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	134848.00								
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**
	2.30		450	54	3.00	55	55	2029	2049
Project Description & Standard Drawings Used	The proposed bridge is to be a 50' single span bridge using 24" box beam. 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 1'. 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 37.75" = 24" (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 1990, 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 -The bridge is in FAIR Condition								
Major Environmental Considerations	Archaeology - A survey will be required.								

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 0.26 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. 3.47 and L.M. 3.61,Pin 134874.00 & 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 10:50 CDT)

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

The following individuals to execute if a bridge concept report:

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	05/19/2024
✓		Confirm Hydraulic Recommendations for Concept Report is Complete	05/19/2024
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	08/19/2024
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)	10/23/2024
		Finalize Document and Upload All Needed Electronic Files	
		Notify the Project Management Director or Assigned Project Manager to Set Up Project (1PM1)	

NA Justification

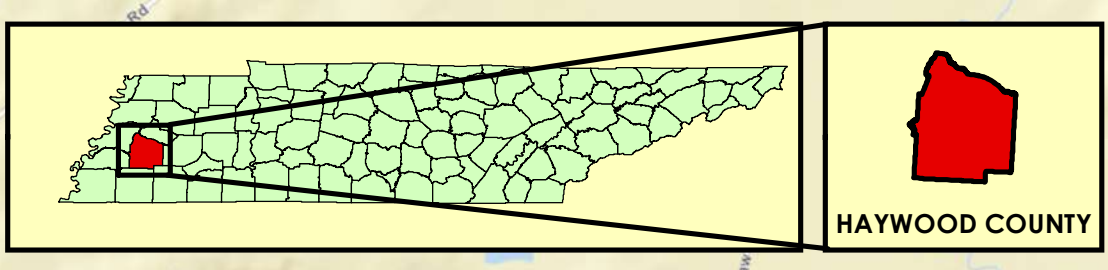
Coordinate with Long Range Planning-Long Range Planning coordination not needed for STID BCR document
Request Preliminary Survey Data- survey data not needed for STID BCR document
Schedule a site visit-site visit not required
0MM1 Conduct Multimodal Review- multimodal coordination not required
0SY1 Provide 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- 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 [38SR0870001]
BRIDGE OVER BRANCH
L.M. 2.30

Allen Cox Rd
Raymond Taylor Rd
Fulton Rd
87
Shady Rest Rd
Cordia Gause Rd

0 0.125 0.25 0.5 Miles

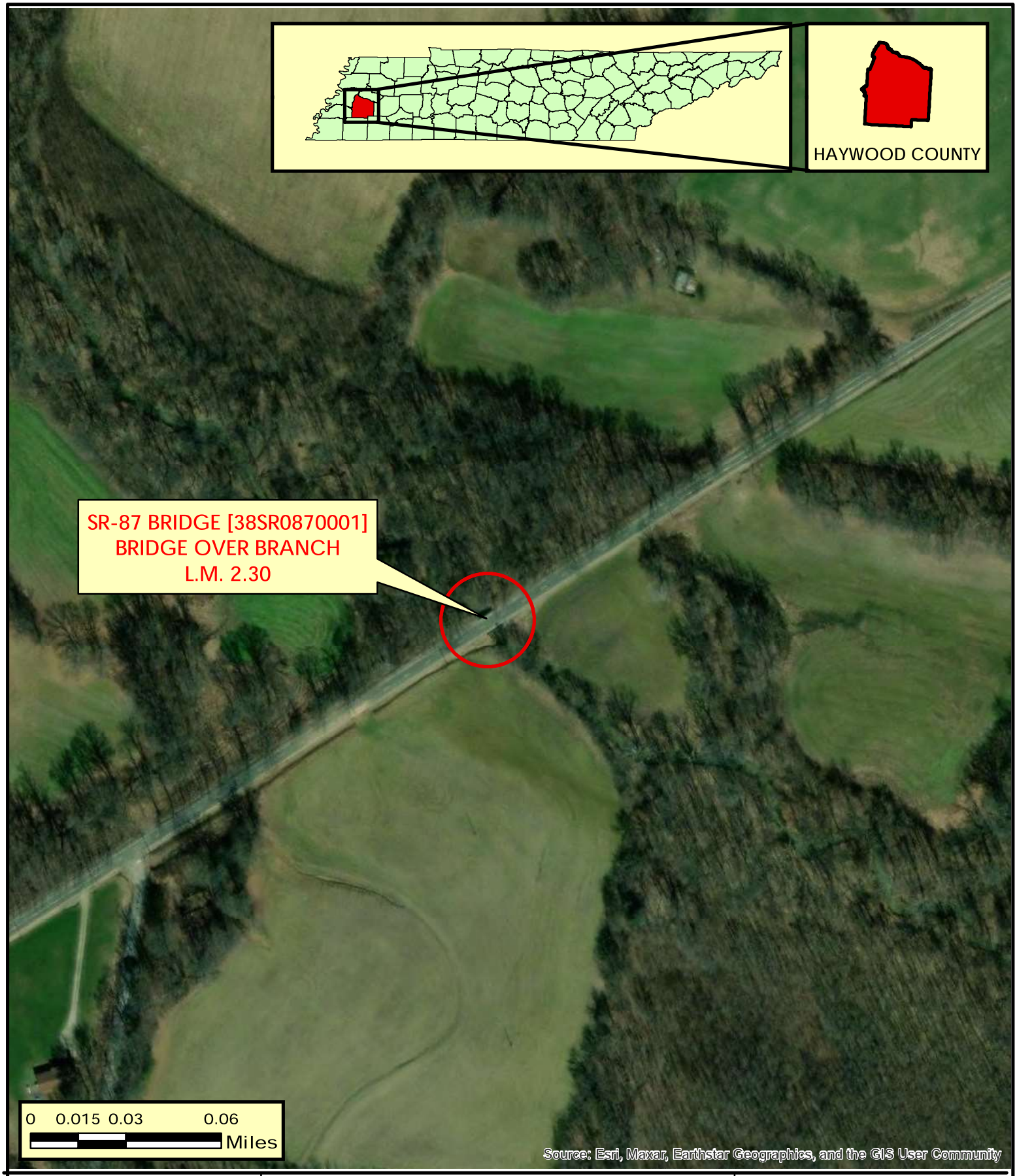
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

