Concept Report Form

The Concept Report Form develops an initial project vision, basis of design and report (e.g., the Concept Report) to transition into the subsequent design stages (Stages 1 through 4 in the Project Delivery Network [PDN]). This form summarizes all project components using information to complete the Concept Report.

General Project Information

Project Name	SR-193 - Bridge over Alexander Creek (TMA)								
PIN	134846.00								
Route Information	**Route**	**NHS (Y/N)**	**Functional Class**		**City**		**County**		
	SR-193	Yes	Rural Major Collector		Rossville		Fayette		
Project Information	**Begin Log Mile**	**End Log Mile**	**AADT[1]**	**Design Hour Vol. (DHV)[1]**	**Truck %[1]**	**Design Speed (MPH)**	**Posted Speed (MPH)**	**Base Year**	**Design Year**
	4.84		2,010	261	2.00	55	50	2029	2049
Project Description & Standard Drawings Used	Proposed bridge: 1 span box beam bridge 60' in length. Typical section: 2-11' travel lanes with 4' shoulders (Design Exception Required). Out-to-out width will be 31'3". The grade will be raised 1'. The road will either be realigned to the south or the bridge will remain on existing alignment as it is a potential candidate to use the ABC method and the road will be detoured. This will be determined at a later time during the design phase. The state route detour is 28 minutes (20.7 miles); the local route detour is 16 minutes (10.9 miles). Superstructure depth is 42.55" = 28.8" (beam) + 10" (deck) + 3.75" (width (in inches) x0.02/2). RD11-TS-2								Project Details
Important Project History or Related Projects	The existing structure, built in 1965, is a 3 span concrete channel beam timber bridge, 55' long with an out-to-out width of 21'7". The existing structure has 2-10' travel lanes with 0' shoulders. The listed weight limit on the inspection report is 40 tons (7/1/2022). The discharges for the drainage basin (StreamStats Version 4.19.4) for drainage area of 4.2 square miles: Q10 is 1630 cfs, Q50 is 2220 cfs, and Q100 is 3040 cfs. This project is NOT expected to utilize federal funding.								
Project Purpose/Need	The need to replace this bridge is due to the present condition of the existing bridge: -Timber bridges are being phased out and is near the end of it's service life -The bridge is in FAIR condition								
Major Environmental Considerations	To be determined								

Multi-Modal Considerations	This project is in a rural area with a proposed 2-lane bridge width of less than 44 ft where the cost of dedicated multimodal accommodations is excessively disproportionate to the need and probable use. Excessively disproportionate is defined as exceeding 20 percent of the cost of the project.	
Major Project Risks	Approx. ROW to be acquired: 1.79 acres (realign); 1.14 acres (ABC). Overhead electric is present. Utility relocation will not be required for the realign option. There are stream stability issues at this location. Potential for suburban expansion in the area due to proximity to Memphis Urban Boundary and Blue Oval City. This document is covered by 23 USC § 407 and its production pursuant to fulfilling public planning requirements does not waive the provisions of § 407.	

[1] Traffic numbers reflect identified design year

Approvals

Executed for approval of this Concept Report

James D. Keeley

Project Management Division Director — Jul 11, 2024 — Date

The following individuals to execute if a bridge concept report:

Jed A. Kwiatkowski

Structures Director — Jul 10, 2024 — Date

Brandon Akins (Jul 11, 2024 10:50 CDT)

Regional Project Management Division Director — Jul 11, 2024 — Date

Action Checklist			
0SD1 Initiate Concept Report and Request Funding			
Complete	**NA**		**Date Completed**
✓		Request and Finalize Safety Data	03/26/2024
✓		Request Project Number, PIN, and Task Profile Numbers	01/10/2024
	✓	Coordinate with Long Range Planning	
✓		Request and Finalize Traffic Data	02/15/2024
	✓	Request Preliminary Survey Data	
✓		Initiate Division Reviews	04/15/2024
	✓	Schedule Site Review (with appropriate Divisions)	
0EN1 Conduct Environmental Desktop Review			
Complete	**NA**		**Date Completed**
✓		Confirm Environmental Desktop Review is Complete	05/22/2024
0MM1 Conduct Multimodal Review			
Complete	**NA**		**Date Completed**
	✓	Confirm Multimodal Review is Complete	
	✓	Review Multimodal Considerations & Recommendations	
0TO1 Conduct Initial Traffic Ops/TSMO Review *(include HQ Traffic Ops and Regional Traffic Office)*			
Complete	**NA**		**Date Completed**
		Confirm Transportation Systems Management & Operations (TSMO) Alignment & Operations Review is Complete	
		Request Concept Report Review	
0ST1 Develop Structures Recommendations			
Complete	**NA**		**Date Completed**
✓		Confirm Recommended Structure Type for Concept Report is Complete	03/25/2024
✓		Confirm Hydraulic Recommendations for Concept Report is Complete	03/25/2024
0SY1 Provide Preliminary Survey Data			
Complete	**NA**		**Date Completed**
	✓	Confirm Control Ground Survey Set	
	✓	Review Preliminary Survey Data	
	✓	Determine Time to Complete the Aerial Survey	
0GT1 Conduct Preliminary Geotechnical Assessment			
Complete	**NA**		**Date Completed**
	✓	Confirm Geotechnical Division Review is Complete	
0RD1 Provide Roadway Desktop Review			
Complete	**NA**		**Date Completed**
		Confirm Roadway Division Review is Complete	

Action Checklist			
0SD2 Develop Draft Concept Report			
Complete	**NA**		**Date Completed**
	✓	Conduct Intersection and Interchange Evaluation (IIE)	
	✓	Complete Conceptual Signal Warrants	
	✓	Develop Draft Conceptual Layouts/Crash Figures for Site Visit	
	✓	Compile Initial Divisional Reviews for Site Visit	
	✓	Prepare & Send Site Visit Packet	
	✓	Lead Site Visit	
	✓	Initiate Interstate Access Requests (IAR) Concept Coordination with FHWA (if applicable)	
✓		Develop, Compile, and Distribute the Draft Concept Report	04/15/2024
0TO2 Develop TSMO Scope Items *(include HQ Traffic Ops and Regional Traffic Office)*			
Complete	**NA**		**Date Completed**
	✓	Confirm Signal Warrants Analysis is Complete	
	✓	Confirm Lighting Warrants Analysis is Complete	
	✓	Review and Confirm TSMO & ITS Scope and Budget	
0RW1 Complete Preliminary Right-of-Way Estimates			
Complete	**NA**		**Date Completed**
	✓	Review and Confirm Preliminary Right-of-Way Cost Estimates	
0UT1 Complete Utility Preliminary Estimates			
Complete	**NA**		**Date Completed**
		Review and Confirm Preliminary Utility Estimate	
		Review and Confirm Preliminary Railroad Cost Estimate	
0SD3 Finalize Concept Report			
Complete	**NA**		**Date Completed**
	✓	Compile and Review Initial Risk Assessment	
		Finalize Conceptual Layouts	
✓		Develop Environmental Technical Study Area (ETSA)	04/12/2024
✓		Address Comments and Finalize Concept Report	06/17/2024
	✓	Address Comments and Finalize Interstate Access Requests (IAR) Document and Memo (if applicable)	
	✓	Develop Roadway Safety Audit (RSA) No Plans Document	
		Submit the final Concept Report for Review and Signatures (as needed; see 0SD3 for additional information)	
		Finalize Document and Upload All Needed Electronic Files	
		Notify the Project Management Director or Assigned Project Manager to Set Up Project (1PM1)	

NA Justification

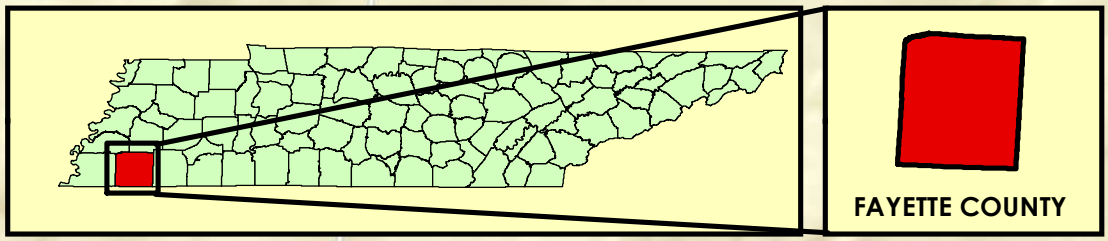
Coordinate with Long Range Planning-Long Range Planning coordination not needed for STID BCR document
Request Preliminary Survey Data- survey data not needed for STID BCR document
Schedule a site visit-site visit not required
0MM1 Conduct Multimodal Review- multimodal coordination not required
0SY1 Provide Preliminary Survey Data- survey data not needed for STID BCR document
0GT1 Conduct Preliminary Geotechnical Assessment- geotechnical data not received for STID BCR document
0SD2 Develop Draft Concept Report-no site visit was held for this bridge and no interchange or signal warrants were required
0TO2 Develop TSMO Scope Items-no signals or lighting needed within project limits
0RW1 Complete Preliminary Right-of-Way Estimates-ROW estimate calculated in cost estimate
0UT1 Complete Utility Preliminary Estimates-utility cost calculated in cost estimate
Compile and Review Initial Risk Assessment-Risk Assessment not needed for STID BCR document
Address Comments and Finalize Interstate Access Requests (IAR) Document and Memo (if applicable)-no interstate within project limits
Develop Roadway Safety Audit (RSA) No Plans Document- no plans document not needed for STID BCR document

