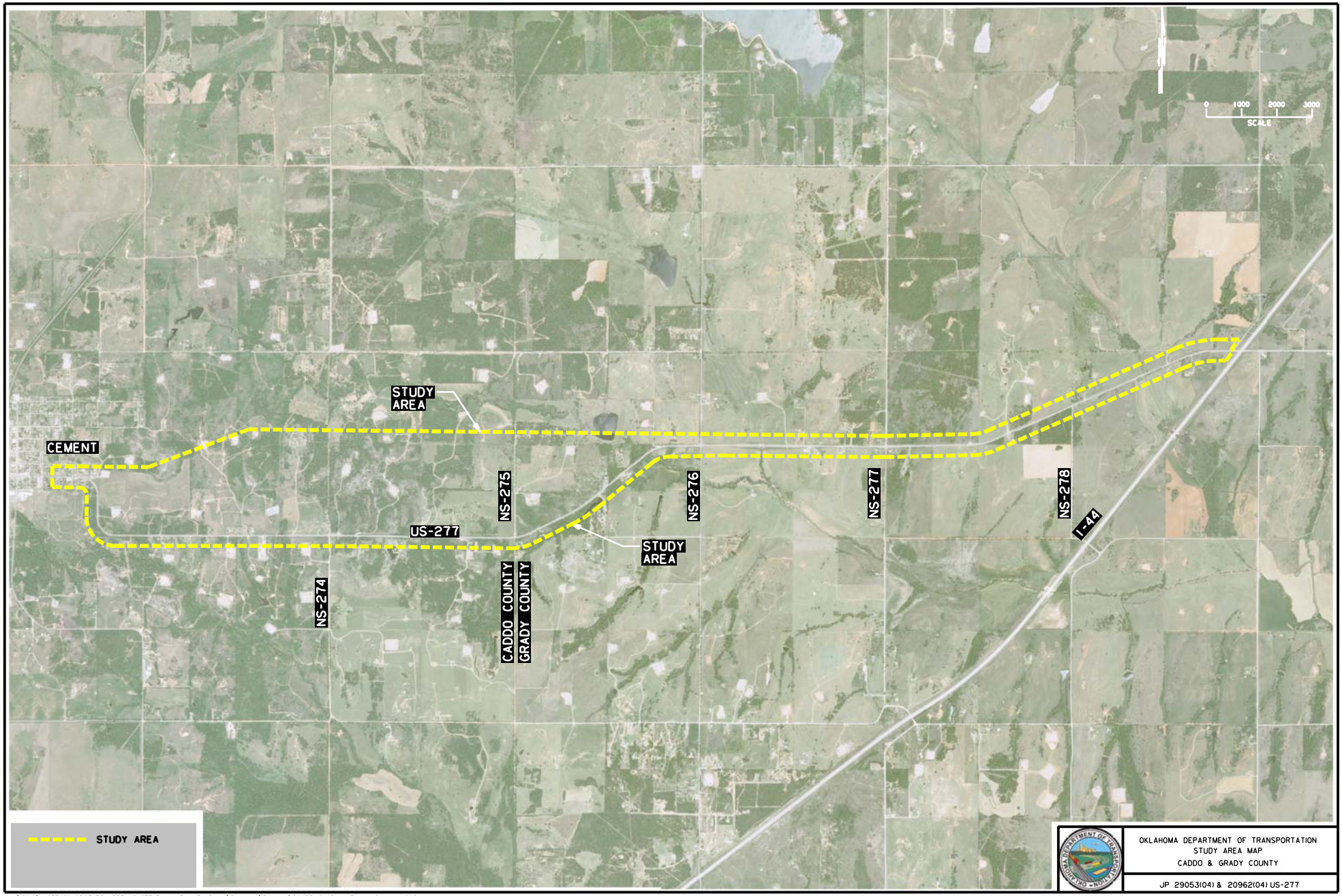
DRS: Garver: kmm

Enclosure: Project Study Area
Location Map



Oklahoma Department of Transportation
Project Location Map
Caddo & Grady Counties

JP 20953(04) & 20962(04) US-277



L:\2011\11037080 ODOT EC-1357 US 277 Prelim Eng-EA Study\Drawings\Displays\20953-04_Data_Recon_Overall_A002.dgn

2/21/2013

Appendix D

Attendance Roster

OKLAHOMA DEPARTMENT OF TRANSPORTATION

ATTENDANCE ROSTER

Thursday, March 28, 2013

PUBLIC INVOLVEMENT MEETING

US-277 East of Cement, OK

http://www.okladot.state.ok.us **Planning & Research Division - Program Coordination Branch**

(PLEASE PRINT CLEARLY)

	NAME & PHONE	ADDRESS	BUSINESS / ORGANIZATION	GENDER / RACE [OPTIONAL]		
☒ Mr. ☒ Ms. ☐ Mrs.	Danny & Karen Glass	[redacted]		☐ Male ☐ Female	☐ White ☐ Asian ☐ Native American	☐ Hispanic ☐ Black ☐ Other
☑ Mr. ☐ Ms. ☑ Mrs.	JT & Gere Downey	[redacted]		☑ Male ☐ Female	☐ White ☐ Asian ☑ Native American	☐ Hispanic ☐ Black ☐ Other
☒ Mr. ☐ Ms. ☐ Mrs.	James Roller	[redacted]		☐ Male ☐ Female	☐ White ☐ Asian ☐ Native American	☐ Hispanic ☐ Black ☐ Other
☐ Mr. ☐ Ms. ☒ Mrs.	Sammie Davidson M Lendon	[redacted]		☐ Male ☒ Female	☒ White ☐ Asian ☐ Native American	☐ Hispanic ☐ Black ☐ Other
☐ Mr. ☐ Ms. ☐ Mrs.				☐ Male ☐ Female	☐ White ☐ Asian ☐ Native American	☐ Hispanic ☐ Black ☐ Other
☐ Mr. ☐ Ms. ☐ Mrs.				☐ Male ☐ Female	☐ White ☐ Asian ☐ Native American	☐ Hispanic ☐ Black ☐ Other
☐ Mr. ☐ Ms. ☐ Mrs.				☐ Male ☐ Female	☐ White ☐ Asian ☐ Native American	☐ Hispanic ☐ Black ☐ Other

OKLAHOMA DEPARTMENT OF TRANSPORTATION
ATTENDANCE ROSTER

Thursday, March 28, 2013
PUBLIC INVOLVEMENT MEETING
US-277 East of Cement, OK

http://www.okladot.state.ok.us — **Planning & Research Division - Program Coordination Branch**

(PLEASE PRINT CLEARLY)

	NAME & PHONE	ADDRESS	BUSINESS / ORGANIZATION	GENDER / RACE [OPTIONAL]		
☒ Mr. ☐ Ms. ☐ Mrs.	[illegible]	[redacted]	CAGUA CO	☒ Male ☐ Female	☐ White ☐ Asian ☐ Native American	☐ Hispanic ☐ Black ☐ Other
☐ Mr. ☒ Ms. ☐ Mrs.	Kathy Harris	[redacted]		☐ Male ☒ Female	☒ White ☐ Asian ☐ Native American	☐ Hispanic ☐ Black ☐ Other
☒ Mr. ☐ Ms. ☐ Mrs.	Rusty Snider	[redacted]		☒ Male ☐ Female	☒ White ☐ Asian ☐ Native American	☐ Hispanic ☐ Black ☐ Other
☐ Mr. ☐ Ms. ☐ Mrs.	Eugene Brooks	[redacted]		☐ Male ☐ Female	☐ White ☐ Asian ☐ Native American	☐ Hispanic ☐ Black ☐ Other
☐ Mr. ☐ Ms. ☐ Mrs.	Troy Ford	[redacted]		☐ Male ☐ Female	☐ White ☐ Asian ☐ Native American	☐ Hispanic ☐ Black ☐ Other
☐ Mr. ☐ Ms. ☐ Mrs.	Dale DeKinder	[redacted]		☐ Male ☐ Female	☐ White ☐ Asian ☐ Native American	☐ Hispanic ☐ Black ☐ Other
☐ Mr. ☐ Ms. ☐ Mrs.	Houston Cuglurn 489 3610	[redacted]		☒ Male ☐ Female	☐ White ☐ Asian ☐ Native American	☐ Hispanic ☐ Black ☐ Other

OKLAHOMA DEPARTMENT OF TRANSPORTATION

ATTENDANCE ROSTER

Thursday, March 28, 2013

PUBLIC INVOLVEMENT MEETING

US-277 East of Cement, OK

http://www.okladot.state.ok.us

Planning & Research Division - Program Coordination Branch

(PLEASE PRINT CLEARLY)

	NAME & PHONE	ADDRESS	BUSINESS / ORGANIZATION	GENDER / RACE [OPTIONAL]		
☑ Mr. ☐ Ms. ☐ Mrs.	Reese Knight 405 247 2462	200 NE 21 st OKC OK	ODOT Div. 7 Anadarko	☑ Male ☐ Female	☐ White ☐ Asian ☐ Native American	☐ Hispanic ☐ Black ☐ Other
☑ Mr. ☐ Ms. ☐ Mrs.	Terry Ray 918.396-1397	[redacted]	Dead Horse O&G ccc	☑ Male ☐ Female	☑ White ☐ Asian ☐ Native American	☐ Hispanic ☐ Black ☐ Other
☑ Mr. ☐ Ms. ☐ Mrs.	Marvin Wilkinson 405 224 0043			☑ Male ☐ Female	☑ White ☐ Asian ☐ Native American	☐ Hispanic ☐ Black ☐ Other
☐ Mr. ☑ Ms. ☐ Mrs.	Jani Houtz 405 320 2012	[redacted]		☐ Male ☐ Female	☐ White ☐ Asian ☐ Native American	☐ Hispanic ☐ Black ☐ Other
☐ Mr. ☐ Ms. ☐ Mrs.	Clifford Scott	[redacted]	SAME	☐ Male ☐ Female	☐ White ☐ Asian ☐ Native American	☐ Hispanic ☐ Black ☐ Other
☐ Mr. ☐ Ms. ☐ Mrs.	Greg Wolf	[redacted]		☐ Male ☐ Female	☐ White ☐ Asian ☐ Native American	☐ Hispanic ☐ Black ☐ Other
☑ Mr. ☐ Ms. ☐ Mrs.	Eduardo Elder	200 NE 21 ST Oklahoma City OK 73105	ODOT.	☐ Male ☐ Female	☐ White ☐ Asian ☐ Native American	☐ Hispanic ☐ Black ☐ Other

OKLAHOMA DEPARTMENT OF TRANSPORTATION

ATTENDANCE ROSTER

Thursday, March 28, 2013

PUBLIC INVOLVEMENT MEETING

US-277 East of Cement, OK

http://www.okladot.state.ok.us

Planning & Research Division - Program Coordination Branch

(PLEASE PRINT CLEARLY)

	NAME & PHONE	ADDRESS	BUSINESS / ORGANIZATION	GENDER / RACE [OPTIONAL]		
☒ Mr. ☐ Ms. ☐ Mrs.	Johnny Walkup 405-247-2462		ODOT Ana. Residency	☒ Male ☐ Female	☒ White ☐ Asian ☐ Native American	☐ Hispanic ☐ Black ☐ Other
☑ Mr. ☐ Ms. ☑ Mrs.	Bob Buffington Tena Buffington	[redacted]	Residents	☑ Male ☑ Female	☑ White ☐ Asian ☐ Native American	☐ Hispanic ☐ Black ☐ Other
☑ Mr. ☐ Ms. ☑ Mrs.	Danny Houtz Evalee Houtz	[redacted]	Residents	☑ Male ☑ Female	☑ White ☐ Asian ☐ Native American	☐ Hispanic ☐ Black ☐ Other
☑ Mr. ☐ Ms. ☐ Mrs.	Bob Rose	ODOT Duncan		☑ Male ☐ Female	☐ White ☐ Asian ☐ Native American	☐ Hispanic ☐ Black ☐ Other
☐ Mr. ☐ Ms. ☐ Mrs.	Siv Sundaram	ODOT-EPD		☐ Male ☑ Female	☐ White ☑ Asian ☐ Native American	☐ Hispanic ☐ Black ☐ Other
☑ Mr. ☐ Ms. ☑ Mrs.	Bobby + Nancy Ryans	[redacted]	Residence	☑ Male ☑ Female	☑ White ☐ Asian ☐ Native American	☐ Hispanic ☐ Black ☐ Other
☑ Mr. ☐ Ms. ☐ Mrs.	Joe Montgomery	[redacted]		☐ Male ☐ Female	☐ White ☐ Asian ☐ Native American	☐ Hispanic ☐ Black ☐ Other

OKLAHOMA DEPARTMENT OF TRANSPORTATION

ATTENDANCE ROSTER

Thursday, March 28, 2013

PUBLIC INVOLVEMENT MEETING

US-277 East of Cement, OK

http://www.okladot.state.ok.us

Planning & Research Division - Program Coordination Branch

(PLEASE PRINT CLEARLY)

	NAME & PHONE	ADDRESS	BUSINESS / ORGANIZATION	GENDER / RACE [OPTIONAL]		
☒ Mr. ☒ Ms. ☐ Mrs.	JOHN R. NORRIS LIZ NORRIS	[redacted]	RETIRED "	☒ Male ☒ Female	☐ White ☐ Asian ☐ Native American	☒ Hispanic ☐ Black ☐ Other
☐ Mr. ☐ Ms. ☐ Mrs.	David Salyer	[redacted]		☒ Male ☐ Female	☒ White ☐ Asian ☐ Native American	☐ Hispanic ☐ Black ☐ Other
☐ Mr. ☐ Ms. ☐ Mrs.	JAY SNIDER	[redacted]		☐ Male ☐ Female	☐ White ☐ Asian ☐ Native American	☐ Hispanic ☐ Black ☐ Other
☐ Mr. ☐ Ms. ☐ Mrs.	George + Delores Donedson	[redacted]		☒ Male ☒ Female	☐ White ☐ Asian ☐ Native American	☐ Hispanic ☐ Black ☐ Other
☐ Mr. ☐ Ms. ☐ Mrs.	Dewane Bayless	[redacted]		☐ Male ☐ Female	☐ White ☐ Asian ☐ Native American	☐ Hispanic ☐ Black ☐ Other
☐ Mr. ☐ Ms. ☐ Mrs.	Linda Kawa	[redacted]		☐ Male ☐ Female	☐ White ☐ Asian ☐ Native American	☐ Hispanic ☐ Black ☐ Other
☒ Mr. ☐ Ms. ☐ Mrs.	MIKE [illegible]	[redacted]		☒ Male ☐ Female	☒ White ☐ Asian ☐ Native American	☐ Hispanic ☐ Black ☐ Other

OKLAHOMA DEPARTMENT OF TRANSPORTATION
ATTENDANCE ROSTER

Thursday, March 28, 2013
PUBLIC INVOLVEMENT MEETING
US-277 East of Cement, OK

http://www.okladot.state.ok.us — **Planning & Research Division - Program Coordination Branch**

(PLEASE PRINT CLEARLY)

	NAME & PHONE	ADDRESS	BUSINESS / ORGANIZATION	GENDER / RACE [OPTIONAL]		
☐ Mr. ☐ Ms. ☒ Mrs.	Mindy Clift 405-829-0244	[redacted]		☐ Male ☐ Female	☐ White ☐ Asian ☐ Native American	☐ Hispanic ☐ Black ☐ Other
☒ Mr. ☐ Ms. ☐ Mrs.	Bob Rusch 405-521-2686	200 NE 21st St. OKC, OK 73105	ODOT	☐ Male ☐ Female	☒ White ☐ Asian ☐ Native American	☐ Hispanic ☐ Black ☐ Other
☒ Mr. ☐ Ms. ☐ Mrs.	Greg Worrell 405 522-8014	200 NE 21st St. OKC, OK 73105	ODOT	☒ Male ☐ Female	☒ White ☐ Asian ☐ Native American	☐ Hispanic ☐ Black ☐ Other
☐ Mr. ☒ Ms. ☐ Mrs.	LAURA CHANEY 405-521-2705	" "	ODOT	☐ Male ☒ Female	☐ White ☐ Asian ☒ Native American	☐ Hispanic ☐ Black ☐ Other
☐ Mr. ☒ Ms. ☐ Mrs.	VERONICA BOWEN (405) 487-3403	[redacted]		☐ Male ☒ Female	☒ White ☐ Asian ☐ Native American	☐ Hispanic ☐ Black ☐ Other
☐ Mr. ☐ Ms. ☒ Mrs.	Debra Roberts	[redacted]		☐ Male ☐ Female	☐ White ☐ Asian ☐ Native American	☐ Hispanic ☐ Black ☐ Other
☒ Mr. ☐ Ms. ☐ Mrs.	Ronald Roberts	[redacted]		☐ Male ☐ Female	☐ White ☐ Asian ☐ Native American	☐ Hispanic ☐ Black ☐ Other

OKLAHOMA DEPARTMENT OF TRANSPORTATION

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Planning & Research Division - Program Coordination Branch

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	NAME & PHONE	ADDRESS	BUSINESS / ORGANIZATION	GENDER / RACE [OPTIONAL]		
☑ Mr. ☐ Ms. ☐ Mrs.	Frank V. Roesler III (405) 521-2350	200 N.E. 21st St. RM: 3A7 Oklahoma City, OK 73105	ODOT Planning & Research Div. Program Coord. Branch	☑ Male ☐ Female	☑ White ☐ Asian ☐ Native American	☐ Hispanic ☐ Black ☐ Other
☑ Mr. ☐ Ms. ☐ Mrs.	Clinton A. Tillett (405) 522-1041	200 N.E. 21st St. RM: 3A7 Oklahoma City, OK 73105	ODOT Planning & Research Div. Program Coord. Branch	☑ Male ☐ Female	☐ White ☐ Asian ☐ Native American	☐ Hispanic ☑ Black ☐ Other
☐ Mr. ☐ Ms. ☐ Mrs.	LAWRENCE Smiley	[redacted]		☒ Male ☐ Female	☐ White ☐ Asian ☐ Native American	☐ Hispanic ☐ Black ☐ Other
☒ Mr. ☐ Ms. ☐ Mrs.	Jay Herbert	200 NE 21st St OKC OK 73105	ODOT R/W	☒ Male ☐ Female	☒ White ☐ Asian ☐ Native American	☐ Hispanic ☐ Black ☐ Other
☒ Mr. ☐ Ms. ☐ Mrs.	[illegible]	[redacted]		☐ Male ☐ Female	☐ White ☐ Asian ☐ Native American	☐ Hispanic ☐ Black ☐ Other
☐ Mr. ☐ Ms. ☐ Mrs.	[illegible]	[redacted]		☐ Male ☐ Female	☐ White ☐ Asian ☐ Native American	☐ Hispanic ☐ Black ☐ Other
☐ Mr. ☐ Ms. ☐ Mrs.	JEFF HILLER	PO Box 460 Duncan OK 73534	ODOT Div 7	☒ Male ☐ Female	☒ White ☐ Asian ☐ Native American	☐ Hispanic ☐ Black ☐ Other

OKLAHOMA DEPARTMENT OF TRANSPORTATION

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	NAME & PHONE	ADDRESS	BUSINESS / ORGANIZATION	GENDER / RACE [OPTIONAL]		
☐ Mr. ☑ Ms. ☐ Mrs.	Kirsten McCullough 918.250.5922	6450 S. Lewis #300 Tulsa OK 74136	Garver	☐ Male ☐ Female	☐ White ☐ Asian ☐ Native American	☐ Hispanic ☐ Black ☐ Other
☑ Mr. ☐ Ms. ☐ Mrs.	Brent Schniers			☐ Male ☐ Female	☐ White ☐ Asian ☐ Native American	☐ Hispanic ☐ Black ☐ Other
☑ Mr. ☐ Ms. ☐ Mrs.	Kevin Moore			☐ Male ☐ Female	☐ White ☐ Asian ☐ Native American	☐ Hispanic ☐ Black ☐ Other
☑ Mr. ☐ Ms. ☐ Mrs.	Nick Braddy			☐ Male ☐ Female	☐ White ☐ Asian ☐ Native American	☐ Hispanic ☐ Black ☐ Other
☐ Mr. ☐ Ms. ☐ Mrs.	GARY THOMA	—	—	☑ Male ☐ Female	☑ White ☐ Asian ☐ Native American	☐ Hispanic ☐ Black ☐ Other
☐ Mr. ☐ Ms. ☒ Mrs.	Hazel C Self	[redacted]		☐ Male ☐ Female	☐ White ☐ Asian ☐ Native American	☐ Hispanic ☐ Black ☐ Other
☐ Mr. ☐ Ms. ☒ Mrs.	Norma Self			☐ Male ☐ Female	☐ White ☐ Asian ☐ Native American	☐ Hispanic ☐ Black ☐ Other

Appendix E

Presentation


ODOT
WELCOME
Public Meeting For US-277
In Caddo and Grady Counties
March 28, 2013

TEAM INTRODUCTIONS

- **ODOT**
  - **Bob Rose - Division 7 Engineer**
  - **Jeff Hiller - Division 7 Construction Engineer**
  - **Siv Sundaram - Environmental Programs**
  - **Greg Worrell - Division 7 NEPA Project Manager**
  - **Jay Herbert - Right-of-Way Division**
  - **Frank Roesler III - Public Involvement Officer**

- **GARVER**

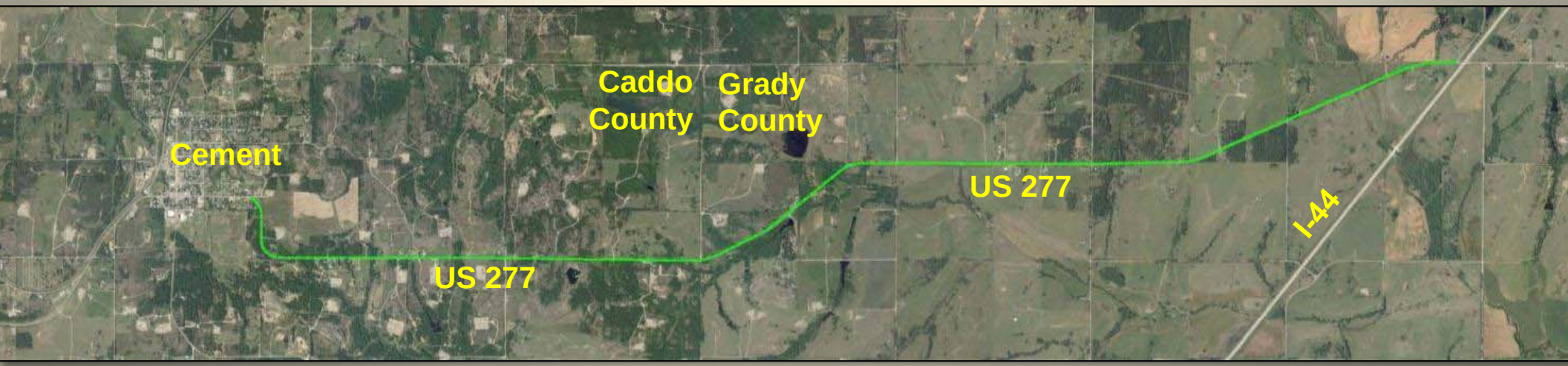
Brent Schniers, PE
Project Manager

Kirsten McCullough AICP, RPA
Environmental Lead

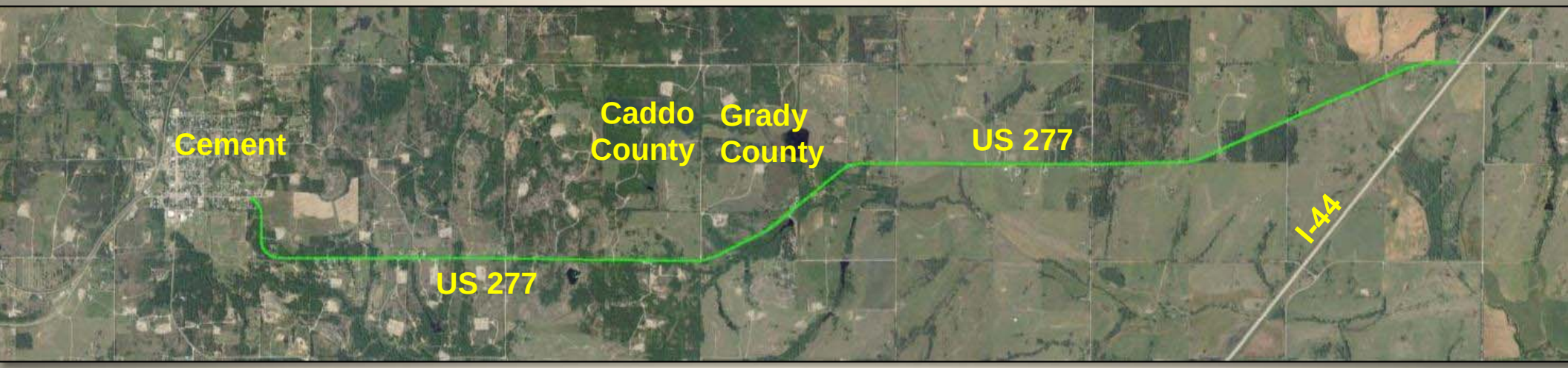
Kevin Moore, PE
Roadway Lead

PURPOSE OF THIS MEETING

…is to Inform the Public and Solicit Comments About the Proposed Improvements to US-277 From the East Edge of Cement to I-44



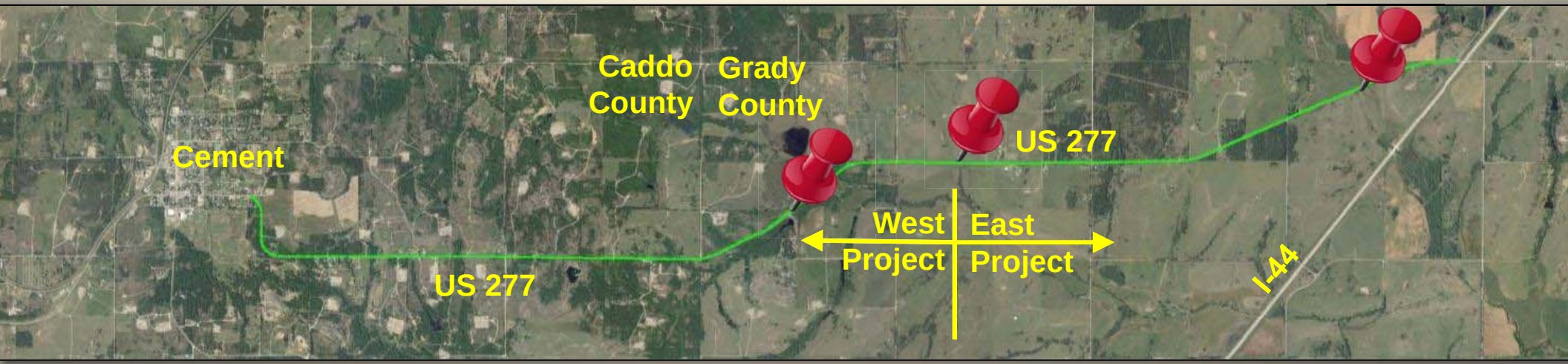
PROJECT PURPOSE



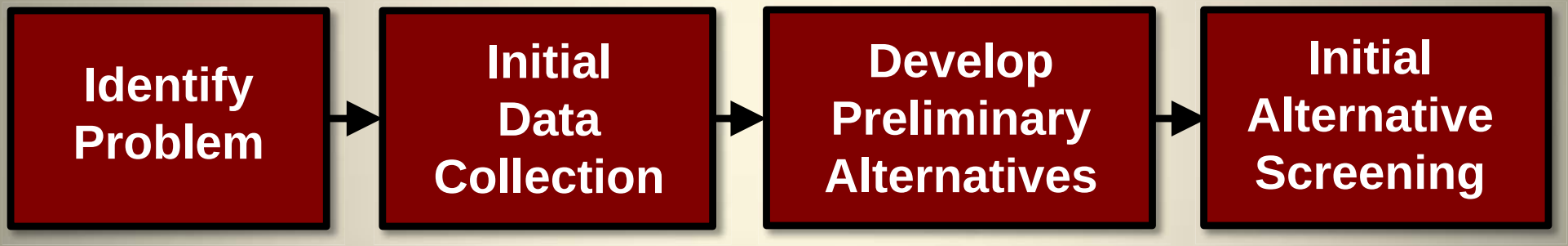
…is to Reduce Accidents and Improve Roadway Deficiencies.

PROJECT AREA INFORMATION

- **General Data**
  - 2 Lane Roadway (Rural Collector)
  - 3 Existing Bridge Structures
    - West Bills Creek
    - Middle Bills Creek
    - East Bills Creek
  - Current Traffic: 2,000 Vehicles/Day (15% Trucks)
  - Projected Traffic (2035): 3,100 Vehicles/Day
- **Corridor is Split into Two Projects**
  - West Project – From Cement to Middle Bills Creek
  - East Project – From Middle Bills Creek to I-44

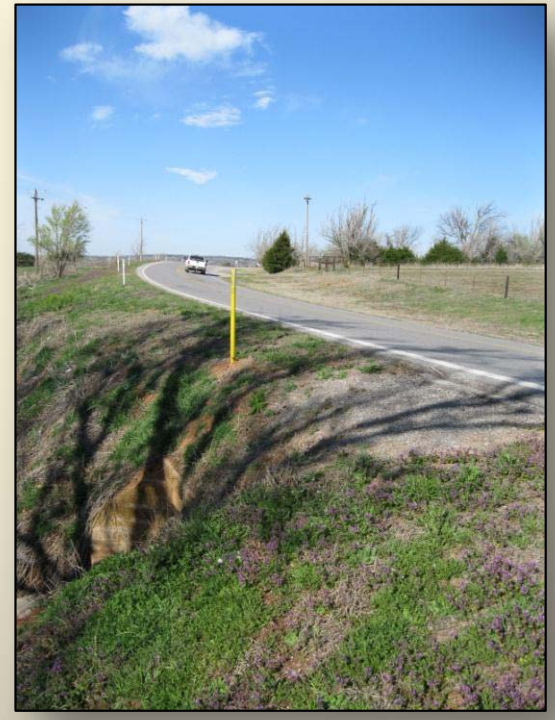


PROJECT DEVELOPMENT PROCESS



EXISTING CONDITIONS WARRANT IMPROVEMENT

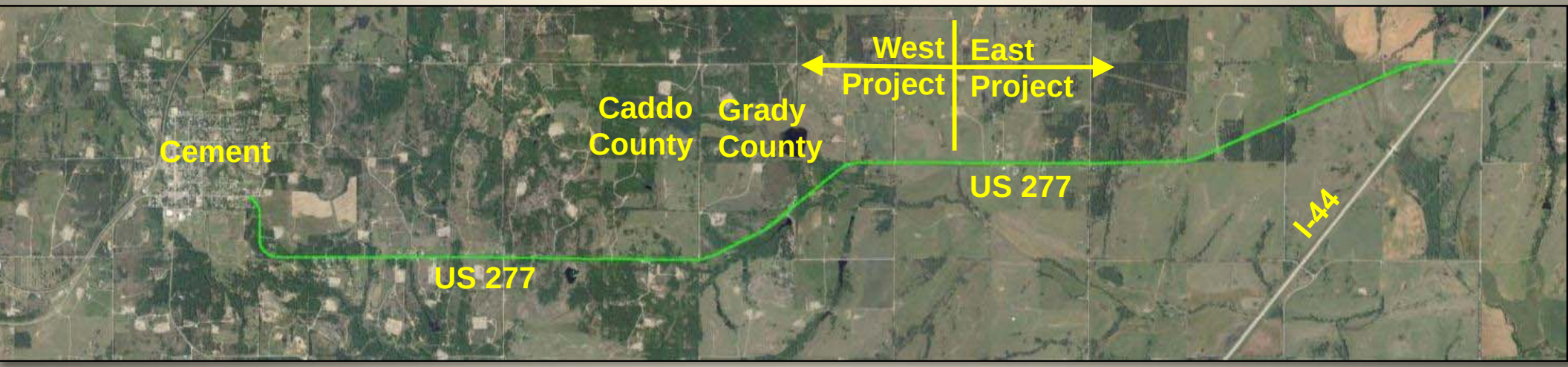
- **Roadway Deficiencies**
  - **Inadequate Sight Distance**
    - **Rolling Terrain – Vertical Alignment**
    - **Sharp Curves – Horizontal Alignment**
    - **Blind Intersections**
  - **No Shoulders**
  - **Steep Roadside Slopes**



Identify Problem → Initial Data Collection → Preliminary Alternatives → Alternative Screening

EXISTING DEFICIENCIES LEAD TO HIGH ACCIDENT RATE

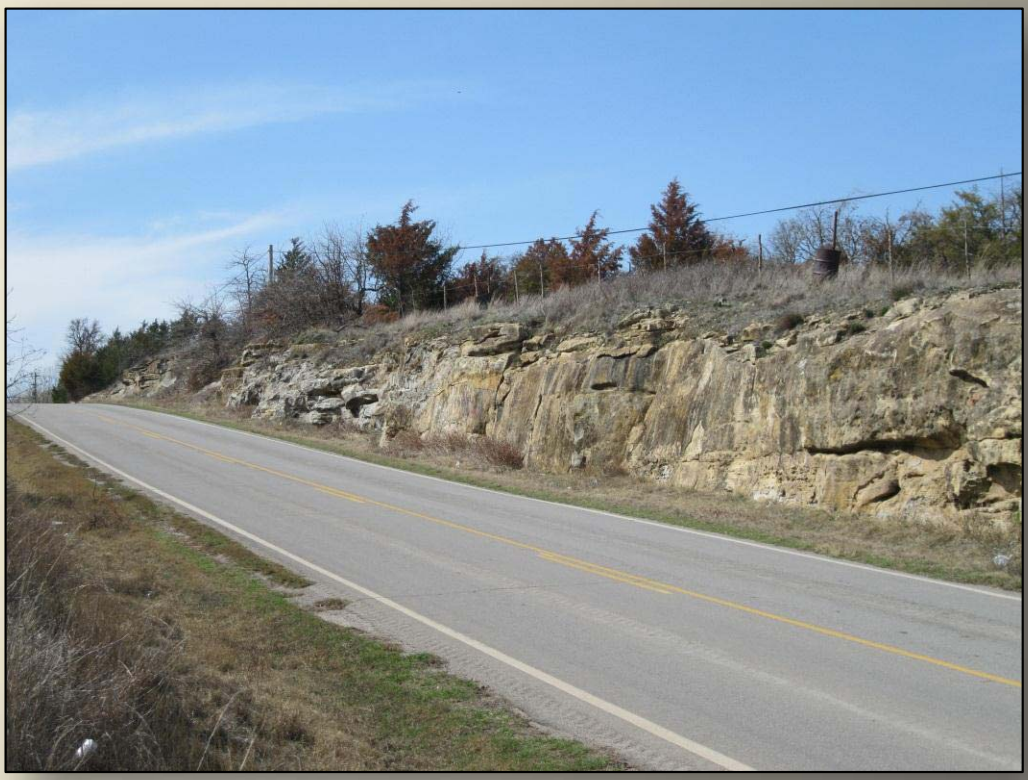
- **Existing Accident Rate**
  - **High Compared to Similar Facilities**
  - **Total 26 Documented over Previous 5 Years**
    - **11 Personal Property Damage**
    - **14 Injury (23 Persons)**
    - **1 Fatal (4 Persons)**



Identify Problem → Initial Data Collection → Preliminary Alternatives → Alternative Screening

INITIAL DATA COLLECTION

- **Identified Key Existing Features**
  - **Topographical**
    - **Rock Outcroppings**
    - **Rock Quarry**
    - **Drainage Structures**
    - **Bridges**
    - **Businesses/Industries**
    - **Residences**
    - **Utilities**
    - **Oil/Gas Facilities**



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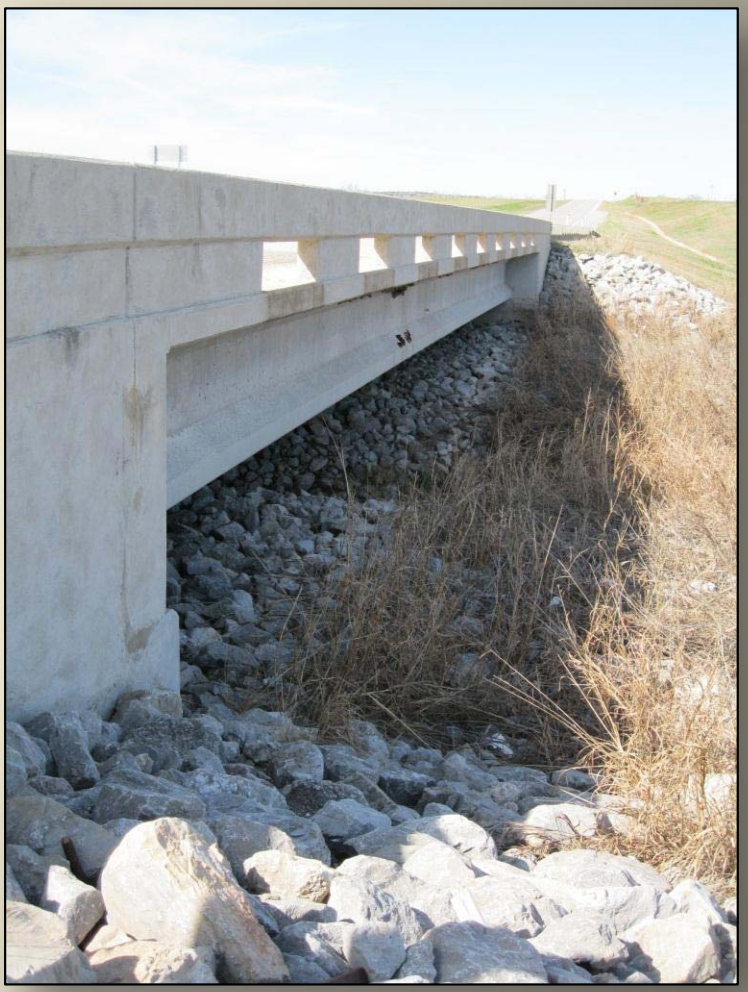

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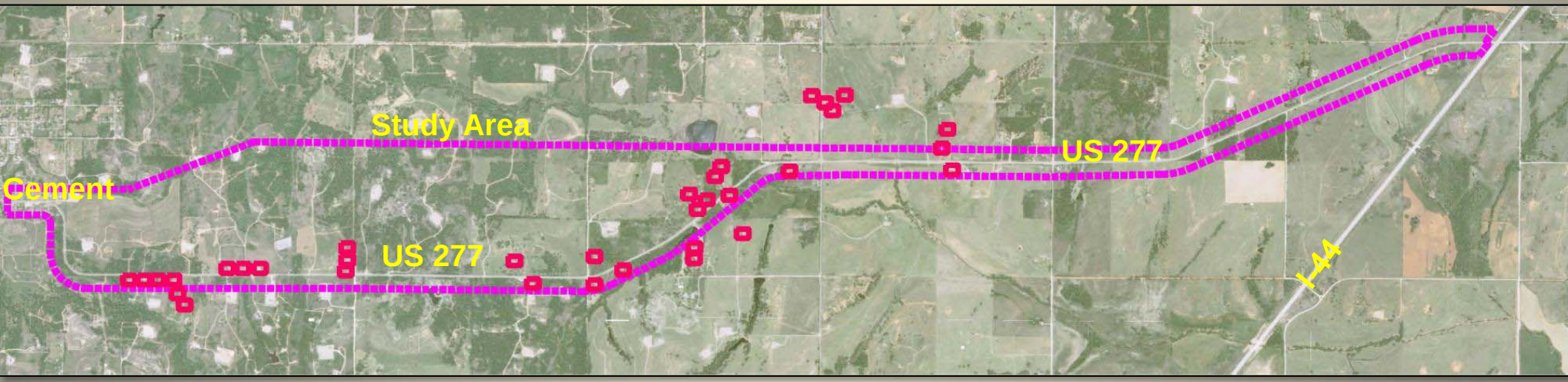
Identify Problem → **Initial Data Collection** → Preliminary Alternatives → Alternative Screening

INITIAL DATA COLLECTION

- **Environmental Data**
  - Homes and Businesses
  - Hazardous Materials
  - Noise
  - Threatened and Endangered Species
  - Cultural Resources
  - Wetlands and Streams



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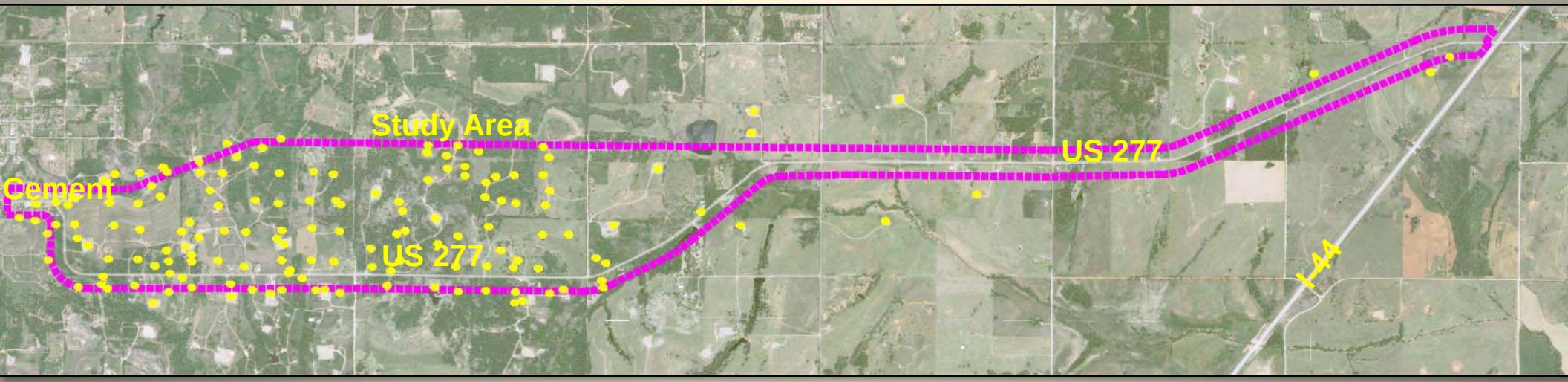

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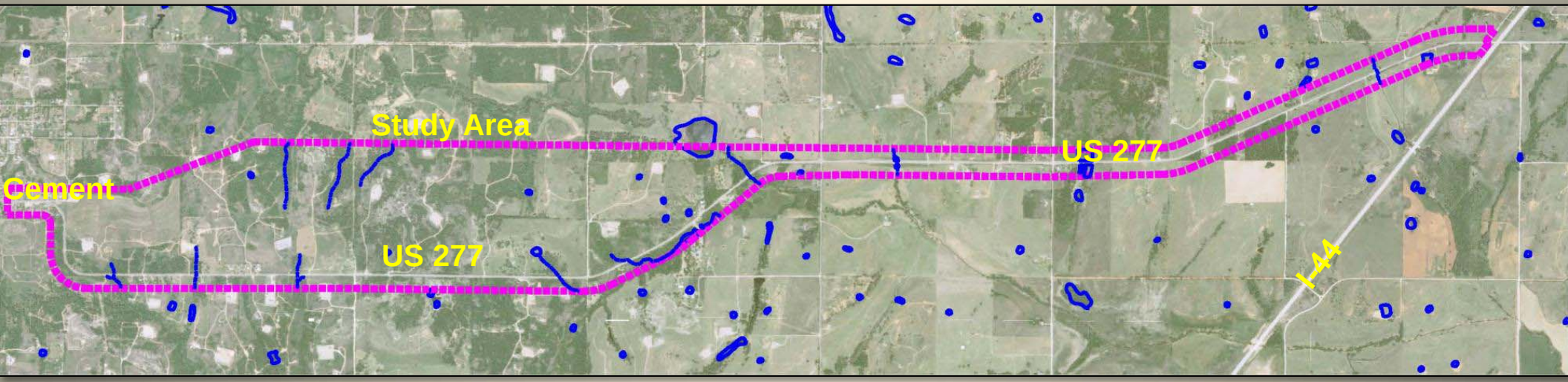
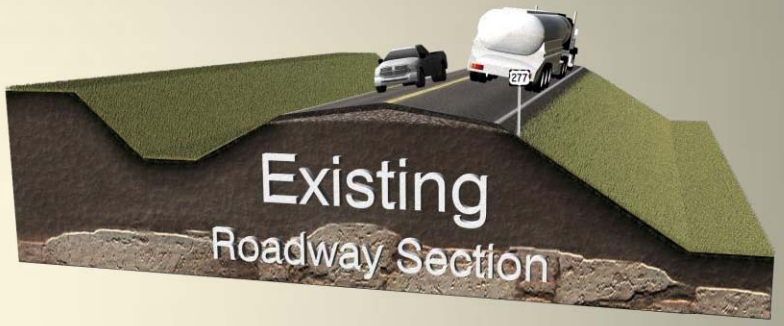


Identify Problem → **Initial Data Collection** → Preliminary Alternatives → Alternative Screening

DEVELOP PRELIMINARY ALT'S

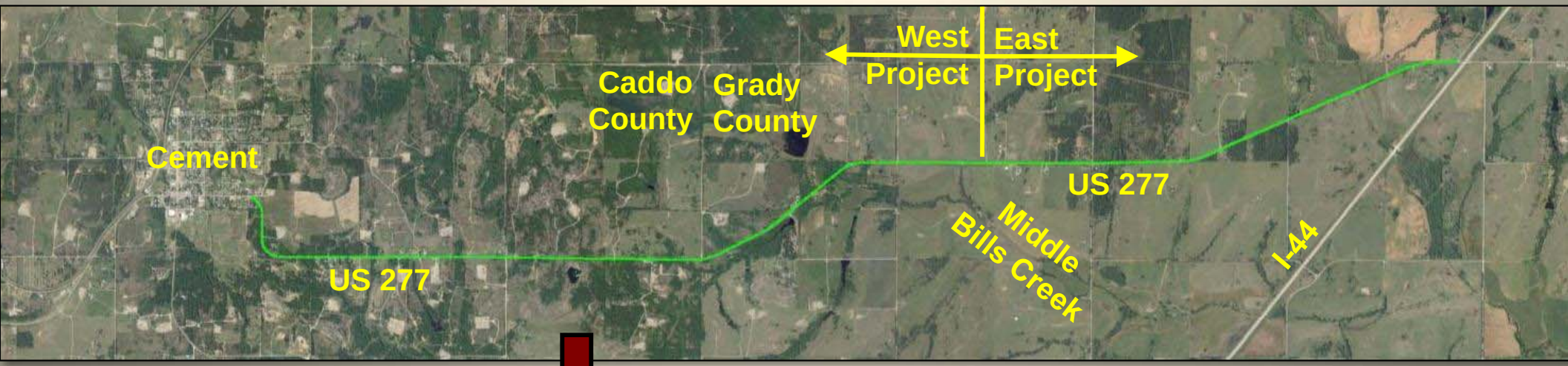
- **Proposed Design Criteria for all Alternatives**
  - **Design Speed of 65mph**
    - **Vertical Sight Distance**
    - **Horizontal Curves**
  - **Roadway Typical Section**
    - **12-foot Lanes**
    - **8-foot Shoulders**
    - **Safe Fill Slopes**
  - **Bridge Structures**
    - **West Bills Creek – Reconstructed**
    - **Middle Bills Creek – Remain As-Is**
    - **East Bills Creek – Widening of Existing**



Identify Problem → Initial Data Collection → **Preliminary Alternatives** → Alternative Screening

DEVELOP PRELIMINARY ALT'S

- **Started With Purpose in Mind**
  - "…To Reduce Accidents and Improve Roadway Deficiencies…"
- **Not Feasible to Correct Existing Roadway -**
  - Numerous Hills to Cut and Valleys to Fill
  - Difficult to Keep Existing Roadway Open During Construction
  - Significant Utility Impacts
  - Impacts to Residences Along Highway

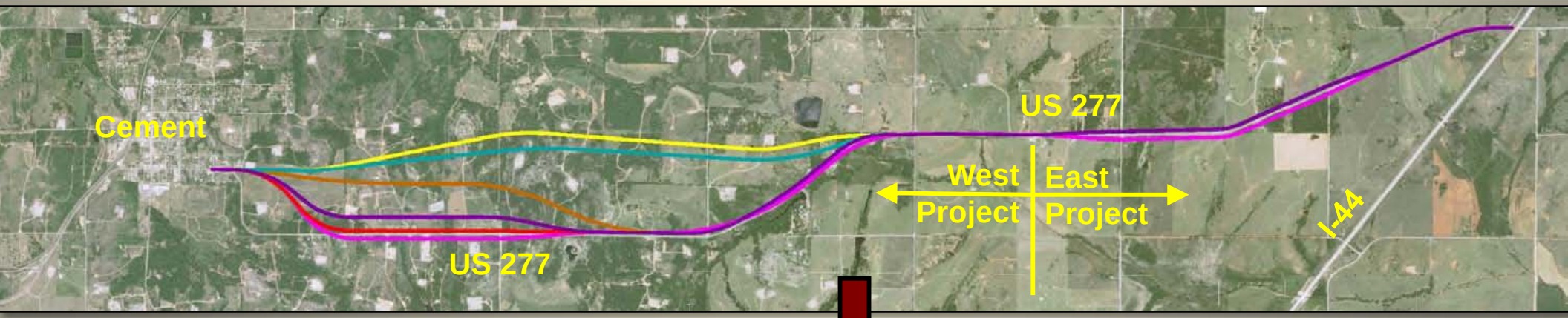


Identify Problem → Initial Data Collection → **Preliminary Alternatives** → Alternative Screening

INITIAL ALTERNATIVE SCREENING

- **Developed Multiple Alternatives**
  - East Project
    - North Parallel Offset
    - South Parallel Offset
  - West Project
    - Parallel Offsets
    - New Alignments

- **Evaluated Alternatives**
  - Right of Way and Utility Impacts
  - Environmental Impacts
  - Construction Costs
  - Refined and Reduced Number of Alternatives
    - East Project (North & South Offset)
    - West Project (Alt. 2A, 4 & 6)



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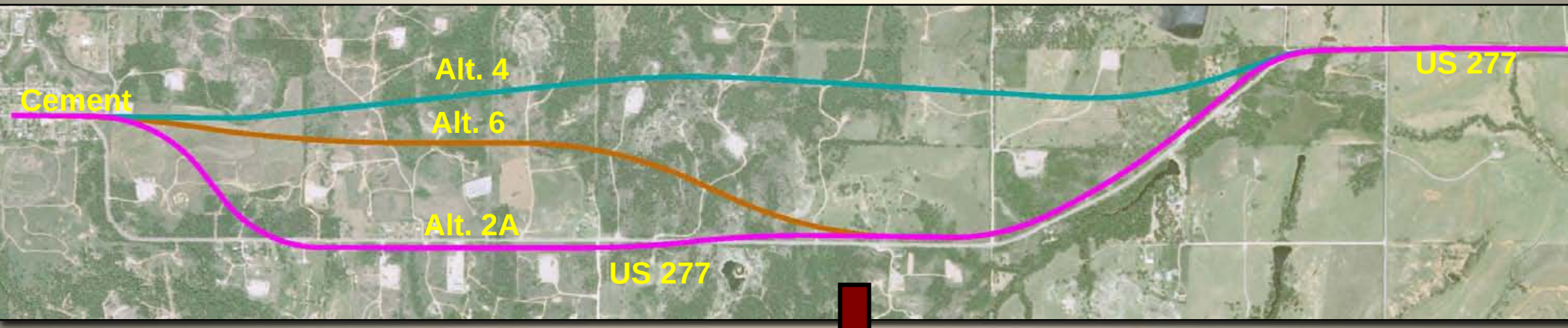

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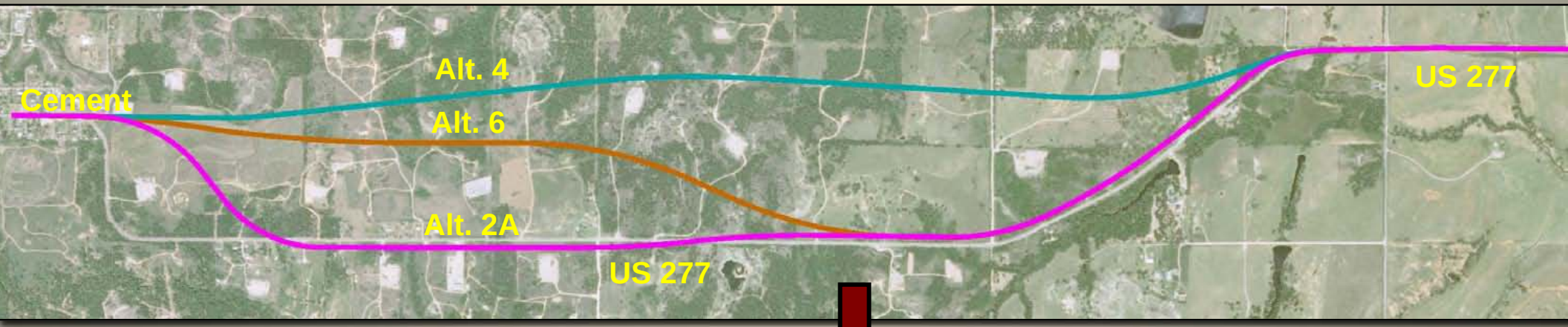
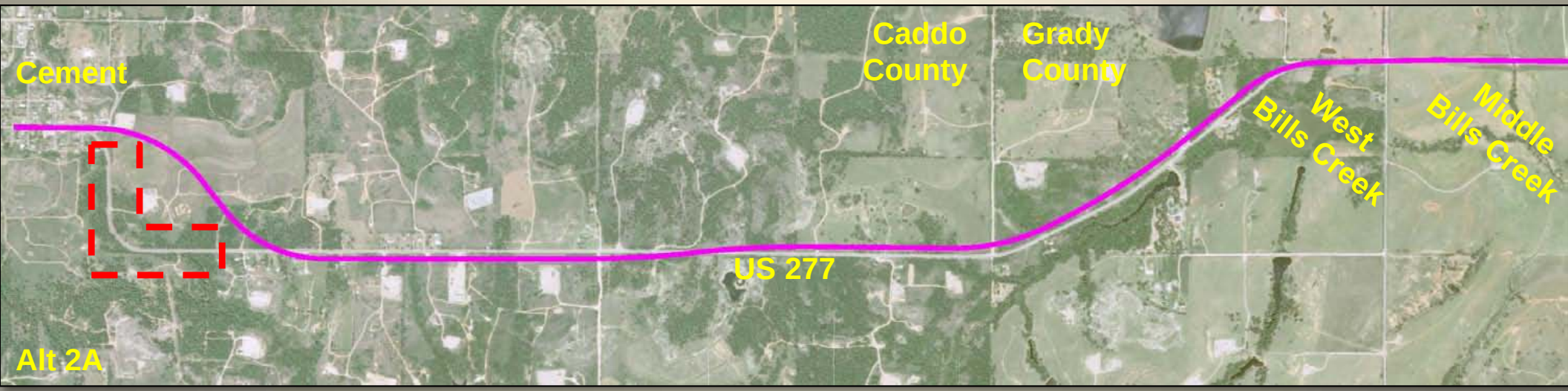


Identify Problem → Initial Data Collection → Preliminary Alternatives → **Alternative Screening**


ALTERNATIVE
OVERVIEWS

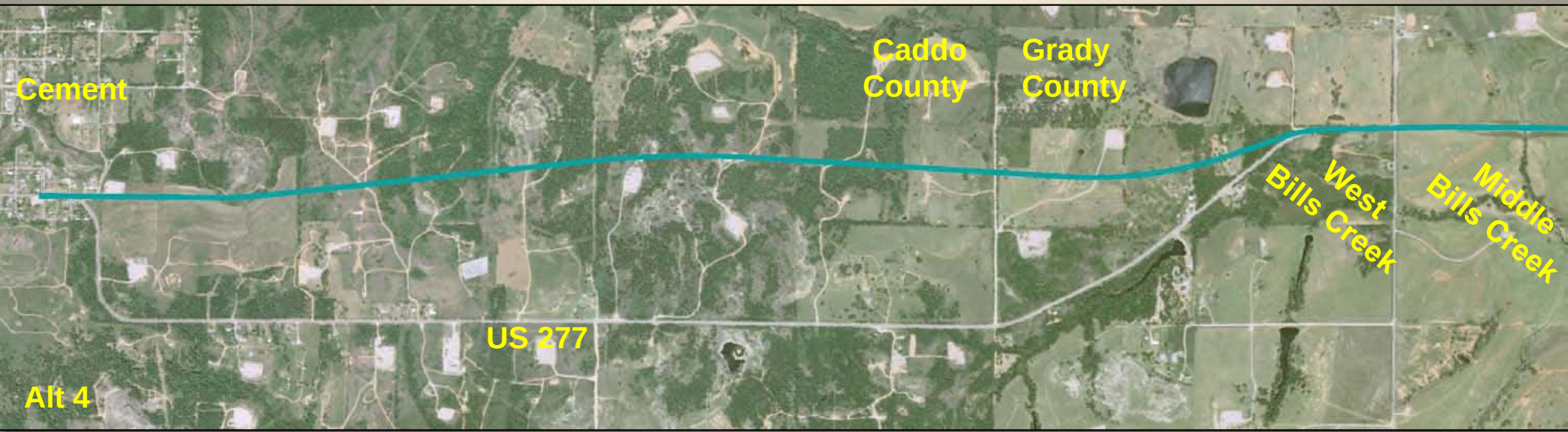
WEST PROJECT ALTERNATIVES
Alternative 2A

- **Overview**
  - Straightens Horizontal Curves Near Cement
  - South Parallel Offset to Just Prior to Rock Quarry
  - North Offset After Rock Quarry
  - Connects Back to Existing Highway After West Bills Creek
- **Key Features**
  - Existing Highway Pavement Removed Within Limits
  - Access to Highway Remains Similar
  - High Utility Impacts & Costs
  - Construction Near Oil/Gas Processing Facilities on South
  - Estimated Overall Cost = $17.3M



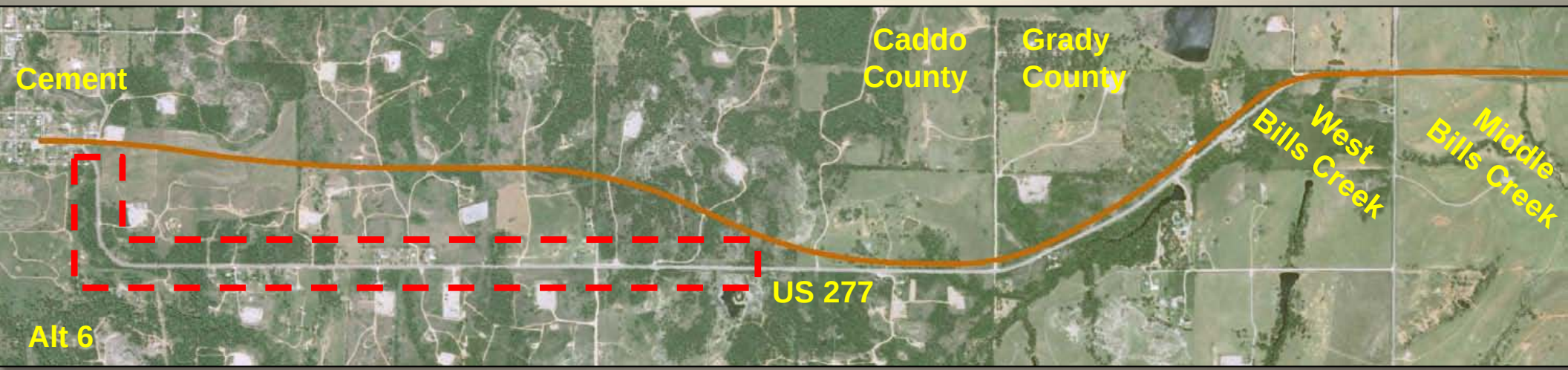
WEST PROJECT ALTERNATIVES
Alternative 4

- **Overview**
  - Creates New Alignment North of Existing Highway
  - Similar to a Survey Alignment Staked by ODOT in the 1970s
  - Connects Back to Existing Highway After West Bills Creek
- **Key Features**
  - Minimizes Residential Impacts
  - Lowest Utility Relocation Costs
  - Significant Construction In Rock
  - Existing Highway Remains in Service as Local Facility
  - Estimated Overall Cost = $16.7M



WEST PROJECT ALTERNATIVES
Alternative 6

- **Overview**
  - Begins as New Alignment North of Existing
  - Shifts South to Avoid Rock and Oil Facilities
  - East of Rock Quarry Becomes a North Offset
  - Connects Back to Existing Highway After West Bills Creek
- **Key Features**
  - Minimizes Oil Pump Jack Impacts
  - Highest Utility Relocation Costs
  - Some Construction In Rock
  - Existing Highway Remains in Service as Local Facility
  - Estimated Overall Cost = $17.4M

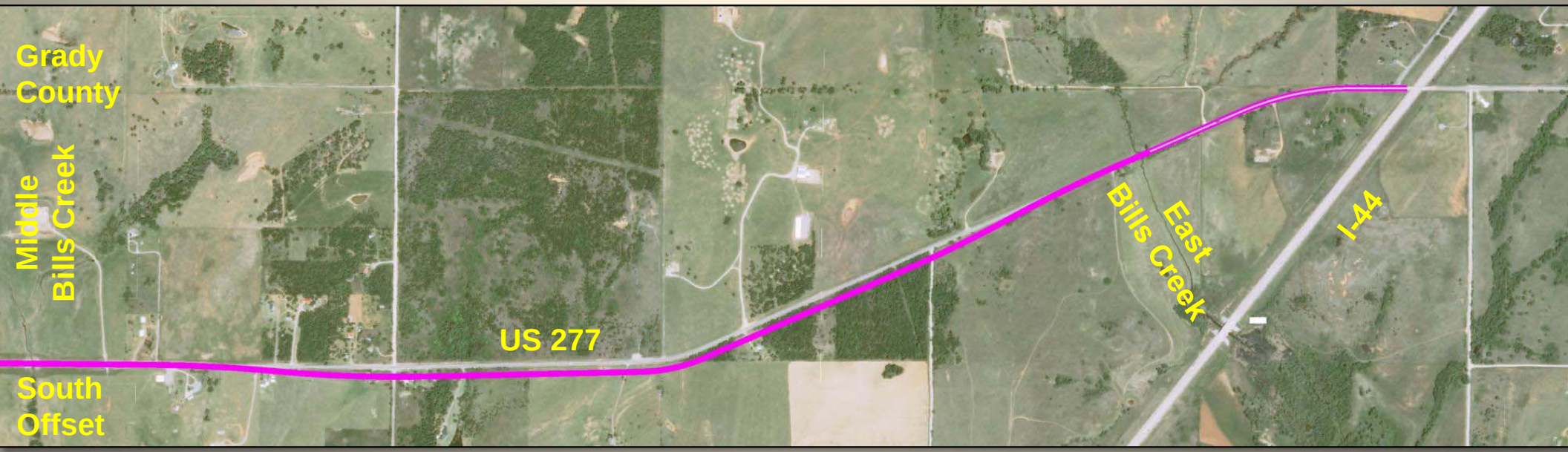


EAST PROJECT ALTERNATIVES
North Offset

- **Overview**
  - Begins on Alignment East of Middle Bills Creek
  - Shifts to a North Parallel Offset
  - Connects Back to Existing Highway Prior to East Bills Creek
- **Key Features**
  - Existing Highway Pavement Removed Within Limits
  - High Utility Relocation Costs
  - Fewer Residential Impacts
  - Estimated Cost = $8.5M

EAST PROJECT ALTERNATIVES
South Offset

- **Overview**
  - Begins on Alignment East of Middle Bills Creek
  - Shifts to a South Parallel Offset
  - Connects Back to Existing Highway Prior to East Bills Creek
- **Key Features**
  - Existing Highway Pavement Removed Within Limits
  - Increased Residential Impacts
  - Lower Utility Relocation Costs
  - Estimated Cost = $8.0M



ENVIRONMENTAL IMPACTS

- **Overall, Environmental Impacts Were Similar Across All of the Alternatives**

- **Impacts are Anticipated to be in These Areas:**
  - **Property Acquisition and Potentially a Small Number of Residential Relocations**
  - **Impacts to Pump Jacks or Storage Tanks**
  - **Potential for Hazardous Waste**
  - **Minor Amounts of Wetland Impacts**

Identify Problem → Initial Data Collection → Preliminary Alternatives → **Alternative Screening**

ENVIRONMENTAL IMPACTS

- **Overall, Environmental Impacts Were Similar Across All of the Alternatives**

- **Impacts are Anticipated to be in These Areas:**
  - **Property Acquisition and Potentially a Small Number of Residential Relocations**
  - **Impacts to Pump Jacks or Storage Tanks**
  - **Potential for Hazardous Waste**
  - **Minor Amounts of Wetland Impacts**

Identify Problem → Initial Data Collection → Preliminary Alternatives → **Alternative Screening**

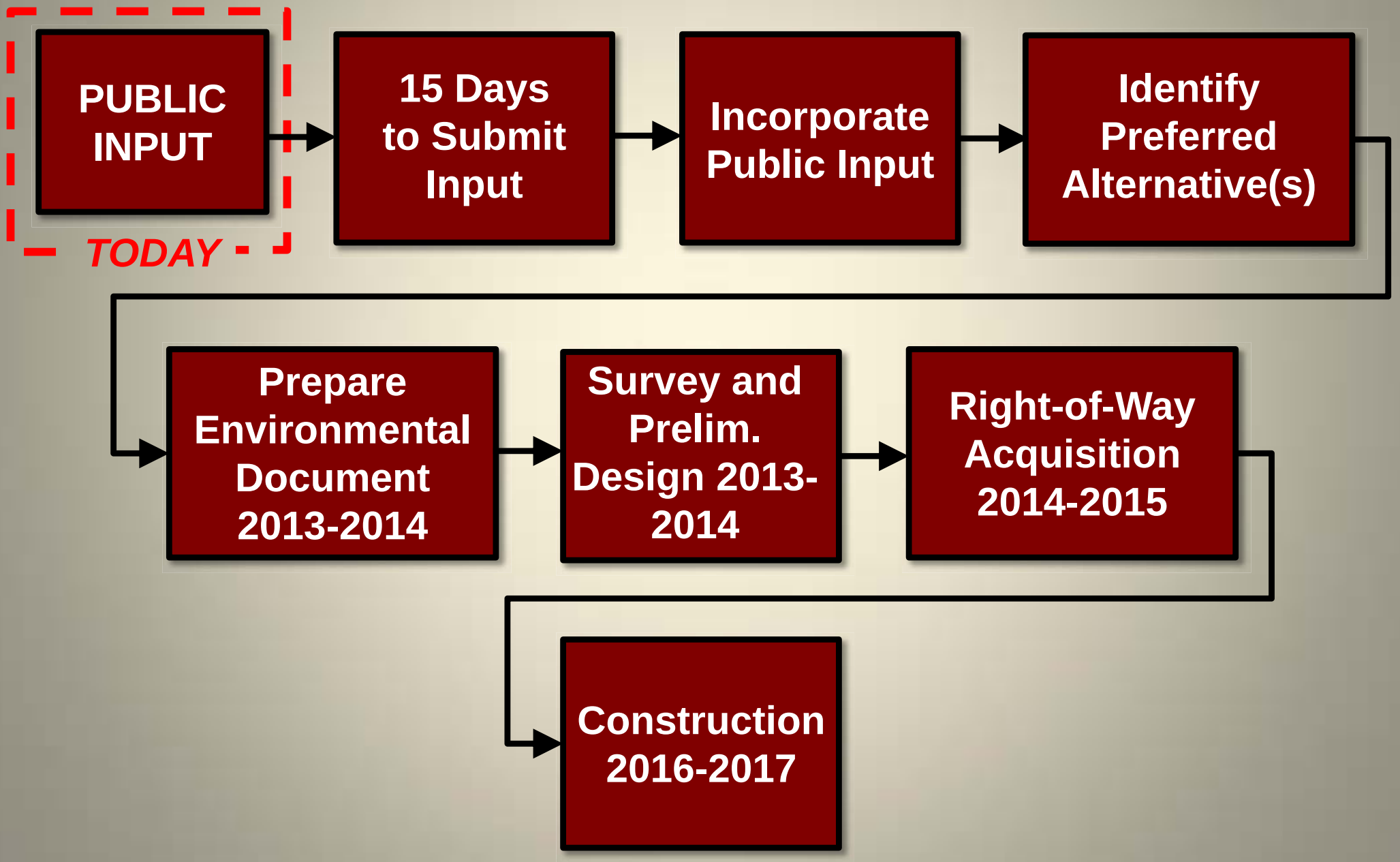

SUMMARY

ALTERNATIVES SUMMARY

WEST PROJECT	RIGHT-OF-WAY	UTILITIES	ENVIRONMENTAL	CONSTRUCTION COST	PUBLIC INPUT	TOTAL COST (Million)	SUMMARY
ALT. 2A						$17.3	· Highest R/W Impacts · Lowest Construction Cost · Moderate Utility/ Environmental Impacts · Higher Total Cost
ALT. 4						$16.7	· Highest Construction Cost · Lowest Utility Impacts · Moderate RW and Environmental Impacts · Lowest Total Cost
ALT. 6						$17.4	· Highest Utility Cost · Lowest Environmental Impacts · Moderate R/W and Construction Cost · Highest Total Cost

EAST PROJECT	RIGHT-OF-WAY	UTILITIES	ENVIRONMENTAL	CONSTRUCTION COST	PUBLIC INPUT	TOTAL COST (Million)	SUMMARY
NORTH OFFSET						$8.5	· Highest Utility/ Construciton Cost · Lowest R/W and Environmental Impacts · Highest Total Cost
SOUTH OFFSET						$8.0	· Higher R/W and Environmental Impacts · Lowest Utility and Construction Cost · Lowest Total Cost

NEXT STEPS


PUBLIC INPUT
TODAY
15 Days to Submit Input
Incorporate Public Input
Identify Preferred Alternative(s)
Prepare Environmental Document 2013-2014
Survey and Prelim. Design 2013-2014
Right-of-Way Acquisition 2014-2015
Construction 2016-2017

THANK YOU!

Please Submit Your Comments by April 12, 2013

- ✓ **Leave Your Comment Form Here Tonight**
- ✓ **Mail the Comment Form Back to ODOT:**

  Environmental Programs Division
  200 NE 21st Street
  Oklahoma City, OK 73105

- ✓ **Email Your Comments to ENVIRONMENTAL@ODOT.ORG**

QUESTIONS?

Appendix F

Written Comments

OKLAHOMA
DEPARTMENT OF COMMERCE

March 21, 2013

Dawn R. Sullivan, P.E.
Environmental Programs Division Engineer
Oklahoma Department of Transportation
200 N.E. 21st Street
Oklahoma City, OK 73105-3204

RE: Solicitation for input for US-277 from Cement to I-44 in Caddo and Grady Counties, Oklahoma

Dear Ms. Sullivan:

We have recived your letter of March 12, 2013 containing information on the above referenced reference project in Caddo and Grady Counties. The Oklahoma State Energy Office has no comments on any potential social, economic or environmental impacts with this action.

Should you have any questions, please contact Carolyn Sullivan at 405-815-5347.

Sincerely,

Vaughn Clark, Director of Community Development
Oklahoma Department of Commerce

VC:cr

OKLAHOMA CONSERVATION COMMISSION

Responsible Care For Oklahoma's Natural Resources

March 29, 2013

Dawn Sullivan, P.E.
Environmental Programs Division Engineer
Oklahoma Dept. of Transportation
200 NE 21st St.
Oklahoma City, OK 73105

RE: Solicitation for input for US-277 from Cement to I-44 in Caddo and Grady Counties, Oklahoma

Dear Ms. Sullivan:

Thank you for the opportunity to review this ODOT proposal as described in your letter of March 12, 2013. The proposed plan calls for the improvement to US-277 by straightening the highway along one of the proposed alternatives.

The project area has been reviewed using the Soil Survey of Caddo and Grady Counties and the US Fish and Wildlife Service National Wetlands Inventory (NWI) maps. Partially hydric soils are indicated on the soil survey map through several small areas of the study area. Wetlands are not indicated within the study area. However, streams do occur within the study area and riparian areas have the potential to contain wetland ecosystems.

One flood control structure is located in the northwest quarter of Section 6, Township 5 North, Range 8 West. This structure appears to be bisected by the study area but outside of any of the proposed alternatives. Any disturbance that could compromise the structural integrity of the dam should be avoided.

After reviewing the study area, based solely on environmental concerns, it appears alternative 4 would be least likely to impact wetland areas and would have the least impact on stream crossings. However, the Oklahoma Conservation Commission (OCC) has several general concerns that should be addressed throughout this project. One concern is that riparian areas will be disturbed and siltation problems may arise during this process. OCC is also concerned about mechanical disturbance in the stream itself, whether it be simply for construction or that it involve the redirecting or "redesigning" of the channels. Additionally, OCC is concerned that the cross-sectional area may be reduced and not allow for needed drainage. OCC recommends plans that reduce disturbance, and thus siltation, in the creek and erosion control plans sufficient to minimize sedimentation impacts from construction activities outside the stream channel. OCC also recommends minimizing changes in the stream configuration (slope, width, depth and path) or if the stream must be manipulated, natural designs be used to reshape and stabilize

the stream. This natural stabilization method is considerably more economical and beneficial to the environment than historical stabilization techniques. Restoring riparian corridors using natural design ultimately produces stream systems that are more stable and efficient in transporting bed load and flood flows while providing habitat for riparian/wetland wildlife. If this method cannot be used, OCC recommends that permanently protected riparian mitigation be implemented possibly through a conservation easement. Tying to this recommendation, OCC suggests that sufficient cross-sectional drainage area through the bridge crossings be incorporated in the plan to allow for maximum periodic flood drainage. Many older bridge designs do not account for all expected flood drainage and the bridge functions as a dam, constricting flow, creating stress on banks and structures, and effectively reducing the natural positive effects of the flood plain. OCC requests that following completion of this project, the streams remain free flowing (stream slope unaffected by construction) with naturally vegetated stable banks and with stream substrate free of excess sedimentation from project activities.

If you have any further questions or concerns, please contact me at 405/522-6908 or at brooks.tramell@conservation.ok.gov.

Sincerely,

Brooks K Tramell

Brooks Tramell
Director of Monitoring, Assessment and Wetlands Programs
Water Quality Division

cc: Wetlands file
Shanon Phillips, OCC Water Quality Division Director

United States Department of Agriculture

NRCS

Natural Resources Conservation Service
1725 HWY 183 South
Clinton, OK 73601

580.323.2580

Subject: US-277 from Cement to I-44 (Caddo and Grady Counties, Oklahoma)

Date: April 17, 2013

To: Dawn R. Sullivan, Env. Programs Div. Engineer
Oklahoma Dept. of Transportation
200 NE 21st Street
Oklahoma City, OK 73105

RE: Solicitation for input for US-277 from Cement to I-44 (Caddo and Grady Counties, Oklahoma)

Ms. Sullivan,

I have completed an environmental review based on the project map that was forwarded to me recently. Please keep in mind these are rough estimates of "Prime Farmland" conversion based on a small scale map: Alt 2A- 3 acres prime (31% of site), Alt 4 – 5.1 acres prime (9% of site), and Alt 6 – 2.4 acres prime (7% of site).

Based on the 2010 color photography of Caddo and Grady counties, no NRCS structures or wetlands/wet areas appear to be in any of the proposed areas.

When a preferred route is determined, I could prepare some more accurate values with regard to prime farmland conversion and complete the NRCS portion of Form AD-1006 for the project (this would be my responsibility due to it being multi-county).

If you have further questions, feel free to contact me.

Clay D. Salisbury

Clay D. Salisbury, Resource Soil Scientist
NRCS, Clinton Technical Service Office
Clinton, OK 73601
(580) 323-2580 ext. 211

OKLAHOMA WATER RESOURCES BOARD
Planning & Management Division
Oklahoma City, OK

PUBLIC NOTICE REVIEW

___ We have no comments to offer. _X_ We offer the following comments.

WE RECOMMEND THAT YOU CONTACT THE LOCAL FLOODPLAIN ADMINISTRATOR FOR POSSIBLE PERMIT REQUIREMENTS FOR THIS PROJECT. THE OWRB WEB SITE, www.owrb.ok.gov, contains a directory of floodplain administrators and is located under forms/floodplain management/floodplain administrators, listed alphabetically by name of community. **If this development would fall on STATE OWNED or operated property, a floodplain development permit is required from OWRB.** The Chapter 55 Rules and permit application for this requirement can be found on the OWRB web site listed above. If this project is proposed in a non-participating community, try to ensure that this project is completed so that it is reasonably safe from flooding and so that it does not flood adjacent property if at all possible.

Reviewer: _Cathy Poage, CFM_____ **Date:** _04/11/2013_

Project Name: Proposed Improvements to US 277, Located from Cement in Caddo County to I-44 in Grady County, OK

FIRM Name: ODOT, Dawn R. Sullivan, P.E.

* Caddo County participates in the NFIP and has a floodplain development permitting system. Grady County does not. Please see paragraph above.

UNITED STATES DEPARTMENT OF THE INTERIOR

BUREAU OF INDIAN AFFAIRS
SOUTHERN PLAINS REGION
1 MILE NORTH OF CITY, HWY 281 & RIVERSIDE DRIVE
P.O. BOX 368
ANADARKO, OKLAHOMA 73005

IN REPLY REFER TO: NATURAL RESOURCES (405) 247-6673

JUN 11 2013

Dawn R. Sullivan, P.E.
Environmental Programs Division Engineer
Oklahoma Department of Transportation
200 N. E. 21st Street
Oklahoma City, OK 73105-3204

Dear Mr. Sullivan:

Thank you for the opportunity to comment on the proposed development ODOT improvements to U.S. 277 from the east edge of Cement in Caddo County to I-44 in Grady County. From your description the project will consist of evaluating six alternatives to improve the highway crossing Caddo and Grady counties.

A review of Bureau of Indian Affairs (BIA) maps of the project location indicates that there are tribal or Individual Indian trust lands within the project area. The BIA has jurisdiction within the project area and there concerns that the proposed improvements will impact Indian trust lands within the Southern Plains Region jurisdiction. A map is attached identifying the BIA administered trust lands along the project corridor. This office should be notified as the project is further developed to mitigate any historic properties that may be present within the Area of Potential Effect (APE).

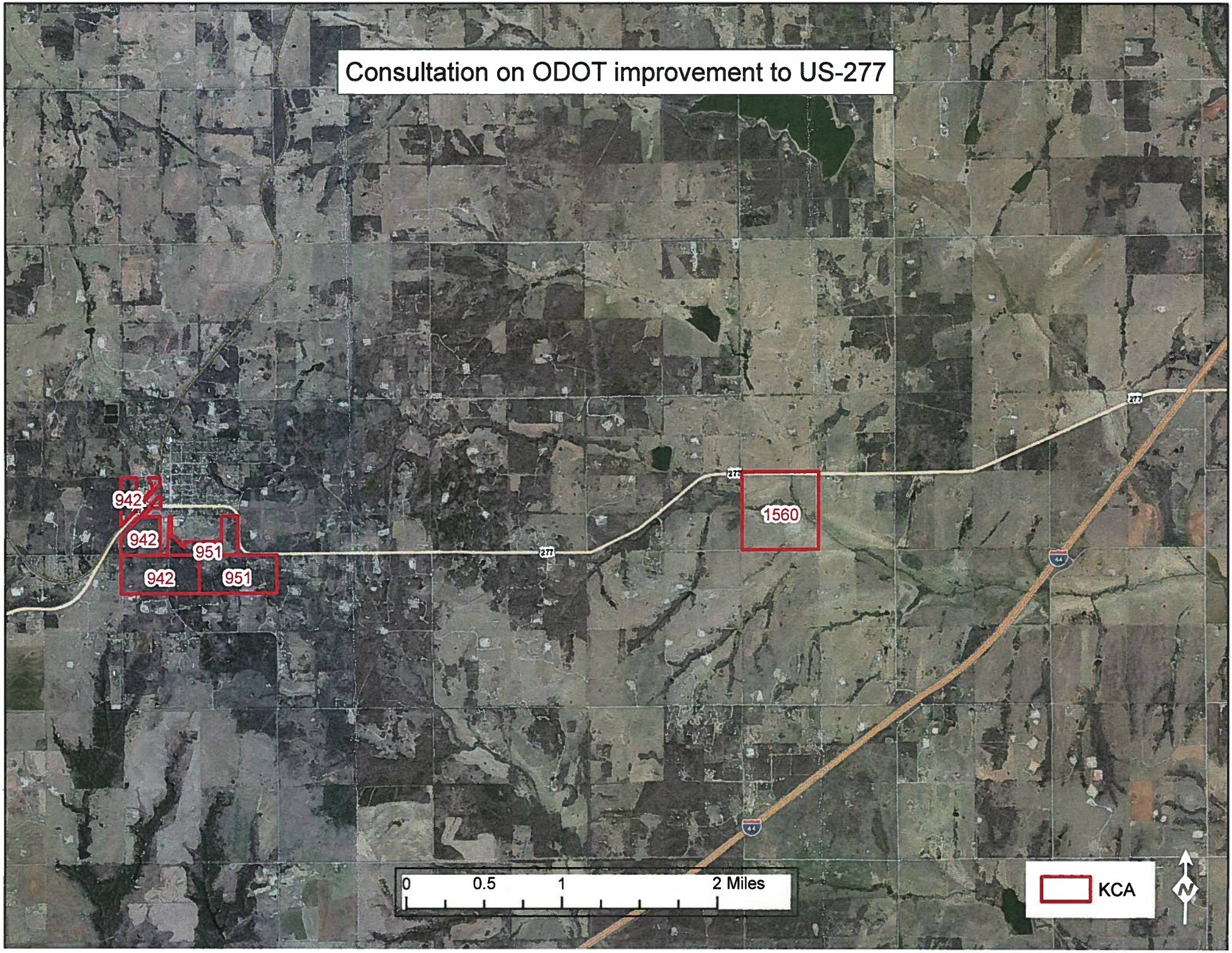
It is recommended that you consult with the Kiowa Tribe of Oklahoma, the Comanche Nation, the Apache Tribe of Oklahoma, and the Wichita and Affiliated Tribes of Oklahoma as they have historic ties to the area and should be consulted to determine if they have some concern that the project has a potential to impact sites of importance in their respective histories or cultural traditions.

If any additional information is required, please contact John A. Worthington, Regional Archeologist, Southern Plains Region, Bureau of Indian Affairs at 405.247.1565.

Sincerely,

Regional Director

RECEIVED
JUN 12 2013
ENVIRONMENTAL
PROGRAMS DIV.


Consultation on ODOT improvement to US-277
942
942
951
942
951
1560
277
277
44
44
0
0.5
1
2 Miles
KCA
N

OKLAHOMA DEPARTMENT OF TRANSPORTATION

PUBLIC COMMENT FORM

http://www.odot.org/meetings/other.php

US-277 IMPROVEMENTS

03/28/2013 **CEMENT, OK**

We would like to thank you for taking the time to attend this meeting and providing us with written comments. Putting your comments in writing is one of the most effective ways to have your concerns addressed.

Samantha Davidson McLendon

NAME:

[redacted]

ADDRESS:

[redacted]

CITY: STATE: ZIP:

[redacted]

PHONE NUMBER:

ENVIRONMENTAL PROGRAMS DIV.
OKLAHOMA DEPARTMENT OF TRANSPORTATION
200 N.E. 21ST ST.
Oklahoma City, OK 73105-3204
FAX: (405) 522-5193
environment@odot.org

Please submit comments by: **04/11/2013**

[redacted]

EMAIL ADDRESS:

"I have the following comments or questions about the proposed project to improve the safety and functionality of the US-277 corridor from Cement, in Caddo Co., to the I-44 Junction in Grady Co."

My family owns a large section of land that connects to highway 277 on the North and County Street 2750 on the West. My great grandparents lived on this land and my grandparents currently live on it. My grandpa runs a cow/calf operation that would be greatly impacted by the Alt 4 plan for the new highway. The Alt 4 plan would essentially cut my grandpa's main grazing land in half, forcing him to either build new facilities to care for his cattle on the south side of the proposed highway or creating a bridge so the cattle could flow freely from one side to the other. Neither of these options seem like they would be practical because they would be too costly. These are the financial aspects that my grandparents will face if this road is built, but for me it's more than just the money side of things.

Ever since I was big enough to care about anything, all I have wanted was to live on that piece of land. My great grandparents had it, my grandparents currently have it, it will be passed down to my dad, then to me. If this road is built it will be placing a huge scar across the land that I have loved since I was a little girl. I know sentimental value means nothing when it comes to money for some people, but to me and my family this means so much. I cannot beg you enough not to build the Alt 4 road. Please choose one of the other two options to build the new highway. I know it is a very hazardous highway that needs to be replaced, but please, please don't build the Alt 4 highway across my grandparents land. That land is my past, present and future. Please don't take that away.

OKLAHOMA DEPARTMENT OF TRANSPORTATION

PUBLIC COMMENT FORM

http://www.odot.org/meetings/other.php

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APR 05 2013
ENVIRONMENTAL PROGRAMS DIV.

US-277 IMPROVEMENTS

03/28/2013 **CEMENT, OK**

We would like to thank you for taking the time to attend this meeting and providing us with written comments. Putting your comments in writing is one of the most effective ways to have your concerns addressed.

BOWEN, VERONICA L.
NAME:

[redacted]
ADDRESS:

[redacted]
CITY: STATE: ZIP:

[redacted]
PHONE NUMBER:

[redacted]
EMAIL ADDRESS:

ENVIRONMENTAL PROGRAMS DIV.
OKLAHOMA DEPARTMENT OF TRANSPORTATION
200 N.E. 21ST ST.
Oklahoma City, OK 73105-3204
FAX: (405) 522-5193
envorinment@odot.org

Please submit comments by: 04/11/2013

"I have the following comments or questions about the proposed project to improve the safety and functionality of the US-277 corridor from Cement, in Caddo Co., to the I-44 Junction in Grady Co."

I prefer Alt. 4!

I hope that this project will hire and use Americans (Oklahomans), and not use Mexicans as was used when handicapped crosswalk was installed in Cement at the junction of Hwy. 277 + Main Street. The only one who could speak English was the supervisor.

Even if it would not be cost effective to add an entrance to I-44, could an exit be made? This is approx. ½ way between Elgin and Chickasha; and I feel it would aid the truckers to have entrance and egress to avoid part of the Chickasha slow-down from Hwy. 81.

(CONTINUED ON BACK)

OKLAHOMA DEPARTMENT OF TRANSPORTATION

PUBLIC COMMENT FORM

http://www.odot.org/meetings/other.php

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APR 01 2013
ENVIRONMENTAL
PROGRAMS DIV.

US-277 IMPROVEMENTS

03/28/2013 **CEMENT, OK**

We would like to thank you for taking the time to attend this meeting and providing us with written comments. Putting your comments in writing is one of the most effective ways to have your concerns addressed.

Houston & Arda Cogburn
NAME:

[redacted]
ADDRESS:

[redacted]
CITY: STATE: ZIP:

[redacted]
PHONE NUMBER:

[redacted]
EMAIL ADDRESS:

ENVIRONMENTAL PROGRAMS DIV.
OKLAHOMA DEPARTMENT OF TRANSPORTATION
200 N.E. 21ST ST.
Oklahoma City, OK 73105-3204
FAX: (405) 522-5193
envorinment@odot.org

Please submit comments by: 04/11/2013

"I have the following comments or questions about the proposed project to improve the safety and functionality of the US-277 corridor from Cement, in Caddo Co., to the I-44 Junction in Grady Co."

We believe that ALT 4 is the best choice. It eliminates all the dangerous curves and hills and there is not much difference in cost. The other routes are not as straight. Might as well take the safest option. Everything needs to be done to save lives.

(CONTINUED ON BACK)

"The mission of the Oklahoma Department of Transportation is to provide a safe, economical, and effective transportation network for the people, commerce, and communities of Oklahoma."

OKLAHOMA DEPARTMENT OF TRANSPORTATION

PUBLIC COMMENT FORM

http://www.odot.org/meetings/other.php

RECEIVED
APR 05 2013
ENVIRONMENTAL PROGRAMS DIV.

US-277 IMPROVEMENTS

03/28/2013 **CEMENT, OK**

We would like to thank you for taking the time to attend this meeting and providing us with written comments. Putting your comments in writing is one of the most effective ways to have your concerns addressed.

George A. Davidson
NAME:

[redacted]
ADDRESS:

[redacted]
CITY: STATE: ZIP:

[redacted]
PHONE NUMBER:

EMAIL ADDRESS:

ENVIRONMENTAL PROGRAMS DIV.
OKLAHOMA DEPARTMENT OF TRANSPORTATION
200 N.E. 21ST ST.
Oklahoma City, OK 73105-3204
FAX: (405) 522-5193
environment@odot.org

Please submit comments by: 04/11/2013

"I have the following comments or questions about the proposed project to improve the safety and functionality of the US-277 corridor from Cement, in Caddo Co., to the I-44 Junction in Grady Co."

Enclosed is a description of how the adoption of the Alt. 4 West Project, on the U.S. 277 corridor would effect the Davidson family.

Our property is bordered on the west by the Grady/Caddo Co. line, County St. 2750. Also enclosed is a map and legal description of that property.

Alt. 4 would divide the property, greatly reducing the value and hampering our present cow/calf operation. All the cattle working facilities would be on the north with grazing land on both sides. To utilize the entire property it would be necessary to build additional working facilities on the south or a passageway under the road, so cattle could move freely from one side to the other. Neither seem ecomically feasable, but one of the two would be a necessity.

Alt. 2A or 6 would have no adverse effect.

(CONTINUED ON BACK)

George A Davidson

FORM-CF-PCB-PRD PRINTED: 27.03.2013 REVISION: 21.04.2011

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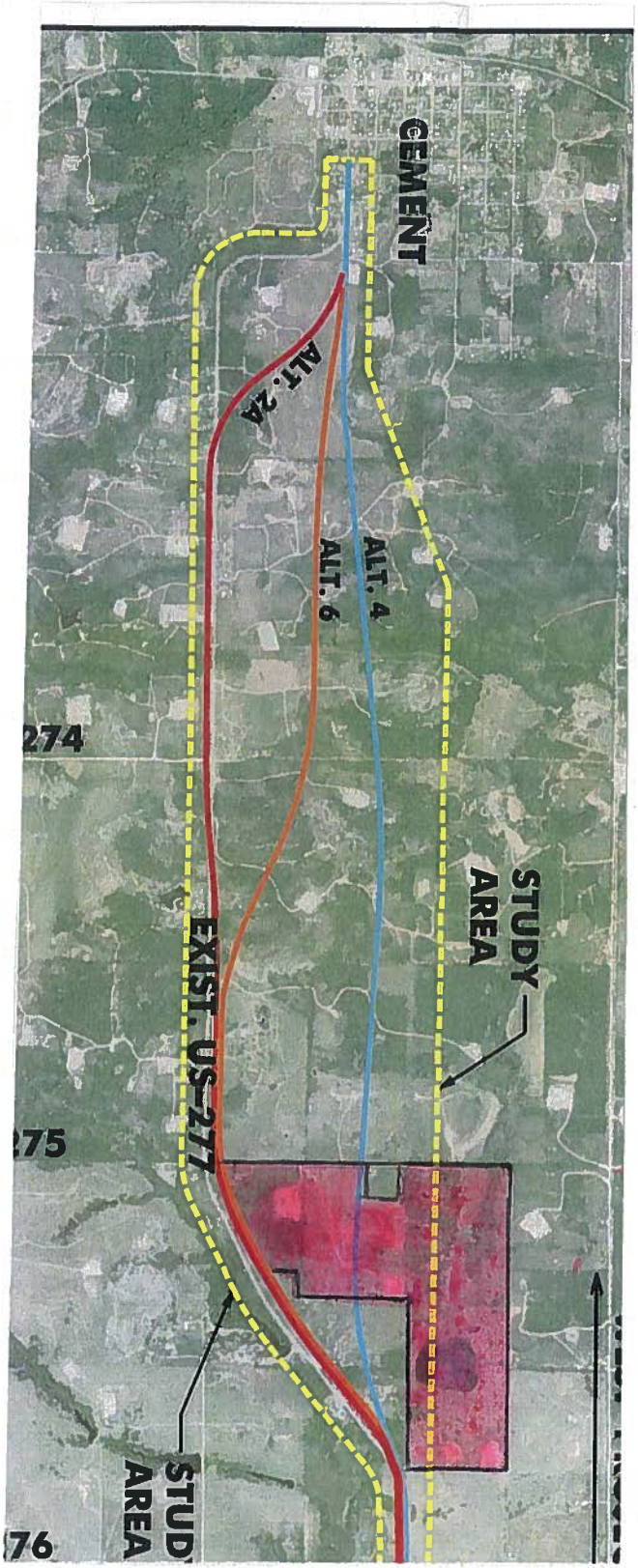


LEGAL DESCRIPTION:

06-05-08-00250 SW/4 NE/4
& SE/4 NW/4 & LOT 5

06-05-08-00400 TR BG SW/C N SW TH E 1416.20' TH N 39 DEG 45 MIN 37 SEC E 537.55' TH N 13 DEG 45 SEC 42 MIN W

06-05-08-00650 TR BG 10' N OF SW/C S SW- NELY ALG CENTER LINE OF HWY ON CURVE TO THE LEFT HAVING A RADIUS=1146.28' FOR

OKLAHOMA DEPARTMENT OF TRANSPORTATION
PUBLIC COMMENT FORM

http://www.odot.org/meetings/other.php

US-277 IMPROVEMENTS

03/28/2013 **CEMENT, OK**

We would like to thank you for taking the time to attend this meeting and providing us with written comments. Putting your comments in writing is one of the most effective ways to have your concerns addressed.

Rusty Snider
NAME:

[redacted]
ADDRESS:

[redacted]
CITY: STATE: ZIP:

[redacted]
PHONE NUMBER:

ENVIRONMENTAL PROGRAMS DIV.
OKLAHOMA DEPARTMENT OF TRANSPORTATION
200 N.E. 21ST ST.
Oklahoma City, OK 73105-3204
FAX: (405) 522-5193
envorinment@odot.org

Please submit comments by: 04/11/2013

[redacted]
EMAIL ADDRESS:

"I have the following comments or questions about the proposed project to improve the safety and functionality of the US-277 corridor from Cement, in Caddo Co., to the I-44 Junction in Grady Co."

