Programmatic Categorical Exclusion

State Route (SR) 193 (Macon Road)

Bridge over Branch, Log Mile (LM) 11.48

Unincorporated Fayette, Tennessee

Fayette County

PIN 128113.02

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

Project Information

General Information

Route: State Route (SR) 193 (Macon Road)

Termini: Bridge over Branch, Log Mile (LM) 11.48

Municipality: Unincorporated Fayette, Tennessee

County: Fayette

PIN: 128113.02

Plans: Transportation Investment Report

Date of Plans: 03/27/2018

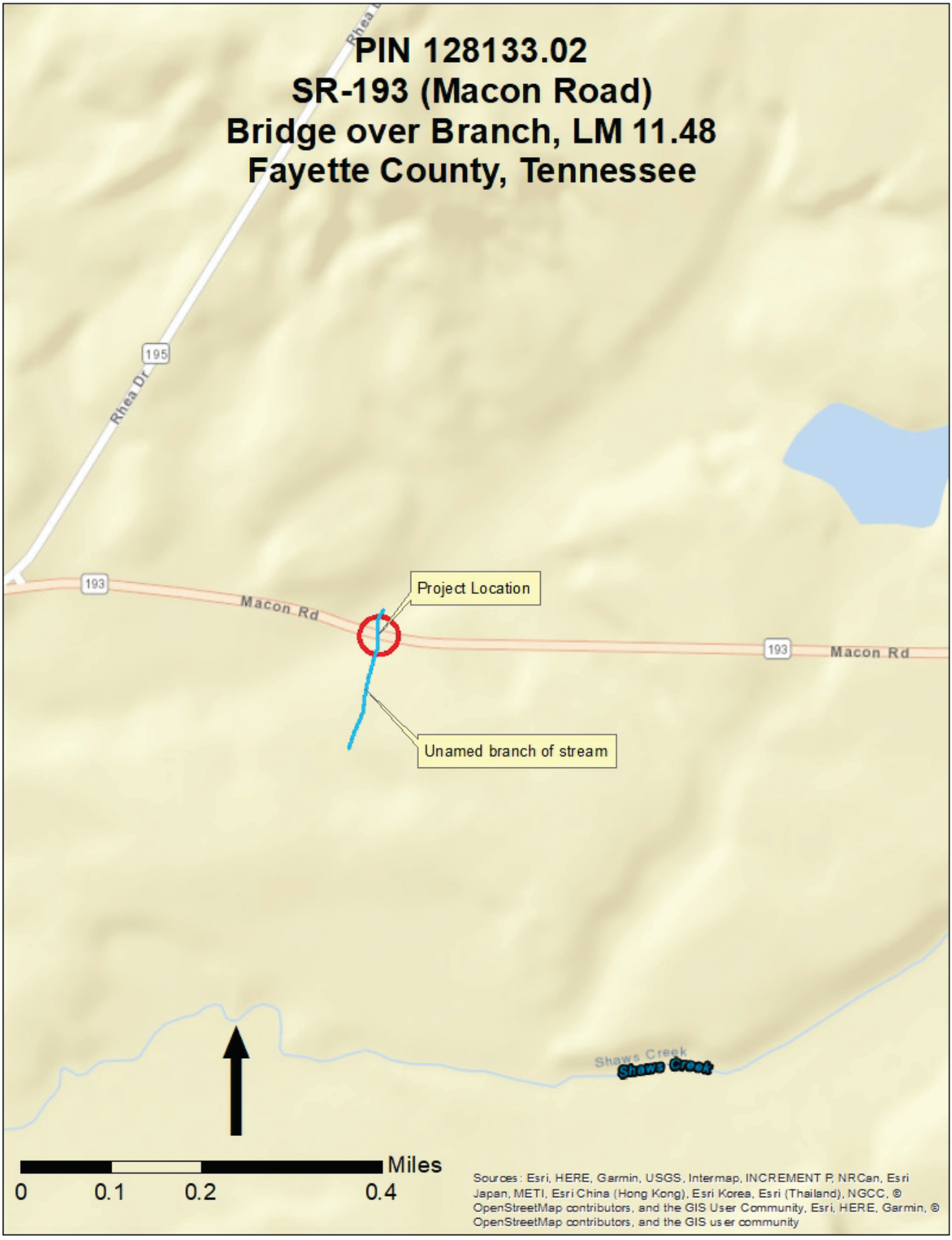
Project Funding

Planning Area: West Tennessee Rural Planning Organization (RPO)

STIP/TIP: 1799001 - Surface Transportation Block Grant Program (STBGP) Grouping

Funding Source	Preliminary Engineering	Right-of-Way	Construction
Federal	BR-STP-193(11)	BR-STP-193(11)	BR-STP-193(11)
State	24029-0207-94	24029-2207-94	24029-3207-94

Project Location



Project Overview

Introduction

The Tennessee Department of Transportation (TDOT), in cooperation with the Federal Highway Administration (FHWA), proposes to replace the SR-193 (Macon Road) Bridge (24015420001) over an unnamed branch at LM 11.48 in Fayette County, TN.

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 Transportation Investment Report (TIR) dated 03/27/2018 (located in the Technical Appendices), the SR-193 Bridge over Branch at LM 11.48 received a sufficiency rating of 44.6. Formerly the proposed project was assigned project PIN 124285.00, however correspondence provided on 10/03/2018 shows a new project PIN (PIN 128113.02), has been assigned. This correspondence can be found in the Technical Appendices. All responses from the technical studies areas list the former PIN.

Project Development

Need

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

Purpose

The purpose of this project is to improve structural elements of the SR-193 Bridge over Branch at LM 11.48 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.

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

Public Involvement

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

Project Design

Existing Conditions and Layout

The proposed project is located in the southwest region of Tennessee in Fayette County between the city of Macon and Williston. The project segment of SR-193 runs east to west connecting the two cities, and according to the 2018 TIR, is a Rural Major Collector consisting of two lanes, (one lane in each direction), with nine foot wide travel lanes and four foot wide shoulders. The speed limit along the project segment is 45 miles per hour (mph).

The SR-193 Bridge (ID 24015420001), built in 1965, is a two-span concrete channel beam bridge with a timber substructure crossing an unnamed branch. The total length of the bridge is 37 feet long with an out-to-out width of 21.67 feet and a vertical height of 7.5 feet at the lowest flow in the stream bed (see Figure 1).

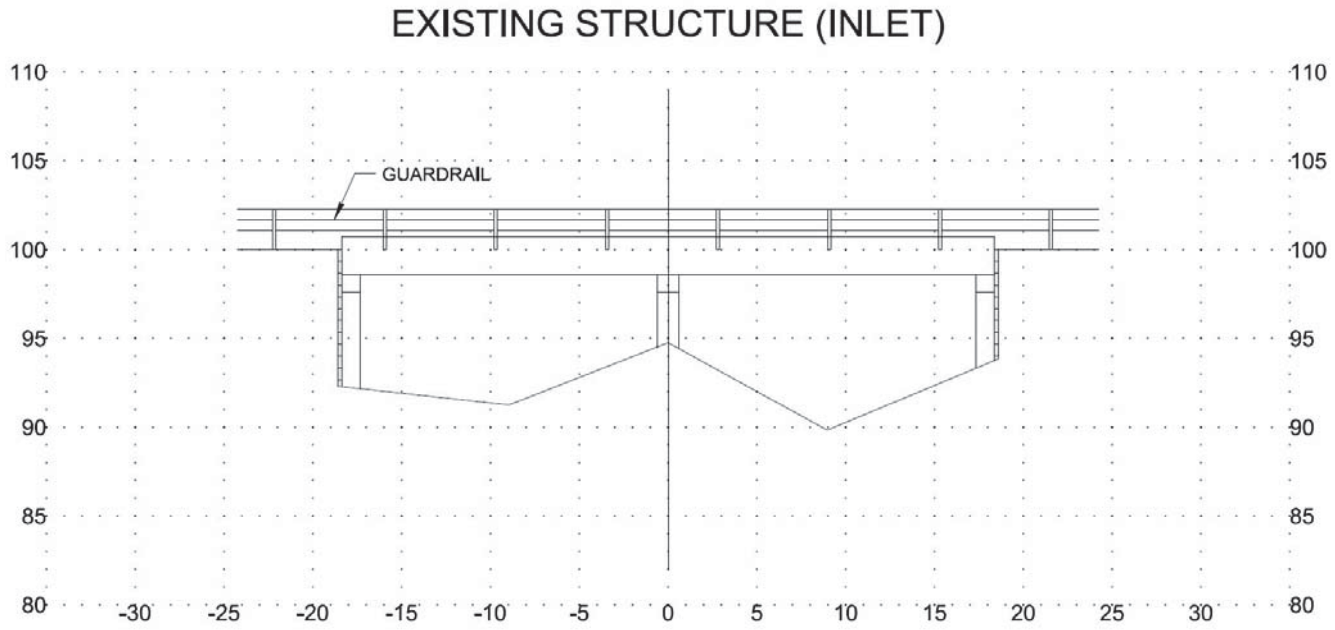


Figure 1. Shows the profile of the existing bridge structure according to TIR dated 03/27/2018.

Proposed Project Description

The proposed bridge would consist of a 53.74 foot long reinforced concrete box bridge consisting of two barrels, each at a width of 18 feet and a vertical height clearance of six feet. The new structure would have an out-to-out width of 39.5 feet (see Figure 2).

The project segment of SR-193 would consist of two 11 foot wide travel lanes, (one in each direction), and six foot wide shoulders. The riding surface for SR-193 would be the top of the new replacement bridge, so the proposed project would add an additional 2.75 feet of roadway width to construct guardrail along both sides of SR-193. The proposed project would add the guardrail and taper both the lanes and shoulders from 170 feet from the project bridge back to the existing roadway in both directions. A new speed limit of 50 mph was proposed for the project segment of SR-193.

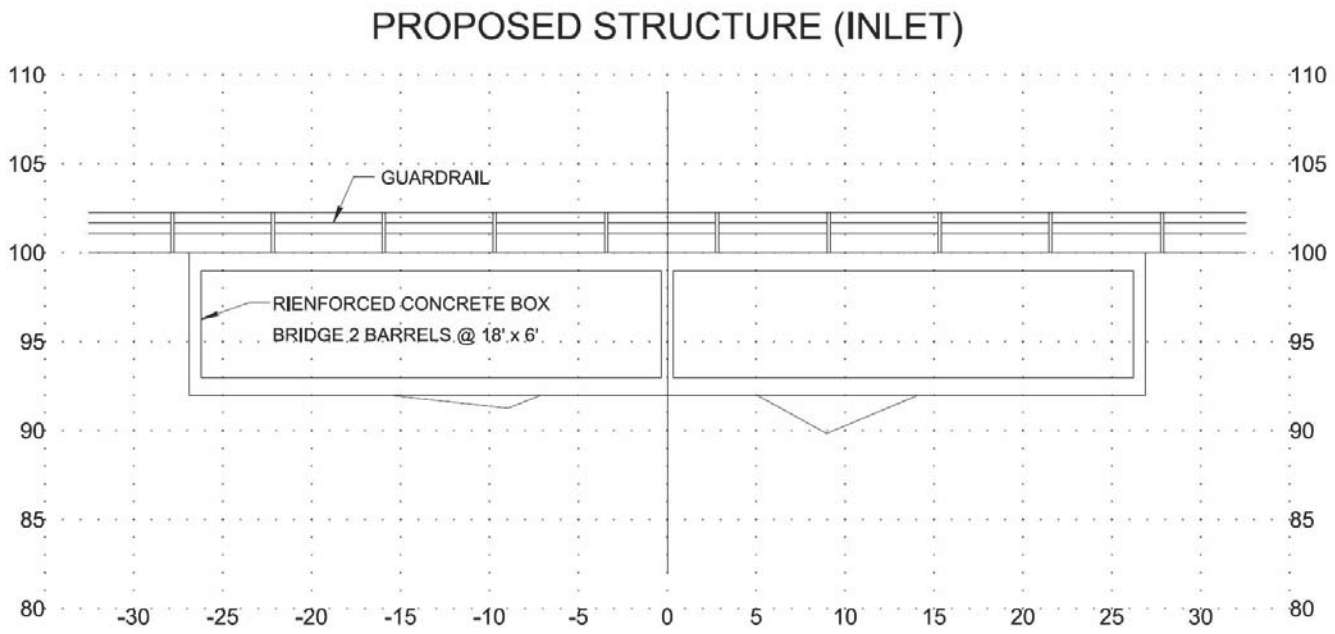


Figure 2. Shows profile of the replacement bridge according to TIR dated 03/27/2018.

Right-of-Way

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

Right-of-Way Acquisition Table					
Permanent Acquisition			**Temporary Acquisition**		
R.O.W Acquisition	Drainage Easements	**Total**	Slope Easements	Construction Easements	**Total**
0.16	0	**0.16**	0	0	**0**

*Measured in acres

According to the TIR dated 03/27/2018, "It is estimated that two tracts of land will be affected resulting in 0.16 acres of estimated right-of-way acquisition."

Displacements and Relocations

Will this project result in residential, business or non-profit displacements and relocations? **No**

Changes in Access Control

Will changes in access control impact the functional utility of any adjacent parcels? **No**

Traffic and Access Disruption

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**

Traffic control would be conducted in two phases for the proposed project using traffic signals. Each phase of the construction would maintain one 11-foot lane of traffic at all times during construction. Also, due to the curvature of the roadway it was determined that the traffic signals would have to be moved back approximately 400 feet from the existing bridge due to sight distance issues. Additional signage and message boards will be necessary due to this additional distance.

Environmental Studies

Water Resources

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

Preliminary Impact Form

County: Fayette Route: SR-193 PIN: 124285.00

Date Prepared: 7/17/2018

Prepared by:
TDOT Region 4 - Environmental Tech Office

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

Streams

Labels	Type *	Function	Quality	Impacts (feet)		
				Permanent	Temporary	Total
STR-1	Stream		Undetermined at this time	100		100
			Total	**100**		**100**

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

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

Protected Species

Is the GPNEA Consultation (2017) or the TDEC-DNA (2015) MOA applicable to this project? **No**

Rare Species Dataviewer:

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

According to the Environmental Boundaries Report (EBR) dated 07/16/2018 from the TDOT Ecology Section, no species were located within a one mile radius of the proposed project. One species was within a one mile to four mile radius of the project, was identified as a Barking tree frog (Hyla gratiosa), a threatened state animal, with the present habitat unsuitable (see Technical Appendices).

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

Coordination with the USFWS was completed on 07/13/2018.

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

Tennessee Wildlife Resources Agency (TWRA):

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

The TWRA correspondence states, "The Tennessee Wildlife Resources Agency has reviewed the information that you provided regarding the proposed SR-193 (Macon Drive) Bridge in Fayette County, Tennessee and we have no concerns regarding the project and do not anticipate adverse impacts to state listed species under our authority due to the project."

Floodplain Management

Flood Zone: Zone X (White) - Area Determined to be Outside the 500-year Floodplain.

Portions of this project are located in or near a Federal Emergency Management Agency (FEMA) defined floodplain however there is no detailed study. The project is located on Flood Insurance Rate Maps in Fayette County, Panel 315 of 605, Map # 47047C0315C. 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:

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

Mobile Source Air Toxics (MSAT):

The same coordination also states, "This project qualifies as a categorical exclusion under 23 CFR 771.117 and does not require a Mobile Source Air Toxics (MSATs) evaluation per FHWA's 'Interim Guidance Update on Air Toxic Analysis in NEPA Documents' dated October 2016."

Noise

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

Archaeology Concurrence:

Concurrence from the TN State Historic Preservation Office (TN-SHPO) was received on 07/24/2018.
TN-SHPO Concurrence letter states, "Considering the information provided, we find that no archeaeological resources eligible for listing in the National Register of Historic Places will be affected by this undertaking,"

Native American Consultation

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

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

Native American Consultation					
Sent	Response		Sent	Response	
☐	☐	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

Chickasaw Nation:

The response was received on 08/31/2018.

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

Shawnee Tribe:

The response was received on 06/12/2018.

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

Environmental Justice

Are there any disproportionately high or adverse effects on low-income or minority populations? **No**

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

Hazardous Materials

Does the project involve any asbestos containing materials? **No**

Does the project involve any other hazardous material sites? **No**

Bicycle and Pedestrian

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

Coordination from the TDOT Multimodal Transportation Resources Division dated 06/08/2018 states, "This bridge project accommodates bicyclists with 6' wide shoulders 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.

Crystal M. Alfaro

Digitally signed by Crystal M. Alfaro
DN: cn=Crystal M. Alfaro, o=TN Dept. of Transportation, ou=Environmental Division - NEPA, email=crystal.alfaro@tn.gov, c=US
Date: 2018.10.11 11:48:55 -05'00'

Document Preparer

Document Approval

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

Joseph D. Santangelo

Digitally signed by Joseph D. Santangelo
Date: 2018.10.11 12:47:10 -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 #	1799001	**TDOT PIN #**		**LENGTH IN MILES**	**LEAD AGENCY** TDOT
COUNTY	STATEWIDE - RURAL				**TOTAL PROJECT COST** $426,000,000
ROUTE					
TERMINI	SURFACE TRANSPORTATION BLOCK GRANT PROGRAM (STBGP) - 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	STBG	106,500,000	85,200,000	21,300,000	
2018	PE, ROW, CONST	STBG	106,500,000	85,200,000	21,300,000	
2019	PE, ROW, CONST	STBG	106,500,000	85,200,000	21,300,000	
2020	PE, ROW, CONST	STBG	106,500,000	85,200,000	21,300,000	

VICINITY MAP

ALL SCHEDULES SUBJECT TO AVAILABILITY OF FUNDS

Grouping Category	Function of Grouping Activities	Allowable Work Types
Surface Transportation Block Grant Program (STBG) Grouping **STIP# 1799001**	Projects and programs for the preservation and improvement of the conditions and performance of Federal-aid highways and public roads, including: • Rehabilitation, resurfacing, restoration, preservation, and operational improvements on Federal-aid highways and designated routes of the Appalachian Development Highway System (ADHS) and local access roads under 40 USC 14501, • Traffic operations on Federal-aid highways, • Bridge and tunnel improvements on public roads, • Safety improvements on public roads, • Environmental mitigation • Scenic and historic highway programs, • Landscaping and scenic beautification,	**Activities previously authorized under the Surface Transportation Program (STP):** • 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 thatsupport 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 • Transportation Alternatives as defined by 23 USC 213(B), 23 USC. 101(A)(29),and Section 1122 of MAP-21 • Noise walls • Wetland and/or stream mitigation • Environmental restoration and pollution abatement • Control of noxious weeds and establishment of native species **Activities previously authorized under the Transportation Enhancement Program:**

Surface Transportation Block Grant Program (STBG) Grouping **(continued)** **STIP# 1799001**	• Historic preservation, • On- and off-road pedestrian and bicycle facilities, • Infrastructure projects for improving non-driver access to public transportation and enhanced mobility, • Community improvement activities, • Recreational Trail Program projects, • Safe Routes to School (SRTS) projects, • Transportation Enhancement projects, • Transportation Alternatives projects, • Projects for the creation, rehabilitation, and maintenance of multi-use recreational trails.	○ Pedestrian and bicycle facilities, safety, and educational activities ○ Acquisition of scenic easements and scenic or historic sites ○ Scenic or historic highway programs ○ Landscaping and other scenic beautification activities ○ Historic preservation ○ Rehabilitation and operation of historic transportation buildings, structures, or facilities ○ Preservation of abandoned railway corridors ○ Inventory, control, and removal of outdoor advertising ○ Archaeological planning and research ○ Environmental mitigation to address water pollution due to highway runoff or reduce vehicle-caused wildlife mortality while maintaining habitat connectivity ○ Establishment of transportation museums ○ Activities under the Tennessee Roadscapes grant program, including landscaping, irrigation, benches, trash cans, paths and signage **Activities previously authorized under the Safe Routes to School Program (SRTS):** • Sidewalk improvements • Traffic calming and speed reduction improvements • Pedestrian and bicycle crossing improvements • On-street bicycle facilities • Off-street bicycle and pedestrian facilities • Secure bicycle parking facilities • Traffic diversion improvements approximately within 2 miles of a school location • Non-infrastructure related activities: ○ Public awareness campaigns and outreach to press and community leaders ○ Traffic education and enforcement in the vicinity of schools ▪ Student sessions on bicycle and pedestrian safety, health, and environment ▪ Funding for training, volunteers, and managers of safe routes to school program **Activities previously authorized under the Transportation Alternatives Program (TAP):** • Construction, planning, and design of on-road and off-road trail facilities for pedestrians, bicyclists, and other non-motorized forms of transportation, including: ○ Sidewalk improvements ○ Bicycle infrastructure ○ Pedestrian and bicycle signals ○ Traffic calming techniques ○ Lighting and other safety-related infrastructure

Surface Transportation Block Grant Program (STBG) Grouping **(continued)** **STIP# 1799001**	• Projects for the planning, design or construction of boulevards and other roadways largely in the right-of-way of former Interstate System routes or other divided highways.	○ Transportation projects to achieve compliance with the Americans with Disabilities Act of 1990 • Construction, planning, and design of infrastructure-related projects and systems that will provide safe routes for non-drivers, including children, older adults, and individualswith disabilities to access daily needs • Conversion and use of abandoned railroad corridors for trails for pedestrians, bicyclists, or other non-motorized transportation users • Construction of turnouts, overlooks, and viewing areas • Community improvement activities, which include but are not limited to: ○ Inventory, control, or removal of outdoor advertising ○ Historic preservation and rehabilitation of historic transportation facilities ○ Vegetation management in transportation rights-of-way to improve roadwaysafety, prevent invasive species, and provide erosion control ○ Archaeological activities relating to impacts from implementation of atransportation project eligible under Title 23 of the USC • Any environmental mitigation activity, including pollution prevention and pollution abatement activities and mitigation to: ○ Address stormwater management, control, and water pollution preventionor abatement related to highway construction or due to highway runoff ○ Reduce vehicle-caused wildlife mortality or to restore and maintain connectivity among terrestrial or aquatic habitats • Recreational Trails Program activities under 23 USC 206 • SRTS Program infrastructure-related projects, non-infrastructure-related activities (suchas pedestrian and bicycle safety and educational activities advanced under the SRTS program), and SRTS Coordinator positions. • Planning, designing, or constructing boulevards and other roadways largely in the right-of-way of former Interstate System routes or other divided highways **Activities previously authorized under the Recreational Trails Program (RTP):** • Maintenance and restoration of existing recreational trails • Development and rehabilitation of trailside and trailhead facilities and trail linkages for recreational trails • Purchase and lease of recreational trail construction and maintenance equipment • Construction of new recreational trails • Acquisition of easements and fee simple title to property for recreational trails or recreational trail corridors • Assessment of trail conditions for accessibility and maintenance • Development and dissemination of publications and operation of educational programs to promote safety and environmental protection • Payment of costs to the State incurred in administering the program

From: John Griffith
To: Eric Philipps
Cc: Randall E. Mann; Lou Timms; Jared McCoy; Dustin Tucker; Rita M. Thompson; Greg Harris
Subject: RE: [EXTERNAL] Fayette County, SR-193 (Macon Road) Bridge over Branch, PIN 124285.00
Date: Friday, July 13, 2018 3:36:33 PM
Attachments: image001.png

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

Eric,
??
Thank you for requesting our review of the proposed SR-193 Bridge replacement over a tributary to Shaws Creek at LM 11.48 in Fayette County, Tennessee.?? Upon review of the information provided and our database, we would not anticipate impacts to any federally listed or proposed species as a result of the project.?? Therefore, based on the best information available at this time, we believe that the requirements of section 7 of the Endangered Species Act (Act) of 1973, as amended, are fulfilled for all species that currently receive protection under the Act.?? Obligations under section 7 of the Act must be reconsidered if (1) new information reveals impacts of the proposed action that may affect listed species or critical habitat in a manner not previously considered, (2) the proposed action is subsequently modified to include activities which were not considered during this consultation, or (3) new species are listed or critical habitat designated that might be affected by the proposed action.
??
TDOT's standard construction BMPs would be implemented during the project. Equipment staging and maintenance areas should be developed an adequate distance from the stream to avoid entry of petroleum-based pollutants into the water.?? Concrete and cement dust must be kept out of the water as they alter chemical properties and can be toxic to aquatic species. This email will serve as our official project response.?? Please let me know if we can offer further assistance.?? Thanks,
??
John Griffith
Transportation Biologist
U.S. Fish and Wildlife Service
Tennessee Field Office
931-525-4995 (office)
931-528-7075 (fax)
??

From: Eric Philipps <Eric.Philipps@tn.gov>
Sent: Thursday, June 21, 2018 2:07 PM
To: john_griffith@fws.gov
Cc: Randall E. Mann <Randall.E.Mann@tn.gov>; Lou Timms <Lou.Timms@tn.gov>; Jared McCoy <Jared.McCoy@tn.gov>; Dustin Tucker <Dustin.Tucker@tn.gov>; Rita M. Thompson <Rita.M.Thompson@tn.gov>; Greg Harris <Greg.Harris@tn.gov>
Subject: [EXTERNAL] Fayette County, SR-193 (Macon Road) Bridge over Branch, PIN 124285.00
??
John,

From: Casey Parker
To: Eric Philipps; TDOT Env LocalPrograms
Cc: Rob Todd
Subject: RE: Request for Comment - Fayette, SR-193 (Macon Drive) Bridge over Branch, PIN 124285.00
Date: Wednesday, July 11, 2018 12:27:26 PM
Attachments: image002.png
image003.png

Subject: Request for Comment - Fayette, SR-193 (Macon Drive) Bridge over Branch, PIN 124285.00

Mr. Eric Philipps,

The Tennessee Wildlife Resources Agency has reviewed the information that you provided regarding the proposed SR-193 (Macon Drive) Bridge in Fayette County, Tennessee and we have no concerns regarding the project and do not anticipate adverse impacts to state listed species under our authority due to the project. Thank you for the opportunity to review and comment on this proposed project, 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: Eric Philipps
Sent: Thursday, June 21, 2018 2:41 PM
To: Casey Parker
Cc: Rob Todd; Randall E. Mann; Lou Timms; Jared McCoy; Dustin Tucker; Rita M. Thompson; Greg Harris
Subject: Request for Comment - Fayette, SR-193 (Macon Drive) Bridge over Branch, PIN 124285.00

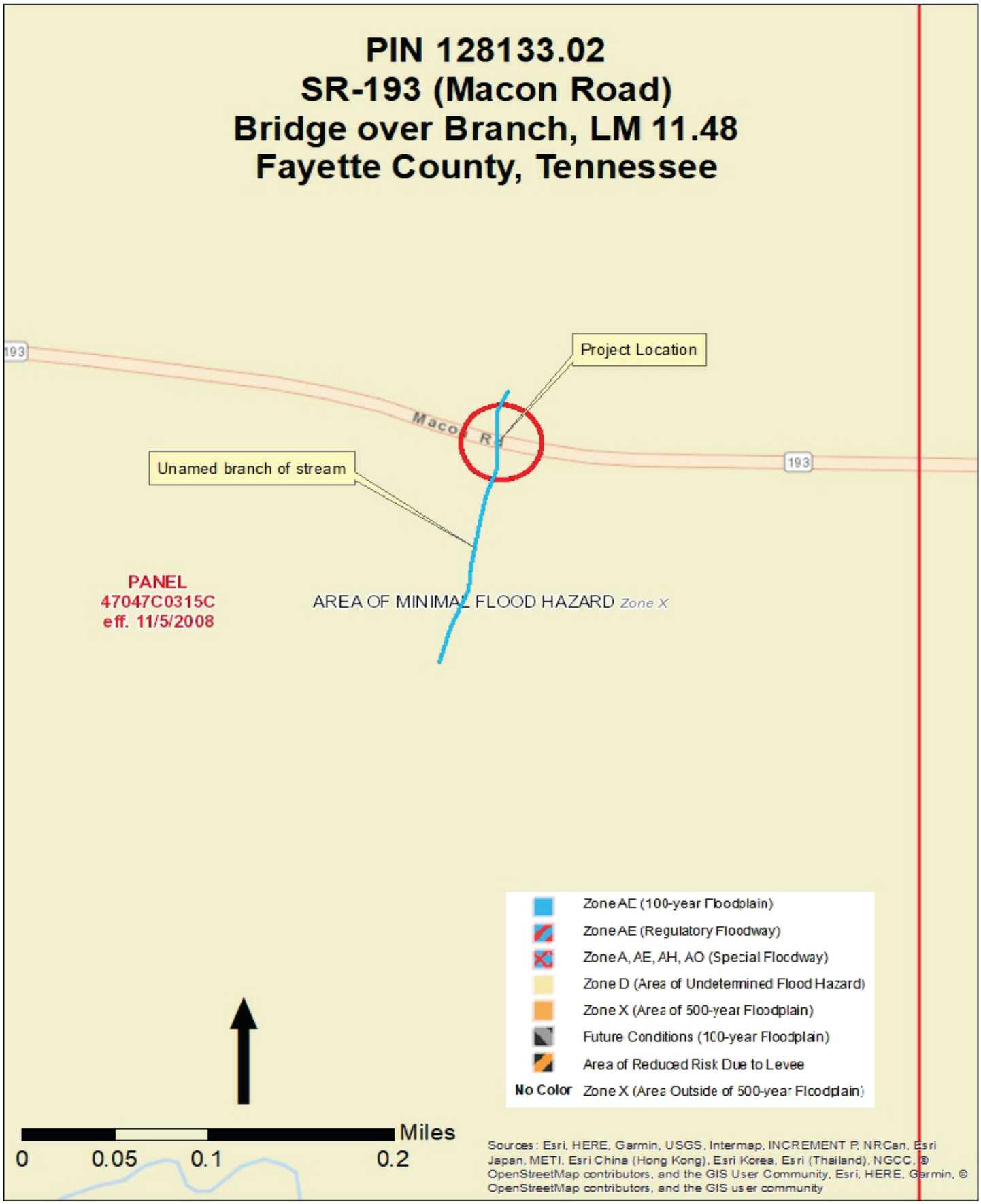
Casey,

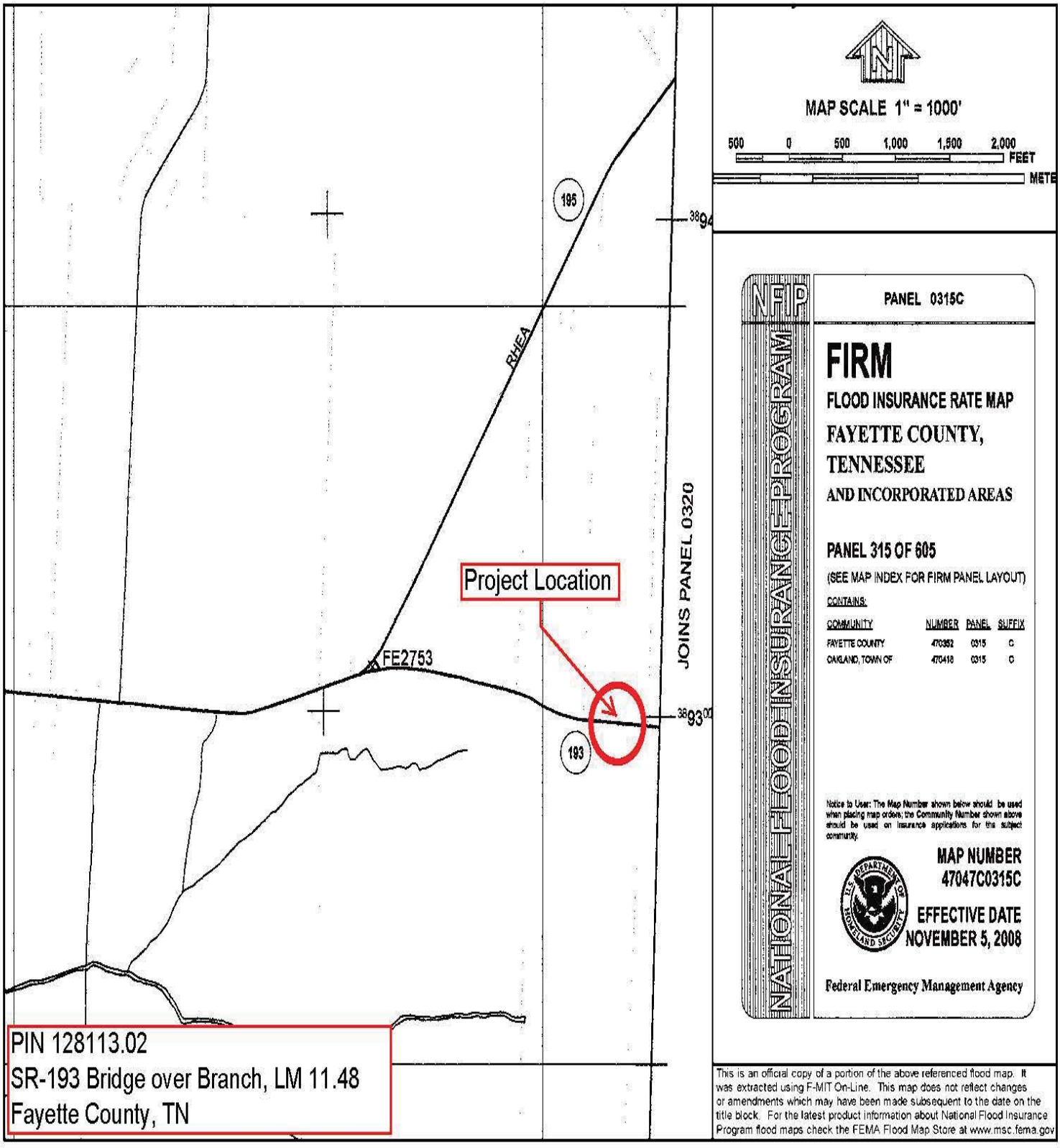
TDOT proposes to replace the subject bridge in Fayette County. Please find attached KMZ file, species maps, species list, and plan sheet. If you have any questions or require additional information, please do not hesitate to contact me.

