Quality Assurance Review

Project Information

Route: SR-1

Termini: Bridge over Muddy Creek, LM 2.13

County: Haywood

PIN: 124505.00

Preparer: Abby Harris

Certification

By signing below, you certify that this document has been reviewed for compliance with all applicable environmental laws, regulations and procedures. The document has been evaluated for quality, accuracy, and completeness, and that all source material has been verified, compiled and included in the attachments and technical appendices.

Reviewer:	Joe Santangelo	**Signature:**	Joseph D. Santangelo Digitally signed by Joseph D. Santangelo Date: 2018.08.24 13:02:28 -05'00'
Title:	Environmental Supervisor	**Comment:**	Revisions required

Reviewer:	Joe Santangelo	**Signature:**	Joseph D. Santangelo Digitally signed by Joseph D. Santangelo Date: 2018.08.24 13:03:10 -05'00'
Title:	Environmental Supervisor	**Comment:**	Approved

Reviewer:	Enter Reviewer Name	**Signature:**	
Title:	Enter Reviewer Title	**Comment:**	Enter Comment

Reviewer:	Enter Reviewer Name	**Signature:**	
Title:	Enter Reviewer Title	**Comment:**	Enter Comment

Reviewer:	Enter Reviewer Name	**Signature:**	
Title:	Enter Reviewer Title	**Comment:**	Enter Comment

Programmatic Categorical Exclusion

State Route (SR) 1

Bridge over Muddy Creek, Log Mile (LM) 2.13

Haywood County

PIN 124505.00

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

Project Information

General Information

Route: SR-1 (US-70)

Termini: Bridge over Muddy Creek, LM 2.13

Municipality: Unincorporated (west of Stanton)

County: Haywood

PIN: 124505.00

Plans: Transportation Investment Report (TIR)

Date of Plans: 04/02/2018

Project Funding

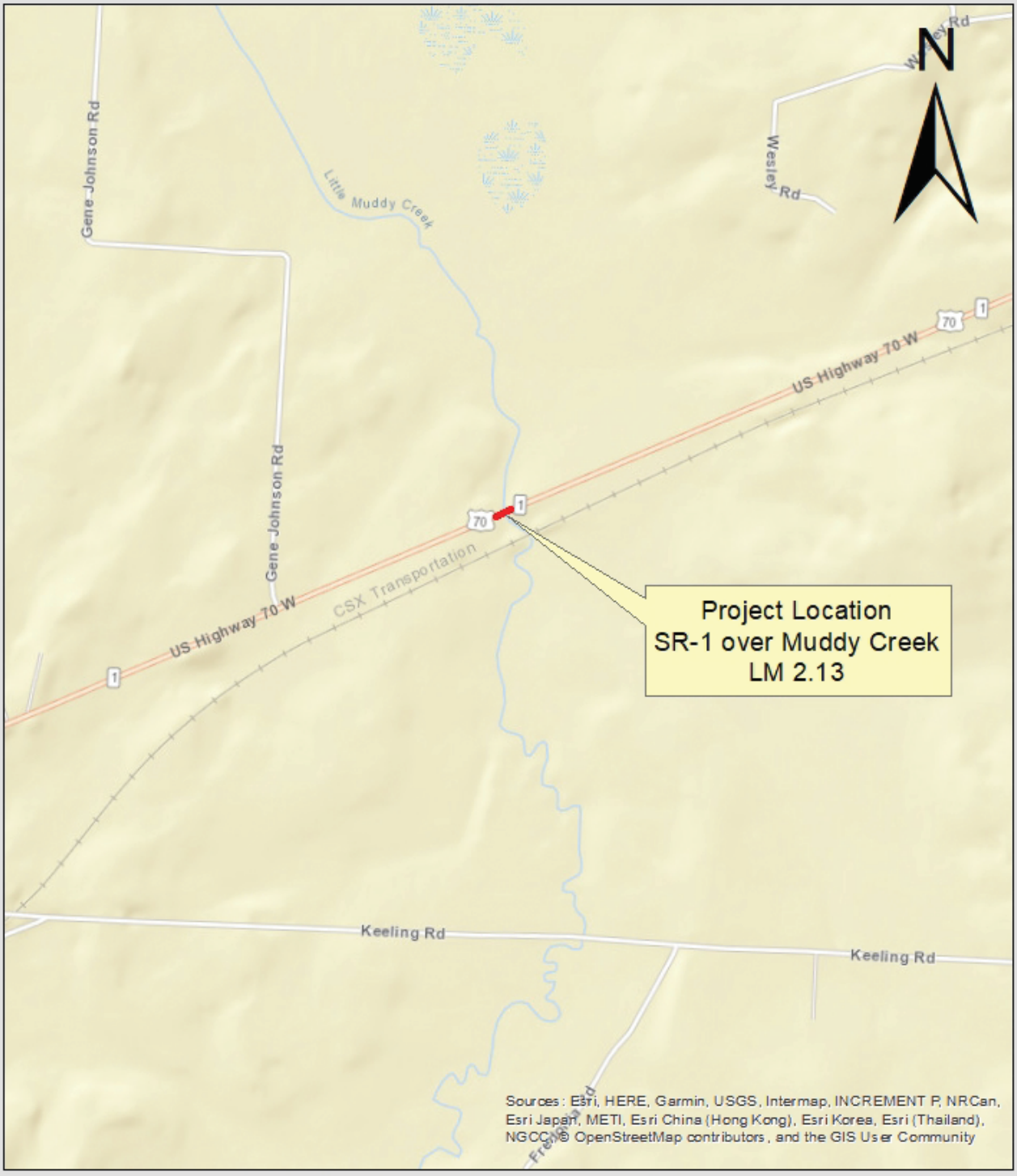
Planning Area: Southwest Tennessee Rural Planning Organization (RPO)

STIP/TIP: 1799003 - National Highway Performance Program (NHPP) Grouping

Funding Source	Preliminary Engineering	Right-of-Way	Construction
Federal	BR-NH-1(382)	BR-NH-1(382)	BR-NH-1(382)
State	38002-1216-94	38002-2216-94	38002-3216-94

Project Location

Project Location Map
PIN 124505.00
Haywood County
SR-1
Bridge over Muddy Creek (LM 2.13)



Project Overview

Introduction

The Tennessee Department of Transportation (TDOT), in cooperation with the Federal Highway Administration (FHWA), is proposing to replace the SR-1 bridge over Muddy Creek at log mile (LM) 2.13 in Haywood County.

Background

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 NBI, Tennessee Inventory and Appraisal Report published on 07/27/2018, located in the Technical Appendices, the SR-1 Bridge over Muddy Creek at LM 2.13 received a sufficiency rating of 45.8. This qualifies the bridge for replacement. The bridge's superstructure received a condition rating of 4, or poor condition, indicating advanced section loss, deterioration, spalling or scour. The bridge's deck and substructure received a condition rating of 5, or fair condition, indicating all of the primary structural elements are sound but may have minor section loss, cracking, spalling or scour. The bridge's stream channel and channel protection received a condition rating of 6, or satisfactory condition, indicating the structural elements show some minor deterioration.

This project contains an official detour route of 26.8 miles in length which exceeds the 25 mile threshold for a rural detour route prompting Federal Highway Administration (FHWA) coordination/approval; however, a local detour route of 21 miles is also proposed which allows this document to be processed as a Programmatic Categorical Exclusion (PCE). Correspondence with FHWA is located in the Technical Appendices.

Project Development

Need

The proposed project is needed to address insufficient structural elements of the SR-1 bridge over Muddy Creek as indicated by the assigned condition ratings and overall sufficiency rating of 45.8.

Purpose

The purpose of the proposed project is to improve structural elements of the SR-1 bridge over Muddy Creek by replacing the existing bridge.

Range of Alternatives

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.

Public Involvement

Has there been any public involvement for the project? **No**

Project Design

Existing Conditions and Layout

Based on the TIR dated 04/02/2018, located in the Technical Appendices, the project bridge is classified as a Rural Arterial Road carrying two 12-foot travel lanes, one in either direction, and consists of two main spans, steel beams, a concrete deck and asphalt surface. The structure has an out-to-out width of 34 feet-five inches and an overall structure length of 65 feet. The project bridge was constructed on 1926 and was rehabilitated in 1959.

Scope of Work

The proposed alignment and grade for the replacement structure will remain the same as the existing structure. The proposed structure will be a two span prestressed box beam structure with a total length of 70 feet. Two unequal spans of 30 feet and 40 feet will make up the length of the bridge and will allow the pier to be moved out of the creek. The proposed structure will consist of two 12-foot travel lanes with eight (8) foot shoulders and single slope concrete parapets for a total structure out-to-out width of 41 feet-three inches. The project will extend 150 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.

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**
0.340	0.000	**0.340**	0.000	0.000	**0.000**

*Measured in acres

According to the TIR, it is estimated that two (2) tracts of land will be affected resulting in approximately 0.34 acres of right-of-way (ROW) acquisition. It is also estimated that underground and overhead utilities will need to be relocated.

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

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, two detour routes will be utilized for the proposed project. The official detour route has a length of 26.8 miles, or 32 minutes. From the project location, this detour would follow SR-1 northeast for 2.2 miles to SR-179. The detour would continue northwest along SR-179 for 9.8 miles to SR-14. The detour would then continue southwest along SR-14 for 2.9 miles to SR-59. The detour would continue south along SR-59 for 5.9 miles where it would reconnect with SR-1. The detour would continue six miles north east back to the project location.

The local route detour has a length of 21 miles, or 25 minutes. This detour would follow SR-1 northeast for 2.2 miles to SR-179. The route would then follow SR-179 northwest 7.2 miles to Charleston-Mason Road. From there, the route would follow Charleston-Mason Road south to reconnect to SR-1. The detour would continue 5.6 miles northeast back to the project location.

Environmental Studies

Water Resources

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

Labels	Type*	Function	Quality	Estimated Impacts		
				Permanent	Temporary	Total
Wetlands						
WTL-1	Emergent	Wildlife habitat	Low Resource value	Unknown**	Unknown**	Unknown**
Streams						
STR-1	Perennial		Assessed - Not Supporting	0 ft		0 ft

*Identification of features has not been reviewed by regulatory agencies and determinations of stream type could possibly be changed. Predicted impacts are considered "preliminary" and will not be completely accurate until the time of permit application.

**Impacts are unknown at this time as no plans are available.

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 Grouped Programmatic No Effect Activities Consultation (2017) and the TDEC-DNA (2015) MOA applicable to this project? **No**

Rare Species Dataviewer:

The TDEC Rare Species Dataviewer was reviewed on 02/08/2018.

Rare Species List			
Species Name	**Status**	**Species Potential within Right-of-Way**	**Accommodations**
Reniform sedge (*Carex reniformis*)	State	Low Potential: Present habitat unsuitable	Not applicable

As indicated in the Environmental Studies Report (ESR) located in the Technical Appendices, the Rare Species Dataviewer indicated no threatened or endangered species within a one mile radius of the project limits and one species within a one to four mile radius which is shown in the table above.

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

Coordination with the USFWS was completed on 02/23/2018.

Coordination with the USFWS on 02/23/2018, located in the Technical Appendices, states, "we believe that the requirements of section 7 of the Endangered Species Act of 1973, as amended, are fulfilled for all species that currently receive protection under the Act. Obligations under section 7 of the Act should 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.

Our National Wetland Inventory maps indicate that the project is bounded by a sizable wetland on either side of the road. If wetland impacts would occur, the Corps of Engineers and the Tennessee Department of Environment and Conservation should be contacted regarding the presence of regulatory wetlands and the requirements of wetlands protection statutes."

Tennessee Wildlife Resources Agency (TWRA):

Coordination with TWRA was completed on 03/05/2018.

Coordination with the TWRA on 03/05/2018, located in the Technical Appendices, states, "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

Flood Zone: Zone A - No Base Flood Elevations Determined

Portions of this project are located in or near a FEMA defined floodplain however there is no detailed study. The project is located on Flood Insurance Rate Maps in Haywood County, Panel 305 of 400, Map # 47075C0305D. The design of the roadway system will be 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 the Attachments.

Air Quality

Transportation Conformity:

Correspondence dated 04/13/2018 with TDOT's Air Quality and Noise Section states, "This project is in Haywood County which is in attainment for all regulated criteria pollutants. Therefore, conformity does not apply to this project."

Mobile Source Air Toxics (MSAT):

In the correspondence referenced above, it states, "This project qualifies as a categorical exclusion under 23 CFR 771.117 and, therefore, does not require an evaluation of MSATs per FHWA's [Federal Highway Administration] 'Interim Guidance Update on Air Toxic Analysis in NEPA [National Environmental Policy Act] Documents' dated October 2016."

Noise

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

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)

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

Section 6(f)

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

Cultural Resources

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.

Correspondence with the TN-SHPO dated 06/12/2018, located in the Technical Appendices, states "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."

Archaeology Concurrence:

Concurrence from the TN State Historic Preservation Office (TN-SHPO) was received on 06/21/2018.

Correspondence with the TN-SHPO dated 06/21/2018, located in the Technical Appendices, states "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."

Native American Consultation

Does this project require Native American consultation? **Yes**

Native American Consultation was requested on 04/04/2018.

Native American Consultation					
Sent	Response		Sent	Response	
☐	☐	Absentee Shawnee Tribe of Oklahoma	☐	☐	Muscogee (Creek) Nation
☐	☐	Cherokee Nation	☐	☐	Poarch Band of Creek Indians
☒	☐	Chickasaw Nation	☐	☐	Quapaw Tribe of Oklahoma
☐	☐	Choctaw Nation of Oklahoma	☒	☒	Shawnee Tribe
☐	☐	Eastern Band of Cherokee Indians	☐	☐	Thlopthlocco Tribal Town
☒	☐	Eastern Shawnee Tribe of Oklahoma	☒	☐	United Keetoowah Band of Cherokee Indians
☒	☐	Kialegee Tribal Town	☐	☐	Other

Shawnee Tribe:

The response was received on 04/06/2018.

In a letter dated 04/06/2018, located in the Technical Appendices, the Shawnee Tribe stated, "The Shawnee Tribe's Tribal Historic Preservation Department concurs that no known historic properties will be negatively impacted by this project. We have no issues or concerns at this time, but in the event that archaeological materials are encountered during construction, use, or maintenance of this location, please re-notify us at that time as we would like to resume immediate consultation under such a circumstance."

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

Does this project include accommodations for bicycles and pedestrians? **Yes**

Correspondence dated 04/17/2018 with TDOT's Multimodal Transportation Resources Division, located in the Technical Appendices, states, "This project accommodates bicycle and pedestrian traffic with an 8' shoulder in a rural area."

Environmental Commitments

Does this project involve any environmental commitments? **No**

Additional Environmental Issues

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.

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.

Abby Harris

Digitally signed by Abby Harris
Date: 2018.08.24 11:52:11 -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: 2018.08.24 13:01:15 -05'00'

Tennessee Department of Transportation

Attachments

Acronyms

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

STIP Project List

STIP #	1799003	**TDOT PIN #**		**LENGTH IN MILES**	**LEAD AGENCY** TDOT
COUNTY	STATEWIDE - RURAL				**TOTAL PROJECT COST** $671,200,000
ROUTE					
TERMINI	NATIONAL HIGHWAY PERFORMANCE PROGRAM (NHPP) - GROUPING				
PROJECT DESCRIPTION	SEE APPENDIX STATE GROUPING DESCRIPTION FOR A COMPREHENSIVE LISTING OF ACTIVITIES INCLUDED BUT NOT LIMITED FOR ELIGIBILITY				
REMARKS					

COUNTY MAP

FY	PHASE	FUNDING	TOTAL FUNDS	FED FUNDS	STATE FUNDS	LOCAL FUNDS
2017	PE, ROW, CONST	NHPP	167,800,000	134,240,000	33,560,000	
2018	PE, ROW, CONST	NHPP	167,800,000	134,240,000	33,560,000	
2019	PE, ROW, CONST	NHPP	167,800,000	134,240,000	33,560,000	
2020	PE, ROW, CONST	NHPP	167,800,000	134,240,000	33,560,000	

VICINITY MAP

ALL SCHEDULES SUBJECT TO AVAILABILITY OF FUNDS

Grouping Category	Function of Grouping Activities	Allowable Work Types

National Highway Performance Program (NHPP) Grouping
 	
STIP# 1799003
	Projects for the preservation and improvement of the conditions and performance of the National Highway System (NHS), including
	
	• Rehabilitation, resurfacing, restoration, preservation, and operational improvements,
	
	• Traffic operations,
	
	• Bridge and tunnel improvements,
	
	• Safety improvements,
	
	• Bicycle and pedestrian improvements, and
	
	• Environmental mitigation.
		• Minor rehabilitation, pavement resurfacing, preventative maintenance, restoration, and pavement preservation treatments to extend the service life of highwayinfrastructure, including pavement markings and improvements to roadside hardware or sight distance
		• Highway improvement work including slide repair, rock fall mitigation, drainage repairs, or other preventative work necessary to maintain or extend the service life of theexisting infrastructure in a good operational condition
		• Minor operational and safety improvements to intersections and interchanges such as adding turn lanes, addressing existing geometric deficiencies, and extending on/off ramps
		• Capital and operating costs for intelligent transportation systems (ITS) and traffic monitoring, management, and control facilities and programs:
		  ○ Infrastructure-based intelligent transportation systems (ITS) capital improvements
		  ○ Traffic Management Center (TMC) operations and utilities
		  ○ Freeway service patrols
		  ○ Traveler information
		• 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
		• 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
		• Rail-highway grade crossing improvements
		• Highway safety improvements:
		  ○ Installation of new or improvement of existing guardrail
		  ○ Installation of traffic signs and signals/lights
		  ○ Spot safety improvements
		• Sidewalk improvements
		• Pedestrian and/or bicycle facilities
		• Traffic calming and traffic diversion improvements
		• Noise walls
		• Wetland and/or stream mitigation
		• Environmental restoration and pollution abatement
		• Control of noxious weeds and establishment of native species

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Tennessee ES Office
446 Neal Street
Cookeville, Tennessee 38501

February 23, 2018

Mr. Tim Nehus
Tennessee Department of Transportation
Environmental Planning and Permits Division
Suite 900, James K. Polk Building
505 Deaderick Street
Nashville, Tennessee 37243-0334

Subject: FWS# 18-CPA-0264. Proposed replacement of the State Route 1 Bridge over a Branch over Little Muddy Creek at LM 2.13; PIN 124505.00, P.E. 38002-0216-94, Haywood County, Tennessee.

Dear Mr. Nehus:

Thank you for your correspondence dated February 7, 2018, regarding the proposal to replace the State Route 1 Bridge over Little Muddy Creek in Haywood County, Tennessee. The Tennessee Department of Transportation requests our comments on any federally listed species of concern for this project. Personnel of the U.S. Fish and Wildlife Service (Service) have reviewed the information provided and offer the following comments.

Endangered species collection records available to the Service do not indicate that federally listed or proposed endangered or threatened species occur within the impact area of the project. We note, however, that collection records available to the Service may not be all-inclusive. Our database is a compilation of collection records made available by various individuals and resource agencies. This information is seldom based on comprehensive surveys of all potential habitat and thus does not necessarily provide conclusive evidence that protected species are present or absent at a specific locality. However, based on the best information available at this time, we believe that the requirements of section 7 of the Endangered Species Act of 1973, as amended, are fulfilled for all species that currently receive protection under the Act. Obligations under section 7 of the Act should 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.

Our National Wetland Inventory maps indicate that the project is bounded by a sizable wetland on either side of the road. If wetland impacts would occur, the Corps of Engineers and the Tennessee Department of Environment and Conservation should be contacted regarding the presence of regulatory wetlands and the requirements of wetlands protection statutes.

If you have any questions regarding our comments, please contact John Griffith of my staff at 931/525-4995 or by email at *john_griffith@fws.gov*.

Sincerely,

Mary E. Jennings

Mary E. Jennings
Field Supervisor

Tim Nehus

From: Casey Parker
Sent: Monday, March 05, 2018 9:46 AM
To: Tim Nehus; TDOT Env.LocalPrograms
Cc: Rob Todd
Subject: Correction of PIN RE: Haywood Co. SR-1 over L. Muddy Cr. and Branch PINs 124505.00 and 124503.00

Correction: PIN 124505.00 and PIN 124503.00

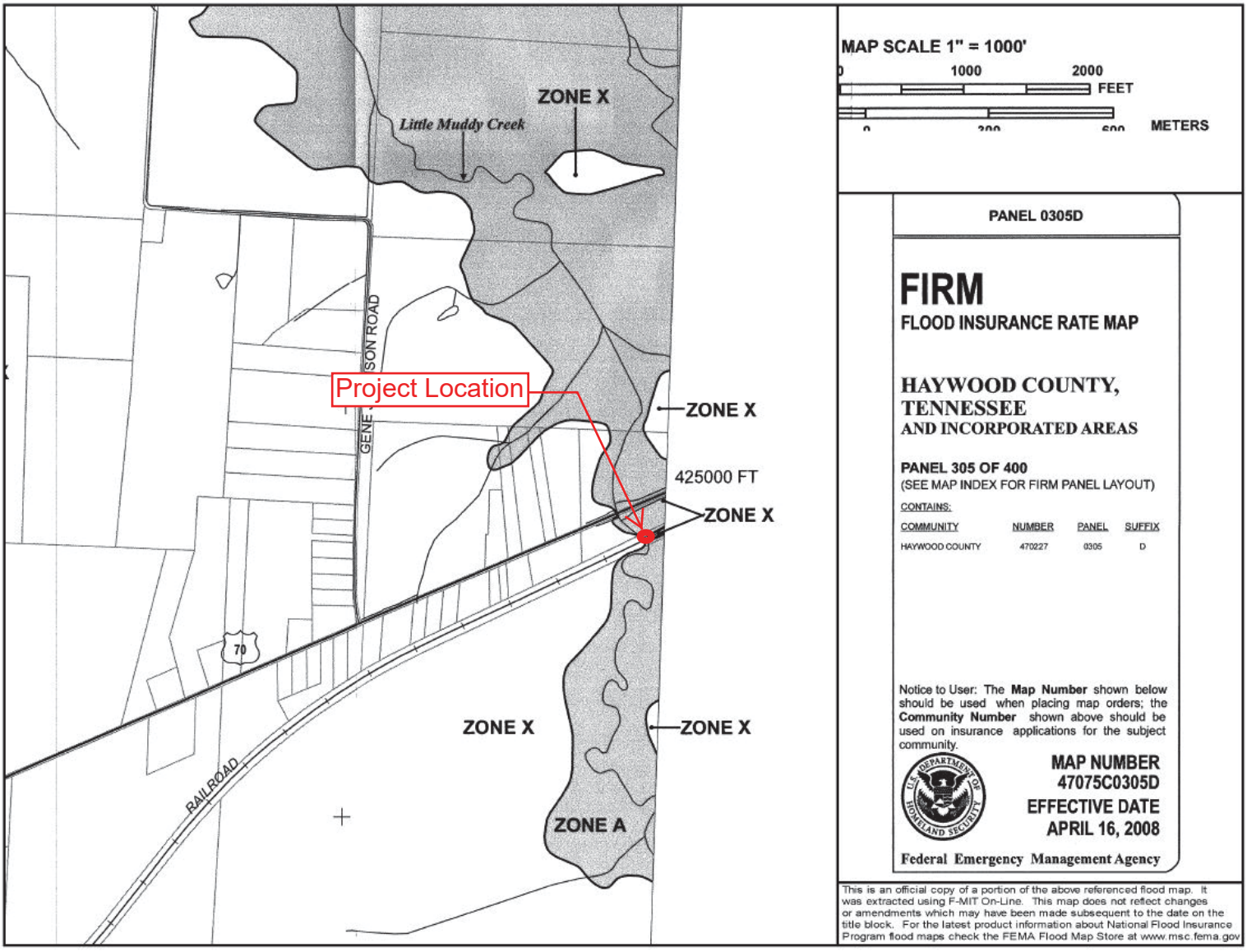
Subject: Haywood County; SR-1, HWY 70 E. Bridge over Branch at LM 2.89; P.E. 38002-0217-94, PIN 124505.00
Haywood County; SR-1, HWY 70 E. Bridge over Branch at LM 2.89; P.E. 38002-0217-94, PIN 124503.00

Mr. Tim Nehus,

I have reviewed the information that you provided regarding the proposed replacement of the subject bridges in Haywood 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

Floodplain Map



TENNESSEE HISTORICAL COMMISSION
STATE HISTORIC PRESERVATION OFFICE
2941 LEBANON PIKE
NASHVILLE, TENNESSEE 37243-0442
OFFICE: (615) 532-1550
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 1 Bridge over Muddy Creek, Log Mile 2.13/ PIN 124505.00, , Haywood 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, Jr.

