OKLAHOMA Transportation

Environmental Assessment

US-70 MADILL REALIGNMENT FROM SH-199, EAST 2.0 MI & FROM 2.0 MI EAST & SOUTH OF SH-199, SOUTH 2.8 MI

MARSHALL COUNTY

ODOT JP 18835(04)&(09)

US-70 Madill Realignment From SH-199, East 2.0 Mi &
From 2.0 mi East & South of SH-199, South 2.8 Mi
Marshall County, Oklahoma
JP 18835(04) & (09)

Environmental Assessment

US Department of Transportation
Federal Highway Administration
and
Oklahoma Department of Transportation

The proposed project includes the realignment of US-70 near Madill to accommodate increasing traffic and address capacity deficiencies along the US-70 corridor. The proposed improvements include construction of a new location roadway facility to improve efficiency and travel time along the US-70 corridor in Marshall County. This Environmental Assessment (EA) describes the project's purpose and need, early design alternatives considered but dismissed, and the alternative selected for further consideration. In addition, the document outlines the social, economic, and environmental effects of the Build and No Build Alternatives and the Oklahoma Department of Transportation's (ODOT's) coordination of public and agency involvement conducted as part of the development of the EA.

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 (FHWA) and is submitted pursuant to 42 USC-4332(2)(c) and 49 USC 303.

Submitted:

Date: 4/25/2022 Joe Butler

Environmental Programs Interim Division Manager
Oklahoma Department of Transportation

Approved:

Date: _____ WASEEM FAZAL Digitally signed by WASEEM FAZAL Date: 2022.04.26 15:25:45 -05'00'

Division Administrator
Oklahoma Division Office
Federal Highway Administration

What Are the Highlights of the Environmental Assessment (EA)?

> An EA is a decision-making document that provides sufficient detail to determine if a project has significant environmental impacts. It includes a brief discussion of the project's need, alternatives evaluated, a summary of the project's effects, and the public outreach efforts completed as part of the project.

The Oklahoma Department of Transportation (ODOT), in cooperation with the Federal Highway Administration (FHWA), has prepared this Environmental Assessment (EA) to document the environmental impacts of the US-70 Madill Realignment project near the City of Madill in Marshall County, Oklahoma. The EA has been prepared according to policies established by the National Environmental Policy Act (NEPA), which requires federal agencies to evaluate and consider impacts of their projects on the natural and human environment.

The project corridor is located in and on the eastern edge of the City of Madill in Marshall County, Oklahoma. The western terminus for the project begins approximately 0.5 mile west of US-177 at Mockingbird Lane and extends east approximately 1.3 miles crossing US-177 and the Burlington North Santa Fe (BNSF) railroad, then southwest on the new alignment to SH-199, then due south for approximately 2.8 miles connecting back to US-70 near Archard Road. A project location map is included as **Figure 1** and the updated environmental study area is depicted on **Figure 2**. The footprint of the environmental study area has been updated since the preparation of the original environmental studies; therefore, these documents are being reviewed and updated accordingly.

One Build Alternative and the No Build Alternative are considered in this document. The Build Alternative includes the realignment of US-70 on new location east of Madill and under the No Build Alternative US-70 would remain a two-lane facility through Madill. A summary of each of the technical analyses and impacts on private property, community and natural resources, and a summary of public involvement activities are presented in this EA. Public involvement opportunities included a stakeholder meeting, held on June 16, 2015, a public meeting, held on September 3, 2015, and a public hearing is being planned for Spring 2022, to present the findings of this EA.

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What Project Are We Studying?

The proposed US-70 project includes a new location roadway facility that would realign US-70 around the City of Madill in Marshall County, Oklahoma. The western terminus for the project begins approximately 0.5 mile west of US-177 at Mockingbird Lane and extends east approximately 1.3 miles crossing US-177 and the BNSF railroad, then southwest on the new alignment to SH-199, then due south for approximately 2.8 miles connecting back to US-70 near Archard Road. The Project Location Map, **Figure 1** is included on the following page. The existing US-70 facility is classified as a principal arterial and consists of both curbed and open roadway sections varying from two-lane to five-lane facilities. The route, which passes through downtown Madill, shares up to five highway designations and has three signalized intersections. The posted speed limit for the existing route varies between 35 and 65 miles per hour (mph).

The environmental study area was developed large enough to support an assessment of potential impacts that the alternative could have on the surrounding community and the environment (**Figure 2**). The footprint of the environmental study area, as included in this document, has been updated since the preparation of the original environmental studies. The environmental studies have been updated accordingly.

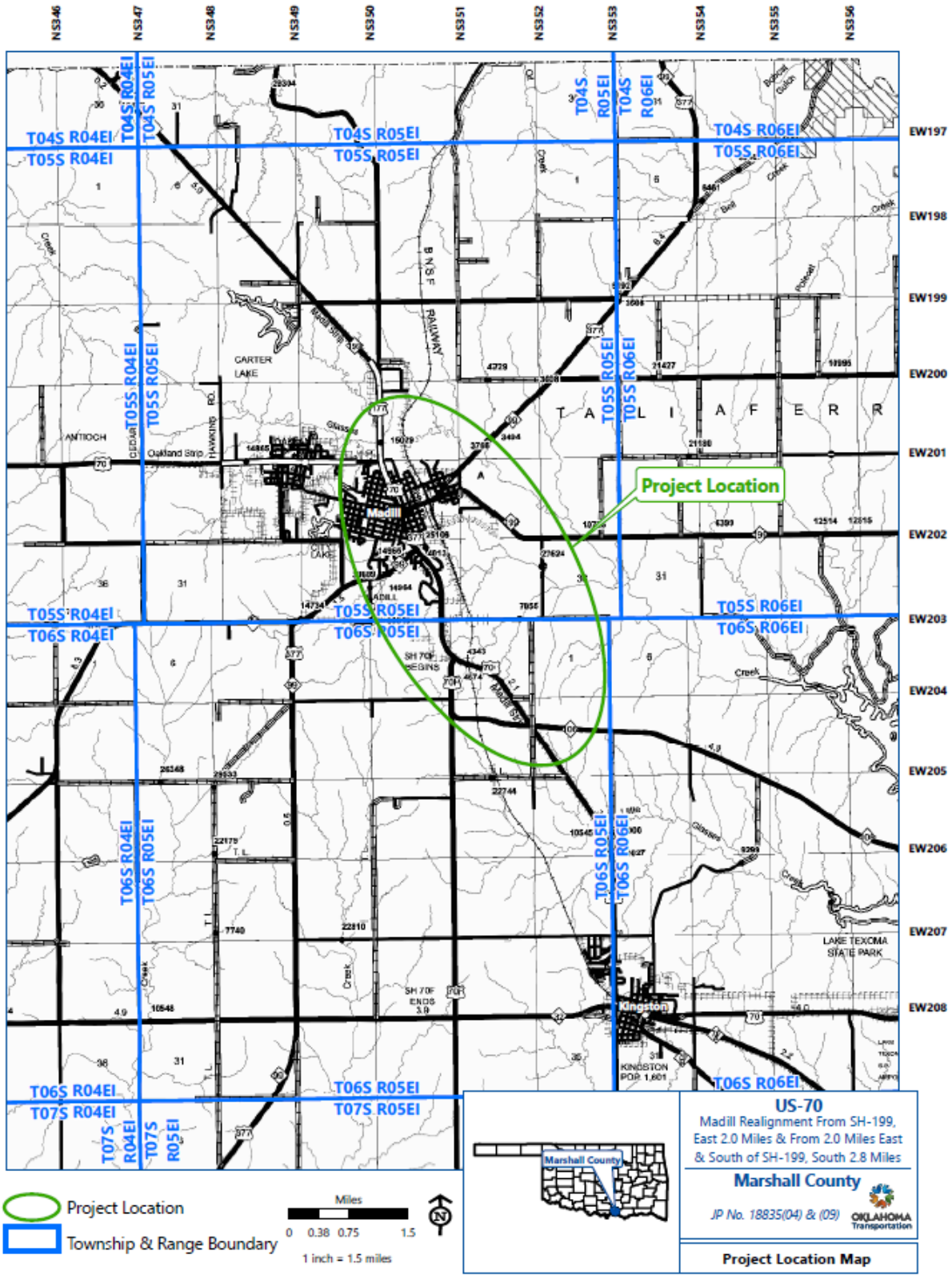

Figure 1: US-70 Project Location Map

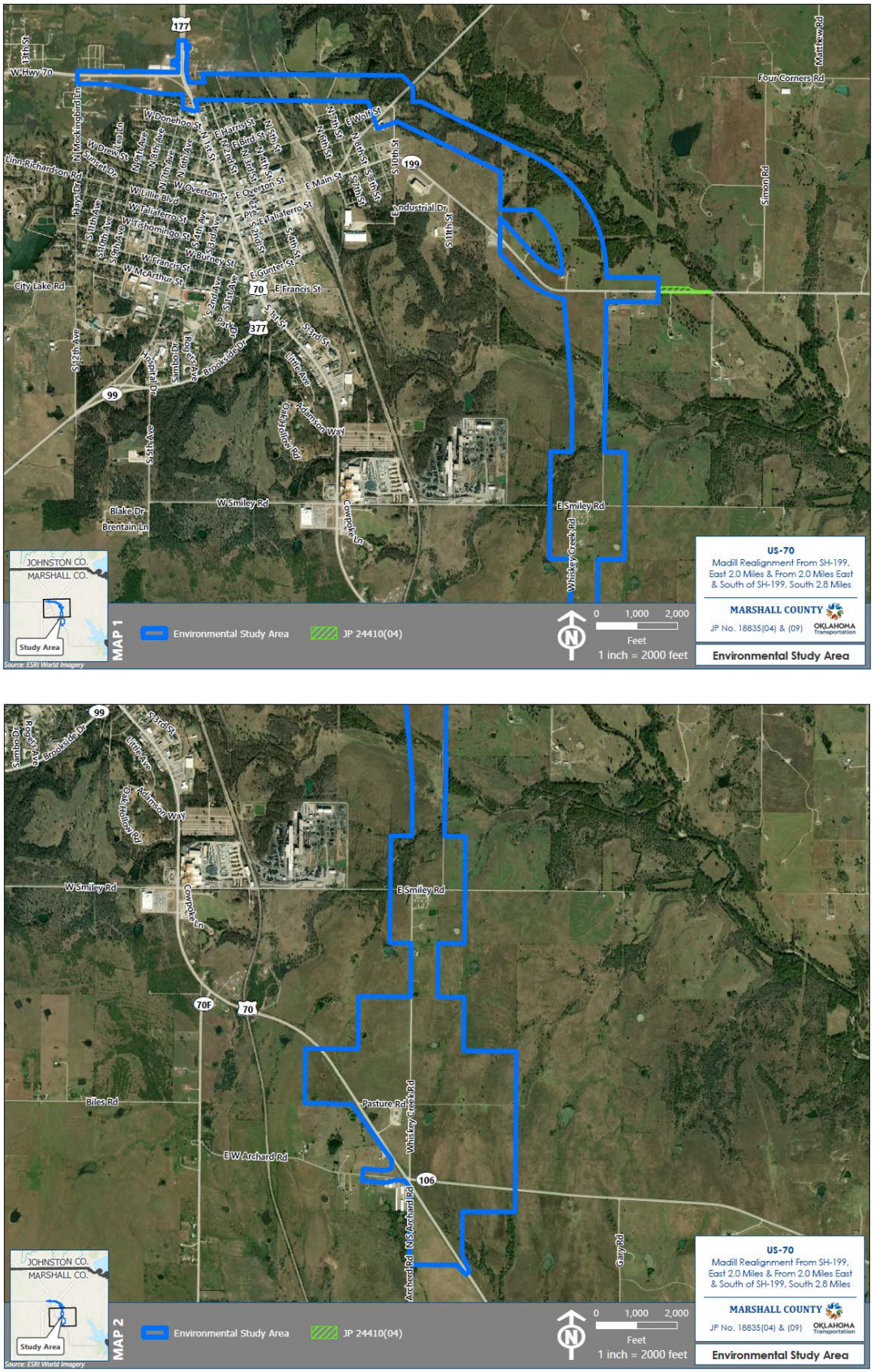

Figure 2: US-70 Environmental Study Area Map

Why is This Project Needed?

The need for the project is to accommodate increasing traffic in the Madill area and to address the current capacity deficiencies on the existing roadway. The purpose of this project is to improve safety, efficiency, and travel times along the US-70 corridor. As discussed below, the US-70 facility results in backups which contribute to a history of congestion and major collisions along the corridor (**Figure 3**). The OKSAFE-T Heat Map for the period of 2011 through 2021 shows that existing US-70 in Madill is a hot spot for collisions.

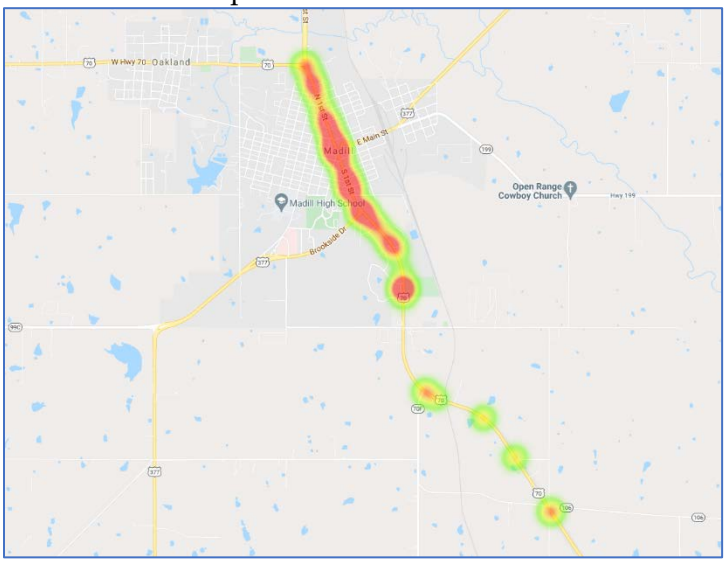

Figure 3: Collision Heat Map, showing high collision activity (in red) along the existing US-70 corridor (2011 – 2021)

Safety

There is a history of collisions along US-70, including 42 injury collisions for the 10-year period between 2011 and 2021 (**Appendix C**). Increasing traffic volumes and congestion are anticipated to increase the potential for crashes.

Traffic Operations and Capacity

Traffic counts were originally conducted in 2013 at several intersections along the existing US-70 corridor through Madill. Based on these counts, Annual Average Daily Traffic (AADT) volumes were developed using a growth factor to project the existing (2022) and the design year (2047) with and without the proposed US-70 realignment. The resulting traffic volumes at six (6) locations along US-70 in and near Madill are shown in **Table 1**. Without construction of the proposed project, future traffic volumes along the existing US-70 would result in increased congestion and travel times, as well as increased potential for accidents. With the realignment half of intersections on the existing segment are projected to have lower future traffic volumes compared to existing traffic volumes, and all but two intersections at the eastern and western termini of the project would have lower volumes compared to the No Build (without the US-70 Realignment). The original Origin-Destination Study, with some minor adjustments to trip

distribution to account for improved corridor connections since the time of the original analysis, was used to estimate the trips that would use the proposed realignment. This decrease in traffic on the existing US-70 is due to the shift of through traffic from the existing US-70 corridor to the new alignment.

Table 1: Existing and Future Annual Average Daily Traffic, Without/With Realignment*

Existing US-70 Location	Existing AADT (2022)	Future AADT, without US-70 Realignment (2047)	Future AADT, with US-70 Realignment (2047)
US-70 West of US-177	6,989	10,541	11,767
US-70 between US-177 and Main St.	11,449	17,237	10,682
US-70 between Main St. and Brookside Dr.	13,869	20,869	12,026
US-70 between Brookside Dr. and Smiley Rd.	13,078	19,690	10,824
US-70 between Smiley Rd. and Archard Rd.	8,675	13,064	2,948
US-70 East of Archard Rd.	8,118	12,215	14,714

*The AADTs provided in this table were derived using the 2013 traffic counts that were projected to 2037 and applying a corresponding growth factor.

What is the History of the Project?

The realignment of US-70 around Madill has been studied by ODOT since the 1990's. A US-70 Feasibility Study completed in 1997 evaluated the roadway based on future travel demand, safety, and congestion. The feasibility study reviewed four potential realignments of US-70 near Madill and concluded the recommended alternative was an eastern bypass around the City of Madill and the Town of Kingston and the widening of the existing US-70 between the two bypasses (**Figure 4**).

After extensive public involvement and coordination beginning in 2001, Environmental studies were completed on a proposed eastern US-70 realignment corridor in 2008.

In 2015 ODOT initiated additional stakeholder and public meetings, and in 2016, environmental studies were performed in support of the proposed realignment of US-70. Due to funding challenges, the project was not advanced immediately following the 2016 studies.

Stakeholder Meetings

ODOT held a stakeholder meeting for the US-70 project on June 16, 2015, in Madill. Notices of the stakeholder meeting were sent to local, State, and Federal officials. The meeting was conducted with a formal presentation and time allotted for questions and responses. The purpose of the meeting was to discuss the project history and alignment constraints, present the proposed alignment, and seek input from the project stakeholders.

Twenty-five people signed in for the meeting, including representatives from ODOT, Marshall County, City of Madill, Housing Authority Board, and local stakeholders. Comment forms were

available at the stakeholder meeting. A total of five (5) verbal and one (1) written comment and suggested solutions were received as a result of the stakeholder meeting. Most of the verbal comments pertained to access, safety, and traffic along the proposed corridor. The written comment indicated that the business owner of Jones Pawn did not receive notice of the stakeholder meeting. This stakeholder also expressed concern regarding the impact of the proposed project on her business, as it was located within the proposed right-of-way (ROW). No comments specific to low-income or minority populations were received. See **Appendix A** for the US-70 Stakeholder Meeting Summary.

There has also been continued communication between stakeholders and ODOT more recently, including informal coordination with Madill Stakeholders, tribes, and notifications to property owners due to the need to update studies.

Public Meeting

ODOT held a public open house for the US-70 project on September 3, 2015, at the Madill Community Building, 810 South 2nd Ave. in Madill, Oklahoma. The meeting was conducted with a formal presentation and time allotted for questions and responses. The purpose of the meeting was to present the eastern realignment option for US-70 and collect the public's input to further assist in the identification of critical social, economic, and environmental effects that may result from the project. Handouts with information on the purpose and goals of the study were available and project team members were stationed at several tables with multiple layouts of the proposed alignment to address questions and comments.

Seventy-seven people signed in for the meeting, including representatives from ODOT, the Mayor of Madill, two Marshall County Commissioners, an Oklahoma State Representative, and a field representative for US Congressman Markwayne Mullin among a number of local constituents, landowners, and business owners.

Comment forms were available at the open house and all meeting materials presented at the open house were made available for public viewing on the ODOT website. A total of 41 written comments and suggested solutions were received as a result of the public meeting. Written comments included the impact of realignment to Open Range Cowboy Church, impact of realignment to Jones Pawn, land surrounding proposed 3rd Street Bridge, impact to residential property, property fragmentation, lack of access at Smiley Road, and consideration of other alignments. No comments specific to low-income or minority populations were received. See **Appendix A** for the US-70 Open House Summary.

What Does this EA Accomplish?

This EA considers one Build Alternative for the US-70 realignment and the No Build Alternative. Four previous alternatives that were identified in the 1997 Feasibility Study to realign US-70 around Madill included the following and are depicted in **Figure 4**.

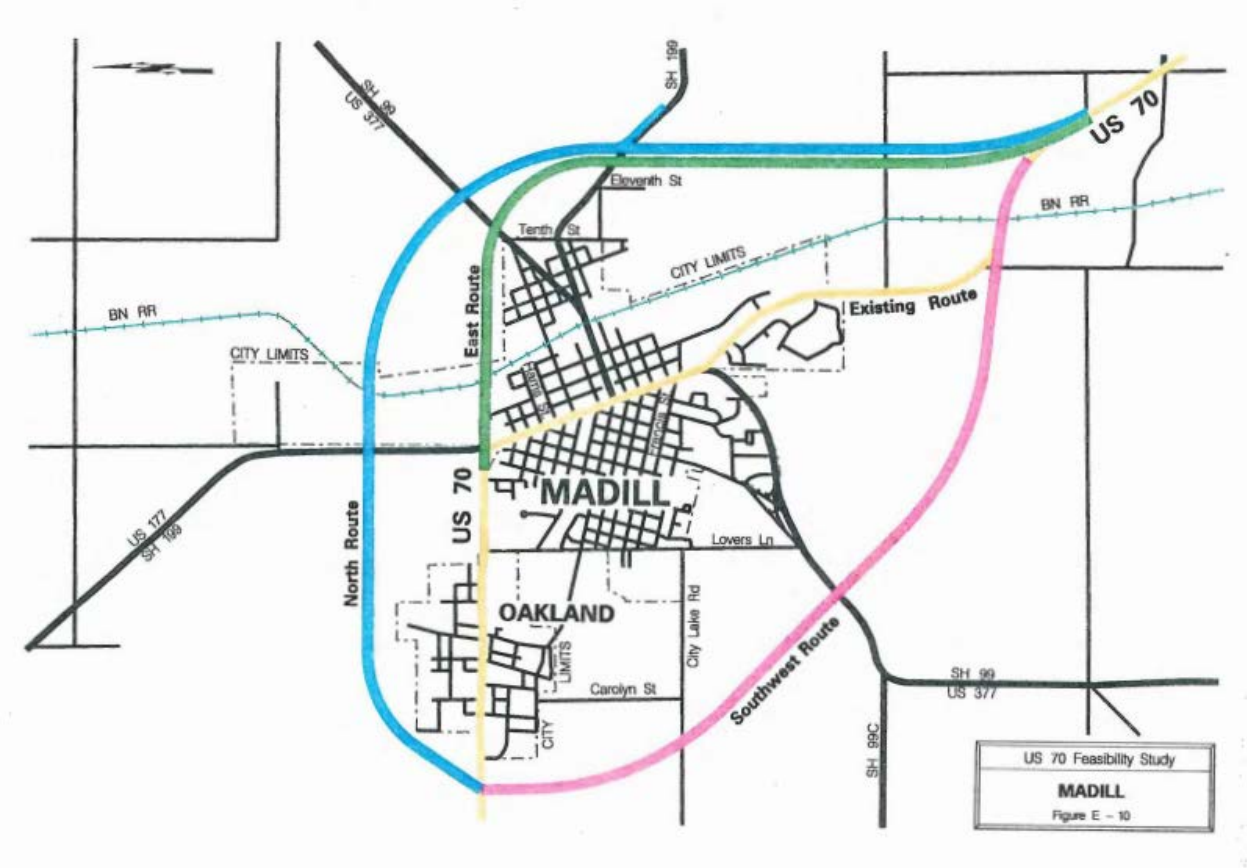

Figure 4: Build Alternatives from 1997 Feasibility Study

- Improve the existing US-70 (yellow)
- Realign the existing US-70 around the southwest edge of Madill (pink)
- Realign the existing US-70 around the north and east edge of Madill (green)
- Expand along US-70 through Oakland continuing on the north and east sides of Madill (blue)

The realignment alternatives were presented at initial public meetings held in May 1996. Comments received at these meetings were used to refine the alternatives. The alternatives at each location were then further evaluated and refined accordingly. Objective screening criteria was employed to select a recommended alternative to advance for further study.

The evaluation criteria included total cost, ability to serve US-70 traffic, number of relocations and displacements, effects to local businesses, and environmental considerations. Each of these criteria was rated on a scale of 1 to 5 and the numbers were added together to identify a recommended alternative. The criteria and results are included in the US 70 *1997 Feasibility Study*, which is available for review at ODOT Central Office at 200 Northeast 21st Street, Oklahoma City, Oklahoma 73105.

Per request from the City of Madill and with city support through Resolution No. 442 (October

1999), a couplet alignment through the City of Madill was added as another alternative in 1999. The couplet alignment focused on widening US 70 (First Street) with one way traffic and widening Third Street to accommodate the opposite direction traffic. Through further evaluation, it was determined that this alignment would result in more displacements and cost. In addition, other government and supporting agencies did not support this alignment. In October 2005, the City of Madill rescinded Resolution No. 442 stating the couplet option was no longer feasible. This option was dropped from further study.

The eastern alternative was determined to have the least amount of impact to land use, neighborhoods, community facilities, economic considerations, parking, access, right-of-way/displacements, sensitive noise receivers, historic properties, hazardous material sites, and wetlands while decreasing congestion, improving existing safety problems, and being most responsive to future transportation needs. As a result of this feasibility study, the eastern realignment was identified as the recommended alternative and the other alternatives were dismissed from further consideration.

Under the No Build Alternative, ODOT would not make any improvements on US-70 and would only continue routine maintenance activities. The No Build Alternative serves as a basis of comparison for the Build Alternative.

This EA examines safety benefits, the need to purchase ROW and impacts to residential and commercial property, impacts to neighborhoods, impacts to the natural environment, and costs of the Build Alternative. It considers input from elected officials, government agencies charged with regulation and/or protection of various resources, Native American tribes, local government entities such as Marshall County, and the public. Once completed, the EA will help ODOT and FHWA make a final decision regarding the selection of a recommended alternative.

How does the US-70 Project Relate to Other On-Going Transportation Projects?

The western terminus for the US-70 realignment project begins approximately 0.5 mile west of US-177 at Mockingbird Lane and extends east approximately 1.3 miles crossing US-177 and the BNSF railroad, then southwest on the new alignment to SH-199, then due south for approximately 2.8 miles connecting back to US-70 near Archard Road. The land use within the US-70 environmental study footprint is mostly undeveloped, except for roadways (local and highway), a railroad, scattered residences and farms, and commercial businesses in the northern portion of the city of Madill. There are numerous open pastures used for grazing livestock, some wooded areas along fence lines and riparian corridors at the streams, and 21 stock ponds and wetlands. The proposed project has independent utility since it will address the transportation needs and no other improvements outside of the identified proposed ROW are necessary to address the purpose and need of this project.

What Potential Solutions Are Being Studied?

Previous Studies

Realignment of US-70 around Madill has been studied by ODOT since the 1990's. A US-70 Feasibility Study completed in 1997 evaluated the roadway based on future travel demand, safety, and congestion. The feasibility study reviewed four alternatives that would meet the objectives of the project and concluded the recommended build alternative was an eastern bypass around the City of Madill and the Town of Kingston and the widening of the existing US-70 between the two bypasses. Therefore, the No Build Alternative and one Build Alternative are reviewed under this EA. These alternatives were presented in additional detail in the above section, What does this EA Accomplish.

No Build Alternative

Under the No Build Alternative, ODOT would not make any improvements to the US-70, beyond routine maintenance. The No Build Alternative serves as a baseline of comparison for the Build Alternative, described below.

Build Alternative

The existing US-70 facility is classified as a principal arterial and consists of both curbed and open roadway sections varying from two-lane to five-lane facilities. The route, which passes through downtown Madill, shares up to five highway designations and has three signalized intersections. No proposed construction to the existing US-70 is proposed, except for tie-ins with the proposed US-70 realignment.

The Build Alternative is located in and on the eastern edge of the City of Madill in Marshall County, Oklahoma. The proposed alignment will utilize a five-lane curbed section to match existing conditions at the beginning of the corridor (existing US-70). The five-lane section will consist of four, 12-ft driving lanes, one 14-ft center left turn lane and curb and gutter with storm sewer. This segment also includes an at-grade intersection with US-177 and a bridge over 3rd Street. The five-lane curbed section is proposed to be built in its entirety and serve as the ultimate configuration. Beginning a few hundred feet east of the 3rd Street bridge, the roadway will transition to a five-lane section with 8-ft shoulders and ditches. For the ultimate design, this five-lane section will continue to the southern project terminus. The proposed US-70 will be bridged over the railroad. The interim design for this segment just east of the BNSF railroad to the southern terminus will consist of a two-lane highway with 8-ft shoulders and ditches. The design speeds for the proposed alignment range from 45 mph for the curbed five-lane, 55 mph for the open five-lane, and 65 mph for the interim two-lane. No interchanges are proposed. Coordination with BNSF is ongoing for the proposed grade separation over BNSF property. The bridge has been designed to meet the BNSF grade separation design requirements and has been approved by BNSF. Reference **Figure 5** for a schematic that shows the interim and ultimate segment layouts and **Appendix B** for the Typical Sections and Plan and Profiles.

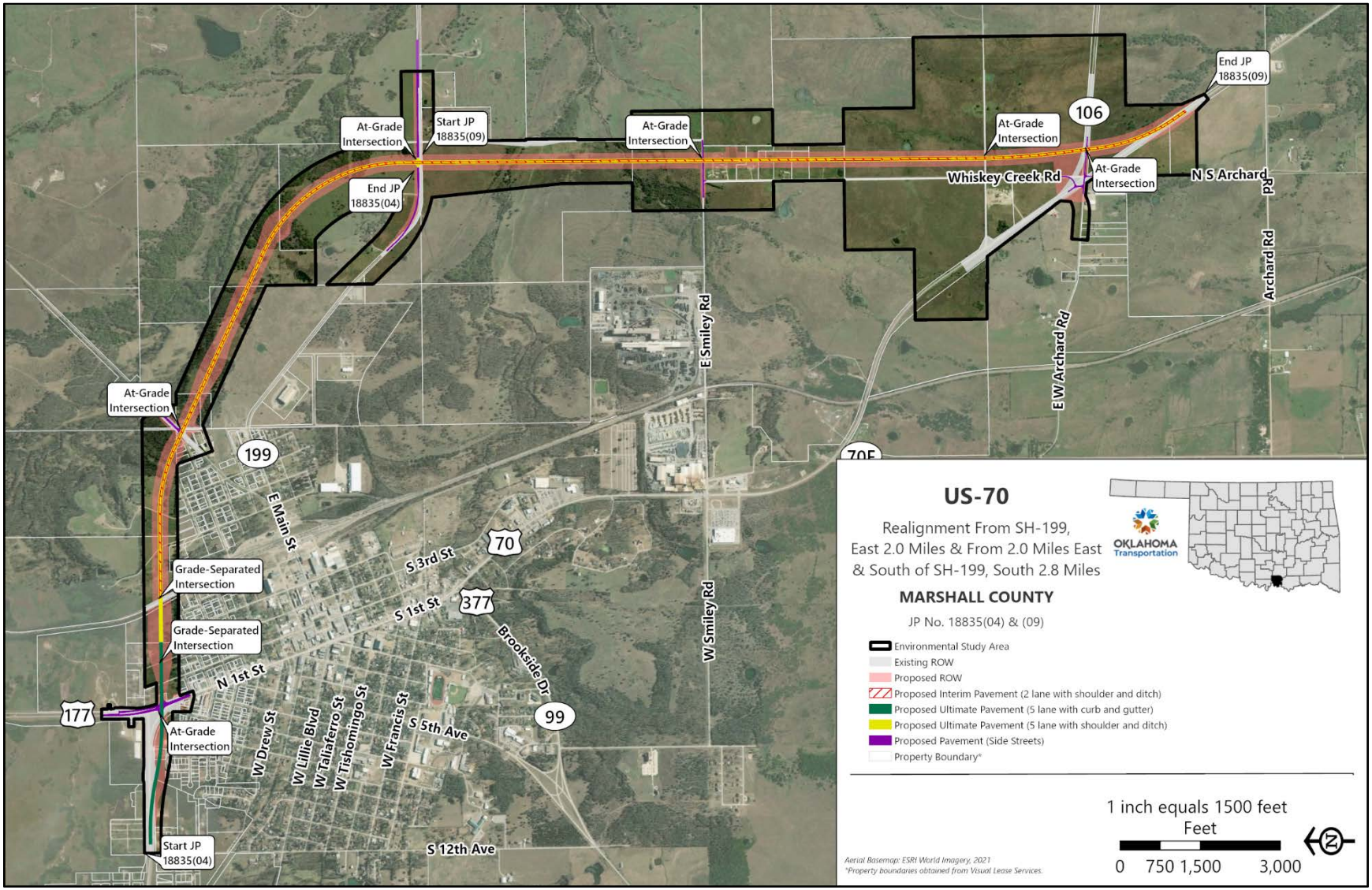

Figure 5: Build Alternative Schematic

How Much Would This Cost?

The cost of the Build Alternative, as provided in the ODOT 8-Year Work Plan, is provided below.

Table 2: Build Alternative Cost

Alternative	Construction	Right-of-Way	Utility Relocation	Total Cost
Build Alternative	$35,000,000	$9,886,000	$3,443,371	$48,329,371

How Will the Alternatives Affect the Environment?

Resources have been identified in the US-70 study area that could be affected by the proposed project. Additional details regarding the resources and potential impacts are presented in the following sections of this document. The following resources are either not present or will not be impacted, and are therefore, not discussed further in this document:

- Air Quality
- Bicycle and Pedestrian Facilities
- Energy

Unless specifically noted below, the No Build Alternative would not have an effect on the respective resources.

How Would the Project Affect Traffic?

A traffic analysis was performed since the project proposes to add capacity. The purpose of this project is to improve safety, efficiency, and travel times along the US-70 corridor as discussed below.

Changes to Access

The existing US-70 facility is classified as a principal arterial and consists of both curbed and open roadway sections varying from two-lane to five-lane facilities. The route, which passes through downtown Madill, shares up to five highway designations and has three signalized intersections. Under the Build Alternative, the realignment of US-70 east of Madill would be constructed alleviating traffic through Madill. No construction along the existing US-70 corridor besides the realignment tie-ins would occur; therefore, no impacts to access along the existing US-70 corridor are anticipated.

Traffic Safety

There is a history of traffic congestion along the existing US-70 corridor, especially when tourists

are traveling through Madill to Lake Texoma. The Build Alternative would improve safety, efficiency, and travel times along the existing US-70 corridor by creating a new location realignment around Madill to accommodate both truck and tourist traffic that would typically travel through Madill thus reducing traffic volumes and alleviating traffic congestion.

Traffic Operations

Existing traffic volumes are decreasing the level of service (LOS) at intersections along US-70 through Madill causing congestion and traffic delay for regional commuters, local residents, and through truck traffic. **Table 3** describes the characteristics that define the different levels of service.

Table 3: Level of Service Characteristics

Level of Service	Definition
A	Free-flow conditions with unimpeded maneuverability. Stopped delay at signalized intersection is minimal.
B	Reasonably unimpeded operations with slightly restricted maneuverability. Stopped delays are not bothersome.
C	Stable operations with somewhat more restrictions in making mid-block land changes than LOS B. Motorists will experience appreciable tension while driving.
D	Approaching unstable operations where small increases in volume produce substantial increases in delay and decreases in speed.
E	Operations with significant intersection approach delays and low average speeds.
F	Operations with extremely low speeds caused by intersection congestion, high delay, and adverse signal progression.

Source: Transportation Research Board, Highway Capacity Manual.

The proposed project would alleviate congestion at existing intersections and travel patterns would be improved. Under the No Build Alternative, in 2047, two locations would experience LOS D and F (intersection of US-70/Brookside Drive in the PM and intersection of US-70 and US-177 in both AM and PM). However, the ultimate scenario for the proposed project would function at an acceptable LOS, which is considered LOS of A, B, or C. **Table 4** presents the estimated seconds of delay and LOS for the No-Build and Build Alternatives for 2027 and 2047.

Table 4: US-70 Intersection Delay and Level of Service

Intersection with US-70	No Build Alternative				Build Alternative			
	2027		2047		2027		2047	
	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
	Intersection LOS Delay (s)							
US-177	E 43.9	F 92.4	F 253.6	F 872.9	B 13.3	B 15.2	B 15.2	B 17.3
Main St.	B 14.0	B 19.4	B 19.5	C 30.6	A 9.1	A 9.8	B 10.6	B 13.5
Brookside Dr.	C 24.1	C 33.7	C 31.8	D 41.0	B 17.3	B 14.7	C 22.7	B 17.6
Smiley Rd.	C 21.8	B 19.9	C 35.0	C 34.3	B 17.2	B 16.2	C 25.0	C 21.6

Source: Adapted from EST, Inc. Traffic Report: US 70 Madill Bypass Marshall County, OK. July 2014 using a 2% growth rate on the original 2013 design traffic.

How Would the Project Affect Homes and Businesses?

The proposed Build Alternative would affect existing homes and businesses in the study area, along US-70. These effects are referred to as socio-economic impacts and include the relocation or displacement of homes and businesses. ODOT has prepared a 2021 Relocation Plan (**Appendix D**), which indicates fifteen residential relocations and eight commercial or governmental relocations (consisting of 20 buildings) would occur as a result of the Build Alternative. The commercial relocations consist of governmental agencies, counselling, tax services, pawn shop, realty services, and a mobile home park. Two additional residential structures would be impacted; however, the structures have been condemned by the City of Madill and are not currently occupied.

The 2021 Relocation Plan included an assessment of all properties affected and the relocation of homes and businesses. Any properties being impacted by the proposed ROW on this project may be entitled to relocation benefits. The eligibility of each property impacted will be determined through the right-of-way process. Acquisition and relocation assistance will be conducted in accordance with the Uniform Relocation Assistance and Real Property Acquisitions Act of 1970, as amended effective February 3, 2005. During the time of the 2021 Relocation Plan, limited commercial and residential properties were available to purchase or rent within study area and Madill. According to a variety of online realty sites there is a limited number of properties available and new construction is likely necessary.

The 2022 Social, Economic and Environmental Justice Report was prepared utilizing the

Relocation Plan and a community study area that encompasses the environmental study area as well as the census blocks and block groups that make up the majority of the City of Madill and the Town of Oakland in proximity to the project.

The 2020 Census data shows 55.5 percent of the population within the community study area as minority populations, which is higher than both Marshall County and the State of Oklahoma. One sizeable readily identifiable group of minority persons exists within the community study area (EJ population), within the communities of Madill and Oakland. This group is comprised of census blocks with larger minority population percentages that are adjacent to one another and neighboring blocks that, when viewed collectively, compose an overall Hispanic or Latino community. Facilities within the community study area, include churches that cater to the Hispanic or Latino populations and offer services in Spanish.

Of the fifteen residential displacements, two are located within this readily identifiable minority population. These residences are located on the north side of Wolf Street, which is the northeastern corner of a neighborhood east of the railroad that is bisected by US-377. Seven of the eight commercial displacements are in four buildings which are also located within the readily identifiable minority population. These include the Marshall County Conservation District, a U.S. Department of Agriculture (USDA) office, Sparlin CPA, Counseling Inc., Edie Brown (funeral services), Jones Pawn, and Samoa Realty. Although located within the readily identifiable population, these commercial displacements fall in census blocks with generally lower percentages of minority persons, and based on review of the type of services, these commercial facilities serve the EJ and non-EJ communities. The remaining commercial displacement is the mobile home park property, which is not located within the readily identifiable minority population.

Aside from the government agencies that will be displaced, there are comparable goods and services provided in Madill. While commercial displacements are disproportionately located within the readily identifiable minority group, the displacements would not adversely or disproportionately affect the EJ population. Businesses that may be dependent on through traffic may experience a decline in business due to fewer regional travelers through town. Businesses and services that are more destination-based or which serve the local community may see an increase in local traffic due to reduced congestion and safer conditions.

How Would the Project Affect Low-Income and Minority Populations?

All federal agencies must comply with Executive Order 12898: *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations* signed on February 11, 1994. This order states that, "each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse

human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations." According to the U.S. Department of Transportation (DOT) Order 5610.2(a), minority population means any readily identifiable groups of minority persons who live in geographic proximity, and if circumstances warrant, geographically dispersed/transient persons (such as migrant workers or Native Americans) who will be similarly affected by a proposed DOT program, policy, or activity. These populations are called "Environmental Justice [EJ] populations." FHWA adopted FHWA Order 6640.23, *FHWA Action to Address Environmental Justice in Minority Populations and Low-Income Populations* on December 2, 1997. This FHWA Order states that "a disproportionately high and adverse effect" means the adverse effect is predominantly borne by EJ populations or is appreciably more severe than the adverse effect made on non-EJ populations or the benefits to the EJ populations are delayed compared to non-EJ populations.

To determine how the US-70 Build Alternative would affect EJ populations, minority, and low-income populations were identified in study area census tracts and block groups, Marshall County and the State of Oklahoma using information from the U.S. Census Bureau. A census block group is a geographical unit used by the U.S. Census Bureau and is the smallest unit they use to publish survey data. A census tract is larger and comprises one or more block groups.

The study area for the US-70 project includes census geographies adjacent to the proposed project as well as the census geographies that would be mostly likely be affected by the project, which includes the communities of Madill and Oakland. There are 274 census blocks within the study area, 226 of which are populated for a total population of 4,888. A condensed version of Race and Ethnicity characteristics is provided below in **Table 5**.

Table 5: Race and Ethnicity Characteristics (2020)

Population	Study Area	Madill	Marshall County	Oklahoma
Total	4,888	3,914	15,312	3,959,353
White Alone	2,175	1,756	9,749	2,407,188
Percent White	44.5%	44.9%	63.7%	60.8%
Black or African American	123	117	169	283,242
Percent Black or African American	2.5%	3.0%	1.1%	7.2%
American Indian and Alaska Native	374	269	1,413	311,890
Percent American Indian and Alaska Native	7.1%	6.9%	9.2%	7.9%
Asian	32	27	44	89,653
Percent Asian	0.7%	0.7%	0.3%	2.3%
Native Hawaiian and Other Pacific Islander	1	1	4	8,168
Percent Native Hawaiian and Other Pacific Islander	0.0%	0.0%	0.0%	0.2%
Hispanic or Latino	1,842	1,448	2,605	471,931
Percent Hispanic or Latino	37.7%	37.0%	17.0%	11.9%
Some Other Race	8	7	85	13,602
Percent Some Other Race	0.2%	0.2%	0.6%	0.3%

Population	Study Area	Madill	Marshall County	Oklahoma
Two or More Races	360	289	1,243	373,679
Percent Two of More Races	7.4%	7.4%	8.1%	9.4%

Source: US Census, 2020, Table P2, "Hispanic or Latino, and not Hispanic or Latino by Race". * No population exists within Block Group 2, Census Tract 947.

The population of the study area is 55.5 percent minority, which is higher than Marshall County (36.3%) and the state of Oklahoma (39.2%) minority percentages as shown in **Appendix B** of the Social, Economic and Environmental Justice Analysis Report. The largest individual minority group within the study area is Hispanic or Latino which makes up 37.7 percent of the community study area. This is higher than the county and state percentages. As discussed previously, this Hispanic or Latino community within Madill and Oakland has been identified as a readily identifiable minority population. **Figure 6** depicts the readily identifiable minority group within the community study area.

The portion of the population made up of two or more races comprises 7.4 percent of the community study area, followed by American Indian and Alaska Native (7.1%), Black or African American (2.5%), Asian (0.7%), Some Other Race (0.2%) and Hawaiian and Other Pacific Islander (>0.0%).

There are no low-income EJ populations within the community study area, and median household income ranges from $37,625 to $70,125 in block groups within the community study area. All block groups also show a presence of households living below the federal poverty level for a family of four ($27,750 in 2022) ranging from 9.6 percent to 34.6 percent. Overall, approximately 16.7 percent of the households in the community study area are living below the poverty level. This is approximately the same as Marshall County, and higher than the State of Oklahoma.

Displacements

The commercial displacements that would occur due to the Build Alternative would include Marshall County Conservation District, US Department of Agriculture (USDA), Sparlin CPA, Counseling Inc., Jones Pawn, Samoa Realty and Pleasant Valley Mobile Home Park. These displacements would impact ten full time employees (FTE's). However, besides the Marshall County Conservation District and USDA all other services that will be displaced are provided within Madill. The Relocation Plan noted that there are currently office spaces available for Sparlin CPA and Counseling, Inc., which accounts for four of the ten full time positions. The impact to the remaining full time positions is anticipated to be temporary, since re-establishment benefits will be provided. While EJ populations within the readily identifiable minority group would experience the impacts from displaced commercial properties, the impact would not be disproportionate to the impacts on the census geographies outside this EJ community. The entire community would equally experience a loss of services if the businesses do not or cannot relocate to nearby locations. Based on the relocation plan there is very limited readily available commercial buildings for the types of businesses that would be affected, and new construction

may likely be necessary. New construction would add an additional eight to 16 months to the schedule to complete necessary relocations.

At the time of the 2021 Relocation Plan there was also limited housing available to purchase or rent within the study area and Madill; therefore, those who would be displaced would likely need to construct on a new location within the community. New construction would add 8 to 16 months to the schedule to complete necessary relocations. The Madill School district covers a very large geographic area, so it may be possible to find replacement housing or commercial real estate that would allow children to remain within the Madill School District. Of the fifteen residential displacements, only two of the residential displacements, would occur within the readily identifiable minority population. Therefore, residential displacements would not be disproportionate to the EJ population. Additionally, based on comments from the 2015 public meeting, the majority of residents and business owners in the community supported the realignment.

Access and Travel Patterns

The proposed realignment will affect travel patterns and how motorists access properties in and around the project area. In general, the ultimate realignment project will provide a route that allows through-traffic to travel at higher speeds and avoid congestion in the City of Madill. Ultimately, the proposed project would change the current travel patterns by allowing motorists the option to either drive through or around Madill which would provide benefit all travelers in the area. The proposed bridge over the BNSF railroad would eliminate the need for traffic to stop for crossing trains. Congestion would also be reduced through downtown Madill which would provide safer and more convenient travel in town. **Table 1** shows the projected AADT levels for 2022 and 2047, which were developed using 2013 data and a corresponding growth factor. The realignment would significantly reduce traffic within Madill.

Motorists traveling along the realigned US-70 would have easier and quicker access to other major arterials in the region with intersections proposed at US-377, SH-199, Smiley Road, and SH-106. These intersections will provide access into and out of Madill for local traffic and more convenient and safer access to areas north and east of Madill for regional traffic.

Community Cohesion

Overall, community cohesion would improve within the community study area by reducing through traffic including large trucks in downtown Madill. Because mobility and safety would be improved for local traffic, community facilities and businesses would be easier to use and access by local residents. Businesses, particularly those dependent on traffic, may, however, see a decline in business due to fewer travelers through town.

However, individual neighborhoods within the smaller environmental study area would experience impacts. The proposed project would displace a mobile home park with eleven residences, which would impact the cohesion of that community by relocating residents. The Madill City Housing Authority complex is located at the northeastern corner of the proposed

intersection of US-70 and N 1st Street. The overpass spanning the BNSF railroad and 3rd Street would modify the existing natural visual and physical barrier that is currently created by the large, wooded parcels that currently separate the complex from the neighborhood to the south. The existing trees create a natural visual and physical barrier; the elevated roadway would replace a portion of the existing barrier with a built structure approximately 30 feet tall. The distance from Ridgeview Drive to the overpass is greater than 300 feet, and aside from the adjoining ROW, a portion of the vegetated buffer will remain intact between the proposed roadway and the Madill City Housing Authority Complex. The topography is relatively flat in the area and the remaining trees may help to buffer the view of the overpass where it is farther removed from the housing. The southern units would be most impacted by the visual aspect of the new construction, but the complex itself would not be bisected. Access to Madill City Housing Authority would be maintained by 3rd Street. Four residences would be displaced near the corner of E Wolf Street and S 10th Street which could impact the cohesion of that area. The realignment would not bisect the neighborhood; however, one property that is currently set apart would have access to the proposed realignment but would no longer have direct access into the neighborhood.

Limited English Proficiency

All block groups within the study area show a presence of persons who speak English "less than very well". This Limited English Proficiency (LEP) population makes up 1,001 individuals, or 11.6 percent of the total population. Spanish speakers comprise the majority of the LEP population with 11.3 percent of the total LEP population. Translated documents in Spanish will be provided for all future hearing notices and project information. Translation and/or other accommodations will be provided at the hearing by request. ODOT will also ask the public meeting attendees to voluntarily provide information on minority status (using check boxes) during sign-in.

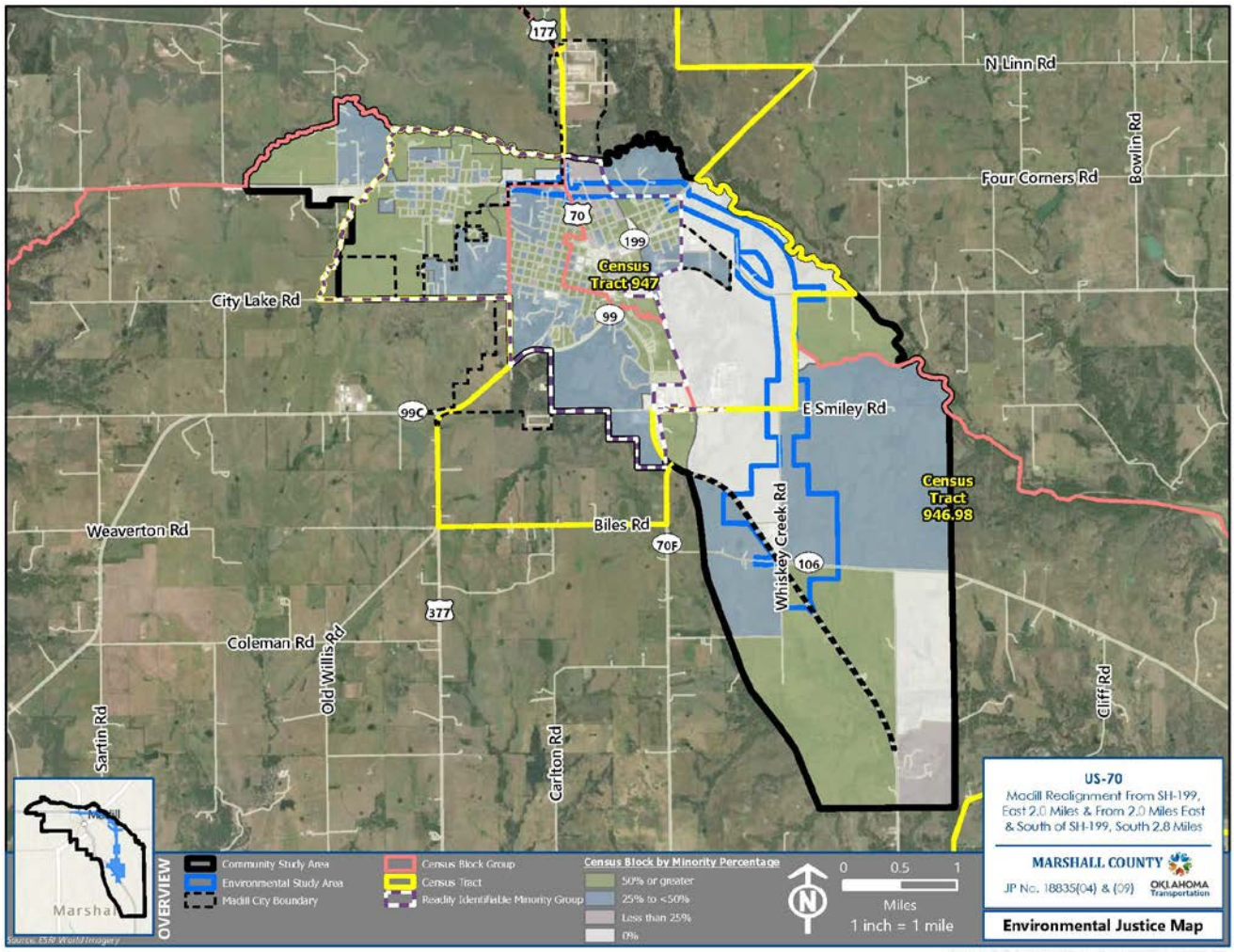

Figure 6: Readily Identifiable Minority Group, 2020

ODOT made a concerted effort to identify and reach out to the Madill community, inclusive of low-income and minority populations to keep them informed of the project and provided ample opportunity to provide input. ODOT issued media releases announcing the date, time, and place of the September 3, 2015, open house. Notifications were also posted on the ODOT website. ODOT also asked the public meeting attendees to voluntarily provide information on minority status (using check boxes) during sign-in. Several of the written comments received were provided by attendees that identified as a minority on the sign-in sheet (Native American); however, comments specific to low-income or minority populations were not received.

Based on the analysis, the Build Alternative would not cause disproportionately high and adverse effects on any minority or low-income populations in accordance with the provisions of E.O. 12898 and FHWA Order 6640.23. The total population of the census blocks within the study area is 4,888. The minority population is 2,713, or 55.5 percent of the total population. Of the 274 census blocks within the study area, 48 are unpopulated. There is one sizeable readily identifiable group of minority persons (Hispanic or Latino), which encompasses the communities of Madill and

Oakland within the community study area.

The proposed realignment would have impacts on travel patterns, access, and community cohesion and would result in the residential and commercial displacements as discussed above. However, these impacts would not be disproportionate or adverse to the EJ population. The safety and mobility benefits resulting from the project would be beneficial for EJ and non-EJ populations alike.

How Would the Project Affect Farmland?

The Farmland Protection Policy Act (FPPA) is intended to minimize the impact federal programs have on the unnecessary and irreversible conversion of farmland to nonagricultural uses. For purposes of the FPPA, farmland includes prime farmland, unique farmland, and farmland of statewide or local importance. The project will require the acquisition land designated as prime and unique farmland. ODOT consulted with the US Department of Agriculture, Natural Resource and Conservation Service (NRCS) regarding impacts to farmlands. The NRCS responded, and the total score was less than the threshold requiring consideration of alternatives. The NRCS correspondence is included in **Appendix E**.

How Would the Project Affect Parks or Recreational Facilities?

DOT Act Section 4(f), LWCF Act Section 6(f) Resources

Section 4(f) of the U.S. Department of Transportation (DOT) Act of 1966 states that Federal Highway Administration (FHWA) may not approve the use of land from a significant publicly owned park, recreation area, wildlife or waterfowl refuge, or historic site. Section 6(f) of the Land and Water Conservation Fund (LWCF) Act establishes a fund to assist local, state, and federal agencies in meeting the demand for present and future outdoor recreation sites. Once a city, county, or agency has used Section 6(f) for funds, neither the land nor the park appurtenances can be eliminated or acquired without coordination with the National Park Service (NPS). No public parks, recreational facilities, wildlife refuges, or historic sites are located within the environmental study area.

One parcel on which a baseball field is located intersects the environmental study area. The parcel is privately owned and the portion of the parcel within the study area is not used for recreation. According to the City Inspector, the property owner agreed to allow the city to use part of his property for a baseball field and the baseball field was constructed through private donations. Additionally, a LWCF grant was awarded to Marshall County for ballfield lighting for the Doc Watkins Field; the boundary for this 6(f) grant is shown in **Figure 7** below. The city maintains the baseball field, but it is not a city-owned facility. Doc Watkins Field is located at the northwest

corner of the intersection of 10th Street and SH-199. The proposed project would not require ROW acquisition from this property, nor would it change the use of the baseball field, adversely impact the portion of the privately owned parcel on which the baseball field is located or alter or eliminate the improvements made using LWCF (6(f)) funding. No adverse impacts to the baseball field (Doc Watkins Field) or the park users are anticipated as a result of the proposed project; therefore, the proposed project would not adversely affect Section 4(f) or 6(f) property. No other public parks or recreational facilities are located in the study area.

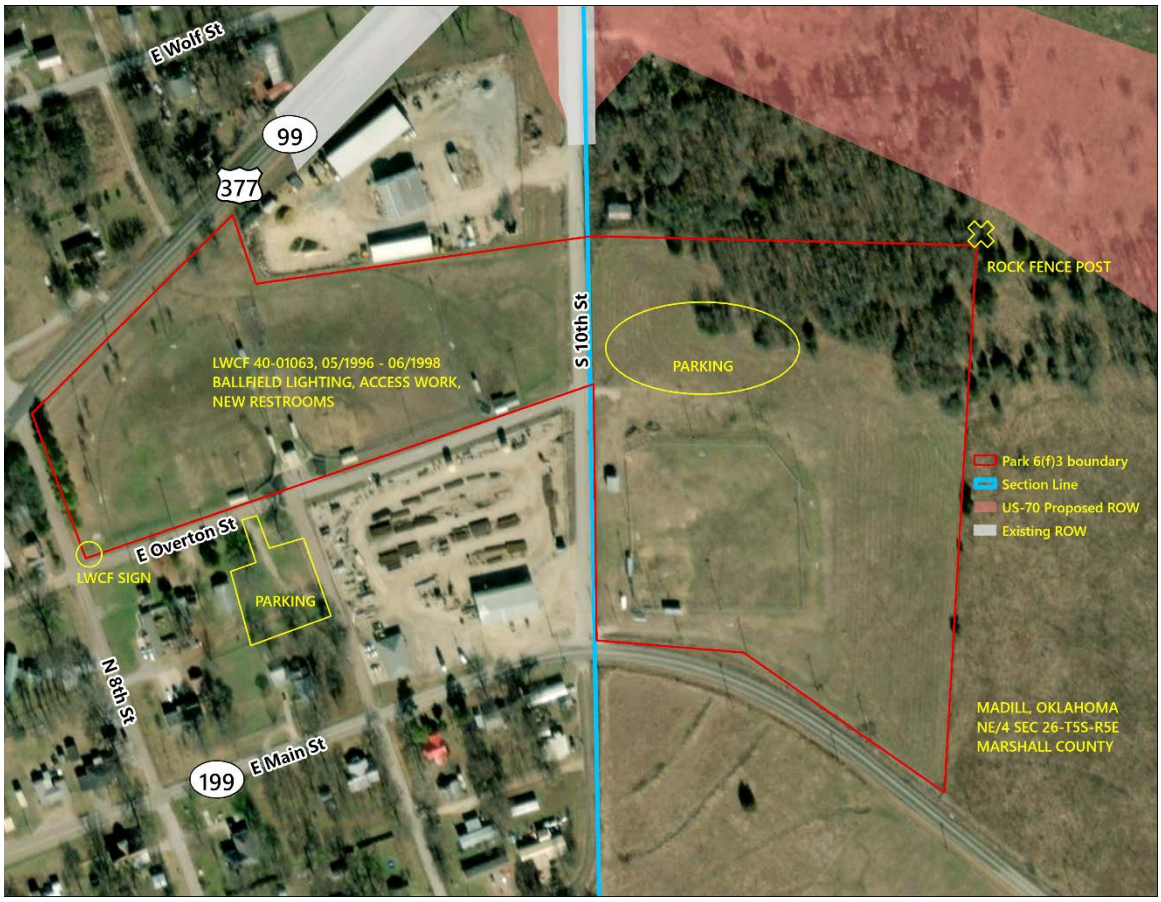

Figure 7: 6(f) Grant Boundary at Doc Watkins Field

How Would the Project Affect Historic and Archaeological Resources?

ODOT coordinated Section 106 consultation on behalf of FHWA for the proposed US-70 realignment.

A Cultural Resources Survey was conducted July 26-31, 2016. During the cultural resource investigations, a total of six newly recorded archeological sites were documented, including four

20th century sites, one multi-component site, and one prehistoric site. Additionally, three 20th century archeological sites were relocated, and site updates completed. The archeological sites did not contain significant archaeological deposits, features, or associations and are all recommended not eligible for inclusion in the National Register of Historic Places (NRHP). Seven buildings over 45 years of age were also documented during the survey. These mid-20th century buildings include residential and commercial structures. None of the buildings possess architectural distinction, nor do they have any association with significant events or persons, and therefore all seven buildings were recommended not eligible for inclusion in the NRHP.

Pursuant to 36 CFR 800.4(d)(1), and based upon the results of the study, the project will have no effect on historic properties. Consultation with the Oklahoma State Historic Preservation Office (SHPO) and the State Archeologist resulted in concurrence with the findings and recommendations.

ODOT consulted with the Chickasaw Nation, Osage Nation, Wichita, and Affiliated Tribes in June 2016 and again in June 2017, to determine if the tribes had any religious or cultural properties in the area that may be affected. A copy of the approved cultural resources report was also distributed to the tribes, with no comments received.

ODOT performed a reevaluation of the study area in February 2022 and concluded that the 2017 memorandum and plan notes for the avoidance of non-assessed cultural resources located within a one-mile vicinity of the project area are still valid. No historically significant cultural resources were identified in the project area.

The Section 106 consultation record, inclusive of the reevaluation, is included in **Appendix F**.

How Will the Project Affect Natural Resources?

Floodplains

The Federal Emergency Management Agency (FEMA) maps floodplains of major streams and rivers across the United States. There are regulated floodplains in the environmental study area (**Appendix G**). The proposed project crosses five unnamed tributaries to Glasses Creek and located within the Zone A or 100-year floodplain. The remainder of the study area is located within Zone X or above the 500-year floodplain.

Habitat for Protected Species

The U.S. Fish and Wildlife Service (USFWS) is responsible for protecting threatened and endangered plants and animals under the Endangered Species Act. According to the USFWS, the US-70 project area has the potential to contain habitat for the following protected species:

Birds:

- Interior Least Tern
- Whooping Crane
- Piping Plover
- Red Knot

Insects:

- American Burying Beetle

A biological field review was performed for the US-70 project and a Biological Assessment Report (**Appendix H**) was prepared. ODOT, on behalf of FHWA, consulted with the USFWS and determined that the project will have no effect on the Interior Least Tern, Piping Plover, Red Knot, and Whooping Crane. The project occurs within the range of the American Burying Beetle (ABB) and suitable habitat for the ABB was identified within the immediate vicinity of the proposed project. The project also has the potential to impact habitat for the Monarch Butterfly, a candidate species.

The project has relied upon use of the 4(d) rule for the ABB and the USFWS has concurred with the Department's effects determination based on consideration of project effects as documented in the Determination Key, the USFWS Programmatic Biological Opinion for the 4(d) rule, and ODOT's commitment to utilizing the conservation measures presented at the end of this EA (What Commitments Have Been Made to Minimize Potential Impacts). The Biological Assessment, ABB Determination Key, species list, and USFWS concurrence are included in **Appendix H**. Plan notes will be added for minimization of impacts to endangered species.

The Bald and Golden Eagle Protection Act (BGEPA) and the Migratory Bird Treaty Act (MBTA) also protect species. The BGEPA was enacted in 1940 and prohibits anyone, without a permit from "taking" bald or golden eagles, including their parts, nests, or eggs. Suitable nesting, roosting or foraging habitat for the Bald Eagle occurs within the project's action area. A nest search survey will be performed within 660 feet of the work zone, during the winter prior to, and within one year of, the start of construction. A Bald Eagle Plan note will be added to the final construction plans. This note is included in the commitments section of this EA.

The MBTA of 1918 prohibits the "take (including killing, capturing, selling, trading and transport) of protected migratory bird species without prior authorization by the Department of Interior U.S. Fish and Wildlife Service. Cliff Swallows and Barn Swallows commonly use bridges and culverts in Oklahoma for nesting, and several Cliff Swallow nets were observed. The project could adversely affect species protected by the Migratory Bird Treaty Act (MBTA) if construction activities occur during the nesting season of this species. Culvert and bridge work should be avoided during the nesting season (generally April to August), and if unavoidable, structures shall be protected from new nest establishment prior to the start of the nesting season. A Migratory Bird Plan note will be added to the final construction plans.

Waters and Wetlands

ODOT performed a study to identify waters and wetlands within the study area. Eight intermittent streams (unnamed tributaries to Glasses Creek and Little Glasses Creek), 19 stock

ponds (7 with wetland fringe), one forested wetland and one emergent wetland were identified in the study footprint and are likely jurisdictional. Five linear swales that are unlikely jurisdictional were also identified in the study footprint. Additional detail can be found in the Waters and Wetlands Report dated January 2022, which is included in **Appendix H**. The original report was prepared in 2016; no additional waters were identified through the updated study. The U.S. Army Corps of Engineers (USACE) regulates all work within waters of the United States, which includes USGS-mapped streams and their associated wetlands.

Jurisdictional status will be confirmed with the USACE, and the proposed construction activities within the jurisdictional waters will be evaluated to ensure the appropriate Section 404 permit authorization is obtained.

How Will the Project Affect Noise Levels?

A Traffic Noise Assessment was conducted according to FHWA regulations and the ODOT Noise Policy to examine the potential noise impacts associated with the proposed roadway improvements.

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 that include distance, buildings, solid fences/walls, topography, ground surfaces, and atmospheric conditions. The noise analysis was performed using the FHWA Traffic Noise Model (version 2.5) in accordance with the FHWA 23 CFR 772, Procedures for Noise Abatement of Highway Traffic Noise and Construction Noise and complies with the ODOT Policy Directive Highway Noise Abatement C-201-3 (ODOT Noise Policy) dated July 13, 2011.

For highway traffic noise, since humans are not equally sensitive to all frequencies, noise adjusted or weighted using an A-weighted scale. The A weighting scale is widely used in environmental analysis because is closely resembles the nonlinearity of human hearing. The unit of A-weighted noise is dBA. Because highway traffic sounds fluctuate over time, an equivalent sound level is used to represent a single number to describe varying sound levels. The term L_{EQ} (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 are expressed in dB (A) L_{EQ} (h).

The analysis consists of a comparison of modeled noise levels for existing conditions (2027) with projected noise levels for future conditions (design year 2047). ODOT and FHWA regulations identify seven noise activity categories based on land use and sound levels, each of which has its exposure define exposure limit (i.e. Noise Abatement Criteria (NAC)).

Twenty-five receivers were modeled and analyzed consisting of 18 single-family residential dwellings, analyzed as NAC Activity Category B; two recreational sports fields, one cemetery, and three places of worship analyzed as NAC Activity Category C; and one multi-family apartment complex, analyzed as NAC Activity Category D. Noise impacts occur when noise is expected to reach 66 dB(A), which is considered "approaching" the NAC of 67 dB (A) for residential homes. Noise impacts also occur when future noise levels are expected to be 15 dB or higher over existing noise levels.

Under current conditions, no receivers are impacted. Based on the future noise analysis, no receivers would approach, meet or exceed the NAC criteria for Category B, C, or D in the proposed roadway conditions, with the highest sound level observed at 64.9 dB(A). However, one (1) receiver, a single-family residence designated as R26, would experience a substantial increase by exceeding 15 dB over the existing noise levels. Existing and predicted noise levels for all receivers, including the interior predictions, are reflected in **Table 6** below.

Table 6: Traffic Noise Levels (dB(A)Leq) for Modeled Receivers

Receiver	Location [C]	NAC Criteria	Existing Noise (2027) dB(A)	Predicted Noise [B] (2047) dB(A)	Change (+/-) dB(A)	Noise Impact
R-1	STA 560+00 303 feet West	B	56.0	58.4	2.4	N
R-2	STA 560+00 100 feet West	C	54.2	57.9	3.7	N
R-3	STA 560+00 80 feet West	C	58.8	63.2	4.4	N
R-4	STA 575+00 263 feet West	B	52.7	61.7	9.0	N
R-5	STA 575+00 223 feet West	B	52.2	61.1	8.9	N
R-6	STA 575+00	B	50.7	58.0	7.3	N
R-7	STA 580+00 160 feet East	B	56.8	59.5	2.7	N
R-8	STA 580+00 285 feet East	B	59.4	59.2	-0.2	N

Receiver	Location [C]	NAC Criteria	Existing Noise (2027) dB(A)	Predicted Noise [B] (2047) dB(A)	Change (+/-) dB(A)	Noise Impact
R-9*	STA 585+00 100 feet West	D	36.1	40.0	3.9	N
R-10	STA 590+00 260 feet West	B	56.1	58.7	2.6	N
R-11	STA 590+00 155 feet East	B	50.4	55.6	5.2	N
R-12	STA 600+00 134 feet West	B	54.4 [A]	55.9	1.5	N
R-13	STA 615+00 250 feet West	B	49.0 [A]	59.4	10.4	N
R-14	STA 615+00 100 feet East	C	46.5 [A]	51.3	4.8	N
R-15	STA 620+00 158 feet East	B	43.0 [A]	57.7	14.7	N
R-16	STA 630+00 200 feet West	B	49.0 [A]	59.9	10.9	N
R-17	STA 630+00 50 feet East	B	49.8	58.1	8.3	N
R-18	STA 635+00 95 feet East	C	56.5	56.5	0.0	N
R-20	STA 645+00 166 feet West	C	49.0	53.8	4.8	N
R-21	STA 705+00 175 feet West	B	53.7 [A]	58.0	4.3	N
R-22	STA 710+00 710 feet East	B	57.4	57.2	-0.2	N

Receiver	Location [C]	NAC Criteria	Existing Noise (2027) dB(A)	Predicted Noise [B] (2047) dB(A)	Change (+/-) dB(A)	Noise Impact
R-23	STA 715+00 115 feet West	C	48.5	57.0	8.5	N
R-24	STA 840+00	B	51.7	52.8	1.1	N
R-25	STA 600+00 285 feet West	B	54.4 [A]	55.8	1.4	N
R-26	STA 775+00 245 feet East	B	44.3 [A]	64.9	20.6	Y

[A] Existing Noise levels as measured during ambient noise readings.
[B] Predicted Noise levels calculated using 2047 traffic volume projections on proposed facilities.
[C] Stations and offsets taken along existing alignment centerline.
*Interior Analysis 25 dB(A) reduction from TNM results.

The ODOT Noise Policy states that predicted noise levels attributed to roadway modifications resulting in increased traffic levels require an evaluation of measured noise impact and possible mitigation measures. Results of the future analysis indicated that one receiver, a single-family residence, will be impacted, and thus, a free-standing noise wall was considered for this receiver as it is the most appropriate form of noise abatement measure. Noise mitigation must be feasible and reasonable to be recommended for design and construction. Feasible refers to the combination of acoustic and engineering factors considered in the evaluation of a noise abatement measure. The engineering considerations include whether it is possible to build an abatement measure given site constraints (drainage, safety, utilities) and acoustical considerations include whether the abatement measure provides an acceptable reduction in noise levels. Reasonable refers to the following factors which determine if mitigation is fair and affordable. For the impacted receiver R26, a preliminary analysis concluded that a free-standing noise wall 333 feet in length and 20 feet in height would reduce the noise levels by 6.1 dB. However, it would not meet the noise reduction design goal of reducing the noise levels by 7 dB. Furthermore, at a total cost of $291,411, it would substantially exceed the cost/benefit ratio of $40,000 per benefitted receiver, meaning noise abatement measures would not be reasonable. Therefore, noise mitigation is not recommended for this project. See **Appendix I** for the 2022 Traffic Noise Assessment Report, which contains additional details regarding the analysis.

How Will the Project Affect the Look of the Area?

The visual environment of the proposed US-70 realignment project area to the east and south of Madill includes rolling hills, pasture, wooded riparian areas, and farmland with scattered homes and several commercial businesses and utility stations.

The proposed project would construct approximately five miles of new location roadway, with a bridge extending over the BNSF railroad, through the rural area east and south of Madill. The bridge over the railroad would be elevated 25 to 30 feet above the existing ground level. Therefore, the new facility would result in a new visual appearance for drivers and viewers of the roadway. Long-term changes to the visual landscape may also occur as the new roadway would likely spur residential or commercial development along its length.

How Will Potential Hazardous Materials Affect the Project?

An Initial Site Assessment (ISA) was performed in March 2022 for the subject project. The purpose of this assessment was to identify potential environmental concerns by reviewing historical data, regulatory information, conducting interviews and a visual inspection of the project area and surrounding area. Sites with the potential for environmental contamination include those containing above and underground storage tanks (e.g. gas stations) and sites with known releases of hazardous materials. Other sites include those that generate or store hazardous materials, including auto sales and repair shops, welding and manufacturing facilities, salvage and recycling facilities, dry cleaning/commercial cleaning shops, and water or wastewater treatment facilities.

Based on hazardous materials database searches, a review of historical aerials, and the field survey, two sites listed in the ISA were determined to possibly affect the project. Harris Virgil/Lee's Phillips 66 (701/801 N. 1st Street) is a historical Underground Storage Tank (UST) site with no reported cases. However, since this site operated pre-regulation, there is a possibility of encountering contamination. A cautionary plan note will be included to address the possibility of encountering contamination near this site. The second site is a sewage lagoon associated with a mobile home park. The proposed right-of-way indicates the lagoon would be acquired and the proposed roadway alignment goes through the current location of the lagoon. The lagoon will need to be closed following standard ODOT right-of-way procedure in accordance with Oklahoma Department of Environmental Quality regulations. To ensure the lagoon has a clean closure and no further action is required, the ODOT hazardous waste specialist will need to check the closure of the lagoon prior to project letting. The Initial Site Assessment and the relevant environmental mitigation notes are included in **Appendix J**.

What Will be the Impacts of Construction?

The existing US-70 corridor through Madill will remain open to traffic during the duration of construction of the proposed project. There will be temporary construction-related impacts, including noise and dust associated with construction and temporary restricted access to properties. Although access to homes and businesses may be impacted during construction, all properties will remain accessible at all times. Construction signage will be displayed during the project warning drivers of construction in the area. Motorists will experience some delay due to potential lane closures, changes in access and reduced speeds in construction zones when the proposed US-70 realignment is connected to the existing US-70.

What Indirect and Cumulative Impacts Will the Project Have?

Under the National Environmental Policy Act (NEPA), the federal government has a policy of assessing indirect and cumulative impacts. Direct impacts are those we have just discussed – those that occur at the same time and place as the project. Indirect effects are effects caused by the project but occur later in time or farther removed in distance compared to direct impacts and can include changes in land use attributable to the project (induced growth) and impacts on environmental resources that occur as a result of the project's influence on population or land use. The definition of indirect effects also includes other potential environmental impacts caused by the project, such as the effect of habitat fragmentation on species viability over time.

For the US-70 realignment, indirect impacts could occur to land use as a result of the new roadway alignment. The new roadway will pass through currently undeveloped areas, or farm and ranch lands. Building a new roadway could encourage new types of development, including residential and commercial development, to occur. While Marshall County and the City of Madill will be responsible for zoning and permitting any new development, the presence of a new roadway could provide favorable conditions for development. New developments in undeveloped areas may potentially impact natural resources including federally listed threatened and endangered species or waters of the U.S. Impacts to waters of the U.S. are subject to the USACE Section 404 permitting process.

The CEQ provides guidance on evaluating cumulative effects in a document 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, 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-range transportation plans for the city and region, comprehensive city plans, and proposed

plats in the vicinity of the project.

According to the ODOT 2022-2029 8-year Construction Work Plan the two extensions of SH-199 totaling approximately 10 miles would start from 1.6 miles east of Junction SH-99 which intersects with the US-70 realignment. Right-of-way acquisition for these projects is currently scheduled to begin in 2025, with construction on the western portion, which will connect to the US-70 realignment, scheduled for 2029.

The primary effect of these future projects on the current US-70 realignment would be increased traffic. As traffic increases, the potential for land use changes also increases. The cumulative impact of increased development potential, discussed above, extended over many years, could lead to a change in the nature of the project area from primarily rural to more suburban, characterized by roadside commercial development and potentially denser residential development. Ultimately, the City of Madill, Marshall County, and other municipal entities along the route would determine future development through planning and zoning decisions. New developments in undeveloped areas may potentially have a cumulative effect on natural resources including potentially federally listed threatened and endangered species or waters of the U.S.

The completion of the US-70 realignment and additional infrastructure projects would have the cumulative impact of enhanced regional mobility and better access of goods and people between the communities in Marshall County. Less congestion along the existing US-70 corridor would mean faster travel times for residents as well as emergency service vehicles. Local access to community facilities such as churches, schools, and medical facilities would also be improved.

Positive cumulative impacts on air quality and traffic congestion are anticipated to occur along the exiting US-70 corridor as a result of the proposed project. With no improvements, the traffic on the exiting US-70 is expected to experience significant congestion and delay, with traffic Level of Service (LOS) declining to level D/E/F by 2037. Congested roadways with idling vehicles can have negative impacts on air quality. By improving traffic mobility and reducing congestion, the proposed improvements of the US-70 realignment would be expected to improve overall air quality over time. These improvements would be independent from the effects of development.

Cumulative impacts are also considered specifically for low-income and minority populations. The direct impacts and benefits of the project, including cumulative impacts, are anticipated to be shared among these special status populations and the general population and are not anticipated to disproportionately affect low-income and minority populations.

Any direct, indirect, and cumulative impacts that may occur to natural resources would be addressed by the entity impacting the resource. Private, government, and/or municipal actions that may result in property acquisition and/or impacts to natural resources would be permitted and mitigated, for example, by that entity in accordance with their own policies and procedures plus any federal, state, or local laws, statutes, guidelines, etc. No mitigation is offered for the

indirect or cumulative impacts potentially occurring as a result of the proposed project as the goals of the project would be accomplished with impacts but without detriment to local resources.

How Did ODOT Involve Other State and Federal Organizations?

ODOT solicited comments relative to the social, economic, or environmental effects of the project from the following local, state, and federal agencies/organizations, and Native American Tribes:

- Board of Commissioners – Marshall County
- Bureau of Indian Affairs
- Bureau of Land Management
- City of Madill
- Chickasaw Nation
- Department of Agriculture
- Department of Wildlife Conservation
- Federal Highway Administration
- Federal Railroad Commission
- Madill Housing Authority
- Marshall County Chamber of Commerce
- Oklahoma Geological Survey
- Oklahoma Conservation Commission
- Oklahoma Water Resources Board
- Oklahoma Tourism & Recreation Department
- Oklahoma Department of Commerce
- Osage Nation
- National Park Service
- State Department of Education
- Tulsa District Corps of Engineers
- U.S. Department of the Interior
- U.S. Housing and Urban Development
- Wichita and Affiliated Tribes

Unless specifically noted, a response was not received from an agency. Responses were received from a few agencies as summarized below. A copy of the agency correspondence is included in **Appendix A**.

- The Oklahoma Corporation Commission, Oil & Gas Conservation Division, stated that there were no issues or concerns regarding the conservation and environmental aspects of the oil and gas division.
- The Oklahoma Conservation Commission commented on potential disturbance to riparian areas and resulting siltation. OCC also expressed concern over redirecting or redesigning of the channel. OCC recommendations included reduced disturbance in the creek and proper erosion control plans. They also recommended a natural stabilization method if the stream needs manipulation. OCC requested that "following completion of this project, the streams remain free flowing (stream slope unaffected by construction) with naturally vegetated stable banks with stream substrate free of excess sedimentation from project activities."
- The Bureau of Land Management responded that they have no concerns or objections for the proposed project.

- The Oklahoma Department of Environmental Quality responded with a General Construction/Improvement Projects fact sheet outlining recommendations for environmental issues including water and sewer lines, lead paint removal, asbestos handling and removal, air quality, storm water permitting, and solid or hazardous waste handling or disposal.

How Did ODOT Involve the Public In the Project?

ODOT offered the public the opportunity to participate in the EA process through one stakeholder meeting, which was held on June 16, 2015, and one public meeting, which was an open house held September 3, 2015. The public involvement activities are described under the History of the Project and summarized below. The purpose of the stakeholder and public meetings was to keep the public informed and solicit comments. ODOT advertised the meeting via media releases announcing the date, time, and place of the event. Notifications were posted on the ODOT website and fliers were distributed within the project area. Written notifications of the open house were mailed to federal, state, and local stakeholders and all property owners within or adjacent to the study area were mailed meeting invitations. The same information presented at the open house was also available on ODOT's website, which allowed individuals to download and review meeting information and provide comments. A Public Hearing will be held Spring 2022 to present the findings of this EA.

Stakeholder Meeting

ODOT held a stakeholder meeting for the US-70 project on June 16, 2015, in Madill. Notices of the stakeholder meeting were sent to local, State, and Federal officials. The meeting was conducted with a formal presentation with time allotted for questions and responses. The purpose of the meeting was to discuss the project history and alignment constraints, present the proposed alignment, and seek input from the project stakeholders. Twenty-five people signed in for the meeting, including representatives from ODOT, Marshall County, City of Madill, Housing Authority Board, and local stakeholders.

A total of five verbal and one written comment and suggested solutions were received as a result of the stakeholder meeting. Most of the verbal comments were regarding access, safety, and traffic along the proposed corridor. The written comment indicated that the business owner of Jones Pawn did not receive notice of the stakeholder meeting. No comments specific to low-income or minority populations were received. See **Appendix A** for the US-70 Stakeholder Summary.

Public Meeting

ODOT held a public open house for the US-70 project on September 3, 2015, in Madill. The meeting was conducted with a formal presentation and time allotted for questions and responses. The purpose of the meeting was to present the eastern realignment alternative for US-70 and collect the public's input to obtain information from the public to further assist in the identification of critical social, economic, and environmental effects that may result from the

project. Seventy-seven people signed in for the meeting, including representatives from ODOT, the Mayor of Madill, two Marshall County Commissioners, an Oklahoma State Representative, and a field representative for US Congressman Markwayne Mullin among a number of local constituents, landowners, and business owners.

A total of 41 written comments and suggested solutions were received as a result of the public meeting. Written comments included impact of realignment to Open Range Cowboy Church, impact of realignment to Jones Pawn, land surrounding proposed 3rd Street Bridge, impact to residential property, property fragmentation, lack access at Smiley Road, and consideration of other alignments. Responses to the public meeting comments will be available at the public hearing. No comments specific to low-income or minority populations were received. See **Appendix A** for the US-70 Open House Summary.

What Commitments have been made to Minimize Project Impacts?

Throughout the planning and study of the US-70 project, ODOT has made efforts to avoid, minimize or mitigate impacts to both the natural and built environment. These efforts will continue through the final design and construction of the project. As discussed throughout this EA, ODOT has conducted environmental resource studies and consulted with appropriate agencies. Updated studies will be coordinated as well, and any additional commitments will be added below. The commitments listed below have been identified for the Build Alternative.

Preconstruction Commitments

- Minimize habitat loss by reducing the amount of ground disturbance of suitable ABB habitat within the construction footprint to only what is necessary for construction and document in the monitoring reports to the Service. Following construction, areas of ground disturbance outside of the safety clear zone will be revegetated with native plant species where applicable and practicable. Areas where revegetation with native plant species is not practicable will be revegetated with more traditional plantings such as solid slab sodding.
- A USACE Section 404 permit will be necessary to authorize impacts to waters and wetlands.

Right-of-Way Commitments

- Fifteen residential and eight commercial or government relocations (consisting of 20 buildings) are proposed for this 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.

Construction Commitments

- Stormwater Pollution Prevention Plan (SWP3) will be developed, and temporary erosion and sediment control plan will be included in construction plans to minimize impacts to water quality.
- All non-displaced properties will remain accessible during construction of the project.

Plan notes to avoid off-site archeological sites for staging or borrow areas will be added to the plans. The following location should be avoided during all construction activities:

- Section 21, T53, R5E: SW ¼ of SE ¼
- Section 22, T53, R5E: SW ¼ of SW ¼

The following plan notes will be incorporated to minimize impact to species:

- Appropriate Best Management Practices to minimize impacts from storm water discharges and sedimentation in streams, as established by the Oklahoma Department of Environmental Quality, shall be conscientiously implemented throughout the proposed construction periods, in order to minimize any potential impacts to any listed species. The effectiveness of erosion controls shall be maintained for the duration of construction activities. Hazardous materials, chemicals, fuels, lubricating oils, and other such substances shall be stored at least 100 feet outside of the ordinary high water mark (OHWM). Refueling of construction equipment shall also be conducted at least 100 feet from the OHWMs. Sediment and erosion controls shall be installed around staging areas to prohibit discharge of materials from these sites. Construction waste materials and debris shall be stockpiled at least 25 feet outside of the OHWMs, and these materials shall be removed and disposed of properly upon completion of the project. Preventative measure must be taken to prohibit the discharge of contaminants into any surface waters.
- The American Burying Beetle is a large carrion burying beetle that occurs within the project limits. Artificial lighting may be used during construction for night activities if the equipment specifications outlined in Special Provision 656-5(a-b) 19 for ABB are adhered to and measures to minimize use of artificial lighting have been implemented. Carcasses and all food trash shall be removed from the permanent and temporary right-of-way throughout the duration of project activities. Pollution Prevention Requirements as specified by the Oklahoma Department of Environmental Quality General Permit OKR10 for Storm Water Discharges shall be implemented when appropriate. Additionally, all equipment will be fueled, and all fuel and motor vehicle oil will not be stored within areas of native vegetation (outside of ABB habitat).
- Migratory bird nesting use of the Whiskey Creek Bridge (NBI# 27624), Smiley Road concrete box culvert, and US-70 box culvert was observed. Painting, repair, retrofit, rehabilitation, or demolition of the existing Whiskey Creek Bridge and forementioned culverts shall be conducted between September 1 and February 28 when migratory bird nests are not occupied. If activities cannot be completed between September 1 and February 28, the bridge and culvert shall be protected from new nest establishment prior

to March 1, by means that do not result in bird death or injury. Options include the exclusion of adult birds from suitable nest sites on or within a structure by the placements of weather resistant polypropylene netting with 0.25-inch or smaller openings, prior to March 1. Methods other than netting must be pre-approved by the ODOT Biologist. Although no nests were observed on all other structures, the birds may occupy the structures in the future. The Resident Engineer shall contact the ODOT Biologist if any bird use of these structures is observed. If birds are observed then painting, repair, retrofit, rehabilitation or demolition of existing bridge and culverts shall be conducted between September 1 and February 28 (when migratory bird nests are not occupied).

One potential hazardous materials site is located along the project corridor. The following will be added as an Environmental Mitigation Note:

- 860+60 to 862+10 Rt. 25 feet Harris Virgil/Lee's Phillips 66
  Petroleum contamination may exist at or near the referenced hazardous materials site. Based on the available information, contamination is not expected to affect construction activities, but is still possible. In the event contaminated soil or groundwater is encountered, the contractor shall adhere to ODOT's Hazardous Materials Specification 107.15 and notify the Resident Engineer, who may then contact the Environmental Programs Division at (405) 521-3050 for assistance.

References

Geyer, Joshua (December 2021). Oklahoma Department of Transportation. Study Map and Totals. Data retrieved from the Traffic Engineering Division Collision Analysis and Safety Branch.

Oklahoma Department of Transportation. 2021 to 2028 Construction Work Plan District 2.

Oklahoma Department of Transportation. US 70 *1997 Feasibility Study.*

List of Preparers

Scott Stegmann – CP&Y, 2000 N. Classen Blvd, Suite 1410, Oklahoma City, OK. M.S. Environmental Science, University of Oklahoma. 27 years' experience (NEPA Project Management, QA/QC; Public Involvement (original technical reports).

Kelly Saladis – CP&Y, 1820 Regal Row, Dallas, TX. B.S. Chemistry and Environmental Science. State University of New York at Binghamton. 22 years' experience (NEPA Project Management, QA/QC; Public Involvement).

Joshua Geyer – CP&Y, 11757 Katy Freeway, Suite 1540, Houston, TX. B.S. Wildlife Biology. Unity

College. 11 years' experience (EA Lead Author).

Victoria Raines – CP&Y, 2000 N. Classen Blvd, Suite 1410, Oklahoma City, OK. Master of Regional and City Planning. University of Oklahoma. 15 years' experience (Social, Economic and Environmental Justice; Historic and Cultural Resources).

Angelia Gillmeister – CP&Y, 13809 Research Boulevard, Suite 300, Austin, TX. B.A. International Studies. Texas State University at San Marcos. 9 years' experience (Noise Study and GIS Lead).

Melissa Cross – CP&Y, 13809 Research Boulevard, Suite 300, Austin, TX. M.S. Forest Economics. Stephan F. Austin State University. 5 years' experience (Biological Studies).

Leigh Raderschadt – CP&Y, 3630 Sinton Road #104 Colorado Springs, CO. M.S. Community and Regional Planning with a Historic Preservation Specialization. University of Texas at Austin. 9 years' experience (QA/QC Social, Economic and Environmental Justice).

Sarah (Cole) Banguilan – Raba Kistner Environmental, 10100 North Central Expressway, Suite 160 Dallas, Texas 75231. M.A. Anthropology/Archaeology. Washington State University. 24 years' experience (Cultural Resources Survey).

Dr. Steve Tomka – Raba Kistner Environmental, 12821 W. Golden Lane, San Antonio, Texas 78249. Ph.D. Archaeology. University of Texas Austin. 34 years' experience (Cultural Resources Survey).

APPENDIX A

AGENCY COORDINATION, STAKEHOLDER SUMMARY, AND OPEN HOUSE SUMMARY

OKLAHOMA DEPARTMENT OF TRANSPORTATION

Environmental Programs Division
200 N.E. 21st Street
Oklahoma City, OK 73105-3204
www.odot.org

August 10, 2015

Mr. Richard Fields
Assistant Field Office Manager - Multi Resources Oklahoma Field Office
Bureau of Land Management
7906 E. 33rd Street, Suite 101
Tulsa, Oklahoma 74145-1352

RE: Solicitation for Input for US-70 Realignment near Madill, Marshall County, State Job Piece No. 18835(04)(09)

Dear Mr. Fields:

The Oklahoma Department of Transportation (ODOT), in cooperation with the Federal Highway Administration (FHWA), is proposing to improve US-70 near Madill in Marshall County, Oklahoma. A US-70 Feasibility Study done in 1997 identified the section of US-70 in Madill as a high priority project based on an evaluation of future travel demand, safety and congestion. The study concluded that the preferred alternative for improvement is an eastern realignment of US-70 in and around the City of Madill. The need for the project is to accommodate increasing traffic in the Madill area and to address the current geometric and capacity deficiencies on the existing roadway. The purpose of the project is to improve the efficiency and travel time of the US-70 corridor addressing both truck traffic and tourist traffic.

ODOT recently tasked a consultant to further study the eastern realignment alternative recommended in the feasibility study to improve US-70 while taking into consideration construction costs, right-of-way, and environmental constraints. ODOT is holding a Public Meeting at 6 p.m. on September 3, 2015, at the Madill Community Building, 810 South 2nd Ave., Madill, OK. The purpose of the Public Meeting is to solicit public and agency input for the proposed changes to US-70 for further consideration.

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 September 17, 2015. Your written comments should be directed to the Environmental Programs Division Engineer, Oklahoma Department of Transportation, 200 NE 21st Street, Oklahoma City, Oklahoma 73105.

Should you have any questions regarding the project, please contact our environmental consultant, Scott Stegmann, CP&Y, Inc. at (405) 835-2836 or sstegmann@cpyi.com or David Saulsberry, ODOT Environmental Project Manager, at 200 NE 21st Street, Oklahoma City, OK, 73105, (405) 521-2315 or dsaulsberry@odot.org

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

Sincerely,

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

DRS/CPY/sds

Enclosure: Location Map

Copy to: Project Management Division
Field Division Engineer
Right-of-Way Division

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Mr. Richard Fields
Assistant Field Office Manager
Bureau of Land Management
7906 E. 33rd Street, Suite 101
Tulsa Oklahoma 74145-1352

Mr. Steve Nolen
Planning & Environmental (PER) Division
Tulsa District Corps of Engineers
1645 S. 101 E. Avenue
Tulsa Oklahoma 74128-4629

Ms. Michelle Lay
Chief - Civil Design Section,
Tulsa District Corps of Engineers
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Federal Railroad Administration
Regional Director, Region 5
4100 International Plaza, Ste. 450
Fort Worth Texas 76109-4820

Mr. Steve Spencer, Regional Director
Regional Environmental Officer/U.S.
Department of the Interior
1001 Indian School NW, Suite 348
Albuquerque New Mexico 87104

Mr. Tim Baker
Environmental Review Coordinator
DEQ Customer Assistance Program
P.O. Box 1677
Oklahoma City Oklahoma 73101-1677

Mr. Trey Lam, Executive Director
Oklahoma Conservation Commission
2800 North Lincoln Blvd., Ste. 160
Oklahoma City Oklahoma 73105

Dr. G. Randy Keller, Director
Oklahoma Geological Survey
100 East Boyd, Room N-131
Norman Oklahoma 73019-0628

Governor Bill Anoatubby
Chickasaw Nation
P.O. Box 1548
Ada Oklahoma 74821

Mr. Andrew Commer
Regulatory Branch Chief
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Mr. Greg Estep - Chief
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Mr. David Blackmore
Engineering Branch
Infrastructure Section
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Ms. Sharon Gordon-Ribeiro
U.S. Housing & Urban Development
Williams Center Tower II, 2 West
cond Street, Ste. 400
Tulsa Oklahoma 74103

Mr. Victor N. Bird, Director
Oklahoma Aeronautics Commission
120 N. Robinson, Suite 1244W
Oklahoma City Oklahoma 73102

Secretary of Commerce and Tourism,
ecutive Director of Commerce
Oklahoma Department of Commerce
900 North Stiles
Oklahoma City Oklahoma 73104

Commissioner Jim Reese
Commissioner of Agriculture
Department of Agriculture
2800 N. Lincoln Blvd., P.O. Box 54298
Oklahoma City Oklahoma 73105-4298

Ms. Joy Hofmeister, State
perintendent
State Department of Education
2500 North Lincoln Blvd., Rm. 121
Oklahoma City Oklahoma 73105-4599

Colonel Anthony Funkhouser
District Engineer
Tulsa District Corps of Engineers
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Tulsa Oklahoma 74128-4629

Mr. Scott Henderson
Chief -Chief Water Management
Tulsa District Corps of Engineers
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Tulsa Oklahoma 74128-4629

Mr. Robert Impson, Regional Director
Eastern Oklahoma Region
Bureau of Indian Affairs
P.O. Box 8002
Muskogee Oklahoma 74402-8002

Sue E. Masica-Regional Director -
Intermountain Region Office
National Park Service
12795 W. Alameda Parkway
Denver Colorado 80225

Mr. Tim Baker, Director - Oil & Gas Div.
Oklahoma Corporation Commission
Jim Thorpe Building
2101 North Lincoln Blvd.
Oklahoma City Oklahoma 73105

Mr. Richard Hatcher - Director
Department of Wildlife Conservation
1801 North Lincoln Blvd., P.O. Box 53465
Oklahoma City Oklahoma 73152-8804

Mr. J.D. Strong
Director
Oklahoma Water Resources Board
3800 North Classen
Oklahoma City Oklahoma 73118

Ms. Kristina S. Marek
Director, State Parks
Oklahoma Tourism & Recreation Dept.
120 North Robinson Avenue, Ste. 600
Oklahoma City Oklahoma 73102

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8. Marshall County DIV 2
    a. US-70 Realignment near Madill. J/P No. 18835(04)(09)
9. McCurtain County
    a. Improvements to US-259 from south of Idabel to 2 miles north of Red River bridge. J/P Nos. 24404(04) and 26343(04)
10. Oklahoma County
    a. Improvements to I-35/I-44 and I-35/NE 63rd Street interchanges.
    b. I-40 bridges over Sooner Road 3.1 miles east of I-35. J/P No. 28854(04), Project No. J2-8854(004)
11. Pittsburg County
    a. US-69 and adjacent frontage roads from US-270 junction south approximately 2 miles to Fourteenth Street. J/P No. 14999(04)
12. Pushmataha County
    a. Bridge on US-271 approximately 5.15 miles SW of LeFlore County line. J/P No. 28837(04), Project No. J2-8837(004)
13. Seminole County
    a. Bridge/approaches on SH-99A over Sand Creek 9.98 miles east of SH-99 junction. J/P No. 29460(04), Project No. J2-9460(004)
    b. US-270 from SH-270A in Seminole east to Y at US-270B west of Wewoka. J/P Nos. 21006(04)(07)(11), Project Nos. STP-167B(091), STP-167B(122)SS and STPY-1006(011)
14. Tulsa County
    a. SH-20 reconstruction from US-75 east 4 miles to Collinsville. J/P No. 24346(04), Project No. J2-4346(004)
    b. SH-20 intersection modification with traffic signals at 145th. J/P No. 31098(04), Project No. J3-1098(004)

Our office has reviewed the information provided in your letters and has no concerns or objections to the proposals. A search of our files shows no impact to Federal minerals in the project areas or any Federal land managed by the BLM.

Sincerely,

Laurence Levesque
Acting Assistant Field Manager
Multi-Resources
Oklahoma Field Office

cc:
NM (441, Central File)
NM (044, L. Levesque)

Bob Anthony
Commissioner

Todd Hiett
Commissioner

Dana Murphy
Commissioner

OKLAHOMA
Corporation Commission

1400 Hoppe Blvd; Ste D
Ada, OK 74820

Telephone: (580)332-3441
FAX: (580)332-8434

OIL & GAS CONSERVATION DIVISION, DISTRICT IV

GRANT ELLIS, DISTRICT MANAGER

Environmental Programs Division Engineer
Oklahoma Department of Transportation
200 NE 21st St.
Oklahoma City, OK 73105-3204

RECEIVED
AUG 31 2015
ENVIRONMENTAL
PROGRAMS DIV.

Re: Solicitation for Input for US-70 Realignment near Madill, Marshall County, State Job Piece No. 18835(04)(09)

We see no social, economic, or environmental effects of the proposal in relation to our district and the area of US-70 Realignment near Madill, Marshall County.

After careful consideration, our office has determined there are no current issues or concerns regarding the conservation and evironmental aspects of the oil and gas division.

If there are any questions, you may contact this office Monday through Friday, 8am to 4:30pm. Thank you.

Grant Ellis
District IV Manager

SCOTT A. THOMPSON
Executive Director

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY

MARY FALLIN
Governor

August 18, 2015

RECEIVED
AUG 24 2015
ENVIRONMENTAL
PROGRAMS DIV.

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

Re: ENVIRONMENTAL REVIEW – State Job Piece #18835(04)(09)
Proposed project is to improve US-70 near Madill, OK. Improvements are needed to accommodate increasing traffic in the Madill area and to address the current geometric and capacity deficiencies on the existing roadway.
Marshall County, OK

Dear Ms. Sullivan,

In response to your request, we have completed an environmental review of air, land and water records for the above- referenced project. Attached is a list of environmental recommendations that you should consider as you complete your project.

If you have any questions or need clarification, please contact Quiana Fields at 405.702.7152, 1.800.869.1400 or quiana.fields@deq.ok.gov.

Sincerely,

Martha Penisten, General Counsel
Office of the Executive Director

Enclosure

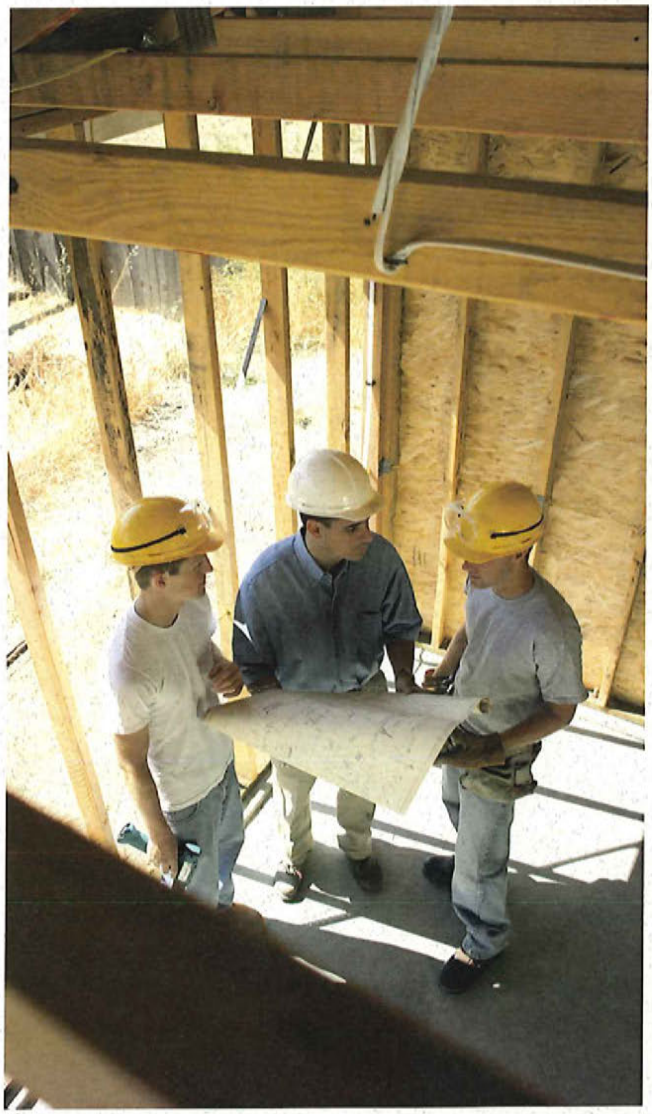
October 2010

AIR, LAND & WATER

Recommendations for General Construction/Improvement Projects

During the environmental review process for general construction/improvement projects, the following recommendations are offered to assist in ensuring environmental compliance throughout the project.

- Any project which includes the removal or installation of water and/or sewer lines shall conform to all relevant local and/or state plumbing codes.
- Any project which includes the removal of paint shall conform to all relevant lead-based paint regulations.
- Any project which includes the handling and/or removal of asbestos shall conform to all relevant asbestos regulations.
- During any construction, demolition, and/or rehabilitation reasonable precautions should be taken to protect air quality by minimizing fugitive dust emissions.
- If construction, demolition, and/or rehabilitation will disturb more than one acre of land, a determination should be made as to whether an Oklahoma Pollutant Discharge Elimination System (OPDES) permit for storm water is required during the construction phase.
- Any solid or hazardous waste from the site shall be recycled and/or disposed of in accordance with all relevant solid waste and/or RCRA regulations.



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September 15, 2015

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-70 Realignment near Madill, Marshall County, State Job Piece No. 18835(04)(09)

Dear Ms. Sullivan:

Thank you for the opportunity to review this ODOT proposal as described in your letter of August 10, 2015. The proposed plan calls for the eastern realignment of US-70 in and around the City of Madill to accommodate increasing traffic and to address the current geometric and capacity deficiencies on the existing roadway.

Your letter and project location map depicts a single preferred alternative. This proposed project was reviewed using the Soil Survey of Marshal County and the US Fish and Wildlife Service National Wetlands Inventory (NWI) Maps. Hydric soils are not indicated on the soil survey map through the study area. A few wetlands are indicated near the proposed route but appear to be stock tanks/farm ponds. The proposed route appears to cross an unnamed ephemeral tributary to Glasses Creek.

Although this project should have minimal impacts on aquatic resources, 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 is 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 creeks 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 streams 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 if bridge crossings are modified, 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 A Tramell

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

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

Partners for a Better Quality of Life

Stakeholder Meeting Summary

Meeting Date:	**Time:**
June 16, 2015	10:30 a.m.
Location: City of Madill Senior Citizens Center 408 W. Overton, Madill, OK	
Project: Proposed realignment of US-70 near Madill, Marshall County, OK	**Presenters:** ODOT, EST, CP&Y

A stakeholder meeting for the proposed realignment of US-70 near Madill was held at 10:30 a.m. at the City of Madill Senior Citizens Center on June 16, 2015. Notices of the meeting were sent to local, State, and Federal elected officials as well as other stakeholders. The meeting attendance roster was signed by 25 people.

Purpose

The purpose of the meeting was to discuss the project history and alignment constraints, present the proposed alignment, and seek input from the project stakeholders.

Presentation

Scott Stegmann, CP&Y, opened the meeting and introduced Cassidy Doescher with EST and Anthony Echelle with ODOT who discussed the proposed project in detail. Mr. Echelle first provided a brief history of the project, touching on the previously conducted US-70 corridor feasibility study and the current status of the proposed realignment near Madill. Following Mr. Echelle's introduction, Ms. Doescher addressed the project's upcoming timeline, including procurement of the right-of-way and utilities relocation starting in Federal Fiscal Year (FFY) 2016 and beginning the initial phase of construction in FFY 2018. Ms. Doescher presented the project constraints and presented the preferred alignment. She also discussed access points to the new facility and where there will be bridges or overpasses and intersections. To conclude, Mr. Echelle described the transition amongst the project's different phases of construction. According to Mr. Echelle, the initial phase of construction would involve the placement of two new lanes for the US-70 bypass, and when the need for additional capacity was warranted, the ultimate phase of construction would expand the bypass to four lanes. At the conclusion of the presentation, the floor was opened to questions from the stakeholders.

Questions and Answers

Stakeholders expressed overall support for the realignment of US-70; however, several expressed concern regarding access to Madill from the new bypass as well as the highway designation changes that would occur as a result of the proposed project. Below is a summary of the main comments communicated at the meeting.

These meeting minutes have been prepared by CP&Y. If there are any conflicts or disputes with any statements above, please inform CP&Y in order that a resolution can be reached.

1) One person asked how many points of access would be constructed for Madill along the US-70 bypass. ODOT replied that the initial phase would have four intersections whereas the ultimate phase would have two intersections and two interchanges. People were pleased with the proposed bridge at 3rd Street.

2) One person inquired about Madill's overall traffic count. ODOT replied that current counts were estimated at 11,000 vehicles per day (VPD) originating in town and 6,000 VPD derived from outside of town. Elaborating on these numbers, EST provided an explanation of the projected traffic counts.

3) Several people commented on the need for access at Smiley Road due to the large trucks associated with the industrial land uses located southeast of town. ODOT explained that the primary goal of the project is to provide a highway with mostly controlled access, which thereby results in a reduced number of access points. Accordingly, ODOT emphasized that balancing these needs will be an integral part of the project.

4) One person asked about safety issues related to the project and whether a cable barrier and/or rumple strips would be utilized on the four-lane divided highway. ODOT replied that rumble strips would most likely be used—however, installation of a cable barrier would depend on future traffic accidents and traffic counts.

5) One person mentioned the traffic issues associated with oversized truck loads along US-377/SH-99 and asked whether any changes to the junction of US-70 and US-377/SH-99 would take place.

Written Comments

One written comment was received. This comment indicated that the business owner of Jones Pawn did not receive notice of the stakeholder meeting. This stakeholder also expressed concern regarding the impact of the proposed project on her business, as it was located within the proposed right-of-way.

These meeting minutes have been prepared by CP&Y. If there are any conflicts or disputes with any statements above, please inform CP&Y in order that a resolution can be reached.

ATTENDANCE ROSTER

Meeting:	US-70 Realignment Stakeholder Meeting	**Meeting Date:**	June 16, 2015
Place:	Madill, OK		

Name & Address	Company/Organization	Phone	E-Mail
[redacted]			

ATTENDANCE ROSTER

Meeting:	US-70 Realignment Stakeholder Meeting	**Meeting Date:**	June 16, 2015
Place:	Madill, OK		

Name & Address	Company/Organization	Phone	E-Mail
[redacted]			

ATTENDANCE ROSTER

Meeting:	US-70 Realignment Stakeholder Meeting	**Meeting Date:**	June 16, 2015
Place:	Madill, OK		

Name & Address	Company/Organization	Phone	E-Mail
[redacted]			

ATTENDANCE ROSTER

Meeting:	US-70 Realignment Stakeholder Meeting	**Meeting Date:**	June 16, 2015
Place:	Madill, OK		

Name & Address	Company/Organization	Phone	E-Mail
[redacted]			

OKLAHOMA DEPARTMENT OF TRANSPORTATION

COMMENT FORM

US-70 REALIGNMENT STAKEHOLDER MEETING
MADILL, OKLAHOMA JUNE 16, 2015

Please provide your name, address, phone number, e-mail address, and any comments in the space below:

[redacted]

Didn't receive notice of this meeting. Should have been since proposed map indicates ODOT taking out my whole business, my son's livelyhood,

Please send comments to:

Environmental Programs Division
Oklahoma Department of Transportation
200 N.E 21st St.
Oklahoma City, OK 73105-3204

E-mail: environment@odot.org

FAX: 405-522-5193

US-70 Madill Realignment
Public Meeting Summary

Meeting Date:	**Time:**
September 3, 2015	6:00 p.m.
Location: Madill Community Building 810 South 2nd Ave. Madill, OK 73446	
Project: US-70 Realignment in and near Madill Marshall County, OK	

A public meeting for the US-70 Madill Realignment was held at 6:00 p.m. at the Madill Community Building on September 3, 2015. A total of 77 people attended the meeting, including 11 representatives from ODOT, the Mayor of Madill, two Marshall County Commissioners, an Oklahoma State Representative, and a field representative for US Congressman Markwayne Mullin among a number of local constituents, landowners, and business owners.

Purpose

The purpose of the meeting was to present the eastern realignment proposal for US-70 and collect the public's input in order to facilitate ODOT moving forward with the design and construction phases of the project. Various aspects of the project were addressed, including project history, alignment study process, lane configurations, proposed realignment, and new highway designations. Feedback was sought from those in attendance, specifically with respect to any potential social, economic, and environmental concerns posed by the proposed realignment.

Presentation

Frank Roesler, ODOT Public Involvement Officer, opened the meeting with introductions of public officials in attendance. Mr. Roesler also touched on the importance of public comments in guiding the project forward and stressed that submittal of a comment form was the best way for the public to get involved. Following Mr. Roesler's introduction, Cassidy Doescher, EST, Inc., provided an outline of the meeting's agenda and then gave the floor to Anthony Echelle, ODOT Division 2 Engineer, to present a brief history of the project. Mr. Echelle discussed the US-70 corridor feasibility study performed in 1997 and the four alternatives that were developed to address traffic congestion in and around the city of Madill. Referring to the proposed alternative at hand, Mr. Echelle indicated that this was the preferred route based on feedback received during the public meeting that took place in 2001. Before transitioning back to Ms. Doescher, Mr. Echelle reiterated that feedback from the attendees was encouraged by ODOT.

These meeting minutes have been prepared by CP&Y. If there are any conflicts or disputes with any statements above, please inform CP&Y in order that a resolution can be reached.

Building on the project background, Ms. Doescher explained the 2014 Alignment Study, which evaluated existing traffic data, environmental constraints, field surveys, and historical documentation to develop an operational analysis for the eastern realignment. This analysis was guided by several design parameters, including an at-grade interchange at US-177/SH-199, avoidance of environmental constraints, minimization of impacts to adjacent landowners, a bridge over BNSF Railroad, and connections between access points along US-70. In addition, Ms. Doescher described the proposed lane configurations and intersections as well as the interim/ultimate controlled access facility and the new highway designations. To conclude, Ms. Doescher outlined the next steps in the design process: gathering of additional public input, updates to environmental studies, and production of construction plans. Ms. Doescher indicated that right-of-way acquisition and utility relocation would begin in Federal Fiscal Year (FFY) 2016, followed by construction (in phases) starting in FFY 2018.

At the conclusion of the presentation, Mr. Roesler opened the floor to questions and comments, instructing attendees to speak directly with ODOT's ROW specialist regarding any right-of-way concerns.

Discussion

The involved parties expressed several concerns regarding the proposed eastern realignment of US-70. Below is a summary of the main comments communicated at the meeting.

1) The pastor of Open Range Cowboy Church asked if Whiskey Creek Road would be wiped out per the configurations of the eastern route alternative. Mr. Echelle advised that ultimately Whiskey Creek Road would be realigned, and this would, as a result, displace the church. However, Mr. Echelle emphasized that at this point in time, the proposed project was only represented by lines on a map, and again, he echoed that the design proposal was open to comments.

2) Several people commented on the lack of access at Smiley Road, expressing concern for the heavy truck traffic that occurs along this road due to Oklahoma Steel and Wire. Mr. Echelle indicated that access was not feasible because it was outside the scope of the current project. Per Mr. Echelle, one of primary purposes of the project is to balance access to businesses along US-70 and to safely/efficiently move traffic by way of controlled access. Accordingly, Mr. Echelle advised that introducing a connection at that location was presently not a viable option. Mr. Echelle also recommended that any concerns regarding access at Smiley Road and associated truck congestion be submitted via the comment form.

3) One person asked if the route is set in stone. Mr. Echelle replied that the eastern alternative is the preferred route based on input received from the community over the past years, including the 2001 public meeting. Mr. Roesler also restated the importance of submitting a comment form to call attention to any desired modifications to the proposed alignment.

These meeting minutes have been prepared by CP&Y. If there are any conflicts or disputes with any statements above, please inform CP&Y in order that a resolution can be reached.

4) Several questions posed by the public attendees were related to the other alignment options and the reasons for which the eastern alternative was chosen. Mr. Echelle advised that previous feedback indicated the eastern route was the preferred route. Mr. Roesler further explained that the preferred alignment was selected as a compromise driven by the socio-economic needs of the community. Per Mr. Echelle and Mr. Roesler, the community desired a route that would neither be a bypass, nor would it cut through town—instead, it would balance movement of traffic with limiting any potential loss of commerce.

Written Comments

Forty-one written comments were received. These comments are summarized in the table below. Please note that several comments addressed more than one issue, so the total amount of comments reflected in table is more than the total amount of individual comment forms received.

Comment Issue/Concern	#	Comment Description
Impact of realignment to Open Range Cowboy Church	35	These comments are concerned with the displacement of Open Range Cowboy Church. As a result of the proposed route, Whiskey Creek Road would be realigned, thereby taking the land where the church now sits. The church was recently relocated to its current site and is described as a prospering community-oriented church that attracts locals from Madill and the surrounding area. All of the comments pertaining to the Open Range Cowboy Church request that the proposed route be reconfigured so that it will no longer require the land where the church is located.
Impact of realignment to Jones Pawn	4	These comments are concerned with the displacement of Jones Pawn as a result of the proposed realignment. According to the owners of Jones Pawn, over $1.5 million has been invested in the business at its current location. Although they realize they will receive compensation for their relocation, the owners fear that it will not be enough and their business will suffer. The business owners suggest that a better and more logical option for the realignment would be to place the route on the west side of town because it will require fewer displacements and be less expensive.
Land surrounding the proposed 3rd Street Bridge	1	This comment is concerned with the 11.7 acres adjacent to the proposed 3rd Street Bridge. The landowner requests access from his property to the new portion of US-70, and if this is not feasible, he would like to have the entire parcel purchased by ODOT. Additionally, the landowner is concerned that the proposed realignment does not account for traffic congestion that will occur between Madill and

		Whitesboro once the Willis Bridge is replaced. The landowner is of the opinion that the US-70 project should address the indirect impacts of this upgraded facility.
Impact to residential property	1	This comment is concerned with the displacement of a residential property as a result of the proposed realignment. The property holds sentimental value for the landowner, as it has been passed down through her family over the past 55 years. However, the property owner does acknowledge the need for the proposed project and understands that she will be compensated for her property loss. As such, she requests that she receives adequate compensation and be kept informed of future decisions relating to the project.
Property fragmentation	4	These comments are concerned with property fragmentation that will result from the proposed realignment. The proposed route will cut through a piece of land, causing the landowners' cattle lots and barn to be separated from the bulk of the property. The landowners request that the proposed route be pushed 200 feet to the west.
Lack of access at Smiley Rd	2	These comments are concerned with the proposed project's lack of access at Smiley Road. It is the opinion of these two constituents that the US-70 project would be more effective if access was provided at this location, thus improving traffic flow to Walmart and relieving truck traffic caused by Oklahoma Steel and Wire.
Consideration of other alternative alignments	5	These comments are concerned with the viability of other alternative alignments, specifically a realignment west of town. These commenters suggest that a western alignment would be more effective and cause fewer adverse impacts. Additionally, these commenters contend that the community has changed significantly since the preferred route was originally chosen.

These meeting minutes have been prepared by CP&Y. If there are any conflicts or disputes with any statements above, please inform CP&Y in order that a resolution can be reached.

Thursday, September 3, 2015 (6:00 PM CDT)

US-70 Improvements - Marshall County, OK

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ODOT

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US-70 Improvements - Marshall County, OK

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NAME	PHONE or EMAIL	STATION
[redacted]	[redacted]	The McAlill Record

RECEIVED
SEP 06 2016
ENVIRONMENTAL
PROGRAMS DIV.

August 31, 2016

Re: US 70 realignment in and near Madill, Marshall County. JP No. 18835(04)(09); Project Nos. NHPP-022N(052) & J1-8835(009)

Dear Siv Sundaram, P.E.

I am writing you in response to your letter dated June 29th, 2016 to Property owners regarding the above bypass for Madill, Oklahoma.

In my research I found out that the City nor County Officials have worked together to make a decision that best fits the needs of the people and the City of Madill according the Marshall County Chamber of Commerce Economic Development Board. Attached are my previous letters to the Editor of the Madill Record. These communications have also been sent to Anthony Echelle with ODOT, City of Madill, Marshall County Commissioners, Marshall County Chamber of Commerce.

As you can see from reading the list of pros and cons in the accompanying letters the East 199 bypass route is the *Most expensive* (2 times the SW route) and *Most Disruptive* to businesses and residences.

199 East Bypass:

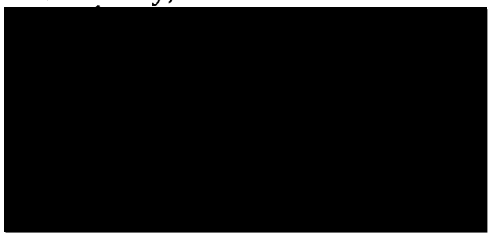
- 2 bridges and a rail road overpass have to be built and maintained, impacts state for more maintenance money.
- 2 highway exchanges will be added which are dangerous and known to bring fatal accidents. This is a grave danger for motorist, local and traveling.
- *Most Expensive 17.7 Million vs. 9 Million (SW route) Savings of approximately 8.7 Million (US 70 feasibility study 1997)*
- Heavy truck traffic from Oklahoma Steel & Wire will still have to use existing Hwy 70 in downtown Madill.
- Old abandoned oil and gas wells exist along the planned 199 east bypass route. Some of those old wells were drilled before P&A guidelines were established and are not properly plugged. Disturbing the old wellbores could create environment problems.

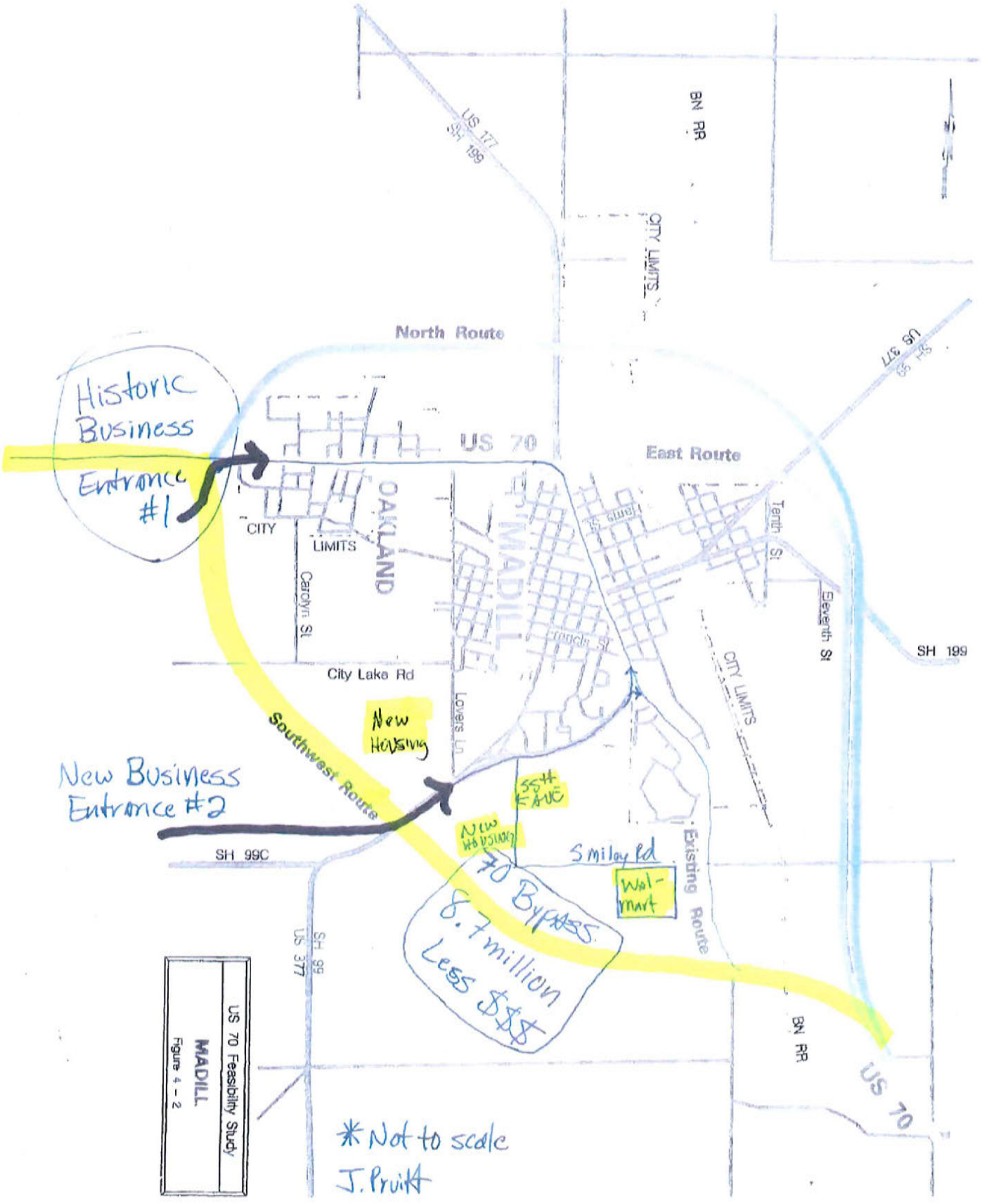
SW Bypass:

- Most direct route to reconnect to existing Highway 70.
- Cheaper to build at a savings of *half the price of the 199 route*.
- Minimal residential and business displacement to humans, nature and historic properties.
- Ties in with new residential and commercial development already established in the west and southwest side of city of Madill.

Making the correct decision for the Highway 70 bypass could be an easy saving the help the State and the Tax payers already plagued with financial burdens. Please contact me directly if you have any questions.

Sincerely,




US 177
SH 199
BN RR
CITY LIMITS
North Route
Historic Business Entrance #1
US 70
East Route
US 377
SH 99
CITY LIMITS
OAKLAND
MADILL
Tenth St
Seventh St
SH 199
Carolyn St
City Lake Rd
Lovers Ln
New Housing
Southwest Route
New Business Entrance #2
SH 99C
55th Ave
New Housing
Smiley Rd
Wal-mart
70 Bypass
8.7 million
Less $$$
Existing Route
SH 99
US 377
BN RR
US 70
US 70 Feasibility Study
MADILL
Figure 4 - 2
*Not to scale
J. Pruitt

Letters to the Editor

8-18-16

New Option for U.S. Highway 70 Bypass

Dear Editor,

I am writing to you about the U.S. Highway 70 Bypass option along SH 199 for Madill. I can't imagine spending twice the amount of money on the most disruptive route, especially since the state is in such bad shape financially.

It looks like the current growth of the City is to the southwest. The reason I have heard why the 199 route was chosen is businesses in town were worried they would be missed.

Madill could take the southwest route and have not one, but two business district entrances into town. That is two places or options to exit US 70 to enter into two different sections of town, which also could help with traffic congestion.

J&I Manufacturing is on the far west end, 377 and 99C intersection is there already. The new housing development is west of City Lake and south,west of town off of S 5th Avenue.

Taco Bell and other businesses have built new locations south of the 70 and 377 intersection in town. Location, location, location... Could the 377/99C area be a new industrial park option for Madill?

With easy, good access could come more industries and more jobs. What is the justified reason to run the bypass out along 199? There is nothing there and no current growth like the southwest part of town that has already been established.

I do not believe Madill is growing enough to support growth on both sides of the City. I just want to see Madill get the best option they have available to them and the businesses.

This could be an easy savings to help with the financial burdens already plagued on the education system and the taxpayers.

[redacted]

Letters Policy Stated

The Madill Record accepts letters to the editor on virtually any subject.

All letters must be signed and the phone number of the letter's author must be provided for verification purposes.

We reserve the right to edit, or refuse, letters which may be libelous.

Opinions for or against a political candidate, or questions, in the weeks preceding an election, will not be published as letters because they would be considered political advertising.

Email letters to recordeditorial@sbcglobal.net.

U.S. 70 Bypass Could Be a Bad Deal

4-7-2016
Madill Record

Dear Editor,

Education is very important. Education saves you from being exploited and fooled. We live in a country where we enjoy a number of rights and freedom. It is easier to take advantage of under-educated people. A quick search of news articles revealed some extreme budget cuts for the state of Oklahoma in every area, especially education. "State Board of Education members voted unanimously to approve a $46.7 million funding cut for the fiscal year ending June 30, including a $25 million reduction in funding that goes to schools." (Mid-year budget cuts could force some Oklahoma school districts to close Dated: 1-7-2016 http://newsok.com/article/5471266)

"Across the state, the reduction amounts to a $62.3 million funding cut in the wake of the second general revenue failure for fiscal year 2016, according to the Oklahoma State Department of Education. Combined with a $46.7 million cut announced in December, funding for public education has been cut by about $109 million to date, a report states." (Oklahoma public schools receive additional budget cut Dated: 3-7-16 www.tuslaworld.com)

The residents and businesses of Marshall County unfortunately were sold a bad deal on the Lake Texoma State Lodge & Pointe Visa deal by our elected officials and are still without a Lodge and State Park at present time. Businesses are missing out on making revenue they need to support their families. I feel like yet another bad deal is being sold to the residents of Marshall County at a high cost to your wallet and education of your family and friends.

The U.S. Highway 70 bypass in Madill has been something that has been talked about and researched since the early 1990's. Recently a decision has been made for the bypass to travel around the east edge of Madill along 199. There were several alternatives to the bypass. But I would like to compare and contrast only 2 of those alternatives: The east bypass at 199 would cost approximately 17.7 Million dollars (US 70 Feasibility Study dated 1997) and will have to have a 3rd St. Bridge and railroad bridges constructed, as well as maintained. Two highway interchanges at 377 and 199 will have to be installed.

We all know how dangerous those are; just think about the Hwy 32 and 377 interchanges.

Also since this causes an issue for Oklahoma Steel and Wire, those trucks and traffic will still be using the highway through town. I might add there is no new growth, commercial or residential, east of town. This route has a perk of having a RR overpass, something Madill has needed and wanted but yet it was always told it was too costly to build. However, an unverified rumor at the local coffee shop states the RR switching yard could possibly be relocated to a different location, what good is an overpass then?

The Southwest bypass is the cheapest at $9 Million, the most direct, has minimal business and residential displacement, as well as it comes right behind in the area of NEW residential and commercial expansion that is already established in Madill. It also only has to have one bridge for City Lake road and only one highway interchange at 377/99/99c. The bypass can reconnect with the existing 70 just south of the Walmart Supercenter and the new housing developments in town. I will also add there are already existing rights of way for the electrical utility lines that were recently installed just west of City Lake in Madill. The land has already been semi-prepared at this point!

I keep hearing that one bypass would be bad for Madill while the other won't. I am not sure how driving one way around town is any different than driving the other way around town.

But I can see how beneficial one of them would be if it is the closest to 3 other local highways and the newest commercial and residential growth in town. As I'm sure many of you have traveled through Whitesboro, Durant, and Ardmore (to name a few). Everyone knows you have to travel through the "business" portion of the highways to get into the smaller towns. It is the 2016s. People traveling have smart phones, GPS, and business location apps.

There are roadside billboards, advertising in the Madill Record and The Texoman. Anyone who comes here will know where to go to get what they need.

When a feasibility study was done in the 1990s, Madill did not have a Super Walmart nor was Walmart where the current store has relocated. Also the newest of Madill's housing markets were not yet developed or taken into consideration on the west and southwest sides of Madill as they are now. Because of those factors, plans to expand need utilities that are already set in place. We need to consider the conditions as they are now and factor in the current growth of the City of Madill.

These decisions made by officials are based on outdated data and ideas that are costly and could be spent more wisely. Don't you think your education system needs more attention and money than paying an extra 8.7 million for a highway bypass that is more disruptive than the cheaper, more direct? One is almost twice as much as the other. Don't forget we need to replace the Willis Bridge too. I urge you to contact your elected officials, local in Madill and statewide to question this... Let's get back to being rational and reasonable.

[redacted]

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PROPOSED US-70 IMPROVEMENTS

09/03/2015
Marshall County, 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.

PLEASE SUBMIT YOUR COMMENTS BY: 09/17/2015

[redacted]

Our church - the Open Range Cowboy Church is located on the SE corner of 199 + Whiskey Rd. Please move the project to the west to avoid taking our church! It is a 4 F high priorty property!

Our church is very popular and is growing. We have had this building for about a year. There is plenty of room to move the highway west enough to clear our property.

Thank you. [redacted]

Comments on this project can be submitted in several ways, including but not limited to:

By US Mail or Dropoff:
OKLAHOMA DEPARTMENT OF TRANSPORTATION
ENVIRONMENTAL PROGRAMS DIVISION
200 N.E. 21ST ST.
Oklahoma City, OK 73105-3204

By Fax:
Fax: (405) 522-5193

By Email:
environment@odot.org

On the Web:
www.odot.org/publicmeetings

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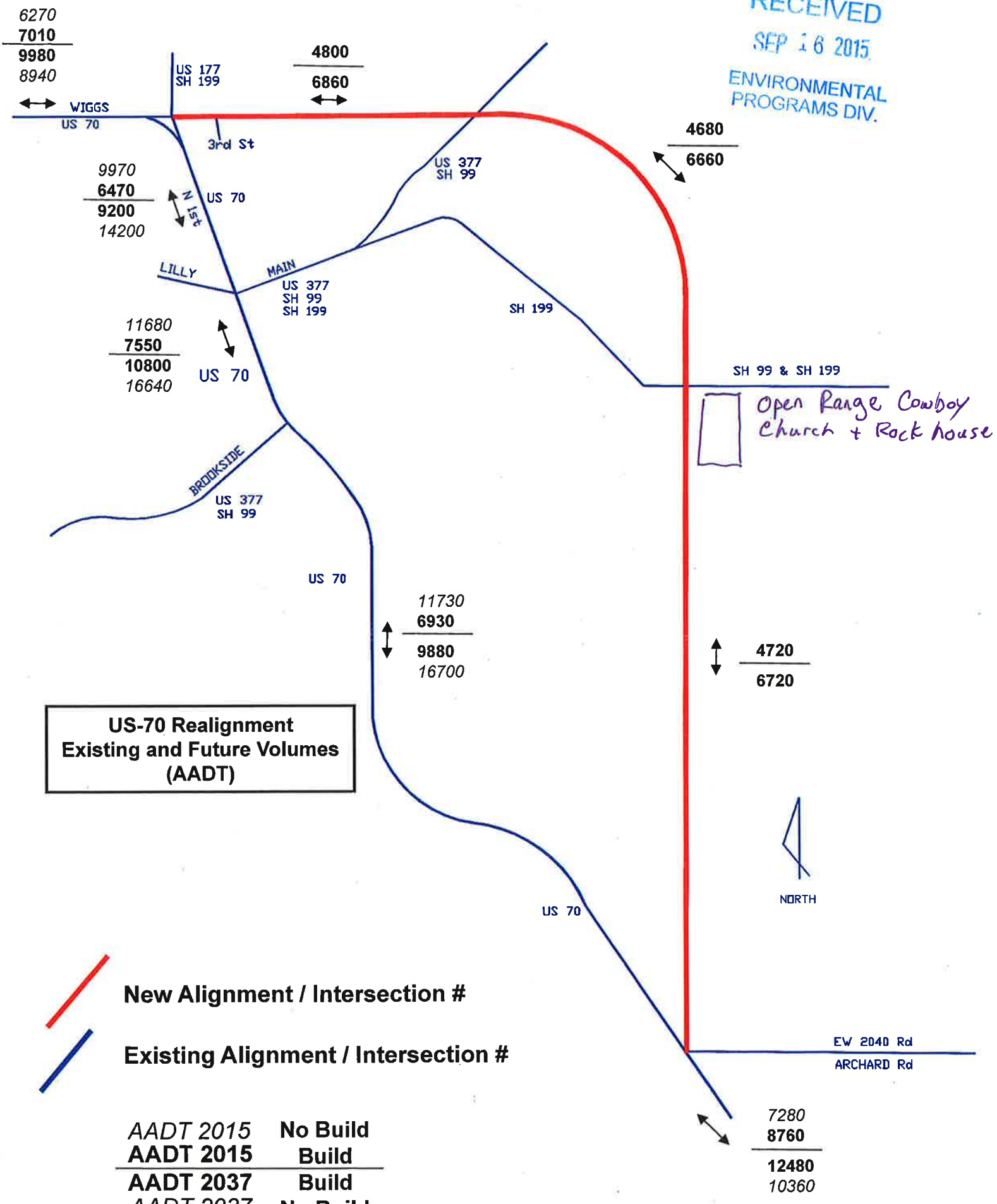

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PLEASE SUBMIT YOUR COMMENTS BY: 09/17/2015

[redacted]

"I have the following comment(s) or question(s) about the proposed project to improve US-70 near Madill, in Marshall County, OK."

RE: Open Range Cowboy Church
17880 Whiskey Rd Madill OK 73446

Please, consider moving the proposed routing of Hwy 70 to the west of our Church's property. Many of us have worked on this property, it is growing & becoming very popular.

This property should be considered a "4F" property since it is owned by the Church

Most Sincerely -

[redacted]

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09/03/2015
Marshall County, OK

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PLEASE SUBMIT YOUR COMMENTS BY: 09/17/2015

[redacted]

"I have the following comment(s) or question(s) about the proposed project to improve US-70 near Madill, in Marshall County, OK."

The property of the Open Range Cowboy Church (Property 4-F) on the Southeast Corner of Hwy 199 and Whiskey Creek Rd Should not be disturbed. We have just built our church. And would greatly appreciate if the plans for this Hwy Could be Redone or possibly moved. This church is very important and it would be wrong to have to distroy it. I understand that plans are made, but at the same time they can be changed. We love our church and would love for it to Remain where it is.

17880 Whiskey Creek Madill, OK

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PLEASE SUBMIT YOUR COMMENTS BY: 09/17/2015

[redacted]

"I have the following comment(s) or question(s) about the proposed project to improve US-70 near Madill, in Marshall County, OK."

I ask that you take in consideration what this will do if you don't change the plans to move this road. Open Range Cowboy Church. (Property 4-F)
17880 Whiskey Creek Rd, Madill OK
Our church is very important and hope yall help us. Thank you.

Comments on this project can be submitted in several ways, including but not limited to:

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PROPOSED US-70 IMPROVEMENTS

09/03/2015
Marshall County, OK

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PLEASE SUBMIT YOUR COMMENTS BY: 09/17/2015

[redacted]

"I have the following comment(s) or question(s) about the proposed project to improve US-70 near Madill, in Marshall County, OK."

Our church is on a 4-H property.
My church is very special to me. It is a church that you can go to and be yourself.
All the church members have worked very hard on getting our church up and going.
Please find it in your hearths to find another route around town.

17880 Wisky Creek Rd

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By US Mail or Dropoff:
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PLEASE SUBMIT YOUR COMMENTS BY: 09/17/2015

[redacted]

"I have the following comment(s) or question(s) about the proposed project to improve US-70 near Madill, in Marshall County, OK."

Our church is an 4/F property. My children at age 5 & 8 got Saved and Baptised at our church which means a lot to US. Open Range has been a blessing. You truly can come as you are and NO one will Judge you. [redacted] 1788 Whiskey Creek Rd. Madill OK 73446.

Comments on this project can be submitted in several ways, including but not limited to:

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ENVIRONMENTAL PROGRAMS DIVISION
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PROPOSED US-70 IMPROVEMENTS

09/03/2015
Marshall County, OK

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PLEASE SUBMIT YOUR COMMENTS BY: 09/17/2015

[redacted]

"I have the following comment(s) or question(s) about the proposed project to improve US-70 near Madill, in Marshall County, OK."

our church is on a 4F Protem and It's
A very wonderful Place to come And Be
Yourself And have fun. 1788 Whiskey
Creek Rd Madill OK 73446.

Comments on this project can be submitted in several ways, including but not limited to:

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PLEASE SUBMIT YOUR COMMENTS BY: 09/17/2015

[redacted]

"I have the following comment(s) or question(s) about the proposed project to improve US-70 near Madill, in Marshall County, OK." 4FP Prop

We started going to the Cowboy Church 3½ Yrs. ago. We have a very strong church family. It troubles me that we may loose what we have struggled so hard & worked so hard to loose it.

Please consider that when you make a decision.

Comments on this project can be submitted in several ways, including but not limited to:

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OKLAHOMA DEPARTMENT OF TRANSPORTATION
ENVIRONMENTAL PROGRAMS DIVISION
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PLEASE SUBMIT YOUR COMMENTS BY: 09/17/2015

[redacted]

"I have the following comment(s) or question(s) about the proposed project to improve US-70 near Madill, in Marshall County, OK."

For 2 years I have gone here & low the preacher 4 F Property
and his wife & all of the people. We as a
church family have helped a lot of people in the
community.

Comments on this project can be submitted in several ways, including but not limited to:

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PLEASE SUBMIT YOUR COMMENTS BY: 09/17/2015

[redacted]

"I have the following comment(s) or question(s) about the proposed project to improve US-70 near Madill, in Marshall County, OK."

4F Property

I have been going here for 2 yrs. I really like this church.

Please consider our church family

Payee

Comments on this project can be submitted in several ways, including but not limited to:

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09/03/2015
Marshall County, OK

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PLEASE SUBMIT YOUR COMMENTS BY: 09/17/2015

[redacted]

"I have the following comment(s) or question(s) about the proposed project to improve US-70 near Madill, in Marshall County, OK."

Been going to this Church for 2 yrs Please don't take 4F Property it

Comments on this project can be submitted in several ways, including but not limited to:

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09/03/2015
Marshall County, OK

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PLEASE SUBMIT YOUR COMMENTS BY: 09/17/2015

[redacted]

"I have the following comment(s) or question(s) about the proposed project to improve US-70 near Madill, in Marshall County, OK."

I have been to this Church and the people are really nice. Hope they can keep this property. This is a 4F Property

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09/03/2015
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PLEASE SUBMIT YOUR COMMENTS BY: 09/17/2015

[redacted]

"I have the following comment(s) or question(s) about the proposed project to improve US-70 near Madill, in Marshall County, OK."

4F Property
I've been to this church & am upset that the hiway may come through there - they have helped a lot of people & are doing good work.

[redacted]

Comments on this project can be submitted in several ways, including but not limited to:

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PLEASE SUBMIT YOUR COMMENTS BY: 09/17/2015

[redacted]

"I have the following comment(s) or question(s) about the proposed project to improve US-70 near Madill, in Marshall County, OK."

I attend Open Range Cowboy Church in Madill OK. I am a state employee and am the one who did the demolition at Durant and there was a church there that we moved the hwy 500 feet to keep from taking this place of worship. I feel that the state hwy dept could also do that in this matter also. There is acreage to the west of us on the

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PLEASE SUBMIT YOUR COMMENTS BY: 09/17/2015

[redacted]

Business / Organization: Open Range Cowboy Church

[redacted]

"I have the following comment(s) or question(s) about the proposed project to improve US-70 near Madill, in Marshall County, OK."

The property on the Corner of Hwy 199 & Whiskey Creek Road is 4-F property. This is the home of the Open Range Cowboy Church. My family and I attend this Church. We would like for you to consider a new route for the US-70 realignment.

Comments on this project can be submitted in several ways, including but not limited to:

By US Mail or Dropoff:
OKLAHOMA DEPARTMENT OF TRANSPORTATION
ENVIRONMENTAL PROGRAMS DIVISION
200 N.E. 21ST ST.
Oklahoma City, OK 73105-3204

By Fax:
Fax: (405) 522-5193

By Email:
environment@odot.org

On the Web:
www.odot.org/publicmeetings

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COMMENT FORM

HTTP://WWW.ODOT.ORG/PUBLICMEETINGS

PROPOSED US-70 IMPROVEMENTS

09/03/2015
Marshall County, 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.

PLEASE SUBMIT YOUR COMMENTS BY: 09/17/2015

[redacted]

Business / Organization:
Open Range Cowboy Church

[redacted]

"I have the following comment(s) or question(s) about the proposed project to improve US-70 near Madill, in Marshall County, OK."

The property at 17880 Whiskey Creek Road is the home of Open Range Cowboy Church. I am a member of this Church, I and my family attend every week. This Church location was chosen because it would allow for growth of our Church to include an arena and room for parking pick-ups and trailers. Please consider not putting the new US-70 realignment through our property.

Comments on this project can be submitted in several ways, including but not limited to:

By US Mail or Dropoff:
OKLAHOMA DEPARTMENT OF TRANSPORTATION
ENVIRONMENTAL PROGRAMS DIVISION
200 N.E. 21ST ST.
Oklahoma City, OK 73105-3204

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PROPOSED US-70 IMPROVEMENTS

09/03/2015
Marshall County, OK

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PLEASE SUBMIT YOUR COMMENTS BY: 09/17/2015

[redacted]

"I have the following comment(s) or question(s) about the proposed project to improve US-70 near Madill, in Marshall County, OK."

I am a member at Open Range Cowboy Church in Madill Okla. where Hwy 70's new road will be coming thru. Our land is situatedon land that is 4F property. We have only been in this building not quite a year. Many people have poured their lives and resources into this church. Giving, working to help make this our church home. We are still working buying things as we have the money so we can stay out of debt. We are simple people Farmers, cowboys country folk trying to reach those in our community who enjoy the same life we do. It's been hard trying to get our church

Comments on this project can be submitted in several ways, including but not limited to:

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OKLAHOMA DEPARTMENT OF TRANSPORTATION
ENVIRONMENTAL PROGRAMS DIVISION
200 N.E. 21ST ST.
Oklahoma City, OK 73105-3204

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PROPOSED US-70 IMPROVEMENTS

09/03/2015
Marshall County, OK

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PLEASE SUBMIT YOUR COMMENTS BY: 09/17/2015

[redacted]

Business / Organization:
Open Range Cowboy Church

[redacted]

"I have the following comment(s) or question(s) about the proposed project to improve US-70 near Madill, in Marshall County, OK."

Open Range Cowboy Church
4-F- Property - 17880 Whisky Creek Rd
Madill OK 73446

Please help us Save OUR Church. God has Seen Fit for US to get this land So that we Could have a place to Worship and Praise him. there is a way you can fix this Problem. Thank You and God Bless You.

[redacted]

Comments on this project can be submitted in several ways, including but not limited to:

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ENVIRONMENTAL PROGRAMS DIVISION
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PROPOSED US-70 IMPROVEMENTS

09/03/2015
Marshall County, OK

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PLEASE SUBMIT YOUR COMMENTS BY: 09/17/2015

[redacted]

"I have the following comment(s) or question(s) about the proposed project to improve US-70 near Madill, in Marshall County, OK."

To whom it may Concern
I am a Sounding member of Open Range Church Caney Church There have been a lot of time and money as well as Prayer Put into this Church. God gave us this property for his Glory we request you consider a State Route and by pass our property
This is 4F Property
[redacted]
17880 Whiskey Creek Rd
Madill OK 73446

Comments on this project can be submitted in several ways, including but not limited to:

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4F 17880 whiskey creek Rd

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PROPOSED US-70 IMPROVEMENTS

09/03/2015
Marshall County, OK

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PLEASE SUBMIT YOUR COMMENTS BY: 09/17/2015

[redacted]

Business / Organization: Open Range Cowboy Church

[redacted]

"I have the following comment(s) or question(s) about the proposed project to improve US-70 near Madill, in Marshall County, OK."

I am a member of Open Range Cowboy Church I would you please consider routing this new Road so we don't loose our Church. We love it here this is a 4E property

Thank you!

Comments on this project can be submitted in several ways, including but not limited to:

By US Mail or Dropoff:
OKLAHOMA DEPARTMENT OF TRANSPORTATION
ENVIRONMENTAL PROGRAMS DIVISION
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PROPOSED US-70 IMPROVEMENTS

09/03/2015
Marshall County, OK

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PLEASE SUBMIT YOUR COMMENTS BY: 09/17/2015

[redacted]

Business / Organization: Open RANGE CHURCH

C [redacted]

E

"I have the following comment(s) or question(s) about the proposed project to improve US-70 near Madill, in Marshall County, OK."

It is my understanding that US-70 improvements will come through our Church building. The people from this Church, which I understand is an F-4 situation, built this Church from the ground up. I don't believe God would have made this Church possible if he intended for it to be destroyed by a Highway.

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By US Mail or Dropoff:
OKLAHOMA DEPARTMENT OF TRANSPORTATION
ENVIRONMENTAL PROGRAMS DIVISION
200 N.E. 21ST ST.
Oklahoma City, OK 73105-3204

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PROPOSED US-70 IMPROVEMENTS

09/03/2015
Marshall County, OK

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PLEASE SUBMIT YOUR COMMENTS BY: 09/17/2015

[redacted]

Business / Organization: Oaks Range Church

[redacted]

"I have the following comment(s) or question(s) about the proposed project to improve US-70 near Madill, in Marshall County, OK."

The proposal of US-70 improvements is indeed a need for Marshall Co.. A new bridge was just built on Whiskey Creek Rd less than 5yrs ago. The people of our Church built on Whiskey Creek Rd is now of all times is an (7-4 situation) ~~the~~ with our Church being in the Middle of this Hwy. We haven't even completed it, and in danger of being taken away. I agree updated hwys is a must, and We are for modern improvements. We hope and pray this is Considered.

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OKLAHOMA DEPARTMENT OF TRANSPORTATION
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09/03/2015
Marshall County, OK

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PLEASE SUBMIT YOUR COMMENTS BY: 09/17/2015

[redacted]

Business / Organization: OPEN RANGE Cowboy Church
17880 Whiskey Creek Rd. (4F Property)

[redacted]

"I have the following comment(s) or question(s) about the proposed project to improve US-70 near Madill, in Marshall County, OK."

This 20 ACRE property belongs to OPEN Range Cowby Church. This Church is a Vital asset to the community of Madill AND the surrounding areas. The congregation is growing each week. That alone tells me that this Church is doing Something Right.

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200 N.E. 21ST ST.
Oklahoma City, OK 73105-3204

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PROPOSED US-70 IMPROVEMENTS

09/03/2015
Marshall County, OK

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PLEASE SUBMIT YOUR COMMENTS BY: 09/17/2015

[redacted]

Business / Organization: "OPEN RANGE Cowboy Church"
17880 WHISKEY CRK RD.
Madill OK 73446

[redacted]

"I have the following comment(s) or question(s) about the proposed project to improve US-70 near Madill, in Marshall County, OK."

My late husband and I have attended the Open Range Cowboy church since it was established. We have our church, We put time and money into to help grow and spread the word of God. My husband passed a-way before he saw the dream fulfilled of our church having our own property to build and grow in our mission to feed the hungry not just for Gods Word but the flesh also. I have donated in my husbands Name to help build our building. God blessed us with the land and funds. It would break so many hearts if because a hiway that was voted on by "town people" only, takes What we know God planned for us. I stand on the belief there is a solution if nothing else, moving the road west 500 feet or so and let us be free to worship and feed the hungry. Thank You.

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200 N.E. 21ST ST.
Oklahoma City, OK 73105-3204

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Comments Continued

We have seen our congergation grow to the point, we will need to build on soon. Please reconsider our position and let us be able to keep this place. We feel it is hallowed ground and we have worked and prayed so hard for what we have there.

COMMENT FORM

HTTP://WWW.ODOT.ORG/PUBLICMEETINGS

PROPOSED US-70 IMPROVEMENTS

09/03/2015
Marshall County, OK

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PLEASE SUBMIT YOUR COMMENTS BY: 09/17/2015

[redacted]

Business / Organization:
Open Range Cowboy Church

[redacted]

"I have the following comment(s) or question(s) about the proposed project to improve US-70 near Madill, in Marshall County, OK."

We are a 4-H property doing God's work on the corner of hwy 199 & Whiskey creek rd. We have been there going on 2 yrs. I think Hwy 70 should go on the west side of Madill. It would cost less money and be more economical to go that way. I think ya'll need to do more research on this. The research ya'll are going is from 1997 things have changed since then.

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ENVIRONMENTAL PROGRAMS DIVISION
200 N.E. 21ST ST.
Oklahoma City, OK 73105-3204

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PROPOSED US-70 IMPROVEMENTS

09/03/2015
Marshall County, OK

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PLEASE SUBMIT YOUR COMMENTS BY: 09/17/2015

[redacted]

Business / Organization:
Olen Range Cowboy Church

[redacted]

"I have the following comment(s) or question(s) about the proposed project to improve US-70 near Madill, in Marshall County, OK."

I would like to petition ODOT engineering Dept. to reconsider the proposed Hwy 70 Rt. Since the 1997 planning, there have been homes and a church added to the proposed route. This church serves appx. 80-100 local as well as out of town members. I understand there are 3 other potential alternate routes possible. If the current planned route could even be moved 500 yds to the west, it could save this church. Please reconsider all possible alternatives to save this church. I pray that God will make your paths straight and your decision clear.

Thank You,

[redacted]

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ENVIRONMENTAL PROGRAMS DIVISION
200 N.E. 21ST ST.
Oklahoma City, OK 73105-3204

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PROPOSED US-70 IMPROVEMENTS

09/03/2015
Marshall County, OK

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PLEASE SUBMIT YOUR COMMENTS BY: 09/17/2015

[redacted]

Business / Organization:

Future land owner / Open Range Cowboy Church

[redacted]

"I have the following comment(s) or question(s) about the proposed project to improve US-70 near Madill, in Marshall County, OK."

I will be a future land owner where the highway is going now it will cut our cattle lots and barn from the majority of our land. If the highway is moved over some the lots will be able to stay with the land.

Thank you

[redacted]

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09/03/2015
Marshall County, OK

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PLEASE SUBMIT YOUR COMMENTS BY: 09/17/2015

[redacted]

Business / Organization:
land owner & member Open Range Church (Josh Cain place on map)

[redacted]

"I have the following comment(s) or question(s) about the proposed project to improve US-70 near Madill, in Marshall County, OK."

Just a note to voice my concern ... As a land owner I wish you would move the road about 200ft to the left (west) where you won't cut my lot and barn from the bulk of my land. This land has been passed down for several generations ....

Also as a member of Open Range Church moving the road over 200ft ~~left~~ (west) would save our Church and land. Please if at all possible consider these changes.

Thank You

[redacted]

4F Property Church

Comments on this project can be submitted in several ways, including but not limited to:

By US Mail or Dropoff:
OKLAHOMA DEPARTMENT OF TRANSPORTATION
ENVIRONMENTAL PROGRAMS DIVISION
200 N.E. 21ST ST.
Oklahoma City, OK 73105-3204

By Fax:
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PROPOSED US-70 IMPROVEMENTS

09/03/2015
Marshall County, OK

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PLEASE SUBMIT YOUR COMMENTS BY: 09/17/2015

[redacted]

"I have the following comment(s) or question(s) about the proposed project to improve US-70 near Madill, in Marshall County, OK."

If there was any way possible to move the road 200ft. to the west, it would be greatly appreciated. It would not only save land and a barn that has been passed down from generations, but also save the Open Range Cowboy Church that has been just recently built. We ask that you please consider moving over the road.

Thank you

[redacted]

4F Property

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ENVIRONMENTAL PROGRAMS DIVISION
200 N.E. 21ST ST.
Oklahoma City, OK 73105-3204

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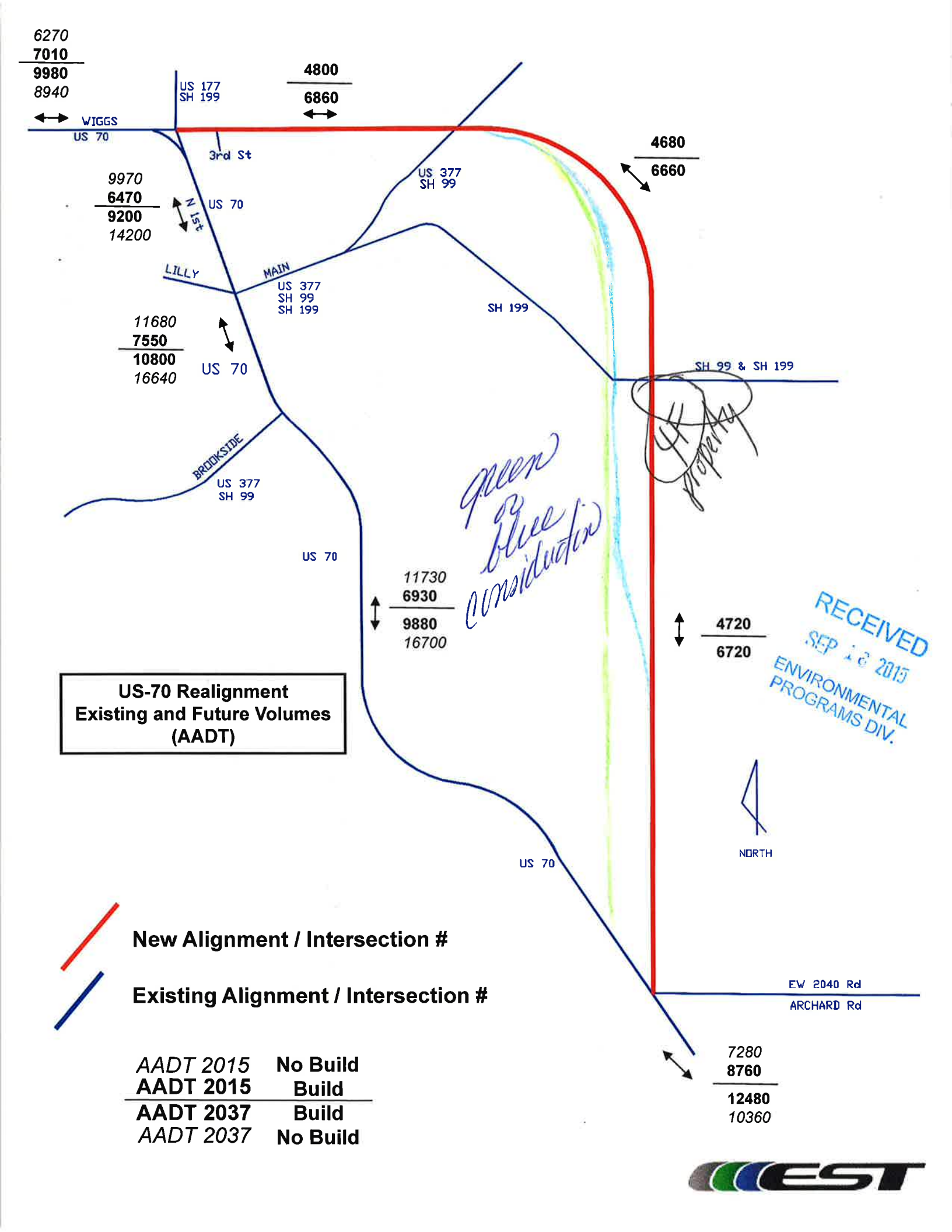
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US 70
LILLY
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US 377
SH 99
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US 377
SH 99
US 70
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6930
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6720
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PROGRAMS DIV.
US-70 Realignment
Existing and Future Volumes
(AADT)
NORTH
US 70
New Alignment / Intersection #
Existing Alignment / Intersection #
EW 2040 Rd
ARCHARD Rd
7280
8760
12480
10360
AADT 2015 No Build
AADT 2015 Build
AADT 2037 Build
AADT 2037 No Build

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PROPOSED US-70 IMPROVEMENTS

09/03/2015
Marshall County, OK

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PLEASE SUBMIT YOUR COMMENTS BY: 09/17/2015

[redacted]

"I have the following comment(s) or question(s) about the proposed project to improve US-70 near Madill, in Marshall County, OK."

I am primarily concerned with safety and flow through traffic congestion in and around Madill. I believe that the entire project would be substantially more effective with on and off ramps near OKlahoma Steel & Wire and Mid-America plants. I also believe that an effort should be made to slightly alter the planned road development route to avoid taking out the Open Range Cowboy church's new church building. Thank you for your consideration.

[redacted]

Comments on this project can be submitted in several ways, including but not limited to:

By US Mail or Dropoff:
OKLAHOMA DEPARTMENT OF TRANSPORTATION
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PROPOSED US-70 IMPROVEMENTS

09/03/2015
Marshall County, OK

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PLEASE SUBMIT YOUR COMMENTS BY: 09/17/2015

[redacted]

"I have the following comment(s) or question(s) about the proposed project to improve US-70 near Madill, in Marshall County, OK."

I am very concerned about the new by-pass road that as of now, is going to be built through the new Cowboy Church just east of Madill. My daughter and her family attend there, and I've supported them all I could. Also, my daughter, Leah Hallmark, has her pasture divided. Please consider going a little West of there.

Sincerely,

[redacted]

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OKLAHOMA DEPARTMENT OF TRANSPORTATION
ENVIRONMENTAL PROGRAMS DIVISION
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PROPOSED US-70 IMPROVEMENTS

09/03/2015
Marshall County, OK

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PLEASE SUBMIT YOUR COMMENTS BY: 09/17/2015

[redacted]

Business / Organization:
Madill Family Medicine Clinic

[redacted]

"I have the following comment(s) or question(s) about the proposed project to improve US-70 near Madill, in Marshall County, OK."

My concern is the lack of a ramp @ Smiley Road to allow traffic to come to Walmart & allow the Okla steel/Mid America access to the bypass without traveling to Archer Road which could be closed off in your next project that continues to bypass Kingston. We need to have the tourist shop here, not drive around us. Also the Cowboy Church deserves the same consideration as the otherchurches & cemetary on your list.

Comments on this project can be submitted in several ways, including but not limited to:

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ODOT COMMENT FORM

HTTP://WWW.ODOT.ORG/PUBLICMEETINGS

PROPOSED US-70 IMPROVEMENTS

09/03/2015
Marshall County, 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.

PLEASE SUBMIT YOUR COMMENTS BY: 09/17/2015

[redacted]

Business / Organization: Open Range Cowboy Church
17880 Whistler Creek Rd Madill

[redacted]

"I have the following comment(s) or question(s) about the proposed project to improve US-70 near Madill, in Marshall County, OK."

Please revamp the new hi-way so that it does not destroy our House of Worship. The worldly things in life have taken over and we as a church family like our home to worship God and his word. myself and my grandchildren one of our next generations need this place of worship more than we need anything in our life. Gods our hope in this world please reconstruct your hi-way

Comments on this project can be submitted in several ways, including but not limited to:

By US Mail or Dropoff:
OKLAHOMA DEPARTMENT OF TRANSPORTATION
ENVIRONMENTAL PROGRAMS DIVISION
200 N.E. 21ST ST.
Oklahoma City, OK 73105-3204

By Fax:
Fax: (405) 522-5193

By Email:
environment@odot.org

On the Web:
www.odot.org/publicmeetings

Please be aware that all information that you submit on this form is subject to public disclosure under the Oklahoma Public Information Act.

FORM-CF-PCB-PRD

OKLAHOMA DEPARTMENT OF TRANSPORTATION
COMMENT FORM

Comments Continued

Lefes are in this Church house and I need my house of worship to be strong and make right decision in this world of self destruct. You would only have to reconstruct your hi-way 500ft or so to leave or house of worship alone

F2 Land

Thank you

[redacted]

Received Time Sep. 17. 2015 10:52AM No. 0216

RECEIVED
SEP 14 2015
ENVIRONMENTAL
PROGRAMS DIV.

COMMENT FORM

HTTP://WWW.ODOT.ORG/PUBLICMEETINGS

PROPOSED US-70 IMPROVEMENTS

09/03/2015
Marshall County, 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.

PLEASE SUBMIT YOUR COMMENTS BY: 09/17/2015

[redacted]

Business / Organization:
4th Open Range Cowboy Church

[redacted]

"I have the following comment(s) or question(s) about the proposed project to improve US-70 near Madill, in Marshall County, OK."

First and foremost the land is God's land. I and my husband have been members of this church for several years and we feel that the plans for the proposed by-pass made in the late 90's did not consider our church or the business's along the route. We have been residents of Madill Marshall County all our lifes and not once were we ask about the by-pass. There were made by very few people of this town. As tax payers why would you waste tax payers dollars to build

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FORM-CF-PCB-PRD

OKLAHOMA DEPARTMENT OF TRANSPORTATION
COMMENT FORM

Comments Continued

overpasses and highway when you could go west of Oakland & connect to 377/99. There is very few homes & business this would effect and be much more economical. I do hope and pray that this decision is not set in stone and can be reconsidered by the citizens of Madill, Marshall county.

Sincerely

[redacted]

RECEIVED
SEP 14 2015
ENVIRONMENTAL
PROGRAMS DIV.

Received Time Sep. 11. 2015 6:49AM No. 0207

Scott Stegmann

From: Siv Sundaram <SSUNDARAM@ODOT.ORG>
Sent: Thursday, September 10, 2015 3:23 PM
To: Scott Stegmann; David Saulsberry
Subject: Fwd: US 70 realignment Madill
Attachments: IMGA0705.JPG

Sent from my iPhone

Begin forwarded message:

From: [redacted]
To: "environment@odot.org" <environment@odot.org>
Subject: US 70 realignment Madill

The proposed realignment east of Madill would take out the Open Range Cowboy Church and a rock residence at the SE corner of the intersection of 199 and Whiskey Rd. Please consider routing the new highway farther to the west to avoid this.
Sincerely, [redacted]


OPEN RANGE
COWBOY CHURCH

Scott Stegmann

From: Anthony Echelle <AECHELLE@ODOT.ORG>
Sent: Monday, September 14, 2015 9:05 AM
To: David Saulsberry
Cc: Lisa Salim
Subject: FW: Message from Website: Public Information

Comment form.....

Anthony Echelle, P.E.
Oklahoma Dept of Transportation
Division 2 Engineer
580-298-3371

-----Original Message-----
From: ODOT - MPR
Sent: Monday, September 14, 2015 8:24 AM
To: Anthony Echelle
Subject: FW: Message from Website: Public Information

Here's the second email.