Thanks,

Eric Philipps | Environmental Studies Specialist

Page 18


PIN 128133.02
SR-193 (Macon Road)
Bridge over Branch, LM 11.48
Fayette County, Tennessee
193
Project Location
Macon Rd
193
Unamed branch of stream
PANEL
47047C0315C
eff. 11/5/2008
AREA OF MINIMAL FLOOD HAZARD Zone X
Zone AE (100-year Floodplain)
Zone AE (Regulatory Floodway)
Zone A, AE, AH, AO (Special Floodway)
Zone D (Area of Undetermined Flood Hazard)
Zone X (Area of 500-year Floodplain)
Future Conditions (100-year Floodplain)
Area of Reduced Risk Due to Levee
No Color Zone X (Area Outside of 500-year Floodplain)
Miles
0 0.05 0.1 0.2
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, © OpenStreetMap contributors, and the GIS User Community, Esri, HERE, Garmin, © OpenStreetMap contributors, and the GIS user community


MAP SCALE 1" = 1000'
500 0 500 1,000 1,500 2,000
FEET
METE
195
193
RHEA
FE2753
JOINS PANEL 0320
Project Location
PANEL 0315C
NFIP
NATIONAL FLOOD INSURANCE PROGRAM
FIRM
FLOOD INSURANCE RATE MAP
FAYETTE COUNTY, TENNESSEE
AND INCORPORATED AREAS
PANEL 315 OF 605
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)
CONTAINS:
COMMUNITY NUMBER PANEL SUFFIX
FAYETTE COUNTY 470352 0315 C
OAKLAND, TOWN OF 470418 0315 C
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
47047C0315C
EFFECTIVE DATE
NOVEMBER 5, 2008
Federal Emergency Management Agency
This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov
PIN 128113.02
SR-193 Bridge over Branch, LM 11.48
Fayette County, TN

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 193 Bridge over Branch, Log Mile 11.48/ PIN 124285.00, , Fayette 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
NASHVILLE, TENNESSEE 37243-0442
OFFICE: (615) 532-1550
www.tnhistoricalcommission.org

July 24, 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-193 (Macon Road) Bridge Replacement over Unknown Branch, Log Mile 11.48, Fayette 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

Quality Assurance Review

Project Information

Route: State Route (SR) 193 (Macon Road)

Termini: Bridge over Branch, Log Mile (LM) 11.48

County: Fayette

PIN: 128113.02

Preparer: Crystal M. Alfaro

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: 2018.10.11 12:48:52 -05'00'
Title:	Environmental Supervisor	**Comment:**	Revision required [backdated 10/10]

Reviewer:	Joe Santangelo	**Signature:**	Joseph D. Santangelo Digitally signed by Joseph D. Santangelo Date: 2018.10.11 12:49:24 -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

Technical Appendices

Programmatic Categorical Exclusion

State Route (SR) 193

(Macon Rd.), Bridge over Branch, Log Mile (LM) 11.48

Unincorporated Fayette, Tennessee

Fayette County

PIN 128113.02

Project Development

Crystal Alfaro

From: Joseph Santangelo
Sent: Wednesday, October 3, 2018 1:11 PM
To: Abby Harris; Brittany Hyder; Crystal Alfaro
Cc: Sharon Sanders
Subject: Design-Build Bridge Projects

Importance: High

All,

The PINs have recently changed for all of these projects. Please see below and update your tracking reports and project files accordingly.

If you have projects that have been approved under the old PIN, I'm awaiting guidance on how to proceed…

Brittany – 124139.00 – New PIN: 128113.01

Crystal – 124285.00 – New PIN: 128113.02

Abby – 124505.00 – New PIN: 128113.03

Abby – 124503.00 – New PIN: 128113.04

Abby – 124637.00 – New PIN: 128113.05

Crystal – 124712.00 – New PIN: 128113.06

Thank you,

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

TENNESSEE
DEPARTMENT OF TRANSPORTATION

TRANSPORTATION INVESTMENT REPORT

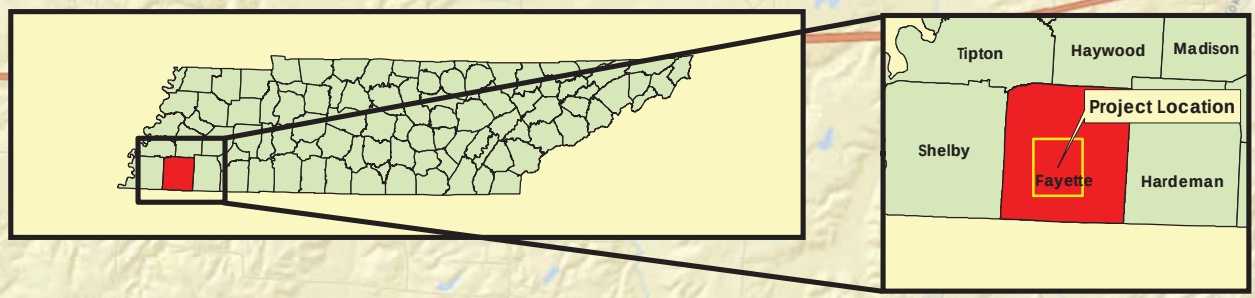
Improve Act
SR-193 (Macon Road)
Bridge over Unknown Branch,
Bridge ID 24015420001
Log Mile 11.48 Fayette County
PIN 124285.00

PREPARED BY PALMER ENGINEERING for
Strategic Transportation Investments Division

Approved by _____ *Date* 3-27-18
Chief of Environment and Planning

Approved by _____ *Date* 3/23/18
Deputy Commissioner and Chief Engineer

Approved by:	Signature	DATE
TRANSPORTATION DIRECTOR STRATEGIC TRANSPORTATION INVESTMENTS DIVISION		3-22-18
ENGINEERING DIRECTOR DESIGN DIVISION	Tabitha J. Caraness	03/22/18
ENGINEERING DIRECTOR STRUCTURES DIVISION		3/23/18



Oakland
64
Church St
Cypress Creek
194
Macon
193
Macon Rd
Shaws Creek
Williston
76
Hurricane Creek
Stafford Creek
Walkins Creek

BRIDGE ID 24015420001
(BRIDGE OVER UNKNOWN BRANCH)

0 0.5 1 2 3 Miles

Sources: Esri, HERE, DeLorme, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), MapmyIndia, NGCC, © OpenStreetMap contributors, and the GIS User Community

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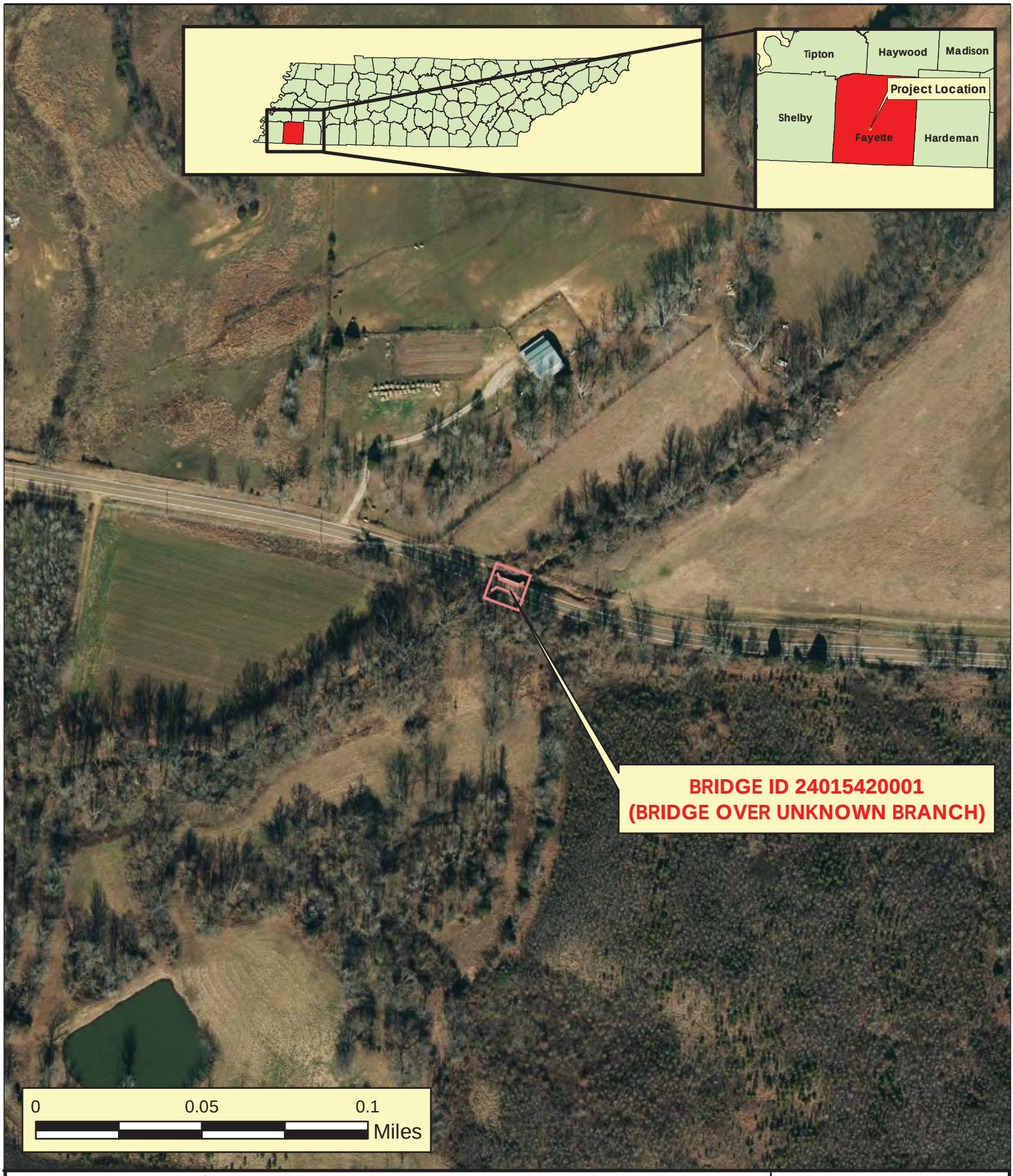
AREA MAP

SR-193 BRIDGE OVER UNKNOWN BRANCH (LM 11.48) FAYETTE COUNTY

TN TDOT Department of Transportation



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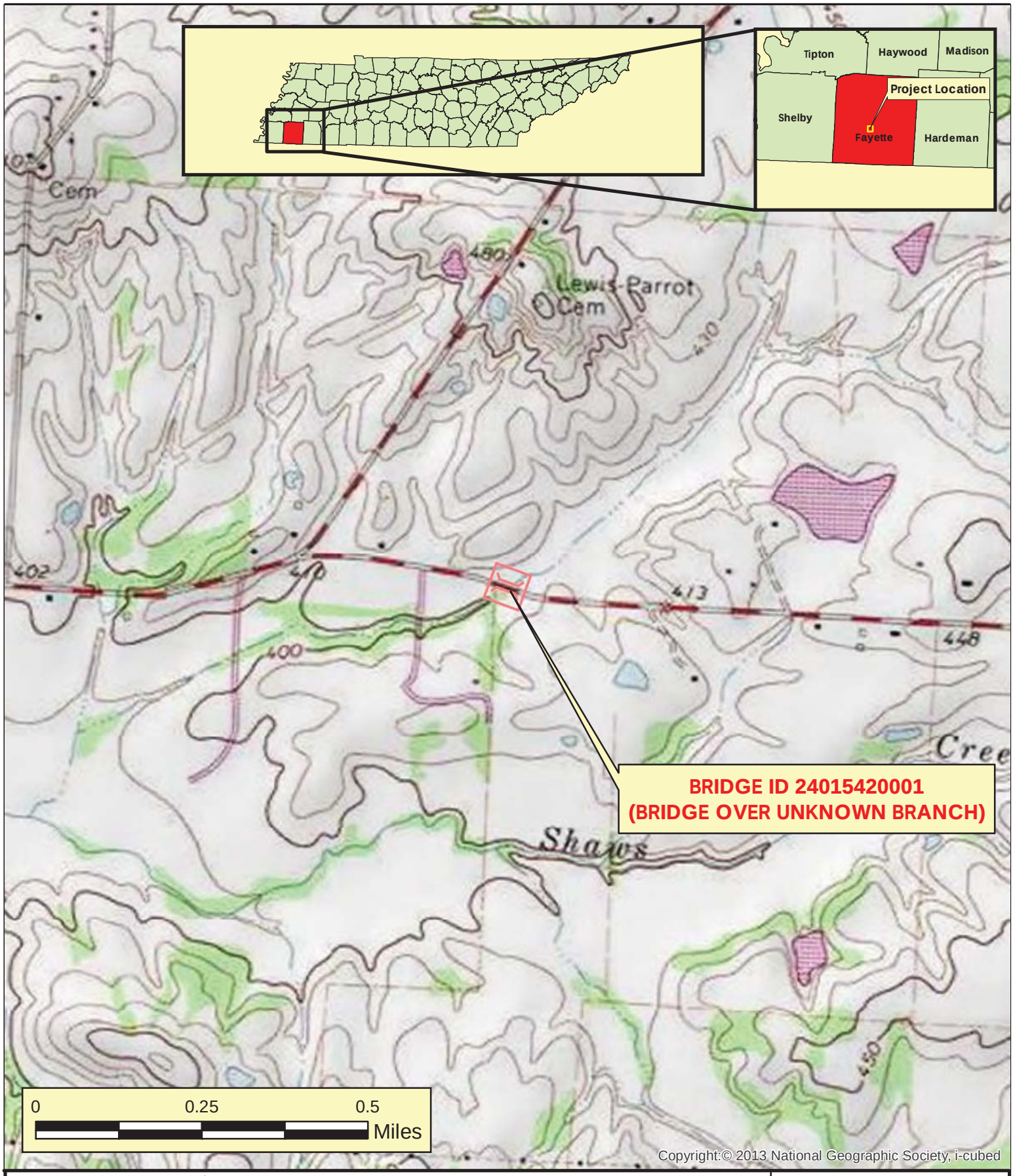
LOCATION MAP

SR-193 BRIDGE OVER
UNKNOWN BRANCH (LM 11.48)
FAYETTE COUNTY

TN TDOT Department of Transportation



N

TOPOGRAPHIC MAP
SR-193 BRIDGE OVER
UNKNOWN BRANCH (LM 11.48)
FAYETTE 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: Mike Gilbert, CE Manager 2
Strategic Transportation Investments Division

DATE: March 9, 2018

SUBJECT: TIR Field Review (Improve Act)
SR-193 (Macon Road), Bridge over Branch
Bridge ID: 24015420001
Log Mile 11.48
Fayette County
PIN: 124285.00

A field review was held for the above-mentioned project on December 12, 2017.

The existing structure, built in 1965, is a two (2) span concrete channel beam bridge with timber substructure crossing an unnamed branch. The structure has an out-to-out width of 21.67 feet. The overall structure length is 37 feet with approximately 7.5 feet of vertical clearance at the lowest flow in the stream bed. The sufficiency rating for this structure is 44.6 based on the Bridge Inspection Report from September 29, 2016.

The discharges for the drainage basin were determined using StreamStats Version 4.1.8. which used a drainage area of 1.15 square miles. The 10-year discharge rate (Q10) was 794 cubic feet per second (cfs), Q50 was 1,060 cfs, and Q100 was 1,170 cfs.

The proposed alignment and grade for the replacement structure will remain the same as the existing structure including the 45° skew with the branch. There is a 45 mph posted speed limit on SR-193 and the proposed design speed will be 50 mph. TDOT hydraulics section has recommended that the proposed structure be a reinforced concrete box bridge with two (2) barrels with a width of 18 feet each and a clearance of six (6) feet on 45° skew (2 @ 18'x6'

RCBB). It is estimated that two tracts of land will be affected resulting in 0.16 acres of estimated right-of-way acquisition and that underground and overhead utilities will need to be relocated.

Closing the road and utilizing a detour route was briefly discussed at the field review. It was determined that the 16.2 mile detour was too far for emergency responders and school buses. It was decided that the better option was to use traffic signals to stage construct the new box bridge while maintaining one lane open during construction. It should be noted that the signals will have to be moved back approximately 400 feet on either end of the existing structure due to horizontal and vertical curve sight distance issues. Additional signage and message boards will be necessary due to this additional distance.

The route has a base year 2022 AADT of 1,540 and a design year 2042 AADT of 1,730. The two (2) lane existing structure and roadway approaches have nine (9) foot travel lanes. The route is classified as a Rural Major Collector and Standard Drawing RD01-TS-2 was used for design considerations. Table IV shows a minimum roadway width of 22 feet and minimum shoulder width of six (6) feet for AADT's between 1500 and 2000. Table I, on the same standard drawing allows a minimum of four (4) foot shoulders; however, due to the need to maintain one lane of traffic during construction the six (6) foot shoulders will be required. Therefore, the typical section on the proposed structure will be eleven (11) foot travel lanes with six (6) foot shoulders. The top of the proposed box bridge will be the new riding surface; so an additional 2.75 feet will be required on either side to allow for guardrail attachment to the top of the box for a total out-to-out width of 39.5 feet on the structure. The project will extend 170 feet from either end of the new proposed structure in order to install guardrail and to taper the lanes and shoulders back to the existing roadway. One (1) lane will remain open during the construction phasing while using temporary signals, signage and message boards to maintain traffic.

This project has been recommended for design-build by the Construction Division within TDOT. It is also possible that an ABC approach to complete the project with a weekend road closure by utilizing a triple barrel precast box. This would save four (4) feet of box length by reducing the six (6) foot shoulders to four (4) and would also eliminate the need for traffic signals for the lane closure for the maintenance of traffic during construction.

The cost for the estimated required approach work, estimated replacement, and estimated preliminary engineering for this bridge replacement is approximately $833,000. Right-of-way acquisition is anticipated for this project.

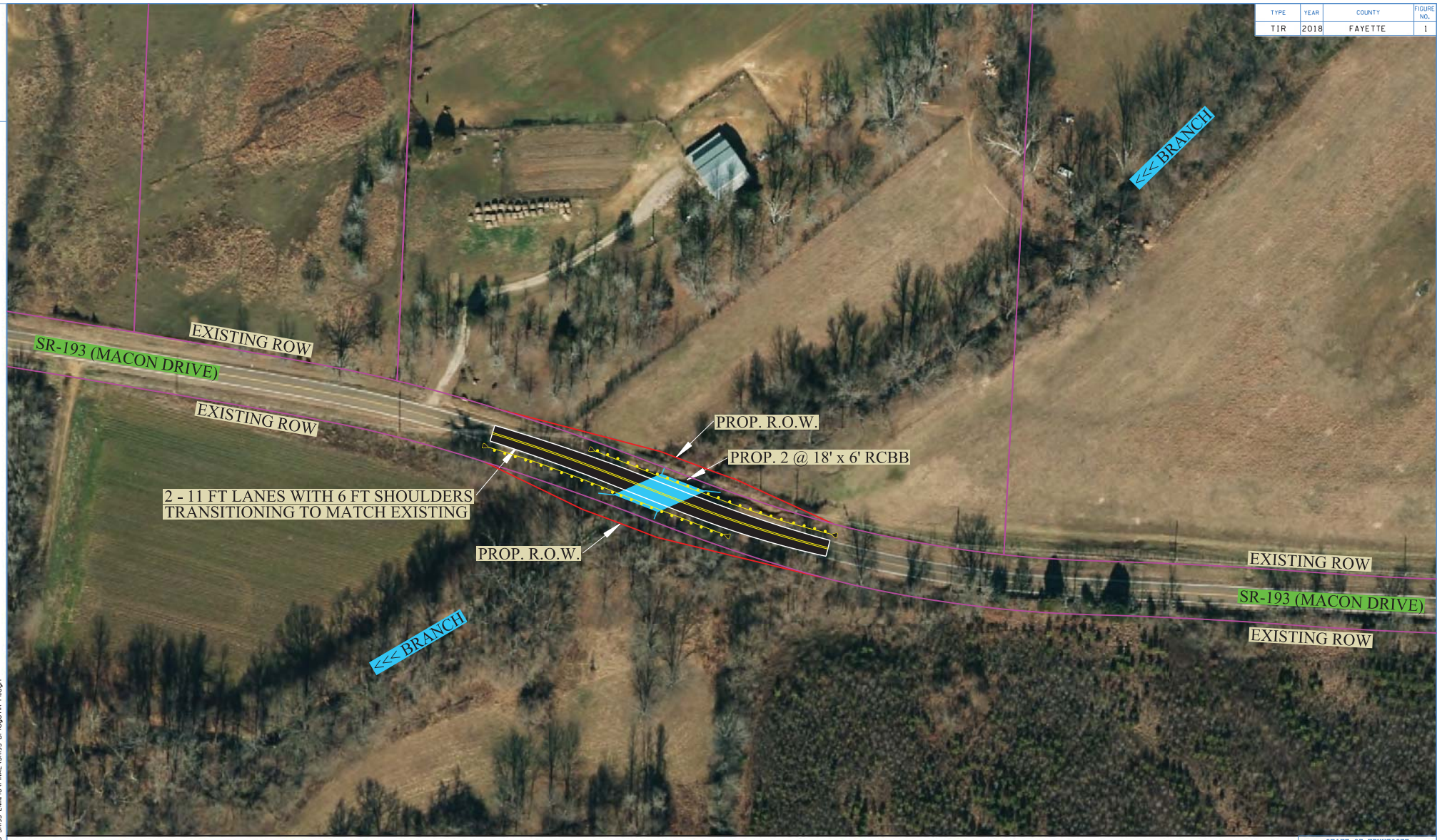
DMG

cc: File

TENNESSEE D.O.T.
STRATEGIC TRANSPORTATION INVESTMENTS DIVISION

FILE NO.

TYPE	YEAR	COUNTY	FIGURE NO.
TIR	2018	FAYETTE	1



0' 100' 200' 300'

N

BRIDGE TIR

STATE ROUTE 193 (MACON DRIVE)
L.M. 11.48
FAYETTE COUNTY

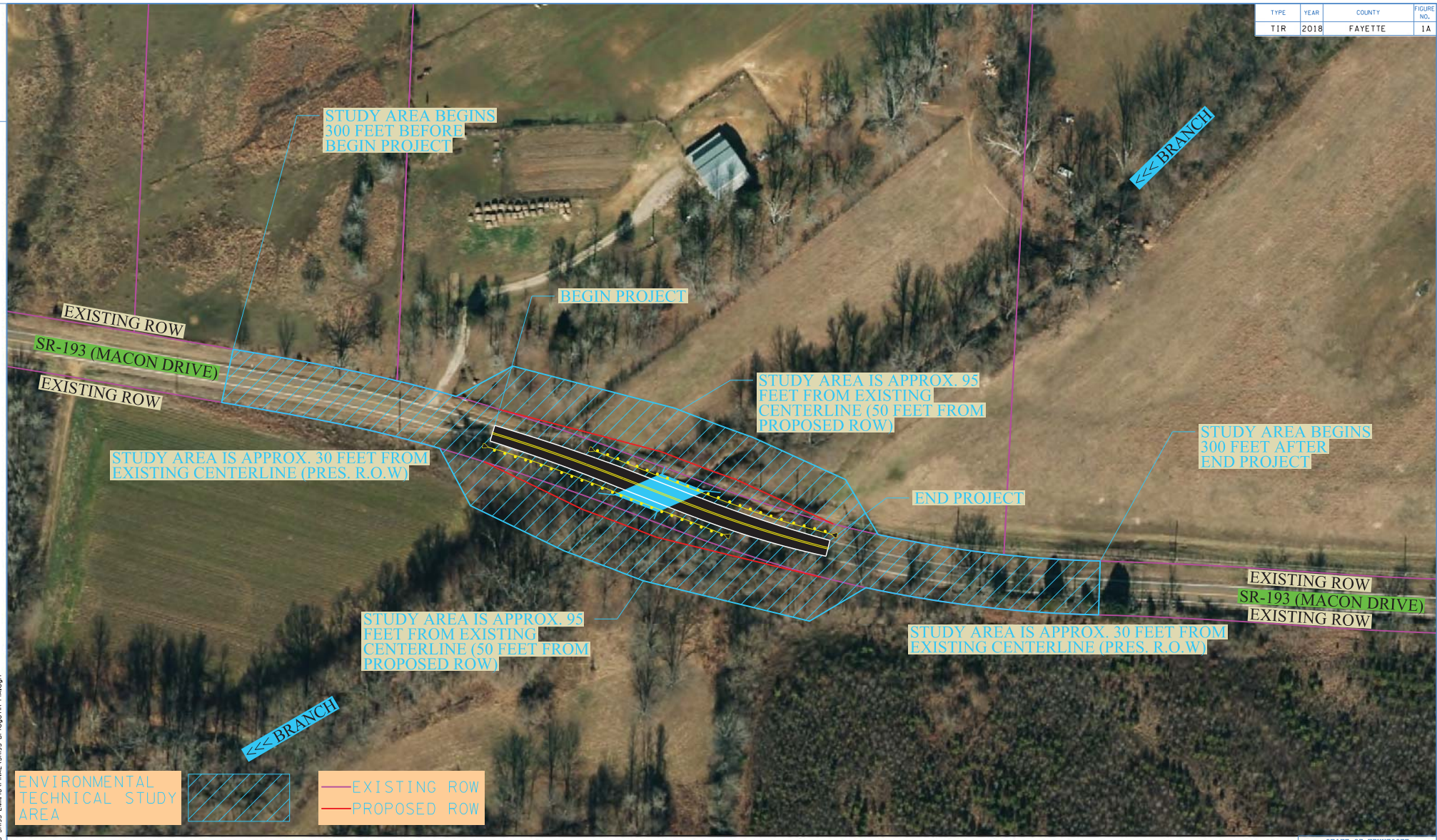
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
STRATEGIC TRANSPORTATION
INVESTMENTS DIVISION

FIGURE 1
SR-193
L.M. 11.48

3/8/2018 10:30:02 PM
T:\TDOT\STID\2017 BTIR\Fayette-SR193-LM11.48\FINAL\SR193-BridgeTIR-Fi.dgn

TENNESSEE D.O.T.
STRATEGIC TRANSPORTATION INVESTMENTS DIVISION
FILE NO.

TYPE	YEAR	COUNTY	FIGURE NO.
TIR	2018	FAYETTE	1A



0′ 100′ 200′ 300′

N

ENVIRONMENTAL TECHNICAL STUDY AREA

STATE ROUTE 193 (MACON DRIVE)
L.M. 11.48
FAYETTE COUNTY

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
STRATEGIC TRANSPORTATION INVESTMENTS DIVISION

FIGURE 1A
SR-193
L.M. 11.48

3/6/2018 10:34:43 PM
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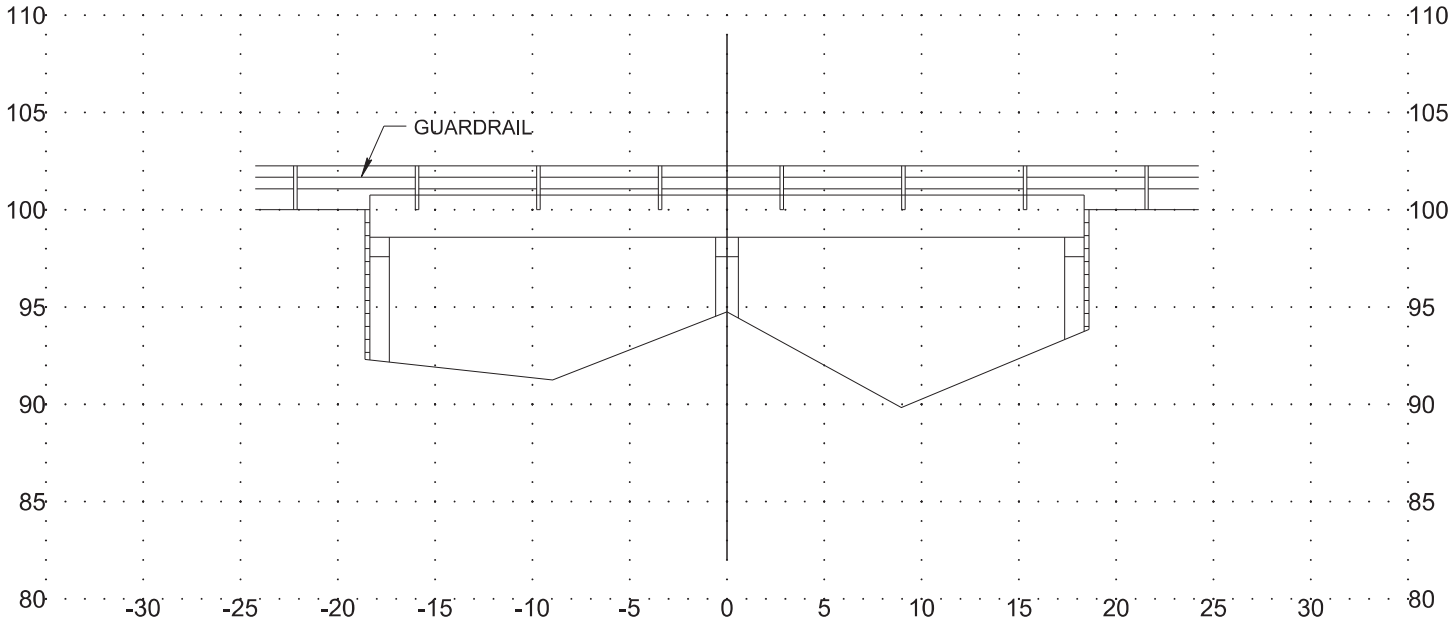
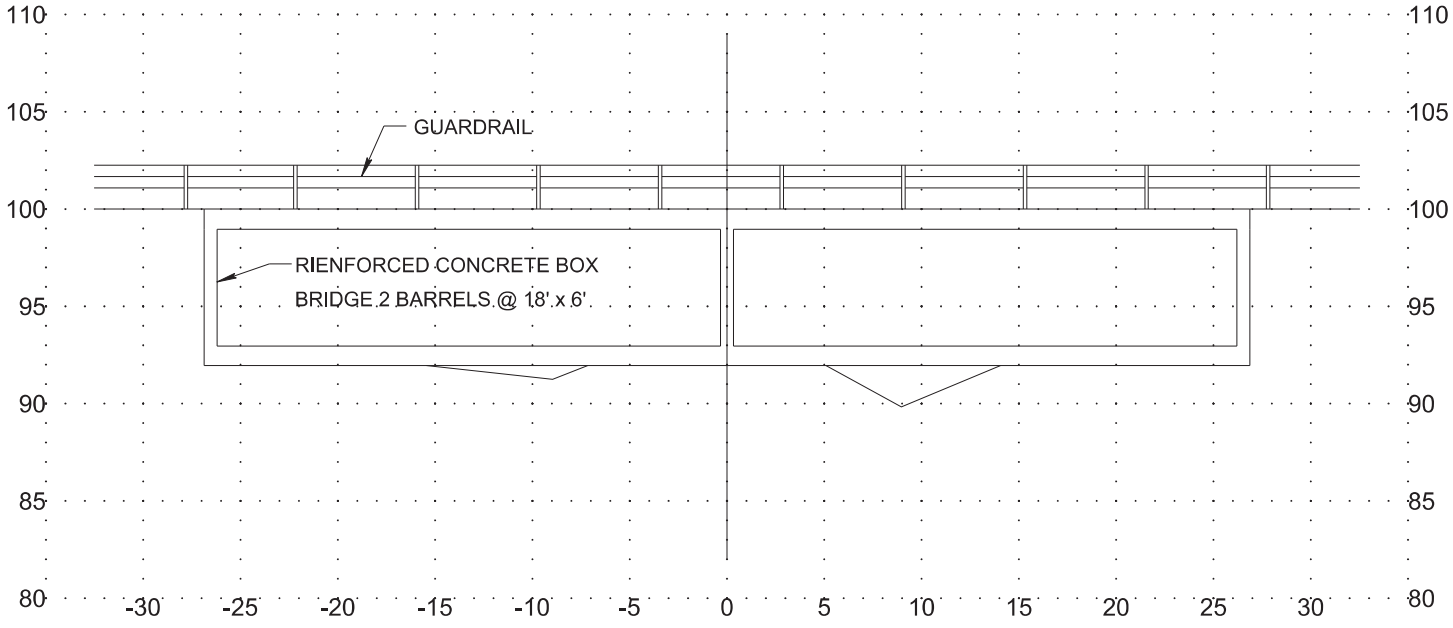
EXISTING STRUCTURE (INLET)



PROPOSED STRUCTURE (INLET)



0' 5' 10' 15'

SCALE: 1" = 10'

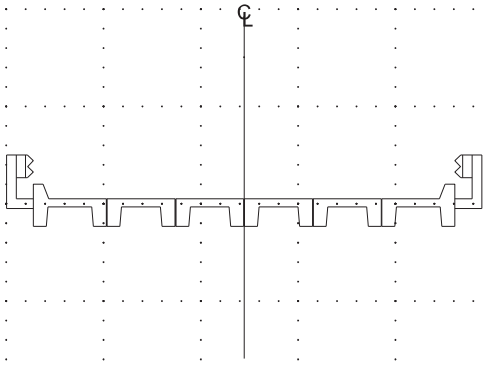
BRIDGE PROFILES

MACON RD (SR193) FAYETTE COUNTY

BRIDGE OVER UNNAMED BRANCH @ L.M. 11.48

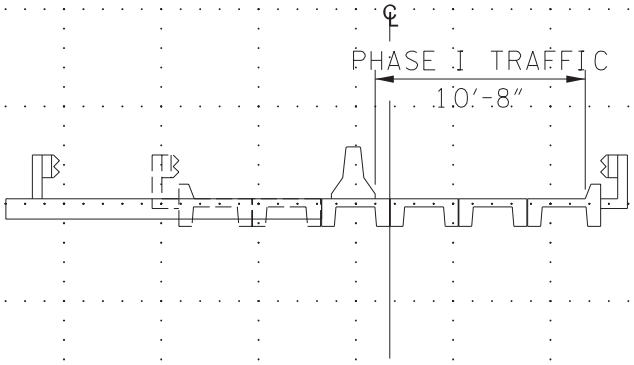
BRIDGE ID: 24015420001

EXISTING STRUCTURE

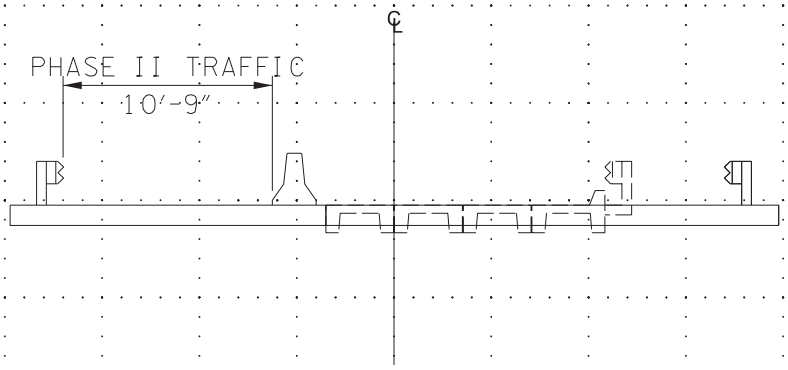


TOTAL WIDTH: 21'-8"