E. Patrick McIntyre
Executive Director and
State Historic Preservation Officer

EPM/cjl

TENNESSEE HISTORICAL COMMISSION
STATE HISTORIC PRESERVATION OFFICE
2941 LEBANON PIKE
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www.tnhistoricalcommission.org

June 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-1/US Highway 70 Bridge Replacement over Little Muddy Creek, Haywood 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

Technical Appendices

Programmatic Categorical Exclusion

State Route 1

Bridge over Muddy Creek, LM 2.13

Haywood County

PIN 124505.00

Project Development

TENNESSEE
DEPARTMENT OF TRANSPORTATION

TRANSPORTATION INVESTMENT REPORT
IMPROVE Act

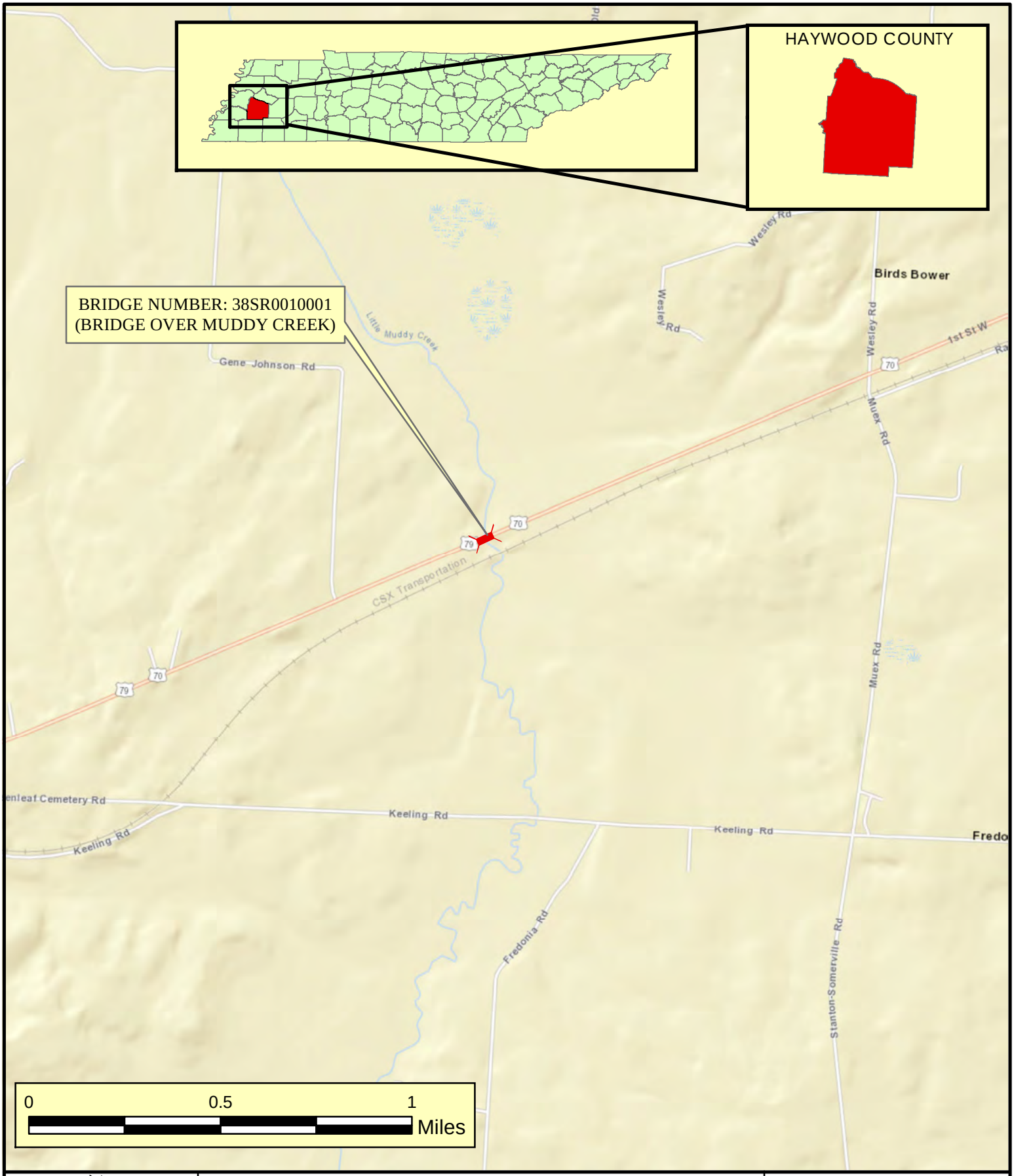
State Route 1
Bridge over Muddy Creek,
Log Mile 2.13 Haywood County
PIN 124505.00

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

Approved by _____ *Date* 04.02.18 *Approved by* _____ *Date* 4/2/18
Chief of Environment and Planning *Deputy Commissioner and Chief Engineer*

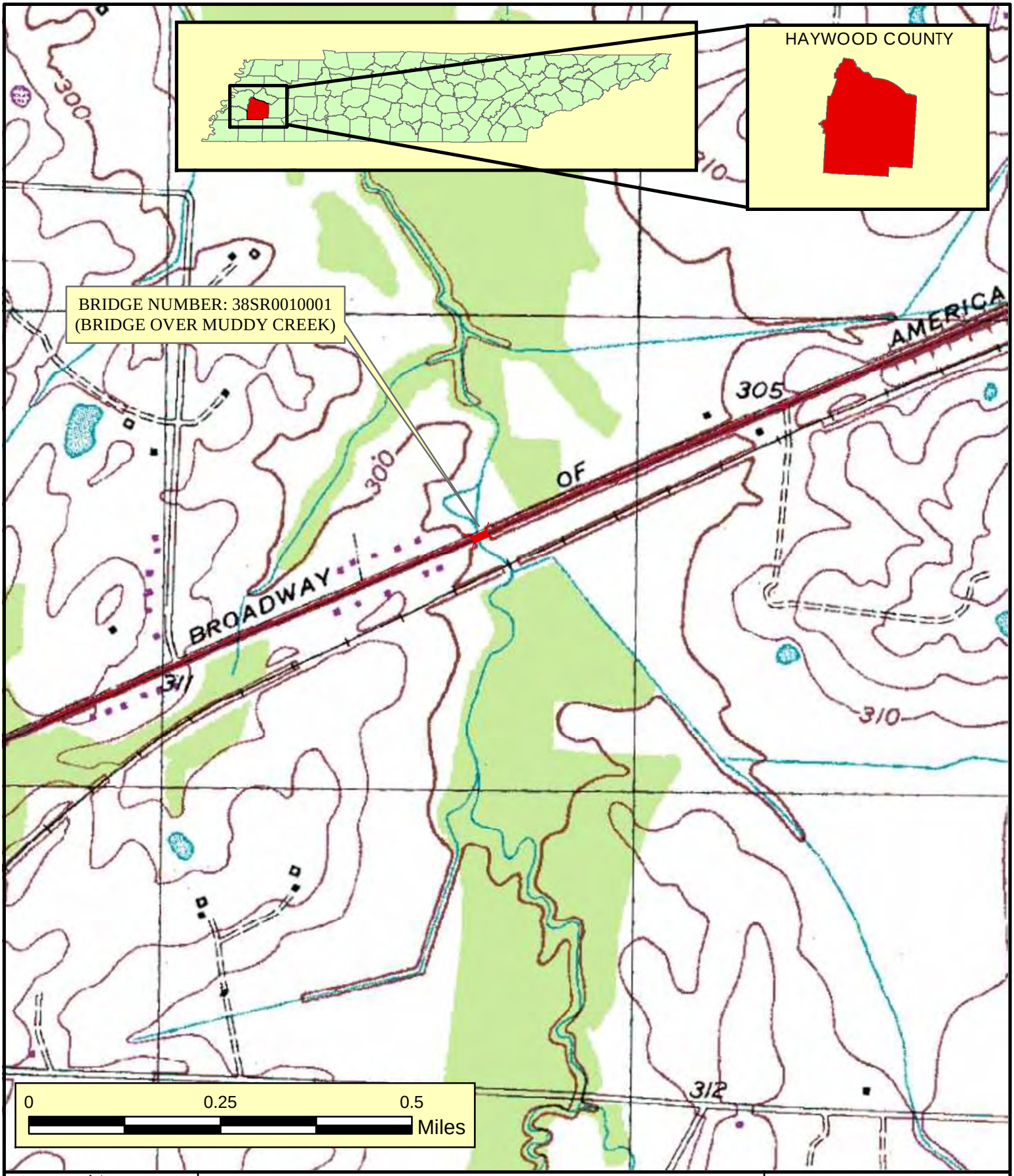
Approved by:	Signature	DATE
TRANSPORTATION DIRECTOR STRATEGIC TRANSPORTATION INVESTMENTS DIVISION		3-26-18
ENGINEERING DIRECTOR DESIGN DIVISION	Jabitha S. Cavaness	03/22/18
ENGINEERING DIRECTOR STRUCTURES DIVISION		3/27/18

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



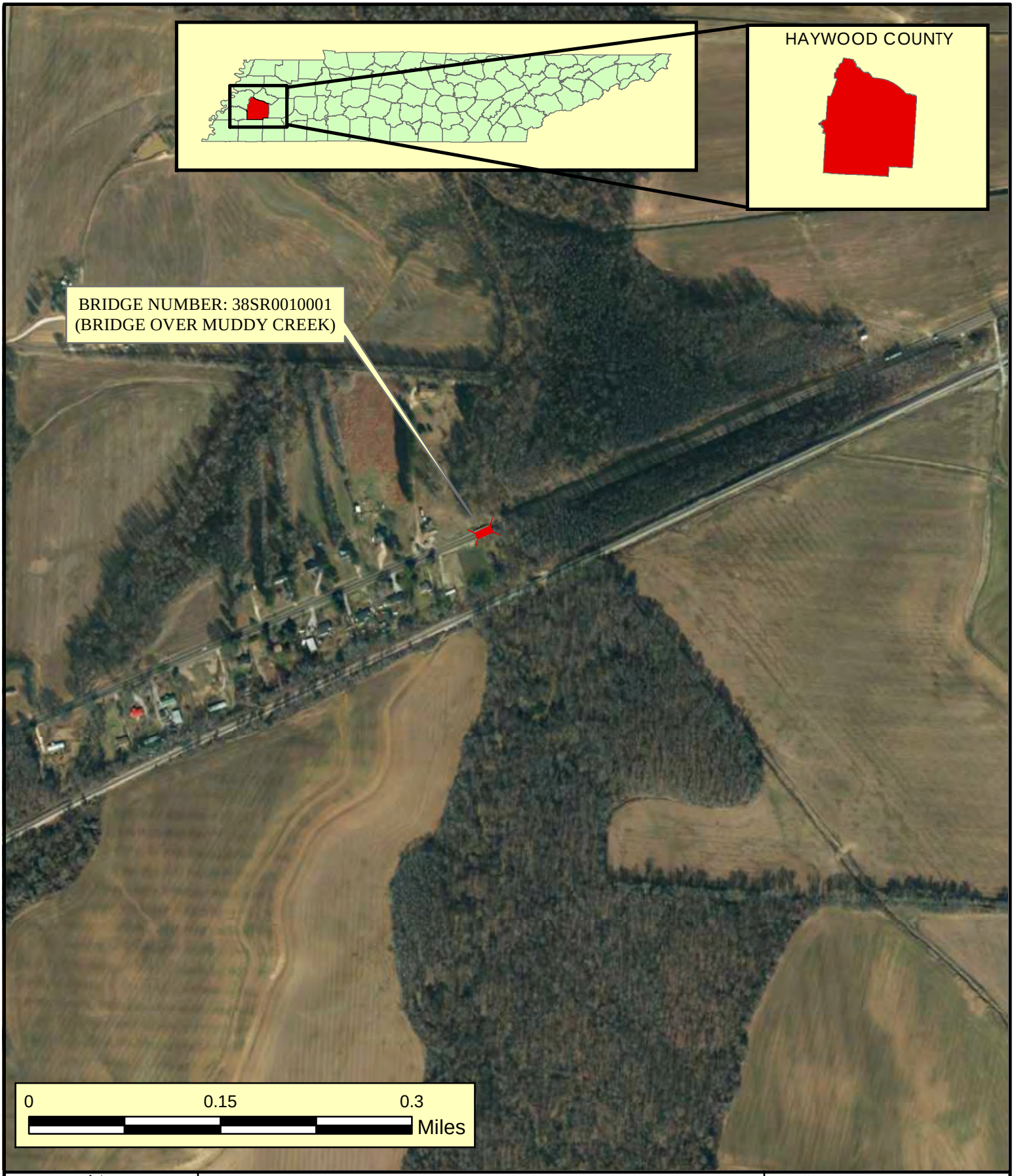
AREA MAP
BRIDGE TIR
STATE ROUTE 1 (US HWY 70)
BRIDGE OVER MUDDY CREEK (LM 2.13)
HAYWOOD COUNTY

TN TDOT Department of Transportation



TOPO MAP
BRIDGE TIR
STATE ROUTE 1 (US HWY 70)
BRIDGE OVER MUDDY CREEK (LM 2.13)
HAYWOOD COUNTY

TN TDOT Department of Transportation



PROJECT MAP
BRIDGE TIR
STATE ROUTE 1 (US HWY 70)
BRIDGE OVER MUDDY CREEK (LM 2.13)
HAYWOOD COUNTY

TN TDOT Department of Transportation

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)
State Route 1/US-70 (SR001), Bridge over Muddy Creek
Bridge ID: 38SR0010001
Log Mile 2.13
Haywood County
PIN: 124505.00

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

The existing structure, built in 1926, is a two (2) span steel beam and concrete deck girder bridge crossing Muddy Creek. The structure has an out-to-out width of 34 feet 5 inches. The overall structure length is 65 feet, and the sufficiency rating for this structure is 48.6 based on the Bridge Inspection Report from December 17, 2015.

The discharges for the drainage basin were determined using StreamStats, which used a drainage area of 5.81 square miles. The 10-year discharge rate (Q10) was 1,950 cubic feet per second (cfs), Q50 was 2,670 cfs, and Q100 was 2,970 cfs.

The bridge project will potentially need a bat survey to be performed and an endangered plant study since these studies may be required by TWRA as part of the project. Additionally the environmental field review team mentioned Swallows nests under the bridge that need to be removed before April.

The proposed alignment and grade for the replacement structure will remain the same as the existing structure including the 90-degree skew with the river channel. There is a 55 mph posted speed limit on State Route 1, which will also be the design speed based on the tangent alignment. Per TDOT Hydraulic recommendations, the proposed structure will be a two (2) span pre-stressed box beam structure with a total length of 70 feet. Two unequal spans of 30 feet and 40 feet will make up the length of the bridge and allow the pier to be moved out of the creek. It is estimated that two (2) tracts of land will be affected resulting in approximately 0.34 acres of right-of-way (ROW) acquisition. It is also estimated that underground and overhead utilities will need to be relocated. Construction phasing for both bridges on State Route 1 (Bridge over Muddy Creek at LM 2.13 and Bridge over Branch at LM 2.89) need to accommodate access to the property located in between the two (2) bridges in Haywood County. Detour routes are provided in report. The official detour will be the only detour route that is signed.

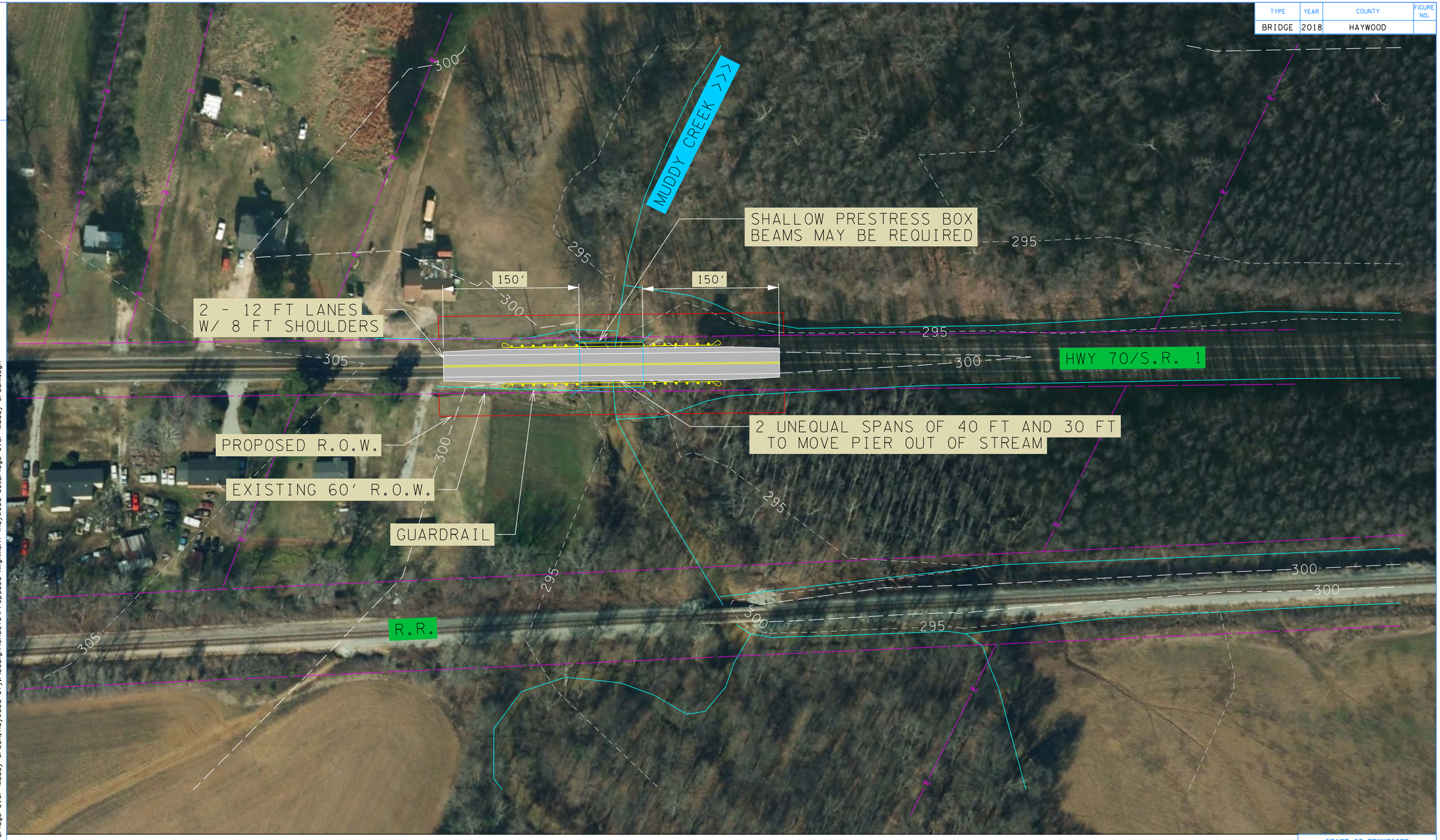
The route has a base year 2022 AADT of 1,650 and a design year 2042 AADT of 1,980. The existing structure and roadway approaches consist of two (2) 12-foot travel lanes. The route is classified as a Rural Arterial Road and Standard Drawing RD01-TS-3 was used for design considerations. Based on Table II from the standard drawing, it is recommended that the proposed curb-to-curb width over the structure will be 40 feet based on a design year AADT between 1,500-2,000 and a design speed of 55 MPH. Therefore, the typical section on the proposed structure will consist of two (2) 12-foot travel lanes with eight (8) foot shoulders and single slope concrete parapets for a total structure out-to-out width of 41 feet 3 inches. The project will extend 150 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 $1,055,000.

cc: File

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

TYPE	YEAR	COUNTY	FIGURE NO.
BRIDGE	2018	HAYWOOD	.



0' 100' 200' 300'

N

BRIDGE TIR

STATE ROUTE 1 (US HWY 70)
BRIDGE OVER MUDDY CREEK @ L.M. 2.13
HAYWOOD COUNTY

55 MPH DESIGN SPEED

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

BRIDGE REPLACEMENT
SR001
L.M. 2.13

3/23/2018 3:44:47 PM
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TENNESSEE D.O.T.
S.T.I.D.
FILE NO. ——

TYPE	YEAR	COUNTY	FIGURE NO.
BRIDGE	2018	HAYWOOD	1

STUDY AREA IS APPROX. 105 FEET FROM EXISTING CENTERLINE (50.0 FEET FROM PROP. R.O.W.)

STUDY AREA BEGINS 300 FEET BEFORE BEGINNING OF PROJECT

BEGIN PROJECT

MUDDY CREEK >>>

END PROJECT

STUDY AREA ENDS 300 FEET AFTER END OF PROJECT

150'

150'

HWY 70/S.R. 1

PROPOSED R.O.W.

EXISTING 60' R.O.W.

STUDY AREA IS APPROX. 105 FEET FROM EXISTING CENTERLINE (50.0 FEET FROM PROP. R.O.W.)

R.R.

