

# Technical Appendices

Programmatic Categorical Exclusion

State Route (SR) 223

(Shady Grove Rd.) Bridge over Branch at L.M. 2.28

Madison County

PIN 128113.06

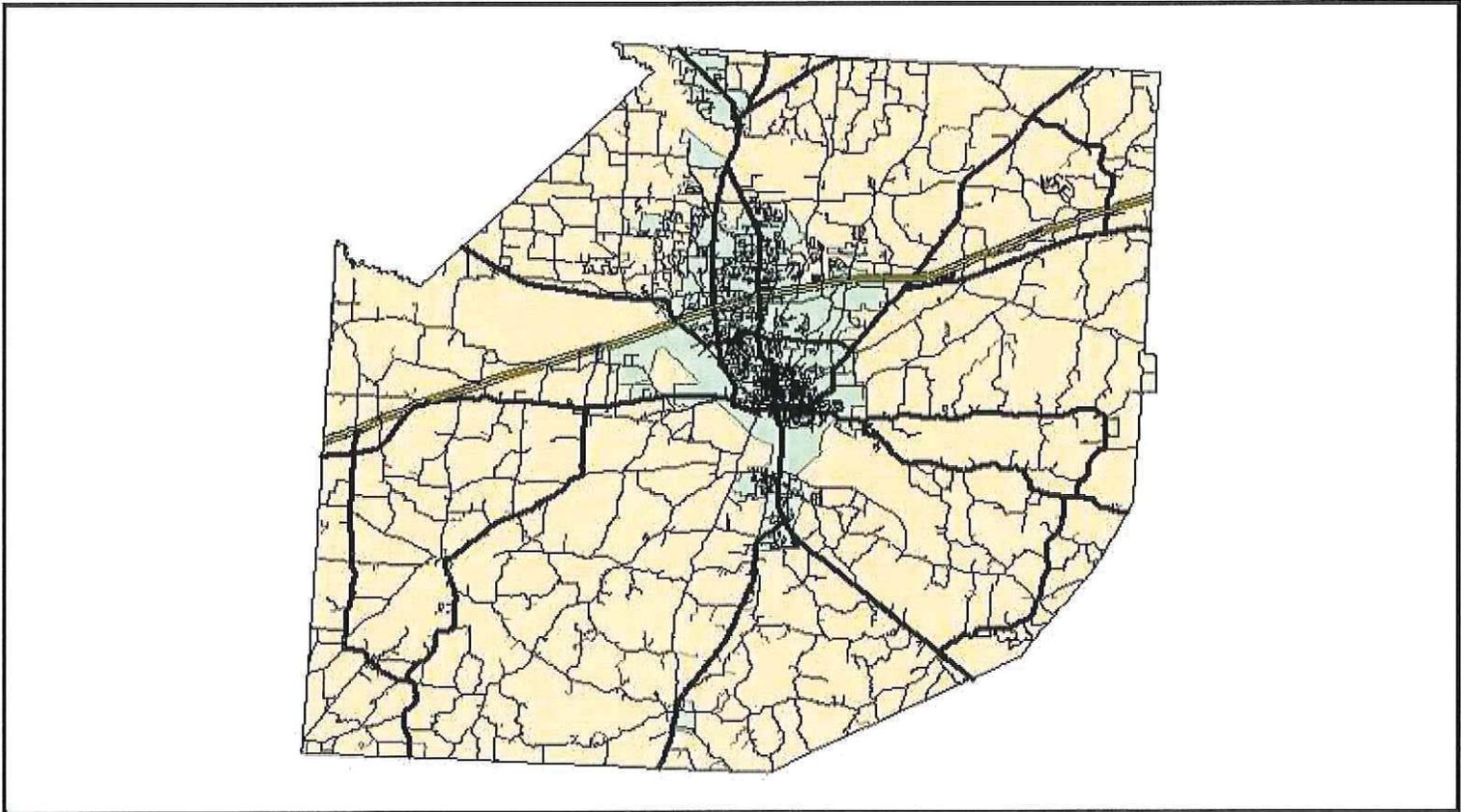
**State Transportation Improvement Program (STIP)/  
Transportation Improvement Program (TIP)  
Fiscal Years 2017-2020**

**JACKSON AREA MPO  
FISCAL YEARS 2017-2020  
TRANSPORTATION IMPROVEMENT PROGRAM (TIP)**

STIP #	TIP# <input type="text" value="STBG-05"/>	TDOT PIN# <input type="text"/>	PRIORITY <input type="text"/>	LEAD AGENCY <input type="text" value="TDOT"/>
COUNTY	<input type="text" value="Madison"/>	LENGTH <input type="text"/>	L RTP# <input type="text" value="Consistent w/L RTP"/>	CONFORMITY STATUS <input type="text"/>
ROUTE/PROJECT NAME	<input type="text" value="Surface Transportation Block Grant (STBG) Grouping"/>		TOTAL PROJECT COST	<input type="text" value="\$1,957,324"/>
TERMINI OR INTERSECTION	<input type="text" value="Jackson Area MPO"/>			
PROJECT DESCRIPTION	RESURFACING, GUARDRAIL, SLIDE REPAIR, SIGNS, SIGNALS, MARKING, INTERSECTION / INTERCHANGE MODIFICATIONS, SIGHT DISTANCE MODIFICATIONS, NOISE WALLS, WETLAND AND OR STREAM MITIGATION, SAFETY IMPROVEMENTS, BRIDGE REPLACEMENT, REPAIR, REHABILITATION, PRESERVATION, ROCKFALL MITIGATION, SIDEWALKS, TRAFFIC CALMING, PEDESTRIAN AND OR BICYCLE FACILITIES, ITS OPERATIONS, MAINTENANCE, POWER, COMMUNICATIONS, CONSTRUCTION, OPERATE THE TN 511 SYSTEM, FREEWAY SERVICE PATROLS, TRAFFIC DIVERSION, NON-INFRASTRUCTURE, SCHOOL AND OTHER FLASHING SIGNALS, BRIDGE AND TUNNEL INSPECTION, RAIL-HIGHWAY GRADE CROSSING IMPROVEMENTS, ENHANCEMENT ACTIVITIES, ETC. SEE APPENDIX E.			

FISCAL YEAR	PHASE	FUNDING TYPE	TOTAL FUNDS	FED FUNDS	STATE FUNDS	LOCAL FUNDS
2017	PE, ROW, CONST	STBG	\$489,331	\$391,465	\$97,866	\$0
2018	PE, ROW, CONST	STBG	\$489,331	\$391,465	\$97,866	\$0
2019	PE, ROW, CONST	STBG	\$489,331	\$391,465	\$97,866	\$0
2020	PE, ROW, CONST	STBG	\$489,331	\$391,465	\$97,866	\$0

AMENDMENT # <input type="text"/>	ADJUSTMENT # <input type="text"/>	REMARKS <input type="text" value="Source: TDOT Program Development and Scheduling Office (PDSO) 2016"/>
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## STIP Project List

<b>STIP #</b>	1799001	<b>TDOT PIN #</b>		<b>LENGTH IN MILES</b>		<b>LEAD AGENCY</b>	TDOT	
<b>COUNTY</b>	STATEWIDE - RURAL						<b>TOTAL PROJECT COST</b>	\$426,000,000
<b>ROUTE</b>								
<b>TERMINI</b>	SURFACE TRANSPORTATION BLOCK GRANT PROGRAM (STBGP) - GROUPING							
<b>PROJECT DESCRIPTION</b>	SEE APPENDIX STATE GROUPING DESCRIPTION FOR A COMPREHENSIVE LISTING OF ACTIVITIES INCLUDED BUT NOT LIMITED FOR ELIGIBILITY							
<b>REMARKS</b>								



**COUNTY MAP**

FY	PHASE	FUNDING	TOTAL FUNDS	FED FUNDS	STATE FUNDS	LOCAL FUNDS
2017	PE, ROW, CONST	STBG	106,500,000	85,200,000	21,300,000	
2018	PE, ROW, CONST	STBG	106,500,000	85,200,000	21,300,000	
2019	PE, ROW, CONST	STBG	106,500,000	85,200,000	21,300,000	
2020	PE, ROW, CONST	STBG	106,500,000	85,200,000	21,300,000	



**VICINITY MAP**

ALL SCHEDULES SUBJECT TO AVAILABILITY OF FUNDS

## Appendices

Grouping Category	Function of Grouping Activities	Allowable Work Types
<p><b>Surface Transportation Block Grant Program (STBG) Grouping</b></p> <p><b>STIP# 1799001</b></p>	<p>Projects and programs for the preservation and improvement of the conditions and performance of Federal-aid highways and public roads, including:</p> <ul style="list-style-type: none"> <li>● Rehabilitation, resurfacing, restoration, preservation, and operational improvements on Federal-aid highways and designated routes of the Appalachian Development Highway System (ADHS) and local access roads under 40 USC 14501,</li> <li>● Traffic operations on Federal-aid highways,</li> <li>● Bridge and tunnel improvements on public roads,</li> <li>● Safety improvements on public roads,</li> <li>● Environmental mitigation</li> <li>● Scenic and historic highway programs,</li> <li>● Landscaping and scenic beautification,</li> </ul>	<p><b>Activities previously authorized under the Surface Transportation Program (STP):</b></p> <ul style="list-style-type: none"> <li>● Minor rehabilitation, pavement resurfacing, preventative maintenance, restoration, and pavement preservation treatments to extend the service life of highway infrastructure, including pavement markings and improvements to roadside hardware or sight distance</li> <li>● Highway improvement work including slide repair, rock fall mitigation, drainage repairs, or other preventative work necessary to maintain or extend the service life of the existing infrastructure in a good operational condition</li> <li>● Minor operational and safety improvements to intersections and interchanges such as adding turn lanes, addressing existing geometric deficiencies, and extending on/off ramps</li> <li>● Capital and operating costs for intelligent transportation systems (ITS) and traffic monitoring, management, and control facilities and programs: <ul style="list-style-type: none"> <li>○ Infrastructure-based intelligent transportation systems (ITS) capital improvements</li> <li>○ Traffic Management Center (TMC) operations and utilities</li> <li>○ Freeway service patrols</li> <li>○ Traveler information</li> </ul> </li> <li>● Bridge and tunnel construction (no additional travel lanes), replacement, rehabilitation, preservation, protection, inspection, evaluation, and inspector training and inspection and evaluation of other infrastructure assets, such as signs, walls, and drainage structures</li> <li>● Development and implementation of a State Asset Management Plan including data collection, maintenance and integration, software costs, and equipment costs that support the development of performance-based management systems for infrastructure</li> <li>● Rail-highway grade crossing improvements</li> <li>● Highway safety improvements: <ul style="list-style-type: none"> <li>○ Installation of new or improvement of existing guardrail</li> <li>○ Installation of traffic signs and signals/lights</li> <li>○ Spot safety improvements</li> </ul> </li> <li>● Sidewalk improvements</li> <li>● Pedestrian and/or bicycle facilities</li> <li>● Traffic calming and traffic diversion improvements</li> <li>● Transportation Alternatives as defined by 23 USC 213(B), 23 USC. 101(A)(29), and Section 1122 of MAP-21</li> <li>● Noise walls</li> <li>● Wetland and/or stream mitigation</li> <li>● Environmental restoration and pollution abatement</li> <li>● Control of noxious weeds and establishment of native species</li> </ul> <p><b>Activities previously authorized under the Transportation Enhancement Program:</b></p>

## Appendices

<p><b>Surface Transportation Block Grant Program (STBG) Grouping</b></p> <p><b>(continued)</b></p> <p><b>STIP# 1799001</b></p>	<ul style="list-style-type: none"> <li>● Historic preservation,</li> <li>● On- and off-road pedestrian and bicycle facilities,</li> <li>● Infrastructure projects for improving non-driver access to public transportation and enhanced mobility,</li> <li>● Community improvement activities,</li> <li>● Recreational Trail Program projects,</li> <li>● Safe Routes to School (SRTS) projects,</li> <li>● Transportation Enhancement projects,</li> <li>● Transportation Alternatives projects,</li> <li>● Projects for the creation, rehabilitation, and maintenance of multi-use recreational trails.</li> </ul>	<ul style="list-style-type: none"> <li>○ Pedestrian and bicycle facilities, safety, and educational activities</li> <li>○ Acquisition of scenic easements and scenic or historic sites</li> <li>○ Scenic or historic highway programs</li> <li>○ Landscaping and other scenic beautification activities</li> <li>○ Historic preservation</li> <li>○ Rehabilitation and operation of historic transportation buildings, structures, or facilities</li> <li>○ Preservation of abandoned railway corridors</li> <li>○ Inventory, control, and removal of outdoor advertising</li> <li>○ Archaeological planning and research</li> <li>○ Environmental mitigation to address water pollution due to highway runoff or reduce vehicle-caused wildlife mortality while maintaining habitat connectivity</li> <li>○ Establishment of transportation museums</li> <li>○ Activities under the Tennessee Roadscapes grant program, including landscaping, irrigation, benches, trash cans, paths and signage</li> </ul> <p><b>Activities previously authorized under the Safe Routes to School Program (SRTS):</b></p> <ul style="list-style-type: none"> <li>● Sidewalk improvements</li> <li>● Traffic calming and speed reduction improvements</li> <li>● Pedestrian and bicycle crossing improvements</li> <li>● On-street bicycle facilities</li> <li>● Off-street bicycle and pedestrian facilities</li> <li>● Secure bicycle parking facilities</li> <li>● Traffic diversion improvements approximately within 2 miles of a school location</li> <li>● Non-infrastructure related activities:             <ul style="list-style-type: none"> <li>○ Public awareness campaigns and outreach to press and community leaders</li> <li>○ Traffic education and enforcement in the vicinity of schools                 <ul style="list-style-type: none"> <li>• Student sessions on bicycle and pedestrian safety, health, and environment</li> <li>• Funding for training, volunteers, and managers of safe routes to school program</li> </ul> </li> </ul> </li> </ul> <p><b>Activities previously authorized under the Transportation Alternatives Program (TAP):</b></p> <ul style="list-style-type: none"> <li>● Construction, planning, and design of on-road and off-road trail facilities for pedestrians, bicyclists, and other non-motorized forms of transportation, including:             <ul style="list-style-type: none"> <li>○ Sidewalk improvements</li> <li>○ Bicycle infrastructure</li> <li>○ Pedestrian and bicycle signals</li> <li>○ Traffic calming techniques</li> <li>○ Lighting and other safety-related infrastructure</li> </ul> </li> </ul>
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# Previous Environmental Documentation

# Programmatic Categorical Exclusion

State Route (SR) 223

(Shady Grove Road), Bridge over Branch, Log Mile (LM) 2.28

Unincorporated (northeast of Mercer)

Madison County

PIN 128113.06

Submitted Pursuant to the National Environmental Policy Act of 1969, 42 U.S.C. 4332(2)

# Project Information

## General Information

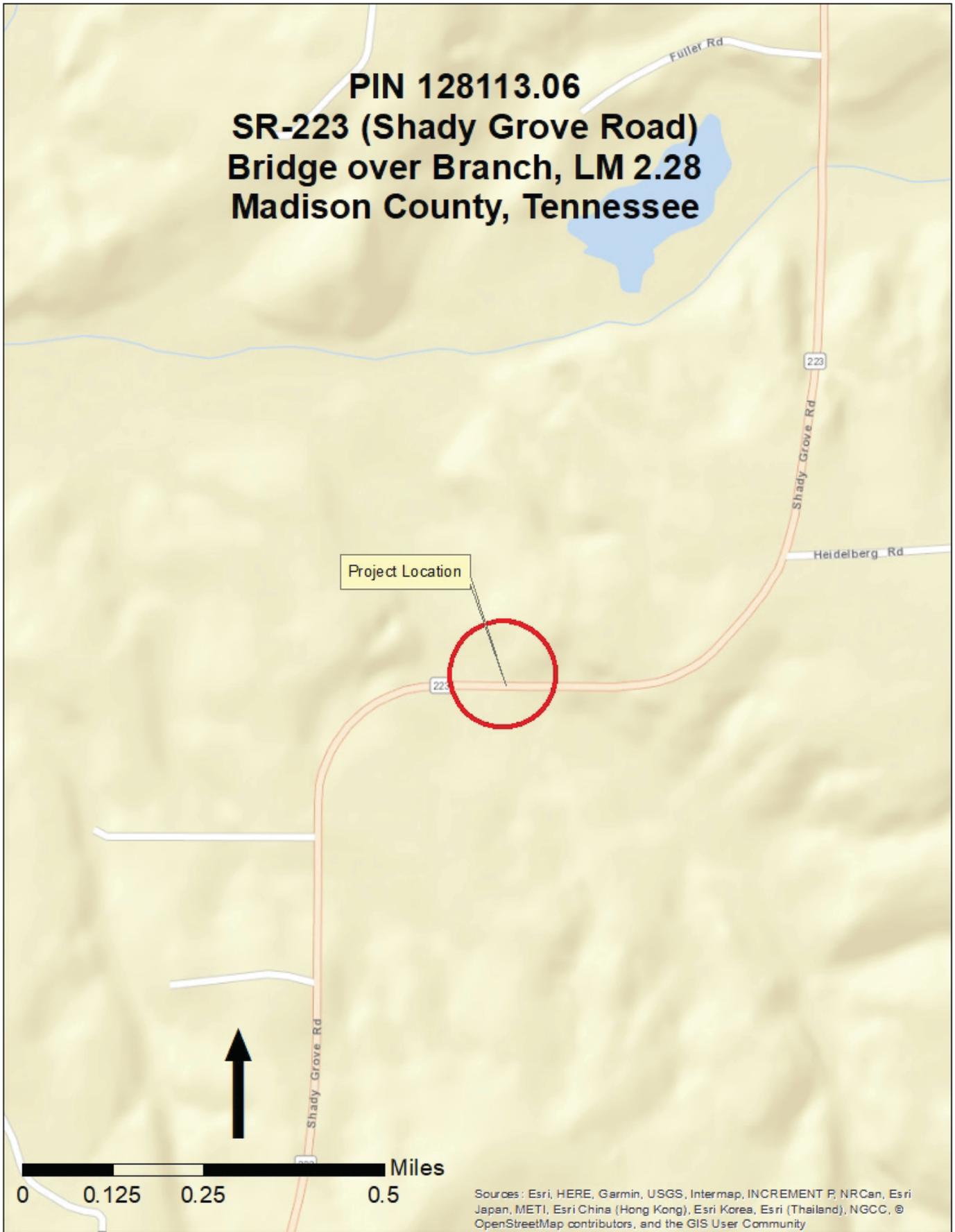
**Route:** State Route (SR) 223  
**Termini:** (Shady Grove Road), Bridge over Branch, Log Mile (LM) 2.28  
**Municipality:** Unincorporated (northeast of Mercer)  
**County:** Madison  
**PIN:** 128113.06  
**Plans:** Transportation Investment Report  
**Date of Plans:** 04/12/2018

## Project Funding

**Planning Area:** Jackson Metropolitan Planning Organization (MPO)  
**STIP/TIP:** Jackson STBG-05: Surface Transportation Block Group (STBG) Grouping

Funding Source	Preliminary Engineering	Right-of-Way	Construction
Federal	BR-STP-223(11)	BR-STP-223(11)	BR-STP-223(11)
State	57039-0231-94	57039-2231-94	57039-3231-94

# Project Location



# Project Overview

## Introduction

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The Tennessee Department of Transportation (TDOT), in cooperation with the Federal Highway Administration (FHWA), proposes to replace the SR-223 (Shady Grove Road) Bridge (57S81960003) over an unnamed branch at LM 2.28 in Madison County, TN.

## Background

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Every two years, TDOT performs a comprehensive inspection and subsequent evaluation of all public bridges across the state in order to determine the status of their working condition and operating limits to ensure that they are in accordance with the Federal Highway Administration (FHWA) National Bridge Inspection Standards (NBIS). These inspections are recorded and published in the National Bridge Inventory (NBI) Tennessee Inventory and Appraisal Report. One of the components of this evaluation is the designation of a sufficiency rating. A sufficiency rating is calculated for each individual bridge that is used to carry vehicular traffic. Ratings are measured on a scale of 0 to 100. A rating of 100 corresponds to a bridge that qualifies as an “entirely sufficient bridge,” while a rating of 0 denotes a bridge that is “entirely deficient.” Bridges that receive a sufficiency rating of less than 80.0 are eligible for rehabilitation; bridges that earn a rating below 50.0 are eligible for replacement. Another component of the NBI are the condition ratings. Condition ratings are used to describe the existing, in-place bridge as compared to the as-built condition. The physical condition of the deck, superstructure, and substructure components of a bridge are evaluated for a condition rating. Condition ratings are assigned codes ranging from 0-9, with 0 being failed condition and 9 being excellent condition.

According to the Transportation Investment Report (TIR) dated 04/12/2018 (located in the Technical Appendices), the SR-223 Bridge over Branch at LM 2.28 received a sufficiency rating of 27.4. Formerly, the proposed project was assigned project PIN 124712.00, however correspondence provided on 10/03/2018 shows a new project PIN (PIN 128113.06), has been assigned. This correspondence can be found in the Technical Appendices. All responses from the technical studies areas list the former PIN.

# Project Development

## Need

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The proposed project is needed to address insufficient structural elements due to the deterioration of the bridge as indicated by the sufficiency rating.

## Purpose

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The purpose of this project is to improve structural elements of the SR-223 Bridge over Branch at LM 2.28 by replacing the existing bridge.

## Range of Alternatives

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Other than the selected design, were any alternative build designs developed for this project?

No

### No-Build

In the development of design solutions that address the needs outlined above and achieve the purpose of the project, TDOT evaluated the potential consequences should the project not be implemented. This option, known as the No-Build alternative, assumed the continuation of current conditions and set the baseline from which the impacts of the selected design were compared.

The No-Build Alternative was not selected as it does not meet the purpose and need of the project.

## Public Involvement

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Has there been any public involvement for the project?

No

## Existing Conditions and Layout

The proposed project is located in the southwest region of Tennessee in Madison County between the cities of Mercer and Denmark. The project segment of SR-233 runs north to south connecting these two cities, and according to the TIR dated 04/12/2018, is a Rural Collector Road consisting of two, nine foot wide travel lanes, (one lane in each direction). The speed limit along the project segment is 45 miles per hour (mph).

The initial SR-233 Bridge (ID 5781960003), built in 1952, was a single-span steel I-beam bridge crossing an unnamed branch of Chisholm Creek. The total length of the bridge was 23 feet long with an out-to-out width of 22 feet and three inches. The sufficiency rating for this initial structure was a 27.4 based off a Bridge Inspection Report dated 08/03/2017 from the TDOT Structures Division - Bridge Inspection Unit. Since the inspection, the initial structure was removed and replaced with a temporary structure. The temporary structure is a precast concrete slab bridge, with an out-to-out width of 28 feet and 8 inches and an overall length of 28 ft (see Figure 1).

## EXISTING STRUCTURE (INLET)

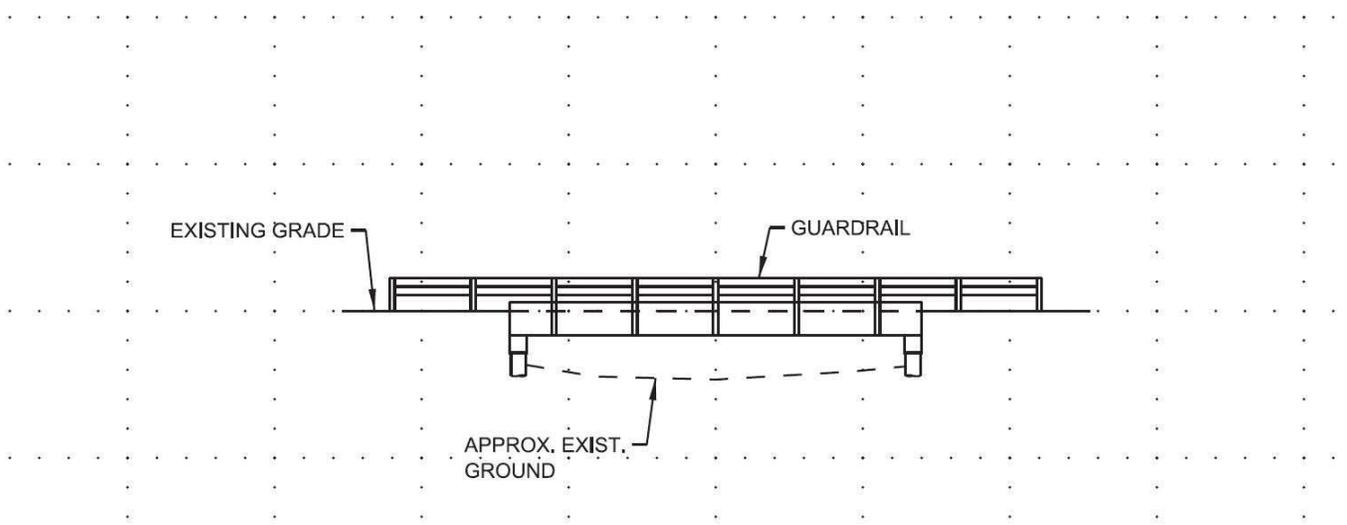


Figure 1. Shows the profile of the existing bridge structure according to TIR dated 04/12/2018.

## Proposed Project Description

The proposed bridge would consist of a 26 foot long reinforced concrete box bridge consisting of two barrels, each at a length of 12 feet and a vertical height clearance of five feet. The new structure would have an out-to-out width of 33 feet and six inches (see Figure 2).

The project segment of SR-233 would consist of two, 11 foot wide travel lanes, (one in each direction), and three foot wide shoulders. The proposed project would extend 120 feet from the project bridge in both directions to install guardrail and to taper the paved shoulders back to the existing roadway. The speed limit would remain at 45 mph for this project.

# PROPOSED STRUCTURE (INLET)

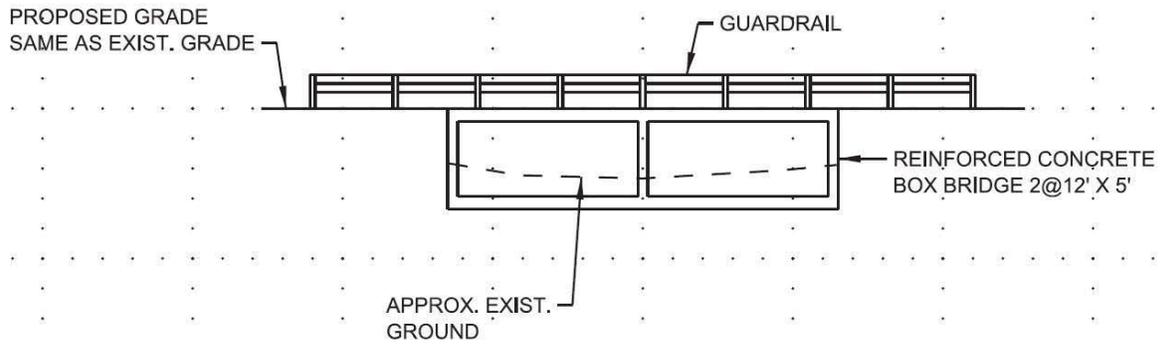


Figure 2. Shows profile of the replacement bridge according to TIR dated 04/12/2018.

## Right-of-Way

Does this project require the acquisition of right-of-way or easements?

Yes

Right-of-Way Acquisition Table

Permanent Acquisition			Temporary Acquisition		
R.O.W Acquisition	Drainage Easements	Total	Slope Easements	Construction Easements	Total
0.06	0	0.06	0	0	0

\*Measured in acres

According to the TIR dated 04/12/2018, "It is estimated that two tracts of land will be affected resulting in 0.06 acres of estimated right-of-way acquisition."

## Displacements and Relocations

Will this project result in residential, business or non-profit displacements and relocations?

No

## Changes in Access Control

Will changes in access control impact the functional utility of any adjacent parcels?

No

## Traffic and Access Disruption

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**At this time, are traffic control measures and temporary access information available?**

**Yes**

**Will this project involve traffic control measures that may result in major traffic disruptions?**

**No**

According to the TIR dated 04/12/2018 traffic control would be conducted by detouring commercial and local traffic with two different detour routes.

The commercial route would consist of traffic using the following route: Approaching from the east and north, would be directed to take Britton Lane heading due north, next onto Denmark Jackson Road heading east, then onto Smith Lane heading north to turn onto SR-1 (Airways Boulevard) heading west, next turning onto SR-138 to head due south to turn back onto SR-223 (Shady Grove Road). The detour for traffic approaching from the west, or south, would use the same roads in the reverse. The total length of the commercial detour route is approximately 30.6 miles with a driving time of 28 minutes to complete.

In addition to the commercial route, a second detour would be implemented for local traffic. The local traffic detour consists of utilizing the following streets: Traffic approaching the bridge from the north and/or east would turn onto Heidelberg Road heading east, next onto Maple Springs Road heading west, then onto SR-138 heading west, and lastly back onto SR-223 heading north. Traffic approaching from the south and/or west would utilize the same road but in the reverse order. The local traffic detour has a total length of 7.1 miles with a driving time of 12 minutes to complete.

# Environmental Studies

## Water Resources

Are there any water resources, wetlands or natural habitat located within the project area?

Yes

Preliminary Impact Form

County: Madison

Route: SR-223

PIN: 124712.00

Date Prepared: 7/17/2018

Prepared by:  
TDOT Region 4 - Environmental Tech Office

**NOTE:** This document is for "preliminary" use only and will not be considered accurate until the time of permit application.

### Streams

Labels	Type *	Function	Quality**	Impacts (feet) **		
				Permanent	Temporary	Total
STR-1	Stream		Undetermined at this time	175		175
STR-2	Stream		Undetermined at this time	0		0
<b>Total</b>				<b>175</b>		<b>175</b>

\* Identification of features has not been reviewed by regulatory agencies. Determinations could change.

Mitigation of impacts to streams or any other fluvial systems will be accomplished through the avoidance and minimization of potential impacts during the design process. Permanent stream alterations such as relocations, impoundments or channel modification will be mitigated on-site to the extent possible in order to return the channel to its most probable natural state. Impacts that cannot be mitigated on-site will be subject to a compensatory mitigation plan that may include restoration of a comparable resource or application of an in-lieu fee program.

## Protected Species

Is the GPNEA (2017) Consultation or the TDEC-DNA (2015) MOA applicable to this project?

No

### Rare Species Dataviewer:

The TDEC Rare Species Dataviewer was reviewed on 06/21/2018.

Rare Species List			
Species Name	Status	Species Potential within Right-of-Way	Accommodations
Piebald Madtom ( <i>Noturus gladiator</i> )	State	Low Potential: Present habitat unsuitable	BMP's

According to the Environmental Boundaries Report (EBR) dated 07/18/2018 from the TDOT Ecology Section, The TDEC Rare Species Dataviewer showed one species located within a one mile radius, and the one to four mile

radius, of the project was identified as the Piebald madtom, (*Noturus gladiator*), a state threatened animal with the present habitat unsuitable in both locations (see above Table).

### **U.S. Fish and Wildlife Service (USFWS):**

Coordination with the USFWS was completed on 07/16/2018.

The USFWS correspondence states, "Upon review of the information provided and our database, we would not anticipate impacts to any federally listed or proposed species as a result of the project. Therefore, based on the best information available at this time, we believe that the requirements of section 7 of the Endangered Species Act (Act) of 1973, as amended, are fulfilled for all species that currently receive protection under the Act."

### **Tennessee Wildlife Resources Agency (TWRA):**

Coordination with TWRA was completed on 07/11/2018.

The TWRA correspondence states, "I have reviewed the information that you provided regarding the proposed bridge replacement on SR-223 (Shady Grove Road) in Madison County, Tennessee. The implementation of standard BMP's will be sufficient to satisfy the needs of the Tennessee Wildlife Resources Agency for this proposed project."

## **Floodplain Management**

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**Flood Zone:** Zone A - No Base Flood Elevations Determined

Portions of this project are located in or near a Federal Emergency Management Agency (FEMA) defined floodplain however there is no detailed study. The project is located on Flood Insurance Rate Maps (FIRMs) in Madison County, Panel 375 of 435, Map # 47113C0375E. The design of the roadway system is consistent with the Memorandum of Understanding (MOU) between FHWA and FEMA and with the floodplain management criteria set forth in the National Flood Insurance Regulations of Title 44 of the Code of Federal Regulations (CFR). It will be consistent with the requirements of floodplain management guidelines for implementing Executive Order 11988 and FHWA guidelines 23 CFR 650A. A portion of the FEMA FIRM is included in Attachment

## **Air Quality**

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### **Transportation Conformity:**

Coordination with the TDOT Air and Noise Section dated 06/08/2018 states, "This project is in Madison County which is in attainment for all transportation-related regulated criteria pollutants. Therefore, conformity does not apply to this project."

### **Mobile Source Air Toxics (MSAT):**

The same coordination also states, "This project qualifies as a categorical exclusion under 23 CFR 771.117 and does

not require a Mobile Source Air Toxics (MSATs) evaluation per FHWA's 'Interim Guidance Update on Air Toxic Analysis in NEPA Documents' dated October 2016."

## Noise

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In accordance with FHWA requirements and TDOT's Noise Policy this project is determined to be **Type III**

No significant noise impacts are anticipated for this project and a noise study is not needed.

## Farmland

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Is this project exempt from the provisions of the Farmland Protection Policy Act (FPPA)? **Yes**

**FPPA Exemption:** Small Acreage (3 acres or less for an existing bridge or interchange)

## Section 4(f)

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Does this project involve the use of property protected by Section 4(f) (49 USC 303)? **No**

## Section 6(f)

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Does this project involve the use of property assisted by the L&WCF? **No**

## Cultural Resources

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Does the Interstate Highway exemption or MOU between TDOT and the SHPO (2015) apply? **No**

Are NRHP listed or eligible cultural resources within the project Area of Potential Effect (APE)? **No**

### Historic/Architectural Concurrence:

Concurrence from the TN State Historic Preservation Office (TN-SHPO) was received on 06/12/2018.

TN-SHPO Concurrence letter states, "Considering the information provided, we find that no architectural resources eligible for listing in the National Register of Historic Places will be affected by this undertaking,"

### Archaeology Concurrence:

Concurrence from the TN State Historic Preservation Office (TN-SHPO) was received on 08/21/2018.

TN-SHPO Concurrence letter states, "Considering the information provided, we find that no archaeological resources eligible for listing in the National Register of Historic Places will be affected by this undertaking."

## Native American Consultation

Does this project require Native American consultation?

Yes

Native American Consultation was requested on 05/14/2018.

Native American Consultation					
Sent	Response		Sent	Response	
<input type="checkbox"/>	<input type="checkbox"/>	Absentee Shawnee Tribe of Oklahoma	<input type="checkbox"/>	<input type="checkbox"/>	Muscogee (Creek) Nation
<input type="checkbox"/>	<input type="checkbox"/>	Cherokee Nation	<input type="checkbox"/>	<input type="checkbox"/>	Poarch Band of Creek Indians
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Chickasaw Nation	<input type="checkbox"/>	<input type="checkbox"/>	Quapaw Tribe of Oklahoma
<input type="checkbox"/>	<input type="checkbox"/>	Choctaw Nation of Oklahoma	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Shawnee Tribe
<input type="checkbox"/>	<input type="checkbox"/>	Eastern Band of Cherokee Indians	<input type="checkbox"/>	<input type="checkbox"/>	Thlopthlocco Tribal Town
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Eastern Shawnee Tribe of Oklahoma	<input checked="" type="checkbox"/>	<input type="checkbox"/>	United Keetoowah Band of Cherokee Indians
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Kialegee Tribal Town	<input type="checkbox"/>	<input type="checkbox"/>	Other

### Chickasaw Nation:

The response was received on 10/03/2018.

Correspondence from the Chickasaw Nation states, "The Chickasaw Nation supports the proposed undertakings and is presently unaware of any specific historic properties, including those of traditional religious and cultural significance, in the project area."

### Shawnee Tribe:

The response was received on 06/12/2018.

The Shawnee Tribe correspondence states, "The Shawnee Tribe's Tribal Historic Preservation Department concurs that no known historic properties will be negatively impacted by this project."

## Environmental Justice

Are there any disproportionately high or adverse effects on low-income or minority populations?

No

The proposed project does not have the potential to cause disproportionately high or adverse effects on low-income or minority populations.

## Hazardous Materials

Does the project involve any asbestos containing materials?

No

Does the project involve any other hazardous material sites?

No

## Bicycle and Pedestrian

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Does this project include accommodations for bicycles and pedestrians?

No

**Policy Exception:** Area characteristics (population, employment, transit) do not justify multimodal alternatives.

Coordination dated 06/08/2018 from the Multimodal Transportation Resources Division states, "This bridge project is exempt from Multimodal accommodation due to low ADT and rural nature of project."

## Environmental Commitments

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Does this project involve any environmental commitments?

No

## Additional Environmental Issues

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Are there any additional environmental concerns involved with this project?

No

# Conclusion

## Review Determination

### Determination: Programmatic Categorical Exclusion

This federal-aid highway project qualifies for a Categorical Exclusion under 23 C.F.R 771.117(d) and does not exceed the thresholds listed in Section IV(A)(1)(b) of the 2016 Programmatic Agreement between the Federal Highway Administration, Tennessee Division and the Tennessee Department of Transportation. The Department has determined that the specific conditions and criteria for these CEs are satisfied and that significant environmental impacts will not result from this action. This project is therefore designated as a Programmatic Categorical Exclusion and does not require Administration approval.

This state-funded highway project meets the qualifications for a Categorical Exclusion under 23 C.F.R 771.117(d) and does not exceed the thresholds listed in Section IV(A)(1)(b) of the 2016 Programmatic Agreement between the Federal Highway Administration, Tennessee Division and the Tennessee Department of Transportation. Though not required at this time, the Department has determined that all specific conditions and criteria for these CEs are satisfied and that significant environmental impacts will not result from this action. This project is therefore designated as a Tennessee Programmatic Categorical Exclusion.

## Reference Material

All source material used in support of the information and conclusions presented in this document are included in the attachments and technical appendices. The attachments are located at the end of the environmental document and include information on funding, agency concurrence, applicable agency agreements, and special commitment support. The technical appendices are compiled as a separate document and include the project plans, technical reviews, reports and any other additional information.

## Preparer Certification

By signing below, you certify that this document has been prepared in compliance with all applicable environmental laws, regulations and procedures. You can attest to the document's quality, accuracy, and completeness, and that all source material has been compiled and included in the attachments and technical appendices.

Crystal M. Alfaro

Digitally signed by Crystal M. Alfaro  
DN: cn=Crystal M. Alfaro, o=TN Dept. of  
Transportation, ou=Environmental Division - NEPA,  
email=crystal.alfaro@tn.gov, c=US  
Date: 2018.10.12 14:33:59 -05'00'

Document Preparer

## Document Approval

By signing below, you officially concur that this document is in compliance with all applicable environmental laws, regulations and procedures. You have reviewed and verified the document's quality, accuracy, and completeness and that all source material has been compiled and included in the attachments and technical appendices.

Joseph D. Santangelo

Digitally signed by Joseph D. Santangelo  
Date: 2018.10.12 15:21:45 -05'00'

# Attachments

## Acronyms

<b>AADT</b>	Annual Average Daily Traffic	<b>NRCS</b>	Natural Resources Conservation Service
<b>ADA</b>	Americans with Disabilities Act	<b>NRHP</b>	National Register of Historic Places
<b>APE</b>	Area of Potential Effect	<b>PCE</b>	Programmatic Categorical Exclusion
<b>BMP</b>	Best Management Practice	<b>PIN</b>	Project Identification Number
<b>CAA</b>	Clean Air Act	<b>PM</b>	Particulate Matter
<b>CE</b>	Categorical Exclusion	<b>PND</b>	Pond
<b>CEQ</b>	Council on Environmental Quality	<b>RCRA</b>	Resource Conservation and Recovery Act
<b>CFR</b>	Code of Federal Regulations	<b>ROW</b>	Right-of-Way
<b>CMAQ</b>	Congestion Mitigation and Air Quality	<b>ROD</b>	Record of Decision
<b>DEIS</b>	Draft Environmental Impact Statement	<b>RPO</b>	Rural Planning Organization
<b>FEMA</b>	Federal Emergency Management Agency	<b>SIP</b>	State Implementation Plan
<b>FONSI</b>	Finding of No Significant Impact	<b>SNK</b>	Sinkhole
<b>EA</b>	Environmental Assessment	<b>SR</b>	State Route
<b>EIS</b>	Environmental Impact Statement	<b>STIP</b>	State Transportation Improvement Program
<b>EJ</b>	Environmental Justice	<b>STR</b>	Stream
<b>EPA</b>	Environmental Protection Agency	<b>TDEC</b>	TN Department of Environment and Conservation
<b>EPH</b>	Ephemeral Stream	<b>TDOT</b>	Tennessee Department of Transportation
<b>FHWA</b>	Federal Highway Administration	<b>TIP</b>	Transportation Improvement Program
<b>FIRM</b>	Flood Insurance Rate Map	<b>SHPO</b>	State Historic Preservation Office
<b>FPPA</b>	Farmland Protection Policy Act	<b>TPO</b>	Transportation Planning Organization
<b>GHG</b>	Greenhouse Gas	<b>TVA</b>	Tennessee Valley Authority
<b>GIS</b>	Geographic Information System	<b>TWRA</b>	Tennessee Wildlife Resources Agency
<b>IAC</b>	Interagency Consultation	<b>USDOT</b>	U.S. Department of Transportation
<b>LWCF</b>	Land and Water Conservation Fund	<b>USACE</b>	U.S. Army Corps of Engineers
<b>LOS</b>	Level of Service	<b>USFWS</b>	U.S. Fish and Wildlife Service
<b>MOA</b>	Memorandum of Agreement	<b>UST</b>	Underground Storage Tank
<b>MOU</b>	Memorandum of Understanding	<b>VMT</b>	Vehicle Miles Traveled
<b>MPO</b>	Metropolitan Planning Organization	<b>VPD</b>	Vehicles Per Day
<b>MSAT</b>	Mobile Source Air Toxics	<b>WWC</b>	Wet Weather Conveyance
<b>NEPA</b>	National Environmental Policy Act		

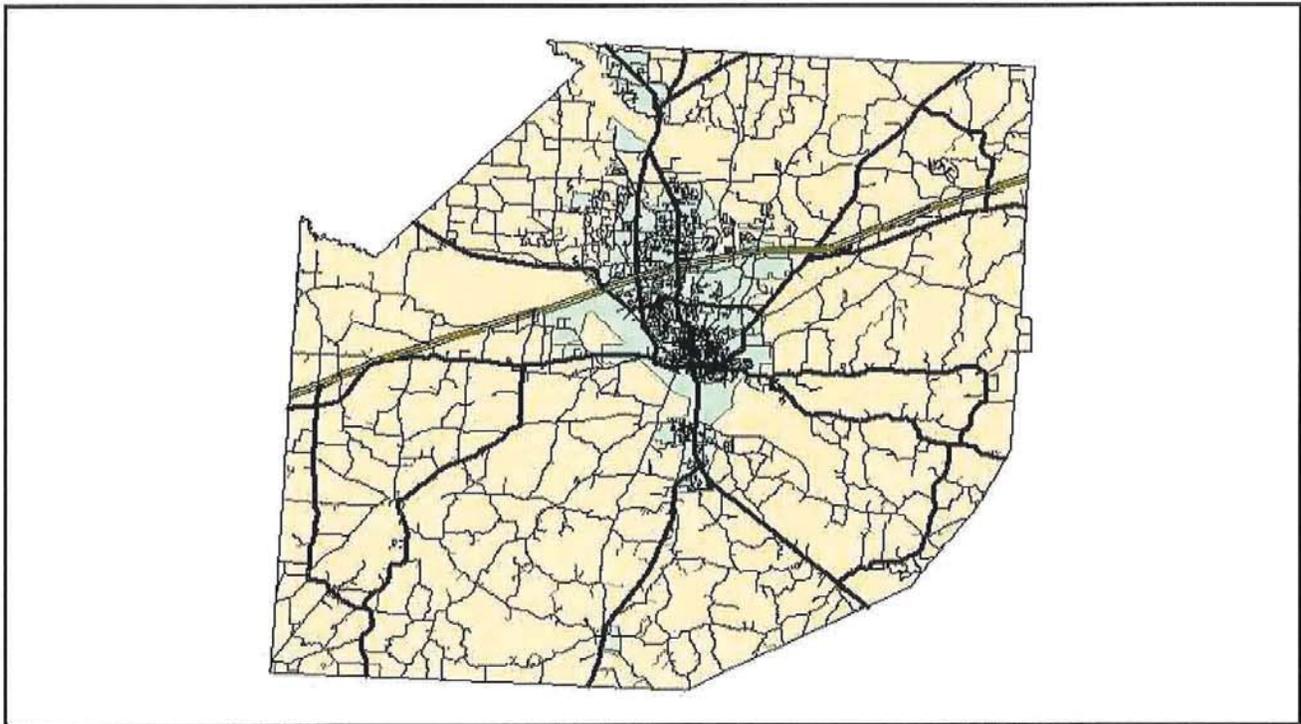
# State Transportation Improvement Program

## JACKSON AREA MPO FISCAL YEARS 2017-2020 TRANSPORTATION IMPROVEMENT PROGRAM (TIP)

STIP #	TIP#	STBG-05	TDOT PIN#	PRIORITY	LEAD AGENCY	TDOT
COUNTY	Madison	LENGTH	L RTP#	Consistent w/L RTP	CONFORMITY STATUS	
ROUTE/PROJECT NAME	Surface Transportation Block Grant (STBG) Grouping		TOTAL PROJECT COST	\$1,957,324		
TERMINI OR INTERSECTION	Jackson Area MPO					
PROJECT DESCRIPTION	RESURFACING, GUARDRAIL, SLIDE REPAIR, SIGNS, SIGNALS, MARKING, INTERSECTION / INTERCHANGE MODIFICATIONS, SIGHT DISTANCE MODIFICATIONS, NOISE WALLS, WETLAND AND OR STREAM MITIGATION, SAFETY IMPROVEMENTS, BRIDGE REPLACEMENT, REPAIR, REHABILITATION, PRESERVATION, ROCKFALL MITIGATION, SIDEWALKS, TRAFFIC CALMING, PEDESTRIAN AND OR BICYCLE FACILITIES, ITS OPERATIONS, MAINTENANCE, POWER, COMMUNICATIONS, CONSTRUCTION, OPERATE THE TN 511 SYSTEM, FREEWAY SERVICE PATROLS, TRAFFIC DIVERSION, NON-INFRASTRUCTURE, SCHOOL AND OTHER FLASHING SIGNALS, BRIDGE AND TUNNEL INSPECTION, RAIL-HIGHWAY GRADE CROSSING IMPROVEMENTS, ENHANCEMENT ACTIVITIES, ETC. SEE APPENDIX E.					

FISCAL YEAR	PHASE	FUNDING TYPE	TOTAL FUNDS	FED FUNDS	STATE FUNDS	LOCAL FUNDS
2017	PE, ROW, CONST	STBG	\$489,331	\$391,465	\$97,866	\$0
2018	PE, ROW, CONST	STBG	\$489,331	\$391,465	\$97,866	\$0
2019	PE, ROW, CONST	STBG	\$489,331	\$391,465	\$97,866	\$0
2020	PE, ROW, CONST	STBG	\$489,331	\$391,465	\$97,866	\$0

AMENDMENT #	ADJUSTMENT #	REMARKS
		Source: TDOT Program Development and Scheduling Office (PDSO) 2016



Appendices

Grouping Category	Function of Grouping Activities	Allowable Work Types
<p>Surface Transportation Block Grant Program (STBG) Grouping</p> <p>STIP# 1799001</p>	<p>Projects and programs for the preservation and improvement of the conditions and performance of Federal-aid highways and public roads, including:</p> <ul style="list-style-type: none"> <li>• Rehabilitation, resurfacing, restoration, preservation, and operational improvements on Federal-aid highways and designated routes of the Appalachian Development Highway System (ADHS) and local access roads under 40 USC 14501.</li> <li>• Traffic operations on Federal-aid highways.</li> <li>• Bridge and tunnel improvements on public roads.</li> <li>• Safety improvements on public roads.</li> <li>• Environmental mitigation</li> <li>• Scenic and historic highway programs.</li> <li>• Landscaping and scenic beautification.</li> </ul>	<p>Activities previously authorized under the Surface Transportation Program (STP):</p> <ul style="list-style-type: none"> <li>• Minor rehabilitation, pavement resurfacing, preventative maintenance, restoration, and pavement preservation treatments to extend the service life of highway infrastructure, including pavement markings and improvements to roadside hardware or sight distance</li> <li>• Highway improvement work including slide repair, rock fall mitigation, drainage repairs, or other preventative work necessary to maintain or extend the service life of existing infrastructure in a good operational condition</li> <li>• Minor operational and safety improvements to intersections and interchanges such as adding turn lanes, addressing existing geometric deficiencies, and extending on/off ramps</li> <li>• Capital and operating costs for intelligent transportation systems (ITS) and traffic monitoring, management, and control facilities and programs:             <ul style="list-style-type: none"> <li>○ Infrastructure-based intelligent transportation systems (ITS) capital improvements</li> <li>○ Traffic Management Center (TMC) operations and utilities</li> <li>○ Freeway service patrols</li> <li>○ Traveler information</li> </ul> </li> <li>• Bridge and tunnel construction (no additional travel lanes), replacement, rehabilitation, preservation, protection, inspection, evaluation, and inspector training and inspection and evaluation of other infrastructure assets, such as signs, walls, and drainage structures</li> <li>• Development and implementation of a State Asset Management Plan including data collection, maintenance and integration, software costs, and equipment costs that support the development of performance-based management systems for infrastructure</li> <li>• Rail-highway grade crossing improvements</li> <li>• Highway safety improvements:             <ul style="list-style-type: none"> <li>○ Installation of new or improvement of existing guardrail</li> <li>○ Installation of traffic signs and signals/signs</li> <li>○ Spot safety improvements</li> </ul> </li> <li>• Sidewalk improvements</li> <li>• Pedestrian and/or bicycle facilities</li> <li>• Traffic calming and traffic diversion improvements</li> <li>• Transportation Alternatives as defined by 23 USC 213(B), 23 USC, 101(A)(29), and Section 1122 of MAP-21</li> <li>• Noise walls</li> <li>• Wetland and/or stream mitigation</li> <li>• Environmental restoration and pollution abatement</li> <li>• Control of noxious weeds and establishment of native species</li> </ul> <p>Activities previously authorized under the Transportation Enhancement Program:</p>

Appendices

<p><b>Surface Transportation Block Grant Program (STBG) Grouping</b> <b>(continued)</b>  <b>STIP# 1799001</b></p>	<ul style="list-style-type: none"> <li>● Historic preservation.</li> <li>● On- and off-road pedestrian and bicycle facilities.</li> <li>● Infrastructure projects for improving non-driver access to public transportation and enhanced mobility.</li> <li>● Community improvement activities.</li> <li>● Recreational Trail Program projects.</li> <li>● Safe Routes to School (SRTS) projects.</li> <li>● Transportation Enhancement projects.</li> <li>● Transportation Alternatives projects.</li> <li>● Projects for the creation, rehabilitation, and maintenance of multi-use recreational trails.</li> </ul>	<ul style="list-style-type: none"> <li>○ Pedestrian and bicycle facilities, safety, and educational activities</li> <li>○ Acquisition of scenic easements and scenic or historic sites</li> <li>○ Scenic or historic highway programs</li> <li>○ Landscaping and other scenic beautification activities</li> <li>○ Historic preservation</li> <li>○ Rehabilitation and operation of historic transportation buildings, structures, or facilities</li> <li>○ Preservation of abandoned railway corridors</li> <li>○ Inventory, control, and removal of outdoor advertising</li> <li>○ Archaeological planning and research</li> <li>○ Environmental mitigation to address water pollution due to highway runoff or reduce vehicle-caused wildlife mortality while maintaining habitat connectivity</li> <li>○ Establishment of transportation museums</li> <li>○ Activities under the Tennessee Roadscapes grant program, including landscaping, irrigation, benches, trash cans, paints, and signage</li> </ul> <p><b>Activities previously authorized under the Safe Routes to School Program (SRTS):</b></p> <ul style="list-style-type: none"> <li>● Sidewalk improvements</li> <li>● Traffic calming and speed reduction improvements</li> <li>● Pedestrian and bicycle crossing improvements</li> <li>● On-street bicycle facilities</li> <li>● Off-street bicycle and pedestrian facilities</li> <li>● Secure bicycle parking facilities</li> <li>● Traffic diversion improvements approximately within 2 miles of a school location</li> <li>● Non-infrastructure related activities:             <ul style="list-style-type: none"> <li>○ Public awareness campaigns and outreach to press and community leaders</li> <li>○ Traffic education and enforcement in the vicinity of schools                 <ul style="list-style-type: none"> <li>▪ Student sessions on bicycle and pedestrian safety, health, and environment</li> <li>▪ Funding for training, volunteers, and managers of safe routes to school program</li> </ul> </li> </ul> </li> </ul> <p><b>Activities previously authorized under the Transportation Alternatives Program (TAP):</b></p> <ul style="list-style-type: none"> <li>● Construction, planning, and design of on-road and off-road trail facilities for pedestrians, bicyclists, and other non-motorized forms of transportation, including:             <ul style="list-style-type: none"> <li>○ Sidewalk improvements</li> <li>○ Bicycle infrastructure</li> <li>○ Pedestrian and bicycle signals</li> <li>○ Traffic calming techniques</li> <li>○ Lighting and other safety-related infrastructure</li> </ul> </li> </ul>
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# U.S. Fish and Wildlife Service Coordination

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**From:** [John Griffith](#)  
**To:** [Eric Philipps](#)  
**Cc:** [Randall E. Mann](#); [Lou Timms](#); [Jared McCoy](#); [Dustin Tucker](#); [Rita M. Thompson](#); [Greg Harris](#)  
**Subject:** RE: [EXTERNAL] Madison County, SR-223 (Shady Grove Road) Bridge over Branch, PIN 124712.00  
**Date:** Monday, July 16, 2018 9:44:40 AM  
**Attachments:** [image001.png](#)

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**\*\*\* This is an EXTERNAL email. Please exercise caution. DO NOT open attachments or click links from unknown senders or unexpected email - STS-Security. \*\*\***

Eric,  
??

