

## 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

<b>Project Name</b>	SR-196 - Bridge over Branch of Russell Creek (TMA)									
<b>PIN</b>	134849.00									
<b>Route Information</b>	<b>Route</b>	<b>NHS (Y/N)</b>	<b>Functional Class</b>			<b>City</b>		<b>County</b>		
	SR-196	Yes	Urban Minor Arterial			Piperton		Fayette		
<b>Project Information</b>	<b>Begin Log Mile</b>	<b>End Log Mile</b>	<b>AADT<sup>1</sup></b>	<b>Design Hour Vol. (DHV)<sup>1</sup></b>	<b>Truck %<sup>1</sup></b>	<b>Design Speed (MPH)</b>	<b>Posted Speed (MPH)</b>	<b>Base Year</b>	<b>Design Year</b>	
	1.35		1,290	155	4.00	50	45	2029	2049	
<b>Project Description &amp; Standard Drawings Used</b>	<p>The proposed bridge is to be a 70' single span using 33" box beam. The typical section for the approach and bridge will be 2-11' foot travel lanes with 4' shoulders (Design Exception Required). 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. The state route detour is 13 minutes (8.6 miles). Superstructure depth is 47.35" = 33.6" (beam) + 10" (deck) + 3.75" (width (in inches) x0.02/2).</p> <p>RD11-TS-3</p>									
<b>Important Project History or Related Projects</b>	<p>The existing structure, built in 1939, is a 2 span concrete channel beam timber bridge, 38' long with an out-to-out width of 21'7". The existing structure has 2-10' travel lanes with no shoulders. The listed weight limit on the inspection report is 40 tons (7/6/2022). The discharges for the drainage basin (StreamStats Version 4.19.4) for drainage area of 0.69 square miles: Q10 is 598 cfs, Q50 is 794 cfs, and Q100 is 1050 cfs.</p> <p>This project is NOT expected to utilize federal funding.</p>									
<b>Project Purpose/Need</b>	<p>The need to replace this bridge is due to the present condition of the existing bridge:</p> <ul style="list-style-type: none"> <li>-Timber bridges are being phased out and is near the end of it's service life</li> <li>-The bridge is in FAIR condition</li> </ul>									
<b>Major Environmental Considerations</b>	To be determined									

Project Details

<p><b>Multi-Modal Considerations</b></p>	<p>This project is in a urban 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.</p>	
<p><b>Major Project Risks</b></p>	<p>Approximately 1.27 acres of right of way are expected to be acquired. Overhead electric and water lines are present. The 2' grade raise could potentially affect access to adjacent property owner. Shallower Beam Options should be considered (e.g. Valmont U-Beam). Potential for suburban expansion in the area due to proximity to Memphis Urban Boundary and Blue Oval City.</p> <p>This document is covered by 23 USC § 407 and its production pursuant to fulfilling public planning requirements does not waive the provisions of § 407.</p>	

<sup>1</sup> Traffic numbers reflect identified design year

### Approvals

*Executed for approval of this Concept Report*

#### Approvals

*Executed for approval of this Concept Report*



Jul 11, 2024

Project Management Division Director

Date

*The following individuals to execute if a bridge concept report:*

*The following individuals to execute if a bridge concept report:*



Jul 10, 2024

Structures Director

Date



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

Jul 11, 2024

Regional Project Management Division Director

Date

## Action Checklist

OSD1 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 <i>(include HQ Traffic Ops and Regional Traffic Office)</i>			
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	04/11/2024
✓		Confirm Hydraulic Recommendations for Concept Report is Complete	04/11/2024
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

OSD2 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
OTO2 Develop TSMO Scope Items <i>(include HQ Traffic Ops and Regional Traffic Office)</i>		
Complete	NA	Date Completed
	✓	Confirm Signal Warrants Analysis is Complete
	✓	Confirm Lighting Warrants Analysis is Complete
	✓	Review and Confirm TSMO & ITS Scope and Budget
ORW1 Complete Preliminary Right-of-Way Estimates		
Complete	NA	Date Completed
	✓	Review and Confirm Preliminary Right-of-Way Cost Estimates
OUT1 Complete Utility Preliminary Estimates		
Complete	NA	Date Completed
		Review and Confirm Preliminary Utility Estimate
		Review and Confirm Preliminary Railroad Cost Estimate
OSD3 Finalize Concept Report		
Complete	NA	Date Completed
	✓	Compile and Review Initial Risk Assessment
		Finalize Conceptual Layouts
✓		Develop Environmental Technical Study Area (ETSA)
✓		Address Comments and Finalize Concept Report
	✓	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 OSD3 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

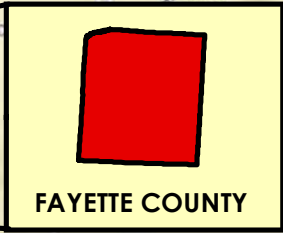
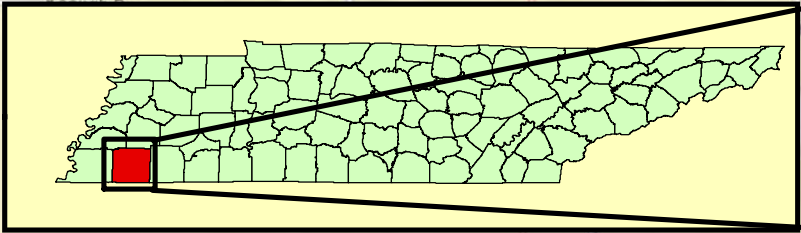
**Concept Report  
Table of Contents/Attachments**

	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 <sup>1</sup>		✓
ROW Form 44-A <sup>1</sup>		✓
Crash Packet <sup>1</sup>	✓	
Crash Prediction Analysis <sup>1</sup>		✓
Site Visit Attendee List		✓
Environmental Desktop Review Form <sup>1</sup>		
Multimodal Considerations & Recommendations <sup>1</sup>		✓
Existing Structure Summary <sup>1</sup>	✓	
Email or memo containing Structure Type Recommendations <sup>1</sup>		
Email or memo containing Hydraulic Recommendations <sup>1</sup>		
Hydraulic Data	✓	
Intersection and Interchange Evaluation (IIE) Analysis and Summary Form		✓
Traffic Analysis Summary/Tables	✓	
Forecasted Traffic Sheets <sup>1</sup>	✓	
Traffic Modeling (e.g., Synchro, VISSIM, Highway Capacity Software (HCS) Output) <sup>1</sup>		✓
Signal Warrant <sup>1</sup>		✓
Lighting Warrant <sup>1</sup>		✓
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 <sup>1</sup>		✓