Concept Report Table of Contents/Attachments		
	Included	NA
One-Page Summary (with project location map)	✓	
Conceptual Layout(s) and Cross Section	✓	
Environmental Technical Study Area (ETSA) Layout	✓	
Concept Cost Estimate (Construction Year Estimate)	✓	
TSMO & ITS Scope and Budget[1]		✓
ROW Form 44-A[1]		✓
Crash Packet[1]	✓	
Crash Prediction Analysis[1]		✓
Site Visit Attendee List		✓
Environmental Desktop Review Form[1]		
Multimodal Considerations & Recommendations[1]		✓
Existing Structure Summary[1]	✓	
Email or memo containing Structure Type Recommendations[1]		
Email or memo containing Hydraulic Recommendations[1]		
Hydraulic Data	✓	
Intersection and Interchange Evaluation (IIE) Analysis and Summary Form		✓
Traffic Analysis Summary/Tables	✓	
Forecasted Traffic Sheets[1]	✓	
Traffic Modeling (e.g., Synchro, VISSIM, Highway Capacity Software (HCS) Output)[1]		✓
Signal Warrant[1]		✓
Lighting Warrant[1]		✓
Initial Risk Assessment using the Risk Assessment Form		✓
Final Interstate Access Request (IAR) Document and Memo with Letter from STID Director		✓
Road Safety Audit (RSA) No Plans[1]		✓

NA Justification

TSMO & ITS Scope and Budget-no ITS within project limits; ROW Form 44-A-form not needed for STID BCR document; Crash Prediction Analysis- 8 crashes occurred within the project limits, crash prediction analysis not needed; Site Visit Attendee List-no site visit was held; Multimodal Considerations & Recommendation-no multimodal coordination;
Intersection and Interchange Evaluation (IIE) Analysis and Summary Form- AADT is too low for IIE Analysis
Traffic Modeling (e.g., Synchro, VISSIM, Highway Capacity Software (HCS) Output)- AADT too low to model
Signal Warrant-no signals warranted within project limits; Lighting Warrant-no lighting warranted within project limits
Initial Risk Assessment using the Risk Assessment Form-Risk Assessment not needed for STID BCR document
Final IAR Document and Memo with Letter from STID Director-no interstate access within project limits
Road Safety Audit (RSA) No Plans-RSA no plans document not needed for STID BTIR document

[1] External document to STID



Hosi Way

Yancey Rd

Alexander Creek

SR-193 BRIDGE [24014580001]
BRIDGE OVER ALEXANDER CREEK
L.M. 4.84

Macon Rd

193

Macon Rd

Nuckolls Rd

0 0.125 0.25 0.5 Miles

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

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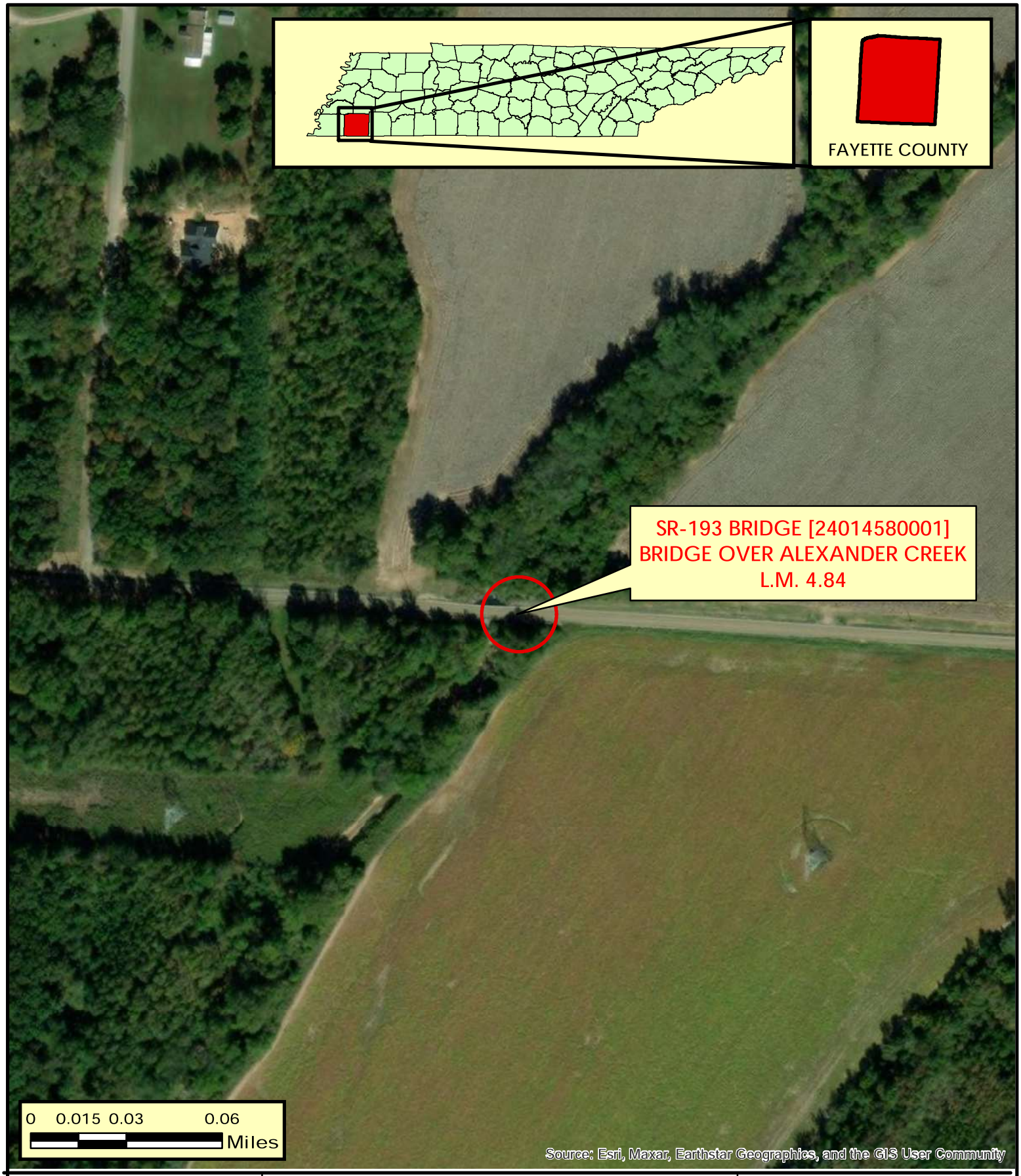
AREA MAP
SR-193 BRIDGE [24014580001]
BRIDGE OVER ALEXANDER CREEK
L.M. 4.84
FAYETTE COUNTY

TN TDOT Department of Transportation

PIN 134846.00



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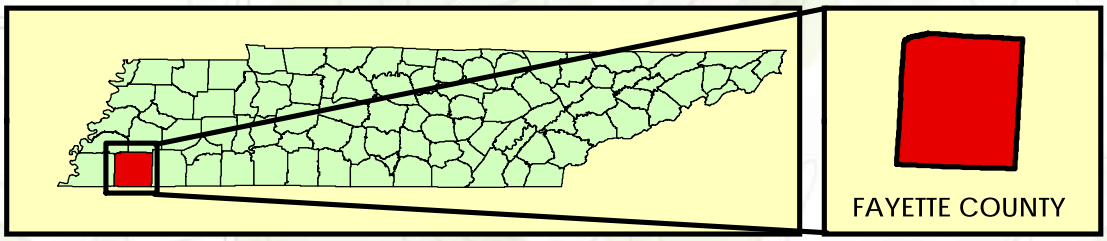
LOCATION MAP