ENVIRONMENTAL TECHNICAL STUDY AREA

0' 100' 200' 300'

N

ENVIRONMENTAL TECHNICAL STUDY AREA

STATE ROUTE 1 (US HWY 70)
BRIDGE OVER MUDDY CREEK @ L.M. 2.13
HAYWOOD COUNTY

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

FIGURE 1
BRIDGE REPLACEMENT
SR001
L.M. 2.13

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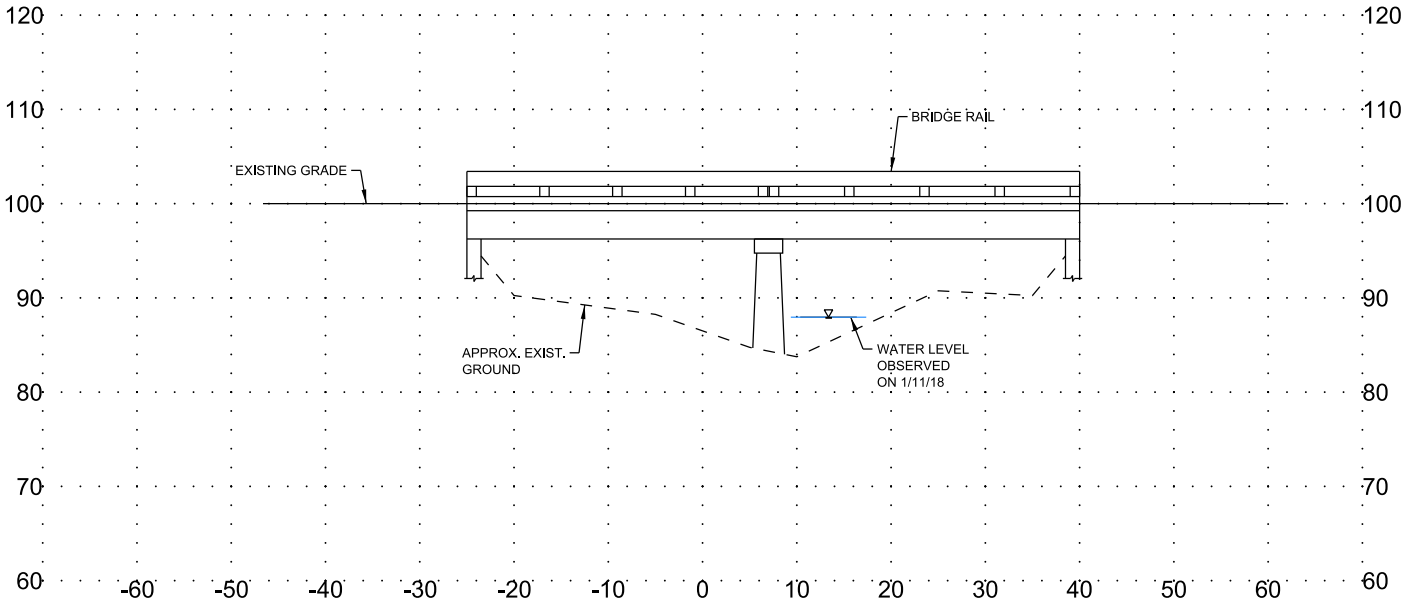
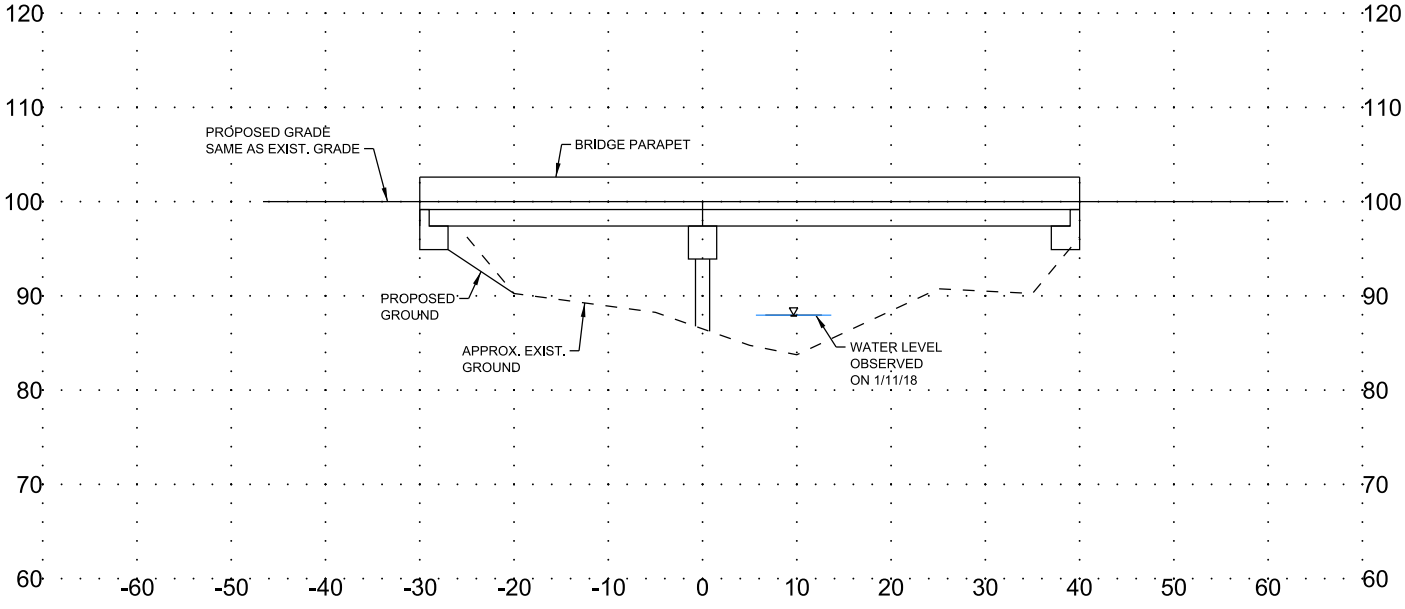
EXISTING STRUCTURE (INLET)



PROPOSED STRUCTURE (INLET)



0' 10' 20' 30'

SCALE: 1" = 20'

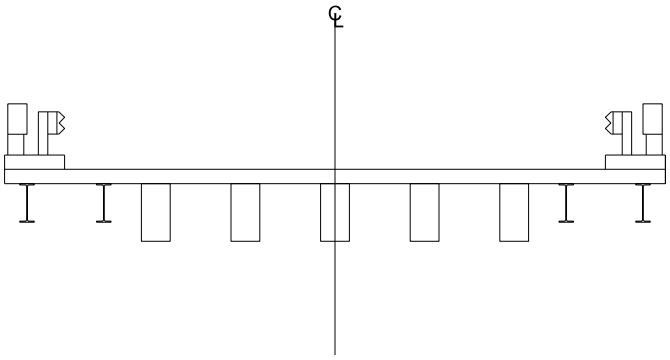
PROPOSED PROFILE

STATE ROUTE 1 (US HWY 70) HAYWOOD COUNTY

BRIDGE OVER MUDDY CREEK @ L.M. 2.13

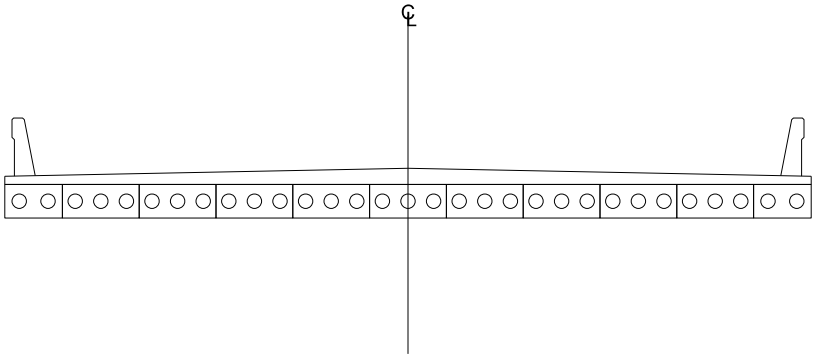
BRIDGE ID: 38SR0010001

EXISTING STRUCTURE



TOTAL WIDTH: 34'-5"

PROPOSED STRUCTURE



TOTAL WIDTH: 41'-3"

0' 5' 10' 15'

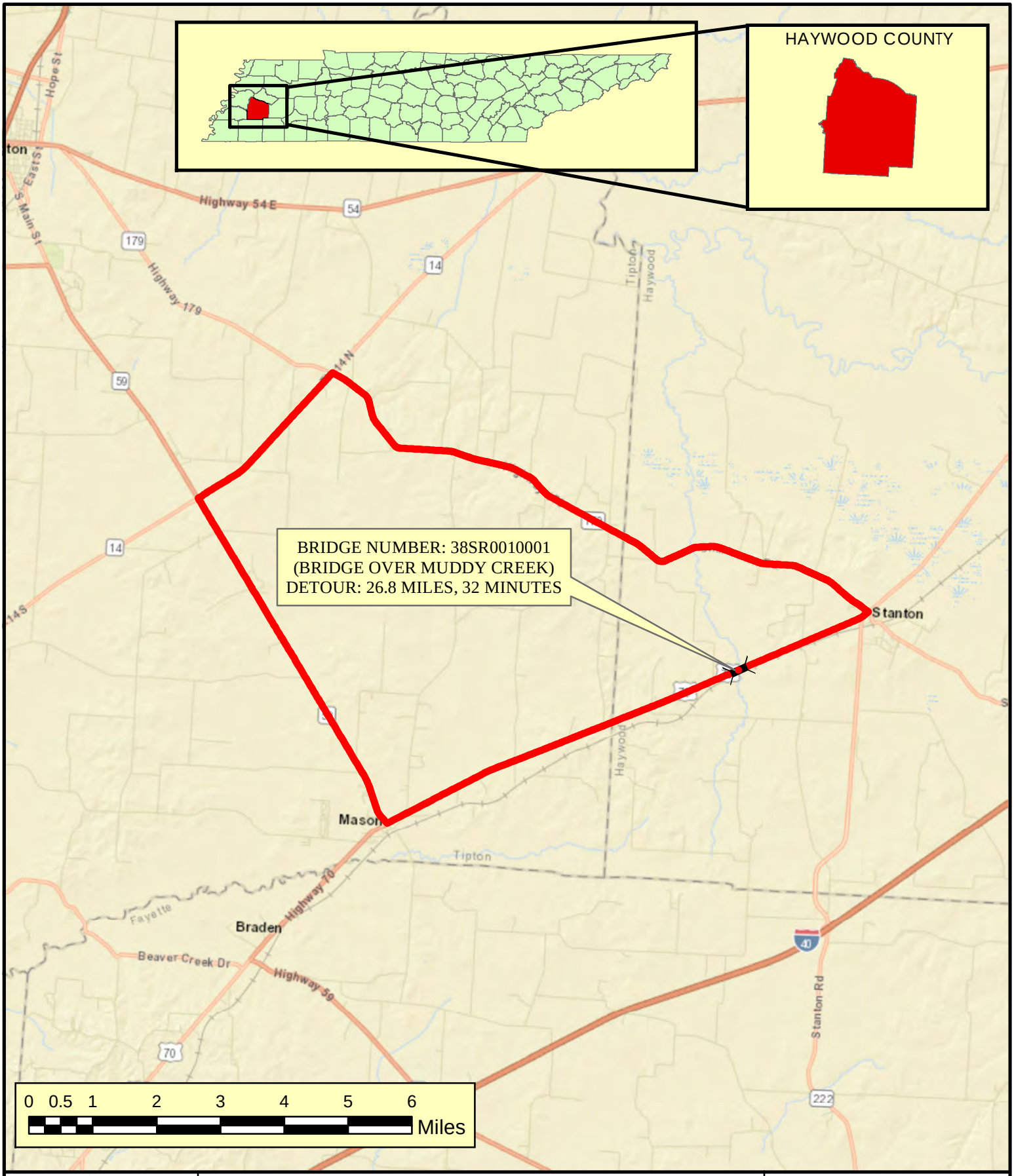
SCALE: 1" = 10'

PROPOSED TYPICAL SECTION

STATE ROUTE 1 (US HWY 70) HAYWOOD COUNTY

BRIDGE OVER MUDDY CREEK L.M. 2.13

BRIDGE ID: 38SR0010001



N

OFFICIAL DETOUR MAP

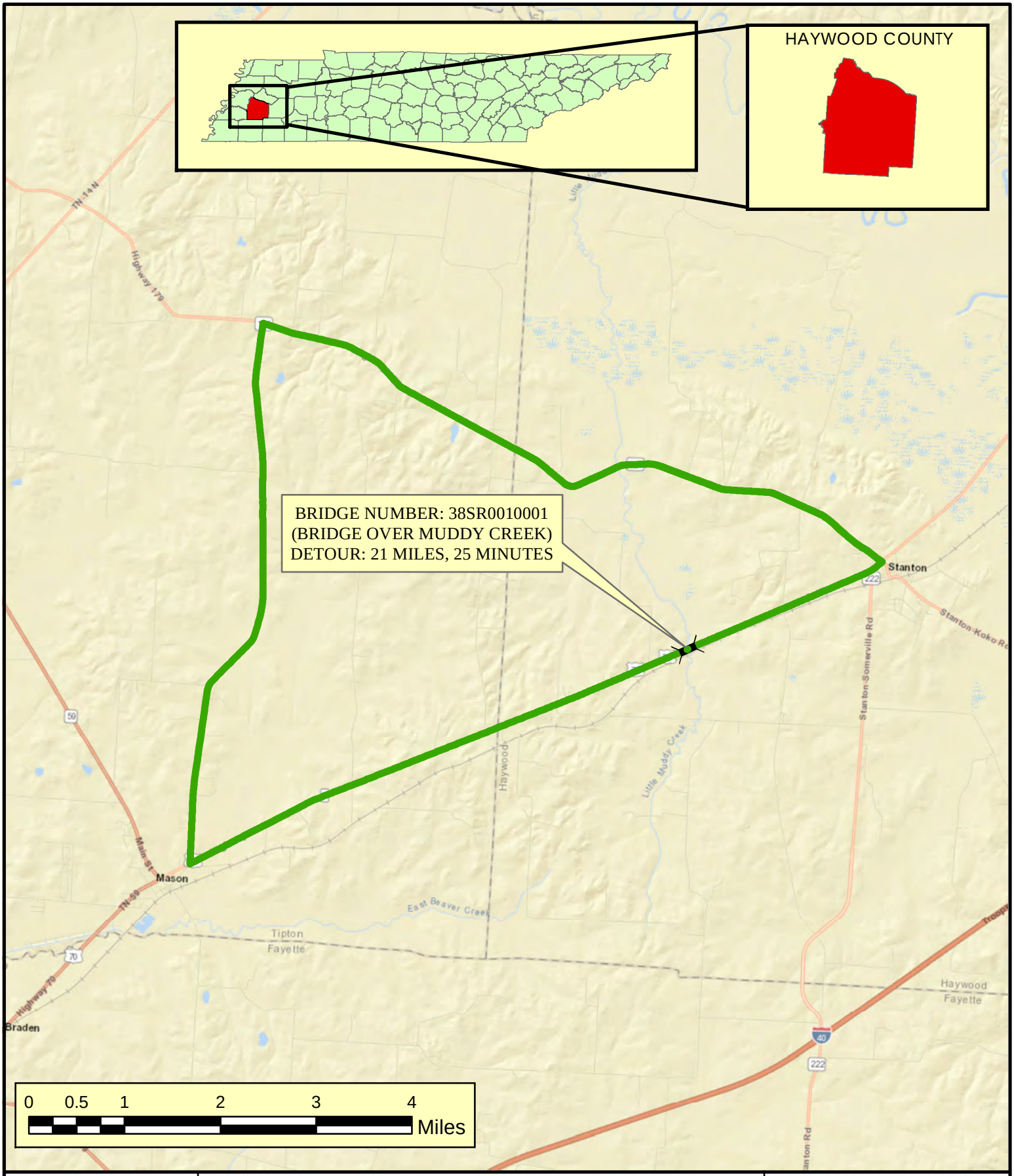
BRIDGE TIR

STATE ROUTE 1 (US HWY 70)

BRIDGE OVER MUDDY CREEK (LM 2.13)

HAYWOOD COUNTY

TN TDOT Department of Transportation



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LOCAL ROUTE DETOUR MAP
BRIDGE TIR
STATE ROUTE 1 (US HWY 70)
BRIDGE OVER MUDDY CREEK (LM 2.13)
HAYWOOD COUNTY

TN TDOT Department of Transportation

COST ESTIMATE SUMMARY

Route:	SR001 STATE ROUTE 1 (U.S. HIGHWAY 70)
Description:	REPLACEMENT OF BRIDGE OVER MUDDY CREEK
County:	HAYWOOD
Length:	0.07 MILES
Date:	March 9, 2018

DESCRIPTION	LOCAL 0%	STATE 100%	FEDERAL 0%	TOTAL
Construction Items				
Pavement Removal	$0	$6,600	$0	$6,600
Asphalt Paving	$0	$31,000	$0	$31,000
Concrete Pavement	$0	$0	$0	$0
Drainage	$0	$5,900	$0	$5,900
Appurtenances	$0	$0	$0	$0
Structures	$0	$405,700	$0	$405,700
Fencing	$0	$0	$0	$0
Signalization	$0	$0	$0	$0
Railroad Crossing or Separation	$0	$0	$0	$0
Earthwork	$0	$88,800	$0	$88,800
Clearing and Grubbing	$0	$10,600	$0	$10,600
Seeding & Sodding	$0	$3,200	$0	$3,200
Rip-Rap or Slope Protection	$0	$0	$0	$0
Guardrail	$0	$25,100	$0	$25,100
Signing	$0	$600	$0	$600
Pavement Markings	$0	$1,700	$0	$1,700
Maintenance of Traffic	$0	$23,700	$0	$23,700
Mobilization (5%)	$0	$30,100	$0	$30,100
Other Items = 10%	$0	$63,300	$0	$63,300
Const. Contingency = 15%	$0	$43,600	$0	$43,600
Construction Estimate	$0	$739,900	$0	$739,900
Interchanges & Unique Intersections				
Roundabouts	$0	$0	$0	$0
Interchanges	$0	$0	$0	$0
Right-of-Way & Utilties	**LOCAL 0%**	**STATE 100%**	**FEDERAL 0%**	**TOTAL**
Right-of-Way	$0	$61,100	$0	$61,100
Utilities	$0	$77,900	$0	$77,900
Preliminary & Construction Engineering and Inspection				
Prelim. Eng. 10%	$0	$87,900	$0	$87,900
Const. Eng. & Inspec. 10%	$0	$87,900	$0	$87,900
Total Project Cost	$0	$1,054,700	$0	$ 1,055,000

PAY ITEM SUMMARY

TDOT PAY ITEM	TDOT DESCRIPTION	UNIT	TOOL QUANTITIES	ADDITIONAL QUANTITIES	TOOL QUANTITIES + ADDITIONAL QUANTITIES	Statewide UNIT COST	TOTAL COST
Pavment Removal							
202-03.01	Removal of Asphalt Pavement	SY	22		22	$ 25.98	$ 577.42
415-01.02	Cold Planning Bituminous Pavement	SY	788		788	$ 7.63	$ 6,015.21
						PAVEMENT REMOVAL TOTAL (ROUNDED)	$ 6,600
Asphalt Roads							
303-01	Mineral Aggregate, Type A Base, Grading D	TON	600		600	$ 32.05	$ 19,235.58
402-01	Bituminous Material For Prime Coat (PC)	TON	1		1	$ 713.46	$ 519.53
402-02	Aggregate For Cover Material (PC)	TON	3		3	$ 66.09	$ 173.70
403-01	Bituminous Material For Tack Coat (TC)	TON	0		0	$ 781.26	$ 186.67
411-01.07	ACS (PG64-22) GR "E"	TON	42		42	$ 112.44	$ 4,765.36
411-02.10	ACS Mix(PG70-22) Grading D	TON	52		52	$ 115.30	$ 6,022.65
						PAVING TOTAL (ROUNDED)	$ 31,000
Concrete Roads							
						CONCRETE RAMPS AND ROADWAYS TOTAL (ROUNDED)	$ -
Drainage							
607-05.02	24" Concrete Pipe Culvert (Class III)	LF	42		42	$ 85.50	$ 3,590.85
611-07.01	Class A Concrete (Pipe Endwalls)	CY	2		2	$ 1,054.36	$ 1,901.22
611-07.02	Steel Bar Reinforcement (Pipe Endwalls)	LB	171		171	$ 2.31	$ 395.80
						DRAINAGE TOTAL (ROUNDED)	$ 5,900
Appurtenances							
						ROADWAY AND PAVEMENT APPURTENANCES TOTAL (ROUNDED)	$ -
Earthwork & Mineral							
105-01	Constrction Stakes, Lines, and Grades	LS	1	-0.8	0.2	$ 112,407.96	$ 22,481.59
203-01	Road & Drainage Excavation (Unclassified)	CY	2260		2260	$ 16.78	$ 37,935.73
203-03	Borrow Excavation (Unclassified)	CY	1884		1884	$ 15.04	$ 28,323.13
						EARTHWORK & MINERAL TOTAL (ROUNDED)	$ 88,800
Structures							
N/A	Removal of Bridge	SF	2236		2236	$ 20.00	$ 44,720.00
N/A	New Bridge (Concrete Girder):	SF	2888		2888	$ 125.00	$ 360,937.50
						STRUCTURES TOTAL (ROUNDED)	$ 405,700
Interchanges and Unique Intersections							
						INTERCHANGES AND UNIQUE INTERSECTIONS TOTAL (ROUNDED)	$ -
Lighting & Signalization							
						LIGHTING & SIGNALIZATION TOTAL (ROUNDED)	$ -
Guardrail							
705-01.01	Guardrail at Bridge Ends	LF	100		100	$ 73.64	$ 7,364.49
705-02.02	Single Guardrail (Type 2)	LF	163		162.624	$ 18.82	$ 3,060.28
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)	$ 25,100
Seeding and Sodding							
801-01	Seeding (With Mulch)	UNIT	26		26	$ 78.14	$ 2,021.75
801-01.07	Temporary Seeding (With Mulch)	UNIT	19		19	$ 29.93	$ 580.75
801-02	Seeding (Without Mulch)	UNIT	19		19	$ 28.50	$ 552.97
						SODDING TOTAL (ROUNDED)	$ 3,200
Maintenace of Traffic							
N/A	Traffic Control	LS	1		1		$ 23,168.00
712-02.02	Interconnected Portable Barrier Rail	LF	15		15	$ 31.96	$ 472.52
						MAINTENANCE OF TRAFFIC TOTAL (ROUNDED)	$ 23,700
Signs							
Not Listed	Signs (Construction)	LS	1		1	$ -	$ 600
						SIGNING TOTAL (ROUNDED)	$ 600
Pavement Markings							
716-13.06	Spray Thermo P.M. (40 mil 4")	LM	0.6		0.6	$ 2,887.70	$ 1,617.11
						PAVEMENT MARKINGS TOTAL (ROUNDED)	$ 1,700
Fencing							
						FENCE TOTAL (ROUNDED)	$ -
Rip-Rap							
						RIP-RAP & SLOPE PROTECTION TOTAL (ROUNDED)	$ -
Clearing and Grubing							
201-01	Clearing and Grubbing	LS		0.04	0.04	$ 264,380.06	$ 10,575.20
						CLEAR AND GRUBBING TOTAL (ROUNDED)	$ 10,600.00
Railroad At-Grade Crossing							
						RAILROAD CROSSING OR SEPARATION TOTAL (ROUNDED)	$ -
Utilties							
N/A	Overhead Distribution	LM	0.07		0.07	$ 375,000	$ 26,250
N/A	Underground Communication	LM	0.07		0.07	$ 500,000	$ 35,000
N/A	Underground Water	LM	0.07		0.07	$ 237,600	$ 16,632
						UTILITIES TOTAL (ROUNDED)	$ 77,900.00
Right-of-Way							
N/A	Right-of-Way	LS	1		1	$ 61,090.91	$ 61,090.91
						RIGHT-OF-WAY TOTAL (ROUNDED)	$ 61,100.00

BRIDGE TIR

Haywood
State Route 1

LOCATION			
Bridge #:	38SR0010001	Feature Crossed:	Little Muddy Creek
Road Name:	State Route 1	Log mile:	2.13
Route ID:	SR001	System:	5-STP Rural, State
City:	Stanton	Functional Class:	Rural Arterial
County:	Haywood	State Project Number	38002-0216-94
PIN:	124505.00		

ROADWAY		
	Existing	**Proposed (Preliminary Design Estimate)**
Design Standard		RD01-TS-3 / 2011 Green Book
Route Characteristics		
AADT:	1650	1980
AADT Year:	2022	2042
Terrain:	Rolling	Rolling
No. Lanes:	2	2
Speed(Posted):	55	55
Speed (Design):		55
Approach Character.		
Lane Width (ft):	12	12
Shoulder Width (ft):	4	8
ROW Width (ft):	60	110
ROW Tracts Affected		2
ROW Required (acre)		0.34
Cross Section Width (ft):	24/32/60	24/40/110
Approach Length (ft):		150' (east), 150' (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)	UG: Water, FOC OH: Electric	N/A
Utilities to be Relocated	N/A	UG: Water, FOC OH: Electric
Comments		

BRIDGE TIR

Haywood
State Route 1

STRUCTURE		
	Existing	**Proposed (Preliminary Design Estimate)**
Bridge Characteristics		
Year Built	1926	
Load Limit	20 tons(inspection report), 40 tons(signed)	
Sufficiency Rating	48.6	
Skew	90	90
Structure Type	Concrete Deck Girder/Steel Beam	Prestressed Box Beam
Structures in Channel	Yes	No
Length (ft)	65	70
No. Spans (App./Main)	0 | 2	0 | 2
Width (curb to curb) (ft)	28.2	40
Width (o to o) (ft)	34.4	41.3
Sidewalks on Structure	No	No
Vert. Clearance (ft)	8	9.2
Superstructure Depth (in)	86	67
Girder Depth (in)	36 (Conc. Deck Girder) / 24 (Steel Beams)	21
Finish Grade-Low Girder (in)	45	31
High Water Marks	N/A	
Bridge Rail Type	Conc. Rail w/ Guardrail	Single Slope Concrete Parapet
Bridge Rail Height (ft)	2.7	3
Indication Overtopping	No	
Local Scour	No	
Obstructions	No	
Other Structures	N/A	N/A
Comments	Heavy corrision on I-beams in several spots. Poor pavement condition on bridge deck. Bridge deck, girders and approaches have spalling and cracks. Abutment #1 has cracks.	