Thanks,
Lisa

Follow us on Twitter @OKDOT and YouTube or visit www.odot.org Oklahoma Department of Transportation
405-522-8000

From: [redacted]
Sent: Saturday, September 12, 2015 11:27 AM
To: odotinfo@odot.org
Subject: Message from Website: Public Information

I am wanting to know the proper people to contact in order to argue the importance of my business in Madill Oklahoma. Jones Pawn at 904 N. 1st Madill OK 73446. I would like to speak of the more intelligent solution of a reroute to the West for US 70 bypass. I would like to point out the less expense and the lack of need for a bypass to the East. I would like to point out the fact that we will be using the best Lawyer we can find to fight this or get the most for what we will be loosing. Thank you for any assistance or listening ear your are willing to extend.

Scott Stegmann

From: Anthony Echelle <AECHELLE@ODOT.ORG>
Sent: Monday, September 14, 2015 9:05 AM
To: David Saulsberry
Cc: Lisa Salim
Subject: FW: Message from Website: Public Information

David,
I would consider this email as a completed comment form.
Thanks,

Anthony Echelle, P.E.
Oklahoma Dept of Transportation
Division 2 Engineer
580-298-3371

-----Original Message-----
From: ODOT - MPR
Sent: Monday, September 14, 2015 8:24 AM
To: Anthony Echelle
Subject: FW: Message from Website: Public Information

Anthony,
I'm not sure if Brenda might have already sent this along to you. It came in Thursday and this customer emailed again on Saturday, which I will forward to you.

I think it might be best if you are able to call this gentleman, although his email indicates he has spoken with you before.

Please let me know how I may help you with a response to this request.

Thanks,
Lisa

Follow us on Twitter @OKDOT and YouTube or visit www.odot.org Oklahoma Department of Transportation
405-522-8000

From: [redacted]
Sent: Thursday, September 10, 2015 12:57 PM
To: odotinfo@odot.org
Subject: Message from Website: Public Information

My name is [redacted] I am the co-owner of Jones Pawn in Madill Oklahoma with my [redacted] was born in Guymon OK and I am the son of two born and raised parents from Madill as well. My Father served in the ARMY and was a Silver and Bronze Star Vietnam Veteran, retired a LTC before passing away from Agent Orange Cancer. I currently have a issue with the rerouting of US Highway 70 around Madill. I would like to discuss the issues I have with this bypass and my opinions on logical solutions.

The current plan for the bypass of US 70 (if you are unaware) is to go around the east side of Madill and connect back with current US 70 route at the Southeast side of the city. The bypass will make a drop south from Oakland in order to not impact Federal HUD Housing. The route will take out the current DHS Office then Jones Pawn, my Business. The Bypass will go on to need two bridges, one over 3rd and one over the BNSF Railroad (which the town has needed for decades.) As you continue around the town Homes and Churches will be effected by this reroute.

One of the reasons for the reroute was to help redirect traffic, mainly Semi Trucks, from Oklahoma Steel and Wire. This reroute will not help this mainly because Smiley Road will not connect to the bypass. Trucks will not back track towards Kingston in order to connect with the Bypass and go back Northeast. Another reason was that the leaders of the town of Madill did not want the Bypass to go around the town to the West. In 1997 that was the original plan. The West would go through wide open country, not taking out any Business, Homes, Churches or need any Bridges. The West Reroute would allow the Semi Trucks from OK. Steel and Wire to make a turn to the West at the Southern end of Madill, thus not causing them to go through the center of town or have to backtrack. 377 has only one bridge for heavy loads which is Willis Bridge. Trucks will not back track from Dickson or Tishomingo for this Bypass. ODOT Division 2 Engineer Anthony Echelle said, “ The west route was th e least expensive for ODOT, but the feedback AT THE TIME (1990s) was that the west route was not what the community wants. It was a compromise that the people did not want a bypass, but they also did not want ODOT to cut into the country.” This was in the 1990s, much has changed and to be honest, I feel there was other motives at the time for the West Route not to be used. With all information used, the most logical route is to the West.

My Mother and I have put several years of our lives and tons of money into the making of our Business. The location we currently have, 904 North 1st, is best for the Traffic we need to connect with. I attended College. I got a B.A. in Education along with a A.A.S. in Graphic Design and Computer Graphics. I was unable to find Employment because I was told I don’t have enough experience or I am over qualified. I was born legally blind plus I currently have prostate and liver cancer. As the son of a ARMY Officer I would have made a great Solder and I tried to enlist straight out of High School (1992 Madill Graduate) I was unable to enlist because of my handicap. I applied for S.S.I and was told I was still able to work. I used all my resources as a Native Chickasaw in order to better myself and attend School. I have been a law abiding citizen and faithful member of Church of Christ. I only say this because I am like anyone else seeking the “American Dream.”

We invested a large amount of money in the purchasing of the Business, Building, Remodel, Fence, Signs, Metal Roof, Security and much much more. It is to our understanding that it will be up to us to find a new location and move our location. We do understand that we will be given some for the relocation but we will never get back what we have in this, nor will we ever be able to find as good of a location. We feel we provide a service to our community and our local law enforcement. We loan money to those unable to borrow anyplace else and we provide as well a privately funded sting operation for the local Police in catching local thieves and wrong doers.

We ask that you please reconsider the route direction. Please take in consideration for a Small Town Business just trying to make a living. We will have far better growth to the West, not the East. By moving to the West Madill would logically have better economic growth. We are in no way against the economic growth of our City or the rerouting of US 70. We are only against the current plan to take us out. Thank you for your time and looking into this matter.

Scott Stegmann

From: David Saulsberry <DSAULSBERRY@ODOT.ORG>
Sent: Monday, September 21, 2015 6:54 AM
To: Scott Stegmann
Subject: FW: 9/03/2015 Madill OK public meeting comments

Scott – Here is another comment for the Madill Public Meeting.

~~~~~~

David Saulsberry, CPM
Project Manager, Div. 2 & Oklahoma County
Environmental Programs Division
Oklahoma Department of Transportation
200 NE 21st Street, Oklahoma City, OK 73105
Phone: (405) 521-2315 Fax: (405) 522-5193
Email: dsaulsberry@odot.org

From: Siv Sundaram
Sent: Thursday, September 17, 2015 8:47 PM
To: David Saulsberry
Subject: Fwd: 9/03/2015 Madill OK public meeting comments

Sent from my iPhone

Begin forwarded message:

From: [redacted]
Date: September 17, 2015 at 3:01:26 PM CDT
To: <environment@odot.org>
Subject: 9/03/2015 Madill OK public meeting comments

RE: Proposed US-70 improvements, Marshall county.

From: [redacted]

We own the 11.7 acres that surrounds the proposed 3rd street bridge. While we would like to have access to highway 70 via any land not acquired by ODOT, should that not be possible due to elevations etc etc, we would request that entire parcel be purchased, but would like to have a conversation concerning these matters; specifically a rep to visit with me and staking out proposed areas in question.

In addition, as a resident of Madill, there is no apparent relief in this plan for traffic destined for the Willis bridge/west side of lake Texoma areas and Lebanon/Marietta, specifically HWYs 377 and 32 heading south to texas and southwest to I-35. There is heavy recreational vehicle and semi truck traffic as well as passenger car traffic between Madill and Whitesboro, TX. This traffic with the proposed new bypass, will CONTINUE coming thu downtown Madill or taking shortcuts down mockingbird/12th st through residential Madill. There has been NO ALLOWANCE for this traffic in the proposed plan. You all are replacing the WIllis bridge in the near future, so you MUST realize how much traffic there is between Madill and Whitesboro and I personally am baffled why this is not being addressed in this VERY expensive project.
~~~~~~

Regards,

[redacted]

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SEP 14 2015
ENVIRONMENTAL
PROGRAMS DIV.

ODOT

COMMENT FORM

HTTP://WWW.ODOT.ORG/PUBLICMEETINGS

PROPOSED US-70 IMPROVEMENTS

09/03/2015
Marshall County, OK

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PLEASE SUBMIT YOUR COMMENTS BY: 09/17/2015

[redacted]

Business / Organization:
JONES PAWN

[redacted]

"I have the following comment(s) or question(s) about the proposed project to improve US-70 near Madill, in Marshall County, OK."

I have serious issue with Removing my business. I have put my life into it, not only money but energy as well. I have over 1.5 million dollars invested in my business for this location, fence, signs, etc. How can anyone justify spending that much to move me? Should I be ok with being moved to a worse location? Why in the world would the bypass not go around the west end of town away from business? We paid $400,000 for property and building. $20,000 in fence, $50,000 in signs, $20,000 in gravel, $$$ in- much, much, more.

over

Comments on this project can be submitted in several ways, including but not limited to:

By US Mail or Dropoff:
OKLAHOMA DEPARTMENT OF TRANSPORTATION
ENVIRONMENTAL PROGRAMS DIVISION
200 N.E. 21ST ST.
Oklahoma City, OK 73105-3204

By Fax:
Fax: (405) 522-5193

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OKLAHOMA DEPARTMENT OF TRANSPORTATION

COMMENT FORM

Comments Continued

I don't Like the idea of having to move my Business, find as good a LOCATION, Loose money moving.

I don't Like the idea of the large Amount of money this will cost me.

OK Dept of TRANSPORTATION
ENVIRONMENTAL PROGRAMS Div.
200 N.E. 21st ST.
OK City, OK 73105-3204

RECEIVED
SEP 14 2015
ENVIRONMENTAL PROGRAMS DIV.

COMMENT FORM

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PLEASE SUBMIT YOUR COMMENTS BY: 09/17/2015

[redacted]

Business / Organization: JONES PAWN

[redacted]

"I have the following comment(s) or question(s) about the proposed project to improve US-70 near Madill, in Marshall County, OK."

What happened to the plan to by-pass to the West. All Country and no utilities, homes or businesses? Sewer bridges, etc. ???
This plan appears to be somewhat more expense involved. ie. taking out my business and other property. This plan will involved more utilities, etc.
With the damages done by 2015 rains, OK has so many roads and bridges to be repaired. It makes sense to do a more efficient way to Hwy 70 West around the W. of city and tie back in on 70.
It appears to me a small group of "city" people proposed this plan many years ago. (most are deceased now).
Build the bridge over the RR @ Wolf - Smarter!

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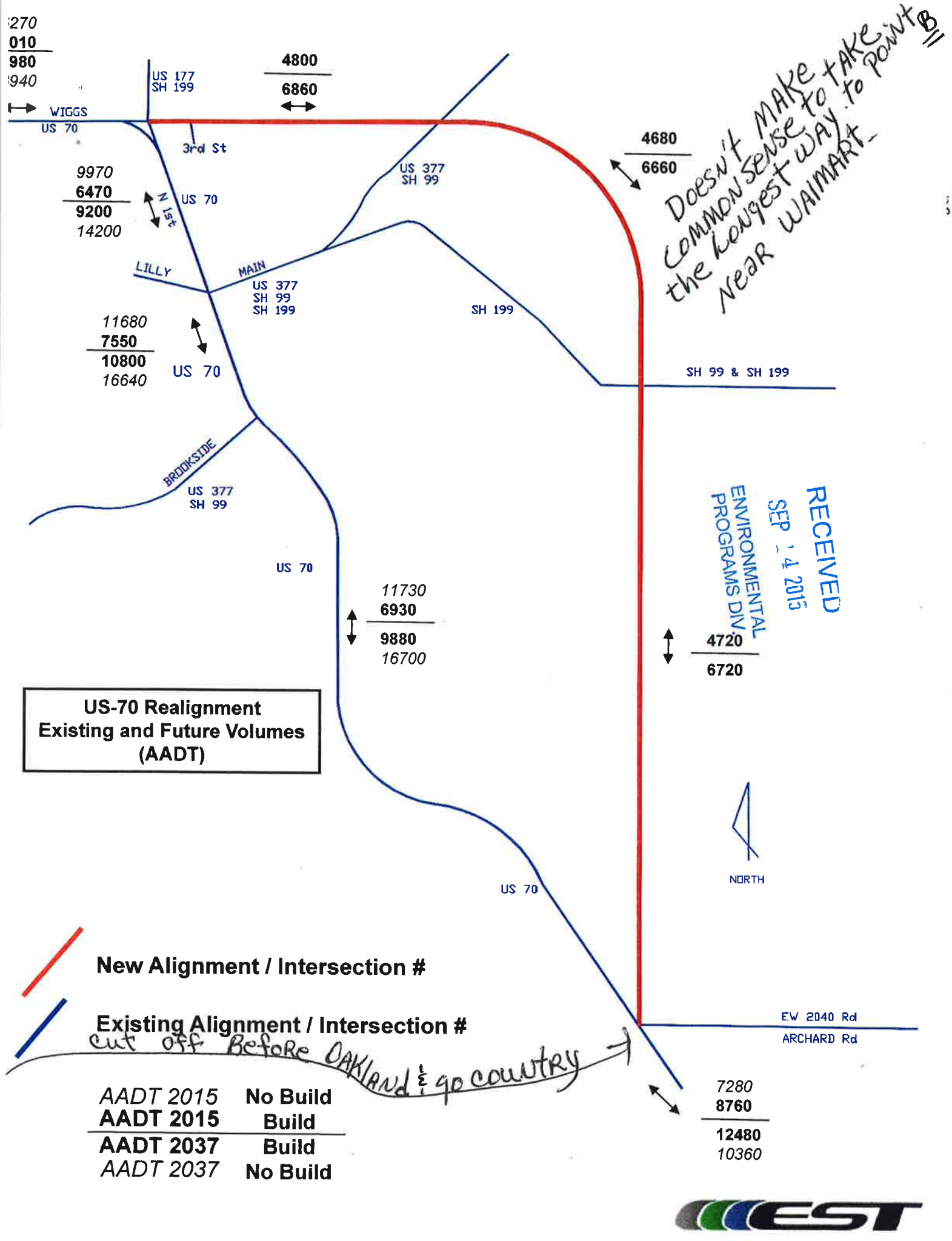
OVER

Comments Continued

Please use your common sense and tota
rethink this purposal.
The current plan would be so much
more expense to the state and to all prop
owners in the path. Businesses and several
property owners. Longer distance, more
bridges, more exits and would take su
much longer to complete.
Cut off before Oakland and go across
country through mostly all pastures
Would have a major intersection at 377
I can't understand the more expensive
plan. Our business pays taxes to the stat
and would appreciate a more conservati
use of tax dollars.

Very Sincerely,

[redacted]


270
010
980
940
WIGGS
US 70
US 177
SH 199
4800
6860
3rd St
9970
6470
9200
14200
N 1st
US 70
US 377
SH 99
4680
6660
Doesn't MAKE TAKE COMMON SENSE to the longest WAY to POINT Near WAIMART
LILLY
MAIN
US 377
SH 99
SH 199
11680
7550
10800
16640
US 70
SH 99 & SH 199
BROOKSIDE
US 377
SH 99
US 70
11730
6930
9880
16700
4720
6720
RECEIVED
SEP 14 2015
ENVIRONMENTAL PROGRAMS DIV.
US-70 Realignment
Existing and Future Volumes
(AADT)
NORTH
US 70
New Alignment / Intersection #
Existing Alignment / Intersection #
cut off Before OAKland & go country
EW 2040 Rd
ARCHARD Rd
7280
8760
12480
10360
AADT 2015 No Build
AADT 2015 Build
AADT 2037 Build
AADT 2037 No Build

COMMENT FORM

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PROPOSED US-70 IMPROVEMENTS

09/03/2015
Marshall County, OK

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PLEASE SUBMIT YOUR COMMENTS BY: 09/17/2015

[redacted]

"I have the following comment(s) or question(s) about the proposed project to improve US-70 near Madill, in Marshall County, OK."

I have lived in this town all of my life. The traffic has continually gotten worse over the last 8-10 years. I also know that the semi-truck problem has gotten really bad. The congestion with all traffic in general has gotten horrible, especially on holidays, school events, five o'clock traffic, etc.... I totally understand the need for this project and do believe it is for the betterment of Marshall. I do hate the thought of having to sell my property for sentimental reasons. I worked very hard to buy this property back from the nursing home after my grandmother

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OKLAHOMA DEPARTMENT OF TRANSPORTATION

COMMENT FORM

Comments Continued

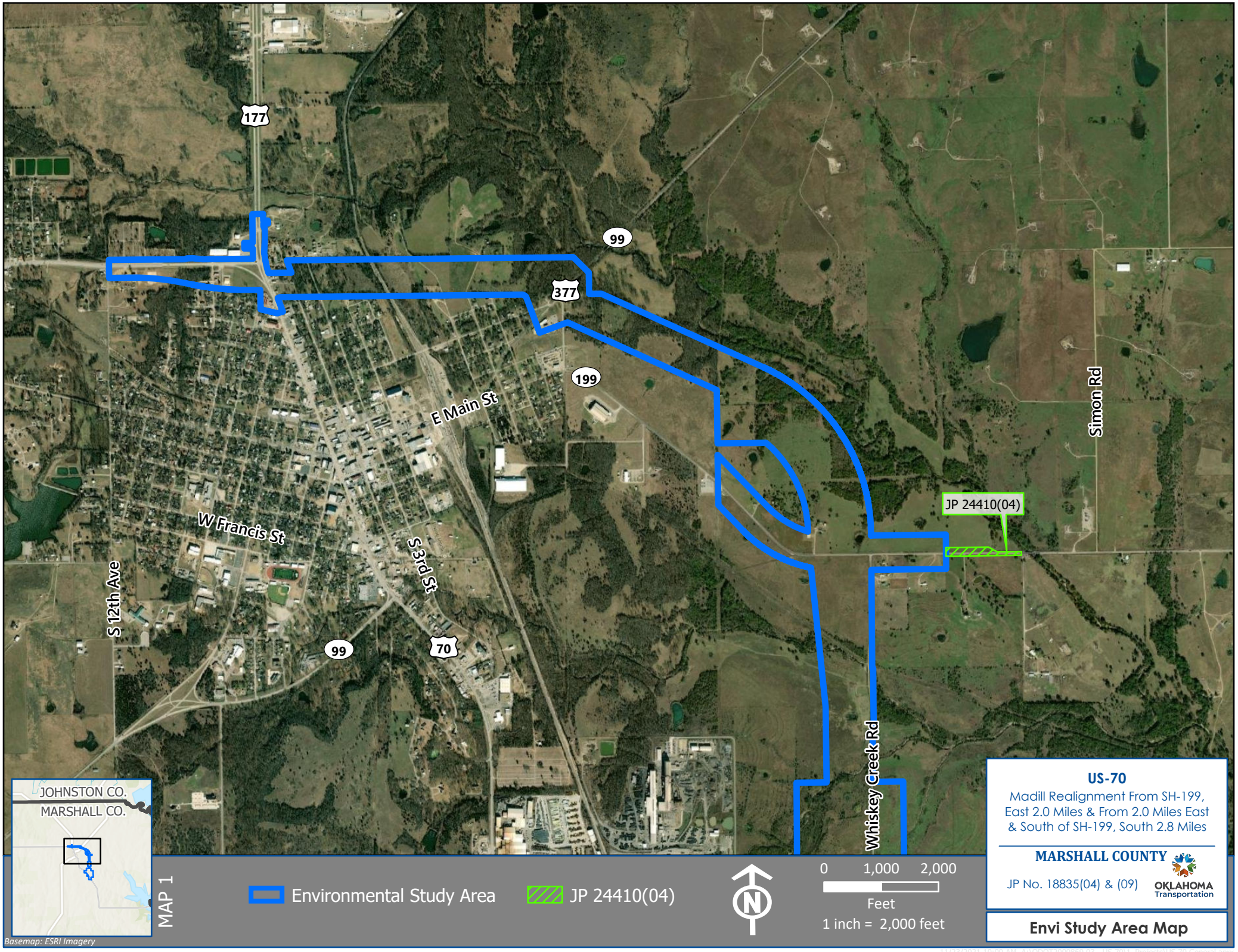
had to be placed there. This property had been my grand-parents home place for 55 years. My mother was born on this property and I have so many fond childhood memories made in that house/property. I do understand that I will have to sell my property for progress and improvement of Marshall County. As long as I receive adequate compensation and my sister receives compensation for having to move and for displacement (as she has lived in my house for 25 years. I own this property free and clear and totally understand that I will have to sell, I would like to know if there will be another meeting to let us know for sure if this is the route they choose. Would also like to know what kind of timeline's we are looking at. I do agree with the project as long as we are compensated fairly.

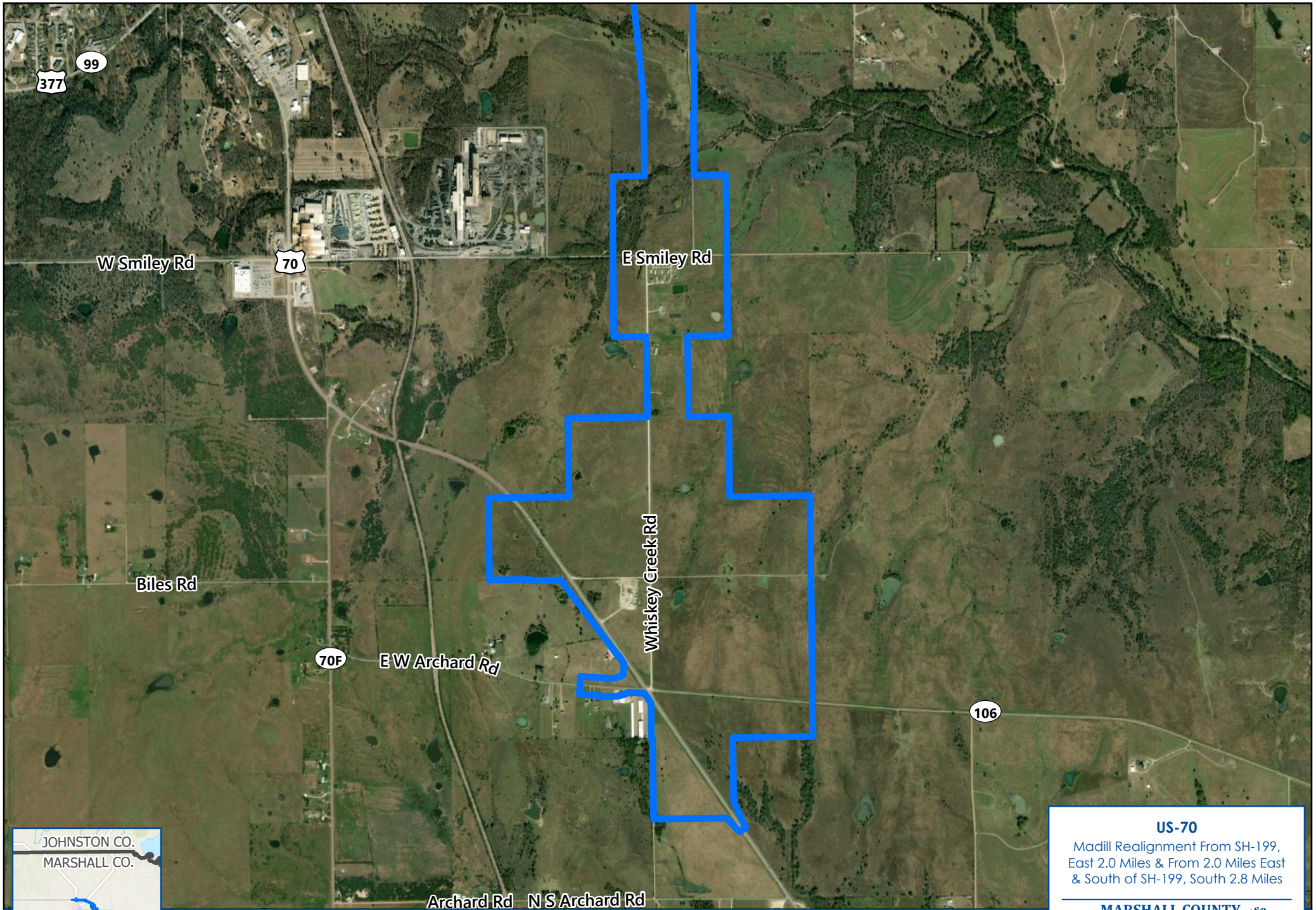
Thank you,

[redacted]

APPENDIX B

PROJECT FOOTPRINT, TYPICAL SECTIONS, PLANS AND PROFILES


177
99
377
199
E Main St
Simon Rd
JP 24410(04)
W Francis St
S 12th Ave
S 3rd St
99
70
Whiskey Creek Rd
JOHNSTON CO.
MARSHALL CO.
MAP 1
Environmental Study Area
JP 24410(04)
N
0
1,000
2,000
Feet
1 inch = 2,000 feet
US-70
Madill Realignment From SH-199, East 2.0 Miles & From 2.0 Miles East & South of SH-199, South 2.8 Miles
MARSHALL COUNTY
JP No. 18835(04) & (09)
OKLAHOMA Transportation
Envi Study Area Map
Basemap: ESRI Imagery



US-70

Madill Realignment From SH-199, East 2.0 Miles & From 2.0 Miles East & South of SH-199, South 2.8 Miles

MARSHALL COUNTY

JP No. 18835(04) & (09)

OKLAHOMA Transportation

Envi Study Area Map

11/23/2021 10:00 AM, A:\ODOT2000869.03 - US 70\1_Projects\US 70 General.aprx

OKLAHOMA DEPARTMENT OF TRANSPORTATION

REVISED
PROPOSED R/W
12/29/2021

SURVEY DATA

SEE SURVEY DATA ON SHEET NOS.
S001-S038 FOR COMPLETE INFORMATION.

STATE OF OKLAHOMA
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED

U.S. HIGHWAY

PROJECT NO. NHPP-022N(052)

GRADING, DRAINAGE, SURFACING AND BRIDGES

U.S. HIGHWAY NO. 70

MARSHALL COUNTY

CONTROL SECTION NO. 70-48-27

STATE JOB PIECE NO. 18835(04)

BRIDGE 'A' - LOCATION NO. XXXX XXXXX - NB1 NO. XXXXX

BRIDGE 'B' - LOCATION NO. XXXX XXXXX - NB1 NO. XXXXX

INDEX OF SHEETS

US-70 REALIGNMENT DESIGN DATA

AADT 2017	= 4,465
AADT 2037	= 6,240
DHV (TWO WAY)	= 624
K (DHV/AADT-TWO WAY)	= 10%
D (DIRECTIONAL DIST.)	= 54%
T (% OF DHV)	= 12%
T (% OF AADT)	= 15%
T_3 (% OF AADT)	= 9%
V	= 45 MPH TO 65 MPH
20 YEAR FLEX. ESALS	= 3.61 M

SCALES

0 ½" 1"

PLAN	1" = 50'
PROFILE HORIZONTAL	1" = 50'
PROFILE VERTICAL	1" = 5'
LAYOUT MAP	1" = 2,640'

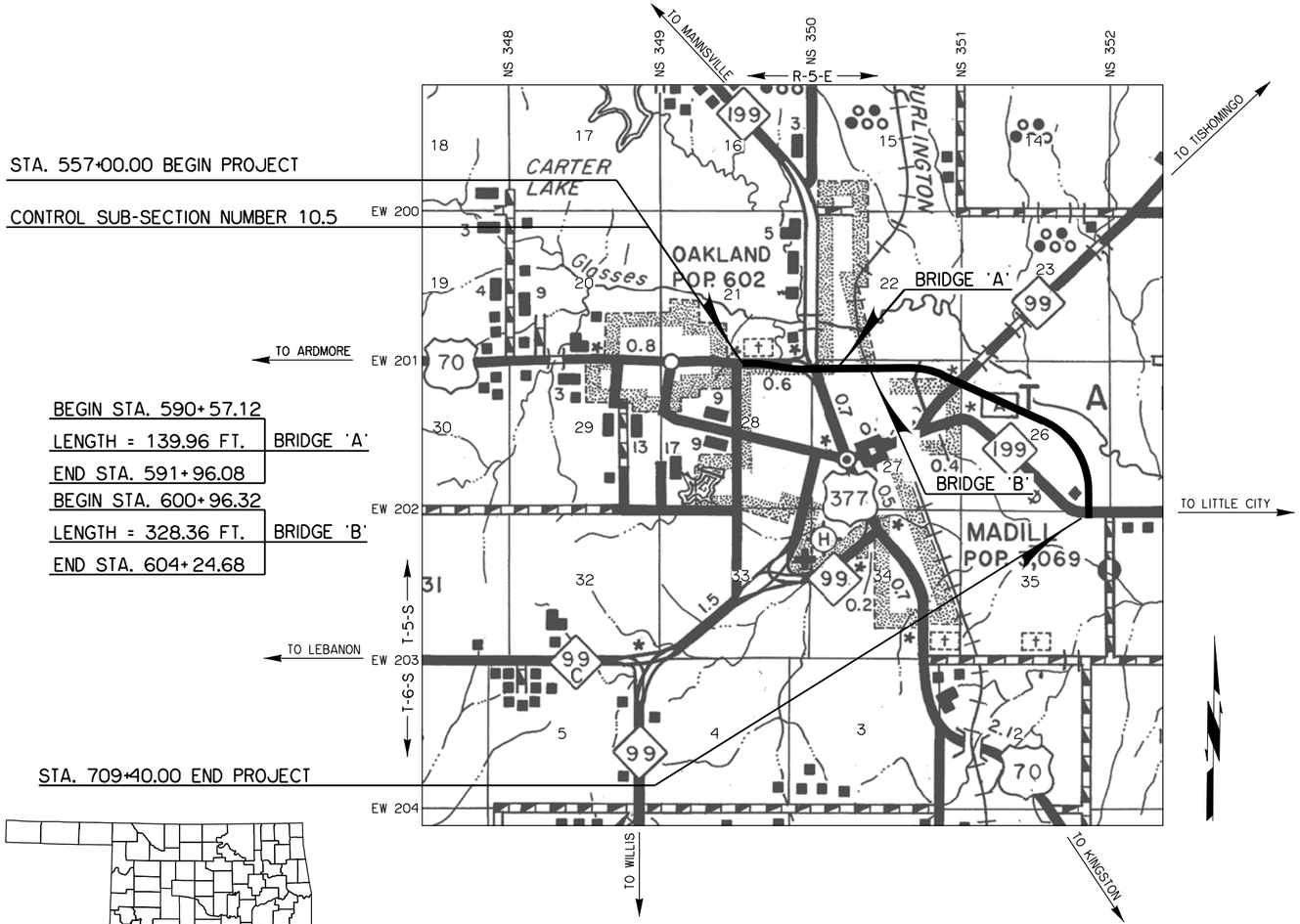
STA. 557+00.00 BEGIN PROJECT

CONTROL SUB-SECTION NUMBER 10.5

BEGIN STA. 590+57.12
LENGTH = 139.96 FT. BRIDGE 'A'
END STA. 591+96.08

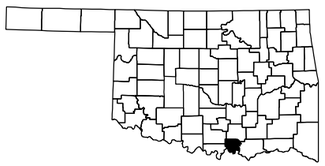
BEGIN STA. 600+96.32
LENGTH = 328.36 FT. BRIDGE 'B'
END STA. 604+24.68

STA. 709+40.00 END PROJECT



CONVENTIONAL SYMBOLS

- PROPOSED ROAD
- RAILROADS
- TOWNSHIP AND RANGE
- SECTION LINES
- QUARTER SECTION LINES
- FENCES
- GROUND LINE
- EXISTING ROADS
- BASE LINE
- GRADE LINES (+2% -2%)
- TELEPHONE AND TELEGRAPH
- POWER LINES
- BUILDINGS
- OIL WELL
- DRAINAGE STRUCTURES - IN PLACE
- DRAINAGE STRUCTURES - NEW
- PRES.R/W — RIGHT-OF-WAY LINES - EXISTING
- R/W — RIGHT-OF-WAY LINES - NEW
- CONTROLLED ACCESS
- RIGHT-OF-WAY FENCE



LOCATION MAP
DIVISION II

PROJECT LENGTH BASED ON CONSTRUCTION REFERENCE LINE

ROADWAY LENGTH	14771.88 FT.	2.797 MILES
BRIDGE LENGTH	468.32 FT.	0.088 MILES
PROJECT LENGTH		2.886 MILES

EQUATIONS: NONE

EXCEPTIONS: NONE

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

615 N. HUDSON, STE. 300
OKLAHOMA CITY, OK 73102
(405) 815-3600

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

DATE

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

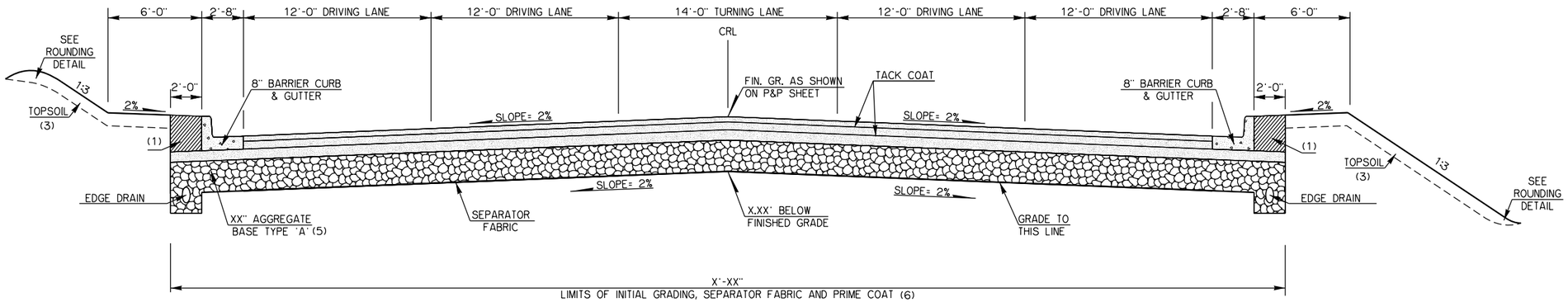
CASSIDY DOESCHER, OKLA. REG NO. 22540 DATE
(SHEET NOS. 0001-0010, R001-R034, X001-X264)

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

SWO 4007(2) PROJECT NO. NHPP-022N(052) SHEET NO. 0001

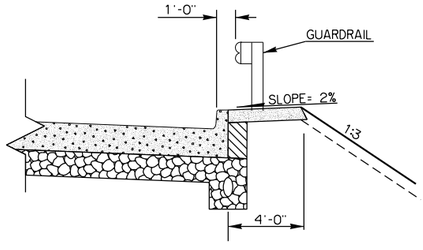
OKLAHOMA DEPARTMENT OF TRANSPORTATION

REVISED
PROPOSED R/W
03/15/2022



TYPICAL SECTION NO. 1
US-70 CURBED - 45 MPH DESIGN SPEED
STA. 557+00.00 TO STA. 590+15.49
STA. 592+38.77 TO STA. 595+00.00

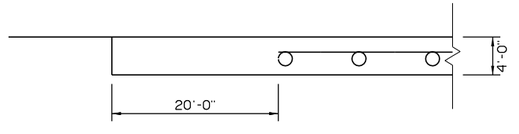
PAVEMENT REQUIREMENT		
X" PAVT. STRUCT.	12' DRIVING LANES & 14' TURNING LANE	2'-8" COMB. CURB & GUTTER (8" BARRIER)
SURFACE COURSE	X" SUPERPAVE TYPE SX (PG XX-XX OK)	X" COMB. CURB & GUTTER
BASE COURSE	X" SUPERPAVE TYPE SX (PG XX-XX OK)	
	X" SUPERPAVE TYPE SX (PG XX-XX OK)	X" SUPERPAVE TYPE S3 (PG 64-22 OK)



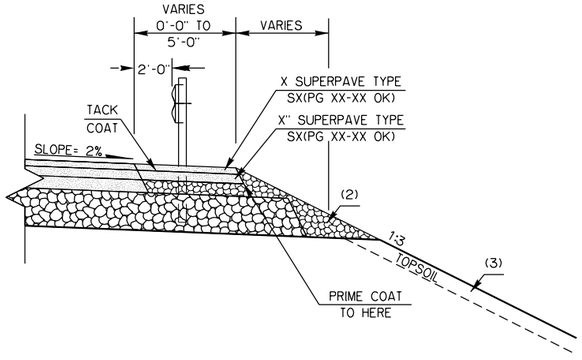
GUARDRAIL WIDENING
BRIDGE 'A'

STA 588+54.86 TO STA. 590+15.49 RT
STA. 592+38.77 TO STA. 593+99.40 LT

PAVEMENT REQUIREMENT	
2" PAVT. STRUCTURE	GUARDRAIL WIDENING
SURFACE COURSE	2.0" SUPERPAVE TYPE SX (PG XX-XX)

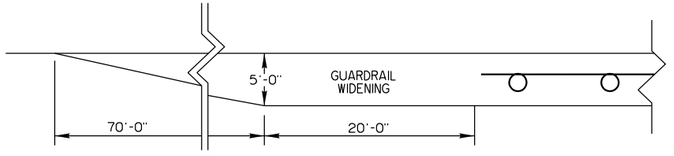


GUARDRAIL WIDENING BRIDGE 'A'



GUARDRAIL WIDENING
BRIDGE 'B'

STA. 597+78.85 TO STA. 593+37.64 LT
STA. 604+74.03 TO STA. 606+42.16 LT



GUARDRAIL WIDENING BRIDGE 'B'

NOTES:

(1) BACKFILL NOTE:
TO BE BACKFILLED AND COMPACTED AS PART OF THE FINISHING OPERATIONS. QUANTITY IS MEASURED IN UNCLASSIFIED BORROW.

(2) BACKFILL NOTE:
TO BE BACKFILLED AND COMPACTED AS PART OF THE FINISHING OPERATIONS. QUANTITY IS MEASURED IN T.B.S.C. TYPE E.

(3) TOPSOIL NOTE:
THE CONTRACTOR SHALL STRIP ALL AVAILABLE TOPSOIL, STOCKPILE THE MATERIAL AND REPLACE THE TOPSOIL ON FINISHED SLOPES IN ACCORDANCE WITH SECTION 205 OF THE STANDARD SPECIFICATION. RESERVED TOPSOIL SHOULD BE SPREAD FIRST ON THE COMPLETED SLOPES OF THE CUT SECTIONS AND THE REMAINDER ON COMPLETED FILL SLOPES OR OTHER PRIORITY AREAS LOCATED BY THE ENGINEER. THE CONTRACTOR SHALL DETERMINE THE AMOUNT OF TOPSOIL REQUIRED AND INCLUDE ALL COSTS TO REMOVE, STOCKPILE AND REPLACE THE TOPSOIL ON THE FINISHED SLOPES IN THE PAY ITEM FOR TOPSOIL, LUMP SUM.

THE GRADING LINE AS SHOWN ON THE TYPICAL AND CROSS SECTIONS IS TO THE TOP OF THE TOPSOIL. EARTHWORK QUANTITIES WERE NOT ADJUSTED FOR SALVAGE AND TOPSOIL QUANTITIES INCLUDED IN THE MASS LINE BALANCE.

(4) DISTANCE MEASURED VERTICALLY FROM THE EDGE OF THE FINISHED GRADE SHOULDER.

(5) PRIME COAT ON TOP OF AND BELOW AGGREGATE BASE.

(6) THE SUBGRADE WILL BE COMPACTED IN ACCORDANCE WITH THE OKLAHOMA DEPARTMENT OF TRANSPORTATION 2009 STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION SECTION 202.04(5)(B)(2), EARTH FILL.

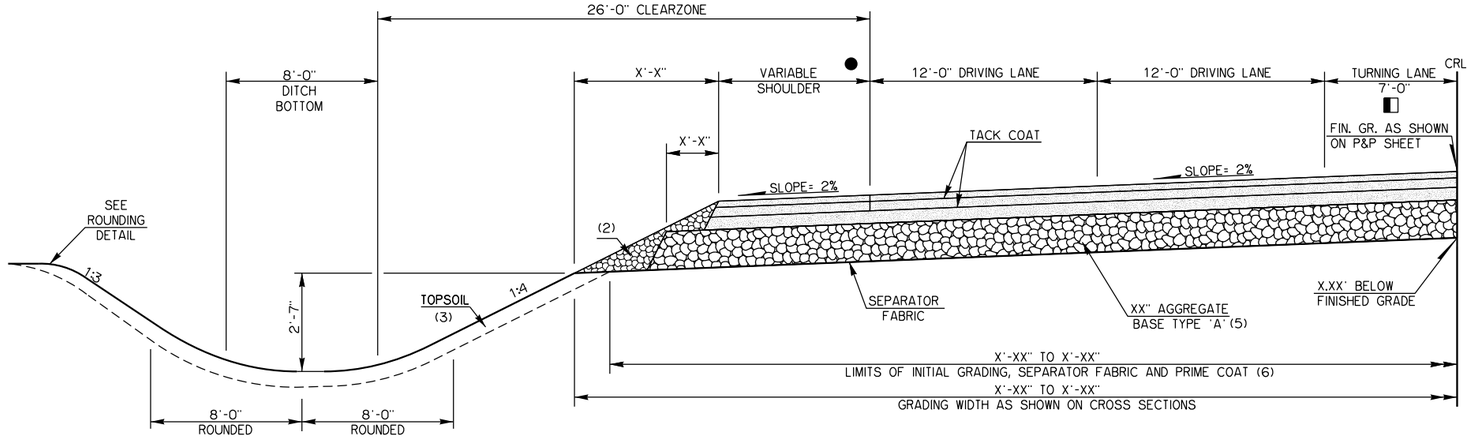
US-70 REALIGNMENT — MARSHALL COUNTY

TYPICAL SECTIONS (SHEET 1 OF 9)

STATE JOB NO. 18835(04) — SHEET NO. 0002

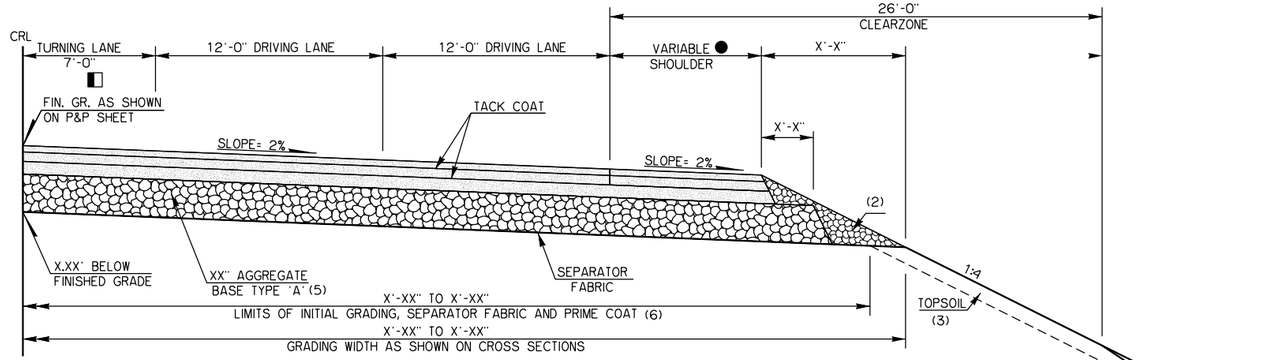
OKLAHOMA DEPARTMENT OF TRANSPORTATION

REVISED
PROPOSED R/W
03/15/2022

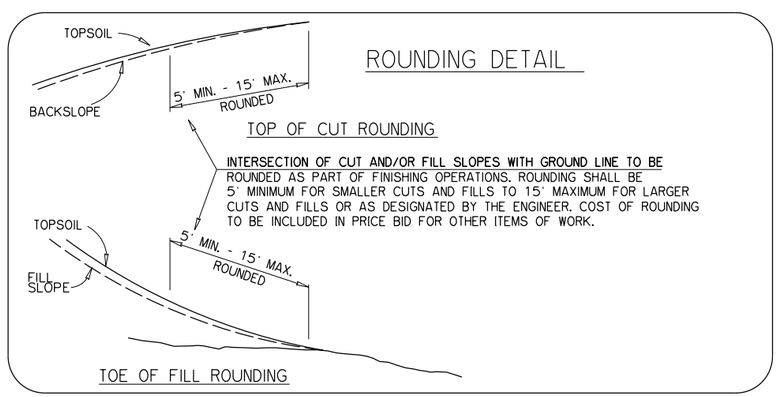


● 8'-0" STA. 595+00.00 TO 600+46.97
STA. 604+74.02 TO 643+90.00
8'-0" TO 10'-0" STA. 643+90.00 TO 645+00.00
10'-0" STA. 645+00.00 TO 657+44.82

◧ 7'-0" STA. 595+00.00 TO 604+46.97
STA. 604+74.02 TO 654+00.00
7'-0" TO 13'-0" STA. 654+00.00 TO 657+44.82



TYPICAL SECTION NO. 2
US-70 FIVE LANE OPEN - 55 MPH DESIGN SPEED
STA. 595+00.00 TO STA. 600+46.97
STA. 604+74.02 TO STA. 657+44.82
STA. 657+44.82 TO STA. 709+40.00 (ULTIMATE)



ROUNDING DETAIL

INTERSECTION OF CUT AND/OR FILL SLOPES WITH GROUND LINE TO BE ROUNDED AS PART OF FINISHING OPERATIONS. ROUNDING SHALL BE 5' MINIMUM FOR SMALLER CUTS AND FILLS TO 15' MAXIMUM FOR LARGER CUTS AND FILLS OR AS DESIGNATED BY THE ENGINEER. COST OF ROUNDING TO BE INCLUDED IN PRICE BID FOR OTHER ITEMS OF WORK.

PAVEMENT REQUIREMENT		
X" PAVT. STRUCT.	12' DRIVING LANES & 14' TURNING LANE	VAR. SHOULDERS
SURFACE COURSE	X" SUPERPAVE TYPE SX (PG XX-XX OK)	X" SUPERPAVE TYPE SX (PG XX-XX OK)
BASE COURSE	X" SUPERPAVE TYPE SX (PG XX-XX OK)	X" SUPERPAVE TYPE SX (PG XX-XX OK)
	X" SUPERPAVE TYPE SX (PG XX-XX OK)	X" SUPERPAVE TYPE SX (PG XX-XX OK)

NOTES:

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(4) DISTANCE MEASURED VERTICALLY FROM THE EDGE OF THE FINISHED GRADE SHOULDER.

(5) PRIME COAT ON TOP OF AND BELOW AGGREGATE BASE.

(6) THE SUBGRADE WILL BE COMPACTED IN ACCORDANCE WITH THE OKLAHOMA DEPARTMENT OF TRANSPORTATION 2009 STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION SECTION 202.04(5)(B)(2), EARTH FILL.

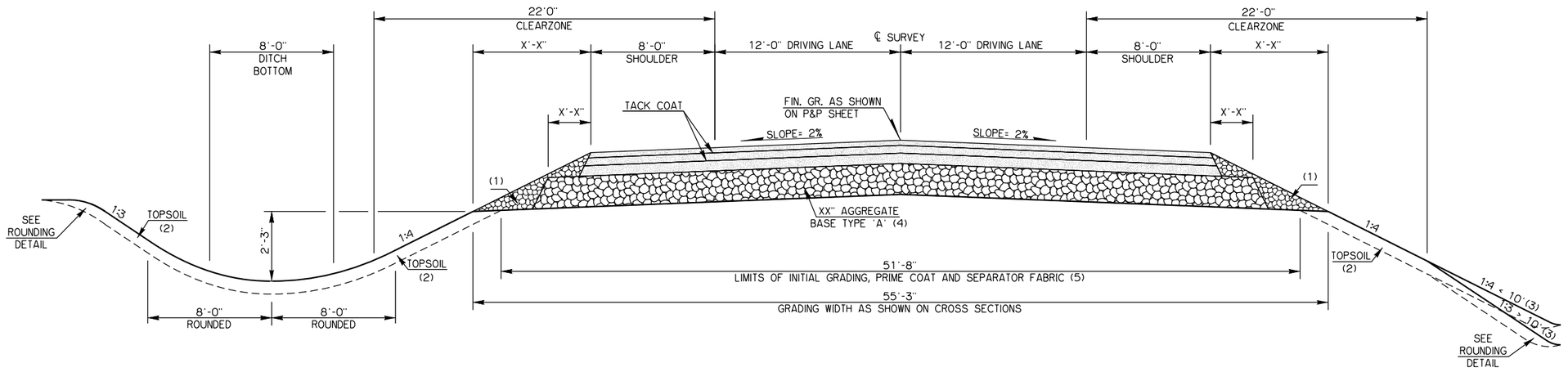
US-70 REALIGNMENT — MARSHALL COUNTY

TYPICAL SECTIONS
(SHEET 2 OF 9)

STATE JOB NO. 18835(04) — SHEET NO. 0003

OKLAHOMA DEPARTMENT OF TRANSPORTATION

REVISED
PROPOSED R/W
03/15/2022



TYPICAL SECTION NO. 3
US-70 - 65 MPH DESIGN SPEED
STA. 657+44.82 TO STA. 709+40.00 (INTERIM)

PAVEMENT REQUIREMENT		
X" PAVT. STRUCT.	12' DRIVING LANES & 4' INSIDE SHOULDER	10'-0" SHOULDERS
SURFACE COURSE	X" SUPERPAVE TYPE SX (PG XX-XX OK)	X" SUPERPAVE TYPE SX (PG XX-XX OK)
BASE COURSE	X" SUPERPAVE TYPE SX (PG XX-XX OK)	X" SUPERPAVE TYPE SX (PG XX-XX OK)
	X" SUPERPAVE TYPE SX(PG XX-XX OK)	X" SUPERPAVE TYPE SX (PG XX-XX OK)

NOTES:

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(3) DISTANCE MEASURED VERTICALLY FROM THE EDGE OF THE FINISHED GRADE SHOULDER.

(4) PRIME COAT ON TOP OF AND BELOW AGGREGATE BASE.

(5) THE SUBGRADE WILL BE COMPACTED IN ACCORDANCE WITH THE OKLAHOMA DEPARTMENT OF TRANSPORTATION 2009 STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION SECTION 202.04(5)(B)(2), EARTH FILL.

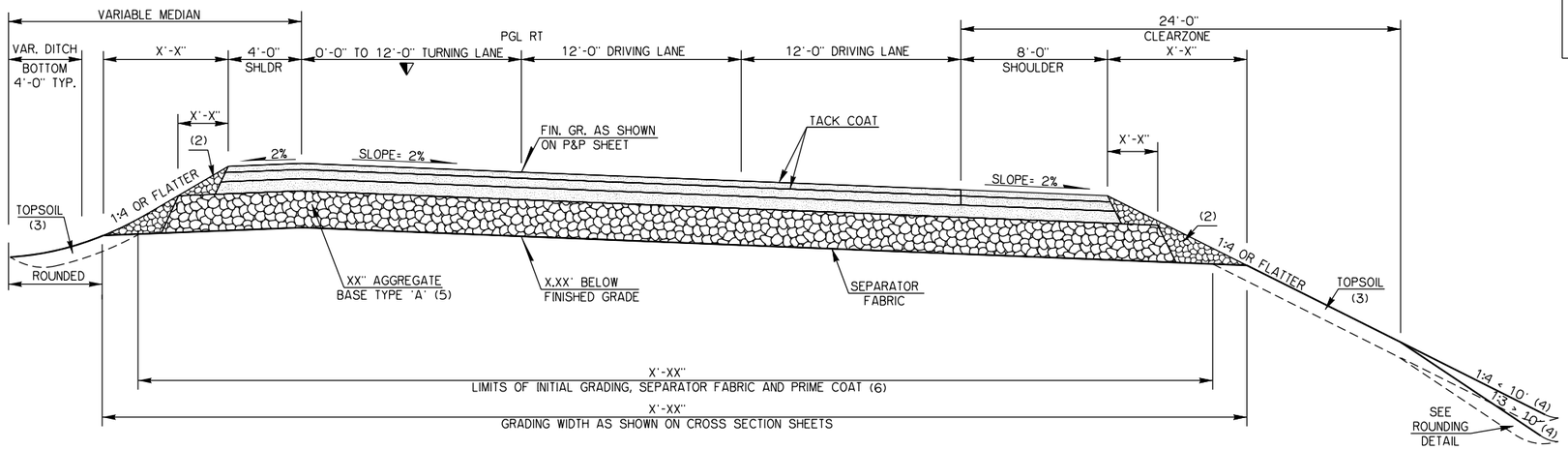
US-70 REALIGNMENT — MARSHALL COUNTY

TYPICAL SECTION
(SHEET 3 OF 9)

STATE JOB NO. 18835(04) — SHEET NO. 0004

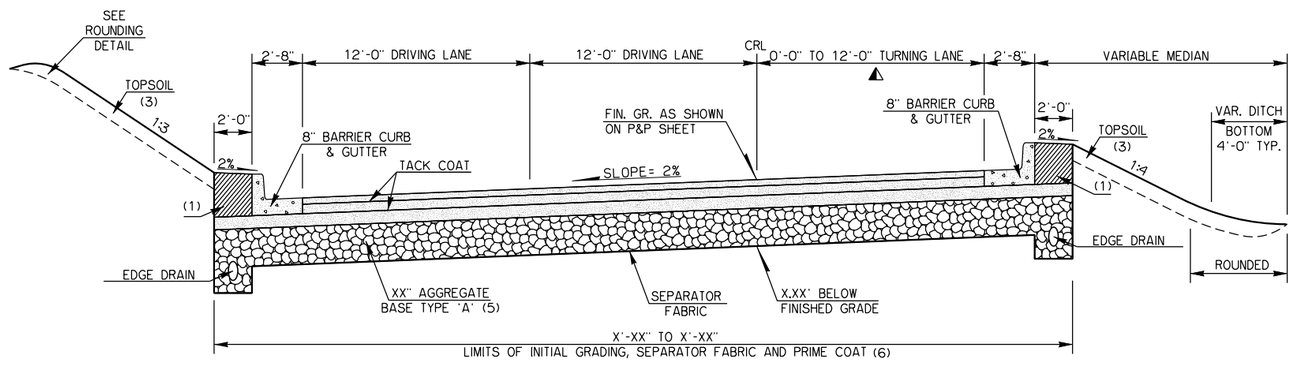
OKLAHOMA DEPARTMENT OF TRANSPORTATION

REVISED
PROPOSED R/W
03/15/2022



▼
0'-0" STA. 845+00.00 TO STA. 845+50.90
0'-0" TO 12'-0" STA. 845+50.90 TO STA. 846+70.90
12'-0" STA. 846+70.90 TO STA. 848+28.02
0'-0" STA. 848+28.02 TO STA. 851+36.85

PAVEMENT REQUIREMENT		
X" PAVT. STRUCT.	12' DRIVING LANES & 4' INSIDE SHOULDER	8'-0" SHOULDER
SURFACE COURSE	X" SUPERPAVE TYPE SX (PG XX-XX OK)	X" SUPERPAVE TYPE SX (PG XX-XX OK)
BASE COURSE	X" SUPERPAVE TYPE SX (PG XX-XX OK)	X" SUPERPAVE TYPE S3 (PG XX-XX OK)
	X" SUPERPAVE TYPE SX (PG XX-XX OK)	X" SUPERPAVE TYPE SX (PG XX-XX OK)



TYPICAL SECTION NO. 4

US-177/SH-199 - 40 MPH DESIGN SPEED
RT STA. 845+00.00 TO STA. 851+36.85
LT STA. 848+17.50 TO STA. 851+36.85

▲
12'-0" STA. 848+17.50 TO STA. 849+25.70
12'-0" TO 0'-0" STA. 849+25.70 TO STA. 850+45.73
0'-0" STA. 850+45.73 TO STA. 851+36.85

PAVEMENT REQUIREMENT	
X" PAVT. STRUCT.	12' DRIVING LANES
SURFACE COURSE	X" SUPERPAVE TYPE SX (PG XX-XX OK)
BASE COURSE	X" SUPERPAVE TYPE SX (PG XX-XX OK)
	X" SUPERPAVE TYPE SX (PG XX-XX OK)

NOTES:

(1) BACKFILL NOTE:
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THE GRADING LINE AS SHOWN ON THE TYPICAL AND CROSS SECTIONS IS TO THE TOP OF THE TOPSOIL. EARTHWORK QUANTITIES WERE NOT ADJUSTED FOR SALVAGE AND TOPSOIL QUANTITIES INCLUDED IN THE MASS LINE BALANCE.

(4) DISTANCE MEASURED VERTICALLY FROM THE EDGE OF THE FINISHED GRADE SHOULDER.

(5) PRIME COAT ON TOP OF AND BELOW AGGREGATE BASE.

(6) THE SUBGRADE WILL BE COMPACTED IN ACCORDANCE WITH THE OKLAHOMA DEPARTMENT OF TRANSPORTATION 2009 STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION SECTION 202.04(5)(B)(2), EARTH FILL.

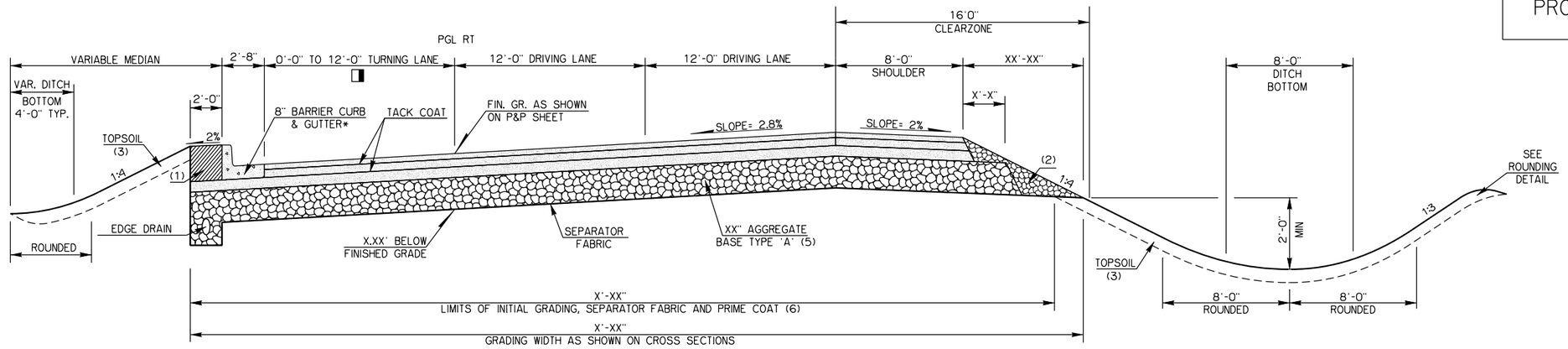
US-70 REALIGNMENT — MARSHALL COUNTY

TYPICAL SECTIONS (SHEET 4 OF 9)

STATE JOB NO. 18835(04) — SHEET NO.0005

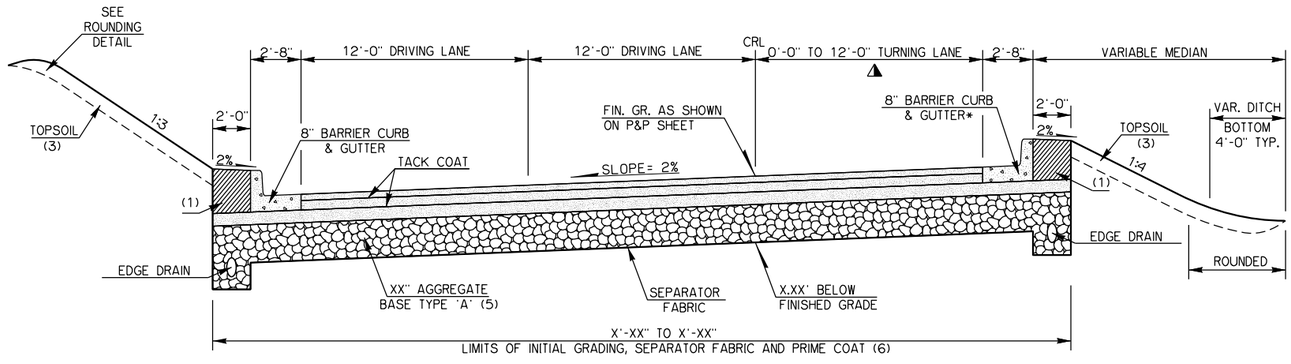
OKLAHOMA DEPARTMENT OF TRANSPORTATION

REVISED
PROPOSED R/W
03/15/2022



◨ 0'-0" STA. 851+36.85 TO STA. 852+56.44
0'-0" TO 12'-0" STA. 852+56.44 TO STA. 853+55.01
12'-0" STA. 853+55.01 TO STA. 856+03.99
* OMIT CURB FROM STA. 855+21.29 TO STA. 856+03.99

PAVEMENT REQUIREMENT		
X" PAVT. STRUCT.	12' DRIVING LANES	8'-0" SHOULDERS
SURFACE COURSE	X" SUPERPAVE TYPE SX (PG XX-XX OK)	X" SUPERPAVE TYPE SX (PG XX-XX OK)
BASE COURSE	X" SUPERPAVE TYPE SX (PG XX-XX OK)	X" SUPERPAVE TYPE SX (PG XX-XX OK)
	X" SUPERPAVE TYPE SX (PG XX-XX OK)	X" SUPERPAVE TYPE SX (PG XX-XX OK)



TYPICAL SECTION NO. 5
US-177/SH-199 - 40 MPH DESIGN SPEED
STA. 851+36.85 TO STA. 856+03.99

◭ 0'-0" STA. 851+36.85 TO STA. 854+65.41
0'-0"- 12'-0" STA. 854+65.41 TO STA. 855+46.12
12'-0" STA. 855+46.12 TO STA. 856+03.99
* OMIT CURB FROM STA. 855+21.29 TO STA. 856+03.99

PAVEMENT REQUIREMENT	
X" PAVT. STRUCT.	12' DRIVING LANES
SURFACE COURSE	X" SUPERPAVE TYPE SX (PG XX-XX OK)
BASE COURSE	X" SUPERPAVE TYPE SX (PG XX-XX OK)
	X" SUPERPAVE TYPE SX (PG XX-XX OK)

NOTES:

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THE GRADING LINE AS SHOWN ON THE TYPICAL AND CROSS SECTIONS IS TO THE TOP OF THE TOPSOIL. EARTHWORK QUANTITIES WERE NOT ADJUSTED FOR SALVAGE AND TOPSOIL QUANTITIES INCLUDED IN THE MASS LINE BALANCE.

(4) DISTANCE MEASURED VERTICALLY FROM THE EDGE OF THE FINISHED GRADE SHOULDER.

(5) PRIME COAT ON TOP OF AND BELOW AGGREGATE BASE.

(6) THE SUBGRADE WILL BE COMPACTED IN ACCORDANCE WITH THE OKLAHOMA DEPARTMENT OF TRANSPORTATION 2009 STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION SECTION 202.04(5)(B)(2), EARTH FILL.

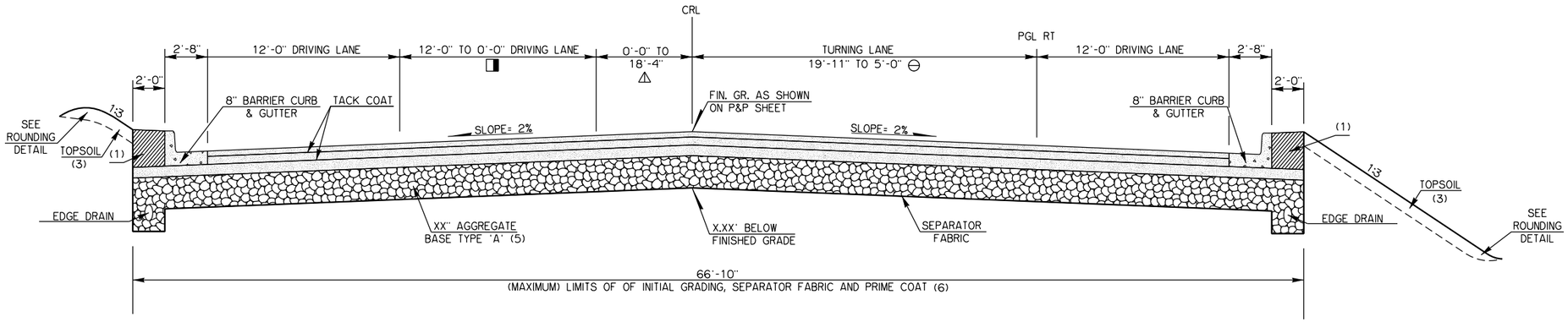
US-70 REALIGNMENT — MARSHALL COUNTY

TYPICAL SECTIONS
(SHEET 5 OF 9)

STATE JOB NO. 18835(04) — SHEET NO. 0006

OKLAHOMA DEPARTMENT OF TRANSPORTATION

REVISED
PROPOSED R/W
03/15/2022



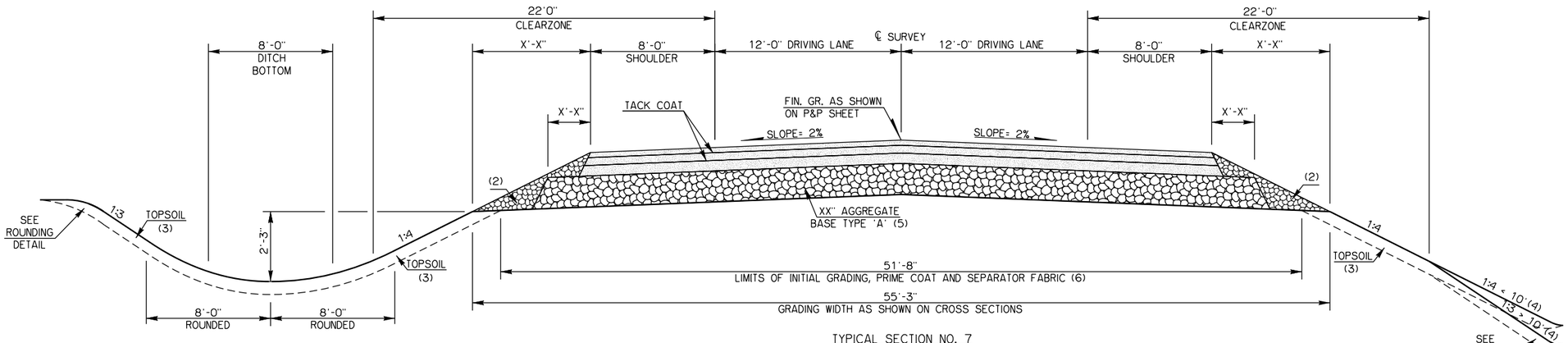
TYPICAL SECTION NO. 6
US-177/SH-199 - 40 MPH DESIGN SPEED
STA. 856+71.64 TO STA. 862+10.03

⊖ 19'-11" TO 5'-0" STA. 856+71.64 TO STA. 862+10.03

⚠ 0'-0" STA. 856+71.64 TO STA. 859+69.72
12'-0" TO 18'-4" STA. 859+69.72 TO STA. 862+10.03

◨ 12'-0" TO 0'-0" STA. 856+71.64 TO STA. 859+69.72
0'-0" STA. 859+69.72 TO STA. 862+10.03

PAVEMENT REQUIREMENT		
X" PAVT. STRUCT.	12' DRIVING LANES & TURN LANE	2'-8" COMB. CURB & GUTTER (8" BARRIER)
SURFACE COURSE	X" SUPERPAVE TYPE SX (PG XX-XX OK)	X" COMB. CURB & GUTTER
BASE COURSE	X" SUPERPAVE TYPE SX (PG XX-XX OK)	
	X" SUPERPAVE TYPE SX (PG XX-XX OK)	X" SUPERPAVE TYPE SX (PG XX-XX OK)



TYPICAL SECTION NO. 7
US-377/SH-99 - 50 MPH DESIGN SPEED
STA. 41+00.00 TO STA. 43+40.95
STA. 44+09.05 TO STA. 49+00.00

PAVEMENT REQUIREMENT		
X" PAVT. STRUCT.	12' DRIVING LANES	8'-0" SHOULDERS
SURFACE COURSE	X" SUPERPAVE TYPE SX (PG XX-XX OK)	X" SUPERPAVE TYPE SX (PG XX-XX OK)
BASE COURSE	X" SUPERPAVE TYPE SX (PG XX-XX OK)	X" SUPERPAVE TYPE SX (PG XX-XX OK)
	X" SUPERPAVE TYPE SX (PG XX-XX OK)	X" SUPERPAVE TYPE SX (PG XX-XX OK)

NOTES:

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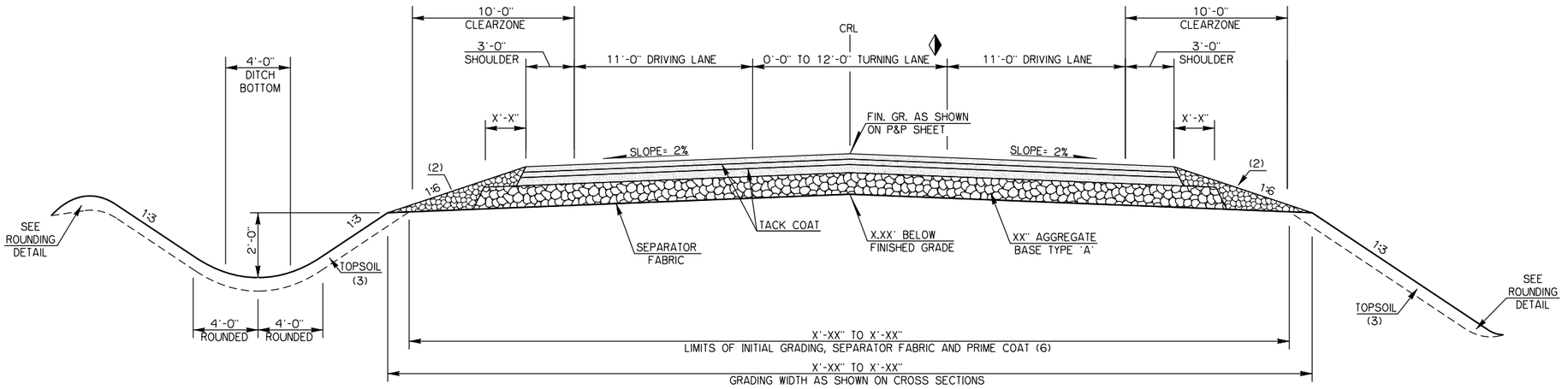
US-70 REALIGNMENT — MARSHALL COUNTY

TYPICAL SECTIONS
(SHEET 6 OF 9)

STATE JOB NO. 18835(04) — SHEET NO. 0007

OKLAHOMA DEPARTMENT OF TRANSPORTATION

REVISED
PROPOSED R/W
03/15/2022



TYPICAL SECTION NO. 8
PROPOSED COUNTY ROAD (EXISTING SH-199) - 45 MPH DESIGN SPEED
STA. 526+00.00 TO STA. 544+28.03

PAVEMENT REQUIREMENT		
X" PAVT. STRUCT.	11' DRIVING LANES & 12' TURN LANE	3'-0" SHOULDERS
SURFACE COURSE	X" SUPERPAVE TYPE SX (PG XX-XX OK)	X" SUPERPAVE TYPE SX (PG XX-XX OK)
BASE COURSE	X" SUPERPAVE TYPE SX (PG XX-XX OK)	X" SUPERPAVE TYPE SX (PG XX-XX OK)
	X" SUPERPAVE TYPE SX (PG XX-XX OK)	X" SUPERPAVE TYPE SX (PG XX-XX OK)

◆ 0'-0" STA. 526+00.00 TO STA. 538+56.00
0'-0" TO 12'-0" STA. 538+56.00 TO STA. 541+25.98
0'-0" STA. 541+25.98 TO STA. 544+28.03

NOTES:

(1) BACKFILL NOTE:
TO BE BACKFILLED AND COMPACTED AS PART OF THE FINISHING OPERATIONS. QUANTITY IS MEASURED IN UNCLASSIFIED BORROW.

(2) BACKFILL NOTE:
TO BE BACKFILLED AND COMPACTED AS PART OF THE FINISHING OPERATIONS. QUANTITY IS MEASURED IN T.B.S.C. TYPE E.

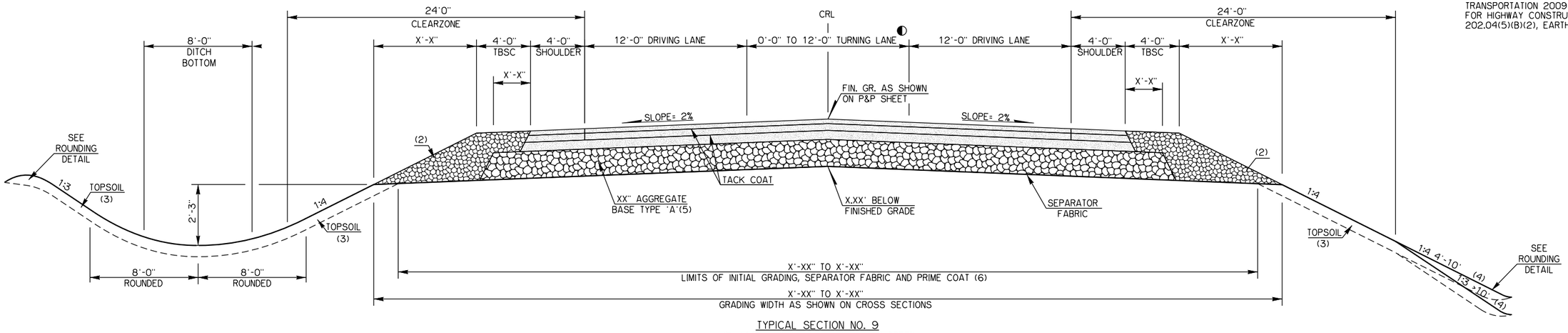
(3) TOPSOIL NOTE:
THE CONTRACTOR SHALL STRIP ALL AVAILABLE TOPSOIL, STOCKPILE THE MATERIAL AND REPLACE THE TOPSOIL ON FINISHED SLOPES IN ACCORDANCE WITH SECTION 205 OF THE STANDARD SPECIFICATION. RESERVED TOPSOIL SHOULD BE SPREAD FIRST ON THE COMPLETED SLOPES OF THE CUT SECTIONS AND THE REMAINDER ON COMPLETED FILL SLOPES OR OTHER PRIORITY AREAS LOCATED BY THE ENGINEER. THE CONTRACTOR SHALL DETERMINE THE AMOUNT OF TOPSOIL REQUIRED AND INCLUDE ALL COSTS TO REMOVE, STOCKPILE AND REPLACE THE TOPSOIL ON THE FINISHED SLOPES IN THE PAY ITEM FOR TOPSOIL, LUMP SUM.

THE GRADING LINE AS SHOWN ON THE TYPICAL AND CROSS SECTIONS IS TO THE TOP OF THE TOPSOIL. EARTHWORK QUANTITIES WERE NOT ADJUSTED FOR SALVAGE AND TOPSOIL QUANTITIES INCLUDED IN THE MASS LINE BALANCE.

(4) DISTANCE MEASURED VERTICALLY FROM THE EDGE OF THE FINISHED GRADE SHOULDER.

(5) PRIME COAT ON TOP OF AND BELOW AGGREGATE BASE.

(6) THE SUBGRADE WILL BE COMPACTED IN ACCORDANCE WITH THE OKLAHOMA DEPARTMENT OF TRANSPORTATION 2009 STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION SECTION 202.04(5)(B)(2), EARTH FILL.



TYPICAL SECTION NO. 9
SH-199 MAINLINE - 45 MPH DESIGN SPEED
STA. 545+64.04 TO STA. 558+50.00

◐ 12'-0" STA. 545+64.04 TO STA. 547+84.00
12'-0" TO 0'0" STA. 547+84.00 TO STA. 550+57.00
0'-0" STA 550+57.00 TO STA. 558+50.00

PAVEMENT REQUIREMENT		
X" PAVT. STRUCT.	12' DRIVING LANES & 12' TURN LANE	4'-0" SHOULDERS
SURFACE COURSE	X" SUPERPAVE TYPE SX (PG XX-XX OK)	X" SUPERPAVE TYPE SX (PG XX-XX OK)
BASE COURSE	X" SUPERPAVE TYPE SX (PG XX-XX OK)	X" SUPERPAVE TYPE SX (PG XX-XX OK)
	X" SUPERPAVE TYPE SX (PG XX-XX OK)	X" SUPERPAVE TYPE SX (PG XX-XX OK)

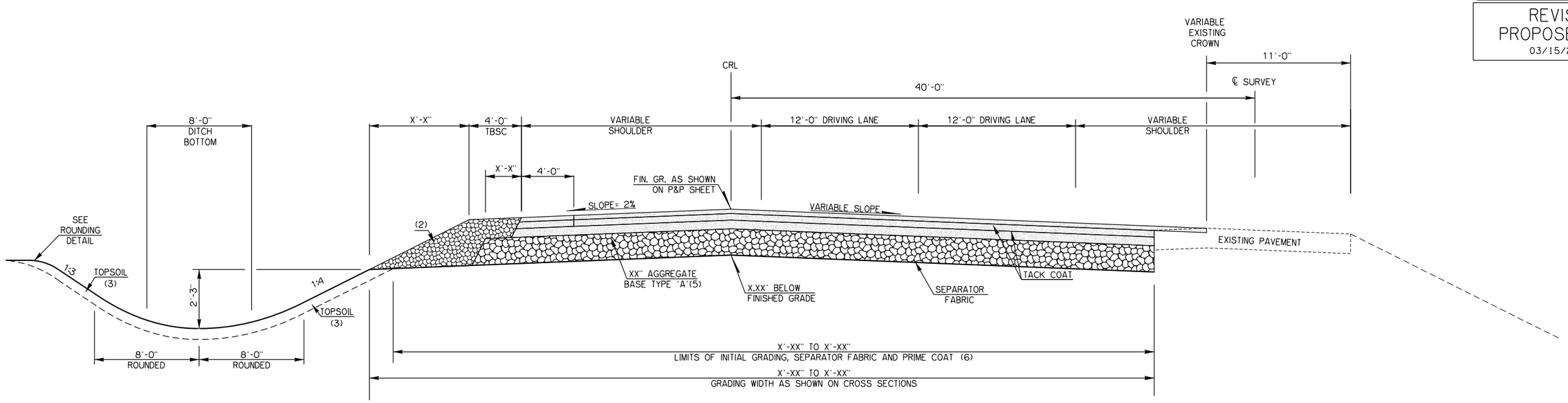
US-70 REALIGNMENT — MARSHALL COUNTY

TYPICAL SECTIONS
(SHEET 7 OF 9)

STATE JOB NO. 18835(04) — SHEET NO. 0008

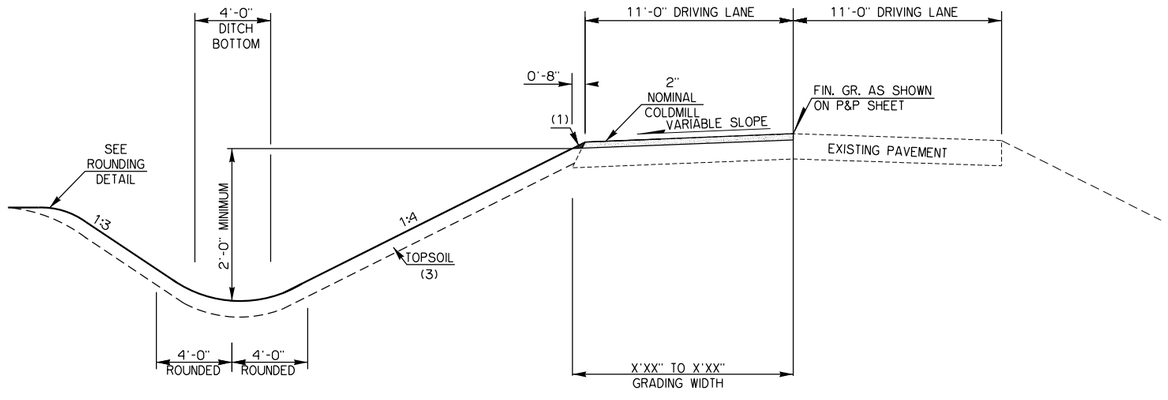
OKLAHOMA DEPARTMENT OF TRANSPORTATION

REVISED
PROPOSED R/W
03/15/2022



TYPICAL SECTION NO. 10
SH-199 MAINLINE - 45 MPH DESIGN SPEED
STA. 558+50.00 TO STA. 567+50.00

PAVEMENT REQUIREMENT		
X" PAVT. STRUCT.	12' DRIVING LANES	VARIABLE SHOULDERS
SURFACE COURSE	X" SUPERPAVE TYPE SX (PG XX-XX OK)	X" SUPERPAVE TYPE SX (PG XX-XX OK)
BASE COURSE	X" SUPERPAVE TYPE SX (PG XX-XX OK)	X" SUPERPAVE TYPE SX (PG XX-XX OK)
	X" SUPERPAVE TYPE SX (PG XX-XX OK)	X" SUPERPAVE TYPE SX (PG XX-XX OK)



TYPICAL SECTION NO. 11
SH-199 MAINLINE - 45 MPH DESIGN SPEED
STA. 567+50.00 TO STA. 568+84.00

PAVEMENT REQUIREMENT	
X" PAVT. STRUCT.	DRIVING LANES
SURFACE COURSE	X" SUPERPAVE TYPE SX (PG XX-XX OK)

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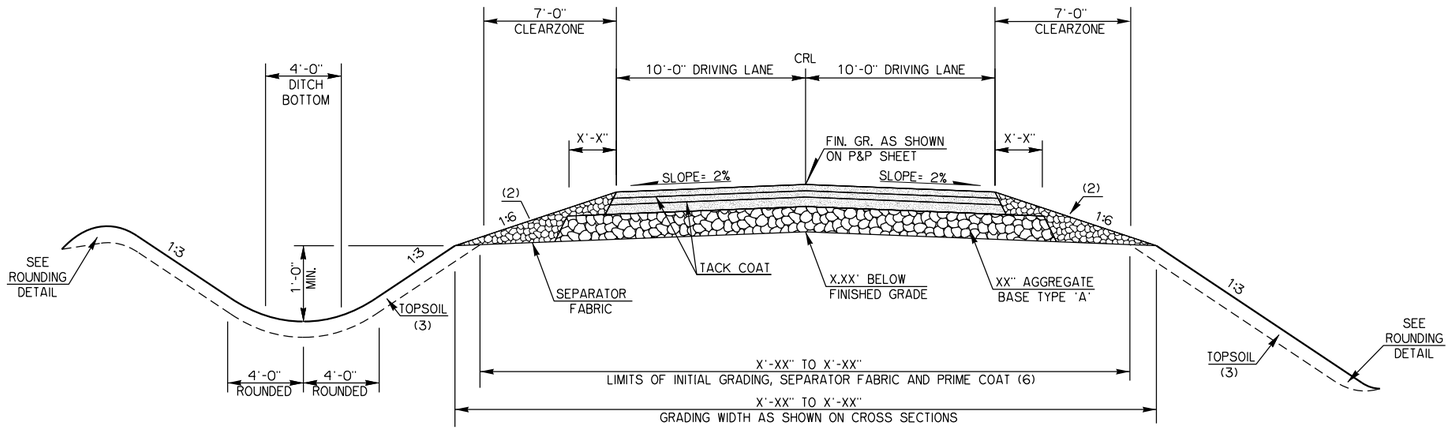
US-70 REALIGNMENT — MARSHALL COUNTY

TYPICAL SECTIONS
(SHEET 8 OF 9)

STATE JOB NO. 18835(04) — SHEET NO. 0009

OKLAHOMA DEPARTMENT OF TRANSPORTATION

REVISED
PROPOSED R/W
03/15/2022



TYPICAL SECTION NO. 12

WOLF STREET AND 10TH STREET CONNECTIONS
STA. 526+00.00 TO STA. 544+28.03

PAVEMENT REQUIREMENT	
X" PAVT. STRUCT.	10' DRIVING LANES & 12' TURN LANE
SURFACE COURSE	X" SUPERPAVE TYPE SX (PG XX-XX OK)
BASE COURSE	X" SUPERPAVE TYPE SX (PG XX-XX OK)
	X" SUPERPAVE TYPE SX (PG XX-XX OK)

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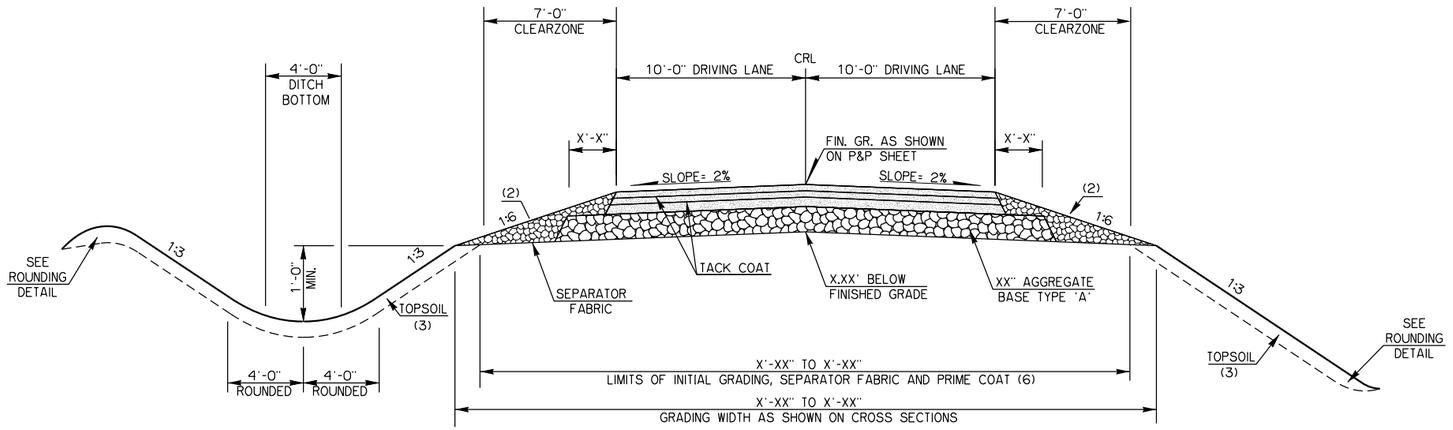
US-70 REALIGNMENT — MARSHALL COUNTY

TYPICAL SECTIONS
(SHEET 9 OF 9)

STATE JOB NO. 18835(04) — SHEET NO. 0010

OKLAHOMA DEPARTMENT OF TRANSPORTATION

REVISED
PROPOSED R/W
12/02/2021



TYPICAL SECTION NO. 12

WOLF STREET AND 10TH STREET CONNECTIONS
STA. 526+00.00 TO STA. 544+28.03

PAVEMENT REQUIREMENT	
X" PAVT. STRUCT.	10' DRIVING LANES & 12' TURN LANE
SURFACE COURSE	X" SUPERPAVE TYPE SX (PG XX-XX OK)
BASE COURSE	X" SUPERPAVE TYPE SX (PG XX-XX OK)
	X" SUPERPAVE TYPE SX (PG XX-XX OK)

NOTES:

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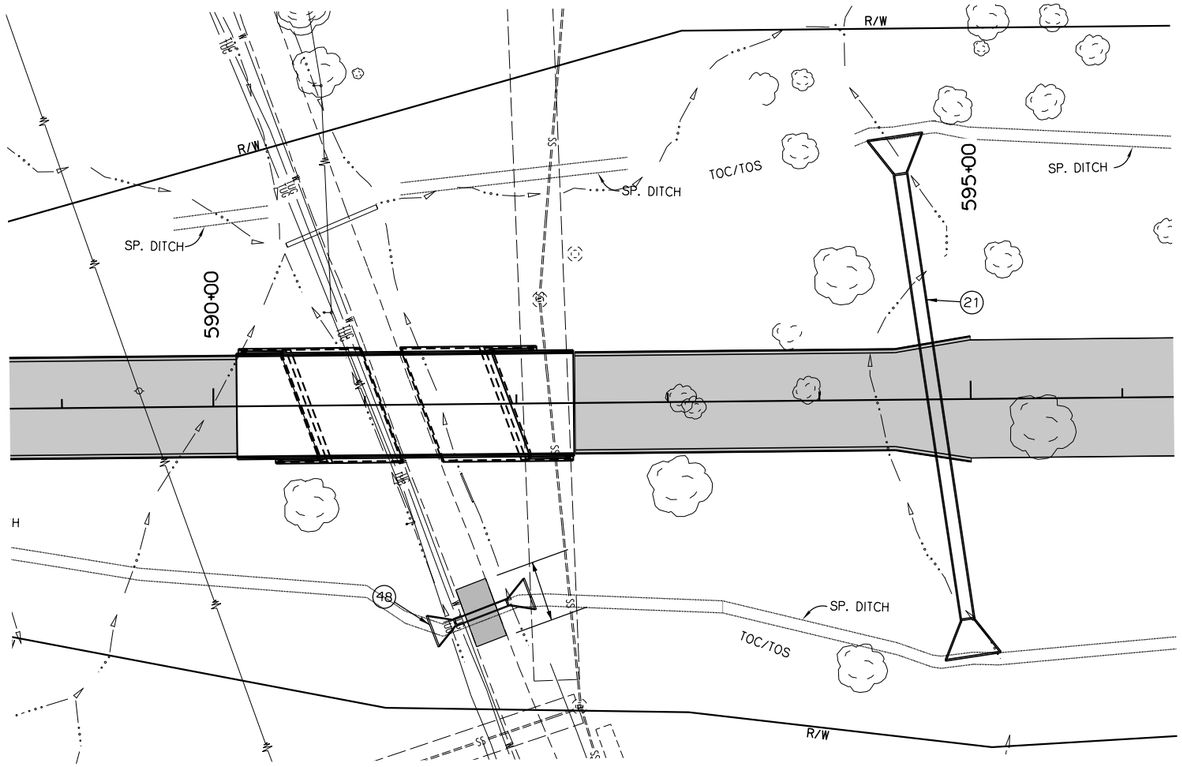
US-70 REALIGNMENT — MARSHALL COUNTY

TYPICAL SECTIONS
(SHEET 9 OF 9)

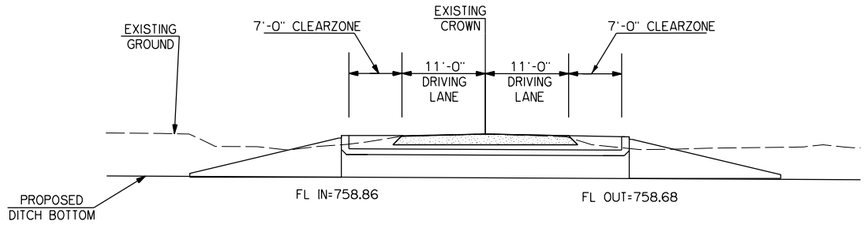
STATE JOB NO. 18835(04) — SHEET NO. 0010

OKLAHOMA DEPARTMENT OF TRANSPORTATION

REVISED
PROPOSED R/W
12/02/2021

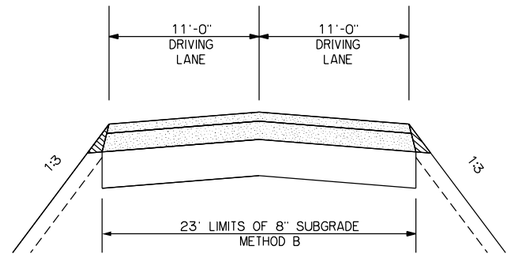


PLAN VIEW



CROSS SECTION VIEW
OF STR 48

PROFILE VIEW
OF 3'x4' RCB



PAVEMENT REQUIREMENT	
6" PAVT. STRUCT.	DRIVING LANES
SURFACE COURSE	2" SUPERPAVE TYPE S4 (PG 64-22 OK)
BASE COURSE	4" SUPERPAVE TYPE S3 (PG 64-22 OK)

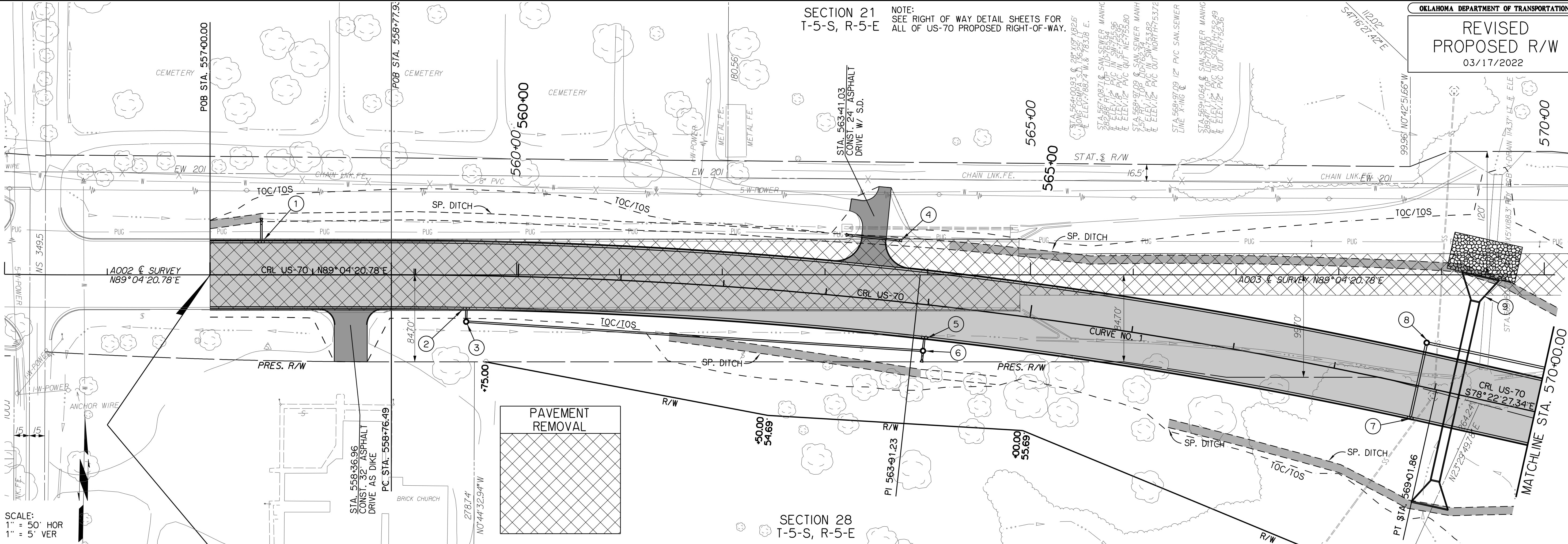
TYPICAL SECTION
OF ASPHALT PATCH
ON 3RD STREET

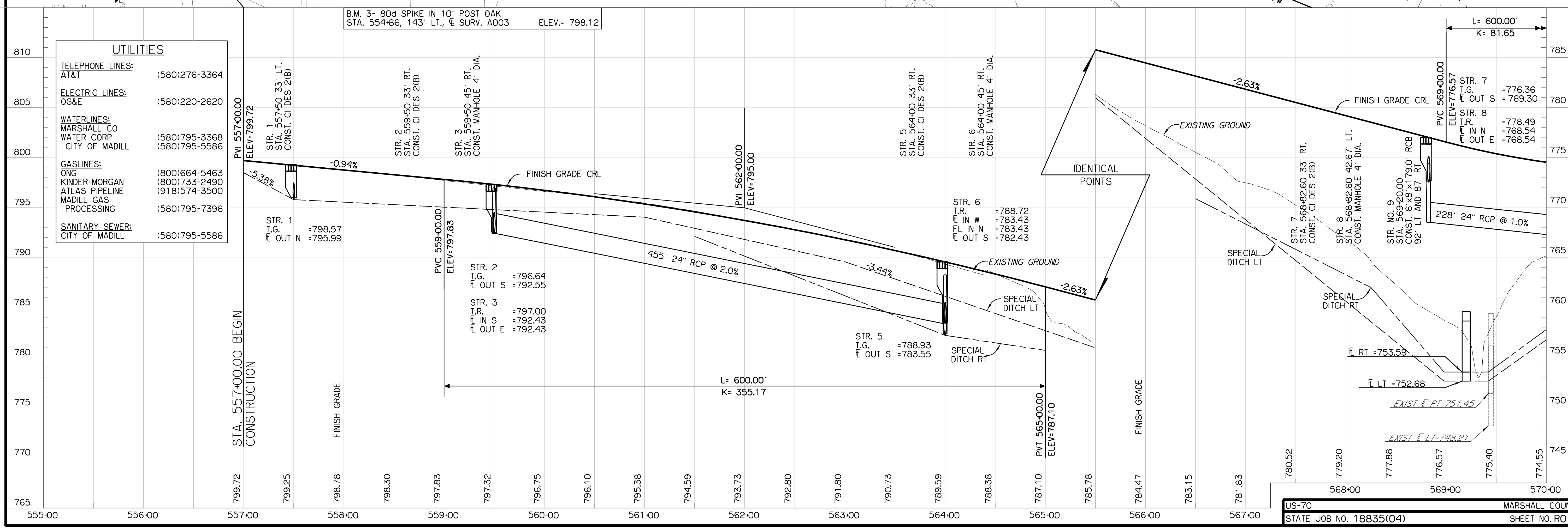
US-70 REALIGNMENT — MARSHALL COUNTY

DETAILS OF 3RD STREET STRUCTURE AND ASPHALT PATCH

STATE JOB NO. 18835(04) — SHEET NO. R001

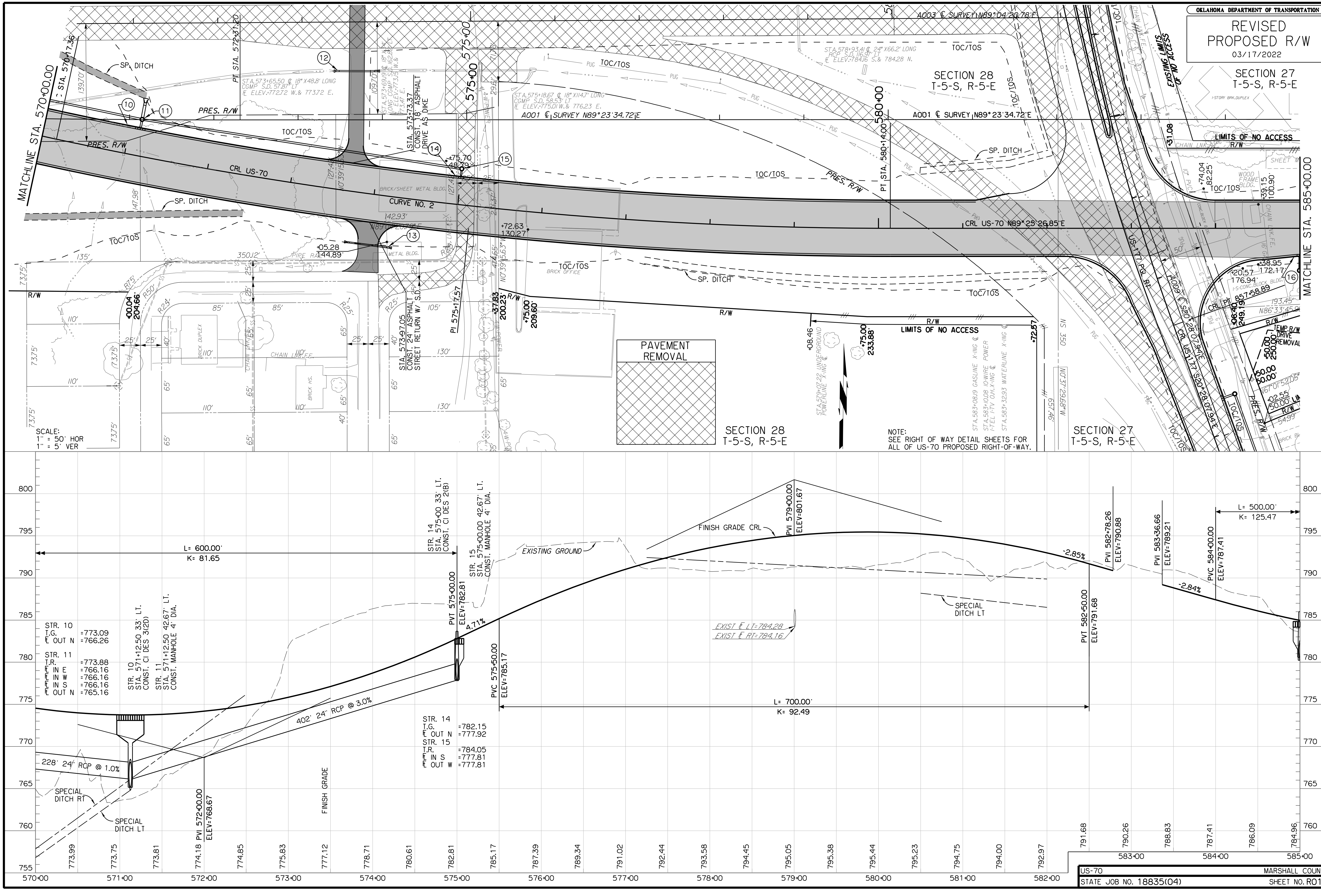
REVISED
PROPOSED R/W
03/17/2022


SECTION 21
T-5-S, R-5-E
NOTE:
SEE RIGHT OF WAY DETAIL SHEETS FOR
ALL OF US-70 PROPOSED RIGHT-OF-WAY.
CEMETERY
POB STA. 557+00.00
POB STA. 558+77.93
560+00
565+00
570+00
STA. 563+41.03
CONST. 24" ASPHALT
DRIVE W/ S.D.
EW 201
CHAIN LNK.FE.
STAT.Ȼ R/W
TOC/TOS
SP. DITCH
A002 Ȼ SURVEY
N89°04'20.78"E
CRL US-70 N89°04'20.78"E
CRL US-70
A003 Ȼ SURVEY N89°04'20.78"E
CURVE NO. 1
PRES. R/W
R/W
CRL US-70
S78°22'27.34"E
MATCHLINE STA. 570+00.00
PAVEMENT
REMOVAL
STA. 558+36.96
CONST. 32' ASPHALT
DRIVE AS DIKE
PC STA. 558+76.49
PI 563+91.23
PT STA. 569+01.86
BRICK CHURCH
ANCHOR WIRE
SECTION 28
T-5-S, R-5-E
SCALE:
1" = 50' HOR
1" = 5' VER


B.M. 3- 80d SPIKE IN 10" POST OAK
STA. 554+86, 143' LT., Ȼ SURV. A003 ELEV.= 798.12
PVI 557+00.00
ELEV=799.72
STR. 1
STA. 557+50 33' LT.
CONST. CI DES 2(B)
STR. 2
STA. 559+50 33' RT.
CONST. CI DES 2(B)
STR. 3
STA. 559+50 45' RT.
CONST. MANHOLE 4' DIA.
-0.94%
-5.38%
FINISH GRADE CRL
STR. 1
T.G. =798.57
Ȼ OUT N =795.99
PVC 559+00.00
ELEV=797.83
STR. 2
T.G. =796.64
Ȼ OUT S =792.55
STR. 3
T.R. =797.00
Ȼ IN S =792.43
Ȼ OUT E =792.43
PVI 562+00.00
ELEV=795.00
455' 24" RCP @ 2.0%
-3.44%
STR. 5
STA. 564+00 33' RT.
CONST. CI DES 2(B)
STR. 6
STA. 564+00 45' RT.
CONST. MANHOLE 4' DIA.
STR. 6
T.R. =788.72
Ȼ IN W =783.43
FL IN N =783.43
Ȼ OUT S =782.43
EXISTING GROUND
-2.63%
SPECIAL
DITCH LT
STR. 5
T.G. =788.93
Ȼ OUT S =783.55
SPECIAL
DITCH RT
L= 600.00'
K= 355.17
PVT 565+00.00
ELEV=787.10
IDENTICAL
POINTS
-2.63%
FINISH GRADE CRL
EXISTING GROUND
STR. 7
STA. 568+82.60 33' RT.
CONST. CI DES 2(B)
STR. 8
STA. 568+82.60 42.67' LT.
CONST. MANHOLE 4' DIA.
STR. NO. 9
STA. 569+20.00
CONST. 6'x8'x179.0' RCB
92' LT AND 87' RT
PVC 569+00.00
ELEV=776.57
STR. 7
T.G. =776.36
Ȼ OUT S =769.30
STR. 8
T.R. =778.49
Ȼ IN N =768.54
Ȼ OUT E =768.54
L= 600.00'
K= 81.65
228' 24" RCP @ 1.0%
SPECIAL
DITCH LT
SPECIAL
DITCH RT
Ȼ RT =753.59
Ȼ LT =752.68
EXIST Ȼ RT=751.45
EXIST Ȼ LT=748.21
STA. 557+00.00 BEGIN
CONSTRUCTION
FINISH GRADE
FINISH GRADE
799.72 799.25 798.78 798.30 797.83 797.32 796.75 796.10 795.38 794.59 793.73 792.80 791.80 790.73 789.59 788.38 787.10 785.78 784.47 783.15 781.83 780.52 779.20 777.88 776.57 775.40 774.55
555+00 556+00 557+00 558+00 559+00 560+00 561+00 562+00 563+00 564+00 565+00 566+00 567+00
568+00 569+00 570+00
810 805 800 795 790 785 780 775 770 765
785 780 775 770 765 760 755 750 745

UTILITIES

TELEPHONE LINES:	
AT&T	(580)276-3364
ELECTRIC LINES:	
OG&E	(580)220-2620
WATERLINES:	
MARSHALL CO WATER CORP	(580)795-3368
CITY OF MADILL	(580)795-5586
GASLINES:	
ONG	(800)664-5463
KINDER-MORGAN	(800)733-2490
ATLAS PIPELINE	(918)574-3500
MADILL GAS PROCESSING	(580)795-7396
SANITARY SEWER:	
CITY OF MADILL	(580)795-5586


OKLAHOMA DEPARTMENT OF TRANSPORTATION
REVISED PROPOSED R/W
03/17/2022
SECTION 28
T-5-S, R-5-E
SECTION 27
T-5-S, R-5-E
MATCHLINE STA. 570+00.00
MATCHLINE STA. 585+00.00
CRL US-70
CURVE NO. 2
CRL US-70 N89°25'26.85"E
A001 ℄ SURVEY N89°23'34.72"E
A003 ℄ SURVEY N89°04'20.78"E
US-177 PGL RT
CRL US-177 S20°28'07.94"E
EXISTING LIMITS OF NO ACCESS
LIMITS OF NO ACCESS
PRES. R/W
R/W
TOC/TOS
SP. DITCH
PI STA. 572+31.20
PI 575+17.57
PT STA. 580+14.00
STA. 573+73.37 CONST. 18' ASPHALT DRIVE AS DIKE
STA. 573+97.05 CONST. 24' ASPHALT STREET RETURN W/ S.D.
STA. 573+65.50 ℄ 18" X48.8' LONG CGMP S.D. 57.87' LT ℄ ELEV.=772.72 W.& 773.72 E.
STA. 575+18.67 ℄ 18" X114.7' LONG CGMP S.D. 58.53' LT ℄ ELEV.=775.01 W.& 776.23 E.
STA. 578+93.41 ℄ 24" X66.2' LONG RCP S.D. 116.97' LT ℄ ELEV.=784.16 S.& 784.28 N.
STA. 579+07.22 UNDERGROUND POWERLINE X-ING ℄
STA. 583+08.19 GASLINE X-ING ℄
STA. 583+10.08 10-WIRE POWER I-TEL I-TV O.H. X-ING ℄
STA. 583+32.93 WATERLINE X-ING ℄
PAVEMENT REMOVAL
SCALE: 1" = 50' HOR 1" = 5' VER
NOTE: SEE RIGHT OF WAY DETAIL SHEETS FOR ALL OF US-70 PROPOSED RIGHT-OF-WAY.
BRICK DUPLEX
BRICK HS.
BRICK OFFICE
METAL BLDG.
BRICK/SHEET METAL BLDG.
WOOD FRAME BLDG.
1-S-CONC.BLOCK BLDG.
1-STORY BRK.DUPLEX
TEMP. R/W DRIVE REMOVAL
L= 600.00' K= 81.65
L= 700.00' K= 92.49
L= 500.00' K= 125.47
PVI 572+00.00 ELEV=768.67
PVT 575+00.00 ELEV=782.81
PVC 575+50.00 ELEV=785.17
PVI 579+00.00 ELEV=801.67
PVT 582+50.00 ELEV=791.68
PVI 582+78.26 ELEV=790.88
PVI 583+36.66 ELEV=789.21
PVC 584+00.00 ELEV=787.41
4.71%
-2.85%
-2.84%
FINISH GRADE CRL
FINISH GRADE
EXISTING GROUND
SPECIAL DITCH RT
SPECIAL DITCH LT
EXIST ℄ LT=784.28
EXIST ℄ RT=784.16
228' 24" RCP @ 1.0%
402' 24" RCP @ 3.0%
STR. 10 STA. 571+12.50 33' LT. CONST. CI DES 3(2D)
STR. 11 STA. 571+12.50 42.67' LT. CONST. MANHOLE 4' DIA.
STR. 14 STA. 575+00 33' LT. CONST. CI DES 2(B)
STR. 15 STA. 575+00.00 42.67' LT. CONST. MANHOLE 4' DIA.
STR. 10 T.G. =773.09 ℄ OUT N =766.26
STR. 11 T.R. =773.88 ℄ IN E =766.16 ℄ IN W =766.16 ℄ IN S =766.16 ℄ OUT N =765.16
STR. 14 T.G. =782.15 ℄ OUT N =777.92
STR. 15 T.R. =784.05 ℄ IN S =777.81 ℄ OUT W =777.81
773.99 773.75 773.81 774.18 774.85 775.83 777.12 778.71 780.61 782.81 785.17 787.39 789.34 791.02 792.44 793.58 794.45 795.05 795.38 795.44 795.23 794.75 794.00 792.97 791.68 790.26 788.83 787.41 786.09 784.96
570+00 571+00 572+00 573+00 574+00 575+00 576+00 577+00 578+00 579+00 580+00 581+00 582+00 583+00 584+00 585+00
US-70
MARSHALL COUNTY
STATE JOB NO. 18835(04)
SHEET NO. R016

OKLAHOMA DEPARTMENT OF TRANSPORTATION

REVISED PROPOSED R/W

03/17/2022

SECTION 27
T-5-S, R-5-E

PAVEMENT REMOVAL

MATCHLINE STA. 585+00.00

MATCHLINE STA. 600+00.00

CRL US-70 N89°25'26.85"E

AO01 ℄ SURVEY N89°23'34.72"E

LIMITS OF NO ACCESS

CONSTRUCT GUARDRAIL

SP. DITCH

TOC/TOS

40'-0" LONG ASPHALT PATCH

TEMP. R/W TO REMOVE DRIVE

20' Sewer Easement

30' Sewer Easement

PLAT: MADILL

SCALE:
1" = 50' HOR

NOTE:
SEE RIGHT OF WAY DETAIL SHEETS FOR ALL OF US-70 PROPOSED RIGHT-OF-WAY.

B.M. 7- "X" ON CONC. CURB, SWQ4007,(1) SURVEY BY ROBERTS UHLES, LS#1512 03/04/2002
STA 586+39, 221' LT., ℄ SURV. US-70, ELEV.= 777.24

B.M. 8- 80D SPIKE IN 20" POST OAK, SWQ4007(1) SURVEY BY ROBERT UHLES, LS#1512 03/04/2002
STA. 595+68, 161' LT., ℄ SURV. US-70, ELEV.= 754.52

US-70	MARSHALL COUNTY
STATE JOB NO. 18835(04)	SHEET NO. R017

OKLAHOMA DEPARTMENT OF TRANSPORTATION

REVISED
PROPOSED R/W
03/17/2022

SCALE:
1" = 50' HOR
1" = 5' VER

L= 500.00'
K= 125.47

STR. 16
STA. 585+00 33' RT.
CONST. CI DES 2(D)

STR. 17
STA. 585+00 50' RT.
CONST. MANHOLE 4' DIA.

STR. 18
STA. 587+54.17 33' LT.
CONST. CI DES 2(2D)

STR. 19
STA. 587+54.17 33' RT.
CONST. CI DES 2(2D)

STR. 20
STA. 587+54.17 50' RT.
CONST. MANHOLE 4' DIA.

PVT 589+00.00
ELEV=783.15

BRIDGE LENGTH = 139.96'

BEGIN BRIDGE
STA. 590+15.36

END BRIDGE
STA. 591+96.08

FINISH GRADE CRL

1.14%

FULL STA. 590+37.13
ELEVATION = 784.72'

FULL STA. 592+18.69
ELEVATION = 786.79'

L= 250.00'
K= 585.82

PVC 597+25.00
ELEV=792.57

PVI 598+50.00
ELEV=794.00

PVT 599+75.00
ELEV=795.96

1.57%

261' 24" RCP @ 3.0%

STR. 16
T.G. =784.25
℄ OUT S =780.58

STR. 17
T.R. =786.45
℄ IN N =780.23
℄ OUT E =780.23

PVI 586+50.00
ELEV=780.30

STR. 18
T.G. =781.42
℄ IN S =771.83
℄ OUT N =770.83

STR. 20
T.R. =779.80
℄ IN W =772.66
℄ OUT S =772.66

STR. 19
T.G.= 781.42
℄ IN S= 772.49
℄ OUT N= 772.49

PROPOSED BRIDGE 'A' - SINGLE SPAN (140') STEEL I-GIRDER
BRIDGE WITH 19°53'35" SKEW RIGHT FORWARD, 66'-0" CLEAR
ROADWAY AND CONCRETE RAILS (TR4) AT CRL STA. 591+26.60

STR. NO. 21
STA. 594+75.00
CONST. 6'x8'x298.0' RCB
SKEWED 10° RT FORWARD
150' LT AND 146' RT
℄ IN S 758.0'
℄ OUT N 755.8'

EXISTING GROUND

EXISTING GROUND

3.82%

SPECIAL
DITCH LT

STR. NO. 48
SEE DETAILS OF 3RD
STREET STRUCTURE AND
ASPHALT PATCH

SPECIAL
DITCH RT

SPECIAL
DITCH LT

SPECIAL
DITCH RT

SPECIAL
DITCH LT

℄ LT 745.8'

℄ RT 748.0'

FINISH GRADE

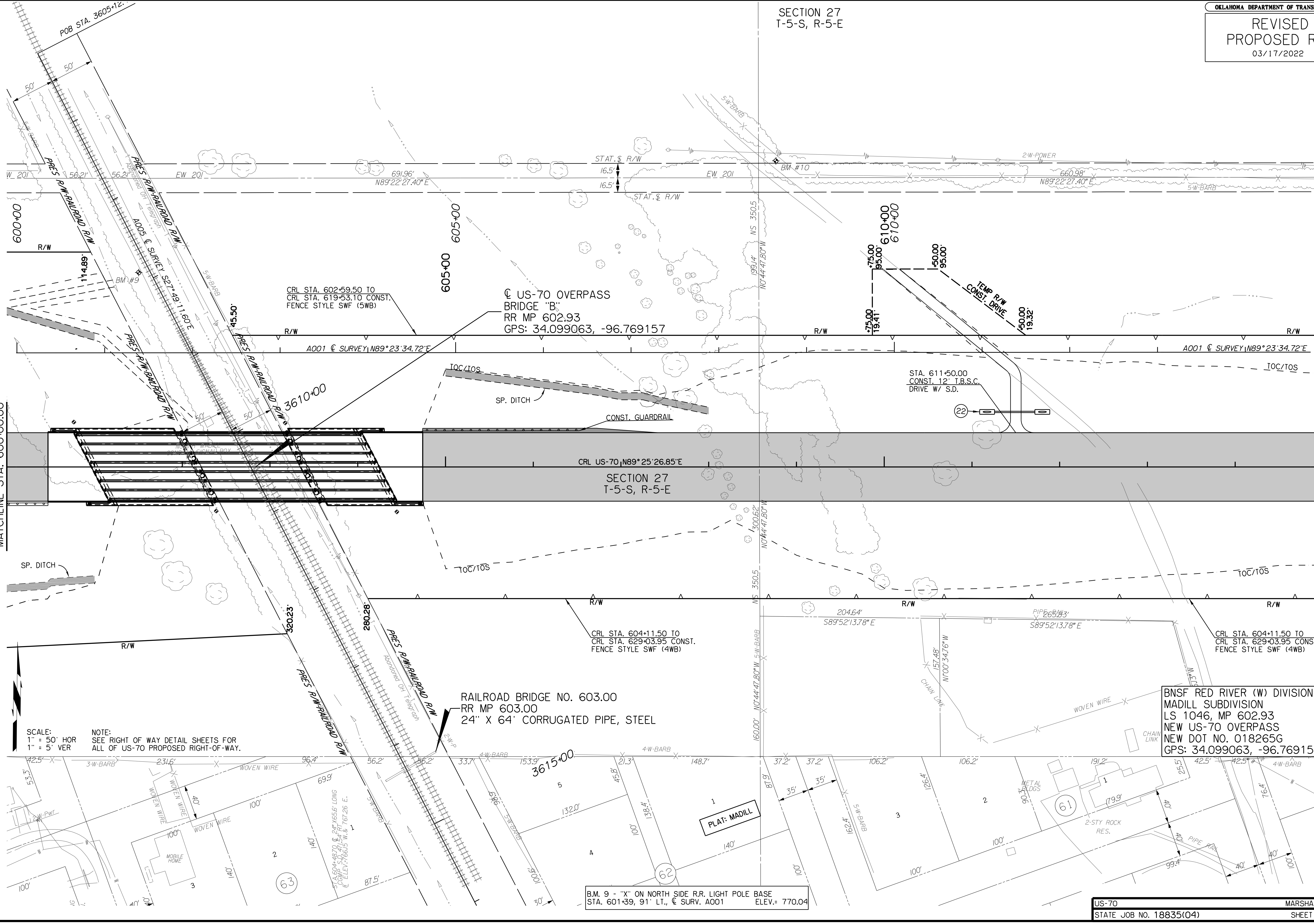
815 810 805 800 795 790 785 780 775 770 765 760 755 750 745 740 735 730 725

784.04 783.32 782.79 782.46 782.34 782.41 782.68 783.15 783.73 784.30 784.87 785.44 786.01 786.59 787.15 787.72 788.29 788.86 789.43 790.00 790.58 791.15 791.72 792.29 792.86 793.48 794.13 794.83 795.57 796.35

585+00 586+00 587+00 588+00 589+00 590+00 591+00 592+00 593+00 594+00 595+00 596+00 597+00 598+00 599+00 600+00

US-70 MARSHALL COUNTY
STATE JOB NO. 18835(04) SHEET NO. R018

REVISED PROPOSED R/W
03/17/2022


SECTION 27
T-5-S, R-5-E
POB STA. 3605+12.
STAT. S R/W
EW 201
691.96'
N89°22'27.40"E
660.98'
N89°22'27.40"E
BM #10
BM #9
2-W-POWER
5-W-BARB
600+00
605+00
610+00
PRES R/W-RAILROAD R/W
A005 ℄ SURVEY S27°49'11.60"E
CRL STA. 602+59.50 TO
CRL STA. 619+53.10 CONST.
FENCE STYLE SWF (5WB)
℄ US-70 OVERPASS
BRIDGE "B"
RR MP 602.93
GPS: 34.099063, -96.769157
TEMP R/W
CONST. DRIVE
A001 ℄ SURVEY N89°23'34.72"E
TOC/TOS
SP. DITCH
CONST. GUARDRAIL
STA. 611+50.00
CONST. 12' T.B.S.C.
DRIVE W/ S.D.
22
3610+00
CRL US-70 N89°25'26.85"E
SECTION 27
T-5-S, R-5-E
MATCHLINE STA. 600+00.00
MATCHLINE STA. 615+00.00
CRL STA. 604+11.50 TO
CRL STA. 629+03.95 CONST.
FENCE STYLE SWF (4WB)
RAILROAD BRIDGE NO. 603.00
RR MP 603.00
24" X 64' CORRUGATED PIPE, STEEL
BNSF RED RIVER (W) DIVISION
MADILL SUBDIVISION
LS 1046, MP 602.93
NEW US-70 OVERPASS
NEW DOT NO. 018265G
GPS: 34.099063, -96.769157
3615+00
PLAT: MADILL
2-STY ROCK RES.
MOBILE HOME
61
62
63

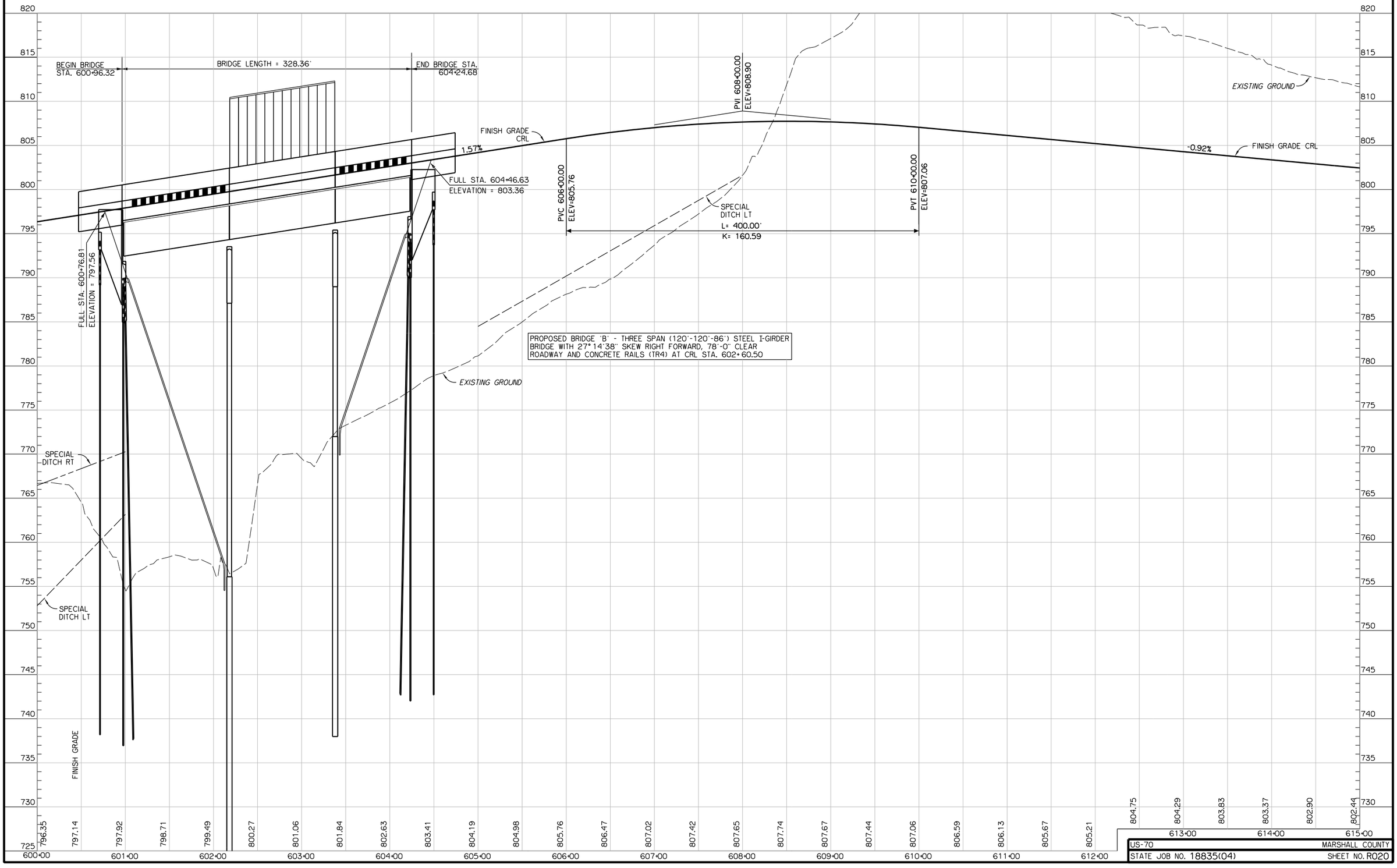
SCALE:
1" = 50' HOR
1" = 5' VER

NOTE:
SEE RIGHT OF WAY DETAIL SHEETS FOR ALL OF US-70 PROPOSED RIGHT-OF-WAY.

B.M. 9 - "X" ON NORTH SIDE R.R. LIGHT POLE BASE
STA. 601+39, 91' LT., ℄ SURV. A001 ELEV.= 770.04

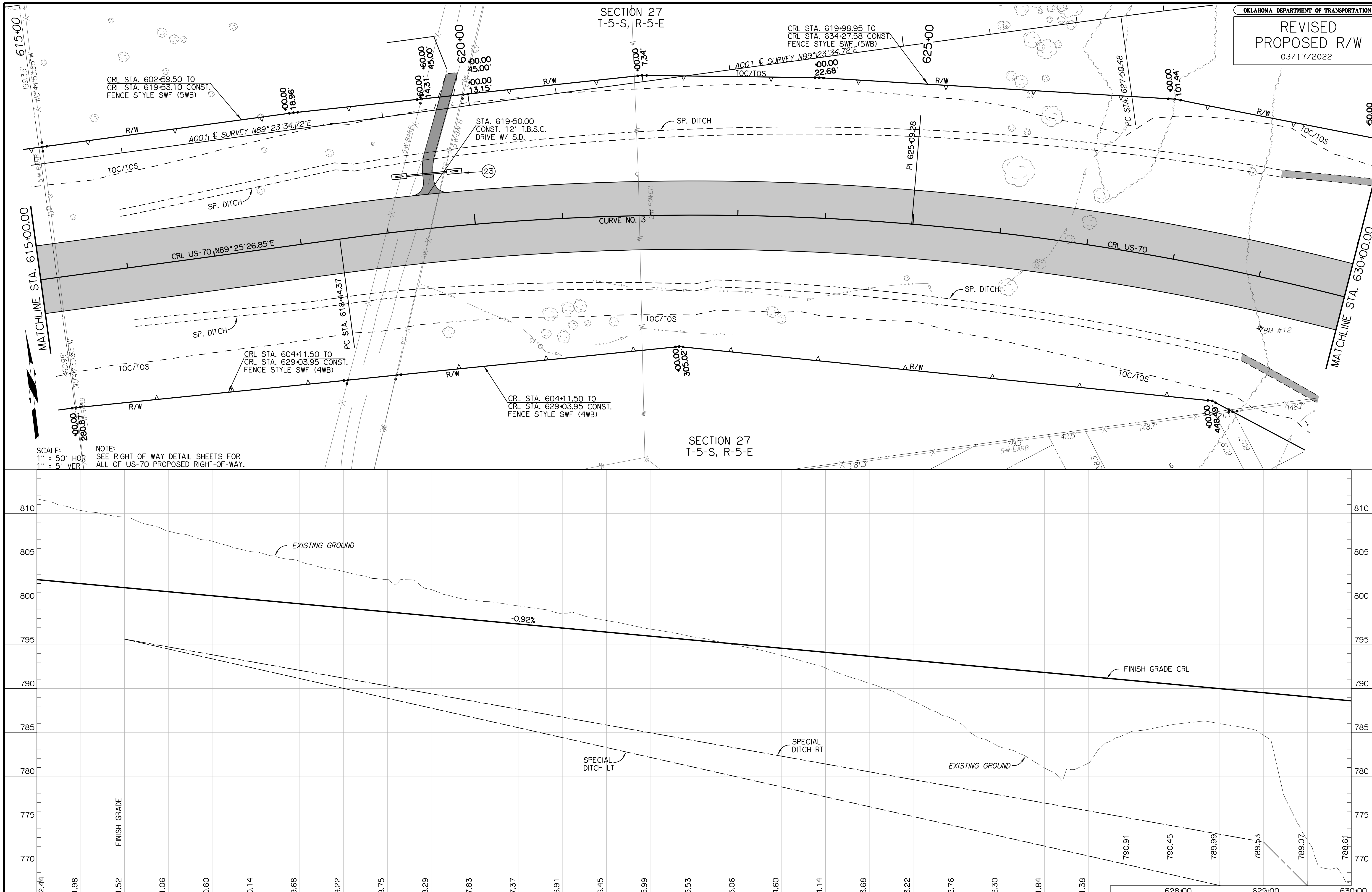
OKLAHOMA DEPARTMENT OF TRANSPORTATION

REVISED
PROPOSED R/W
03/17/2022



US-70 MARSHALL COUNTY

STATE JOB NO. 18835(04) SHEET NO. R020



US-70	MARSHALL COUNTY
STATE JOB NO. 18835(04)	SHEET NO. R021

OKLAHOMA DEPARTMENT OF TRANSPORTATION

REVISED
PROPOSED R/W
03/17/2022

SECTION 27
T-5-S, R-5-E

SECTION 26
T-5-S, R-5-E

PAVEMENT
REMOVAL

CRL STA. 619+98.95 TO
CRL STA. 634+27.58 CONST.
FENCE STYLE SWF (5WB)

CRL STA. 636+40.40 TO
CRL STA. 706+85.40 CONST.
FENCE STYLE SWF (5WB)

CRL STA. 637+30.30 TO
CRL STA. 706+67.00 CONST.
FENCE STYLE SWF (5WB)

CRL US-70 S65°34'55.77"E

MATCHLINE STA. 630+00.00

MATCHLINE STA. 645+00.00

LIMITS OF NO ACCESS

R/W

TOC/TOS

SP. DITCH

PRES. R/W

BM #14

B.M# 14- 2" ALUMINUM CAP IN FENO SPIKE
STA. 635+08 , 543' RT ELEV.= 781.68

SCALE:
1" = 50' HOR
1" = 5' VER

NOTE:
SEE RIGHT OF WAY DETAIL SHEETS FOR
ALL OF US-70 PROPOSED RIGHT-OF-WAY.

PVI 632+60.00
ELEV=786.21

PVC 631+16.00
ELEV=787.59

PVT 634+10.00
ELEV=783.45

PVC 640+50.00
ELEV=771.69

-0.90%

-1.84%

L= 300.00'
K= 327.64

L= 1000.00'
K= 352.36

FINISH GRADE CRL

EXIST ℄ RT=780.54

EXIST ℄ LT=779.56

EXISTING GROUND

SPECIAL
DITCH RT

SPECIAL
DITCH LT

STR. NO. 24
STA. 630+25.00
CONST. 4'X4'X218' RCB
116' LT AND 102' RT
FL IN S 761.5'
FL OUT N 760.00'

℄ RT 761.5'

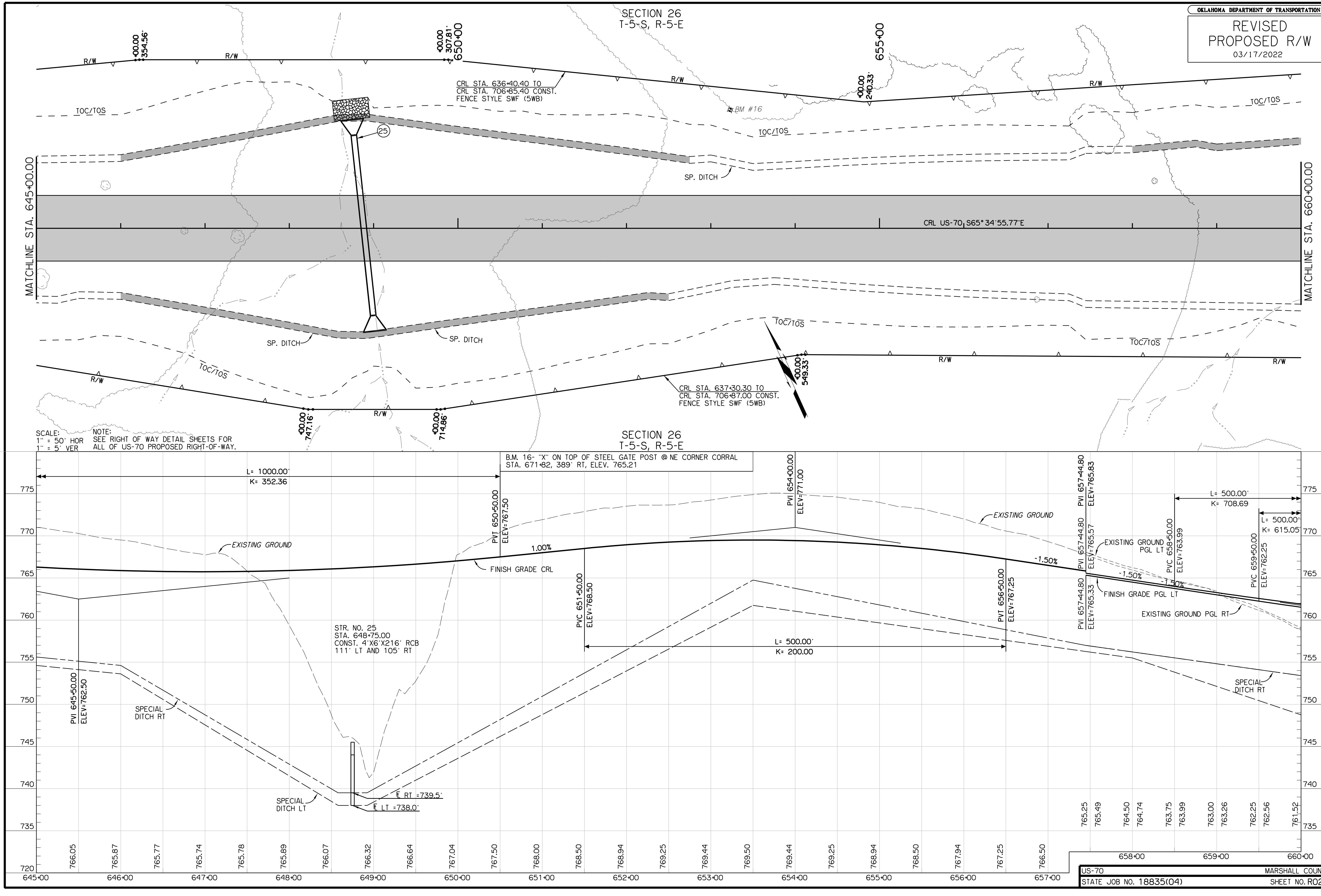
℄ LT 760.0'

FINISH GRADE

630+00	631+00	632+00	633+00	634+00	635+00	636+00	637+00	638+00	639+00	640+00	641+00	642+00	643+00	644+00	645+00
788.61	788.15	787.69	787.20	786.64	786.00	785.29	784.50	783.64	782.72	781.80	780.88	779.96	779.04	778.12	777.20	776.28	775.37	774.45	773.53	772.61	771.69	770.81	769.99	769.25	768.58	767.98	767.45	767.00	766.61	766.29

795 790 785 780 775 770 765 760 755 750

US-70 MARSHALL COUNTY
STATE JOB NO. 18835(04) SHEET NO. R022



OKLAHOMA DEPARTMENT OF TRANSPORTATION
REVISED
PROPOSED R/W
03/17/2022
SECTION 26
T-5-S, R-5-E
+00.00
354.56'
+00.00
307.81'
650+00
655+00
+00.00
240.33'
R/W
TOC/TOS
CRL STA. 636+40.40 TO
CRL STA. 706+85.40 CONST.
FENCE STYLE SWF (5WB)
BM #16
25
SP. DITCH
MATCHLINE STA. 645+00.00
MATCHLINE STA. 660+00.00
CRL US-70 S65° 34' 55.77"E
CRL STA. 637+30.30 TO
CRL STA. 706+87.00 CONST.
FENCE STYLE SWF (5WB)
+00.00
549.33'
+00.00
747.16'
+00.00
714.86'
SCALE:
1" = 50' HOR
1" = 5' VER
NOTE:
SEE RIGHT OF WAY DETAIL SHEETS FOR
ALL OF US-70 PROPOSED RIGHT-OF-WAY.
B.M. 16- "X" ON TOP OF STEEL GATE POST @ NE CORNER CORRAL
STA. 671+82, 389' RT, ELEV. 765.21
L= 1000.00'
K= 352.36
PVT 650+50.00
ELEV=767.50
PVI 654+00.00
ELEV=771.00
PVI 657+44.80
ELEV=765.83
L= 500.00'
K= 708.69
L= 500.00'
K= 615.05
EXISTING GROUND
1.00%
FINISH GRADE CRL
PVC 651+50.00
ELEV=768.50
PVT 656+50.00
ELEV=767.25
-1.50%
PVI 657+44.80
ELEV=765.57
EXISTING GROUND
PGL LT
PVC 658+50.00
ELEV=763.99
PVC 659+50.00
ELEV=762.25
-1.50%
-1.50%
PVI 657+44.80
ELEV=765.33
FINISH GRADE PGL LT
EXISTING GROUND PGL RT
STR. NO. 25
STA. 648+75.00
CONST. 4'X6'X216' RCB
111' LT AND 105' RT
L= 500.00'
K= 200.00
PVI 645+50.00
ELEV=762.50
SPECIAL
DITCH RT
SPECIAL
DITCH LT
FL RT =739.5'
FL LT =738.0'
SPECIAL
DITCH RT
775
770
765
760
755
750
745
740
735
720
766.05
765.87
765.77
765.74
765.78
765.89
766.07
766.32
766.64
767.04
767.50
768.00
768.50
768.94
769.25
769.44
769.50
769.44
769.25
768.94
768.50
767.94
767.25
766.50
765.25
765.49
764.50
764.74
763.75
763.99
763.00
763.26
762.25
762.56
761.52
645+00
646+00
647+00
648+00
649+00
650+00
651+00
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653+00
654+00
655+00
656+00
657+00
658+00
659+00
660+00
US-70
MARSHALL COUNTY
STATE JOB NO. 18835(04)
SHEET NO. R023

OKLAHOMA DEPARTMENT OF TRANSPORTATION

REVISED
PROPOSED R/W
03/17/2022

SECTION 26
T-5-S, R-5-E

A001 ℄ SURVEY S51°43'14.59"E

00.00 51.07

00.00 22.96

NS 3515

M-K PIPELINE

665+00

00.00 12.55

670+00

CRL STA. 636+40.40 TO
CRL STA. 706+85.40 CONST.
FENCE STYLE SWF (5WB)

00.00 149.20

675+00

R/W

TOC/TOS

BRUSH

SP. DITCH

MATCHLINE STA. 660+00.00

MATCHLINE STA. 675+00.00

CRL US-70 S65°34'55.77"E

BM #17

PC STA. 672+06.39

A001 ℄ SURVEY S51°43'14.60"E

NO 7418F

N73°17'W

CRL STA. 637+30.30 TO
CRL STA. 706+87.00 CONST.
FENCE STYLE SWF (5WB)

00.00 68.53

PC STA. 677+18.26

SCALE:
1" = 50' HOR
1" = 5' VER

NOTE:
SEE RIGHT OF WAY DETAIL SHEETS FOR
ALL OF US-70 PROPOSED RIGHT-OF-WAY.

B.M. 17- 6# REBAR STAKE
STA. 664+52, 304' RT., ℄ SURV. A001 ELEV.= 759.82

L= 500.00'
K= 708.69

L= 500.00'
K= 615.05

PVI 661+00.00
ELEV=760.24

PVT 663+50.00
ELEV= 758.25

PVT 664+50.00
ELEV= 756.78

PVI 662+00.00
ELEV=758.50

FINISH GRADE PGL RT

FINISH GRADE PGL LT

EXISTING GROUND PGL LT

SPECIAL
DITCH RT

SPECIAL
DITCH LT

SP. DITCH
MEDIAN

-0.79%

-0.34%

-0.69%

-0.69%

-1.03%

-0.67%

L= 200.00'
K= 1566.53

PVC 672+00.00
ELEV=751.50

PVI 673+00.00
ELEV=750.70

PVT 674+00.00
ELEV= 750.03

EXISTING GROUND PGL RT

SPECIAL
DITCH INTERMIN

775
770
765
760
755
750
745
740
735
730

660+00 761.90
661+00 760.83 761.27 760.18 760.68
662+00 759.58 760.13 759.01 759.60
663+00 758.48 759.12 758.00 758.67
664+00 757.55 758.25 757.15 757.86
665+00 756.78 757.46 756.44 757.06
666+00 756.09 756.66 755.75 756.27
667+00 755.41 755.87 755.06 755.47
668+00 754.72 755.07 754.38 754.68
669+00 754.03 754.28 753.69 753.88
670+00 753.34 753.48 753.00 753.09
671+00 752.66 752.69 752.31 752.29
672+00 751.97 751.89 751.63 751.50
673+00 751.28 751.11 750.94 750.73
674+00 750.59 750.38 750.25 750.03
675+00 749.91 749.70 749.56

US-70 MARSHALL COUNTY
STATE JOB NO. 18835(04) SHEET NO. R024

OKLAHOMA DEPARTMENT OF TRANSPORTATION

REVISED
PROPOSED R/W
03/17/2022

SECTION 26
T-5-S, R-5-E

MATCHLINE STA. 675+00.00

MATCHLINE STA. 690+00.00

CRL US-70 CURVE NO. 4

680+00

685+00

690+00

+00.00
350.28'

+00.00
370.6'

+50.00
293.18'

+00.00
317.37'

+00.00
18.21'

+00.00
1.1.72'

R/W

TOC/TOS

SP. DITCH

EW 201.5

5W-BARB

BRUSH

AOO1 ℄ SURVEY

CRL STA. 636+40.40 TO
CRL STA. 706+85.40 CONST.
FENCE STYLE SWF (5WB)

CRL STA. 637+30.30 TO
CRL STA. 706+87.00 CONST.
FENCE STYLE SWF (5WB)

SECTION 26
T-5-S, R-5-E

NOTE:
SEE RIGHT OF WAY DETAIL SHEETS FOR
ALL OF US-70 PROPOSED RIGHT-OF-WAY.

SCALE:
1" = 50' HOR
1" = 5' VER

L= 500.00'
K= 299.78

L= 500.00'
K= 294.28

PVC 675+50.00
ELEV=749.03

PVC 675+50.00
ELEV=749.22

PVI 678+00.00
ELEV=747.37

PVI 678+00.00
ELEV=747.50

PVT 680+50.00
ELEV= 749.87

PVT 680+50.00
ELEV= 750.03

1.00% 1.01%

PVC 683+00.00
ELEV=752.37

PVC 683+00.00
ELEV=752.56

K= 370.47
L= 900.00'

L= 900.00'
K= 367.46

PVI 687+50.00
ELEV=756.87

PVI 687+50.00
ELEV=757.11

FINISH GRADE PGL LT

FINISH GRADE PGL RT

EXISTING GROUND PGL LT

EXISTING GROUND PGL RT

SPECIAL DITCH RT

SPECIAL DITCH LT

INTERIM SPECIAL DITCH RT

INTERIM SPECIAL DITCH LT

STR. NO. 26
STA. 677+50.00
CONST. 6'X6'X258' RCB
140' LT AND 118' RT

℄ RT=724.82'

℄ LT=720.5'

765 760 755 750 745 740 735 730 725 720

749.37 749.22 749.03 748.92 748.74 748.70 748.53 748.57 748.41 748.52 748.37 748.56 748.41 748.69 748.53 748.89 748.74 749.19 749.03 749.57 749.41 750.03 749.87 750.53 750.37 751.04 750.87 751.55 751.37 752.05 751.87 752.56 752.37 753.03 752.84 753.43 753.23 753.77 753.57 754.04 753.83 754.24 754.03 754.37 754.16 754.43 754.22 754.43 754.21 754.35 754.14 754.21 754.00 754.01 753.79 753.73 753.51 753.38 753.17 752.97

675+00 676+00 677+00 678+00 679+00 680+00 681+00 682+00 683+00 684+00 685+00 686+00 687+00 688+00 689+00 690+00

US-70 MARSHALL COUNTY

STATE JOB NO. 18835(04) SHEET NO. R025

OKLAHOMA DEPARTMENT OF TRANSPORTATION

REVISED
PROPOSED R/W
03/17/2022

SECTION 26
T-5-S, R-5-E

CRL STA. 636+40.40 TO
CRL STA. 706+85.40 CONST.
FENCE STYLE SWF (5WB)

STA.695+42.02 4-WIRE POWER O.H. XING ℄

PI 695+42.38

+00.00 320.69

+00.00 309.69

695+00

+76.65 297.78

R/W

TOC/TOS

700+00

+00.00 244.75

+00.00 202.68

LIMITS OF NO ACCESS

705+00

CRL US-70 CURVE NO. 4

MATCHLINE STA. 690+00.00

MATCHLINE STA. 705+00.00

SP. DITCH

A001 ℄ SURVEY

+00.00 8.69

+00.00 44.61

+00.00 100.93 PT STA.170435.52

CRL STA. 637+30.30 TO
CRL STA. 706+87.00 CONST.
FENCE STYLE SWF (5WB)

SECTION 26
T-5-S, R-5-E

NOTE:
SEE RIGHT OF WAY DETAIL SHEETS FOR
ALL OF US-70 PROPOSED RIGHT-OF-WAY.

SCALE:
1" = 50' HOR
1" = 5' VER

K= 370.47
L= 900.00'

PVT 692+00.00
ELEV= 750.44

PVC 693+00.00
ELEV=749.01

L= 600.00'
K= 203.17

PVT 699+00.00
ELEV= 749.30

PVC 701+50.00
ELEV=753.11

L= 200.00'
K= 506.79

-1.44%
-1.43%

1.54%

1.52%

FINISH GRADE PGL LT

FINISH GRADE PGL RT

EXISTING GROUND PGL RT

EXISTING GROUND PGL LT

PVI 696+00.00
ELEV=744.73

PVI 702+50.00
ELEV=754.64

PVC 703+75.00
ELEV=756.80

L= 350.00'
K= 339.39

L= 400.00'
K= 282.84

PVT 692+00.00
ELEV= 750.64

SPECIAL
DITCH RT

INTERIM
SPECIAL
DITCH RT

SPECIAL
DITCH RT

L= 900.00'
K= 367.46

℄ RT =739.4'
℄ LT =738.7'

STR. NO. 27
STA. 695+00.00
CONST. 3'X6'X176.5' RCB
98.25' LT AND 78.25' RT

PVC 693+00.00
ELEV=749.20

PVI 696+00.00
ELEV=744.89

PVT 699+00.00
ELEV= 749.50

K= 201.76
L= 600.00'

765 760 755 750 745 740 735 730 725 720

752.76 752.49 752.28 751.94 751.74 751.33 751.12 750.64 750.44 749.92 749.73 749.20 749.01 748.55 748.36 748.01 747.83 747.60 747.42 747.32 747.14 747.16 746.98 747.12 746.94 747.21 747.03 747.42 747.24 747.75 747.57 748.21 748.02 748.79 748.60 749.50 749.30 750.27 750.06 751.03 750.83 751.80 751.59 752.57 752.35 753.34 753.11 754.11 753.90 754.88 754.74 755.64 755.62 756.41 756.56 757.17 757.47 757.87 758.30 758.49

690+00 691+00 692+00 693+00 694+00 695+00 696+00 697+00 698+00 699+00 700+00 701+00 702+00 703+00 704+00 705+00

US-70 MARSHALL COUNTY

STATE JOB NO. 18835(04) SHEET NO. R026

OKLAHOMA DEPARTMENT OF TRANSPORTATION

REVISED
PROPOSED R/W
03/17/2022

SECTION 26
T-5-S, R-5-E

SECTION 35
T-5-S, R-5-E

CRL STA. 636+40.40 TO
CRL STA. 706+85.40 CONST.
FENCE STYLE SWF (5WB)

LIMITS OF NO ACCESS

PROP R/W ON
JP 18835(09)

TOC/TOS

MATCHLINE STA. 705+00.00

545+00

A001 ℄ SURVEY

CRL US-70 S00°26'9.36"E

A001 ℄ SURVEY S0[illegible]26'09.36"E

A001 ℄ SURVEY S0°26'09.36"E

BM #23
751.320

PAVEMENT
REMOVAL

CRL STA. 637+30.30 TO
CRL STA. 706+87.00 CONST.
FENCE STYLE SWF (5WB)

SCALE:
1" = 50' HOR
1" = 5' VER

SECTION 26
T-5-S, R-5-E

SECTION 35
T-5-S, R-5-E

NOTE:
SEE RIGHT OF WAY DETAIL SHEETS FOR
ALL OF US-70 PROPOSED RIGHT-OF-WAY.

B.M. 23- DELINEATOR POST IN NORTH SH-199 RW FENCE
STA. 706+43.62, 1035' RT., ℄ SURV. SH-199 ELEV.=767.32

PVI 705+50.00
ELEV=760.39

PVI 705+50.00
ELEV=759.48

PVI 708+00.00
ELEV=761.66

PVI 708+00.00
ELEV=760.75

FINISH GRADE PGL RT

0.50%

0.50%

EXISTING GROUND PGL RT

EXISTING GROUND PGL LT

SPECIAL
DITCH RT

INTERIM
SPECIAL
DITCH RT

℄ RT =755.52'

℄ LT =751.25'

PVT 707+25.00
ELEV= 760.37

PVT 707+50.00
ELEV= 761.40

L= 350.00'
K= 339.39
L= 400.00'
K= 282.84

STR. NO. 28
STA. 706+75.00
CONST. 24"x194.95' RCP
92' LT AND 103' RT

STA. 708+00.00 END
CONSTRUCTION

759.04 759.03 759.69 759.51 760.25 759.91 760.72 760.23 761.11 760.49 761.40 760.75 761.66 761.00 761.91 761.25 762.16 761.45 762.36

705+00 706+00 707+00 708+00 709+00 710+00 711+00 712+00 713+00 714+00 715+00 716+00 717+00 718+00 719+00 720+00

US-70 MARSHALL COUNTY

STATE JOB NO. 18835(04) SHEET NO. R027

OKLAHOMA DEPARTMENT OF TRANSPORTATION

REVISED
PROPOSED R/W
03/17/2022

SEC 22
T-5-S, R-5-E

SEC 21
T-5-S, R-5-E

SCALE:
1" = 50' HOR
1" = 5' VER

NOTE:
SEE RIGHT OF WAY DETAIL SHEETS FOR
ALL OF US-70 PROPOSED RIGHT-OF-WAY.

STA. 845+00.00 BEGIN CONSTRUCTION US-177

PVI 845+00.00
ELEV=766.05

PVI 848+17.50
ELEV= 775.37

PVC 848+50.00
ELEV= 776.49

PVI 850+00.00
ELEV= 781.68

PVT 851+50.00
ELEV= 785.61

PVC 852+03.86
ELEV=787.65

PVC 852+25.00
ELEV= 787.57

PVI 853+53.86
ELEV=792.25

PVI 853+75.00
ELEV= 791.50

PVT 855+03.86
ELEV= 791.34

PVI 855+20.00
ELEV=791.24

PVT 855+25.00
ELEV= 790.60

3.07%
3.46%
2.62%
-0.61%

FINISH GRADE CRL
EXISTING CRL
SPECIAL DITCH RT
EXIST RT. E ELEV.= 771.38
EXIST RT. E ELEV.= 771.38

L= 300.00'
K= 358.23

L= 300.00'
K= 93.20

L= 300.00'
K= 81.62

766.05 767.58 769.12 770.65 772.19 773.72 775.26 776.49 776.79 778.19 778.32 779.81 779.86 781.36 781.39 782.85 782.93 784.26 784.46 785.61 785.99 786.92 787.53 788.19 788.93 789.23 790.03 790.01 790.82 790.51 791.31 790.75 791.49 790.72 791.36 790.45 790.15 789.85

842+00 843+00 844+00 845+00 846+00 847+00 848+00 849+00 850+00 851+00 852+00 853+00 854+00 855+00 856+00

800 795 790 785 780 775 770 765 760 755

US-177 MARSHALL COUNTY
STATE JOB NO. 18835(04) SHEET NO. R028

OKLAHOMA DEPARTMENT OF TRANSPORTATION

REVISED PROPOSED R/W

03/17/2022

SEC 27
T-5-S, R-5-E

SEC 28
T-5-S, R-5-E

NOTE:
SEE RIGHT OF WAY DETAIL SHEETS FOR ALL OF US-70 PROPOSED RIGHT-OF-WAY.

SCALE:
1" = 50' HOR
1" = 5' VER

MATCHLINE STA. 856+00.00

CRL US-70 N89°25'57"E 189.44'

N20°28'07.94"W

S20°28'07.95"E 40.00'

LIMITS OF NO ACCESS 214.26'

TEMP. R/W & DRIVE REMOVAL

CRL PT 857+58.89

CRL US-177 S20°28'07.94"E

177 PGL RT

RANDOLPH STREET

FIRST STREET

STA. 861+08.46 CONST. 24" CONCRETE DRIVE

STA. 861+75.38 CONST. 24" CONCRETE DRIVE

CRL POE 862+10.03

POE STA. 867+10.39

METAL BUILDING AUTO SALES

SONIC DRIVE

2.5" PIPE RAIL

CONVENIENCE STORE

HOTEL

WATER FEATURE

EXISTING LIMITS OF NO ACCESS

NS 350

N0°37'29.68"W 657.46'

EXISTING CRL

-0.60%

FINISH GRADE CRL

92.4' 43"X26" RCPA @ 0.6%

149' 24" RCP @ 1.0%

66' 36"X22" RCPA @ 0.5%

95' 36"X22" RCPA @ 0.5%

1.23%

L= 200.00'
K= 109.19

PVC 860+00.00 ELEV= 787.75

PVI 861+00.00 ELEV= 787.15

PVT 862+00.00 ELEV= 788.38

PVI 862+09.61 ELEV= 788.50

EXIST. ℄ ELEV.= 783.66

EXIST. ℄ ELEV.= 781.98

EXIST. ℄ ELEV.= 784.08

EXIST. ℄ ELEV.= 782.45

EXIST. ℄ ELEV.= 781.87

EXIST. ℄ ELEV.= 781.74

EXIST. ℄ ELEV.= 783.61

EXIST. ℄ ELEV.= 771.27

STR. 31
T.G. =788.07
℄ OUT N =783.14

STR. 32
T.R. =789.39
℄ IN S =783.14
℄ OUT E =783.03

STR. 33
T.G. =785.64
℄ OUT NE =781.83

STR. 34
T.R. =787.68
℄ IN SW =781.28
℄ IN W =781.57
℄ IN E =781.62
℄ OUT N =781.28

STR. 35
T.R. =787.54
℄ IN S =781.95
℄ OUT W =781.95

STR. 36
T.G. =787.01
℄ IN S =782.00
℄ OUT N =782.00

STR. 37
T.G. =787.01
℄ IN S =781.23
℄ OUT N =782.23

STR. 38
T.R. =789.13
℄ IN E =782.25
℄ OUT N =782.25

STR. 39
T.G. =787.51
℄ OUT S =782.75

STR. 40
T.R. =789.53
℄ IN N =782.72
℄ OUT S =782.72

STR. 31 STA. 858+60.00 26' LT. CONST. CI DES 2(B)

STR. 32 STA. 858+60.00 40' LT. CONST. MANHOLE 4' DIA.

STR. 33 STA. 859+61.00 39' RT. CONST. GPI DES 1

STR. 34 STA. 858+60.00 40' LT. CONST. MANHOLE 5' DIA.

STR. 35 STA. 860+75.00 40' LT. CONST. MANHOLE 5' DIA.

STR. 36 STA. 860+75.00 27.49' LT. CONST. CI DES 2(2B)

STR. 37 STA. 860+75.00 22.85' RT. CONST. CI DES 3(2D)

STR. 38 STA. 860+75.00 30' RT. CONST. MANHOLE 5' DIA.

STR. 39 STA. 861+70.00 20.14' RT. CONST. CI DES 3(D)

STR. 40 STA. 861+70.00 30' RT. CONST. MANHOLE 5' DIA.

STA. 862+10.03 END CONSTRUCTION US-177

857+00 858+00 859+00 860+00 861+00 862+00 863+00 864+00 865+00 866+00 867+00 868+00 869+00 870+00 871+00

800 795 790 785 780 775 770 765 760 755

US-177 MARSHALL COUNTY

STATE JOB NO. 18835(04) SHEET NO. R029

OKLAHOMA DEPARTMENT OF TRANSPORTATION

REVISED PROPOSED R/W

03/17/2022

SECTION 27
T-5-S, R-5-E

SECTION 26
T-5-S, R-5-E

SCALE:
1" = 50' HOR
1" = 5' VER

B.M. 14- 2" ALUMINUM CAP IN FENO SPIKE
STA. 635+08, 543' LT., ℄ SURV. A001 ELEV.= 781.68

NOTE:
SEE RIGHT OF WAY DETAIL SHEETS FOR
ALL OF US-70 PROPOSED RIGHT-OF-WAY.

EXISTING ℄ SURVEY

FINISH GRADE ℄ SURVEY

STA. 44+09.05 BEGIN CONSTRUCTION SH-99

STA. 48+00.00 END CONSTRUCTION SH-99

PVI 44+09.05 Elev= 781.29

PVC 44+50.00 Elev= 780.26

PVI 46+00.00 Elev= 776.50

PVT 47+50.00 Elev= 767.92

PVI 49+00.00 Elev= 759.34

2.51%

-5.72%

L= 300.00'
K= 93.44

780.26 778.88 777.22 775.30 773.10 770.65 767.92 765.06 762.20 759.34

39+00 40+00 41+00 42+00 43+00 44+00 45+00 46+00 47+00 48+00 49+00 50+00 51+00 52+00 53+00 54+00

750 755 760 765 770 775 780 785 790 795

SH-99 MARSHALL COUNTY

STATE JOB NO. 18835(04) SHEET NO. R030

OKLAHOMA DEPARTMENT OF TRANSPORTATION

REVISED
PROPOSED R/W
03/17/2022

SCALE:
1" = 50' HOR
1" = 5' VER

B.M. 15- 8OD SPIKE IN EAST SIDE 17" RED OAK
STA. 644+77, 1018' RT., ℄ SURV. AOO1 ELEV.= 781.48

STA. 1+90.00 BEGIN CONSTRUCTION WOLF ST & 10TH ST CONNECTION

STA. 6+15.00 CONSTRUCTION WOLF ST & 10TH ST CONNECTION

STR. NO. 41
STA. 4+75.00
CONST. 2-24"X34" RCP W/ PCES
17' LT AND 17' RT

SH-99	MARSHALL COUNTY
STATE JOB NO. 18835(04)	SHEET NO. R031

OKLAHOMA DEPARTMENT OF TRANSPORTATION

REVISED PROPOSED R/W

03/17/2022

SEC 26
T-5-S, R-5-E

SEC 35
T-5-S, R-5-E

A006 ℄ SURVEY S44°1'11.1971"E

CRL SH-199

S 44°1'11.20" E

BM #AA
777.360

BM #BB
776.252

BM #22
777.815

PC STA. 528+71.86

℄ STA. 524+83.03 TO
℄ STA. 538+37.65 CONST.
FENCE STYLE SWF (5WB)

PC STA. 532+05.40

CRL SH-199 (CURVE NO. 1)

STA. 538+00.00
MATCHLINE

STA. 535+00.00
CONST. 12' T.B.S.C.
DRIVE W/ S.D.

10'X16' CATTLE GUARD

16' PIPE GATE

EW 202

PI 534+41.07

PI 534+96.07

GRAVEL

TOC/TOS

PRES. R/W

R/W

3.3' Waterline Easement

MARSHALL CO. WATER CORP.
2" PVC APPROX. 24" DEEP

MARSHALL Co. Water Corp.
2" PVC approx. 24" deep

AT&T Telephone
Ardmore, OK

Pond

Gravel

24" Bois D' Arc

Triple 8" Bois D' Arc

10" Elm

5-W-BARB

6-W-BARB

4-W-Power

2-W-POWER

1-W-Guy

TUG

TWG

PAVEMENT REMOVAL

SCALE:
1" = 50' HOR
1" = 5' VER

NOTE:
SEE RIGHT OF WAY DETAIL SHEETS FOR ALL OF US-70 PROPOSED RIGHT-OF-WAY.

B.M. AA- ////
STA. XXX+XX, XXXX' RT., ℄ SURV. 6 ELEV.= XXXX.XX

B.M. BB- XXXXX
STA. XXX+XX, XXXX' RT., ℄ SURV. A006 ELEV.= XXX.XX

B.M. 22- 80d SPIKE IN POWER POLE
STA. 706+37, 1035' RT., ℄ SURV. A001 ELEV.= 777.82

PVI 526+00.00
ELEV= 779.23

-0.13%

PVI 531+50.00
ELEV= 778.50

-0.76%

FINISH GRADE CRL

EXISTING CRL

PVC 530+25.00
ELEV= 778.67

PVT 532+75.00
ELEV= 777.54

L= 250.00'
K= 395.58

STA. 526+00.00 BEGIN
CONSTRUCTION SH-199

523+00	524+00	525+00	526+00	527+00	528+00	529+00	530+00	531+00	532+00	533+00	534+00	535+00	536+00	537+00	538+00
			779.23	779.16	779.10	779.03	778.96	778.90	778.83	778.77	778.70	778.62	778.50	778.30	778.05	777.73	777.35	776.97	776.59	776.21	775.82	775.44	775.06	774.68	774.29	773.91	773.53

790 785 780 775 770 765 760 755 750 745

SH-199 MARSHALL COUNTY
STATE JOB NO. 18835(04) SHEET NO. R032

OKLAHOMA DEPARTMENT OF TRANSPORTATION

REVISED
PROPOSED R/W
03/17/2022

SEC 26
T-5-S, R-5-E

SEC 25
T-5-S, R-5-E

SEC 35
T-5-S, R-5-E

SEC 36
T-5-S, R-5-E

MATCHLINE STA. 538+00.00

MATCHLINE STA. 553+00.00

PAVEMENT REMOVAL

SCALE:
1" = 50' HOR
1" = 5' VER

NOTE:
SEE RIGHT OF WAY DETAIL SHEETS FOR ALL OF US-70 PROPOSED RIGHT-OF-WAY.

