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-87 - Bridge over Branch (TMA)								
PIN	134874.00								
Route Information	**Route**	**NHS (Y/N)**	**Functional Class**		**City**		**County**		
	SR-87	Yes	Rural Major Collector		Ripley		Haywood		
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**
	3.47		410	41	5.00	55	55	2029	2049
Project Description & Standard Drawings Used	The proposed bridge is to be a 40' single span bridge using Type I I-beams. The typical section for the approach and bridge will be 2-11' foot travel lanes with 4' shoulders. The out-to-out width based on the above recommendations will be 31'3". The proposed grade and vertical clearance will be raised 2'. A detour is recommended but is a potential ABC candidate. The state route detour is 45 minutes (39.2 miles); the local route detour is 17 minutes (13.5 miles). Superstructure depth is 41.75" = 28" (beam) + 10" (deck) + 3.75" (width (in inches) x0.02/2). RD11-TS-2								Project Details
Important Project History or Related Projects	Existing structure, built in 1960, is a single span concrete channel beam timber bridge, 29' long with an out-to-out width of 29'. The existing structure has 2-10' travel lanes with no shoulders. The listed weight limit on the inspection report is 40 tons (8/11/2023). The discharges for the drainage basin (StreamStats Version 4.19.4) for drainage area of 23.84 square miles: Q10 is 4260 cfs, Q50 is 5980 cfs, and Q100 is 6690 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	Historic Preservation- A historic resources survey and report will be required. Archaeology- A survey of the ETSA will be required, There is a low likelihood of intact archaeological deposits in the ETSA. Ecology- Water resources are present in the project area.								

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 are 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	Approximately 0.27 acres of right of way are expected to be acquired. Overhead electric lines are present. This bridge replacement should be coordinated with the replacements at L.M. 2.30 and L.M. 3.61,Pin 134848.00 & Pin 134873.00. Survey to include all three structures. 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

David Duncan
David Duncan (Oct 24, 2024 10:39 CDT)

Engineering Concepts and Statewide Programs Director — Date: 10/24/2024

The following individuals to execute if a bridge concept report:

Jed A Kmiazewycz

Structures Director — Date: 10/25/2024

Regional Project Management Director — Date: 10/28/2024

Action Checklist			
0SD1 Initiate Concept Report and Request Funding			
Complete	**NA**		**Date Completed**
✓		Request and Finalize Safety Data	04/05/2024
✓		Request Project Number, PIN, and Task Profile Numbers	01/22/2024
	✓	Coordinate with Long Range Planning	
✓		Request and Finalize Traffic Data	02/21/2024
	✓	Request Preliminary Survey Data	
	✓	Initiate Division Reviews	
	✓	Schedule Site Review (with appropriate Divisions)	
0EN1 Conduct Environmental Desktop Review			
Complete	**NA**		**Date Completed**
✓		Confirm Environmental Desktop Review is Complete	10/11/2024
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	08/12/2024
✓		Confirm Hydraulic Recommendations for Concept Report is Complete	08/12/2024
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	09/20/2024

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	09/02/2024
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	09/20/2024
		Review and Confirm Preliminary Railroad Cost Estimate	
0SD3 Finalize Concept Report			
Complete	**NA**		**Date Completed**
	✓	Compile and Review Initial Risk Assessment	
✓		Finalize Conceptual Layouts	08/31/2024
✓		Develop Environmental Technical Study Area (ETSA)	08/31/2024
✓		Address Comments and Finalize Concept Report	10/21/2024
	✓	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	10/23/2024
		Notify the Project Management Director or Assigned Project Manager to Set Up Project (1PM1)	