I truely believe this project is needed and will benefit our community as well as future generations. I've lived and grown up in the Cyril / Cement area all my life and have lost many friends and acquaintenances over the years. Having said that, I do have concerns about the project and how it may impact my immediate family and our ranch.

It is my opinion that Alt. #4 will be the simplist route to impliment and maintain traffic flow during the coarse of construction. However, the difficulty factor of that coarse will be extremely high for various reasons. I feel this route is the best for the community, it's straighter, impacts less residence, is the least expensive [redacted] based on these numbers, and may provide the safest passage along the corridor. However, do not be fooled by the numbers and logistics.

(CONTINUED ON BACK)

OKLAHOMA DEPARTMENT OF TRANSPORTATION

PUBLIC COMMENT FORM

This route will cross many very deep canyons and through some VARy difficult terrain. I Know personally because my family have been running cattle and horses NORTH of the old rock quarry for years. The land is rough, has a lot of timber and canyons everywhere.

Again even though I feel Alt. #4 B the best option for all involved it will directly effect my family and our way of life forever. Currently, my family run cattle and horses on the west 1/2 of SEC 1, T5N, R9W. We own the NORTH 1/4 SECTION and lease the south section. Your proposed route Alt. #4 will cut our ranch in 1/2. This will make moving cattle and horses more difficult with the highway splitting our summer and winter pastures.

Not only does it make things difficult it disrupts our quite, peaceful environment and creates other access points into our pastures. I don't want to sound like I'm ungrateful or complaining but I spent all my adult life building this place for my family and our future generations and Alt. #4 will change all that to come. If you need to visit I welcome your phone calls.

Thanks

Rusty Snider

4/1/13

OKLAHOMA DEPARTMENT OF TRANSPORTATION

PUBLIC COMMENT FORM

http://www.odot.org/meetings/other.php

US-277 IMPROVEMENTS

03/28/2013

CEMENT, OK

We would like to thank you for taking the time to attend this meeting and providing us with written comments. Putting your comments in writing is one of the most effective ways to have your concerns addressed.

GARY THOMA

NAME: [redacted]

ADDRESS: [redacted]

CITY: [redacted] STATE: ZIP:

PHONE NUMBER:

ENVIRONMENTAL PROGRAMS DIV.
OKLAHOMA DEPARTMENT OF TRANSPORTATION
200 N.E. 21ST ST.
Oklahoma City, OK 73105-3204
FAX: (405) 522-5193
envorinment@odot.org

Please submit comments by: 04/11/2013

EMAIL ADDRESS:

"I have the following comments or questions about the proposed project to improve the safety and functionality of the US-277 corridor from Cement, in Caddo Co., to the I-44 Junction in Grady Co."

I WOULD LIKE TO GO ON RECORD AS BEING IN FAVOR OF THE NORTH OFFSET ON THE EAST PROJECT OF HIGHWAY 277. DUE TO THE LEAST ENCROACHMENT ON HOMES AND THE LOWEST RIGHT OF WAY AND ENVIRONMENTAL IMPACTS I BELIEVE THE NORTH OFFSET WOULD BE THE RIGHT CONSTRUCTION DECISION.

THANK YOU

(CONTINUED ON BACK)

FORM-CF-PCB-PRD REVISION: 21.04.2011

"The mission of the Oklahoma Department of Transportation is to provide a safe, economical, and effective transportation network for the people, commerce, and communities of Oklahoma."

APPENDIX E

ALTERNATIVE SELECTION LETTERS

OKLAHOMA DEPARTMENT OF TRANSPORTATION
200 N. E. 21st Street
Oklahoma City, OK 73105-3204

May 14, 2014

Church of Christ
PO Box 282
Cement OK 73017

Subject: Reconstruction of US-277 from east of Cement to I-44, Caddo and Grady Counties, Job Piece Numbers 20953(04) and 20962(04), Project Numbers STPY-108C(099)SS and STPY-126C(088)SS

Dear Property Owner:

We are pleased to inform you that the Oklahoma Department of Transportation (ODOT), in cooperation with the Federal Highway Administration (FHWA), is proposing to improve US-277 from the east edge of Cement in Caddo County to I-44 in Grady County. Existing US-277 is a major truck route but has several sharp curves and rolling terrain which results in inadequate sight distance to safely stop for turning vehicles or stopped vehicles or to pass slow moving vehicles. As a result this route has a substantial accident history.

A public meeting was held in the town of Cement on March 28, 2013 to present three alternative alignments for the segment of US-277 from east of Cement to Middle Bills Creek bridge approach (Alternatives 2A, 4, and 6) known as the West Project and two alternative alignments (North Offset and South Offset) for the segment from Middle Bills Creek bridge approach to I-44 known as the East Project. Comments were received from the residents at this public meeting. In addition, comments were received from a solicitation sent to state and federal agencies.

Based on the alignment study, evaluation of environmental considerations, right-of-way and utility impacts, public meeting comments, and state and federal agency input, ODOT has selected Alternate 4 for the West Project and the North Offset for the East Project as the preferred alignments (see attached map). For the West Project, Alternates 2A and 6 were eliminated due to the number of residential and commercial properties that would be impacted, along with higher estimated construction costs. For the East Project, the South Offset was eliminated because it had more impacts on residential properties.

ODOT will move forward with the design on the preferred alternatives now identified while completing detailed environmental studies on the anticipated right-of-way for the alternatives. ODOT currently has both projects tentatively scheduled for right-of-way and utility relocation in year 2014 with projected construction of the West Project in year 2016 and the East Project in year 2018. Due to the offset alignment, the existing US-277 roadway will remain open for traffic during construction.

Should you have any information or specific concerns, please contact our authorized agent, Ms. Kirsten McCullough with Garver at 918-858-3799 or KJMcCullough@GarverUSA.com. As always, your cooperation is greatly appreciated.

Respectfully,

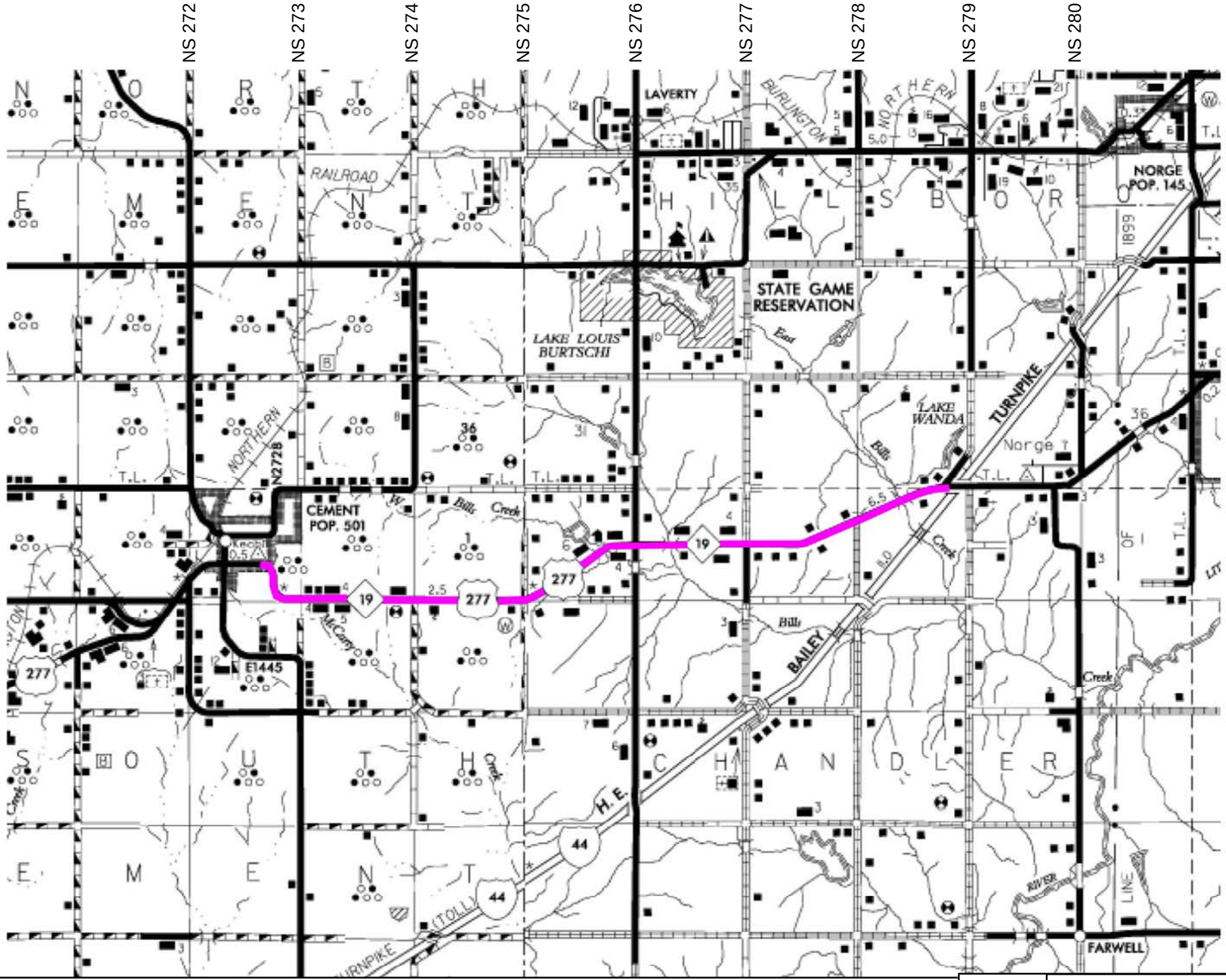
for

Dawn R. Sullivan, P.E.
Environmental Programs Division Engineer

DRS:garver:gw

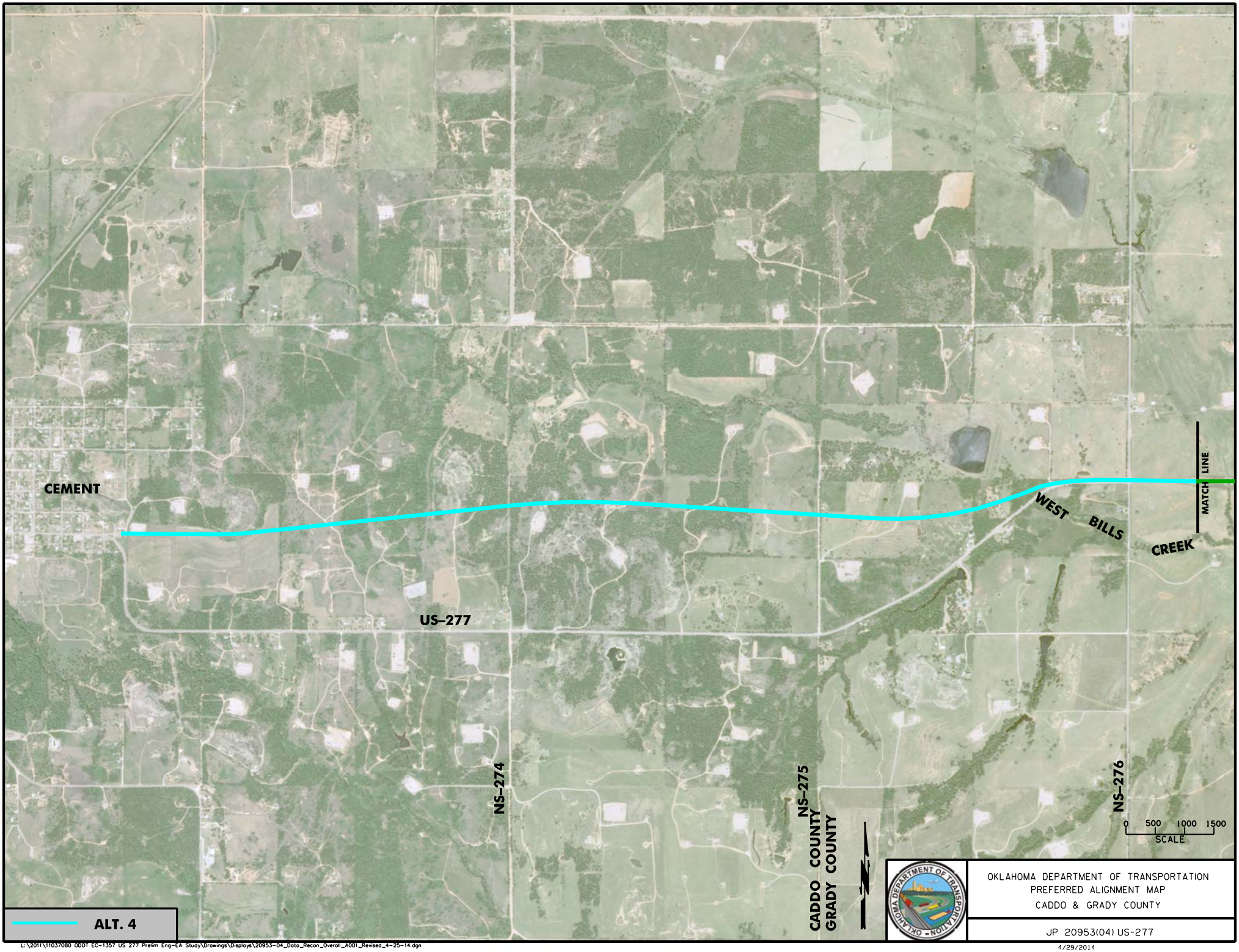
Enclosures: Preferred Alignment Maps, Location Map

Copy to: Project Management Division
Field Division Engineer
Roadway Design Division
Bridge Division
Right-of-Way Division
Survey Division
Environmental Project Manager



Oklahoma Department of Transportation
Project Location Map
Caddo & Grady Counties

JP 20953(04) & 20962(04) US-277



OKLAHOMA DEPARTMENT OF TRANSPORTATION
PREFERRED ALIGNMENT MAP
CADDO & GRADY COUNTY

JP 20953(04) US-277

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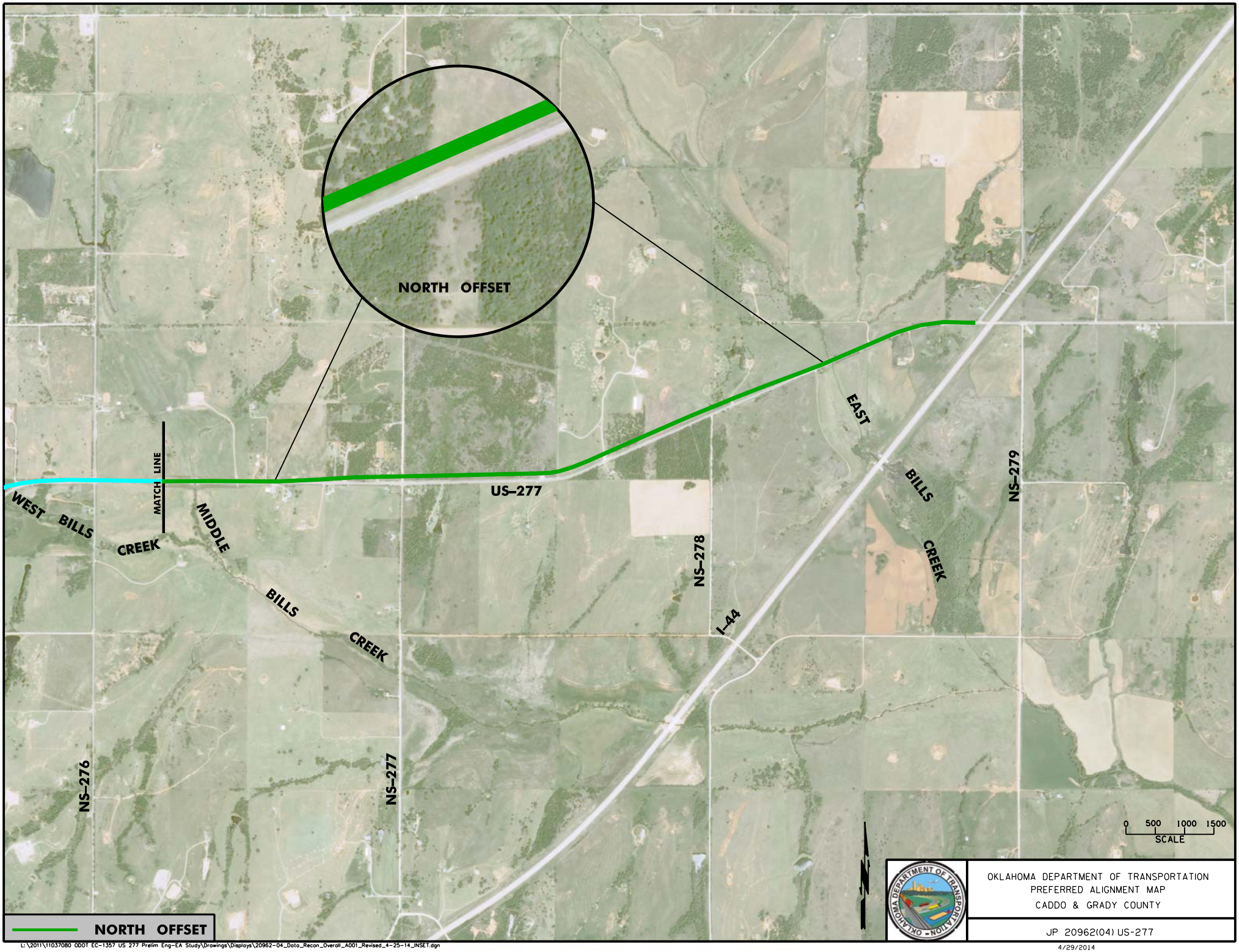
4/29/2014


NORTH OFFSET
MATCH LINE
US-277
WEST BILLS CREEK
MIDDLE BILLS CREEK
BILLS CREEK
EAST BILLS CREEK
NS-276
NS-277
NS-278
NS-279
I-44
0 500 1000 1500
SCALE
NORTH OFFSET
OKLAHOMA DEPARTMENT OF TRANSPORTATION
PREFERRED ALIGNMENT MAP
CADDO & GRADY COUNTY
JP 20962(04) US-277
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4/29/2014

J/P 20953(04) Caddo & Grady Cos. US-277 Alternative Selection Notification List

Rev. 5/2/2014

Public Meeting Attendees/Comments ("Stakeholder")

TITLE	FIRSTNAME	LASTNAME	TITLE	BUSINESS NAME	ADDRESS	ADDRESS2	CITY	STATE	ZIP
Ms.	Danene	Banfour			111 E. 7th		Cement	Ok	73017
Ms.	Veronica	Bowen			PO Box 296		Cement	OK	73017
Mr.	Eugene	Brooks			PO Box 376		Cement	OK	73017
Mr. & Ms.	Bob & Tena	Buffington			272 US Highway 277		Cement	OK	73017
Ms.	Mindy	Clift			PO Box 84		Cement	OK	73017
Mr.	Houston	Cogburn			R1 Box 1688A		Cement	OK	73017
Mr. & Ms.	George & Delores	Davidson			3143 CS 2750		Cement	OK	73017
Ms.	Samantha	Davidson McLendor			PO Box 402		Cement	OK	73017
Mr.	Dale	DeKinder			PO Box 1986		Chickasha	OK	73023
Mr. & Ms.	JR & Gena	Downey			311 E 1st		Cement	OK	73017
Mr.	Troy	Ford			3098 County Rd 2770		Cement	OK	73017
Mr. & Ms.	Danny & Karen	Glass			154 CR 1440		Cement	OK	73017
Ms.	Kathy	Harris			214 E 1st Apt 103		Cement	OK	73017
Ms.	Jani	Houtz			113 County Road 1430		Cement	OK	73017
Mr. & Ms.	Danny & Evalee	Houtz			147 CR 1430		Cement	OK	73017
Ms.	Linda	Kawa			111 E 7th		Cement	OK	73017
Mr. & Ms.	Raymond & Debi	McPherson			PO Box 117		Cement	OK	73017
Mr.	Joe	Montgomery			3284 CS 2770		Cement	OK	73017
Mr. & Ms.	John & Liz	Norris			3027 CS 2770		Cement	OK	73017
Mr.	Jerry	Ray		Dead Horse O&G, LLC	4455 Hobbyhorse Lane		Skiatook	OK	74070
Mr. & Ms.	Ronald & Debra	Roberts			PO Box 281		Cement	OK	73017
Mr.	James	Roller		Chesapeake Energy Corporatior	PO Box 18496		Oklahoma City	OK	73154-0496
Mr. & Ms.	Bobby & Nancy	Ryans			331 US Highway 277		Cement	OK	73017
Mr.	David	Salyer			30146 Hwy 19		Cement	OK	73017
Mr.	Melford	Scott			271 US Highway 277		Cement	OK	73017
Mr.	Vance	Self			PO Box 17		Cement	OK	73017
Ms.	Hazel	Self			PO Box 411		Cement	OK	73017
Mr.	Lawrence	Smiley			172 US Highway 277		Cement	OK	73017
Mr.	Rusty	Snider			RR 1 Box 237		Cement	OK	73017
Mr.	Jay	Snider			RR 1 Box 167		Cyril	OK	73024
Mr.	Gary	Thoma			1906 Louisiana		Chickasha	OK	73018
Mr.	Jack	Thomas			3094 CS 2790		Cement	OK	73017
Mr.	Marvin	Wilkinson			291 US Highway 277		Cement	OK	73017
Mr. & Mrs.		Wolf			PO Box 203		Cement	OK	73017

Other Property Owners ("Property Owner")

Ms.	Michelle Ra-Ann	Allen			20521 98th Ave Ct E		Graham	WA	98338-0000
Mr. & Ms.	Ivy & Elanor	Amaon		Amaon Trust	12861 Corbett Ct		San Diego	CA	92130-0000
Mr. & Ms.	L S & Frankie	Baxter			PO Box 163		Cement	OK	73017-0000
Ms.	Marilyn	Bernard		Marilyn R Bernard Revocable Trust	330 Morgan Street Unit 203		New Orleans	LA	70114-0
Mr. & Ms.	Kenneth A II & Angela	Bivens			719 W Rollingwood St		Pinehurst	TX	77362-0000
Mr. & Ms.	Gerald & Joni	Blakley			903 N.H. Street		Cement	OK	73017-0000
Mr. & Mr.	James & James Brian	Botts		C/O Elizabeth Botts	PO Box 648		Cyril	OK	73029-0000
Ms. & Mr.	Julie & David W	Bowlin		C/O Jennifer Bowlir	RT 1 Box 1340		Cement	OK	73017-0000
Mr. & Ms.	Lee R & Margaret	Brandon			PO Box 295		Cement	OK	73017-0000
Mr. & Ms.	Jeffery & Candance	Briscoe			PO Box 161		Cement	OK	73017-0000
Ms.	Gail	Buckmaster			5803 Russel Rd		Durham	NC	27712-1945
Mr.	David	Burns et al			RT 1 Box 80A		Cyril	OK	73029-0000
Mr.	Mike	Cates			PO Box 301		Cement	OK	73017-0000
Ms.	Betty Jo	Chambers			PO Box 31		Cement	OK	73017-0000
Mr. & Ms.	Francis & Linda	Chapman			153 US Hwy 277		Cement	OK	73017
	Resident				147 County Road 1440		Cement	OK	73017
	Resident				150 County Road 1440		Cement	OK	73017-0000
Mr. & Ms.	Damon Scott & Pamela	Charlson			PO Box 1832		Chickasha	OK	73023-0000
Ms.	Annetta	Charlson			PO Box 1832		Chickasha	OK	73023-0000
				Church of Christ	PO Box 282		Cement	OK	73017-0000
Mr.	Charles	Clark			RR 1 Box 995		Cement	OK	73017-0000
Mr. & Ms.	Leon & Juanita	Cogburn			PO Box 283		Cement	OK	73017-0000
Mr. & Ms.	Jerry L. & Wanda J.	Dallas			RR 1 Box 1370		Cement	OK	73017-0000
Mr. & Ms.	Danny & Leah	Davidson			8822 N Memorial		Owasso	OK	74055-0000
Mr. & Ms.	Dwayne & Jeanette	Doss			406 County Road 1440		Cement	OK	73017-9235
Ms.	Joyce Larue	Dowd		Trustee	1207 Steele		Scott City	KS	67871-0000
Mr.	Glenn	Emmons		Glenn Emmons Trust	8565 Trinity Cr Unit 822B		Huntington Beach	CA	92646-0000
Mr.	Samuel Lee	Fike			PO Box 532		Cement	OK	73017-0000
Mr.	Paul M.	Fondren			PO Box 746		Crescent	OK	73072-0000
Mr. & Ms.	Larry Dean & Shirley	Ford			8121 Turtle Dove Dr.		Oklahoma City	OK	73132-0000
	Opal	Galle Estate		C/O Gilbert E Galle	PO Box 21617		Charleston	SC	29413-1617
Mr.	Joseph M.	Garis			292 US Highway 277		Cement	OK	73017-9230
				Garrett & Company	9701 N Broadway Ext		Oklahoma City	OK	73114-0000
Ms.	Linda D. (Ross)	Gilleland			PO Box 496		Cement	OK	73017-0000

	Resident				160 US Highway 277	Cement	OK	73017-0000
Mr. & Ms.	Jessie A. & Stephanie A.	Gonzales			PO Box 431	Cement	OK	73017-0000
Mr. & Ms.	Michael & Rosa Lee	Halcomb			268 US Hwy 277	Cement	OK	73017-0000
Mr. & Ms.	Barry W. & Cynthia S.	Hall			101 US Highway 277	Cement	OK	73017-0000
Mr. & Ms.	Dock B. & Norma	Haney			PO Box 208	Cement	OK	73017-0000
Mr. & Ms.	Mathieu & Ashley	Haney			RR 1 Box 1337	Cement	OK	73017-0000
Mr. & Ms.	Weston M. & Kalie	Hargus			29116 State Highway 19	Cement	OK	73017-0000
Mr. & Ms.	Billy & Melva	Harris			2919 County Street 2773	Chickasha	OK	73018-0000
Mr.	Billy L.	Holmes			PO Box 32	Cement	OK	73017-0000
Mr.	Warren	Hughes		C/O Leroy Hughes	18133 Sycamore Ave	Hesperia	CA	92345-0000
Mr.	Eugene	Hulsey		Nicole Mar (F/D)	PO Box 395	Cement	OK	73017-0000
Ms.	Gayla S.	Hunter			PO Box 622	Cement	OK	73017-0622
Ms.	Lenora	Hussey			2723 Valley View Dr Apt 1	Chickasha	OK	73018-0000
Ms.	Annette	Jackson			PO Box 333	Cyril	OK	73029-0000
Mr. & Ms.	Larry A. & Tracy	Jackson			364 CR 4856	Newark	TX	76071-0000
Mr.	Kurt	Kinder			PO Box 41	Cement	OK	73017-0000
Mr. & Ms.	Harold E. & Rose M.	Koehler			PO Box 532	Cement	OK	73017-0053
Ms.	Alice L.	Ladymon			PO Box 66	Cement	OK	73017-0000
Mr. & Ms.	Earl & Sharon L.	Livingston		Livingston Family Rev. Trust	PO Box 48	Ninnekah	OK	73067-0000
Mr. & Ms.	Clifford & Ladonna	Marshall			RR 1 Box 32-A	Cyril	OK	73017-0000
Ms.	Mary K.	Mehler			10313 Parker Rd	Marlow	OK	73055-0000
Ms.	Jody	Nix			PO Box 345	Cement	OK	73017-0000
Mr. & Ms.	AJ & Mary	Nowlin			2450 Hand Rd	Midwest City	OK	73130-8024
Mr.	Raymond Earl	Parks			PO Box 73	Cement	OK	73017-0000
	Resident				100 NE E	Cement	OK	73017
Mr. & Ms.	C. E. & Gracie	Powell			PO Box 391	Cement	OK	73017
Mr.	John Ray	Pyzner			230 N Main Street	Ada	OK	74820
Mr. & Ms.	G. H. & Juanita M.	Ray			924 S 12th	Chickasha	OK	73018-0000
Mr. & Ms.	Victor & Tamie	Remy			PO Box 386	Cement	OK	73017-0000
Ms.	Agnes Rider	Rieck		C/O Adonna Bridges	PO Box 875	Fletcher	OK	73541-0000
Mr. & Ms.	Richard D. & Elizabeth	Riley			PO Box 503	Cement	OK	73017-0000
Ms.	Linda Darline	Ross			PO Box 496	Cement	OK	73017-0000
Mr.	Freeman	Salyer			505 N 1st St	Cyril	OK	73029-9794
Mr. & Ms.	Bobby R. & Rita	Shepard			RR 1 Box 1350	Cement	OK	73017-0000
Mr. & Ms.	T.B. & Rena I.	Simmons			RR 1 Box 1300	Cement	OK	73017-0000
Mr. & Ms.	Harry E. & Peggy M.	Sites			3130 County Street 2770	Cement	OK	73017-0000
Mr. & Ms.	Omar Allen & Carol Forrest	Sites	ll		124 Ruskin Pl	Chickasha	OK	73018-7732
Mr. & Ms.	Michael & Lavonna	Smith			141 County Road 1440	Cement	OK	73017-0000
Ms.	Pauline	Smith			RR 1 Box 13565	Cement	OK	73017-0000
Mr.	Jason	Stamper			169 US Hwy 277	Cement	OK	73017-0000
Ms.	Eleanor B.	Stephens			PO Box 15	Peirce City	MO	65723-0000
Ms.	Elaine	Surbeck			10222 E Nacoma Drive	Sun Lakes	AZ	85248-7621
Mr.	Henry W.	Surbeck			2212 Alder St NE	Tacoma	WA	98422-0000
				Trace Ranch LP	2931 County Street 2773	Chickasha	OK	73018-0000
	Keith, Kent, Kevin, Karl & Kriste	Veldhuizen			917 SW 36th Street	Lawton	OK	73505-0000
Mr. & Ms.	Larry & Carla	Wasson			119 Farris Pl	Chickasha	OK	73018-0000
Ms.	Oneta J.	West			PO Box 111	Cement	OK	73017-0000
	Resident				105 NE E Ave	Cement	OK	73017
Mr.	Ed	White			PO Box 561	Cement	OK	73017-0000
	Resident				105 S F Ave	Cement	OK	73017
Mr.	James E.	White			PO Box 561	Cement	OK	73017-0000
Mr.	James Edward	White			PO Box 61	Cement	OK	73017-0000
	Resident				110 NE F	Cement	OK	73017
Mr. & Ms.	Carl G. & Mary E.	Whitt			PO Box 387	Cement	OK	73017-0000
Ms.	Susan	Wigley		C/O Beulah Roberts Reece	1714 21st St	Chickasha	OK	73018-5225
Mr.	Bobby	Wilkinson			PO Box 1	Cement	OK	73017-0000
	Resident				105 S G Ave	Cement	OK	73017
Mr.	Donald	Wilkinson			PO Box 336	Cement	OK	73017-0000
Mr.	Zane	Wilkinson			317 US Hwy 277	Cement	OK	73017-0000
Ms.	Pamela Ann	Worbes			PO Box 85	Cement	OK	73017-0000
Ms.	Linda S	Youngblood			PO Box 374	Cement	OK	73017-0000
	Resident				108 F Ave	Cement	OK	73017
Mr. & Ms.	Robert & Donna	Youngblood			PO Box 574	Cement	OK	73017-0000
	Resident				106 F Ave	Cement	OK	73017
	John R.	Paukune			2200 Willowick Rd #14-E	Houston	TX	77027
	Jerre L.	Kise			PO Box 542	Walters	OK	73572-0542
	Mary J.	Wardiski			5102 NW Meadowbrook Dr	Lawton	OK	73505-4748
	Connie A.	Secondine			132 Lions Cv	Walters	OK	73572-3022
	Norma A.	Tahsuda			1601 S Sandhill Rd Unit 297	Las Vegas	NV	89104-4739

Public Meeting List ("Title")								
NO LETTER	Mike	Patterson	Director	Oklahoma Department of Transportation	200 NE 21st St	Oklahoma City	OK	73105
NO LETTER	Gary	Evans	Chief Engineer	Oklahoma Department of Transportation	200 NE 21st St	Oklahoma City	OK	73105
NO LETTER	Tim	Gatz	Director of Administration	Oklahoma Department of Transportation	200 NE 21st St	Oklahoma City	OK	73105
NO LETTER	David	Streb	Director of Engineering	Oklahoma Department of Transportation	200 NE 21st St	Oklahoma City	OK	73105

NO LETTER	Cassey	Shell	Director of Operations	Oklahoma Department of Transportation	200 NE 21st St	Oklahoma City	OK	73105
NO LETTER	John	Bowman	Planning & Research Division Enginee	Oklahoma Department of Transportation	200 NE 21st St	Oklahoma City	OK	73105
NO LETTER	Ray	Sanders	Project Management Division Manage	Oklahoma Department of Transportation	200 NE 21st St	Oklahoma City	OK	73105
NO LETTER	Tim	Tegeler	Roadway Design Enginee	Oklahoma Department of Transportation	200 NE 21st St	Oklahoma City	OK	73105
NO LETTER	Dawn	Sullivan	Environmental Programs Division Enginee	Oklahoma Department of Transportation	200 NE 21st St	Oklahoma City	OK	73105
NO LETTER	Kurt	Harms	Chief of Right of Way	Oklahoma Department of Transportation	200 NE 21st St	Oklahoma City	OK	73105
NO LETTER	Harold	Smart	Traffic Division Enginee	Oklahoma Department of Transportation	200 NE 21st St	Oklahoma City	OK	73105
NO LETTER	Shannon	Sheffert	Local Government Division Enginee	Oklahoma Department of Transportation	200 NE 21st St	Oklahoma City	OK	73105
NO LETTER	Larry	Reser	Chief of Survey	Oklahoma Department of Transportation	200 NE 21st St	Oklahoma City	OK	73105
NO LETTER	Bob	Rusch	Bridge Division Enginee	Oklahoma Department of Transportation	200 NE 21st St	Oklahoma City	OK	73105
NO LETTER	Terri	Angier	Chief of Media & Public Relations	Oklahoma Department of Transportation	200 NE 21st St	Oklahoma City	OK	73105
NO LETTER	Bob	Rose	Division VII Enginee		PO Box 460	Duncan	OK	73534
Mr.	Gary	Corino	Division Administrato	Federal Highway Admnistratio	5801 N Broadway Ext Ste 300	Oklahoma City	OK	73118
Mr.	Bradley	Burgess	District VII	Oklahoma Department of Transportation	21 NW 44th St Ste 201	Lawton	OK	73505
Congressman	Frank	Lucas	US House of Representatives	Oklahoma District 3	2311 Rayburn HOB	Washington	DC	20515
Congressman	Frank	Lucas	US House of Representatives	Oklahoma District 3	10952 NW Expressway, Suite B	Yukon	OK	73099
Congressman	Tom	Cole	US House of Representatives	Oklahoma District 4	2458 Rayburn HOB	Washington	DC	20515
Congressman	Tom	Cole	US House of Representatives	Oklahoma District 4	711 SW D Ave Ste 201	Lawton	OK	73501
Senator	Tom	Ivester	State Senate	District 26	2300 N Lincoln Blvd Rm 529A	Oklahoma City	OK	73105
Senator	Tom	Ivester	State Senate	District 26	PO Box 1950	Elk City	OK	73648
Senator	Ron	Justice	State Senate	District 23	2300 N Lincoln Blvd Rm 423	Oklahoma City	OK	73105
Senator	Ron	Justice	State Senate	District 23	2209 County Street 2880	Chickasha	OK	73018
Representative	Scott	Biggs	State Representaive	District 51	2300 N Lincoln Blvd Rm 320	Oklahoma City	OK	73105
Representative	Joe	Dorman	State Representaive	District 65	2300 N Lincoln Blvd Rm 540	Oklahoma City	OK	73105
Representative	Joe	Dorman	State Representaive	District 65	PO Box 559	Rush Springs	OK	73082
Senator	Jim	Inhofe	US Senate		205 Russell Senate Office Bldg	Washington	DC	20510-3603
Senator	Jim	Inhofe	US Senate		1900 NW Expressway Ste 1210	Oklahoma City	OK	73118
Senator	Tom	Coburn	US Senate		172 Russell Senate Office Bldg	Washington	DC	20510
Senator	Tom	Coburn	US Senate		100 N Broadway Ste 1820	Oklahoma City	OK	73102
Mr.	Blaine	Smith, Jr.	Executive Director	Association of South Central OK Governments	PO Box 1647	Duncan	OK	73534-1647
Vice Mayor	Kathy	Harris	Town of Cement		411 N Main	Cement	OK	73017
Mr.	Bill	Pascoe	Superintendent	Cement Public Schools	201 S Main	Cement	OK	73017
Mr.	Todd	Bunch	Superintendent	Ninnekah Public Schools	PO Box 275	Ninnekah	OK	73067
Mr.	Ted	Key	Fire Chief	Town of Cement	411 N Main	Cement	OK	73017
Mr.	Everett	Hart	Chief of Police	Town of Cement	411 N Main	Cement	OK	73017
Mr.	Gene	Cain	Sheriff	Caddo County	102 SW Oklahoma	Anadarko	OK	73005
Mr.	Larry	McDuffey	Emergency Management Directo	Caddo County	102 SW Oklahoma	Anadarko	OK	73005
Mr.	Art	Kell	Sheriff	Grady County	326 W Choctaw	Chickasha	OK	73018
Mr.	Dale	Thompson	Emergency Management Directo	Grady County	326 W Choctaw	Chickasha	OK	73018
Mr.	Steven	Browning	Administrator	Southern Plains Medical Center	PO Box 1069	Chickasha	OK	73023
Mr.	Doug	Riebel	Chairman of the Board	Oklahoma Turnpike Authority	4401 W Memorial Rd Ste 130	Oklahoma City	OK	73134
Mr.	Tim	Stewart	Director	Oklahoma Turnpike Authority	3500 Martin Luther King Ave	Oklahoma City	OK	73136
Mr.	Jack	Damrill		Oklahoma Turnpike Authority	3500 Martin Luther King Ave	Oklahoma City	OK	73136
				Agencies Solicited/Commented ("Mr./Ms.")				
Mr.	Richard	Fields	Assistant Field Office Manager - Multi Resources	Bureau of Land Management	7906 E 33rd St Ste 101	Tulsa	OK	74145-1352
Mr.	Andrew	Comer	Regulatory Branch Chief (Attn: Environmental Ar	Tulsa District Corps of Engineers	1645 S 101st E Ave	Tulsa	OK	74128-4629
Mr.	Anthony	Funkhouser	District Engineer	Tulsa District Corps of Engineers	1645 S 101st E Ave	Tulsa	OK	74128-4629
Mr.	Steve	Nolen	Planning & Environmental (PER) Divisio	Tulsa District Corps of Engineers	1645 S 101st E Ave	Tulsa	OK	74128-4629
Mr.	Dan	Deerinwater	Director, Southern Plains Regional Office	Bureau of Indian Affairs	WCD Office Complex, PO Box 368	Anadarko	OK	73005
Ms.	Dixie	Porter	Field Supervisor (ES)	U.S. Fish & Wildlife Service	9014 E 21st St	Tulsa	OK	74129-1428
Mr.	Ron L.	Hilliard	State Conservationist	Natural Resources Conservation Service	100 USDA Ste 206	Stillwater	OK	74074-2655
Mr.	Jerry	Hayden	Field Office Director	U.S. Housing & Urban Development	301 W 6th St Ste 200	Oklahoma City	OK	73102
			Environmental Review Coordinato	DEQ Customer Assistance Program	PO Box 1677	Oklahoma City	OK	73101-1677
Ms.	Carolyn	Sullivan	Energy Program Manager	Oklahoma Department of Commerce	900 N. Stiles Avenue	Oklahoma City	OK	73104
Mr.	Richard	Hatcher	Director	Department of Wildlife Conservation	PO Box 53465	Oklahoma City	OK	73152-8804
Mr.	Mike	Thralls	Executive Director	Oklahoma Conservation Commission	2800 North Lincoln Blvd Ste 160	Oklahoma City	OK	73105
Mr.	Jim	Reese	Secretary of Agriculture	Department of Agriculture	PO Box 54298	Oklahoma City	OK	73105-4298
Mr.	JD	Strong		Oklahoma Water Resources Board	3800 North Classen	Oklahoma City	OK	73118
Mr.	Randy	Keller	Director	Oklahoma Geological Survey	100 E Boyd Rm N-131	Norman	OK	73019-0628
Mr.	Robert	Brooks	State Archaeologist	Oklahoma Archaeological Survey	111 East Chesapeake Bldg 134	Norman	OK	73019-5111
Ms.	Janet	Barresi	State Superintendent	State Department of Education	2500 N Lincoln Blvd Rm. 121	Oklahoma City	OK	73105-4599
Mr.	Blaine	Smith, Jr.	Executive Director	Association of South Central OK Governments	PO Box 1647	Duncan	OK	73534-1647
Mr.	Donald	Cabaniss, Jr.		APACHE TRIBE	PO Box 1330	Anadarko	OK	73005
Mr.	Wallace	Coffey		COMANCHE NATION	PO Box 908	Lawton	OK	73502
Mr.	Jeff	Houser		FORT SILL APACHE TRIBE	RR 2 Box 121	Apache	OK	73006
Mr.	Ron	Two Hatchet		KIOWA TRIBE	PO Box 369	Carnegie	OK	73015
Mr.	Bradley	Burgess		OK Transportation Commission	21 NW 44th St Ste 201	Lawton	OK	73505
Mr.	Benny	Bowling	Commssioner	Caddo County	18042 County Rd 1180	Binger	OK	73009
Mr.	Randy	McLemore	Commssioner	Caddo County	RR 1 Box 220D	Gracemont	OK	73042
Mr.	Brent	Kinder	Commssioner	Caddo County	523 S Ruth Dr	Carnegie	OK	73015
Mr.	Windle	Hardy	Commssioner	Grady County	326 W Choctaw	Chickasha	OK	73018
Mr.	Michael	Lennier	Commssioner	Grady County	326 W Choctaw	Chickasha	OK	73018
Mr.	Jack	Porter	Commssioner	Grady County	326 W Choctaw	Chickasha	OK	73018

Mr.	Vaughn	Clark		Oklahoma Department of Commerce	900 N Stiles Ave.	Oklahoma City	OK	73104
Ms.	Brooks	Tramell	Director of Monitoring, Assessment, and Wetlands	Oklahoma Conservation Commission	2800 N Lincoln Blvd Ste 160	Oklahoma City	OK	73105-4210
Ms.	Cathy	Poage	Planning & Management Division	Oklahoma Water Resources Board	3800 N Classen Blvd	Oklahoma City	OK	73118

Utility Owners ("Mr./Ms.")

Mr.	Rick	Williamson		City of Cement - Water	411 N Main St	Cement	OK	73005
Mr.	Donny	Cosby		Grady County RWD #7	PO Box 51	Ninnekah	OK	73067
Mr.	Tommy	Brown		ONG Transportation	5848 E. 15th St	Tulsa	OK	74112
Mr.	Jose	Tarango	MGC Supervisor	DCP Midstream	PO Box 590	Tuttle	OK	73089
Mr.	Brandon	Johnson		ONEOK Gas Transportation Company	100 W 5th St	Tulsa	OK	74103
Mr.	Paul	Henderson		ONEOK Field Services	PO Box 871	Tulsa	OK	74101
Mr.	Josh	Caldwell		ENOGEX	PO Box 24300	Oklahoma City	OK	73124-0300
Mr.	Jeffery	Stovall	Division Services	Enable Midstream Partners	PO Box 54979	Oklahoma City	OK	73118
Mr.	Jim	Campbell		CenterPoint Energy Oklahoma Gas	PO Box 4583	Houston	TX	77210-4583
Mr.	Daniel	So		Plains Pipeline	740306 S 3510 Rd	Cushing	OK	74023
				Lumen Energy Corp.	4200 E. Skelly Dr	Tulsa	OK	74135
Mr.	Daryl	Williams		R. L. Bolin Properties	PO Box 91	Cement	OK	73005
Mr.	Richard	Forney		PSO Distribution	PO Box 201	Tulsa	OK	74001
Mr.	Mike	Treadwell		Rural Electric Cooperative, Inc	PO Box 609	Lindsay	OK	73052
Mr.	Derek	Weaver		Caddo Electric Cooperative, Inc	PO Box 70	Binger	OK	73009
Mr.	Woody	Hario		AT&T	7001 NW 23rd St Rm 335	Bethany	OK	73008
Mr.	John	Striplin		Chesapeake Operating, Inc.	PO Box 18496	Oklahoma City	OK	73154-0491
Mr.	Rod	Smith		Citation Oil & Gas Corp.	3501 S Lakeside Dr	Oklahoma City	OK	73179
				Superior Oil & Gas, LLC	844 S Walbaum Rd	Calumet	OK	73014-8528
				Cement Oil Company	3284 County St	Cement	OK	73017
Mr.	Tim	Suttle		TEPPCO Crude Pipeline Company	210 Park Ave Ste 1600	Oklahoma City	OK	73102
				Marathon Oil	1516 Lera	Weatherford	OK	73096
				Ward Petroleum Corporation	PO Box 1187	Enid	OK	73702

Oil & Gas Operators ("Mr./Ms.")

Mr.	Mike	Schulte		Stephens Production Company	623 Garrison Ave	Fort Smith	AR	72902-2407
Ms.	Treva	Kigar		Marathon Oil Company	5555 San Felipe Rd	Houston	TX	77253-3128
Mr.	Mike	Chambers		MAC Energy, LLC	3695 Merlin Ct	Newcastle	OK	73065-1385
Mr.	Wayne	McPherson		Liberty Operating, Inc.	1827 Atchison Dr	Norman	OK	73069-8225
Mr.	Stacy	Phillips		Superior Oil & Gas, LLC	RR 2 Box 61	Ringwood	OK	73768-9717
Mr.	Jim	Johnson		Johnson E Lyle	7100 NW 63rd St Ste 1703	Bethany	OK	73008-5008
Mr.	Gary	Hatchell		Bolin R L Properties LP	4245 Kemp Blvd Ste 316	Wichita Falls	TX	76308-2829
Ms.	Candy	Knight		Cemoil, Inc.	2931 County Rd 2773	Chickasha	OK	73018
Ms.	Becky	Sanner		Jones L E Operating, Inc.	15 S 10th St	Duncan	OK	73534-1185
Mr.	Dexter	Holleyman		Crown Energy Company	333 N Portland Ave	Oklahoma City	OK	73107-6107
Mr.	J.E.	Epperson		Ouachita Exploration, Inc.	402 W Chickasha Ave	Chickasha	OK	73023-0926
Ms.	Laurie	Kilbridge		Exxon Mobile Oil Corporation	14950 Heathrow Forest Pkwy	Houston	TX	77210-4358
Mr.	Mike	McCaughtry		Jac-Mac Energy Corporation	1301 SW 116th Pl	Oklahoma City	OK	73170-2612
Ms.	Jeanette	Simmons		T-D Oil, Inc.	14414 CR 2730	Cement	OK	73017-0065
Mr.	Bary	Hilty		Caddo-Marchand, LLC	12221 Merit Dr Ste 930	Dallas	TX	75251-2202
Ms.	Genea	Holloway		Cimarex Energy Company of Colorado	202 S. Cheyenne Ave., Suite 1000	Tulsa	OK	74103-3001
Ms.	Annabel	Jones		Samson Resources Company	2 W 2nd St Ste 1500	Tulsa	OK	74103-3103
Mr.	Cliff	Marshall		CFC Oil, Inc.	RR 1 Box 32A	Cyril	OK	73029-9704
Mr.	Ken	Kinnear		Kaiser Francis Oil Company	PO Box 21468	Tulsa	OK	74121-1468
Mr.	William	Ward		Ward Petroleum Corporation	PO Box 1187	Enid	OK	73702-1187
Mr.	Jeff	Dillard		Cobra Oil & Gas Corporation	PO Box 8206	Wichita Falls	TX	76307-8206
Ms.	Laura	Hanson		BTA Oil Producers, LLC	104 S Pecos St	Midland	TX	79701-5099
Mr.	J.R.	Sorrels		Cheyenne Oil Properties, inc	107 N. 4th St Ste 209	Ponca City	OK	74601-4529
Mr.	John	Donnellan		Kechi Energy, LLC	PO Box 1433	Chickasha	OK	73023-1433
				Enogex Gathering & Processing, LLC	PO Box 24300	Oklahoma City	OK	73124-0300
				Jennings Hallett Gas Auth. Co.	1400 S Boston Ste 680	Tulsa	OK	74119
Ms.	Donna	Williams		Conoco Phillips Company	PO Box 51810	Midland	TX	79710-1810

APPENDIX F

RELOCATION PLANS

Oklahoma Department of Transportation – Right-of-Way Division

Relocation Branch Room C7 Third Floor Office 521-2648 Fax 522-1858

October 23, 2015

To: **Environmental Programs Division**

Thru: Project Management Branch

From: Diana Barlow, Manager, Relocation Branch Diana Barlow

Subject: Relocation Plan – J/P 20953(04)(05)(06) a.k.a. STP-108C(099)SS, Grady County – Grade, Drain & Surface: US-277 Beg 2.57 mis W. of Grady C/L at the N. curve in the E. edge of Cement, ext E. approx 4.0 mis to Middle Bills Cr Br. (New Align)

Attached is the Relocation Plan for the above referenced project to be included in the Environmental Document.

RELOCATION PLANNING
U.S. Highway 277
Grady County

This pre-planning information is provided to the Environmental Programs Division to be included in the Environmental Document to satisfy Pre-planning requirements of the Federal Regulations 49 CFR, § 24.205, relocation planning, advisory services and coordination. The proposed study for Grade, Drain & Surface of U.S. Highway 277 in Grady County is as follows:

A pre-planning drive out was conducted on October 1, 2015. 4-Residential Relocations and 3-Commercial Relocations would be affected by the proposed reconstruction of US-277.

The "Relo Plan Inventory" table lists sites affected by the proposed Right-of-Way. Right-of-Way Plans have been "marked-up" labeling the sites inventoried.

Relo Plan Inventory

JP 20953(04)(05)(06) Grady Co.,
Grade, Drain & Surface: US-277 Beg 2.57 mis W. of Grady C/L at the N. curve in the E. edge of Cement, ext E. approx 4.0 mis to Middle Bills Cr Br. (New Align)

Location	Stationing	Description
A	1005+50R 60' CRL	1200 SF Wood Frame House with a Carport and 300 SF Storage Building; Residential Relo #1
B	1007+25R 85' CRL	2400 SF Commercial Brick Building; Commercial Relo #1
C	1008+75R to 1009+60R 60' CRL	400 SF Concrete Block Building & 500 SF Concrete Block Building; Commercial Relo #2
D	1010+50R 40' CRL	1000 SF Metal Building; Commercial Relo #3 (Personal Property Only)
E	1011+50R 90' CRL	1000 SF Mobile Home with a 400 SF Detached Garage; Residential Relo #2
F	1013+00R 120' CRL	1400 SF Wood Frame House; Residential Relo #3
G	1012+50L 85' CRL	1400 SF Brick House; Residential Relo #4
H	1009+25L 50' CRL	2500 SF Metal Building (Church) Commercial Relo #4
I	1164+50L 70' CRL	1400 SF Metal Building; Commercial Relo #5 (Personal Property Only)

Residential Relocations:

There are (4)-Single Family Residences (1-1200 SF Wood Frame House, presumed to be 2bd/1bath), (1-1000 SF Mobile Home, presumed to be 2bd/1bath), (1-1400 SF Wood Frame House, presumed to be 3bd/2bath) and (1-Brick House, presumed to be 3bd/2bath). Locations "F" & "G" are not in the "Proposed New Right-of-Way", but there could be a possibility that the proximity of the "Proposed New Right-of-Way" to the residences could affect them, so they are being considered affected for this study. There are available properties for sale in the surrounding areas. Web based realtors services supplied the most listings of available properties in the Cement and surrounding area. The web based realtor services utilized are listed in the RPRS. At the time of the Study, Decent, Safe & Sanitary (DSS) replacement housing is available around the project area. Replacement property searches were made for Location "A" a minimum of 2 bedrooms, 1 bathroom houses with a minimum of 1200 SF; Location "E" a minimum of 2 bedrooms, 1 bathroom mobile homes with a minimum of 1000 SF; Locations "F" & "G" a minimum of 3 bedrooms, 2 bathroom houses with a minimum of 1400 SF.

Available Residential Replacement Properties for:

Location "A"

Property	SF	Price
512 S Mockingbird Rd, Ninnekah, OK	1,350	$ 54,500.00
2770 County St 2757, Cement, OK	1,320	$ 55,000.00
116 S. Rush Ave, Rush Springs, OK	1,350	$ 69,900.00
106 Green Way, Elgin, OK	1,200	$ 102,500.00
19082 County Rd 1375, Anadarko, OK	1,310	$ 105,000.00
2482 County Rd 1370, Blanchard, OK	1,269	$ 134,900.00
Average	1,299.83	$ 89,966.67

Prices range from $54,500 to $134,900 with an average price of $86,967 (rnd). Square footage ranged from 1,200 to 1350 SF with an average of 1,300 SF (rnd). Replacement Housing Payments (RHP), Rental Assistance Payments (RAP) and Move payments are estimated from current RHP & RAP activity experienced by the planning agent.

"Estimated" Residential Relocation Cost for Location "A":

RHP: $30,000.00 to $60,000.00

Move Payment: $2,500.00 to $4,000.00

Location "E"

Property	SF	Price
22498 Holden Dr., Blanchard, OK	1,275	$ 62,000.00
2912 Abney Rd., Marlow, OK	1,536	$ 68,000.00
1470 County Rd. 1330, Chickasha, OK	1,568	$ 69,500.00
1330 County St. 2921, Tuttle, OK	1,440	$ 71,500.00
35334 Lambert Ln., Blanchard, OK	1,292	$ 84,900.00
706 County Rd 1410, Ninnekah, OK	1,440	$ 95,000.00
Average	1,425.17	$ 75,150.00

Prices range from $62,000 to $95,000 with an average price of $75,150. Square footage ranged from 1,275 to 1568 SF with an average of 1,426 SF (rnd). Replacement Housing Payments (RHP), Rental Assistance Payments (RAP) and Move payments are estimated from current RHP & RAP activity experienced by the planning agent.

"Estimated" Residential Relocation Cost for Location "E":

RHP: $30,000.00 to $60,000.00
Move Payment: $2,500.00 to $4,000.00

Locations "F & G"

Property	SF	Price
112 E. St., Cement, OK	1,600	$ 52,000.00
Address not available, Blanchard, OK	1,456	$ 69,000.00
211 N. B Ave., Cement, OK	1,792	$ 79,000.00
709 N. East St., Fort Cobb, OK	1,666	$ 79,500.00
13011 State Highway 19, Apache, OK	1,500	$ 98,500.00
Address not available, Chickasha, OK	1,512	$ 130,000.00
615 S. Harrison Ave., Blanchard, OK	1,506	$ 148,500.00
30 Walnut Dr., Ninnekah, OK	1,481	$ 155,000.00
869 Hereford Dr., Elgin, OK	1,700	$ 169,900.00
Average	1,579.22	$ 109,044.44

Prices range from $52,000 to $169,900 with an average price of $109,045 (rnd). Square footage ranged from 1,456 to 1700 SF with an average of 1,580 SF (rnd). Replacement Housing Payments (RHP), Rental Assistance Payments (RAP) and Move payments are estimated from current RHP & RAP activity experienced by the planning agent.

"Estimated" Residential Relocation Cost for Location "F":

RHP: $30,000.00 to $60,000.00
Move Payment: $2,500.00 to $4,000.00

"Estimated" Residential Relocation Cost for Location "G":

RHP: $30,000.00 to $60,000.00
Move Payment: $2,500.00 to $4,000.00

Commercial Relocations

At this time there are three possible commercial relocations which are at locations "B", "C" & "H". Location "B" is currently a vacant commercial building. The "Proposed New Right-of-Way cuts through a good portion of the parking area and is also in close proximity to the building. For these reasons Location "B" is being considered a commercial relocation. Two properties were found in the Chickasha and Elgin areas that appeared to be suitable replacement locations. The properties ranged in price from $185,000 to $800,000. Location "C" consists of two vacant concrete block buildings, one appears to be an office and the other is a garage/shop. One property was found in the Lawton area that appeared to be a suitable replacement location. The property's price was $120,000. Location "H" is a church with only a small portion of their parking area being affected by the take area. The church itself is not in the take area right now. In the event the church is affected, they will be offered relocation benefits as a non-profit organization. Locations "D" & "I" consist of metal buildings which would be personal property moves only.

Commercial Relocations

Location	Move & Re-Establish
"B" – Brick Building	$25,000.00 to $100,000.00
"C" – Concrete Block Buildings	$10,000.00 to $50,000.00
"D" – Metal Building (Personal Property Move)	$1,500.00 to $2,500.00
"H" – Metal Building (Church of Christ)	$25,000.00 to $100,000.00
"I" - Metal Building (Personal Property Move)	$2,500.00 to $3,500.00

"Estimated" Commercial Relocation Cost Summary
$64,000.00 to $256,000.00

Potential Relocation Problems:
None seen at this time.

"Estimated" Relocation Plan Cost Summary:
Residential Relocations Total: $130,000.00 to $256,000.00
Commercial Relocations Total: $64,000.00 to $256,000.00

If a residential or commercial property is occupied when this project begins, full relocation benefits and relocation advisory assistance will be offered to all affected displacees.

There was nothing that indicated low income or minority considerations were prevalent in the community or being impacted by the project requiring special advisory services.

The Code of Federal Regulations (CFR) 49, Part 24, limits a payment not to exceed $7,200.00 for rental assistance (RAP) or down payment assistance; and homeowner-occupant (RHP) payment may not exceed $31,000.00. Last Resort Housing (LRH)

allows for these amounts to be exceeded and will most likely be necessary to relocate persons affected by the proposed plans.

Planning Agent:
Joel Law 10/23/2015

Relocation Plan Resources Summary:

Web based Realtor Sites:
Realtor.com
Zillow.com
Loopnet.com

OKLAHOMA DEPARTMENT OF TRANSPORTATION

PRELIMINARY PLANS
1/30/2015

STATE OF OKLAHOMA
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED

STATE HIGHWAY

FEDERAL AID PROJECT NO. J2-0953(004)
GRADE, DRAINING, BRIDGE & SURFACE
U.S. HIGHWAY 277

CADDO & GRADY COUNTIES

CONTROL SECTION NO. 277-08-08 & 277-26-14
STATE JOB NO. 20953(04)

INDEX OF SHEETS

BRDG. A
BXX-BXX

STA. 209+37.50(AHD) BEGIN BRIDGE
BRIDGE LENGTH=125.00'
STA. 291+62.50(AHD) END BRIDGE
NBI NO. 18275
LOC. NO. 2614 0358 X

C.R.L. STA. 1007+64.00
END INCIDENTAL
BEGIN PROJECT

C.R.L. STA. 1005+00.00
BEGIN INCIDENTAL

C.R.L. STA. 1199+75.00
BEGIN EXCEPTION

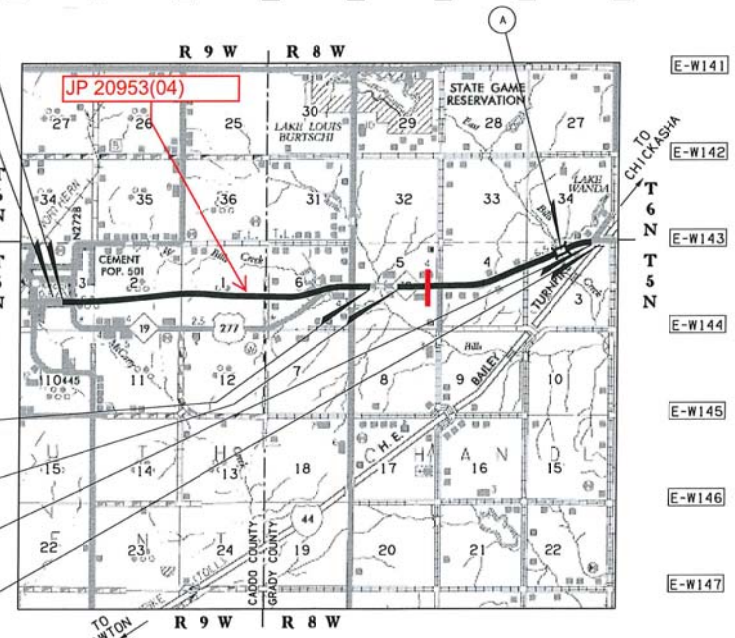
C.R.L. AHD. STA. 185+50.00
END EXCEPTION

C.R.L. AHD. STA. 318+48.54
END PROJECT
BEGIN INCIDENTAL

C.R.L. AHD. STA. 318+80.00
END INCIDENTAL

N-S272 N-S273 N-S274 N-S275 N-S276 N-S277 N-S278 N-S279

E-W141 E-W142 E-W143 E-W144 E-W145 E-W146 E-W147



LOCATION MAP

DESIGN DATA

AADT 2015	=	2,020
AADT 2035	=	3,310
DHV (2-WAY)	=	364
K (DHV/ADT)	=	11%
D	=	53%
T (% DHV)	=	12%
T (% AADT)	=	15%
T^3(% AADT)	=	10%
V	=	65MPH

RECEIVED
OCT 26 2015
ENVIRONMENTAL PROGRAMS DIV.

SCALES	1"
PLAN	1" = 50'
PROFILE HOR.	1" = 50'
VER.	1" = 5'
LAYOUT MAP	1" = 3,520'

CONVENTIONAL SYMBOLS

PROPOSED ROAD
RAILROADS
RANGE & TOWNSHIP
SECTION LINES
QUARTER SECTION LINES
FENCES
GROUND LINE
EXISTING ROADS
BASE LINE
GRADE LINES
TELEPHONE & TELEGRAPH
POWER LINES
BUILDINGS
OILWELL
DRAINAGE STRUCTURES - IN PLACE
DRAINAGE STRUCTURES - NEW
RIGHT-OF-WAY LINES - EXISTING
RIGHT-OF-WAY LINES - NEW
CONTROLLED ACCESS
RIGHT-OF-WAY FENCE

ROADWAY LENGTH ..... 32,509.54 FT. 6.157 MI.
BRIDGE LENGTH ..... 125.00 FT. 0.023 MI.
PROJECT LENGTH ..... 6.180 MI.

EQUATIONS : C.R.L. STA. 1203+86.91=C.R.L. AHD. STA. 178+00.00
EXCEPTIONS : C.R.L. STA. 1199+75.00 TO C.R.L. AHD. STA. 185+50.00

THE FOLLOWING STANDARDS WILL BE REQUIRED:
ODOT STANDARDS

ROADWAY			BRIDGE
SSS-1-1	PCES-4-0	GBCA-1-0	TR4-2-00E
TSC2-3-0	SPI-4-0	GRHI-1-0	EJ-SK-03E
TSD-2-0	FPI-3-0	GRH2-1-0	EJ-DTL-01E
LECS-4-0	SPB-1-1	SKT-1-00	HP1-2-00E
	FHTMP-5-0	RDI-3-0	B4D-C-ABUT-MISC-01E
	FHTCP-3-0	PDT-1-1	
	SBI-4-0	RWF2-2-0	
	PUD-3-0	SUEL1-3-1	

PREPARED BY:
GARVER
10015 EAST 51ST STREET
TULSA, OKLAHOMA 74146
(918) 250-5922 (VOICE)
(918) 250-6529 (FAX)

THIS DOCUMENT IS PRELIMINARY IN NATURE AND IS NOT A FINAL, SIGNED AND SEALED DOCUMENT

KEVIN M. MOORE, P.E.
OKLA. REG. NO. 22545
RESPONSIBLE FOR SHEETS: X-X
DATE

DAVID P. ERICKSON, P.E.
OKLA. REG. NO. 24951
RESPONSIBLE FOR SHEETS: X-X
DATE

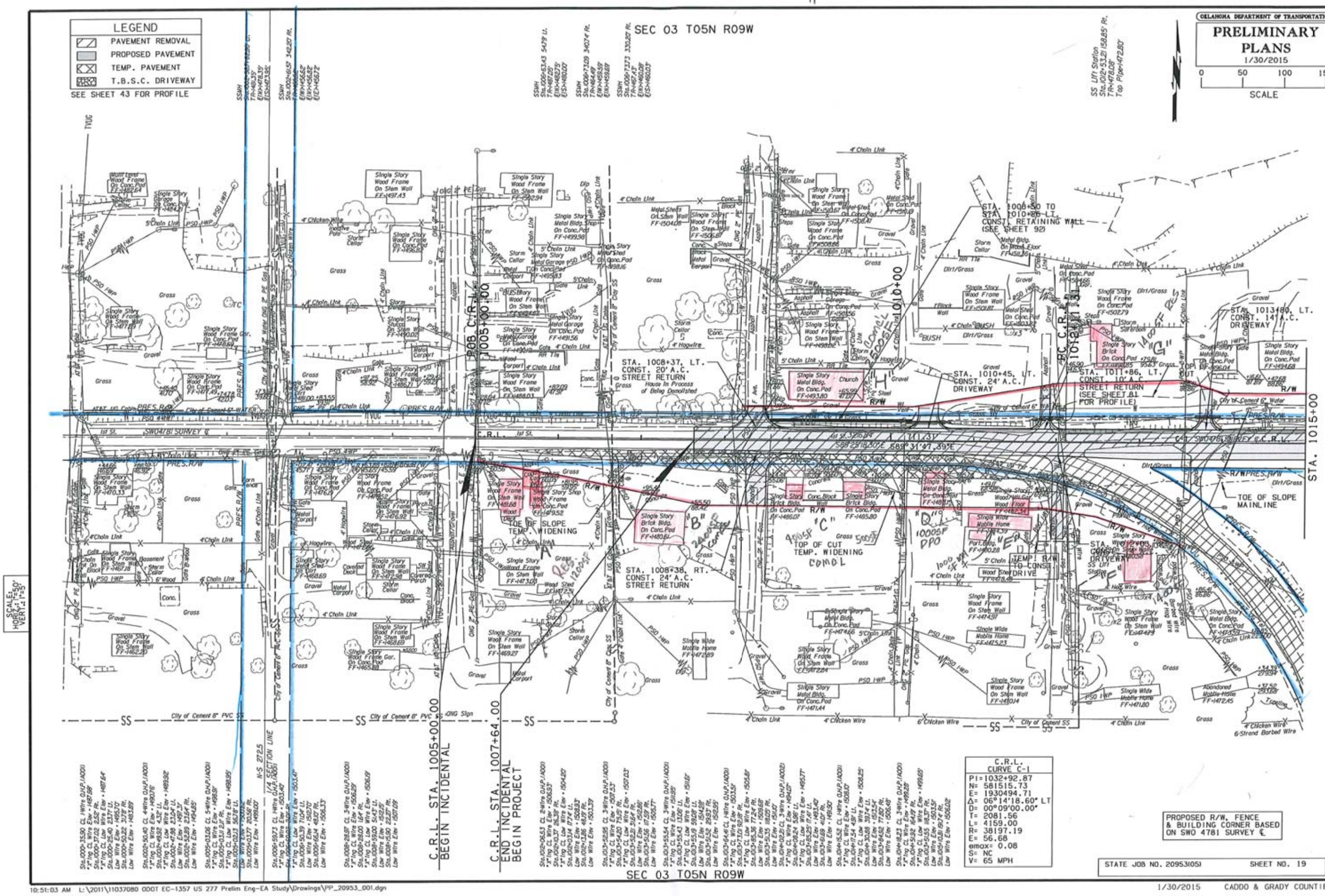
CERTIFICATE OF AUTHORIZATION NO. 4193 P.E., L.S. RENEWAL DATE: 6-30-2016

OKLAHOMA DEPARTMENT OF TRANSPORTATION	DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION
DATE APPROVED	DATE APPROVED
BY	BY
CHIEF ENGINEER	DIVISION ADMINISTRATOR

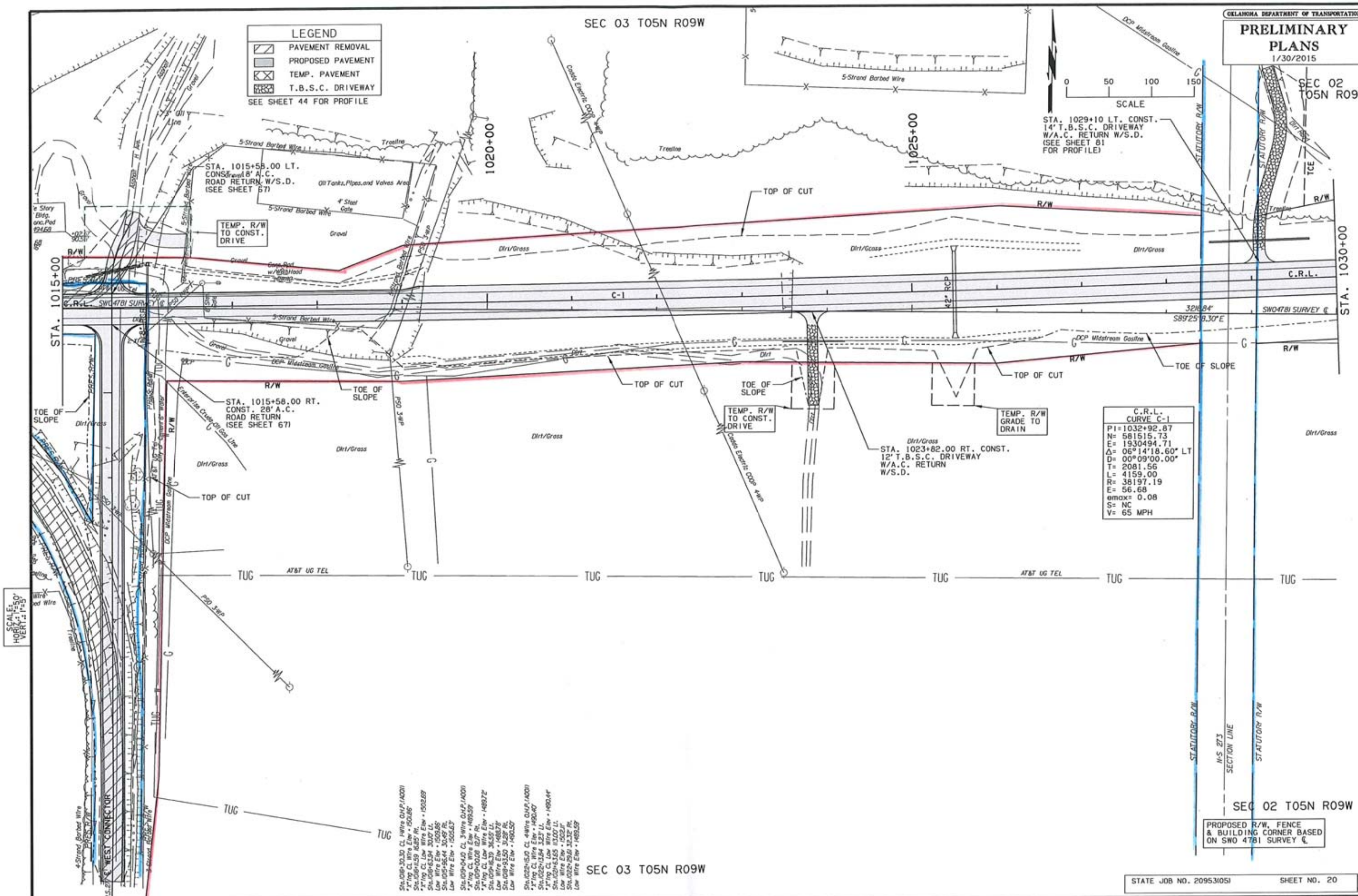
SWO 4781(1) & 4878(1) PROJECT NO. J2-0953(004) SHEET NO. 1

2009 OKLAHOMA STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION GOVERN, APPROVED BY THE U.S. DEPARTMENT OF TRANSPORTATION, FEDERAL HIGHWAY ADMINISTRATION, JANUARY 4, 2010.

P.E. NO. : 20953(01)



OKLAHOMA DEPARTMENT OF TRANSPORTATION
PRELIMINARY PLANS
1/30/2015
0 50 100 150
SCALE
LEGEND
PAVEMENT REMOVAL
PROPOSED PAVEMENT
TEMP. PAVEMENT
T.B.S.C. DRIVEWAY
SEE SHEET 43 FOR PROFILE
SEC 03 T05N R09W
STA. 1008+50 TO STA. 1010+86 LT. CONST. RETAINING WALL (SEE SHEET 92)
STA. 1013+80, LT. CONST. 14' A.C. DRIVEWAY
STA. 1008+37, LT. CONST. 20' A.C. STREET RETURN
STA. 1010+45, LT. CONST. 24' A.C. DRIVEWAY
STA. 1011+86, LT. CONST. 10' A.C. STREET RETURN (SEE SHEET 81 FOR PROFILE)
STA. 1015+00
TOE OF SLOPE MAINLINE
TOE OF SLOPE TEMP. WIDENING
TOP OF CUT TEMP. WIDENING
STA. 1008+38, RT. CONST. 24' A.C. STREET RETURN
TEMP. R/W TO CONST. DRIVE
C.R.L. STA. 1005+00.00 BEGIN INCIDENTAL
C.R.L. STA. 1007+64.00 END INCIDENTAL BEGIN PROJECT
C.R.L. CURVE C-1
PI=1032+92.87
N= 581515.73
E= 1930494.71
Δ= 06°14'18.60" LT
D= 00°09'00.00"
T= 2081.56
L= 4159.00
R= 38197.19
E= 56.68
emax= 0.08
S= NC
V= 65 MPH
PROPOSED R/W, FENCE & BUILDING CORNER BASED ON SWO 4781 SURVEY ℄
STATE JOB NO. 20953(05)
SHEET NO. 19
SCALE: HORZ.: 1"=50' VERT.: 1"=5'
10:51:03 AM L:\2011\11037080 ODOT EC-1357 US 277 Prelim Eng-EA Study\Drawings\PP_20953_001.dgn
1/30/2015
CADDO & GRADY COUNTIES


OKLAHOMA DEPARTMENT OF TRANSPORTATION
PRELIMINARY PLANS
1/30/2015
LEGEND
PAVEMENT REMOVAL
PROPOSED PAVEMENT
TEMP. PAVEMENT
T.B.S.C. DRIVEWAY
SEE SHEET 44 FOR PROFILE
SEC 03 T05N R09W
SEC 02 T05N R09W
SCALE
0 50 100 150
STA. 1029+10 LT. CONST. 14' T.B.S.C. DRIVEWAY W/A.C. RETURN W/S.D. (SEE SHEET 81 FOR PROFILE)
STA. 1015+58.00 LT. CONST. 18' A.C. ROAD RETURN W/S.D. (SEE SHEET 67)
STA. 1015+58.00 RT. CONST. 28' A.C. ROAD RETURN (SEE SHEET 67)
STA. 1023+82.00 RT. CONST. 12' T.B.S.C. DRIVEWAY W/A.C. RETURN W/S.D.
TEMP. R/W TO CONST. DRIVE
TEMP. R/W GRADE TO DRAIN
TOP OF CUT
TOE OF SLOPE
STA. 1015+00
1020+00
1025+00
STA. 1030+00
C.R.L.
SW04781 SURVEY ℄
321.84'
S89°25'8.30"E
C-1
42" RCP
C.R.L. CURVE C-1
PI=1032+92.87
N= 581515.73
E= 1930494.71
Δ= 06°14'18.60" LT
D= 00°09'00.00"
T= 2081.56
L= 4159.00
R= 38197.19
E= 56.68
emax= 0.08
S= NC
V= 65 MPH
5-Strand Barbed Wire
Treeline
Oil Tanks, Pipes, and Valves Area
4' Steel Gate
Gravel
Dirt/Grass
DCP Midstream Gasline
Caddo Electric COOP 4-WP
Enterprise Crude Oil Gas Line
PSO 3-WP
AT&T UG TEL
TUG
R/W
STATUTORY R/W
N-S 273 SECTION LINE
TCE
US 277 WEST CONNECTOR
SCALE: HORIZ.: 1"=50' VERT.: 1"=5'
PROPOSED R/W, FENCE & BUILDING CORNER BASED ON SWO 4781 SURVEY ℄
STATE JOB NO. 20953(05)
SHEET NO. 20

10:51:07 AM L:\2011\11037080 ODOT EC-1357 US 277 Prelim Eng-EA Study\Drawings\PP_20953_002.dgn

1/30/2015 CADDO & GRADY COUNTIES

SEC 02 T05N R09W

LEGEND	
▨	PAVEMENT REMOVAL
▩	PROPOSED PAVEMENT
⊠	TEMP. PAVEMENT
▦	T.B.S.C. DRIVEWAY

SEE SHEET 45 FOR PROFILE

C.R.L. CURVE C-1
PI=1032+92.87
N= 581515.73
E= 1930494.71
Δ= 06°14'18.60" LT
D= 00°09'00.00"
T= 2081.56
L= 4159.00
R= 38197.19
E= 56.68
emax= 0.08
S= NC
V= 65 MPH

SW04781 SURVEY ℄ CURVE S-1
PI- 1034+47.17
N- 581811.25
E- 1930648.98
Δ- 6°35'57.73" LT
D- 1°00'00.00"
T- 330.33
L- 659.54
R- 5729.58
E- 9.51

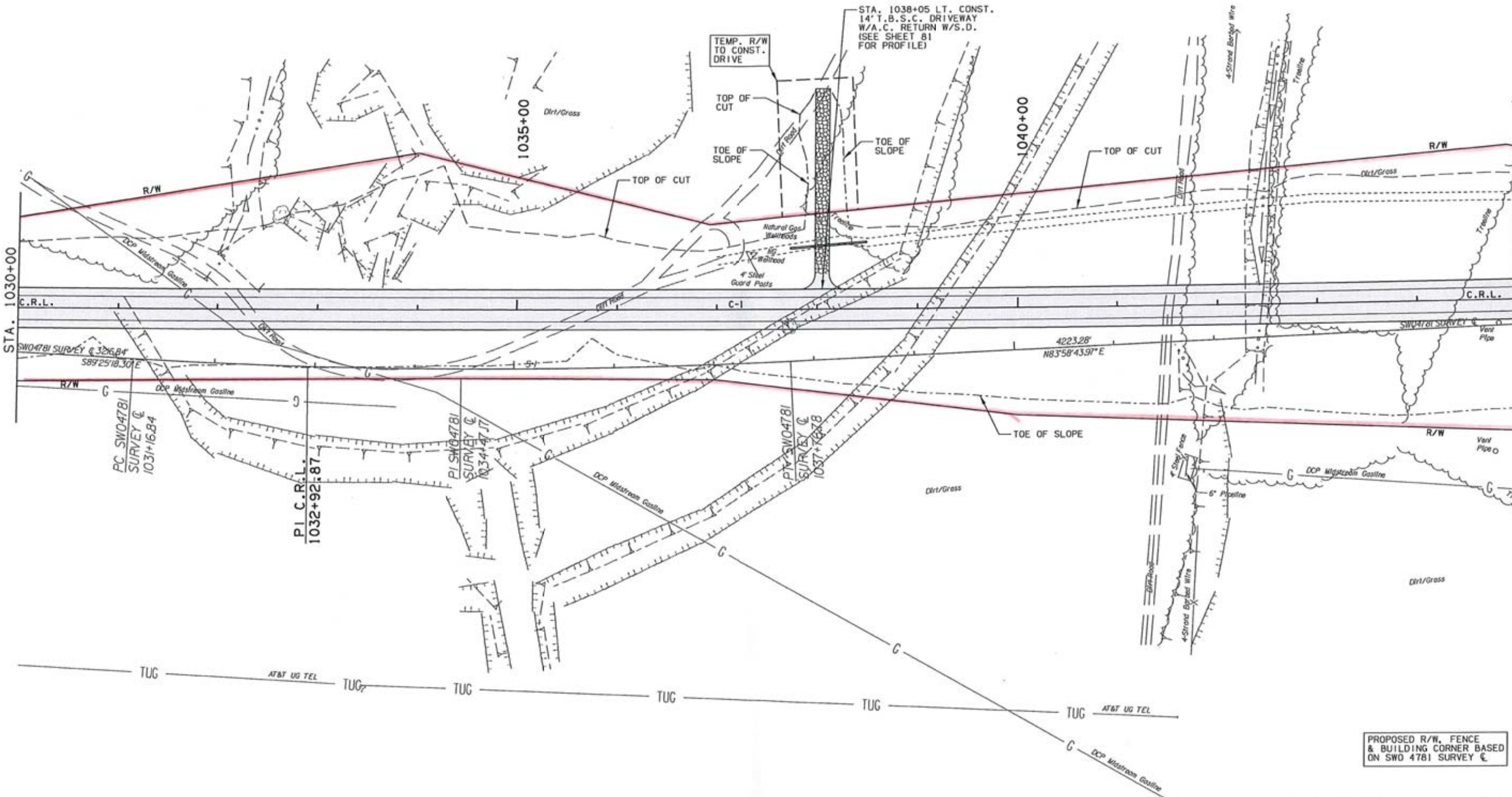
OKLAHOMA DEPARTMENT OF TRANSPORTATION

PRELIMINARY PLANS

1/30/2015

0 50 100 150

SCALE



PROPOSED R/W, FENCE & BUILDING CORNER BASED ON SWO 4781 SURVEY ℄

SEC 02 T05N R09W

SCALE: HORIZ.: 1"=50' VERT.: 1"=5'

STATE JOB NO. 20953(05)	SHEET NO. 21

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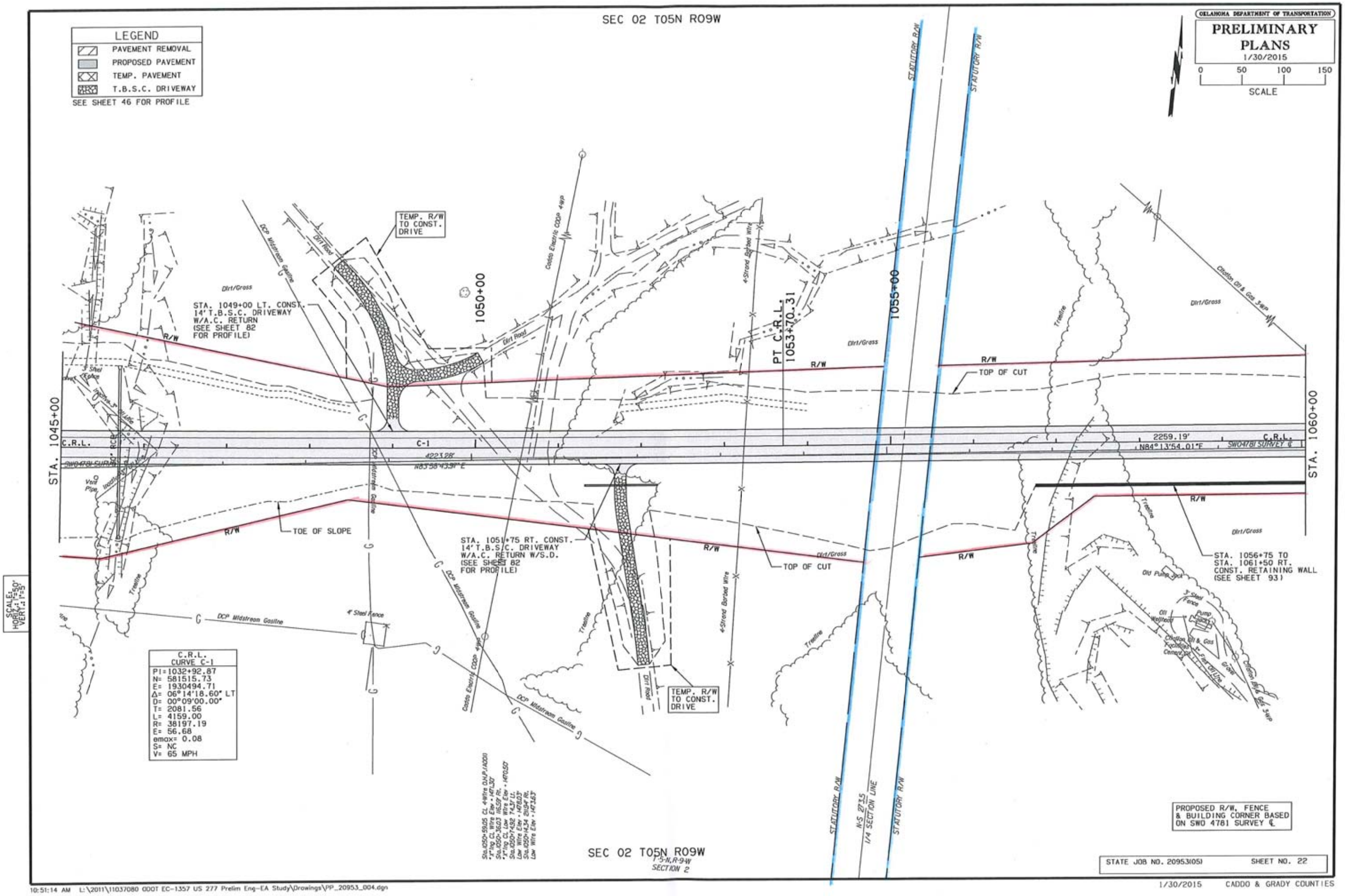
1/30/2015 CADDO & GRADY COUNTIES


SEC 02 T05N R09W
LEGEND
PAVEMENT REMOVAL
PROPOSED PAVEMENT
TEMP. PAVEMENT
T.B.S.C. DRIVEWAY
SEE SHEET 46 FOR PROFILE
OKLAHOMA DEPARTMENT OF TRANSPORTATION
PRELIMINARY PLANS
1/30/2015
0 50 100 150
SCALE
STA. 1045+00
STA. 1060+00
1050+00
1055+00
PT C.R.L. 1053+70.31
TEMP. R/W TO CONST. DRIVE
STA. 1049+00 LT. CONST. 14'T.B.S.C. DRIVEWAY W/A.C. RETURN (SEE SHEET 82 FOR PROFILE)
STA. 1051+75 RT. CONST. 14'T.B.S.C. DRIVEWAY W/A.C. RETURN W/S.D. (SEE SHEET 82 FOR PROFILE)
STA. 1056+75 TO STA. 1061+50 RT. CONST. RETAINING WALL (SEE SHEET 93)
R/W
TOP OF CUT
TOE OF SLOPE
STATUTORY R/W
N-S 27.35
1/4 SECTION LINE
C.R.L.
C-1
2259.19'
N84°13'54.01"E
Dirt/Grass
Dirt Road
Treeline
DCP Midstream Gasline
Caddo Electric COOP 4-WP
4-Strand Barbed Wire
4' Steel Fence
Chitton Oil & Gas 3-WP
Old Pump Jack
Oil Wellhead
Pump Jack
C.R.L. CURVE C-1
PI=1032+92.87
N= 581515.73
E= 1930494.71
Δ= 06°14'18.60" LT
D= 00°09'00.00"
T= 2081.56
L= 4159.00
R= 38197.19
E= 56.68
emax= 0.08
S= NC
V= 65 MPH
SCALE: HORIZ.: 1"=50' VERT.: 1"=5'
SEC 02 T05N R09W
T-5-N,R-9-W SECTION 2
PROPOSED R/W, FENCE & BUILDING CORNER BASED ON SWO 4781 SURVEY ℄
STATE JOB NO. 20953(05)
SHEET NO. 22
1/30/2015
CADDO & GRADY COUNTIES
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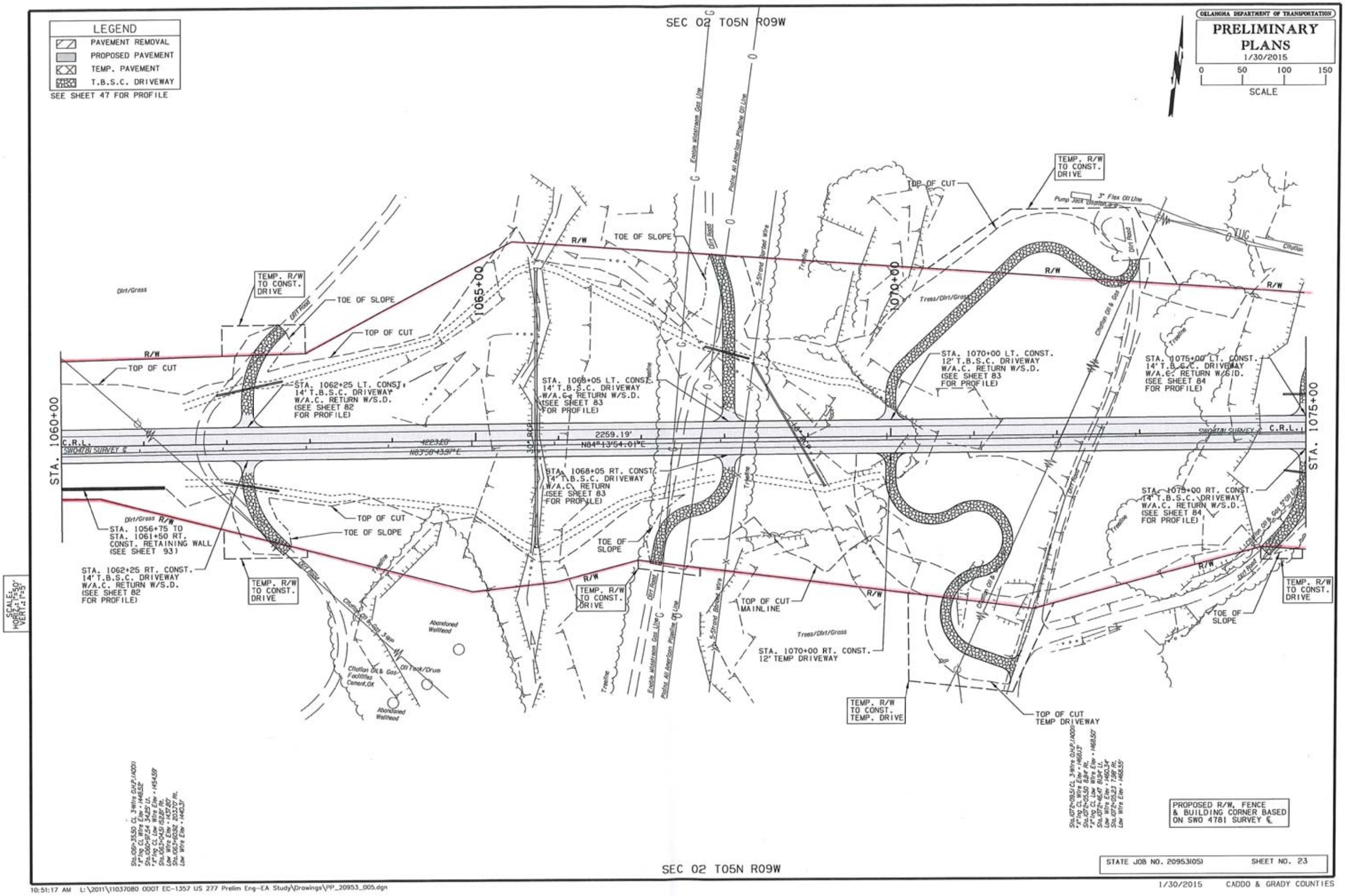