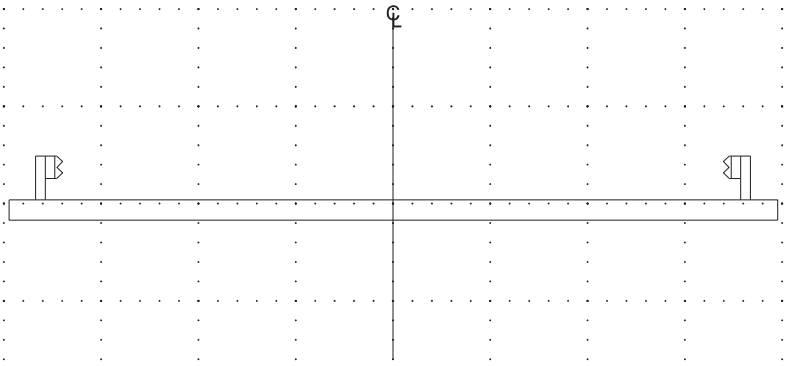
PHASE I



PHASE II



PROPOSED STRUCTURE



TOTAL WIDTH: 39'-6"

0' 5' 10' 15'

SCALE: 1" = 10'

PROPOSED TYPICAL SECTION AND PHASED CONSTRUCTION

MACON RD (SR193) FAYETTE COUNTY

BRIDGE OVER UNNAMED BRANCH @ L.M. 11.48

BRIDGE ID: 24015420001

COST ESTIMATE SUMMARY

Route:	SR -193 (Macon Road)
Description:	Bridge TIR
	RCBB over Branch
County:	Fayette
Length:	0.1 Mile
Date:	March 9, 2018

DESCRIPTION	LOCAL 0%	STATE 0%	FEDERAL 0%	TOTAL	% Contribution
Construction Items					
Pavement Removal	$0	$0	$0	$6,900	1.57%
Asphalt Paving	$0	$0	$0	$60,200	13.73%
Concrete Pavement	$0	$0	$0	$0	0.00%
Drainage	$0	$0	$0	$4,200	0.96%
Appurtenances	$0	$0	$0	$0	0.00%
Structures	$0	$0	$0	$227,500	51.88%
Fencing	$0	$0	$0	$0	0.00%
Signalization	$0	$0	$0	$20,000	4.56%
Railroad Crossing or Separation	$0	$0	$0	$0	0.00%
Earthwork	$0	$0	$0	$69,300	15.80%
Clearing and Grubbing	$0	$0	$0	$0	0.00%
Seeding & Sodding	$0	$0	$0	$4,500	1.03%
Rip-Rap or Slope Protection	$0	$0	$0	$1,400	0.32%
Guardrail	$0	$0	$0	$21,400	4.88%
Signing	$0	$0	$0	$400	0.09%
Pavement Markings	$0	$0	$0	$2,100	0.48%
Maintenance of Traffic	$0	$0	$0	$20,600	4.70%
Mobilization (5%)	$0	$0	$0	$21,900	
Other Items = 10%	$0	$0	$0	$46,000	
Const. Contingency = 15%	$0	$0	$0	$41,800	
Construction Estimate	$0	$0	$0	$548,200	
Interchanges & Unique Intersections					
Roundabouts	$0	$0	$0	$0	
Interchanges	$0	$0	$0	$0	
Right-of-Way & Utilties	**LOCAL 0%**	**STATE 0%**	**FEDERAL 0%**	**TOTAL**	
Right-of-Way	$0	$0	$0	$9,500	
Utilities	$0	$0	$0	$136,300	
Preliminary & Construction Engineering and Inspection					
Prelim. Eng. 10%	$0	$0	$0	$69,400	
Const. Eng. & Inspec. 10%	$0	$0	$0	$69,400	
Total Project Cost	$0	$0	$0	$ 833,000	

Per Mile Cost
$ 10,412,500.00

PAY ITEM SUMMARY

TDOT PAY ITEM	TDOT DESCRIPTION	UNIT	TOOL QUANTITIES	ADDITIONAL QUANTITIES	TOOL QUANTITIES + ADDITIONAL QUANTITIES	Statewide UNIT COST	TOTAL COST
Pavment Removal							
415-01.02	Cold Planning Bituminous Pavement	SY	892		892	$ 7.63	$ 6,800.56
						PAVEMENT REMOVAL TOTAL (ROUNDED)	**$ 6,900**
Asphalt Roads							
303-01	Mineral Aggregate, Type A Base, Grading D	TON	1248		1248	$ 31.98	$ 39,903.43
307-02.01	Asphalt Concrete Mix (PG70-22) (BPMB-HM) Grading A	TON	24		24	$ 101.32	$ 2,460.90
307-02.02	Asphalt Cement (PG70-22)(BPMB-HM) Grading A-S	TON	1		1	$ 727.26	$ 414.71
307-02.03	Aggregate (BPMB-HM) Grading A-S Mix	TON	18		18	$ 74.35	$ 1,370.76
307-02.08	Asphalt Concrete Mix (PG70-22) (BPMB-HM) Grading B-M2	TON	16		16	$ 113.83	$ 1,811.03
402-01	Bituminous Material For Prime Coat (PC)	TON	1		1	$ 713.29	$ 695.62
402-02	Aggregate For Cover Material (PC)	TON	4		4	$ 66.05	$ 232.50
403-01	Bituminous Material For Tack Coat (TC)	TON	0		0	$ 781.16	$ 311.08
411-01.07	ACS (PG64-22) GR "E"	TON	45		45	$ 112.43	$ 5,105.09
411-02.10	ACS Mix(PG70-22) Grading D	TON	68		68	$ 115.27	$ 7,884.87
						PAVING TOTAL (ROUNDED)	**$ 60,200**
Concrete Roads							
						CONCRETE RAMPS AND ROADWAYS TOTAL (ROUNDED)	**$ -**
Drainage							
607-05.02	24" Concrete Pipe Culvert (Class III)	LF	55	-55	0	$ 85.64	$ 17.13
710.02	Aggregate Underdrains (with pipe)	LF	845		845	$ 5.46	$ 4,612.61
						DRAINAGE TOTAL (ROUNDED)	**$ 4,200**
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	3191	-1595	1596	$ 16.79	$ 26,802.82
203-03	Borrow Excavation (Unclassified)	CY	2660	-1330	1330	$ 15.04	$ 19,996.92
						EARTHWORK & MINERAL TOTAL (ROUNDED)	**$ 69,300**
Structures							
N/A	Removal of Bridge	SF	814		814	$ 20.00	$ 16,280.00
N/A	New Bridge (Box):	SF	2011		2011	$ 105.00	$ 211,150.80
						STRUCTURES TOTAL (ROUNDED)	**$ 227,500**
Interchanges and Unique Intersections							
						INTERCHANGES AND UNIQUE INTERSECTIONS TOTAL (ROUNDED)	**$ -**
Lighting & Signalization							
730-40	Temporary Traffic Signal System	EA		1	1	$ 20,000.00	$ 20,000.00
						LIGHTING & SIGNALIZATION TOTAL (ROUNDED)	**$ 20,000**
Guardrail							
705-02.02	Single Guardrail (Type 2)	LF	232	130	362.32	$ 18.79	$ 6,809.37
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)	**$ 21,400**
Seeding and Sodding							
801-01	Seeding (With Mulch)	UNIT	37		37	$ 77.90	$ 2,879.12
801-01.07	Temporary Seeding (With Mulch)	UNIT	28		28	$ 29.91	$ 829.03
801-02	Seeding (Without Mulch)	UNIT	28		28	$ 28.44	$ 788.41
						SODDING TOTAL (ROUNDED)	**$ 4,500**
Maintenace of Traffic							
N/A	Traffic Control	LS	1		1		$ 16,716.00
712-02.02	Interconnected Portable Barrier Rail	LF	21	55	76	$ 31.96	$ 2,432.77
712-01.02	Lane Closure	EA		1	1	$ 117.36	$ 117.36
712-04.01	Flexible Drums (Channelizing)	EA		50	50	$ 25.83	$ 1,291.64
						MAINTENANCE OF TRAFFIC TOTAL (ROUNDED)	**$ 20,600**
Signs							
Not Listed	Signs (Construction)	LS	1		1	$ -	$ 400
						SIGNING TOTAL (ROUNDED)	**$ 400**
Pavement Markings							
716-13.06	Spray Thermo P.M. (40 mil 4")	LM	0.7		0.7	$ 2,886.74	$ 2,032.26
						PAVEMENT MARKINGS TOTAL (ROUNDED)	**$ 2,100**
Fencing							
						FENCE TOTAL (ROUNDED)	**$ -**
Rip-Rap							
709-05.08	Machined Rip-Rap (Class B)	TON		40	40	$ 33.70	$ 1,347.90
						RIP-RAP & SLOPE PROTECTION TOTAL (ROUNDED)	**$ 1,400.00**
Clearing and Grubing							
						CLEAR AND GRUBBING TOTAL (ROUNDED)	**$ -**
Railroad At-Grade Crossing							
						RAILROAD CROSSING OR SEPARATION TOTAL (ROUNDED)	**$ -**
Utilties							
N/A	Overhead Distribution	LM	0.1		0.1	$ 375,000	$ 37,500
N/A	Underground Communication	LM	0.1		0.1	$ 500,000	$ 50,000
N/A	Underground Gas	LM	0.1		0.1	$ 250,000	$ 25,000
N/A	Underground Water	LM	0.1		0.1	$ 237,600	$ 23,760
						UTILITIES TOTAL (ROUNDED)	**$ 136,300.00**
Right-of-Way							
N/A	Right-of-Way	LS	1		1	$ 9,454.55	$ 9,454.55
						RIGHT-OF-WAY TOTAL (ROUNDED)	**$ 9,500.00**

BRIDGE TIR

Fayette
SR-193 (Macon Rd.) at LM 11.48

LOCATION			
Bridge #:	24015420001	Feature Crossed:	Unnamed Branch
Road Name:	SR-193 (Macon Rd.)	Log mile:	11.48
Route ID:	SR193	System:	05-STP Rural State
City:	Macon	Functional Class:	Rural Major Collector
County:	Fayette	State Project Number	24029-0207-94
PIN:	124285.00		

ROADWAY		
	Existing	**Proposed (Preliminary Design Estimate)**
Design Standard		RD01-TS-2 / 2011 Green Book
Route Characteristics		
AADT:	1540	1730
AADT Year:	2022	2042
Terrain:	Rolling	Rolling
No. Lanes:	2	2
Speed(Posted):	45	50
Speed (Design):		50
Approach Character.		
Lane Width (ft):	9	11
Shoulder Width (ft):	4	6
ROW Width (ft):	60	90
ROW Tracts Affected		2
ROW Required (acre)		0.16
Cross Section Width (ft):	18/26/60	22/34/90
Approach Length (ft):		170' (north), 170' (south)
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, OH electric, UG Fiber, UG Gas	N/A
Utilities to be Relocated	N/A	UG water, OH electric, UG Fiber, UG Gas
Comments	Discussions at Field Review on large farming equipment having impacts on existing guardrail.	This project has been recommended for design build by the Construction Division within TDOT.

BRIDGE TIR

Fayette
SR-193 (Macon Rd.) at LM 11.48

STRUCTURE		
	Existing	**Proposed (Preliminary Design Estimate)**
Bridge Characteristics		
Year Built	1965	
Load Limit	15 tons	
Sufficiency Rating	44.6	
Skew	45	45
Structure Type	PCCS with Timber Substructure	2 @ 18'X6" RCBB
Structures in Channel	Yes	Yes
Length (ft)	37	53.74
No. Spans (App./Main)	0 | 2	0 | 2
Width (curb to curb) (ft)	20	34
Width (o to o) (ft)	21.6	39.5
Sidewalks on Structure	No	No
Vert. Clearance (ft)	7.5	6
Superstructure Depth (in)	17	N/A
Girder Depth (in)	17	N/A
Finish Grade-Low Girder (in)	17	N/A
High Water Marks	N/A	
Bridge Rail Type	Metal Gaurdrail	Metal Guardrail attached to Box
Bridge Rail Height (ft)	2.17	2.58
Indication Overtopping	No	
Local Scour	No	
Obstructions	No	
Other Structures	N/A	Another option to consider is an ABC approach to complete the project with a weekend road closure by utilizing a triple barrel precast box. This would save 4 feet of box length by reducing the 6 foot shoulders to 4 and would also eliminate the need for temporary traffic signals.
Comments	Concrete filled retaining walls added to each abutment. Mild timber decay of pier columns.	This project has been recommended for design build by the Construction Division within TDOT.

BRIDGE TIR

FLOW RATES (from USGS StreamStats Program Version 3)

Drainage Area (sq. miles)	1.15 sq mi
10 Year Discharge Rate (Q10) cfs	794
50 Year Discharge Rate (Q50) cfs	1060
100 Year Discharge Rate (Q100) cfs	1170

CHANNEL

Depth (ft)	6
Width of Normal Flow (ft)	25
Depth of Normal Flow (ft)	2
Skew of Channel with Roadway	45
Type of Material in Stream Bed	rock, gravel, sand, and silt
Type of Vegetation on Banks	low growth, large timber, dead trees
Are Channel Banks Stable	No
Signs of Stream Aggradation	No
Signs of Stream Degradation	No
Drift or Drift Potential	Yes
Comments	

FLOODPLAIN

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

MAINTENANCE OF TRAFFIC

Method of Maintaining Traffic	stage construct
Description	Utilizing traffic signals, the new box bridge will be stage constructed while maintaining one lane open during construction. It should be noted that the signals will have to be moved back on either end due to horizontal and vertical curve limitations. Additional signage and message boards will be required.
Comments	Another option to consider is an ABC approach to complete the project with a weekend road closure by utilizing a triple barrel precast box.

BRIDGE TIR

Fayette
SR-193 (Macon Rd.) at LM 11.48

SITE VISIT ATTENDEES			DATE: 3/17/2016
Name	Organization	Phone	Email
Mike Gilbert	TDOT (STID)	615-741-0772	michael.gilbert@tn.gov
Glen Blankenship	TDOT - Survey	731-935-0137	glen.blankenship@tn.gov
James Boyd	TDOT - Survey	731-935-0138	james.boyd@tn.gov
Derek Ryan	TDOT- Traffic		derek.ryan@tn.gov
Willie Coleman	TDOT - Utilities	731-935-0160	willie.coleman@tn.gov
Marcus Powell	TDOT	901-537-4399	marcus.l.powell@tn.gov
Jason D. Moody	TDOT	731-935-0183	jason.d.moody@tn.gov
Ryan Philpott	TDOT	731-935-0147	ryan.philpott@tn.gov
Dustin Tucker	TDOT	731-935-0101	dustin.tucker@tn.gov
Evelyn DiOrio	TDOT	731-935-0302	evelyn.diorio@tn.gov
Eric Philipps	TDOT	731-935-0174	eric.philipps@tn.gov
Elizabeth Cardwell	TDOT	731-935-0243	elizabeth.cardwell@tn.gov
Peter DeLong	TDOT	731-935-0338	peter.delong@tn.gov
Todd Kemp	Palmer	615-476-0772	tkemp@palmernet.com
Kyle McLemore	Palmer	615-297-8957	kmclemore@palmernet.com

TENNESSEE DEPARTMENT OF TRANSPORTATION
STRATEGIC TRANSPORTATION INVESTMENTS DIVISION

PROJECT NO.: 24029-1207-94 ROUTE: S.R. 193
COUNTY: FAYETTE CITY:
PROJECT PIN NUMBER: 124285.00
PROJECT DESCRIPTION: BRIDGE OVER BRANCH (L.M. 11.48)
BRIDGE ID: 24015420001

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
1,540	2022	1,730	190	11	2042	65-35	3	4	42	58

REQUESTED BY: NAME MICHAEL GILBERT DATE 2/28/18
DIVISION S.T.I.D.
ADDRESS J.K. POLK BLDG.
NASHVILLE, TN. 37243

REVIEWED BY: TONY ARMSTRONG Tony Armstrong DATE 2.28.18
TRANSPORTATION MANAGER 1
SUITE 1000, JAMES K. POLK BUILDING

APPROVED BY: JIM WATERS DATE 3/1/18
ASSISTANT DIRECTOR
SUITE 1000, JAMES K. POLK BUILDING

COMMENTS:

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

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

NOTE: FOR BRIDGE REPLACEMENT PROJECTS, ADLs ARE NOT REQUIRED FOR ADTs OF 1000 OR LESS AND PERCENTAGE OF TRUCKS OF 7% OR LESS.
SEE ATTACHMENTS FOR TURNING MOVEMENTS AND/OR OTHER DETAILS. (REV. 2/22/17)

TENNESSEE DEPARTMENT OF TRANSPORTATION
STRATEGIC TRANSPORTATION INVESTMENTS DIVISION

PROJECT NO.: 24029-1207-94 ROUTE NO.: S.R. 193
COUNTY: FAYETTE CITY:
PROJECT DESCRIPTION: BRIDGE OVER BRANCH (L.M. 11.48)
BRIDGE ID: 240154200001

FAP Rural

Pavement Structural Design

Calculation of Equivalent Daily 18 Kip Single Axle Loads

Type Vehicle		ADT (No. Counted)	Flexible 18-kip Factor	Flexible ADL	Rigid 18-kip Factor	Rigid ADL
Pass. cars and motorcycles (1-2)		973	0.001	1	0.001	1
Pick-up, Panel, Van (3)		597	0.005	3	0.004	2
Sing. Unit	Buses (4)	0	0.300	0	0.300	0
	2-axle, 6-tire (5)	13	0.240	3	0.310	4
	3-axle or more (6-7)	26	1.700	44	2.300	60
Comb.	4-axle (8)	11	1.110	12	1.500	17
	5-axle or more (9-13)	15	1.320	20	2.200	33
Totals (2032 AADT)		1,635		83		117

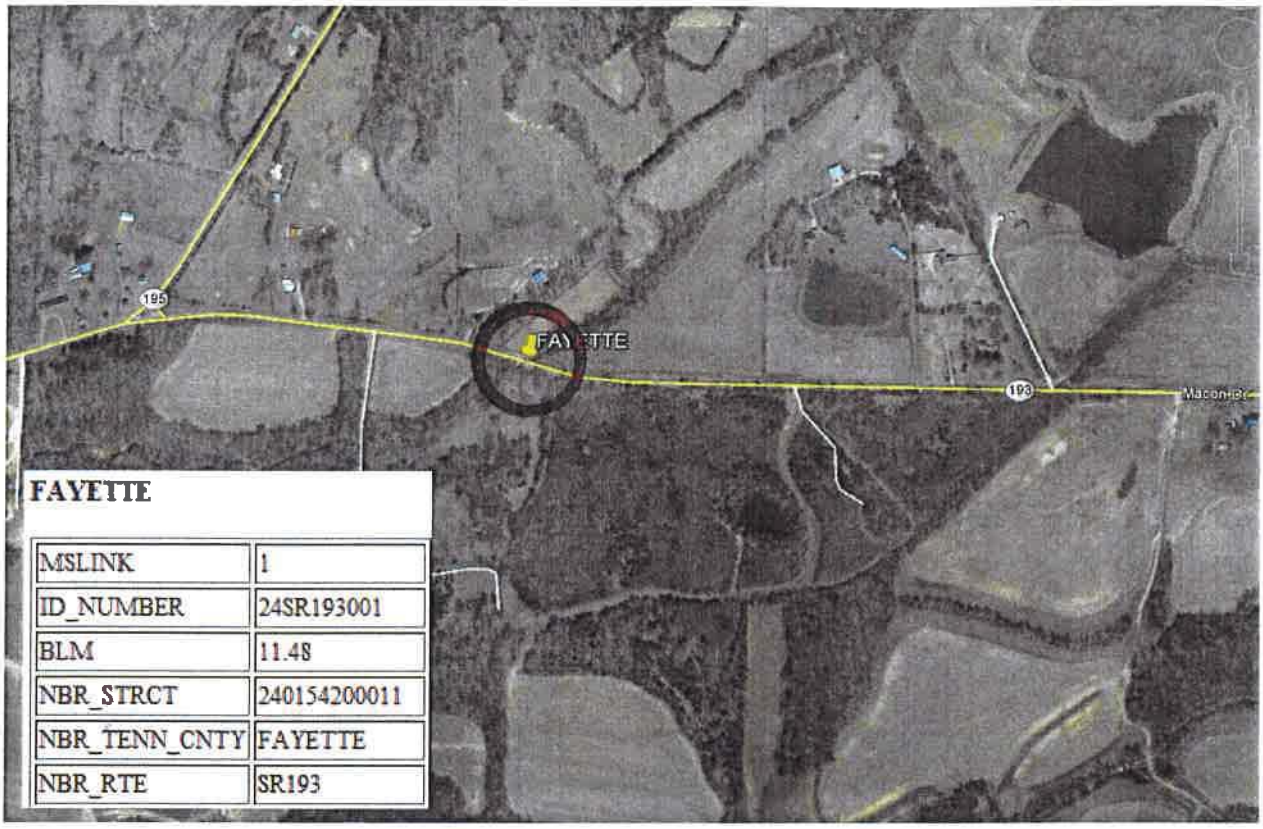
Suggested Percentages of Trucks in Design Lane

5,000 or less ADT	95%
5,000 - 10,000 ADT	90%
10,000 - 15,000 ADT	85%
15,000 - 20,000 ADT	80%
20,000 - 30,000 ADT	75%
30,000 - 40,000 ADT	70%
40,000 Plus	60%

No. of Lanes: 2
% Trucks in Design Lane: 100%
ADL in Design Lane:

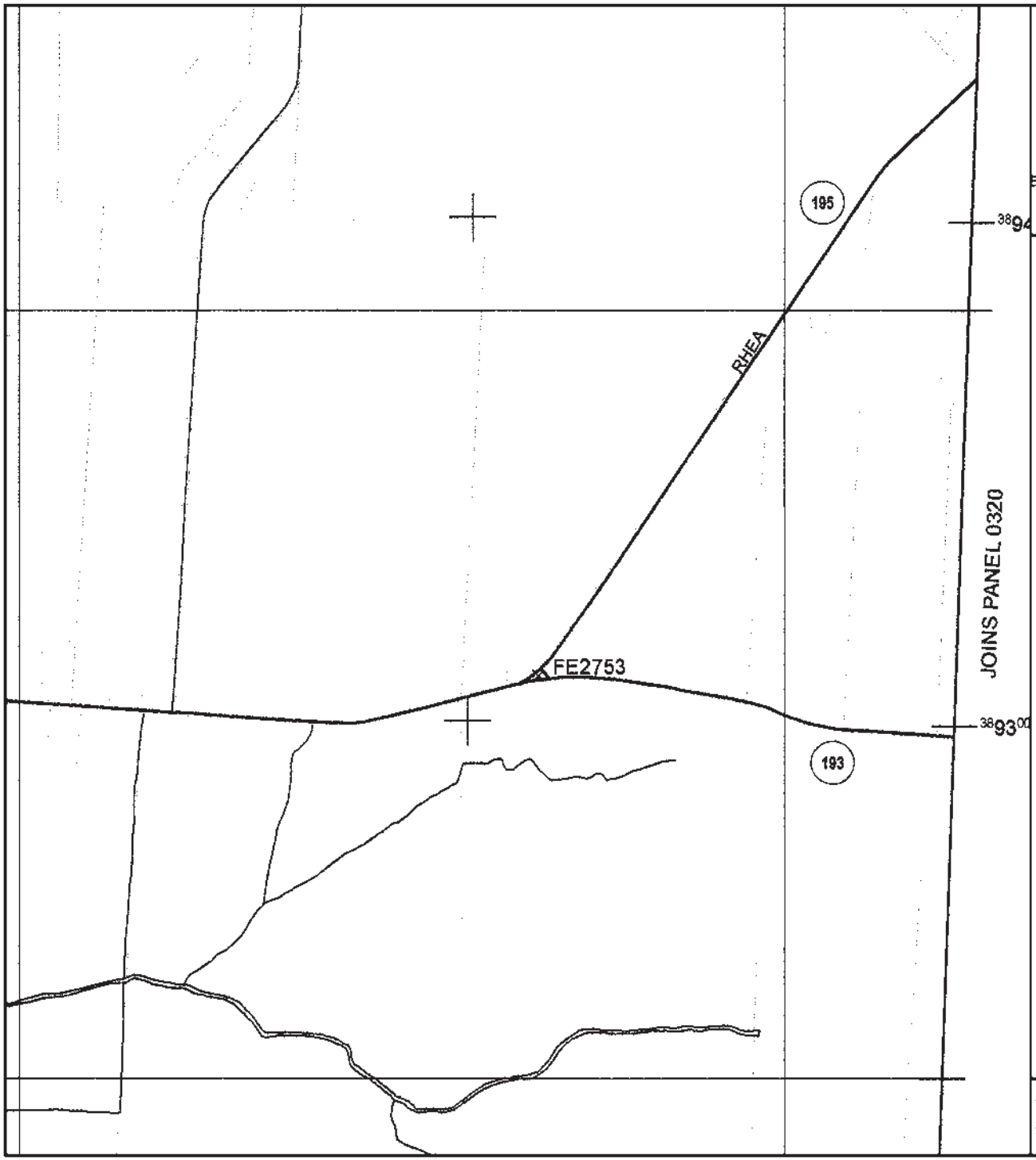
FLEX:	0.5	X	1.00	X	83.3	=	42
RIGID:	0.5	X	1.00	X	116.7	=	58

ADL Calculations By: RANDY BOGUSKIE Date: 2/28/2018
Reviewed By: Tony Kuntz Date: 2.28.18
[REV. 7/1/14]



FAYETTE COUNTY

S.R. 193 @ L.M. 11.48



MAP SCALE 1" = 1000'

500 0 500 1,000 1,500 2,000 FEET

METE

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0315C

FIRM

FLOOD INSURANCE RATE MAP

FAYETTE COUNTY, TENNESSEE

AND INCORPORATED AREAS

PANEL 315 OF 605

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
FAYETTE COUNTY	470352	0315	C
OAKLAND, TOWN OF	470418	0315	C

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.

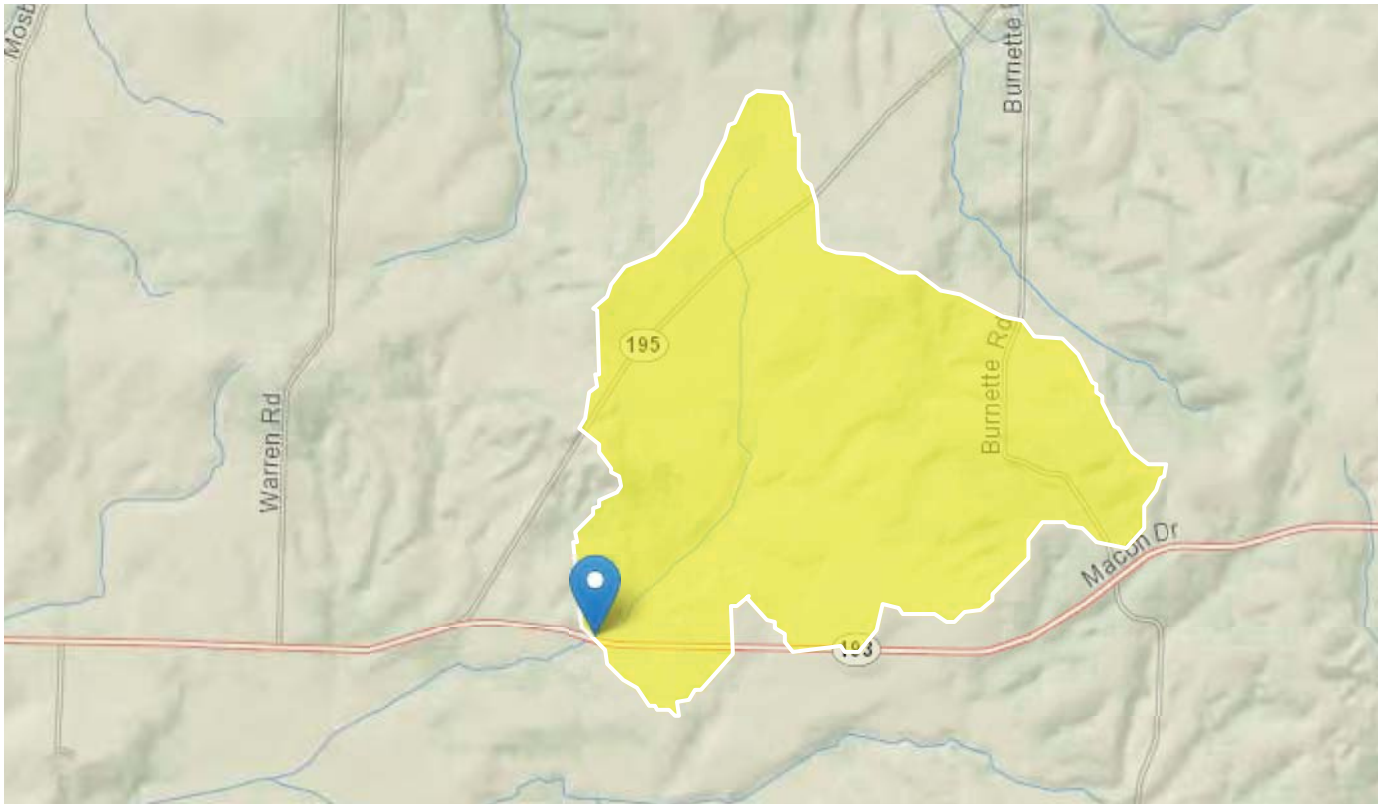
MAP NUMBER
47047C0315C

EFFECTIVE DATE
NOVEMBER 5, 2008

Federal Emergency Management Agency

Fayette SR 193 @ LM 11.48 StreamStats Report

Region ID: TN
Workspace ID: TN20180205214405755000
Clicked Point (Latitude, Longitude): 35.15558, -89.44109
Time: 2018-02-05 15:44:20 -0600



Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
CONTDA	Area that contributes flow to a point on a stream	1.15	square miles
DRNAREA	Area that drains to a point on a stream	1.15	square miles
RECESS	Number of days required for streamflow to recede one order of magnitude when hydrograph is plotted on logarithmic scale	140	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)	2.424	dimensionless
SOILPERM	Average Soil Permeability	1.07	inches per hour
TNCLFACT2	Tennessee climate factor, 2-year interval	2.424	
TNSOILFAC	Tennessee soil factor, percentage of area underlain by a soil permeability greater than or equal to 2 inches per hour	37	
CSL10_85	Change in elevation divided by length between points 10 and 85 percent of distance along main channel to basin divide - main channel method not known	49.48	feet per mi

Peak-Flow Statistics Parameters [DAOnly Area 4]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
CONTDA	Contributing Drainage Area	1.15	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	469	ft^3/s	247	893	38.7	38.7	1.8
5 Year Peak Flood	667	ft^3/s	358	1240	37.2	37.2	2.4
10 Year Peak Flood	794	ft^3/s	422	1500	38	38	3.1
25 Year Peak Flood	950	ft^3/s	488	1850	40.1	40.1	3.8
50 Year Peak Flood	1060	ft^3/s	527	2140	42.2	42.2	4.2
100 Year Peak Flood	1170	ft^3/s	560	2450	44.7	44.7	4.4
500 Year Peak Flood	1420	ft^3/s	618	3270	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	1.15	square miles	2	2405
RECESS	Recession Index	140	days per log cycle	32	350
PERMGTE2IN	Percent permeability gte 2 in per hr	37.002	percent	2	98

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

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

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

Statistic	Value	Unit
7 Day 10 Year Low Flow	0.0156	ft^3/s
30 Day 5 Year Low Flow	0.0359	ft^3/s

Low-Flow Statistics Citations

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

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

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	1.15	square miles	2	2405
RECESS	Recession Index	140	days per log cycle	32	350
CLIMFAC2YR	Tennessee Climate Factor 2 Year	2.424	dimensionless	2.307	2.455
PERMGTE2IN	Percent permeability gte 2 in per hr	37.002	percent	2	98

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

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

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

Statistic	Value	Unit
Mean Annual Flow	1.5	ft^3/s

Annual Flow Statistics Citations

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

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

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	1.15	square miles	2	2405
RECESS	Recession Index	140	days per log cycle	32	350
PERMGTE2IN	Percent permeability gte 2 in per hr	37.002	percent	2	98

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

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

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

Statistic	Value	Unit
Summer Mean Flow	0.328	ft^3/s

Seasonal Flow Statistics Citations

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

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

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	1.15	square miles	2	2405
RECESS	Recession Index	140	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	2.424	dimensionless	2.307	2.455
SOILPERM	Average Soil Permeability	1.07	inches per hour	0.97	2.44

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

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

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

Statistic	Value	Unit
99.5 Percent Duration	0.0144	ft^3/s
99 Percent Duration	0.0206	ft^3/s
98 Percent Duration	0.0273	ft^3/s
95 Percent Duration	0.0391	ft^3/s
90 Percent Duration	0.0532	ft^3/s
80 Percent Duration	0.0775	ft^3/s
70 Percent Duration	0.119	ft^3/s
60 Percent Duration	0.178	ft^3/s
50 Percent Duration	0.24	ft^3/s
40 Percent Duration	0.406	ft^3/s
30 Percent Duration	1.04	ft^3/s
20 Percent Duration	1.81	ft^3/s
10 Percent Duration	3.16	ft^3/s

Flow-Duration Statistics Citations

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

CHECK LIST OF DETERMINANTS FOR LOCATION STUDY

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

1.	Agricultural land usage	X
2.	Airport (existing or proposed)	
3.	Commercial area, shopping center	
4.	Floodplains	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	
12.	Waterway, lake, pond, river, stream, spring	

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	

Transportation Investment Report
Bridge ID: #24015420001
Fayette County
SR-193 (Macon Rd.) at LM 11.48 over Branch

Bridge Number

Looking west across bridge

Transportation Investment Report
Bridge ID: #24015420001
Fayette County
SR-193 (Macon Rd.) at LM 11.48 over Branch

Looking west across bridge standing near east end of bridge

Looking west standing near middle of bridge

Transportation Investment Report
Bridge ID: #24015420001
Fayette County
SR-193 (Macon Rd.) at LM 11.48 over Branch

Looking east across bridge standing near west end of bridge

Looking east standing near middle of bridge

Transportation Investment Report
Bridge ID: #24015420001
Fayette County
SR-193 (Macon Rd.) at LM 11.48 over Branch

Looking east standing off east end of bridge

Pavement failure at west end of bridge

Transportation Investment Report
Bridge ID: #24015420001
Fayette County
SR-193 (Macon Rd.) at LM 11.48 over Branch

Looking at downstream side standing off SW corner of bridge

Looking at upstream side standing off NW corner of bridge

Transportation Investment Report
Bridge ID: #24015420001
Fayette County
SR-193 (Macon Rd.) at LM 11.48 over Branch

Looking at downstream side standing off SE corner of bridge

Looking north at upstream side standing on bridge

Transportation Investment Report
Bridge ID: #24015420001
Fayette County
SR-193 (Macon Rd.) at LM 11.48 over Branch

Looking south at downstream side standing on bridge

Looking south at downstream side standing on bridge

Transportation Investment Report
Bridge ID: #24015420001
Fayette County
SR-193 (Macon Rd.) at LM 11.48 over Branch

Looking at west abutment standing on the south side of bridge

Looking at west abutment standing on the south side of bridge

Transportation Investment Report
Bridge ID: #24015420001
Fayette County
SR-193 (Macon Rd.) at LM 11.48 over Branch

Looking at east abutment standing on the south side of bridge

Looking under bridge deck

Transportation Investment Report
Bridge ID: #24015420001
Fayette County
SR-193 (Macon Rd.) at LM 11.48 over Branch

Looking at west abutment standing under bridge

Looking at center pier and east abutment standing under bridge

Transportation Investment Report
Bridge ID: #24015420001
Fayette County
SR-193 (Macon Rd.) at LM 11.48 over Branch

Looking at west abutment standing under bridge

Looking at center pier and east abutment standing under bridge

Transportation Investment Report
Bridge ID: #24015420001
Fayette County
SR-193 (Macon Rd.) at LM 11.48 over Branch

Looking at center pier and east abutment standing under bridge

Environmental Studies Request

Environmental Studies Request

Project Information

Route: State Route 193 (Macon Road)

Termini: Bridge (ID 24015420001) over Unknown Branch, Log Mile 11.48

County: Fayette

PIN: 124285.00

Request

Request Type: Initial Environmental Study

Project Plans: Transportation Investment Report

Date of Plans: 03/27/2018

Location: Email Attachment

Certification

Requestor: Crystal M. Alfaro

Title: TESS - NEPA

Signature: Crystal M. Alfaro

Digitally signed by Crystal M. Alfaro
DN: cn=Crystal M. Alfaro, o=TN Dept. of Transportation, ou=Environmental Division - NEPA, email=crystal.alfaro@tn.gov, c=US
Date: 2018.06.05 14:33:29 -05'00'

Ecology

Environmental Study

Technical Section

Section: Ecology

Study Results

Based on the TIR dated 3-28-18, the Environmental Boundaries Report dated 7-16-18 for this project is still valid.