Thank you for requesting our review of the proposed SR-223 Bridge replacement over a unnamed tributary to Chisholm Creek at LM 2.28 in Madison County, Tennessee.?? Upon review of the information provided and our database, we would not anticipate impacts to any federally listed or proposed species as a result of the project.?? Therefore, based on the best information available at this time, we believe that the requirements of section 7 of the Endangered Species Act (Act) of 1973, as amended, are fulfilled for all species that currently receive protection under the Act.?? Obligations under section 7 of the Act must be reconsidered if (1) new information reveals impacts of the proposed action that may affect listed species or critical habitat in a manner not previously considered, (2) the proposed action is subsequently modified to include activities which were not considered during this consultation, or (3) new species are listed or critical habitat designated that might be affected by the proposed action.

??

TDOT's standard construction BMPs would be implemented during the project. Equipment staging and maintenance areas should be developed an adequate distance from the stream to avoid entry of petroleum-based pollutants into the water.?? Concrete and cement dust must be kept out of the water as they alter chemical properties and can be toxic to aquatic species. This email will serve as our official project response.?? Please let me know if we can offer further assistance.?? Thanks,

??

John Griffith  
Transportation Biologist  
U.S. Fish and Wildlife Service  
Tennessee Field Office  
931-525-4995 (office)  
931-528-7075 (fax)  
??

---

**From:** Eric Philipps <[Eric.Philipps@tn.gov](mailto:Eric.Philipps@tn.gov)>  
**Sent:** Thursday, June 21, 2018 2:15 PM  
**To:** [john\\_griffith@fws.gov](mailto:john_griffith@fws.gov)  
**Cc:** Randall E. Mann <[Randall.E.Mann@tn.gov](mailto:Randall.E.Mann@tn.gov)>; Lou Timms <[Lou.Timms@tn.gov](mailto:Lou.Timms@tn.gov)>; Jared McCoy <[Jared.McCoy@tn.gov](mailto:Jared.McCoy@tn.gov)>; Dustin Tucker <[Dustin.Tucker@tn.gov](mailto:Dustin.Tucker@tn.gov)>; Rita M. Thompson <[Rita.M.Thompson@tn.gov](mailto:Rita.M.Thompson@tn.gov)>; Greg Harris <[Greg.Harris@tn.gov](mailto:Greg.Harris@tn.gov)>  
**Subject:** [EXTERNAL] Madison County, SR-223 (Shady Grove Road) Bridge over Branch, PIN 124712.00  
??

# Tennessee Wildlife Resource Agency Coordination

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**From:** [Casey Parker](#)  
**To:** [Eric Philipps](#); [TDOT Env.LocalPrograms](#)  
**Cc:** [Rob Todd](#)  
**Subject:** RE: Request for Comment - Madison, SR-223 (Shady Grove Road) Bridge over Branch, PIN 124712.00  
**Date:** Wednesday, July 11, 2018 2:53:29 PM  
**Attachments:** [image002.png](#)  
[image003.png](#)

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Subject: Request for Comment - Madison, SR-223 (Shady Grove Road) Bridge over Branch, PIN 124712.00

Mr. Eric Philipps,

I have reviewed the information that you provided regarding the proposed bridge replacement on SR-223 (Shady Grove Road) in Madison County, Tennessee. The implementation of standard BMP's will be sufficient to satisfy the needs of the Tennessee Wildlife Resources Agency for this proposed project. Thank you for the opportunity to review and comment, please contact me if you need further assistance.

**Casey Parker - Wildlife Biologist**  
**Liaison to TDOT & Federal Highway Administration**  
**Tennessee Wildlife Resources Agency**  
**Environmental Services Division**  
**Email:** [casey.parker@tn.gov](mailto:casey.parker@tn.gov)



---

**From:** Eric Philipps  
**Sent:** Thursday, June 21, 2018 2:57 PM  
**To:** Casey Parker  
**Cc:** Rob Todd; Randall E. Mann; Lou Timms; Jared McCoy; Dustin Tucker; Rita M. Thompson; Greg Harris  
**Subject:** Request for Comment - Madison, SR-223 (Shady Grove Road) Bridge over Branch, PIN 124712.00

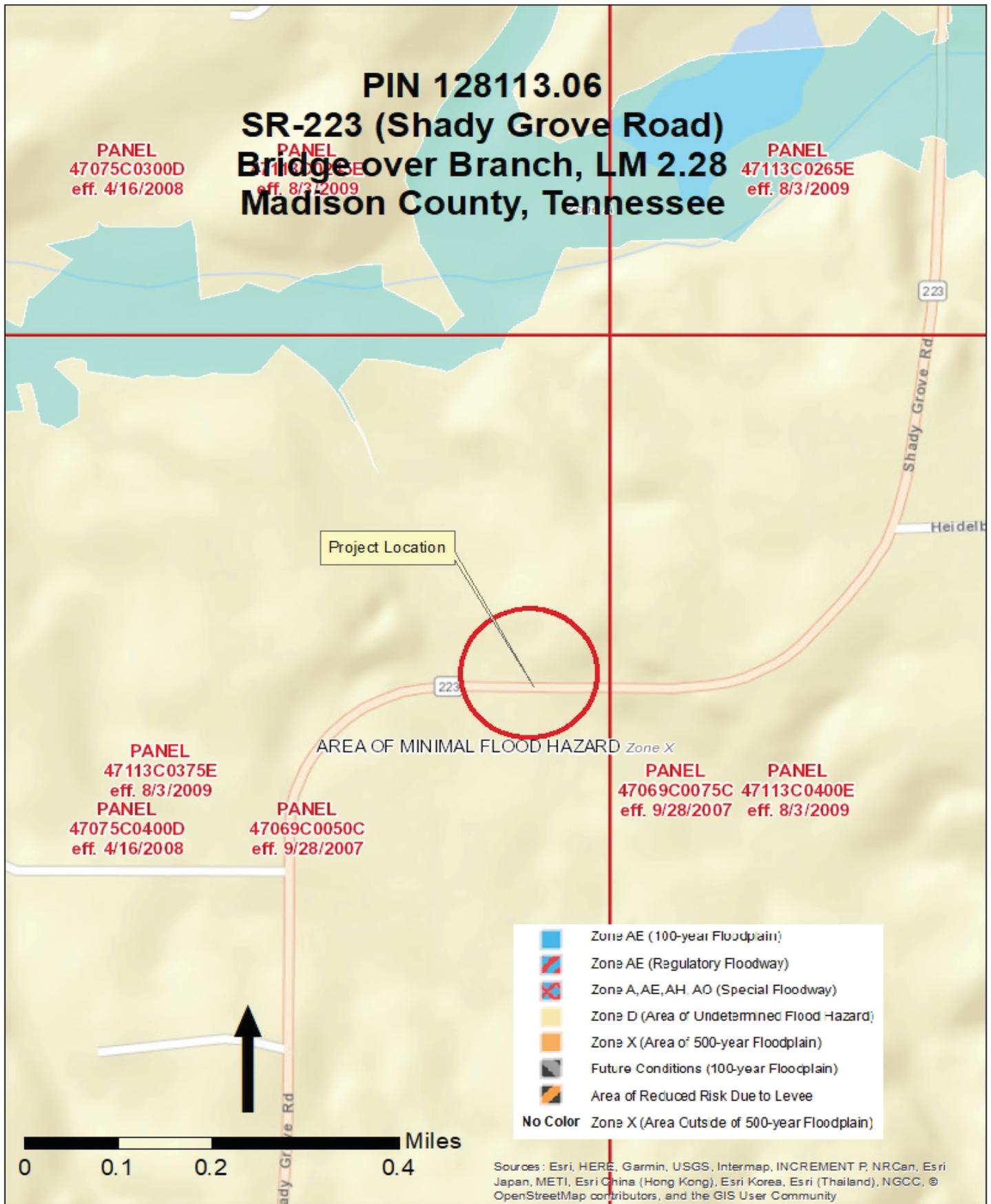
Casey,

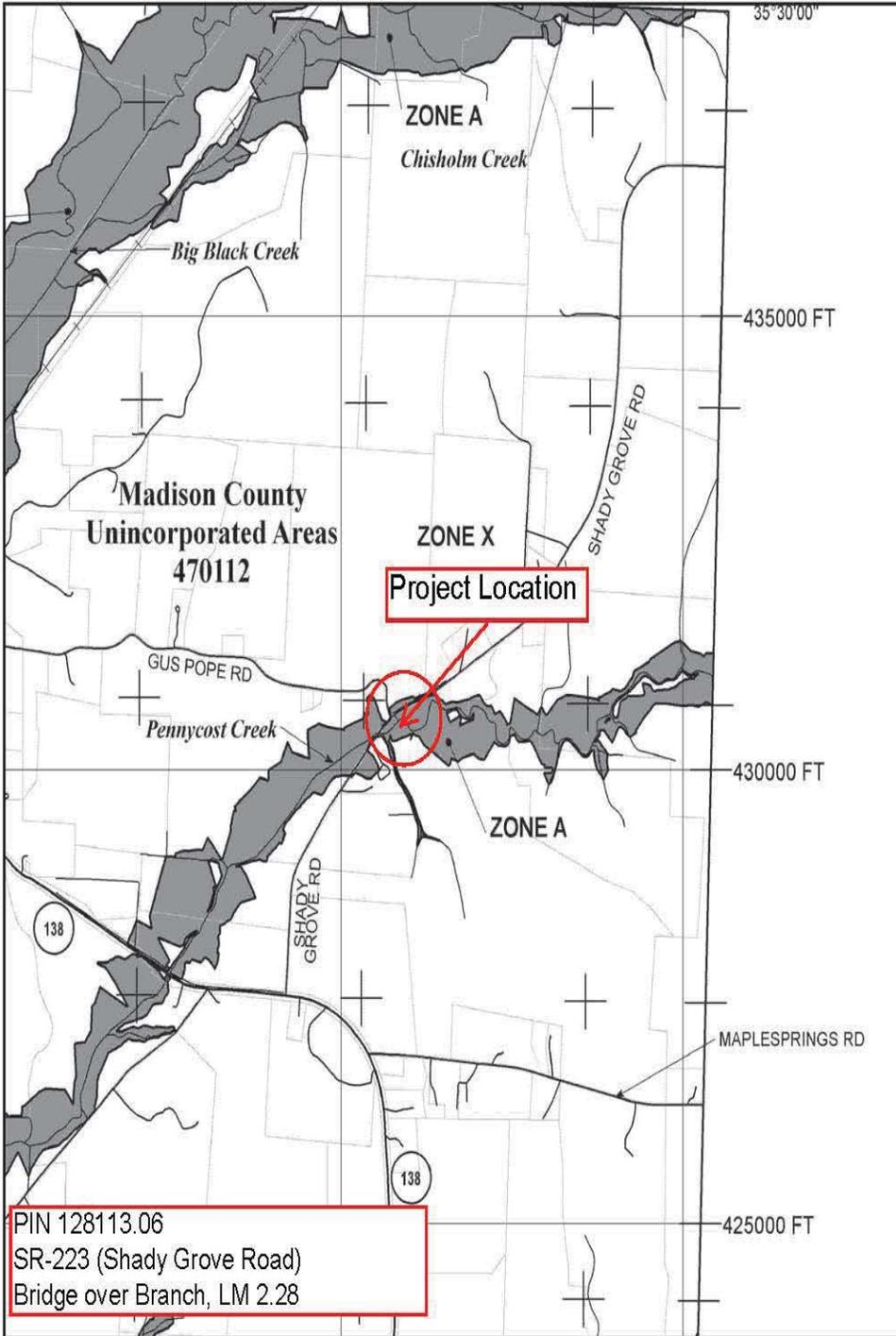
TDOT proposes to replace the subject bridge in Madison County. Please find attached KMZ file, species maps, species list, and plan sheet. If you have any questions or require additional information, please do not hesitate to contact me.

Thanks



# Floodplain Map





and Insurance Program at 1-800-638-6620.

**MAP SCALE 1" = 2000'**

**NFIP** PANEL 0375E

**FIRM**  
**FLOOD INSURANCE RATE MAP**  
**MADISON COUNTY,**  
**TENNESSEE**  
**AND INCORPORATED AREAS**

**PANEL 375 OF 435**  
 (SEE MAP INDEX FOR FIRM PANEL LAYOUT)

**CONTAINS:**

COMMUNITY	NUMBER	PANEL	SUFFIX
MADISON COUNTY	470112	0375	E

Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.

**MAP NUMBER**  
**47113C0375E**

**MAP REVISED**  
**AUGUST 3, 2009**

**Federal Emergency Management Agency**

**NATIONAL FLOOD INSURANCE PROGRAM**

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](http://www.msc.fema.gov)



**TENNESSEE HISTORICAL COMMISSION**  
STATE HISTORIC PRESERVATION OFFICE  
2941 LEBANON PIKE  
NASHVILLE, TENNESSEE 37243-0442  
OFFICE: (615) 532-1550  
[www.tnhistoricalcommission.org](http://www.tnhistoricalcommission.org)

June 12, 2018

Ms. Katherine Looney  
Tennessee Department of Transportation  
505 Deaderick St  
Suite 900  
Nashville, TN 37243-1402

RE: FHWA / Federal Highway Administration, Replacement of the SR 223 Bridge over Branch,  
Log Mile 2.28/ PIN 124712.00, , Madison County, TN

Dear Ms. Looney:

In response to your request, we have reviewed the architectural survey report and accompanying documentation submitted by you regarding the above-referenced undertaking. Our review of and comment on your proposed undertaking are among the requirements of Section 106 of the National Historic Preservation Act. This Act requires federal agencies or applicants for federal assistance to consult with the appropriate State Historic Preservation Office before they carry out their proposed undertakings. The Advisory Council on Historic Preservation has codified procedures for carrying out Section 106 review in 36 CFR 800 (Federal Register, December 12, 2000, 77698-77739).

Considering the information provided, we concur that no architectural resources eligible for listing in the National Register of Historic Places will be affected by this undertaking. If project plans are changed or archaeological remains are discovered during project construction, please contact this office to determine what further action, if any, will be necessary to comply with Section 106 of the National Historic Preservation Act. Questions or comments may be directed to Casey Lee (615 253-3163).

Your cooperation is appreciated.

Sincerely,

A handwritten signature in cursive script that reads "E. Patrick McIntyre, Jr.".

E. Patrick McIntyre  
Executive Director and  
State Historic Preservation Officer

EPM/cjl



**TENNESSEE HISTORICAL COMMISSION**  
STATE HISTORIC PRESERVATION OFFICE  
2941 LEBANON PIKE  
NASHVILLE, TENNESSEE 37243-0442  
OFFICE: (615) 532-1550  
[www.tnhistoricalcommission.org](http://www.tnhistoricalcommission.org)

August 21, 2018

Mr. Phillip R. Hodge  
Tennessee Department of Transportation  
Suite 900, James K. Polk Building  
505 Deaderick Street  
Nashville, TN 37243-1402

RE: FHWA / Federal Highway Administration, SR-233 (Shady Grove Road) Bridge  
Replacement, Log Mile 2.28, Madison County, TN

Dear Mr. Hodge:

In response to your request, we have reviewed the archaeological report of investigations and accompanying documentation submitted by you regarding the above-referenced undertaking. Our review of and comment on your proposed undertaking are among the requirements of Section 106 of the National Historic Preservation Act. This Act requires federal agencies or applicants for federal assistance to consult with the appropriate State Historic Preservation Office before they carry out their proposed undertakings. The Advisory Council on Historic Preservation has codified procedures for carrying out Section 106 review in 36 CFR 800 (Federal Register, December 12, 2000, 77698-77739).

Considering the information provided, we find that no archaeological resources eligible for listing in the National Register of Historic Places will be affected by this undertaking. If project plans are changed or archaeological remains are discovered during project construction, please contact this office to determine what further action, if any, will be necessary to comply with Section 106 of the National Historic Preservation Act. Complete and/or updated Tennessee Site Survey Forms should be submitted to the Tennessee Division of Archaeology for all sites recorded and/or revisited during the current investigation. Questions or comments may be directed to Jennifer Barnett (615) 687-4780.

Your cooperation is appreciated.

Sincerely,

E. Patrick McIntyre, Jr.  
Executive Director and  
State Historic Preservation Officer

EPM/jmb

# Project Development

**TENNESSEE**  
**DEPARTMENT OF TRANSPORTATION**



**TRANSPORTATION INVESTMENT REPORT**  
**IMPROVE Act**

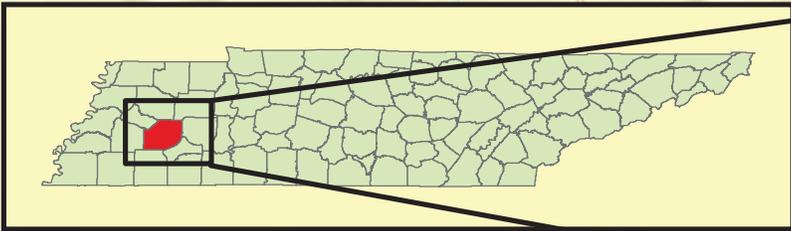
**State Route 223**  
**Bridge over Branch,**  
**Log Mile 2.28 Madison County**  
**PIN 124712.00**

PREPARED BY KCI TECHNOLOGIES INC. FOR THE  
TENNESSEE DEPARTMENT OF TRANSPORTATION

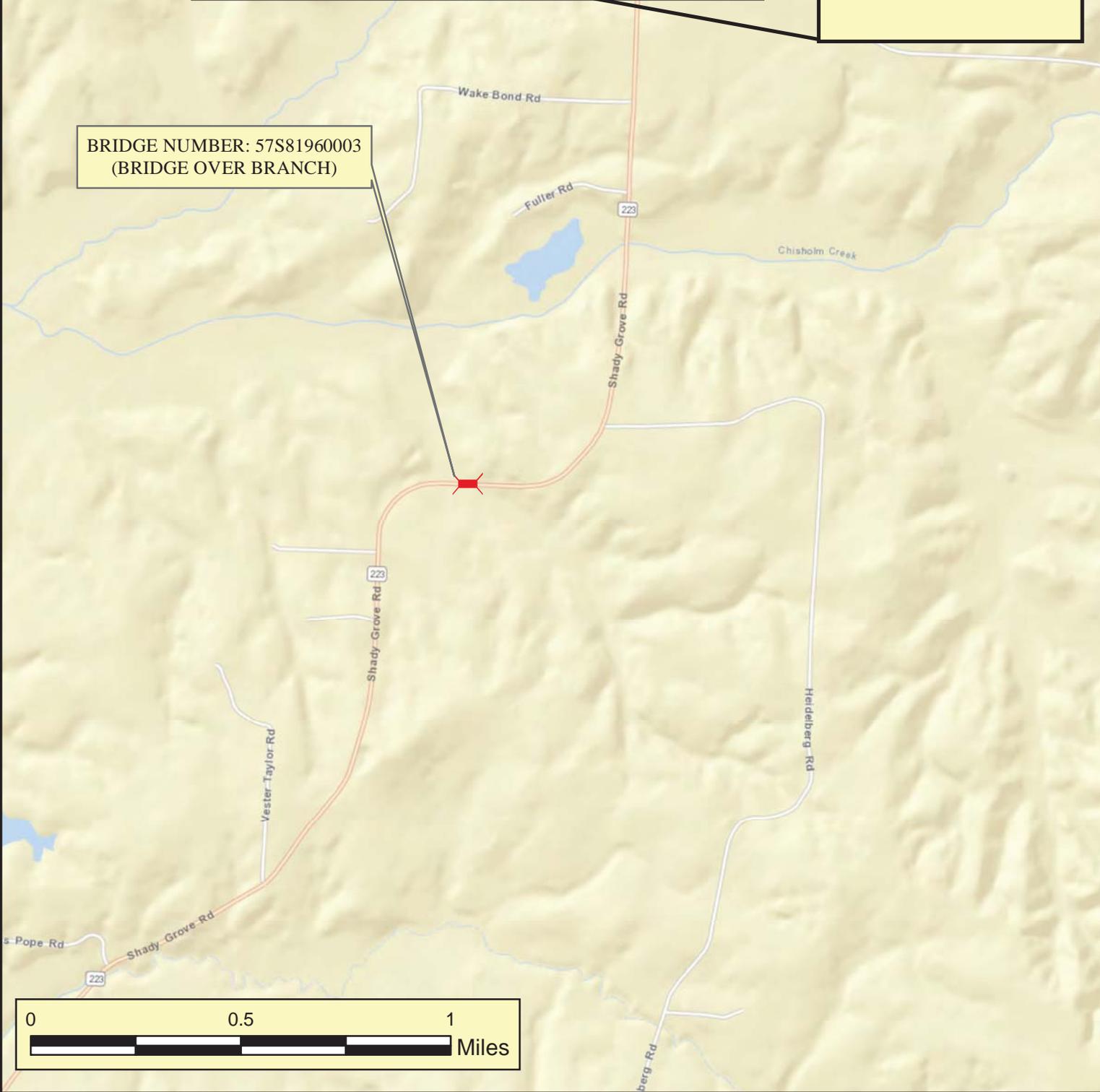
Approved by Toks Oritokun Date 03-28-18 Approved by Paul Deegan Date 4/2/18  
Chief of Environment and Planning Deputy Commissioner and Chief Engineer

Approved by:	Signature	DATE
TRANSPORTATION DIRECTOR STRATEGIC TRANSPORTATION INVESTMENTS DIVISION		3-26-18
ENGINEERING DIRECTOR DESIGN DIVISION		03/27/18
ENGINEERING DIRECTOR STRUCTURES DIVISION		3/27/18

*This document is covered by 23 USC § 409 and its production pursuant to fulfilling public planning requirements does not waive the provisions of § 409.*

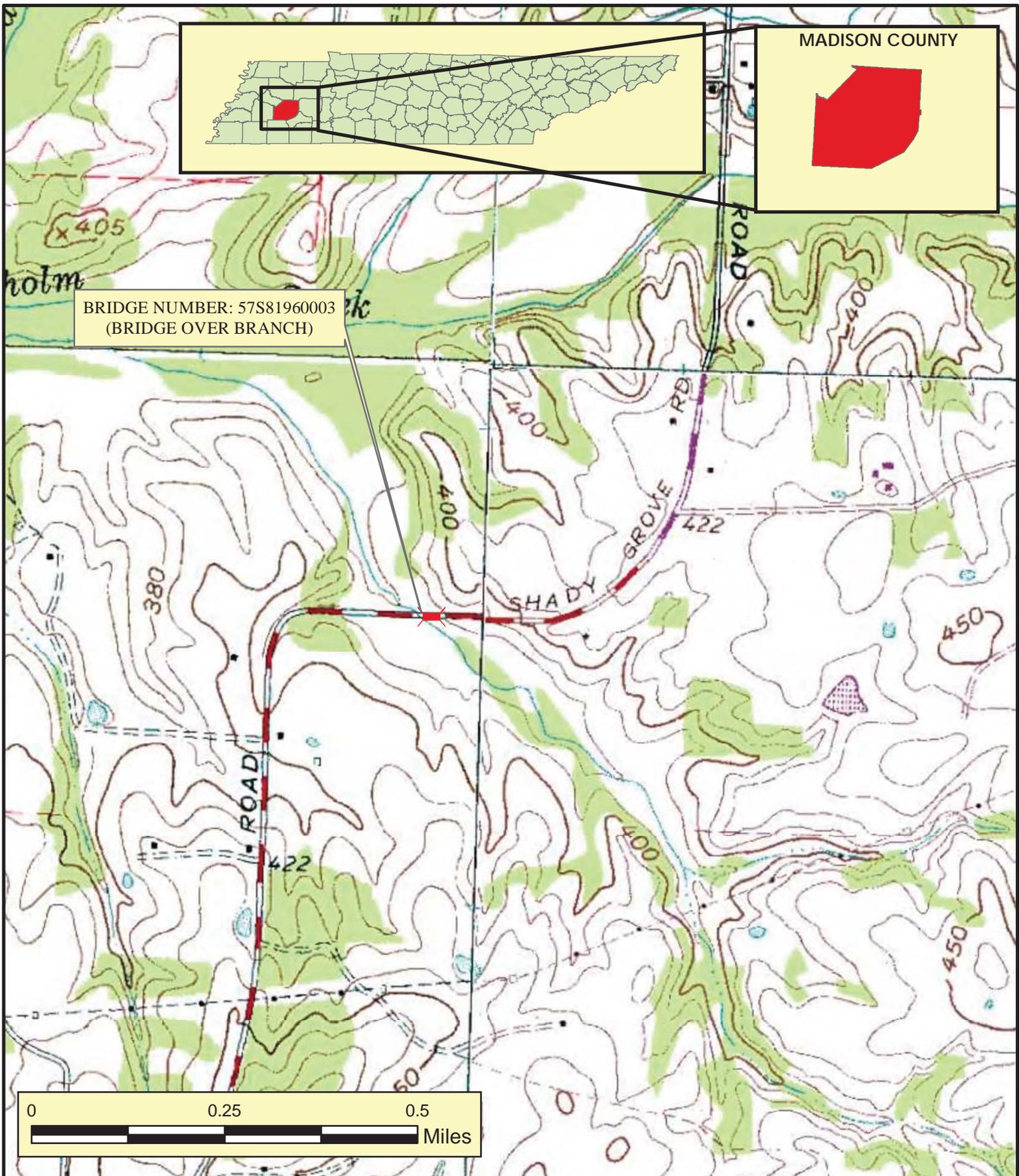


BRIDGE NUMBER: 57S81960003  
(BRIDGE OVER BRANCH)

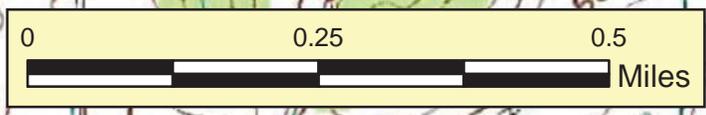


**AREA MAP**  
**BRIDGE TIR**  
**STATE ROUTE 223 (SHADY GROVE ROAD)**  
**BRIDGE OVER BRANCH (LM 2.28)**  
**MADISON COUNTY**



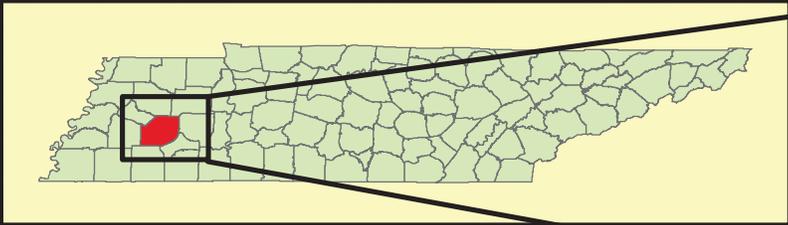


BRIDGE NUMBER: 57S81960003  
(BRIDGE OVER BRANCH)

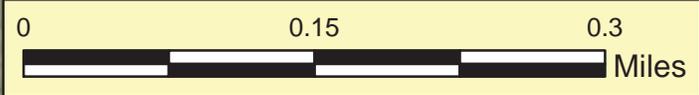


**TOPO MAP**  
**BRIDGE TIR**  
**STATE ROUTE 223 (SHADY GROVE ROAD)**  
**BRIDGE OVER BRANCH (LM 2.28)**  
**MADISON COUNTY**





BRIDGE NUMBER: 57S81960003  
(BRIDGE OVER BRANCH)



**PROJECT MAP**  
**BRIDGE TIR**  
**STATE ROUTE 223 (SHADY GROVE ROAD)**  
**BRIDGE OVER BRANCH (LM 2.28)**  
**MADISON COUNTY**





**STATE OF TENNESSEE**  
**DEPARTMENT OF TRANSPORTATION**  
**STRATEGIC TRANSPORTATION INVESTMENTS DIVISION**  
SUITE 1000, JAMES K. POLK BUILDING  
505 DEADERICK STREET  
NASHVILLE, TN 37243  
(615) 741-2208

**JOHN C. SCHROER**  
COMMISSIONER

**BILL HASLAM**  
GOVERNOR

**MEMORANDUM**

**TO:** Steve Allen, Transportation Director  
Strategic Transportation Investments Division

**FROM:** David Duncan P.E., C.E. Manager 1  
Strategic Transportation Investments Division

**DATE:** March 9, 2018

**SUBJECT:** TIR Field Review (IMPROVE Act)  
Shady Grove Road (SR223), Bridge over Branch  
Bridge ID: 57S81960003  
Log Mile 2.28  
Madison County  
PIN: 124712.00

A field review was held for the above-mentioned project on January 11, 2018.

The initial structure, built in 1952, was a single span steel I-beam bridge crossing a branch of Chisholm Creek. The structure had an out-to-out width of 22 feet 3 inches. The overall structure length was 23 feet. The sufficiency rating for this structure is 27.4 based on the Bridge Inspection Report from August 3, 2017. Floating maintenance has removed and replaced the initial bridge with a temporary precast concrete slab bridge. The temporary structure has an out-to-out width of 28 feet 8 inches and overall length of 28 feet. These measurements are taken from a Site Inspection performed by KCI Technologies on January 10, 2018.

The discharges for the drainage basin were determined using StreamStats, which used a drainage area of 0.76 square miles. The 10-year discharge rate (Q10) was 631 cubic feet per second (cfs), Q50 was 839 cfs, and Q100 was 922 cfs.

There is potential for restrictions from TWRA for in stream work due to records of the Pie Bald Mad Tom and the Naked Sand Darter in the vicinity of the project site.

The proposed alignment and grade for the replacement structure will remain the same as the existing structure including the 60-degree skew with the river channel. There is a 45 mph posted speed limit on State Route 223, which will also be the design speed based on the tangent alignment. The TDOT Hydraulics Section has recommended that the proposed structure be a reinforced concrete box bridge with two (2) barrels with a length of 12 feet and a total clearance of 5 feet (2 @ 12'x 5') giving a total structure length of 26 feet per TDOT structures standard STD-17-76. It is estimated that two (2) tracts of land will be affected resulting in approximately 0.06 acres of right-of-way (ROW) acquisition. Detour routes are provided in report. The official detour will be the only detour route that is signed.

The route has a base year 2022 AADT of 610 and a design year 2042 AADT of 1,120. The existing structure and roadway approaches consist of two (2) nine (9) foot travel lanes. The route is classified as a Rural Collector Road and Standard Drawing RD01-TS-2 was used for design considerations. Based on Tables I and IV from the standard drawing, it is recommended that the proposed curb-to-curb width over the structure will be 28 feet based on a design year AADT between 400-1,500 and a design speed of 45 MPH. Therefore, the typical section on the proposed structure will consist of two (2) 11-foot travel lanes with three (3) foot shoulders and guardrail per TDOT structures standard STD-17-7 giving an out-to-out structure width of 33 feet 6 inches. The project will extend 120 feet from the structure to the east and to the west in order to install guardrail and to taper the paved shoulders back into the existing roadway.

The total cost for the estimated required approach work, estimated replacement and estimated preliminary engineering for this bridge replacement is approximately \$425,000.

cc: File

TENNESSEE D.O.T.  
S.T.I.D.  
FILE NO. —

TYPE	YEAR	COUNTY	FIGURE NO.
BRIDGE	2018	MADISON	

3/23/2018 3:55:44 PM M:\2017\160408005 (1101) TIR - SR-223 Bridge over Branch, Madison County\Design\Sheets\Proposed Alignment Madison Co. Bridge Over Branch.dgn



**BRIDGE TIR**  
STATE ROUTE 223 (SHADY GROVE ROAD)  
BRIDGE OVER BRANCH @ L.M. 2.28  
MADISON COUNTY

45 MPH DESIGN SPEED

STATE OF TENNESSEE  
DEPARTMENT OF TRANSPORTATION  
S.T.I.D.

BRIDGE REPLACEMENT  
SR223  
L.M. 2.28

TENNESSEE D.O.T.  
S.T.I.D.  
FILE NO. \_\_\_\_\_

TYPE	YEAR	COUNTY	FIGURE NO.
BRIDGE	2018	MADISON	1



3/23/2018 3:57:24 PM M:\2017\160408005 (1001) TR - SR-223 Bridge over Branch, Madison County\Design\Sheets\Proposed Environmental Layout Madison Co.Bridge Over Branch.dgn



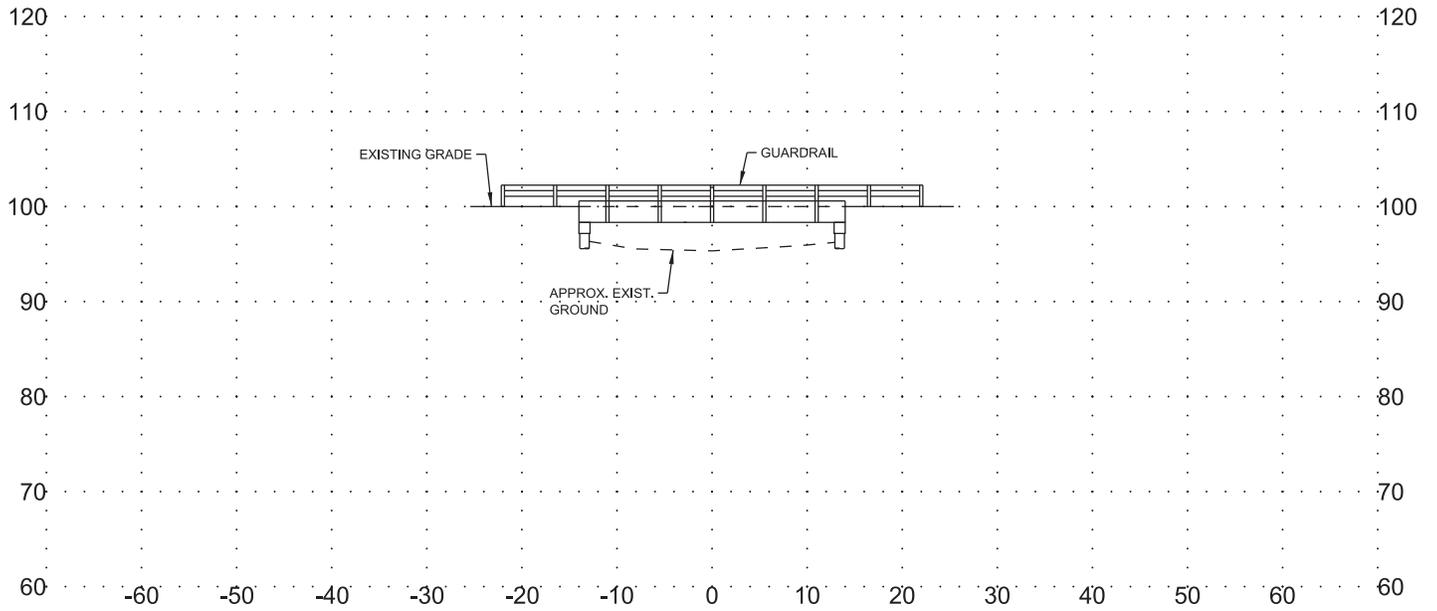
### ENVIRONMENTAL TECHNICAL STUDY AREA

STATE ROUTE 223 (SHADY GROVE ROAD)  
BRIDGE OVER BRANCH @ L.M. 2.28  
MADISON COUNTY

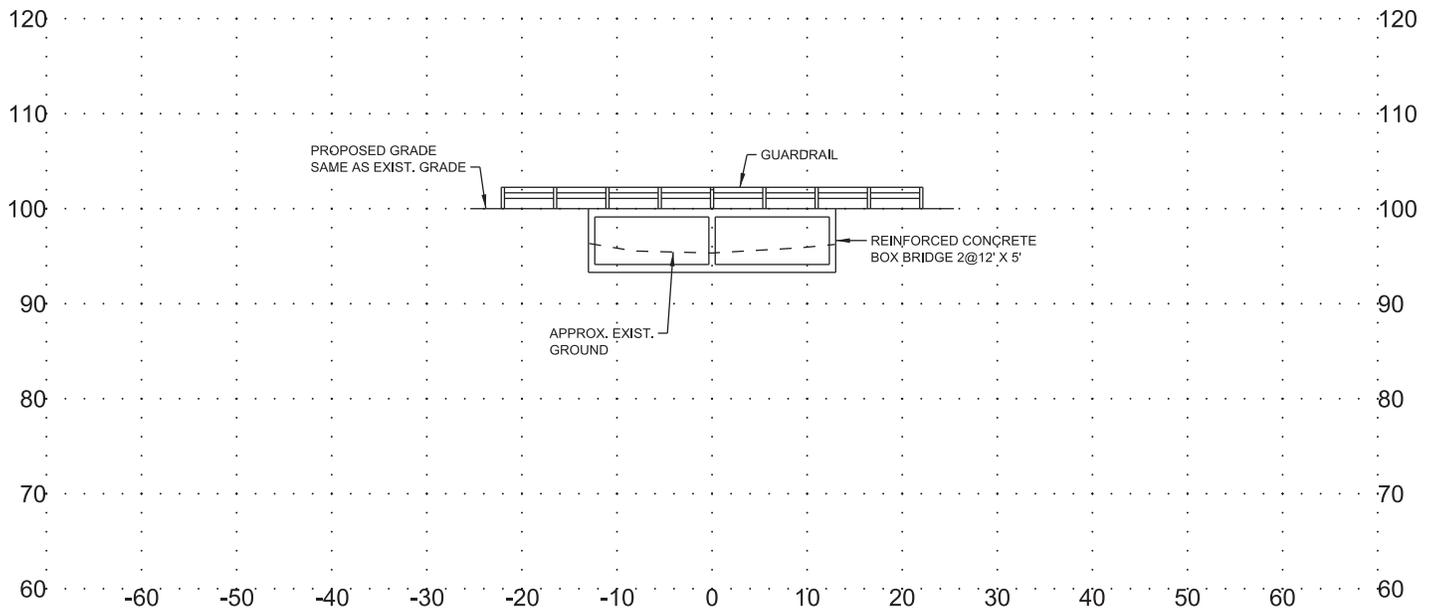
STATE OF TENNESSEE  
DEPARTMENT OF TRANSPORTATION  
S.T.I.D.

FIGURE 1  
BRIDGE REPLACEMENT  
SR223  
L.M. 2.28

# EXISTING STRUCTURE (INLET)



# PROPOSED STRUCTURE (INLET)



SCALE: 1" = 20'

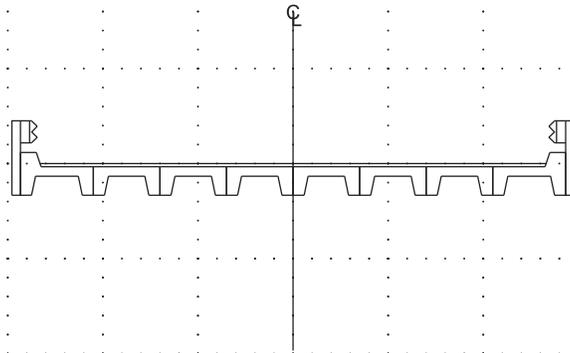
## PROPOSED PROFILE

STATE ROUTE 223 (SHADY GROVE ROAD) MADISON COUNTY

BRIDGE OVER BRANCH L.M. 2.28

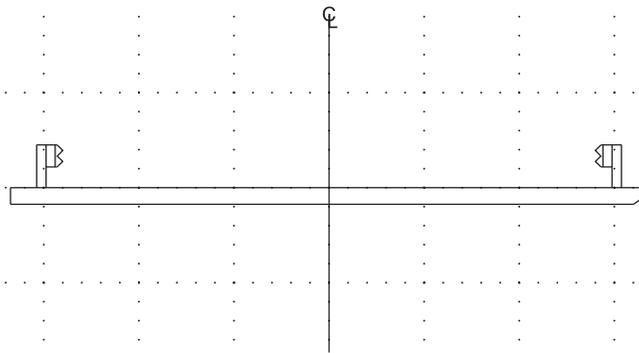
BRIDGE ID: 57S81960003

EXISTING STRUCTURE

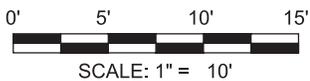


TOTAL WIDTH: 28'-8"

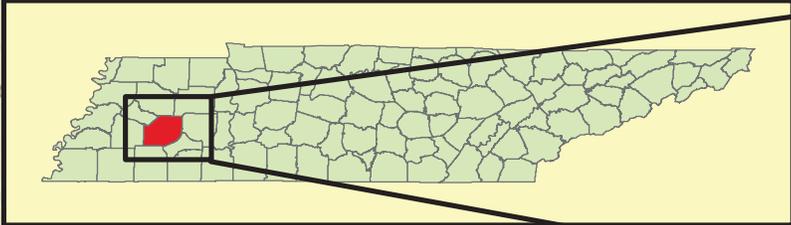
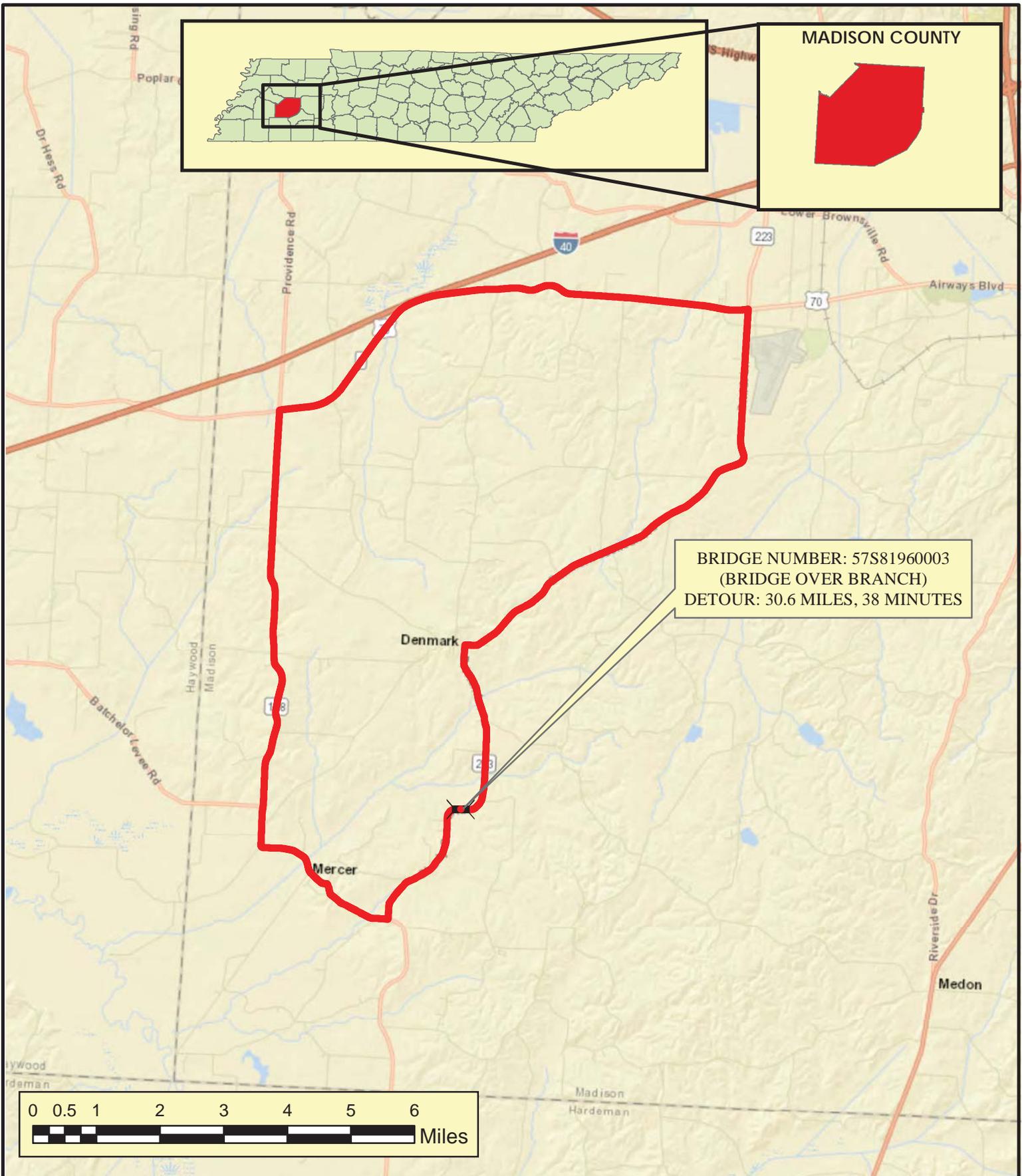
PROPOSED STRUCTURE



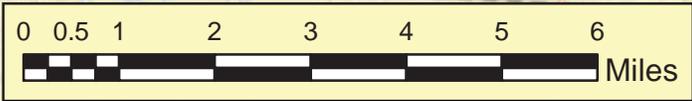
TOTAL WIDTH: 33'-6"



**PROPOSED TYPICAL SECTION**  
**STATE ROUTE 223 (SHADY GROVE ROAD) MADISON COUNTY**  
**BRIDGE OVER BRANCH L.M. 2.28**  
**BRIDGE ID: 57S81960003**

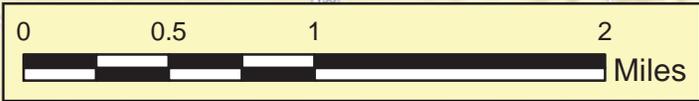
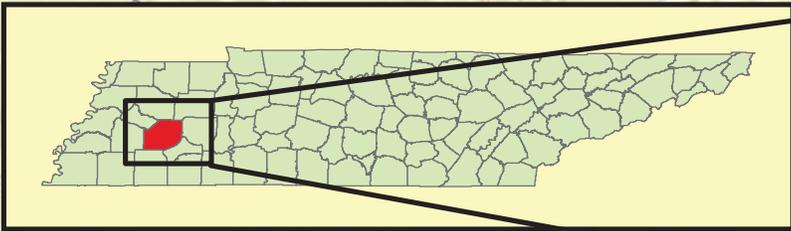
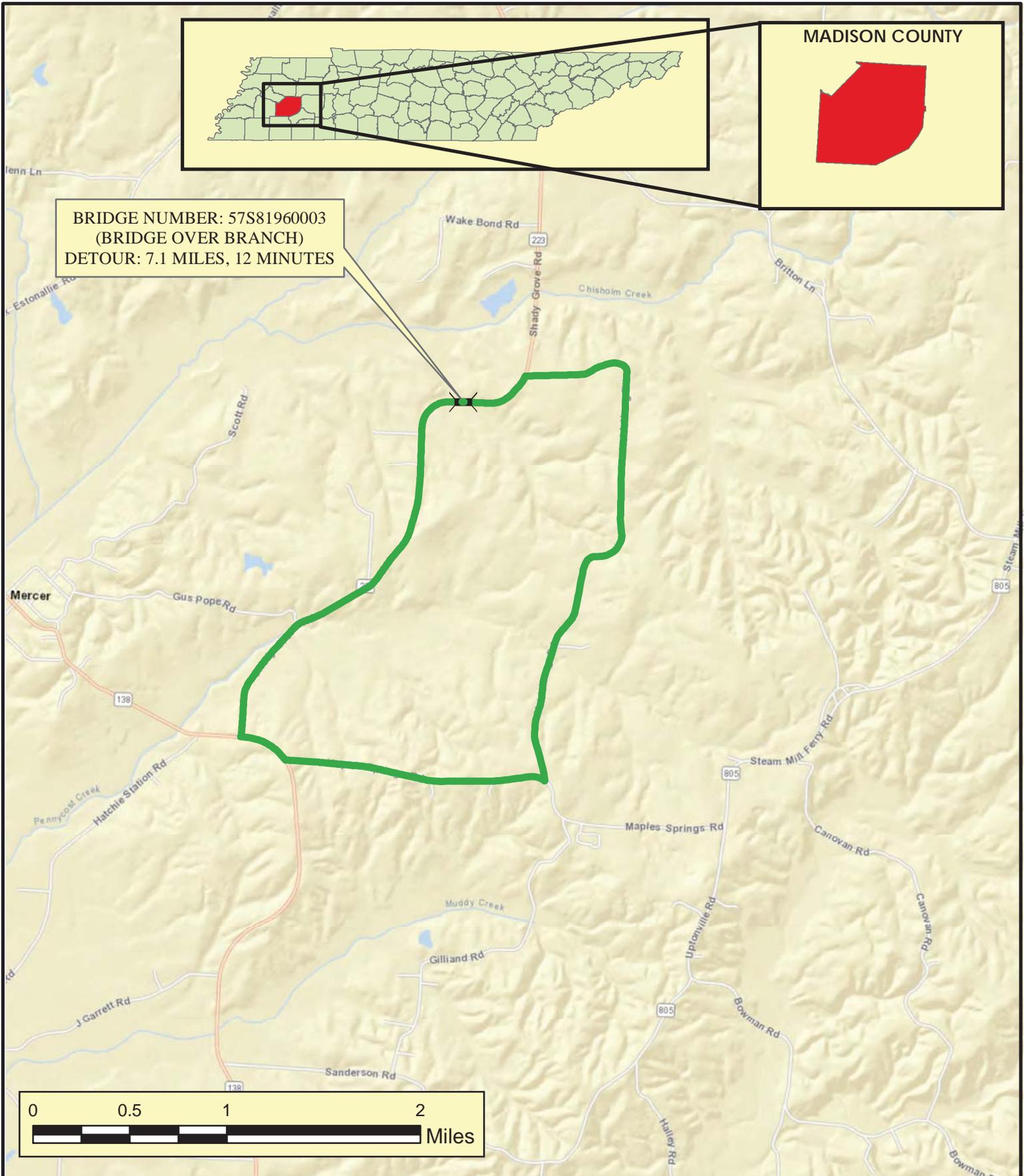