LEGEND
PAVEMENT REMOVAL
PROPOSED PAVEMENT
TEMP. PAVEMENT
T.B.S.C. DRIVEWAY
SEE SHEET 47 FOR PROFILE
SEC 02 T05N R09W
OKLAHOMA DEPARTMENT OF TRANSPORTATION
PRELIMINARY PLANS
1/30/2015
0 50 100 150
SCALE
STA. 1060+00
STA. 1075+00
1065+00
1070+00
C.R.L.
SW0478I SURVEY ℄
2259.19'
N84°13'54.01"E
R/W
TOP OF CUT
TOE OF SLOPE
TEMP. R/W TO CONST. DRIVE
STA. 1062+25 LT. CONST. 14' T.B.S.C. DRIVEWAY W/A.C. RETURN W/S.D. (SEE SHEET 82 FOR PROFILE)
STA. 1068+05 LT. CONST. 14' T.B.S.C. DRIVEWAY W/A.C. RETURN W/S.D. (SEE SHEET 83 FOR PROFILE)
STA. 1070+00 LT. CONST. 12' T.B.S.C. DRIVEWAY W/A.C. RETURN W/S.D. (SEE SHEET 83 FOR PROFILE)
STA. 1075+00 LT. CONST. 14' T.B.S.C. DRIVEWAY W/A.C. RETURN W/S.D. (SEE SHEET 84 FOR PROFILE)
STA. 1056+75 TO STA. 1061+50 RT. CONST. RETAINING WALL (SEE SHEET 93)
STA. 1062+25 RT. CONST. 14' T.B.S.C. DRIVEWAY W/A.C. RETURN W/S.D. (SEE SHEET 82 FOR PROFILE)
STA. 1068+05 RT. CONST. 14' T.B.S.C. DRIVEWAY W/A.C. RETURN (SEE SHEET 83 FOR PROFILE)
TOP OF CUT MAINLINE
STA. 1070+00 RT. CONST. 12' TEMP DRIVEWAY
TEMP. R/W TO CONST. TEMP. DRIVE
TOP OF CUT TEMP DRIVEWAY
STA. 1075+00 RT. CONST. 14' T.B.S.C. DRIVEWAY W/A.C. RETURN W/S.D. (SEE SHEET 84 FOR PROFILE)
Dirt/Gross
Dirt Road
Treeline
Trees/Dirt/Grass
Abandoned Wellhead
Oil Tank/Drum
Chitton Oil & Gas Facilities Cement, OK
Enable Midstream Gas Line
Plains All American Pipeline Oil Line
5-Strand Barbed Wire
Pump Jack
3" Flex Oil Line
SCALE: HORIZ.: 1"=50' VERT.: 1"=5'
PROPOSED R/W, FENCE & BUILDING CORNER BASED ON SWO 4781 SURVEY ℄
STATE JOB NO. 20953(05)
SHEET NO. 23
1/30/2015
CADDO & GRADY COUNTIES
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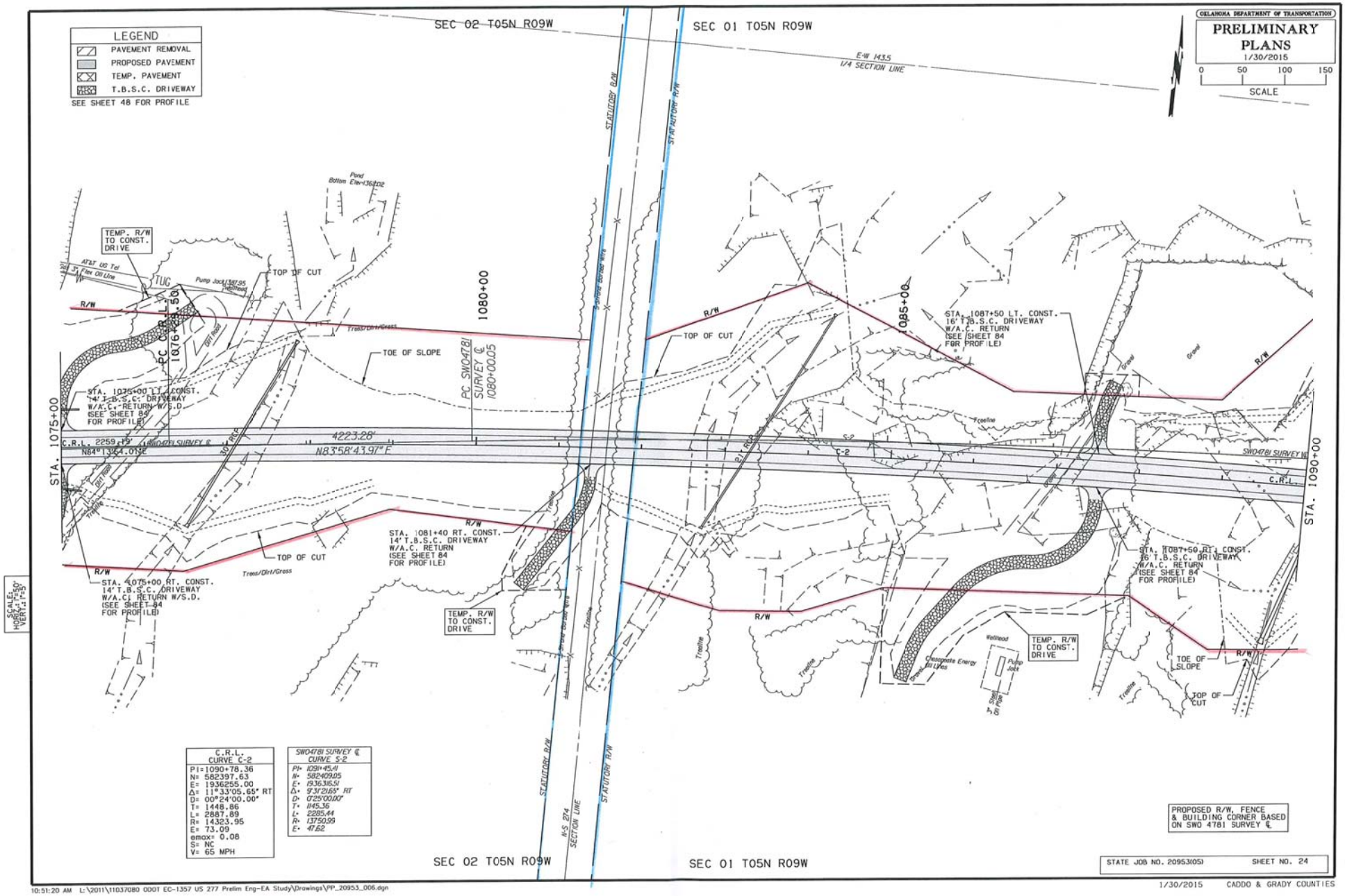
LEGEND
PAVEMENT REMOVAL
PROPOSED PAVEMENT
TEMP. PAVEMENT
T.B.S.C. DRIVEWAY
SEE SHEET 48 FOR PROFILE
SEC 02 T05N R09W
SEC 01 T05N R09W
E-W 1413.5
1/4 SECTION LINE
STATUTORY R/W
OKLAHOMA DEPARTMENT OF TRANSPORTATION
PRELIMINARY PLANS
1/30/2015
0 50 100 150
SCALE
STA. 1075+00
STA. 1080+00
STA. 1085+00
STA. 1090+00
TEMP. R/W TO CONST. DRIVE
TOP OF CUT
TOE OF SLOPE
R/W
PC C.R.L. 1076+29.59
PC SW04781 SURVEY ℄ 1080+00.05
C.R.L. 2259.19'
N84°13'54.01"E
422.28'
N83°58'43.97"E
STA. 1075+00 LT. CONST. 14' T.B.S.C. DRIVEWAY W/A.C. RETURN W/S.D (SEE SHEET 84 FOR PROFILE)
STA. 1075+00 RT. CONST. 14' T.B.S.C. DRIVEWAY W/A.C. RETURN W/S.D. (SEE SHEET 84 FOR PROFILE)
STA. 1081+40 RT. CONST. 14' T.B.S.C. DRIVEWAY W/A.C. RETURN (SEE SHEET 84 FOR PROFILE)
STA. 1087+50 LT. CONST. 16' T.B.S.C. DRIVEWAY W/A.C. RETURN (SEE SHEET 84 FOR PROFILE)
STA. 1087+50 RT. CONST. 16' T.B.S.C. DRIVEWAY W/A.C. RETURN (SEE SHEET 84 FOR PROFILE)
C-2
S-2
SW04781 SURVEY ℄
C.R.L.
Pond Bottom Elev=1362.02
AT&T UG Tel
3" Flex Oil Line
Pump Jack/1387.95 Wellhead
Lift Pads
Trees/Dirt/Grass
3 Strand Barbed Wire
Treeline
Gravel
Chesapeake Energy Oil Lines
Pump Jack
Steel Oil Pipe
SCALE: HORIZ. 1"=30' VERT. 1"=3'
C.R.L. CURVE C-2
PI= 1090+78.36
N= 582397.63
E= 1936255.00
Δ= 11°33'05.65" RT
D= 00°24'00.00"
T= 1448.86
L= 2887.89
R= 14323.95
E= 73.09
emax= 0.08
S= NC
V= 65 MPH
SW04781 SURVEY ℄ CURVE S-2
PI= 1091+45.41
N= 582409.05
E= 1936316.51
Δ= 9°31'21.65" RT
D= 0°25'00.00"
T= 1145.36
L= 2285.44
R= 13750.99
E= 47.62
N-S 274 SECTION LINE
PROPOSED R/W, FENCE & BUILDING CORNER BASED ON SW0 4781 SURVEY ℄
STATE JOB NO. 20953(05)
SHEET NO. 24
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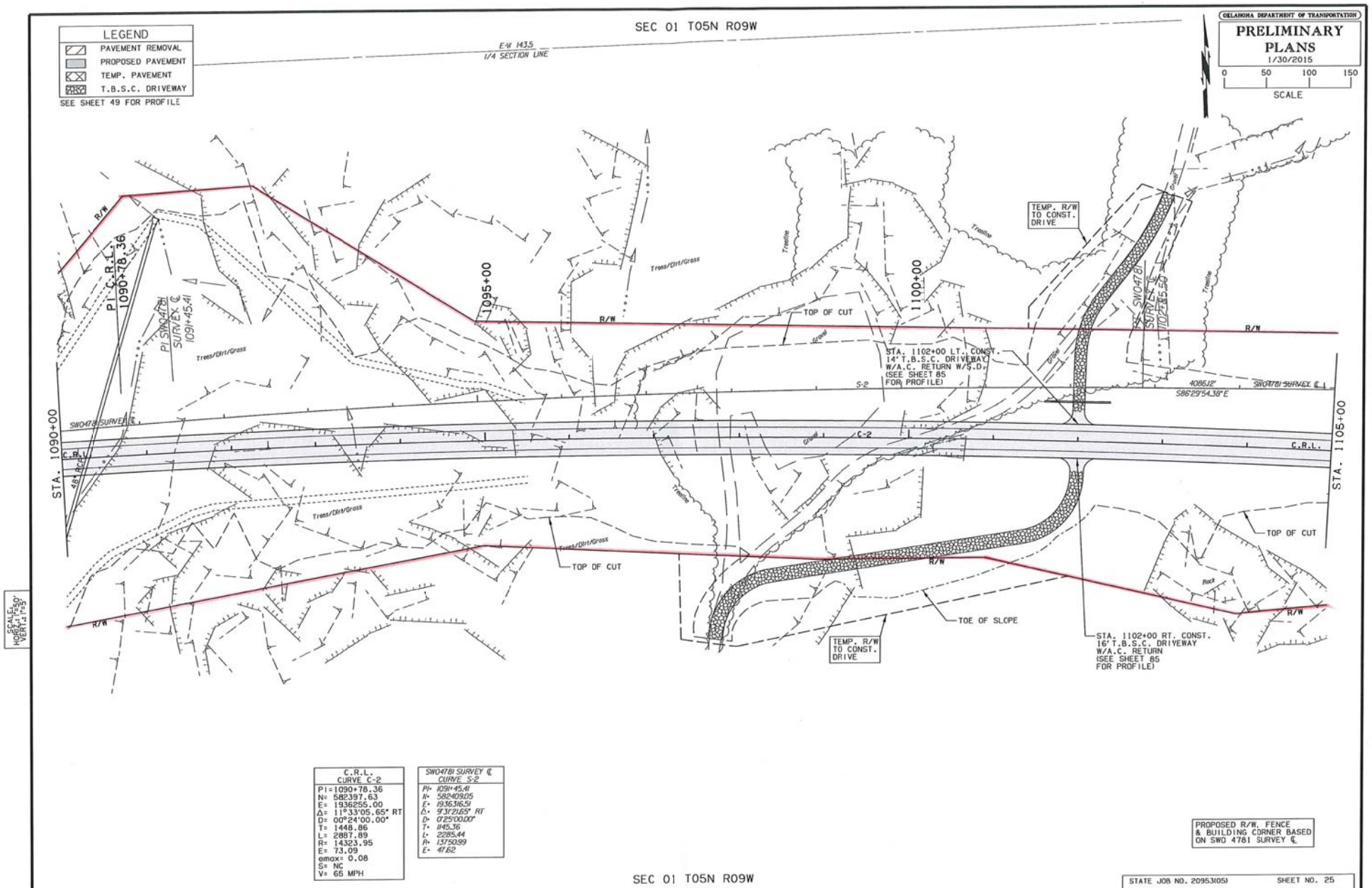
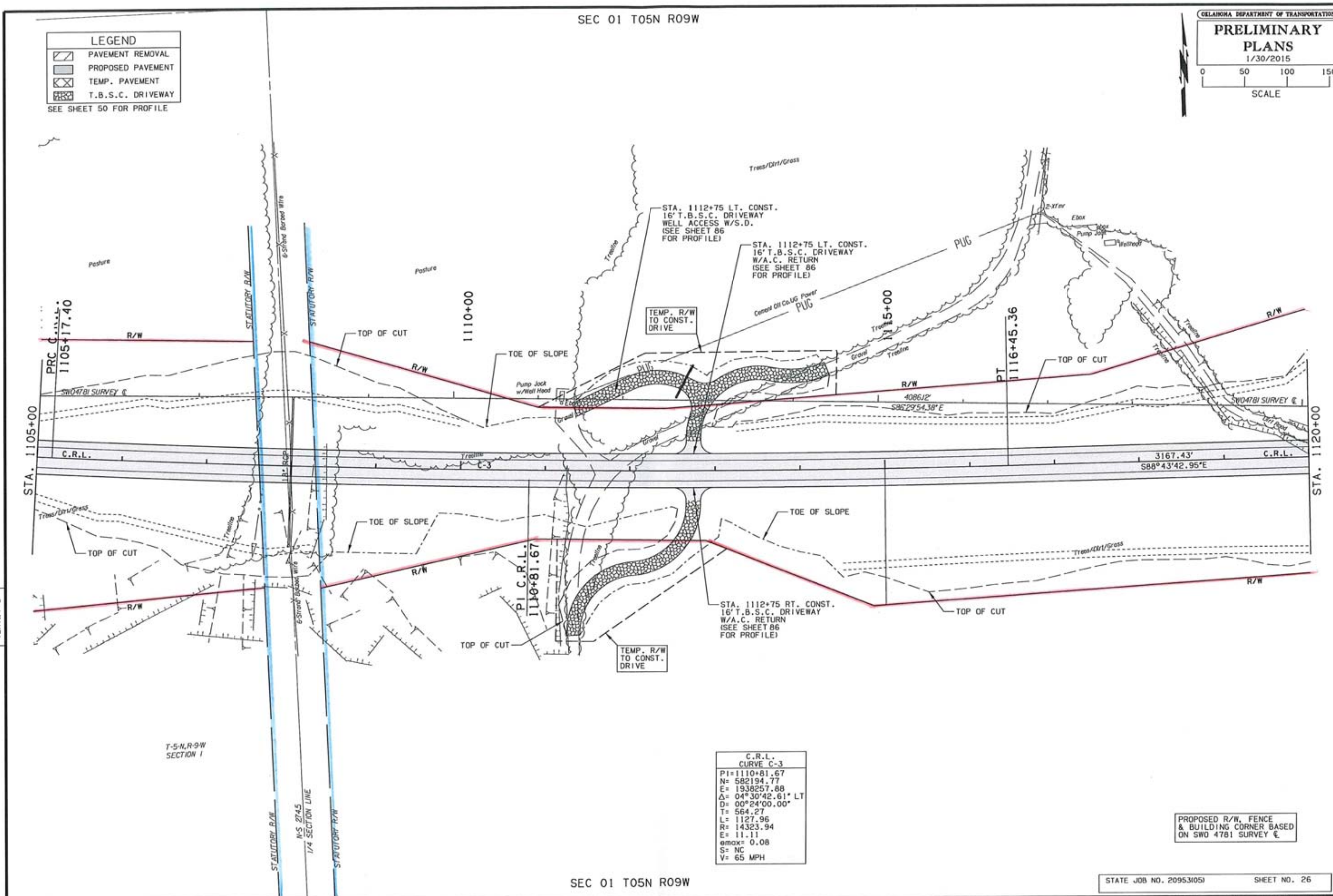
1/30/2015
CADDO & GRADY COUNTIES


LEGEND
PAVEMENT REMOVAL
PROPOSED PAVEMENT
TEMP. PAVEMENT
T.B.S.C. DRIVEWAY
SEE SHEET 49 FOR PROFILE
SEC 01 T05N R09W
E-W 1435
1/4 SECTION LINE
OKLAHOMA DEPARTMENT OF TRANSPORTATION
PRELIMINARY PLANS
1/30/2015
0 50 100 150
SCALE
R/W
P.I. C.R.L. 1090+78.36
P.I. SW04781 SURVEY ℄ 1091+45.41
1095+00
1100+00
Trees/Dirt/Grass
Treeline
Gravel
TOP OF CUT
TEMP. R/W TO CONST. DRIVE
STA. 1102+00 LT. CONST. 14' T.B.S.C. DRIVEWAY W/A.C. RETURN W/S.D. (SEE SHEET 85 FOR PROFILE)
S-2
SW04781 SURVEY ℄
S86°29'54.38"E
STA. 1090+00
STA. 1105+00
C.R.L.
C-2
TOE OF SLOPE
Rock
STA. 1102+00 RT. CONST. 16' T.B.S.C. DRIVEWAY W/A.C. RETURN (SEE SHEET 85 FOR PROFILE)
SCALE: 1"=50' HORIZ. 1"=5' VERT.
C.R.L. CURVE C-2
PI = 1090+78.36
N= 582397.63
E= 1936255.00
Δ= 11°33'05.65" RT
D= 00°24'00.00"
T= 1448.86
L= 2887.89
R= 14323.95
E= 73.09
emax= 0.08
S= NC
V= 65 MPH
SW04781 SURVEY ℄ CURVE S-2
PI= 1091+45.41
N= 582409.05
E= 1936316.51
Δ= 9°31'21.65" RT
D= 0°25'00.00"
T= 1145.36
L= 2285.44
R= 1375099
E= 47.62
PROPOSED R/W, FENCE & BUILDING CORNER BASED ON SW0 4781 SURVEY ℄
SEC 01 T05N R09W
STATE JOB NO. 20953(05)
SHEET NO. 25
10:51:23 AM L:\2011\11037080 ODOT EC-1357 US 277 Prelim Eng-EA Study\Drawings\PP_20953_007.dgn
1/30/2015
CADDO & GRADY COUNTIES


SEC 01 T05N R09W
LEGEND
PAVEMENT REMOVAL
PROPOSED PAVEMENT
TEMP. PAVEMENT
T.B.S.C. DRIVEWAY
SEE SHEET 50 FOR PROFILE
OKLAHOMA DEPARTMENT OF TRANSPORTATION
PRELIMINARY PLANS
1/30/2015
0 50 100 150
SCALE
STA. 1112+75 LT. CONST. 16'T.B.S.C. DRIVEWAY WELL ACCESS W/S.D. (SEE SHEET 86 FOR PROFILE)
STA. 1112+75 LT. CONST. 16'T.B.S.C. DRIVEWAY W/A.C. RETURN (SEE SHEET 86 FOR PROFILE)
STA. 1112+75 RT. CONST. 16'T.B.S.C. DRIVEWAY W/A.C. RETURN (SEE SHEET 86 FOR PROFILE)
TEMP. R/W TO CONST. DRIVE
TOP OF CUT
TOE OF SLOPE
R/W
STATUTORY R/W
N-S 2745
1/4 SECTION LINE
6-Strand Barbed Wire
Pasture
Treeline
Trees/Dirt/Grass
Pump Jack w/Well Head
Cement Oil Co.UG Power
PUG
Ebox
Wellhead
SW04781 SURVEY ℄
C.R.L.
STA. 1105+00
PRC 1105+17.40
1110+00
PI C.R.L. 1110+81.67
1115+00
PT 1116+45.36
STA. 1120+00
3167.43'
S88°43'42.95"E
4086.12'
S86°29'54.38"E
C-3
T-5-N, R-9-W SECTION 1
C.R.L. CURVE C-3
PI=1110+81.67
N= 582194.77
E= 1938257.88
Δ= 04°30'42.61" LT
D= 00°24'00.00"
T= 564.27
L= 1127.96
R= 14323.94
E= 11.11
emax= 0.08
S= NC
V= 65 MPH
PROPOSED R/W, FENCE & BUILDING CORNER BASED ON SWO 4781 SURVEY ℄
SEC 01 T05N R09W
STATE JOB NO. 20953(05)
SHEET NO. 26

SCALE: HORIZ.: 1"=50' VERT.: 1"=5'

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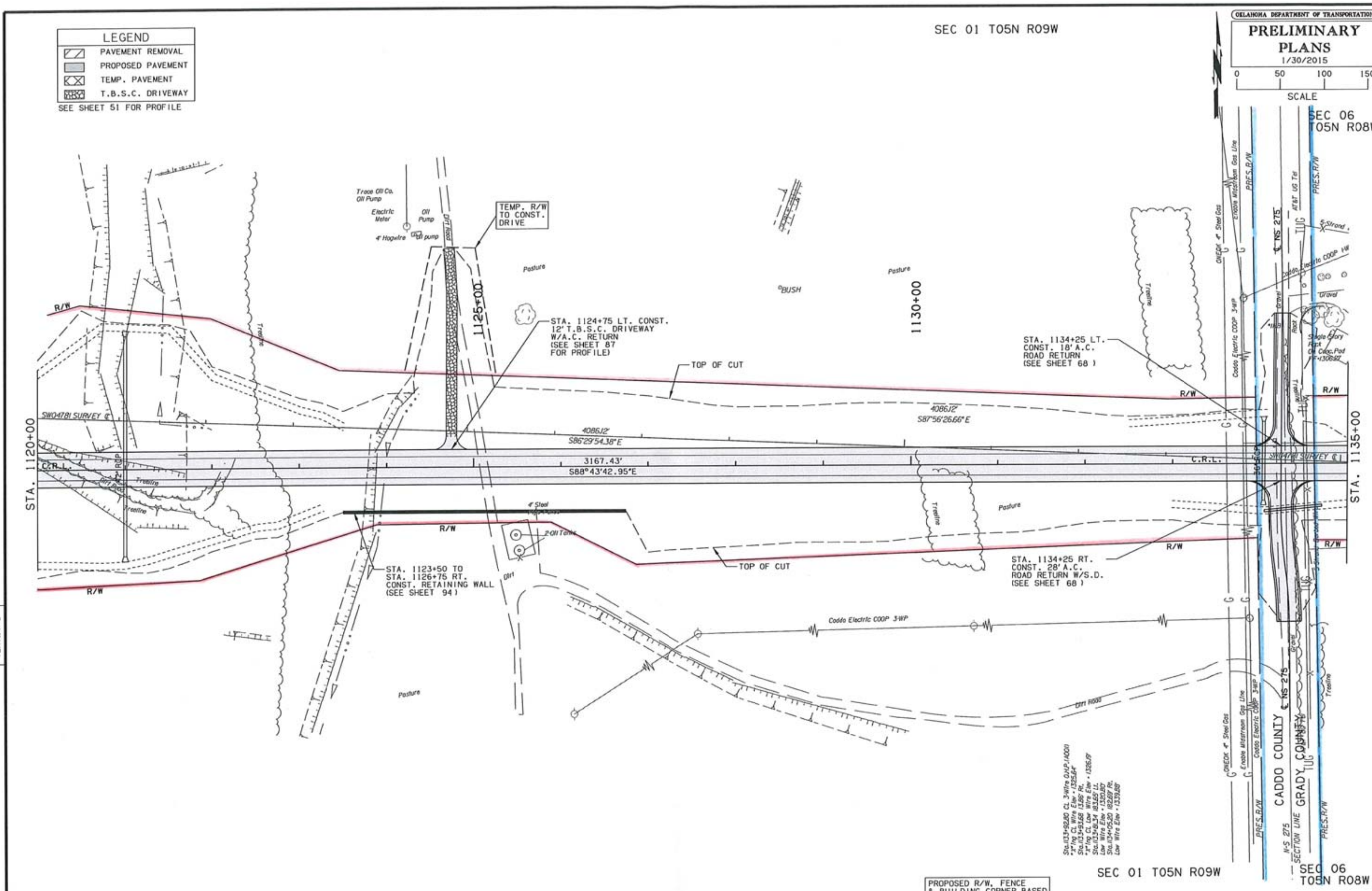
1/30/2015 CADDO & GRADY COUNTIES


OKLAHOMA DEPARTMENT OF TRANSPORTATION
PRELIMINARY PLANS
1/30/2015
0 50 100 150
SCALE
LEGEND
PAVEMENT REMOVAL
PROPOSED PAVEMENT
TEMP. PAVEMENT
T.B.S.C. DRIVEWAY
SEE SHEET 51 FOR PROFILE
SEC 01 T05N R09W
SEC 06 T05N R08W
STA. 1120+00
STA. 1135+00
1125+00
1130+00
TEMP. R/W TO CONST. DRIVE
STA. 1124+75 LT. CONST. 12' T.B.S.C. DRIVEWAY W/A.C. RETURN (SEE SHEET 87 FOR PROFILE)
TOP OF CUT
STA. 1123+50 TO STA. 1126+75 RT. CONST. RETAINING WALL (SEE SHEET 94)
STA. 1134+25 LT. CONST. 18' A.C. ROAD RETURN (SEE SHEET 68)
STA. 1134+25 RT. CONST. 28' A.C. ROAD RETURN W/S.D. (SEE SHEET 68)
3167.43'
S88°43'42.95"E
S86°29'54.38"E
S87°56'26.66"E
C.R.L.
SW04781 SURVEY
R/W
PRES.R/W
Caddo Electric COOP 3-WP
CADDO COUNTY
GRADY COUNTY
N-S 275
SECTION LINE
Dirt Road
Pasture
Treeline
BUSH
PROPOSED R/W, FENCE & BUILDING CORNER BASED ON SWO 4781 SURVEY
SCALE: HORIZ.: 1"=50' VERT.: 1"=5'

STATE JOB NO. 20953(05) SHEET NO. 27

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1/30/2015 CADDO & GRADY COUNTIES

OKLAHOMA DEPARTMENT OF TRANSPORTATION

PRELIMINARY PLANS
1/30/2015

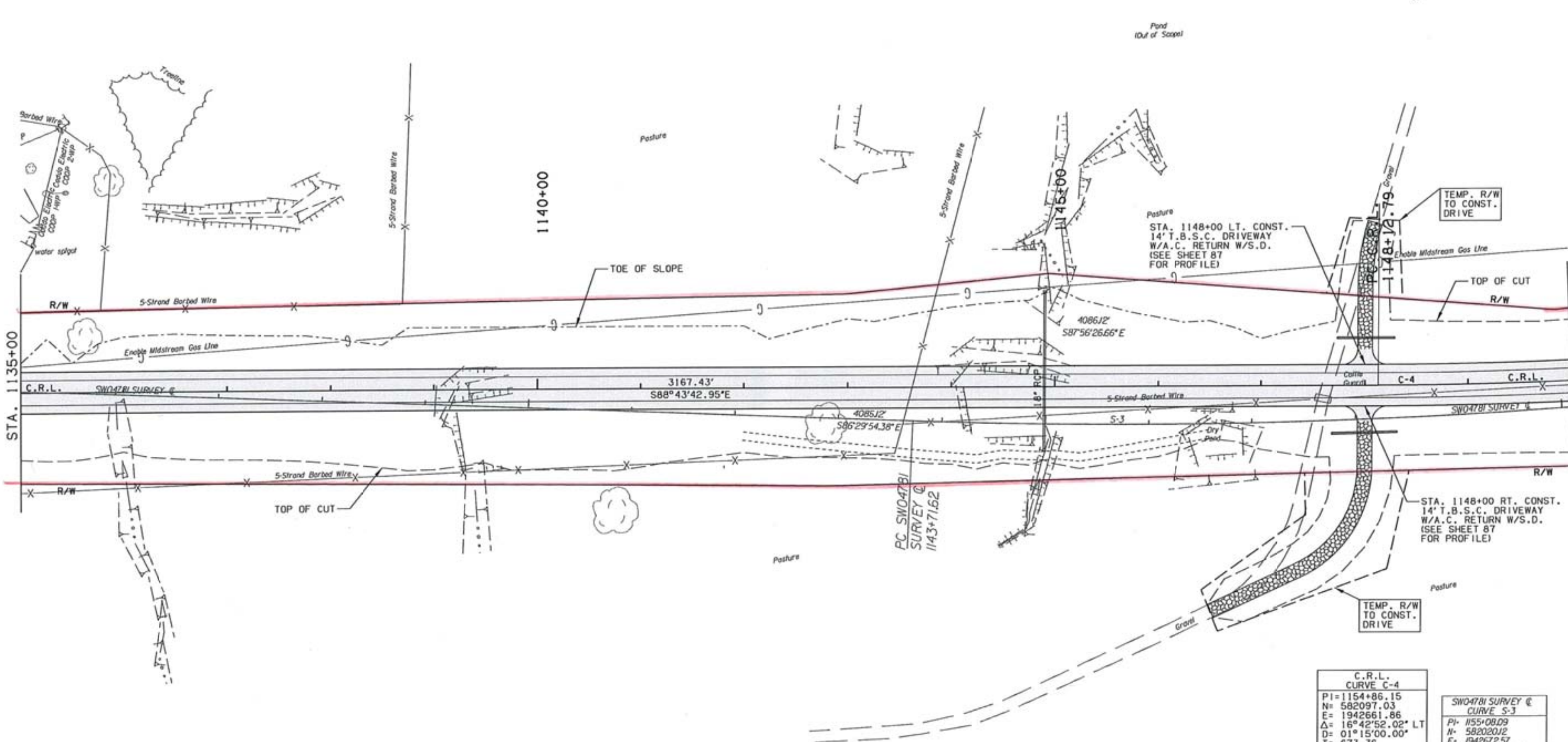
SCALE 0 50 100 150

SEC 06 T05N R08W

LEGEND

- PAVEMENT REMOVAL
- PROPOSED PAVEMENT
- TEMP. PAVEMENT
- T.B.S.C. DRIVEWAY

SEE SHEET 52 FOR PROFILE



STA. 1135+00
1140+00
1145+00
STA. 1150+00
C.R.L.
C-4
SW04781 SURVEY ℄
S-3
R/W
TOE OF SLOPE
TOP OF CUT
5-Strand Barbed Wire
Enable Midstream Gas Line
Treeline
Pasture
Pond (Out of Scope)
water spigot
3167.43'
S88°43'42.95"E
4086J2'
S87°56'26.66"E
S86°29'54.38"E
PC SW04781 SURVEY ℄ 1143+71.62
PC C.R.L. 1148+12.79
STA. 1148+00 LT. CONST. 14' T.B.S.C. DRIVEWAY W/A.C. RETURN W/S.D. (SEE SHEET 87 FOR PROFILE)
STA. 1148+00 RT. CONST. 14' T.B.S.C. DRIVEWAY W/A.C. RETURN W/S.D. (SEE SHEET 87 FOR PROFILE)
TEMP. R/W TO CONST. DRIVE
Gravel
Cattle Guard
Dry Pond

C.R.L. CURVE C-4
PI= 1154+86.15
N= 582097.03
E= 1942661.86
Δ= 16°42'52.02" LT
D= 01°15'00.00"
T= 673.36
L= 1337.16
R= 4583.66
E= 49.20
emax= 0.08
S= 4.0%
V= 65 MPH

SW04781 SURVEY ℄ CURVE S-3
PI- 1155+08.09
N- 582020.12
E- 1942672.57
Δ- 22°23'17.10" LT
D- 1°00'00.00"
T- 1136.47
L- 2243.81
R- 5729.58
E- 111.62

PROPOSED R/W, FENCE & BUILDING CORNER BASED ON SWO 4781 SURVEY ℄

SEC 06 T05N R08W

STATE JOB NO. 20953(05) SHEET NO. 28

OKLAHOMA DEPARTMENT OF TRANSPORTATION

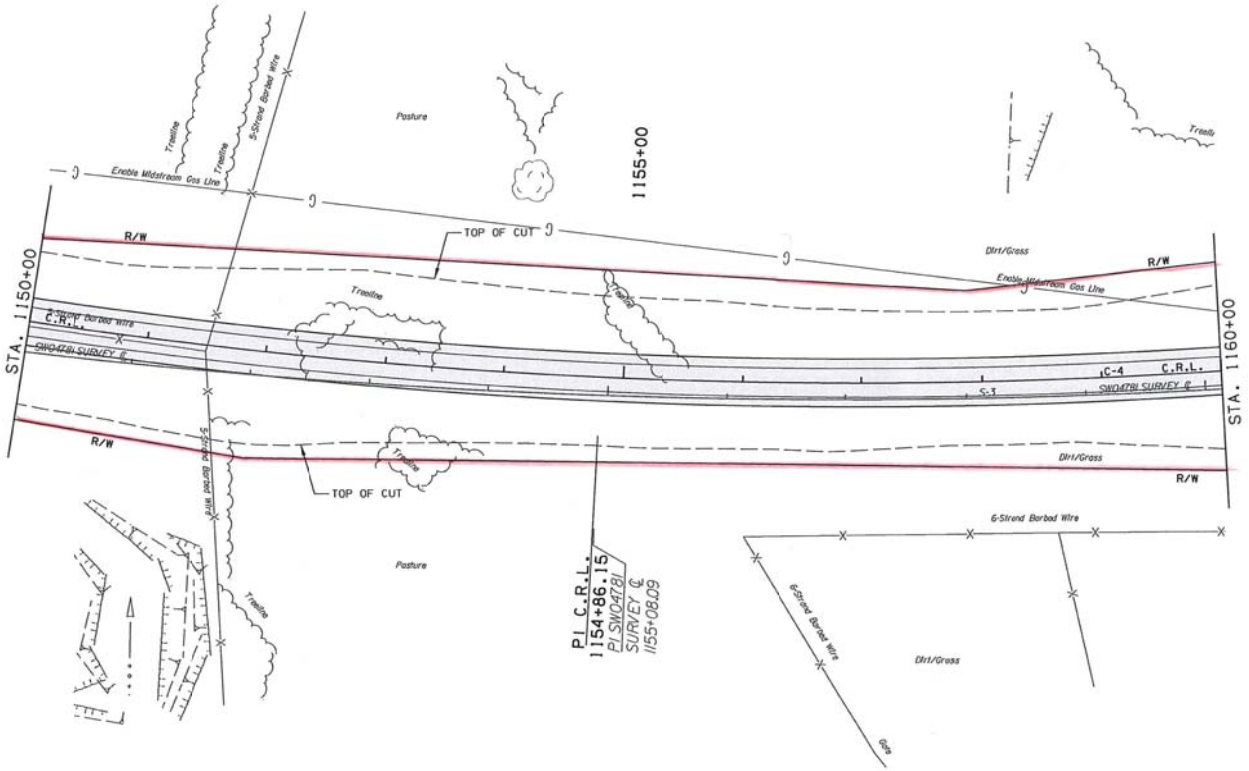
PRELIMINARY PLANS
1/30/2015

0 50 100 150
SCALE

SEC 06 T05N R08W

LEGEND
PAVEMENT REMOVAL
PROPOSED PAVEMENT
TEMP. PAVEMENT
T.B.S.C. DRIVEWAY

SEE SHEET 53 FOR PROFILE



SCALE:
HORIZ. 1"=50'
VERT. 1"=5'

C.R.L. CURVE C-4
PI= 1154+86.15
N= 582097.03
E= 1942661.86
Δ= 16°42'52.02" LT
D= 01°15'00.00"
T= 673.36
L= 1337.16
R= 4583.66
E= 49.20
emax= 0.08
S= 4.0%
V= 65 MPH

SW0478I SURVEY ℄ CURVE S-3
PI= 1155+08.09
N= 582020.12
E= 1942672.57
Δ= 22°23'17.13" LT
D= 10°00.00"
T= 1136.47
L= 2243.81
R= 572.958
E= 111.62

T-5-N, R-8-W
SECTION 6

SEC 06 T05N R08W

PROPOSED R/W, FENCE & BUILDING CORNER BASED ON SW0 4781 SURVEY ℄

STATE JOB NO. 20953(05) SHEET NO. 29

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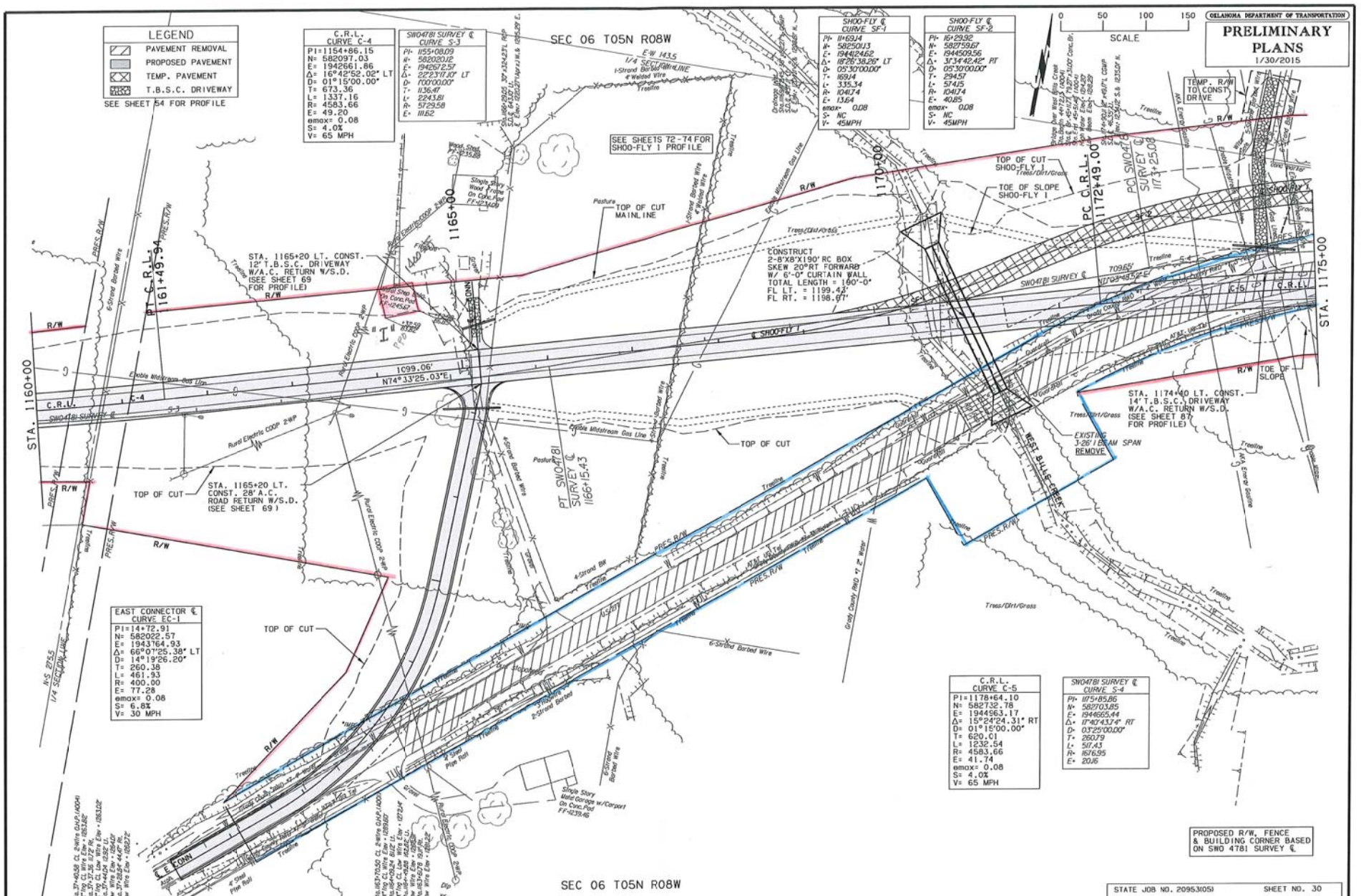
1/30/2015 CADDO & GRADY COUNTIES


LEGEND
PAVEMENT REMOVAL
PROPOSED PAVEMENT
TEMP. PAVEMENT
T.B.S.C. DRIVEWAY
SEE SHEET 54 FOR PROFILE
C.R.L. CURVE C-4
PI=1154+86.15
N= 582097.03
E= 1942661.86
Δ= 16°42'52.02" LT
D= 01°15'00.00"
T= 673.36
L= 1337.16
R= 4583.66
E= 49.20
emax= 0.08
S= 4.0%
V= 65 MPH
SW0478I SURVEY ℄ CURVE S-3
PI= 1155+08.09
N= 582020.12
E= 1942672.57
Δ= 22°23'17.10" LT
D= 100°00.00"
T= 1136.47
L= 2243.81
R= 5729.58
E= 111.62
SHOO-FLY ℄ CURVE SF-1
PI= 1169+14
N= 582501.13
E= 1944124.62
Δ= 18°26'38.26" LT
D= 05°30'00.00"
T= 169.14
L= 335.34
R= 1041.74
E= 13.64
emax= 0.08
S= NC
V= 45MPH
SHOO-FLY ℄ CURVE SF-2
PI= 1162+92.92
N= 582759.67
E= 1944509.56
Δ= 31°34'42.42" RT
D= 05°30'00.00"
T= 294.57
L= 574.15
R= 1041.74
E= 40.85
emax= 0.08
S= NC
V= 45MPH
SCALE 0 50 100 150
OKLAHOMA DEPARTMENT OF TRANSPORTATION
PRELIMINARY PLANS
1/30/2015
SEC 06 T05N R08W
SEE SHEETS 72-74 FOR SHOO-FLY 1 PROFILE
TEMP. R/W TO CONST. DRIVE
STA. 1165+20 LT. CONST. 12' T.B.S.C. DRIVEWAY W/A.C. RETURN W/S.D. (SEE SHEET 69 FOR PROFILE)
CONSTRUCT 2-8'X8'X190' RC BOX SKEW 20°RT FORWARD W/ 6'-0" CURTAIN WALL TOTAL LENGTH = 190'-0" FL LT. = 1199.43' FL RT. = 1198.97'
TOP OF CUT MAINLINE
TOP OF CUT SHOO-FLY 1
TOE OF SLOPE SHOO-FLY 1
PT C.R.L. 1161+49.94
PC C.R.L. 1172+49.00
PC SW0478I SURVEY ℄ 1173+25.08
STA. 1160+00
STA. 1165+00
STA. 1170+00
STA. 1175+00
1099.06' N74°33'25.03"E
PT SW0478I SURVEY ℄ 1166+15.43
STA. 1165+20 LT. CONST. 28' A.C. ROAD RETURN W/S.D. (SEE SHEET 69)
STA. 1174+40 LT. CONST. 14' T.B.S.C. DRIVEWAY W/A.C. RETURN W/S.D. (SEE SHEET 87 FOR PROFILE)
R/W TOE OF SLOPE
EXISTING J-261 I BEAM SPAN REMOVE
WEST BILLS CREEK
EAST CONNECTOR ℄ CURVE EC-1
PI=14+72.91
N= 582022.57
E= 1943764.93
Δ= 66°07'25.38" LT
D= 14°19'26.20"
T= 260.38
L= 461.93
R= 400.00
E= 77.28
emax= 0.08
S= 6.8%
V= 30 MPH
C.R.L. CURVE C-5
PI= 1178+64.10
N= 582732.78
E= 1944963.17
Δ= 15°24'24.31" RT
D= 01°15'00.00"
T= 620.01
L= 1232.54
R= 4583.66
E= 41.74
emax= 0.08
S= 4.0%
V= 65 MPH
SW0478I SURVEY ℄ CURVE S-4
PI= 1175+85.86
N= 582703.85
E= 1944665.44
Δ= 17°40'43.74" RT
D= 03°25'00.00"
T= 260.79
L= 517.43
R= 1676.95
E= 20.16
PROPOSED R/W, FENCE & BUILDING CORNER BASED ON SW0 4781 SURVEY ℄
SEC 06 T05N R08W
STATE JOB NO. 20953(05) SHEET NO. 30
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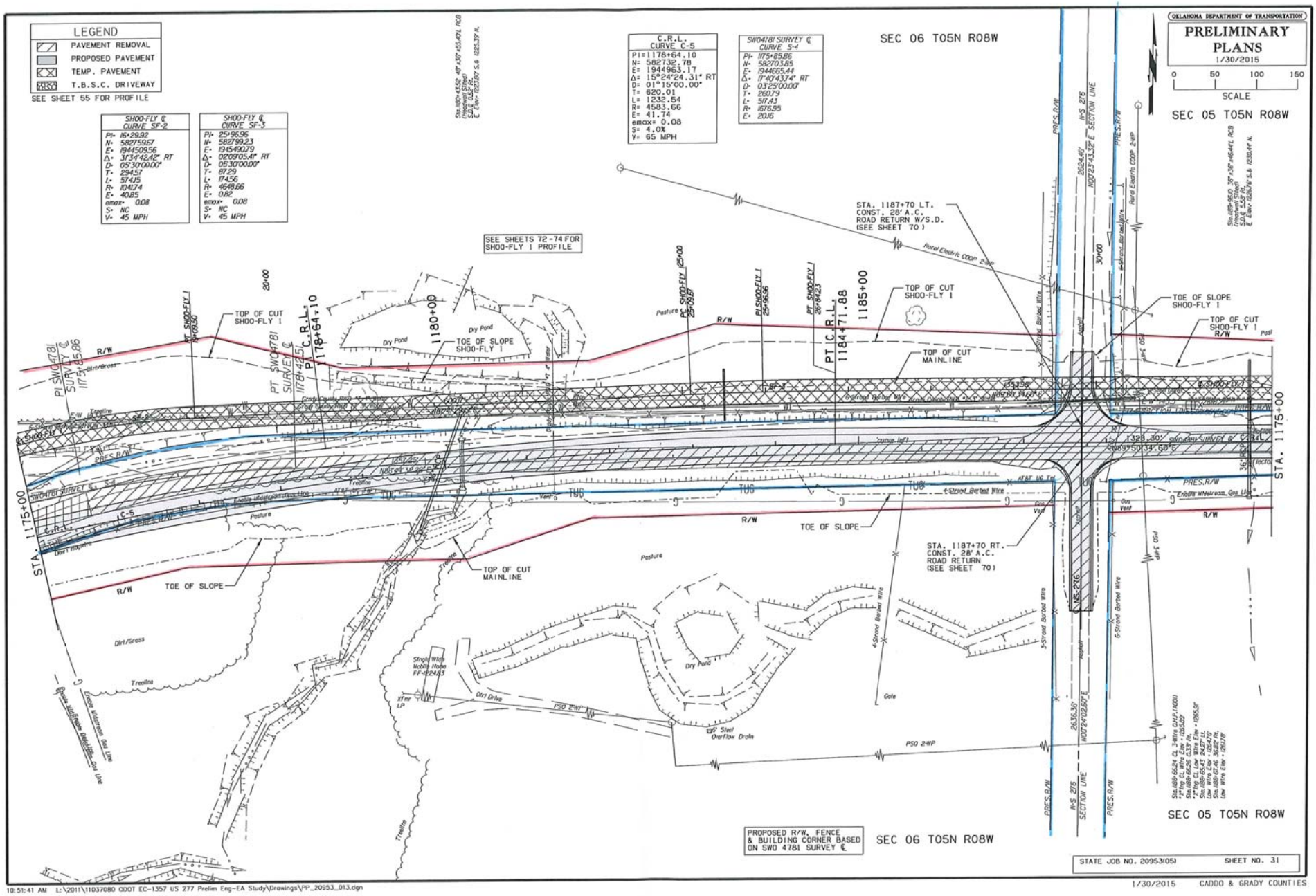
1/30/2015 CADDO & GRADY COUNTIES


LEGEND
PAVEMENT REMOVAL
PROPOSED PAVEMENT
TEMP. PAVEMENT
T.B.S.C. DRIVEWAY
SEE SHEET 55 FOR PROFILE
SHOO-FLY ℄ CURVE SF-2
PI= 16+29.92
N= 582759.57
E= 1944509.56
Δ= 3°34'42.42" RT
D= 05°30'00.00"
T= 294.57
L= 574.15
R= 1040.74
E= 40.85
emax= 0.08
S= NC
V= 45 MPH
SHOO-FLY ℄ CURVE SF-3
PI= 25+96.96
N= 582799.23
E= 1945490.79
Δ= 02°09'05.41" RT
D= 05°30'00.00"
T= 87.29
L= 174.56
R= 1648.66
E= 0.82
emax= 0.08
S= NC
V= 45 MPH
C.R.L. CURVE C-5
PI=1178+64.10
N= 582732.78
E= 1944963.17
Δ= 15°24'24.31" RT
D= 01°15'00.00"
T= 620.01
L= 1232.54
R= 4583.66
E= 41.74
emax= 0.08
S= 4.0%
V= 65 MPH
SW04781 SURVEY ℄ CURVE S-4
PI= 1175+85.86
N= 582703.85
E= 1944665.44
Δ= 17°40'43.74" RT
D= 03°25'00.00"
T= 260.79
L= 517.43
R= 1676.95
E= 201.6
SEC 06 T05N R08W
SEC 05 T05N R08W
OKLAHOMA DEPARTMENT OF TRANSPORTATION
PRELIMINARY PLANS
1/30/2015
SCALE
STA. 1187+70 LT. CONST. 28' A.C. ROAD RETURN W/S.D. (SEE SHEET 70)
SEE SHEETS 72-74 FOR SHOO-FLY 1 PROFILE
TOP OF CUT SHOO-FLY 1
TOE OF SLOPE SHOO-FLY 1
TOP OF CUT MAINLINE
TOE OF SLOPE
STA. 1187+70 RT. CONST. 28' A.C. ROAD RETURN (SEE SHEET 70)
PROPOSED R/W, FENCE & BUILDING CORNER BASED ON SWO 4781 SURVEY ℄
STATE JOB NO. 20953(05)
SHEET NO. 31
1/30/2015
CADDO & GRADY COUNTIES
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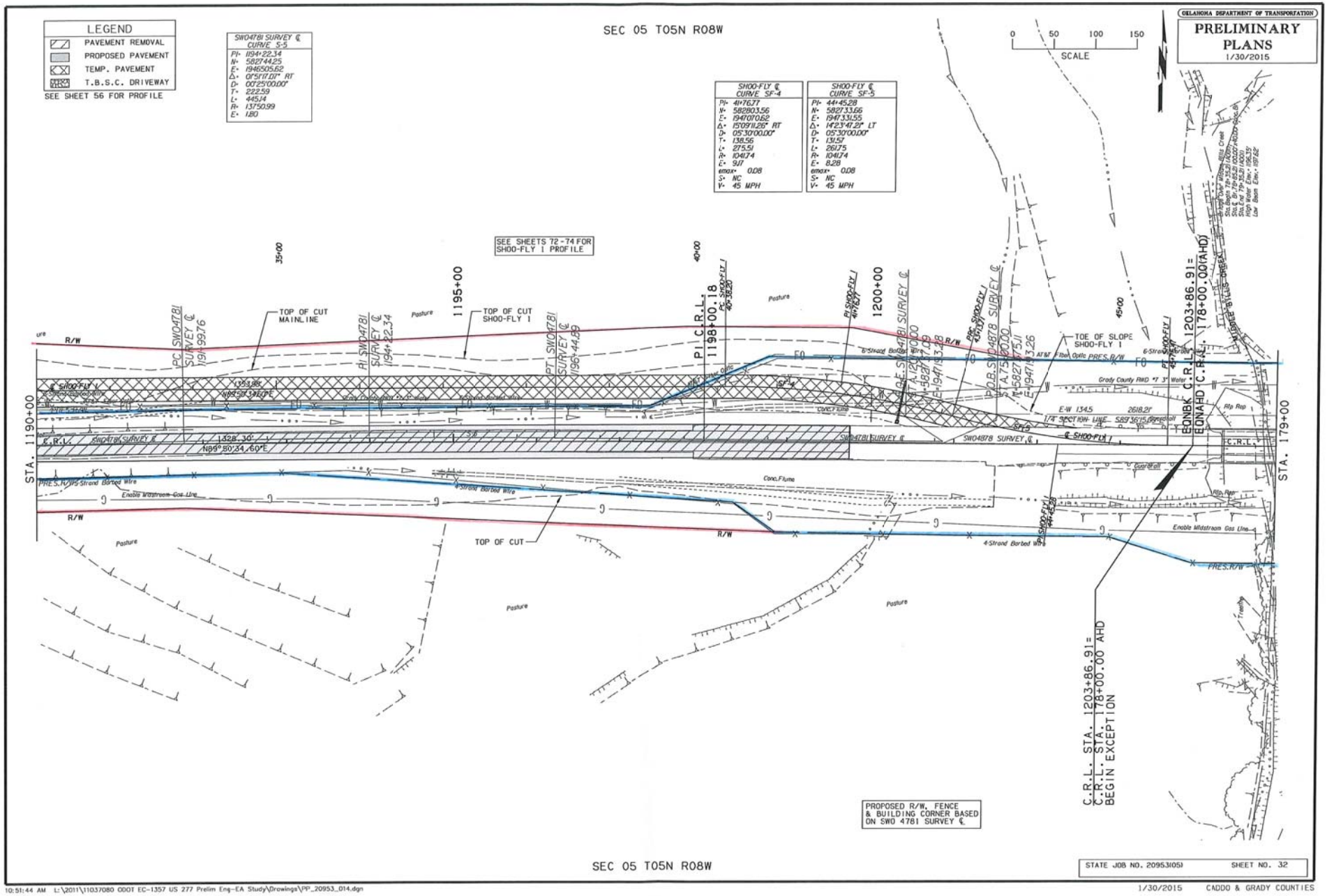
LEGEND
PAVEMENT REMOVAL
PROPOSED PAVEMENT
TEMP. PAVEMENT
T.B.S.C. DRIVEWAY
SEE SHEET 56 FOR PROFILE
SW0478I SURVEY ℄ CURVE 5-5
PI= 1194+22.34
N= 582744.25
E= 1946505.62
Δ= 01°51'17.01" RT
D= 002°50'00.00"
T= 222.59
L= 445.14
R= 13750.99
E= 1.80
SH00-FLY ℄ CURVE SF-4
PI= 1197+67.77
N= 582803.56
E= 1947070.62
Δ= 150911.26" RT
D= 05°30'00.00"
T= 138.56
L= 275.51
R= 1041.74
E= 9.17
emax= 0.08
S= NC
V= 45 MPH
SH00-FLY ℄ CURVE SF-5
PI= 1200+44.28
N= 582713.66
E= 1947331.55
Δ= 14°23'47.21" LT
D= 05°30'00.00"
T= 131.57
L= 261.75
R= 1041.74
E= 8.28
emax= 0.08
S= NC
V= 45 MPH
SEC 05 T05N R08W
SCALE 0 50 100 150
OKLAHOMA DEPARTMENT OF TRANSPORTATION
PRELIMINARY PLANS
1/30/2015
SEE SHEETS 72-74 FOR SH00-FLY 1 PROFILE
STA. 1190+00
STA. 179+00
1195+00
1198+00.18
1200+00
TOP OF CUT MAINLINE
TOP OF CUT SH00-FLY 1
TOP OF CUT
TOE OF SLOPE SH00-FLY 1
PC SW0478I SURVEY ℄ 1191+99.76
PI SW0478I SURVEY ℄ 1194+22.34
PT SW0478I SURVEY ℄ 1196+44.89
P.C.S. SW0478I SURVEY ℄
P.O.B. SW0478 SURVEY ℄ STA 1200+00.00 N 582775.11 E 1947133.26
P.O.E. SW0478I SURVEY ℄ STA 1201+03.38 N 582803.56 E 1947133.38
E.R.V. SW0478I SURVEY ℄
328.30' N89°50'34"E 60"
SW0478I SURVEY ℄
SW0478 SURVEY ℄
℄ SH00-FLY 1
E-W 134.5
2618.21'
1/4 SECTION LINE S89°36'15"E
Grady County RWD #7 3" Water
AT&T Fiber Optic PRES. R/W
6-Strand Barbed Wire
4-Strand Barbed Wire
PRES. R/W
Enable Midstream Gas Line
Conc. Flume
Conc. Box Culvert
Rip Rap
Gravel Rd
Pasture
R/W
F0
OHP
C.R.L.
EDNBK C.R.L. 1203+86.91= EDNAHD C.R.L. 178+00.00(AHD)
C.R.L. STA. 1203+86.91= C.R.L. STA. 178+00.00 AHD BEGIN EXCEPTION
PROPOSED R/W, FENCE & BUILDING CORNER BASED ON SW0 4781 SURVEY ℄.
SEC 05 T05N R08W
STATE JOB NO. 20953(105)
SHEET NO. 32
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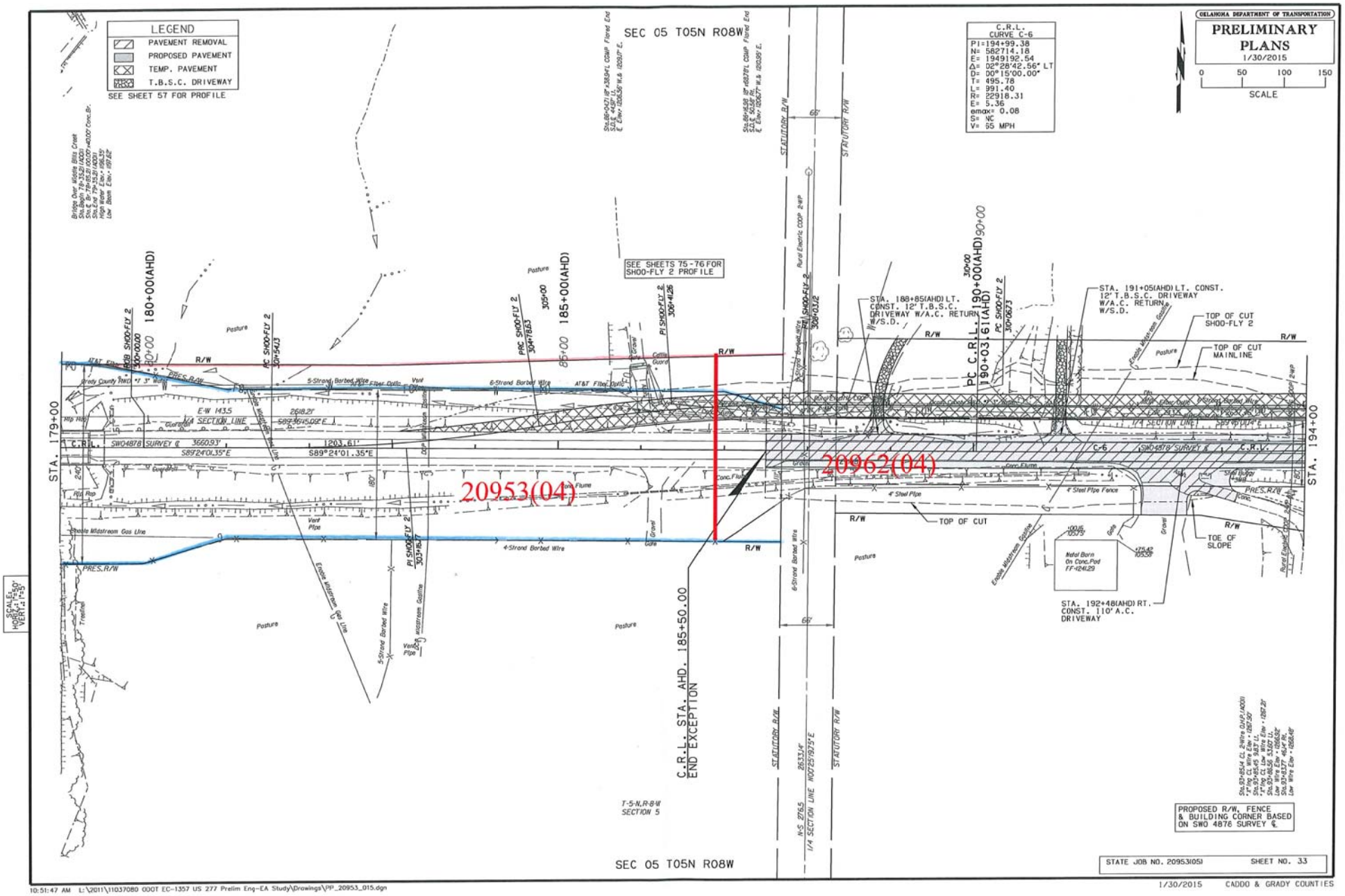
1/30/2015
CADDO & GRADY COUNTIES


LEGEND
PAVEMENT REMOVAL
PROPOSED PAVEMENT
TEMP. PAVEMENT
T.B.S.C. DRIVEWAY
SEE SHEET 57 FOR PROFILE
SEC 05 T05N R08W
C.R.L. CURVE C-6
PI= 194+99.38
N= 582714.18
E= 1949192.54
Δ= 02°28'42.56" LT
D= 00°15'00.00"
T= 495.78
L= 991.40
R= 22918.31
E= 5.36
emax= 0.08
S= NC
V= 55 MPH
OKLAHOMA DEPARTMENT OF TRANSPORTATION
PRELIMINARY PLANS
1/30/2015
0 50 100 150
SCALE
SEE SHEETS 75-76 FOR SHOO-FLY 2 PROFILE
STA. 179+00
STA. 180+00(AHD)
STA. 185+00(AHD)
STA. 190+00(AHD)
STA. 194+00
PC C.R.L. 190+03.61(AHD)
STA. 188+85(AHD) LT. CONST. 12' T.B.S.C. DRIVEWAY W/A.C. RETURN W/S.D.
STA. 191+05(AHD) LT. CONST. 12' T.B.S.C. DRIVEWAY W/A.C. RETURN W/S.D.
STA. 192+48(AHD) RT. CONST. 110' A.C. DRIVEWAY
TOP OF CUT SHOO-FLY 2
TOP OF CUT MAINLINE
TOP OF CUT
TOE OF SLOPE
20953(04)
20962(04)
C.R.L. STA. AHD. 185+50.00
END EXCEPTION
SEC 05 T05N R08W
T-5-N, R-8-W
SECTION 5
PROPOSED R/W, FENCE & BUILDING CORNER BASED ON SWO 4876 SURVEY ℄
STATE JOB NO. 20953(05)
SHEET NO. 33
1/30/2015
CADDO & GRADY COUNTIES
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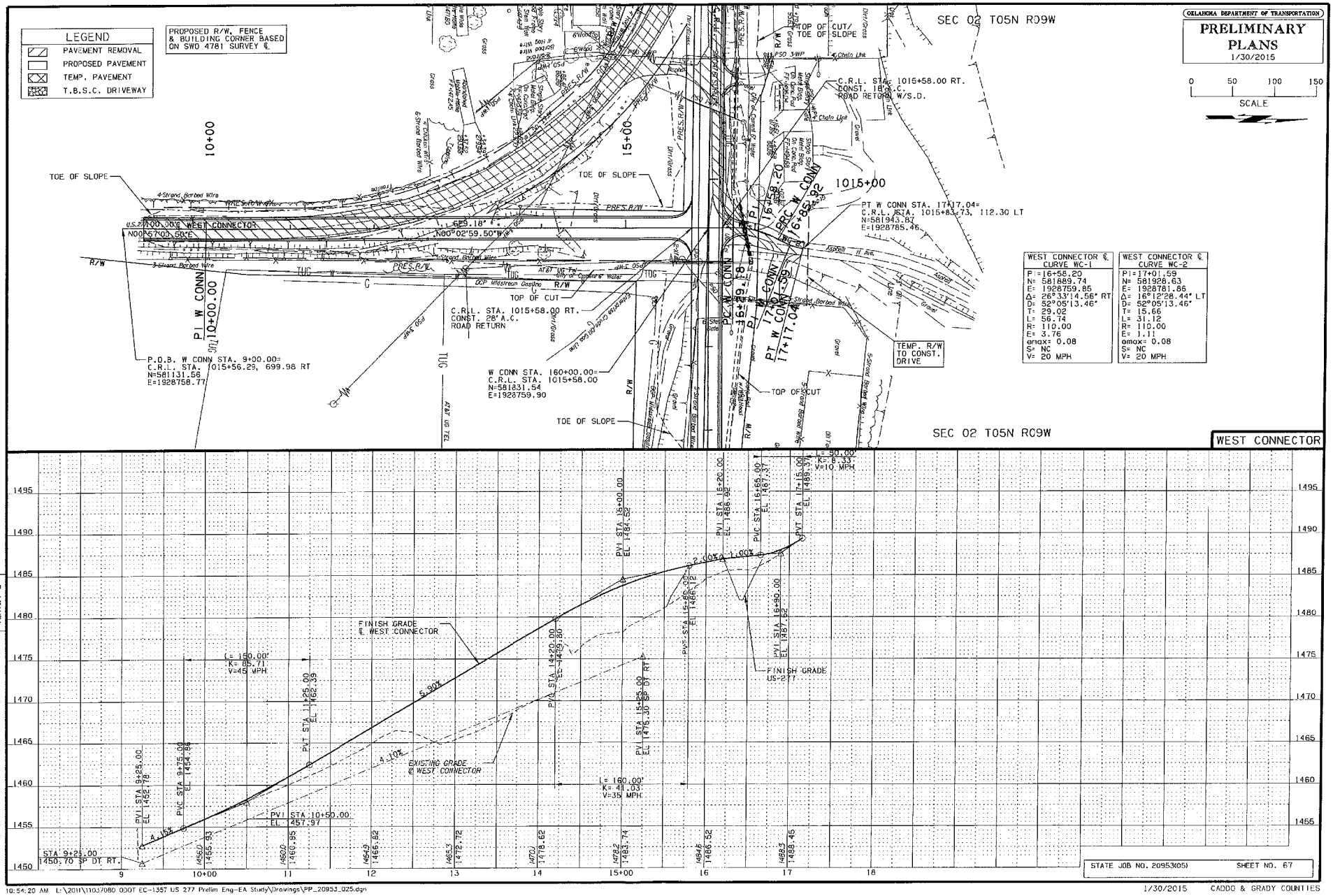

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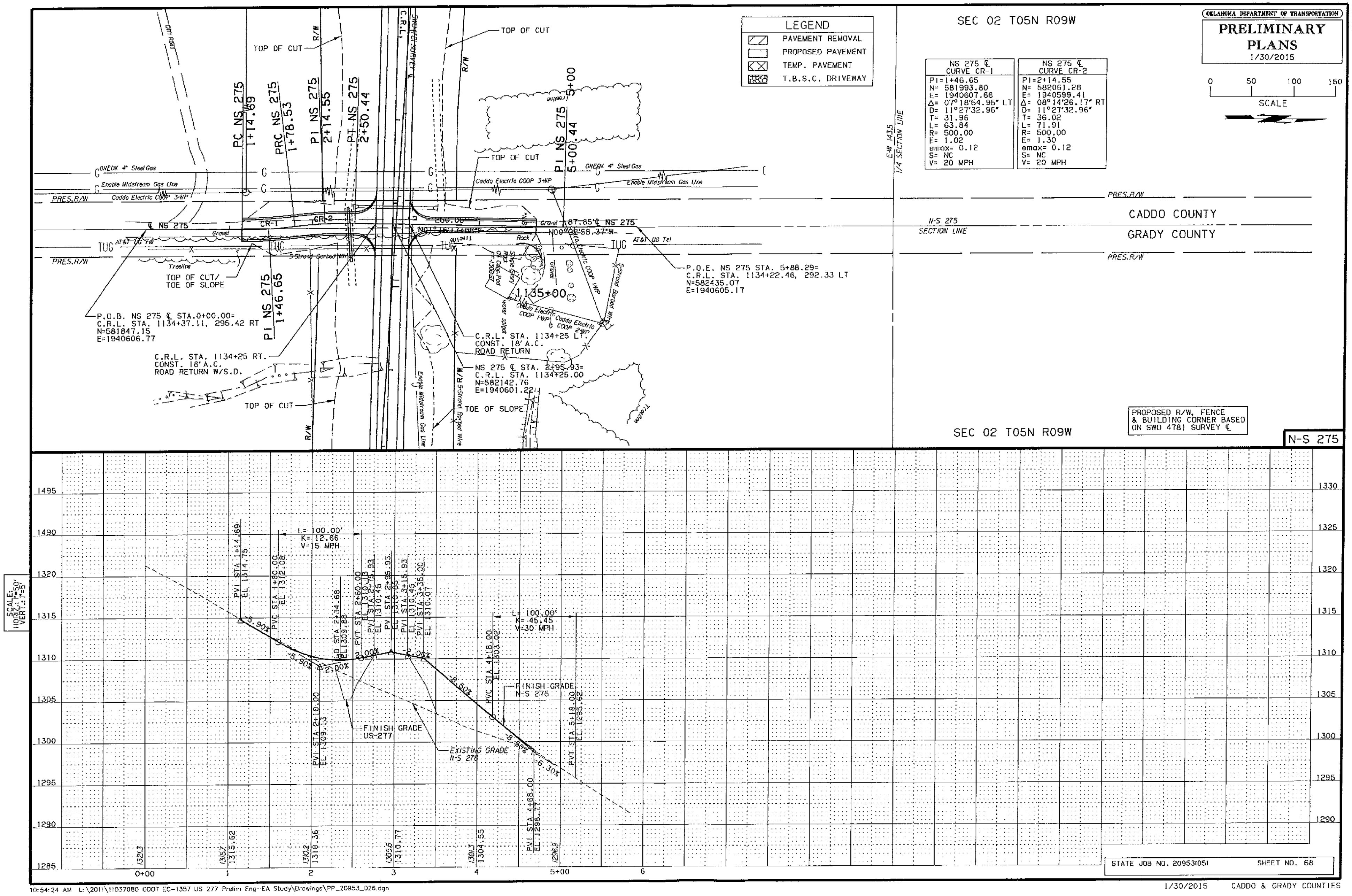
1/30/2015 CADDO & GRADY COUNTIES



OKLAHOMA DEPARTMENT OF TRANSPORTATION
PRELIMINARY PLANS
1/30/2015
SCALE
0 50 100 150
SEC 02 T05N R09W
LEGEND
PAVEMENT REMOVAL
PROPOSED PAVEMENT
TEMP. PAVEMENT
T.B.S.C. DRIVEWAY
NS 275 ℄ CURVE CR-1
PI=1+46.65
N= 581993.80
E= 1940607.66
Δ= 07°18'54.95" LT
D= 11°27'32.96"
T= 31.96
L= 63.84
R= 500.00
E= 1.02
emax= 0.12
S= NC
V= 20 MPH
NS 275 ℄ CURVE CR-2
PI=2+14.55
N= 582061.28
E= 1940599.41
Δ= 08°14'26.17" RT
D= 11°27'32.96"
T= 36.02
L= 71.91
R= 500.00
E= 1.30
emax= 0.12
S= NC
V= 20 MPH
CADDO COUNTY
GRADY COUNTY
PRES.R/W
N-S 275 SECTION LINE
E-W 1435 1/4 SECTION LINE
PC NS 275 1+14.69
PRC NS 275 1+78.53
PI NS 275 2+14.55
PT NS 275 2+50.44
PI NS 275 5+00.44
PI NS 275 1+46.65
TOP OF CUT
TOP OF CUT/ TOE OF SLOPE
TOE OF SLOPE
P.O.B. NS 275 ℄ STA.0+00.00= C.R.L. STA. 1134+37.11, 295.42 RT N=581847.15 E=1940606.77
C.R.L. STA. 1134+25 RT. CONST. 18' A.C. ROAD RETURN W/S.D.
C.R.L. STA. 1134+25 LT. CONST. 18' A.C. ROAD RETURN
NS 275 ℄ STA. 2+95.93= C.R.L. STA. 1134+25.00 N=582142.76 E=1940601.22
P.O.E. NS 275 STA. 5+88.29= C.R.L. STA. 1134+22.46, 292.33 LT N=582435.07 E=1940605.17
1135+00
ONEOK 4" Steel Gas
Enable Midstream Gas Line
Caddo Electric COOP 3-WP
5-Strand Barbed Wire
PROPOSED R/W, FENCE & BUILDING CORNER BASED ON SWO 4781 SURVEY ℄
N-S 275
L= 100.00' K= 12.66 V=15 MPH
L= 100.00' K= 45.45 V=30 MPH
PVI STA 1+14.69 EL 1314.75
PVC STA 1+60.00 EL 1312.08
PVI STA 2+10.00 EL 1309.13
PVT STA 2+60.00 EL 1310.45
PVI STA 2+95.93 EL 1310.65
PVT STA 3+36.00 EL 1310.07
PVC STA 4+18.00 EL 1303.02
PVI STA 4+68.00 EL 1298.77
PVI STA 5+18.00 EL 1295.62
-5.90%
2.00%
-2.00%
-8.50%
-6.30%
FINISH GRADE US-277
FINISH GRADE N-S 275
EXISTING GRADE N-S 275
SCALE: HORIZ.: 1"=50' VERT.: 1"=5'
0+00 1 2 3 4 5+00 6
STATE JOB NO. 20953(05) SHEET NO. 68
1/30/2015 CADDO & GRADY COUNTIES
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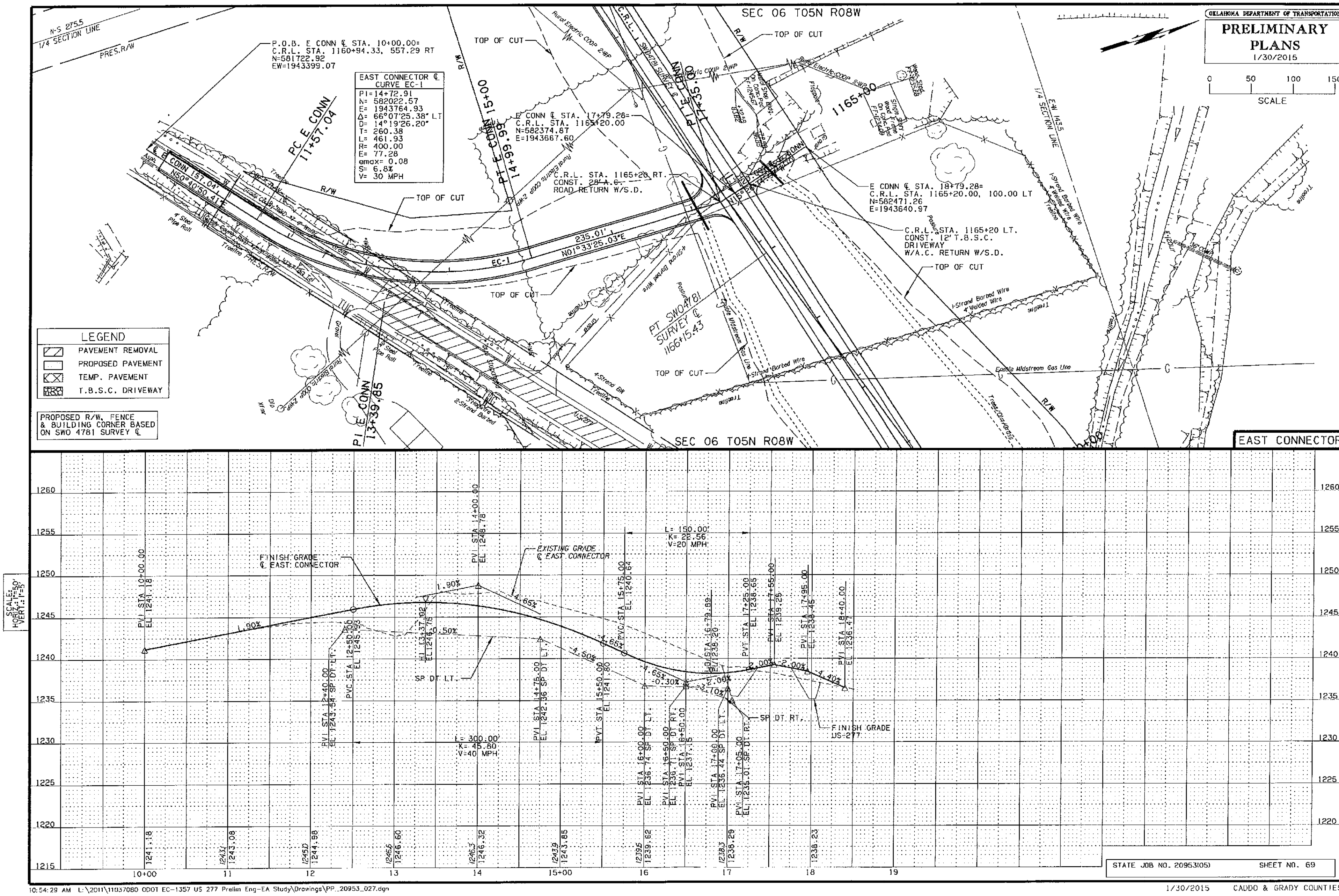

OKLAHOMA DEPARTMENT OF TRANSPORTATION
PRELIMINARY PLANS
1/30/2015
SCALE
SEC 06 T05N R08W
EAST CONNECTOR
P.O.B. E CONN ℄ STA. 10+00.00= C.R.L. STA. 1160+94.33, 557.29 RT N=581722.92 EW=1943399.07
EAST CONNECTOR ℄ CURVE EC-1
PI= 14+72.91
N= 582022.57
E= 1943764.93
Δ= 66°07'25.38" LT
D= 14°19'26.20"
T= 260.38
L= 461.93
R= 400.00
E= 77.28
emax= 0.08
S= 6.8%
V= 30 MPH
PC E CONN 11+57.04
PT E CONN 14+99.99
PI E CONN 13+39.85
PI E CONN 17+35.00
E CONN ℄ STA. 17+79.28= C.R.L. STA. 1165+20.00 N=582374.67 E=1943667.60
C.R.L. STA. 1165+20 RT. CONST. 28' A.C. ROAD RETURN W/S.D.
E CONN ℄ STA. 18+79.28= C.R.L. STA. 1165+20.00, 100.00 LT N=582471.26 E=1943640.97
C.R.L. STA. 1165+20 LT. CONST. 12' T.B.S.C. DRIVEWAY W/A.C. RETURN W/S.D.
PT SW04781 SURVEY ℄ 1166+15.43
TOP OF CUT
LEGEND
PAVEMENT REMOVAL
PROPOSED PAVEMENT
TEMP. PAVEMENT
T.B.S.C. DRIVEWAY
PROPOSED R/W, FENCE & BUILDING CORNER BASED ON SWO 4781 SURVEY ℄
FINISH GRADE ℄ EAST CONNECTOR
EXISTING GRADE ℄ EAST CONNECTOR
FINISH GRADE US-277
L= 300.00' K= 45.80 V=40 MPH
L= 150.00' K= 22.56 V=20 MPH
SCALE: HORZ.: 1"=50' VERT.: 1"=5'
STATE JOB NO. 20953(05)
SHEET NO. 69
1/30/2015
CADDO & GRADY COUNTIES
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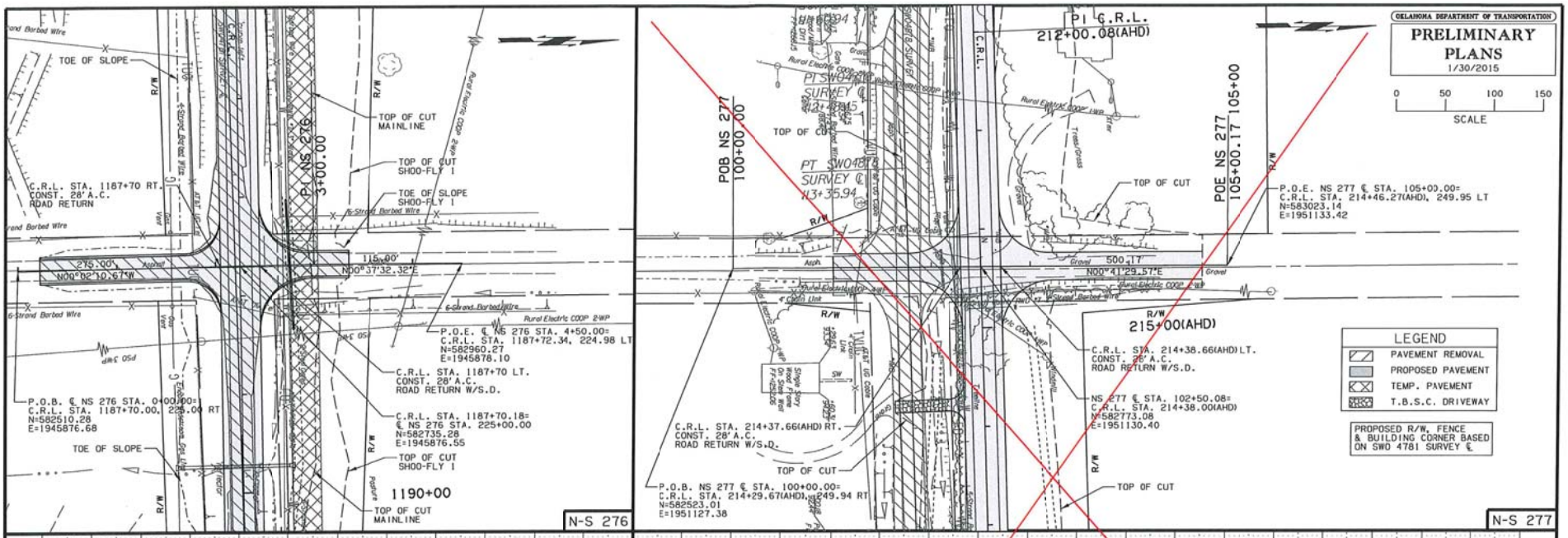

OKLAHOMA DEPARTMENT OF TRANSPORTATION
PRELIMINARY PLANS
1/30/2015
SCALE
0 50 100 150
N-S 276
N-S 277
POB NS 277 100+00.00
POE NS 277 105+00.17
PI C.R.L. 212+00.08(AHD)
PI NS 276 3+00.00
1190+00
215+00(AHD)
TOE OF SLOPE
TOP OF CUT
TOP OF CUT MAINLINE
TOP OF CUT SHOO-FLY 1
TOE OF SLOPE SHOO-FLY 1
C.R.L. STA. 1187+70 RT. CONST. 28' A.C. ROAD RETURN
C.R.L. STA. 1187+70 LT. CONST. 28' A.C. ROAD RETURN W/S.D.
C.R.L. STA. 1187+70.18= ℄ NS 276 STA. 225+00.00 N=582735.28 E=1945876.55
P.O.B. ℄ NS 276 STA. 0+00.00= C.R.L. STA. 1187+70.00, 225.00 RT N=582510.28 E=1945876.68
P.O.E. ℄ NS 276 STA. 4+50.00= C.R.L. STA. 1187+72.34, 224.98 LT N=582960.27 E=1945878.10
C.R.L. STA. 214+37.66(AHD) RT. CONST. 28' A.C. ROAD RETURN W/S.D.
P.O.B. NS 277 ℄ STA. 100+00.00= C.R.L. STA. 214+29.67(AHD), 249.94 RT N=582523.01 E=1951127.38
C.R.L. STA. 214+38.66(AHD) LT. CONST. 28' A.C. ROAD RETURN W/S.D.
NS 277 ℄ STA. 102+50.08= C.R.L. STA. 214+38.00(AHD) N=582773.08 E=1951130.40
P.O.E. NS 277 ℄ STA. 105+00.00= C.R.L. STA. 214+46.27(AHD), 249.95 LT N=583023.14 E=1951133.42
LEGEND
PAVEMENT REMOVAL
PROPOSED PAVEMENT
TEMP. PAVEMENT
T.B.S.C. DRIVEWAY
PROPOSED R/W, FENCE & BUILDING CORNER BASED ON SWO 4781 SURVEY ℄
FINISH GRADE ℄ N-S 276
FINISH GRADE SHOO-FLY 1
FINISH GRADE US-277
EXISTING GRADE ℄ N-S 276
FINISH GRADE ℄ N-S 277
EXISTING GRADE ℄ N-S 277
HORIZ. SCALE 1"=50' VERT. SCALE 1"=5'
STATE JOB NO. 20953(05)
SHEET NO. 70

Oklahoma Department of Transportation – Right-of-Way Division
Relocation Branch Room C7 Third Floor Office 521-2648 Fax 522-1858

October 9, 2015

To: **Environmental Programs Division**

Thru: Project Management Branch

From: Diana Barlow, Manager, Relocation Branch Diana Barlow

Subject: Relocation Plan – J/P 20962(04)(05)(06) a.k.a. J2-0962(008), Grady County – Grade, Draining, Bridge & Surface: US-277 beg 1.45 mis E. of Caddo C/L at E. side of Middle Bill's Creek, ext E. 2.7 mis on offset alignment to H.E. Bailey T.P. overpass br.

Attached is the Relocation Plan for the above referenced project to be included in the Environmental Document.

RELOCATION PLANNING
US Highway 277
Grady County

This pre-planning information is provided to the Environmental Programs Division to be included in the Environmental Document to satisfy Pre-planning requirements of the Federal Regulations 49 CFR, § 24.205, relocation planning, advisory services and coordination. The proposed study for grade, draining, bridge & surface of U.S. Highway 277 in Grady County is as follows:

A pre-planning drive out was conducted on October 1, 2015. 1-Residential Relocation would be affected by the proposed reconstruction of US-277.

The "Relo Plan Inventory" table lists sites affected by the proposed Right-of-Way. Right-of-Way Plans have been "marked-up" labeling the sites inventoried.

Relo Plan Inventory

JP 20962(04)(05)(06) Grady Co.,
Grade, Draining, Bridge & Surface: US-277 Beg 1.45 mis E. of Caddo C/L at E. side of Middle Bills Creek, ext E. 2.7 mis on offset alignment to H.E. Bailey T.P. br.

Location	Stationing	Description
A	109+75L 100' CLS	900 SF Office Trailer; Commercial Relo #1 (Personal Property Only)
B	112+00L 170' CLS	2000 SF Wood Frame House; Residential Relo #1

Residential Relocations:
There is (1)-Single Family Residence (1-2,000 SF Wood Frame House, presumed to be 3bd/2bath). There are available properties for sale in the surrounding areas. Web based realtor services supplied the listings of available properties in the Cement and surrounding area. The web based realtor services utilized are listed in the RPRS. At the time of the Study, Decent, Safe & Sanitary (DSS) replacement housing is available around the project area. Replacement property searches were made for Location "B", a minimum of 3 bedrooms, 2 bathroom houses with a minimum of 2,000 SF.

Available Residential Replacement Properties for:

Location "B"

Property	Sq. Ft.	Price
820 E. Choctaw Ave, Chickasha, OK	2,244	$ 97,000.00
Address Not Available, Chickasha, OK	2,016	$ 114,000.00
43188 County Rd. 2740, Cement, OK	2,000	$ 118,500.00
312 Miller Dr., Amber, OK	2,060	$ 163,500.00
12775 N. 2440 Rd., Carnegie, OK	2,441	$ 169,900.00
708 S. Carnegie St., Carnegie, OK	2,514	$ 184,900.00
Average	2,212.50	$ 141,300.00

Prices range from $97,000 to $184,900 with an average price of $141,300 (rnd). Square footage ranged from 2,000 SF to 2,514 SF with an average of 2,213.00 SF (rnd). Replacement Housing Payments (RHP), Rental Assistance Payments (RAP) and Move payments are estimated from current RHP & RAP activity experienced by the planning agent.

"Estimated" Residential Relocation Cost for Location "B":
RHP: $30,000.00 to $60,000.00
Move Payment: $2,500.00 to $4,000.00

Commercial Relocations

At this time, Location "A" consists of a 960SF office trailer which appears to be used for storage. This would be a personal property move only.

Commercial Relocations

Location	Move & Re-Establish
"A" - Personal Property Move for Office Trailer	$1,500.00 to $2,500.00

"Estimated" Commercial Relocation Cost Summary
$1,500.00 to $2,500.00

Potential Relocation Problems:
None seen at this time.

"Estimated" Relocation Plan Cost Summary:
Residential Relocations Total: $32,500.00 to $64,000.00
Commercial Relocations Total: $1,500.00 to $2,500.00

If a residential or commercial property is occupied when this project begins, full relocation benefits and relocation advisory assistance will be offered to all affected displacees.

There was nothing that indicated low income or minority considerations were prevalent in the community or being impacted by the project requiring special advisory services.

The Code of Federal Regulations (CFR) 49, Part 24, limits a payment not to exceed $7,200.00 for rental assistance (RAP) or down payment assistance; and homeowner-occupant (RHP) payment may not exceed $31,000.00. Last Resort Housing (LRH) allows for these amounts to be exceeded and will most likely be necessary to relocate persons affected by the proposed plans.

Planning Agent:
Joel Law 10/9/2015

Relocation Plan Resources Summary:

Web based Realtor Sites:
Realtor.com
Zillow.com

FOR SURVEY CONTROL DATA, SEE SURVEY DATA SHEETS.

LOCATION MAP
DIVISION VII

OKLAHOMA DEPARTMENT OF TRANSPORTATION

PRELIM FIELD REVIEW & R/W UTILITY MEETING
07-31-2015

STATE OF OKLAHOMA
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED
STATE HIGHWAY

FEDERAL AID PROJECT NO. J2-0962(008)
GRADE, DRAIN, BRIDGE, & SURFACE
US 277

GRADY COUNTY

STATE JOB NO. 20962(08)
CONTROL SECTION NO. 277-26-14

BRIDGE "A" LOCATION NO. 2614 0358X OLD NBI NO. 18275, NEW NBI NO. 31417

SEE SHEET 2 FOR INDEX OF SHEETS AND REQUIRED STANDARDS
SEE SHEET 3 FOR INDEX OF SEALS

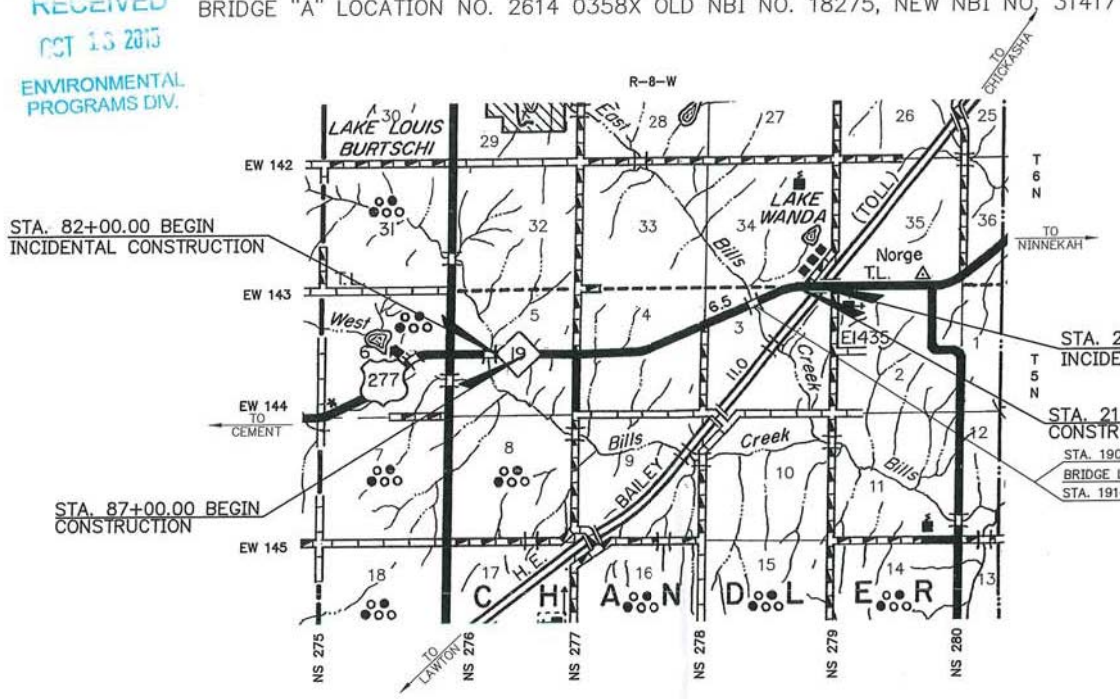
RECEIVED
OCT 13 2015
ENVIRONMENTAL PROGRAMS DIV.

PRELIMINARY EARTHWORK	UNCLASSIFIED EXCAVATION 202(A)	EMBANKMENT +15% COMP.	EXCESS EXCAVATION	UNCLASSIFIED BORROW 202(C)
	C.Y.	C.Y.	C.Y.	C.Y.
US 277	223,318	195,102	28,216	
NS-277	4,936	1	4,935	
NS-278	4,569	2	4,567	
NS-279	425	2	423	
DETOUR 1	1,470	2,045		575
DETOUR 2	634	279	355	
TOTALS	235,352	197,431	38,496	5.75

DESIGN DATA	
ADT 2019	= 2340
ADT 2039	= 3620
DHV (2-WAY)	= 398
K (DHV/ADT)	= 11%
D	= 53%
T (% DHV)	= 12%
T (% ADT)	= 15%
T3 (% ADT)	= 10%
V	= 65 MPH
20YR FLEX. ESALS = 2.7 M	

SCALES
PLAN 1" = 50'
PROFILE HOR. 1" = 50'
VER. 1" = 5'
LAYOUT MAP 1" = 5,280'

CONVENTIONAL SYMBOLS
- PROPOSED ROAD
- RAILROADS
- RANGE & TOWNSHIP
- SECTION LINES
- QUARTER SECTION LINES
- FENCES
- GROUND LINE
- EXISTING ROADS
- BASE LINE
- GRADE LINES
- TELEPHONE & TELEGRAPH
- POWER LINES
- BUILDINGS
- OIL WELLS
- DRAINAGE STRUCTURES - IN PLACE
- DRAINAGE STRUCTURES - NEW
- RIGHT-OF-WAY LINES - EXISTING
- R/W RIGHT-OF-WAY LINES - NEW
- CONTROLLED ACCESS
- R/W RIGHT-OF-WAY FENCE



NOTE:

ROADWAY LENGTH	12,965.50 FT.	2.455 MI.
BRIDGE LENGTH	64.50 FT.	0.012 MI.
PROJECT LENGTH		2.467 MI.

EQUATIONS: NONE
EXCEPTION: NONE

2009 OKLAHOMA STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION GOVERN, APPROVED BY THE U.S. DEPARTMENT OF TRANSPORTATION, FEDERAL HIGHWAY ADMINISTRATION, JANUARY 4, 2010.