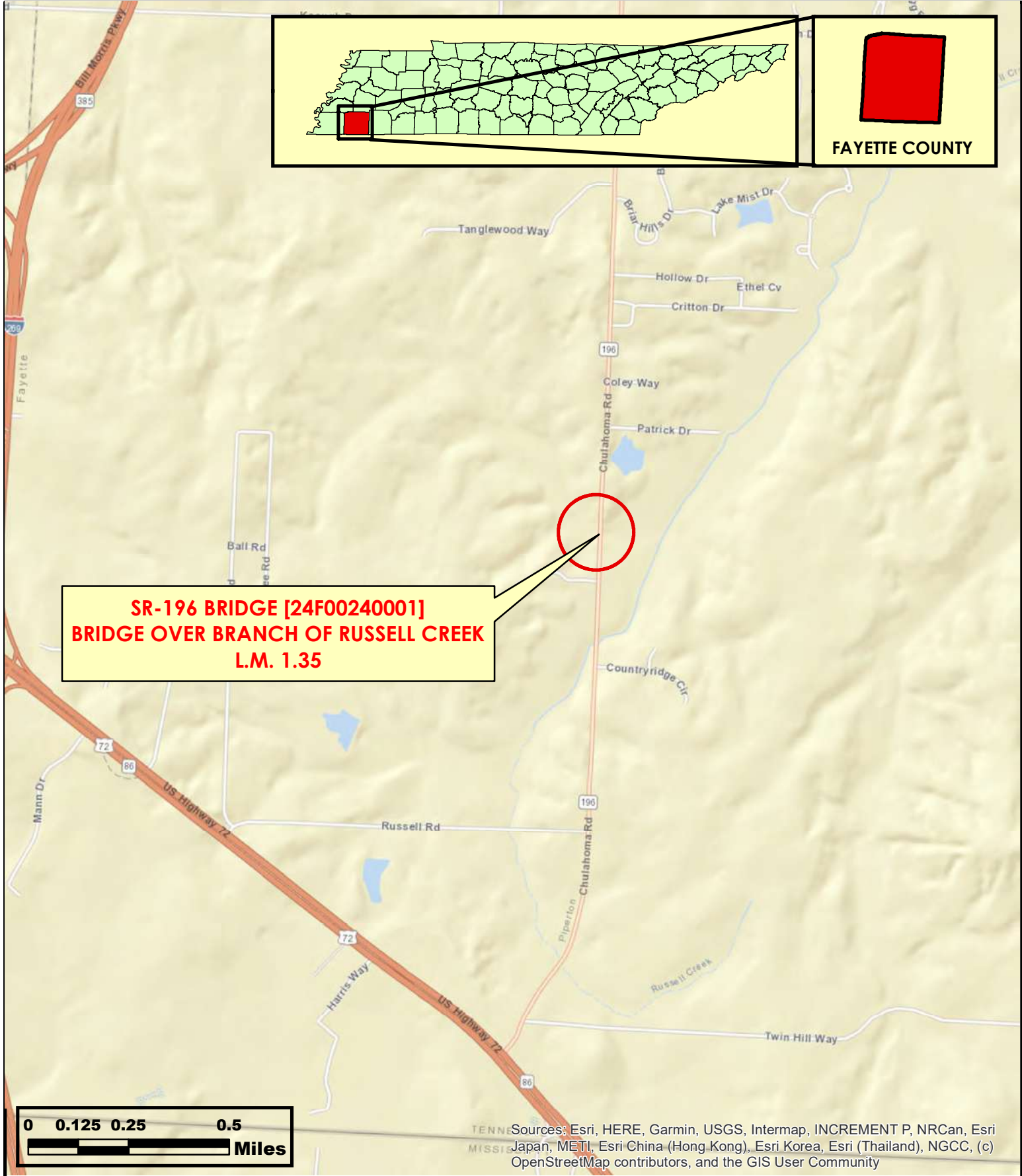
**NA Justification**

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

<sup>1</sup> External document to STID



FAYETTE COUNTY



**SR-196 BRIDGE [24F00240001]  
BRIDGE OVER BRANCH OF RUSSELL CREEK  
L.M. 1.35**



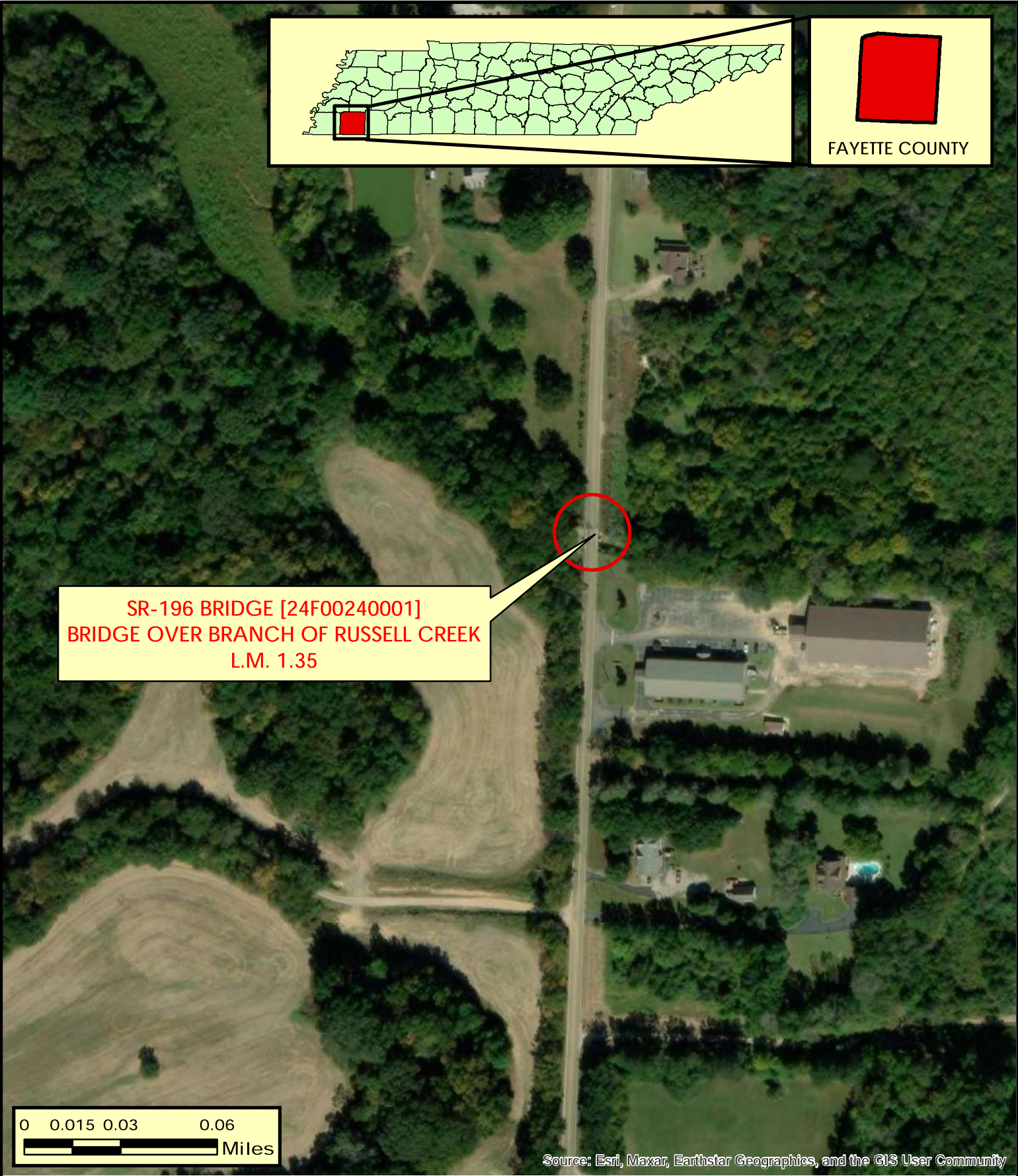
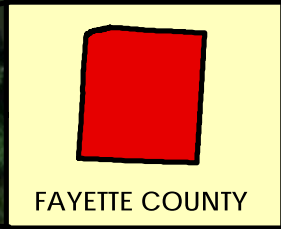
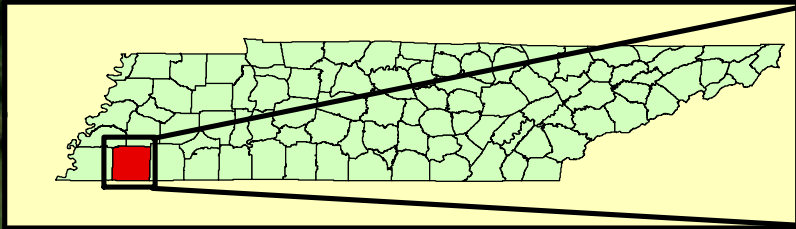
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