SR-193 BRIDGE [24014580001]
BRIDGE OVER ALEXANDER CREEK
L.M. 4.84
FAYETTE COUNTY

TN TDOT Department of Transportation

PIN 134846.00



Yancey Rd

SR-193 BRIDGE [24014580001]
BRIDGE OVER ALEXANDER CREEK
L.M. 4.84

193
400 ft
Macon Rd
193

350 ft

0 0.05 0.1 0.2
Miles

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

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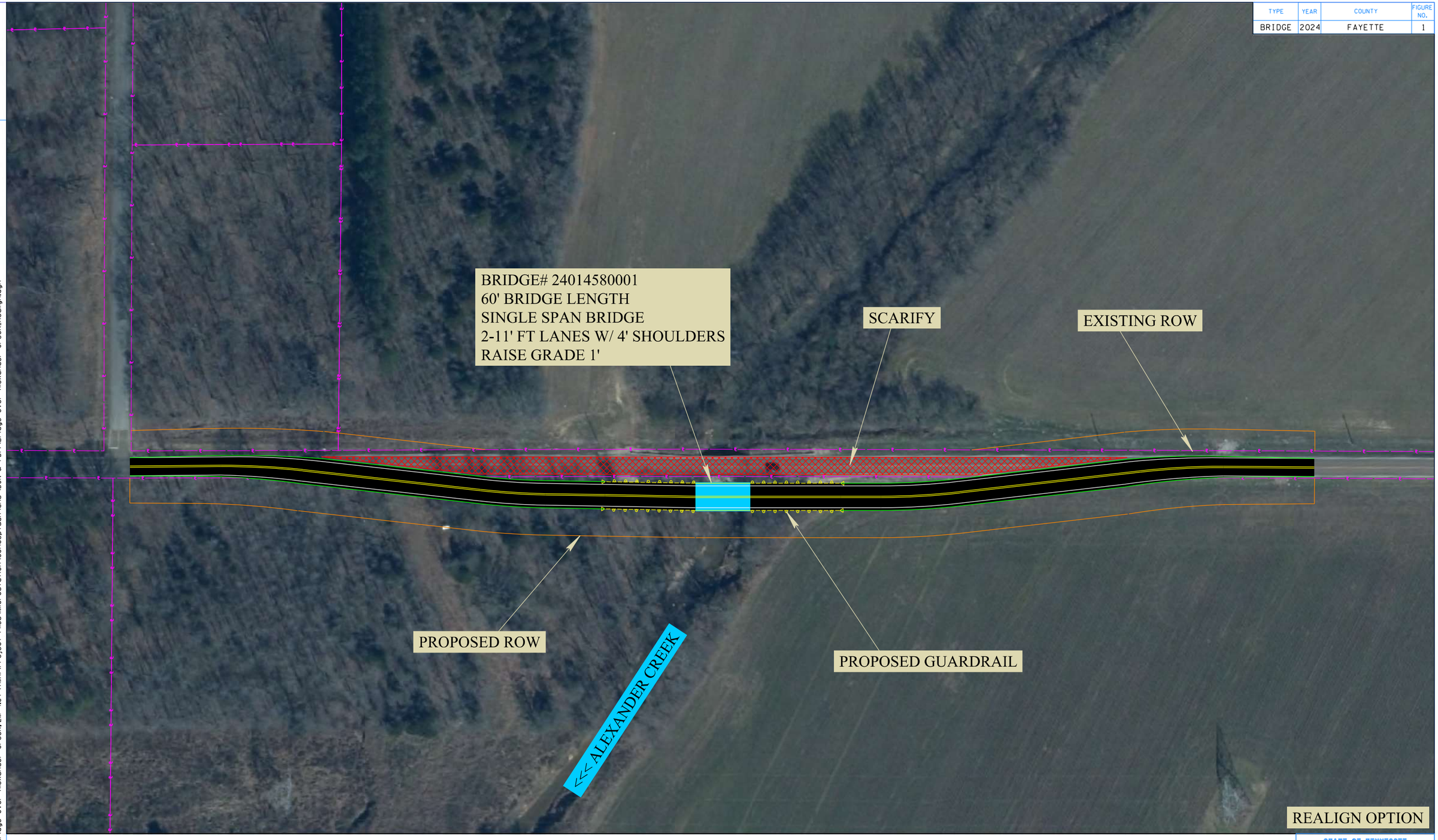
TOPOGRAPHIC MAP
SR-193 BRIDGE [24014580001]
BRIDGE OVER ALEXANDER CREEK
L.M. 4.84
FAYETTE COUNTY

TN TDOT Department of Transportation

PIN 134846.00

TENNESSEE D.O.T.
S.T.I.D.
FILE NO. ——

TYPE	YEAR	COUNTY	FIGURE NO.
BRIDGE	2024	FAYETTE	1



0′ 100′ 200′ 300′

N

R4 TIMBER BRIDGE PROGRAM

STATE ROUTE 193
BRIDGE OVER ALEXANDER CREEK, L.M. 4.84
FAYETTE COUNTY

CAUTION !
PRELIMINARY PLANS SUBJECT TO CHANGE

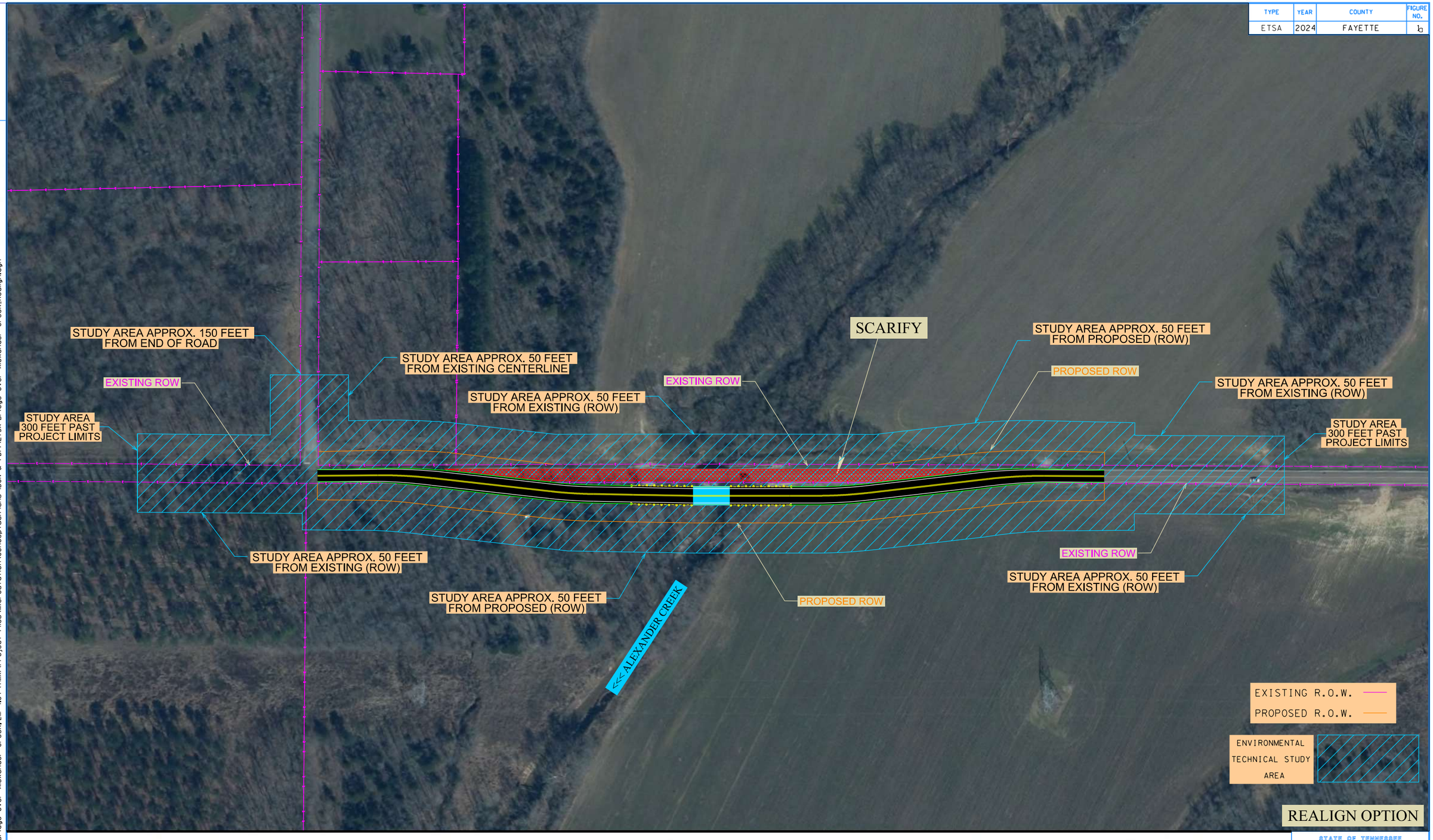
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
S.T.I.D.