NA Justification

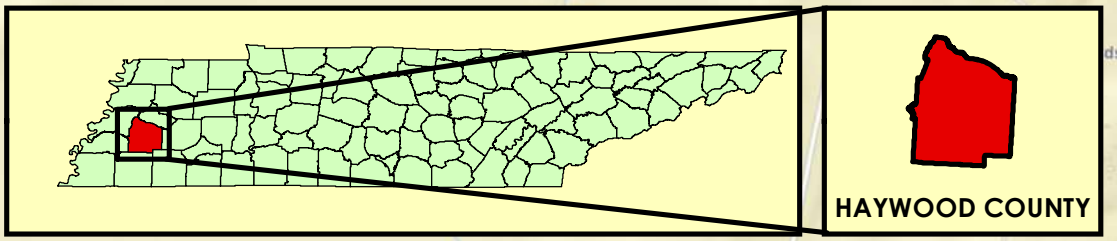
Coordinate with Long Range Planning-Long Range Planning coordination not needed for STID BCR document
Request Preliminary Survey Data- survey data not needed for STID BCR document
Schedule a site visit-site visit not required
0MM1 Conduct Multimodal Review- multimodal coordination not required
0SY1 Provide 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- 2 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



SR-87 BRIDGE [38S80460003]
BRIDGE OVER BRANCH
L.M. 3.47

Hudson Ln
Opal Shaw Rd
Allen Cox Rd
Raymond Taylor Rd
Fulton Rd
87
Fulton Rd
Hudson Ln
Shady Rest Rd
Pepper Ln

0 0.125 0.25 0.5 Miles

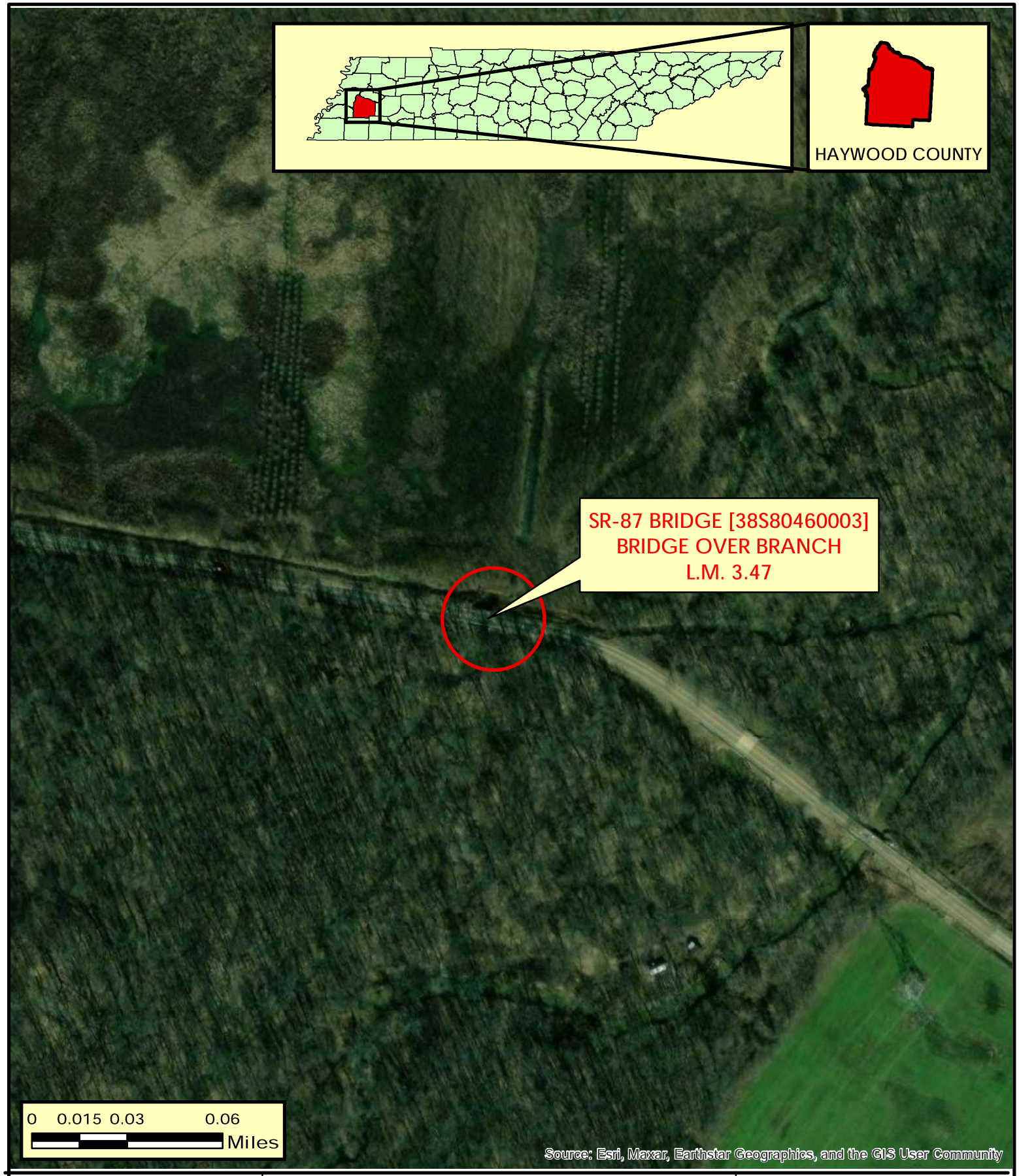
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

