

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

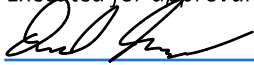
Project Name	Lower Brownsville Road Bridge over I-40									
PIN	136174.00									
Route Information	Route	NHS (Y/N)	Functional Class		City		County			
	08290	No	Rural Local		Jackson		Madison			
Project Information	Begin Log Mile	End Log Mile	AADT¹	Design Hour Vol. (DHV)¹	Truck %¹	Design Speed (MPH)	Posted Speed (MPH)	Base Year	Design Year	
	4.54	4.54	880	115	12.00	30	30	2030	2050	
Project Description & Standard Drawings Used	Demolish and replace the bridge over I-40. The proposed bridge will be lengthened to allow for future widening of the interstate as well as raised to accommodate TDOT's minimum vertical clearance. The proposed structure is a 250' 2-span prestressed concrete bridge. The proposed cross-section will have 2-12' travel lanes and 4' shoulders on both sides. The project limits include approximately 1,300 feet of roadway improvements along Lower Brownsville Road. The roadway improvements include raising the grade to meet the proposed bridge elevation and widening. Widening the road will better align with TDOT's current standards while also matching the existing bridge's 12-foot lanes. Minimal Right-of-Way and utility impacts are anticipated. See page 7 for additional details. RD11-TS-2								Project Details	
Important Project History or Related Projects	The existing bridge is a 4-span, 236' long structure with a 34.7' width. The bridge has 2-12' travel lanes and 4' shoulders on either side. This project will utilize federal funding.									
Project Purpose/Need	The need to replace this bridge is due to the present condition of the existing bridge: -Bridge condition is poor and built in 1960									
Major Environmental Considerations	There is a large box culvert under the interstate that could be impacted. The culvert carries an environmental feature - Meriweather Branch. Ecology report states a site visit would be required to identify any additional features. The project is within the range of protected bats. No major/high level environmental concerns based off environmental desktop review. Cultural Resources states NAC will be coordinated in Stage 1 of the project. Section 106 review will be required of new ROW or easements become necessary.									

Multi-Modal Considerations	This project is in a rural area with a proposed 2-lane bridge width of less than 44 ft where the cost of dedicated multimodal accommodations is excessively disproportionate to the need and probable use. Excessively disproportionate is defined as exceeding 20 percent of the cost of the project.			
Major Project Risks	This document is covered by 23 USC § 407 and its production pursuant to fulfilling public planning requirements does not waive the provisions of § 407.			
Concept Estimate and Timeline	Total Current Project Cost		Construction Year Estimate	Preliminary Estimates
	\$ 7,940,000		\$ 10,400,000	
	Proposed Construction Year		Estimated Construction Duration	
	2030		TBD	

¹ Traffic numbers reflect identified design year

Approvals

Executed for approval of this Concept Report



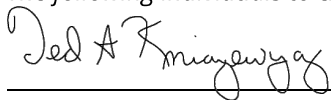
David Duncan (Jul 16, 2025 13:49 CDT)

Engineering Concepts and Statewide Programs Director

07/16/2025

Date

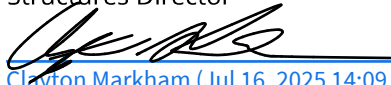
The following individuals to execute if a bridge concept report:



Structures Director

07/16/2025

Date



Clayton Markham (Jul 16, 2025 14:09 CDT)

Alternative Delivery Director

07/16/2025

Date

Action Checklist			
0SD1 Initiate Concept Report and Request Funding			
Complete	NA		Date Completed
✓		Request and Finalize Safety Data	04/16/2025
✓		Request Project Number, PIN, and Task Profile Numbers	04/01/2025
	✓	Coordinate with Long Range Planning	
✓		Request and Finalize Traffic Data	03/06/2025
	✓	Request Preliminary Survey Data	
	✓	Initiate Division Reviews	
✓		Schedule Site Review (with appropriate Divisions)	03/21/2025
0EN1 Conduct Environmental Desktop Review			
Complete	NA		Date Completed
✓		Confirm Environmental Desktop Review is Complete	05/15/2025
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	05/15/2025
	✓	Confirm Hydraulic Recommendations for Concept Report is Complete	
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	03/21/2025
✓		Lead Site Visit	03/21/2025
	✓	Initiate Interstate Access Requests (IAR) Concept Coordination with FHWA (if applicable)	
✓		Develop, Compile, and Distribute the Draft Concept Report	04/25/2025
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	07/15/2025
✓		Develop Environmental Technical Study Area (ETSA)	07/15/2025
✓		Address Comments and Finalize Concept Report	07/15/2025
	✓	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)	07/16/2025
✓		Finalize Document and Upload All Needed Electronic Files	07/23/2025
	✓	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 Concepts BCR document
Request Preliminary Survey Data- survey data not needed for Concepts BCR document
0MM1 Conduct Multimodal Review- multimodal coordination not required
0SY1 Provide Preliminary Survey Data- survey data not needed for Concepts BCR document
0GT1 Conduct Preliminary Geotechnical Assessment- geotechnical data not received for Concepts BCR document
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 Concepts BCR document
Develop Roadway Safety Audit (RSA) No Plans Document- no plans document not needed for Concepts BCR document
0MM1 - Multimodal review not received for Concepts BCR document
0TO1 - TSMO review not received for Concepts BCR document
0ST1 - No hydraulic recommendation received for Concepts BCR document
0RD1 - Roadway review not received for Concepts 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 Concepts 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 Concepts BCR document; Crash Prediction Analysis- 2 crash occurred within the project limits, crash prediction analysis not needed; 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 Concepts BCR document Road Safety Audit (RSA) No Plans-RSA no plans document not needed for Concepts BTIR document Site visit was a virtual presentation - no attendee list needed No multimodal considerations or recommendations received No emails or memos containing structure types or hydraulic recommendations received No IAR needed for Concepts BCR document		

¹ External document to Concepts

Madison County
Lower Brownsville Road over I-40 (L.M. 4.54)

Project Description:

The primary work of the project is to demolish and replace the bridge over I-40. The proposed bridge will be lengthened to allow for future widening of the interstate as well as raised to accommodate TDOT's minimum vertical clearance. The proposed structure is a 250' 2-span prestressed concrete bridge. Following TDOT's Structural Design Guidelines (SDG), the span length will require 63" bulb-tee prestressed girders. To meet 17' vertical clearance, the grade will have to rise 1.65'. The proposed cross-section will have 2-12' travel lanes and 4' shoulders on both sides.

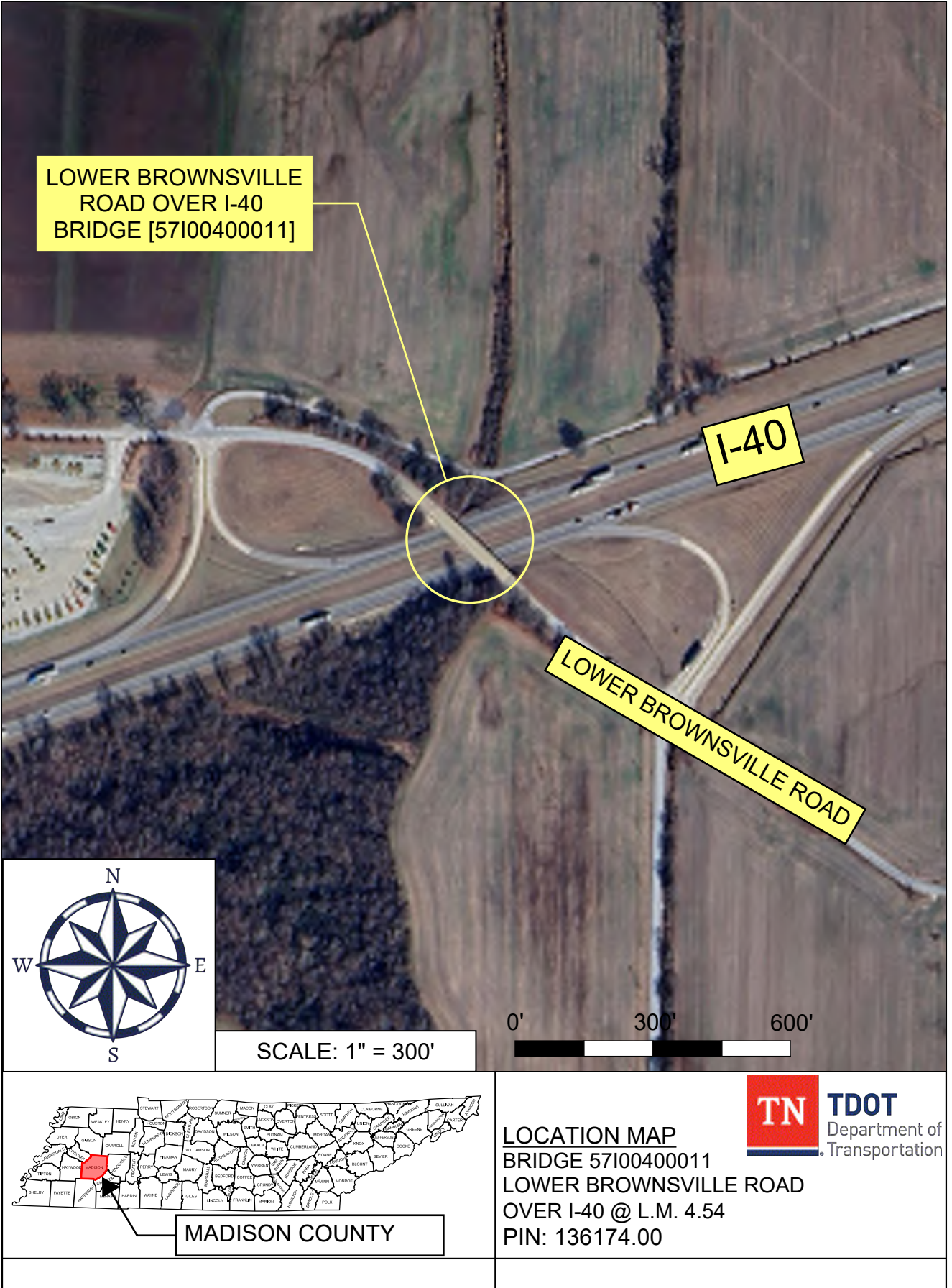
The project limits include approximately 1,300 feet of roadway improvements along Lower Brownsville Road. The roadway improvements include raising the grade to meet the proposed bridge elevation and widening along Lower Brownsville Road. Widening the road will better align with TDOT's current standards while also matching the existing bridge's 12-foot lanes. Minimal Right-of-Way and utility impacts are anticipated.