FIGURE 1
S.R. 193
L.M. 4.84

4/8/2024 9:28:36 AM
X:\Projects\Fayette\SR 193\Bridge over Alexander Creek,LM 4.84 (TMA)\Project Files\Microstation\Conceptual Plans\DGN & PDF\Bridge over Alexander Creek_Realign.dgn

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

TYPE	YEAR	COUNTY	FIGURE NO.
ETSA	2024	FAYETTE	1a



REALIGN OPTION

0' 150' 300' 450'

N

ENVIRONMENTAL TECHNICAL STUDY AREA

STATE ROUTE 193
BRIDGE OVER ALEXANDER CREEK, L.M. 4.84
FAYETTE COUNTY

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

FIGURE 1a
S.R. 193
L.M. 4.84

4/9/2024 9:45:35 AM
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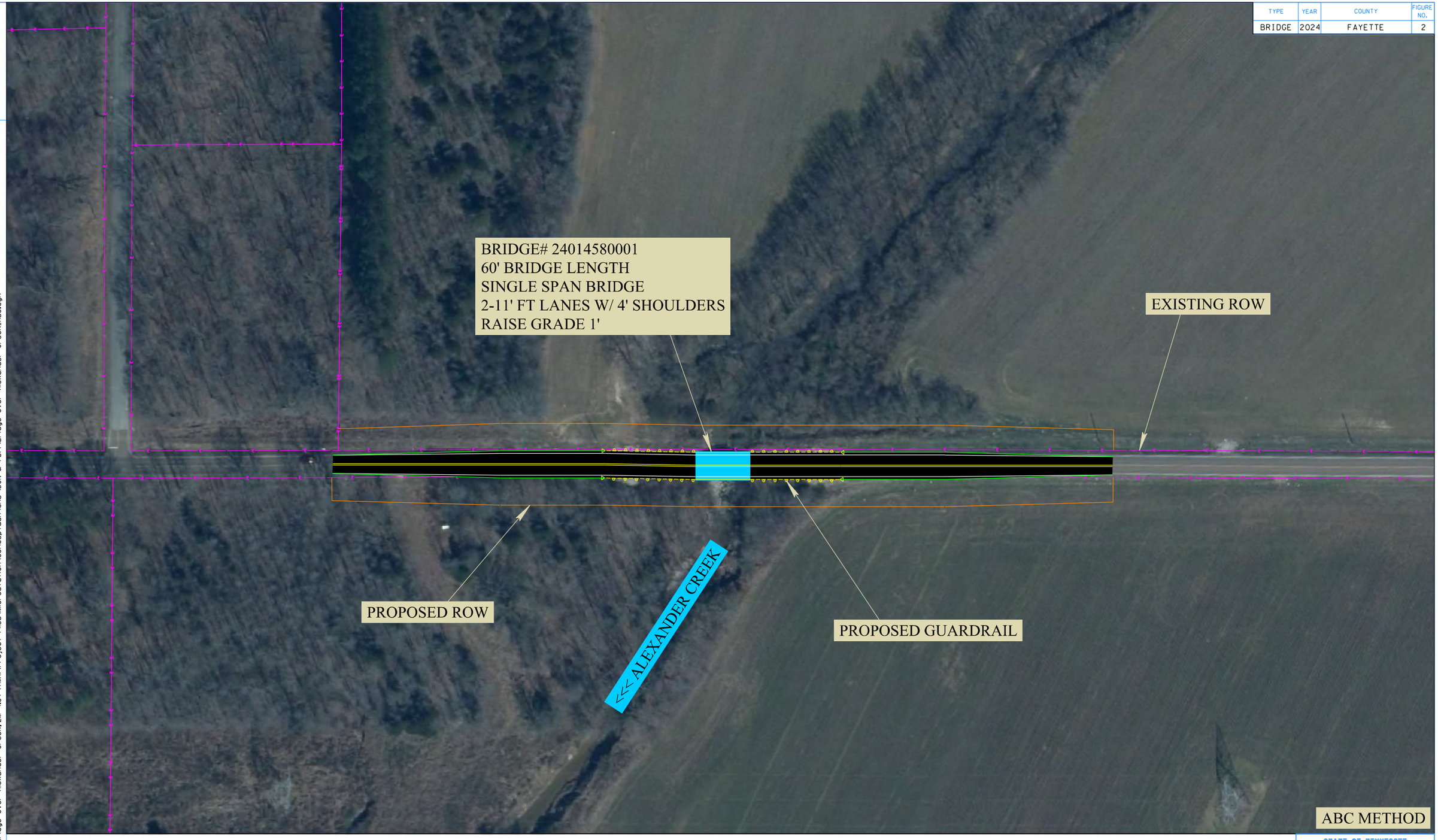
TENNESSEE D.O.T.

S.T.I.D.

FILE NO. ——

TYPE	YEAR	COUNTY	FIGURE NO.
BRIDGE	2024	FAYETTE	2



0' 100' 200' 300'

N

R4 TIMBER BRIDGE PROGRAM

STATE ROUTE 193
BRIDGE OVER ALEXANDER CREEK, L.M. 4.84
FAYETTE COUNTY

CAUTION ! PRELIMINARY PLANS SUBJECT TO CHANGE

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

FIGURE 2
S.R. 193
L.M. 4.84

4/8/2024 9:25:32 AM
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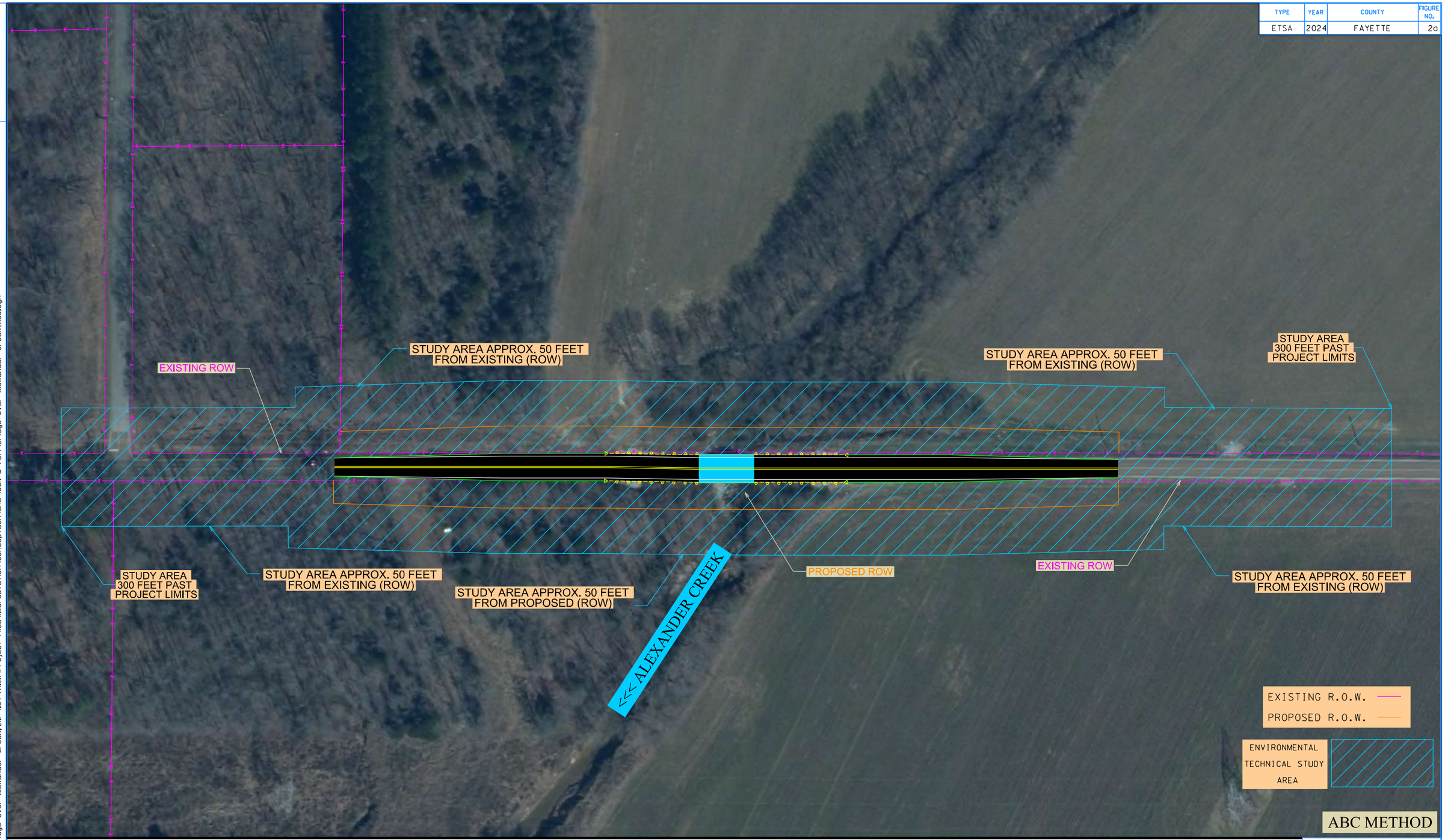
TENNESSEE D.O.T.

S.T.I.D.

FILE NO.