BRIDGE TIR

Haywood
State Route 1

FLOW RATES (from USGS StreamStats)	
Drainage Area (sq. miles)	5.81
10 Year Discharge Rate (Q10) cfs	1950
50 Year Discharge Rate (Q50) cfs	2670
100 Year Discharge Rate (Q100) cfs	2970

CHANNEL	
Depth (ft)	4.2
Width of Normal Flow (ft)	22
Depth of Normal Flow (ft)	4.2
Skew of Channel with Roadway	90
Type of Material in Stream Bed	sand and silt
Type of Vegetation on Banks	low growth, large timber, dead trees
Are Channel Banks Stable	Yes
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	Offical Detour: Detour thru-traffic east of bridge onto State Route 179 heading west, next onto State Route 14 heading south, then onto State Route 59 heading east, lastly back onto State Route 1 heading west . Detour thru-traffic west of bridge using the same route in reverse order. This is the only detour route that will be signed.
Comments	Detour for Local Traffic: Detour thru-traffic east of bridge onto State Route 179 heading west, next onto Charleston-Mason Rd heading south, then back onto State Route 1 heading west. Detour thru-traffic west of bridge using the same route in reverse order. Construction phasing for both bridges on State Route 1 (Bridge over Muddy Creek at LM 2.13 and Bridge over Branch at LM 2.89) need to accommodate access to the property located in between the two (2) bridges in Haywood County.

TENNESSEE DEPARTMENT OF TRANSPORTATION
STRATEGIC TRANSPORTATION INVESTMENTS DIVISION

PROJECT NO.: 38002-1216-94 ROUTE: S.R. 1
COUNTY: HAYWOOD CITY:
PROJECT PIN NUMBER: 124505.00
PROJECT DESCRIPTION: HWY. 70 E. BRIDGE OVER MUDDY CREEK (L.M. 2.13)
BRIDGE ID: 38SR0010001

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
1,650	2022	1,980	218	11	2042	65-35	9	13		

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

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

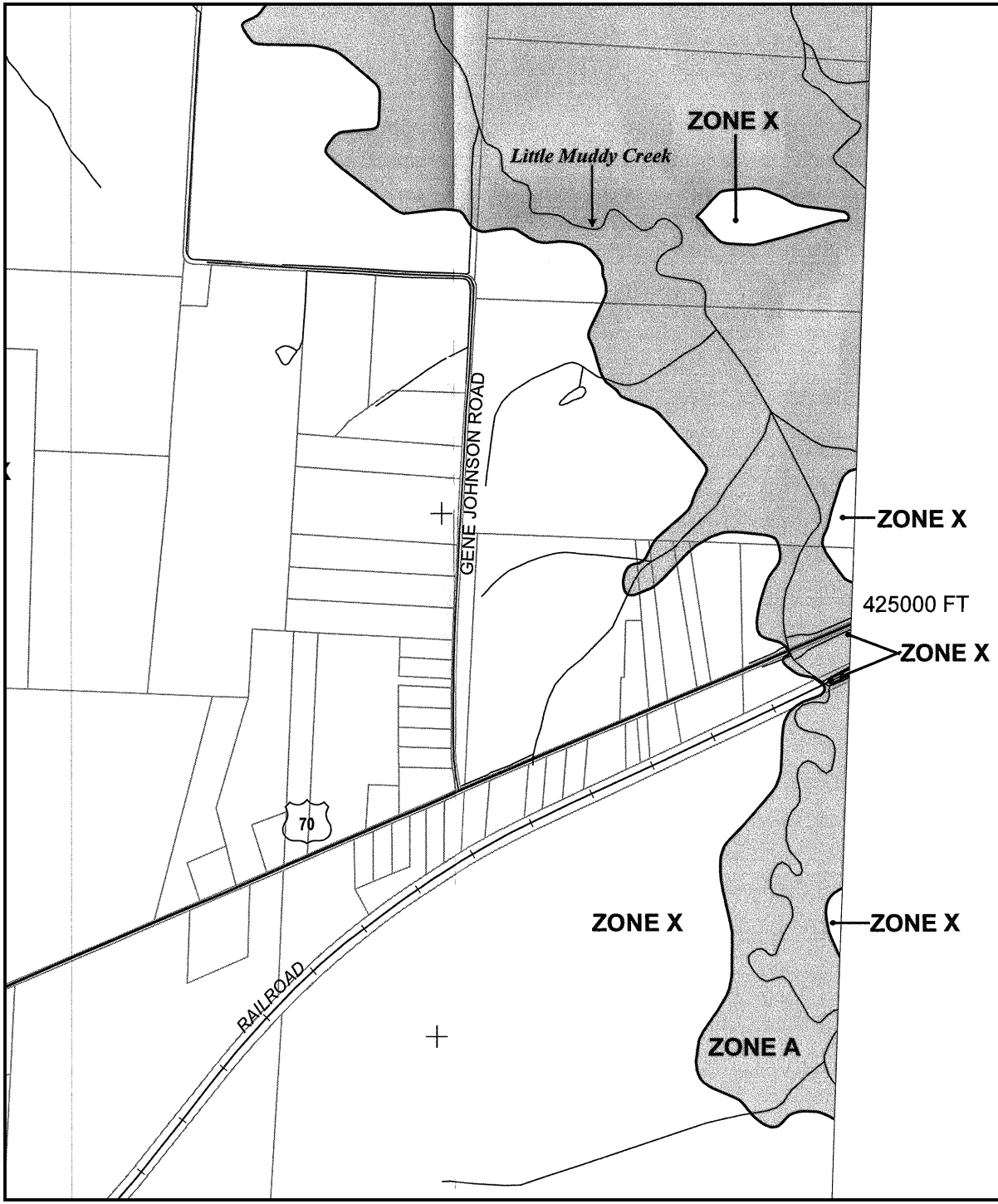
APPROVED BY: JIM WATERS DATE 12/1/17
ASSISTANT DIRECTOR
SUITE 1000, JAMES K. POLK BUILDING

COMMENTS:

THIS TRAFFIC BASED ON 2017 CYCLE COUNTS. THE DESIGN YEAR TRAFFIC IS BASED ON GROWTH RATE FROM THE ADAM COMPUTER PROGRAM.

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.
SEE ATTACHMENTS FOR TURNING MOVEMENTS AND/OR OTHER DETAILS. (REV. 2/22/17)



MAP SCALE 1" = 1000'

0 1000 2000 FEET

0 300 600 METERS

PANEL 0305D

FIRM

FLOOD INSURANCE RATE MAP

HAYWOOD COUNTY, TENNESSEE
AND INCORPORATED AREAS

PANEL 305 OF 400
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
HAYWOOD COUNTY	470227	0305	D

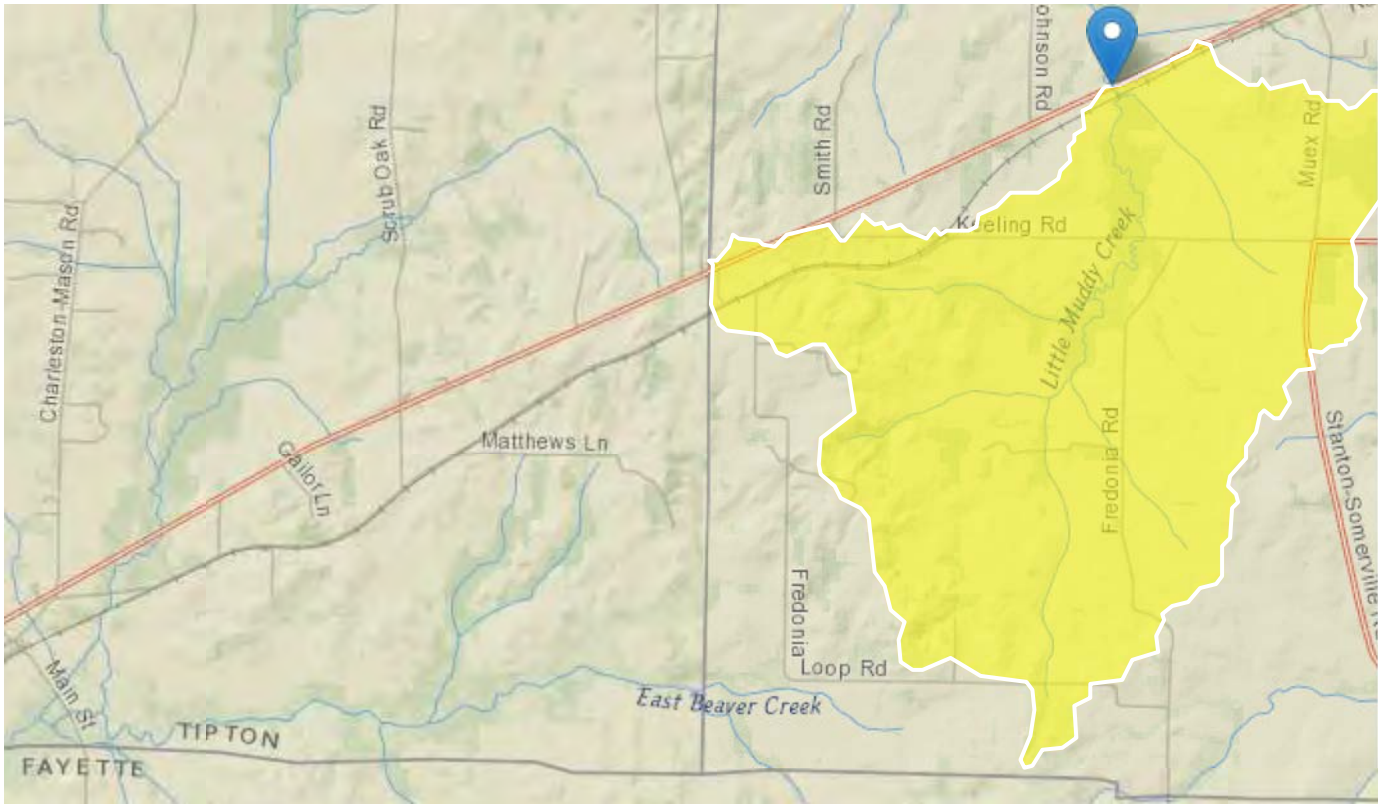
Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
47075C0305D
EFFECTIVE DATE
APRIL 16, 2008

Federal Emergency Management Agency

StreamStats Report

Region ID: TN
Workspace ID: TN20180105164809997000
Clicked Point (Latitude, Longitude): 35.45055, -89.43871
Time: 2018-01-05 10:47:40 -0600



Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
CONTDA	Area that contributes flow to a point on a stream	5.81	square miles
DRNAREA	Area that drains to a point on a stream	5.81	square miles
RECESS	Number of days required for streamflow to recede one order of magnitude when hydrograph is plotted on logarithmic scale	32	days per log cycle
PERMGTE2IN	Percent of area underlain by soils with permeability greater than or equal to 2 inches per hour	37.002	percent
CLIMFAC2YR	Two-year climate factor from Lichy and Karlinger (1990)	2.403	dimensionless
SOILPERM	Average Soil Permeability	1.07	inches per hour

Peak-Flow Statistics Parameters [DAOnly Area 4]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
CONTDA	Contributing Drainage Area	5.81	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	1100	ft^3/s	588	2070	38.7	38.7	1.8
5 Year Peak Flood	1610	ft^3/s	879	2960	37.2	37.2	2.4
10 Year Peak Flood	1950	ft^3/s	1050	3610	38	38	3.1
25 Year Peak Flood	2370	ft^3/s	1240	4540	40.1	40.1	3.8
50 Year Peak Flood	2670	ft^3/s	1350	5290	42.2	42.2	4.2
100 Year Peak Flood	2970	ft^3/s	1450	6090	44.7	44.7	4.4
500 Year Peak Flood	3670	ft^3/s	1630	8270	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	5.81	square miles	2	2405
RECESS	Recession Index	32	days per log cycle	32	350
PERMGTE2IN	Percent permeability gte 2 in per hr	37.002	percent	2	98

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

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

Statistic	Value	Unit	SEp
7 Day 10 Year Low Flow	0.00927	ft^3/s	123
30 Day 5 Year Low Flow	0.0245	ft^3/s	93.5

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	5.81	square miles	2	2405

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
RECESS	Recession Index	32	days per log cycle	32	350
CLIMFAC2YR	Tennessee Climate Factor 2 Year	2.403	dimensionless	2.307	2.455
PERMGTE2IN	Percent permeability gte 2 in per hr	37.002	percent	2	98

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

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

Statistic	Value	Unit	SEp
Mean Annual Flow	6.84	ft^3/s	13.1

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	5.81	square miles	2	2405
RECESS	Recession Index	32	days per log cycle	32	350
PERMGTE2IN	Percent permeability gte 2 in per hr	37.002	percent	2	98

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

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

Statistic	Value	Unit	SEp
Summer Mean Flow	1.16	ft^3/s	38.3

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	5.81	square miles	2	2405
RECESS	Recession Index	32	days per log cycle	32	350
PERMGTE2IN	Percent permeability gte 2 in per hr	37.002	percent	2	98
CLIMFAC2YR	Tennessee Climate Factor 2 Year	2.403	dimensionless	2.307	2.455
SOILPERM	Average Soil Permeability	1.07	inches per hour	0.97	2.44

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

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

Statistic	Value	Unit	SEp
99.5 Percent Duration	0.00858	ft^3/s	122
99 Percent Duration	0.0131	ft^3/s	105
98 Percent Duration	0.018	ft^3/s	96.4
95 Percent Duration	0.0261	ft^3/s	90.5
90 Percent Duration	0.0361	ft^3/s	85.8
80 Percent Duration	0.0592	ft^3/s	79.6
70 Percent Duration	0.0964	ft^3/s	75
60 Percent Duration	0.203	ft^3/s	69.2
50 Percent Duration	0.338	ft^3/s	57
40 Percent Duration	0.713	ft^3/s	46.9
30 Percent Duration	1.92	ft^3/s	36.6
20 Percent Duration	6.24	ft^3/s	27.4
10 Percent Duration	13.6	ft^3/s	17.7

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	**X**
5.	Forested land	
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	**X**
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	

Comments: Additional environmental information includes a bat survey needs to be performed, Swallows nests under the bridge need to be removed before April and an endangered plant study.

BRIDGE TIR

Haywood
State Route 1

SITE VISIT ATTENDEES			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

Transportation Investment Report for Bridge ID: 38SR0010001
Haywood County
State Route 1

Bridge Number

Upstream From Bridge

Transportation Investment Report for Bridge ID: 38SR0010001
Haywood County
State Route 1

Downstream From Bridge

Upstream From West Bank

Transportation Investment Report for Bridge ID: 38SR0010001
Haywood County
State Route 1

Downstream From East Bank

Looking Westbound from Bridge

Transportation Investment Report for Bridge ID: 38SR0010001
Haywood County
State Route 1

Looking Eastbound from Bridge

Westbound Approach of Bridge

Transportation Investment Report for Bridge ID: 38SR0010001
Haywood County
State Route 1

Eastbound Approach of Bridge

Weight Limit Sign at West Approach

Transportation Investment Report for Bridge ID: 38SR0010001
Haywood County
State Route 1

Fiber Optic Cable Warning Sign

Existing Utility Pole on North Side of Bridge

Transportation Investment Report for Bridge ID: 38SR0010001
Haywood County
State Route 1

Inlet

Outlet

Transportation Investment Report for Bridge ID: 38SR0010001
Haywood County
State Route 1

Corrosion on Girder at Outlet

Extensive Decay of Pier near Girder and Foundation at Inlet

Transportation Investment Report for Bridge ID: 38SR0010001
Haywood County
State Route 1

Outlet Pier from East Bank

Extensive Pavement Cracking and Rutting on Bridge

Transportation Investment Report for Bridge ID: 38SR0010001
Haywood County
State Route 1

Corrosion and Decay at Girder Connection to East Abutment on Inlet Side

Extensive Pavement Cracking and Rutting Leaving Bridge Eastbound

Transportation Investment Report for Bridge ID: 38SR0010001
Haywood County
State Route 1

Corrosion of Outlet Girder between West Abutment and Pier

East Abutment

Transportation Investment Report for Bridge ID: 38SR0010001
Haywood County
State Route 1

West Abutment

Bridge Beams

NATIONAL BRIDGE INVENTORY
TENNESSEE INVENTORY AND APPRAISAL REPORT

TN TDOT DEPARTMENT OF TRANSPORTATION

BRIDGE ID NUMBER: **38SR0010001**
BRIDGE OWNER: **STATE OF TENNESSEE**
FIPS CODE: **00000**
ROAD NAME: **HWY. 70 E.**
CROSSING: **MUDDY CREEK**
LOCATION: **2 M W OF SR179**

COUNTY: **HAYWOOD**
ROUTE: **SR001**
SPECIAL CASE: **0**
COUNTY SEQUENCE: **1**
LOG MILE: **2.13**
SUFFICIENCY RATING: **45.8**

IDENTIFICATION

(16a,b) LATITUDE:	N	35.45053	DEGREES
(17a,b) LONGITUDE:	W	89.43881	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: **CONCRETE**
(44a) APPR SPAN MATERIAL: **NOT APPLICABLE**

(45) NUMBER OF MAIN SPANS: **2**
(46) NUMBER OF APPROACH SPANS: **0**
(107) TYPE OF DECK: **CONCRETE CAST-IN-PLACE**
(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: **1926**
(106) YEAR THE BRIDGE WAS REHABILITATED: **1959**
(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: **32.8 FT**
(49) TOTAL BRIDGE LENGTH: **65.3 FT**
(50a) LEFT SIDEWALK WIDTH: **0.0 FT**
(50b) RIGHT SIDEWALK WIDTH: **0.0 FT**
(51) BRIDGE CURB TO CURB WIDTH: **28.2 FT**
(52) BRIDGE OUT TO OUT WIDTH: **34.4 FT**
(32) APPROACH ROADWAY (W/ SHLDS) WIDTH: **31.2 FT**
(33) BRIDGE MEDIAN: **NO MEDIAN**
(34) BRIDGE SKEW: **0 DEGREES**
(35) BRIDGE FLARE: **NO FLARE**
(520) MIN VERTICAL CLEARANCE OVER RD: **NO RESTRICTION**
(47) MIN HORIZONTAL CLEARANCE ON ROADWAY: **28.2 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**

PUBLICATION DATE
27-Jul-18

CLASSIFICATION

(112) MEETS NBIS BRIDGE LENGTH: **YES**
(104) NATIONAL HIGHWAY SYSTEM: **NOT A NHS ROUTE**
(26) FUNCTIONAL CLASS: **RURAL ARTERIAL**
(101) PARALLEL BRIDGE: **NO PARALLEL BRIDGE**
(102) TRAFFIC DIR: **2-WAY TRAFFIC**
(103) TEMPORARY BRIDGE: **NOT APPLICABLE**
(110) NATIONAL TRUCK ROUTE: **NOT ON TRUCK NETWORK**
(37) HISTORICAL CLASS: **BRIDGE IS NOT ELIGIBLE FOR THE NATIONAL REGISTER**

CONDITION RATINGS

(58) DECK: **5**
(59) SUPERSTRUCTURE: **4**
(60) SUBSTRUCTURE: **5**
(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: **4**
(68) DECK GEOMETRY: **5**
(69) UNDERCLEARANCE RATING: **N**
(71) WATERWAY ADEQUACY: **6**
(72) APPROACH ROADWAY ALIGNMENT: **8**
(36) TRAFFIC SAFETY FEATURES: **0011**
(113) SCOUR CONDITION RATING: **3**

RECOMMENDED IMPROVEMENTS

(75) TYPE OF WORK: **BRIDGE REPLACEMENT**
(76) LENGTH OF BRIDGE IMPROVEMENT: **89.9 FT**
(94) BRIDGE IMPROVEMENT COST: **$630,000.00**
(95) ROADWAY IMPROVEMENT COST: **$64,000.00**
(96) TOTAL PROJECT COST: **$946,000.00**
(97) YEAR OF IMPROVEMENT COST ESTIMATE: **2018**

INSPECTION DATES

(90) DATE OF LAST REGULAR INSPECTION: **10/31/2017**
(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): **N/A**
(92c) SPECIAL INSP FREQUENCY (MONTHS): **N**

From:	Fottrell, Gary (FHWA)
To:	Joseph Santangelo
Cc:	Sharon Sanders; Abby Harris; Tammy Sellers; Susannah Kniazewycz
Subject:	RE: PIN 124505.00, Haywood, SR-1 Bridge over Muddy Creek
Date:	Wednesday, August 22, 2018 8:22:56 AM
Attachments:	image001.png

Hello – yes, please process as a PCE like the other one.