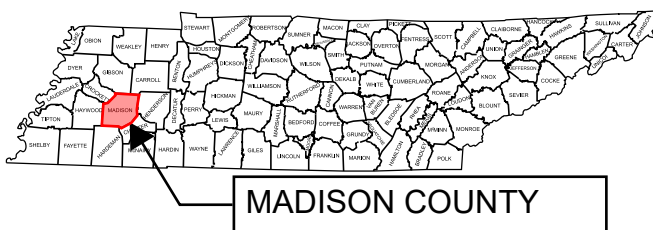
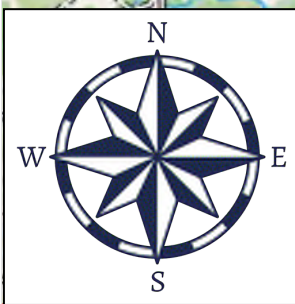
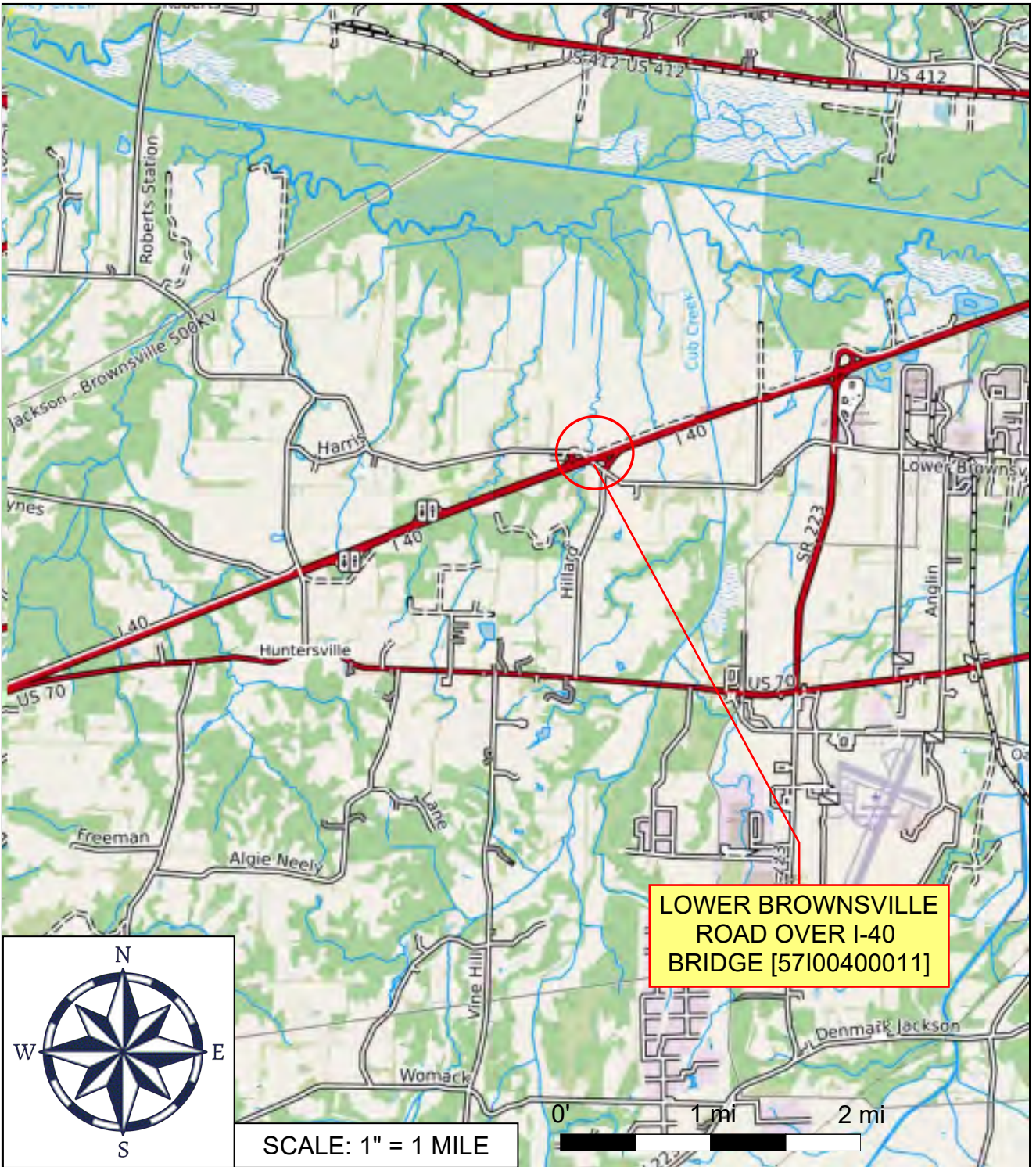
Traffic control will be handled with a road closure. Detours involving the interstate, state routes, and local roads will be implemented. See pages 11 to 13 for detour routes. The north side interstate detour's length and time are 13 miles and 12 minutes, respectively. The south side interstate detour's length and time are 5 miles and 5 minutes, respectively. The state route/local road detour's length and time are 7 miles and 10 minutes, respectively.

TDOT's resources show Lower Brownsville Road classified as a Local Road with a design speed of 30 MPH. The traffic data provided by TDOT indicated an AADT of 590 vehicles and 880 vehicles for 2030 and 2050, respectively.

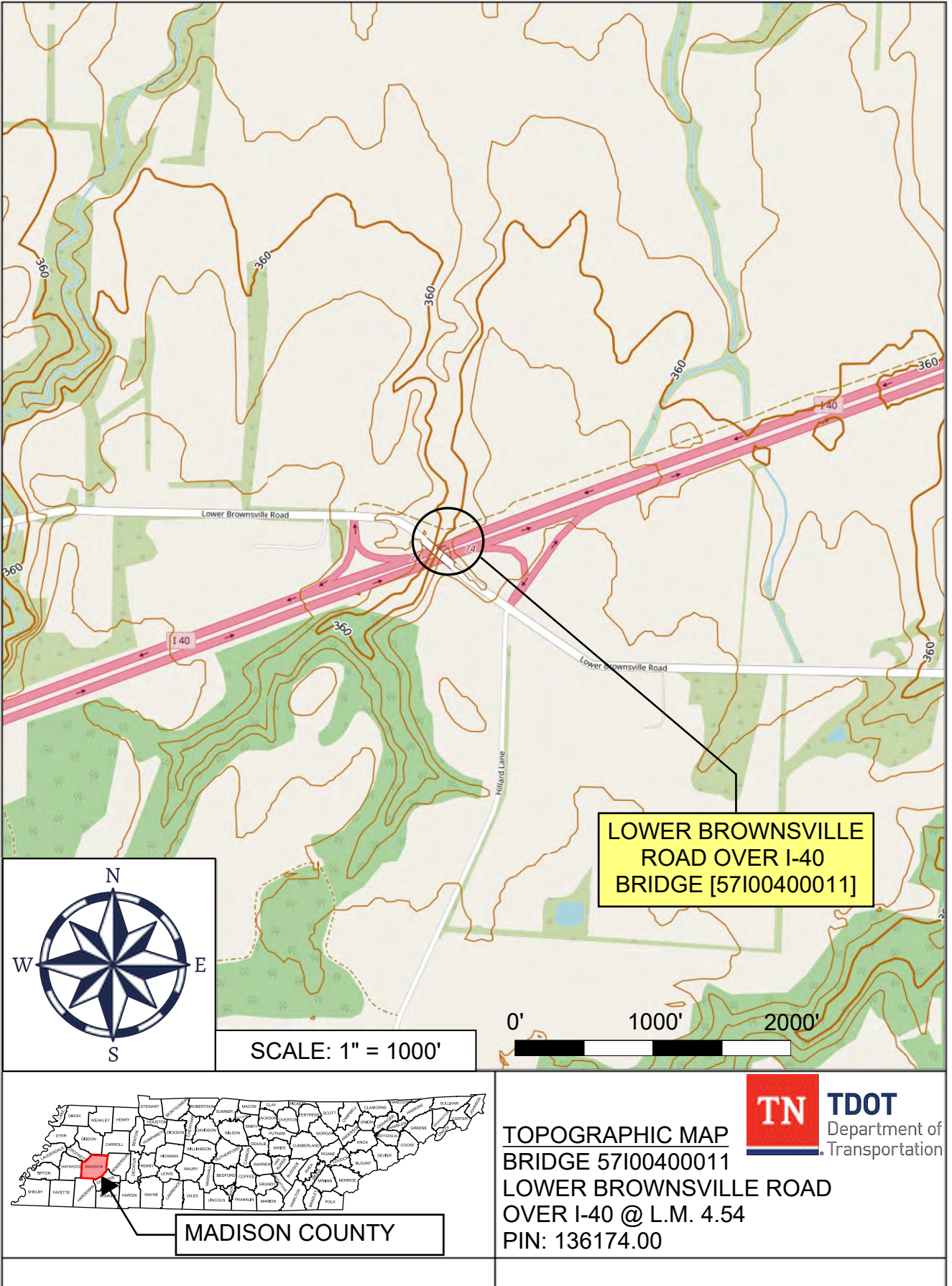
Project Risks:

There is a large box culvert under the interstate that could be impacted. The culvert carries an environmental feature.





AREA MAP
BRIDGE 57I00400011
LOWER BROWNSVILLE ROAD
OVER I-40 @ L.M. 4.54
PIN: 136174.00



02 - Madison Co. North Side Interstate Detour

Elements



Bridge Closure

North Side Detour



1300 Lower Brownsville Rd,
Jackson, TN 38301, USA



I-40, Jackson, TN 38301, USA



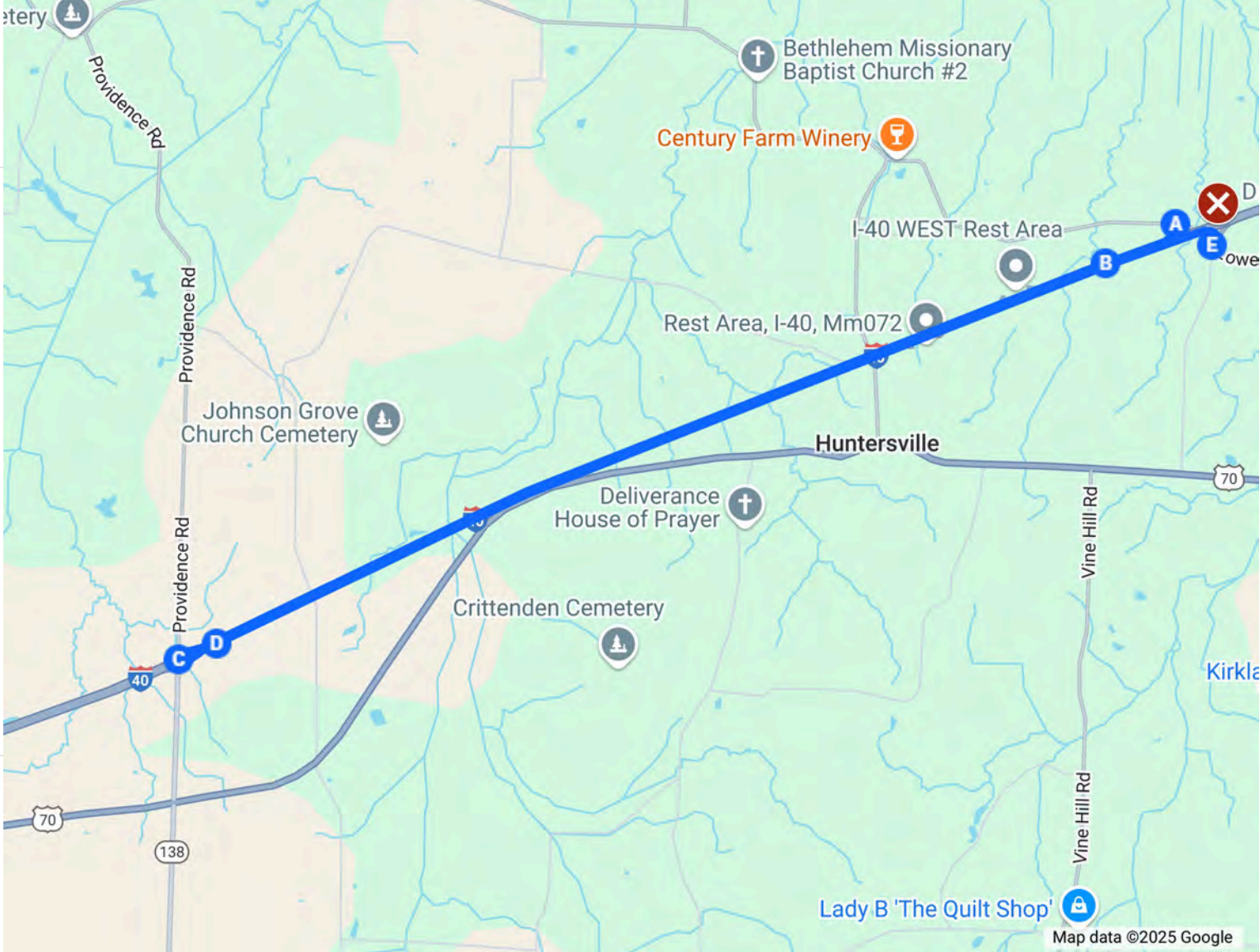
160 Hwy 138 Providence Rd,
Denmark, TN 38391, USA