N

AREA MAP
SR-87 BRIDGE [38SR0870001]
BRIDGE OVER BRANCH
L.M. 2.30
HAYWOOD COUNTY

TN TDOT Department of Transportation

PIN 134848.00

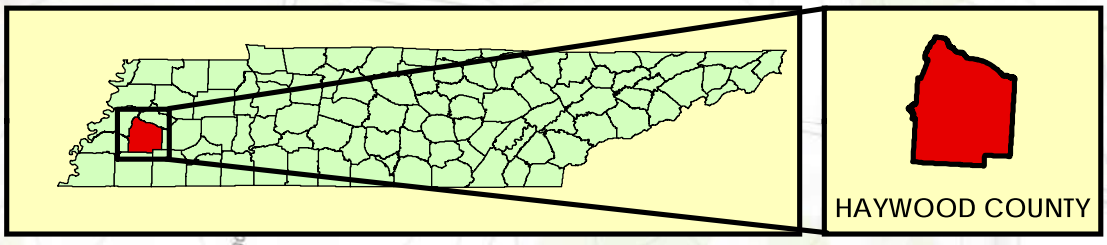


N

LOCATION MAP
SR-87 BRIDGE [38SR0870001]
BRIDGE OVER BRANCH
L.M. 2.30
HAYWOOD COUNTY

TN TDOT Department of Transportation

PIN 134848.00



SR-87 BRIDGE [38SR0870001]
BRIDGE OVER BRANCH
L.M. 2.30

Fulton Rd

87

300 ft

353 ft

Walker Cemetery 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