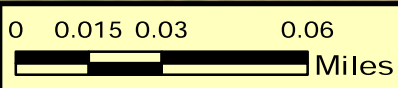
**AREA MAP**  
**SR-196 BRIDGE [24F00240001]**  
**BRIDGE OVER BRANCH OF RUSSELL CREEK**  
**L.M. 1.35**  
**FAYETTE COUNTY**



**PIN 134849.00**



**SR-196 BRIDGE [24F00240001]  
BRIDGE OVER BRANCH OF RUSSELL CREEK  
L.M. 1.35**



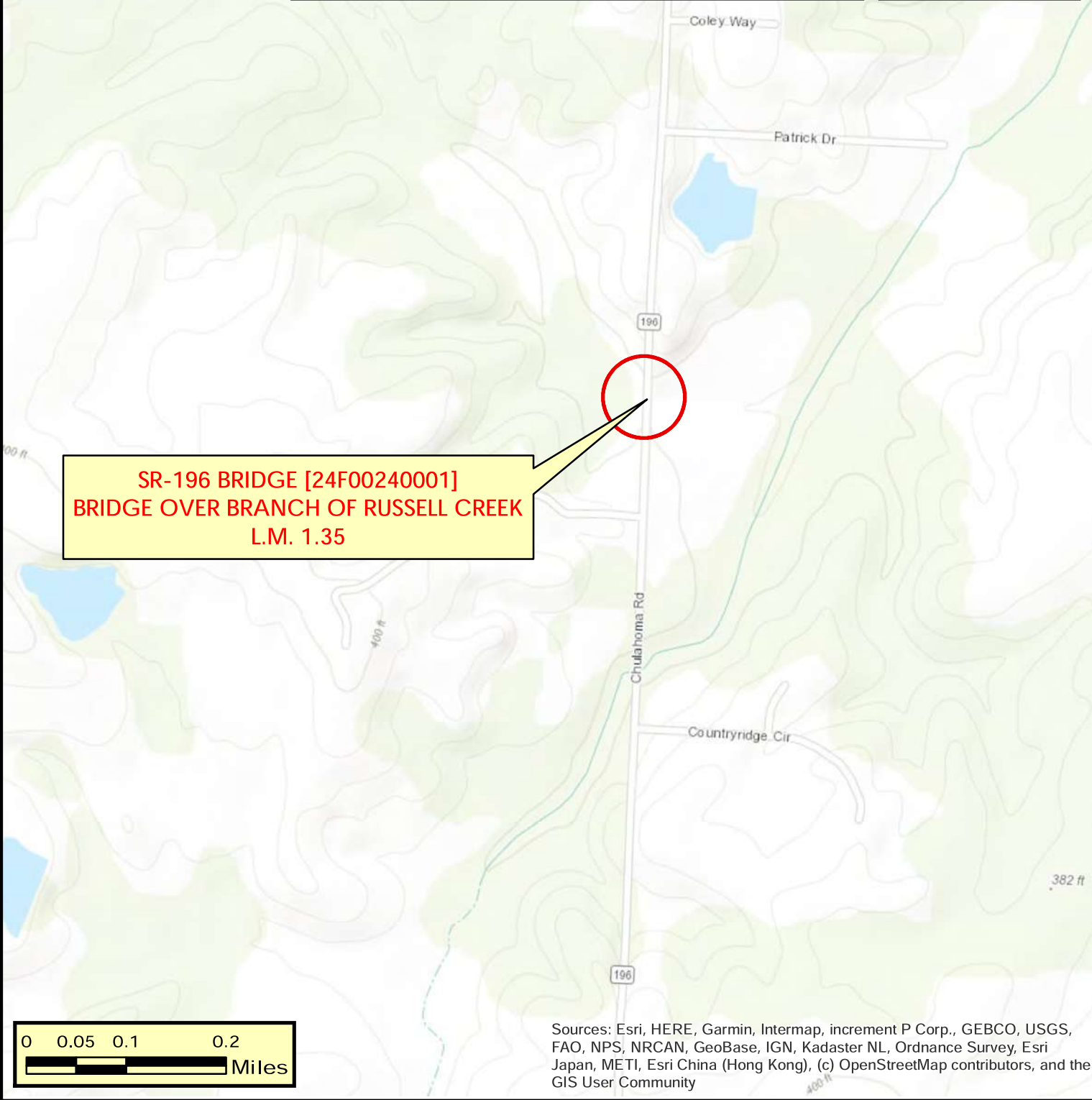
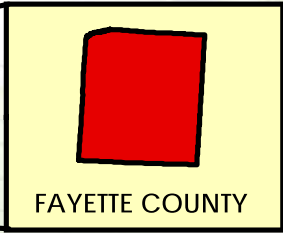
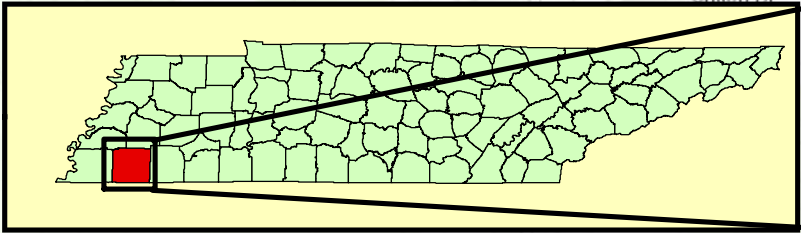
Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community



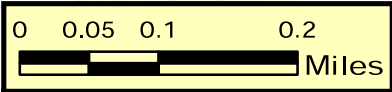
**LOCATION MAP**  
**SR-196 BRIDGE [24F00240001]**  
**BRIDGE OVER BRANCH OF RUSSELL CREEK**  
**L.M. 1.35**  
**FAYETTE COUNTY**



**PIN 134849.00**



**SR-196 BRIDGE [24F00240001]  
BRIDGE OVER BRANCH OF RUSSELL CREEK  
L.M. 1.35**



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



**TOPOGRAPHIC MAP**  
**SR-196 BRIDGE [24F00240001]**  
**BRIDGE OVER BRANCH OF RUSSELL CREEK**  
**L.M. 1.35**  
**FAYETTE COUNTY**