I-40, Denmark, TN 38391, USA



1299 Lower Brownsville Rd,
Jackson, TN 38301, USA



Drive 13 mi, 12 minutes

02 - Madison Co. South Side Interstate Detour

Elements



Bridge Closure

South Side Detour



1299 Lower Brownsville Rd,
Jackson, TN 38301, USA



I-40, Jackson, TN 38301, USA



1187 Lower Brownsville Rd,
Jackson, TN 38301, USA



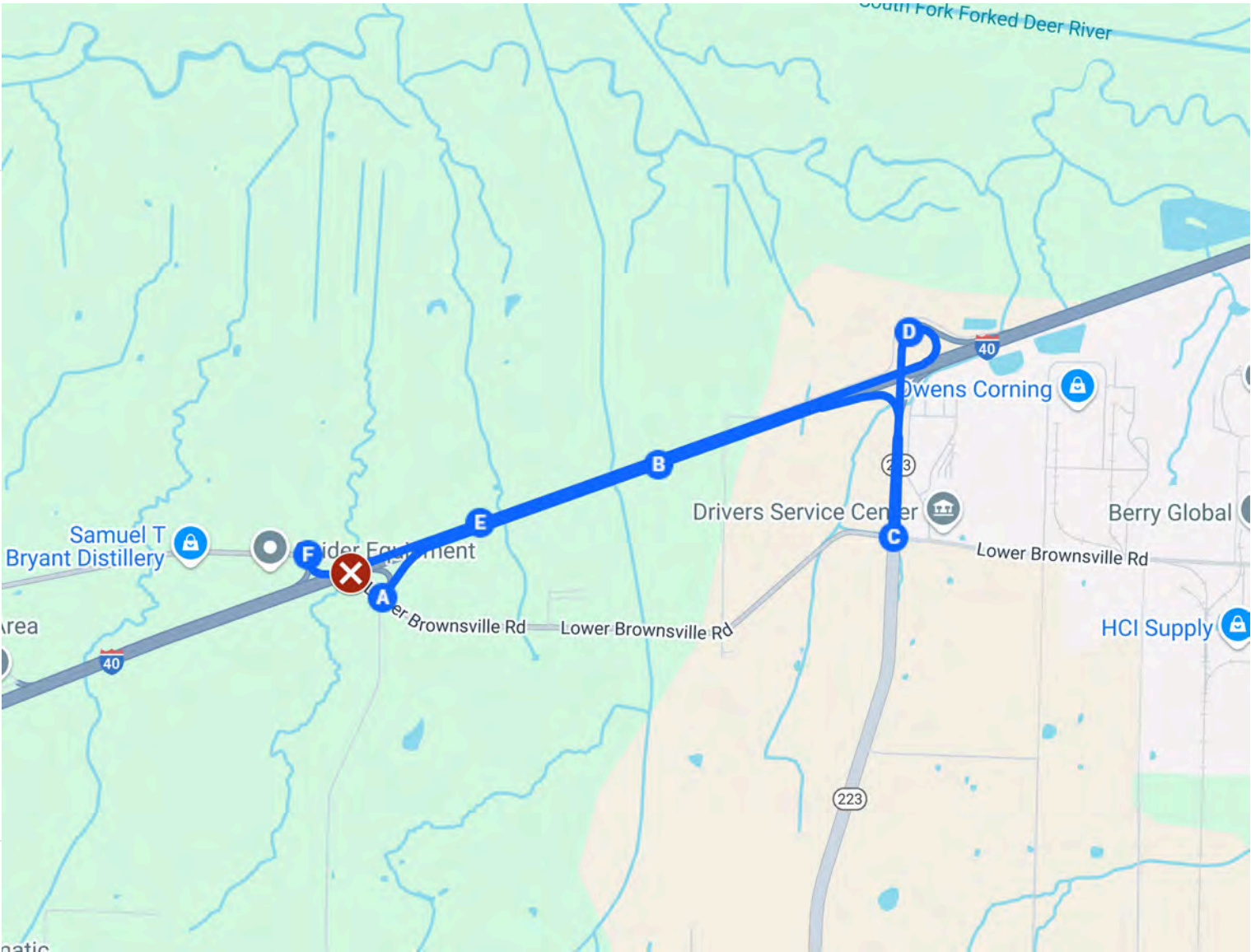
I-40, Jackson, TN 38301, USA



I-40, Jackson, TN 38301, USA



1300 Lower Brownsville Rd,
Jackson, TN 38301, USA



Drive 5 mi, 5 minutes

02 - Madison Co. State Route/Local Road Detour

Elements



Bridge Closure

Detour

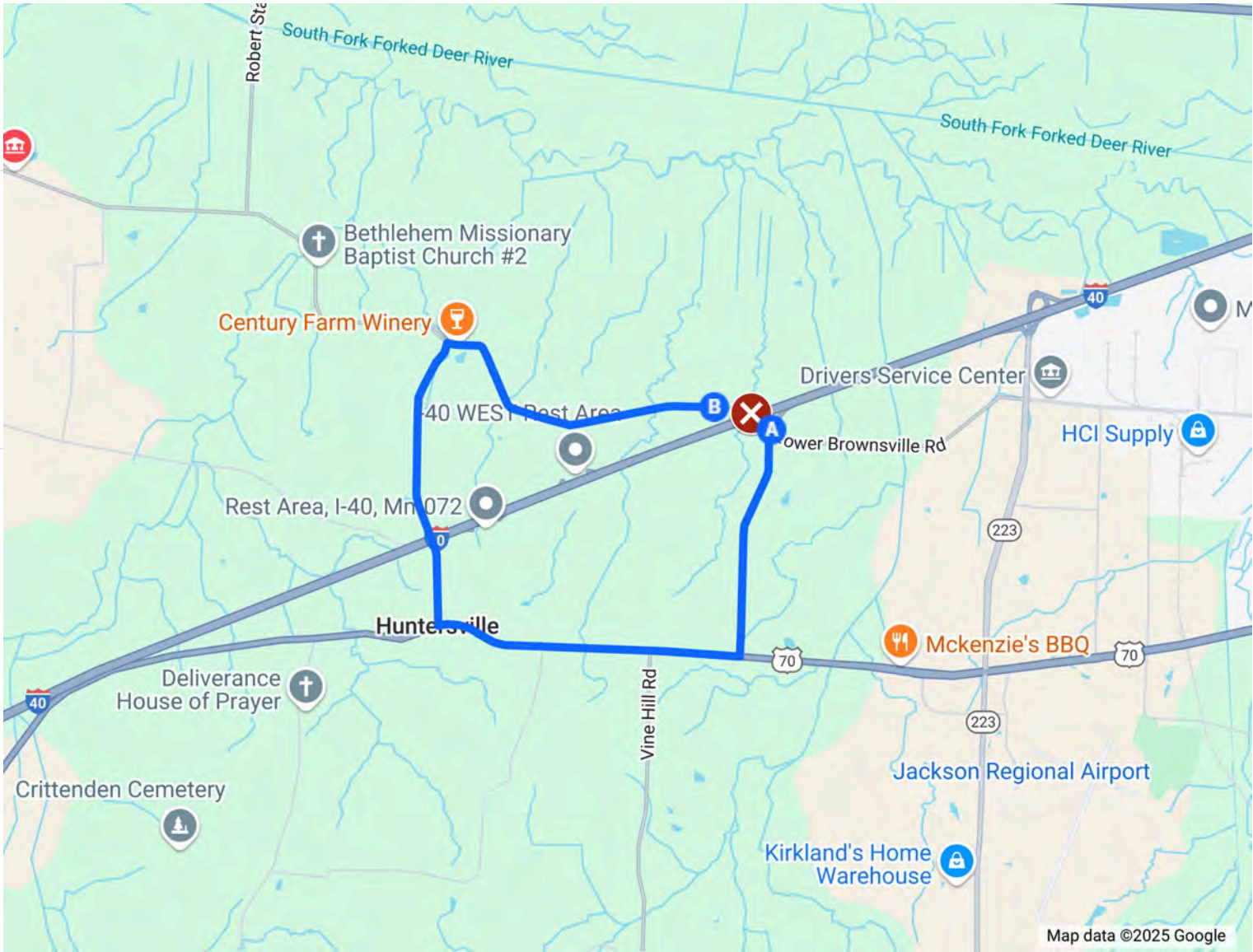


Point 1

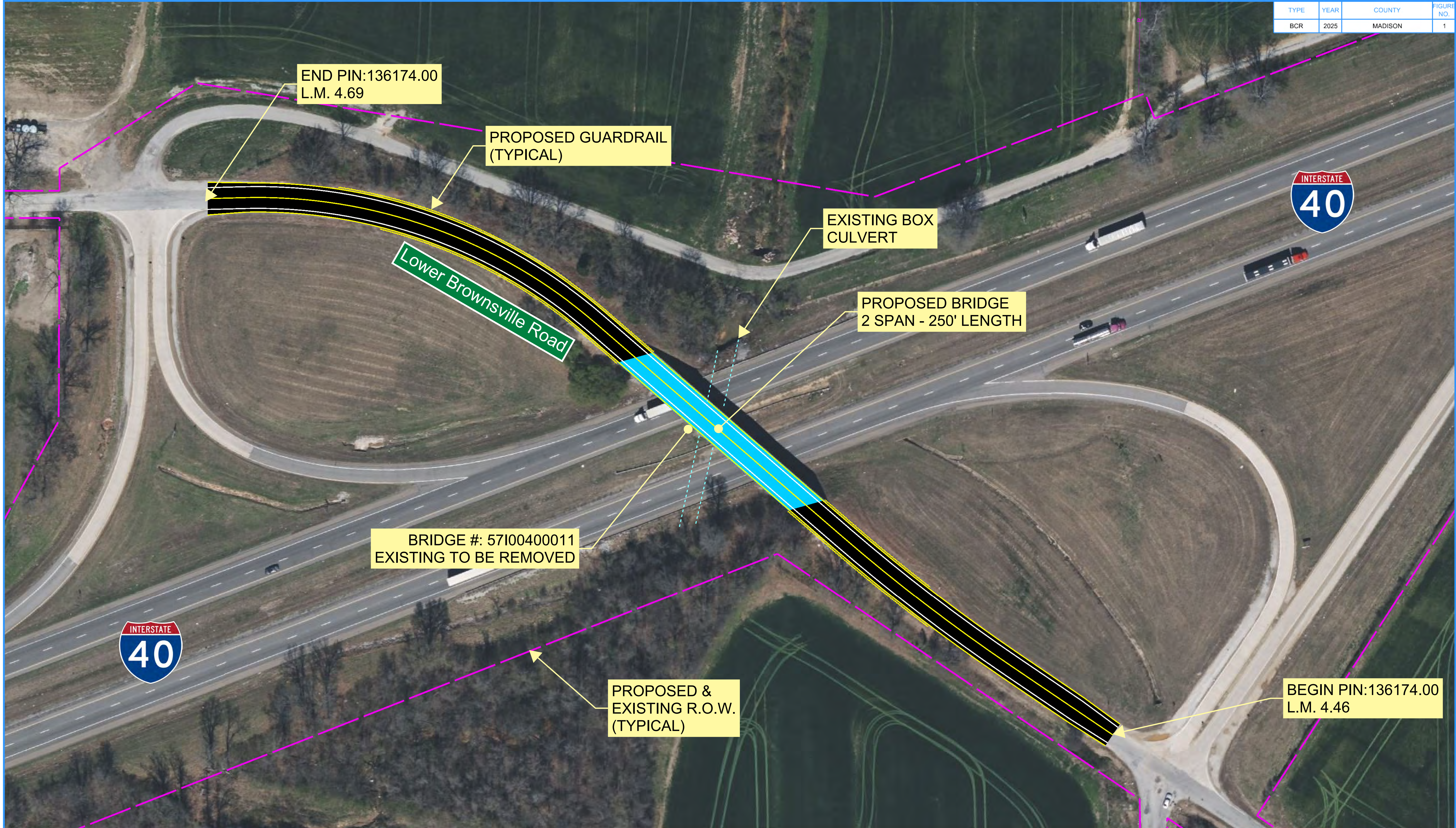


Snider Equipment, LLC, Lower
Brownsville Road, Jackson, TN

Drive 7 mi, 10 minutes



TYPE	YEAR	COUNTY	FIGURE NO.
BCR	2025	MADISON	1



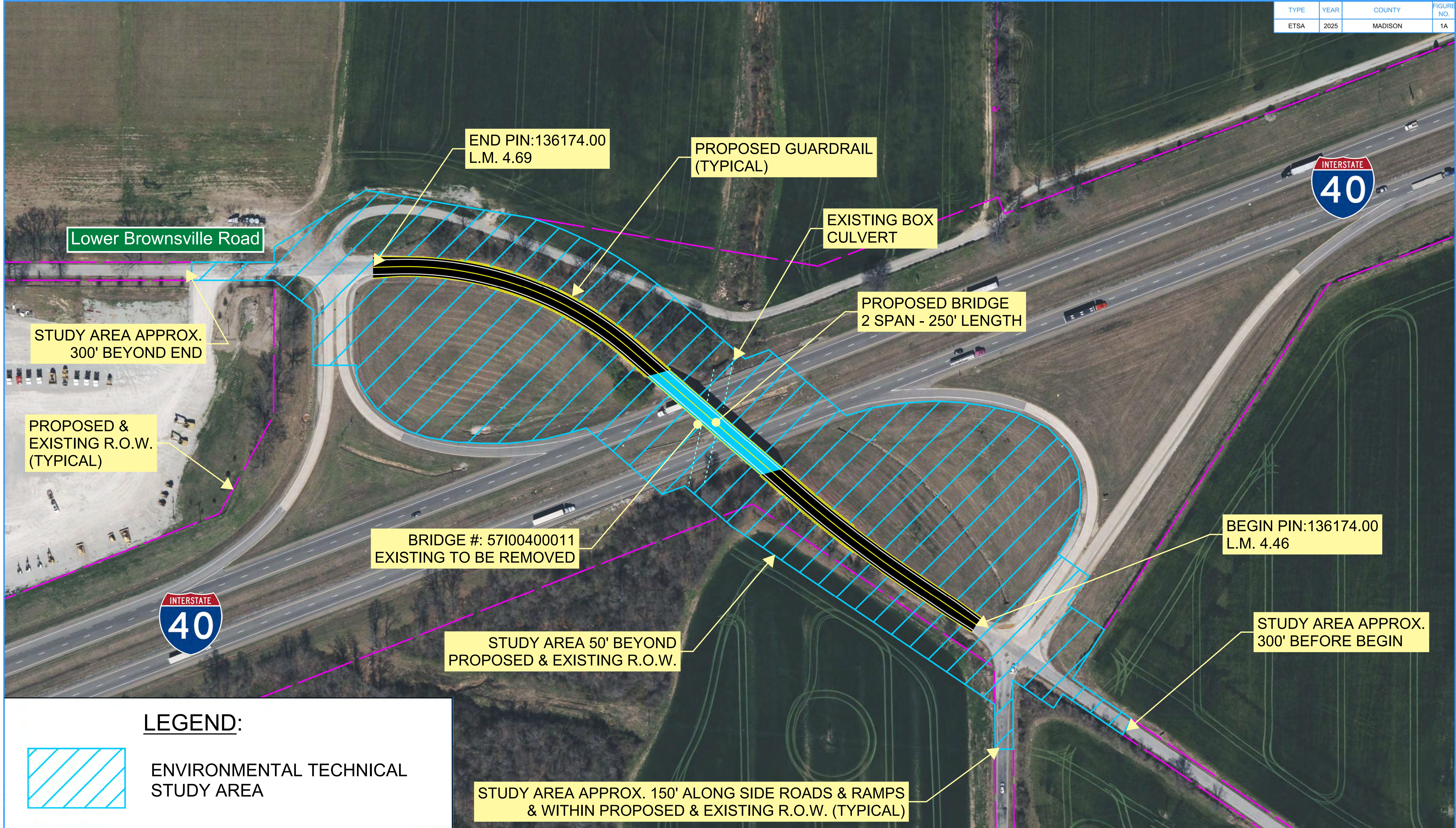
BRIDGE CONCEPT REPORT

LOWER BROWNSVILLE ROAD OVER I-40 (L.M. 4.54)
MADISON COUNTY

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

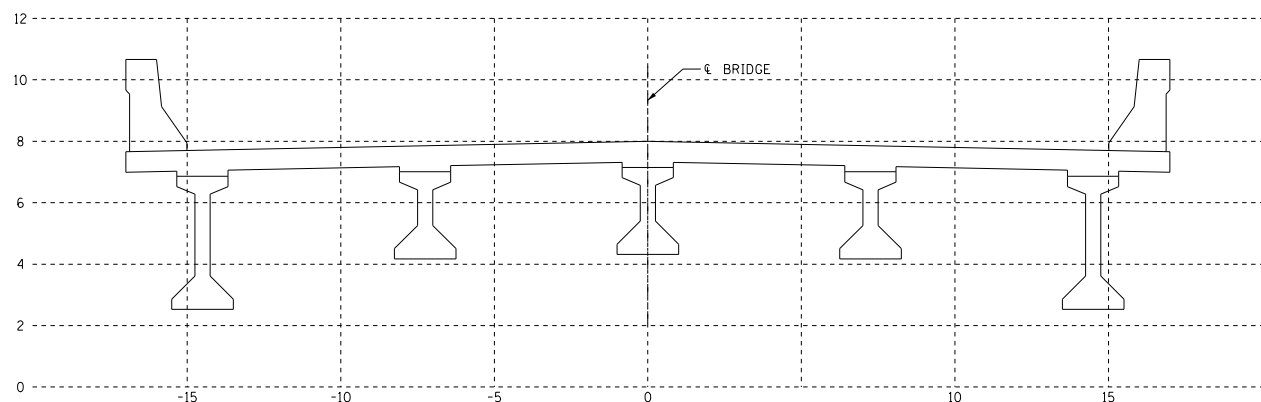
FIGURE 1
LOWER BROWNSVILLE
ROAD OVER I-40 (L.M. 4.54)

TYPE	YEAR	COUNTY	FIGURE NO.
ETSA	2025	MADISON	1A



ENVIRONMENTAL TECHNICAL STUDY AREA

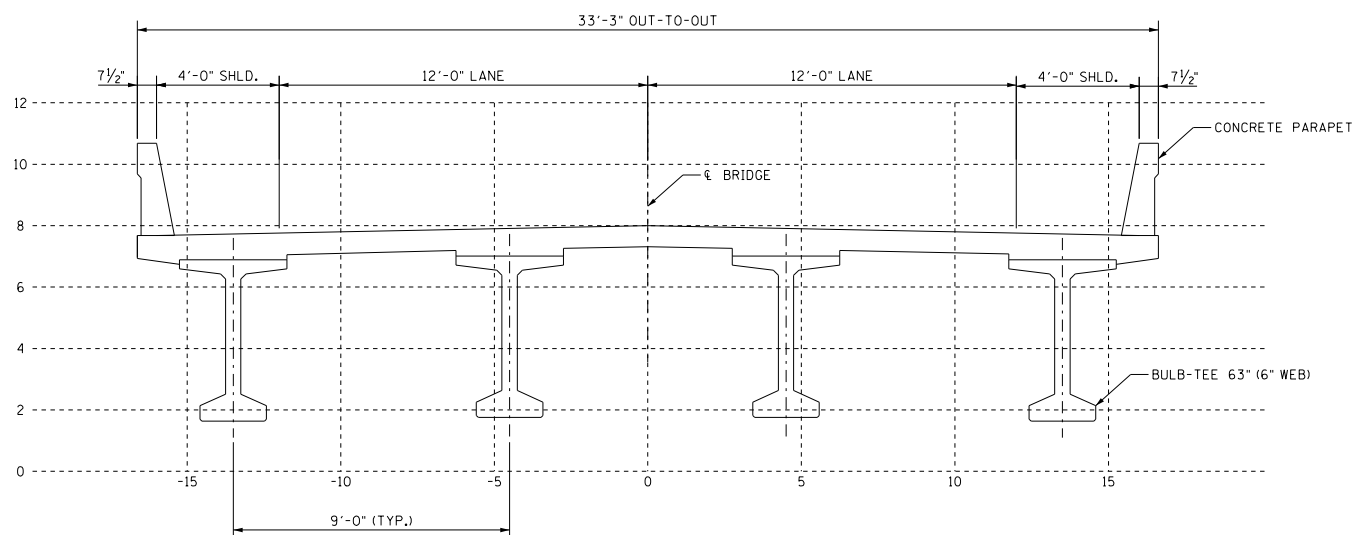
LOWER BROWNSVILLE ROAD OVER I-40 (L.M. 4.54)
MADISON COUNTY



TOTAL WIDTH: 34'-0"
CURB TO CURB: 32'-0"

EXISTING STRUCTURE

(LOOKING AHEAD)



TOTAL WIDTH: 33'-3"
CURB TO CURB: 32'-0"

PROPOSED STRUCTURE

(LOOKING AHEAD)

[illegible]

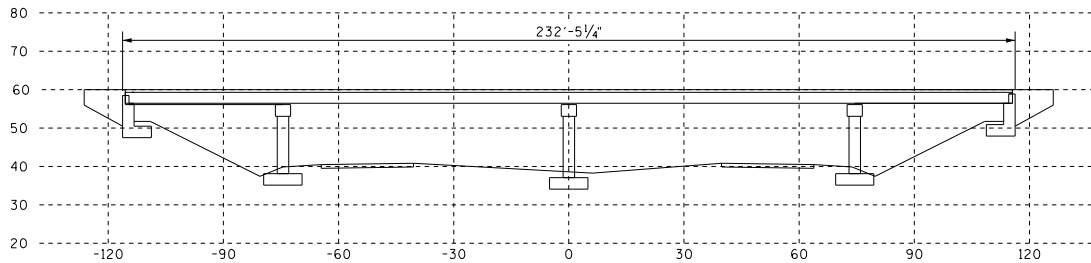
BRIDGE TYPICAL SECTION

LOWER BROWNSVILLE ROAD OVER I-40
MADISON COUNTY

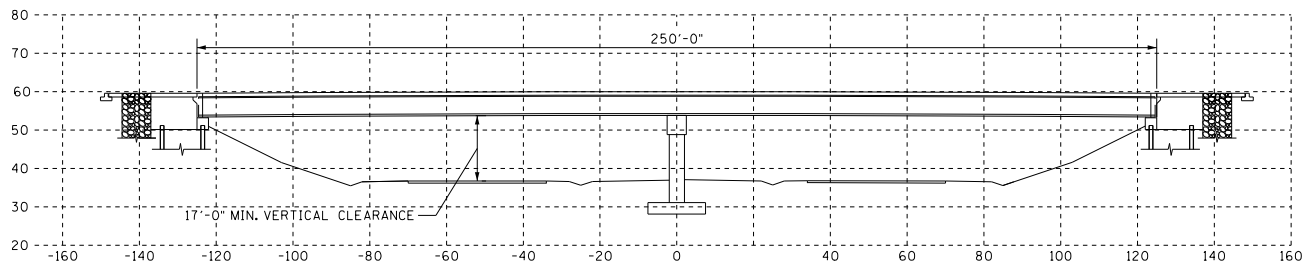
PRELIMINARY
PLANS

BARGE
DESIGN SOLUTIONS

615 3RD AVENUE SOUTH / SUITE 700 / NASHVILLE / TENNESSEE / 37203



EXISTING STRUCTURE
(LOOKING EAST)



PROPOSED STRUCTURE