Commitments

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

Cliff swallow and barn swallow nests, eggs, or birds (young and adults) will not be disturbed between April 15 and July 31. From August 1 to April 14, nests can be removed or destroyed, and measures implemented to prevent future nest building at the site (e.g., closing off area using netting).

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: 2018.07.30 08:34:08 -05'00'

Environmental Boundaries Report

SR-193 (Macon Drive) Bridge over Branch, LM 11.48

Project Number: 24029-0207-94

PIN: 124285.00

Fayette County, Tennessee

Prepared by:
Tennessee Department of Transportation – TDOT
Region 4

Environmental Boundaries Report Index

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

JOHN C. SCHROER
COMMISSIONER

BILL HASLAM
GOVERNOR

MEMORANDUM

To: Dennis Moultrie
Design Division

From: Eric Philipps
Environmental Tech Office, Region 4

Eric Philipps
Digitally signed by Eric Philipps
Date: 2018.07.20 15:22:59 -05'00'

Date: July 16, 2018

Subject: **Environmental Boundaries For**: Fayette County, SR-193 (Macon Drive), Bridge over Branch, LM 11.48
PE: 24029-0207-94 **PIN:** 124285.00

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

SPRINGS/STREAMS

There is **one (1)** stream within the project limits.

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

WET WEATHER CONVEYANCES/UPLAND DRAINAGE FEATURES

There is one (1) wet weather conveyance/upland drainage feature within the project limits.

WETLANDS

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

OTHER FEATURES

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

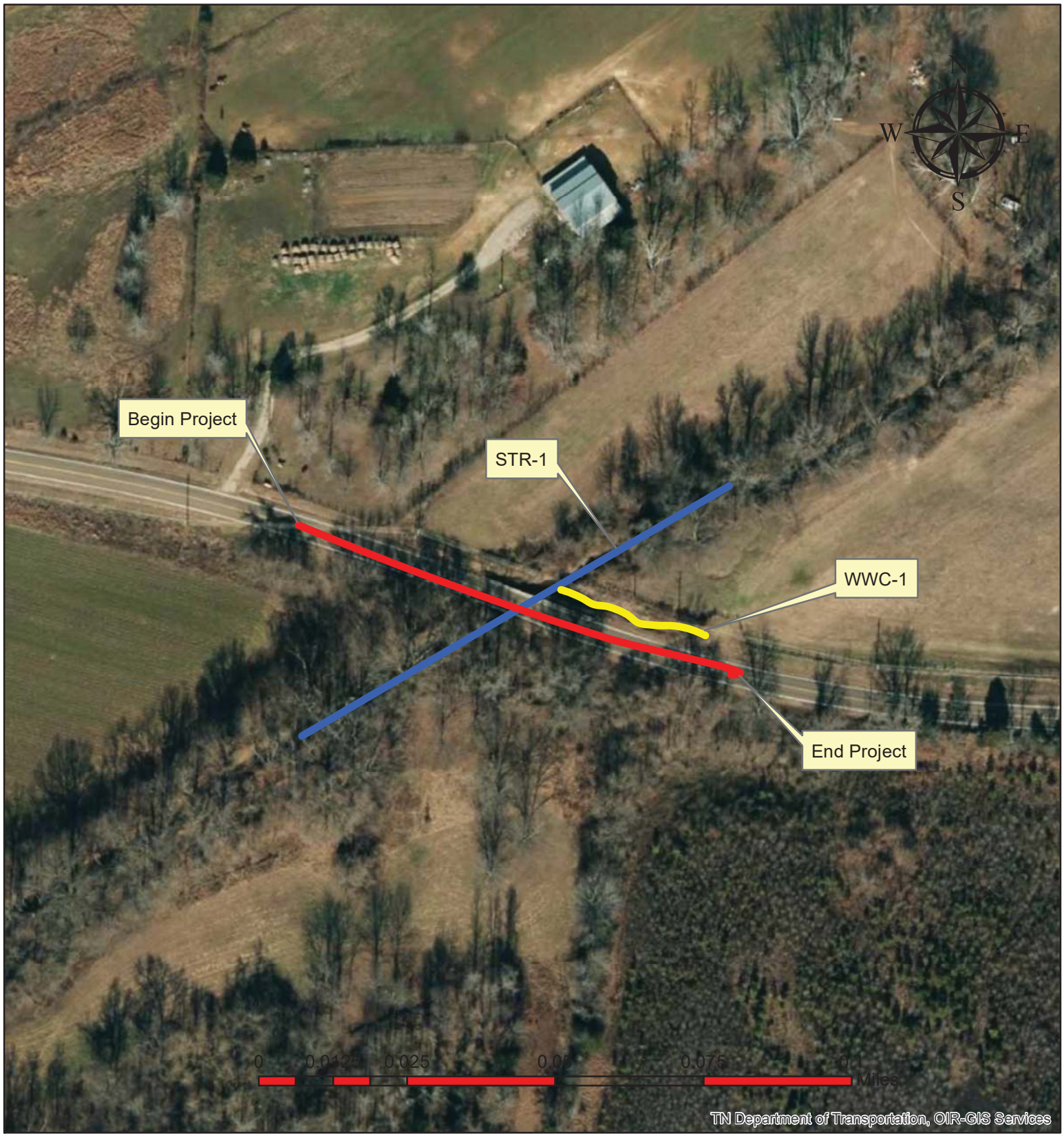
PROTECTED SPECIES

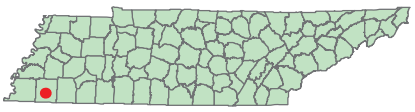
A search of the TDEC rare species database was performed on June 21, 2018. Coordination with TWRA and USFWS is included within this report.

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

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

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





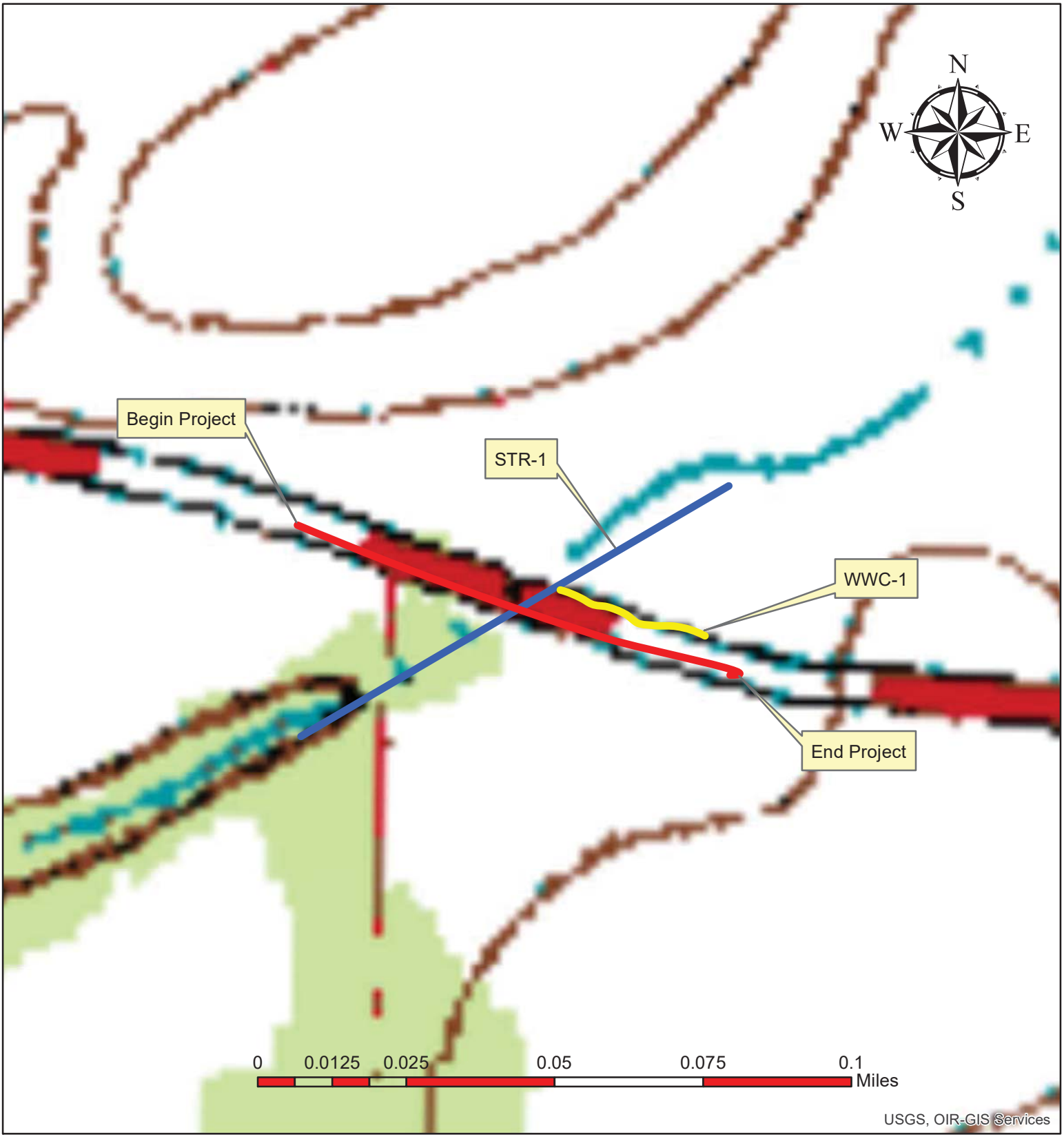
Page 5

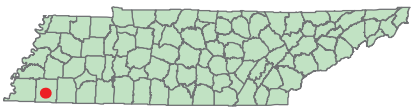
Fayette County; SR-193 (Macon Road), Bridge over Unknown Branch, LM 11.48

P.E. 24029-0207-94
PIN 124285.00

07/03/2018

TN TDOT Department of Transportation





Fayette County; SR-193 (Macon Road), Bridge over Unknown Branch, LM 11.48

P.E. 24029-0207-94
PIN 124285.00

07/03/2018

TN TDOT Department of Transportation

Preliminary Impact Form

County: Fayette Route: SR-193 PIN: 124285.00

Date Prepared: 7/17/2018

Prepared by:
TDOT Region 4 - Environmental Tech Office

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

Streams

Labels	Type *	Function	Quality	Impacts (feet)		
				Permanent	Temporary	Total
STR-1	Stream		Undetermined at this time	100		100
			Total	**100**		**100**

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

Table 1. Calculation of Normal Weather Conditions / Ames Plantation, TN - June 2018
Source: AgAcis, 1988-2018 WETS, Ames Plantation

		Long-term Rainfall Records							
	Month	Minus one Std. Dev (DRY)	Normal (Mean Inches)	Plus One Std. Dev. (WET)	Actual Rainfall	Condition	Condition Value	Month Weight Value	Product of Previous two columns
1st month prior	May	3.73	5.69	6.84	6.77	Normal	2	3	6
2nd Month prior	Apr	4.01	5.46	6.42	6.37	Normal	2	2	4
3rd month prior	Mar	4.07	5.59	6.58	7.86	Wet	3	1	3
								Sum	13

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

Condition Value	
Dry =	1
Normal =	2
Wet=	3

Conclusions:

Prior period has been normal.

Ecology Field Data Sheet: **Water Resources**

Project:	Fayette County; SR-193 (Macon Drive) Bridge over Unknown Branch, LM 11.48				
Biologist:	Eric Philipps	**Affiliation:**	TDOT	**Date:**	06/13/2018

1-Station: from plans	No stations									
2-Map label and name	STR-1									
3-Latitude/Longitude	Crossing SR-193 at approx. 35.155602, -89.441124									
4-Potential impact	Encapsulation/Fill									
5-Feature description:										
-channel identification	perennial stream		intermittent stream		ephemeral stream		wwc			
-HD score (if applicable)										
-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	~6 ft		-top of bank width		~15 ft					
- avg. gradient of stream (%)	Low									
-bank height and slope ratio	LDB - ~8 ft				RDB - ~8 ft					
-water flow	fast ☐		moderate ☐		slow ✓		isolated pools ☐		none ☐	
-water depth (riffles / pools)	~.5 ft		water width (riffles / pools)		~6 ft					
-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, black walnut, elderberry, sumac									
	RDB: Boxelder, black walnut, elderberry, sumac									
-habitat assessment score	75									
	epifaunal substrate	3			channel alteration	5				
	channel substrate	3			channel sinuosity	4				
	pool variability	2			bank stability	LDB	6	RDB	6	
	sediment deposition	6			bank vegetative protection	LDB	6	RDB	6	
	channel flow status	18			riparian veg zone width	LDB	5	RDB	5	
-benthos	Assumed									
-fish	Observed									
-algae or other aquatic life	Periphyton observed									
6-photo numbers	1, 2									
7-rainfall information	1.74" in previous 7 days									
8-HUC -12 Code & Name	080102100303 Shaws Creek									
9-Confirmed by:										
10-Assessed	yes ☐		no ✓							
11-ETW	yes ☐		no ✓							
12-303 (d) List	yes ☐		siltation ☐		habitat: ☐		other: ☐			
	no ✓									
13-Notes	Stream is listed on TDEC waterviewer as Misc. Tribs to Shaws Creek (TN08010210021_0999). 2 barn swallow nests and 2 juveniles observed under bridge.									

Ecology Field Data Sheet: **Water Resources**

Project:	Fayette County; SR-193 (Macon Drive) Bridge over Unknown Branch, LM 11.48				
Biologist:	Eric Philipps	**Affiliation:**	TDOT	**Date:**	06/13/2018

1-Station: from plans	No stations				
2-Map label and name	WWC-1				
3-Latitude/Longitude	From 35.155518, -89.441048 (confluence with STR-1) to 35.155483, -89.440559 (field drive north of SR-193)				
4-Potential impact	Encapsulation/Fill				
5-Feature description:					
-channel identification	perennial stream	intermittent stream	ephemeral stream	WWC	
-HD score (if applicable)	13				
-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	~2 ft	-top of bank width	~5 ft		
- avg. gradient of stream (%)	Low				
-bank height and slope ratio	LDB - ~6 ft		RDB - ~6 ft		
-water flow	fast ☐	moderate ☐	slow ☐	isolated pools ☑	none ☐
-water depth (riffles / pools)	~.5 ft	water width (riffles / pools)	~2 ft		
-bank stability: LDB, RDB	LDB: Stable ☑	Eroding ☐	Undercutting ☐	Sloughing ☐	Exposed Roots ☐
	RDB: Stable ☑	Eroding ☐	Undercutting ☐	Sloughing ☐	Exposed Roots ☐
-dominant riparian species: ----------(LDB /RDB)----------	LDB: American sweetgum, sumac, elderberry, elm				
	RDB: American sweetgum, sumac, elderberry, elm				
-habitat assessment score	0				

	epifaunal substrate		channel alteration				
	channel substrate		channel sinuosity				
	pool variability		bank stability	LDB		RDB	
	sediment deposition		bank vegetative protection	LDB		RDB	
	channel flow status		riparian veg zone width	LDB		RDB	

-benthos	None observed							
-fish	None observed							
-algae or other aquatic life	None observed							
6-photo numbers	3, 4							
7-rainfall information	1.74" in previous 24 hours							
8-HUC -12 Code & Name	080102100303 Shaws Creek							
9-Confirmed by:								
10-Assessed	yes ☐	no ☐						
11-ETW	yes ☐	no ☐						
12-303 (d) List	yes ☐	siltation ☐	habitat: ☐	other: ☐				
	no ☐							
13-Notes	Single pool of water observed near field drive east of bridge.							

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.4

County: Fayette	Named Waterbody:	Date/Time: 6/13/18	
Assessors/Affiliation: Eric Philipps, TDOT		Project ID: 124712.00	
Site Name/Description: WWC-1			
Site Location: NE corner of SR-193 and STR-1			
USGS quad: Macon, TN	HUC (12 digit): 080102100303 Shaws Creek	Lat/Long: From 35.155518, -89.441048 (confluence with STR-1) to 35.155483, -89.440559 (field drive north of SR-193)	
Previous Rainfall (7-days) : 1.74" in last 24 hours			
Precipitation this Season vs. Normal : very wet wet **average** dry drought unknown Source of recent & seasonal precip data : AgAcis			
Watershed Size : <.03 sq mi	Photos: Yes	Number : 3, 4	
Soil Type(s) / Geology : Collins silt loam, 0 to 2 percent slopes, occasionally flooded, brief duration			
Surrounding Land Use : Agricultural, Forested			
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : **Severe** Moderate 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) = 13

Justification / Notes : Feature is characterized as actively eroding roadside ditch. Parallels SR-193 and enters STR-1 north of roadway/bridge from the east.

Secondary Field Indicator Evaluation

A. Geomorphology (Subtotal =) 5		**Absent**	**Weak**	**Moderate**	**Strong**
1. Continuous bed and bank	3	0	1	2	3
2. Sinuous channel	0	0	1	2	3
3. In-channel structure: riffle-pool sequences	0.5	0	1	2	3
4. Sorting of soil textures or other substrate	1	0	1	2	3
5. Active/relic floodplain	0	0	1	2	3
6. Depositional bars or benches	0	0	1	2	3
7. Braided channel	0	0	1	2	3
8. Recent alluvial deposits	0.5	0	0.5	1	1.5
9. Natural levees	0	0	1	2	3
10. Headcuts	0	0	1	2	3
11. Grade controls	0	0	0.5	1	1.5
12. Natural valley or drainageway	0	0	0.5	1	1.5
13. At least second order channel on existing USGS or NRCS map		No = 0			

B. Hydrology (Subtotal =) 5.5		**Absent**	**Weak**	**Moderate**	**Strong**
14. Subsurface flow/discharge into channel	1	0	1	2	3
15. Water in channel and >48 hours since sig. rain	1	0	1	2	3
16. Leaf litter in channel (January – September)	1	1.5	1	0.5	0
17. Sediment on plants or on debris	0.5	0	0.5	1	1.5
18. Organic debris lines or piles (wrack lines)	0.5	0	0.5	1	1.5
19. Hydric soils in stream bed or sides of channel		Yes = 1.5			

C. Biology (Subtotal =) 2.5		**Absent**	**Weak**	**Moderate**	**Strong**
20. Fibrous roots in channel [1]	1.5	3	2	1	0
21. Rooted plants in channel [1]	1	3	2	1	0
22. Crayfish in stream (exclude in floodplain)	0	0	0.5	1	1.5
23. Bivalves/mussels	0	0	1	2	3
24. Amphibians	0	0	0.5	1	1.5
25. Macrobenthos (record type & abundance)	0	0	1	2	3
26. Filamentous algae; periphyton	0	0	1	2	3
27. Iron oxidizing bacteria/fungus	0	0	0.5	1	1.5
28.Wetland plants in channel [2]	0	0	0.5	1	2

[1] Focus is on the presence of upland plants. [2] Focus is on the presence of aquatic or wetland plants.

Total Points = 13

Under Normal Conditions, Watercourse is a Wet Weather Conveyance if Secondary Indicator Score < 19 points

Notes : Feature is characterized as actively eroding roadside ditch. Parallels SR-193 and enters STR-1 north of roadway/bridge from the east.

Date of field study: 6/13/18 Date TDEC database checked: 6/21/18 Completed by: Eric Philipps

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					
Hyla gratiosa (Barking tree frog) (A)	-	T		A	A	Low wet woods and swamps esp. with ephemeral ponds. 1993-08. Austin Peay State University Department of Zoology.	

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 #
Barn Swallow (*Hirundo rustica*)	2 nests, 2 juveniles	Underneath bridge (35.155602, -89.441124)	April 15 – July 31	

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]
None	

[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

4 Mile T&E Species

SCIENTIFIC_NAME	COMMON_NAME	LAST_OBS_DATE	FED_PROTECTION	ST_PROTECTION	EO_RANK
Hyla gratiosa	Barking Tree Frog	1993-08	--	D	Verified extant

From: John Griffith
To: Eric Philipps
Cc: Randall E. Mann; Lou Timms; Jared McCoy; Dustin Tucker; Rita M. Thompson; Greg Harris
Subject: RE: [EXTERNAL] Fayette County, SR-193 (Macon Road) Bridge over Branch, PIN 124285.00
Date: Friday, July 13, 2018 3:36:33 PM
Attachments: image001.png

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

Eric,
??
Thank you for requesting our review of the proposed SR-193 Bridge replacement over a tributary to Shaws Creek at LM 11.48 in Fayette County, Tennessee.?? Upon review of the information provided and our database, we would not anticipate impacts to any federally listed or proposed species as a result of the project.?? Therefore, based on the best information available at this time, we believe that the requirements of section 7 of the Endangered Species Act (Act) of 1973, as amended, are fulfilled for all species that currently receive protection under the Act.?? Obligations under section 7 of the Act must be reconsidered if (1) new information reveals impacts of the proposed action that may affect listed species or critical habitat in a manner not previously considered, (2) the proposed action is subsequently modified to include activities which were not considered during this consultation, or (3) new species are listed or critical habitat designated that might be affected by the proposed action.
??
TDOT's standard construction BMPs would be implemented during the project. Equipment staging and maintenance areas should be developed an adequate distance from the stream to avoid entry of petroleum-based pollutants into the water.?? Concrete and cement dust must be kept out of the water as they alter chemical properties and can be toxic to aquatic species. This email will serve as our official project response.?? Please let me know if we can offer further assistance.?? Thanks,
??
John Griffith
Transportation Biologist
U.S. Fish and Wildlife Service
Tennessee Field Office
931-525-4995 (office)
931-528-7075 (fax)
??

From: Eric Philipps <Eric.Philipps@tn.gov>
Sent: Thursday, June 21, 2018 2:07 PM
To: john_griffith@fws.gov
Cc: Randall E. Mann <Randall.E.Mann@tn.gov>; Lou Timms <Lou.Timms@tn.gov>; Jared McCoy <Jared.McCoy@tn.gov>; Dustin Tucker <Dustin.Tucker@tn.gov>; Rita M. Thompson <Rita.M.Thompson@tn.gov>; Greg Harris <Greg.Harris@tn.gov>
Subject: [EXTERNAL] Fayette County, SR-193 (Macon Road) Bridge over Branch, PIN 124285.00
??
John,

??

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

??

Thanks,

Eric Philipps | Environmental Studies Specialist
Region 4 | Project Development
Environmental Tech Office | Building A, 1st floor
300 Benchmark Place, Jackson, TN 38301
p. 731-935-0174???? c. 731-513-0021
eric.philipps@tn.gov
tn.gov/tdot

??

From: Casey Parker
To: Eric Philipps; TDOT Env.LocalPrograms
Cc: Rob Todd
Subject: RE: Request for Comment - Fayette, SR-193 (Macon Drive) Bridge over Branch, PIN 124285.00
Date: Wednesday, July 11, 2018 12:27:26 PM
Attachments: image002.png
image003.png

Subject: Request for Comment - Fayette, SR-193 (Macon Drive) Bridge over Branch, PIN 124285.00

Mr. Eric Philipps,

The Tennessee Wildlife Resources Agency has reviewed the information that you provided regarding the proposed SR-193 (Macon Drive) Bridge in Fayette County, Tennessee and we have no concerns regarding the project and do not anticipate adverse impacts to state listed species under our authority due to the project. Thank you for the opportunity to review and comment on this proposed project, 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: Eric Philipps
Sent: Thursday, June 21, 2018 2:41 PM
To: Casey Parker
Cc: Rob Todd; Randall E. Mann; Lou Timms; Jared McCoy; Dustin Tucker; Rita M. Thompson; Greg Harris
Subject: Request for Comment - Fayette, SR-193 (Macon Drive) Bridge over Branch, PIN 124285.00

Casey,

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

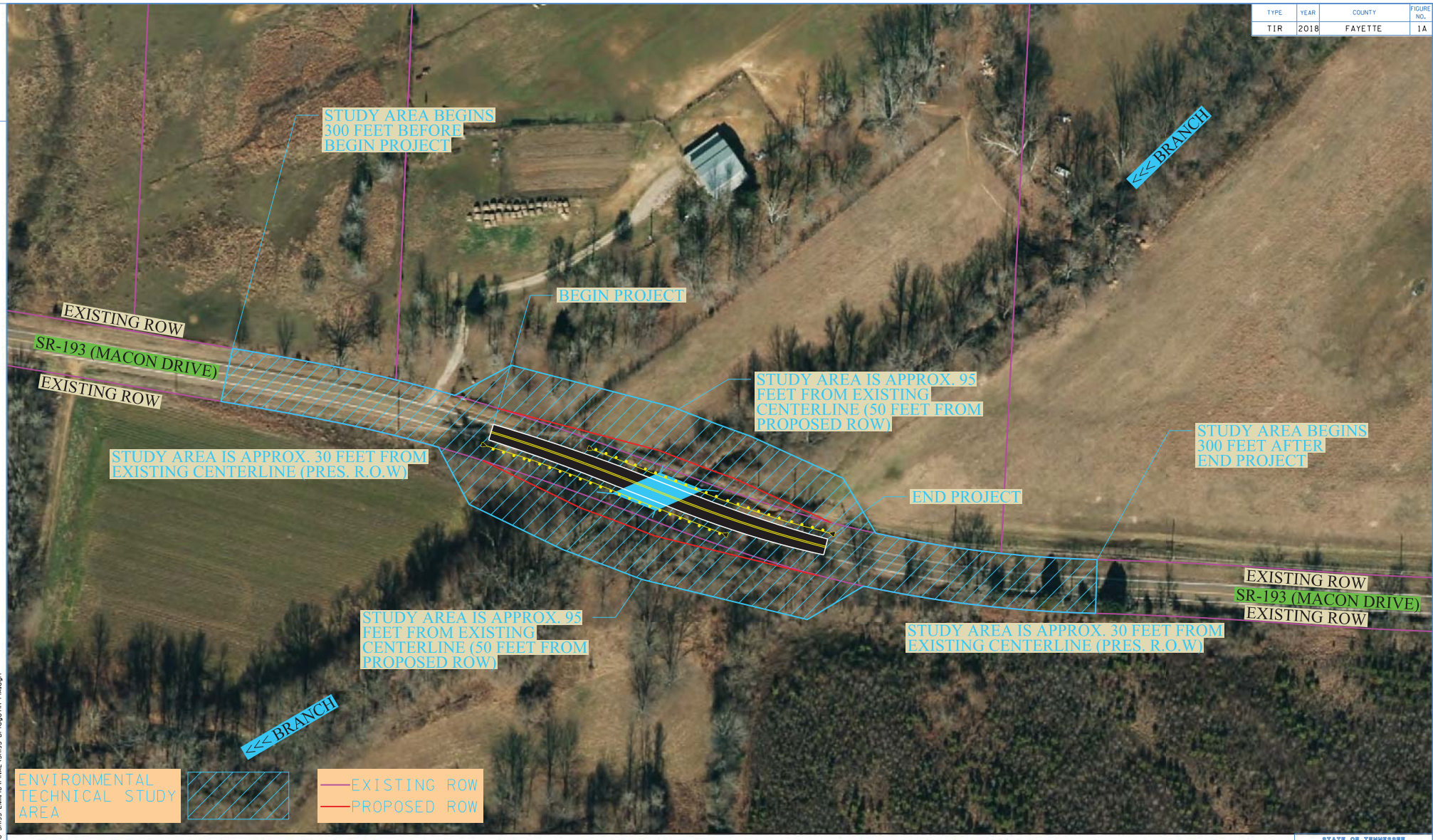
Thanks,

Eric Philipps | Environmental Studies Specialist

Region 4 | Project Development
Environmental Tech Office | Building A, 1st floor
300 Benchmark Place, Jackson, TN 38301
p. 731-935-0174 c. 731-513-0021
eric.philipps@tn.gov
tn.gov/tdot

Special Notes

Cliff swallow and barn swallow nests, eggs, or birds (young and adults) will not be disturbed between April 15 and July 31. From August 1 to April 14, nests can be removed or destroyed, and measures implemented to prevent future nest building at the site (e.g., closing off area using netting).


TENNESSEE D.O.T.
STRATEGIC TRANSPORTATION INVESTMENTS DIVISION
FILE NO.
TYPE | YEAR | COUNTY | FIGURE NO.
TIR | 2018 | FAYETTE | 1A
STUDY AREA BEGINS 300 FEET BEFORE BEGIN PROJECT
BRANCH
BEGIN PROJECT
EXISTING ROW
SR-193 (MACON DRIVE)
EXISTING ROW
STUDY AREA IS APPROX. 95 FEET FROM EXISTING CENTERLINE (50 FEET FROM PROPOSED ROW)
STUDY AREA IS APPROX. 30 FEET FROM EXISTING CENTERLINE (PRES. R.O.W)
STUDY AREA BEGINS 300 FEET AFTER END PROJECT
END PROJECT
EXISTING ROW
SR-193 (MACON DRIVE)
EXISTING ROW
STUDY AREA IS APPROX. 95 FEET FROM EXISTING CENTERLINE (50 FEET FROM PROPOSED ROW)
STUDY AREA IS APPROX. 30 FEET FROM EXISTING CENTERLINE (PRES. R.O.W)
BRANCH
ENVIRONMENTAL TECHNICAL STUDY AREA
EXISTING ROW
PROPOSED ROW
0' 100' 200' 300'
N
ENVIRONMENTAL TECHNICAL STUDY AREA
STATE ROUTE 193 (MACON DRIVE)
L.M. 11.48
FAYETTE COUNTY
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
STRATEGIC TRANSPORTATION INVESTMENTS DIVISION
FIGURE 1A
SR-193
L.M. 11.48
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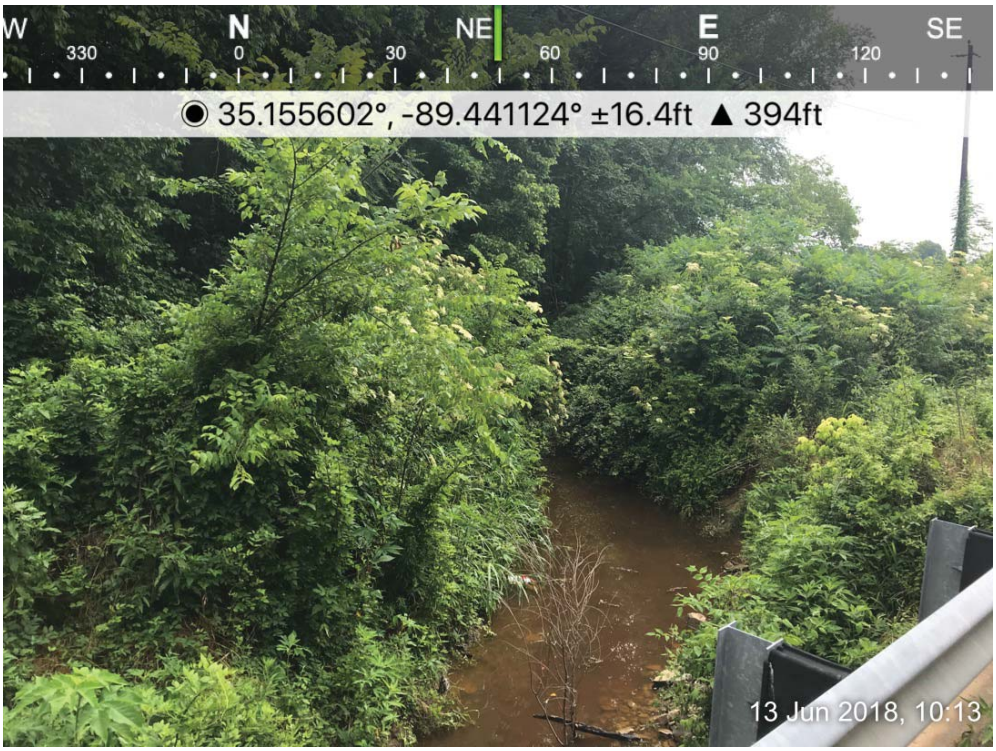

Photo 1. STR-1 — Looking downstream from bridge

Photo 2. STR-1 — Looking upstream from bridge

Photo 3. WWC-1 — Looking up gradient from near confluence with STR-1

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

Air and Noise

Environmental Study

Technical Section

Section: Air and Noise

Study Results

AIR QUALITY

Transportation Conformity

This project is in Fayette County which is in attainment for all transportation-related 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: 2018.06.08 12:19:35 -05'00'

Cultural Resources

Archaeology

Environmental Study

Technical Section

Section: Archaeology

Study Results

In a letter dated July 24, 2018, the TN SHPO concurred that there are no resources eligible for listing on the National Register of Historic Places that 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: SHPO

Location: Email Attachment

Certification

Responder: Sarah Kate McKinney

Title: TESS Archaeology

Signature: Sarah Kate McKinney

Digitally signed by Sarah Kate McKinney
Date: 2018.09.28 09:57:56 -05'00'

DRAFT

PHASE I ARCHAEOLOGICAL SURVEY OF BRIDGE REPLACEMENT AT SR193 (MACON ROAD) AT LOG MILE 11.48, FAYETTE COUNTY

PIN: 124285.00

PE-N: 24029-0207-94

AGREEMENT NO. E1906, WORK ORDER NO. 8

TDOA PERMIT: 000991

LEAD FEDERAL AGENCY: FEDERAL HIGHWAY ADMINISTRATION

PREPARED FOR:

TENNESSEE DEPARTMENT OF TRANSPORTATION
JAMES K. POLK BUILDING, SUITE 900
505 DEADERICK STREET
NASHVILLE, TN 37243

PREPARED BY:

AECOM
1600 PERIMETER PARK DRIVE
SUITE 400
MORRISVILLE, NC 27560

PRINCIPAL INVESTIGATOR AND AUTHOR:

MARK MARTINKOVIC, MA, RPA

JULY 16, 2018

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MANAGEMENT SUMMARY

The Tennessee Department of Transportation (TDOT) intends to replace the bridge on State Road 193 (Macon Road) over Unknown Branch at Log Mile 11.48 in Fayette County, Tennessee. The project is tracked as TDOT Project Number (PE-N) 24029-0207-94 and PIN 124285.00. AECOM performed a Phase I terrestrial archaeological survey of the project's Area of Potential Effect (APE) under contract to the TDOT (Agreement No. E1906, Work Order 8). Design plans for the project were provided by TDOT archaeologist Sarah K. McKinney in PDF format via email attachment on May 16, 2018. The APE includes land on the east and west sides of Unknown Branch and the north and south sides of State Road 193 (Macon Road). The Area of Potential Effects (APE) for this study has been defined by TDOT as an area extending 50 feet beyond the existing right of way for a distance of 200 feet to either side of the bridge, then narrowing to the existing right of way for an additional 300 feet in both directions. State Archaeological Permit #000991 was issued by the Tennessee Division of Archaeology to AECOM on June 11, 2018.