TYPE	YEAR	COUNTY	FIGURE NO.
ETSA	2024	FAYETTE	2a



0' 100' 200' 300'

N

ENVIRONMENTAL TECHNICAL STUDY AREA

STATE ROUTE 193
BRIDGE OVER ALEXANDER CREEK, L.M. 4.84
FAYETTE COUNTY

CAUTION ! PRELIMINARY PLANS SUBJECT TO CHANGE

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

FIGURE 2a
S.R. 193
L.M. 4.84

4/9/2024 9:0:20 AM
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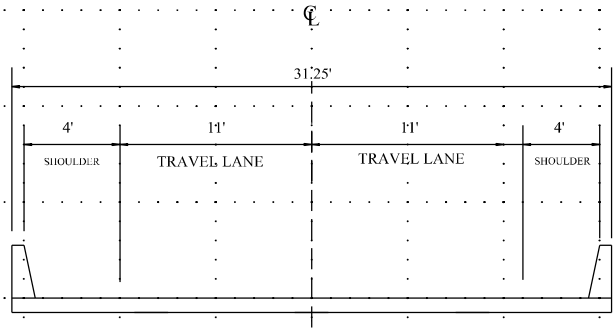
PROPOSED COMPLETED



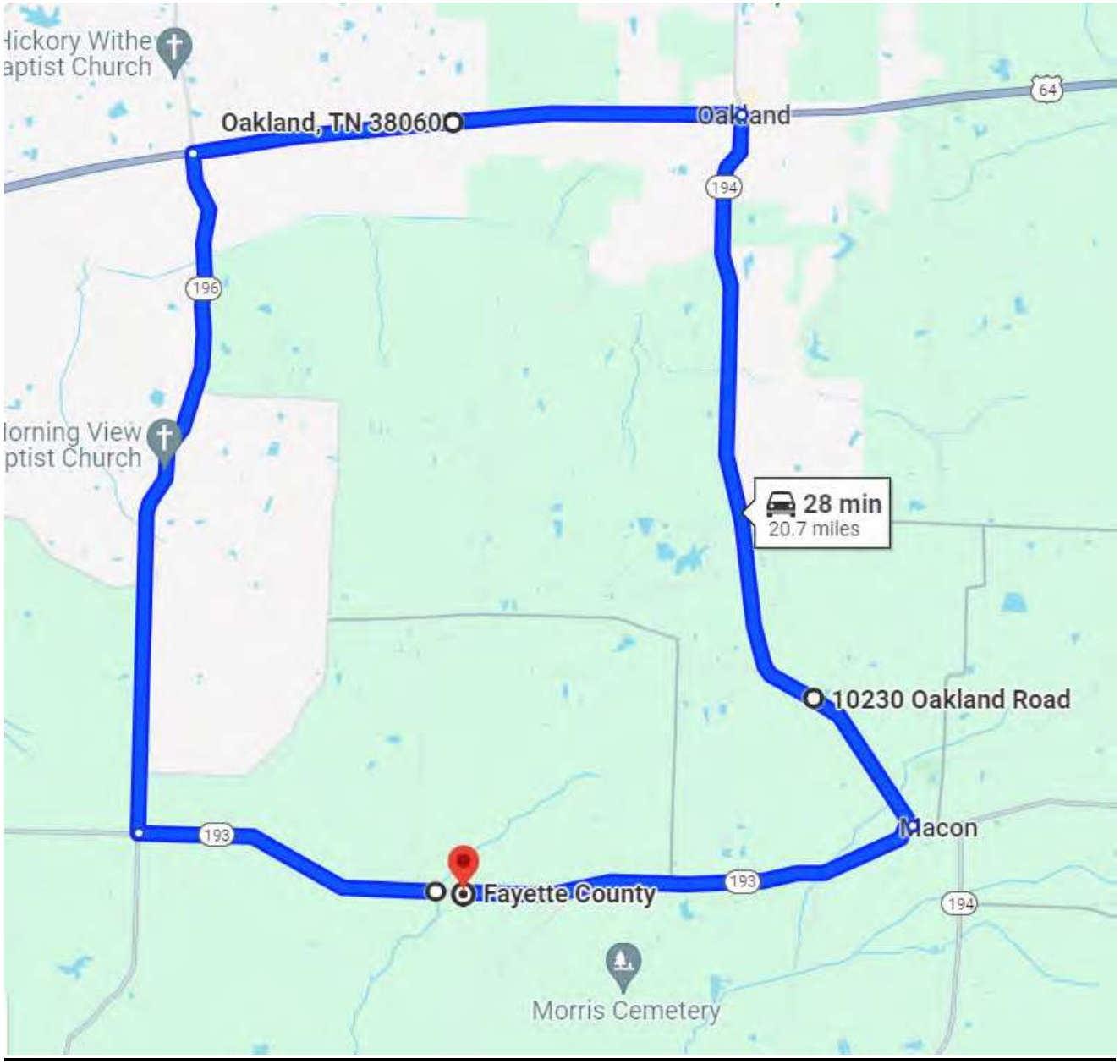
0' 5' 10' 15'

CROSS-SECTION DETAIL

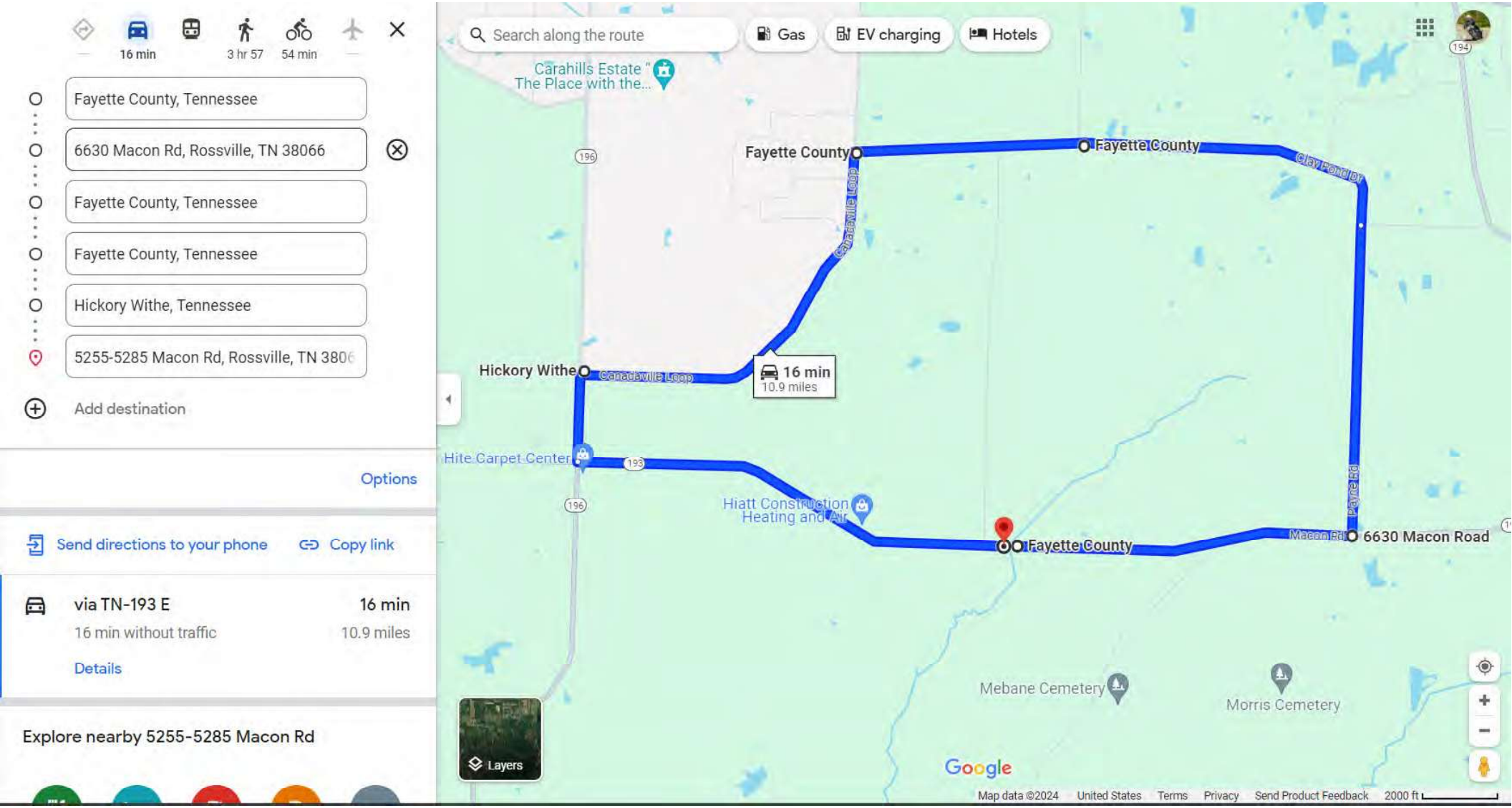
REGION 4 TIMBER BRIDGE PROGRAM
TRANSPORTATION MODERNIZATION ACT (TMA)

CAUTION !
PRELIMINARY
PLANS
SUBJECT TO
CHANGE

DETOUR MAP – STATE ROUTE



DETOUR MAP – LOCAL ROUTE



CRASH SUMMARY REPORT

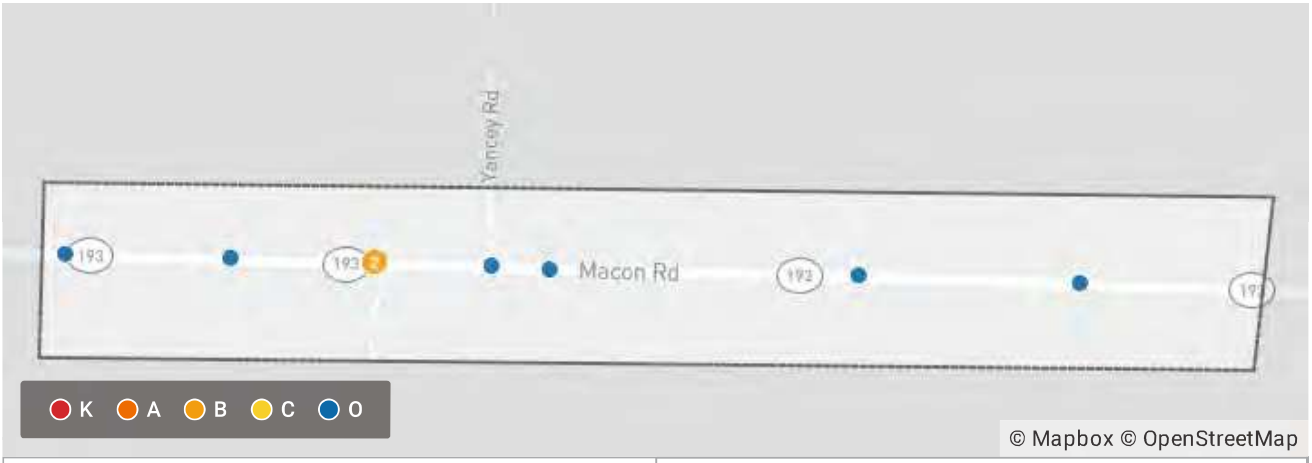
Fayette Co SR193 - Bridge over Alexander Creek