TRIAD DESIGN GROUP
Architecture • Engineering
3020 N.W. 149TH STREET
OKLAHOMA CITY, OK 73134
PH. (405) 752-1122
FAX (405) 752-8855
CA# 1759, RENEWAL 06-30-2017

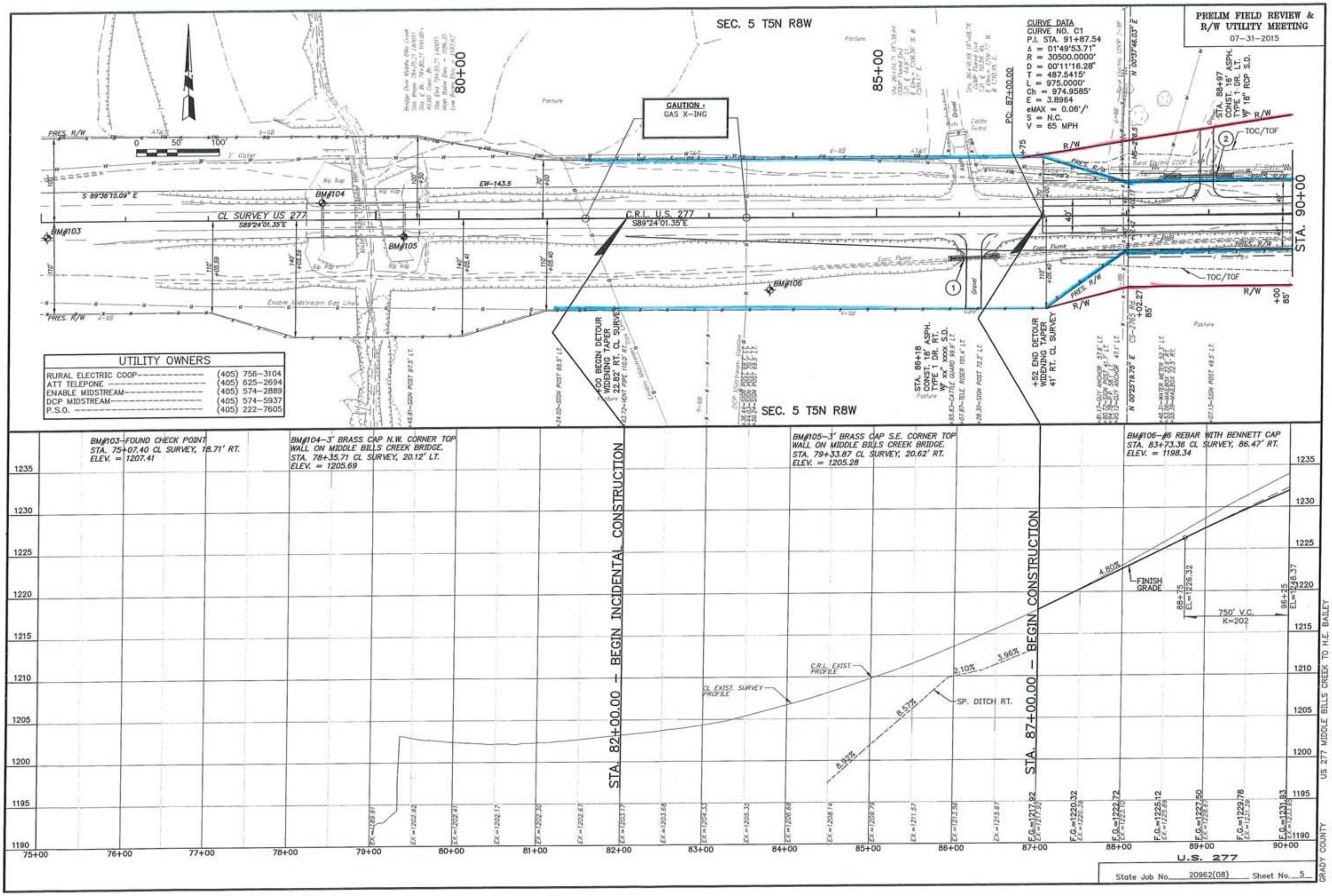
JOSHUA M. JOHNSTON
LICENSED PROFESSIONAL ENGINEER NO. 26204
DATE

OKLAHOMA DEPARTMENT OF TRANSPORTATION	DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION
DATE APPROVED	DATE APPROVED
BY	BY
CHIEF ENGINEER	DIVISION ADMINISTRATOR

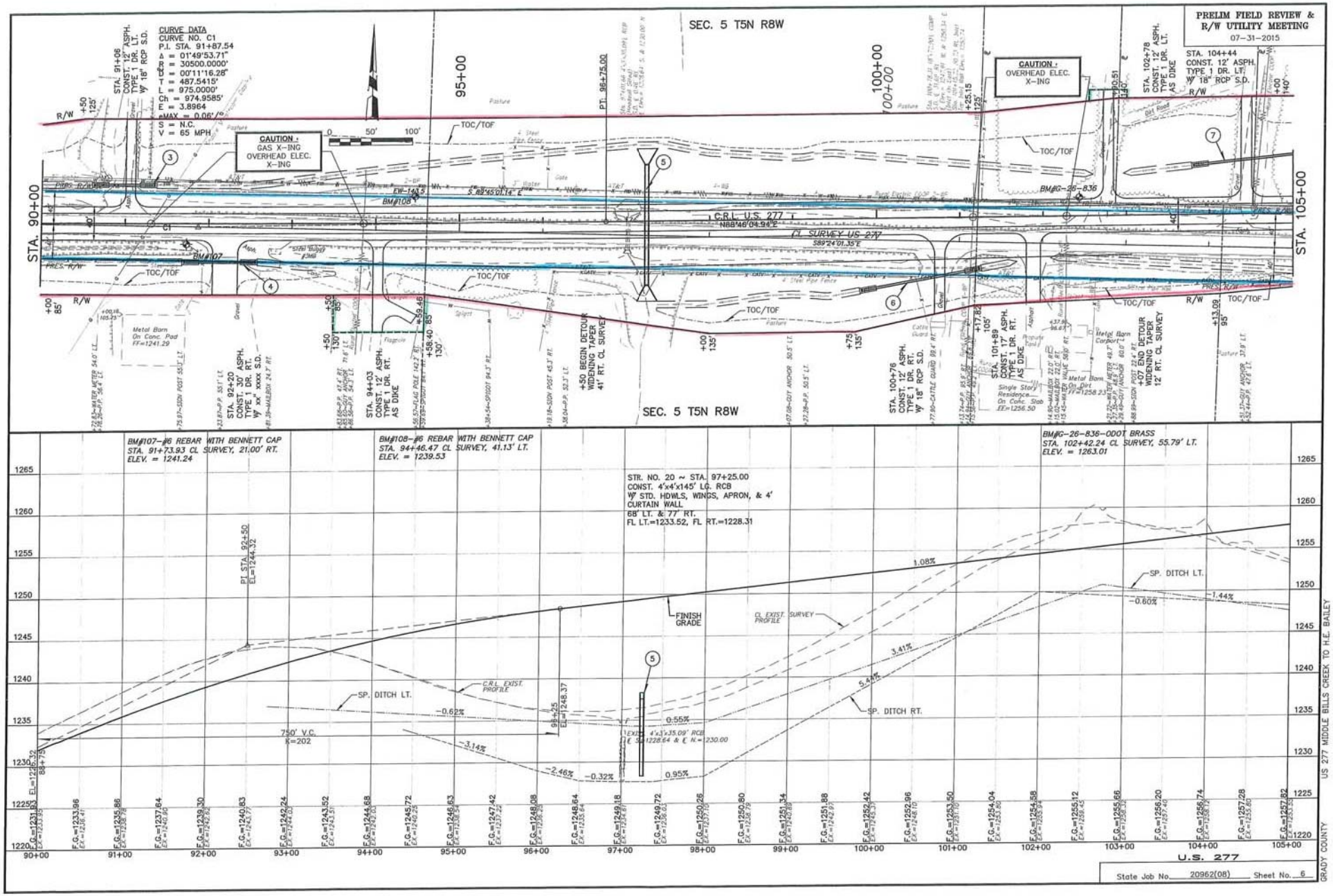
SWO 4878 PROJECT NO. J2-0962(008) SHEET NO. 1
COUNTY HIGHWAY SHEET NO.

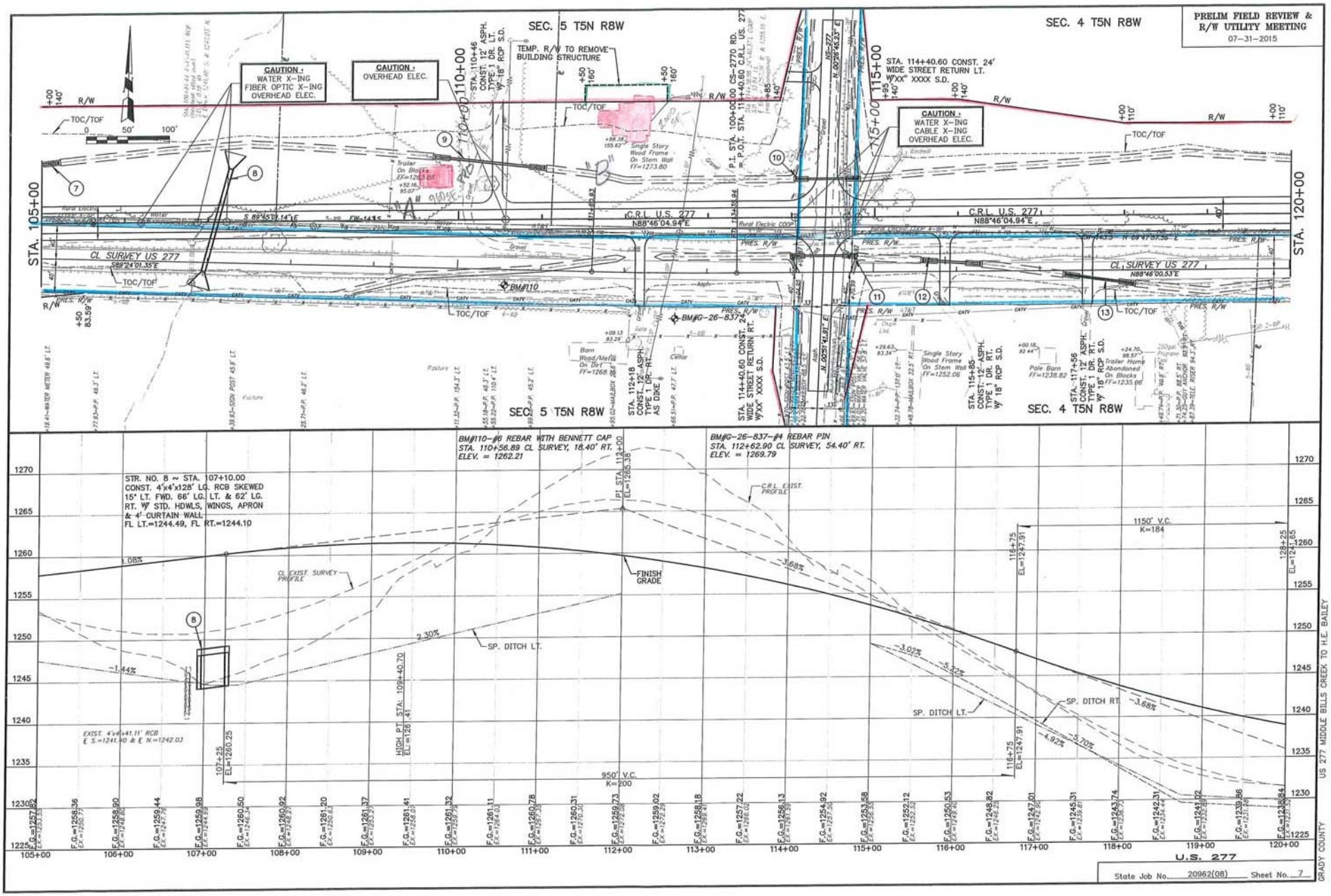
P.E. NO. XXXXX

W:\E255-01\File Shr d and Index of Sheets & Standards.dwg, 7/29/2015 2:48:58 PM, RRoyette

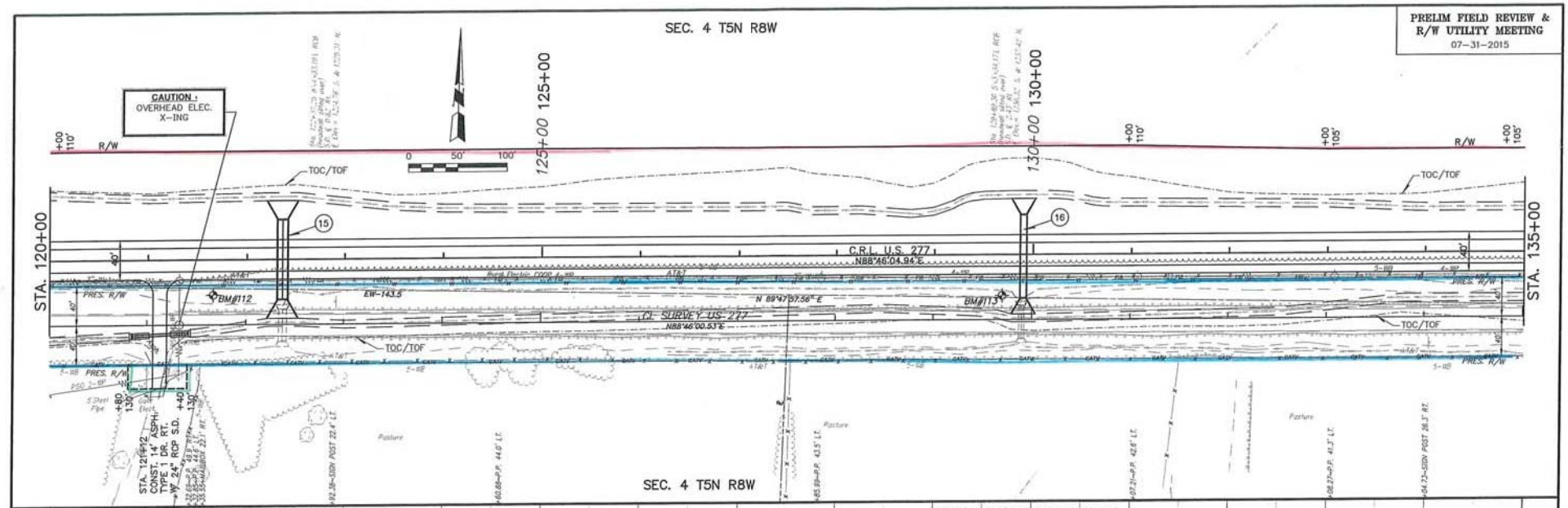


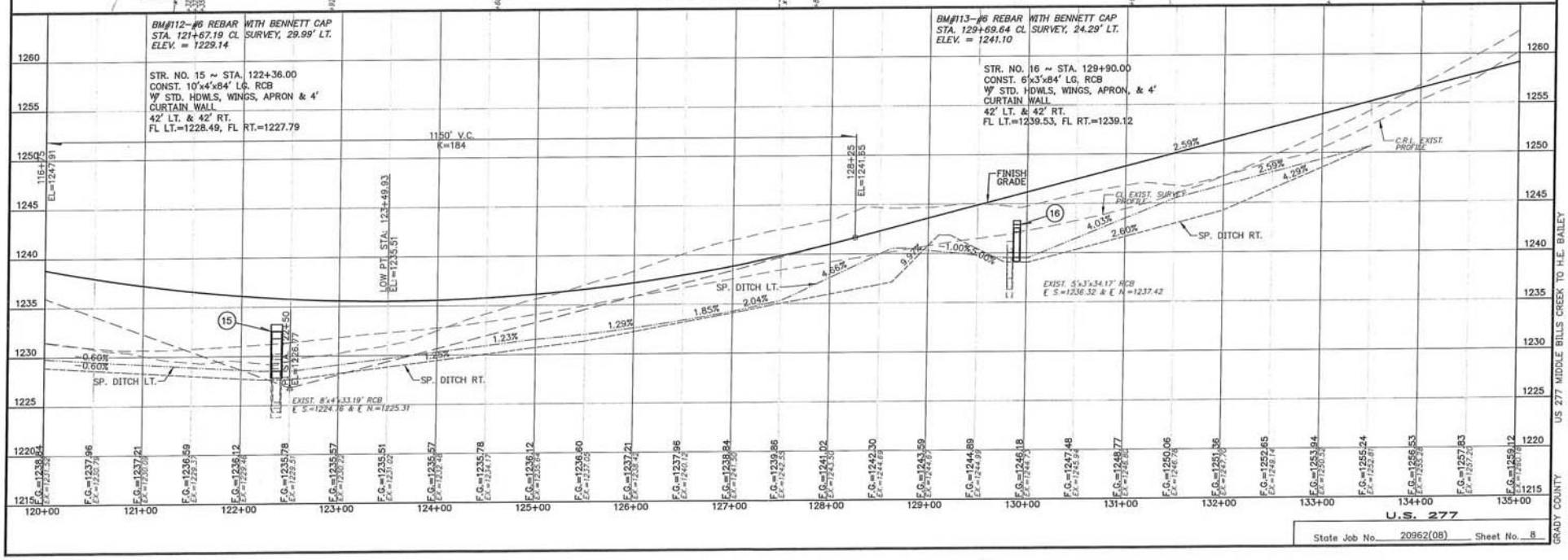
PRELIM FIELD REVIEW &
R/W UTILITY MEETING
07-31-2015
SEC. 5 T5N R8W
CAUTION :
GAS X-ING
CURVE DATA
CURVE NO. C1
P.I. STA. 91+87.54
Δ = 01°49'53.71"
R = 30500.0000'
D = 00°11'16.28"
T = 487.5415'
L = 975.0000'
Ch = 974.9585'
E = 3.8964
eMAX = 0.06'/'
S = N.C.
V = 65 MPH
PC: 87+00.00
80+00
85+00
STA. 90+00
S 89°36'15.09" E
CL SURVEY US 277
S89°24'01.35"E
C.R.L. U.S. 277
S89°24'01.35"E
BM#103
BM#104
BM#105
BM#106
EW-143.5
PRES. R/W
R/W
TOC/TOF
Enable Midstream Gas Line
STA. 88+97
CONST. 16' ASPH.
TYPE 1 DR. LT.
W/ 18" RCP S.D.
STA. 86+18
CONST. 18' ASPH.
TYPE 1 DR. RT.
+00 BEGIN DETOUR
WIDENING TAPER
22.82' RT. CL SURVEY
+52 END DETOUR
WIDENING TAPER
41' RT. CL SURVEY
N 00°25'19.75" E
CS-2765 Rd.
+02.27
85'
UTILITY OWNERS
RURAL ELECTRIC COOP (405) 756-3104
ATT TELEPONE (405) 625-2694
ENABLE MIDSTREAM (405) 574-2889
DCP MIDSTREAM (405) 574-5937
P.S.O. (405) 222-7605
BM#103-FOUND CHECK POINT
STA. 75+07.40 CL SURVEY, 18.71' RT.
ELEV. = 1207.41
BM#104-3" BRASS CAP N.W. CORNER TOP
WALL ON MIDDLE BILLS CREEK BRIDGE.
STA. 78+35.71 CL SURVEY, 20.12' LT.
ELEV. = 1205.69
BM#105-3" BRASS CAP S.E. CORNER TOP
WALL ON MIDDLE BILLS CREEK BRIDGE.
STA. 79+33.87 CL SURVEY, 20.62' RT.
ELEV. = 1205.28
BM#106-#6 REBAR WITH BENNETT CAP
STA. 83+73.36 CL SURVEY, 86.47' RT.
ELEV. = 1198.34
STA. 82+00.00 - BEGIN INCIDENTAL CONSTRUCTION
STA. 87+00.00 - BEGIN CONSTRUCTION
CL EXIST. SURVEY PROFILE
C.R.L. EXIST. PROFILE
SP. DITCH RT.
FINISH GRADE
4.80%
2.10%
3.96%
8.57%
8.92%
88+75
EL=1226.32
96+25
EL=1238.37
750' V.C.
K=202
1235
1230
1225
1220
1215
1210
1205
1200
1195
1190
75+00
76+00
77+00
78+00
79+00
80+00
81+00
82+00
83+00
84+00
85+00
86+00
87+00
88+00
89+00
90+00
U.S. 277
State Job No. 20962(08) Sheet No. 5
US 277 MIDDLE BILLS CREEK TO H.E. BAILEY
GRADY COUNTY

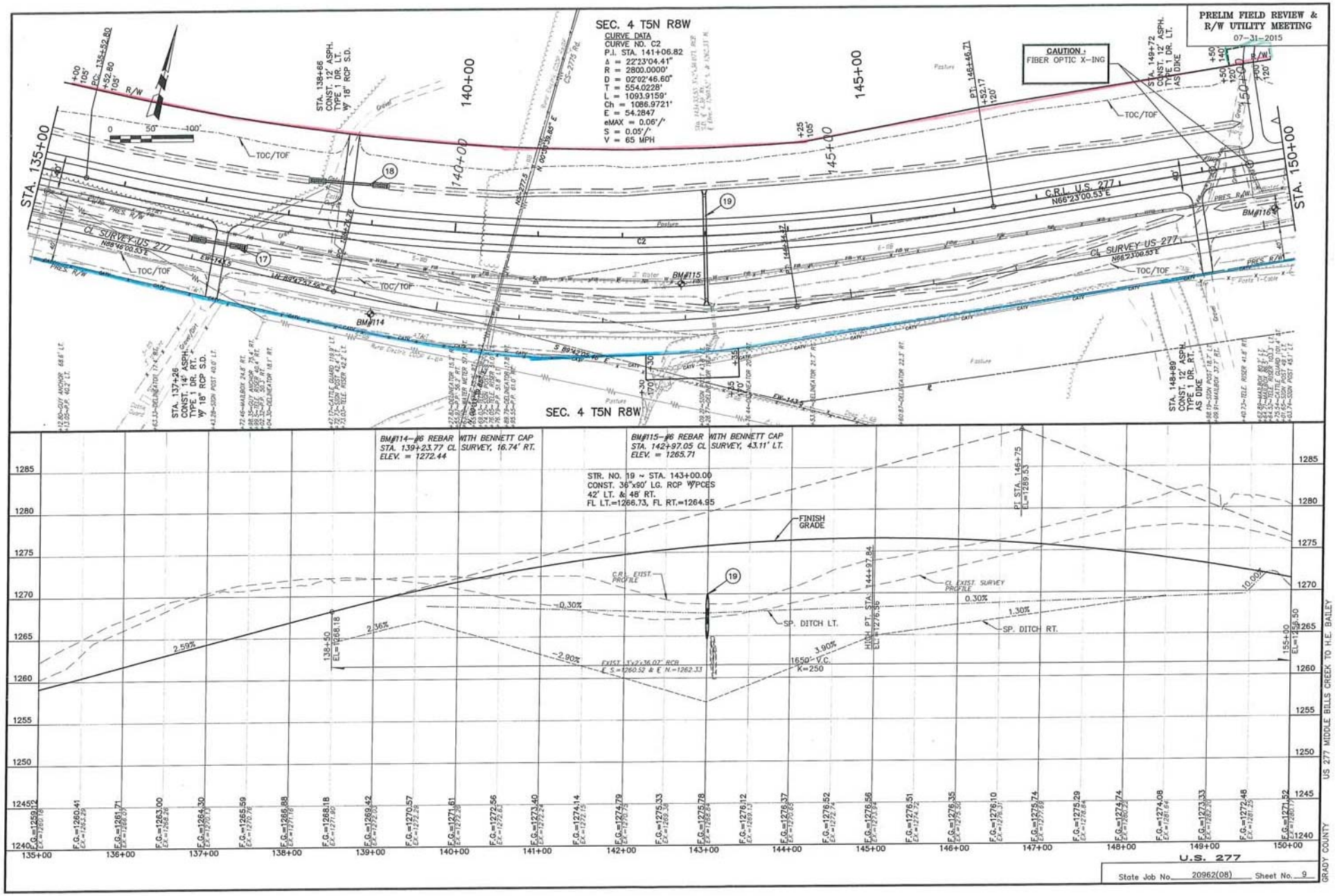

PRELIM FIELD REVIEW & R/W UTILITY MEETING
07-31-2015
CURVE DATA
CURVE NO. C1
P.I. STA. 91+87.54
Δ = 01°49'53.71"
R = 30500.0000'
D = 00°11'16.28"
T = 487.5415'
L = 975.0000'
Ch = 974.9585'
E = 3.8964
eMAX = 0.06'/'
S = N.C.
V = 65 MPH
SEC. 5 T5N R8W
STA. 90+00
STA. 105+00
95+00
100+00
CAUTION : GAS X-ING OVERHEAD ELEC. X-ING
CAUTION : OVERHEAD ELEC. X-ING
STA. 91+06 CONST. 12' ASPH. TYPE 1 DR. LT. W/ 18" RCP S.D.
STA. 92+20 CONST. 30' ASPH. TYPE 1 DR. RT. W/ xx" xxxx S.D.
STA. 94+03 CONST. 12' ASPH. TYPE 1 DR. RT. AS DIKE
+50 BEGIN DETOUR WIDENING TAPER 41' RT. CL SURVEY
STA. 100+76 CONST. 12' ASPH. TYPE 1 DR. RT. W/ 18" RCP S.D.
STA. 101+89 CONST. 17' ASPH. TYPE 1 DR. RT. AS DIKE
+07 END DETOUR WIDENING TAPER 12' RT. CL SURVEY
STA. 102+78 CONST. 12' ASPH. TYPE 1 DR. LT. AS DIKE
STA. 104+44 CONST. 12' ASPH. TYPE 1 DR. LT. W/ 18" RCP S.D.
C.R.L. U.S. 277
N88°46'04.94"E
CL SURVEY US 277
S89°24'01.35"E
S 89°45'01.14" E
BM#107
BM#108
BM#C-26-836
TOC/TOF
R/W
PRES. R/W
Metal Barn On Conc. Pad FF=1241.29
Single Story Residence On Conc. Slab FF=1256.50
Metal Barn Carport
Dirt Road
Gravel
Pasture
Fence
BM#107-#6 REBAR WITH BENNETT CAP
STA. 91+73.93 CL SURVEY, 21.00' RT.
ELEV. = 1241.24
BM#108-#6 REBAR WITH BENNETT CAP
STA. 94+46.47 CL SURVEY, 41.13' LT.
ELEV. = 1239.53
BM#C-26-836-ODOT BRASS
STA. 102+42.24 CL SURVEY, 55.79' LT.
ELEV. = 1263.01
STR. NO. 20 ~ STA. 97+25.00
CONST. 4'x4'x145' LG. RCB
W/ STD. HDWLS, WINGS, APRON, & 4' CURTAIN WALL
68' LT. & 77' RT.
FL LT.=1233.52, FL RT.=1228.31
P.I. STA. 92+50
El.=1244.32
FINISH GRADE
CL EXIST. SURVEY PROFILE
C.R.L. EXIST. PROFILE
SP. DITCH LT.
SP. DITCH RT.
1.08%
-0.62%
-3.14%
-2.46%
-0.32%
0.55%
0.95%
3.41%
5.44%
-0.60%
1.44%
750' V.C.
K=202
4'x3'x35.09' RCB
℄ El=1228.64 & ℄ N=1230.00
1265
1260
1255
1250
1245
1240
1235
1230
1225
1220
90+00
91+00
92+00
93+00
94+00
95+00
96+00
97+00
98+00
99+00
100+00
101+00
102+00
103+00
104+00
105+00
U.S. 277
State Job No. 20962(08) Sheet No. 6
GRADY COUNTY US 277 MIDDLE BILLS CREEK TO H.E. BAILEY
W:\E255-0\PMP US 277 Aerg, 7/28/2015 2:35:19 PM, mSullerton


PRELIM FIELD REVIEW & R/W UTILITY MEETING
07-31-2015
SEC. 5 T5N R8W
SEC. 4 T5N R8W
STA. 105+00
STA. 110+00
STA. 115+00
STA. 120+00
CAUTION - WATER X-ING FIBER OPTIC X-ING OVERHEAD ELEC.
CAUTION - OVERHEAD ELEC.
CAUTION - WATER X-ING CABLE X-ING OVERHEAD ELEC.
TEMP. R/W TO REMOVE BUILDING STRUCTURE
STA. 110+46 CONST. 12' ASPH. TYPE 1 DR. LT. W/ 18" RCP S.D.
STA. 114+40.60 CONST. 24' WIDE STREET RETURN LT. W/ XX" XXXX S.D.
P.I. STA. 100+00.00 CS-2770 RD. = P.O.T. STA. 111+40.60 C.R.L. US. 277
C.R.L. U.S. 277 N88°46'04.94"E
CL SURVEY US 277 S89°24'01.35"E
CL SURVEY US 277 N88°46'00.53"E
BM#110
BM#G-26-837
STA. 112+18 CONST. 12' ASPH. TYPE 1 DR. RT. AS DIKE
STA. 115+85 CONST. 12' ASPH. TYPE 1 DR. RT. W/ 18" RCP S.D.
STA. 117+56 CONST. 12' ASPH. TYPE 1 DR. RT. W/ 18" RCP S.D.
Single Story Wood Frame On Stem Wall FF=1273.80
Trailer On Blocks EF=1263.86
Barn Wood/Metal On Dirt FF=1268.28
Single Story Wood Frame On Stem Wall FF=1252.06
Pole Barn FF=1238.82
Trailer Home Abandoned On Blocks FF=1235.86
BM#110-#6 REBAR WITH BENNETT CAP STA. 110+56.89 CL SURVEY, 18.40' RT. ELEV. = 1262.21
BM#G-26-837-#4 REBAR PIN STA. 112+62.90 CL SURVEY, 54.40' RT. ELEV. = 1269.79
STR. NO. 8 @ STA. 107+10.00 CONST. 4'x4'x128' LG. RCB SKEWED 15° LT. FWD. 66' LG. LT. & 62' LG. RT. W/ STD. HDWLS, WINGS, APRON & 4' CURTAIN WALL: FL LT.=1244.49, FL RT.=1244.10
EXIST. 4'x4'x41.11' RCB ℄ S.=1241.90 & ℄ N.=1242.03
C.R.L. EXIST. PROFILE
CL EXIST. SURVEY PROFILE
FINISH GRADE
SP. DITCH LT.
SP. DITCH RT.
PT STA. 112+00 EL=1265.38
HIGH PT STA. 109+40.70 EL=1261.41
107+25 EL=1260.25
116+75 EL=1247.91
128+25 EL=1241.65
950' V.C. K=200
1150' V.C. K=184
-1.44%
1.08%
2.30%
-3.68%
-3.02%
-5.72%
-4.92%
-5.70%
-3.68%
U.S. 277
State Job No. 20962(08) Sheet No. 7
GRADY COUNTY US 277 MIDDLE BILLS CREEK TO H.E. BAILEY
W:\E255-0\P&P US-277.dwg, 7/28/2015 2:36:34 PM, mfulleton

PRELIM FIELD REVIEW &
R/W UTILITY MEETING
07-31-2015







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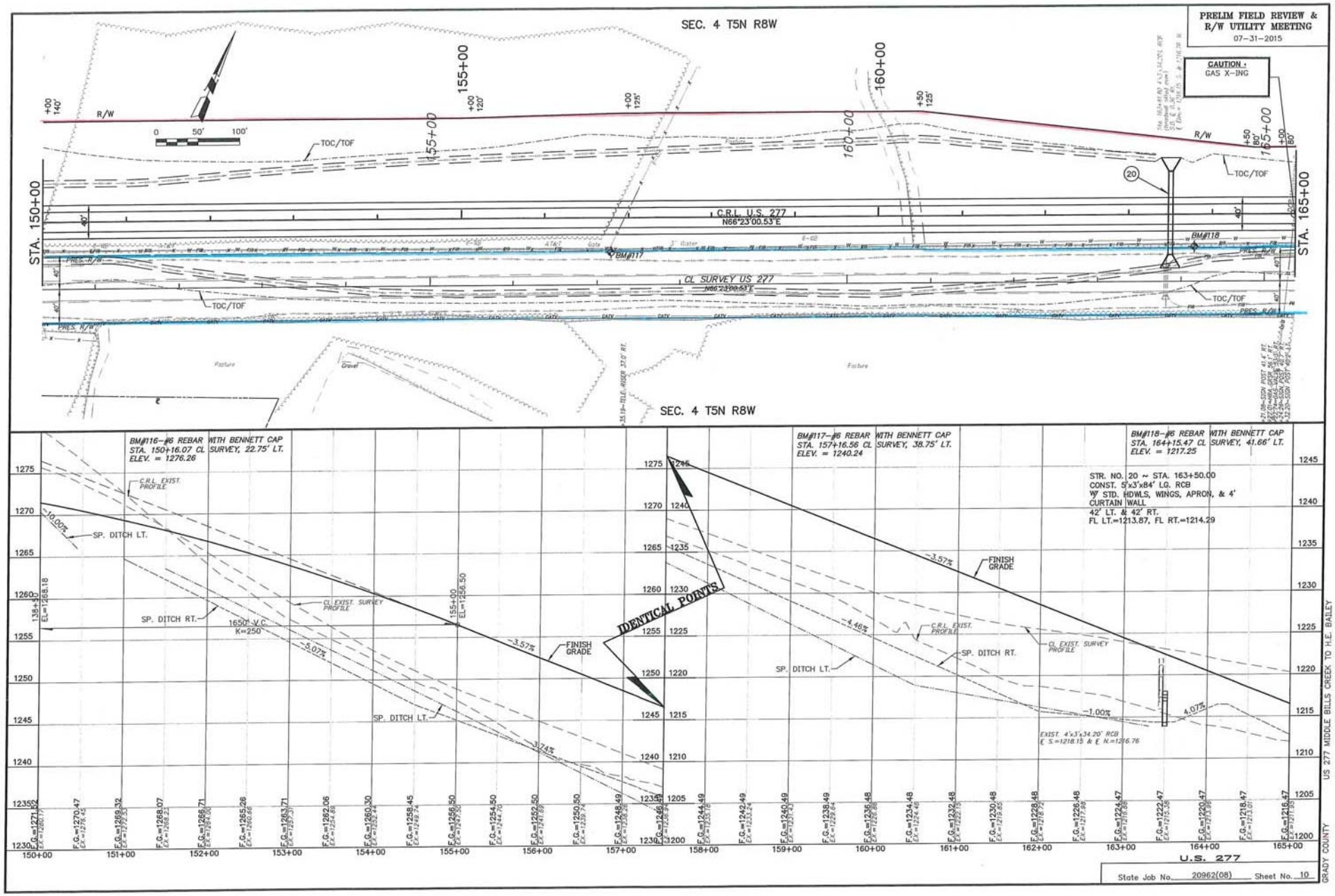

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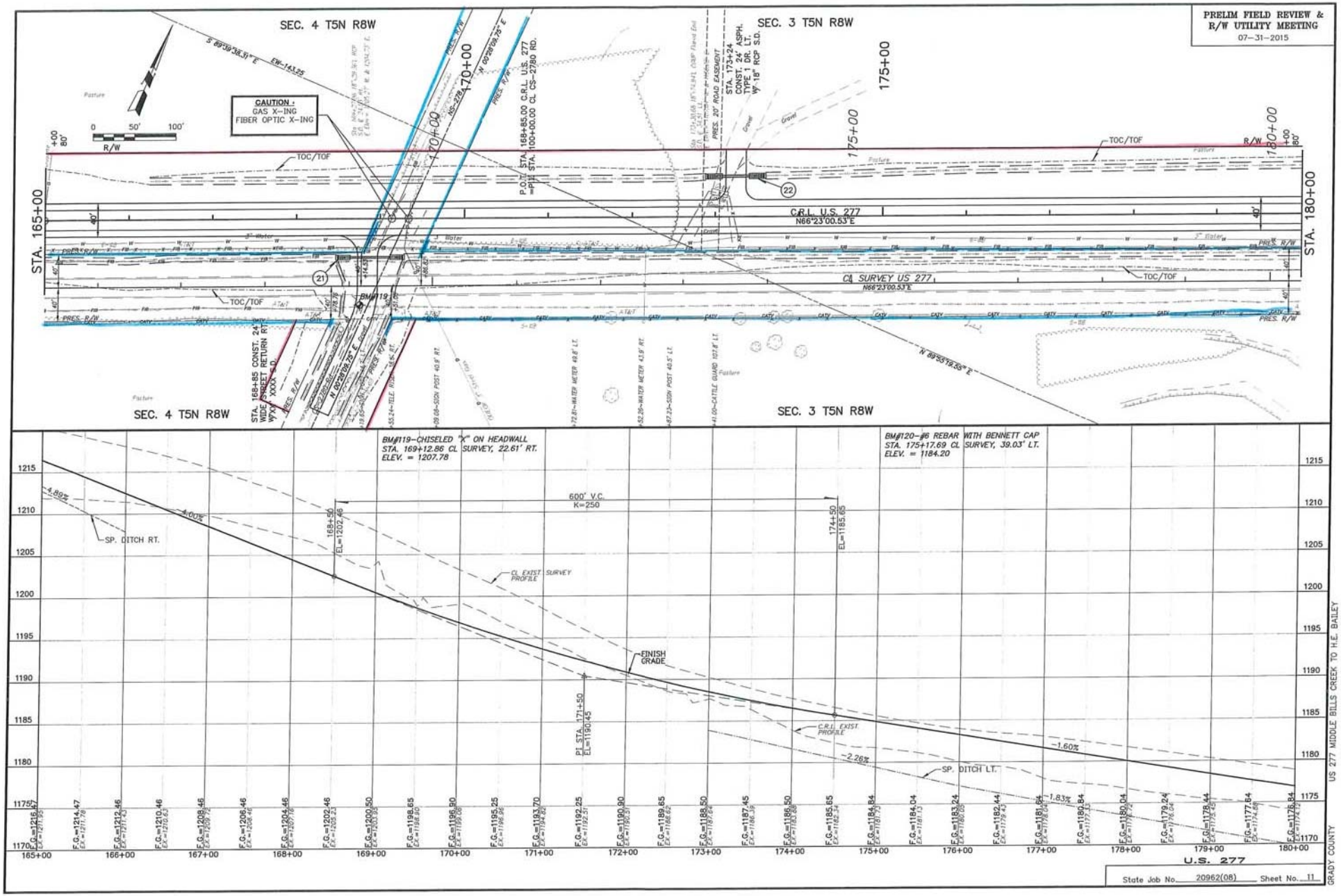
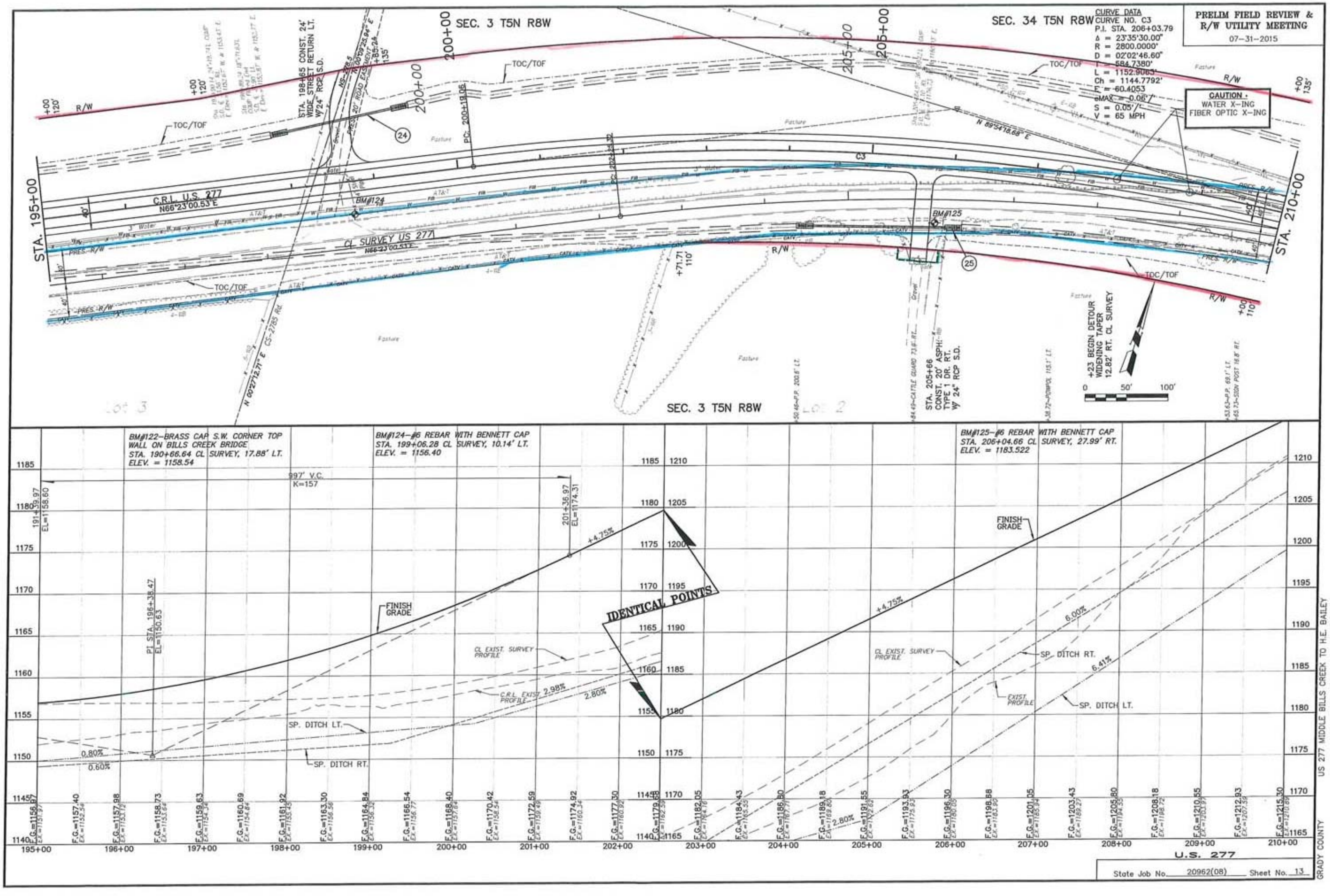
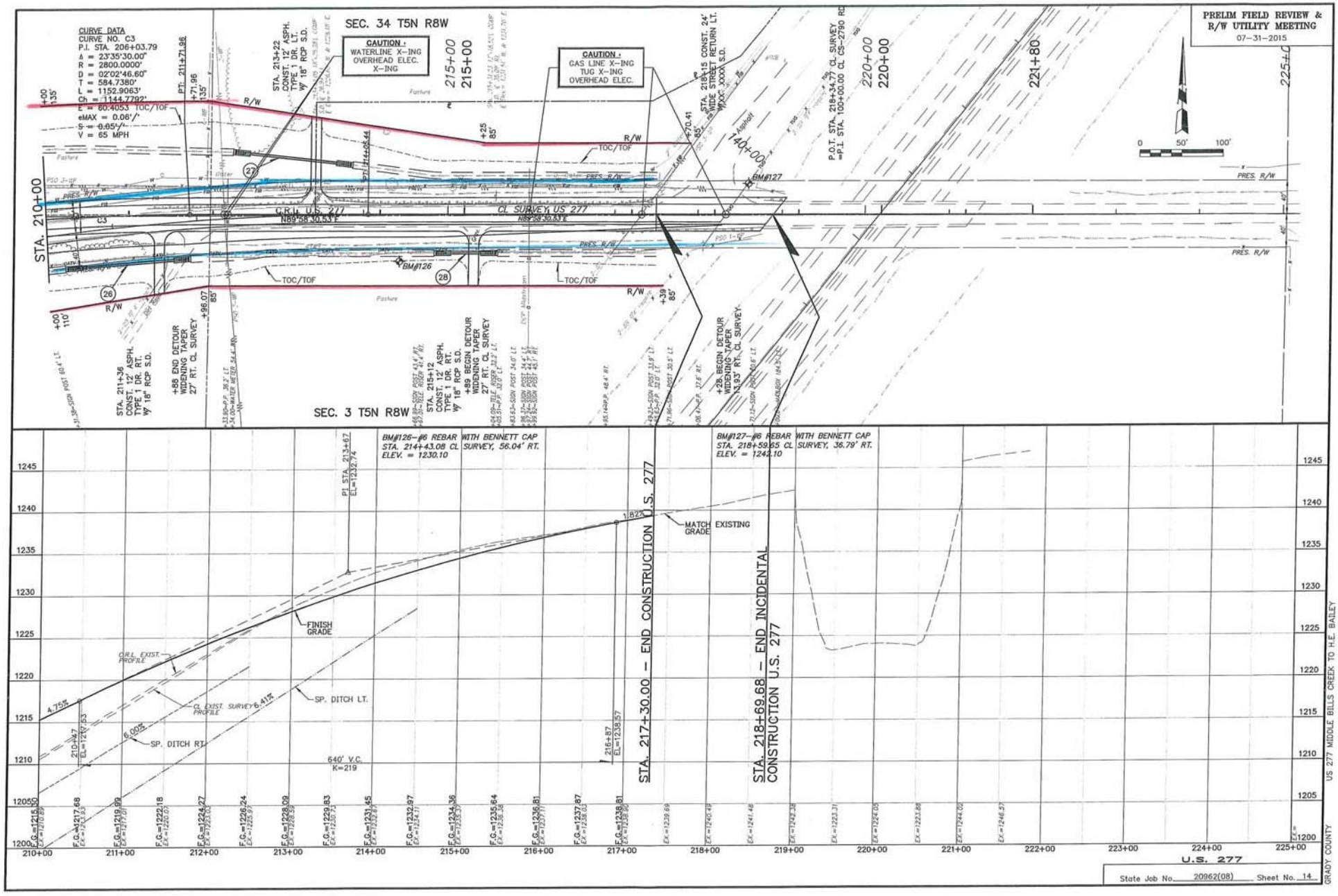

PRELIM FIELD REVIEW & R/W UTILITY MEETING
07-31-2015
SEC. 4 T5N R8W
SEC. 3 T5N R8W
CAUTION :
GAS X-ING
FIBER OPTIC X-ING
0 50' 100'
R/W
TOC/TOF
PRES. R/W
C.R.I. U.S. 277
N66°23'00.53"E
CL SURVEY US 277
N66°23'00.53"E
P.O.T. STA. 168+85.00 C.R.I. U.S. 277
P.I. STA. 100+00.00 CL CS-2780 RD.
STA. 173+24 ASPH. CONST. 24' TYP. 1 DIR. L.T. W/ 18" RCP S.D.
PRES. 20' ROAD EASEMENT
STA. 165+00
STA. 180+00
170+00
175+00
BM#119
BM#120
STA. 168+85 CONST. 24' WIDE CONCRETE RETURN RT. W/ XXXX" S.D.
SEC. 4 T5N R8W
SEC. 3 T5N R8W
BM#119-CHISELED "X" ON HEADWALL
STA. 169+12.86 CL SURVEY, 22.61' RT.
ELEV. = 1207.78
BM#120-#6 REBAR WITH BENNETT CAP
STA. 175+17.69 CL SURVEY, 39.03' LT.
ELEV. = 1184.20
600' V.C.
K=250
168+50
EL=1202.46
174+50
EL=1185.65
4.89%
4.00%
-2.26%
1.60%
1.83%
SP. DITCH RT.
SP. DITCH LT.
CL EXIST SURVEY PROFILE
C.R.I. EXIST. PROFILE
FINISH GRADE
PI STA. 171+50
EL=1190.45
1215
1210
1205
1200
1195
1190
1185
1180
1175
1170
165+00
166+00
167+00
168+00
169+00
170+00
171+00
172+00
173+00
174+00
175+00
176+00
177+00
178+00
179+00
180+00
U.S. 277
State Job No. 20962(08) Sheet No. 11
GRADY COUNTY US 277 MIDDLE BILLS CREEK TO H.E. BAILEY
W:\E255-0YPAP US 277.dwg, 7/28/2015 2:37:24 PM, mfullerton



PRELIM FIELD REVIEW & R/W UTILITY MEETING
07-31-2015
SEC. 3 T5N R8W
SEC. 34 T5N R8W
CURVE DATA
CURVE NO. C3
P.I. STA. 206+03.79
Δ = 23°35'30.00"
R = 2800.0000'
D = 02°02'46.60"
T = 584.7380'
L = 1152.9063'
Ch = 1144.7792'
E = 60.4053
eMAX = 0.06'/'
S = 0.05'/'
V = 65 MPH
CAUTION
WATER X-ING
FIBER OPTIC X-ING
STA. 195+00
STA. 210+00
C.R.L. U.S. 277
N66°23'00.53"E
CL SURVEY US 277
N66°23'00.53"E
PRES. R/W
R/W
TOC/TOF
BM#124
BM#125
C3
PC 200+18.06
STA. 198+65 CONST. 24' WIDE STREET RETURN LT. W/24" RCP S.D.
STA. 205+66 CONST. 20' ASPH. TYPE 1 DR. RT. W/ 24" RCP S.D.
+23 BEGIN DETOUR WIDENING TAPER 12.82' RT. CL SURVEY
N 89°54'18.68" E
Pasture
Lot 3
Lot 2
0 50' 100'
BM#122-BRASS CAP S.W. CORNER TOP WALL ON BILLS CREEK BRIDGE STA. 190+66.64 CL SURVEY, 17.88' LT. ELEV. = 1158.54
BM#124-#6 REBAR WITH BENNETT CAP STA. 199+06.28 CL SURVEY, 10.14' LT. ELEV. = 1156.40
BM#125-#6 REBAR WITH BENNETT CAP STA. 206+04.66 CL SURVEY, 27.99' RT. ELEV. = 1183.522
997' V.C.
K=157
191+39.97 EL=1158.60
201+36.97 EL=1174.31
PI STA. 196+38.47 EL=1150.63
FINISH GRADE
+4.75%
IDENTICAL POINTS
CL EXIST. SURVEY PROFILE
C.R.L. EXIST. PROFILE
2.98%
2.80%
SP. DITCH LT.
SP. DITCH RT.
0.80%
0.60%
6.00%
6.41%
EXIST. PROFILE
195+00
196+00
197+00
198+00
199+00
200+00
201+00
202+00
203+00
204+00
205+00
206+00
207+00
208+00
209+00
210+00
U.S. 277
State Job No. 20962(08)
Sheet No. 13
GRADY COUNTY
US 277 MIDDLE BILLS CREEK TO H.E. BAILEY



State Job No. 20962(08) Sheet No. 14

US 277 MIDDLE BILLS CREEK TO H.E. BAILEY
GRADY COUNTY

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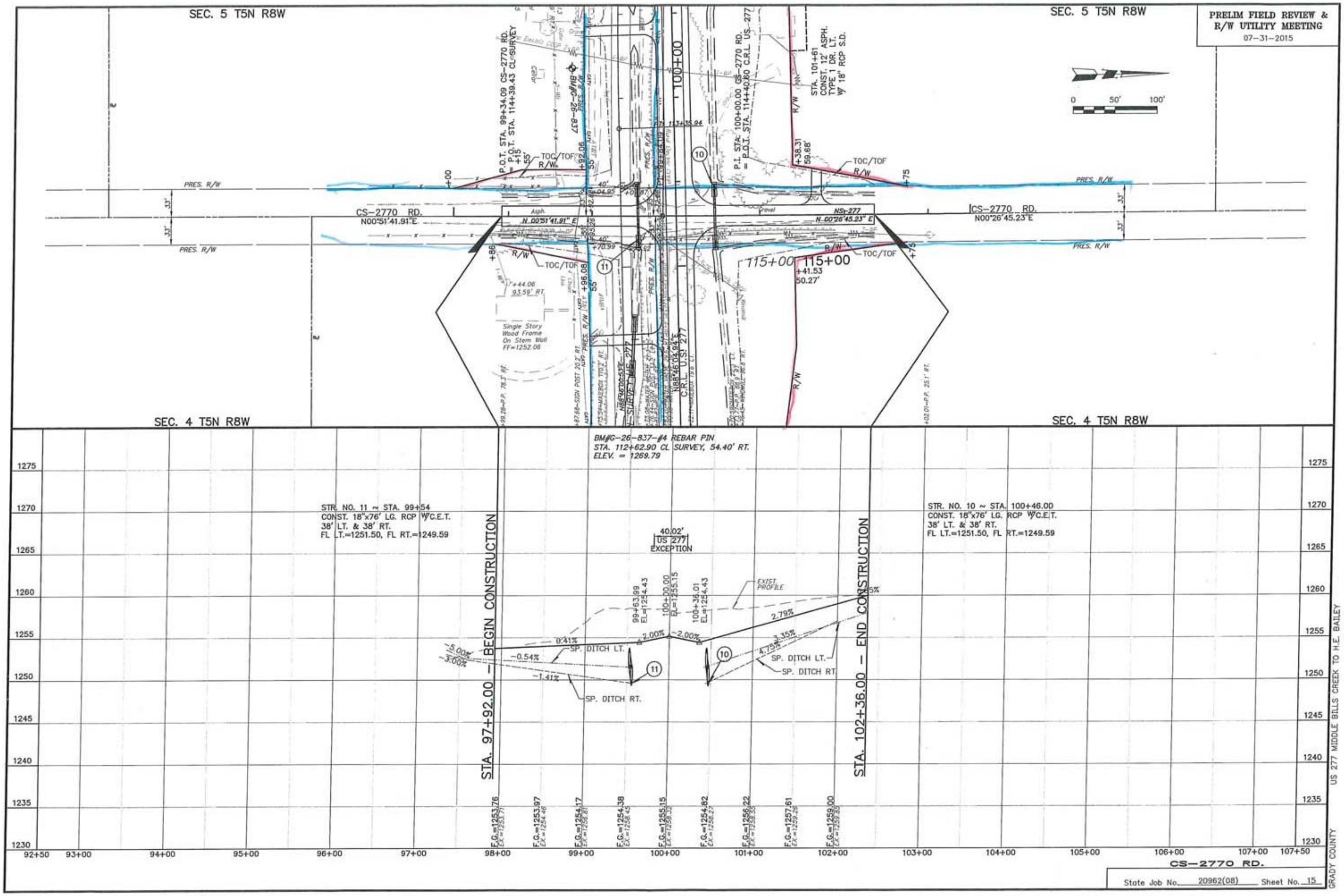

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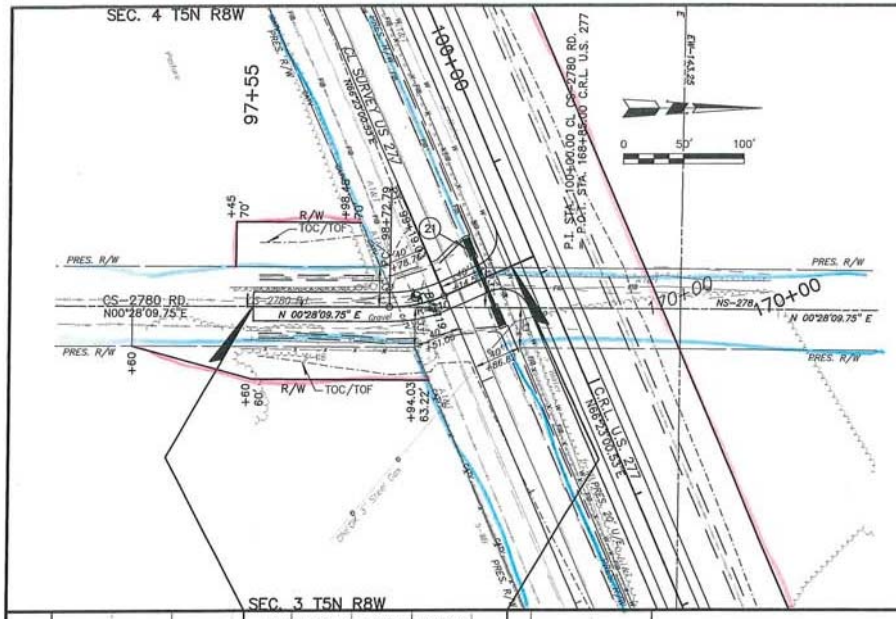
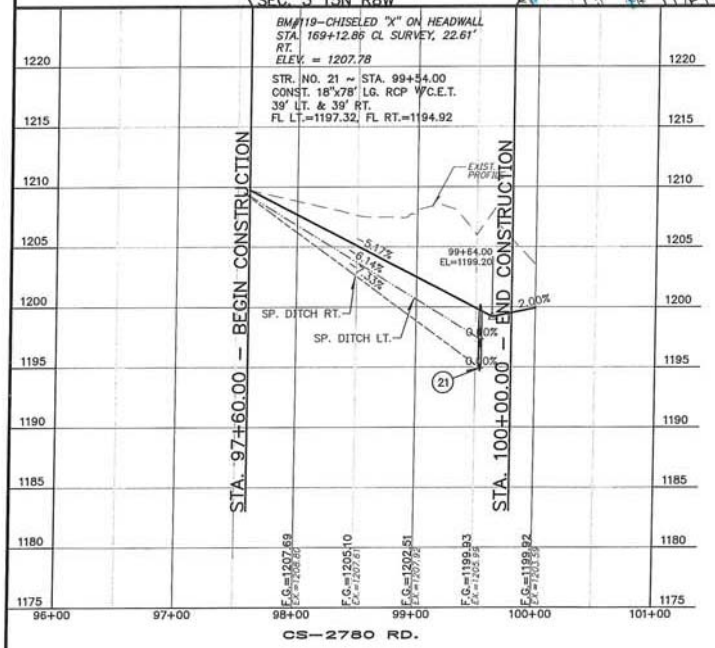
PRELIM FIELD REVIEW &
R/W UTILITY MEETING
07-31-2015



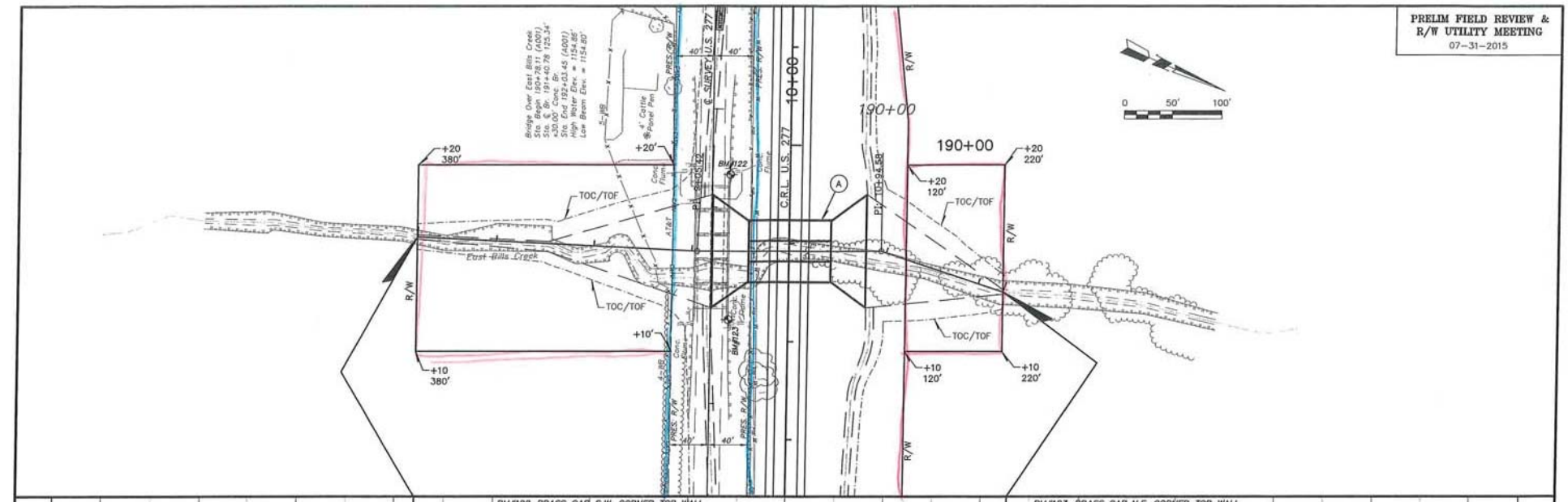


GRADY COUNTY US 277 MIDDLE BILLS CREEK TO H.E. BAILEY

State Job No. 20962(08) Sheet No. 16

W:\E265-0\Crossing Streets P&P.dgn, 7/28/2015 2:38:36 PM, mfullerton

PRELIM FIELD REVIEW &
R/W UTILITY MEETING
07-31-2015



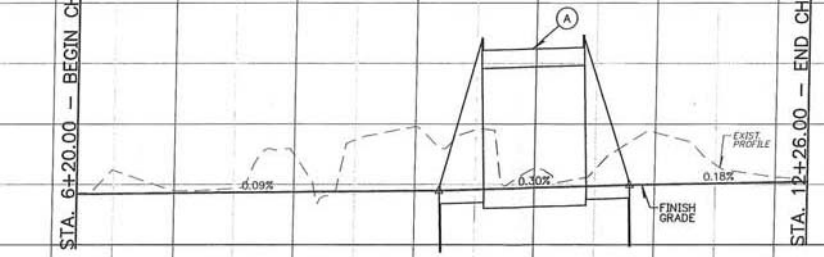
BM#122–BRASS CAP, S.W. CORNER TOP WALL
ON BILLS CREEK BRIDGE
STA. 190+66.64 CL SURVEY, 17.884' LT.
ELEV. = 1158.54

BM#123–BRASS CAP, N.E. CORNER TOP WALL
ON BILLS CREEK BRIDGE
STA. 192+14.75 CL SURVEY, 17.88' LT.
ELEV. = 1158.59

STA. 6+20.00 – BEGIN CHANNEL CONSTRUCTION

STA. 12+26.00 – END CHANNEL CONSTRUCTION

BRIDGE "A" ~ STA. 191+08.00
CONST. 3-20'X10'X85' LG. RCB
W/ STD. HDWLS, WINGS, APRON AND
4' CURTAIN WALLS.
43' LT. & 43' RT.
FL LT.=1144.95, FL RT.=1144.48



HYDRAULIC DATA ~ BRIDGE "A"
EAST BILL CREEK

TOTAL D.A.	=	13.90 SQ. MI.			
CONTROLLED D.A.	=	2.10 SQ. MI.			
EFFECTIVE D.A.	=	11.80 SQ. MI.			
Q2	=	803 CFS	Q50	=	5550 CFS
V2	=	2.09 FPS	V50	=	10.90 FPS
Q2 CHW	=	1151.70 FT.	Q50 CHW	=	1155.99 FT.
Q5	=	1750 CFS	Q0.T. = Q75	=	6270 CFS
V5	=	4.05 FPS	V0.T.	=	11.92 FPS
Q5 CHW	=	1152.89 FT.	O.T. CHW	=	1156.76 FT.
Q10	=	2700 CFS	Q100	=	6980 CFS
V10	=	5.85 FPS	V100	=	12.63 FPS
Q10 CHW	=	1153.70 FT.	Q100 CHW	=	1157.23 FT.
Q25	=	4310 CFS	Q500	=	11100 CFS
V25	=	8.85 FPS	V500	=	12.93 FPS
Q25 CHW	=	1154.83 FT.	Q500 CHW	=	1159.15 FT.

1175 1170 1165 1160 1155 1150 1145 1140 1135 1130

3+00 4+00 5+00 6+00 7+00 8+00 9+00 10+00 11+00 12+00 13+00 14+00 15+00 16+00 17+00

F.G.=1144.24 Ex.=1146.10
F.G.=1144.28 Ex.=1144.30
F.G.=1144.33 Ex.=1144.66
F.G.=1144.37 Ex.=1147.44
F.G.=1144.42 Ex.=1148.66
F.G.=1144.46 Ex.=1149.79
F.G.=1144.57 Ex.=1149.49
F.G.=1144.72 Ex.=1148.36
F.G.=1144.87 Ex.=1148.22
F.G.=1145.00 Ex.=1149.26
F.G.=1145.09 Ex.=1146.65
F.G.=1145.18 Ex.=1145.91

BRIDGE "A"

State Job No. 20962(08) Sheet No. 17

US 277 MIDDLE BILLS CREEK TO H.E. BAILEY
GRADY COUNTY

W:\E255-0/P&P East Bills Creek.dwg, 7/28/2015 2:38:59 PM, mMarlton

United States Department of the Interior
Bureau of Indian Affairs
Title Status Report

Report Certification Time and Date: 06/11/2008 10:00:00 PM
Requestor: NOWINGS Date/Time: 05/08/2014 14:40:41

Land Legal Description

Land Area	Land Area Name	Tract Number	LTRO	Region	Agency	Resources
802	KIOWA, COMANCHE, APACHE	1560	ANADARKO, OK	SOUTHERN PLAINS REGIONAL OFFICE	ANADARKO AGENCY	Both

Section	Township	Range	State	County	Meridian	Legal Description		Acres
5	005.00N	008.00W	OKLAHOMA	GRADY	Indian		SW	160.000
						TOTAL TRACT ACRES:		160.000

Title Status

Tract 802 1560 is held by the United States of America in trust for the land owner(s) with trust interests and/or by the land owner(s) with restricted interests and/or fee simple interests, as listed in Appendix "A" attached to and incorporated in this Title Status Report.

The title to Tract 802 1560 is current, complete, correct, and without defect. Ownership is in unity and interests are owned in the following title status: restricted.

The tract ownership is encumbered by the title documents as listed on Appendix "B" attached to and incorporated in this Title Status Report.

No Tract Notes or Coded Remarks for this tract.

This report does not cover encroachments nor any other rights that might be disclosed by a physical inspection of the premises, nor questions of location or boundary that an accurate survey may disclose. This Report also does not cover encumbrances, including but not limited to irrigation charges, unpaid claims, not filed or recorded in this Land Titles and Records Office. This report does not state the current ownership of the interests owned in fee simple but states the ownership at the time the interest ceased to be held in trust or restricted ownership status.

This Title Status Report is a true and correct report of the status of title to the real estate described herein according to the official land records recorded and maintained in this office.

RECEIVED
JUN 09 2014

Allotment Name: POWYWOONARD

Allotment Number: Comanche 1560

Appendix "A"

Effective Ownership as of 06/11/2008

---- OWNER ----				- DOCUMENT -		NAME IN WHICH	FRACTION TRACT	AGGREGATE SHARE	AGGREGATE
Tribe	Indian or Non-Indian	Title Status	Interest*	Class	Type	SURNAME/FIRST NAME	AS ACQUIRED	CONVERTED TO LCD	DECIMAL
COMANCHE - OK	Indian	Restrict	All	Prob Ord	TESTATE	SECONDINE	1		
						NAT SURV CHILD/CONNIE A	20		
		Restrict	Title	Prob Mod	AMIN COR	CONNIE ANN SECONDINE	1	5	
						NATIVIDAD	5	20	.2500000000
						NATURAL SURVIVING CHILDREN OF			
COMANCHE - OK	Indian	Restrict	All	Prob Ord	TESTATE	TAHSUDA	1	5	
						NORMA ANN	4	20	.2500000000
COMANCHE - OK	Indian	Restrict	All	Prob Ord	TESTATE	WARDESKI	1	5	
						MARY JO TAHSUDA	4	20	.2500000000
COMANCHE - OK	Indian	Restrict	All	Prob Ord	TESTATE	HAWKINS	1	5	
						JERREE LYNN TOYEBO	4	20	.2500000000

IN TRUST:	20	
	20	1.0000000000
IN FEE:	0	
	20	.0000000000
TOTAL:	20	
	20	1.0000000000

* "All" means the equitable beneficial interest and the legal title interest merged together.

* SPECIAL INTEREST HOLDERS *

COMANCHE - OK	Indian	Restricted	Beneficial	Probate Order	TESTATE	SECONDINE NATIVIDAD	1	4	
						CONNIE ANN	5	20	.2000000000

Allotment Name: POWYWOONARD

Allotment Number: Comanche 1560

Appendix "B"

Ownership of Tract 802 1560 is encumbered by the following:

Contract Type/Contractor Name	Contract Number	Contractor ID	Begin Date	Expiration Date	Leased Acres	Record Image#
Oil and Gas Pipeline	030175	802C00004491	01/09/2003	01/15/2023	.890	802-030175
ENOGEX GAS GATHERING LLC						
AGRICULTURE LEASE	0000054253	802C003314	01/01/2010	12/31/2014	160.000	802-0000054253
MELFORD SCOTT						
Highways and Roads	062001996	802C003503	08/30/1995	PERPETUAL	.220	802-062001-96
OKLAHOMA DEPARTMENT OF TRANSPORTATION						
Highways and Roads	020145993	802C003979	12/01/1992	PERPETUAL	2.620	802-020145-93
ST OF OK, DEPT OF TRANS						

Type of Encumbrance	Encumbrance Holder	Expiration Date	Document Number	Description and Explanation
HIGHWAYS/ROADS	OK STATE HIGHWAY COMM	PERPETUAL	55934928	EASEMENT FOR ROW TO CONSTRUCT AND MAINTAIN PUBLIC HIGHWAY APPROVED 1/4/1929 FOR A PERPETUAL TERM, PURSUANT TO THE PROVISIONS OF THE ACT OF MAY 27, 1908 (35 STATS. L., 312).

TRACT/OWNER/ADDRESS/INTEREST
Effective Date: 06/11/2008

Tract ID: 802 1560
Agency: ANADARKO AGENCY

Section	Township	Range	County	ST	Meridian	Acres
5	005.00N	008.00W	GRADY	OK	Indian	160.000

KISE, JERRE L
PO BOX 542
WALTERS, OK 73572-0542
TTL Interest: .2500000000
Ben Interest: .2500000000
Ownership Type: R - Restricted

SECONDINE, CONNIE A
132 LIONS CV
WALTERS, OK 73572-3022
Life Interest: .2000000000
Ownership Type: R - Restricted

SECONDINE, NAT SURV CHILD/CONNIE A
ANADARKO AGENCY
C/O SUPERINTENDENT
P.O. BOX 309
ANADARKO, OK 73005
TTL Interest: .2500000000
Ben Interest: .0500000000
Ownership Type: R - Restricted

TAHSUDA, NORMA A
1601 S SANDHILL RD UNIT 297
LAS VEGAS, NV 89104-4739
TTL Interest: .2500000000
Ben Interest: .2500000000
Ownership Type: R - Restricted

WARDESKI, MARY J
5102 NW MEADOWBROOK DR
LAWTON, OK 73505-4748
TTL Interest: .2500000000
Ben Interest: .2500000000
Ownership Type: R - Restricted

*** * * * End of Report * * * ***

APPENDIX G

NOISE STUDIES

Oklahoma Department of Transportation
Environmental Programs Division, 200 N.E. 21st Street, Oklahoma City, OK 73105
Main Office 405.521.3050 / Fax 405.522.5193

DATE: **December 1, 2015**

TO: Kirsten McCullough – Environmental Project Manager – Garver, LLC

FROM: Kevin Larios, P.E. – Noise Specialist KML

SUBJECT: **Approved Traffic Noise Assessment prepared for US-277 from Cement extending easterly to I-44 in Caddo and Grady Counties, J/P Numbers 20953(04) & 20962(04) (EC-1357 TO1).**

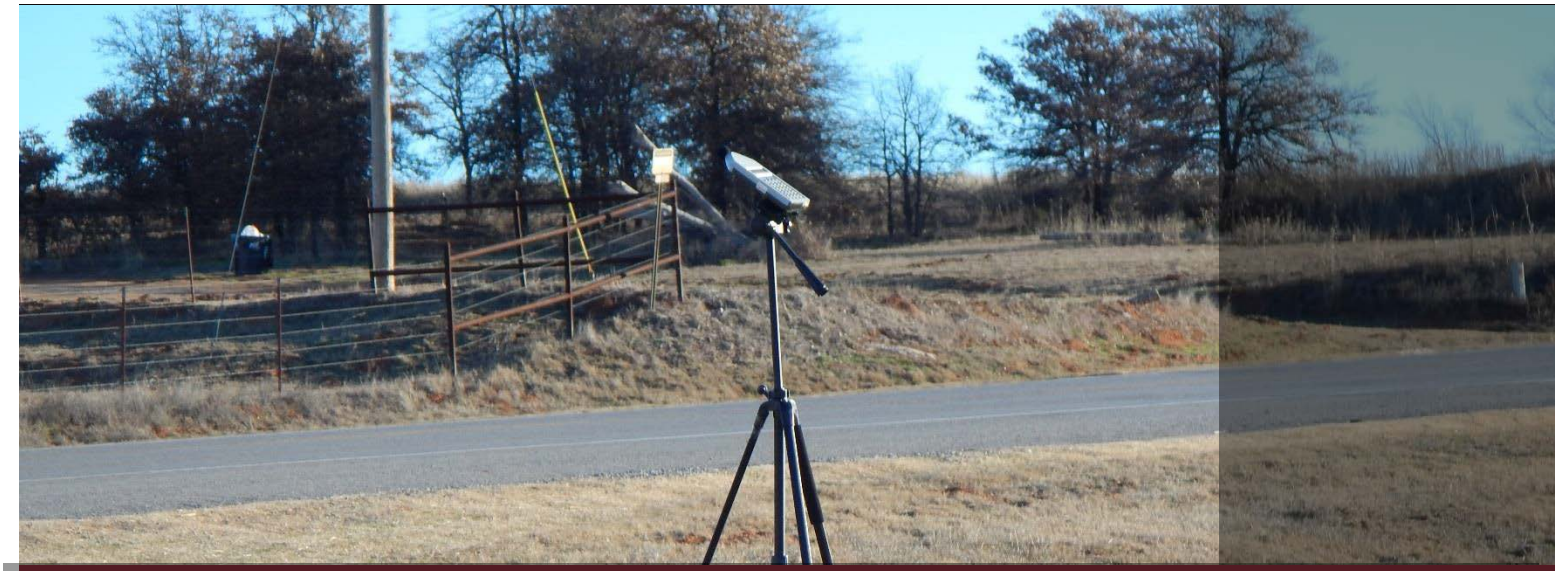
Attached is the approved Traffic Noise Assessment completed for the subject project. A noise study was required due to the proposed improvements consisting of substantial horizontal and vertical alterations of existing US-277. The analysis had utilized the FHWA Traffic Noise Model version 2.5 in accordance with FHWA 23 CFR 772 and complies with the ODOT Noise Policy dated July 13, 2011. Noise measurements were performed at three (3) locations along the existing highway for purposes to validate the noise model which proved satisfactory. The land uses along the project extent are predominantly residential and agricultural, with multiple active oil and gas operations scattered throughout the area. The noise sensitive land uses for this project are considered to be only single family residential and two places of worship. Based on a field inspection, aerial maps and preliminary design plans, forty-two (42) model receiver sites were analyzed. The existing noise levels for forty (40) receivers were determined by noise modeling while noise measurements were performed at two (2) residential receivers (R-25 and R-43) in determining the ambient acoustic environment due to long distances from existing US-277. Under current conditions, one (1) residential receiver (R-22) is impacted with a noise level of 66.2 dB(A) $L_{eq}(h)$. Based on the proposed project and future traffic volumes no residential dwellings or places of worship will approach the 67 dB(A) $L_{eq}(h)$ for NAC Categories B and C. Further, no receivers will experience future levels greater than 15 dB over the current condition which is considered to be a substantial increase for noise impact determination. As planned, the proposed project will not have any traffic noise impacts.

KML

Attachment

Copy: Siv Sundaram
Greg Worrell
Ryan Mountain - Garver, LLC

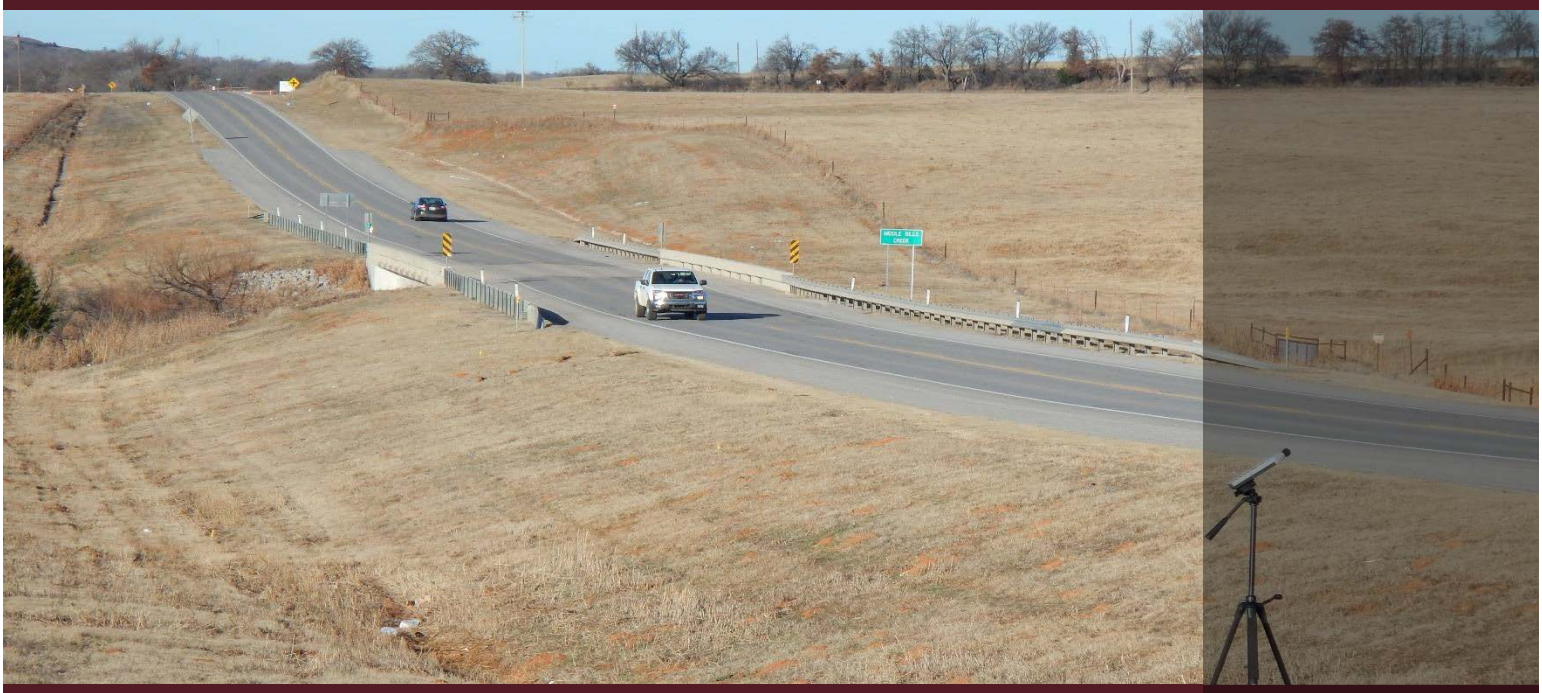
Kevin Larios, P.E.
Noise Specialist
Direct: (405) 522-4420
E-mail: klarios@odot.org



Traffic Noise Assessment

US-277 from Cement, OK to I-44, Caddo and Grady Counties

JP 20953(04) & 20962(04)



Prepared For:

Oklahoma Department of Transportation

December 1, 2015

GARVER

GarverUSA.com

Executive Summary

This traffic noise assessment report examines the potential noise impacts associated with the proposed reconstruction of US-277 from Cement, Oklahoma to I-44 in Caddo and Grady Counties.

The noise analysis was performed using the FHWA's computer model Traffic Noise Model version 2.5 in accordance with the FHWA 23 CFR 772, Procedures for Noise Abatement of Highway Traffic Noise and Construction and complies with the ODOT Policy Directive Highway Noise Abatement C-201-3 dated July 13, 2011.

The land uses along the project extent are predominantly residential and agricultural, with multiple active oil and gas operations scattered throughout the area. The noise sensitive land uses for this project are considered to be only single family residential and two places of worship. Based on a field inspection, aerial maps and preliminary design plans, forty-two (42) model receiver sites were analyzed. Under current conditions, one (1) residential receiver (R-22) is impacted with a noise level of 66.2 dB(A) L_{eq} (h). Based on the proposed project and future traffic volumes no residential dwellings or places of worship will approach the 67 dB(A) L_{eq}(h) for NAC Categories B and C. Further, no receivers will experience future levels greater than 15 dB over the current condition which is considered to be a substantial increase for noise impact determination. As planned, the proposed project will not have any traffic noise impacts.

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LIST OF TABLES

APPENDIX

1.0 INTRODUCTION

This Traffic Noise Assessment investigates the noise impacts that could result from the proposed reconstruction of US-277 from Cement to I-44 in Caddo and Grady Counties, Oklahoma. The proposed project consists of constructing a modern two-lane facility with paved shoulders on new alignment for the majority of the project's extent. Beginning at the east edge of Cement the proposed alignment extends eastwardly cross-country approximately 1,640-2,200 feet north of the existing highway until the new roadway meets the existing alignment just west of NS-276 and follows the existing alignment up to the bridge over Middle Bills Creek. Just east of Middle Bills Creek the alignment diverges to approximately 110 feet north of the existing alignment, where it continues until shifting back to the existing alignment to tie into the roadway approach located just west of East Bills Creek. At East Bills Creek, the proposed improvements follow the existing alignment to I-44 at the end of the project area. **Figure 1** in the Appendix depicts the project location.

The analysis of this project relies on aerial maps, preliminary design plans, a field survey, and traffic data as provided to the Environmental Programs Division of the Oklahoma Department of Transportation (ODOT). The noise analysis was completed in accordance with the FHWA 23 CFR 772, *Procedures for Noise Abatement of Highway Traffic Noise and Construction* and complies with the ODOT Policy Directive *Highway Noise Abatement* C-201-3 (ODOT Noise Policy) dated July 13, 2011.

2.0 TERMINOLOGY AND SOUND THEORY

Noise, defined as unwanted or excessive sound, is an undesirable by-product of our modern way of life. From these known effects of noise, criteria have been established to help protect the public health and safety and prevent disruption of certain human activities. These criteria are based on such known impacts of noise on people as speech interference, sleep interference, physiological responses, hearing loss and annoyance. Highway traffic noise is a major contributor to overall transportation noise and is considered to be a line source of energy from which the energy levels dissipate vertically and laterally from the roadway. The rate at which the sound energy degrades is dependent upon several factors, including distance, buildings, solid fences/walls, topography, ground surfaces, and atmospheric conditions. Traffic noise is not constant. It varies as each vehicle passes a point. The time-varying characteristics of environmental noise are analyzed statistically to determine the duration and intensity of noise exposure. In an urban environment, noise is made up of two distinct parts. One is ambient or background noise. Wind noise and distant traffic noise make up the acoustical environment surrounding the project. These sounds are not readily recognized, but combine to produce a nonirritating ambient sound level. This background sound level varies throughout the day, being lowest at night and highest during the day. The other component of urban noise is intermittent and louder than the background noise. Transportation noise and local industrial noise are examples of this type of noise. It is for these reasons that environmental noise is analyzed statistically.

Sound from highway traffic is generated primarily from a vehicle's tires, engine and exhaust. It is commonly measured in decibels (dB) and is a logarithmic unit, as opposed to the more common linear unit of measurement such as temperature. Sound is composed of many frequencies measured in Hertz (Hz). The healthy young adult ear generally responds to sound in the range of 20 to 20,000 Hz. For highway traffic noise, since humans are not equally sensitive to all frequencies, noise is adjusted or weighted using an A-weighted scale. The A weighting scale is widely used in environmental analysis because it closely resembles the nonlinearity of human hearing. The unit of A-weighted noise is dB(A). Because highway traffic sounds fluctuate over time, an equivalent sound level is used to represent a single number to describe varying traffic sound levels. The term Leq (h) refers to the steady-state sound level which in a stated period of time contains the same acoustic energy as the time-varying sound level during the same period. All traffic noise levels in this analysis will be expressed in dB(A) L_{eq}(h).

3.0 METHODOLOGY

Traffic noise analysis consists of a comparison of physically measured or modeled noise levels for existing condition with projected noise levels the for future condition. The analysis was performed using the FHWA's Traffic Noise Model version 2.5 (TNM 2.5) in modeling existing and future noise levels based on traffic data, roadway geometry, and receiver site locations. Preliminary alignment and roadway elevation characteristics were available and average pavement surface was utilized for both existing and future conditions in the modeling effort. A receiver is a location, usually representing a dwelling unit where frequent exterior human activity occurs. The chosen receiver is modeled for noise levels and evaluated for noise impacts. For this analysis, the peak hour volumes and corresponding speeds for automobiles, medium trucks and heavy trucks result in the noisiest conditions. During all other periods, the noise levels are expected to be less than indicated in this report.

The FHWA has seven noise activity categories based on land use and sound levels, each of which has its own Noise Abatement Criteria (NAC). The NAC categories are listed in **Table 1** on the proceeding page. If a project would result in higher L_{eq} (h) values than the NAC values for a given location, then noise abatement or mitigation measures must be evaluated. For the noise sensitive receptors where no frequent exterior human activity area is identifiable, then interior noise levels can be determined using adjustment factors and compared to the NAC in determining impacts in accordance with the ODOT Noise Policy. An impact occurs when, at a given receptor, future noise levels approach by one dB(A), meet or exceed the FHWA NAC for its activity category. An impact also occurs when the future noise levels exceed existing noise levels by 15 dB(A) at a given receptor. Once an impact is identified, then noise abatement is considered for the impacted area. Only those areas for which mitigation is determined to be feasible and reasonable as defined by ODOT Noise Policy will be recommended.

TABLE 1
FHWA Noise Abatement Criteria (NAC)
Hourly A-Weighted Sound Level, decibels dB(A)

Activity Category	Activity Criteria[1] Leq (h)[2]	Activity Description
A	57 (Exterior)	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B[3]	67 (Exterior)	Residential
C[3]	67 (Exterior)	Active sport areas, amphitheaters, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreational areas, Section 4(f) sites, schools, television studios, trails, and trail crossings.
D	52 (Interior)	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public or nonprofit institutional structures, radio studios, recording studios, schools, and television studios
E[3]	72 (Exterior)	Hotels, motels, offices, restaurants/bars, and other developed lands, properties or activities not included in A-D or F.
F	- -	Agriculture, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources, water treatment, electrical), and warehousing
G	- -	Undeveloped lands that are not permitted

[1] The Leq(h) Activity Criteria values are for impact determination only, and are not design standards for noise abatement measures.
[2] The equivalent steady-state sound level which in a stated period of time contains the same acoustic energy as the time-varying sound level during the same time period, with Leq(h) being the hourly value of Leq.
[3] Includes undeveloped lands permitted for this activity category.

4.0 TRAFFIC NOISE ANALYSIS

4.1 Traffic Data

Traffic noise calculations based on existing year 2012 and future design year 2035 traffic volumes were performed using the FHWA TNM 2.5 model. The unit of measure for roadway traffic is the average annual daily traffic (AADT), which is defined as the estimate of traffic volumes in vehicles per day on a roadway, averaged from the seven annual average days of the week, for a calendar year. TNM utilizes the design hourly traffic (DHV) to determine the existing traffic noise levels and calculates the predicted noise levels which occur when the highest volume for an hour is combined with the highest speeds and considered as the "worst hour for noise." DHV data is based on the percentage of hourly vehicular traffic present on the facility at the design capacity consisting of cars, medium trucks and heavy trucks. **Table 2** depicts the DHV values utilized in the modeling. The modeling assumed all vehicles were traveling at various speeds ranging from 35 to 65 mph for both the existing and future conditions.

TABLE 2
Noise Model Traffic Volumes
JP 20953(04) & 20962(04), US-277 from Cement, OK to I-44

	AADT	DHV	Cars	Medium Trucks	Heavy Trucks
Existing (2012)	2,100	230	203	9	18
Future (2035)	3,310	364	320	15	29

4.2 Existing Condition & Land Use

The current roadway is a two-lane facility with eleven-foot travel lanes and sod shoulders. The project limits begin at the east edge of Cement and extend approximately 6.75 miles east along US-277 to the I-44 overpass bridge. This facility is classified as a Rural Collector with rolling terrain. Based on aerial maps and the field investigation, land use is predominately residential and agricultural, with multiple active oil and gas operations scattered throughout the area. In addition, within the Town of Cement extent, there are two places of worship. The residential dwellings were evaluated as NAC Activity Category B and the places of worship were evaluated as NAC Activity Category C. No Activity Categories A or E exist. The noise sensitive land uses for this project are considered to only be the residential dwellings and places of worship.

4.3 Model Validation

For purposes in validating the noise model, noise measurements were performed using a Larson-Davis Model 720(MPR005) Type 2 Sound Level Meter. Noise readings were conducted January 27-28, 2015 and collected for 15 minutes at three locations. **Figures 2B and 2F** in the Appendix depict the location of the model validation sites. A traffic count, by vehicle type, was collected simultaneously. The existing roadway and collected traffic data were inputted into TNM 2.5 in calculating the noise levels for each site. The modeled noise levels were then compared with the field recorded noise levels in determining the accuracy of the model (see **Table 3**). The model is considered validated when the difference between measured and predicted noise levels are within +/- 3.0 dB(A) of each other. Based on the field measurements all three sites had the model predicted within +/-3.0 dB(A) of existing levels, and therefore, the TNM 2.5 model is considered validated. The field data, sound meter calibration certificate and the modeling results are on file with the ODOT Environmental Programs Division and this information is available upon request.

TABLE 3
Field Recorded & Model Noise Levels Comparison

Receiver	Location Station* / distance from existing centerline	Field Record Noise Level dB(A) Leq (h)	TNM Predicted Noise Level dB(A) Leq (h)	Difference (field-model)
MV-2	1070+19.40*, 47.5' north	68.4	65.4	-3.0
MV-5	86+09.74(AHD)**, 65.4' south	65.4	63.2	-2.2
MV-6	86+09.74(AHD)**, 65.4' south	65.5	64.2	-1.3

* Proposed stationing used because stationing along the existing alignment was not completed.
** AHD means "ahead". Due to the station change associated with combining two designs from two different consultants, AHD was used to designate the change.

4.4 Existing Noise Levels

Forty-two (42) receiver locations were selected for modeling purposes to identify noise levels for the existing and future conditions. **Figures 2A-2I** in the Appendix depicts the location of the modeled receivers. The existing levels for forty (40) receivers are predominately due to existing US-277, and therefore, were modelled using 2012 design traffic data and existing roadway and sound levels summarized in **Table 4**. However, for the remaining two (2) receivers, R-25 and R-43, field measurements were used to determine the ambient sound level due to long distances from existing US-277. **Figure 2D** depicts the location of R-25 and R-43 and **Table 4** includes the existing noise levels based on ambient readings taken at 30-miniute duration utilizing the same sound level meter described in

Section 4.3. The ambient reading at R-25 was made at 8:03 AM, January 28, 2015 with a temperature of 47º F and winds light and variable. The ambient reading at R-43 was made at 6:55 AM, November 6, 2015 at a temperature of 43º F and winds light and variable. Observations during the measurement period at both receiver locations revealed that the existing acoustic environment consists of natural and nearby oil and gas operation noises. The NAC Activity Categories B and C were utilized during this modeling effort to identify potential impacts to these types of receivers. The TNM data and results of the existing condition along with the field records for R-25 and R-43 are on file with the ODOT Environmental Programs Division and available upon request.

4.5 Future Noise Levels

Using the preliminary project plans and 2035 projected traffic data, the future noise levels expected from the proposed US-277 alignment were determined for the modeled receivers and summarized in **Table 4.** The TNM 2.5 results of the future condition are on file with the ODOT Environmental Programs Division and available upon request.

TABLE 4
Traffic Noise Levels Comparison, dB(A) L_{eq} (h)
JP 20953(04) & 20962(04), US-277 from Cement, OK to I-44

Modeled Receiver	Description	Distance/Location from Roadway Centerline	Existing Sound Level	Future Sound Level	Change (+/-)	Noise Impact?
R-1*	place of worship	1001+04.35, 57' south	60.0	58.1	-1.9	No
R-2*	single family residential	1001+92.39, 53' north	60.2	59.8	-0.4	No
R-3*	single family residential	1001+84.87, 62' south	59.3	58.8	-0.5	No
R-4*	single family residential	1004+06.53, 48' north	61.5	62.3	+0.8	No
R-5*	single family residential	1004+10.05, 45' south	62.0	59.9	-2.1	No
R-6	single family residential	1005+98.47, 53' north	60.3	62.1	+1.8	No
R-7	single family residential	1005+67.26, 45' south	61.4	59.6	-1.8	No

TABLE 4
Traffic Noise Levels Comparison, dB(A) L_{eq} (h)
JP 20953(04) & 20962(04), US-277 from Cement, OK to I-44

Modeled Receiver	Description	Distance/Location from Roadway Centerline	Existing Sound Level	Future Sound Level	Change (+/-)	Noise Impact?
R-8	single family residential	1007+40.61, 66' south	58.5	59.5	+1.0	No
R-9	place of worship	1009+85.77, 58' north	60.2	62.6	+2.4	No
R-10	single family residential	1011+23.42, 69' south	60.3	60.3	0.0	No
R-11	single family residential	1012+77.50, 120' south	60.9	61.9	+1.0	No
R-12	single family residential	1012+58.65, 84' north	57.5	63.8	+6.3	No
R-13	single family residential	1013+87.39, 273' south	57.7	55.4	-2.3	No
R-14**	single family residential	1046+36.53, 137' north	56.5	49.1	-7.4	No
R-15**	single family residential	1051+24.45, 91' north	59.9	52.3	-7.6	No
R-16**	single family residential	1054+57.63, 90' north	61.1	53.4	-7.7	No
R-17**	single family residential	1057+90.07, 80' north	62.4	54.5	-7.9	No
R-18**	single family residential	1077+35.57, 127' north	58.3	51.1	-7.2	No
R-19**	single family residential	1079+92.56, 662' north	45.5	42.3	-3.2	No
R-20**	single family residential	1117+16.04, 544' north	46.3	41.7	-4.6	No

TABLE 4
Traffic Noise Levels Comparison, dB(A) L_{eq} (h)
JP 20953(04) & 20962(04), US-277 from Cement, OK to I-44

Modeled Receiver	Description	Distance/Location from Roadway Centerline	Existing Sound Level	Future Sound Level	Change (+/-)	Noise Impact?
R-21	single family residential	1159+37.52, 547' south	63.3	55.2	-8.1	No
R-22	single family residential	1158+79.71, 611' south	66.2	57.4	-8.8	No
R-23	NOT USED					
R-24	single family residential	1165+25.11, 165' north	46.6	59.6	+13.0	No
R-25	single family residential	1135+29.76, 144' north	46.1	60.8	+14.7	No
R-26	single family residential	1180+19.56, 242' south	53.1	55.8	+2.7	No
R-27	single family residential	1186+28.16, 441' south	47.9	50.8	+2.9	No
R-28**	single family residential	189+54.44(AHD), 251' north	53.6	58.8	+5.2	No
R-29**	single family residential	194+51.41(AHD), 182' south	56.3	57.4	+1.1	No
R-30**	single family residential	201+95.13(AHD), 139' south	61.2	62.1	+0.9	No
R-31**	single family residential	209+94.16(AHD), 165' north	55.1	59.6	+4.5	No
R-32**	single family residential	212+62.81(AHD), 90' north	60.3	65.0	+4.7	No
R-33**	single family residential	216+04.06(AHD), 185' south	61.7	60.2	-1.5	No

TABLE 4
Traffic Noise Levels Comparison, dB(A) L_{eq} (h)
JP 20953(04) & 20962(04), US-277 from Cement, OK to I-44

Modeled Receiver	Description	Distance/Location from Roadway Centerline	Existing Sound Level	Future Sound Level	Change (+/-)	Noise Impact?
R-34**	single family residential	243+67.80(AHD), 674' north	44.1	47.1	+3.0	No
R-35**	single family residential	249+12.48(AHD), 253' north	55.9	55.8	-0.1	No
R-36**	single family residential	317+81.66(AHD), 232' north	51.9	55.0	+3.1	No
R-37**	single family residential	310+65.31(AHD), 213' south	55.3	58.5	+3.2	No
R-38**	single family residential	212+28.83(AHD), 875' north	43.1	44.4	+1.3	No
R-39**	single family residential	213+71.66(AHD), 524' north	47.6	49.6	+2.0	No
R-40**	single family residential	205+46.33(AHD), 551' north	46.5	49.6	+3.1	No
R-41**	single family residential	203+03.04(AHD), 539' north	46.6	49.5	+2.9	No
R-42**	single family residential	210+44.01(AHD), 195' north	54.6	58.7	+4.1	No
R-43	single family residential	1137+8058, 897' north	50.8	43.5 51.8	-7.3 (modeled) +1.0 (calculated)	No

* Existing stationing used due to no proposed work or stationing in this segment.
** Receiver location oriented along existing alignment where no improvements are anticipated and measured from existing roadway using proposed stationing.

4.6 Traffic Noise Impacts

Results of the analysis for the future condition indicated that no receivers approach 67.0 dB(A) L_{eq}(h) for NAC Activity Categories B and C. Further, no receivers will experience future levels greater than 15 dB

over the current condition which is considered to be a substantial increase for noise impact determination. In the instance of R-43, where the future noise contributed by the highway is 7.3 dB less than the existing ambient levels, the existing and modeled levels added together would result in a 1.0 dB increase in future noise levels. **Exhibit A** in the Appendix is a *Decibel Addition Table* that services to illustrate this concept. Overall, the proposed project will not have any traffic noise impacts.