Gary

From: Joseph Santangelo [mailto:Joseph.Santangelo@tn.gov]
Sent: Wednesday, August 22, 2018 8:17 AM
To: Fottrell, Gary (FHWA) <Gary.Fottrell@dot.gov>
Cc: Sharon Sanders <Sharon.Sanders@tn.gov>; Abby Harris <Abby.Harris@tn.gov>
Subject: FW: PIN 124505.00, Haywood, SR-1 Bridge over Muddy Creek

Good Morning Gary,

We have another bridge replacement along SR-1 / US-70 over the Muddy Creek (PIN 124505.00) which is approximately one mile southwest of the US-70 bridge replacement over Branch (PIN 124503.00) which you cleared for PCE processing on 08/09/18 (see below). This bridge replacement is using the same detour routes with the same detour lengths as PIN 124503.00 (see Pages 11 & 12 of the attached TIR). Please advise as to whether TDOT can process the Environmental Document for PIN 124505.00 as a PCE or if it will require FHWA coordination/approval.

Thank you,

TN TDOT Department of Transportation

Joe Santangelo | Environmental Supervisor
Environmental Division – NEPA Section
James K. Polk Building, 9th Floor
505 Deaderick Street
Nashville, TN 37243
p. 615-253-1454
Joseph.Santangelo@tn.gov

From: Abby Harris
Sent: Wednesday, August 22, 2018 7:37 AM
To: Joseph Santangelo
Subject: PIN 124505.00, Haywood, SR-1 Bridge over Muddy Creek

Morning Joe,

The attached TIR for the subject PIN indicates that the same detour will be used for this project and

the 124503.00 Project (SR-1 Bridge over Branch at LM 2.89). Gary has indicated that we can process 124503.00 as a PCE (email chain below), I wanted to get clearance for this one as well.

Thank you!
Abby

From: Fottrell, Gary (FHWA) [mailto:Gary.Fottrell@dot.gov]
Sent: Thursday, August 9, 2018 4:03 PM
To: Joseph Santangelo
Cc: Sharon Sanders; Abby Harris; Klint Rommel; Tammy Sellers; Susannah Kniazewycz
Subject: RE: SR-1 (US-70) Bridge over Branch - Haywood County

Hi Joe, since there is a feasible detour route that is 21 miles in length, which we can assume the locals will utilize, you can process this as a PCE.

Thanks,
Gary

From: Joseph Santangelo [mailto:Joseph.Santangelo@tn.gov]
Sent: Thursday, August 9, 2018 3:12 PM
To: Fottrell, Gary (FHWA) <Gary.Fottrell@dot.gov>
Cc: Sharon Sanders <Sharon.Sanders@tn.gov>; Abby Harris <Abby.Harris@tn.gov>
Subject: SR-1 (US-70) Bridge over Branch - Haywood County

Hi Gary,

We have a bridge replacement project (PIN 124503.00) along SR -1 (US-70) over Branch (west of Stanton in Region 4) which will require an Official Detour Route of 26.8 miles (see Page 11 of 38 of the attached Planning Report). As you know, this is only 1.8 miles over the 25 mile threshold for a rural detour route. Additionally, the Local Detour Route will be 21 miles in length (see Page 12 of 38 of the attached Planning Report). Please advise as to whether TDOT can process the Environmental Document as a PCE or if it will require FHWA coordination/approval.

Thank you,

TN TDOT Department of Transportation

Joe Santangelo | Environmental Supervisor
Environmental Division – NEPA Section
James K. Polk Building, 9th Floor
505 Deaderick Street
Nashville, TN 37243
p. 615-253-1454
Joseph.Santangelo@tn.gov

Ecology

Environmental Studies Request

Project Information

Route: State Route 1

Termini: Bridge over Muddy Creek, LM 2.13 (IA)

County: Haywood

PIN: 124505.00

Request

Request Type: Initial Environmental Study

Project Plans: Transportation Investment Report

Date of Plans: 04/02/2018

Location: Email Attachment

Certification

Requestor: Abby Harris

Title: TESS - NEPA

Signature: Abby Harris Digitally signed by Abby Harris Date: 2018.04.10 10:56:23 -05'00'

Environmental Study

Technical Section

Section: Ecology

Study Results

Based on the TIR dated 4/2/2018, the EBR dated 3/27/2018 is still valid for this project. There is one (1) stream and one (1) wetland identified within the project limits. Coordination with TWRA and USFWS is included within the EBR.

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: Eric Philipps

Title: TESS

Signature: Eric Philipps

Digitally signed by Eric Philipps
Date: 2018.04.17 07:55:15 -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

JOHN C. SCHROER
COMMISSIONER

BILL HASLAM
GOVERNOR

MEMORANDUM

To: Tabitha Cavaness
Project Development

From: Tim Nehus TN
Environmental Division

Date: March 27, 2018

Subject: **Environmental Boundaries For**:
Haywood County; SR-1, HWY. 70 E. Bridge over Little Muddy Creek at LM 2.13 **PE:** 38002-0216-94 **PIN:** 124505.00

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

SPRINGS/STREAMS

There is one stream (STR-1, Little Mudd Creek) associated with the subject bridge. The attached Environmental Boundaries Report details the water course encountered.

WETLANDS

There is one wetland (WTL-1) located in the southwest quadrant of the bridge. Plans are not yet available therefore, impacts to the wetland cannot be determined at this time.

PROTECTED SPECIES

A search of the TDEC rare species database completed on February 8, 2018 indicated that no threatened or endangered species occur within the one or four mile radius of the bridge (see attached Species Review Form). The project was coordinated with the U.S. Fish and Wildlife Service and Tennessee Wildlife Resources Agency and their responses are attached.

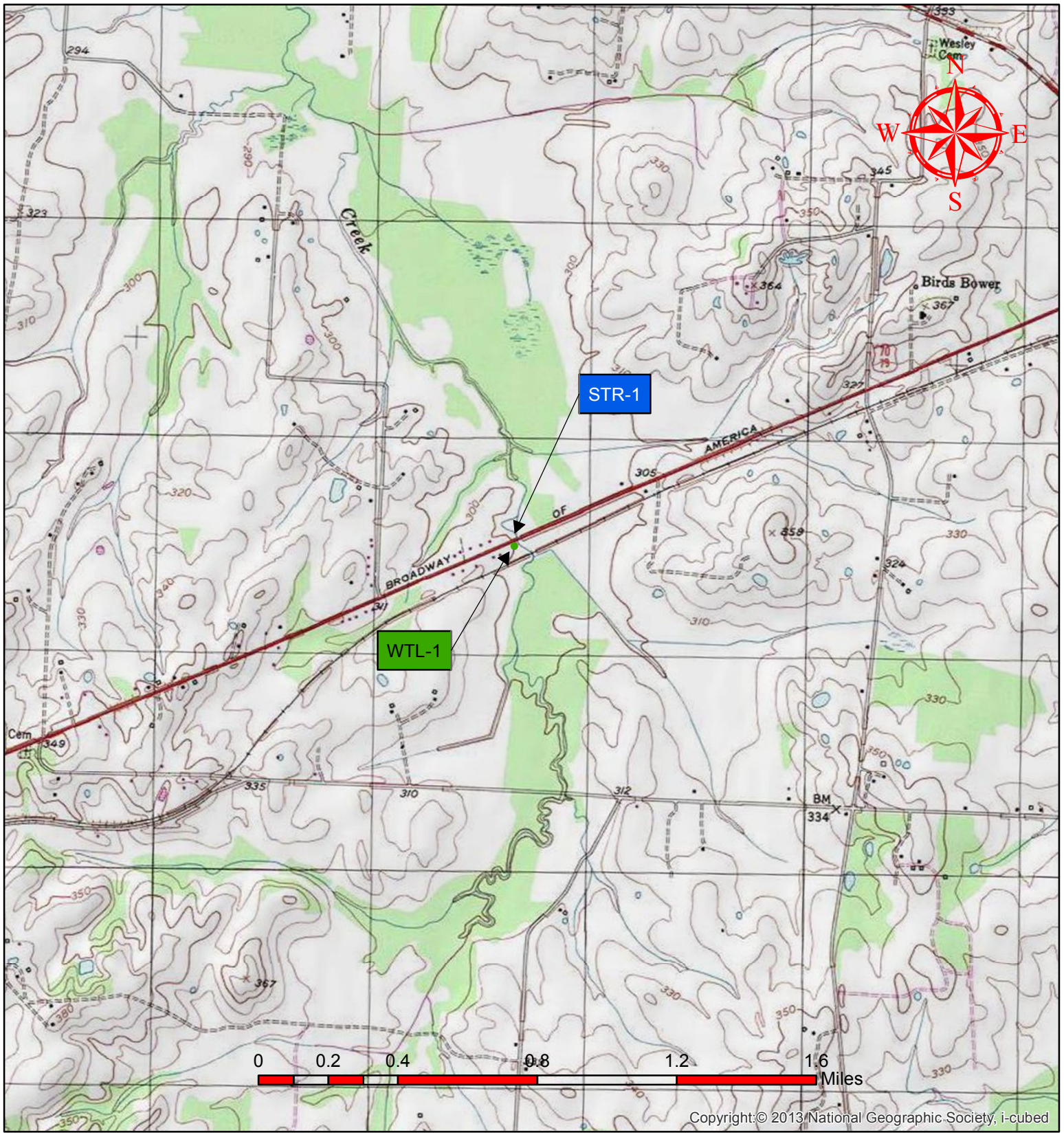
Your assistance is appreciated. If you have any questions or comments, please contact Tim Nehus in the Environmental Division at 615-532-5580 or Tim.Nehus@tn.gov.

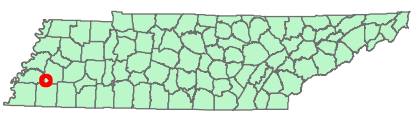
xc: Jennifer Lloyd w/ attachments
Brian Egli w/ attachments
Freddy Miller w/ attachments
John Hewitt w/ attachments
R4.EnvTechOffice@tn.gov

Labels	Type*	Function	Quality	Estimated Impacts		
				Permanent	Temporary	Total
Wetlands						
WTL-1	Emergent	Wildlife habitat	Low Resource value	Unknown**	Unknown**	Unknown**
Streams						
STR-1	Perennial		Assessed - Not Supporting	0 ft		0 ft

*Identification of features has not been reviewed by regulatory agencies and determinations of stream type could possibly be changed. Predicted impacts are considered “preliminary” and will not be completely accurate until the time of permit application.

**Impacts are unknown at this time as no plans are available.



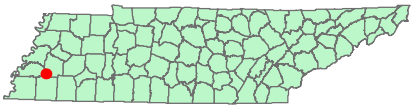


Haywood County, SR-1, HWY 70 E. Bridge over Little Muddy Creek at LM 2.13

TN Quadrangle Stanton (423-NW)
Date 11.29.2017

P.E. 38002-0216-94
PIN 124505.00

TN TDOT Department of Transportation



Haywood County, SR-1, HWY 70 E. Bridge over Little Muddy Creek at LM 2.13

TN Quadrangle Stanton (423-NW)
Date 11.29.2017

P.E. 38002-0216-94
PIN 124505.00

TN TDOT Department of Transportation

Ecology Field Data Sheet: **Water Resources**

Project:	Haywood County; SR-1, HWY 70 E. Bridge over Little Muddy Creek at LM 2.13; P.E. 38002-0216-94, PIN 124505.00				
Biologist:	G. Harris, T. Nehus	**Affiliation:**	TDOT	**Date:**	11.29.2018

1-Station: from plans	N/A										
2-Map label and name	STR-1 (Little Muddy Creek)										
3-Latitude/Longitude	35.450565;-89.438744										
4-Potential impact	Crossing/Bridge, runoff										
5-Feature description:											
-channel identification	perennial stream ✓		intermittent stream		ephemeral stream		wwc				
-HD score (if applicable)	N/A (presence of fish other than Gambia primary indicator)										
-OHWM indicators	bed & banks ✓		deposition ✓		presence of litter / debris		scour		veg absent, bent, matted ✓		
	change in plant community ✓		destruction of terrestrial veg		multiple observed flow events ✓		sediment sorting ✓		water staining ✓		
	change in soil character ✓		leaf litter disturbed absent ✓		natural line impressed on bank ✓		shelving		wracking ✓		
-sinuosity	absent		weak		moderate ✓		strong				
-channel bottom width	20'-25'		-top of bank width		35'-40'						
- avg. gradient of stream (%)											
-bank height and slope ratio	LDB - 10'				RDB - 8'						
-water flow	fast		moderate		slow ✓		isolated pools		none		
-water depth (riffles / pools)	1.5'-4' continuous run		water width (riffles / pools)		20'-25'						
-bank stability: LDB, RDB	LDB:	Stable		Eroding ✓		Undercutting		Sloughing		Exposed Roots	
	RDB:	Stable		Eroding ✓		Undercutting		Sloughing		Exposed Roots	
-dominant riparian species: ----------(LDB /RDB)----------	LDB: Boxelder seedlings, sycamore, green ash, grasses										
	RDB: Boxelder seedlings, sycamore, green ash, grasses										
-habitat assessment score	0										
	epifaunal substrate				channel alteration						
	pool substrate				frequency of re-ox zones						
	pool variability				bank stability	LDB		RDB			
	sediment deposition				bank vegetative protection	LDB		RDB			
	channel flow status				riparian veg zone width	LDB		RDB			
-benthos	Assumed										
-fish	Yes										
-algae or other aquatic life	assumed										
6-photo numbers	1, 2										
7-rainfall information	None previous 3 days										
8-HUC -12 Code & Name	Little Muddy Creek - Wesley Lake (080102080511)										
9-Confirmed by:	Not required										
10-Assessed	yes	✓	no								
11-ETW	yes		no	✓							
12-303 (d) List	yes	✓	siltation		habitat:	✓	other:	✓			
	no	✓									
13-Notes	No swallow nests. Best option for haul road is west of bridge.										

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.4

County: Haywood	Named Waterbody: L. Muddy Creek	Date/Time: 11.29.2017
Assessors/Affiliation: GKH / TDOT		Project ID: 124505.00
Site Name/Description: SR-1 Bridge over Little Muddy Creek at LM 2.13		
Site Location: SR-1 Bridge over Little Muddy Creek at LM 2.13		
USGS quad:	HUC (12 digit): TN	Lat/Long: 35.609846/-89.256652
Previous Rainfall (7-days) : None		
Precipitation this Season vs. Normal : very wet wet (average) dry drought unknown Source of recent & seasonal precip data : NOAA		
Watershed Size : 5.81	Photos: Yes	Number : 1-2
Soil Type(s) / Geology : Convent - somewhat poorly drained, coarse silty, Entisols		
Surrounding Land Use : Agriculture, residential, forested to the east		
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : Severe (Moderate) 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 *Gambusia*)		(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) = 0

Justification / Notes :

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Haywood County; SR-1, HWY 70 E. Bridge over Little Muddy Creek at LM 2.13 Map Label: WTL-1

PE and PIN: 38002-0216-94, 124505.00 Date: 11.29.2018 Station: N/A

Investigator(s): G. Harris, T. Nehus HUC 12 (code and name): Little Muddy Creek - Wesley Lake (080102080511)

Landform (hillslope, terrace, etc.): Slope Local relief (concave, convex, none): concave Slope (%): _____

Subregion (LRR or MLRA): LRR-P Lat: 35.450745 Long: -89.438431 Datum: WGS-84

Soil Map Unit Name: Convent NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation ✓, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ✓ No _____ Hydric Soil Present? Yes ✓ No _____ Wetland Hydrology Present? Yes ✓ No _____	**Is the Sampled Area within a Wetland?** **Yes ✓ No _____**
Remarks: Photos: 3 Buffer (ft): Approximate size (ac.): Portion Affected (permanent) (ac.): Portion Affected (temporary) (ac.):	Confirmation (by, date): Not Required Mitigation (to be included in design): No Notes:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___Surface Water (A1)
- ___High Water Table (A2)
- ✓Saturation (A3)
- ___Water Marks (B1)
- ___Sediment Deposits (B2)
- ___Drift Deposits (B3)
- ___Algal Mat or Crust (B4)
- ___Iron Deposits (B5)
- ___Inundation Visible on Aerial Imagery (B7)
- ___Water-Stained Leaves (B9)
- ___Aquatic Fauna (B13)
- ___Marl Deposits (B15) **(LRR U)**
- ___Hydrogen Sulfide Odor (C1)
- ✓Oxidized Rhizospheres on Living Roots (C3)
- ___Presence of Reduced Iron (C4)
- ___Recent Iron Reduction in Tilled Soils (C6)
- ___Thin Muck Surface (C7)
- ___Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___Surface Soil Cracks (B6)
- ___Sparsely Vegetated Concave Surface (B8)
- ___Drainage Patterns (B10)
- ___Moss Trim Lines (B16)
- ___Dry-Season Water Table (C2)
- ___Crayfish Burrows (C8)
- ___Saturation Visible on Aerial Imagery (C9)
- ___Geomorphic Position (D2)
- ___Shallow Aquitard (D3)
- ___FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): _____

Water Table Present? Yes ___ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): 6"

Wetland Hydrology Present? Yes ✓ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Wetland located in maintained ROW north of bridge

VEGETATION – Use scientific names of plants.

Map Label: WTL-1

Tree Stratum (Plot sizes:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		
Sapling Stratum ( )			
1. Liquidambar styraciflua		yes	FAC
2. Fraxinus pennsylvanica		yes	FACW
3.			
4.			
5.			
6.			
7.			
	= Total Cover		
Shrub Stratum ( )			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		
Herb Stratum ( )			
1. Juncus effusus		yes	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	= Total Cover		
Woody Vine Stratum ( )			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Definitions of Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? **Yes** _____ **No** _____

Remarks: (If observed, list morphological adaptations below).

SOIL Map Label: WTL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
6"-10"	10YR4/1		7.5YR5/8	35	C	M		

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- ___ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12) (LRR T, U)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✓ **No** _____

Remarks:

TRAM USER GUIDE

SITUATION **TRAM**

- Application that individually or cumulatively proposes impacts greater than *de minimis*……..……..……...YES

- Wetland is a “roadside ditch” and not part of a larger wetland – constructed primarily to convey storm water…….COMPLETE EXCEPTIONAL STATUS WETLAND SECTION ONLY, FULL TRAM ASSESSMENT **NOT** REQUIRED.

- Wetland formed as a result of land use changes or practices that restrict, confine or impound drainage artificially (roadways, culverts, fill material, general development, etc.). These wetlands are typically small and recently formed, of very low resource value, and anthropogenic in nature. Common dominant species can include black willow, cattails, silver maple, red maple, green ash, etc….HAS LOW RESOURCE VALUE, COMPLETE EXCEPTIONAL STATUS WETLAND SECTION, FULL TRAM ASSESSMENT **NOT** REQUIRED

- Fringe wetlands associated with ponds, impoundments, reservoirs, large lakes, and water resource development lands and waters, including flowage easements managed by the Tennessee Valley Authority or the Army Corps of Engineers…….YES- USE NON-HGM TRAM

- Semi-permanent to permanently inundated wetlands (e.g. impoundments and fallow created ponds) (<6.6-feet deep)……YES-USE NON-HGM TRAM

NOTE: The exceptional status wetland section must be completed for all wetlands, including wetlands where full HGM is not required or the Non-HGM TRAM is used.

An affirmative response to 1-6 of the Decision Table identifies the wetland per rule as an Outstanding Natural Resource Water (ONRW) or Exceptional Tennessee Waters (ETW). A positive response to 7-13 requires a final determination by the Department.

#	Wetland Feature Decision Table WTL-1	Yes/No	Affirmative Result
1	The wetland has been designated as an **Outstanding Natural Resource Water (ONRW)** by the Department under 0400-40-03-.06(5)(a)**.**	No	**ORNW**
2	The wetland has previously been designated and documented as an Exceptional Tennessee Water (ETW) by the Department under 0400-40-03-.06(4)(a)(7)	No	**ETW**
3	The wetland is within state or national parks, wildlife refuges, forests, wilderness areas, natural areas, or is a designated State Scenic Rivers or Federal Wild and Scenic Rivers.	No	**ETW**
4	The wetland is known to contain a documented non-experimental population of state or federally listed threatened or endangered aquatic or semi-aquatic plants, or aquatic animals.	No	**ETW**
5	The wetland or the area it is in has been designated by the U.S. Fish and Wildlife Service as "**Critical Habitat**" for any threatened or endangered aquatic or semi-aquatic plant or aquatic animal species.	No	**ETW**
6	The wetland falls within an area designated as Lands Unsuitable for Mining pursuant to the federal Surface Mining Control and Reclamation Act where such designation is based in whole or in part on impacts to water resource values	No	**ETW**
7	**The wetland exhibits outstanding ecological or recreational values such as, but not limited to, those as outlined in 8-12**	No	Determination Required by TDEC
8	The wetland fits within the species composition concept for any plant community found in the state of Tennessee **ranked G2, G1, or more imperiled** at the "Association" classification level according to the NatureServe and Natural Heritage Ranking system (e.g. "bog", "fen", and "wet prairie/barren" communities).	No	Determination Required by TDEC
9	The wetland is **an uncommon resource** (e.g. vernal pools, headwater wetlands, sinks, spring/seeps, glades, newly described communities, high recreational or socioeconomic value) in the region and/or is deemed such by concurrence of qualified scientists.	No	Determination Required by TDEC
10	The wetland is an **older aged forested wetland** comprised of overstory trees with an average diameter at breast height (dbh) being **greater than or equal to 30 in** within the WAA.	No	Determination Required by TDEC
11	The wetland is observed and documented to be a **significant waterfowl, songbird, shorebird, amphibian, bat, fish habitat area**. These may include rookeries, migratory congregations, nesting sites, breeding areas, etc.	No	Determination Required by TDEC
12	The wetland is **hydrologically connected** to and/or has significant ecological contribution to an **ETW**	No	Determination Required by TDEC
13	The wetland has High Resource Value as determined by a **score of 75 and above** using the TRAM or non-HGM TRAM (to be determined after completing the quantitative portion of this manual)	No	Determination Required by TDEC

End of Narrative Rating. Begin Quantitative Rating on Next Page.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Haywood County; SR-1, HWY 70 E. Bridge over Little Muddy Creek at LM 2.13 Map Label: UPL-1

PE and PIN: 38002-0216-94, 124505.00 Date: 11.29.2018 Station: N/A

Investigator(s): G. Harris, T. Nehus HUC 12 (code and name): Little Muddy Creek - Wesley Lake (080102080511)

Landform (hillslope, terrace, etc.): Slope Local relief (concave, convex, none): concave Slope (%): _____

Subregion (LRR or MLRA): LRR-P Lat: 35.450642 Long: -89.438408 Datum: WGS-84

Soil Map Unit Name: Convent NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation ✓, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No ✓ Hydric Soil Present? Yes _____ No ✓ Wetland Hydrology Present? Yes _____ No ✓	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✓
Remarks: Photos: 4 Buffer (ft): Approximate size (ac.): Portion Affected (permanent) (ac.): Portion Affected (temporary) (ac.):	Confirmation (by, date): Not Required Mitigation (to be included in design): No Notes:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- __Surface Water (A1)
- __High Water Table (A2)
- __Saturation (A3)
- __Water Marks (B1)
- __Sediment Deposits (B2)
- __Drift Deposits (B3)
- __Algal Mat or Crust (B4)
- __Iron Deposits (B5)
- __Inundation Visible on Aerial Imagery (B7)
- __Water-Stained Leaves (B9)
- __Aquatic Fauna (B13)
- __Marl Deposits (B15) **(LRR U)**
- __Hydrogen Sulfide Odor (C1)
- __Oxidized Rhizospheres on Living Roots (C3)
- __Presence of Reduced Iron (C4)
- __Recent Iron Reduction in Tilled Soils (C6)
- __Thin Muck Surface (C7)
- __Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- __Surface Soil Cracks (B6)
- __Sparsely Vegetated Concave Surface (B8)
- __Drainage Patterns (B10)
- __Moss Trim Lines (B16)
- __Dry-Season Water Table (C2)
- __Crayfish Burrows (C8)
- __Saturation Visible on Aerial Imagery (C9)
- __Geomorphic Position (D2)
- __Shallow Aquitard (D3)
- __FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ **No** ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Road slope

VEGETATION – Use scientific names of plants.