B.M. 23- DELINEATOR POST IN NORTH SH 199 RW FENCE
STA. 708+43, 62' RT., ℄ SURV. A001 ELEV.= 757.32

B.M. 24- RR SPIKE IN POWER
STA. 708+90, 745'LT., ℄ SURV. A001 ELEV.= 761.39

PVC 538+87.50 ELEV= 772.86
PVI 540+00.00 ELEV= 772.00
PVC 541+37.50 ELEV= 767.33
PVT 541+12.50 ELEV= 768.18
PVI 542+50.00 ELEV= 763.50
PVT 543+62.50 ELEV= 762.15
PVT 543+85.78 ELEV= 761.87
PVT 545+23.78 ELEV= 760.21
PVC 545+37.50 ELEV= 760.05
PVI 546+75.00 ELEV= 758.40
PVT 548+12.50 ELEV= 760.54
PVI 551+00.00 ELEV= 765.00
PVC 549+25.00 ELEV= 762.28
PVT 552+75.00 ELEV= 757.90

L= 225.00'
K= 85.38

L= 225.00'
K= 102.27

L= 275.00'
K= 99.89

L= 350.00'
K= 62.41

-3.40%
-1.20%
-1.20%
1.55%
5.09%
6.65%

EXCEPTION
EXISTING CRL
FINISH GRADE CRL
SPECIAL DITCH RT
STR. NO. 44
STA. 546+50.00
CONST. 24'x111' RCP
58' LT AND 53' RT
EXIST. LT. ℄ ELEV.= 752.09
EXIST. RT. ℄ ELEV.= 750.21
℄ RT=750.0'
℄ LT=748.29'

762.97 762.55 761.72 760.49 758.87 756.89

773.15 772.76 772.15 771.26 770.07 768.59 766.91 765.39 764.12 763.09 762.31 761.70 761.10 760.50 759.91 759.50 759.33 759.42 759.76 760.35 761.12 761.89 762.62 763.00

538+00 539+00 540+00 541+00 542+00 543+00 544+00 545+00 546+00 547+00 548+00 549+00 550+00 551+00 552+00 553+00

740 745 750 755 760 765 770 775 780 785

SH-199 MARSHALL COUNTY
STATE JOB NO. 18835(04) SHEET NO. R033

OKLAHOMA DEPARTMENT OF TRANSPORTATION

REVISED
PROPOSED R/W
03/17/2022

SEC 25
T-5-S, R-5-E

555+00 555+00 560+00 560+00 565+00 565+00

℄ STA. 546+02.10 TO ℄ STA. 571+00.00
CONST. FENCE STYLE SWF (5WB)

℄ STA. 546+02.10 TO ℄ STA. 571+00.00
CONST. FENCE STYLE SWF (5WB)

MATCHLINE STA. 553+00.00

MATCHLINE STA. 569+00.00

R/W R/W R/W R/W

TOC/TOS TOC/TOS TOC/TOS

33' Waterline Easement

47

CURVE NO. 2

PRES.R/W

EW 202

33'

CURVE NO. 3

2640.69'

N 89°24'53.47" E

CRL SH-199 N 89°24'53.47" E

A006 ℄ SURVEY N 89°24'53.47" E

Gravel Gravel

8'x15' Cattle Guard

8'x15' Cattle Guard

Pond

PAVEMENT REMOVAL

SCALE:
1" = 50' HOR
1" = 5' VER

NOTE:
SEE RIGHT OF WAY DETAIL SHEETS FOR ALL OF US-70 PROPOSED RIGHT-OF-WAY.

SEC 36
T-5-S, R-5-E

570+00

50.00
115.00'

Oil Tanks

Dirt

7kV Power

Dirt

00.00

PRES.R/W

16' METAL GATE

EW 202

PIPE-CABLE

PRES.R/W

L= 500.00'
K= 156.72

STA. 567+50.00 END CONSTRUCTION AND BEGIN INCIDENTAL

STA. 569+84.00 END INCIDENTAL CONSTRUCTION

L= 300.00'
K= 73.55

-4.06%

-4.78%

PVC 554+41.11
ELEV= 751.17

PVI 557+41.11
ELEV= 745.12

0.02%

FINISH GRADE CRL

PVI 559+76.46
ELEV= 745.17

EXISTING CRL

PVI 555+91.11
ELEV= 745.08

10.0%

7.46%

℄ RT=737.60'

SPECIAL DITCH RT

℄ LT=736.50'

PVC 558+26.46
ELEV= 745.14

STR. NO. 47
STA. 557+25.00
CONST. 24"x82' RCP
45° LT AND 37° RT

L= 300.00'
K= 53.65

PVI 561+26.46
ELEV= 736.82

IDENTICAL POINTS

-5.57%

-5.57%

PVC 562+50.00
ELEV= 729.94

PVI 565+00.00
ELEV= 716.02

PVI 567+50.00
ELEV= 710.07

755 750 745 740 735 730 725 720 715 710

750 745 740 735 730 725 720 715 710 705

754.86 752.83 750.81 749.01 747.56 746.44 745.66 745.22 745.12 745.13 745.09 744.65 743.74 742.37 740.53 738.23 735.51 732.72 729.94 727.23 724.69 722.30 720.08 718.01 716.10 714.36 712.77 711.34 710.07

553+00 554+00 555+00 556+00 557+00 558+00 559+00 560+00 561+00 562+00 563+00 564+00 565+00 566+00 567+00 568+00

SH-199 MARSHALL COUNTY
STATE JOB NO. 18835(04) SHEET NO. R034

STATE OF OKLAHOMA
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED

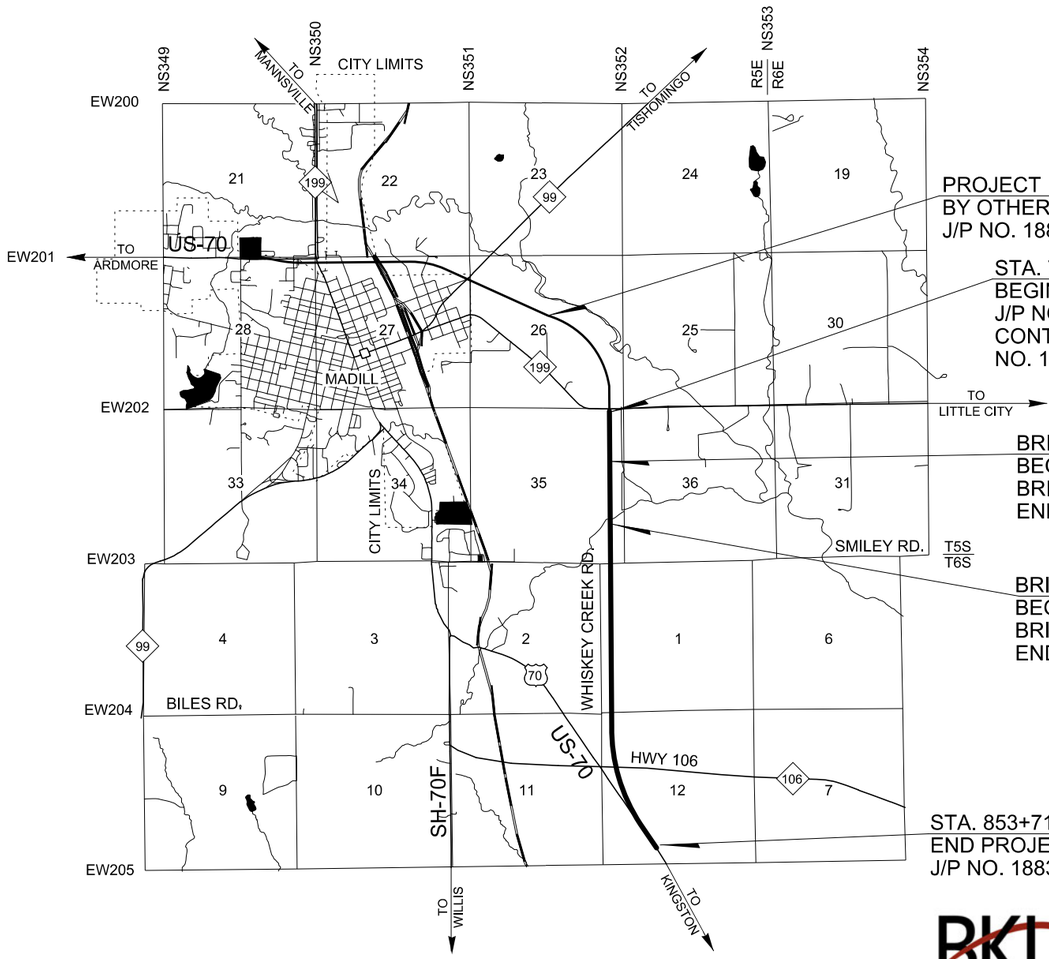
U.S. HIGHWAY

GRADING, DRAINAGE, BRIDGE AND SURFACING
US HIGHWAY 70

MARSHALL COUNTY

FEDERAL PROJECT NO. J-18835(009) 1
STATE JOB NO. 18835(09)
CONTROL SECTION NO. 70-48-04 1
BRIDGE 'A' NBI NO. 32023 LOCATION NO. 4804 0208 X (EXISTING NBI NA)
BRIDGE 'B' NBI NO. 32024 LOCATION NO. 4804 0250 X (EXISTING NBI NA)

INDEX OF SHEETS



PROJECT
BY OTHERS
J/P NO. 18835(04)

STA. 709+16.51
BEGIN PROJECT
J/P NO. 18835(09)
CONTROL SUB-SECTION
NO. 13.39

BRIDGE "A"
BEGIN BRIDGE "A" - STA 726+37.75
BRIDGE "A" LENGTH = 53.11'
END BRIDGE "A" - STA 726+90.86

BRIDGE "B"
BEGIN BRIDGE "B" - STA 746+83.00
BRIDGE "B" LENGTH = 34.00'
END BRIDGE "B" - STA 747+17.00

STA. 853+71.09
END PROJECT
J/P NO. 18835(09)

SEE SURVEY DATA SHEETS SWO 4007(2)
FOR SURVEY CONTROL

DESIGN DATA

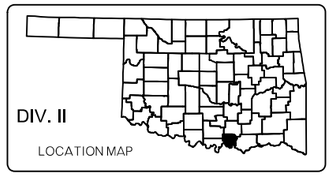
ADT 2017	= 4,465
ADT 2037	= 6,240
DHV (TWO-WAY)	= 624
K (DHV/AADT-TWO WAY)	= 10%
D (DIRECTIONAL DIST.)	= 54%
T (% DHV)	= 12%
T (% AADT)	= 15%
T³(% AADT)	= 9%
V	= 70 MPH
20 YR FLEX ESALS	= 3.61M

SCALES 1"

PLAN	1" = 100'	BRIDGE PLAN & ELEVATION	
PROFILE HOR.	1" = 100'	PLAN	1" = 20'
VER.	1" = 10'	PROFILE HOR.	1" = 20'
LAYOUT MAP	1" = 2,640'	VER.	1" = 1'

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 WELL
- DRAINAGE STRUCTURES - IN PLACE
- DRAINAGE STRUCTURES - NEW
- PRES. R/W — RIGHT-OF-WAY LINES - EXISTING
- R/W — RIGHT-OF-WAY LINES - NEW
- CONTROLLED ACCESS
- R/W — RIGHT-OF-WAY FENCE
- ASPHALT PAVEMENT - ROADWAY
- ASPHALT PAVEMENT - SHOULDER & DRIVEWAY
- TRAFFIC BOUND SURFACE COURSE
- PAVEMENT REMOVAL



2019 OKLAHOMA STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION GOVERN, APPROVED BY THE U.S. DEPARTMENT OF TRANSPORTATION, FEDERAL HIGHWAY ADMINISTRATION, DECEMBER 18, 2019.

PROJECT LENGTH BASED ON CRL STATIONING

ROADWAY LENGTH	14,348.78	FT.	2.718	MI.
BRIDGE LENGTH	87.12	FT.	0.017	MI.
PROJECT LENGTH			2.718	MI.

EQUATIONS : STA. 850+96.09 US-70 CRL = 178+00.00 CL SURVEY EXIST. US-70
EXCEPTIONS : NONE

UTILITY LOCATION NUMBERS

STATE-WIDE	1-800-522-6543
OUT-OF-STATE	1-800-654-8249
LOCAL	1-405-840-5032

THESE NUMBERS ARE TO BE USED FOR INFORMATION ON THE LOCATION OF ALL UNDERGROUND UTILITIES. CONTACT THESE NUMBERS PRIOR TO ANY EXCAVATION.

THESE PLANS ARE PRELIMINARY IN NATURE AND ARE NOT A FINAL, SIGNED AND SEALED SET OF DOCUMENTS.

OKLAHOMA DEPARTMENT OF TRANSPORTATION
REVISED PROPOSED R/W
1/31/2022

1 ADDED PROJECT & SECTION NUMBERS 1/31/2022

BKL ENGINEERS | ARCHITECTS
CA. 262 (PE) 6-30-2022
1623 E. 6TH STREET
TULSA, OKLAHOMA 74120
TEL: 918-835-9588
FAX: 918-835-9119
MAIL@BKLINC.COM

PREPARED BY:
BKL, INC.
FOR THE OKLAHOMA
DEPARTMENT OF TRANSPORTATION

OKLAHOMA Transportation

RYAN MAHAFFEY , P.E.
OKLA. REG. NO. 26866
DATE

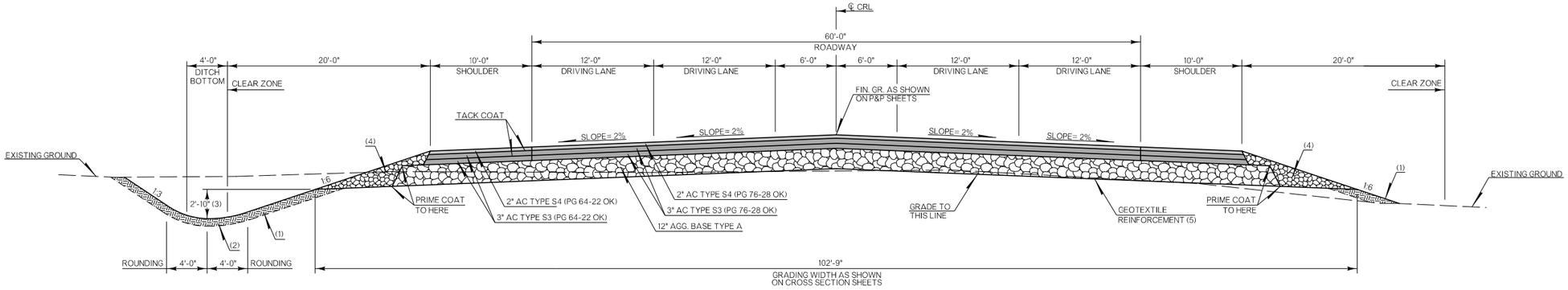
OKLAHOMA DEPARTMENT OF TRANSPORTATION	DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION
DATE APPROVED	DATE APPROVED
BY	BY
CHIEF ENGINEER	DIVISION ADMINISTRATOR

SWO 4007(2) PROJECT NO. 1 J1-8835(009)
COUNTY MARSHALL HIGHWAY US-70 SHEET NO. 0001

OKLAHOMA DEPARTMENT OF TRANSPORTATION

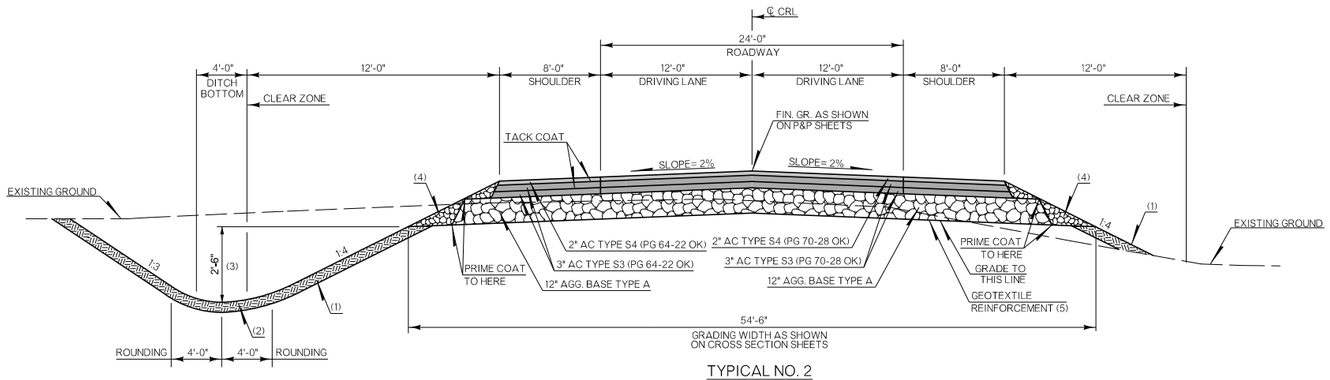
PROPOSED R/W

NOVEMBER 29, 2021



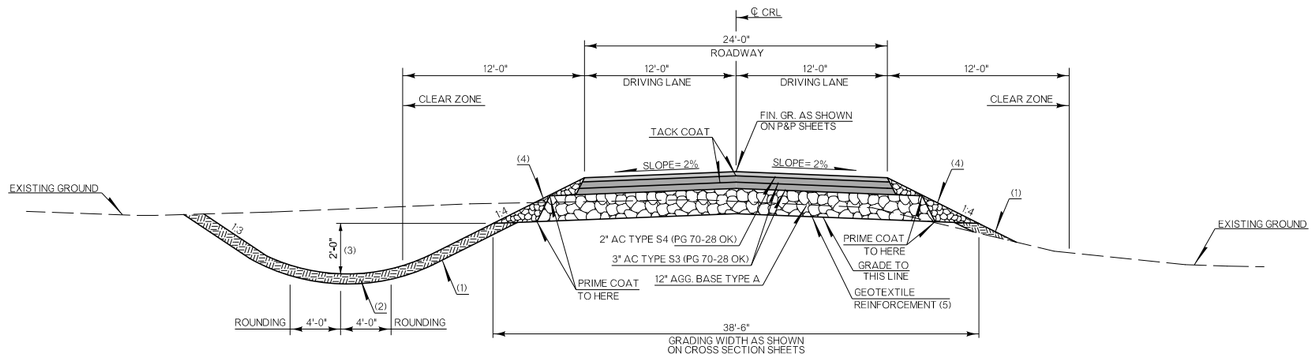
TYPICAL NO. 1

US-70
STA. 709+16.51 TO 853+70.96



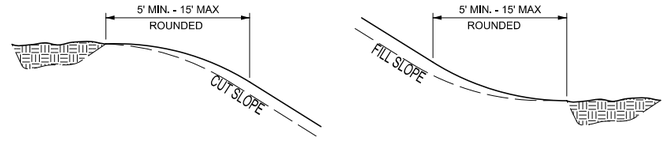
TYPICAL NO. 2

EX. US-70
STA. 200+12.00 TO 203+25.00



TYPICAL NO. 3

SMILEY RD
STA. 13+47.23 TO 24+00.00
WHISKEY CREEK RD
STA. 300+00.00 TO 304+00.00
STA. 400+00.00 TO 407+79.30
HWY 106
STA. 100+00.00 TO 107+96.69
STA. 108+78.22 TO 112+56.40



ROUNDING DETAIL

N.T.S.

NOTES:

(1) TOPSOIL NOTE:
THE CONTRACTOR SHALL STRIP ALL OF THE AVAILABLE TOPSOIL, APPROXIMATELY 5" THICK, STOCKPILE IT AND PLACE IT BACK ON THE SECTION IN ACCORDANCE WITH SECTION 205 OF THE STANDARD SPECIFICATION. RESERVED TOPSOIL SHALL BE SPREAD FIRST ON THE COMPLETED SLOPES OF THE CUT SECTIONS AND THE REMAINDER ON COMPLETED FILL SLOPES OR OTHER PRIORITY AREAS LOCATED BY THE ENGINEER. ALL ADDITIONAL COSTS ASSOCIATED WITH OPERATION SHALL BE INCLUDED IN THE PAY ITEM FOR TYPE SALVAGED TOPSOIL. LUMP SUM.

THE GRADING LINE AS SHOWN ON THE TYPICAL AND CROSS SECTIONS IS TO THE TOP OF THE TOPSOIL. EARTHWORK QUANTITIES WERE NOT ADJUSTED FOR SALVAGE AND THE TOPSOIL QUANTITY IS INCLUDED IN THE MASS LINE BALANCE.

(2) SEE ROUNDING DETAIL.

(3) DISTANCES ARE MEASURED VERTICALLY FROM THE EDGE OF THE FINISHED SHOULDER.

(4) TO BE BACKFILLED WITH TBSC TYPE "E" (0.72 TON/L.F.).

(5) SPECIFY MIRAFI RS380i OR APPROVED EQUAL.

DESIGN	JCD		OKLAHOMA DEPARTMENT OF TRANSPORTATION DESIGN DIVISION
DRAWN	MRW		
CHECKED	JCD		TYPICAL SECTION
APPROVED	RJM		
SQUAD	BKL, Inc.		JOB PIECE NO. 18835 (09) SHEET NO. 0002

OKLAHOMA DEPARTMENT OF TRANSPORTATION

PROPOSED
R/W
NOVEMBER 29, 2021

GENERAL NOTES BRIDGE 'A'

SPECIFICATIONS
COMPLY WITH THE REQUIREMENTS OF THE 2009 OKLAHOMA STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, EXCEPT AS MODIFIED BY THE PLANS AND SPECIAL PROVISIONS.

PERFORATED PIPE UNDERDRAIN AT WINGWALLS
INSTALLATION OF THE PERFORATED PIPE, COARSE PIPE UNDERDRAIN COVER MATERIAL AND SEPARATOR FABRIC SHALL BE INSTALLED AT THE RETAINING WALLS AS SHOWN ON SHEET NO. 123 RODENT SCREENS SHALL BE INSTALLED AT THE OUTLET END IN THE RCB WALL AS SHOWN ON STANDARD PUD-3.
ALL COSTS TO INSTALL THE PERFORATED PIPE UNDERDRAIN INCLUDING THE COST OF ALL PERFORATED PIPE, PIPE UNDERDRAIN COVER MATERIAL, SEPARATOR FABRIC, LABOR, EQUIPMENT AND INCIDENTALS SHALL BE INCLUDED IN THE UNIT PRICE BID PER LINEAR FOOT OF " 6" PERFORATED PIPE UNDERDRAIN ROUND."

CHAMPHER REQUIREMENT
PROVIDE ALL EXPOSED CONCRETE EDGES WITH A 1½ INCH CHAMFER UNLESS OTHERWISE SHOWN OR NOTED. USE SIZED LUMBER FOR ALL CHAMFER STRIPS.

CURTAIN WALL INTO ROCK
IF ROCK IS ENCOUNTERED BEFORE THE TOTAL DEPTH OF THE CURTAIN WALL HAS BEEN REACHED, THE CURTAIN WALL SHALL BE KEYED SIX INCHES INTO ROCK.

JP 18835(09)
0201 BRIDGE 'A'

SUMMARY OF QUANTITIES
TRIPLE 14' X 10' RCB X 208.00 LF

ITEM		DESCRIPTION	UNIT	QUANTITY	
				INTERIM	FINAL (ADD)
202(A)	1301	UNCLASSIFIED EXCAVATION	C.Y.	1,071.00	1,380.00
501(A)	1306	STRUCTURAL EXCAVATION UNCLASSIFIED	C.Y.	320.84	271.16
509(A)	1326	CLASS AA CONCRETE	C.Y.	1,107.80	845.10
511(A)	1332	REINFORCING STEEL	LB.	194,049.00	151,489.00
601(B)	1353	TYPE 1A PLAIN RIPRAP	TON	2,000.00	1,000.00
601(C)	1355	TYPE 1A FILTER BLANKET	TON	694.00	347.00
613(H)	6204	6" PERFORATED PIPE UNDERDRAIN ROUND	LF.	204.00	102.00

PAY QUANTITY NOTES (BRIDGE "A")

(BR-1) PAYMENT FOR THIS ITEM WILL BE BASED ON PLAN QUANTITIES ONLY. SEE SECTION 109.01B OF THE STANDARD SPECIFICATIONS.

(BR-2) "UNCLASSIFIED EXCAVATION"QUANTITY SHOWN INCLUDES A QUANTITY FOR EXCAVATION OF THE RCB IN ACCORDANCE WITH STANDARD SB1-4 PLUS QUANTITIES FOR WINGWALLS CALCULATED IN A SIMILAR MANNER.

(BR-3) "STRUCTURAL EXCAVATION UNCLASSIFIED"QUANTITY INCLUDES THE VOLUME OF THE BOTTOM SLAB OF THE RCB IN ACCORDANCE WITH STANDARD SB1-4 PLUS THE VOLUME OF THE FOOTINGS (APRONS) FOR WALLS.

OKLAHOMA DEPARTMENT OF TRANSPORTATION STANDARDS

BRIDGE

RCB-C3-14(2-12)
RCB-E3-H10-30-1
RCB-E3-H10-30-2
RCB-E3-H10-30-3
RCB-CW3-D6-30

ROADWAY

PUD-3-2
SBI-4-2

US-70 OVER GLASSES CREEK - BRIDGE "A"

DESIGN	SL	
DRAWN	MRW	
CHECKED	KM	
APPROVED	RJM	
SQUAD	BKL, Inc.	

OKLAHOMA DEPARTMENT OF TRANSPORTATION
DESIGN DIVISION

GENERAL NOTES & SUMMARY OF PAY QUANTITIES - BRIDGE 'A'

JOB PIECE NO. 18835 (09) SHEET NO. AB01

OKLAHOMA DEPARTMENT OF TRANSPORTATION

PROPOSED
R/W
NOVEMBER 29, 2021

GENERAL NOTES BRIDGE 'B'

SPECIFICATIONS
COMPLY WITH THE REQUIREMENTS OF THE 2009 OKLAHOMA STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, EXCEPT AS MODIFIED BY THE PLANS AND SPECIAL PROVISIONS.

PERFORATED PIPE UNDERDRAIN AT WINGWALLS
INSTALLATION OF THE PERFORATED PIPE, COARSE PIPE UNDERDRAIN COVER MATERIAL AND SEPARATOR FABRIC SHALL BE INSTALLED AT THE RETAINING WALLS AS SHOWN ON SHEET NO. 123 RODENT SCREENS SHALL BE INSTALLED AT THE OUTLET END IN THE RCB WALL AS SHOWN ON STANDARD PUD-3.
ALL COSTS TO INSTALL THE PERFORATED PIPE UNDERDRAIN INCLUDING THE COST OF ALL PERFORATED PIPE, PIPE UNDERDRAIN COVER MATERIAL, SEPARATOR FABRIC, LABOR, EQUIPMENT AND INCIDENTALS SHALL BE INCLUDED IN THE UNIT PRICE BID PER LINEAR FOOT OF " 6" PERFORATED PIPE UNDERDRAIN ROUND."

CHAMPHER REQUIREMENT
PROVIDE ALL EXPOSED CONCRETE EDGES WITH A 1½ INCH CHAMFER UNLESS OTHERWISE SHOWN OR NOTED. USE SIZED LUMBER FOR ALL CHAMFER STRIPS.

CURTAIN WALL INTO ROCK
IF ROCK IS ENCOUNTERED BEFORE THE TOTAL DEPTH OF THE CURTAIN WALL HAS BEEN REACHED, THE CURTAIN WALL SHALL BE KEYED SIX INCHES INTO ROCK.

JP 18835(09)
0201 BRIDGE 'B'

SUMMARY OF QUANTITIES
TRIPLE 10' X 10' RCB X 174.00 LF

ITEM		DESCRIPTION	UNIT	QUANTITY	
				INTERIM	FINAL (ADD)
202(A)	1301	UNCLASSIFIED EXCAVATION	C.Y.	447.00	459.00
501(A)	1306	STRUCTURAL EXCAVATION UNCLASSIFIED	C.Y.	188.00	196.00
509(A)	1326	CLASS AA CONCRETE	C.Y.	518.80	566.90
511(A)	1332	REINFORCING STEEL	LB.	76,704.00	84,375.00
601(B)	1353	TYPE 1A PLAIN RIPRAP	TON	1,740.00	722.00
601(C)	1355	TYPE 1A FILTER BLANKET	TON	405.00	174.00
613(H)	6204	6" PERFORATED PIPE UNDERDRAIN ROUND	LF.	164.00	82.00

PAY QUANTITY NOTES (BRIDGE "B")

(BR-1) PAYMENT FOR THIS ITEM WILL BE BASED ON PLAN QUANTITIES ONLY. SEE SECTION 109.01B OF THE STANDARD SPECIFICATIONS.

(BR-2) "UNCLASSIFIED EXCAVATION"QUANTITY SHOWN INCLUDES A QUANTITY FOR EXCAVATION OF THE RCB IN ACCORDANCE WITH STANDARD SB1-4 PLUS QUANTITIES FOR WINGWALLS CALCULATED IN A SIMILAR MANNER.

(BR-3) "STRUCTURAL EXCAVATION UNCLASSIFIED"QUANTITY INCLUDES THE VOLUME OF THE BOTTOM SLAB OF THE RCB IN ACCORDANCE WITH STANDARD SB1-4 PLUS THE VOLUME OF THE FOOTINGS (APRONS) FOR WALLS.

OKLAHOMA DEPARTMENT OF TRANSPORTATION STANDARDS

BRIDGE
RCB-C3-10(2-12)
RCB-E3-H10-0-1
RCB-E3-H10-0-2
RCB-CW3-D6-0

ROADWAY
PUD-3-2
SBI-4-2

US-70 OVER UNNAMED CREEK - BRIDGE "B"

DESIGN	SL	
DRAWN	MRW	
CHECKED	KM	
APPROVED	RJM	
SQUAD	BKL, Inc.	

OKLAHOMA DEPARTMENT OF TRANSPORTATION
DESIGN DIVISION

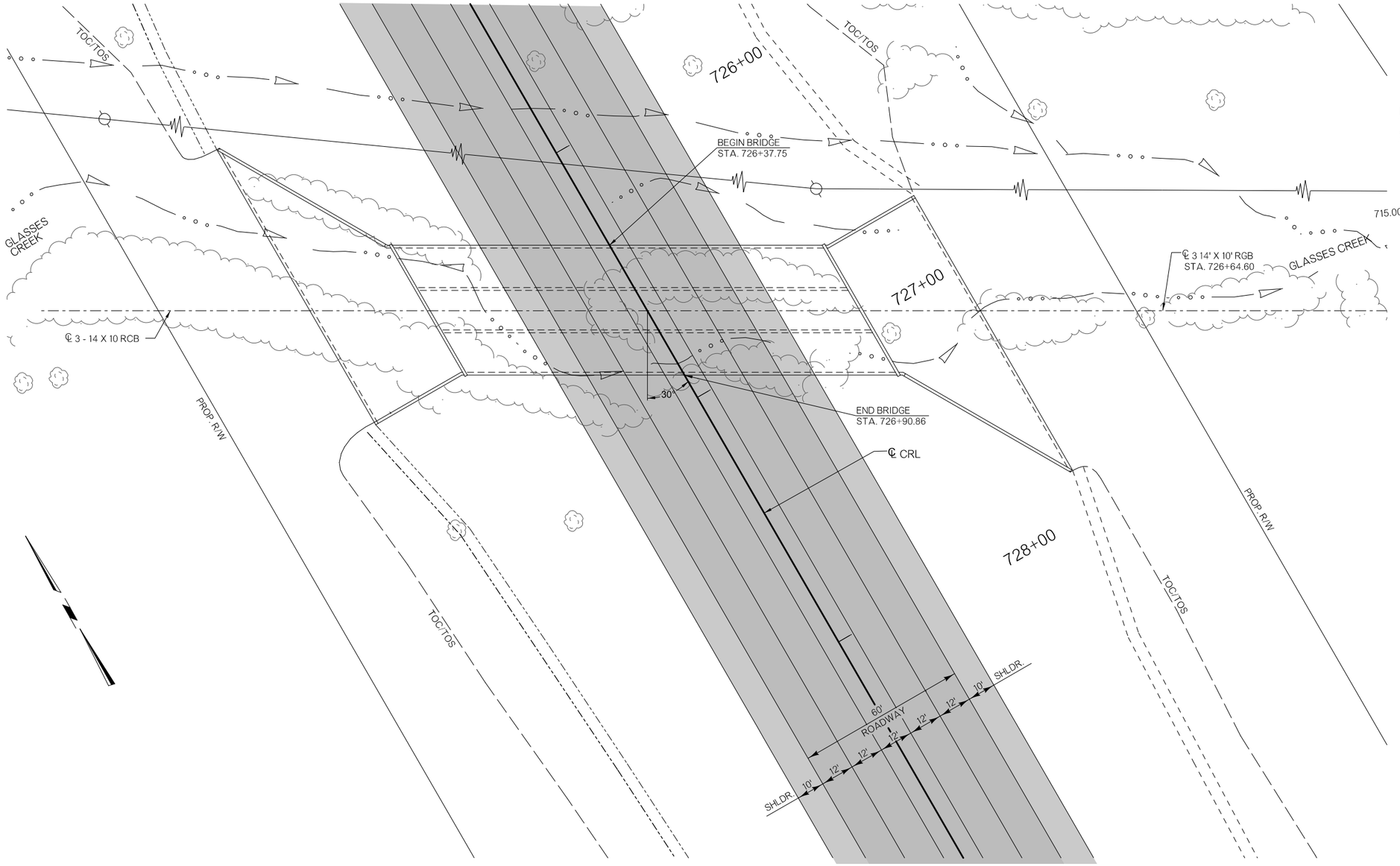
GENERAL NOTES & SUMMARY OF PAY QUANTITIES - BRIDGE 'B'

JOB PIECE NO. 18835 (09) SHEET NO. AB02

OKLAHOMA DEPARTMENT OF TRANSPORTATION

PROPOSED R/W

NOVEMBER 29, 2021



INDEX OF SHEETS

SHT. NO.	DESCRIPTION
AB01	GENERAL NOTES & PAY QUANTITIES (BRIDGE 'A')
B001	GENERAL PLAN AND ELEVATION (BRIDGE 'A')

OKLAHOMA DEPARTMENT OF TRANSPORTATION STANDARDS:

BRIDGE	ROADWAY
RCB-C3-14(2-12)	PUD-3-2
RCB-E3-H10-30-1	SB1-4-2
RCB-E3-H10-30-2	
RCB-E3-H10-30-3	
RCB-CW3-D6-30	

DESIGN DATA LRFD

DESIGN SPECIFICATIONS: 2007 EDITION OF AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS WITH INTERIMS FROM 2008 AND AWS SPECIFICATIONS

LOADING: HL93

CLASS A CONCRETE	F'C = 3,000 psi
CLASS AA CONCRETE	F'C = 4,000 psi
REINFORCING STEEL (GR. 60)	FY = 60,000 psi
OPERATING RATING HS60	

HYDRAULIC SUMMARY

PROPOSED STRUCTURE: ℄ CRL STATION 726+90.00
3 ~ 14' X 10' RCB, 30° SKEW, 44'-0" CLEAR ROADWAY
ROADWAY ELEVATION = 731.55

TOTAL DRAINAGE AREA = 2.16 SQ. MI.
CONTROLLED DA = 0.0 SQ. MI.
EFFECTIVE DA = 2.16 SQ. MI.

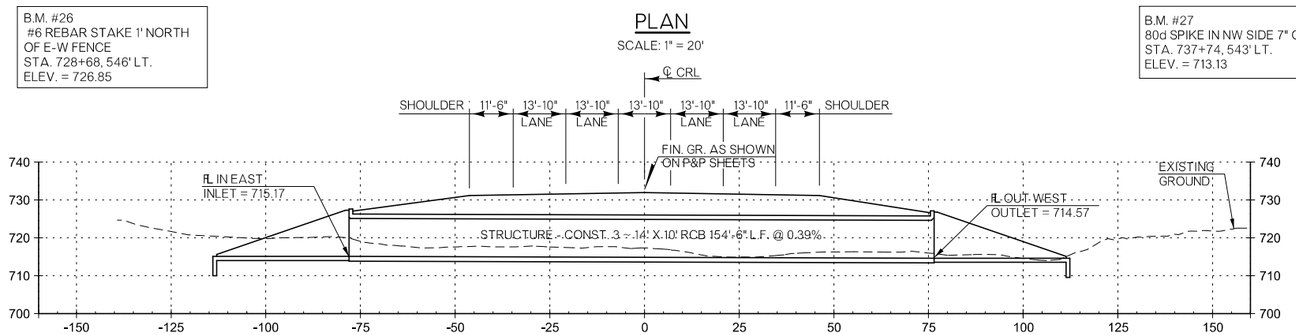
Q2 = 841 cfs	Q50 = 4,640 cfs
V2 = 4.59 fps	V50 = 12.69 fps
CHW2 = 722.19 ft.	CHW50 = 726.79 ft.
Q5 = 1,660 cfs	Q100 = 5,710 cfs
V5 = 6.87 fps	V100 = 11.21 fps
CHW5 = 723.37 ft.	CHW100 = 727.62 ft.
Q10 = 2.460 cfs	Q500 = 8,590 cfs
V10 = 8.70 fps	V500 = 8.64 fps
CHW10 = 724.10 ft.	CHW50 = 728.59 ft.
Q25 = 3,770 cfs	QOT = Q56.63 = 4781.81 cfs
V25 = 12.23 fps	
CHW25 = 725.08 ft.	

B.M. #26
#6 REBAR STAKE 1' NORTH OF E-W FENCE
STA. 728+68, 546' LT.
ELEV. = 726.85

B.M. #27
80d SPIKE IN NW SIDE 7" OAK
STA. 737+74, 543' LT.
ELEV. = 713.13

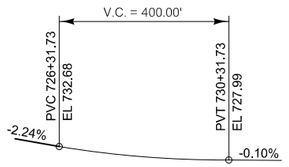
PLAN

SCALE: 1" = 20'



PROFILE

SCALE: 1" = 20'



C.R.L. PROFILE DATA

US-70 OVER GLASSES CREEK - BRIDGE "A"

DESIGN	JCD	
DRAWN	MRW	
CHECKED	JCD	
APPROVED	RSM	
SQUAD	BKL, Inc.	

OKLAHOMA DEPARTMENT OF TRANSPORTATION
DESIGN DIVISION

GENERAL PLAN AND ELEVATION

℄ STATION 726+64.60, 30° SKEW LT. FWD.
CONSTRUCT 3 ~ 14' X 10' RCB OVER GLASSES CREEK
60' CLR. ROADWAY

JOB PIECE NO. 18835 (09) SHEET NO. B001

OKLAHOMA DEPARTMENT OF TRANSPORTATION

PROPOSED R/W

NOVEMBER 29, 2021

INDEX OF SHEETS

SHT. NO.	DESCRIPTION
AB02	GENERAL NOTES & PAY QUANTITIES (BRIDGE 'B')
B002	GENERAL PLAN AND ELEVATION (BRIDGE 'B')

OKLAHOMA DEPARTMENT OF TRANSPORTATION STANDARDS:

BRIDGE	ROADWAY
RCB-C3-10(2-12)	PUD-3-2
RCB-E3-H10-0-1	SB1-4-2
RCB-E3-H10-0-2	
RCB-CW3-D6-0	

DESIGN DATA LRFD

DESIGN SPECIFICATIONS: 2007 EDITION OF AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS WITH INTERIMS FROM 2008 AND AWS SPECIFICATIONS

LOADING: HL93

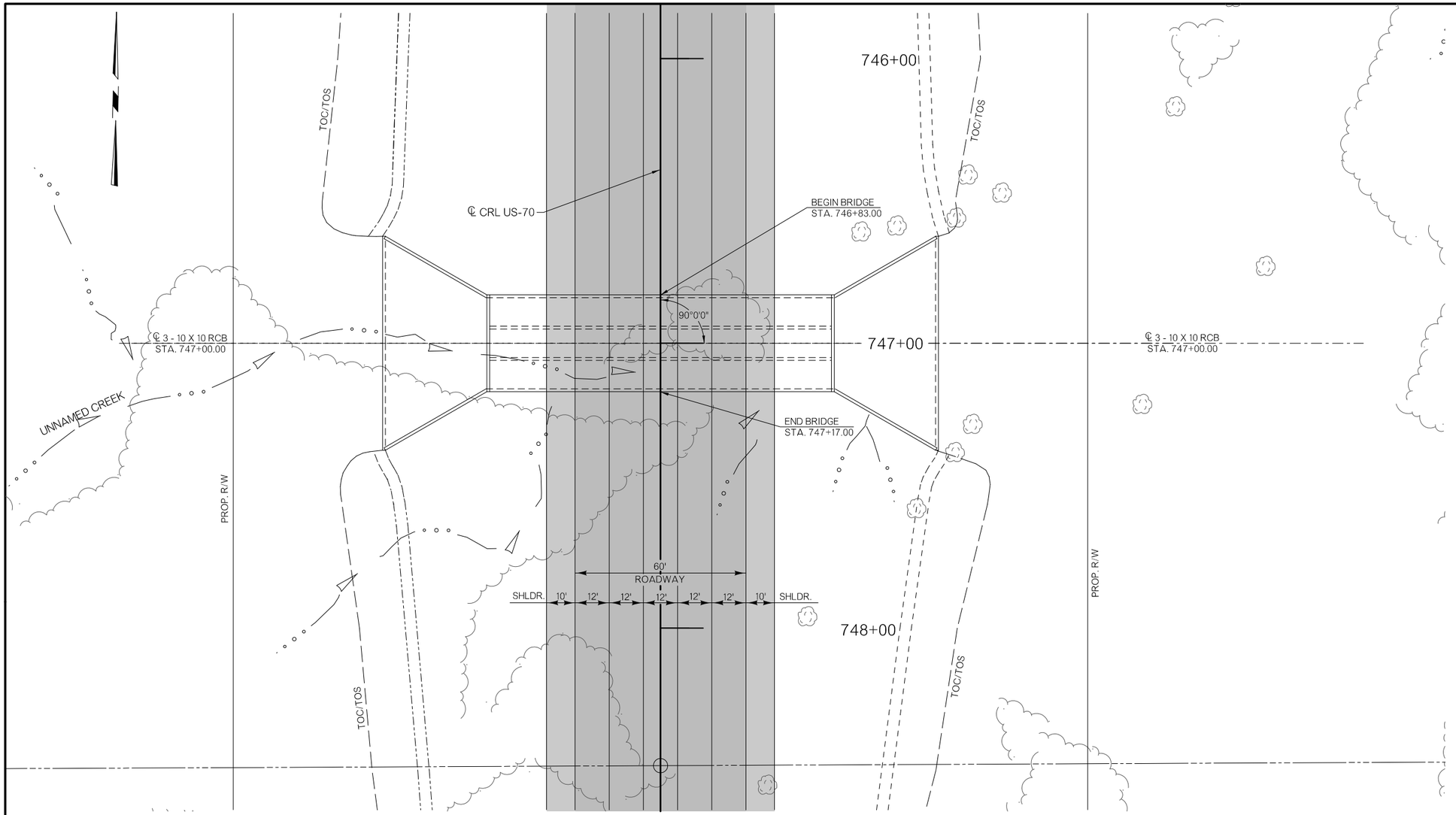
CLASS A CONCRETE	F'C = 3,000 psi
CLASS AA CONCRETE	F'C = 4,000 psi
REINFORCING STEL (GR. 60)	FY = 60,000 psi
OPERATING RATING HS60	

HYDRAULIC SUMMARY

PROPOSED STRUCTURE: ℄ CRL STATION 747+00.00
3 ~ 10' X 10' RCB, 0° SKEW, 44'-0" CLEAR ROADWAY
ROADWAY ELEVATION = 733.56

TOTAL DRAINAGE AREA = 2.16 SQ. MI.
CONTROLLED DA = 0.0 SQ. MI.
EFFECTIVE DA = 2.16 SQ. MI.

Q2 = 446 cfs	Q50 = 2,520 cfs
V2 = 8.17 fps	V50 = 9.23 fps
CHW2 = 716.42 ft.	CHW50 = 721.11 ft.
Q5 = 894 cfs	Q100 = 3,130 cfs
V5 = 8.10 fps	V500 = 10.43 fps
CHW5 = 717.79 ft.	CHW100 = 725.18 ft.
Q10 = 1330 cfs	Q500 = 4,710 cfs
V10 = 8.20 fps	V500 = 20.35 fps
CHW10 = 718.88 ft.	CHW50 = 727.69 ft.
Q25 = 2060 cfs	QOT = Q374.1 = 4212.71 cfs
V25 = 9.18 fps	
CHW25 = 720.33 ft.	

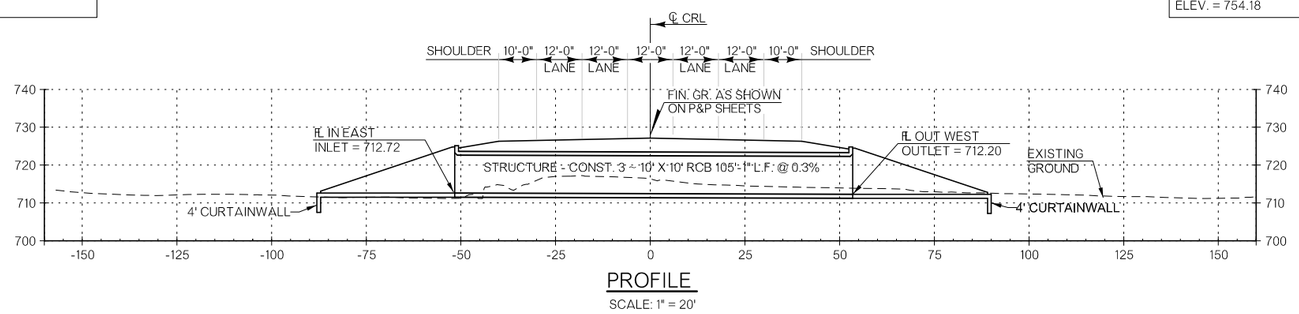


B.M. #28 #6 REBAR STAKE IN FNCE
N=272767.2268
E=2349886.1897
STA. 741+98.00, 551.00' LT.
ELEV. = 713.73

B.M. #29 #6 REBAR STAKE
N=271867.4575
E=2349870.9134
STA. 750+97.00, 529.00' LT.
ELEV. = 754.18

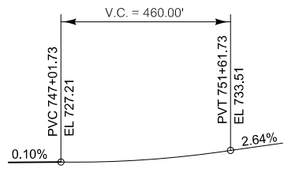
PLAN

SCALE: 1" = 20'



PROFILE

SCALE: 1" = 20'



C.R.L. PROFILE DATA

US-70 OVER UNNAMED CREEK - BRIDGE "B"

DESIGN	JCD		OKLAHOMA DEPARTMENT OF TRANSPORTATION DESIGN DIVISION
DRAWN	MRW		GENERAL PLAN AND ELEVATION
CHECKED	JCD		℄ STATION 747+00.00 CONSTRUCT 3 ~ 10' X 10' RCB OVER UNNAMED CREEK 60' CLR. ROADWAY
APPROVED	RJM		
SQUAD	BKL, Inc.		JOB PIECE NO. 18835 (09) SHEET NO. B002

STORM WATER MANAGEMENT PLAN

REVISIONS	
DESCRIPTION	DATE

SITE DESCRIPTION

PROJECT LIMITS: BEGINNING APPROXIMATELY 800 FT. SOUTH OF SH-199 AND EXTENDS SOUTH APPROXIMATELY 2.61 MILES TO US-70, SOUTH OF ARCHARD ROAD.

PROJECT DESCRIPTION: CONSTRUCT NEW BRIDGES AND ROADWAY OVER GLASSES AND UNNAMED CREEK. CONSTRUCT FULL DEPTH PAVEMENT ON THE US-70 RE-ALIGNMENT, SMILEY ROAD, ARCHARD ROAD, WHISKEY CREEK ROAD AND ARCHARD ROAD (WEST).

SUGGESTED SEQUENCE OF EROSION CONTROL ACTIVITIES: PRIOR TO INITIATING SOIL DISTURBING ACTIVITIES, THE CONTRACTOR WILL INSTALL ALL PERIMETER TEMPORARY SEDIMENT CONTROLS SPECIFIED. STRIP, STOCKPILE AND STABILIZE STOCKPILE AND STABILIZE TOPSOIL. CLEAR AND GRUB ONLY IN NECESSARY AREAS, PRESERVING AS MUCH NATIVE VEGETATION AS POSSIBLE. INSTALL, MAINTAIN AND/OR MOVE TEMPORARY SEDIMENT ITEMS WITH CONSTRUCTION OPERATIONS AS PRACTICAL. IF DIRECTED BY THE ENGINEER, PLANT TEMPORARY SEEDING. REPLACE SALVAGED TOPSOIL AND DEVICES WHEN AN ACCEPTABLE VEGETATIVE COVER (AT LEAST 70%) HAS BEEN ATTAINED. AS SITE CONDITIONS WARRANT, THE CONTRACTOR MAY CHOOSE TO MODIFY THE TYPE OR ARRANGEMENT OF SPECIFIED PRACTICES TO IMPROVE THEIR EFFECTIVENESS AS APPROVED BY THE ENGINEER. THE CONTRACTOR WILL MAINTAIN A LOG OF THE DATES OF MAJOR SOIL DISTURBANCE ACTIVITIES, AND ALSO THE DATES OF INSTALLATION OF EROSION CONTROL MEASURES.

SOIL TYPE: _____

AREA TO BE DISTURBED: 53.3 ACRES

OFFSITE AREA TO BE DISTURBED: (FOR CONTRACTOR USE) _____

MAXIMUM ACRES TO BE DISTURBED AT ANY ONE TIME: (FOR CONTRACTOR USE) _____

LATITUDE & LONGITUDE OF CENTER OF PROJECT: LAT. 34°03'52.54 N , LONG. 96°44'34.65" W

NAME OF RECEIVING WATERS: GLASSES CREEK AND UNNAMED CREEK

SENSITIVE WATERS OR WATERSHEDS: YES ☐ NO ☒

303(D) IMPAIRED WATERS: YES ☐ NO ☒

NOTE:
THIS SHEET SHOULD BE USED IN CONJUNCTION WITH A DRAINAGE MAP THAT ILLUSTRATES THE DRAINAGE PATTERNS/PATHWAYS AND RECEIVING WATERS FOR THIS PROJECT. THIS SHEET SHOULD ALSO BE USED WITH THE EROSION CONTROL SUMMARIES, PAY ITEMS, & NOTES.

EROSION AND SEDIMENT CONTROLS

OKLAHOMA DEPARTMENT OF TRANSPORTATION
PROPOSED R/W
NOVEMBER 29, 2021

SOIL STABILIZATION PRACTICES:

- [X] TEMPORARY SEEDING
- [X] PERMANENT SODDING, SPRIGGING OR SEEDING
- [X] VEGETATIVE MULCHING
- [ ] SOIL RETENTION BLANKET
- [X] PRESERVATION OF EXISTING VEGETATION

NOTE: TEMPORARY EROSION CONTROL METHODS MUST BE USED ON ALL DISTURBED AREAS WHERE CONSTRUCTION ACTIVITIES HAVE CEASED FOR OVER 14 DAYS. METHODS USED WILL BE AS SHOWN ON PLANS, OR AS DIRECTED BY THE ENGINEER.

STRUCTURAL PRACTICES:

- [X] STABILIZED CONSTRUCTION EXIT
- [X] TEMPORARY SILT FENCE
- [X] TEMPORARY SILT DIKES
- [ ] TEMPORARY FIBER LOG
- [ ] DIVERSION, INTERCEPTOR OR PERIMETER DIKES
- [ ] DIVERSION, INTERCEPTOR OR PERIMETER SWALES
- [X] ROCK FILTER DAMS
- [ ] TEMPORARY SLOPE DRAIN
- [X] PAVED DITCH W/ DITCH LINER PROTECTION
- [ ] TEMPORARY DIVERSION CHANNELS
- [ ] TEMPORARY SEDIMENT BASINS
- [ ] TEMPORARY SEDIMENT TRAPS
- [ ] TEMPORARY SEDIMENT FILTERS
- [X] TEMPORARY SEDIMENT REMOVAL
- [X] RIP RAP
- [X] INLET SEDIMENT FILTER
- [ ] TEMPORARY BRUSH SEDIMENT BARRIERS
- [ ] SANDBAG BERMS
- [ ] TEMPORARY STREAM CROSSINGS

OFFSITE VEHICLE TRACKING:

- [X] HAUL ROADS DAMPENED FOR DUST CONTROL
- [X] LOADED HAUL TRUCKS TO BE COVERED WITH TARPAULIN
- [X] EXCESS DIRT ON ROAD REMOVED DAILY

NOTES:

_____

_____

_____

_____

_____

THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR THE FOLLOWING:

MAINTENANCE AND INSPECTION:

ALL EROSION AND SEDIMENT CONTROLS WILL BE MAINTAINED IN GOOD WORKING ORDER FROM THE BEGINNING OF CONSTRUCTION UNTIL AN ACCEPTABLE VEGETATIVE COVER IS ESTABLISHED. INSPECTION BY THE CONTRACTOR AND ANY NECESSARY REPAIRS SHALL BE PERFORMED ONCE EVERY 7 CALENDAR DAYS AND WITHIN 24 HOURS AFTER ANY STORM EVENT GREATER THAN 0.5 INCH AS RECORDED BY A NON-FREEZING RAIN GAUGE TO BE LOCATED ON SITE. POTENTIALLY ERODIBLE AREAS, DRAINAGEWAYS, MATERIAL STORAGE, STRUCTURAL DEVICES, CONSTRUCTION ENTRANCES AND EXITS ALONG WITH EROSION AND SEDIMENT CONTROL LOCATIONS ARE EXAMPLES OF SITES THAT NEED TO BE INSPECTED.

WASTE MATERIALS:

PROPER MANAGEMENT AND DISPOSAL OF CONSTRUCTION WASTE MATERIAL IS REQUIRED BY THE CONTRACTOR. MATERIALS INCLUDE STOCKPILES, SURPLUS, DEBRIS AND ALL OTHER BY-PRODUCTS FROM THE CONSTRUCTION PROCESS. PRACTICES INCLUDE DISPOSAL, PROPER MATERIALS HANDLING, SPILL PREVENTION AND CLEANUP MEASURES. CONTROLS AND PRACTICES SHALL MEET THE REQUIREMENTS OF ALL FEDERAL, STATE AND LOCAL AGENCIES.

HAZARDOUS MATERIALS:

PROPER MANAGEMENT AND DISPOSAL OF HAZARDOUS WASTE MATERIALS IS REQUIRED. THE CONTRACTOR IS RESPONSIBLE FOR FOLLOWING MANUFACTURER'S RECOMMENDATIONS, STATE AND FEDERAL REGULATIONS TO ENSURE CORRECT HANDLING, DISPOSAL, SPILL PREVENTION AND CLEANUP MEASURES. EXAMPLES INCLUDE BUT ARE NOT LIMITED TO: PAINTS, ACIDS, CLEANING SOLVENTS, CHEMICAL ADDITIVES, CONCRETE CURING COMPOUNDS AND CONTAMINATED SOILS.

GENERAL NOTES:

A STORM WATER POLLUTION PREVENTION PLAN (SWPPP) IS REQUIRED TO COMPLY WITH THE OKLAHOMA POLLUTION DISCHARGE ELIMINATION SYSTEM (OPDES) REGULATIONS. THIS PLAN IS INITIATED DURING THE DESIGN PHASE, CONFIRMED IN THE PRE-WORK MEETINGS AND AVAILABLE ON THE JOB SITE ALONG WITH COPIES OF THE NOTICE OF INTENT (NOI) FORM AND PERMIT CERTIFICATE THAT HAVE BEEN FILED WITH THE OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY (ODEQ). THE PLAN MUST BE KEPT CURRENT WITH UP-TO-DATE AMENDMENTS DURING THE PROGRESSION OF THE PROJECT. ALL CONTRACTOR OFF-SITE OPERATIONS ASSOCIATED WITH THE PROJECT MUST BE DOCUMENTED IN THE SWPPP, I.E., BORROW PITS, WORK ROADS, DISPOSAL SITES, ASPHALT/CONCRETE PLANTS, ETC. THE BASIC GOAL OF STORM WATER MANAGEMENT IS TO IMPROVE WATER QUALITY BY REDUCING POLLUTANTS IN STORM WATER DISCHARGES. RUNOFF FROM CONSTRUCTION SITES HAS A POTENTIAL FOR POLLUTION DUE TO EXPOSED SOILS AND THE PRESENCE OF HAZARDOUS MATERIALS USED IN THE CONSTRUCTION PROCESS. THE PREVENTION OF SOIL EROSION, CONTAINMENT OF HAZARDOUS MATERIALS AND/OR THE INTERCEPTION OF THESE POLLUTANTS BEFORE LEAVING THE CONSTRUCTION SITE ARE THE BEST PRACTICES FOR CONTROLLING STORM WATER POLLUTION.

THE FOLLOWING SECTIONS OF THE 2009 ODOT STANDARD SPECIFICATIONS SHOULD BE NOTED:

103.05	BONDING REQUIREMENTS
104.10	FINAL CLEANING UP
104.12	CONTRACTOR'S RESPONSIBILITY FOR WORK
104.13	ENVIRONMENTAL PROTECTION
106.08	STORAGE AND HANDLING OF MATERIAL
107.01	LAWS, RULES AND REGULATIONS TO BE OBSERVED
107.20	STORM WATER MANAGEMENT
220	MANAGEMENT OF EROSION, SEDIMENTATION AND STORM WATER POLLUTION PREVENTION AND CONTROL
221	TEMPORARY SEDIMENT CONTROL

IN ADDITION:

"ODEQ GENERAL PERMIT (OKR10) FOR STORM WATER DISCHARGES FROM CONSTRUCTION ACTIVITIES WITHIN THE STATE OF OKLAHOMA." ODEQ, WATER QUALITY DIVISION, SEPTEMBER 13, 2012.

DESIGN	RB		OKLAHOMA DEPARTMENT OF TRANSPORTATION ROADWAY DESIGN DIVISION
DRAWN	MM		
CHECKED	KM		STORM WATER MANAGEMENT PLAN
APPROVED	SL		
SQUAD	BKL INC.		

COUNTY MARSHALL HIGHWAY US-70 STATE JOB NO. 18835(09) SHEET NO. E001

REVISED 04 / 01 / 2015

$$datestamp$$ X:\Projects\692-Madill Bypass\DGN\REVISED\Sheets\E001-18835(09)-Storm Water Management Plan.dgn

OKLAHOMA DEPARTMENT OF TRANSPORTATION

REVISED PROPOSED R/W

1/31/2022

1 UPDATED LABELS & PROP. RW 1/31/2022

SEC. 26, T-5-S, R-5-E

SEC. 35, T-5-S, R-5-E

TYPICAL DITCH
SPECIAL DITCH (LEFT)
SPECIAL DITCH (RIGHT)

DITCH LEGEND

SH 199

Pres. R/W

N89°19'37.99"E

379.27'

710+00

715+00

PROP. RW

+ 00
150' 1

150'

SP. DITCH LT.

TOC/TOS

PT
711+19.60
CL SURVEY

375.33'

US-70 ℄ SURVEY

60'
10'12'12'12'12'10'

150'-0"

MATCH LINE STA. 720+00

BM #23

33'-0"

SP. DITCH RT.

TOC/TOS

PROP. RW

EW-202
SECTION LINE - N89°19'37.99"E

12" Elm

32" Bois D' Arc

1'-0" Willows

30" Bois D' Arc

SCALES:
1" = 50' HOR
1" = 5' VER

SEC. 26, T-5-S, R-5-E

SEC. 35, T-5-S, R-5-E

STA. 709+16.51
BEGIN CONSTRUCTION
PROJECT NO. J/P-18835(09)

B.M. #23
DELINEATOR POST IN
NORTH SH 199 RW FENCE
STA. 708+43.62 RT.
ELEV. = 757.32

B.M. #24
RR SPIKE IN POWER POLE
STA. 708+90, 745' LT.
ELEV. = 761.39

B.M. #25
#6 REBAR STAKE 2' EAST OF 5" ELM
STA. 717+96, 746' LT.
ELEV. = 756.36

BOP W.B.
PVI 709+16.51
EL 760.82

PVI 712+88.70
EL 762.80

PVI 715+53.70
EL 756.85

0.50%

PVC 710+23.70
EL 761.46

4.71% SPCL. DITCH RT.

0.40% SPCL. DITCH RT.

-0.44% SPCL. DITCH RT.

0.75% SPCL. DITCH LT.

-1.63% SPCL. DITCH LT.

-3.78% SPCL. DITCH RT.

-2.24%

-2.25% SPCL. DITCH LT.

PROFILE GRADE
CRL CL SURVEY

-0.50% SPCL. DITCH LT.

-1.50% SPCL. DITCH LT.

EXISTING GRADE
CRL ℄ SURVEY

-1.90% SPCL. DITCH RT.

PVI 708+69.73
EL 756.00

PVI 709+16.51
EL 757.26

PVI 709+31.73
EL 754.00

PVI 711+00.00
EL 758.00

PVI 712+00.00
EL 757.68

PVI 712+40.00
EL 756.00

PVI 715+00.00
EL 750.50

PVI 716+62.29
EL 746.40

PVI 718+00.00
EL 735.00

PVI 719+00.00
EL 745.31

V.C.= 530.00'
V=65 MPH, K = 193

PROFILE ELEVATIONS SHOWN
ARE ALONG CRL CL SURVEY

UTILITY COORDINATION

UTILITY	PHONE	NOTIFIED	RESPONDED
AT&T TELEPHONE LINES	580-276-3364		
OG&E ELECTRIC LINES	580-220-2620		
WATERLINES; CITY OF MADILL MARSHALL CO. WATER CORP	580-795-5586 580-795-3368		
SANITARY SEWER; CITY OF MADILL	580-795-5586		
GAS LINES; ONG KINDER/MORGAN ATLAS PIPELINE MADILL GAS PROCESSING	800-664-5463 800-733-2490 918-574-3500 580-795-7396		

770 765 760 755 750 745 740 735 730 725

750.99 752.85 755.34 755.86 761.69 757.18 761.54 757.47 760.88 756.10 759.69 752.84 757.98 750.87 755.82 746.39 753.57 743.57 751.33 742.89 749.09 742.96 746.84 741.58

707+00 708+00 709+00 710+00 711+00 712+00 713+00 714+00 715+00 716+00 717+00 718+00 719+00 720+00

US-70 MARSHALL COUNTY

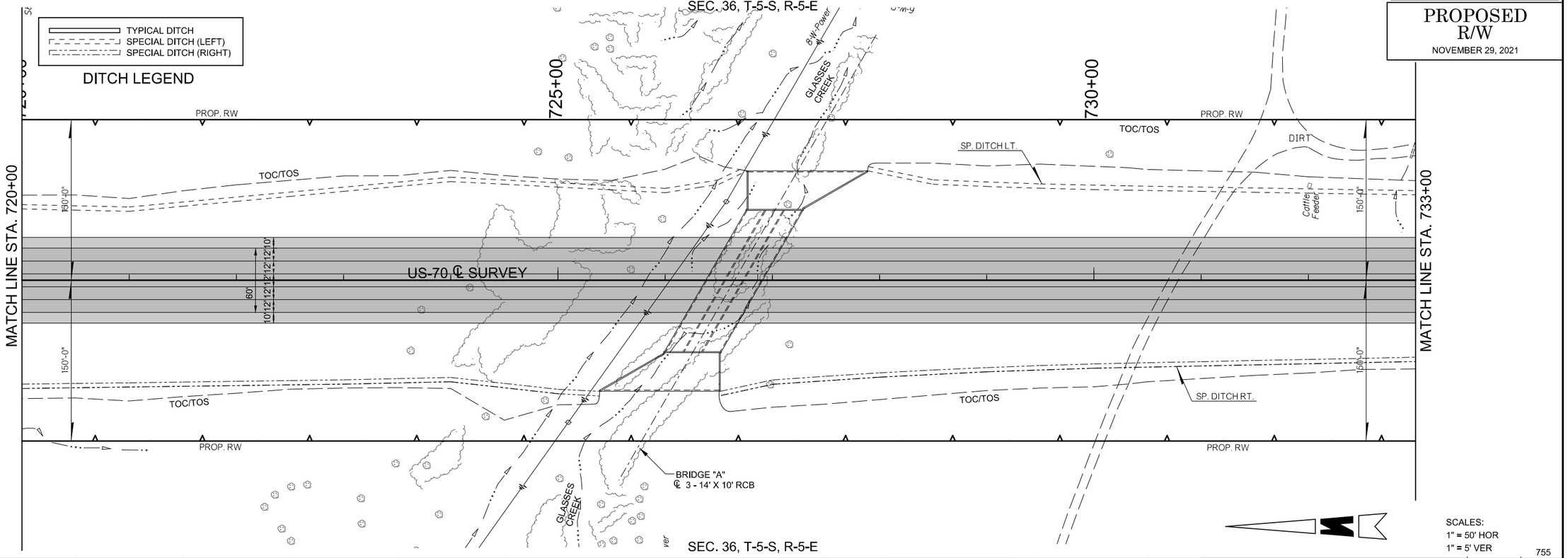
STATE JOB NO. 18835(09) SHEET NO. R001

PRINT DATE: 2/10/2022 X:\Projects\692-Madill Bypass\DGN\REVISED\Sheets\R001-18835(09)-Plan & Profile Sht 1.dgn

OKLAHOMA DEPARTMENT OF TRANSPORTATION

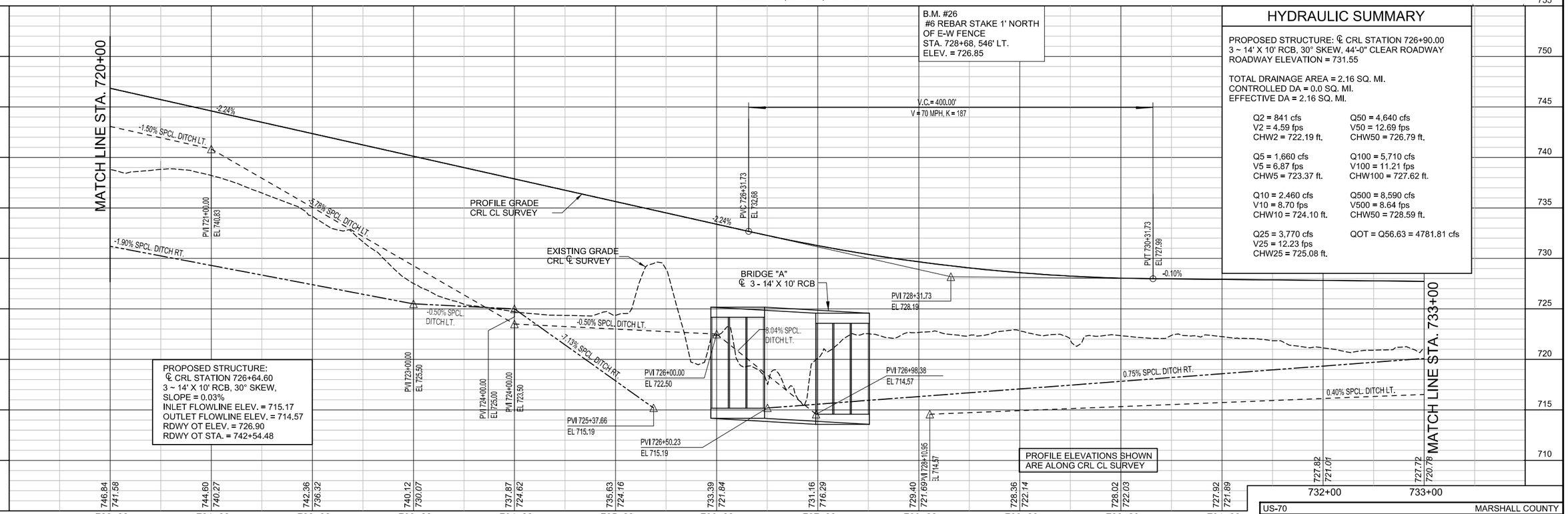
PROPOSED R/W

NOVEMBER 29, 2021



SCALES:
1" = 50' HOR
1" = 5' VER

755



US-70	MARSHALL COUNTY
STATE JOB NO. 18835(09)	SHEET NO. R002

PRINT DATE: 11/29/2021 X:\Projects\692-Madill Bypass\DGN\REV4SED\Sheets\R002-18835(09)-Plan & Profile Sht 2.dgn

OKLAHOMA DEPARTMENT OF TRANSPORTATION

REVISED PROPOSED R/W
1/31/2022

1 ADDED SECTION LINE LABEL 1/31/2022

SEC. 35, T-5-S, R-5-E

1/4 SECTION LINE N89°23'39.65"E

735+00 | 740+00 | 745+00

MATCH LINE STA. 733+00

MATCH LINE STA. 746+00

PROP. RW

EW-202.5

SP. DITCH LT.

TOC/TOS

150'-0"

6-W-Barb

Cattle Feeder

pipe rail corral with loading chute

W.E.B.B.

60'

10'12' 12'12'12'10'

US-70 ℄ SURVEY

SP. DITCH RT.

1/4 SECTION LINE N89°18'38.54" E ~ 1321.90'

TYPICAL DITCH
SPECIAL DITCH (LEFT)
SPECIAL DITCH (RIGHT)

DITCH LEGEND

SCALES:
1" = 50' HOR
1" = 5' VER

SEC. 35, T-5-S, R-5-E

B.M. #27
80d SPIKE IN NW SIDE 7" OAK
STA. 737+74, 543' LT.
ELEV. = 713.13

B.M. #28
#6 REBAR STAKE IN FENCE
STA. 741+98, 551' LT.
ELEV. = 713.73

V.C.= 550.00'
V = 70 MPH; K = 2750

PROFILE GRADE ON CRL CL SURVEY

-0.10%

PVC 739+79.48
EL 727.04

PVT 745+29.48
EL 727.04

EXISTING GRADE CRL ℄ SURVEY

0.75% SPCL. DITCH RT.

0.40% SPCL. DITCH LT.

-1.08% SPCL. DITCH RT.

-0.62% SPCL. DITCH LT.

PVI 737+00.00
EL 718.13

PVI 737+00.00
EL 723.11

PROFILE ELEVATIONS SHOWN ARE ALONG CRL CL SURVEY

733+00	734+00	735+00	736+00	737+00	738+00	739+00	740+00	741+00	742+00	743+00	744+00	745+00	746+00
727.72 / 720.78	727.62 / 721.41	727.52 / 722.52	727.42 / 722.77	727.32 / 718.75	727.22 / 726.01	727.12 / 722.79	727.02 / 722.67	726.95 / 723.02	726.91 / 722.24	726.91 / 719.36	726.94 / 716.15	727.01 / 719.21	727.11 / 719.58

US-70	MARSHALL COUNTY
STATE JOB NO. 18835(09)	SHEET NO. R003

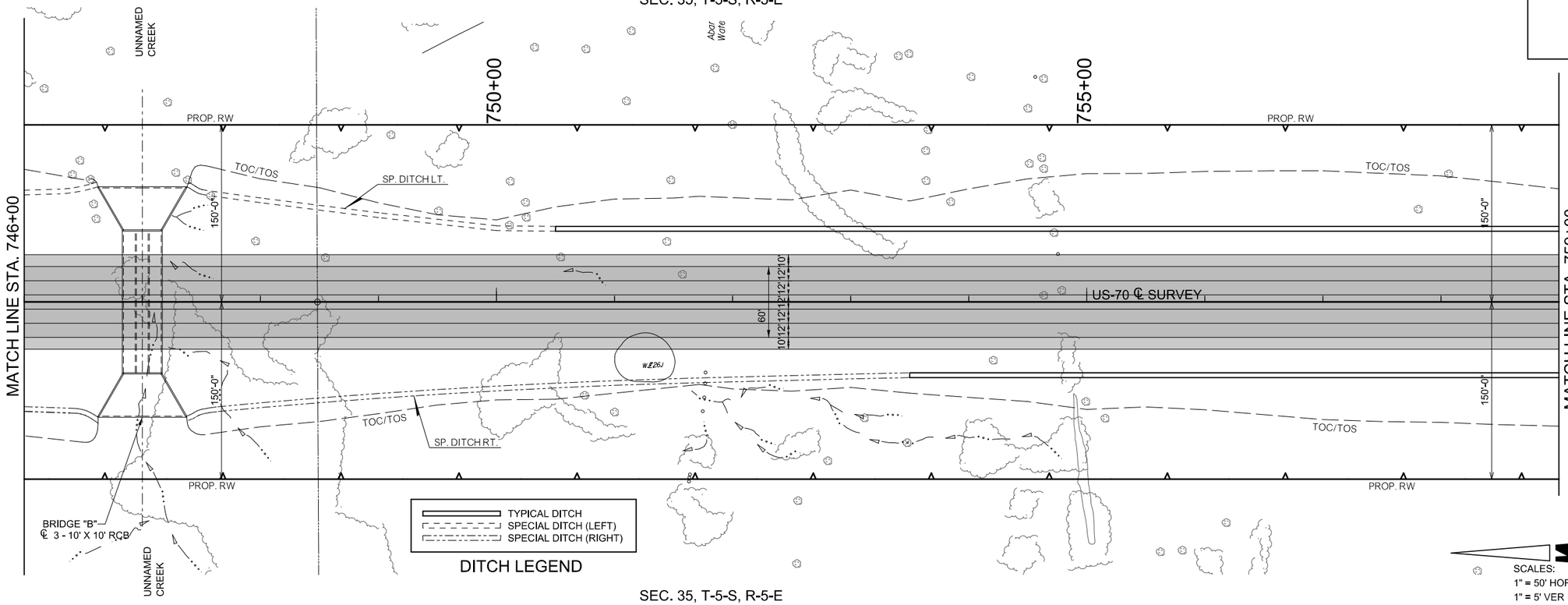
PRINT DATE: 2/10/2022 X:\Projects\692-Madill Bypass\DGN\REVISED\Sheets\R003-18835(09)-Plan & Profile Sht 3.dgn

OKLAHOMA DEPARTMENT OF TRANSPORTATION

PROPOSED R/W

NOVEMBER 29, 2021

SEC. 35, T-5-S, R-5-E



SEC. 35, T-5-S, R-5-E

SCALES:
1" = 50' HOR
1" = 5' VER

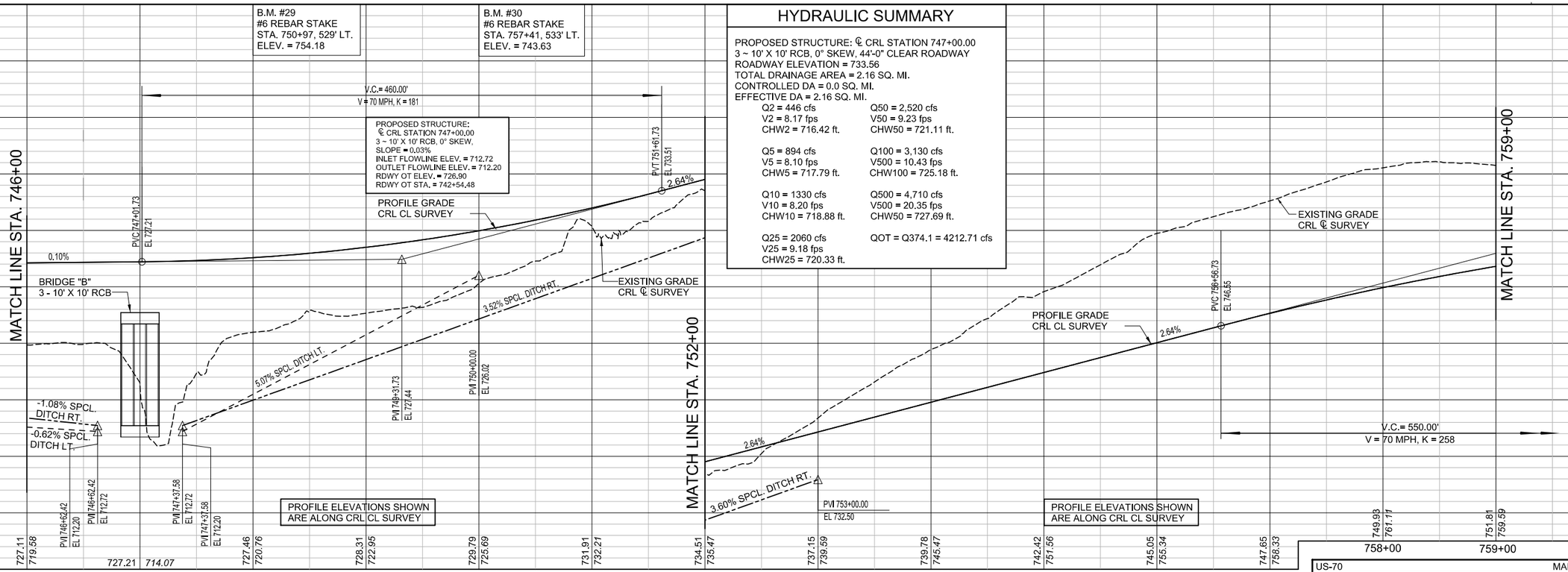
B.M. #29
#6 REBAR STAKE
STA. 750+97, 529' LT.
ELEV. = 754.18

B.M. #30
#6 REBAR STAKE
STA. 757+41, 533' LT.
ELEV. = 743.63

HYDRAULIC SUMMARY

PROPOSED STRUCTURE: ℄ CRL STATION 747+00.00
3 ~ 10' X 10' RCB, 0° SKEW, 44'-0" CLEAR ROADWAY
ROADWAY ELEVATION = 733.56
TOTAL DRAINAGE AREA = 2.16 SQ. MI.
CONTROLLED DA = 0.0 SQ. MI.
EFFECTIVE DA = 2.16 SQ. MI.

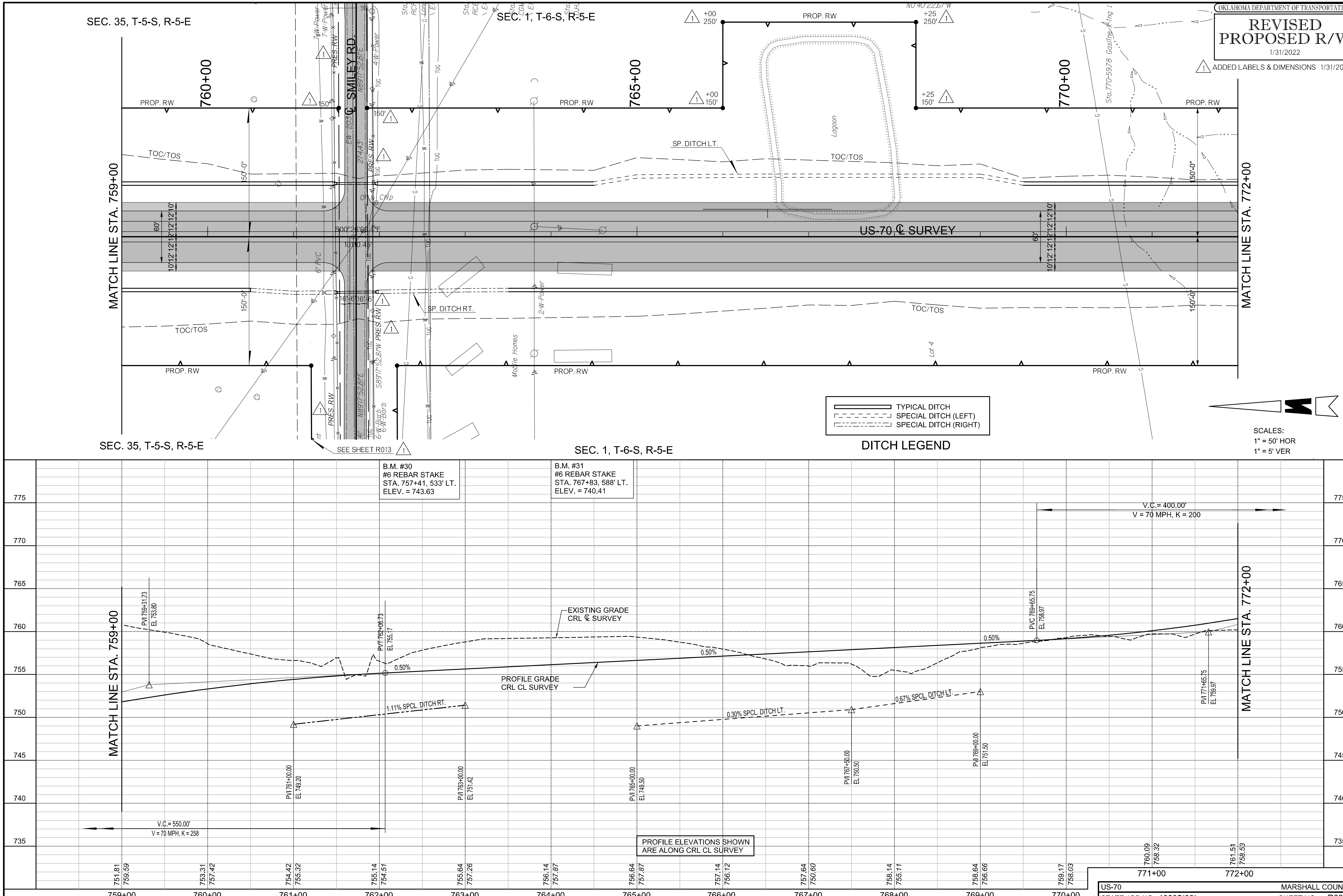
Q2 = 446 cfs	Q50 = 2,520 cfs
V2 = 8.17 fps	V50 = 9.23 fps
CHW2 = 716.42 ft.	CHW50 = 721.11 ft.
Q5 = 894 cfs	Q100 = 3,130 cfs
V5 = 8.10 fps	V500 = 10.43 fps
CHW5 = 717.79 ft.	CHW100 = 725.18 ft.
Q10 = 1330 cfs	Q500 = 4,710 cfs
V10 = 8.20 fps	V500 = 20.35 fps
CHW10 = 718.88 ft.	CHW50 = 727.69 ft.
Q25 = 2060 cfs	QOT = Q374.1 = 4212.71 cfs
V25 = 9.18 fps	
CHW25 = 720.33 ft.	



PRINT DATE: 11/29/2021 X:\Projects\692-Madill Bypass\DGN\REVISED\Sheets\R004-18835(09)-Plan & Profile Sht 4.dgn

US-70 MARSHALL COUNTY

STATE JOB NO. 18835(09) SHEET NO. R004



OKLAHOMA DEPARTMENT OF TRANSPORTATION

REVISED PROPOSED R/W

1/31/2022

△1 ADDED LABELS & DIMENSIONS 1/31/2022

US-70 MARSHALL COUNTY

STATE JOB NO. 18835(09) SHEET NO. R005

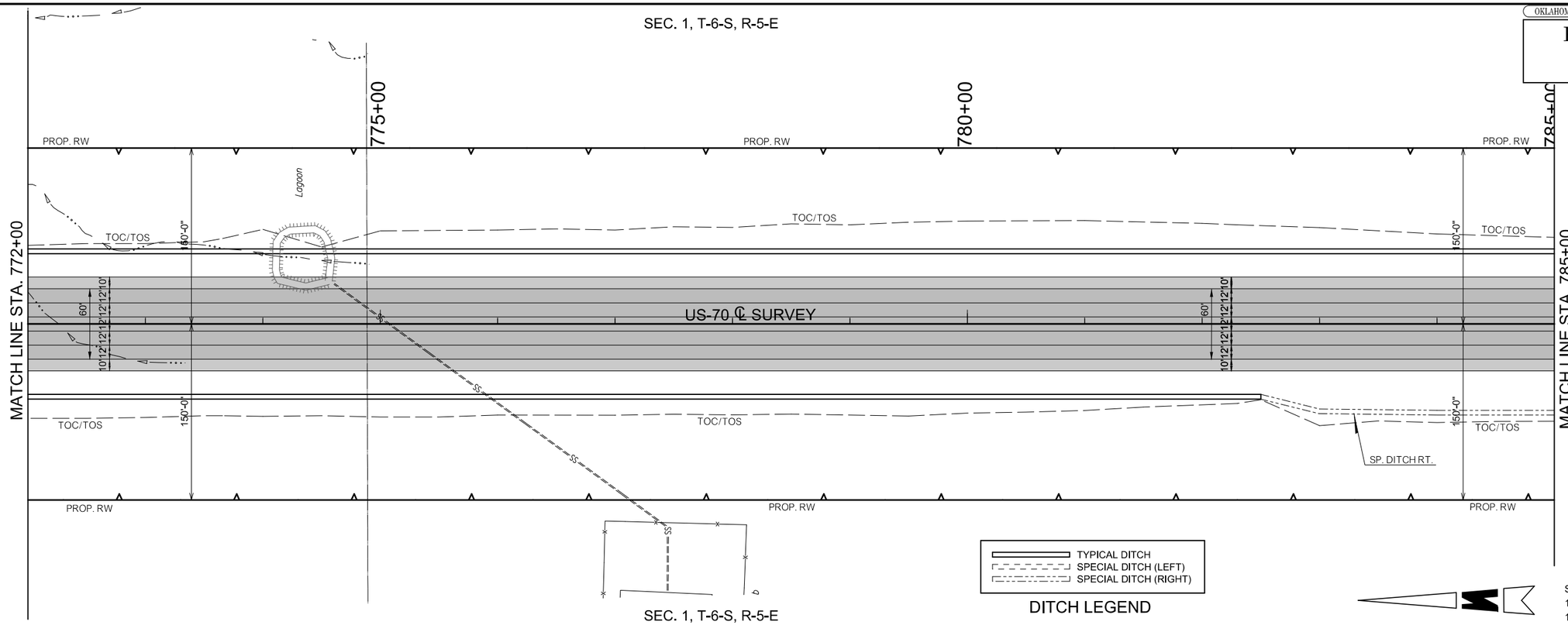
PRINT DATE: 2/10/2022 X:\Projects\692-Madill Bypass\DGN\REVISED\Sheets\R005-18835(09)-Plan & Profile Sht 5.dgn

OKLAHOMA DEPARTMENT OF TRANSPORTATION

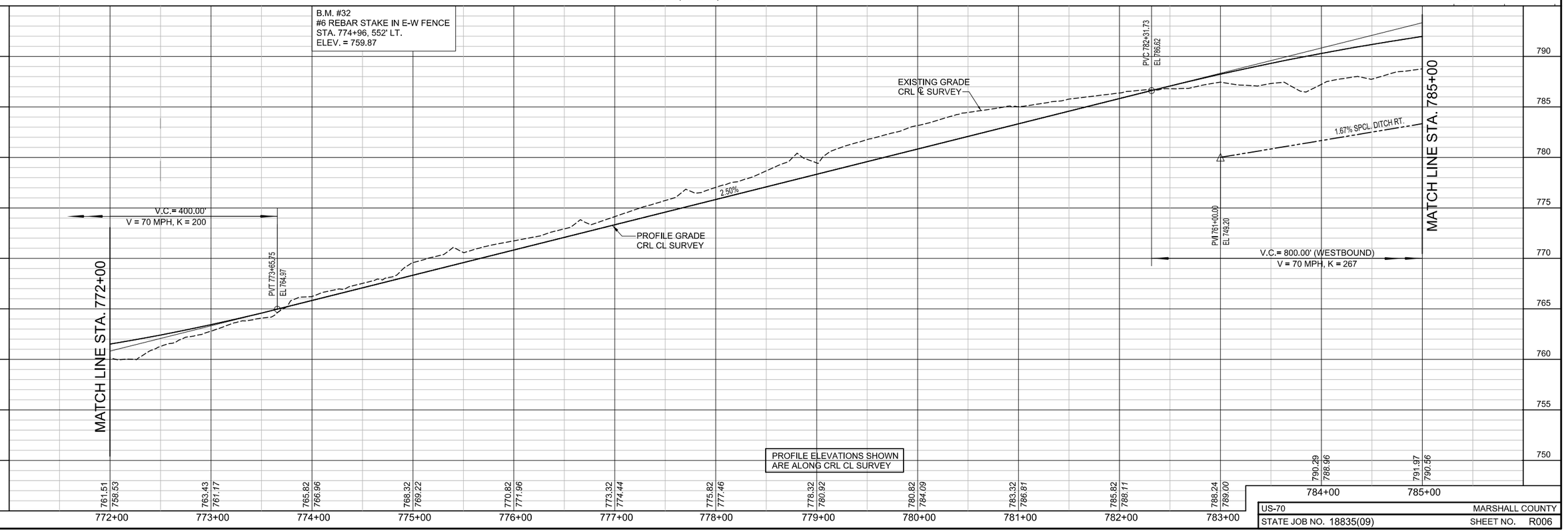
PROPOSED R/W

NOVEMBER 29, 2021

SEC. 1, T-6-S, R-5-E



SEC. 1, T-6-S, R-5-E



US-70 MARSHALL COUNTY

STATE JOB NO. 18835(09) SHEET NO. R006

PRINT DATE: 11/29/2021 X:\Projects\692-Madill Bypass\DGN\REVISED\Sheets\R006-18835(09)-Plan & Profile Sht 6.dgn

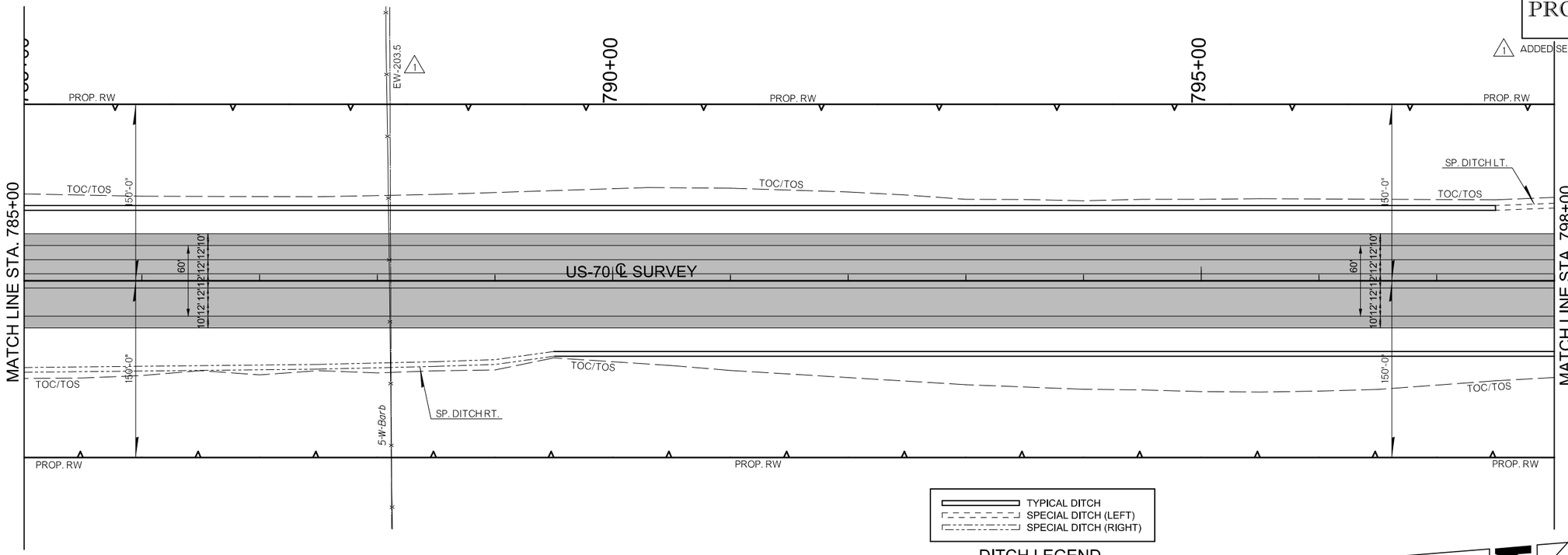
SEC. 1, T-6-S, R-5-E

OKLAHOMA DEPARTMENT OF TRANSPORTATION

REVISED PROPOSED R/W

1/31/2022

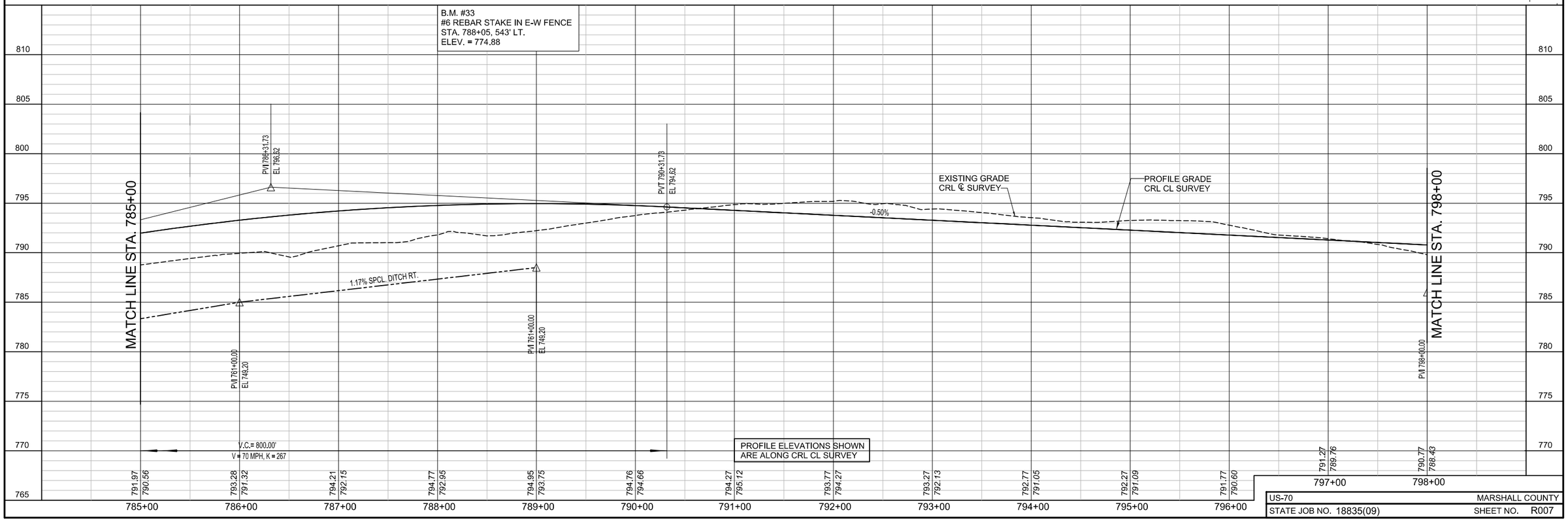
1 ADDED SECTION LINE LABEL 1/31/2022



DITCH LEGEND

SCALES:
1" = 50' HOR
1" = 5' VER

SEC. 1, T-6-S, R-5-E



US-70 MARSHALL COUNTY

STATE JOB NO. 18835(09) SHEET NO. R007

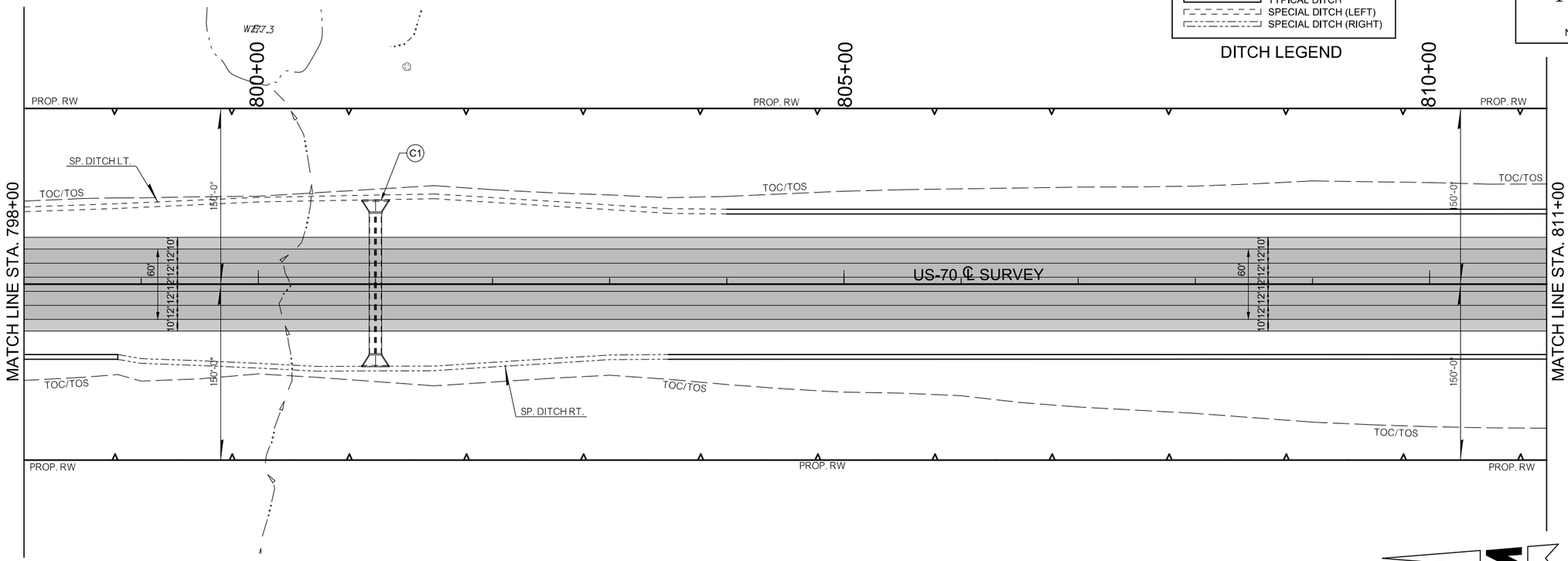
PRINT DATE: 2/10/2022 X:\Projects\692-Madill Bypass\DGN\REVISED\Sheets\R007-18835(09)-Plan & Profile Sht 7.dgn

OKLAHOMA DEPARTMENT OF TRANSPORTATION

PROPOSED R/W
NOVEMBER 29, 2021

SEC. 1, T-6-S, R-5-E

DITCH LEGEND
- TYPICAL DITCH
- SPECIAL DITCH (LEFT)
- SPECIAL DITCH (RIGHT)

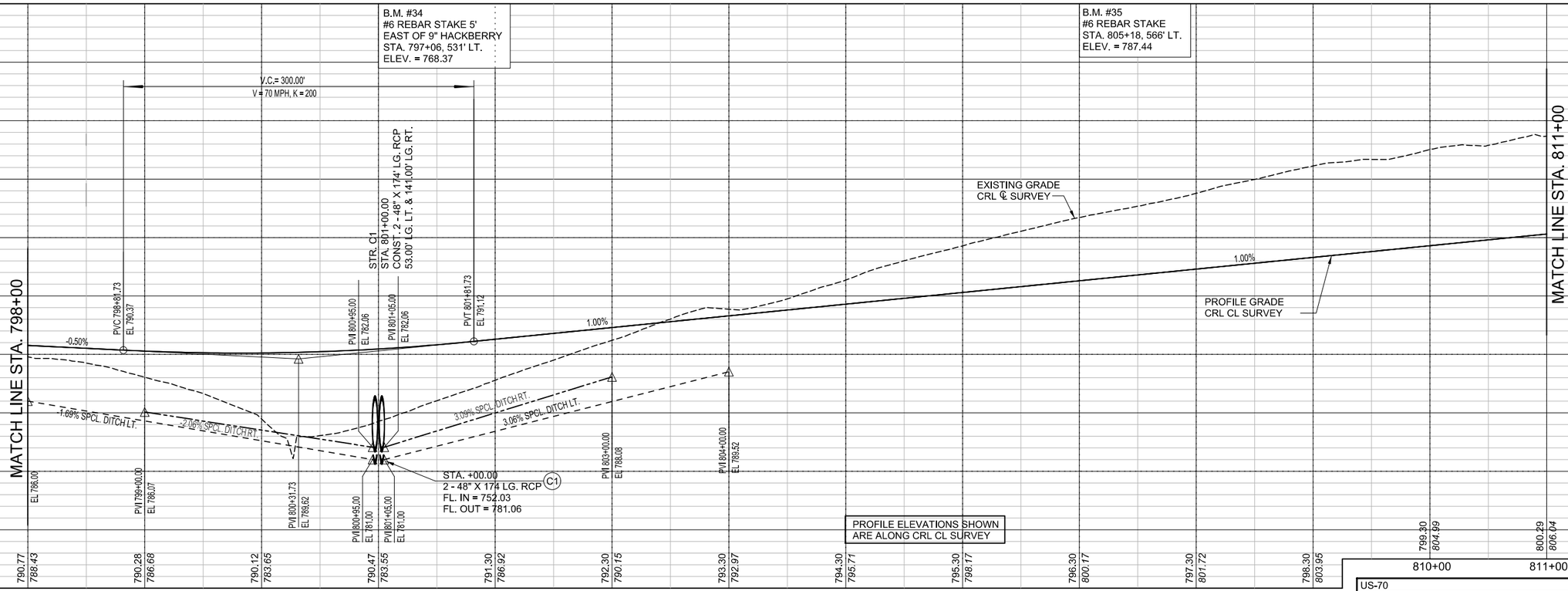


SCALES:
1" = 50' HOR
1" = 5' VER

SEC. 1, T-6-S, R-5-E

B.M. #34
#6 REBAR STAKE 5' EAST OF 9" HACKBERRY
STA. 797+06, 531' LT.
ELEV. = 768.37

B.M. #35
#6 REBAR STAKE
STA. 805+18, 566' LT.
ELEV. = 787.44



PRINT DATE: 11/29/2021 X:\Projects\692-Madill Bypass\DGN\REVISED\Sheets\R008-18835(09)-Plan & Profile Sht 8.dgn

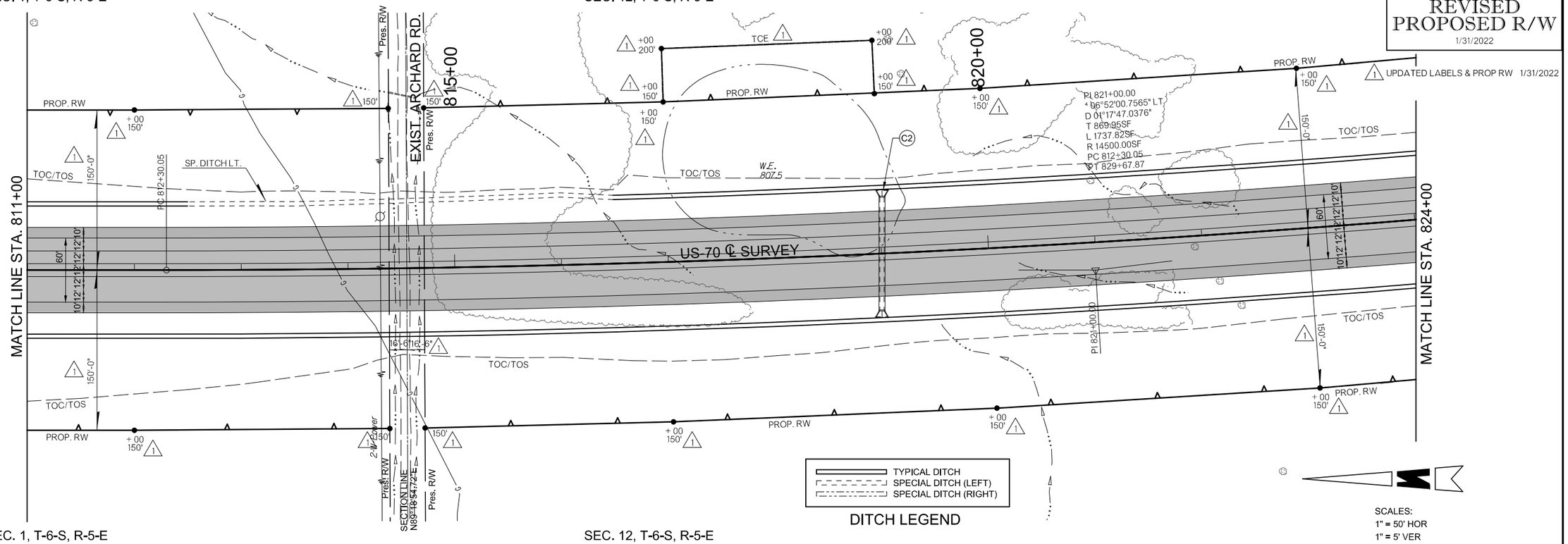
US-70 MARSHALL COUNTY
STATE JOB NO. 18835(09) SHEET NO. R008

OKLAHOMA DEPARTMENT OF TRANSPORTATION

REVISED PROPOSED R/W
1/31/2022

UPDATED LABELS & PROP RW 1/31/2022

SEC. 1, T-6-S, R-5-E | SEC. 12, T-6-S, R-5-E



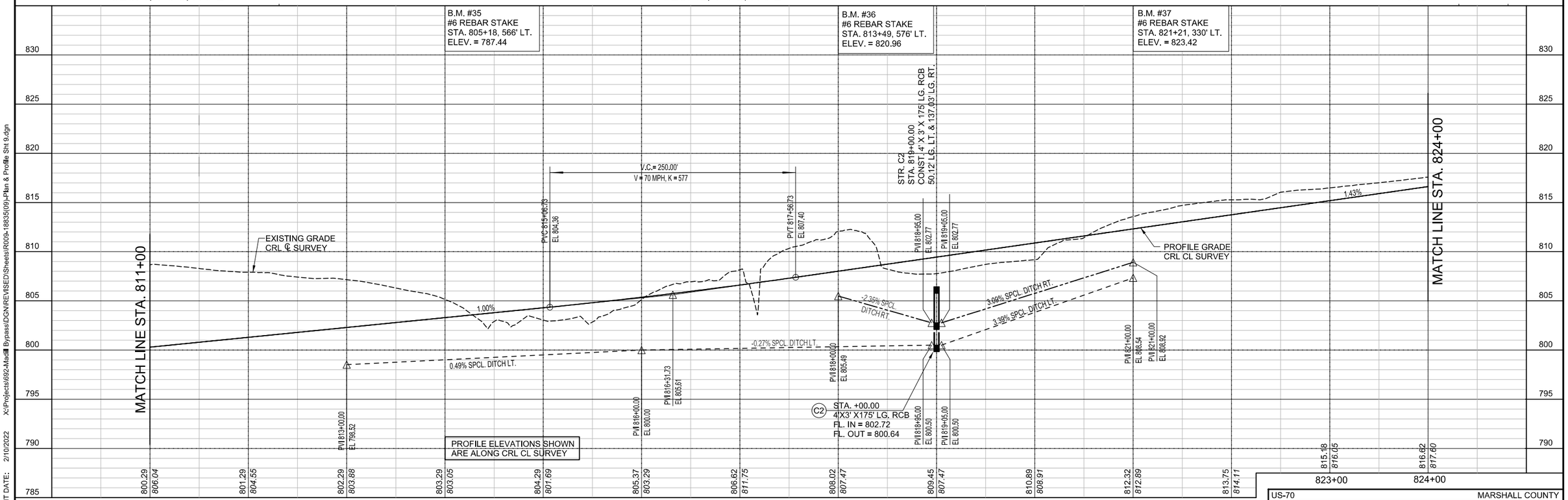
SCALES:
1" = 50' HOR
1" = 5' VER

SEC. 1, T-6-S, R-5-E | SEC. 12, T-6-S, R-5-E

B.M. #35
#6 REBAR STAKE
STA. 805+18, 566' LT.
ELEV. = 787.44

B.M. #36
#6 REBAR STAKE
STA. 813+49, 576' LT.
ELEV. = 820.96

B.M. #37
#6 REBAR STAKE
STA. 821+21, 330' LT.
ELEV. = 823.42



US-70	MARSHALL COUNTY
STATE JOB NO. 18835(09)	SHEET NO. R009

PRINT DATE: 2/10/2022 X:\Projects\692-Madill Bypass\DGN\REVISED\Sheets\R009-18835(09)-Plan & Profile Sht 9.dgn

OKLAHOMA DEPARTMENT OF TRANSPORTATION

REVISED PROPOSED R/W

1/31/2022

1 UPDATED LABELS & PROPOSED ROW 1/31/2022

SEC. 12, T-6-S, R-5-E

825+00 830+00 835+00

MATCH LINE STA. 824+00

MATCH LINE STA. 837+00

150'-0"

PROP. RW

TOC/TOS

US-70 ℄ SURVEY

PI 829+67.87

S07°18'10.1"E 632.92

PI 843+62.33
Δ 27°10'55.6532" LT
D 05°58'03.1889"
T 761.55SF
L 1494.42SF
R 3150.00SF
PC 836+00.79
PT 850+95.20

℄ OLD US-70

℄ HWY 106

165+00

5'W Barb

4'W Power

Pres. R/W

50'

10'

TYPICAL DITCH
SPECIAL DITCH (LEFT)
SPECIAL DITCH (RIGHT)

DITCH LEGEND

S34°49'57.7"E 1932.91'

SEE SHEETS R014 & R015

SEC. 12, T-6-S, R-5-E

SCALES:
1" = 50' HOR
1" = 5' VER

B.M. #38
#6 REBAR STAKE
STA. 830+06, 342' LT.
ELEV. = 623.58

B.M. #39
"X" ON EAST END CONC. ISLAND
STA. 832+71, 382' RT.
ELEV. = 824.89

SUPERELEVATION
N.C TO 5.20%

SUPERELEVATION
5.20% (FULL SUPER)

STA. 826+72.08

STA. 828+88.08

PVC 826+36.70
EL 820.01

PVI 829+36.70
EL 824.30

PVT 832+36.70
EL 821.55

-0.92%

PROFILE GRADE
CRL CL SURVEY

EXISTING GRADE
CRL ℄ SURVEY

V.C.= 600.00'
V = 70 MPH, K = 255

PROFILE ELEVATIONS SHOWN
ARE ALONG CRL CL SURVEY

816.62	818.05	819.48	820.84	821.82	822.42	822.63	822.44	821.86	820.97	820.05	819.14	818.22	817.30
817.60	*819.36*	*820.83*	*821.22*	*821.32*	*821.53*	*821.13*	*820.66*	*820.29*	*819.71*	*818.36*	*817.42*	*816.40*	*814.84*

824+00 825+00 826+00 827+00 828+00 829+00 830+00 831+00 832+00 833+00 834+00 835+00 836+00 837+00

US-70 MARSHALL COUNTY

STATE JOB NO. 18835(09) SHEET NO. R010

PRINT DATE: 2/10/2022 X:\Projects\692-Madill Bypass\DGN\REV4SED\Sheets\R010-18835(09)-Plan & Profile Sht 10.dgn

OKLAHOMA DEPARTMENT OF TRANSPORTATION

REVISED PROPOSED R/W

1/31/2022

1 UPDATED LABELS & PROPOSED ROW 1/31/2022

SEC. 12, T-6-S, R-5-E

MATCH LINE STA. 837+00

MATCH LINE STA. 850+00

840+00 845+00 170+00 175+00

PROP. RW

TOC/TOS

SP. DITCH LT.

SP. DITCH RT.

US-70 ℄ SURVEY

℄ EXIST. OLD US-70

Pres. R/W

Asphalt Pav.

6-W-B

6-W-Barb

BM #40

BM #41

BM #42

C3

Sta.842+29.97 TU

Sta.842+83.00, 1.3' RCB, X-Drain, Aqua, \ Elev.:807.37 W.S.

842.06' EW-204.5 N89°12'29.94"E

64.97' 30°20' 200' N89°12'29.94"E

150'-0"

60'

10'-12'-12'-12'-12'-10'

TYPICAL DITCH
TYPICAL DITCH (PAVED)
SPECIAL DITCH
SPECIAL DITCH (PAVED)

DITCH LEGEND

SCALES:
1" = 50' HOR
1" = 5' VER

B.M. #40
DELINEATOR POST IN EAST US 70 RW FENCE
STA. 839+37, 64' RT.
ELEV. = 811.37

B.M. #41
"X" ON CL EAST HEADWALL RCB X-DRAIN
STA. 842+77, 17' RT.
ELEV. = 809.02

B.M. #42
DELINEATOR POST IN EAST US 70 RW FENCE
STA. 848+05, 100' LT.
ELEV. = 803.76

SUPERELEVATION
5.20% (FULL SUPER)

STR. C3
STA. 843+00.00
CONST. 36" X 188' LG. RCP
56.18' LG. LT. & 142.24' LG. RT.

STA. +00.00
36" X 188' LG. RCP (C3)
FL. IN = 804.07
FL. OUT = 802.09

-2.50% SPCL. DITCH RT.
-1.14% SPCL. DITCH RT.
-2.86% SPCL. DITCH LT.
4.20% SPCL. DITCH RT.
0.38% SPCL. DITCH LT.
-0.50% SPCL. DITCH LT.
-0.92%

PROFILE GRADE CRL CL SURVEY

EXISTING GRADE CRL ℄ SURVEY

PVI 839+00.00 EL 810.00
PVI 840+00.00 EL 807.50
PVI 840+00.00 EL 810.44
PVI 842+95.00 EL 804.14
PVI 843+05.00 EL 804.14
PVI 842+95.00 EL 802.00
PVI 843+05.00 EL 802.00
PVI 844+00.00 EL 808.13
PVI 845+00.00 EL 802.75
PVI 848+00.00 EL 801.00

PROFILE ELEVATIONS SHOWN ARE ALONG CRL CL SURVEY

837+00	838+00	839+00	840+00	841+00	842+00	843+00	844+00	845+00	846+00	847+00	848+00	849+00	850+00
817.30	816.38	815.47	814.55	813.63	812.71	811.80	810.88	809.96	809.04	808.13	807.21	806.29	805.37
814.84	814.28	813.32	811.82	809.33	806.02	804.37	804.68	806.11	805.62	807.24	807.17	806.35	806.51

PRINT DATE: 2/10/2022 X:\Projects\692-Medill Bypass\DGN\REVISED\Sheets\R011-18835(09)-Plan & Profile Sht 11.dgn

US-70 MARSHALL COUNTY

STATE JOB NO. 18835(09) SHEET NO. R011

OKLAHOMA DEPARTMENT OF TRANSPORTATION

REVISED PROPOSED R/W

1/31/2022

1 UPDATED PROPOSED ROW 1/31/2022

SEC. 12, T-6-S, R-5-E

PI 843+62.33
Δ 27°10'55.6532" LT
D 05°58'03.1889"
T 761.55SF
L 1494.42SF
R 3150.00SF
PC 836+00.79
PT 850+95.20

TYPICAL DITCH
TYPICAL DITCH (PAVED)
SPECIAL DITCH
SPECIAL DITCH (PAVED)

DITCH LEGEND

MATCH LINE STA. 850+00

PROP. RW

+50 150' 1

+56 150'

TOC/TOS

Pres. R/W

SP. DITCH LT.

180+00

185+00

190+00

BM #43
"X" ON CL EAST HEADWALL
RCP X-DRAIN
STA. 855+46, 82' LT.
ELEV. = 798.01

BM# 43
ELEV. 798.01

BM# 44
ELEV. 794.72

6-W-Barb

15.11.73'

S34°29'5.77"E

PT 851+39.36

60'

10'12'12'12'12'10'

US-70 ℄ SURVEY

FO

STA. 853+71.09 US-70 = STA. 180+75.00
℄ EXIST OLD US-70
END CONSTRUCTION
PROJECT NO. J/P-18835(09)

SCALES:
1" = 50' HOR
1" = 5' VER

SEC. 12, T-6-S, R-5-E

B.M. #43
"X" ON CL EAST HEADWALL
RCP X-DRAIN
STA. 855+46, 82' LT.
ELEV. = 798.01

B.M. #44
DELINEATOR POST IN EAST
US 70 RW FENCE
STA. 858+68, 114' LT.
ELEV. = 794.72

SUPERELEVATION
5.20% (FULL SUPER)

SUPERELEVATION
5.20% TO N.C.

STA. 850+88.30

STA. 851+84.30

PROFILE GRADE
CRL CL SURVEY

-0.92%

PVI 853+97.11
EL 801.73

EXISTING GRADE
CRL ℄ SURVEY

-1.05% SP. DITCH LT.

PVI 853+97.11
EL 795.00

PROFILE ELEVATIONS SHOWN
ARE ALONG CRL CL SURVEY

850+00	851+00	852+00	853+00	854+00	855+00	856+00	857+00	858+00	859+00	860+00	861+00	862+00	863+00
805.37 / 805.51	804.46 / 804.44	803.54 / 803.52	802.62 / 802.67	801.70	800.80	799.89	798.93	797.83	796.11	794.31			

825 820 815 810 805 800 795 790 785 780

US-70 MARSHALL COUNTY
STATE JOB NO. 18835(09) SHEET NO. R012

PRINT DATE: 2/10/2022 X:\Projects\692-Medill Bypass\DGN\REVISED\Sheets\R012-18835(09)-Plan & Profile Sht 12.dgn

OKLAHOMA DEPARTMENT OF TRANSPORTATION

REVISED PROPOSED R/W

1/31/2022

SEC. 35, T-5-S, R-5-E

SEC. 36, T-5-S, R-5-E

1 ADDED LABELS & EDITED RW 1/31/2022

SEE SHEET R005

SMILEY RD. / E.W. 203

SECTION LINE

PROP. RW

Pres. R/W

EASEMENT

50' Waterline Easement

TYPICAL DITCH
TYPICAL DITCH (PAVED)
SPECIAL DITCH
SPECIAL DITCH (PAVED)

DITCH LEGEND

SEC. 2, T-6-S, R-5-E

SEC. 1, T-6-S, R-5-E

SCALES:
1" = 50' HOR
1" = 5' VER

B.M. #30
#6 REBAR STAKE
STA. 757+41, 533' LT.
ELEV. = 743.63

EXISTING GRADE

PROFILE GRADE ON C.R.L.

PVI 17+08.90 EL 767.00

PVI 13+47.23 EL 746.57

PVC 15+40.79 EL 758.40

PVC 19+40.79 EL 756.63

PVI 19+67.79 EL 754.06

PVC 19+55.79 EL 755.06

PVI 20+11.79 EL 754.18

PVI 20+51.79 EL 754.98

PVI 20+91.79 EL 754.18

PVT 24+00.00 EL 741.43

PVI 22+00.00 EL 745.50

PVI 24+00.00 EL 737.53

V.C. = 400.00'
K = 30

V.C. = 56.00'
K = 6

6.11%

-7.00%

2.00%

-2.00%

3.99% SPCL. DITCH RT.

743.97 749.55 750.05 754.62 757.12 756.64 761.99 755.32 766.03 751.12 765.24 749.24 762.03 750.75 757.19 750.83 752.71 748.53 749.06 744.93 744.58 741.18 741.13 737.48

13+00 14+00 15+00 16+00 17+00 18+00 19+00 20+00 21+00 22+00 23+00 25+00 26+00

770 765 760 755 750 745 740 735 730 725

SMILEY RD. MARSHALL COUNTY

STATE JOB NO. 18835(09) SHEET NO. R013

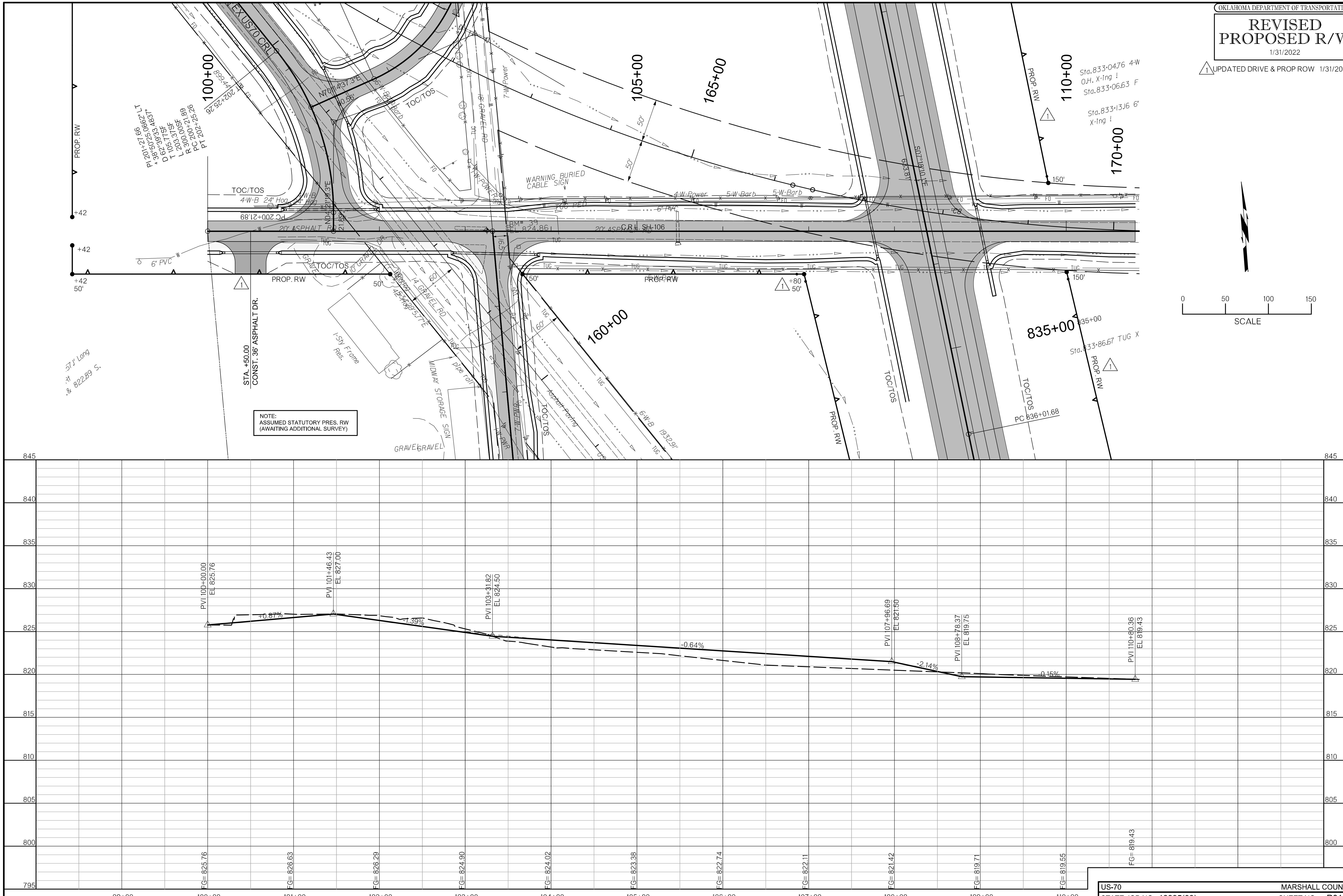
PRINT DATE: 2/10/2022 X:\Projects\692-Medill Bypass\DGN\REVISED\Sheets\R013-18835(09)-Plan & Profile Smiley Road.dgn

OKLAHOMA DEPARTMENT OF TRANSPORTATION

REVISED PROPOSED R/W

1/31/2022

1 UPDATED DRIVE & PROP ROW 1/31/2022



EX US70 CRL
100+00
105+00
110+00
165+00
170+00
160+00
835+00
PROP. RW
TOC/TOS
C.R.L. SH-106
20' ASPHALT RD
PI 201+27.66
Δ 38°50'25.0662" LT
D 62°39'33.4837"
T 105.77SF
L 203.00SF
R 300.00SF
PC 200+21.89
PT 202+25.26
PC 200+21.89
WARNING BURIED CABLE SIGN
STA. +50.00
CONST. 36' ASPHALT DR.
NOTE:
ASSUMED STATUTORY PRES. RW
(AWAITING ADDITIONAL SURVEY)
PC 836+01.68
Sta.833+04.76 4-W O.H. X-Ing !
Sta.833+06.63 F
Sta.833+13.16 6' X-Ing !
Sta.833+86.67 TUG X
SCALE
0
50
100
150
PVI 100+00.00
EL 825.76
PVI 101+46.43
EL 827.00
PVI 103+31.82
EL 824.50
PVI 107+96.69
EL 821.50
PVI 108+78.37
EL 819.75
PVI 110+80.36
EL 819.43
+0.87%
-1.39%
-0.64%
-2.14%
-0.15%
FG= 825.76
FG= 826.63
FG= 826.29
FG= 824.90
FG= 824.02
FG= 823.38
FG= 822.74
FG= 822.11
FG= 821.42
FG= 819.71
FG= 819.55
FG= 819.43
99+00
100+00
101+00
102+00
103+00
104+00
105+00
106+00
107+00
108+00
109+00
110+00
845
840
835
830
825
820
815
810
805
800
795

PRINT DATE: 2/10/2022 X:\Projects\692-Madill Bypass\DGN\REVISED\Sheets\SIDE ROAD P&P SHEETS\R014-18835(09)-Plan & Profile EX US75.dgn

US-70	MARSHALL COUNTY
STATE JOB NO. 18835(09)	SHEET NO. R014

OKLAHOMA DEPARTMENT OF TRANSPORTATION

REVISED PROPOSED R/W

1/31/2022

1 ADDED DRIVE & SIDE DRAIN 1/31/2022

PI 201+27.66
Δ 38°50'25.0662" LT
D 62°39'33.4837"
T 105.77SF
L 203.37SF
R 300.00SF
PC 200+21.89
PT 202+25.26

POB 100+00.00

PI 302+00.02
Δ 71°01'38.3055" LT
D 104°25'55.8062"
T 128.46SF
L 223.14SF
R 180.00SF
PC 300+90.56
PT 303+03.70

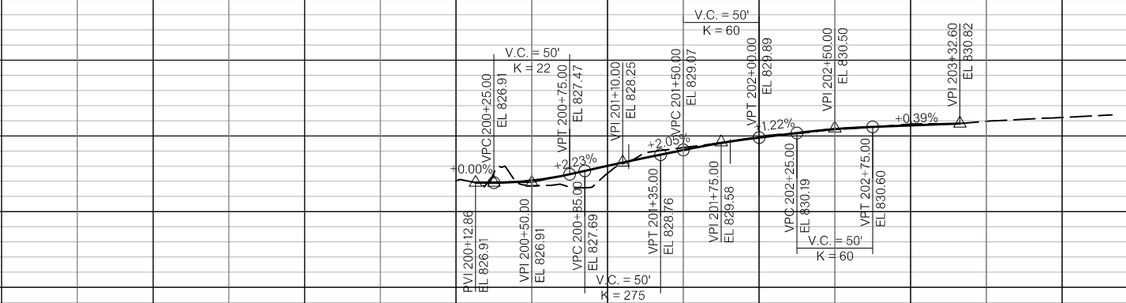
C.R.L. EX. US-70

PROP. RW

405+00

305+00

SCALE 0 50 100 150



US-70	MARSHALL COUNTY
STATE JOB NO. 18835(09)	SHEET NO. R015

PRINT DATE: 2/10/2022 X:\Projects\692-Madill Bypass\DGN\REV\SED\Sheets\SIDE ROAD P&P SHEETS\R015-18835(09)-Plan & Profile SH106.dgn

OKLAHOMA DEPARTMENT OF TRANSPORTATION

REVISED PROPOSED R/W
1/31/2022

1 UPDATED PROPOSED ROW 1/31/2022

SEC. 25, T-5-S, R-5-E

SEC. 36, T-5-S, R-5-E

SEC. 26, T-5-S, R-5-E

SEC. 35, T-5-S, R-5-E

SECTION LINE

N 00°26'09.36" W 1321.50'

N0°26'9.36"W 1949.24'

S0°26'9.36"W 1060.00'

NS 352

PRES. R/W

ST AT ∠ R/W

16.5'

TUG

13.50'

150'-0"

PROP. R/W

150'

+ 00

PT 711+19.60 CL SURVEY

SP. DITCH LT.

SP. DITCH RT.

TOC/TOS

US-70 ℄ SURVEY

EW-202

SECTION LINE

N 89°19'37.99" E

740.18'

746.35'

742.28'

375.33'

370.27'

33'

550+86.40

550+00

645+00

710+00

715+00

720+00

MATCH LINE STA. 720+00

UTILITY COORDINATION

UTILITY	PHONE	NOTIFIED	RESPONDED
AT&T TELEPHONE LINES	580-276-3364		
OG&E ELECTRIC LINES	580-220-2620		
WATERLINES: CITY OF MADILL MARSHALL CO. WATER CORP	580-795-5586 580-795-3368		
SANITARY SEWER: CITY OF MADILL	580-795-5586		
GAS LINES: ONG KINDER/MORGAN ATLAS PIPELINE MADILL GAS PROCESSING	800-664-5463 800-733-2490 918-574-3500 580-795-7396		

SCALES:
1" = 50' HOR
1" = 5' VER

DESIGN	JCD	
DRAWN	MRW	
CHECKED	JCD	
APPROVED	RJM	
SQUAD	BKL, Inc.	

OKLAHOMA DEPARTMENT OF TRANSPORTATION
DESIGN DIVISION

RIGHT OF WAY DETAIL (1)

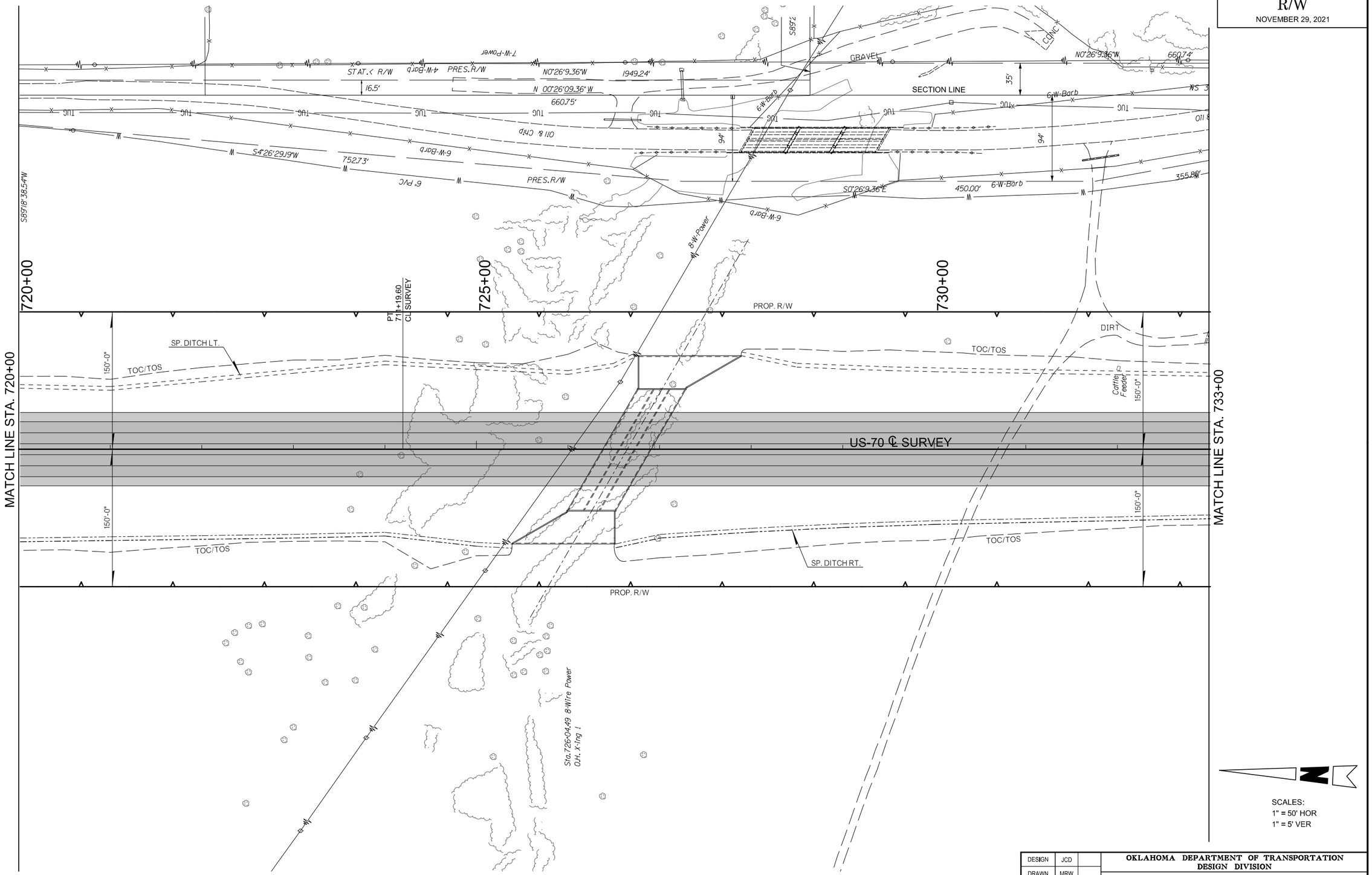
JOB PIECE NO. 18835 (09) SHEET NO. R016

OKLAHOMA DEPARTMENT OF TRANSPORTATION

PROPOSED R/W

NOVEMBER 29, 2021

SEC. 36, T-5-S, R-5-E



SCALES:
1" = 50' HOR
1" = 5' VER

SEC. 35, T-5-S, R-5-E

DESIGN	JCD	
DRAWN	MRW	
CHECKED	JCD	
APPROVED	RJM	
SQUAD	BKL, Inc.	

OKLAHOMA DEPARTMENT OF TRANSPORTATION
DESIGN DIVISION

RIGHT OF WAY DETAIL (2)

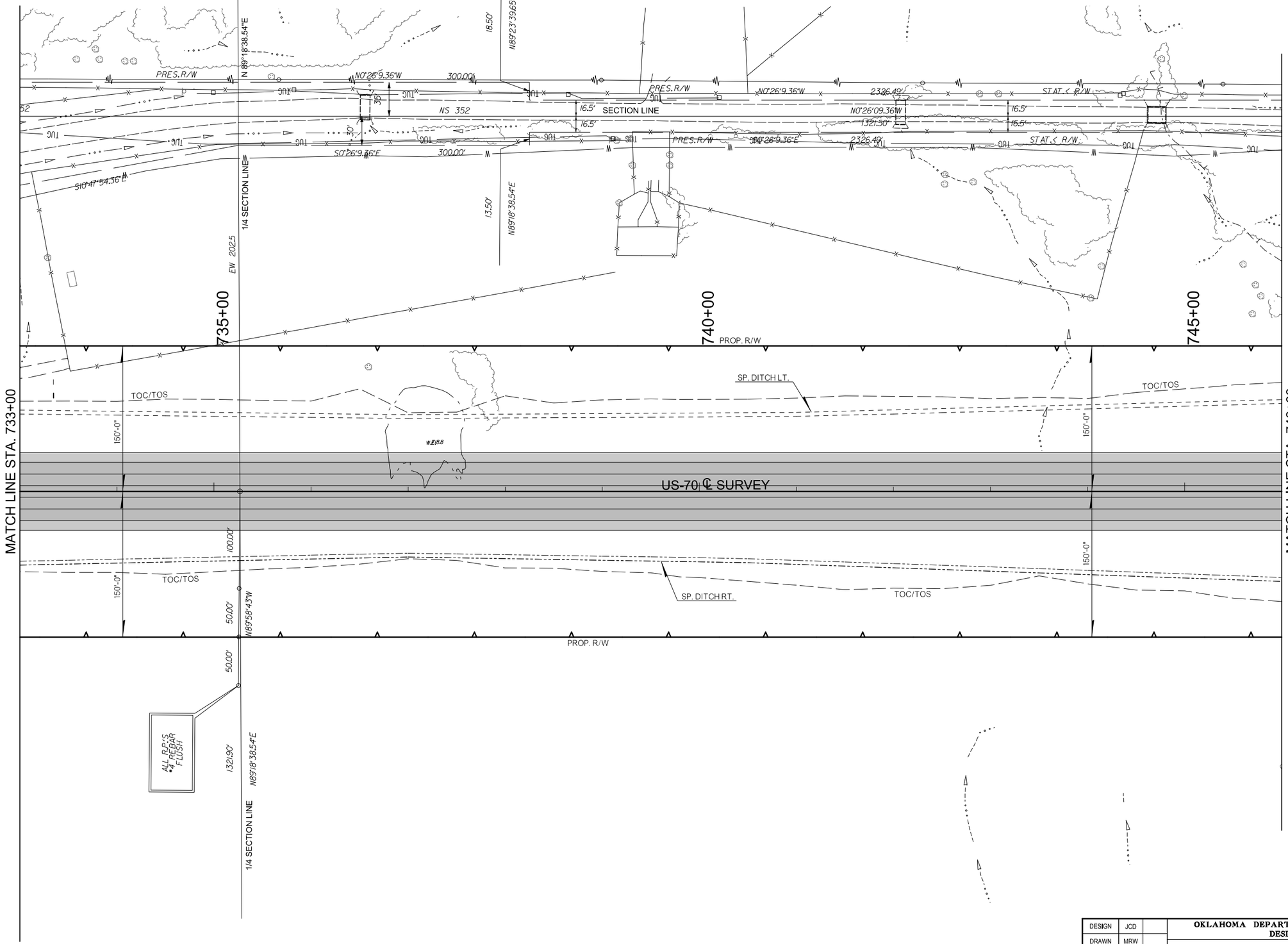
JOB PIECE NO. 18835 (09) SHEET NO. R017

OKLAHOMA DEPARTMENT OF TRANSPORTATION

PROPOSED R/W

NOVEMBER 29, 2021

SEC. 36, T-5-S, R-5-E



SCALES:
1" = 50' HOR
1" = 5' VER

SEC. 35, T-5-S, R-5-E

DESIGN	JCD	
DRAWN	MRW	
CHECKED	JCD	
APPROVED	RJM	
SQUAD	BKL, Inc.	

OKLAHOMA DEPARTMENT OF TRANSPORTATION
DESIGN DIVISION

RIGHT OF WAY DETAIL (3)

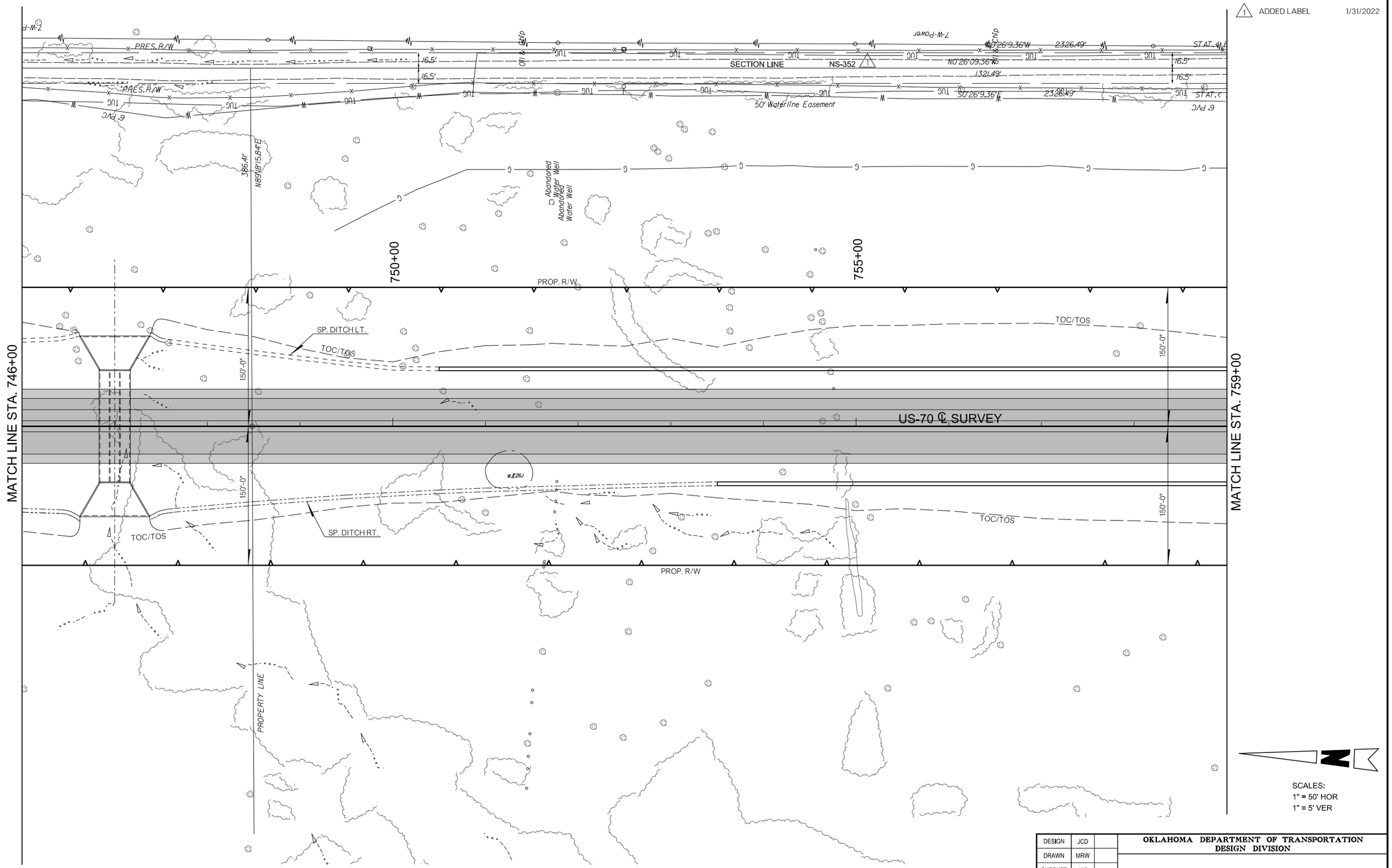
JOB PIECE NO. 18835 (09) SHEET NO. R018

OKLAHOMA DEPARTMENT OF TRANSPORTATION

REVISED PROPOSED R/W
1/31/2022

1 ADDED LABEL 1/31/2022

SEC. 36, T-5-S, R-5-E



SCALES:
1" = 50' HOR
1" = 5' VER

DESIGN	JCD	
DRAWN	MRW	
CHECKED	JCD	
APPROVED	RJM	
SQUAD	BKL, Inc.	

OKLAHOMA DEPARTMENT OF TRANSPORTATION
DESIGN DIVISION

RIGHT OF WAY DETAIL (4)

JOB PIECE NO. 18835 (09) SHEET NO. R019

OKLAHOMA DEPARTMENT OF TRANSPORTATION

REVISED PROPOSED R/W

1/31/2022

1 ADDED LABELS 1/31/2022

SEC. 36, T-5-S, R-5-E

SEC. 1, T-6-S, R-5-E

25+00

16.5'

16.5'

SECTION LINE

PRES. R/W

NS 352

SECTION LINE

PRES. R/W

111.97'

760+00

N89°17'52.81"E

274.43'

EW 203

1319.45'

N0°40'22.67"W

+00
250'

+25
250'

765+00

+00
150'

+25
150'

770+00

PROP. R/W

150'

150'

PROP. R/W

PROP. R/W

MATCH LINE STA. 759+00

MATCH LINE STA. 772+00

TOC/TOS

150'-0"

SP. DITCH LT.

Lagoon

1

TOC/TOS

150'-0"

US-70 ℄ SURVEY

PRES. R/W

PRES. R/W

TOC/TOS

150'-0"

SP. DITCH RT.

TOC/TOS

Lot 4

PROP. R/W

+20.57
150'

50' Waterline Easement

SECTION LINE

N89°17'52.81"E

S89°17'52.81"W

386.41'

756.31'

+20.59
150'

PROP. R/W

50'-0"

50'-0"

+00
50'

STAT. < R/W

S0°40'33.7"E

1301.76'

PRES. R/W

16.5'

N0°40'33.70"W

1318.23'

16.5'

1 NS-352

SECTION LINE

N0°40'33.70"W

1318.23'

16.5'

+00
50'

STAT. < R/W

S0°40'33.7"E

1301.75'

PRES. R/W

SEC. 35, T-5-S, R-5-E

SEC. 2, T-6-S, R-5-E

SCALES:
1" = 50' HOR
1" = 5' VER

DESIGN	JCD	
DRAWN	MRW	
CHECKED	JCD	
APPROVED	RJM	
SQUAD	BKL, Inc.	

OKLAHOMA DEPARTMENT OF TRANSPORTATION
DESIGN DIVISION

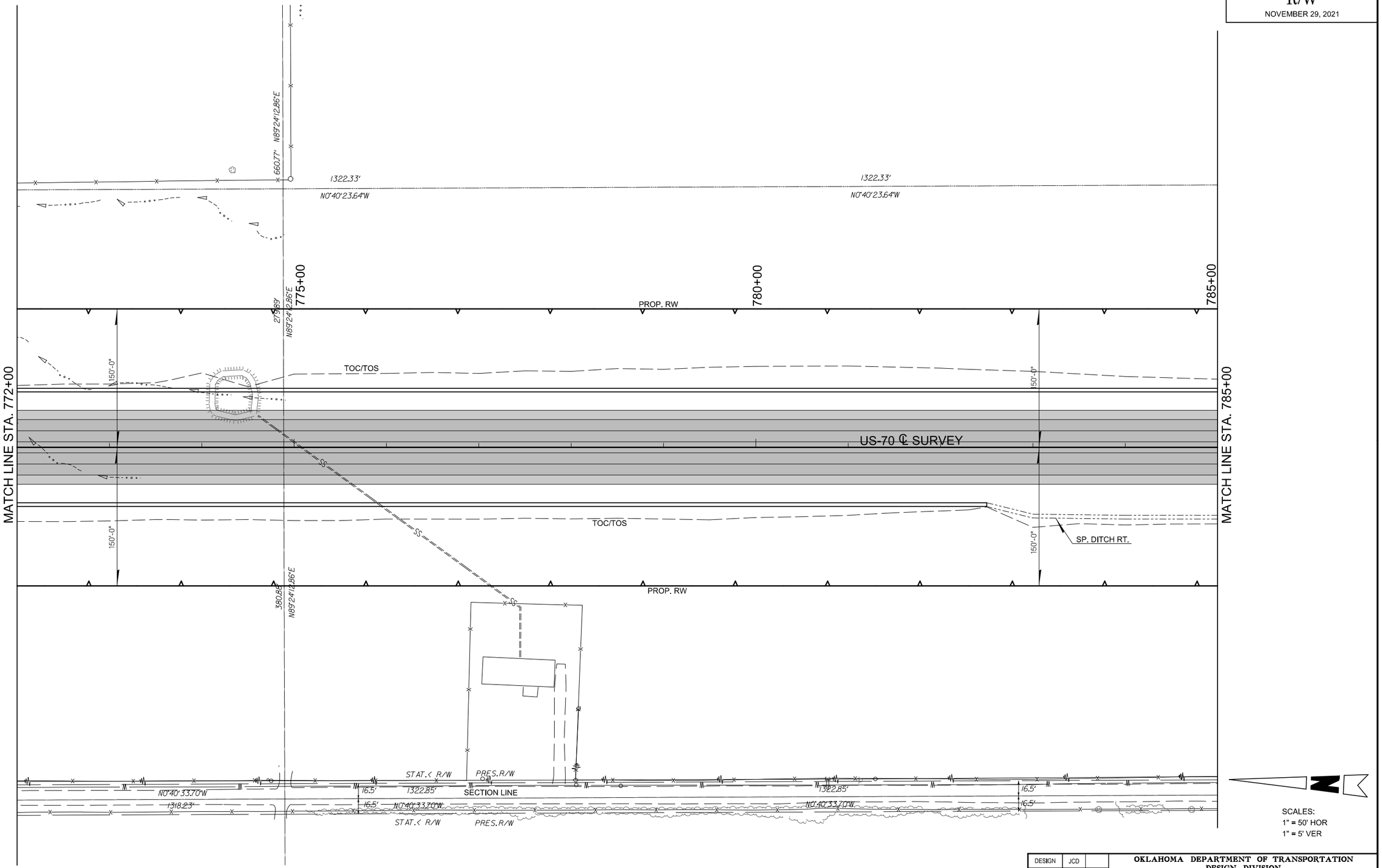
RIGHT OF WAY DETAIL (5)

JOB PIECE NO. 18835 (09) SHEET NO. R020

OKLAHOMA DEPARTMENT OF TRANSPORTATION

PROPOSED
R/W
NOVEMBER 29, 2021

SEC. 1, T-6-S, R-5-E



SCALES:
1" = 50' HOR
1" = 5' VER

SEC. 2, T-6-S, R-5-E

DESIGN	JCD	
DRAWN	MRW	
CHECKED	JCD	
APPROVED	RJM	
SQUAD	BKL, Inc.	

OKLAHOMA DEPARTMENT OF TRANSPORTATION
DESIGN DIVISION

RIGHT OF WAY DETAIL (6)

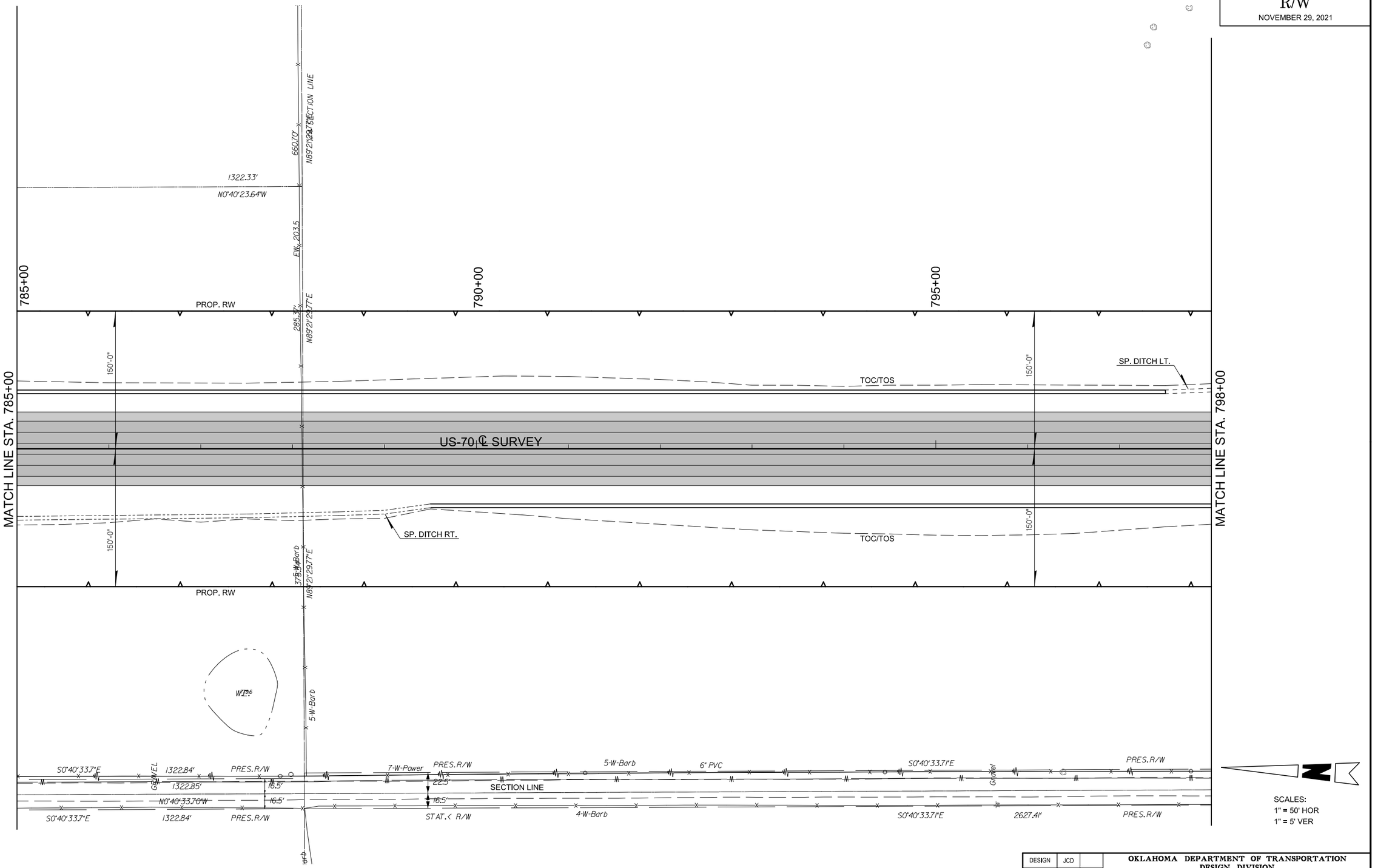
JOB PIECE NO. 18835 (09) SHEET NO. R021

OKLAHOMA DEPARTMENT OF TRANSPORTATION

PROPOSED R/W

NOVEMBER 29, 2021

SEC. 1, T-6-S, R-5-E



SCALES:
1" = 50' HOR
1" = 5' VER

SEC. 2, T-6-S, R-5-E

DESIGN	JCD	
DRAWN	MRW	
CHECKED	JCD	
APPROVED	RJM	
SQUAD	BKL, Inc.	

OKLAHOMA DEPARTMENT OF TRANSPORTATION
DESIGN DIVISION

RIGHT OF WAY DETAIL (7)

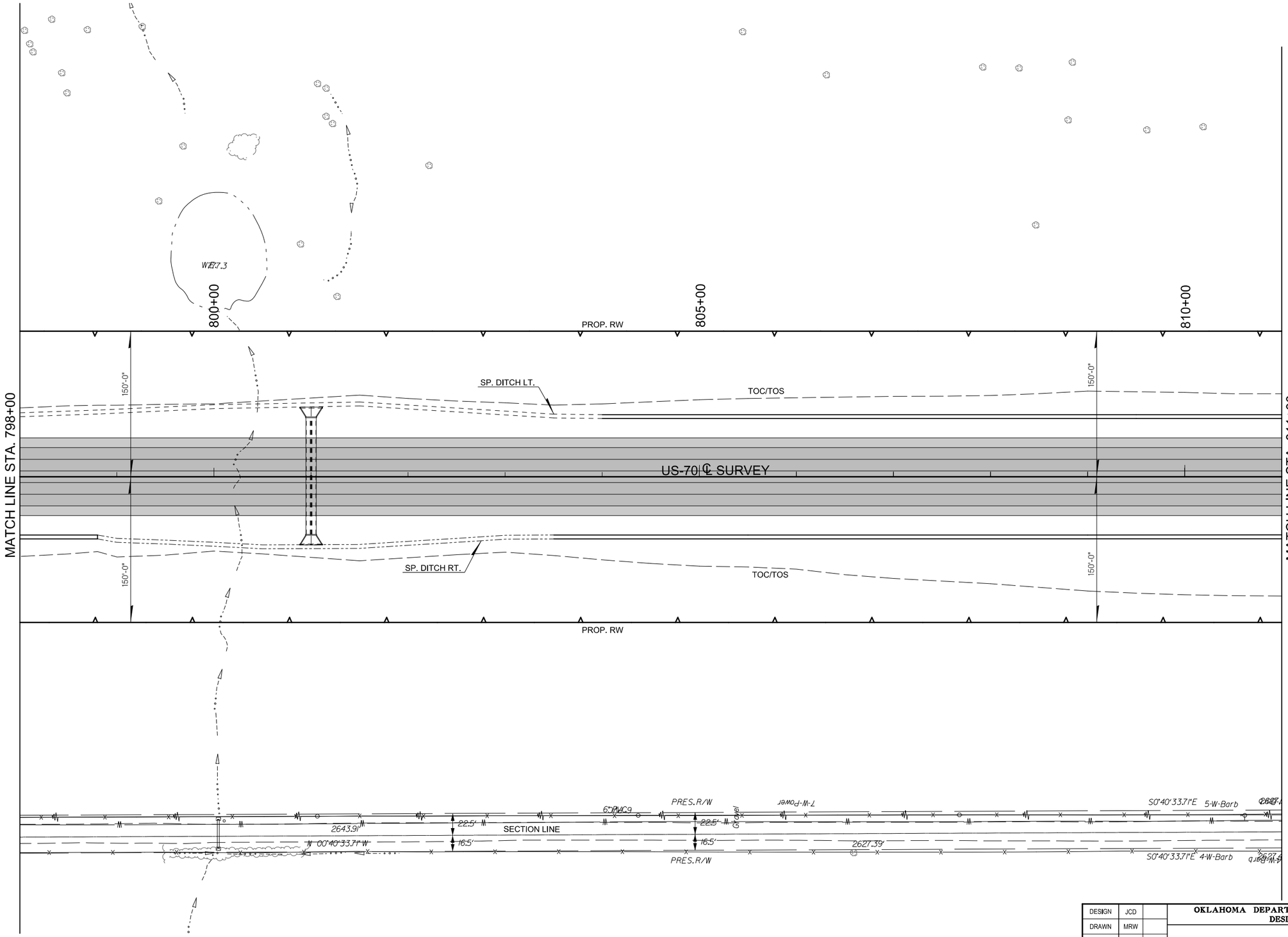
JOB PIECE NO. 18835 (09) SHEET NO. R022

OKLAHOMA DEPARTMENT OF TRANSPORTATION

PROPOSED R/W

NOVEMBER 29, 2021

SEC. 1, T-6-S, R-5-E



SCALES:
1" = 50' HOR
1" = 5' VER

SEC. 2, T-6-S, R-5-E

DESIGN	JCD	
DRAWN	MRW	
CHECKED	JCD	
APPROVED	RJM	
SQUAD	BKL, Inc.	

OKLAHOMA DEPARTMENT OF TRANSPORTATION
DESIGN DIVISION

RIGHT OF WAY DETAIL (8)

JOB PIECE NO. 18835 (09) SHEET NO. R023

OKLAHOMA DEPARTMENT OF TRANSPORTATION

REVISED PROPOSED R/W
1/31/2022

1 ADDED LABELS & EDITED RW 1/31/2022

SEC. 1, T-6-S, R-5-E

SEC. 12, T-6-S, R-5-E

MATCH LINE STA. 811+00

MATCH LINE STA. 824+00

STAT.< R/W

16.5' 16.5'

2211.99'
N89°18'54.72"E

815+00

820+00

BM# 37
ELEV=823.42

+00 200'

+00 150'

TCE

PROP. RW

PI 821+00.00
Δ 86°52'00.7565" LT
D 01°17'47.0376"
T 869.95SF
L 1737.82SF
R 14500.00SF
PC 812+30.05
PT 829+67.87

150'-0"

SP. DITCH LT.

TOC/TOS

W.E.
807.5

PC 812+30.05

US-70 ℄ SURVEY

PI 821+00.00

150'

PROP. RW

3642.26'
N89°18'54.72"E

PRES. R/W

22.5'

16.5'

STAT.< R/W

SECTION LINE

NS-352

S0°47'0.98"E

1605.90'

N0°47'0.98"W

1585.85'

POE 309+63.6

SEC. 2, T-6-S, R-5-E

SEC. 11, T-6-S, R-5-E

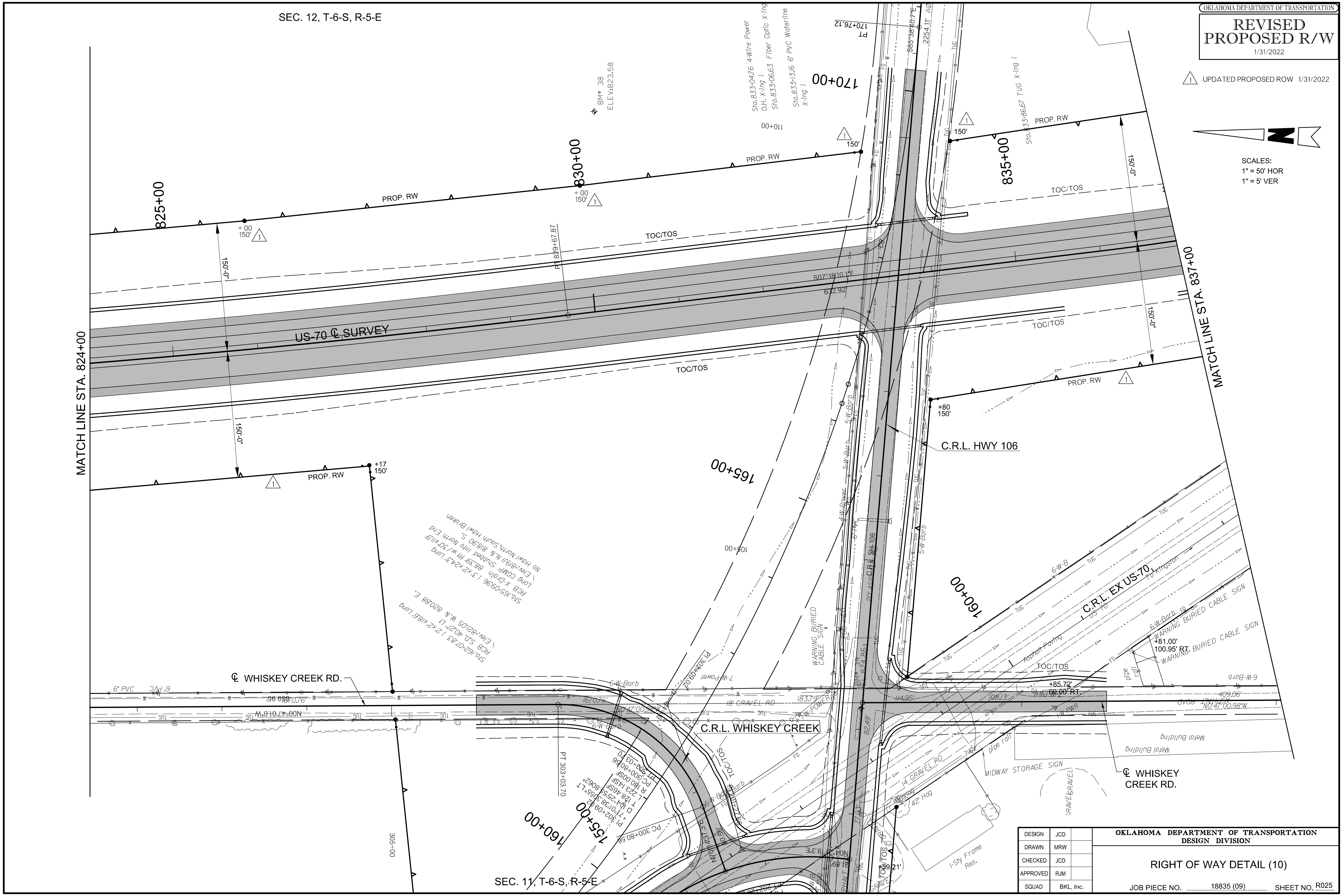
SCALES:
1" = 50' HOR
1" = 5' VER

DESIGN	JCD	
DRAWN	MRW	
CHECKED	JCD	
APPROVED	RJM	
SQUAD	BKL, Inc.	