5.0 CONSTRUCTION NOISE

In general, construction noise related to highway projects is not a major issue. Sources of noise include heavy machinery like backhoes and scrapers, cranes, pile drivers, and trucks transporting materials. Typically construction noise can be minimized by implementing time of day restrictions for construction operations adjacent to noise sensitive areas. The ODOT is concerned of any special noise-sensitive land uses or activities which may be affected by construction noise from the proposed project, and any special measures which are feasible and reasonable will be added to the project plans and specifications. No special noise sensitive land uses or activities that may be affected by construction noise are in proximity to the project.

6.0 COORDINATION WITH LOCAL OFFICIALS

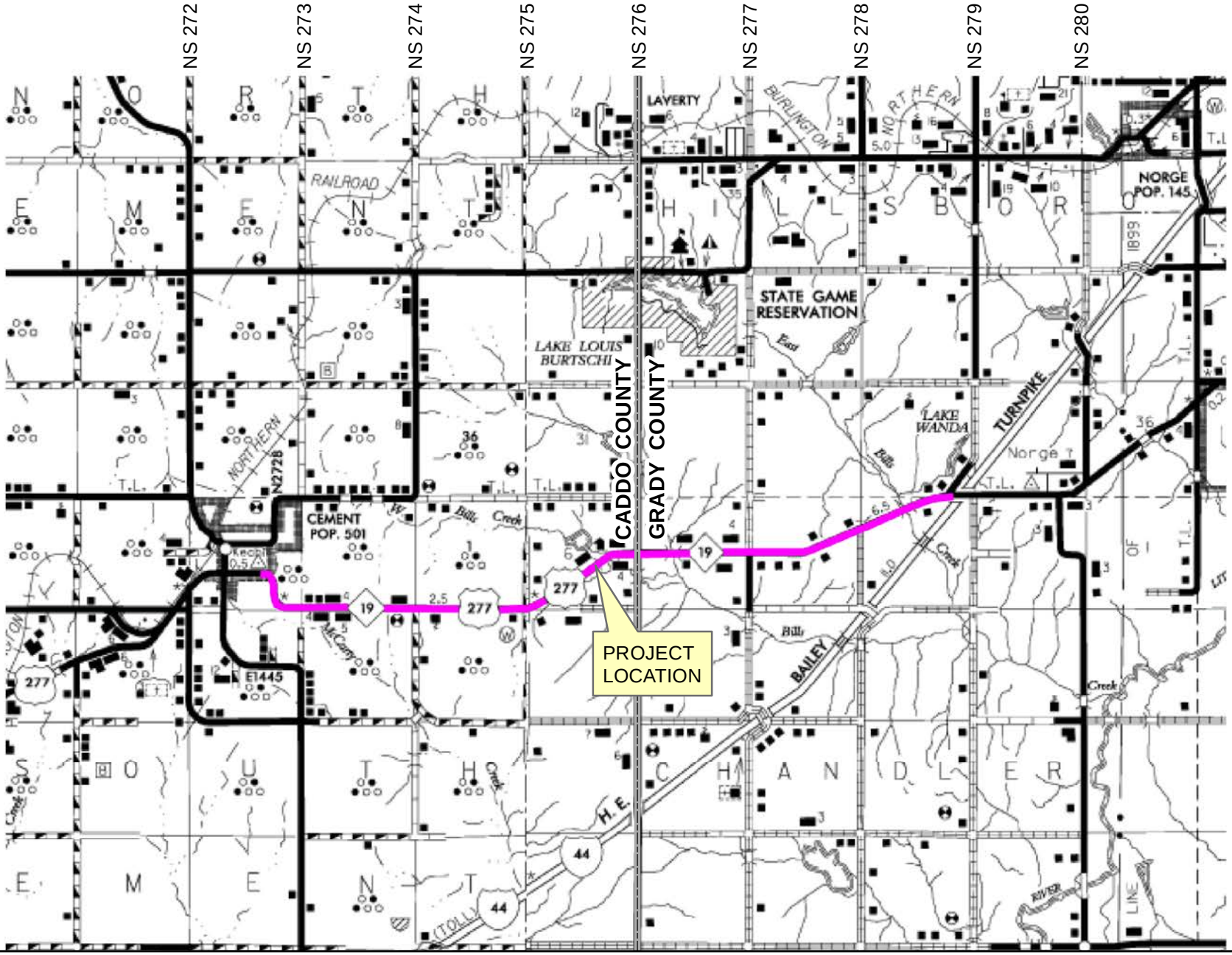
Traffic noise levels that approach, meet or exceed the sound levels specified in the ODOT Noise Policy resulting from the proposed US-277 project have been identified. To aid in noise compatible land use planning, using TNM 2.5, the approximate distance from the center of the proposed two-lane roadway was used to determine the noise impact contours being that of 66 dB(A) and 71 dB(A). **Table 5** summarizes the location and distances of the noise impact zones. The distances remain relatively consistent throughout the length of the roadway. **Figure 2** shows the approximate location of the impact contours. For the majority of the project extent the 71 dB(A) contours fall within existing highway right-of-way. However, 23,288 linear feet (4.41 miles) of the 66 dB(A) contours fall outside of existing highway right-of-way on the south side of the future alignment, with 31,957 linear feet (6.05 miles) falling outside of existing highway right-of-way on the north side of the future alignment. Development within this zone on either side of the proposed reconstructed highway facility should be compatible with elevated traffic noise levels. Residential and other related land use is discouraged within the designated impact zone(s) due to anticipated future noise levels.

TABLE 5 -Noise Contour Impact Zone

Roadway Section	**66 dB(A)***	**71 dB(A)***
US-277, 65 mph	78.5 feet	28.5 feet

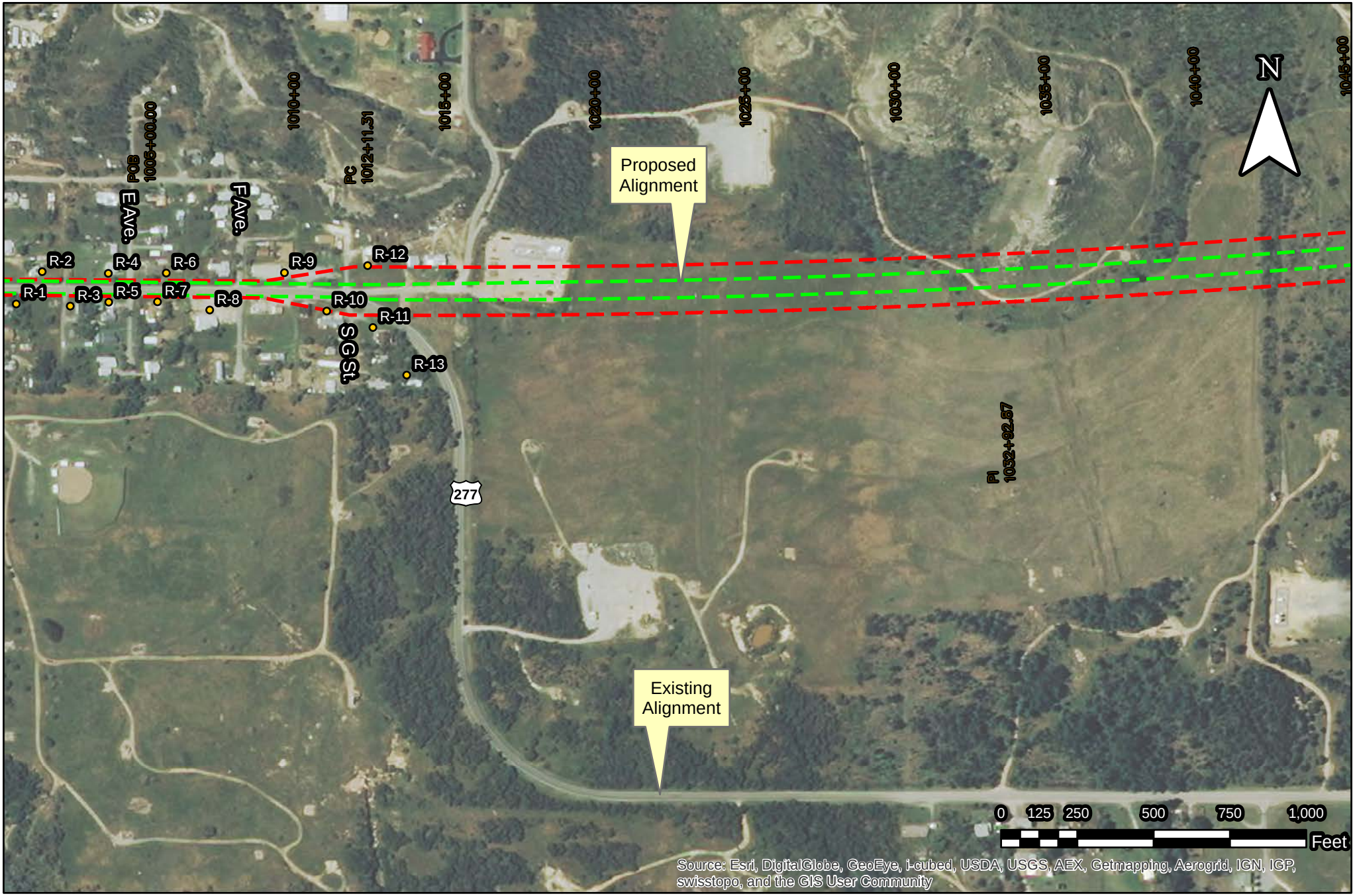
* Average distance north and south from US-277 centerline.

APPENDIX



JP No. 20953(04) & 20962(04)
US-277 from Cement, OK to I-44
Caddo & Grady Counties, Oklahoma

Figure 1 - Project Location Map
ODOT General Highway Map

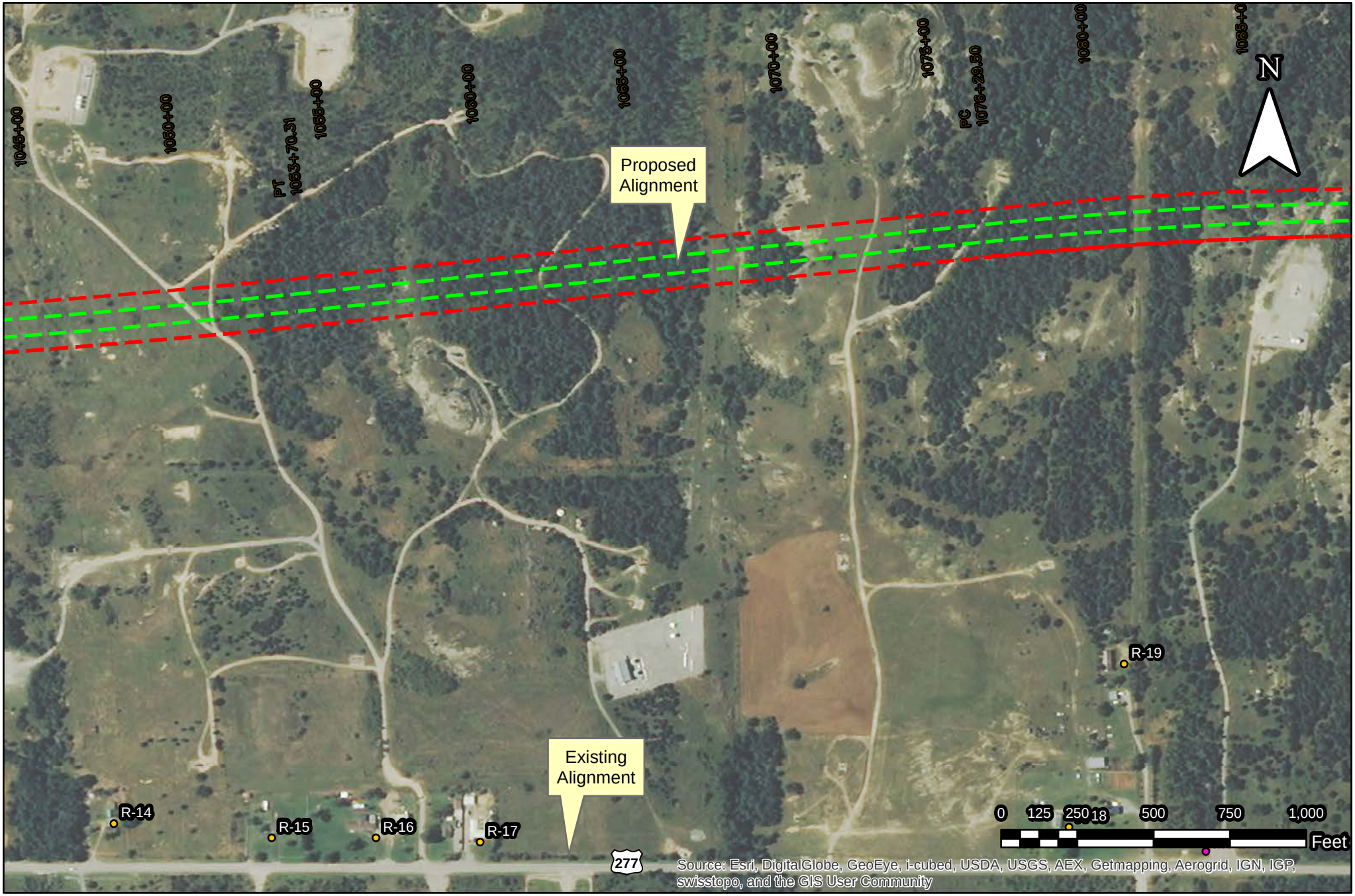


Legend

- Receiver Location
- Model Validation Location
- Future 66dB Contour Line
- Future 71dB Contour Line

JP No. 20953(04) & 20962(04)
US-277 from Cement, OK to I-44
Caddo & Grady Counties, Oklahoma

Figure 2A - Noise Study Map
2013 ESRI Aerial Imagery

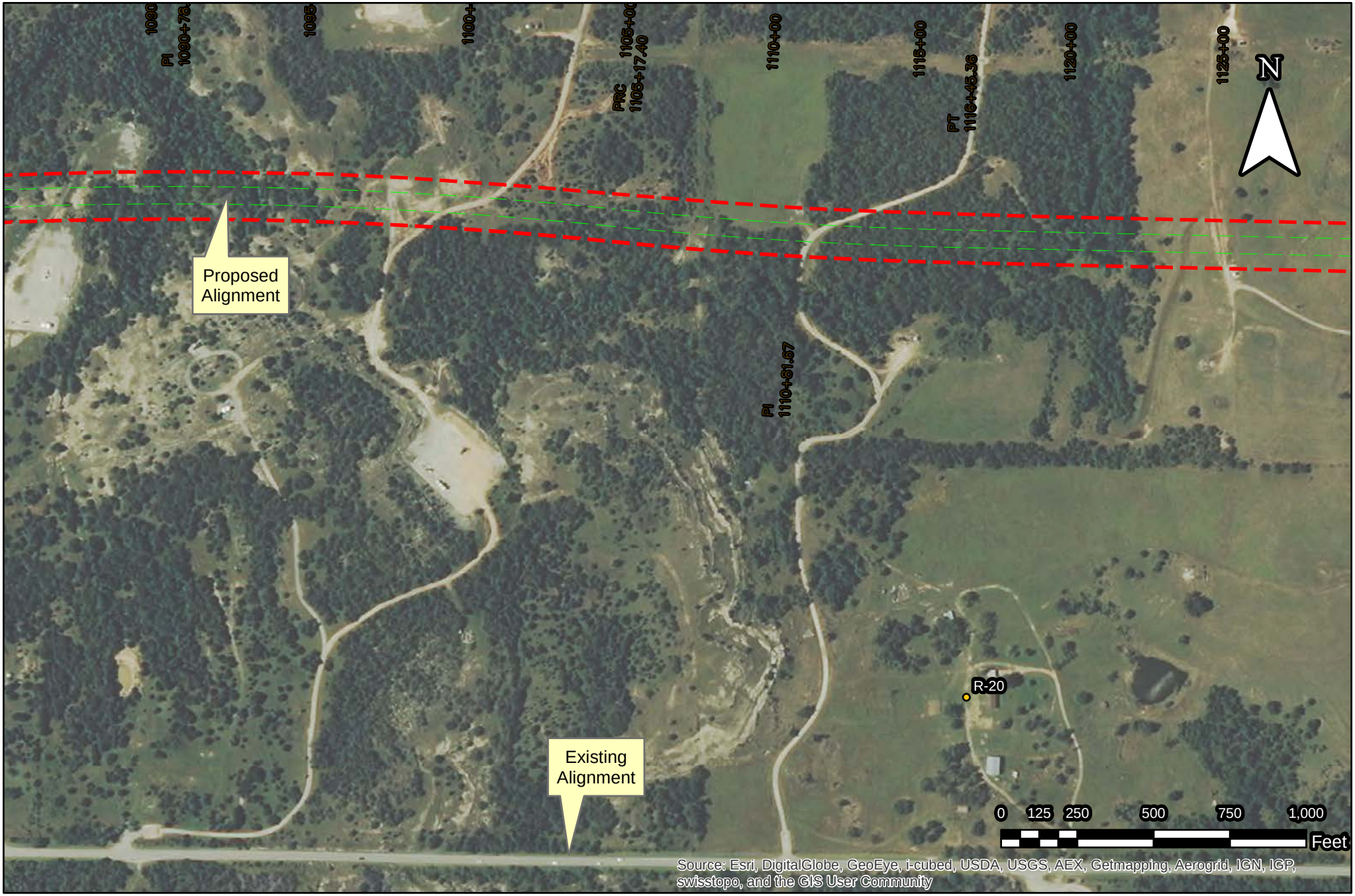


Legend

- Receiver Location
- Model Validation Location
- Future 66dB Contour Line
- Future 71dB Contour Line

JP No. 20953(04) & 20962(04)
US-277 from Cement, OK to I-44
Caddo & Grady Counties, Oklahoma

Figure 2B - Noise Study Map
2013 ESRI Aerial Imagery

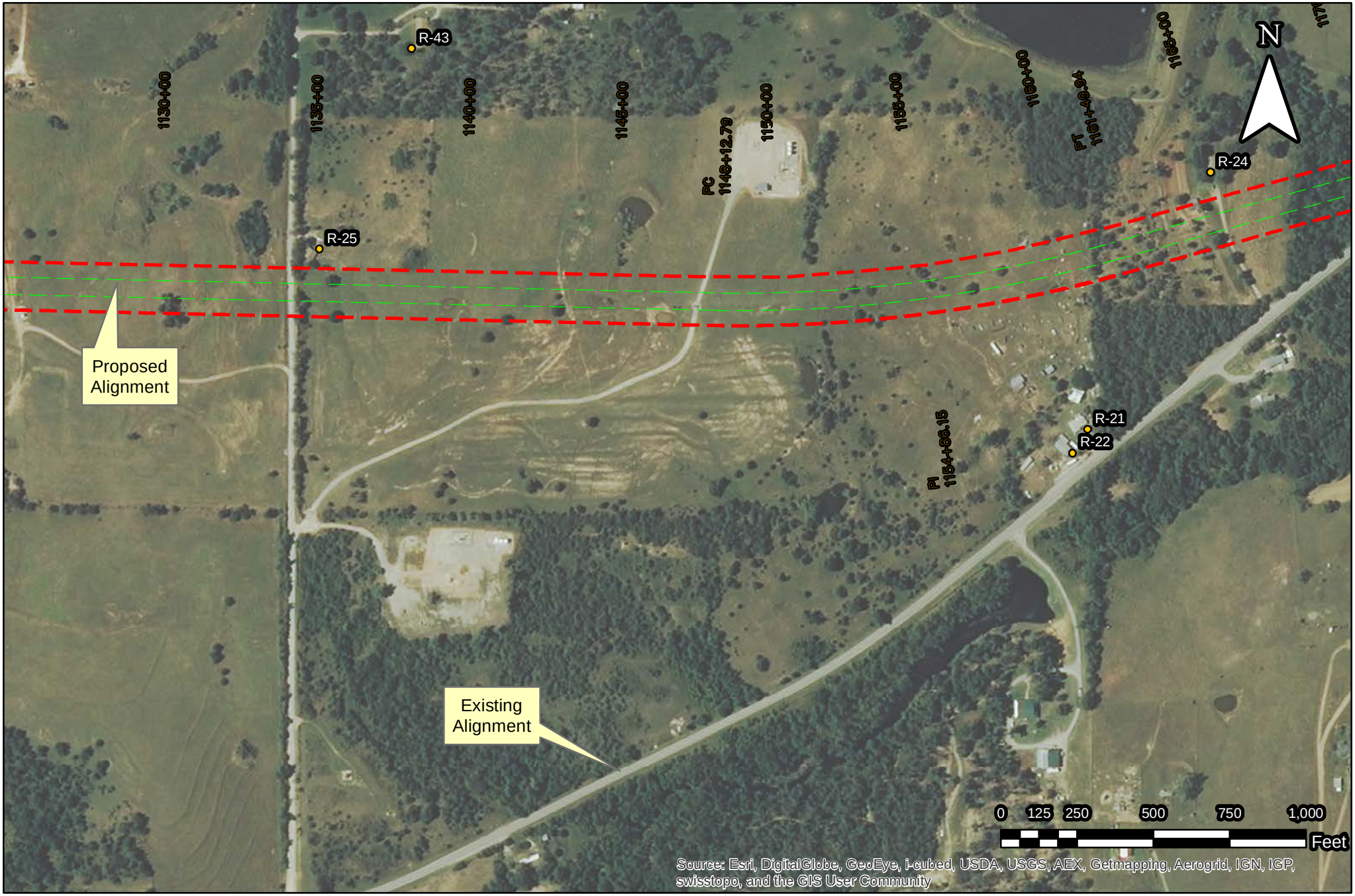


Legend

- Receiver Location
- Model Validation Location
- Future 71dB Contour Line
- Future 66dB Contour Line

JP No. 20953(04) & 20962(04)
US-277 from Cement, OK to I-44
Caddo & Grady Counties, Oklahoma

Figure 2C - Noise Study Map
2013 ESRI Aerial Imagery



Legend

- Receiver Location
- Model Validation Location
- Future 71dB Contour Line
- Future 66dB Contour Line

JP No. 20953(04) & 20962(04)
US-277 from Cement, OK to I-44
Caddo & Grady Counties, Oklahoma

Figure 2D - Noise Study Map
2013 ESRI Aerial Imagery

Legend

- Receiver Location
- Model Validation Location
- Future 71dB Contour Line
- Future 66dB Contour Line

JP No. 20953(04) & 20962(04)
US-277 from Cement, OK to I-44
Caddo & Grady Counties, Oklahoma

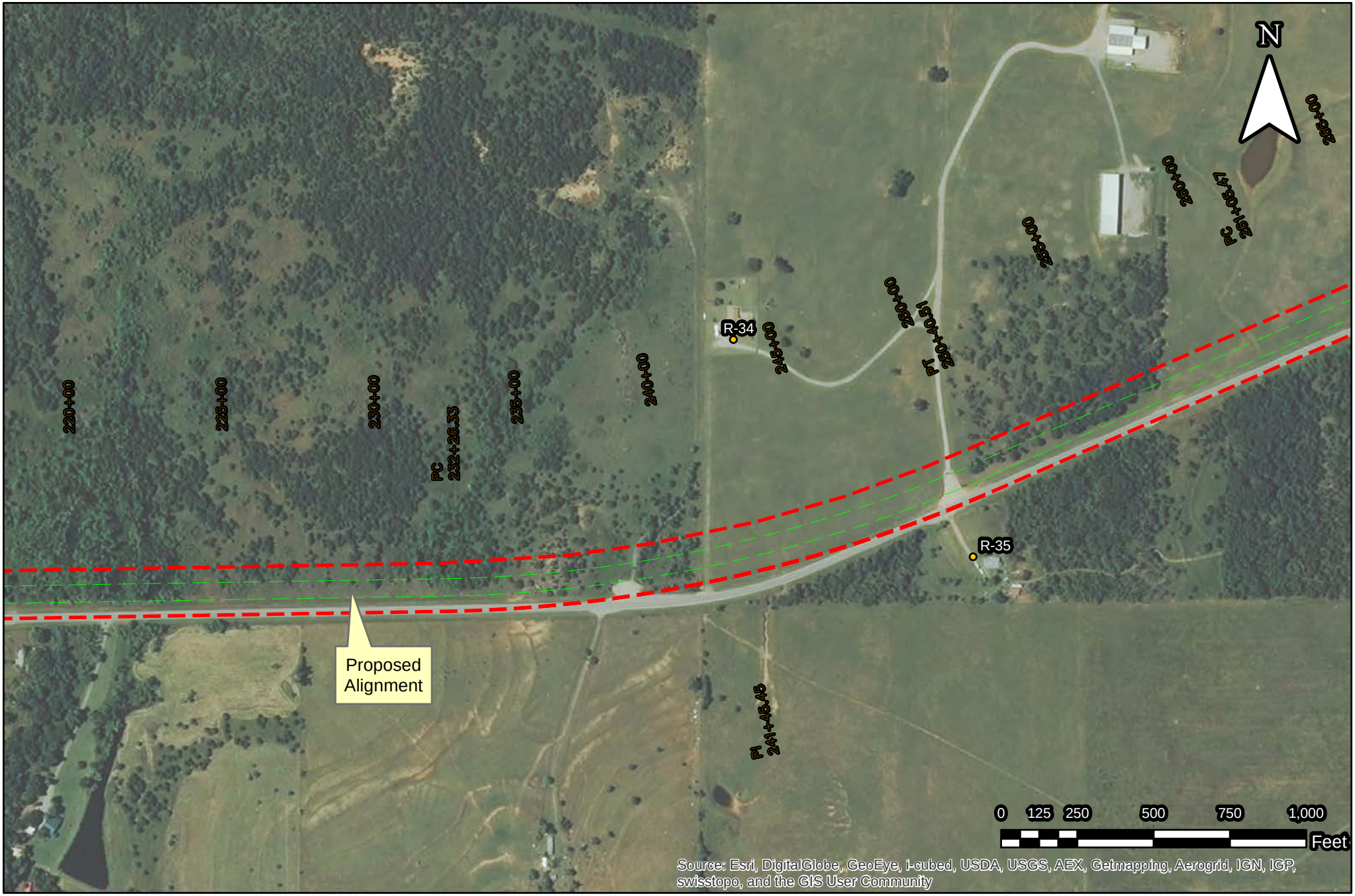
Figure 2E - Noise Study Map
2013 ESRI Aerial Imagery

Legend

- Receiver Location
- Model Validation Location
- Future 71dB Contour Line
- Future 66dB Contour Line

JP No. 20953(04) & 20962(04)
US-277 from Cement, OK to I-44
Caddo & Grady Counties, Oklahoma

Figure 2F - Noise Study Map
2013 ESRI Aerial Imagery

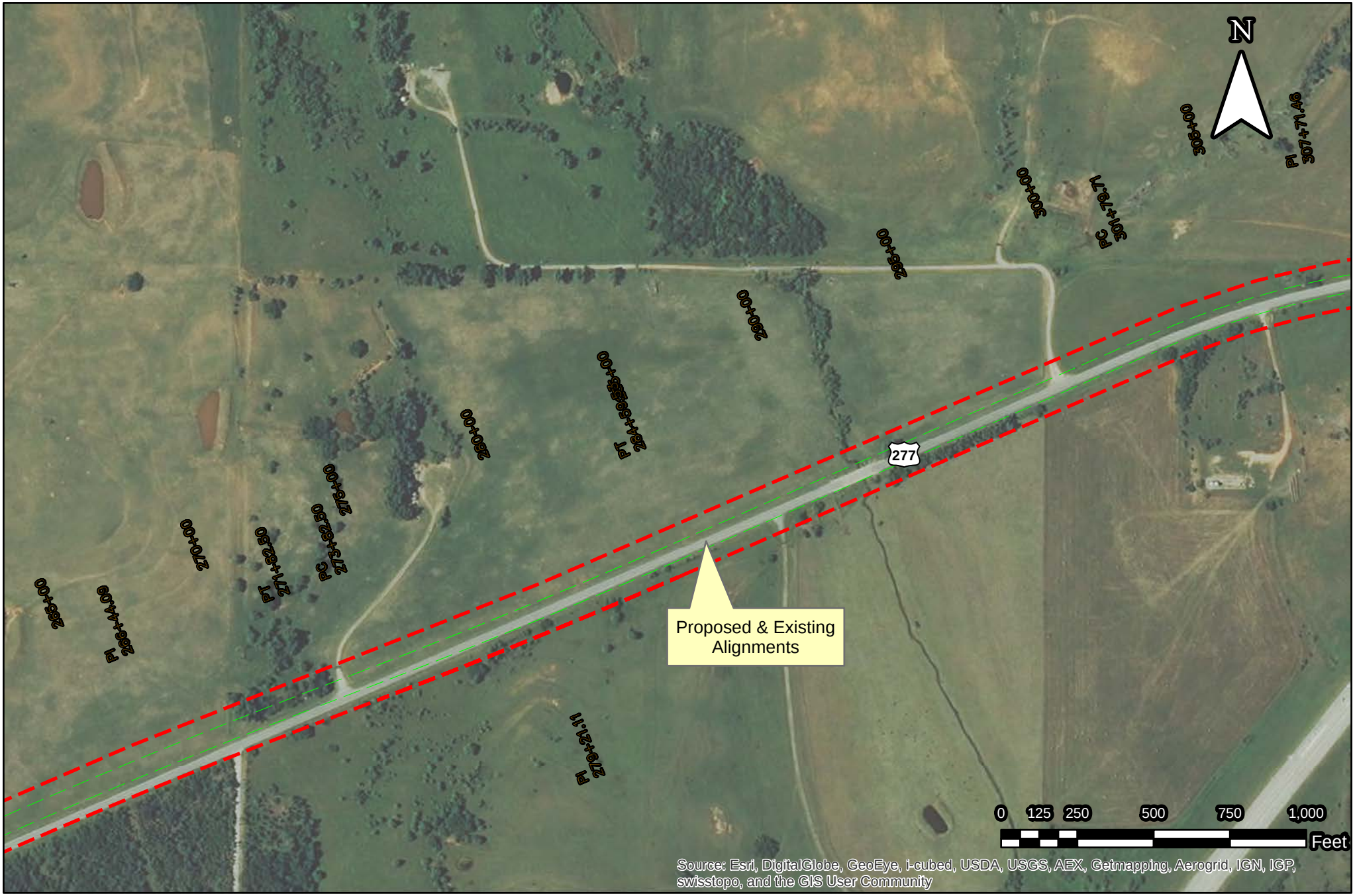


Legend

- Receiver Location
- Model Validation Location
- Future 71dB Contour Line
- Future 66dB Contour Line

JP No. 20953(04) & 20962(04)
US-277 from Cement, OK to I-44
Caddo & Grady Counties, Oklahoma

Figure 2G - Noise Study Map
2013 ESRI Aerial Imagery

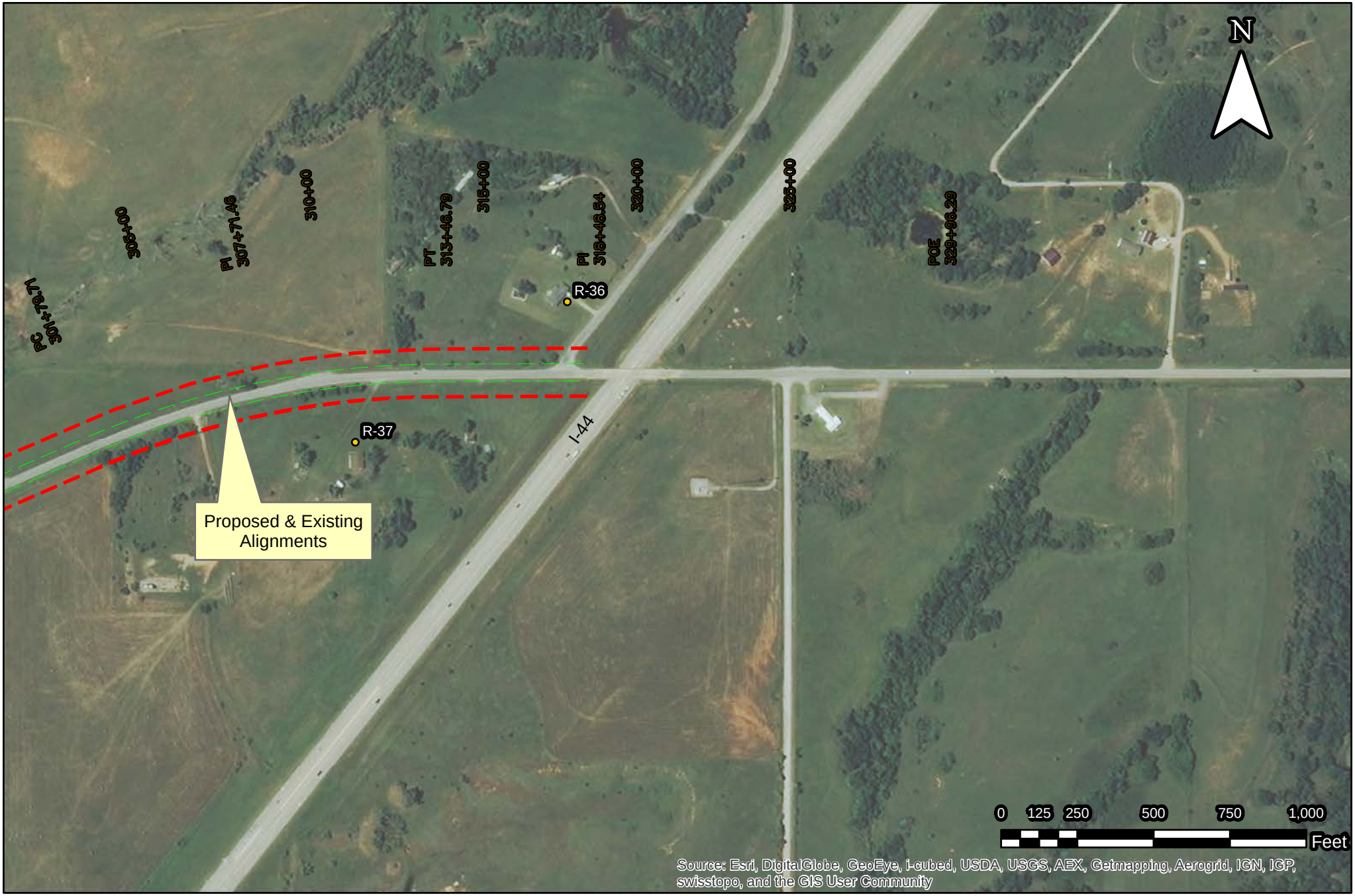


Legend

- Receiver Location
- Model Validation Location
- Future 71dB Contour Line
- Future 66dB Contour Line

JP No. 20953(04) & 20962(04)
US-277 from Cement, OK to I-44
Caddo & Grady Counties, Oklahoma

Figure 2H - Noise Study Map
2013 ESRI Aerial Imagery



Legend

- Receiver Location
- Model Validation Location
- Future 71dB Contour Line
- Future 66dB Contour Line

JP No. 20953(04) & 20962(04)
US-277 from Cement, OK to I-44
Caddo & Grady Counties, Oklahoma

Figure 2I - Noise Study Map
2013 ESRI Aerial Imagery

Sound Power Level Difference between two Sound Sources (dB)	Added Decibel to the Highest Sound Power Level (dB)
0	3
1	2.5
2	2
3	2
4	1.5
5	1
6	1
7	1
8	0.5
9	0.5
10	0.5
> 10	0

Source: http://www.engineeringtoolbox.com/adding-decibel-d_63.html

EXHIBIT A - Decibel Addition Table

APPENDIX H

BIOLOGICAL STUDIES

Oklahoma Department of Transportation
NEPA SUMMARY FORM
Endangered Species Act Section 7 Biological Assessment
Bald Eagle Assessment,
Swallow Assessment
and
Jurisdictional Waters and Wetlands Evaluation

County: Caddo & Grady
J/P Number: 20953(04) & 20962(04)
Report Prepared by: Garver
USFWS Concurrence Date: 13 January 2015
Form Prepared by: Elizabeth Nichols

NEPA PM: Greg Worrell
Project Number:
Report Submitted Date: 19 November 2014
ROW / Let Date: 2016/2018
Date: 13 January 2015

1. Project Description:
   a. Project Name: Grade, Drain, Surface and Bridges US-277 from Cement, OK to I-44
   b. Work Description: Reconstruct US-277 on new and offset alignment, correct curve deficiencies, and replace bridges as needed.
   c. Footprint acreage: 470.1

2. Federally Listed Species Effect Determinations: **USFWS Number**: 02EKOK00-2014-SLI-0953 rechecked 8 December 2014

NOTE: Within 90 days of construction, a current species list must be requested to determine if any changes to federally-listed species have occurred since the original ESA section 7 consultation. If changes have occurred, further consultation may be required.

Species	Listing Status	Effect Determination & Concurrence	USFWS Concurrence Requirements
Black-Capped Vireo	Endangered	May Affect, unlikely to adversely affect	None
Interior Least Tern	Endangered	No Effect	None
Whooping Crane	Endangered	May Affect, unlikely to adversely affect	None
Piping Plover	Threatened	No Effect	None
Red Knot	Proposed	No Effect	None
Sprague's Pipit	Candidate	Not likely to impact current existence	None

3. Acres of ABB suitable habitat: None

4. Bald Eagle Assessment: _____ not expected to impact *or* __X___ may impact

5. Swallow Assessment: _____ may not impact *or* __X___ will likely impact

6. Migratory Birds: 1 Eastern Phoebe nest (NBI #02099)
Species that are present during the breeding season will be addressed by implementing measures, designed in coordination with the USFWS, to avoid impacts to active nests. This will be done prior to project letting and any appropriate plan notes will be provided at that time.

7. NEPA Commitments:

a. Surveys

Species Survey Type	Survey Season Survey Dates (must be conducted within 1 year of start of construction)	Check if Survey to be Completed
Bald Eagle	December 1 - February 28	X

b. Habitat Conservation: None

c. Swallow and other migratory bird nesting on transportation structures

Cliff Swallows and Barn Swallows are small colonial nesting birds protected by the federal Migratory Bird Treaty Act. These species commonly use bridges and culverts for nesting. Swallow use of ***US-277 bridges over I-44 (NBI:15810), Middle Bills Creek (NBI:23946) and West Bills Creek (NBI:02099)*** have been observed. In order to avoid impacts to swallows, work on these structures must be completed between September 1, and March 31, when nests are not occupied. If work cannot be completed between September 1 and March 31, the ***structures*** must be protected from new nest establishment prior to April 1, by means that do not result in death or injury to these birds. Options include the exclusion of adult birds from suitable nest sites on or within a structure by the placement of netting prior to April 1. Methods other than netting must be pre-approved by the ODOT Biologist.

8. Waters and Wetlands Evaluation:

Wetlands and Ponds:

Total Field Sites	Type	Cowardin Classification	Potential Jurisdictional Status	Acres within study footprint
1	Emergent Wetland	PEM1A	Unlikely	0.04
5	Ponds	PUBHhx	Unlikely	0.56

Streams and Drainages:

Total Field Sites	Water Body Name	USGS Designation	Potential Jurisdictional Status	Acres within study footprint	Linear Feet within study footprint
1	East Bills Creek	Mapped intermittent	Likely	0.09	671.8
1	West Bills Creek	Mapped intermittent	Likely	0.15	714.6
3	Unnamed tributaries to West Bills Creek	Unmapped ephemeral	Likely	0.17	1,405.2
4	Unnamed tributaries to McCarty Creek	Unmapped ephemeral	Likely	0.04	269
1	Middle Bills Creek	Mapped intermittent	Likely	0.26	422.7

United States Department of the Interior

FISH AND WILDLIFE SERVICE

Division of Ecological Services
9014 East 21st Street
Tulsa, Oklahoma 74129
918/581-7458 / (FAX) 918/581-7467

8 December 2014

Online Project Review Concurrence Letter

To: Julianne Whitaker
ODOT Environmental Program Division
200 NE 21st Street
Oklahoma City, OK 73105

Project Name: Grade, Drain, Surface and Bridges US-277 from Cement, OK to I-44

Dear Applicant:

Thank you for using the U.S. Fish and Wildlife Service (Service) Oklahoma Ecological Services Field Office online project review process. By providing this letter in conjunction with your project review package, you are certifying that you have accurately completed the online project review process for the referenced project in accordance with all instructions provided, using the best available information to reach your conclusions. Concurrence with "not likely to adversely affect" determinations does not provide any exemption for violations of section 9 of the ESA or "take" of federally-listed species. The Federal action agency is ultimately responsible for ensuring compliance with the ESA and any take that occurs due to your proposed action would be considered a violation under section 9 of the ESA.

This letter and the enclosed project review package complete the review of your project in accordance with the Endangered Species Act of 1973 (16 U.S.C. 1531-1544, 87 Stat. 884), as amended (ESA). This letter also provides information for your project review under the National Environmental Policy Act (National Environmental Policy Act of 1969 (P.L. 91-190, 42 U.S.C. 4321-4347, 83 Stat. 852), as amended. A copy of this letter and the project review package must be emailed to **okprojectreview@fws.gov** for this certification to be valid. This letter and the project review package will be maintained in Service records. **Please allow the OKESFO 35 days to review your information. If the OKESFO determines that the package is not complete, or that additional coordination is necessary, we will contact your office. If after 35 days from the time you emailed your project review package the OKESFO has not contacted your office, consider your section 7 consultation complete.**

The proposed action consists of

The Oklahoma Department of Transportation (ODOT) is proposing to reconstruct US-277 with varied offsets to correct vertical/horizontal curve deficiencies. Proposed improvements include reconstructing US-277 with two, twelve-foot travel lanes and eight-foot paved shoulders mostly on new alignment located north of the existing highway. The proposed alignment heads east out of Cement and travels cross-country approximately 1,640-2,200 feet north of the existing highway. The proposed new alignment meets the existing alignment just west of NS-276 and follows the existing alignment up to the bridge over Middle Bills Creek. A new structure will be constructed at West Bills Creek, so some channel work is expected in this area. The recently reconstructed bridge at Middle Bills Creek will remain in place. Just east of Middle Bills Creek the alignment diverges to approximately 110 feet north of the existing alignment, where it continues until shifting back to the existing alignment to tie into the roadway approach located just west of East Bills Creek. At East Bills Creek, the proposed improvements follow the existing alignment to I-44 at the end of the project area. The bridge at East Bills Creek will be widened to accommodate the new roadway, and minimal channel work is expected in this area. The proposed improvements will require approximately 180 acres of new right-of-way. The roadway will remain open during construction.

The project is expected to be completed:

The project is expected to begin construction sometime in 2016.

This project review is needed for:

The ODOT, acting as the duly authorized agent for the Federal Highway Administration, is initiating Section 7 consultation for the above mentioned project as a component of the agency's implementation of the procedural provisions of the National Environmental Policy Act. The information contained in this submission constitutes ODOT's biological assessment on the proposed project site, and the following effect determinations are based upon this information.

The species conclusions table in the enclosed project review package summarizes your ESA conclusions. These conclusions resulted in "not likely to adversely affect/modify" determinations for listed species and critical habitat in relation to potential effects of your proposed project. We certify that the use of the online project review process in strict accordance with the instructions provided as documented in the enclosed project review package results in reaching the appropriate determinations. Therefore, we concur with determinations of "not likely to adversely affect" for listed species and critical habitat reached by proper use of this process. For projects where this particular determination is reached, additional coordination with this office is not needed.

Candidate species are not legally protected pursuant to the ESA. However, the Service encourages efforts to avoid or minimize adverse impacts to them from project effects. Some federal agencies have standing policies that grant limited protections to candidate species. Conservation of candidate species now may preclude future needs to federally list them as endangered or threatened, at which point their legal protection would become required. Please contact this office for additional coordination if your project action area contains candidate species.

Should project plans change or if additional information on the distribution of listed species or critical habitat becomes available, this determination may be reconsidered. You should re-visit the Service's Information, Planning, and Conservation (IPaC) website at http://ecos/fws.gov/ipac/ within 90 days of project inititaion to ensure species information is correct. If new species or critical habitat is identified, this letter is no longer valid and a new project package should be submitted to the OKESFO.

Information about the online project review process including instructions and use, species information, and other information regarding project reviews within Oklahoma is available at our website: <http://www.fws.gov/southwest/es/oklahoma/ >. If you have any questions, please call 918-581-7458 or send an email message to OKProjectReview@fws.gov.

Sincerely,
/s/ Jontie Aldrich
Acting Field Supervisor
Oklahoma Ecological Services Field Office

Enclosures:

1) ENTIRE PROJECT REVIEW PACKAGE:
   - ☑ Species Conclusion Table
   - ☑ IPaC Species List and Action Area map
   - ☑ This letter (Online Concurrence Letter)
   - ☑ (Optional) Additional maps
2) Other relevant project data/documents

ENDANGERED, THREATENED AND CANDIDATE SPECIES, DESIGNATED CRITICAL HABITAT, BALD EAGLE AND SWALLOW ASSESSMENT

For

County	Caddo & Grady	JP Number	20953(04) & 20962(04)	Project Number	
Road Number	US-277	Water Body Name		West Bills Creek, Middle Bills Creek, & East Bills Creek	
ROW Date	2016	Let Date	2018 & 2019	Project Length	6.75 Miles
Project General Location		US-277 from Cement, Oklahoma to I-44			
Project Statement		Reconstruct US-277 on New Alignment to the North from East of Cement to West Bills Creek and Offset Alignment from West Bills Creek to I-44 and reconstruct bridges as needed.			

Prepared for:
Oklahoma Department of Transportation
Environmental Programs Division
200 NE 21st Street
Oklahoma City, OK 73105

Prepared by:

Biologist Name	Jeremy Spires and Ryan Mountain
Company/Agency Name	Garver
Address	6450 South Lewis, Suite 300
City, State Zip	Tulsa, OK 74136

Report Date:	November 19, 2014
Field Survey Date	June 9 – 11, 2014
Field Survey Biologist(s)	Jeremy Spires

1. PROJECT OVERVIEW

1.1 Federal Nexus

This biological assessment, prepared by the above named Garver for the Oklahoma Department of Transportation (ODOT), addresses the above named project in compliance with Section 7(c) of the Endangered Species Act (ESA) of 1973, as amended. Section 7 of the ESA requires that, through consultation with the U.S. Fish and Wildlife Service (Service), federal actions do not jeopardize the continued existence of any threatened, endangered, or proposed species or result in the destruction or adverse modification of critical habitat. This assessment evaluates the potential effects of the proposed transportation project on species that are federally listed under the ESA. Specific project design elements are identified that avoid or minimize adverse effects of the proposed project on listed species and designated critical habitat.

1.2. Project Description

Project Type	**Check √**
Bridge and Approaches	
Grade, Drain, Surface and Bridge	√
Grade, Drain and Surface	
Asphalt Overlay	
Widen and Resurface existing lanes	
Pavement Reconstruction & rehabilitation	
Bridge Rehabilitation	
Safety Improvements (Cable Barrier, Guardrail, signage)	
Intersection Modifications	
Safe Routes to School (Describe)	
Enhancements (Describe)	
Other (Describe)	

Description of the **existing** bridge/roadway facility and reason for proposed project

The project limits begin at the east edge of Cement and extend approximately 6.75 miles east along US-277 to the I-44 overpass bridge. This facility is classified as a Rural Collector with rolling terrain. The current roadway is a two-lane facility with eleven-foot travel lanes and sod shoulders. The corridor has a posted speed limit of 65 mph for the majority of the project length. Heading west the speed steps down gradually from 65 mph to 45 mph at the two 90 degree horizontal curves into Cement. The existing highway has numerous vertical and horizontal curves. Several of the horizontal curves are deficient with either an excessive degree of curve, deficient superelevation rate, or a combination thereof. There are three bridge structures within the study corridor at West Bills Creek, Middle Bills Creek, and East Bills Creek. The existing structure over West Bills Creek (NBI 02099) consists of 3-26' I-beam span bridge with a 31-foot clear roadway. The existing structure over Middle Bills Creek (NBI 23976) is a 100' PC beam span bridge with a 40-foot clear roadway. The existing bridge over East Bills Creek (NBI 18275) consists of 5-25' concrete slab spans with a 32-foot clear roadway. The purpose of the project is to improve safety by correcting the deficient vertical and horizontal curves in the project corridor.

Description of **proposed** improvements

The Oklahoma Department of Transportation (ODOT) is proposing to reconstruct US-277 with varied offsets to correct vertical/horizontal curve deficiencies. Proposed improvements include reconstructing US-277 with two, twelve-foot travel lanes and eight-foot paved shoulders mostly on new alignment located north of the existing highway. The proposed alignment heads east out of Cement and travels cross-country approximately 1,640-2,200 feet north of the existing highway. The proposed new alignment meets the existing alignment just west of NS-276 and follows the existing alignment up to the bridge over Middle Bills Creek. A new structure will be constructed at West Bills Creek, so some channel work is expected in this area. The recently reconstructed bridge at Middle Bills Creek will remain in place. Just east of Middle Bills Creek the alignment diverges to approximately 110 feet north of the existing alignment, where it continues until shifting back to the existing alignment to tie into the roadway approach located just west of East Bills Creek. At East Bills Creek, the proposed improvements follow the existing alignment to I-44 at the end of the project area. The bridge at East Bills Creek will be widened to accommodate the new roadway, and minimal channel work is expected in this area. The proposed improvements will require approximately 180 acres of new right-of-way. The roadway will remain open during construction.

In-water Work Expected as part of the proposed action	YES	NO
	√	
Project is an off-set, or new alignment	YES	NO
	√	

1.3. Project Area and Setting

Project Location		Environmental Study Footprint		Ecoregion & Game Type	
Section Range & Township	Lat/Long (NAD 83)	Dimensions	Acreage	Level IV Ecoregion (Woods et al. 2005)	Game Type (Duck and Fletcher 1943)
Sections 1, 2, and 3, T5N, R9W Sections 3, 4, 5, and 6, T5N, R8W Section 34, T6N, R8W	Beginning of Project: Latitude 34.9320° N & Longitude 98.1361° W End of Project: Latitude 34.9419° N & Longitude 98.0244° W	6.75 mile-long segment of existing US-277 beginning at E St. in Cement with a width of 200 ft., extending east and splits along the proposed new alignment with a width of 600 ft. and along the existing alignment within the existing ROW, connecting west of West Bills Creek and continuing east along the existing US-277 centerline with varying widths of 400-600 ft., and ending at the I-44 bridge.	470.1	Northwestern Cross Timbers of the Cross Timbers	Postoak-Blackjack Forest & Tallgrass Prairie

Action Area:

NEPA Environmental Study Footprint with a 0.25 mile area surrounding the study footprint.

2. FEDERALLY LISTED SPECIES AND DESIGNATED CRITICAL HABITAT

Species Range and Occurrence Evaluation (Check √ all that apply)

Species	Action Area is within a watershed associated with occupied water bodies		Action Area includes an occupied water body		Project site within 5 miles of known records	
	YES	NO	YES	NO	YES	NO
Black-capped Vireo						√
Whooping Crane		√		√		√
Interior Least Tern		√		√		√
Piping Plover						√
Sprague's Pipit						√
Red Knot						√

Legally Designated Critical Habitat	Action Area includes Designated Critical Habitat (Check √)	
	YES	NO
Whooping Crane		√

For the Interior Least Tern				
IPaC Special Conditions Identified	YES		NO	√

For the Whooping Crane (Check √)							
Action Area is in which percentage Whooping Crane migratory corridor						Action Area is within 15 miles of Salt Plains National Wildlife Refuge, Hackberry Flat, or Foss Reservoir.	
5%	10%	15%	20%	25%	75%	YES	NO
					√		√

3. ENVIRONMENTAL BASELINE

3.1. Ecological Processes and Conditions

Soils (Use Soil Map of Oklahoma by Carter and Gregory 2008)

Soil Class	Northern Cross Timbers
Soil Name	Stephenville-Darnell-Niotaze
Soil Type	Alfisols, Inceptisols
Soil Characteristics	Shallow, sandy and loamy, moderately acid, and humus-poor soils on steep slopes (up to 18%)

Climate (Use Woods et al. 2005)

Precipitation	Mean annual inches	31-38
Growing Season	Number of days	200-230
Mean Temperatures	Summer min/max	68°F/94°F
	Winter min/max	22°F/47°F

River System

According to the 1991 Cyril, Oklahoma and 1991 Laverty, Oklahoma 7.5 minute United States Geological Survey (USGS) topographic quadrangles, there are twenty mapped intermittent streams within the action area: McCarty Creek, two unnamed tributaries to McCarty Creek, West Bills Creek, nine unnamed tributaries to West Bills Creek, Middle Bills Creek, one unnamed tributary to Middle Bills Creek, East Bills Creek, and four unnamed tributaries to East Bills Creek.

Land Use and Land Ownership

From Woods et al. 2005	Northern Cross Timbers of the Cross Timbers: Woodland, grassland, rangeland, and especially on level uplands and floodplains, cropland growing small grains, alfalfa, grain sorghum, cotton, and peanuts. Cultivation and overgrazing have widely destroyed native prairie. Small impoundments are common. Flood control and channelization projects affect the canyons of Caddo and Canadian counties. Gas and oil fields occur.
From Field Investigation	Residential properties, fenced pastures, commercial farm operations, oil & gas operations, scrubland, wooded riparian areas, and rocky outcrops.

Terrestrial and Aquatic Community Descriptions (based on field site visit)

The study footprint primarily contains residential areas, fenced pastures, commercial farm operations, wooded riparian areas, rocky outcrops, and scrubland. Multiple active oil and gas operations are within the action area. Common vegetation observed within the study footprint includes sedge (*Carex* species), bermudagrass (*Cynodon dactylon*), smartweed (*Polygonum pensylvanicum*), knotweed (*Polygonum amphibium*), foxtail (*Setaria pumila*), spike rush (*Eleocharis acicularis*), ragweed (*Ambrosia trifida*), johnsongrass (*Sorghum halepense*), tall fescue (*Schedonorus arundinaceus*), horse nettle (*Solanum carolinense*), horsetail (*Equisetum hyemale*), daisy fleabane (*Erigeron annuus*), blackeyed Susan (*Rudbeckia hirta*), sweetclover (*Melilotus officinalis*), fragrant sumac (*Rhus aromatic*), smooth sumac (*Rhus glabra*), thistle (*Cirsium discolor*), yucca (*Yucca filamentosa*), tickseed (*Coreopsis lanceolata*), broomsedge bluestem (*Andropogon virginicus*), pokeweed (*Phytolacca americana*), ryegrass (*Lolium perenne*), duckweed (*Lemna minor*), common rush (*Juncus effuses*), eastern redbud (*Cercis canadensis*), red oak (*Quercus falcate*), mockernut hickory (*Carya tomentosa*), white oak (*Quercus alba*), catalpa (*Catalpa speciosa*), common hackberry (*Celtis occidentalis*), eastern redcedar (*Juniperus virginiana*), texas buckeye (*Aesculus glabra* var. *arguta*), blackjack oak (*Quercus marilandica*), cottonwood (*Populus deltoids*), slippery elm (*Ulmus rubra*), pecan (*Carya illinoinensis*), american beautyberry (*Callicarpa americana*), boxelder (*Acer negundo*), black willow (*Salix nigra*), poison ivy (*Toxicodendron radicans*), virginia creeper (*Parthenocissus quinquefolia*), riverbank grape (*Vitis riparia*), and greenbrier (*Smilax rotundifolia*).

3.2 Species Habitat Analysis

Pedestrian survey of entire study footprint	YES	√	NO	
Bridge inspection for bat use and suitability as bat roosting habitat	YES		NO	√

SPECIES	HABITAT	YES	NO
Black-capped Vireo	Shrub land, with small to intermediate sized trees and shrubs with vegetative cover that extends to ground level, is present within the action area.	√	
Whooping Crane	Shallowly-submerged sandbars in large river channels are present within the action area.		√
	Emergent wetlands are present with the Environmental Study Footprint	√	
	Acres of emergent wetlands within the Environmental Study Footprint	0.04 Acres	
	Croplands suitable for foraging occur within 15 miles of Salt Plains National Wildlife Refuge, Hackberry Flat, or Foss Reservoir		√
Interior Least Tern	Sparsely vegetated islands or sandbars along large rivers, with nearby areas of shallow water, are present within the action area.		√

SPECIES	HABITAT	YES	NO
Piping Plover	Sparsely vegetated sandy or gravelly shorelines and islands associated with the major river systems are present within the action area.		√
	Salt flats and mudflats associated with reservoirs are present within the action area.		√
Sprague's Pipit	Pastures or weedy fields, including grasslands with dense herbaceous vegetation or grassy agricultural fields, are present within the action area.	√	
Red Knot	Mudflats associated with reservoirs are present within the action area.		√

4. ANALYSIS OF EFFECTS

4.1 Direct Effects

Species/ Resource	Habitat impacts expected from project activities		Describe
	Yes	No	
Black-capped Vireo	√		Potential habitat areas will be impacted by land clearing activities to construct new roadway primarily along the proposed new alignment in the western portion of the footprint.
Whooping Crane	√		While very small and not likely suitable stopover habitat, the small potential wetland habitat will be permanently impacted by construction of the new roadway.
Sprague's Pipit	√		Potential habitat will be lost with the construction of new pavement and acquisition of new ROW both in the western portion on new alignment and the eastern portion where the existing alignment will be corrected for horizontal and vertical deficiencies in some areas.

4.2 Indirect Effects

Long-term habitat alterations

Species/Resource	Long-term habitat alterations (describe)
Black-capped Vireo	Clearing and conversion of potential habitat into new roadway and maintained ROW will occur along the proposed new alignment, and may occur in the remainder where road curvatures will be corrected.
Whooping Crane	Potential wetland habitat will be permanently lost when new roadway is constructed.
Sprague's Pipit	Clearing and conversion of potential habitat for road construction and maintained ROW will occur throughout the study footprint.

Indirect land use impacts

The proposed improvements for this 6.75 mile-long corridor consist of reconstructing existing US-277 from Cement to Middle Bills Creek on a new offset alignment as well as widening the existing alignment from Middle Bills Creek to I-44. Some new residential and/or commercial development may occur along the new US-277 alignment. However, overall land use is not expected to undergo major changes given that much of the area is currently used for oil & gas extraction, and the terrain is rough and not well suited to large-scale development.

4.3 Interrelated and Interdependent Actions and Activities

The proposed improvements consist of widening the existing alignment and constructing new alignment, which will result in some minor land use impacts in the area by reducing the number of well pad sites and suitable habitat. No other interrelated or interdependent actions are expected.

Species Conclusion Table (Check √ which apply)

SPECIES / DESIGNATED CRITICAL HABITAT	CONCLUSION				ESA SECTION 7		NOTES AND DOCUMENTATION Check √ all that apply			
	Species Habitat Present within the Action Area		Project Activities Expected to Impact Habitat		No Effect	May Affect, Unlikely to Adversely Affect	Field Studies	ONHI Rare Species / ABB Database Review	USFWS Occupied Water Bodies and Associated Watershed Maps	Whooping Crane Migration Corridor Map; LPC Habitat Model
	YES	NO	YES	NO						
Black-capped Vireo	√		√			√	√	√		
Whooping Crane	√		√			√	√	√	√	√
Interior Least Tern		√		√	√		√	√	√	
Piping Plover		√		√	√		√	√		
Sprague's Pipit	√		√			√	√	√		
Red Knot		√		√	√		√	√		

CONCLUSIONS

The proposed project may affect, unlikely to adversely affect the Black-capped Vireo, Whooping Crane, and Sprague's Pipit. There will be no effect on the Interior Least Tern, Piping Plover, and Red Knot.

RECOMMENDED CONSERVATION MEASURES: None

5. BALD EAGLE AND SWALLOW ASSESSMENT

5.1. Bald Eagle Assessment

The Bald Eagle (*Haliaeetus leucocephalus*) is a large predatory bird protected by the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act. Activities that would disturb eagles are prohibited under the Bald and Golden Eagle Protection Act. "Disturb" means to agitate an eagle to the degree that causes or is likely to (1) cause injury, (2) interfere with breeding, feeding or sheltering behavior, or (3) nest abandonment.

Bald Eagle Habitat Present	Two potential roosting trees observed in eastern portion of the study footprint.
Bald Eagle Nests Observed	None
Bald Eagles Observed	None

5.2 Swallow Assessment

Cliff Swallows (*Petrochelidon pyrrhonota*) and Barn Swallows (*Hirundo rustica*) are small colonial and semi-colonial nesting birds protected by the federal Migratory Bird Treaty Act. Barn Swallows use man-made structures for nesting and live in close association with humans. Both species commonly use bridges and culverts in Oklahoma for nesting.

Swallow Nests Observed	YES	√	NO	
	Approximate Number of Cliff Swallow Nests		Approximate Number of Barn Swallow Nests	
US-277 Bridge over Middle Bills Creek (NBI 23976)	>25		None	
US-277 Bridge over I-44 (NBI 15810)	>25		None	
Other MB Nests Observed on Transportation Structures	One Eastern Phoebe (*Sayornis Phoebe*) nest under US-277 Bridge over West Bills Creek (NBI 02099)			
In order to avoid impacts to swallows, any activities that may destroy active nests, eggs or birds shall be completed between September 1, and March 31, when nests are not occupied. If seasonal avoidance cannot be accomplished, structures shall be protected from new nest establishment prior to April 1, by means that do not result in death or injury to these birds.				

6. REFERENCES

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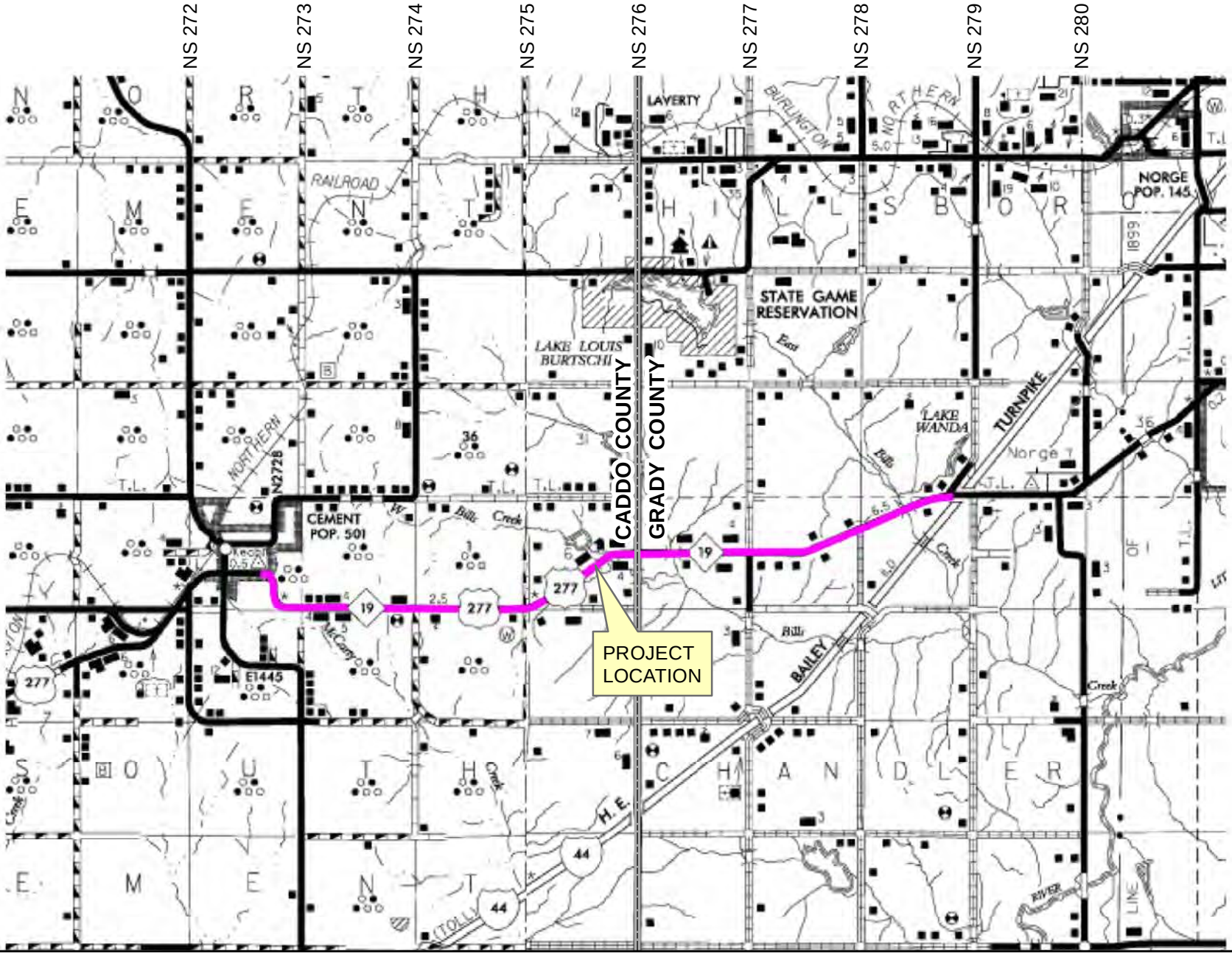
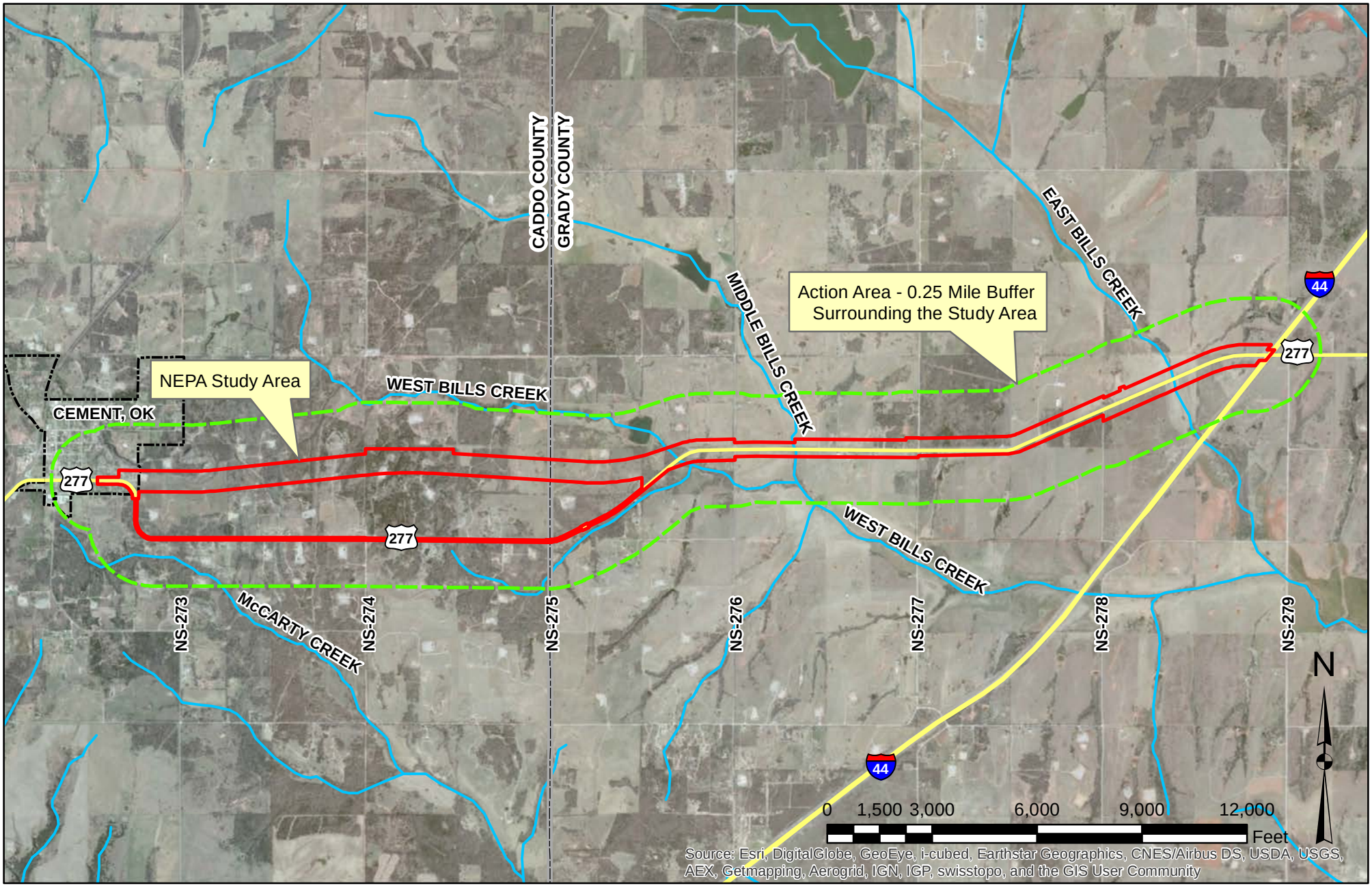
Woods, A. J., J. M. Omernik, D. R. Butler, J. G. Ford, J. E. Henley, B. W. Hoagland, D. S. Arndt, and B. C. Moran, 2005 Ecoregions of Oklahoma (color poster with map, descriptive text, summary tables, and photographs): Reston, VA, US Geological Survey (map scale 1:1,250,000).



N

JP No. 20953(04) & 20962(04)
US-277 from Cement, OK to I-44
Caddo & Grady Counties, Oklahoma

Figure 1 - Project Location Map
ODOT General Highway Map



Legend

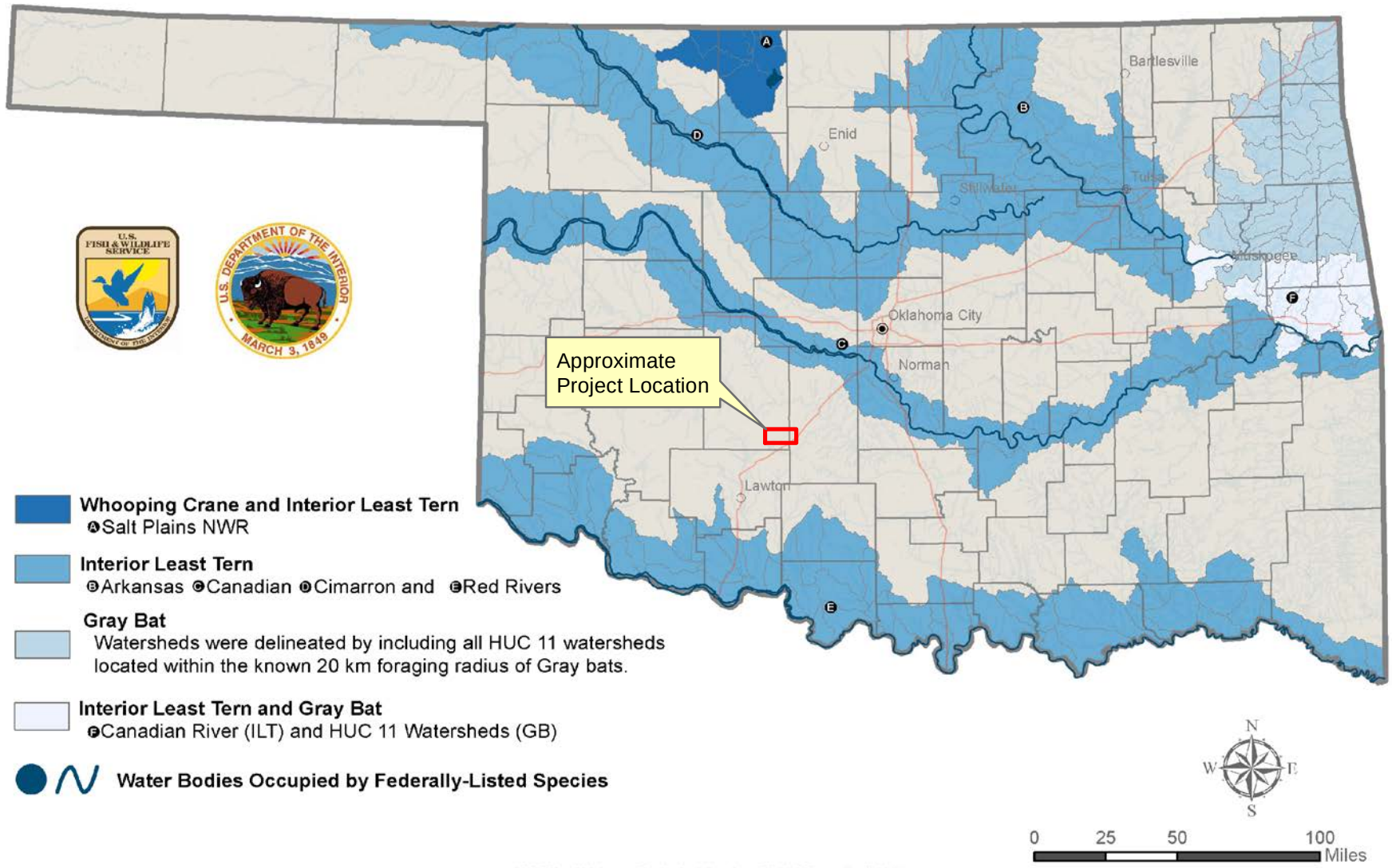
- Study Area
- Action Area
- Highways
- City Limits
- County Boundary
- Streams

JP No. 20953(04) & 20962(04)
US-277 from Cement, OK to I-44
Caddo & Grady Counties, Oklahoma

Figure 2 - Environmental Study Area

Federally-Listed Aquatic Dependent Species Watersheds of Oklahoma

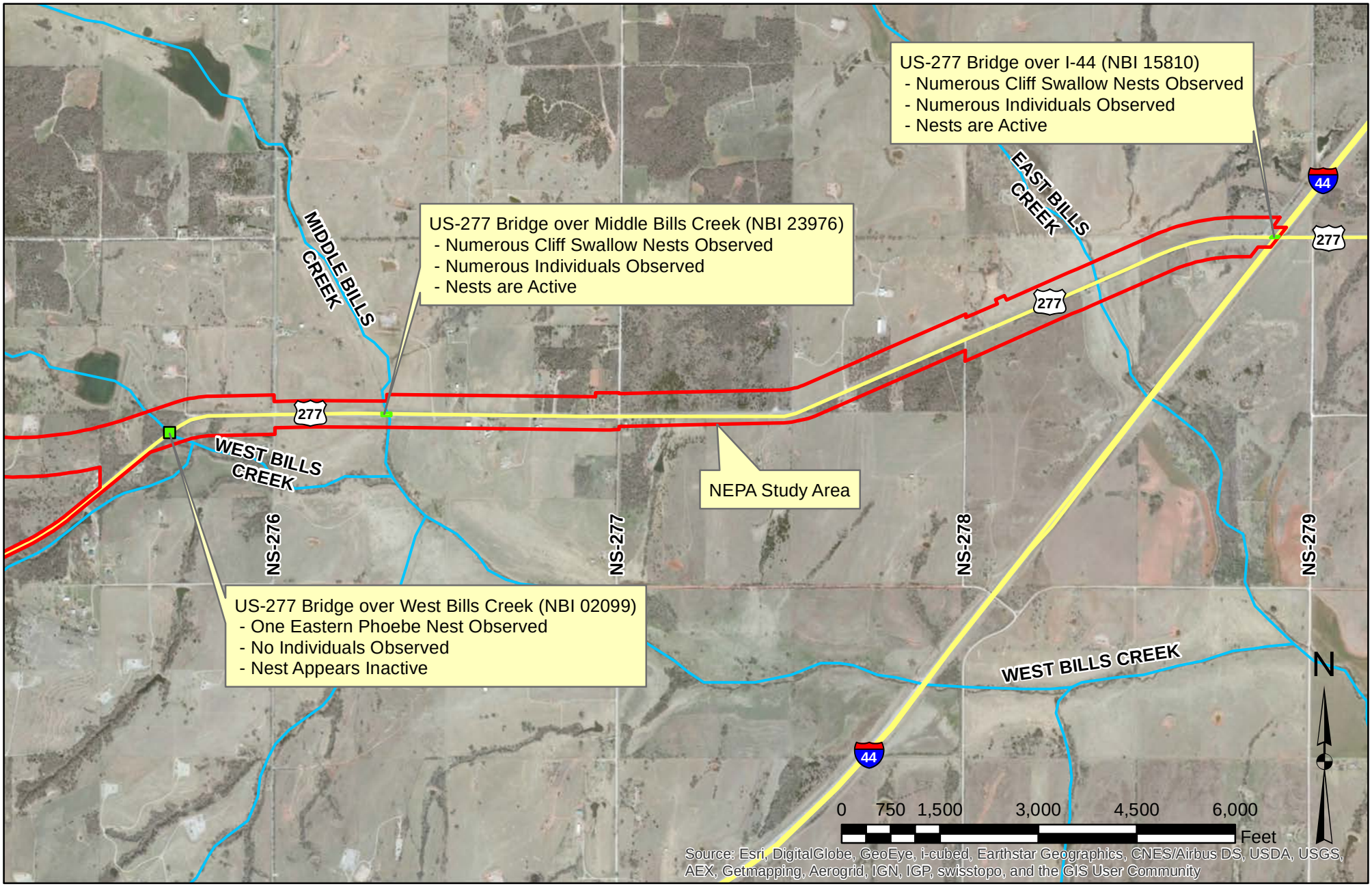
These watersheds were delineated using 11 digit Hydrologic Unit Code (HUC) watersheds. All watersheds adjacent to water bodies occupied by federally-listed species are included in the delineation, as well as those 11 digit HUC watersheds within 10 miles of the occupied water body. Please note that not all 11 digit HUC watersheds that feed into sensitive occupied water bodies are included in this delineation and effects to those watersheds outside of this delineation could impact sensitive water bodies.



USFWS - Oklahoma Ecological Services Field Office - April 2011

JP No. 20953(04) & 20962(04)
US-277 from Cement, OK to I-44
Caddo & Grady Counties, Oklahoma

Figure 3 - USFWS Federally-Listed Aquatic Dependent Species Watersheds of Oklahoma

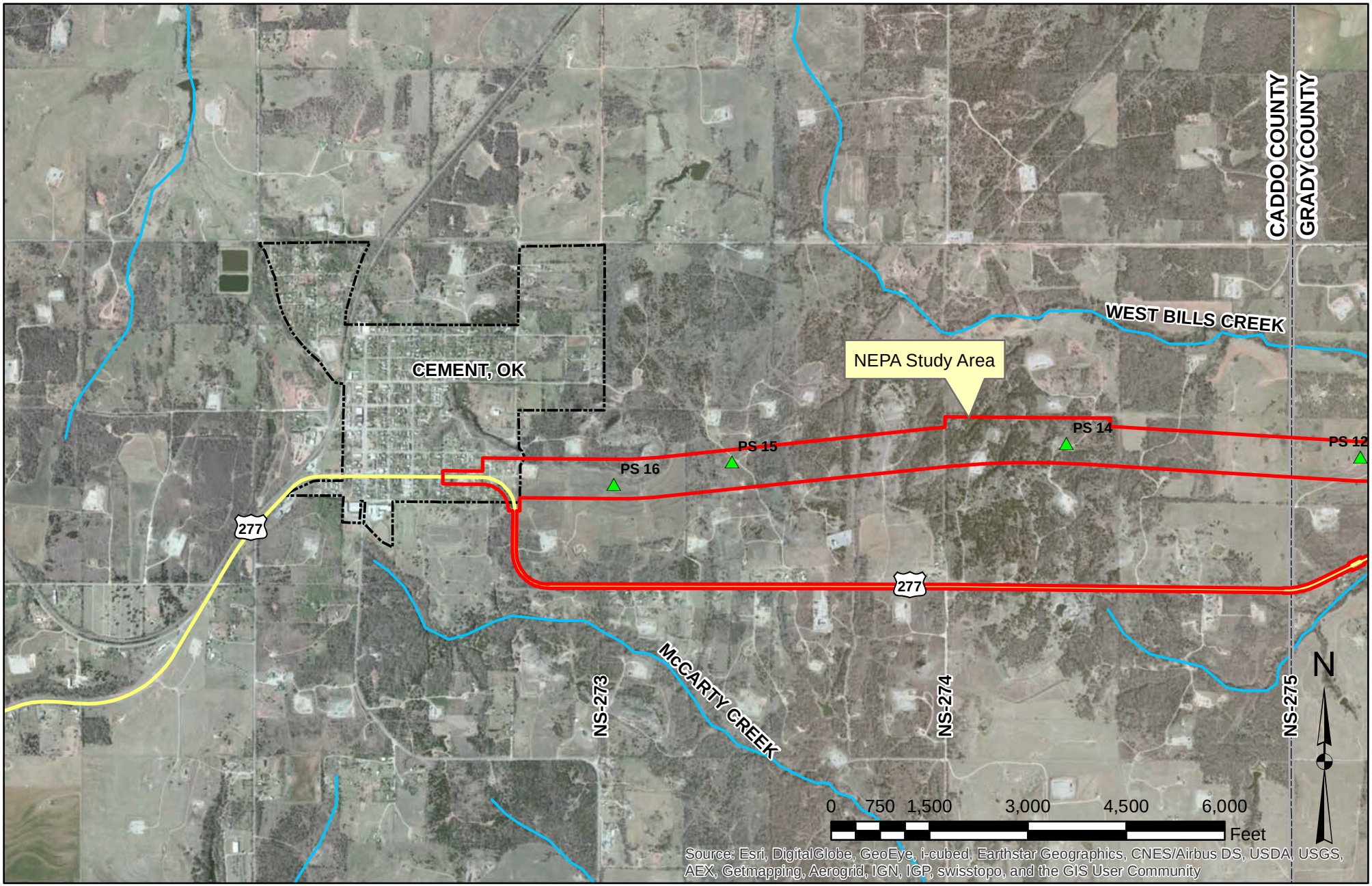


Legend

- Study Area
- Individual Nest
- Highways
- Multiple Nests
- Streams

JP No. 20953(04) & 20962(04)
US-277 from Cement, OK to I-44
Caddo & Grady Counties, Oklahoma

Figure 4 - Swallow & Migratory Bird Survey Structures Location Map

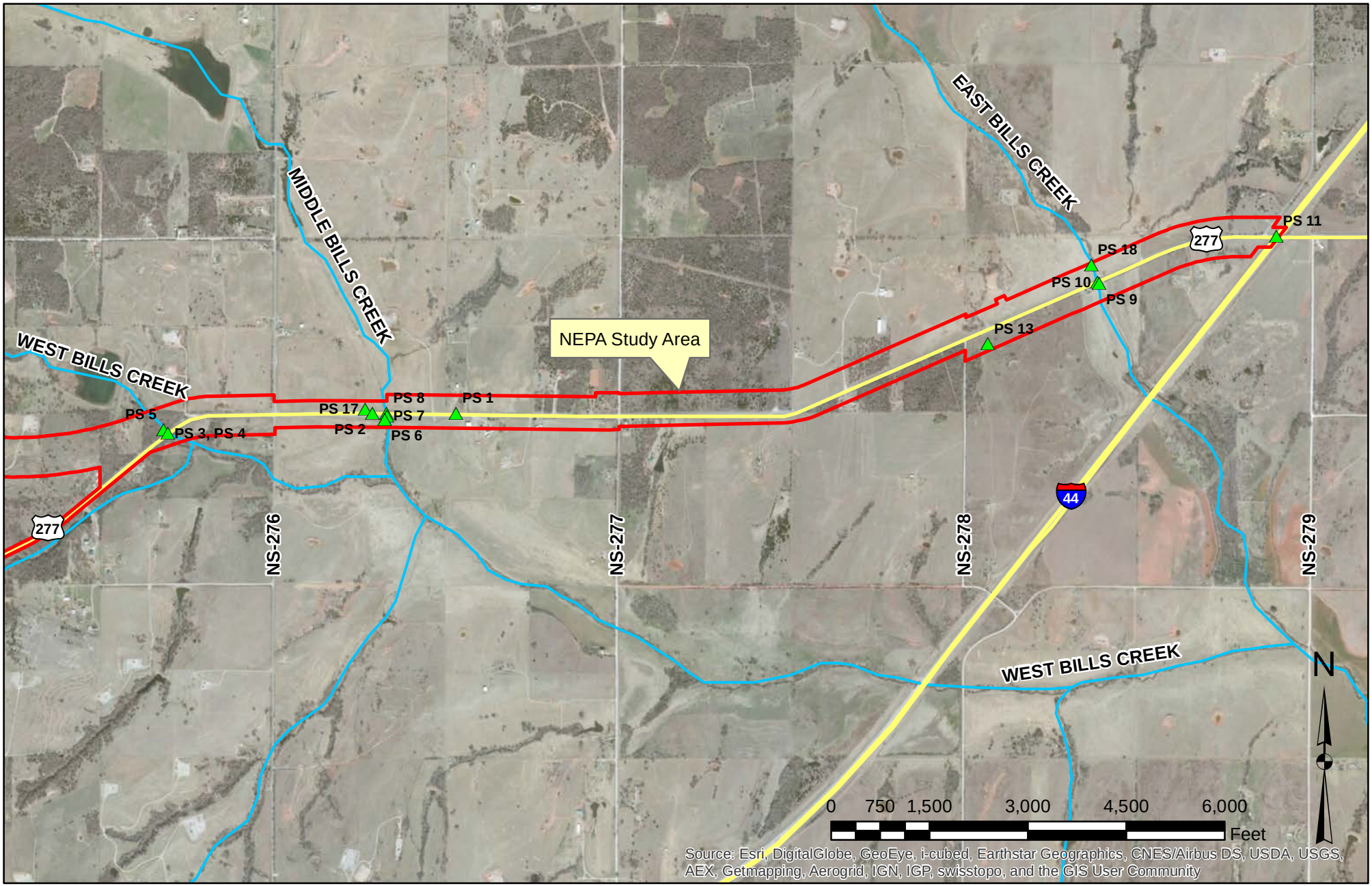


Legend

- Study Area
- County Boundary
- Highways
- Streams
- City Limits
- Photo Site (PS)

JP No. 20953(04) & 20962(04)
US-277 from Cement, OK to I-44
Caddo & Grady Counties, Oklahoma

Figure 5 - Photo Log Location Map
Sheet 1 of 2



Legend

- Study Area
- County Boundary
- Highways
- Streams
- City Limits
- Photo Site (PS)

JP No. 20953(04) & 20962(04)
US-277 from Cement, OK to I-44
Caddo & Grady Counties, Oklahoma

Figure 5 - Photo Log Location Map
Sheet 2 of 2

▲Photo Site 1 (PS 1): View of US-277 near Middle Bills Creek. View is to the west.

▲PS 2: View of US-277 at Middle Bills Creek. View is to the east.

▲PS 3: Upstream (north) side of the existing bridge over West Bills Creek. View is to the southwest.

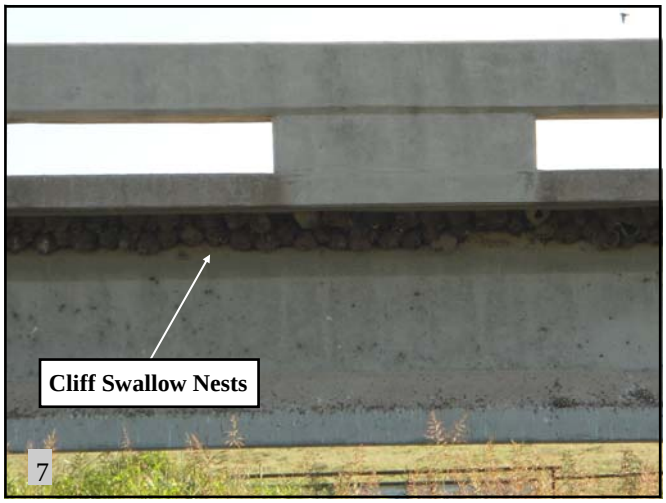
▲PS 4: View of eastern phoebe nest under the existing bridge over West Bills Creek. View is to the southwest.

▲PS 5: Shell of mussel species (*Uniomerus tetralasmus*) observed upstream of the bridge over West Bills Creek.

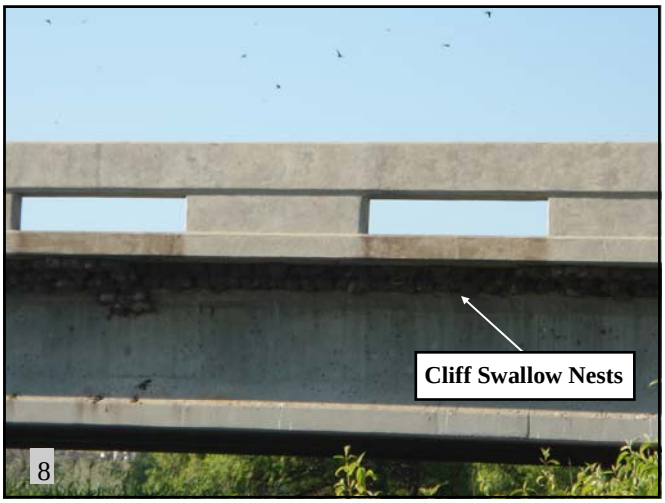
▲PS 6: Downstream (south) side of the existing bridge over Middle Bills Creek. View is to the north.

Caddo & Grady Counties, OK
J/P No. 20953(04) & 20962(04)

On-site photographs taken June 9-11, 2014
Garver Project No. 11037080



▲PS 7: View of cliff swallow nests under the existing bridge over Middle Bills Creek. View is to the north.



▲PS 8: View of cliff swallow nests under the existing bridge over Middle Bills Creek. View is to the south.

▲PS 9: Downstream (south) side of the existing bridge over East Bills Creek. View is to the northeast.

▲PS 10: View under the existing bridge over East Bills Creek. View is to the northeast.

▲PS 11: View of cliff swallow nests under the existing bridge over I-44. View is to the southeast.

▲PS 12: Emergent wetland (Wetland 1) within study foot-print. View is to the southwest.

Caddo & Grady Counties, OK
J/P No. 20953(04) & 20962(04)

On-site photographs taken June 9-11, 2014
Garver Project No. 11037080

▲PS 13: Scrubland within the study footprint south of US-277 and west East Bills Creek. View is to the east.

▲PS 14: Scrubland in the vicinity of the proposed alignment. View is to the southwest.

▲PS 15: Herbaceous field in the vicinity of the proposed alignment. View is to the west.

▲PS 16: Herbaceous field within in the vicinity of the proposed alignment. View is to the southwest.

▲PS 17: Fenced pasture within the study footprint. View is to the northwest.

▲PS 18: Fenced pasture within the study footprint. View is to the southwest.

Caddo & Grady Counties, OK
J/P No. 20953(04) & 20962(04)

On-site photographs taken June 9-11, 2014
Garver Project No. 11037080

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Oklahoma Ecological Services Field Office
9014 EAST 21ST STREET
TULSA, OK 74129
PHONE: (918)581-7458 FAX: (918)581-7467
URL: www.fws.gov/southwest/es/Oklahoma/

Consultation Tracking Number: 02EKOK00-2014-SLI-0953 June 03, 2014
Project Name: ODOT EC-1357 US 277 Prelim Eng-EA Study

Subject: 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 enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. 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. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having

similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Non-federal entities conducting activities that may result in take of listed species should consider seeking coverage under section 10 of the ESA, either through development of a Habitat Conservation Plan (HCP) or, by becoming a signatory to the General Conservation Plan (GCP) currently under development for the American burying beetle. Each of these mechanisms provides the means for obtaining a permit and coverage for incidental take of listed species during otherwise lawful activities.

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit through our Project Review step-wise process http://www.fws.gov/southwest/es/oklahoma/OKESFO%20Permit%20Home.htm.

If your species list does not contain the American burying beetle and your projects falls within Marshall, Love, Carter, Murray, Garvin, McClain, Cleveland, Pottawatomie or Adair counties,

the Service reccomends that you consider the American burying beetle in your project planning process. There is evidence to suggest (Crawford and Hoagland 2010), that the American burying beetle may occur in these counties.