N

AREA MAP
SR-87 BRIDGE [38S80460003]
BRIDGE OVER BRANCH
L.M. 3.47
HAYWOOD COUNTY

TN TDOT Department of Transportation

PIN 134874.00

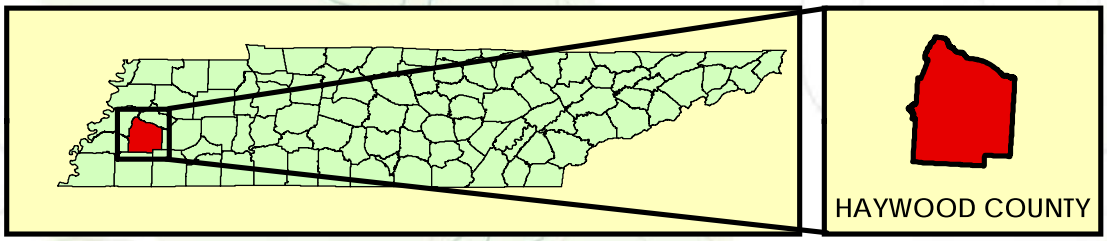


N

LOCATION MAP
SR-87 BRIDGE [38S80460003]
BRIDGE OVER BRANCH
L.M. 3.47
HAYWOOD COUNTY

TN TDOT Department of Transportation

PIN 134874.00



SR-87 BRIDGE [38S80460003]
BRIDGE OVER BRANCH
L.M. 3.47

321 ft

Allen Cox Rd

Fulton Rd

Fulton Rd

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

N

TOPOGRAPHIC MAP

SR-87 BRIDGE [38S80460003]
BRIDGE OVER BRANCH
L.M. 3.47
HAYWOOD COUNTY

TN TDOT Department of Transportation

PIN 134874.00

TENNESSEE D.O.T.

S.T.I.D.

FILE NO. ——

TYPE	YEAR	COUNTY	FIGURE NO.
BRIDGE	2024	HAYWOOD	1

0' 100' 200' 300'