The Scope of Work (SOW) for the project is compliant with TCA 4-11-111 and Section 106 of the National Historic Preservation Act in compliance with the regulations issued by the Advisory Council on Historic Preservation (36 CFR 800), and following TDOT's *Scope of Work Phase I Archaeological Assessments* (FY 2017-2018) and the Tennessee SHPO's *Standards and Guidelines for Archaeological Resource Management Studies* (March 2009). This standardized SOW included background research, shovel test survey at 20 meter intervals in the APE, and reporting tasks. AECOM performed the Phase I archaeological survey to address these project goals on June 13-14, 2018.

The APE northwest of the Unknown Branch consists of an elevated landform with a southeast facing slope, the remaining southwestern, southeastern, and northeastern sides consist of level floodplain. Subsurface testing was conducted within the entire APE with the exception of areas consisting of existing road and road berm.

No archaeological resources or archaeologically sensitive deposits have been identified within the State Road 193 (Macon Road) Bridge APE. We therefore recommend no additional archaeological studies be required in conjunction with the proposed replacement of the State Road 193 (Macon Road) Bridge over Unknown Branch.

TABLE OF CONTENTS

LIST OF FIGURES

1.0 INTRODUCTION

The Tennessee Department of Transportation (TDOT) intends to replace the bridge on State Road 193 (Macon Road) spanning Unknown Branch at Log Mile 11.48 in Fayette County, Tennessee (Figure 1 through Figure 3).

The project is tracked as TDOT Project Number (PE-N) 24029-0207-94 and PIN 124285.00. AECOM performed a Phase I terrestrial archaeological survey of the project's Area of Potential Effect (APE) under contract to the TDOT (Agreement No. E1906, Work Order 8). Design plans for the project were provided by TDOT archaeologist Sarah K. McKinney in PDF format via email attachment on May 16, 2018. The APE includes land on the east and west sides of Unknown Branch and the north and south sides of State Road 193 (Macon Road). The Area of Potential Effects (APE) for this study has been defined by TDOT as an area extending 50 feet beyond the existing right of way for a distance of 200 feet to either side of the bridge, then narrowing to the existing right of way for an additional 300 feet in both directions. State Archaeological Permit #000991 was issued by the Tennessee Division of Archaeology to AECOM on June 11, 2018 (Appendix A).

AECOM performed the Phase I archaeological survey to address these project goals June 13-14, 2018. Mark Martinkovic, RPA acted as the Archaeologist in General Charge and the Archaeologist in Direct Charge. Mr. Martinkovic was assisted in the field by Crew Chief Jeffrey Scott Jones. Sarah Potere completed the Historical Context. Daniel Cassedy, PhD, RPA performed QA/QC tasks for the project, and acted as the primary liaison with TDOT. Sarah K. McKinney of TDOT is managing the project for TDOT.

The following report is organized as follows. Background—including environmental, cultural, and archaeological contexts—is presented in Chapter 2. Chapter 3 details the methodology used for the project and Chapter 4 presents the results of the project. A summary of the work and recommendations can be found in Chapter 5. References cited can be found in Chapter 6. Following Chapter 6 are appendices for the TDOA Permit (Appendix A) and Shovel Test Log (Appendix B).

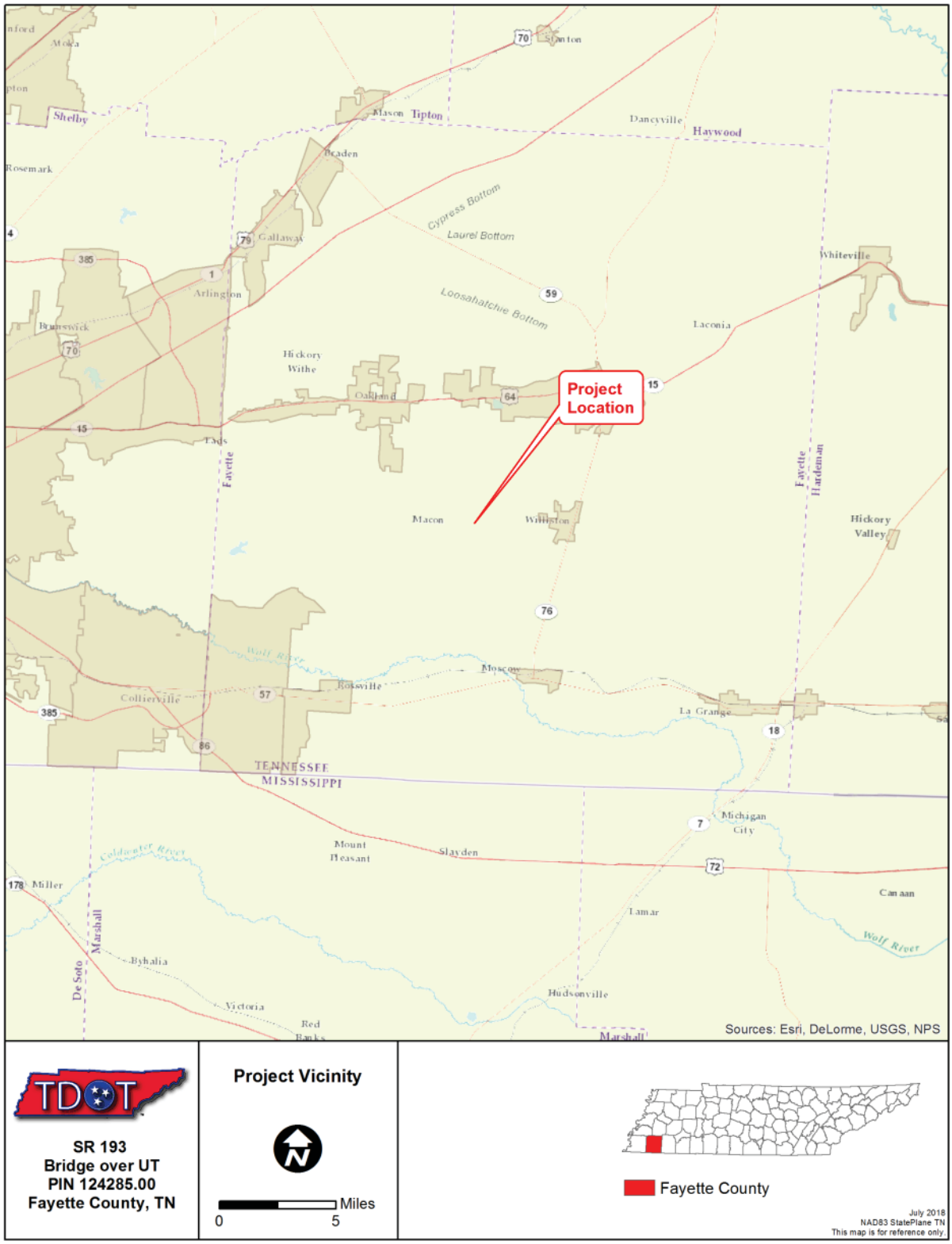


Figure 1. General Location of SR 193 (Macon Road) Bridge Replacement Project, Fayette County, Tennessee.

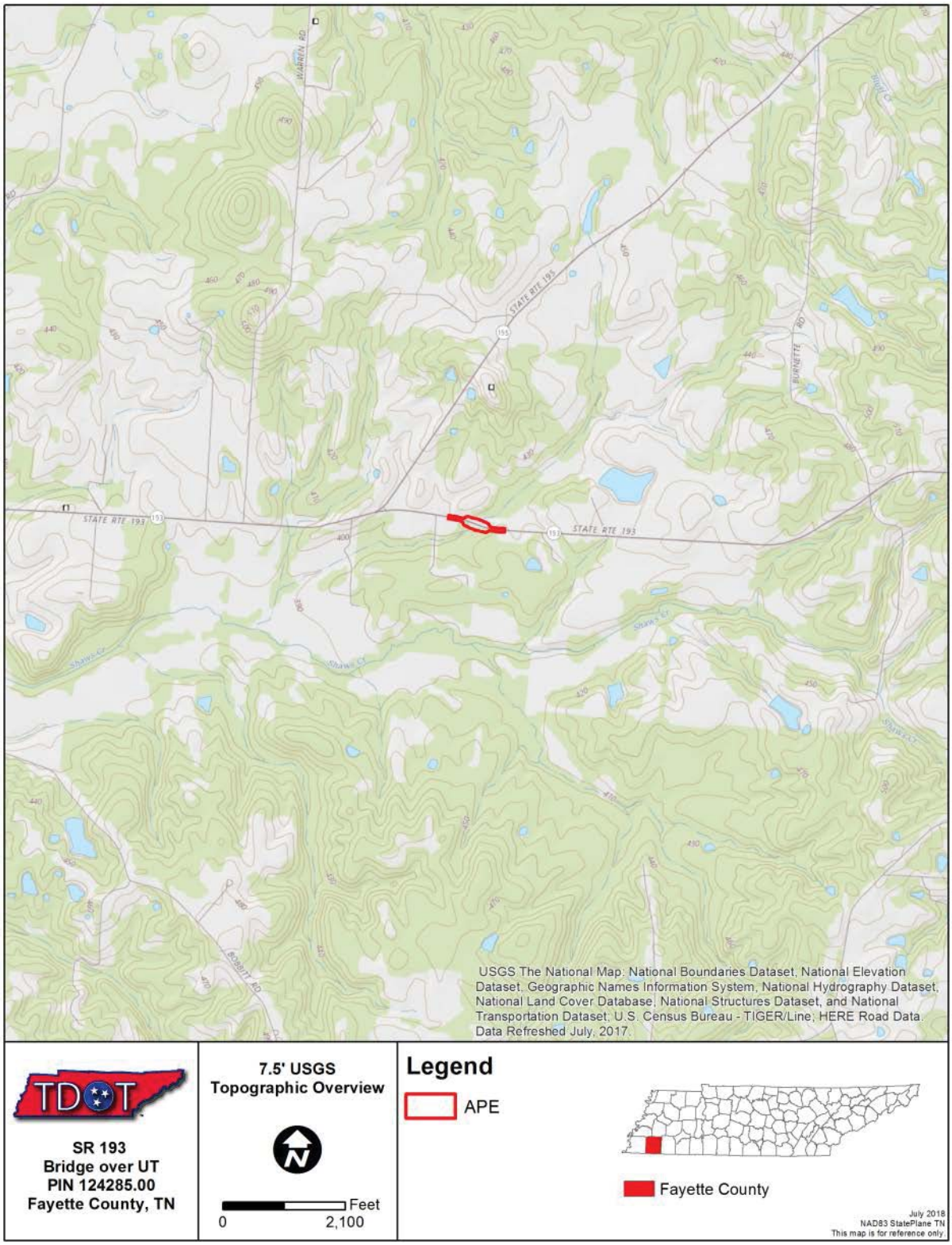


Figure 2. Topographic Setting of SR 193 (Macon Road) Bridge Replacement Project Vicinity.

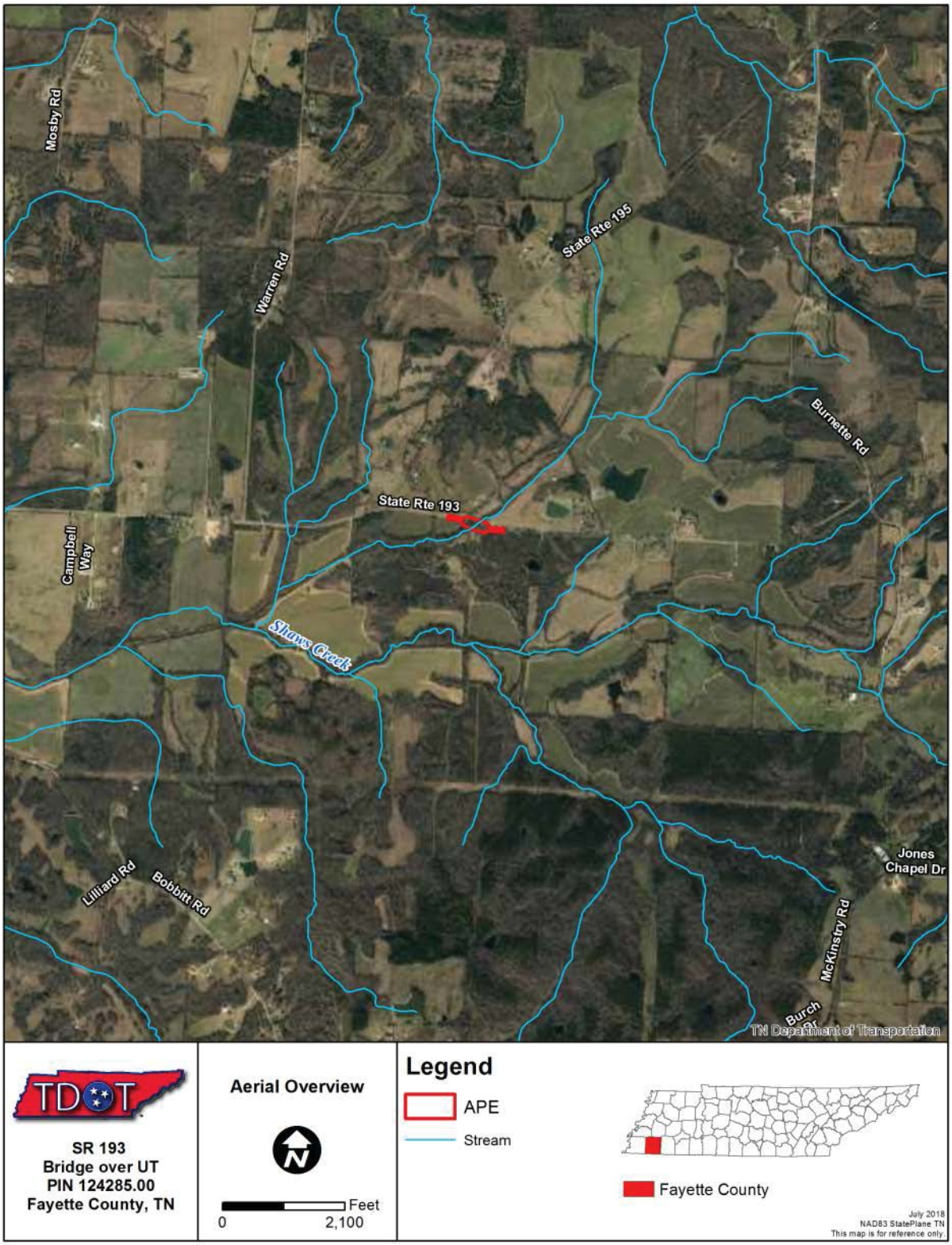


Figure 3. Aerial Photograph SR 193 (Macon Road) Bridge Replacement Project Vicinity.

2.0 BACKGROUND

Environmental Context

The current project is located within the eastern portion of the Mississippi Valley Loess Plain physiographic province of western Tennessee (Figure 4). This region is marked by rolling terrain with well-drained soils that were formed in Loess over Coastal Plain sediments (Fenneman 1938). When the northern glaciers melted many changes were spurred, including increased floods and exposure of the Mississippi River bottom. Western winds picked up loose silt and carried it away, much of this silt (Loveland Loess) fell on Fayette County and formed the Loess hills (USDA 1964). Braun (1950) places the project area in the Western Mesophytic Forest, specifically in the Mississippian Valley section. Beech, oak, hickory, walnut, birch, and chestnut communities dominate the region. Many other species of trees are interspersed throughout the forestlands as well.

The majority of the APE is located within the floodplain of Unknown Branch, a tributary of Shawn Creek. A small portion of upland is present on the northwestern portion of the APE. The USDA Soil Survey has mapped the APE as alluvial silty loam soil units. The Collins Silt loam extends across much of the study area (Figure 5).

The Grenada Fine Silt loam, which is present in a portion of the northwest quadrant, is described as a moderately well-drained loam to a depth of two meters. Grenada Silt loam is present in severely eroded Loess Hills. The remaining eastern portion of the APE contains Gullied land complex, which is severely eroded and sloping.

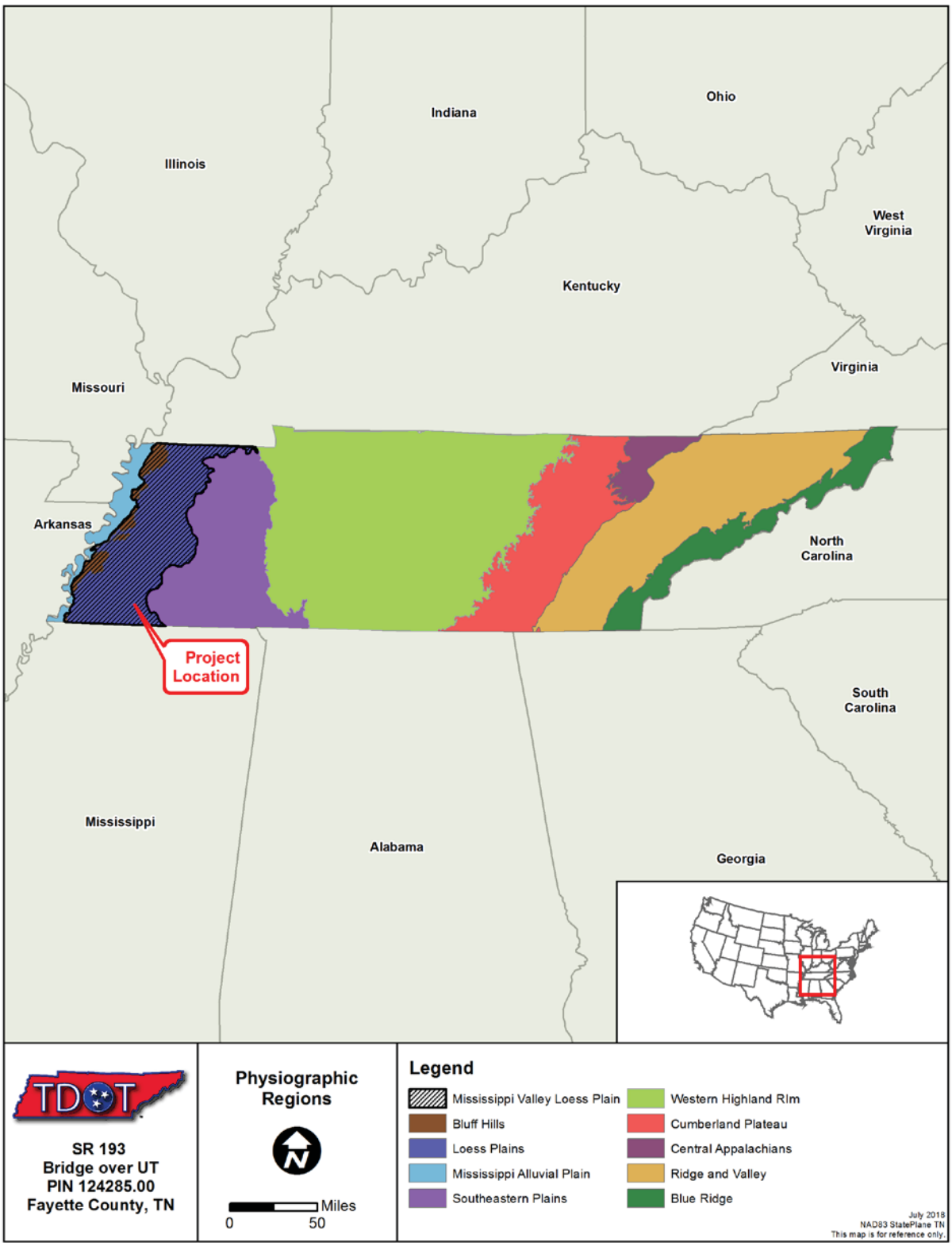


Figure 4. Physiographic provinces of Tennessee.

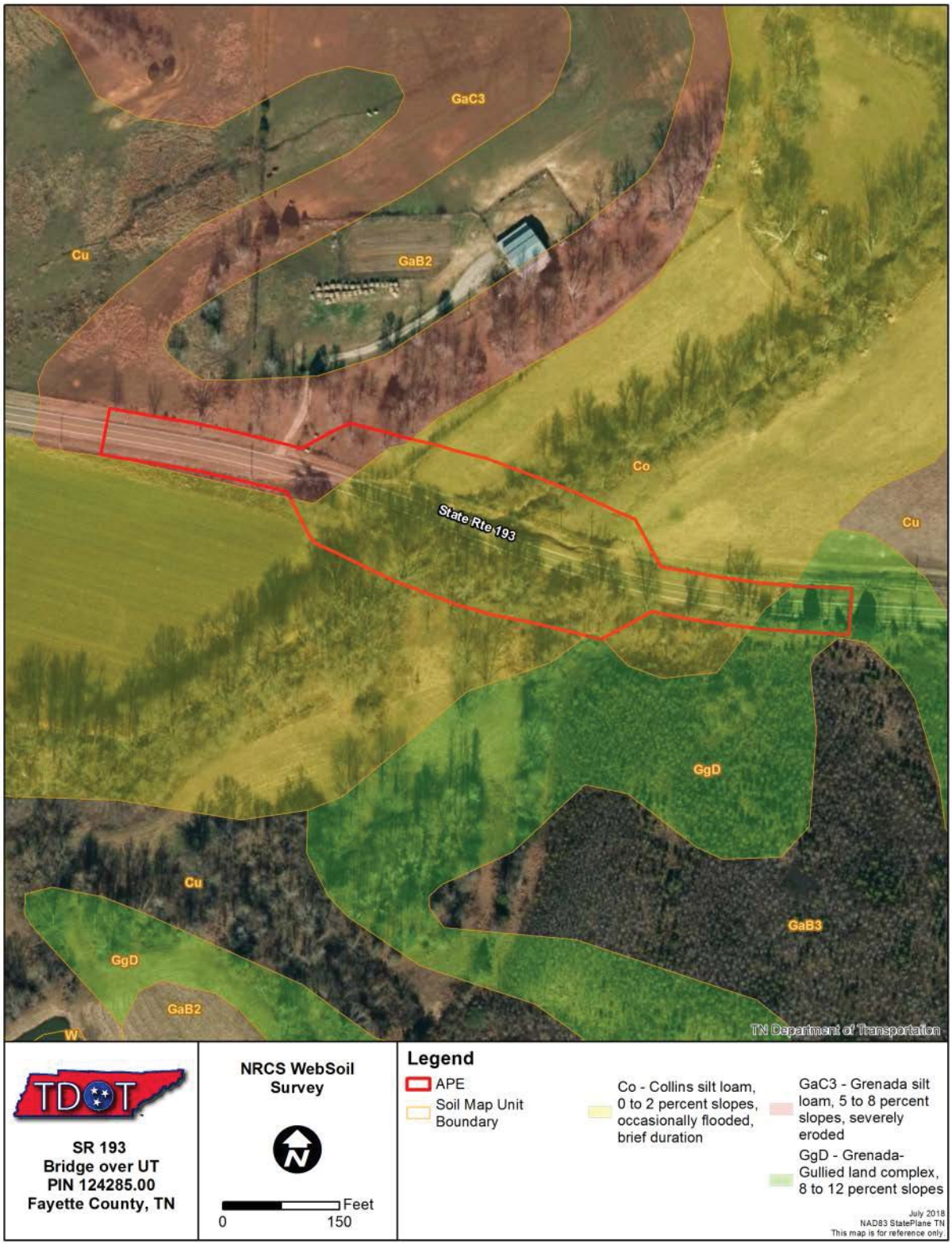


Figure 5. Soil Map of Project Vicinity with Approximate Project Area Depicted.

Cultural Context

Pre-Clovis Occupations in the Southeast (ca. pre-12,000 BP)

For the past several decades, the Meadowcroft Rockshelter in Pennsylvania has been an anomalous site with intriguing evidence indicative of early human occupations predating the classic Clovis Paleoindian assemblages that have long been thought to be the first inhabitants of North America (Adovasio et al. 1999:427-428). However, within the past decade, data from several Southeastern sites has begun to convince many archaeologists that there may have been a significant pre-Clovis occupation that predates 12,000 BP by several thousand years. Both the Topper Site in South Carolina (Chandler 2001) and the Cactus Hill site in southern Virginia (McAvoy and McAvoy 1997) have produced well-documented pre-Clovis assemblages. Site 44SM37 in the Saltville Valley of Smyth County, Virginia has produced possible pre-Clovis artifacts associated with Pleistocene faunal remains (McDonald 2000). Although distinct diagnostic artifacts for these assemblages have not yet been defined, there are indications that large and small blades and possibly triangular and lanceolate point forms may be associated with these early pre-Clovis occupations.

Paleoindian Period (ca. 11,500-10,000 BP)

The first relatively well-documented inhabitants of eastern North America have been termed Paleoindians by archaeologists. This cultural period corresponds with the late glacial transition in eastern North America, and is marked by the retreat of the Laurentide ice sheet. The end of the Paleoindian period coincides with the Pleistocene/Holocene epoch transition, which in most areas of the southeast is estimated to be ca. 10,000 BP. Paleoindians are presumed to have been fairly mobile hunters and gatherers. High concentrations of Paleoindian sites along the Cumberland, Ohio, and Tennessee Rivers has prompted Anderson (1990, 1996) to suggest these major rivers provided routes for initial populations to enter the Eastern Woodlands, and provided these groups with staging areas "where at least some of these initial populations slowed their movement, settling in for greater or lesser periods of time" (Anderson 1996:36). Such a decrease in mobility would have allowed these groups "to familiarize themselves with the resources available in their new homeland" (Anderson 1996:36). These initial settlements are presumed to be the core from which later regional cultural traditions would emerge in the Middle and Late Paleoindian subperiods (Anderson 1996:37).

The Paleoindian tool kit was based on a highly refined flake and blade technology as well as a significant bone, wood and antler assemblage as evidenced by material recovered from waterlogged sites in Florida (Milanich and Fairbanks 1980). Paleoindians exhibited a marked preference for the use of high-quality cryptocrystalline or metavolcanic lithic materials for the fashioning of their tools, suggesting many of these groups focused their seasonal settlement/subsistence activities around quarries (Gardner 1981). Base camps tied to traditional access rights to quarry material may have contributed to increasing differentiation in projectile point forms as well as tribal distinctiveness and culturally circumscribed territoriality. This would set the stage for many of the trends associated with the subsequent Archaic culture period. Key diagnostics of the Paleoindian period are fluted, and later, unfluted lanceolate projectile points. Over the course of the Paleoindian period, fluted point forms underwent a general reduction in size, and true fluting gave way to basal thinning. A wide range of Paleoindian lithic implements have been recovered from sites in North America, reflecting associations with discrete functions and activities: unspecialized flake tools, formal side and end scrapers, gravers, denticulates, hafted unifacial knives, and bifacial knives (Gardner 1979). There have been several finds of worked ivory (Goodyear 1999).

Overall population density during the Paleoindian period is often thought to have been fairly low. In the South, however, large numbers of sites in the late Paleoindian period, and evidence for territories discovered in several regions, indicates relatively rapid population evolutions (Gunn and Brown 1982). Climate and vegetation were changing rapidly at this time, as the continental ice sheets retreated to the north. Based on a decline in the numbers of projectile points between Clovis and full-fluted post-Clovis projectile point types (e.g., Cumberland), Anderson et. al. (2009) have suggested a population decline occurred during the initial Middle Paleoindian subperiod. Later in the Middle Paleoindian subperiod, and continuing into the Late Paleoindian subperiod (and beyond), population appears to have increased, though.

In general, the Paleoindian Period is divided into three units: Early Paleoindian (11,500-11,000 BP), Middle Paleoindian (11,000-10,500 BP), and Late Paleoindian (10,500-9900 BP) (cf. Anderson 1990:201).

The Early Paleoindian is marked by the presence of fluted projectile points, "very similar to the classic Clovis points of the West" (Ward and Davis 1999:29). Clovis projectile points have been found on sites ranging from Canada to the southern tip of South America, and variants of the Clovis projectile point have been found throughout much of the eastern United States (Justice 1987:17-23).

Beginning in the Middle Paleoindian, regional differentiation of point types becomes manifest, and these point types are often found in environmental zones that lack Early Paleoindian evidence, suggesting a movement beyond the initial staging points posited by Anderson (1990, 1996). Thus various fluted types (e.g., Cumberland, Gainey, and Redstone), and later, unfluted types (e.g., Suwannee and Simpson), mark Middle Paleoindian occupations.

Dalton points (Goodyear 1982) and several varieties of the Dalton point type, such as the Hardaway-Dalton type—broad, thin, triangular bifaces with deeply concave bases and shallow side notches (Coe 1964:64)—are diagnostic markers of Late Paleoindian assemblages.

Archaic Period (ca. 10,000-3000 BP)

The Archaic period begins with the onset of Holocene post-glacial climatic conditions in the east. The Archaic period exhibits an increase in the density and horizontal dispersal of archaeological remains. It is characterized by a reliance on both wild animal and plant resources, which became increasingly stabilized and broad based over time. The Archaic was a relatively long and successful foraging adaptation, with subsistence based on hunting, fishing, and the collection of wild plant resources with minor horticultural gardening practiced in some locales in the Late Archaic. Group organization was presumed to still be fairly mobile, making use of seasonally available resources in different areas of the Southeast. Caldwell (1958) has termed the maximizing adaptation (scheduled hunter-forager) to the environment in the Eastern woodlands during the Archaic period "primary forest efficiency." Group size gradually increased during this period, culminating in a fairly complex society in the Late Archaic.

The Archaic has been subdivided into three sub-periods: Early (ca. 10,000-8000 BP), Middle (ca. 8000-5000 BP), and Late (ca. 5000-3000 BP). Diagnostic projectile points, including a variety of notched, bifurcate, and stemmed types, form the primary criteria used to identify and date these occupations (Coe 1964). The technology of the Archaic peoples of the Southeast appears to have been progressively more diverse than that of Paleoindians. Over the course of the Archaic period, increasing numbers of artifact and tool types appear, such as groundstone implements (e.g., woodworking and plant processing tools), carved and polished stone bowls, axes, atlatl weights, and stone pipes and beads (Griffin 1967; Jennings 1975:127-129). Regional differentiation in projectile point and other artifact

styles also occurs, suggesting the emergence and elaboration of local cultures or cultural traditions. This cultural variability is thought to be partially related to localized differences in environment and subsistence resources, and to an increasing regional population base, with a concomitant circumscription of group territories and mobility (Ford 1974).

During the Early Archaic, the vegetation matrix of mixed coniferous forest was replaced by mixed hardwood communities dominated by oak, hemlock, beech, and maple (Claggett and Cable 1982:212). A fairly modern faunal assemblage was in place, following the extinction of the Pleistocene megafauna, although some species such as buffalo and elk have since ceased to be present in the southeast. The Early Archaic is subdivided into earlier Corner Notched (ca. 9550-8775 BP) and later Bifurcate (ca. 8775-8000 BP) traditions, named for the shapes of the projectile points used to recognize these occupations. Corner Notched tradition components are identified by the presence of Palmer and Kirk projectile points, while Bifurcate tradition assemblages are identified by a range of bifurcate-based forms, including the succeeding St. Albans, LeCroy, and Kanawha types (Chapman 1975; Gardner 1974).

During the Middle Archaic, the cool, moist conditions of the Early Holocene gave way to the warmer, drier climate of the mid Holocene Hypsithermal interval. This pattern may be reversed at higher altitudes. Extensive estuarine marshes and riverine swamps began to emerge in coastal regions as the sea level ceased its post-Pleistocene rise, perhaps as early as 8000 BP during a Middle Holocene sea level high stand, but certainly by 5000 BP. The northern hardwoods vegetational matrix was replaced by an oak-hickory forest, which was in turn replaced by a southern hardwoods-pine forest characterized by the species occupying the region today (Carbone 1974; Delcourt and Delcourt 1983).

Diagnostic projectile points from the Middle Archaic include Eva, Morrow Mountain, Sykes/White Springs, and Benton types. In addition, an increase in ground stone tools and a more diverse tool kit is present on some Middle Archaic sites.

During the Late Archaic period, population appears to have grown markedly and to have concentrated in riverine and estuarine settings. Climatic conditions were warm, moist, and unusually stable. The sea level appears to have been relatively stable, rising to within ca. 2-4 meters of its present stand; only minor fluctuations on the order of one to a few meters occurred (Colquhoun and Brooks 1987).

Diagnostic artifacts of the Late Archaic include Ledbetter, Wade, Little Bear Creek, and Motley projectile points. Grinding implements, polished stone tools, and carved soapstone bowls become fairly common, suggesting increased use of plant resources, and possibly changes in subsistence strategies and cooking technologies. For example, some researchers suggest that it is during the Late Archaic when cooking techniques underwent a transition from indirect to direct cooking methods.