OKLAHOMA DEPARTMENT OF TRANSPORTATION
DESIGN DIVISION

RIGHT OF WAY DETAIL (9)

JOB PIECE NO. 18835 (09) SHEET NO. R024



SEC. 12, T-6-S, R-5-E
SEC. 11, T-6-S, R-5-E
MATCH LINE STA. 824+00
MATCH LINE STA. 837+00
825+00
830+00
835+00
PROP. RW
TOC/TOS
US-70 ℄ SURVEY
S07°18'10.1"E
632.92'
150'-0"
C.R.L. HWY 106
C.R.L. EX US-70
C.R.L. WHISKEY CREEK
℄ WHISKEY CREEK RD.
BM# 38
ELEV:823.58
170+00
165+00
160+00
155+00
WARNING BURIED CABLE SIGN
MIDWAY STORAGE SIGN
Metal Building
18' GRAVEL RD
14' GRAVEL RD
Asphalt Paving
+85.72'
60.00' RT.
+81.00'
100.95' RT.
UPDATED PROPOSED ROW 1/31/2022
SCALES:
1" = 50' HOR
1" = 5' VER

OKLAHOMA DEPARTMENT OF TRANSPORTATION

REVISED PROPOSED R/W

1/31/2022

DESIGN	JCD
DRAWN	MRW
CHECKED	JCD
APPROVED	RJM
SQUAD	BKL, Inc.

OKLAHOMA DEPARTMENT OF TRANSPORTATION
DESIGN DIVISION

RIGHT OF WAY DETAIL (10)

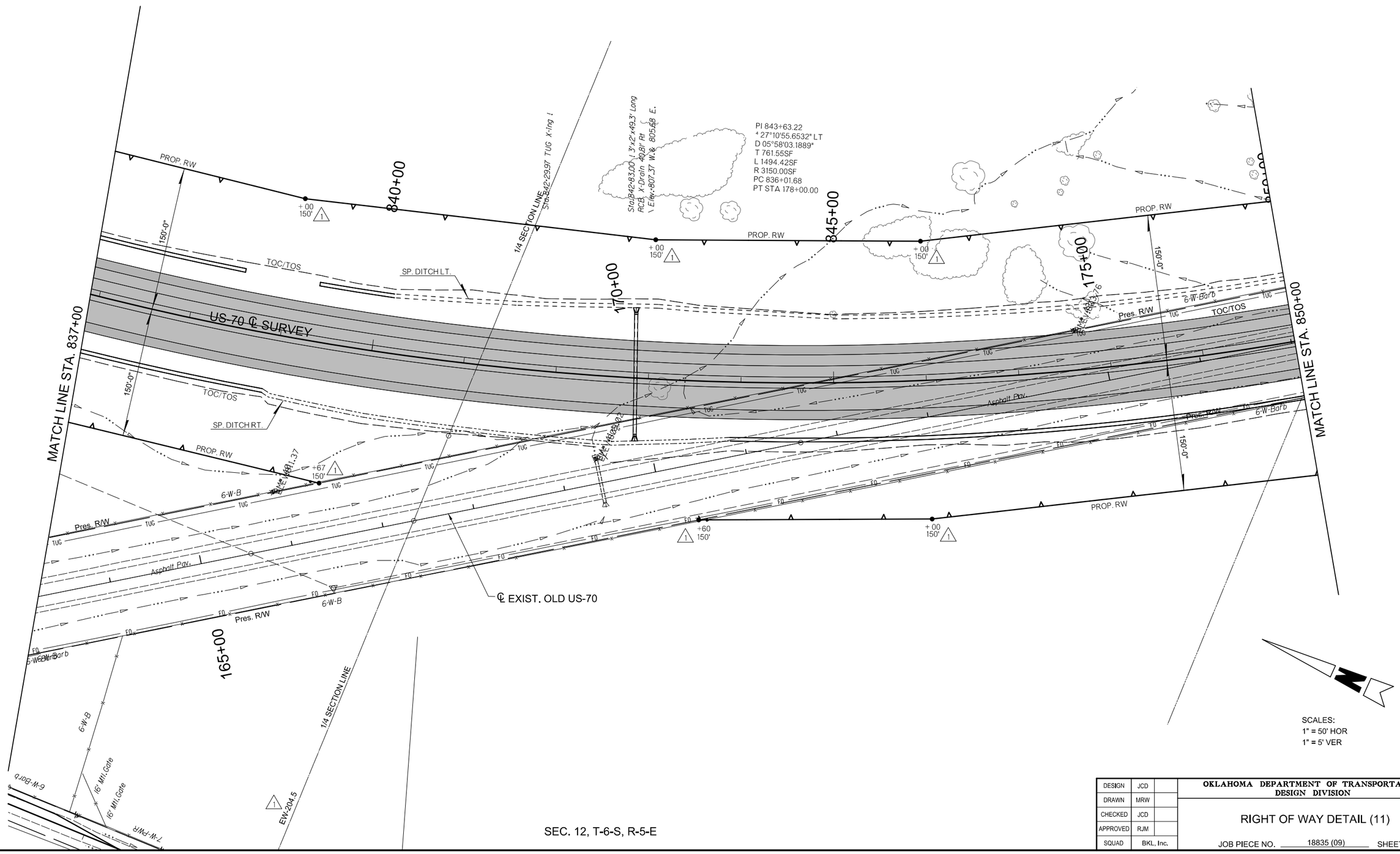
JOB PIECE NO. 18835 (09) SHEET NO. R025

SEC. 12, T-6-S, R-5-E

OKLAHOMA DEPARTMENT OF TRANSPORTATION

REVISED
PROPOSED R/W
1/31/2022

1 UPDATED LABEL & PROP RW 1/31/2022



SCALES:
1" = 50' HOR
1" = 5' VER

SEC. 12, T-6-S, R-5-E

DESIGN	JCD		OKLAHOMA DEPARTMENT OF TRANSPORTATION DESIGN DIVISION
DRAWN	MRW		
CHECKED	JCD		RIGHT OF WAY DETAIL (11)
APPROVED	RJM		
SQUAD	BKL, Inc.		JOB PIECE NO. 18835 (09) SHEET NO. R026

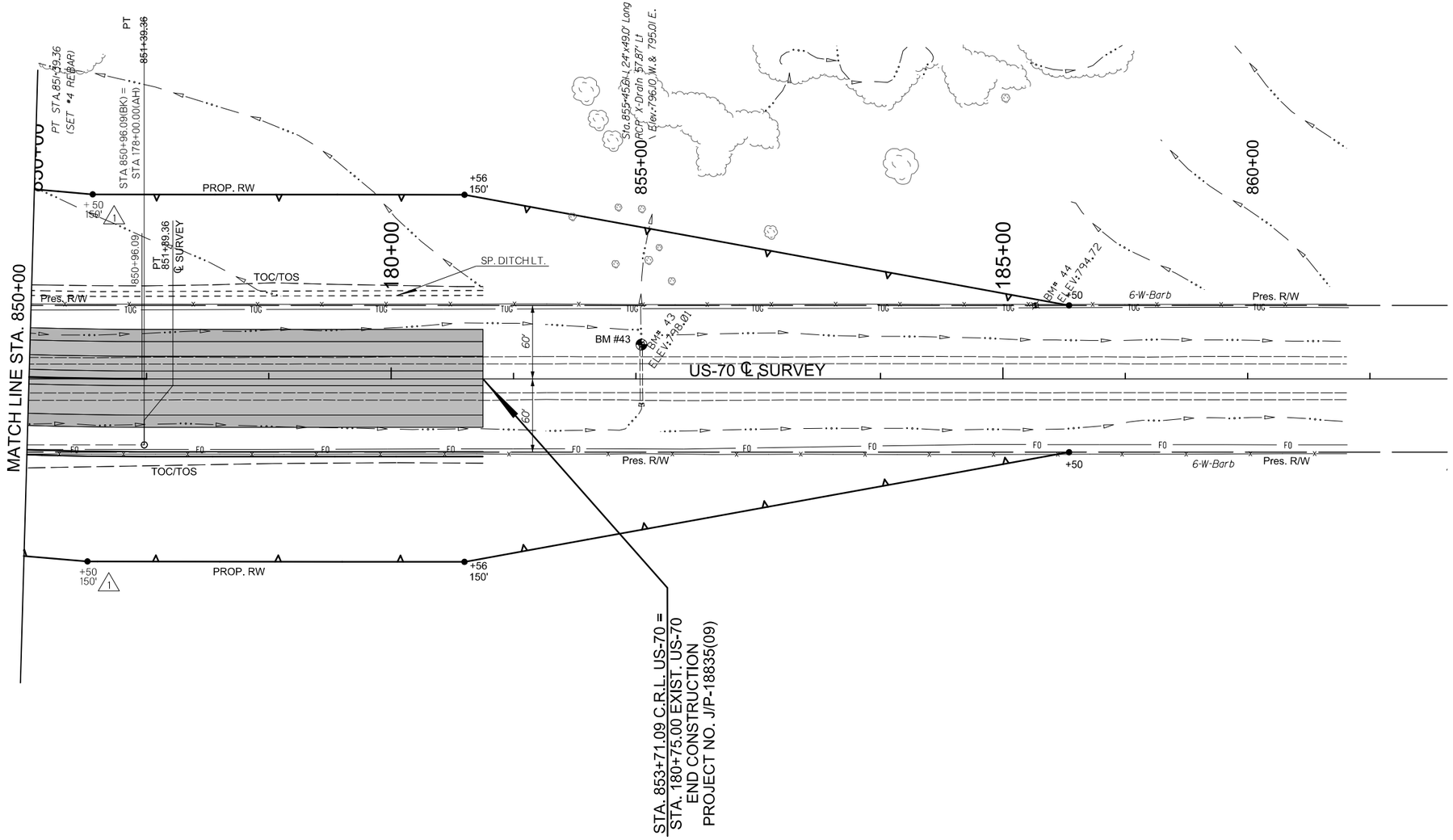
SEC. 12, T-6-S, R-5-E

OKLAHOMA DEPARTMENT OF TRANSPORTATION

REVISED PROPOSED R/W

1/31/2022

1 UPDATED PROPOSED ROW 1/31/2022



SCALES:
1" = 50' HOR
1" = 5' VER

SEC. 12, T-6-S, R-5-E

DESIGN	JCD	
DRAWN	MRW	
CHECKED	JCD	
APPROVED	RJM	
SQUAD	BKL, Inc.	

OKLAHOMA DEPARTMENT OF TRANSPORTATION
DESIGN DIVISION

RIGHT OF WAY DETAIL (12)

JOB PIECE NO. 18835 (09) SHEET NO. R027

OKLAHOMA DEPARTMENT OF TRANSPORTATION

REVISED PROPOSED R/W
1/31/2022

1 ADDED LABELS & EDITED RW 1/31/2022

SEC. 35, T-5-S, R-5-E

SEC. 36, T-5-S, R-5-E

SEC. 1, T-6-S, R-5-E

SEC. 1, T-6-S, R-5-E

SMILEY ROAD

WHISKEY CREEK RD.

℄ SMILEY RD. / EW 203

US-70 SURVEY

PROP. R/W

TOC/TOS

SECTION LINE

EASEMENT

Pres. R/W

Mobile Homes

Lagoon

pipe rail corral

CONST. 100.61 WWF FENCE
℄ SMILEY RD. STA. 15+42.00 TO
℄ SMILEY RD. STA. 16+42.61

Sta.761+35.41 Waterline X-ing !
BW203 ℄ SEC.LINE (SET MAG NAIL) 386.41' E.TO STANDARD SEC COR 386.41' W.TO CLOSING SEC LINE (CLOSING COR) 1.80' S.OF INTERSECTION

Sta.761+48.92 7-Wire Power O.H. X-ing !

Sta.761+91.96 4-Wire Power O.H. X-ing !

Sta.761+77.63 ! Triple 7'x5'x25.7' Long RCB S.D. 1107.28' Rt ∖ Elev.728.70 N.& 728.82 S.

Sta.761+51.66 ! 24'x26.2' Long RCP S.D. 385.48' Lt w/ 24'x5.4' G Long BGMC Stubbed into West End ∖ Elev.738.94 W.& 736.52 E.

Sta.761+65.82 ! 10'x4'x17.2' Long RCB S.D. 929.74' Lt ∖ Elev.723.13 N.& 723.53 S.

Sta.761+84.64 ! 12'x20.1' Long CGMP S.D. 28.08' Lt ∖ Elev.753.17 W.& 752.45 E.

Sta.763+80.35 2-Wire Power O.H. X-ing !

STA.+61.30 CONST. 12' ASPHALT DR.

N89°41'55.68"E - 654.76'

N89°07'37.55"E - 752.70'

+00.00' 180.00'

+96 50'

+00 85'

+00 50'

+25 85'

+25 50'

+76 50'

+43 50'

+59 50'

+69

+96 50'

760+00

765+00

25+00

20+00

15+00

10+00

SCALES:
1" = 50' HOR
1" = 5' VER

DESIGN	JCD	
DRAWN	MRW	
CHECKED	JCD	
APPROVED	RJM	
SQUAD	BKL, Inc.	

OKLAHOMA DEPARTMENT OF TRANSPORTATION
DESIGN DIVISION

RIGHT OF WAY DETAIL (13)
SMILEY ROAD

JOB PIECE NO. 18835 (09) SHEET NO. R028

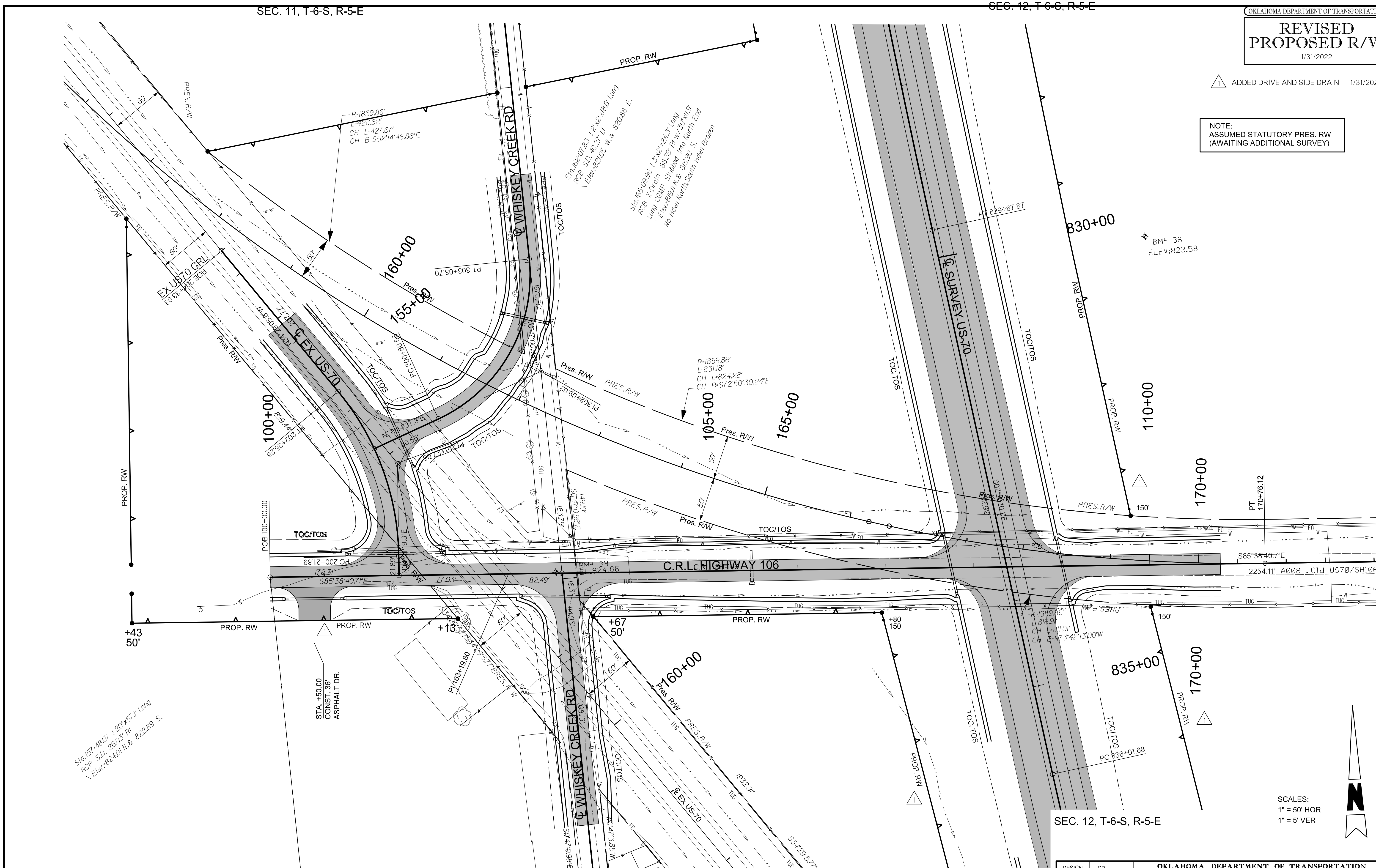
OKLAHOMA DEPARTMENT OF TRANSPORTATION

REVISED PROPOSED R/W

1/31/2022

△1 ADDED DRIVE AND SIDE DRAIN 1/31/2022

NOTE:
ASSUMED STATUTORY PRES. RW
(AWAITING ADDITIONAL SURVEY)



SEC. 11, T-6-S, R-5-E
SEC. 12, T-6-S, R-5-E
PROP. RW
PRES.R/W
R=1859.86'
L=428.62'
CH L=427.67'
CH B=S52°14'46.86"E
℄ WHISKEY CREEK RD
TOC/TOS
℄ EX US-70
EX US70 CRL
160+00
155+00
100+00
PT 303+03.70
PC 300+80.56
PI 303+60.02
R=1859.86'
L=831.18'
CH L=824.28'
CH B=S72°50'30.24"E
105+00
165+00
PT 829+67.87
830+00
BM# 38
ELEV:823.58
℄ SURVEY US-70
110+00
170+00
PT 170+76.12
150'
POB 100+00.00
PC 200+21.89
C.R.L. HIGHWAY 106
S85°38'40.7"E
S85°38'40.7"E
2254.11' A008 101d US70/SH106 S
172.31'
77.03'
82.49'
+43
50'
+13
+67
50'
+80
150
STA +50.00
CONST. 36'
ASPHALT DR.
PI 163+19.80
R=1959.86'
L=816.91'
CH L=811.01'
CH B=N73°42'13.00"W
835+00
170+00
PC 836+01.68
S34°29'5.77"E
SCALES:
1" = 50' HOR
1" = 5' VER

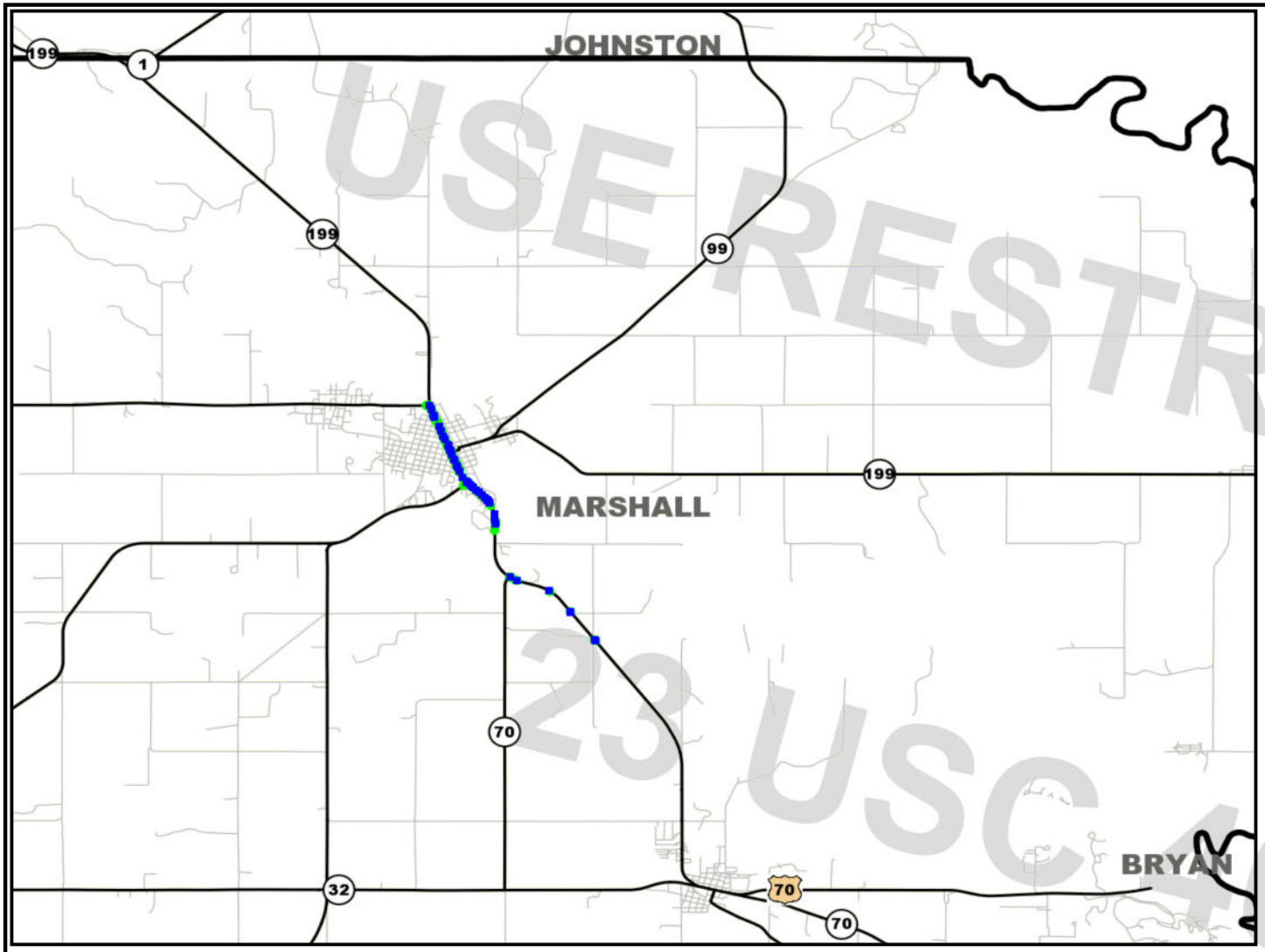
SEC. 12, T-6-S, R-5-E

SEC. 11, T-6-S, R-5-E

DESIGN	JCD	OKLAHOMA DEPARTMENT OF TRANSPORTATION DESIGN DIVISION
DRAWN	MRW	
CHECKED	JCD	RIGHT OF WAY DETAIL (14)
APPROVED	RJM	SH 106
SQUAD	BKL, Inc.	JOB PIECE NO. 18835 (09) SHEET NO. R029

APPENDIX C

COLLISION DATA



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23 USC 409

Program Provided by:
Traffic Engineering Division
Collision Analysis and Safety Branch
(405) 522-0985
Created: 12/16/2021
by S Stegmann

Study Map & Totals

Legend

- Fatality
- Injury
- Property Damage

N W E S

Remarks:

NONE

2 NONMAPPABLE COLLISIONS **

Date Range: 01-01-2011 thru 12-16-2021

	2011						2012						2013					
	Fat	SRS Inj	Non-Incap Inj	Poss Inj	PD	Tot	Fat	SRS Inj	Non-Incap Inj	Poss Inj	PD	Tot	Fat	SRS Inj	Non-Incap Inj	Poss Inj	PD	Tot
Collisions		1	1	2	10	14		1	5	5	17	28		1	2	2	26	31
Persons		2	2	3		7		1	5	10		16		1	2	5		8

STUDY TOTALS (CONT.)

Date Range: 01-01-2011 Thru 12-16-2021

Program Provided by:
Traffic Engineering Division
Collision Analysis and Safety Branch
(405) 522-0985
Created: 12/16/2021 by S Stegmann

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	2014						2015						2016					
	Fat	SRS Inj	Non-Incap Inj	Poss Inj	PD	Tot	Fat	SRS Inj	Non-Incap Inj	Poss Inj	PD	Tot	Fat	SRS Inj	Non-Incap Inj	Poss Inj	PD	Tot
Collisions			1	2	17	20		2	5	8	26	41		1	4	6	17	28
Persons			1	4		5		2	8	13		23		1	5	11		17

	2017						2018						2019					
	Fat	SRS Inj	Non-Incap Inj	Poss Inj	PD	Tot	Fat	SRS Inj	Non-Incap Inj	Poss Inj	PD	Tot	Fat	SRS Inj	Non-Incap Inj	Poss Inj	PD	Tot
Collisions			3	8	33	44			2	6	26	34				3	14	17
Persons			3	11		14			3	8		11				4		4

	2020						2021*					
	Fat	SRS Inj	Non-Incap Inj	Poss Inj	PD	Tot	Fat	SRS Inj	Non-Incap Inj	Poss Inj	PD	Tot
Collisions					1	1						0
Persons						0						0

* DENOTES A YEAR FOR WHICH DATA MAY BE INCOMPLETE.

	Study Total					
	Fatality	Suspected Serious Injury	Non-Incapacitating Injury	Possible Injury	Property Damage	Total
Collisions		6	23	42	187	258
Persons		7	29	69		105

** NONMAPPABLE COLLISIONS ARE NOT PLOTTED ON THE MAP DUE TO INSUFFICIENT LOCATION INFORMATION.

STUDY TOTALS - BY CITY AND HWY CLASS

Date Range: 01-01-2011 Thru 12-16-2021

Program Provided by:
Traffic Engineering Division
Collision Analysis and Safety Branch
(405) 522-0985
Created: 12/16/2021 by S Stegmann

USE RESTRICTED
23 USC 409

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
2011		4	10	14										4	10	14
2012		11	17	28										11	17	28
2013		5	26	31										5	26	31
2014		3	17	20										3	17	20
2015		15	26	41										15	26	41
2016		11	17	28										11	17	28
2017		11	33	44										11	33	44
2018		8	26	34										8	26	34
2019		3	14	17										3	14	17
2020			1	1											1	1
Total:		71	187	258				0				0		71	187	258

County: (48) MARSHALL

	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
(05) KINGSTON		1	1	2										1	1	2
(10) MADILL		70	186	256										70	186	256
Total:		71	187	258				0				0		71	187	258

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

Program Provided by:
Traffic Engineering Division
Collision Analysis and Safety Branch
(405) 522-0985
Created: 12/16/2021 by S Stegmann

USE RESTRICTED
23 USC 409

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)		2	7	9		4	2	6		1	6	7		1	5	6		6	6	12
Head-On (front-to-front)						1		1										1		1
Right Angle (front-to-side)						2	1	3		1	2	3			4	4				
Angle Turning		1	1	2		1	5	6			7	7		1	3	4		2	5	7
Other Angle																			1	1
Sideswipe Same Direction							1	1							1	1				
Sideswipe Opposite Direction																				
Fixed Object		1		1		1	2	3			4	4								
Pedestrian																		1		1
Pedal Cycle																				
Animal											1	1								
Overturn/Rollover						1		1			2	2						1		1
Vehicle-Train																				
Other Single Vehicle Crash																				
Other			2	2		1	6	7		3	4	7		1	4	5		4	14	18
Total		4	10	14		11	17	28		5	26	31		3	17	20		15	26	41
Percent		1.6	3.9	5.4		4.3	6.6	10.9		1.9	10.1	12.0		1.2	6.6	7.8		5.8	10.1	15.9

Collisions By Type Of Collision

Type Of Collision	2016				2017				2018				2019				2020			
	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)		4	9	13		5	16	21		4	15	19		2	8	10			1	1
Head-On (front-to-front)																				
Right Angle (front-to-side)			2	2			1	1		1	2	3			1	1				
Angle Turning		3	2	5		3	8	11		2	3	5			1	1				
Other Angle																				
Sideswipe Same Direction											1	1			2	2				
Sideswipe Opposite Direction															1	1				
Fixed Object		2	2	4			5	5			3	3		1		1				
Pedestrian						1		1												
Pedal Cycle																				
Animal																				
Overturn/Rollover						1		1												
Vehicle-Train																				
Other Single Vehicle Crash		1		1																
Other		1	2	3		1	3	4		1	2	3			1	1				
Total		11	17	28		11	33	44		8	26	34		3	14	17			1	1
Percent		4.3	6.6	10.9		4.3	12.8	17.1		3.1	10.1	13.2		1.2	5.4	6.6			0.4	0.4

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

TABULATION OF COLLISIONS

Date Range: 01-01-2011 Thru 12-16-2021

Program Provided by:
Traffic Engineering Division
Collision Analysis and Safety Branch
(405) 522-0985
Created: 12/16/2021 by S Stegmann

USE RESTRICTED
23 USC 409

Collisions By Type Of Collision

Type Of Collision	2021*				Total				
	Fat	Inj *	PD	Tot	Fat	Inj *	PD	Tot	Pct
Rear-End (front-to-rear)						29	75	104	40.3
Head-On (front-to-front)						2		2	0.8
Right Angle (front-to-side)						4	13	17	6.6
Angle Turning						13	35	48	18.6
Other Angle							1	1	0.4
Sideswipe Same Direction							5	5	1.9
Sideswipe Opposite Direction							1	1	0.4
Fixed Object						5	16	21	8.1
Pedestrian						2		2	0.8
Pedal Cycle									
Animal							1	1	0.4
Overturn/Rollover						3	2	5	1.9
Vehicle-Train									
Other Single Vehicle Crash						1		1	0.4
Other						12	38	50	19.4
Total						71	187	258	100
Percent						27.5	72.5	100	

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

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Collision Analysis and Safety Branch
(405) 522-0985
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USE RESTRICTED
23 USC 409

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																				
Pedal Cycle																				
Parked Vehicle						1		1							1	1				
CMV		1	2	3		1	3	4		1	8	9			1	1			2	2
Other Single Vehicle						1	2	3			3	3						2		2
Other Multi-Vehicle		8	16	24		21	27	48		9	34	43		6	33	39		30	50	80
Total		9	18	27		24	32	56		10	45	55		6	35	41		33	52	85
Percent		1.8	3.5	5.3		4.7	6.3	11.0		2.0	8.9	10.8		1.2	6.9	8.1		6.5	10.2	16.7

Units By Unit Type

Unit Type	2016				2017				2018				2019				2020			
	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																				
Pedal Cycle		1		1																
Parked Vehicle							1	1			2	2			1	1				
CMV			1	1		1	4	5		1	4	5								
Other Single Vehicle		4	2	6		1	3	4			2	2		1		1				
Other Multi-Vehicle		17	29	46		21	54	75		15	44	59		4	28	32			2	2
Total		22	32	54		24	62	86		16	52	68		5	29	34			2	2
Percent		4.3	6.3	10.6		4.7	12.2	16.9		3.1	10.2	13.4		1.0	5.7	6.7			0.4	0.4

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

Program Provided by:
Traffic Engineering Division
Collision Analysis and Safety Branch
(405) 522-0985
Created: 12/16/2021 by S Stegmann

USE RESTRICTED
23 USC 409

Units By Unit Type

Unit Type	2021*				Total				
	Fat	Inj *	PD	Tot	Fat	Inj *	PD	Tot	Pct
Train									
Pedestrian						2		2	0.4
Animal									
Pedal Cycle						1		1	0.2
Parked Vehicle						1	5	6	1.2
CMV						5	25	30	5.9
Other Single Vehicle						9	12	21	4.1
Other Multi-Vehicle						131	317	448	88.2
Total						149	359	508	100
Percent						29.3	70.7	100	

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

Program Provided by:
Traffic Engineering Division
Collision Analysis and Safety Branch
(405) 522-0985
Created: 12/16/2021 by S Stegmann

USE RESTRICTED
23 USC 409

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			2	2		2	3	5			2	2			1	1			4	4
Passenger Vehicle-4 Door		3	7	10		7	10	17		1	14	15		1	15	16		2	19	21
Passenger Vehicle-Convertible											2	2								
Pickup Truck		1	8	9		5	14	19		3	14	17		2	14	16		8	20	28
Single-Unit Truck (2 axles)										1	1	2								
Single-Unit Truck (3 or more axles)																				
School Bus																				
Truck/Trailer																				
Truck-Tractor (bobtail)																			1	1
Truck-Tractor/Semi-Trailer			2	2		1	3	4		1	4	5							1	1
Truck-Tractor/Double																				
Truck-Tractor/Triple																				
Bus/Large Van (9-15 seats)																				
Bus (16+ seats)																				
Motorcycle							1	1						1		1		2		2
Motor Scooter/Moped																				
Motor Home																				
Farm Machinery																				
ATV																				
Sport Utility Vehicle (SUV)			2	2			6	6		1	7	8			6	6		5	17	22
Passenger Van		1	1	2			2	2											2	2
Truck More Than 10,000 lbs.																				
Van (10,000 lbs. or less)																				
Other							2	2			4	4			1	1		1	2	3
Total		5	22	27		15	41	56		7	48	55		4	37	41		18	66	84
Percent		1.0	4.4	5.3		3.0	8.1	11.1		1.4	9.5	10.9		0.8	7.3	8.1		3.6	13.1	16.6

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

Program Provided by:
Traffic Engineering Division
Collision Analysis and Safety Branch
(405) 522-0985
Created: 12/16/2021 by S Stegmann

USE RESTRICTED
23 USC 409

Vehicles By Vehicle Type

Vehice Type	2016				2017				2018				2019				2020			
	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	2	3			2	2			5	5			3	3			1	1
Passenger Vehicle-4 Door		1	7	8		2	24	26		4	18	22		3	11	14			1	1
Passenger Vehicle-Convertible																				
Pickup Truck		4	16	20		4	21	25		3	20	23		1	5	6				
Single-Unit Truck (2 axles)			1	1																
Single-Unit Truck (3 or more axles)																				
School Bus			1	1							2	2								
Truck/Trailer						1		1												
Truck-Tractor (bobtail)							1	1												
Truck-Tractor/Semi-Trailer			1	1			3	3			2	2								
Truck-Tractor/Double																				
Truck-Tractor/Triple											1	1								
Bus/Large Van (9-15 seats)																				
Bus (16+ seats)																				
Motorcycle		1		1																
Motor Scooter/Moped																				
Motor Home																				
Farm Machinery																				
ATV																				
Sport Utility Vehicle (SUV)		3	12	15		4	19	23		3	6	9			9	9				
Passenger Van		1	2	3							2	2								
Truck More Than 10,000 lbs.																				
Van (10,000 lbs. or less)																				
Other						1	3	4			2	2			2	2				
Total		11	42	53		12	73	85		10	58	68		4	30	34			2	2
Percent		2.2	8.3	10.5		2.4	14.5	16.8		2.0	11.5	13.5		0.8	5.9	6.7			0.4	0.4

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

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Vehicles By Vehicle Type

Vehice Type	2021*				Total				
	Fat	Inj *	PD	Tot	Fat	Inj *	PD	Tot	Pct
Passenger Vehicle-2 Door						3	25	28	5.5
Passenger Vehicle-4 Door						24	126	150	29.7
Passenger Vehicle-Convertible							2	2	0.4
Pickup Truck						31	132	163	32.3
Single-Unit Truck (2 axles)						1	2	3	0.6
Single-Unit Truck (3 or more axles)									
School Bus							3	3	0.6
Truck/Trailer						1		1	0.2
Truck-Tractor (bobtail)							2	2	0.4
Truck-Tractor/Semi-Trailer						2	16	18	3.6
Truck-Tractor/Double									
Truck-Tractor/Triple							1	1	0.2
Bus/Large Van (9-15 seats)									
Bus (16+ seats)									
Motorcycle						4	1	5	1.0
Motor Scooter/Moped									
Motor Home									
Farm Machinery									
ATV									
Sport Utility Vehicle (SUV)						16	84	100	19.8
Passenger Van						2	9	11	2.2
Truck More Than 10,000 lbs.									
Van (10,000 lbs. or less)									
Other						2	16	18	3.6
Total						86	419	505	100
Percent						17.0	83.0	100	

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

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Day And Time Of Occurrence Of Collisions

Day	Hour Of The Day																									
	AM												PM												Tot	Pcnt
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12		
Sunday							1		2	1	2	2	2	1	2	1	2	2	1			1			20	7.8
Monday							3	2	1	1	2	3	3		2	8	5	2	2	1	1				36	14.0
Tuesday	1					1		1	2	2	1	2	2	7	3	3	1	2	1	3	1			1	34	13.2
Wednesday	1	1				2		1	1	2	4	6	4	2	4	3	7	5		2		1			46	17.8
Thursday						2			2		3	3	1	3	6	5	5	2	1			1	1		35	13.6
Friday				2			2	2	3	3	4	7	4	5	8	9	5	3	4	1	3		1		67	26.0
Saturday					1				2	2	1		1	1	3		2		3		2	1		1	20	7.8
	Early Morning - Sunrise						Morning Peak			Mid Morning/Afternoon						PM Peak			Evening - Late Night						Tot	100
Total	11						25			115						72			35						258	
Percent	4.3						9.7			44.6						27.9			13.6						100	

Roadway/Lighting

Roadway Conditions	Lighting Conditions					Total	Percent
	Daylight	Darkness	Twilight	Lighted	Unknown		
Dry	186	5	8	33		232	89.9
Wet (Water)	17	1		7		25	9.7
Ice, Snow, or Slush							
Mud, Dirt, Gravel, or Sand							
Other	1					1	0.4
Total	204	6	8	40		258	100
Percent	79.1	2.3	3.1	15.5		100	

Weather Conditions

Weather Conditions	Total	Percent
Clear	193	74.8
Clouds Present	44	17.1
Raining/Fog	18	7.0
Snowing/Sleet/Hail	1	0.4
Other	2	0.8
Total	258	100

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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		11	44			1											2	4		13	49	62	12.4
Failed to Stop		5	4																	5	4	9	1.8
Failed to Signal																							
Improper Turn		4	17												1		1	1		5	19	24	4.8
Improper Start																							
Improper Stop			1																		1	1	0.2
Improper Backing		1	5															1		1	6	7	1.4
Improper Parking																							
Improper Passing		1	1														1	1		2	2	4	0.8
Improper Lane Change			2															1			3	3	0.6
Left of Center		1	2			1											2			3	3	6	1.2
Following Too Close		15	36											1			1	1		17	37	54	10.8
Unsafe Speed		6	10			1														6	11	17	3.4
DWI					1	3												1		1	4	5	1.0
Inattention		16	34								1						1	2		18	36	54	10.8
Negligent Driving			2															2			4	4	0.8
Defective Vehicle		1	4														2			3	4	7	1.4
Wrong Way																							
No Improper Action		64	151														2	7		66	158	224	44.9
Other		4	10														1	3		5	13	18	3.6
Total		129	323		1	6					1			1	1		13	24		145	354	499	100
Percent		25.9	64.7		0.2	1.2					0.2			0.2	0.2		2.6	4.8		29.1	70.9	100	

Severities Indicate Highest Severity in Collision

Collisions By Special Feature

Special Feature	Total			
	Fat	Inj *	PD	Tot
Bridge			1	1
Work Zone		2		2
Cross Median				
Train Collision				

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

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Collision Rate Analysis

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Location: Multiple Lengths of Highway
Time Period: 01-01-2011 to 12-16-2021 (4003 days)

RATE = No. of Collisions per 100 Million Vehicle Miles

Rate Type	Location Rates	Statewide Rates ** (2015 - 2017)
Queried Collisions:	183.99	149.95
Fatal Collisions:	0.00	1.39
Vis. Injury Collisions *:	20.68	19.86

Collision History Summary
(Number of Years = 11)

# Collisions		# People	
Involving Fatality:	0	Killed:	0
Vis. Injury *:	29	Vis. Injured *:	36
Poss. Injury:	42	Poss. Injured:	69
Property Damage Only:	187		
TOTAL:	258		

* Includes Suspected Serious and Non-Incapacitating Injuries.

Road Characteristics

Roadway Length (miles):	03.95
Roadway Width (feet):	24 - 60
Avg. Daily Traffic (Veh/Day):	8868
Number of Lanes *:	TWO-LANES
Access Control *:	NONE
Urban Area Type *:	RURAL
Rural or Municipal *:	MUNICIPAL
Median Type *:	CONTINOUS LEFT LANE
Median Width (feet):	0 - 14

* 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.
Statewide rates cannot be compared to Queried Collisions unless the queried collisions include every collision type.

STUDY CRITERIA

Date Range: 01-01-2011 Thru 12-16-2021

Program Provided by:
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ROADWAY / REGION

	QUERY OVER	SELECTIONS
1	Control Section	County: 48, Control Section: 2, CS Query On: range, Mile Start: 06.43, Mile End: 06.98
2	Control Section	County: 48, Control Section: 4, CS Query On: range, Mile Start: 00.00, Mile End: 03.40

DATE

Date Range	01-01-2011 to 12-16-2021

FILTER COLLISIONS

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

REPORT SECTIONS

Collision Map & Study Totals	(Included)
Collision Analysis Tables	(Included)
- Totals By City, Hwy Class	Checked
- Other Analysis Tables	Checked
Rate Analysis	(Included)
Query Criteria	(Included)

APPENDIX D

SOCIAL, ECONOMIC, AND ENVIRONMENTAL JUSTICE ANALYSIS REPORT & RELOCATION PLAN

SOCIAL, ECONOMIC AND

ENVIRONMENTAL JUSTICE ANALYSIS REPORT

US-70: Madill Realignment from SH-199, east 2 miles & from 2.0 miles east and south of SH-199, south 2.8 miles

Marshall County, Oklahoma
JP # 18835(04)(09)

1/20/2022

Prepared By:
CP&Y Inc., an STV Company
2000 N Classen Blvd, Suite 1410
Oklahoma City, OK 73106

1. INTRODUCTION

1.1. PURPOSE OF SOCIAL, ECONOMIC AND ENVIRONMENTAL JUSTICE ANALYSIS

The purpose of the following report is to determine whether the proposed project would adversely impact minority or low-income populations; and, if so, to evaluate mitigation and avoidance measures that could be taken to decrease any adverse impacts to minority or low-income populations within the project study area. Under U.S. Department of Transportation (DOT) Order 5610.2(a), minority population means any readily identifiable groups of minority persons who live in geographic proximity, and if circumstances warrant, geographically dispersed/transient persons (such as migrant workers or Native Americans) who will be similarly affected by a proposed DOT program, policy, or activity.

1.2. PROJECT OVERVIEW

The project is located near the northern extent of the City of Madill and extends east and south of the city in Marshall County, Oklahoma. See Appendix B for the census geographies tables and community study area map. The study area for the analysis of the US-70 realignment consists of a four-mile section of new roadway, where existing US-70 intersects with N 1st Street and SH-106, and census blocks and block groups that make up the majority of the City of Madill and the Town of Oakland in proximity to the project. This study area was delineated to capture the areas that would be most likely to experience impacts from the proposed project. The existing US-70 facility is classified as a principal arterial and consists of both curbed and open roadway sections varying from two-lane to five-lane facilities. The route, which passes through downtown Madill, shares up to five highway designations and has three signalized intersections.

A feasibility study was completed in 1997 and identified this section of US-70 in and near Madill as a high priority project, based on an evaluation of future travel demand, safety, and congestion. The study concluded that the preferred alternative would be an eastern alignment of US-70 in and around Madill. The need for the project is to accommodate increasing traffic in the Madill area and to address the current geometric and capacity deficiencies on the existing roadway. The purpose of the project is to improve the efficiency and travel time of the US-70 corridor. The existing US-70 is highly utilized by truck traffic passing through Madill. This corridor is also the primary corridor through downtown Madill. The dual function of US-70 as a commercial corridor and a truck route are inconsistent with each other. The existing US-70 corridor currently lacks access control, meaning that businesses and residences may connect directly to the highway. In addition to the safety concerns this poses, the number of ingress and egress points slows traffic and has the effect of increasing congestion along the corridor.

Preliminary design and environmental studies for this project were conducted in 2017. This study is being performed to update the original Social, Economic, and Environmental Justice Report.

1.3. PROPOSED ALTERNATIVES/IMPROVEMENTS

No Build Alternative

Under the No Build Alternative, no work would occur and the existing roadways within the project area would remain unchanged. This would not meet the purpose and need for the project, which is to improve the efficiency and travel time of the US-70 corridor.

Build Alternative

The existing US-70 facility is classified as a principal arterial and consists of both curbed and open roadway sections varying from two-lane to five-lane facilities. The route, which passes through downtown Madill, shares up to five highway designations and has three signalized intersections. No proposed construction to the existing US-70 is proposed, except for tie-ins with the proposed US-70 realignment.

The Build Alternative is in and on the eastern edge of the City of Madill in Marshall County, Oklahoma. The proposed alignment will utilize a five-lane curbed section to match existing conditions at the beginning of the corridor (existing US-70). These five lanes will transition to an open section and continue east beyond the intersection with US-377. South of this intersection, the ultimate design will transition to a four-lane divided highway with a 64-foot grassy median. In the interim, the westbound lanes of the four-lane ultimate will serve as a two-lane highway. The five-lane section is proposed to be built in its entirety in the interim and serve for the ultimate as well. This segment includes bridges over a BNSF railroad and 3rd Street as well as at-grade intersections with US-177 and US-377. The interim two-lane facility between US-377 and the end of the alignment will have a bridge over a tributary of Glasses Creek plus at-grade intersections at SH-199 and Archard Road. The ultimate design will incorporate grade-separated interchanges for the four-lane divided facility. This will include two bridges over SH-199, a bridge on EW2040 over US-70, and another bridge over a tributary of Glasses Creek. The design speeds for the proposed alignment range from 45 mph for the curbed five-lane, 55 mph for the open five-lane, and 65 mph for the ultimate four-lane and interim two-lane.

2. SOCIAL AND ECONOMIC PROFILE

2.1. DEFINITION OF ENVIRONMENTAL JUSTICE POPULATIONS

Executive Order (EO) 12898 requires federal agencies to "make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse effects of its programs, policies, and activities on minority populations or low-income populations." To achieve this, federal agencies should collect and analyze information concerning a project's effects on minorities or low-income groups when required by the National Environmental Policy Act (NEPA), and if such investigations find that minority or low-income groups experience disproportionate adverse effects, then additional measures are to be taken. Disproportionately high and adverse human health or environmental effects are defined by FHWA as adverse effects that:

(1) are predominantly borne by a minority population and/or a low-income population; or

(2) will be suffered by the minority population and/or low-income population and are appreciably more severe or greater in magnitude than the adverse effects that will be suffered by the non-minority population and/or non-low-income population (FHWA, 1998).

2.2. COMMUNITY PROFILE

The community study area (study area) is in south central Oklahoma and includes City of Madill and the nearby community of Oakland. Though only a portion of the proposed project trends through it, the entire City of Madill was included in the study area as it is reasonably anticipated that all members of the Madill community would be affected by the proposed project. Madill is a small city with a population of 3,914 as per the 2020 Decennial Census. Madill is comprised of residential, commercial, and institutional land uses, spread throughout the community. Early childhood education through high school is served by Madill Public Schools, within the study area. Please see Appendix C – Community Facilities Map to view the community facilities located in the study area. The portion of the study area beyond the City of Madill is composed of agricultural and undeveloped land, though there are some rural residential properties southeast of Madill and within the study area. The study area is comprised of the census blocks that would be most affected by the build alternative. The study area is irregular in shape and encompasses the City of Madill and nearby community of Oakland in the northwestern portion and follows the proposed realignment and block groups to the southeast.

Demographics

The study area consists of 274 blocks located in two census tracts and six block groups. **Table 1** below shows the condensed breakdown of populations by minority within the study area, City of Madill, Marshall County, and the state of Oklahoma. The percent Hispanic or Latino population within the study area is significantly greater than the percentages for Marshall County and the state of Oklahoma. A total of 226 of the 274 blocks are populated, though some have sparse populations. The study area is comprised of census geographies that are immediately adjacent to the project area and nearby census geographies that could contain individuals who would most be directly affected by access and travel pattern changes resulting from the proposed project.

The population in the study area accounts for almost one-third of the county's population. The total minority population in the study area is 2,713, or approximately 55.5 percent of the study area population. One sizeable readily identifiable group of minority persons exists in the study area, within the communities of Madill and Oakland. The Environmental Justice Map in Appendix B illustrates the location of the readily identifiable minority group within the overall study area. The group is comprised of census blocks with larger minority population percentages that are adjacent to one another and neighboring blocks that, when viewed collectively, compose an overall community. The remaining blocks are more fragmented and do not have as large of a minority population, nor are they located adjacent to other blocks with moderate or large minority populations. The Environmental Justice Table and Map in Appendix B provide detailed information on the race and ethnicity data for the study area by census block. Note: Census tracts and block group boundaries shifted between 2019 and 2020. Table 1 uses 2020 data while remaining tables use 2019 data as 2020 data has not yet been released. Differences in census tracts and block groups between the following tables occur because of the boundary changes.

Table 1: Race and Ethnicity Characteristics, 2020

Population	Study Area	Madill	Marshall County	Oklahoma
Total	4,888	3,914	15,312	3,959,353
White Alone	2,175	1,756	9,749	2,407,188
Percent White	44.5%	44.9%	63.7%	60.8%
Black or African American	123	117	169	283,242

Population	Study Area	Madill	Marshall County	Oklahoma
Percent Black or African American	2.5%	3.0%	1.1%	7.2%
American Indian and Alaska Native	374	269	1,413	311,890
Percent American Indian and Alaska Native	7.1%	6.9%	9.2%	7.9%
Asian	32	27	44	89,653
Percent Asian	0.7%	0.7%	0.3%	2.3%
Native Hawaiian and Other Pacific Islander	1	1	4	8,168
Percent Native Hawaiian and Other Pacific Islander	0.0%	0.0%	0.0%	0.2%
Hispanic or Latino	1,842	1,448	2,605	471,931
Percent Hispanic or Latino	37.7%	37.0%	17.0%	11.9%
Some Other Race	8	7	85	13,602
Percent Some Other Race	0.2%	0.2%	0.6%	0.3%
Two or More Races	360	289	1,243	373,679
Percent Two of More Races	7.4%	7.4%	8.1%	9.4%

Source: U.S. Census Bureau, 2020 Decennial Census. Table P2: Hispanic or Latino, and Not Hispanic or Latino by Race.

Table 2: Median Household Income and Poverty Levels by Block Group, 2019

Geographic Area		Median Household Income	Percentage of Households with Income Below Poverty Level
Census Tract	Block Group		
946.98	1	$38,073	9.6%
946.98	2	$70,125	9.7%
946.98	3	$48,482	14.7%
947	1	$37,625	34.6%
947	2	$45,462	13.9%
947	3	$41,719	19.5%
Study Area		**$46,914**	**16.7%**
Madill		$41,193	22.0%
Marshall County		$45,746	16.1%
Oklahoma		$52,919	15.0%

Source: U.S. Census Bureau, 2015-2019 American Community Survey 5-Year Estimates, Table B19013: Median Household Income.

Table 2 shows the median household income and percent of households in poverty per block group in the study area as well as for the City of Madill, Marshall County and Oklahoma. None of the block groups in the study area have a median household income (MHI) below the 2022 Department of Health and Human Services (DHHS) poverty level for a family of four, which is $27,750. However, all block groups show a presence of households below the poverty level. MHI's for the study area range from $37,625 to $70,125. Block group 1 in census tract 946.98 and block groups 1-3 in census tracts 947 have a lower MHI than Marshall County. The study area has a slightly higher percentage of households in poverty compared to

Marshall County, at 16.7% in the study area and 16.1% in Marshall County. Two block groups, 1 and 3 within census tract 947, have a higher percentage of households in poverty compared to Marshall County, but all others have lower percentages.

Table 3: Population by Age by Block Group, 2019

Geographic Area		Total Population	Female Under 18	Male Under 18	Females 18 and Over	Males 18 and Over
Census Tract	Block Group					
946.98	1	1,247	7.9%	9.5%	43.9%	38.6%
	2	1,212	13.4%	11.0%	41.5%	34.2%
	3	1,776	11.0%	10.2%	40.0%	38.7%
947	1	1,600	15.9%	17.8%	27.8%	38.5%
	2	2,039	12.7%	11.7%	36.2%	39.4%
	3	1,347	13.1%	17.0%	34.7%	35.2%
Study Area		**9,221**	**12.4%**	**12.9%**	**37.0%**	**37.7%**
Madill		3,937	14.7%	14.7%	32.8%	37.8%
Marshall County		16,505	11.5%	11.8%	38.9%	37.7%
Oklahoma		393,2870	11.9%	12.5%	38.6%	37.1%

Source: American Community Survey 5-Year Estimates 2015-2019. Table B01001 "Sex by Age"

Table 3 shows the population by age per block group in the study area. All but two block groups (block groups 1 and 3 in census tract 946.98) have a lower percentage of females under 18 than Marshall County; within the study area the total percentage of females under 18 exceeds the percentage for Marshall County. All but two block groups (groups 1 and 3 in census tract 947) have lower percentage of males under 18 compared to Marshall County; however, the total percent of males under 18 in the study area exceeds the percentage for the county. All block groups within the study area in census tract 947 have a lower percentage of females over 18 than Marshall County, and all block groups in census tract 946.98 have a higher percentage of females over 18 than the county at large. All but two of the block groups in the study area (block group 2 in census tract 946.98 and block group 3 in census tract 947) have a higher percentage of males over 18 than Marshall County. The overall percentage of males over 18 within the study area is consistent with the county percentages.

Table 4: Employment Status and Unemployment by Block Group, 2019

Geographic Area		Total Population 16 Years and Over	In Labor Force	Employed	Unemployed	Unemployment Rate
Census Tract	Block Group					
946.98	1	1,046	511	494	17	3.3%
	2	954	570	560	10	1.8%
	3	1,497	793	740	53	6.7%
947	1	1,131	569	558	11	1.9%
	2	1,594	912	885	27	3.0%
	3	980	605	552	53	8.8%
Study Area		**7,202**	**3960**	**3789**	**171**	**4.3%**

Geographic Area		Total Population 16 Years and Over	In Labor Force	Employed	Unemployed	Unemployment Rate
Census Tract	Block Group					
Madill		2,918	1595	1547	48	3.0%
Marshall County		13,114	6749	6476	273	4.0%
Oklahoma		308,0177	1,885,928	1,772,123	94,834	5.0%

Source: American Community Survey 5-Year Estimate 2015-2019. Table B23025 "Employment Status for the Population 16 Years and Over"

Table 4 shows unemployment rates for block groups in the study area. Overall, the unemployment rate within the study area is only slightly higher than Marshall County (4.3% versus 4.0%); however, the unemployment rates within the various block groups range from 1.8% to 8.8%.

Table 5: Population 65 and Over Living Alone by Block Group, 2019

Geographic Area		Total Population 65 Years and Over	Population Living Alone	Percentage of Population Living Alone
Census Tract	Block Group			
946.98	1	378	146	38.6%
	2	159	9	5.7%
	3	429	55	12.8%
947	1	116	55	47.4%
	2	440	84	19.1%
	3	165	52	31.5%
Study Area		**1,687**	**401**	**23.8%**
Madill		569	150	26.4%
Marshall County		3,673	879	23.9%
Oklahoma		603,394	165,221	27.4%

Source: American Community Survey 5-Year Estimates 2015-2019. Table B09020 "Relationship by Household Type (including Living Alone) for the Population 65 Years and Over"

Table 5 identifies the percentages of people over the age of 65 who live alone per block group in the study area. Within the study area, the percentage of people over the age of 65 living alone (23.8%) is generally consistent with Marshall County (23.9%) and much lower than the state of Oklahoma (27.4%).

Table 6: Population with a Disability by Census Tract, 2019

Geographic Area Name	Total Population	Population with a Disability	Percentage of Population with a Disability
Census Tract 946.98	4,235	1,826	43.1%
Census Tract 947	4,842	1,881	38.8%
Study Area Census Tracts	**9,077**	**3,707**	**40.8%**
Madill	3,793	1,424	37.5%

Geographic Area Name	Total Population	Population with a Disability	Percentage of Population with a Disability
Marshall County	16,305	6,971	42.8%
Oklahoma	3,851,223	1,476,364	38.3%

Source: American Community Survey 5-Year Estimates 2015- 2019. Table B18101 "Sex by Age by Disability Status"

Table 6 identifies the percentage of the population with a disability by census tract in the study area. In the study area, the percentage of the population with a disability (40.8%) is lower than that of Marshall County (42.8%) but higher than the state of Oklahoma.

3. SOCIAL AND ECONOMIC IMPACTS

3.1. RIGHT-OF-WAY AND DISPLACEMENTS

No Build Alternative

Under the No Build Alternative, no work would occur and the existing roadways within the project area would remain unchanged. No displacements would occur.

Build Alternative

The 2021 ODOT Relocation Plan indicates a total of eight commercial and 15 residential displacements would occur under the Build Alternative: seven commercial and four residential for JP 18835(04) and one commercial and 11 residential displacements under JP 18835(09). The displacements for JP 18835(04) include a mobile home park that includes eleven mobile home residences.

The locations of all proposed displacements are shown on the Displacements Map in Appendix D. The displaced residences associated with JP 18835(04) include a 1,500 square foot wood frame house, an 800 square foot mobile home, an 1,800 square foot wood frame house, and a 1,700 square foot brick house. The commercial displacements include The Marshall County Conservation District office and the following three tenants of that building, U.S. Department of Agriculture office, and Sparlin CPA, Counseling Inc (Locations A-D). Additional, stand-alone commercial relocations include Eddie Brown (funeral services, Location E), Jones Pawn (Location F), and Samoa Realty (Location G). The relocation plan assumes that there is only one relocation option for each displaced residential and commercial property. According to a variety of online realty sites there is a limited number of properties available and new construction is likely necessary and would add an estimated 8 to 18 months to the project schedule. There are ten full-time employees that would be impacted by the displaced commercial properties. See the Relocation planning document for JP 18835(04) in Appendix D for more information.

The displaced properties associated with JP 18835(09) include 11 residential mobile homes and the mobile home park in which they reside (Locations A-K). The relocation plan does not include specific location details for the individual residences. An additional residence (the northwesternmost residence) is no longer habitable and appears to have burned. Based on plans and aerials, the presumed locations of the residences are shown on the Displacements Map in Appendix D. Field investigation conducted in December 2021 confirmed that current residences are located at each of the points shown. The

commercial property is the Pleasant Valley Mobile Home Park in which the individual residences are located.

3.2. ACCESS AND TRAVEL PATTERNS

No Build Alternative

Under the No Build Alternative, no work would occur, and access and travel patterns would continue as they currently exist.

Build Alternative

Currently, traveling north/south on US 177 or US 377 and east/west on US 70 or SH 199 requires motorists travel through Madill including neighborhoods and the downtown area.

The Build Alternative will affect travel patterns and how motorists access properties in and around the study area. In general, the ultimate realignment project will provide a route that allows through-traffic to avoid congestion in the City of Madill. The existing US-70 alignment carries traffic east and south through downtown Madill along a three-lane roadway (two travel lanes and a two-way center left) with dedicated left- and right-turn lanes at E Main/W Lillie Street, S 2nd Avenue, and Brookside Drive (US-377). Because of the commercial nature of the corridor, there is direct access to numerous driveways as well as side streets. Annual Average Daily Traffic (AADT) volumes based on 2013 traffic and projected for 2037 show that AADT would increase by approximately 48 percent without the proposed realignment at six locations (shown below in **Table 7**). The realignment is projected to reduce traffic at four out of the six locations. Traffic would be reduced 8.0 percent between US-177 and Main Street and 66.6 percent between Smiley Road and Archard Road. The two locations that would experience an increased AADT are near the project's termini US-70 east of US-177 (65.6%) and US-70 east of Archard Road (78.3%).

Table 7: Existing and Future AADT

Existing US-70 Location	Existing AADT (2013)	Future AADT, without US-70 Realignment (2037)	Future AADT, with US-70 Realignment (2037)
US-70 West of US-177	6,026	8,940	9,980
US-70 between US-177 and Main St.	9,872	14,620	9,060
US-70 between Main St. and Brookside Dr.	11,958	17,700	10,200
US-70 between Brookside Dr. and Smiley Rd.	11,276	16,700	9,180
US-70 between Smiley Rd. and Archard Rd.	7,480	11,080	2,500
US-70 East of Archard Rd.	7,000	10,360	12,480

Source: EST, Inc. Traffic Report: US-70 Madill Bypass Marshall County, OK. July 2014

The ultimate realignment to the east and south of Madill would carry through-traffic, particularly large truck traffic around Madill to the east to avoid congestion and slower speeds that exist in town. There are multiple businesses in and around Madill that create heavy truck traffic. This realignment would particularly benefit these businesses because trucks would be able to access them easier and more directly by using the new route.

The proposed US-70 realignment would allow motorists to maintain higher speeds and avoid local traffic. There would be limited access to properties along the route with intersections located at US-177 and US-377, SH-199, Archard Road, and existing US-70 facilities. There would no longer be a need to travel into Madill on any the local roadways to access other roadways leading into and out of town. For instance, currently, motorists traveling east on US-70 would need to travel south into Madill, turn left on E. Main Street, travel through the courthouse square and then merge onto either US-377 or SH-199 to access properties along those roadways. The proposed alignment would allow that same motorist to instead continue east on the US-70 facility and turn onto US-377 or SH-199. Likewise, travelers can access the US-70 realignment from US-377 or SH-199 to travel in either direction without the need to travel through downtown and through the courthouse square to access the other major roadways leading out of town.

The US-70 realignment would also contribute to reduced traffic through the city, which would make travel within town less congested and safer. The projected AADT for the Build Alternative for locations between the project limits are shown in **Table 7.** Traffic would be reduced by over 8.0 percent between US-70 and Main Street, 14.7 percent between Main Street and Brookside Drive, 18.6 percent between Brookside Drive and Smiley Road, and 66.6 percent between Smiley Road and Archard Road. Traffic is expected to increase in the area regardless and AADT would be higher at the project's termini because of additional local and regional travelers entering and exiting the realignment route. Improved flow would allow motorists to access their destinations easier. The US-70 realignment includes a bridge that spans the BNSF railroad which would improve traffic flow by providing an alternative route that does not include an at grade crossing of the railroad, thereby, eliminating the need to stop for crossing trains. Currently, traffic must yield to passing trains at Wolf Street, E. Main Street (US-377), Smiley Road, and SH-106. The bridge would also span 3rd Street, which provides access to the Madill City Housing Authority housing complex and the City of Madill Wastewater Treatment Plant. This project would benefit the local population because the US-70 realignment would be a continuation of existing US-70 leading directly in/out of Madill.

Motorists travelling along the realigned US-70 would have easier and quicker access to other major arterials in the region as intersections are proposed at US-377, SH-199, Smiley Road, and SH-106. These intersections will provide access into and out of Madill for local traffic and more convenient and safer access to areas north and east of Madill for regional traffic. In fact, access would be more convenient and safer for regional traffic in all directions from Madill, because through traffic would be less congested through downtown Madill.

3.3. COMMUNITY COHESION

Existing Community Cohesion

No Build Alternative

Under the No Build Alternative, no work would occur, and there would be no displacements. Access and travel patterns would continue as they currently exist, and the project would have no effect on community cohesion.

Build Alternative

Currently, community cohesion in the study area appears stable. There are numerous community facilities such as churches, including those that cater to the Hispanic or Latino population. Madill is the county seat and community facilities also include government agencies and services. However, there is a noticeable scarcity of sidewalks throughout the community with most pedestrian facilities present around the courthouse square and near schools. This lack of connectivity for pedestrians and cyclists makes accessing and using community facilities more difficult via travel modes other than motor vehicles.

The Build Alternative would impact community cohesion within the study area, particularly in individual neighborhoods. The proposed project would displace a mobile home park with eleven residences, which would impact the cohesion of that community by relocating residents. The realignment would also modify the existing natural barrier that separates the Madill City Housing Authority complex by constructing an overpass over 3rd street (the access point to the neighborhood). This complex is currently separated from the residential area to the south by undeveloped wooded parcels. The existing trees create a natural visual and physical barrier. The elevated roadway would replace the existing barrier with a built structure approximately 30 feet tall. The distance from Ridgeview Drive (roughly the center point of the complex) to the overpass is greater than 300 feet, and aside from the adjoining ROW, a portion of the vegetated buffer will remain between the proposed roadway and the Madill City Housing Authority Complex. The topography is relatively flat in the area and the remaining trees may help to buffer the view of the overpass where it is farther removed from the housing complex. The units to the south of Ridgeview Drive would be most impacted by the clearing and the construction of the overpass; however, the complex itself would not be bisected. It should also be noted that access to Madill City Housing Authority would be maintained by 3rd Street. Four residences would also be displaced near the corner of E Wolf Street and S 10th Street which could impact the cohesion of that area. However, the realignment would not bisect the neighborhood; the four residences are located at the edge of town where urban development backs up into open space. Four of five commercial displacements are located at the US-70/US-177 interchange and are currently bisected by N 1st Street and do not represent a cohesive commercial development. The proposed project generally runs along natural barriers such as the creek and wooded areas between US-377 and SH-199 and along existing roadways between SH-199 and SH-106. The project does bisect individual properties and does separate one property that lies on the outskirts from the neighborhood located in Madill's northeastern corner just north of Bird Street. This property would have access to the proposed realignment but would no longer have direct access into the neighborhood.

Community cohesion could be impacted as a result of less traffic in town. Businesses that may be dependent on through traffic may experience a decline in business due to fewer regional travelers through town. Businesses and services that are more destination-based or which serve the local community may see an increase traffic due to reduced congestion and safer conditions.

Community cohesion for the study area would likely improve by reducing through traffic, including large trucks, in downtown Madill. Because mobility and safety would be improved for local traffic, community facilities and businesses would be easier to use and access by local residents.

4. PUBLIC INVOLVEMENT

4.1. LIMITED ENGLISH PROFICIENCY (LEP)

EO 13166, "Improving Access to Services for Persons with Limited English Proficiency (LEP)," was signed by President Clinton on August 11, 2000. This EO calls for all federal agencies to examine the services they provide and identify any need for services to those with limited English proficiency, and to develop and implement a system to provide those services so that LEP persons can have meaningful access to them. In compliance with this EO, the study of the proposed realignment of US-70 near Madill evaluated potential LEP impacts in the study area of the proposed project.

The four-factor analysis is a tool used by ODOT to identify the following:

1. The number or proportion of LEP persons eligible to be served or likely to be encountered by a program, activity, or service of the recipient or grantee;

2. The frequency with which LEP individuals come in contact with the program;

3. The nature and importance of the program, activity, or service provided by the recipient of people's lives; and

4. The resources available to the recipient and cost.

Individuals who do not speak English as their primary language and who have a limited ability to read, write, or understand English are considered to have LEP. These LEP individuals are identified in the Census as people who speak English "less than very well." The proportion of LEP populations within the census tract and the language they speak at home is provided in **Table 8**.

Table 8: Limited English Proficiency by Block Group, 2019

Geographic Area		Total Population 5 Years and Over	Total LEP	Total LEP %	Spanish LEP	Spanish LEP %	Indo-European LEP	Indo-European LEP %	Asian and Pacific Islander LEP	Asian and Pacific Islander LEP %	Other LEP	Other LEP %
Census Tract	Block Group											
946.98	1	1,180	52	4.4%	52	4.4%	0	0.0%	0	0.0%	0	0.0%
	2	1,136	13	1.1%	13	1.1%	0	0.0%	0	0.0%	0	0.0%
	3	1,711	130	7.6%	130	7.6%	0	0.0%	0	0.0%	0	0.0%
947	1	1,428	220	15.4%	197	13.8%	0	0.0%	23	1.6%	0	0.0%
	2	1,955	418	21.4%	412	21.1%	0	0.0%	6	0.3%	0	0.0%
	3	1,229	168	13.7%	168	13.7%	0	0.0%	0	0.0%	0	0.0%
Total Study Area		**8,639**	**1,001**	**11.6%**	**972**	**11.3%**	**0**	**0.0%**	**29**	**0.3%**	**0**	**0.0%**
Madill		3,662	638	17.4%	609	16.6%	0	0.0%	29	0.8%	0	0.0%
Marshall County		15,550	1,036	6.7%	1,007	6.5%	0	0.0%	29	0.2%	0	0.0%
Oklahoma		3,671,554	144,765	3.9%	104,942	2.9%	6733	0.2%	27,910	0.8%	5180	0.1%

Source: *American Community Survey 5-year estimate 2015-2019. Table 16004. "Age by Language Spoken At Home by Ability To Speak English*"

All block groups in the study area show a presence of people who speak English "less than very well." The study area exceeds the threshold of the need for safe harbor communications, with over 5% of the total population (11.6%) identified as LEP population and a population of more than 50 persons. Translated vital documents (Spanish language is the majority of the LEP population's first language) will be provided for all future hearing notices and project information. Additionally, translation and/or other accommodations can also be provided at the hearing by request.

4.2. PUBLIC OUTREACH

A stakeholder meeting was held on June 16, 2015. The purpose of the meeting was to discuss the history of the project and alignment constraints, present the proposed alignment, and seek input from the project stakeholders. Twenty-five people signed in for the meeting, including representatives from ODOT, Marshall County, City of Madill, Housing Authority Board, and local stakeholders. A total of five verbal and one written comment were received as a result of the meeting. Most of the comments pertained to access, safety, and traffic along the proposed corridor. One local business owner expressed concern about potential impacts to her business, Jones Pawn, which was in the proposed right-of-way (ROW) of the project, as well as the fact that she did not receive written notice of the stakeholder meeting. No comments specifically pertaining to low-income, or minority populations were received.

Additionally, a public meeting was held on September 3, 2015, in Madill. The meeting included a formal presentation and allocated time for questions and responses. The purpose of the meeting was to present the eastern realignment option for US-70 and to collect the public's input to further identify critical social, economic, and environmental impacts that may result from the proposed project. Handouts with information about the purpose and goals of the study were available and project team members were stationed at several tables with numerous layouts of the proposed realignment to address questions and comments. Seventy-five people signed in for the meeting. A total of 41 written comments and suggested solutions were received as a result of the public meeting. These comments included concerns about the impact of realignment to Open Range Cowboy Church, impact of realignment to Jones Pawn, land surrounding proposed 3rd Street Bridge, impact to residential property, property fragmentation, lack of access at Smiley Road, and consideration of other alignments. No comments specific to low-income or minority populations were received.

It should be noted that at the time of the public meeting, the study area that was considered for social and economic justice was limited solely to the footprint of the proposed project; at that time the threshold for safe harbor communication materials was not met within the study area, and translated materials were not required, requested, or prepared.

A public hearing is being planned for Spring 2022, but no date is set as of this time. Translated vital documents will be prepared and provided to stakeholders within the study area for the upcoming hearing.

5. IMPACTS ON THE ENVIRONMENTAL JUSTICE POPULATION

EO 12898 requires federal agencies to "make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse effects of its programs, policies, and activities on minority populations or low-income populations." To achieve this, federal agencies should collect and analyze information concerning a project's effects on minorities or low-income groups when required by NEPA, and if such investigations find that minority or low-income groups experience disproportionate adverse effects, then additional measures are to be taken.

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

(1) are predominantly borne by a minority population and/or a low-income population; or

(2) will be suffered by the minority population and/or low-income population and are appreciably more severe or greater in magnitude than the adverse effects that will be suffered by the nonminority population and/or non-low-income population (FHWA, 1998).

No Build Alternative

Based on the analysis above, the No Build Alternative will not cause disproportionately high and adverse effects on any minority or low-income populations in accordance with the provisions of E.O. 12898 and FHWA Order 6640.23. The No Build Alternative would not alter any existing conditions and would therefore not impact minority or low-income populations in the study area.

Build Alternative

Based on the analysis above, the Build Alternative will not cause disproportionately high and adverse effects on any minority or low-income populations in accordance with E.O. 12898 and FHWA Order 6640.23.

There are no low-income EJ block groups located within the study area, so the project will not have an adverse effect on low-income populations.

The total minority population in the study area is 2,678, or approximately 55.5% of the study area population. There is one substantial readily identifiable group of minority persons (Hispanic or Latino), which encompasses the entire communities of Madill and nearby Oakland, even though there are few blocks with relatively low minority populations within each community. The community features churches that cater to the Hispanic or Latino populations and offer services in Spanish in two separate locations on the east and west sides of town. It is apparent that there is a Hispanic community within Madill; therefore, the portion of the community study area within city limits was included as having a readily identifiable minority group, which is again corroborated by the census data. The proposed displacements predominantly fall within census geographies which do not have major minority populations and are not included within the readily identifiable minority population. The individual displacements/relocations are discussed in more detail below.

The proposed displacements for JP 18835(04) include seven commercial and four residential relocations. Four of the seven commercial displacements are located within a single building (Locations A-D), and while that building is located within the readily identifiable minority population, the particular block on which it is located (block 2000 of block group 2 within census tract 947) has a total of 34 people, with a minority population of 13, or approximately 38%. Relocation E (Eddie Brown) is located within the same block. Although also located within the readily identifiable minority population, the remaining two commercial displacements (Location F- Jones Pawn and Location G- Samoa Realty) are located within block group 1, census tract 947 with an even lower minority population (19%), comprised of a total population of 96 people with 18 of those identified as minorities. Two of the four residential relocations are proposed within the readily identifiable minority population and in blocks with an 80% minority population (Locations H and J). These residences are located within block 1018 of block group 1 within census tract 947, which has a total of 10 people, 8 of which are identified as minorities. These residences are located on the north side of Wolf Street, which is the northeastern corner of a neighborhood east of the railroad that is bisected by US-377. The remaining

two residential relocations (Locations I and K) are located outside of the readily identifiable minority population and in a block with no individuals identified as minority.

The proposed displacements for JP 18835(09) include one commercial and 11 residential relocations (Locations A-K), which include a mobile home park and 11 residences within that park. The parcel is located outside of the readily identifiable minority population and in a block (block 1000 of block group 1 within census tract 946.98) with a total population of 27 people, 7 of which are identified as minorities (approximately 26%).

The proposed displacements would not disproportionately impact EJ populations. None of the proposed commercial displacements specifically cater to EJ populations, and aside from the Marshall County Conservation District and U.S. Department of Agriculture offices, there are alternative options for each commercial displacement within Madill and the surrounding community study area. EJ and non-EJ populations would experience the benefits of safer and slower traffic within the City of Madill with the heavy truck and through traffic being diverted to the US-70 realignment to the east of town.

APPENDIX A

PHOTOGRAPHS

Appendix A – Project Photos

Photo 1: Western terminus looking east

Photo 2: Jones Pawn [Location F under JP 18835(04)] proposed relocation due to the project

Photo 3: Water tower and railroad track crossing

Photo 4: Open Range Cowboy Church

Photo 5: Pleasant Valley Mobile Home Park [Locations A-K under JP 18835(09)] proposed commercial and 11 residential relocations

Photo 6: Southern terminus looking north

APPENDIX B

EJ TABLE AND MAPS

Appendix B: Race and Ethnicity by Census Block

Geographic Area			Total Population	White alone	Black or African American alone	American Indian and Alaska Native alone	Asian alone	Native Hawaiian and Other Pacific Islander alone	Some Other Race alone	Population of two or more races	Hispanic or Latino	Total Minority	Total Minority Percentage
Census Tract	Block Group	Census Block											
		1000	27	20	0	0	0	0	0	6	1	7	26%
		1010	4	0	0	3	0	0	0	1	0	4	100%
		1011	14	14	0	0	0	0	0	0	0	0	0%
		1014	1	0	0	1	0	0	0	0	0	1	100%
		1020	15	11	0	0	0	0	0	0	4	4	27%
		1024	12	7	0	4	0	0	0	1	0	5	42%
		1032	3	3	0	0	0	0	0	0	0	0	0%
		1056	15	4	0	0	0	0	0	5	6	11	73%
		1058	13	4	0	4	0	0	0	5	0	9	69%
		1059	19	14	0	1	0	0	0	1	3	5	26%
		1060	6	3	1	1	0	0	1	0	0	3	50%
		1061	49	40	0	4	0	0	0	3	2	9	18%
	1	1062	29	22	1	1	4	0	0	1	0	7	24%
946.98	3	3045	6	3	0	0	0	0	0	2	1	3	50%
		1004	96	78	2	3	0	0	0	4	9	18	19%
		1005	6	4	0	2	0	0	0	0	0	2	33%
		1006	13	10	0	1	0	0	0	0	2	3	23%
		1007	14	3	3	0	0	0	0	0	8	11	79%
		1008	24	0	0	0	0	0	0	2	22	24	100%
		1009	2	0	0	0	0	0	0	0	2	2	100%
		1011	3	2	0	0	0	0	0	1	0	1	33%
		1012	5	5	0	0	0	0	0	0	0	0	0%
		1014	13	6	0	0	0	0	0	0	7	7	54%
		1016	13	0	0	2	0	0	0	0	11	13	100%
		1017	7	0	5	1	0	0	0	0	1	7	100%
		1018	10	2	0	0	0	0	0	1	7	8	80%
		1019	6	1	0	0	0	0	0	0	5	5	83%
		1020	21	6	4	3	0	0	0	0	8	15	71%
		1021	20	3	10	1	0	0	0	2	4	17	85%
		1022	3	0	0	1	0	0	0	0	2	3	100%
		1023	6	3	0	0	0	0	0	0	3	3	50%
947	1	1024	4	2	0	0	0	0	0	0	2	2	50%

Appendix B: Race and Ethnicity by Census Block

Geographic Area			Total Population	White alone	Black or African American alone	American Indian and Alaska Native alone	Asian alone	Native Hawaiian and Other Pacific Islander alone	Some Other Race alone	Population of two or more races	Hispanic or Latino	Total Minority	Total Minority Percentage
Census Tract	Block Group	Census Block											
		1025	9	4	0	0	0	0	0	0	5	5	56%
		1027	13	8	1	1	0	0	0	0	3	5	38%
		1028	8	2	1	1	0	0	0	0	4	6	75%
		1030	16	0	5	0	0	0	0	0	11	16	100%
		1031	9	2	0	0	0	0	0	1	6	7	78%
		1032	16	4	7	0	0	0	0	0	5	12	75%
		1034	3	1	0	0	0	0	0	0	2	2	67%
		1035	15	4	0	5	0	0	0	0	6	11	73%
		1036	4	0	0	0	0	0	0	0	4	4	100%
		1037	16	2	0	1	0	0	0	0	13	14	88%
		1038	24	1	0	1	0	0	0	0	22	23	96%
		1039	10	3	0	0	0	0	0	1	6	7	70%
		1040	10	5	0	1	0	0	0	3	1	5	50%
		1041	16	8	0	0	0	0	0	3	5	8	50%
		1042	34	19	0	0	0	0	0	0	15	15	44%
		1043	6	2	0	0	0	0	0	0	4	4	67%
		1044	65	45	3	7	0	0	0	1	9	20	31%
		1045	25	1	4	2	0	0	2	0	16	24	96%
		1047	8	4	0	0	0	0	0	0	4	4	50%
		1048	16	14	0	1	0	0	0	1	0	2	13%
		1049	11	0	1	2	0	0	0	0	8	11	100%
		1054	4	1	3	0	0	0	0	0	0	3	75%
		1055	29	7	1	0	0	0	0	0	21	22	76%
		1056	16	10	0	0	0	0	0	2	4	6	38%
		1057	16	12	0	2	0	0	0	0	2	4	25%
		1059	24	6	0	0	0	0	0	5	13	18	75%
		1060	6	2	0	0	0	0	0	1	3	4	67%
		1067	31	24	0	0	0	0	0	0	7	7	23%
		1068	13	1	0	0	0	0	0	7	5	12	92%
		1070	5	1	0	0	0	0	0	1	3	4	80%
		1071	4	1	0	0	0	0	0	0	3	3	75%
		1072	19	17	0	0	0	0	0	0	2	2	11%

Appendix B: Race and Ethnicity by Census Block

Geographic Area			Total Population	White alone	Black or African American alone	American Indian and Alaska Native alone	Asian alone	Native Hawaiian and Other Pacific Islander alone	Some Other Race alone	Population of two or more races	Hispanic or Latino	Total Minority	Total Minority Percentage
Census Tract	Block Group	Census Block											
		1073	34	7	0	0	0	0	0	1	26	27	79%
		1074	23	4	0	0	0	0	0	1	18	19	83%
		1077	6	1	0	0	0	0	0	0	5	5	83%
		1079	5	2	3	0	0	0	0	0	0	3	60%
		1080	31	12	0	0	0	0	0	5	14	19	61%
		1081	15	3	3	0	0	0	0	1	8	12	80%
		1082	1	0	0	0	0	0	0	0	1	1	100%
		1084	6	0	0	0	0	0	1	0	5	6	100%
		1085	26	9	2	2	0	0	0	1	12	17	65%
		1086	28	12	0	0	0	0	0	5	11	16	57%
		1087	14	6	0	4	0	0	0	0	4	8	57%
		1088	23	3	0	0	0	0	0	0	20	20	87%
		1089	19	7	0	4	0	0	0	0	8	12	63%
		1090	29	18	1	2	0	0	0	1	7	11	38%
		1091	18	3	0	0	0	0	1	4	10	15	83%
		1092	21	3	0	0	0	0	0	0	18	18	86%
		1093	34	20	0	6	0	0	0	0	8	14	41%
		1094	20	6	0	8	0	0	0	2	4	14	70%
		1096	17	1	0	0	0	0	0	0	16	16	94%
		1097	16	5	1	3	0	0	0	2	5	11	69%
		1098	7	0	0	0	0	0	0	0	7	7	100%
		1100	24	5	0	3	0	0	0	0	16	19	79%
		1101	29	7	0	0	0	0	0	0	22	22	76%
		2000	34	21	0	2	0	0	0	9	2	13	38%
		2001	15	5	0	1	0	0	0	6	3	10	67%
		2002	7	3	0	0	0	0	0	1	3	4	57%
		2003	23	8	0	0	1	0	0	0	14	15	65%
		2004	36	14	0	1	0	0	0	0	21	22	61%
		2005	29	13	0	3	0	0	0	0	13	16	55%
		2006	132	94	0	9	0	0	0	0	29	38	29%
		2007	16	9	0	0	0	0	0	0	7	7	44%
	2	2008	30	22	0	0	0	0	0	0	8	8	27%

Appendix B: Race and Ethnicity by Census Block

Geographic Area			Total Population	White alone	Black or African American alone	American Indian and Alaska Native alone	Asian alone	Native Hawaiian and Other Pacific Islander alone	Some Other Race alone	Population of two or more races	Hispanic or Latino	Total Minority	Total Minority Percentage
Census Tract	Block Group	Census Block											
		2009	31	7	0	0	1	0	0	1	22	24	77%
		2010	25	16	0	2	1	0	0	2	4	9	36%
		2011	23	8	3	0	0	0	0	4	8	15	65%
		2012	21	11	0	0	2	0	0	2	6	10	48%
		2013	97	49	5	7	0	0	0	6	30	48	49%
		2014	27	16	0	4	0	0	0	1	6	11	41%
		2015	40	16	0	5	0	0	0	2	17	24	60%
		2016	16	8	0	0	0	0	0	0	8	8	50%
		2017	29	14	1	4	1	0	0	1	8	15	52%
		2018	21	12	0	0	0	0	0	2	7	9	43%
		2019	12	6	1	0	0	0	0	0	5	6	50%
		2020	17	5	0	3	0	0	0	1	8	12	71%
		2021	22	11	2	0	0	0	0	0	9	11	50%
		2022	8	2	0	0	1	0	0	0	5	6	75%
		2023	16	9	0	0	0	0	0	2	5	7	44%
		2024	14	4	0	0	0	0	0	2	8	10	71%
		2025	12	2	0	0	0	0	0	0	10	10	83%
		2026	33	28	0	0	1	0	0	0	4	5	15%
		2027	10	7	0	2	0	0	0	0	1	3	30%
		2028	15	7	0	0	1	0	0	0	7	8	53%
		2029	12	5	0	0	3	0	0	4	0	7	58%
		2030	12	4	1	2	0	0	0	0	5	8	67%
		2031	15	0	0	0	0	0	0	3	12	15	100%
		2032	10	4	0	3	0	0	0	0	3	6	60%
		2033	14	7	0	3	0	0	0	3	1	7	50%
		2034	41	24	2	0	0	0	0	4	11	17	41%
		2035	18	5	0	1	0	0	0	1	11	13	72%
		2036	39	18	0	0	0	0	0	2	19	21	54%
		2037	38	16	0	4	0	0	0	1	17	22	58%
		2038	20	2	1	0	0	0	0	0	17	18	90%
		2039	24	5	0	0	0	0	0	2	17	19	79%
		2040	28	10	0	0	0	0	1	2	15	18	64%

Appendix B: Race and Ethnicity by Census Block

Geographic Area			Total Population	White alone	Black or African American alone	American Indian and Alaska Native alone	Asian alone	Native Hawaiian and Other Pacific Islander alone	Some Other Race alone	Population of two or more races	Hispanic or Latino	Total Minority	Total Minority Percentage
Census Tract	Block Group	Census Block											
		2041	37	9	0	0	0	0	0	0	28	28	76%
		2042	4	2	0	1	0	0	0	0	1	2	50%
		2043	15	11	0	0	0	0	0	2	2	4	27%
		2044	10	2	0	0	0	0	0	2	6	8	80%
		2045	14	7	1	0	0	0	0	0	6	7	50%
		2046	24	6	0	11	0	0	0	4	3	18	75%
		2047	12	0	1	0	0	0	0	4	7	12	100%
		2048	10	4	1	0	0	0	0	1	4	6	60%
		2049	27	18	3	0	0	0	0	0	6	9	33%
		2050	87	52	11	4	0	0	0	8	12	35	40%
		2052	41	23	0	5	0	0	0	3	10	18	44%
		2053	15	3	0	1	0	0	0	5	6	12	80%
		2054	22	20	0	0	0	0	0	0	2	2	9%
		2055	13	4	0	0	0	0	0	0	9	9	69%
		2056	40	8	0	1	0	0	0	2	29	32	80%
		2057	37	13	0	1	0	0	0	2	21	24	65%
		2058	13	8	1	0	0	0	0	3	1	5	38%
		2059	34	11	0	4	0	0	0	2	17	23	68%
		2060	25	10	1	0	0	0	0	4	10	15	60%
		2061	20	8	0	3	0	0	0	0	9	12	60%
		2062	28	6	1	2	0	0	0	1	18	22	79%
		2063	21	11	0	1	0	0	0	5	4	10	48%
		2064	20	9	0	5	0	0	0	0	6	11	55%
		2065	39	17	0	5	0	0	0	11	6	22	56%
		2066	15	3	0	1	0	0	0	2	9	12	80%
		2067	18	9	2	0	0	0	0	4	3	9	50%
		2068	26	12	0	0	1	0	0	2	11	14	54%
		2069	30	5	0	10	0	0	0	0	15	25	83%
		2070	56	23	2	6	1	0	0	6	18	33	59%
		2071	63	24	0	4	5	0	0	4	26	39	62%
		2072	25	8	0	0	0	0	0	2	15	17	68%
		2073	69	51	4	3	0	1	0	8	2	18	26%

Appendix B: Race and Ethnicity by Census Block

Geographic Area			Total Population	White alone	Black or African American alone	American Indian and Alaska Native alone	Asian alone	Native Hawaiian and Other Pacific Islander alone	Some Other Race alone	Population of two or more races	Hispanic or Latino	Total Minority	Total Minority Percentage
Census Tract	Block Group	Census Block											
		2074	43	22	0	10	0	0	0	1	10	21	49%
		2075	31	21	1	0	0	0	0	0	9	10	32%
		2077	22	13	0	3	1	0	0	2	3	9	41%
		2078	70	32	2	19	0	0	0	5	12	38	54%
		2079	36	15	1	6	0	0	0	4	10	21	58%
		2080	17	5	1	2	0	0	0	2	7	12	71%
		2081	7	0	0	0	1	0	0	4	2	7	100%
		2083	40	21	0	1	0	0	0	5	13	19	48%
		2085	41	15	0	2	2	0	0	7	15	26	63%
		3001	6	0	0	2	0	0	0	3	1	6	100%
		3002	16	10	0	1	0	0	0	1	4	6	38%
		3003	106	44	1	9	0	0	0	0	52	62	58%
		3004	13	11	0	0	0	0	0	0	2	2	15%
		3005	22	12	0	0	0	0	0	0	10	10	45%
		3006	16	11	0	1	0	0	0	0	4	5	31%
		3007	11	6	0	0	1	0	0	2	2	5	45%
		3008	9	4	0	0	0	0	0	0	5	5	56%
		3009	6	3	0	0	0	0	0	0	3	3	50%
		3011	6	0	0	0	0	0	0	0	6	6	100%
		3012	8	6	0	0	0	0	0	0	2	2	25%
		3013	66	2	0	3	0	0	0	0	61	64	97%
		3014	5	0	0	0	0	0	0	0	5	5	100%
		3015	32	8	0	3	0	0	0	4	17	24	75%
		3016	22	14	0	2	0	0	0	1	5	8	36%
		3017	10	5	0	0	0	0	0	1	4	5	50%
		3018	147	107	4	13	0	0	0	6	17	40	27%
		3019	46	28	0	0	0	0	0	3	15	18	39%
		3021	50	28	1	3	0	0	0	17	1	22	44%
		3022	31	3	3	0	0	0	0	3	22	28	90%
		3023	11	2	0	0	0	0	0	0	9	9	82%
		3024	15	0	0	6	0	0	0	1	8	15	100%
	3	3026	17	2	0	0	0	0	0	5	10	15	88%

Appendix B: Race and Ethnicity by Census Block

Geographic Area			Total Population	White alone	Black or African American alone	American Indian and Alaska Native alone	Asian alone	Native Hawaiian and Other Pacific Islander alone	Some Other Race alone	Population of two or more races	Hispanic or Latino	Total Minority	Total Minority Percentage
Census Tract	Block Group	Census Block											
		3027	8	3	0	2	0	0	0	2	1	5	63%
		3028	9	1	0	1	0	0	0	1	6	8	89%
		3029	9	2	0	0	0	0	0	0	7	7	78%
		3030	20	7	0	0	0	0	0	3	10	13	65%
		3031	22	18	0	0	0	0	0	1	3	4	18%
		3032	14	4	0	0	0	0	0	0	10	10	71%
		3033	19	2	0	5	0	0	0	3	9	17	89%
		3034	9	0	0	3	0	0	0	3	3	9	100%
		3035	1	0	0	0	0	0	0	0	1	1	100%
		3036	23	9	0	2	0	0	0	7	5	14	61%
		3037	7	4	0	0	0	0	0	0	3	3	43%
		3038	4	3	0	1	0	0	0	0	0	1	25%
		3039	19	0	0	2	0	0	0	2	15	19	100%
		3041	27	10	0	7	0	0	0	2	8	17	63%
		3043	19	5	0	4	0	0	0	0	10	14	74%
		3045	10	1	0	0	0	0	0	0	9	9	90%
		3046	17	2	3	0	0	0	0	0	12	15	88%
		3047	14	8	0	0	0	0	0	0	6	6	43%
		3048	3	0	0	0	0	0	0	1	2	3	100%
		3049	14	10	0	1	0	0	0	1	2	4	29%
		3050	10	3	0	2	0	0	0	0	5	7	70%
		3051	17	10	0	0	0	0	0	2	5	7	41%
		3053	16	2	0	3	0	0	0	0	11	14	88%
		3054	16	8	0	0	0	0	0	4	4	8	50%
		3055	14	7	0	1	0	0	0	0	6	7	50%
		3056	6	1	0	0	0	0	0	0	5	5	83%
		3057	9	4	0	3	0	0	0	0	2	5	56%
		3058	6	4	0	0	0	0	0	2	0	2	33%
		3059	5	1	0	1	0	0	0	0	3	4	80%
		3060	10	7	0	3	0	0	0	0	0	3	30%
		3061	27	19	0	0	0	0	0	2	6	8	30%
		3062	22	11	0	4	0	0	0	2	5	11	50%

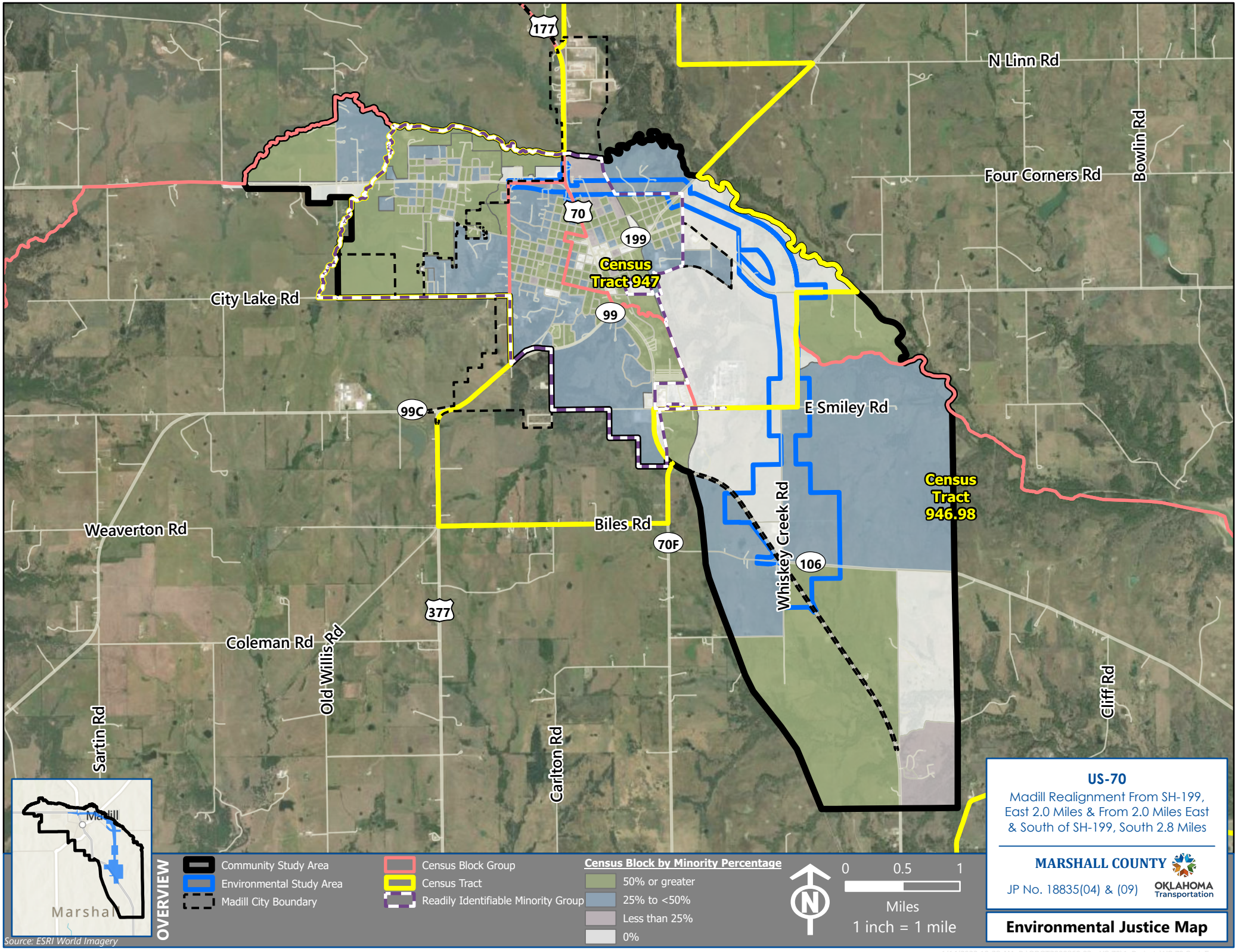
Appendix B: Race and Ethnicity by Census Block

Geographic Area			Total Population	White alone	Black or African American alone	American Indian and Alaska Native alone	Asian alone	Native Hawaiian and Other Pacific Islander alone	Some Other Race alone	Population of two or more races	Hispanic or Latino	Total Minority	Total Minority Percentage
Census Tract	Block Group	Census Block											
		3063	25	10	0	3	3	0	0	1	8	15	60%
		3064	11	5	0	0	0	0	0	0	6	6	55%
		3066	18	5	0	0	0	0	2	7	4	13	72%
		3067	12	0	0	0	1	0	0	2	9	12	100%
Study Area			4,888	2,175	123	347	32	1	8	360	1,842	2,713	55.5%
Madill			3,914	1,756	117	269	27	1	7	289	1,448	2,158	55.1%
Marshall County			15,312	9,749	169	1,413	44	4	85	1,243	2,605	5,563	36.3%
Oklahoma			3,959,353	2,407,188	283,242	311,890	8,9653	8,168	13,602	373,679	471,931	1,552,165	39.2%

Source: 2020 U.S. Decennial Census. Table P2, "Hispanic or Latino, and Not Hispanic or Latino by Race"

Note: Only populated blocks are represented. Study area intersects CT 946.98 BG 2; however, no intersecting blocks within BG are populated.

Highlighted rows indicate the blocks that are included in the readily identifiable minority groups.


177
N Linn Rd
Bowlin Rd
Four Corners Rd
70
199
Census Tract 947
City Lake Rd
99
99C
E Smiley Rd
Census Tract 946.98
Whiskey Creek Rd
Weaverton Rd
Biles Rd
70F
106
377
Coleman Rd
Old Willis Rd
Sartin Rd
Carlton Rd
Cliff Rd
OVERVIEW
Madill
Marshall
Community Study Area
Environmental Study Area
Madill City Boundary
Census Block Group
Census Tract
Readily Identifiable Minority Group
Census Block by Minority Percentage
50% or greater
25% to <50%
Less than 25%
0%
N
0
0.5
1
Miles
1 inch = 1 mile
US-70
Madill Realignment From SH-199, East 2.0 Miles & From 2.0 Miles East & South of SH-199, South 2.8 Miles
MARSHALL COUNTY
JP No. 18835(04) & (09)
OKLAHOMA Transportation
Environmental Justice Map
Source: ESRI World Imagery
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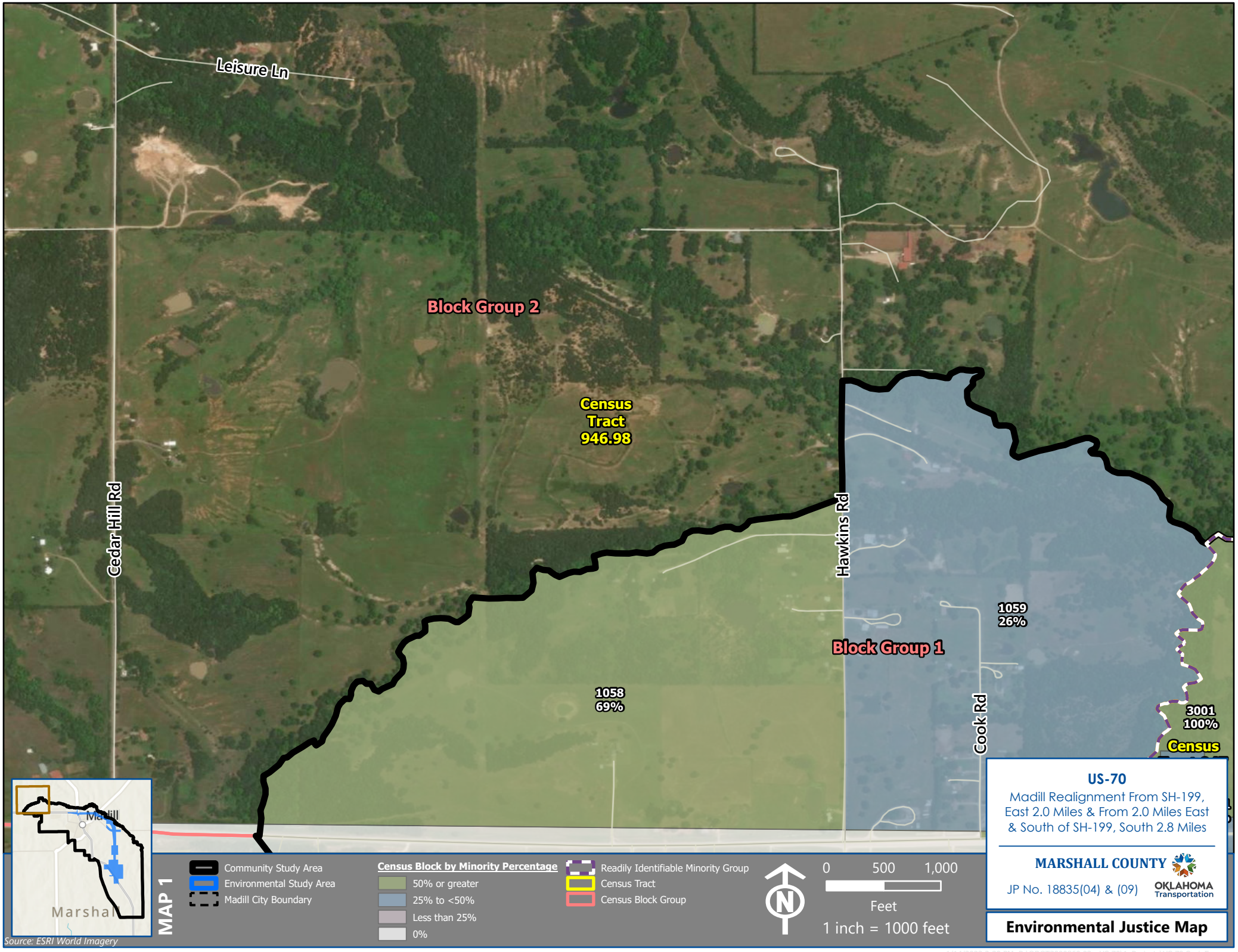
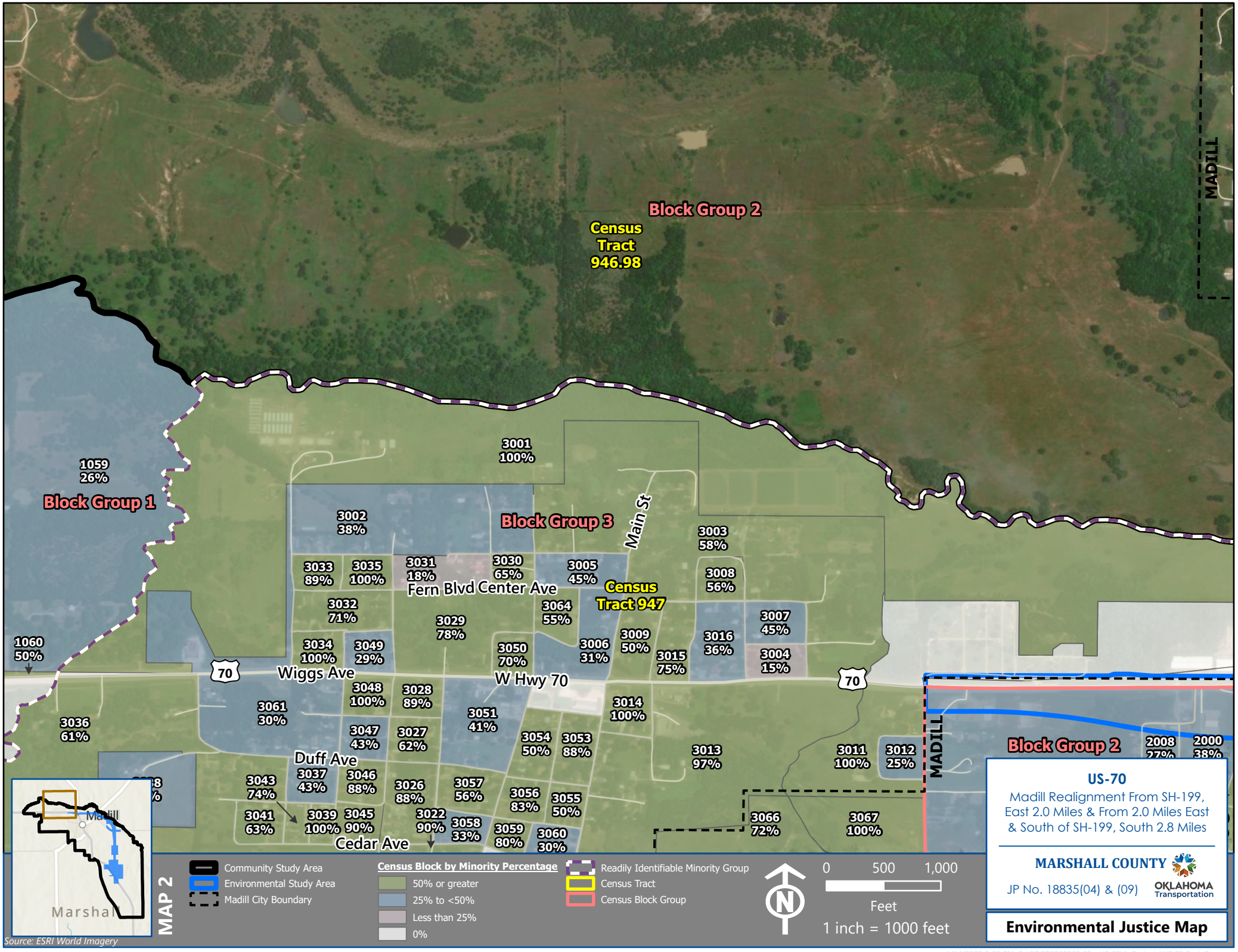
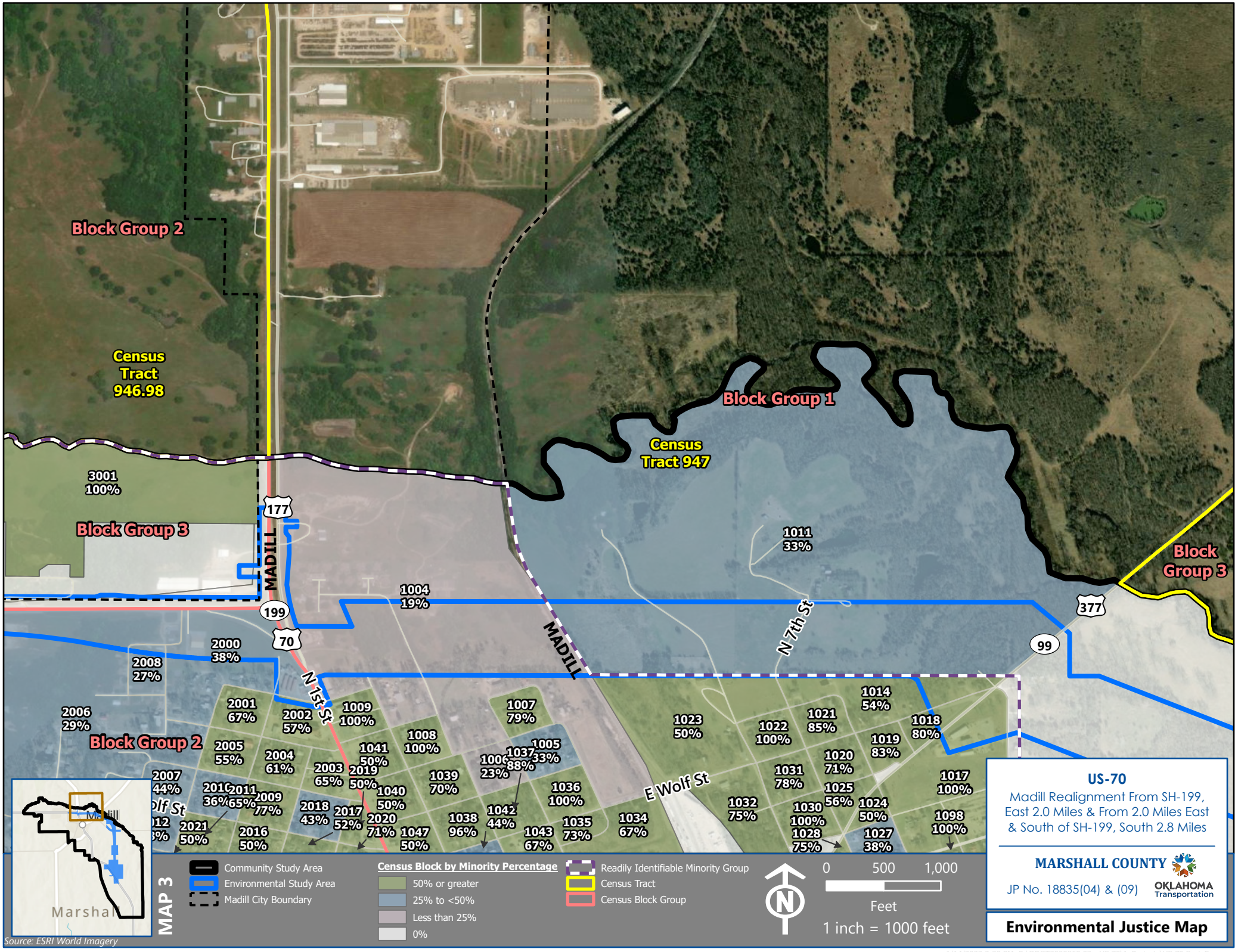
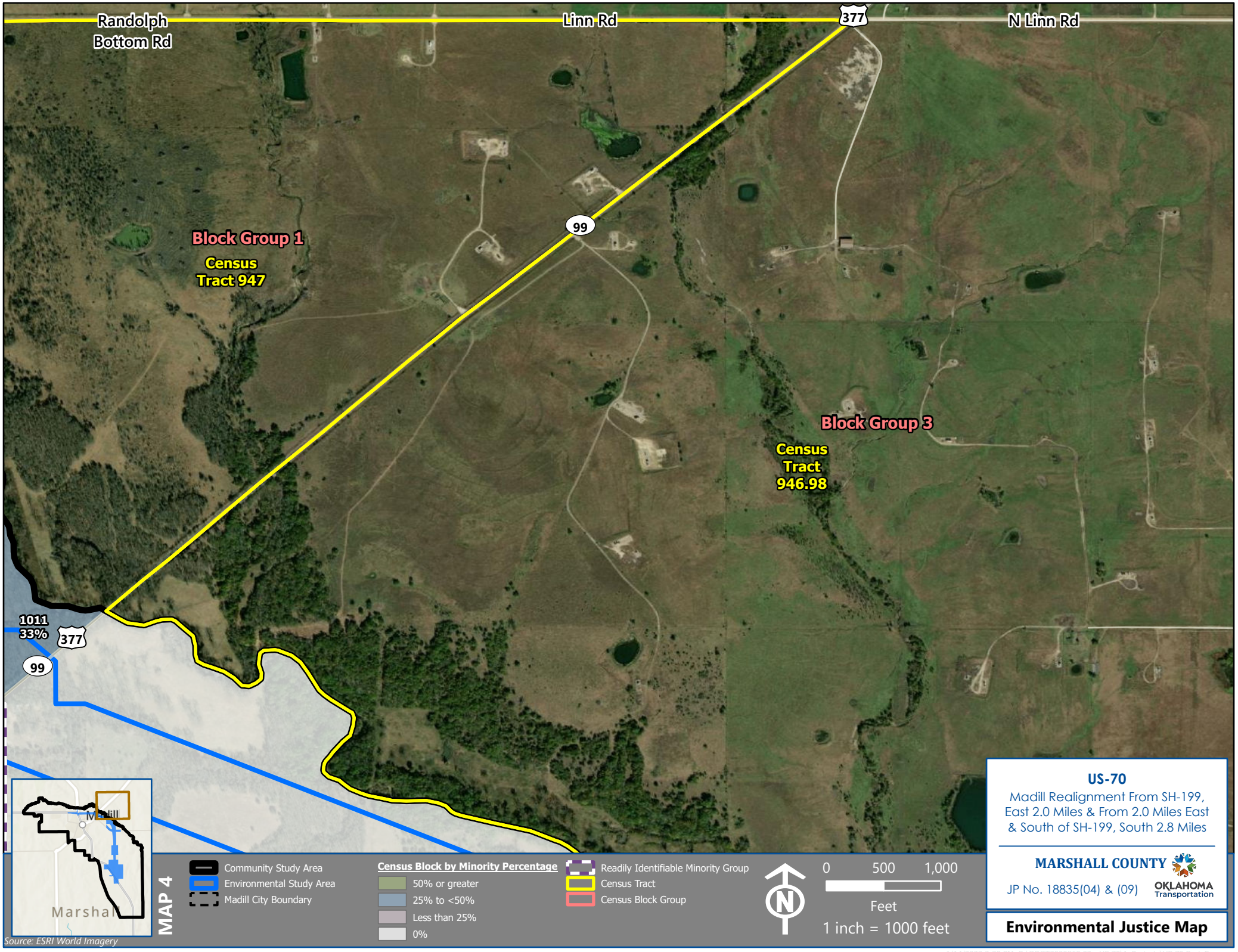
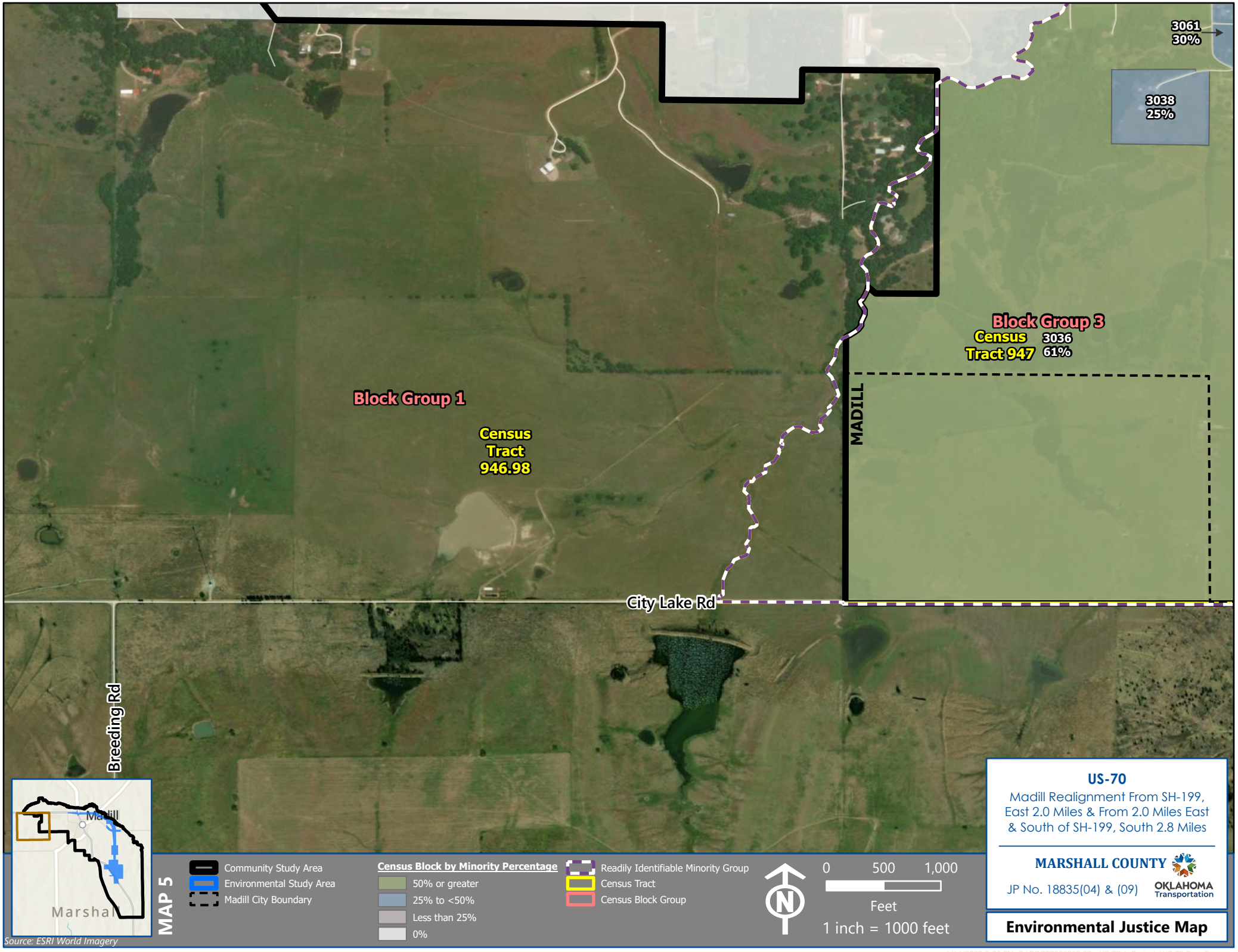
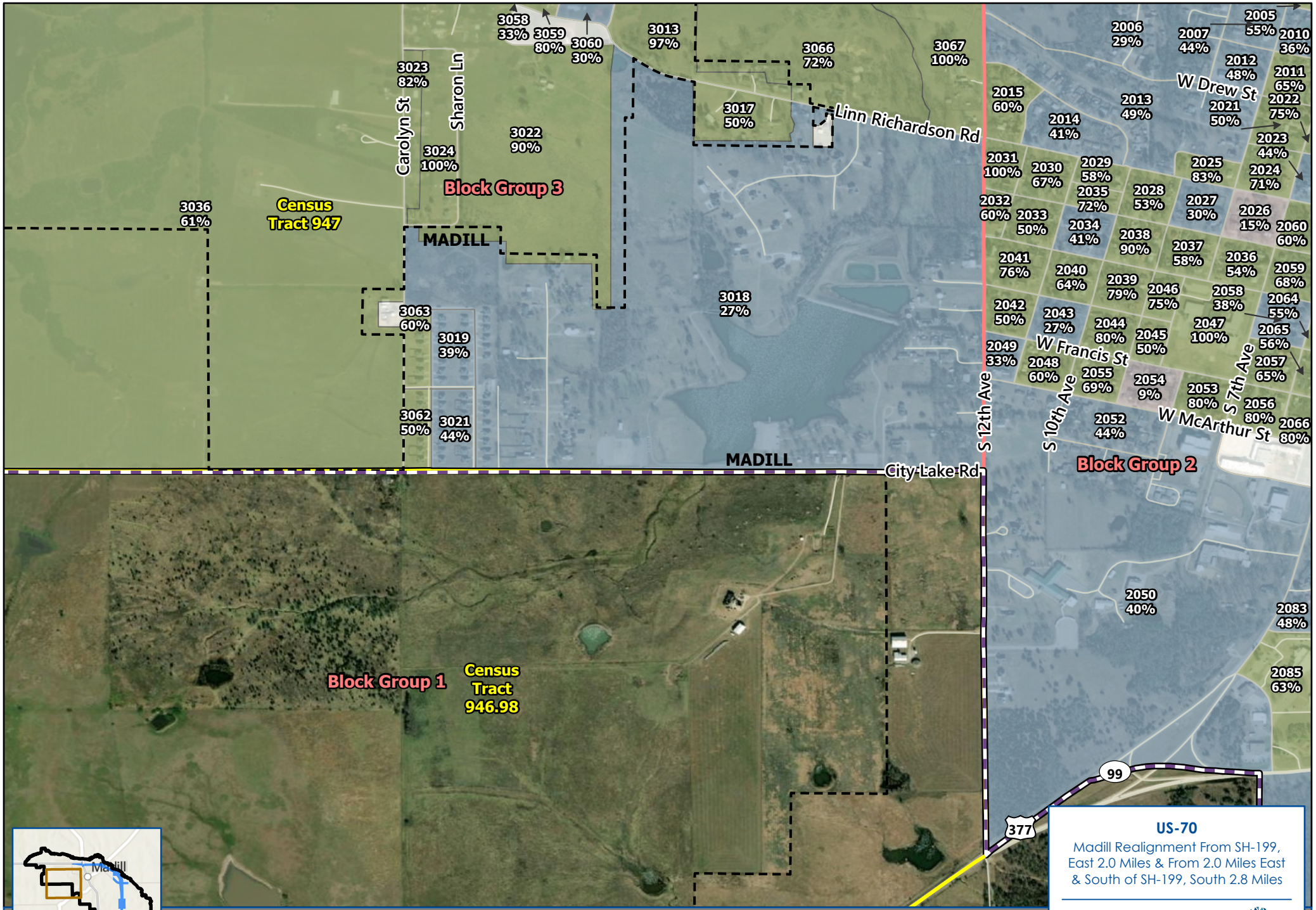

Leisure Ln
Block Group 2
Census Tract 946.98
Cedar Hill Rd
Hawkins Rd
1059 26%
Block Group 1
1058 69%
Cook Rd
3001 100%
Census
Madill
Marshall
MAP 1
Community Study Area
Environmental Study Area
Madill City Boundary
Census Block by Minority Percentage
50% or greater
25% to <50%
Less than 25%
0%
Readily Identifiable Minority Group
Census Tract
Census Block Group
N
0 500 1,000
Feet
1 inch = 1000 feet
US-70
Madill Realignment From SH-199, East 2.0 Miles & From 2.0 Miles East & South of SH-199, South 2.8 Miles
MARSHALL COUNTY
JP No. 18835(04) & (09)
OKLAHOMA Transportation
Environmental Justice Map
Source: ESRI World Imagery


Block Group 2
Census Tract 946.98
MADILL
1059 26%
Block Group 1
3001 100%
3002 38%
Block Group 3
Main St
3003 58%
3033 89%
3035 100%
3031 18%
3030 65%
3005 45%
Fern Blvd
Center Ave
Census Tract 947
3008 56%
3032 71%
3064 55%
3007 45%
3029 78%
1060 50%
3034 100%
3049 29%
3050 70%
3006 31%
3009 50%
3016 36%
3004 15%
3015 75%
70
Wiggs Ave
W Hwy 70
3048 100%
3028 89%
3061 30%
3014 100%
3036 61%
3051 41%
3047 43%
3027 62%
3054 50%
3053 88%
Duff Ave
3013 97%
3011 100%
3012 25%
Block Group 2
2008 27%
2000 38%
3037 43%
3046 88%
3043 74%
3026 88%
3057 56%
3056 83%
3055 50%
3041 63%
3039 100%
3045 90%
3022 90%
3058 33%
3059 80%
3060 30%
Cedar Ave
3066 72%
3067 100%
Marshall
MAP 2
Community Study Area
Environmental Study Area
Madill City Boundary
Census Block by Minority Percentage
50% or greater
25% to <50%
Less than 25%
0%
Readily Identifiable Minority Group
Census Tract
Census Block Group
N
0 500 1,000
Feet
1 inch = 1000 feet
US-70
Madill Realignment From SH-199, East 2.0 Miles & From 2.0 Miles East & South of SH-199, South 2.8 Miles
MARSHALL COUNTY
JP No. 18835(04) & (09)
OKLAHOMA Transportation
Environmental Justice Map
Source: ESRI World Imagery


Block Group 2
Census Tract 946.98
Block Group 1
Census Tract 947
Block Group 3
3001 100%
177
MADILL
199
70
1004 19%
1011 33%
Block Group 3
377
99
N 7th St
MADILL
2000 38%
2008 27%
N 1st St
2006 29%
2001 67%
2002 57%
1009 100%
1007 79%
1023 50%
1022 100%
1021 85%
1014 54%
1018 80%
Block Group 2
2005 55%
2004 61%
1041 50%
1008 100%
1005 33%
1037 88%
1006 23%
1019 83%
1020 71%
2007 44%
2003 65%
2019 50%
1039 70%
1031 78%
1017 100%
E Wolf St
2010 36%
2011 65%
2009 77%
1040 50%
1036 100%
1025 56%
1032 75%
1030 100%
1024 50%
2018 43%
2017 52%
2020 71%
1042 44%
1038 96%
1035 73%
1034 67%
1028 75%
1027 38%
1098 100%
2021 50%
2016 50%
1047 50%
1043 67%
Marshall
MAP 3
Community Study Area
Environmental Study Area
Madill City Boundary
Census Block by Minority Percentage
50% or greater
25% to <50%
Less than 25%
0%
Readily Identifiable Minority Group
Census Tract
Census Block Group
N
0 500 1,000
Feet
1 inch = 1000 feet
US-70
Madill Realignment From SH-199, East 2.0 Miles & From 2.0 Miles East & South of SH-199, South 2.8 Miles
MARSHALL COUNTY
JP No. 18835(04) & (09)
OKLAHOMA Transportation
Environmental Justice Map
Source: ESRI World Imagery


Randolph Bottom Rd
Linn Rd
377
N Linn Rd
99
Block Group 1
Census Tract 947
Block Group 3
Census Tract 946.98
1011
33%
377
99
Marshall
MAP 4
Community Study Area
Environmental Study Area
Madill City Boundary
Census Block by Minority Percentage
50% or greater
25% to <50%
Less than 25%
0%
Readily Identifiable Minority Group
Census Tract
Census Block Group
N
0
500
1,000
Feet
1 inch = 1000 feet
US-70
Madill Realignment From SH-199, East 2.0 Miles & From 2.0 Miles East & South of SH-199, South 2.8 Miles
MARSHALL COUNTY
JP No. 18835(04) & (09)
OKLAHOMA Transportation
Environmental Justice Map
Source: ESRI World Imagery


3061
30%
3038
25%
Block Group 3
Census Tract 947
3036
61%
Block Group 1
Census Tract 946.98
MADILL
City Lake Rd
Breeding Rd
Madill
Marshall
MAP 5
Community Study Area
Environmental Study Area
Madill City Boundary
Census Block by Minority Percentage
50% or greater
25% to <50%
Less than 25%
0%
Readily Identifiable Minority Group
Census Tract
Census Block Group
N
0
500
1,000
Feet
1 inch = 1000 feet
US-70
Madill Realignment From SH-199, East 2.0 Miles & From 2.0 Miles East & South of SH-199, South 2.8 Miles
MARSHALL COUNTY
JP No. 18835(04) & (09)
OKLAHOMA Transportation
Environmental Justice Map
Source: ESRI World Imagery


3058 33%
3059 80%
3060 30%
3013 97%
3066 72%
3067 100%
3023 82%
Sharon Ln
Carolyn St
3017 50%
Linn Richardson Rd
3022 90%
3024 100%
Block Group 3
Census Tract 947
3036 61%
MADILL
3018 27%
3063 60%
3019 39%
3062 50%
3021 44%
MADILL
City Lake Rd
2006 29%
2005 55%
2007 44%
2010 36%
2012 48%
W Drew St
2011 65%
2015 60%
2013 49%
2022 75%
2021 50%
2014 41%
2023 44%
2031 100%
2030 67%
2029 58%
2025 83%
2024 71%
2035 72%
2028 53%
2032 60%
2033 50%
2027 30%
2026 15%
2034 41%
2060 60%
2038 90%
2037 58%
2041 76%
2036 54%
2040 64%
2059 68%
2039 79%
2046 75%
2058 38%
2064 55%
2042 50%
2043 27%
2044 80%
2047 100%
2065 56%
2049 33%
W Francis St
2045 50%
2048 60%
2057 65%
2055 69%
2054 9%
2053 80%
S 12th Ave
S 10th Ave
S 7th Ave
2056 80%
2052 44%
W McArthur St
2066 80%
Block Group 2
2050 40%
2083 48%
2085 63%
Block Group 1
Census Tract 946.98
99
377
Marshall
Madill
MAP 6
Community Study Area
Environmental Study Area
Madill City Boundary
Census Block by Minority Percentage
50% or greater
25% to <50%
Less than 25%
0%
Readily Identifiable Minority Group
Census Tract
Census Block Group
N
0 500 1,000
Feet
1 inch = 1000 feet
US-70
Madill Realignment From SH-199, East 2.0 Miles & From 2.0 Miles East & South of SH-199, South 2.8 Miles
MARSHALL COUNTY
JP No. 18835(04) & (09)
OKLAHOMA Transportation
Environmental Justice Map
Source: ESRI World Imagery

MAP 7

Community Study Area
Environmental Study Area
Madill City Boundary

Census Block by Minority Percentage

50% or greater
25% to <50%
Less than 25%
0%

Readily Identifiable Minority Group
Census Tract
Census Block Group

0 500 1,000
Feet
1 inch = 1000 feet

US-70

Madill Realignment From SH-199, East 2.0 Miles & From 2.0 Miles East & South of SH-199, South 2.8 Miles

MARSHALL COUNTY

JP No. 18835(04) & (09)

OKLAHOMA Transportation

Environmental Justice Map

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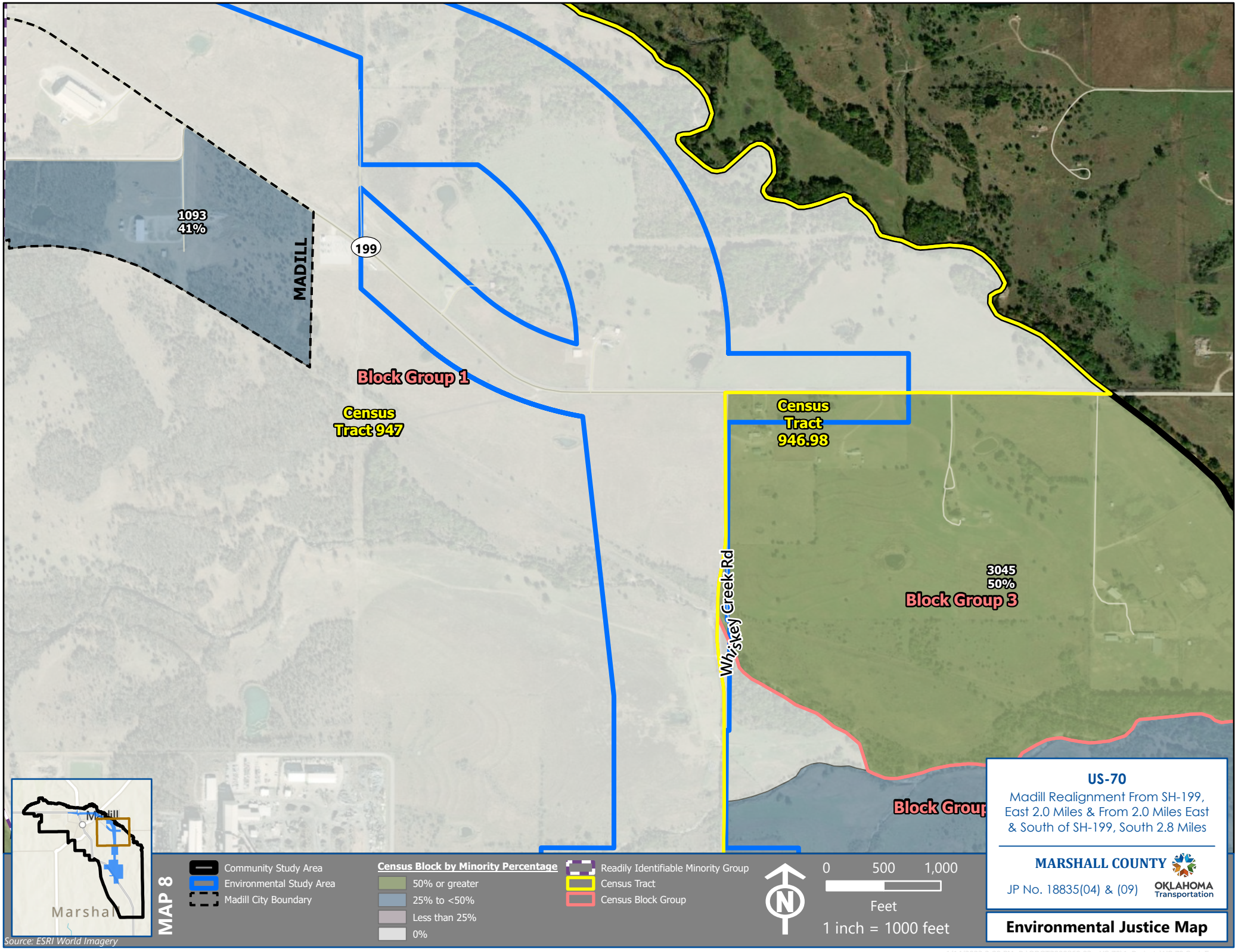
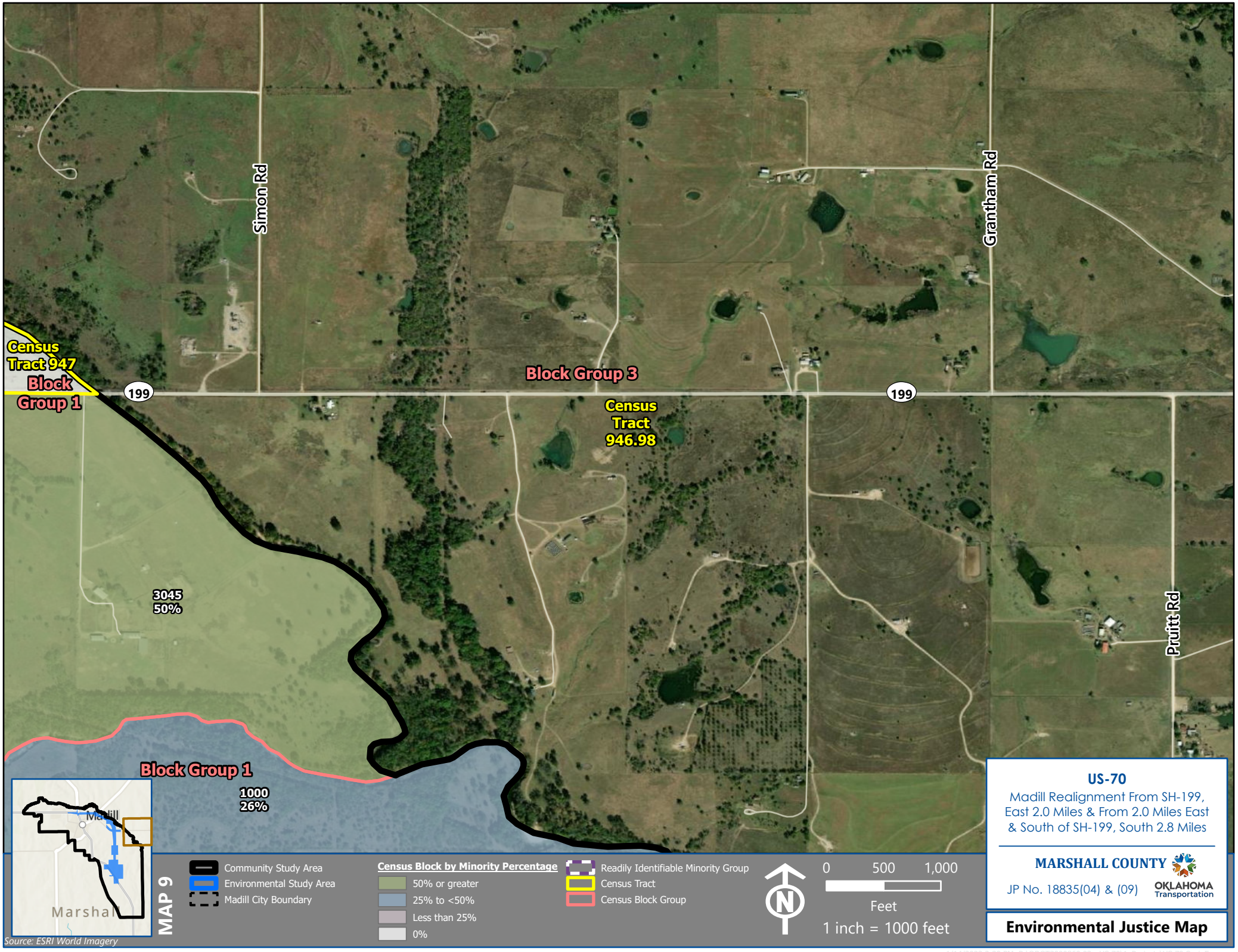

1093
41%
MADILL
199
Block Group 1
Census
Tract 947
Census
Tract
946.98
3045
50%
Block Group 3
Whiskey Creek Rd
Block Group
Marshall
MAP 8
Community Study Area
Environmental Study Area
Madill City Boundary
Census Block by Minority Percentage
50% or greater
25% to <50%
Less than 25%
0%
Readily Identifiable Minority Group
Census Tract
Census Block Group
N
0
500
1,000
Feet
1 inch = 1000 feet
US-70
Madill Realignment From SH-199, East 2.0 Miles & From 2.0 Miles East & South of SH-199, South 2.8 Miles
MARSHALL COUNTY
JP No. 18835(04) & (09)
OKLAHOMA Transportation
Environmental Justice Map
Source: ESRI World Imagery



US-70

Madill Realignment From SH-199, East 2.0 Miles & From 2.0 Miles East & South of SH-199, South 2.8 Miles

MARSHALL COUNTY

JP No. 18835(04) & (09)

OKLAHOMA Transportation

Environmental Justice Map

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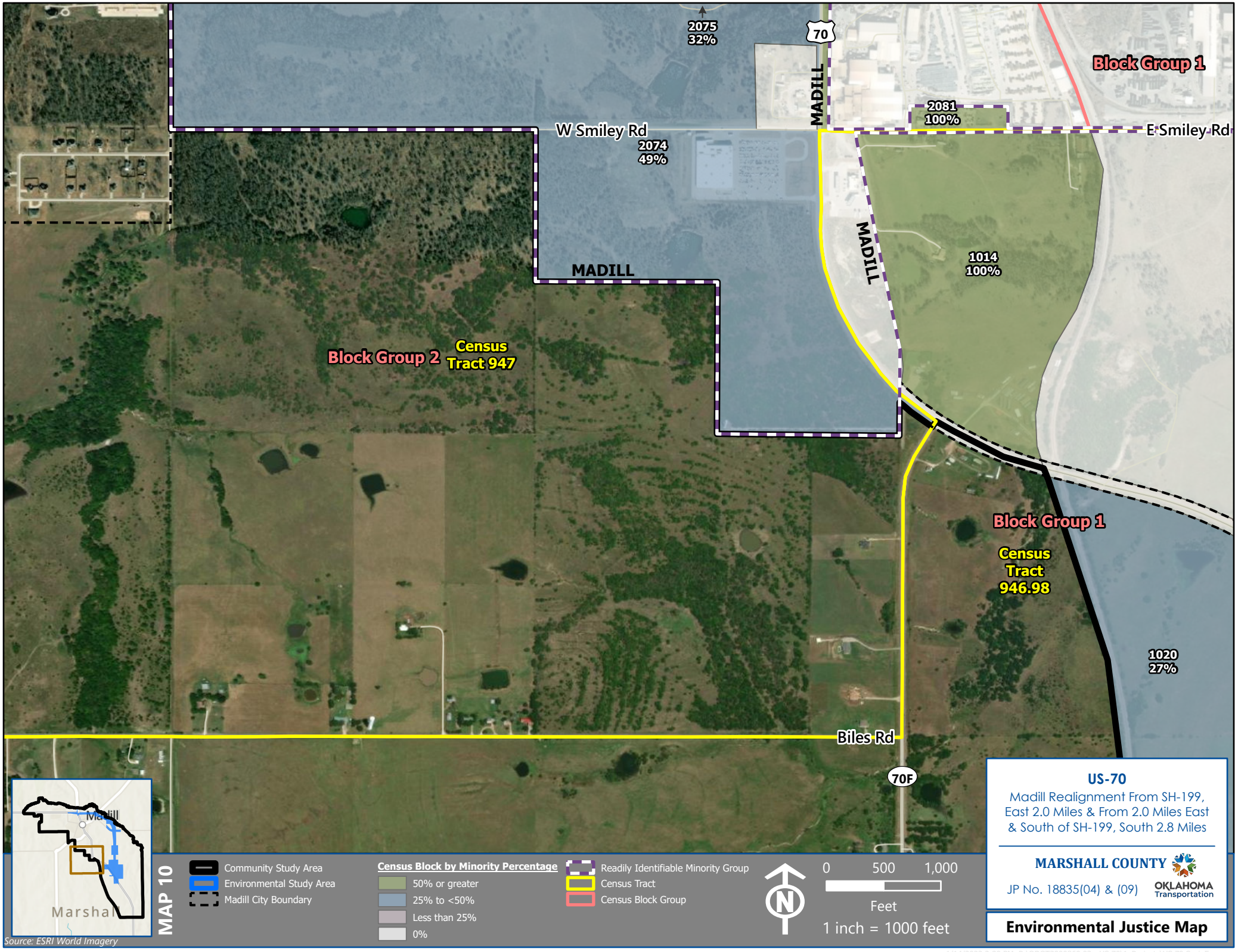
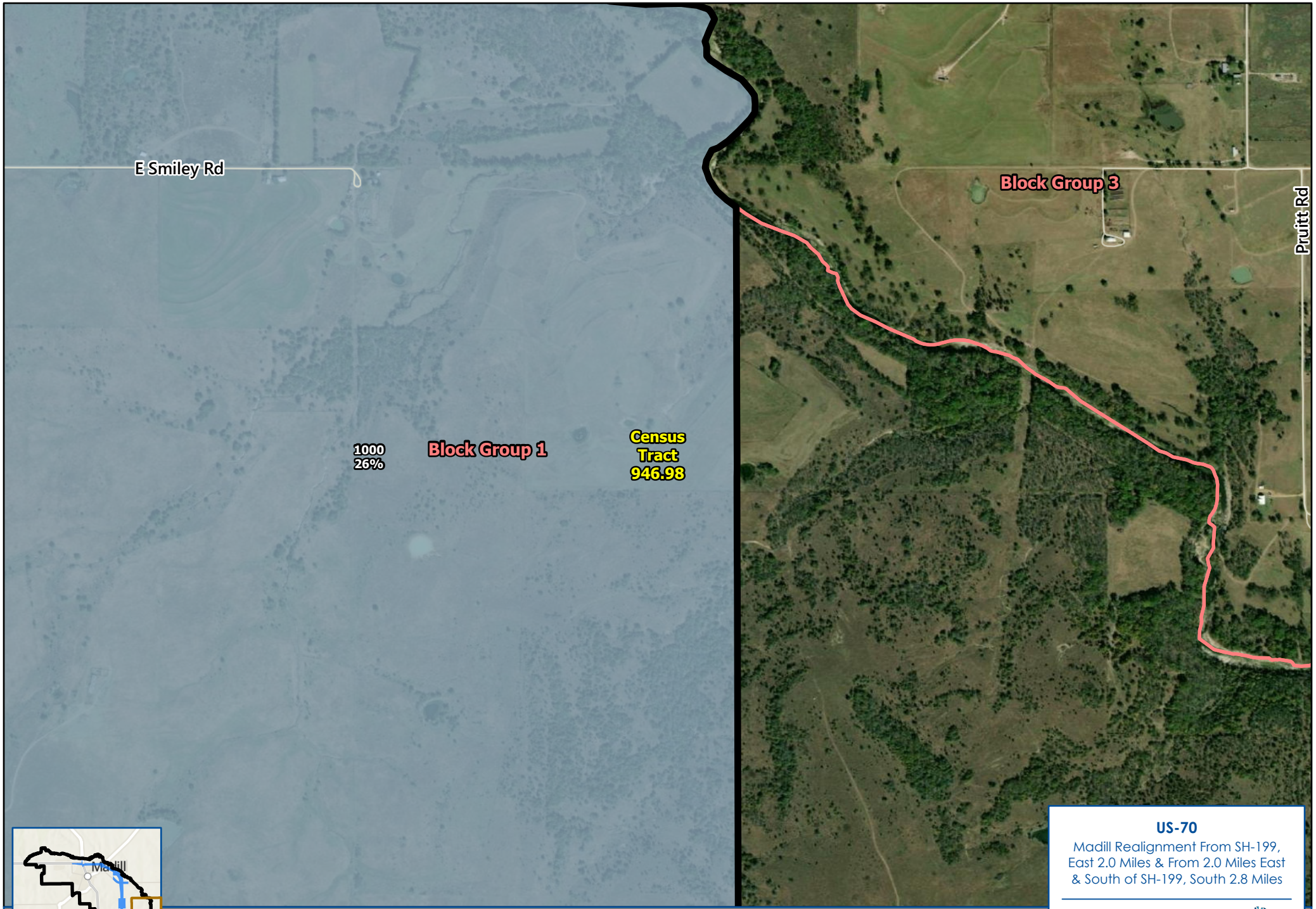

2075
32%
70
MADILL
Block Group 1
2081
100%
W Smiley Rd
2074
49%
E Smiley Rd
MADILL
MADILL
1014
100%
Block Group 2
Census
Tract 947
Block Group 1
Census
Tract
946.98
1020
27%
Biles Rd
70F
Madill
Marshall
MAP 10
Community Study Area
Environmental Study Area
Madill City Boundary
Census Block by Minority Percentage
50% or greater
25% to <50%
Less than 25%
0%
Readily Identifiable Minority Group
Census Tract
Census Block Group
N
0
500
1,000
Feet
1 inch = 1000 feet
US-70
Madill Realignment From SH-199, East 2.0 Miles & From 2.0 Miles East & South of SH-199, South 2.8 Miles
MARSHALL COUNTY
JP No. 18835(04) & (09)
OKLAHOMA Transportation
Environmental Justice Map
Source: ESRI World Imagery



US-70

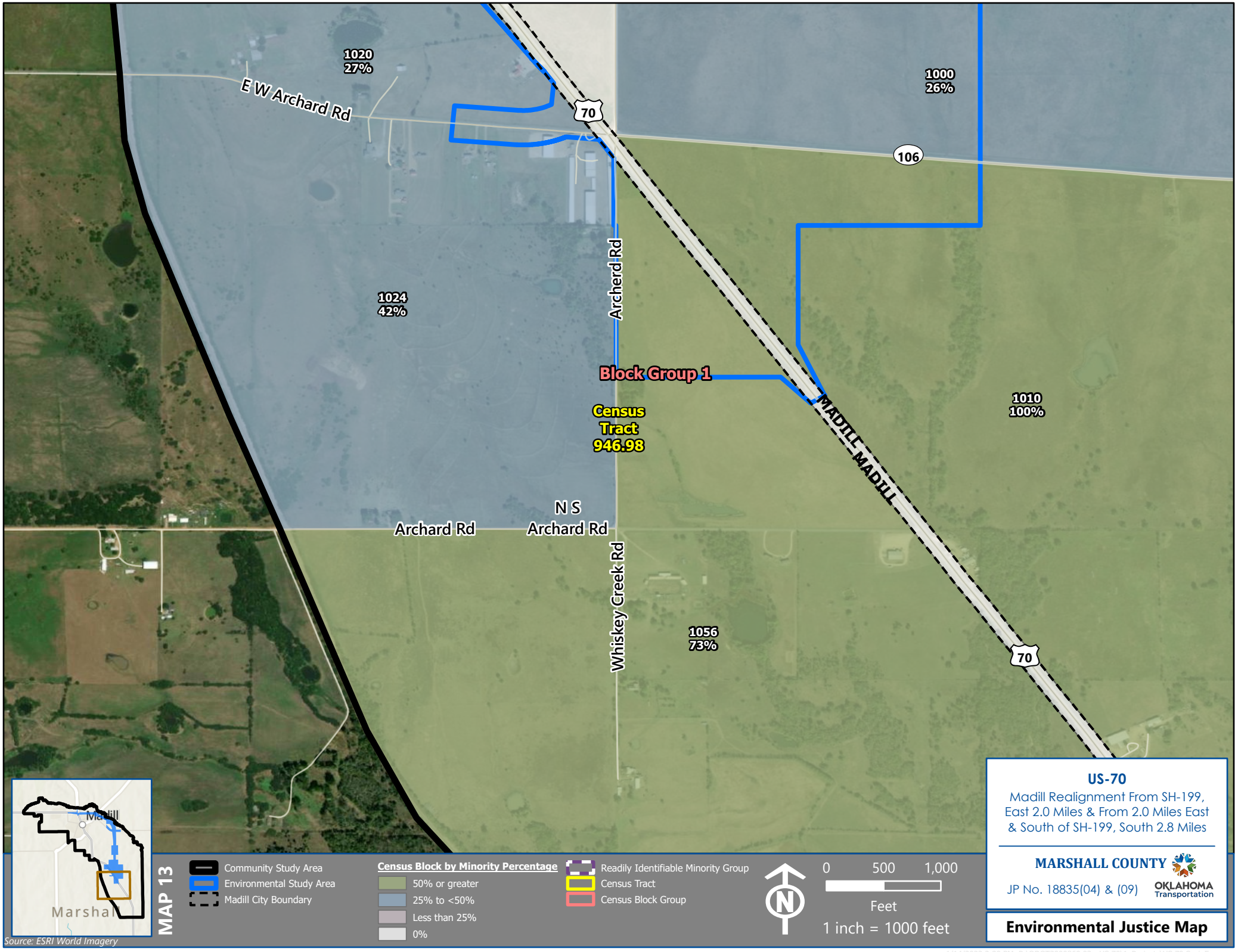
Madill Realignment From SH-199, East 2.0 Miles & From 2.0 Miles East & South of SH-199, South 2.8 Miles

MARSHALL COUNTY

JP No. 18835(04) & (09)

OKLAHOMA Transportation

Environmental Justice Map


1020
27%
E W Archard Rd
70
1000
26%
106
1024
42%
Archerd Rd
Block Group 1
Census
Tract
946.98
MADILL MADILL
1010
100%
N S
Archard Rd
Archard Rd
Whiskey Creek Rd
1056
73%
70
Marshall
MAP 13
Community Study Area
Environmental Study Area
Madill City Boundary
Census Block by Minority Percentage
50% or greater
25% to <50%
Less than 25%
0%
Readily Identifiable Minority Group
Census Tract
Census Block Group
N
0
500
1,000
Feet
1 inch = 1000 feet
US-70
Madill Realignment From SH-199, East 2.0 Miles & From 2.0 Miles East & South of SH-199, South 2.8 Miles
MARSHALL COUNTY
JP No. 18835(04) & (09)
OKLAHOMA Transportation
Environmental Justice Map
Source: ESRI World Imagery

US-70

Madill Realignment From SH-199, East 2.0 Miles & From 2.0 Miles East & South of SH-199, South 2.8 Miles

MARSHALL COUNTY

JP No. 18835(04) & (09)

OKLAHOMA Transportation

Environmental Justice Map

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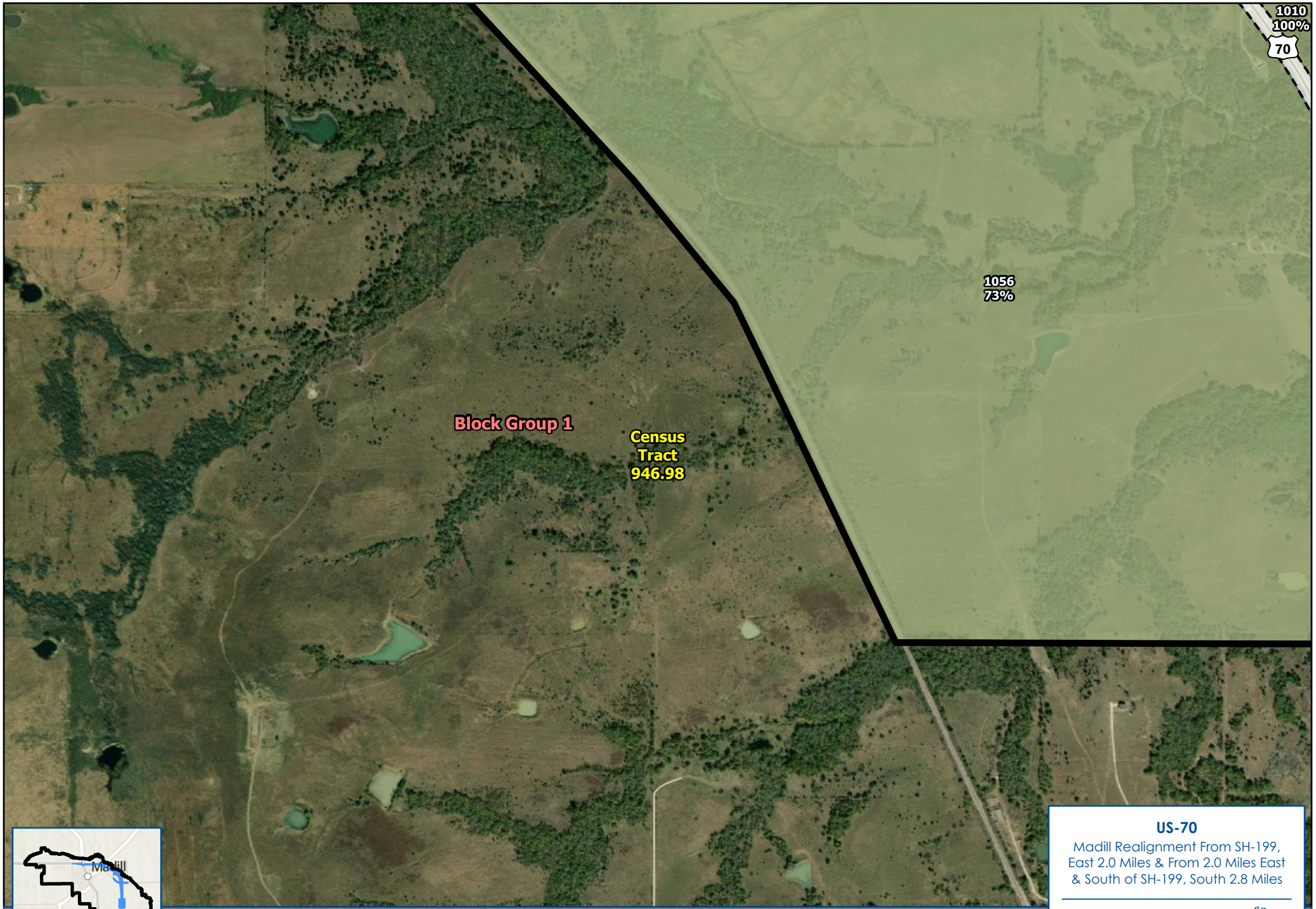
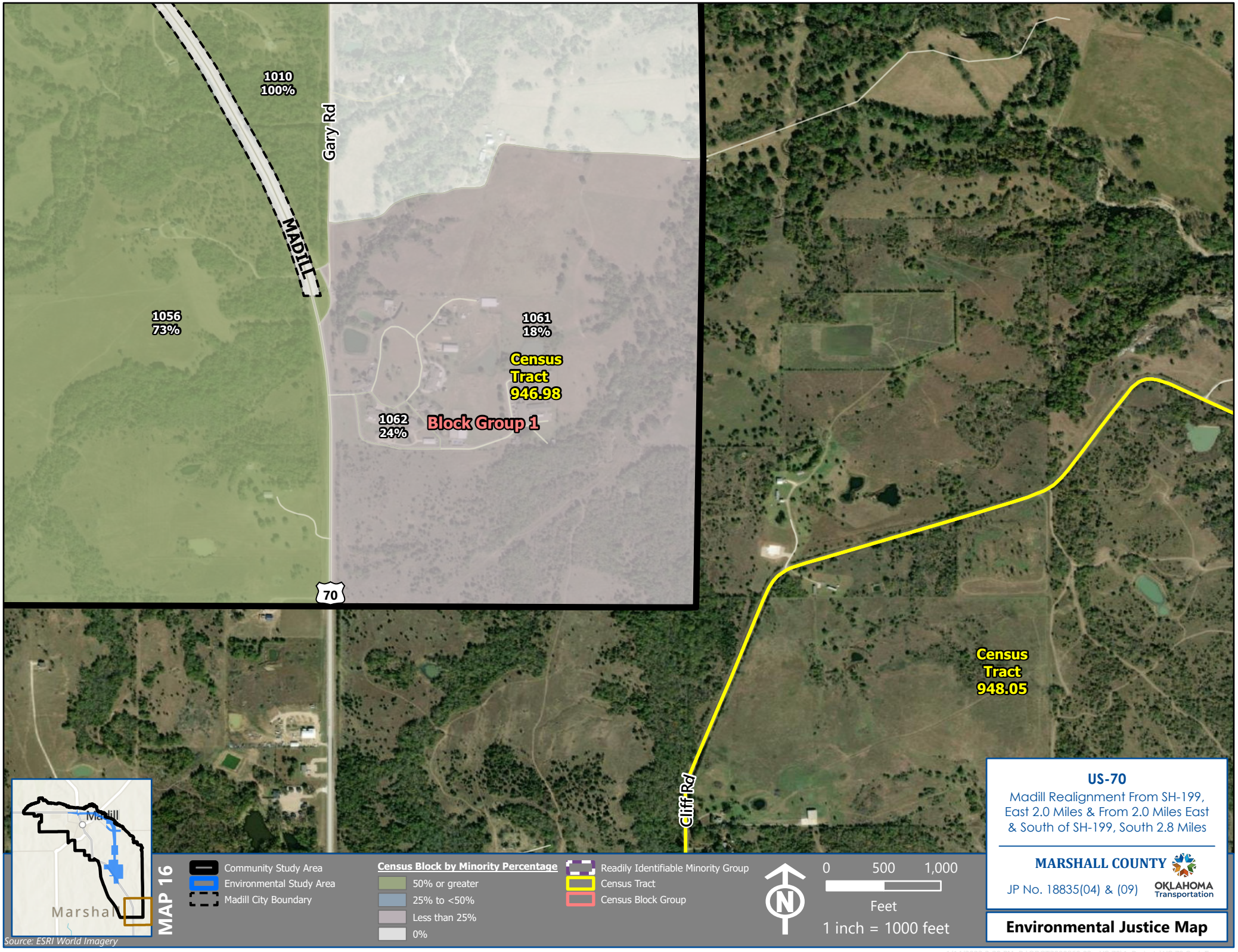
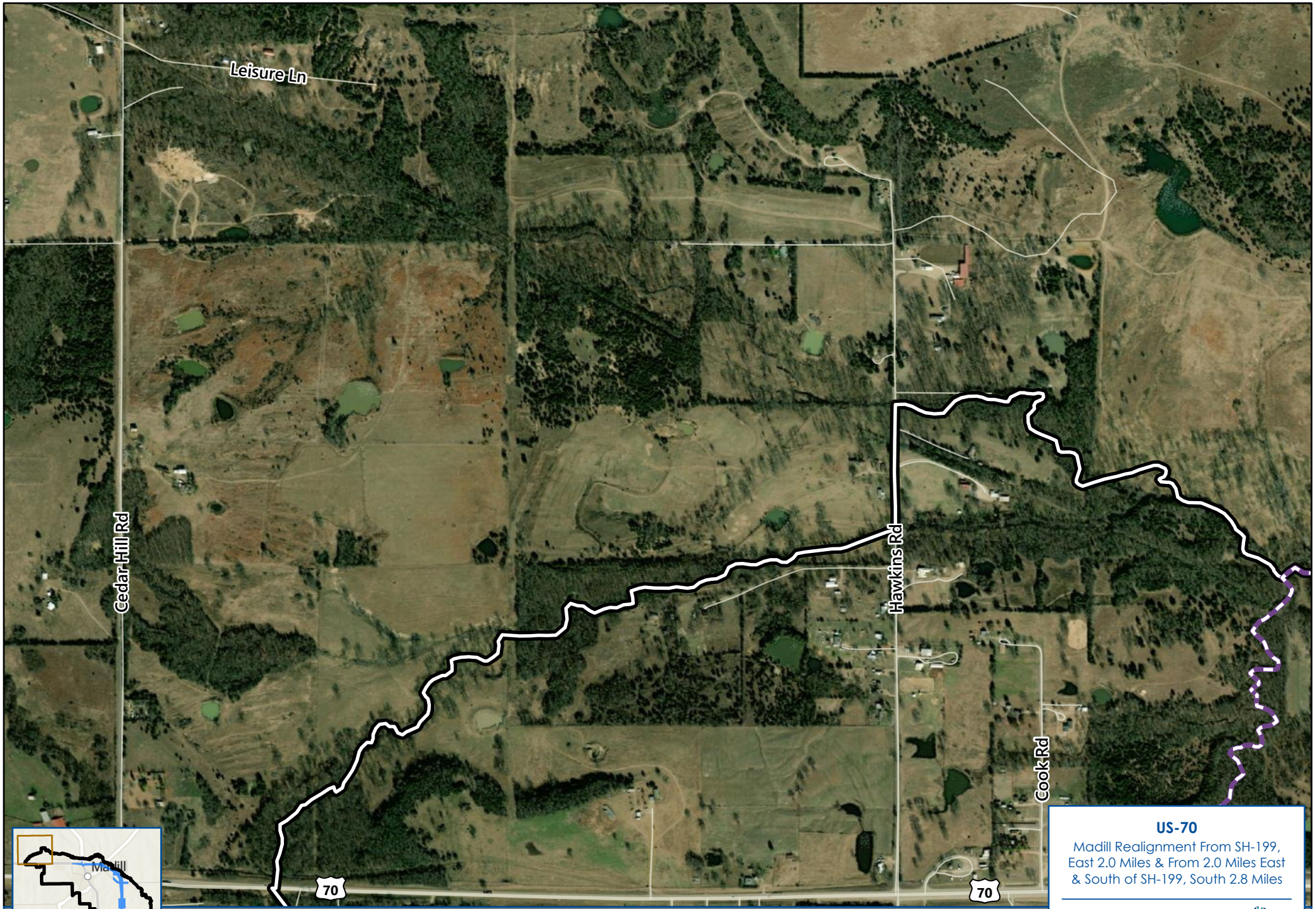