N

R4 TIMBER BRIDGE PROGRAM

STATE ROUTE 87
BRIDGE OVER BRANCH, L.M. 3.47
HAYWOOD COUNTY

CAUTION ! PRELIMINARY PLANS SUBJECT TO CHANGE

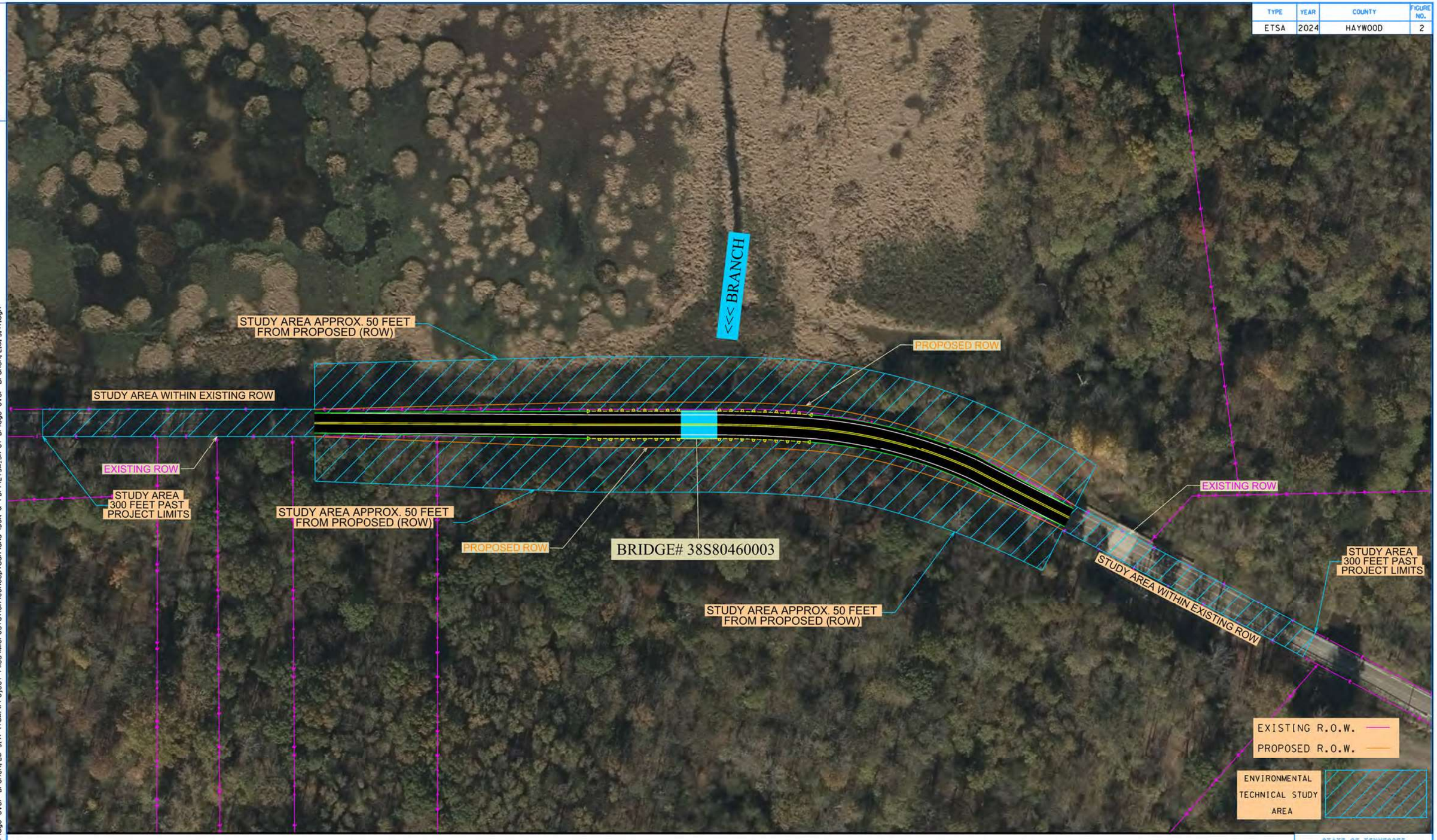
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
S.T.I.D.

FIGURE 1
S.R. 87
L.M. 3.47

8/23/2024 10:35:28 AM
X:\Projects\Haywood\SR-87\Bridge over Branch,LM 3.47 (TMA)\Project Files\Microstation\ConceptualPlans (DGN & PDF)\SR 87 Bridge over Branch, L.M. 3.47.dgn

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

TYPE	YEAR	COUNTY	FIGURE NO.
ETSA	2024	HAYWOOD	2



0' 100' 200' 300'

N

ENVIRONMENTAL TECHNICAL STUDY AREA

STATE ROUTE 87
BRIDGE OVER BRANCH, L.M. 3.47
HAYWOOD COUNTY

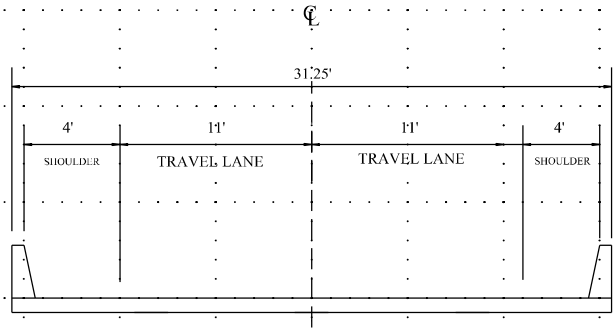
CAUTION! PRELIMINARY PLANS SUBJECT TO CHANGE