BRIDGE NUMBER: 57S81960003  
 (BRIDGE OVER BRANCH)  
 DETOUR: 30.6 MILES, 38 MINUTES



**OFFICIAL DETOUR MAP**  
**BRIDGE TIR**  
**STATE ROUTE 223 (SHADY GROVE ROAD)**  
**BRIDGE OVER BRANCH (LM 2.28)**  
**MADISON COUNTY**





**LOCAL ROUTE DETOUR MAP**  
**BRIDGE TIR**  
**STATE ROUTE 223 (SHADY GROVE ROAD)**  
**BRIDGE OVER BRANCH (LM 2.28)**  
**MADISON COUNTY**



# COST ESTIMATE SUMMARY

**Route:** SR223 STATE ROUTE 223 (SHADY GROVE ROAD)  
**Description:** REPLACEMENT OF BRIDGE OVER BRANCH  
**County:** MADISON  
**Length:** 0.05 MILES  
**Date:** March 9, 2018



DESCRIPTION	LOCAL	STATE	FEDERAL	TOTAL
	0%	100%	0%	
<b>Construction Items</b>				
Pavement Removal	\$0	\$3,800	\$0	\$3,800
Asphalt Paving	\$0	\$29,500	\$0	\$29,500
Concrete Pavement	\$0	\$0	\$0	\$0
Drainage	\$0	\$7,100	\$0	\$7,100
Appurtenances	\$0	\$0	\$0	\$0
Structures	\$0	\$107,600	\$0	\$107,600
Fencing	\$0	\$0	\$0	\$0
Signalization	\$0	\$0	\$0	\$0
Railroad Crossing or Separation	\$0	\$0	\$0	\$0
Earthwork	\$0	\$73,200	\$0	\$73,200
Clearing and Grubbing	\$0	\$10,600	\$0	\$10,600
Seeding & Sodding	\$0	\$2,600	\$0	\$2,600
Rip-Rap or Slope Protection	\$0	\$0	\$0	\$0
Guardrail	\$0	\$24,500	\$0	\$24,500
Signing	\$0	\$300	\$0	\$300
Pavement Markings	\$0	\$1,100	\$0	\$1,100
Maintenance of Traffic	\$0	\$10,900	\$0	\$10,900
Mobilization (5%)	\$0	\$13,600	\$0	\$13,600
Other Items = 10%	\$0	\$28,500	\$0	\$28,500
Const. Contingency = 15%	\$0	\$30,900	\$0	\$30,900
<b>Construction Estimate</b>	<b>\$0</b>	<b>\$344,200</b>	<b>\$0</b>	<b>\$344,200</b>
<b>Interchanges &amp; Unique Intersections</b>				
Roundabouts	\$0	\$0	\$0	\$0
Interchanges	\$0	\$0	\$0	\$0
<b>Right-of-Way &amp; Utilities</b>				
	LOCAL	STATE	FEDERAL	TOTAL
	0%	100%	0%	
Right-of-Way	\$0	\$10,200	\$0	\$10,200
Utilities	\$0	\$0	\$0	\$0
<b>Preliminary &amp; Construction Engineering and Inspection</b>				
Prelim. Eng. 10%	\$0	\$35,400	\$0	\$35,400
Const. Eng. & Inspec. 10%	\$0	\$35,400	\$0	\$35,400
<b>Total Project Cost</b>	<b>\$0</b>	<b>\$425,200</b>	<b>\$0</b>	<b>\$ 425,000</b>

# PAY ITEM SUMMARY

TDOT PAY ITEM	TDOT DESCRIPTION	UNIT	TOOL QUANTITIES	ADDITIONAL QUANTITIES	TOOL QUANTITIES + ADDITIONAL QUANTITIES	Statewide UNIT COST	TOTAL COST
<b>Pavement Removal</b>							
415-01.02	Cold Planning Bituminous Pavement	SY	486		486	\$ 7.64	\$ 3,709.56
PAVEMENT REMOVAL TOTAL (ROUNDED)							\$ 3,800
<b>Asphalt Roads</b>							
303-01	Mineral Aggregate, Type A Base, Grading D	TON	571		571	\$ 32.05	\$ 18,291.17
307-02.01	Asphalt Concrete Mix (PG70-22) (BPMB-HM) Grading A	TON	19		19	\$ 101.33	\$ 1,886.85
307-02.02	Asphalt Cement (PG70-22)(BPMB-HM) Grading A-S	TON	0		0	\$ 727.26	\$ 317.95
307-02.03	Aggregate (BPMB-HM) Grading A-S Mix	TON	14		14	\$ 74.35	\$ 1,051.00
307-02.08	Asphalt Concrete Mix (PG70-22) (BPMB-HM) Grading B-M2	TON	12		12	\$ 113.84	\$ 1,388.56
402-01	Bituminous Material For Prime Coat (PC)	TON	0		0	\$ 713.72	\$ 266.82
402-02	Aggregate For Cover Material (PC)	TON	1		1	\$ 66.14	\$ 89.25
403-01	Bituminous Material For Tack Coat (TC)	TON	0		0	\$ 781.25	\$ 191.67
411-01.07	ACS (PG64-22) GR "E"	TON	13		13	\$ 112.58	\$ 1,469.71
411-02.10	ACS Mix(PG70-22) Grading D	TON	39		39	\$ 115.32	\$ 4,535.79
PAVING TOTAL (ROUNDED)							\$ 29,500
<b>Concrete Roads</b>							
CONCRETE RAMPS AND ROADWAYS TOTAL (ROUNDED)							\$ -
<b>Drainage</b>							
607-05.02	24" Concrete Pipe Culvert (Class III)	LF	29		29	\$ 85.54	\$ 2,478.94
611-07.01	Class A Concrete (Pipe Endwalls)	CY	1		1	\$ 1,054.82	\$ 1,562.39
611-07.02	Steel Bar Reinforcement (Pipe Endwalls)	LB	141		141	\$ 2.31	\$ 325.19
710.02	Aggregate Underdrains (with pipe)	LF	486		486	\$ 5.46	\$ 2,652.25
DRAINAGE TOTAL (ROUNDED)							\$ 7,100
<b>Appurtenances</b>							
ROADWAY AND PAVEMENT APPURTENANCES TOTAL (ROUNDED)							\$ -
<b>Earthwork &amp; Mineral</b>							
105-01	Construction Stakes, Lines, and Grades	LS	1	-0.8	0.2	\$ 112,407.96	\$ 22,481.59
203-01	Road & Drainage Excavation (Unclassified)	CY	1727		1727	\$ 16.79	\$ 28,994.94
203-03	Borrow Excavation (Unclassified)	CY	1439		1439	\$ 15.04	\$ 21,646.34
EARTHWORK & MINERAL TOTAL (ROUNDED)							\$ 73,200
<b>Structures</b>							
N/A	Removal of Bridge	SF	804		804	\$ 20.00	\$ 16,072.00
N/A	New Bridge (Box)	SF	871		871	\$ 105.00	\$ 91,455.00
STRUCTURES TOTAL (ROUNDED)							\$ 107,600
<b>Interchanges and Unique Intersections</b>							
INTERCHANGES AND UNIQUE INTERSECTIONS TOTAL (ROUNDED)							\$ -
<b>Lighting &amp; Signalization</b>							
LIGHTING & SIGNALIZATION TOTAL (ROUNDED)							\$ -
<b>Guardrail</b>							
705-01.01	Guardrail at Bridge Ends	LF	100		100	\$ 73.64	\$ 7,364.49
705-02.02	Single Guardrail (Type 2)	LF	134		133,584	\$ 18.82	\$ 2,514.27
705-04.07	Tan Energy Absg Term (NCHRP, 350, TL3)	EA	5	-1	4	\$ 2,352.59	\$ 9,410.38
705-04.09	Earth Pad for Type 38 GR End Treatment	EA	5	-1	4	\$ 1,294.80	\$ 5,179.21
GUARDRAIL TOTAL (ROUNDED)							\$ 24,500
<b>Seeding and Sodding</b>							
801-01	Seeding (With Mulch)	UNIT	21		21	\$ 78.25	\$ 1,662.90
801-01.07	Temporary Seeding (With Mulch)	UNIT	16		16	\$ 29.94	\$ 477.19
801-02	Seeding (Without Mulch)	UNIT	16		16	\$ 28.52	\$ 454.60
SODDING TOTAL (ROUNDED)							\$ 2,600
<b>Maintenance of Traffic</b>							
N/A	Traffic Control	LS	1		1	\$ -	\$ 10,412.00
712-02.02	Interconnected Portable Barrier Rail	LF	12		12	\$ 31.96	\$ 388.14
MAINTENANCE OF TRAFFIC TOTAL (ROUNDED)							\$ 10,900
<b>Signs</b>							
Not Listed	Signs (Construction)	LS	1		1	\$ -	\$ 300
SIGNING TOTAL (ROUNDED)							\$ 300
<b>Pavement Markings</b>							
716-13.06	Spray Thermo P.M. (40 mil 4")	LM	0.3		0.3	\$ 2,889.10	\$ 1,010.03
PAVEMENT MARKINGS TOTAL (ROUNDED)							\$ 1,100
<b>Fencing</b>							
FENCE TOTAL (ROUNDED)							\$ -
<b>Rip-Rap</b>							
RIP-RAP & SLOPE PROTECTION TOTAL (ROUNDED)							\$ -
<b>Clearing and Grubbing</b>							
201-01	Clearing and Grubbing	LS		0.04	0.04	\$ 264,380.06	\$ 10,575.20
CLEAR AND GRUBBING TOTAL (ROUNDED)							\$ 10,600.00
<b>Railroad At-Grade Crossing</b>							
RAILROAD CROSSING OR SEPARATION TOTAL (ROUNDED)							\$ -
<b>Utilities</b>							
UTILITIES TOTAL (ROUNDED)							\$ -
<b>Right-of-Way</b>							
N/A	Right-of-Way	LS	1	27	28	\$ 362.42	\$ 10,147.88
RIGHT-OF-WAY TOTAL (ROUNDED)							\$ 10,200.00

# BRIDGE TIR

Madison  
State Route 223/Shady Grove Road

LOCATION			
Bridge #:	57S81960003	Feature Crossed:	Branch
Road Name:	StateRoute223/ShadyGroveRoad	Log mile:	2.28
Route ID:	SR223	System:	5-STP Rural, State
City:	Mercer	Functional Class:	Rural Collector
County:	Madison	State Project Number	57039-0230-04
PIN:	124712.00		

ROADWAY		
	Existing	Proposed (Preliminary Design Estimate)
Design Standard		RD01-TS-2 / 2011 Green Book
<b>Route Characteristics</b>		
AADT:	610	1120
AADT Year:	2022	2042
Terrain:	Rolling	Rolling
No. Lanes:	2	2
Speed(Posted):	45	45
Speed (Design):		45
<b>Approach Character.</b>		
Lane Width (ft):	9	11
Shoulder Width (ft):	2	3
ROW Width (ft):	60	70
ROW Tracts Affected		2
ROW Required (acre)		0.06
Cross Section Width (ft):	18/22/60	22/28/70
Approach Length (ft):		120' (east), 120' (west)
Alignment:	tangent	tangent
Grade:		grade to remain the same as existing
Surface Material:	Pavement	Pavement
Sidewalks (R/L):	No	No
App. Lower Than Structure	No	No
Utilities (list)	N/A	N/A
Utilities to be Relocated	N/A	N/A
Comments		

# BRIDGE TIR

Madison  
State Route 223/Shady Grove Road

STRUCTURE		
	Existing	Proposed (Preliminary Design Estimate)
<b>Bridge Characteristics</b>		
Year Built	2017	
Load Limit	10 tons(inspection report), 40 tons(signed)	
Sufficiency Rating	27.4	
Skew	60	60
Structure Type	Precast Concrete Slab	Reinforced Concrete Box
Structures in Channel	No	No
Length (ft)	28	26
No. Spans (App./Main)	0   1	0   1
Width (curb to curb) (ft)	26.5	28
Width (o to o) (ft)	28.7	33.5
Sidewalks on Structure	No	No
Vert. Clearance (ft)	3	3.8
Superstructure Depth (in)	27	10.5
Girder Depth (in)	18	n/a
Finish Grade-Low Girder (in)	20	10.5
High Water Marks	N/A	
Bridge Rail Type	Guardrail	Guardrail
Bridge Rail Height (ft)	2.7	2.25
Indication Overtopping	No	
Local Scour	No	
Obstructions	No	
Other Structures	N/A	N/A
Comments	Floating maintenance replaced original structure with a temporary structure. Substructure is timber.	

# BRIDGE TIR

Madison  
State Route 223/Shady Grove Road

## FLOW RATES (from USGS StreamStats)

Drainage Area (sq. miles)	0.76
10 Year Discharge Rate (Q10) cfs	631
50 Year Discharge Rate (Q50) cfs	839
100 Year Discharge Rate (Q100) cfs	922

## CHANNEL

Depth (ft)	N/A
Width of Normal Flow (ft)	14
Depth of Normal Flow (ft)	N/A
Skew of Channel with Roadway	60
Type of Material in Stream Bed	silt
Type of Vegetation on Banks	low growth, large timber
Are Channel Banks Stable	No
Signs of Stream Aggradation	No
Signs of Stream Degradation	No
Drift or Drift Potential	Yes
Comments	

## FLOODPLAIN

Skew Same as Channel	Yes
Symmetrical About Channel	Yes
Approx. Floor Elevations	N/A
Type of Vegetation in Floodplain	low growth, large timber, grass
Any Buildings in Floodplain	No
Flood Information From Locals	N/A
Comments	

## MAINTENANCE OF TRAFFIC

Method of Maintaining Traffic	temporary detour
Description	<p><u>Official Detour:</u> Detour thru-traffic north/east of bridge onto Britton Lane/State Route 223 heading north, next onto Denmark Jackson Road/State Route 223 heading east, then onto Smith Lane/State Route 223 heading north, turn onto Airways Boulevard/Brownsville Highway/State Route 1/U.S. Highway 70 heading west, turn onto State Route 138 heading south, lastly back onto Shady Grove Road/State Route 223. Detour thru-traffic south/west of bridge using the same route in reverse order. This is the only detour route that will be signed.</p>
Comments	<p><u>Detour for Local Traffic:</u> Detour thru-traffic north/east of bridge onto Heidelberg Road heading east, next onto Maple Springs Road heading west, then onto State Route 138 heading west, lastly back onto State Route 223 heading north. Detour thru-traffic south/west of bridge using the same route in reverse order.</p>

**TENNESSEE DEPARTMENT OF TRANSPORTATION  
STRATEGIC TRANSPORTATION INVESTMENTS DIVISION**

PROJECT NO.: 57039-0230-04 ROUTE: S.R. 223  
 COUNTY: MADISON CITY: \_\_\_\_\_  
 PROJECT PIN NUMBER: 124712.00  
 PROJECT DESCRIPTION: BRIDGE OVER BRANCH @ L.M. 2.28

**DIVISION REQUESTING:**

MAINTENANCE  PAVEMENT DESIGN   
 S.T.I.D.  STRUCTURES   
 PROG. DEVELOPMENT & ADM.  SURVEY & ROADWAY DESIGN   
 PUBLIC TRANS. & AERO.  TRAFFIC SIGNAL DESIGN   
 OTHER   
 YEAR PROJECT PROGRAMMED FOR CONSTRUCTION: \_\_\_\_\_  
 PROJECTED LETTING DATE: \_\_\_\_\_

**TRAFFIC ASSIGNMENT:**

BASE YEAR		DESIGN YEAR					DESIGN ROADWAY % TRUCKS		DESIGN AVERAGE DAILY LOADS	
AADT	YEAR	AADT	DHV	%	YEAR	DIR.DIST.	DHV	AADT	FLEX	RIGID
610	2022	1,120	1,460	13	2042	65-35	10	15		

REQUESTED BY: NAME CALEB SMITH DATE 11/6/17  
 DIVISION S.T.I.D.  
 ADDRESS 505 DEADERICK STREET  
NASHVILLE, TN. 37243

REVIEWED BY: TONY ARMSTRONG *Tony Armstrong* DATE 11.30.17  
 TRANSPORTATION MANAGER 1  
 SUITE 1000, JAMES K. POLK BUILDING

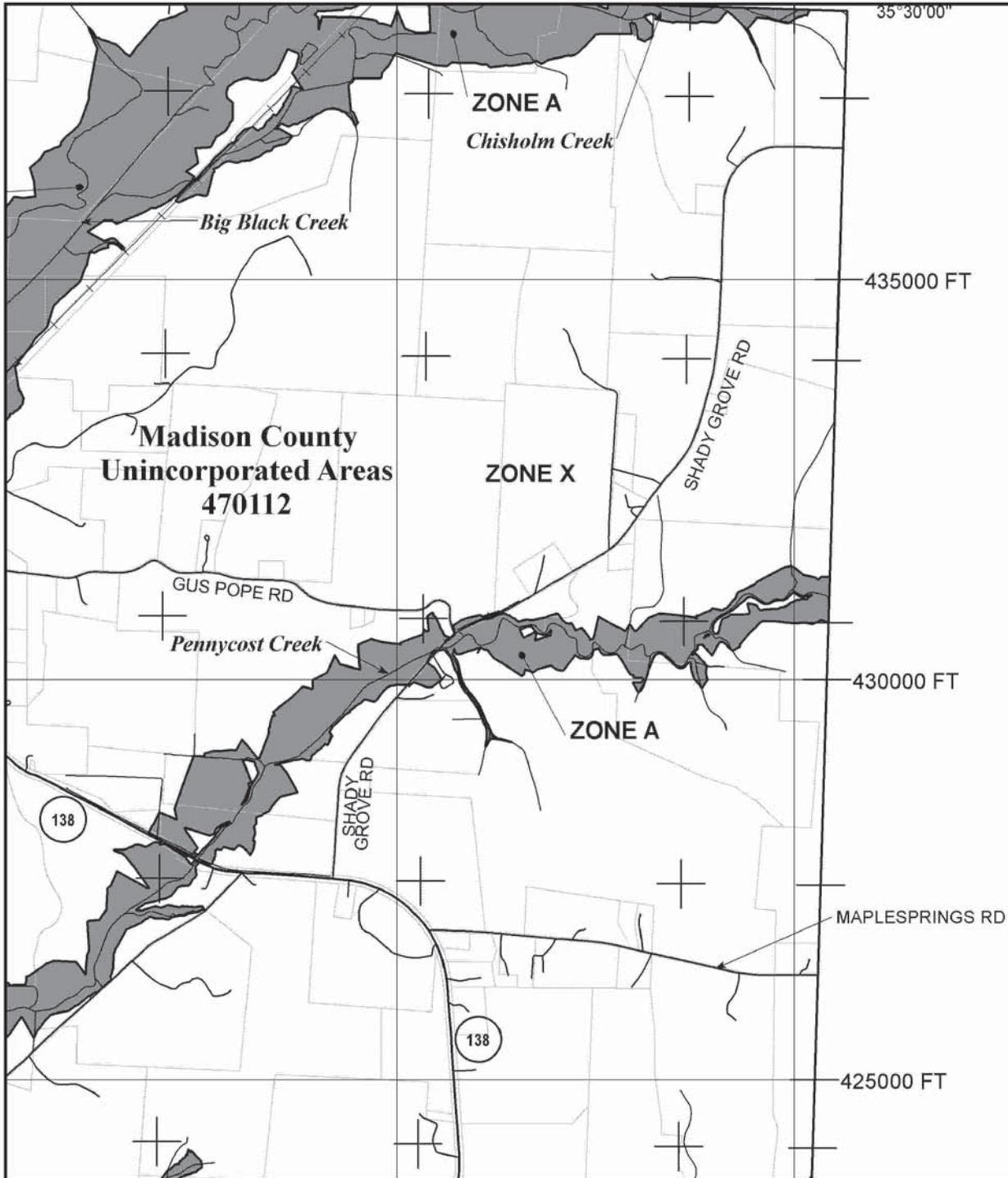
APPROVED BY: JIM WATERS *Jim Waters* DATE 12/1/17  
 ASSISTANT DIRECTOR  
 SUITE 1000, JAMES K. POLK BUILDING

**COMMENTS:**

THIS TRAFFIC BASED ON 2017 CYCLE COUNTS. THE DESIGN YEAR TRAFFIC IS BASED ON GROWTH RATE FROM THE JACKSON MPO COMPUTER ASSIGNMENT MODEL.

**DHV'S ARE NOT REQUIRED FOR SIDE ROADS LESS THAN 1000 AADT.**

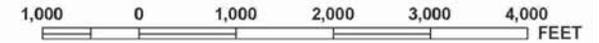
NOTE: FOR BRIDGE REPLACEMENT PROJECTS, ADLs ARE NOT REQUIRED FOR ADTs OF 1000 OR LESS AND PERCENTAGE OF TRUCKS OF 7% OR LESS.



and Insurance Program at 1-800-638-6620.



MAP SCALE 1" = 2000'



NFP

PANEL 0375E

**FIRM**

**FLOOD INSURANCE RATE MAP  
MADISON COUNTY,  
TENNESSEE  
AND INCORPORATED AREAS**

**PANEL 375 OF 435**

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
MADISON COUNTY	470112	0375	E

Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.

**MAP NUMBER  
47113C0375E**

**MAP REVISED  
AUGUST 3, 2009**

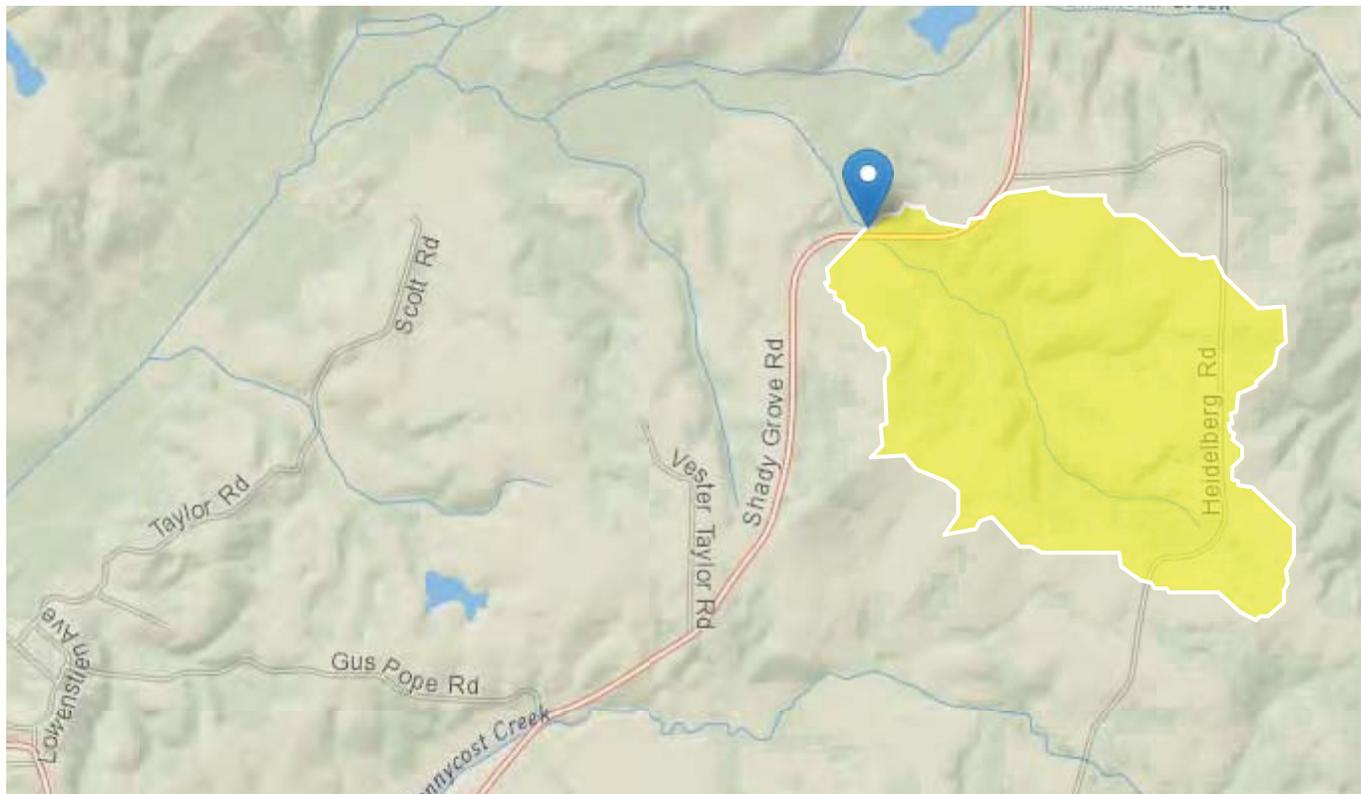


Federal Emergency Management Agency

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](http://www.msc.fema.gov)

# StreamStats Report

Region ID: TN  
 Workspace ID: TN20180105165620999000  
 Clicked Point (Latitude, Longitude): 35.49555, -89.00179  
 Time: 2018-01-05 10:55:51 -0600



## Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
CONDA	Area that contributes flow to a point on a stream	0.76	square miles
DRNAREA	Area that drains to a point on a stream	0.76	square miles
RECESS	Number of days required for streamflow to recede one order of magnitude when hydrograph is plotted on logarithmic scale	151	days per log cycle
PERMGTE2IN	Percent of area underlain by soils with permeability greater than or equal to 2 inches per hour	99.166	percent
CLIMFAC2YR	Two-year climate factor from Lichy and Karlinger (1990)	2.402	dimensionless
SOILPERM	Average Soil Permeability	2.015	inches per hour

## Peak-Flow Statistics Parameters [DAOnly Area 4]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
CONDA	Contributing Drainage Area	0.76	square miles	0.76	2308

**Peak-Flow Statistics Flow Report** [DAOnly Area 4]

PII: Prediction Interval-Lower, Plu: Prediction Interval-Upper, SEp: Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	PII	Plu	SE	SEp	Equiv. Yrs.
2 Year Peak Flood	377	ft <sup>3</sup> /s	197	722	38.7	38.7	1.8
5 Year Peak Flood	532	ft <sup>3</sup> /s	284	996	37.2	37.2	2.4
10 Year Peak Flood	631	ft <sup>3</sup> /s	333	1200	38	38	3.1
25 Year Peak Flood	752	ft <sup>3</sup> /s	384	1470	40.1	40.1	3.8
50 Year Peak Flood	839	ft <sup>3</sup> /s	414	1700	42.2	42.2	4.2
100 Year Peak Flood	922	ft <sup>3</sup> /s	438	1940	44.7	44.7	4.4
500 Year Peak Flood	1120	ft <sup>3</sup> /s	481	2590	51.1	51.1	4.7

*Peak-Flow Statistics Citations*

Law, G.S., and Tasker G.D.,2003, Flood-Frequency Prediction Methods for Unregulated Streams of Tennessee, 2000: U.S. Geological Survey Water-Resources Investigations Report 03-4176, 79p. (<http://pubs.usgs.gov/wri/wri034176/>)

**Low-Flow Statistics Parameters** [Low Flow West Region 2009 5159]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.76	square miles	2	2405
RECESS	Recession Index	151	days per log cycle	32	350
PERMGTE2IN	Percent permeability gte 2 in per hr	99.166	percent	2	98

**Low-Flow Statistics Disclaimers** [Low Flow West Region 2009 5159]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors

**Low-Flow Statistics Flow Report** [Low Flow West Region 2009 5159]

Statistic	Value	Unit
7 Day 10 Year Low Flow	0.0882	ft <sup>3</sup> /s
30 Day 5 Year Low Flow	0.112	ft <sup>3</sup> /s

*Low-Flow Statistics Citations*

Law, G.S., Tasker, G.D., and Ladd, D.E.,2009, Streamflow-characteristic estimation methods for unregulated streams of Tennessee: U.S. Geological Survey Scientific Investigations Report 2009-5159, 212 p., 1 pl. (<http://pubs.usgs.gov/sir/2009/5159/>)

## Annual Flow Statistics Parameters [Low Flow West Region 2009 5159]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.76	square miles	2	2405
RECESS	Recession Index	151	days per log cycle	32	350
CLIMFAC2YR	Tennessee Climate Factor 2 Year	2.402	dimensionless	2.307	2.455
PERMGTE2IN	Percent permeability gte 2 in per hr	99.166	percent	2	98

## Annual Flow Statistics Disclaimers [Low Flow West Region 2009 5159]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors

## Annual Flow Statistics Flow Report [Low Flow West Region 2009 5159]

Statistic	Value	Unit
Mean Annual Flow	1.14	ft <sup>3</sup> /s

*Annual Flow Statistics Citations*

Law, G.S., Tasker, G.D., and Ladd, D.E., 2009, Streamflow-characteristic estimation methods for unregulated streams of Tennessee: U.S. Geological Survey Scientific Investigations Report 2009–5159, 212 p., 1 pl. (<http://pubs.usgs.gov/sir/2009/5159/>)

## Seasonal Flow Statistics Parameters [Low Flow West Region 2009 5159]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.76	square miles	2	2405
RECESS	Recession Index	151	days per log cycle	32	350
PERMGTE2IN	Percent permeability gte 2 in per hr	99.166	percent	2	98

## Seasonal Flow Statistics Disclaimers [Low Flow West Region 2009 5159]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors

## Seasonal Flow Statistics Flow Report [Low Flow West Region 2009 5159]

Statistic	Value	Unit
Summer Mean Flow	0.462	ft <sup>3</sup> /s

*Seasonal Flow Statistics Citations*

Law, G.S., Tasker, G.D., and Ladd, D.E., 2009, Streamflow-characteristic estimation methods for unregulated streams of Tennessee: U.S. Geological Survey Scientific Investigations Report 2009–5159, 212 p., 1 pl.

(<http://pubs.usgs.gov/sir/2009/5159/>)

### Flow-Duration Statistics Parameters [Low Flow West Region 2009 5159]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.76	square miles	2	2405
RECESS	Recession Index	151	days per log cycle	32	350
PERMGTE2IN	Percent permeability gte 2 in per hr	99.166	percent	2	98
CLIMFAC2YR	Tennessee Climate Factor 2 Year	2.402	dimensionless	2.307	2.455
SOILPERM	Average Soil Permeability	2.015	inches per hour	0.97	2.44

### Flow-Duration Statistics Disclaimers [Low Flow West Region 2009 5159]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors

### Flow-Duration Statistics Flow Report [Low Flow West Region 2009 5159]

Statistic	Value	Unit
99.5 Percent Duration	0.0804	ft <sup>3</sup> /s
99 Percent Duration	0.0886	ft <sup>3</sup> /s
98 Percent Duration	0.0967	ft <sup>3</sup> /s
95 Percent Duration	0.116	ft <sup>3</sup> /s
90 Percent Duration	0.132	ft <sup>3</sup> /s
80 Percent Duration	0.166	ft <sup>3</sup> /s
70 Percent Duration	0.199	ft <sup>3</sup> /s
60 Percent Duration	0.196	ft <sup>3</sup> /s
50 Percent Duration	0.263	ft <sup>3</sup> /s
40 Percent Duration	0.374	ft <sup>3</sup> /s
30 Percent Duration	0.648	ft <sup>3</sup> /s
20 Percent Duration	1.12	ft <sup>3</sup> /s
10 Percent Duration	2.07	ft <sup>3</sup> /s

### *Flow-Duration Statistics Citations*

Law, G.S., Tasker, G.D., and Ladd, D.E., 2009, Streamflow-characteristic estimation methods for unregulated streams of Tennessee: U.S. Geological Survey Scientific Investigations Report 2009-5159, 212 p., 1 pl. (<http://pubs.usgs.gov/sir/2009/5159/>)

## CHECK LIST OF DETERMINANTS FOR LOCATION STUDY

If any of the following facilities or ESE categories are located within the project area or corridor, place an "x" in the blank opposite the item. Where more than one alternate is to be considered, place its letter designation in the blank.

1.	Agricultural land usage	X
2.	Airport (existing or proposed)	
3.	Commercial area, shopping center	
4.	Floodplains	
5.	Forested land	X
6.	Historical, cultural, or natural landmark	
7.	Industrial park, factory	
8.	Institutional usages	
	a. School or other educational institution	
	b. Church or other religious institution (Cemetery)	
	c. Hospital or other medical facility	
	d. Public building, e.g., fire station	
	e. Defense installation	
9.	Recreation usages	
	a. Park or recreational area	
	b. Game preserve or wildlife area	
10.	Residential establishment	
11.	Urban area, town, city, or community	
12.	Waterway, lake, pond, river, stream, spring	X
	Permit required: Coast Guard	
	Section 404	X
	TVA Section 26a review	
	NPDES	X
	Aquatic Resource Alteration	X
13.	Other	
14.	Location coordinated with local officials	
15.	Railroad crossings	
16.	Hazardous materials site	
	<u>Comments:</u> Additional environmental information includes perform fish study on High Bald Mad Tom and Naked Sand Darter.	

**BRIDGE TIR**Madison  
State Route 223/Shady Grove Road

<b>SITE VISIT ATTENDEES</b>			DATE: 1/11/2018
Name	Organization	Phone	Email
David Duncan	TDOT (STID)	615-532-6131	david.a.duncan@tn.gov
Joseph Clement	TDOT (STID)	615-770-1035	joseph.clement@tn.gov
Willie Coleman	TDOT Utilities	731-935-0160	willie.coleman@tn.gov
Robert Hope	TDOT Survey	731-935-0241	robert.hope@tn.gov
Branden Garcia	TDOT Operations	731-695-5776	branden.garcia@tn.gov
Burt Hutchins	R4 Project Dev.	731-935-0142	burt.hutchins@tn.gov
Nicholas Stephens	R4 Project Dev.	731-935-0133	nicholas.stephens@tn.gov
Evelyn DiOrio	R4 Env. Tech	731-935-0302	evelyn.diorio@tn.gov
Eric Philipps	R4 Env. Tech	731-935-0174	eric.philipps@tn.gov
Derek Ryan	R4 Traffic		derek.ryan@tn.gov
Brandon Taylor	KCI	615-559-0158	brandon.taylor@kci.com
Daniel Keener	KCI	980-288-6763	daniel.keener@kci.com
Drew Randolph	KCI	615-559-0157	drew.randolph@kci.com



Bridge Number



Upstream View from Bridge



Downstream View



Inlet



Outlet



Floodplain Downstream



Flood Plain Downstream looking towards Bridge



Flood Plain Upstream



Looking East from Bridge



Looking West from Bridge



Eastbound from Bridge



Westbound from Bridge



Weight Limit Sign at East Approach of Bridge



Connection to East Abutment on Inlet Side



Connection to West Abutment on Inlet Side



Pavement Cracking at East Abutment Connection



West Abutment

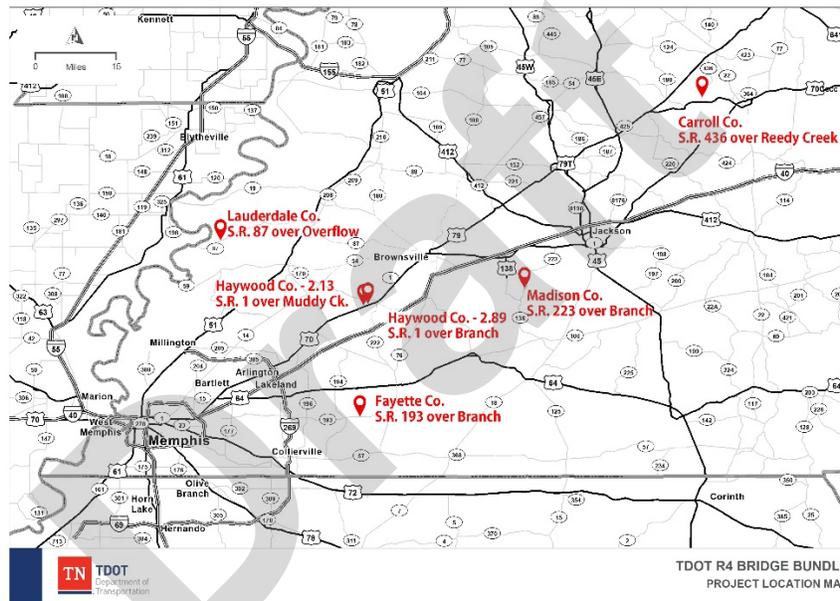


East Abutment



Bridge Beams

Pre- RFQ Contractor Review Meeting  
For  
Bridge Replacement Bundle, Region 4  
Design-Build Project DB1901  
(BR-STP-REG4(199), 98400-1216-94)  
Carroll, Haywood, Madison, Fayette, and Lauderdale Counties  
June 18, 2019, 10:00 am (C.T.) - 12:00pm (C.T.)  
Region 4 Auditorium  
300 Benchmark Place, Jackson, TN 38301



The Pre- RFQ Proposal meeting was held on June 18, 2019, at 10:00 am. (C.T.), TDOT Region 4 Auditorium. The meeting introduced attendees to the Design Build Bridge Bundle contract delivery method prior to the release of the RFQ. The meeting gave an overall introduction to the project as scoped, and included an opportunity for TDOT to answer questions about the project and process. The TDOT Project Management team for the project was present.

## PROJECT DESCRIPTION

The Tennessee Department of Transportation (TDOT) Construction Division is proposing construction of a Design-Build Bridge Replacement Project for TDOT Region 4 (Project). The Project is considered a pilot project for bundling bridge improvements under one Design-Build Contract (BR-STP-REG4(199), 98400-1216-94). The Project consists of the replacement of six (6) bridges, which are located in the following Tennessee counties: Carroll, Haywood, Madison, Fayette, and Lauderdale. The work generally includes the design and construction of the replacement structures and associated roadway, drainage, and pavement approaches and transitions. The bridges to be replaced are listed on the following pages. See additional information at the project website:

<https://www.tn.gov/tdot/tdot-construction-division/transportation-construction-alternative-contracting/bridge-replacement-bundle-region-4.html>

## Bridge Replacement Bundle, Region 4

### Design-Build Contract DB1901

(BR-STP-REG4(199), 98400-1216-94)

#### Carroll, Haywood, Madison, Fayette, and Lauderdale Counties

- **Bridge No. 1:** Log Mile 0.68 of SR-436 (Reedy Creek Road) over Reedy Creek in Carroll County – The current sufficiency rating of the bridge (ID 09S821330001) is 47.1. The existing structure consists of a four-span bridge with pre-stressed concrete beams and reinforced concrete deck having two (2) 9-foot travel lanes.
- **Bridge No. 2:** Log Mile 11.48 SR-193 (Macon Road) over Branch in Fayette County – The current sufficiency rating of the bridge (ID 24015420001) is 68.9. The existing structure consists of a two-span concrete channel beam bridge with timber substructures having two (2) 9-foot travel lanes.
- **Bridge No. 3:** Log Mile 2.89 SR-1 (US-70/79) over Branch in Haywood County – The current sufficiency rating of the bridge (ID 38SR0010003) is 37.1. The existing structure consists of a single-span precast concrete slab bridge with two (2) 12-foot travel lanes.
- **Bridge No. 4:** Log Mile 2.13 SR-1 (US-70/79) over Muddy Creek in Haywood County – The current sufficiency rating of the bridge (ID 38SR0010001) is 48.2. The existing structure consists of a two-span bridge with steel and concrete girders and reinforced concrete deck and two (2) 12-foot travel lanes.
- **Bridge No. 5:** Log Mile 3.88 SR-87 over Overflow in Lauderdale County – The current sufficiency rating of the bridge (ID 49SR0870011) is 49.5. The existing structure consists of a single-span steel I-beam with timber deck and asphalt overlay having two (2) 10-foot travel lanes.
- **Bridge No. 6:** Log Mile 2.28 SR-223 (Shady Grove Road) over Branch in Madison County – The sufficiency rating of the bridge (ID 57S81960003) is 27.4 (8/2017) and maintenance has replaced it with a temporary bridge. The original structure consisted of a single-span steel I-beam bridge with precast concrete deck panels having two (2) 9-foot travel lanes. The temporary bridge is a precast concrete slab.

## Meeting Presentation Slides

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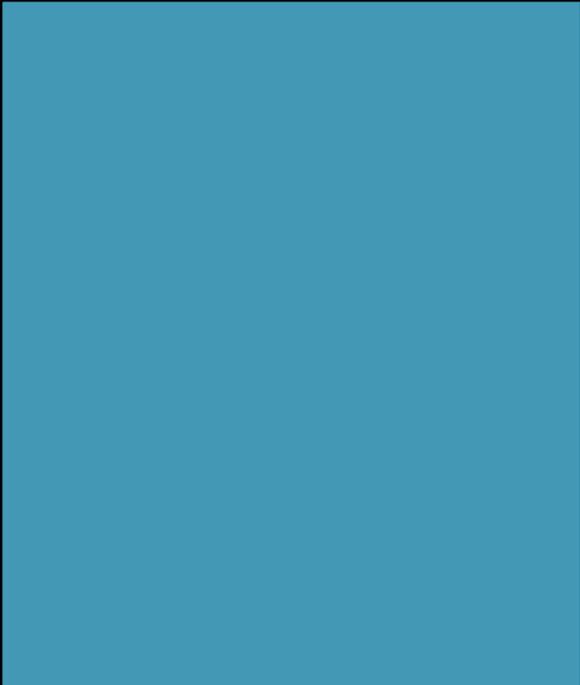


## Bridge Replacement Bundle

Region 4 – DB1901



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01 TDOT Design-Build Process

02 Project Specific Information

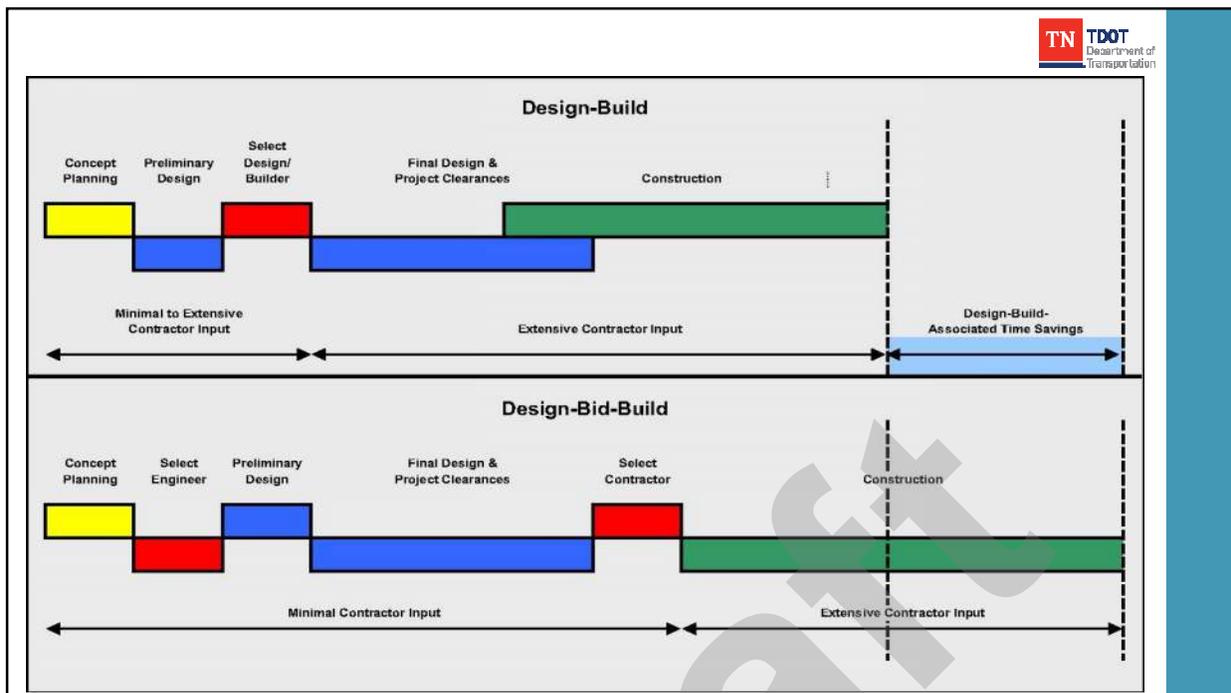
Draft



01 TDOT Design-Build Process



Draft



## Request for Qualifications (RFQ)

- Solicitation of RFQ (website only); RFQ Package is only released by email request to Lia Obaid (Lia.Obaid@tn.gov).
- The RFQ will:
  - Be released prior to the conclusion of the NEPA review process, if necessary.
  - State the general status of the NEPA process.
  - Outline the tentative general scope, description, location, and anticipated procurement process.
  - State the evaluation criteria and scoring of the Statement of Qualifications (SOQs)
  - Outline the basic SOQ format, schedule, stipend amount, DBE goal, and selection method for the RFP.
- The SOQ submittal package in response to the RFQ will need to include:
  - A letter of interest.
  - Response to all categories and evaluation criteria for scoring.
  - A demonstration of the Design-Builder's strengths and specialized capabilities.



## SOQ Scoring Criteria

- Design-Builder Experience
- Key Personnel and Organization
- Project Understanding and Approach
- Project Management Approach

Draft



## Short-Listing

- TDOT will short-list at least three (if any) of the most qualified Design-Builders.
- TDOT will notify all teams submitting SOQs of their selection results.
- The short-listed firms will be posted to the project website.
- Short-listed Design-Builders will be invited to submit proposals in response to the RFP.

## Request for Proposals (RFP)

- Approval of FHWA is required to release the RFP.
- Release of the RFP will be to the short-listed Design-Builder's by email.
- The RFP will further define the:
  - Contract requirements,
  - Proposal submittal instructions,
  - Scope of Work,
  - Project description and location,
  - Procurement schedule,
  - Specific evaluation criteria of the Technical Proposal,
  - Submittal criteria for the Price Proposal,
  - Selection method for the DB project, and
  - Stipend

## Request for Proposals (RFP continued)

- The RFP Document Structure will include:
  - RFP Contract Book 1 (Instructions to Design-Builders - ITDB)
  - RFP Contract Book 2 (Design-Build Contract)
  - RFP Contract Book 3 (Project Specific Information)
  - Reference Documents, such as the Department's:
    - DB Standard Guidance and Addendum,
    - Standard Specifications,
    - Supplemental Specifications,
    - Design Guidelines, and Addendums,
    - Construction Circular Letters,
    - Standard Drawings, and
    - Other programmatic plans and reference documents.

## Request for Proposals (RFP continued)

- The Design-Builder's Technical Proposal package will include:
  - Response to all categories of the evaluation criteria including the Technical Solution (Concept).
  - A clear demonstration of the Design-Builder's approach to:
    - Project Delivery,
    - Project Management,
    - Schedule Management,
    - Environmental Compliance,
    - Implementing Innovation, and
    - Considering Context Sensitive Solutions.
  - Oral Presentation/Interview.
  - Technical Proposals will be evaluated as Pass/Fail.
  - From passing Technical Proposals, Award of the Project will be to lowest Price Proposal (A + B Bidding).

# 02 Project Information

## Identifying and Allocating Risk

- This will be one Design-Build Contract with Six (6) Project Sites.
- Issues related to this Design-Build contract to consider include:

Utility Relocations	NEPA Commitments	Stream/Wetland Mitigation
Right-of-Way Acquisition	Permit Requirements	Staged Construction/MOT
Seismic Design	Hydraulic Design	Railroad Agreement
Third Party Involvement	DB Contract terms	Public Involvement
CPM Scheduling	Liquidated Damages	Geotechnical Investigations

## Scope of Work

- The Design-Builder's Scope of Work for the Project is anticipated to include, but not be limited to:
  - Final Design including Geotechnical Investigation,
  - Railroad Coordination and Insurance (for survey),
  - Removing and Replacing the Existing Bridge Structures,
  - Reconstruction of Roadway Approaches, as needed,
  - Erosion and Sediment Control,
  - Pavement Markings and Roadway Signing,
  - Providing for Maintenance of Traffic during construction,
  - Obtaining and meeting all requirements for Environmental Permits,
  - Compliance with all NEPA Commitments including mitigation design and construction,
  - Environmental Services and NEPA Document Reevaluation for Design-Builder changes, and
  - Right-of-way Acquisition.