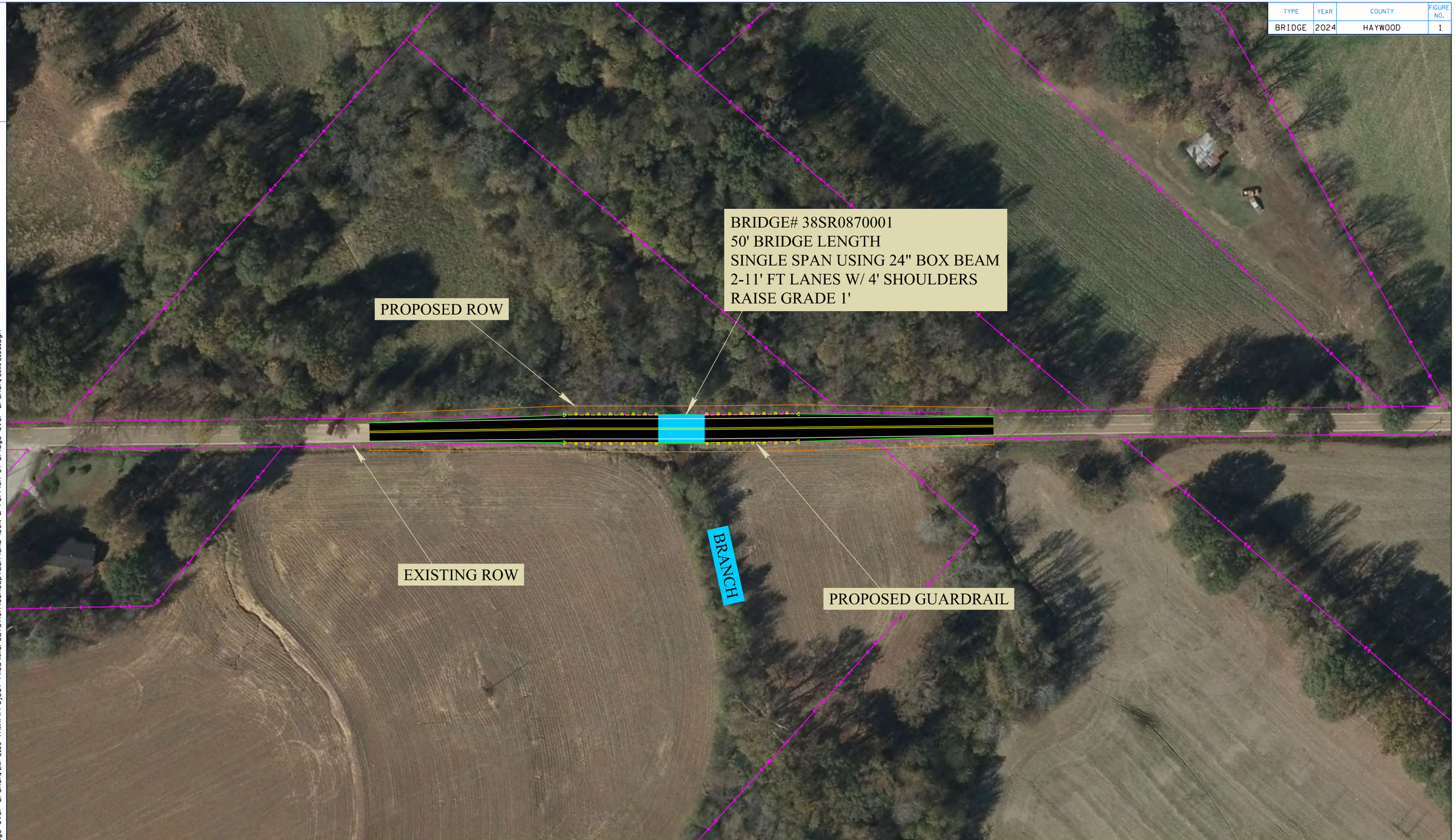
SR-87 BRIDGE [38SR0870001]
BRIDGE OVER BRANCH
L.M. 2.30
HAYWOOD COUNTY

TN TDOT Department of Transportation

PIN 134848.00

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. 2.30
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. 2.30

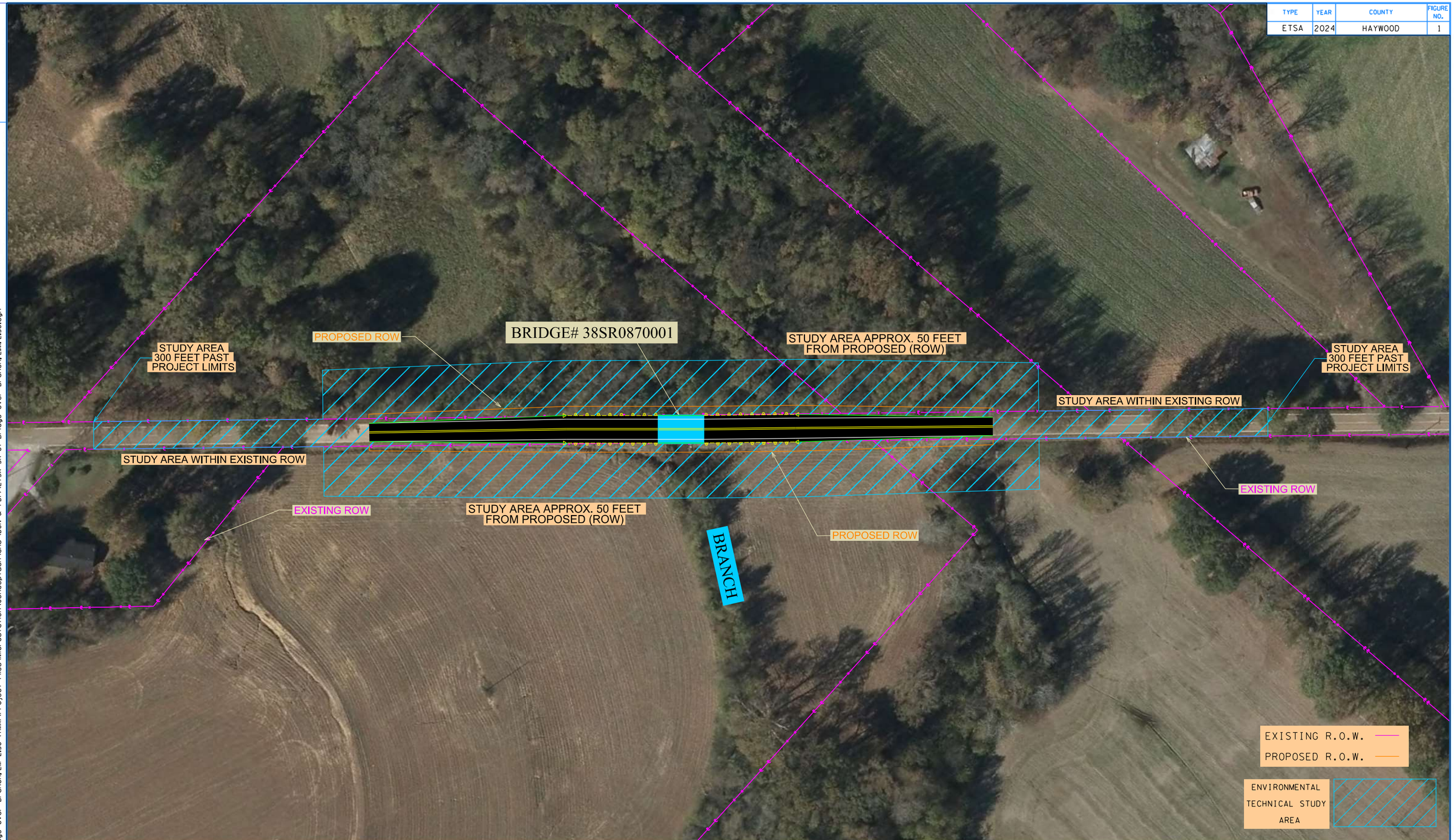
7/29/2024 2:26:12 PM
X:\Projects\Haywood\SR-87\Bridge over Branch,LM 2.30 (TMA)\Project Files\Microstation\ConceptualPlans (DGN & PDF)\SR 87 Bridge over Branch,L.M.2.30.dgn

TENNESSEE D.O.T.