Created on April 3, 2024
Created by JOSHUA CLOUD
Requested by Michael Cloud
Data extents: March 28, 2021 to March 28, 2024

TN TDOT Department of Transportation

Applied Filters

County = Fayette | Shape: Polygon



Total Crashes	8	Fatal Crashes	0

Summary		Crash
Total Crashes	8	100.00%
Truck/Bus Involved	2	25.00%
+ 4 more	0	0%

Type of Crash		Crash
(O) Property-Damage Only	7	87.50%
(B) Suspected Minor Injury	1	12.50%
+ 3 more	0	0%

Date of Crash (Year)		Crash
2023	3	37.50%
2022	4	50.00%
2021	1	12.50%
+ 8 more	0	0%

Manner of First Collision		Crash
No Collision W/ Vehicle	5	62.50%
Sideswipe, Opp Dir	3	37.50%
+ 8 more	0	0%

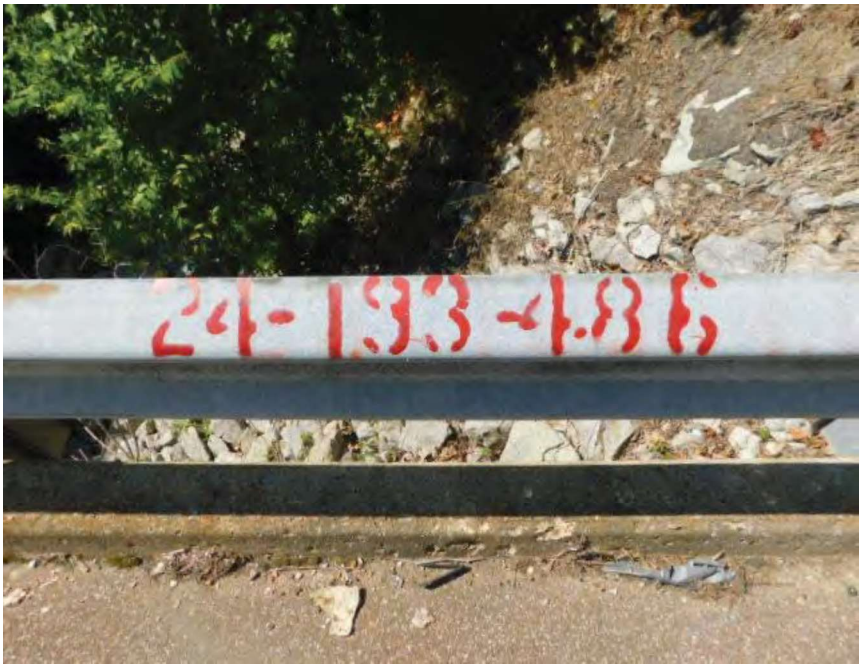
First Harmful Event		Crash
Ditch	3	37.50%
Vehicle in Transport	3	37.50%
Overturn	1	12.50%
Standing Tree	1	12.50%
+ 61 more	0	0%

Crash Location		Crash
Along Roadway	8	100.00%
+ 6 more	0	0%

Light Conditions		Crash
Daylight	5	62.50%
Dark-Not Lighted	3	37.50%
+ 6 more	0	0%

Weather Conditions		Crash
Clear	4	50.00%
Cloudy	2	25.00%
Rain	2	25.00%
+ 9 more	0	0%

Bridge Loc. No: 24-SR193-0486 Date: 07-01-2022



BRIDGE NO.

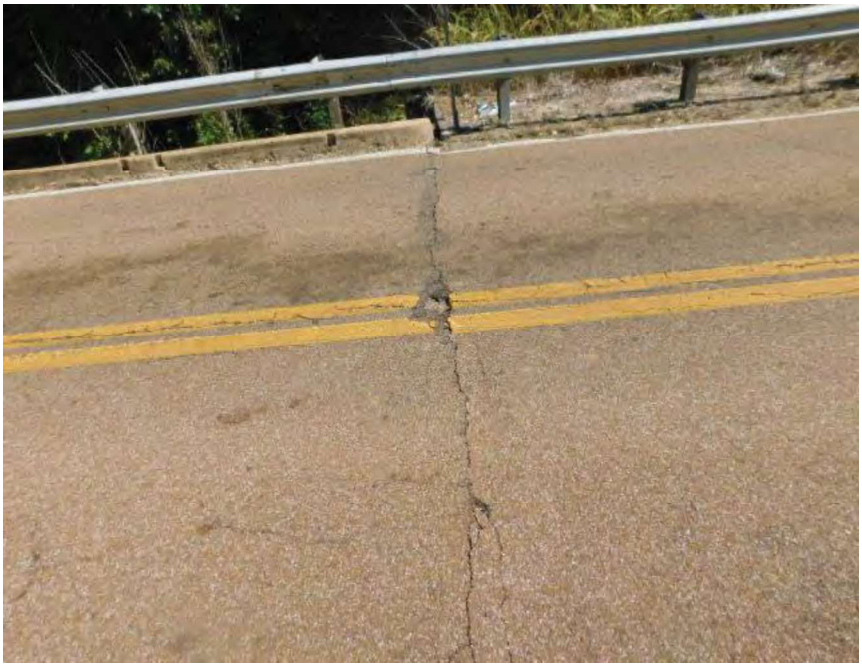
APPROACH 1 WEIGHT LIMIT SIGN 40T/40T

Bridge Loc. No: 24-SR193-0486 Date: 07-01-2022

LOOKING AHEAD ON ROUTE

VIEW ACROSS TOP OF DECK

Bridge Loc. No: 24-SR193-0486 Date: 07-01-2022



APPROACH 2 A/C SETTLED

LOOKING BACK ON ROUTE

Bridge Loc. No: 24-SR193-0486 Date: 07-01-2022

APPROACH 2 WEIGHT LIMIT SIGN 40T/40T

ABUTMENT 1

Bridge Loc. No: 24-SR193-0486 Date: 07-01-2022

BOTTOM DECK SPAN 1

FRONT SIDE BENT 1 A

Bridge Loc. No: 24-SR193-0486 Date: 07-01-2022

REAR SIDE BENT 1 B

FRONT SIDE BENT 2

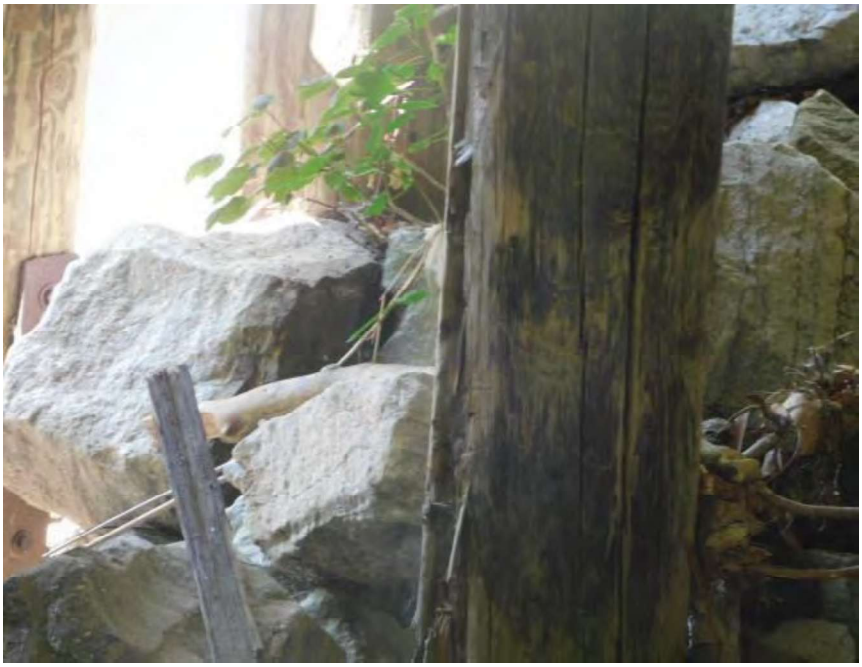
Bridge Loc. No: 24-SR193-0486 Date: 07-01-2022