Attachment

United States Department of Interior
Fish and Wildlife Service

Project name: ODOT EC-1357 US 277 Prelim Eng-EA Study

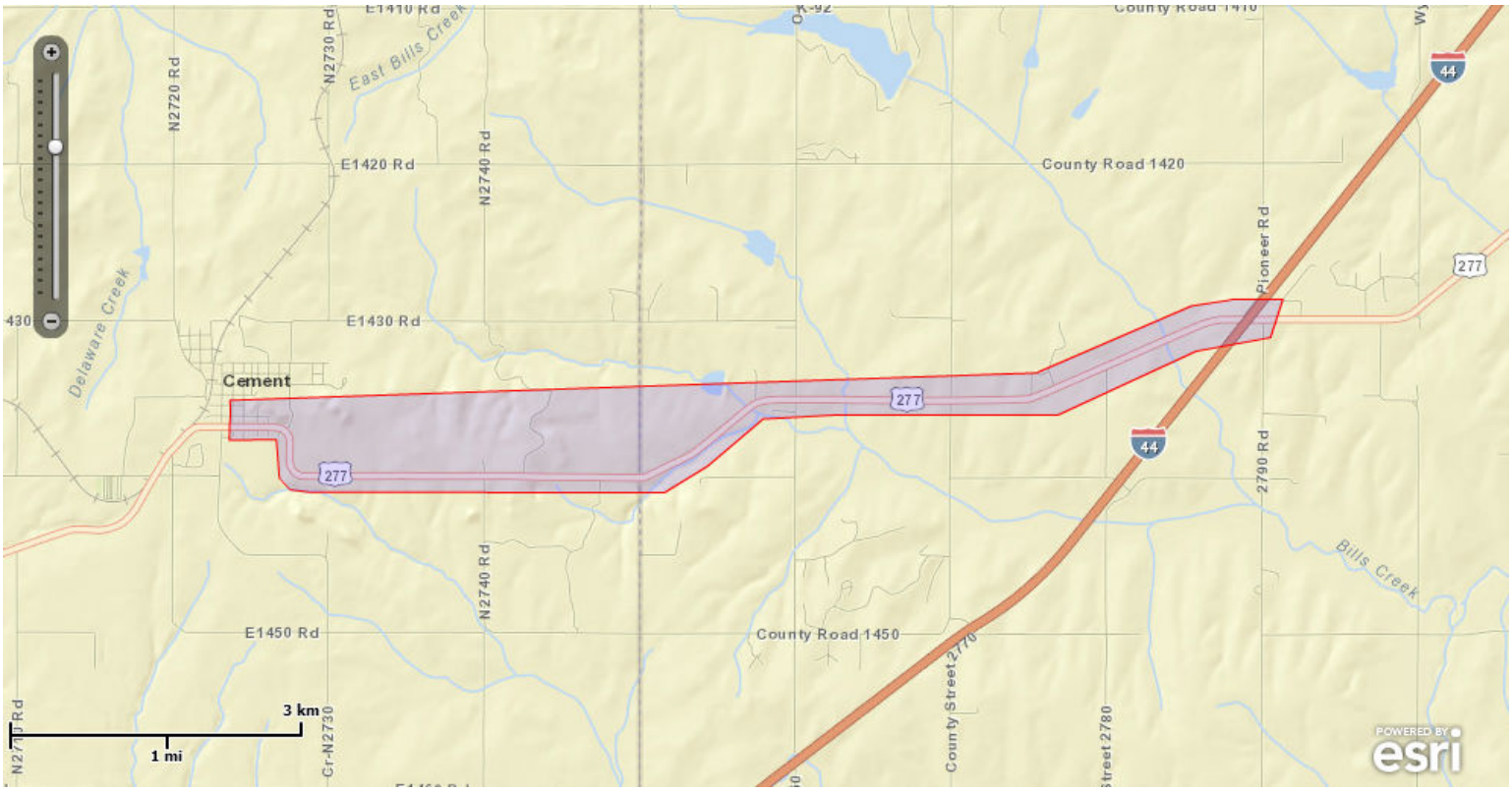
Official Species List

Provided by:

Oklahoma Ecological Services Field Office
9014 EAST 21ST STREET
TULSA, OK 74129
(918) 581-7458
http://www.fws.gov/southwest/es/Oklahoma/

Consultation Tracking Number: 02EKOK00-2014-SLI-0953
Project Type: Transportation
Project Description: Road construction from Cement to I-44

Project Location Map:



Project Coordinates: MULTIPOLYGON (((-98.1392512 34.9329506, -98.1392468 34.9345205, -98.0482663 34.9370535, -98.0307568 34.9432452, -98.0262936 34.9438081, -98.0204571 34.9438081, -98.0218363 34.9403387, -98.0302477 34.9390722, -98.0458689 34.9331617, -98.0712747 34.9331617, -98.0790853 34.9328098, -98.085351 34.928447, -98.0902433 34.925984, -98.1304121 34.9260544, -98.132472 34.9262655, -98.1336736 34.9273211, -98.134017 34.9309099, -98.1393385 34.9308396, -98.1392512 34.9329506)))

Project Counties: Caddo, OK | Grady, OK

Endangered Species Act Species List

There are a total of 6 threatened, endangered, or candidate species on your 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. Critical habitats listed on the **Has Critical Habitat** lines may or may not lie within your project area. See the **Critical habitats within your project area** section further below for critical habitat that lies within your project. Please contact the designated FWS office if you have questions.

Black-Capped Vireo *(Vireo atricapilla)*
Population: Entire
Listing Status: Endangered

Least tern *(Sterna antillarum)*
Population: interior pop.
Listing Status: Endangered

Piping Plover *(Charadrius melodus)*
Population: except Great Lakes watershed
Listing Status: Threatened
Has Critical Habitat: Final designated

Red Knot *(Calidris canutus rufa)*
Listing Status: Proposed Threatened

Sprague's Pipit *(Anthus spragueii)*
Listing Status: Candidate

Whooping crane *(Grus americana)*
Population: except where EXPN
Listing Status: Endangered
Has Critical Habitat: Final designated

Critical habitats that lie within your project area

There are no critical habitats within your project area.

WATERS AND WETLANDS EVALUATION REPORT

For

County	Caddo & Grady	JP Number	20953(04) & 20962(04)	Project Number	
Road Number	US-277	Water Body Name		East Bills Creek, Middle Bills Creek, & West Bills Creek	
ROW Date	2016	Let Date	2018 & 2019	Project Length	6.75 Miles
Project General Location		US-277 from Cement, Oklahoma to I-44			
Project Statement		Reconstruct US-277 on New Alignment to the North from East of Cement to West Bills Creek and Offset Alignment from West Bills Creek to I-44 and reconstruct bridges as needed.			

Prepared for:
Oklahoma Department of Transportation
Environmental Programs Division
200 NE 21st Street
Oklahoma City, OK 73105

Prepared by:

Biologist Name	Jeremy Spires and Ryan Mountain
Company/Agency Name	Garver
Address	6450 South Lewis, Suite 300
City, State Zip	Tulsa, OK 74136

Date:	November 20, 2014

PROJECT OVERVIEW

Project Type	Check √
Bridge and Approaches	
Grade, Drain, Surface and Bridge	√
Grade, Drain and Surface	
Asphalt Overlay	
Widen and Resurface existing lanes	
Pavement Reconstruction & rehabilitation	
Bridge Rehabilitation	
Safety Improvements (Cable Barrier, Guardrail, signage)	
Intersection Modifications	
Safe Routes to School (Describe)	
Enhancements (Describe)	
Other (Describe)	

Description of the **existing** bridge/roadway

The project limits begin at the east edge of Cement and extend approximately 6.75 miles east along US-277 to the I-44 overpass bridge. This facility is classified as a Rural Collector with rolling terrain. The current roadway is a two-lane facility with eleven-foot travel lanes and sod shoulders. The corridor has a posted speed limit of 65 mph for the majority of the project length. Heading west the speed steps down gradually from 65 mph to 45 mph at the two 90 degree horizontal curves into Cement. The existing highway has numerous vertical and horizontal curves. Several of the horizontal curves are deficient with either an excessive degree of curve, deficient superelevation rate, or a combination thereof. There are three bridge structures within the study corridor at West Bills Creek, Middle Bills Creek, and East Bills Creek. The existing structure over West Bills Creek (NBI 02099) consists of 3-26' I-beam span bridge with a 31-foot clear roadway. The existing structure over Middle Bills Creek (NBI 23976) is a 100' PC beam span bridge with a 40-foot clear roadway. The existing bridge over East Bills Creek (NBI 18275) consists of 5-25' concrete slab spans with a 32-foot clear roadway. The purpose of the project is to improve safety by correcting the deficient vertical and horizontal curves in the project corridor.

Description of **proposed** improvements **SPECIFIC TO THIS PROJECT**

The Oklahoma Department of Transportation (ODOT) is proposing to reconstruct US-277 with varied offsets to correct vertical/horizontal curve deficiencies. Proposed improvements include reconstructing US-277 with two, twelve-foot travel lanes and eight-foot paved shoulders mostly on new alignment located north of the existing highway. The proposed alignment heads east out of Cement and travels cross-country approximately 1,640-2,200 feet north of the existing highway. The proposed new alignment meets the existing alignment just west of NS-276 and follows the existing alignment up to the bridge over Middle Bills Creek. A new structure will be constructed at West Bills Creek, so some channel work is expected in this area. The recently reconstructed bridge at Middle Bills Creek will remain in place. Just east of Middle Bills Creek the alignment diverges to approximately 110 feet north of the existing alignment, where it continues until shifting back to the existing alignment to tie into the roadway approach located just west of East Bills Creek. At East Bills Creek, the proposed improvements follow the existing alignment to I-44 at the end of the project area. The bridge at East Bills Creek will be widened to accommodate the new roadway, and minimal channel work is expected in this area. The proposed improvements will require approximately 180 acres of new right-of-way. The roadway will remain open during construction.

Project Environmental Study Footprint

Project Location		**Environmental Study Footprint**	
Section Range & Township	Lat/Long (NAD 83)	Dimensions	Acreage
Sections 1, 2, and 3, T5N, R9W Sections 3, 4, 5, and 6, T5N, R8W Section 34, T6N, R8W	Beginning of Project: Latitude 34.9320° N & Longitude 98.1361° W End of Project: Latitude 34.9419° N & Longitude 98.0244° W	6.75 mile-long segment of existing US-277 beginning at E St. in Cement, OK with a width of 200 ft., extending east and splits along the proposed new alignment with a width of 600 ft. and along the existing alignment within the existing ROW, connecting west of West Bills Creek and continuing east along the existing US-277 centerline with varying widths of 400-600 ft., and ending at the I-44 bridge.	470.1

Environmental Study Footprint Soils (NRCS Soil Survey Map)

Map Unit Name	Percent Slope	Drainage Class	Hydric Rating		Description
			YES	NO	
CoC	3 – 5	Well drained	√		Binger fine sandy loam
CoD2	5 – 8	Well drained		√	Binger fine sandy loam, eroded
DnD	3 – 12	Well drained		√	Darnell-Noble association
DnE	12 – 30	Well drained		√	Darnell-Noble association
DoB	1 – 3	Well drained	√		Dougherty and Konawa soils
DuD	3 – 8	Well drained	√		Dougherty and Eufaula soils
KoC2	1 – 5	Well drained	√		Konawa loamy fine sand, eroded
MoD	3 – 8	Well drained	√		Minco very fine sandy loam
NoD	3 – 8	Well drained	√		Noble fine sandy loam
QwD	5 – 12	Well drained		√	Ironmound-Nash complex
Ro	20 – 75	Well drained		√	Darnell-Rock outcrop complex
3	0 – 1	Well drained	√		Cyril fine sandy loam, occasionally flooded
10	0 – 1	Somewhat poorly drained	√		Gracemont fine sandy loam, occasionally flooded
21	5 – 12	Well drained		√	Lucien-Nash complex
27	3 – 5	Well drained		√	Minco silt loam
30	1 – 5	Well drained		√	Nash-Lucien complex
32	3 – 5	Well drained		√	Noble-Darnell complex
37	0 – 1	Well drained		√	Pond Creek silt loam
40	0 – 1	Well drained	√		Port silt loam, occasionally flooded
42	12 – 30	Well drained		√	Ironmound-Rock outcrop complex
48	1 – 3	Well drained		√	Stephenville fine sandy loam
50	3 – 5	Well drained		√	Stephenville fine sandy loam, eroded
51	3 – 8	Well drained		√	Stephenville fine sandy loam, severely eroded
52	1 – 8	Well drained		√	Stephenville-Darnell complex
53	3 – 8	Well drained	√		Stephenville-Eufaula complex
54	0 – 12	Well drained		√	Stephenville-Pulaski complex
57	3 – 5	Well drained		√	Teller loam, eroded

Environmental Study Footprint General Description and Vegetation Present

The study footprint primarily contains residential areas with open fields, fenced pastures, wooded riparian areas, rocky outcrops, and scrubland. Multiple active oil and gas operations are within the action area. Common vegetation observed within the study footprint includes sedge (*Carex* species), bermudagrass (*Cynodon dactylon*), smartweed (*Polygonum pensylvanicum*), knotweed (*Polygonum amphibium*), foxtail (*Setaria pumila*), spike rush (*Eleocharis acicularis*), ragweed (*Ambrosia trifida*), johnsongrass (*Sorghum halepense*), tall fescue (*Schedonorus arundinaceus*), horse nettle (*Solanum carolinense*), horsetail (*Equisetum hyemale*), daisy fleabane (*Erigeron annuus*), blackeyed Susan (*Rudbeckia hirta*), sweetclover (*Melilotus officinalis*), fragrant sumac (*Rhus aromatic*), smooth sumac (*Rhus glabra*), thistle (*Cirsium discolor*), yucca (*Yucca filamentosa*), tickseed (*Coreopsis lanceolata*), broomsedge bluestem (*Andropogon virginicus*), pokeweed (*Phytolacca americana*), ryegrass (*Lolium perenne*), duckweed (*Lemna minor*), common rush (*Juncus effuses*), eastern redbud (*Cercis canadensis*), red oak (*Quercus falcate*), mockernut hickory (*Carya tomentosa*), white oak (*Quercus alba*), catalpa (*Catalpa speciosa*), common hackberry (*Celtis occidentalis*), eastern redcedar (*Juniperus virginiana*), texas buckeye (*Aesculus glabra* var. *arguta*), blackjack oak (*Quercus marilandica*), cottonwood (*Populus deltoids*), slippery elm (*Ulmus rubra*), pecan (*Carya illinoinensis*), american beautyberry (*Callicarpa americana*), boxelder (*Acer negundo*), black willow (*Salix nigra*), poison ivy (*Toxicodendron radicans*), virginia creeper (*Parthenocissus quinquefolia*), riverbank grape (*Vitis riparia*), and greenbrier (*Smilax rotundifolia*).

WATERS AND WETLANDS EVALUATION

Data Sources Reviewed (list)

USGS 7.5 minute Quad	NWI Map	USACE Wetland Regional Supplement	Additional Resources Reviewed
1991 Cyril, OK	1989 Cyril, OK	Great Plains Region (Version 2.0)	ODEQ Flex Viewer geospatial data
1991 Laverty, OK	1983 Laverty, OK		

Wetlands and Ponds Summary Table

Number of Field Sites	Type of Wetland or Pond	Cowardin Classification	Potential Jurisdictional Status	Acres within Environmental Study Footprint
Wetland 1	Emergent Wetland	PEM1A	Not Likely	0.04
Pond 1	Pond	PUBHhx	Not Likely	0.19
Pond 2	Pond	PUBHhx	Not Likely	0.05
Pond 3	Pond	PUBHhx	Not Likely	0.02
Pond 4	Pond	PUBHx	Not Likely	0.03
Pond 5	Pond	PUBHhx	Not Likely	0.27

Streams and Drainages Summary Table

Number of Field Sites	Stream Name	USGS Mapped Status	Potential Jurisdictional Status	Acres within Environmental Study Footprint	Linear Feet within Environmental Study Footprint
OW 1	East Bills Creek	Mapped intermittent	Likely	0.09	671.8
OW 2	Unnamed Tributary to West Bills Creek	Unmapped ephemeral	Likely	0.03	192.5
OW 3	Unnamed Tributary to McCarty Creek	Unmapped ephemeral	Likely	0.01	66.1
OW 4	Unnamed Tributary to McCarty Creek	Unmapped ephemeral	Likely	0.01	70.2
OW 5	Unnamed Tributary to McCarty Creek	Unmapped ephemeral	Likely	0.01	66.0
OW 6	Unnamed Tributary to McCarty Creek	Unmapped ephemeral	Likely	0.01	66.7
OW 7	West Bills Creek	Mapped intermittent	Likely	0.15	714.6
OW 8	Unnamed Tributary to West Bills Creek	Unmapped ephemeral	Likely	0.02	372.2
OW 9	Unnamed Tributary to West Bills Creek	Unmapped ephemeral	Likely	0.12	840.5
OW 10	Middle Bills Creek	Mapped intermittent	Likely	0.26	422.7

For Each Field Site

Streams and Other Linear Aquatic Features

OW 1 – East Bills Creek is a USGS mapped intermittent stream and was observed as intermittent during the field investigation. During the field investigation, runs and pools were observed within OW 1 as well as undercut banks and a strong manure odor. Cattle have unrestricted access to OW 1 on both sides of US-277 which has caused stream bank erosion and turbidity issues. The OHWM width associated with OW 1 varies from 4-6 feet throughout the channel with a depth of 0.5-2 feet. The OHWM width at the existing bridge is approximately 12-15 feet. An estimated 671.8 linear feet (0.093 acre) of OW 1 occurs within the study footprint. Dominant riparian plant species include american elm, boxelder, black willow, and bermudagrass. This feature is likely to be subject to regulation by the USACE.

OW 2 – the unnamed tributary to West Bills Creek is not a USGS mapped stream within the study footprint; this feature was observed as ephemeral during the field investigation. The OW 2 channel begins on the south (downstream) side of an existing 3’ x 2’ reinforced concrete box (RCB). This feature was dry during the field investigation and undercut banks were observed within OW 2. The OHWM width associated with OW 2 varied from 3-6 feet. An estimated 192.5 linear feet (0.027 acre) of OW 2 occurs within the study footprint. Dominant riparian plant

species include slippery elm, white oak, fragrant sumac, and johnsongrass. This feature is likely to be subject to regulation by the USACE.

OW 3 – the unnamed tributary to McCarty Creek is not a USGS mapped stream but was observed as ephemeral during the field investigation. This feature was dry during the field investigation, and some drift material, root wads, and undercut banks were also observed within OW 3. The OHWM width associated with OW 3 varied from 3-4 feet north (upstream) of US-277 to 10-15 feet south (downstream) of US-277 due to severe bank erosion. An estimated 66.1 linear feet (0.011 acre) of OW 3 occurs within the study footprint. Dominant riparian plant species include red oak, fragrant sumac, pecan, american elm, and johnsongrass. This feature is likely to be subject to regulation by the USACE.

OW 4 – the unnamed tributary to McCarty Creek is not a USGS mapped stream but was observed as ephemeral during the field investigation. This feature was dry during the field investigation, and some drift material, root wads, and undercut banks were also observed within OW 4. The OHWM width associated with OW 4 varied from 3-5 feet. An estimated 70.2 linear feet (0.008 acre) of OW 4 occurs within the study footprint. Dominant riparian plant species include american elm, bermudagrass, and johnsongrass. This feature is likely to be subject to regulation by the USACE.

OW 5 – the unnamed tributary to McCarty Creek is not a USGS mapped stream but was observed as ephemeral during the field investigation. This feature was dry during the field investigation, and some drift material was also observed within OW 5. The OHWM width associated with OW 5 varied from 4-6 feet. An estimated 66.0 linear feet (0.009 acre) of OW 5 occurs within the study footprint. Dominant riparian plant species include american elm, hackberry, black willow, catalpa tree, american beauty berry, and johnsongrass. This feature is likely to be subject to regulation by the USACE.

OW 6 – the unnamed tributary to McCarty Creek is not a USGS mapped stream but was observed as ephemeral during the field investigation. This feature was dry during the field investigation, and some drift material was also observed. The OHWM width associated with OW 6 varied from 2-4 feet. An estimated 66.7 linear feet (0.006 acre) of OW 6 occurs within the study footprint. Dominant riparian plant species include american elm, white oak, and greenbrier. This feature is likely to be subject to regulation by the USACE.

OW 7 – West Bills Creek is a USGS mapped intermittent stream but was observed as perennial during the field investigation. Riffles and runs were observed within the channel. Undercut banks, root wads, drift material and a slight sulfur odor were also observed within OW 7. A NRCS control structure (retention pond) is located approximately 800 feet upstream of the existing bridge. The control structure regulates the flow of West Bills Creek through the existing bridge. The average OHWM width associated with OW 7 is approximately 9 feet with a depth of 0.25-2 feet. The OHWM width varies from 7-19 feet upstream of the existing bridge, 13-17 feet at the bridge, and 6-9 feet downstream of the bridge. An estimated 714.6 linear feet (0.148 acre) of OW 7 occurs within the study footprint. Aquatic organisms observed within include mosquito fish (*Gambusia* species), crayfish, and pondhorn mussel (*Uniomerus tetralasmus*). Dominant riparian plant species include american elm, white oak, slippery elm, greenbrier, horsetail,

duckweed, grape, and johnsongrass. This feature is likely to be subject to regulation by the USACE.

OW 8 – the unnamed tributary to West Bills Creek is not a USGS mapped stream but was observed as ephemeral during the field investigation. This feature was dry during the field investigation, and rock ledges were also observed within OW 8. The OHWM width associated with OW 8 varied from 1-2 feet. An estimated 372.2 linear feet (0.017 acre) of OW 8 occurs within the study footprint. Dominant riparian plant species include red oak, eastern red cedar, blackjack oak, and daisy fleabane. This feature is likely to be subject to regulation by the USACE.

OW 9 – the unnamed tributary to West Bills Creek is not a USGS mapped intermittent stream but was observed as ephemeral during the field investigation. During the field investigation, the feature was generally dry, but some pools were observed. Rock ledges were also observed within OW 9. The OHWM width associated with OW 9 varied from 4-6 feet. An estimated 840.5 linear feet (0.116 acre) of OW 9 occurs within the study footprint. Dominant riparian plant species include red oak, american elm, american beauty berry, and greenbrier. This feature is likely to be subject to regulation by the USACE.

OW 10 – Middle Bills Creek is a USGS mapped intermittent stream and was observed as intermittent during the field investigation. Runs were observed within OW 10 during the field investigation as well as a slight manure odor. The average OHWM width associated with OW 10 is approximately 25 feet with a depth of 0.25-2 feet. The OHWM width varies from 14-22 feet upstream of the existing bridge, 20-24 feet at the bridge, and 32-38 feet downstream of the bridge. An estimated 422.7 linear feet (0.26 acre) of OW 10 occurs within the study footprint. Dominant riparian plant species include american elm, white oak, slippery elm, greenbrier, horsetail, duckweed, grape, and johnsongrass. This feature is likely to be subject to regulation by the USACE.

Wetlands and Ponds

Wetland 1 – this wetland is classified as a PEM1A (Palustrine, Emergent, Persistent, Temporarily Flooded Wetland) and is located along the proposed new alignment of US-277 between the Caddo County line and West Bills Creek (OW 7) in Section 6, T5N, R8W. This feature was observed as an isolated, concave surface that is likely a partially filled in pond. This feature is not illustrated on the 1991 Laverty, OK NWI map. Vegetation observed includes black willow, knotweed, and smartweed. Approximately 0.04 acre occurs within the study footprint. This feature is not likely to be subject to regulation by the USACE.

Pond 1 – this man-made agricultural pond is located along the proposed new alignment of US-277 between the Caddo County line and West Bills Creek (OW 7) in Section 6, T5N, R8W. Livestock, including cattle, have unrestricted access to this feature. This feature is shown as a PUSCh on the 1991 Laverty, OK NWI map. Approximately 0.19 acre occurs within the footprint. This feature is not likely to be subject to regulation by the USACE.

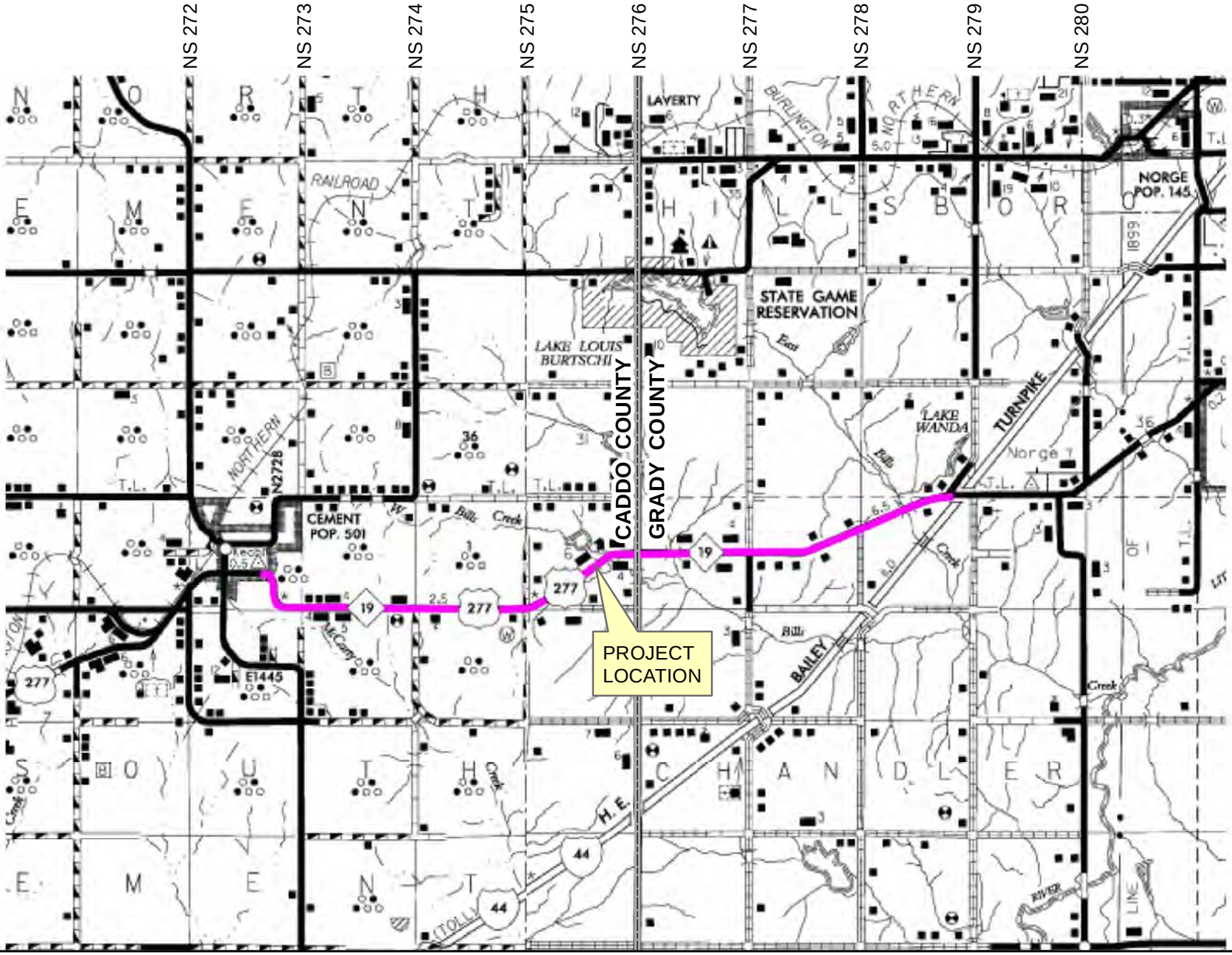
Pond 2 – this man-made agricultural pond is located along the proposed new alignment of US-277 between the Caddo County line and West Bills Creek (OW 7) in Section 6, T5N, R8W.

Livestock, including cattle, have unrestricted access to this feature. This feature is not illustrated on the 1991 Laverty, OK NWI map. Approximately 0.05 acre occurs within the footprint. This feature is not likely to be subject to regulation by the USACE.

Pond 3 – this man-made agricultural pond is located along the proposed new alignment of US-277 between the Caddo County line and West Bills Creek (OW 7) in Section 6, T5N, R8W. Livestock, including cattle, have unrestricted access to this feature. This feature is shown as a PUSAh on the 1991 Laverty, OK NWI map. Approximately 0.02 acre occurs within the footprint. This feature is not likely to be subject to regulation by the USACE.

Pond 4 – this man-made agricultural pond is located along the proposed new alignment of US-277 between Cement and NS-274 in Section 2, T5N, R9W. Livestock, including cattle, have unrestricted access to this feature. This feature is not illustrated on the 1991 Laverty, OK NWI map. Approximately 0.03 acre occurs within the footprint. This feature is not likely to be subject to regulation by the USACE.

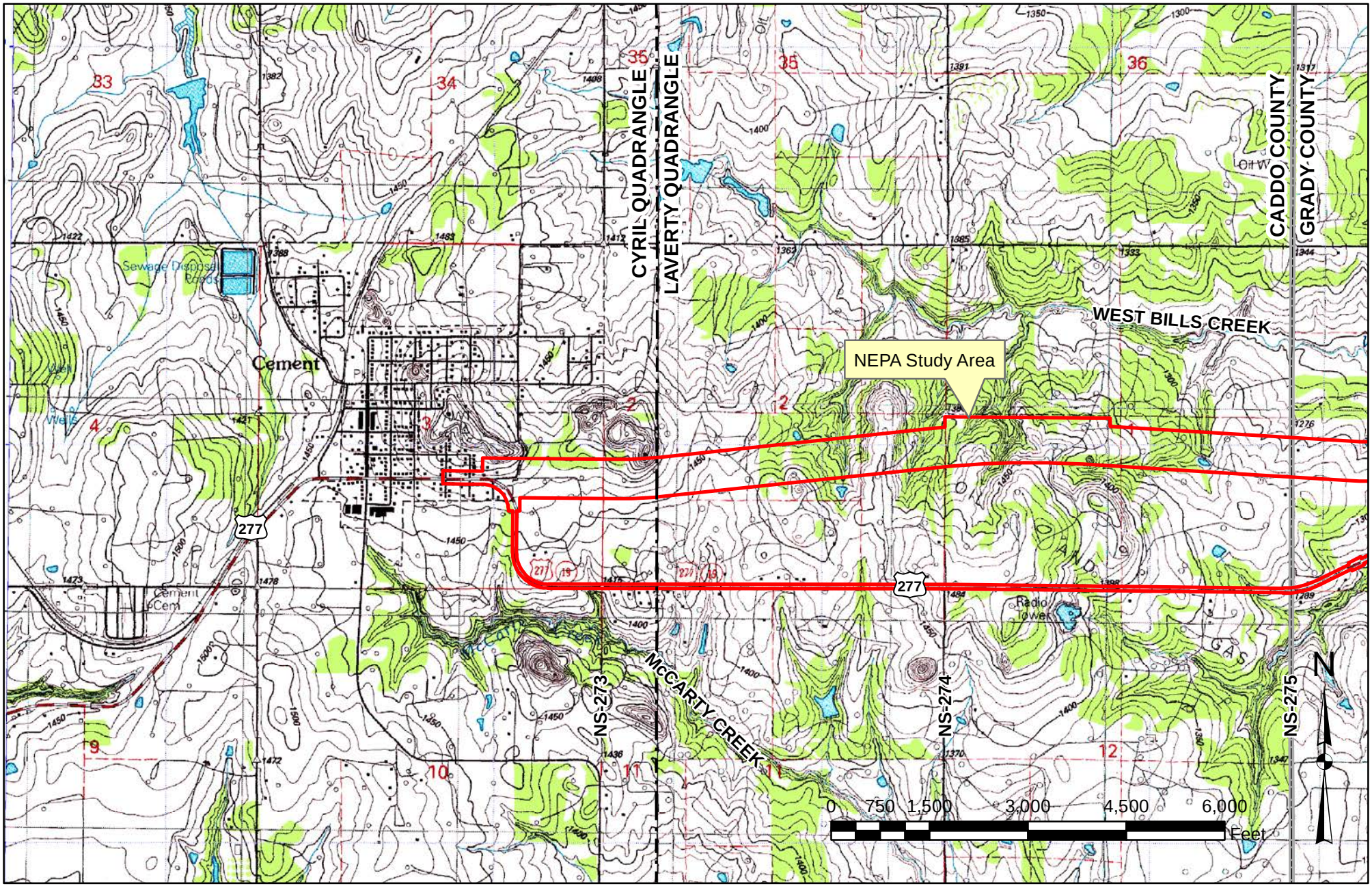
Pond 5 – this man-made agricultural pond is located north of US-277 between West Bills Creek (OW 7) and NS-276 in Section 6, T5N, R8W. Livestock, including cattle, have unrestricted access to this feature. This feature is not illustrated on the 1991 Laverty, OK NWI map. Approximately 0.27 acre occurs within the footprint. This feature is not likely to be subject to regulation by the USACE.



N

JP No. 20953(04) & 20962(04)
US-277 from Cement, OK to I-44
Caddo & Grady Counties, Oklahoma

Figure 1 - Project Location Map
ODOT General Highway Map

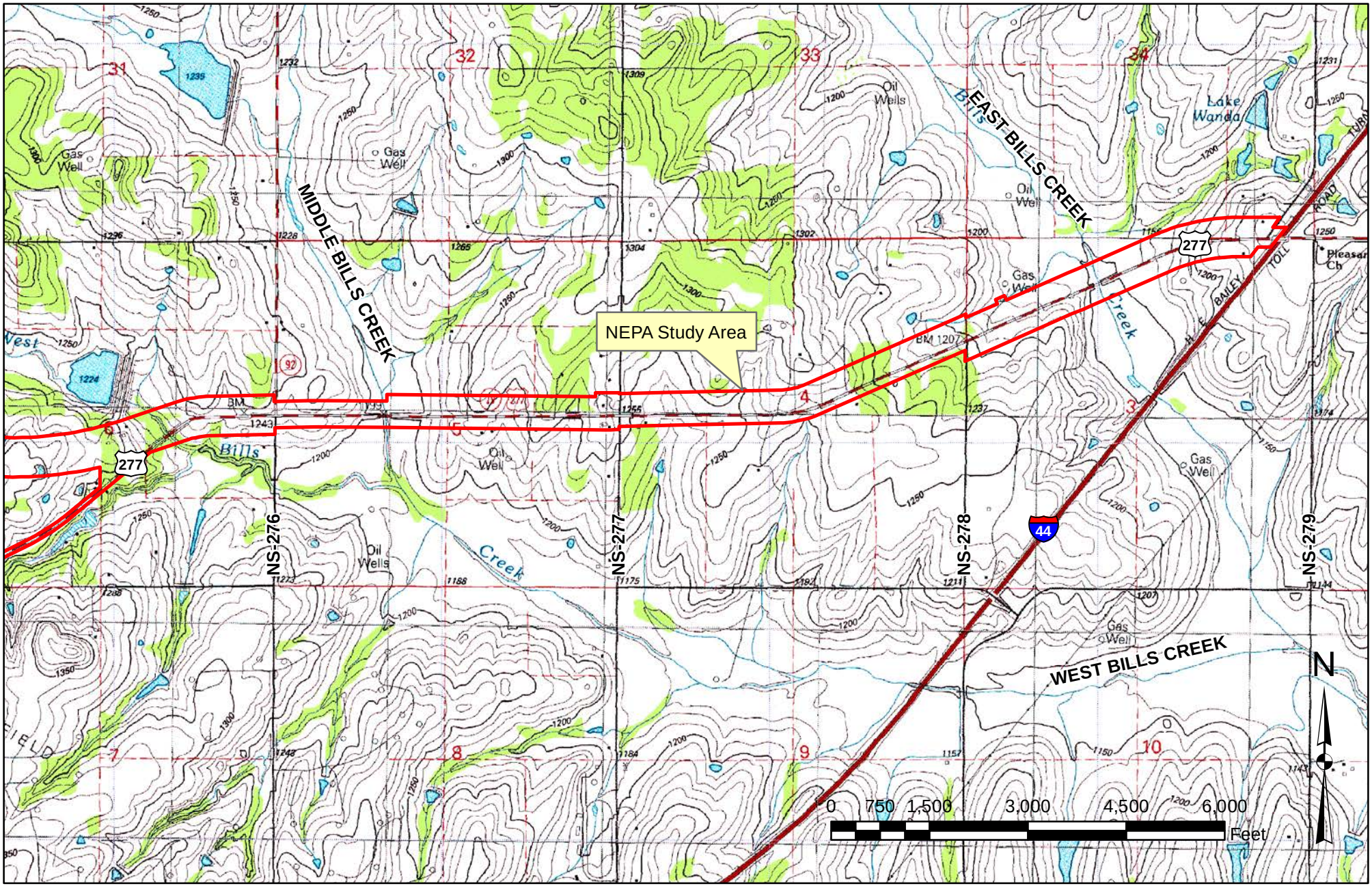


Legend

- Study Area
- County Boundary

JP No. 20953(04) & 20962(04)
US-277 from Cement, OK to I-44
Caddo & Grady Counties, Oklahoma

Figure 2 - USGS 7.5 Minute Topographic Map
Sheet 1 of 2
1991 Cyril, Okla. & 1991 Laverty, Okla. Quadrangles

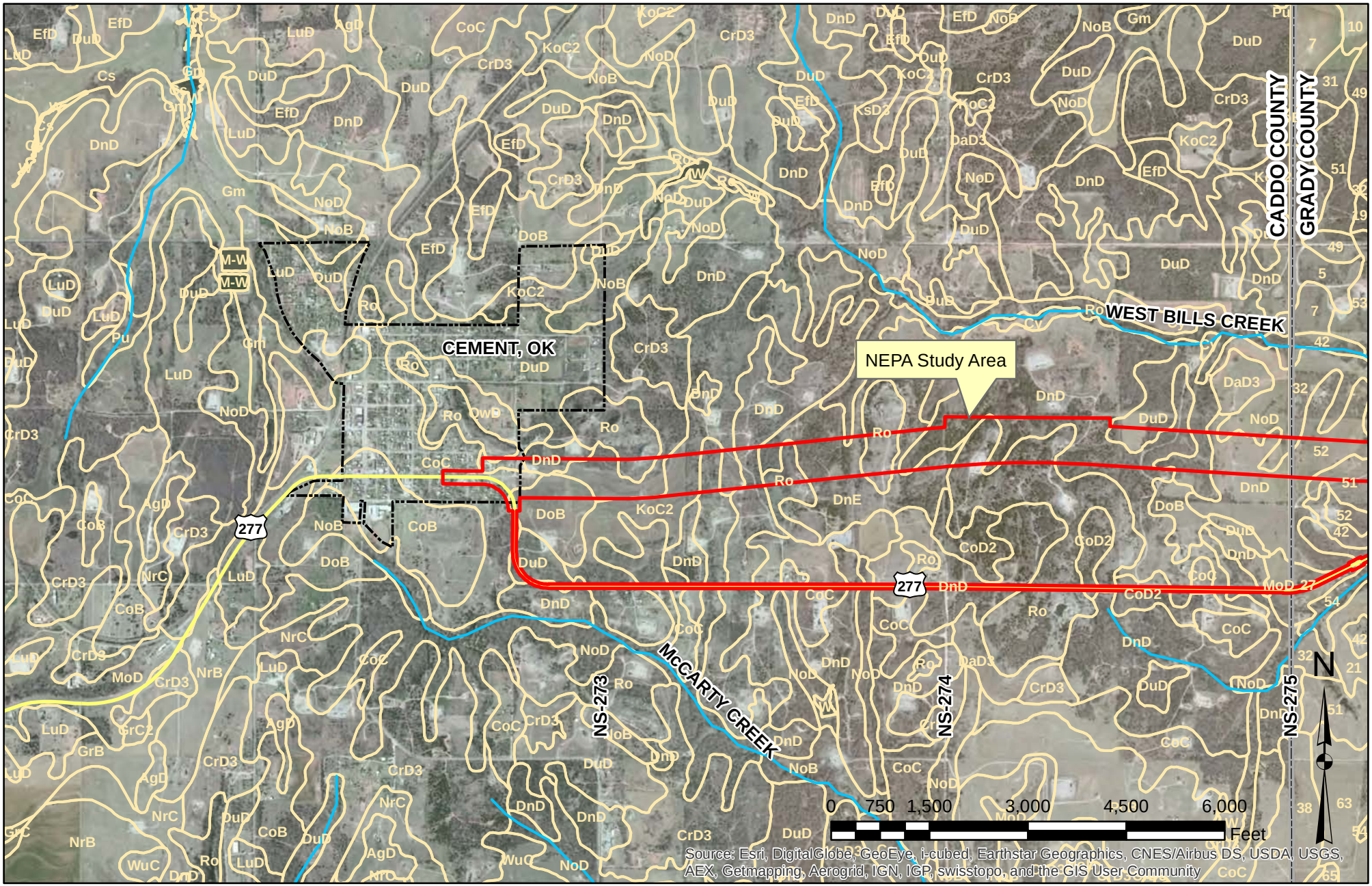


Legend

- Study Area
- County Boundary

JP No. 20953(04) & 20962(04)
US-277 from Cement, OK to I-44
Caddo & Grady Counties, Oklahoma

Figure 2 - USGS 7.5 Minute Topographic Map
Sheet 2 of 2
1991 Laverty, Okla. Quadrangles

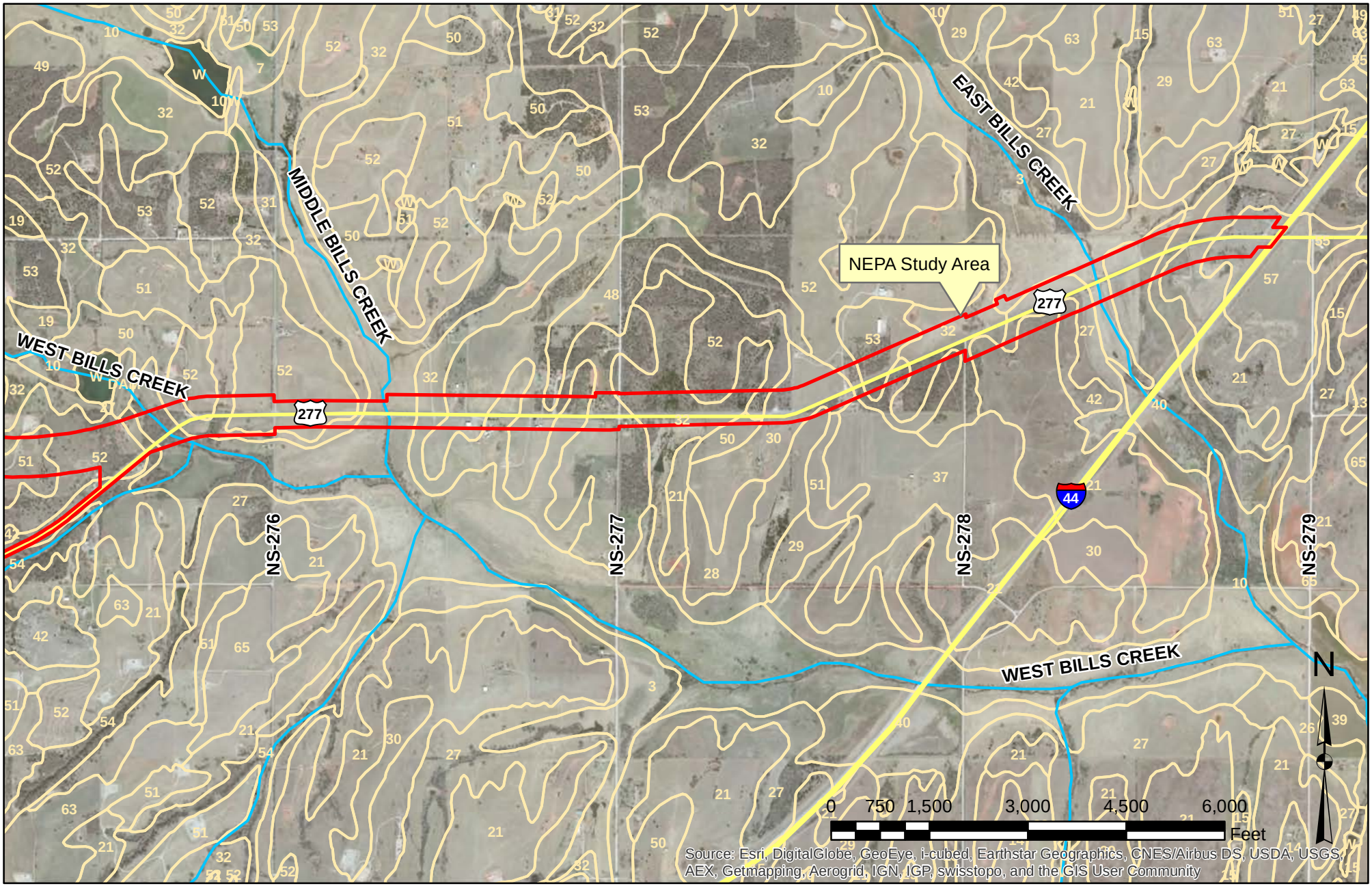


Legend

- Study Area
- County Boundary
- Highways
- Streams
- City Limits
- NRCS Soils

JP No. 20953(04) & 20962(04)
US-277 from Cement, OK to I-44
Caddo & Grady Counties, Oklahoma

Figure 3 - NRCS Soils Information
Sheet 1 of 2

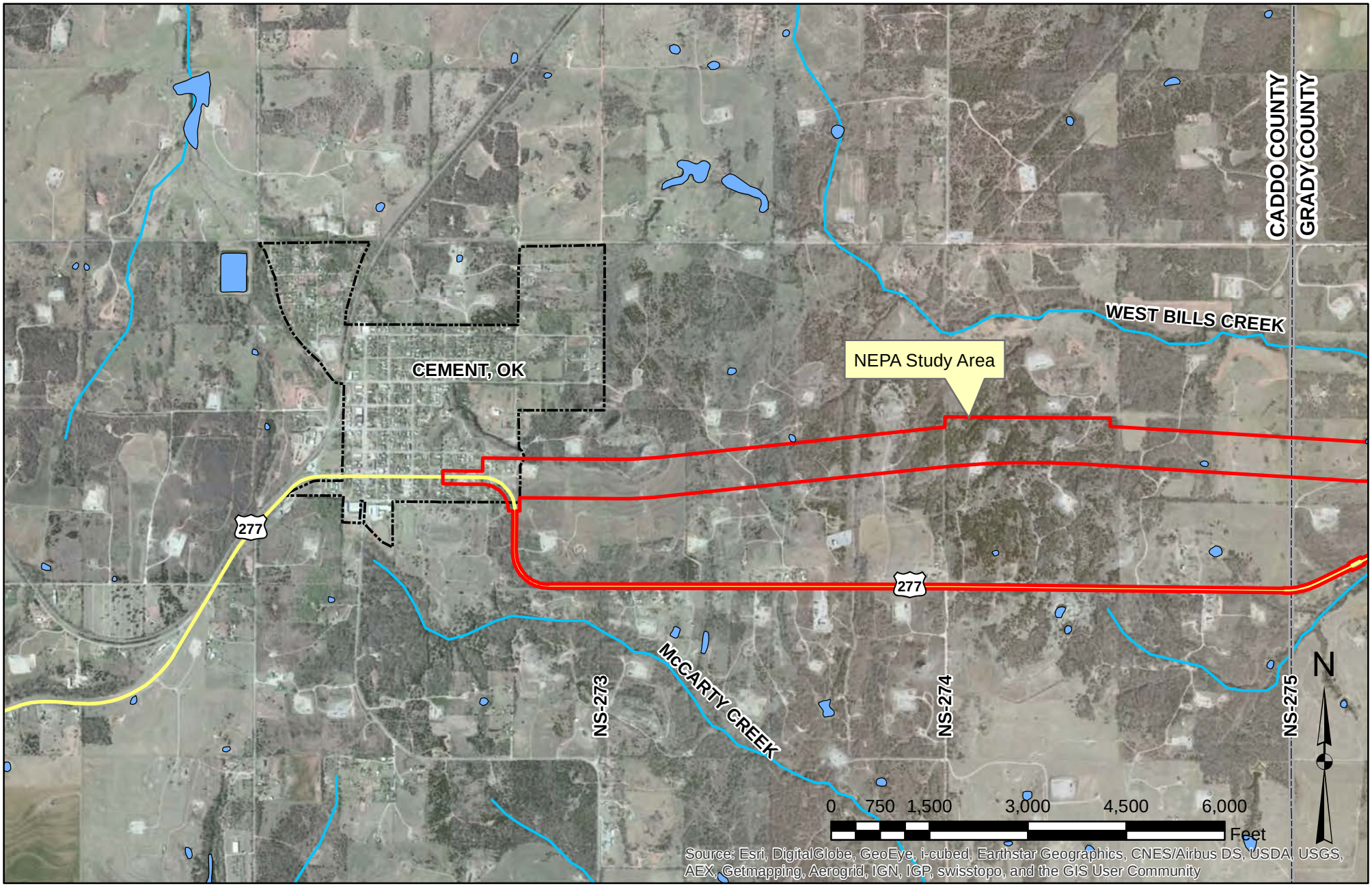


Legend

- Study Area
- County Boundary
- Highways
- Streams
- City Limits
- NRCS Soils

JP No. 20953(04) & 20962(04)
US-277 from Cement, OK to I-44
Caddo & Grady Counties, Oklahoma

Figure 3 - NRCS Soils Information
Sheet 2 of 2

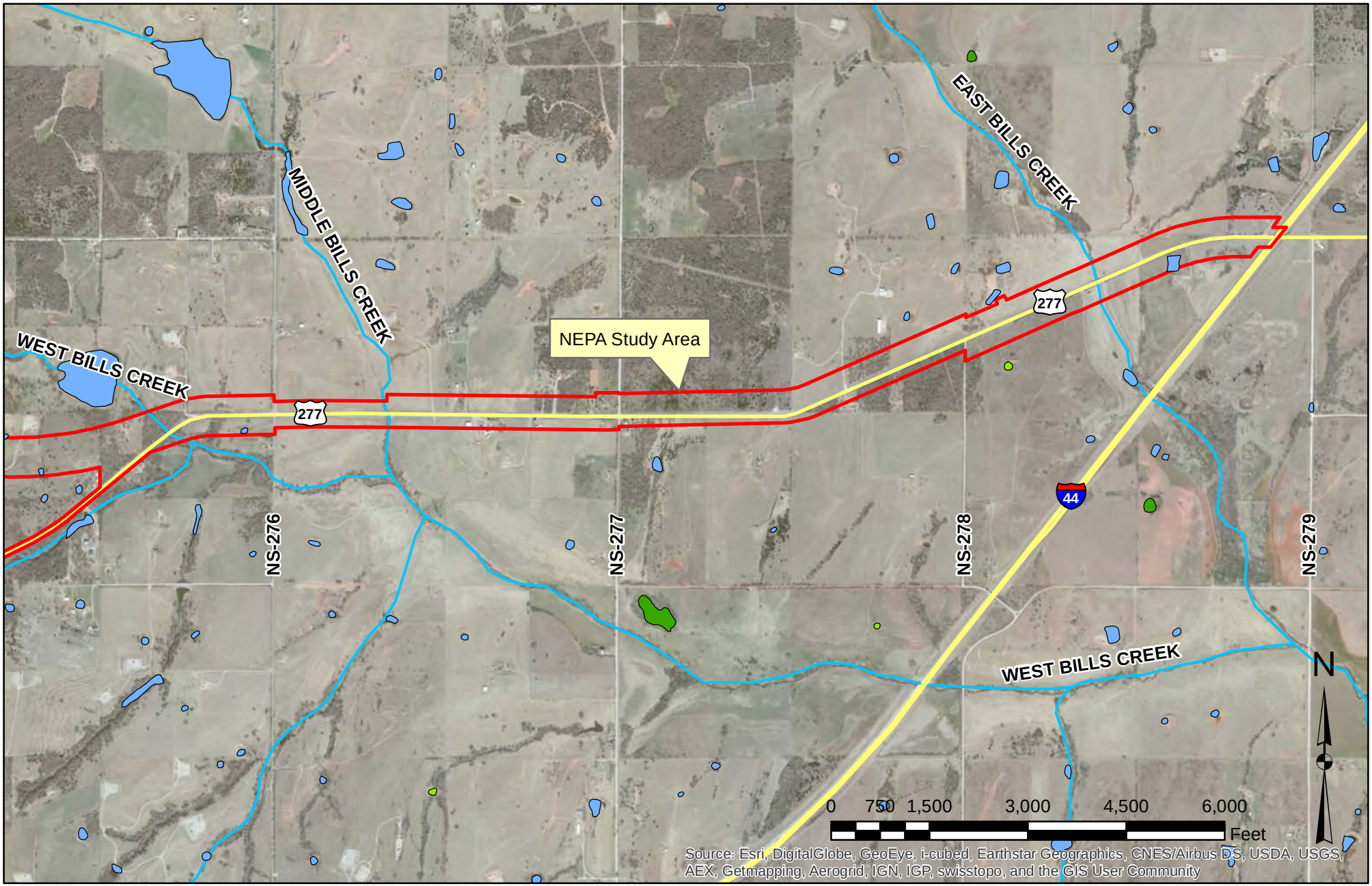


Legend

- Study Area
- County Boundary
- Freshwater Emergent Wetland
- Highways
- Streams
- Freshwater Forested/Shrub Wetland
- City Limits
- Freshwater Pond

JP No. 20953(04) & 20962(04)
US-277 from Cement, OK to I-44
Caddo & Grady Counties, Oklahoma

Figure 4 - USFWS NWI Information
Sheet 1 of 2

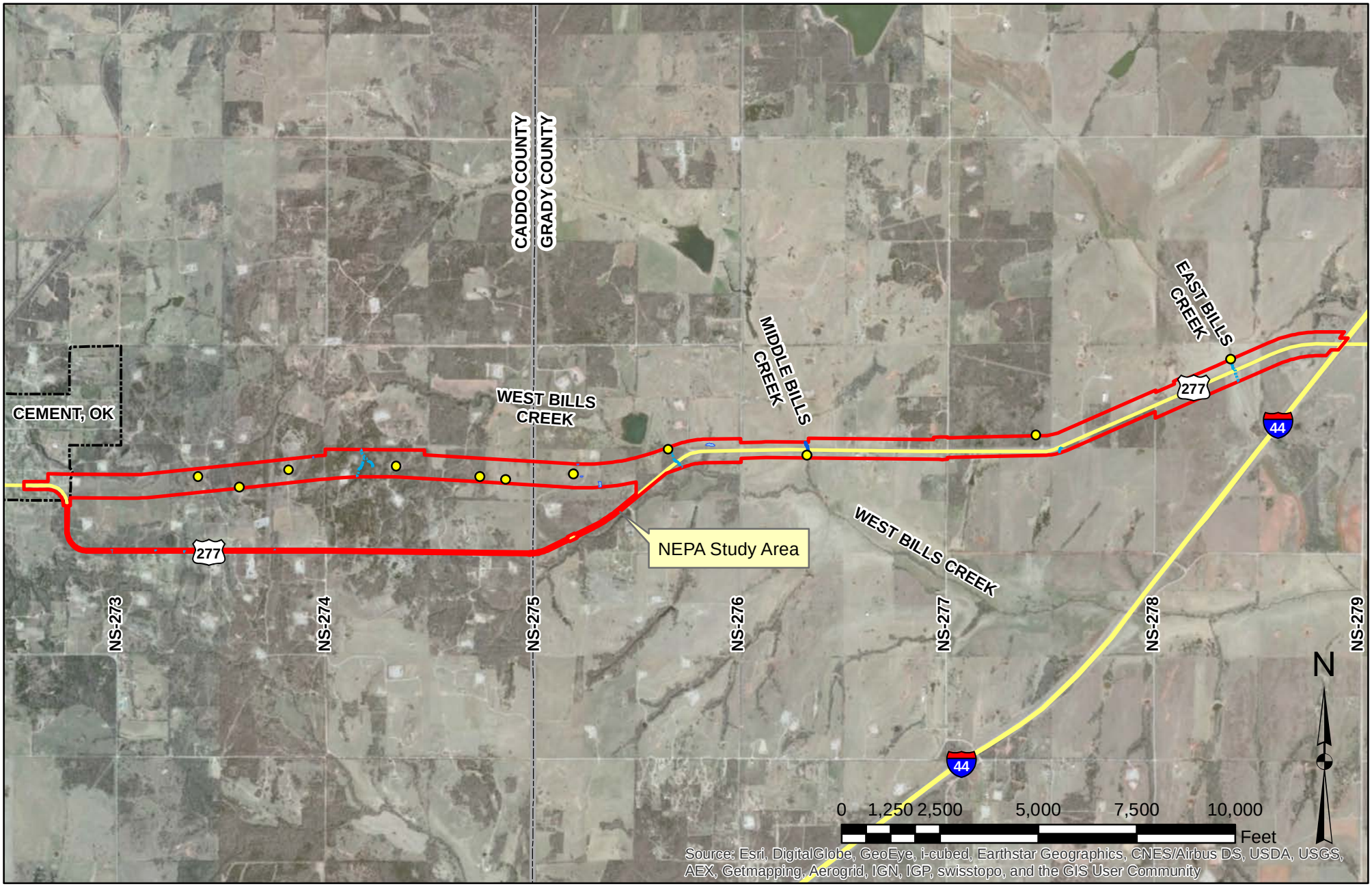


Legend

- Study Area
- County Boundary
- Freshwater Emergent Wetland
- Highways
- Streams
- Freshwater Forested/Shrub Wetland
- City Limits
- Freshwater Pond

JP No. 20953(04) & 20962(04)
US-277 from Cement, OK to I-44
Caddo & Grady Counties, Oklahoma

Figure 4 - USFWS NWI Information
Sheet 2 of 2

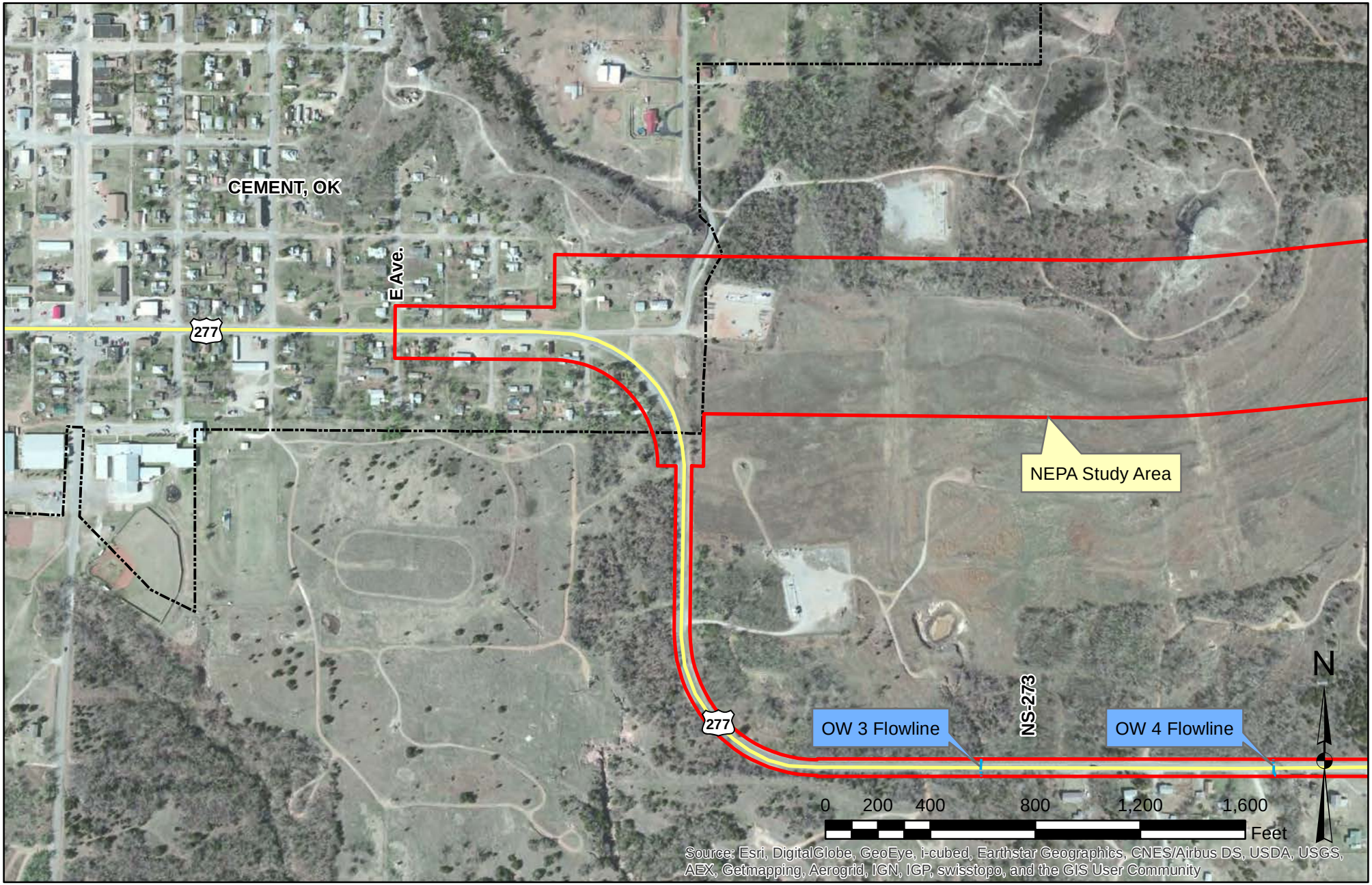


Legend

- Study Area
- County Boundary
- OHWM
- Highways
- Data Point
- Emergent Wetland
- City Limits
- Flowline
- Pond

JP No. 20953(04) & 20962(04)
US-277 from Cement, OK to I-44
Caddo & Grady Counties, Oklahoma

Figure 5 - Aquatic Resources
Sheet Overview

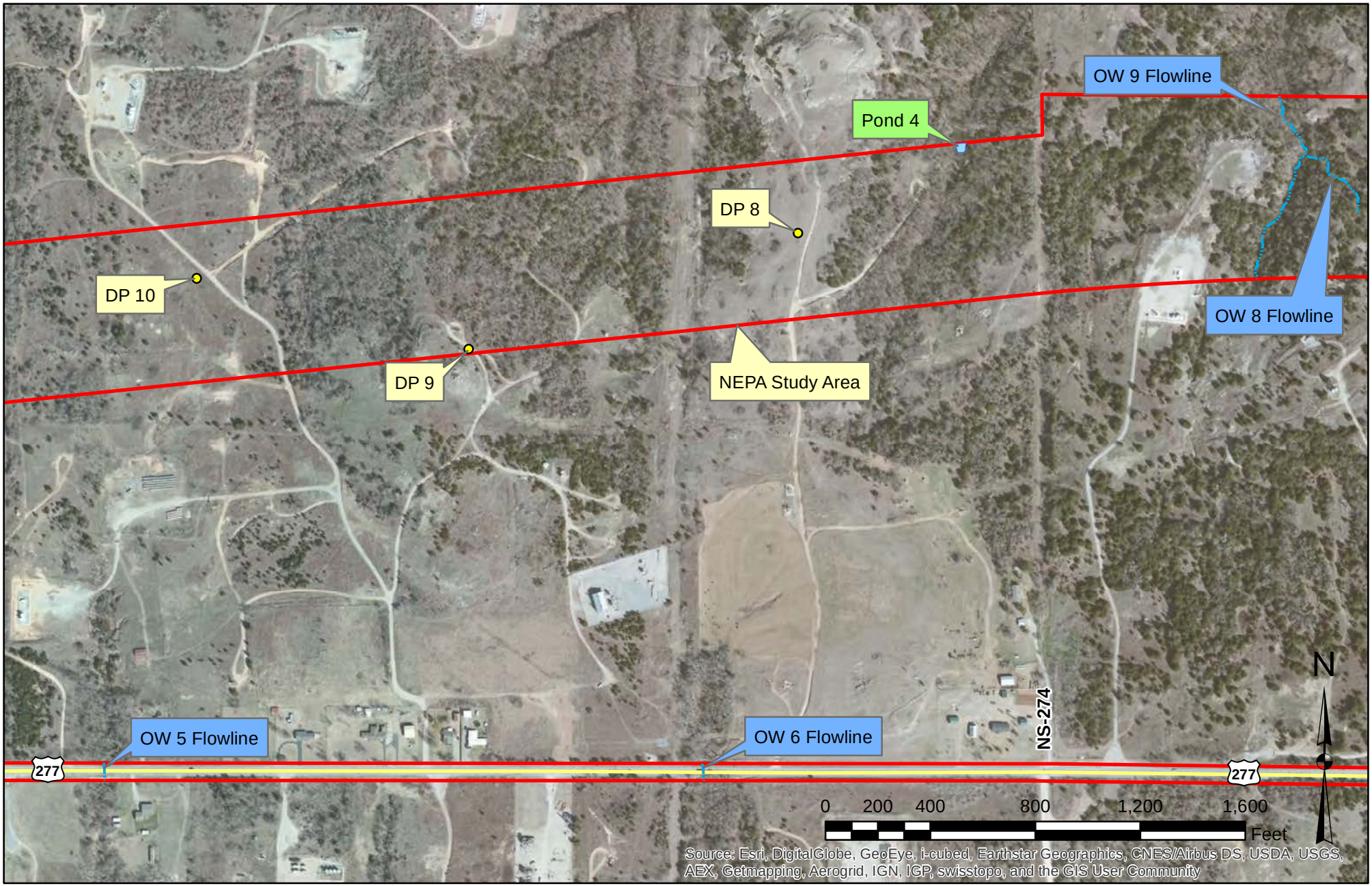


Legend

- Study Area
- County Boundary
- OHWM
- Highways
- Data Point
- Emergent Wetland
- City Limits
- Flowline
- Pond

JP No. 20953(04) & 20962(04)
US-277 from Cement, OK to I-44
Caddo & Grady Counties, Oklahoma

Figure 5 - Aquatic Resources
Sheet 1 of 7

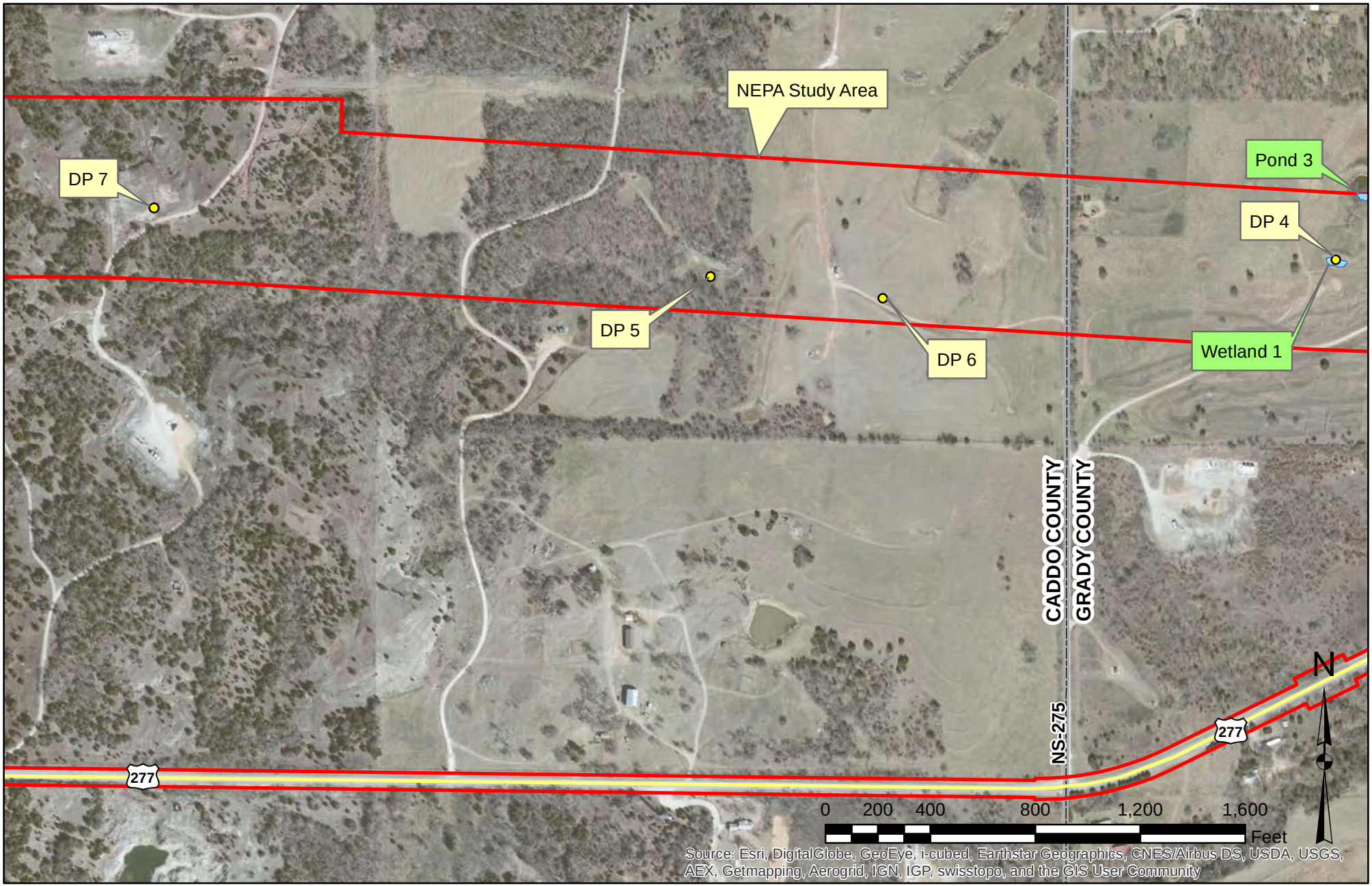


Legend

- Study Area
- County Boundary
- OHWM
- Highways
- Data Point
- Emergent Wetland
- City Limits
- Flowline
- Pond

JP No. 20953(04) & 20962(04)
US-277 from Cement, OK to I-44
Caddo & Grady Counties, Oklahoma

Figure 5 - Aquatic Resources
Sheet 2 of 7

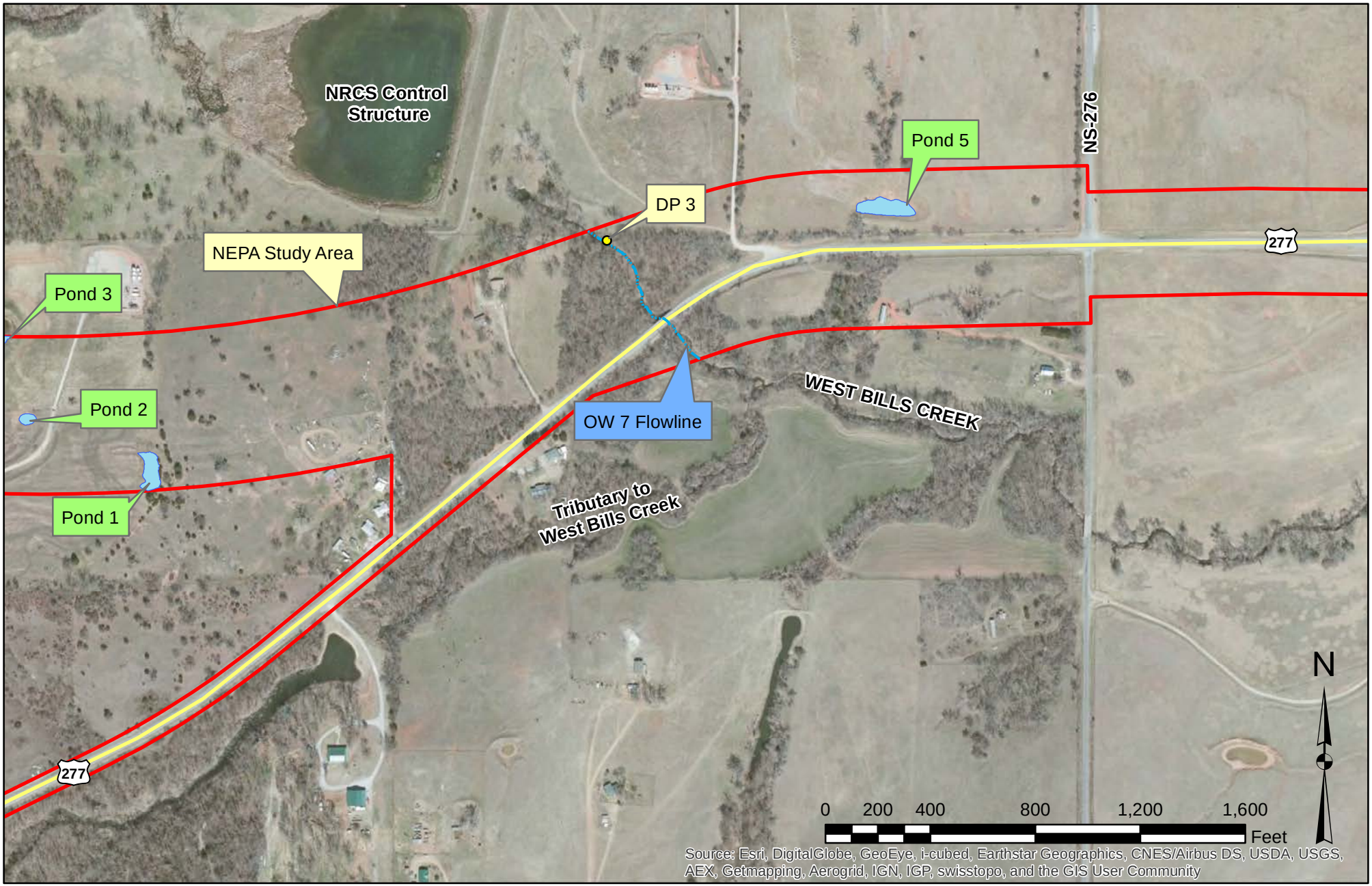


Legend

- Study Area
- County Boundary
- OHWM
- Highways
- Data Point
- Emergent Wetland
- City Limits
- Flowline
- Pond

JP No. 20953(04) & 20962(04)
US-277 from Cement, OK to I-44
Caddo & Grady Counties, Oklahoma

Figure 5 - Aquatic Resources
Sheet 3 of 7

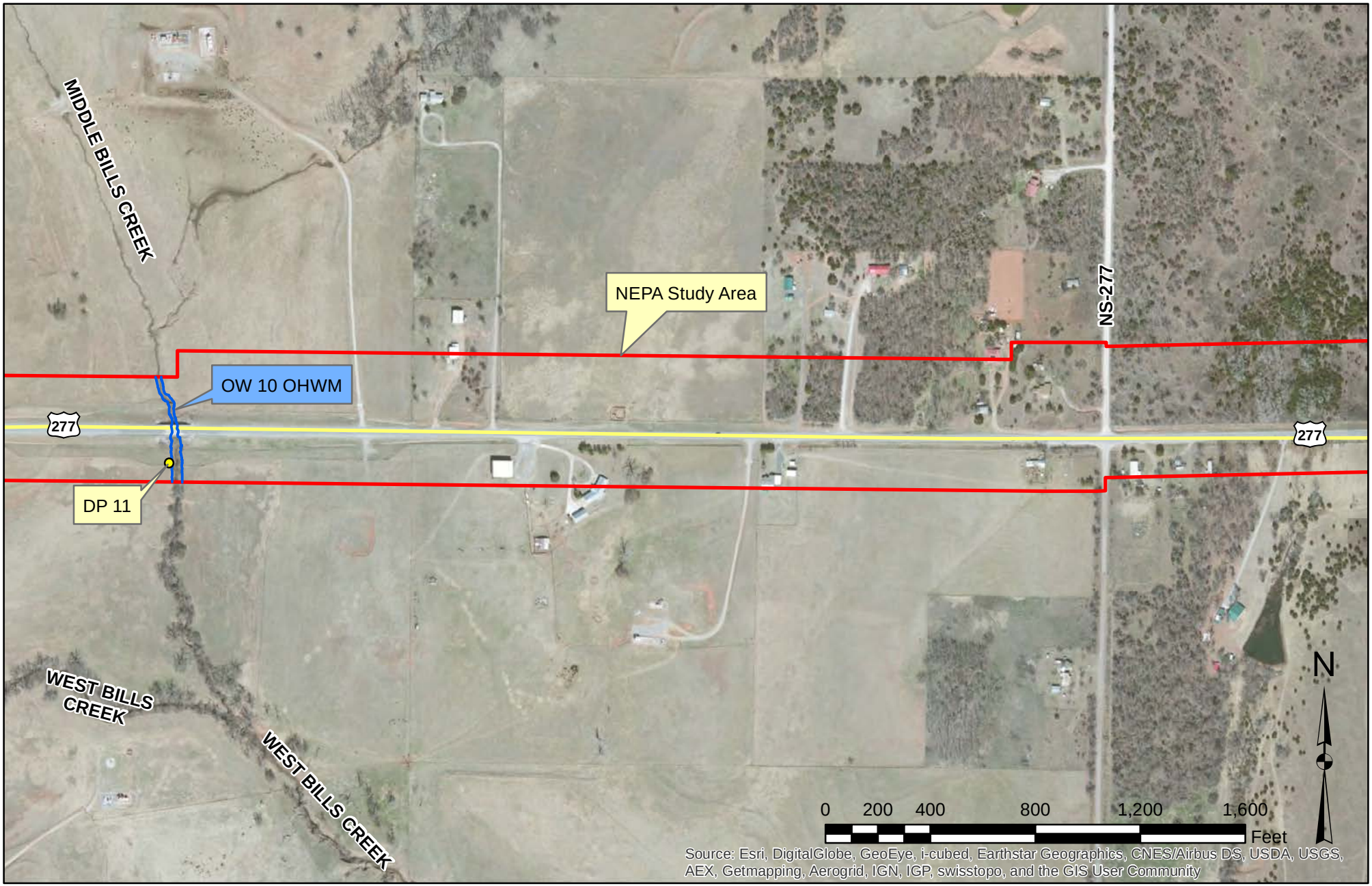


Legend

- Study Area
- County Boundary
- OHWM
- Highways
- Data Point
- Emergent Wetland
- City Limits
- Flowline
- Pond

JP No. 20953(04) & 20962(04)
US-277 from Cement, OK to I-44
Caddo & Grady Counties, Oklahoma

Figure 5 - Aquatic Resources
Sheet 4 of 7

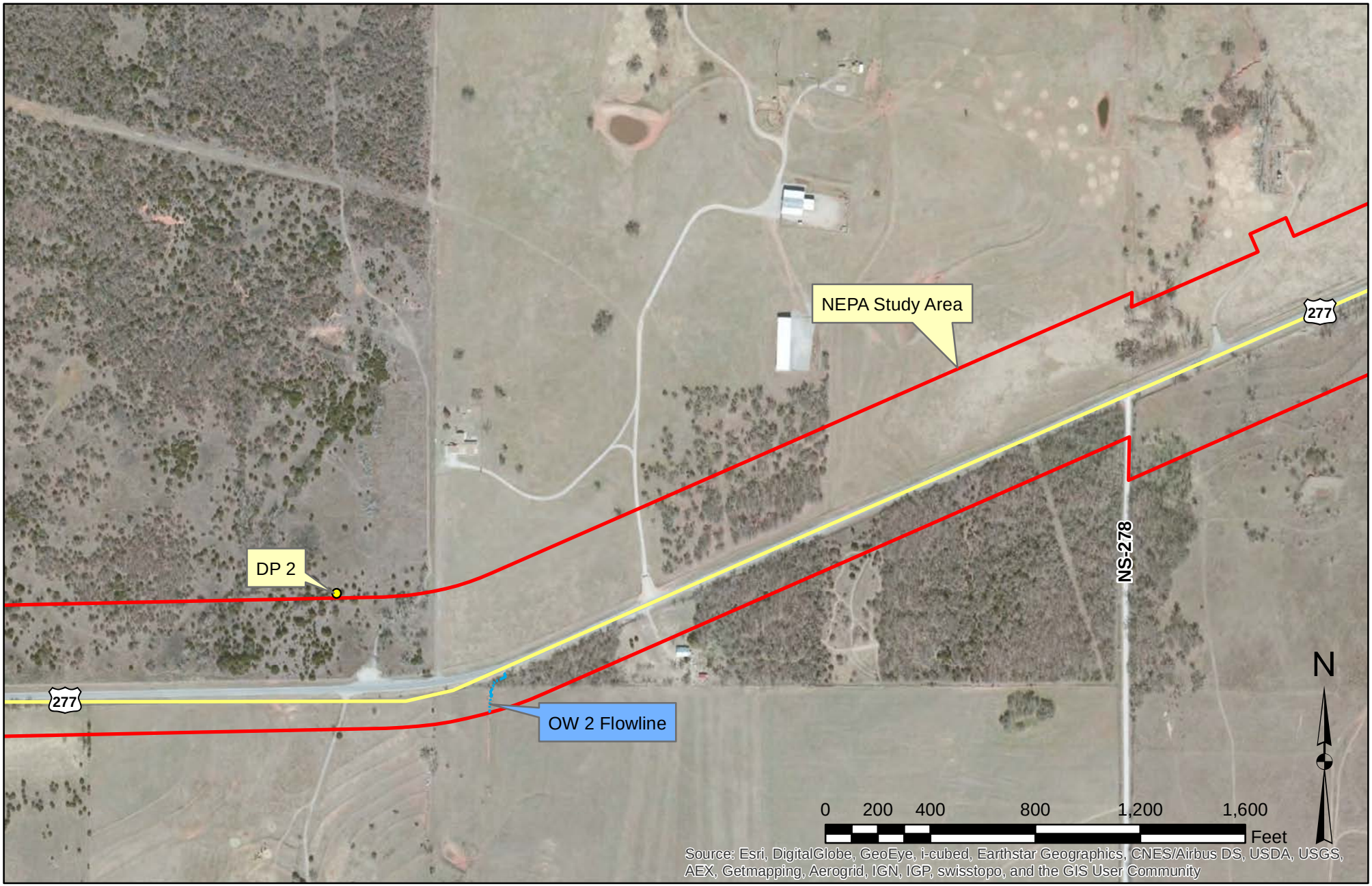


Legend

- Study Area
- County Boundary
- OHWM
- Highways
- Data Point
- Emergent Wetland
- City Limits
- Flowline
- Pond

JP No. 20953(04) & 20962(04)
US-277 from Cement, OK to I-44
Caddo & Grady Counties, Oklahoma

Figure 5 - Aquatic Resources
Sheet 5 of 7

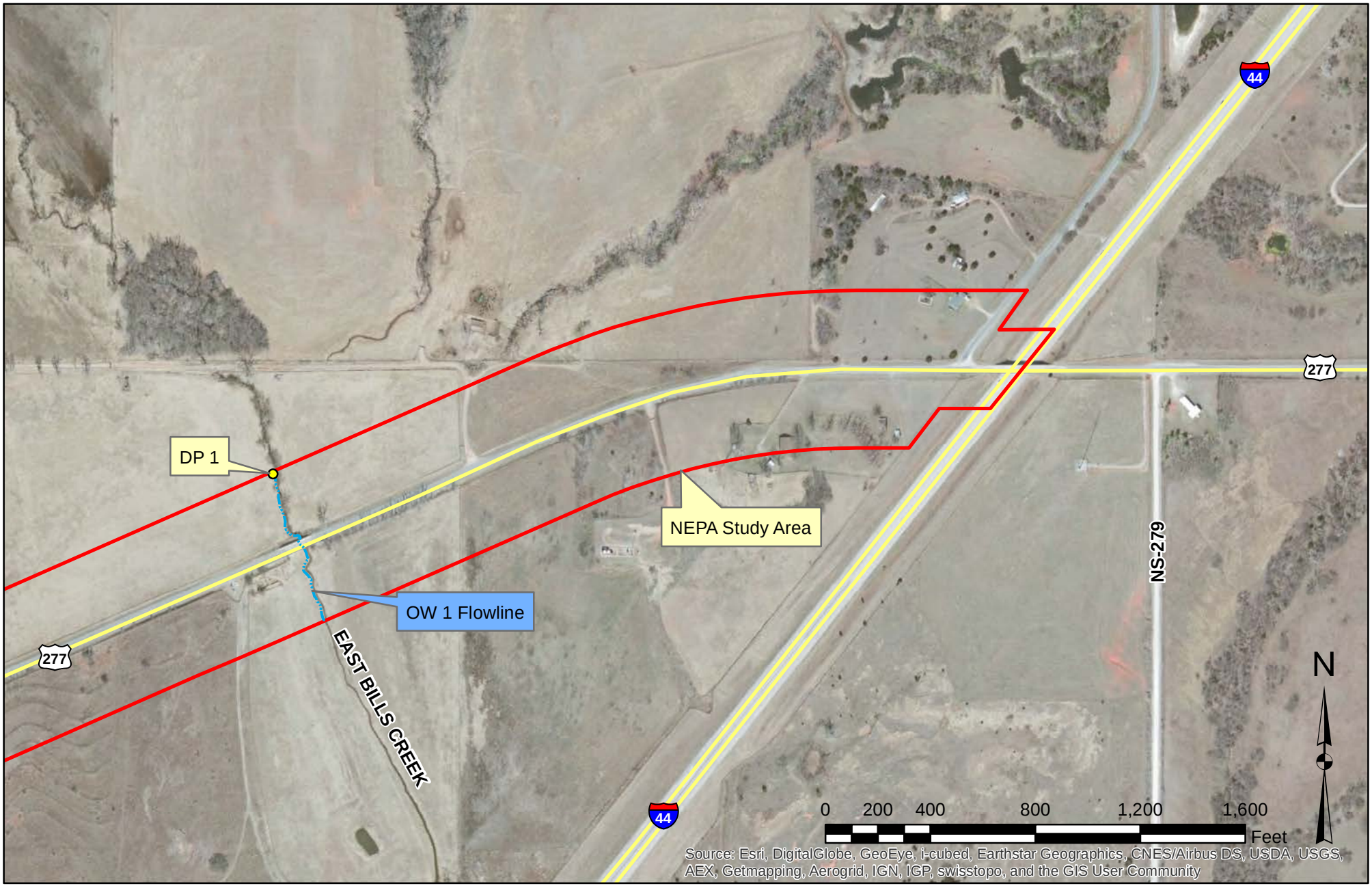


Legend

- Study Area
- County Boundary
- OHWM
- Highways
- Data Point
- Emergent Wetland
- City Limits
- Flowline
- Pond

JP No. 20953(04) & 20962(04)
US-277 from Cement, OK to I-44
Caddo & Grady Counties, Oklahoma

Figure 5 - Aquatic Resources
Sheet 6 of 7



Legend

- Study Area
- County Boundary
- OHWM
- Highways
- Data Point
- Emergent Wetland
- City Limits
- Flowline
- Pond

JP No. 20953(04) & 20962(04)
US-277 from Cement, OK to I-44
Caddo & Grady Counties, Oklahoma

Figure 5 - Aquatic Resources
Sheet 7 of 7

▲View of US-277 near Middle Bills Creek. View is to the west.

▲View of US-277 at Middle Bills Creek. View is to the west.

▲View of US-277 at Middle Bills Creek. View is to the east.

▲View of upstream side of the existing bridge over East Bills Creek (OW 1). View is to the south.

▲View of upstream channel of OW 1. View is to the northwest.

▲View of upstream channel of OW 1. View is to the southwest.

Caddo & Grady Counties, OK
J/P No. 20953(04) & 20962(04)

On-site photographs taken June 9-11, 2014
Garver Project No. 11037080

▲View of downstream side of the existing bridge over East Bills Creek (OW 1). View is to the northeast.

▲View of the OW 1 channel under the existing bridge. View is to the north.

▲OW 2: View of riprap at the RCB outlet on the south side of US-277. View is to the northeast.

▲View of downstream channel of OW 2. View is to the southwest.

▲OW 3: View of upstream (north) side of the RCB. View is to the southwest.

▲OW 3: View of upstream channel. View is looking down from US-277.

Caddo & Grady Counties, OK
J/P No. 20953(04) & 20962(04)

On-site photographs taken June 9-11, 2014
Garver Project No. 11037080

▲OW 3: View of downstream channel and structure outlet. View is looking down from US-277.

▲OW 4: View of upstream side (north) of the RCB. View is to the southwest.

▲OW 4: View of upstream channel. View is to the north.

▲OW 4: View of structure outlet. View is to the west.

▲View of upstream channel of OW 5 from US-277. View is to the north.

▲View of downstream channel of OW 5. View is to the south.

Caddo & Grady Counties, OK
J/P No. 20953(04) & 20962(04)

On-site photographs taken June 9-11, 2014
Garver Project No. 11037080

▲OW 6: View of upstream channel. View is to the north.

▲OW 6: View of downstream channel. View is to the south.

▲View of upstream (north) side of the existing bridge over West Bills Creek (OW 7). View is to the southwest.

▲OW 7: View of channel under the existing bridge. View is to the south (looking downstream).

▲View of upstream channel of OW 7. View is to the northwest.

▲View of OW 8 channel. View is to the northwest (looking downstream).

Caddo & Grady Counties, OK
J/P No. 20953(04) & 20962(04)

On-site photographs taken June 9-11, 2014
Garver Project No. 11037080

▲View of OW 8 channel. View is to the northwest (looking downstream).

▲View of OW 9 channel. View is to the southwest (looking upstream).

▲View of OW 9 channel. View is to the northeast (looking downstream).

▲View of upstream channel and existing bridge over Middle Bills Creek (OW 10). View is to the south.

▲View of upstream channel of OW 10. View is to the north.

▲View of downstream channel of OW 10. View is to the south.

Caddo & Grady Counties, OK
J/P No. 20953(04) & 20962(04)

On-site photographs taken June 9-11, 2014
Garver Project No. 11037080

▲View of emergent wetland (Wetland 1). View is to the southwest.

▲View of Pond 1. View is to the south.

▲View of Pond 2. View is to the west.

▲View of Pond 3. View is to the east.

▲View of Pond 4. View is to the north.

▲View of Pond 5. View is to the north.

Caddo & Grady Counties, OK
J/P No. 20953(04) & 20962(04)

On-site photographs taken June 9-11, 2014
Garver Project No. 11037080

Print Form

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: JP 20953(04) & 20962(04) US-277 City/County: Grady County Sampling Date: 06/09/2014

Applicant/Owner: Oklahoma Department of Transportation State: OK Sampling Point: DP 1

Investigator(s): WJS Section, Township, Range: Sec. 3 T5N R8W

Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): none Slope (%): _____

Subregion (LRR): LRR J Lat: 34.940898°N Long: 98.033940°W Datum: NAD83

Soil Map Unit Name: 3 - Cyril fine sandy loam, 0-1% slopes, occasionally flooded NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No _____	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes _____	No X	
Wetland Hydrology Present?	Yes _____	No X	

Remarks:

Does not meet all wetland criteria.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Black willow (Salix nigra)*	30	Yes	FACW
2. *Boxelder (Acer negundo)*	10	Yes	FAC
3. *American elm (Ulmus americana)*	5	No	FAC
4.			
	45	= Total Cover	
Sapling/Shrub Stratum (Plot size: 30')			
1. *none*			
2.			
3.			
4.			
5.			
	_____	= Total Cover	
Herb Stratum (Plot size: 30')			
1. *Bermudagrass (Cynodon dactylon)*	90	Yes	FACU
2. *Carex species*	5	No	-
3. *Foxtail (Setaria pumila)*	10	No	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	105	= Total Cover	
Woody Vine Stratum (Plot size: 30')			
1. *Grape (Vitis riparia)*	5	Yes	FAC
2.			
	5	= Total Cover	

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC−): 3 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: (A)		(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No _____

Remarks:

Meets hydrophytic vegetation criteria.

SOIL

Sampling Point: DP 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 4	10YR3/3	100					fine	silty loam
4 - 16	2.5YR3/4	100					fine	silty loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** X

Remarks:

Does not meet hydric soil criteria.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) (**where not tilled**)
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) (**where tilled**)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) (**LRR F**)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): -

Water Table Present? Yes _____ No X Depth (inches): >16"

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): >16"

Wetland Hydrology Present? **Yes** _____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Does not meet wetland hydrology criteria.

Print Form

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: JP 20953(04) & 20962(04) US-277 City/County: Grady County Sampling Date: 06/09/2014

Applicant/Owner: Oklahoma Department of Transportation State: OK Sampling Point: DP 2

Investigator(s): WJS Section, Township, Range: Sec. 4 T5N R8W

Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): _____

Subregion (LRR): LRR J Lat: 34.935618°N Long: 98.050422°W Datum: NAD83

Soil Map Unit Name: 52 - Stephenville-Darnell complex, 1-8% slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No _____	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes _____ No X	
Wetland Hydrology Present?	Yes X No _____	

Remarks:

Does not meet all wetland criteria.
Appears to be remanent of a pond. Berms present on three sides.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *none*			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: 30')			
1. *none*			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: 30')			
1. *Ragweed (Ambrosia trifida)*	15	Yes	FAC
2. *Spike rush (Eleocharis acicularis)*	25	Yes	OBL
3. *Daisy fleabane (Erigeron annuus)*	5	No	FACU
4. *Carex species*	10	No	-
5.			
6.			
7.			
8.			
9.			
10.			
	55 = Total Cover		
Woody Vine Stratum (Plot size: 30')			
1. *none*			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC−): 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: (A)		(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No _____

Remarks:

Meets hydrophytic vegetation criteria.

SOIL

Sampling Point: DP 2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-22	5YR3/3	100					fine	sandy clay

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** X

Remarks:

Does not meet hydric soil criteria.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- X Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- X Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) (**where not tilled**)
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) (**where tilled**)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) (**LRR F**)

Field Observations:

Surface Water Present? Yes X No _____ Depth (inches): 0-2"

Water Table Present? Yes X No _____ Depth (inches): surface

Saturation Present? (includes capillary fringe) Yes X No _____ Depth (inches): surface

Wetland Hydrology Present? **Yes** X **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Meets wetland hydrology criteria.

Print Form

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: JP 20953(04) & 20962(04) US-277 City/County: Grady County Sampling Date: 06/10/2014

Applicant/Owner: Oklahoma Department of Transportation State: OK Sampling Point: DP 3

Investigator(s): WJS Section, Township, Range: Sec. 6 T5N R8W

Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): convex Slope (%): _____

Subregion (LRR): LRR J Lat: 34.934585°N Long: 98.081611°W Datum: NAD83

Soil Map Unit Name: 10 - Gracemont fine sandy loam, 0-1% slopes, occasionally flooded NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No X	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes X	No _____	
Wetland Hydrology Present?	Yes X	No _____	

Remarks:

Does not meet all wetland criteria.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Mockernut hickory (Carya tomentosa)*	30	-	NI
2. *Pecan (Carya illinoinensis)*	20	Yes	FAC
3.			
4.			
	50	= Total Cover	
Sapling/Shrub Stratum (Plot size: 30')			
1. *Slippery elm (Ulmus rubra)*	10	Yes	FAC
2. *Redbud (Cercis canadensis)*	15	Yes	UPL
3. *Black willow (Salix nigra)*	2	No	FACW
4.			
5.			
	27	= Total Cover	
Herb Stratum (Plot size: 30')			
1. *Horse tail (Equisetum hyemale)*	40	Yes	FACW
2. *Spike rush (Eleocharis acicularis)*	10	No	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	55	= Total Cover	
Woody Vine Stratum (Plot size: 30')			
1. *Poison ivy (Toxicodendron radicans)*	25	Yes	FACU
2. *Virginia creeper (Parthenocissus quinquefolia)*	10	Yes	FACU
	35	= Total Cover	

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC−): 3 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	10	x 1 =	10
FACW species	42	x 2 =	84
FAC species	30	x 3 =	90
FACU species	35	x 4 =	140
UPL species	15	x 5 =	75
Column Totals:	132 (A)		399 (B)

Prevalence Index = B/A = 3.02

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No X

Remarks:

Does not meet hydrophytic vegetation criteria.

SOIL

Sampling Point: DP 3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 6	7.5YR3/4	100					fine	sandy loam
6 - 12	10YR3/1	100					fine	sandy loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- X Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

Meets hydric soil criteria.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- X Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) (**where not tilled**)
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) (**where tilled**)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) (**LRR F**)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): -

Water Table Present? Yes ___ No X Depth (inches): >12"

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): >12"

Wetland Hydrology Present? **Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Meets wetland hydrology criteria.