Map Label: UPL-1

Tree Stratum (Plot sizes:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		
Sapling Stratum ( )			
1.		no	UPL
2.		no	UPL
3.			
4.			
5.			
6.			
7.			
	= Total Cover		
Shrub Stratum ( )			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		
Herb Stratum ( )			
1. Cynodon dactylon		yes	FACU
2. Lamium amplexicauli		yes	UPL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	= Total Cover		
Woody Vine Stratum ( )			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Definitions of Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? **Yes** ____ **No** ✓

Remarks: (If observed, list morphological adaptations below).

SOIL Map Label: UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12"	10YR3/4		none		C	M		

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- ___ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12) (LRR T, U)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✓

Remarks:
Road Fill

Photo Summary: 11.29.2017
Project Description: Haywood County; SR-1 Bridge over Little Muddy Creek at LM 2.13; **P.E.** 38002-0216-94, **PIN** 124505.00

Photo 1. Downstream view of Little Muddy Cr. (STR-1)

Photo 2. Upstream view of Little Muddy Cr. (STR-1)

Photo 3. View of WTL-1

Photo 4. View of WTL-1 Upland data point

Project: Haywood County; SR-1, HWY 70 Bridge over Little Muddy Creek at LM 2.13 PE No. 38002-0216-94 PIN: 124505.00

Date of field study: 11.29.2017 Date TDEC database checked: 2.01.2018 Completed by: T. Nehus

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					
None							

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					
Reniform sedge (*Carex reniformis*) P		S		A, B		Rich bottomland woods. Last obs. 5.04.1996 approximately 2.5 mi. NE of bridge.	

Project: Haywood County; SR-1, HWY 70 Bridge over Little Muddy Creek at LM 2.13 PE No. 38002-0216-94 PIN: 124505.00

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[1]

[1] 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

List Natural Areas, management areas, refuges, or similar sites within or adjacent to project (attach 7.5 minute topographic map with pertinent boundaries of area marked)

Area Name	Type of Area	Pertinent Notes

List locations that contain potential Indiana bat habitat (Provide an aerial that indicates areas checked)

Location (description; lat/long or station number)	Tree Species	Photograph #

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

JOHN C. SCHROER
COMMISSIONER

BILL HASLAM
GOVERNOR

February 7, 2018

Ms. Mary E. Jennings
U.S. Department of Interior
Fish and Wildlife Service
446 Neal Street
Cookeville, TN 38501

SUBJECT: Haywood County; SR-1, HWY 70 E. Bridge over Little Muddy Creek at LM 2.13; P.E. 38002-0216-94, PIN 124505.00

Dear Ms. Jennings:

The Tennessee Department of Transportation is proposing to replace the subject bridge in Haywood County. Topographic and aerial maps are attached. In compliance with the Fish and Wildlife Act of 1958, and the Endangered Species Act of 1973 (amended), we are requesting a list of threatened and/or endangered species that may be present in the vicinity of the proposed project.

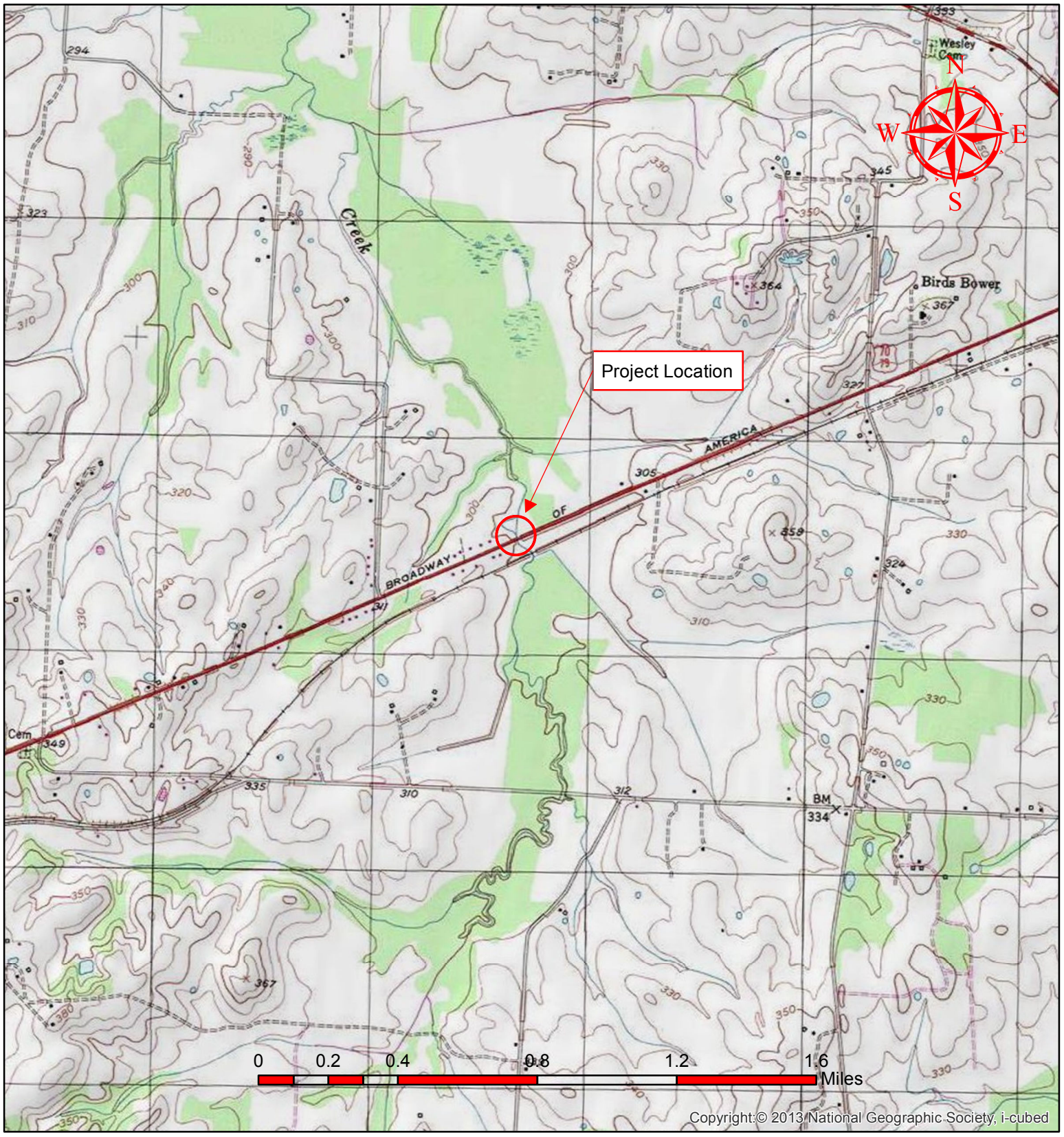
Please include in your reply the entire project description as listed in the subject line of this request. Your assistance in the preparation of this project is greatly appreciated. If you have any questions, please contact me at Tim.Nehus@tn.gov, or 615-532-5580.

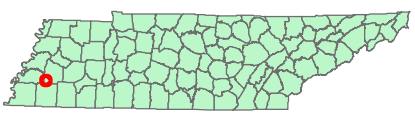
Best Regards,

Tim Nehus

Tim Nehus,
Environmental Division/Consultant

xc: ED Project File



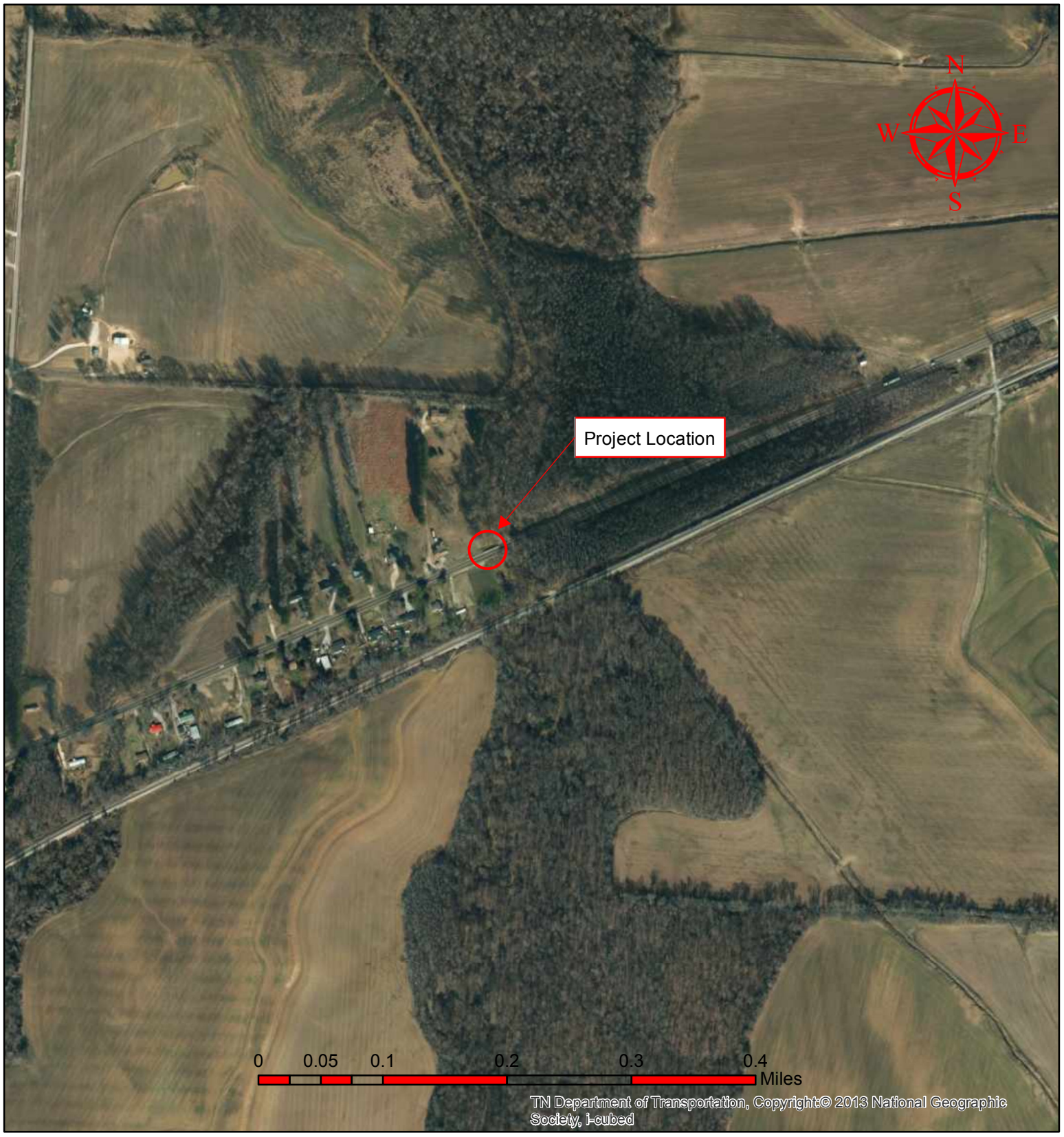


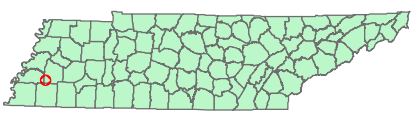
Haywood County, SR-1, HWY 70 E. Bridge over Little Muddy Creek at LM 2.13

TN Quadrangle Stanton (423-NW)
Date 11.29.2017

P.E. 38002-0216-94
PIN 124505.00

TN TDOT Department of Transportation





Haywood County, SR-1, HWY 70 E. Bridge over Little Muddy Creek at LM 2.13

TN Quadrangle Stanton (423-NW)
Date 11.29.2017

P.E. 38002-0216-94
PIN 124505.00

TN TDOT Department of Transportation

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Tennessee ES Office
446 Neal Street
Cookeville, Tennessee 38501

February 23, 2018

Mr. Tim Nehus
Tennessee Department of Transportation
Environmental Planning and Permits Division
Suite 900, James K. Polk Building
505 Deaderick Street
Nashville, Tennessee 37243-0334

Subject: FWS# 18-CPA-0264. Proposed replacement of the State Route 1 Bridge over a Branch over Little Muddy Creek at LM 2.13; PIN 124505.00, P.E. 38002-0216-94, Haywood County, Tennessee.

Dear Mr. Nehus:

Thank you for your correspondence dated February 7, 2018, regarding the proposal to replace the State Route 1 Bridge over Little Muddy Creek in Haywood County, Tennessee. The Tennessee Department of Transportation requests our comments on any federally listed species of concern for this project. Personnel of the U.S. Fish and Wildlife Service (Service) have reviewed the information provided and offer the following comments.

Endangered species collection records available to the Service do not indicate that federally listed or proposed endangered or threatened species occur within the impact area of the project. We note, however, that collection records available to the Service may not be all-inclusive. Our database is a compilation of collection records made available by various individuals and resource agencies. This information is seldom based on comprehensive surveys of all potential habitat and thus does not necessarily provide conclusive evidence that protected species are present or absent at a specific locality. However, based on the best information available at this time, we believe that the requirements of section 7 of the Endangered Species Act of 1973, as amended, are fulfilled for all species that currently receive protection under the Act. Obligations under section 7 of the Act should 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.

Our National Wetland Inventory maps indicate that the project is bounded by a sizable wetland on either side of the road. If wetland impacts would occur, the Corps of Engineers and the Tennessee Department of Environment and Conservation should be contacted regarding the presence of regulatory wetlands and the requirements of wetlands protection statutes.

If you have any questions regarding our comments, please contact John Griffith of my staff at 931/525-4995 or by email at *john_griffith@fws.gov*.

Sincerely,

Mary E. Jennings

Mary E. Jennings
Field Supervisor

Tim Nehus

From: Casey Parker
Sent: Monday, March 05, 2018 9:46 AM
To: Tim Nehus; TDOT Env.LocalPrograms
Cc: Rob Todd
Subject: Correction of PIN RE: Haywood Co. SR-1 over L. Muddy Cr. and Branch PINs 124505.00 and 124503.00

Correction: PIN 124505.00 and PIN 124503.00

Subject: Haywood County; SR-1, HWY 70 E. Bridge over Branch at LM 2.89; P.E. 38002-0217-94, PIN 124505.00
Haywood County; SR-1, HWY 70 E. Bridge over Branch at LM 2.89; P.E. 38002-0217-94, PIN 124503.00

Mr. Tim Nehus,

I have reviewed the information that you provided regarding the proposed replacement of the subject bridges in Haywood 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

From: Casey Parker
Sent: Monday, March 5, 2018 9:34 AM
To: Tim Nehus; TDOT Env.LocalPrograms
Cc: Rob Todd
Subject: RE: Haywood Co. SR-1 over L. Muddy Cr. and Branch PINs 124505.00 and 124505.00

Subject: : Haywood County; SR-1, HWY 70 E. Bridge over Branch at LM 2.89; P.E. 38002-0217-94, PIN 124503.00
Haywood County; SR-1, HWY 70 E. Bridge over Branch at LM 2.89; P.E. 38002-0217-94, PIN 124503.00

Mr. Tim Nehus,

I have reviewed the information that you provided regarding the proposed replacement of the subject bridges in Haywood 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

From: Tim Nehus
Sent: Thursday, February 8, 2018 2:45 PM
To: Casey Parker
Cc: Rob Todd
Subject: Haywood Co. SR-1 over L. Muddy Cr. and Branch PINs 124505.00 and 124505.00

Casey,

SUBJECT: Haywood County; SR-1, HWY 70 E. Bridge over Branch at LM 2.89; P.E. 38002-0217-94, PIN 124503.00

Haywood County; SR-1, HWY 70 E. Bridge over Branch at LM 2.89; P.E. 38002-0217-94, PIN 124503.00

TDOT is proposing to replace the subject bridges in Haywood County. KMZ files of each bridge are attached as well as a single species map covering both bridges. Please advise us of any concerns TWRA may have. If you need anything else, just let me know.

Thanks,
Tim

Tim Nehus
Environmental Division-Consultant
TN Department of Transportation
505 Deaderick St., Suite 900
Nashville, TN 37243
O: (615) 532-5580 C: (615) 330-0745

Air and Noise

Environmental Studies Request

Project Information

Route: State Route 1

Termini: Bridge over Muddy Creek, LM 2.13 (IA)

County: Haywood

PIN: 124505.00

Request

Request Type: Initial Environmental Study

Project Plans: Transportation Investment Report

Date of Plans: 04/02/2018

Location: Email Attachment

Certification

Requestor: Abby Harris

Title: TESS - NEPA

Signature: Abby Harris Digitally signed by Abby Harris Date: 2018.04.10 10:56:23 -05'00'

Environmental Study

Technical Section

Section: Air and Noise

Study Results

AIR QUALITY
Transportation Conformity
This project is in Haywood 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 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
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: Darlene D Reiter

Title: TDOT Environmental Division Consultant

Signature: Darlene D Reiter

Digitally signed by Darlene D Reiter
Date: 2018.04.13 12:56:51 -05'00'

Cultural Resources

Environmental Studies Request

Project Information

Route: State Route 1

Termini: Bridge over Muddy Creek, LM 2.13 (IA)

County: Haywood

PIN: 124505.00

Request

Request Type: Initial Environmental Study

Project Plans: Transportation Investment Report

Date of Plans: 04/02/2018

Location: Email Attachment

Certification

Requestor: Abby Harris

Title: TESS - NEPA

Signature: Abby Harris Digitally signed by Abby Harris Date: 2018.04.10 10:56:23 -05'00'

Environmental Study

Technical Section

Section: Historic Preservation

Study Results

In a letter dated 6/12/2018, the TN-SHPO concurred that no architectural resources eligible for listing in the National Register of Historic Places will 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? **Yes**

Type: Historical-Architectural Report & SHPO Letter

Location: FileNet

Certification

Responder: Laura van Opstal

Title: TESS-AD, Historic Preservation

Signature: Laura van Opstal

Digitally signed by Laura van Opstal
Date: 2018.06.15 11:25:41 -05'00'

TENNESSEE HISTORICAL COMMISSION
STATE HISTORIC PRESERVATION OFFICE
2941 LEBANON PIKE
NASHVILLE, TENNESSEE 37243-0442
OFFICE: (615) 532-1550
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 1 Bridge over Muddy Creek, Log Mile 2.13/ PIN 124505.00, , Haywood 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, Jr.

E. Patrick McIntyre
Executive Director and
State Historic Preservation Officer

EPM/cjl

Environmental Studies Request

Project Information

Route: State Route 1

Termini: Bridge over Muddy Creek, LM 2.13 (IA)

County: Haywood

PIN: 124505.00

Request

Request Type: Initial Environmental Study

Project Plans: Transportation Investment Report

Date of Plans: 04/02/2018

Location: Email Attachment

Certification

Requestor: Abby Harris

Title: TESS - NEPA

Signature: Abby Harris Digitally signed by Abby Harris Date: 2018.04.10 10:56:23 -05'00'

Environmental Study

Technical Section

Section: Archaeology

Study Results

In a letter dated June 21, 2018, the TN SHPO concurred that no listed, eligible, or potentially eligible National Register of Historic Places 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? **Yes**

Type: SHPO letter

Location: Email Attachment

Certification

Responder: Sarah Kate McKinney

Title: TESS Archaeology

Signature: Sarah Kate McKinney

Digitally signed by Sarah Kate McKinney
Date: 2018.07.02 14:08:52 -05'00'

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

June 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-1/US Highway 70 Bridge Replacement over Little Muddy Creek, Haywood 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

Native American Consultation

Environmental Studies Request

Project Information

Route: State Route 1

Termini: Bridge over Muddy Creek, LM 2.13 (IA)

County: Haywood

PIN: 124505.00

Request

Request Type: Initial Environmental Study

Project Plans: Transportation Investment Report

Date of Plans: 04/02/2018

Location: Email Attachment

Certification

Requestor: Abby Harris

Title: TESS - NEPA

Signature: Abby Harris Digitally signed by Abby Harris Date: 2018.04.10 10:56:23 -05'00'

Environmental Study

Technical Section

Section: Native American Coordination

Study Results

Native American Coordination was sent to all interested, federally recognized tribes between 4/5/18-7/2/18. The Shawnee Tribe responded with a finding of "no concern." No other tribes responded during the consultation period.

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: Native American Coordination

Location: Email Attachment

Certification

Responder: Sarah Kate McKinney

Title: TESS Archaeology

Signature: Sarah Kate McKinney

Digitally signed by Sarah Kate McKinney
Date: 2018.08.15 14:45:45 -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

JOHN C. SCHROER
COMMISSIONER

BILL HASLAM
GOVERNOR

April 4, 2018

Mr. Brett Barnes
Cultural Preservation Director/ THPO
Eastern Shawnee Tribe of Oklahoma
70500 E. 128 Road, Wyandotte OK
74370

SUBJECT: Section 106 Initial Consultation for Proposed Bridge Replacement of State Route 1 Bridges over Muddy Creek and Unnamed Branch in Haywood County, Tennessee (TDOT PIN 124505.00 and 124503.00).

Dear Mr. Barnes,

The Tennessee Department of Transportation (TDOT), in coordination with the Federal Highway Administration (FHWA), is proposing to replace the State Route 1 bridges over Muddy Creek, log mile 2.13 and Unnamed Branch, log mile 2.89, in Haywood County, Tennessee (maps attached). At this time detailed plans are not yet available, however, additional right-of-way is anticipated, and there will be ground disturbance within the area of potential effects (APE). For the archaeological assessment, the APE is generally defined as a polygon extending 500' from each streambank, 150' laterally on both its upstream and downstream side, and vertically to the maximum potential depth for archaeological deposits. The APE may be adjusted based on project specific circumstances.