(LOOKING EAST)

REVISION INFORMATION				
REV.	DATE	BY	CHK.	DESCRIPTION

FILE NO.

BRIDGE ELEVATION

LOWER BROWNSVILLE ROAD OVER I-40

MADISON COUNTY

PRELIMINARY
PLANS

COST ESTIMATE SUMMARY

COST ESTIMATE SUMMARY				
Route:	Lower Brownsville Road			
Termini:	I-40 @ L.M. 4.54			
Scope of Work:	Bridge Replacement			Estimate Developed By Initial/Organization
Project Type of Work:	Bridge Replacement			
County:	Madison			RD/BARGE
Length:	0.23 Miles			
Date:	July 14, 2025			
Estimate Type:	Design-Bid-Build			
Years Inflated:	0			

DESCRIPTION	LOCAL	STATE	FEDERAL	TOTAL
	0%	0%	0%	
Construction Items				
Removal Items	\$0	\$0	\$0	\$61,300
Asphalt Paving	\$0	\$0	\$0	\$321,000
Concrete Pavement	\$0	\$0	\$0	\$0
Drainage	\$0	\$0	\$0	\$648,000
Appurtenances	\$0	\$0	\$0	\$0
Structures & Contingency	\$0	\$0	\$0	\$2,740,000
Fencing	\$0	\$0	\$0	\$0
Signalization & Lighting	\$0	\$0	\$0	\$0
Railroad Crossing	\$0	\$0	\$0	\$0
Earthwork	\$0	\$0	\$0	\$917,000
Clearing and Grubbing	\$0	\$0	\$0	\$18,400
Seeding & Sodding	\$0	\$0	\$0	\$14,000
Rip-Rap or Slope Protection	\$0	\$0	\$0	\$54,300
Guardrail	\$0	\$0	\$0	\$61,900
Signing	\$0	\$0	\$0	\$4,800
Pavement Markings	\$0	\$0	\$0	\$11,800
Traffic Control	\$0	\$0	\$0	\$246,000
Construction Lines and Stakes	\$0	\$0	\$0	\$80,000
DESIGN-BID-BUILD & DESIGN-BUILD PERCENTAGES				
Mobilization	5%	\$0	\$0	\$243,000
Allowances	10%	\$0	\$0	\$485,000
Const. Contingency (Structures Not Included)	20%	\$0	\$0	\$568,000
Const. Eng. & Inspec.	10.0%	\$0	\$0	\$647,000
Construction Estimate - DBB & DB		\$0	\$0	\$7,120,000
Right-of-Way & Utilities				
	0%	0%	0%	TOTAL
Right-of-Way		\$0	\$0	\$69,000
Utilities		\$0	\$0	\$100,000
Preliminary Engineering				
	0%	0%	0%	TOTAL
Prelim. Eng.	10.0%	\$0	\$0	\$647,000
Design-Bid-Build Project Cost		\$0	\$0	\$ 7,940,000