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

FIGURE 2
S.R. 87
L.M. 3.47

8/28/2024 7:54:04 AM
X:\Projects\Haywood\SR-87\Bridge over Branch, LM 3.47 (TMA)\Project Files\Microstation\ConceptualPlans (DGN & PDF)\ETSA-SR 87 Bridge over Branch, L.M. 3.47.dgn

PROPOSED COMPLETED



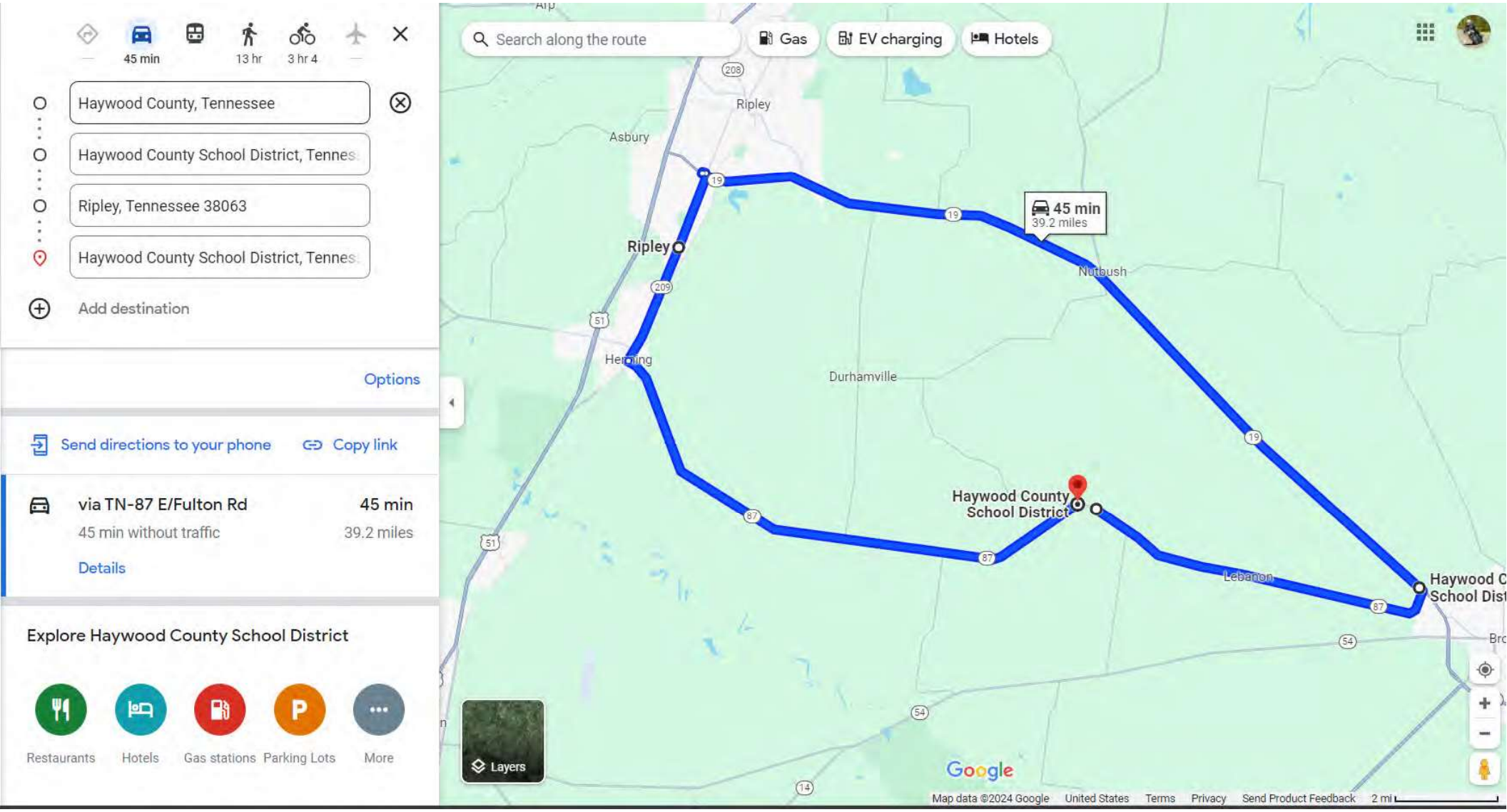
0' 5' 10' 15'