1010
100%
70
1056
73%
Block Group 1
Census
Tract
946.98
Madill
Marshall
MAP 15
Community Study Area
Environmental Study Area
Madill City Boundary
Census Block by Minority Percentage
50% or greater
25% to <50%
Less than 25%
0%
Readily Identifiable Minority Group
Census Tract
Census Block Group
N
0
500
1,000
Feet
1 inch = 1000 feet
US-70
Madill Realignment From SH-199, East 2.0 Miles & From 2.0 Miles East & South of SH-199, South 2.8 Miles
MARSHALL COUNTY
JP No. 18835(04) & (09)
OKLAHOMA Transportation
Environmental Justice Map
Source: ESRI World Imagery


1010
100%
Gary Rd
MADILL
1056
73%
1061
18%
Census
Tract
946.98
1062
24%
Block Group 1
70
Census
Tract
948.05
Cliff Rd
Madill
Marshall
MAP 16
Community Study Area
Environmental Study Area
Madill City Boundary
Census Block by Minority Percentage
50% or greater
25% to <50%
Less than 25%
0%
Readily Identifiable Minority Group
Census Tract
Census Block Group
N
0
500
1,000
Feet
1 inch = 1000 feet
US-70
Madill Realignment From SH-199, East 2.0 Miles & From 2.0 Miles East & South of SH-199, South 2.8 Miles
MARSHALL COUNTY
JP No. 18835(04) & (09)
OKLAHOMA Transportation
Environmental Justice Map
Source: ESRI World Imagery

APPENDIX C

COMMUNITY FACILITIES MAP



MAP 1

Community Facilities

Readily Identifiable Minority Group

Community Study Area

Environmental Study Area

0 500 1,000

Feet

1 inch = 1000 feet

Source: ESRI World Imagery

US-70

Madill Realignment From SH-199, East 2.0 Miles & From 2.0 Miles East & South of SH-199, South 2.8 Miles

MARSHALL COUNTY

JP No. 18835(04) & (09)

OKLAHOMA Transportation

Community Facilities Map

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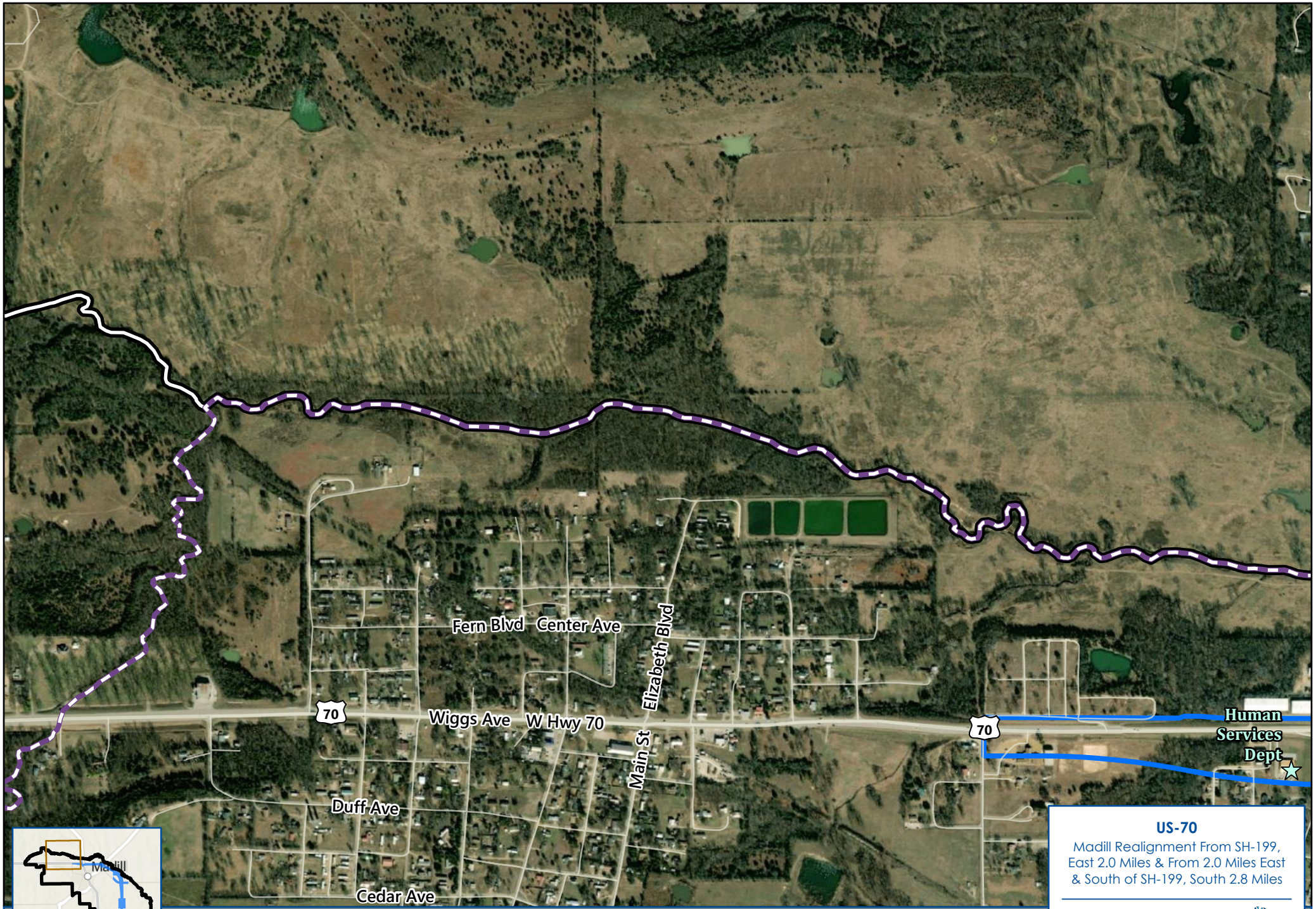

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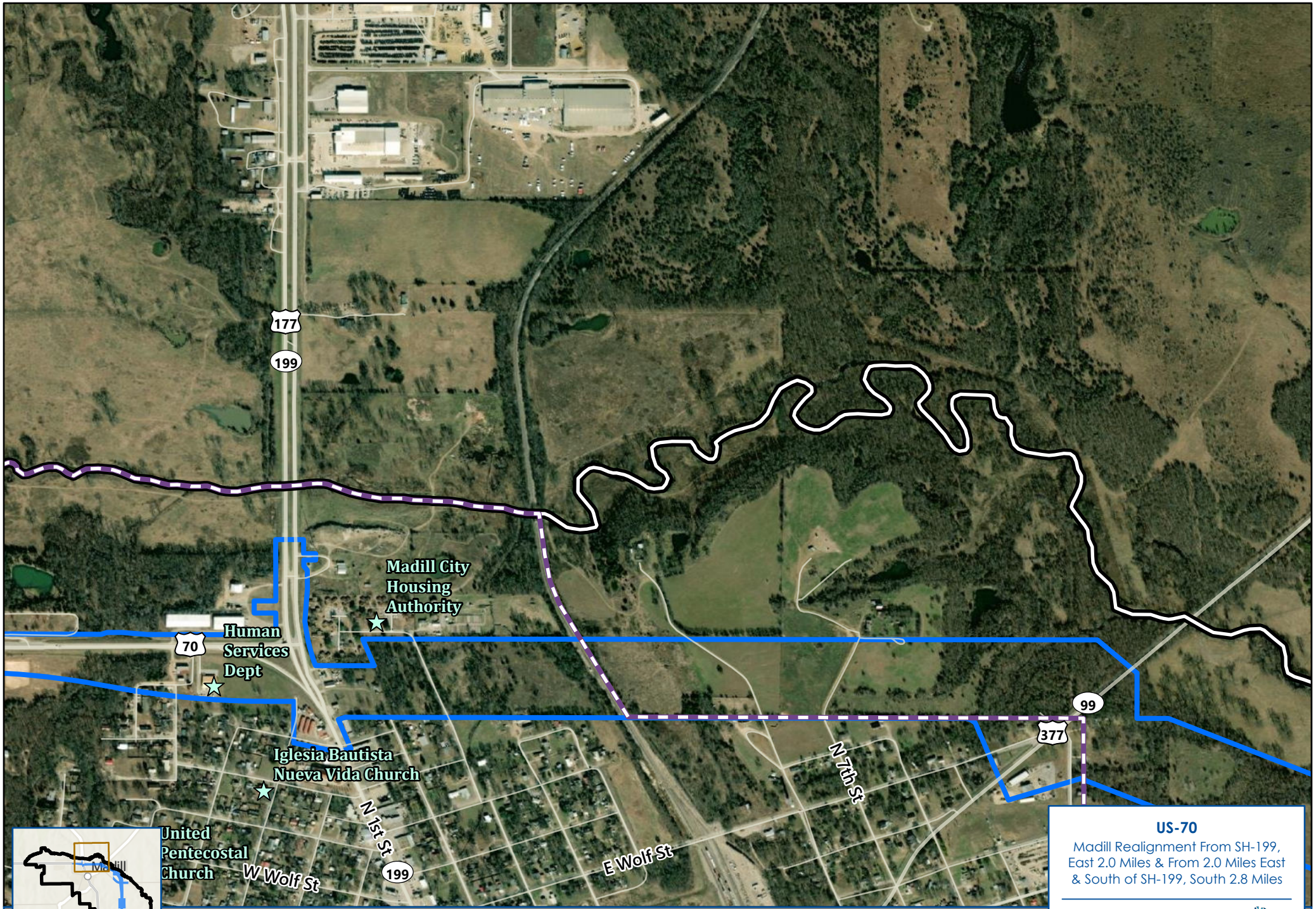

US-70

Madill Realignment From SH-199, East 2.0 Miles & From 2.0 Miles East & South of SH-199, South 2.8 Miles

MARSHALL COUNTY

JP No. 18835(04) & (09)

OKLAHOMA Transportation

Community Facilities Map

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US-70

Madill Realignment From SH-199, East 2.0 Miles & From 2.0 Miles East & South of SH-199, South 2.8 Miles

MARSHALL COUNTY

JP No. 18835(04) & (09)

OKLAHOMA Transportation

Community Facilities Map

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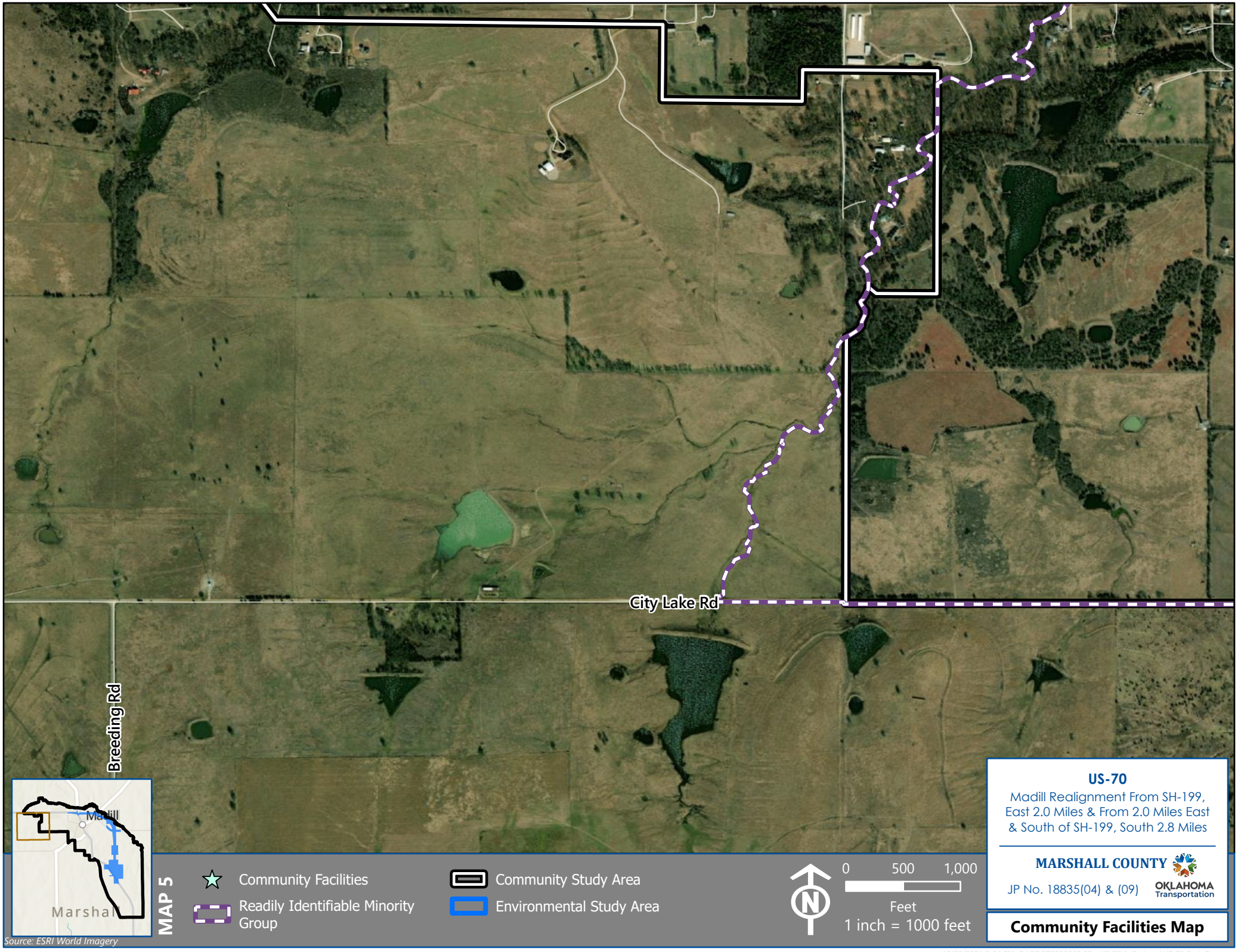


US-70

Madill Realignment From SH-199, East 2.0 Miles & From 2.0 Miles East & South of SH-199, South 2.8 Miles

MARSHALL COUNTY

JP No. 18835(04) & (09)

OKLAHOMA Transportation

Community Facilities Map

MAP 5

- Community Facilities
- Readily Identifiable Minority Group
- Community Study Area
- Environmental Study Area

N

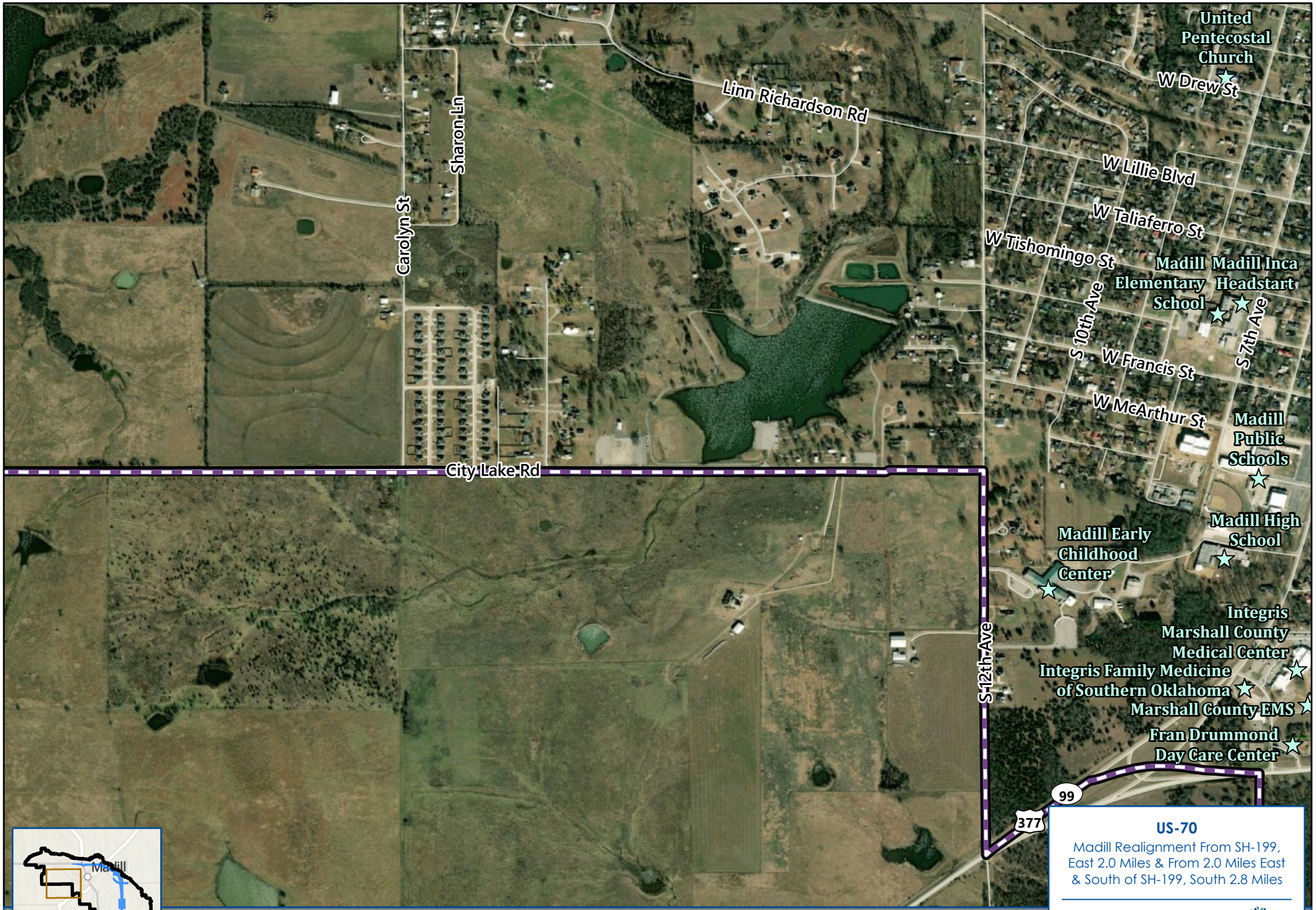
0 500 1,000

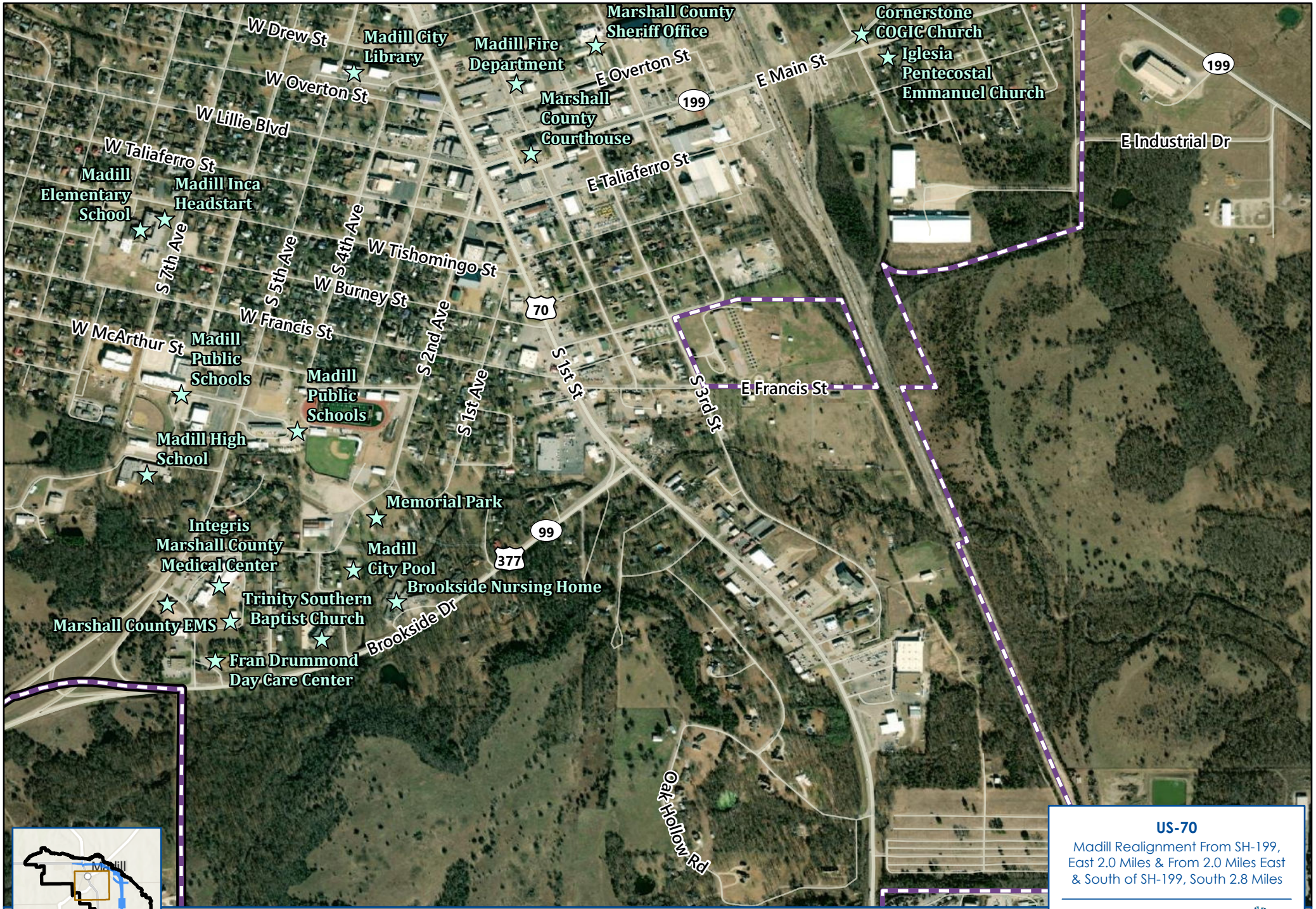
Feet

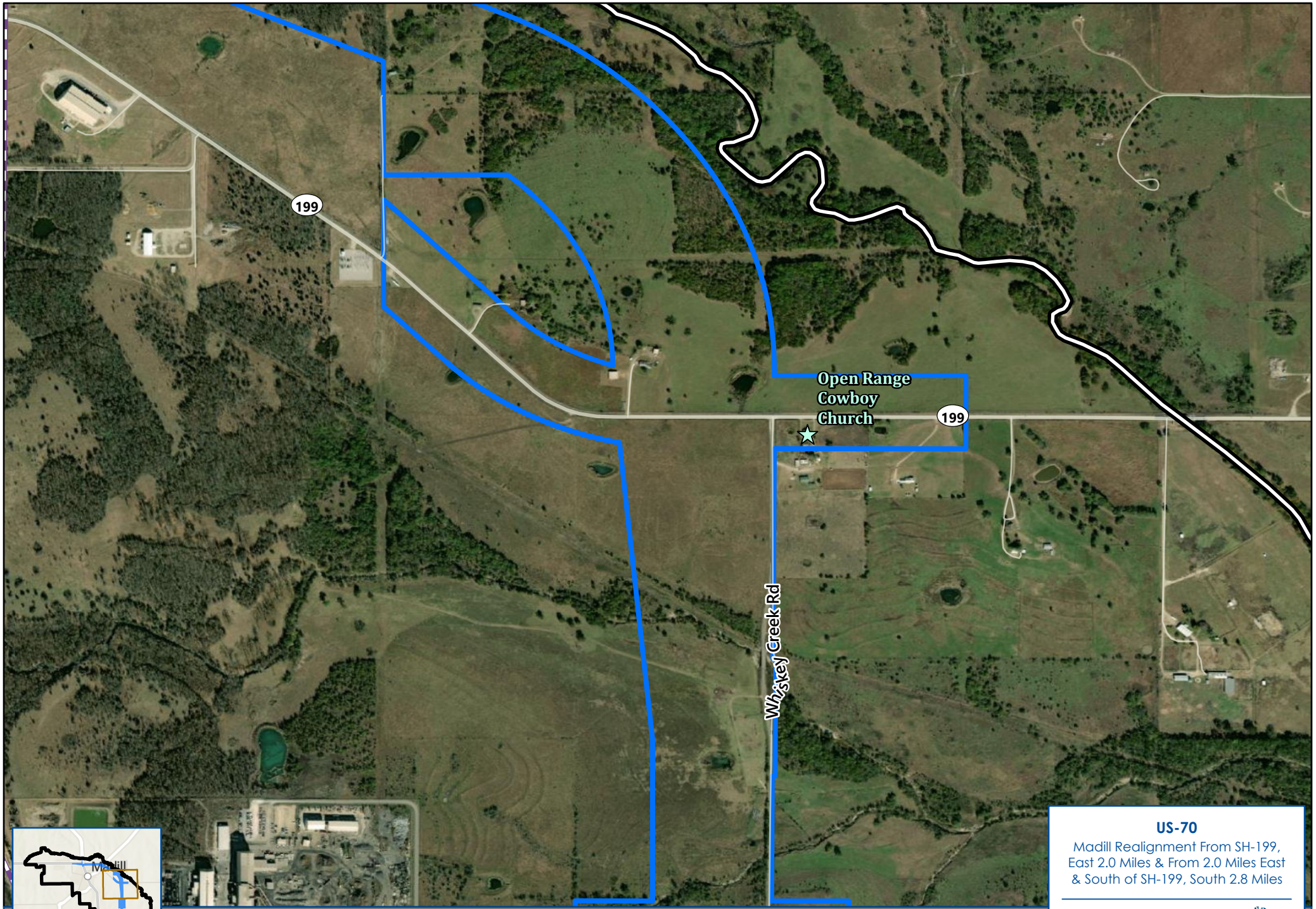
1 inch = 1000 feet

Source: ESRI World Imagery

12/20/2021 3:24 PM, P:\ODOT2000869.03 - US 70\1_Projects\US 70 SocioEc.aprx


United Pentecostal Church
W Drew St
Linn Richardson Rd
Sharon Ln
Carolyn St
W Lillie Blvd
W Taliaferro St
W Tishomingo St
Madill Elementary School
Madill Inca Headstart
S 10th Ave
S 7th Ave
W Francis St
W McArthur St
Madill Public Schools
City Lake Rd
Madill High School
Madill Early Childhood Center
S 12th Ave
Integris Marshall County Medical Center
Integris Family Medicine of Southern Oklahoma
Marshall County EMS
Fran Drummond Day Care Center
99
377
Madill
Marshall
MAP 6
Community Facilities
Readily Identifiable Minority Group
Community Study Area
Environmental Study Area
N
0 500 1,000
Feet
1 inch = 1000 feet
US-70
Madill Realignment From SH-199, East 2.0 Miles & From 2.0 Miles East & South of SH-199, South 2.8 Miles
MARSHALL COUNTY
JP No. 18835(04) & (09)
OKLAHOMA Transportation
Community Facilities Map
Source: ESRI World Imagery


W Drew St
Madill City Library
Madill Fire Department
Marshall County Sheriff Office
Cornerstone COGIC Church
Iglesia Pentecostal Emmanuel Church
W Overton St
E Overton St
E Main St
199
W Lillie Blvd
Marshall County Courthouse
E Industrial Dr
W Taliaferro St
E Taliaferro St
Madill Elementary School
Madill Inca Headstart
S 7th Ave
S 5th Ave
S 4th Ave
W Tishomingo St
W Burney St
W Francis St
70
W McArthur St
Madill Public Schools
S 2nd Ave
S 1st Ave
S 1st St
S 3rd St
E Francis St
Madill Public Schools
Madill High School
Memorial Park
99
377
Integris Marshall County Medical Center
Madill City Pool
Brookside Nursing Home
Trinity Southern Baptist Church
Marshall County EMS
Brookside Dr
Fran Drummond Day Care Center
Oak Hollow Rd
Marshall
MAP 7
Community Facilities
Readily Identifiable Minority Group
Community Study Area
Environmental Study Area
N
0
500
1,000
Feet
1 inch = 1000 feet
US-70
Madill Realignment From SH-199, East 2.0 Miles & From 2.0 Miles East & South of SH-199, South 2.8 Miles
MARSHALL COUNTY
JP No. 18835(04) & (09)
OKLAHOMA Transportation
Community Facilities Map
Source: ESRI World Imagery



MAP 8

Community Facilities

Readily Identifiable Minority Group

Community Study Area

Environmental Study Area

N

0 500 1,000

Feet

1 inch = 1000 feet

Source: ESRI World Imagery

US-70

Madill Realignment From SH-199, East 2.0 Miles & From 2.0 Miles East & South of SH-199, South 2.8 Miles

MARSHALL COUNTY

JP No. 18835(04) & (09)

OKLAHOMA Transportation

Community Facilities Map

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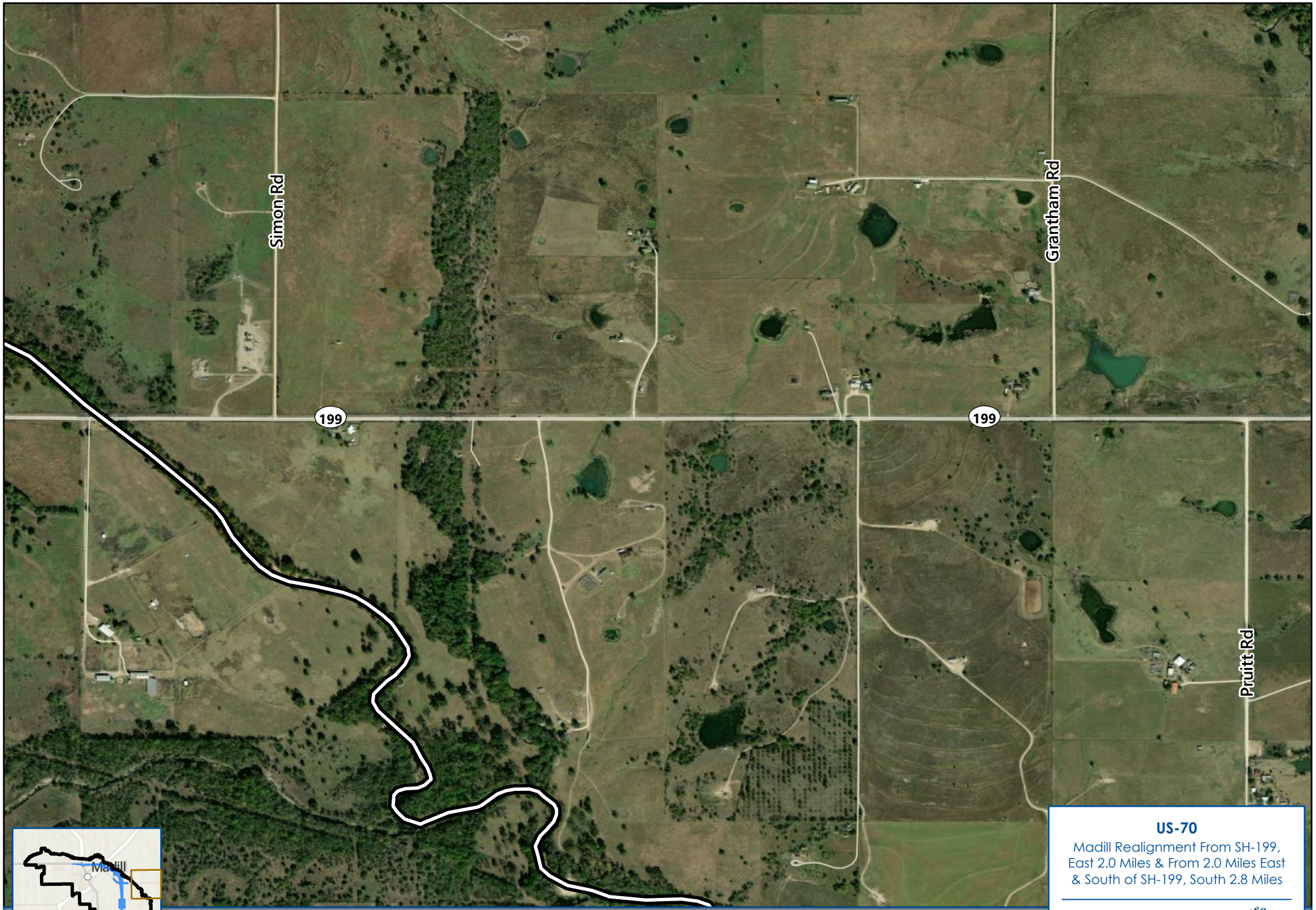


MAP 9

Community Facilities

Readily Identifiable Minority Group

Community Study Area

Environmental Study Area

0 500 1,000

Feet

1 inch = 1000 feet

US-70

Madill Realignment From SH-199, East 2.0 Miles & From 2.0 Miles East & South of SH-199, South 2.8 Miles

MARSHALL COUNTY

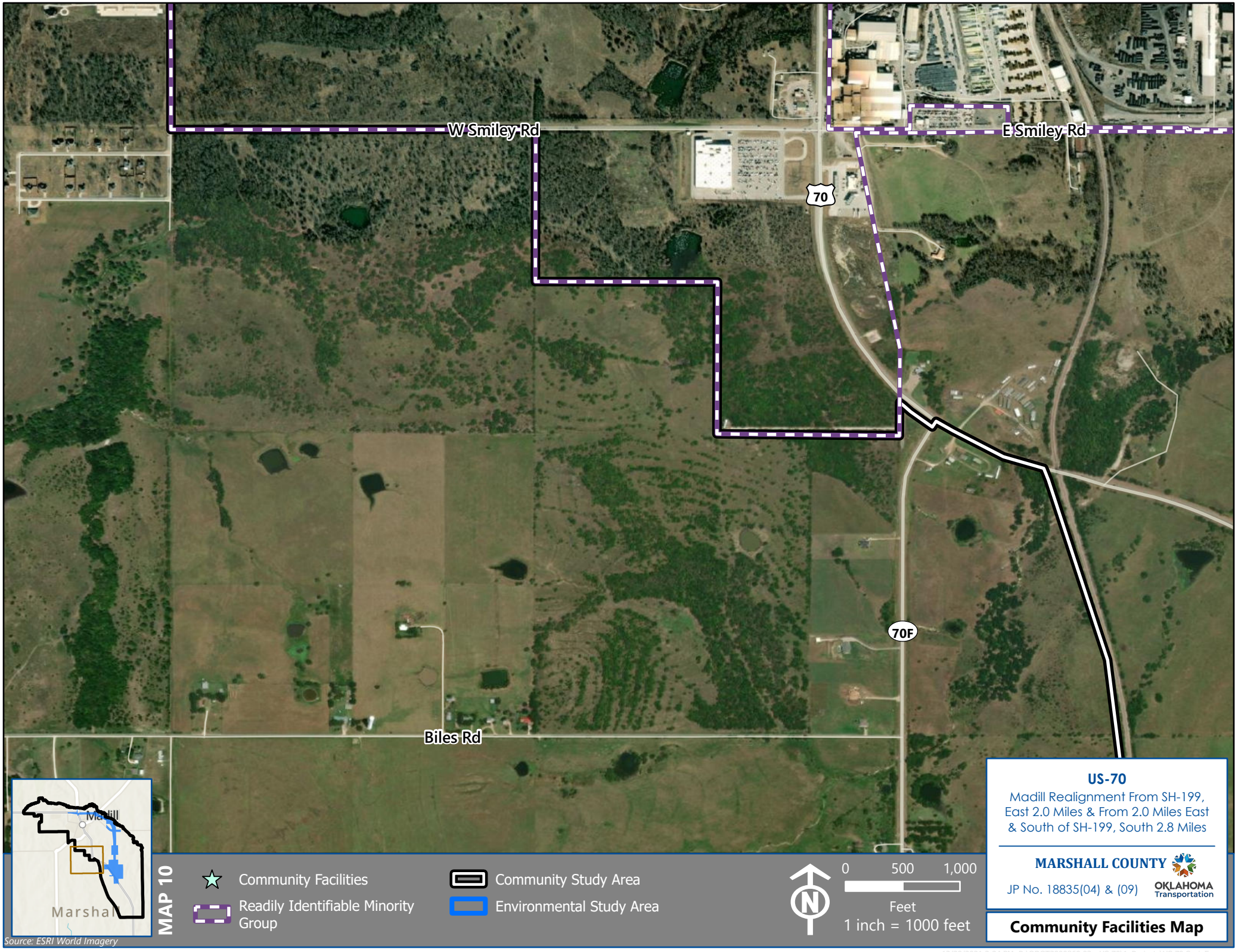
JP No. 18835(04) & (09)

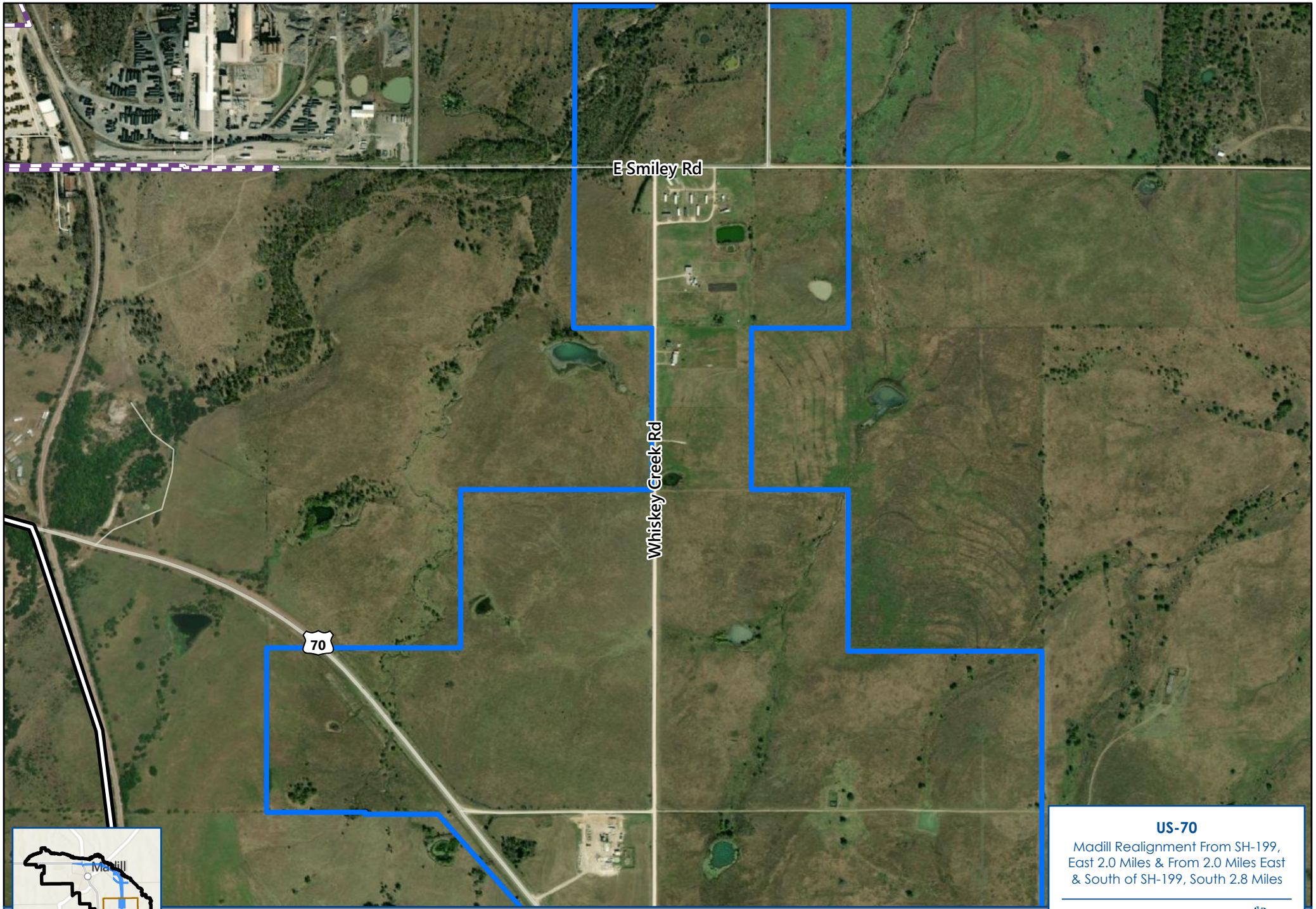
OKLAHOMA Transportation

Community Facilities Map

Source: ESRI World Imagery

12/20/2021 3:24 PM, P:\ODOT2000869.03 - US 70\1_Projects\US 70 SocioEc.aprx


W Smiley Rd
E Smiley Rd
70
70F
Biles Rd
Madill
Marshall
MAP 10
Community Facilities
Readily Identifiable Minority Group
Community Study Area
Environmental Study Area
N
0
500
1,000
Feet
1 inch = 1000 feet
US-70
Madill Realignment From SH-199, East 2.0 Miles & From 2.0 Miles East & South of SH-199, South 2.8 Miles
MARSHALL COUNTY
JP No. 18835(04) & (09)
OKLAHOMA Transportation
Community Facilities Map
Source: ESRI World Imagery
12/20/2021 3:24 PM, P:\ODOT2000869.03 - US 70\1_Projects\US 70 SocioEc.aprx



US-70

Madill Realignment From SH-199, East 2.0 Miles & From 2.0 Miles East & South of SH-199, South 2.8 Miles

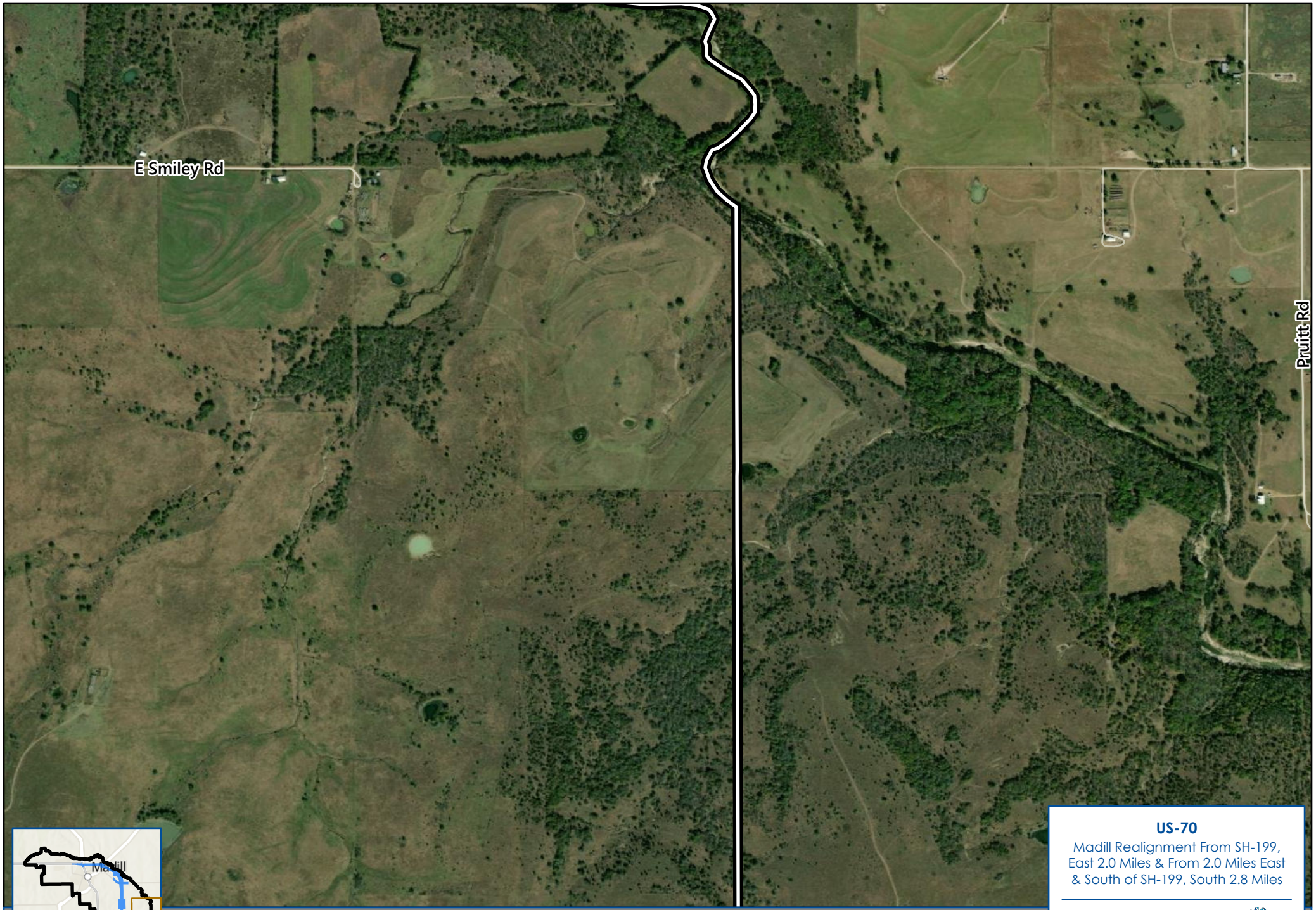
MARSHALL COUNTY

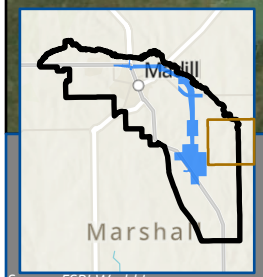
JP No. 18835(04) & (09)

OKLAHOMA Transportation

Community Facilities Map

12/20/2021 3:24 PM, P:\ODOT2000869.03 - US 70\1_Projects\US 70 SocioEc.aprx





MAP 12

Community Facilities

Readily Identifiable Minority Group

Community Study Area

Environmental Study Area

0 500 1,000

Feet

1 inch = 1000 feet

Source: ESRI World Imagery

US-70

Madill Realignment From SH-199, East 2.0 Miles & From 2.0 Miles East & South of SH-199, South 2.8 Miles

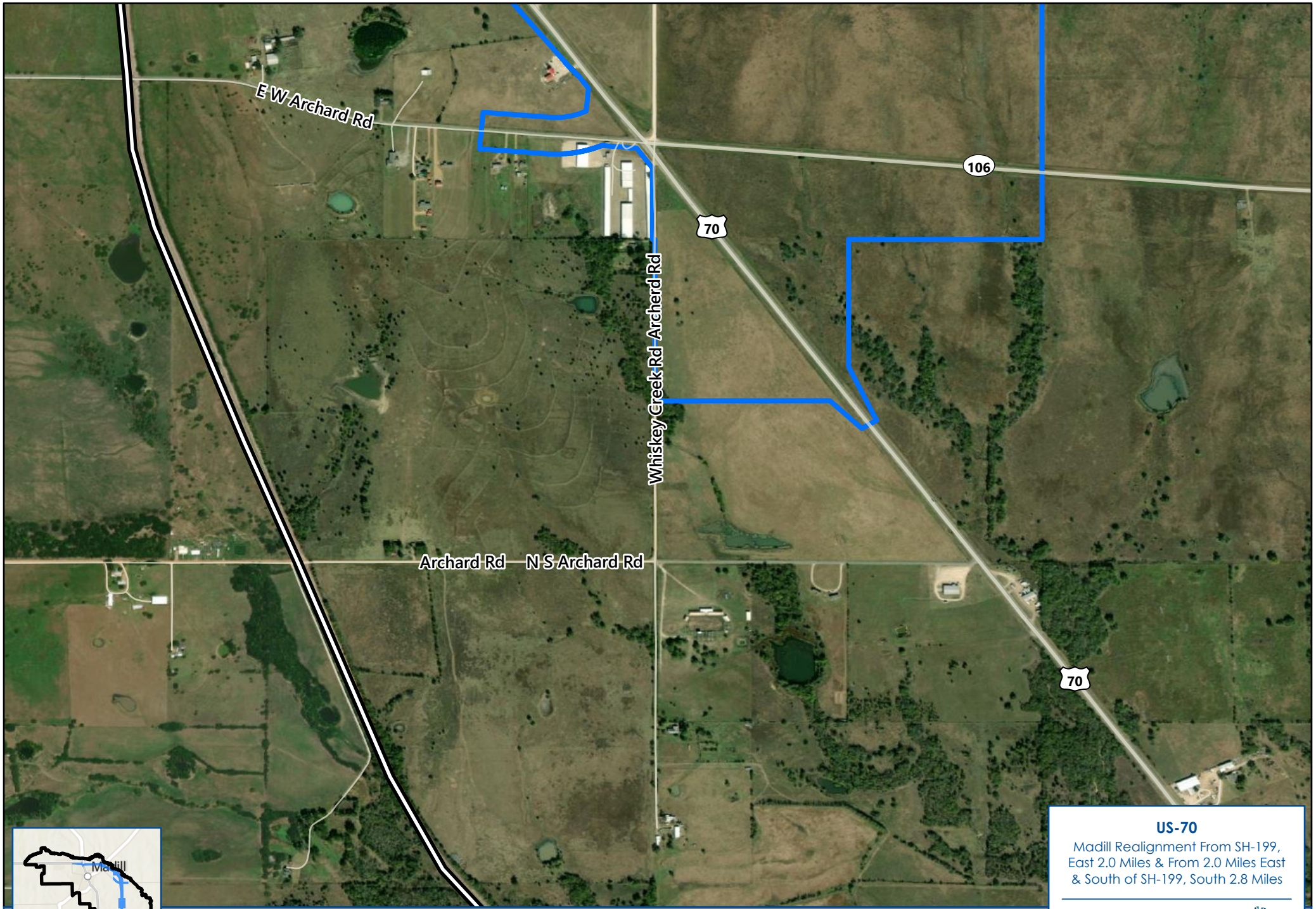
MARSHALL COUNTY

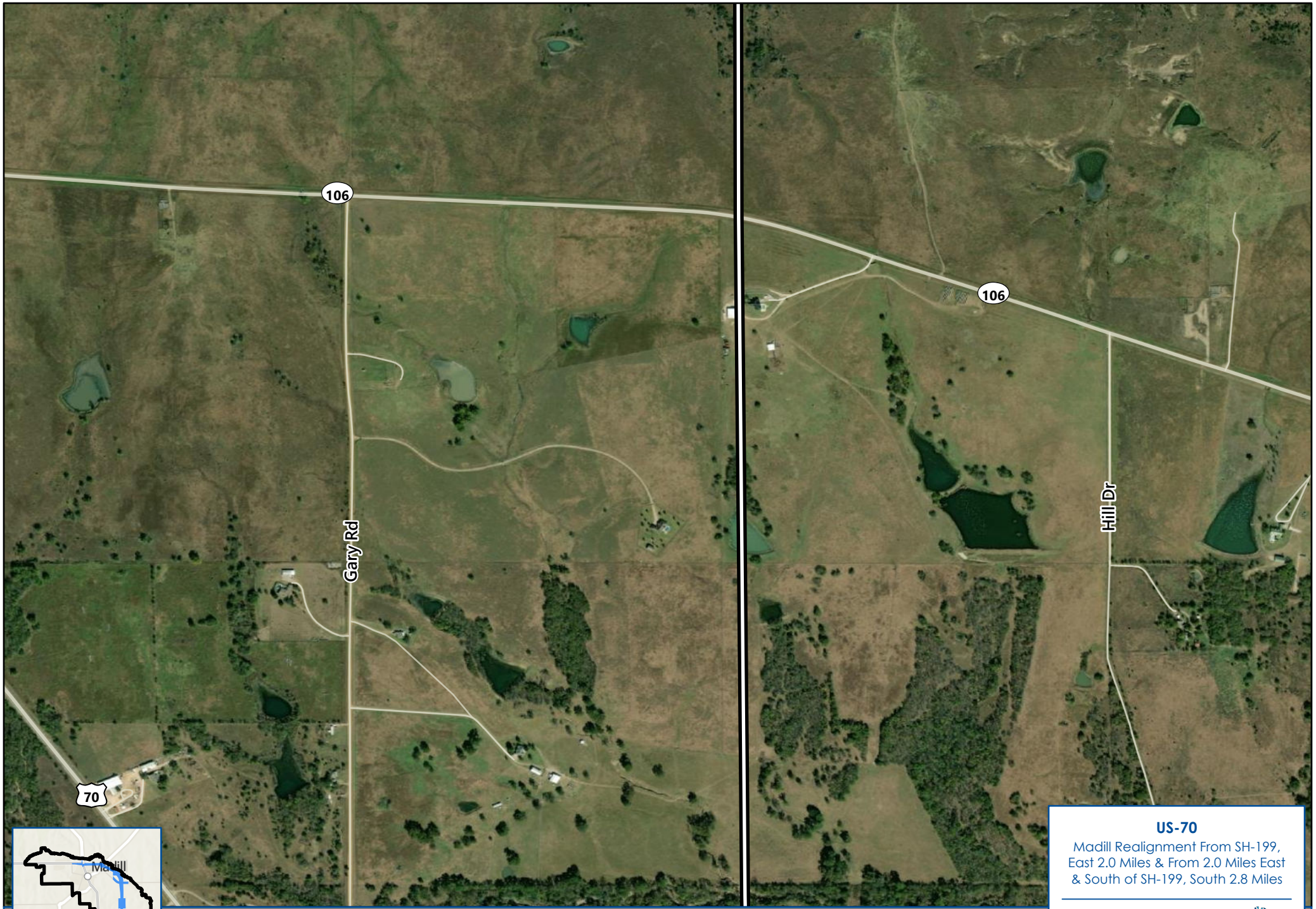
JP No. 18835(04) & (09)

OKLAHOMA Transportation

Community Facilities Map

12/20/2021 3:24 PM, P:\ODOT2000869.03 - US 70\1_Projects\US 70 SocioEc.aprx


E W Archard Rd
106
70
Whiskey Creek Rd
Archard Rd
Archard Rd
N S Archard Rd
70
Madill
Marshall
MAP 13
Community Facilities
Readily Identifiable Minority Group
Community Study Area
Environmental Study Area
N
0
500
1,000
Feet
1 inch = 1000 feet
US-70
Madill Realignment From SH-199, East 2.0 Miles & From 2.0 Miles East & South of SH-199, South 2.8 Miles
MARSHALL COUNTY
JP No. 18835(04) & (09)
OKLAHOMA Transportation
Community Facilities Map
Source: ESRI World Imagery



MAP 14

Community Facilities

Readily Identifiable Minority Group

Community Study Area

Environmental Study Area

N

0 500 1,000

Feet

1 inch = 1000 feet

Source: ESRI World Imagery

US-70

Madill Realignment From SH-199, East 2.0 Miles & From 2.0 Miles East & South of SH-199, South 2.8 Miles

MARSHALL COUNTY

JP No. 18835(04) & (09)

OKLAHOMA Transportation

Community Facilities Map

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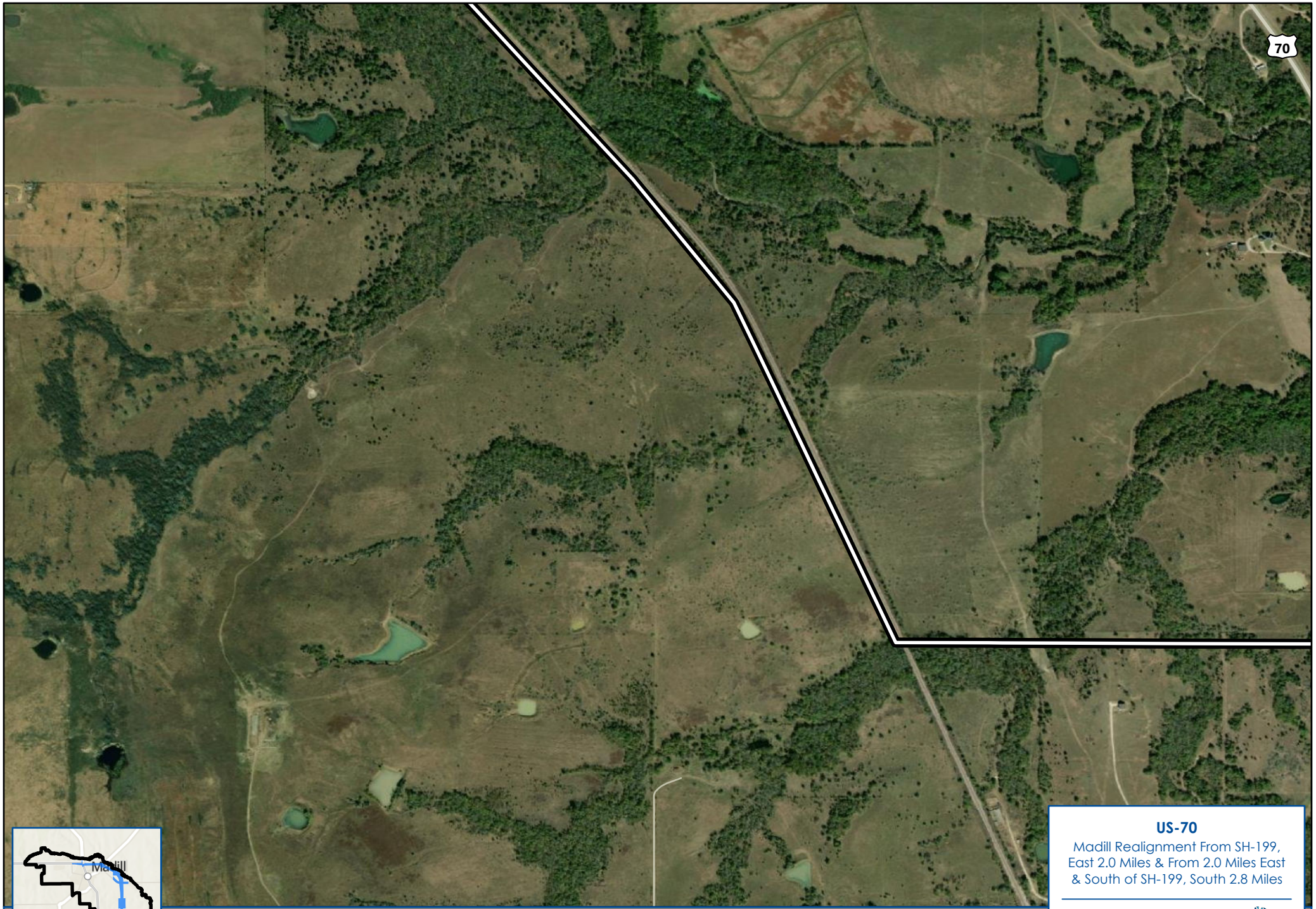
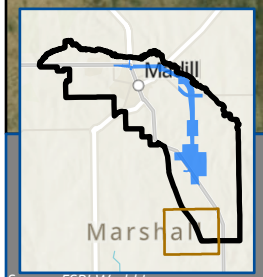




MAP 15

Community Facilities

Readily Identifiable Minority Group

Community Study Area

Environmental Study Area

0 500 1,000

Feet

1 inch = 1000 feet

US-70

Madill Realignment From SH-199, East 2.0 Miles & From 2.0 Miles East & South of SH-199, South 2.8 Miles

MARSHALL COUNTY

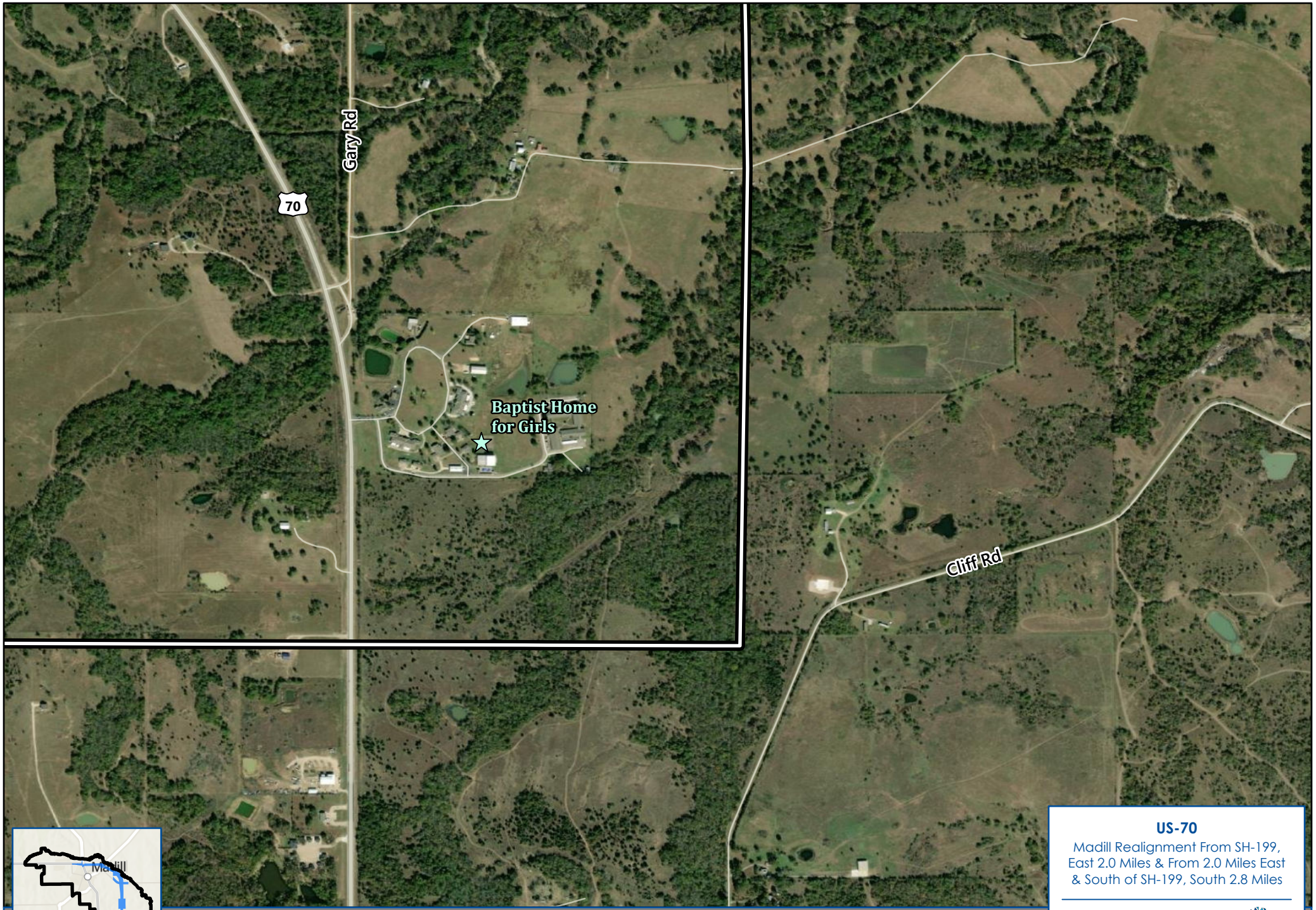
JP No. 18835(04) & (09)

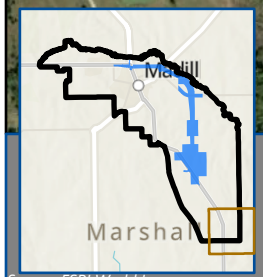
OKLAHOMA Transportation

Community Facilities Map

Source: ESRI World Imagery

12/20/2021 3:24 PM, P:\ODOT2000869.03 - US 70\1_Projects\US 70 SocioEc.aprx





MAP 16

Community Facilities

Readily Identifiable Minority Group

Community Study Area

Environmental Study Area

0 500 1,000

Feet

1 inch = 1000 feet

Source: ESRI World Imagery

US-70

Madill Realignment From SH-199, East 2.0 Miles & From 2.0 Miles East & South of SH-199, South 2.8 Miles

MARSHALL COUNTY

JP No. 18835(04) & (09)

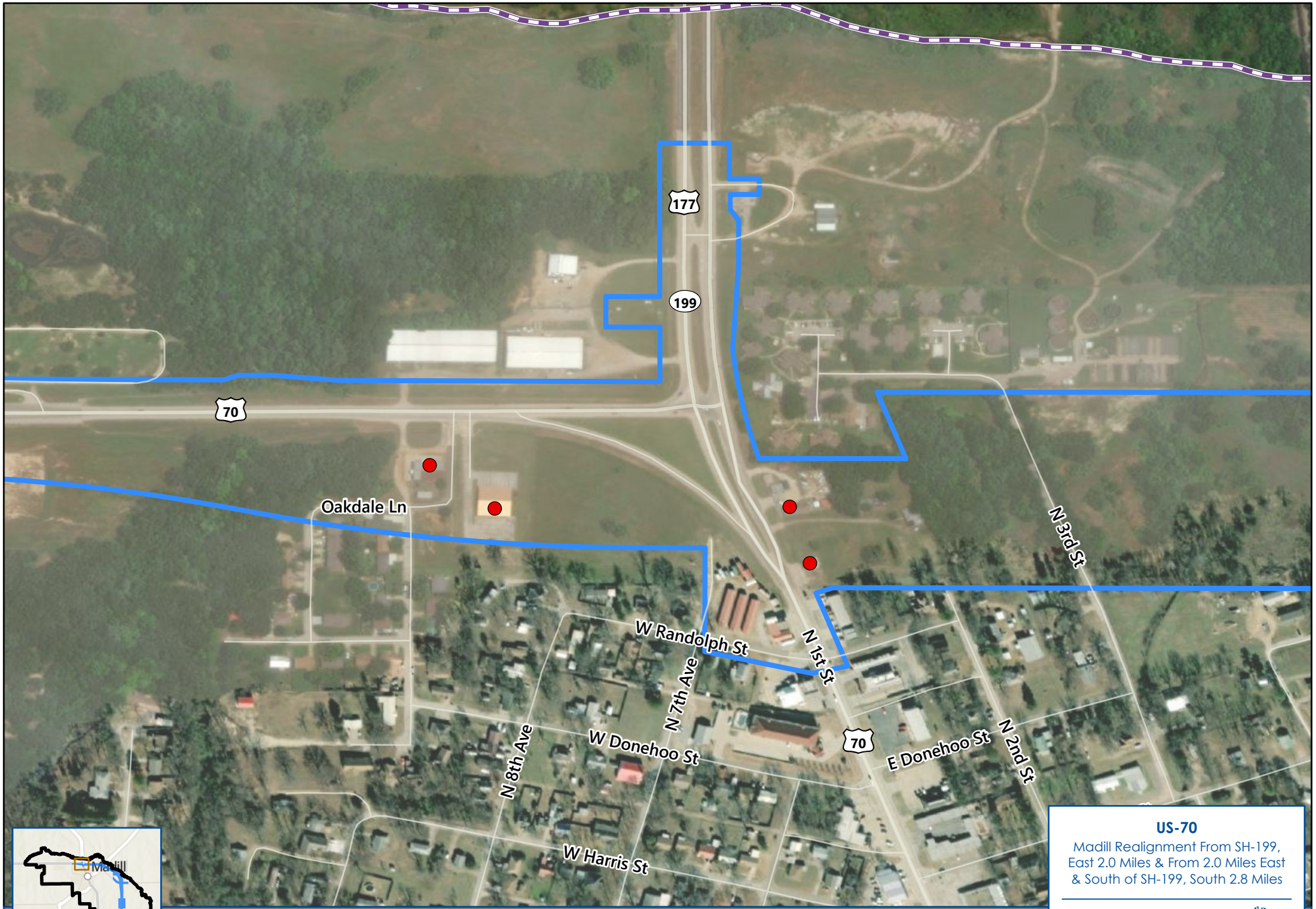
OKLAHOMA Transportation

Community Facilities Map

12/20/2021 3:24 PM, P:\ODOT2000869.03 - US 70\1_Projects\US 70 SocioEc.aprx

APPENDIX D

PROPOSED DISPLACEMENTS MAP AND RELOCATIONS PLAN(S)



US-70

Madill Realignment From SH-199, East 2.0 Miles & From 2.0 Miles East & South of SH-199, South 2.8 Miles

MARSHALL COUNTY

JP No. 18835(04) & (09)

OKLAHOMA Transportation

Displacements Map

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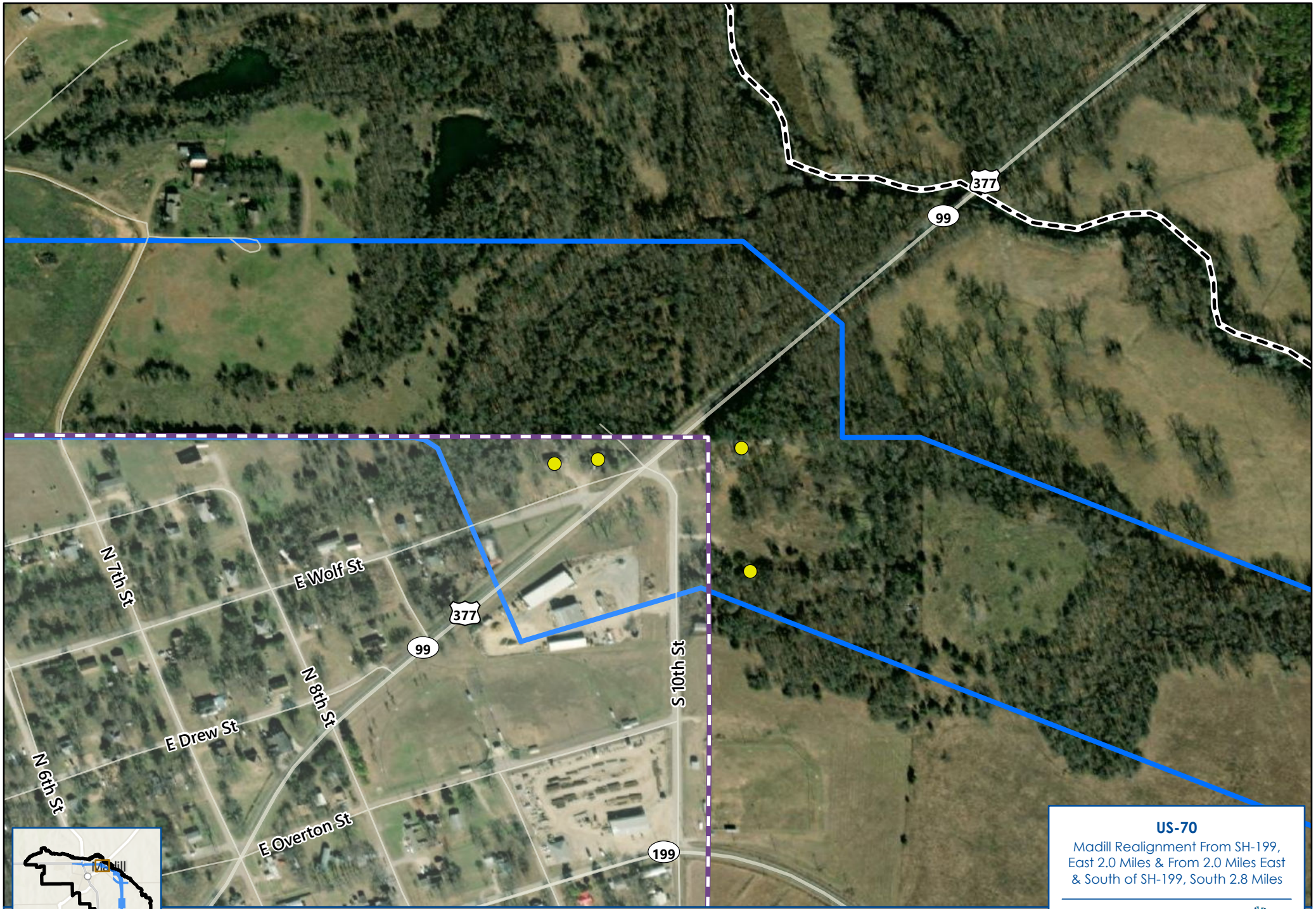


MAP 2

- Residential Displacement
- Commercial Displacement
- Readily Identifiable Minority Group
- Environmental Study Area
- Community Study Area

0 200 400

Feet

1 inch = 400 feet

Source: ESRI World Imagery

US-70

Madill Realignment From SH-199, East 2.0 Miles & From 2.0 Miles East & South of SH-199, South 2.8 Miles

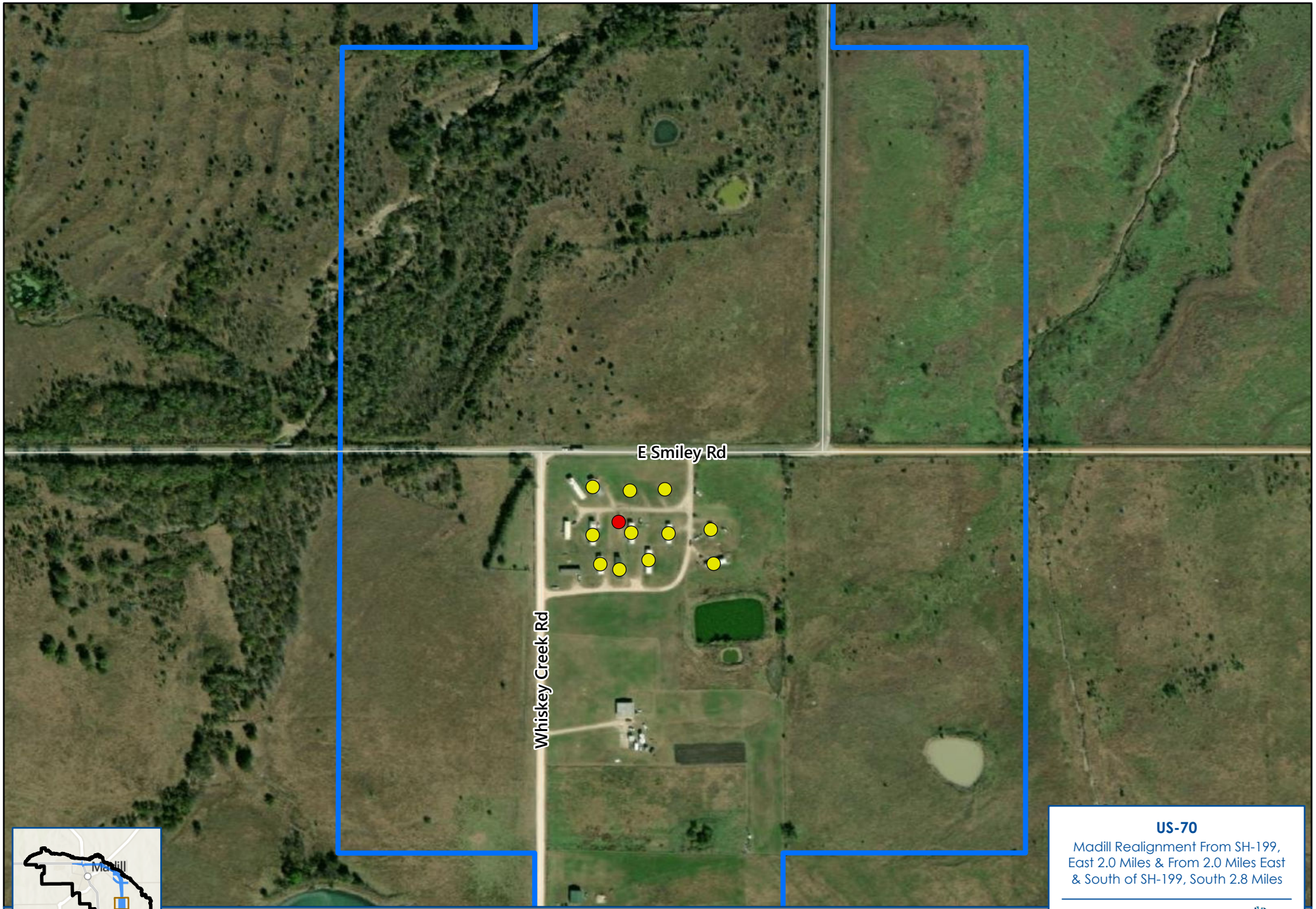
MARSHALL COUNTY

JP No. 18835(04) & (09)

OKLAHOMA Transportation

Displacements Map

1/14/2022 10:27 AM, P:\ODOT2000869.03 - US 70\1_Projects\US 70 SocioEc.aprx



US-70

Madill Realignment From SH-199, East 2.0 Miles & From 2.0 Miles East & South of SH-199, South 2.8 Miles

MARSHALL COUNTY

JP No. 18835(04) & (09)

OKLAHOMA Transportation

Displacements Map

1/14/2022 10:27 AM, P:\ODOT2000869.03 - US 70\1_Projects\US 70 SocioEc.aprx

Oklahoma Department of Transportation – Right-of-Way Division

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

November 8, 2021

To: **Environmental Programs Division**

Thru: Project Management Branch

From: Diana Barlow, Manager, Relocation Branch for John E. Gallegos

Subject: Relocation Plan – JP18835(04) a.k.a. NHPP-022N(052), Marshall Co., US-70: Madill Realignment from SH-199 East 2.0 Miles.

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

RELOCATION PLANNING
US Highway 70, Realignment in Madill, Ok.
Marshall 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[i], § 24.205, relocation planning, advisory services and coordination. The proposed study for the grade, drain, and surface of US Highway 70 in Marshall County is as follows:

A pre-planning drive out was conducted on October 27, 2021. Currently there is a mix of Residential and Commercial Relocations that would be affected by the proposed grade, drain, and surface project.

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 Inventory 65% Plans

JP 18835(04) Marshall Co.,
US-70: Madill Realignment from SH-199 East 2.0 Miles.

11/8/2021

Location	Station	DESCRIPTION
A	574+00R 160' CL US-70	Commercial #1 4800 SF Bldg., "Marshall Co. Conservation"
B	574+00R 160' CL US-70	Commercial #2 Tenant: "USDA"
C	574+00R 160' CL US-70	Commercial #3 Tenant: "Sparlin CPA"
D	574+00R 160' CL US-70	Commercial #4 Tenant: "Counseling Inc."
E	576+00R 240' CL US-70	Commercial #5 8100 SF Brick Bldg.
F	857+00L 60' CL US-177	Commercial #6 2100 SF Bldg., "Jones Pawn"
G	859+30L 70' CL US-177	Commercial #7 SF Bldg., "Samoa Realty"
H	42+00L 150' CL SH-99	Residential #1 1500 SF Wood Frame House (Yellow)
I	42+50R 340' CL SH-99	Residential #2 800 SF Mobile Home (Green)
J	43+00L 80' CL SH-99	Residential #3 1800 SF Wood Frame House (White)
K	46+00R 140' CL SH-99	Residential #4 1700 SF Brick House

Commercial Relocations:

At the time of this Relocation Plan, there are: 7 active commercial businesses requiring relocation. Local Realtors solicited for help with this Relocation Plan in the Madill area are listed in "Relo Plan Resources Summary" (RPRS). Multiple Listing Service (MLS) is available and used by Realtors[ii] in Marshall County. Web based realtor services supplied the most listings of available properties in the Madill area (with some duplication of listings). The web-based realtor services utilized are listed in the RPRS[iii]. Local realtors were contacted to determine what suitable properties may be available on the market. Royce King indicated that there is LIMITED readily available Commercial Buildings and NEW Construction will most likely be necessary. It is anticipated that it would take at least 8 to 18 months additional time to accomplish these relocations: if special permitting is required and the businesses choose to rebuild. Location E was previously occupied by DHS, the owner, Eddie Brown, said he was in process of moving his Funeral Business to that location. Mr. King said he did not know of any comparable buildings available for Eddie Brown to relocate to in Madill. But Eddie Brown is still eligible for moving and Re-establishment benefits. The Marshall Co. Conservation District would be able to build if necessary since they are receiving FMV monies and are eligible for move and Reestablishment benefits. There are office spaces available for the Commercial Tenants: Martha Sparlin CPA and Counseling Inc.

Available Commercial Properties & Land:

The availability of commercial building lots within the Madill city limits is very limited. New construction will need 8 to 16 months' time added to schedule to complete relocations.

Assessment of Commercial Relocations with Employees:[iv]

Location "A": Marshall Co. Conservation District: 1 FTE.
Location "B": USDA has 2 FTE.
Location "C": Sparlin, CPA, has 3 FTE.
Location "D": Counseling Inc., has 1 FTE.
Location "E": Eddie Brown, no FTE or PTE.
Location "F": Jones Pawn has 1 FTE.
Location "G": Samoa Realty, has 1 FTE.

Residential Relocations:

At the time of this Relocation Plan, there are 4 Residences being affected. It is assumed there is only one relocation per residence. Local Realtors were solicited for help with this Relocation Plan in the Madill area. They are listed in the "Relo Plan Resources Summary" (RPRS). Multiple Listing Service (MLS) is available and used by Realtors in Marshall County. Web based realtor services supplied the most listings of available properties in the Madill area (with some duplication of listings). The web-based realtor services utilized are listed in the RPRS. Local realtors were contacted to determine what suitable properties may be available

on the market. The availability of residential properties in the Madill area to relocate residential displaces is very limited.
Replacement property searches were made for a minimum of 2 and 3 bedroom; 1- and 2-bathroom houses; 900 to 1800 square feet (SF).

Available Purchase to Own Properties:
604 S. Geraldine Dr., Madill, Ok., 73446, 2 bed, 1 bath, 1,036 SF; 2451 E. end Dr., Madill, Ok., 73446, 2 bed, 2.5 bath, 1,000 SF; 16723 W. Hwy 70, Madill, Ok., 73446, 3 bed, 2 bath, 2,210 SF.

Available Rental Properties:
622 N. 3rd Ave., Durant, Ok., 74701, 3 bed, 1 bath, 1,926 SF; 118 Heather Lane, Pottsboro, Tx., 75076, 3 bed, 2 bath, 1,250 SF; 851 Annas Way, Durant, Ok., 74701, 4 bed, 2 bath, 1,443 SF; 1614 Rustic Dr., Durant, Ok., 74701, 3 bed, 2 bath, 1,219 SF.

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.

ODOT Planning Agent:
Nicholas Granko 11/8/2021

Relocation Plan Resources Summary:

---

[i] **Relocation Acronyms**
SF = Square Feet
CFR = Code of Federal Regulations
FTE = Full Time Employees
PTE = Part Time Employees
DSS = Decent Safe and Sanitary
LRH = Last Resort Housing
MLS = Multiple Listing Service
RAP = Rental Assistance Payment
RHP = Relocation Housing Payment

[ii] **Realtors solicited in the Madill, Ok. 73446 zip code area:**

Bob King Properties, 21146 Buckholt Rd, Madill, OK 73446, (580) 795-4049
Bob “Royce” King, email: bobkingproperties@sbcglobal.net
Sparlin Realty, 14776 W. Hwy 70, Madill, OK 73446, (580) 725-7253
Patti Sparlin, email: pattidsparlin@sbcglobal.net

[iii] **Web based Realtor sites:**
Realtor.com
Zillow.com
Trulia.com
Loopnet.com

[iv]**Contact for Commercial Relocation Employee Data:**

[redacted]

Oklahoma Department of Transportation – Right-of-Way Division

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

November 8, 2021

To: **Environmental Programs Division**

Thru: Project Management Branch

From: Diana Barlow, Manager, Relocation Branch *Diana Barlow*

Subject: Relocation Plan – JP18835(09) a.k.a. J1-8835(009), Marshall Co., US-70: MADILL REALIGNMENT FROM 2.0 MI EAST & SOUTH OF SH-199, SOUTH 2.8 MI.

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

RELOCATION PLANNING
US Highway 70, Realignment in Madill, Ok.
Marshall 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[i], § 24.205, relocation planning, advisory services and coordination. The proposed study for the grade, drain, and surface of US Highway 70 in Marshall County is as follows:

A pre-planning drive out was conducted on October 27, 2021. Currently there is a mix of Residential and Commercial Relocations that would be affected by the proposed grade, drain, and surface project.

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 Inventory 65% Plans

JP 18835(09) Marshall Co.,
US-70: MADILL REALIGNMENT
FROM 2.0 MI EAST & SOUTH OF SH-199, SOUTH 2.8 MI.

11/8/2021

Location	Station	DESCRIPTION
A	20+00R 100' CL Smiley Rd.	Commercial #1 Plesant Valley (PV) Mobile Home Park
B	20+00R 100' CL Smiley Rd.	Residential #1 Mobile Home in PV Trailer Park
C	20+00R 100' CL Smiley Rd.	Residential #2 Mobile Home in PV Trailer Park
D	20+00R 100' CL Smiley Rd.	Residential #3 Mobile Home in PV Trailer Park
E	20+00R 100' CL Smiley Rd.	Residential #4 Mobile Home in PV Trailer Park
F	20+00R 100' CL Smiley Rd.	Residential #5 Mobile Home in PV Trailer Park
G	20+00R 100' CL Smiley Rd.	Residential #6 Mobile Home in PV Trailer Park
H	20+00R 100' CL Smiley Rd.	Residential #7 Mobile Home in PV Trailer Park
I	20+00R 100' CL Smiley Rd.	Residential #8 Mobile Home in PV Trailer Park
J	20+00R 100' CL Smiley Rd.	Residential #9 Mobile Home in PV Trailer Park
K	20+00R 100' CL Smiley Rd.	Residential #10 Mobile Home in PV Trailer Park
L	20+00R 100' CL Smiley Rd.	Residential #11 Mobile Home in PV Trailer Park

Residential Relocations:

At the time of this Relocation Plan, there are 11 Residences being affected. It is assumed there is only one relocation per residence. Local Realtors were solicited for help with this Relocation Plan in the Madill area. They are listed in the "Relo Plan Resources Summary" (RPRS). Multiple Listing Service (MLS) is available and used by Realtors[ii] in Marshall County. Web based realtor services supplied the most listings of available properties in the Madill area (with some duplication of listings). The web-based realtor services utilized are listed in the RPRS[iii]. Local realtors were contacted to determine what suitable properties may be available on the market. Eleven (11) displacements is a large number of displacements for an area the size of Madill or any project. The availability of residential properties in the Madill area to relocate residential displaces is very limited. Most listings from web-based show "Pending Sale" status. The availability of Residential properties within the Madill city limits is very limited. New construction will need 8 to 16 months' time added to schedule to complete relocations. Replacement property searches were made for a minimum of 2 and 3 bedroom; 1- and 2-bathroom houses; 900 to 1800 square feet (SF). Listings of available replacement properties are listed below:

Available Purchase to Own Properties:

604 S. Geraldine Dr., Madill, Ok., 73446, 2 bed, 1 bath, 1,036 SF; 2451 E. end Dr., Madill, Ok., 73446, 2 bed, 2.5 bath, 1,000 SF; 16723 W. Hwy 70, Madill, Ok., 73446, 3 bed, 2 bath, 2,210 SF.

Available Rental Properties:

622 N. 3rd Ave., Durant, Ok., 74701, 3 bed, 1 bath, 1,926 SF; 118 Heather Lane, Pottsboro, Tx., 75076, 3 bed, 2 bath, 1,250 SF; 851 Annas Way, Durant, Ok., 74701, 4 bed, 2 bath, 1,443 SF; 1614 Rustic Dr., Durant, Ok., 74701, 3 bed, 2 bath, 1,219 SF.

Commercial Relocations:

There is 1 active commercial business eligible for relocation benefits.

Assessment of Commercial Relocations with Employees:[iv]

Location "A": Pleasant Valley Park has: 1 Full Time Employee (FTE).

Low income does seem to be prevalent in the Pleasant Valley Park community. Usually, low income displaces qualify for a larger RAP and Last Resort Housing is necessary for them finding suitable DSS replacement housing.

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.

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.

ODOT Planning Agent:
Nicholas Granko 11/8/2021

Relocation Plan Resources Summary:

---

[i] **Relocation Acronyms**
SF = Square Feet
CFR = Code of Federal Regulations
FTE = Full Time Employees
PTE = Part Time Employees
DSS = Decent Safe and Sanitary
LRH = Last Resort Housing
MLS = Multiple Listing Service
RAP = Rental Assistance Payment
RHP = Relocation Housing Payment

[ii] **Realtors solicited in the Madill, Ok. 73446 zip code area:**
Bob King Properties, 21146 Buckholt Rd, Madill, OK 73446, (580) 795-4049
Bob "Royce" King, email: bobkingproperties@sbcglobal.net
Sparlin Realty, 14776 W. Hwy 70, Madill, OK 73446, (580) 725-7253
Patti Sparlin, email: pattidsparlin@sbcglobal.net

[iii] **Web based Realtor sites:**
Realtor.com
Zillow.com
Trulia.com
Loopnet.com

[iv] **Contact for Commercial Relocation Employee Data:**
[redacted]

APPENDIX E

NRCS COORDINATION

Kelly Saladis

From: McVeigh, Jami - NRCS, Tishomingo, OK <jami.mcveigh@usda.gov>
Sent: Tuesday, April 19, 2022 12:00 PM
To: Kelly Saladis
Subject: RE: AD 1006 for Marshall County US-70 Realignment, Madill, ODOT JP 18835(04) & (09)
Attachments: 20220419_11260811510_24_Farmland_ClassificationHWY70prime.pdf; FPPA form 1006 - US-70 Marshall Co JP 18835(04) (09).pdf

Attached are the AD-1006 and the map of prime farmland in the area selected.

Thanks,

Jami B. McVeigh
580-371-3219
Tishomingo Field Office

From: Kelly Saladis <ksaladis@cpyi.com>
Sent: Tuesday, April 19, 2022 10:30 AM
To: McVeigh, Jami - NRCS, Tishomingo, OK <jami.mcveigh@usda.gov>
Subject: RE: AD 1006 for Marshall County US-70 Realignment, Madill, ODOT JP 18835(04) & (09)

Good morning,

The zip file included a GIS shapefile of the study area. I have attached a pdf file of the study area for reference. Please let me know if you need anything else.
Thank you,

Kelly J. Saladis, AICP
Sr. Project Manager, Environmental Planning and Permitting

CP&Y an STV Company

1820 Regal Row, Suite 200
Dallas, TX 75235
P: 214.276.5420 | **C:** 607.725.5448
ksaladis@cpyi.com | www.cpyi.com

Connect with us:

From: McVeigh, Jami - NRCS, Tishomingo, OK <jami.mcveigh@usda.gov>
Sent: Tuesday, April 19, 2022 10:02 AM
To: Kelly Saladis <ksaladis@cpyi.com>
Subject: FW: AD 1006 for Marshall County US-70 Realignment, Madill, ODOT JP 18835(04) & (09)

Kelly Saladis,

Windows is having a problem opening your zip file attachment.

Please send in PDF

Thanks,

Jami B. McVeigh
580-371-3219
Tishomingo Field Office

From: Marshall County CD <marshallccd@conservation.ok.gov>
Sent: Tuesday, April 19, 2022 8:18 AM
To: McVeigh, Jami - NRCS, Tishomingo, OK <jami.mcveigh@usda.gov>
Subject: Fw: AD 1006 for Marshall County US-70 Realignment, Madill, ODOT JP 18835(04) & (09)

Good morning,

Can you please fill out the document attached? It needs to be done by NRCS. I have overlooked this email until i was sent another email asking for it to be completed. Thanks.

Misty McClure
Secretary
Marshall County Conservation District
800 Cedar Drive
Madill, OK 73446

From: Kelly Saladis <ksaladis@cpyi.com>
Sent: Friday, December 17, 2021 7:46 AM
To: Marshall County CD <marshallccd@conservation.ok.gov>
Subject: [EXTERNAL] AD 1006 for Marshall County US-70 Realignment, Madill, ODOT JP 18835(04) & (09)

Dear Ms. Hudson,

The Oklahoma Dept. of Transportation is progressing the environmental studies for the proposed realignment project to improve US-70 near Madill, Oklahoma (please see attached project location map). This project was initially coordinated several years ago but went on hold. At this time the footprint has changed, so we are looking to coordinate again. I have also attached SHP files of the study area boundary. Please find a copy of USDA Form AD-1006 for this referenced Federal action. 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 this form within the next 45 days and return one copy to me at the address below or to ksaladis@cpyi.com.

In addition, please let us know if the proposed projects would impact any NRCS structures or properties such as flood control dams, NRCS wetlands, etc.

Your assistance is greatly appreciated. If you have any questions, please feel free to contact me.

Thank you,

Kelly J. Saladis, AICP

Sr. Project Manager, Environmental Planning and Permitting

an STV Company

1820 Regal Row, Suite 200
Dallas, TX 75235
P: 214.276.5420 | **C:** 607.725.5448
ksaladis@cpyi.com | www.cpyi.com

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U.S. Department of Agriculture

FARMLAND CONVERSION IMPACT RATING

PART I *(To be completed by Federal Agency)*	Date Of Land Evaluation Request 12/16/2021
Name of Project US 70 JP 18835(04) & (09)	Federal Agency Involved FHWA
Proposed Land Use Transportation	County and State Marshall County, OK
PART II *(To be completed by NRCS)*	Date Request Received By NRCS 18 April 2022 / Person Completing Form: J.B. McVeigh

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 2254	Average Farm Size 289
Major Crop(s) wheat, soybeans	Farmable Land In Govt. Jurisdiction Acres: 286976% 68.1	Amount of Farmland As Defined in FPPA Acres: 19131% 45.4	
Name of Land Evaluation System Used CALES	Name of State or Local Site Assessment System	Date Land Evaluation Returned by NRCS 18 April 2022	

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	226.7			
B. Total Acres To Be Converted Indirectly	0.0			
C. Total Acres In Site	226.7			
PART IV *(To be completed by NRCS)* Land Evaluation Information				
A. Total Acres Prime And Unique Farmland	356.2			
B. Total Acres Statewide Important or Local Important Farmland	356.2			
C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted	.003737			
D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value	90			
PART V (To be completed by NRCS) Land Evaluation Criterion Relative Value of Farmland To Be Converted (Scale of 0 to 100 Points)	80			

PART VI *(To be completed by Federal Agency)* Site Assessment Criteria *(Criteria are explained in 7 CFR 658.5 b. For Corridor project use form NRCS-CPA-106)*	**Maximum Points**	Site A	Site B	Site C	Site D
1. Area In Non-urban Use	(15)	12			
2. Perimeter In Non-urban Use	(10)	9			
3. Percent Of Site Being Farmed	(20)	12			
4. Protection Provided By State and Local Government	(20)	0			
5. Distance From Urban Built-up Area	(15)	0			
6. Distance To Urban Support Services	(15)	0			
7. Size Of Present Farm Unit Compared To Average	(10)	8			
8. Creation Of Non-farmable Farmland	(10)	0			
9. Availability Of Farm Support Services	(5)	3			
10. On-Farm Investments	(20)	10			
11. Effects Of Conversion On Farm Support Services	(10)	0			
12. Compatibility With Existing Agricultural Use	(10)	4			
TOTAL SITE ASSESSMENT POINTS	160	58	0	0	0
PART VII ***(To be completed by Federal Agency)***					
Relative Value Of Farmland *(From Part V)*	100	80	0	0	0
Total Site Assessment *(From Part VI above or local site assessment)*	160	58	0	0	0
TOTAL POINTS ***(Total of above 2 lines)***	260	138	0	0	0

Site Selected:	Date Of Selection	Was A Local Site Assessment Used? YES ☐ NO ☑
Reason For Selection:		
Name of Federal agency representative completing this form:		Date:

(See Instructions on reverse side) **Form AD-1006 (03-02)**

STEPS IN THE PROCESSING THE FARMLAND AND CONVERSION IMPACT RATING FORM

Step 1 - Federal agencies (or Federally funded projects) involved in proposed projects that may convert farmland, as defined in the Farmland Protection Policy Act (FPPA) to nonagricultural uses, will initially complete Parts I and III of the form. For Corridor type projects, the Federal agency shall use form NRCS-CPA-106 in place of form AD-1006. The Land Evaluation and Site Assessment (LESA) process may also be accessed by visiting the FPPA website, http://fppa.nrcs.usda.gov/lesa/.

Step 2 - Originator (Federal Agency) will send one original copy of the form together with appropriate scaled maps indicating location(s)of project site(s), to the Natural Resources Conservation Service (NRCS) local Field Office or USDA Service Center and retain a copy for their files. (NRCS has offices in most counties in the U.S. The USDA Office Information Locator may be found at http://offices.usda.gov/scripts/ndISAPI.dll/oip_public/USA_map, or the offices can usually be found in the Phone Book under U.S. Government, Department of Agriculture. A list of field offices is available from the NRCS State Conservationist and State Office in each State.)

Step 3 - NRCS will, within 10 working days after receipt of the completed form, make a determination as to whether the site(s) of the proposed project contains prime, unique, statewide or local important farmland. (When a site visit or land evaluation system design is needed, NRCS will respond within 30 working days.

Step 4 - For sites where farmland covered by the FPPA will be converted by the proposed project, NRCS will complete Parts II, IV and V of the form.

Step 5 - NRCS will return the original copy of the form to the Federal agency involved in the project, and retain a file copy for NRCS records.

Step 6 - The Federal agency involved in the proposed project will complete Parts VI and VII of the form and return the form with the final selected site to the servicing NRCS office.

Step 7 - The Federal agency providing financial or technical assistance to the proposed project will make a determination as to whether the proposed conversion is consistent with the FPPA.

INSTRUCTIONS FOR COMPLETING THE FARMLAND CONVERSION IMPACT RATING FORM

(For Federal Agency)

Part I: When completing the "County and State" questions, list all the local governments that are responsible for local land use controls where site(s) are to be evaluated.

Part III: When completing item B (Total Acres To Be Converted Indirectly), include the following:

1. Acres not being directly converted but that would no longer be capable of being farmed after the conversion, because the conversion would restrict access to them or other major change in the ability to use the land for agriculture.
2. Acres planned to receive services from an infrastructure project as indicated in the project justification (e.g. highways, utilities planned build out capacity) that will cause a direct conversion.

Part VI: Do not complete Part VI using the standard format if a State or Local site assessment is used. With local and NRCS assistance, use the local Land Evaluation and Site Assessment (LESA).

1. Assign the maximum points for each site assessment criterion as shown in § 658.5(b) of CFR. In cases of corridor-type project such as transportation, power line and flood control, criteria #5 and #6 will not apply and will, be weighted zero, however, criterion #8 will be weighed a maximum of 25 points and criterion #11 a maximum of 25 points.

2. Federal agencies may assign relative weights among the 12 site assessment criteria other than those shown on the FPPA rule after submitting individual agency FPPA policy for review and comment to NRCS. In all cases where other weights are assigned, relative adjustments must be made to maintain the maximum total points at 160. For project sites where the total points equal or exceed 160, consider alternative actions, as appropriate, that could reduce adverse impacts (e.g. Alternative Sites, Modifications or Mitigation).

Part VII: In computing the "Total Site Assessment Points" where a State or local site assessment is used and the total maximum number of points is other than 160, convert the site assessment points to a base of 160.
Example: if the Site Assessment maximum is 200 points, and the alternative Site "A" is rated 180 points:

$$\frac{\text{Total points assigned Site A}}{\text{Maximum points possible}} = \frac{180}{200} \text{ X } 160 = 144 \text{ points for Site A}$$

For assistance in completing this form or FPPA process, contact the local NRCS Field Office or USDA Service Center.

NRCS employees, consult the FPPA Manual and/or policy for additional instructions to complete the AD-1006 form.

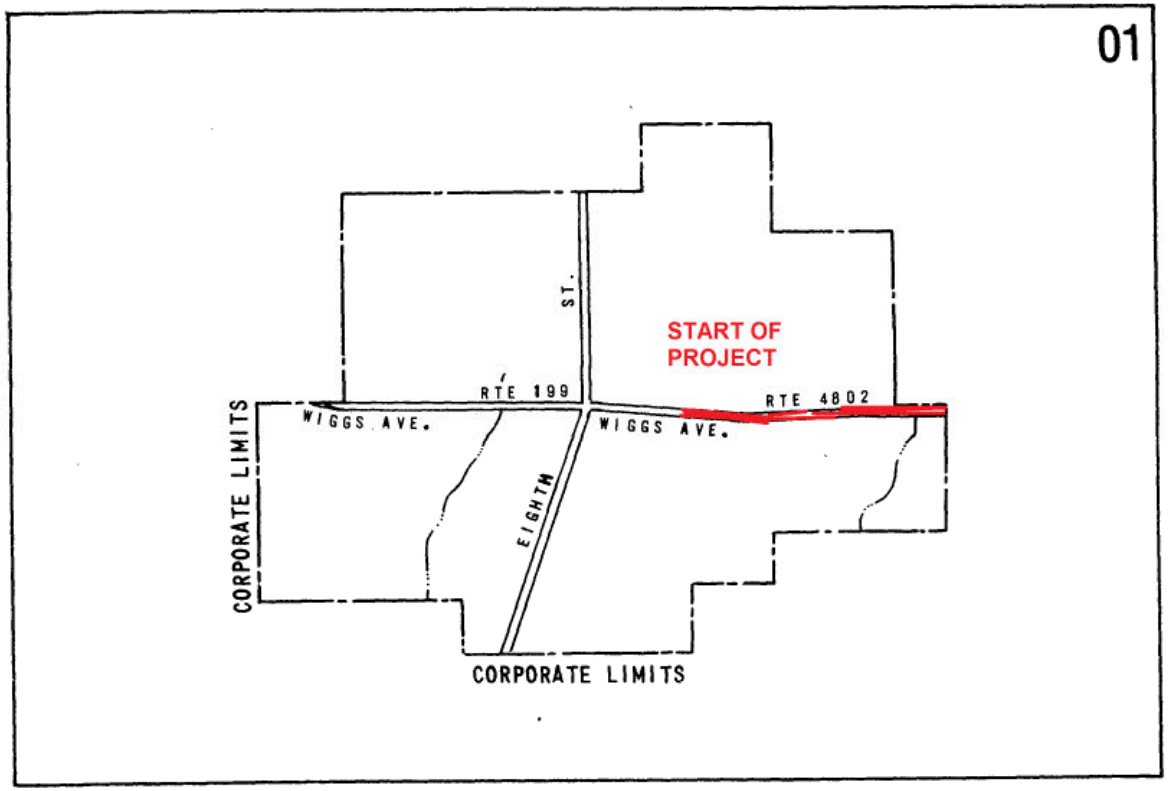
APPENDIX F

HISTORIC AND CULTURAL RESOURCES AND TRIBAL COORDINATION

These documents have been removed due to the sensitive nature of information included in them.

APPENDIX G

FEMA FLOODPLAIN MAP



ederal emergency management agenc

FIRM

FLOOD INSURANCE RATE MAP

MAP INDEX

TOWN OF OAKLAND, OK

(MARSHALL COUNTY)

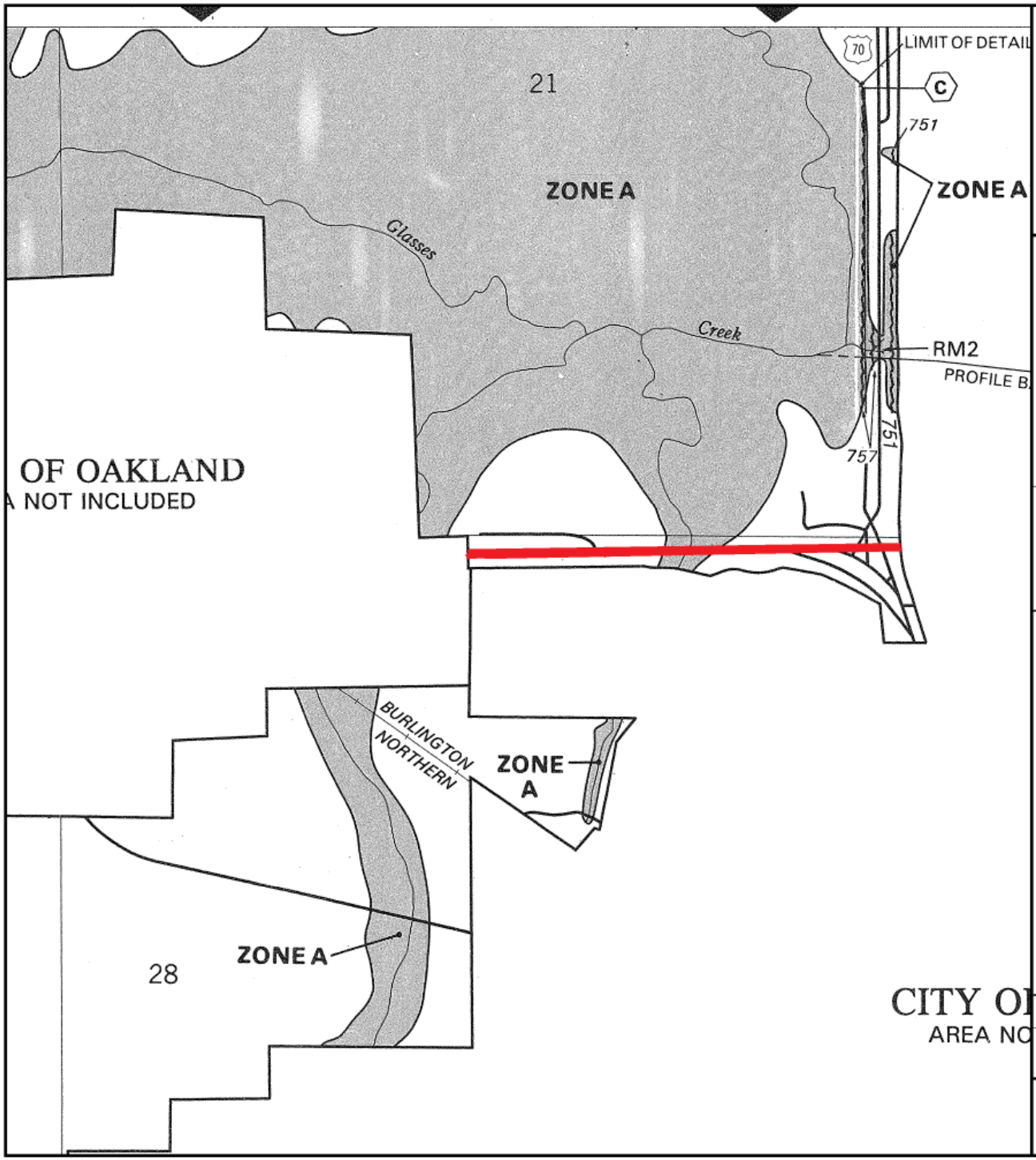
COMMUNITY NUMBER 400313

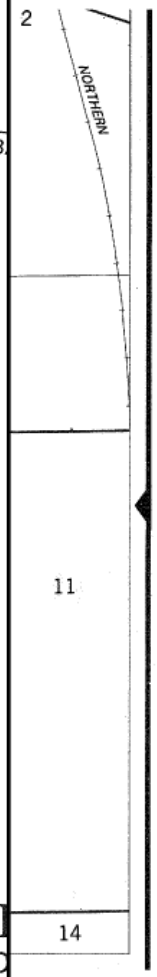
E C

E A

E C

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





NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP

MARSHALL COUNTY, OKLAHOMA

UNINCORPORATED AREAS

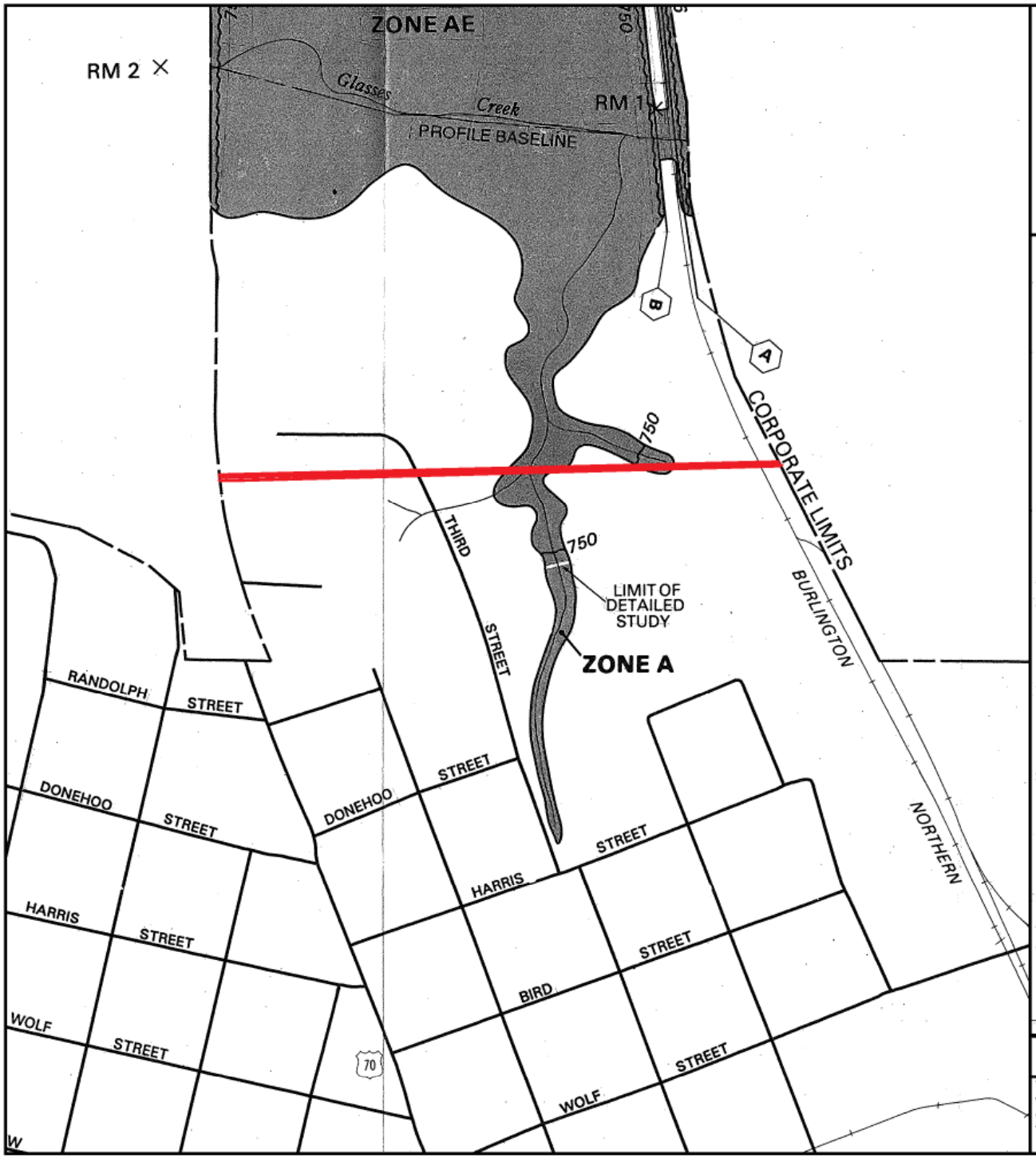
(SEE MAP INDEX FOR PANELS NOT PRINTED)

COMMUNITY-PANEL NUMBER
400511 0020 B

MAP REVISED:
SEPTEMBER 30, 1997

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



APPROXIMATE SCALE IN FEET

500 0 500

NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP

CITY OF
MADILL
OKLAHOMA
MARSHALL COUNTY

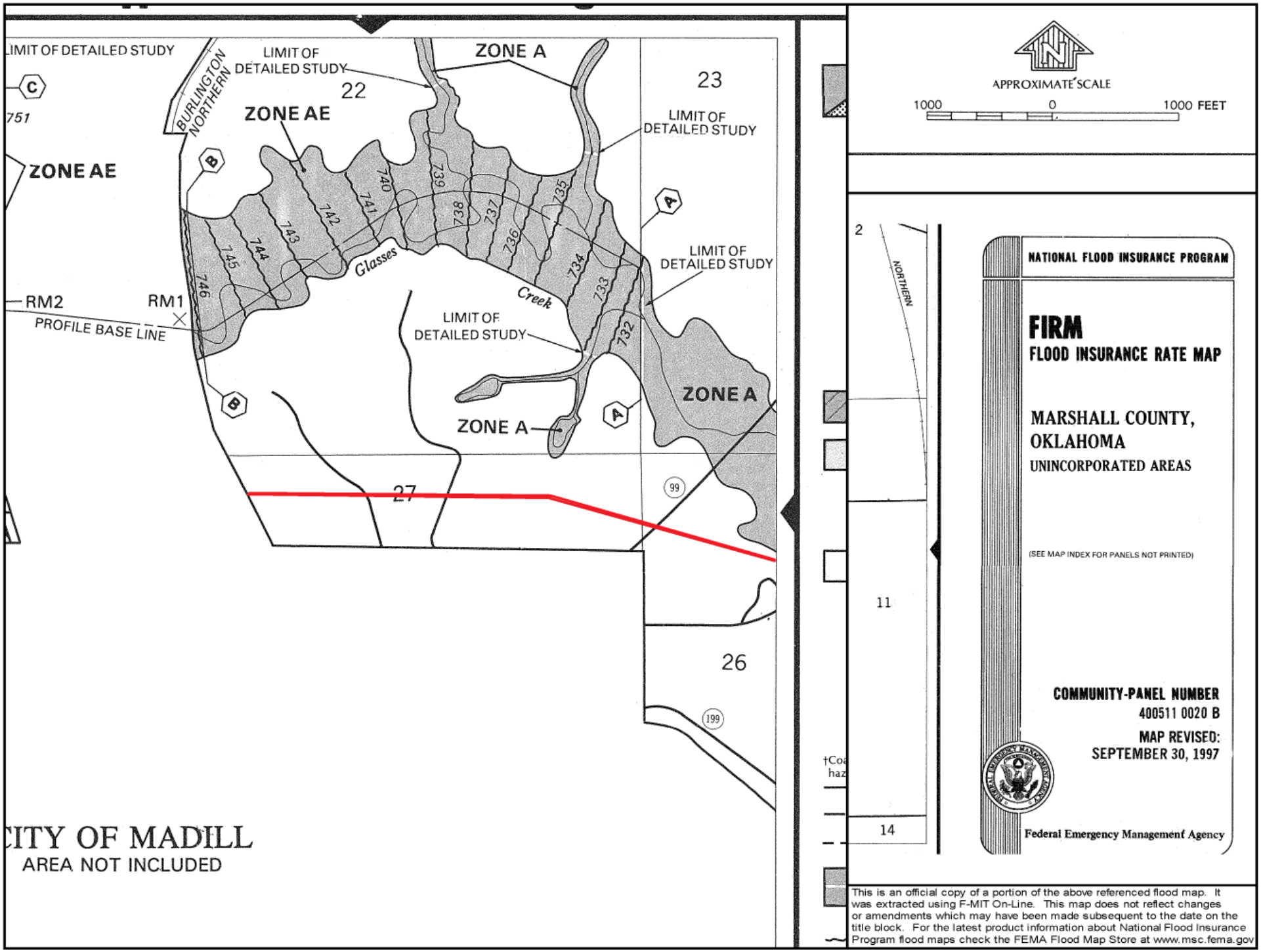
ONLY PANEL PRINTED

COMMUNITY-PANEL NUMBER
400114 0001 C

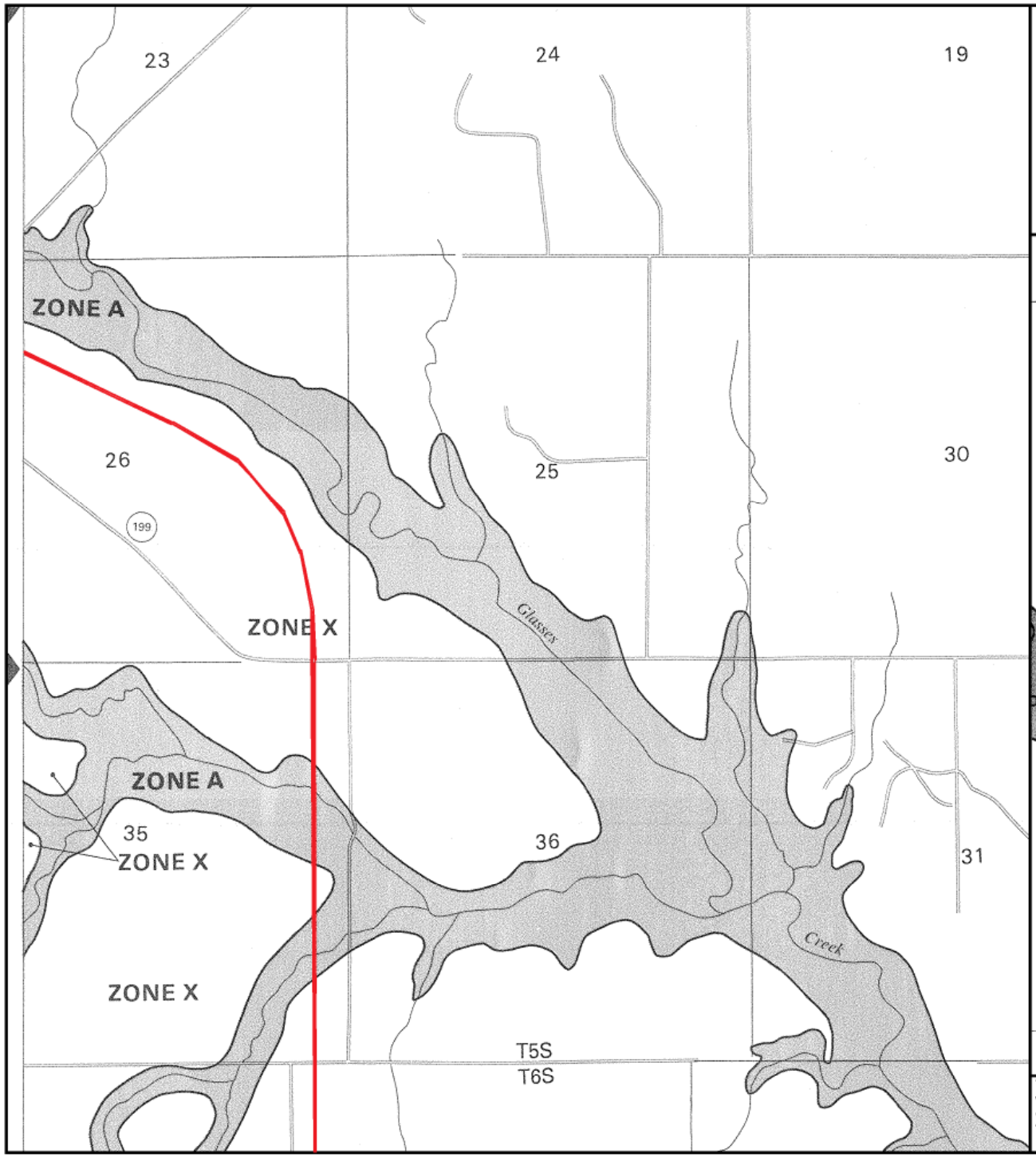
MAP REVISED:
SEPTEMBER 30, 1997

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



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



N

APPROXIMATE SCALE

2000 0 2000 FEET

NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP

MARSHALL COUNTY, OKLAHOMA

UNINCORPORATED AREAS

PANEL 50 OF 150

(SEE MAP INDEX FOR PANELS NOT PRINTED)

PANEL LOCATION

COMMUNITY-PANEL NUMBER

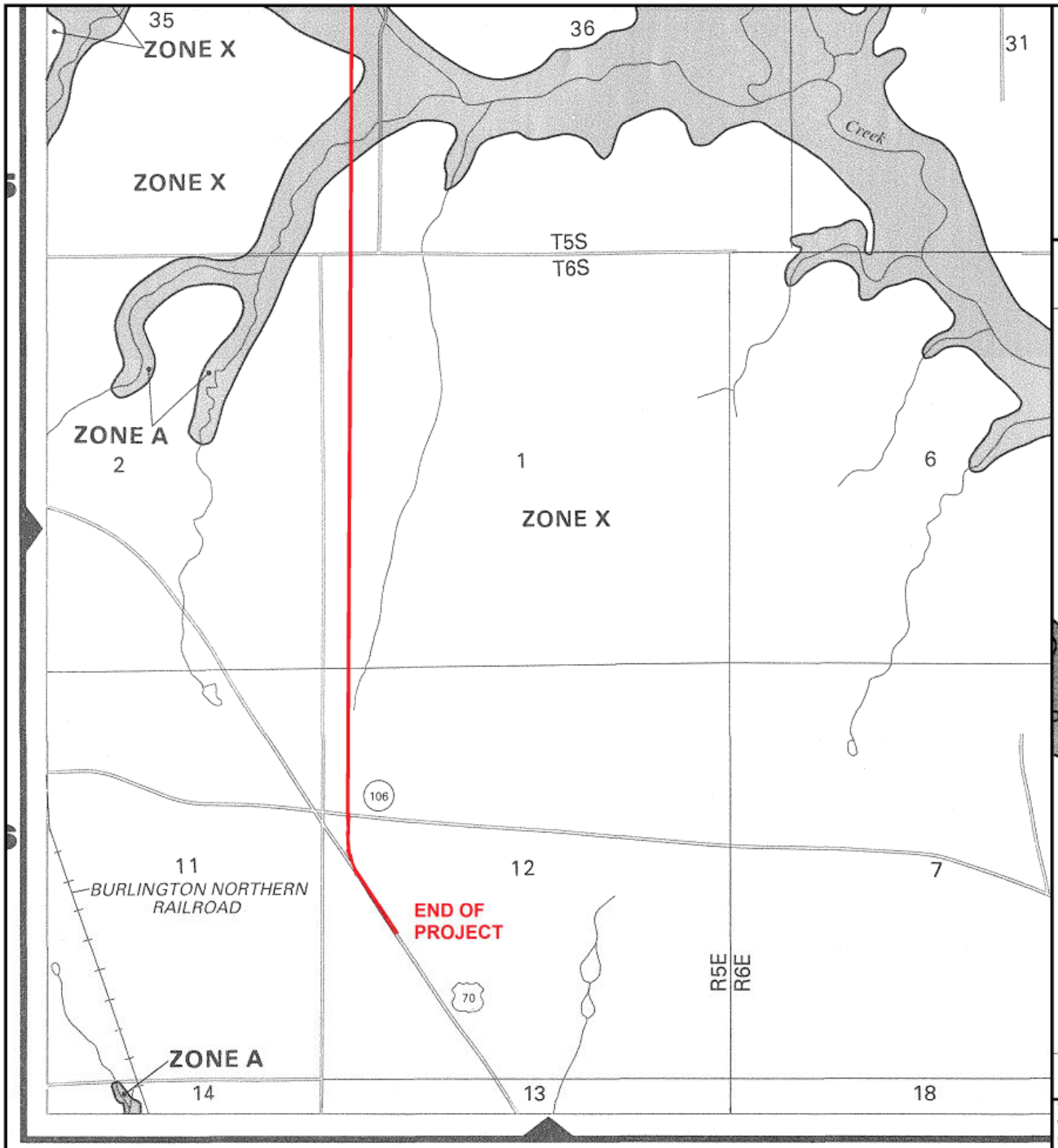
400511 0050 A

EFFECTIVE DATE:

NOVEMBER 2, 1990

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



APPROXIMATE SCALE

2000 0 2000 FEET

NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP

MARSHALL COUNTY, OKLAHOMA

UNINCORPORATED AREAS

PANEL 50 OF 150

(SEE MAP INDEX FOR PANELS NOT PRINTED)

PANEL LOCATION

COMMUNITY-PANEL NUMBER

400511 0050 A

EFFECTIVE DATE:

NOVEMBER 2, 1990

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 H

NATURAL RESOURCES

BIOLOGICAL STUDIES TRACKING FORM

NEPA Project Manager	Kelly Salidis / Kathy Koon
State or Local Government Project	State
USFWS TAILS #	**02EKOK00-2022-SLI-0672** (formerly 02EKOK00-2016-SLI-1572)
Original IPaC List	6/24/2016
Email used to request IpaC official species list	sitz@cpyi.com
Last Updated Species List Date	4/6/2022
ROW	1/1/2022
Let Date	2027
90 Day Prior to Let IpaC List	Click here to enter a date.
Original Biological Assessment and Waters and Wetlands Report Prepared By:	CP&Y
Latest Field Date:	12/20/2021
Original Report Date:	10/4/2016
USFWS Consultation Submittal:	ABB Only
USFWS Concurrence:	None required
Original Tracking Form Prepared by :	Elizabeth Nichols
Original Tracking Form date:	10/12/2016
Update Reason	Change in Notes/Commitments
Updated By Whom:	Julianne Whitaker
Tracking Form Updated Date:	10/31/2016
Update Reason	Change in Footprint
Updated By Whom:	CP&Y
Updated Report Date:	1/24/2022
USFWS Consultation Submittal:	2/1/2022
USFWS Concurrence:	2/3/2022
Tracking Form Updated By Whom:	Elizabeth Nichols
Tracking Form Updated Date:	2/3/2022
Update Reason	Change in Scope
Updated By Whom:	CP&Y
Amended USFWS Consultation Submittal:	4/6/2022
Amended USFWS Concurrence:	4/11/2022 - Original concurrence 2/3/22 still valid
Tracking Form Updated By Whom:	Elizabeth Nichols
Tracking Form Updated Date:	4/11/2022
ADD MORE LINES AS NEEDED FOR EACH TIME PROJECT IS UPDATED	

Project Name from Oracle

US-70: Madill Realignment from SH-199 east 2.0 miles & from 2.0 miles east and south of SH-199, south 2.8 miles

Project Description

Grade, Drain, Surface and Bridge

Check if any of the following is expected s part of the proposed action

Work within the OHWM is expected			☒
Project is OFF-SET alignment	☐	or NEW alignment	☒
Project involves **NO OFF EXISTING PAVEMENT** work			☐
Project requires new ROW (permanent &/or temporary)			☒

2. FEDERALLY LISTED SPECIES AND DESIGNATED CRITICAL HABITAT

Species	Listing Status	IPaC Check if Yes	Effect Determination for IPaC listed species
Red-cockaded Woodpecker	Endangered	☐	Choose an item.
Whooping Crane	Endangered	☒	No Effect
Gray Bat	Endangered	☐	Choose an item.
Indiana Bat	Endangered	☐	Choose an item.
Ozark Big-eared Bat	Endangered	☐	Choose an item.
Neosho Mucket	Endangered	☐	Choose an item.
Ouachita Rock Pocketbook	Endangered	☐	Choose an item.
Scaleshell Mussel	Endangered	☐	Choose an item.
Winged Mapleleaf	Endangered	☐	Choose an item.
Harperella	Endangered	☐	Choose an item.
American Burying Beetle	Threatened	☒	Final Effect Analysis and Determination covered in the BO for the final 4(d) rule
Eastern Black Rail	Threatened	☐	Choose an item.
Piping Plover	Threatened	☒	No Effect
Red Knot	Threatened	☒	No Effect
Northern Long-eared Bat	Threatened	☐	Choose an item
Arkansas River Shiner	Threatened	☐	Choose an item.
Leopard Darter	Threatened	☐	Choose an item.
Neosho Madtom	Threatened	☐	Choose an item.
Ozark Cavefish	Threatened	☐	Choose an item.
American Alligator	Threatened	☐	Choose an item.
Rabbitsfoot Mussel	Threatened	☐	Choose an item.
Monarch Butterfly	Candidate	☒	Not likely to jeopardize the continued existence
Rattlesnake-master Borer Moth	Candidate	☐	Choose an item.
Peppered Chub	Proposed	☐	Choose an item.
Whooping Crane Critical Habitat	Designated	☐	Choose an item.
Arkansas River Shiner Critical Habitat	Designated	☐	Choose an item.
Leopard Darter Critical Habitat	Designated	☐	Choose an item.
Neosho Mucket Critical Habitat	Designated	☐	Choose an item.
Rabbitsfoot Critical Habitat	Designated	☐	Choose an item.
Peppered Chub Critical Habitat	Proposed	☐	Choose an item.

	NEPA Footprint	Construction Footprint
Number of acres within the NEPA Study Footprint & Construction Footprint (if known)	1,021	Click here to enter text.
Number of acres of perennial plant vegetation (ABB habitat) within the NEPA Footprint & Construction Footprint (if known)	953	Click here to enter text.

ABB Conservation Lands adjacent	NO
Presence of milkweed and nectar plants	YES

Bald Eagle Assessment	May impact
Migratory Bird Assessment of Transportation Structures	Migratory birds found nesting on transportation structures
Migratory Bird Impacts	nesting habitat for migratory birds will be impacted
Birds of Conservation Concern	No BCC listed
Interior Least Tern (MBTA)	not expected to impact

Species (choose those that apply)	**Seasonal Restriction Period**
Bald Eagle	September 16 – May 31
Migratory Birds: Swallows and Phoebes (NESTS PRESENT)	March 1 – August 31

Conservation Commitments

ODOT Commitment: All operators, employees, and contractors will be made aware of all environmental commitments, including the following Plan Notes.

ABB Commitment: Minimize habitat loss by reducing the amount of ground disturbance of suitable ABB habitat within the construction footprint to only what is necessary for project construction and document in the monitoring reports to the Service. Following construction, areas of ground disturbance outside of the safety clear zone will be revegetated with native plant species where applicable and practicable. Areas where revegetation with native plant species is not practicable will be revegetated with more traditional plantings such as solid slab sodding.

Monarch Commitment: ODOT, as a Certificate of Inclusion partner in the Nationwide Monarch Butterfly CCAA for Energy and Transportation lands, will adhere to the conservation measures, as well as minimize threats to the monarch butterfly as stipulated in this CCAA.

Species Plan Notes

Non-Compliance: Failure to implement the commitments specified in the Plan Notes can result in non-compliance issues on the project. Work activities may be suspended on the project, for an undetermined duration, while working with regulators to bring the project back into compliance. The contractor will not be compensated for time lost.

Water Quality Conservation: Appropriate Best Management Practices to minimize impacts from storm water discharges and sedimentation in streams, as established by the Oklahoma Department of Environmental Quality, shall be conscientiously implemented throughout the proposed construction

periods, in order to minimize any potential impacts to any listed species. The effectiveness of erosion controls shall be maintained for the duration of construction activities. Hazardous materials, chemicals, fuels, lubricating oils, and other such substances shall be stored at least 100 feet outside of the ordinary high water mark (OHWM). Refueling of construction equipment shall also be conducted at least 100 feet from the OHWMs. Sediment and erosion controls shall be installed around staging areas to prohibit discharge of materials from these sites. Construction waste materials and debris shall be stockpiled at least 25 feet outside of the OHWMs, and these materials shall be removed and disposed of properly following completion of the project. Preventative measure must be taken to prohibit the discharge of contaminants into any surface waters.

American Burying Beetle Note: The American Burying Beetle is a large carrion burying beetle that occurs within the project limits. Artificial lighting may be used during construction for night activities if the equipment specifications outlined in Special Provision 656-5(a-b)19 for ABB are adhered to and measures to minimize use of artificial lighting have been implemented. Carcasses and all food trash shall be removed from the permanent and temporary right-of-way throughout the duration of project activities. Pollution Prevention Requirements as specified by the Oklahoma Department of Environmental Quality General Permit OKRl0 for Storm Water Discharges shall be implemented when appropriate. Additionally, all equipment will be fueled, and all fuel and motor vehicle oil will not be stored within areas of native vegetation (ie. outside of ABB habitat).

Bald Eagle Note: Suitable nesting, roosting or foraging habitat for the Bald Eagle occurs within the project's action area. The Bald Eagle nesting season in Oklahoma extends from September 16, through May 31. The Resident Engineer shall contact the ODOT Biologist to schedule a nest survey. Nest search surveys can only be conducted when leaves are not on the trees typically between December 1st and February 28th. No work may occur within suitable Bald Eagle habitat, located between STA. 611+00 and STA 748+00, during the nesting season (September 16, through May 31) until the completion of the survey by the ODOT Biologist. If nests are observed, a no-work buffer up to a distance of 660 feet shall be placed around the nest. The exact distance of the buffer zone shall be established by the ODOT Biologist in consultation with US Fish and Wildlife Services. If the buffer cannot be maintained, all clearing, external construction and landscaping activities, within the buffer, shall be conducted between June 1 and September 15 (outside the nesting season).

Migratory Bird Note: Migratory birds are protected by the federal Migratory Bird Treaty Act. Many birds commonly use bridges and culverts for nesting. The nesting season for most migratory bird species extends from March 1 to August 31. Migratory bird nesting use of the Whiskey Creek bridge (NBI:27624) and two RCBs (34.070938, -96.739315 and 34.058374, -96.749519) was observed. Painting, repair, retrofit, rehabilitation or demolition of the existing bridge and culverts shall be conducted between September 1, and February 28, when migratory bird nests are not occupied. If painting, repair, retrofit, rehabilitation or demolition cannot be completed between September 1 and February 28, the bridge and culverts shall be protected from new nest establishment prior to March 1, by means that do not result in bird death or injury. Options include the exclusion of adult birds from suitable nest sites on or within a structure by the placement of weather-resistant polypropylene netting with 0.25-inch or smaller openings, prior to March 1. Methods other than netting must be pre-approved by the ODOT Biologist.

Although no nests were observed on all other structures, the birds may occupy the structures in the future. The Resident Engineer shall contact the ODOT Biologist if any bird use of these structures is observed. If birds are observed then painting, repair, retrofit, rehabilitation or demolition of the existing bridges and culverts shall be conducted between September 1, and February 28 (when migratory bird nests are not occupied).

Waters and Wetlands Delineation Status

Dec 2021 updated delineation (appears to be no change from original)

Wetlands and Ponds

Total Number of Sites	Water Body Type	Potential Jurisdiction Status	Acres within the NEPA Footprint
1	Herbaceous Wetland	Likely Jurisdictional	0.03
1	Forested Wetland	Unlikely Jurisdictional	1.09
1	Pond with wetland	Likely Jurisdictional	1.38
5	Pond with wetland	Unlikely Jurisdictional	2.43
3	Pond	Likely Jurisdictional	1.90
10	Pond	Unlikely Jurisdictional	3.12
		Total	**9.95**

Streams and Drainages

Total Number of sites	Water body name	USGS Designation	Potential Jurisdictional Status	Acres within the NEPA Footprint	Liner Feet within the NEPA Footprint
7	Tributaries to Glasses Creek	mapped intermittent	Likely Jurisdictional	1.8	9,224
2	Tributaries to Little Glasses Creek	mapped intermittent	Likely Jurisdictional	0.19	2,047
1	Ephemeral drainage	mapped intermittent	Likely Jurisdictional	No OHWM	1,458
			Total Likely Jurisdictional	**1.99**	**12,729**
5	drainages	unmapped ephemeral drainages	Unlikely Jurisdictional	No OHWM	3,692

Nichols, Elizabeth

From: Goins, Kassandra M <kassandra_goins@fws.gov>
Sent: Thursday, February 3, 2022 9:17 AM
To: Nichols, Elizabeth
Cc: Echo-Hawk, Patricia; Amber McIntyre; Vonceil Harmon
Subject: Re: [EXTERNAL] 02EKOK00-2022-SLI-0672 ODOT Marshall JP 18835(04)(09) Consultation Review Package

Hello Liz,

The Service has reviewed consultation package 02EKOK00-2022-SLI-0672 ODOT Marshall JP 18835(04)(09).

Based on the information provided, the project will occur within the range of the American burying beetle (*Nicrophorus americanus*; ABB) and you have concluded that the project may affect the species. The Service agrees with this determination. Any take that may occur as a result of the project is not prohibited under the Endangered Species Act of 1973 (Act; 87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.), Section 4(d) rule adopted for this species at 50 CFR 17.47(d) (85 FR 65241). The Service asks that the conservation measures as articulated in the assessment, and in conjunction with the guidelines set forth by the Federal Highway Administration, be implemented and maintained.

You have determined that the project will have no effect on the endangered whooping crane (*Grus americana*), the threatened piping plover (*Charadrius melodus*) and red knot (*Calidris canutus rufa*).

Additionally, based on the potential presence of migratory birds/nests on structures involved in this project, the Services asks that ODOT proceed in conjunction with guidance set forth by the Federal Highway Administration to avoid and minimize potential impacts to migratory birds, nests, and/or eggs.

In order to avoid impacts to Bald Eagles, as Bald Eagles or their habitat have been observed during the biological assessment, a survey for eagles and their nests will be conducted within 660 feet of the work zone, during the winter prior to, and within one year of, the start of construction. If a nest is found, appropriate conservation measures based on the National Bald Eagle Management Guidelines will be implemented.

The Service also recommends ODOT/FHWA replace box culverts with structures that are fish passage friendly, as suggested in the Service email to ODOT dated 8/16/2021. This applies to project culverts (being demolished, repaired, retrofitted, maintained or rehabilitated) along perineal or intermittent streams still providing habitat to native fish species.

The online project review concurrence letter signed by the Field Supervisor is now valid, and the project may proceed accordingly. The Service asks that, within 90 days prior to construction, a new

species list be obtained to see if any changes have occurred. If changes have occurred, please verify with the Oklahoma Ecological Services Field Office to determine if further consultation is needed. If you have any questions, please contact the Field Office.

Sincerely,

Kasey Goins
Fish & Wildlife Biologist (T&E Species)
U.S. Fish and Wildlife Service
Oklahoma Ecological Services Field Office

9014 E. 21st St.
Tulsa, OK 74129
561.603.0556

From: Goins, Kassandra M <kassandra_goins@fws.gov> on behalf of OK Project Review, FWS <OKProjectReview@fws.gov>
Sent: Tuesday, February 1, 2022 3:19 PM
To: Goins, Kassandra M <kassandra_goins@fws.gov>
Subject: Fw: [EXTERNAL] 02EKOK00-2022-SLI-0672 ODOT Marshall JP 18835(04)(09) Consultation Review Package

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From: Nichols, Elizabeth <elizabeth.nichols@ou.edu>
Sent: Tuesday, February 1, 2022 7:32 PM
To: OK Project Review, FWS <OKProjectReview@fws.gov>
Cc: Amber McIntyre <amcintyre@odot.org>
Subject: [EXTERNAL] 02EKOK00-2022-SLI-0672 ODOT Marshall JP 18835(04)(09) Consultation Review Package

This email has been received from outside of DOI - Use caution before clicking on links, opening attachments, or responding.

Elizabeth Nichols
Assistant Manager, Natural Resources Program
Oklahoma Department of Transportation
Oklahoma Biological Survey
111 E. Chesapeake
Norman, OK 73019
405.325.6802 (office)
elizabeth.nichols@ou.edu
enichols@odot.org

Nichols, Elizabeth

From: Nichols, Elizabeth
Sent: Wednesday, April 6, 2022 5:44 PM
To: OK Projects
Cc: Amber McIntyre
Subject: 02EKOK00-2022-SLI-0672 ODOT Marshall JP 18835(04)(09) Change in Project Scope

Hi Kasey,
This project was last consulted on February this year, with Concurrence issued by you 2/3/2022. We have been notified that there is a change in scope, based on recent plans. The proposed four-lane divided facility is no longer proposed. The following proposed project description has been updated to reflect this change. While this work will not require as much right-of-way, studies remain with the original study area provided. In addition to no change in footprint, there has been no change in species or effect determinations. The following is the update in the scope of work:

> The proposed improvement consists of a new location US-70 corridor. The alignment will utilize a five-lane curbed section to match existing conditions at the beginning of the corridor (existing US-70). The five-lane section will consist of four, 12-ft driving lanes, one 14-ft center left turn lane and curb and gutter with storm sewer. This segment also includes an at-grade intersection with US-177 and a bridge over 3rd Street. The five-lane curbed section is proposed to be built in its entirety in the interim and serve as the ultimate configuration. Beginning a few hundred feet east of the 3rd Street bridge, the roadway will transition to a five-lane section with 8-ft shoulders and ditches. For the ultimate design, this five-lane section will continue to the southern project terminus. The proposed US-70 will be bridged over the railroad. The interim design for this segment just east of the BNSF railroad to the southern terminus will consist of a two-lane highway with 8-ft shoulders and ditches. The design speeds for the proposed alignment range from 45 mph for the curbed five-lane, 55 mph for the open five-lane, and 65 mph for the interim two-lane. No interchanges are proposed.

If you need additional information, or a different format, please let me know.
Thanks!
Liz

Elizabeth Nichols
Assistant Manager, Natural Resources Program
Oklahoma Department of Transportation
Oklahoma Biological Survey
111 E. Chesapeake
Norman, OK 73019
405.325.6802 (office)
elizabeth.nichols@ou.edu
enichols@odot.org

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Oklahoma Ecological Services Field Office
9014 East 21st Street
Tulsa, OK 74129-1428
Phone: (918) 581-7458 Fax: (918) 581-7467
http://www.fws.gov/southwest/es/Oklahoma/

In Reply Refer To: February 01, 2022
Project code: 2022-0001717
Project Name: US-70 Realignment, Marshall Co, OK JP 18835(04)(09)

Subject: Verification letter for 'US-70 Realignment, Marshall Co, OK JP 18835(04)(09)' project under the October 15, 2020, Programmatic Biological Opinion on Final 4(d) Rule for the American burying beetle and Activities Excepted from Take Prohibitions (50 CFR § 17.47(d), Federal Register Citation 85 FR 65241).

Dear Elizabeth Nichols:

The U.S. Fish and Wildlife Service (Service) received on **February 01, 2022** your effect determination(s) for the 'US-70 Realignment, Marshall Co, OK JP 18835(04)(09)' (the Action) using the American burying beetle (*Nicrophorus americanus*) determination key within the Information for Planning and Consultation (IPaC) system.

This determination key assists users in determining whether a Federal action is consistent with the activities analyzed in the Service's October 15, 2020, Programmatic Biological Opinion (PBO). The PBO addresses activities excepted from incidental "take"[1] prohibitions applicable to the American burying beetle under the Endangered Species Act of 1973 (Act) (87 Stat.884, as amended; 16 U.S.C. 1531 et seq.).

Based upon your IPaC submission, the Action is consistent with activities analyzed in the PBO. The Action may affect the American burying beetle; however, any incidental take that may occur as a result of the Action is not prohibited under the Act Section 4(d) rule adopted for this species at 50 CFR §17.47(d). **Unless the Service advises you within 30 days of the date of this letter that your IPaC-assisted determination was incorrect, this letter verifies that the PBO satisfies and concludes your responsibilities for this Action under Act Section 7(a)(2) with respect to the American burying beetle.**

Please report any changes to the information about the Action that you submitted in IPaC, the results of any American burying beetle surveys conducted in the Action area, and any dead, injured, or sick American burying beetles that are found during Action implementation. If the Action is not completed within one year of the date of this letter, you must update and resubmit the information required in the IPaC key.

This IPaC-assisted determination allows you to rely on the PBO for compliance with Act Section 7(a)(2) only for the American burying beetle.

---

[1]Take means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct (Act, Section 3(19)).

This letter covers only the American burying beetle. It **does not** apply to the following ESA-protected species that also may occur in the Action area:

- Monarch Butterfly *Danaus plexippus* Candidate
- Piping Plover *Charadrius melodus* Threatened
- Red Knot *Calidris canutus rufa* Threatened
- Whooping Crane *Grus americana* Endangered

If your project may affect additional listed species, you must evaluate additional DKeys for other species, or submit a request for consultation for the additional species to your local Ecological Services Field Office.

Action Description
You provided to IPaC the following name and description for the subject Action.

1. Name

US-70 Realignment, Marshall Co, OK JP 18835(04)(09)

2. Description

The following description was provided for the project 'US-70 Realignment, Marshall Co, OK JP 18835(04)(09)':

> Grade, Drain, Bridge, and Surface on US-70; Realignment of US-70 from SH-99 east 2.0 miles – J/P 18835(04); AND Realignment of US-70 from 2.0 miles east and south of SH-199 south 2.8 miles – J/P 18835(09)

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@34.0709027,-96.74236095039385,14z

Qualification Interview

1. Is the action authorized, funded, or being carried out by a Federal agency?

   Yes

2. Have you determined that the proposed action will have “no effect” on the American burying beetle? (If you are unsure select "No")

   No

3. Will your activity **purposefully take** American burying beetles?

   No

4. Is your project wholly inside the 4d rule Analysis Area? For areas of your project occurring inside the Analysis Area (New England, Northern Plains, Southern Plains), your project may qualify for exemptions. For areas of your project occurring outside the Analysis Area, all incidental take is exempted according to the ABB 4d Rule.

   Automatically answered
   Yes

5. Is American burying beetle suitable habitat present within the action area?

   Yes

6. Will suitable habitat be affected by the proposed action? Suitable habitat may be impacted if the action involves soil disturbance, use of vehicles or heavy equipment, artificial lighting, vegetation removal, use of herbicides, pesticides, other hazardous chemicals.

   Yes

Project Questionnaire

Please select the activity that best matches your proposed action.

8. Soil disturbance related to road construction and maintenance

If you chose 13 above, please describe below. If you did not choose 13 above, please type "0".

0

Estimate the total acres of suitable American burying beetle habitat that may be affected.

953

Please estimate the total number of acres of **temporary impacts** to American burying beetle habitat. See definitions

953

Please estimate the total number of acres of **permanent impacts** to American burying beetle habitat. See definitions

953

August 2015

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

FHWA

Online Project Review Concurrence Letter

To: Transportation

Project Name: Marshall JP 18835(04)(09) Grade, Drain, Bridge, and Surface on US-70; Madill Realignment from SH-199 east 2.0 miles & from 2.0 miles east and south of SH-199, south 2.8 miles

Consultation Code: 27 Sep 2016

Dear Applicant:

Thank you for using the U.S. Fish and Wildlife Service (Service) Oklahoma Ecological Services Field Office (ESFO) online project review process. By providing this letter in conjunction with your complete 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 Endangered Species Act of 1973 (16 U.S.C. 1531-1544, 87 Stat. 884), as amended (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 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 Oklahoma ESFO 60 days to review your information. If the Oklahoma ESFO determines that the package is not complete, or that additional coordination is necessary, we will contact your office. If, after 60 days from the date of your email submittal of your project review package, the Oklahoma ESFO has not contacted your office, consider your section 7 consultation complete.**

The proposed action consists of:

Jami B. McVeigh

Project start and completion dates:

2027

Federal agency or federal program providing a permit, funding, grant, authorization, loan, etc. associated with the proposed project and how that agency is associated with your project:

FHWA

Federal Agency/Program Point of contact (Name, phone, and email address):

2254

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 initiation 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 Oklahoma ESFO.

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/ Jonna Polk
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

54954.2.2

ENDANGERED, THREATENED AND CANDIDATE SPECIES, DESIGNATED CRITICAL HABITAT, BALD EAGLE AND MIGRATORY BIRD ASSESSMENTS

For

USFWS TAILS #		**02EKOK00-2022-SLI-0672**			
Email used to request IPaC official species list		mcross@cpyi.com			
County	Marshall	JP Number	18835(04)(09)	Project Number	NHPP-022N(052) & J1-8835(009)
Road Number	US-70	Water Body Name		Various tributaries to Glasses Creek and Little Glasses Creek	
ROW Date	January 2022	Let Date	2027	Project Length	5.6 miles
Project General Location		From SH-199, east 2.0 miles & from 2.0 miles east and south of SH-199, south 2.8 miles in Madill, OK			
Project Description & Statement From Oracle		Grade, Drain, Bridge, and Surface on US-70; Madill Realignment from SH-199 east 2.0 miles & from 2.0 miles east and south of SH-199, south 2.8 miles – J/P 18835(04)(09)			

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

Prepared by:

Biologist Name	Melissa Cross
Company/Agency Name	CP&Y, Inc., an STV Company
Address	2000N. Classen Blvd, Suite 1410
City, State Zip	Oklahoma City, OK 73106

Report Date:	January 24, 2022
Field Survey Date	August 9-11, 2016, and December 20, 2021
Field Survey Biologist(s)	Matt Haverland & Sarah Itz (2016), Melissa Cross (2021)

Form Date: October 2021

1. PROJECT OVERVIEW

1.1 Federal Nexus

This biological assessment, prepared by the above named Company/Agency 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

Grade, Drain, Surface and Bridge

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

The existing US-70 alignment lies on the north side of Madill where it intersects and merges with US-177/SH-199 before turning south through the town's commercial district. The highway then continues southeast toward Kingston. There are presently three signalized intersections and one yield intersection on US-70 within the project study area. The speed limit on the existing alignment ranges from 35 to 65 miles per hour and the route is classified as a principal arterial. The route shares designations for multiple highways throughout the study area, including US-177, US-377, SH-199, and SH-99.

The existing lane configurations within the environmental study area begins as a five-lane curbed section and then transitions to a two-lane undivided open section with shoulders and continues to the US-177/SH-199 intersection. After the intersection, it is primarily a three-lane undivided curb and gutter section with intermittent open sections and paved shoulders up to the second intersection with US-377/SH-99. This three-lane section has an exceptionally wide center turning lane and several instances of four striped lanes at intersections. The environmental study area between the junction at US-177/SH-199 and the southern junction with US-377/SH-99 is highly commercialized with frequent driveways and only minimal curbing near side street intersections and businesses. Between the intersections with SH-99 and Smiley Road, the roadway is a uniform three-lane open section with minimal shoulders. Approximately 0.25 miles south of the intersection of US-70 and Smiley Road, the three-lane facility transitions to a two-lane undivided open section with 10-foot shoulders for the remainder of the project study area. With the proposed realignment of US-70, the existing US-70 facility will only be disturbed at the beginning, near the intersection of US-177/SH-199 and at the end, near the intersection of Archard Road. The majority of the new alignment is through rural areas and construction will have limited impact to the driving public, limited generally to intersecting highways and county roads.

Overhead and underground power, water, sanitary sewer, telephone, fiber optic, and high-pressure gas line utilities exist throughout the environmental study area. The utilities are concentrated along the existing US-70 route and intersecting roadway alignments.

Description of **proposed** improvements

The proposed new alignment will utilize a five-lane curbed section to match existing conditions at the beginning of the corridor (existing US-70). These five lanes will transition to an open section and continue east beyond the intersection with US-377. South of this intersection, the ultimate design will transition to a four-lane divided highway with a 64-foot grassy median. In the interim, the westbound lanes of the four-lane ultimate will serve as a two-lane highway. The five-lane section is proposed to be built in its entirety in the interim and serve for the ultimate as well. This segment includes bridges over a BNSF railroad and 3rd Street as well as at-grade intersections with US-177 and US-377. The interim two-lane facility between US-377 and the end of the alignment will have a bridge over a tributary of Glasses Creek plus at-grade intersections at SH-199 and Archard Road. The ultimate design will incorporate grade-separated interchanges for the four-lane divided facility. This will include two bridges over SH-199, a bridge on EW2040 over US-70, and another bridge over a tributary of Glasses Creek. The design speeds for the proposed alignment ranges from 45 mph for the curbed five-lane, 55 mph for the open five-lane, and 65 mph for the ultimate four-lane and interim two-lane.

Approximately 450 acres of right-of-way (ROW) will be required for this project since the proposed alignment is mostly through undeveloped areas aside from connections to the existing alignment of US-70. Sixty-five (65) percent plans provide estimate of approximately 214 acres needed to complete the ultimate four-lane segment with interchanges. Overhead and underground utilities exist throughout the study corridor and impacts to them will be unavoidable.

The project was originally studied in 2016. In 2021, additional corner clips were added to the proposed project that were not originally evaluated in the 2016 field investigations. In addition, field studies were updated due to the age of the original studies.

Check if any of the following is expected s part of the proposed action

Work within OHWM is expected			☒
Project is OFF-SET alignment	☐	or NEW alignment	☒
Project involves **NO OFF EXISTING PAVEMENT** work			☐
Project requires new ROW (permanent &/or temporary)			☒

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)
25-T5S-R5E, 26-T5S-R5E, 27-T5S-R5E, 28-T5S-R5E, 35-T5S-R5E, 36-T5S-R5E, 1-T6S-R5E, 11-T6S-R5E, 12-T6S, R5E, 2-T6S-R5E, 21-T5S-R5E, 22-T5S-R5E	Start – 34.0995°, -96.7846° End – 34.0455°, -96.7433°	5.6 miles long by variable width	1,021	Eastern Cross Timbers	Tallgrass Prairie

Action Area:
The action area for this project includes a 0.25-mile buffer around the Environmental study area to account for the occurrence of Migratory Birds.

2. FEDERALLY LISTED SPECIES AND DESIGNATED CRITICAL HABITAT

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

Species	IPaC[1]	Watershed[2]	Water Body[3]	Records[4]
	Check if Yes	Check if YES	Check if Yes	Check if Yes
Red-cockaded Woodpecker	☐			☐
Whooping Crane	☒	☐		☐
Gray Bat	☐	☐		☐
Indiana Bat	☐			☐
Ozark Big-eared Bat	☐			☐
Neosho Mucket	☐	☐	☐	☐
Ouachita Rock Pocketbook	☐	☐	☐	☐
Scaleshell Mussel	☐	☐	☐	☐
Winged Mapleleaf	☐	☐	☐	☐
Harperella	☐			☐
American Burying Beetle	☒			☒
Eastern Black Rail	☐			☐
Piping Plover	☒			☐

Species	IPaC[1]	Watershed[2]	Water Body[3]	Records[4]
	Check if Yes	Check if YES	Check if Yes	Check if Yes
Red Knot	☒			☐
Northern Long-eared Bat	☐			☐
Arkansas River Shiner	☐	☐	☐	☐
Leopard Darter	☐	☐	☐	☐
Neosho Madtom	☐	☐	☐	☐
Ozark Cavefish	☐	☐		☐
American Alligator	☐			☐
Rabbitsfoot Mussel	☐	☐	☐	☐
Monarch Butterfly	☒			☐
Rattlesnake-master Borer Moth	☐			☐
Peppered Chub	☐	☐		☐

[1]Species is on the Proposed Project's IPaC List
[2]Action Area is within a watershed associated with occupied water bodies
[3]Action Area includes an occupied water body
[4]Project site within 5 miles of known records

Designated or Proposed Critical Habitat	Action Area includes Designated Critical Habitat (Check √ if Yes)
Whooping Crane	☐
Arkansas River Shiner	☐
Leopard Darter	☐
Neosho Mucket	☐
Rabbitsfoot	☐
Peppered Chub	☐

Action area is adjacent to McAlester Army Ammunition Plant or Camp Gruber/Cherokee WMA ☐

All of part of the action area is within the 10 mile **gray bat** priority area (ODOT will check) ☐
All of part of the action area is within the 2 mile **gray bat** priority area (ODOT will check) ☐

Action area is within what percentage **Whooping Crane** migratory corridor **100%**
Action area is within 15 miles of Salt Plains NWR, Hackberry Flat, or Foss Reservoir. ☐

Action area is within the historic range of the **Red-cockaded Woodpecker** ☐
Action area is within 10 miles of the McCurtain County Wilderness Area ☐
Action area is within 10 miles of the Pushmataha Wildlife Management Area ☐

3. ENVIRONMENTAL BASELINE

3.1. Ecological Processes and Conditions

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

Soil Class	Grand Prairie
Soil Name	Chigley-Durant-Clarita-Helden-Ferris-Burleson
Soil Type	Alfisols, mollisols, vertisols
Soil Characteristics	Deep, clayey (high shrink-swell potential), and humus rich soils on gently rolling slopes

Climate (Use Woods et al. 2005)

Precipitation	Mean annual inches	38-46”
Growing Season	Number of days	225-235 days
Mean Temperatures	Summer min/max	72/94 degrees
	Winter min/max	28/51 degrees

River System

Fifteen unnamed tributaries to Glasses Creek, Glasses Creek, and five unnamed tributaries to Little Glasses Creek occur within the action area.

Land Use and Land Ownership

From Woods et al. 2005	Mostly grassland, pastureland, and woodland; some cropland. The main crops are small grains, grain sorghum, forage sorghum, and peanuts. Abandoned farmland is common. Fire suppression and passive land use have allowed the woodland distribution to greatly expand. Small impoundments are common.
From Field investigation	Land use in the vicinity of the project is urban in the city of Madill, agricultural for grazing cattle, scattered residential, and wooded areas primarily along the streams, drainages, and fence lines.

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

The environmental environmental study area is mostly undeveloped, except for roadways, a railroad, scattered houses and farms, and commercial businesses in the city of Madill. There are numerous open pastures used for grazing livestock, some wooded areas along fence lines and riparian corridors at the streams, and 21 stock ponds and wetlands. The open grasslands/pastures are comprised of typical upland species of grasses and forbs, often with shrub and tree species along the edges and in clumps. Species observed in these areas include annual marsh elder (*Iva annua*), honey locust (*Gleditsia triacanthos*), hackberry (*Celtis occidentalis*), western ragweed (*Ambrosia psilostachya*), Osage orange (*Maclura pomifera*), American persimmon (*Diospyros virginiana*), Bermuda grass (*Cynodon dactylon*), sunflower (*Helianthus annua*), beggars tick (*Torilis arvensis*), doveweed (*Croton setigerus*), post oak (*Quercus stellata*), greenbriar (*Smilax* sp.), eastern redcedar (*Juniperus virginiana*), ryegrass (*Lolium* sp.), and honeysuckle (*Lonicera japonica*).

The riparian corridors in the environmental environmental study area include American elm (*Ulmus americana*), woodland creek oats (*Chasmanthium latifolium*), Virginia creeper (*Parthenocissus quinquefolia*), black hickory (*Carya texana*), deciduous holly (*Ilex decidua*), red oak (*Quercus rubra*), sycamore (*Platanus occidentalis*), eastern redcedar, greenbriar, poison ivy (*Toxicodendron radicans*), grape (*Vitis* sp.), willow oak (*Quercus phellos*), mimosa (*Albizia julibrissin*), black willow (*Salix nigra*), giant ragweed (*Ambrosia trifida*), cottonwood (*Populus deltoides*), hackberry, and Johnson grass (*Sorghum halepense*). The streams within the environmental study area appear to be intermittent. During the field survey in August 2016, no flowing water was observed, but small pools of water were observed in some of the tributaries.

There are 19 stock ponds (7 of which have a wetland fringe around the edges of the pond) and 2 wetlands (1 forested and 1 emergent) in the environmental study area. Wetland vegetative species observed in these areas include green ash (*Fraxinus pennsylvanica*), Osage orange, black willow, creeping burhead (*Echinodorus cordifolius*), sand spikerush (*Eleocharis montevidensis*), swamp smartweed (*Polygonum hydropiperoides*), cocklebur (*Xanthium strumarium*), bulrush (*Schoenoplectus acutus*), floating primrose-willow (*Ludwigia peploides*), and Vasey's grass (*Paspalum urvillei*).

3.2 Species Habitat Analysis

Pedestrian survey of entire NEPA study footprint (including 300-foot work zone buffer in karst areas) ☒
Bridge/Structure inspected for bat use (Complete the Bridge Inspection Form) ☐

SPECIES	HABITAT	
Whooping Crane	Shallowly-submerged sandbars in large river channels occur within the **0.25 miles of the NEPA Environmental Study Footprint**.	☐
	If within the 75% migration corridor, provide the number of acres of emergent wetlands that occur within the **NEPA Environmental Study Footprint**.	enter acres.
	Croplands suitable for foraging occur within the **0.25 miles of the NEPA Environmental Study Footprint** and is within the 95% migration corridor.	☐
American Burying Beetle	Number of acres of native perennial plant vegetation (where native perennial vegetation is the dominant vegetation) within the **NEPA Environmental Study Footprint** (include shapefiles).	953
Piping Plover	Sparsely vegetated sandy or gravelly shorelines and islands associated with the major river systems occur within the **0.25 miles of the NEPA Environmental Study Footprint.**	☐
	Salt flats or mudflats associated with reservoirs occur within the **0.25 miles of the NEPA Environmental Study Footprint.**	☐
Red Knot	Mudflats associated with reservoirs occur within the **0.25 miles of the NEPA Environmental Study Footprint.**	☐

SPECIES	HABITAT	
Monarch Butterfly	Presence of milkweed (*Asclepias sp*.) species within the **NEPA Environmental Study Footprint.**	☐
	Presence of flowering or potentially flowering nectar plants *(defined as forbs that can provide nectar for monarchs at some point in the growing season)* within the **NEPA Environmental Study Footprint.**	☒
	Presence of additional native habitat within the **NEPA Environmental Study Footprint.**	☒

4. ANALYSIS OF EFFECTS

4.1 Direct Effects

Species/ Resource	Habitat impacts expected from project activities	Describe specific ACTIONS of the project and the results of those actions on species habitats, including indirect impacts to prey or drinking water, as well as improvements to habitat as a result of specific actions. If habitat within the action area identified above will not be impacted, describe why.
American Burying Beetle	☒	There is approximately 953 acres of potential ABB habitat in the environmental study area; however, based on the current plans only approximately 188 acres of potential habitat would be converted to impervious cover and maintained ROW. In the areas that would be converted to new ROW, easements, and temporary ROW, vegetation clearing activities such as ground clearing and scaping, staging areas, and the construction of a new roadway and bridges would directly impact any individuals of this species present within the study area. The increased impervious cover from the new roadway would result in a permanent overall decrease of available habitat for this species.
Monarch Butterfly	☒	Native perennially vegetated land is located within the study area. While no nectar plants were observed during the December 2021 investigation, due to the size and undeveloped nature of the study area it is highly likely numerous flowering plants are present during spring and summer. No milkweed was observed within the study area either, but the December field investigation did not take place within the flowering season for the plant. The 2016 field investigation was before the listing of this species occurred; therefore, notes on flowering plants and milkweed presence were not recorded at that time. While exact construction methods are unknown, approximately 188 acres of undeveloped habitat will be impacted from ground clearing, soil scraping, staging areas, or new impervious cover. The increased impermeable cover from the re-aligned roadway would result in a permanent overall decrease of available habitat for this species.