S.T.I.D.

FILE NO.

TYPE	YEAR	COUNTY	FIGURE NO.
ETSA	2024	HAYWOOD	1



0′ 100′ 200′ 300′

N

ENVIRONMENTAL TECHNICAL STUDY AREA

STATE ROUTE 87
BRIDGE OVER BRANCH, L.M. 2.30
HAYWOOD COUNTY

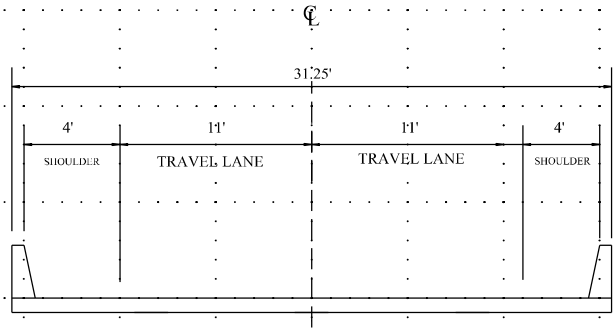
CAUTION ! PRELIMINARY PLANS SUBJECT TO CHANGE

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

FIGURE 1
S.R. 87
L.M. 2.30

8/5/2024 2:15:05 PM
X:\Projects\Haywood\SR-87\Bridge over Branch,LM 2.30 (TMA)\Project Files\Microstation\ConceptualPlans (DGN & PDF)\ETSA SR 87 Bridge over Branch, L.M. 2.30.dgn

PROPOSED COMPLETED



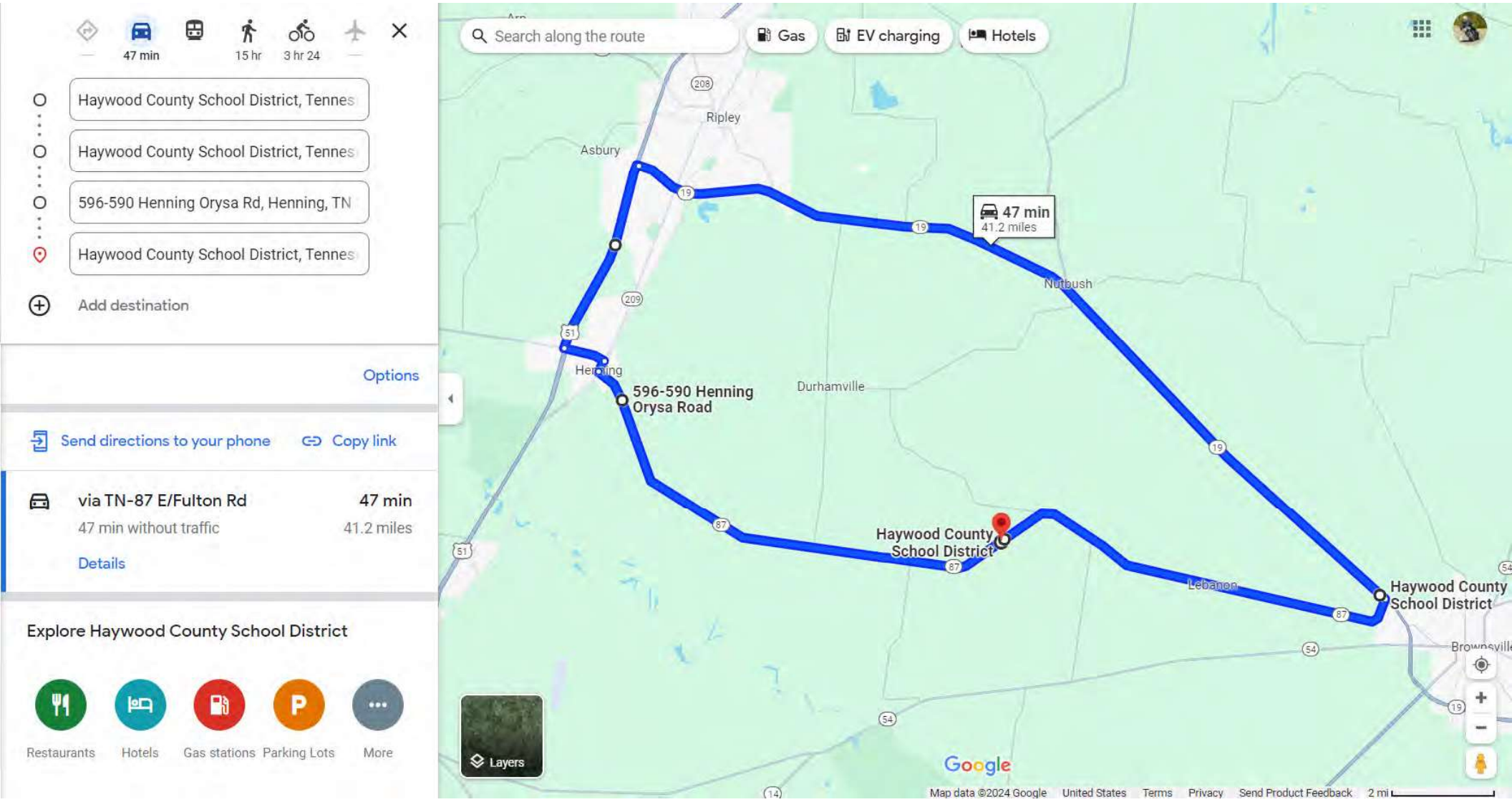
0' 5' 10' 15'