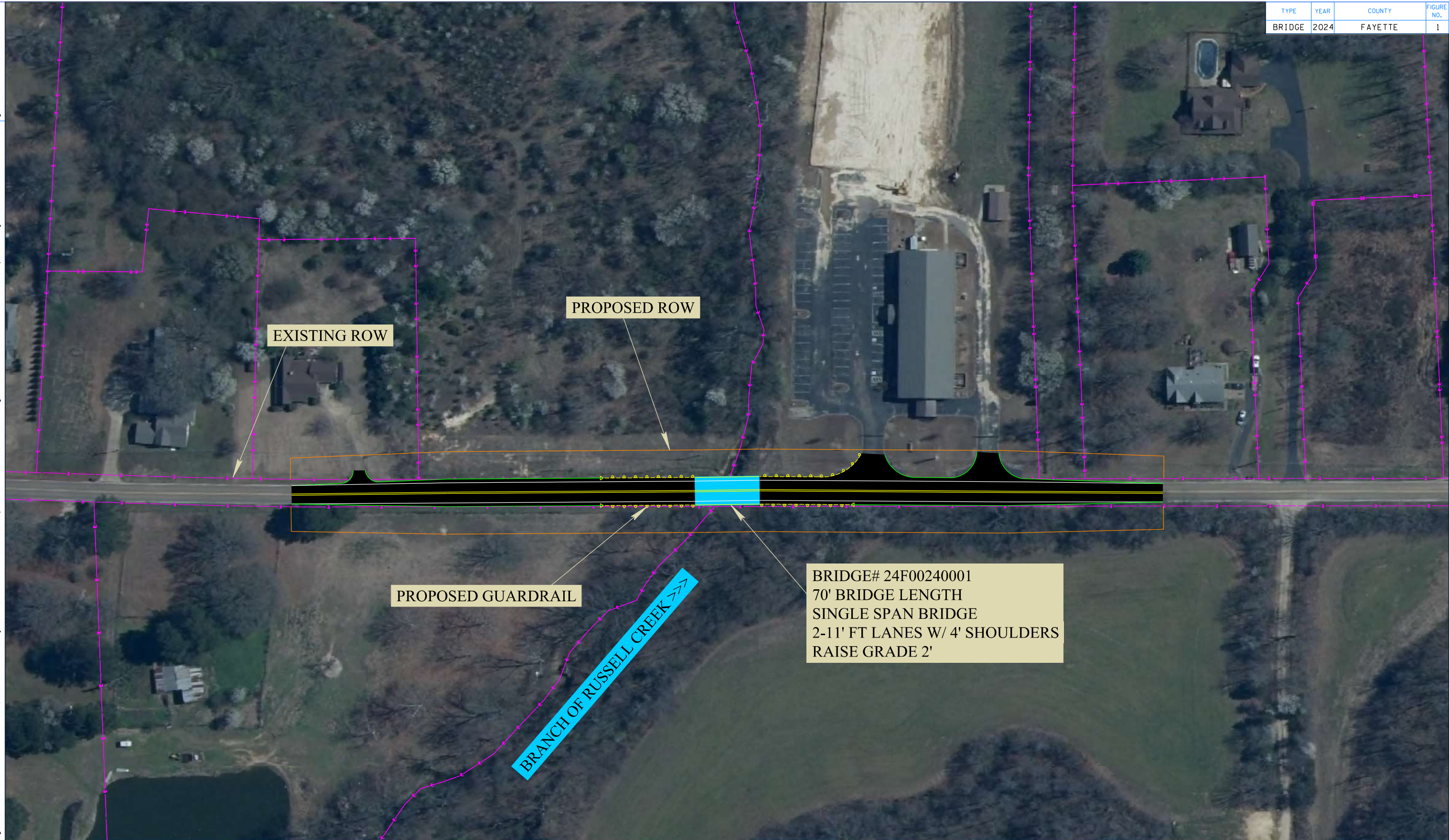


**PIN 134849.00**

TYPE	YEAR	COUNTY	FIGURE NO.
BRIDGE	2024	FAYETTE	1

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

4/17/2024 4:22:02 PM X:\Projects\Fayette\SR 196\Bridge over Branch of RussellCreek.LM 1.35 TMA\Project Files\Microstation\ConceptualPlans (CON & PDF)\Bridge over Branch of RussellCreek\_Updated Hydraulics Recommendation.dgn



BRIDGE# 24F00240001  
70' BRIDGE LENGTH  
SINGLE SPAN BRIDGE  
2-11' FT LANES W/ 4' SHOULDERS  
RAISE GRADE 2'

### R4 TIMBER BRIDGE PROGRAM

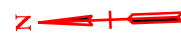
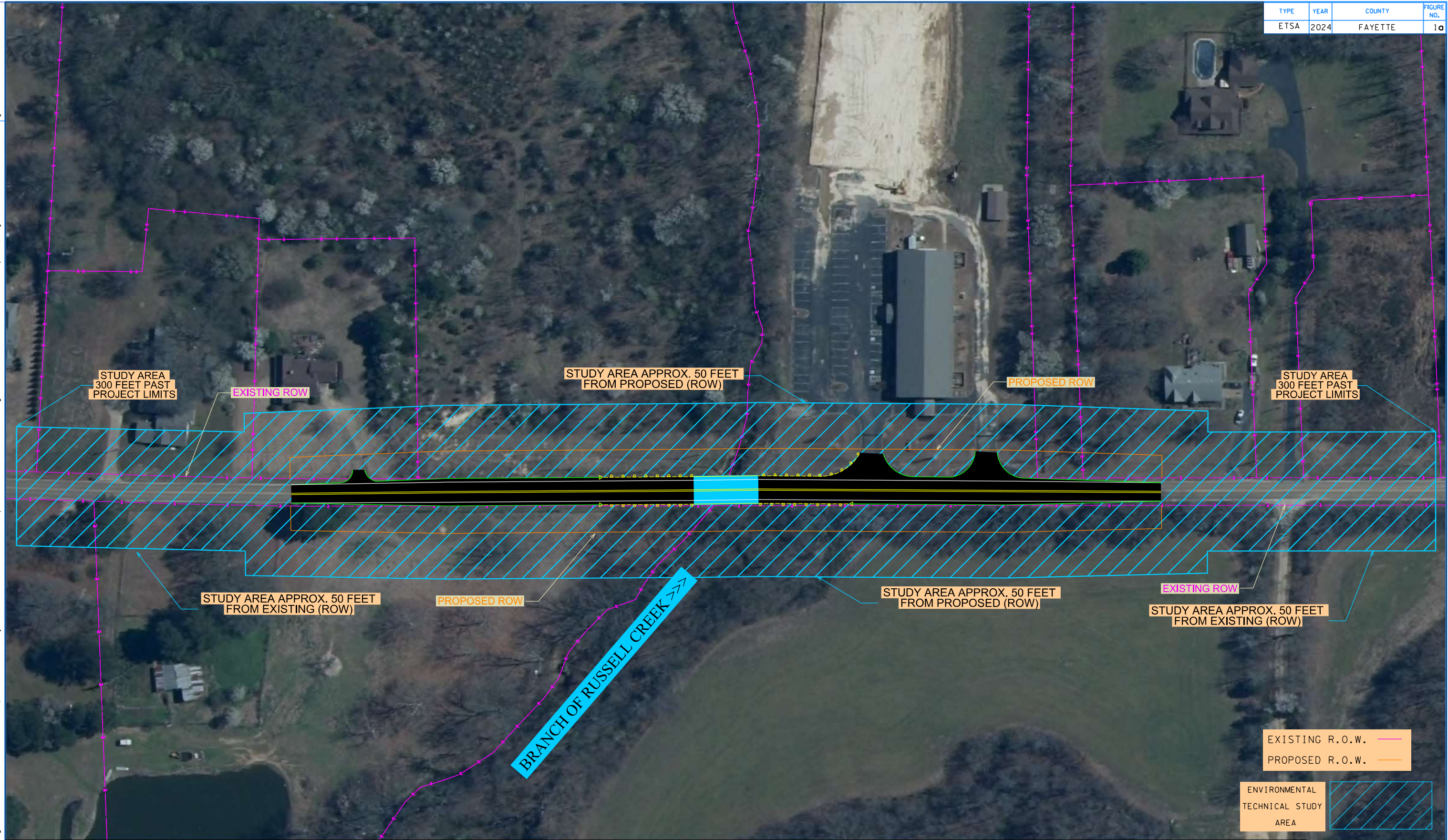
STATE ROUTE 196  
BRIDGE OVER BRANCH OF RUSSELL CREEK, L.M. 1.35  
FAYETTE COUNTY