## Scope of Work



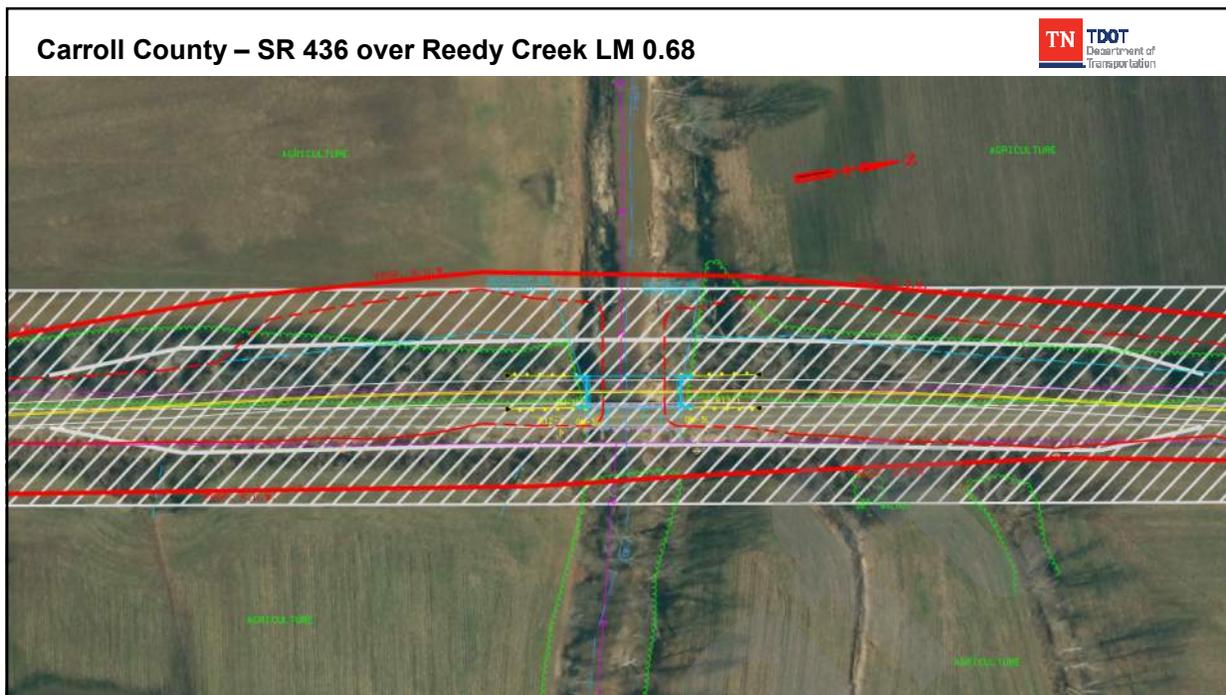
- TDOT's Scope of Work for the Project is anticipated to include but may not be limited to:
  - Utility Coordination for Chapter 86 Utility Relocations,
  - Railroad Coordination for access to railroad right-of-way (Haywood County), and
  - NEPA documentation for concept plans provided in the RFP.

### NOTES:

1. The project is currently being re-evaluated for NEPA due to the changes in design since the TIR documents were prepared. The Re-evaluations will be complete prior to FHWA approval for issuing the RFP. Any further changes to design requiring NEPA re-evaluation, will be the responsibility of the Design-Builder.
2. No Alternate Technical Concepts requiring Design Exceptions will be allowed.

## Carroll County – SR 436 over Reedy Creek, LM 0.68





**Carroll County – SR 436 over Reedy Creek LM 0.68**

TN TDOT  
Department of  
Transportation

**TIR Comparison**

TIR

- Design Speed - 50mph
- Typical: RD01-TS-2
- 2 Lanes @ 11' with 3' Shoulders
- Single Span 90' PS Girder
- 10' Alignment Shift
- ROW – 1.1 acres estimated
- MOT – One lane maintained with signal

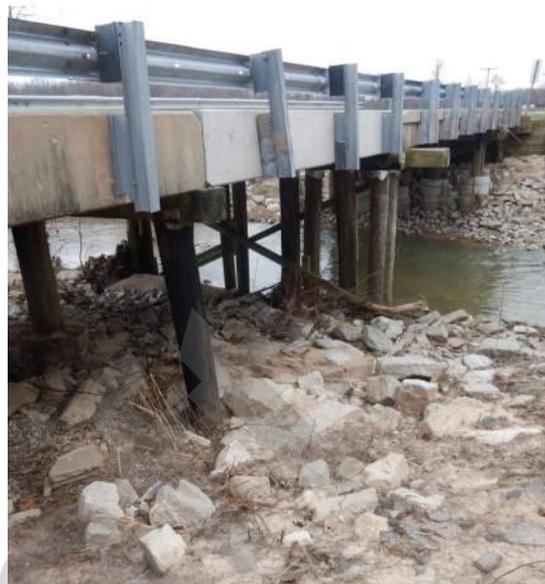
Proposed

- Design Speed - 45mph
- Typical: RD11-TS-2
- 2 Lanes @ 11' with 4' Shoulders
- Single Span 90' PS Girder
- 24' Alignment Shift
- ROW – 4.2 acres estimated
- MOT – One 16' lane maintained with signal (limited closure and detour may be allowed)

### Carroll County – SR 436 over Reedy Creek LM 0.68

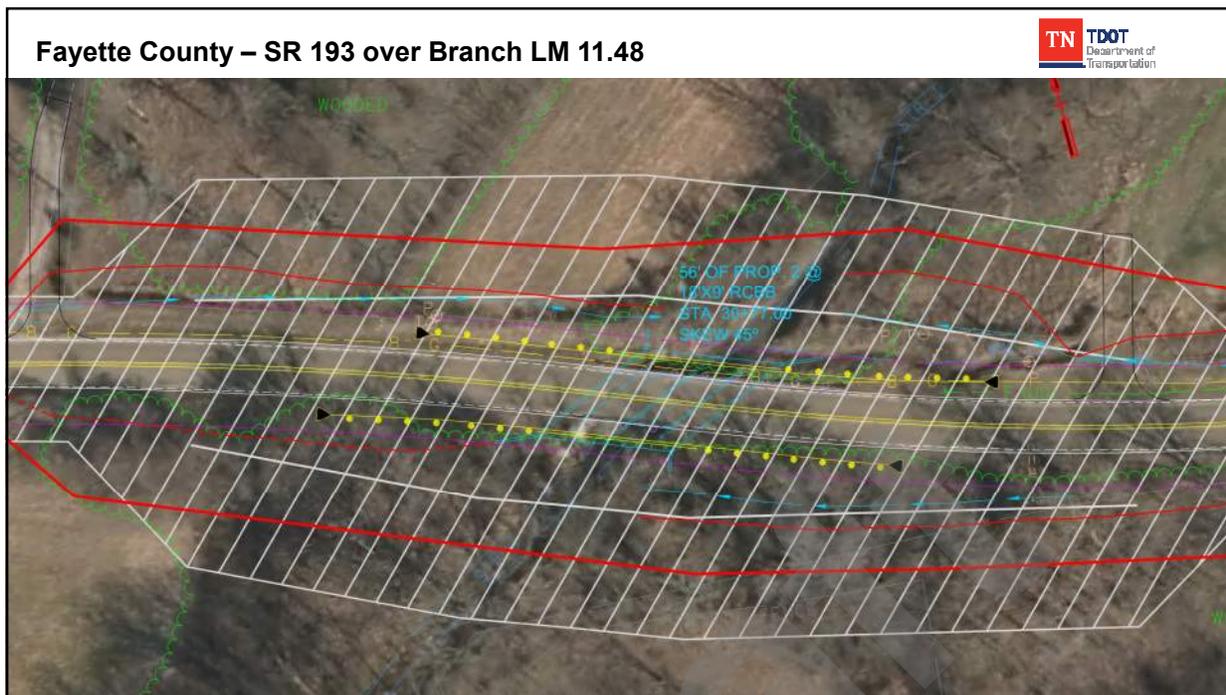


- Environmental Commitments
  - Seasonal Tree Removal for Bat Habitat
  - Cliff/Barn Swallows, Eggs, and Nests Disturbance Restrictions
  
- Utilities
  - OH Power (Carroll Co. Elec. Dept.)



### Fayette County – SR 193 over Branch LM 11.48





**Fayette County – SR 193 over Branch LM 11.48**



**TIR Comparison**

<u>TIR</u>	<u>Proposed</u>
<ul style="list-style-type: none"> <li>▪ Design Speed - 50mph</li> <li>▪ Typical: RD01-TS-2</li> <li>▪ 2 Lanes @ 11' with 6' Shoulders</li> <li>▪ Double 18'x6' RCBB</li> <li>▪ ROW – 0.16 acres estimated</li> <li>▪ MOT – One lane maintained with signal</li> </ul>	<ul style="list-style-type: none"> <li>▪ Design Speed - 45mph</li> <li>▪ Typical: RD11-TS-2</li> <li>▪ 2 Lanes @ 11' with 6' Shoulders</li> <li>▪ Double 18'x9' RCBB</li> <li>▪ ROW – 0.9 acres estimated</li> <li>▪ MOT – One lane maintained with signal (however, closure and detour may be allowed)</li> </ul>




### Fayette County – SR 193 over Branch LM 11.48

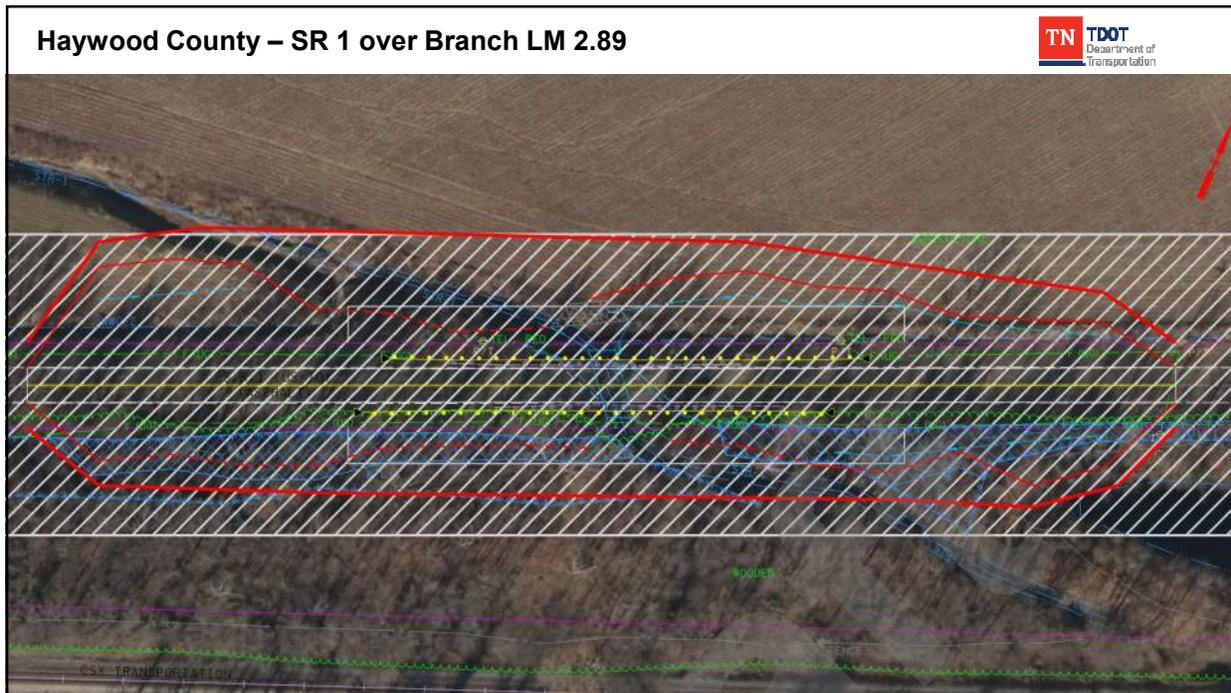


- Environmental Commitments
  - Cliff/Barn Swallows, Eggs, and Nests Disturbance Restrictions
  
- Utilities
  - Cable (AT&T)
  - Electric (Chickasaw Elec. Co-Op)
  - Gas (Somerville LG&W)
  - Telephone (AT&T)



### Haywood County – SR 1 over Branch LM 2.89





**Haywood County – SR 1 over Branch LM 2.89**

TN TDOT  
Department of  
Transportation

### TIR Comparison

<p><u>TIR</u></p> <ul style="list-style-type: none"> <li>▪ Design Speed - 55mph</li> <li>▪ Typical: RD01-TS-3</li> <li>▪ 2 Lanes @ 12' with 8' Shoulders</li> <li>▪ Double 18'x16' RCBB</li> <li>▪ ROW – 0.3 acres estimated</li> <li>▪ MOT – Detour</li> </ul>	<p><u>Proposed</u></p> <ul style="list-style-type: none"> <li>▪ Design Speed - 55mph</li> <li>▪ Typical: RD11-TS-3</li> <li>▪ 2 Lanes @ 12' with 6' Shoulders</li> <li>▪ Single 18'x16' RCBC</li> <li>▪ ROW – 1.95 acres estimated</li> <li>▪ MOT – One lane maintained with signal and closure is not allowed</li> </ul>
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### Haywood County – SR 1 over Branch LM 2.89



- Environmental Commitments
  - Cliff/Barn Swallows, Eggs, and Nests Disturbance Restrictions
  - Also, Potential Wetland Impacts
  
- Utilities
  - Cable (AT&T)
  - Electric (Southwest Elec. Memb.)
  - Telephone (AT&T)
  - Water (Town of Mason)



### Haywood County – SR 1 over Muddy Creek LM 2.13



### Haywood County – SR 1 over Muddy Creek LM 2.13



### Haywood County – SR 1 over Muddy Creek LM 2.13



#### TIR Comparison

##### TIR

- Design Speed - 55mph
- Typical: RD01-TS-3
- 2 Lanes @ 12' with 8' Shoulders
- Two Span 30'-40' PS Girder
- ROW – 0.3 acres estimated
- MOT – Detour

##### Proposed

- Design Speed - 55mph
- Typical: RD11-TS-3
- 2 Lanes @ 12' with 6' Shoulders
- Single Span 70' PS Girder
- ROW – 1.47 acres estimated
- MOT – One lane maintained with signal and closure is not allowed.



### Haywood County – SR 1 over Muddy Creek LM 2.13



#### ▪ Environmental Commitments

- None
- However, Potential Wetland Impacts & 303d List Stream

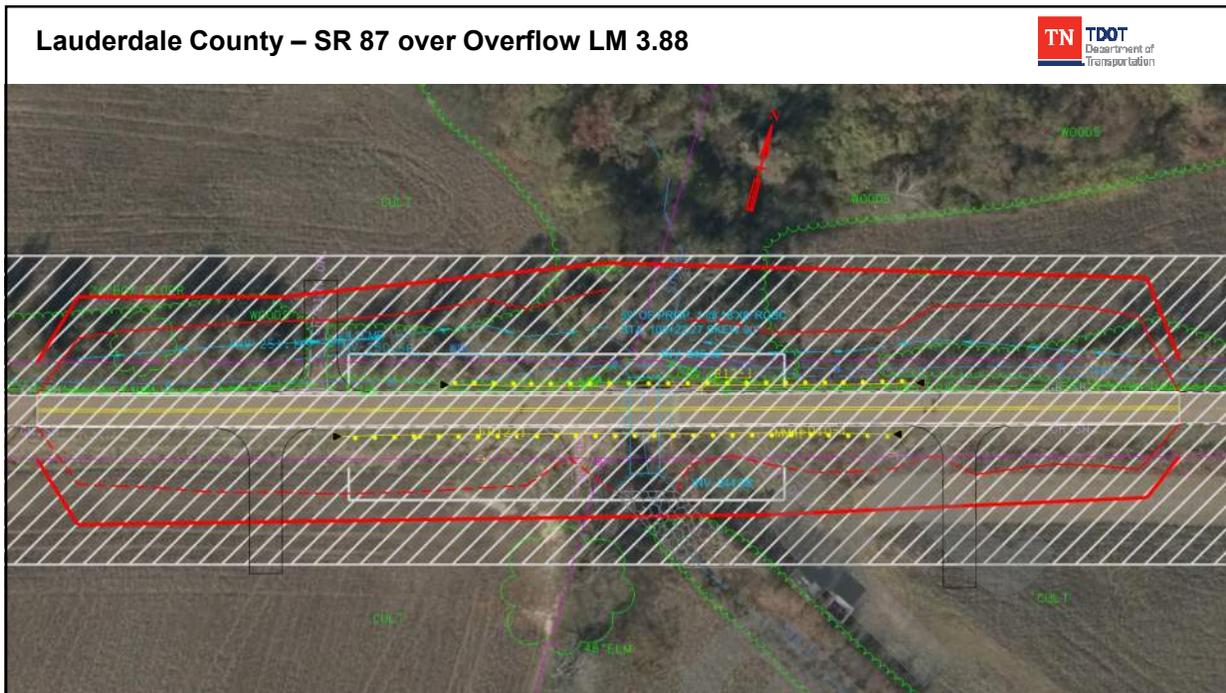
#### ▪ Utilities

- Cable (AT&T)
- Electric (Southwest Elec. Memb.)
- Telephone (AT&T)
- Water (Town of Mason)



### Lauderdale County – SR 87 over Overflow LM 3.88





**Lauderdale County – SR 87 over Overflow LM 3.88**

**TIR Comparison**

<p><u>TIR</u></p> <ul style="list-style-type: none"> <li>▪ Design Speed - 55mph</li> <li>▪ Typical: RD01-TS-2</li> <li>▪ 2 Lanes @ 11' with 3' Shoulders</li> <li>▪ Single Span 32' PS Girder</li> <li>▪ ROW – 0.14 acres estimated</li> <li>▪ MOT – One lane maintained with signal</li> </ul>	<p><u>Proposed</u></p> <ul style="list-style-type: none"> <li>▪ Design Speed - 55mph</li> <li>▪ Typical: RD11-TS-2</li> <li>▪ 2 Lanes @ 11' with 4' Shoulders</li> <li>▪ Single 18'x8' RCBC</li> <li>▪ ROW – 1.3 acres estimated</li> <li>▪ MOT – One 16' lane maintained with signal and closure is not allowed.</li> </ul>
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### Lauderdale County – SR 87 over Overflow LM 3.88



- Environmental Commitments

- Seasonal Tree Removal (Bat Habitat)

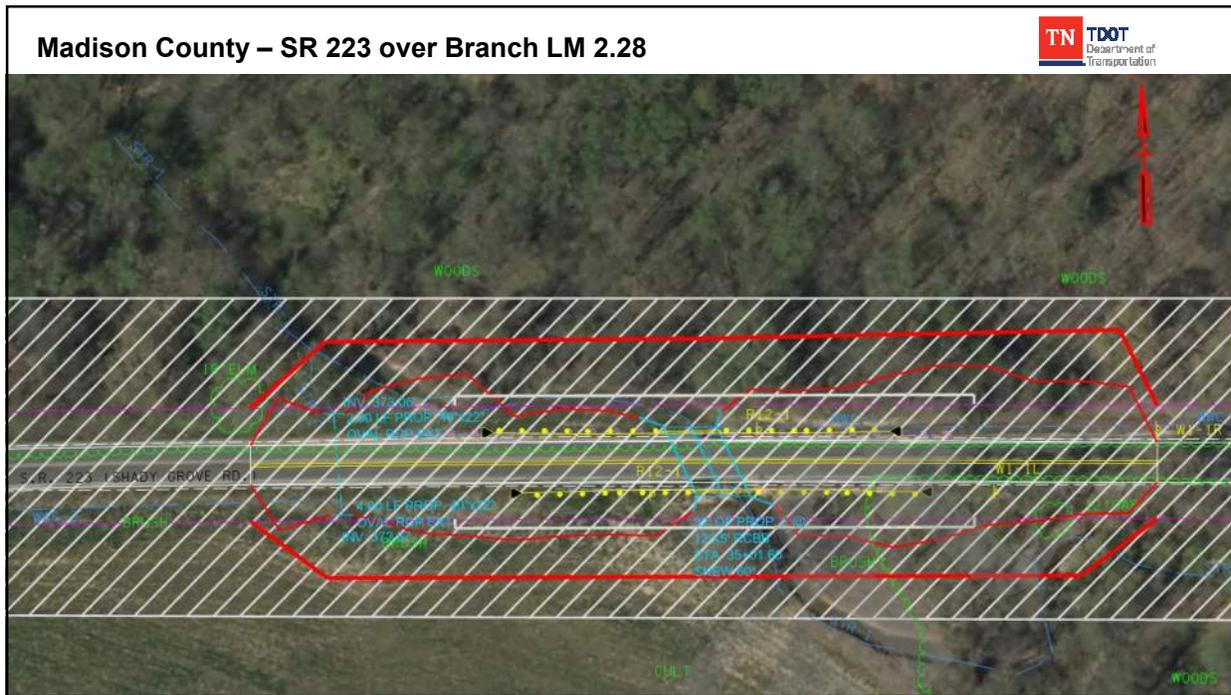
- Utilities

- Telephone (AT&T)
- Water (Lauderdale Co. Water Sys.)
- Electric (Southwest TN Elec. Membership Corp.)



### Madison County – SR 223 over Branch LM 2.28





**Madison County – SR 223 over Branch LM 2.28**

TN TDOT  
Department of  
Transportation

### TIR Comparison

<u>TIR</u>	<u>Proposed</u>
▪ Design Speed - 45mph	▪ Design Speed - 45mph
▪ Typical: RD01-TS-2	▪ Typical: RD11-TS-2
▪ 2 Lanes @ 11' with 3' Shoulders	▪ 2 Lanes @ 11' with 4' Shoulders
▪ Double 12'x5' RCBB	▪ Double 12'x5' RCBB
▪ ROW – 0.06 acres estimated	▪ ROW – 0.7 acres estimated
▪ MOT – Detour	▪ MOT – Detour (closure allowed)



## See Project Web Site for Information

- <https://www.tn.gov/tdot/tdot-construction-division/transportation-construction-alternative-contracting/bridge-replacement-bundle-region-4.html>

The screenshot shows the TDOT website interface. At the top right is the TDOT logo. Below it is a navigation bar with a search box and a 'Go to TN.gov' link. The main content area is titled 'Bridge Replacement Bundle Region 4' with the project ID 'DB1901'. A left-hand navigation menu lists various categories like 'Construction', 'Bid Lettings', 'Alternative Contracting', etc. The main content area contains a disclaimer: 'The files presented here are FOR INFORMATION ONLY. TDOT makes no warranty of any kind, express or implied, with respect to the file(s) and specifically makes no warranty that said file(s) shall be fit for any particular purpose. Furthermore, any description of said file(s) shall not be deemed to create an express warranty that such file(s) shall conform to said description. Receiver assumes all risk and liability for any losses, damages, claims or expenses resulting from the use or possession of any file(s) furnished by TDOT.' Below this are links for 'Contractor Review Meeting Information - 5/28/19', 'Current Consultant Selection Results - 1/10/19', and 'Reference Material - Updated 04/03/19'. A large 'Draft' watermark is overlaid diagonally across the page.

## Questions?



## R4BB Industry Review Meeting – Q&A

### Questions

1. Are Design-Builders precluded from contacting Utility owners that are potentially impacted by the project site?
  - a. No, the Design-Builders may contact the Utility owners directly but the teams will not be allowed to discuss the project with TDOT's Owner's Representative Consultant or anyone at TDOT other than Lia Obaid.
2. Has the ROW been purchased for the project sites?
  - a. No, it is currently planned for the Design-Builder to be responsible for Right-of-way (ROW) Acquisition
3. Have the existing bridges been evaluated for Asbestos Containing Material (ACM)?
  - a. Yes, results of the phase 1 studies are contained in the NEPA documents for each bridge site and available on the project web site. No ACM was detected at the bridge sites during the phase 1 studies.
4. Are the Design-Builder to provide full ROW services?
  - a. Yes, all services except for condemnation, which will be provided by the State.
5. Which party is responsible for writing the check for ROW and easement acquisition?
  - a. TDOT will pay the costs for purchasing ROW and easements, however, the Design-Builder will be responsible to provide (at their cost) all ROW acquisition services, such as appraisals, review appraisals, negotiations, relocations services, and all other services with the exception of those associated with condemnation.
6. Can bridge spans and culvert opening be modified from what is shown in the functional plans?
  - a. Yes, the Design-Builder can modify the structure type/span/etc. to give them the most economical solution at each site. Innovation is encouraged. The Design-Builder will be responsible for meeting TDOT design guidelines and specifications outlined in the RFP. Deviation from the design criteria or terms of the RFP will require an Alternate Technical Concept and TDOT approval. This process will be defined in the RFP.
7. The project will be awarded to Design-Builder with a passing technical proposal with the lowest price proposal using A+B bidding, is the "B" portion per site or per project?
  - a. The "B" portion of the bid will be based on the overall schedule. This will include ROW acquisition, Utility relocation, etc.
  - b. Note: each site is anticipated to have its own Liquidated Damages for exceeding the site specific construction durations specified in the RFP.
8. Are there timeline restrictions on TDOT's response to submitted ATC's?
  - a. ATC's will be submitted and evaluated prior to Design-Builder proposals are to be submitted. TDOT will hold one-on-one meetings with short listed teams to discuss design and ATC's. ATC's will be either accepted or denied at that time. ATC requirements and schedule, including deadline for TDOT response, will be further outlined in the RFP.
9. Has the stipend for this project been established?
  - a. No, this is still being evaluated but expected to be relatively similar to Polk County.
10. Have all Utility owners been notified of this project?
  - a. Yes, early utility contacts have been made to owners.
11. Will any project sites require Public Involvement/Meeting?
  - a. Public Involvement requirements have not been fully defined for the project sites but it is anticipated to be a Design-Builder scope of work.

## Meeting Sign-In Sheets

Draft



Region 4 Bridge Bundle Design-Build  
 Pre-RFQ Industry Review Meeting  
 Tuesday, June 18, 2019



NAME	ORGANIZATION	PHONE	EMAIL
Wes Huguen	Arcadis	423-596-3179	Wesley.Huguen@Arcadis.com
JEFF PORTER	QK4	859-608-6078	sporter@qk4.com
Clint Butler	Arcadis	423-310-0201	clint.butler@arcadis.com
KRISTY ALLEN	HAROLD COFFEN CONSTRUCTION	270-236-3102	KRISTY@HCOFFEN.COM
Charles Scott	Jones Bros Contractors LLC	615-218-9441	cscott@jonesbroscont.com
Jeff Hays	TDOT	615 791-3124	
John Rehm	Arcadis	615 414 6299	john.rehm@arcadis.com
JEFF ANDERSON	SUPERIOR CONSTRUCTION	615 917 7233	JEFF@SUPERIORCONSTRUCTION.COM
Matt Thomson	Thomson & Thomson, Inc.	731-668-1950	mthomson@tandtbridge.com
Shane Hollid	A24	901 372 0404	shaneh@a24.com
Henry Pate	Neel-Schaffer	615-383-2420	Henry.Pate@neel-schaffer.com
Sharm Sanders	TDOT	615-253-1234	sharm.sanders@tn.gov
Mark Christian	TERRACON	901-881-1670	mark.christian@terracon.com
Kent Starwalt	TRBA	615-255-5751	kent@trba.org
Adam Pipkin	Thomson & Thomson	731-668-1950	apipkin@tandtbridge.com
Tim Coads	DENEOT	731 431 2175	ty@denentconstruction.com
Will Daman & Tripp Hise	Deman	731. 424-6304	will@demanconstruction.com
	"	" - " - "	hise@demanconstruction.com





**From:** Fottrell, Gary (FHWA) [<mailto:Gary.Fottrell@dot.gov>]  
**Sent:** Friday, June 21, 2019 7:31 AM  
**To:** Joseph Santangelo  
**Cc:** Sharon Sanders  
**Subject:** [EXTERNAL] RE: SR-223 Bridge over Branch, Madison, 124712.00

**\*\*\* This is an EXTERNAL email. Please exercise caution. DO NOT open attachments or click links from unknown senders or unexpected email - STS-Security. \*\*\***

---

Joe, please process in-house since there is a feasible 7.1 mile detour.

Thanks  
Gary

---

**From:** Joseph Santangelo [<mailto:Joseph.Santangelo@tn.gov>]  
**Sent:** Friday, June 21, 2019 7:25 AM  
**To:** Fottrell, Gary (FHWA) <[Gary.Fottrell@dot.gov](mailto:Gary.Fottrell@dot.gov)>  
**Cc:** Sharon Sanders <[Sharon.Sanders@tn.gov](mailto:Sharon.Sanders@tn.gov)>  
**Subject:** SR-223 Bridge over Branch, Madison, 124712.00  
**Importance:** High

Good Morning Gary,

We have the subject bridge replacement project which will require an official detour route of 30.6 miles (see page 11 of the attached report) and a local detour route of 7.1 miles (see page 12 of the attached report). The proposed ROW acquisition is below an acre and there are no commitments on the project. Please advise as to whether TDOT can process the environmental document in-house or if it will require FHWA coordination/approval.

Thank you,



**Joe Santangelo** | Environmental Supervisor  
Environmental Division – NEPA Section  
James K. Polk Building, 9<sup>th</sup> Floor  
505 Deaderick Street  
Nashville, TN 37243  
p. 615-253-1454  
[Joseph.Santangelo@tn.gov](mailto:Joseph.Santangelo@tn.gov)

# NATIONAL BRIDGE INVENTORY TENNESSEE INVENTORY AND APPRAISAL REPORT



BRIDGE ID NUMBER: **57S81960003**  
 BRIDGE OWNER: **STATE OF TENNESSEE**  
 FIPS CODE: **00000**  
 ROAD NAME: **SHADY GROVE RD.**  
 CROSSING: **BRANCH**  
 LOCATION: **2.55 MI.SOUTH OF DENMARK**

COUNTY: **MADISON**  
 ROUTE: **SR223**  
 SPECIAL CASE: **0**  
 COUNTY SEQUENCE: **1**  
 LOG MILE: **2.28**  
 SUFFICIENCY RATING: **12.6**

## IDENTIFICATION

(16a,b) LATITUDE: **N 35.49525 DEGREES**  
 (17a,b) LONGITUDE: **W 89.00128 DEGREES**  
 (98a) BORDER BRIDGE STATE CODE: **N/A**  
 (98b) PERCENT SHARE: **N/A**  
 (99) BORDER BRIDGE NUMBER: **NOT APPLICABLE**

## BRIDGE TYPE AND MATERIAL

(43a) MAIN SPAN MATERIAL: **STEEL**  
 (44a) APPR SPAN MATERIAL: **NOT APPLICABLE**  
 (45) NUMBER OF MAIN SPANS: **1**  
 (46) NUMBER OF APPROACH SPANS: **0**  
 (107) TYPE OF DECK: **CONCRETE PRECAST PANELS**  
 (108) TYPE OF WEARING SURFACE AND DECK PROTECTION:  
 A) TYPE OF SURFACE: **ASPHALT**  
 B) TYPE MEMBRANE: **NONE**  
 C) TYPE PROTECTION: **NONE**

## AGE AND SERVICE

(27) YEAR THE BRIDGE WAS BUILT: **1952**  
 (106) YEAR THE BRIDGE WAS REHABILITATED: **N/A**  
 (42a) SERVICE ON BRIDGE: **HIGHWAY**  
 (42b) UNDER BRIDGE: **WATERWAY**  
 (28a) NUMBER OF LANES CARRIED BY BRIDGE: **2**  
 (28b) NUMBER OF LANES UNDER THE BRIDGE: **0**

## GEOMETRIC DATA

(48) MAXIMUM SPAN LENGTH: **23.0 FT**  
 (49) TOTAL BRIDGE LENGTH: **23.0 FT**  
 (50a) LEFT SIDEWALK WIDTH: **0.0 FT**  
 (50b) RIGHT SIDEWALK WIDTH: **0.0 FT**  
 (51) BRIDGE CURB TO CURB WIDTH: **21 FT**  
 (52) BRIDGE OUT TO OUT WIDTH: **22.3 FT**  
 (32) APPROACH ROADWAY (W/ SHLDS) WIDTH: **29.9 FT**  
 (33) BRIDGE MEDIAN: **NO MEDIAN**  
 (34) BRIDGE SKEW: **30 DEGREES**  
 (35) BRIDGE FLARE: **NO FLARE**  
 (520) MIN VERTICAL CLEARANCE OVER RD: **NO RESTRICTION**  
 (47) MIN HORIZONTAL CLEARANCE ON ROADWAY: **22.0 FT**  
 (54a) VERT UNDERCLR: **NOT A HIGHWAY OR RAILROAD**  
 (54b) MIN VERTICAL UNDERCLEARANCE: **NOT APPLICABLE**  
 (55a) HORZ UNDERCLR: **NOT A HIGHWAY OR RAILROAD**  
 (55b) MIN HORZ UNDERCLR ON RIGHT: **NOT APPLICABLE**  
 (56) MIN HORZ UNDERCLR ON LEFT: **NOT APPLICABLE**

## NAVIGATION DATA

(38) NAV CONTROL: **NO NAVIGATION CONTROL**  
 (39) NAVIGATION VERTICAL CLEARANCE: **N/A**  
 (116) LIFT BRIDGE VERT CLEARANCE: **N/A**  
 (40) NAVIGATION HORZ CLEARANCE: **N/A**

## CLASSIFICATION

(112) MEETS NBIS BRIDGE LENGTH: **YES**  
 (104) NATIONAL HIGHWAY SYSTEM: **NOT A NHS ROUTE**  
 (26) FUNCTIONAL CLASS: **RURAL MAJOR COLLECTOR**  
 (101) PARALLEL BRIDGE: **NO PARALLEL BRIDGE**  
 (102) TRAFFIC DIR: **2-WAY TRAFFIC**  
 (103) TEMPORARY BRIDGE: **TEMPORARY BRIDGE IN-PLACE**  
 (110) NATIONAL TRUCK ROUTE: **NOT ON TRUCK NETWORK**  
 (37) HISTORICAL CLASS: **HISTORICAL SIGNIFICANCE HAS NOT BEEN DETERMINED**

## CONDITION RATINGS

(58) DECK: **4**  
 (59) SUPERSTRUCTURE: **4**  
 (60) SUBSTRUCTURE: **4**  
 (61) STREAM CHANNEL AND CHANNEL PROTECTION: **6**  
 (62) CULVERT CONDITION (IF APPLICABLE): **N**

## DESIGN LOAD AND WEIGHT POSTING

(31) DESIGN LOADING: **H-15-44**  
 WEIGHT POSTING (2 AXLE VEHICLES): **ALL LEGAL LOADS**  
 WEIGHT POSTING (3 OR MORE AXLES): **ALL LEGAL LOADS**  
 (70) BRIDGE POSTING CODE: **5**  
 (41) WT POSTING STATUS: **WEIGHT POSTED**

## APPRAISAL

(67) STRUCTURAL EVALUATION: **3**  
 (68) DECK GEOMETRY: **3**  
 (69) UNDERCLEARANCE RATING: **N**  
 (71) WATERWAY ADEQUACY: **5**  
 (72) APPROACH ROADWAY ALIGNMENT: **8**  
 (36) TRAFFIC SAFETY FEATURES: **0000**  
 (113) SCOUR CONDITION RATING: **5**

## RECOMMENDED IMPROVEMENTS

(75) TYPE OF WORK: **BRIDGE REPLACEMENT**  
 (76) LENGTH OF BRIDGE IMPROVEMENT: **44 FT**  
 (94) BRIDGE IMPROVEMENT COST: **\$293,000.00**  
 (95) ROADWAY IMPROVEMENT COST: **\$30,000.00**  
 (96) TOTAL PROJECT COST: **\$440,000.00**  
 (97) YEAR OF IMPROVEMENT COST ESTIMATE: **2018**

## INSPECTION DATES

(90) DATE OF LAST REGULAR INSPECTION: **8/3/2017**  
 (91) REGULAR INSPECTION FREQUENCY (MONTHS): **24**  
 (93b) DATE OF LAST UNDERWATER INSP (MO/YR): **N/A**  
 (92b) UNDERWATER INSP FREQUENCY (MONTHS): **N**  
 (93c) DATE OF SPECIAL INSPECTION (MO/YR): **/**  
 (92c) SPECIAL INSP FREQUENCY (MONTHS): **N**

## PUBLICATION DATE

**16-Apr-19**

**PRODUCED PURSUANT TO  
PUBLIC RECORDS REQUEST**  
 This document is covered by 23 USC §409  
 and its production pursuant to a public  
 document records request does not  
 waive the provisions of §409

# Project Design

Index Of Sheets

PRELIMINARY INDEX OF SHEETS

TITLE SHEET..... 1  
 TYPICAL SECTIONS.....2B  
 RIGHT-OF-WAY NOTES, UTILITY NOTES and UTILITY OWNERS..... 3  
 RIGHT-OF-WAY ACQUISITION TABLE(S) and PROPERTY MAP(S).....3A  
 PRESENT LAYOUT(S)..... 4  
 RIGHT OF WAY DETAILS.....4A  
 PROPOSED LAYOUT(S).....4B  
 PROPOSED PROFILE(S).....4C  
 DRAINAGE MAP(S)..... 5  
 CULVERT SECTION(S)..... 6  
 ROADWAY CROSS SECTIONS.....7-14

STATE OF TENNESSEE  
 DEPARTMENT OF TRANSPORTATION  
 BUREAU OF ENGINEERING

**MADISON COUNTY**

S.R. 223 (SHADY GROVE RD.) BRIDGE REPLACEMENT  
 OVER BRANCH AT L.M. 2.28

PRELIMINARY

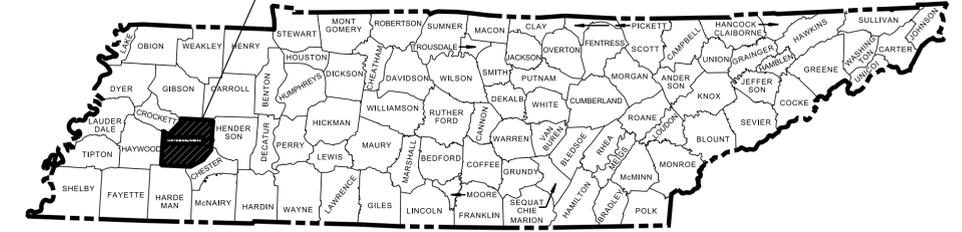
STATE HIGHWAY NO. 223 U.S. ROUTE NO.

DOES THIS PROJECT QUALIFY FOR UTILITY CHAPTER 86	YES X	NO
--	-------	----

TENN.	YEAR	SHEET NO.
	2019	1
FED. AID PROJ. NO.	BR-STP-223(11)	
STATE PROJ. NO.	57039-0231-94	

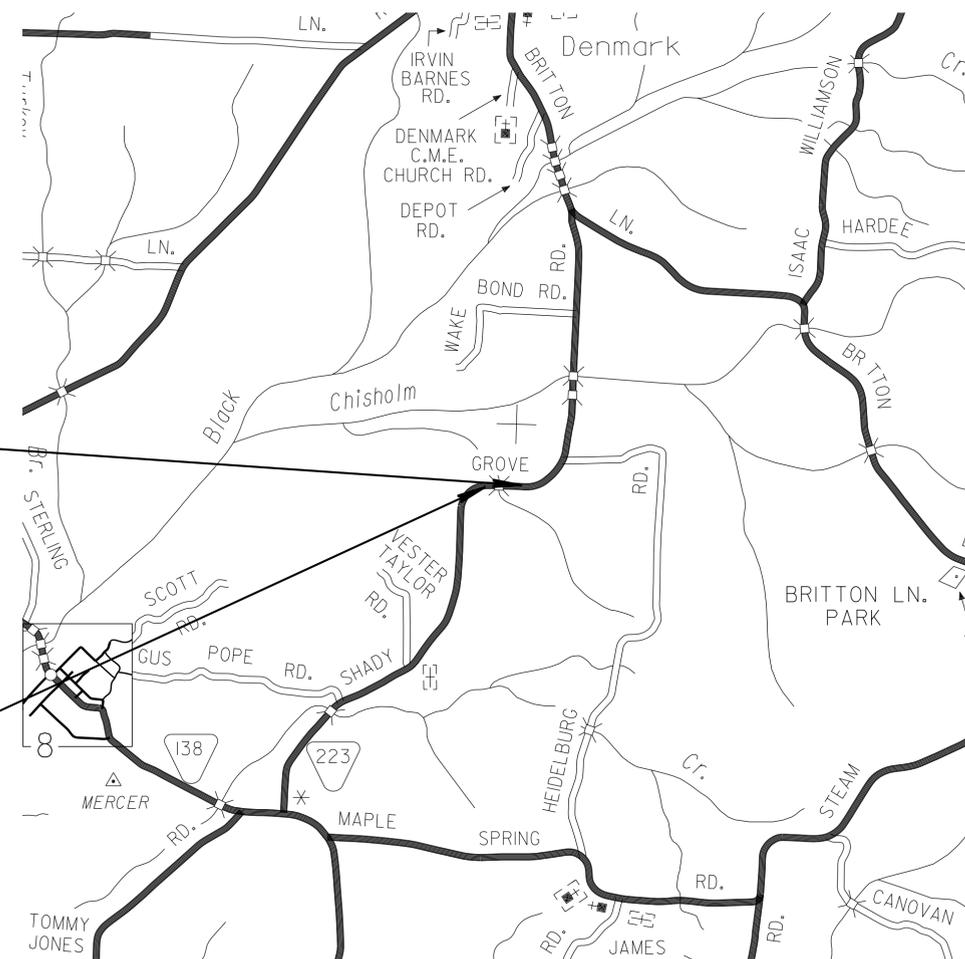
PROJECT LOCATION

BRIDGE ID. # 57S81960003



PROJECT LOCATION

BRIDGE ID. #



NO EXCLUSIONS

PRELIMINARY  
PLANS

CAUTION!  
PRELIMINARY  
PLANS  
SUBJECT TO  
CHANGE

ROAD TO BE CLOSED  
DURING CONSTRUCTION

SEALED BY

57039-0231-94  
 END PROJECT NO. BR-STP-223(11) PRELIMINARY  
 STA. 37+40.00  
 N 436670.0772 E 1075519.3623

57039-0231-94  
 BEGIN PROJECT NO. BR-STP-223(11) PRELIMINARY  
 STA. 32+60.00  
 N 436686.1659 E 1075039.6393

SPECIAL NOTES

PROPOSALS MAY BE REJECTED BY THE COMMISSIONER IF ANY OF THE UNIT PRICES CONTAINED THEREIN ARE OBVIOUSLY UNBALANCED, EITHER EXCESSIVE OR BELOW THE REASONABLE COST ANALYSIS VALUE.

THIS PROJECT TO BE CONSTRUCTED UNDER THE STANDARD SPECIFICATIONS OF THE TENNESSEE DEPARTMENT OF TRANSPORTATION DATED JANUARY 1, 2015 AND ADDITIONAL SPECIFICATIONS AND SPECIAL PROVISIONS CONTAINED IN THE PLANS AND IN THE PROPOSAL CONTRACT.

TDOT C.E. MANAGER 1 OR  
 TDOT TRANSPORTATION MANAGER 1 : STEPHANIE KISSELL  
 DESIGNED BY : HDR ENGINEERING, INC.  
 DESIGNER : GREG CLUCKER CHECKED BY KEVIN CAGLE  
 P.E. NO. 57039-0231-94 (NEPA)  
 PIN NO. 128113.06

SCALE: 1"= 1/2 MILE



R.O.W. LENGTH	0.091 MILES
ROADWAY LENGTH	0.085 MILES
BRIDGE LENGTH	0.000 MILES
BOX BRIDGE LENGTH	0.006 MILES
BOX BRIDGE LENGTH	0.000 MILES ▲
PROJECT LENGTH	0.091 MILES

▲ Not included in the project length (Non Riding Surface).

S.R. 223	
SURVEY 10-09-18	TRAFFIC DATA
	ADT (2022) 610
	ADT (2042) 1120
	DHV (2042) 146
	D 65 - 35
	T (ADT) 15 %
	T (DHV) 10 %
	V 45 MPH

COORDINATES ARE NAD 83(1995), ARE DATUM ADJUSTED BY THE FACTOR OF 1.00005 AND TIED TO THE TGRN. ALL ELEVATIONS ARE REFERENCED TO THE NAVD 1988 WITH GEOID 03.

APPROVED: Paul D. Degges  
 PAUL D. DEGGES, CHIEF ENGINEER

DATE:

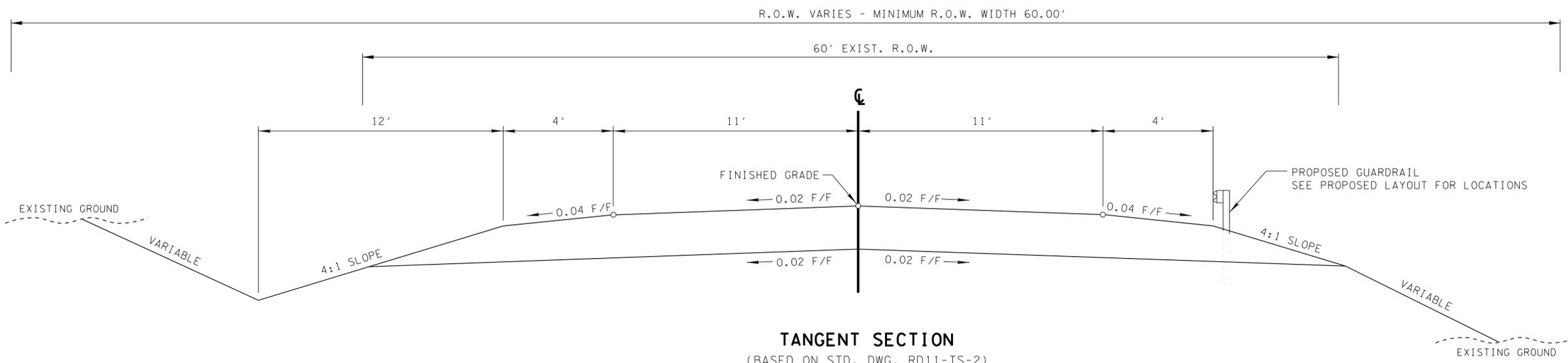
APPROVED: Clay Bright  
 CLAY BRIGHT, COMMISSIONER

U.S. DEPARTMENT OF TRANSPORTATION  
 FEDERAL HIGHWAY ADMINISTRATION

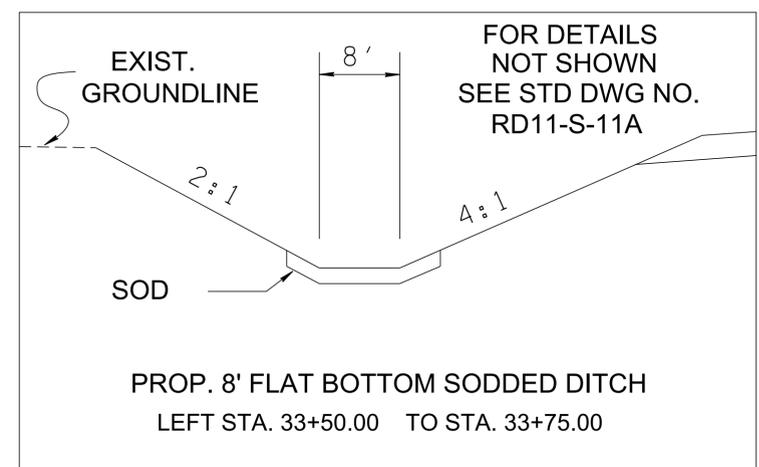
APPROVED: \_\_\_\_\_  
 DIVISION ADMINISTRATOR DATE

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TYPE	YEAR	PROJECT NO.	SHEET NO.
PRELIM	2019	BR-STP-223(11)	2B



**TANGENT SECTION**  
 (BASED ON STD. DWG. RD11-TS-2)  
 STA. 32+60.00 TO STA. 37+40.00



**CAUTION!**  
 PRELIMINARY  
 PLANS  
 SUBJECT TO  
 CHANGE

SEALED BY

STATE OF TENNESSEE  
 DEPARTMENT OF TRANSPORTATION

TYPICAL  
 SECTIONS

TYPE	YEAR	PROJECT NO.	SHEET NO.
PRELIM	2019	BR-STP-223(11)	3

**RIGHT-OF-WAY**

- (1) ALL RAMPS MUST CONFORM TO THE DEPARTMENT'S "POLICY ON FINANCING CONSTRUCTION OF PUBLIC ROAD INTERSECTIONS AND DRIVEWAYS ON HIGHWAY RESURFACING, RECONSTRUCTION AND CONSTRUCTION PROJECTS ON NEW LOCATIONS", THE MANUAL ON RULES AND REGULATIONS FOR CONSTRUCTING DRIVEWAYS ON STATE HIGHWAY RIGHT-OF-WAY, STANDARD DRAWING RP-R-1, AND OTHER ACCEPTED DESIGN AND SAFETY STANDARDS.
- (2) ANY NECESSARY PAVING OF DRIVEWAYS WILL BE DONE DURING PAVING OPERATIONS ON THE MAIN ROADWAY.
- (3) NEW DRIVEWAYS PROVIDED IN THE PLANS WILL BE PAVED BASED ON THE 7 PERCENT CRITERIA. THOSE 7 PERCENT OR STEEPER IN GRADE WILL BE PAVED AND THOSE FLATTER THAN 7 PERCENT WILL BE COVERED WITH BASE STONE.
- (4) ON PROJECTS WITHOUT CURB AND GUTTER THAT ARE ON STATE ROUTES, IT WILL BE THE RESPONSIBILITY OF THE OWNER TO SECURE A PERMIT AND TO CONSTRUCT ADDITIONAL DRIVEWAYS AND FIELD ENTRANCES OTHER THAN THOSE PROVIDED IN THE PLANS.