CROSS-SECTION DETAIL

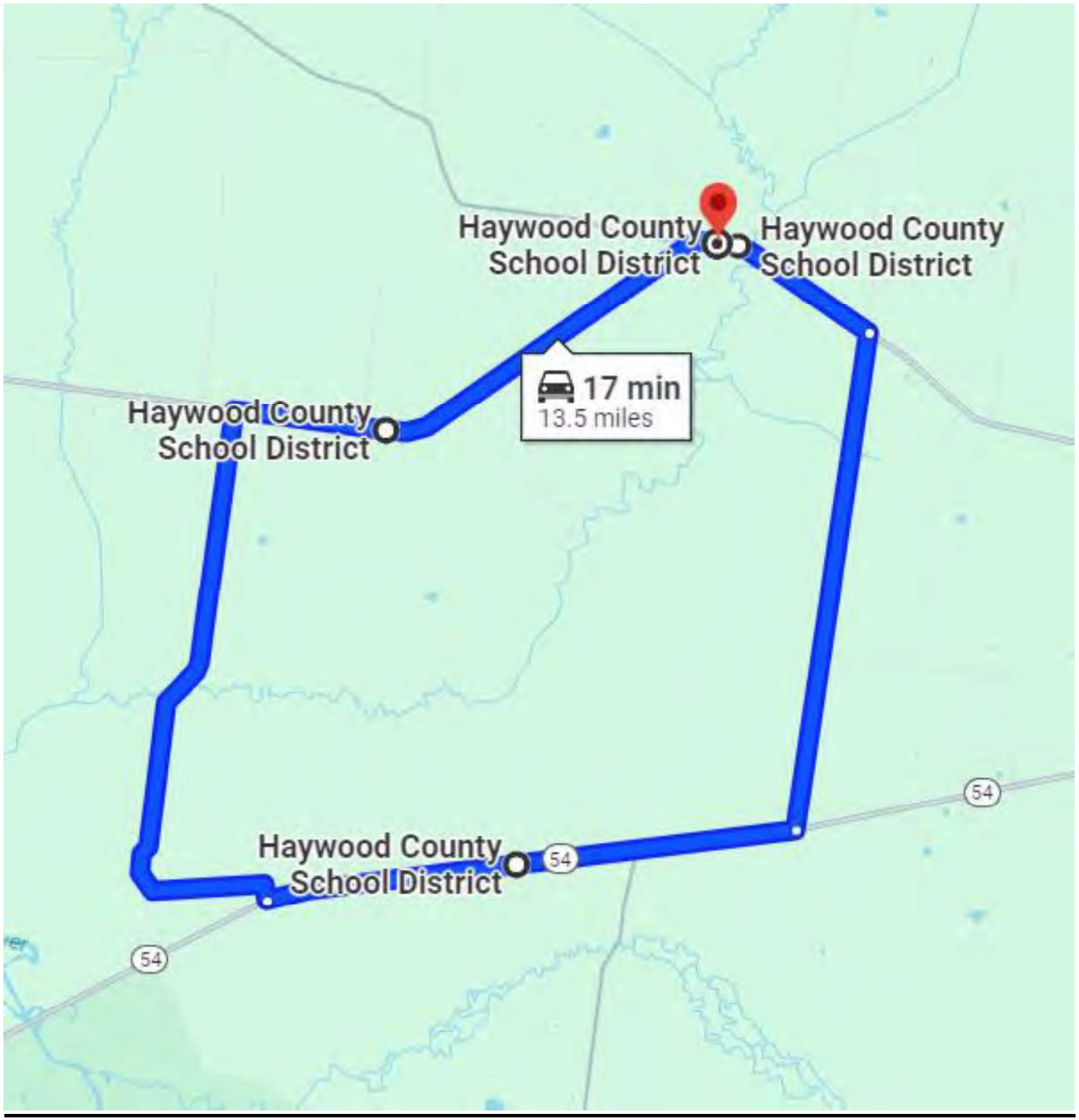
REGION 4 TIMBER BRIDGE PROGRAM
TRANSPORTATION MODERNIZATION ACT (TMA)