CROSS-SECTION DETAIL

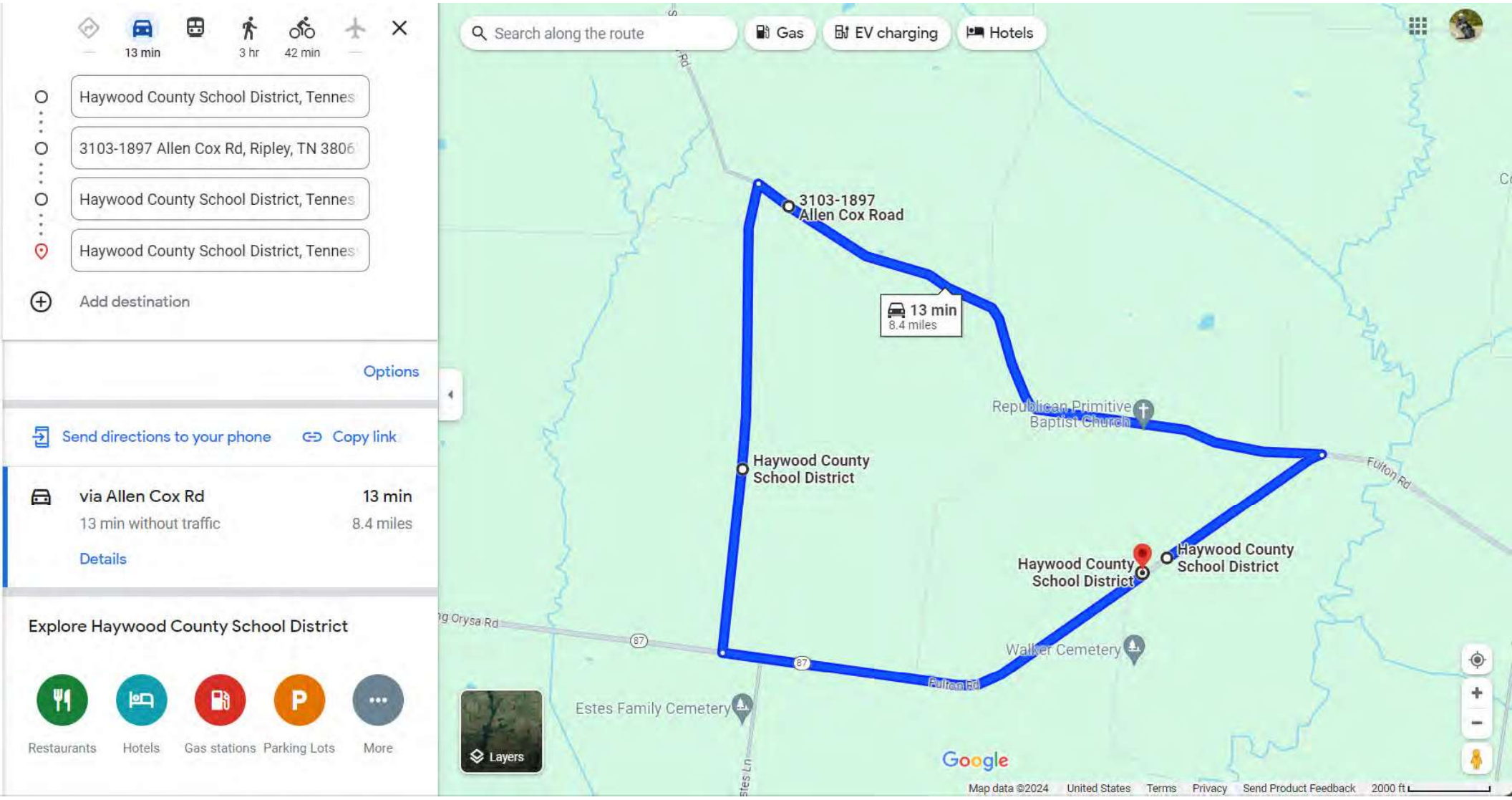
REGION 4 TIMBER BRIDGE PROGRAM
TRANSPORTATION MODERNIZATION ACT (TMA)

CAUTION !
PRELIMINARY
PLANS
SUBJECT TO
CHANGE

DETOUR MAP – STATE ROUTE



DETOUR MAP – LOCAL ROUTE



CRASH SUMMARY REPORT

Haywood SR087 - Bridge over Branch (LM 2.30)