**UTILITY**

- (1) THE LOCATIONS OF UTILITIES SHOWN WITHIN THESE PLANS ARE APPROXIMATE ONLY. EXACT LOCATIONS SHALL BE DETERMINED IN THE FIELD BY CONTACTING THE UTILITY COMPANIES INVOLVED. NOTIFICATION BY CALLING THE TENNESSEE ONE CALL SYSTEM, INC., AT 1-800-351-1111 AS REQUIRED BY TCA 65-31-106 WILL BE REQUIRED.
- (2) UNLESS OTHERWISE NOTED, ALL UTILITY ADJUSTMENTS WILL BE PERFORMED BY THE UTILITY OR ITS REPRESENTATIVE. THE CONTRACTOR AND UTILITY OWNERS WILL BE REQUIRED TO COOPERATE WITH EACH OTHER IN ORDER TO EXPEDITE THE WORK REQUIRED BY THIS CONTRACT. ON CONTRACTS WHERE CONSTRUCTION STAKES, LINES, AND GRADES ARE CONTRACT ITEMS, THE CONTRACTOR WILL BE REQUIRED TO PROVIDE RIGHT-OF-WAY OR SLOPE STAKES, DITCH OR STREAM BED GRADES, OR OTHER ESSENTIAL SURVEY STAKING TO PREVENT CONFLICTS WITH THE HIGHWAY CONSTRUCTION. FREQUENTLY, THIS WILL BE REQUIRED AS THE FIRST ITEM OF WORK AND AT ANY LOCATION ON THE PROJECT DIRECTED BY THE ENGINEER.
- (3) THE CONTRACTOR WILL PROVIDE ALL NECESSARY PROTECTIVE MEASURES TO SAFEGUARD EXISTING UTILITIES FROM DAMAGE DURING CONSTRUCTION OF THIS PROJECT. IN THE EVENT THAT SPECIAL EQUIPMENT IS REQUIRED TO WORK OVER AND AROUND THE UTILITIES, THE CONTRACTOR WILL BE REQUIRED TO FURNISH SUCH EQUIPMENT. THE COST OF PROTECTING UTILITIES FROM DAMAGE AND FURNISHING SPECIAL EQUIPMENT WILL BE INCLUDED IN THE PRICE BID FOR OTHER ITEMS OF CONSTRUCTION.
- (4) PRIOR TO SUBMITTING HIS BID, THE CONTRACTOR WILL BE SOLELY RESPONSIBLE FOR CONTACTING OWNERS OF ALL AFFECTED UTILITIES IN ORDER TO DETERMINE THE EXTENT TO WHICH UTILITY RELOCATIONS AND/OR ADJUSTMENTS WILL HAVE UPON THE SCHEDULE OF WORK FOR THE PROJECT. WHILE SOME WORK MAY BE REQUIRED 'AROUND' UTILITY FACILITIES THAT WILL REMAIN IN PLACE, OTHER UTILITY FACILITIES MAY NEED TO BE ADJUSTED CONCURRENTLY WITH THE CONTRACTOR'S OPERATIONS. ADVANCE CLEAR CUTTING MAY BE REQUIRED BY THE ENGINEER AT ANY LOCATION WHERE CLEARING IS CALLED FOR IN THE SPECIFICATIONS AND CLEAR CUTTING IS NECESSARY FOR A UTILITY RELOCATION. ANY ADDITIONAL COST WILL BE INCLUDED IN THE UNIT PRICE BID FOR THE CLEARING ITEM SPECIFIED IN THE PLANS.
- (5) THE CONTRACTOR SHALL NOTIFY EACH INDIVIDUAL UTILITY OWNER OF HIS PLAN OF OPERATION IN THE AREA OF THE UTILITIES. PRIOR TO COMMENCING WORK, THE CONTRACTOR SHALL CONTACT THE UTILITY OWNERS AND REQUEST THEM TO PROPERLY LOCATE THEIR RESPECTIVE UTILITY ON THE GROUND. THIS NOTIFICATION SHALL BE GIVEN AT LEAST THREE (3) BUSINESS DAYS PRIOR TO COMMENCEMENT OF OPERATIONS AROUND THE UTILITY IN ACCORDANCE WITH TCA 65-31-106.

**UTILITY OWNERS**

**CABLE:**  
**UTILITY NAME**  
 Address  
 City, State Zip  
**CONTACT:**  
 OFFICE PHONE:  
 CELL PHONE:  
 Email:

**ELECTRIC:**  
**UTILITY NAME**  
 Address  
 City, State Zip  
**CONTACT:**  
 OFFICE PHONE:  
 CELL PHONE:  
 Email:

**GAS:**  
**UTILITY NAME**  
 Address  
 City, State Zip  
**CONTACT:**  
 OFFICE PHONE:  
 CELL PHONE:  
 Email:

**TELEPHONE:**  
**UTILITY NAME**  
 Address  
 City, State Zip  
**CONTACT:**  
 OFFICE PHONE:  
 CELL PHONE:  
 Email:

**WATER:**  
**UTILITY NAME**  
 Address  
 City, State Zip  
**CONTACT:**  
 OFFICE PHONE:  
 CELL PHONE:  
 Email:

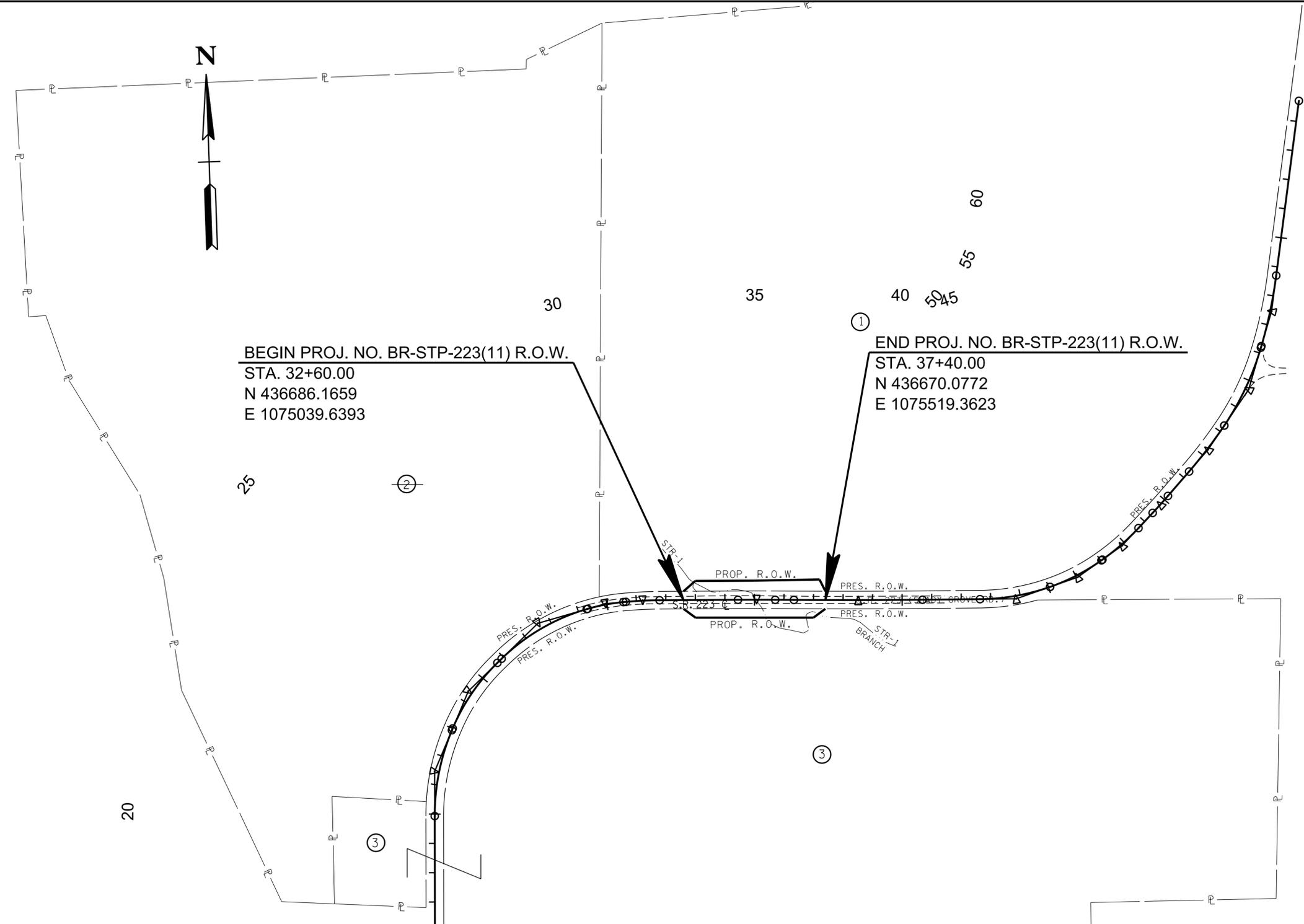
**CAUTION !  
 PRELIMINARY  
 PLANS  
 SUBJECT TO  
 CHANGE**

**SEALED BY**

**STATE OF TENNESSEE  
 DEPARTMENT OF TRANSPORTATION**

**RIGHT-OF-WAY  
 NOTES,  
 UTILITY NOTES  
 AND  
 UTILITY OWNERS**

TYPE	YEAR	PROJECT NO.	SHEET NO.
PRELIM	2019	BR-STP-223(11)	3A



BEGIN PROJ. NO. BR-STP-223(11) R.O.W.  
 STA. 32+60.00  
 N 436686.1659  
 E 1075039.6393

END PROJ. NO. BR-STP-223(11) R.O.W.  
 STA. 37+40.00  
 N 436670.0772  
 E 1075519.3623

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 PRELIMINARY  
 PLANS  
 SUBJECT TO  
 CHANGE

SEALED BY

COORDINATES ARE NAD 83(1995), ARE DATUM ADJUSTED BY THE FACTOR OF 1.00005 AND TIED TO THE TGRN. ALL ELEVATIONS ARE REFERENCED TO THE NAVD 1988 WITH GEOID 03.

STATE OF TENNESSEE  
 DEPARTMENT OF TRANSPORTATION

PROPERTY MAP  
 AND  
 RIGHT-OF-WAY  
 ACQUISITION  
 TABLE

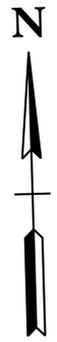
**DISTURBED AREA**

IN BETWEEN SLOPE LINES	0.490	(AC)
15 FOOT WIDE STRIP (OUT SIDE SLOPE LINES)	0.380	(AC)
TOTAL DISTURBED AREA	0.870	(AC)

**R.O.W. ACQUISITION TABLE**

TRACT NO.	PROPERTY OWNERS	COUNTY RECORDS				TOTAL AREA (ACRES)			AREA TO BE ACQUIRED (ACRES)			AREA REMAINING (ACRES)		EASEMENT (ACRES)			
		TAX MAP NO.	PARCEL NO.	DEED DOCUMENT REFERENCE		LEFT	RIGHT	TOTAL	LEFT	RIGHT	TOTAL	LEFT	RIGHT	PERMANENT	SLOPE	CONSTRUCTION	AIR RIGHTS
				BOOK	PAGE												
1	DENMARK FARMS, L.L.C.	134	016.00	712	789	112.832		112.832	0.375		0.375	112.457					
2	JAMES WAGES	139	004.00	749	1580	90.454		90.454				90.454					
3	BILLY TAYLOR	139	002.00	639	809	2.620	116.979	119.599		0.308	0.308	2.620	116.671				
<b>ACQUISITION TOTALS (ACRES)</b>																	

TYPE	YEAR	PROJECT NO.	SHEET NO.
PRELIM	2019	BR-STP-223(11)	4

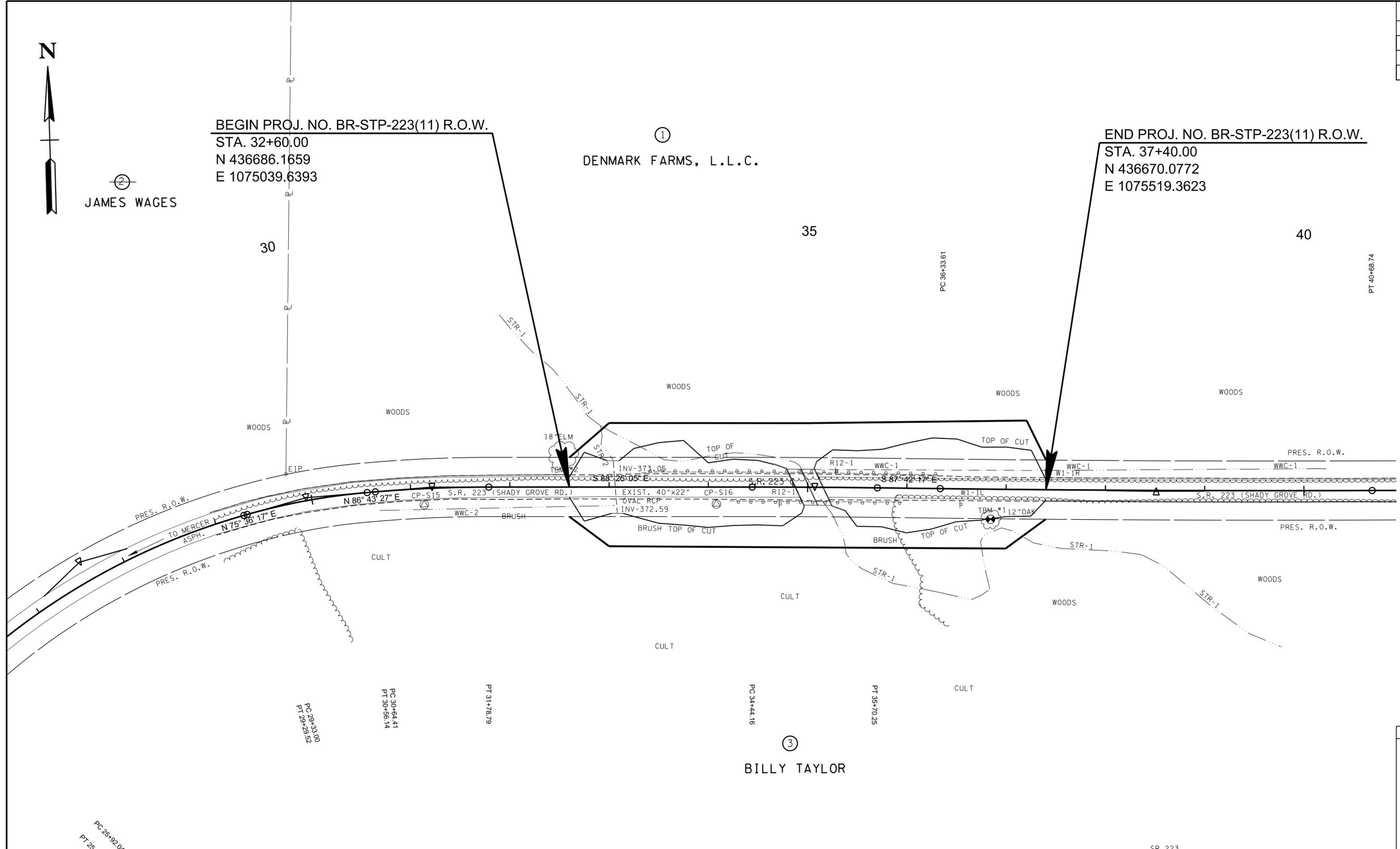


②  
JAMES WAGES

BEGIN PROJ. NO. BR-STP-223(11) R.O.W.  
STA. 32+60.00  
N 436686.1659  
E 1075039.6393

①  
DENMARK FARMS, L.L.C.

END PROJ. NO. BR-STP-223(11) R.O.W.  
STA. 37+40.00  
N 436670.0772  
E 1075519.3623



**CAUTION!**  
PRELIMINARY  
PLANS  
SUBJECT TO  
CHANGE

SEALED BY

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SR 223  
PI 27+64.27  
N 436,623.6788  
E 1,074,544.1930  
Δ 28° 10' 49" (RT)  
D 8' 21' 01"  
R 686.15  
L 337.48  
T 172.22

SR 223  
PI 29+94.76  
N 436,682.7158  
E 1,074,774.2050  
Δ 11° 07' 10" (RT)  
D 9' 01' 47"  
R 634.52  
L 123.14  
T 61.77

SR 223  
PI 31+21.63  
N 436,689.9878  
E 1,074,901.2577  
Δ 4° 51' 28" (RT)  
D 4' 14' 49"  
R 1,349.10  
L 114.38  
T 57.23

SR 223  
PI 35+07.21  
N 436,679.3410  
E 1,075,286.7528  
Δ 0° 42' 48" (RT)  
D 0' 33' 56"  
R 10,129.04  
L 126.08  
T 63.04  
SE N.C.  
DESIGN SPEED 45 MPH  
TRANS. LENGTH N/A

SR 223  
PI 38+51.18  
N 436,665.5654  
E 1,075,630.4491  
Δ 0° 55' 06" (LT)  
D 0' 12' 40"  
R 27,147.03  
L 435.13  
T 217.57  
SE N.C.  
DESIGN SPEED 45 MPH  
TRANS. LENGTH N/A

COORDINATES ARE NAD 83(1995), ARE DATUM ADJUSTED BY THE FACTOR OF 1.00005 AND TIED TO THE TGRN. ALL ELEVATIONS ARE REFERENCED TO THE NAVD 1988 WITH GEOID 03.

STATE OF TENNESSEE  
DEPARTMENT OF TRANSPORTATION

PRESENT  
LAYOUT

STA. 32+60 TO STA. 37+40  
SCALE: 1"= 50'

TYPE	YEAR	PROJECT NO.	SHEET NO.
PRELIM	2019	BR-STP-223(11)	4A

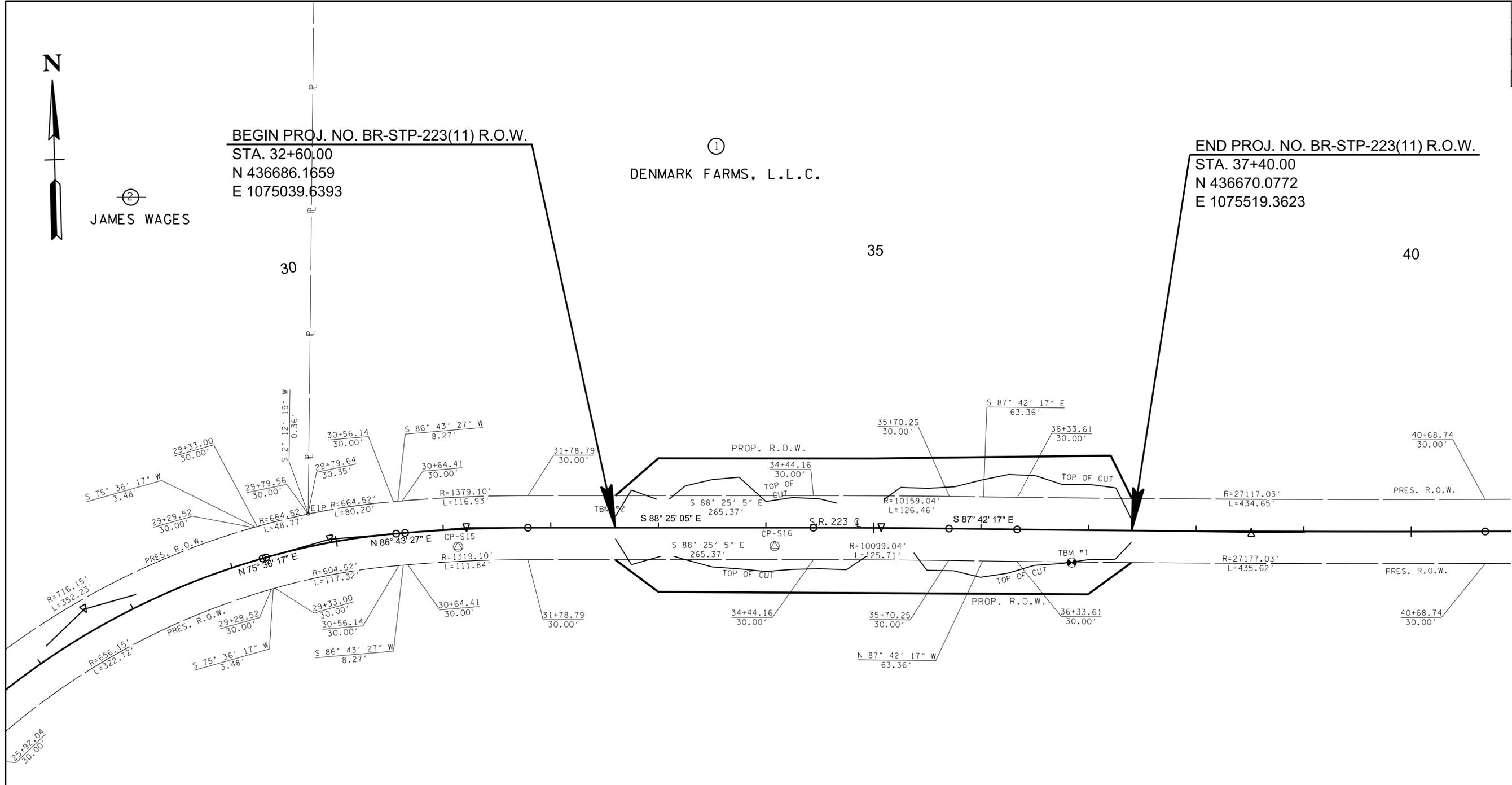


②  
JAMES WAGES

BEGIN PROJ. NO. BR-STP-223(11) R.O.W.  
STA. 32+60.00  
N 436686.1659  
E 1075039.6393

①  
DENMARK FARMS, L.L.C.

END PROJ. NO. BR-STP-223(11) R.O.W.  
STA. 37+40.00  
N 436670.0772  
E 1075519.3623



③  
BILLY TAYLOR

**CAUTION!**  
PRELIMINARY  
PLANS  
SUBJECT TO  
CHANGE

SEALED BY

COORDINATES ARE NAD 83(1995), ARE DATUM ADJUSTED BY THE FACTOR OF 1.00005 AND TIED TO THE TGRN. ALL ELEVATIONS ARE REFERENCED TO THE NAVD 1988 WITH GEOID 03.

STATE OF TENNESSEE  
DEPARTMENT OF TRANSPORTATION

RIGHT OF WAY  
DETAILS

STA. 32+60 TO STA. 37+40  
SCALE: 1"= 50'

TYPE	YEAR	PROJECT NO.	SHEET NO.
PRELIM	2019	BR-STP-223(11)	4B



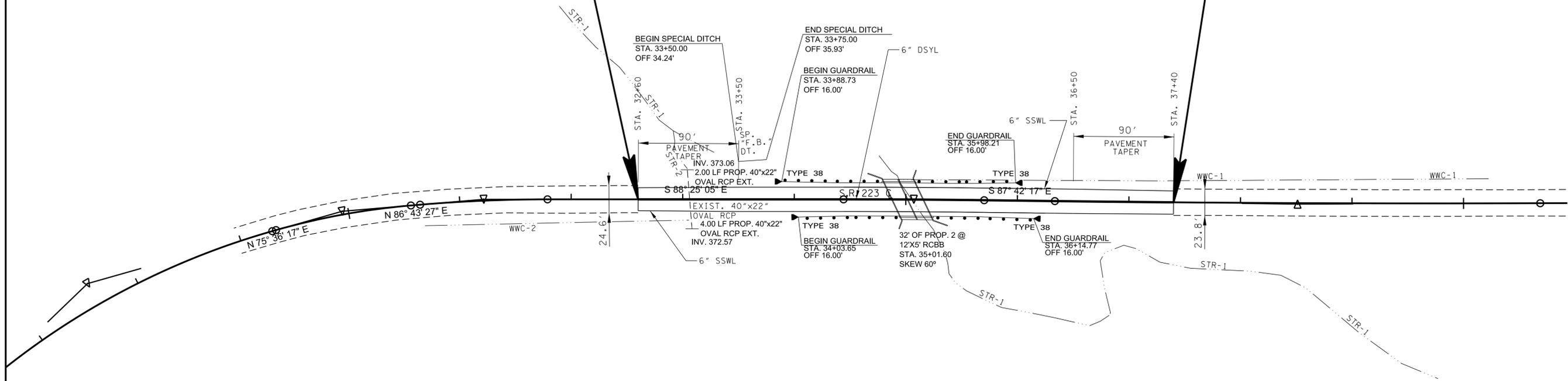
BEGIN PROJ. NO. BR-STP-223(11) R.O.W.  
 STA. 32+60.00  
 N 436686.1659  
 E 1075039.6393

END PROJ. NO. BR-STP-223(11) R.O.W.  
 STA. 37+40.00  
 N 436670.0772  
 E 1075519.3623

30

35

40



**CAUTION!**  
**PRELIMINARY**  
**PLANS**  
**SUBJECT TO**  
**CHANGE**

SEALED BY

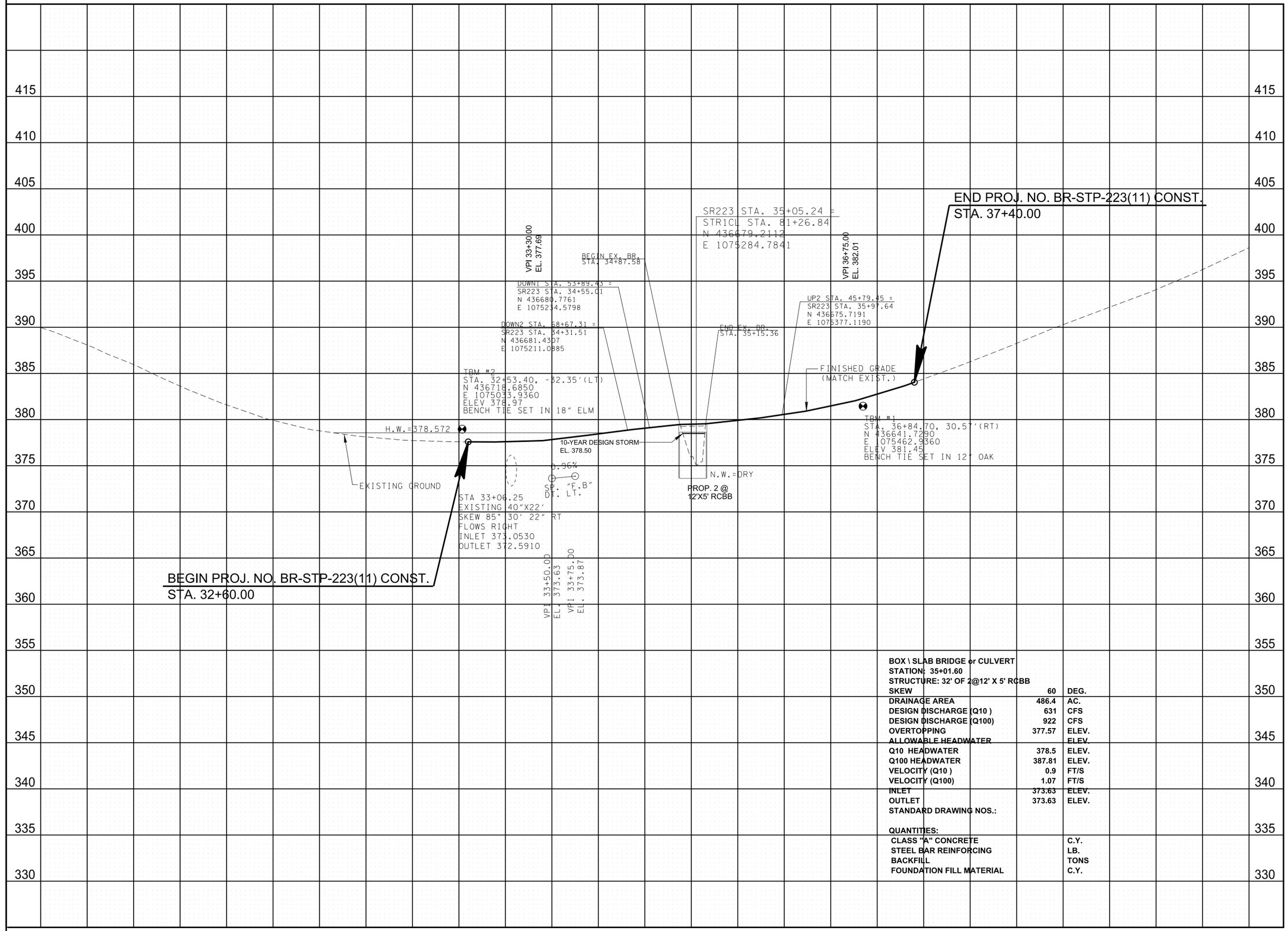
COORDINATES ARE NAD 83(1995), ARE DATUM ADJUSTED BY THE FACTOR OF 1.00005 AND TIED TO THE TGRN. ALL ELEVATIONS ARE REFERENCED TO THE NAVD 1988 WITH GEOID 03.

STATE OF TENNESSEE  
 DEPARTMENT OF TRANSPORTATION

**PROPOSED**  
**LAYOUT**

STA. 32+60 TO STA. 37+40  
 SCALE: 1"= 50'

TYPE	YEAR	PROJECT NO.	SHEET NO.
PRELIM	2019	BR-STP-223(11)	4C



**CAUTION!**  
PRELIMINARY  
PLANS  
SUBJECT TO  
CHANGE

SEALED BY

---

COORDINATES ARE NAD 83(1995), ARE DATUM ADJUSTED BY THE FACTOR OF 1.00005 AND TIED TO THE TGRN. ALL ELEVATIONS ARE REFERENCED TO THE NAVD 1988 WITH GEOID 03.

STATE OF TENNESSEE  
DEPARTMENT OF TRANSPORTATION

PROPOSED  
PROFILE

STA. 32+60 TO STA. 37+40

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

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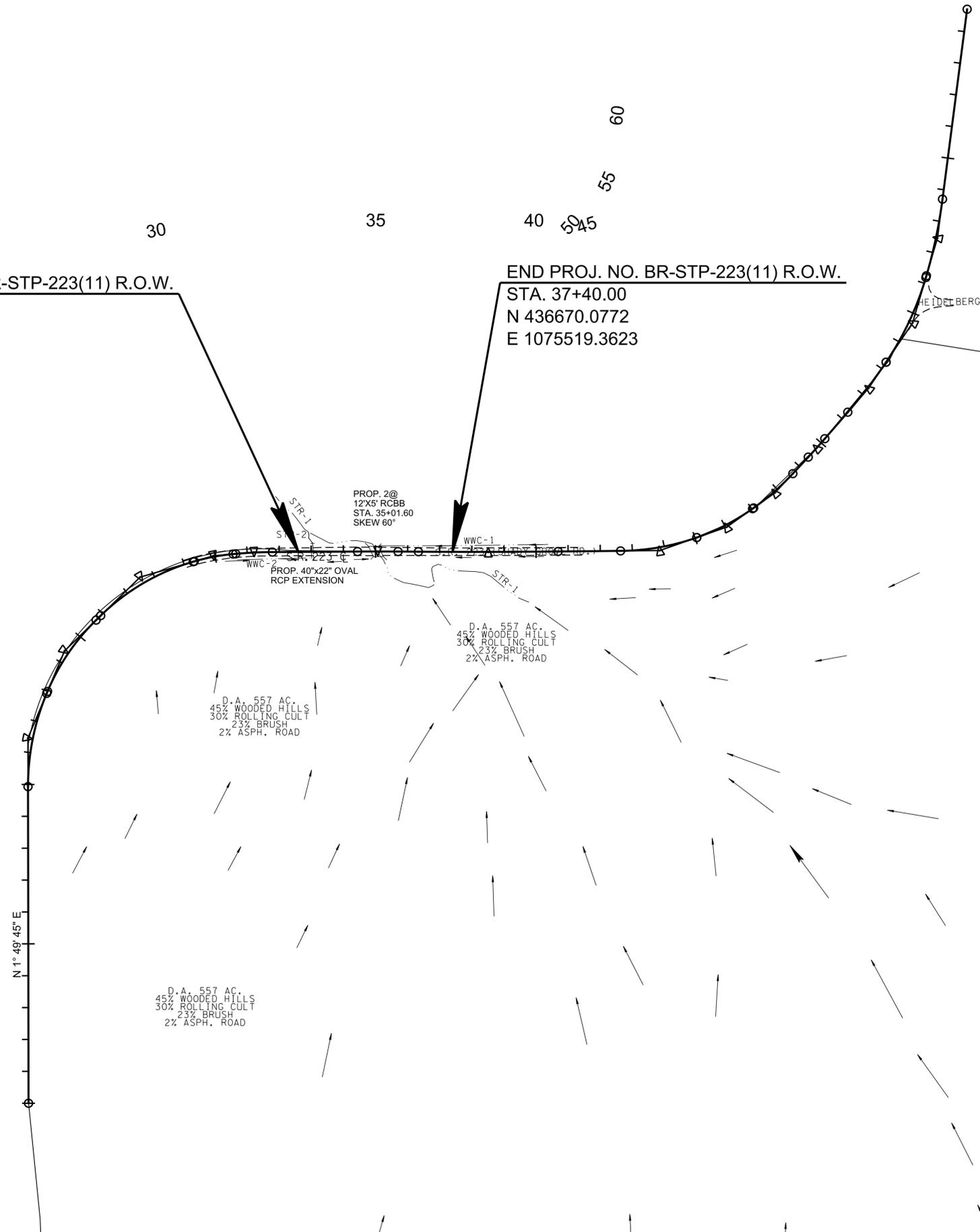
TYPE	YEAR	PROJECT NO.	SHEET NO.
PRELIM	2019	BR-STP-223(11)	5



BEGIN PROJ. NO. BR-STP-223(11) R.O.W.  
 STA. 32+60.00  
 N 436686.1659  
 E 1075039.6393

END PROJ. NO. BR-STP-223(11) R.O.W.  
 STA. 37+40.00  
 N 436670.0772  
 E 1075519.3623

10  
15  
20



**CAUTION!**  
**PRELIMINARY**  
**PLANS**  
**SUBJECT TO**  
**CHANGE**

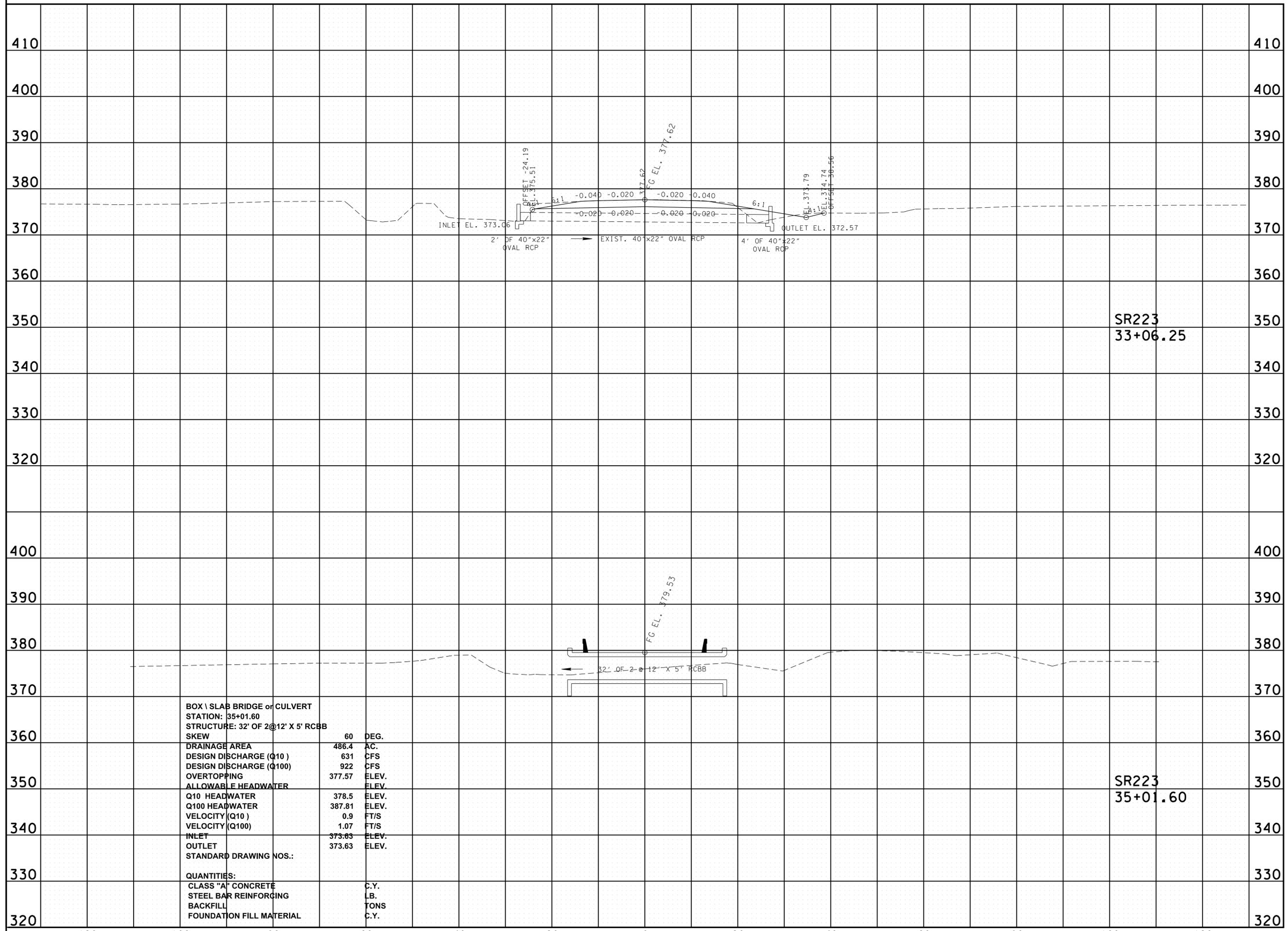
SEALED BY

COORDINATES ARE NAD 83(1995), ARE DATUM ADJUSTED BY THE FACTOR OF 1.00005 AND TIED TO THE TGRN. ALL ELEVATIONS ARE REFERENCED TO THE NAVD 1988 WITH GEOID 03.

STATE OF TENNESSEE  
 DEPARTMENT OF TRANSPORTATION

**DRAINAGE**  
**MAP**  
 STA. 32+60 TO STA. 37+40  
 SCALE: 1"=200'

TYPE	YEAR	PROJECT NO.	SHEET NO.
PRELIM	2019	BR-STP-223(11)	6



BOX \ SLAB BRIDGE or CULVERT	
STATION: 35+01.60	
STRUCTURE: 32' OF 2 @ 12' X 5' RCBB	
SKEW	60 DEG.
DRAINAGE AREA	486.4 AC.
DESIGN DISCHARGE (Q10)	631 CFS
DESIGN DISCHARGE (Q100)	922 CFS
OVERTOPPING	377.57 ELEV.
ALLOWABLE HEADWATER	ELEV.
Q10 HEADWATER	378.5 ELEV.
Q100 HEADWATER	387.81 ELEV.
VELOCITY (Q10)	0.9 FT/S
VELOCITY (Q100)	1.07 FT/S
INLET	373.63 ELEV.
OUTLET	373.63 ELEV.
STANDARD DRAWING NOS.:	
QUANTITIES:	
CLASS "A" CONCRETE	C.Y.
STEEL BAR REINFORCING	LB.
BACKFILL	TONS
FOUNDATION FILL MATERIAL	C.Y.

**CAUTION!**  
PRELIMINARY  
PLANS  
SUBJECT TO  
CHANGE

SEALED BY

STATE OF TENNESSEE  
DEPARTMENT OF TRANSPORTATION

CULVERT  
SECTION

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400  
390  
380  
370

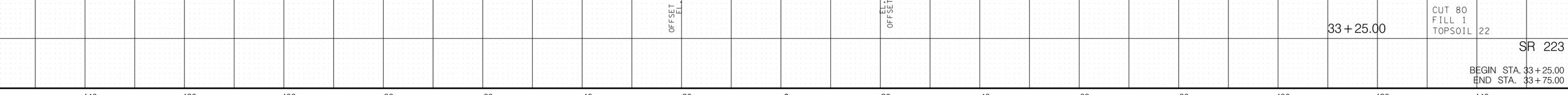
400  
390  
380  
370

400  
390  
380  
370

400  
390  
380  
370

400  
390  
380  
370

400  
390  
380  
370



33 + 75.00 CUT 98 FILL 13 TOPSOIL 30

33 + 50.00 CUT 86 FILL 2 TOPSOIL 28

33 + 25.00 CUT 80 FILL 1 TOPSOIL 22

SR 223  
BEGIN STA. 33+25.00  
END STA. 33+75.00

400  
390  
380  
370

400  
390  
380  
370

400  
390  
380  
370

400  
390  
380  
370

400  
390  
380  
370

400  
390  
380  
370

34+50.00

CUT 57  
FILL 1  
TOPSOIL 19

34+25.00

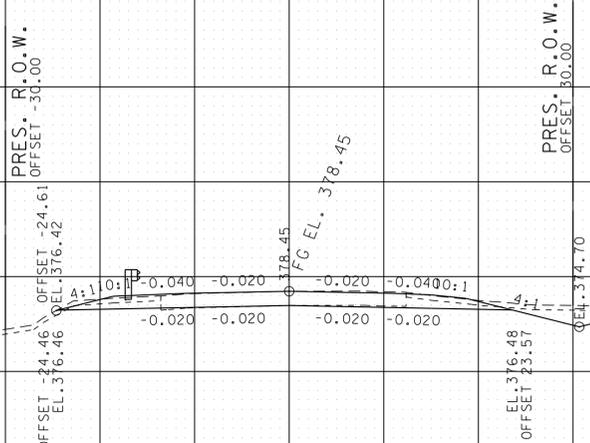
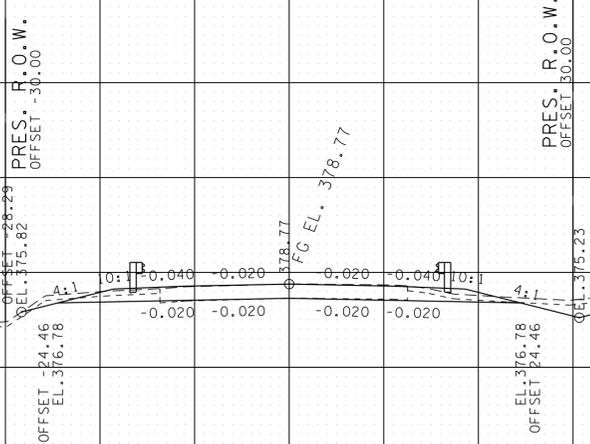
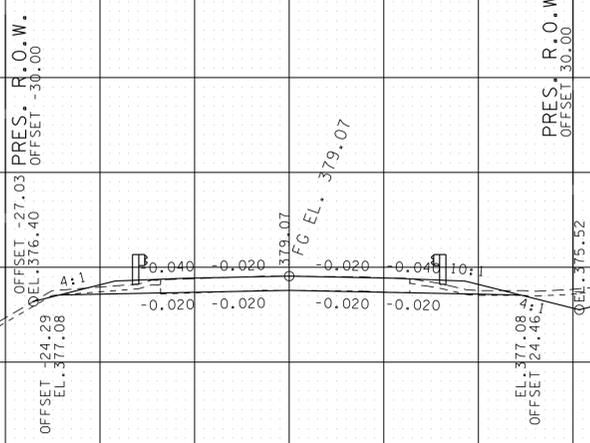
CUT 61  
FILL 1  
TOPSOIL 21

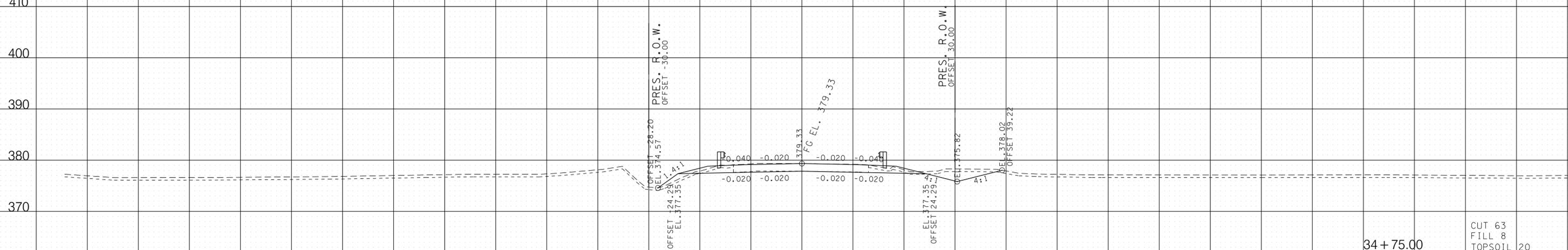
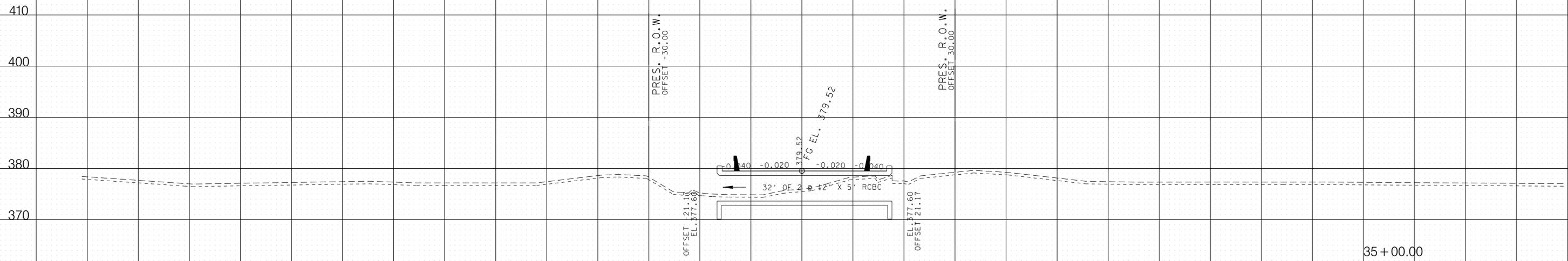
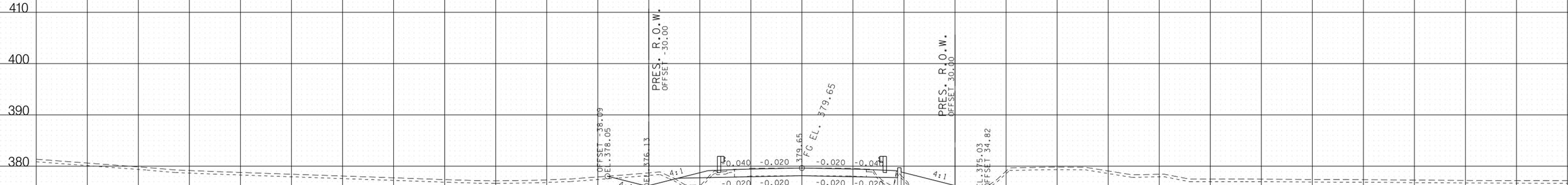
34+00.00

CUT 67  
FILL 1  
TOPSOIL 20

SR 223

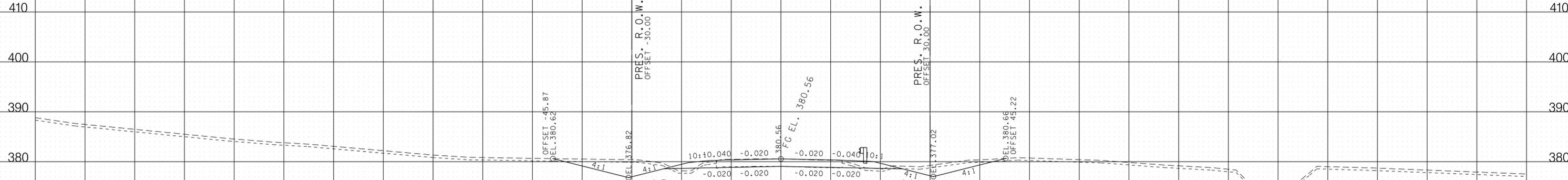
BEGIN STA. 34+00.00  
END STA. 34+50.00



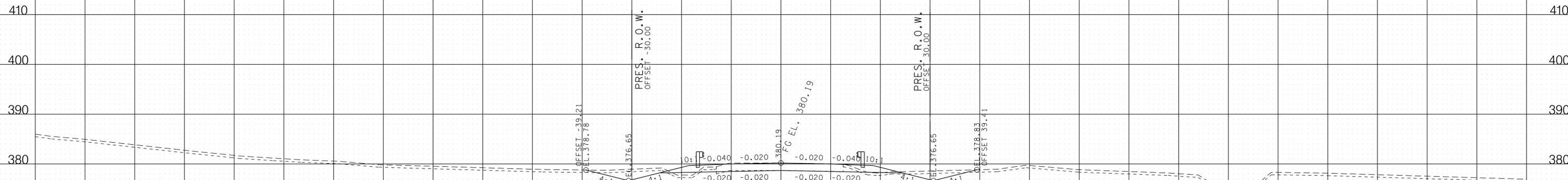


SR 223

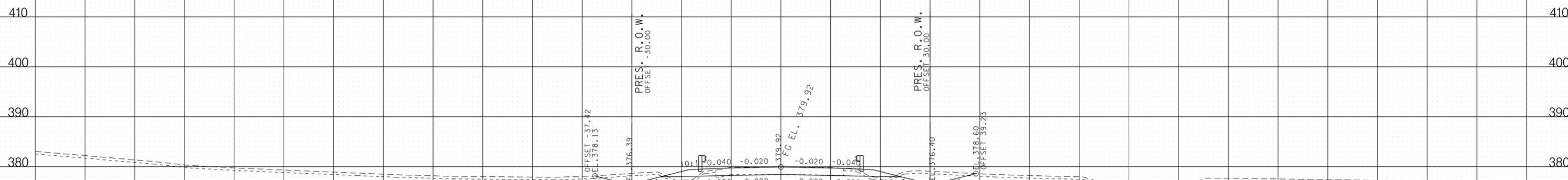
BEGIN STA. 34+75.00  
END STA. 35+25.00



36+00.00  
 CUT 94  
 FILL 8  
 TOPSOIL 33

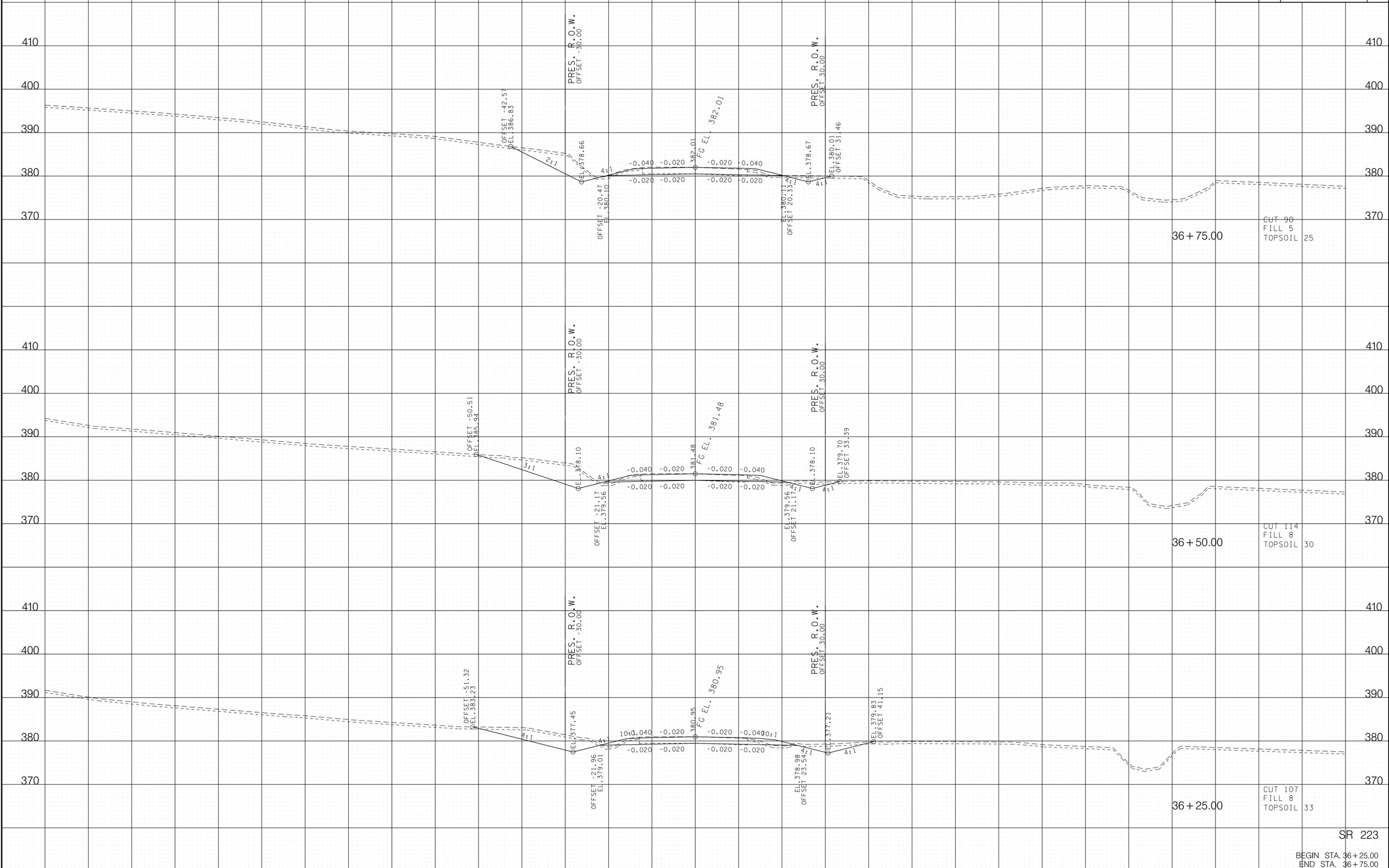


35+75.00  
 CUT 64  
 FILL 10  
 TOPSOIL 26



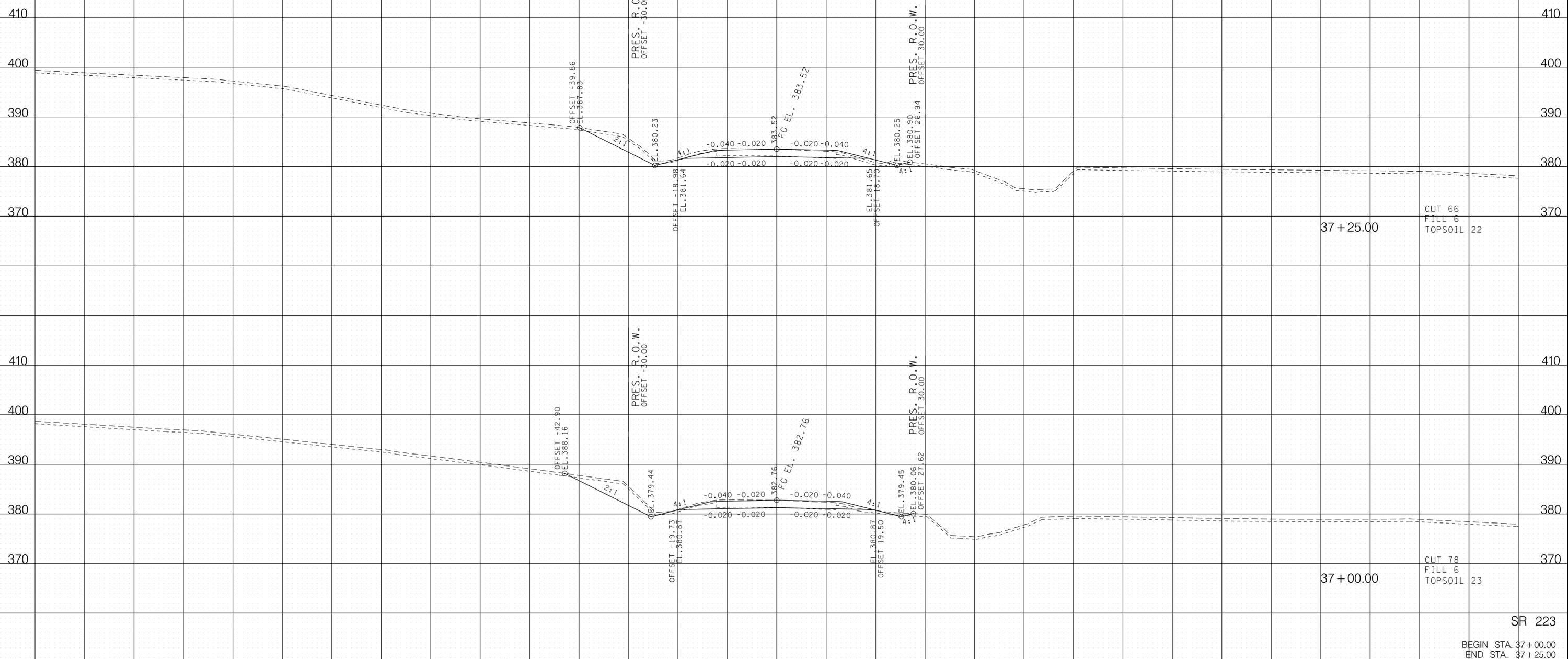
35+50.00  
 CUT 73  
 FILL 12  
 TOPSOIL 26