PAY ITEM SUMMARY

TDOT PAY ITEM	TDOT DESCRIPTION	UNIT	TOOL QUANTITIES	ADDITIONAL QUANTITIES	TOOL QUANTITIES + ADDITIONAL	Unit Price	TOTAL COST
Pavment Removal							
202-03.01	REMOVAL OF ASPHALT PAVEMENT	SY	2969		2969	\$ 20.64	\$ 61,270.53
PAVEMENT REMOVAL TOTAL (ROUNDED)							\$ 61,300
Asphalt Roads							
303-01	MINERAL AGGREGATE, TYPE A BASE, GRADING D	TON	3243		3243	\$ 40.60	\$ 131,684.62
307-(01, 02, 03).01	ASPHALT CONCRETE MIX (All Grades) (BPMB-HM) GRADING A	TON	559		559	\$ 124.26	\$ 69,415.78
307-(01 & 02 & 03).08	ASPHALT CONCRETE MIX (ALL GRADES) (BPMB-HM) GRADING B-M2	TON	488		488	\$ 130.99	\$ 63,910.22
402-01	BITUMINOUS MATERIAL FOR PRIME COAT (PC)	TON	6		6	\$ 978.20	\$ 5,851.06
402-02	AGGREGATE FOR COVER MATERIAL (PC)	TON	22		22	\$ 75.90	\$ 1,638.63
403-01	BITUMINOUS MATERIAL FOR TACK COAT (TC)	TON	3		3	\$ 974.85	\$ 3,188.84
411-01.07	ACS MIX (PG64-22) GRADING E SHOULDER	TON	87		87	\$ 128.63	\$ 11,194.93
411-(01 & 02 & 03).10	ACS MIX(ALL GRADES) GRADING D	TON	233		233	\$ 146.95	\$ 34,204.26
PAVING TOTAL (ROUNDED)							\$ 321,100
Concrete Roads							
CONCRETE RAMPS AND ROADWAYS TOTAL (ROUNDED)							\$ -
Drainage							
607-05.02	24" CONCRETE PIPE CULVERT (CLASS III)	LF	136		136	\$ 137.55	\$ 18,665.54
611-07.01	CLASS A CONCRETE (PIPE ENDWALLS)	CY	7	200	207	\$ 2,156.18	\$ 447,204.67
611-07.02	STEEL BAR REINFORCEMENT (PIPE ENDWALLS)	LB	704	36000	36704	\$ 4.08	\$ 149,751.50
710-02	Aggregate Underdrains (with pipe)	LF	2429		2429	\$ 13.31	\$ 32,327.33
DRAINAGE TOTAL (ROUNDED)							\$ 648,000
Appurtenances							
ROADWAY AND PAVEMENT APPURTENANCES TOTAL (ROUNDED)							\$ -
Earthwork & Mineral							
203-01	ROAD & DRAINAGE EXCAVATION (UNCLASSIFIED)	CY	5811		5811	\$ 17.18	\$ 99,826.47
203-02.01	BORROW EXCAVATION (GRADED SOLID ROCK)	TON	1281		1281	\$ 60.67	\$ 77,715.32
203-03	BORROW EXCAVATION (UNCLASSIFIED)	CY	2905		2905	\$ 19.30	\$ 56,072.49
203-50	CONSTRUCTION OF HAUL ROAD	LS	1		1	\$ 646,004.00	\$ 646,004.00
204-01	CULVERT EXCAVATION (UNCLASSIFIED)	CY		700	700	\$ 53.44	\$ 37,405.42
EARTHWORK & MINERAL TOTAL (ROUNDED)							\$ 917,100
Construction Lines and Stakes							
105-01	Construction Lines and Stakes	LS	1		1		\$ 80,000.00
							\$ 80,000
Structures							
N/A	Removal of Bridge	SF	8024		8024	\$ 30.00	\$ 240,720.00
N/A	New Bridge (Concrete I-Beam & Bulb-T)	SF	8325		8325	\$ 240.00	\$ 1,998,000.00
N/A	Contingency - New Bridge (Concrete I-Beam & Bulb-T)	%	25.0%		25.0%	\$ 25.0%	\$ 499,500.00
STRUCTURES TOTAL (ROUNDED)							\$ 2,738,300
Interchanges and Unique Intersections							
INTERCHANGES AND UNIQUE INTERSECTIONS TOTAL (ROUNDED)							\$ -
Lighting & Signalization							
LIGHTING & SIGNALIZATION TOTAL (ROUNDED)							\$ -
Guardrail							
705-01.01	GUARDRAIL AT BRIDGE ENDS	LF	100		100	\$ 112.09	\$ 11,209.00
705-06.01	W Beam GR (Type 2) Mash TL3	LF	607		607.2	\$ 34.66	\$ 21,045.55
705-06.20	Tangent Energy Absorbing Term Mash TL-3	EA	8		8	\$ 3,697.01	\$ 29,576.08
GUARDRAIL TOTAL (ROUNDED)							\$ 61,900
Seeding and Sodding							
801-01	SEEDING (WITH MULCH)	UNIT	106		106	\$ 65.16	\$ 6,923.90
801-01.07	TEMPORARY SEEDING (WITH MULCH)	UNIT	80		80	\$ 45.90	\$ 3,658.00
801-02	SEEDING (WITHOUT MULCH)	UNIT	80		80	\$ 42.23	\$ 3,365.52
SODDING TOTAL (ROUNDED)							\$ 14,000
Maintenance of Traffic							
N/A	Traffic Control Cost	LS	1		1		\$ 245,879.00
MAINTENANCE OF TRAFFIC TOTAL (ROUNDED)							\$ 245,900
Signs							
Not Listed	Signs (Construction)	LS	1		1	\$ -	\$ 4,800
SIGNING TOTAL (ROUNDED)							\$ 4,800
Pavement Markings							
716-12.02	ENHANCED FLAT THERMO P.M. (6IN)	LM	1,564		1,564	\$ 7,529.96	\$ 11,776.86
PAVEMENT MARKINGS TOTAL (ROUNDED)							\$ 11,800
Fencing							
FENCE TOTAL (ROUNDED)							\$ -
Rip-Rap							
709-05.05	Machined Rip-Rap (Class A-3)	TON	800		800	\$ 67.80	\$ 54,240.00
RIP-RAP & SLOPE PROTECTION TOTAL (ROUNDED)							\$ 54,300.00
Clearing and Grubbing							
201-01	Clearing and Grubbing	LS			1	\$ 18,400.00	\$ 18,400.00
CLEAR AND GRUBBING TOTAL (ROUNDED)							\$ 18,400.00
Railroad At-Grade Crossing							
RAILROAD CROSSING OR SEPARATION TOTAL (ROUNDED)							\$ -
Utilities							
UTILITIES TOTAL (ROUNDED)							\$ 100,000.00
Right-of-Way							
N/A	Right-of-Way	LS	1		1	\$ 69,000	\$ 69,000.00
RIGHT-OF-WAY TOTAL (ROUNDED)							\$ 69,000.00

COST ESTIMATE SUMMARY (2025) - DESIGN-BID-BUILD									
PIN	Project Type of Work	Starting Inflation	Preliminary Engineering:	Right-of-Way:	Utilities:	Construction:	Total Project Cost (2025):		
136174.00	Bridge Replacement	5.50%	\$ 647,000	\$ 69,000	\$ 100,000	\$ 7,120,000	7,940,000		
COST ESTIMATE SUMMARY (2025) - DESIGN-BUILD									
PIN	Project Type of Work	Starting Inflation	Preliminary Engineering:	Right-of-Way:	Utilities:	Construction:	Total Project Cost (2025):		
136174.00	Bridge Replacement	5.50%	\$ 647,000	\$ 69,000	\$ 100,000	\$ 7,120,000	7,940,000		
COST ESTIMATE SUMMARY (2025) - CMGC & HIGH RISK SCENARIOS									
PIN	Project Type of Work	Starting Inflation	Preliminary Engineering:	Right-of-Way:	Utilities:	Construction:	Total Project Cost (2025):		
136174.00	Bridge Replacement	5.50%	\$ 712,000	\$ 69,000	\$ 100,000	\$ 7,830,000	8,710,000		
DESIGN-BID-BUILD - INFLATED COST									
No. of Years	Year	Inflation	Preliminary Engineering:	Right-of-Way:	Utilities:	Construction:	Total Inflated Project Cost		
0	2025		\$ 647,000	\$ 69,000	\$ 100,000	\$ 7,120,000	7,940,000		
1	2026	5.50%	\$ 683,000	\$ 72,800	\$ 106,000	\$ 7,510,000	8,380,000		
2	2027	5.50%	\$ 720,000	\$ 76,800	\$ 111,000	\$ 7,920,000	8,840,000		
3	2028	5.50%	\$ 760,000	\$ 81,000	\$ 117,000	\$ 8,360,000	9,320,000		
4	2029	5.50%	\$ 802,000	\$ 85,500	\$ 124,000	\$ 8,820,000	9,840,000		
5	2030	5.50%	\$ 846,000	\$ 90,200	\$ 131,000	\$ 9,310,000	10,400,000		
6	2031	5.50%	\$ 892,000	\$ 95,100	\$ 138,000	\$ 9,820,000	10,900,000		
7	2032	5.50%	\$ 941,000	\$ 100,000	\$ 145,000	\$ 10,400,000	11,600,000		
8	2033	5.50%	\$ 993,000	\$ 106,000	\$ 153,000	\$ 10,900,000	12,200,000		
9	2034	5.50%	\$ 1,050,000	\$ 112,000	\$ 162,000	\$ 11,500,000	12,900,000		
10	2035	5.50%	\$ 1,110,000	\$ 118,000	\$ 171,000	\$ 12,200,000	13,600,000		
DESIGN-BUILD - INFLATED COST									
No. of Years	Year	Inflation	Preliminary Engineering:	Right-of-Way:	Utilities:	Construction:	Total Inflated Project Cost		
0	2025		\$ 647,000	\$ 69,000	\$ 100,000	\$ 7,120,000	7,940,000		
1	2026	5.50%	\$ 683,000	\$ 72,800	\$ 106,000	\$ 7,510,000	8,380,000		
2	2027	5.50%	\$ 720,000	\$ 76,800	\$ 111,000	\$ 7,920,000	8,840,000		
3	2028	5.50%	\$ 760,000	\$ 81,000	\$ 117,000	\$ 8,360,000	9,320,000		
4	2029	5.50%	\$ 802,000	\$ 85,500	\$ 124,000	\$ 8,820,000	9,840,000		
5	2030	5.50%	\$ 846,000	\$ 90,200	\$ 131,000	\$ 9,310,000	10,400,000		
6	2031	5.50%	\$ 892,000	\$ 95,100	\$ 138,000	\$ 9,820,000	10,900,000		
7	2032	5.50%	\$ 941,000	\$ 100,000	\$ 145,000	\$ 10,400,000	11,600,000		
8	2033	5.50%	\$ 993,000	\$ 106,000	\$ 153,000	\$ 10,900,000	12,200,000		
9	2034	5.50%	\$ 1,050,000	\$ 112,000	\$ 162,000	\$ 11,500,000	12,900,000		
10	2035	5.50%	\$ 1,110,000	\$ 118,000	\$ 171,000	\$ 12,200,000	13,600,000		
CMGC (HIGH RISK) - INFLATED COST									
No. of Years	Year	Inflation	Preliminary Engineering:	Right-of-Way:	Utilities:	Construction:	Total Inflated Project Cost		
0	2025		\$ 941,000	\$ 100,000	\$ 145,000	\$ 10,400,000	11,600,000		
1	2026	5.50%	\$ 751,000	\$ 72,800	\$ 106,000	\$ 8,260,000	9,190,000		
2	2027	5.50%	\$ 792,000	\$ 76,800	\$ 111,000	\$ 8,710,000	9,690,000		
3	2028	5.50%	\$ 836,000	\$ 81,000	\$ 117,000	\$ 9,190,000	10,200,000		
4	2029	5.50%	\$ 882,000	\$ 85,500	\$ 124,000	\$ 9,700,000	10,800,000		
5	2030	5.50%	\$ 931,000	\$ 90,200	\$ 131,000	\$ 10,200,000	11,400,000		
6	2031	5.50%	\$ 982,000	\$ 95,100	\$ 138,000	\$ 10,800,000	12,000,000		
7	2032	5.50%	\$ 1,040,000	\$ 100,000	\$ 145,000	\$ 11,400,000	12,700,000		
8	2033	5.50%	\$ 1,090,000	\$ 106,000	\$ 153,000	\$ 12,000,000	13,400,000		
9	2034	5.50%	\$ 1,150,000	\$ 112,000	\$ 162,000	\$ 12,700,000	14,100,000		
10	2035	5.50%	\$ 1,220,000	\$ 118,000	\$ 171,000	\$ 13,400,000	14,900,000		
								INFLATION INPUTS	
								Long Term Inflation:	5.50%