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
2023	2	100.00%
+ 10 more	0	0%

Manner of First Collision		Crash
Angle	1	50.00%
No Collision W/ Vehicle	1	50.00%
+ 8 more	0	0%

First Harmful Event		Crash
Other Object (not fixed)	1	50.00%
Vehicle in Transport	1	50.00%
+ 63 more	0	0%

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

Light Conditions		Crash
Daylight	1	50.00%
+ 7 more	0	0%

Weather Conditions		Crash
Clear	2	100.00%
+ 11 more	0	0%

1/8” crack on slab E

Impending spall on slab E

Spalling on slab B

Spall to steel on slab B

1/16” crack on slab A

Right elevation

Abutment 2 Left end of cap

Abutment 2 pile A Alignment

Abutment 2

Right end of Abutment 2 cap decayed

Abutment 1

Left elevation

Right bridge rail damage

Approach 2 weight limit sign

Opposite direction of route

Bridge #

Right side downstream

Approach 2 asphalt

Left bridge rail

View across top deck

Left side upstream

Approach 1 asphalt

TN TDOT Department of Transportation

Asset **#38SR0870001** (Routine)

Region: 04, **County:** 38 - Haywood

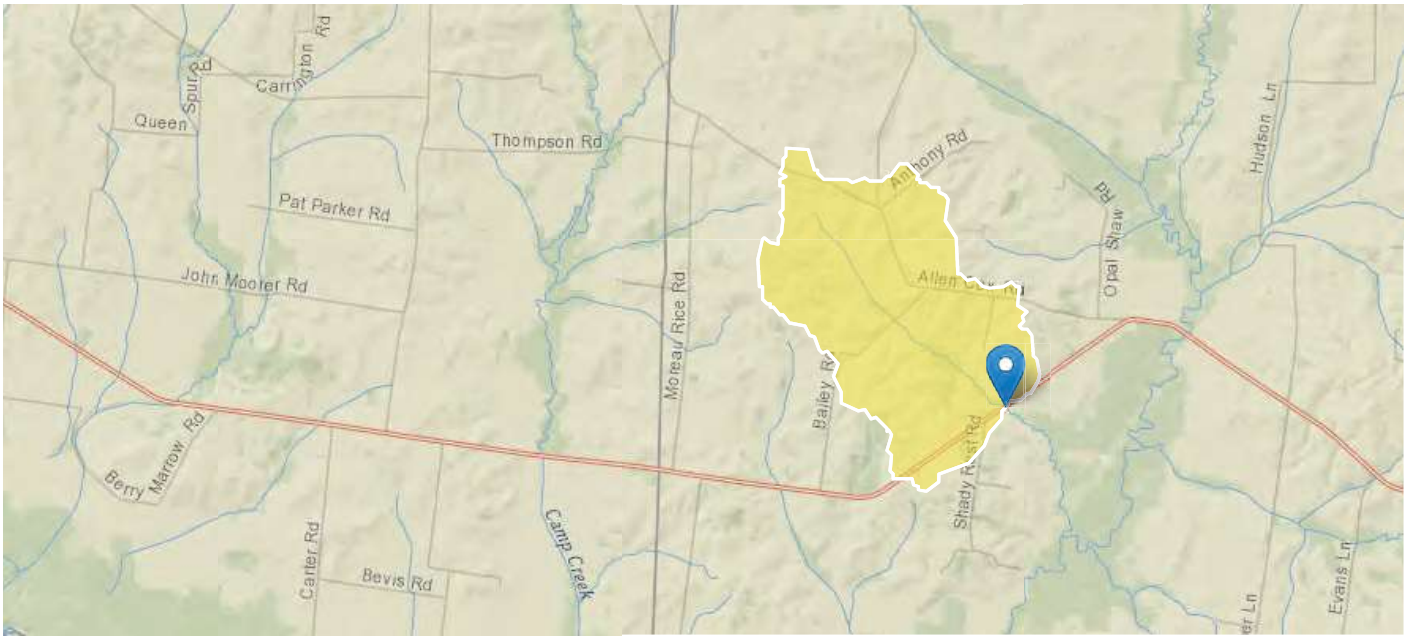
Team Lead: Jason Ellison, **Inspection Date:** 08/11/2023

Approach 1 weight limit sign

Direction of route

StreamStats

Region ID: TN
Workspace ID: TN20240404155343417000
Clicked Point (Latitude, Longitude): 35.62455, -89.43081
Time: 2024-04-04 10:54:05 -0500



Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
CLIMFAC2YR	Two-year climate factor from Lichy and Karlinger (1990)	2.395	dimensionless
CONTDA	Area that contributes flow to a point on a stream	2.01	square miles
DRNAREA	Area that drains to a point on a stream	2.01	square miles
PERMGTE2IN	Percent of area underlain by soils with permeability greater than or equal to 2 inches per hour	37.002	percent
RECESS	Number of days required for streamflow to recede one order of magnitude when hydrograph is plotted on logarithmic scale	32	days per log cycle
SOILPERM	Average Soil Permeability	1.07	inches per hour