4.2 Indirect Effects

Long-term habitat alterations

Species/ Resource	Identify long-term, permanent changes in habitat
American Burying Beetle	Long-term habitat alterations will occur in the areas of suitable ABB habitat that get converted to new roadways and maintained ROW.
Monarch Butterfly	Long-term habitat alterations will occur in the areas of suitable butterfly habitat that get converted to new roadways and maintained ROW.

Indirect land use impacts

Since this project involves a new location roadway, indirect land use impacts are likely to occur after the new roadway is built. The areas that were previously inaccessible will now be accessible to motorists traveling on US-70 around the city of Madill. This will likely result in the development of new businesses and residences along the new highway, which would in turn lead to further conversion and fragmentation of ABB habitat.

4.3 Interrelated and Interdependent Actions and Activities

This project involves a new location highway around the city of Madill. It is expected that it will induce commercial and residential growth along the new route. There will be utility relocations as well.

USFWS TAILS Number:	**02EKOK00-2022-SLI-0672**
ODOT Project JP Number:	188535(04)(09)

SPECIES / DESIGNATED CRITICAL HABIT	**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, not likely to adversely affect	May affect, Likely to adversely affect	Field Studies	ONHI database / ABB	USFWS occupied waterbodies & watersheds	Whooping Crane Migration Corridor
American Burying Beetle	☒	☒	☐	☒	Project uses the BO for the final 4(d) rule	☒	☒	☐	☐
Whooping Crane	☐	☐	☒	☐	☐	☒	☒	☒	☒
Piping Plover	☐	☐	☒	☐	☐	☒	☒	☐	☐
Red Knot	☐	☐	☒	☐	☐	☒	☒	☐	☐
Monarch Butterfly	☒	☒	☐	☒	☐	☒	☒	☐	☐

CONCLUSIONS

No Effect	Whooping Crane, Piping Plover, Red Knot
May affect	American Burying Beetle
May affect, not likely to adversely affect	
May affect, likely to adversely affect	
Not likely to jeopardize the continued existence of the species – Candidate species only	Monarch Butterfly
Appropriate Effect Determination for ABB has been made under the BO for the final 4(d) rule	☒

RECOMMENDED AVOIDANCE AND MINIMIZATION MEASURES

Suitable habitat for the **American Burying Beetle** occurs within the immediate vicinity of the proposed project. In order to minimize adverse impacts to the ABB, the following conservation measures will be implemented:

a) The areas of suitable habitat will be field mapped.
b) The amount of ground disturbance to suitable ABB habitat within the construction footprint will be minimized to only what is necessary for project construction.
c) Following construction, areas of ground disturbance outside of the safety clear zone will be revegetated with native plant species where applicable and practicable. Areas where revegetation with native plant species is not practicable will be revegetated with more traditional planting such as solid slab sodding.
d) Pollution Prevention Requirements as specified by the Oklahoma Department of Environmental Quality General Permit OKRl0 for Storm Water Discharges shall be implemented. Additionally, all equipment will be fueled, and all fuel and motor vehicle oil will be stored outside ABB habitat.
e) The use of artificial lighting will be minimized. If night construction is necessary, direct light will be shielded to the work area and prevent light from projecting upwards. A special provision will be included in the project contract which outlines approved lighting for use during night work.
f) Carcasses and trash will continuously be removed from any permanent and temporary construction rights-of-way, throughout the duration of the project.

ODOT, as a Certificate of Inclusion partner in the Nationwide **Monarch Butterfly** CCAA for Energy and Transportation lands, will adhere to the conservation measures, as well as minimize threats to the monarch butterfly as stipulated in this CCAA.

5. BALD AND GOLDEN EAGLE PROTECTION ACT ASESSMENT

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.

Potential Bald Eagle Habitat Present	w/in NEPA Footprint	w/in 660 ft Buffer of NEPA Footprint	DO NOT LEAVE BLANK
Presence of Cottonwood, Sycamore, Pecan or Pine	☒	☒	Some cottonwoods and pecans were observed within the riparian areas within the vicinity of Glasses Creek within the study area.
Open foraging areas with large trees	☒	☒	Large trees suitable for scouting was only observed along the edges of the riparian areas of mapped creeks.
Distance to closest perennial water body	River or Lake	181ft, 3.5mi	Glasses Creek is a perennial waterway located approximately 181ft north of the study area, and Lake Texoma is located approximately 3.5 miles southeast of the proposed project. Multiple intermittent streams and stock ponds were observed within the study area.
	Stream or Pond	Within Buffer	
Potential Bald Eagle Nests Observed	☐	☐	None were observed.
Bald Eagles Observed in the general vicinity	☐	☐	No eagles were observed within the vicinity of the proposed project.
General Description of Bald Eagle Nesting Habitat and Impact Determination, within the NEPA Footprint and within 660-ft of the NEPA Footprint	The majority of trees within open pastures of the study area were smaller species such as Ashe-junipers or hackberries that would not provide ideal nesting or forage scouting locations for eagles. However, larger cottonwood and pecan trees were observed primarily within the vicinity of Glasses Creek that could provide suitable scouting and nesting locations for eagles. Lake Texoma is located approximately 3.5 miles southeast of the project and does have several reported eagle sightings from 2021 reported on eBird. Eagles would not be likely to nest within the study area, but could be found nesting along Glasses Creek within a 660ft buffer of the project area. Incidental sighting of foraging eagles from Lake Texoma would also be very possible within the study area.		
Station #s for Buffered Bald Eagle Habitat	From STA. 611+00 to 748+00		

In order to avoid impacts to Bald Eagles, if Bald Eagles or their habitat are observed during the biological assessment, a survey for eagles and their nests will be conducted within 660 feet of the work zone, during the winter prior to, and within one year of, the start of construction. If a nest is found, appropriate conservation measures based on the National Bald Eagle Management Guidelines will be implemented.

6. MIGRATORY BIRD TREATY ACT (MBTA) ASSESSMENT

6.1 Structure 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. Other migratory birds can also nest on transportation structures.

Identify ALL structures including pipe culverts and whether positive or negative for migratory birds (identify named streams where possible rather than just FS#). Provide shapefiles and map of structures identifying pos/neg swallow structures.	Approx. Number of Cliff Swallow Nests	Approx. Number of Barn Swallow Nests	Approx. Number of Eastern Phoebe Nests
C1: US-70 concrete box culvert at approx. 569+00	0	0	0
C2: US-70 concrete box culvert at approx. 579+00	0	0	0
C3: N. 3rd St corrugated metal pipe (34.099363, -96.773202)	0	0	0
C4: SH-199 concrete box culvert at approx.. 525+00	0	0	0
C5: SH-199 concrete box culvert at approx. 546+50	0	0	0
Whiskey Creek Rd bridge (NBI #27624) at approx. 729+00	**30**	**0**	**0**
C6: Whiskey Creek Rd bridge (no NBI) at approx. 736+50	0	0	0
C7: Whiskey Creek Rd concrete box culvert at approx..742+00	0	0	0
C8: Whiskey Creek bridge (no NBI) at approx. 745+00	0	0	0
C9: Smiley Rd concrete box culvert (34.070938, -96.739315)	**0**	**6**	**0**
C10: Whiskey Creek Rd concrete box culvert (34.060391, -96.743578)	0	0	0
C11: US-70 concrete box culvert 34.058814, -96.750150)	0	0	0
C12: US-70 concrete box culvert at approx. (34.058374, -96.749519)	**10**	**0**	**0**
C13: Pasture Rd corrugated metal pipe at approx. 814-50	0	0	0
C14: SH-106 concrete box culvert at approx. 164+00	0	0	0
C15: SH-106 concrete box culvert at approx. 172+50	0	0	0
C16: SH-106 concrete box culvert (34.050629, -96.735807)	0	0	0
Other MB and Nests Observed	None observed.		
Based on existing plans, no work on suitable drainage structures will occur			☐

In order to avoid impacts to migratory birds, if structures are being used by these birds, any activities that may destroy active nests, eggs or birds shall be completed between September 1, and February 28, when nests are not occupied. If seasonal avoidance cannot be accomplished, structures shall be protected from new nest establishment prior to March 1, by means that do not result in death or injury to these birds.

6.2 Birds of Conservation Concern

Species Identified on IPaC list	Breeding Season
None listed	

6.3 Interior Least Tern

Sparsely vegetated islands or sandbars along large rivers, with nearby areas of shallow water, occur within the 0.25 miles of the NEPA Environmental Environmental study area.	☐
N/A	

7. REFERENCES:

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OBS. (2016, June 24). Oklahoma Natural Heritage Inventory. Retrieved from Oklahoma Biological Survey.

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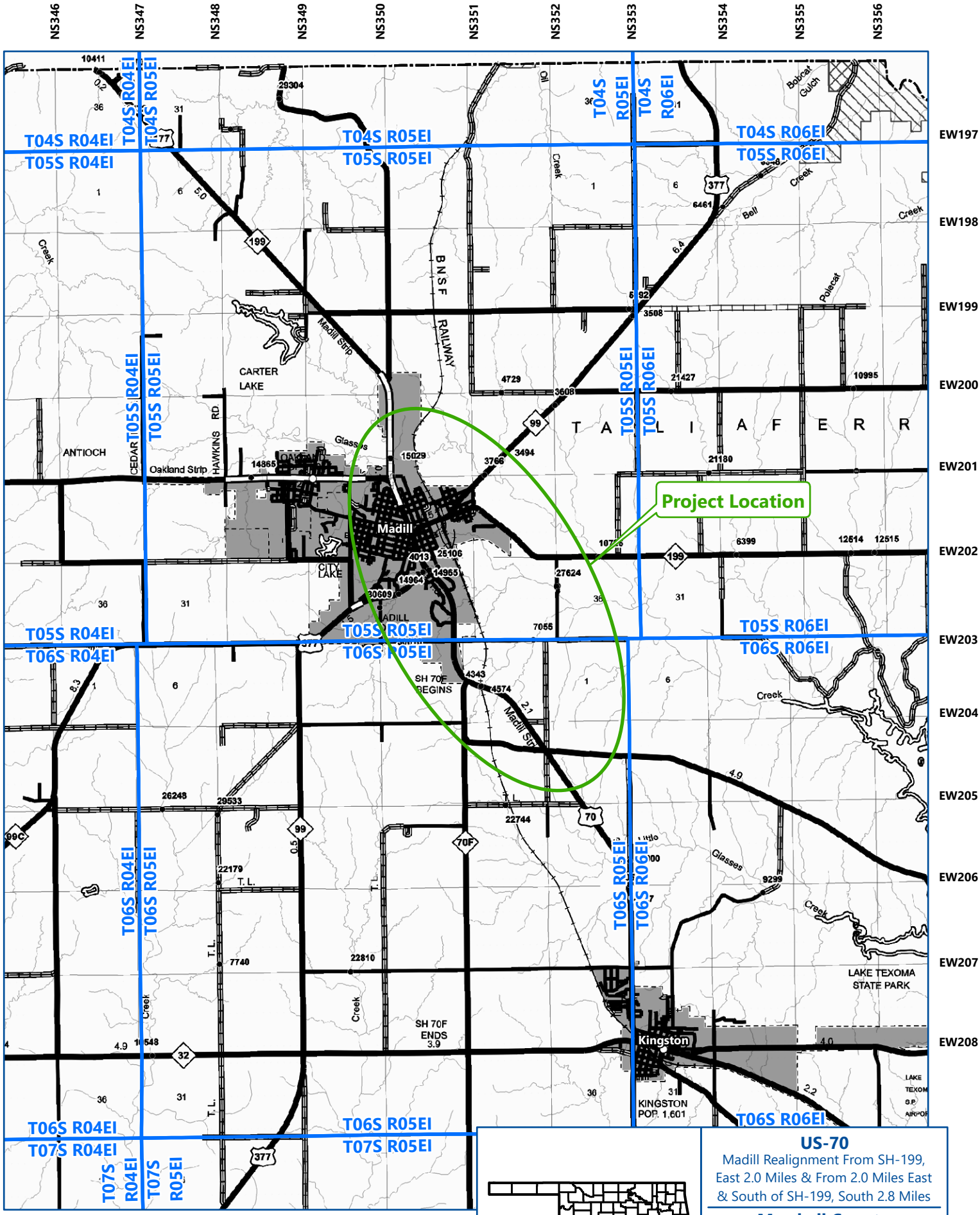
Woods, A. J., Omernik, J. M., Butler, D. R., Ford, J. G., Henley, J. E., Hoagland, B. W., et al. (2005). Ecoregions of Oklahoma (color poster with map, descriptive text, summary tables, and photographs). Reston, VA: U.S. Geological Survey (map scale 1:1,250,000).

8. FIGURES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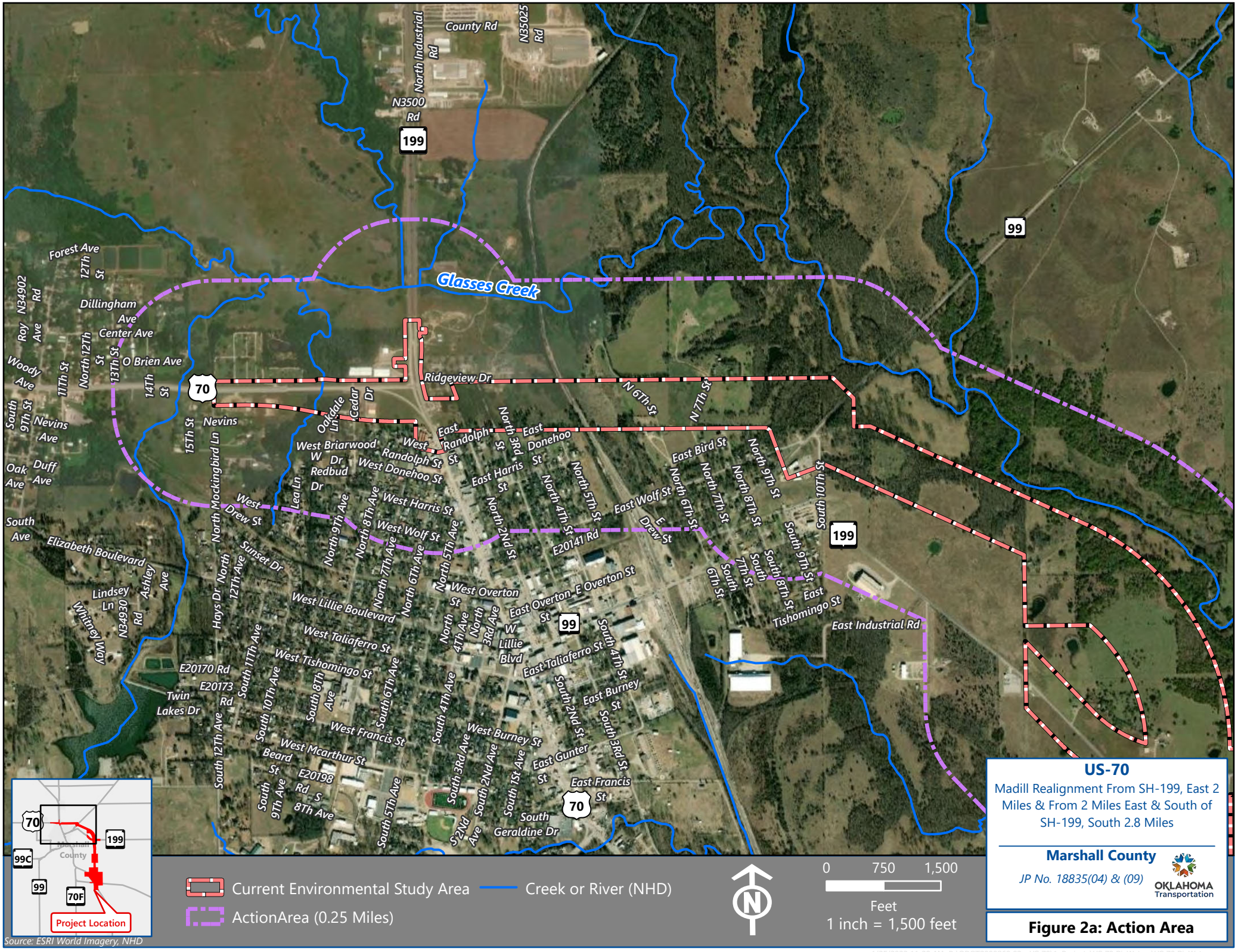
Project Location
Madill
CARTER LAKE
ANTIOCH
Oakland Strip
CITY LAKE
SH 70F BEGINS
SH 70F ENDS 3.9
Madill Strip
BNSF RAILWAY
Kingston
KINGSTON POP. 1,601
LAKE TEXOMA STATE PARK
Bobcat Gulch
Bell Creek
Polecat Creek
Glasses Creek
Marshall County
Project Location
Township & Range Boundary
Miles
0 0.38 0.75 1.5
1 inch = 1.5 miles
US-70
Madill Realignment From SH-199, East 2.0 Miles & From 2.0 Miles East & South of SH-199, South 2.8 Miles
Marshall County
JP No. 18835(04) & (09)
OKLAHOMA Transportation
Figure 1: Project Location Map



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Madill Realignment From SH-199, East 2 Miles & From 2 Miles East & South of SH-199, South 2.8 Miles

Marshall County

JP No. 18835(04) & (09)

OKLAHOMA Transportation

Figure 2a: Action Area

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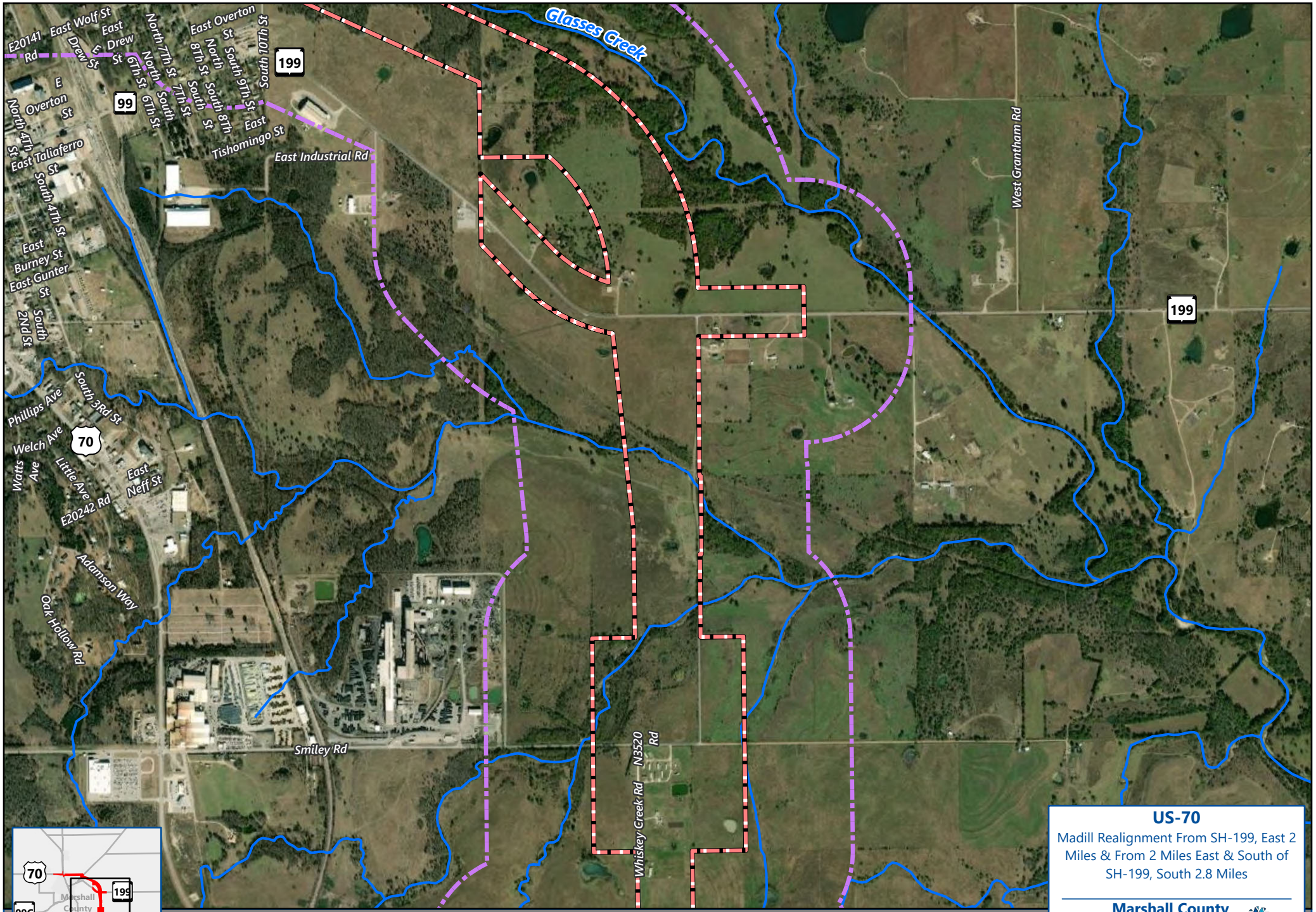

US-70

Madill Realignment From SH-199, East 2 Miles & From 2 Miles East & South of SH-199, South 2.8 Miles

Marshall County

JP No. 18835(04) & (09)

OKLAHOMA Transportation

Figure 2b: Action Area

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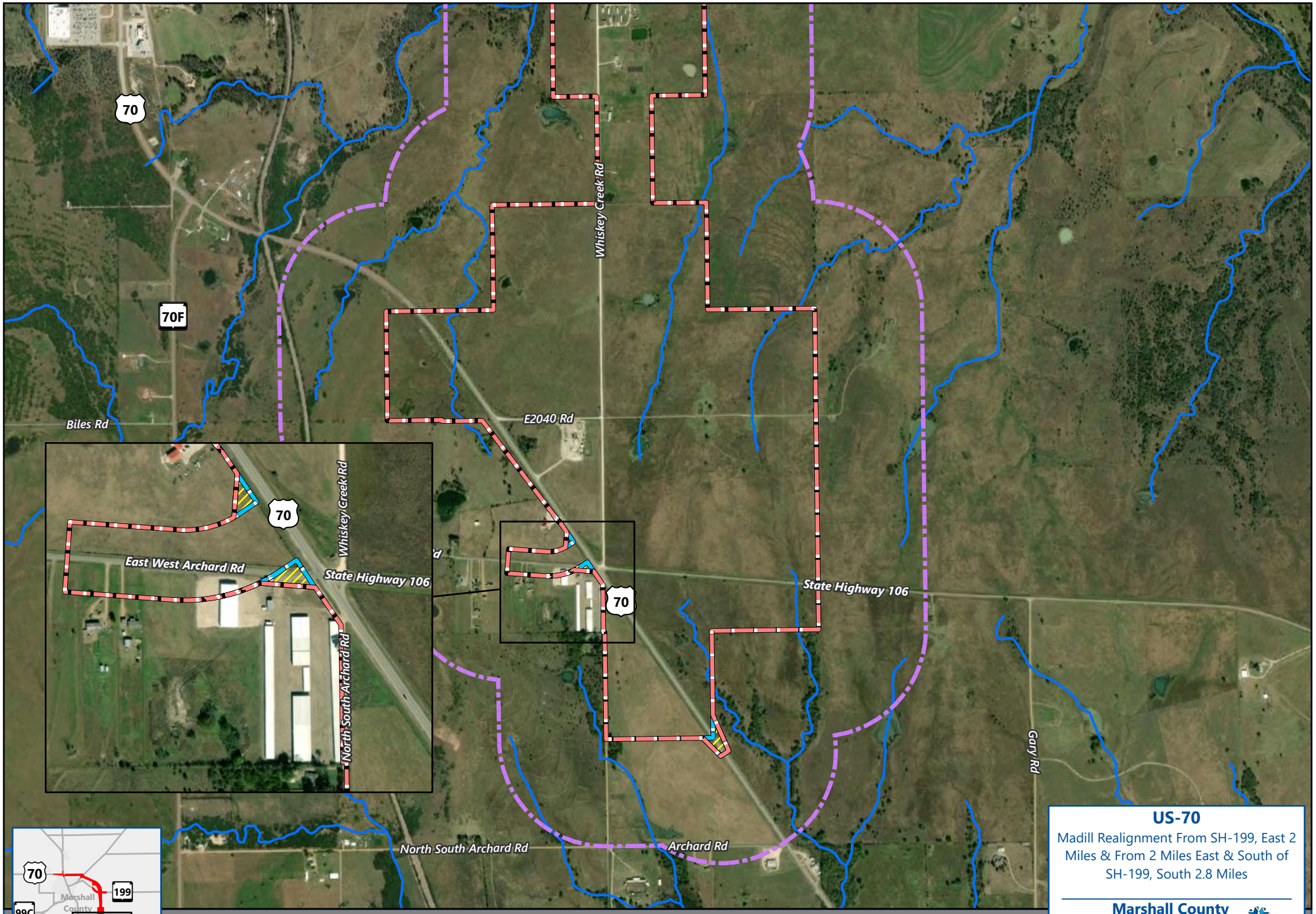

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Madill Realignment From SH-199, East 2 Miles & From 2 Miles East & South of SH-199, South 2.8 Miles

Marshall County

JP No. 18835(04) & (09)

OKLAHOMA Transportation

Figure 2c: Action Area

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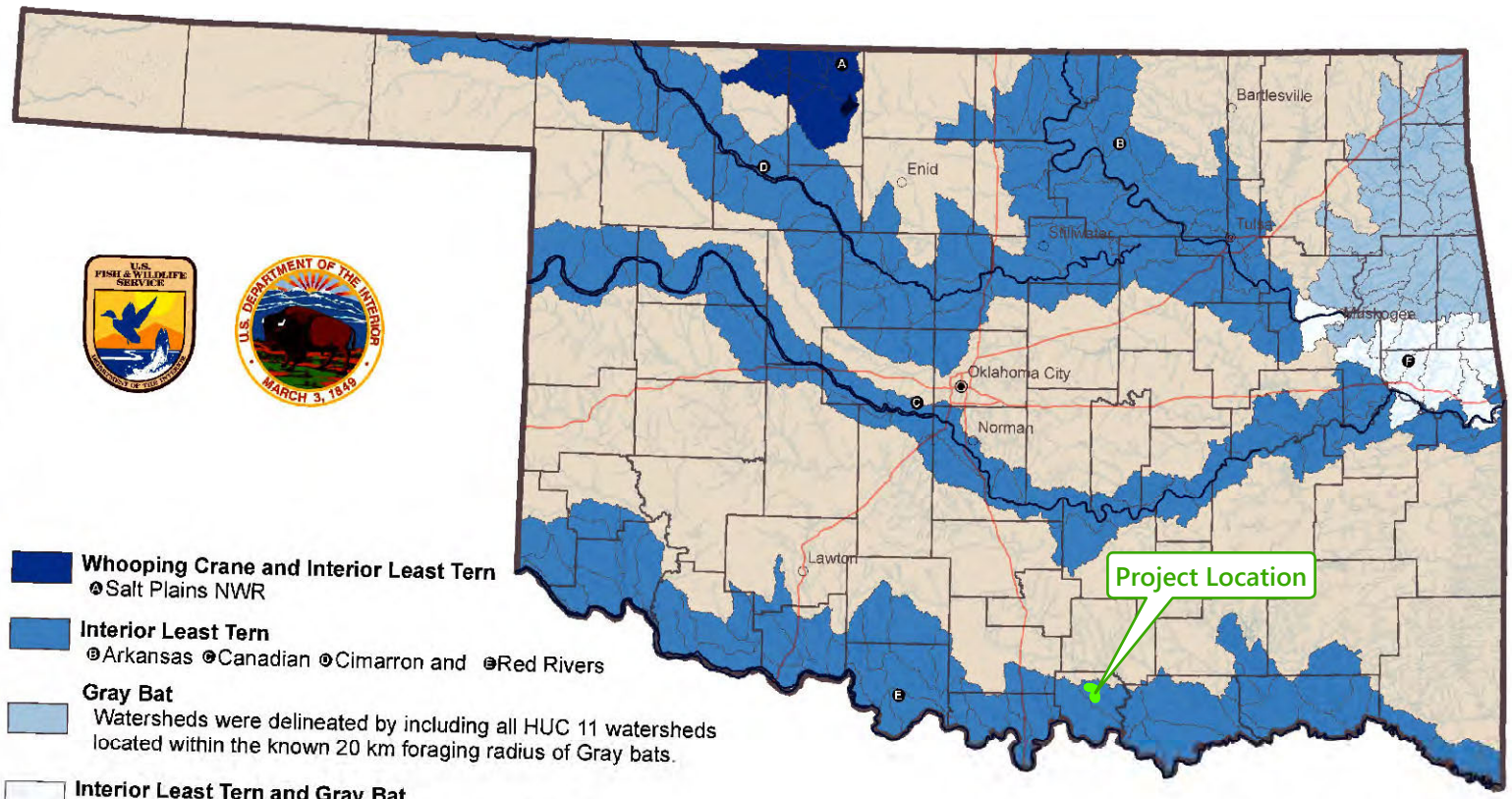
Federally-Listed Aquatic Dependent Species Watersheds of Oklahoma

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

US-70

Madill Realignment From SH-199, East 2 Miles & From 2 Miles East & South of SH-199, South 2.8 Miles

Marshall County

JP No. 18835(04) & (09)

OKLAHOMA Transportation

Environmental Study Area

Figure 3a

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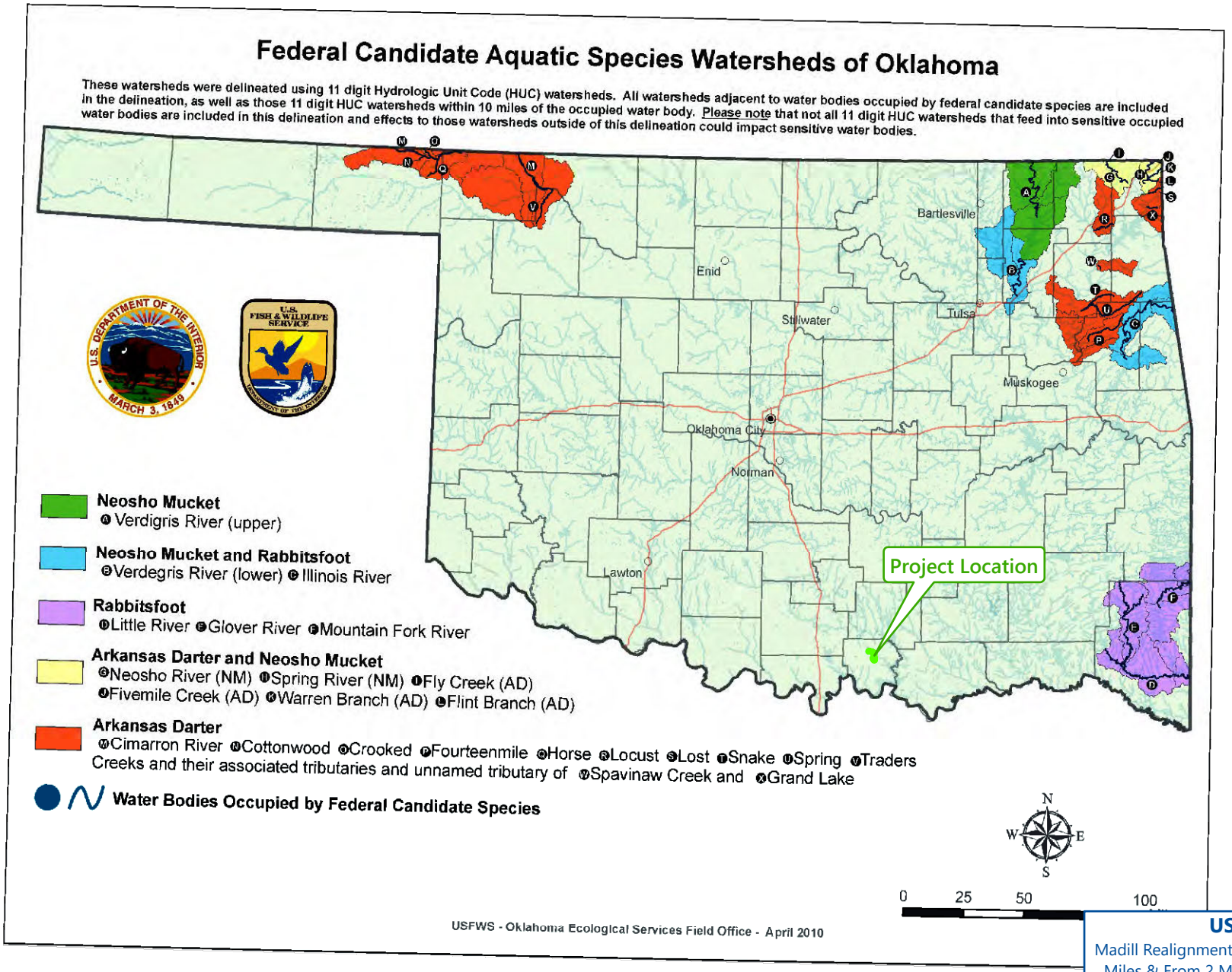


US-70

Madill Realignment From SH-199, East 2 Miles & From 2 Miles East & South of SH-199, South 2.8 Miles

Marshall County

JP No. 18835(04) & (09)

OKLAHOMA Transportation

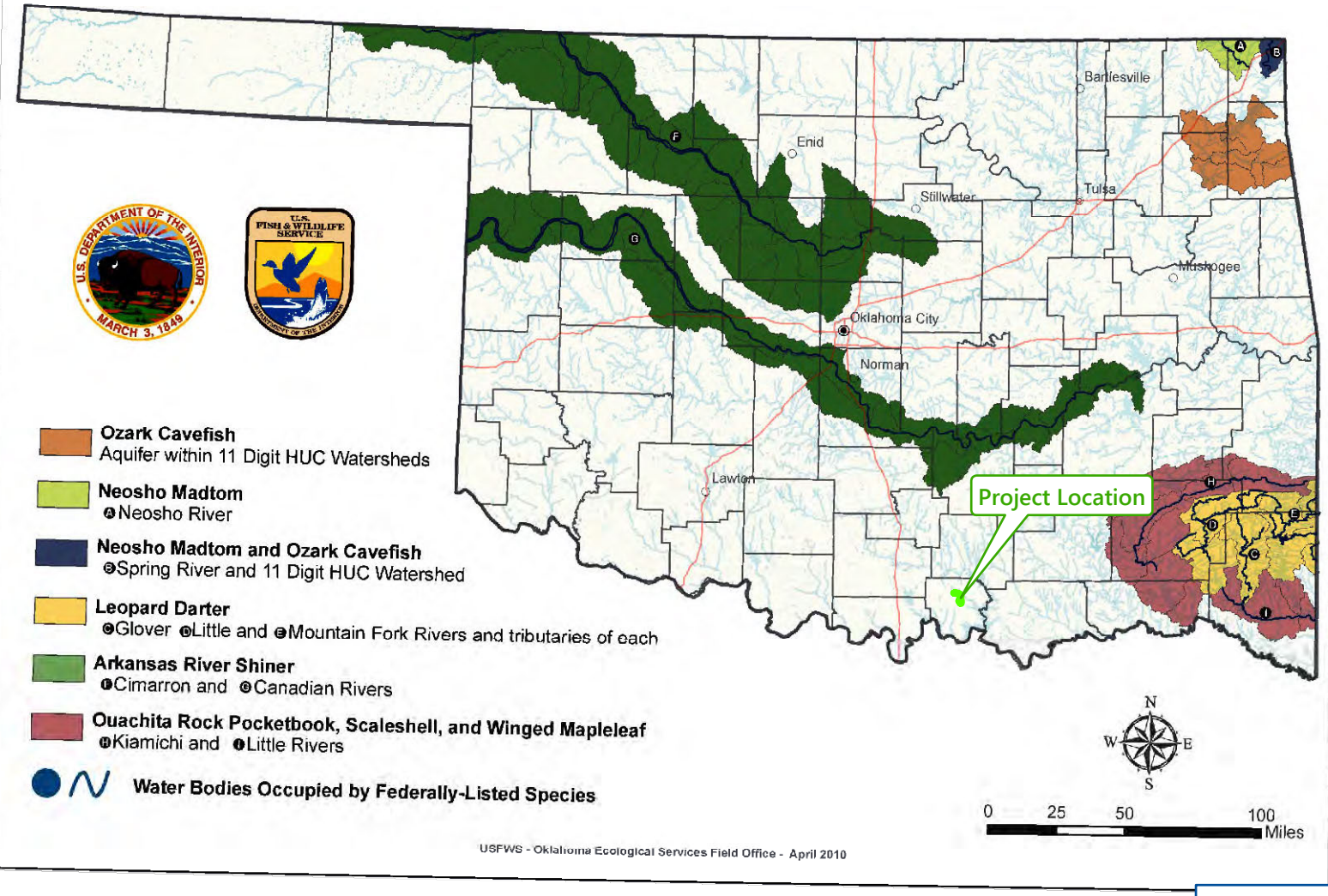
Environmental Study Area

Figure 3b

1/25/2022 11:32 AM, P:\ODOT2000869.03 - US 70\1_Projects\US 70 BioWaters\US 70 BioWaters.aprx

Federally-Listed Aquatic 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.



US-70

Madill Realignment From SH-199, East 2 Miles & From 2 Miles East & South of SH-199, South 2.8 Miles

Marshall County

JP No. 18835(04) & (09)

OKLAHOMA Transportation

Environmental Study Area

Figure 3c

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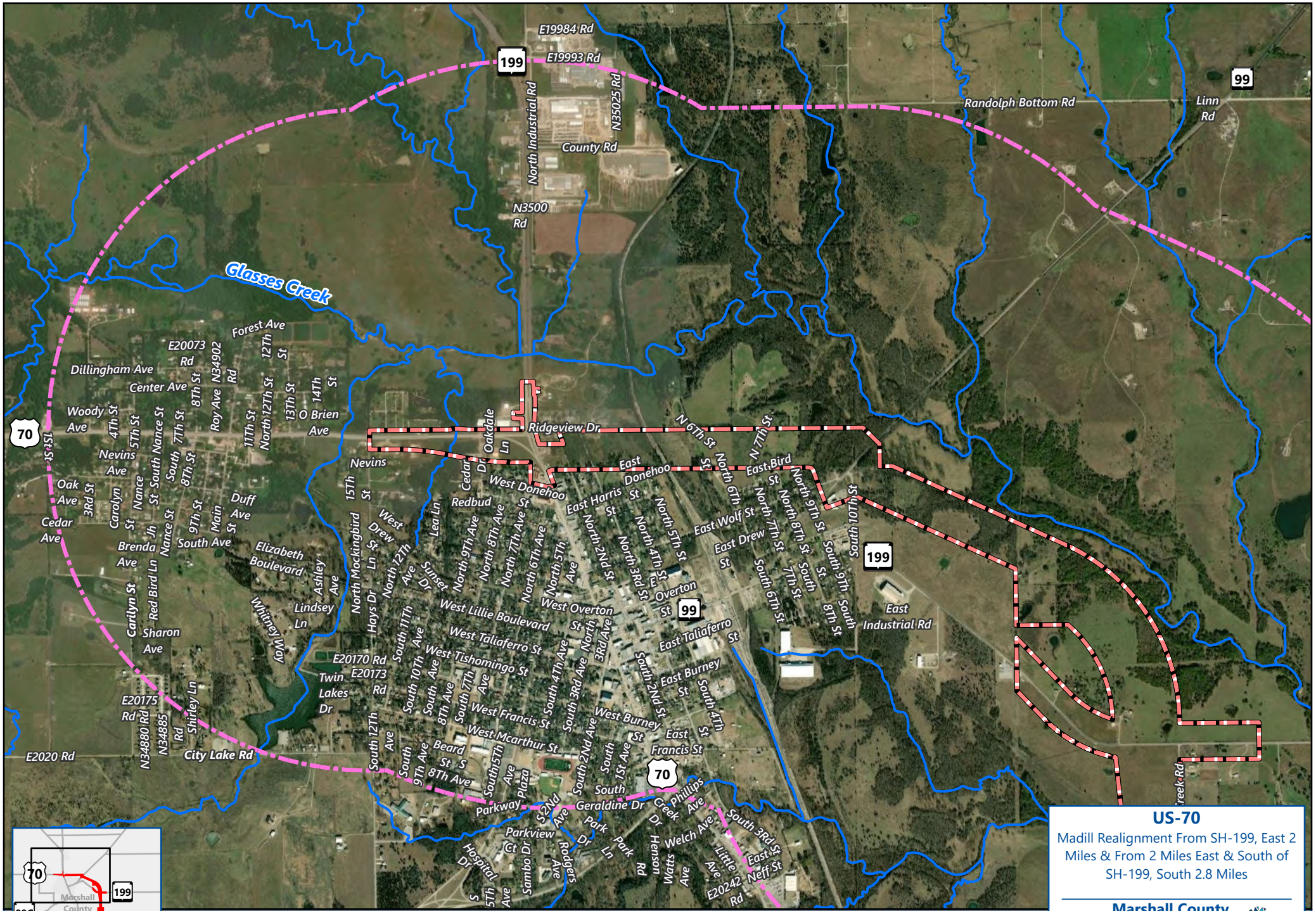

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Madill Realignment From SH-199, East 2 Miles & From 2 Miles East & South of SH-199, South 2.8 Miles

Marshall County

JP No. 18835(04) & (09)

OKLAHOMA Transportation

Figure 4a: 1 Mile Buffer

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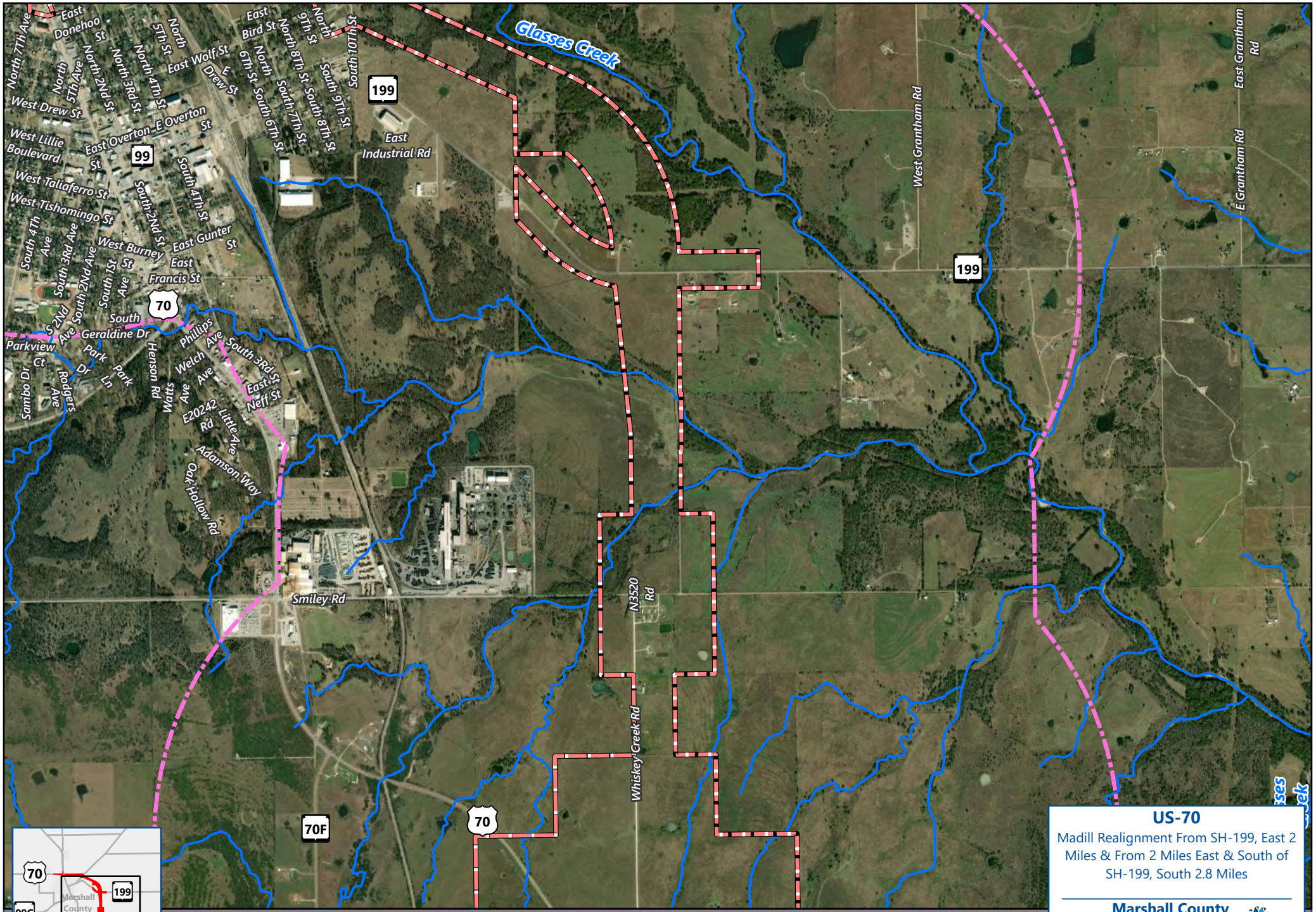

US-70

Madill Realignment From SH-199, East 2 Miles & From 2 Miles East & South of SH-199, South 2.8 Miles

Marshall County

JP No. 18835(04) & (09)

OKLAHOMA Transportation

Figure 4b: 1 Mile Buffer

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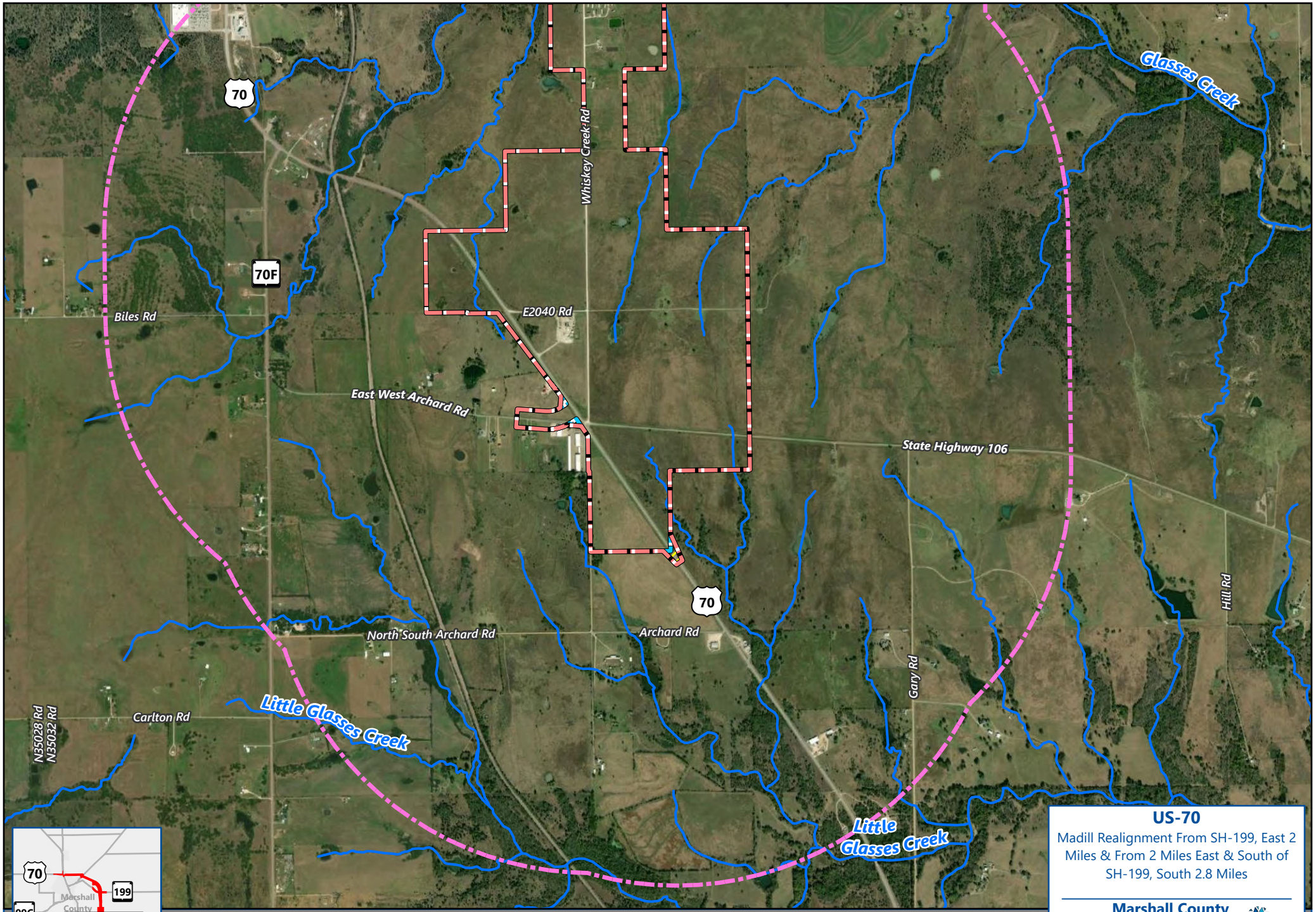

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Madill Realignment From SH-199, East 2 Miles & From 2 Miles East & South of SH-199, South 2.8 Miles

Marshall County

JP No. 18835(04) & (09)

OKLAHOMA Transportation

Figure 4c: 1 Mile Buffer

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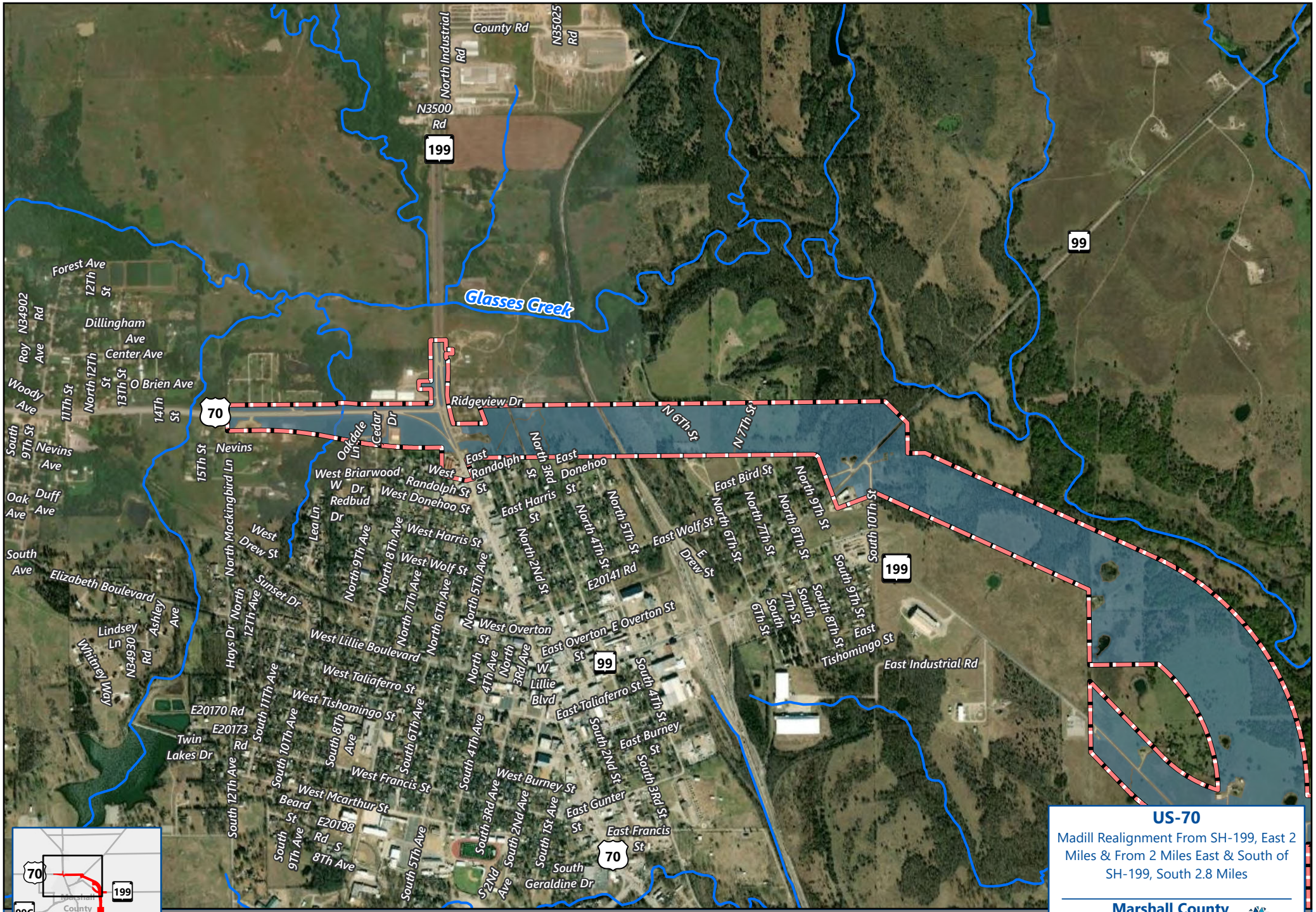

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Madill Realignment From SH-199, East 2 Miles & From 2 Miles East & South of SH-199, South 2.8 Miles

Marshall County

JP No. 18835(04) & (09)

OKLAHOMA Transportation

Figure 5a: ABB Habitat

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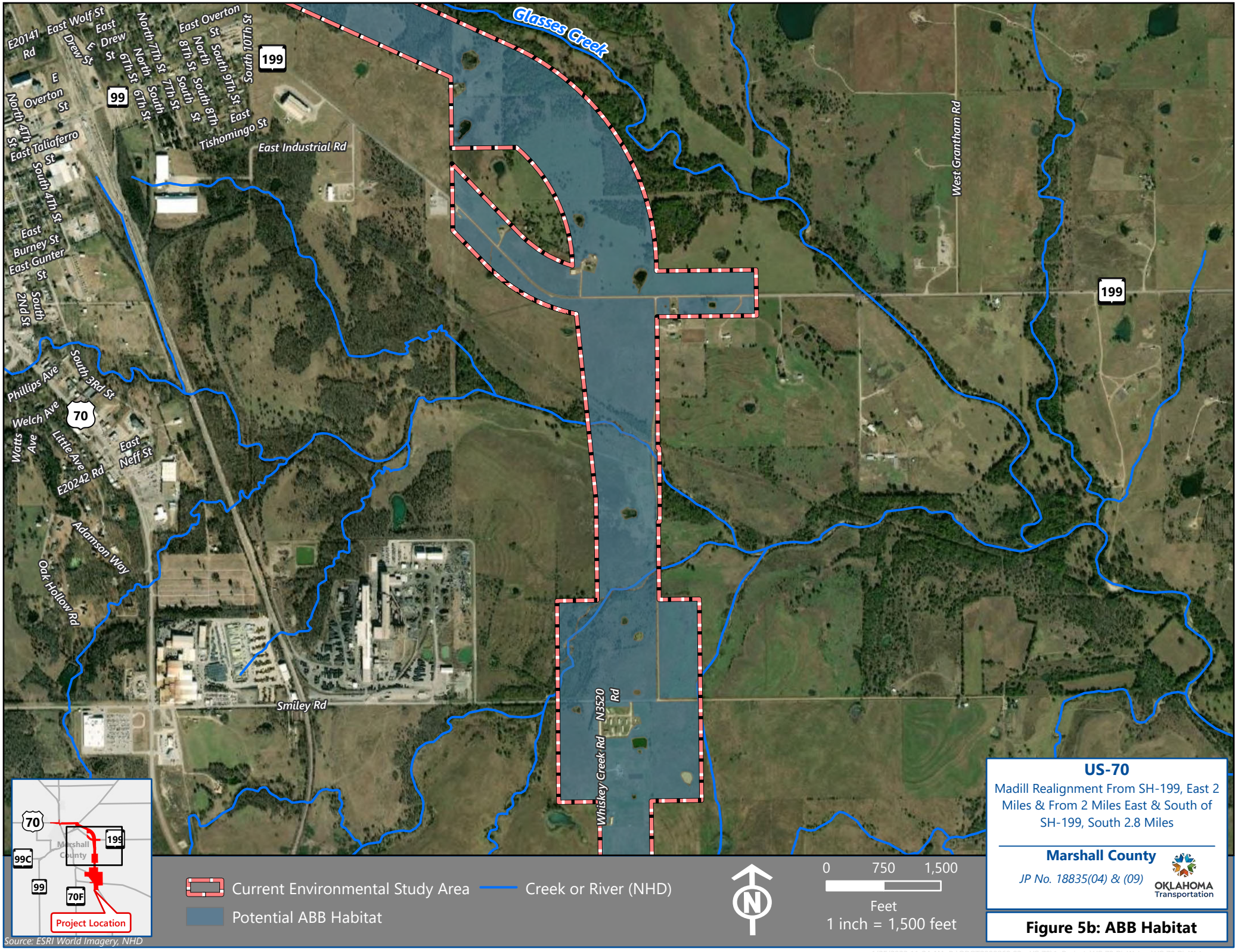

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Madill Realignment From SH-199, East 2 Miles & From 2 Miles East & South of SH-199, South 2.8 Miles

Marshall County

JP No. 18835(04) & (09)

OKLAHOMA Transportation

Figure 5b: ABB Habitat

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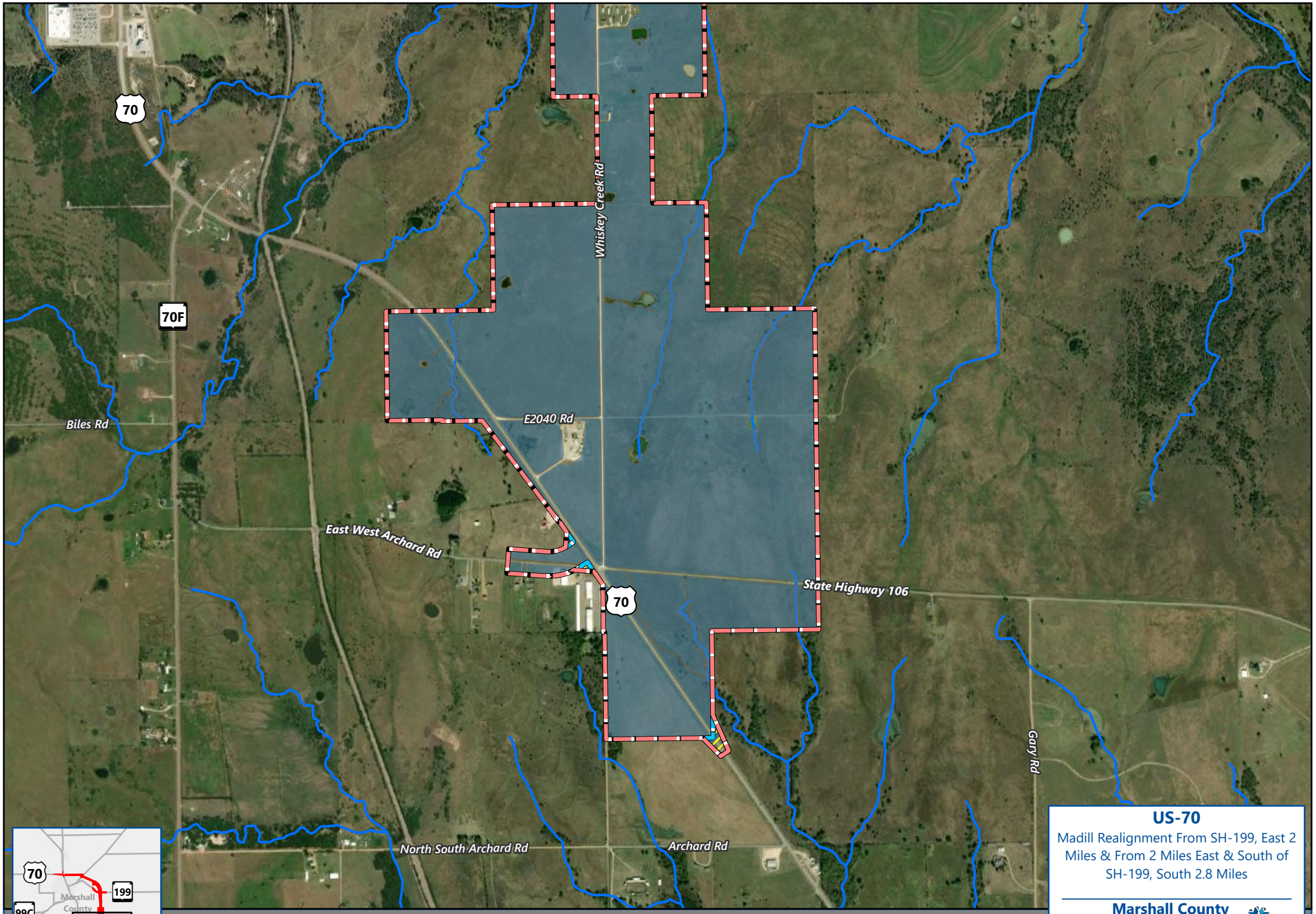

Source: ESRI World Imagery, NHD

US-70

Madill Realignment From SH-199, East 2 Miles & From 2 Miles East & South of SH-199, South 2.8 Miles

Marshall County

JP No. 18835(04) & (09)

OKLAHOMA Transportation

Figure 5c: ABB Habitat

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Source: ESRI World Imagery, NHD, FWHA

US-70

Madill Realignment From SH-199, East 2 Miles & From 2 Miles East & South of SH-199, South 2.8 Miles

Marshall County

JP No. 18835(04) & (09)

OKLAHOMA Transportation

Figure 6b: Culvert Locations

1/25/2022 11:36 AM, P:\ODOT2000869.03 - US 70\1_Projects\US 70 BioWaters\US 70 BioWaters.aprx

Source: ESRI World Imagery, NHD, FWHA

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Madill Realignment From SH-199, East 2 Miles & From 2 Miles East & South of SH-199, South 2.8 Miles

Marshall County

JP No. 18835(04) & (09)

OKLAHOMA Transportation

Figure 6c: Culvert Locations

1/25/2022 11:36 AM, P:\ODOT2000869.03 - US 70\1_Projects\US 70 BioWaters\US 70 BioWaters.aprx

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Madill Realignment From SH-199, East 2 Miles & From 2 Miles East & South of SH-199, South 2.8 Miles

Marshall County

JP No. 18835(04) & (09)

OKLAHOMA Transportation

Figure 6d: Culvert Locations

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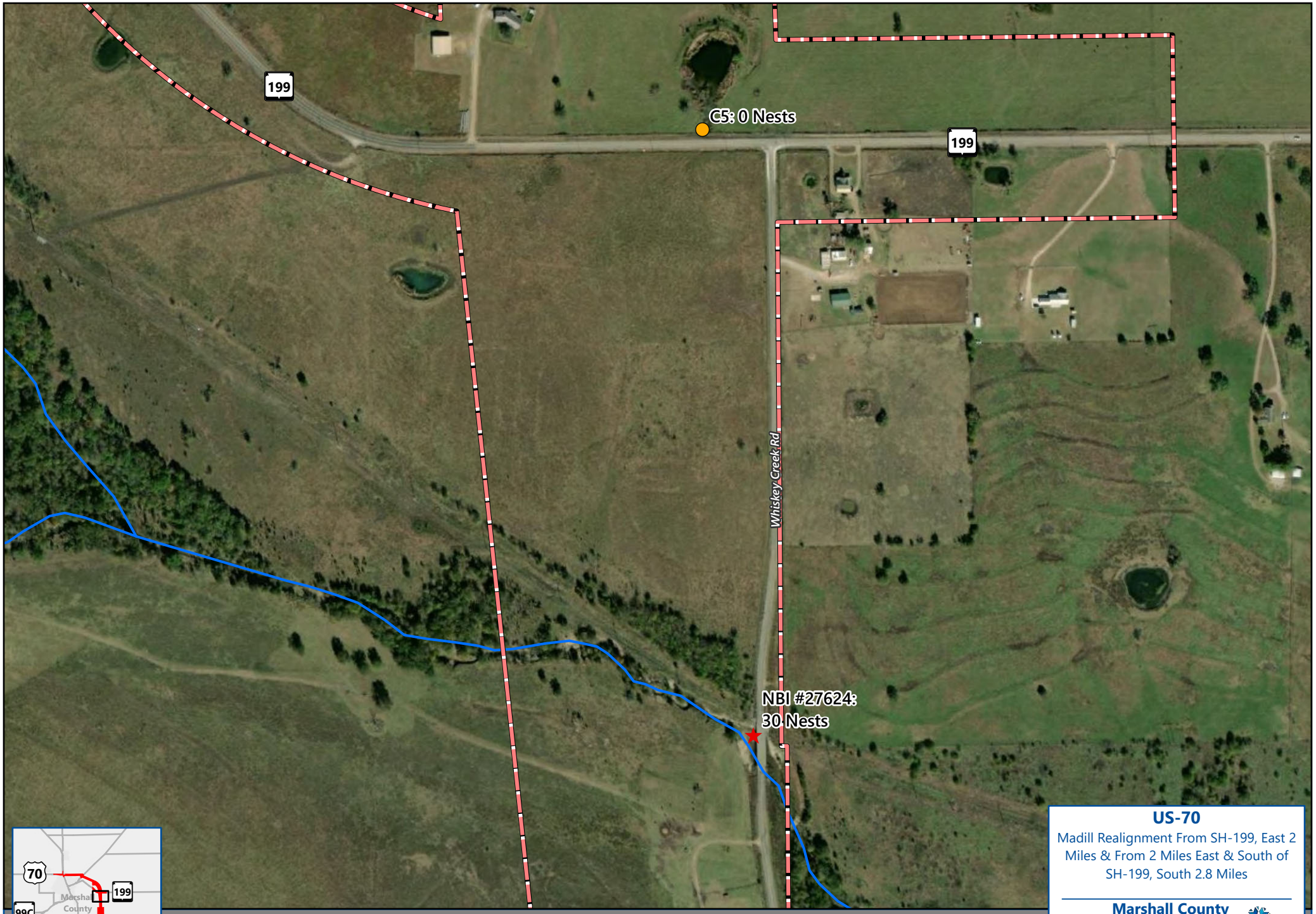

US-70

Madill Realignment From SH-199, East 2 Miles & From 2 Miles East & South of SH-199, South 2.8 Miles

Marshall County

JP No. 18835(04) & (09)

OKLAHOMA Transportation

Figure 6e: Culvert Locations

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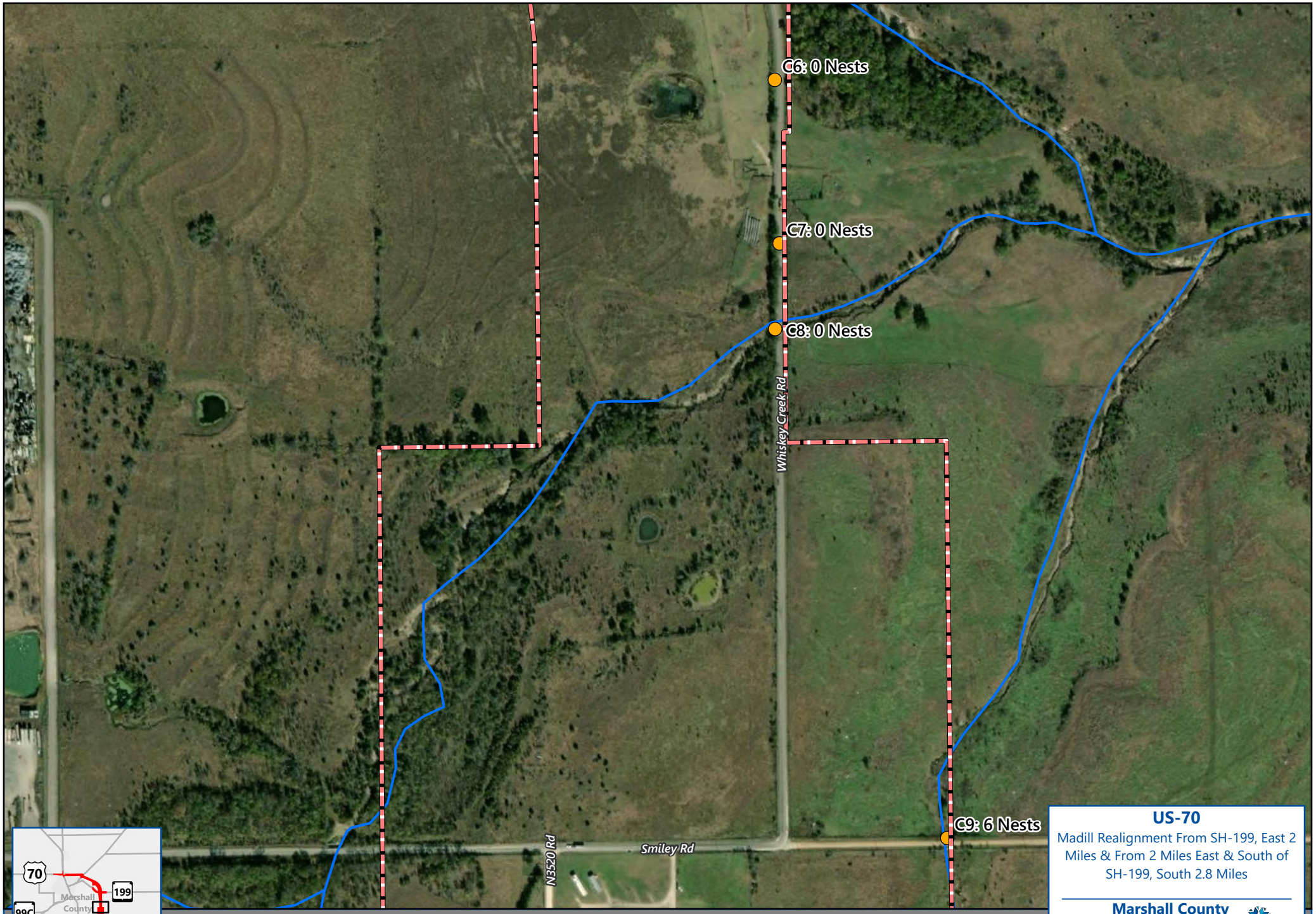

Source: ESRI World Imagery, NHD, FWHA

US-70

Madill Realignment From SH-199, East 2 Miles & From 2 Miles East & South of SH-199, South 2.8 Miles

Marshall County

JP No. 18835(04) & (09)

OKLAHOMA Transportation

Figure 6f: Culvert Locations

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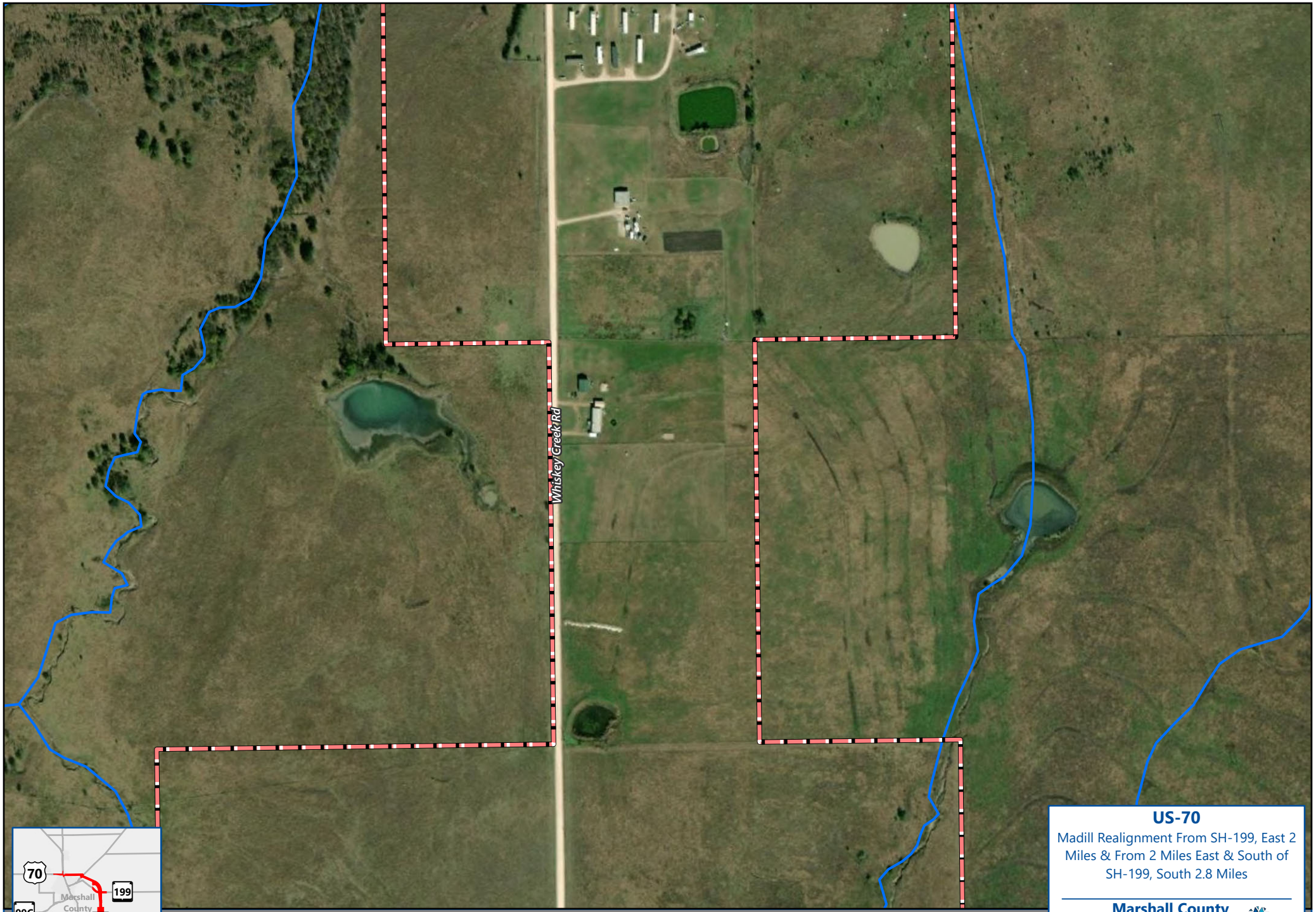

Source: ESRI World Imagery, NHD, FWHA

US-70

Madill Realignment From SH-199, East 2 Miles & From 2 Miles East & South of SH-199, South 2.8 Miles

Marshall County

JP No. 18835(04) & (09)

OKLAHOMA Transportation

Figure 6g: Culvert Locations

1/25/2022 11:36 AM, P:\ODOT2000869.03 - US 70\1_Projects\US 70 BioWaters\US 70 BioWaters.aprx

Source: ESRI World Imagery, NHD, FWHA

US-70

Madill Realignment From SH-199, East 2 Miles & From 2 Miles East & South of SH-199, South 2.8 Miles

Marshall County

JP No. 18835(04) & (09)

OKLAHOMA Transportation

Figure 6h: Culvert Locations

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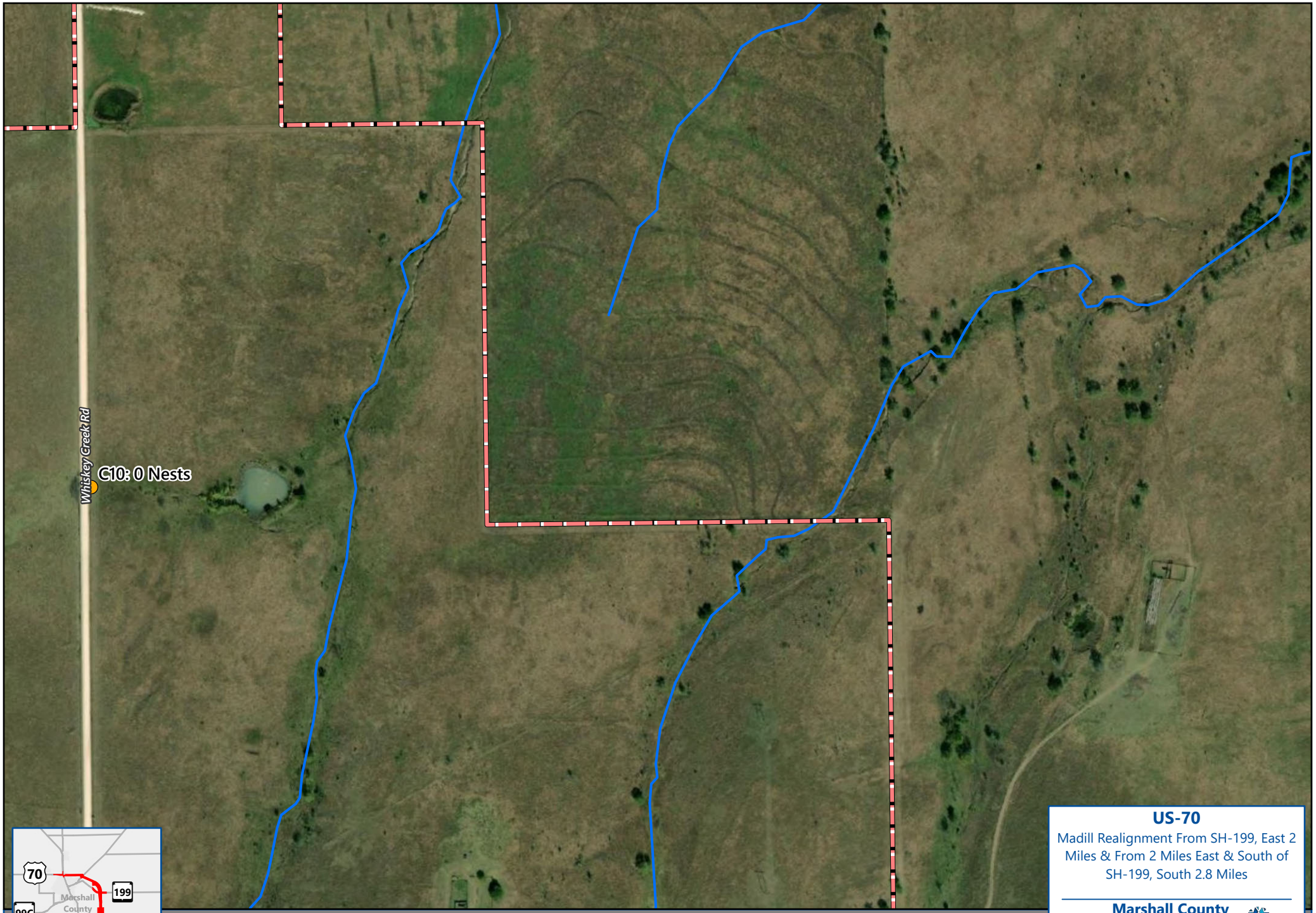

US-70

Madill Realignment From SH-199, East 2 Miles & From 2 Miles East & South of SH-199, South 2.8 Miles

Marshall County

JP No. 18835(04) & (09)

OKLAHOMA Transportation

Figure 6i: Culvert Locations

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US-70

Madill Realignment From SH-199, East 2 Miles & From 2 Miles East & South of SH-199, South 2.8 Miles

Marshall County

JP No. 18835(04) & (09)

OKLAHOMA Transportation

Figure 6j: Culvert Locations

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US-70

Madill Realignment From SH-199, East 2 Miles & From 2 Miles East & South of SH-199, South 2.8 Miles

Marshall County

JP No. 18835(04) & (09)

OKLAHOMA Transportation

Figure 6k: Culvert Locations

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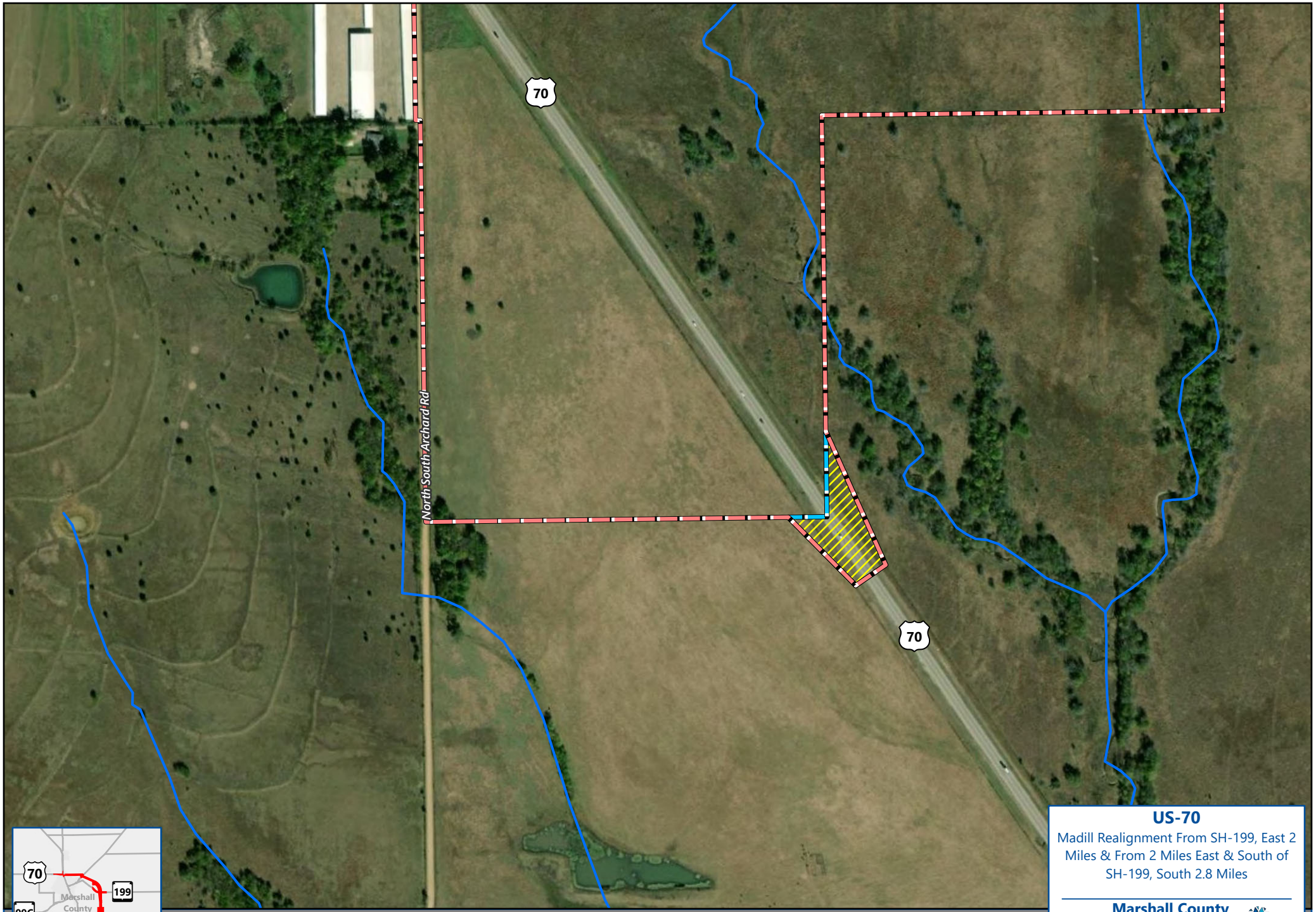

US-70

Madill Realignment From SH-199, East 2 Miles & From 2 Miles East & South of SH-199, South 2.8 Miles

Marshall County

JP No. 18835(04) & (09)

OKLAHOMA Transportation

Figure 6I: Culvert Locations

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1/25/2022 11:37 AM, P:\ODOT2000869.03 - US 70\1_Projects\US 70 BioWaters\US 70 BioWaters.aprx

Source: ESRI World Imagery, NHD

US-70

Madill Realignment From SH-199, East 2 Miles & From 2 Miles East & South of SH-199, South 2.8 Miles

Marshall County

JP No. 18835(04) & (09)

OKLAHOMA Transportation

Figure 7b: Photo Locations

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US-70

Madill Realignment From SH-199, East 2 Miles & From 2 Miles East & South of SH-199, South 2.8 Miles

Marshall County

JP No. 18835(04) & (09)

OKLAHOMA Transportation

Figure 7c: Photo Locations

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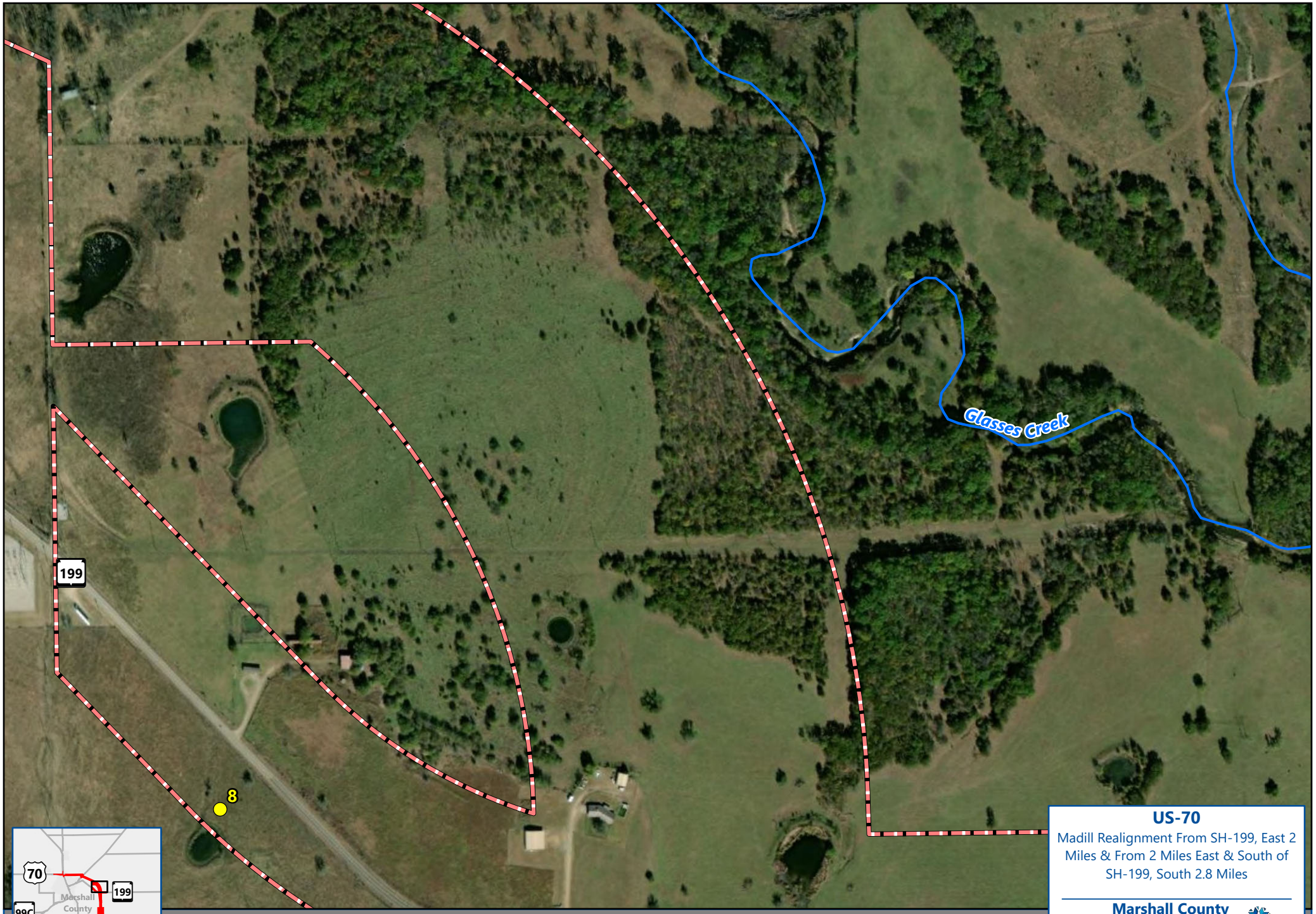


US-70

Madill Realignment From SH-199, East 2 Miles & From 2 Miles East & South of SH-199, South 2.8 Miles

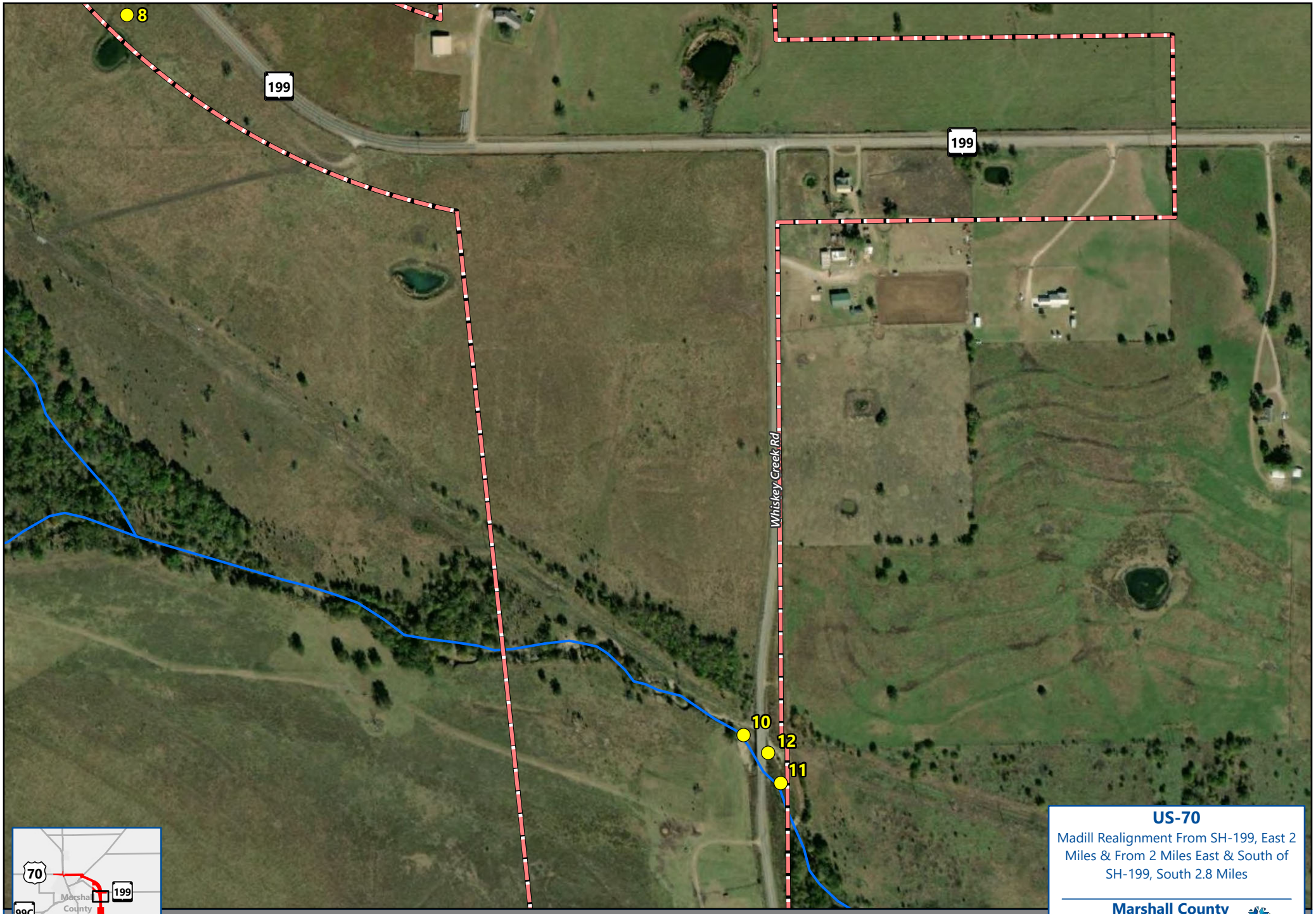
Marshall County

JP No. 18835(04) & (09)

OKLAHOMA Transportation

Figure 7d: Photo Locations

1/25/2022 11:37 AM, P:\ODOT2000869.03 - US 70\1_Projects\US 70 BioWaters\US 70 BioWaters.aprx



US-70

Madill Realignment From SH-199, East 2 Miles & From 2 Miles East & South of SH-199, South 2.8 Miles

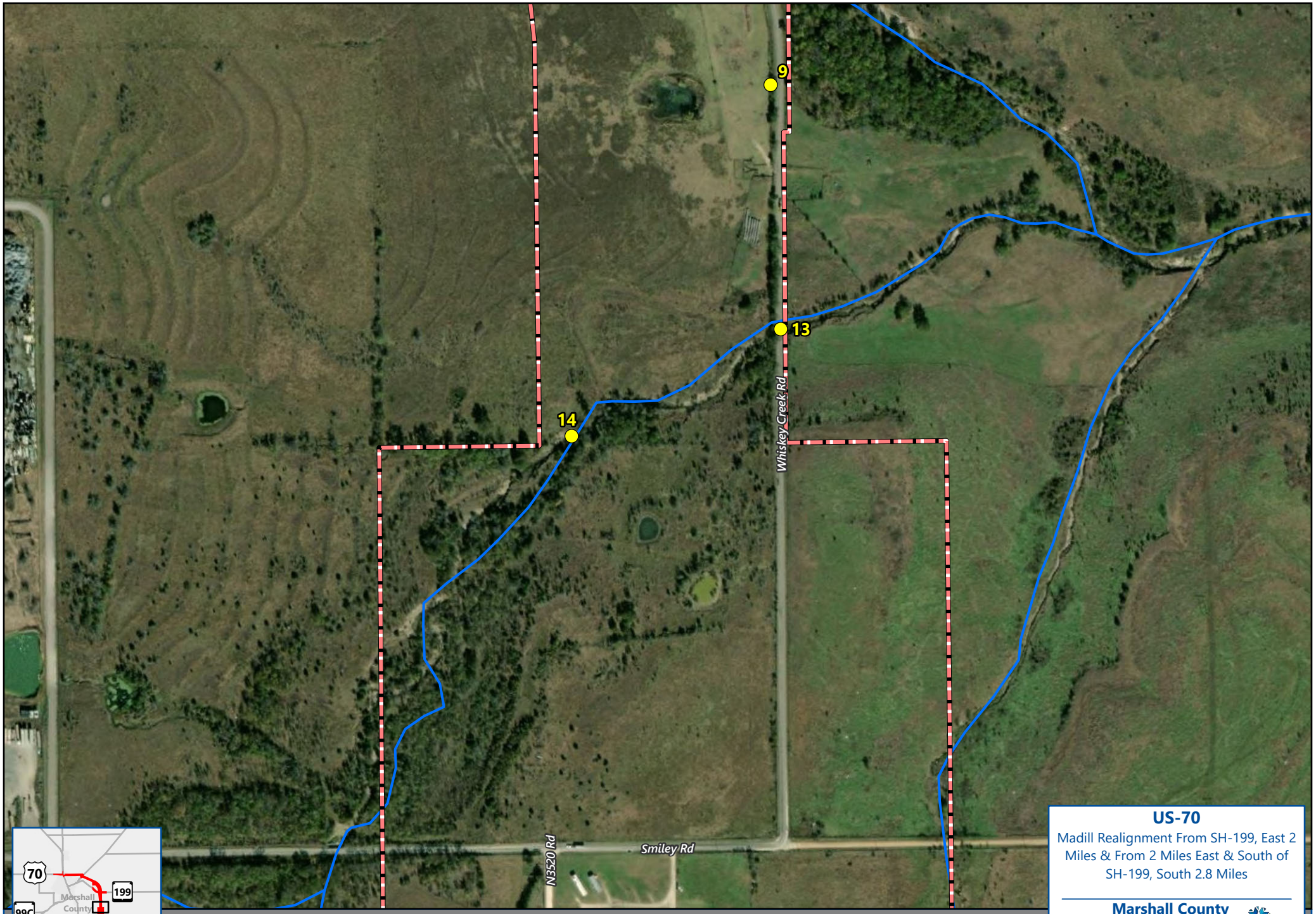
Marshall County

JP No. 18835(04) & (09)

OKLAHOMA Transportation

Figure 7e: Photo Locations

1/25/2022 11:37 AM, P:\ODOT2000869.03 - US 70\1_Projects\US 70 BioWaters\US 70 BioWaters.aprx



US-70

Madill Realignment From SH-199, East 2 Miles & From 2 Miles East & South of SH-199, South 2.8 Miles

Marshall County

JP No. 18835(04) & (09)

OKLAHOMA Transportation

Figure 7f: Photo Locations

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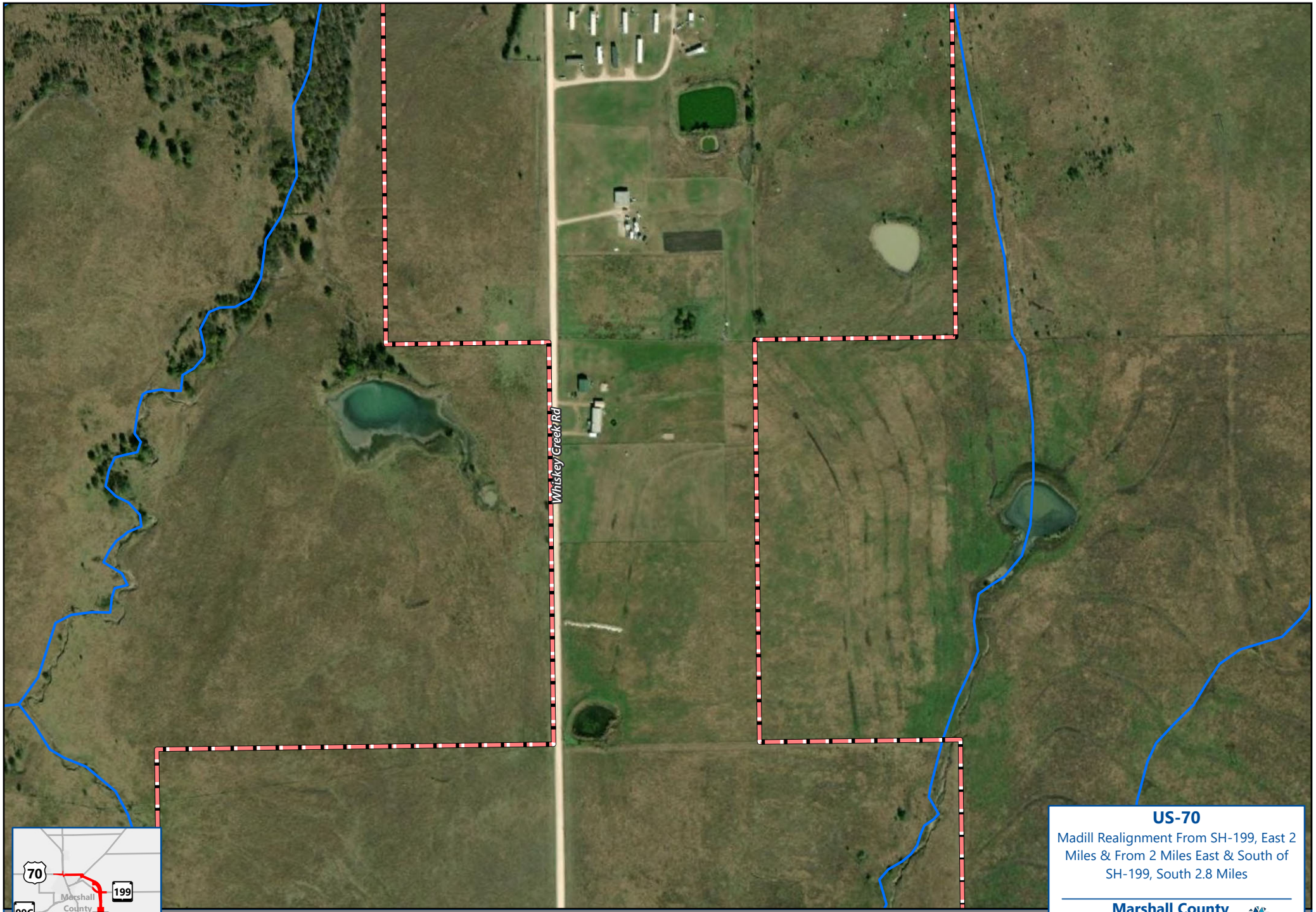
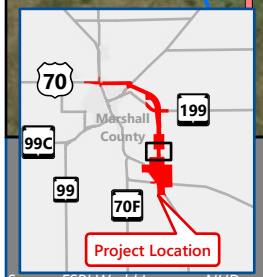




Current Environmental Study Area
Photo Location
Creek or River (NHD)

0 200 400
Feet
1 inch = 400 feet

Source: ESRI World Imagery, NHD

US-70

Madill Realignment From SH-199, East 2 Miles & From 2 Miles East & South of SH-199, South 2.8 Miles

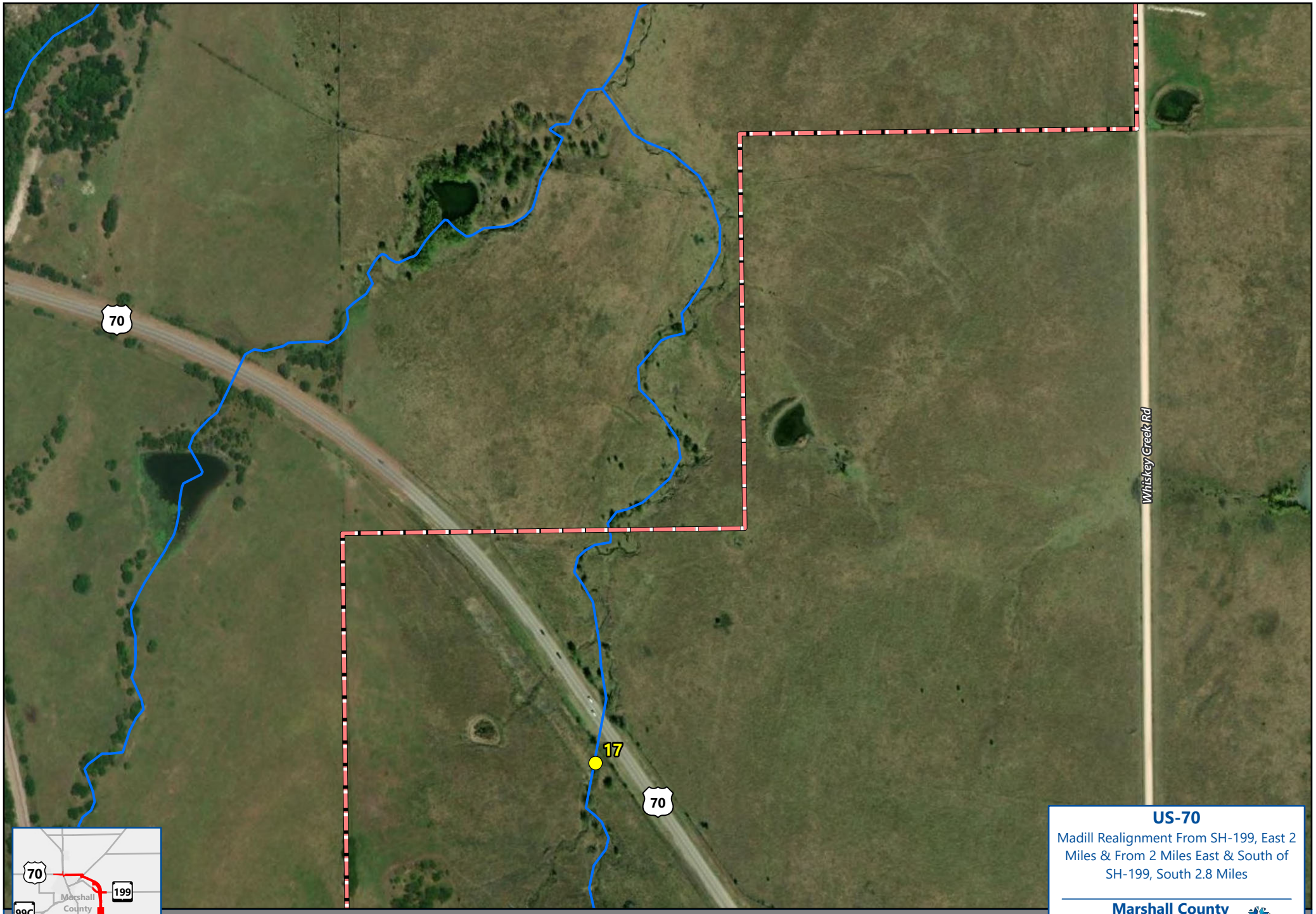
Marshall County

JP No. 18835(04) & (09)

OKLAHOMA Transportation

Figure 7g: Photo Locations

1/25/2022 11:37 AM, P:\ODOT2000869.03 - US 70\1_Projects\US 70 BioWaters\US 70 BioWaters.aprx



US-70

Madill Realignment From SH-199, East 2 Miles & From 2 Miles East & South of SH-199, South 2.8 Miles

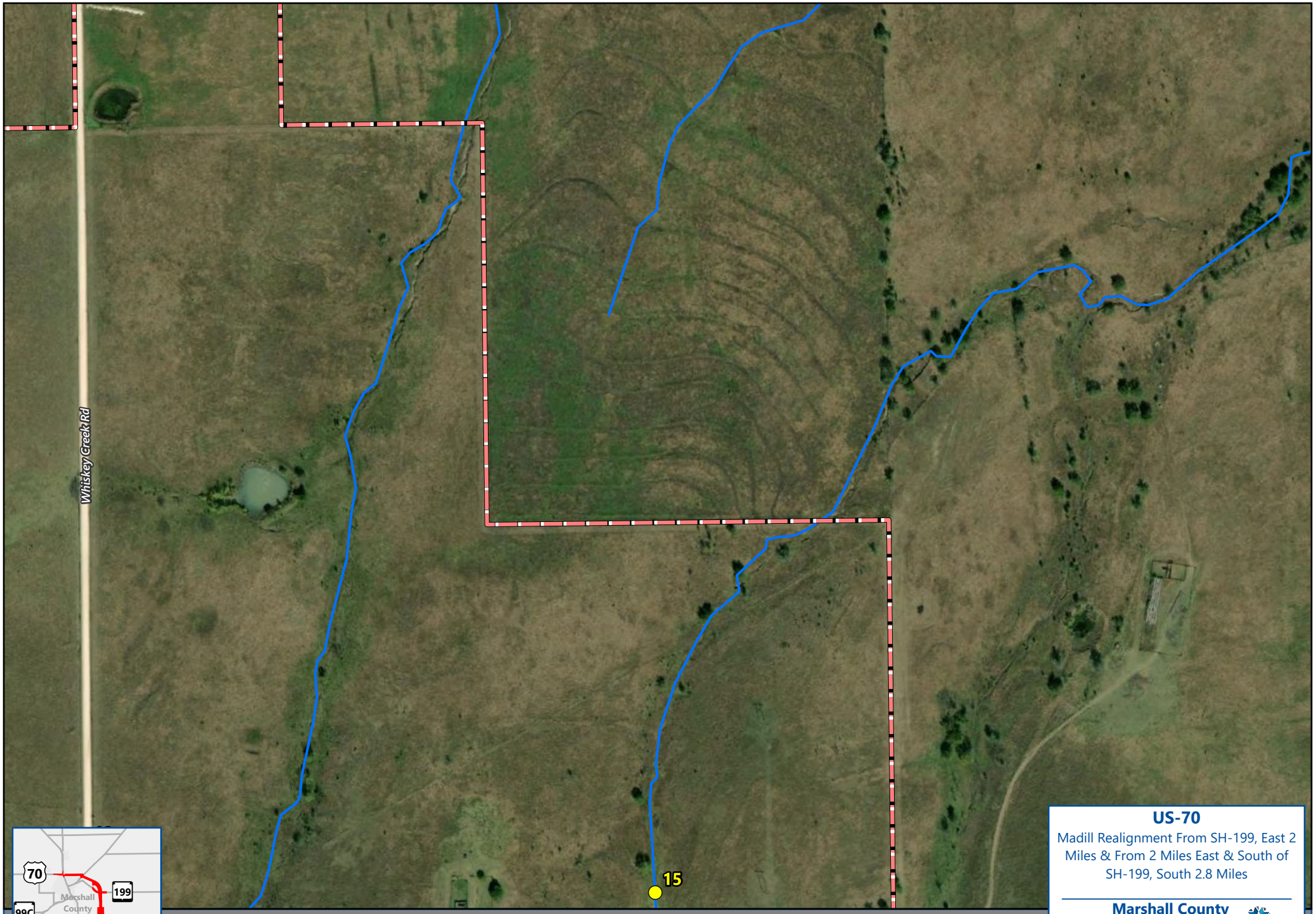
Marshall County

JP No. 18835(04) & (09)

OKLAHOMA Transportation

Figure 7h: Photo Locations

1/25/2022 11:37 AM, P:\ODOT2000869.03 - US 70\1_Projects\US 70 BioWaters\US 70 BioWaters.aprx



US-70

Madill Realignment From SH-199, East 2 Miles & From 2 Miles East & South of SH-199, South 2.8 Miles

Marshall County

JP No. 18835(04) & (09)

OKLAHOMA Transportation

Figure 7i: Photo Locations

1/25/2022 11:38 AM, P:\ODOT2000869.03 - US 70\1_Projects\US 70 BioWaters\US 70 BioWaters.aprx

Source: ESRI World Imagery, NHD

US-70

Madill Realignment From SH-199, East 2 Miles & From 2 Miles East & South of SH-199, South 2.8 Miles

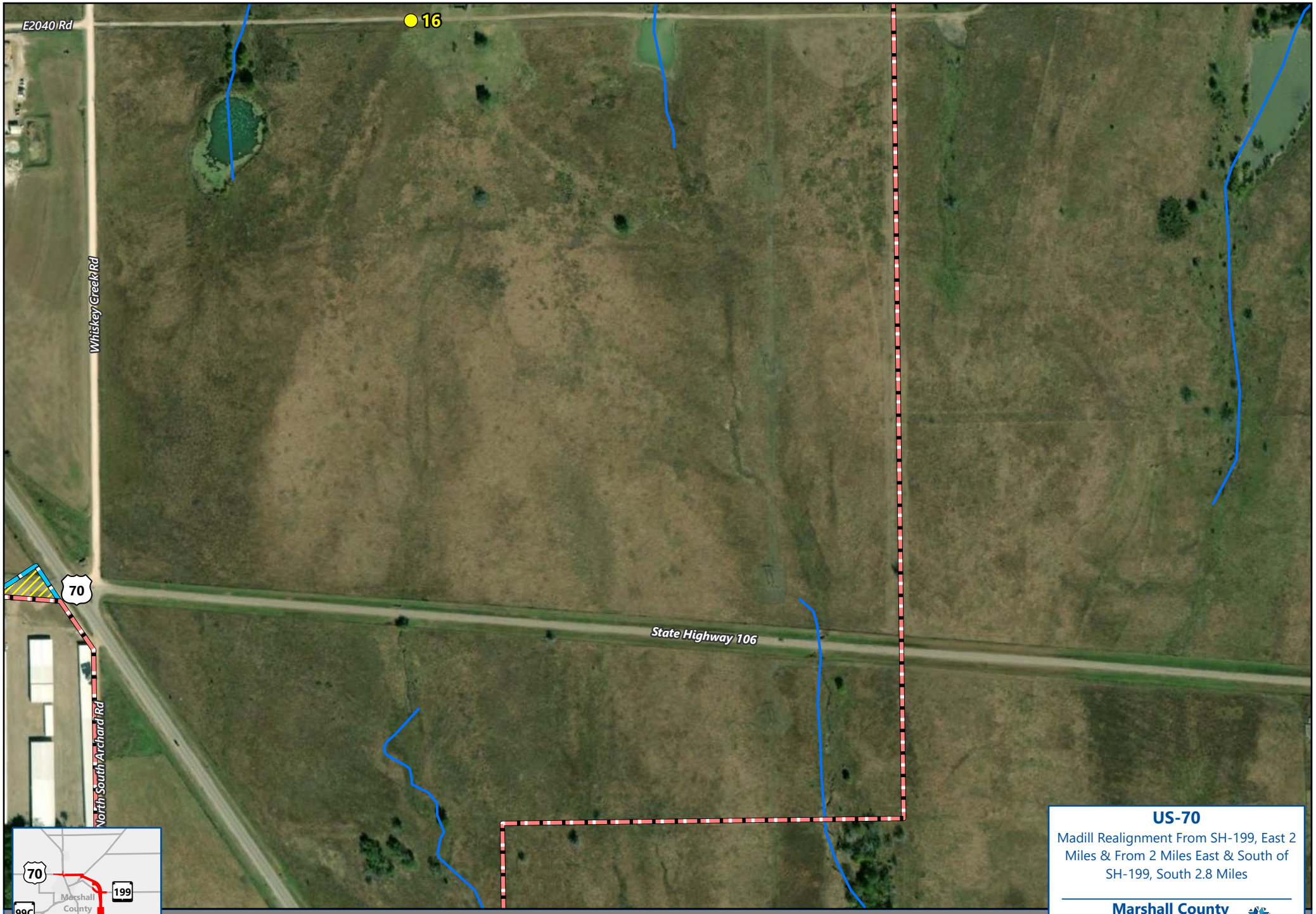
Marshall County

JP No. 18835(04) & (09)

OKLAHOMA Transportation

Figure 7j: Photo Locations

1/25/2022 11:38 AM, P:\ODOT2000869.03 - US 70\1_Projects\US 70 BioWaters\US 70 BioWaters.aprx



US-70

Madill Realignment From SH-199, East 2 Miles & From 2 Miles East & South of SH-199, South 2.8 Miles

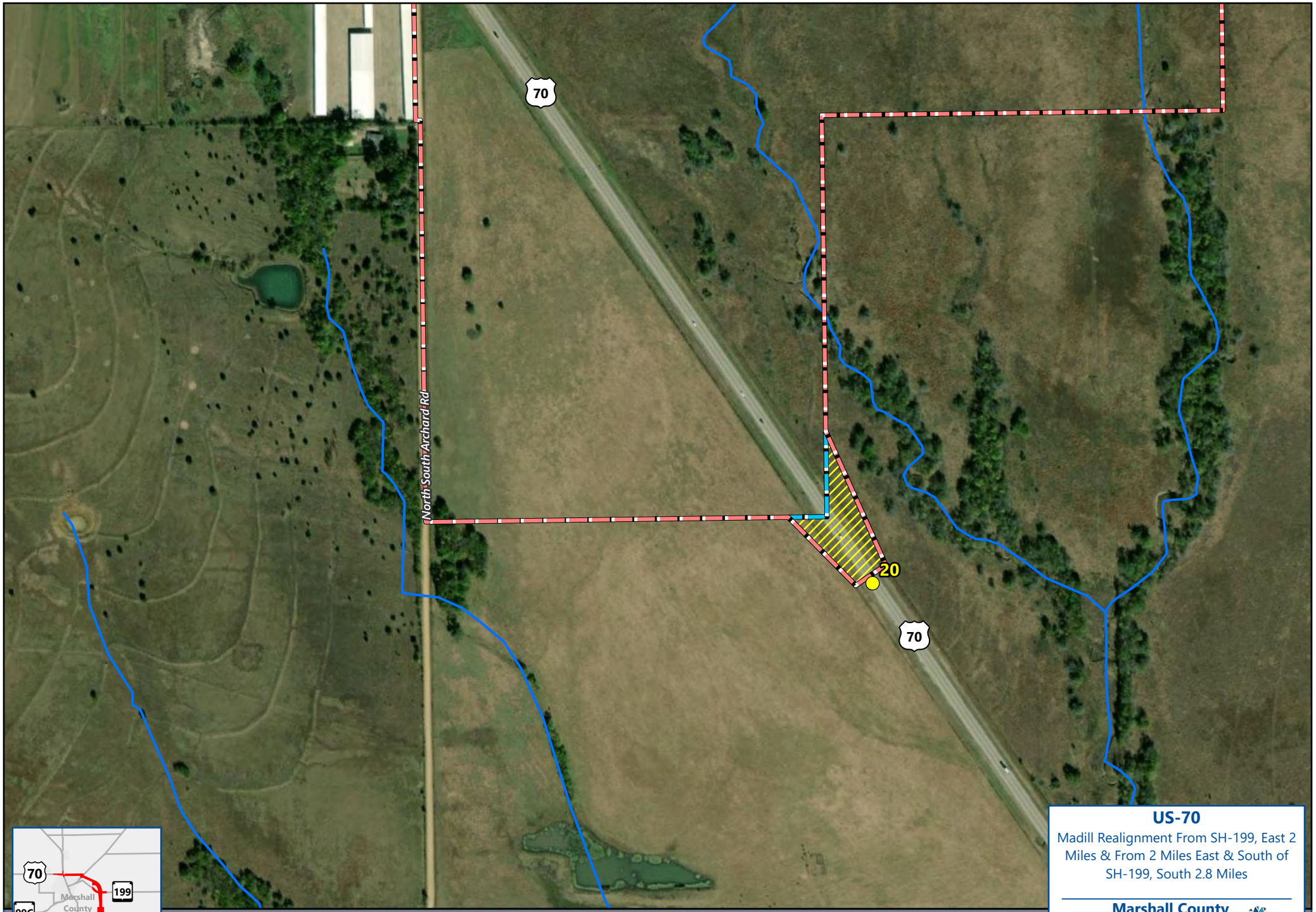
Marshall County

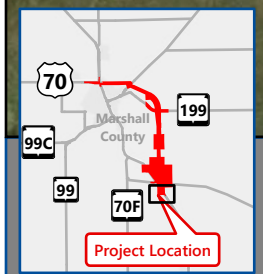
JP No. 18835(04) & (09)

OKLAHOMA Transportation

Figure 7k: Photo Locations

1/25/2022 11:38 AM, P:\ODOT2000869.03 - US 70\1_Projects\US 70 BioWaters\US 70 BioWaters.aprx





Current Environmental Study Area
Previous Environmental Study Area
Additions to Study Area
Creek or River (NHD)
Photo Location

0 200 400
Feet
1 inch = 400 feet

Source: ESRI World Imagery, NHD

US-70

Madill Realignment From SH-199, East 2 Miles & From 2 Miles East & South of SH-199, South 2.8 Miles

Marshall County

JP No. 18835(04) & (09)

OKLAHOMA Transportation

Figure 7l: Photo Locations

1/25/2022 11:38 AM, P:\ODOT2000869.03 - US 70\1_Projects\US 70 BioWaters\US 70 BioWaters.aprx

Photo 1 – Typical view of the existing US-70 in Madill. View from northwest project terminus, facing west.

Photo 2 – Typical view of the ROW for existing US-70 in Madill. View from northwest project terminus, facing east.

Photo 3 – Typical riparian habitat found along tributaries and drainage areas.

Photo 4 – Typical riparian habitat found along tributaries and drainages.

Photo 5 – Upland drainage area in the northwestern study footprint. East side of North 3rd Street, facing east.

Photo 6 – Unnamed tributary in the northwestern project area. East side of North 3rd Street, facing north. Tributary collects runoff from upland drainage area. Standing water was present in some of the tributaries transecting the study footprint.

Photo 7 – Typical view of wooded area along Highway 377 ROW, facing east.

Photo 8 – Pond in northcentral project area. South of SH-199, northwest of Whiskey Creek Road, facing south. Several ponds in the project area are isolated and collect upland drainage.

Photo 9 – Within the study footprint, bridges and culverts (such as this one) were inspected for swallows nests.

Photo 10 – Unnamed tributary in the central project area. View from bridge on Whiskey Creek Road, facing west.

Photo 11 – Bridge at Whiskey Creek Road with unnamed tributary in the central project area, facing west.

Photo 12 – Cliff swallow nests under bridge on Whiskey Creek Road. All nests were unoccupied at the time of the survey.

Photo 13 – Field Site 6: Unnamed tributary in the central project area. View from bridge on Whiskey Creek Road, facing west.

Photo 14 – Riparian habitat along unnamed tributary in the central project area. West of Whiskey Creek Road, facing southwest.

Photo 15 – Typical swale found in project area, facing north from Pasture Road.

Photo 16 – Typical view of upland pasture in project area. East of Whiskey Creek Road, facing northwest.

Photo 17 –Unnamed tributary in southwest project area. Southwest of US-70, west of Whiskey Creek Road, facing south.

Photo 18 – Typical view along Whiskey Creek Road in the project area. Common habitat in the vicinity includes pastures and fields with isolated ponds and occassional riparian corridors.

Photo 19 – Typical view along Whiskey Creek Road in the project area. Common habitat in the vicinity includes pastures and fields with isolated ponds and occassional riparian corridors.

Photo 19 – Typical view along Whiskey Creek Road in the project area. Common habitat in the vicinity includes pastures and fields with isolated ponds and occassional riparian corridors.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Oklahoma Ecological Services Field Office
9014 East 21st Street
Tulsa, OK 74129-1428
Phone: (918) 581-7458 Fax: (918) 581-7467
http://www.fws.gov/southwest/es/Oklahoma/

In Reply Refer To: January 05, 2022
Consultation Code: 02EKOK00-2022-SLI-0672
Event Code: 02EKOK00-2022-E-02486
Project Name: US-70 Realignment, Marshall Co, OK JP 18835(04)(09)

Subject: List of threatened and endangered species that may occur in your proposed project location 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.

Attachment(s):

- Official Species List

- USFWS National Wildlife Refuges and Fish Hatcheries
- Migratory Birds
- Wetlands

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

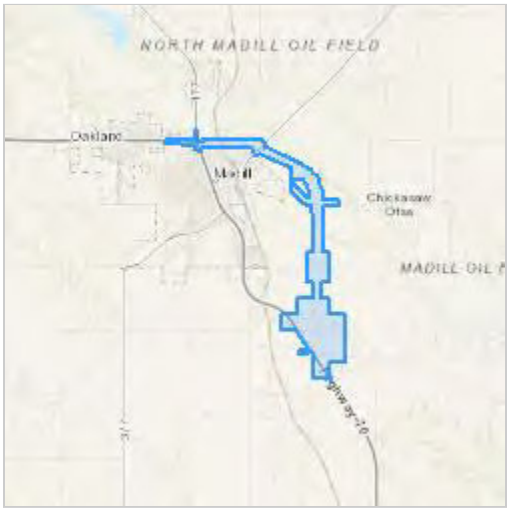
Oklahoma Ecological Services Field Office
9014 East 21st Street
Tulsa, OK 74129-1428
(918) 581-7458

Project Summary

Consultation Code: 02EKOK00-2022-SLI-0672
Event Code: Some(02EKOK00-2022-E-02486)
Project Name: US-70 Realignment, Marshall Co, OK JP 18835(04)(09)
Project Type: TRANSPORTATION
Project Description: Grade, Drain, Bridge, and Surface on US-70; Realignment of US-70 from SH-99 east 2.0 miles – J/P 18835(04); AND Realignment of US-70 from 2.0 miles east and south of SH-199 south 2.8 miles – J/P 18835(09)

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@34.0735095,-96.74235286573902,14z



Counties: Marshall County, Oklahoma

Endangered Species Act Species

There is a total of 5 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Birds

NAME	STATUS
Piping Plover *Charadrius melodus* Population: [Atlantic Coast and Northern Great Plains populations] - Wherever found, except those areas where listed as endangered. There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/6039	Threatened
Red Knot *Calidris canutus rufa* There is **proposed** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/1864	Threatened
Whooping Crane *Grus americana* Population: Wherever found, except where listed as an experimental population There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/758	Endangered

Insects

NAME	STATUS
American Burying Beetle *Nicrophorus americanus*	Threatened
Population: Wherever found, except where listed as an experimental population No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/66	
Monarch Butterfly *Danaus plexippus*	Candidate
No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

Migratory Birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

---

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Sep 1 to Jul 31

Probability Of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the

FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

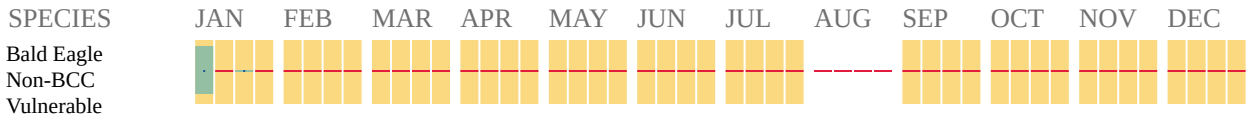
1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

Breeding Season (■)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



Additional information can be found using the following links:

- Birds of Conservation Concern http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php
- Measures for avoiding and minimizing impacts to birds http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php
- Nationwide conservation measures for birds http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf

Migratory Birds FAQ

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the AKN Phenology Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets .

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?
To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The Cornell Lab of Ornithology All About Birds Bird Guide, or (if you are unsuccessful in locating the bird of interest there), the Cornell Lab of Ornithology Neotropical Birds guide. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?
Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects
For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?
If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report
The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Wetlands

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

WETLAND INFORMATION WAS NOT AVAILABLE WHEN THIS SPECIES LIST WAS GENERATED. PLEASE VISIT HTTPS://WWW.FWS.GOV/WETLANDS/DATA/MAPPER.HTML OR CONTACT THE FIELD OFFICE FOR FURTHER INFORMATION.

OBS Ref. 2022-011-BUS-CPY

Dear Ms. Cross, Jan. 10, 2022

We have reviewed occurrence information on federal and state threatened, endangered or candidate species, as well as non-regulatory rare species and ecological systems of importance currently in the Oklahoma Natural Heritage Inventory database for the following location you provided:

Sec. 1, 2, 11, and 12-T6S-R5E and Sec. 21, 22, 23, 25, 26, 27, 28, 35, and 36-T5S-R5E. Marshall County

We found 1 occurrence(s) of relevant species within the vicinity of the project location as described.

Species Name	Common Name	Federal Status
Nicrophorus americanus	**American burying beetle**	**Threatened**
County	***TRS***	***Count***
Marshall	Sec. 13-T5S-R5E	1

Additionally, absence from our database does not preclude such species from occurring in the area.

If you have any questions about this response, please send me an email, or call us at the number given below.

Although not specific to your project, you may find the following links helpful.

ONHI, guide to ranking codes for endangered and threatened species:
http://www.oknaturalheritage.ou.edu/content/biodiversity-info/ranking-guide/

Information regarding the Oklahoma Natural Areas Registry:
https://okregistry.wordpress.com/

Todd Fagin
Oklahoma Natural Heritage Inventory
(405) 325-4700
tfagin@ou.edu

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Oklahoma Ecological Services Field Office
9014 East 21st Street
Tulsa, OK 74129-1428
Phone: (918) 581-7458 Fax: (918) 581-7467
http://www.fws.gov/southwest/es/Oklahoma/

In Reply Refer To: April 06, 2022
Project Code: 2022-0001717
Project Name: US-70 Realignment, Marshall Co, OK JP 18835(04)(09)

Subject: List of threatened and endangered species that may occur in your proposed project location 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

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see https://www.fws.gov/birds/policies-and-regulations.php.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures see https://www.fws.gov/birds/bird-enthusiasts/threats-to-birds.php.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/birds/policies-and-regulations/executive-orders/e0-13186.php.

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 Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Migratory Birds
- Wetlands

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Oklahoma Ecological Services Field Office
9014 East 21st Street
Tulsa, OK 74129-1428
(918) 581-7458

Project Summary

Project Code: 2022-0001717
Event Code: None
Project Name: US-70 Realignment, Marshall Co, OK JP 18835(04)(09)
Project Type: Road/Hwy - New Construction
Project Description: Grade, Drain, Bridge, and Surface on US-70; Realignment of US-70 from SH-99 east 2.0 miles – J/P 18835(04); AND Realignment of US-70 from 2.0 miles east and south of SH-199 south 2.8 miles – J/P 18835(09)

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@34.0709027,-96.74236095039385,14z

Counties: Marshall County, Oklahoma

Endangered Species Act Species

There is a total of 5 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Birds

NAME	STATUS
Piping Plover *Charadrius melodus* Population: [Atlantic Coast and Northern Great Plains populations] - Wherever found, except those areas where listed as endangered. There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/6039	Threatened
Red Knot *Calidris canutus rufa* There is **proposed** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/1864	Threatened
Whooping Crane *Grus americana* Population: Wherever found, except where listed as an experimental population There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/758	Endangered

Insects

NAME	STATUS
American Burying Beetle *Nicrophorus americanus*	Threatened
Population: Wherever found, except where listed as an experimental population No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/66	
Monarch Butterfly *Danaus plexippus*	Candidate
No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

Migratory Birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

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1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Sep 1 to Jul 31

Probability Of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the

FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

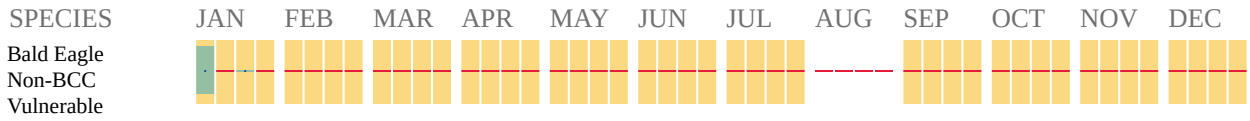
1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

Breeding Season (■)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



Additional information can be found using the following links:

- Birds of Conservation Concern http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php
- Measures for avoiding and minimizing impacts to birds http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php
- Nationwide conservation measures for birds http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf

Migratory Birds FAQ

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the AKN Phenology Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets .

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?
To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The Cornell Lab of Ornithology All About Birds Bird Guide, or (if you are unsuccessful in locating the bird of interest there), the Cornell Lab of Ornithology Neotropical Birds guide. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?
Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects
For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?
If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report
The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Wetlands

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

WETLAND INFORMATION WAS NOT AVAILABLE WHEN THIS SPECIES LIST WAS GENERATED. PLEASE VISIT HTTPS://WWW.FWS.GOV/WETLANDS/DATA/MAPPER.HTML OR CONTACT THE FIELD OFFICE FOR FURTHER INFORMATION.

WATERS AND WETLANDS EVALUATION REPORT

For

County	Marshall	JP Number	18835(04)(09)	Project Number	NHPP-022N(052) & J1-8835(009)
Road Number	US-70	Water Body Name		Various tributaries to Glasses Creek and Little Glasses Creek	
ROW Date	January 2022	Let Date	202	Project Length	5.6 miles
Project General Location		From SH-199, east 2.0 miles & from 2.0 miles east and south of SH-199, south 2.8 miles in Madill, OK			
Project Statement		Grade, Drain, Bridge, and Surface on US-70; Madill Realignment from SH-199 east 2.0 miles & from 2.0 miles east and south of SH-199, south 2.8 miles – J/P 18835(04)(09)			

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

Prepared by:

Biologist Name	Melissa Cross
Company/Agency Name	CP&Y, Inc.
Address	2000N Classen Blvd, Suite 1410
City, State Zip	Oklahoma City, OK

Report Date:	January 24, 2022
Field Date:	August 9-11, 2016, December 20, 2021

PROJECT OVERVIEW

Project Type (Choose one)	**Check √**
Bridge and Approaches or bridge widening/structure extension	
Grade, Drain, Surface and Bridge	X
Grade, Drain and Surface	
Asphalt Overlay Resurfacing	
Widen and Resurface existing lanes	
Pavement Reconstruction or 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 existing US-70 alignment lies on the north side of Madill where it intersects and merges with US-177/SH-199 before turning south through the town's commercial district. The highway then continues southeast toward Kingston. There are presently three signalized intersections and one yield intersection on US-70 within the project study area. The speed limit on the existing alignment ranges from 35 to 65 miles per hour and the route is classified as a principal arterial. The route shares designations for multiple highways throughout the study area, including US-177, US-377, SH-199, and SH-99.

The existing lane configurations within the environmental study area begins as a five-lane curbed section and then transitions to a two-lane undivided open section with shoulders and continues to the US-177/SH-199 intersection. After the intersection, it is primarily a three-lane undivided curb and gutter section with intermittent open sections and paved shoulders up to the second intersection with US-377/SH-99. This three-lane section has an exceptionally wide center turning lane and several instances of four striped lanes at intersections. The study footprint between the junction at US-177/SH-199 and the southern junction with US-377/SH-99 is highly commercialized with frequent driveways and only minimal curbing near side street intersections and businesses. Between the intersections with SH-99 and Smiley Road, the roadway is a uniform three-lane open section with minimal shoulders. Approximately 0.25 miles south of the intersection of US-70 and Smiley Road, the three-lane facility transitions to a two-lane undivided open section with 10-foot shoulders for the remainder of the project study area. With the proposed realignment of US-70, the existing US-70 facility will only be

disturbed at the beginning, near the intersection of US-177/SH-199 and at the end, near the intersection of Archard Road. The majority of the new alignment is through rural areas and construction will have limited impact to the driving public, limited generally to intersecting highways and county roads.

Overhead and underground power, water, sanitary sewer, telephone, fiber optic, and high-pressure gas line utilities exist throughout the environmental study area. The utilities are concentrated along the existing US-70 route and intersecting roadway alignments. Impacts to overhead power, water, and underground telephone lines will be unavoidable.

Description of **proposed** improvements **SPECIFIC TO THIS PROJECT**

The proposed alignment will utilize a five-lane curbed section to match existing conditions at the beginning of the corridor (existing US-70). These five lanes will transition to an open section and continue east beyond the intersection with US-377. South of this intersection, the ultimate design will transition to a four-lane divided highway with a 64-foot grassy median. In the interim, the westbound lanes of the four-lane ultimate will serve as a two-lane highway. The five-lane section is proposed to be built in its entirety in the interim and serve for the ultimate as well. This segment includes bridges over a BNSF railroad and 3rd Street as well as at-grade intersections with US-177 and US-377. The interim two-lane facility between US-377 and the end of the alignment will have a bridge over a tributary of Glasses Creek plus at-grade intersections at SH-199 and Archard Road. The ultimate design will incorporate grade-separated interchanges for the four-lane divided facility. This will include two bridges over SH-199, a bridge on EW2040 over US-70, and another bridge over a tributary of Glasses Creek. The design speeds for the proposed alignment ranges from 45 mph for the curbed five-lane, 55 mph for the open five-lane, and 65 mph for the ultimate four-lane and interim two-lane.

Approximately 450 acres of right-of-way (ROW) will be required for this project since the proposed alignment is mostly through undeveloped areas aside from connections to the existing alignment of US-70. Sixty-five (65) percent plans provide an estimate of approximately 214 acres needed to complete the ultimate four-lane segment with interchanges. Overhead and underground utilities exist throughout the study corridor and impacts to them will be unavoidable. These impacts will be concentrated near existing roadways. Minor impacts to streams and farm ponds will occur due to the proposed roadway and corresponding crossings.

The project was originally studied in 2016. In 2021, additional corner clips were added to the proposed project that were not originally evaluated in the 2016 field investigations. In addition, field studies were updated due to the age of the original studies.

Project Environmental Study Footprint

Project Location		Environmental Study Footprint	
Section Range & Township	Lat/Long (NAD 83)	Dimensions	Acreage
21-T5S-R5E, 22-T5S-R5E, 25-T5S-R5E, 26-T5S-R5E, 27-T5S-R5E, 28-T5S-R5E, 35-T5S-R5E, 36-T5S-R5E, 1-T6S-R5E, 11-T6S-R5E, 12-T6S, R5E, 2-T6S-R5E	Start – 34.0995°, -96.7846° End – 34.0455°, -96.7433°	5.6 miles long by variable width	1, 021

Environmental Study Footprint Soils (NRCS Soil Survey Map)

Map Unit Name	Percent Slope	Drainage Class	Hydric Rating		Description
			YES	NO	
3	1-3%	Moderately well drained		X	Burleson clay
5	0-1%	Moderately well drained		X	Counts loam
7	1-3%	Moderately well drained		X	Durant loam
10	3-5%	Well drained		X	Ferris clay, eroded
11	3-5%	Well drained		X	Ferris clay, severely eroded
12	5-12%	Well drained		X	Ferris-Tarrant complex
13	0-1%	Well drained		X	Frioton silty clay loam, occasionally flooded
15	2-5%	Well drained		X	Heiden clay
16	2-5%	Well drained		X	Heiden stony clay
20	1-3%	Well drained		X	Konsil fine sandy loam
21	1-5%	Well drained		X	Konsil fine sandy loam, eroded
22	1-5%	Well drained		X	Konsil fine sandy loam, gullied
23	3-5%	Well drained		X	Konsil fine sandy loam
26	3-5%	Well drained		X	Purves clay

Map Unit Name	Percent Slope	Drainage Class	Hydric Rating		Description
			YES	NO	
27	2-15%	Well drained		X	Tarrant very cobbly clay
29	0-1%	Moderately well drained		X	Wilson loam

Environmental Study Footprint General Description and Vegetation Present

The environmental study area is mostly undeveloped, except for roadways, a railroad, scattered houses and farms, and commercial businesses in the city of Madill. There are numerous open pastures used for grazing livestock, some wooded areas along fence lines and riparian corridors at the streams, and 21 stock ponds and wetlands.

The open grasslands/pastures are comprised of typical upland species of grasses and forbs, often with shrub and tree species along the edges and in clumps. Species observed in these areas include annual marsh elder (*Iva annua*), honey locust (*Gleditsia triacanthos*), hackberry (*Celtis occidentalis*), western ragweed (*Ambrosia psilostachya*), Osage orange (*Maclura pomifera*), American persimmon (*Diospyros virginiana*), Bermuda grass (*Cynodon dactylon*), sunflower (*Helianthus annua*), beggars tick (*Torilis arvensis*), doveweed (*Croton setigerus*), post oak (*Quercus stellata*), greenbriar (*Smilax* sp.), eastern redcedar (*Juniperus virginiana*), ryegrass (*Lolium* sp.), and honeysuckle (*Lonicera japonica*).

The riparian corridors in the environmental study area include American elm (*Ulmus americana*), woodland creek oats (*Chasmanthium latifolium*), Virginia creeper (*Parthenocissus quinquefolia*), black hickory (*Carya texana*), deciduous yaupon (*Ilex decidua*), red oak (*Quercus rubra*), sycamore (*Platanus occidentalis*), eastern redcedar, greenbriar, poison ivy (*Toxicodendron radicans*), grape (*Vitis* sp.), willow oak (*Quercus phellos*), mimosa (*Albizia julibrissin*), black willow (*Salix nigra*), giant ragweed (*Ambrosia trifida*), cottonwood, hackberry, and Johnson grass (*Sorghum halepense*). The streams within the environmental study area appear to be intermittent. During the field survey in August 2016, no flowing water was observed, but small pools of water were observed in some of the tributaries.

There are 19 stock ponds (7 of which have a wetland fringe around the edges of the pond) and two wetlands (1 forested and 1 emergent) in the environmental study area. Wetland vegetative species observed in these areas include green ash (*Fraxinus pennsylvanica*), Osage orange, black willow, creeping burhead (*Echinodorus cordifolius*), sand spikerush (*Eleocharis montevidensis*), swamp smartweed (*Polygonum hydropiperoides*), cocklebur (*Xanthium strumarium*), bulrush (*Schoenoplectus acutus*), floating primrose-willow (*Ludwigia peploides*), and Vasey's grass (*Paspalum urvillei*).

WATERS AND WETLANDS EVALUATION

Data Sources Reviewed (list)

USGS 7.5 minute Quad	NWI Map	USACE Wetland Regional Supplement	Additional Resources Reviewed
Madill	Madill	Great Plains	NHD of Oklahoma
Kingston North	Kingston North	Great Plaints	NHD of Oklahoma

Wetlands and Ponds Summary Table

Field Sites	Type of Wetland or Pond	Cowardin Classification	Potential Jurisdictional Status	Acres within Environmental Study Footprint
16	Forested wetland	PFO1 – Palustrine, forested, broad-leaved deciduous	Unlikely	1.09 ac
17	Pond with wetland fringe	PUBHh – Palustrine, unconsolidated bottom, permanently flooded, diked/impounded, PEM – Palustrine, emergent	Unlikely	Pond – 0.45 ac Wetland – 0.16 ac
18	Pond with wetland fringe	PUBHh – Palustrine, unconsolidated bottom, permanently flooded, diked/impounded, PEM – Palustrine, emergent	Unlikely	Pond – 0.38 ac Wetland – 0.06 ac
19	Pond with wetland fringe	PUBHh – Palustrine, unconsolidated bottom, permanently flooded, diked/impounded, PEM – Palustrine, emergent	Unlikely	Pond – 0.65 ac Wetland – 0.26 ac
20	Pond with wetland fringe	PUBHh – Palustrine, unconsolidated bottom, permanently flooded, diked/impounded, PEM – Palustrine, emergent	Unlikely	Pond – 0.04 ac Wetland – 0.04 ac
21	Pond	PUBHh – Palustrine, unconsolidated bottom, permanently flooded, diked/impounded	Unlikely	0.20 ac
22	Pond	PUBHh – Palustrine, unconsolidated bottom, permanently flooded, diked/impounded	Unlikely	0.55 ac

Field Sites	Type of Wetland or Pond	Cowardin Classification	Potential Jurisdictional Status	Acres within Environmental Study Footprint
23	Pond	PUBHh – Palustrine, unconsolidated bottom, permanently flooded, diked/impounded	Unlikely	0.19 ac
24	Pond	PUBHh – Palustrine, unconsolidated bottom, permanently flooded, diked/impounded	Unlikely	0.27 ac
25	Pond	PUBHh – Palustrine, unconsolidated bottom, permanently flooded, diked/impounded	Unlikely	0.12 ac
26	Pond	PUBHh – Palustrine, unconsolidated bottom, permanently flooded, diked/impounded	Unlikely	0.19 ac
27	Pond	PUBHh – Palustrine, unconsolidated bottom, permanently flooded, diked/impounded	Unlikely	0.66 ac
28	Pond	PUBHh – Palustrine, unconsolidated bottom, permanently flooded, diked/impounded	Unlikely	0.45 ac
29	Pond	PUBHh – Palustrine, unconsolidated bottom, permanently flooded, diked/impounded	Unlikely	0.06 ac
30	Pond with wetland fringe	PUBHh – Palustrine, unconsolidated bottom, permanently flooded, diked/impounded, PEM – Palustrine, emergent	Unlikely	Pond – 0.33 ac Wetland – 0.06 ac

Field Sites	Type of Wetland or Pond	Cowardin Classification	Potential Jurisdictional Status	Acres within Environmental Study Footprint
31	Pond with wetland	PUBHh – Palustrine, unconsolidated bottom, permanently flooded, diked/impounded, PEM – Palustrine, emergent, PSS1 – palustrine, scrub-shrub, broad-leaved deciduous	Likely	Pond – 0.58 ac Wetland – 0.80 ac
32	Pond	PUBHh – Palustrine, unconsolidated bottom, permanently flooded, diked/impounded	Unlikely	0.43 ac
33	Pond	PUBHh – Palustrine, unconsolidated bottom, permanently flooded, diked/impounded	Likely	0.17 ac
34	Emergent wetland	PEM – Palustrine, emergent	Likely	0.03 ac
35	Pond	PUBHh – Palustrine, unconsolidated bottom, permanently flooded, diked/impounded	Likely	1.32 ac
36	Pond	PUBHh – Palustrine, unconsolidated bottom, permanently flooded, diked/impounded	Likely	0.41 ac

Streams and Drainages Summary Table

Field Sites	Stream Name	USGS Mapped Status	Potential Jurisdictional Status	Acres within Environmental Study Footprint	Linear Feet within Environmental Study Footprint
1	Unnamed tributary	Intermittent	Likely	0.09 ac	444 ft
2	Swale	Unmapped	Unlikely	--	816 ft
3	Unnamed tributary	Unmapped	Likely	0.11 ac	762 ft
4	Swale	Unmapped	Unlikely	--	256 ft
5	Unnamed tributary	Intermittent	Likely	0.44 ac	1192 ft
6	Unnamed tributary	Intermittent	Likely	0.73 ac	2175 ft

Field Sites	Stream Name	USGS Mapped Status	Potential Jurisdictional Status	Acres within Environmental Study Footprint	Linear Feet within Environmental Study Footprint
7	Unnamed tributary	Intermittent	Likely	0.05 ac	387 ft
8	Unnamed tributary	Intermittent	Likely	0.20 ac	2372 ft
9	Swale	Intermittent	Likely	--	1458 ft
10	Unnamed tributary	Intermittent	Likely	0.18 ac	1892 ft
11	Swale	Unmapped	Unlikely	--	355 ft
12	Swale	Unmapped	Unlikely	--	552 ft
13	Tributary and swale	Intermittent	Likely	0.12 ac	1485 ft
14	Unnamed tributary	Intermittent	Likely	0.07 ac	562 ft
15	Swale	Unmapped	Unlikely	--	1713 ft

Streams and other linear aquatic features

Field Site 1 is an unnamed tributary to Glasses Creek and is mapped as an intermittent stream on the United States Geologic Survey (USGS) topographic map. There are approximately 0.09 acres and 444 linear feet of this feature within the study footprint. The width between the ordinary high water marks (OHWM) varies from 4 to 10 feet. A portion of the tributary south of the existing US-70 had recently been disturbed and filled by a temporary construction road. No OHWM was discerned in the area of disturbance. The elevation of the OHWM is unknown. Dominant riparian species observed at this field site include American elm, woodland creek oats, Virginia creeper, deciduous yaupon, sycamore, greenbriar, poison ivy, grape, black willow, giant ragweed, and Johnson grass. Since this field site is shown as a blue line on the topographic map and as a National Dataset Hydrology (NHD) flowline, it is likely to be considered jurisdictional.

Field Site 2 is a swale that connects to Field Site 3, an unnamed tributary. It is not mapped on the USGS topographic map and does not exhibit an OHWM. Based on field observations, it is likely ephemeral and only carries water during/after storm events. There are approximately 816 linear feet of swale at this field site. Riparian species observed along this swale include hackberry, American elm, deciduous yaupon, giant ragweed, and greenbriar. Since this swale does not have an OHWM and is not mapped on the USGS topographic map, it is unlikely to be considered jurisdictional.

Field Site 3 is an unnamed tributary to Glasses Creek and is mapped as an intermittent stream on the USGS topographic map. There are approximately 0.11 acres and 762 linear feet of this feature within the study footprint. The width between the OHWMs varies from 5 to 15 feet. The elevation of the OHWM is unknown. Dominant riparian species observed at this field site include American elm, woodland creek oats, Virginia creeper, deciduous yaupon, sycamore, greenbriar, poison ivy, grape, black willow, giant ragweed, and Johnson grass. Since this field site is shown as a blue line on the topographic map and as an NHD flowline, it is likely to be considered jurisdictional.

Field Site 4 is a swale that is not mapped on the USGS topographic map and does not exhibit an OHWM. Based on field observations, it is likely ephemeral and only carries water during/after storm events. There are approximately 256 linear feet of swale at this field site. There is not a riparian corridor at this swale. Vegetative species along the swale are mostly upland grasses and forbs such as Bermuda grass, sunflower, beggars tick, doveweed, and ryegrass. Since this swale does not have an OHWM and is not mapped on the USGS topographic map, it is unlikely to be considered jurisdictional.

Field Site 5 is an unnamed tributary to Glasses Creek and is mapped as an intermittent stream on the USGS topographic map. There are approximately 0.44 acres and 1192 linear feet of this feature within the study footprint. The width between the OHWMs varies from approximately 10 to 20 feet. The elevation of the OHWM is unknown. Dominant riparian species observed at this field site include American elm, woodland creek oats, Virginia creeper, deciduous yaupon, sycamore, greenbriar, poison ivy, grape, black willow, giant ragweed, and Johnson grass. Since this field site is shown as a blue line on the topographic map and as an NHD flowline, it is likely to be considered jurisdictional.

Field Site 6 is an unnamed tributary to Glasses Creek and is mapped as an intermittent stream on the USGS topographic map. There are approximately 0.73 acres and 2175 linear feet of this feature within the study footprint. The width between the OHWMs varies from approximately 10 to 20 feet. The elevation of the OHWM is unknown. Dominant riparian species observed at this field site include American elm, woodland creek oats, Virginia creeper, deciduous yaupon, sycamore, greenbriar, poison ivy, grape, black willow, giant ragweed, and Johnson grass. Since this field site is shown as a blue line on the topographic map and as an NHD flowline, it is likely to be considered jurisdictional.

Field Site 7 is an unnamed tributary to Glasses Creek and is mapped as an intermittent stream on the USGS topographic map. There are approximately 0.05 acres and 387 linear feet of this feature within the study footprint. The width between the OHWMs varies from approximately 5 to 15 feet. The elevation of the OHWM is unknown. The areas adjacent to this tributary appear to have been cleared of riparian species and now have upland grass and forb species adjacent, such as Bermuda grass, sunflower, beggars tick, doveweed, bluestem, and ryegrass. Since this field site is shown as a blue line on the topographic map and as an NHD flowline, it is likely to be considered jurisdictional.

Field Site 8 is an unnamed tributary to Glasses Creek and is mapped as an intermittent stream on the USGS topographic map. There are approximately 0.20 acres and 2372 linear feet of this feature within the study footprint. The width between the OHWMs varies from approximately 1 to 4 feet.

The elevation of the OHWM is unknown. The areas adjacent to this tributary appear to have been cleared of riparian species and now have upland grass and forb species adjacent, such as Bermuda grass, sunflower, beggars tick, doveweed, bluestem, and ryegrass. Since this field site is shown as a blue line on the topographic map and as an NHD flowline, it is likely to be considered jurisdictional.

Field Site 9 is a swale that is mapped on the USGS topographic map as an intermittent stream. Based on field observations, it does not exhibit an OHWM and likely only carries water during/after storm events. There are approximately 1458 linear feet of swale at this field site. There is no riparian corridor along this swale. Vegetative species adjacent to the swale are mostly upland grasses and forbs such as Bermuda grass, sunflower, beggars tick, doveweed, and ryegrass. Since this swale is mapped as a blue line on the USGS topographic map and as an NHD flowline, it is likely to be considered jurisdictional.

Field Site 10 is an unnamed tributary to Glasses Creek and is mapped as an intermittent stream on the USGS topographic map. There are approximately 0.18 acres and 1892 linear feet of this feature within the study footprint. The width between the OHWMs varies from approximately 3 to 5 feet. The elevation of the OHWM is unknown. The areas adjacent to this tributary appear to have been cleared of riparian species and now have upland grass and forb species adjacent, such as Bermuda grass, sunflower, beggars tick, doveweed, bluestem, and ryegrass. Since this field site is shown as a blue line on the topographic map and as an NHD flowline, it is likely to be considered jurisdictional.

Field Sites 11 and 12 are swales that are not mapped on the USGS topographic map. They both connect to Field Site 10. Neither exhibited an OHWM. Field Site 11 is approximately 355 feet long and Field Site 12 is approximately 552 feet long within the environmental study footprint. There are no riparian corridors along these swales. Vegetative species adjacent to the swales are mostly upland grasses and forbs such as Bermuda grass, sunflower, beggars tick, doveweed, and ryegrass. Since these swales are not mapped on the USGS topographic map and do not exhibit OHWMs, they are unlikely to be considered jurisdictional under the US Army Corps of Engineers (USACE).

Field Site 13 is an unnamed tributary to Little Glasses Creek that is shown as a blue line intermittent stream on the topographic map. Field observations found that the OHWM is intermittent within the study footprint. In the areas where an OHWM was observed, the OHWM widths varied from approximately 3 to 6 feet. There are approximately 0.12 acres and 1485 linear feet of this feature within the study footprint, 770 linear feet of which is swale. The elevation of the OHWM is unknown. The areas adjacent to this tributary appear to have been cleared of riparian species and now have upland grass and forb species adjacent, such as Bermuda grass, western ragweed, beggars tick, doveweed, bluestem, and ryegrass. Since this field site is shown as a blue line on the topographic map and as an NHD flowline, it is likely to be considered jurisdictional.

Field Site 14 is an unnamed tributary to Little Glasses Creek and is mapped as an intermittent stream on the USGS topographic map. There are approximately 0.07 acres and 562 linear feet of this feature within the study footprint. The width between the OHWM is approximately 2 feet. The elevation of the OHWM is unknown. The areas adjacent to this tributary appear to have been

cleared of riparian species and now have upland grass and forb species adjacent, such as Bermuda grass, western ragweed, beggars tick, doveweed, bluestem, and ryegrass. Since this field site is shown as a blue line on the topographic map and as an NHD flowline, it is likely to be considered jurisdictional.

Field Site 15 is a swale that is not mapped on the USGS topographic map. Based on field observations, it does not exhibit an OHWM and likely only carries water during/after storm events. There are approximately 1713 linear feet of swale at this field site. There is no riparian corridor along this swale. Vegetative species adjacent to the swale are mostly upland grasses and forbs such as Bermuda grass, western ragweed, beggars tick, doveweed, and ryegrass. Since this swale is not mapped as a blue line on the USGS topographic map and does not exhibit an OHWM, it is unlikely to be considered jurisdictional.

Wetlands and ponds

Field Site 16 is a forested wetland (PFO1 – palustrine, forested, broad-leaved deciduous) that does not appear to be connected to a potentially jurisdictional waterway. It is shown on the NWI map as a freshwater emergent wetland (PEM1C – palustrine, emergent, persistent, seasonally flooded). Vegetative species found in the wetland include green ash, creeping burhead, sand spikerush, and swamp smartweed, with approximately 20% bare ground. This vegetation assemblage meets the dominance test and therefore, hydrophytic vegetation is present. The wetland soil indicator observed was redox dark surface (F6). Wetland hydrology indicators observed were water marks, water-stained leaves, and surface soils cracks. No surface water, water table, or saturation were observed. This wetland is approximately 1.09 acres in size. No hydrological connection to a potentially jurisdictional waterbody was found. The area around the wetland was walked and no channel leading out of the wetland was observed. Marshall County has not been digitally mapped for floodplains, but paper maps are available. These maps, as well as historical aerial photographs dated 1954, 1963, 1984, and 1995 were inspected to see if there was an evident historical hydrological connected between this wetland and Glasses Creek to the northeast. However, no connection between the two can be discerned. Therefore, it is likely that this is an isolated wetland and as such, unlikely to be considered jurisdictional under the USACE.

Field Site 17 is a stock pond with a fringe of wetlands around its edges. It is shown on the NWI map as a PUBHh (palustrine, unconsolidated bottom, permanently flooded, diked/impounded) area. Field observations are consistent within this classification. The wetlands along the pond edge appear to be PEM (palustrine, emergent). Vegetation observed in the wetland includes Osage orange, cocklebur, sand spikerush, and bulrush. Approximately 15% is bare ground. This vegetation assemblage meets the dominance test and therefore, hydrophytic vegetation is present. The depleted matrix (F3) was the soil indicator observed. Wetland hydrology indicators found include algal mat/crust and inundation visible of aerial imagery. No surface water, water table, or saturation were observed. This wetland is approximately 0.16 acres; the pond is approximately 0.45 acres. No connection to a potentially jurisdictional waterbody was discerned; therefore, this field site is unlikely to be considered jurisdictional.

Field Site 18 is a stock pond with a fringe of wetlands around its edges. It is shown on the NWI map as a PUBHh (palustrine, unconsolidated bottom, permanently flooded, diked/impounded) area. Field observations are consistent with this classification. The wetlands along the pond edge appear to be PEM (palustrine, emergent). Vegetation observed in the wetland includes black willow, cocklebur, Bermuda grass, and bulrush. Approximately 7% is bare ground. This vegetation assemblage meets the dominance test and therefore, hydrophytic vegetation is present. Redox dark surface (F6) was the soil indicator observed. Wetland hydrology indicators found include algal mat/crust and inundation visible of aerial imagery. No surface water, water table, or saturation were observed. This wetland is approximately 0.06 acres; the pond is approximately 0.38 acres. No connection to a potentially jurisdictional waterbody was discerned; therefore, this field site is unlikely to be considered jurisdictional.

Field Site 19 is a stock pond with a fringe of wetlands around its edges. It is shown on the NWI map as a PUBHh (palustrine, unconsolidated bottom, permanently flooded, diked/impounded) area. Field observations are consistent with this classification. The wetlands along the pond edge appear to be PEM (palustrine, emergent). Vegetation observed in the wetland includes black willow, water primrose, Vasey's grass, and bulrush. Approximately 35% is bare ground. This vegetation assemblage meets the dominance test and therefore, hydrophytic vegetation is present. Redox dark surface (F6) was the soil indicator observed. The wetland hydrology indicator found was soil saturation. No surface water or water table were present. This wetland is approximately 0.26 acres; the pond is approximately 0.65 acres. No connection to a potentially jurisdictional waterbody was discerned; therefore, this field site is unlikely to be considered jurisdictional.

Field Site 20 is a stock pond with a fringe of wetlands around its edges. It is shown on the NWI map as a PUBHh (palustrine, unconsolidated bottom, permanently flooded, diked/impounded) area. Field observations are consistent with this classification. The wetlands along the pond edge appear to be PEM (palustrine, emergent). Vegetation observed in the wetland includes cattails, Vasey's grass, and bulrush. Approximately 20% is bare ground. This vegetation assemblage meets the dominance test and therefore, hydrophytic vegetation is present. Redox dark surface (F6) was the soil indicator observed. The wetland hydrology indicator found was soil saturation. No surface water or water table were present. This wetland is approximately 0.04 acres; the pond is approximately 0.04 acres. Only a portion of the pond and wetlands lie within the environmental study footprint. No connection to a potentially jurisdictional waterbody was discerned; therefore, this field site is unlikely to be considered jurisdictional.

Field Site 21 is a pond, which is shown on the NWI map as a PUBHh (palustrine, unconsolidated bottom, permanently flooded, diked/impounded) area. Field observations are consistent with this classification. No wetlands were observed along the edges of this pond. The pond is approximately 0.20 acres in size. No connection to a potentially jurisdictional waterbody was discerned; therefore, this field site is unlikely to be considered jurisdictional.

Field Site 22 is a pond, which is shown on the NWI map as a PUBHh (palustrine, unconsolidated bottom, permanently flooded, diked/impounded) area. Field observations are consistent with this classification. No wetlands were observed along the edges of this pond. The pond is approximately 0.55 acres in size. No connection to a potentially jurisdictional waterbody was discerned; therefore, this field site is unlikely to be considered jurisdictional.

Field Site 23 is a pond, which is shown on the NWI map as a PUBHh (palustrine, unconsolidated bottom, permanently flooded, diked/impounded) area. Field observations are consistent with this classification. No wetlands were observed along the edges of this pond. The pond is approximately 0.19 acres in size. No connection to a potentially jurisdictional waterbody was discerned; therefore, this field site is unlikely to be considered jurisdictional.

Field Site 24 is a pond, which is shown on the NWI map as a PUBHh (palustrine, unconsolidated bottom, permanently flooded, diked/impounded) area. Field observations are consistent with this classification. Wetland vegetation was observed around the edges of the pond; however, no hydric soil indicators were found and therefore, the area does not qualify to be a wetland. The pond is approximately 0.27 acres in size. No connection to a potentially jurisdictional waterbody was discerned; therefore, this field site is unlikely to be considered jurisdictional.

Field Site 25 is a pond, which is shown on the NWI map as a PUBHh (palustrine, unconsolidated bottom, permanently flooded, diked/impounded) area. Field observations are consistent with this classification. No wetlands were observed along the edges of this pond. The pond is approximately 0.12 acres in size. No connection to a potentially jurisdictional waterbody was discerned; therefore, this field site is unlikely to be considered jurisdictional.

Field Site 26 is a pond, which is shown on the NWI map as a PUBHh (palustrine, unconsolidated bottom, permanently flooded, diked/impounded) area. Field observations are consistent with this classification. No wetlands were observed along the edges of this pond. The pond is approximately 0.19 acres in size. No connection to a potentially jurisdictional waterbody was discerned; therefore, this field site is unlikely to be considered jurisdictional.

Field Site 27 is two manmade ponds, which are not shown on the NWI map. They appear to be PUBHh (palustrine, unconsolidated bottom, permanently flooded, diked/impounded). These ponds may have been dug for stormwater detention/retention. No wetlands were observed along the edges of these ponds. The ponds total approximately 0.66 acres. No connection to a potentially jurisdictional waterbody was discerned; therefore, this field site is unlikely to be considered jurisdictional.

Field Site 28 is a pond, which is shown on the NWI map as a PUBHh (palustrine, unconsolidated bottom, permanently flooded, diked/impounded) area. Field observations are consistent with this classification. No wetlands were observed along the edges of this pond. The pond is approximately 0.45 acres in size. No connection to a potentially jurisdictional waterbody was discerned; therefore, this field site is unlikely to be considered jurisdictional.

Field Site 29 is a pond, which is not shown on the NWI map. It appears to be PUBHh (palustrine, unconsolidated bottom, permanently flooded, diked/impounded). No wetlands were observed along the edges of this pond. The pond is approximately 0.06 acres in size. No connection to a potentially jurisdictional waterbody was discerned; therefore, this field site is unlikely to be considered jurisdictional.

Field Site 30 is a stock pond with a fringe of wetlands around its edge. It is shown on the NWI map as a PUBHh (palustrine, unconsolidated bottom, permanently flooded, diked/impounded) area. Field observations agree within this classification. The wetlands along the pond edge appear to be PEM (palustrine, emergent). Vegetation observed in the wetland includes mostly bulrush with some cattail. Approximately 5% is bare ground. This vegetation assemblage meets the dominance test and therefore, hydrophytic vegetation is present. Redox dark surface (F6) was the soil indicator observed. The wetland hydrology indicators found were algal mat/crust, inundation visible on aerial imagery, and aquatic invertebrates. No surface water, water table, or saturation was present. This wetland is approximately 0.06 acres; the pond is approximately 0.33 acres. No connection to a potentially jurisdictional waterbody was discerned; therefore, this field site is unlikely to be considered jurisdictional.