CRASH SUMMARY REPORT

Madison Co - Lower Brownsville Road Bridge

Created on April 16, 2025

Created by Geneva Dowdy

Data extents: February 28, 2022 to February 28, 2025

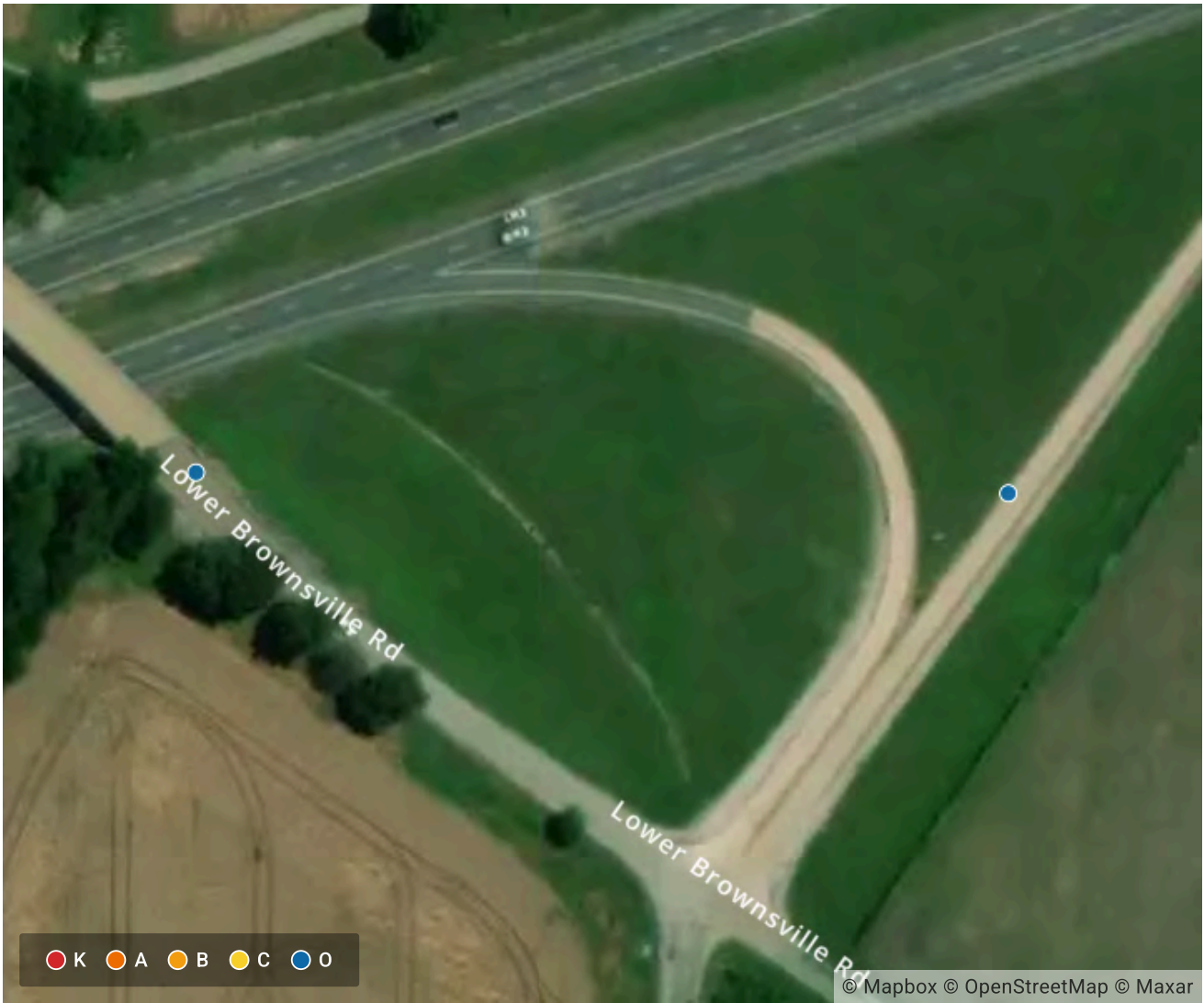


Applied Filters

County = Madison

Log Mile ≤ 4.44 - 4.64

Route = 0B290



Total Crashes	2	Fatal Crashes	0
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Summary		Crash
Total Crashes	2	100.00%
Truck/Bus Involved	1	50.00%
Alcohol Involved	0	0.00%

Distracted Driver Involved
Motorcycle Involved
Pedestrian Involved

Type of Crash	Crash	
(O) Property-Damage Only	2	100.00%
+ 4 more	0	0%
Date of Crash (Year)	Crash	
2024	2	100.00%
+ 11 more	0	0%
Manner of First Collision	Crash	
No Collision W/ Vehicle	2	100.00%
+ 9 more	0	0%
First Harmful Event	Crash	
Highway Traffic Sign Post	1	50.00%
Other Non-Collision	1	50.00%
+ 64 more	0	0%
Crash Location	Crash	
Along Roadway	1	50.00%
Ramp	1	50.00%
+ 5 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%
Cloudy	1	50.00%
+ 10 more	0	0%

Draft Environmental Desktop Review Form

Part 1 – Project Information

PIN	136174.00
Project Number (if available)	
County	Madison
Route	
Termini	Lower Brownsville Rd Bridge over I-40
Type of Document	Draft
Date ENV DIV Comments are Due	5/12/25 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 Madison 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

According to the report, the project is not proposing additional travel lanes. Additionally, there are no noise-sensitive land uses in the project area. Therefore, this project is likely to be a Type III noise project type in accordance with the FHWA noise regulation in 23 CFR 772 and TDOT's noise policy. As proposed in the report, a noise study is not needed.

Cultural Resources

Archeology: No known archaeological sites or studies have been conducted in the proposed project area. If right-of-way acquisition is required prehistoric cultural resources may be impacted due to its proximity to a previously recorded site.

Historic Preservation: Review of the proposed project design indicates this proposed project will require right-of-way acquisition, which will necessitate a Section 106 report. There is one above-ground resources aged 50 years or older located within the study area, Bridge #: 57I00400011. Should new ROW or easements become necessary, then further Section 106 review will be required.

Native American Coordination: NAC will be coordinated with all tribes interested in Madison County once Stage 1 is initiated for the proposed project.

Ecology

Meriweather Branch is located within the project footprint and may be affected by project activities. Aerial imagery also suggests that additional water features may be present within the project footprint and a site visit will be needed to identify any additional features.

No rare species records are present in the vicinity of the project, however the project is within the range of protected bats, so this may need to be addressed during the species agency coordination.

HazMat

No known hazardous material sites near this project. The asbestos bridge survey has been scheduled, and the report is due by 2 July 2025.

NEPA

The proposed Bridge Replacement project will most likely consist of a C-List CE Class of Action, and will not require FHWA review and approval. This is based on the currently proposed detour routes, and the scope of work to include minimal ROW acquisition.

Please ensure that the private access drive located adjacent to Lower Brownsville Rd., and parallel to I-40 will not be closed during and post construction of the Bridge Replacement project.

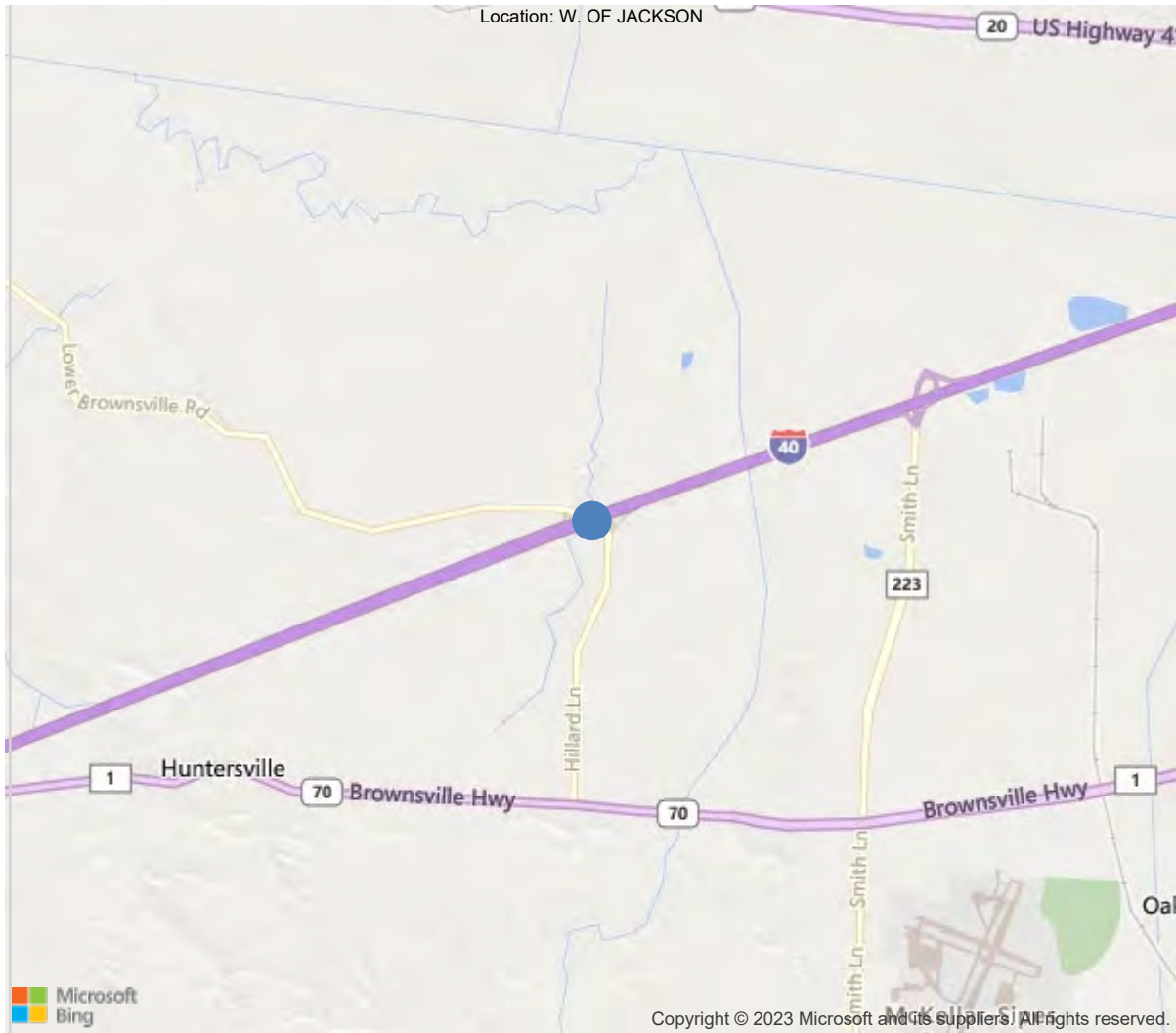


Latitude:35.63294, Longitude:-88.94892

Region 04, 57 - Madison County

Team Leader: Jason Ellison

Inspectors: Mandy McNeal, Tonjuanita James, Joel Ferrell, Jacob Castellaw, Jennifer Blankenship,
Shayne Hayes, Ty Patrick



35.63294, -88.94892

90 - LAST INSPECTION DATE 04/18/2023

10 - MIN. V.C. OVER DECK (ROADWAY + SHOULDERS) 99.99 FT.

520 - MIN. V.C. OVER DECK (EXCLUDES SHOULDERS) 99.99 FT.

36 - TRAFFIC SAFETY FEATURES

Br. Rail	Trans.	Appr. Rail	Terminal	SPEED LIM.
1	1	1	1	70

41 - STRC OPEN/CLOSED/POSTED A

58 - DECK 6

59 - SUPERSTRUCTURE 6

60 - SUBSTRUCTURE 4

61 - CHANL/CHANL PROTECTION N

62 - CULVERT AND RETAIN WALL N

71 - WATERWAY ADEQUACY N

72 - APPROACH RDWY ALIGNMENT 8

521 - OVERALL CONDITION 3 - Poor

16 - LATITUDE 17 - LONGITUDE

35.632944 -88.948917



David Duncan (Jul 16, 2025 13:49 CDT)

TEAM LEADER SIGNATURE

N NOT APPLICABLE

9 EXCELLENT CONDITION

8 VERY GOOD CONDITION - NO PROBLEMS NOTED.

7 GOOD CONDITION - SOME MINOR PROBLEMS.

6 SATISFACTORY CONDITION - MINOR DETERIORATION OF STRUCTURAL ELEMENTS.

5 FAIR CONDITION - ALL PRIMARY STRUCTURAL ELEMENTS ARE SOUND BUT MAY HAVE MINOR SECTION LOSS, CRACKING, SPALLING OR SCOUR.