CAUTION !
PRELIMINARY
PLANS
SUBJECT TO
CHANGE

DETOUR MAP – STATE ROUTE



DETOUR MAP – LOCAL ROUTE



CRASH SUMMARY REPORT

Haywood Co SR087 - Bridge over Lagoon Creek

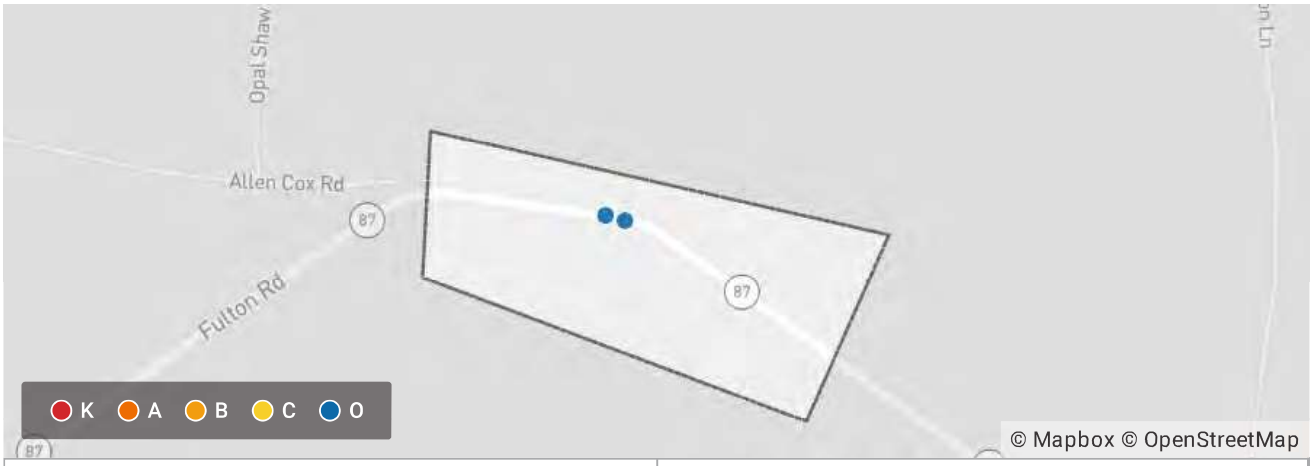
Created on April 4, 2024

Created by JOSHUA CLOUD

Data extents: March 28, 2021 to March 28, 2024

Applied Filters

County = Haywood | Shape: Polygon



Total Crashes	2	Fatal Crashes	0

Summary		Crash
Total Crashes	2	100.00%
+ 5 more	0	0%

Type of Crash		Crash
(O) Property-Damage Only	2	100.00%
+ 4 more	0	0%

Date of Crash (Year)		Crash
2024	1	50.00%
2022	1	50.00%
+ 9 more	0	0%

Manner of First Collision		Crash
No Collision W/ Vehicle	2	100.00%
+ 9 more	0	0%

First Harmful Event		Crash
Guardrail End	1	50.00%
Immersion	1	50.00%
+ 63 more	0	0%

Crash Location		Crash
Along Roadway	2	100.00%
+ 6 more	0	0%

Light Conditions		Crash
Dark-Not Lighted	1	50.00%
Daylight	1	50.00%
+ 6 more	0	0%