SR 223  
 BEGIN STA. 35+50.00  
 END STA. 36+00.00

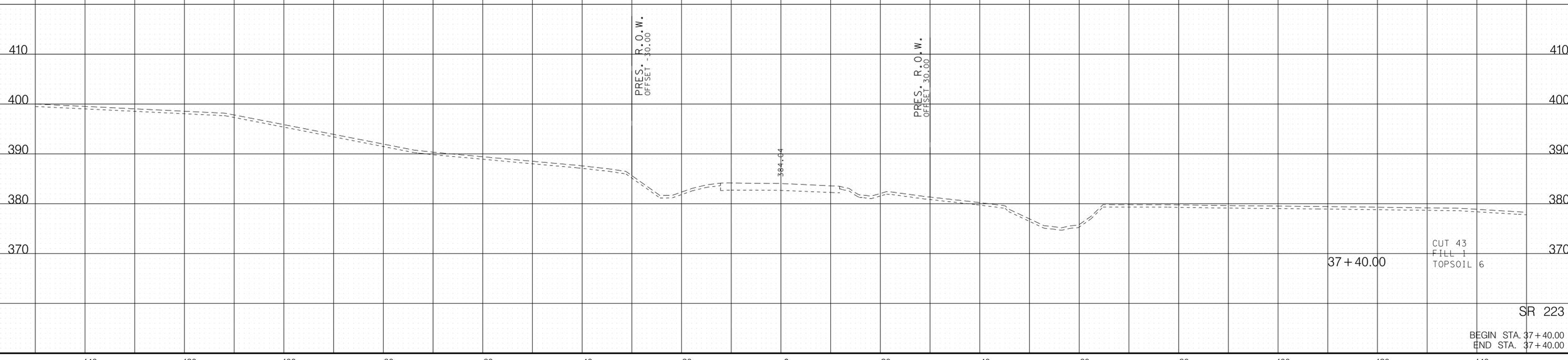


SR 223

BEGIN STA. 36+25.00  
END STA. 36+75.00



TYPE	YEAR	PROJECT NO.	SHEET NO.
PRELIM	2019	BR-TP-223(11)	14



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# Ecology

# Environmental Studies Request

## Project Information

---

**Route:** State Route 223  
**Termini:** S.R. 223 (Shady Grove Rd.) Bridge Replacement over Branch at L.M. 2.28  
**County:** Madison  
**PIN:** 128113.06

## Request

---

**Request Type:** Environmental Study Reevaluation  
**Project Plans:** Design-Build Bridge Plans  
**Date of Plans:** 06/12/2019  
**Location:** Email Attachment

## Certification

---

**Requestor:** Jonathan Knudsen  
**Title:** TDOT Environmental Studies Request

**Signature:** Jonathan  
Knudsen

Digitally signed by  
Jonathan Knudsen  
Date: 2019.06.14  
11:00:30 -05'00'

# Environmental Study

## Technical Section

---

**Section:** Ecology

## Study Results

---

Based on the plans dated 6/12/2019, the environmental boundaries report dated 7/18/2018 for PIN 124712.00 is still valid for this project.

## Commitments

---

**Did the study of this project result in any environmental commitments?**

No

## Additional Information

---

**Is there any additional information or material included with this study?**

Yes

**Type:** Environmental Boundaries Report (EBR)

**Location:** FileNet

## Certification

---

**Responder:** Dustin Tucker

**Title:** TESS Advanced

**Signature:** Dustin  
Tucker

 Digitally signed by  
Dustin Tucker  
Date: 2019.07.03  
08:39:37 -05'00'



# **Environmental Boundaries Report**

**SR-223 (Shady Grove Road) Bridge over Branch, LM 2.28**

**Project Number: 57039-0231-94**

**PIN: 124712.00**

**Madison County, Tennessee**

**Prepared by:  
Tennessee Department of Transportation – TDOT  
Region 4**

## Environmental Boundaries Report Index

Memo .....	Page 3
Maps and Topos .....	Page 5
NEPA Impact Table .....	Page 7
Normal Rainfall Calculation .....	Page 8
Stream Data Sheets .....	Page 9
Wet Weather Conveyance Data Sheets .....	Page 11
Species Review .....	Page 17
Marked-up Plan Sheets .....	Page 24
Photo Log .....	Page 25



STATE OF TENNESSEE  
DEPARTMENT OF TRANSPORTATION  
REGION 4 ENVIRONMENTAL TECH OFFICE  
300 BENCHMARK PLACE  
JACKSON, TENNESSEE 38301  
(731) 935-0139

JOHN C. SCHROER  
COMMISSIONER

BILL HASLAM  
GOVERNOR

**MEMORANDUM**

**To:** Dennis Moultrie  
Design Division

**From:** Eric Philipps  
Environmental Tech Office, Region 4

**Eric Philipps**

Digitally signed by Eric Philipps  
Date: 2018.07.18 09:34:42  
-05'00'

**Date:** July 18, 2018

**Subject:** **Environmental Boundaries For:** Madison County, SR-223 (Shady Grove Road), Bridge over Branch, LM 2.28  
**PE:** 57039-0231-94      **PIN:** 124712.00

An ecological evaluation of the subject project has been conducted with the following results:

**SPRINGS/STREAMS**

There are **two (2)** streams within the project limits.

- Information concerning the quality and amount of impact can be found in the attached impact table.

**WET WEATHER CONVEYANCES/UPLAND DRAINAGE FEATURES**

There are two (2) wet weather conveyances/upland drainage features within the project limits.

**WETLANDS**

There are **no** wetlands within the project limits.

**OTHER FEATURES**

There are **no** other features noted within the project limits.

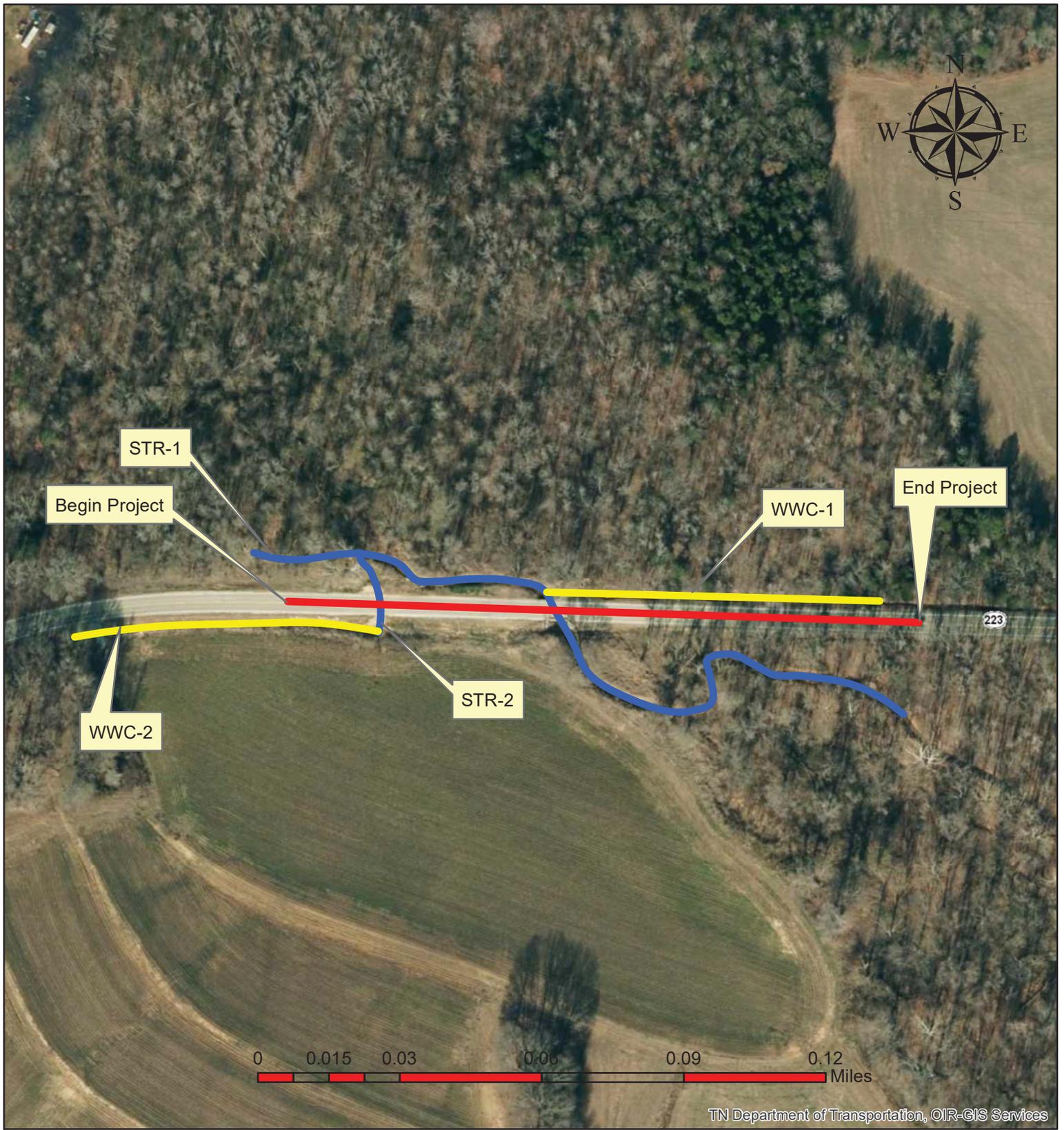
**PROTECTED SPECIES**

A search of the TDEC rare species database was performed on June 21, 2018. Coordination with TWRA and USFWS is included within this report.

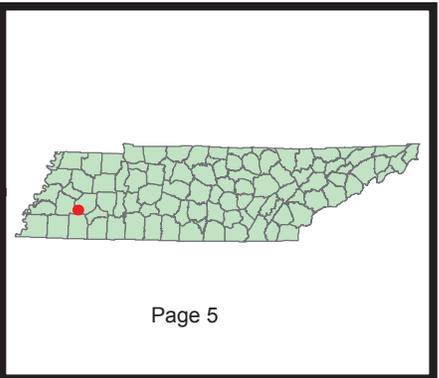
Your assistance is appreciated. If you have any questions or comments, please contact Eric Philipps in the Region 4 Environmental Tech Office at 731-935-0174 or [eric.philipps@tn.gov](mailto:eric.philipps@tn.gov).

xc: Tabitha Cavaness  
Rachel Webb  
Gary Scruggs  
Randall Mann  
Lou Timms  
Jared McCoy  
Glen Blakenship  
James Boyd  
John Hewitt  
D.J. Wiseman  
Michael White  
Khalid Ahmed  
Sharon Sanders  
Rita Thompson  
Greg Harris

TDOT.ENV.NEPA  
R4.ENVTechOffice  
TDOT. Env. Ecology  
TDOT.Env.Mitigation



TN Department of Transportation, OIR-GIS Services

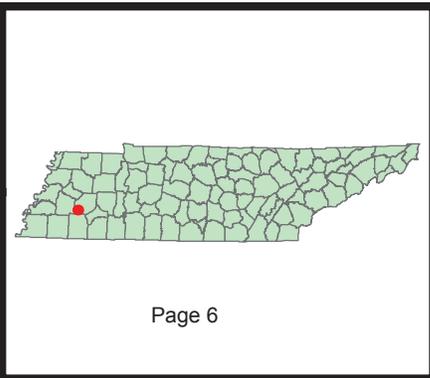
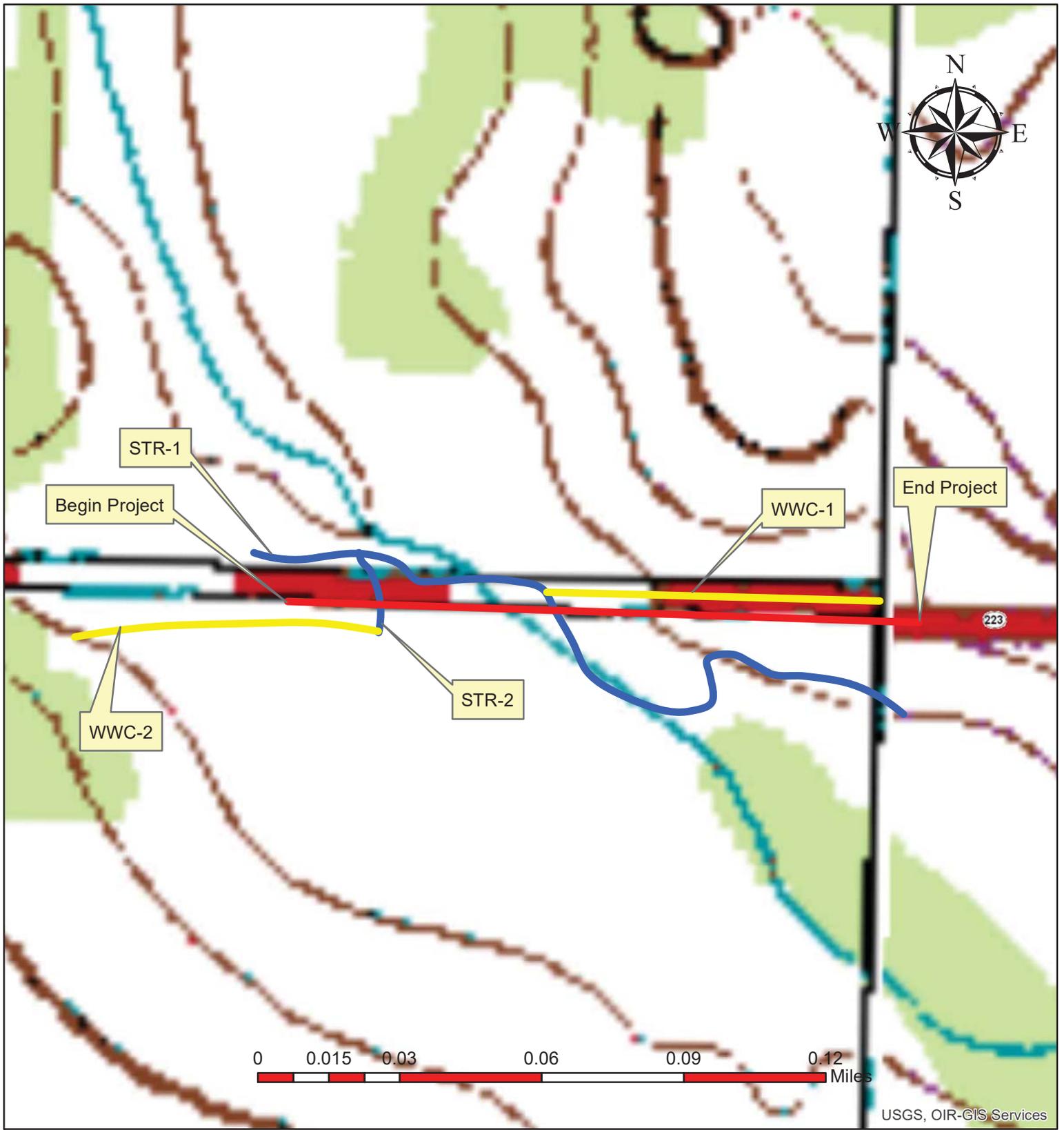


**Madison County; SR-223 (Shady Grove Road), Bridge over Branch, LM 2.28**

**P.E. 57039-0231-94  
PIN 124712.00**

**07/03/2018**





**Madison County; SR-223 (Shady Grove Road), Bridge over Branch, LM 2.28**

**P.E. 57039-0231-94  
PIN 124712.00**

**07/03/2018**



Preliminary Impact Form

County: Madison

Route: SR-223

PIN: 124712.00

Date Prepared: 7/17/2018

Prepared by:  
 TDOT Region 4 - Environmental Tech Office

**NOTE:** *This document is for "preliminary" use only and will not be considered accurate until the time of permit application.*

**Streams**

Labels	Type *	Function	Quality**	Impacts (feet) **		
				Permanent	Temporary	Total
STR-1	Stream		Undetermined at this time	175		175
STR-2	Stream		Undetermined at this time	0		0
<b>Total</b>				<b>175</b>		<b>175</b>

\* Identification of features has not been reviewed by regulatory agencies. Determinations could change.

Table 1. Calculation of Normal Weather Conditions / Jackson McKellar-Sipes AP, TN - June 2018  
 Source: AgAcis, 1988-2018 WETS, Jackson McKellar-Sipes AP

		Long-term Rainfall Records								
	Month	Minus one Std. Dev (DRY)	Normal (Mean Inches)	Plus One Std. Dev. (WET)	Actual Rainfall	Condition	Condition Value	Month Weight Value	Product of Previous two columns	
1st month prior	May	3.6	5.5	6.61	4.76	Normal	2	3	6	
2nd Month prior	Apr	3.41	4.95	5.89	6.87	Wet	3	2	6	
3rd month prior	Mar	3.89	5.47	6.47	4.46	Normal	2	1	2	
								Sum	14	

Note:	
If sum is:	
6-9	then prior period has been drier than normal
10-14	then prior period has been normal
15-18	then prior period has been wetter than normal

Condition Value	
Dry =	1
Normal =	2
Wet=	3

Conclusions:  
 Prior period has been normal.  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

## Ecology Field Data Sheet: Water Resources

<b>Project:</b>		Madison County; SR-223 (Shady Grove Road), Bridge over Branch, LM 2.28					
<b>Biologist:</b>	Eric Philipps	<b>Affiliation:</b>	TDOT	<b>Date:</b>	06/13/2018		
<b>1-Station:</b> from plans	No Plans						
<b>2-Map label and name</b>	STR-1						
<b>3-Latitude/Longitude</b>	35.49529, -89.00131						
<b>4-Potential impact</b>	Encapsulation/Fill						
<b>5-Feature description:</b>							
-channel identification	<input checked="" type="checkbox"/> perennial stream	<input type="checkbox"/> intermittent stream	<input type="checkbox"/> ephemeral stream	<input type="checkbox"/> wwc			
-HD score (if applicable)							
-OHWM indicators	bed & banks <input checked="" type="checkbox"/>	deposition <input checked="" type="checkbox"/>	presence of litter / debris <input checked="" type="checkbox"/>	scour <input checked="" type="checkbox"/>	veg absent, bent, matted <input checked="" type="checkbox"/>		
	change in plant community <input checked="" type="checkbox"/>	destruction of terrestrial veg <input checked="" type="checkbox"/>	multiple observed flow events <input type="checkbox"/>	sediment sorting <input checked="" type="checkbox"/>	water staining <input checked="" type="checkbox"/>		
	change in soil character <input checked="" type="checkbox"/>	leaf litter disturbed absent <input checked="" type="checkbox"/>	natural line impressed on bank <input checked="" type="checkbox"/>	shelving <input checked="" type="checkbox"/>	wracking <input checked="" type="checkbox"/>		
-sinuosity	absent <input type="checkbox"/>	weak <input checked="" type="checkbox"/>	moderate <input type="checkbox"/>	strong <input type="checkbox"/>			
-channel bottom width	~6ft.		-top of bank width	~10ft.			
- avg. gradient of stream (%)	Low						
-bank height and slope ratio	LDB - ~2.5ft.		RDB - ~2.5ft.				
-water flow	fast <input type="checkbox"/>	moderate <input type="checkbox"/>	slow <input checked="" type="checkbox"/>	isolated pools <input type="checkbox"/>	none <input type="checkbox"/>		
-water depth (riffles / pools)	~1ft.		water width (riffles / pools)		~6ft.		
-bank stability: LDB, RDB	LDB: Stable <input type="checkbox"/>	Eroding <input checked="" type="checkbox"/>	Undercutting <input type="checkbox"/>	Sloughing <input type="checkbox"/>	Exposed Roots <input type="checkbox"/>		
	RDB: Stable <input type="checkbox"/>	Eroding <input checked="" type="checkbox"/>	Undercutting <input type="checkbox"/>	Sloughing <input type="checkbox"/>	Exposed Roots <input type="checkbox"/>		
-dominant riparian species: ------(LDB /RDB)-----	LDB: Kudzu, Giant Ragweed						
	RDB: Kudzu, American sweetgum, Riverbirch						
-habitat assessment score	48						
	epifaunal substrate	5	channel alteration	5			
	channel substrate	6	channel sinuosity	6			
	pool variability	4	bank stability	LDB	3	RDB 3	
	sediment deposition	5	bank vegetative protection	LDB	1	RDB 1	
	channel flow status	5	riparian veg zone width	LDB	2	RDB 2	
-benthos	Assumed						
-fish	Observed						
-algae or other aquatic life	Frogs, Tadpoles observed, Algae						
<b>6-photo numbers</b>	1, 2						
<b>7-rainfall information</b>	.16" previous 7days						
<b>8-HUC -12 Code &amp; Name</b>	08010208503, Big Black Creek						
<b>9-Confirmed by:</b>							
<b>10-Assessed</b>	yes <input type="checkbox"/>	no <input checked="" type="checkbox"/>					
<b>11-ETW</b>	yes <input type="checkbox"/>	no <input checked="" type="checkbox"/>					
<b>12-303 (d) List</b>	yes <input type="checkbox"/>	siltation <input type="checkbox"/>	habitat: <input type="checkbox"/>	other: <input type="checkbox"/>			
	no <input checked="" type="checkbox"/>						
<b>13-Notes</b>	Chisholm Creek (TN08010208030_0200)						

## Ecology Field Data Sheet: Water Resources

<b>Project:</b>		Madison County; SR-223 (Shady Grove Road), Bridge over Branch, LM 2.28					
<b>Biologist:</b>	Eric Philipps	<b>Affiliation:</b>	TDOT	<b>Date:</b>	06/13/2018		
<b>1-Station:</b> from plans	No plans						
<b>2-Map label and name</b>	STR-2						
<b>3-Latitude/Longitude</b>	Crossing SR-223 through culvert at 35.495255, -89.001984						
<b>4-Potential impact</b>	Encapsulation/Fill						
<b>5-Feature description:</b>							
-channel identification	perennial stream	<input checked="" type="checkbox"/> <b>intermittent stream</b>	ephemeral stream	wwc			
-HD score (if applicable)							
-OHWM indicators	bed & banks <input checked="" type="checkbox"/>	deposition <input checked="" type="checkbox"/>	presence of litter / debris <input checked="" type="checkbox"/>	scour <input checked="" type="checkbox"/>	veg absent, bent, matted <input checked="" type="checkbox"/>		
	change in plant community <input checked="" type="checkbox"/>	destruction of terrestrial veg <input checked="" type="checkbox"/>	multiple observed flow events <input type="checkbox"/>	sediment sorting <input checked="" type="checkbox"/>	water staining <input checked="" type="checkbox"/>		
	change in soil character <input checked="" type="checkbox"/>	leaf litter disturbed absent <input checked="" type="checkbox"/>	natural line impressed on bank <input checked="" type="checkbox"/>	shelving <input type="checkbox"/>	wracking <input checked="" type="checkbox"/>		
-sinuosity	absent <input type="checkbox"/>	weak <input checked="" type="checkbox"/>	moderate <input type="checkbox"/>	strong <input type="checkbox"/>			
-channel bottom width	~3 ft.		-top of bank width	~5 ft.			
- avg. gradient of stream (%)	Low						
-bank height and slope ratio	LDB - ~2 ft.		RDB - ~2 ft.				
-water flow	fast <input type="checkbox"/>	moderate <input type="checkbox"/>	slow <input type="checkbox"/>	isolated pools <input checked="" type="checkbox"/>	none <input type="checkbox"/>		
-water depth (riffles / pools)	~.5 ft		water width (riffles / pools)	~.5 ft			
-bank stability: LDB, RDB	LDB: Stable <input checked="" type="checkbox"/>	Eroding <input type="checkbox"/>	Undercutting <input type="checkbox"/>	Sloughing <input type="checkbox"/>	Exposed Roots <input type="checkbox"/>		
	RDB: Stable <input checked="" type="checkbox"/>	Eroding <input type="checkbox"/>	Undercutting <input type="checkbox"/>	Sloughing <input type="checkbox"/>	Exposed Roots <input type="checkbox"/>		
-dominant riparian species: ------(LDB /RDB)-----	LDB: Kudzu, boxelder, American sycamore						
	RDB: Kudzu, boxelder, American sycamore						
-habitat assessment score	49						
	epifaunal substrate	4	channel alteration	2			
	channel substrate	6	channel sinuosity	3			
	pool variability	4	bank stability	LDB	5	RDB 5	
	sediment deposition	6	bank vegetative protection	LDB	3	RDB 3	
	channel flow status	2	riparian veg zone width	LDB	3	RDB 3	
-benthos	Assumed						
-fish	Observed						
-algae or other aquatic life	Frogs, Tadpoles, Algal mat observed						
<b>6-photo numbers</b>	5, 6						
<b>7-rainfall information</b>	.16" previous 7days						
<b>8-HUC -12 Code &amp; Name</b>	08010208503, Big Black Creek						
<b>9-Confirmed by:</b>							
<b>10-Assessed</b>	yes <input type="checkbox"/>	no <input checked="" type="checkbox"/>					
<b>11-ETW</b>	yes <input type="checkbox"/>	no <input checked="" type="checkbox"/>					
<b>12-303 (d) List</b>	yes <input type="checkbox"/>	siltation <input type="checkbox"/>	habitat: <input type="checkbox"/>	other: <input type="checkbox"/>			
	no <input checked="" type="checkbox"/>						
<b>13-Notes</b>	Fish observed in pool present on either side of culvert under SR-223.						

## Ecology Field Data Sheet: Water Resources

<b>Project:</b>		Madison County; SR-223 (Shady Grove Road), Bridge over Branch, LM 2.28					
<b>Biologist:</b>	Eric Philipps	<b>Affiliation:</b>	TDOT	<b>Date:</b>	06/13/2018		
<b>1-Station: from plans</b>	No Plans						
<b>2-Map label and name</b>	WWC-1						
<b>3-Latitude/Longitude</b>	From 35.495338, -89.000710 to 35.495331, -89.001320						
<b>4-Potential impact</b>	Encapsulation/Fill						
<b>5-Feature description:</b>							
-channel identification	perennial stream	intermittent stream	ephemeral stream	WWC			
-HD score (if applicable)	8						
-OHWM indicators	bed & banks <input type="checkbox"/>	deposition <input type="checkbox"/>	presence of litter / debris <input type="checkbox"/>	scour <input type="checkbox"/>	veg absent, bent, matted <input type="checkbox"/>		
	change in plant community <input type="checkbox"/>	destruction of terrestrial veg <input type="checkbox"/>	multiple observed flow events <input type="checkbox"/>	sediment sorting <input type="checkbox"/>	water staining <input type="checkbox"/>		
	change in soil character <input type="checkbox"/>	leaf litter disturbed absent <input type="checkbox"/>	natural line impressed on bank <input type="checkbox"/>	shelving <input type="checkbox"/>	wracking <input type="checkbox"/>		
-sinuosity	absent <input checked="" type="checkbox"/>	weak <input type="checkbox"/>	moderate <input type="checkbox"/>	strong <input type="checkbox"/>			
-channel bottom width	~1 ft.		-top of bank width		~2.5 ft.		
- avg. gradient of stream (%)	Low						
-bank height and slope ratio	LDB - ~2 ft.			RDB - ~2 ft.			
-water flow	fast <input type="checkbox"/>	moderate <input type="checkbox"/>	slow <input type="checkbox"/>	isolated pools <input type="checkbox"/>	none <input checked="" type="checkbox"/>		
-water depth (riffles / pools)	N/A		water width (riffles / pools)		N/A		
-bank stability: LDB, RDB	LDB: Stable <input checked="" type="checkbox"/>	Eroding <input type="checkbox"/>	Undercutting <input type="checkbox"/>	Sloughing <input type="checkbox"/>	Exposed Roots <input type="checkbox"/>		
	RDB: Stable <input checked="" type="checkbox"/>	Eroding <input type="checkbox"/>	Undercutting <input type="checkbox"/>	Sloughing <input type="checkbox"/>	Exposed Roots <input type="checkbox"/>		
-dominant riparian species: ------(LDB /RDB)-----	LDB: Kudzu, grasses						
	RDB: Kudzu, American Sweetgum, Elm						
-habitat assessment score	0						
	epifaunal substrate		channel alteration				
	channel substrate		channel sinuosity				
	pool variability		bank stability		LDB	RDB	
	sediment deposition		bank vegetative protection		LDB	RDB	
	channel flow status		riparian veg zone width		LDB	RDB	
-benthos	None observed						
-fish	None observed						
-algae or other aquatic life	None observed						
<b>6-photo numbers</b>	3, 4						
<b>7-rainfall information</b>	.16" previous 7 days						
<b>8-HUC -12 Code &amp; Name</b>	08010208503, Big Black Creek						
<b>9-Confirmed by:</b>							
<b>10-Assessed</b>	yes <input type="checkbox"/>	no <input type="checkbox"/>					
<b>11-ETW</b>	yes <input type="checkbox"/>	no <input type="checkbox"/>					
<b>12-303 (d) List</b>	yes <input type="checkbox"/>	siltation <input type="checkbox"/>	habitat: <input type="checkbox"/>	other: <input type="checkbox"/>			
	no <input type="checkbox"/>						
<b>13-Notes</b>							

## Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.4

County: Madison	Named Waterbody:	Date/Time: 6/13/18
Assessors/Affiliation: Eric Philipps, TDOT	Project ID: 124712.00	
Site Name/Description: WWC-1		
Site Location: NE corner of SR-223 and STR-1		
USGS quad: Mercer, TN	HUC (12 digit): Big Black Creek 080102080503	Lat/Long: From 35.495338, -89.000710 to 35.495331, -89.001320
Previous Rainfall (7-days) : .19" in last 48 hours		
Precipitation this Season vs. Normal : very wet    wet <b>average</b> dry    drought    unknown		
Source of recent & seasonal precip data : AqAcis		
Watershed Size : <.03 sq mi	Photos: Yes	Number : 3, 4
Soil Type(s) / Geology : From Lexington silt loam, 8 to 12 percent slopes, severely eroded to Collins silt loam, 0 to 2 percent slopes, frequently flooded, brief duration		
Surrounding Land Use : Agricultural, Forested		
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : Severe                      Moderate <b>Slight</b> Absent		

### Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge	✓	WWC
2. Defined bed and bank absent, dominated by upland vegetation / grass	✓	WWC
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions	✓	WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall	✓	WWC
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase	✓	Stream
6. Presence of fish (except <i>Gambusia</i> )	✓	Stream
7. Presence of naturally occurring ground water table connection	✓	Stream
8. Flowing water in channel and 7 days since last precipitation in local watershed	✓	Stream
9. Evidence watercourse has been used as a supply of drinking water	✓	Stream

**NOTE : If any Primary Indicators 1-9 = "Yes", then STOP; absent directly contradictory evidence, determination is complete.**

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in *TDEC-WPC Guidance For Making Hydrologic Determinations, Version 1.4*

**Overall Hydrologic Determination = WWC**

**Secondary Indicator Score (if applicable) = 8**

**Justification / Notes :** Feature is characterized as actively eroding roadside ditch. Parallels SR-223 and enters STR-1 north of roadway/bridge from the east.



## Ecology Field Data Sheet: Water Resources

<b>Project:</b>		Madison County; SR-223 (Shady Grove Road), Bridge over Branch, LM 2.28					
<b>Biologist:</b>	Eric Philipps	<b>Affiliation:</b>	TDOT	<b>Date:</b>	06/13/2018		
<b>1-Station: from plans</b>	No plans						
<b>2-Map label and name</b>	WWC-2						
<b>3-Latitude/Longitude</b>	From 35.495190, -89.003014 to 35.495213, -89.001869						
<b>4-Potential impact</b>	Encapsulation/Fill						
<b>5-Feature description:</b>							
-channel identification	perennial stream	intermittent stream	ephemeral stream	WWC			
-HD score (if applicable)	11.5						
-OHWM indicators	bed & banks <input type="checkbox"/>	deposition <input type="checkbox"/>	presence of litter / debris <input type="checkbox"/>	scour <input type="checkbox"/>	veg absent, bent, matted <input type="checkbox"/>		
	change in plant community <input type="checkbox"/>	destruction of terrestrial veg <input type="checkbox"/>	multiple observed flow events <input type="checkbox"/>	sediment sorting <input type="checkbox"/>	water staining <input type="checkbox"/>		
	change in soil character <input type="checkbox"/>	leaf litter disturbed absent <input type="checkbox"/>	natural line impressed on bank <input type="checkbox"/>	shelving <input type="checkbox"/>	wracking <input type="checkbox"/>		
-sinuosity	absent <input checked="" type="checkbox"/>	weak <input type="checkbox"/>	moderate <input type="checkbox"/>	strong <input type="checkbox"/>			
-channel bottom width	~2 ft.		-top of bank width		~2 ft.		
- avg. gradient of stream (%)	Low						
-bank height and slope ratio	LDB - ~2ft.			RDB - ~2ft.			
-water flow	fast <input type="checkbox"/>	moderate <input type="checkbox"/>	slow <input type="checkbox"/>	isolated pools <input type="checkbox"/>	none <input checked="" type="checkbox"/>		
-water depth (riffles / pools)	N/A		water width (riffles / pools)		N/A		
-bank stability: LDB, RDB	LDB: Stable <input checked="" type="checkbox"/>	Eroding <input checked="" type="checkbox"/>	Undercutting <input type="checkbox"/>	Sloughing <input type="checkbox"/>	Exposed Roots <input type="checkbox"/>		
	RDB: Stable <input checked="" type="checkbox"/>	Eroding <input checked="" type="checkbox"/>	Undercutting <input type="checkbox"/>	Sloughing <input type="checkbox"/>	Exposed Roots <input type="checkbox"/>		
-dominant riparian species: ------(LDB /RDB)-----	LDB: Boxelder, giant ragweed, poison ivy, grasses						
	RDB: Boxelder, giant ragweed, poison ivy, grasses						
-habitat assessment score	0						
	epifaunal substrate		channel alteration				
	channel substrate		channel sinuosity				
	pool variability		bank stability		LDB	RDB	
	sediment deposition		bank vegetative protection		LDB	RDB	
	channel flow status		riparian veg zone width		LDB	RDB	
-benthos	None observed						
-fish	None observed						
-algae or other aquatic life	None observed						
<b>6-photo numbers</b>	7, 8						
<b>7-rainfall information</b>	.16" previous 7 days						
<b>8-HUC -12 Code &amp; Name</b>	08010208503 Big Black Creek						
<b>9-Confirmed by:</b>							
<b>10-Assessed</b>	yes <input type="checkbox"/>	no <input type="checkbox"/>					
<b>11-ETW</b>	yes <input type="checkbox"/>	no <input type="checkbox"/>					
<b>12-303 (d) List</b>	yes <input type="checkbox"/>	siltation <input type="checkbox"/>	habitat: <input type="checkbox"/>	other: <input type="checkbox"/>			
	no <input type="checkbox"/>						
<b>13-Notes</b>							

## Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.4

County: Madison	Named Waterbody:	Date/Time: 6/13/18
Assessors/Affiliation: Eric Philipps, TDOT	Project ID: 124712.00	
Site Name/Description: WWC-2		
Site Location: SW corner of SR-223 and STR-2		
USGS quad: Mercer, TN	HUC (12 digit): Big Black Creek 080102080503	Lat/Long: From 35.495190, -89.003014 to 35.495213, -89.001869
Previous Rainfall (7-days) : .16" in last 48 hours		
Precipitation this Season vs. Normal : very wet    wet <b>average</b> dry    drought    unknown		
Source of recent & seasonal precip data : AqAcis		
Watershed Size : <.03 sq mi	Photos: Yes	Number : 7, 8
Soil Type(s) / Geology : From Lexington silt loam, 5 to 8 percent slopes, severely eroded to Collins silt loam, 0 to 2 percent slopes, frequently flooded, brief duration		
Surrounding Land Use : Agricultural, Forested		
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : Severe <b>Moderate</b> Slight                      Absent		

### Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge	✓	WWC
2. Defined bed and bank absent, dominated by upland vegetation / grass	✓	WWC
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions	✓	WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall	✓	WWC
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase	✓	Stream
6. Presence of fish (except <i>Gambusia</i> )	✓	Stream
7. Presence of naturally occurring ground water table connection	✓	Stream
8. Flowing water in channel and 7 days since last precipitation in local watershed	✓	Stream
9. Evidence watercourse has been used as a supply of drinking water	✓	Stream

**NOTE : If any Primary Indicators 1-9 = "Yes", then STOP; absent directly contradictory evidence, determination is complete.**

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in *TDEC-WPC Guidance For Making Hydrologic Determinations, Version 1.4*

**Overall Hydrologic Determination = WWC**

**Secondary Indicator Score (if applicable) = 11.5**

**Justification / Notes :** Feature is characterized as actively eroding roadside ditch. Parallels SR-223 and enters STR-2 south of roadway from the west. Heavy deposits of sand observed. Recent removal of culvert at field drive is contributing to erosion.

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**Species reported within 1 mile radius of project:**

Species  Scientific and common names, followed by (A) for animal or (P) for plant	Status		Species is potentially present in R-O-W because: (A) it is listed by TDEC within ROW (B) habitat is present (C) observed during site visit (D) critical habitat present within ROW	Species is considered likely NOT present in R-O-W because: (A) Present habitat unsuitable (B) Not observed during site visit (C) Original record questionable (D) Considered extinct/extirpated	Accommodations to minimize impacts: (A) BMPs are sufficient to protect species (B) Special Notes are included on project plans (C) Individuals will be impacted. (D) Accommodations not practical due to broad habitat description or mobility of species	Habitat (include blooming, breeding or other information; where found according to TDEC database; year last observed; reference)	Notes
	Fed	TN					
<i>Noturus gladiator</i> (Piebald madtom) (A)	-	D		A	A	Large creeks & rivers in moderate-swift currents with clean sand or gravel substrates; Mississippi River tributaries. 1970-PRE. TAYLOR, W. R. 1969. A REVISION OF THE CATFISH GENUS NOTURUS RAFINESQUE WITH AN ANALYSIS OF HIGHER GROUPS IN THE ICTALURIDAE. US NAT. MUS. BULL. NO. 282:315 PP.	

**Species reported within 1-mile to 4-mile radius of project:**

Species  Scientific and common names, followed by (A) for animal or (P) for plant	Status		Species is potentially present in R-O-W because:  (A) it is listed by TDEC within ROW (B) habitat is present (C) observed during site visit (D) critical habitat present within ROW	Species is considered likely NOT present in R-O-W because: (A) Present habitat unsuitable (B) Not observed during site visit (C) Original record questionable (D) Considered extinct/extirpated	Accommodations to minimize impacts: (A) BMPs are sufficient to protect species (B) Special Notes are included on project plans (C) Individuals will be impacted. (D) Accommodations not practical due to broad habitat description or mobility of species	Habitat (include blooming, breeding or other information; where found according to TDEC database; year last observed; reference)	Notes
	Fed	TN					
<i>Noturus gladiator</i> (Piebald madtom) (A)	-	D		A	A	Large creeks & rivers in moderate-swift currents with clean sand or gravel substrates; Mississippi River tributaries. 1970-PRE. TAYLOR, W. R. 1969. A REVISION OF THE CATFISH GENUS NOTURUS RAFINESQUE WITH AN ANALYSIS OF HIGHER GROUPS IN THE ICTALURIDAE. US NAT. MUS. BULL. NO. 282:315 PP.	

**Migratory Birds**

List **significant concentrations** of migratory birds encountered within the project area (rookeries, aggregations, nesting areas, etc).

Species (Scientific and Common Name)	Approximate No. of Nests (or Individuals)	Location of Nests (or Individuals) (Include Latitude & Longitude)	Nesting Dates and Reference	Photograph #
None				

**USFWS letter:** Yes  X  (attached) No   (explain)

**Biological Assessment:** Yes   (response letter attached; see below) No  X

Species (scientific and common names)	USFWS conclusion <sup>1</sup>
None	

<sup>1</sup> Choose from "no effect"; "not likely to adversely affect;" or "likely to adversely affect;". If "likely to adversely affect" is chosen, indicate "no jeopardy to species and no adverse modification to habitat" or "jeopardy to species, or adverse modification to habitat" based on FWS concurrence letter

# 1 & 4 Mile T&E

SCIENTIFIC_NAME	COMMON_NAME	LAST_OBS_DATE	FED_PROTECTION	ST_PROTECTION	EO_RANK
Noturus gladiator	Piebald Madtom	1970-PRE	--	D	Historical

**From:** [John Griffith](#)  
**To:** [Eric Philipps](#)  
**Cc:** [Randall E. Mann](#); [Lou Timms](#); [Jared McCoy](#); [Dustin Tucker](#); [Rita M. Thompson](#); [Greg Harris](#)  
**Subject:** RE: [EXTERNAL] Madison County, SR-223 (Shady Grove Road) Bridge over Branch, PIN 124712.00  
**Date:** Monday, July 16, 2018 9:44:40 AM  
**Attachments:** [image001.png](#)

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**\*\*\* This is an EXTERNAL email. Please exercise caution. DO NOT open attachments or click links from unknown senders or unexpected email - STS-Security. \*\*\***

Eric,  
??

Thank you for requesting our review of the proposed SR-223 Bridge replacement over a unnamed tributary to Chisholm Creek at LM 2.28 in Madison County, Tennessee.?? Upon review of the information provided and our database, we would not anticipate impacts to any federally listed or proposed species as a result of the project.?? Therefore, based on the best information available at this time, we believe that the requirements of section 7 of the Endangered Species Act (Act) of 1973, as amended, are fulfilled for all species that currently receive protection under the Act.?? Obligations under section 7 of the Act must be reconsidered if (1) new information reveals impacts of the proposed action that may affect listed species or critical habitat in a manner not previously considered, (2) the proposed action is subsequently modified to include activities which were not considered during this consultation, or (3) new species are listed or critical habitat designated that might be affected by the proposed action.

??

TDOT's standard construction BMPs would be implemented during the project. Equipment staging and maintenance areas should be developed an adequate distance from the stream to avoid entry of petroleum-based pollutants into the water.?? Concrete and cement dust must be kept out of the water as they alter chemical properties and can be toxic to aquatic species. This email will serve as our official project response.?? Please let me know if we can offer further assistance.?? Thanks,

??

John Griffith  
Transportation Biologist  
U.S. Fish and Wildlife Service  
Tennessee Field Office  
931-525-4995 (office)  
931-528-7075 (fax)  
??

---

**From:** Eric Philipps <[Eric.Philipps@tn.gov](mailto:Eric.Philipps@tn.gov)>  
**Sent:** Thursday, June 21, 2018 2:15 PM  
**To:** [john\\_griffith@fws.gov](mailto:john_griffith@fws.gov)  
**Cc:** Randall E. Mann <[Randall.E.Mann@tn.gov](mailto:Randall.E.Mann@tn.gov)>; Lou Timms <[Lou.Timms@tn.gov](mailto:Lou.Timms@tn.gov)>; Jared McCoy <[Jared.McCoy@tn.gov](mailto:Jared.McCoy@tn.gov)>; Dustin Tucker <[Dustin.Tucker@tn.gov](mailto:Dustin.Tucker@tn.gov)>; Rita M. Thompson <[Rita.M.Thompson@tn.gov](mailto:Rita.M.Thompson@tn.gov)>; Greg Harris <[Greg.Harris@tn.gov](mailto:Greg.Harris@tn.gov)>  
**Subject:** [EXTERNAL] Madison County, SR-223 (Shady Grove Road) Bridge over Branch, PIN 124712.00  
??

John,

??

Please find attached the coordination request, including species maps and list, for the proposed bridge replacement in Madison County.

??

Thanks,



**Eric Philipps** | Environmental Studies Specialist  
Region 4 | Project Development

Environmental Tech Office | Building A, 1<sup>st</sup> floor  
300 Benchmark Place, Jackson, TN 38301

p. 731-935-0174???? c. 731-513-0021

[eric.philipps@tn.gov](mailto:eric.philipps@tn.gov)

[tn.gov/tdot](http://tn.gov/tdot)

??

**From:** [Casey Parker](#)  
**To:** [Eric Philipps](#); [TDOT Env.LocalPrograms](#)  
**Cc:** [Rob Todd](#)  
**Subject:** RE: Request for Comment - Madison, SR-223 (Shady Grove Road) Bridge over Branch, PIN 124712.00  
**Date:** Wednesday, July 11, 2018 2:53:29 PM  
**Attachments:** [image002.png](#)  
[image003.png](#)

---

Subject: Request for Comment - Madison, SR-223 (Shady Grove Road) Bridge over Branch, PIN 124712.00

Mr. Eric Philipps,

I have reviewed the information that you provided regarding the proposed bridge replacement on SR-223 (Shady Grove Road) in Madison County, Tennessee. The implementation of standard BMP's will be sufficient to satisfy the needs of the Tennessee Wildlife Resources Agency for this proposed project. Thank you for the opportunity to review and comment, please contact me if you need further assistance.

**Casey Parker - Wildlife Biologist**  
**Liaison to TDOT & Federal Highway Administration**  
**Tennessee Wildlife Resources Agency**  
**Environmental Services Division**  
**Email:** [casey.parker@tn.gov](mailto:casey.parker@tn.gov)



---

**From:** Eric Philipps  
**Sent:** Thursday, June 21, 2018 2:57 PM  
**To:** Casey Parker  
**Cc:** Rob Todd; Randall E. Mann; Lou Timms; Jared McCoy; Dustin Tucker; Rita M. Thompson; Greg Harris  
**Subject:** Request for Comment - Madison, SR-223 (Shady Grove Road) Bridge over Branch, PIN 124712.00

Casey,

TDOT proposes to replace the subject bridge in Madison County. Please find attached KMZ file, species maps, species list, and plan sheet. If you have any questions or require additional information, please do not hesitate to contact me.