CAUTION!  
PRELIMINARY  
PLANS  
SUBJECT TO  
CHANGE

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

FIGURE 1  
S.R. 196  
L.M. 1.35

4/18/2024 11:02:23 AM X:\Projects\Fayette\SR 196\Bridges over Branch of RussellCreek.LM 1.35 (TMA)\Project Files\Microstation\ConceptualPlans (DGN & PDF)\Bridge over Branch of RussellCreek\_Updated Hydraulics Recommendation.dgn

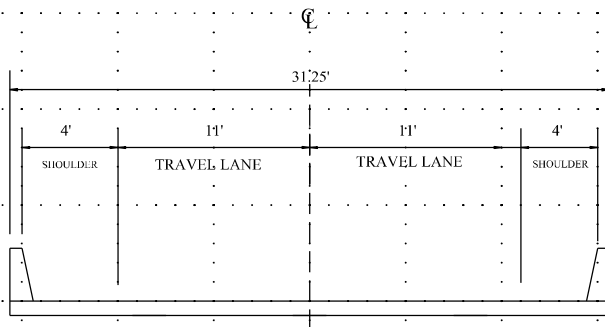


## ENVIRONMENTAL TECHNICAL STUDY AREA

STATE ROUTE 196  
BRIDGE OVER BRANCH OF RUSSELL CREEK, L.M. 1.35  
FAYETTE COUNTY

**CAUTION!**  
PRELIMINARY  
PLANS  
SUBJECT TO  
CHANGE

**PROPOSED COMPLETED**



**CROSS-SECTION DETAIL**

**REGION 4 TIMBER BRIDGE PROGRAM  
TRANSPORTATION MODERNIZATION ACT (TMA)**

**CAUTION!  
PRELIMINARY  
PLANS  
SUBJECT TO  
CHANGE**

# DETOUR MAP



13 min 2 hr 56 44 min

- TN-196, Piperton, TN 38017
- Piperton, Tennessee
- I-269, Piperton, TN 38017
- Piperton, Tennessee
- Piperton, Tennessee
- Piperton, Tennessee