Woodland Period (ca. 3000-1100 BP)

Across the eastern United States, the Woodland period is marked by the appearance of widespread pottery use, a greatly increased role for horticulture in subsistence economies, and an elaboration of mortuary ceremonialism, including the appearance of burial mounds (Griffin 1967:180). In the greater Southeast, the Woodland period began with a transition from the Late Archaic that was marked by increasing sedentism and changes in food storage and preparation technologies. Subsistence strategies were a continuation of earlier hunter-forager ways, with an increased reliance on the cultivation of native plants (Yarnell and Black 1985). Religious life, as evidenced by increased ceremonialism and the development of burial mounds, became more sophisticated during the Woodland period. The

Woodland period is divided into three subperiods: Early (3000-2200 BP), Middle (2200-1650 BP), and Late (1650-1100 BP) (Kimball 1985).

The Early Woodland is largely a transitional period between the Archaic and Woodland. Initial Woodland occupations are thought to reflect a more or less unchanged continuation of preceding Late Archaic lifeways, but with the expansion of ceramic technology and the introduction of the bow and arrow. Intensive horticulture also likely began in the Early Woodland (Watson 1989). Adena and Flint Creek projectile point forms are diagnostic of the Early Woodland period in the project area. The earliest Early Woodland ceramics (or quite possibly even Late Archaic) are fiber tempered wares that are manufactured along the Atlantic and Gulf coasts. These are quickly replaced by cord marked and fabric impressed styles later in the Early Woodland period that appear to originate from the north (Chapman 1985:56).

The Middle Woodland is usually characterized by an intensification of long-distance trade throughout the eastern Woodlands. Artifacts indicating interactions with the Hopewell culture to the north have been found throughout Tennessee (Caldwell 1964). Mound building greatly intensifies in Tennessee during the Middle Woodland. Research at the Pinson Mounds (40MD1) has documented a large mound complex with exotic artifacts indicating trade and relations with cultural groups including Hopewell, Marksville, Copena, Swift Creek, and Miller (Broster and Adair 1975; Broster et al. 1980).

Fabric-marked ceramics decline while cord-marked ceramics increase during the Middle Woodland. Grog tempered ceramics such as Baytown first appear in the Middle Woodland. Stemmed points, such as the Stuben and Bakers Creek types, continue to be produced in the Middle Woodland (Justice 1987:208-212). Other forms also appear, though, particularly triangular types such as the Copena and Copena Triangluar being Middle Woodland diagnostic types (Justice 1987:204-208).

The Late Woodland sees a decline and disappearance of the far-ranging trade networks of the Middle Woodland. Cultural groups appear to have become more isolated from one another and also less socially complex (Kneberg 1952; Dragoo 1976). Many Late Woodland villages are fortified, indicating a level of cultural conflict and turmoil.

Diagnostic artifacts of the Late Woodland are poorly understood for the project region (Mainfort et al. 1994). Baytown ceramics are continued to be manufactured; other ceramic types include Mulberry Creek Cord Marked, Wheeler Check Stamped, and Coles Creek Incised (Smith 1996). The shift from larger to smaller triangular projectile point types is also evident with the Madison and Hamilton small triangular point types.

Mississippian Period (ca. 1100-400 BP)

During the Mississippian period, people began settling in large towns that were the centers of government and religious life. Most Mississippian period towns were often palisaded, were built around a central plaza, and often included one or more large, flat-topped mounds. Smaller “homesteads” or small nuclear family farms were located in the river valleys to provide surplus food for the larger towns. Floodplains offered rich, well drained, easily tilled soils conducive to the cultivation of maize, squash, and beans. Nearby fish and waterfowl were readily available in these locations and provided an additional source of protein. Also, the harvesting of wild foods, such as nuts and fruits, provided a further source of protein and fat. Animals such as deer, raccoon, and turkey also remained important sources of food. Artwork in pottery and shell reached the pinnacle of prehistoric development at many of these sites (Hudson 1976).

Excess food production in the Mississippian led to a more sedentary lifestyle, and a greater need for storage (Rindos 1989). The more egalitarian society of the Late Woodland once again became more socially complex and marked by a chiefdom-level society (Blitz 1993). In the project region, however, it has been suggested that there was a significant population decrease and almost a near abandonment due to rapid shifts in the socio-political organization of portions of the Mississippian area along the central Mississippi and parts of the Tennessee and Cumberland River valleys (Williams 1980, 1983, 1990).

Lithic assemblages become less complex during the Mississippian. Small triangular points first seen in the Late Woodland continue to be manufactured. Hoes, chunky stones, engraved shell items, mica, and galena are also present throughout the Mississippian period. Conversely, ceramics become much more complex. Shell tempering is seen in much of the heartland of the Mississippian culture. Numerous decorative motifs and highly burnished wares become commonplace during this period. Anthropomorphic symbolism also rises and is seen on shell gorgets, copper and stone plates, and pottery. Many other specialized artifact types also appear in the archaeological record (e.g., stone maces, monolithic axes, chert ceremonial "swords").

HISTORIC CONTEXT: FAYETTE COUNTY,TN

Fayette County is located in the southwestern corner of Tennessee, approximately twenty miles to the east of Memphis. Lying within the Mississippi River watershed, Fayette is bounded on the north by Tipton and Haywood counties, on the south by the state of Mississippi, on the east by Hardeman County, and the west by Shelby and Tipton counties (Morton 1989:1; Goodspeed 1887:787). Despite its size of 700 square miles, making it the third largest county in the state by area, Fayette remains rural and boasted a population of only 38,413 residents as of the 2010 census (U.S. Census). Today, two major roadways run through the county, US 64 spanning the county's centerline, and both U.S. 70 and Interstate 40 cut through Fayette's northwestern corner (Morton 1989:3).

Settlement in the Fayette County region began shortly following the Treaty of 1818. While some of the region's newcomers came from nearby Middle Tennessee, most settlers hailed from neighboring states such as North Carolina, Alabama, Virginia, and Kentucky (Goodspeed 1887:807). A large portion of them were of Scotch-Irish descent. In September 1824 the Tennessee General Assembly formally established Fayette County, creating it from portions of neighboring Shelby and Hardeman counties (Figure 6). In February 1825 the county seat was established in Somerville, a newly formed town near the county's geographical center (Morton 1989:6, 14). The county's population at the time of its establishment was estimated to be about 800 (Goodspeed 1887:799).

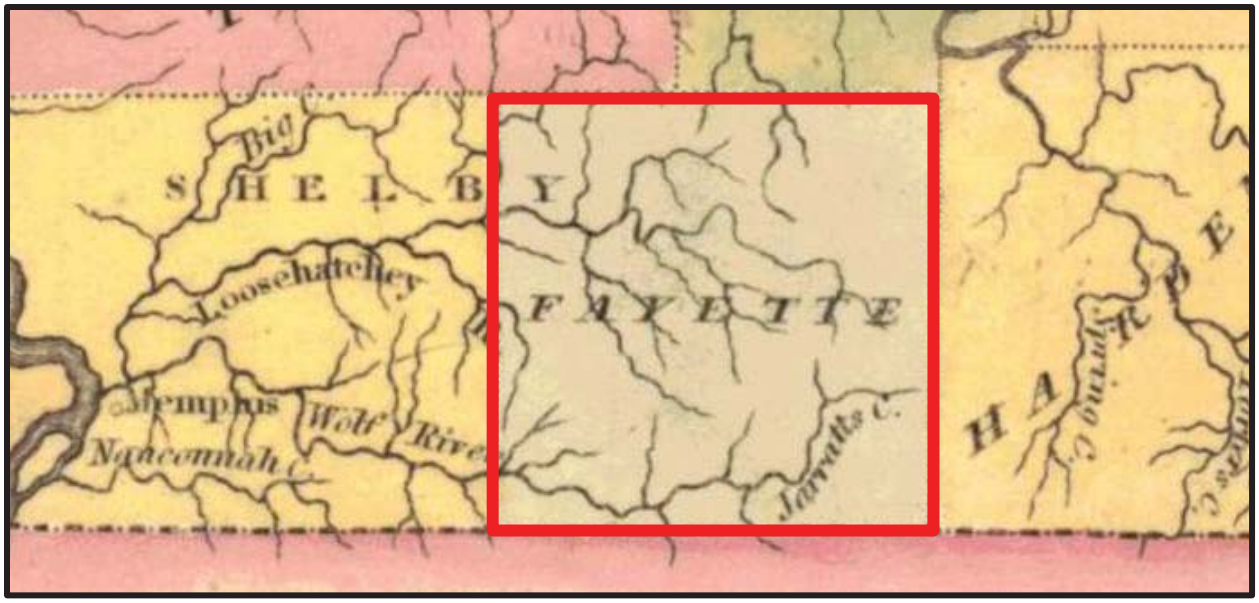


Figure 6. 1824 Finley "Map of Tennessee."

According to the U.S. Census, the population of Fayette County exploded during the first twenty years following incorporation. In 1830 the county's population was recorded at 8,652 and jumped in 1840 to 21,501 residents (U.S. Census). This massive growth correlates directly with the arrival of the railroad in Fayette County; the first line constructed being a local line between LaGrange and Memphis in December 1835 (Morton 1989:29). By the 1880s multiple lines ran through the county as seen in Nicholson's 1877 Postal Map of Tennessee (Figure 7). This included the Memphis and Charleston line at the southern end—a branch line spanning from the town of Moscow to the county seat of Somerville—the Memphis and Louisville line in the northwest corner, and the Mississippi Central Railroad in the southeast corner (Goodspeed 1887:799).

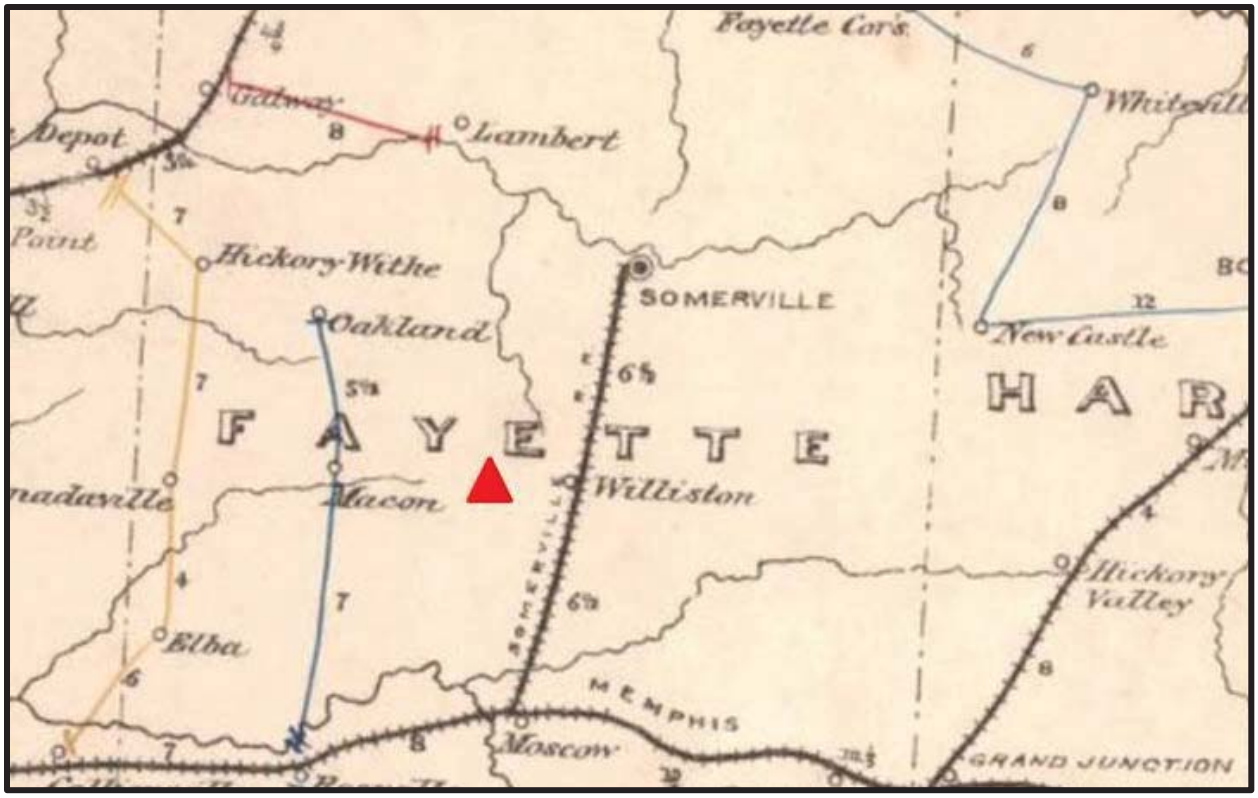


Figure 7. Nicholson's 1877 "Postal Route Map of the State of Tennessee."

Despite a sizeable increase in both transportation and population, agriculture continued to rule the economy of Fayette throughout the second half of the nineteenth century. Timber was a lucrative crop early on for the county, although the supply was much depleted by the late-nineteenth century (Goodspeed 1887:50). Cotton was by and large the crop that drove the county's economy during the nineteenth century. The crop was grown on plantations and farms of all sizes, and relied heavily on slave labor for cultivation. Although cotton no longer reigns as king within the county, Fayette's agricultural economy still booms and was the second highest agricultural gross income of all Tennessee counties as of the late 1970s. Today Fayette farmers focus efforts on the cultivation of soybeans, beef, poultry, and egg production (Morton 1989:33, 39).

Not unlike many other parts of Tennessee, Fayette County saw much of the Civil War first hand. Located near the southeastern corner of the county, along the route of the east-west running Memphis & Charleston Railroad, the town of La Grange proved a key location for both the North and South throughout the war. In June 1862 Memphis fell. One week later La Grange found itself under the occupation of Union troops. Control of the town would fluctuate between both Union and Confederate troops throughout the remainder of the war's duration. During the second half of the war, skirmishes occurred in neighboring towns, although none reported near the project area, which is situated between the towns of Macon and Williston as seen in Figure 7 (Sayers 2001).

The population of Fayette County reached its nineteenth century peak in 1880 when the U.S. Census recorded 31,871 residents. Retaining its largely rural economy, the county's population hovered around 30,000 for the next five decades before beginning to decrease. By 1950, the population had receded to only 27,535 residents, a majority of whom were African American (U.S. Census; Morton web). The 1949 USGS map (Figure 8) depicts the rural nature of the county at this time, especially the region

surrounding the project area. As denoted by the map, the housing density is low, a handful of houses placed on either side of the road, and at a fair distance from one another. Few secondary roads digress from the main east to west road, State Route 193, on which the project is located. The simplified road network further illustrates the region's rural character.

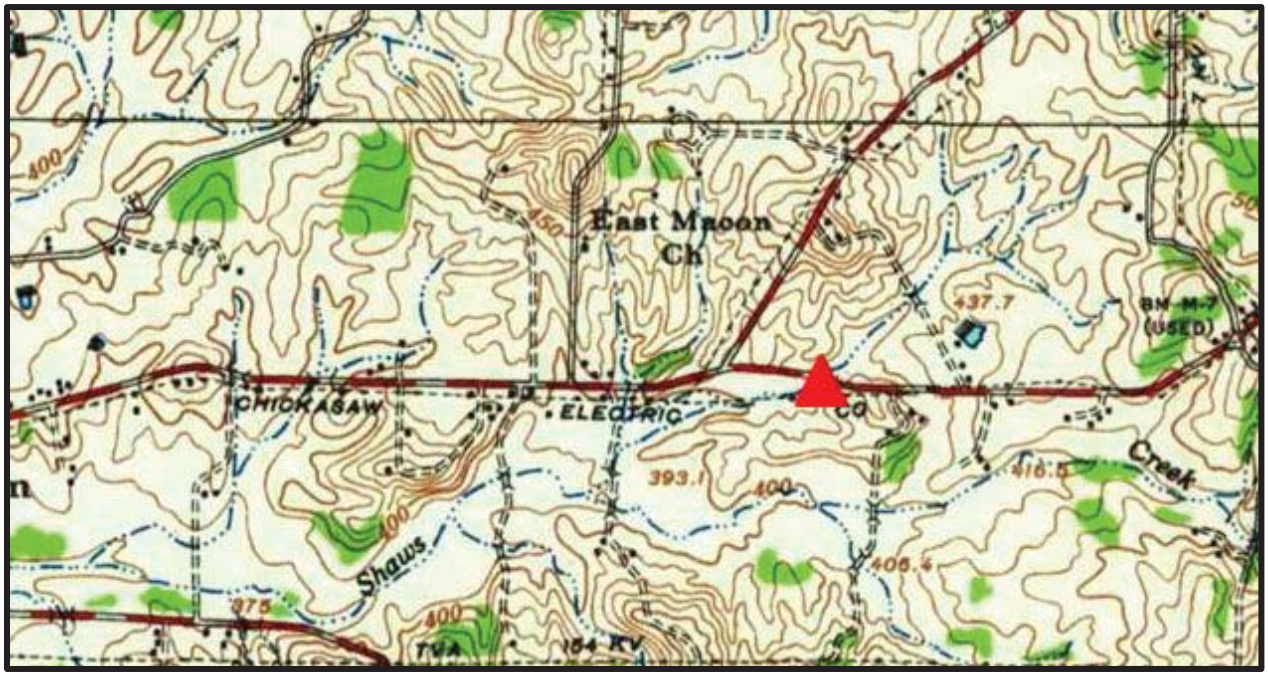


Figure 8. USGS 1949 Moscow, TN Topographic Map.

By the 1960s, few changes had occurred within the vicinity of the project area as seen in the 1965 USGS Map of Macon (Figure 9). A few more residential structures popped up along State Route 193, but no industrial or high-density residential growth. At the time of the 1960 census, only 24,577 residents were recorded in the county. The county's population did not exceed 30,000 residents again until 2010 when it was recorded at 38,413 (U.S. Census). Although by and large characterized as rural, by the end of the twentieth century, Fayette County boasted 32 small manufacturing companies, most of which are located in county seat of Somerville and the northeastern town of Gallaway (Morton 1989:46). Major manufacturing endeavors have avoided the communities of Macon and Williston, in-between which is located the project area. The county is predicted to see a continuous trend of population growth in the decades to come, as it is anticipated to further transform into a "bedroom community" for the nearby city of Memphis.

Figure 9. USGS 1965 Macon, TN Topographic Map.

Archaeological Context

Research at the TDOA on June 11, 2018, coupled with background resources provided by TDOT, has revealed that there are no several previously-recorded sites or archaeological survey efforts within several miles of the project area.

The closest archaeological resource, site 40FY201, was recorded approximately 3.5 miles north of the APE. This site was recorded in 1979 as a Woodland prehistoric and Historic scatter by Drexel A. Peterson. The NRHP eligibility of site 40FY201 is unknown. The study that discovered site 40FY201 was undertaken by archaeologists on behalf of the USDA Soil Conservation Service. The undertaking focused on an archaeological survey of the Loosahatchie River and Wolf River watersheds. This multi-year effort focused on targeted lands adjacent to the both rivers, and resulted in the discovery of numerous archaeological resources and a refinement of the prehistoric cultural chronology of the area (Peterson 1979).

3.0 METHODOLOGY

Field Methods

Archaeological fieldwork for the project consisted of a combination of reconnaissance and shovel test pit (STP) excavation. The project APE is divided into four areas based on divisions provided by Unknown Branch and Macon Road: Northwest Quadrant, Northeast Quadrant, Southeast Quadrant, and Southwest Quadrant.

Reconnaissance. A portion of the project APE on the extreme west and east edges does not extend beyond the existing ROW and is located within the existing Macon Road berm. These areas within the existing berm were subjected to pedestrian reconnaissance to determine if any areas required subsurface testing and/or if signs of archaeological resource(s) were present.

Shovel Test Pits. All four quadrants were subjected to STP survey adjacent to Unknown Branch, as the APE included land outside of the existing Macon Road berm. Systematic shovel testing was performed at 20 meter (66 feet) intervals. Two transects were established, with Transect A on the north side of Macon Road and Transect B on the south side of Macon Road. STPs were numbered sequentially within the transects.

Shovel tests were square, approximately 30 centimeters (11.8 inches) across, and excavated by hand with a long-handled shovel. Shovel tests were excavated in vertical levels based on natural soil stratigraphy, terminating approximately 10 centimeters (four inches or 0.3 feet) into sterile subsoil. Each stratigraphic context was excavated and screened separately. Soils removed were screened using quarter-inch hardwire mesh for uniform artifact recovery. Upon completion of the shovel test excavation, the walls of each STP were inspected for artifacts, features, and other indications of an archaeological site. Standardized information was recorded for each test pit on a form. Data recorded for each STP included provenience, depth (in centimeters), and Munsell color and soil texture for each strata.

Project photographs were taken with a digital camera to document the topography, vegetation, and general conditions at the time of the fieldwork. Digital photographs were also taken of several STP profiles.

4.0 RESULTS OF INVESTIGATION

Fieldwork Overview

The project APE was divided into four quadrants (Northwest, Southwest, Northeast, Southeast) based on the divisions of Macon Road and the Unknown Branch (Figure 10). The extreme western and eastern portions of the quadrants were subjected to pedestrian reconnaissance, as the APE was restricted to the existing Macon Road berm in these locations (Figure 11). The two areas within the Macon Road berm contain buried utilities and erosion, especially within the northeastern quadrant (Figure 12). No subsurface testing was deemed necessary within either the eastern or western edges of the APE in all four quadrants due to the existing Macon Road Berm, and there will be no further discussion of the road berm in the following sections. Pedestrian reconnaissance did not identify any signs of archaeological resources nor locations where such resources might be preserved.

At their widest point, all four quadrants contain approximately 95-feet of new ROW measured from the existing road centerline. Portions of this new ROW are currently under the existing roadway berm, but there is about 65-feet of new ROW from the current paved edge of Macon Road. This wider portion of APE measures approximately 450-feet in length.

Northwestern Quadrant

The Northwestern Quadrant includes an upland landform bordering the Unknown Branch, as mentioned in Chapter 2 (Figure 13). The southwestern quadrant contains improved pasture interspersed with hardwood trees and various grasses and was tested at 20 meter intervals. (Figure 6). STPs 1 – 4 in Transect A were excavated in the Northwestern Quadrant.

The three STPs excavated on the upland landform encountered oxidized silty clay. The stratigraphy in this area is exemplified in STP A3 (Figure 14). The first stratum (Ap horizon) consisted of yellowish brown (10YR 5/4) silty clay to a depth of 15 cmbs. The second stratum (E horizon) consisted of strong brown (7.5YR 5/6) heavily oxidized clay to a terminal depth of 25 cmbs.

The remaining STP A4 was excavated in the Unknown Branch floodplain, and revealed alternating layers of silt to a depth of 70 cmbs. No cultural resources were encountered in the Northwestern Quadrant.

Northeastern Quadrant

The Northeastern Quadrant consists of floodplain and is currently a densely vegetated fallow agricultural field (Figure 15). Numerous erosional gullies were encountered during testing, with the area adjacent to Unknown Branch being untestable. There was a general 3-4 foot drop in elevation in the eroded areas (Figure 16). STPs 5 and 6 in Transect A were excavated in the Northeastern Quadrant.

Both STPs were excavated in the fallow agricultural field. Typical stratigraphy is typified by STP A6. The first stratum (Ap horizon) consisted of brown (10YR 4/3) loamy sand to a depth of 14 cmbs. The second stratum (C1 horizon) consisted of yellowish brown (10YR 5/4) silt to a depth of 33 cmbs. The third stratum (C2 horizon) was characterized by a yellowish brown (10YR 5/4) fine sand and silt mix to a depth of 63 cmbs. The final stratum (C3 horizon) displayed yellowish brown (10YR 5/4) silt and oxidized clay to a depth of 74 cmbs. Strata 2-4 represent varying flood events and deposits in the floodplain, with strata 2 and 4 containing silt only and stratum 3 containing more sand.

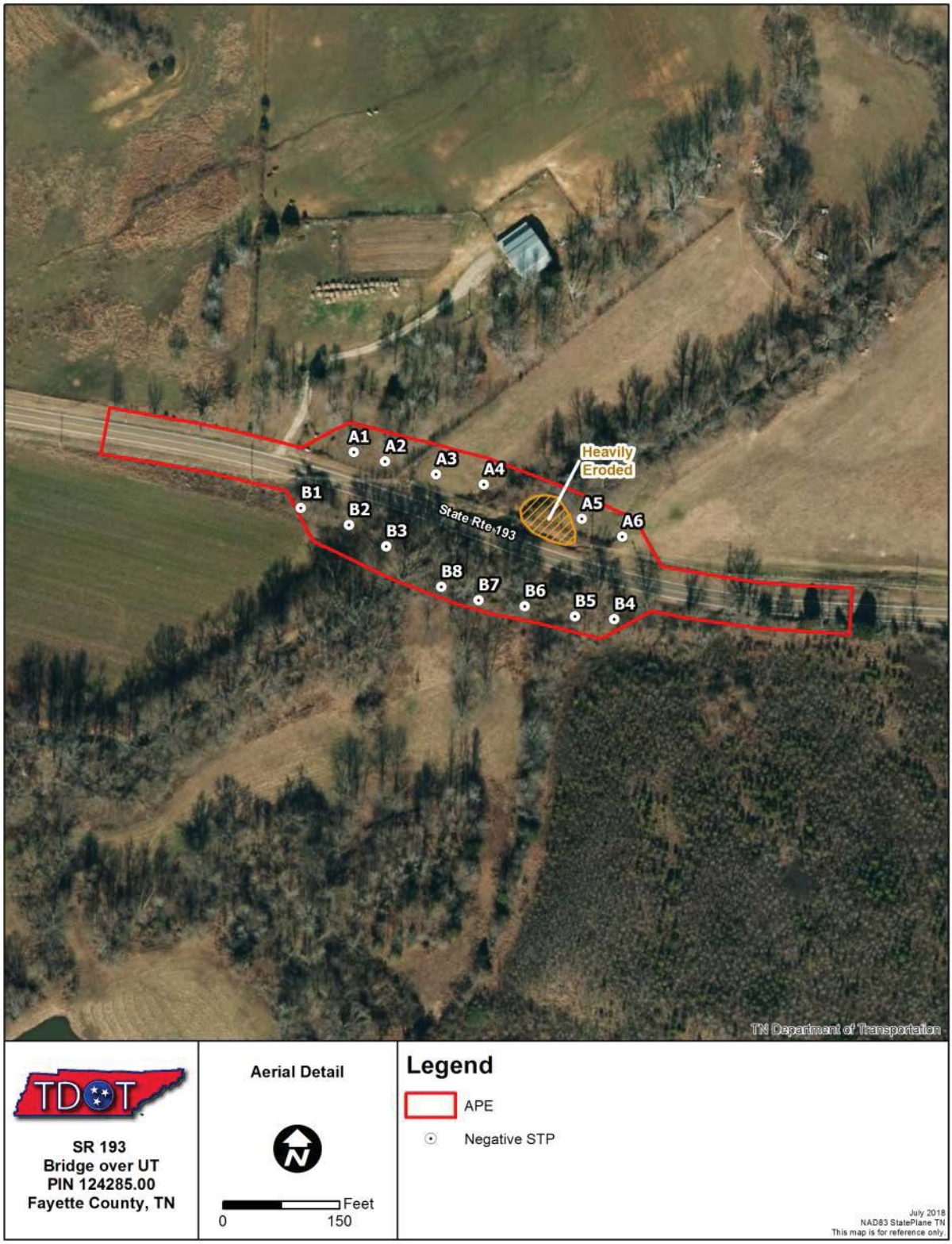


Figure 10. Macon Road field testing map.

Figure 11. APE within existing ROW, western APE, facing west.

Figure 12. View of Eastern Macon Road APE within the existing ROW, showing erosion and exposed utility cable, View North.

Figure 13. Environmental setting of the upland landform, facing northwest.

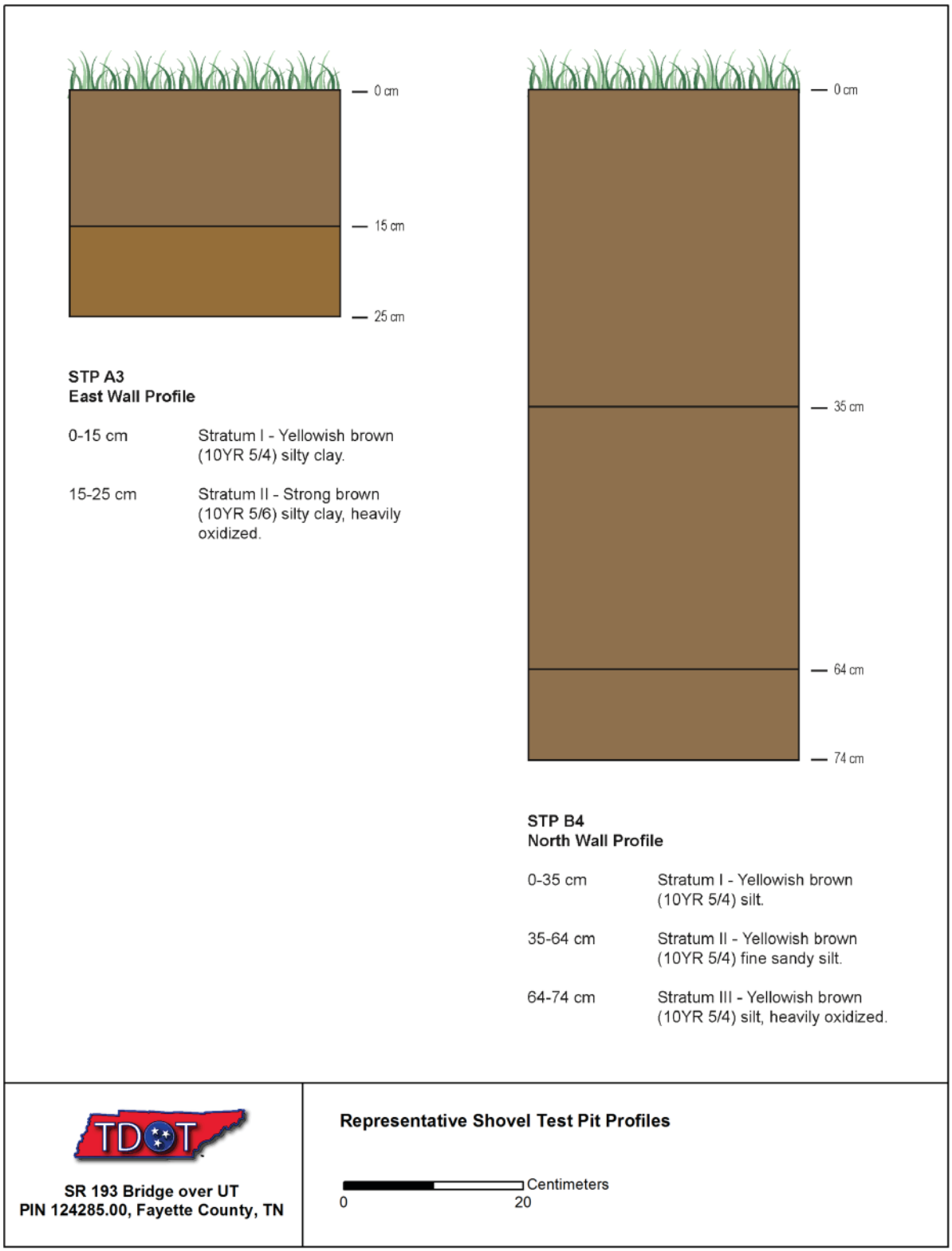


Figure 14. Macon Road Representative Soil Profiles

Figure 15. Environmental setting of the Northeast Quadrant, facing northeast.

Figure 16. Crew member standing in gully to display elevation differences (center of photo), view west.

Southwestern Quadrant

The Southwestern Quadrant is located in floodplain which is currently active agricultural field (Figure 10: Figure 17). The agricultural field is bounded by dense hardwood forest bordering the Unknown Branch drainage. The ground surface of the agricultural field was quite wet due to recent heavy rains. STPs 1 – 3 in Transect B were excavated in the Southwestern Quadrant.

The three STPs excavated in the agricultural field and floodplain forest encountered floodplain deposits with deeper oxidized stratigraphy. The stratigraphy in this area is typified by STP B3. The first stratum (Ap horizon) consisted of yellowish brown (10YR 5/4) silt to a depth of 37 cmbs. The second stratum (C horizon) is characterized by yellowish brown (10YR 5/4) silt to a depth of 43 cmbs. The third stratum (C horizon) displayed yellowish brown (10YR 5/4) fine sand and silt to a depth of 62 cmbs. Finally, the fourth stratum (C horizon) exhibited yellowish brown (10YR 5/4) silt to a depth of 71 cmbs. Similar to the Northeastern Quadrant, Strata 2-4 represent varying flood events and deposits in the floodplain, with strata 2 and 4 containing silt only and stratum 3 containing more sand.

Southeastern Quadrant

The Southeastern Quadrant is located in floodplain hardwood forest with a dense understory bordered by fallow agricultural fields south of the APE (Figure 18). STPs 4 – 8 in Transect B were excavated in the Southeastern Quadrant (Figure 10).

The four STPs excavated in the floodplain forest encountered floodplain deposits with oxidized stratigraphy increasing with depth. The stratigraphy in this area is exemplified in STP B4 (Figure 14: Figure 19). The first stratum (Ap horizon) consists of yellowish brown (10YR 5/4) silt to a depth of 35 cmbs. The second stratum (C horizon) displayed yellowish brown (10YR 5/4) fine sand/silt to a depth of 64 cmbs. The third stratum (C horizon) was characterized by a yellowish brown (10YR 5/4) silt to a depth of 74 cmbs. Similar to the other floodplain quadrants, all strata represent flood events and deposits in the floodplain, with increasingly mineralized and oxidized deposits increasing with depth.

Figure 17. Environmental setting of the Southwestern Quadrant, facing southeast.

Figure 18. Environmental setting in the Southeastern Quadrant, facing south.

Figure 19. STP B4 North Wall Profile.

5.0 SUMMARY AND RECOMMENDATIONS

The TDOT intends to replace the bridge on Macon Road spanning the Unknown Branch at Log Mile 11.48 in Fayette County, Tennessee. The project is tracked as TDOT Project Number (PE-N) 24029-0207-94 and PIN 124285.00. AECOM performed a (modified) Phase I terrestrial archaeological survey of the project's Area of Potential Effect (APE) under contract to the TDOT (Agreement No. E1906, Work Order 8). Design plans for the project were provided by TDOT staff member Sarah K. McKinney. The APE includes land on the east and west sides of Unknown Branch and the north and south sides of State Road 193 (Macon Road). The Area of Potential Effects (APE) for this study has been defined by TDOT as an area extending 50 feet beyond the existing right of way for a distance of 200 feet to either side of the bridge, then narrowing to the existing right of way for an additional 300 feet in both directions. State Archaeological Permit #000991 was issued by the Tennessee Division of Archaeology to AECOM on June 11, 2018.