Peak-Flow Statistics

Peak-Flow Statistics Parameters [DAOnly Area 4]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
CONTDA	Contributing Drainage Area	2.01	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	630	ft^3/s	333	1190	38.7	38.7	1.8
20-percent AEP flood	904	ft^3/s	488	1670	37.2	37.2	2.4
10-percent AEP flood	1080	ft^3/s	577	2020	38	38	3.1
4-percent AEP flood	1300	ft^3/s	672	2520	40.1	40.1	3.8
2-percent AEP flood	1460	ft^3/s	730	2920	42.2	42.2	4.2
1-percent AEP flood	1610	ft^3/s	776	3340	44.7	44.7	4.4
0.2-percent AEP flood	1970	ft^3/s	863	4490	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

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

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	2.01	square miles	2	2405
RECESS	Recession Index	32	days per log cycle	32	350
PERMGTE2IN	Percent permeability gte 2 in per hr	37.002	percent	2	98

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

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	ASEp
7 Day 10 Year Low Flow	0.00274	ft^3/s	123
30 Day 5 Year Low Flow	0.00756	ft^3/s	93.5

Low-Flow Statistics Citations

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

Flow-Duration Statistics

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

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	2.01	square miles	2	2405
RECESS	Recession Index	32	days per log cycle	32	350
PERMGTE2IN	Percent permeability gte 2 in per hr	37.002	percent	2	98
CLIMFAC2YR	Tennessee Climate Factor 2 Year	2.395	dimensionless	2.307	2.455
SOILPERM	Average Soil Permeability	1.07	inches per hour	0.97	2.44

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

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

Statistic	Value	Unit	ASEp
99.5 Percent Duration	0.00253	ft^3/s	122
99 Percent Duration	0.00394	ft^3/s	105
98 Percent Duration	0.00549	ft^3/s	96.4
95 Percent Duration	0.0081	ft^3/s	90.5
90 Percent Duration	0.0113	ft^3/s	85.8
80 Percent Duration	0.0186	ft^3/s	79.6
70 Percent Duration	0.0307	ft^3/s	75
60 Percent Duration	0.0624	ft^3/s	69.2
50 Percent Duration	0.108	ft^3/s	57
40 Percent Duration	0.225	ft^3/s	46.9
30 Percent Duration	0.626	ft^3/s	36.6
20 Percent Duration	2.05	ft^3/s	27.4
10 Percent Duration	4.53	ft^3/s	17.7

Flow-Duration Statistics Citations

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

Annual Flow Statistics

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

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	2.01	square miles	2	2405
RECESS	Recession Index	32	days per log cycle	32	350
CLIMFAC2YR	Tennessee Climate Factor 2 Year	2.395	dimensionless	2.307	2.455

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
PERMGTE2IN	Percent permeability gte 2 in per hr	37.002	percent	2	98

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

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	ASEp
Mean Annual Flow	2.34	ft^3/s	13.1

Annual Flow Statistics Citations

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

Seasonal Flow Statistics

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

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	2.01	square miles	2	2405
RECESS	Recession Index	32	days per log cycle	32	350
PERMGTE2IN	Percent permeability gte 2 in per hr	37.002	percent	2	98

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

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	ASEp
Summer Mean Flow	0.378	ft^3/s	38.3

Seasonal Flow Statistics Citations

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

TENNESSEE DEPARTMENT OF TRANSPORTATION
STRATEGIC TRANSPORTATION INVESTMENTS DIVISION

PROJECT NO.: 28S087-S1-002 ROUTE: S.R. 87
COUNTY: HAYWOOD CITY:
PROJECT PIN NUMBER: 134848.00
PROJECT DESCRIPTION: BRIDGE OVER BRANCH @ L.M. 2.30

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: 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
320	2029	450	54	12	2049	65-35	2	3		

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)

PIN	County	Route	Priority	Termini	LM	Bridge #	Hydraulics Recommendation
134835.00	Chester	SR125	1	Bridge over Little Piney Creek (TMA)	0.12	12016770001	single span type 4 I beam,with 2.5 ft grade change.
134837.00	Chester	SR125	1	Bridge over Piney Creek (TMA)	1.40	12016770003	45" box beam, 85 ft long single span, raise grad 2 ft. Proposed ETSA should include 50 ft of channel up and downstream of bridge outer limits. Proposed ROW to include limits of existing riprap.
134852.00	Henderson	SR200	1	Bridge over Overflow(TMA)	0.59	39S80610001	36" box beam, 70 ft long single span, raise grade 2 ft.
134849.00	Fayette	SR196	1	Bridge over Branch of Russell Creek (T	1.35	24F00240001	Single span 70 ft using 33" box beam. Raise grade 2 ft.
134850.00	Fayette	SR196	1	Bridge over Russell Branch (TMA)	1.09	24F00240003	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. Alternative design, single span with 4.25 ft grade increase.
134851.00	Fayette	SR196	1	Bridge over Branch (TMA)	14.115	24S81090007	Recommendation is 3 span 128 ft bridge, raise grade 2.5 ft. Survey to include location of existing concrete block channel protection up and downstream of bridge in plan and profile.
134845.00	Dyer	SR104	1	Bridge over Branch (TMA)	4.89	23SR0200001	60 ft single span using 30" box beam. Raise grade 1.5 ft. Proposed ETSA and ROW to include limits of riprap up and downstream. Site gets backwater from Obion River during major floods. Probably levee in NW quadrant should be avoided if possible.
134874.00	Haywood	SR087	1	Bridge over Branch (TMA)	3.47	38S80460003	Overflow for 134873.00. Very undersized for drainage area. Appears to be 1 of 3 structures on floodplain.
134848.00	Haywood	SR087	1	Bridge over Branch (TMA)	2.3	38SR0870001	50' single span using a 24" deep box beam. Raise grade 1 ft.
134880.00	Haywood	SR179	1	Bridge over Overflow(TMA)	1.09	38S80520001	105', 3 span, type 1 I beam, raise grade 2 ft. Existing bridge is scour critical. Main channel bridge is 134881.00 and hydraulic design should be done together. Existing bridge is scour critical. Both are undersized and will probably be low design storm.
134881.00	Haywood	SR179	1	Bridge over Little Muddy Creek (TMA	1.24	38S80520003	105', 3 span, type 1 I beam, raise grade 2 ft. Existing bridge is scour critical. Main channel bridge is 134881.00 and hydraulic design should be done together. Existing bridge is scour critical. Both are undersized and will probably be low design storm.