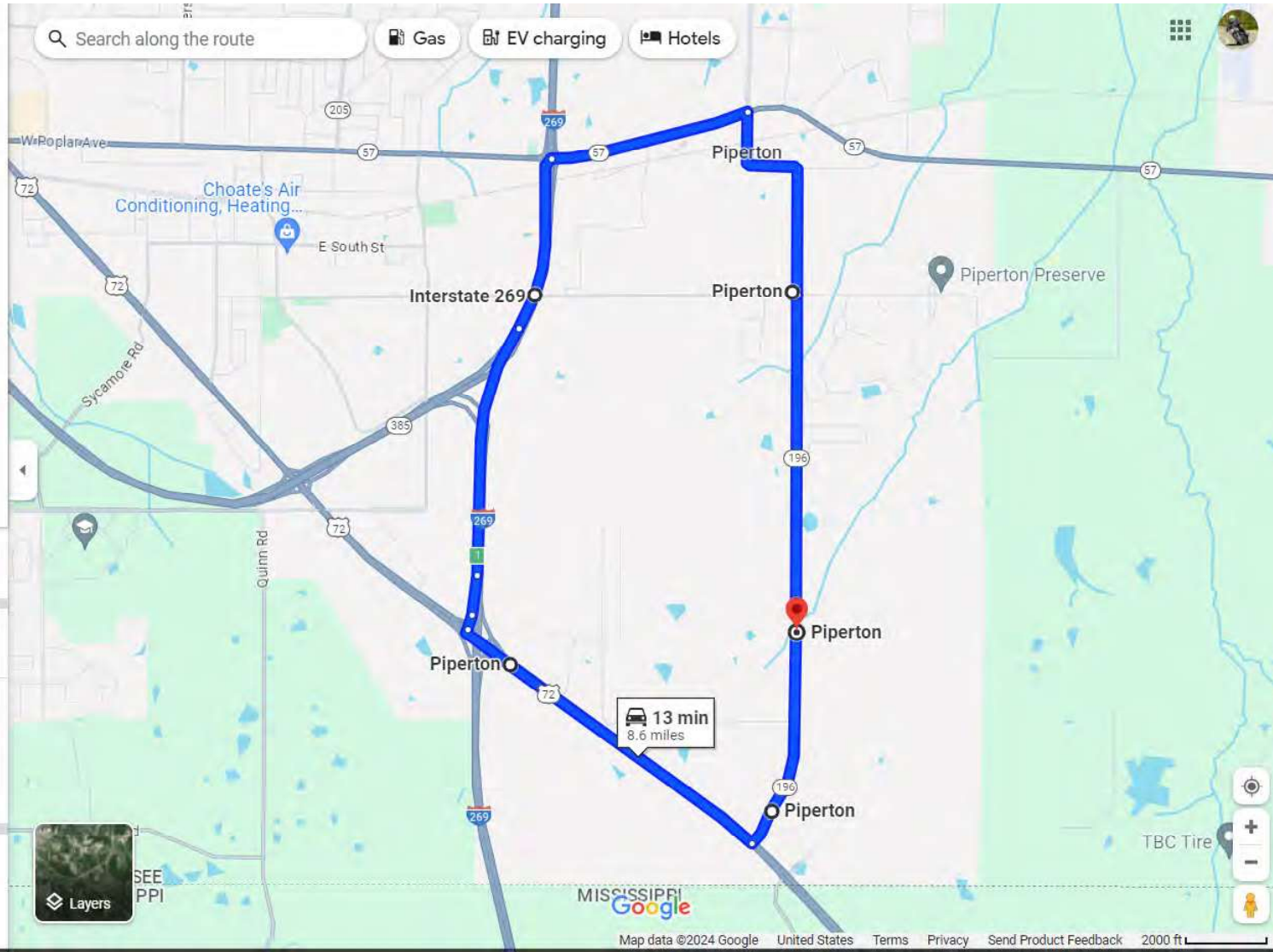
+ Add destination

Options

Send directions to your phone Copy link

via TN-196 N 13 min 13 min without traffic 8.6 miles Details

Explore Piperton



# Fayette Co SR196 - Branch of Russell Creek

Created on April 3, 2024

Created by JOSHUA CLOUD

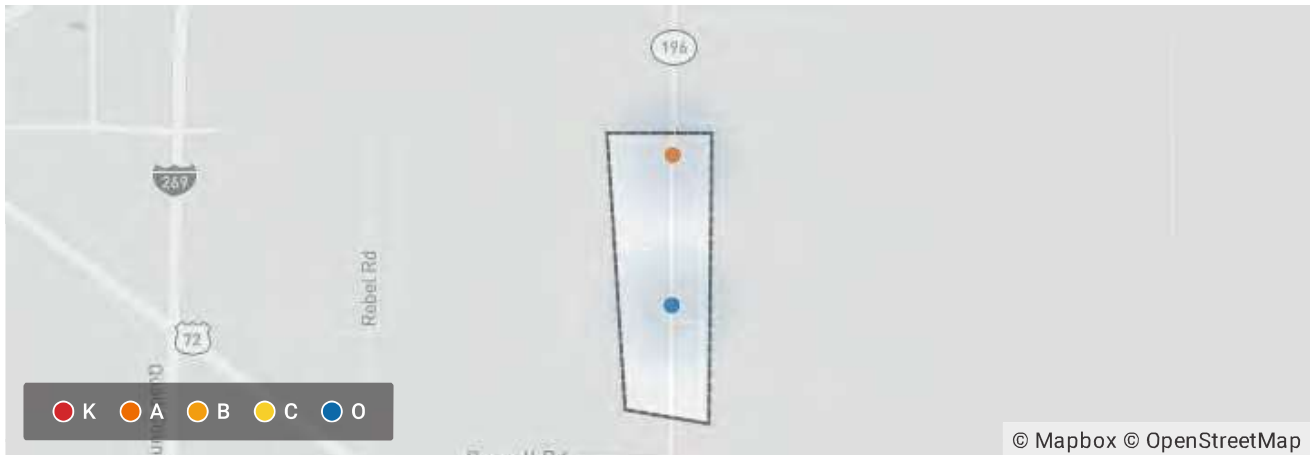
Requested by Michael Cloud

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



## Applied Filters

County = Fayette Shape: Polygon



<b>Total Crashes</b>	<b>2</b>	<b>Fatal Crashes</b>	<b>0</b>
----------------------	----------	----------------------	----------

Summary	Crash	
Total Crashes	2	100.00%
Truck/Bus Involved	1	50.00%
+ 4 more	0	0%

Type of Crash	Crash	
(A) Suspected Serious Injury	1	50.00%
(O) Property-Damage Only	1	50.00%
+ 3 more	0	0%