Weather Conditions		Crash
Clear	1	50.00%
+ 11 more	0	0%

Bottom deck of span #1

Spall to steel on slab A

1/16” crack on slab D

1/16” crack on slab D

Spall to steel on slab B

1/16” crack on slab G

Top 1 pile G decay in top of pile

Abutment 1

Right elevation

Left side upstream

Approach 1 right embankment

Left curb

Approach 2 left terminal

Approach 2 right terminal

Opposite direction of route

Approach 2 weight limit sign

Right rail post leaking 1 foot opposite direction of route

Direction of route

Approach 1 weight limit sign

Approach 2 asphalt

Approach 1 asphalt

Wearing surface cracks

Left bridge rail damage

Right side downstream

View across top deck

#

TENNESSEE DEPARTMENT OF TRANSPORTATION
STRATEGIC TRANSPORTATION INVESTMENTS DIVISION

PROJECT NO.: 38S087-S1-004 ROUTE: S.R. 87
COUNTY: HAYWOOD CITY:
PROJECT PIN NUMBER: 134874.00
PROJECT DESCRIPTION: BRIDGE OVER BRANCH @ L.M. 3.47

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
290	2029	410	41	10	2049	65-35	3	5		

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 2/22/2024
TRANSPORTATION MANAGER 1
SUITE 1000, JAMES K. POLK BUILDING

APPROVED BY: TONY ARMSTRONG Tony Armstrong DATE 2/22/2024
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)

TN TDOT Department of Transportation

Environmental Division

0SD2 Environmental Desktop Review Form

Part 1 – Project Information

PIN	134874.00
Project Number (if available)	
County	Haywood
Route	SR87
Termini	Bridge over Branch (TMA)
Type of Document	TEER
Date ENV DIV Comments are Due	10.10.24 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 Haywood County which is in attainment for all regulated criteria pollutants. Therefore, conformity does not apply to this project.

Mobile Source Air Toxics (MSATs)

This project qualifies as a categorical exclusion under 23 CFR 771.117 and, 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

Historic Preservation: The bridge is greater than fifty years of age, so a historic resources survey and report will be required. There are no other previously identified historic resources in the vicinity of the bridge.

Archaeology: There are no previously recorded sites or survey areas within one mile of the ETSA. A survey of the ETSA will be required. Given the previous disturbance via road construction, there is a low likelihood of intact archaeological deposits in the ETSA.

Ecology

Water resources are present in the project area.

HazMat

No known hazardous materials sites affect the area around this bridge replacement. No additional hazardous material studies are recommended at this time. The asbestos bridge survey has been completed and the following project commitment EDHZ001 has been submitted in PPRM. In the event hazardous materials or wastes are encountered within the right-of-way, notification shall be made per TDOT Standard Specifications for Road and Bridge Construction (January 1, 2021) Section 107.08.C. Disposition of hazardous materials or wastes shall be subject to all applicable Federal, State, and local regulations, including the applicable sections of the Federal Resource Conservation and Recovery Act, as amended; the Comprehensive Environmental Response, Compensation, and Liability Act, as amended; and the Tennessee Hazardous Waste Management Act of 1983, as amended. Databases reviewed include Google Earth imagery, EPA National Priorities List, EPA EnviroMapper (Envirofacts), TDEC Registered Underground Storage Tanks Public Data Viewer and Data and Reports, TDEC Division of Water Resources Public Data Viewer and Oil and Gas Wells database, TDEC Division of Remediation Sites Public Data Viewer, TDOT Integrated Bridge Information System, and others, as necessary.

EDHZ001. An Asbestos Containing Material (ACM) survey was completed on Bridge No. 38S80460003 SR-87 over Branch LM 3.47 (38-SR087-03.47). No asbestos 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, 2021) Sections 107.08.D and 202.03).

NEPA

No Section 4(f) or Section 6(f) resources within project limits. The project is located within a 100-year floodplain and is located on FEMA FIRM # 47075C0100D (Panel 100 of 400), in Haywood County, TN. Detour lengths will not need to be coordinated with FHWA, since the project is solely state-funded. The environmental document type will be a TEER, since the project is solely state-funded.