Print Form

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: JP 20953(04) & 20962(04) US-277 City/County: Grady County Sampling Date: 06/10/2014

Applicant/Owner: Oklahoma Department of Transportation State: OK Sampling Point: DP 4

Investigator(s): WJS Section, Township, Range: Sec. 6 T5N R8W

Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): concave Slope (%): _____

Subregion (LRR): LRR J Lat: 34.932888°N Long: 98.089652°W Datum: NAD83

Soil Map Unit Name: 51 - Stephenville fine sandy loam, 3-8% slopes, severly eroded NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No _____	**Is the Sampled Area within a Wetland?** Yes X No _____
Hydric Soil Present?	Yes X No _____	
Wetland Hydrology Present?	Yes X No _____	

Remarks:

Meets all wetland criteria.
Likely a pond that as filled in. A berm is present on the north side.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Black willow (Salix nigra)*	10	Yes	FACW
2.			
3.			
4.			
	10 = Total Cover		
Sapling/Shrub Stratum (Plot size: 30')			
1. *none*			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: 30')			
1. *Smartweed (Polygonum pensylvanicum)*	80	Yes	FACW
2. *Knotweed (Polygonum amphibium)*	10	No	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	90 = Total Cover		
Woody Vine Stratum (Plot size: 30')			
1. *none*			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC−): 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

X 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No _____

Remarks:

Meets hydrophytic vegetation criteria.

SOIL

Sampling Point: DP 4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-22	2.5YR4/6	90	2.5YR5/1	10	C	M	fine	sandy loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- X Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** _____

Remarks:

Meets hydric soil criteria.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- X Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) (**where not tilled**)
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) (**where tilled**)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) (**LRR F**)

Field Observations:

Surface Water Present? Yes X No _____ Depth (inches): 2"

Water Table Present? Yes X No _____ Depth (inches): surface

Saturation Present? (includes capillary fringe) Yes X No _____ Depth (inches): surface

Wetland Hydrology Present? **Yes** X **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Meets wetland hydrology criteria.

Print Form

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: JP 20953(04) & 20962(04) US-277 City/County: Caddo County Sampling Date: 06/10/2014

Applicant/Owner: Oklahoma Department of Transportation State: OK Sampling Point: DP 5

Investigator(s): WJS Section, Township, Range: Sec. 1 T5N R9W

Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): _____

Subregion (LRR): LRR J Lat: 34.932704°N Long: 98.097604°W Datum: NAD83

Soil Map Unit Name: DuD - Dougherty and Eufaula soils, 3-8% slopes NWI classification: PUSAh

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No _____	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes _____	No X	
Wetland Hydrology Present?	Yes _____	No X	

Remarks:

Does not meet all wetland criteria.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *none*			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: 30')			
1. *Black willow (Silax nigra)*	5	Yes	FACW
2. *Cottonwood (Populus deltoides)*	10	Yes	FAC
3.			
4.			
5.			
	15 = Total Cover		
Herb Stratum (Plot size: 30')			
1. *Common rush (Juncus effusus)*	10	No	OBL
2. *Smartweed (Polygonum pensylvanicum)*	15	No	FACW
3. *Pokeweed (Phytolacca americana)*	20	No	FACU
4. *Ryegrass (Lolium perenne)*	60	Yes	FACU
5. *Ragweed (Ambrosia trifida)*	15	No	FAC
6.			
7.			
8.			
9.			
10.			
	120 = Total Cover		
Woody Vine Stratum (Plot size: 30')			
1. *none*			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC−): 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No _____

Remarks:

Meets hydrophytic vegetation criteria.

SOIL

Sampling Point: DP 5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0 - 4	7.5YR3/3	100					fine	loam
4 - 10	10YR3/1	100					fine	loam
10 - 18	7.5YR3/3	100					fine	loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** X

Remarks:

Does not meet hydric soil criteria.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) (**where not tilled**)
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) (**where tilled**)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) (**LRR F**)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): -

Water Table Present? Yes _____ No X Depth (inches): >18"

Saturation Present? (includes capillary fringe) Yes X No X Depth (inches): >18"

Wetland Hydrology Present? **Yes** _____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

does not meet wetland hydrology criteria.

Print Form

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: JP 20953(04) & 20962(04) US-277 City/County: Caddo County Sampling Date: 06/10/2014

Applicant/Owner: Oklahoma Department of Transportation State: OK Sampling Point: DP 6

Investigator(s): WJS Section, Township, Range: Sec. 1 T5N R9W

Landform (hillslope, terrace, etc.): field Local relief (concave, convex, none): none Slope (%): _____

Subregion (LRR): LRR J Lat: 34.932480°N Long: 98.095413°W Datum: NAD83

Soil Map Unit Name: DnD - Darnell-Noble association, 3-12% slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No X	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes _____	No X	
Wetland Hydrology Present?	Yes _____	No X	

Remarks:

Does not meet any wetland criteria.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *none*			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 30')			
1. *none*			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 30')			
1. *Fescue (Schedonorus arundinaceus)*	90	Yes	FACU
2. *Blackeyed Susan (Rudbeckia hirta)*	8	No	FACU
3. *Daisy Fleabane (Erigeron annuus)*	2	No	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: 30')			
1. *none*			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC−): 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species 100	x 4 =	400
UPL species	x 5 =	
Column Totals: 100 (A)		400 (B)

Prevalence Index = B/A = 4.0

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No X

Remarks:

Does not meet hydrophytic vegetation criteria.

SOIL

Sampling Point: DP 6

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 18	2.5YR3/4	100					fine	sandy loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** X

Remarks:

Does not meet hydric soil criteria.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) (**where not tilled**)
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) (**where tilled**)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) (**LRR F**)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): -

Water Table Present? Yes _____ No X Depth (inches): >18"

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): >18"

Wetland Hydrology Present? **Yes** _____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Does not meet wetland hydrology criteria.

Print Form

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: JP 20953(04) & 20962(04) US-277 City/County: Caddo County Sampling Date: 06/10/2014

Applicant/Owner: Oklahoma Department of Transportation State: OK Sampling Point: DP 7

Investigator(s): WJS Section, Township, Range: Sec. 1 T5N R9W

Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): convex Slope (%): _____

Subregion (LRR): LRR J Lat: 34.933419°N Long: 98.104685°W Datum: NAD83

Soil Map Unit Name: Ro - Darnell-Rock outcrop complex, 20-75% slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No X	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes _____	No X	
Wetland Hydrology Present?	Yes _____	No X	

Remarks:

Does not meet any wetland criteria.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *none*			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: 30')			
1. *Eastern redcedar (Juniperus virginiana)*	5	Yes	UPL
2. *Blackjack oak (Quercus marilandica)*	5	-	NI
3. *Texas buckeye (Aesculus glabra var. arguta)*	5	Yes	FAC
4.			
5.			
	15 = Total Cover		
Herb Stratum (Plot size: 30')			
1. *Sweetclover (Melilotus officinalis)*	10	Yes	FACU
2. *Ragweed (Ambrosia trifida)*	15	Yes	FAC
3. *Broomsedge bluestem (Andropogon virginicus)*	20	Yes	FACU
4. *Sumac (Rhus glabra)*	5	-	NI
5. *Tickseed (Coreopsis lanceolata)*	5	No	FACU
6.			
7.			
8.			
9.			
10.			
	55 = Total Cover		
Woody Vine Stratum (Plot size: 30')			
1. *none*			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC−): 2 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 40 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species _____	x 1 =	_____
FACW species _____	x 2 =	_____
FAC species 20	x 3 =	60
FACU species 35	x 4 =	140
UPL species 5	x 5 =	25
Column Totals: 60 (A)		225 (B)

Prevalence Index = B/A = 3.75

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No X

Remarks:

Does not meet hydrophytic vegetation criteria.

SOIL

Sampling Point: DP 7

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** X

Remarks:

Does not meet hydric soil criteria. Rocky outcrop.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) (**where not tilled**)
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) (**where tilled**)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) (**LRR F**)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): -

Water Table Present? Yes _____ No X Depth (inches): -

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Does not meet wetland hydrology criteria.

Print Form

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: JP 20953(04) & 20962(04) US-277 City/County: Caddo County Sampling Date: 06/10/2014

Applicant/Owner: Oklahoma Department of Transportation State: OK Sampling Point: DP 8

Investigator(s): WJS Section, Township, Range: Sec. 2 T5N R9W

Landform (hillslope, terrace, etc.): Local relief (concave, convex, none): none Slope (%):

Subregion (LRR): LRR J Lat: 34.933144°N Long: 98.113806°W Datum: NAD83

Soil Map Unit Name: Ro - Darnell-Rock outcrop complex, 20-75% slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	No X	**Is the Sampled Area within a Wetland?** Yes No X
Hydric Soil Present?	Yes	No X	
Wetland Hydrology Present?	Yes	No X	

Remarks:

Does not meet any wetland criteria.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *none*			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 30')			
1. *none*			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 30')			
1. *Daisy fleabane (Erigeron annuus)*	5	No	FACU
2. *Fescue (Schedonorus arundinaceus)*	40	Yes	FACU
3. *Broomsedge bluestem (Andropogon virginicus)*	25	Yes	FACU
4. *Thistle (Cirsium discolor)*	10	No	FACU
5.			
6.			
7.			
8.			
9.			
10.			
	80 = Total Cover		
Woody Vine Stratum (Plot size: 30')			
1. *none*			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC−): 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species 80	x 4 =	320
UPL species	x 5 =	
Column Totals: 80 (A)		320 (B)

Prevalence Index = B/A = 4.0

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes No X

Remarks:

Does not meet hydrophytic vegetation criteria.

SOIL

Sampling Point: DP 8

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 20	10YR4/3	100					fine	sandy loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** X

Remarks:

Does not meet hydric soil criteria.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) (**where not tilled**)
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) (**where tilled**)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) (**LRR F**)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): -

Water Table Present? Yes _____ No X Depth (inches): >20"

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): >20"

Wetland Hydrology Present? **Yes** _____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Does not meet wetland hydrology criteria.

Print Form

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: JP 20953(04) & 20962(04) US-277 City/County: Caddo County Sampling Date: 06/10/2014

Applicant/Owner: Oklahoma Department of Transportation State: OK Sampling Point: DP 9

Investigator(s): WJS Section, Township, Range: Sec. 2 T5N R9W

Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): convex Slope (%): _____

Subregion (LRR): LRR J Lat: 34.931927°N Long: 98.117994°W Datum: NAD83

Soil Map Unit Name: Ro - Darnell-Rock outcrop complex, 20-75% slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No X	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes _____	No X	
Wetland Hydrology Present?	Yes _____	No X	

Remarks:

Does not meet any wetland criteria.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Eastern redcedar (Juniperus virginiana)*	30	Yes	UPL
2. *White oak (Quercus alba)*	5	No	FACU
3.			
4.			
	35	= Total Cover	
Sapling/Shrub Stratum (Plot size: 30')			
1. *Eastern redcedar (Juniperus virginiana)*	5	No	UPL
2. *American elm (Ulmus americana)*	20	Yes	FAC
3.			
4.			
5.			
	25	= Total Cover	
Herb Stratum (Plot size: 30')			
1. *Broomsedge bluestem (Andropogon virginicus)*	20	Yes	FACU
2. *Sumac (Rhus aromatica)*	10	Yes	UPL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	30	= Total Cover	
Woody Vine Stratum (Plot size: 30')			
1. *none*			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC−): 1 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 25% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species 20	x 3 =	60
FACU species 25	x 4 =	100
UPL species 45	x 5 =	225
Column Totals: 80 (A)		385 (B)

Prevalence Index = B/A = 4.8

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No X

Remarks:

Does not meet hydrophytic vegetation criteria.

SOIL

Sampling Point: DP 9

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** X

Remarks:

Does not meet hydric soil criteria. Rocky Outcrop.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) (**where not tilled**)
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) (**where tilled**)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) (**LRR F**)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): -

Water Table Present? Yes _____ No X Depth (inches): -

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Does not meet wetland hydrology criteria.

Print Form

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: JP 20953(04) & 20962(04) US-277 City/County: Caddo County Sampling Date: 06/10/2014

Applicant/Owner: Oklahoma Department of Transportation State: OK Sampling Point: DP 10

Investigator(s): WJS Section, Township, Range: Sec. 2 T5N R9W

Landform (hillslope, terrace, etc.): old field Local relief (concave, convex, none): none Slope (%): _____

Subregion (LRR): LRR J Lat: 34.932668°N Long: 98.121452°W Datum: NAD83

Soil Map Unit Name: KoC2 - Konawa loamy fine sand, 1-5% slopes, eroded NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No X	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes _____	No X	
Wetland Hydrology Present?	Yes _____	No X	

Remarks:

Does not meet any wetland criteria.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *none*			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: 30')			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: 30')			
1. *Broomsedge bluestem (Andropogon virginicus)*	75	Yes	FACU
2. *Ragweed (Ambrosia trifida)*	40	Yes	FAC
3. *Horsenettle (Solanum carolinense)*	10	No	UPL
4. *Blackeyed susan (Rudbeckia hirta)*	5	No	FACU
5. *Daisy fleabane (Erigeron annuus)*	2	No	FACU
6. *Yucca (Yucca filamentosa)*	2	No	NI
7.			
8.			
9.			
10.			
	134 = Total Cover		
Woody Vine Stratum (Plot size: 30')			
1. *none*			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC−): 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species _____	x 1 =	_____
FACW species _____	x 2 =	_____
FAC species 40	x 3 =	120
FACU species 82	x 4 =	328
UPL species 10	x 5 =	50
Column Totals: 132 (A)		498 (B)

Prevalence Index = B/A = 3.77

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No X

Remarks:

Does not meet hydrophytic vegetation criteria.

SOIL

Sampling Point: DP 10

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 18	7.5YR3/3	100					fine	sandy loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** X

Remarks:

Does not meet hydric soil criteria.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) (**where not tilled**)
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) (**where tilled**)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) (**LRR F**)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): -

Water Table Present? Yes _____ No X Depth (inches): >18"

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): >18"

Wetland Hydrology Present? **Yes** _____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Does not meet wetland hydrology criteria.

Print Form

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: JP 20953(04) & 20962(04) US-277 City/County: Grady County Sampling Date: 06/10/2014

Applicant/Owner: Oklahoma Department of Transportation State: OK Sampling Point: DP 11

Investigator(s): WJS Section, Township, Range: Sec. 5 T5N R8W

Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): convex Slope (%): _____

Subregion (LRR): LRR J Lat: 34.934213°N Long: 98.069861°W Datum: NAD83

Soil Map Unit Name: 10 - Gracemont fine sandy loam, 0-1% slopes, occasionally flooded NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No X	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes _____	No X	
Wetland Hydrology Present?	Yes _____	No X	

Remarks:

Does not meet any wetland criteria.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Black willow (Salix nigra)*	5	Yes	FACW
2. *American elm (Ulmus americana)*	5	Yes	FAC
3.			
4.			
	10	= Total Cover	
Sapling/Shrub Stratum (Plot size: 30')			
1. *Black willow (Salix nigra)*	5	Yes	FACW
2.			
3.			
4.			
5.			
	5	= Total Cover	
Herb Stratum (Plot size: 30')			
1. *Johnsongrass (Sorghum halepense)*	30	Yes	FACU
2. *Bermudagrass (Cynodon dactylon)*	30	Yes	FACU
3. *Indian blanket (Gaillardia pulchella)*	15	Yes	UPL
4. *Horsenettle (Solanum carolinense)*	5	No	UPL
5.			
6.			
7.			
8.			
9.			
10.			
	80	= Total Cover	
Woody Vine Stratum (Plot size: 30')			
1. *none*			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC−): 3 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	10	x 2 =	20
FAC species	5	x 3 =	15
FACU species	60	x 4 =	240
UPL species	20	x 5 =	100
Column Totals:	95 (A)		375 (B)

Prevalence Index = B/A = 3.95

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No X

Remarks:

Does not meet hydrophytic vegetation criteria.

SOIL

Sampling Point: DP 11

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 14	2.5YR3/4	100						sandy silt loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** X

Remarks:

Does not meet hydric soil criteria.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) (**where not tilled**)
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) (**where tilled**)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) (**LRR F**)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): -

Water Table Present? Yes _____ No X Depth (inches): >14"

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): >14"

Wetland Hydrology Present? **Yes** _____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Does not meet wetland hydrology criteria.

STREAM HABITAT ASSESSMENT FIELD DATA SHEET

CADDO & GRADY COUNTIES, OKLAHOMA

GARVER PROJECT NO. 11037080

Project Location	JP 20953(04) & 20962(04) US-277	Stream Name	East Bills Creek
USGS Quadrangle	1991 Laverty, Okla.	Stream Location	OW 1
Section	3	Date	6/9/2014
Township	5N	Weather	Overcast
Range	8W	Collector	WJS

Ordinary High Water	4' - 6' wide, 0.5' - 2' deep	**Notes:** Cattle have unrestricted access to stream.
Stream Flow	dry low (normal) high	Average OHWM width = 4' - 6' OHWM width at Bridge = 12' -15'
Stream Class	perennial ephemeral (intermittent)	

Stream Substrate	**Notes**:	Habitats Observed	Riffle (Pool) (Run) Wetlands
Boulders (>10")			
Cobble (2-10")		% of Stream Shaded	0%
Gravel (1/4"-2")			
Sand (1/64"-1/4")		Riparian Composition - % and Class of Vegetation	
Silt 100%		%	%
Bedrock		Trees 10%	Bare Soil 10%
Clay		Shrubs	Rocks
Detritus		Grasses 80%	Other

Riparian Composition - Species of Vegetation

bermudagrass (*Cynodon dactylon*)	
american elm (*Ulmus americana*)	
boxelder (*Acer negundo*)	
black willow (*Salix nigra*)	

STREAM HABITAT ASSESSMENT FIELD DATA SHEET

CADDO & GRADY COUNTIES, OKLAHOMA

GARVER PROJECT NO. 11037080

OW 1

Bank Cover Types Observed		Average Width of Wooded Riparian Zone (facing downstream)			
Undercut Banks	X	Upstream of Crossing			
Rock Ledges		Right Bank	0	Left Bank	0
Roots/Root Wads					
Drift Material		Downstream of Crossing			
Other		Right Bank	0	Left Bank	0

Aquatic Organisms Observed	Streambank Erosion Potential		
none	Severe		**Notes**: Cattle have eroded stream banks
	High	X	
	Moderate		
	Low		
	None		
	Stream Color	Clear	
	Stream Odor	Strong odor of manure	
	Algae	none	

Notes:

STREAM HABITAT ASSESSMENT FIELD DATA SHEET

CADDO & GRADY COUNTIES, OKLAHOMA

GARVER PROJECT NO. 11037080

Project Location	JP 20953(04) & 20962(04) US-277	Stream Name	Unnamed Tributary to West Bills Creek
USGS Quadrangle	1991 Laverty, OK	Stream Location	OW 2
Section	4	Date	6/9/2014
Township	5N	Weather	Overcast
Range	8W	Collector	WJS

Ordinary High Water	3' - 6' wide	**Notes:** Defined channel begins on the south side (downstream) of US-277
Stream Flow	(dry) low normal high	
Stream Class	perennial (ephemeral) intermittent	

Stream Substrate		**Notes**: Rip-rap at 3' x 2' RCB structure on south side of US-277	Habitats Observed: Riffle, Pool, Run, Wetlands
Boulders (>10")			
Cobble (2-10")			% of Stream Shaded: 80%
Gravel (1/64"-1/4")			
Sand (1/64"-1/4")			Riparian Composition - % and Class of Vegetation
Silt	100%		%
Bedrock			Trees 70%
Clay			Shrubs 10%
Detritus			Grasses 10%
			Bare Soil 10%
			Rocks
			Other

Riparian Composition - Species of Vegetation

johnsongrass (*Sorghum halepense*)	
white oak (*Quercus alba*)	
slippery elm (*Ulmus rubra*)	
fragrant sumac (*Rhus aromatica*)	

STREAM HABITAT ASSESSMENT FIELD DATA SHEET

CADDO & GRADY COUNTIES, OKLAHOMA

GARVER PROJECT NO. 11037080

OW 2

Bank Cover Types Observed		Average Width of Wooded Riparian Zone (facing downstream)			
Undercut Banks	X	Upstream of Crossing			
Rock Ledges		Right Bank	-	Left Bank	-
Roots/Root Wads					
Drift Material		Downstream of Crossing			
Other		Right Bank	10'	Left Bank	>100'

Aquatic Organisms Observed	Streambank Erosion Potential		**Notes**:
none	Severe	X	
	High		
	Moderate		
	Low		
	None		
	Stream Color		
	Stream Odor		
	Algae		

Notes:

STREAM HABITAT ASSESSMENT FIELD DATA SHEET

CADDO & GRADY COUNTIES, OKLAHOMA

GARVER PROJECT NO. 11037080

Project Location	JP 20953(04) & 20962(04) US-277	Stream Name	Unnamed Tributary to McCarty Creek
USGS Quadrangle	1991 Cyril, Okla.	Stream Location	OW 3
Section	3	Date	6/9/2014
Township	5N	Weather	Overcast
Range	9W	Collector	WJS

Ordinary High Water	3' - 4' wide (US) & 10' - 15' wide (DS)	**Notes:** OHWM width on the north side of US-277 (upstream) is 3' - 4' (length = 45'). The OHWM width on the south side of US-277 (downstream) is 10' - 15' (length = 21.1').
Stream Flow	(dry) low normal high	
Stream Class	perennial (ephemeral) intermittent	

Stream Substrate		**Notes**:	Habitats Observed	Riffle	Pool	Run	Wetlands
Boulders (>10")							
Cobble (2-10")			% of Stream Shaded			100%	
Gravel (1/4"-2")							
Sand (1/64"-1/4")			Riparian Composition - % and Class of Vegetation				
Silt	100%			%			%
Bedrock			Trees	80%		Bare Soil	
Clay			Shrubs	10%		Rocks	
Detritus			Grasses	10%		Other	

Riparian Composition - Species of Vegetation	
johnsongrass (*Sorghum halepense*)	
american elm (*Ulmus americana*)	
pecan (*Carya illinoinensis*)	
fragrant sumac (*Rhus aromatica*)	
red oak (*Quercus falcata*)	

STREAM HABITAT ASSESSMENT FIELD DATA SHEET

CADDO & GRADY COUNTIES, OKLAHOMA

GARVER PROJECT NO. 11037080

OW 3

Bank Cover Types Observed		Average Width of Wooded Riparian Zone (facing downstream)			
Undercut Banks	X	Upstream of Crossing			
Rock Ledges		Right Bank	>100'	Left Bank	>100'
Roots/Root Wads	X				
Drift Material	X	Downstream of Crossing			
Other		Right Bank	>100'	Left Bank	>100'

Aquatic Organisms Observed	Streambank Erosion Potential		**Notes**:
none	Severe	X	
	High		
	Moderate		
	Low		
	None		
	Stream Color		
	Stream Odor		
	Algae		

Notes:

STREAM HABITAT ASSESSMENT FIELD DATA SHEET

CADDO & GRADY COUNTIES, OKLAHOMA

GARVER PROJECT NO. 11037080

Project Location	JP 20953(04) & 20962(04) US-277	Stream Name	Unnamed Tributary to McCarty Creek
USGS Quadrangle	1991 Laverty, Okla.	Stream Location	OW 4
Section	2	Date	6/9/2014
Township	5N	Weather	Overcast
Range	9W	Collector	WJS

Ordinary High Water	3' - 5' wide			**Notes:**
Stream Flow	(dry)	low	normal	high
Stream Class	perennial	(ephemeral)	intermittent	

Stream Substrate		**Notes**:	Habitats Observed	Riffle Pool Run Wetlands
Boulders (>10")				
Cobble (2-10")			% of Stream Shaded	30%
Gravel (1/64"-2")				
Sand (1/64"-1/4")			Riparian Composition - %	and Class of Vegetation
Silt	100%		%	%
Bedrock			Trees 20%	Bare Soil 10%
Clay			Shrubs 10%	Rocks
Detritus			Grasses 60%	Other

Riparian Composition - Species of Vegetation

johnsongrass (*Sorghum halepense*)	
american elm (*Ulmus americana*)	
bermudagrass (*Cynodon dactylon*)	

STREAM HABITAT ASSESSMENT FIELD DATA SHEET

CADDO & GRADY COUNTIES, OKLAHOMA

GARVER PROJECT NO. 11037080

OW 4

Bank Cover Types Observed		Average Width of Wooded Riparian Zone (facing downstream)			
Undercut Banks	X	Upstream of Crossing			
Rock Ledges		Right Bank	30'	Left Bank	0'
Roots/Root Wads	X				
Drift Material	X	Downstream of Crossing			
Other		Right Bank	0'	Left Bank	0'

Aquatic Organisms Observed	Streambank Erosion Potential		**Notes**:
none	Severe	X	
	High		
	Moderate		
	Low		
	None		
	Stream Color		
	Stream Odor		
	Algae		

Notes:

STREAM HABITAT ASSESSMENT FIELD DATA SHEET

CADDO & GRADY COUNTIES, OKLAHOMA

GARVER PROJECT NO. 11037080

Project Location	JP 20953(04) & 20962(04) US-277	Stream Name	Unnamed Tributary to McCarty Creek
USGS Quadrangle	1991 Laverty, Okla.	Stream Location	OW 5
Section	2	Date	6/9/2014
Township	5N	Weather	Overcast
Range	9W	Collector	WJS

Ordinary High Water	4' - 6' wide				**Notes:**
Stream Flow	(dry)	low	normal	high	
Stream Class	perennial	(ephemeral)	intermittent		

Stream Substrate		**Notes**:	Habitats Observed	Riffle	Pool Run Wetlands
Boulders (>10")					
Cobble (2-10")			% of Stream Shaded		60%
Gravel (1/4"-2")	20%				
Sand (1/64"-1/4")			Riparian Composition - %	and Class of Vegetation	
Silt	80%			%	%
Bedrock			Trees	40%	Bare Soil
Clay			Shrubs	10%	Rocks
Detritus			Grasses	60%	Other

Riparian Composition - Species of Vegetation

johnsongrass (*Sorghum halepense*)	
american elm (*Ulmus americana*)	
hackberry (*Celtis occidentalis*)	
black willow (*Salix nigra*)	
catalpa tree (*Catalpa speciosa*)	
american beauty berry (*Callicarpa americana*)	

STREAM HABITAT ASSESSMENT FIELD DATA SHEET

CADDO & GRADY COUNTIES, OKLAHOMA

GARVER PROJECT NO. 11037080

OW 5

Bank Cover Types Observed		Average Width of Wooded Riparian Zone (facing downstream)			
Undercut Banks		Upstream of Crossing			
Rock Ledges		Right Bank	30'	Left Bank	30'
Roots/Root Wads					
Drift Material	X	Downstream of Crossing			
Other		Right Bank	15'	Left Bank	15'

Aquatic Organisms Observed	Streambank Erosion Potential		**Notes**:
none	Severe	X	
	High		
	Moderate		
	Low		
	None		
	Stream Color		
	Stream Odor		
	Algae		

Notes:

STREAM HABITAT ASSESSMENT FIELD DATA SHEET

CADDO & GRADY COUNTIES, OKLAHOMA

GARVER PROJECT NO. 11037080

Project Location	JP 20953(04) & 20962(04) US-277	Stream Name	Unnamed Tributary to McCarty Creek
USGS Quadrangle	1991 Laverty, Okla.	Stream Location	OW 6
Section	2	Date	6/9/2014
Township	5N	Weather	Overcast
Range	9W	Collector	WJS

Ordinary High Water	2' - 4' wide	**Notes:** No flow, only pools present
Stream Flow	(dry) low normal high	
Stream Class	perennial (ephemeral) intermittent	

Stream Substrate		**Notes**:	Habitats Observed	Riffle (Pool) Run Wetlands	
Boulders (>10")	2%				
Cobble (2-10")	8%		% of Stream Shaded	100%	
Gravel (1/4"-2")	10%				
Sand (1/64"-1/4")			Riparian Composition - %	and Class of Vegetation	
Silt	80%		%		%
Bedrock			Trees	80%	Bare Soil
Clay			Shrubs	10%	Rocks
Detritus			Grasses	10%	Other

Riparian Composition - Species of Vegetation

white oak (*Quercus alba*)	
american elm (*Ulmus americana*)	
greenbrier (*Smilax rotundifolia*)	

STREAM HABITAT ASSESSMENT FIELD DATA SHEET

CADDO & GRADY COUNTIES, OKLAHOMA

GARVER PROJECT NO. 11037080

OW 6

Bank Cover Types Observed		Average Width of Wooded Riparian Zone (facing downstream)			
Undercut Banks		Upstream of Crossing			
Rock Ledges		Right Bank	0'	Left Bank	40'
Roots/Root Wads					
Drift Material	X	Downstream of Crossing			
Other		Right Bank	>100'	Left Bank	>100'

Aquatic Organisms Observed	Streambank Erosion Potential		**Notes**:
none	Severe	X	
	High		
	Moderate		
	Low		
	None		
	Stream Color		
	Stream Odor		
	Algae		

Notes:

STREAM HABITAT ASSESSMENT FIELD DATA SHEET

CADDO & GRADY COUNTIES, OKLAHOMA

GARVER PROJECT NO. 11037080

Project Location	JP 20953(04) & 20962(04) US-277	Stream Name	West Bills Creek
USGS Quadrangle	1991 Laverty, Okla.	Stream Location	OW 7
Section	6	Date	6/10/2014
Township	5N	Weather	Clear, 90's
Range	8W	Collector	WJS

Ordinary High Water	~9' wide (avg.), 0.25' - 2' deep	**Notes:** Flow regulated by a NRCS control structure (retention pond) located ~800' upstream of existing bridge. OHWM width Upstream: 7' - 19' OHWM width at Bridge: 13' - 17' OHWM width Downstream: 6' - 9'
Stream Flow	dry low **(normal)** high	
Stream Class	**(perennial)** ephemeral intermittent	

Stream Substrate	**Notes**:	Habitats Observed **(Riffle)** Pool **(Run)** Wetlands
Boulders (>10")		
Cobble (2-10")		% of Stream Shaded 100%
Gravel (1/4"-2") 10%		
Sand (1/64"-1/4") 5%		Riparian Composition - % and Class of Vegetation
Silt 85%		% %
Bedrock		Trees 80% Bare Soil
Clay		Shrubs 10% Rocks
Detritus		Grasses 10% Other

Riparian Composition - Species of Vegetation

white oak (*Quercus alba*)	johnsongrass (*Sorghum halepense*)
american elm (*Ulmus americana*)	
greenbrier (*Smilax rotundifolia*)	
slippery elm (*Ulmus rubra*)	
horsetail (*Equisetum hyemale*)	
duckweed (*Lemna minor*)	
grape (*Vitis riparia*)	

STREAM HABITAT ASSESSMENT FIELD DATA SHEET

CADDO & GRADY COUNTIES, OKLAHOMA

GARVER PROJECT NO. 11037080

OW 7

Bank Cover Types Observed		Average Width of Wooded Riparian Zone (facing downstream)			
Undercut Banks	X	Upstream of Crossing			
Rock Ledges		Right Bank	>100'	Left Bank	>100'
Roots/Root Wads	X				
Drift Material	X	Downstream of Crossing			
Other		Right Bank	>100'	Left Bank	>100'

Aquatic Organisms Observed	Streambank Erosion Potential		**Notes**:
Crayfish	Severe		
Gambusia species	High		
Pondhorn mussel (*Uniomerus tetralasmus*)	Moderate	X	
	Low		
	None		
	Stream Color	clear	
	Stream Odor	slight sulfur odor	
	Algae	none	

Notes:

STREAM HABITAT ASSESSMENT FIELD DATA SHEET

CADDO & GRADY COUNTIES, OKLAHOMA

GARVER PROJECT NO. 11037080

Project Location	JP 20953(04) & 20962(04) US-277	Stream Name	Unnamed Tributary to West Bills Creek
USGS Quadrangle	1991 Laverty, Okla.	Stream Location	OW 8
Section	1	Date	6/10/2014
Township	5N	Weather	Clear, 90's
Range	9W	Collector	WJS

Ordinary High Water	1' - 2' wide				**Notes:**
Stream Flow	(dry)	low	normal	high	
Stream Class	perennial	(ephemeral)	intermittent		

Stream Substrate		**Notes**:	Habitats Observed	Riffle Pool Run Wetlands
Boulders (>10")				
Cobble (2-10")	20%		% of Stream Shaded	90%
Gravel (1/4"-2")	30%			
Sand (1/64"-1/4")	10%		Riparian Composition - %	and Class of Vegetation
Silt	10%		%	%
Bedrock	30%		Trees 70%	Bare Soil
Clay			Shrubs 10%	Rocks 15%
Detritus			Grasses 5%	Other

Riparian Composition - Species of Vegetation

red oak (*Quercus falcata*)	
eastern red cedar (*Juniperus virginiana*)	
blackjack oak (*Quercus marilandica*)	
fleabane daisy (*Erigeron annuus*)	

STREAM HABITAT ASSESSMENT FIELD DATA SHEET

CADDO & GRADY COUNTIES, OKLAHOMA

GARVER PROJECT NO. 11037080

OW 8

Bank Cover Types Observed		Average Width of Wooded Riparian Zone (facing downstream)			
Undercut Banks		Upstream of Crossing			
Rock Ledges	X	Right Bank	>100'	Left Bank	>100'
Roots/Root Wads					
Drift Material		Downstream of Crossing			
Other		Right Bank	>100'	Left Bank	>100'

Aquatic Organisms Observed	Streambank Erosion Potential		**Notes**:
none	Severe		
	High		
	Moderate		
	Low	X	
	None		
	Stream Color		
	Stream Odor		
	Algae		

Notes:

STREAM HABITAT ASSESSMENT FIELD DATA SHEET

CADDO & GRADY COUNTIES, OKLAHOMA

GARVER PROJECT NO. 11037080

Project Location	JP 20953(04) & 20962(04) US-277	Stream Name	Unnamed Tributary to West Bills Creek
USGS Quadrangle	1991 Laverty, Okla.	Stream Location	OW 9
Section	1	Date	6/10/2014
Township	5N	Weather	Clear, 90's
Range	9W	Collector	WJS

Ordinary High Water	4' - 6' wide			**Notes:** Dry with pools present
Stream Flow	(dry)	low	normal	high
Stream Class	perennial	(ephemeral)	intermittent	

Stream Substrate		**Notes**:	Habitats Observed: Riffle (Pool) Run Wetlands
Boulders (>10")	20%		
Cobble (2-10")	30%		% of Stream Shaded: 90%
Gravel (1/4"-2")	30%		
Sand (1/64"-1/4")	10%		Riparian Composition - % and Class of Vegetation
Silt	10%		% / %
Bedrock			Trees 80% / Bare Soil
Clay			Shrubs 20% / Rocks 15%
Detritus			Grasses / Other

Riparian Composition - Species of Vegetation

red oak (*Quercus falcata*)	
american elm (*Ulmus americana*)	
greenbrier (*Smilax rotundifolia*)	
american beauty berry (*Callicarpa americana*)	

STREAM HABITAT ASSESSMENT FIELD DATA SHEET

CADDO & GRADY COUNTIES, OKLAHOMA

GARVER PROJECT NO. 11037080

OW 9

Bank Cover Types Observed		Average Width of Wooded Riparian Zone (facing downstream)			
Undercut Banks		Upstream of Crossing			
Rock Ledges	X	Right Bank	>100'	Left Bank	>100'
Roots/Root Wads					
Drift Material		Downstream of Crossing			
Other		Right Bank	>100'	Left Bank	>100'

Aquatic Organisms Observed	Streambank Erosion Potential		**Notes**:
none	Severe		
	High		
	Moderate		
	Low	X	
	None		
	Stream Color		
	Stream Odor		
	Algae		

Notes:

STREAM HABITAT ASSESSMENT FIELD DATA SHEET

CADDO & GRADY COUNTIES, OKLAHOMA

GARVER PROJECT NO. 11037080

Project Location	JP 20953(04) & 20962(04) US-277	Stream Name	Middle Bills Creek
USGS Quadrangle	1991 Laverty, Okla.	Stream Location	OW 10
Section	5	Date	6/10/2014
Township	5N	Weather	Clear, 90's
Range	8W	Collector	WJS

Ordinary High Water	~25' wide (avg.), 0.25' - 2' deep	**Notes:** cattle have unrestricted access to stream
Stream Flow	dry low (normal) high	OHWM width Upstream: 14' - 22'
Stream Class	perennial ephemeral (intermittent)	OHWM width at Bridge: 20' - 24' OHWM width Downstream: 32' - 38'

Stream Substrate	**Notes**:	Habitats Observed	Riffle Pool (Run) Wetlands
Boulders (>10")		% of Stream Shaded	20%
Cobble (2-10")			
Gravel (1/4"-2")			
Sand (1/64"-1/4")		Riparian Composition - % and Class of Vegetation	
Silt 100%			%
Bedrock		Trees 10%	Bare Soil 10%
Clay		Shrubs 10%	Rocks
Detritus		Grasses 80%	Other

Riparian Composition - Species of Vegetation

black willow (*Salix nigra*)	
american elm (*Ulmus americana*)	
johnsongrass (*Sorghum halepense*)	
horse nettle (*Solanum carolinense*)	
bermudagrass (*Cynodon dactylon*)	

STREAM HABITAT ASSESSMENT FIELD DATA SHEET

CADDO & GRADY COUNTIES, OKLAHOMA

GARVER PROJECT NO. 11037080

OW 10

Bank Cover Types Observed		Average Width of Wooded Riparian Zone (facing downstream)			
Undercut Banks		Upstream of Crossing			
Rock Ledges	X	Right Bank	0'	Left Bank	0'
Roots/Root Wads					
Drift Material		Downstream of Crossing			
Other		Right Bank	0'	Left Bank	0'

Aquatic Organisms Observed	Streambank Erosion Potential		**Notes**:
none	Severe		
	High		
	Moderate	X	
	Low		
	None		
	Stream Color	clear	
	Stream Odor	slight manure odor	
	Algae	none	

Notes:

APPENDIX I

NRCS COORDINATION

U.S. Department of Agriculture

FARMLAND CONVERSION IMPACT RATING

PART I *(To be completed by Federal Agency)*		Date Of Land Evaluation Request 5/23/14	
Name Of Project JP 20953(04) & JP 20962(04) US-277 Improvem		Federal Agency Involved Federal Highway Administration	
Proposed Land Use State Road/Right-of-Way		County And State Caddo & Grady Counties, Oklahoma	
PART II *(To be completed by NRCS)*		Date Request Received By NRCS	
Does the site 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 ☐	Acres Irrigated 41,617	Average Farm Size 401
Major Crop(s) Winter Wheat	Farmable Land In Govt. Jurisdiction Acres: 1,131,056 % 75	Amount Of Farmland As Defined in FPPA Acres: 785,283 % 51	
Name Of Land Evaluation System Used CALES	Name Of Local Site Assessment System -	Date Land Evaluation Returned By NRCS 6/27/14	

PART III *(To be completed by Federal Agency)*	Alternative Site Rating			
	Site A	Site B	Site C	Site D
A. Total Acres To Be Converted Directly	405.0			
B. Total Acres To Be Converted Indirectly				
C. Total Acres In Site	405.0	0.0	0.0	0.0
PART IV *(To be completed by NRCS)* Land Evaluation Information				
A. Total Acres Prime And Unique Farmland	216.7			
B. Total Acres Statewide And Local Important Farmland	0.0			
C. Percentage Of Farmland In County Or Local Govt. Unit To Be Converted	0.0			
D. Percentage Of Farmland In Govt. Jurisdiction With Same Or Higher Relative Value	65.3			
PART V *(To be completed by NRCS)* Land Evaluation Criterion Relative Value Of Farmland To Be Converted *(Scale of 0 to 100 Points)*	38	0	0	0

PART VI *(To be completed by Federal Agency)* Site Assessment Criteria *(These criteria are explained in 7 CFR 658.5(b)*	Maximum Points				
1. Area In Nonurban Use	15	14			
2. Perimeter In Nonurban Use	10	10			
3. Percent Of Site Being Farmed	20	8			
4. Protection Provided By State And Local Government	20	0			
5. Distance From Urban Builtup Area	0	0			
6. Distance To Urban Support Services	0	0			
7. Size Of Present Farm Unit Compared To Average	10	1			
8. Creation Of Nonfarmable Farmland	25	25			
9. Availability Of Farm Support Services	5	5			
10. On-Farm Investments	20	20			
11. Effects Of Conversion On Farm Support Services	25	25			
12. Compatibility With Existing Agricultural Use	10	5			
TOTAL SITE ASSESSMENT POINTS	160	113	0	0	0
PART VII *(To be completed by Federal Agency)*					
Relative Value Of Farmland *(From Part V)*	100	38	0	0	0
Total Site Assessment *(From Part VI above or a local site assessment)*	160	113	0	0	0
TOTAL POINTS *(Total of above 2 lines)*	260	151	0	0	0

Site Selected:	Date Of Selection	Was A Local Site Assessment Used? Yes ☐ No ☐

Reason For Selection:

McCullough, Kirsten J.

From: Salisbury, Clay - NRCS, Clinton, OK <Clay.Salisbury@ok.usda.gov>
Sent: Friday, June 27, 2014 10:45 AM
To: McCullough, Kirsten J.
Subject: RE: FPPA Coordination for US-277, Cement to I-44, JP 20953(04) & JP 20962(04), Caddo and Grady Counties
Attachments: JP 20953(04)_20962(04) AD1006-Farmland Conversion Impact Rating_Parts I III.pdf

Ms. McCullough,

I have attached the completed AD-1006 for this project. I am sorry for delay. I would like to note that I appreciate that your team had already gathered the soils information for the project. By doing so, I think the accuracy is much better than if I digitized the project from a Topo scale map. Again, I appreciate it. If you have multi-county projects requiring AD-1006s in the southwest portion of the state (roughly south of I40 and west of I35), I will continue to be your contact.

Thank you,

Clay D. Salisbury
Resource Soil Scientist
Clinton TSO
(580) 323-2580 x121

From: McCullough, Kirsten J. [mailto:KJMcCullough@GarverUSA.com]
Sent: Thursday, May 22, 2014 5:06 PM
To: Salisbury, Clay - NRCS, Clinton, OK
Cc: Stanley, Lacee B.
Subject: FPPA Coordination for US-277, Cement to I-44, JP 20953(04) & JP 20962(04), Caddo and Grady Counties

Mr. Salisbury
Attached is information related to FPPA coordination for this ODOT project in Caddo and Grady Counties. Please review and let me know if you have any questions. Thank you.

Kirsten McCullough, AICP, RPA
Environmental Project Manager
Transportation Team
Office: 918-250-5922
Mobile: 918-852-0752

6450 South Lewis
Suite 300
Tulsa, OK 74136

TEL 918.250.5922
FAX 918.858.0107

www.GarverUSA.com

May 23, 2014

Clay D. Salisbury
Resource Soil Scientist
USDA Natural Resources Conservation Service
Clinton Technical Service Office
1725 Hwy 183 South
Clinton, OK 73601

RE: Site assessment for Farmland Protection Policy Act (FPPA) and Identification of any NRCS Structures or Properties within the Study Area: JP No. 20953(04) and 20962(04), Caddo and Grady Counties, Oklahoma

Dear Mr. Salisbury,

The Oklahoma Department of Transportation (ODOT), in cooperation with Federal Highway Administration (FHWA), is in the early developmental stages of a roadway reconstruction project on US-277 from Cement to I-44 in Caddo and Grady Counties. The project will involve reconstructing the roadway on a new alignment and will require additional variable right-of-way of approximately 405 acres in Caddo and Grady Counties to accommodate the proposed improvements. In April of 2013 you provided some preliminary information on farmland conversion for several alternative alignments that were under consideration (letter attached). Alternative 4 has been selected by ODOT as the preferred alternative. This letter requests your assistance with completion of FPPA coordination for this project.

Please find attached an electronic copy of USDA Form AD-1006 and maps for the following federal action in Caddo and Grady Counties, OK: Federal funding for a roadway improvement project. In accordance with the current 7 CFR Part 658 - Farmland Protection Policy Act, Parts I and III of Form AD-1006 have been completed. Please complete the NRCS portions of these forms within the next 45 days and return one copy to:

Kirsten McCullough
Garver
6450 S. Lewis, Suite 300
Tulsa, OK 74136

In addition, please let us know if the proposed project would impact any NRCS structure or properties such as flood control dams, wetlands, etc.

Your assistance is greatly appreciated. If you have any questions, please call me at 918-250-5922 or kjmccullough@garverusa.com.

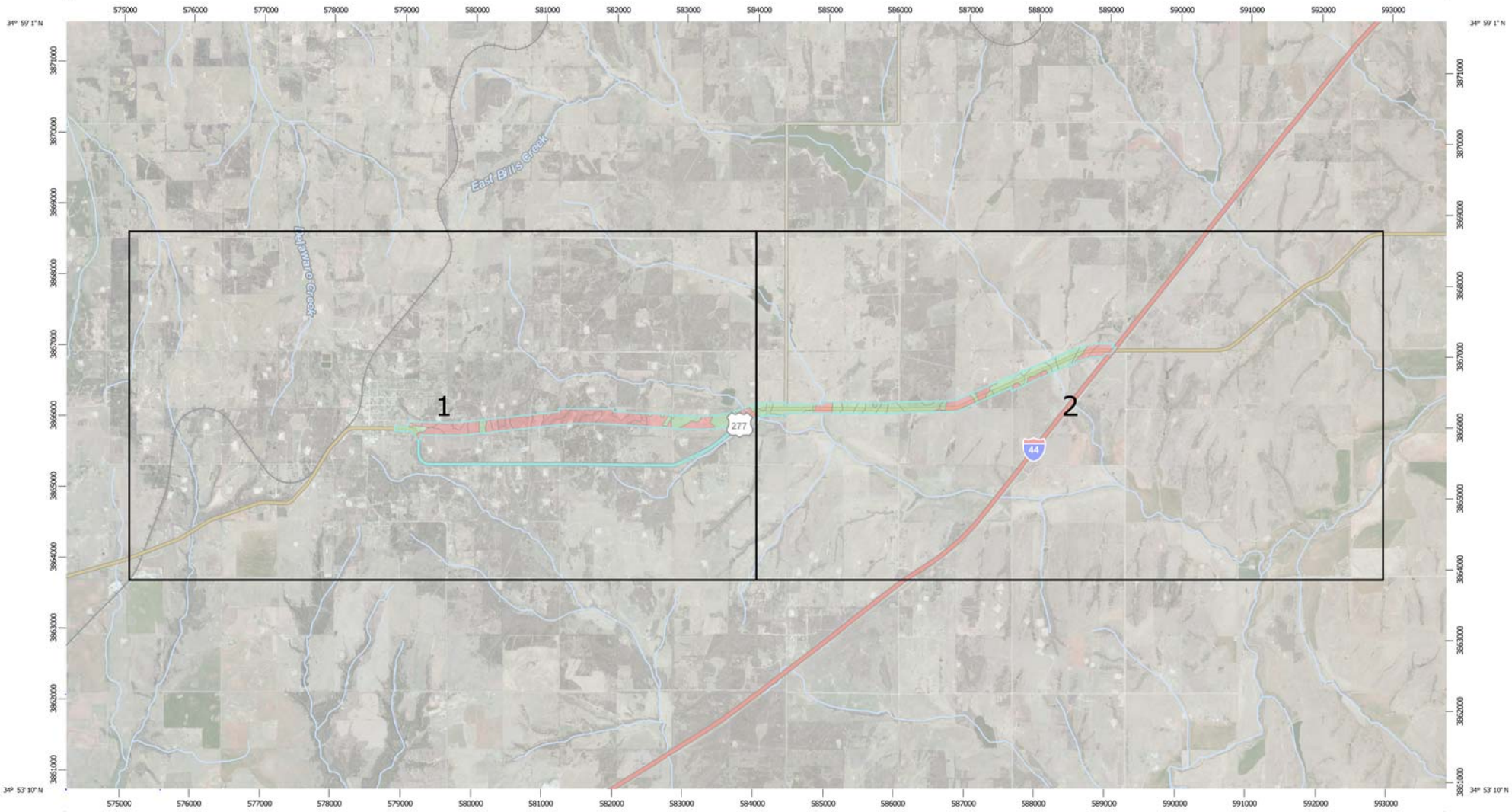
Sincerely,

Kirsten McCullough, AICP, RPA
Project Manager

Enclosures: Form AD-1006, Location Maps

Copy to: ODOT

Farmland Classification—Caddo County, Oklahoma, and Grady County, Oklahoma
(US-277 Cement to I-44)
Index Sheet

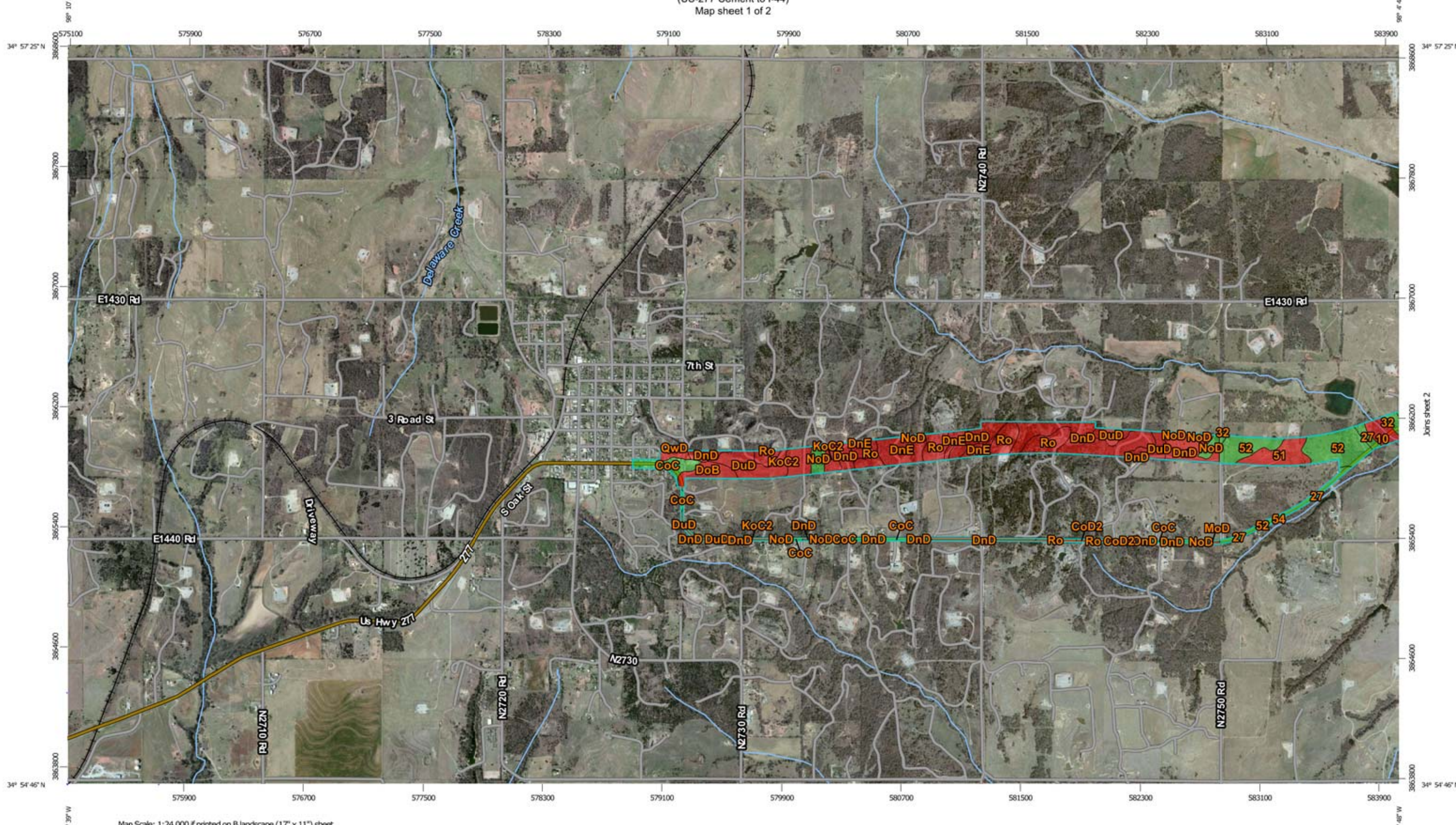


Map Scale: 1:52,800 if printed on B landscape (17" x 11") sheet.
Meters
0 500 1000 2000 3000
Feet
0 2500 5000 10000 15000
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 14N WGS84

Natural Resources Conservation Service

Web Soil Survey
National Cooperative Soil Survey

Farmland Classification—Caddo County, Oklahoma, and Grady County, Oklahoma
(US-277 Cement to I-44)
Map sheet 1 of 2



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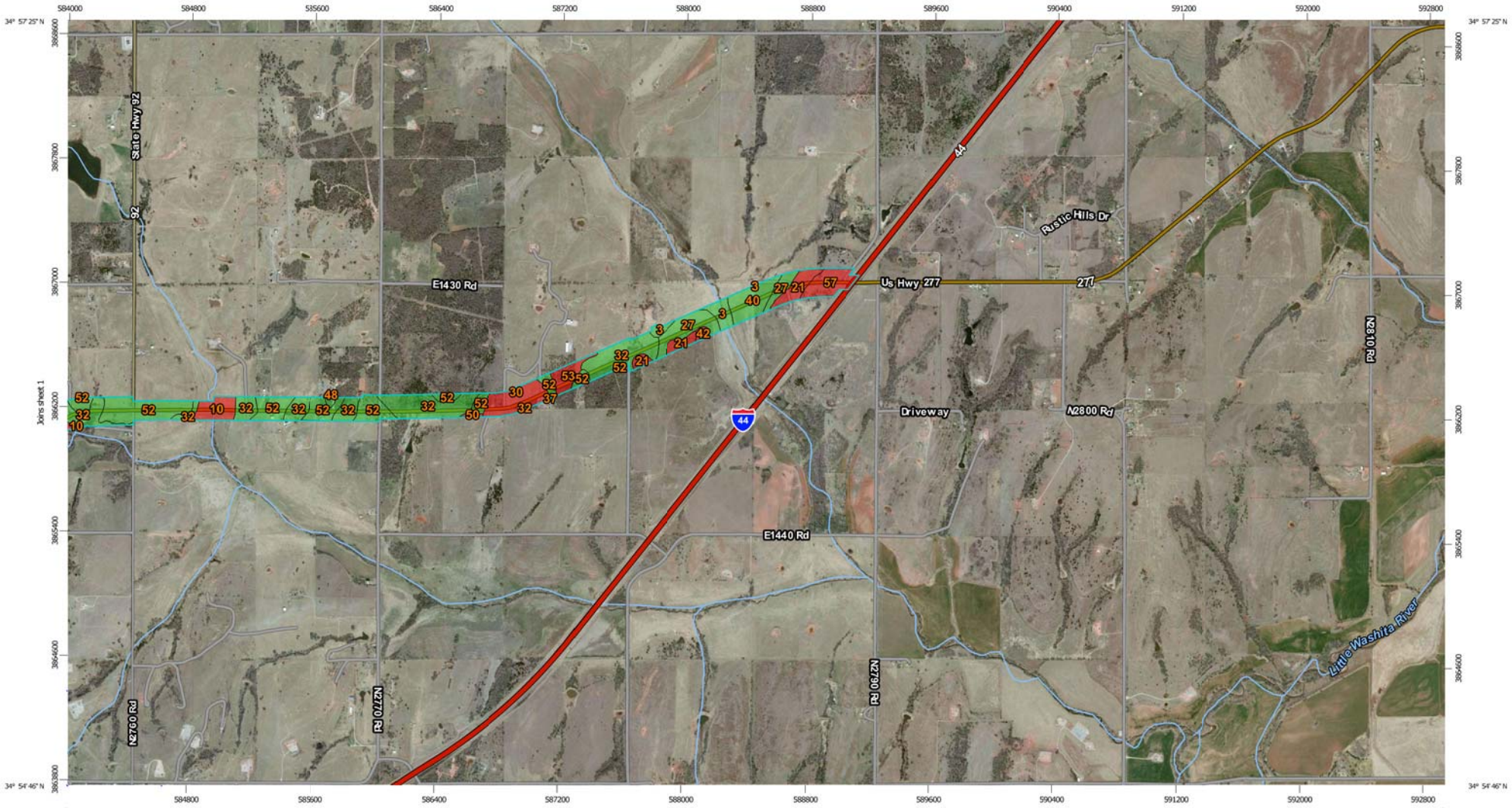
Meters: 0 350 700 1400 2100

Feet: 0 1000 2000 4000 6000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 14N WGS84

Map Sheet Location: 1

Farmland Classification—Caddo County, Oklahoma, and Grady County, Oklahoma
(US-277 Cement to I-44)
Map sheet 2 of 2



Map Scale: 1:24,000 if printed on B landscape (17" x 11") sheet.

N

Meters: 0, 350, 700, 1400, 2100

Feet: 0, 1000, 2000, 4000, 6000

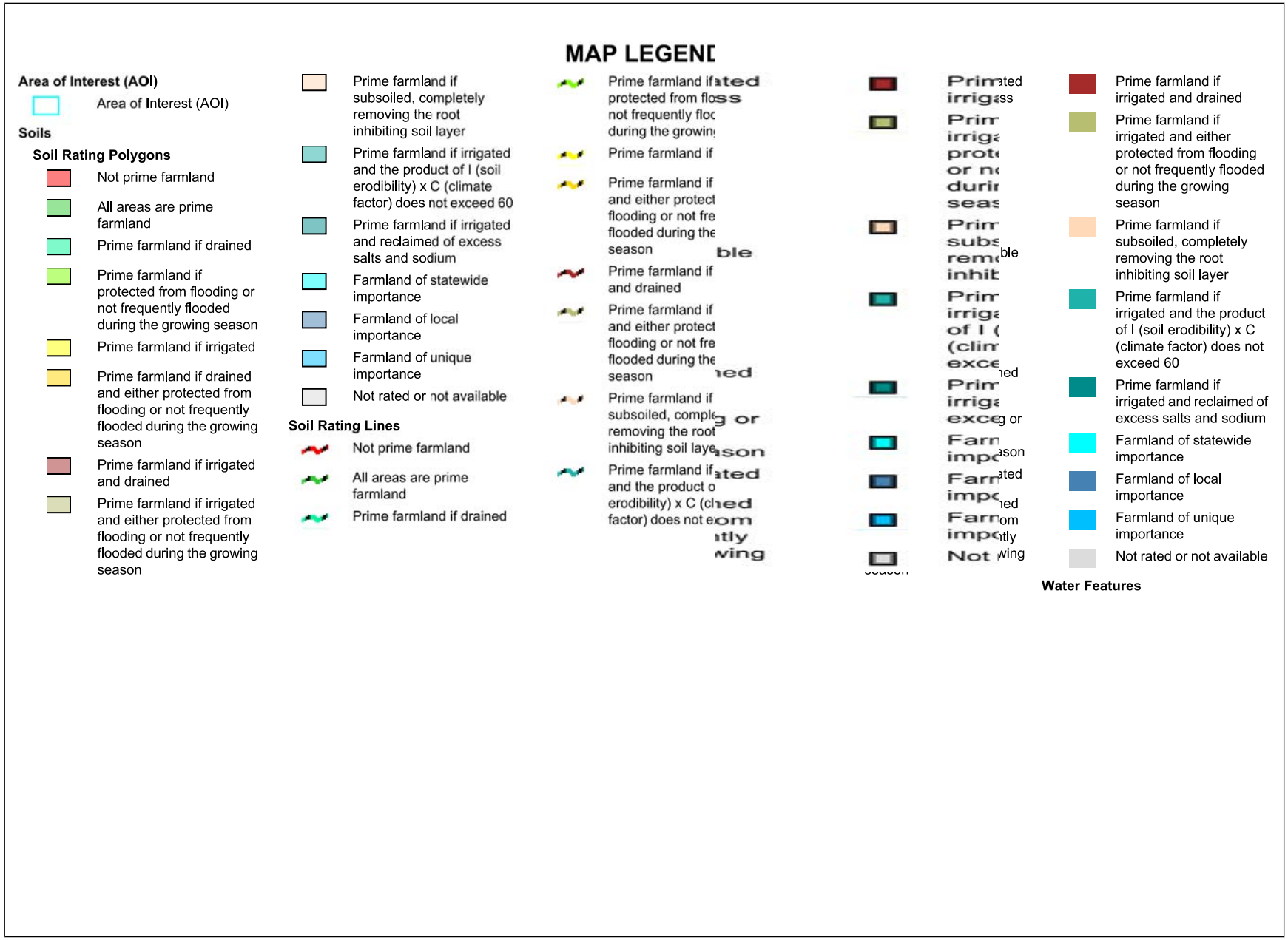
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 14N WGS84

USDA Natural Resources Conservation Service

Web Soil Survey
National Cooperative Soil Survey

Map Sheet Location: 2

5/12/2014


MAP LEGEND
Area of Interest (AOI)
Area of Interest (AOI)
Soils
Soil Rating Polygons
Not prime farmland
All areas are prime farmland
Prime farmland if drained
Prime farmland if protected from flooding or not frequently flooded during the growing season
Prime farmland if irrigated
Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
Prime farmland if irrigated and drained
Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season
Prime farmland if subsoiled, completely removing the root inhibiting soil layer
Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
Prime farmland if irrigated and reclaimed of excess salts and sodium
Farmland of statewide importance
Farmland of local importance
Farmland of unique importance
Not rated or not available
Soil Rating Lines
Not prime farmland
All areas are prime farmland
Prime farmland if drained
Water Features

MAP INFORMATION

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Caddo County, Oklahoma
Survey Area Data: Version 9, Dec 26, 2013

Soil Survey Area: Grady County, Oklahoma
Survey Area Data: Version 8, Dec 24, 2013

Your area of interest (AOI) includes more than one soil survey area. These survey areas may have been mapped at different scales, with a different land use in mind, at different times, or at different levels of detail. This may result in map unit symbols, soil properties, and interpretations that do not completely agree across soil survey area boundaries.

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jan 26, 2011—Jun 12, 2011

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Farmland Classification

Farmland Classification— Summary by Map Unit — Caddo County, Oklahoma (OK015)				
Map unit symbol	**Map unit name**	**Rating**	**Acres in AOI**	**Percent of AOI**
CoC	Binger fine sandy loam, 3 to 5 percent slopes	All areas are prime farmland	11.6	2.5%
CoD2	Binger fine sandy loam, 5 to 8 percent slopes, eroded	Not prime farmland	1.6	0.3%
DnD	Darnell-Noble association, 3 to 12 percent slopes	Not prime farmland	67.2	14.3%
DnE	Darnell-Noble association, 12 to 30 percent slopes	Not prime farmland	22.6	4.8%
DoB	Dougherty and Konawa soils, 1 to 3 percent slopes	Not prime farmland	8.1	1.7%
DuD	Dougherty and Eufaula soils, 3 to 8 percent slopes	Not prime farmland	27.0	5.7%
KoC2	Konawa loamy fine sand, 1 to 5 percent slopes, eroded	Not prime farmland	12.8	2.7%
MoD	Minco very fine sandy loam, 3 to 8 percent slopes	Not prime farmland	0.5	0.1%
NoD	Noble fine sandy loam, 3 to 8 percent slopes	All areas are prime farmland	10.3	2.2%
QwD	Ironmound-Nash complex, 5 to 12 percent slopes	Not prime farmland	2.5	0.5%
Ro	Darnell-Rock outcrop complex, 20 to 75 percent slopes	Not prime farmland	33.4	7.1%
Subtotals for Soil Survey Area			**197.7**	**42.1%**
Totals for Area of Interest			**469.9**	**100.0%**

Farmland Classification— Summary by Map Unit — Grady County, Oklahoma (OK051)				
Map unit symbol	**Map unit name**	**Rating**	**Acres in AOI**	**Percent of AOI**
3	Cyril fine sandy loam, 0 to 1 percent slopes, occasionally flooded	All areas are prime farmland	7.0	1.5%
10	Gracemont fine sandy loam, 0 to 1 percent slopes, occasionally flooded	Not prime farmland	15.5	3.3%
21	Lucien-Nash complex, 5 to 12 percent slopes	Not prime farmland	12.6	2.7%

Farmland Classification— Summary by Map Unit — Grady County, Oklahoma (OK051)				
Map unit symbol	**Map unit name**	**Rating**	**Acres in AOI**	**Percent of AOI**
27	Minco silt loam, 3 to 5 percent slopes	All areas are prime farmland	25.2	5.4%
30	Nash-Lucien complex, 1 to 5 percent slopes	Not prime farmland	14.9	3.2%
32	Noble-Darnell complex, 3 to 5 percent slopes	All areas are prime farmland	62.6	13.3%
37	Pond Creek silt loam, 0 to 1 percent slopes	All areas are prime farmland	0.0	0.0%
40	Port silt loam, 0 to 1 percent slopes, occasionally flooded	All areas are prime farmland	13.0	2.8%
42	Ironmound-Rock outcrop complex, 12 to 30 percent slopes	Not prime farmland	1.5	0.3%
48	Stephenville fine sandy loam, 1 to 3 percent slopes	All areas are prime farmland	0.8	0.2%
50	Stephenville fine sandy loam, 3 to 5 percent slopes, eroded	Not prime farmland	1.0	0.2%
51	Stephenville fine sandy loam, 3 to 8 percent slopes, severely eroded	Not prime farmland	13.6	2.9%
52	Stephenville-Darnell complex, 1 to 8 percent slopes	All areas are prime farmland	86.2	18.3%
53	Stephenville-Eufaula complex, 3 to 8 percent slopes	Not prime farmland	6.7	1.4%
54	Stephenville-Pulaski complex, 0 to 12 percent slopes	Not prime farmland	0.0	0.0%
57	Teller loam, 3 to 5 percent slopes, eroded	Not prime farmland	11.4	2.4%
Subtotals for Soil Survey Area			**272.2**	**57.9%**
Totals for Area of Interest			**469.9**	**100.0%**

Description

Farmland classification identifies map units as prime farmland, farmland of statewide importance, farmland of local importance, or unique farmland. It identifies the location and extent of the soils that are best suited to food, feed, fiber, forage, and oilseed crops. NRCS policy and procedures on prime and unique farmlands are published in the "Federal Register," Vol. 43, No. 21, January 31, 1978.

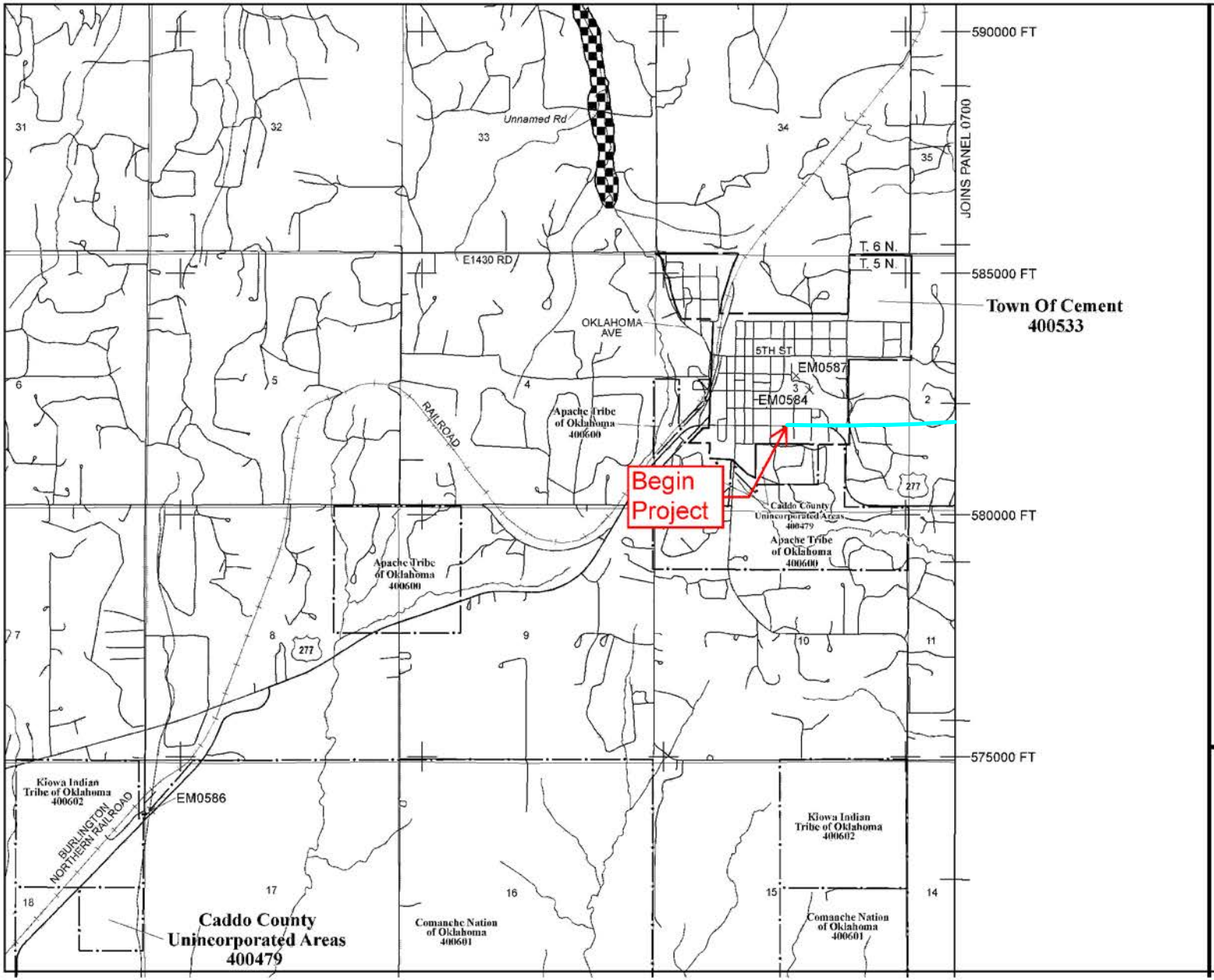
Rating Options

Aggregation Method: No Aggregation Necessary

Tie-break Rule: Lower

APPENDIX J

FLOODPLAIN INFORMATION



ance Program at 1-800-638-6620.

MAP SCALE 1" = 2000'

0 0 1,000 2,000 3,000 4,000 FEET

NFIP NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0675E

FIRM

FLOOD INSURANCE RATE MAP

CADDO COUNTY, OKLAHOMA AND INCORPORATED AREAS

PANEL 675 OF 825

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

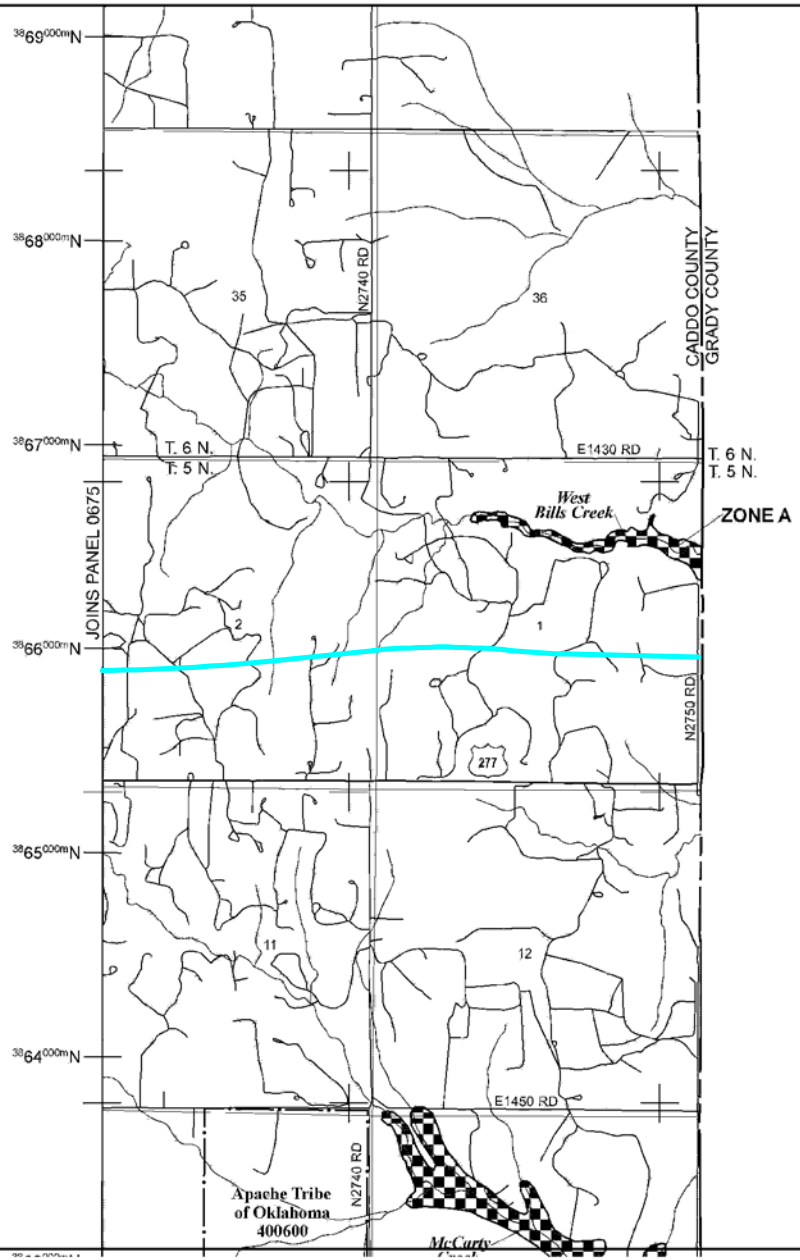
COMMUNITY	NUMBER	PANEL	SUFFIX
APACHE TRIBE OF OKLAHOMA	400600	0675	E
CADDO COUNTY, UNINCORPORATED AREAS	400479	0675	E
CEMENT, TOWN OF	400533	0675	E
COMANCHE NATION OF OKLAHOMA	400601	0675	E
CYRIL, TOWN OF	400264	0675	E
KIOWA INDIAN TRIBE OF OKLAHOMA	400602	0675	E

Notice to User: The Map Numbers shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.

MAP NUMBER 40015C0675E

REVISED DATE APRIL 18, 2011

Federal Emergency Management Agency



ance Program at 1-800-638-6620.

MAP SCALE 1" = 2000'

0 0 1,000 2,000 3,000 4,000 FEET

NFIP NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0700E

FIRM

FLOOD INSURANCE RATE MAP

CADDO COUNTY, OKLAHOMA

AND INCORPORATED AREAS

PANEL 700 OF 825

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

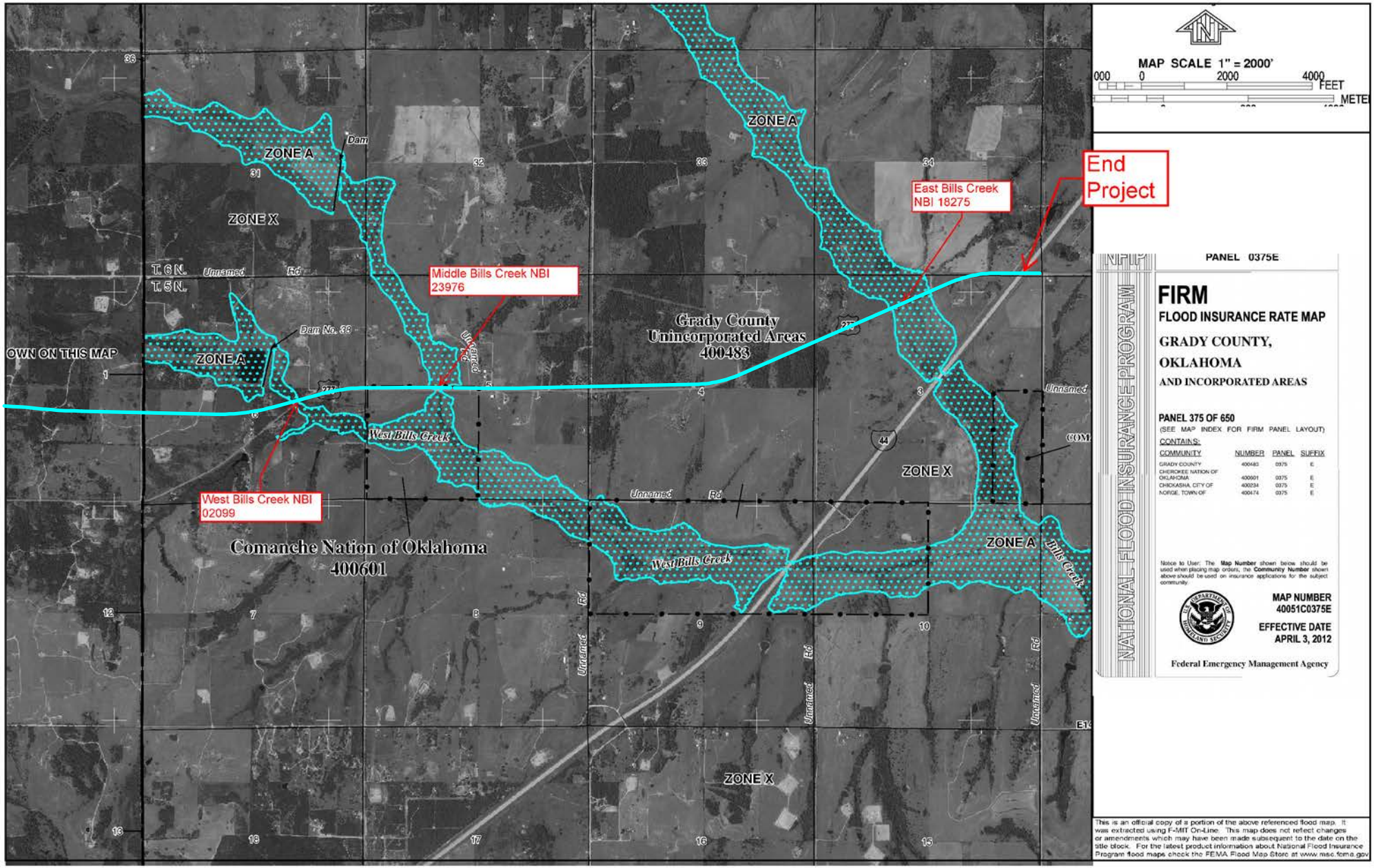
COMMUNITY	NUMBER	PANEL	SUFFIX
APACHE TRIBE OF OKLAHOMA	400600	0730	E
CADDO COUNTY, UNINCORPORATED AREAS	400179	0700	E

Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.

MAP NUMBER
40015C0700E

REVISED DATE
APRIL 18, 2011

Federal Emergency Management Agency


MAP SCALE 1" = 2000'
000 0 2000 4000
FEET
METE
End Project
East Bills Creek NBI 18275
Middle Bills Creek NBI 23976
West Bills Creek NBI 02099
Grady County Unincorporated Areas 400483
Comanche Nation of Oklahoma 400601
ZONE A
ZONE X
Dam
Dam No. 39
Unnamed Rd
West Bills Creek
Bills Creek
T. 6 N.
T. 5 N.
OWN ON THIS MAP
PANEL 0375E
NATIONAL FLOOD INSURANCE PROGRAM
FIRM
FLOOD INSURANCE RATE MAP
GRADY COUNTY, OKLAHOMA
AND INCORPORATED AREAS
PANEL 375 OF 650
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)
CONTAINS:
COMMUNITY NUMBER PANEL SUFFIX
GRADY COUNTY 400483 0375 E
CHEROKEE NATION OF OKLAHOMA 400001 0375 E
CHICKASHA, CITY OF 400234 0375 E
NORGE, TOWN OF 400474 0375 E
Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.
MAP NUMBER 40051C0375E
EFFECTIVE DATE APRIL 3, 2012
Federal Emergency Management Agency
This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

APPENDIX K

HAZARDOUS WASTE STUDIES

Oklahoma Department of Transportation

Environmental Programs Division

Office 521-3050 Fax 522-5193

DATE: November 18, 2015

TO: Division VII NEPA Project Manager

FROM: Hazardous Waste Coordinator DAE

SUBJECT: Review of Preliminary Plans (1/30/15) and R/W Utility Meeting Plans Storm Sewer Detail (10/27/15, Sheet 12)

20953(04) US-277: Beginning 2.57 miles W. of Grady C/L at the N. curve in the E. edge of Cement, ext. E. approximately 4.0 miles to Middle Bills Creek Bridge (New Alignment). 20962(04) US-277: Beginning 1.45 E. of Caddo C/L at E. side of Middle Bills Creek, ext. E. 2.7 miles on offset alignment to H.E. Bailey T.P overpass bridge.

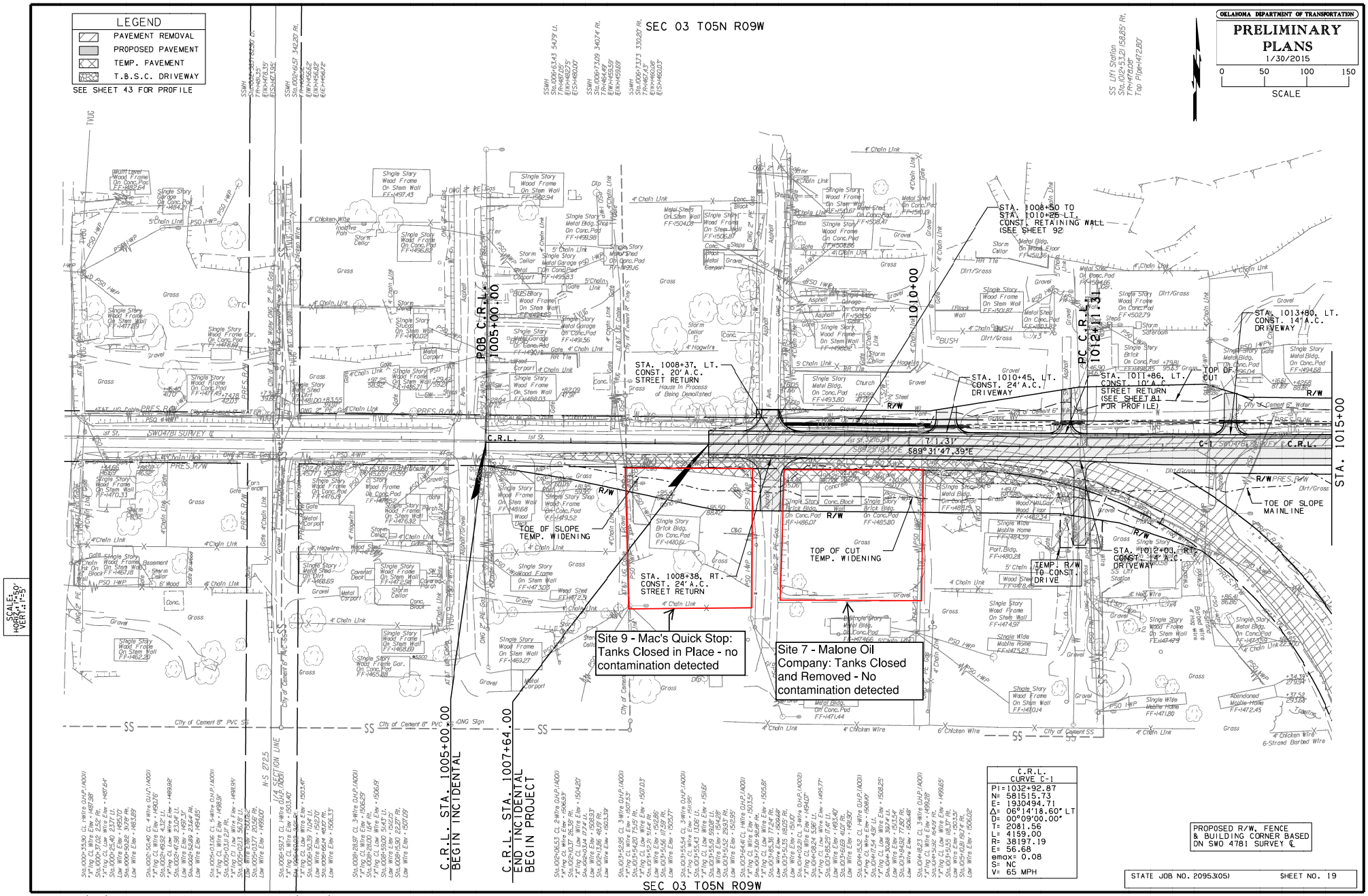
An Initial Site Assessment (ISA) was performed for the subject project by Parsons Brinkerhoff (dated January 2015). ODOT's Consultant Report Review (dated January 16, 2015) resulted in a request for plans to determine what affect, if any, the identified potential environmental concerns may have on the project.

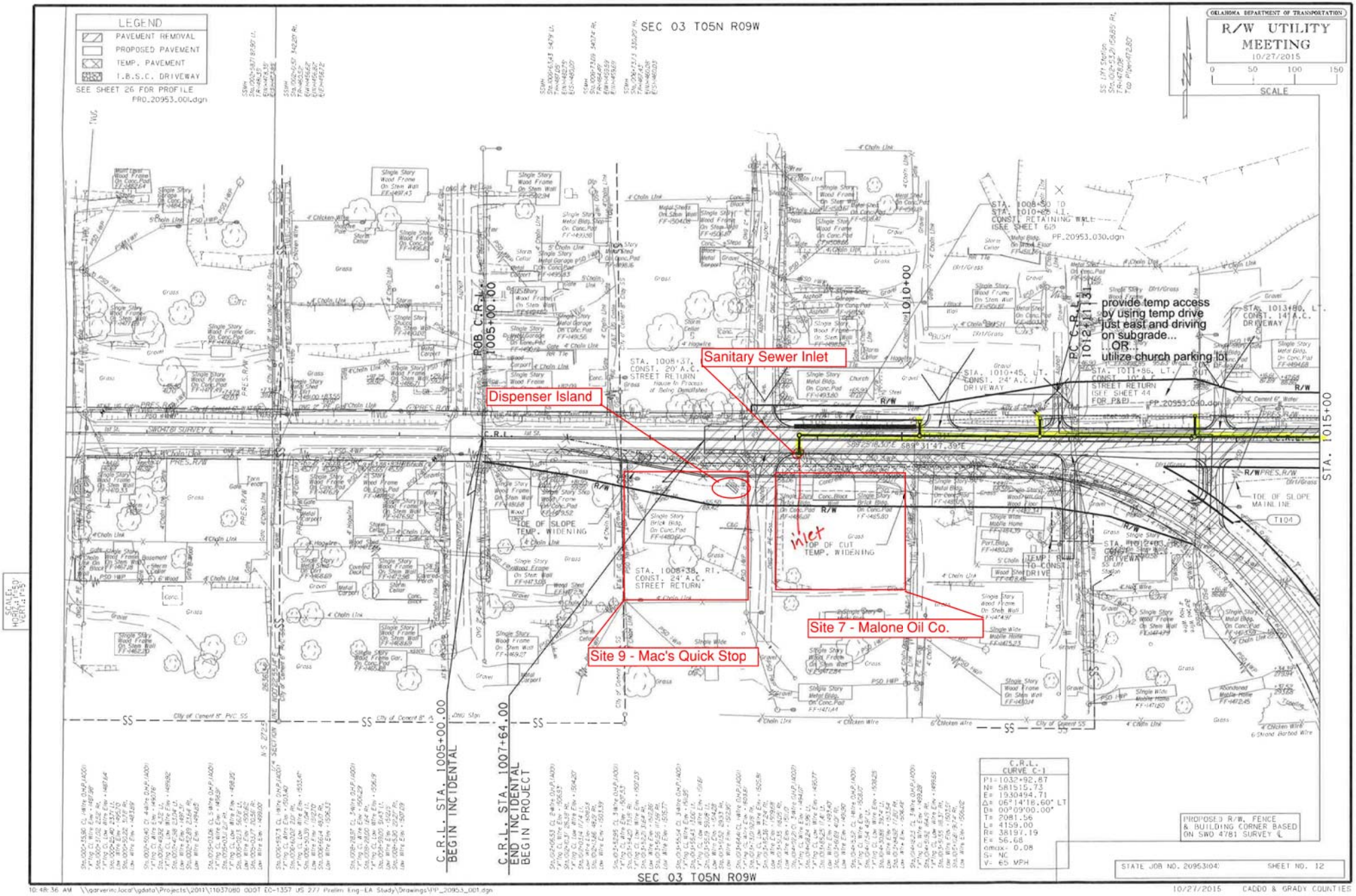
Two UST facilities were noted and plans requested in order to evaluate the environmental risk posed to the project. A plan sheet was submitted by Garver on October 27, 2015, which indicates relatively shallow ground disturbance will occur at the toe of slope/top of cut, and during storm sewer installation. Tank closure documentation for Mac's Quick Mart is limited, and based on field observations, it is possible that product lines and portions of the dispenser system may still be present. Such features could affect this area of the project if acquired by ODOT, however procedures are in place for such concerns to be handled though ODOT Right of Way Division.

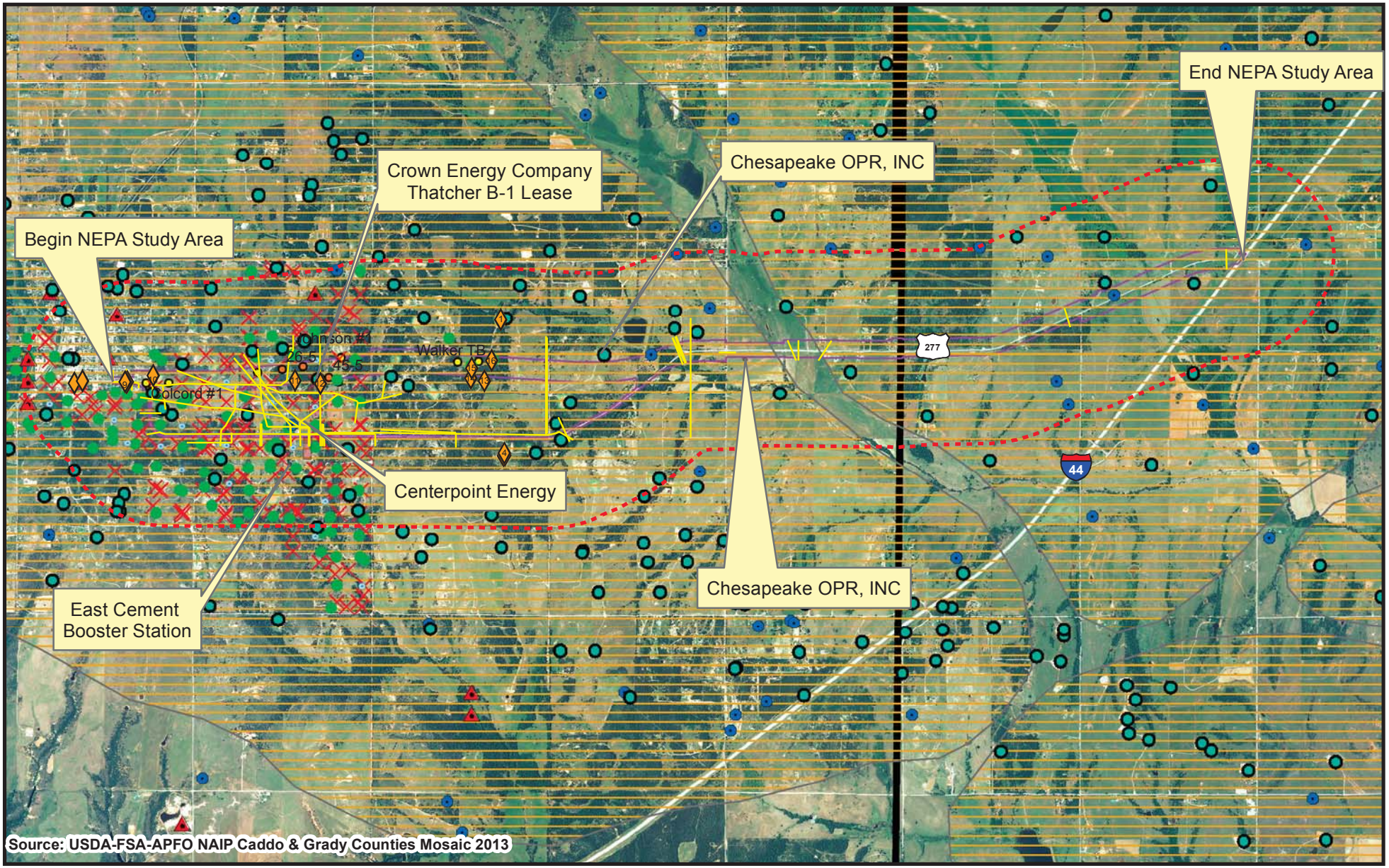
The Consultant Report Review also noted that 20 oil and gas wells, multiple gas pipelines, pump stations and ASTs were located within or adjoining the study area. Similar to the above underground storage tank concerns, these facilities will be handled via standard ODOT Right of Way Division procedures for clearing the right of way for the project.