4 POOR CONDITION - ADVANCED SECTION LOSS, DETERIORATION, SPALLING OR SCOUR.

3 SERIOUS CONDITION - LOSS OF SECTION, DETERIORATION, SPALLING OR SCOUR HAVE SERIOUSLY AFFECTED PRIMARY STRUCTURAL COMPONENTS. LOCAL FAILURES ARE POSSIBLE. FATIGUE CRACKS IN STEEL OR SHEAR CRACKS IN CONCRETE MAY BE PRESENT.

2 CRITICAL CONDITION - ADVANCED DETERIORATION OF PRIMARY STRUCTURAL ELEMENTS. FATIGUE CRACKS IN STEEL OR SHEAR CRACKS IN CONCRETE MAY BE PRESENT OR SCOUR MAY HAVE REMOVED SUBSTRUCTURE SUPPORT. UNLESS CLOSELY MONITORED IT MAY BE NECESSARY TO CLOSE THE BRIDGE UNTIL CORRECTIVE ACTION IS TAKEN.

1 "IMMINENT" FAILURE CONDITION - MAJOR DETERIORATION OR SECTION LOSS PRESENT IN CRITICAL STRUCTURAL COMPONENTS OR OBVIOUS VERTICAL OR HORIZONTAL MOVEMENT AFFECTING STRUCTURAL STABILITY. BRIDGE IS CLOSED TO TRAFFIC BUT CORRECTIVE ACTION MAY PUT IT BACK IN LIGHT SERVICE.

0 FAILED CONDITION - OUT OF SERVICE AND BEYOND CORREC

IDENTIFICATION	
(1) State Names	47 - Tennessee
(8) Structure Number	57100400011
(5) Inventory Route	1
(2) Highway Agency District	Region 4
(3) County Code	57 - Madison
(4) Place Code	00000
(6) Features Intersected	I40
(7) Facility Carried	NFA B290 (SA 5725)
(9) Location	W. OF JACKSON
(11) Mile Point	4.540 mi
(12) Base Highway Network	No
(13) LRS Inventory Rte & Subrte	
(16) Latitude	35.632944
(17) Longitude	-88.948917
(98) Border Bridge State Code	
(99) Border Bridge Structure No.	
STRUCTURE TYPE AND MATERIAL	
(43) Main Structure Type	52
Material	5 - Prestressed concrete *
Type	2 - Stringer/Multi-beam or girder
(44) Approach Structure Type	00
Material	0 - Other / None
Type	0 - Other / None
(45) No. of Spans in Main Unit	4
(46) No. of Approach Spans	0
(107) Deck Structure Type	1 - Concrete Cast-in-Place
(108) Wearing Surface/Protective System	
Type of Wearing Surface	6 - Bituminous
Type of Membrane	0 - None
Type of Deck Protection	0 - None
AGE AND SERVICE	
(27) Year Built	1960
(106) Year Reconstructed	0
(42) Type of Service	11
On	1 - Highway
Under	1 - Highway, with or without pedestrian
(28) Lane	
On	2
Under	4
(29) Average Daily Traffic	270
(30) Year of ADT	1999
(109) Truck ADT	2 %
(19) Bypass, Detour Length	7 mi
GEOMETRIC DATA	
(48) Length of Maximum Span	75.0 ft
(49) Structure Length	236.0 ft
(50) Curb or Sidewalk Width	
Left	0.0 ft
Right	0.0 ft
(51) Bridge Roadway Width Curb to Curb	32.7 ft
(52) Deck Width Out to Out	34.7 ft
(32) Approach Roadway Width (W/Shoulders)	22.0 ft
(33) Bridge Median	0 - No median
(34) Skew	62 Deg
(35) Structure Flared	0 - No flare
(10) Inventory Route Min Vert Clear	99.99 ft
(47) Inventory Route Total Horiz Clear	32.6 ft
(53) Min Vert Clear Over Bridge Rdwy	99.99 ft
(54) Min Vert Underclear	16.00 ft
Ref:	
(55) Min Lat Underclear RT	10.5 ft
Ref:	
(56) Min Lat Underclear LT	28.0 ft
NAVIGATION DATA	
(38) Navigation Control	N - Not applicable, no waterwa
(111) Pier Protection	
(39) Navigation Vertical Clearance	0.0 ft
(116) Vert-Lift Bridge Nav Min Vert Clear	ft
(40) Navigation Horizontal Clearance	0.0 ft

CLASSIFICATION	
(112) NBIS Bridge Length	Y
(104) Highway System	0
(26) Functional Class	9 - Rural Local
(100) Defense Highway	0 - The inventory route is not
(101) Parallel Structure	N - No parallel structure exis
(102) Direction of Traffic	2 - way traffic
(103) Temporary Structure	
(105) Federal Lands Highways	0 - N/A
(110) Designated National Network	0 - The inventory route is not
(20) Toll	3 - On free road. The structu
(21) Maintain	1 - State Highway Agency
(22) Owner	1 - State Highway Agency
(37) Historical Significance	4 - Historical significance is
CONDITION	
(58) Deck	6
(59) Superstructure	6
(60) Substructure	4
(61) Channel & Channel Protection	N
(62) Culverts	N
LOAD RATING AND POSTING	
(31) Design Load	5 - MS 18 / HS 20
(63) Operating Rating Method	1
(64) Operating Rating	
Type	1 - Load Factor(LF)
Rating	50.54
(65) Inventory Rating Method	1 - Load Factor(LF)
(66) Inventory Rating	
Type	
Rating	27.86
(70) Bridge Posting	5 - Equal to or above legal loads
(41) Structure Open/Posted/Closed	A - Open, no restriction
APPRAISAL	
(67) Structural Evaluation	4
(68) Deck Geometry	6
(69) Clearances, Vertical/Horizontal	4
(71) Waterway Adequacy	N
(72) Approach Roadway Alignment	8
(36A) Bridge Railings	1 - Inspected feature meets current
(36B) Transitions	1 - Inspected feature meets current
(36C) Approach Guardrail	1 - Inspected feature meets current
(36D) Approach Guardrail Ends	1 - Inspected feature meets current
(113) Scour Critical Bridges	N - Bridge not over waterway.
PROPOSED IMPROVEMENTS	
(75) Type of Work	
(76) Length of Structure Improvement	ft
(94) Bridge Improvement Cost	\$
(95) Roadway Improvement Cost	\$
(96) Total Project Cost	\$
(97) Year of Improvement Cost Estimate	
(114) Future ADT	432
(115) Year of Future ADT	2041

INSPECTIONS *			
(90) Inspection Date	04/18/2023		
(91) Frequency	24		
(92) Critical Feature Inspection	Done	Freq. (Mon)	Date
A: Fracture Critical Detail	No		
B: Underwater Inspection	No		
C: Other Special Inspection			
* The inspection date and frequency information in this box contains the current NBI date and frequency information. Please refer to the report header for the date this inspection was conducted.			

PERFORMANCE EVALUATION

Time of Day Inspected 2:15 pm

Weather Conditions Unnumbered 73+-

Vehicles Observed All types

LIVE LOAD BEHAVIOR

Sub Horiz./ Vert. Defl (No)

Sub Vibration (No)

Super Horiz./ Vert. Defl (No)

Super Vibration (No)

APPROACH

Alignment (Good)

Pavement (Fair)

1/4" cracks and light spall

Embankment (Poor)

Approach 2 right has heavy washing

TRAFFIC SAFETY FEATURES

Bridge Railing Rating (Fair)

Transitions Rating (Good)

Guardrail Rating (Good)

Guardrail Terminal Rating (Good)

Bridge Railing:

Transitions:

Guardrail:

Guardrail Terminal:

SIGNS POSTED ON ROUTE

Paddleboards No

Vertical Clearance (<14'-6") No

Posted Height

Narrow Bridge Signs No

One Lane Bridge Signs No

Other Signs or Plaques

Weight Limit Posted Not Needed

Gross Tons

Single-unit Vehicle Tons

Multi-unit Vehicle Tons

564 Assigned Bridge Name

ATTACHED SIGNS

Sign No	Location	Text on Sign	Noted Defects
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DECK

Wearing Surface Type		Concrete	Wearing Surface Depth
Wearing Surface	(Fair)	Up to fine cracks and spall	
Deck - Structural Condition	(Fair)	Hairline cracks with efflorescence	
Parapet	(Fair)	Fine cracks	
Deck Drains	(Good)		
Expansion Joints	(Poor)	Joints on span 1-4 have material missing span 1&4 are full of debris	

SUPERSTRUCTURE

Bearing Devices	(Poor)	Abutment 1, bent3, and abutment 2 have heavy corrosion
Beams	(Fair)	Spall steel
Diaphragms	(Good)	
Superstructure Bracing	(Good)	
Alignment of Members	(Good)	

TEXTURE COAT

Earthquake Devices (Good)

ABUTMENTS

Abutment Caps	(Fair)	Fine crack(s) up to 1/16" , impending spall area(s), scaling(spalling area(s), protective coating peeling , pop outs, surface spall
Abutment Wings	(Fair)	Damage area(s) , fine crack(s) with efflorescence
Abutment Backwall	(Good)	
Abutment Plumb	(Good)	
Abutment Embankment	(Fair)	Embankment washing
Abutment Slope Paving	(Fair)	Fine crack(s) , broken areas , settling

PIERS

BENTS

Bent Caps	(Poor)	Spall to steel area(s), spalling area(s), impending spall area(s) bent 1,2, and 3
Bent Columns	(Poor)	Bent 1 column a , bent 3 column A&b spall to steel and cracks
Bent Plumb	(Good)	

Inspection Team's Summary

This is a 4 span concrete I beam bridge with concrete bridge and metal approach rails. The concrete wearing surface has up to fine cracks and spalling. The approach asphalt has up to 1/4" cracks. Spans 1-4 joints are poor due to missing or torn material. Approach 2 right side embankment is poor. The bottom deck has hairline cracks. The concrete I beams have spall to steel and impending spall. Span 4 CIB A is poor due to spalling to steel. The substructure has spalling, and spall to steel, impending spall, and up to 1/16" cracks.

Vegetation is poor.

Bridge condition is poor.

Minimum vertical clearance is 16'0".

General Inspection Comment

ELEMENTS	DESCRIPTION	UNITS	TOTAL	CS1	CS2	CS3	CS4
12	Re Concrete Deck	SF	8189	7967	222	0	0
1080	Delamination/Spall/Patched Area	SF	2	0	2	0	0
1120	Efflorescence/Rust Staining	SF	40	0	40	0	0
1130	Cracking (RC and Other)	SF	180	0	180	0	0
(12) Element record added 2015-07-14.							
(1120-12) Element record added 4/12/2021							
109	Pre Opn Conc Girder/Beam	LF	1180	1166	14	0	0
1080	Delamination/Spall/Patched Area	LF	14	0	14	0	0
(109) Element record added 2015-07-14.							
(1080-109) Element record added 9/12/2019							
205	Re Conc Column	EA	6	0	0	6	0
1080	Delamination/Spall/Patched Area	EA	3	0	0	3	0
1090	Exposed Rebar	EA	3	0	0	3	0
(205) Element record added 2015-07-14.							
(1080-205) Element record added 4/12/2021							
(1090-205) Element record added 4/12/2021							
215	Re Conc Abutment	LF	79	39	40	0	0
1080	Delamination/Spall/Patched Area	LF	20	0	20	0	0
1130	Cracking (RC and Other)	LF	20	0	20	0	0
(215) Element record added 2015-07-14.							
(1080-215) Element record added 4/12/2021							
234	Re Conc Pier Cap	LF	118	33	55	30	0
1080	Delamination/Spall/Patched Area	LF	45	0	45	0	0
1090	Exposed Rebar	LF	30	0	0	30	0
1130	Cracking (RC and Other)	LF	10	0	10	0	0
(234) Element record added 2015-07-14.							
(1130-234) Element record added 9/12/2019							
301	Pourable Joint Seal	LF	105	75	0	0	30
2320	Seal Adhesion	LF	30	0	0	0	30
(301) Element record added 9/12/2019							
(2320-301) Element record added 9/12/2019							
311	Moveable Bearing	EA	40	0	0	0	0

ELEMENTS	DESCRIPTION	UNITS	TOTAL	CS1	CS2	CS3	CS4
1000	Corrosion	EA	40	0	0	40	0
515	Steel Protective Coating	SF	40	0	0	40	0
9999	Unknown	EA	40	0	0	40	0
(311) Element record added 2015-07-14.							
(1000-311) Element record added 9/12/2019							
(515-311) Element record added 4/12/2021							
331	Re Conc Bridge Railing	LF	472	422	50	0	0
1130	Cracking (RC and Other)	LF	50	0	50	0	0
(331) Element record added 2015-07-14.							
(1130-331) Element record added 9/12/2019							

Equipment List

General Inspection

☐ Pocket knife

☐ Sounding/chipping hammer

☐ Chain drag

☐ Range pole

☒ Yes 25' rod - depth and clearance

Visual Aid

☐ Binoculars

☐ Flashlight

☐ Magnifying glass

☐ Hand mirror

Cleaning

☐ Wisk broom

☐ Wire brush

☐ Flat bladed screwdriver

☐ Hand shovel

☐ Penetrating oil (WD-40, etc.)