Field Site 31 is a stock pond with a fringe of wetlands around its edge and a large area of wetlands extending from the pond to Whiskey Creek Road. The pond is shown on the NWI map as a PUBHh (palustrine, unconsolidated bottom, permanently flooded, diked/impounded) area. Field observations are consistent with this classification. The wetlands along the pond edge appear to be PEM (palustrine, emergent) and the wetlands extending west appear to be PSS1 – palustrine, scrub-shrub, broad-leaved deciduous. Vegetation observed in the wetland includes mostly rattlebush (*Sesbania drummondii*) with lesser amounts of sand spikerush, bulrush, and annual marsh elder. Approximately 15% is bare ground. This vegetation assemblage meets the dominance test and therefore, hydrophytic vegetation is present. Redox dark surface (F6) was the soil indicator observed. The wetland hydrology indicators found were drainage patterns and FAC-neutral test. No surface water, water table, or saturation was present. This wetland is approximately 0.80 acres; the pond is approximately 0.58 acres. There appears to be a channel leading out of the pond east towards the unnamed tributary to Glasses Creek (Field site 8). Since the tributary is likely jurisdictional and this pond/wetland appears to be hydrologically connected, this field site is also likely to be considered jurisdictional.

Field Site 32 is a pond, which is shown on the NWI map as a PUBHh (palustrine, unconsolidated bottom, permanently flooded, diked/impounded) area. Field observations are consistent with this classification. No wetlands were observed along the edges of this pond. The pond is approximately 0.43 acres in size. No connection to a potentially jurisdictional waterbody was discerned; therefore, this field site is unlikely to be considered jurisdictional. The NWI also shows a small PUBHh area just to the southeast of this field site. This area was investigated and no pond or wetland was observed in that area.

Field Site 33 is a pond, which is shown on the NWI map as a PUBHh (palustrine, unconsolidated bottom, permanently flooded, diked/impounded) area. Field observations are consistent with this classification. No wetlands were observed along the edges of this pond. The pond is approximately 0.17 acres in size. This pond is connected to a blue line (Field Site 10) via a swale (Field Site 11). Since there is a hydrological connection between the pond and a likely jurisdictional blue line stream, the pond is also likely jurisdictional.

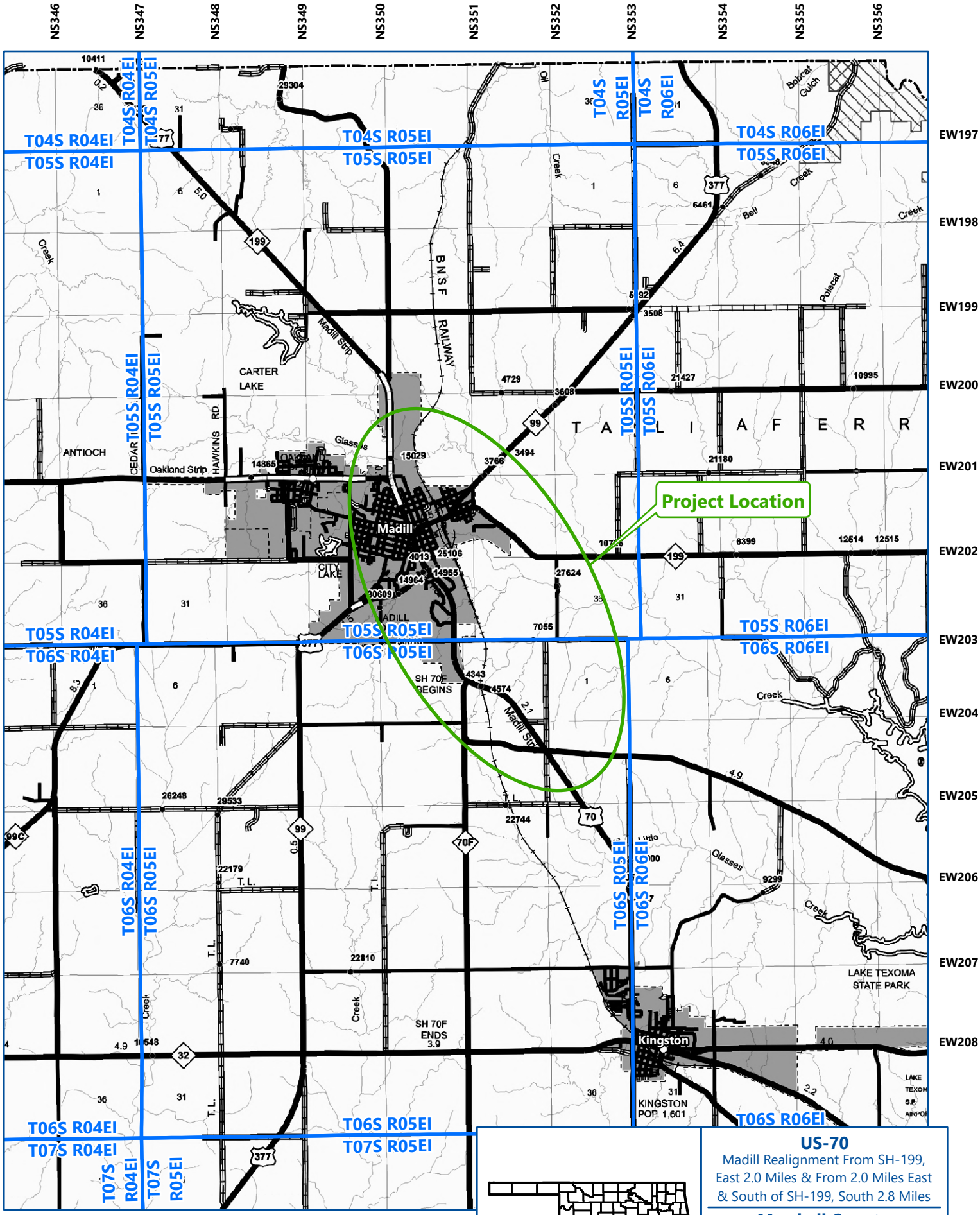
Field Site 34 is a small emergent wetland located along the Field Site 9 swale which is shown as a blue line on the topographic map. The wetland is approximately 0.03 acres. Vegetative species observed in the wetland includes floating primrose-willow, cocklebur, sand spikerush, and annual

marsh elder. Almost no bare ground was observed. This vegetation assemblage meets the dominance test and therefore, hydrophytic vegetation is present. The hydric soil indicator depleted matrix (F3) was observed in the soil. Surface soil cracks and geomorphic position were the wetland hydrology indicators observed in the wetland. No surface water, water table, or saturation was present during the delineation. Since the wetland occurs on a blue line stream (Field site 9) which is likely jurisdictional, this wetland is also likely jurisdictional.

Field Site 35 is a pond, which is shown on the NWI map as a PUBHh (palustrine, unconsolidated bottom, permanently flooded, diked/impounded) area. Field observations are consistent with this classification. No wetlands were observed along the edges of this pond. The pond is approximately 1.32 acres in size. This pond is connected to a blue line (Field Site 8), which is likely to be considered jurisdictional. Therefore, the pond is also likely jurisdictional.

Field Site 36 is a pond, which is shown on the NWI map as a PUBHh (palustrine, unconsolidated bottom, permanently flooded, diked/impounded) area. Field observations are consistent with this classification. No wetlands were observed along the edges of this pond. The pond is approximately 0.41 acres in size. This pond is connected to a blue line (Field Site 9), which is likely to be considered jurisdictional. Therefore, the pond is also likely jurisdictional.

FIGURES



US-70

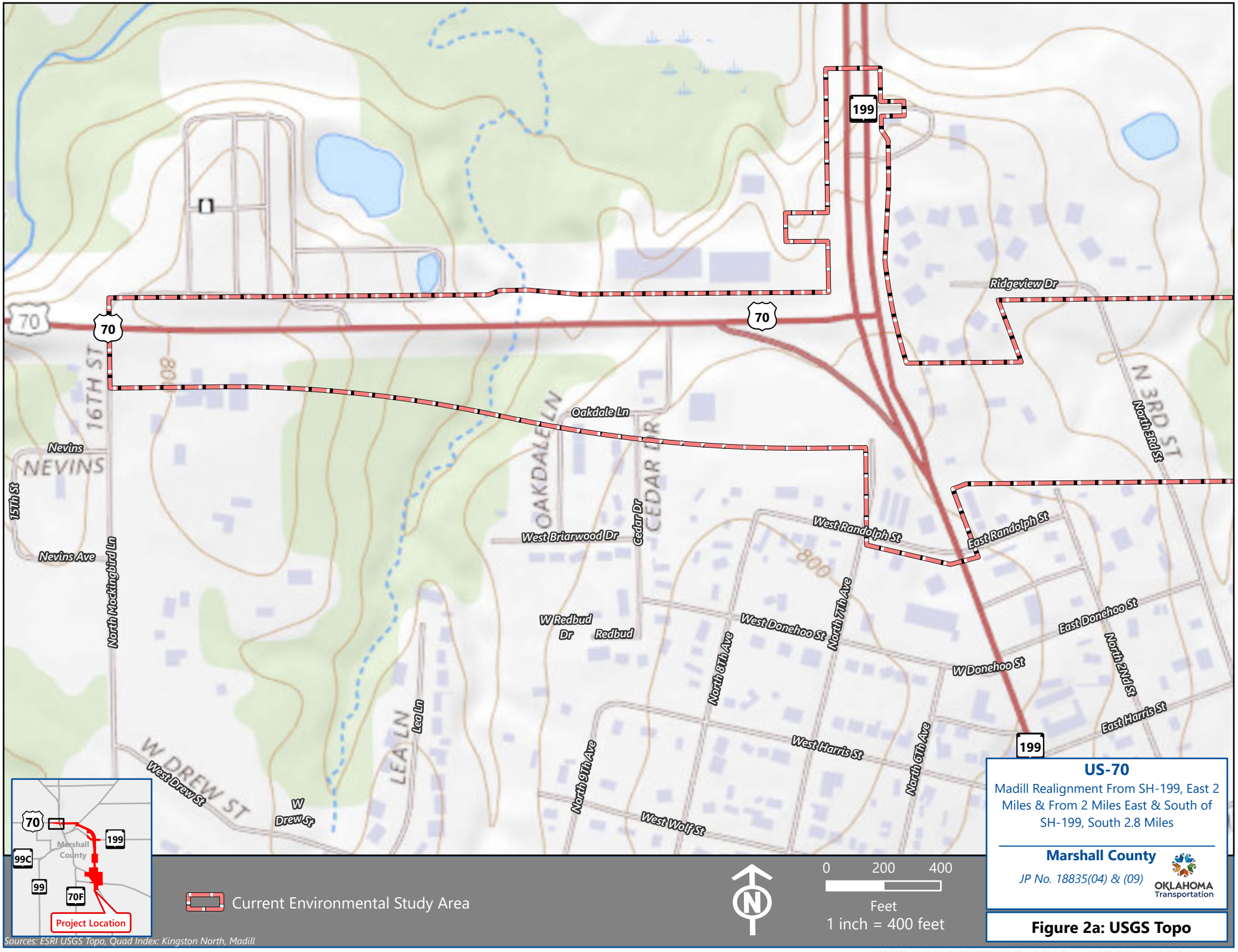
Madill Realignment From SH-199, East 2.0 Miles & From 2.0 Miles East & South of SH-199, South 2.8 Miles

Marshall County

JP No. 18835(04) & (09)

OKLAHOMA Transportation

Figure 1: Project Location Map



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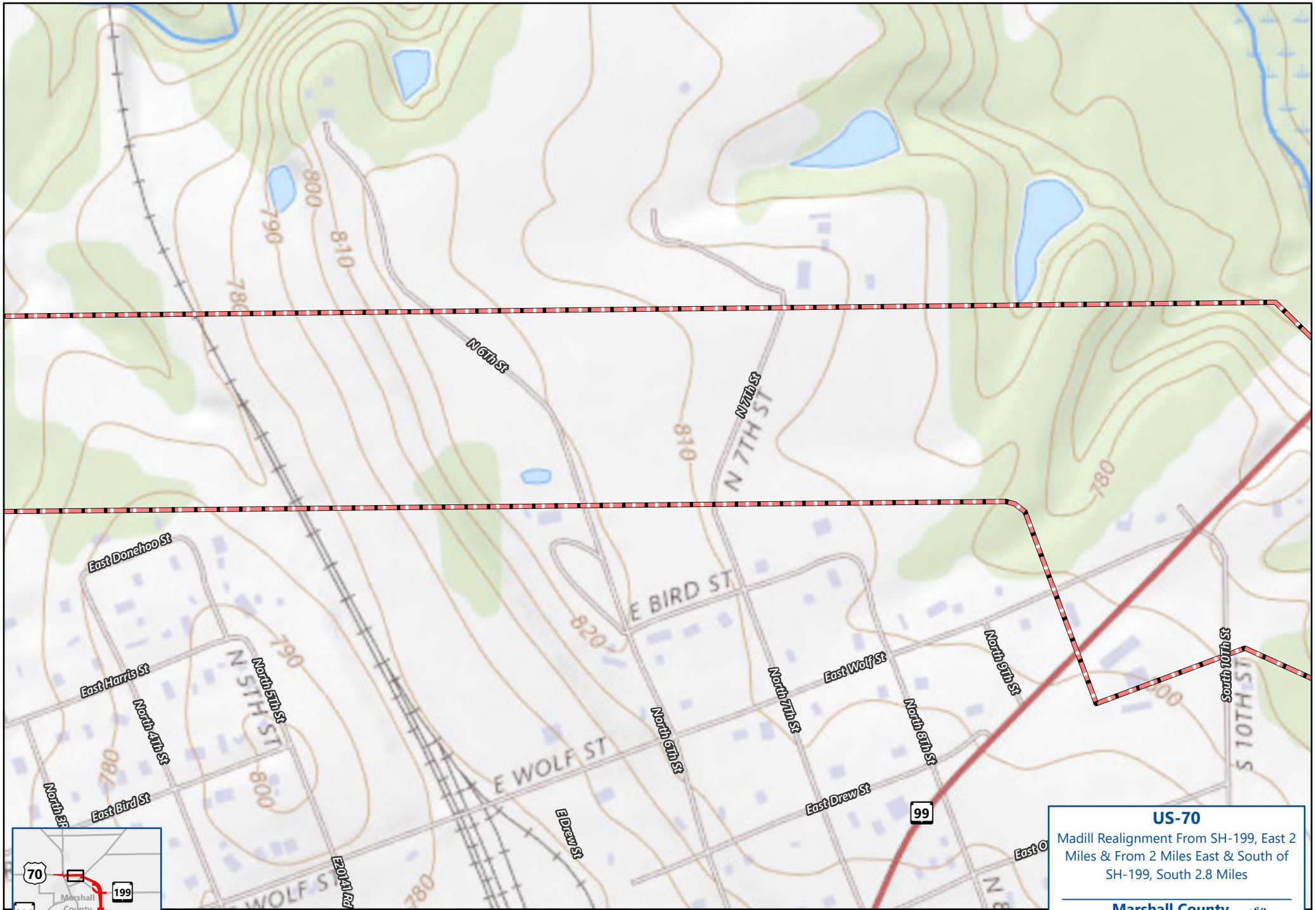

US-70

Madill Realignment From SH-199, East 2 Miles & From 2 Miles East & South of SH-199, South 2.8 Miles

Marshall County

JP No. 18835(04) & (09)

OKLAHOMA Transportation

Figure 2b: USGS Topo

Sources: ESRI USGS Topo, Quad Index: Kingston North, Madill

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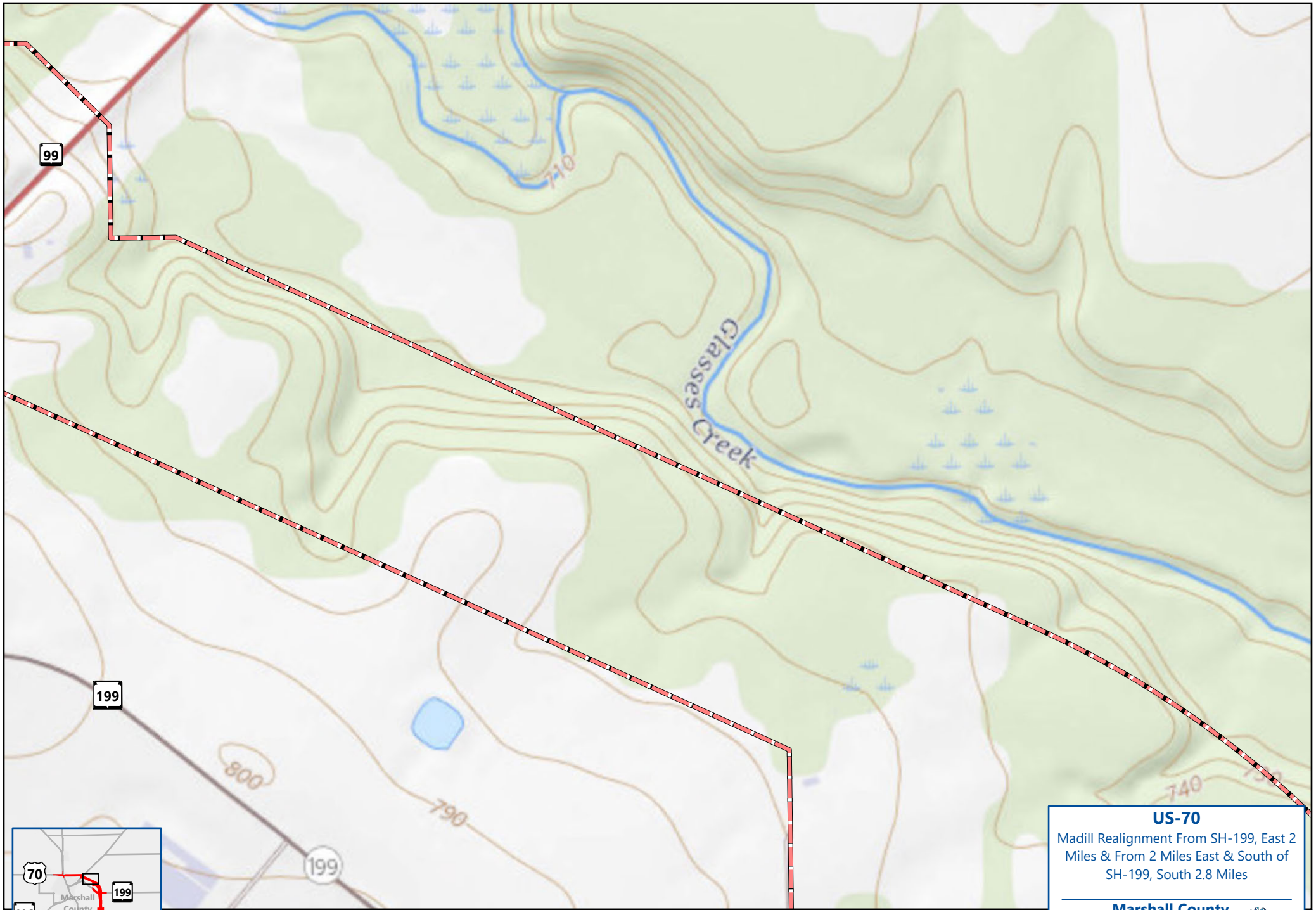

US-70

Madill Realignment From SH-199, East 2 Miles & From 2 Miles East & South of SH-199, South 2.8 Miles

Marshall County

JP No. 18835(04) & (09)

OKLAHOMA Transportation

Figure 2c: USGS Topo

Sources: ESRI USGS Topo, Quad Index: Kingston North, Madill

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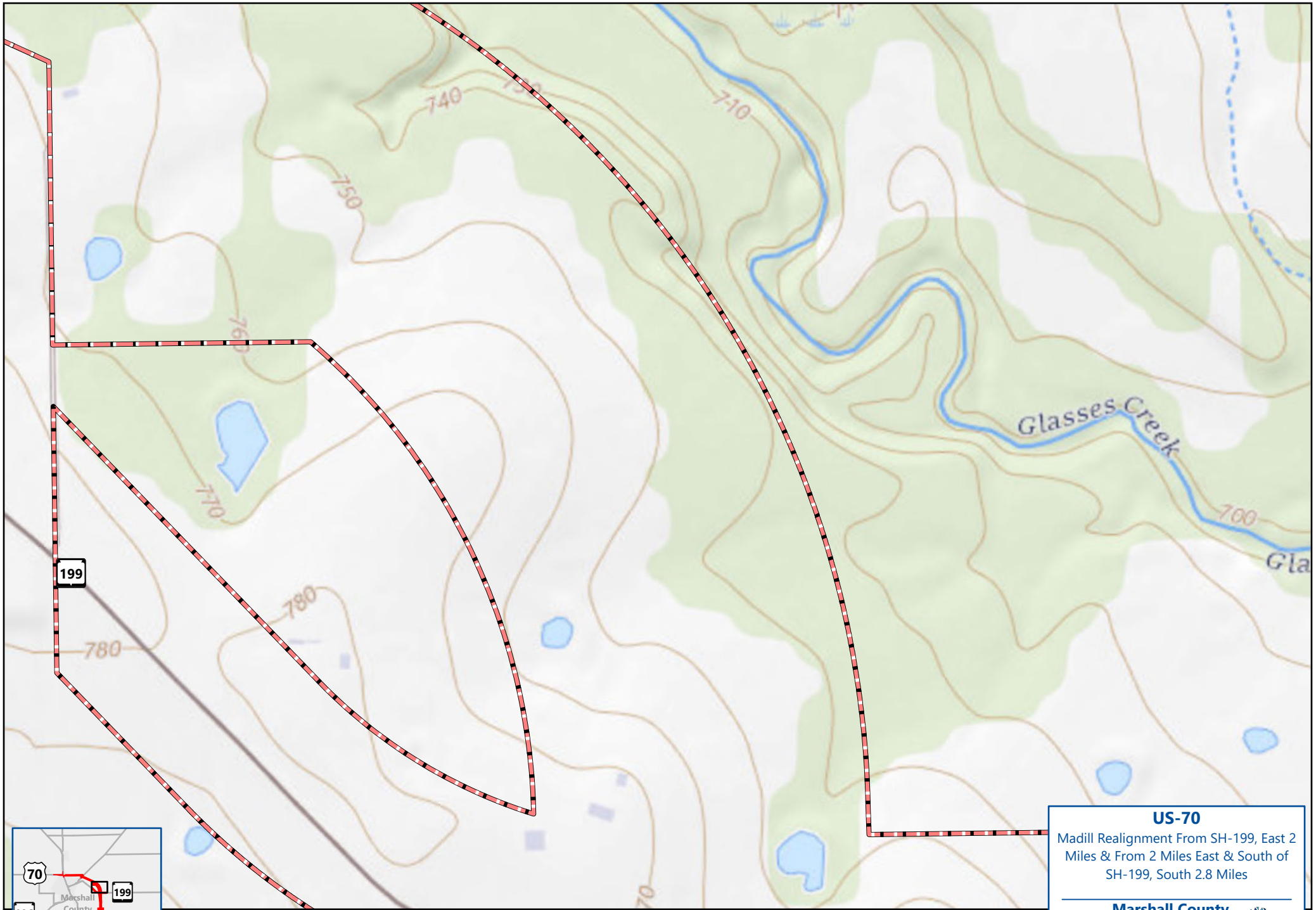

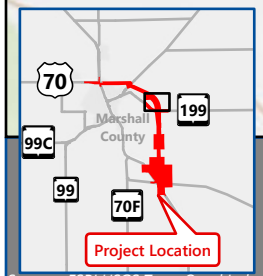

Current Environmental Study Area

0 200 400
Feet
1 inch = 400 feet

US-70

Madill Realignment From SH-199, East 2 Miles & From 2 Miles East & South of SH-199, South 2.8 Miles

Marshall County

JP No. 18835(04) & (09)

OKLAHOMA Transportation

Figure 2d: USGS Topo

Sources: ESRI USGS Topo, Quad Index: Kingston North, Madill

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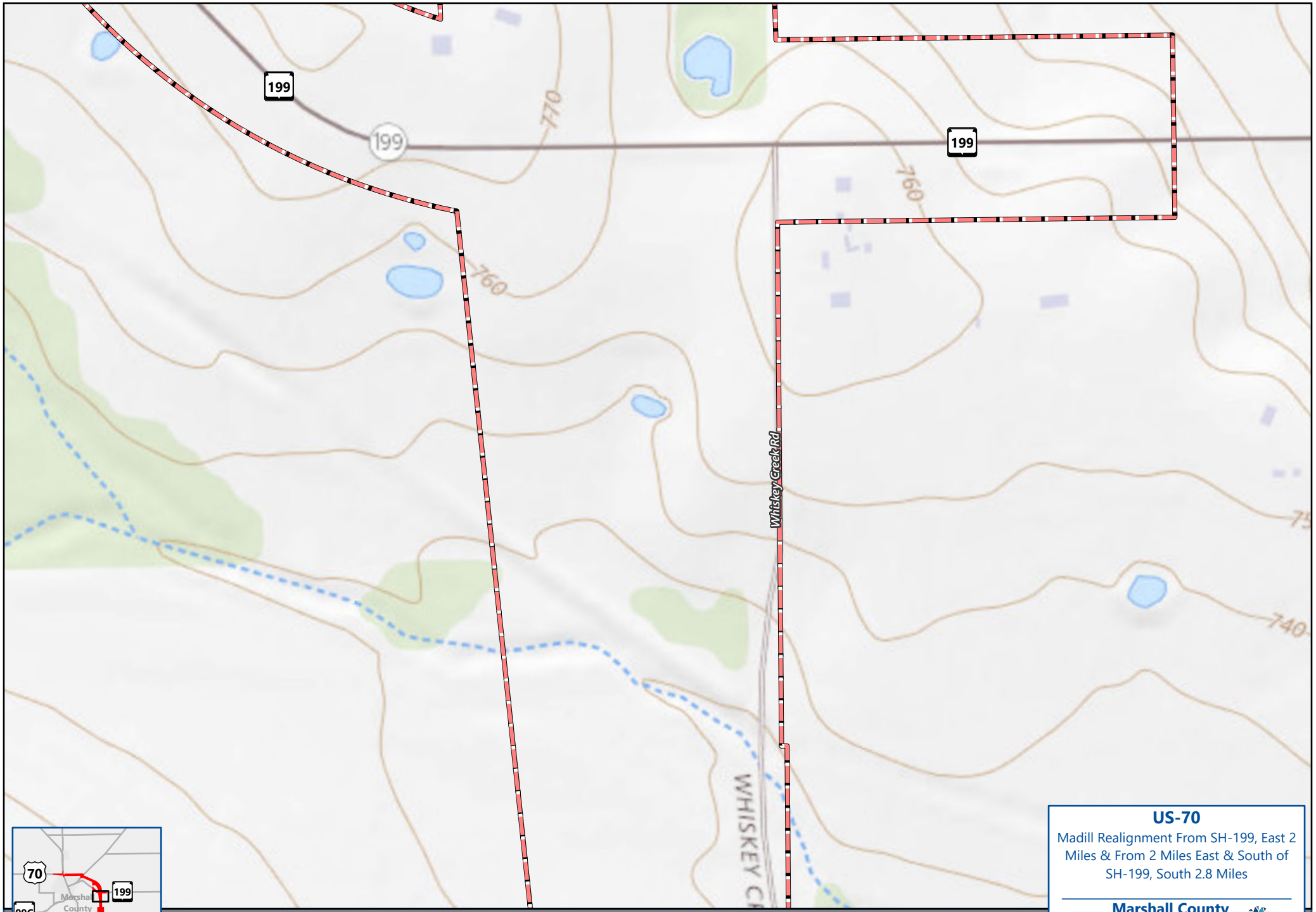


US-70

Madill Realignment From SH-199, East 2 Miles & From 2 Miles East & South of SH-199, South 2.8 Miles

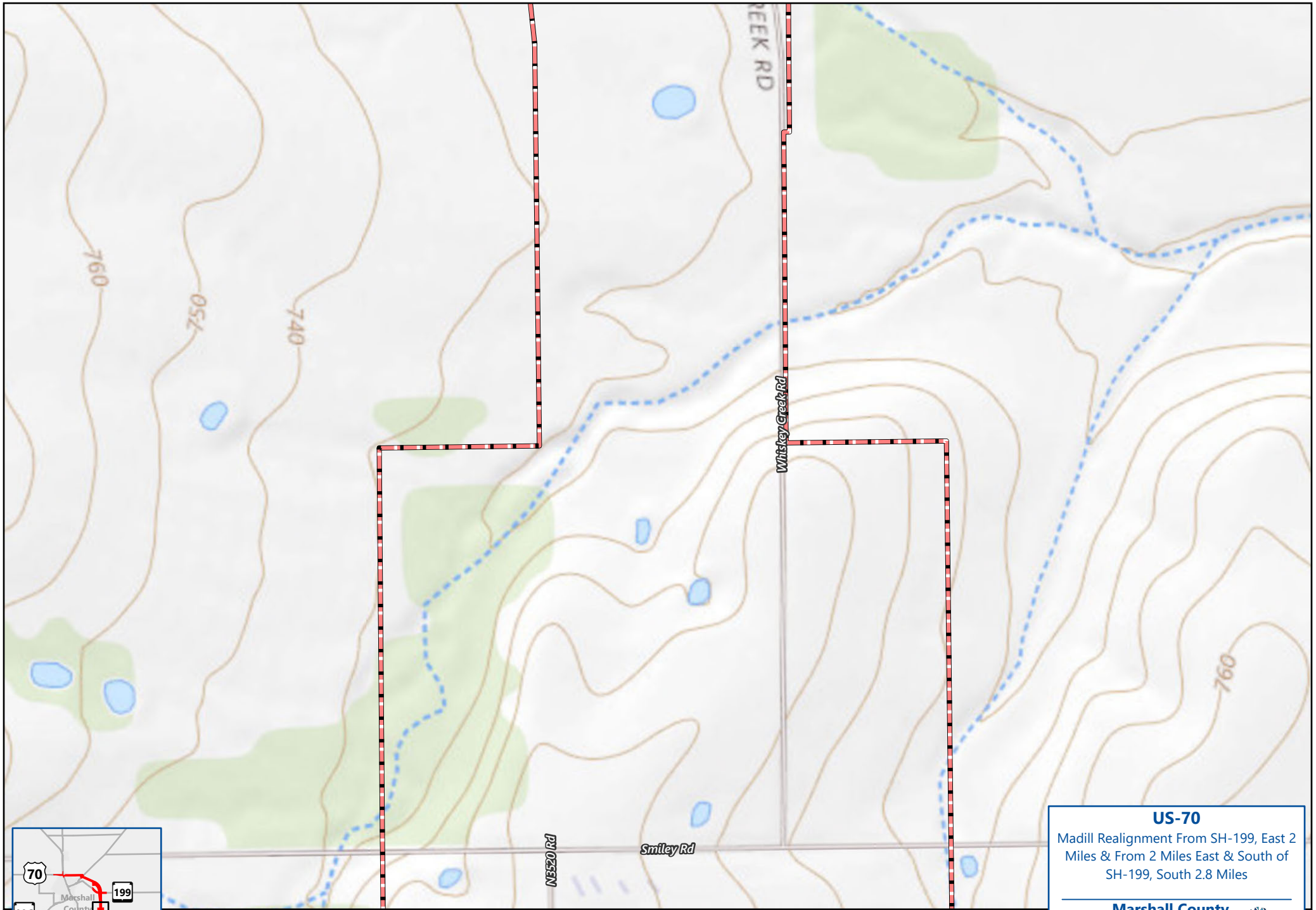
Marshall County

JP No. 18835(04) & (09)

OKLAHOMA Transportation

Figure 2e: USGS Topo

Sources: ESRI USGS Topo, Quad Index: Kingston North, Madill



US-70

Madill Realignment From SH-199, East 2 Miles & From 2 Miles East & South of SH-199, South 2.8 Miles

Marshall County

JP No. 18835(04) & (09)

OKLAHOMA Transportation

Figure 2f: USGS Topo

Sources: ESRI USGS Topo, Quad Index: Kingston North, Madill

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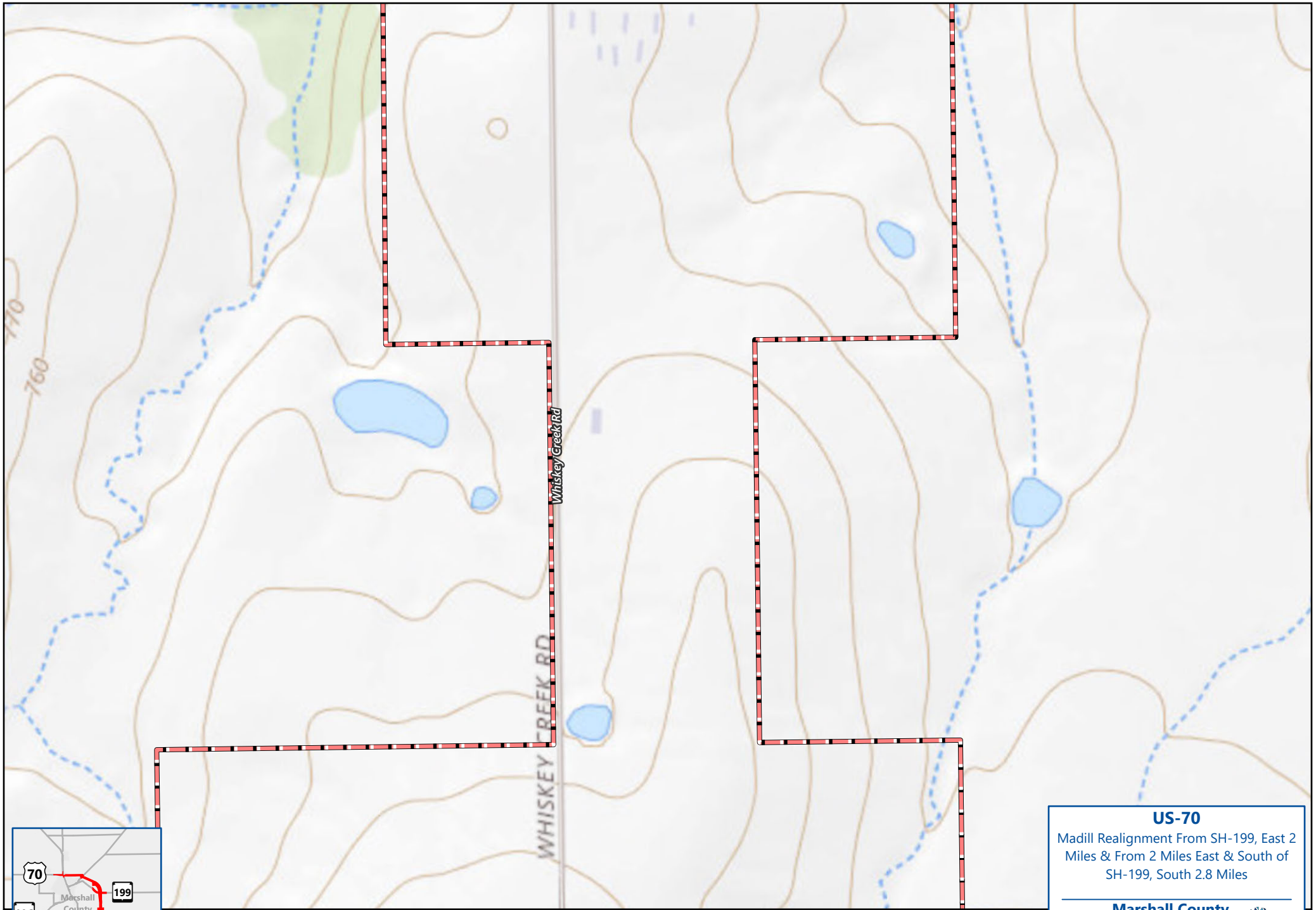

US-70

Madill Realignment From SH-199, East 2 Miles & From 2 Miles East & South of SH-199, South 2.8 Miles

Marshall County

JP No. 18835(04) & (09)

OKLAHOMA Transportation

Figure 2g: USGS Topo

Sources: ESRI USGS Topo, Quad Index: Kingston North, Madill

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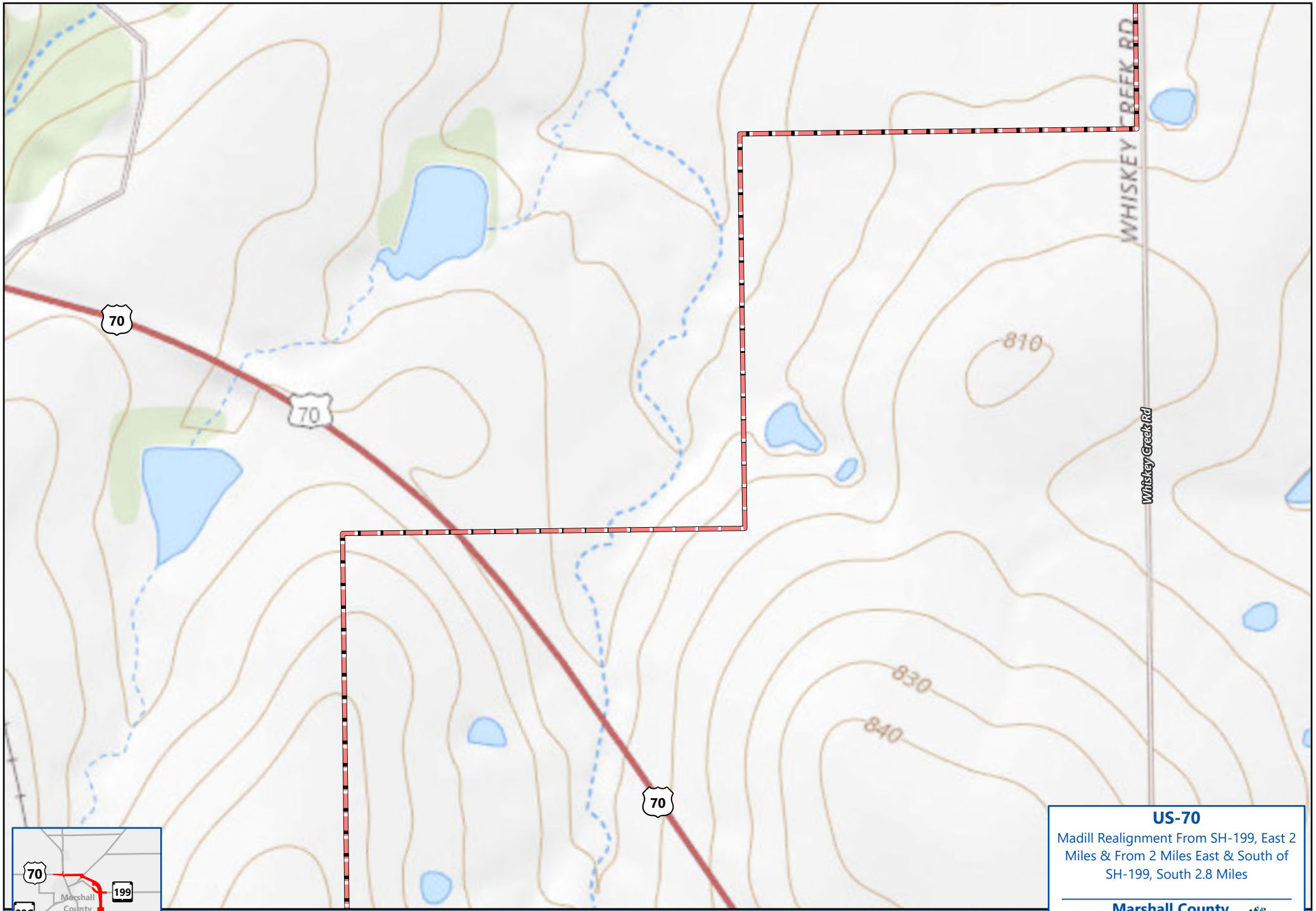

US-70

Madill Realignment From SH-199, East 2 Miles & From 2 Miles East & South of SH-199, South 2.8 Miles

Marshall County

JP No. 18835(04) & (09)

OKLAHOMA Transportation

Figure 2h: USGS Topo

Sources: ESRI USGS Topo, Quad Index: Kingston North, Madill

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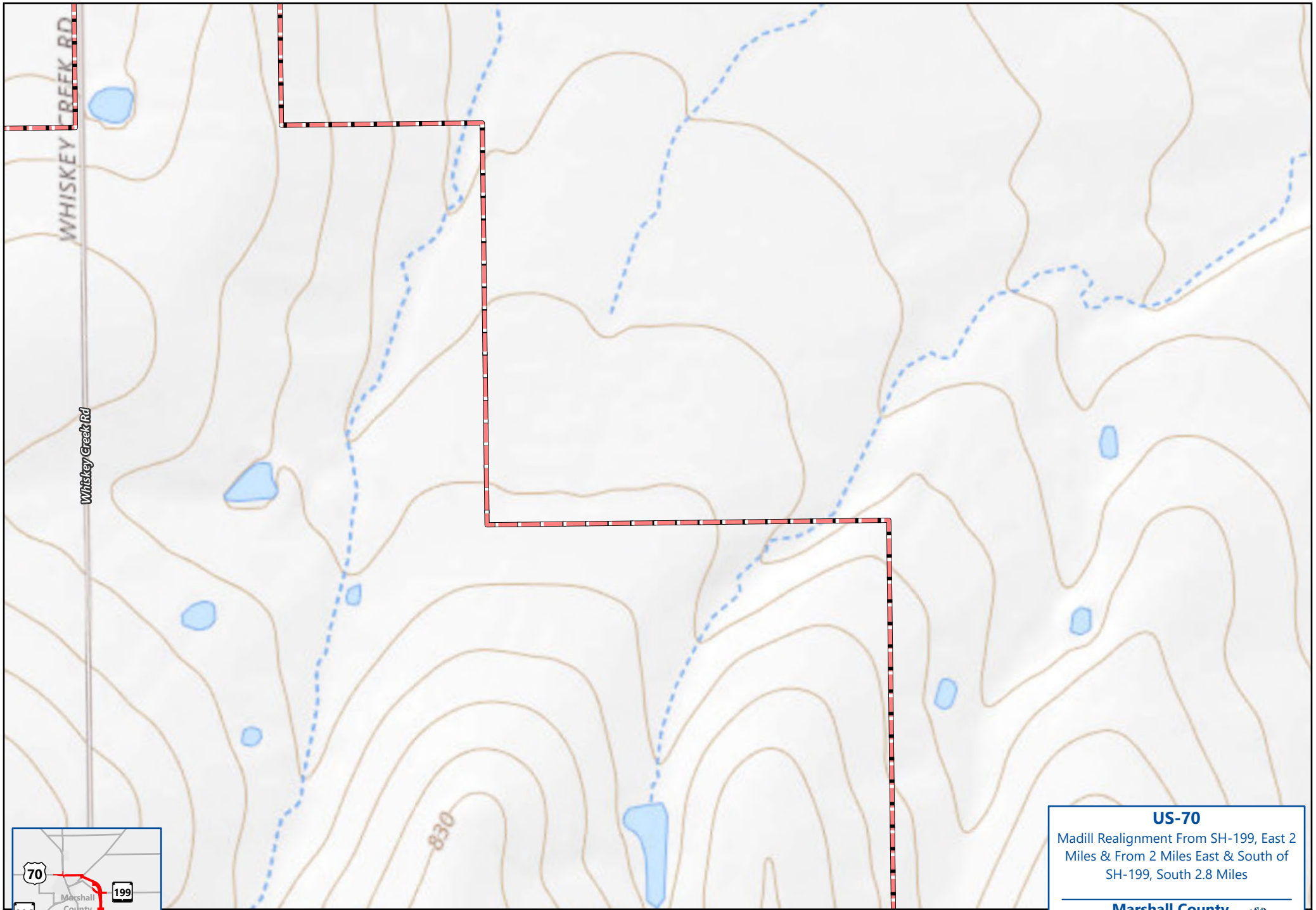

US-70

Madill Realignment From SH-199, East 2 Miles & From 2 Miles East & South of SH-199, South 2.8 Miles

Marshall County

JP No. 18835(04) & (09)

OKLAHOMA Transportation

Figure 2i: USGS Topo

Sources: ESRI USGS Topo, Quad Index: Kingston North, Madill

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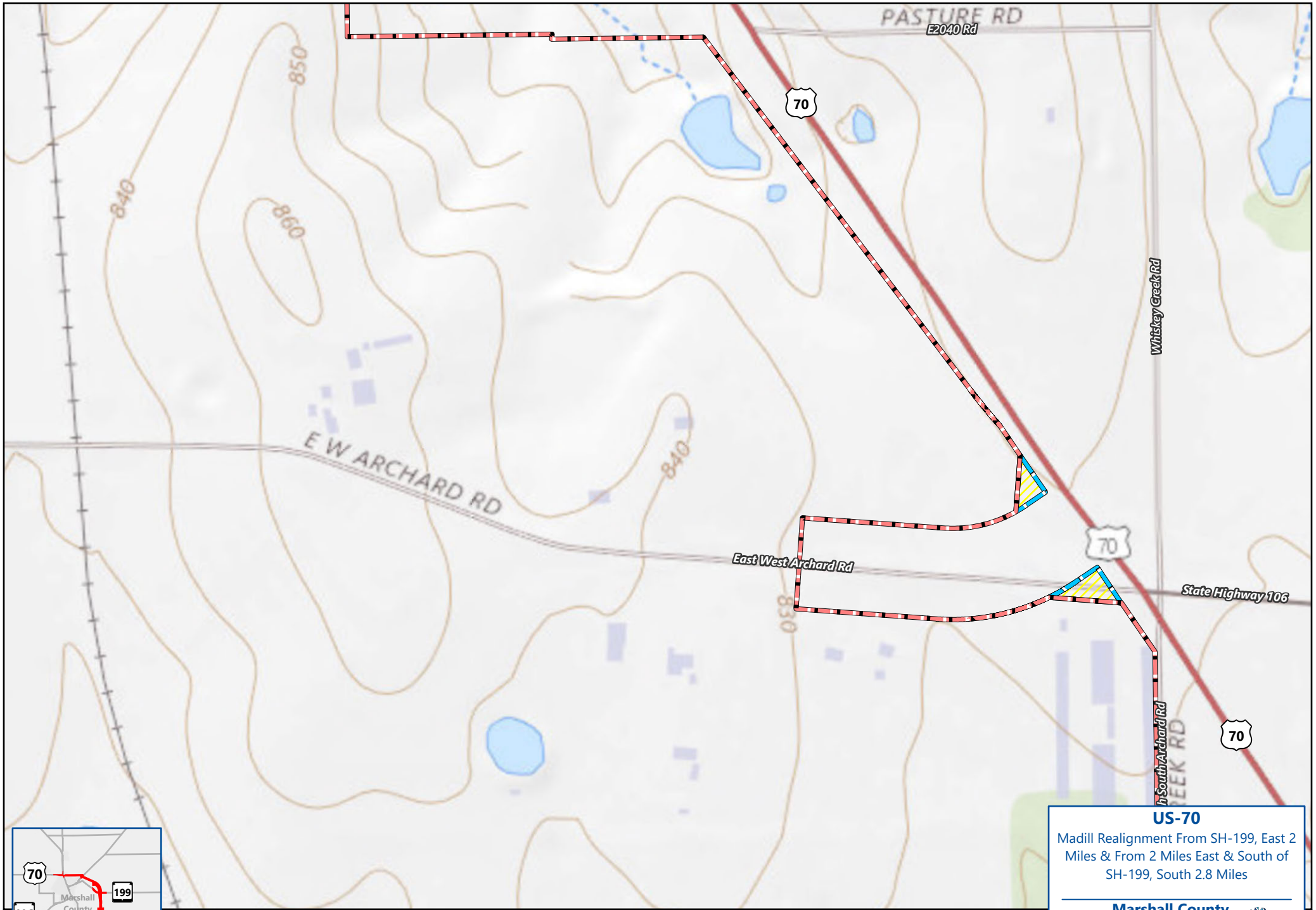

US-70

Madill Realignment From SH-199, East 2 Miles & From 2 Miles East & South of SH-199, South 2.8 Miles

Marshall County

JP No. 18835(04) & (09)

OKLAHOMA Transportation

Figure 2j: USGS Topo

Sources: ESRI USGS Topo, Quad Index: Kingston North, Madill

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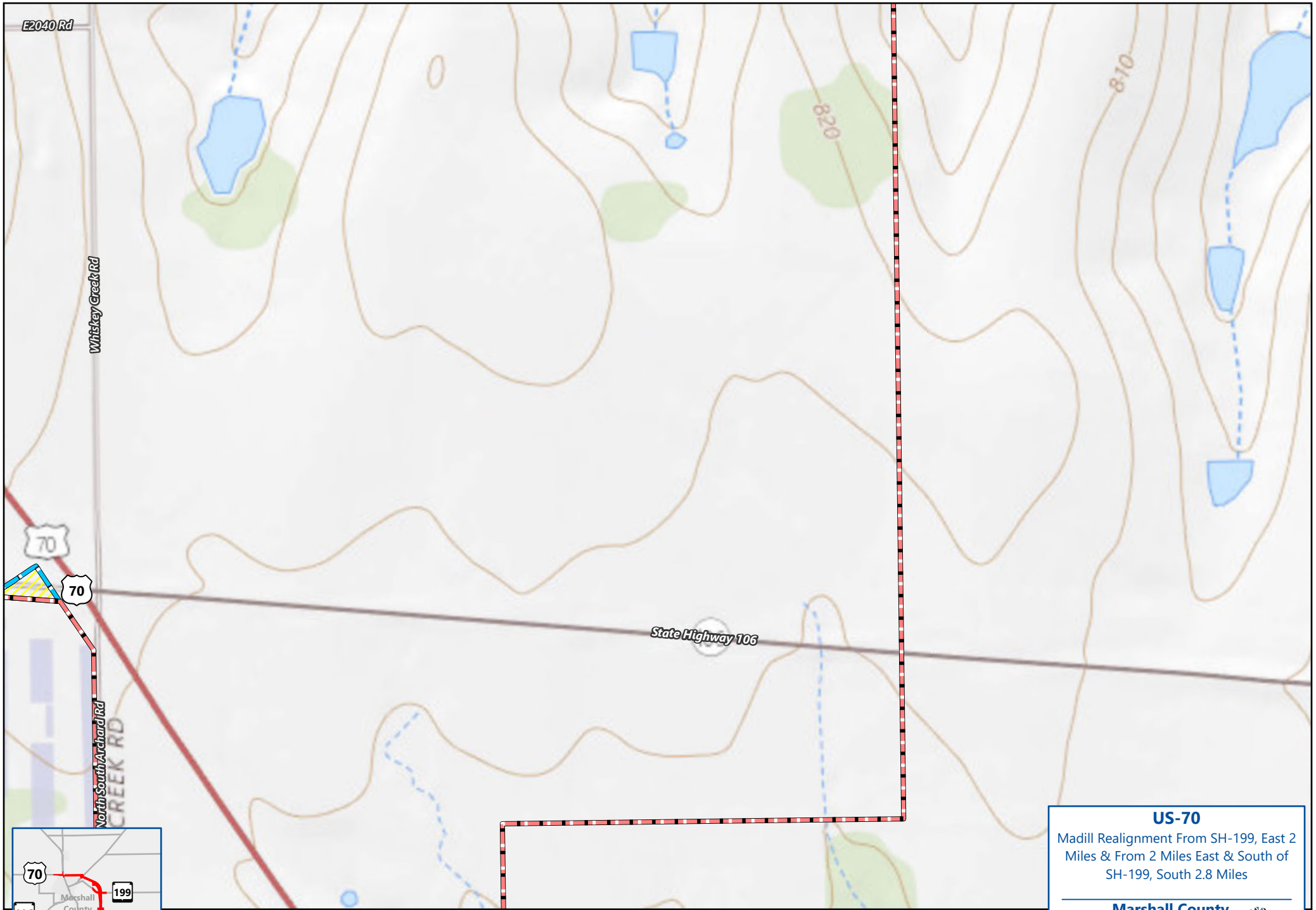


US-70

Madill Realignment From SH-199, East 2 Miles & From 2 Miles East & South of SH-199, South 2.8 Miles

Marshall County

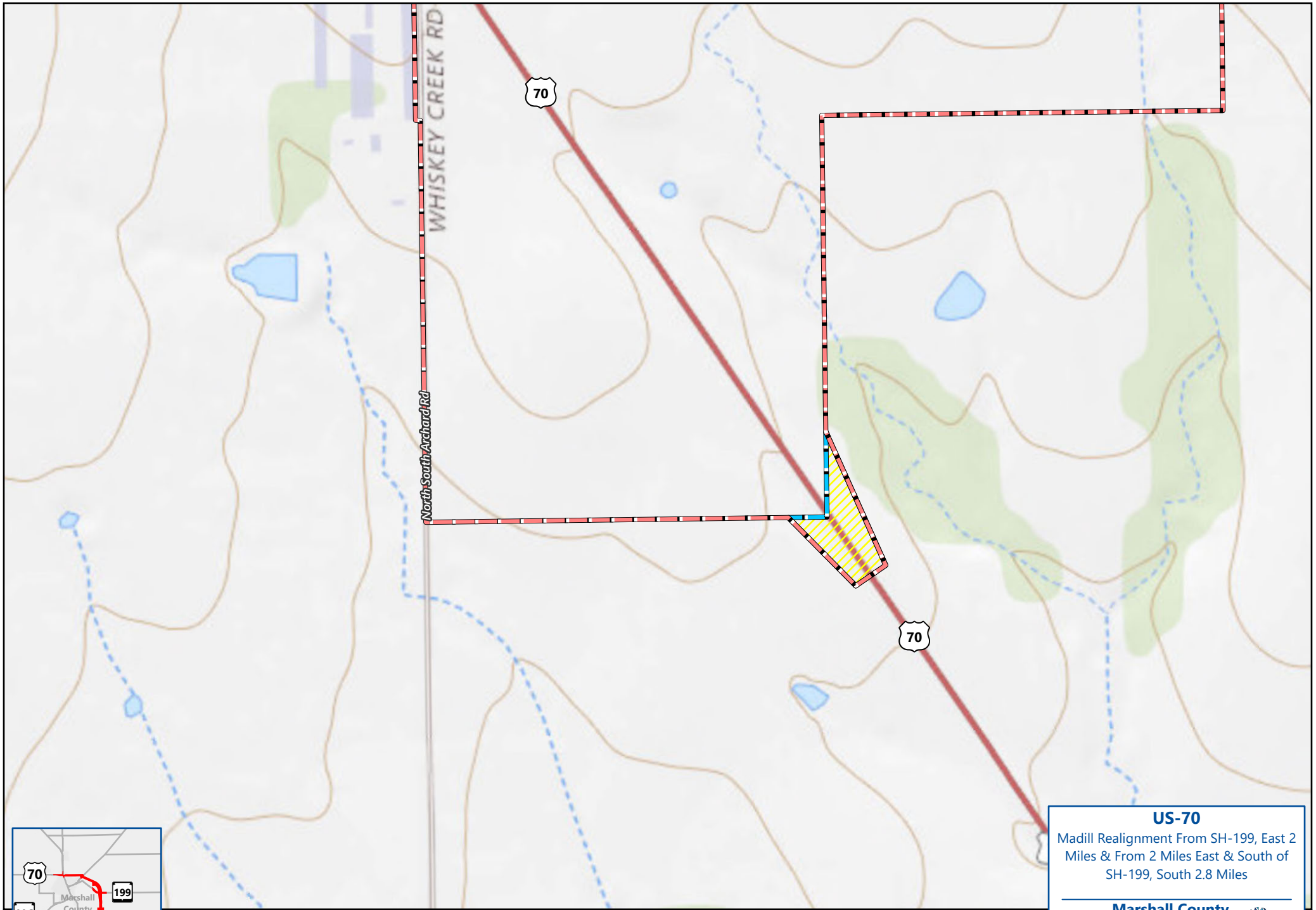
JP No. 18835(04) & (09)

OKLAHOMA Transportation

Figure 2k: USGS Topo

Sources: ESRI USGS Topo, Quad Index: Kingston North, Madill

1/25/2022 11:47 AM, P:\ODOT2000869.03 - US 70\1_Projects\US 70 BioWaters\US 70 BioWaters.aprx



US-70

Madill Realignment From SH-199, East 2 Miles & From 2 Miles East & South of SH-199, South 2.8 Miles

Marshall County

JP No. 18835(04) & (09)

OKLAHOMA Transportation

Figure 2I: USGS Topo

Sources: ESRI USGS Topo, Quad Index: Kingston North, Madill

1/25/2022 11:47 AM, P:\ODOT2000869.03 - US 70\1_Projects\US 70 BioWaters\US 70 BioWaters.aprx

US-70

Madill Realignment From SH-199, East 2 Miles & From 2 Miles East & South of SH-199, South 2.8 Miles

Marshall County

JP No. 18835(04) & (09)

OKLAHOMA Transportation

Figure 3a: NRCS Soils Map

1/25/2022 1:13 PM, P:\ODOT2000869.03 - US 70\1_Projects\US 70 BioWaters\US 70 BioWaters.aprx


10 - Ferris clay, 3 to 5 percent slopes, eroded
13 - Frioton silty clay loam, 0 to 1 percent slopes, occasionally flooded
21 - Konsil fine sandy loam, 1 to 5 percent slopes, eroded
26 - Purves clay, 3 to 5 percent slopes
27 - Tarrant very cobbly clay, 2 to 15 percent slopes
3 - Burleson clay, 1 to 3 percent slopes
13
13
N 6Th St
N 7Th St
27
26
3
East Donehoo St
East Harris St
21
North 5Th St
North 4Th St
North 3R
East Bird St
E20141 Rd
E Drew St
North 6Th St
North 7Th St
East Wolf St
North 8Th St
North 9Th St
East Drew St
99
East O
South 10Th St
10
70
199
99C
Marshall County
99
70F
Project Location
Current Environmental Study Area
NRCS Soil Unit
N
0
200
400
Feet
1 inch = 400 feet
US-70
Madill Realignment From SH-199, East 2 Miles & From 2 Miles East & South of SH-199, South 2.8 Miles
Marshall County
JP No. 18835(04) & (09)
OKLAHOMA Transportation
Figure 3b: NRCS Soils Map
Source: ESRI World Imagery, NRCS
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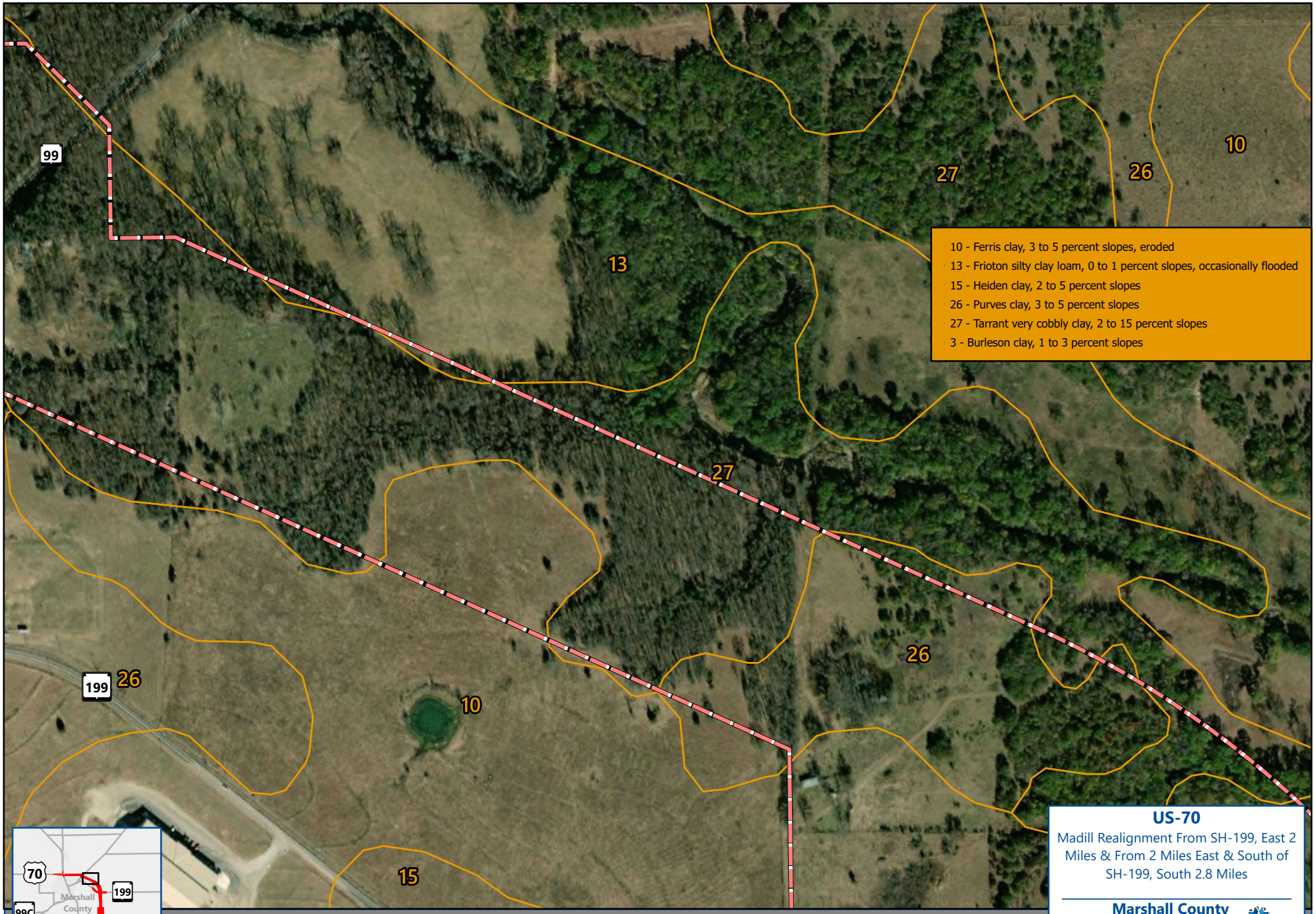

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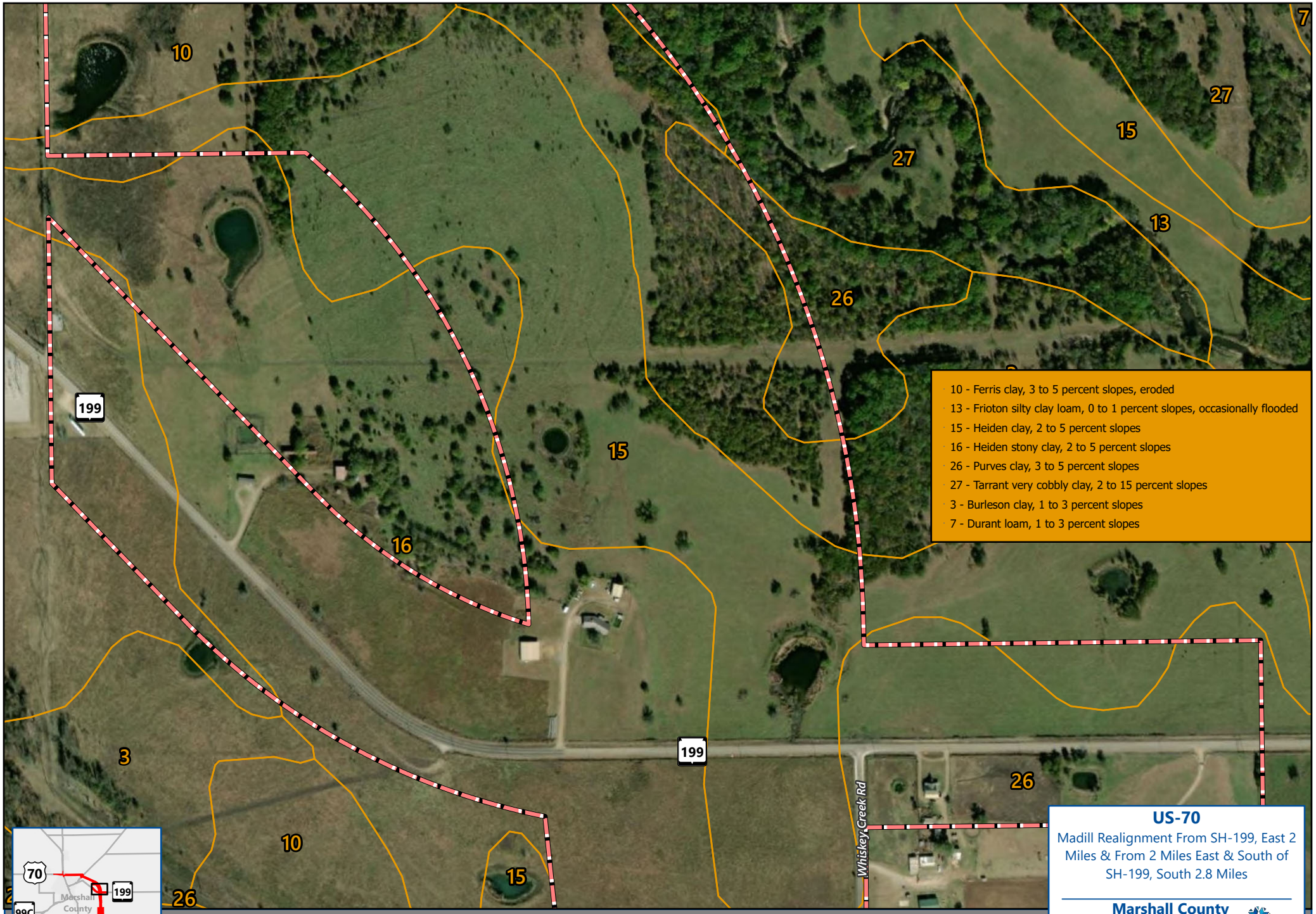


Source: ESRI World Imagery, NRCS

US-70

Madill Realignment From SH-199, East 2 Miles & From 2 Miles East & South of SH-199, South 2.8 Miles

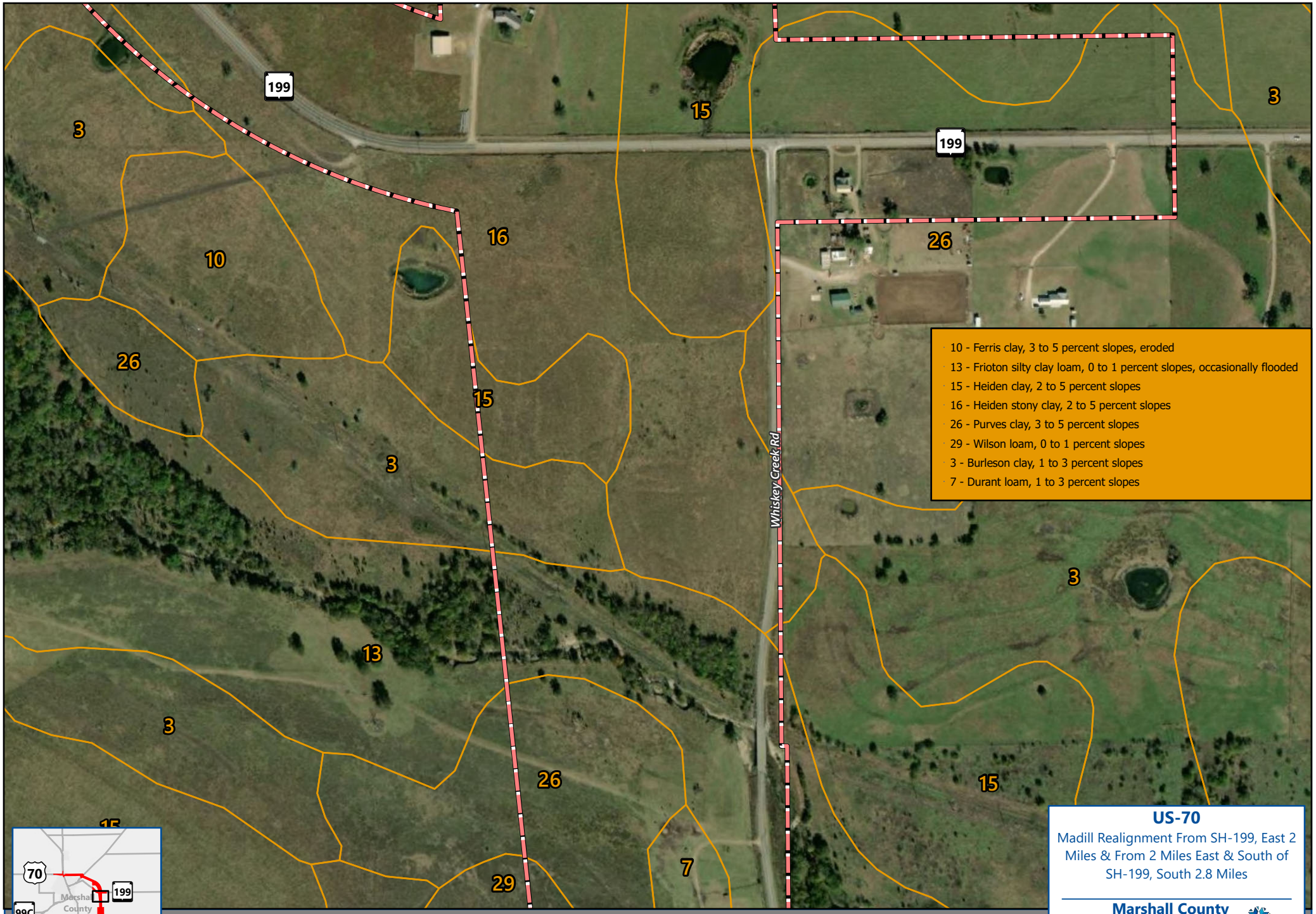
Marshall County

JP No. 18835(04) & (09)

OKLAHOMA Transportation

Figure 3d: NRCS Soils Map

1/25/2022 1:16 PM, P:\ODOT2000869.03 - US 70\1_Projects\US 70 BioWaters\US 70 BioWaters.aprx



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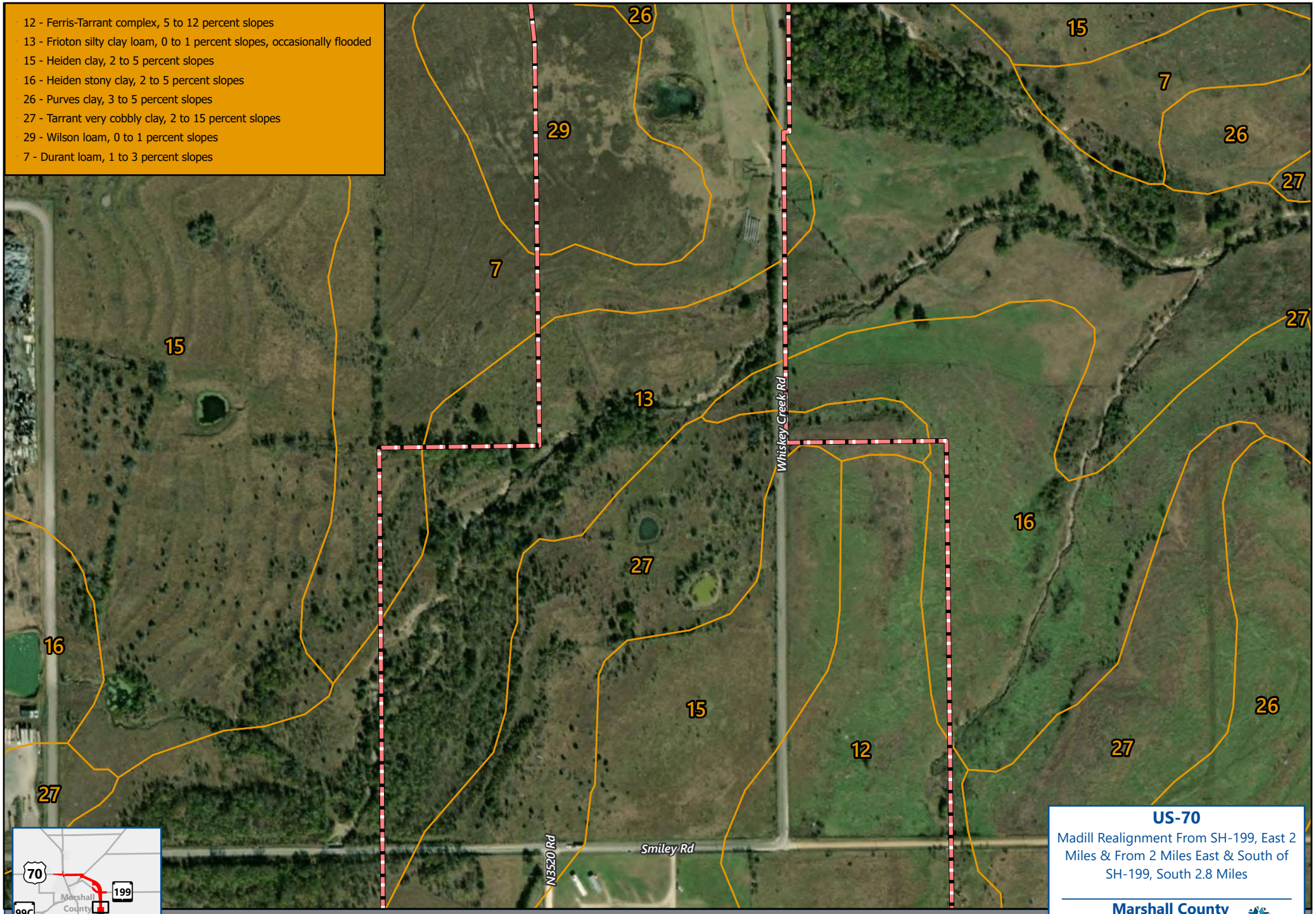


US-70

Madill Realignment From SH-199, East 2 Miles & From 2 Miles East & South of SH-199, South 2.8 Miles

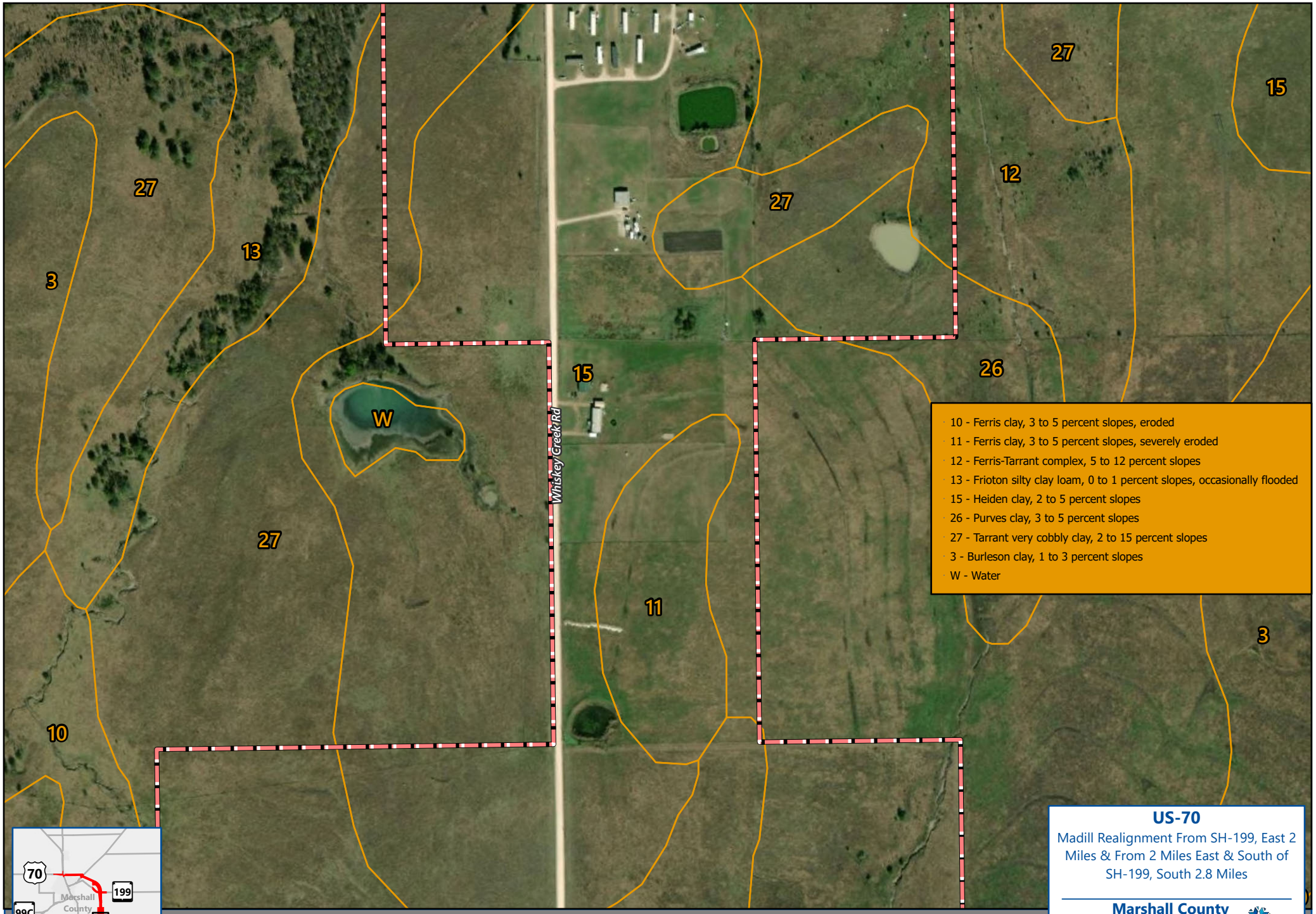
Marshall County

JP No. 18835(04) & (09)

OKLAHOMA Transportation

Figure 3f: NRCS Soils Map

1/25/2022 1:13 PM, P:\ODOT2000869.03 - US 70\1_Projects\US 70 BioWaters\US 70 BioWaters.aprx



Source: ESRI World Imagery, NRCS

US-70

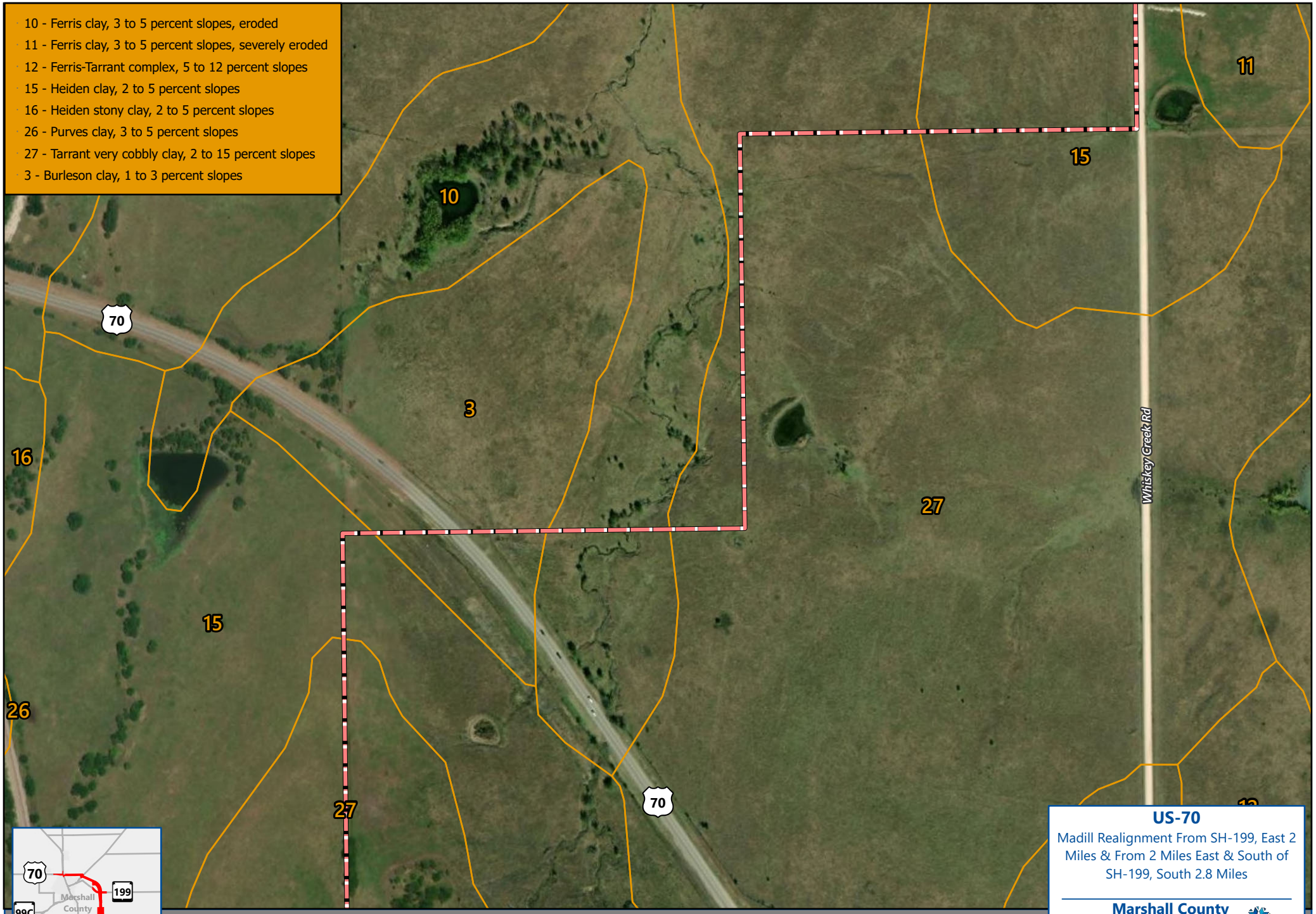
Madill Realignment From SH-199, East 2 Miles & From 2 Miles East & South of SH-199, South 2.8 Miles

Marshall County

JP No. 18835(04) & (09)

OKLAHOMA Transportation

Figure 3g: NRCS Soils Map



US-70

Madill Realignment From SH-199, East 2 Miles & From 2 Miles East & South of SH-199, South 2.8 Miles

Marshall County

JP No. 18835(04) & (09)

OKLAHOMA Transportation

Figure 3h: NRCS Soils Map

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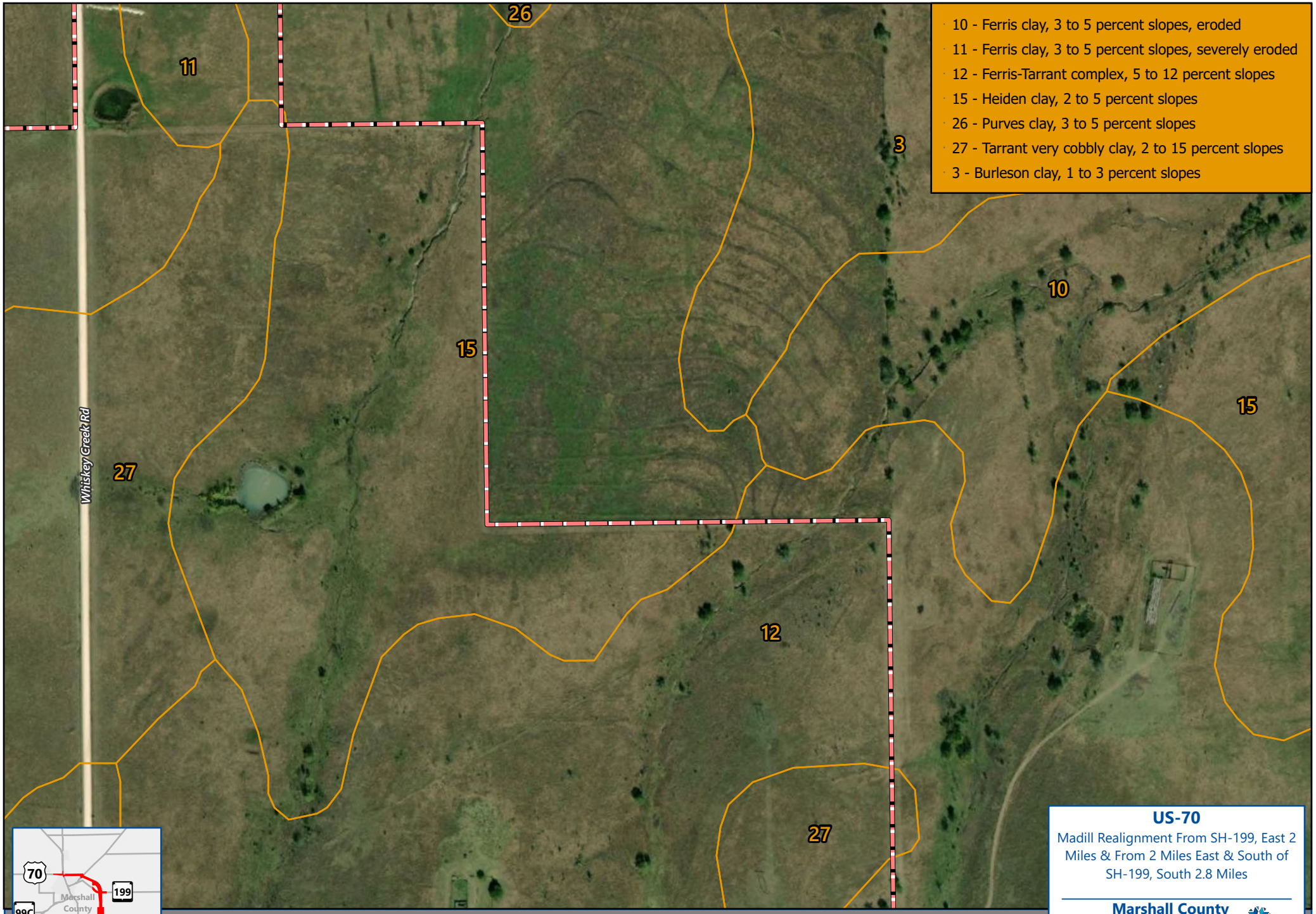

Source: ESRI World Imagery, NRCS

US-70

Madill Realignment From SH-199, East 2 Miles & From 2 Miles East & South of SH-199, South 2.8 Miles

Marshall County

JP No. 18835(04) & (09)

OKLAHOMA Transportation

Figure 3i: NRCS Soils Map

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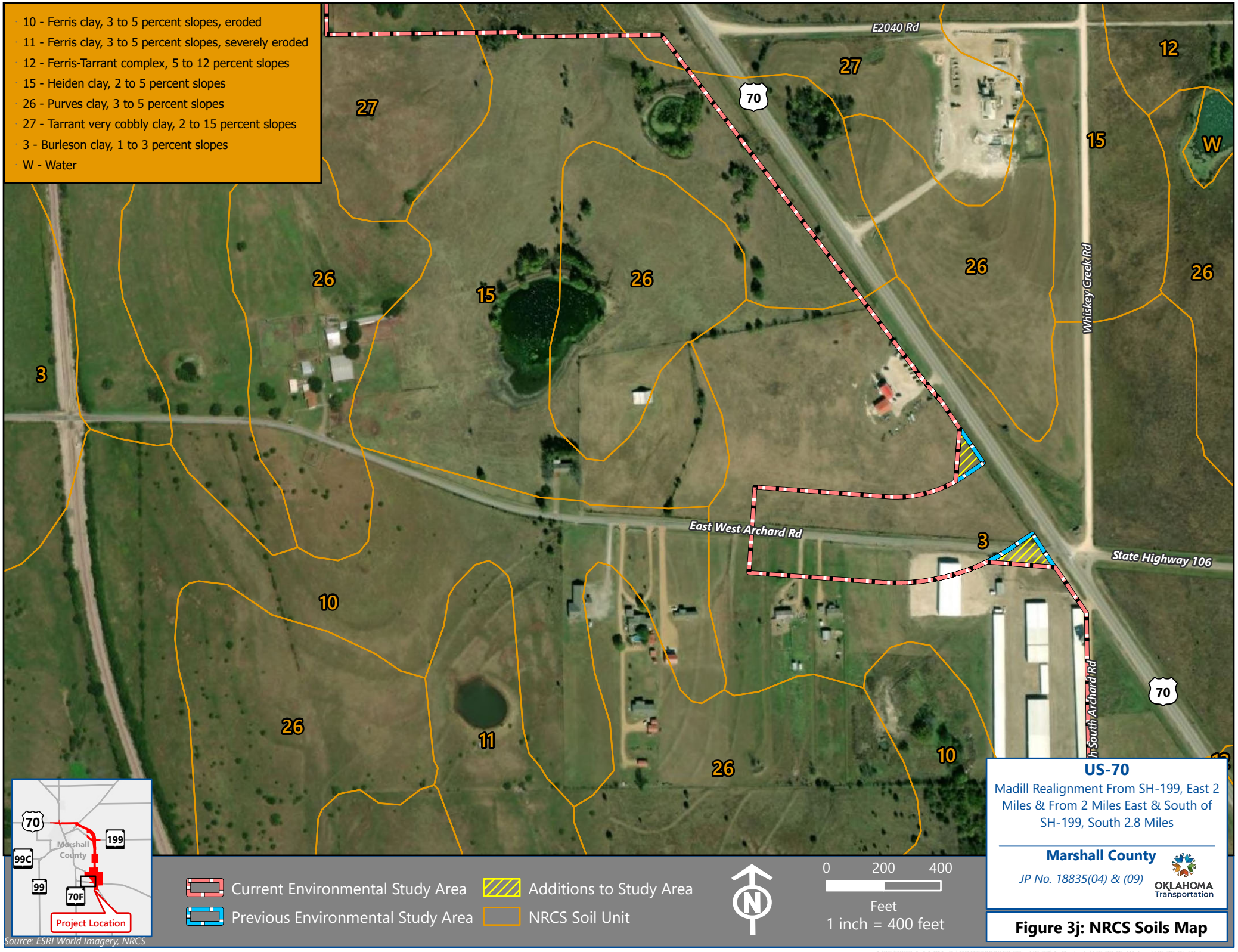
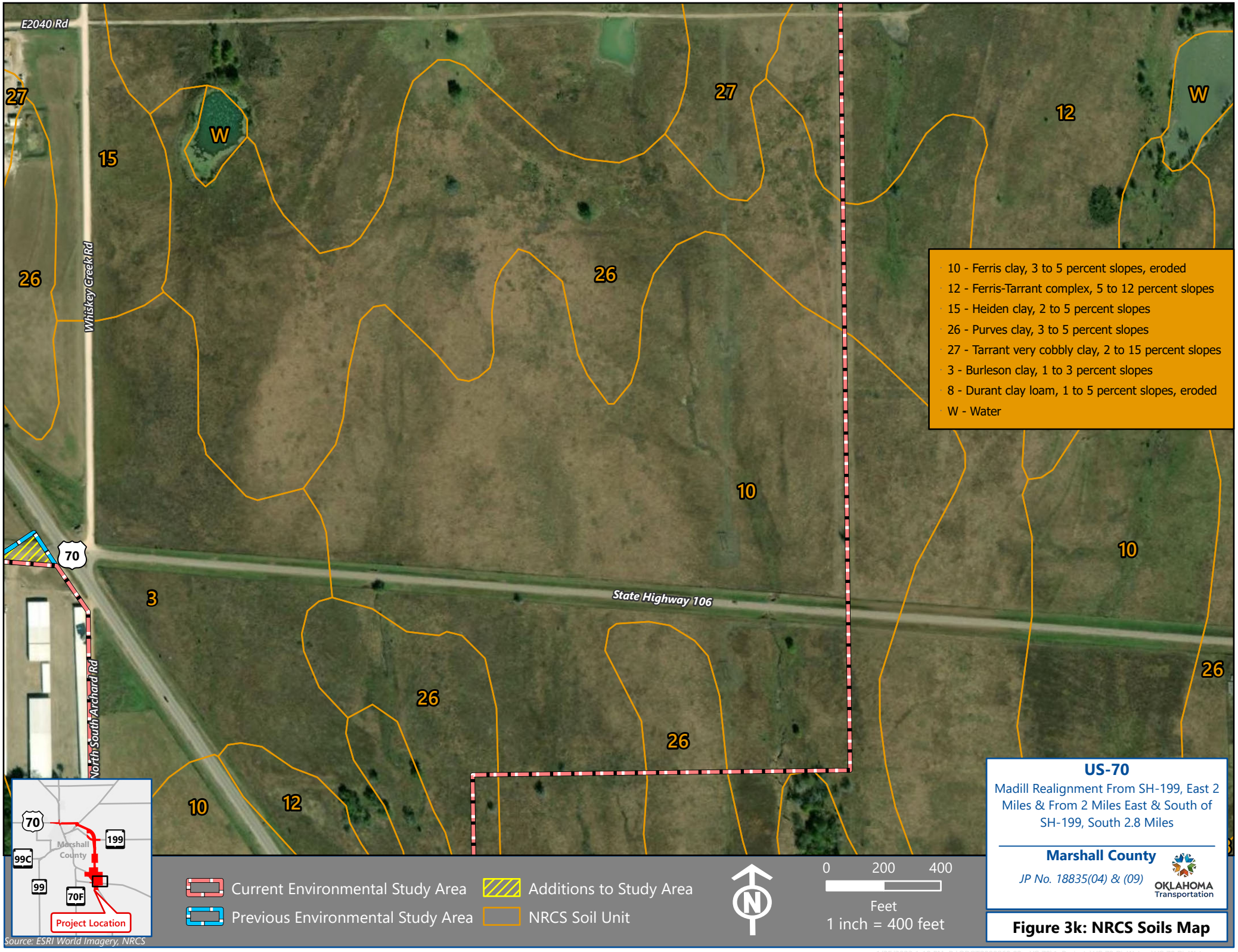

10 - Ferris clay, 3 to 5 percent slopes, eroded
11 - Ferris clay, 3 to 5 percent slopes, severely eroded
12 - Ferris-Tarrant complex, 5 to 12 percent slopes
15 - Heiden clay, 2 to 5 percent slopes
26 - Purves clay, 3 to 5 percent slopes
27 - Tarrant very cobbly clay, 2 to 15 percent slopes
3 - Burleson clay, 1 to 3 percent slopes
W - Water
E2040 Rd
Whiskey Creek Rd
East West Archard Rd
State Highway 106
South Archard Rd
70
199
99C
99
70F
Marshall County
Project Location
Source: ESRI World Imagery, NRCS
Current Environmental Study Area
Previous Environmental Study Area
Additions to Study Area
NRCS Soil Unit
N
0 200 400
Feet
1 inch = 400 feet
US-70
Madill Realignment From SH-199, East 2 Miles & From 2 Miles East & South of SH-199, South 2.8 Miles
Marshall County
JP No. 18835(04) & (09)
OKLAHOMA Transportation
Figure 3j: NRCS Soils Map
1/25/2022 1:14 PM, P:\ODOT2000869.03 - US 70\1_Projects\US 70 BioWaters\US 70 BioWaters.aprx



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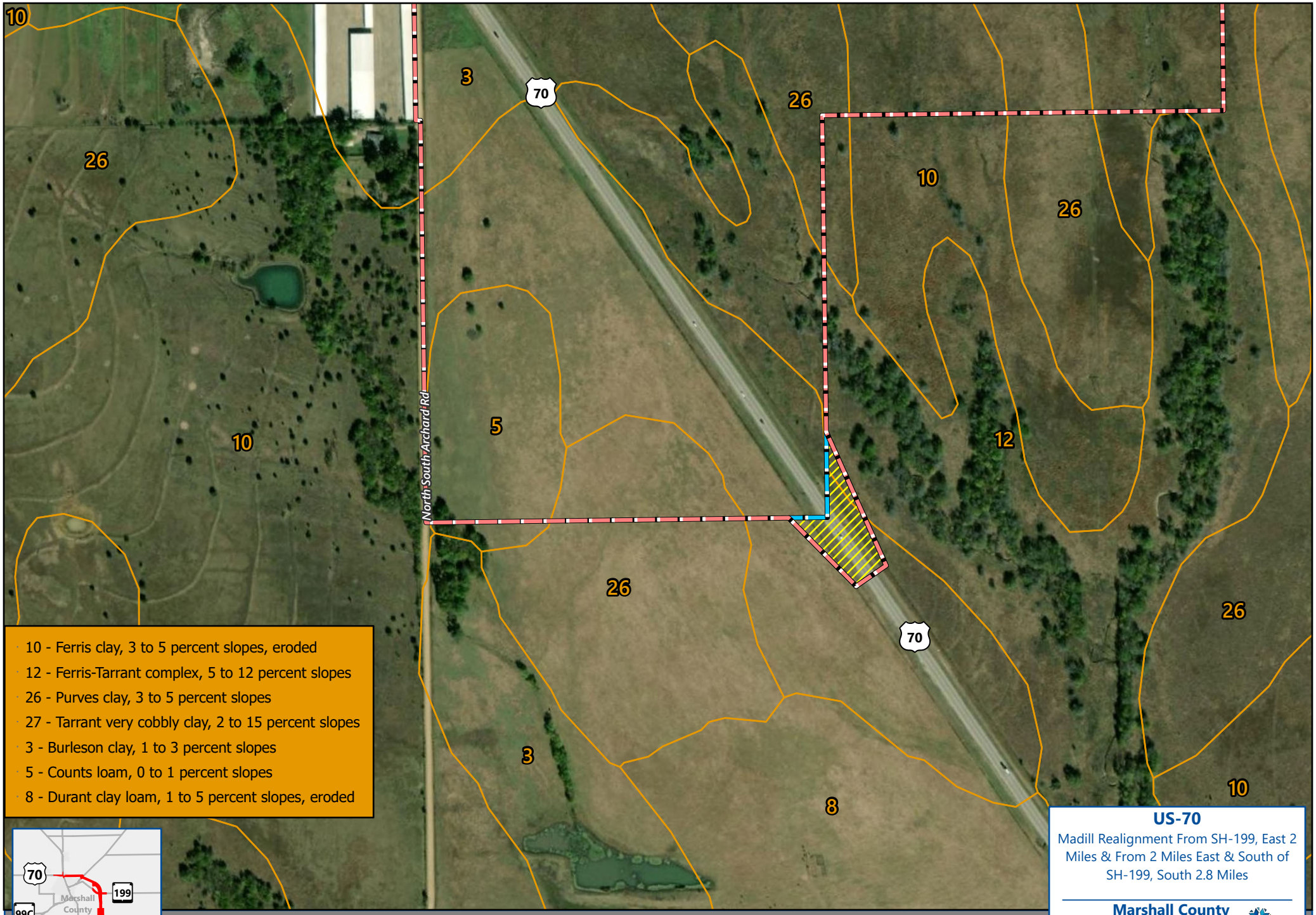
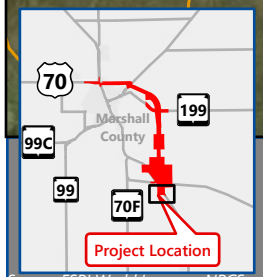


- 10 - Ferris clay, 3 to 5 percent slopes, eroded
- 12 - Ferris-Tarrant complex, 5 to 12 percent slopes
- 26 - Purves clay, 3 to 5 percent slopes
- 27 - Tarrant very cobbly clay, 2 to 15 percent slopes
- 3 - Burleson clay, 1 to 3 percent slopes
- 5 - Counts loam, 0 to 1 percent slopes
- 8 - Durant clay loam, 1 to 5 percent slopes, eroded



Current Environmental Study Area
Previous Environmental Study Area
Additions to Study Area
NRCS Soil Unit

0 200 400
Feet
1 inch = 400 feet

Source: ESRI World Imagery, NRCS

US-70

Madill Realignment From SH-199, East 2 Miles & From 2 Miles East & South of SH-199, South 2.8 Miles

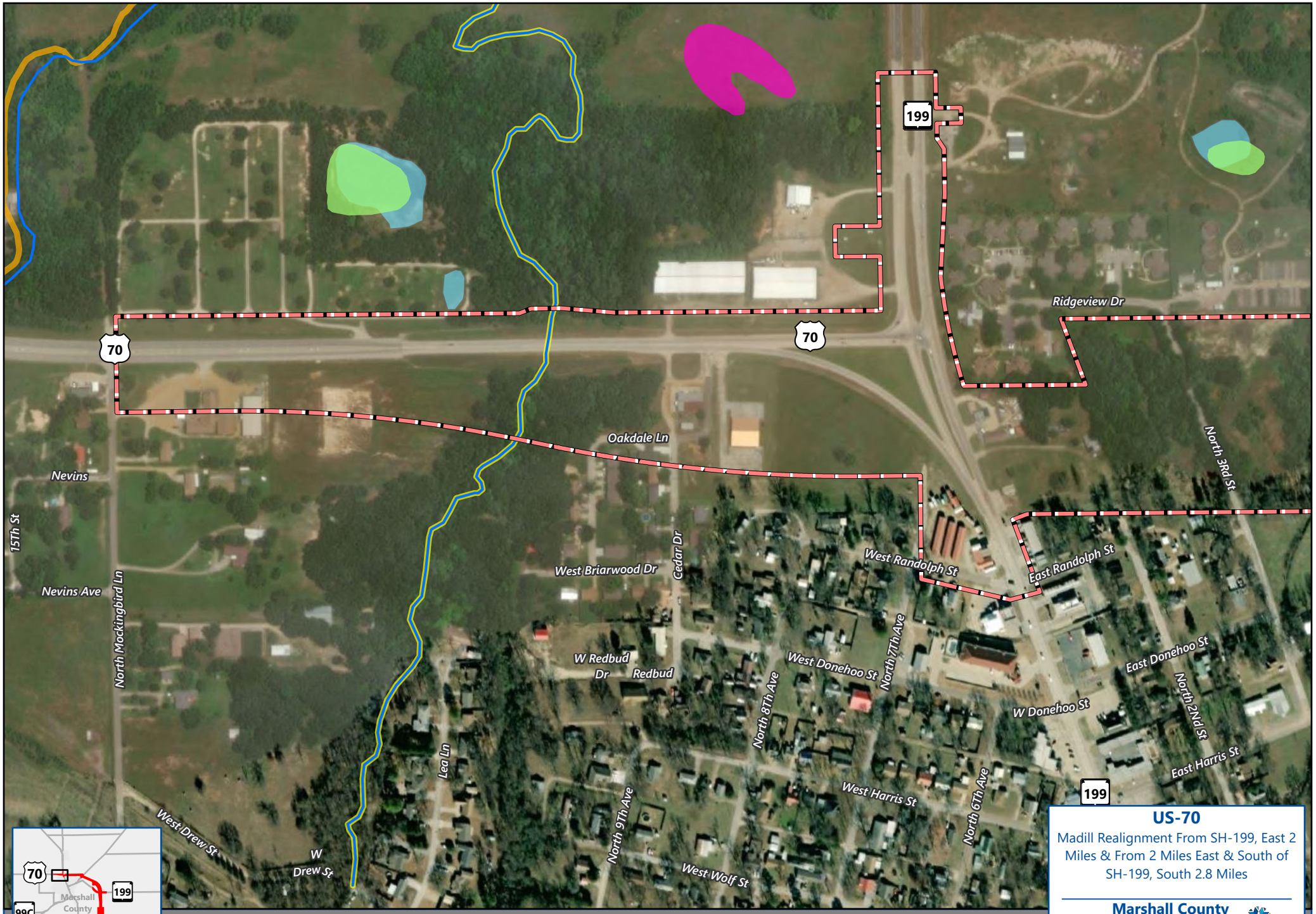
Marshall County

JP No. 18835(04) & (09)

OKLAHOMA Transportation

Figure 3I: NRCS Soils Map

1/25/2022 1:20 PM, P:\ODOT2000869.03 - US 70\1_Projects\US 70 BioWaters\US 70 BioWaters.aprx



Source: ESRI World Imagery, NWI, NHD

US-70

Madill Realignment From SH-199, East 2 Miles & From 2 Miles East & South of SH-199, South 2.8 Miles

Marshall County

JP No. 18835(04) & (09)

OKLAHOMA Transportation

Figure 4a: Water Resources

1/25/2022 2:00 PM, P:\ODOT2000869.03 - US 70\1_Projects\US 70 BioWaters\US 70 BioWaters.aprx

US-70

Madill Realignment From SH-199, East 2 Miles & From 2 Miles East & South of SH-199, South 2.8 Miles

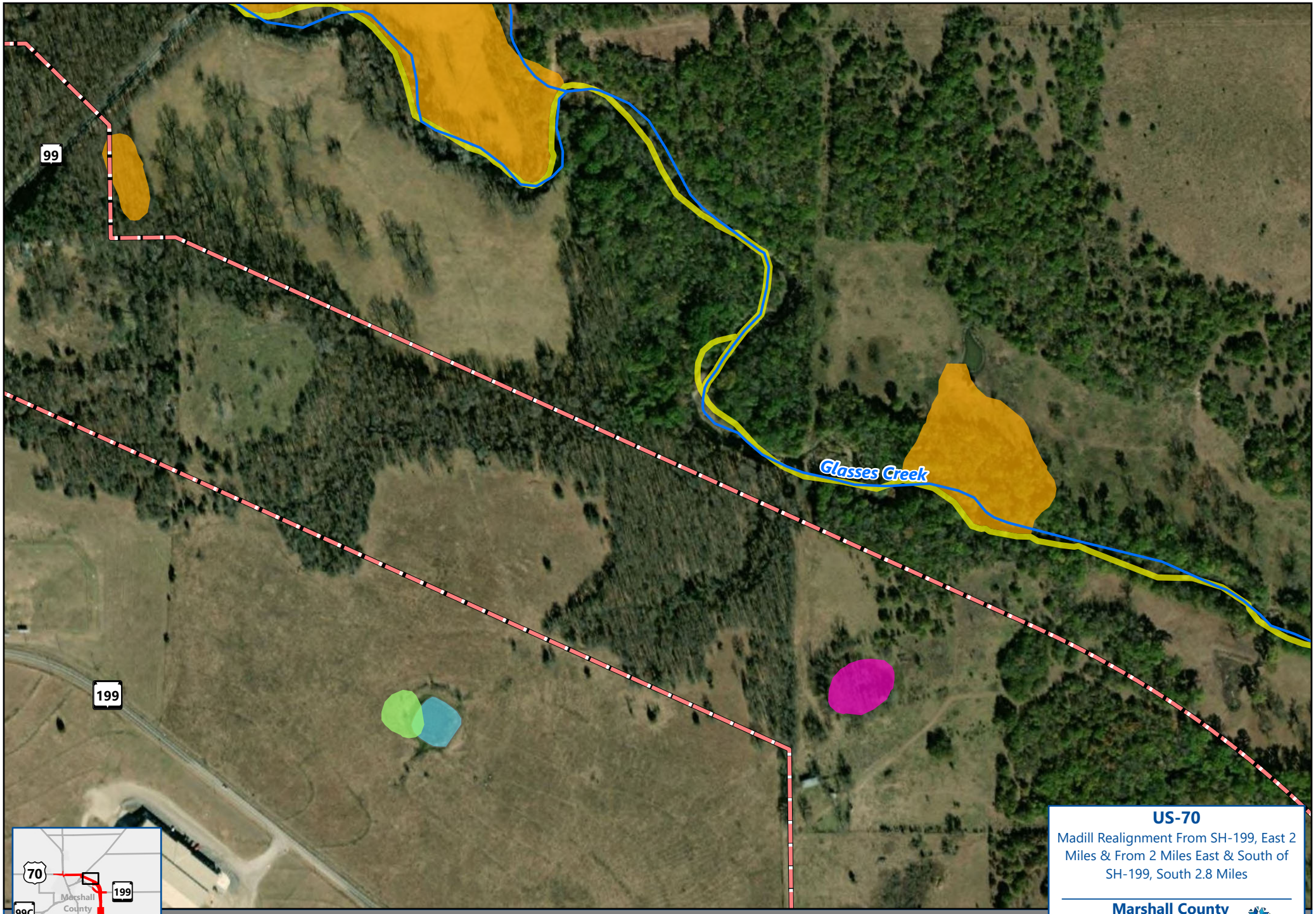
Marshall County

JP No. 18835(04) & (09)

OKLAHOMA Transportation

Figure 4b: Water Resources

1/25/2022 2:00 PM, P:\ODOT2000869.03 - US 70\1_Projects\US 70 BioWaters\US 70 BioWaters.aprx



US-70

Madill Realignment From SH-199, East 2 Miles & From 2 Miles East & South of SH-199, South 2.8 Miles

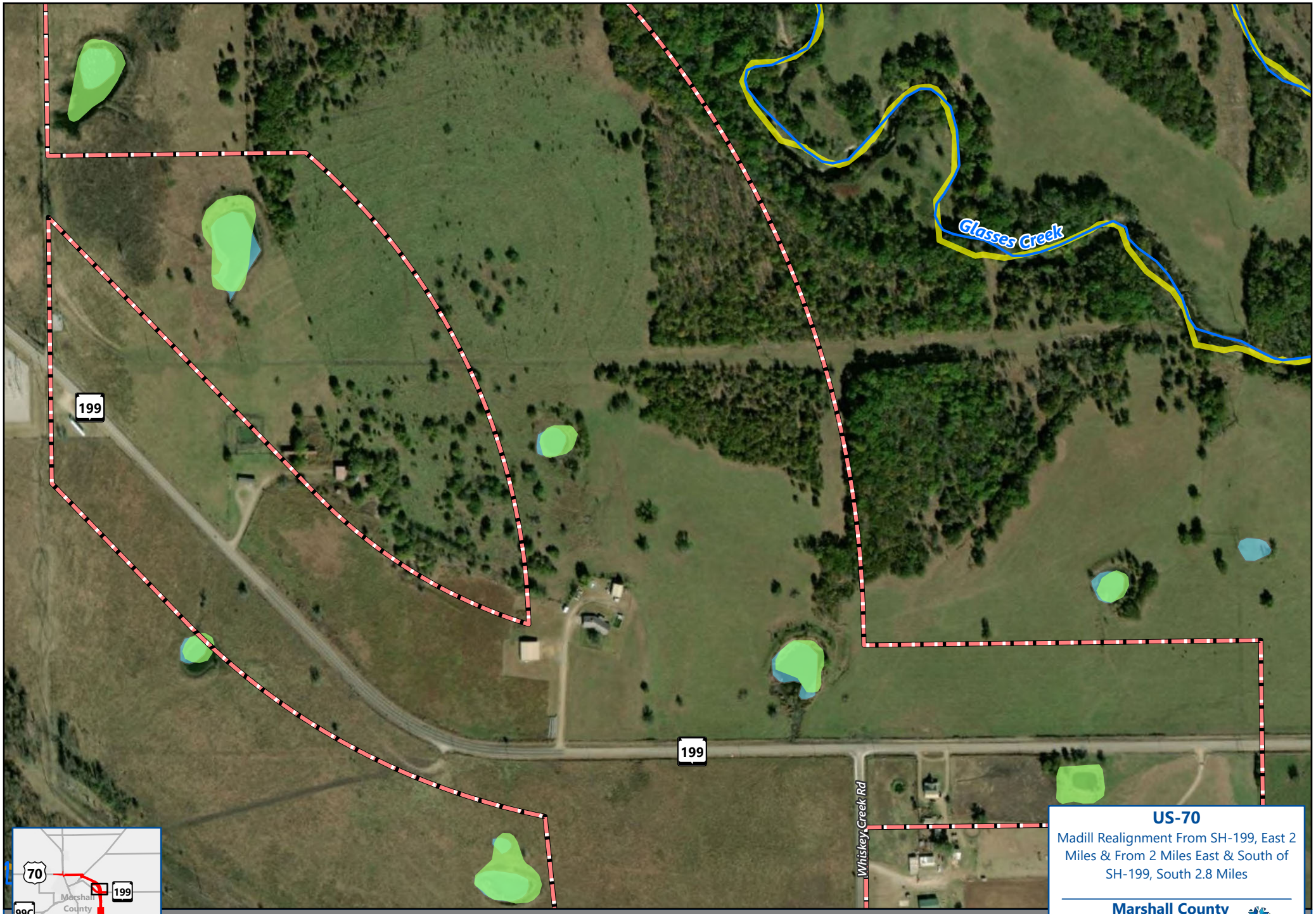
Marshall County

JP No. 18835(04) & (09)

OKLAHOMA Transportation

Figure 4c: Water Resources

1/25/2022 2:00 PM, P:\ODOT2000869.03 - US 70\1_Projects\US 70 BioWaters\US 70 BioWaters.aprx



US-70

Madill Realignment From SH-199, East 2 Miles & From 2 Miles East & South of SH-199, South 2.8 Miles

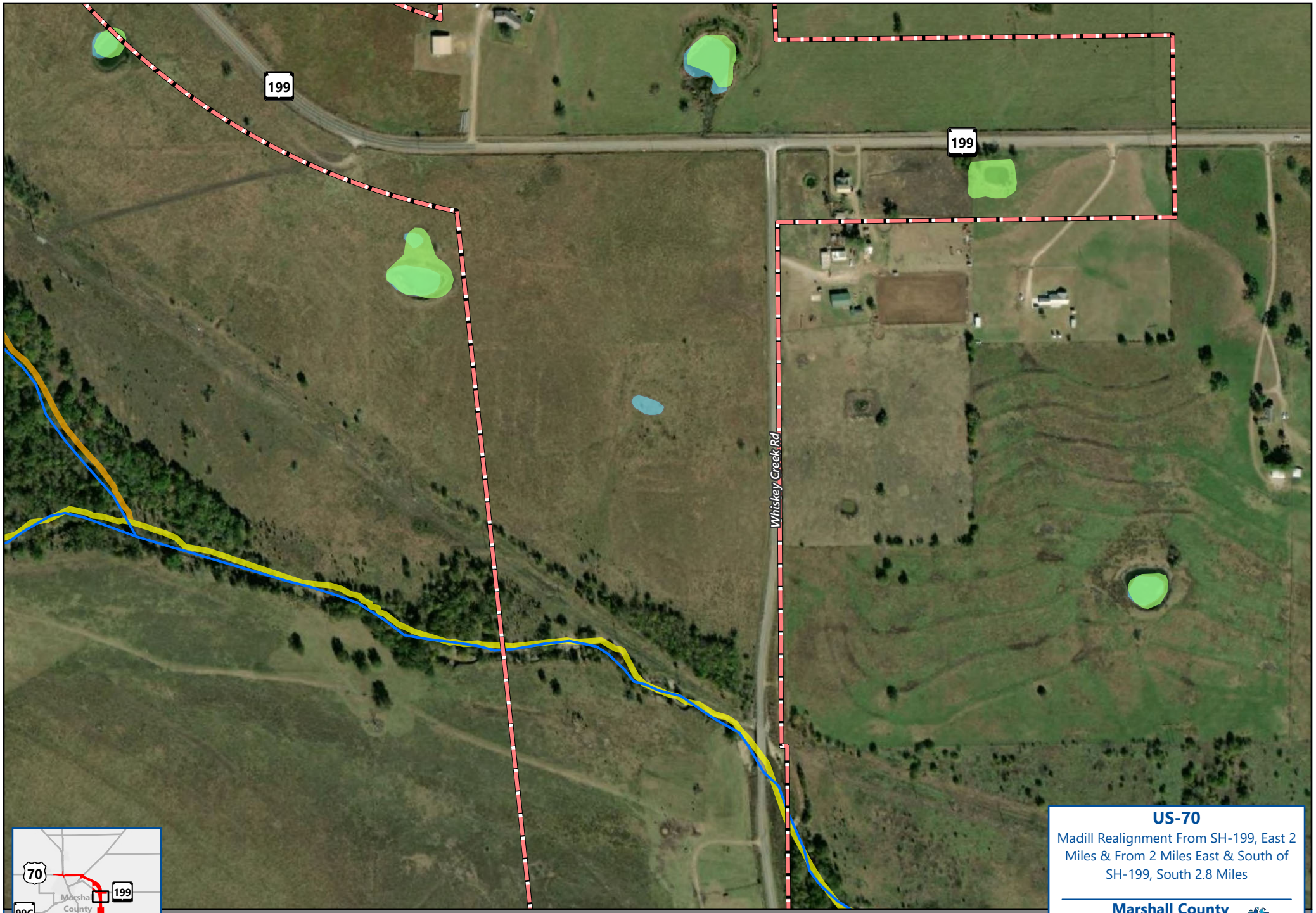
Marshall County

JP No. 18835(04) & (09)

OKLAHOMA Transportation

Figure 4d: Water Resources

1/25/2022 2:00 PM, P:\ODOT2000869.03 - US 70\1_Projects\US 70 BioWaters\US 70 BioWaters.aprx



US-70

Madill Realignment From SH-199, East 2 Miles & From 2 Miles East & South of SH-199, South 2.8 Miles

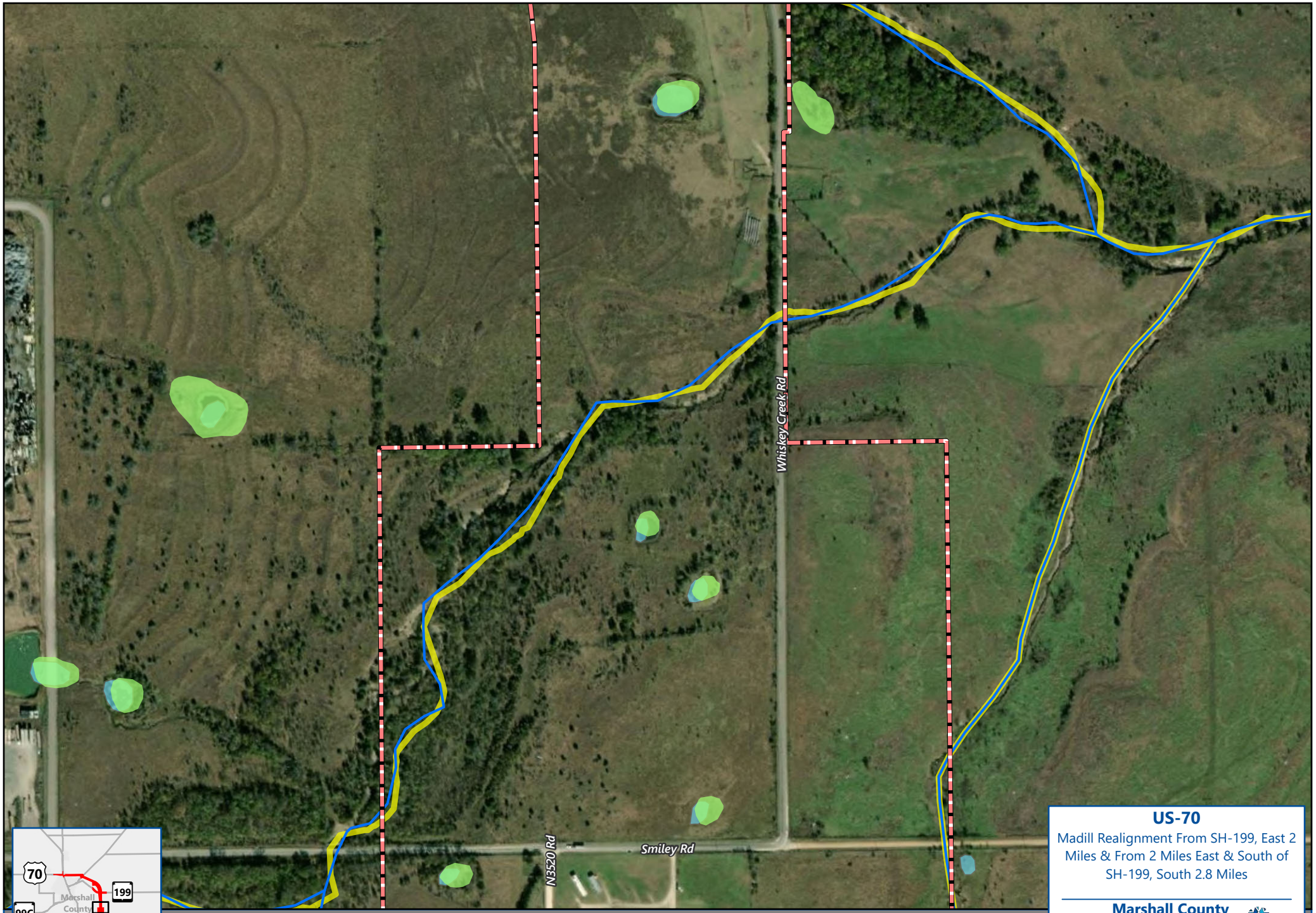
Marshall County

JP No. 18835(04) & (09)

OKLAHOMA Transportation

Figure 4e: Water Resources

1/25/2022 2:00 PM, P:\ODOT2000869.03 - US 70\1_Projects\US 70 BioWaters\US 70 BioWaters.aprx



US-70

Madill Realignment From SH-199, East 2 Miles & From 2 Miles East & South of SH-199, South 2.8 Miles

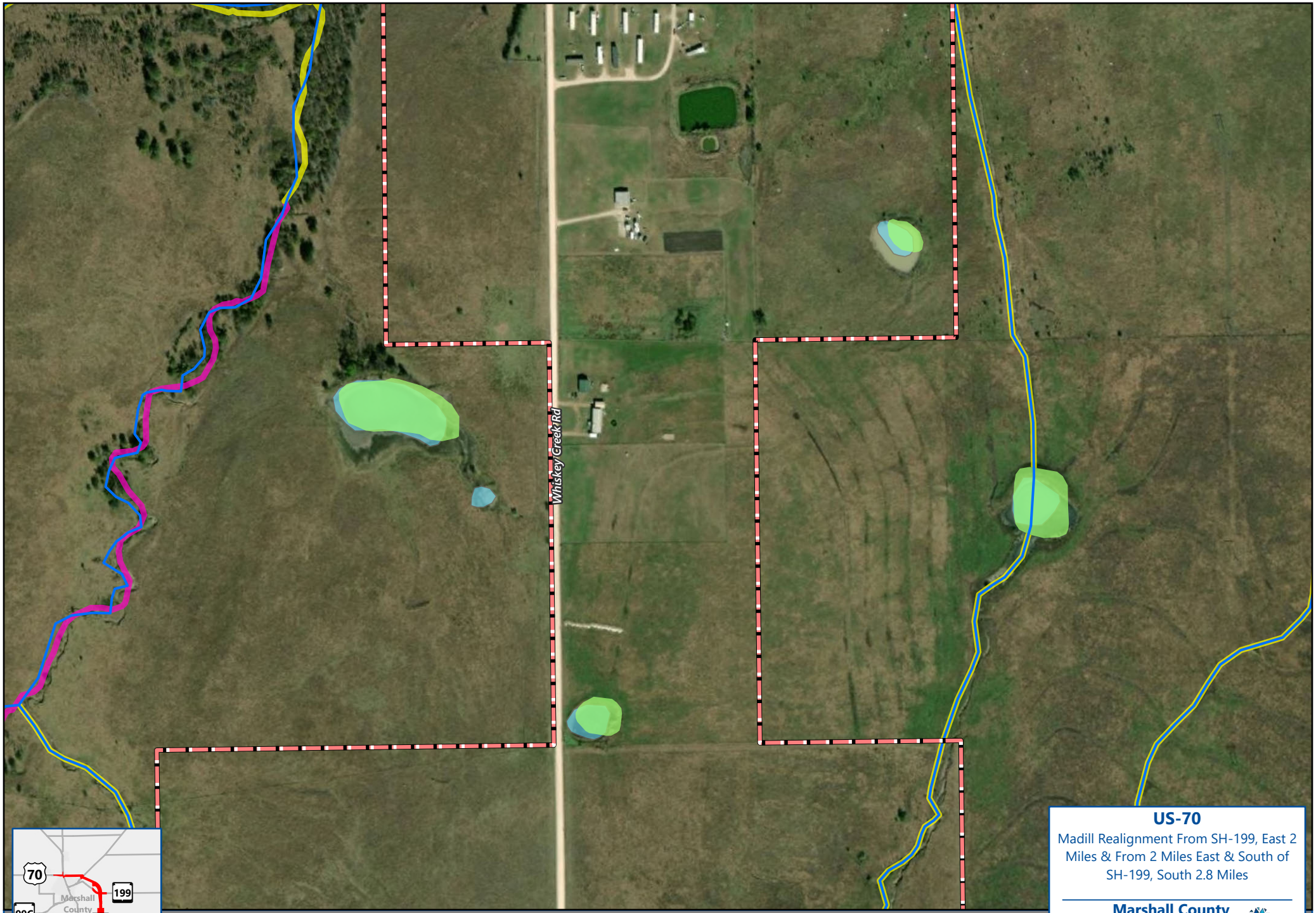
Marshall County

JP No. 18835(04) & (09)

OKLAHOMA Transportation

Figure 4f: Water Resources

1/25/2022 2:00 PM, P:\ODOT2000869.03 - US 70\1_Projects\US 70 BioWaters\US 70 BioWaters.aprx



US-70

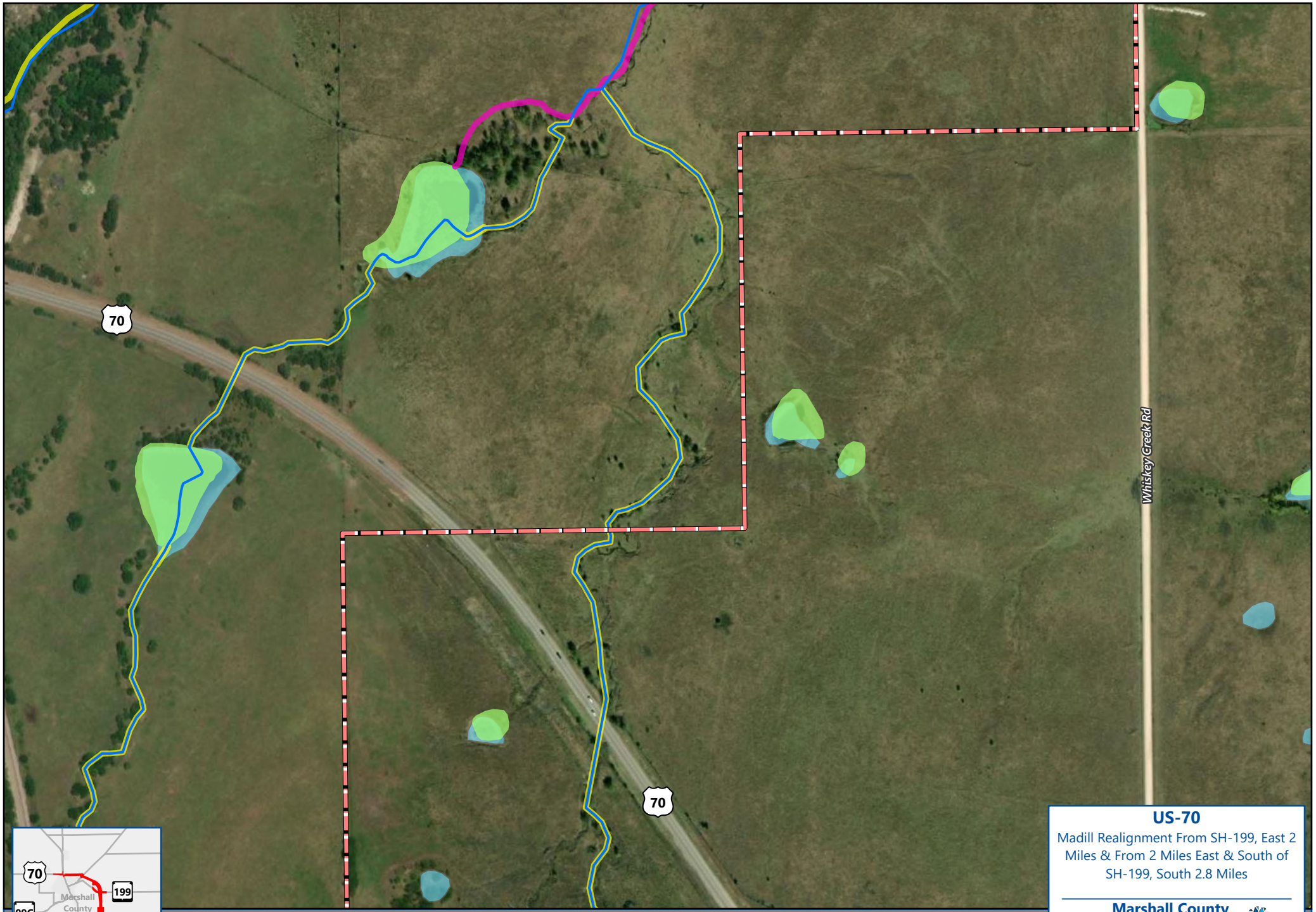
Madill Realignment From SH-199, East 2 Miles & From 2 Miles East & South of SH-199, South 2.8 Miles

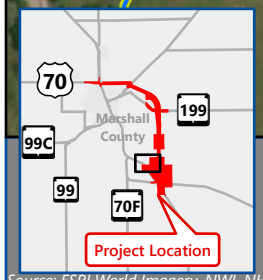
Marshall County

JP No. 18835(04) & (09)

OKLAHOMA Transportation

Figure 4g: Water Resources





Current Environmental Study Area
Creek or River (NHD)
Waterbody (NHD)
Freshwater Emergent Wetland
Freshwater Forested/Shrub Wetland
Freshwater Pond
Riverine

N

0 200 400
Feet
1 inch = 400 feet

Source: ESRI World Imagery, NWI, NHD

US-70

Madill Realignment From SH-199, East 2 Miles & From 2 Miles East & South of SH-199, South 2.8 Miles

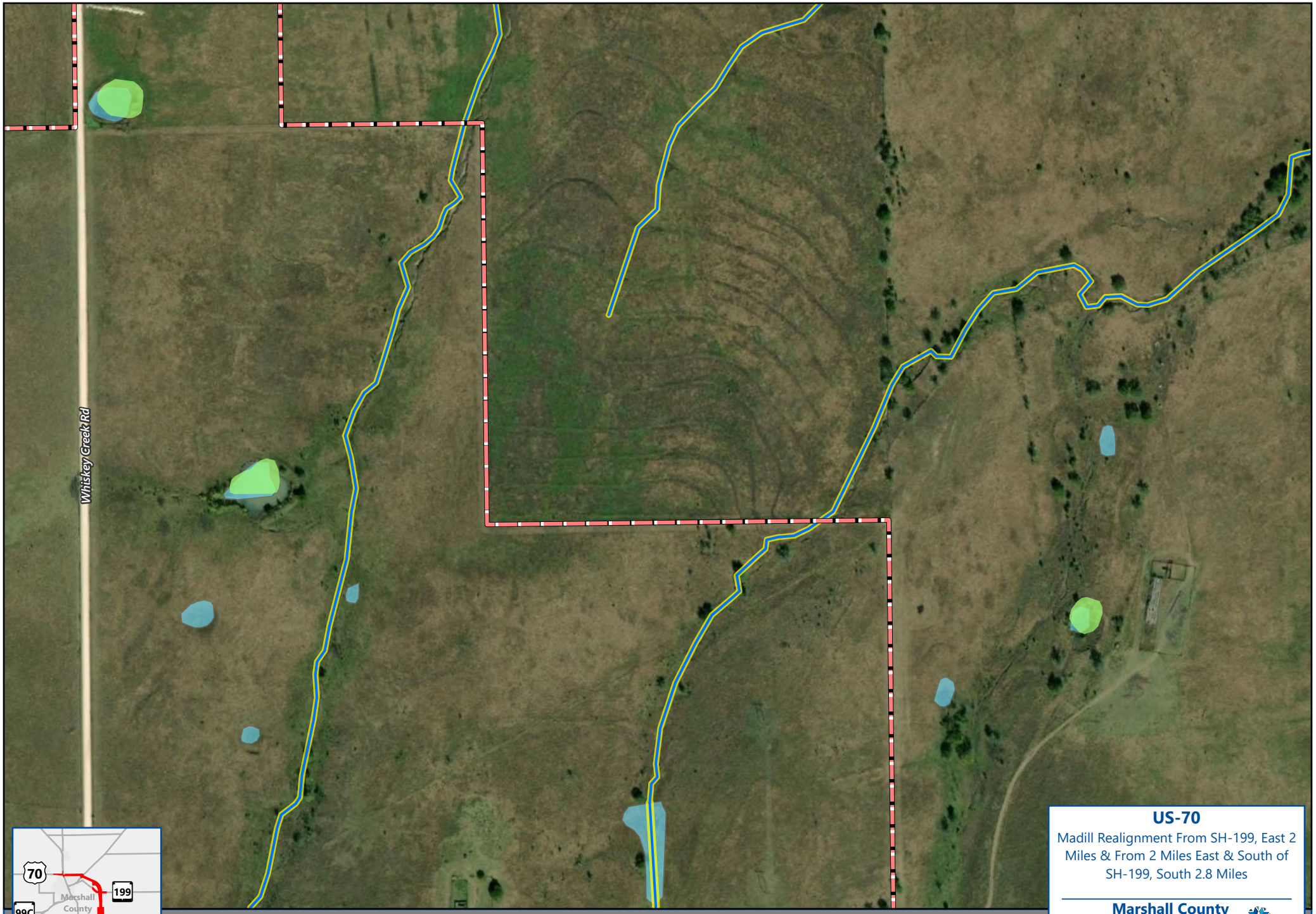
Marshall County

JP No. 18835(04) & (09)

OKLAHOMA Transportation

Figure 4h: Water Resources

1/25/2022 2:00 PM, P:\ODOT2000869.03 - US 70\1_Projects\US 70 BioWaters\US 70 BioWaters.aprx



Source: ESRI World Imagery, NWI, NHD

US-70

Madill Realignment From SH-199, East 2 Miles & From 2 Miles East & South of SH-199, South 2.8 Miles

Marshall County

JP No. 18835(04) & (09)

OKLAHOMA Transportation

Figure 4i: Water Resources

1/25/2022 2:01 PM, P:\ODOT2000869.03 - US 70\1_Projects\US 70 BioWaters\US 70 BioWaters.aprx

Source: ESRI World Imagery, NWI, NHD

US-70

Madill Realignment From SH-199, East 2 Miles & From 2 Miles East & South of SH-199, South 2.8 Miles

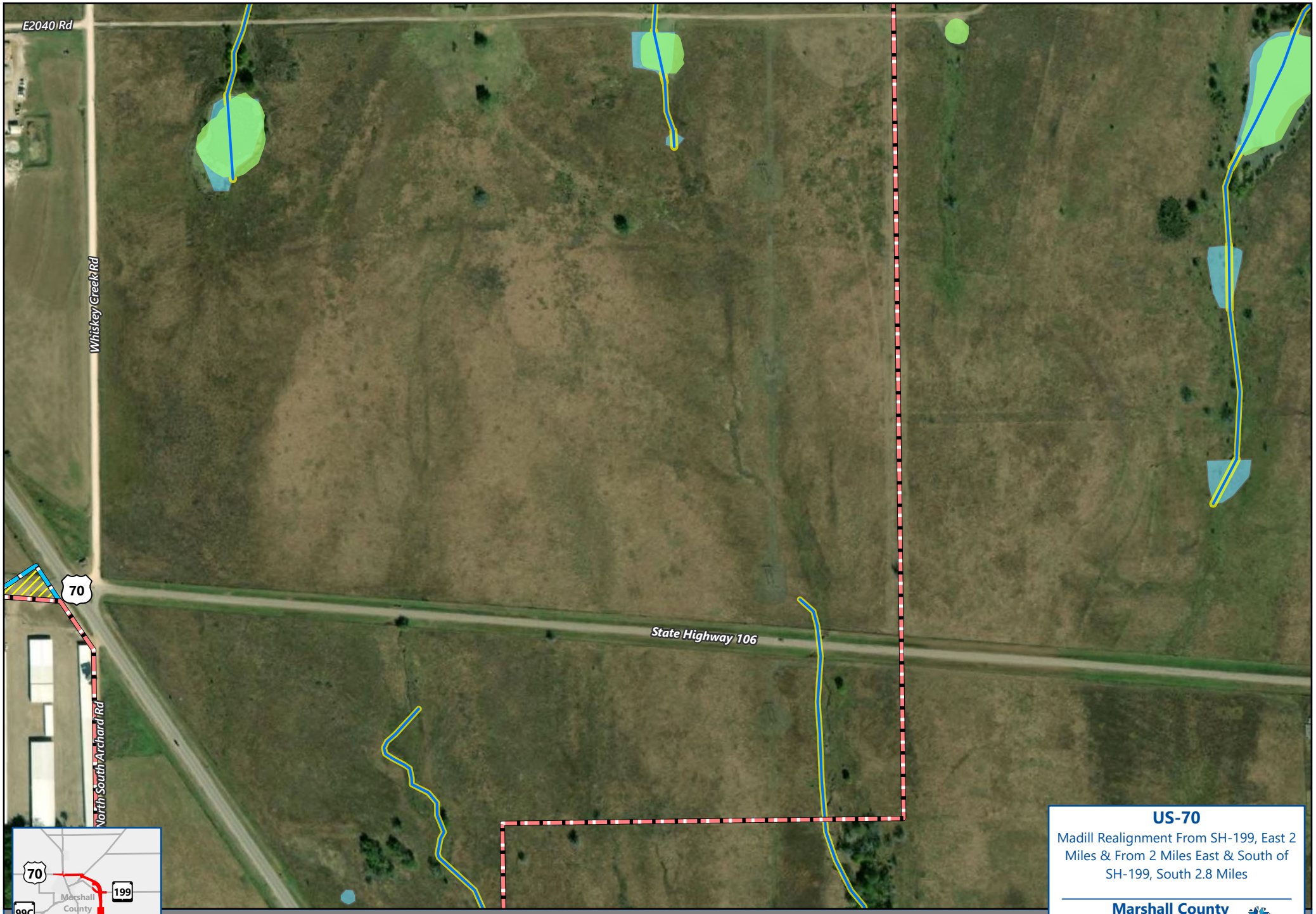
Marshall County

JP No. 18835(04) & (09)

OKLAHOMA Transportation

Figure 4j: Water Resources

1/25/2022 2:01 PM, P:\ODOT2000869.03 - US 70\1_Projects\US 70 BioWaters\US 70 BioWaters.aprx



Source: ESRI World Imagery, NWI, NHD

US-70

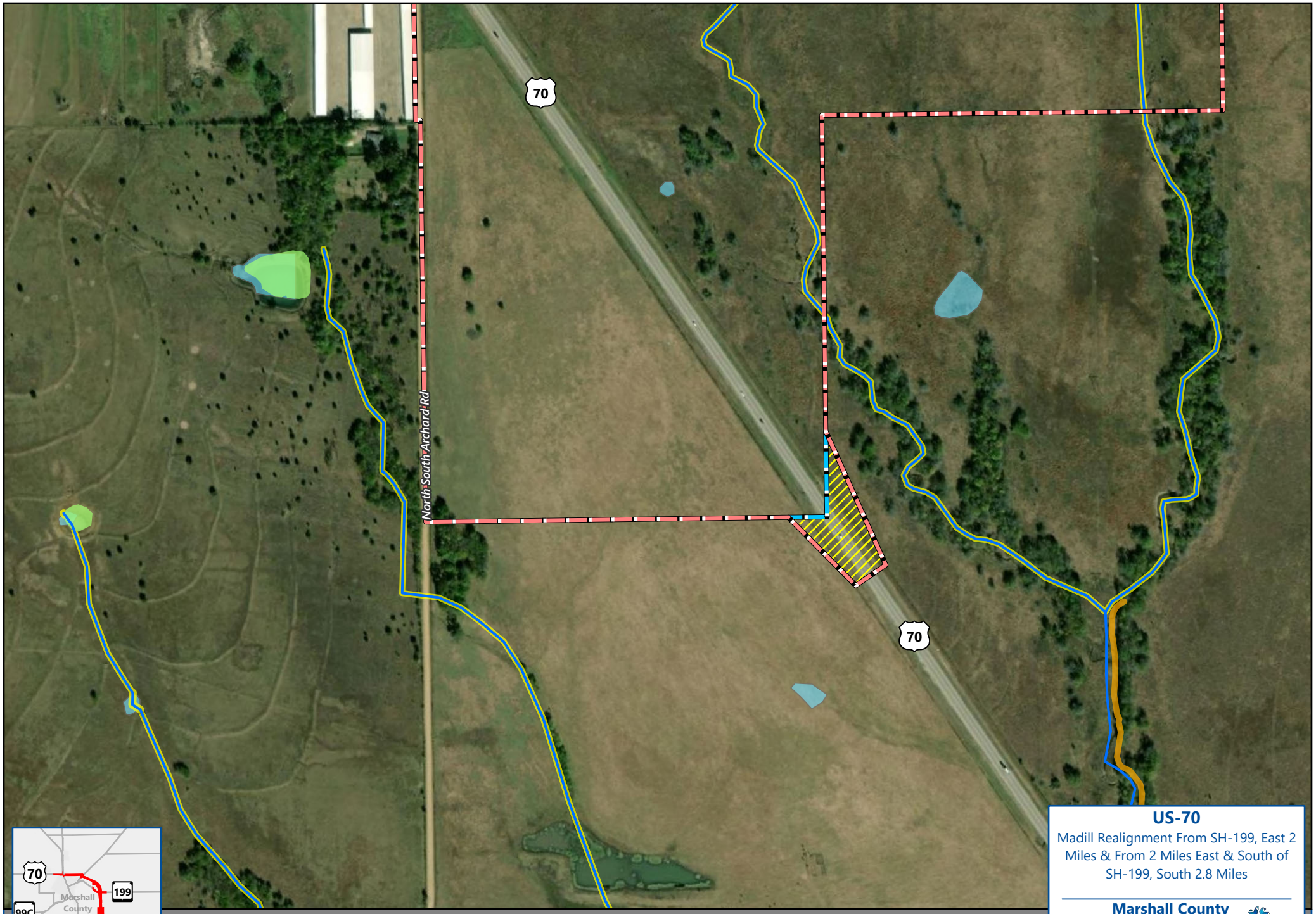
Madill Realignment From SH-199, East 2 Miles & From 2 Miles East & South of SH-199, South 2.8 Miles

Marshall County

JP No. 18835(04) & (09)

OKLAHOMA Transportation

Figure 4k: Water Resources



US-70

Madill Realignment From SH-199, East 2 Miles & From 2 Miles East & South of SH-199, South 2.8 Miles

Marshall County

JP No. 18835(04) & (09)

OKLAHOMA Transportation

Figure 4l: Water Resources

1/25/2022 2:01 PM, P:\ODOT2000869.03 - US 70\1_Projects\US 70 BioWaters\US 70 BioWaters.aprx

1/25/2022 12:31 PM, P:\ODOT2000869.03 - US 70\1_Projects\US 70 BioWaters\US 70 BioWaters.aprx

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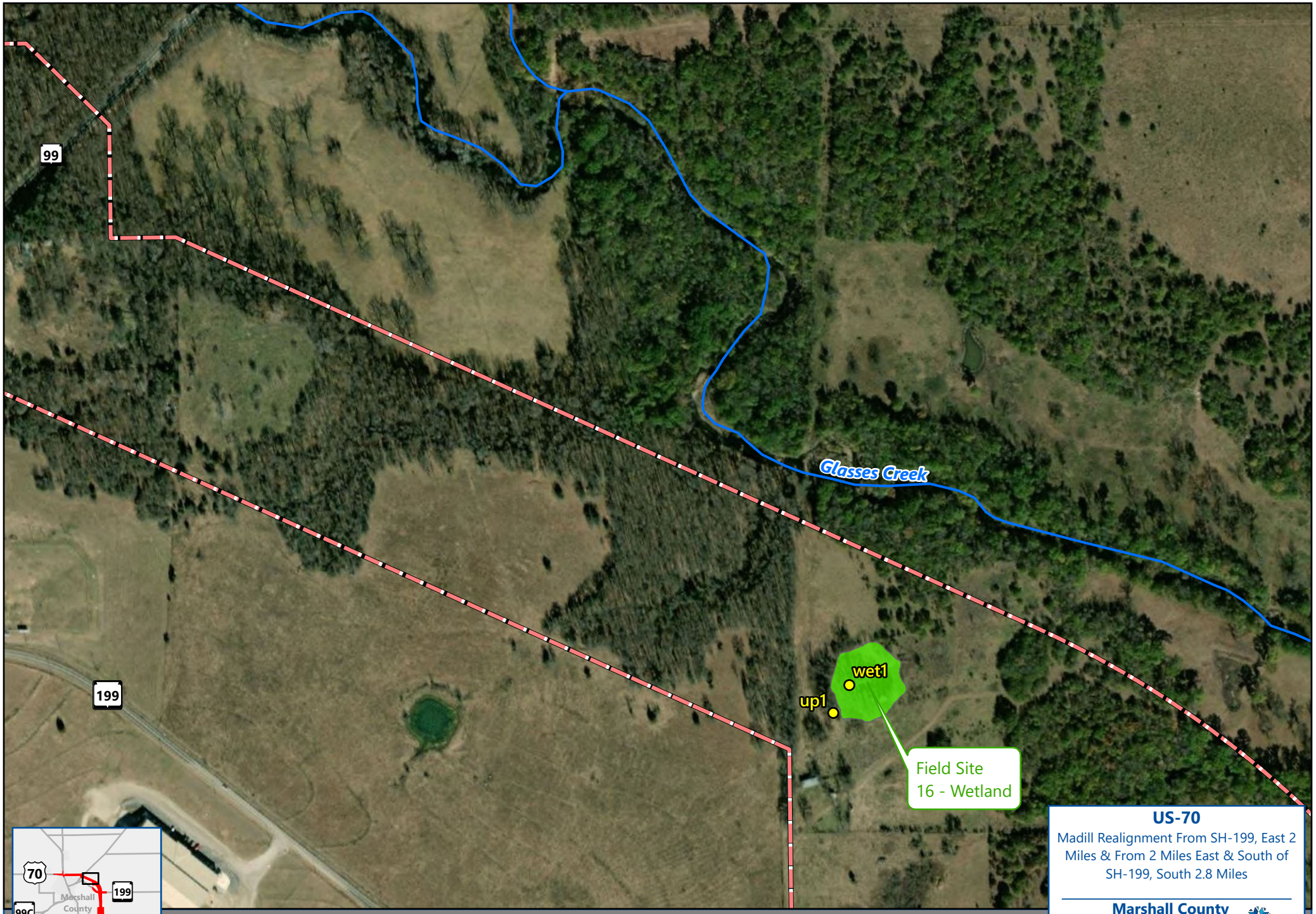
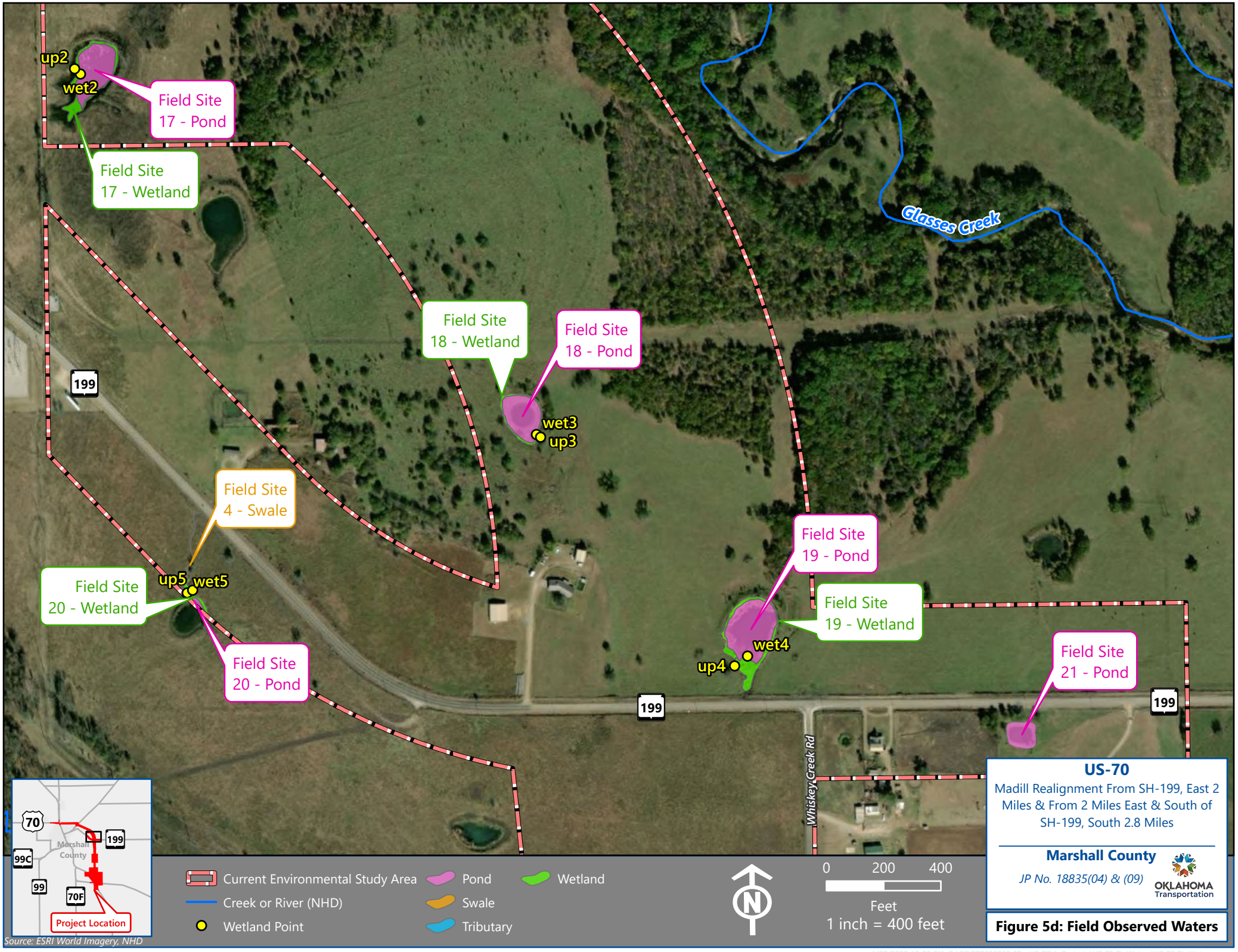


Figure 5c: Field Observed Waters

1/25/2022 12:32 PM, P:\ODOT2000869.03 - US 70\1_Projects\US 70 BioWaters\US 70 BioWaters.aprx



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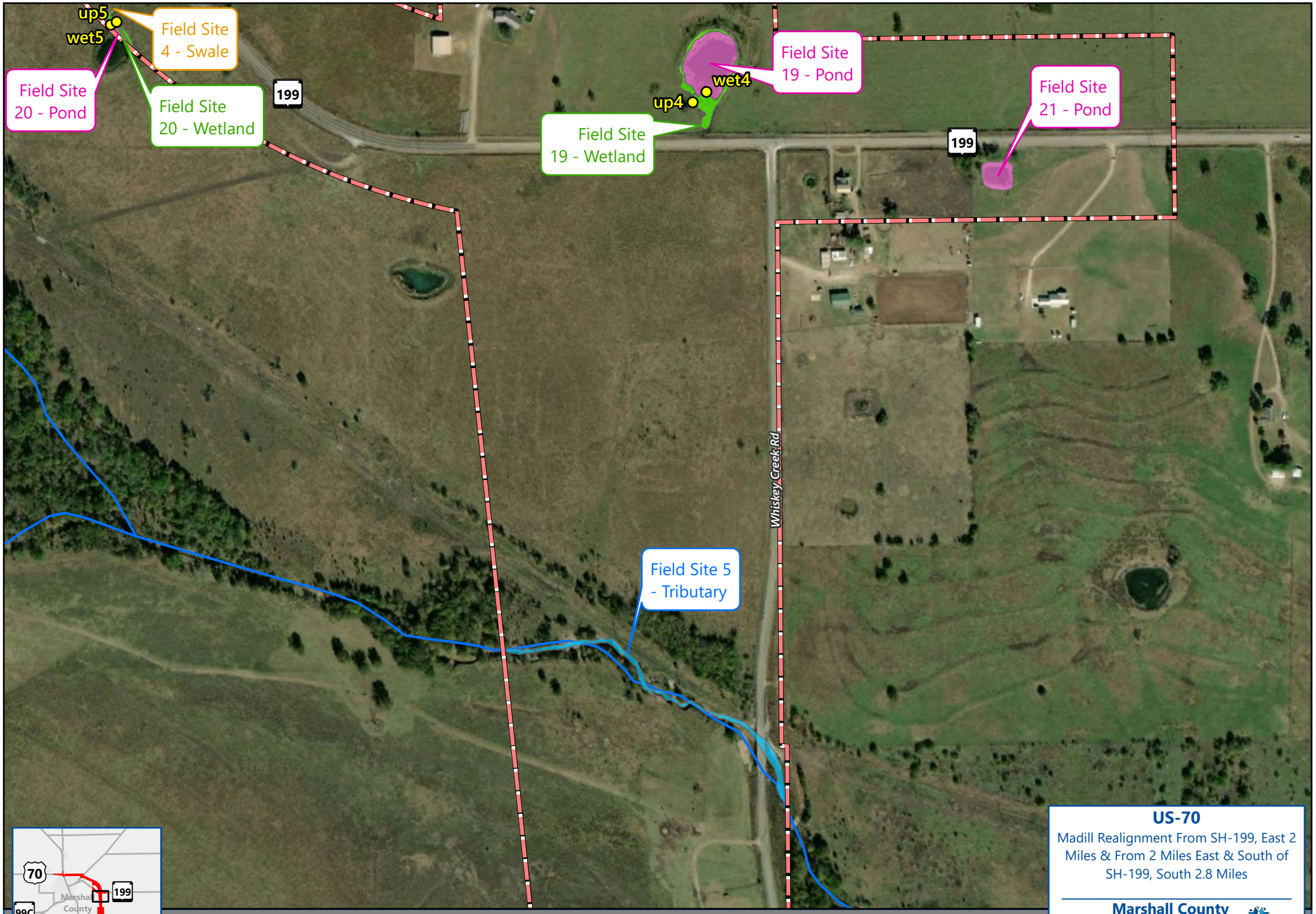


US-70

Madill Realignment From SH-199, East 2 Miles & From 2 Miles East & South of SH-199, South 2.8 Miles

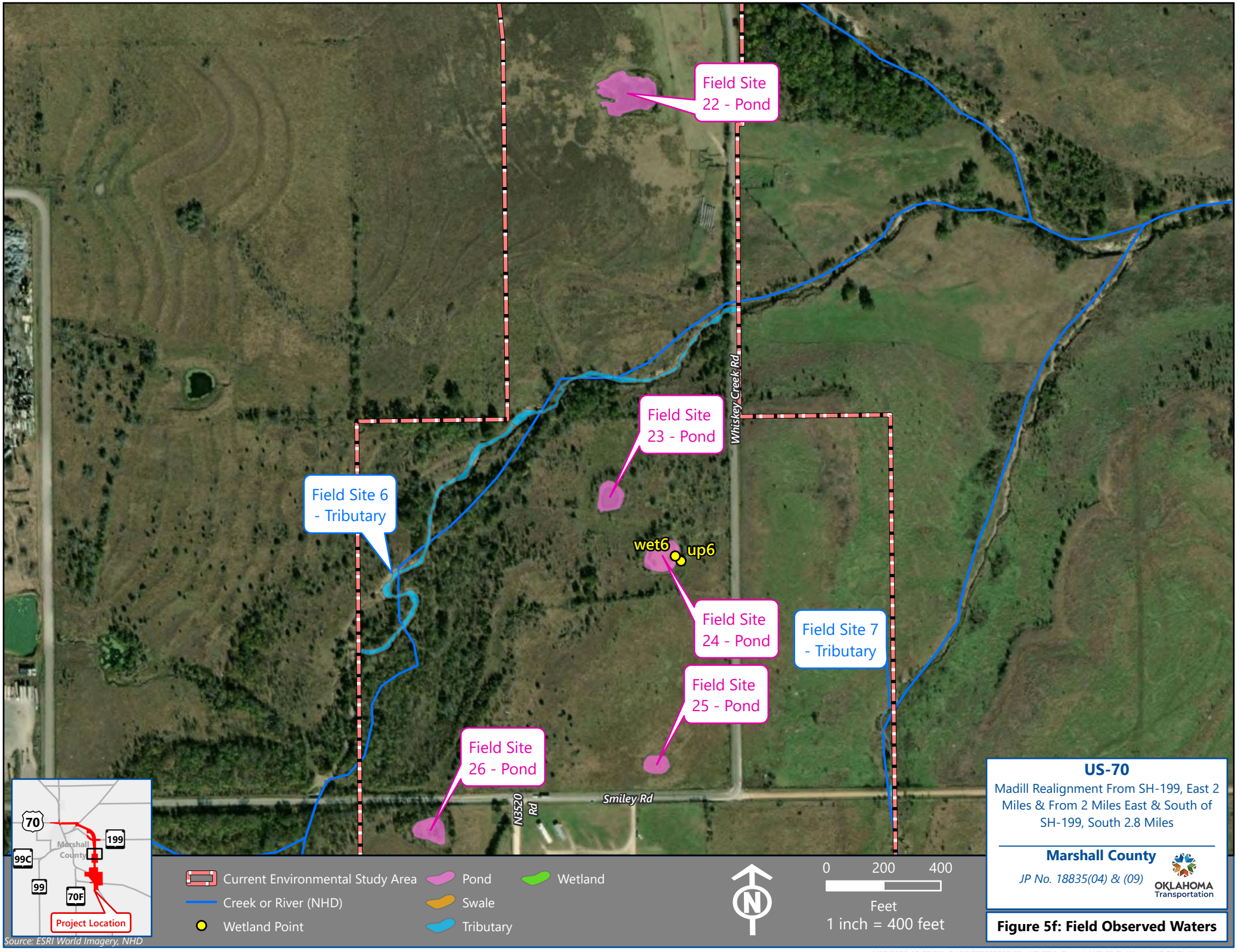
Marshall County

JP No. 18835(04) & (09)

OKLAHOMA Transportation

Figure 5e: Field Observed Waters

1/25/2022 12:32 PM, P:\ODOT2000869.03 - US 70\1_Projects\US 70 BioWaters\US 70 BioWaters.aprx



US-70

Madill Realignment From SH-199, East 2 Miles & From 2 Miles East & South of SH-199, South 2.8 Miles

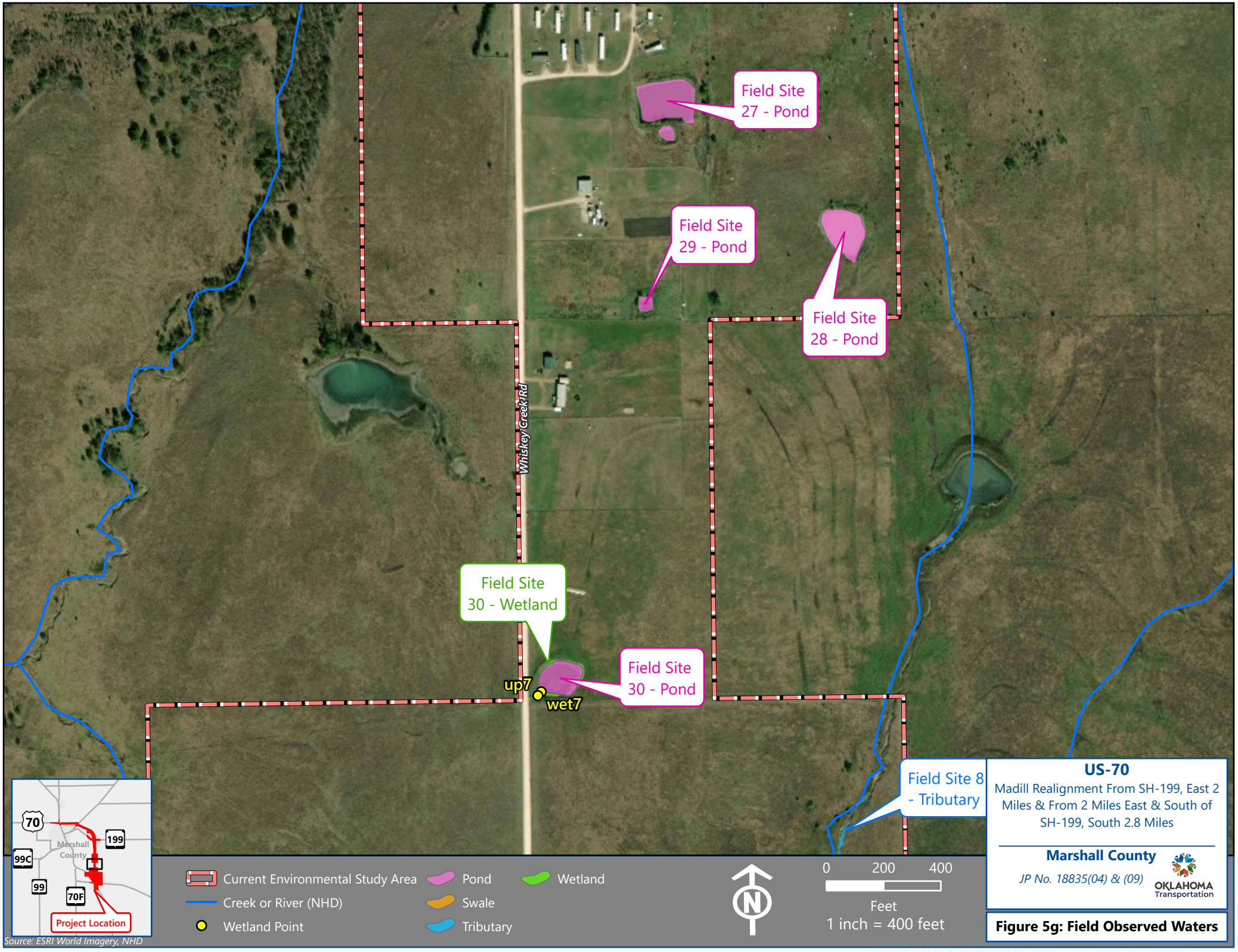
Marshall County

JP No. 18835(04) & (09)

OKLAHOMA Transportation

Figure 5f: Field Observed Waters

1/25/2022 12:32 PM, P:\ODOT2000869.03 - US 70\1_Projects\US 70 BioWaters\US 70 BioWaters.aprx



US-70

Madill Realignment From SH-199, East 2 Miles & From 2 Miles East & South of SH-199, South 2.8 Miles

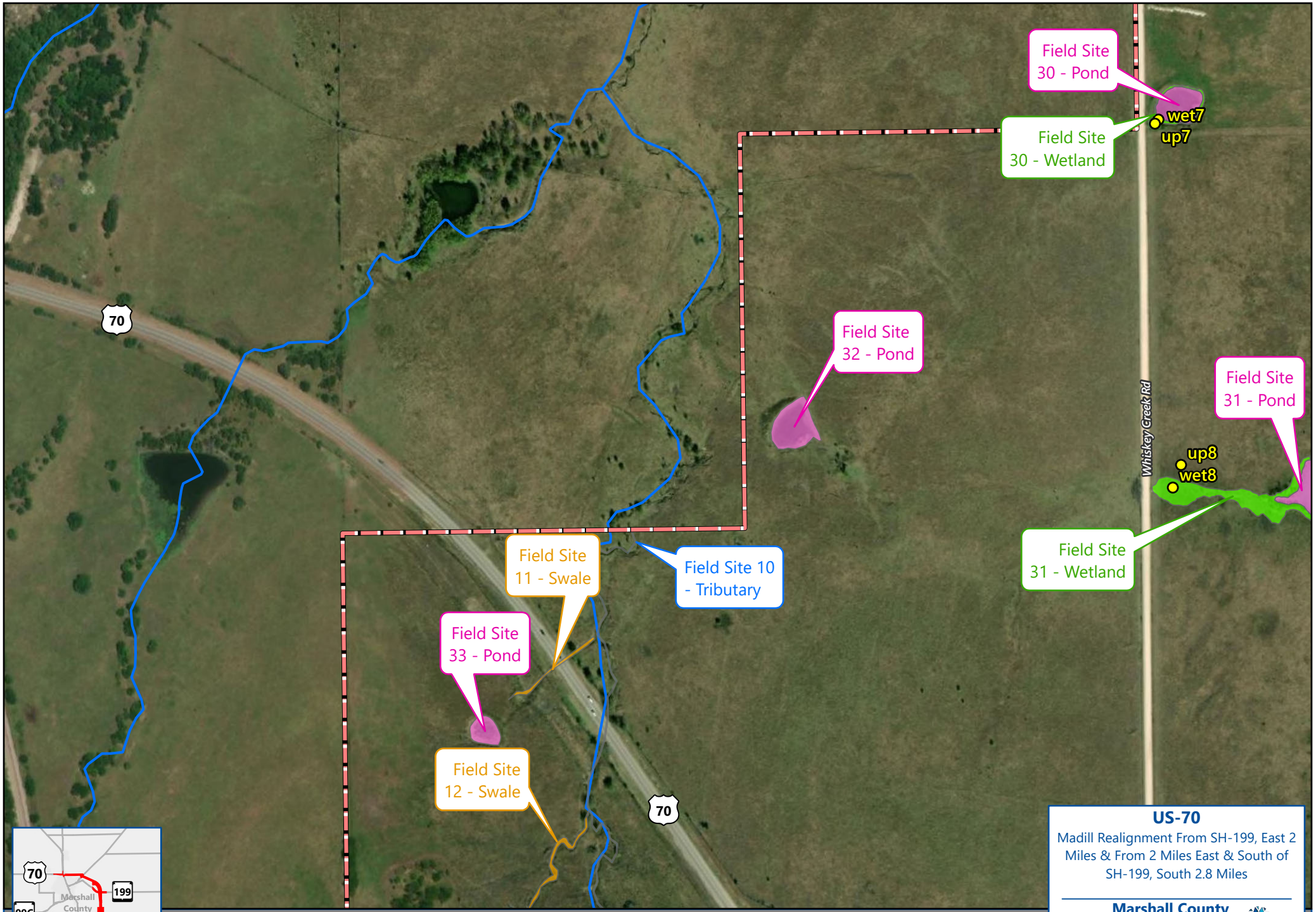
Marshall County

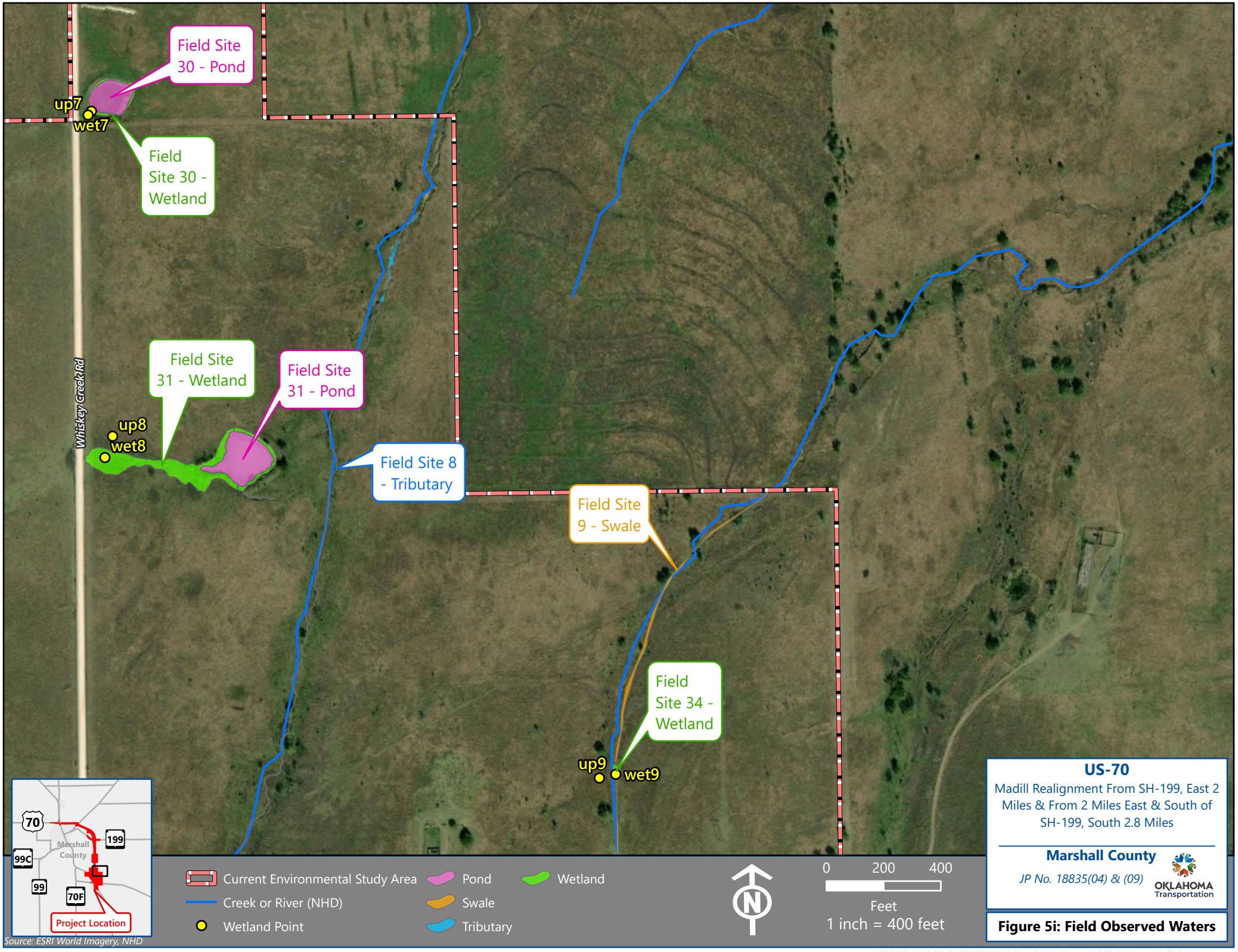
JP No. 18835(04) & (09)

OKLAHOMA Transportation

Figure 5g: Field Observed Waters

1/25/2022 12:32 PM, P:\ODOT2000869.03 - US 70\1_Projects\US 70 BioWaters\US 70 BioWaters.aprx


Field Site 30 - Pond
wet7
up7
Field Site 30 - Wetland
70
Field Site 32 - Pond
Whiskey Creek Rd
Field Site 31 - Pond
up8
wet8
Field Site 31 - Wetland
Field Site 11 - Swale
Field Site 10 - Tributary
Field Site 33 - Pond
Field Site 12 - Swale
70
Marshall County
70
199
99C
99
70F
Project Location
Current Environmental Study Area
Creek or River (NHD)
Wetland Point
Pond
Swale
Tributary
Wetland
N
0 200 400
Feet
1 inch = 400 feet
US-70
Madill Realignment From SH-199, East 2 Miles & From 2 Miles East & South of SH-199, South 2.8 Miles
Marshall County
JP No. 18835(04) & (09)
OKLAHOMA Transportation
Figure 5h: Field Observed Waters
Source: ESRI World Imagery, NHD
1/25/2022 12:32 PM, P:\ODOT2000869.03 - US 70\1_Projects\US 70 BioWaters\US 70 BioWaters.aprx


Field Site 30 - Pond
up7
wet7
Field Site 30 - Wetland
Whiskey Creek Rd
Field Site 31 - Wetland
Field Site 31 - Pond
up8
wet8
Field Site 8 - Tributary
Field Site 9 - Swale
Field Site 34 - Wetland
up9
wet9
70
199
99C
99
70F
Marshall County
Project Location
Source: ESRI World Imagery, NHD
Current Environmental Study Area
Creek or River (NHD)
Wetland Point
Pond
Swale
Tributary
Wetland
N
0
200
400
Feet
1 inch = 400 feet
US-70
Madill Realignment From SH-199, East 2 Miles & From 2 Miles East & South of SH-199, South 2.8 Miles
Marshall County
JP No. 18835(04) & (09)
OKLAHOMA Transportation
Figure 5i: Field Observed Waters
1/25/2022 12:33 PM, P:\ODOT2000869.03 - US 70\1_Projects\US 70 BioWaters\US 70 BioWaters.aprx

Source: ESRI World Imagery, NHD

US-70

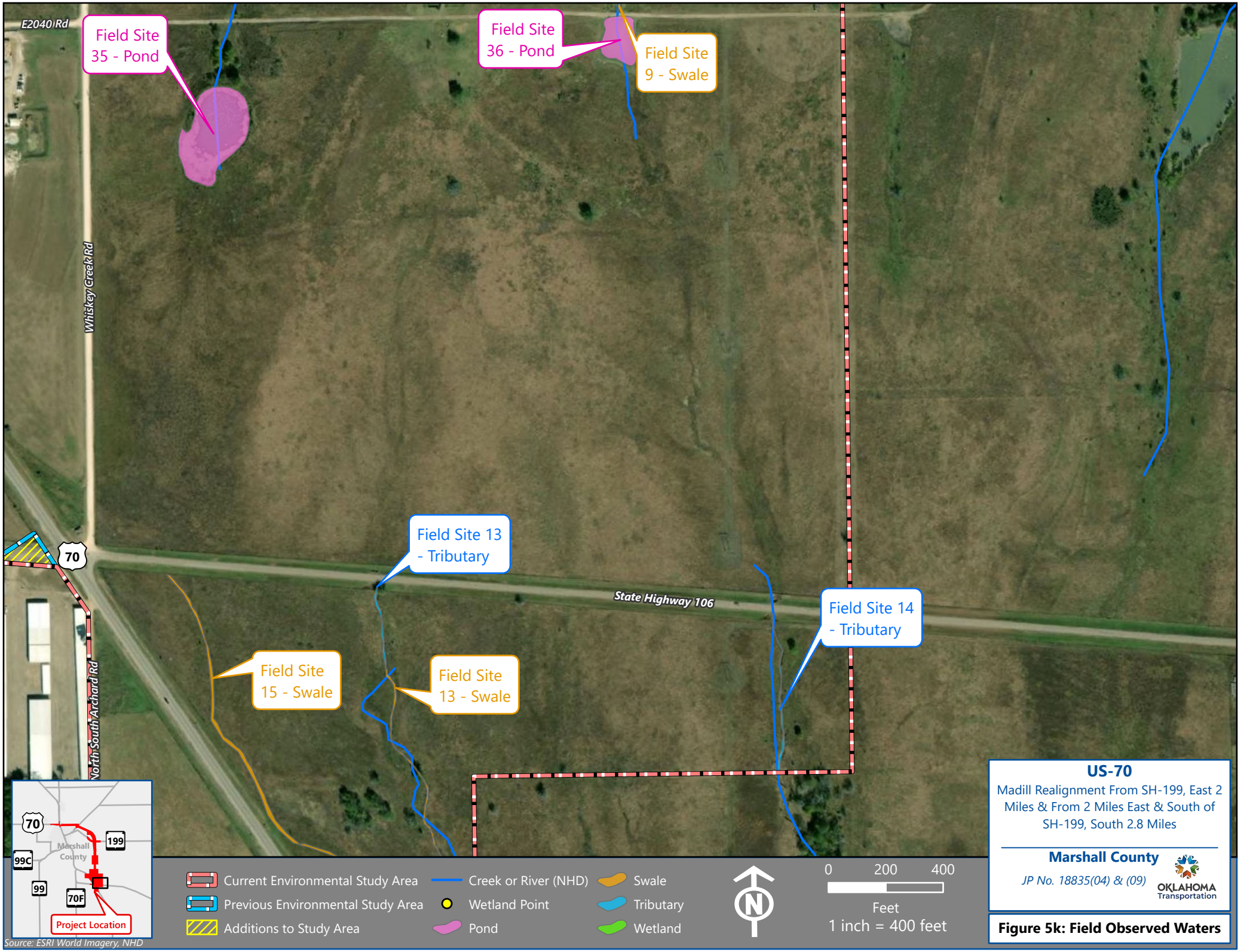
Madill Realignment From SH-199, East 2 Miles & From 2 Miles East & South of SH-199, South 2.8 Miles

Marshall County

JP No. 18835(04) & (09)

OKLAHOMA Transportation

Figure 5j: Field Observed Waters



US-70

Madill Realignment From SH-199, East 2 Miles & From 2 Miles East & South of SH-199, South 2.8 Miles

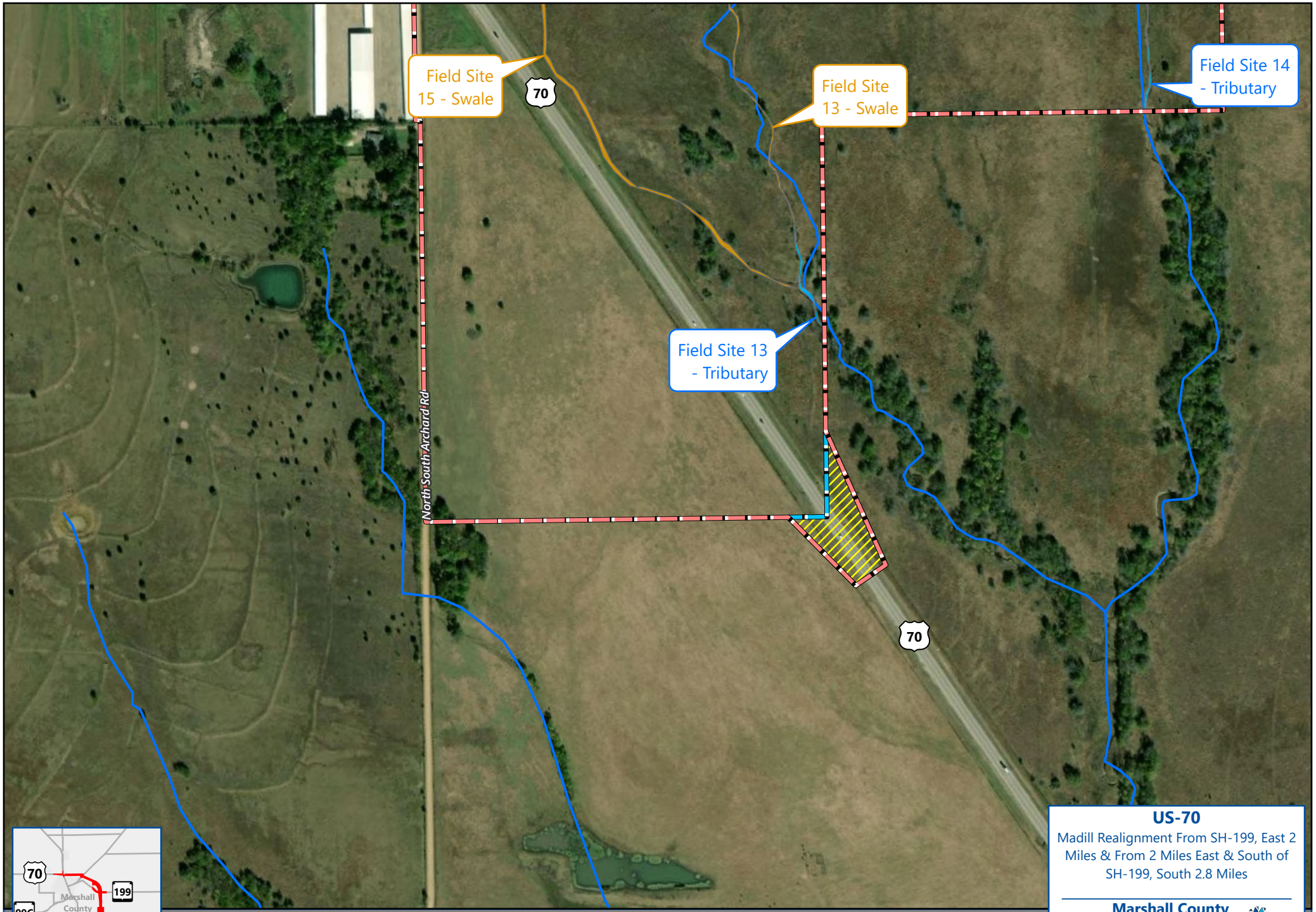
Marshall County

JP No. 18835(04) & (09)

OKLAHOMA Transportation

Figure 5k: Field Observed Waters

1/25/2022 12:33 PM, P:\ODOT2000869.03 - US 70\1_Projects\US 70 BioWaters\US 70 BioWaters.aprx



US-70

Madill Realignment From SH-199, East 2 Miles & From 2 Miles East & South of SH-199, South 2.8 Miles

Marshall County

JP No. 18835(04) & (09)

OKLAHOMA Transportation

Figure 5I: Field Observed Waters

1/25/2022 12:33 PM, P:\ODOT2000869.03 - US 70\1_Projects\US 70 BioWaters\US 70 BioWaters.aprx

Photo 1 – Field Site 1: Unnamed tributary near the northwestern project terminus. South side of existing US-70, facing south.