DAE

Attachment


LEGEND
PAVEMENT REMOVAL
PROPOSED PAVEMENT
TEMP. PAVEMENT
T.B.S.C. DRIVEWAY
SEE SHEET 43 FOR PROFILE
OKLAHOMA DEPARTMENT OF TRANSPORTATION
PRELIMINARY PLANS
1/30/2015
0 50 100 150
SCALE
SEC 03 T05N R09W
STA. 1008+50 TO STA. 1010+25 LT. CONST. RETAINING WALL (SEE SHEET 92)
STA. 1008+37, LT. CONST. 20' A.C. STREET RETURN
STA. 1008+38, RT. CONST. 24' A.C. STREET RETURN
STA. 1010+45, LT. CONST. 24' A.C. DRIVEWAY
STA. 1011+86, LT. CONST. 10' A.C. STREET RETURN (SEE SHEET 81 FOR PROFILE)
STA. 1013+80, LT. CONST. 14' A.C. DRIVEWAY
STA. 1012+03, RT. CONST. 14' A.C. DRIVEWAY
POB C.R.L. 1005+00.00
PC C.R.L. 1010+21.31
STA. 1010+00
STA. 1015+00
C.R.L. STA. 1005+00.00 BEGIN INCIDENTAL
C.R.L. STA. 1007+64.00 END INCIDENTAL BEGIN PROJECT
TOE OF SLOPE TEMP. WIDENING
TOP OF CUT TEMP. WIDENING
TOE OF SLOPE MAINLINE
TOP OF CUT
TEMP. R/W TO CONST. DRIVE
Site 9 - Mac's Quick Stop: Tanks Closed in Place - no contamination detected
Site 7 - Malone Oil Company: Tanks Closed and Removed - No contamination detected
C.R.L. CURVE C-1
PI= 1032+92.87
N= 581515.73
E= 1930494.71
Δ= 06°14'18.60" LT
D= 00°09'00.00"
T= 2081.56
L= 4159.00
R= 38197.19
E= 56.68
emax= 0.08
Ss= NC
V= 65 MPH
PROPOSED R/W, FENCE & BUILDING CORNER BASED ON SWO 4781 SURVEY ℄
STATE JOB NO. 20953(05)
SHEET NO. 19
SCALE: HORIZ.: 1"=50' VERT.: 1"=5'
10:51:03 AM L:\201\11037080 ODOT EC-1357 US 277 Prelim Eng-EA Study\Drawings\PP_20953_001.dgn
1/30/2015
CADDO & GRADY COUNTIES


OKLAHOMA DEPARTMENT OF TRANSPORTATION
R/W UTILITY MEETING
10/27/2015
SCALE
LEGEND
PAVEMENT REMOVAL
PROPOSED PAVEMENT
TEMP. PAVEMENT
I.B.S.C. DRIVEWAY
SEE SHEET 26 FOR PROFILE
PRO_20953_001.dgn
SEC 03 T05N R09W
provide temp access by using temp drive just east and driving on subgrade...
...OR...
utilize church parking lot
Sanitary Sewer Inlet
Dispenser Island
Site 7 - Malone Oil Co.
Site 9 - Mac's Quick Stop
inlet
POB C.R.L. 1005+00.00
C.R.L. STA. 1005+00.00
BEGIN INCIDENTAL
C.R.L. STA. 1007+64.00
END INCIDENTAL
BEGIN PROJECT
C.R.L. CURVE C-1
PI= 1032+92.87
N= 581515.73
E= 1930494.71
D= 06°14'18.60" LT
Ds= 00°09'00.00"
T= 2081.56
L= 4159.00
R= 38197.19
Fe= 56.68
emax= 0.08
S= NC
V= 65 MPH
PROPOSED R/W, FENCE & BUILDING CORNER BASED ON SWD 4781 SURVEY
STATE JOB NO. 20953(04)
SHEET NO. 12
10:48:36 AM
10/27/2015
CADDO & GRADY COUNTIES



Legend

- NEPA Study Area
- 1/2 Mile Boundary
- Photo Locations
- Potential Contamination Site
- Permitted Air Emission Sites (AIRS)
- TierII Facilities
- Gas/Oil Line
- AST Locations
- Oil/Gas Fields
- Groundwater Well
- Monitoring Well
- Injector Well
- Active Well
- Inactive/Abandon Well
- Active Well - Well Type Not Reported

Proposed Well

- 26-5
- 33-1A
- 45-5

Oklahoma Department of Transportation
US-277 From Cement To
Middle Bills Creek
Caddo & Grady Counties
JP 20953(04) & 20962(04)

0 0.5 1 2 Miles

Figure 4
Half-Mile Boundary View
of
Oil/Gas Well and AST Locations
and
Oil/Gas Storage/Processing
Facilities Locations

N

OKLAHOMA DEPARTMENT OF TRANSPORTATION
CONSULTANT REPORT REVIEW – HAZARDOUS WASTE

Reviewed By:	Kris Mutz	**County:**	Caddo & Grady
Review Date:	January 16, 2015	**Project No.:**	STP-108C(099)SS & STPY-126C(088)SS
Consultant:	Garver/Parsons Brinckerhoff	**J/P Number:**	20953(04) & 20962(04)

1. PROJECT DESCRIPTION: US-277: Begin 2.57 miles west of the Grady County line at the north curve in the east edge of Cement, and extend east approx. 6.7 miles on offset alignment to the H.E. Bailey Turnpike overpass bridge.

2. LEVEL OF INVESTIGATION: ☒Assessment ☐Sampling

3. SUMMARY OF INVESTIGATION

A. Relative risk of contamination in study footprint: ☐Low ☐Moderate ☒High

B. Potential for contamination, if present, to affect project: ☐Low ☐Moderate ☒High

C. Did Consultant recommend additional work? ☐No ☒Yes (describe below):

PB identified a former gas station, a second former gas station with three USTs closed in place, 20 oil/gas/ injection wells, and multiple gas pipelines, pump stations and ASTs within or adjoining the study area that pose a risk to the project, and recommended additional investigation prior to commencement of construction activities to properly evaluate the degree of risk each one presents.

4. RECOMMENDATIONS*:

☐ Approval to Proceed (No Further Action)

☒ Approval to Proceed, Pending:

- ☐ Avoidance of described site(s)
- ☒ Plan Notes regarding described site(s) (See Section 5)
- ☒ Additional investigation by ODOT

☐ Approval NOT Recommended

* - If different from Consultant, explain in Section 6 General Comments

5. PLAN NOTES: Plan notes and contaminated materials management requirements may be developed, pending additional investigation and review of design drawings.

6. GENERAL COMMENTS: Review of design drawings is necessary to determine what effect the closed USTs and oil/gas equipment will have on the project.

ATTACH EXCERPTS FROM REPORT, AS APPROPRIATE.*

*The full document is on file with ODOT's Environmental Programs Division. Please contact Kris Mutz at (405) 521-2673 or kmutz@odot.org for more information.

INITIAL SITE ASSESSMENT

Caddo and Grady Counties, Oklahoma
JP Number: JP 20953(04) & 20962(04)

Prepared For:

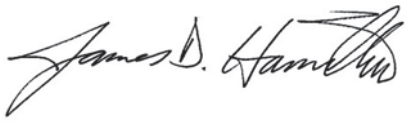
Oklahoma Department of Transportation
Environmental Programs Division
200 NE 21st Street
Oklahoma City, OK 73105

Prepared by:

Parsons Brinckerhoff
901 Mopac Expressway South
Building 2, Suite 595
Austin, TX 78746

Prepared by:

Jonathan Sell
PB Lead Environmental Scientist



James Hamilton, AICP
PB Project Manager

Reviewed by:

Ryan Mountain
Senior Environmental Scientist

January 2015

Environmental Professional Statement

12.13.1 “[I, We] declare that, to the best of [my, our] professional knowledge and belief, [I, we] meet the definition of Environmental professional as defined in §312.10 of 40 CFR§ 312” and
12.13.2 “[I, We] have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the subject property. [I, We] have developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.”

Jonathan Sell
PB Lead Environmental Scientist

1.0 EXECUTIVE SUMMARY

The Oklahoma Department of Transportation (ODOT), in cooperation with the Federal Highway Administration (FHWA), is proposing to improve US Highway 277 (US-277) from Cement, Oklahoma, in Caddo County to the Interstate Highway 44 (I-44) junction in Grady County. Existing US-277 is a major truck route but has several sharp curves and rolling terrain, which results in inadequate sight distance to safely stop vehicles for turning or to pass slow moving vehicles. These factors contribute to a substantial accident history. The proposed improvements will begin at approximately Latitude 34.932057° and Longitude 98.135176° (NAD 83) near the intersection of US-277 and E Street in Caddo County, which is located in the town of Cement.

Proposed improvements include reconstructing US-277 on a new alignment located north of the existing highway. The proposed alignment heads east out of Cement and travels cross-country approximately 1,640 to 2,200 feet north of the existing highway. The proposed new alignment meets the existing alignment just west of County Road NS-276 and follows the existing alignment up to the bridge over Middle Bills Creek. A new bridge will be constructed at West Bills Creek. The recently reconstructed bridge at Middle Bills Creek will remain in place. Just east of Middle Bills Creek the alignment diverges to approximately 110 feet north of the existing alignment, where it continues until shifting back to the existing alignment to tie into the roadway approach located just west of East Bills Creek. At East Bills Creek the proposed improvements follow the existing alignment to I-44 at the end of the project area. The bridge at East Bills Creek will be widened to accommodate the new roadway. The proposed improvements will require approximately 180 acres of new right-of-way (R/W). The roadway will remain open during construction. Sections of the existing US-277 facility that would not be incorporated into the proposed alignment would receive minor improvements such as mill and overlay before transfer to county jurisdiction.

At the request of ODOT, an Initial Site Assessment (ISA) was conducted to identify sites within and adjacent to the proposed project that are potentially “at risk” for contamination due to hazardous waste or petroleum products. The methods for identifying sources of potential contamination consisted of a review of ODOT specified compliant federal and state environmental databases, an oil and gas well report, and a field reconnaissance (performed in July 2014) of the project and adjacent properties. The investigation did not include review of title data, and no interviews with property owners or consultation with local, state, or federal authorities were conducted.

The ISA performed did not determine any facilities within the ASTM 1527 radius guidelines of the proposed project (with the exception of the oil and gas wells and associated ASTs and gas pipelines) to have Recognized Environmental Conditions that are considered “high risk” to impact the construction of the proposed project.

The Oil and Gas Well report identified 152 wells within one-half mile of the proposed project corridor. Furthermore, the Citation Oil and Gas Corporation provided additional location information on oil and gas wells that occur within/adjacent to the proposed project corridor. Of the identified wells, approximately two injection wells, twelve active wells, six abandoned wells, and three proposed wells were identified as occurring directly within the National Environmental Policy Act (NEPA) Study Area of the proposed new alignment project corridor. Due to the possible acquisition and removal/relocation of oil/gas wells and associated aboveground storage tanks as well as petroleum involvement at these locations, the oil/gas wells and aboveground storage tanks that occur directly within and to the north of the proposed project corridor are considered to pose a "high risk" to project construction or R/W acquisition. Furthermore, numerous gas and oil pipelines occur within and adjacent to the proposed project corridor, which also pose a "high risk" to project construction or R/W acquisition.

2.0 INVESTIGATIVE METHODS AND EVALUATION CRITERIA

2.1 Purpose

Hazardous waste, contaminated soils or polluted groundwater within or adjacent to a project can cause delays in construction and result in escalated cost due to remediation actions. Early detection of potential contamination due to hazardous waste or petroleum products will aid the ODOT in reducing construction delays and escalated costs. The purpose of this ISA report is to identify sites within the vicinity of the project that are potential sources of contamination so that further investigation can be conducted if necessary and remedial procedures can be implemented efficiently.

2.2 Scope of Investigation

The scope of this ISA included a field reconnaissance of the project, review of state and federal environmental regulatory databases, and a report of oil and gas well locations. The databases and specified search distances from the project location are listed in **Table 1**.

TABLE 1: FEDERAL AND STATE ENVIRONMENTAL DATABASE

Federal Databases	Search Radius
EPA National Priority List (NPL)	1.00 mile
Delisted National Priorities List (DNPL)	0.50 mile
Resource Conservation & Recovery Act - Corrective Action Facilities (RCRAC)	1.00 mile
Resource Conservation & Recovery Act - Treatment, Storage & Disposal Facilities (RCRAT)	0.50 mile
Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) list	0.50 mile
Emergency Response Notification System (ERNSOK) list	0.02 mile

US-277 and F Avenue. The site investigation involved walking the site to determine if the former or existing location of the USTs could be identified and to observe any signs of potential contamination such as staining, unusual die back of vegetation, monitoring wells, and/or remediation equipment present at the site. The former location of the fuel dispensing island appeared to be approximately 40 feet south of the existing US-277 edge of pavement. One brick and concrete block building was also located on the property; however, the building was locked and the contents and/or current business operations could not be determined. No other signs of potential contamination such as staining, unusual die back of vegetation, monitoring wells, and/or remediation equipment were present at the sites.

Based on the field investigations, findings reported in the environmental database, OCC site data, and possible acquisition of R/W, this site is considered a "low risk" to the construction of the proposed project. However, if the proposed project would involve soil disturbance, soil removal from the site, and/or removal of the USTs that were closed in place at the site, it is recommended that more information be obtained in regard to the potential presence of contaminated soil/groundwater and condition of petroleum storage tanks on the premises. If contaminated soil/groundwater is encountered and/or the removal of the USTs is required, the risk associated with the facility should be considered "moderate to high." If the R/W acquisition would not disturb the current location of the inactive USTs and no soil/groundwater contamination is present, then the "low risk" determination would still be applicable to this site.

5.0 SUMMARY OF FINDINGS AND RECOMMENDATIONS

Based on the available information reviewed during this assessment, this ISA revealed evidence of recognized adverse environmental conditions in connection with the proposed project corridor. The recognized adverse environmental conditions are summarized below.

- Two sites (Site 7 and Site 9) with a "low risk" potential are located within the proposed project corridor near the western terminus, which are former gas station locations with inactive USTs. The OCC site data indicate that the USTs have been removed at Site 7 and were closed in place at Site 9. Therefore, due to the potential presence of contaminated soil/groundwater, location of R/W acquisition, if required, the risk potential at these sites may increase to "moderate or high" due to soil disturbance and the location of the inactive USTs at Site 9. As a result, these sites may require further assessment to evaluate the potential risk to the construction of the proposed project.

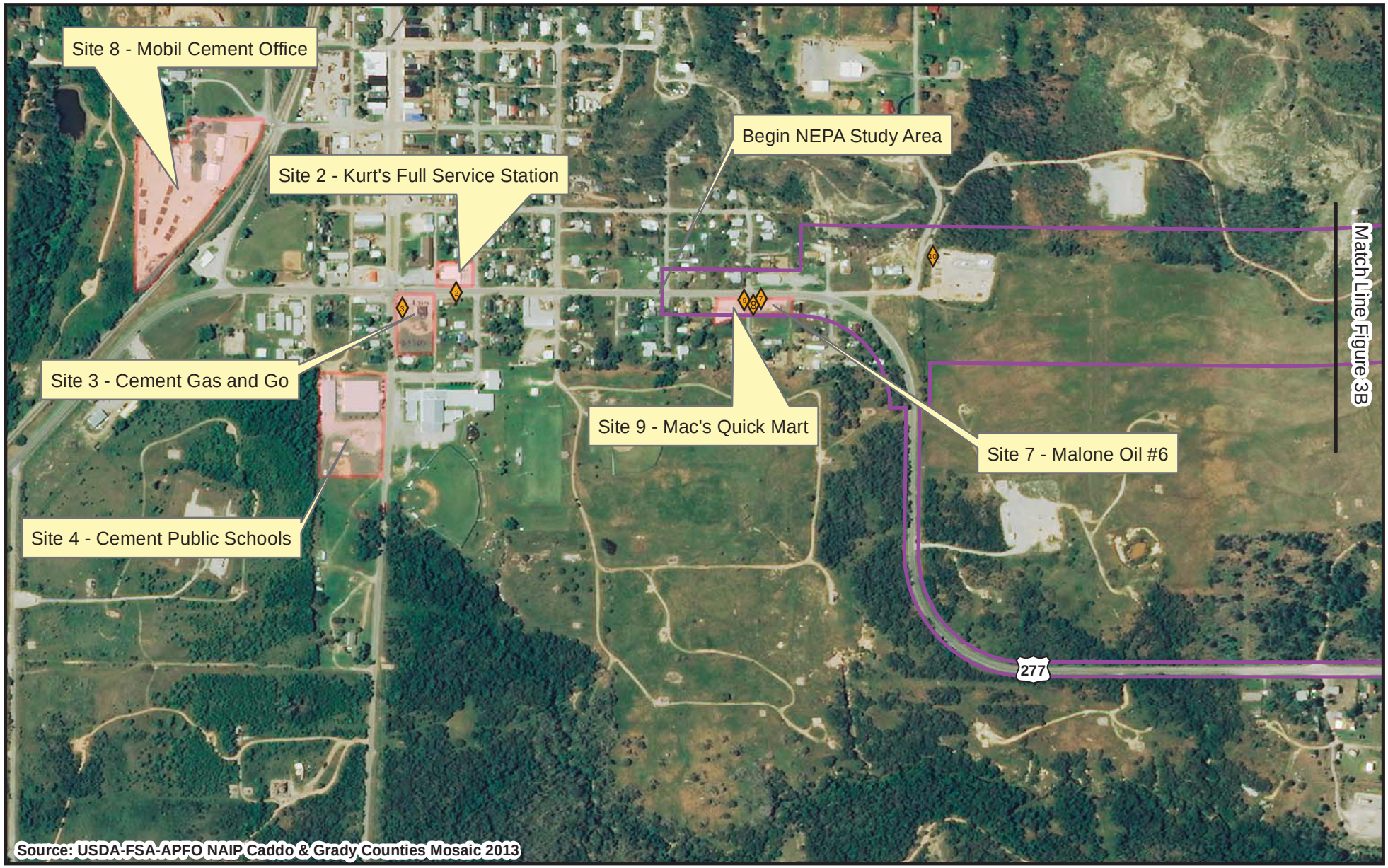
- Numerous oil and gas wells as well as the associated ASTs are located within and adjacent to the proposed project corridor. Due to petroleum involvement at the oil and gas wells and the AST sites, potential removal

and relocation of the wells and ASTs, and soil disturbance and excavation, the oil and gas wells and ASTs pose a "high risk" to the construction of the proposed project. Therefore, these sites may require further assessment to evaluate potential releases as well as potential soil and groundwater contamination.

- Several gas and oil pipelines were also identified within and adjacent to the proposed project corridor. Due to the type of product associated with the oil and gas pipelines, potential removal and relocation of the pipelines and associated facilities, and soil disturbance and excavation, the oil and gas pipelines pose a "high risk" to the construction of the proposed project. Therefore, further investigation is warranted prior to the commencement of construction activities to properly evaluate the degree of risk posed by gas pipelines and associated production equipment.

- Four oil and gas storage and processing facilities with air quality permits (**East Cement Booster Station, Chesapeake OPR Inc. (two sites), and Centerpoint Energy**) also occur within and/or adjacent the proposed project corridor. Based on the location of the oil and gas storage and processing facilities from the proposed project corridor, and current status, these facilities are considered a "low risk" to the construction of the proposed project.

- Three water wells (agricultural, domestic, and industrial) were identified by the OWRB database as occurring within the proposed project corridor. However, their location could not be verified during the field reconnaissance. Therefore, prior to any planned construction, a more detailed search may be required to supplement this assessment.



Legend

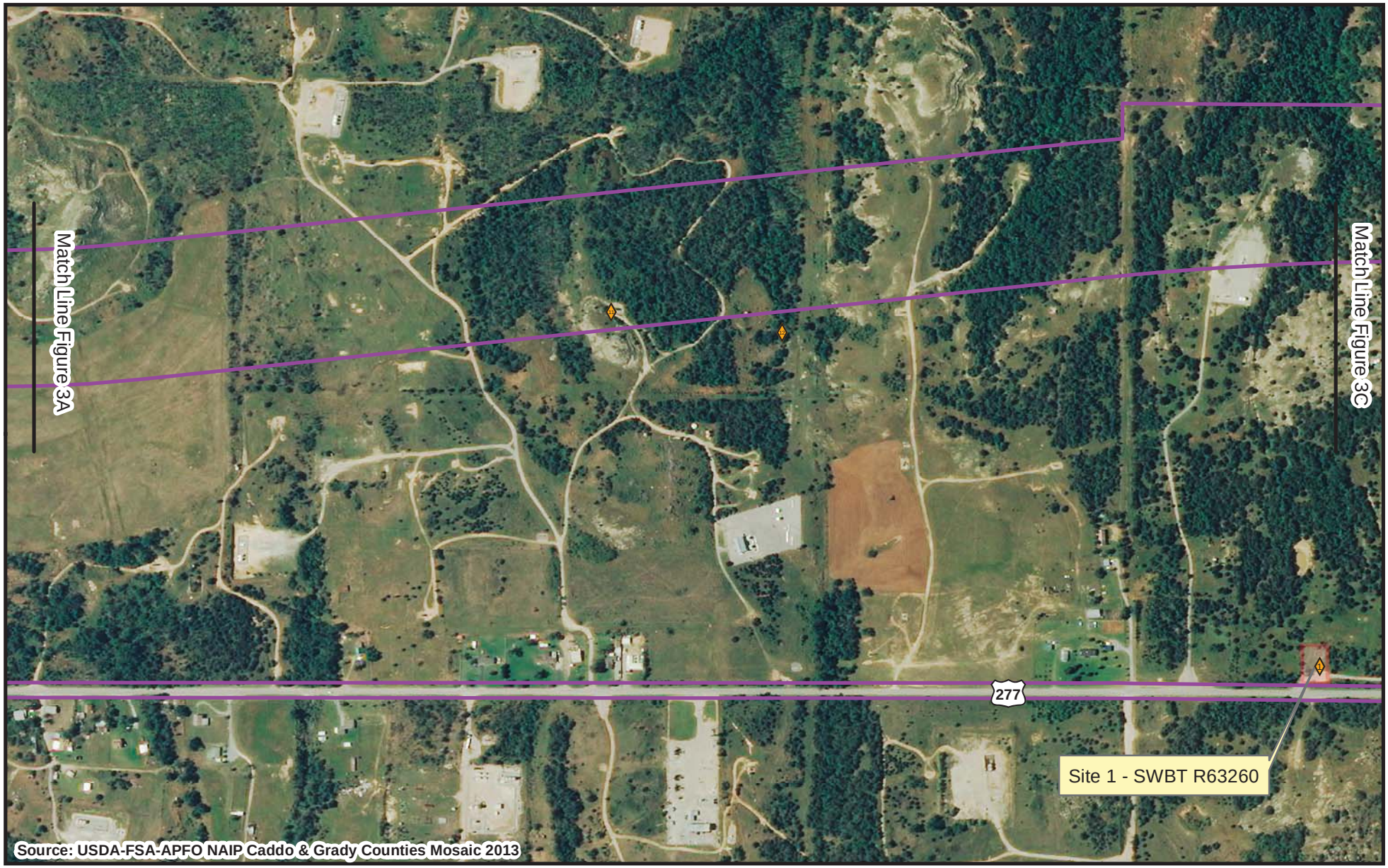
- NEPA Study Area
- Potential Contamination Site
- Photo Location

Oklahoma Department of Transportation
US-277 From Cement To
Middle Bills Creek
Caddo & Grady Counties
JP 20953(04) & 20962(04)

0 0.05 0.1 0.2 Miles

Figure 3A
Potential Contamination
Site Locations

N



Legend

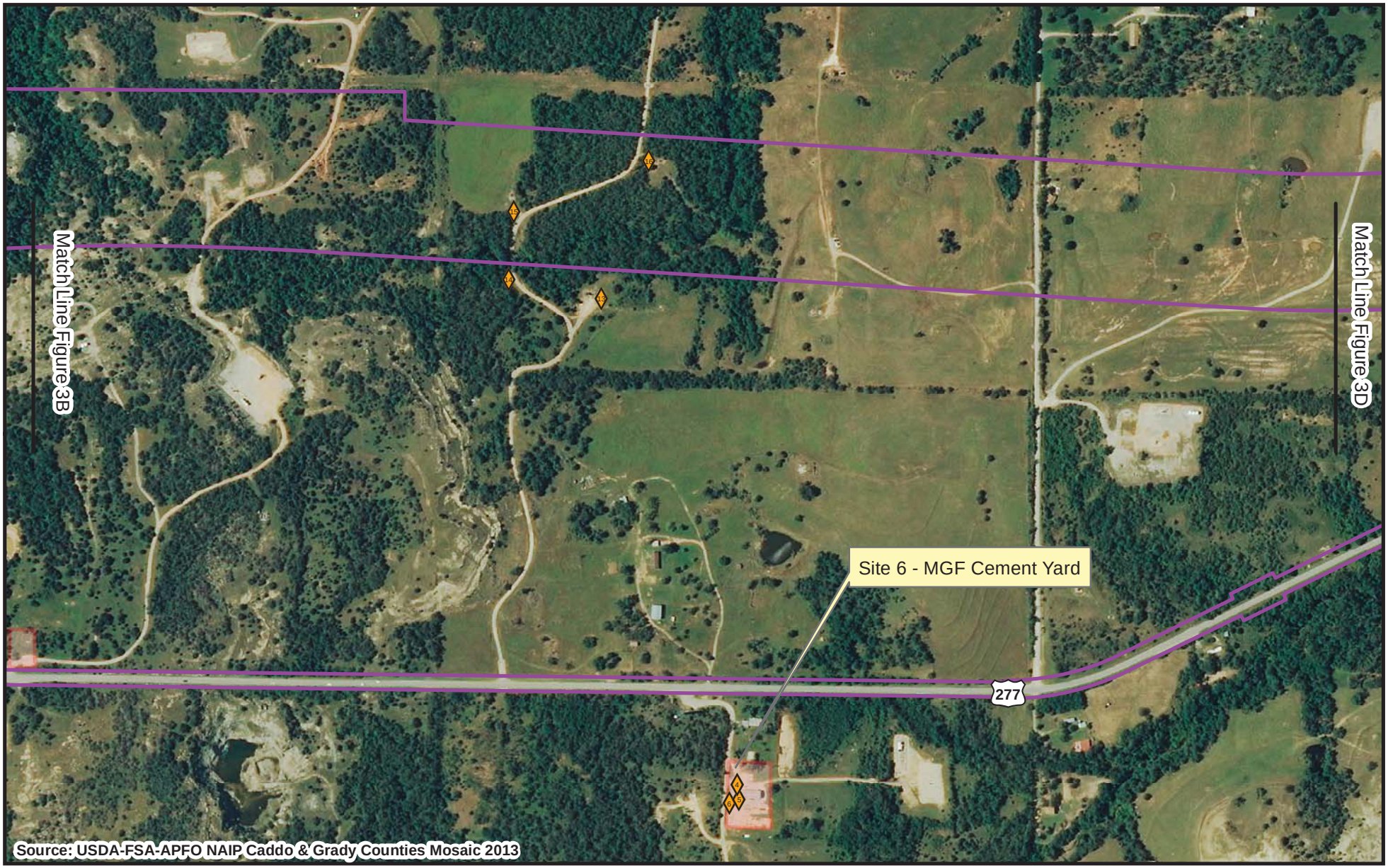
- NEPA Study Area
- Potential Contamination Site
- Photo Location

Oklahoma Department of Transportation
US-277 From Cement To
Middle Bills Creek
Caddo & Grady Counties
JP 20953(04) & 20962(04)

0 0.05 0.1 0.2 Miles

Figure 3B
Potential Contamination
Site Locations

N



Legend

- NEPA Study Area
- Potential Contamination Site
- Photo Location

Oklahoma Department of Transportation
US-277 From Cement To
Middle Bills Creek
Caddo & Grady Counties
JP 20953(04) & 20962(04)

0 0.05 0.1 0.2 Miles

Figure 3C
Potential Contamination
Site Locations

N

Legend

- NEPA Study Area
- Potential Contamination Site
- Photo Location

Oklahoma Department of Transportation
US-277 From Cement To
Middle Bills Creek
Caddo & Grady Counties
JP 20953(04) & 20962(04)

0 0.05 0.1 0.2 Miles

Figure 3D
Potential Contamination
Site Locations

N

Legend

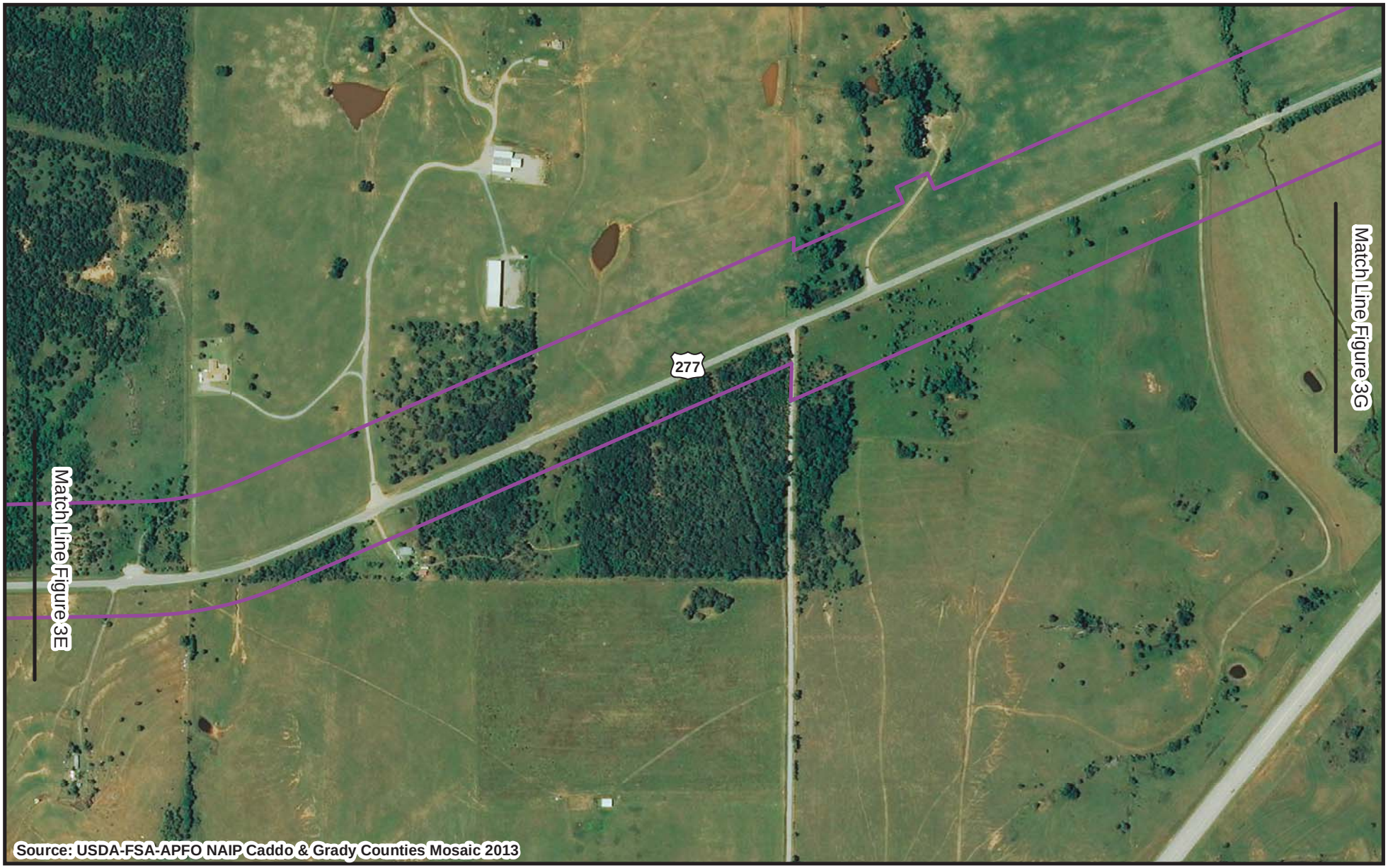
- NEPA Study Area
- Potential Contamination Site
- Photo Location

Oklahoma Department of Transportation
US-277 From Cement To
Middle Bills Creek
Caddo & Grady Counties
JP 20953(04) & 20962(04)

0 0.05 0.1 0.2 Miles

Figure 3E
Potential Contamination
Site Locations

N



Legend

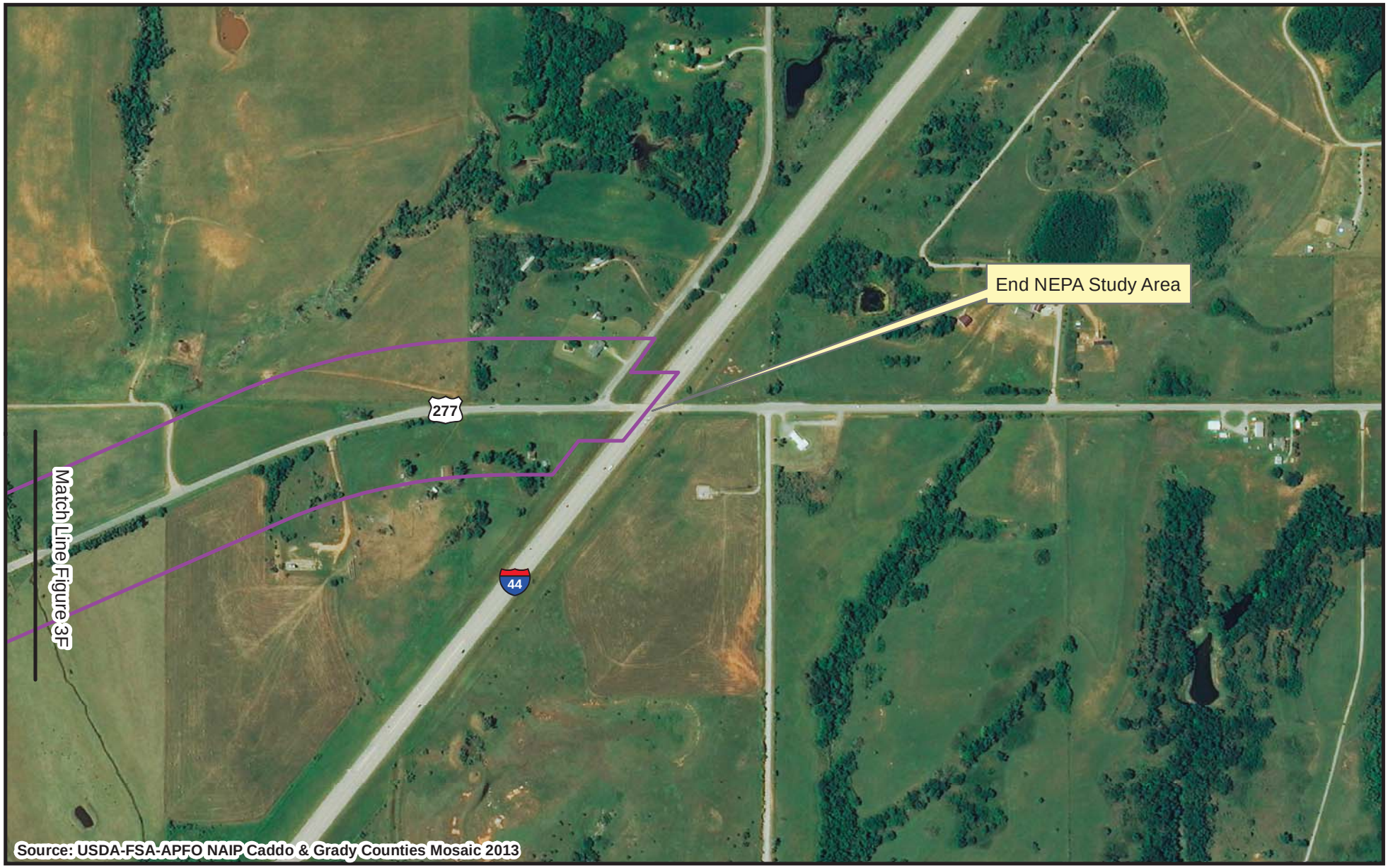
- NEPA Study Area
- Potential Contamination Site
- Photo Location

Oklahoma Department of Transportation
US-277 From Cement To
Middle Bills Creek
Caddo & Grady Counties
JP 20953(04) & 20962(04)

0 0.05 0.1 0.2 Miles

Figure 3F
Potential Contamination
Site Locations

N



Legend

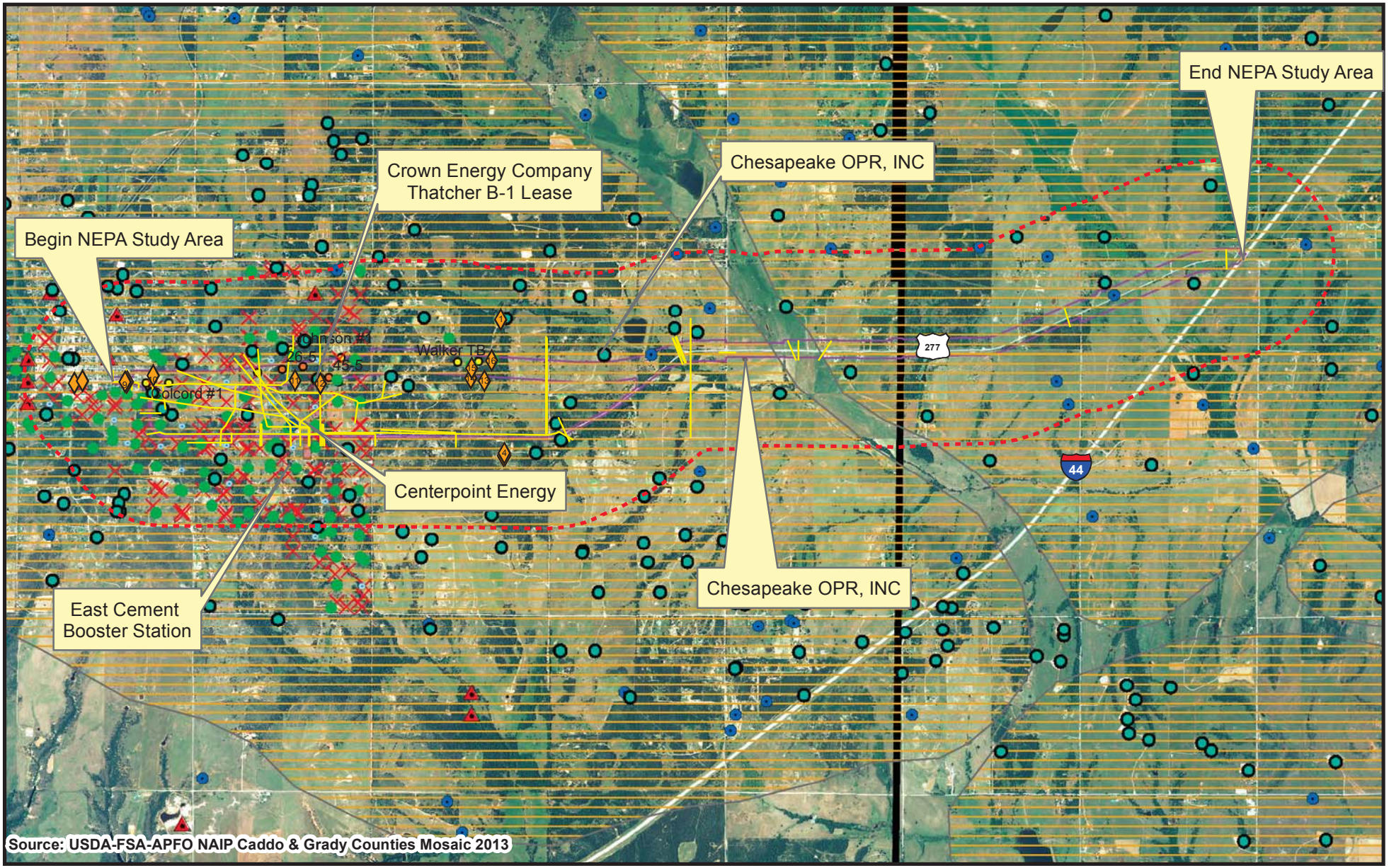
- NEPA Study Area
- Potential Contamination Site
- Photo Location

Oklahoma Department of Transportation
US-277 From Cement To
Middle Bills Creek
Caddo & Grady Counties
JP 20953(04) & 20962(04)

0 0.05 0.1 0.2 Miles

Figure 3G
Potential Contamination
Site Locations

N



Legend

- NEPA Study Area
- 1/2 Mile Boundary
- Photo Locations
- Potential Contamination Site
- Permitted Air Emission Sites (AIRS)
- TierII Facilities
- Gas/Oil Line
- AST Locations
- Oil/Gas Fields
- Groundwater Well
- Monitoring Well
- Injector Well
- Active Well
- Inactive/Abandon Well
- Active Well - Well Type Not Reported

Proposed Well

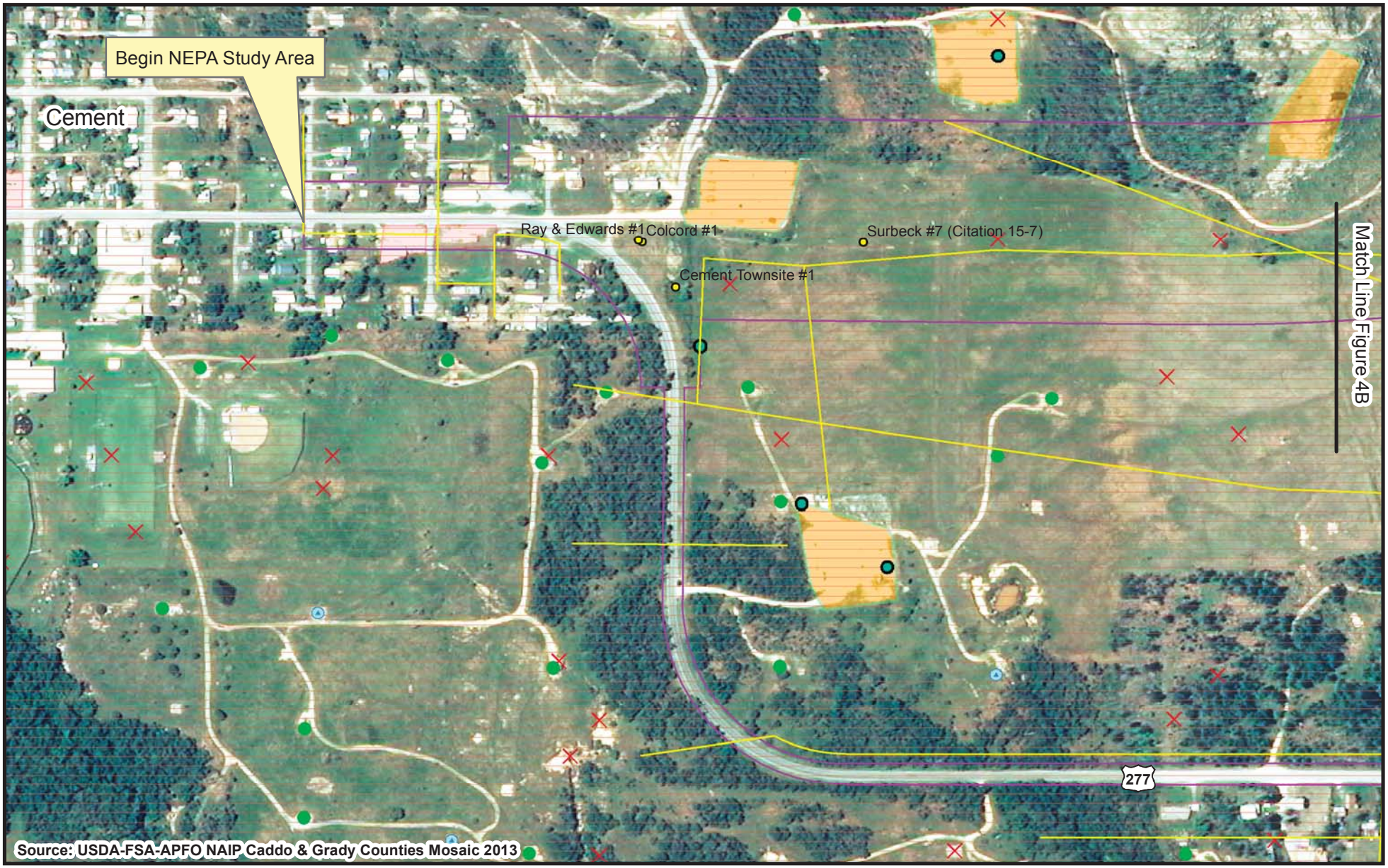
- 26-5
- 33-1A
- 45-5

Oklahoma Department of Transportation
US-277 From Cement To
Middle Bills Creek
Caddo & Grady Counties
JP 20953(04) & 20962(04)

0 0.5 1 2 Miles

Figure 4
Half-Mile Boundary View
of
Oil/Gas Well and AST Locations
and
Oil/Gas Storage/Processing
Facilities Locations

N



Legend

- NEPA Study Area
- Photo Locations
- Potential Contamination Site
- Permitted Air Emission Sites (AIRS)
- Oil/Gas Field
- Tier II Facilities
- AST Locations
- Gas/Oil Line
- Groundwater Well
- Monitoring Well
- Injector Well
- Active Well
- Inactive/Abandon Well
- Active Well - Well Type Not Reported
- Proposed Well
  - 26-5
  - 33-1A
  - 45-5

Oklahoma Department of Transportation
US-277 From Cement To
Middle Bills Creek
Caddo & Grady Counties
JP 20953(04) & 20962(04)

0 0.05 0.1 0.2 Miles

Figure 4A
Oil/Gas Well and AST Locations
and
Oil/Gas Storage/Processing
Facilities Locations

N

Legend

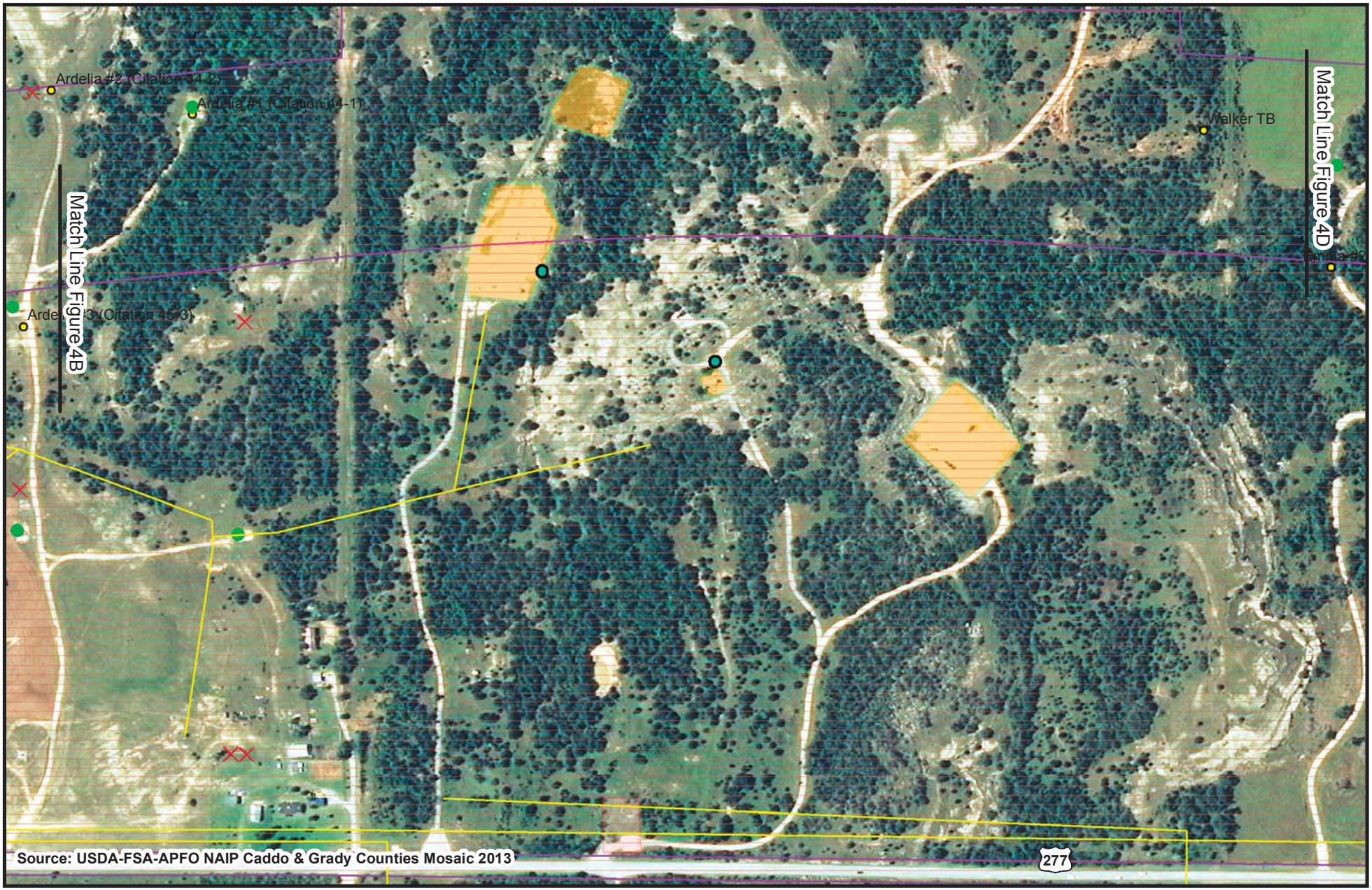
NEPA Study Area
Photo Locations
Potential Contamination Site
Permitted Air Emission Sites (AIRS)
Oil/Gas Field
Tier II Facilities
AST Locations
Gas/Oil Line
Groundwater Well
Monitoring Well
Injector Well
Active Well
Inactive/Abandon Well
Active Well - Well Type Not Reported
Proposed Well
26-5
33-1A
45-5

Oklahoma Department of Transportation
US-277 From Cement To
Middle Bills Creek
Caddo & Grady Counties
JP 20953(04) & 20962(04)

0 0.05 0.1 0.2 Miles

Figure 4B
Oil/Gas Well and AST Locations
and
Oil/Gas Storage/Processing
Facilities Locations

N



Legend

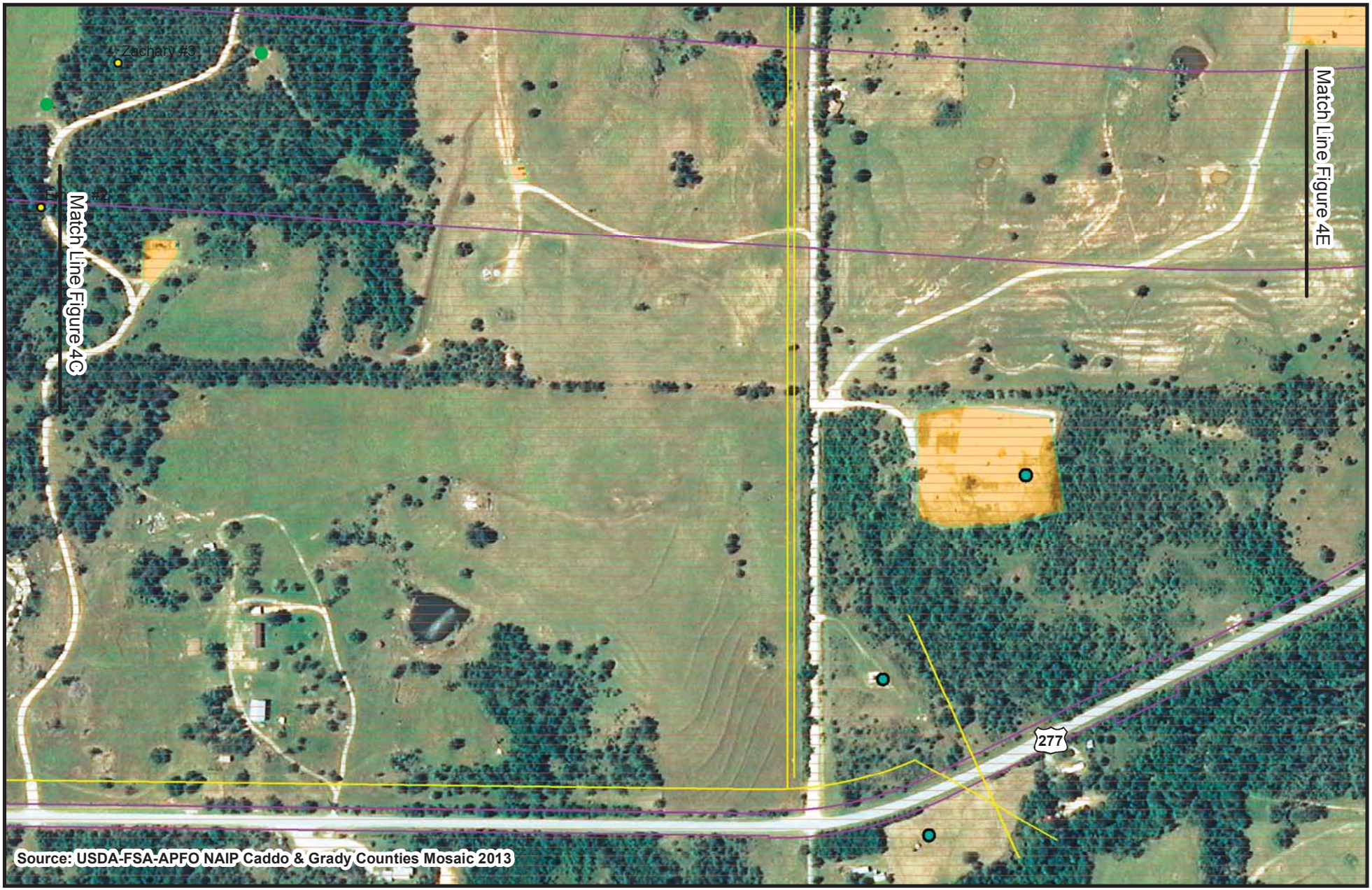
NEPA Study Area
Photo Locations
Potential Contamination Site
Permitted Air Emission Sites (AIRS)
Oil/Gas Field
Tier II Facilities
AST Locations
Gas/Oil Line
Groundwater Well
Monitoring Well
Injector Well
Active Well
Inactive/Abandon Well
Active Well - Well Type Not Reported
Proposed Well
26-5
33-1A
45-5

Oklahoma Department of Transportation
US-277 From Cement To
Middle Bills Creek
Caddo & Grady Counties
JP 20953(04) & 20962(04)

0 0.05 0.1 0.2 Miles

Figure 4C
Oil/Gas Well and AST Locations
and
Oil/Gas Storage/Processing
Facilities Locations

N



Legend

- NEPA Study Area
- Photo Locations
- Potential Contamination Site
- Permitted Air Emission Sites (AIRS)
- Oil/Gas Field
- Tier II Facilities
- AST Locations
- Gas/Oil Line
- Groundwater Well
- Monitoring Well
- Injector Well
- Active Well
- Inactive/Abandon Well
- Active Well - Well Type Not Reported

Proposed Well
- 26-5
- 33-1A
- 45-5

Oklahoma Department of Transportation
US-277 From Cement To
Middle Bills Creek
Caddo & Grady Counties
JP 20953(04) & 20962(04)

0 0.05 0.1 0.2 Miles

Figure 4D
Oil/Gas Well and AST Locations
and
Oil/Gas Storage/Processing
Facilities Locations

N

Legend

- NEPA Study Area
- Photo Locations
- Potential Contamination Site
- Permitted Air Emission Sites (AIRS)
- Oil/Gas Field
- Tier II Facilities
- AST Locations
- Gas/Oil Line
- Groundwater Well
- Monitoring Well
- Injector Well
- Active Well
- Inactive/Abandon Well
- Active Well - Well Type Not Reported
- Proposed Well
  - 26-5
  - 33-1A
  - 45-5

Oklahoma Department of Transportation
US-277 From Cement To
Middle Bills Creek
Caddo & Grady Counties
JP 20953(04) & 20962(04)

0 0.05 0.1 0.2 Miles

Figure 4E
Oil/Gas Well and AST Locations
and
Oil/Gas Storage/Processing
Facilities Locations

N

Legend

NEPA Study Area
Photo Locations
Potential Contamination Site
Permitted Air Emission Sites (AIRS)
Oil/Gas Field
Tier II Facilities
AST Locations
Gas/Oil Line
Groundwater Well
Monitoring Well
Injector Well
Active Well
Inactive/Abandon Well
Active Well - Well Type Not Reported
Proposed Well
26-5
33-1A
45-5

Oklahoma Department of Transportation
US-277 From Cement To
Middle Bills Creek
Caddo & Grady Counties
JP 20953(04) & 20962(04)

0 0.05 0.1 0.2 Miles

Figure 4F
Oil/Gas Well and AST Locations
and
Oil/Gas Storage/Processing
Facilities Locations

N

Legend

- NEPA Study Area
- Photo Locations
- Potential Contamination Site
- Oil/Gas Field
- Permitted Air Emission Sites (AIRS)
- AST Locations
- Tier II Facilities
- Gas/Oil Line
- Groundwater Well
- Monitoring Well
- Injector Well
- Active Well
- Inactive/Abandon Well
- Active Well - Well Type Not Reported
- Proposed Well
  - 26-5
  - 33-1A
  - 45-5

Oklahoma Department of Transportation
US-277 From Cement To
Middle Bills Creek
Caddo & Grady Counties
JP 20953(04) & 20962(04)

0 0.05 0.1 0.2 Miles

Figure 4G
Oil/Gas Well and AST Locations
and
Oil/Gas Storage/Processing
Facilities Locations

N

Legend

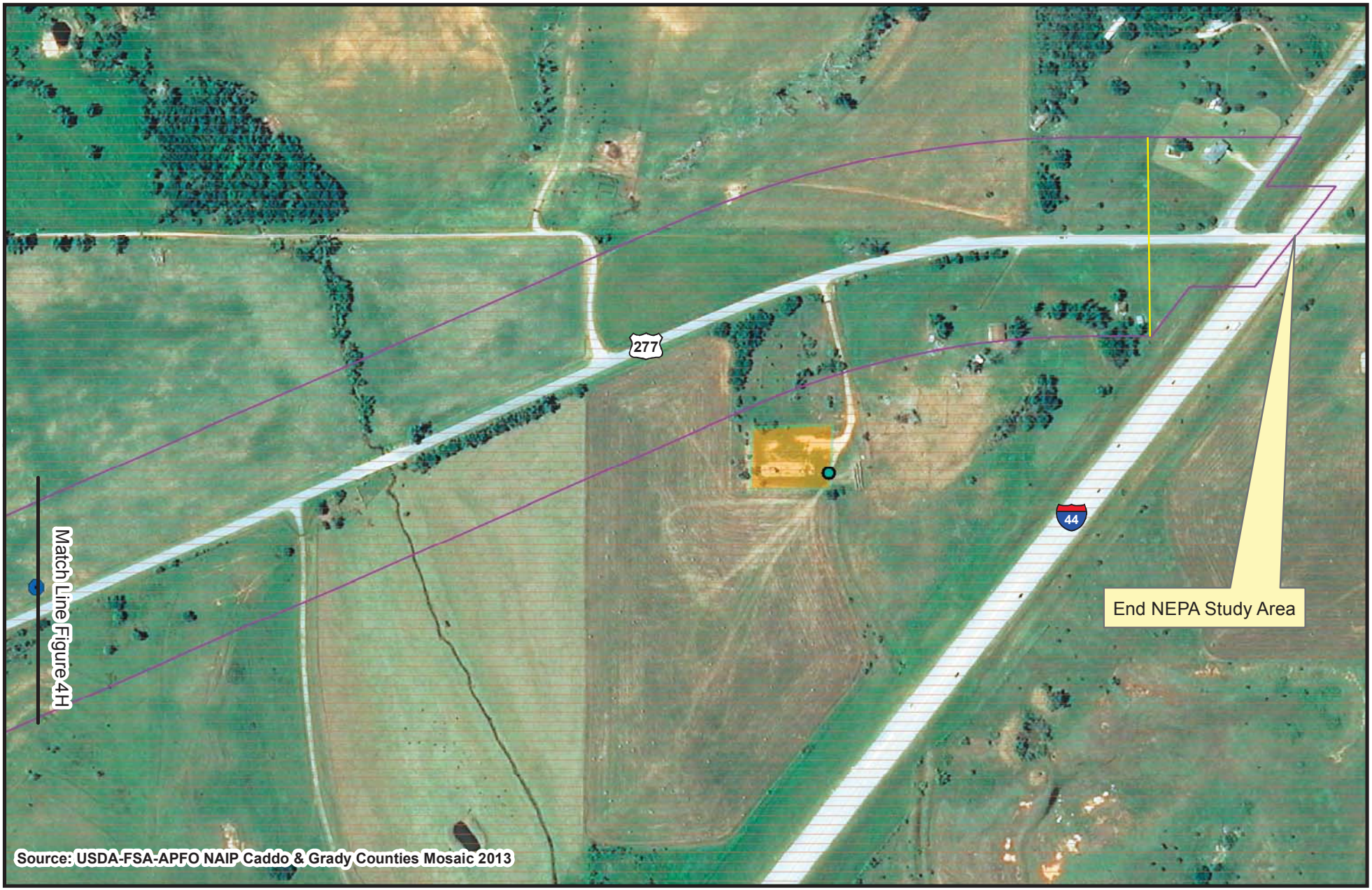
- NEPA Study Area
- Photo Locations
- Potential Contamination Site
- Oil/Gas Field
- Permitted Air Emission Sites (AIRS)
- AST Locations
- Tierll Facilities
- Gas/Oil Line
- Groundwater Well
- Monitoring Well
- Injector Well
- Active Well
- Inactive/Abandon Well
- Active Well - Well Type Not Reported
- Proposed Well
  - 26-5
  - 33-1A
  - 45-5

Oklahoma Department of Transportation
US-277 From Cement To
Middle Bills Creek
Caddo & Grady Counties
JP 20953(04) & 20962(04)

0 0.05 0.1 0.2 Miles

Figure 4H
Oil/Gas Well and AST Locations
and
Oil/Gas Storage/Processing
Facilities Locations

N



Legend

- NEPA Study Area
- Photo Locations
- Potential Contamination Site
- Oil/Gas Field
- Permitted Air Emission Sites (AIRS)
- AST Locations
- Tier II Facilities
- Gas/Oil Line
- Groundwater Well
- Monitoring Well
- Injector Well
- Active Well
- Inactive/Abandon Well
- Active Well - Well Type Not Reported

Proposed Well
- 26-5
- 33-1A
- 45-5

Oklahoma Department of Transportation
US-277 From Cement To
Middle Bills Creek
Caddo & Grady Counties
JP 20953(04) & 20962(04)

0 0.05 0.1 0.2 Miles

Figure 4I
Oil/Gas Well and AST Locations
and
Oil/Gas Storage/Processing
Facilities Locations

N

APPENDIX L

OTHER INFORMATION

Monthly Status Report (Revised Schedule)

NEPA Consultant: Garver Eng Contract EC 1357

Project: SH 277 Caddo & Grady County, J/P 20953(04) & 20962(04)

Step ID		Duration in Calendar days	Target Start from Task Order	Target Completion Date from Task Order:	Actual Start Date:	Actual Completion	Critical Path	Responsible Party	Comments
1	NTP for Task Order 1	0	3/14/2014	3/14/2014	3/24/2014	3/24/2015	Yes		
2.1	Plot Study Footprint	15	3/14/2014	3/29/2014	3/24/2014	4/18/2014	Yes	Consultant	sent to ODOT for review 4/8/14
2.2	Property Owner Notification	30	3/29/2014	4/28/2014	4/18/2014	5/16/2014	Yes	Consultant	all letters except tribal owners sent 5/16; tribal owners sent 6/11
2.3	Cultural Resources & Tribal Coordination Initiation	15	3/29/2014	4/13/2014	4/18/2014	5/8/2014	Yes	Consultant	
2.4	Tribal Coordination 30 Day Waiting Period prior to Start of Specialist Studies	45	4/13/2014	5/28/2014	5/8/2014	6/8/2014	Yes	Consultant	
2.5	Notification of Preferred Alignement for Detailed Studies	30	3/14/2014	4/13/2014	3/24/2014	5/16/2014	Yes	Consultant	all letters except tribal owners sent 5/16; tribal owners sent 6/11
3	Cultural Resources Study	90	5/28/2014	8/26/2014	6/9/2014	10/8/2014	Yes	Consultant	
4	T&E & Wetland Studies	90	5/28/2014	8/26/2014	6/9/2014	11/20/2014	Yes	Consultant	
5	Hazardous Waste Studies	90	5/28/2014	8/26/2014	6/9/2014	10/14/2014	Yes	Consultant	
6	NRCS coordination	60	3/29/2014	5/28/2014	4/18/2014	6/30/2014		Consultant	
7.1	ODOT Review of Cultural Resources Studies	60	8/26/2014	10/25/2014	10/9/2014	2/11/2015	Yes	ODOT Specialists	
7.2	ODOT Review of Biological Studies	60	8/26/2014	10/25/2014	11/20/2014	12/8/2014	Yes	ODOT Specialists	
7.3	ODOT Review of Haz Waste Studies	60	8/26/2014	10/25/2014	10/14/2014	1/19/2015	Yes	ODOT Specialists	ODOT Haz Waste Coordinator reviewed plans at PIH meeting on 3/18/15 - ODOT will develop plan notes
8	USFWS	45	10/25/2014	12/9/2014	12/8/2014	1/13/2015	Yes	ODOT Specialists	
9	SHPO Coordination	45	10/25/2014	12/9/2014	2/25/2015	3/14/2015	Yes	ODOT Specialists	
10.1	Receive Preliminary Plan In Hand Plans	0	7/1/2015	7/1/2015			Yes	From Triad proposal (Critical Path)	Garver plans complete 1/30/15
10.2	Review Preliminary Plan in Hand Plans with Footprint	5	7/1/2015	7/6/2015			Yes	Consultant	Garver plans within footprint
10.3	Attend Plan In Hand	0		1/0/1900		3/18/2015	Yes	Consultant	PIH for JP 20953(04) (Garver project)
10.4	Receive R/W Submittal Plans Plans	0	10/1/2015	10/1/2015			Yes	From Triad proposal (Critical Path)	Received JP 20962(04) R/W plans 8/4/15. PFR/RW Meeting held 8/20/15. JP 20953(04) prelim R/W submitted 11/13/15. R/W & UT review meeting held 12/14/15
10.5	ReviewRevised Plans with Footprint	15	10/1/2015	10/16/2015	8/4/2015	8/4/2015	Yes	Consultant	Triad R/W plans within NEPA footprint
11	Noise Study	30	7/1/2015	7/31/2015	8/4/2015	9/24/2015	Yes	Consultant	
12	ODOT Review of Noise Studies	60	7/31/2015	9/29/2015	9/28/2015		Yes	ODOT Specialists	prelim ODOT comments received 10/13/15; resubmitted draft report on 10/21/15; ODOT took additional field measurements on 11/6/15 and will update report. Results received 11/20/15
13	Relocation Studies	60	9/1/2015	10/31/2015	8/4/2015	11/3/2015	Yes	Consultant/ ODOT	Relocation plan for JP 20962(04) received 10/13/15. Relocation plan for JP 20953(04) received 11/3/15.
14	Socio Economic Studies	60	9/1/2015	10/31/2015	8/4/2015	10/5/2015	Yes	Consultant	no separate report - section in EA
15.1	Draft EA Preparation	30	10/31/2015	11/30/2015	11/20/2015	12/2/2015	Yes	Consultant	
15.2	FHWA/EPD Review of Draft EA	60	11/30/2015	1/29/2016	12/3/2015	3/7/2016		NEPA PM/ FHWA	
15.3	Revised EA Preparation	15	1/29/2016	2/13/2016	3/7/2016			Consultant	
15.4	FHWA Approval of EA	15	2/13/2016	2/28/2016				FHWA	
15.5	Preparation for Initial Public Hearing	15	2/28/2016	3/14/2016				NEPA PM/ Consultant	
15.6	Pre Meeting	0	3/14/2016	3/14/2016				NEPA PM/ Consultant	pre-meeting scheduled for 4/25/16
15.7	Public Hearing Notifications	30	3/14/2016	4/13/2016				NEPA PM/ Consultant	
15.8	Public Hearing	0	4/13/2016	4/13/2016				NEPA PM/ Consultant	
15.9	End of Public Comment Period	30	4/13/2016	5/13/2016				Consultant	
15.10	Response to Public Comments	15	5/13/2016	5/28/2016				NEPA PM/ Consultant	
16	Revised EA Preparation	15	5/28/2016	6/12/2016				Consultant	
16.1	FHWA/EPD Review of Revised EA	15	6/12/2016	6/27/2016				NEPA PM/ FHWA	
17.1	FHWA FONSI	15	6/27/2016	7/12/2016				FHWA	
17.2	Distribution of FONSI	15	7/12/2016	7/27/2016				NEPA PM	

Oklahoma Department of Transportation

Project Management Division (405)522-7601 Fax (405) 522-7612 Room 3C9

DATE: **12/02/2010**

TO: **Distribution List**

FROM: **Ronda Lindsay, Project Management Division**

SUBJECT: **Draft - Project Initiation Report**

J/P Number: 20953(04) County: Caddo/Grady Highway: US-277 Division: 7
PS&E Date: 2016 R/W Date : 2014 Drive-out Date: 12/02/2010
Programmed Estimate: $4,596,026
Project Description: US-277 from 2.57 miles W. of Caddo C/L, extend E. approx. 4.0 miles.

FUNCTIONAL CLASSIFICATION

Area Type:	□ Urban	□ Suburban	■ Rural	
Terrain Type:	□ Flat	■ Rolling	□ Mountainous	
Access Control:	□ Full	□ Partial	■ None	
Highway Type:	□ Freeway	□ Principal Arterial	□ Minor Arterial	■ Collector
	□ NHS	■ Non-NHS	□ STRAHNET	□ Scenic Hwy

EXISTING INFORMATION

Current ADT: 2500 % Trucks: 15% Number of Lanes: 2 Lane Width: 12'
Outside Shoulder Width: 3' sod Inside Shoulder Width: n/a
■ Open Section □ Curb & Gutter □ Divided, median width:
□ Other (describe):
Pavement Type: AC Type C Pavement Condition: □ Good ■ Fair □ Poor
Shoulder Type: Sod Shoulder Condition: □ Good ■ Fair □ Poor
Storm Sewer ■ No □ Yes Storm Sewer Condition: □ Good □ Fair □ Poor
Sidewalks ■ No □ Yes Sidewalk Width:
Bridge A Description: 3-26' I-BM
Bridge B Description: 100' P.C. BM

	Bridge A	Bridge B
Feature Intersected:	West Bill Cr	Middle Bill Creek
NBI Number(s):	02099	23976
Location Number(s):	2614 0082 X	2614 0146 X
Sufficiency Rating(s):	85.2 ND	93.7 ND
Year(s) Built:	1928	1994
Bridge Width(s):	34'	42.2'
Bridge Length(s):	79.07'	100.06'
Posted Clearance(s):	N	N
Posted:	N	N
Health Index:	89.94	97.68

ENVIRONMENTAL CONSIDERATIONS

■ Historic Properties, list: none listed, potential farmstead sites located along US-277 corridor
□ Archeological Sites, list: none listed
□ Cemeteries, list: none identified
■ Hazardous Waste / LUST Sites, list: LUST site located @ MGF Cement Yard, 2 mi. east of Cement, numerous oil/gas wells within study corridor
■ Endangered Species, list: black-capped vireo, interior least tern, whooping crane, Arkansas River shiner, piping plover, lesser prairie-chicken
□ Section 4F or 6F Properties, list: none identified
□ Farmland □ Wetlands □ Scenic and Protected Aquifers □ 100 Year Flood Plain

ALTERNATIVE IMPACTS

□ Other Agencies List:
□ Turnpike Involvement
□ Metropolitan Planning Organizations List:

PERMIT INFORMATION

Design Exception Anticipated: □ No □ As required by design □ Yes, type:
Maintenance Agreements (Lighting, Signals, etc.): □ No □ Yes, type:
Permits required: □ FAA ■ USACE □ OWRB □ Railroad □ Other, type:
Additional:

PROPOSED IMPROVEMENT

Project Intent:
Reconstruct on approx. 50' offset alignment to correct vertical and horizontal curves.

Special Considerations:

Need additional alignment study to determine the final alignment. Look at residential and business impacts on both sides.

Description of Proposed Improvements:

Reconstruct 2-12' lanes with 8' shoulders on approximately 50' offset alignment. The project will begin 2.47 miles W. of Caddo C/L, extend E. 2.47 miles to the west side of Middle Bill Creek.

This project will be sent out to a Consultant on the March 2011 solicitation. The contract needs to include public involvement. The consultant will need to check with the Corporation Commission to identify any gas, oil sites and pipelines in the area. They will need to pull the property owners and look at the alignment at the quarter section lines to avoid splitting ownerships. There are approximately 5 residential properties and 5 out buildings on the north and 6 residential and 4 out buildings on the south that will be impacted based on the final alignment decision.

There is a lot of rock in the area that will require that in depth geotech be done upfront. Roadway needs to check with Materials Division to see if they can look at the area.

The old roadway will become the property of the County and removed off the State inventory. The West Bill Creek Bridge will be demolished and could possibly be replaced with a RCB, depending on hydraulics, or a roadway sized RCB.

Design Speed: 65 mph

Project Termini:
Beginning of Project: 2.57 miles W. of Caddo C/L
End of Project: 1.43 miles E. of Caddo County Line.
Limits of Survey: 500' E. and W. of project.
Limits of NEPA Survey Area:

Typical Section:
■ Open Section □ Curb & Gutter □ Divided, median width:
□ Other (describe):
Number of Lanes: 2 Lane Width: 12'
Outside Shoulder Width: n/a Inside Shoulder Width:
Storm Sewer ■ No □ Yes Sidewalks ■ No □ Yes, width: '
Overlay □ No □ Yes, thickness:
Coldmill □ No □ Yes, thickness:
Add Shoulders □ No ■ Yes, width:
Bridge Width: 40 ' clear roadway

Alignment:
■ Existing
■ New, located -TBD □ North or □ South or □ East or □ West of existing
□ Parallel Lanes, located □ North or □ South or □ East or □ West of existing
□ Spot Improvements
■ Horizontal, Description:
■ Vertical, Description:

Detour:
■ Shoo-fly, for tie-ins □ North or □ South or □ East or □ West of existing
□ Widening, located □ North or □ South or □ East or □ West of existing
□ Crossovers
□ Close Road
□ Signed Detour, Route Description:

□ Phased Construction, Description:

Traffic Items:
Traffic Management Plan □ No ■ Yes
Median Barrier ■ No □ Yes
New Guardrail □ No ■ Yes
End Treatment □ No ■ Type: GETs
Highway Lighting ■ No □ Outside or □ Median

Traffic Signals	■ No	□ Location(s):

Right-of-Way:

Additional RW Required	□ No	■ Yes, describe: For New Alignment
Utility Conflicts	□ No	■ Yes, describe:

Miscellaneous:

Channel Re-Alignment	■ No	□ Yes, describe:

INITIATION ESTIMATE

Roadway:	$	Total Construction:	$
Bridge:	$ 500,000		
Traffic Control:	$	Right-of-Way:	$
Signing and Striping:	$	Utility:	$
Highway Lighting:	$		
Traffic Signals:	$	Total Estimate:	$
Mobilization:	$		
Staking:	$		
E & C:	$		

Division VII Engineer	Bob Rose	405-255-7586
Division VII Const. Engr	Jeff Hiller	405-255-7586
Anadarko Resident Engr.	Reese Knight	405-247-2462
Roadway	Eduardo Elder	405-521-4848
Bridge	Bob Rusch	405-521-2606
Anadarko Residency	Jeff Hacker	405-247-2462
Right-of-way	Christa Sawyer	405-522-2214
Environmental	Scott Stegmann	405-522-8014
Survey	Leroy Tackett	405-521-2621
Roadway Geometrics	Clay Henry	405-521-4769

Attachments:

Distribution List:

Director of Engineering
Director of Capital Projects and Information Management
Bridge Division
Environmental Programs Division
Field Division
Project Management Division

Right-of-Way Division
Roadway Design
Survey Division
Traffic Engineering

Oklahoma Department of Transportation

Project Management Division (405)522-7601 Fax (405) 522-7612 Room 3C9

DATE: **12/02/2010**

TO: **Distribution List**

FROM: **Ronda Lindsay, Project Management Division**

SUBJECT: **Draft - Project Initiation Report**

J/P Number: 20962(04) County: Grady Highway: US-277 Division: 7
PS&E Date: 2016 R/W Date : 2014 Drive-out Date: 12/02/2010
Programmed Estimate: $5,940,000
Project Description: US-277 from 1.45 miles E. of the Caddo C/L, extend E. approx. 2.7 miles on new alignment to the Turnpike overpass.

FUNCTIONAL CLASSIFICATION

Area Type:	□ Urban	□ Suburban	■ Rural	
Terrain Type:	□ Flat	■ Rolling	□ Mountainous	
Access Control:	□ Full	□ Partial	■ None	
Highway Type:	□ Freeway	□ Principal Arterial	□ Minor Arterial	■ Collector
	□ NHS	■ Non-NHS	□ STRAHNET	□ Scenic Hwy

EXISTING INFORMATION

Current ADT: 1800 % Trucks: 15% Number of Lanes: 2 Lane Width: 12'
Outside Shoulder Width: 3' sod Inside Shoulder Width: n/a
■ Open Section □ Curb & Gutter □ Divided, median width:
□ Other (describe):
Pavement Type: AC Type C Pavement Condition: □ Good ■ Fair □ Poor
Shoulder Type: Sod Shoulder Condition: □ Good ■ Fair ■ Poor
Storm Sewer ■ No □ Yes Storm Sewer Condition: □ Good □ Fair □ Poor
Sidewalks ■ No □ Yes Sidewalk Width:
Bridge A Description: 5-25' Concrete Slab Spans

	Bridge A
Feature Intersected:	East Bill Creek
NBI Number(s):	18275
Location Number(s):	2614 0358 X
Sufficiency Rating(s):	92.6 ND
Year(s) Built:	1972
Bridge Width(s):	34.7'
Bridge Length(s):	125'
Posted Clearance(s):	N
Posted:	N
Health Index:	79.6

ENVIRONMENTAL CONSIDERATIONS

■ Historic Properties, list: none listed, potential farmstead sites located along US-277 corridor
□ Archeological Sites, list: none listed
□ Cemeteries, list: none identified
■ Hazardous Waste / LUST Sites, list: none identified, numerous oil/gas wells within study corridor
■ Endangered Species, list: black-capped vireo, interior least tern, whooping crane, Arkansas River shiner, piping plover, lesser prairie-chicken
□ Section 4F or 6F Properties, list:
□ Farmland □ Wetlands □ Scenic and Protected Aquifers □ 100 Year Flood Plain

ALTERNATIVE IMPACTS

□ Other Agencies List:
□ Turnpike Involvement
□ Metropolitan Planning Organizations List:

PERMIT INFORMATION

Design Exception Anticipated: ■ No □ As required by design □ Yes, type:
Maintenance Agreements (Lighting, Signals, etc.): ■ No □ Yes, type:
Permits required: □ FAA ■ USACE □ OWRB □ Railroad □ Other, type:
Additional:

PROPOSED IMPROVEMENT

Project Intent: Reconstruct on offset alignment to the north to correct vertical and horizontal curves.

Special Considerations:

Additional alignment studies will be necessary to determine the final alignment.
This project will be sent out to a consulting firm on the March 2011 solicitation.

Description of Proposed Improvements:

After the field review it was determined that the best location to split the projects was at Middle Bill Creek. This project will begin on the east side of Middle Bill Creek Bridge.

This project will be sent out to a Consultant on the March 2011 solicitation. The contract needs to include public involvement. The consultant will need to check with the Corporation Commission to identify any gas, oil sites and pipelines in the area. They will need to pull the property owners and look at the alignment at the quarter section lines to avoid splitting ownerships. There are approximately 5 residential properties and 5 out buildings on the north and 6 residential and 4 out buildings on the south that will be impacted based on the final alignment decision.

The Bridge over East Bill Creek will be widened to match the new roadway.

There is a lot of rock in the area that will require that in depth geotech be done upfront. Roadway needs to check with Materials Division to see if they can look at the area.

The old roadway will become the property of the County and removed off the State inventory.

Design Speed: 65 mph

Project Termini:
Beginning of Project: 1.45 miles E. of Caddo C/L
End of Project: 4.15 miles E. of the Grady C/L at the Turnpike Overpass.
Limits of Survey: 500' E. and West of Project.
Limits of NEPA Survey Area:

Typical Section:
■ Open Section □ Curb & Gutter □ Divided, median width:
□ Other (describe):
Number of Lanes: 2 Lane Width: 12'
Outside Shoulder Width: n/a Inside Shoulder Width: 8'
Storm Sewer ■ No □ Yes Sidewalks ■ No □ Yes, width: '
Overlay □ No □ Yes, thickness:
Coldmill □ No □ Yes, thickness:
Add Shoulders □ No ■ Yes, width:
Bridge Width: 40 ' clear roadway

Alignment:
■ Existing
■ New, located TBD □ North or □ South or □ East or □ West of existing
□ Parallel Lanes, located □ North or □ South or □ East or □ West of existing
□ Spot Improvements
■ Horizontal, Description:
■ Vertical, Description:

Detour:
□ Shoo-fly, for tie-ins □ North or □ South or □ East or □ West of existing
□ Widening, located □ North or □ South or □ East or □ West of existing
□ Crossovers
□ Close Road
□ Signed Detour, Route Description:

□ Phased Construction, Description:

Traffic Items:
Traffic Management Plan □ No ■ Yes
Median Barrier ■ No □ Yes
New Guardrail □ No ■ Yes
End Treatment □ No ■ Type: GETs
Highway Lighting ■ No □ Outside or □ Median
Traffic Signals ■ No □ Location(s):

Right-of-Way:

Additional RW Required	□ No	■ Yes, describe: For New Alignment
Utility Conflicts	□ No	■ Yes, describe:

Miscellaneous:

Channel Re-Alignment	■ No	□ Yes, describe:

INITIATION ESTIMATE

Roadway:	$	Total Construction:	$
Bridge:	$ 700,000		
Traffic Control:	$	Right-of-Way:	$
Signing and Striping:	$	Utility:	$
Highway Lighting:	$		
Traffic Signals:	$	Total Estimate:	$
Mobilization:	$		
Staking:	$		
E & C:	$		

Division VII Engineer	Bob Rose	405-255-7586
Division VII Const. Engr	Jeff Hiller	405-255-7586
Anadarko Resident Engr.	Reese Knight	405-247-2462
Roadway	Eduardo Elder	405-521-4848
Bridge	Bob Rusch	405-521-2606
Bridge	Asghar Molla	405-521-6490
Right-of-way	Christa Sawyer	405-522-2214
Environmental	Scott Stegmann	405-522-8014
Survey	Leroy Tackett	405-521-2621

Attachments:

Distribution List:

Director of Engineering
Director of Capital Projects and Information Management
Bridge Division
Environmental Programs Division
Field Division
Project Management Division
Right-of-Way Division
Roadway Design
Survey Division

Traffic Engineering

OKLAHOMA DEPARTMENT OF TRANSPORTATION
200 N. E. 21st Street
Oklahoma City, OK 73105-3204

May 14, 2014

Subject: Reconstruction of US-277 from east of Cement to I-44, Caddo and Grady Counties, JP 20953(04) and JP 20962(04), Project Numbers STPY-108C(099)SS and STPY-126C(088)SS

Dear Property Owner:

We are pleased to inform you the Oklahoma Department of Transportation (ODOT) is considering improvements to the subject roadway. The exact project scope and requirements will be clarified through the planning, environmental review, and design process. In accordance with the National Environmental Policy Act, the National Historic Preservation Act, and Federal Highway Administration policy, the Department is requesting any information or specific concerns you may have regarding this project's potential impact on the human environment, the natural environment, and historic properties.

Additionally, in the near future, employees or authorized agents of ODOT may be entering your property for the purpose of surveying environmental considerations, such as cultural resources, biological resources, noise, and hazardous materials. Results from these studies will be incorporated into the environmental document being prepared for this project. It may be necessary to do minor hand digging in your property as part of the survey. Any test holes will be filled in and cleaned up afterwards.

Oklahoma Statute 69-702 provides for the Department of Transportation, through its agents and employees, to enter the property and make the necessary surveys and other examinations related to the proposed highway project. A copy of Oklahoma Statute 69-702 is provided with this letter.

If you are currently leasing this property, please notify your lessee of our planned work.

Should you have any information or specific concerns, please contact our authorized agent Kirsten McCullough of Garver at 918-250-5922 or KJMcCullough@GarverUSA.com. As always, your cooperation is greatly appreciated.

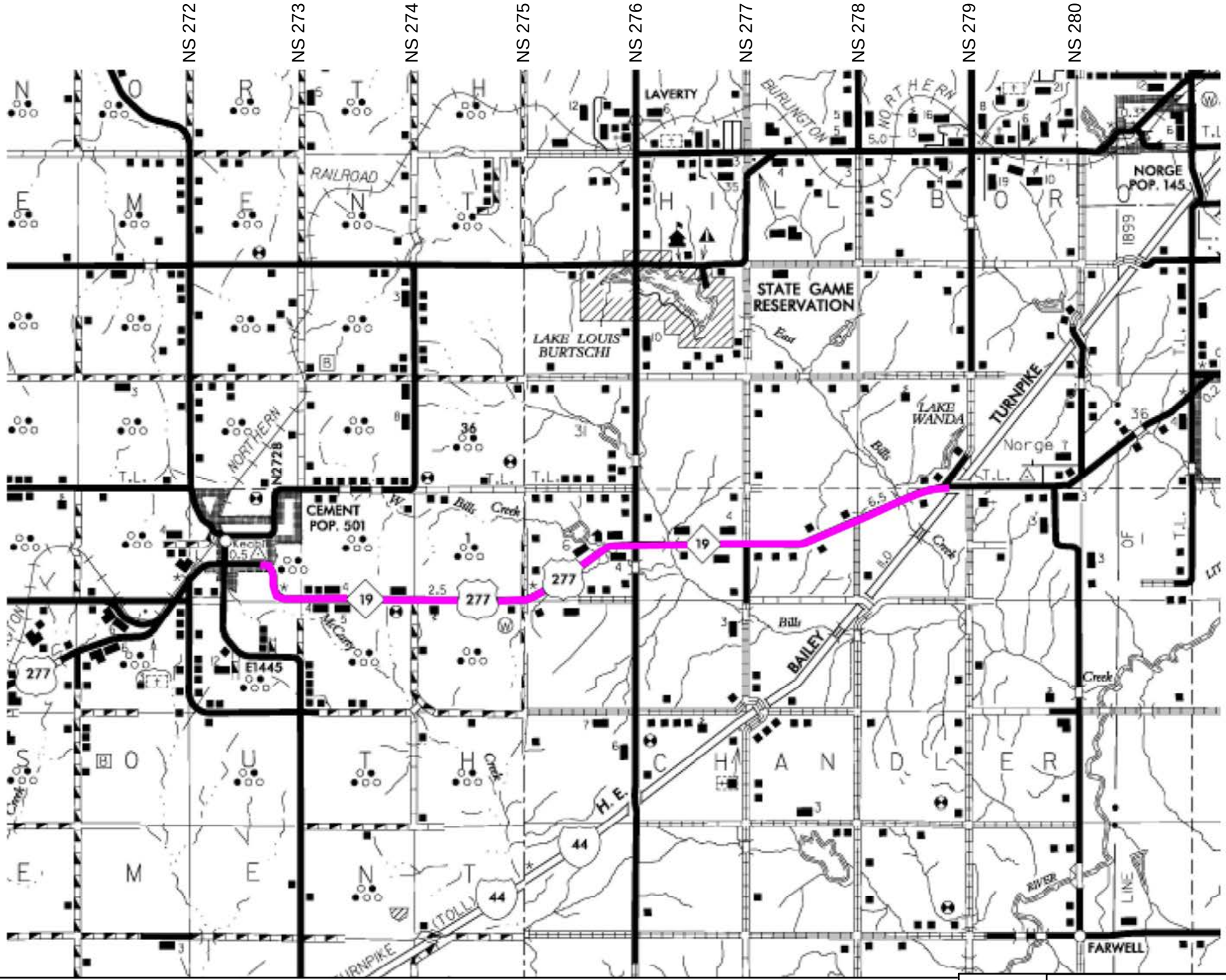
Respectfully,

for CV Dawn R. Sullivan, P.E.
Environmental Programs Division Engineer

DRS/Garver

Enclosures: Location Map, Copy of Statute 69-702

Copy to: Project Management
Field Division Engineer
Survey Division
Materials Division
Right-of-Way Division
ODOT Cultural Resources Specialist
Specialists



Oklahoma Department of Transportation
Project Location Map
Caddo & Grady Counties

JP 20953(04) & 20962(04) US-277

Oklahoma Statutes

Title 69 – Roads, Bridges and Ferries

§69-702. Entry upon premises to make surveys and examinations for establishment or relocation of highways - Notice.
The Department, through its authorized agents and employees, may enter upon any lands, waters, and premises in the state for the purpose of making surveys, soundings and drillings, and examinations as may be determined necessary or convenient for the purpose of establishing, locating, relocating, constructing, and maintaining state highways or relocations thereof and facilities necessary and incidental thereto. Such entry shall not be deemed a trespass, nor shall an entry for such purpose be deemed an entry under any condemnation proceedings which may be then pending; but notice shall be given to the owner of or person residing on the premises, personally or by registered mail, at least ten (10) days prior to such entry. Laws 1968, c. 415, Sec. 702.

J/P 20953(04) Caddo & Grady Cos. US-277 Property Owner Notification List

Rev. 5/27/2014

FIRSTNAME	LASTNAME	TITLE	BUSINESS NA	ADDRESS	ADDRESS2	CITY	STATE	ZIP
Ivy & Elanor	Amaon	Amaon Trust		12861 Corbett Ct		San Diego	CA	92130
Marilyn	Bernard	Marilyn R Bernard Revocable Trust		330 Morgan Street	Unit 203	New Orleans	LA	70114
James	Botts	c/o Elizabeth Botts		PO Box 648		Cyril	OK	73029
Julie & David W.	Bowlin	c/o Jennifer Bowlin		Rt 1 Box 1340		Cement	OK	73017
Lee R. & Margaret	Brandon			PO Box 295		Cement	OK	73017
Eugene R.	Brooks			PO Box 376		Cement	OK	73018
B. Gail	Buckmaster			5803 Russell Rd		Durham	NC	27712-1945
David O. & et al.	Burns			RT 1 Box 80A		Cyril	OK	73029
Francis & Linda	Chapman			153 US Hwy 277		Cement	OK	73017
Damon Scott & Pamela	Charlson			PO Box 1832		Chickasha	OK	73023
Charles	Clark			RT 1 Box 995		Cement	OK	73017
Authur Houston	Cogburn			Rt 1 Box 1688 A		Cement	OK	73017
Arthur Houston	Cogburn			104 SE 1st		Cement	OK	73017
Jerry L. & Wanda J.	Dallas			Rt 1 Box 1370		Cement	OK	73017
George & Delores	Davidson			3143 CS 2750		Cement	OK	73017
Danny & Leah	Davidson			8822 N. Memorial		Owasso	OK	74055
Dale	DeKinder			PO Box 1986		Chickasha	OK	73023
Dwayne & Jeanette	Doss			406 County Road 1440		Cement	OK	73017-9235
Paul	Fondren			PO Box 746		Crescent	OK	73072
Larry Dean & Shirley	Ford			8121 Turtle Dove Dr.		Oklahoma City	OK	73132
Troy	Ford			3098 County Street 2770		Cement	OK	73017-9231
Joseph M.	Garis			292 US Highway 277		Cement	OK	73017-9230
Jessie A & Stephanie A.	Gonzales			PO Box 431		Cement	OK	73017
Michael & Rosa Lee	Halcomb			268 US Hwy 277		Cement	OK	73017
Barry W. & Cynthia S.	Hall			101 US Highway 277		Cement	OK	73017
Dock B. & Ollie	Haney			PO Box 208		Cement	OK	73017
Mathieu & Ashley	Haney			Rt 1 Box 1337		Cement	OK	73017
Weston M. & Kalie	Hargus			29116 State Hwy 19		Cement	OK	73017
Jani	Houtz			113 County Road 1430		Cement	OK	73017
Danny & Evalee	Houtz			147 CR 1430		Cement	OK	73017
Lenora	Hussey			2723 Valley View Dr.	Apt # 1	Chickasha	OK	73018
Wanda Gayetta	Johnson	c/o Deedra Johnson		PO Box 1154		Chickasha	OK	73023
Kurt A.	Kinder			PO Box 41		Cement	OK	73017
Jerre L.	Kise			PO Box 542		Walters	OK	73572-542
Harold E.	Koehler			PO Box 53		Cement	OK	73017
Harold E.	Koehler			501 E. 1st		Cement	OK	73017
Earl & Sharon L	Livingston	Livingston Family Rev. Trust		PO Box 48		Ninnekah	OK	73067
Clifford & Ladonna	Marshall			Rt 1 Box 32-A		Cyril	OK	73017
Raymond & Debbie	McPherson			PO Box 117		Cement	OK	73017
Raymond & Debbie	McPherson			100 NE 1st		Cement	OK	73017
Mary K.	Mehler			10313 Parker Rd		Marlow	OK	73055
Joe	Montgomery			3284 CS 2770		Cement	OK	73017
Jose	Paukume							
John R.	Paukune			2200 Willowick Rd #14-E		Houston	TX	77027
John Ray	Pyzner			230 N. Main St.		Ada	OK	74820-9562
G. H. & Juanita	Ray			924 S. 12th		Chickasha	OK	73018
Agnes Rider	Rieck	C/O Adonna Bridges		PO Box 875		Fletcher	OK	73541
Richard D. & Elizabeth	Riley			PO Box 503		Cement	OK	73017
Ronald & Debra	Roberts			PO Box 281		Cement	OK	73017

Bobby & Nancy	Ryans			331 US Highway 277		Cement	OK	73017
Freeman	Salyer			505 N. 1st Street		Cyril	OK	73029-9794
David & Lori	Salyer			30146 State Highway 19		Cement	OK	73017-9275
Melford	Scott			271 US Highway 277		Cement	OK	73017
Connie A.	Secondine			132 Lions Cv		Walters	OK	73572-3022
Hazel	Self			PO Box 411		Cement	OK	73017
Robert & Charlene	Self			PO Box 411		Cement	OK	73017
Bobby R. & Rita	Shepard			Rt 1 Box 1350		Cement	OK	73017
T. B. & Rena	Simmons			Rt 1 Box 1300		Cement	OK	73017
Lawrence	Smiley			172 US Highway 277		Cement	OK	73017
Pauline	Smith			Rt 1 Box 1365		Cement	OK	73017
Jason	Stamper			169 US Hwy 277		Cement	OK	73017
Elaine	Surbeck			10222 E Nacoma Dr		Sun Lakes	AZ	85248-7621
Henry W.	Surbeck			2212 Alder St NE		Tacoma	WA	98422
Norma A.	Tahsuda			1601 S Sandhill Rd Unit 297		Las Vegas	NV	89104-4739
Gary	Thoma			1906 Louisiana		Chickasha	OK	73018
Jack	Thomas			3094 CS 2790		Cement	OK	73017
Mary J.	Wardeski			5102 NW Meadowbrook Dr		Lawton	OK	73505-4748
Larry & Carla	Wasson			119 Farris Pl		Chickasha	OK	73018-7713
Carl G. & Mary E.	Whitt			PO Box 387		Cement	OK	73017
Susan	Wigley	C/O Beulah Roberts Reece		1714 21st St		Chickasha	OK	73018-5225
Marvin	Wilkinson			291 US Highway 277		Cement	OK	73017
Bobby	Wilkinson			PO Box 1		Cement	OK	73017
Zane	Williams			317 US Hwy 277		Cement	OK	73017
To-Wy	Woonard							
		Garrett & Co (A Gen Part)		9701 N Broadway Ext		Oklahoma City	OK	73114
		Trace Ranch LP		2931 County Street 2773		Chickasha	OK	73018
		Church of Christ		PO Box 282		Cement	OK	73017
		Church of Christ		102 N. F Street		Cement	OK	73017
		Church of Christ		601 NE 1st		Cement	OK	73017