Date of Crash (Year)	Crash	
2021	2	100.00%
+ 10 more	0	0%

Manner of First Collision	Crash	
Sideswipe, Opp Dir	2	100.00%

+ 9 more 0 0%

**First Harmful Event** Crash

Vehicle in Transport 2 100.00%

+ 64 more 0 0%

**Crash Location** Crash

Along Roadway 2 100.00%

+ 6 more 0 0%

**Light Conditions** Crash

Daylight 2 100.00%

+ 7 more 0 0%

**Weather Conditions** Crash

Clear 1 50.00%

Cloudy 1 50.00%

+ 10 more 0 0%

**Bridge Loc. No: 24-SR196-0136      Date: 07-06-2022**



**BRIDGE NO.**

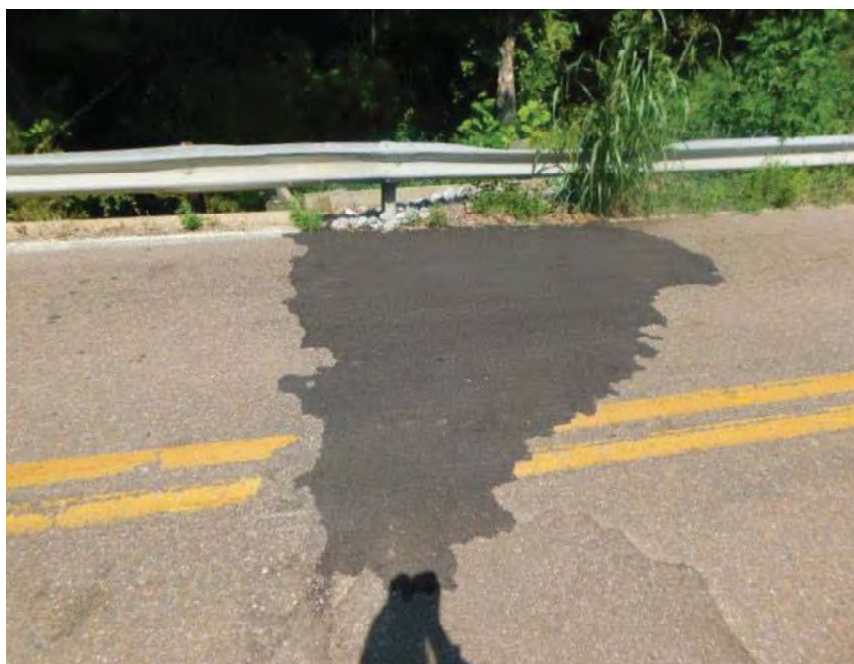


**APPROACH 1 WEIGHT LIMIT SIGN 40T/40T**

**Bridge Loc. No: 24-SR196-0136      Date: 07-06-2022**



**LOOKING AHEAD ON ROUTE**

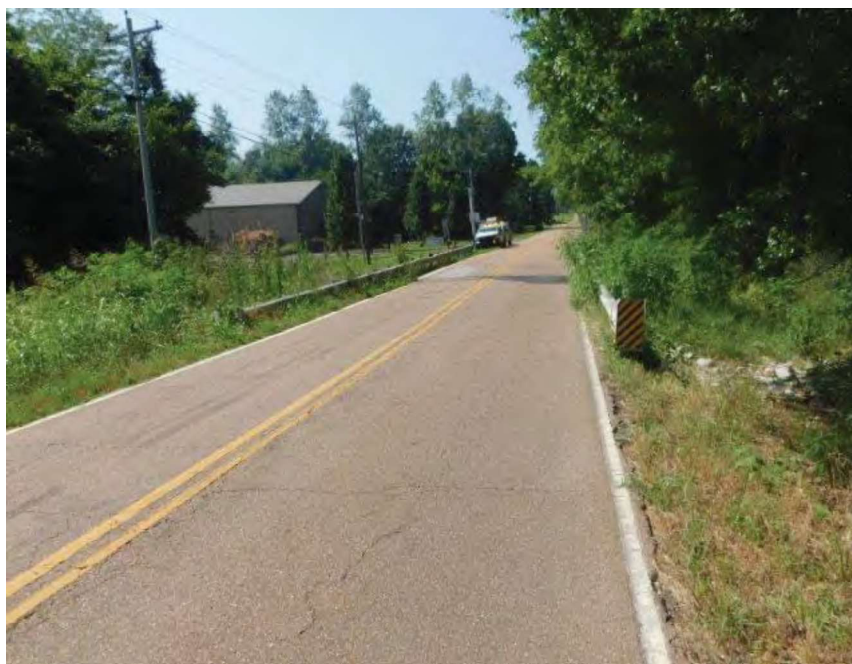


**APPROACH 2 PATCHED AND SETTLED**

**Bridge Loc. No: 24-SR196-0136      Date: 07-06-2022**



**VIEW ACROSS TOP OF DECK**



**LOOKING BACK ON ROUTE**

**Bridge Loc. No: 24-SR196-0136      Date: 07-06-2022**



**APPROACH 2 WEIGHT LIMIT SIGN 40T/40T**



**APPROACH 1 PATCHED, SETTLED**

**Bridge Loc. No: 24-SR196-0136      Date: 07-06-2022**



**ABUTMENT 2**



**BOTTOM DECK SPAN 2**

**Bridge Loc. No: 24-SR196-0136      Date: 07-06-2022**



**SLAB F SPAN 1 SPALLED TO STEEL**



**FRONT SIDE BENT 1**

**Bridge Loc. No: 24-SR196-0136      Date: 07-06-2022**



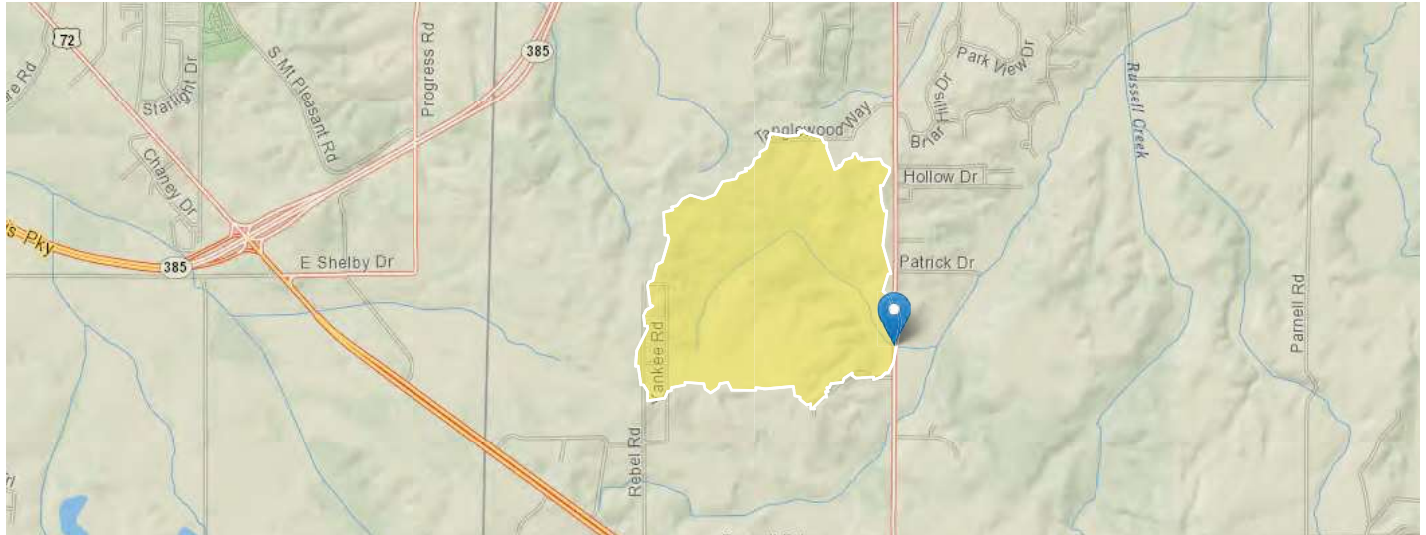
**RIGHT SIDE INLET END**



**ABUTMENT 1**

# StreamStats

**Region ID:** TN  
**Workspace ID:** TN20240404150434402000  
**Clicked Point (Latitude, Longitude):** 35.01705, -89.61754  
**Time:** 2024-04-04 10:04:56 -0500



[+ Collapse All](#)

## Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
CLIMFAC2YR	Two-year climate factor from Lichy and Karlinger (1990)	2.439	dimensionless
CONTDA	Area that contributes flow to a point on a stream	0.69	square miles
GSL10_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	38.1	feet per mi
DRNAREA	Area that drains to a point on a stream	0.69	square miles
HA1PCT	Percent of area within Hydrologic Area 1	0	percent
HA2PCT	Percent of area within Hydrologic Area 2	0	percent
HA3PCT	Percent of area within Hydrologic Area 3	0	percent
HA4PCT	Percent of area within Hydrologic Area 4	100	percent
PERMGTE2IN	Percent of area underlain by soils with permeability greater than or equal to 2 inches per hour	46.57	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	1.087	inches per hour
TNCLFACT2	Tennessee climate factor, 2-year interval	2.439	dimensionless
TNSOILFAC	Tennessee soil factor, percentage of area underlain by a soil permeability greater than or equal to 2 inches per hour	47	percent

## Peak-Flow Statistics

Peak-Flow Statistics Parameters [DAOnly Area 4]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
CONTDA	Contributing Drainage Area	0.69	square miles	0.76	2308

## Peak-Flow Statistics Disclaimers [DAOnly Area 4]

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

## Peak-Flow Statistics Flow Report [DAOnly Area 4]

Statistic	Value	Unit
50-percent AEP flood	359	ft <sup>3</sup> /s
20-percent AEP flood	505	ft <sup>3</sup> /s
10-percent AEP flood	598	ft <sup>3</sup> /s
4-percent AEP flood	712	ft <sup>3</sup> /s
2-percent AEP flood	794	ft <sup>3</sup> /s
1-percent AEP flood	872	ft <sup>3</sup> /s
0.2-percent AEP flood	1050	ft <sup>3</sup> /s

### 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	0.69	square miles	2	2405
RECESS	Recession Index	32	days per log cycle	32	350
PERMGTE2IN	Percent permeability gte 2 in per hr	46.57	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	0.00132	ft <sup>3</sup> /s
30 Day 5 Year Low Flow	0.00332	ft <sup>3</sup> /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/>)

## ➤ 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	0.69	square miles	2	2405
RECESS	Recession Index	32	days per log cycle	32	350
PERMGTE2IN	Percent permeability gte 2 in per hr	46.57	percent	2	98
CLIMFAC2YR	Tennessee Climate Factor 2 Year	2.439	dimensionless	2.307	2.455
SOILPERM	Average Soil Permeability	1.087	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	0.00121	ft <sup>3</sup> /s
99 Percent Duration	0.00181	ft <sup>3</sup> /s
98 Percent Duration	0.00245	ft <sup>3</sup> /s
95 Percent Duration	0.00352	ft <sup>3</sup> /s
90 Percent Duration	0.00477	ft <sup>3</sup> /s
80 Percent Duration	0.00764	ft <sup>3</sup> /s
70 Percent Duration	0.012	ft <sup>3</sup> /s
60 Percent Duration	0.0226	ft <sup>3</sup> /s
50 Percent Duration	0.0347	ft <sup>3</sup> /s
40 Percent Duration	0.0826	ft <sup>3</sup> /s
30 Percent Duration	0.239	ft <sup>3</sup> /s
20 Percent Duration	0.772	ft <sup>3</sup> /s
10 Percent Duration	1.5	ft <sup>3</sup> /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/>)

## ➤ 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	0.69	square miles	2	2405
RECESS	Recession Index	32	days per log cycle	32	350
CLIMFAC2YR	Tennessee Climate Factor 2 Year	2.439	dimensionless	2.307	2.455
PERMGTE2IN	Percent permeability gte 2 in per hr	46.57	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	0.858	ft <sup>3</sup> /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

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

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.69	square miles	2	2405
RECESS	Recession Index	32	days per log cycle	32	350
PERMGTE2IN	Percent permeability gte 2 in per hr	46.57	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	0.145	ft <sup>3</sup> /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/>)**

USGS Data Disclaimer: Unless otherwise stated, all data, metadata and related materials are considered to satisfy the quality standards relative to the purpose for which the data were collected. Although these data and associated metadata have been reviewed for accuracy and completeness and approved for release by the U.S. Geological Survey (USGS), no warranty expressed or implied is made regarding the display or utility of the data for other purposes, nor on all computer systems, nor shall the act of distribution constitute any such warranty.

USGS Software Disclaimer: This software has been approved for release by the U.S. Geological Survey (USGS). Although the software has been subjected to rigorous review, the USGS reserves the right to update the software as needed pursuant to further analysis and review. No warranty, expressed or implied, is made by the USGS or the U.S. Government as to the functionality of the software and related material nor shall the fact of release constitute any such warranty. Furthermore, the software is released on condition that neither the USGS nor the U.S. Government shall be held liable for any damages resulting from its authorized or unauthorized use.

USGS Product Names Disclaimer: Any use of trade, firm, or product names is for descriptive purposes only and does not imply endorsement by the U.S. Government.