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.

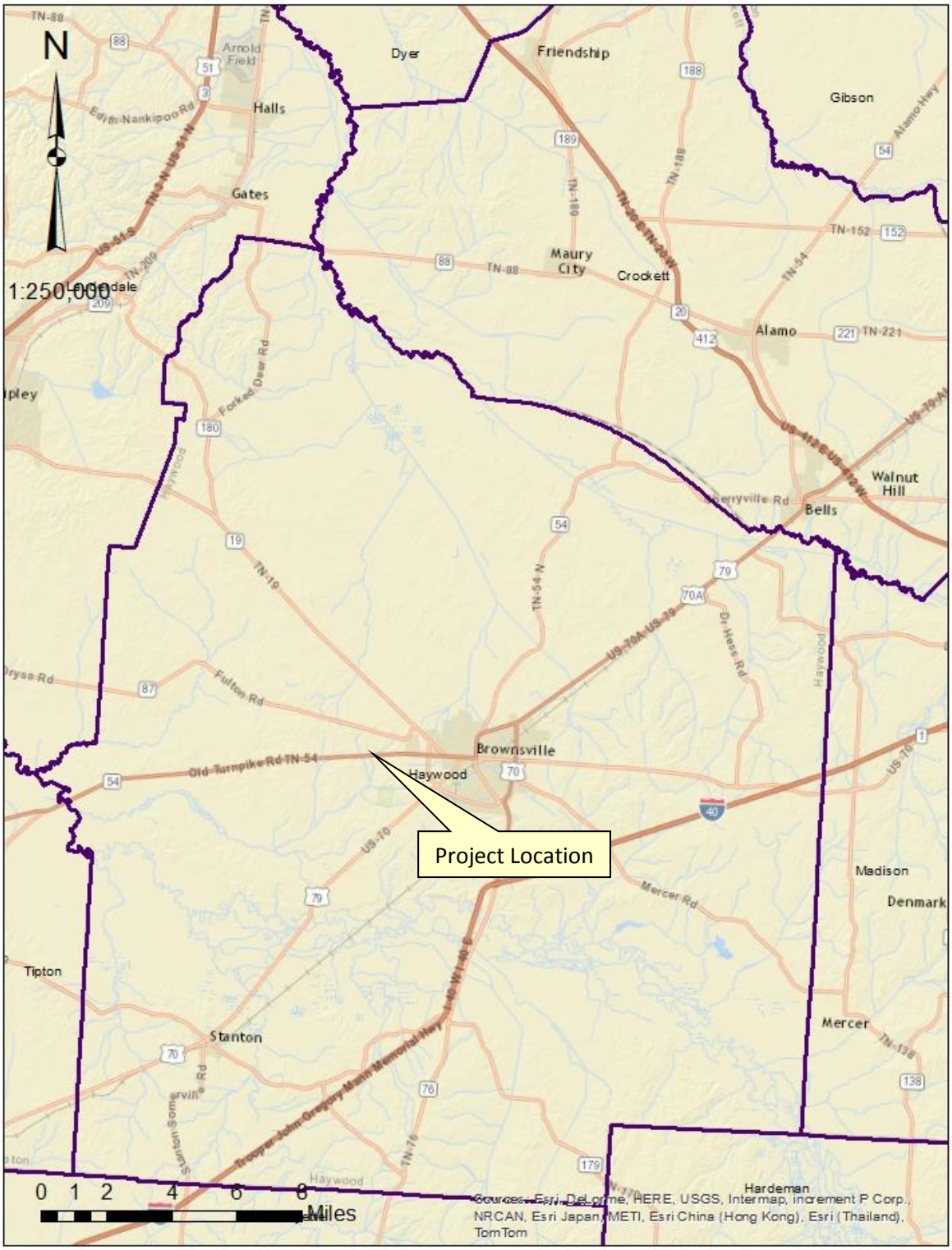
Please respond to me via letter, telephone (615-741-0977), fax (615-741-1098), or E-mail (Phillip.Hodge@tn.gov). I respectfully request responses (email is preferred) to project reports and other materials within thirty (30) days of receipt if at all possible. Thank you for your assistance.

Sincerely,

Phillip R. Hodge
Archaeology Program Manager

Enclosure

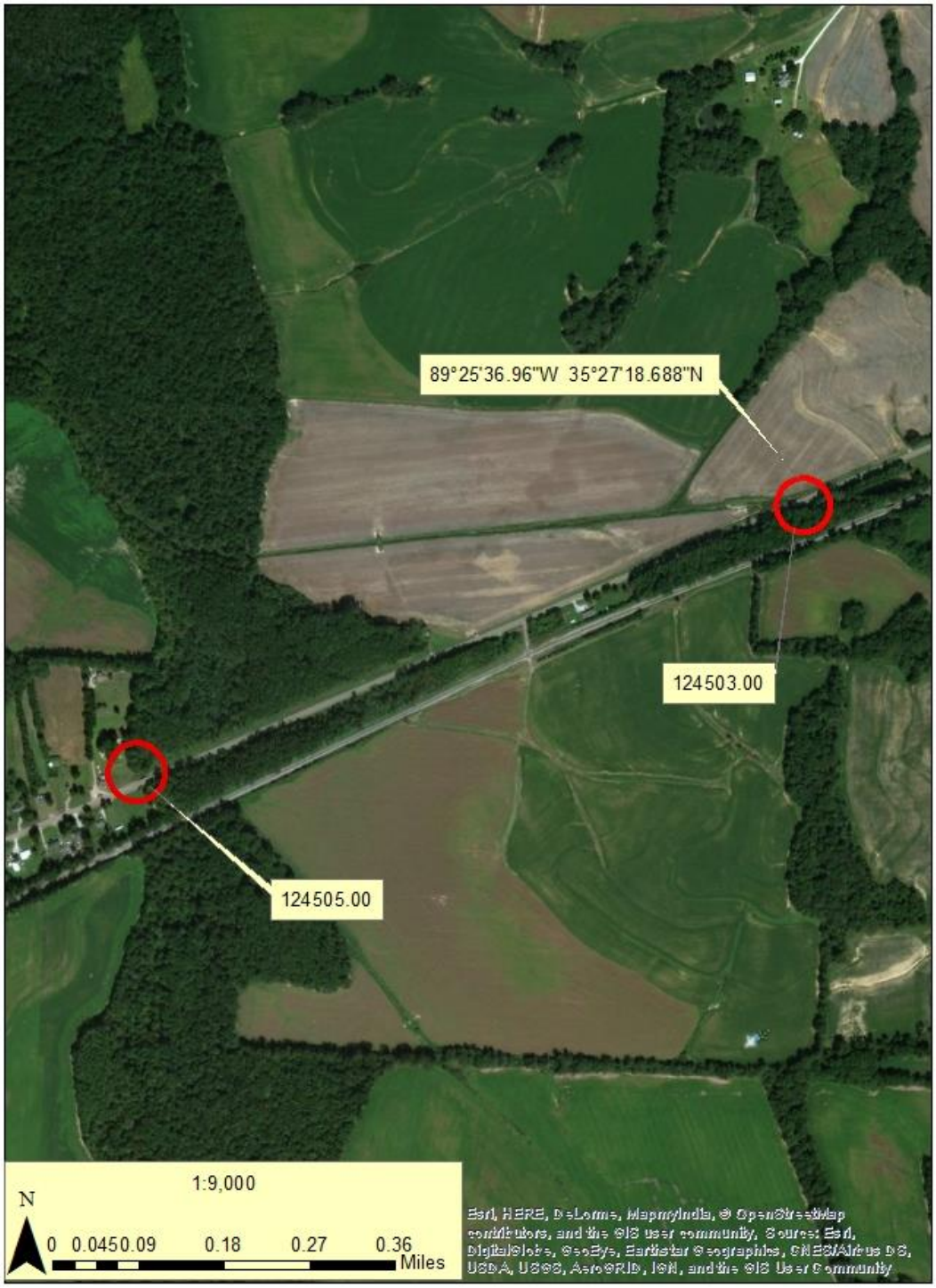
cc Karen Brunso, The Chickasaw Nation
David Cook, Kialegee Tribal Town
Tonya Tipton, Shawnee Tribe
Eric Oosahwee-Voss, United Keetoowah Band of Cherokee Indians



Project Vicinity Base map

TDOT PIN 124505.00 and 124503.00
Haywood County
USGS TOPO Stanton 423 NW

TDOT PIN 124505.00 and 124503.00
Haywood County
USGS TOPO Stanton 423 NW



From: Phillip Hodge
To: Sarah K. McKinney
Subject: FW: Section 106 Coordination; State Route 1 Bridge over Muddy Creek, Haywood County, Tennessee PIN 124505.00
Date: Wednesday, August 15, 2018 2:23:46 PM

Please PDF the email below as the tribal response, unless an official response on tribal letterhead is attached. Either way, save to the NAC Response folder for this project, along with the Outlook file (.msg). Also be sure to update the project tracking sheet.

Thanks!

From: Fottrell, Gary (FHWA) [mailto:Gary.Fottrell@dot.gov]
Sent: Wednesday, August 15, 2018 2:21 PM
To: Phillip Hodge
Subject: RE: Section 106 Coordination; State Route 1 Bridge over Muddy Creek, Haywood County, Tennessee PIN 124505.00

Phil:

The 30-day review period offered to the Chickasaw Nation for this project has ended. We have received no comments. If we receive comments from them in the future, we will forward them immediately to you.

Gary

From: Fottrell, Gary (FHWA)
Sent: Monday, July 16, 2018 2:57 PM
To: 'Chickasaw Nation (HPO@chickasaw.net)' <HPO@chickasaw.net>
Cc: Phillip Hodge <Phillip.Hodge@tn.gov>
Subject: Section 106 Coordination; State Route 1 Bridge over Muddy Creek, Haywood County, Tennessee PIN 124505.00

Dear Ms. Brunso:

Please find attached information for a project proposed by the Tennessee Department of Transportation (TDOT):

- **State Route 1 Bridge over Muddy Creek, Haywood County, PIN 124505.00**

In accordance with Section 106 of the National Historic Preservation Act of 1966, as amended, and as promulgated in 36 CFR 800, 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? If possible, we would appreciate your response via email by August 15th.

TDOT has attached a map of the project site with coordinates, architectural/historical and archaeological assessments, and SHPO letters. Thank you for your assistance on this project. If you have questions or need additional information, please feel free to call at any time.

Sincerely,

Gary Fottrell
Environmental Program Engineer
TN Division, Federal Highway Administration
404 BNA Drive, Suite 508
Nashville, TN 37217
Phone (615) 781-5766

From:	tonya@shawnee-tribe.com
To:	Phillip Hodge
Subject:	RE: TN-DOT Section 106 Consultation; Haywood County, SR1 bridges over Muddy Creek and Unnamed Branch, PINs 124505.00 and 124503.00
Date:	Friday, April 6, 2018 10:26:58 AM
Attachments:	image001.jpg image002.png

This letter is in response to the above referenced project.

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

We have no issues or concerns at this time, but in the event that archaeological materials are encountered during construction, use, or maintenance of this location, please re-notify us at that time as we would like to resume immediate consultation under such a circumstance.

If you have any questions, you may contact me via email at tonya@shawnee-tribe.com

Thank you for giving us the opportunity to comment on this project.

Sincerely,
Tonya Tipton THPO
Shawnee Tribe

From: Phillip Hodge <Phillip.Hodge@tn.gov>
Sent: Thursday, April 5, 2018 3:50 PM
To: tonya@shawnee-tribe.com
Subject: TN-DOT Section 106 Consultation; Haywood County, SR1 bridges over Muddy Creek and Unnamed Branch, PINs 124505.00 and 124503.00

Dear Ms. Tipton,

Please find attached a letter inviting Shawnee Tribe to participate in the subject project as a consulting party under Section 106 of the National Historic Preservation Act. This letter also describes the project and includes maps that illustrate its location. 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 response.

Sincerely,
Phil

logo

Phillip Hodge | Archaeology Program Manager
Environmental Division
James K. Polk Building, 9th Floor
505 Deaderick St.
Nashville, TN 37243
p. 615-741-0977
Phillip.Hodge@tn.gov

Hazardous Materials

Environmental Studies Request

Project Information

Route: State Route 1

Termini: Bridge over Muddy Creek, LM 2.13 (IA)

County: Haywood

PIN: 124505.00

Request

Request Type: Initial Environmental Study

Project Plans: Transportation Investment Report

Date of Plans: 04/02/2018

Location: Email Attachment

Certification

Requestor: Abby Harris

Title: TESS - NEPA

Signature: Abby Harris Digitally signed by Abby Harris Date: 2018.04.10 10:56:23 -05'00'

Environmental Study

Technical Section

Section: Hazardous Materials

Study Results

Based on the Transportation Investment Report dated 2 April 2018, no known hazardous materials sites appear to affect this project as it is currently planned. The asbestos bridge survey has been completed, no asbestos was detected. The following project commitment was previously submitted and is pending in PPRM.

Little Muddy Creek is listed by TDEC DWR as a non-supporting stream due to physical substrate habitat alterations from channelization.

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; and 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**

An Asbestos Containing Material (ACM) survey was conducted on Bridge No. 38SR0010001, SR-1 over Muddy Creek, LM 2.13 (38-SR001-2.13). 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 (per TDOT 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

Signature: Kyle Kirschenmann

Digitally signed by Kyle Kirschenmann
DN: cn=Kyle Kirschenmann, o=TDOT, ou=Environmental Division, email=kyle.kirschenmann@tn.gov, c=US
Date: 2018.04.11 08:59:32 -04'00'

Title: Environmental Program Manager, Hazardous Materials Section

30-January-2018
Barge File Number: 3637865

Mr. Kyle Kirschenmann, PG
Environmental Program Manager – Hazardous Materials Section
State of Tennessee, Department of Transportation
TDOT Environmental Division
James K. Polk Building, Suite 900
505 Deaderick Street
Nashville, TN 37243-0334

RE: Asbestos Assessment Report
SR-1 (US-70) Bridge over Muddy Creek, LM 2.13 (IA)
PE-N: 38002-0216-94, PIN: 124505.00
Bridge Number: 38SR0010001
Haywood County, Tennessee

Dear Mr. Kirschenmann:

Enclosed is the asbestos assessment report for the above-referenced bridge. A total of 36 samples were obtained during the assessment for asbestos analyses. Asbestos minerals were not detected in any of the samples collected.

If you have any questions, please contact me by phone at 615-252-4349 or via email at Tom.McComb@bargedesign.com.

Sincerely,

Thomas McComb, PG, CPG
Contract Manager / Project Manager
Barge Design Solutions, Inc.

Enclosure

615 3RD AVENUE SOUTH // SUITE 700 // NASHVILLE // TENNESSEE // 37210 // 615-254-1500 // BARGEDESIGN.COM

TENNESSEE DEPARTMENT OF TRANSPORTATION
ASBESTOS ASSESSMENT REPORT

SR-1 (US-70) Bridge over Muddy Creek, LM 2.13 (IA)
PE-N: 38002-0216-94, PIN: 124505.00
Bridge Number: 38SR0010001
Haywood County, Tennessee

PREPARED BY

615 3rd Avenue South, Suite 700
Nashville, TN 37210
Barge Project #: 36378-65

30-January-2018

Randy Bell

Randy Bell (Signature)
Tennessee Asbestos Inspector Accreditation No: A-I-47753-55579

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FIGURES

APPENDICES

1.0 INTRODUCTION

This report presents the findings of an assessment for asbestos-containing materials (ACM) completed on the bridge identified in Section 1.1. The assessment was completed by Barge Design Solutions, Inc. (Barge) in accordance with the State of Tennessee, Department of Transportation Environmental Division, Social and Cultural Resources Office, Hazardous Materials Section requirements.

1.1 TDOT Bridge Identification

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

Termini: SR-1 (US-70) Bridge over Muddy Creek, LM 2.13 (IA)
PE-N: 38002-0216-94
PIN: 124505.00
Bridge Number: 38SR0010001
County: Haywood

1.2 General Description

Bridge Number 38SR0010001, located on SR-1 over Muddy Creek, LM 2.13 (38-SR001-2.13), is a 65-foot, two-lane, two-span bridge constructed of concrete deck girders and steel I-beams with an asphalt wearing surface. The bridge was constructed in 1926. Based on visual assessment while on site the bridge appeared to have been modified and contained the following suspect materials which were sampled: new bearing pads and new piers. The bridge location is shown on Figure 1.

2.0 ASSESSMENT

The identification of 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 1% asbestos by calibrated visual area estimation by 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 was applied during the same general time. Once the homogeneous sampling areas are identified, bulk samples of suspect materials were obtained from the homogeneous areas at the discretion of our inspectors, based on site conditions and experience.

2.1 Personnel and Date(s) of Assessment

The sampling and field activities were performed on December 4, 2017, by Randy Bell, Accredited State of Tennessee Asbestos Inspector. Copies of the inspector's and Barge's current accreditation from the State of Tennessee are included in Appendix A.

2.2 Visual Survey

Barge's survey began with a walk-through and visual survey of the structures located on the property. The visual survey consisted of:

- Sketching the structure and/or verifying the plans provided
- Locating and identifying homogeneous areas (HAs) of suspect materials that may contain asbestos minerals
- Determining applicable sampling locations

2.3 Access to Bridge Components

Individual bridge components were accessed by the following methods:

2.3.1 Top of Bridge Deck (Homogeneous Areas 2 & 3)

The bridge had a concrete curb. Three samples labeled MC-02-04, MC-02-05, and MC-02-06 were collected from the concrete curb. Samples were obtained using hammers and chisels. Three samples labeled MC-03-07, MC-03-08, and MC-03-09 were collected from the road stripe. Samples were obtained using a razor knife.

2.3.2 Underside of Bridge Deck (Homogeneous Area 9)

Three samples labeled MC-09-25, MC-09-26, and MC-09-27 were collected from the bottom of the bridge deck. Samples were obtained using hammers and chisels.

2.3.3 Bridge Beams (Homogeneous Area 7)

The bridge had concrete beams. Three samples labeled MC-07-19, MC-07-20, and MC-07-21 were collected from the beams. Samples were obtained using hammers and chisels.

2.3.4 Bridge Piers/Bents and Support (Homogeneous Area 10, 11, & 12)

The bridge had concrete piers and had been widened. Three samples labeled MC-10-28, MC-10-29, and MC-10-30 were collected from the old pier cap. Three samples labeled MC-11-31, MC-11-32, and MC-11-33 were collected from the old pier. Three samples labeled MC-12-34, MC-12-35, and MC-12-36 were collected from the new pier. Samples were obtained using hammers and chisels.

2.3.5 Bridge Rails (Homogeneous Area 1)

The bridge had concrete parapets. Three samples labeled MC-01-01, MC-01-02, and MC-01-03 were collected from the concrete parapets. Samples were obtained using hammers and chisels.

2.3.6 Abutments (Homogeneous Areas 4, 5, & 8)

The bridge had concrete wing walls. Three samples labeled MC-04-10, MC-04-11, and MC-04-12 were collected from the wing walls. The bridge had a concrete abutment. Three samples labeled MC-08-22, MC-08-23, and MC-08-24 were collected from the abutment. Samples were obtained using hammers and chisels. Three samples labeled MC-05-13, MC-05-14, and MC-05-15 were collected from the bearing pads beneath the new steel beams. Samples were obtained using a razor knife.

2.3.7 Bridge Drainage (Homogeneous Area 6)

Three samples labeled MC-06-16, MC-06-17, and MC-06-18 were collected from the deck drains. Samples were obtained using hammers and chisels.

2.3.8 Other

No other samples were collected from this bridge.

3.0 ANALYTICAL PROCEDURES

3.1 Asbestos Analysis Procedures

The bulk samples are analyzed in the laboratory using PLM coupled with dispersion staining (EPA Method 600/R-93/116). 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.

Samples which contain multiple layers, or that have associated mastic or adhesive backing, are analyzed as two or more separate samples when possible.

3.2 Laboratory Name and Accreditation

The bulk samples collected for this assessment were analyzed by a laboratory that has received certification from the American Industrial Hygiene Association's (AIHA) Laboratory Accreditation Program. The name and laboratory number of the analytical laboratory that analyzed the samples for this assessment is indicated in Table 1.

Table 1 - Analytical Laboratory

Laboratory Name	Frost Environmental Services, LLC
Laboratory ID Number	198214

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 during demolition or renovation operations.

4.1.1 Definitions

Significant definitions related to regulation of asbestos under NESHAPS regulations 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 assessment are presented in the following section.

5.1 Results of Asbestos Bulk Sample Analysis

A total of 36 samples were obtained from the bridge. A depiction of the sample locations is shown on Figure 2. Multiple samples of each homogeneous area were collected in accordance with State of Tennessee, Department of Transportation Environmental Division, Social and Cultural Resources Office, 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.

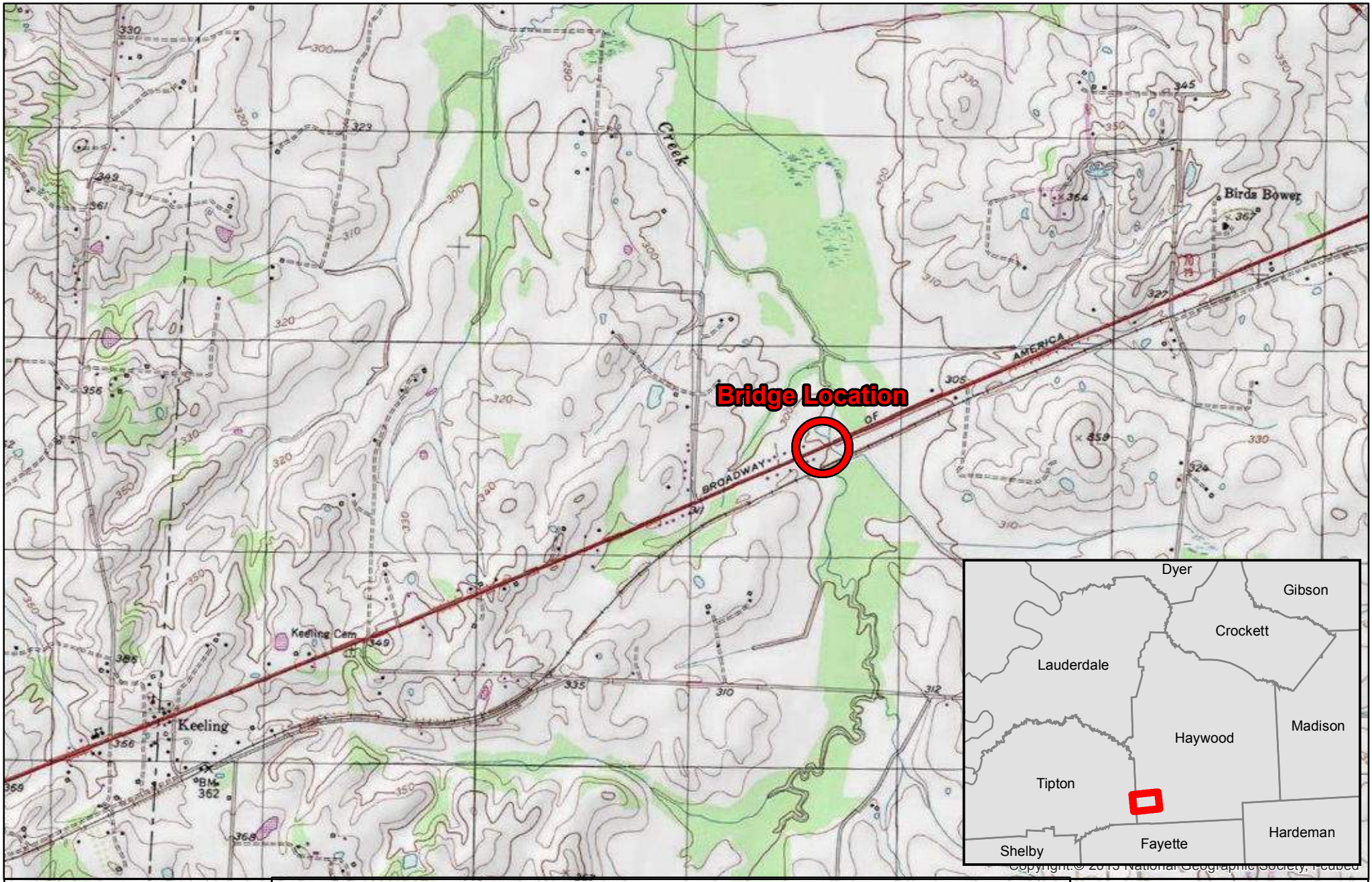
None of the sampled material was found to contain asbestos minerals.