The Scope of Work (SOW) for the project is compliant with TCA 4-11-111 and Section 106 of the National Historic Preservation Act in compliance with the regulations issued by the Advisory Council on Historic Preservation (36 CFR 800), and following TDOT's *Scope of Work Phase I Archaeological Assessments* (FY 2017-2018) and the Tennessee SHPO's *Standards and Guidelines for Archaeological Resource Management Studies* (March 2009). This standardized SOW included background research, shovel test survey at 20 meter intervals in the APE, and reporting tasks. AECOM performed the Phase I archaeological survey to address these project goals on June 13-14, 2018.

The APE northwest of the Unknown Branch consists of an elevated landform with a southeast facing slope; the remaining southwestern, southeastern, and northeastern sides consist of level floodplain. Subsurface testing was conducted within the entire APE.

No archaeological resources or archaeologically sensitive deposits have been identified within the State Road 193 (Macon Road) Bridge APE. We therefore recommend no additional archaeological studies be required in conjunction with the proposed replacement of the State Road 193 (Macon Road) Bridge over Unknown Branch.

6.0 REFERENCES CITED

Adovasio, J.M., D. Pedler, J. Donahue, and R. Stuckenrath

1999 No Vestiges of a Beginning nor Prospect for an End: Two Decades of Debate on Meadowcroft Rockshelter. In *Ice Age Peoples of North America*, edited by Robson Bonnichsen and Karen L. Turnmire, pp. 416-431. Corvallis: Center for the Study of the First Americans.

Anderson, D.G.

1990 The Paleoindian Colonization of Eastern North America: A View from the Southeastern United States. In *Early Paleoindian Economies of Eastern North America*, edited by K. B. Tankersley and B. L. Isaac, pp. 163-216. Research in Economic Anthropology, Supplement 5. JAI Press, Greenwich, Connecticut.

1996 Modeling Regional Settlement in the Archaic Period Southeast. In *Archaeology of the Mid-Holocene Southeast*, edited by K. E. Sassaman and D. G. Anderson, pp. 161-180. University of Florida Press, Gainesville.

Anderson, D. G., D. S. Miller, D. T. Anderson, S. . Yerka, J. C. Gillam, E. N. Johanson, and A. Smallwood

2009 "Paleoindians in North America: Evidence from PIDBA (Paleoindian Database of the Americas)." Poster presented at the Annual Meeting of the Society for American Archaeology, Atlanta, Georgia, 24 April 2009.

Angst, M.G. (with contribution by J. Vavrasek)

2011 Archaeological Survey of TVA Lands Along the Lower Duck River and Within the Duck River and Big Sandy Units of the Tennessee National Wildlife Refuge, Benton, Henry and Humphreys Counties, Tennessee; Volume III: 2011 Season. Archaeological Research Laboratory, University of Tennessee, Knoxville. Prepared for Tennessee Valley Authority, Cultural Compliance Section, Knoxville. Manuscript on file, Tennessee Division of Archaeology, Nashville.

Birkeland, P.W.

1999 *Soils and Geomorphology, 3rd ed*. Oxford Univ. Press, Inc., Oxford/New York, 430 p

Brackenridge, R.G.

1984 Alluvial stratigraphy and radiocarbon dating along the Duck River, Tennessee: Implications regarding flood-plain origin, Geological Society of America Bulletin, v. 95, p. 9-25.

Braun, L. E.

1950 *Deciduous Forest of Eastern North America*. The Blakiston Company, Philadelphia.

Broster, J.B., and L.C. Adair

1975 Archaeological Investigations at the Pinson Mounds Site (40MD1); Madison County, Tennessee. In *The Pinson Mounds Archaeological Project: Excavations of 1974 and 1975*, edited by J.B. Broster and L. Schneider, pp. 1-89. Tennessee Division of Archaeology Research Series No. 1, Nashville.

Broster, J.B., L.C. Adair, and R.C. Mainfort, Jr.
1980 Archaeological Investigations at the Pinson Mounds State Archaeological Area. In *Archaeological Investigations at Pinson Mounds State Archaeological Area: 1974, 1975, and 1978 Field Seasons*, edited by Robert C. Mainfort, Jr., pp. 1-90. Tennessee Division of Archaeology Research Series No. 1, Nashville.

Cable, J.S.
1998 Intensive Survey of the New Johnsonville Gas Pipeline, Humphreys and Hickman Counties, Tennessee. Palmetto Research Institute Publication in Archaeology No. 7, Irmo, South Carolina. Prepared for Tennessee Valley Authority, Knoxville.

Caldwell, J.R.
1958 *Trend and Tradition in the Prehistory of the United States*. Memoir 88. American Anthropological Association, Arlington, Virginia.

Carbone, V.A.
1974 The Paleo-Environment of the Shenandoah Valley. In *The Flint Run Paleo-Indian Complex: A Preliminary Report, 1971-1973 Seasons*, edited by William M. Gardner, pp. 84-99. Catholic University of America, Department of Anthropology Occasional Paper No. 1. Washington, D.C.

Chandler, J.M.
2001 The Topper Site: Beyond Clovis at Allendale. *The Mammoth Trumpet* 16 (4):10-15.

Chapman, Jefferson
1985 *Tellico Archaeology*. Publications in Archaeology No. 41. Tennessee Valley Authority. The University of Tennessee Press, Knoxville.

Claggett, S.R., and J.S. Cable
1982 *The Haw River Sites: Archaeological Investigations at Two Stratified Sites in the North Carolina Piedmont*. Commonwealth Associates, Inc., Jackson, Michigan. Submitted to U.S. Army Corps of Engineers, Wilmington District. Copies available from US Army Corps of Engineers, Wilmington, North Carolina.

Coe, J.L.
1964 The Formative Cultures of the Carolina Piedmont. *Transactions of the American Philosophical Society* 54(5). Philadelphia.

Colquhoun, D.J., and M.J. Brooks
1987 New evidence for Eustatic Components in Late Holocene Sea Levels. In *Climate: History, Periodicity, and Predictability*, edited by M.R. Rampino, J.E. Sanders, W.S. Newman, and L.K. Konigsson, pp. 143-156. Van Nostrand Reinhold, New York.

Delcourt, P.A., and H.R. Delcourt
1983 Late-Quaternary Vegetational Dynamics and Community Stability Reconsidered. *Quaternary Research* 19(2):265-271.

Dragoo, D.W.
1976 Some Aspects of Eastern North America Prehistory: A Review 1975. *American Antiquity* 41(1):3-27.

Fenneman, Nevin M.
1938 Physiography of the Eastern United States. McGraw-Hill, New York.

Finley, Anthony
1824 "Tennessee." Electronic resource accessed July 2018 and available at **Error! Hyperlink reference not valid.**.

Ford, R.I.
1974 Northeastern Archaeology: Past and Future Directions. *Annual Review of Anthropology* 1:385-413.

Gardner, W.M.
1974 The Flint Run Complex: Pattern and Process During the Paleo-Indian to Early Archaic. In *The Flint Run Paleo-Indian Complex: A Preliminary Report, 1971-1973 Seasons*, edited by William M. Gardner, pp. 5-47. Occasional Paper No. 1. Department of Anthropology, Catholic University of America, Washington, D.C.

1979 Paleo-Indian Settlement Patterns and Site Distribution in the Middle Atlantic. Ms. on file, Department of Anthropology, Catholic University, Washington, D.C.

1981 Paleoindian Settlement Patterns and Site Distributions in the Middle Atlantic. In *Anthropological Careers*, edited by R. A. Landman,pp 51-73. Anthropological Society of Washington, Washington D. C.

Glassow, M.
1977 Issues in Evaluating the Significance of Archaeological Resources. *American Antiquity* 42:413-420.

Goodspeed Publishing Company
1886 *History of Tennessee*: *From the Earliest Time to the Present; Together with an Historical and a Biographical Sketch of Fayette and Hardeman Counties, Besides a Valuable Fund of Notes, Original Observations, Reminiscences, Etc. Etc.* Goodspeed Publishing Company. Nashville, TN.

Goodyear, A.C.
1982 The Chronological Position of the Dalton Horizon in the Southeastern United States. *American Antiquity* 47:382-395.

1999 The Early Holocene Occupation of the Southeastern United States: A Geoarchaeological Summary. In *Ice Age Peoples of North America*, edited by Robson Bonnichsen and Karen Turnmire, pp. 432-481. Oregon State University Press, Corvallis, Oregon.

Google Earth
2018 Aerial Imagery in Google Earth Pro. First accessed June 10, 2018.

Griffin, J.B.
1967 Eastern North American Archaeology: A Summary. *Science* 156:175-191.

Hudson, Charles
1976 The Southeastern Indians. The University of Tennessee Press, Knoxville.

Jennings, J.D.
1975 *Prehistory of North America*. McGraw Hill, New York.

Justice, N.D.
1987 *Stone Age Spear and Arrow Points of the Midcontinental and Eastern United States*. Indiana University Press, Bloomington.

Kimball, Larry (editor)
1985 *The 1977 Archaeological Survey: An Overall Assessment of the Archaeological Resources of the Tellico Reservoir*. Report of Investigations No. 40. Department of Anthropology, University of Tennessee, Knoxville.

Morton, Dorothy Rich
1989 *Fayette County*. Memphis State University Press. Memphis, TN.

2018 "Fayette County." Electronic resource accessed July 2018 and available at **Error! Hyperlink reference not valid.**.

Kneberg, M.
1952 The Tennessee Area. In *Archaeology of the Eastern United States*, edited by J.B. Griffin, pp. 190-198. University of Chicago Press.

McAvoy, J.M, and L.D. McAvoy
1997 *Archaeological Investigations of Site 44SX202, Cactus Hill, Sussex County, Virginia*. Virginia Department of Historic Resources, Research Report Series No. 8. Richmond.

McDonald, J.N.
2000 *An Outline of the Pre-Clovis Archaeology of SV-2, Saltville, Virginia*. Virginia Museum of Natural History's Jeffersoniana Series, Number 9. Available from McDonald and Woodward Publishers, Granville, Ohio.

Mainfort, R.C., J.C. Brandon, E. Breitburg, S. Chapman, M.L. Kwas, W.L. Lawrence, J.E. Mirecki, and A.B. Shea
1994 *Archaeological Investigations in the Obion River Drainage: the West Tennessee Tributaries Project*. Tennessee Department of Environment and Conservation, Division of Archaeology, Research Series No. 10, Nashville.

Milanich, J.T., and C.H. Fairbanks
1980 *Florida Archaeology*. Academic Press, New York.

Nicholson, W.L.
1877 "Postal Route Map of the State of Tennessee." Electronic resource accessed July 2018 and available at http://alabamamaps.ua.edu/historicalmaps/us_states/tennessee_/index2_1851-1900. htm.

Peterson, Drexel. A.
1979 *An Archaeological Survey and Assessment of the Loosahatchie Watershed*. Memphis State University, Memphis, Tennessee. Prepared for the Soil Conservation Service, Nashville, Tennessee.

Rindos, D.
1989 Darwinism and Its Role in the Explanation of Domestication. In *Foraging and Farming: The Evolution of Plant Exploitation*. Unwin Hyman, London.

Sayers, Alethea D.
2001 "La Grange, Tennessee: A Chronology of Civil War Events." Electronic resource accessed July 2018 and available at http://www.lagrangetn.com/chronology.htm.

Schoeneberger, P.J., D.A. Wysocki, E.C. Benham, and W.D. Broderson,
1998 *Field Book for Describing and Sampling Soils*. Natural Resources Conservation Service, U.S. Dept. of Agriculture, National Soil Survey Center, Lincoln.

Seramur, K.C.
2016 *Geomorphology Investigation for Bakerville Road Bridge over the Duck River Humphreys County, Tennessee. PIN 107697.00*. Seramur & Associates, PC, Boone, North Carolina. Submitted to AECOM, Raleigh, North Carolina. Manuscript on file, AECOM, Raleigh, North Carolina. (and Appendix D this Volume).

Smith, G.P.
1996 The Mississippi River Drainage of Western Tennessee. In *Prehistory of the Central Mississippi Valley*, edited by C. McNutt, pp 97-118. University of Alabama Press, Tuscaloosa.

South, S.
1977 *Method and Theory in Historical Archaeology*. Academic Press, New York.

Tennessee Department of Transportation (TDOT)
2017 Scope of Work: Phase I Archaeological Assessments, FY 2017-2018. Manuscript on file, Tennessee Department of Transportation, Nashville.

Townsend, J., J.H. Sprinkle, and J. Knoerl
1993 Guidelines for the Evaluation and Registering of Historical Archaeological Sites and Districts. National Register Bulletin 36, U.S. Department of the Interior, National Park Service, Interagency Resources Division, National Register of Historic Places, Washington, D.C.

United States Census
Fayette County Census information from 1830-2010.

United States Geological Survey (USGS)
1949 Moscow, TN 7.5-minute Topographical Quadrangle. USGS, Washington, D.C.

1965 Macon, TN 7.5-minute Topographical Quadrangle. USGS, Washington, D.C.

Ward, H.T., and R.P.S. Davis, Jr.
1999 *Time Before History: The Archaeology of North Carolina*. University of North Carolina Press, Chapel Hill.

Watson, P.J.
1989 Early Plant Cultivation in the Eastern Woodlands of North America. In *Foraging and Farming: The Evolution of Plant Exploitation*. Unwin Hyman, London.

Web Soil Survey (WSS)
2018 Web Soil Survey. Electronic resource available at http://websoilsurvey.nrcs.usda.gov/app/ first accessed June 11, 2018.

Williams, S.
1980 The Armorel Phase: A Very Late Complex in the Lower Mississippi Valley. *Southeastern Archaeological Conference Bulletin* 22:105-110.

1983 Some Ruminations on the Current Strategy of Research in the Southeast. *Southeastern Archaeological Conference Bulletin* 21:72-81.

1990 The Vacant Quarter and Other Late Events in the Lower Valley. In *Towns and Temples along the Mississippi*, edited by D.H. Dye and C.A. Cox, pp 170-180. University of Alabama Press, Tuscaloosa.

Yarnell, R.A., and M.J. Black
1985 Temporal Trends Indicated by a Survey of Archaic and Woodland Plant Food Remains from Southeastern North America. *Southeastern Archaeology* 4(2):93-106.

APPENDIX A – TDOA PERMIT

STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF ARCHAEOLOGY
Cole Building #3, 1216 Foster Avenue
NASHVILLE, TN 37243
(615) 741-1588 FAX (615) 741-7329

ARCHAEOLOGICAL PERMIT

NO. 000991

IN ACCORDANCE WITH THE PROVISIONS OF TENNESSEE CODE ANNOTATED SECTION 11-6-101 ET SEQ. PERMISSION IS HEREBY GRANTED TO:

MATTHEW JORGENSON

REPRESENTING:

AECOM

FOR ARCHAEOLOGICAL INVESTIGATION ON THE FOLLOWING DESIGNATED STATE-OWNED OR CONTROLLED LANDS

PHASE I ARCHAEOLOGICAL ASSESSMENT OF SR 193 (MACON ROAD) BRIDGE (ID# 24015420001) OVER UNKNOWN BRANCH, LOG MILE 11.48, FAYETTE COUNTY

IN ACCORDANCE WITH THE APPLICATION FILED MAY 30, 2018 IN THE OFFICE OF THE DIVISION OF ARCHAEOLOGY AND IN CONFORMITY WITH THE DATA SUBMITTED THEREIN WHICH IS CONSIDERED AS A PART OF THIS PERMIT.

ISSUED THIS 11TH DAY OF JUNE 2018

TO EXPIRE 31ST DAY OF OCTOBER 2018

ADDITIONAL TERMS TO PERMIT APPLICATION: ARTIFACTUAL REMAINS AND THE ORIGINAL PROJECT RECORDS WILL BE CURATED WITH THE TENNESSEE DIVISION OF ARCHAEOLOGY. THIS PERMIT IS SUBJECT TO PERIODIC REVIEW AND/OR CANCELLATION BY THE DIVISION OF ARCHAEOLOGY SHOULD CONDITIONS WARRANT SAME.

Michael C Moore

DIRECTOR/STATE ARCHAEOLOGIST

Matthew J

APPLICANT

CN-0939

APPENDIX B – SHOVEL TEST LOG

Transect	STP #	Depth (cm)	Munsell #	Munsell Color	Texture	Artifacts	Comments
A	1	0-20	7.5 YR 5/6	Strong Brown	Silty Clay	none	Clay increasing with depth
A	2	0-25	7.5 YR 5/6	Strong Brown	Silty Clay	none	Clay increasing with depth
A	3	0-15	10YR5/4	Yellowish Brown	Silty Clay	none	Clay increasing with depth
		15-25	7.5 YR 5/6	Strong Brown	Silty Clay	none	Oxidized Clay
A	4	0-30	10YR5/4	Yellowish Brown	Silt	none	Floodplain
		30-62	10YR5/4	Yellowish Brown	Fine Sand/Silt	none	
		62-70	10YR5/4	Yellowish Brown	Silt	none	Oxidized
A	5	0-32	10YR5/4	Yellowish Brown	Silt	none	Floodplain
		32-64	10YR5/4	Yellowish Brown	Fine Sand/Silt	none	
		64-68	10YR5/4	Yellowish Brown	Silt	none	Oxidized
A	6	0-14	10YR4/3	Brown	Loamy sand	none	Plowzone
		14-33	10YR5/4	Yellowish Brown	Silt	none	
		33-63	10YR5/4	Yellowish Brown	Fine Sand/Silt	none	
		63-74	10YR5/4	Yellowish Brown	Silty Clay	none	Oxidized Clay
B	1	0-39	10YR5/4	Yellowish Brown	Silt	none	In plowed field; plowzone
		39-45	10YR7/4	Very Pale Brown	Fine Sand	none	
		45-63	10YR5/4	Yellowish Brown	Fine Sand/Silt	none	
		63-73	10YR5/4	Yellowish Brown	Fine Sand/Silt	none	Oxidized
B	2	0-36	10YR5/4	Yellowish Brown	Silt	none	Edge of plowed field; plowzone
		36-42	10YR7/4	Very Pale Brown	Fine Sand	none	
		42-61	10YR5/4	Yellowish Brown	Fine Sand/Silt	none	
		61-70	10YR5/4	Yellowish Brown	Fine Sand/Silt	none	Oxidized
B	3	0-37	10YR5/4	Yellowish Brown	Silt	none	Floodplain Forest
		37-43	10YR7/4	Very Pale Brown	Fine Sand	none	
		43-62	10YR5/4	Yellowish Brown	Fine Sand/Silt	none	
		62-71	10YR5/4	Yellowish Brown	Fine Sand/Silt	none	Oxidized

B	4	0-35	10YR5/4	Yellowish Brown	Silt	none	Floodplain Forest
		35-64	10YR5/4	Yellowish Brown	Fine Sand/Silt	none	
		64-74	10YR5/4	Yellowish Brown	Silt	none	Oxidized
B	5	0-33	10YR5/4	Yellowish Brown	Silt	none	Floodplain Forest
		33-63	10YR5/4	Yellowish Brown	Fine Sand/Silt	none	
		63-72	10YR5/4	Yellowish Brown	Silt	none	Oxidized
B	6	0-34	10YR5/4	Yellowish Brown	Silt	none	Floodplain Forest
		34-63	10YR5/4	Yellowish Brown	Fine Sand/Silt	none	
		63-73	10YR5/4	Yellowish Brown	Silt	none	Oxidized
B	7	0-37	10YR5/4	Yellowish Brown	Silt	none	Floodplain Forest
		37-65	10YR5/4	Yellowish Brown	Fine Sand/Silt	none	
		65-76	10YR5/4	Yellowish Brown	Silt	none	Oxidized
B	8	0-35	10YR5/4	Yellowish Brown	Silt	none	Floodplain Forest
		35-64	10YR5/4	Yellowish Brown	Fine Sand/Silt	none	
		64-75	10YR5/4	Yellowish Brown	Silt	none	Oxidized

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

July 24, 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-193 (Macon Road) Bridge Replacement over Unknown Branch, Log Mile 11.48, Fayette 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

Historic Preservation

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 11:26:41 -05'00'

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BUREAU OF ENVIRONMENT & PLANNING
SUITE 700, JAMES K. POLK BUILDING
505 DEADERICK STREET
NASHVILLE, TENNESSEE 37243-1402
(615) 741-5376

JOHN C. SCHROER
COMMISSIONER

BILL HASLAM
GOVERNOR

June 6, 2018

Mr. E. Patrick McIntyre, Jr.
Executive Director & State Historic Preservation Officer
Tennessee Historical Commission
2941 Lebanon Road
Nashville, TN 37214

SUBJECT: Historic/Architectural Assessment for the Proposed Replacement of the State Route 193 Bridge over Branch, Log Mile 11.48, in Fayette County, PIN 124285.00

Dear Mr. McIntyre,

Enclosed is the Historic/Architectural Assessment for the above-referenced project. It is the opinion of TDOT that there are no historic resources within the Area of Potential Effect of the proposed project. On behalf of the Federal Highway Administration, we request your review of this report pursuant to regulations contained within 36 CFR 800. An archaeological assessment is being prepared separately.

We look forward to your comments. Thank you for your help in this matter.

Sincerely,

Katherine Looney

TDOT Environmental Supervisor, Historic Preservation

Enclosure

BRIDGE REPLACEMENT PROJECT: FAYETTE COUNTY

State Route 193 Bridge over Branch, Log Mile 11.48
PIN 124285.00

PROJECT DESCRIPTION

The Tennessee Department of Transportation (TDOT), with funding made available through the Federal Highway Administration (FHWA), is proposing to remove and replace the State Route 193 (SR-193) bridge over branch in Fayette County, Tennessee. The project proposes to replace the existing bridge with a new structure on the same alignment. The bridge replacement project will require approximately 0.16 acres of new right-of-way (ROW) acquisition.

The existing bridge is a two-span concrete channel beam bridge with timber superstructure 37 feet long and 21.67 feet wide. The proposed replacement structure is a reinforced concrete box beam bridge 39.5 feet wide. The replacement bridge will maintain the two travel lanes, but will add six-foot shoulders. The project includes transition work along SR-193 to taper the paved shoulders into the existing roadway east and west of the bridge, and to install guardrail.

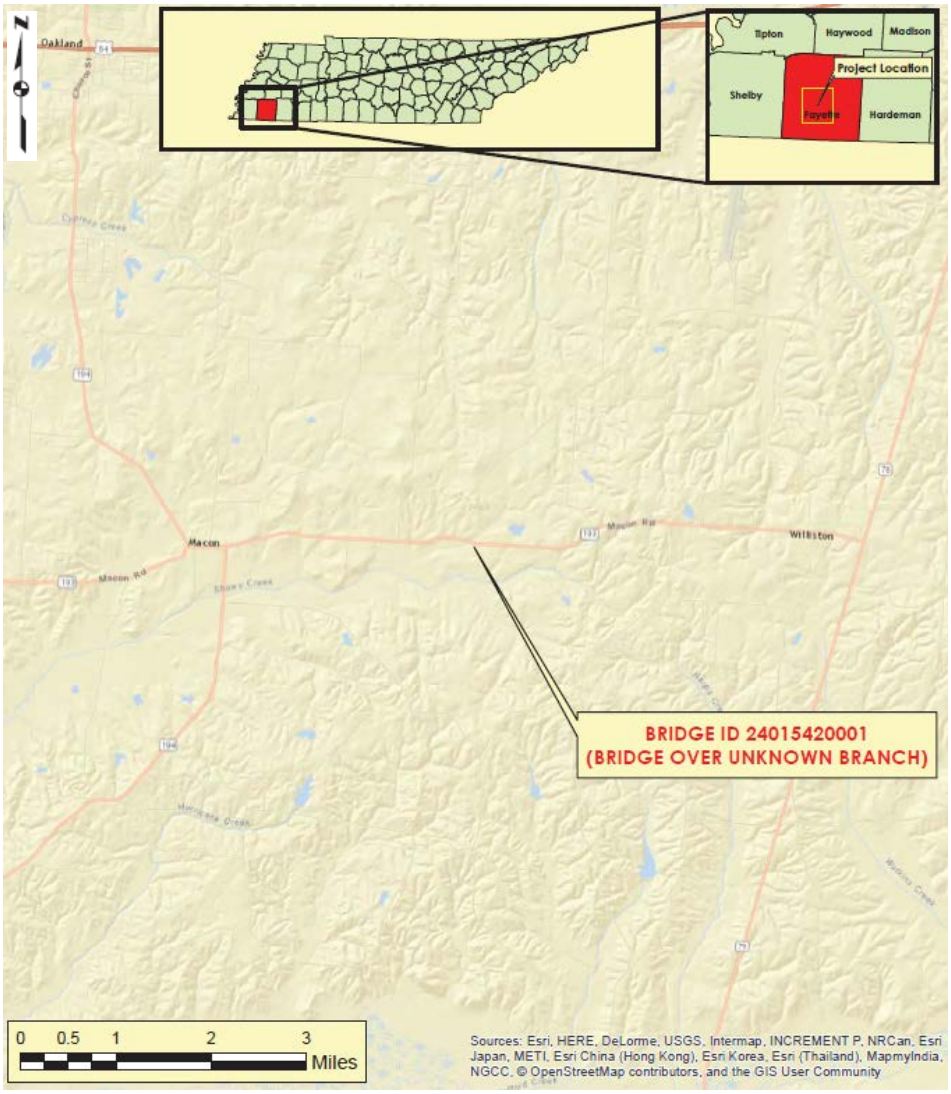


Figure 1: *Project location map.*

PUBLIC AND TRIBAL PARTICIPATION

TDOT will write to eight Native American tribes or representatives asking each for information regarding the project and if they would like to participate in the Section 106 review process as a consulting party. The tribes with historic interest in Fayette County are:

The Chickasaw Nation
Eastern Shawnee Tribe of Oklahoma
Kialegee Tribal Town
Muscogee (Creek) Nation
Quapaw Tribe of Oklahoma
Shawnee Tribe
Thlopthlocco Tribal Town
United Keetoowah Band of Cherokee Indians

TDOT invited the Fayette County Mayor to be a consulting party in the Section 106 process via letter dated May 11, 2018. To date, TDOT has not received any response regarding historic resources.

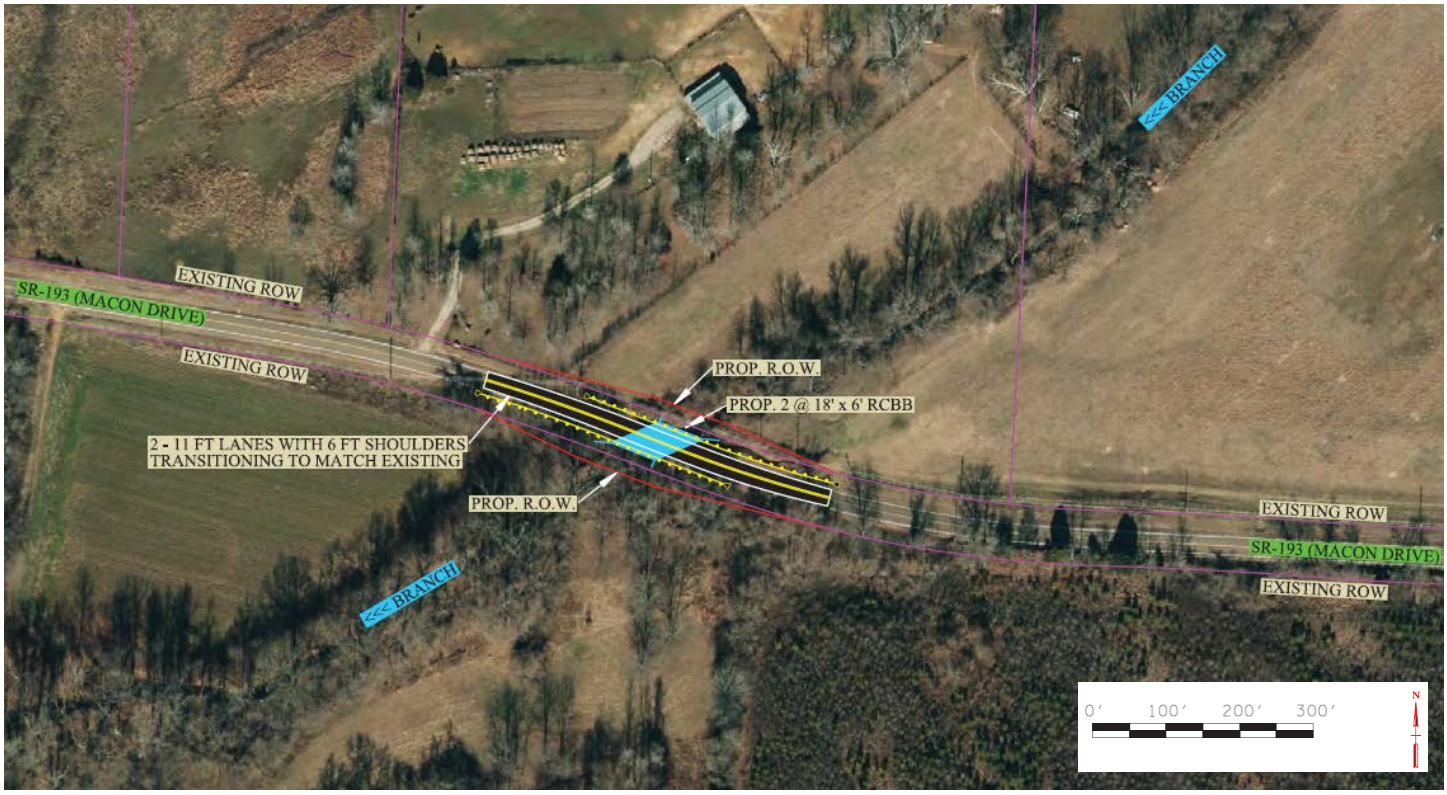


Figure 2: *Functional layout for proposed bridge replacement, aerial view. Proposed ROW lines are for planning purposes.*

ARCHITECTURAL/HISTORICAL SURVEY

In compliance with Section 106 of the National Historic Preservation Act of 1966, as amended, TDOT staff historians reviewed the Area of Potential Effect (APE) for this project. An archaeological assessment is being prepared separately. A TDOT historian checked the survey records of the Tennessee State Historic Preservation Office (TN-SHPO) to determine if any previous architectural surveys had identified historic properties in the area. There are no previously surveyed properties within the APE of the proposed project (Figure 3).

LIT/RECORDS SEARCH: 5/21/2018—Laura van Opstal
FIELD STUDY: 5/24/2018—Laura van Opstal & Katherine Looney

Figure 3: *TN-SHPO survey map. USGS topographic quadrangle Macon 424NW. There are no previously surveyed properties within the APE of the proposed project. Roads driven by TDOT historians during the field survey are highlighted in yellow.*

TDOT historians field reviewed the APE for the proposed project in compliance with 36 CFR 800 regulations. The purpose of this survey was to identify any resources either included in or eligible for inclusion in the National Register of Historic Places (eligibility criteria are set forth in 36 CFR 60.4). The survey area included land needed for additional ROW as well as areas that might possibly be affected by changes in air quality, noise levels, setting, and land use. The area surrounding the bridge is rural and mostly agricultural fields and wooded areas.

The field survey did not identify any buildings within the APE. The existing bridge was built in 1965, and is a two-span concrete channel beam bridge with a timber substructure. The bridge is not currently listed in the National Register of Historic Places. In 2000, the Department of Civil and Environmental Engineering at the University of Tennessee conducted a survey of and evaluation for National Register eligibility of pre-1950 bridges. They found

that the precast concrete bridge is a common type that is not eligible for listing in the National Register of Historic Places.

Therefore, it is the opinion of TDOT that there are no properties listed in or eligible for listing in the National Register of Historic Places within the proposed project's APE.

View east along SR-193 toward the bridge.

CONCLUSION

The Tennessee Department of Transportation, with funding made available through the Federal Highway Administration (FHWA), is proposing the replacement of the SR-193 bridge over an unnamed branch in Fayette County.

In compliance with 36 CFR 800, TDOT historians surveyed the proposed project APE for historic resources. No National Register listed or eligible properties exist in the project area, and no historic resources were identified by the survey. It is the opinion of TDOT that there are no historic resources in the project area. Additionally, the lack of historic resources indicates that Section 4(f) does not apply.

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 193 Bridge over Branch, Log Mile 11.48/ PIN 124285.00, , Fayette 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

Native American Consultation

Environmental Study

Technical Section

Section: Native American Coordination

Study Results

NAC Was sent to all federally recognized, interested tribes on May 14, 2018 and August 21, 2018. The Shawnee Tribes responded with a finding of "no concern." The Chickasaw Nation requested to be a consulting party. A final report was sent to the tribe. No other tribes responded.

Commitments

Did the study of this project result in any environmental commitments? **No**

Additional Information

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

Certification

Responder: Sarah Kate McKinney

Title: TESS Archaeology

Signature: Sarah Kate McKinney

Digitally signed by Sarah Kate McKinney
Date: 2018.09.28 10:05:21 -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

May 14, 2018

Mr. Everett Bandy
Tribal Historic Preservation Officer
Quapaw Tribe of Oklahoma
PO Box 765, Quapaw OK
74363-0765

SUBJECT: Section 106 Initial Consultation for Proposed Bridge Replacement of State Route 193 Bridge over Unknown Branch in Fayette County, Tennessee (TDOT PIN 124285.00).

Dear Mr. Bandy,

The Tennessee Department of Transportation (TDOT), in coordination with the Federal Highway Administration (FHWA), is proposing to replace the State Route 193 (Macon Road) bridge over unnamed branch, log mile 11.48, in Shelby County, Tennessee (maps attached). The proposed bridge replacement will remain on the same alignment, however, approximately 0.16 acres of right-of-way is expected. Both underground and overhead utilities will need to be relocated and there will be ground disturbance in the area of potential effects.

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

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

Please respond to me via letter, telephone (615-741-0977), fax (615-741-1098), or E-mail (Phillip.Hodge@tn.gov). 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.