Thanks,



**Eric Philipps** | Environmental Studies Specialist  
Region 4 | Project Development  
Environmental Tech Office | Building A, 1<sup>st</sup> floor  
300 Benchmark Place, Jackson, TN 38301  
p. 731-935-0174 c. 731-513-0021  
[eric.philipps@tn.gov](mailto:eric.philipps@tn.gov)  
[tn.gov/tdot](http://tn.gov/tdot)

TENNESSEE D.O.T.  
S.T.I.D.  
FILE NO. \_\_\_\_\_

TYPE	YEAR	COUNTY	FIGURE NO.
BRIDGE	2018	MADISON	1



3/23/2018 3:57:24 PM M:\2017\160408005 (1101) TIR - SR-223 Bridge over Branch, Madison County\Design\Sheets\Proposed Environmental Layout Madison Co.Bridge Over Branch.rdg



### ENVIRONMENTAL TECHNICAL STUDY AREA

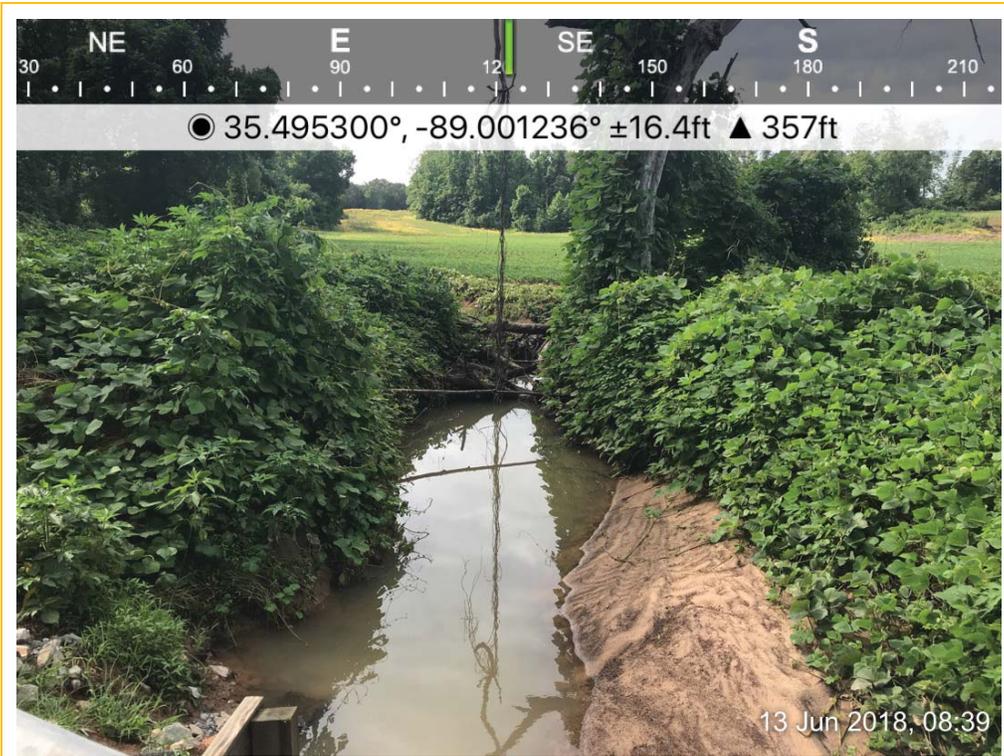
STATE ROUTE 223 (SHADY GROVE ROAD)  
BRIDGE OVER BRANCH @ L.M. 2.28  
MADISON COUNTY

ENVIRONMENTAL  
TECHNICAL  
STUDY  
AREA



STATE OF TENNESSEE  
DEPARTMENT OF TRANSPORTATION  
S.T.I.D.

FIGURE 1  
BRIDGE REPLACEMENT  
SR223  
L.M. 2.28



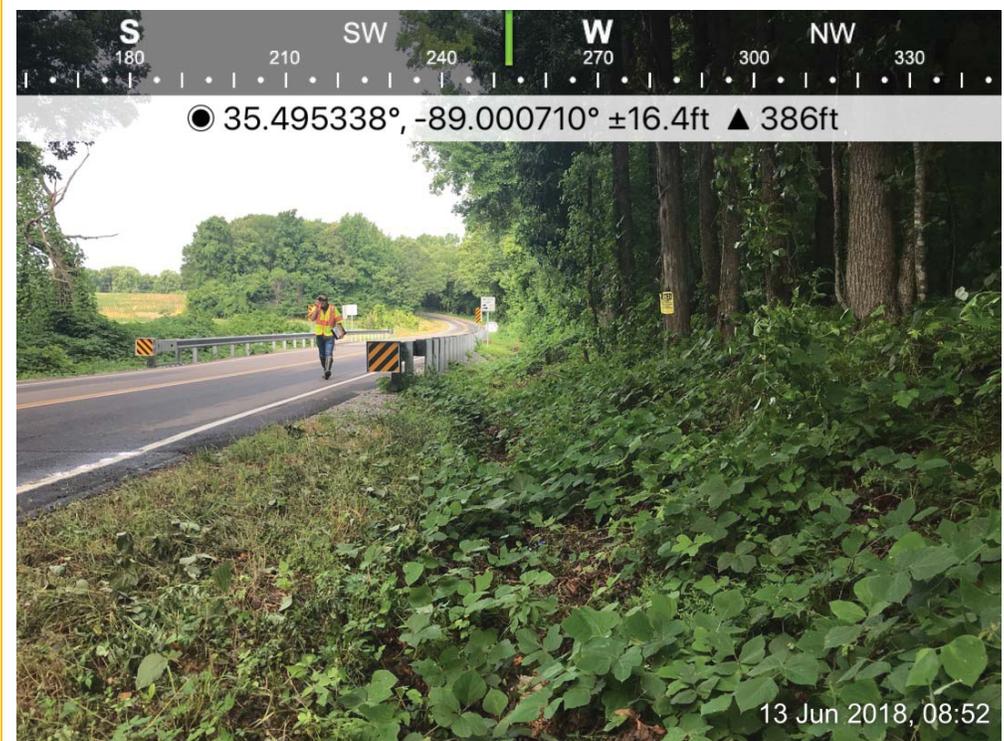
**Photo 1.** STR-1 — Looking upstream from bridge



**Photo 2.** STR-1 — Looking downstream from bridge



**Photo 3.** WWC-1 — Looking up gradient



**Photo 4.** WWC-1 — Looking down gradient, toward confluence with STR-1



**Photo 5.** STR-2 — Looking upstream at origin of STR-2 and terminus of WWC-2.



**Photo 6.** STR-2 — Looking downstream, toward confluence with STR-1.

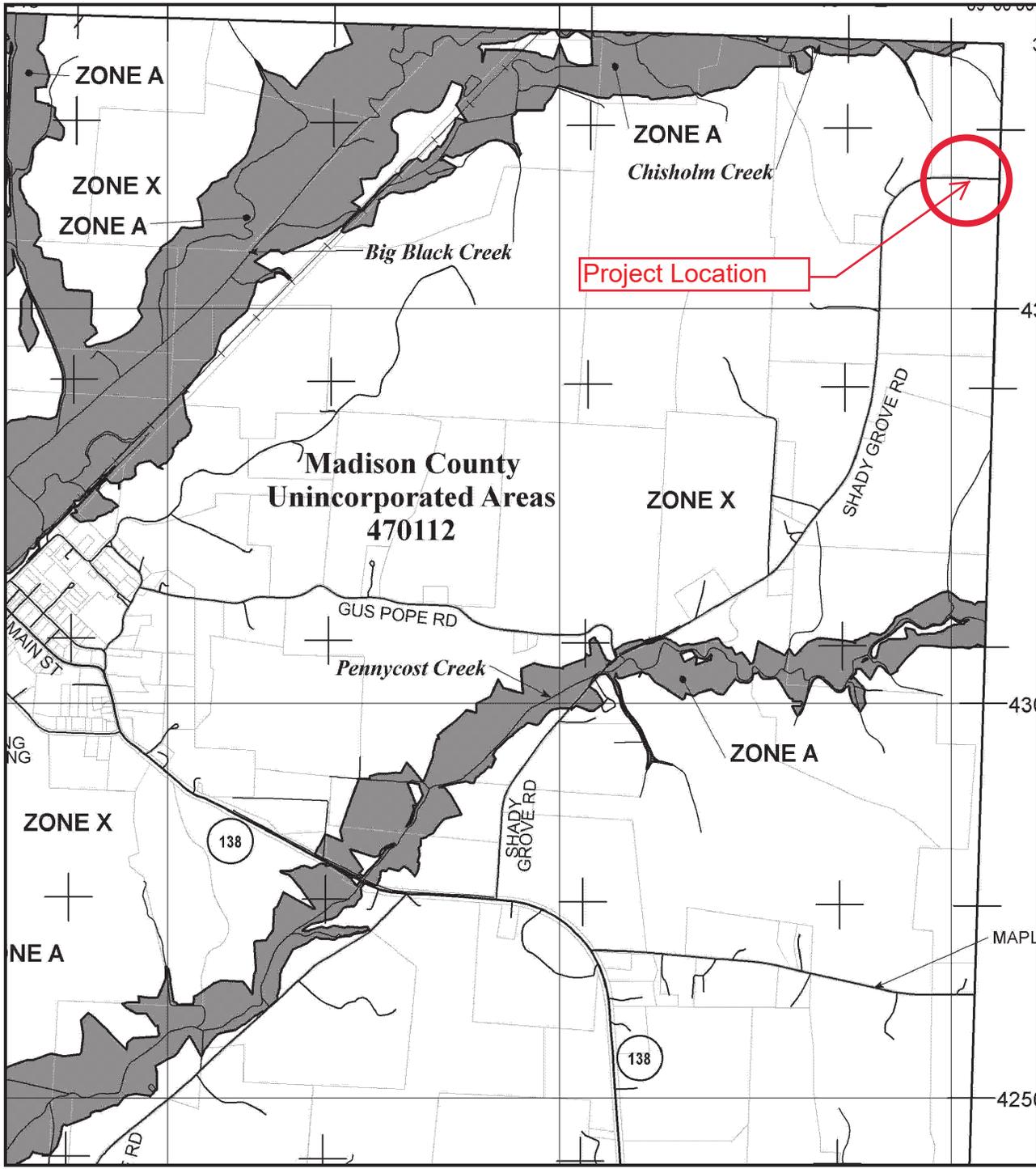


**Photo 7.** WWC-2 — Looking down gradient.



**Photo 8.** WWC-2 — Looking up gradient, from confluence with STR-2.

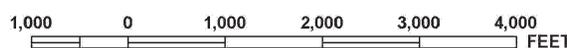
# Floodplain Management



Insurance Program at 1-800-638-6620.



MAP SCALE 1" = 2000'



**NATIONAL FLOOD INSURANCE PROGRAM**

PANEL 0375E

**FIRM**  
**FLOOD INSURANCE RATE MAP**  
**MADISON COUNTY,**  
**TENNESSEE**  
**AND INCORPORATED AREAS**

**PANEL 375 OF 435**  
 (SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
MADISON COUNTY	470112	0375	E

Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.

**MAP NUMBER**  
**47113C0375E**  
**MAP REVISED**  
**AUGUST 3, 2009**

  
**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](http://www.msc.fema.gov)

# Air and Noise

# Environmental Studies Request

## Project Information

---

**Route:** State Route 223  
**Termini:** S.R. 223 (Shady Grove Rd.) Bridge Replacement over Branch at L.M. 2.28  
**County:** Madison  
**PIN:** 128113.06

## Request

---

**Request Type:** Environmental Study Reevaluation  
**Project Plans:** Design-Build Bridge Plans  
**Date of Plans:** 06/12/2019  
**Location:** Email Attachment

## Certification

---

**Requestor:** Jonathan Knudsen  
**Title:** TDOT Environmental Studies Request

**Signature:** Jonathan  
Knudsen

Digitally signed by  
Jonathan Knudsen  
Date: 2019.06.14  
11:00:30 -05'00'

# Environmental Study

## Technical Section

---

**Section:** Air and Noise

## Study Results

---

### AIR QUALITY

#### Transportation Conformity

This project is in Madison County which is in attainment for all regulated criteria pollutants. Therefore, conformity does not apply to this project.

#### Mobile Source Air Toxics (MSATs)

This project qualifies as a categorical exclusion under 23 CFR 771.117 and, therefore, does not require an evaluation of MSATs per FHWA's "Interim Guidance Update on Air Toxic Analysis in NEPA Documents" dated October 2016.

### NOISE

This project is Type III in accordance with the FHWA noise regulation in 23 CFR 772 and TDOT's noise policy; therefore, a noise study is not needed.

## Commitments

---

Did the study of this project result in any environmental commitments?

No

## Additional Information

---

Is there any additional information or material included with this study?

No

## Certification

---

**Responder:** Chasity L. Stinson

**Title:** TESS Advanced, TDOT Air and Noise Section

**Signature:** Chasity L.  
Stinson

Digitally signed by  
Chasity L. Stinson  
Date: 2019.06.19  
14:41:14 -05'00'

# Cultural Resources

# Environmental Studies Request

## Project Information

---

**Route:** State Route 223  
**Termini:** S.R. 223 (Shady Grove Rd.) Bridge Replacement over Branch at L.M. 2.28  
**County:** Madison  
**PIN:** 128113.06

## Request

---

**Request Type:** Environmental Study Reevaluation  
**Project Plans:** Design-Build Bridge Plans  
**Date of Plans:** 06/12/2019  
**Location:** Email Attachment

## Certification

---

**Requestor:** Jonathan Knudsen  
**Title:** TDOT Environmental Studies Request

**Signature:** Jonathan  
Knudsen

Digitally signed by  
Jonathan Knudsen  
Date: 2019.06.14  
11:00:30 -05'00'

# Environmental Study

## Technical Section

---

**Section:** Archaeology

## Study Results

---

In a letter dated August 21, 2018 the TN SHPO concurred that no NRHP listed, eligible, or potentially eligible properties would be affected by this undertaking.

## Commitments

---

Did the study of this project result in any environmental commitments?

No

## Additional Information

---

Is there any additional information or material included with this study?

No

## Certification

---

**Responder:** Sarah Kate McKinney

**Title:** TESS Archaeology

**Signature:** Sarah Kate McKinney  
Digitally signed by Sarah Kate McKinney  
Date: 2019.06.17 14:31:12 -05'00'



**TENNESSEE HISTORICAL COMMISSION**  
STATE HISTORIC PRESERVATION OFFICE  
2941 LEBANON PIKE  
NASHVILLE, TENNESSEE 37243-0442  
OFFICE: (615) 532-1550  
[www.tnhistoricalcommission.org](http://www.tnhistoricalcommission.org)

August 21, 2018

Mr. Phillip R. Hodge  
Tennessee Department of Transportation  
Suite 900, James K. Polk Building  
505 Deaderick Street  
Nashville, TN 37243-1402

RE: FHWA / Federal Highway Administration, SR-233 (Shady Grove Road) Bridge Replacement, Log Mile 2.28, Madison County, TN

Dear Mr. Hodge:

In response to your request, we have reviewed the archaeological report of investigations and accompanying documentation submitted by you regarding the above-referenced undertaking. Our review of and comment on your proposed undertaking are among the requirements of Section 106 of the National Historic Preservation Act. This Act requires federal agencies or applicants for federal assistance to consult with the appropriate State Historic Preservation Office before they carry out their proposed undertakings. The Advisory Council on Historic Preservation has codified procedures for carrying out Section 106 review in 36 CFR 800 (Federal Register, December 12, 2000, 77698-77739).

Considering the information provided, we find that no archaeological resources eligible for listing in the National Register of Historic Places will be affected by this undertaking. If project plans are changed or archaeological remains are discovered during project construction, please contact this office to determine what further action, if any, will be necessary to comply with Section 106 of the National Historic Preservation Act. Complete and/or updated Tennessee Site Survey Forms should be submitted to the Tennessee Division of Archaeology for all sites recorded and/or revisited during the current investigation. Questions or comments may be directed to Jennifer Barnett (615) 687-4780.

Your cooperation is appreciated.

Sincerely,

E. Patrick McIntyre, Jr.  
Executive Director and  
State Historic Preservation Officer

EPM/jmb

# Environmental Studies Request

## Project Information

---

**Route:** State Route 223  
**Termini:** S.R. 223 (Shady Grove Rd.) Bridge Replacement over Branch at L.M. 2.28  
**County:** Madison  
**PIN:** 128113.06

## Request

---

**Request Type:** Environmental Study Reevaluation  
**Project Plans:** Design-Build Bridge Plans  
**Date of Plans:** 06/12/2019  
**Location:** Email Attachment

## Certification

---

**Requestor:** Jonathan Knudsen  
**Title:** TDOT Environmental Studies Request

**Signature:** Jonathan  
Knudsen

Digitally signed by  
Jonathan Knudsen  
Date: 2019.06.14  
11:00:30 -05'00'

# Environmental Study

## Technical Section

---

**Section:** Historic Preservation

## Study Results

---

Based on a review of the 6/12/2019 Preliminary Plans, the TN-SHPO letter dated 6/12/2018 remains valid. The project APE does not contain historic properties listed or eligible for listing the National Register of Historic Places as currently proposed.

## Commitments

---

Did the study of this project result in any environmental commitments?

No

## Additional Information

---

Is there any additional information or material included with this study?

No

## Certification

---

**Responder:** Haley Seger

**Title:** TESS - Historic Preservation

**Signature:**

Haley Seger

Digitally signed by Haley  
Seger  
Date: 2019.06.17  
15:27:22 -05'00'



**TENNESSEE HISTORICAL COMMISSION**  
STATE HISTORIC PRESERVATION OFFICE  
2941 LEBANON PIKE  
NASHVILLE, TENNESSEE 37243-0442  
OFFICE: (615) 532-1550  
[www.tnhistoricalcommission.org](http://www.tnhistoricalcommission.org)

June 12, 2018

Ms. Katherine Looney  
Tennessee Department of Transportation  
505 Deaderick St  
Suite 900  
Nashville, TN 37243-1402

RE: FHWA / Federal Highway Administration, Replacement of the SR 223 Bridge over Branch,  
Log Mile 2.28/ PIN 124712.00, , Madison County, TN

Dear Ms. Looney:

In response to your request, we have reviewed the architectural survey report and accompanying documentation submitted by you regarding the above-referenced undertaking. Our review of and comment on your proposed undertaking are among the requirements of Section 106 of the National Historic Preservation Act. This Act requires federal agencies or applicants for federal assistance to consult with the appropriate State Historic Preservation Office before they carry out their proposed undertakings. The Advisory Council on Historic Preservation has codified procedures for carrying out Section 106 review in 36 CFR 800 (Federal Register, December 12, 2000, 77698-77739).

Considering the information provided, we concur that no architectural resources eligible for listing in the National Register of Historic Places will be affected by this undertaking. If project plans are changed or archaeological remains are discovered during project construction, please contact this office to determine what further action, if any, will be necessary to comply with Section 106 of the National Historic Preservation Act. Questions or comments may be directed to Casey Lee (615 253-3163).

Your cooperation is appreciated.

Sincerely,

E. Patrick McIntyre  
Executive Director and  
State Historic Preservation Officer

EPM/cjl

# Native American Consultation

# Environmental Studies Request

## Project Information

---

**Route:** State Route 223  
**Termini:** S.R. 223 (Shady Grove Rd.) Bridge Replacement over Branch at L.M. 2.28  
**County:** Madison  
**PIN:** 128113.06

## Request

---

**Request Type:** Environmental Study Reevaluation  
**Project Plans:** Design-Build Bridge Plans  
**Date of Plans:** 06/12/2019  
**Location:** Email Attachment

## Certification

---

**Requestor:** Jonathan Knudsen  
**Title:** TDOT Environmental Studies Request

**Signature:** Jonathan  
Knudsen

Digitally signed by  
Jonathan Knudsen  
Date: 2019.06.14  
11:00:30 -05'00'

# Environmental Study

## Technical Section

---

**Section:** Native American Coordination

## Study Results

---

NAC was sent to the Absentee Shawnee and the Thlopthlocco Tribal Town on July 16, 2019 to bring NAC up to date. Neither tribe responded.

## Commitments

---

Did the study of this project result in any environmental commitments?

No

## Additional Information

---

Is there any additional information or material included with this study?

No

## Certification

---

**Responder:** Sarah Kate McKinney

**Title:** TESS Archaeology

**Signature:** Sarah Kate  
McKinney

Digitally signed by  
Sarah Kate McKinney  
Date: 2019.08.27  
13:03:52 -05'00'



**STATE OF TENNESSEE  
DEPARTMENT OF TRANSPORTATION**

**ENVIRONMENTAL DIVISION**  
SUITE 900, JAMES K. POLK BUILDING  
505 DEADERICK STREET  
NASHVILLE, TENNESSEE 37243-1402  
(615) 741-3655

**CLAY BRIGHT**  
COMMISSIONER

**BILL LEE**  
GOVERNOR

July 15, 2019

Ms. Devon Frazier  
Absentee Shawnee Tribe of Oklahoma  
2025 South Gordon Cooper Dr.  
Shawnee, OK 74801-9381

**SUBJECT:** Section 106 Initial Consultation for Proposed Bridge Replacement of State Route 223 Bridge over Branch in Madison County, Tennessee (TDOT PIN 124712.00).

Dear Ms. Frazier,

The Tennessee Department of Transportation (TDOT), in coordination with the Federal Highway Administration (FHWA), is proposing to replace the State Route 223 bridge over a branch, log mile 2.28, in Madison County, Tennessee (maps attached). The proposed bridge replacement will remain on the same alignment, however, approximately 0.06 acres of additional right-of-way is expected and there will be ground disturbance in the area of potential effects.

The National Historic Preservation Act (NHPA) recognizes that federally funded undertakings, like the subject project, can affect historic properties to which your tribe attaches religious, cultural, and historic significance. In accordance with 36 CFR 800 regulations implementing compliance with Section 106 of the NHPA, we are providing general project information so that you can determine if your tribe has an interest in the project area or nature of the work proposed and so you have an opportunity to bring to our attention any interests and concerns about the potential for impacts to properties of religious and cultural significance. In addition, do you wish to be a consulting party on the project? Early awareness of your concerns can serve to protect historic properties valued by your tribe.

If you act as a consulting party you will receive archaeological assessment reports and related documentation, be invited to attend project meetings with FHWA, TDOT, and the Tennessee State Historic Preservation Office (TN-SHPO), if any are held, and be asked to provide input throughout the process. If you choose to not act as a consulting party at this time, you can do so at a later date simply by notifying me.

Please respond to me via letter, telephone (615-741-0977), fax (615-741-1098), or E-mail ([Phillip.Hodge@tn.gov](mailto:Phillip.Hodge@tn.gov)). I respectfully request responses (email is preferred) to project reports and other materials within thirty (30) days of receipt if at all possible. Thank you for your assistance.

Sincerely,

Phillip R. Hodge  
Cultural Resources Manager

Enclosure

cc  
Janet Maylen, Thlpothlocco Tribal Town



**TDOT PIN 124712.00**  
**Madison County**  
**USGS TOPO Mercer 431 NE**



Madison County, TN. PIN 124712.00

**TDOT PIN 124712.00**  
**Madison County**  
**USGS TOPO Mercer 431 NE**



Project Location: Aerial View

## Phillip Hodge

---

**From:** TDOT TribalCoordination  
**Sent:** Tuesday, July 16, 2019 4:59 PM  
**To:** '106NAGPRA@astribe.com'  
**Subject:** Section 106 Early Coordination; Carroll County, TN, West Tennessee Bridges (Region 4)  
**Attachments:** Carroll SR436 Bridge 124139.00 NAC Frazier.pdf; Fayette SR 193 Bridge 124285.00 NAC Frazier.pdf; Haywood SR 1 Bridges 124505.00 and 124503.00 NAC Frazier.pdf; Lauderdale SR 87 Bridge 124637.00 NAC Frazier.pdf; Madison SR 223 Bridge 124712.00 NAC Frazier.pdf

Dear Ms. Frazier,

On behalf of the Federal Highway Administration, please find attached letters inviting Absentee Shawnee Tribe of Indians in Oklahoma to participate in the subject projects as a consulting party under Section 106 of the National Historic Preservation Act. These letters describe each project and include maps illustrating their location.

These projects were originally coordinated with federally recognized Native American nations in 2018. I am providing this information to you since at that time Carroll County was not included on FHWA's list of counties for Absentee Shawnee Tribe of Indians in Oklahoma's area of interest within Tennessee.

If you have any questions or need additional information, please feel free to call or email anytime. I appreciate your review of this information and look forward to your comments.

Sincerely,  
Phil



**Phillip Hodge** | Cultural Resources Manager  
Environmental Division  
James K. Polk Building, 9<sup>th</sup> Floor  
505 Deaderick St.  
Nashville, TN 37243  
p. 615-741-0977  
[Phillip.Hodge@tn.gov](mailto:Phillip.Hodge@tn.gov)

## Phillip Hodge

---

**From:** Phillip Hodge  
**Sent:** Tuesday, July 16, 2019 4:59 PM  
**To:** THPO@tttown.org  
**Subject:** Section 106 Early Coordination; Carroll County, TN, West Tennessee Bridges (Region 4)  
**Attachments:** Madison SR 223 Bridge 124712.00 NAC Cloud.pdf; Lauderdale SR 87 Bridge 124637.00 NAC Cloud.pdf; Haywood SR 1 Bridges 124505.00 and 124503.00 NAC Cloud.pdf; Carroll SR436 Bridge 124139.00 NAC Cloud.pdf

Dear Mr. Cloud,

On behalf of the Federal Highway Administration, please find attached letters inviting Thlopthlocco Tribal Town to participate in the subject projects as a consulting party under Section 106 of the National Historic Preservation Act. These letters describe each project and include maps illustrating their location.

These projects were originally coordinated with federally recognized Native American nations and tribes in 2018. I am providing this information to you since at that time Carroll County was not included on FHWA's list of counties for Thlopthlocco Tribal Town's area of interest within Tennessee.

If you have any questions or need additional information, please feel free to call or email anytime. I appreciate your review of this information and look forward to your comments.

Sincerely,  
Phil



**Phillip Hodge** | Cultural Resources Manager  
Environmental Division  
James K. Polk Building, 9<sup>th</sup> Floor  
505 Deaderick St.  
Nashville, TN 37243  
p. 615-741-0977  
[Phillip.Hodge@tn.gov](mailto:Phillip.Hodge@tn.gov)

# Hazardous Materials

# Environmental Studies Request

## Project Information

---

**Route:** State Route 223  
**Termini:** S.R. 223 (Shady Grove Rd.) Bridge Replacement over Branch at L.M. 2.28  
**County:** Madison  
**PIN:** 128113.06

## Request

---

**Request Type:** Environmental Study Reevaluation  
**Project Plans:** Design-Build Bridge Plans  
**Date of Plans:** 06/12/2019  
**Location:** Email Attachment

## Certification

---

**Requestor:** Jonathan Knudsen  
**Title:** TDOT Environmental Studies Request

**Signature:** Jonathan  
Knudsen

Digitally signed by  
Jonathan Knudsen  
Date: 2019.06.14  
11:00:30 -05'00'

# Environmental Study

## Technical Section

---

**Section:** Hazardous Materials

## Study Results

---

Based on the Preliminary Plans dated 12 June 2019, no known hazardous materials sites appear to affect this project as it is currently planned and no additional hazardous material studies are recommended at this time. The asbestos bridge survey has been completed, no asbestos was detected and the following project commitment has been submitted but does not show in these plans.

In the event hazardous substances/wastes are encountered within the right-of-way, their disposition shall be subject to all applicable regulations, including the applicable sections of the Federal Resource Conservation and Recovery Act, as amended; the Comprehensive Environmental Response, Compensation, and Liability Act, as amended; and the Tennessee Hazardous Waste Management Act of 1983, as amended. Databases reviewed include: Google Earth imagery, EPA National Priorities List, EPA EnviroMapper, TDEC Registered UST database, TDEC Division of Water Resources Public Data Viewer, TDOT IBIS, and others as necessary.

## Commitments

---

**Did the study of this project result in any environmental commitments?**

Yes

EDHZ001. An Asbestos Containing Material (ACM) survey was conducted on Bridge No. 57S81960003, SR-223 over Branch, LM 2.28 (57-SR223-02.28). No ACM was detected. No special accommodations for demolition and waste disposal are anticipated for these structures and the material can be deposited in a C&D landfill. Prior to the demolition or rehabilitation of any structure (bridge or building), the contractor is required to submit the National Emission Standards for Hazardous Air Pollutants standard 10-day notice of demolition to the TDEC Division of Air Pollution Control (Standard Specifications for Road and Bridge Construction (January 1, 2015) Sections 107.08 D and 202.03).

## Additional Information

---

**Is there any additional information or material included with this study?**

No

## Certification

---

**Responder:** Kyle Kirschenmann

**Title:** Transportation Manager 1, Hazardous Materials Section

**Signature:**

Kyle Kirschenmann

Digitally signed by Kyle Kirschenmann  
DN: cn=Kyle Kirschenmann, o=TDOT,  
ou=Hazardous Materials Section,  
email=kyle.kirschenmann@tn.gov,  
c=US  
Date: 2019.06.17 06:58:08 -0400



# TENNESSEE DEPARTMENT OF TRANSPORTATION

## ASBESTOS INSPECTION REPORT

SR-223 Bridge over Branch  
Bridge ID Number 57S81960003  
Madison County, Tennessee



Prepared by:



**K. S. WARE & ASSOCIATES, L.L.C.**  
54 Lindsley Avenue  
Nashville, Tennessee 37210

January 11, 2016  
KSWA Project Number: 100-15-0061

*Kollan Spradlin*

Kollan Spradlin  
Tennessee Asbestos Inspector Accreditation [A-I-96275-44129]

TABLE OF CONTENTS

1.0 INTRODUCTION ..... 1  
    1.1 TDOT BRIDGE IDENTIFICATION ..... 1  
    1.2 GENERAL DESCRIPTION ..... 1

2.0 INSPECTION ..... 1  
    2.1 PERSONNEL AND DATE(S) OF INSPECTION ..... 1  
    2.2 VISUAL SURVEY ..... 2  
    2.3 ACCESS TO BRIDGE COMPONENTS ..... 2  
        2.3.1 Asphalt Overlay – Homogeneous Area A ..... 2  
        2.3.2 Concrete Decking – Homogeneous Area B ..... 2  
        2.3.3 Concrete Abutment – Homogeneous Area C ..... 2

3.0 ANALYTICAL PROCEDURES ..... 3  
    3.1 ASBESTOS ANALYSIS PROCEDURES ..... 3  
    3.2 LABORATORY NAME AND ACCREDITATION ..... 3

4.0 REGULATORY OVERVIEW ..... 3  
    4.1 NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS ..... 3  
        4.1.1 Definitions ..... 4

5.0 RESULTS ..... 5  
    5.1 RESULTS OF ASBESTOS BULK SAMPLE ANALYSIS ..... 5

6.0 QUALIFICATIONS ..... 6

**TABLES**

Table – 1: Bridge Component Description ..... 2  
Table – 2: Analytical Laboratory ..... 3

**FIGURES**

Figure – 1: Site Vicinity Map ..... 7

APPENDICES

Appendix A: Photographs

Appendix B: Asbestos Sample Laboratory Analysis Data

Appendix C: Asbestos Inspection Personnel Accreditations

Appendix D: Health and Safety Plan

Appendix E: Activity Hazard Analysis

## 1.0 INTRODUCTION

This report presents the findings of an inspection for asbestos-containing materials completed on the bridge identified in Section 1.1. The inspection was completed in accordance with the State of Tennessee, Department of Transportation Environmental Division, Hazardous Materials Section requirements.

### 1.1 TDOT BRIDGE IDENTIFICATION

The bridge is identified in the TDOT Project System/Bridge Management System as:

TDOT PE Number: 57039-4229-04  
TDOT PIN Number: 122985.00  
Bridge Inventory Number: 57S81960003  
Termini: SR-223 Bridge over Branch. LM 2.28  
Log Mile Number: 2.28

### 1.2 GENERAL DESCRIPTION

The SR-223 Bridge over Branch is a 23-foot, 2-lane, 1-span bridge constructed of steel I-beams and steel girders with a concrete deck and an asphalt wearing surface. The bridge was constructed in 1952 and is scheduled for repair. **Figure – 1** shows the general location of the bridge. Photographs of the subject Madison County Bridge are presented in **Appendix A**, and the analytical results of all the samples collected from the bridge, along with the chain-of-custody records, are included in **Appendix B**.

## 2.0 INSPECTION

The identification of asbestos-containing materials (ACM) is performed by collecting bulk samples of suspect materials and having those samples analyzed by a laboratory. ACM are those materials found to contain greater than one percent asbestos by calibrated visual area estimation (CVAE) using Polarized Light Microscopy (PLM).

Bulk sampling is a procedure in which representative homogeneous sampling areas in a structure are identified and then sampled. A homogeneous sampling area is defined as an area that contains material of the same type (uniform in color and texture) and is applied during the same general time period. Once the homogeneous sampling areas are identified, bulk samples of suspect materials are obtained at the discretion of our inspectors, based on site conditions and past experience.

### 2.1 PERSONNEL AND DATE(S) OF INSPECTION

The sampling and field activities were performed on December 16, 2015 by Mr. Kollan Spradlin. Mr. Spradlin is an accredited State of Tennessee Asbestos Inspector. A copy of Mr. Spradlin's current accreditation from the State of Tennessee is included in **Appendix C**. Field activities were conducted under a Health and Safety Plan (**Appendix D**) and an Activity Hazard Analysis (**Appendix E**) prepared prior to mobilizing to the site.

## 2.2 VISUAL SURVEY

KSWA's survey began with a visual survey of the bridge. The visual survey consisted of:

- sketching the structure and/or verifying the plans provided
- locating and identifying homogeneous areas of suspect materials that may contain asbestos minerals
- determining applicable sampling locations

Table-1 lists the homogeneous areas identified during our visual survey.

Table – 1: Bridge Component Descriptions

Homogeneous Area	Description	Sample Numbers
A	Asphalt Overlay	223-1, 223-2, 223-3
B	Concrete Decking	223-4, 223-5, 223-6
C	Concrete Abutment	223-7, 223-8, 223-9

## 2.3 ACCESS TO BRIDGE COMPONENTS

Individual bridge components were accessed by the following methods.

### 2.3.1 Asphalt Overlay – Homogeneous Area A

The asphalt overlay was accessed and sampled from the top and shoulder of the bridge.

### 2.3.2 Concrete Decking – Homogeneous Area B

The concrete decking was accessed and sampled from the shoulder of the bridge.

### 2.3.3 Concrete Abutment – Homogeneous Area C

The concrete abutment was accessed and sampled from the shoulder of the bridge.

### 3.0 ANALYTICAL PROCEDURES

#### 3.1 ASBESTOS ANALYSIS PROCEDURES

The bulk samples are analyzed in the laboratory using PLM coupled with dispersion staining. PLM is an analytical method for asbestos identification, which identifies the specific asbestos minerals by their unique optical properties. The optical properties are a result of the mineral's chemical composition, physical atomic structure, and visual morphology. This is the U.S. Environmental Protection Agency (EPA) recommended method of analysis for asbestos identification in bulk samples.

In most instances, samples from each homogeneous area are analyzed on a "first positive stop" basis. "First positive stop" means that if one sample from a homogeneous area of material is found to contain greater than 1% asbestos, the remaining samples from that homogeneous area are not analyzed and the material is assumed to contain asbestos. In addition, samples which contain multiple layers, or that have associated mastic or adhesive backing, are analyzed as two or more separate samples. Samples that are identified to contain 1% or less asbestos minerals have been point counted by the laboratory for confirmation.

#### 3.2 LABORATORY NAME AND ACCREDITATION

The bulk samples collected for this inspection were analyzed by a laboratory that has received accreditation from the National Institute of Standards and Technology (NIST) under the National Voluntary Laboratory Accreditation Program (NVLAP). The name and accreditation number of the analytical laboratory that analyzed the samples for this inspection are indicated in Table - 2:

Table – 2: Analytical Laboratory

Laboratory	EMSL Analytical, Inc.
NVLAP Number	102104-0

### 4.0 REGULATORY OVERVIEW

#### 4.1 NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS

The EPA's National Emission Standards for Hazardous Air Pollutants (NESHAP) regulations (40 CFR 61, Subpart B) requires that all regulated asbestos-containing materials (RACM) be properly removed prior to any renovation or demolition activities that will disturb them. These regulations define RACM as:

- Friable ACM.
- Category I non-friable ACM that has become friable.
- Category I non-friable ACM that will be or has been subject to sanding, grinding, cutting, or abrading.
- Category II non-friable ACM that has a high probability of becoming, or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of demolition or renovation operations.

#### 4.1.1 Definitions

Significant definitions related to regulation of asbestos under NESHAP include:

**Friable asbestos-containing material (ACM)**, is defined by the Asbestos NESHAP, as any material containing more than one percent (1%) asbestos as determined using the method specified in Appendix A, Subpart F, 40 CFR Part 763, Section 1, Polarized Light Microscopy (PLM), that, when dry, can be crumbled, pulverized or reduced to powder by hand pressure. (Sec. 61.141)

**Non-friable ACM** is any material containing more than one percent (1%) asbestos as determined using the method specified in Appendix A, Subpart F, 40 CFR Part 763, Section 1, Polarized Light Microscopy (PLM), that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure. EPA also defines two categories of non-friable ACM, Category I and Category II non-friable ACM, which are described as follows:

**Category I non-friable ACM** is any asbestos-containing packing, gasket, resilient floor covering or asphalt roofing product which contains more than one percent (1%) asbestos as determined using polarized light microscopy (PLM) according to the method specified in Appendix A, Subpart F, 40 CFR Part 763. (Sec. 61.141)

**Category II non-friable ACM** is any material, excluding Category I non-friable ACM, containing more than one percent (1%) asbestos as determined using polarized light microscopy according to the methods specified in Appendix A, Subpart F, 40 CFR Part 763 that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure. (Sec. 61.141)

**"Regulated Asbestos-Containing Material" (RACM)** is (a) friable asbestos material, (b) Category I non-friable ACM that has become friable, (c) Category I non-friable ACM that will be or has been subjected to sanding, grinding, cutting or abrading, or (d) Category II non-friable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of demolition or renovation operations.

**Friable materials** are defined as those which can be crumbled, pulverized, or reduced to powder by hand pressure when dry. The NESHAP regulations also establish specific notification and control requirements for renovation and demolition work.

## 5.0 RESULTS

The results of the asbestos inspection are presented in the following sections.

### 5.1 RESULTS OF ASBESTOS BULK SAMPLE ANALYSIS

Nine samples were collected from the SR-223 Bridge over Branch. Multiple samples of each homogeneous area were collected in accordance with State of Tennessee, Department of Transportation Environmental Division, Hazardous Materials Section requirements and delivered to the laboratory for visual observation and microscopic analysis. The samples were selected based on homogeneous areas of suspect materials, as described in Section 2.2.

Building material homogeneous areas sampled included: asphalt overlay, concrete decking, and concrete abutment.

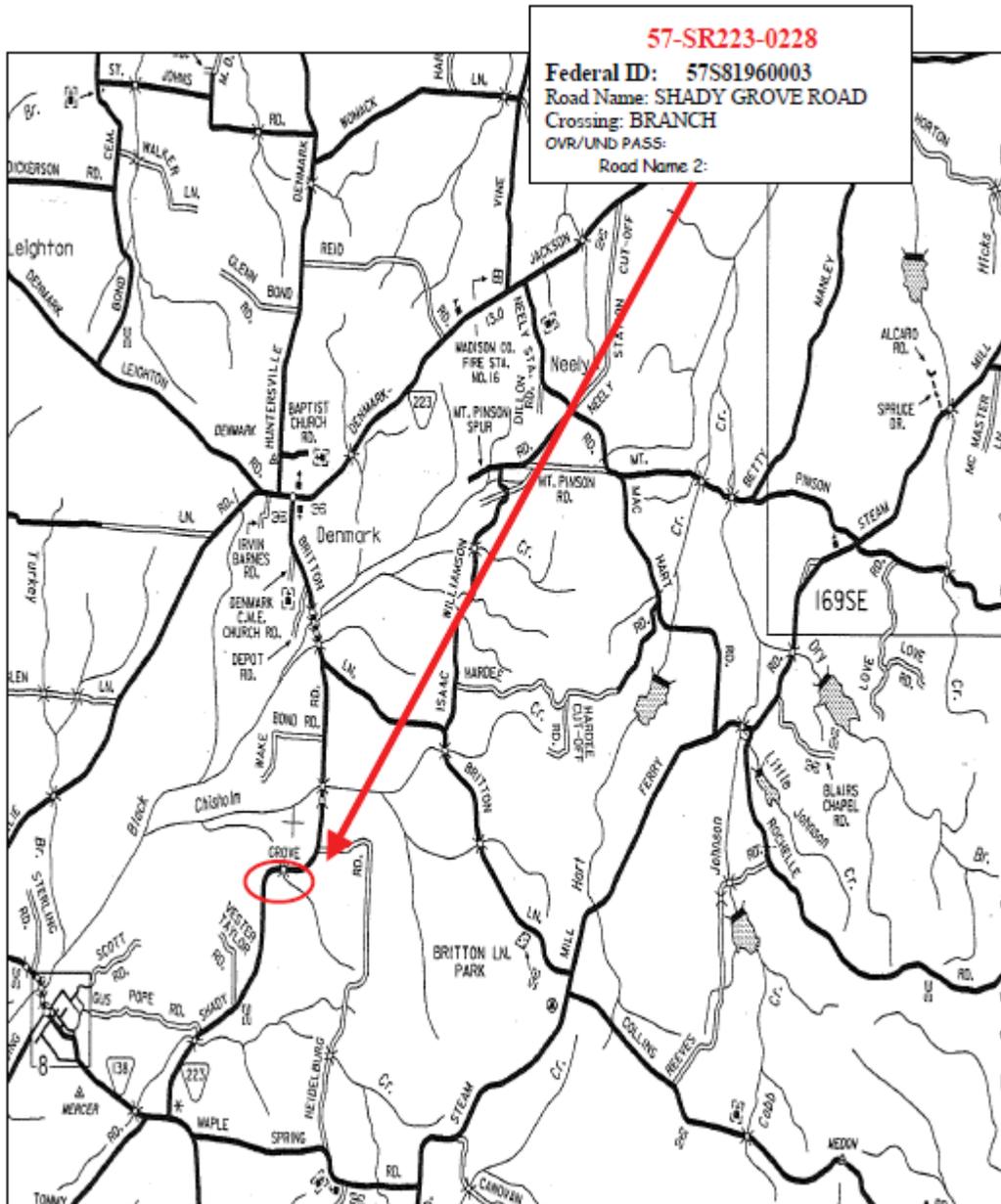
No asbestos was found to be present in any of the materials sampled from the bridge.

## 6.0 QUALIFICATIONS

The information presented herein is based on information obtained during the site visit and from previous experience. If additional information becomes available which might impact our conclusions or recommendations, K. S. Ware & Associates, L.L.C. requests the opportunity to review the information, reassess the potential concerns, and modify opinions, if warranted.

This report has been prepared on behalf of the Tennessee Department of Transportation. This document is not a Bid Document or a Contract Document. Use of this report or reliance upon information contained in this report by any other party implies an agreement by that party to the same terms and conditions under which service was provided. Furthermore, any party, other than our Client, relying on this document is cautioned that all conclusions made or decisions arrived at based on their review of this document are those solely of the third party, without warranty, guarantee or promise by the author. These findings are relevant to the dates of our services and should not be relied upon to represent conditions at substantially earlier or later dates.

### Figure – 1: Site Vicinity Map Madison County



## APPENDIX A: PHOTOGRAPHS



Photo 1: View of HA-A and HA-B on the top of SR-223 Bridge over Branch

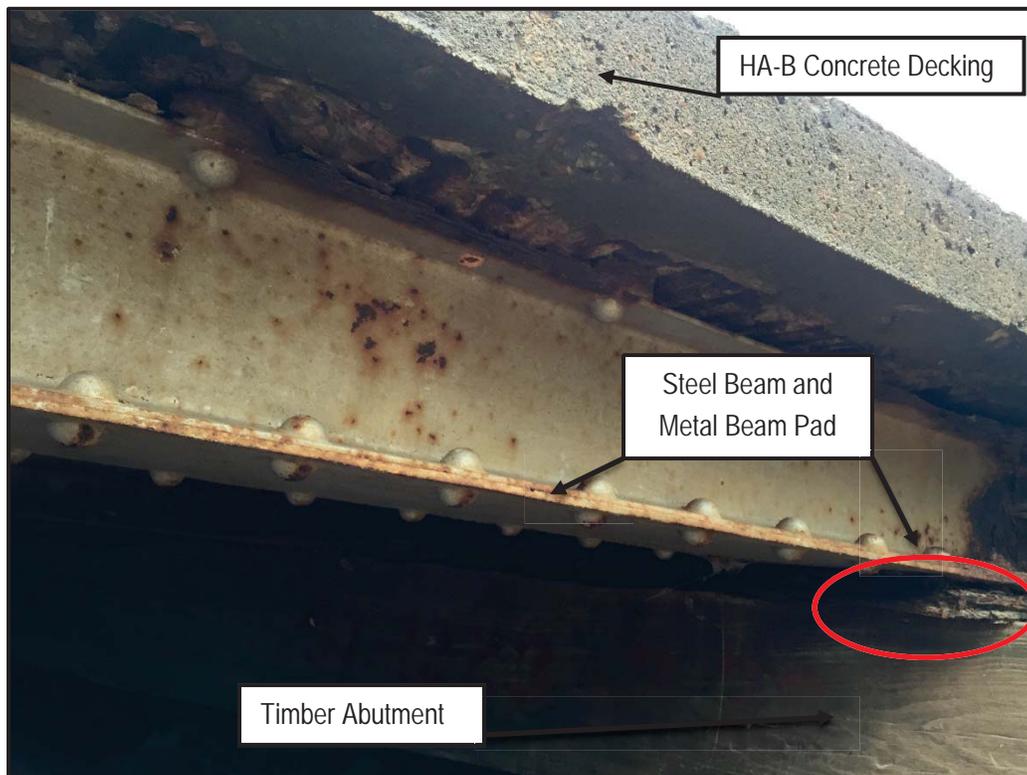


Photo 2: View of HA-B over timber abutments, steel beams, and metal beam pads



Photo 3: View of HA-C beside SR-223 Bridge over Branch



Photo 4: View of HA-C on SR-223 Bridge over Branch

## **APPENDIX B: ASBESTOS SAMPLE LABORATORY ANALYSIS DATA**



EMSL ANALYTICAL, INC.  
LABORATORY • PRODUCTS • TRAINING

### Asbestos Bulk Building Material Chain of Custody

EMSL Order Number (Lab Use Only):

7054

Kernersville, NC 27284  
PHONE: (336) 992-1025  
FAX: (336) 992-4175

Company : K.S. Ware & Associates, LLC		EMSL-Bill to: <input checked="" type="checkbox"/> Same <input type="checkbox"/> Different If Bill to is Different note instructions in Comments**	
Street: 54 Lindsley Ave.		Third Party Billing requires written authorization from third party	
City: Nashville	State/Province: TN	Zip/Postal Code: 37210	Country: United States
Report To (Name): Kollan Spradlin		Telephone #: 615-255-9702	
Email Address: kspradin@kswarellc.com		Fax #:	Purchase Order:
Project Name/Number:		Please Provide Results: <input type="checkbox"/> Fax <input checked="" type="checkbox"/> Email <input type="checkbox"/> Mail	
U.S. State Samples Taken: TN		CT Samples: <input type="checkbox"/> Commercial/Taxable <input type="checkbox"/> Residential/Tax Exempt	

**Turnaround Time (TAT) Options\* – Please Check**

3 Hour   
  6 Hour   
  24 Hour   
  48 Hour   
  72 Hour   
  96 Hour   
  1 Week   
  2 Week

\*For TEM Air 3 hr through 6 hr, please call ahead to schedule. \*There is a premium charge for 3 Hour TEM AHERA or EPA Level II TAT. You will be asked to sign an authorization form for this service. Analysis completed in accordance with EMSL's Terms and Conditions located in the Analytical Price Guide.