Photo 2 – Field Site 1: Unnamed tributary near the northwestern project terminus. South side of existing US-70, facing north. Some standing water was present in the tributary.

Photo 3 – Field Site 1: Unnamed tributary near the northwestern project terminus. North side of existing US-70, facing north. Some standing water present in tributary.

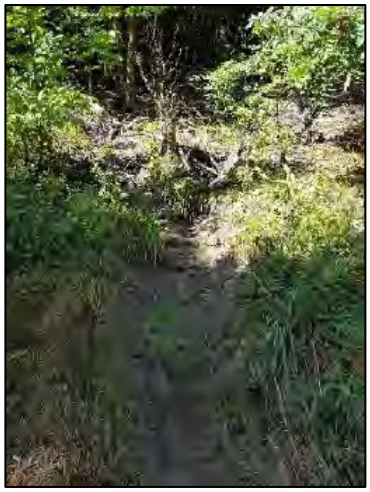


Photo 4 – Field Site 2: Upland drainage area in the northwestern project area. This swale dissipates intermittently and appears to carry sheetflow during/after rain fall.

Photo 5 – Field Site 2: Upland drainage area in the northwestern project area. East side of North 3rd Street, facing east.

Photo 6 – Field Site 3: Unnamed tributary in the northwestern project area. East side of North 3rd Street, facing north. Tributary collects runoff from Field Site 2. Some standing water present in tributary.

Photo 7 – Field Site 3: Unnamed tributary in the northwestern project area. East side of North 3rd Street, facing north. Confluence of Field Site 2 and Field Site 3.

Photo 8* – Field Site 4: Shallow swale in the northcentral project area. South side of Highway 199, facing south. * – *Photo curtosy Google Maps Street View, January 2014*

Photo 9 – Field Site 20: Pond in northcentral project area. South of SH-199, northwest of Whiskey Creek Road, facing south. Pond receives drainage from Field Site 4.

Photo 10 – Field Site 5: Unnamed tributary in the central project area. View from bridge on Whiskey Creek Road, facing west.

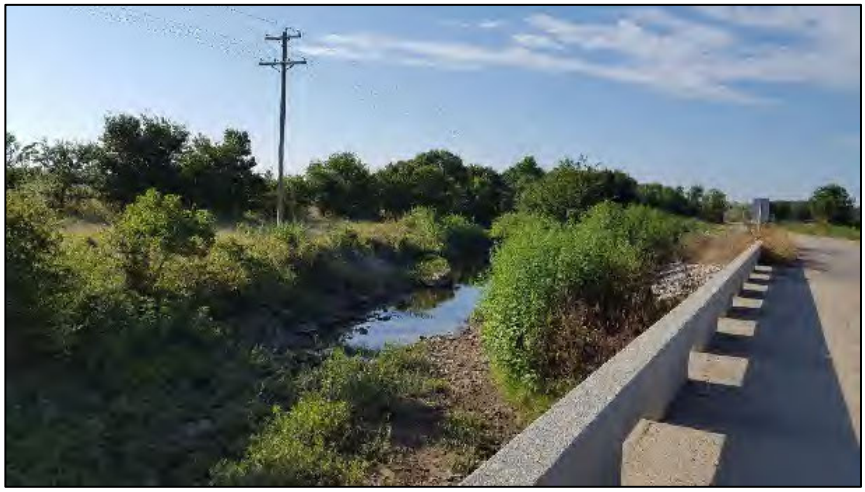


Photo 11 – Field Site 5: Unnamed tributary in the central project area. View from bridge on Whiskey Creek Road, facing east.

Photo 12 – Field Site 5: Unnamed tributary in the central project area. West of Whiskey Creek Road, facing west.

Photo 13 – Field Site 6: Unnamed tributary in the central project area. View from bridge on Whiskey Creek Road, facing east.

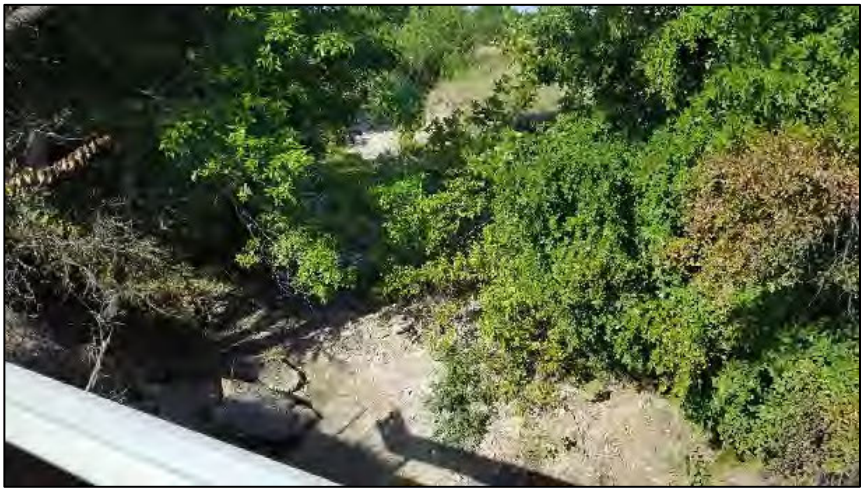


Photo 14 – Field Site 6: Unnamed tributary in the central project area. View from bridge on Whiskey Creek Road, facing west.

Photo 15 – Field Site 6: Unnamed tributary in the central project area. West of Whiskey Creek Road, facing southwest.

Photo 16 – Field Site 6: Unnamed tributary in the central project area. West of Whiskey Creek Road, facing southwest.

Photo 17 – Field Site 7: Unnamed tributary in the central project area. View from culvert on Smiley Road, facing south.

Photo 18 – Field Site 7: Unnamed tributary in the central project area. View from culvert on Smiley Road, facing north.

Photo 19 – Field Site 8: Continuation of unnamed tributary (Field Site 7) in the southcentral project area. Located in open field, east of pond (Field Site 31) to the east of Whiskey Creek Road, facing south. OHWM is difficult to determine throughout much of tributary.

Photo 20 – Field Site 8: Continuation of unnamed tributary (Field Site 7) in the southcentral project area. Located in open field, north of pond (Field Site 35) to the east of Whiskey Creek and Pasture Roads, facing north from a private road.

Photo 21 – Field Site 35: Pond in the southcentral project area. Located in a field directly east of Pasture Road, south of a private road. Pond located at head (southern end) of Field Site 8.

Photo 22 – Field Site 9: Swale in the southeast project area. Located in open field, north of pond (Field Site 36) to the east of Whiskey Creek and Pasture Roads, facing north from a private road. An OHWM was not observed.

Photo 23 – Field Site 9: Swale in the southeast project area. Located in open field, north of pond (Field Site 36) to the east of Whiskey Creek Road, facing north.

Photo 24 – Field Site 36: Pond in the southcentral project area. Located in a field directly east of Pasture Road, south of a private road. Pond located at head (southern end) of Field Site 9.

Photo 25 – Field Site 10: Unnamed tributary in southwest project area. Northeast of US-70, west of Whiskey Creek Road, facing north.

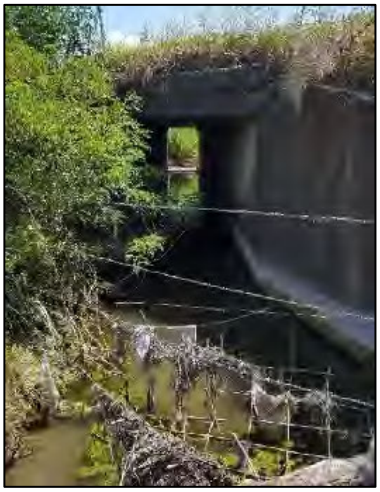


Photo 26 – Field Site 10: Unnamed tributary in southwest project area. West of Whiskey Creek Road, facing south towards the US-70 culvert.

Photo 27 – Field Site 10: Unnamed tributary in southwest project area. Southwest of US-70, west of Whiskey Creek Road, facing south.

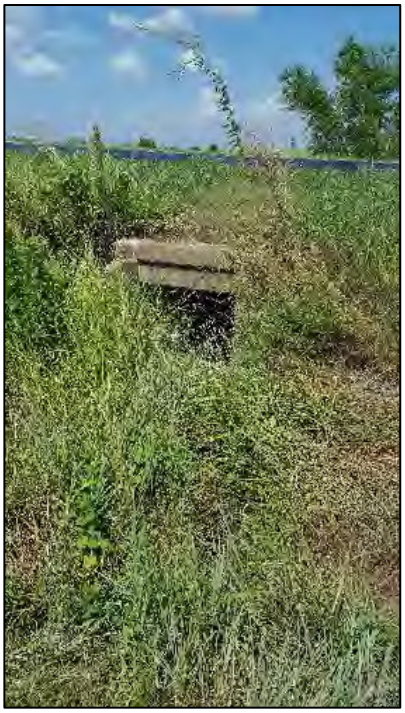


Photo 28 – Field Site 11: Swale in southwest project area. West of Whiskey Creek Road, facing north towards the US-70 culvert. Swale stretches from tributary to east (Field Site 10) to pond (Field Site 33).

Photo 29 – Field Site 11: Swale in southwest project area. West of Whiskey Creek Road, facing north towards pond (Field Site 33).

Photo 30 – Field Site 33: Pond in the southwest central project area. Located in a field west of US-70, northwest of Pasture Road.

Photo 31 – Field Site 13: Unnamed tributary/swale near southern project terminus. Located in open field, east of US-70, south of SH-106, facing south. This field site intermittently exhibited an OHWM throughout the study footprint.

Photo 32 – Field Site 14: Unnamed tributary near southern project terminus. Located in open field, east of US-70, south of SH-106, facing south.

Photo 33 – Field Site 16: Forested wetland in the northern portion of study footprint. Site located along a private road north of East Main Street.

Photo 34 – Field Site 17: Pond and fringe wetland in the northern project area. Site located along a private road north of East Main Street.

Photo 35 – Field Site 18: Pond and fringe wetland in the northcentral project area. Site located in a field behind a private residence, north of SH-199.

Photo 36 – Field Site 19: Pond and fringe wetland in the northcentral project area. Site located in a field near a private residence, north of SH-199.

Photo 37 – Field Site 21: Pond in northcentral project area. Directly south of SH-199, approximately 650 feet east of the intersection of SH-199 and Whiskey Creek Road.

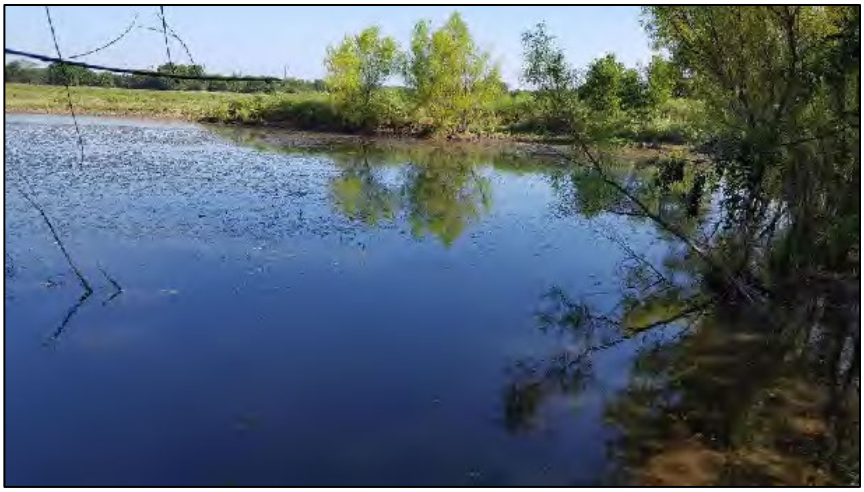


Photo 38 – Field Site 22: Pond in central project area. Located in a field west of Whiskey Creek Road, between Field Sites 5 and 6.

Photo 39 – Field Site 23: Pond in central project area. West of Whiskey Creek Road, north of Smiley Road.

Photo 40 – Field Site 24: Pond in central project area. West of Whiskey Creek Road, north of Smiley Road.

Photo 41 – Field Site 26: Dried out pond in central project area. Directly south of Smiley Road and west of Whiskey Creek Road.

Photo 42 – Field Site 27: Pond(s) in the central project area. Located in a field behind a group of mobile homes at the southeast corner of Smiley Road and Whiskey Creek Road. This appears to be wastewater lagoons for the mobile home park.

Photo 43 – Field Site 29: Pond in the central project area. Located in a field south of Smiley Road and east of Whiskey Creek Road.

Photo 44 – Field Site 30: Pond with fringe wetland in the central project area. Located directly east of Whiskey Creek Road, south of Smiley Road.

Photo 45 – Field Site 31: Pond with fringe wetland in the southcentral project area. Located directly east of Whiskey Creek Road, east of Smiley Road, facing south. The wetland extends west from the pond and terminates near the Whiskey Creek Road culvert.

Photo 46 – Field Site 31: Wetland area with lots of *Sesbania.* This wetland extends west from the pond and terminates near the Whiskey Creek Road culvert.

Photo 47 – Field Site 32: Pond in the southwest central project area. Located in a field north of Pasture Road, between US-70 and Whiskey Creek Road.

Photo 48 – Field Site 34: Emergent wetland situated within a swale (Field Site 9) in the southcentral project area. Located in a field, west of Whiskey Creek Road and north of a private road.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: US-70 Realignment City/County: Madill/Marshall Sampling Date: 8/9/16

Applicant/Owner: ODOT State: OK Sampling Point: Wet 1

Investigator(s): Sarah Itz, Matt Haverland Section, Township, Range: 26-T5S-R5E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 1

Subregion (LRR): LRR J Lat: 34.094006 Long: -96.749086 Datum: NAD 83

Soil Map Unit Name: 26 - Purces clay, 3-5% slopes NWI classification: PEM1C - Freshwater Emergent Wetland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation _____ Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ 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 _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks: The sampling point location is within a wetland.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Fraxinus pennsylvanica	90	Yes	FAC
2.			
3.			
4.			
	90 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15ft)			
1. Fraxinus pennsylvanica	10	Yes	FAC
2.			
3.			
4.			
5.			
	10 = Total Cover		
Herb Stratum (Plot size: 5ft)			
1. Echinodorus cordifolius	60	Yes	OBL
2. Eleocharis montevidensis	15	No	FACW
3. Polygonum hydropiperoides	5	No	OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	80 = Total Cover		
Woody Vine Stratum (Plot size: 15ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 20

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: 3/3=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 Hydrophictic 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 _____

Remarks: (Include photo numbers here or on a separate sheet.)

Hydrophytic vegetation is present in the sampling point location.

SOIL

Sampling Point: Wet 1

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
0-6	10YR 3/1	80	5YR 4/6	20	C	M	Loamy-Clay	
6-16	10YR 3/1	60	5YR 3/4	40	C	M, PL	Loamy-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:

- ___ 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) **(LRRI, J)**
- ___ Coast Prairie Redox (A16) **(LRR F, G, H)**
- ___ Dark Surface (S7) **(LRR G)**
- ___ High Plains Depressions (F16) **(LRRH outside of MLRA 72 & 73)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

Hydric soil is present at the sampling point location.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is 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 ✔ Depth (inches): _____

Water Table Present? Yes ___ No ✔ Depth (inches): None to 16"

Saturation Present? (includes capillary fringe) Yes ___ No ✔ Depth (inches): None to 16"

Wetland Hydrology Present? **Yes** ✔ **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Wetland hydrology is present at the sampling point location..

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: US-70 Realignment City/County: Madill/Marshall Sampling Date: 8/9/16

Applicant/Owner: ODOT State: OK Sampling Point: up 1

Investigator(s): Sarah Itz, Matt Haverland Section, Township, Range: 26-T5S-R5E

Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): none Slope (%): 0-2%

Subregion (LRR): LRR J Lat: 34.093759 Long: -96.749262 Datum: NAD 83

Soil Map Unit Name: 26 - Purces clay, 3-5% slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation _____ Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ 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 _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks: The sampling point location is not within a wetland.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Ulmus alata	20	Yes	FACU
2. Ulmus rubra	8	No	FACU
3. Maclura pomifera	30	Yes	FACU
4. Gleditsia triacanthos	5	No	FACU
	63	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15ft)			
1. Symphoricarpos orbiculatus	8	Yes	FACU
2. Carya illinoinensis	5	Yes	FAC
3. Celtis laevigata	2	No	FAC
4.			
5.			
	15	= Total Cover	
Herb Stratum (Plot size: 5ft)			
1. Cynodon dactylon	70	Yes	FACU
2. Ambrosia trifida	5	No	FAC
3. Croton monanthogynus	2	No	UPL
4. Xanthium strumarium	2	No	FAC
5.			
6.			
7.			
8.			
9.			
10.			
	79	= Total Cover	
Woody Vine Stratum (Plot size: 15ft)			
1. Smilax bona-nox	2	No	FACU
2.			
	2	= Total Cover	

% Bare Ground in Herb Stratum 21

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: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 1/5=20% (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 Hydrophictic 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 _____

Remarks: (Include photo numbers here or on a separate sheet.)

Hydrophytic vegetation is not present at the sampling point location.

SOIL

Sampling Point: Up 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
0-10	10YR 2/1	100					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:

- ___ 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) **(LRRI, J)**
- ___ Coast Prairie Redox (A16) **(LRR F, G, H)**
- ___ Dark Surface (S7) **(LRR G)**
- ___ High Plains Depressions (F16) **(LRRH outside of MLRA 72 & 73)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ No ____

Remarks:

Hydric soils are not present at the sampling point location.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is 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 ✔ Depth (inches): _____

Water Table Present? Yes ____ No ✔ Depth (inches): None to 10in

Saturation Present? (includes capillary fringe) Yes ____ No ✔ Depth (inches): None to 10in

Wetland Hydrology Present? Yes ✔ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Wetland hydrology is not present at the sampling point location.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: US-70 Realignment City/County: Madill/Marshall Sampling Date: 8/9/16

Applicant/Owner: ODOT State: OK Sampling Point: Wet 2

Investigator(s): Sarah Itz, Matt Haverland Section, Township, Range: 26-T5S-R5E

Landform (hillslope, terrace, etc.): Fringe wetland Local relief (concave, convex, none): Concave Slope (%): 2

Subregion (LRR): LRR J Lat: 34.091566 Long: -97.749322 Datum: NAD 83

Soil Map Unit Name: 10 - Ferris clay, 3-5% slopes NWI classification: PUBHh - Freshwater Pond

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation _____ Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ 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 _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks: The sampling point location is within a wetland

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Maclura pomifera	5	Yes	FACU
2.			
3.			
4.			
	5 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1. Maclura pomifera	2	No	FACU
2.			
3.			
4.			
5.			
	2 = Total Cover		
Herb Stratum (Plot size: 5)			
1. Xanthium strumarium	25	Yes	FAC
2. Eleocharis montevidensis	20	Yes	FACW
3. Schoenoplectus acutus	40	Yes	OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	85 = Total Cover		
Woody Vine Stratum (Plot size: 15)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 15

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: 3/4=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 Hydrophictic 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 _____

Remarks: (Include photo numbers here or on a separate sheet.)

Hydrophytic vegetation is present at the sampling point location.

SOIL

Sampling Point: Wet 2

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
0-16	5Y 4/1	75	5YR 4/6	25	C	M	loamy-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:

- ___ 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) **(LRRI, J)**
- ___ Coast Prairie Redox (A16) **(LRR F, G, H)**
- ___ Dark Surface (S7) **(LRR G)**
- ___ High Plains Depressions (F16) **(LRRH outside of MLRA 72 & 73)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ____

Remarks:

Hydric soil is present at the sampling point location.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ 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 ____ No ✔ Depth (inches): _____

Water Table Present? Yes ____ No ✔ Depth (inches): None to 16"

Saturation Present? (includes capillary fringe) Yes ____ No ✔ Depth (inches): None to 16"

Wetland Hydrology Present? **Yes** ✔ **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Wetland hydrology is present at the sampling point location.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: US-70 Realignment City/County: Madill/Marshall Sampling Date: 8/9/16

Applicant/Owner: ODOT State: OK Sampling Point: up 2

Investigator(s): Sarah Itz, Matt Haverland Section, Township, Range: 26-T5S-R5E

Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): none Slope (%): 1-3%

Subregion (LRR): LRR J Lat: 34.091618 Long: -96.749387 Datum: NAD 83

Soil Map Unit Name: 10 - Ferris clay, 3-5% slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation _____ Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ 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 _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks: The sampling point location is not within a wetland.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5ft)			
1. Amphiachyris dracunculoides	90	Yes	UPL
2. Cynodon dactylon	10	No	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: 15ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 0

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: 0/1= 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 _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ 1 – Rapid Test for Hydrophictic 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 _____

Remarks: (Include photo numbers here or on a separate sheet.)

Hydrophytic vegetation is not present at the sampling point location.

SOIL

Sampling Point: up 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
0-10	10YR 4/3	45					Clay-Loam	
0-10	10YR 4/4	55					Clay-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:

- ___ 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) **(LRRI, J)**
- ___ Coast Prairie Redox (A16) **(LRR F, G, H)**
- ___ Dark Surface (S7) **(LRR G)**
- ___ High Plains Depressions (F16) **(LRRH outside of MLRA 72 & 73)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ No ____

Remarks:

Hydric soils are not present at the sampling point location.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is 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 ✔ Depth (inches): _____

Water Table Present? Yes ____ No ✔ Depth (inches): None to 10"

Saturation Present? (includes capillary fringe) Yes ____ No ✔ Depth (inches): None to 10"

Wetland Hydrology Present? Yes ✔ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Wetland hydrology is not present at the sampling point location.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: US-70 Realignment City/County: Madill/Marshall Sampling Date: 8/9/16

Applicant/Owner: ODOT State: OK Sampling Point: wet 3

Investigator(s): Sarah Itz, Matt Haverland Section, Township, Range: 26-T5S-R5E

Landform (hillslope, terrace, etc.): pond Local relief (concave, convex, none): concave Slope (%): 2-4%

Subregion (LRR): LRR J Lat: 34.088053 Long: -96.744113 Datum: NAD 83

Soil Map Unit Name: 15 - Heiden clay, 2-5% slopes NWI classification: PUBHh - Freshwater Pond

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No ____ (If no, explain in Remarks.)

Are Vegetation ____ Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ 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 ____	**Is the Sampled Area within a Wetland?** Yes ✔ No ____
Hydric Soil Present?	Yes ✔ No ____	
Wetland Hydrology Present?	Yes ✔ No ____	

Remarks: The sampling point location is within a wetland.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix nigra	30	Yes	FACW
2.			
3.			
4.			
	30 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5ft)			
1. Xanthium strumarium	8	No	FAC
2. Schoenoplectus acutus	75	Yes	OBL
3. Cynodon dactylon	10	No	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	93 = Total Cover		
Woody Vine Stratum (Plot size: 15ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 7

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 Hydrophictic 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 ____

Remarks: (Include photo numbers here or on a separate sheet.)

Hydrophytic vegetation is present at the sampling point location.

SOIL

Sampling Point: wet 3

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
0-16	10YR 3/1	80	2.5Y 5/6	4	C	M	clay-loam	
0-16	10YR 2/1	14	5YR 4/6	2	C	PL	clay-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:

- ___ 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) **(LRRI, J)**
- ___ Coast Prairie Redox (A16) **(LRR F, G, H)**
- ___ Dark Surface (S7) **(LRR G)**
- ___ High Plains Depressions (F16) **(LRRH outside of MLRA 72 & 73)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ No ___

Remarks:

Hydric soils is present at the sampling point location.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is 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 ✔ Depth (inches): _____

Water Table Present? Yes ___ No ✔ Depth (inches): None to 16"

Saturation Present? (includes capillary fringe) Yes ___ No ✔ Depth (inches): None to 16"

Wetland Hydrology Present? Yes ✔ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Wetland hydrology is present at the sampling point location.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: US-70 Realignment City/County: Madill/Marshall Sampling Date: 8/9/16

Applicant/Owner: ODOT State: OK Sampling Point: up 3

Investigator(s): Sarah Itz, Matt Haverland Section, Township, Range: 26-T5S-R5E

Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): none Slope (%): 0-2%

Subregion (LRR): LRR J Lat: 34.088025 Long: -96.744058 Datum: NAD 83

Soil Map Unit Name: 15 - Heiden clay, 2-5% slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation _____ Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ 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 _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks: The sampling point location is not within a wetland.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Maclura pomifera	45	Yes	FACU
2.			
3.			
4.			
	45 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15ft)			
1. Maclura pomifera	10	Yes	FACU
2.			
3.			
4.			
5.			
	10 = Total Cover		
Herb Stratum (Plot size: 5ft)			
1. Cynodon dactylon	20	Yes	FACU
2. Schizachyrium scoparium	5	Yes	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	25 = Total Cover		
Woody Vine Stratum (Plot size: 15ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 75

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: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0/4= 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 _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ 1 – Rapid Test for Hydrophictic 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 _____

Remarks: (Include photo numbers here or on a separate sheet.)

Hydrophytic vegetation is not present at the sampling point location.

SOIL

Sampling Point: up 3

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
0-6	10YR 3/1	96	2Y 5/4	4	C	M	clay-loam	
6-12	10YR 3/1	5					clay-loam	
	2Y 5/4	95						

[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:

- ___ 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) **(LRRI, J)**
- ___ Coast Prairie Redox (A16) **(LRR F, G, H)**
- ___ Dark Surface (S7) **(LRR G)**
- ___ High Plains Depressions (F16) **(LRRH outside of MLRA 72 & 73)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

Hydric soils are present at the sampling point location.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is 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 ✔ Depth (inches): _____

Water Table Present? Yes ___ No ✔ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ___ No ✔ Depth (inches): _____

Wetland Hydrology Present? **Yes** ✔ **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Wetland hydrology is not present at the sampling point location.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: US-70 Realignment City/County: Madill/Marshall Sampling Date: 8/9/16

Applicant/Owner: ODOT State: OK Sampling Point: wet 4

Investigator(s): Sarah Itz, Matt Haverland Section, Township, Range: 26-T5S-R5E

Landform (hillslope, terrace, etc.): pond Local relief (concave, convex, none): concave Slope (%): 0-1%

Subregion (LRR): LRR J Lat: 34.085893 Long: -96.741705 Datum: NAD 83

Soil Map Unit Name: 15 - Heiden clay, 2-5% slopes NWI classification: PUBHh - Freshwater Pond

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation _____ Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ 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 _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks: The sampling point location is within a wetland.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Fraxinus pennsylvanica	30	Yes	FAC
2. Salix nigra	15	Yes	FACW
3.			
4.			
	45	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15ft)			
1. Salix nigra	10	Yes	FACW
2.			
3.			
4.			
5.			
	10	= Total Cover	
Herb Stratum (Plot size: 5ft)			
1. Schoenoplectus acutus	50	Yes	OBL
2. Ludwigia peploides	3	No	OBL
3. Paspalum urvillei	8	No	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	61	= Total Cover	
Woody Vine Stratum (Plot size: 15ft)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 35

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 4/4= 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 Hydrophictic 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 _____

Remarks: (Include photo numbers here or on a separate sheet.)

Hydrophytic vegetation is present at the sampling point location.

SOIL

Sampling Point: wet 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
0-16	10YR 3/1	98	10YR 3/4	2	C	M	loamy-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:

- ___ 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) **(LRRI, J)**
- ___ Coast Prairie Redox (A16) **(LRR F, G, H)**
- ___ Dark Surface (S7) **(LRR G)**
- ___ High Plains Depressions (F16) **(LRRH outside of MLRA 72 & 73)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ **No** ___

Remarks:

Hydric soils are present at the sampling point location.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is 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 ✔ Depth (inches): _____

Water Table Present? Yes ___ No ✔ Depth (inches): None to 16"

Saturation Present? (includes capillary fringe) Yes ___ No ✔ Depth (inches): 0-16"

Wetland Hydrology Present? Yes ✔ **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Wetland hydrology is present at the sampling point location.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: US-70 Realignment City/County: Madill/Marshall Sampling Date: 8/9/16

Applicant/Owner: ODOT State: OK Sampling Point: up 4

Investigator(s): Sarah Itz, Matt Haverland Section, Township, Range: 26-T5S-R5E

Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): none Slope (%): 0-1%

Subregion (LRR): LRR J Lat: 34.085804 Long: -96.741856 Datum: NAD 83

Soil Map Unit Name: 15 - Heiden clay, 2-5% slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation _____ Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ 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 _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks: The sampling point location is not present within a wetland.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Maclura pomifera	35	Yes	FACU
2.			
3.			
4.			
	35 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5ft)			
1. Iva annua	5	No	FAC
2. Paspalum dilatatum	3	No	FAC
3. Scirpus atrovirens	40	Yes	OBL
4. Paspalum urvillei	30	Yes	FACW
5.			
6.			
7.			
8.			
9.			
10.			
	78 = Total Cover		
Woody Vine Stratum (Plot size: 15ft)			
1. Smilax bona-nox	5	Yes	FACU
2.			
	5 = Total Cover		

% Bare Ground in Herb Stratum 22

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: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 2/4= 50% (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 Hydrophictic 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 _____

Remarks: (Include photo numbers here or on a separate sheet.)

Hydrophytic vegetation is not present at the sampling point location.

SOIL

Sampling Point: up 4

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
0-9	10YR 3/1	100					clay-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:

- ___ 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) **(LRRI, J)**
- ___ Coast Prairie Redox (A16) **(LRR F, G, H)**
- ___ Dark Surface (S7) **(LRR G)**
- ___ High Plains Depressions (F16) **(LRRH outside of MLRA 72 & 73)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 9

Hydric Soil Present? Yes ✔ No ___

Remarks:

Hydric soils are not present at the sampling point location.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is 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 ✔ Depth (inches): ___

Water Table Present? Yes ___ No ✔ Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No ✔ Depth (inches): ___

Wetland Hydrology Present? Yes ✔ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Wetland hydrology is not present at the sampling point location.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: US-70 Realignment City/County: Madill/Marshall Sampling Date: 8/9/16

Applicant/Owner: ODOT State: OK Sampling Point: wet 5

Investigator(s): Sarah Itz, Matt Haverland Section, Township, Range: 26-T5S-R5E

Landform (hillslope, terrace, etc.): pond Local relief (concave, convex, none): concave Slope (%): 0%

Subregion (LRR): LRR J Lat: 34.086571 Long: -96.748165 Datum: NAD 83

Soil Map Unit Name: 15 - Heiden clay, 2-5% slopes NWI classification: PUBHh - Freshwater Pond

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No ____ (If no, explain in Remarks.)

Are Vegetation ____ Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ 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 ____	**Is the Sampled Area within a Wetland?** Yes ✔ No ____
Hydric Soil Present?	Yes ✔ No ____	
Wetland Hydrology Present?	Yes ✔ No ____	

Remarks: The sampling point is within a wetland.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5ft)			
1. Schoenoplectus acutus	50	Yes	OBL
2. Typha latifolia	15	No	OBL
3. Paspalum dilatatum	15	No	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	80 = Total Cover		
Woody Vine Stratum (Plot size: 15ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 20

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: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 1/1= 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 Hydrophictic 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 ____

Remarks: (Include photo numbers here or on a separate sheet.)

Hydrophytic vegetation is present at the sampling point location.

SOIL

Sampling Point: wet 5

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
0-16	10YR 3/1	98	10YR 3/4	2	C	M	loamy-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:

- ___ 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) **(LRRI, J)**
- ___ Coast Prairie Redox (A16) **(LRR F, G, H)**
- ___ Dark Surface (S7) **(LRR G)**
- ___ High Plains Depressions (F16) **(LRRH outside of MLRA 72 & 73)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ **No** ___

Remarks:

Hydric soils are present at the sampling point location.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is 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 ✔ Depth (inches): _____

Water Table Present? Yes ___ No ✔ Depth (inches): None to 16"

Saturation Present? (includes capillary fringe) Yes ___ No ✔ Depth (inches): 0-16"

Wetland Hydrology Present? Yes ✔ **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Wetland hydrology is present at the sampling point location.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: US-70 Realignment City/County: Madill/Marshall Sampling Date: 8/9/16

Applicant/Owner: ODOT State: OK Sampling Point: up 5

Investigator(s): Sarah Itz, Matt Haverland Section, Township, Range: 26-T5S-R5E

Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): none Slope (%): 0%

Subregion (LRR): LRR J Lat: 34.086596 Long: -96.748101 Datum: NAD 83

Soil Map Unit Name: 15 - Heiden clay, 2-5% slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation _____ Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ 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 _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks: The sampling point location is not within a wetland.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5ft)			
1. Paspalum dilatatum	15	No	FAC
2. Iva annua	3	No	FAC
3. Cynodon dactylon	60	Yes	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	78 = Total Cover		
Woody Vine Stratum (Plot size: 15ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 22

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: 0/1= 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 _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ 1 – Rapid Test for Hydrophictic 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 _____

Remarks: (Include photo numbers here or on a separate sheet.)

Hydrophytic vegetation is not present at the sampling point location.

SOIL

Sampling Point: up 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 %	Type[1]	Loc[2]	Texture	Remarks
0-9	10YR 3/1	100					clay-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:

- ___ 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) **(LRRI, J)**
- ___ Coast Prairie Redox (A16) **(LRR F, G, H)**
- ___ Dark Surface (S7) **(LRR G)**
- ___ High Plains Depressions (F16) **(LRRH outside of MLRA 72 & 73)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: rock

Depth (inches): 9

Hydric Soil Present? Yes ✔ **No** ___

Remarks:

Hydric soils are not present at the sampling point location.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is 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 ✔ Depth (inches): ___

Water Table Present? Yes ___ No ✔ Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No ✔ Depth (inches): ___

Wetland Hydrology Present? Yes ✔ **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Wetland hydrology is not present at the sampling point location.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: US-70 Realignment City/County: Madill/Marshall Sampling Date: 8/10/16

Applicant/Owner: ODOT State: OK Sampling Point: wet 6

Investigator(s): Sarah Itz, Matt Haverland Section, Township, Range: 35-T5S-R5E

Landform (hillslope, terrace, etc.): pond Local relief (concave, convex, none): concave Slope (%): 0-3%

Subregion (LRR): LRR J Lat: 34.073196 Long: -96.741773 Datum: NAD 83

Soil Map Unit Name: 27 - Tarrant very cobbly clay, 2-15% slopes NWI classification: PUBHh - Freshwater Pond

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation _____ Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ 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 _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks: The sampling point location is not within a wetland.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix nigra	30	Yes	FACW
2.			
3.			
4.			
	30 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5ft)			
1. Xanthium strumarium	3	No	FAC
2. Cynodon dactylon	2	No	FACU
3. Schoenoplectus acutus	2	No	OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	7 = Total Cover		
Woody Vine Stratum (Plot size: 15ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 93%

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: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 1/1= 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 Hydrophictic 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 _____

Remarks: (Include photo numbers here or on a separate sheet.)

Hydrophytic vegetation is present at the sampling point location.

SOIL

Sampling Point: wet 6

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
0-6	10YR 4/3	100					loamy-clay	
6-16	10YR 4/3	50	10YR 5/6	50	C	M	loamy-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:

- ___ 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) **(LRRI, J)**
- ___ Coast Prairie Redox (A16) **(LRR F, G, H)**
- ___ Dark Surface (S7) **(LRR G)**
- ___ High Plains Depressions (F16) **(LRRH outside of MLRA 72 & 73)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

Hydric soils are not present at the sampling point location.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is 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 ✔ Depth (inches): _____

Water Table Present? Yes ___ No ✔ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ___ No ✔ Depth (inches): _____

Wetland Hydrology Present? **Yes** ✔ **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Wetland hydrology is present at the sampling point location.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: US-70 Realignment City/County: Madill/Marshall Sampling Date: 8/10/16

Applicant/Owner: ODOT State: OK Sampling Point: up 6

Investigator(s): Sarah Itz, Matt Haverland Section, Township, Range: 35-T5S-R5E

Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 5%

Subregion (LRR): LRR J Lat: 34.073149 Long: -96.741706 Datum: NAD 83

Soil Map Unit Name: 27 - Tarrant very cobbly clay, 2-15% slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation _____ Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ 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 _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks: The sampling point location is not within a wetland.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Gleditsia triacanthos	6	Yes	FACU
2. Ulmus crassifolia	6	Yes	FAC
3.			
4.			
	12	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15ft)			
1. Ulmus crassifolia	2	No	FAC
2. Maclura pomifera	3	No	FACU
3. Symphoricarpos orbiculatus	8	Yes	FACU
4.			
5.			
	13	= Total Cover	
Herb Stratum (Plot size: 5ft)			
1. Euphorbia bicolor	3	No	FACU
2. Setaria parviflora	3	No	FAC
3. Ambrosia trifida	3	No	FAC
4. Bromus arvensis	75	Yes	FACU
5. Amphiachyris dracunculoides	3	No	UPL
6.			
7.			
8.			
9.			
10.			
	87	= Total Cover	
Woody Vine Stratum (Plot size: 15ft)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 13

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: 1/4= 25% (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 Hydrophictic 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 _____

Remarks: (Include photo numbers here or on a separate sheet.)

Hydrophytic vegetation is not present at the sampling point location.

SOIL

Sampling Point: up 6

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
0-12	10YR 4/2	100					sandy-clay	mixed with sand and gravel

[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:

- ___ 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) **(LRRI, J)**
- ___ Coast Prairie Redox (A16) **(LRR F, G, H)**
- ___ Dark Surface (S7) **(LRR G)**
- ___ High Plains Depressions (F16) **(LRRH outside of MLRA 72 & 73)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ **No** ___

Remarks:

Hydric soils are not present at the sampling point location.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is 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 ✔ Depth (inches): _____

Water Table Present? Yes ___ No ✔ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ___ No ✔ Depth (inches): _____

Wetland Hydrology Present? Yes ✔ **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Wetland hydrology is not present at the sampling point location.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: US-70 Realignment City/County: Madill/Marshall Sampling Date: 8/10/16

Applicant/Owner: ODOT State: OK Sampling Point: wet 7

Investigator(s): Sarah Itz, Matt Haverland Section, Township, Range: 1-T6S-R5E

Landform (hillslope, terrace, etc.): Pond Local relief (concave, convex, none): Concave Slope (%): 2-3%

Subregion (LRR): LRR J Lat: 34.063728 Long: -96.743464 Datum: NAD 83

Soil Map Unit Name: 15 - Heiden clay, 2-5% slopes NWI classification: PUBHh - Freshwater Pond

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No ____ (If no, explain in Remarks.)

Are Vegetation ____ Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ 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 ____	**Is the Sampled Area within a Wetland?** Yes ✔ No ____
Hydric Soil Present?	Yes ✔ No ____	
Wetland Hydrology Present?	Yes ✔ No ____	

Remarks: The sampling point location is within a wetland.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5ft)			
1. Schoenoplectus acutus	90	Yes	OBL
2. Typha latifolia	5	No	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	95 = Total Cover		
Woody Vine Stratum (Plot size: 15ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 5

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: 1 (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 Hydrophictic 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 ____

Remarks: (Include photo numbers here or on a separate sheet.)

Hydrophytic vegetation is present at the sampling point location.

SOIL

Sampling Point: wet 7

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
0-3	2.5Y 4/2	98	7.5YR 4/6	2	C	M	clay-loam	
3-11	2.5Y 3/1	70	7.5YR 3/4	25	C	M	clay-loam	
	10YR 2/1	5						
11-16	2.5Y 4/3	85					clay-loam	
	2.5Y 3/1	14						
	10YR 2/1	1						

[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:

- ___ 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) **(LRRI, J)**
- ___ Coast Prairie Redox (A16) **(LRR F, G, H)**
- ___ Dark Surface (S7) **(LRR G)**
- ___ High Plains Depressions (F16) **(LRRH outside of MLRA 72 & 73)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

Hydric soils are present at the sampling point location.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is 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 ✔ Depth (inches): _____

Water Table Present? Yes ___ No ✔ Depth (inches): None to 16"

Saturation Present? (includes capillary fringe) Yes ___ No ✔ Depth (inches): None to 16"

Wetland Hydrology Present? **Yes** ✔ **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Wetland hydrology is present at the sampling point location.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: US-70 Realignment City/County: Madill/Marshall Sampling Date: 8/10/16

Applicant/Owner: ODOT State: OK Sampling Point: up 7

Investigator(s): Sarah Itz, Matt Haverland Section, Township, Range: 1-T6S-R5E

Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 0-3%

Subregion (LRR): LRR J Lat: 34.063683 Long: -96.743500 Datum: NAD 83

Soil Map Unit Name: 15 - Heiden clay, 2-5% slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation _____ Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ 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 _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks: The sampling point location is not within a wetland.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5ft)			
1. Xanthium strumarium	45	Yes	FAC
2. Cynodon dactylon	50	Yes	FACU
3. Amphiachyris dracunculoides	3	No	UPL
4. Euphorbia bicolor	2	No	UPL
5.			
6.			
7.			
8.			
9.			
10.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: 15ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 0

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: 1/2= 50% (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 Hydrophictic 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 _____

Remarks: (Include photo numbers here or on a separate sheet.)

Hydrophytic vegetation is not present at the sampling point location.

SOIL

Sampling Point: up 7

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
0-12	10YR 2/1	100					clay-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:

- ___ 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) **(LRRI, J)**
- ___ Coast Prairie Redox (A16) **(LRR F, G, H)**
- ___ Dark Surface (S7) **(LRR G)**
- ___ High Plains Depressions (F16) **(LRRH outside of MLRA 72 & 73)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

Hydric soil is not present at the sampling point location.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is 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 ✔ Depth (inches): _____

Water Table Present? Yes ___ No ✔ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ___ No ✔ Depth (inches): _____

Wetland Hydrology Present? **Yes** ✔ **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Wetland hydrology is not present at the sampling point location.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: US-70 Realignment City/County: Madill/Marshall Sampling Date: 8/10/16

Applicant/Owner: ODOT State: OK Sampling Point: wet 8

Investigator(s): Sarah Itz, Matt Haverland Section, Township, Range: 1-T6S-R5E

Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 1%

Subregion (LRR): LRR J Lat: 34.060389 Long: -96.743349 Datum: NAD 83

Soil Map Unit Name: 27 - Tarrant very cobbly clay, 2-15% slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation _____ Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ 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 _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks: The sampling point location is within a wetland.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15ft)			
1. Sesbania drummondii	90	Yes	FACW
2.			
3.			
4.			
5.			
	90 = Total Cover		
Herb Stratum (Plot size: 5ft)			
1. Iva annua	20	Yes	FAC
2. Eleocharis montevidensis	50	Yes	FACW
3. Schoenoplectus acutus	10	No	OBL
4. Cyperus esculentus	5	No	OBL
5.			
6.			
7.			
8.			
9.			
10.			
	85 = Total Cover		
Woody Vine Stratum (Plot size: 15ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 15

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: 3/3= 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 Hydrophictic 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 _____

Remarks: (Include photo numbers here or on a separate sheet.)

Hydrophytic vegetation is present at the sampling point location.

SOIL

Sampling Point: wet 8

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
0-8	10YR 2/1	80	10YR 4/6	20	C	M	Clayey-sandy-loam	
8-16	10YR 2/1	90	10YR 4/6	10	C	M	Clayey-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:

- ___ 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) **(LRRI, J)**
- ___ Coast Prairie Redox (A16) **(LRR F, G, H)**
- ___ Dark Surface (S7) **(LRR G)**
- ___ High Plains Depressions (F16) **(LRRH outside of MLRA 72 & 73)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

Hydric soils are present at the sampling point location.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is 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 ✔ Depth (inches): _____

Water Table Present? Yes ___ No ✔ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ___ No ✔ Depth (inches): _____

Wetland Hydrology Present? **Yes** ✔ **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Wetland hydrology is present at the sampling point location.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: US-70 Realignment City/County: Madill/Marshall Sampling Date: 8/10/16

Applicant/Owner: ODOT State: OK Sampling Point: up8

Investigator(s): Sarah Itz, Matt Haverland Section, Township, Range: 1-T6S-R5E

Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): none Slope (%): 0-2%

Subregion (LRR): LRR J Lat: 34.060600 Long: -96.743259 Datum: NAD 83

Soil Map Unit Name: 27 - Tarrant very cobbly clay, 2-15% slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation _____ Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ 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 _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks: The sampling point location is not within a wetland.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15ft)			
1. Juniperus virginiana	2	No	UPL
2.			
3.			
4.			
5.			
	2 = Total Cover		
Herb Stratum (Plot size: 5ft)			
1. Amphiachyris dracunculoides	40	Yes	UPL
2. Iva annua	35	Yes	FAC
3. Schizachyrium scoparium	5	No	FACU
4. Euphorbia bicolor	3	No	UPL
5. Croton monanthogynus	3	No	UPL
6.			
7.			
8.			
9.			
10.			
	86 = Total Cover		
Woody Vine Stratum (Plot size: 15ft)			
1. Cuscuta indecora	3	No	UPL
2.			
	3 = Total Cover		

% Bare Ground in Herb Stratum 14

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: 1/2= 50% (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 Hydrophictic 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 _____

Remarks: (Include photo numbers here or on a separate sheet.)

Hydrophytic vegetation is not present at the sampling point location

SOIL

Sampling Point: up 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
0-1	2.5Y 6/4	90					sandy-loam	
0-1	10YR 3/2	10						
1-12	10YR 3/1	100					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:

- ___ 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) **(LRRI, J)**
- ___ Coast Prairie Redox (A16) **(LRR F, G, H)**
- ___ Dark Surface (S7) **(LRR G)**
- ___ High Plains Depressions (F16) **(LRRH outside of MLRA 72 & 73)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ____

Remarks:

Hydric soil is not present at the sampling point location.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is 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 ✔ Depth (inches): _____

Water Table Present? Yes ____ No ✔ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ____ No ✔ Depth (inches): _____

Wetland Hydrology Present? **Yes** ✔ **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Wetland hydrology is not present at the sampling point location

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: US-70 Realignment City/County: Madill/Marshall Sampling Date: 8/10/16

Applicant/Owner: ODOT State: OK Sampling Point: wet 9

Investigator(s): Sarah Itz, Matt Haverland Section, Township, Range: 1-T6S-R5E

Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 0-2%

Subregion (LRR): LRR J Lat: 34.057318 Long: -96.737496 Datum: NAD 83

Soil Map Unit Name: 12 - Ferris-Tarrant complex 5-12% slopes NWI classification: R5UBF - Riverine

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation _____ Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ 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 _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks: The sampling point location is within a wetland.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5ft)			
1. Ludwigia peploides	70	Yes	OBL
2. Xanthium strumarium	20	Yes	FAC
3. Eleocharis montevidensis	3	No	FACW
4. Iva annua	2	No	FAC
5.			
6.			
7.			
8.			
9.			
10.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: 15ft)			
1.			
2.			
	95 = Total Cover		

% Bare Ground in Herb Stratum 5

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: 2/2= 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 Hydrophictic 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 _____

Remarks: (Include photo numbers here or on a separate sheet.)

Hydrophytic vegetation is present at the sampling point location

SOIL

Sampling Point: wet 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
0-16	10YR 4/2	90	10YR 5/8	10	C	M	sandy-calyey-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:

- ___ 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) **(LRRI, J)**
- ___ Coast Prairie Redox (A16) **(LRR F, G, H)**
- ___ Dark Surface (S7) **(LRR G)**
- ___ High Plains Depressions (F16) **(LRRH outside of MLRA 72 & 73)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

Hydric soils are present at the sampling point location

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is 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 ✔ Depth (inches): _____

Water Table Present? Yes ___ No ✔ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ___ No ✔ Depth (inches): _____

Wetland Hydrology Present? **Yes** ✔ **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Wetland hydrology is present at the sampling point location.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: US-70 Realignment City/County: Madill/Marshall Sampling Date: 8/10/16

Applicant/Owner: ODOT State: OK Sampling Point: up 9

Investigator(s): Sarah Itz, Matt Haverland Section, Township, Range: 1-T6S-R5E

Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 0-2%

Subregion (LRR): LRR J Lat: 34.057259 Long: -96.737701 Datum: NAD 83

Soil Map Unit Name: 12 - Ferris-Tarrant complex 5-12% slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation _____ Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ 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 _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks: The sampling point location is not within a wetland.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5ft)			
1. Iva annua	30	Yes	FAC
2. Ambrosia trifida	6	No	FAC
3. Desmanthus illinoensis	2	No	FACU
4. Croton texensis	1	No	UPL
5. Amphiachyris dracunculoides	30	Yes	UPL
6. Eleocharis montevidensis	30	Yes	FACW
7.			
8.			
9.			
10.			
	99 = Total Cover		
Woody Vine Stratum (Plot size: 15ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 1

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: 2/3= 67% (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 Hydrophictic 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 _____

Remarks: (Include photo numbers here or on a separate sheet.)

Hydrophytic vegetation is present at the sampling point location.

SOIL

Sampling Point: up 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
0-6	10YR 3/2	99	10YR 4/6	1	C	M, PL	clay-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:

- ___ 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) **(LRRI, J)**
- ___ Coast Prairie Redox (A16) **(LRR F, G, H)**
- ___ Dark Surface (S7) **(LRR G)**
- ___ High Plains Depressions (F16) **(LRRH outside of MLRA 72 & 73)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: bedrock

Depth (inches): 6"

Hydric Soil Present? Yes ✔ **No** ___

Remarks:

Hydric soils are not present at the sampling point location.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is 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 ✔ Depth (inches): ___

Water Table Present? Yes ___ No ✔ Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No ✔ Depth (inches): ___

Wetland Hydrology Present? Yes ✔ **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Wetland hydrology is not present at the sampling point location.

IPaC User Contact Information

Agency: Oklahoma Department of Transportation
Name: Elizabeth Nichols
Address: 111 E. Chesapeake St.
Address Line 2: ODOT Highway Program at Oklahoma Biologist Survey
City: Norman
State: OK
Zip: 73019
Email elizabeth.nichols@ou.edu
Phone: 4053256802

Lead Agency Contact Information

Lead Agency: Federal Highway Administration

APPENDIX I

TRAFFIC NOISE ASSESSMENT

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: **April 25, 2022**

TO: Kelly Saladis – Sr. Project Manager - CP&Y Environmental Planning & Permitting

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

SUBJECT: **Approved Traffic Noise Assessment prepared for the proposed US-70 Madill Realignment project, Marshall County, JP 18835(04)(09), CI 2253E TO 3.**

Attached is the approved traffic noise assessment that investigated the potential noise impacts that could result from the proposed US-70 Realignment project at Madill, Marshall County. The analysis utilized the FHWA Traffic Noise Model version 2.5 per FHWA 23 CFR 772, which complied with the ODOT Noise Policy dated July 13, 2011. The evaluation of this project is based on a field survey, a review of aerial photographic maps, preliminary design plans (March 2022), and traffic data (2014 traffic report).

The noise analysis evaluated twenty-five (25) receptors consisting of 18 single-family residential dwellings, one (1) multi-family apartment complex, three (3) places of worship, one (1) cemetery, and two (2) recreational sports fields. Single-family residential dwelling receptors were evaluated under Noise Abatement Criteria (NAC) Category B. The cemetery, sports fields, and places of worship were evaluated under NAC Category C. The multi-family residential dwelling was evaluated under NAC Category D. The existing sound levels for seventeen (17) receptors were determined by noise modeling. Eight (8) receivers required field measurements to assess ambient sound levels due to their relatively long distances from the existing US-70 and SH-99 and SH-199 highway systems.

Based on the future (2047) analysis, no receptors would approach, meet, or exceed the NAC for Category B, C, or D in the future roadway conditions, with the highest sound level determined at 64.9 dB(A). However, one (1) receptor, a single-family residential designated as R26, would experience a substantial increase by exceeding 15 dB over the existing noise levels.

Kevin Larios, P.E.
Senior Noise Specialist
Mobile: (405) 746-1815
E-mail: klarios@odot.org

Abatement in the form of a free-standing wall placed inside the project right-of-way was considered for the one (1) impacted residential receptor. A preliminary barrier analysis concluded that a free-standing noise wall 333 feet in length and 20 feet in height would reduce the noise levels by 6.1 dB, falling short of the desired 7 dB design reduction goal. However, considered a benefit receptor with at least a 5 dB reduction, the total wall cost is calculated at $291,411. This amount substantially exceeds the reasonableness cost per benefitted receptor allowed under ODOT Noise Policy. Therefore, noise mitigation is not recommended for this project.

A commitment is made that the ODOT Noise Specialist will need to review the 90% project plans to determine if any noise modeling updates are required due to potential changes with roadway design or traffic data.

KML

Attachment

Copy: Kathy Coon – ODOT Environmental Project Manager – District 2
Leslie Novotny - ODOT Environmental Project Supervisor

Kevin Larios, P.E.
Senior Noise Specialist
Mobile: (405) 746-1815
E-mail: klarios@odot.org

TRAFFIC NOISE ASSESSMENT

US-70 Madill Realignment from SH-99, east 2 miles &

from 2.0 miles east and south of SH-199, south 2.8 miles

Marshall County, OK

JP 18835(04) & (09)

Prepared for

Oklahoma Department of Transportation
Environmental Programs Division
200 NE 21st Street
Oklahoma City, Oklahoma 73105
Main Office: 405-522-3050
FAX: 405-522-5193

Prepared by

CP&Y, Inc.
13809 Research Blvd., Suite 300
Austin, Texas 78750

Angela Gillmeister

Angela Gillmeister
Noise Specialist

April 2022

Executive Summary

The purpose of this report is to identify and evaluate the traffic noise impacts resulting from the proposed realignment of US-70 near the City of Madill in Marshall County, Oklahoma. The existing US-70 facility runs through Madill and consists of both curbed and open roadway sections varying from two-lane to five-lane facilities with varying shoulder widths and no shoulders in Madill. As a result of the proposed project, US-70 would bypass Madill to the east and north of the city on a new alignment. The proposed alignment will utilize a five-lane curbed section to match existing conditions at the beginning of the corridor (existing US-70). The five-lane section will consist of four, 12-ft driving lanes, one 14-ft center left turn lane and curb and gutter with storm sewer. This segment also includes an at-grade intersection with US-177 and a bridge over 3rd Street. The five-lane curbed section is proposed to be built in its entirety in the interim and serve as the ultimate configuration. Beginning a few hundred feet east of the 3rd Street bridge, the roadway will transition to a five-lane section with 8-ft shoulders and ditches. For the ultimate design, this five-lane section will continue to the southern project terminus. This traffic noise study assesses the entire project to be built (i.e., ultimate condition).

The traffic noise analysis was performed using the FHWA Traffic Noise Model (TNM) 2.5 in accordance with the FHWA 23 CFR 772, Procedures for Noise Abatement of Highway Traffic Noise and Construction and complies with the Oklahoma Department of Transportation (ODOT) Policy Directive Highway Noise Abatement C-201-3 dated July 13, 2011.

Currently, the land uses along the project extent are predominately agricultural with some scattered residences, and commercial facilities, residential neighborhoods, and community facilities in town. Twenty-five (25) receivers were modeled and analyzed. These receivers include 18 single-family residential dwellings, one (1) multi-family apartment complex, three (3) places of worship, one (1) cemetery, and two (2) recreational sports fields. Single-family residential dwelling receivers were evaluated under Noise Abatement Criteria (NAC) Category B. The cemetery, sports fields, and places of worship were evaluated under NAC category C. The multi-family residential dwelling was evaluated under NAC Category D.

Under current conditions, no receivers are impacted. Based on the future noise analysis, no receivers would approach, meet or exceed the NAC criteria for Category B, C, or D in the proposed roadway conditions, with the highest sound level observed at 64.9 dB(A). However, one (1) receiver, a single-family residential designated as R26, would experience a substantial increase by exceeding 15 dB over the existing noise levels. Abatement in the form of a free-standing wall was considered for this impacted residential receiver. A preliminary barrier analysis concluded that a free-standing noise wall 333 feet in length and 20 feet in height would reduce the noise levels by 6.1 dB. However, it would not meet the noise reduction design goal of reducing the noise levels by 7 dB. Furthermore, a total cost of $291,411 would substantially exceed the cost/benefit ratio of $40,000 per benefitted receiver, meaning noise abatement measures would not be reasonable. Therefore, noise mitigation is not recommended for this project.

The field measurement data, sound meter calibration certification, and the TNM 2.5 results used in this analysis are on file with the ODOT Environmental Programs Division, and copies are available upon request.

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List of Tables

Appendix

TRAFFIC NOISE ASSESSMENT

US-70 Madill Realignment from SH-99, east 2 miles & from 2.0 miles east and south of SH-199, south 2.8 miles
JP No. 18835(04) & (09)
Marshall County, OK

I. Introduction

The purpose of this report is to identify and evaluate the traffic noise impacts resulting from the proposed realignment of US-70 near the City of Madill in Marshall County, Oklahoma. The existing US-70 facility runs through Madill and consists of both curbed and open roadway sections varying from two-lane to five-lane facilities with a width of 12 feet per lane. Shoulders vary in width across the existing facility but are generally between four and eight feet wide. Generally, no shoulders exist on US-70 in Madill between W Donehoo and Smiley Road. As a result of the proposed project, US-70 would bypass Madill to the east and north of the city on a new alignment.

The proposed alignment will utilize a five-lane curbed section to match existing conditions at the beginning of the corridor (existing US-70). The five-lane section will consist of four, 12-ft driving lanes, one 14-ft center left turn lane and curb and gutter with storm sewer. This segment also includes an at-grade intersection with US-177 and a bridge over 3rd Street. The five-lane curbed section is proposed to be built in its entirety in the interim and serve as the ultimate configuration. Beginning a few hundred feet east of the 3rd Street bridge, the roadway will transition to a five-lane section with 8-ft shoulders and ditches. For the ultimate design, this five-lane section will continue to the southern project terminus. The proposed US-70 will be bridged over the railroad. The interim design for this segment just east of the BNSF railroad to the southern terminus will consist of a two-lane highway with 8-ft shoulders and ditches. The design speeds for the proposed alignment range from 45 mph for the curbed five-lane, 55 mph for the open five- lane, and 65 mph for the interim two-lane. No interchanges are proposed.

The evaluation of this project is based on a field survey, review of aerial photographic maps, preliminary design plans (March 2022), and traffic data (2014 traffic report). This traffic noise analysis was performed using the FHWA Traffic Noise Model (TNM) 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.

II. Fundamentals of Noise 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. 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 logarithmic, as opposed to more common linear units such as that of 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 an equivalent of an average sound level over an hour's time

period that contains the same acoustic energy as the time-varying sound level during the same period. All traffic noise levels in this analysis would be expressed in dB(A) Leq(h).

III. Analysis Methodology

Traffic noise analysis consists of a comparison of physically measured or modeled noise levels for existing conditions with projected noise levels for future conditions. FHWA's software, TNM 2.5 was used to model existing and future noise levels based on traffic data, roadway geometry, and receiver site locations. Traffic volumes for US-70 were included in the computer modeling. A receiver is a location, such as a dwelling unit, active sports area, school, or childcare facility, where exterior human activity occurs. Indoor receivers were also included in this analysis and include churches and a medical business. The identified receivers were modeled for noise levels and evaluated for noise impacts.

In this analysis, the peak hour volumes and corresponding speeds for automobiles, medium trucks, and heavy trucks resulted in the noisiest conditions. Normally, during all other periods, the noise levels are expected to be less than indicated in this report. This study only analyzes the traffic noise levels resulting from the proposed roadway improvements.

The FHWA has seven noise activity categories based on land use and sound levels, each of which has its own NAC. The NAC categories are listed in **Table 1**. If a project would result in higher Leq(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 would be recommended.

Table 1: Federal Highway Administration Noise Abatement Criteria

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 sports areas, amphitheaters, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or non-profit institutional structures, radio studios, recording studios, recreation areas, Section 4(f) sites, schools, television studios, trails, and trail crossings.
D	52 (interior)	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, schools, and television studios.
E[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.

IV. Traffic Data

The traffic data used to model noise levels in this report is based on traffic data and projections from the traffic report prepared by EST for ODOT in July 2014. The unit of measure for traffic on a roadway is the average daily traffic (ADT), which is defined as the total volume of vehicles during a given time period (greater than one year), divided by the number of days in that time period. Because of the length of time that has passed since the traffic report was published, the traffic data was grown to base-year 2027 ADT and 2047 design year ADT values using a compound annual growth rate of two percent.

Noise analysis should model the "worst hour for noise" which occurs when the highest volume for an hour is combined with the highest speeds. The highest hourly traffic at the design speed is the Design Hourly Volume (DHV). The vehicle distribution shown in **Table 2** was provided by ODOT on the design plans and the current and future ADT represent an average for the entire project extent.

Table 2: Design Traffic Data

Location	2027 ADT	Existing Speed	2047 ADT	Design Speed	Vehicle Distribution (%) DHV		
					Light Duty	Medium Duty	Heavy Duty
US- 70	5,800	60 mph	8,000	45 - 65 mph	84.0%	3.6%	12.4%

V. Field Survey and Model Validation

The existing facilitates on US-70 vary between a two-lane to a five-lane facility with varying shoulder widths between 0 feet and 8 feet. To validate the noise model, noise measurements were performed in in February 2017 using the ODOT Sound Level Meter (Larson Davis Model 720 Type II) as part of the initial noise study completed for the proposed divided four-lane. The noise measurements were collected along US-70 at the west and south extents of the project limits consisting of four 15-minute readings. **Figure 2** in the Appendix depicts the location of the modeled validation sites. A traffic count by vehicle type was collected simultaneously. The existing roadway and collected traffic data were input into TNM 2.5, and noise levels were calculated for each site and reading. The modeled noise levels were then compared with

the field recorded noise levels to determine the model's accuracy (see **Table 3**). The model is considered validated when the difference between measured and predicted noise levels are within +/- 3.0 dB(A). Based on the field measurements, three of the four readings at both sites had the model predicted within +/-3.0 dB(A) of existing levels and; therefore, the TNM 2.5 model is considered validated. The ODOT Senior Noise Specialist advised that a new model validation was unnecessary for the updated noise study for the proposed five-lane facility, given the existing noise environment remains the same.

Table 3: Field Measured & Modeled Noise Levels Comparison

Receiver	Location	Field Measured Noise Level dB(A)	TNM Predicted Noise Level[A] dB(A)	Difference dB
MV4-1	North End/US 70 (S of Roadway)	64.0	64.0	0.0
MV4-2	North End/US 70 (S of Roadway)	62.5	62.1	+0.4
MV4-3	South End/US 70 (W of Roadway)	69.8	68.2	+1.6

[A] Predicted Noise levels calculated using the traffic count data collected during the 2017 noise reading.

A field verification of noise sensitive areas within the project was also conducted in February 2017. For purposes of this reevaluation, a follow-up field survey was conducted on January 11, 2022, to verify the previous field verification and identify newly developed noise sensitive areas. Based on aerial photographic maps and the field investigation, the areas adjacent to the project are predominantly agricultural with some scattered residences, and commercial facilities, residential neighborhoods, and community facilities in town.

VI. Existing Condition & Noise Analysis Results

Potential noise impacts were modeled for twenty-five (25) receivers. These receivers include eighteen (18) single-family residential dwellings, one (1) multi-family apartment complex, three (3) places of

worship, one (1) cemetery, and two (2) recreational sports fields. One receiver previously analyzed in the noise analysis as R19 will be displaced as part of this reevaluation and is not included as a receiver in this analysis. Each single-family residential receiver was evaluated under NAC Category B, and the modeled point was located 10 feet from the house in the backyard or on a front porch, whichever was closer to the roadway. The places of worship, cemetery, and sports fields were evaluated under NAC Category C. The multi-family residential dwelling was evaluated under NAC Category D, and the modeling point was placed in the interior of the building, as there is no area of exterior use. Locations of modeled receivers are depicted in **Figure 2.**

Traffic data from 2027 was used for current traffic volumes for roadways within the project area for this traffic noise assessment. The existing noise levels for receivers along the project corridor were modeled using FHWA TNM 2.5; however, eight (8) receivers required field measurements to determine ambient sound levels due to their remote locations and far distances from the modeled roadways. These ambient noise readings serve as the existing noise level for these receivers designated as R12, R13, R14, R15, R16, R21, R25 and R26.

Under current conditions, no receivers are impacted. None of the twenty-five (25) receivers would approach, meet or exceed the NAC criteria for Category B, C, or D in the existing roadway conditions, with the highest sound level observed at 59.4 dB(A). This noise study includes one interior analysis of a multi-family residential dwelling, described as masonry with single glaze windows. In accordance with the ODOT Noise Policy, the interior sound level predictions were computed by subtracting 25 dB(A) from the predicted exterior levels. The existing noise levels for all receivers, including the interior predictions, are reflected in **Table 4**.

VII. Future Noise Analysis Results

Future noise levels were modeled using predicted 2047 traffic volumes. Similarly, to the existing condition noise analysis, results from the future noise analysis show that none of the twenty-five (25) receivers would approach, meet or exceed the NAC criteria for Category B, C, or D; however, they will experience an average increase of 5.6 dB(A) compared to the existing noise analysis, ranging from a slight decrease in sound levels to an increase of 20.6 dB(A). Consistent with the existing condition noise analysis and in

accordance with the ODOT Noise Policy, interior sound level predictions for one multi-family residential dwelling were computed by subtracting 25 dB(A) from the predicted exterior levels. The predicted traffic noise levels for 2047 for the 25 modeled receivers can be found in **Table 4**.

As further explained in Section XI, the noise impact line extends out to 170 feet from the center alignment of the proposed design, as shown in **Figure 2** in the Appendix. Traffic noise levels are equal to or exceed 66 dB(A) between the center alignment and the noise impact line.

Table 4: Traffic Noise Levels (dB(A) Leq) For Modeled Receivers

Receiver	Location [C]	NAC Criteria	Existing Noise (2027) dB(A)	Predicted Noise [B] (2047) dB(A)	Change (+/-) dB(A)	Noise Impact
R-1	STA 560+00 303 feet West	B	56.0	58.4	2.4	N
R-2	STA 560+00 100 feet West	C	54.2	57.9	3.7	N
R-3	STA 560+00 80 feet West	C	58.8	63.2	4.4	N
R-4	STA 575+00 263 feet West	B	52.7	61.7	9.0	N
R-5	STA 575+00 223 feet West	B	52.2	61.1	8.9	N
R-6	STA 575+00	B	50.7	58.0	7.3	N
R-7	STA 580+00 160 feet East	B	56.8	59.5	2.7	N
R-8	STA 580+00 285 feet East	B	59.4	59.2	-0.2	N

Receiver	Location [C]	NAC Criteria	Existing Noise (2027) dB(A)	Predicted Noise [B] (2047) dB(A)	Change (+/-) dB(A)	Noise Impact
R-9*	STA 585+00 100 feet West	D	36.1	40.0	3.9	N
R-10	STA 590+00 260 feet West	B	56.1	58.7	2.6	N
R-11	STA 590+00 155 feet East	B	50.4	55.6	5.2	N
R-12	STA 600+00 134 feet West	B	54.4 [A]	55.9	1.5	N
R-13	STA 615+00 250 feet West	B	49.0 [A]	59.4	10.4	N
R-14	STA 615+00 100 feet East	C	46.5 [A]	51.3	4.8	N
R-15	STA 620+00 158 feet East	B	43.0 [A]	57.7	14.7	N
R-16	STA 630+00 200 feet West	B	49.0 [A]	59.9	10.9	N
R-17	STA 630+00 50 feet East	B	49.8	58.1	8.3	N
R-18	STA 635+00 95 feet East	C	56.5	56.5	0.0	N
R-20	STA 645+00 166 feet West	C	49.0	53.8	4.8	N
R-21	STA 705+00 175 feet West	B	53.7 [A]	58.0	4.3	N
R-22	STA 710+00 710 feet East	B	57.4	57.2	-0.2	N

Receiver	Location [C]	NAC Criteria	Existing Noise (2027) dB(A)	Predicted Noise [B] (2047) dB(A)	Change (+/-) dB(A)	Noise Impact
R-23	STA 715+00 115 feet West	C	48.5	57.0	8.5	N
R-24	STA 840+00	B	51.7	52.8	1.1	N
R-25	STA 600+00 285 feet West	B	54.4 [A]	55.8	1.4	N
R-26	STA 775+00 245 feet East	B	44.3 [A]	64.9	20.6	Y

[A] Existing Noise levels as measured during ambient noise readings.

[B] Predicted Noise levels calculated using 2047 traffic volume projections on proposed facilities.

[C] Stations and offsets taken along existing alignment centerline.

*Interior Analysis 25 dB(A) reduction from TNM results.

VIII. Traffic Noise Impacts

The results of the analysis of the future roadway and traffic conditions indicated that one (1) receiver would experience a substantial increase by exceeding 15 dB over the existing noise levels. This receiver, R26, is a single-family residence. No receivers would approach, meet or exceed the NAC criteria for Category B, C, or D in the proposed roadway conditions, with the highest sound level observed at 64.9 dB(A).

IX. Consideration of Abatement

The ODOT Noise Policy was used as the traffic noise impact guideline for this study. This policy states that predicted noise levels attributed to roadway modifications resulting in increased traffic levels require an evaluation of measured noise impact and possible mitigation measures. Results of the future condition

analysis indicated that one receiver, a single-family residence, will be impacted, and thus, a free-standing noise wall was considered for this receiver as it is the most appropriate form of noise abatement measure. Noise mitigation must be feasible and reasonable to be recommended for design and construction. Feasible refers to the combination of acoustic and engineering factors considered in the evaluation of a noise abatement measure. The engineering considerations include whether it is possible to build an abatement measure given site constraints (drainage, safety, utilities) and acoustical considerations include whether the abatement measure provides an acceptable reduction in noise levels. Reasonable refers to the following factors which determine if mitigation is fair and affordable. The criteria are specified in the ODOT Noise Policy.

1. The property owners' and residents' desire for mitigation
2. The ODOT noise reduction design goal of 7.0 dB(A) must be achieved for at least 75 percent of the benefitted receptors identified within the first row of receptors
3. The cost is not to exceed $30,000 per benefitted receptor. A benefitted receptor is any receptor that achieves at least a five (5) dB(A) reduction compared to no mitigation.

These three criteria were used to evaluate the reasonableness of noise abatement. Additional factors that may be considered to increase the allowable cost and benefit factors listed above are as follows: if the overall magnitude of the future noise levels without mitigation exceeds 75 dB(A); if the date of permitted construction of the residential area pre-dates the date of initial highway construction, and if local officials have implemented measures to control incompatible growth and development adjacent to highways, then an additional $10,000 per benefitted receptor will be allowed in the Reasonableness Criteria, for a total of $40,000 per benefitted receptor. Due to this project involving a highway in a new location, the cost/benefit ratio of $40,000 was applied.

For the impacted receiver R26, a preliminary analysis concluded that a free-standing noise wall 333 feet in length and 20 feet in height would reduce the noise levels by 6.1 dB. However, it would not meet the noise reduction design goal of reducing the noise levels by 7 dB. Furthermore, at a total cost of $291,411, it would substantially exceed the cost/benefit ratio of $40,000 per benefitted receiver, meaning noise abatement measures would not be reasonable. Therefore, noise mitigation is not recommended for this project.

X. Construction Noise

Construction noise related to highway projects is not a major issue. Noise sources include heavy machineries like backhoes and scrapers, cranes, pile drivers, and trucks transporting materials. Construction noise can be minimized by implementing time of day restrictions for construction operations adjacent to noise-sensitive areas. ODOT is concerned with any special noise-sensitive land uses or activities that may be affected by construction noise from the proposed project. Any special measures that 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 close to the project.

XI. Coordination with Local Officials

Traffic noise approaching and exceeding the sound levels specified in the ODOT Noise Policy resulting from the proposed facility has been identified. To aid in noise-compatible land use planning, using the TNM model, the distance from the center alignment of the proposed facility was used to determine the 66 dB(A) and 71 dB(A) future contour lines. Results are summarized in **Table 5** and shown in **Figure 2**. The 71dB(A) contour line falls within the ROW throughout the project, and the 66 dB(A) contour line, on average, falls within 20 feet of the ROW. Due to anticipated future noise levels, all residential and NAC Activity Category C land uses are discouraged within the 66 dB(A) impact line.

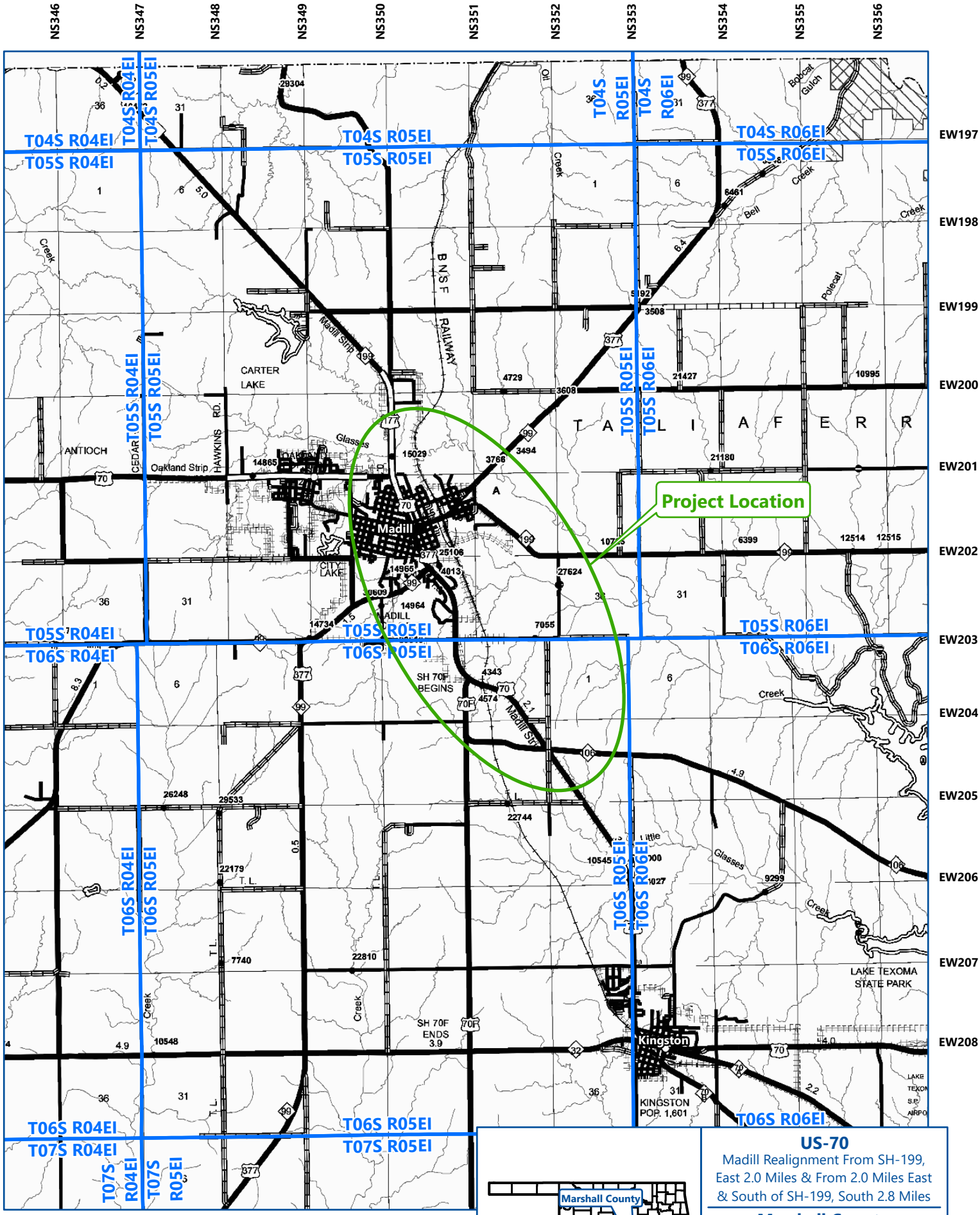
Table 5: Noise Contour Impact Line

Roadway Section	66 dB(A)	71 dB(A)
US 70 Realignment from Existing US 70 (Beginning of Project) to US 177	Within ROW	Within ROW
US 70 Realignment from US 177 to BNSF RR	Within ROW	Within ROW
US 70 Realignment from BNSF RR to SH 99	170 feet*	Within ROW

Roadway Section	66 dB(A)	71 dB(A)
US 70 Realignment from SH 99 to SH 199	170 feet*	Within ROW
US 70 Realignment from SH 199 to Existing US 70 (End of Project)	170 feet*	Within ROW

*Distance from the center of the proposed facility.

APPENDIX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T06S R04EI
T07S R04EI
T06S R05EI
T07S R05EI
T06S R06EI
Project Location
Madill
CARTER LAKE
ANTIOCH
Oakland Strip
CITY LAKE
MADILL
SH 70F BEGINS
SH 70F ENDS 3.9
Kingston
KINGSTON POP. 1,601
LAKE TEXOMA STATE PARK
BNSF RAILWAY
Madill Strip
Glasses Creek
Bell Creek
Polecat Creek
Bobcat Gulch
Little Creek
HAWKINS RD.
CEDAR
Project Location
Township & Range Boundary
Miles
0 0.38 0.75 1.5
1 inch = 1.5 miles
Marshall County
US-70
Madill Realignment From SH-199, East 2.0 Miles & From 2.0 Miles East & South of SH-199, South 2.8 Miles
Marshall County
JP No. 18835(04) & (09)
OKLAHOMA Transportation
Project Location Map

US-70

Madill Realignment From SH-199, East 2.0 Miles & From 2.0 Miles East & South of SH-199, South 2.8 Miles

MARSHALL COUNTY

JP No. 18835(04) & (09)

OKLAHOMA Transportation

Receiver Location Map

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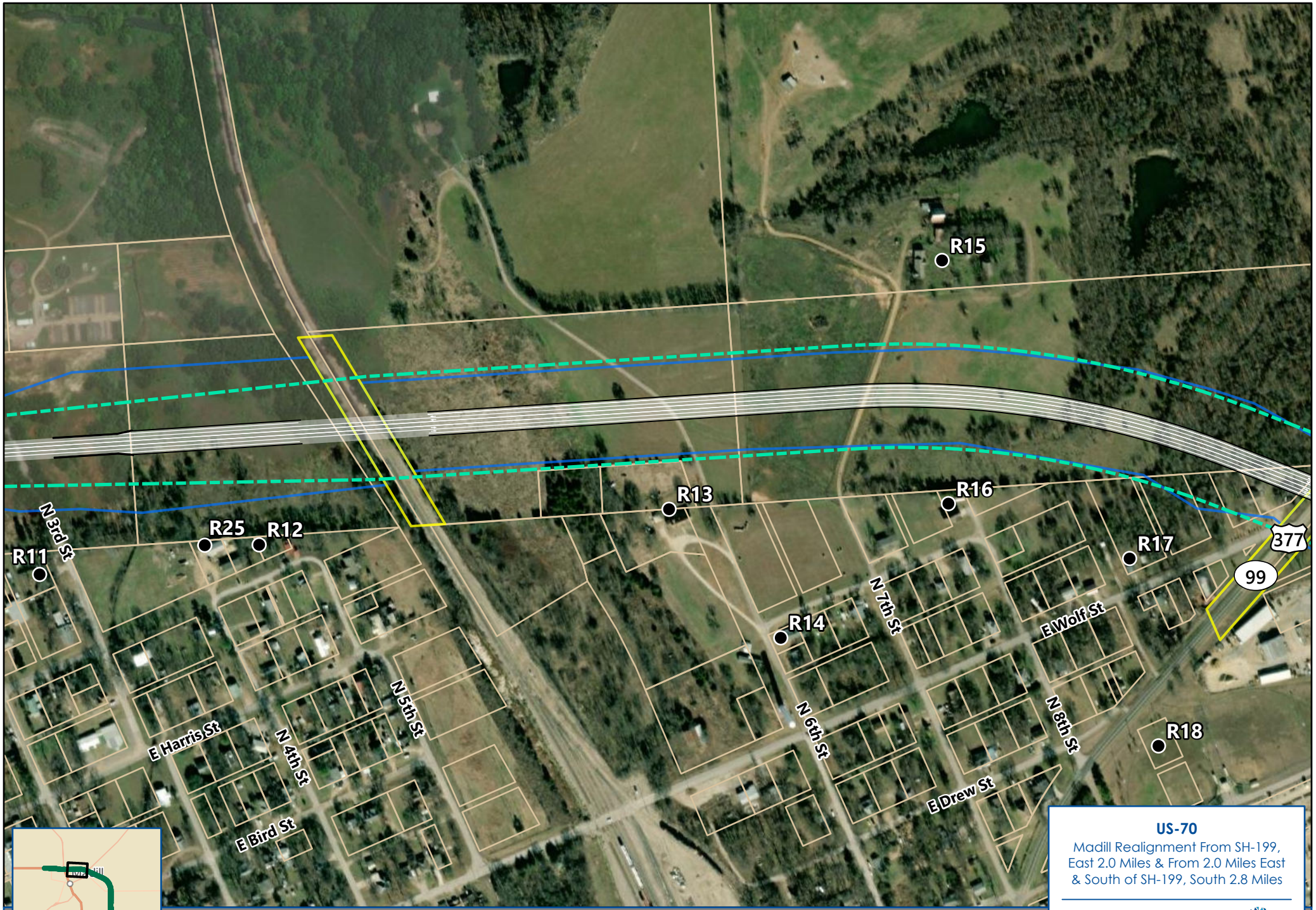

US-70

Madill Realignment From SH-199, East 2.0 Miles & From 2.0 Miles East & South of SH-199, South 2.8 Miles

MARSHALL COUNTY

JP No. 18835(04) & (09)

OKLAHOMA Transportation

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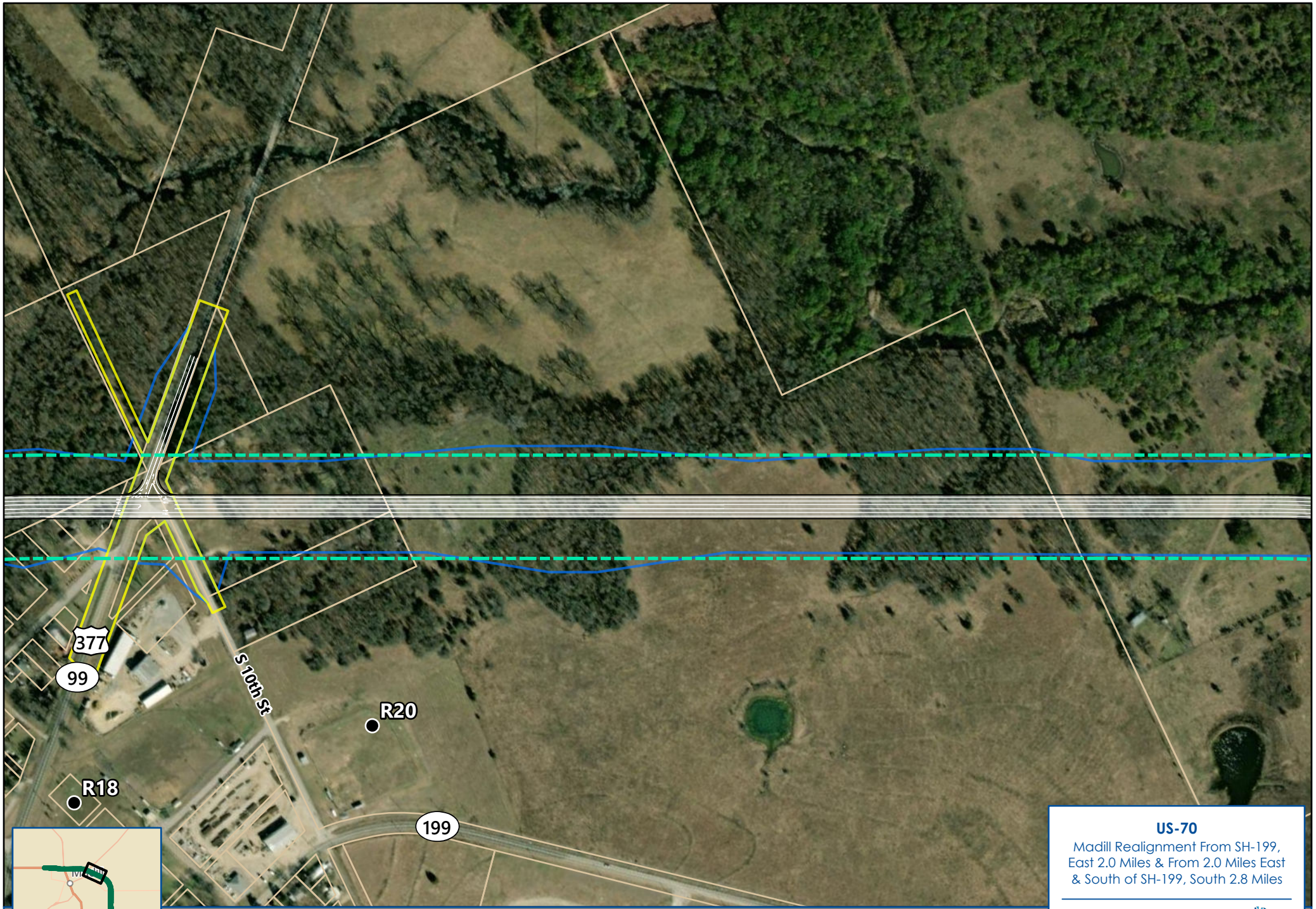

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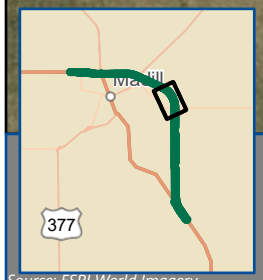

MAP 4

Representative Receiver

R# (Non-Impacted Receiver)

R# (Impacted Receiver)

Validation Noise Reading

66 dB Contour Line

Proposed ROW

Existing ROW

Lane Striping

Shoulder Edge/Curb

Property Boundary

400 200 0

Feet

1 inch = 400 feet

Source: ESRI World Imagery

US-70

Madill Realignment From SH-199, East 2.0 Miles & From 2.0 Miles East & South of SH-199, South 2.8 Miles

MARSHALL COUNTY

JP No. 18835(04) & (09)

OKLAHOMA Transportation

Receiver Location Map

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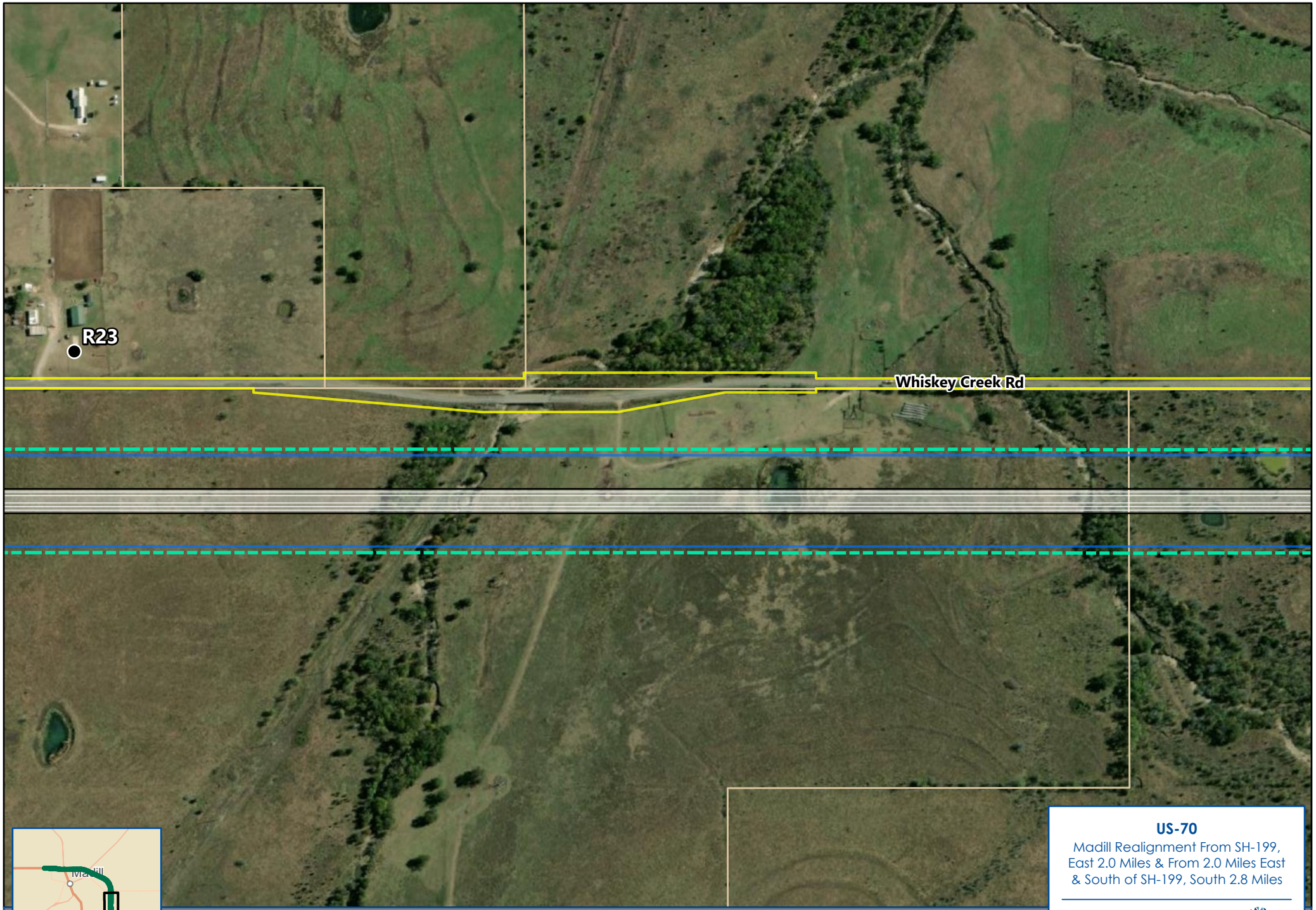

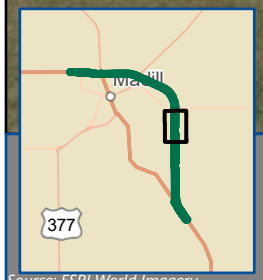

MAP 5

Representative Receiver

R# (Non-Impacted Receiver)

R# (Impacted Receiver)

Validation Noise Reading

66 dB Contour Line

Proposed ROW

Existing ROW

Lane Striping

Shoulder Edge/Curb

Property Boundary

400 200 0

Feet

1 inch = 400 feet

Source: ESRI World Imagery

US-70

Madill Realignment From SH-199, East 2.0 Miles & From 2.0 Miles East & South of SH-199, South 2.8 Miles

MARSHALL COUNTY

JP No. 18835(04) & (09)

OKLAHOMA Transportation

Receiver Location Map

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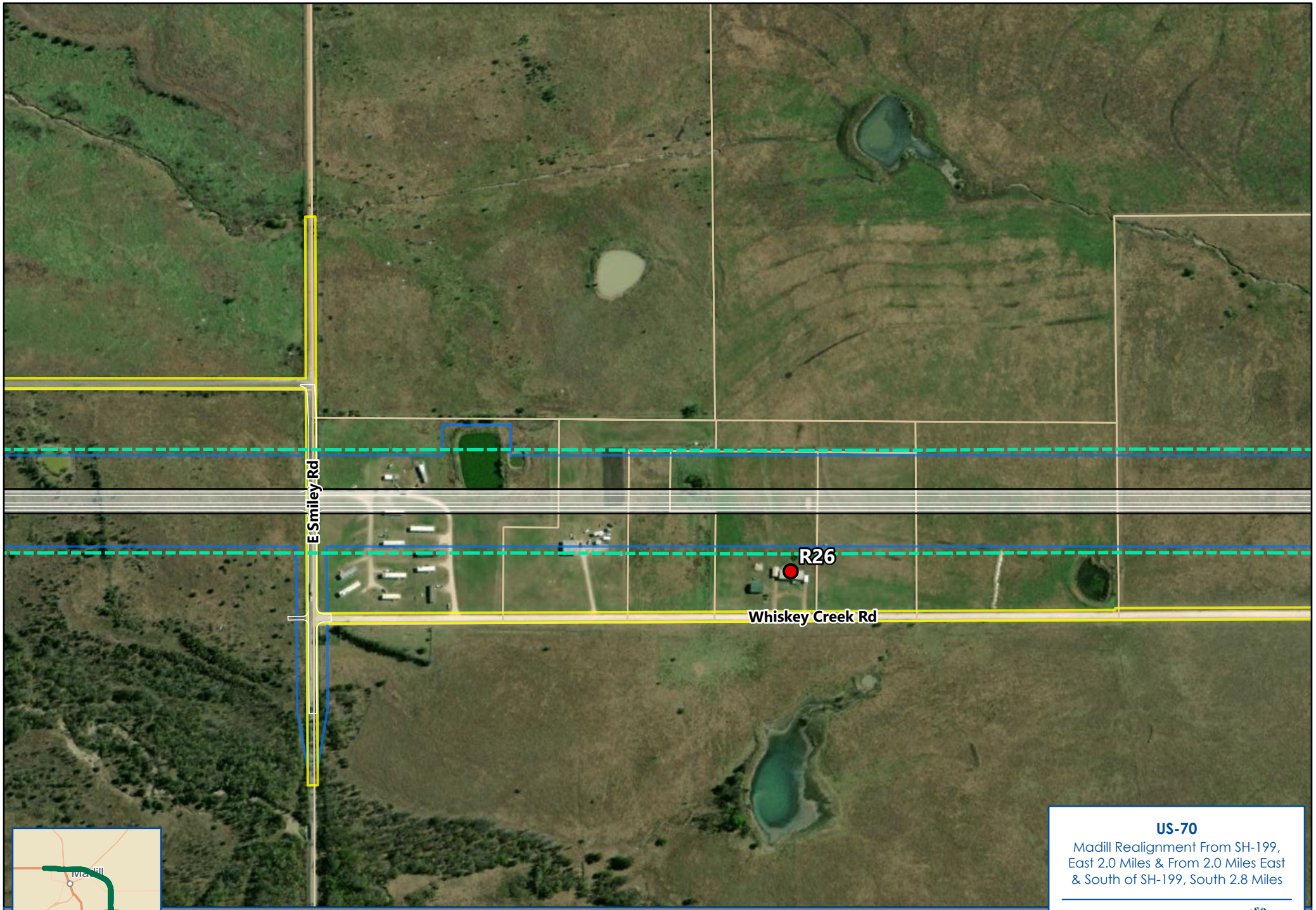

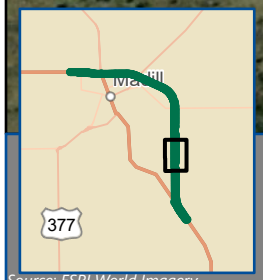

MAP 6

Representative Receiver

R# (Non-Impacted Receiver)

R# (Impacted Receiver)

Validation Noise Reading

66 dB Contour Line

Proposed ROW

Existing ROW

Lane Striping

Shoulder Edge/Curb

Property Boundary

400 200 0

Feet

1 inch = 400 feet

Source: ESRI World Imagery

US-70

Madill Realignment From SH-199, East 2.0 Miles & From 2.0 Miles East & South of SH-199, South 2.8 Miles

MARSHALL COUNTY

JP No. 18835(04) & (09)

OKLAHOMA Transportation

Receiver Location Map

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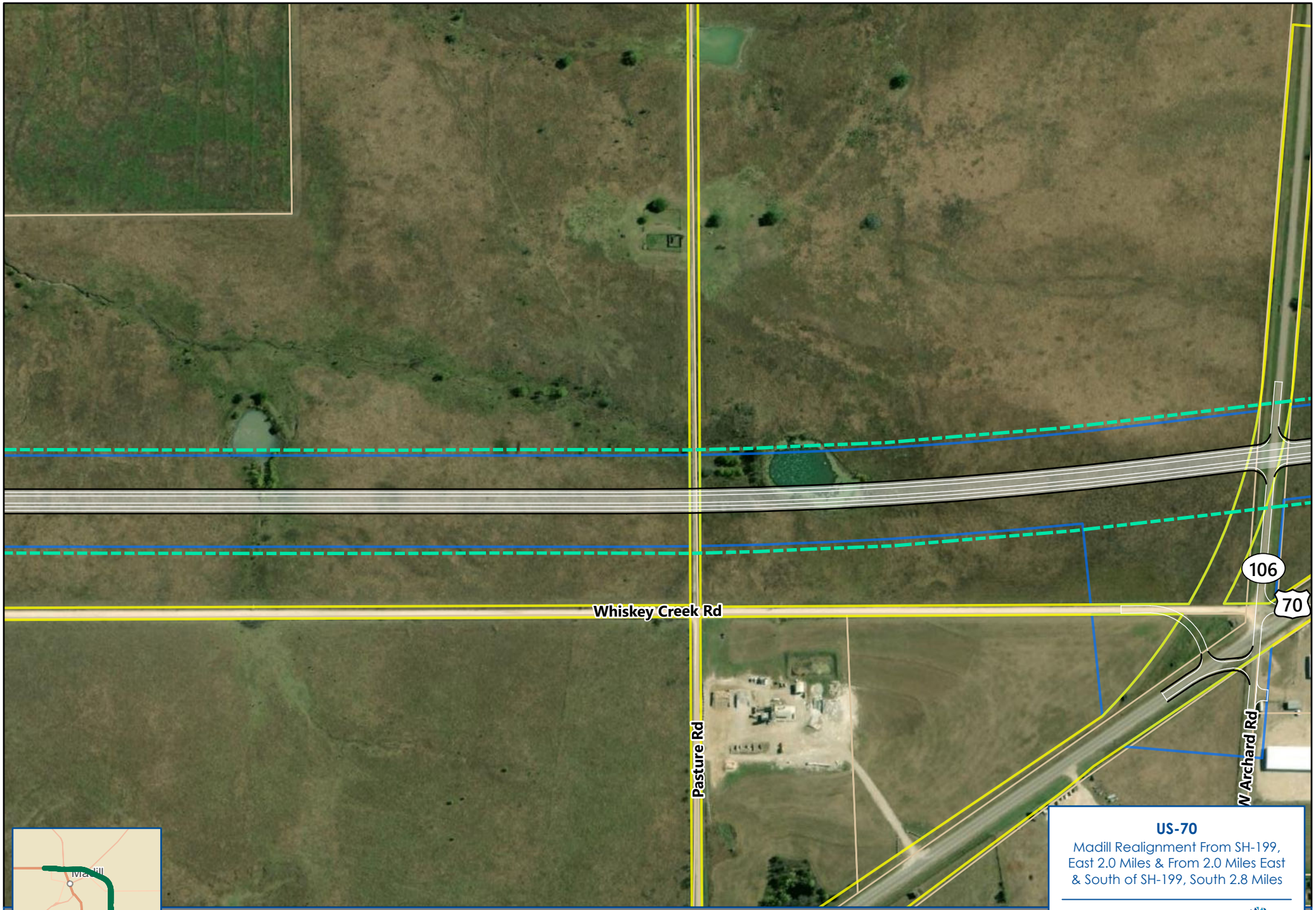

MAP 7

Representative Receiver

R# (Non-Impacted Receiver)

R# (Impacted Receiver)

Validation Noise Reading

66 dB Contour Line

Proposed ROW

Existing ROW

Lane Striping

Shoulder Edge/Curb

Property Boundary

400 200 0

Feet

1 inch = 400 feet

Source: ESRI World Imagery

US-70

Madill Realignment From SH-199, East 2.0 Miles & From 2.0 Miles East & South of SH-199, South 2.8 Miles

MARSHALL COUNTY

JP No. 18835(04) & (09)

OKLAHOMA Transportation

Receiver Location Map

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MAP 8

Representative Receiver

R# (Non-Impacted Receiver)

R# (Impacted Receiver)

Validation Noise Reading

66 dB Contour Line

Proposed ROW

Existing ROW

Lane Striping

Shoulder Edge/Curb

Property Boundary

400 200 0

Feet

1 inch = 400 feet

Source: ESRI World Imagery

US-70

Madill Realignment From SH-199, East 2.0 Miles & From 2.0 Miles East & South of SH-199, South 2.8 Miles

MARSHALL COUNTY

JP No. 18835(04) & (09)

OKLAHOMA Transportation

Receiver Location Map

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APPENDIX J

INITIAL SITE ASSESSMENT

OKLAHOMA DEPARTMENT OF TRANSPORTATION
CONSULTANT REPORT REVIEW – HAZARDOUS WASTE

Reviewed By: Evan Mace
Review Date: 4/4/2022
Consultant: CP&Y
County: Marshall
J/P Number: 18835(04)(09)

1. PROJECT DESCRIPTION: 18835(04): GRADE, DRAIN, BRIDGE & SURFACE: US-70: MADILL REALIGNMENT FROM SH-199, EAST 2.0 MI SMC=80/20 (2 ON 4); 18835(09): GRADE, DRAIN, BRIDGE & SURFACE: US-70: MADILL REALIGNMENT FROM 2.0 MI EAST & SOUTH OF SH-199, SOUTH 2.8 MI

2. LEVEL OF INVESTIGATION: ☐Recon ☒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):

Enercon recommended additional investigation, for the mentioned sites.

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: Cautionary plan note attached.

6. GENERAL COMMENTS: Two sites that are listed in the ISA were determined to possibly affect the project. Harris Virgil/Lee's Phillips 66 (701/801 N. 1st Street) is a historical UST site with no reported cases. Since this site operated pre-regulation, there is a possibility of encountering unreported contamination, although there is no evidence contamination is present. A cautionary plan note is attached addressing the possibility of encountering contamination near this site.

The second site is a sewage lagoon associated with a mobile home park. The proposed R/W line shows that the lagoon will be acquired and the proposed roadway alignment goes through the current location of the lagoon. The lagoon will need to be closed following standard ODOT R/W procedure in accordance with ODEQ regulations. To ensure that the lagoon has a clean closure and no further action is required from a hazardous waste perspective, the ODOT hazardous waste specialist will need to check the closure of the lagoon prior to letting of the project. Please notify the ODOT hazardous waste specialist when 90% plans become available or at the pre-let check.

ATTACH EXCERPTS FROM REPORT, AS APPROPRIATE.*

*The full document is on file with ODOT's Environmental Programs Division. Please contact David Edwards at (405) 521-2673 or daedwards@odot.org for more information.

OKLAHOMA DEPARTMENT OF TRANSPORTATION

Environmental Programs Division
200 N.E. 21st Street
Oklahoma City, OK 73105-3204
www.odot.org

DATE: **April 4, 2022**

TO: Roadway Design Division, Project Management Division

FROM: Environmental Programs Division

SUBJECT: **GRADE, DRAIN, BRIDGE & SURFACE: US-70: MADILL REALIGNMENT FROM SH-199, EAST 2.0 MI SMC=80/20 (2 ON 4), GRADE, DRAIN, BRIDGE & SURFACE: US-70: MADILL REALIGNMENT FROM 2.0 MI EAST & SOUTH OF SH-199, SOUTH 2.8 MI; Marshall County; JP No. 18835(04)(09).**

One potential hazardous materials site is located along the project corridor.

Please have the following added to the "Environmental Mitigation Notes" of the project plans per Policy Directive C-201-2D(2):

"Stations	**OCC Facility/Case No.**	**Facility**
860+60 to 862+10 Rt. 25 ft.	**4801844/ NA**	**Harris Virgil/Lee's Phillips 66**

Petroleum contamination may exist at or near the referenced hazardous materials site. Based on the available information, contamination is not expected to affect construction activities, but is still possible. In the event contaminated soil or groundwater is encountered, the contractor shall adhere to ODOT's Hazardous Materials Specification 107.15 and notify the Resident Engineer, who may then contact the Environmental Programs Division at (405)521-3050 for assistance."

This mitigation measure should be discussed at all pre-work conferences per Policy Directive C-201-2-E(1). If you have any questions, please contact Evan Mace at (405)416-0831.

EMM

INITIAL SITE ASSESSMENT

US-70: JP 18835(04) MADILL REALIGNMENT FROM SH-199 EAST 2 MILES
JP 18835(09) MADILL REALIGNMENT FROM SH-199 SOUTH 2.8 MILES
MARSHALL COUNTY, OKLAHOMA

Engineering Contract No. CI-2253E, Construction J/P# 18835(04) & 18835(09)

Prepared For:

Oklahoma Department of Transportation
Environmental Programs Division
Oklahoma City, OK

Prepared By:

1601 NW Expressway, Suite 1000
Oklahoma City, OK 73118
(405) 722-7693
Fax: (405) 722-7694

Seth Scherm
Environmental Specialist

Reviewed by:

Rusty Lynch
Senior Project Manager
Oklahoma Corporation Commission (OCC)
Environmental Consultant License #1800

INITIAL SITE ASSESSMENT

US-70: JP 18835(04) MADILL REALIGNMENT FROM SH-199 EAST 2 MILES
JP 18835(09) MADILL REALIGNMENT FROM SH-199 SOUTH 2.8 MILES
MARSHALL COUNTY, OKLAHOMA

Engineering Contract No. CI-2253E, Construction J/P# 18835(04) & 18835(09)

1.0 EXECUTIVE SUMMARY

The Oklahoma Department of Transportation (ODOT) requested an Initial Site Assessment (ISA) of a segment of current US-70 as well as the proposed area in which it will be realigned to the east-southeast (following what is now Whiskey Creek Road) of Madill in Marshall County, Oklahoma. The project area corridor extends east from the existing US-70 at S. 12th Avenue in the city of Madill to US-377, then heads southeast to State Highway (SH) 199, then head due south to its terminus approximately 2,650' south of the existing intersection of US-70 at SH-106. The proposed alignment will utilize a five-lane curbed section to match existing conditions at the beginning of the corridor (existing US-70). The five-lane section will consist of four, 12-ft driving lanes, one, 14-ft center left turn lane and curb and gutter with storm sewer. The five-lane curbed section is proposed to be built in its entirety in the interim and serve as the ultimate configuration. Beginning a few hundred feet east of the 3rd Street bridge, the roadway will transition to a five-lane section with 8-ft shoulders and ditches. For the ultimate design, the five-lane open section will continue to the southern terminus of the project. The interim design for the segment just east of the BNSF railroad to the southern terminus will consist of a two-lane highway with 8-ft shoulders and ditches. The study area is variable in width depending on the section and extends approximately 5.8 miles. It covers approximately 1,022 acres.

The Area of Investigation (AOI)/project corridor is generally characterized by US-70 and primarily parallel-running and east adjoining Whiskey Creek Road, associated shoulder/right-of-way (ROW), corridor intersecting roads (SH-106, Smiley Road, SH-199, SH-377, E. Wolf Street, S. 10th Street, N. 3rd Street,, N. 6th Street, N. 7th Street, W. Randolph Street, Oakdale Lane, N. Cedar Drive, and N. Mockingbird Lane), intersecting railroad tracks (north central portion of project corridor), commercial properties (Rustin Concrete, self-storage facilities, gas stations), churches (Open Range Cowboy Church), municipal properties (Marshall County construction yard), creek crossings (Glasses Creek), residential properties, vacant land, and/or undeveloped/livestock grazing land.

ODOT requested the ISA realizing the potential for presence of hazardous waste or soil/groundwater pollution within or adjoining the proposed project area could lead to project delays and escalated construction costs.

The purpose of this assessment was to identify potential environmental concerns by reviewing historical data, regulatory information, performing interviews and a visual inspection of the site and surrounding area.

The potential environmental concerns were developed from the available historical information and site work. A list of contacts (**Table 1**) and a summary of potential environmental hazards (**Table 2**) are provided in **Exhibit A**. Site ID, topographic, geologic, and soil maps are provided in **Exhibit B**. A log of site photographs documented within and adjoining the project corridor/AOI is available as **Exhibit C**.

Sites with Recognized Environmental Conditions (RECs) determined by this ISA to present a low, moderate, or high environmental risk to the AOI are listed below.

- Fueling station/underground storage tank (UST) facility located within the AOI [Lee's Phillips 66 Station located at 701 N. 1st Street (US-70)]. **Map ID 1**
- Historical auto service/gasoline service station within the AOI (Harris Virgil located at 801 N. 1st Street). **Map ID 2**
- Historical gas station/current gasoline service station within and immediately adjoining the AOI (First Stop Food Mart/Sunoco Station located at 601 and 611 N. 1st Street). **Map ID 3**
- Madill Wastewater Plant located at 1000 NE 3rd Street. Identified as a Tier II facility storing chlorine and sulfur dioxide with no reported violations. **Map ID 4**
- Marshall County Construction yard located directly south of intersection of SH-99 and S. 10th Street. Maintains 8,000-gallon diesel fuel AST. **Map ID 5**
- Potential sewage/septic field lagoon associated with residential mobile home park just southeast of the intersection of Smiley Road and Whiskey Creek Road. **Map ID 6**
- Mid American Steel & Wire located at 122558 Smiley Road adjoining to the west of the project corridor/AOI. **Map ID 7**
- Rustin Concrete plant located at 12160 US-70 within the project corridor/AOI. While the facility was not identified on any of the regulatory databases, potential for storage of hazardous materials and unregulated fuel storage tanks exist. Property was previously identified as an AST facility maintaining at least one diesel AST on a 2016 ISA conducted by CP&Y, Inc. **Map ID 8**
- Groundwater supply wells, groundwater test wells, and/or geotechnical borings within and adjoining the AOI. **Oklahoma Water Resources Board Map in Exhibit E.**
- Underground natural gas transmission that cross the project AOI from east to west just south of the intersection of Whiskey Creek Road and Smiley Road.
- Wetland feature (Glasses Creek) within and crossing the project AOI, approximately 1,900' south of the intersection of Whiskey Creek Road and US-199. Creek runs generally from west-northwest to east-southeast towards Lake Texoma.
- Overhead utility transmission line ROW and underground cables located within the AOI.

2.0 INVESTIGATIVE METHODS AND EVALUATION CRITERIA

2.1 Purpose

The Oklahoma Department of Transportation (ODOT) requested an ISA of a segment of US-70 as well as the proposed area in which it will be realigned to the east-southeast (following what is now Whiskey Creek Road) of Madill in Marshall County, Oklahoma. ODOT proposes to realign United States

flow direction. From surface topography it appeared the shallow groundwater would locally flow toward small tributaries, drainage ditches, and topographic lows. Regional groundwater flow direction covering the scope of this project would be toward the east-southeast along creeks and tributaries eventually feeding into nearby Lake Texoma.

Generally, potentially hazardous waste sites adjoining the proposed AOI to the east-southeast would not likely impact the AOI because contaminants would move east-southeast away from the AOI. For similar reasons, potential hazardous waste sites adjoining the proposed AOI to the west-northwest would more likely impact the AOI. However, site specific topography can influence these exceptions.

ENERCON researched groundwater well information for the AOI from the OWRB website database. A map and relevant well permit records are presented within **Exhibit E**.

Several groundwater wells were identified within the vicinity of the AOI by the OWRB database. According to OWRB data, there is one groundwater well are located within the NEPA study area (OWRB, 2022). It is a groundwater test hole owned by BL Moore Oklahoma Steel & Wire. It is reportedly 450 feet deep, and groundwater was first encountered at a depth of 180 feet. An OWRB well map is included in **Exhibit E**. ENERCON reviewed the well records and believes the records do not pose an environmental concern to the AOI. An OWRB map and well record reports are included within **Exhibit E**.

4.3 Local Geology

The Oklahoma Geologic Survey Hydrologic Atlas 5 was reviewed to determine subsurface geologic characteristics. Beneath the surface soils, study area lies within the alluvium (Qal), Kiamichi Formation (Kki), Goodland Limestone and Walnut Clay (Kgw), Caddo Formation (Kcf), and Antlers Sand (Ka) surficial geologic units. The alluvium units are comprised mainly of alluvium and low terrace deposits along streams, and are mostly sand, silt, clay, and gravel. The Kiamichi Formation is primarily shale with some limestone. The two main rock types in the Goodland Limestone and Walnut Clay are limestone and mudstone. The primary and secondary rock types in the Caddo Formation are limestone and shale, respectively. Antlers Sand is made up of sand and clay or mud.

Mean annual precipitation of the AOI area is approximately 42 inches per year with the wet seasons recognized as May - June and September - October.

A geologic map and USDA soil map of the subject area are included in **Exhibit B.**

5.0 FINDINGS AND RECOMMENDATIONS

Summarized below are the major findings from this Initial Site Assessment and appropriate recommendations.

- Fueling station/underground storage tank (UST) facility located within the AOI [Lee's Phillips 66 Station located at 701 N. 1st Street (US-70)]. **Map ID 1**

- Historical auto service/gasoline service station within the AOI (Harris Virgil located at 801 N. 1st Street). **Map ID 2**
- Historical gas station/current gasoline service station within and immediately adjoining the AOI (First Stop Food Mart/Sunoco Station located at 601 and 611 N. 1st Street). **Map ID 3**
- Madill Wastewater Plant located at 1000 NE 3rd Street. Identified as a Tier II facility storing chlorine and sulfur dioxide with no reported violations. **Map ID 4**
- Marshall County Construction yard located directly south of intersection of SH-99 and S. 10th Street. Maintains 8,000-gallon diesel fuel AST. **Map ID 5**
- Potential sewage/septic field lagoon associated with residential mobile home park just southeast of the intersection of Smiley Road and Whiskey Creek Road. **Map ID 6**
- Mid American Steel & Wire located at 122558 Smiley Road adjoining to the west of the project corridor/AOI. **Map ID 7**
- Rustin Concrete plant located at 12160 US-70 within the project corridor/AOI. While the facility was not identified on any of the regulatory databases, potential for storage of hazardous materials and unregulated fuel storage tanks exist. Property was previously identified as an AST facility maintaining at least one diesel AST on a 2016 ISA conducted by CP&Y, Inc. **Map ID 8**
- Groundwater supply wells, groundwater test wells, and/or geotechnical borings within and adjoining the AOI. **Oklahoma Water Resources Board Map in Exhibit E.**
- Underground natural gas transmission pipeline that crosses the project AOI from east to west just south of the intersection of Whiskey Creek Road and Smiley Road.

- ***Recommendation*** *– Based on the nature of the findings and location of these site within and/or adjoining the project AOI/ROW, these properties present an environmental concern to the project. Further investigation is recommended at this time.* Based on the location of the fueling station/underground storage tank (UST) facility located within the AOI [Lee's Phillips 66 Station located at 701 N. 1st Street (US-70) **Map ID 1**]. Additionally of moderate concern is the historical auto service/gasoline service station within the AOI (Harris Virgil located at 801 N. 1st Street **Map ID 2**). The proposed realignment construction project may "take" a section of the aforementioned facilities and impact the existing USTs within the ground. A ground penetrating radar survey should be performed to verify UST locations and determine if the roadway construction will interfere with the tank locations.

Utility Lines in Corridor

Multiple utility pole-mounted transformers were observed along the length of the US-70 project corridor, with no signs of leak or staining. Additionally, and in conjunction with the utility-pole mounted transformers, overhead powerlines and telephone lines were observed along the majority of the project area corridor/AOI/ROW running parallel to the project roadway. Lines crossed the project roadways at several locations.

Recommendation – *ENERCON considers the utilities in the corridor to be a low environmental concern to the AOI. No further investigation is recommended at this time.*

Pipelines in Corridor

One pipeline was identified crossing the AOI on the National Pipeline Mapping Systems (NPMS) Public Map Viewer. What is depicted as a "natural gas transmission line" intersects the project corridor AOI running generally from east to west to south near the central portion of the project area. Transmission line crosses the project AOI from east to west just south of the intersection of Whiskey Creek Road and Smiley Road.

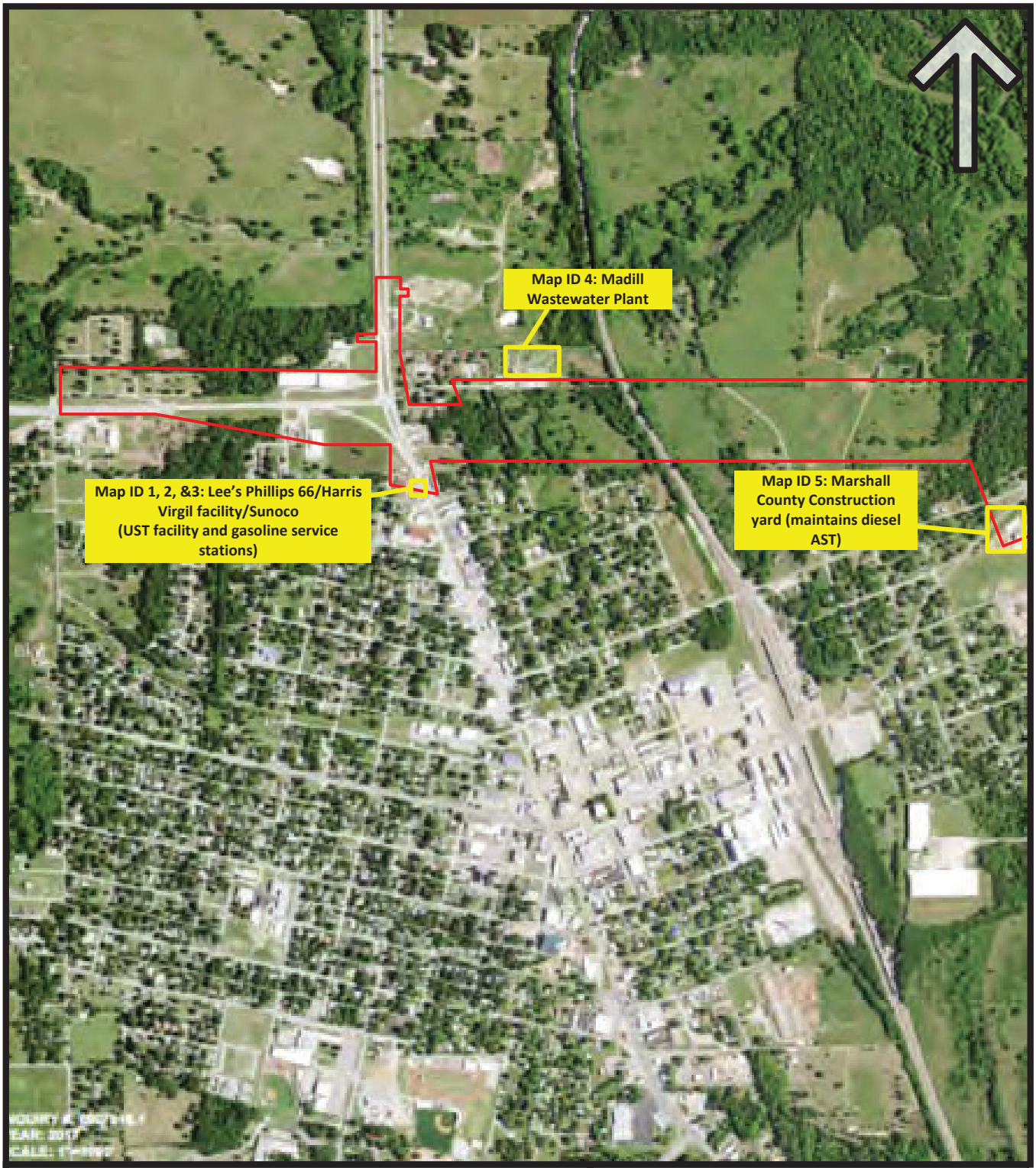
> ***Recommendation*** **–** *ENERCON considers the lines within the corridor to be a moderate environmental concern to the AOI. Precautions and correspondence with pipeline owners should be taken prior to project construction. No further investigation is recommended at this time.*

TABLE 2

POTENTIAL ENVIRONMENTAL HAZARDS

US-70: JP 18835(04)MADILL REALIGNMENT FROM SH-199 EAST 2 MILES
JP 18835(09) MADILL REALIGNMENT FROM SH199 SOUTH 2.8 MILES
MARSHALL COUNTY, OK
ODOT J/P NOS. 18835(04)(09)
ENERCON PROJECT NO. CPYI-00014

Map I.D.	*BUSINESS*	*ADDRESS*	*TYPE OF OPERATION*	*ACTIVE/ CLOSED*	*ENVIRONMENTAL CONCERN*	*POTENTIAL CONSTITUENTS/ CONTAMINANTS*	*COMMENTS*	*POSITION RELATIVE TO ROW*	*RELATIVE ELEVATION*	*EXPECTED GW FLOW DIR.*	*LEVEL OF CONCERN*
1	Lee's Phillips 66	701 N. 1st Street Madill, OK 73446	Fueling Station & convenience store	Active	UST / HIST UST (1971 - present)	Gasoline & diesel	No reported violations	Within project corridor/area of interest (AOI)	Within AOI	General ESE	Moderate Soil/GW Impact to AOI
2	Harris Virgil	801 N. 1st Street Madill, OK 73446	Historical auto station Gasoline service station	Closed	Historical auto station Gasoline service station (1969 - 1976)	Gasoline & diesel	No reported violations	Within project corridor/AOI	Within AOI	General ESE	Low Soil/GW Impact to AOI
3	First Stop Food Mart Sunoco RIA Express Hans & Family, Inc.	601 N. 1st Street 611 N. 1st Street Madill, OK 73446	Historical auto station and current Gasoline service station	Active	UST / HIST UST (1978 - present)	Gasoline & diesel	No reported violations	Within and immediately adjoining project corridor/AOI	Within AOI	General ESE	Moderate Soil/GW Impact to AOI
4	Madill Wastewater Plant	1000 NE 3rd Street Madill, OK 73446	Municipal wastewater plant	Active	Treatment chemicals and/or wastewater spills	Treatment chemicals and/or wastewater spills	No reported violations	Adjoining to north of AOI.	Down-gradient	General ESE	Low Soil/GW Impact to AOI
5	Marshall County Construction yard	directly south of intersection of SH-99 and S. 10th Street	Construction equipment and storage yard with 8,000-gallon diesel fuel AST	Active	Maintains 8,000-gallon diesel fuel AST	Diesel fuel	No reported violations	Within project corridor/AOI	Within AOI	General ESE	Low Soil/GW Impact to AOI
6	Sewage/septic system lagoon associated with mobile home park	Immediately southeast of intersection of Smiley Road and Whiskey Creek Road	Sewage lagoon surface pond	Active	Sewage lagoon surface pond	Biologic hazards	N/A	Within project corridor/AOI.	Within AOI	General ESE	Moderate Soil/GW Impact to AOI
7	Mid American Steel & Wire	12558 Smiley Road Madill, OK 73446	Metal processing company	Active	Metals, fuel storage tanks, releases of chemicals	Metals, fuel storage tanks, releases of chemicals	No reported violations	Adjoining to west of AOI	Up-gradient	General ESE	Low Soil/GW Impact to AOI
8	Rustin Concrete	12160 US Highway 70 Madill, OK 73446	Concrete plant	Active	Potential fuel storage tanks	Fuel storage (diesel and/or gasoline)	No reported violations	Within AOI	Within AOI	General ESE	Low Soil/GW Impact to AOI



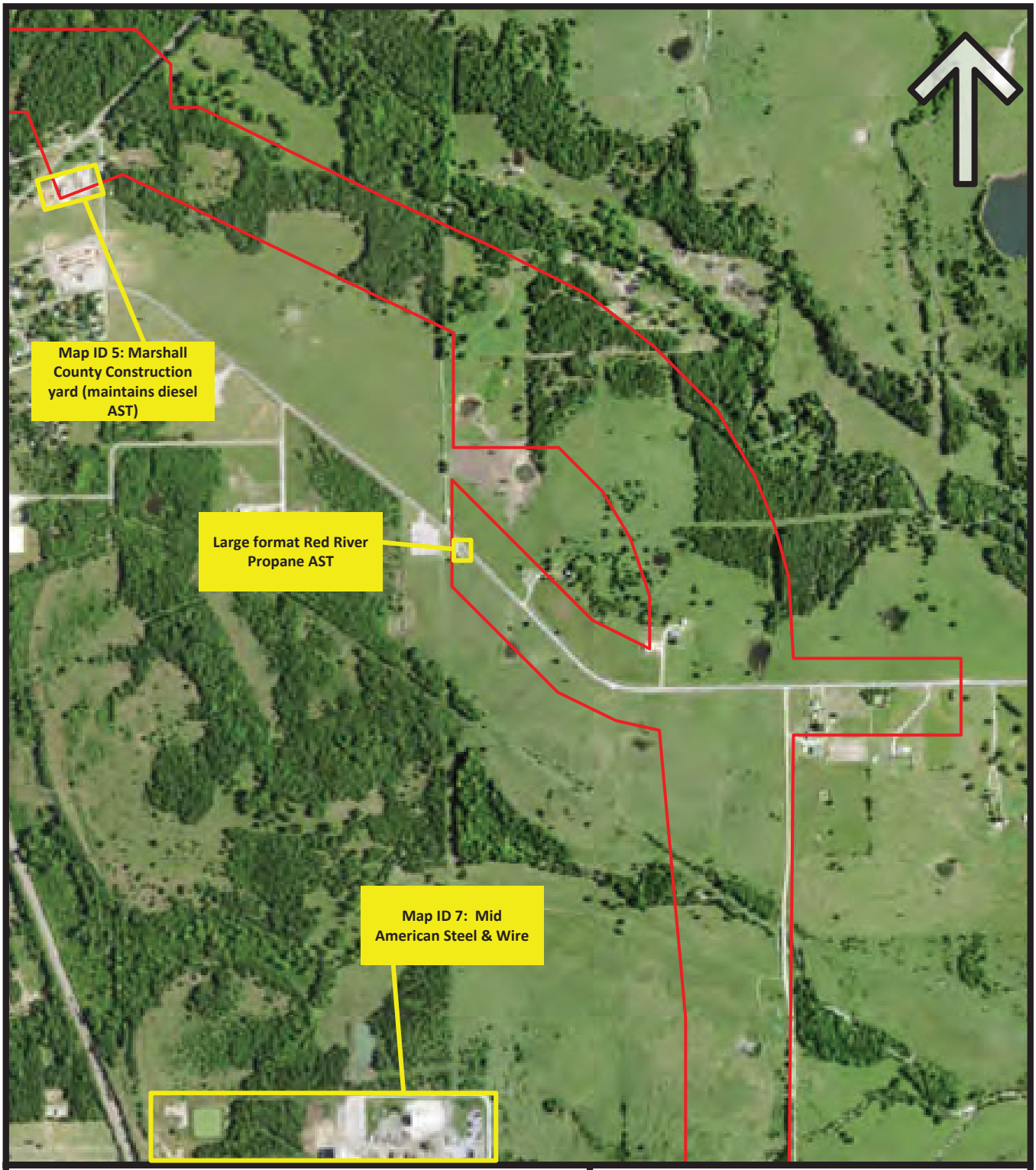
Enercon Services, Inc.
1601 NW Expressway, Ste. 1000
Oklahoma City, OK 73118
www.enercon.com
405.722.7693 405.722.7694 (fax)

Source: EDR Aerial Photo Decade Package, 2022
Project: CPYI-00014

Figure 1.1: Site Map Index

US-70 Realignment from SH-199
Marshall County, Oklahoma

J/P #18835(04)(09)



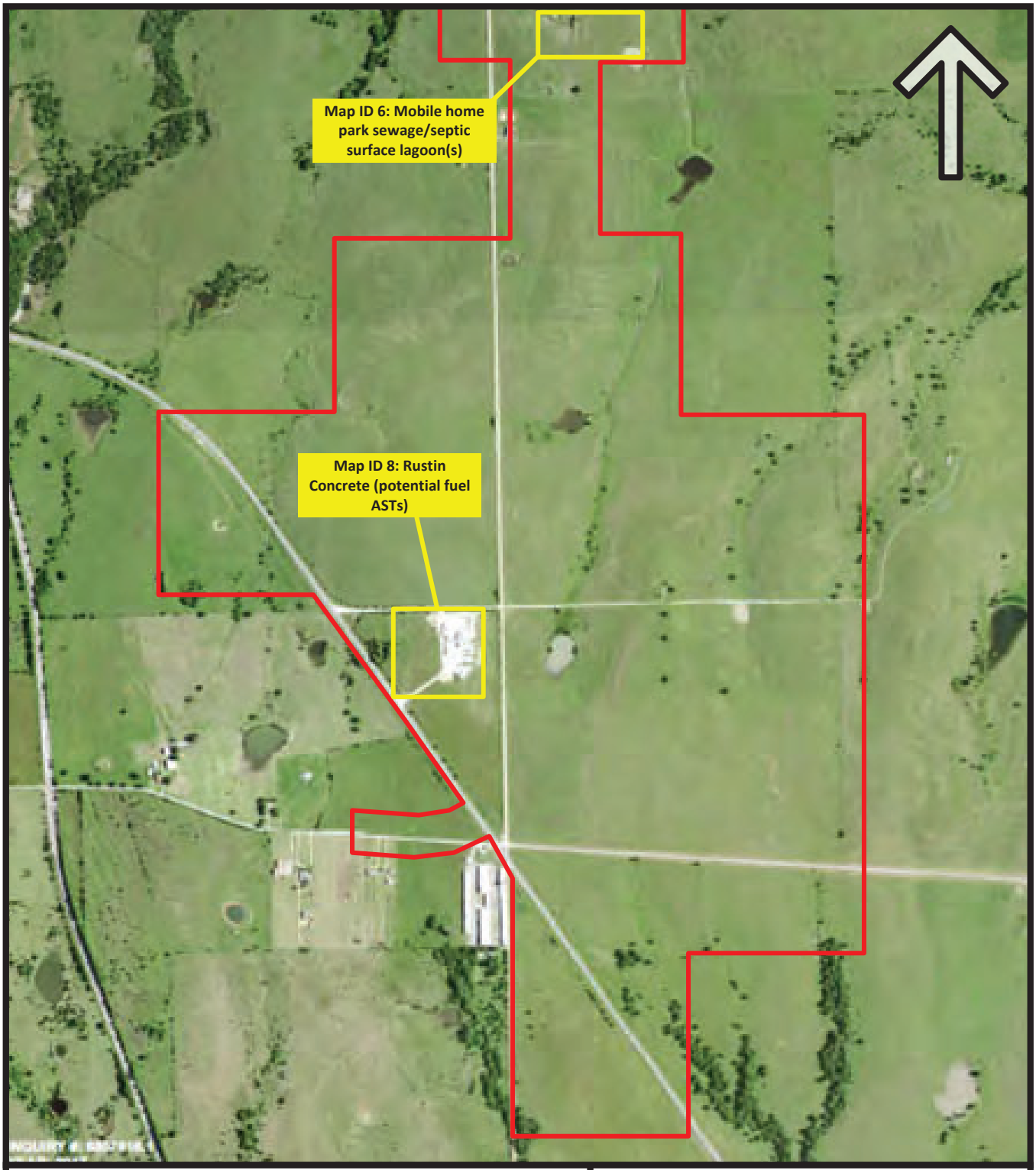
Enercon Services, Inc.
1601 NW Expressway, Ste. 1000
Oklahoma City, OK 73118
www.enercon.com
405.722.7693 405.722.7694 (fax)

Source: EDR Aerial Photo Decade Package, 2022
Project: CPYI-00014

Figure 1.2: Site Map Index

US-70 Realignment from SH-199
Marshall County, Oklahoma

J/P #18835(04)(09)



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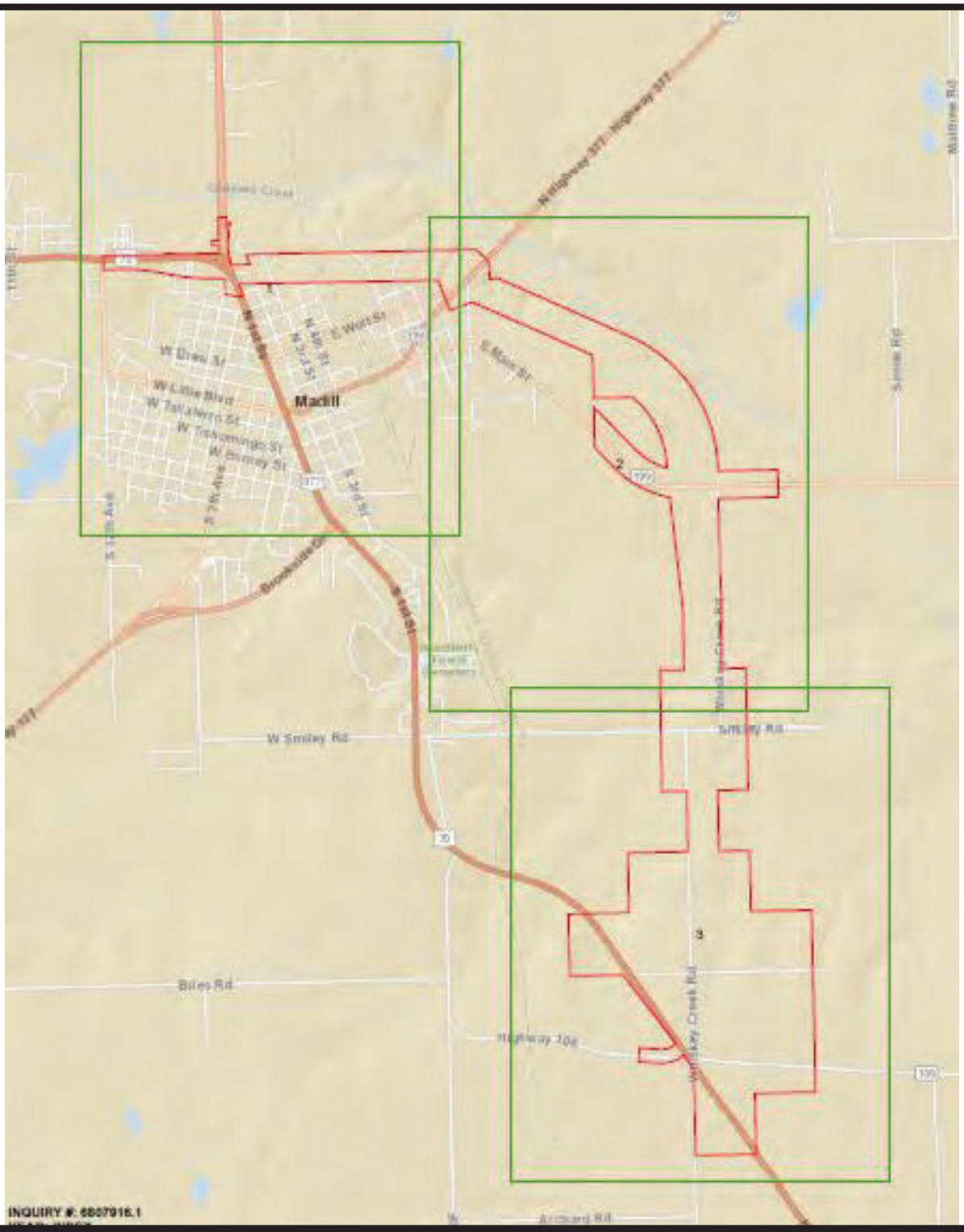
Source: EDR Aerial Photo Decade Package, 2022
Project: CPYI-00014

Figure 1.3: Site Map Index

US-70 Realignment from SH-199
Marshall County, Oklahoma

J/P #18835(04)(09)



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www.enercon.com
405.722.7693 405.722.7694 (fax)

Source: EDR Aerial Photo Decade Package, 2022
Project: CPYI-00014

Site Map Index

US-70 Realignment from SH-199
Marshall County, Oklahoma

J/P #18835(04)(09)

US-70 Realignment From SH-199
Madill, OK 73446

Inquiry Number: 6807916.2s
January 05, 2022

EDR Area / Corridor Report

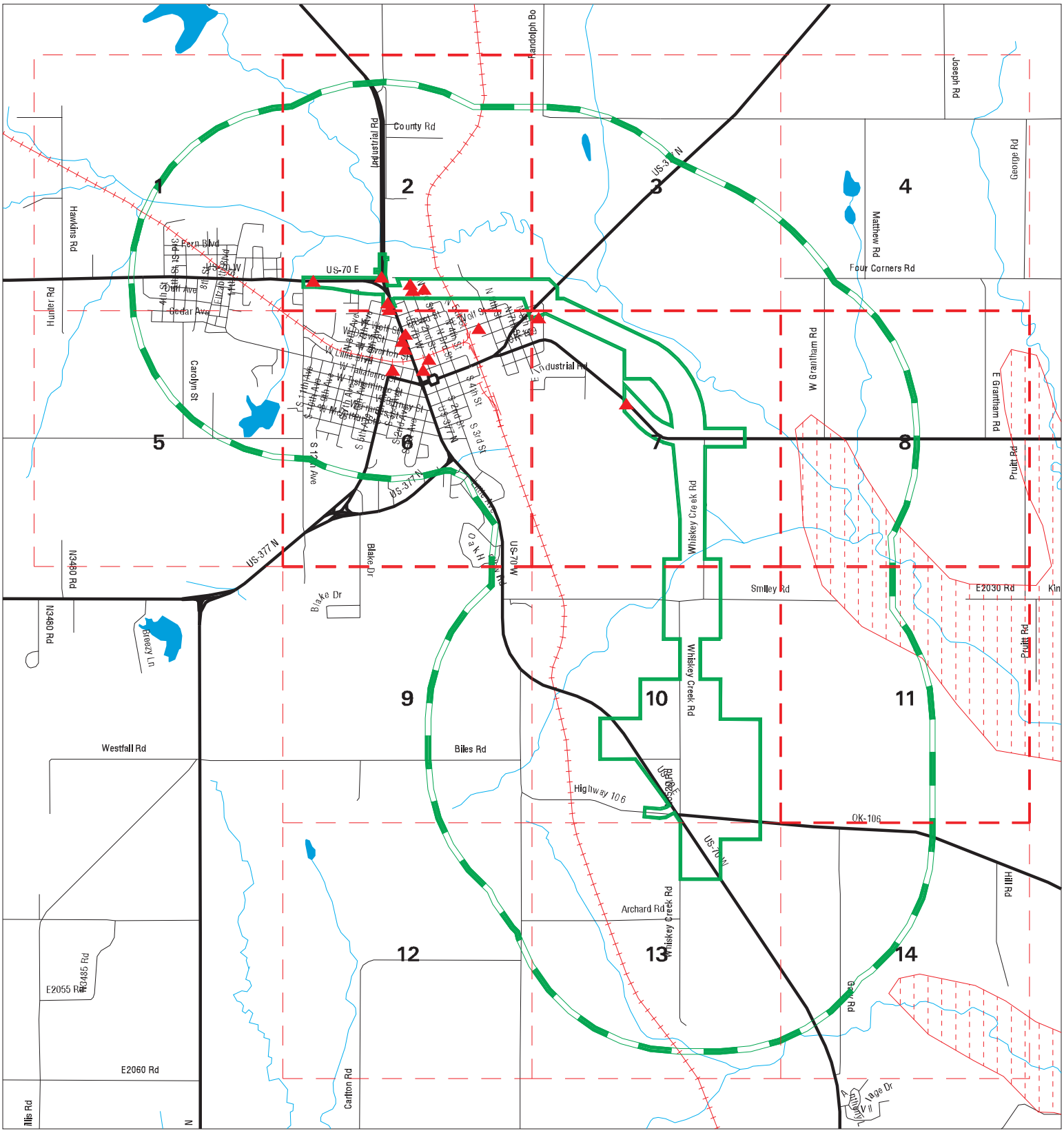
6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

MAPPED SITES SUMMARY

Target Property:
US-70 REALIGNMENT FROM SH-199
MADILL, OK 73446

MAP ID / FOCUS MAP	SITE NAME	ADDRESS	DATABASE ACRONYMS	DIST (ft. & mi.) DIRECTION
Reg / Multiple	LAKE TEXOMA		DOD	1674 0.317 East
1 / 2	HARRIS VIRGIL	801 N FIRST	EDR Hist Auto	TP
2 / 2	OKLAHOMA STEEL AND W	799 HIGHWAY 70 S	FINDS	TP
A3 / 2	MADILL WASTEWATER PL	1000 NE 3RD ST.	TIER 2	TP
A4 / 2	MADILL WASTEWATER PL	1000 NE 3RD	TIER 2	TP
A5 / 2	MADILL WASTEWATER PL	1000 N.E. 3RD	TIER 2	TP
A6 / 2	MADILL WASTEWATER PL	1003 N.E. 3RD	TIER 2	TP
7 / 2	SUTHERLAND WELL SERV	520 INDUSTRIAL BLVD	HIST UST	TP
8 / 2		900 NORTH THIRD	ERNS	TP
B9 / 2	PHILLIP 66	701 N FIRST ST ST	EDR Hist Auto	TP
B10 / 2	LEE'S PHILLIPS 66	701 N 1ST	UST, HIST UST	TP
11 / 7	RED RIVER PROPANE	SR 199 EAST	TIER 2	TP
C12 / 7	MARSHALL COUNTY COMM	MARSHALL COUNTY COUR	UST, HIST UST	52 0.010 SSE
C13 / 7	MARSHALL COUNTY #2	8TH ST EAST EDGE OF	AST	76 0.014 SSE
D14 / 2	HANS AND FAMILY INC	611 N 1ST ST	EDR Hist Auto	96 0.018 SSW
D15 / 2	RIA EXPRESS	611 N 1ST ST	UST, HIST UST	96 0.018 SSW
16 / 6	RATLIFF OIL COMPANY	508 E. WOLF	AST	984 0.186 South
17 / 6	MADILL MART	500 N 1ST ST	UST, HIST UST	984 0.186 SSE
18 / 6	RATCLIFFE & SONS	401 N FIRST STREET	LUST, UST, HIST UST	1181 0.224 SSE
19 / 6	CITGO #4	307 N FIRST	LUST, UST, HIST UST	1452 0.275 SSE
20 / 6	CITY OF MADILL	201 E OVERTON	LUST, UST, HIST UST	1998 0.378 South
21 / 6	MADILL PROVISIONAL I		FUDS	2083 0.395 South
22 / 6	OKLAHOMA STEEL & WIR	1 MI SOUTH OF CITY	SEMS-ARCHIVE	2304 0.436 SSE

Key Map - 6807916.2s



Sites
Target Property
Search Buffer
Focus Map - No Sites
Focus Map - Sites
National Priority List Sites
Dept. Defense Sites
Indian Reservations BIA

0 1/2 1 Miles

SITE NAME: \US-70 Realignment From SH-199	CLIENT: Enercon Services, Inc.
ADDRESS: Madill OK	CONTACT: Seth Scherm
CITY/STATE: 73446	INQUIRY #: 6807916.2s
ZIP:	DATE: 01/05/22 12:56 PM

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APPENDIX K

PUBLIC HEARING DOCUMENTATION

Not Yet Included