BOTTOM DECK SPAN 2

PILE B BENT 2

Bridge Loc. No: 24-SR193-0486 Date: 07-01-2022

PILE B BENT 2



PILE D BENT 1 B DECAYED

Bridge Loc. No: 24-SR193-0486 Date: 07-01-2022

BOTTOM DECK SPAN 3

LEFT SIDE INLET END VIEW

Bridge Loc. No: 24-SR193-0486 Date: 07-01-2022

ABUTMENT 2

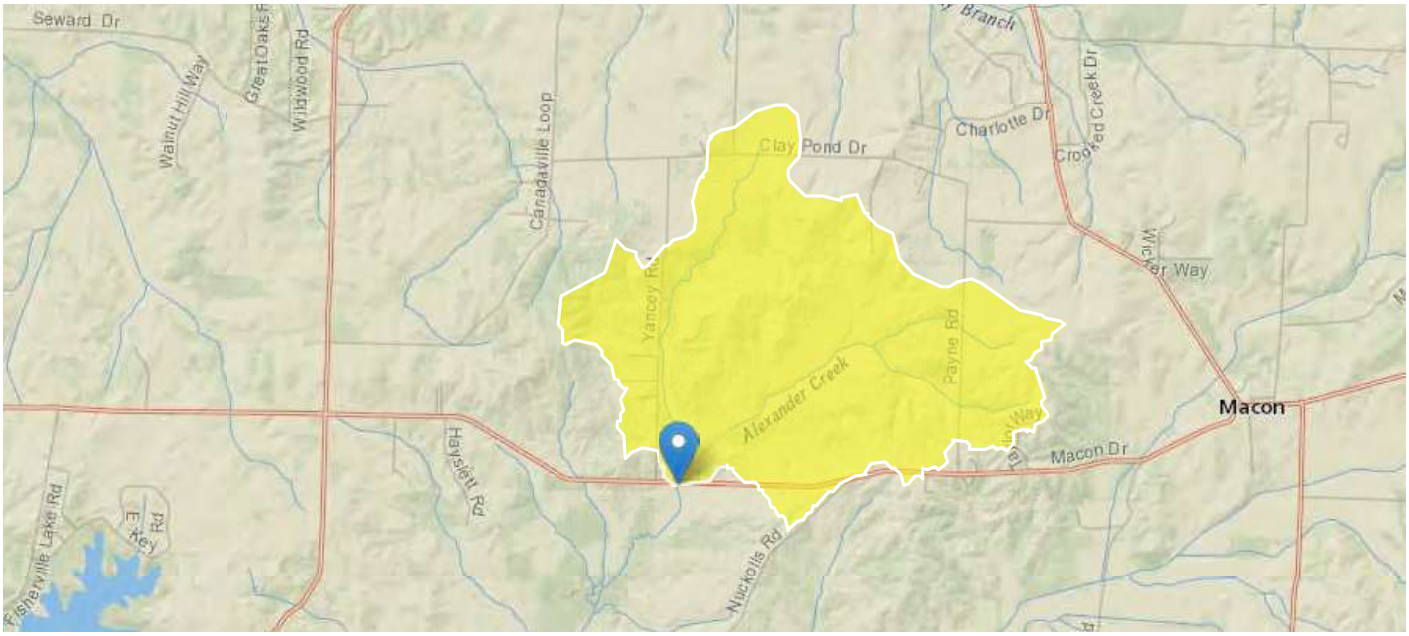
LEFT SIDE SPAN 1 CURB SPALLED TO STEEL

Bridge Loc. No: 24-SR193-0486 **Date: 07-01-2022**

LEFT SIDE SPAN 1 CURB SPALLED TO STEEL

Fayette Co SR193 - Bridge over Alexander Creek

Region ID: TN
Workspace ID: TN20240409142036216000
Clicked Point (Latitude, Longitude): 35.14606, -89.55503
Time: 2024-04-09 09:20:59 -0500



Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
CONTDA	Area that contributes flow to a point on a stream	4.2	square miles
DRNAREA	Area that drains to a point on a stream	4.2	square miles

Peak-Flow Statistics

Peak-Flow Statistics Parameters [DAOnly Area 4]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
CONTDA	Contributing Drainage Area	4.2	square miles	0.76	2308

Peak-Flow Statistics Flow Report [DAOnly Area 4]

PIL: Lower 90% Prediction Interval, PIU: Upper 90% Prediction Interval, ASEp: Average Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	PIL	PIU	SE	ASEp	Equiv. Yrs.
50-percent AEP flood	929	ft^3/s	494	1750	38.7	38.7	1.8
20-percent AEP flood	1350	ft^3/s	734	2480	37.2	37.2	2.4

Statistic	Value	Unit	PIL	PIU	SE	ASEp	Equiv. Yrs.
10-percent AEP flood	1630	ft^3/s	877	3030	38	38	3.1
4-percent AEP flood	1970	ft^3/s	1030	3780	40.1	40.1	3.8
2-percent AEP flood	2220	ft^3/s	1120	4400	42.2	42.2	4.2
1-percent AEP flood	2460	ft^3/s	1200	5060	44.7	44.7	4.4
0.2-percent AEP flood	3040	ft^3/s	1350	6870	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/)

Maximum Probable Flood Statistics

Maximum Probable Flood Statistics Parameters [Crippen Bue Region 3]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	4.2	square miles	0.1	10000

Maximum Probable Flood Statistics Flow Report [Crippen Bue Region 3]

Statistic	Value	Unit
Maximum Flood Crippen Bue Regional	14000	ft^3/s

Maximum Probable Flood Statistics Citations

Crippen, J.R. and Bue, Conrad D.1977, Maximum Floodflows in the Conterminous United States, Geological Survey Water-Supply Paper 1887, 52p. (https://pubs.usgs.gov/wsp/1887/report.pdf)

Application Version: 4.19.4
StreamStats Services Version: 1.2.22
NSS Services Version: 2.2.1

TENNESSEE DEPARTMENT OF TRANSPORTATION
STRATEGIC TRANSPORTATION INVESTMENTS DIVISION

PROJECT NO.: 24S193-S1-003 ROUTE: S.R. 193
COUNTY: FAYETTE CITY:
PROJECT PIN NUMBER: 134846.00
PROJECT DESCRIPTION: BRIDGE OVER ALEXANDER CREEK @ L.M. 4.84

DIVISION REQUESTING:

		PAVEMENT DESIGN	☐
MAINTENANCE	☐	STRUCTURES	☐
S.T.I.D.	☒	SURVEY & ROADWAY DESIGN	☐
PROG. DEVELOPMENT & ADM.	☐	TRAFFIC SIGNAL DESIGN	☐
PUBLIC TRANS. & AERO.	☐	OTHER	☐

YEAR PROJECT PROGRAMMED FOR CONSTRUCTION: 2029
PROJECTED LETTING DATE: 2029

TRAFFIC ASSIGNMENT:

BASE YEAR		DESIGN YEAR					DESIGN ROADWAY % TRUCKS		DESIGN AVERAGE DAILY LOADS	
AADT	YEAR	AADT	DHV	%	YEAR	DIR.DIST.	DHV	AADT	FLEX	RIGID
1,830	2029	2,010	261	13	2049	65-35	1	2		

REQUESTED BY: NAME CALEB SMITH DATE 2/15/24
DIVISION S.T.I.D.
ADDRESS 1000 J. K. POLK BUILDING
NASHVILLE TN 37243

REVIEWED BY: RANDY BOGUSKIE Randy Boguskie DATE 2/20/2024
TRANSPORTATION MANAGER 1
SUITE 1000, JAMES K. POLK BUILDING

APPROVED BY: TONY ARMSTRONG Tony Armstrong DATE 2/20/2024
TRANSPORTATION MANAGER 2
SUITE 1000, JAMES K. POLK BUILDING

COMMENTS:

FURNISH THE 2029-2049 TRAFFIC DATA.

THIS TRAFFIC IS BASED ON A 2023 CYCLE COUNT. THE DESIGN YEAR TRAFFIC IS BASED ON GROWTH RATE FROM THE TN-TIMES LINEAR REGRESSION TOOL.

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. 6/9/21)

Michelle Hunt

From: Wesley Peck
Sent: Monday, March 25, 2024 3:03 PM
To: Michael Gilbert
Cc: Ted Kniazewycz; Steve Allen; Jim Waters; Michelle Hunt; David A. Duncan; Shane Hester; Brandon Akins; Daniel Pallme; Ty Tucker
Subject: RE: Timber Bridge Hydraulic Recommendation Request

Follow Up Flag: Follow up
Flag Status: Completed

Mike,

In the interest of being timely, I am enclosing my staff recommendations below. Note, these are all hydraulically complex bridge sites and most have some sort of scour or stream stability issue and I think some additional notes will be necessary for your planning studies. I will do a more in depth review and provide you with additional information later this week.