TN TDOT Department of Transportation

Environmental Division

0SD2 Environmental Desktop Review Form

Part 1 – Project Information

PIN	134848.00
Project Number (if available)	
County	Haywood
Route	SR87
Termini	Bridge over Branch (TMA)
Type of Document	
Date ENV DIV Comments are Due	10/10/2024 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 – There are no previously identified historic resources within 0.25 mile of the proposed project. A survey will likely not be required.

Archaeology - No previously recorded sites, but a survey will be required.

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. 38SR0870001 SR-87 over Branch LM 2.30 (38-SR087-02.30). No ACM was detected. No special accommodations for demolition and waste disposal are anticipated for these structures and the material can be deposited in a C&D landfill. Prior to the demolition or rehabilitation of any structure (bridge or building), the contractor is required to submit the National Emission Standards for Hazardous Air Pollutants standard 10-day notice of

demolition to the TDEC Division of Air Pollution Control (Standard Specifications for Road and Bridge Construction (January 1, 2021) Sections 107.08 D and 202.03).

NEPA

1. Purpose & Need

Need: The subject bridge is a timber bridge, which is a build type that is being phased out. The proposed project is needed to address the insufficient structural elements of the bridge, as indicated by the sufficiency rating of 68.4, the condition rating of the substructure (4), and the appraisal ratings of the structural evaluation (5) and deck geometry (5), as noted in the NBI Report (3/11/2024).

Purpose: The purpose of the proposed project is to address the insufficient structural elements and to bring the bridge up to current TDOT design standards.

2. Logical termini

The termini was provided as follows: SR-87, Bridge over Branch, LM 2.30

No range of log miles establishing the project limits was provided in the Concept Report.

3. Funding source?

The Concept Report states that the project is not expected to utilize federal funding. Therefore, a TEER is anticipated to be the environmental document type.

4. ROW/easement Acquisition

The Concept Reports states that 0.26-acres of ROW would be acquired for the project. I do not think the shown acquisition would be enough to accommodate haul roads/room needed to remove the existing bridge and build the new structure. Therefore, I anticipate that additional easements will be needed.

5. Relocations?

There do not appear to be any structures within the proposed project area. No relocations are anticipated.

6. Traffic Control measures

Two detour options were provided. The local detour would be 8.4-miles (13 minutes travel time). The state route detour would be 41.2-miles (47 minutes travel time). Because the project is solely state-funded, detour length is not a concern for the environmental document.

7. Floodplains

The proposed project is located on FEMA FIRM Map #47075C0210D, Panel 210 of 400. The location is in Zone X (white), an area determined to be outside the 0.2% annual chance floodplain.

8. Section 4(f)

If the project is solely state-funded, Section 4(f) is not applicable.

Section 4(f) is not applicable because the project is solely state-funded. No Section 4(f) resources were identified.

9. Section 6(f)

No Section 6(f) resources were identified near the project location.

10.Farmland

It does appear that agricultural property is within the project area and would be acquired as part of this project. However, the estimated acquisition of 0.26-acres is below the threshold to require farmland coordination in the environmental document. In addition, this project is solely state-funded, so the Farmland Protection Policy Act does not apply to this project.

11.Environmental Justice

No EJ populations were identified from the US Census Bureau's 2018-2022 5-year Community Estimates data.

Environmental Justice Analysis Tables		
Minority Populations		
Census Tract (CT)/ Block Group (BG)	CT 9302 BG 2	Haywood Co.
% Minority/Non-White	41.2%	56.3%
Exceeds County Average by 10% or More	No	
Is BG Population Avg. >50%	No	
Meet EJ Criteria?	No	
Low-Income Populations		
Census Tract (CT)/ Block Group (BG)	CT 9302 BG 2	Haywood Co.
% Low-Income/Below Poverty Line	18.5%	21.9%
Exceeds County Average by 10% or More	No	
Is BG Population Avg. >50%	No	
Meet EJ Criteria?	No	

Source: U.S. Census Bureau, 2018-2022 American Community Survey (ACS) 5-Year Estimates. ACS data was accessed and reviewed on 10/4/2024 via the U.S. Census Bureau website.