<b>PLM - Bulk (reporting limit)</b>		<b>TEM - Bulk</b>	
<input checked="" type="checkbox"/> PLM EPA 600/R-93/116 (<1%) <input type="checkbox"/> PLM EPA NOB (<1%) Point Count <input type="checkbox"/> 400 (<0.25%) <input type="checkbox"/> 1000 (<0.1%) Point Count w/Gravimetric <input type="checkbox"/> 400 (<0.25%) <input type="checkbox"/> 1000 (<0.1%) <input type="checkbox"/> NIOSH 9002 (<1%) <input type="checkbox"/> NY ELAP Method 198.1 (friable in NY) <input type="checkbox"/> NY ELAP Method 198.6 NOB (non-friable-NY) <input type="checkbox"/> OSHA ID-191 Modified <input type="checkbox"/> Standard Addition Method		<input type="checkbox"/> TEM EPA NOB – EPA 600/R-93/116 Section 2.5.5.1 <input type="checkbox"/> NY ELAP Method 198.4 (TEM) <input type="checkbox"/> Chatfield Protocol (semi-quantitative) <input type="checkbox"/> TEM % by Mass – EPA 600/R-93/116 Section 2.5.5.2 <input type="checkbox"/> TEM Qualitative via Filtration Prep Technique <input type="checkbox"/> TEM Qualitative via Drop Mount Prep Technique	
		<b>Other</b>	
		<input type="checkbox"/>	

Check For Positive Stop – Clearly Identify Homogenous Group      Date Sampled: 12-16-2015

Samplers Name: Kollan Spradlin      Samplers Signature: *Kollan Spradlin*

Sample #	HA #	Sample Location	Material Description
223-1	A	NW	Asphalt Overlay
223-2	A	SW	Asphalt Overlay
223-3	A	NE	Asphalt Overlay
223-4	B	NW	Concrete Decking
223-5	B	NE	Concrete Decking
223-6	B	SE	Concrete Decking
223-7	C	NW	Concrete Abutment
223-8	C	NE	Concrete Abutment
223-9	C	SE	Concrete Abutment

Client Sample # (s): 223-1A - 223-9C      Total # of Samples: 9

Relinquished (Client): *Kollan Spradlin*      Date: 12/17/2015      Time: 2:00pm

Received (Lab): *VE*      Date: 12/21      Time: 12:45

Comments/Special Instructions: *FPS UPS 1Z 245 3AR 03 9838 7513*



# EMSL Analytical, Inc.

706 Galin Street Kernersville, NC 27284  
Tel/Fax: (336) 992-1025 / (336) 992-4175  
<http://www.EMSL.com> / [greensborolab@emsl.com](mailto:greensborolab@emsl.com)

EMSL Order: 021507054  
Customer ID: KSWA77  
Customer PO:  
Project ID:

**Attention:** Kollan Spradlin  
K.S. Ware LLC  
54 Lindsley Avenue  
Nashville, TN 37210

**Phone:** (615) 255-9702  
**Fax:** (615) 256-5873  
**Received Date:** 12/21/2015 12:45 AM  
**Analysis Date:** 12/22/2015  
**Collected Date:**

**Project:**

## Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
223-1 021507054-0001	Asphalt Overlay	Black Non-Fibrous Homogeneous	<1% Cellulose	15% Quartz 85% Non-fibrous (Other)	None Detected
223-2 021507054-0002	Asphalt Overlay	Black Non-Fibrous Homogeneous	<1% Cellulose	15% Quartz 85% Non-fibrous (Other)	None Detected
223-3 021507054-0003	Asphalt Overlay	Brown/Gray/Black Fibrous Heterogeneous	<1% Cellulose	15% Quartz 85% Non-fibrous (Other)	None Detected
223-4 021507054-0004	Concrete Decking	Gray/Beige Non-Fibrous Heterogeneous	<1% Cellulose	20% Quartz 80% Non-fibrous (Other)	None Detected
223-5 021507054-0005	Concrete Decking	Gray/Tan Non-Fibrous Heterogeneous	<1% Cellulose	20% Quartz 80% Non-fibrous (Other)	None Detected
223-6 021507054-0006	Concrete Decking	Gray/Tan/Beige Non-Fibrous Heterogeneous	<1% Cellulose	20% Quartz 80% Non-fibrous (Other)	None Detected
223-7 021507054-0007	Concrete Abutment	Gray/Tan Non-Fibrous Heterogeneous		20% Quartz 80% Non-fibrous (Other)	None Detected
223-8 021507054-0008	Concrete Abutment	Gray/Tan Non-Fibrous Homogeneous		20% Quartz 80% Non-fibrous (Other)	None Detected
223-9 021507054-0009	Concrete Abutment	Brown/Gray/Tan Non-Fibrous Heterogeneous	<1% Cellulose	20% Quartz 80% Non-fibrous (Other)	None Detected

Analyst(s)  
Stephen Bennett (6)  
Scott Combs (3)

Stephen Bennett, Laboratory Manager  
or Other Approved Signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. Samples received in good condition unless otherwise noted. Estimated accuracy, precision and uncertainty data available upon request. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample. Reporting limit is 1%

Samples analyzed by EMSL Analytical, Inc. Kernersville, NC NVLAP Lab Code 102104-0, CA ELAP 2689, Virginia 3333-000228, West Virginia LT000321

Initial Report From: 12/23/2015 14:12:58



# EMSL Analytical, Inc.

706 Galin Street Kernersville, NC 27284  
Tel/Fax: (336) 992-1025 / (336) 992-4175  
<http://www.EMSL.com> / [greensborolab@emsl.com](mailto:greensborolab@emsl.com)

EMSL Order: 021507054  
Customer ID: KSWA77  
Customer PO:  
Project ID:

**Attention:** Kollan Spradlin  
K.S. Ware LLC  
54 Lindsley Avenue  
Nashville, TN 37210

**Phone:** (615) 255-9702  
**Fax:** (615) 256-5873  
**Received Date:** 12/21/2015 12:45 AM  
**Analysis Date:** 12/22/2015  
**Collected Date:**

**Project:**

## Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
223-1 <small>021507054-0001</small>	Asphalt Overlay	Black Non-Fibrous Homogeneous	<1% Cellulose	15% Quartz 85% Non-fibrous (Other)	None Detected
223-2 <small>021507054-0002</small>	Asphalt Overlay	Black Non-Fibrous Homogeneous	<1% Cellulose	15% Quartz 85% Non-fibrous (Other)	None Detected
223-3 <small>021507054-0003</small>	Asphalt Overlay	Brown/Gray/Black Fibrous Heterogeneous	<1% Cellulose	15% Quartz 85% Non-fibrous (Other)	None Detected
223-4 <small>021507054-0004</small>	Concrete Decking	Gray/Beige Non-Fibrous Heterogeneous	<1% Cellulose	20% Quartz 80% Non-fibrous (Other)	None Detected
223-5 <small>021507054-0005</small>	Concrete Decking	Gray/Tan Non-Fibrous Heterogeneous	<1% Cellulose	20% Quartz 80% Non-fibrous (Other)	None Detected
223-6 <small>021507054-0006</small>	Concrete Decking	Gray/Tan/Beige Non-Fibrous Heterogeneous	<1% Cellulose	20% Quartz 80% Non-fibrous (Other)	None Detected
223-7 <small>021507054-0007</small>	Concrete Abutment	Gray/Tan Non-Fibrous Heterogeneous		20% Quartz 80% Non-fibrous (Other)	None Detected
223-8 <small>021507054-0008</small>	Concrete Abutment	Gray/Tan Non-Fibrous Homogeneous		20% Quartz 80% Non-fibrous (Other)	None Detected
223-9 <small>021507054-0009</small>	Concrete Abutment	Brown/Gray/Tan Non-Fibrous Heterogeneous	<1% Cellulose	20% Quartz 80% Non-fibrous (Other)	None Detected

Analyst(s)  
Stephen Bennett (6)  
Scott Combs (3)

Stephen Bennett, Laboratory Manager  
or Other Approved Signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. Samples received in good condition unless otherwise noted. Estimated accuracy, precision and uncertainty data available upon request. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample. Reporting limit is 1%  
Samples analyzed by EMSL Analytical, Inc. Kernersville, NC NVLAP Lab Code 102104-0, CA ELAP 2689, Virginia 3333-000228, West Virginia LT000321

Initial Report From: 12/23/2015 14:12:58

## APPENDIX C: ASBESTOS INSPECTION PERSONNEL ACCREDITATIONS

**THE STATE OF TENNESSEE**

Department of Environment and Conservation  
Division of Solid Waste Management  
Toxic Substances Program



Initial



**Kollan L Spradlin**

DOB	Sex	HGT	WGT
13-Aug-1987	M	5' 8"	185

Discipline	Accreditation	Expiration
Inspector	A-1-96275-44129	Jun-30-2016

**Asbestos Accreditation**

## APPENDIX D: HEALTH AND SAFETY PLAN

# HEALTH AND SAFETY PLAN FOR ASBESTOS SURVEY SERVICES

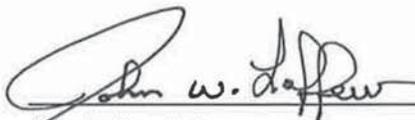
**K. S. WARE AND ASSOCIATES, L.L.C.**

54 Lindsley Ave.  
Nashville, Tennessee 37210

Project Number: 100-15-0061  
Name: Termini: SR-223 Bridge over Branch ACM Survey  
Location: Madison County, Tennessee  
Client: Tennessee Department of Transportation  
Client Contact: Kyle Kirschenmann  
Phone No.: (615)532-8684

## Review and Approval:

Health and Safety Officer

  
John Leffew, P.G. December 15, 2015  
Date

Field Safety Coordinator

  
Kollan Spradlin, E.I. December 15, 2015  
Date

Project Manager

  
Kollan Spradlin, E.I. December 15, 2015  
Date

## Responsibilities for Field Safety Coordinator:

- Primary on-site contact for KSWA's health and safety procedures during field activities.
- Has the authority to stop KSWA operations if conditions are judged to be hazardous to on-site personnel or the public.
- Perform discretionary audits to determine compliance of Health and Safety Plan requirements.
- Responsible for providing access to the health and safety for all on-site employees.
- Responsible for instructing on-site personnel on the location of emergency communication equipment (i.e. phones and radios as necessary).
- Has no responsibility for health and safety procedures of any contractor, subcontractor, client personnel or others on the site.

Date of Plan Preparation

December 1, 2015

Dates of Planned Field Activities

December 16, 2015

## TABLE OF CONTENTS

<u>SECTION</u>	<u>PAGE</u>
<b>1.0 PURPOSE .....</b>	<b>1</b>
<b>2.0 APPLICABILITY.....</b>	<b>2</b>
<b>3.0 SITE DESCRIPTION AND HISTORY.....</b>	<b>3</b>
3.1 BRIDGE INSPECTION EQUIPMENT.....	3
3.2 WORK PRECAUTIONS.....	3
3.3 DISPOSAL RESTRICTIONS .....	3
<b>4.0 HAZARD EVALUATION .....</b>	<b>4</b>
4.1 PHYSICAL HAZARDS .....	4
4.1.1 <i>Operational Hazards</i> .....	4
4.1.2 <i>Fall Hazards</i> .....	4
4.1.3 <i>Heat Stress</i> .....	4
4.1.4 <i>Cold Stress</i> .....	4
4.1.5 <i>Tools and Equipment</i> .....	4
4.1.6 <i>Traffic Hazard</i> .....	4
4.1.7 <i>Noise Hazard</i> .....	4
4.1.8 <i>Asbestos Containing Material</i> .....	5
4.2 CHEMICAL HAZARDS.....	5
4.3 BIOLOGICAL HAZARDS.....	5
4.3.1 <i>Stinging Insects</i> .....	5
<b>5.0 COMMUNICATIONS AND TRAINING .....</b>	<b>6</b>
5.1 COMMUNICATION .....	6
5.2 HEALTH AND SAFETY TRAINING.....	6
5.3 RESPIRATOR USAGE TRAINING AND FIT TESTING .....	6
<b>6.0 SITE CONTROL - WORK ZONES.....</b>	<b>7</b>
<b>7.0 PERSONAL PROTECTION.....</b>	<b>8</b>
<b>8.0 LEVELS OF PROTECTION.....</b>	<b>9</b>
8.1 LEVEL C.....	9
8.1.1 <i>Personal Protective Equipment</i> .....	9
8.1.2 <i>Criteria for Use of Level C</i> .....	9
8.2 LEVEL D.....	9
8.2.1 <i>Personal Protective Equipment</i> .....	10
8.2.2 <i>Criteria for Use of Level D</i> .....	10
<b>9.0 DECONTAMINATION PROCEDURES.....</b>	<b>11</b>
9.1 PERSONNEL DECONTAMINATION .....	11
9.2 EQUIPMENT DECONTAMINATION.....	11
<b>10.0 EMERGENCY PROCEDURES.....</b>	<b>12</b>
10.1 INHALATION.....	12
10.2 SKIN EXPOSURE .....	12
10.3 INGESTION .....	12
10.4 EYES .....	13
10.5 EXPOSURE TO HEAT OR COLD .....	13
10.6 STINGS AND BITES.....	13
10.7 PERSONAL INJURY.....	13
10.8 SPILL OR RELEASE OF HAZARDOUS MATERIAL .....	13
10.9 POTENTIAL OR ACTUAL FIRE/EXPLOSION .....	14
10.10 EVACUATION .....	14
<b>11.0 EMERGENCY CONTACTS .....</b>	<b>15</b>

12.0	MEDICAL MONITORING.....	16
13.0	PERSONNEL AUTHORIZATION .....	17
14.0	FIELD SAFETY COORDINATOR'S SUMMARY .....	18

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## 1.0 PURPOSE

The purpose of this health and safety plan (HASP) is to provide standards for worker safety and protection during field activities conducted on a frequent or routine basis. The plan outlines standards and mandatory procedures relative to physical and chemical hazards encountered at sites, communication, training, worker health monitoring, decontamination procedures and levels of personal protection. Any questions concerning this information should be directed to the K.S. Ware and Associates, L.L.C. (KSWA) Project Manager identified on the cover of this Health and Safety Plan, at 615-255-9702.

## 2.0 APPLICABILITY

This plan is applicable to all personnel working at above referenced site, where mandatory worker health and safety training is required by State or Federal agencies. It is intended for use at the above referenced site where information regarding potential site hazards is available in the form of background research, personal communication with past or present property owners or workers, previous sampling results, etc.

Available information should be provided to site workers as outlined in Section 6.1 A site specific hazard evaluation is included in Section 5.

Activities to which this plan is applicable may include sampling of items that may contain asbestos containing material (ACM); and other routine field activities. Activities involving contact with unknown substances and activities on sites where little background information is available will require more extensive and specific HASP development.

This plan does not cover procedures for entry into confined spaces. Project-specific attachments should be prepared and appended to this Health and Safety Plan if those activities are planned. Work of this nature shall be performed in accordance with 29 CFR 1926.250 subpart P "Excavation, Trenching and Shoring", 29 CFR 1910.146 "Permit Required Confined Space Entry" and the KSWA "Employee Confined Space Entry Program".

### 3.0 SITE DESCRIPTION AND HISTORY

The project consists of performing an Asbestos Survey in Madison County Tennessee on a bridge located on SR- 223 over Branch. The bridge is a 23-foot, 2-lane, 1-span bridge constructed of steel I-beams and steel girders with a concrete deck and asphalt wearing surface. The bridge is numbered 57S81960003. This bridge was constructed in 1952 and is scheduled for repair.

#### 3.1 BRIDGE INSPECTION EQUIPMENT

KSWA will be on site to perform an asbestos survey on the Madison County Bridge. Equipment to be used during the survey will include asbestos sample collection equipment.

#### 3.2 WORK PRECAUTIONS

No eating, drinking, using tobacco products, chewing gum, or putting hands in mouth while on the site.

- Wear the TDOT required roadway safety gear (hard hat, Class III reflective vest, boots) at all times while on the project site.
- Wear gloves at applicable times while at the work site.
- Wear protective eyewear at applicable times while at the work site.
- Wash all exposed skin areas with soap and water before departing from the site.
- Remove and change any non-impervious clothing that becomes contaminated during site activities.
- Do not go anywhere on the site other than where directed by the Field Safety Coordinator.

Use safe and legal procedures for sample storage and shipment.

#### 3.3 DISPOSAL RESTRICTIONS

Treat disposable items as ordinary refuse except when gross contamination is expected. In the event that refuse including disposable personnel protective equipment is suspected of being contaminated, the refuse will be collected and stored on site for future disposal.

---

## 4.0 HAZARD EVALUATION

### 4.1 PHYSICAL HAZARDS

#### 4.1.1 Operational Hazards

Prior to commencement of field activities, the Field Safety Coordinator will conduct a site reconnaissance to identify any visible or operational hazards.

Additionally, because there is a possibility that asbestos may be present at the site, the appropriate Personal Protective Equipment (PPE) will be worn at all times that work is being performed.

#### 4.1.2 Fall Hazards

Field activities can have the potential for fall hazards. Be aware of any uneven terrain, clear paths of debris and materials that may be a hazard. While on the bridges, be aware of slick surfaces and gaps while accessing the different components.

#### 4.1.3 Heat Stress

Field activities in hot climates create a potential for heat stress. The warning symptoms of heat stress include fatigue; loss of strength, reduced accuracy, comprehension and retention; reduced alertness and mental capacity. To prevent heat stress, personnel shall receive adequate water supplies and electrolyte replacement fluids, and maintain scheduled work/rest periods. Pulse rate and body temperature shall also be monitored as appropriate.

#### 4.1.4 Cold Stress

Field activities in cold climates create a potential for cold stress. The warning symptoms of cold stress include reduced coordination, drowsiness, impaired judgment, fatigue, and numbing of the toes, fingers, nose and ears. To prevent cold stress, personnel shall wear appropriate clothing and maintain scheduled work test periods, with rest periods taken in a sheltered and heated location.

#### 4.1.5 Tools and Equipment

Tools and equipment used by KSWA shall be inspected and maintained to be safe and adequate for their designated use. Housekeeping of the site shall be maintained as to prevent trip hazards.

#### 4.1.6 Traffic Hazard

Field activities will encounter traffic on this project. Be aware of the surroundings and watch for traffic.

#### 4.1.7 Noise Hazard

Operation of equipment may present a noise hazard to workers. KSWA personnel will be provided with hearing protection to be utilized when noise levels are excessive.

**Precautions:** In order to reduce the health and safety risk to workers due to physical hazards at the project site, the following precautions will be observed:

1. ANSI Class III High Visibility clothing will be worn by personnel at all times on the project site.
2. Hard hats shall include high visibility reflective tape.
3. Protective eyewear will be worn by personnel in the work area when appropriate.

4. Hearing protection will be worn by personnel as deemed necessary by the Field Safety Coordinator (typically noised levels greater than 85 db).
5. Steel toed boots with non-conductive soles will be worn by personnel at all times on the project site.
6. Hand protection (leather gloves) will be worn by personnel when moving and/or lifting equipment as well as when using large hand tools (machetes, sledges, shovels, etc.).
7. All equipment and related support equipment and vehicles shall have a daily safety inspection (29 CFR 1926.550). The inspections shall include, but are not limited to; all hydraulic lines and fittings for wear and damage, all cable systems and pull ropes for damage and proper installation, exhaust systems and drill controls, electrical lines for damage and/or contact with standing water, etc. Inspection schedules, the vehicle and equipment description, nomenclature, the license plate or ID number for the equipment, the findings of the inspections and the corrective action taken shall be maintained.
8. Before beginning each work shift, the area will be checked for site hazards including overhead lines, underground lines, above ground obstructions, tripping hazards, etc.
9. All vehicles will be fitted with a cab-top rotating or strobe light bar. Light bar is to be active when vehicle is on site.

#### **4.1.8 Asbestos Containing Material**

Collecting samples from bridge components may release asbestos fibers into the air. KSWA personnel will wear a respirator while sampling, and all sampling equipment will be properly decontaminated between samples and after field activities. KSWA personnel will limit exposure by adhering to this health and safety plan.

#### **4.2 CHEMICAL HAZARDS**

Chemical hazards are not anticipated at this site.

#### **4.3 BIOLOGICAL HAZARDS**

##### **4.3.1 Stinging Insects**

The most common stinging insects are bees, wasps and ants. Few species of ants have medically important stings. While most bees possess a defensive sting, and will sting if grasped or crushed, only a few social species sting often enough, or have sufficiently venomous stings to be of medical significance. These include the honeybees and the bumblebees. Most fatalities from bee and wasp stings occur in hypersensitive individuals; death is most often induced by a single sting, and occurs most often within 1 hour after the sting. The victim is typically over 40 years of age and stung on the head or neck. Most deaths are caused by respiratory dysfunction with the second most common cause being anaphylaxis; arteriosclerosis may be a compounding factor. If stung, seek medical attention immediately.

---

## 5.0 COMMUNICATIONS AND TRAINING

Workers at State and Federally listed or recognized sites must be provided with adequate information and training to recognize and evaluate potential hazards. Training shall comply with applicable regulations including 29 CFR 1910.1200 "Hazard Communication Standard".

### 5.1 COMMUNICATION

The Field Safety Coordinator shall supply all on site personnel with readily available access to this Health and Safety Plan. This plan shall cover, at a minimum, the following topics:

- A. A brief description of the history of the location with regards to health and environmental hazards.
- B. A description of the activities to which the hazard evaluation summary is applicable.
- C. A description of any hazards which may be encountered, including:
  - 1. Physical Hazards - terrain, traffic, equipment, severe weather (heat stress and frostbite), electrical hazards, noise.
  - 2. Chemical Hazards - materials used and stored at the site, materials released at the site.
  - 3. Biological Hazards - insects, plants, animals, pathogens, and infectious materials.
- D. A description of the levels of protection selected for the operation.
- E. Equipment decontamination procedure if different from those specified herein.
- F. Summary of emergency contacts for use in the event of fire, explosion, medical emergency or other emergency, including the location of the nearest telephone and an address and phone number to provide to emergency personnel.
- G. A map showing the route to the nearest hospital.

Prior to any employee or subcontractor beginning work on the site, the Field Safety Coordinator shall brief all KSWA employees as well as subcontractors on the contents of this plan. Personnel will have the opportunity to review the plan, and ask questions about the planned work or hazards. Also, a brief site reconnaissance will be completed to familiarize the personnel with site conditions, boundaries, and physical hazards.

By KSWA voluntarily sharing this information with subcontractors and contractors, those firms are not relieved of the responsibility to provide their personnel with adequate and proper supervision, safety information, instruction, and equipment.

### 5.2 HEALTH AND SAFETY TRAINING

All personnel will be provided with approved health and safety training as outlined in 29 CFR 1910.120(e). Documentation for KSWA employees should also be maintained at a central location at the KSWA office.

### 5.3 RESPIRATOR USAGE TRAINING AND FIT TESTING

Prior to assignment to a site where respirator use may be required, employees will be provided with respirator training as outlined in 29 CFR 1910.134(e)(5). Respirator fit tests are to be conducted at 6 to 10 month intervals, or at any time when a condition that may change the fit of a respirator has occurred, such as change in weight, change in facial structure, extensive dental work, etc. All use of respirators shall comply with KSWA's written respiratory program.

## **6.0 SITE CONTROL - WORK ZONES**

It is anticipated that conditions will require special measures to achieve site security or restriction of normal site activities and access. The work area includes a 23-foot, 2-lane, 1-span bridge constructed of steel I-beams and steel girders with a concrete deck and asphalt wearing surface. The work will be performed along the side and underneath the bridge. The work zone will be delineated in accordance with TDOT temporary lane closure guidelines. Work zones will be identified with flashing lights, illuminated and non-illuminated signage, traffic spotter, etc.

## 7.0 PERSONAL PROTECTION

PPE and safety requirements must be appropriate to protect against the known or worst potential hazards on the site. Protective equipment should be selected based on the concentrations and possible routes of exposure to known or potential worst case substances. The levels of PPE are described in Section 8. All KSWA engineering or assessment personal engaged in work on site will be participants in the KSWA medical monitoring program described in Section 12, or a similar program.

It is anticipated that Level D protection and basic site safety measures will be sufficient at this project site. Any conditions warranting upgrading of the required level of protection to Level B or A will be cause for all personnel to immediately leave the work site. The site will be re-evaluated and a new site Health and Safety Plan will be prepared which incorporates the additional site information.

Whenever Level C is in use, the breathing zone of the workers will also be monitored constantly utilizing a photoionization detector (PID). If the total volatile organic concentration (as indicated by the PID) in the breathing zone of the workers approaches 50 ppm, work shall cease and the crew will exit the work area and evaluate the need to upgrade to Level B.

The specific respiratory protective device selected for Level C protection shall be the device identified on each individual's respirator fit test, as described in Section 5.3. In general, respirators will be supplied with combination cartridges for organic vapors, dusts, mists and acid gasses and shall be approved by the Mine Safety and Health Administration and the National Institute for Occupational Safety and Health. In the event that a site hazard evaluation summary identifies the potential for exposure to other chemical substances (i.e. formaldehyde, ammonia), additional cartridges will be supplied as necessary to be made available at the site.

---

## 8.0 LEVELS OF PROTECTION

This plan is not intended for use at sites where levels of protection above Level C are required. Levels C and D are described below.

### 8.1 LEVEL C

Level C protection should be selected when the types and concentrations of respirable materials are known, have adequate warning properties, or are reasonably assumed to be not greater than the protection factors associated with air-purifying respirators; and exposure to the few unprotected areas of the body (i.e., neck and back of head) is unlikely to cause harm. Continuous monitoring of the site and/or individuals should be established.

#### 8.1.1 Personal Protective Equipment

The following equipment is necessary for Level C personal protection:

- Half-face or full-face air-purifying respirator (OSHA/NIOSH approved).
- Chemical-resistant outer clothing.
- Gloves - inner (tight-fitting, chemical-resistant type or woven liners).
- Gloves - outer (chemical resistant).
- Hardhat (face shield optional).
- Boots - outer (chemical-protective).
- Safety glasses.

#### 8.1.2 Criteria for Use of Level C

The following criteria identify situations in which Level C PPE should be employed:

- Site known to contain potentially hazardous materials resulting in air concentrations requiring a protection factor afforded by a full-face or half-face air-purifying respirator (OSHA/NIOSH approved).
- Well-documented, reliable history of site and patterns of prior entry.
- No evidence to suspect acute or chronic toxicity to exposed skin.
- Total vapor reading between 0 ppm and 50 ppm on instruments such as the photoionization detector or organic vapor analyzer.
- Continuous air or personal monitoring should occur while wearing Level C protection.

### 8.2 LEVEL D

Level D is the basic work uniform and for all site operations. Level D should be selected when performing environmental sampling involving dilute concentrations of contaminants on sites that have been characterized by previous analyses or research.

### **8.2.1 Personal Protective Equipment**

The following equipment is necessary for Level D personal protection:

- Standard work clothing.
- Optional disposable chemical-resistant clothing appropriate for known or expected levels of contamination.
- Boots/Shoes - safety or chemical-resistant boots.
- Safety glasses or safety goggles.
- Gloves - disposable latex or nitrile.
- Optional moisture resistant outer gloves.
- Hardhat.

### **8.2.2 Criteria for Use of Level D**

The following criteria indicate situations where Level D personal protection is adequate:

- No indication of airborne health hazards present.
- No gross indication, above background concentrations, on the photoionization detector and/or organic vapor analyzer.

Additionally, a half-face or full-face respirator will be used

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## 9.0 DECONTAMINATION PROCEDURES

### 9.1 PERSONNEL DECONTAMINATION

If Level D protection is used, any disposable inner gloves or protective clothing should be sealed in a plastic bag and disposed of properly. Moisture resistant outer gloves and outer boots should be scrubbed with a stiff brush in soapy water, then rinsed to remove possible residual contamination. Disposable equipment should be used whenever possible.

If Level C or greater protection is used, personnel are required to follow the decontamination procedures listed below, as they apply to the gear being worn:

- A. Wash boots thoroughly with clean water or an appropriate cleaning solution to remove gross contaminants.
- B. Scrub down outer boots in decon solution and rinse with water.
- C. Remove boots.
- D. If wearing reusable raingear, it should be cleaned in a similar manner as the boots.
- E. Disposable Tyveks should be removed and placed in trash receptacle.
- F. Spent cartridges can also be discarded in the trash receptacle.
- G. Remove outer gloves and wash in same manner as boots while wearing disposable inner gloves.
- H. Use a new set of disposable gloves to clean additional equipment including hard hat, safety glasses, etc.
- I. Decontamination wash and rinse water will be allowed to percolate into the ground or as specified.

### 9.2 EQUIPMENT DECONTAMINATION

Proper decontamination of all equipment is necessary to avoid transferring contaminants from the site, thereby increasing potential for exposure of on site and off site personnel. The measures described below should be followed prior to leaving all sites, as applicable to the equipment being used. Any variations from the procedures described below for reasons of worker health or safety must be described by the Project Manager in the site-specific hazard summary.

These measures are separate from, and may not be substituted for, other decontamination procedures associated with proper sampling protocol.

- A. The equipment may be thoroughly rinsed with clean water or an appropriate cleaning solution and wiped dry with paper towels before leaving the work site. Alternatively, they may be wrapped in absorbent material and/or stored in plastic bags sealed to prevent contact with workers, vehicles, etc.
- B. The rinse water from this operation will be allowed to percolate into the ground or as specified.
- C. Decontamination of asbestos inspection equipment will take place at the site prior to moving to subsequent locations. Decontamination of such equipment will entail a thorough steam cleaning, or washing and rinsing of the equipment with high pressure water followed by air drying. In addition, the tires and undercarriages of vehicles exiting areas identified as having surficial hazardous materials will be sprayed with high pressure water and allowed to dry before leaving the contaminated area.

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## 10.0 EMERGENCY PROCEDURES

### 10.1 INHALATION

If warning signals such as: dizziness, nausea, headache, shortness of breath, burning sensation in mouth, throat or lung or symptoms specific to hazard found at the site are apparent, the victim should leave the contaminated air space immediately. Have someone contact emergency services and obtain health and safety information about potential contaminants.

If unconscious, the victim should be pulled out of the contaminated area immediately if they do not have any injuries which would prohibit moving them (i.e. spinal injury). The rescuers should make sure that the area is safe to enter. If the area cannot be safely entered, attempt to ventilate this area. Do not attempt a rescue. Rescuers should make sure they are properly trained in First Aid and rescue and that they are wearing proper respiratory and protective equipment before attempting the rescue.

If the victim is no longer breathing, mouth-to-mouth resuscitation or some other form of artificial respiration should be administered by a person who is properly trained and certified in a location away from the contaminated area.

Medical attention should be obtained as soon as possible.

### 10.2 SKIN EXPOSURE

The skin should be washed with copious amounts of soap and water. If clothing is contaminated, it should be removed immediately and the skin washed thoroughly with running water. If a shower is available, it should be used immediately. Clothes should be removed while showering. This procedure may be life-saving as certain highly toxic chemicals are rapidly absorbed through the skin.

All contaminated parts of the body, including the hair, should be thoroughly decontaminated. It may be necessary to wash repeatedly.

### 10.3 INGESTION

A poison control center or emergency service should be contacted immediately to determine an appropriate course of action. If possible, have health and safety information on the poison available when you call for help. Vomiting should be induced except when the substance presents an aspiration hazard, such as from a petroleum product; or when the substance is a strong acid or base. To induce vomiting, a tablespoon of salt or powdered mustard in a glass of warm water, or syrup of ipecac from the First Aid Kit, can be taken as an emetic.

Drinking plenty of water and placing a finger down the throat may also be effective in inducing vomiting. The treatment should be repeated until vomit is clear.

Medical attention should be obtained immediately.

#### **10.4 EYES**

If a toxicant should get in the eyes, they should be washed with plenty of water. The eye itself should be held open, rotated, and flooded with water so that all surfaces are washed thoroughly. Washing should be continued for at least 15 minutes.

Medical attention should be obtained immediately.

#### **10.5 EXPOSURE TO HEAT OR COLD**

When working under severe weather conditions, personnel should be aware of the signs of heat stress, hypothermia and frostbite as well as the appropriate response actions.

**Heat Stress** - If a worker shows signs of heat stroke (dry, hot, red skin, high body temperature) or heat exhaustion (cool, moist, pale or red skin, dilated pupils, nausea, dizziness), the worker must be removed from the work area and cooled. Loosen clothing, elevate feet, and provide cool liquids. Heat stroke can be life threatening and requires rapid action.

**Hypothermia** - If a worker shows signs of hypothermia (shivering, impaired judgement, drowsiness, clumsiness) the worker must be removed from the work area and warmed gradually.

**Frostbite** - If a worker shows signs of frostbite (skin color changes to white or grayish-yellow then grayish-blue), the worker must be moved to a warm place. The affected area should be placed in warm (100-105°F) water. Do not rub or massage.

#### **10.6 STINGS AND BITES**

If still present, remove stinger with fingernail. Wash the the location of the sting with soap and water, cover with bandage and apply ice. If severe allergic reactions appear (hives, itching, rash, nausea, vomiting, dizziness, swelling) seek medical attention immediately.

#### **10.7 PERSONAL INJURY**

A first aid kit shall be readily available in case of an injury. Administer first aid and/or seek medical help, if necessary. Medical emergencies take precedence over decontamination procedures. A map showing the route to the nearest hospital is provided at the end of this Health and Safety Plan. In the event that a phone is not readily available on-site, it is the responsibility of the field safety coordinator to identify the location of the nearest phone and provide this information to all on site personnel.

#### **10.8 SPILL OR RELEASE OF HAZARDOUS MATERIAL**

Clean up, isolate or contain spill as appropriate. Contact emergency response personnel, project manager, and/or client company officials as appropriate.

### **10.9 POTENTIAL OR ACTUAL FIRE/EXPLOSION**

If it is safe to do so, on site personnel may use available fire fighting equipment to control or extinguish the fire, and remove or isolate materials which may contribute to the fire. Contact the fire department project manager and/or client company officials as appropriate.

### **10.10 EVACUATION**

In the event of an emergency that requires an evacuation of the site, verbal instruction will be given by the Field Safety Coordinator to evacuate the area. Personnel will immediately exit the site to the pre-designated upwind "clean" location. The Field Safety Coordinator will account for KSWA personnel, and will advise personnel of further instructions, if necessary. The Field Safety Coordinator will also advise responding off site emergency personnel, if necessary. Personnel shall not re-enter the site until the emergency conditions have been corrected and the Field Safety Coordinator has authorized re-entry.

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**11.0 EMERGENCY CONTACTS**

<u>Agency</u>	<u>Number</u>
Fire	<u>911</u>
Ambulance	<u>911</u>
Police	<u>911</u>

Nearest Medical Facility:

Jackson-Madison County General Hospital  
620 Skyline Drive  
Jackson, TN 38301  
(731)541-5000

KSWA Personnel Contact Information:

<u>Title</u>	<u>Name</u>	<u>Work</u>	<u>Mobile</u>
Project Manager	Kollan Spradlin	(615) 255-9702	(615) 429-5862
Health and Safety Officer	John Leffew	(615) 255-9702	(615) 889-0557
Field Safety Coordinator	Kollan Spradlin	(615) 255-9702	(615) 429-5862

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## 12.0 MEDICAL MONITORING

All engineering and assessment personnel engaged in on site activities shall be participants in a medical monitoring program similar to the following. As participants in this program, these individuals will have had recent physical examinations.

The primary goal of this medical monitoring program is to provide evaluation and ongoing surveillance of the health status of employees potentially exposed to toxic substances as a result of their work-related activities. An active health monitoring program for those employees potentially at risk is an important tool in evaluating the effects of chronic low-level exposures or acute exposures related to operations at hazardous waste sites. The effects of low-level exposures may not become apparent until years after the initial exposure.

This medical monitoring program includes laboratory testing, personnel medical history evaluation, physical examination and other specific testing.

Each participant in this medical monitoring program undergoes a complete occupational history evaluation and baseline physical examination including the following parameters:

- Pulmonary Function Studies
- Complete Blood Count
- Chemical Blood Profile
- Urinalysis
- Chest X-Ray
- Electrocardiogram
- Specific parameters as necessary dependent upon exposure

Following the establishment of each participant's baseline values for the above parameters, an annual re-evaluation is conducted to monitor potential changes due to work with hazardous materials.

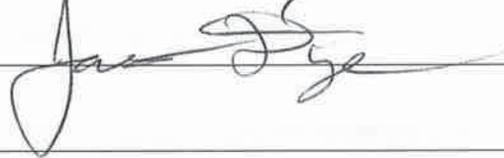
In addition to this annual re-examination, provisions are made for specific post-exposure examinations in the event of a suspected exposure during a particular field event.

The program shall meet or exceed the minimum requirements established in OSHA standard 20 CFR 1910.120.

**13.0 PERSONNEL AUTHORIZATION**

All personnel engaged in on site activities must read this Health and Safety Plan. By signing and dating this form, the listed individual acknowledges that he/she has read, understands and will comply with the requirements of this Health and Safety Plan.

**Personnel Authorized to Enter Site**

<u>Name</u>	<u>Signature</u>	<u>Date</u>
Kollan Spradlin		12/16/15
James Dye		12-16-15

**14.0 FIELD SAFETY COORDINATOR'S SUMMARY**

(To be completed by Field Safety Coordinator after completion of each phase of field work, and returned to Health and Safety Officer.)

**Project Summary**

Project Name:	TDOT Madison County SR-233 Bridge over Branch ACM Survey
Project Number:	100-15-0061
Activities Completed:	12/16/15
Date of Activities:	12/16/15

During the execution of the activities covered by this Health and Safety Plan, there were:

- a) No violations of the Safety Plan provisions and no obvious contamination of KSWA employees or subcontractors.
- b) The following incidents, violations of the Safety Plan provisions, or obvious contamination of KSWA personnel or subcontractors. (Give details of who, when, type of contamination, circumstances, first aid or medical assistance administered in the space below.)

Signature \_\_\_\_\_

Field Safety Coordinator

Date \_\_\_\_\_

12/16/15

## Directions to Hospital

Start out going east on Shady Grove Rd/TN-223 toward Heidelberg Ln. Continue to follow TN-223

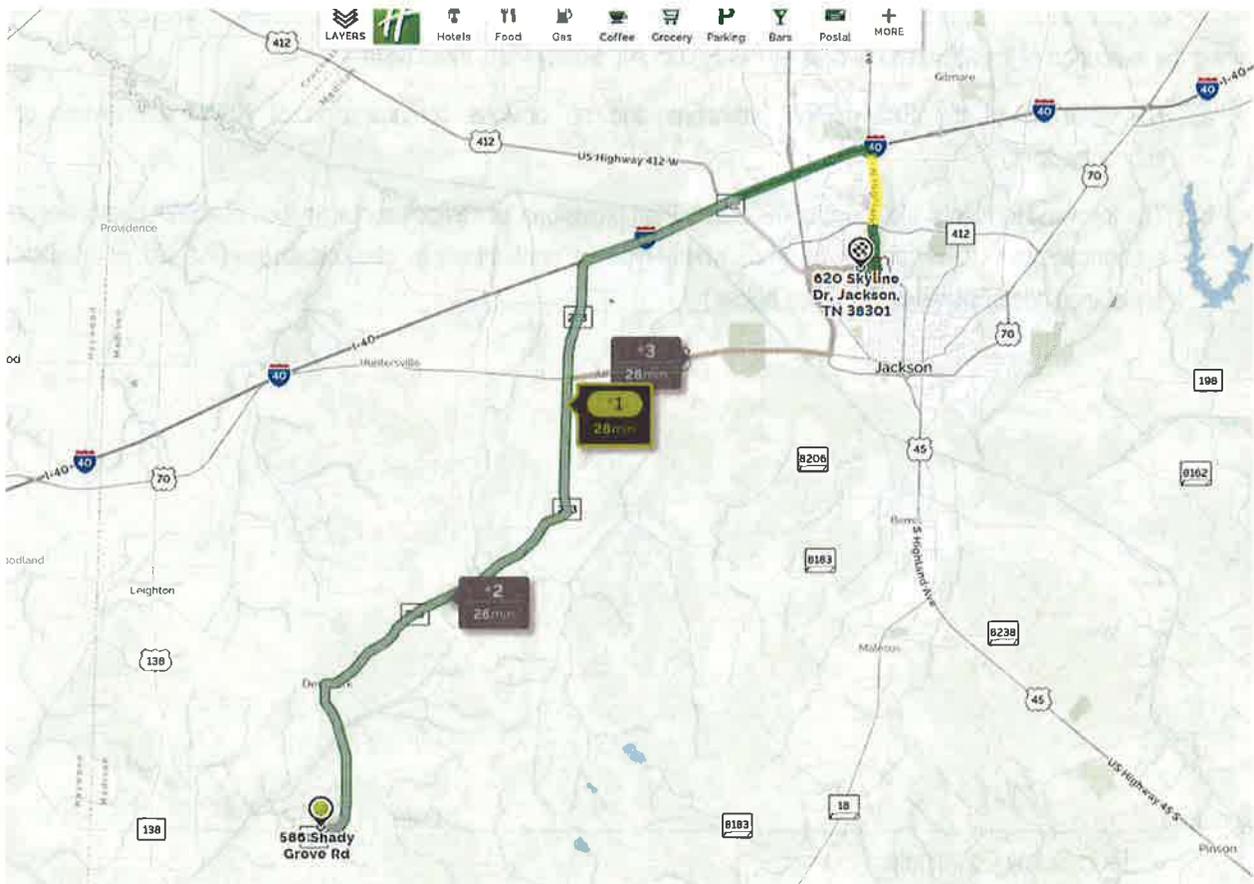
Turn right onto Denmark Jackson Rd/TN-223. Continue to follow TN-223

Merge onto I-40 E toward Nashville

Merge onto N Highland Ave/US-45 S/TN-5 via EXIT 82A toward Jackson

Turn right onto Skyline Dr

620 SKYLINE DR is on the left



## APPENDIX E: ACTIVITY HAZARD ANALYSIS

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# ACTIVITY HAZARD ANALYSIS

Asbestos Survey  
**SR-233 Bridge over Branch ACM Survey**  
Madison County, Tennessee

PIN: 122985.00  
PE: 57039-4229-04  
Bridge Number: 57S81960003

KSWA Project Number: 100-15-0061

Prepared by:



**K. S. WARE AND ASSOCIATES, L.L.C**  
54 Lindsley Avenue  
Nashville, Tennessee 37210

December 1, 2015

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**ACTIVITY HAZARD ANALYSIS FOR ASBESTOS SURVEY**

EM 385-1-1 Reference:

Hard hats and steel toe boots are mandatory. Eye and hearing protection are mandatory during sampling and as appropriate.

<u>Principal Steps</u>	<u>Potential Hazards</u>	<u>Action to Minimize Hazard</u>
1. Asbestos exposure	1. Inhalation, skin irritation	1. All personnel that will be present on the project must wear the proper PPE. Use all safety precautions to insure that all state and federal guidelines are followed and to limit the exposure to asbestos. Asbestos samplers are to use a respirator when sampling.
2. Heat stress exposure	2. Heat stroke.	2. Monitor all personnel for signs of fatigue, dizziness or other physical abnormalities. Personnel should wear clothing suited for the weather conditions and breaks will be given for intake of fluids, etc.
3. Traffic Hazards	3. Moving vehicles	3. Field activities may encounter traffic on various projects. Be aware of your surroundings, watch for traffic when performing in areas that have moving vehicles. Use a spotter or traffic control when sampling in the roadway or crossing the road. Maintain safe positioning when possible.
4. Site Maintenance	4. Slip, trip, and fall.	4. Prior to field activities, the Field Safety Officer should observe the terrain on site and monitor the conditions throughout the survey. Be aware of steep and/or rocky slopes. Also be aware of pot holes around the bridge.
5. Overhead Utilities	5. Electrocution, explosion, fire.	5. Be aware of fallen or low hanging utility lines while on the ground level. Remain at least 10 feet from all utility lines with all equipment.
6. Biological Hazards	6. Small animals, insects	6. Be aware of animal habitat in and around the work area. Do not put hands into areas you cannot inspect for potential insect, animal and snake hazards. Beware of waterborne snakes and colonies of stinging insects
7. Noise	7. Damage to hearing	7. Operations that generate sound levels 85 cBA and above require hearing protection. Either muffs or plugs are acceptable. Heavy traffic can be a cause.
8. Hand/Finger Protection	8. Physical injury to personnel	8. Wear gloves when there is exposure to potential hazards that could produce scrapes and cuts. Do not wear jewelry. Any jewelry can be dangerous. Handle sharp or pointed tools with extreme care. Be careful when using a hammer to not smash hand or fingers. Use the proper gloves for the job at hand.
9. Hand Tools and Equipment	9. Physical injury to personnel	9. Use the right tool or piece of equipment for the job. Use only tools in safe condition. Tools and equipment must be used properly and not abused.
10. Ladders	10. Fall from excessive height	10. Use caution and maintain three points of contact when climbing a ladder. Always have other site personnel support the ladder while in use. Maintain a safe distance from overhead utilities and obstructions.

<u>Principal Steps</u>	<u>Potential Hazards</u>	<u>Action to Minimize Hazard</u>
11. Waterways	11. Rise/fall of water level, current, holes in waterbed	11. If the waterway has to be entered for sampling, be conscious of the water level and current. Utilize a tie off rope if the water level or current cause instability. While walking through water, be careful when stepping in case of holes. Use hip waders and a personal flotation device (PFD).

This Activity Hazard Analysis has been prepared by K.S. Ware and Associates.

The KSWA field safety coordinator for this project will be Mr. Kollan Spradlin. Mr. Spradlin's health and safety training and certifications include:

- OSHA Certified 10 Hours of Site Worker Safety
- OSHA 40 Hour HAZWOPER
- American Red Cross CPR and AED Certified

# Multimodal

# Environmental Studies Request

## Project Information

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**Route:** State Route 223  
**Termini:** S.R. 223 (Shady Grove Rd.) Bridge Replacement over Branch at L.M. 2.28  
**County:** Madison  
**PIN:** 128113.06

## Request

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**Request Type:** Environmental Study Reevaluation  
**Project Plans:** Design-Build Bridge Plans  
**Date of Plans:** 06/12/2019  
**Location:** Email Attachment

## Certification

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**Requestor:** Jonathan Knudsen  
**Title:** TDOT Environmental Studies Request

**Signature:** Jonathan  
Knudsen

Digitally signed by  
Jonathan Knudsen  
Date: 2019.06.14  
11:00:30 -05'00'

# Environmental Study

## Technical Section

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**Section:** Multimodal

## Study Results

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This project accommodates bicyclists with 4' shoulders in a rural area.

## Commitments

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Did the study of this project result in any environmental commitments?

No

## Additional Information

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Is there any additional information or material included with this study?

No

## Certification

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**Responder:** Jessica Wilson

**Title:** Transportation Program Supervisor

**Signature:** Jessica  
Wilson

 Digitally signed by  
Jessica Wilson  
Date: 2019.06.19  
12:15:43 -05'00'



## MULTIMODAL ACCESS POLICY

### **EFFECTIVE DATE:**

July 31, 2015

### **AUTHORITY:**

TCA 4-3-2303

If any portion of this policy conflicts with applicable state or federal laws or regulations, that portion shall be considered void. The remainder of this policy shall not be affected thereby and shall remain in full force and effect.

### **PURPOSE:**

To create and implement a multimodal transportation policy that encourages safe access and mobility for users of all ages and abilities through the planning, design, construction, maintenance, and operation of new construction, reconstruction and retrofit transportation facilities that are federally or state funded. Users include, but are not limited to, motorists, transit-riders, freight-carriers, bicyclists and pedestrians.

### **APPLICATION:**

The policy applies to Department of Transportation employees, consultants and contractors involved in the planning, design, construction, maintenance, and operation of state and federally funded projects, and local governments managing and maintaining transportation projects with funding through TDOT's Local Programs Development Office.

### **DEFINITIONS:**

- Highway: A main road or thoroughfare, such as a street, boulevard, or parkway, available to the public for use for travel or transportation.
- Multimodal: For the purposes of this policy, multimodal is defined as the movement of people and goods on state and functionally-classified roadways. Users include, but are not limited to, motorists, transit-riders, freight-carriers, bicyclists and pedestrians, including those with disabilities.
- Reconstruction: Complete removal and replacement of the pavement structure or the addition of new continuous traffic lanes on an existing roadway.

- Retrofit: Changes to an existing highway within the general right-of-way, such as adding lanes, modifying horizontal and vertical alignments, structure rehabilitation, safety improvements, and maintenance.
- Roadway: The portion of a highway, including shoulders, that is available for vehicular, bicycle or pedestrian use.

### **POLICY:**

The Department of Transportation recognizes the benefits of integrating multimodal facilities into the transportation system as a means to improve the mobility, access and safety of all users. The intent of this policy is to promote the inclusion of multimodal accommodations in all transportation planning and project development activities at the local, regional and statewide levels, and to develop a comprehensive, integrated, and connected multimodal transportation network. TDOT will collaborate with local government agencies and regional planning agencies through established transportation planning processes to ensure that multimodal accommodations are addressed throughout the planning, design, construction, maintenance, and operation of new construction, reconstruction and retrofit transportation facilities as outlined in TDOT's Multimodal Access Policy Implementation Plan.

TDOT is committed to the development of a transportation system that improves conditions for multimodal transportation users through the following actions:

1. Provisions for multimodal transportation shall be given full consideration in new construction, reconstruction and retrofit roadway projects through design features appropriate for the context and function of the transportation facility.
2. The planning, design and construction of new facilities shall give full consideration to likely future demand for multimodal facilities and not preclude the provision of future improvements. If all feasible roadway alternatives have been explored and suitable multimodal facilities cannot be provided within the existing or proposed right of way due to environmental constraints, an alternate route that provides continuity and enhances the safety and accessibility of multimodal travel should be considered.
3. Existing multimodal provisions on roadways shall not be made more difficult or impossible by roadway improvements or routine maintenance projects.
4. Intersections and interchanges shall be designed (where appropriate based on context) to accommodate the mobility of bicyclists and pedestrians to cross corridors as well as travel along them in a manner that is safe, accessible, and convenient.
5. While it is not the intent of resurfacing projects to expand existing facilities, opportunities to provide or enhance bicycle and pedestrian facilities shall be given full consideration during the program development stage of resurfacing projects.
6. Pedestrian facilities shall be designed and built to accommodate persons with disabilities in accordance with the access standards required by the Americans with Disabilities Act

(ADA). Sidewalks, shared use paths, street crossings (including over- and under-crossings) and other infrastructure shall be constructed so that all pedestrians, including those with disabilities, can travel independently.

7. Provisions for transit-riders, pedestrians, and bicyclists shall be included when closing roads, bridges or sidewalks for construction projects where pedestrian, bicycle, or transit traffic is documented or expected.

### **EXCEPTIONS:**

It is TDOT's expectation that full consideration of multimodal access will be integrated in all appropriate new construction, reconstruction and retrofit infrastructure projects. However, there are conditions where it is generally inappropriate to provide multimodal facilities. Examples of these conditions include, but are not limited to:

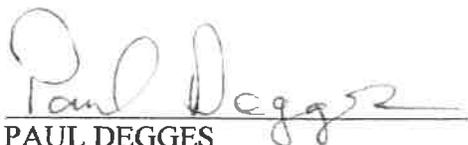
1. Controlled access facilities where non-motorized users are prohibited from using the roadway. In this instance, a greater effort may be necessary to accommodate these users elsewhere within the same transportation corridor.
2. The cost of accommodations would be excessively disproportionate to the need and probable use. Excessively disproportionate is defined as exceeding twenty percent (20%) of the total cost of the project. The twenty percent figure should be used in an advisory rather than an absolute sense, especially in instances where the cost may be difficult to quantify. Compliance with ADA requirements may require greater than 20% of project cost to accommodate multimodal access. Costs associated with ADA requirements are NOT an exception.
3. Areas in which the population and employment densities or level of transit service around the facility, both existing and future, does not justify the incorporation of multimodal alternatives.
4. Inability to negotiate and enter into an agreement with a local government to assume the operational and maintenance responsibility of the facility.
5. Other factors where there is a demonstrated absence of need or prudence, or as requested by the Commissioner of the Department of Transportation.

Exceptions for not accommodating multimodal transportation users on State roadway projects in accordance with this policy shall be documented describing the basis and supporting data for the exception, and must be approved by TDOT's Chief Engineer and Chief of Environment and Planning or their designees.

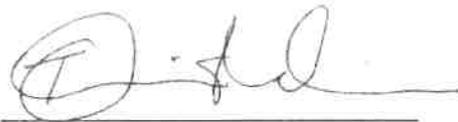
**DESIGN GUIDANCE:**

The Department recognizes that a well-planned and designed transportation network is responsive to its context and meets the needs of its users. Therefore, facilities will be designed and constructed in accordance with current applicable laws and regulations, using best practices and guidance, including but not limited to the following: TDOT Standard Drawings and guidelines, American Association of State Highway and Transportation Officials (AASHTO) publications, Institute of Transportation Engineers (ITE) publications, the Manual on Uniform Traffic Control Devices (MUTCD), National Association of City Transportation Officials (NACTO) publications, the Public Rights-of-Ways Accessibility Guidelines (PROWAG), and the Americans with Disabilities Act Accessibility Guidelines (ADAAG).

**Signed:**



PAUL DEGGES  
Chief Engineer/Deputy Commissioner



TOKS OMISHAKIN  
Chief of Planning/Deputy Commissioner



JOHN SCHROER  
Commissioner