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.: 24S196-S1-005 ROUTE: S.R. 196  
 COUNTY: FAYETTE CITY: \_\_\_\_\_  
 PROJECT PIN NUMBER: 134849.00  
 PROJECT DESCRIPTION: BRIDGE OVER BRANCH OF RUSSELL CREEK @ L.M. 1.35  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**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
870	2029	1,290	155	12	2049	65-35	3	4		

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 2022 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:** David A. Duncan  
**Sent:** Thursday, April 11, 2024 12:13 PM  
**To:** Michelle Hunt; Ty Tucker  
**Cc:** Michael Gilbert  
**Subject:** FW: Timber Bridge Hydraulic Recommendation Request

**Follow Up Flag:** Follow up  
**Flag Status:** Completed

Michelle/Ty,  
I'm going to update the DD\_2 with these recommendations. Wes is updating his recommendation for the ones below.  
Thanks,  
Dave

---

**From:** Wesley Peck <Wesley.Peck@tn.gov>  
**Sent:** Thursday, April 11, 2024 10:52 AM  
**To:** David A. Duncan <David.A.Duncan@tn.gov>  
**Cc:** Ty Tucker <Ty.Tucker@tn.gov>  
**Subject:** RE: Timber Bridge Hydraulic Recommendation Request

Dave,

It's good that you asked that question. I talked to Ted yesterday and he asked that we recommend single spans where we can. We were favoring three short spans in a few sites just to keep the grade change lower, so I need to revise a couple of those recommendations.

PIN 134835.00 – single span, 90' long with type 4 I beam. Raise grade 2.75 ft.  
PIN 134840.00 – single span, 60 ft long with 32" box beam, raise grade 2.5 ft  
PIN 134849.00 – single span, 70 ft using 33" box beam. Raise grade 2.0 ft  
PIN 134850.00 – 1 @ 90 ft bridge using box beams. Raise grade 4.25 ft.  
PIN 134851.00 – Stays three span because it is too long to be a single.



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

---

**From:** David A. Duncan <[David.A.Duncan@tn.gov](mailto:David.A.Duncan@tn.gov)>  
**Sent:** Thursday, April 11, 2024 7:39 AM  
**To:** Wesley Peck <[Wesley.Peck@tn.gov](mailto:Wesley.Peck@tn.gov)>

## 0EN1 Environmental Desktop Review Form

<b>PIN</b>	134849.00
<b>Project Number (if available)</b>	
<b>County</b>	Fayette
<b>Route</b>	SR-196
<b>Termini</b>	Bridge over Branch of Russell Creek, LM 1.35 (TMA)
<b>Type of Document</b>	
<b>Date ENV DIV Comments are Due</b>	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 are 3 historical and 1 prehistoric previously recorded sites within one mile of the ETSA. A survey will be required. There are 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 survey is required.

## Ecology

Water resource features are likely to occur within the project area. Additionally, species records in the area will likely result in surveys and or sweeps.

## HazMat

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

An Asbestos Containing Material (ACM) survey was completed on Bridge No. 24F00240001 SR-196 over Branch of Russell Creek LM 1.35 (24-SR196-01.36). 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

This project was evaluated for the following:

- Detour: Detour under 25 miles, no FHWA coordination needed.
- ROW Acquisition: ROW acquisition is less than 1.5 acres, coordination with FHWA is not 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 not located within a Statewide Flood Hazard Area.

PIN	County	Project	Utilities on Project	At Risk	Mitigation (if applicable)	Items	Footage
134849.00	Fayette	SR-196 Bridge over Branch of Russell Creek L.M. 1.35	Electric (Chickasaw Electric Co-Op assumed)	Aerial Electric - Distribution Lines	Avoid if possible	(4) wire 3PH + Neutral, (2) Crossarms, (2) 45-3 poles, (2) 40-3 poles, (1) overhead guy, (4) 1" anchors (4) down guys	690'
134849.00	Fayette	SR-196 Bridge over Branch of Russell Creek L.M. 1.35	CATV (Spectrum assumed)	Aerial Coax + fiber	Rides aerial route with electric - avoid if possible	(2) Coax replacement - (2) 6M strand - (2) Fiber replacements assumed to be 72 fiber. Anchors shared with power - (4) 6M downguys	690'
134849.00	Fayette	SR-196 Bridge over Branch of Russell Creek L.M. 1.35	Telecommunications (AT&T or Frontier assumed)	Aerial copper	Rides aerial route with electric - avoid if possible	50 pair copper, 6M strand, (4) 6M downguys, (4) 1" anchors.	300'
134849.00	Fayette	SR-196 Bridge over Branch of Russell Creek L.M. 1.35	Gas (MLGW assumed)	See Notes	Gas Marker N side of Bridge - unknown the direction or if it encroaches	Unknown	300'

**Project: SR-196, Bridge over Branch of Russell Creek, LM 1.35 (TMA)**

**Comment Resolution Form**

**County: Fayette**

**PIN 134849.00**

<b>Comment Stage</b>	<b>Division</b>	<b>Commenter</b>	<b>Date</b>	<b>Comment</b>	<b>Comment Addressed?</b>	<b>Additional Notes</b>
Draft Report Review (OSD2)	STID	David Duncan	4/29/2024	Draft Report Review comments requested by email.	N/A	N/A
Draft Report Review (OSD2)	Preconstruction	Kyle Garcia	5/13/2024	ADT = 843(2023); 8% annual growth from previous year 780(2022).	Yes	STID uses the traffic information provided by the traffic forecasting office for design considerations.
Draft Report Review (OSD2)	Preconstruction	Kyle Garcia	5/13/2024	Is the raise in grade taking into account the adjacent flood zone area A which is approximately 1300 feet from the project location.	Yes	STID developed the Concept Report utilizing the provided Hydraulics recommendations noted on page 36 of the Draft Report. This comment is documented and will be further investigated at a later time during the design phase.
Draft Report Review (OSD2)	Preconstruction	Kyle Garcia	5/13/2024	Will access to the field entrance near the Project location need to be maintained.	Yes	Noted.
Draft Report Review (OSD2)	Preconstruction	Kyle Garcia	5/13/2024	Will AOP need to be taken into consideration.	Yes	AOP considerations will need to be investigated during design.
Draft Report Review (OSD2)	Preconstruction	Kyle Garcia	5/13/2024	Are there any utilities attached to the bridge?	Yes	Utilities Office provided estimates and feedback on what is present.
Draft Report Review (OSD2)	Preconstruction	Kyle Garcia	5/13/2024	ETrims shows an existing 60' ROW.	Yes	The exact ROW width will be determined during design when a survey is conducted.
Draft Report Review (OSD2)	Preconstruction	Kyle Garcia	5/13/2024	Local representatives need to attend and review the detour plan and provide feedback.	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 a 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 to determine if the provided detour route is suitable.
Draft Report Review (OSD2)	Preconstruction	Kyle Garcia	5/13/2024	Do EPSC measures need to be included in the cost estimate?	Yes	They are assumed to be included in the additional items field as a % project cost.
Draft Report Review (OSD2)	Preconstruction	Kyle Garcia	5/13/2024	Cost estimate is accounting for 5 end terminals will we need this many?	Yes	The cost estimate has been revised.
Draft Report Review (OSD2)	Preconstruction	Kyle Garcia	5/14/2024	Do stream banks need to be stabilized? Seems like quite a bit of erosion is happening in the stream and rip-rap could have been relocated due to erosion.	Yes	This comment is documented and will be further investigated at a later time during the design phase.