134833.00 – Tentative recommendation is a 2 @16x16 box culvert. However this one has some scour and stream stability issues that I am still reviewing.
134846.00 – Tentative recommendation is single span 60 ft bridge using box beam. Raise grade approximately 1. Ft. This one also has stream stability issues.
134847.00 – Recommendation is single span 90 ft bridge, raise grade 2.0 ft. Superelevation should be kept off bridge deck if possible for safety reasons. Significant drift concerns.
134849.00 – Recommendation is a 3 @ 14x14 box culvert.
134850.00 – Recommendation is a 3 @ 30' girder bridge. Total length 90 ft. Raise grade 2 ft minimum. A two span could probably work, but it may result in a pier in the middle of the channel. We can be creative with it once we have survey data, but this is the best we can do for now.
134851.00 – Recommendation is 3 span 128 ft bridge, raise grade 2.5 ft.
134864.00 – Recommendation is a single span 60 ft bridge, raise grade approx. 2 ft.
134865.00 – Recommendation is a three span 90 ft bridge, raise grade approx. 2.0 ft
134866.00 – Recommendation is a 3 @ 14x7 reinforced concrete box culvert.

Wesley Peck, PE, MS | Manager
Hydraulic Design Section | Structures Division
James K Polk Building, 11th Floor
505 Deaderick St, Nashville, TN 37243-0338
p. 615-532-5660
Wesley.Peck@tn.gov
tn.gov/tdot
Follow TDOT: Facebook | X | Instagram | LinkedIn

From: Michael Gilbert <Michael.Gilbert@tn.gov>
Sent: Monday, March 25, 2024 8:29 AM

TDOT Department of Transportation

Environmental Division

0EN1 Environmental Desktop Review Form

Part 1 – Project Information

PIN	134847.00
Project Number (if available)	
County	Fayette
Route	SR-193
Termini	Bridge over Branch, LM 7.71 (TMA)
Type of Document	
Date ENV DIV Comments are Due	5/22/24 by noon

Part 2: Provide information identifying known Environmental Resources within the proposed project area using the attached information. If no known resources are identified, each study area should note that none were identified.

Air & Noise

AIR QUALITY

Transportation Conformity

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

Mobile Source Air Toxics (MSATs)

This project qualifies as a categorical exclusion under 23 CFR 771.117 and, therefore, does not require an evaluation of MSATs per FHWA's *"Interim Guidance Update on Air Toxic Analysis in NEPA Documents"* dated January 2023.

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.

Cultural Resources

Archaeology: There is 1 previously recorded site within one mile of the ETSA. A survey will be required. There are agricultural, road construction and drainage disturbances within the ETSA. There is a moderate probability of intact archaeological deposits in this location.

History: There is one previously surveyed historic resource in the project area, and the bridge itself is more than 50 years old. Therefore, a historic survey will be required.

Ecology

Water resource features are likely to occur within the project area.

HazMat

No known hazardous materials sites. The asbestos bridge survey has been completed.

An Asbestos Containing Material (ACM) survey was completed on Bridge No. 24014580003 SR-193 over Branch LM 7.72 (24-SR193-07.71). No ACM was detected. Please see the report (PIN 118540.00) 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, 2021 Sections 107.08 D and 202.03).

NEPA

This project was evaluated for the following:

- Detour: Detour under 25 miles, no FHWA coordination needed.
- ROW Acquisition: ROW acquisition is greater than 1.5 acres, coordination with FHWA is required.
- Section 4(f): No Section 4(f) resources were identified in the proposed project area.
- Section 6(f): No Section 6(f) resources were identified in the proposed project area.

- Recreation and Wildlife Management Areas: No Recreation or Wildlife Management areas were identified in the proposed project area.
- Local/State Parks and Greenways: No parks or greenways were identified in the proposed project area.
- Floodplain Management: The project is located within the Statewide Flood Hazard Area Zone A.

PIN	County	Project	Utilities on Project	At Risk	Mitigation (if applicable)	Items	Footage	
134846.00	Fayette	SR-193 Bridge over Alexander Creek L.M. 4.84	Electric (Chickasaw Electric Co-Op assumed)	Aerial Electric - Distribution Lines	Avoid if possible	(4) Wire 3PH + Neutral, (4) 40-4 poles, (4) 1" Anchors, (4) Down guys, (2) OH guys - Remove (2) poles - Remove (4) wire 3ph + neutral.	840'	
134846.00	Fayette	SR-193 Bridge over Alexander Creek L.M. 4.84	Unknown (potentially gas)	Unknown	There is a line in the creek - potentially a gas line see link	Unknown	840'?	Google Pic

Project: SR-193, Bridge over Alexander Creek, LM 4.84 (TMA)
Comment Resolution Form
County: Fayette
PIN 134846.00

Comment Stage	Division	Commenter	Date	Comment	Comment Addressed?	Additional Notes
Draft Report Review (0SD2)	STID	David Duncan	4/29/2024	Draft Report Review comments requested by email.	N/A	N/A
Draft Report Review (0SD2)	Preconstruction	Gina Golightly	5/7/2024	SR-193 is classified as a major collector. Therefore, standard drawing RD11-TS-2 is applicable. The design speed is 55 mph. According to the TDOT Traffic Report, the design year AADT is 2010. Since the design AADT is greater than 2000, 12ft. lanes and 8 ft. shoulders are required.	Yes	RD11-TS-2 was provided on page 1 of the Draft Report. STID has been directed by HQ Structures to assume that all typical sections shown in these reports are to be a maximum of 30' in width (11' lanes and 4' shoulders) based on budgetary constraints. We have noted the bridges that will require a design exceptions and documented crash data at each site.
Draft Report Review (0SD2)	Preconstruction	Gina Golightly	5/7/2024	There are high voltage transmission lines approx. 370 ft. to the south.	Yes	Noted
Draft Report Review (0SD2)	Preconstruction	Gina Golightly	5/7/2024	There are several field entrances that may need access during construction for farming operations.	Yes	This comment is documented and will be further investigated at a later time during the design phase.
Draft Report Review (0SD2)	Preconstruction	Gina Golightly	5/7/2024	Existing bridge curb to curb width is 20 ft. 4 in.	Yes	Noted. in the Bridge Inspection Report dated 7/1/2022, the bridge out-to-out width is 21 ft 7 in. The curb-to-curb width noted is 20 ft 4 in.
Draft Report Review (0SD2)	Preconstruction	Gina Golightly	5/7/2024	From the bridge inspection report, the stream channel and rip-rap are in fair condition. There is moderate bank erosion. Debris/drift is present and likely to accumulate. There are dead trees upstream and downstream.	Yes	This comment is documented and will be further investigated at a later time during the design phase.
Draft Report Review (0SD2)	Preconstruction	Gina Golightly	5/7/2024	Adjacent ditches could possibly be classified at least WWC's.	Yes	This comment is documented and will be further investigated at a later time during the design phase.
Draft Report Review (0SD2)	Preconstruction	Gina Golightly	5/7/2024	Sight distance could be a concern due to the growth of existing vegetation.	Yes	This comment is documented and will be further investigated at a later time during the design phase.
Draft Report Review (0SD2)	Preconstruction	Gina Golightly	5/7/2024	Overhead utilities located on the north side of the roadway may be affected. There are no overhead utilities on the south side of the roadway. Check to see if utilities are attached to the bridge.	Yes	Utilities Office provided estimates and feedback on what is present.
Draft Report Review (0SD2)	Preconstruction	Gina Golightly	5/7/2024	Because of the new bridge elevation and width changes, ensure long enough project limits, sufficient environmental study area, and ROW widths.	Yes	The amount of grade change as well as the roadway width increase was used to calculate the taper length required to tie back into the existing alignment.
Draft Report Review (0SD2)	Preconstruction	Gina Golightly	5/7/2024	Based on a FEMA FIRMETTE it doesn't appear that this project is located within a flood plain. The floodplain can be located approx. 800 ft. downstream.	Yes	This comment is documented and will be further investigated at a later time during the design phase.
Draft Report Review (0SD2)	Preconstruction	Gina Golightly	5/7/2024	The overall drainage area is approximately 4.2 square miles. Consideration should be taken for higher precipitation storms due to the size of the drainage area, and close vicinity of downstream flood plain.	Yes	This comment is documented and will be further investigated at a later time during the design phase.
Draft Report Review (0SD2)	Preconstruction	Gina Golightly	5/7/2024	Structures should review the existing structure to determine if phase construction is even possible while maintaining traffic on the existing alignment.	Yes	STID has been directed by HQ Structures to consider methods of construction that do not exceed provided budgetary constraints. An initial desktop review was performed by STID to determine if detour and/or ABC was viable for each structure. This comment is documented and will be further investigated at a later time during the design phase.
Draft Report Review (0SD2)	Preconstruction	Gina Golightly	5/7/2024	Local representatives need to attend and review the detour plan and provide feedback.	Yes	This comment is documented and will be further investigated at a later time during the design phase.
Draft Report Review (0SD2)	Preconstruction	Gina Golightly	5/7/2024	Reconstructing in-place by means of stage construction would require a width restriction. Agricultural equipment should be considered for staging lane widths.	Yes	This comment is documented and will be further investigated at a later time during the design phase to determine if stage construction would be the preferred method of construction.
Draft Report Review (0SD2)	Preconstruction	Gina Golightly	5/7/2024	Stage construction with minor shift would require a temporary signal but would allow a wider lane to allow some farming vehicles to cross.	Yes	This comment is documented and will be further investigated at a later time during the design phase to determine if stage construction would be the preferred method of construction.