6.0 QUALIFICATIONS

The information presented herein is based on information obtained during the site visit(s) and from previous experience. If additional information becomes available, which might impact our conclusions or recommendations, Barge 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.

Figures



2,000

Feet

N

Scale 1" = 2,000 feet
Tennessee State Plane (feet) 4100fips
North American Datum 1983

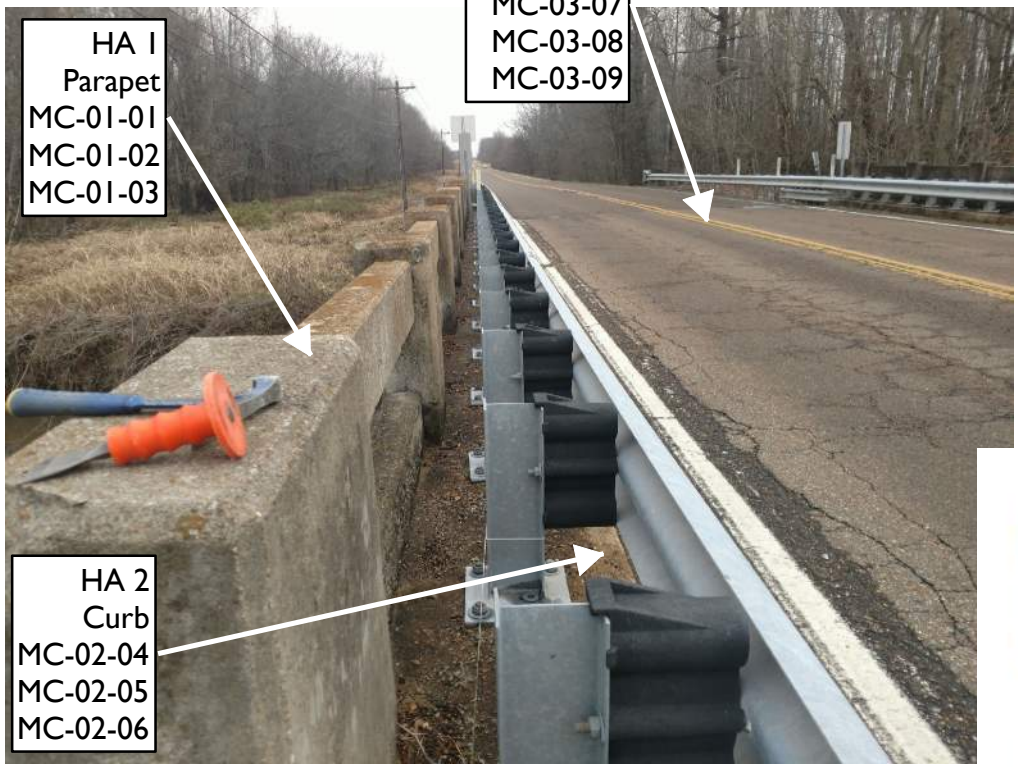
BARGE DESIGN SOLUTIONS

Tennessee Department Of Transportation - Asbestos Assessment Report
January 2018

SR-1 (US-70) Bridge over Muddy Creek, LM 2.13 (IA)
PE-N: 38002-0216-94, PIN: 124505.00
Bridge Number: 38SR0010001
Haywood County, Tennessee

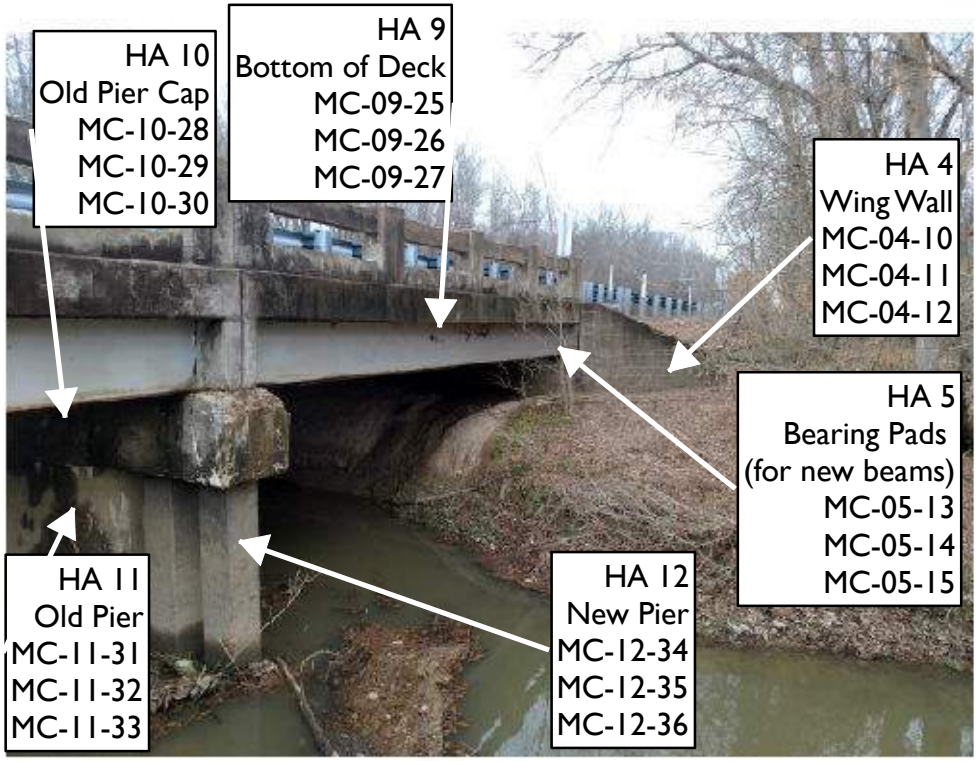
Figure 1 - Site Location Map

Date: 25 January 2018



The following areas are not visible in these photos:

HA 6 Beams	HA 7 Old Beams	HA 8 Abutment
MC-06-16	MC-07-19	MC-08-22
MC-06-17	MC-07-20	MC-08-23
MC-06-18	MC-07-21	MC-08-24



Notes:
Locations are typical of the homogeneous area, some sample locations were not visible from the angle of the photo therefore a representative location was labeled.

HA = Homogeneous Area

Appendix A:
Asbestos Assessment Credentials

THE STATE OF TENNESSEE

Department of Environment and Conservation Division of Solid Waste Management
Toxic Substances Program
William R. Snodgrass Tennessee Tower
312 Rosa L. Parks Avenue, 14th Floor Nashville TN 37243

By virtue of the authority vested by the Division of Solid Waste Management, the Company named below is hereby accreditted to offer and/or conduct Asbestos activities pursuant to Rule 1200-01-20:

Barge Waggoner Sumner and Cannon, Inc

211 Commerce Street Suite 600 Nashville TN, 37201

to conduct ASBESTOS ACTIVITIES in schools or public and commercial buildings in Tennessee. This firm is responsible for compliance with the applicable requirements of Rule 1200-01-20.

Discipline	Type	Accreditation Number	Effective Date	Expiration Date
Accreditation	Re-Accreditation	A-F-410-52467	September 01, 2017	September 30, 2018

Given under the Seal of the State of Tennessee in Nashville.

This **8th** Day of **September 2017**

Division of Solid Waste Management
Toxic Substance Program

CN-1324 (Rev 6/13) RDA-3020

THE STATE OF TENNESSEE

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

Thomas R. Bell

DOB	Sex	HGT	WGT
09-Jul-1960	M	6'0"	200

Discipline	Accreditation	Expiration
Inspector	A-I-47753-63125	Nov-30-2018
Management Planner	A-MP-47753-63126	Nov-30-2018

Re-Accreditation

Asbestos Accreditation

Appendix B: Photographs

Photographer: Chelsea Sachs **Date:** 12/18/2017 **Description:** Photograph 1 – Bridge Number	

Photographer: Chelsea Sachs **Date:** 12/18/2017 **Description:** Photograph 2 – Homogeneous Area 1 Parapet MC-01-01 MC-01-02 MC-01-03	

Photographer: Chelsea Sachs **Date:** 12/18/2017 **Description:** Photograph 3 – Homogeneous Area 2 Curb Sample Locations MC-02-04 MC-02-05 MC-02-06	

Photographer: Chelsea Sachs **Date:** 12/18/2017 **Description:** Photograph 4 – Homogeneous Area 3 Road Stripe Sample Locations MC-03-07 MC-03-08 MC-03-09	

Photographer: Chelsea Sachs **Date:** 12/18/2017 **Description:** Photograph 5 – Homogeneous Area 4 Wing Wall Sample Locations MC-04-10 MC-04-11 MC-04-12	

Photographer: Chelsea Sachs **Date:** 12/18/2017 **Description:** Photograph 6 – Homogeneous Area 5 Bearing Pad Sample Locations MC-05-13 MC-05-14 MC-05-15	

Photographer: Chelsea Sachs **Date:** 12/18/2017 **Description:** Photograph 7 – Homogeneous Area 6 Deck drains Sample Locations MC-06-16 MC-06-17 MC-06-18	

Photographer: Chelsea Sachs **Date:** 12/18/2017 **Description:** Photograph 8 – Homogeneous Area 7 Old Beams Sample Locations MC-07-19 MC-07-20 MC-07-21	

Photographer: Chelsea Sachs **Date:** 12/18/2017 **Description:** Photograph 9 – Homogeneous Area 8 Abutment Sample Locations MC-08-22 MC-08-23 MC-08-24	

Photographer: Chelsea Sachs **Date:** 12/18/2017 **Description:** Photograph 10 – Homogeneous Area 9 Bottom of Deck Sample Locations MC-09-25 MC-09-26 MC-09-27	

Photographer: Chelsea Sachs **Date:** 12/18/2017 **Description:** Photograph 11 – Homogeneous Area 10 Old Pier Cap Sample Locations MC-10-28 MC-10-29 MC-10-30	
Photographer: Chelsea Sachs **Date:** 12/18/2017 **Description:** Photograph 12 – Homogeneous Area 11 Old Pier Sample Locations MC-11-31 MC-11-32 MC-11-33	

Photographer: Chelsea Sachs	
Date: 12/18/2017	
Description: Photograph 13 – Homogeneous Area 12 New Piers Sample Locations MC-12-34 MC-12-35 MC-12-36	

Appendix C:
Asbestos Sample Laboratory Analysis Data

FROST ENVIRONMENTAL SERVICES, LLC
339 ROCKLAND ROAD, SUITE E, HENDERSONVILLE, TENNESSEE 37075
(615) 562-2669 office - (615) 473-9047 cell - email: lab@frostenvironmental.com

POLARIZED LIGHT MICROSCOPY (PLM)
LABORATORY ANALYSIS REPORT
(EPA/600/R-93/116 (JUNE 1993))

CLIENT: Barge Waggoner Sumner & Cannon, Inc.
Date Received: 12/28/2017

PROJECT: TDOT-SR-1 Over Muddy Branch-38SR001001
Date Analyzed: 1/2/2018

LOCATION: Haywood County TN
Date Reported: 1/2/2018

ANALYST: Jody Wilkins

Sample Number	Location	Material Description	Binder (Non-Fibrous) Material	Non-Asbestos Fiber	Asbestos Type & Percent
MC-01-01	Parapet	Tan Cementitious Material	100	None Detected	None Detected
MC-01-02	Parapet	Tan Cementitious Material	100	None Detected	None Detected
MC-01-03	Parapet	Tan Cementitious Material	100	None Detected	None Detected
MC-02-04	Curb	Tan Cementitious Material	100	None Detected	None Detected
MC-02-05	Curb	Tan Cementitious Material	100	None Detected	None Detected
MC-02-06	Curb	Tan Cementitious Material	100	None Detected	None Detected
MC-03-07	Road Stripe	White Beaded Material	100	None Detected	None Detected
MC-03-08	Road Stripe	White Beaded Material	100	None Detected	None Detected
MC-03-09	Road Stripe	White Beaded Material	100	None Detected	None Detected
MC-04-10	Wing Wall	Tan Cementitious Material	100	None Detected	None Detected
MC-04-11	Wing Wall	Tan Cementitious Material	100	None Detected	None Detected
MC-04-12	Wing Wall	Tan Cementitious Material	100	None Detected	None Detected
MC-05-13	New Bearing Pad	Black Cementitious Material	100	None Detected	None Detected
MC-05-14	New Bearing Pad	Black Cementitious Material	100	None Detected	None Detected
MC-05-15	New Bearing Pad	Black Cementitious Material	100	None Detected	None Detected

Asbestos Containing Material (ACM) is defined as any material containing more than one percent asbestos.
Analysis was performed using EPA/600/R-93/116 (June 1993)), Test Method for the Determination of Asebstos in Bulk Building Materials.

FROST ENVIRONMENTAL SERVICES, LLC
339 ROCKLAND ROAD, SUITE E, HENDERSONVILLE, TENNESSEE 37075
(615) 562-2669 office - (615) 473-9047 cell - email: lab@frostenvironmental.com

POLARIZED LIGHT MICROSCOPY (PLM)
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Date Analyzed: 1/2/2018

LOCATION: Haywood County TN
Date Reported: 1/2/2018

ANALYST: Jody Wilkins

Sample Number	Location	Material Description	Binder (Non-Fibrous) Material	Non-Asbestos Fiber	Asbestos Type & Percent
MC-06-16	Drains	Black/Yellow Cementitious Material	100	None Detected	None Detected
MC-06-17	Drains	Black/Yellow Cementitious Material	100	None Detected	None Detected
MC-06-18	Drains	Black/Yellow Cementitious Material	100	None Detected	None Detected
MC-07-19	Old Beams	Tan Cementitious Material	100	None Detected	None Detected
MC-07-20	Old Beams	Tan Cementitious Material	100	None Detected	None Detected
MC-07-21	Old Beams	Tan Cementitious Material	100	None Detected	None Detected
MC-08-22	Abutment	Tan Cementitious Material	100	None Detected	None Detected
MC-08-23	Abutment	Tan Cementitious Material	100	None Detected	None Detected
MC-08-24	Abutment	Tan Cementitious Material	100	None Detected	None Detected
MC-09-25	Bottom Of Deck	Tan Cementitious Material	100	None Detected	None Detected
		Silver Coating	100	<1% Cellulose	None Detected
MC-09-27	Bottom Of Deck	Tan Cementitious Material	100	None Detected	None Detected
MC-09-27	Bottom Of Deck	Tan Cementitious Material	100	None Detected	None Detected
		Silver Coating	100	<1% Cellulose	None Detected
MC-10-28	Old Pier Cap	Tan Cementitious Material	100	None Detected	None Detected
MC-10-29	Old Pier Cap	Tan Cementitious Material	100	None Detected	None Detected

Asbestos Containing Material (ACM) is defined as any material containing more than one percent asbestos.
Analysis was performed using EPA/600/R-93/116 (June 1993)), Test Method for the Determination of Asebstos in Bulk Building Materials.

FROST ENVIRONMENTAL SERVICES, LLC
339 ROCKLAND ROAD, SUITE E, HENDERSONVILLE, TENNESSEE 37075
(615) 562-2669 office - (615) 473-9047 cell - email: lab@frostenvironmental.com

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Date Analyzed: 1/2/2018

LOCATION: Haywood County TN
Date Reported: 1/2/2018

ANALYST: Jody Wilkins

Sample Number	Location	Material Description	Binder (Non-Fibrous) Material	Non-Asbestos Fiber	Asbestos Type & Percent
MC-10-30	Old Pier Cap	Tan Cementitious Material	100	None Detected	None Detected
MC-11-31	Old Pier	Tan Cementitious Material	100	None Detected	None Detected
MC-11-32	Old Pier	Tan Cementitious Material	100	None Detected	None Detected
MC-11-33	Old Pier	Tan Cementitious Material	100	None Detected	None Detected
MC-12-34	New Pier	Tan Cementitious Material	100	None Detected	None Detected
MC-12-35	New Pier	Tan Cementitious Material	100	None Detected	None Detected
MC-12-36	New Pier	Tan Cementitious Material	100	None Detected	None Detected

Asbestos Containing Material (ACM) is defined as any material containing more than one percent asbestos.
Analysis was performed using EPA/600/R-93/116 (June 1993)), Test Method for the Determination of Asebstos in Bulk Building Materials.

Appendix D:
Health and Safety Plan

Health and Safety Plan

BWSC Barge Waggoner Sumner & Cannon, Inc.

Project:TDOT SR-1	Location:Haywood County	Date:12/15/17	Job No.3637865 &64

Project Manager	Office Number	Cell Number
Tom McComb	615-252-4349	615-210-8936

Onsite Contact	Office Number	Cell Number

Description of Field Activities

ACM Sampling

ACTIVITY	WEATHER	BOTANY	TOOLS	JOB BRIEFING
□ Soil Sampling	□ Hot	□ Poison Ivy/Oak	□ Machete	□ Evaluate Surroundings
□ Sediment Sampling	□ Cold	□ Poison Sumac	□ Brush hook	□ Communications
□ Surface-Water Sampling	□ Mild	□ Thistle	□ Pick	□ Safety Plan
□ Ground-Water Sampling	□ Sunny	□ Thorns	□ Ax	□ Emergency Numbers
□ Fish Sampling	□ Fair	□ Needle-like	□ Hammer	□ Lockout/Tagout
□ Macroinvertebrate Sampling	□ Rain	□ Other:	□ Knife	□ Client Requirements
□ Drilling	□ Lightning		□ Drill Rig	□ Insect Repellent
□ Trenching	□ Hail		□ Boat	□ Reflective/Colored Vests
□ Other:	□ Sleet/Snow/Ice		□ Truck/ATV	□ Chemical Information
	□ Night		□ Electrical Equipment	□ Tool Check
	TERRAIN	WILDLIFE	□ Other:	□ Equipment Check
CONSTITUENTS	□ River	□ Ticks		□ First Aid Kit Check
□ Strong Acids/Bases	□ Creek	□ Spiders	TRAFFIC	□ Gloves
□ Metals	□ Lake	□ Chiggers	□ Heavy	□ PFD
□ PCBs	□ Swamp	□ Ants/Fireants	□ Light	□ Waders
□ Pesticides	□ Sinkholes/Collapses	□ Wasps/Bees	□ Boats	□ Steel Toe Boots
□ Asbestos	□ Woods	□ Hornets	□ Railroad	□ Hard Hat
□ VOCs	□ Open & Clear	□ Dogs	□ Planes	□ Eye Protection

□ SVOCs	□ Overgrown	□ Snakes	□ Paved Road	□ Sun Protection
□ Chlorinated Solvents	□ Trenches	□ Hogs/Cattle	□ Gravel Road	□ Fall Protection
□ Lead/Lead Paint	□ Steep	□ Bears	□ Heavy Equipment	□ Other:
□ Radioactive	□ Hilly	□ Raccoons	□ Other:	
□ Unknown	□ Rocky	□ Skunks		
	□ Other:	□ Other:		

Required PPE

Address of Nearest Hospital (Attach Map)

1995 Highway 51 S, Covington, TN 38019

	Police	Fire	Ambulance
Phone Numbers to Police/Fire/Ambulance or 911	731-772-2914	731-772-4979	731-772-4141

Name:	Signature:	Date:
Randy Bell	Randy Bell	12-18-17
Chelsea Sachs	Chelsea Sachs	12/18/17

Google Maps

11295 TN-193, Williston, TN 38076 to Baptist Memorial Hospital-Collierville

Drive 24.1 miles, 33 min

Imagery ©2017 Google, Map data ©2017 Google 2 mi

11295 TN-193

Williston, TN 38076

Get on I-269 S

16 min (11.8 mi)

1. Head west on TN-193 W toward TN-195 W

3.0 mi

2. Slight left to stay on TN-193 W

8.6 mi

3. Turn left onto the ramp to Fisherville

0.3 mi

Follow I-269 S and TN-57 W to your destination in Collierville

17 min (12.3 mi)

4. Merge onto I-269 S

7.7 mi

5. Take the TN-57 exit toward Collierville/Piperton

0.2 mi

6. Keep right at the fork and merge onto TN-57 W

4.4 mi

7. Turn right

14 s (164 ft)

Baptist Memorial Hospital-Collierville

1500 W Poplar Ave, Collierville, TN 38017

These directions are for planning purposes only. You may find that construction projects, traffic, weather, or other events may cause conditions to differ from the map results, and you should plan your route accordingly. You must obey all signs or notices regarding your route.

Multimodal

Environmental Studies Request

Project Information

Route: State Route 1

Termini: Bridge over Muddy Creek, LM 2.13 (IA)

County: Haywood

PIN: 124505.00

Request

Request Type: Initial Environmental Study

Project Plans: Transportation Investment Report

Date of Plans: 04/02/2018

Location: Email Attachment

Certification

Requestor: Abby Harris

Title: TESS - NEPA

Signature: Abby Harris Digitally signed by Abby Harris Date: 2018.04.10 10:56:23 -05'00'

Environmental Study

Technical Section

Section: Multimodal

Study Results

This project accommodates bicycle and pedestrian traffic with an 8' shoulder in a rural area.

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: Jessica Wilson

Title: Transportation Program Supervisor

Signature: Jessica Wilson

Digitally signed by Jessica Wilson
DN: cn=Jessica Wilson, o=TDOT, ou, email=Jessica.L.Wilson@tn.gov, c=US
Date: 2018.04.17 07:08:07 -05'00'

TN TDOT Department of Transportation

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