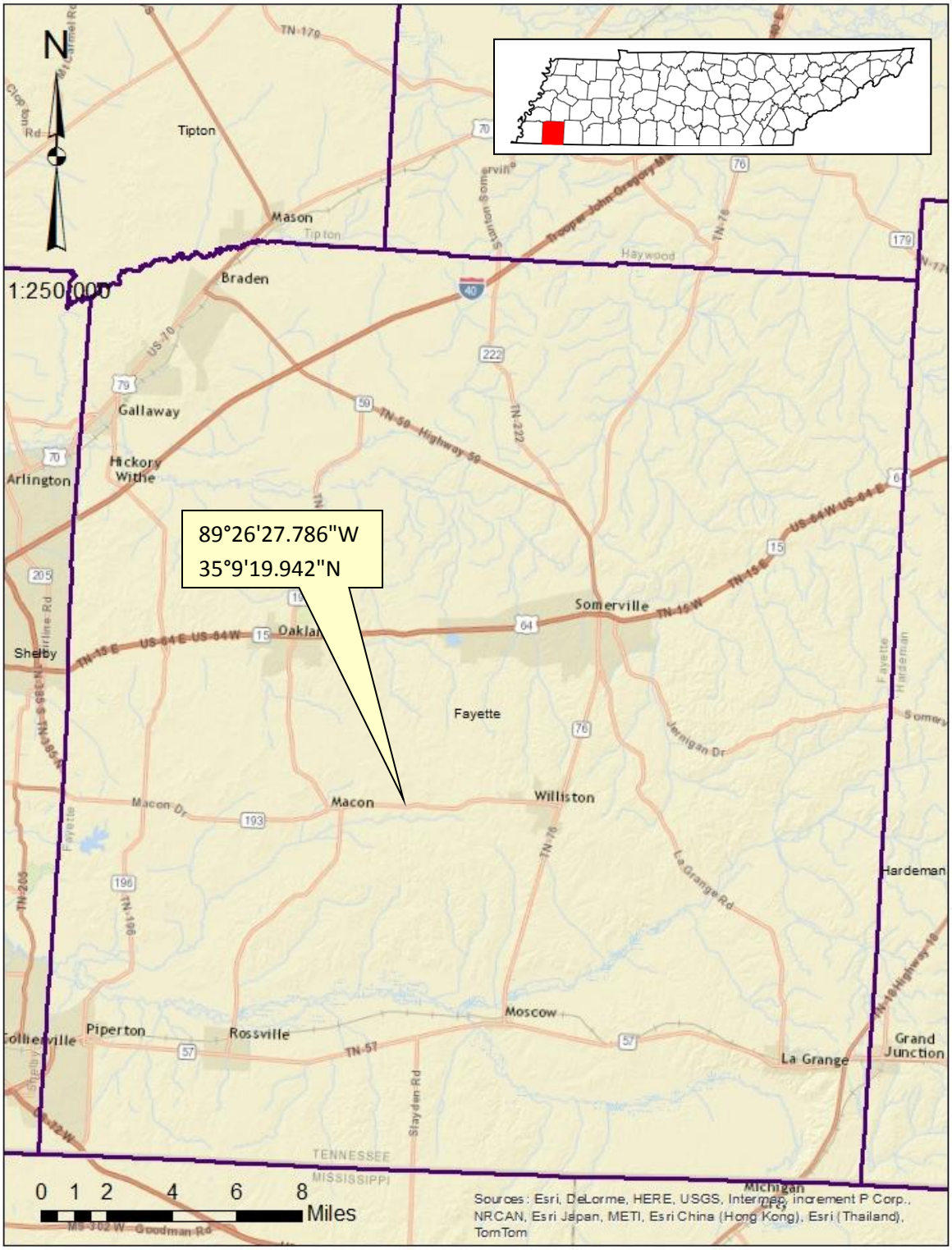
Sincerely,

Phillip R. Hodge
Archaeology Program Manager

Enclosure

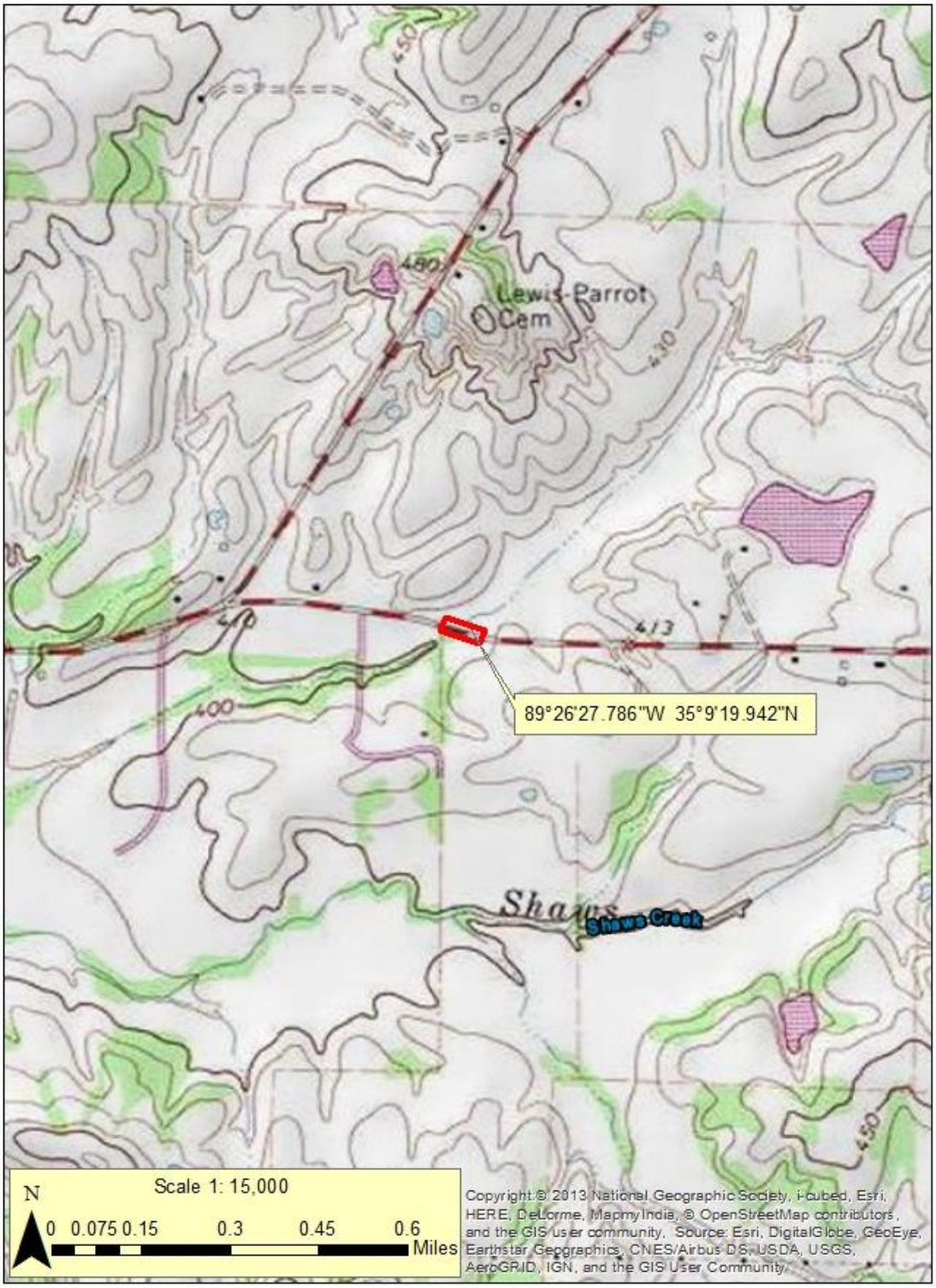
cc Karen Brunso, The Chickasaw Nation
Brett Barnes, Eastern Shawnee Tribe of Oklahoma
David Cook, Kialegee Tribal Town
Tonya Tipton, Shawnee Tribe
Terry Clouthier, Thlopthlocco Tribal Town
Sheila Bird, United Keetoowah Band of Cherokee Indians
Corain Lowe-Zepeda, Muscogee (Creek) Nation

Fayette County, TN. PIN 124285.00



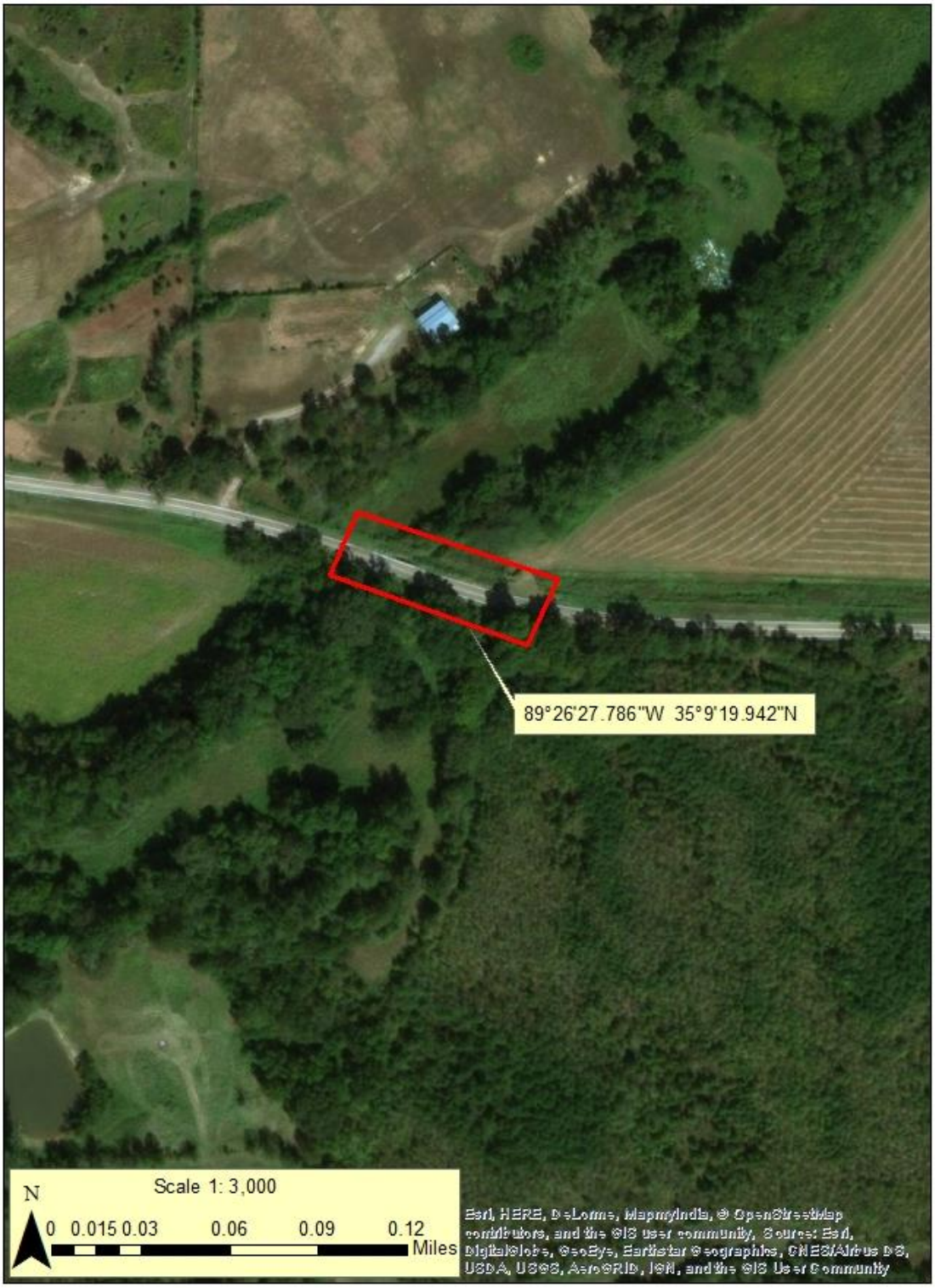
Project Vicinity Map

TDOT PIN 124285.00
Fayette County
USGS TOPO Macon 424 NW



USGS Quad Map

TDOT PIN 124285.00
Fayette County
USGS TOPO Macon 424 NW



Project Location: Aerial View

From: tonya@shawnee-tribe.com
To: Phillip Hodge
Subject: RE: Section 106 Consultation; Fayette County, State Route 193 Bridge over Unknown Branch, PIN 124285.00
Date: Tuesday, June 12, 2018 2:51:05 PM
Attachments: image002.jpg
image003.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
Shawnee Tribe

From: Phillip Hodge <Phillip.Hodge@tn.gov>
Sent: Monday, May 14, 2018 3:23 PM
To: tonya@shawnee-tribe.com
Subject: Section 106 Consultation; Fayette County, State Route 193 Bridge over Unknown Branch, PIN 124285.00

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

From:	Phillip Hodge
To:	Sarah K. McKinney
Subject:	FW: Section 106 Coordination; State Route 193 (Macon Road) Bridge over Unknown Branch, Fayette County, Tennessee PIN 124285.00
Date:	Wednesday, August 22, 2018 4:15:17 PM
Attachments:	Fayette SR 193 Bridge 124285.00 NAC Brunso.pdf Fayette County, TN, SR-193 Bridge over Branch, Archaeological Report_PIN....pdf Fayette County, TN, SR-193 Bridge over Branch, Architectural-Historical ....pdf

FYI, and to file.

From: Fottrell, Gary (FHWA) [mailto:Gary.Fottrell@dot.gov]
Sent: Tuesday, August 21, 2018 7:10 AM
To: Chickasaw Nation (HPO@chickasaw.net)
Cc: Phillip Hodge
Subject: Section 106 Coordination; State Route 193 (Macon Road) Bridge over Unknown Branch, Fayette County, Tennessee PIN 124285.00

Dear Ms. Brunso:

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

- **State Route 193 (Macon Road) Bridge over Unknown Branch, Fayette County, PIN 124285.00**

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 September 20th.

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

August 31, 2018

Mr. Gary Fottrell
Environmental Program Engineer
Tennessee Division
Federal Highway Administration
404 BNA Drive, Suite 508
Nashville, TN 37217

Dear Mr. Fottrell:

Thank you for the letters of notification and cultural resource reports regarding the proposed projects, delineated in the attached table, in Tennessee. We accept the invitation to consult under Section 106 of the National Historic Preservation Act.

The Chickasaw Nation supports the proposed undertakings and is presently unaware of any specific historic properties, including those of traditional religious and cultural significance, in the project area. In the event the agency becomes aware of the need to enforce other statutes we request to be notified under ARPA, AIRFA, NEPA, NAGPRA, NHPA and Professional Standards.

Your efforts to preserve and protect significant historic properties are appreciated. If you have any questions, please contact Ms. Karen Brunso, tribal historic preservation officer, at (580) 272-1106, or at karen.brunso@chickasaw.net.

Sincerely,

Lisa John, Secretary
Department of Culture and Humanities

cc: Gary.Fottrell@dot.gov

Project Description	Location
PIN#124637.00 State Route 87 bridge over Overflow	Lauderdale County
PIN#124154.00 State Route 100 bridge over South Fork Forked Deer River	Chester County
Request #6413 Excess land on I-65	Williamson County
PIN#124505.00 State Route 1 bridge over Muddy Creek	Haywood County
PIN#124748.00 State Route 3 bridge over Overflow	Shelby County
Request #6406 Excess land in Crump	Hardin County
PIN#126713.00 Bike and Pedestrian Trail along Memphis-Arlington Road	Arlington, Shelby County
Request #6421 Excess land	Hardin County
PIN#124285.00 Bridge over unknown branch	Fayette County
PIN#124135.00 Bridge over Reedy Creek	Carroll County

Hazardous Materials

Environmental Study

Technical Section

Section: Hazardous Materials

Study Results

Based on the Transportation Investment Report dated 27 March 2018, no known hazardous materials sites appear to affect this project as it is currently planned and no additional hazardous material studies are recommended at this time. The asbestos bridge survey has been completed and the following project commitment is pending in PPRM.

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 completed on Bridge No. 24015420001, SR-193 over Branch LM 11.48 (24-SR193-11.48). No ACM was detected. Please see the report for further details and photographs. 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=Hazardous Materials Section, email=kyle.kirschenmann@tn.gov, c=US
Date: 2018.06.06 14:19:15 -04'00'

Title: Environmental Program Manager, Hazardous Materials Section

13-April-2018
Barge File Number: 3637862

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-193 Macon Road Bridge over Branch, LM 11.48 (IA)
PE-N: 24029-0207-94, PIN: 124285.00
Bridge Number: 24015420001
Fayette County, Tennessee

Dear Mr. Kirschenmann:

Enclosed is the asbestos assessment report for the above-referenced bridge. A total of 12 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-193 Macon Road Bridge over Branch, LM 11.48 (IA)
PE-N: 24029-0207-94, PIN: 124285.00
Bridge Number: 24015420001
Fayette County, Tennessee

PREPARED BY

615 3rd Avenue South, Suite 700
Nashville, TN 37210
Barge Project #: 36378-62

13-April-2018

Brandon Page

Brandon Page (Signature)
Tennessee Asbestos Inspector Accreditation No: A-I-100428-64307

TABLE OF CONTENTS

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-193 Macon Road Bridge over Branch, LM 11.48 (IA)
PE-N: 24029-0207-94
PIN: 124285.00
Bridge Number: 24015420001
County: Fayette

1.2 General Description

Bridge Number 24015420001 is located on SR-193 over Branch LM 11.48 (24-SR193-11.48), is a 38-foot, two-lane, two-span bridge constructed of pre-stressed concrete channel beams with a concrete deck and asphalt wearing surface. The bridge was constructed in 1965. 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 April 5, 2018, by Brandon Page, 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 Area 1 & 2)

Three samples labeled 01-01-01, 01-01-02, and 01-01-03 were collected from the curb. Samples were collected using hammers and chisels. Three samples labeled 01-02-04, 01-02-05, and 01-02-06 were collected from the road stripe. Samples were obtained using a razor knife.

2.3.2 Underside of Bridge Deck (Homogeneous Area 3)

The bottom of the deck was concrete. Three samples labeled 01-03-07, 01-03-08, and 01-03-09 were collected from the bottom of the deck. Samples were collected using hammers and chisels.

2.3.3 Bridge Beams

No bridge beam samples were collected.

2.3.4 Bridge Piers/Bents and Support

No bridge pier samples were collected.

2.3.5 Bridge Rails

No bridge rail samples were collected.

2.3.6 Abutments (Homogeneous Area 4)

Three samples labeled 01-04-10, 01-04-11, and 01-04-12 were collected from the abutment. Samples were obtained using hammers and chisels.

2.3.7 Bridge Drainage

No bridge drains were observed. No bridge drain samples were collected.

2.3.8 Other

No other samples were collected.

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 12 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 2.3.

No asbestos was detected in any of the samples collected.

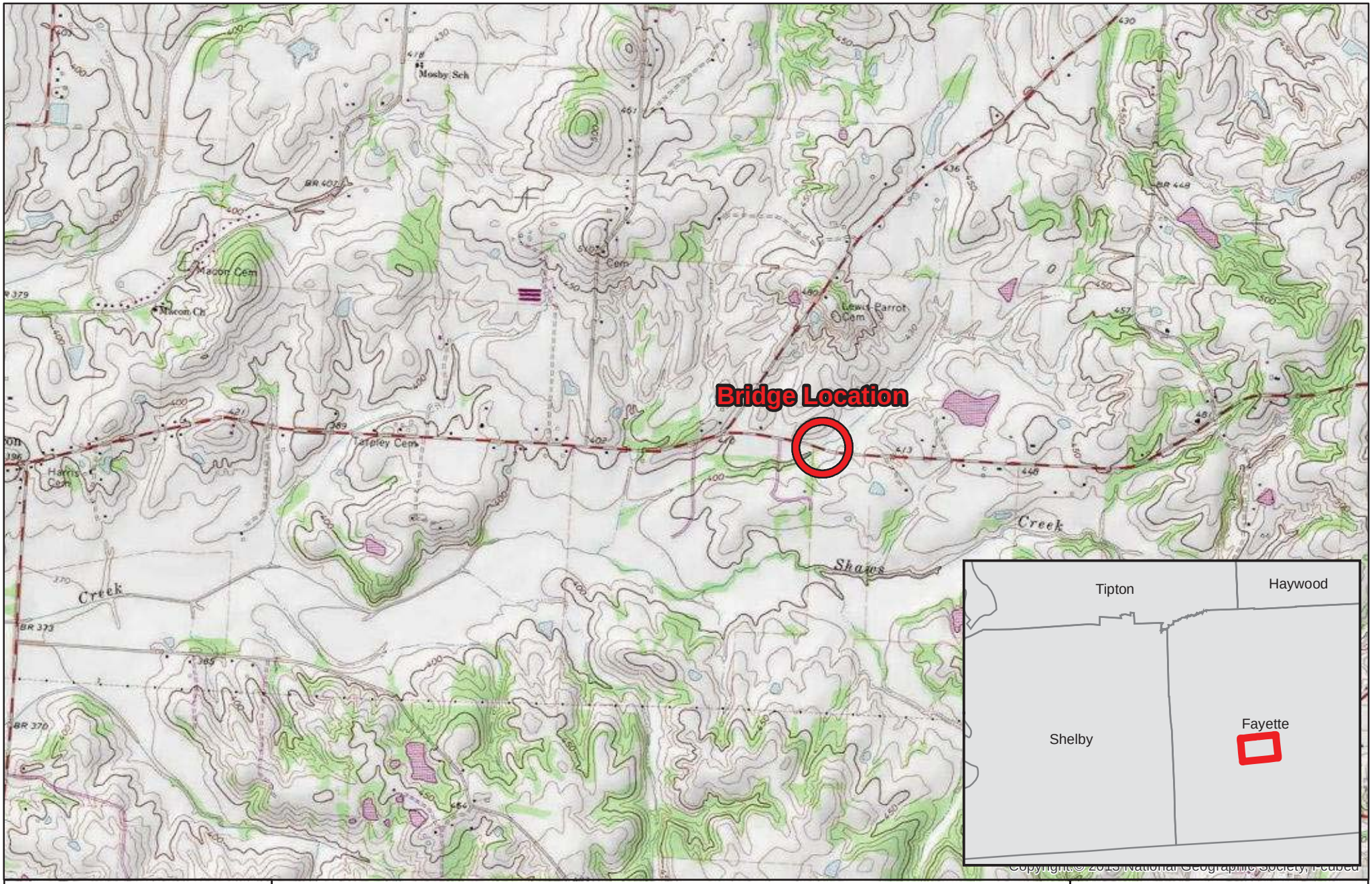
6.0 QUALIFICATIONS

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

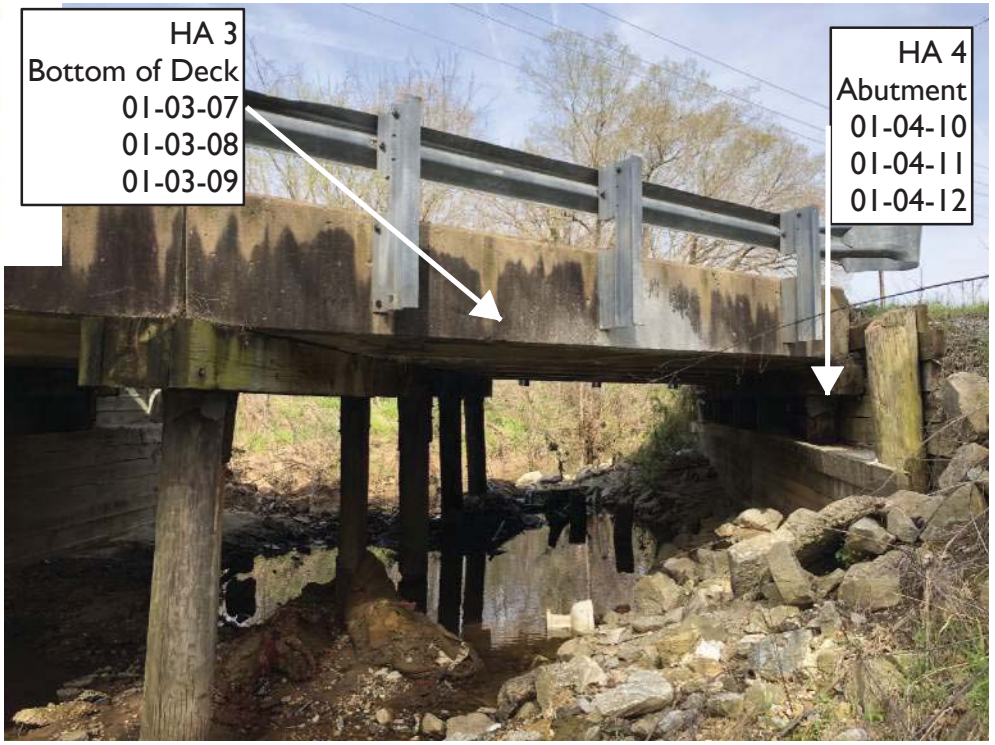
BARGE DESIGN SOLUTIONS

Tennessee Department Of Transportation - Asbestos Assessment Report
April 2018

SR-193 Macon Road Bridge over Branch, LM 11.48 (IA)
PE-N: 24029-0207-94, PIN: 124285.00
Bridge Number: 24015420001
Fayette County, Tennessee

Figure 1 - Site Location Map

Date: 11 April 2018



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

Tennessee Department of Transportation - Asbestos Assessment Report
April 2018

SR-193 Macon Road Bridge over Branch, LM 11.48 (IA)
PE-N: 24029-0207-94, PIN: 124285.00
Bridge Number: 24015420001
Fayette County, Tennessee

Figure 2 -
Sample Location Depiction

BARGE DESIGN SOLUTIONS

Date: 11 April 2018

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

Initial

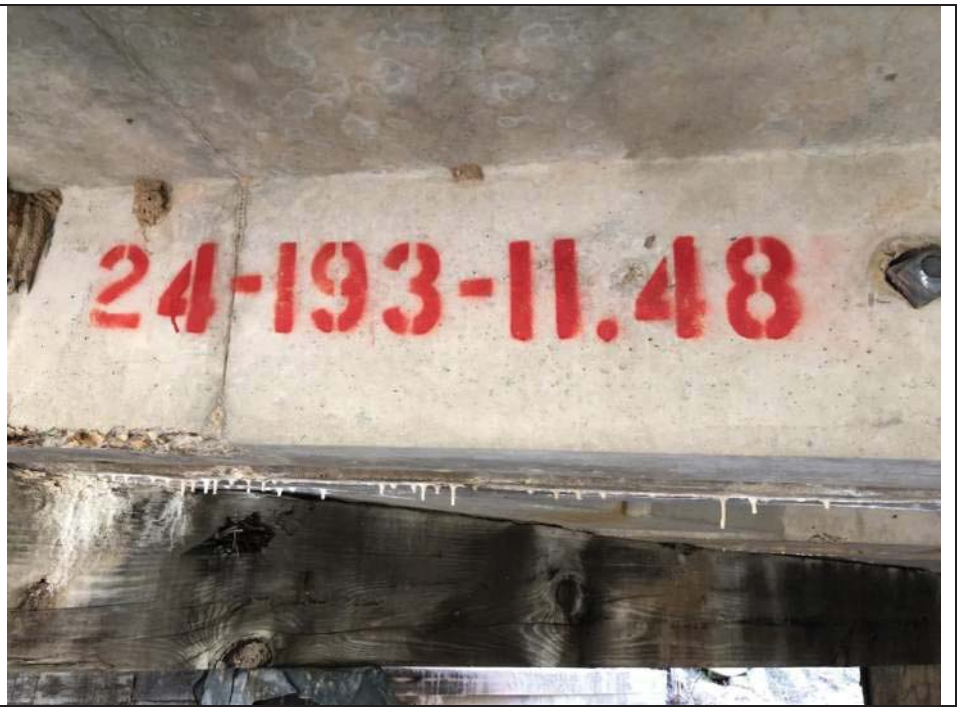
Brandon T Page

DOB	Sex	HGT	WGT
14-May-1990	M	6'4"	185

Discipline	Accreditation	Expiration
Inspector	A-I-100428-64307	Jan-31-2019
Project Designer	A-PD-100428-66330	Mar-31-2019

Asbestos Accreditation

Appendix B: Photographs

Photographer: Brandon Page **Date:** 4/5/2018 **Description:** Photograph 1 – Bridge Number	

Photographer: Brandon Page **Date:** 4/5/2018 **Description:** Photograph 2 – Homogeneous Area 1 Curb 01-01-01 01-01-02 01-01-03	

Photographer: Brandon Page	
Date: 4/5/2018	
Description: Photograph 3 – Homogeneous Area 2 Road Stripe Sample Locations 01-02-04 01-02-05 01-02-06	

Photographer: Brandon Page	
Date: 4/5/2018	
Description: Photograph 4 – Homogeneous Area 3 Bottom of Deck Sample Locations 01-03-07 01-03-08 01-03-09	

Photographer: Brandon Page	
Date: 4/5/2018	
Description: Photograph 5 – Homogeneous Area 4 Abutment Sample Locations 01-04-10 01-04-11 01-04-12	

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: BWSC
PROJECT: SR-193 Over Branch
LOCATION: Fayette County TN

Date Received: 4/6/2018
Date Analyzed: 4/9/2018
Date Reported: 4/9/2018

ANALYST: Jody Wilkins

Sample Number	Location	Material Description	Binder (Non-Fibrous) Material	Non-Asbestos Fiber	Asbestos Type & Percent
01-01-01	Curb	Tan Cementitious Material	100	None Detected	None Detected
01-01-02	Curb	Tan Cementitious Material	100	None Detected	None Detected
01-02-03	Curb	Tan Cementitious Material	100	None Detected	None Detected
01-02-04	Road Stripe	Yellow Beaded Material	100	None Detected	None Detected
01-02-05	Road Stripe	Yellow Beaded Material	100	None Detected	None Detected
01-02-06	Road Stripe	Yellow Beaded Material	100	None Detected	None Detected
01-03-07	Bottom of Deck/Beam	Tan Cementitious Material	100	None Detected	None Detected
01-03-08	Bottom of Deck/Beam	Tan Cementitious Material	100	None Detected	None Detected
01-03-09	Bottom of Deck/Beam	Tan Cementitious Material	100	None Detected	None Detected
01-04-10	Abutment	Tan Cementitious Material	100	None Detected	None Detected
		Tan Coating	100	None Detected	None Detected
01-04-11	Abutment	Tan Cementitious Material	100	None Detected	None Detected
		Tan Coating	100	None Detected	None Detected
01-04-12	Abutment	Tan Cementitious Material	100	None Detected	None Detected
		Tan Coating	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 SR193	Location:FayetteCounty	Date:12/15/17	Job No.3637862

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: ACM Sampling	□ 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)

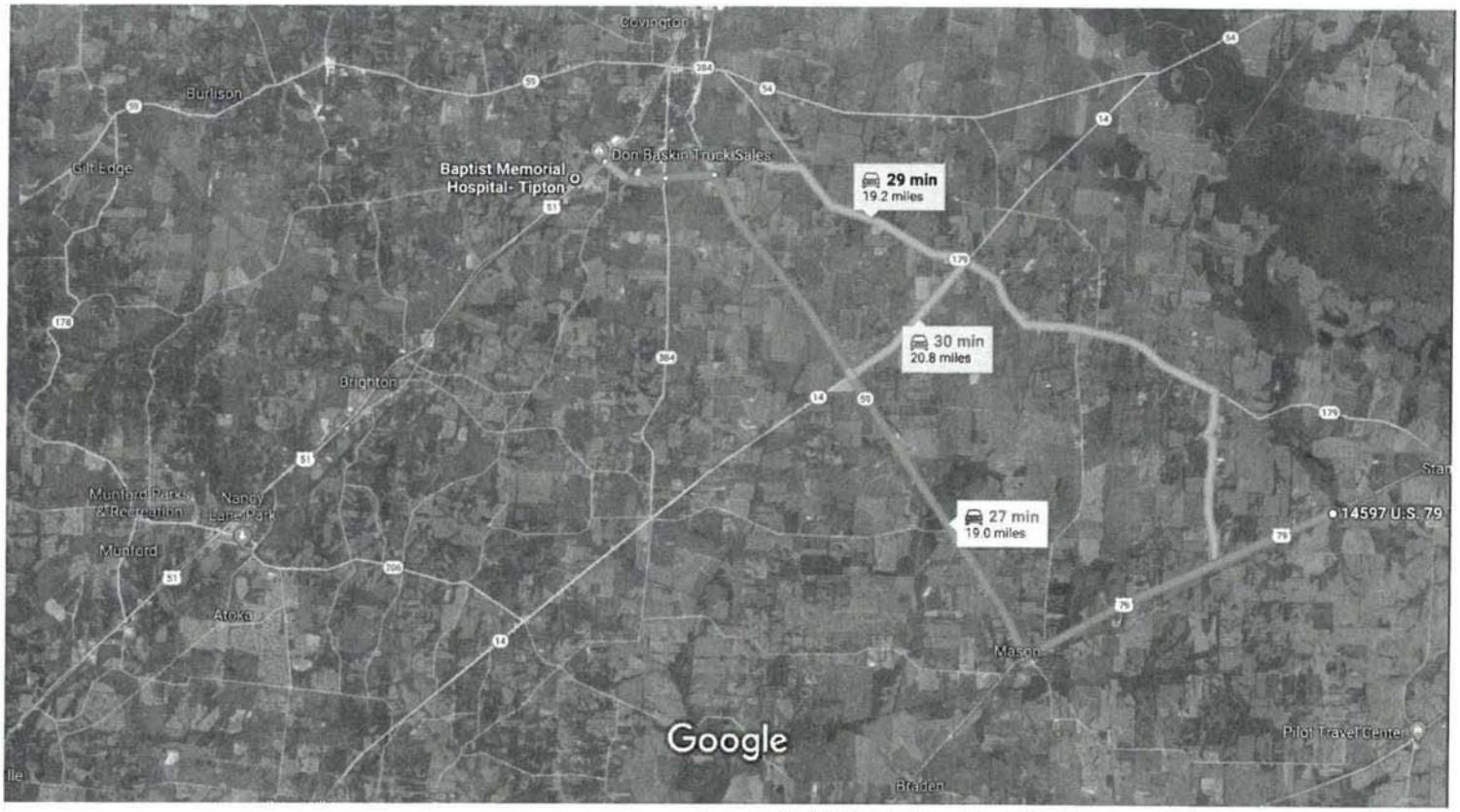
	Police	Fire	Ambulance
Phone Numbers to Police/Fire/Ambulance or 911	901-465-3456	901-466-7130	901-465-2755

Name:	Signature:	Date:
RANDY BELL		4/5/18
BRANDON PAGE		4-5-18

Google Maps

14597 US-79, Stanton, TN 38069 to Baptist Memorial Hospital- Tipton

Drive 19.0 miles, 27 min



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

14597 US-79

Stanton, TN 38069

1. Head southwest on US-70 W/US-79 S toward Gene Johnson Rd — 6.0 mi
2. Turn right onto TN-59 W/Main St — 10.3 mi
   - Continue to follow TN-59 W
3. Turn left onto Hastings Way — 0.9 mi
4. Continue onto Mueller Brass Rd — 1.2 mi
5. Turn left onto U.S. 51 S — 0.5 mi
6. Turn right — 171 ft
7. Slight right — 0.2 mi
   - Destination will be on the left

Baptist Memorial Hospital- Tipton

1995 Highway 51 S, Covington, TN 38019

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 Study

Technical Section

Section: Multimodal

Study Results

This bridge project accommodates bicyclists with 6' wide shoulders 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: Whitney S.D. Mason

Title: Pedestrian and Bicycle Coordinator

Signature: Whitney S.D. Mason

Digitally signed by Whitney S.D. Mason
Date: 2018.06.08 10:27:17 -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