Tools For Access

☐ Ladders

☐ Rope

☒ Yes Waders

☐ Machete or bush axe

Comment

Tools For Measuring

☒ Yes Masonry/Wood Ruler

☐ 6' Pocket Tape

☐ 25' and 100' Tape

☐ Calipers

☒ Yes Thermometer

☐ Carpenter's Level

☐ String and Weighted line (plumb bob)

Special Purpose Equipment

☐ Reach All

☐ Bucket Truck

☒ Yes Traffic control

☐ Boat

☐ Sonar depth finder

☐ Increment borer

☐ Survey equipment

☐ Safety Harness

☐ Climbing equipment

☐ Dye penetrant

☐ Drone

Special Purpose Equipment



Span 3 beam e spall to steel



Bent 3 column b



Rear bent 2



Bent 2 impending spall



Bent 2 column a spall



Bent 2 column b cracking



Bent 2 spall



Span 2 beam d



Bent 1 bearing E spalled to steel



Abutment 1 bearing E. Heavy Corrosion



Bent 3 Column B spalled to steel on Right side Direction of Route



Bent 3 cap spalled to steel on Left end



Bent 3 column A spalled to steel on Left side Direction of Route



Bent 1 Pile B rear side



Bent 1 cap spalled to steel on rear side over pile A



Bent 1 Cap spalled to steel on rear side over pile B



Bottom of cap Bent 1 spalled to steel and beginning to Spall



Bottom of cap Bent 1. Delamination



Bent 1 Cap spalled to steel on Left side and on the bottom



Bent 1 Left end of of Cap spalled



Bent 1 Column A spalled to steel on Left side



Bent 1 column A Right side. Beginning to Spall and spalled to steel



Bent 1 column B beginning to Spall. Front side



Abutment 1 embankment washing at right side slope paving



Abutment 1 embankment washing at right side slope paving



Abutment 1 looking back



Abutment 1 cap fine cracks up to 1/16"



Abutment 1 riser block fine crack up to 1/16"



Abutment 1 fine cracks up to 1/16"



Abutment 1 cap Spall to steel



Abutment 1 riser block impending spalls



Abutment 1 riser block fine crack up to 1/16"



Opposite direction of route on I40



Direction of route on I40



Span 1 bottom deck



Span 1 concrete I-beam "A" impending spall and spall to steel



Riser block on abutment 1 impending spall and 1/8" cracking



Span 1 bottom deck looking back diaphragm impending spall



Span 1 bottom deck looking back diaphragm impending spall and spall to steel



Span 1 bottom deck looking ahead diaphragm spall to steel



Span 2 concrete I-beam "E" spall to steel



Span 2 bottom deck



Span 2 concrete I-beam "A" spalling



Bent 3 rear spall to steel and impending spall



Abutment # 2, wing wall , Right side , Embankment washing below and back under wing



Abutment # 2 poor bearing under beam E



Bent # 3



Abutment # 2 poor bearing under beam A



Abutment # 2 pop outs, surface spall



Abutment # 2 cap, fine crack(s)



Abutment # 2 cap, fine crack(s)



Abutment # 2 cap, scaling



Abutment # 2 cap, scaling



Abutment # 2 embankment washing, Embankment washing below and back under slope pavement



Abutment # 2 , Embankment washing below and back under slope pavement



Bent # 3 poor bearing under A-E



Bent # 3 Column(s) B, spall to steel area(s)



Bent # 3 cap, spall to steel area(s)



Bent # 3 cap, spall to steel area(s)



Bent # 3 cap, spall to steel area(s)



Bent # 3 cap, impending spall area(s)



Bent # 3 crash wall/ parapet , surface steel area(s)



Bent # 3 cap, spall to steel area(s) , spalling area(s) , fine crack(s)



Bent # 3 cap, spalling area(s) in patched area



Bent # 3 cap, spall to steel area(s)



Direction of route



Approach 1



View across top deck



Span 1 joint



Span 1 joint material missing



Left side



Span 2 cracks



Span 2 joint



Span 2 parapet cracks



Right side



Span 3 cracks



Span 3 joint



Span 3 joint and spall



Span 3 cracks



Approach 2 asphalt



Approach 2 right embankment washing



Opposite direction of route



Span 4 joint



Span 2 span



Span 3 crack



Span 1 joint



Span 4



Spall steel on back wall span 4



Spall steel beam a span 4



Span 3

Maintenance Recommendations

Date Added	Recommendation	Priority
04/17/2023	REPAIR COLUMN "A" & "B" AT BENT NO. 3	
04/17/2023	CLEAN AND SEAL ROADWAY EXPANSION JOINTS.	
04/17/2023	CLEAN AND PAINT BEARINGS AT BENT NO.1 - 3	
04/17/2023	REPLACE MISSING BOLTS IN BEARINGS ABUTMENT NO.1 & 2	
04/17/2023	REPLACE MISSING BOLTS IN BEARING "ALL" AT BENT NO.1 - 3	
04/17/2023	REPAIR COLUMN "A" AT BENT NO. 1	
04/17/2023	CUT AND REMOVE VEGETATION FROM CHANNEL	
08/29/2011	UNDERPASS SUBSTRUCTURE PROTECTION GUARDRAILS ARE SUBSTANDARD	
04/17/2023	REPAIR EMBANKMENT EROSION ON RIGHT SIDE OF APPROACH NO. 2	
04/17/2023	CLEAN AND PAINT ALL BEARINGS	
04/17/2023	REPLACE CONCRETE RISER BLOCKS AT BENT NO.3	
04/17/2023	REPAIR CAPBEAM AT BENT NO.1 - 3	
04/17/2023	REPLACE CONCRETE RISER BLOCKS AT ABUTMENT NO.1	

MADISON COUNTY

57-10040-0754

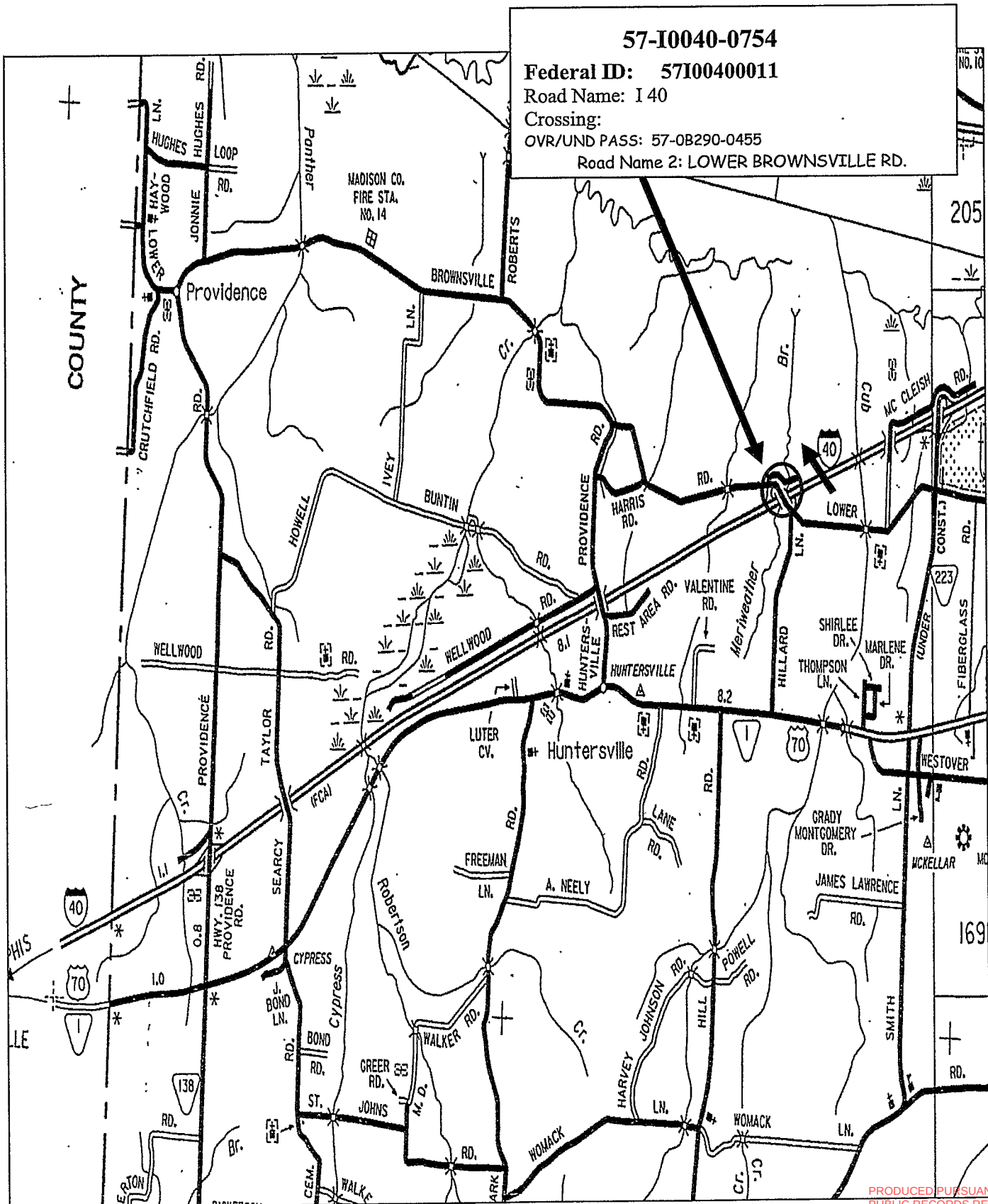
Federal ID: 57I00400011

Road Name: I 40

Crossing:

OVR/UND PASS: 57-0B290-0455

Road Name 2: LOWER BROWNSVILLE RD.



BRIDGE INSPECTION REPORT

Form BIR 3.0
(Rev. 9-22-98)
DT-0069

Field Report No.: 97

Date: 4/17/23

Previous Report No.: 96

Date: 4-12-21

Co. Seq: 01

Plans: YES (X) NO ()

Bridge No. 57100400011
Eleven Digit No.

Bridge Location No. 57 - 10040 - 0754

Co. Route Log Mile

57 - 0B290 - 0455 1
OVER/UNDER PASS

Road Name _____ Feature Intersected _____ CITY _____
Year Constructed 1960 County MADISON Maint. Dist: 48 Maint. Resp: 01
Year Widened _____ Year Rehabilitated _____

Structure Name (If Named) _____

FEATURES

Wearing Surface Concrete (X) Timber () Asphalt () Depth _____ (in.)
Flared Width Yes () No (X) Median Width Open () None (X) Closed ()
Navigational Control Yes () No (X) Bridge Skew 62L ° LT () RT ()
Structure Type (Main Span) CONCRETE I. BEAM
Structure Type (Appr. Spans) _____
No. Main Spans 4 No. Approach Spans _____
Maximum Span Length 75.0 (**. * ft.)
Total Length 236.0 (**. * ft.)

INSPECTORS

1. Ellison (TIL)
2. Hayes
3. Monten
4. Castellano
5. James
6. Patrick
7. _____
8. _____

WIDTHS (*. * ft.)

Deck Out-to-Out 34.7
Roadway Curb/Curb _____
Roadway Rail/Rail 32.7
Sidewalk Rt. _____ Lt. _____
*Approach Roadway 22.0
*(Does Not Include Shoulders)
Approach Shoulder Rt. 6.0
Lt. 6.0

CLEARANCES

Min. Vertical Clearance over Deck _____ (ft.-in.)
Min. Vertical Under Clearance _____ (ft.-in.)
Min. Lateral Under Clearance Rt. _____ (*. * ft.)
Min. Lateral Under Clearance Lt. _____ (*. * ft.)

FRACTURE CRITICAL: _____
(If Yes, Include BIR 3.9)

NBIS Bridge Length (<25 ft.) _____ (ft.-in.)

UNDERWATER INSPECTION

To Be Performed By: _____ Date _____

DOT FIELD TEAM () CONTRACT DIVERS () NONE REQUIRED (X)

Change in Structural Condition: Yes () No (X)

Major Repairs Made: Yes () No (X)

COMMENTS:

LATITUDE: N35 ° 37.9766 '

LONGITUDE: W88 ° 56.9350 '

G.P.S. Location

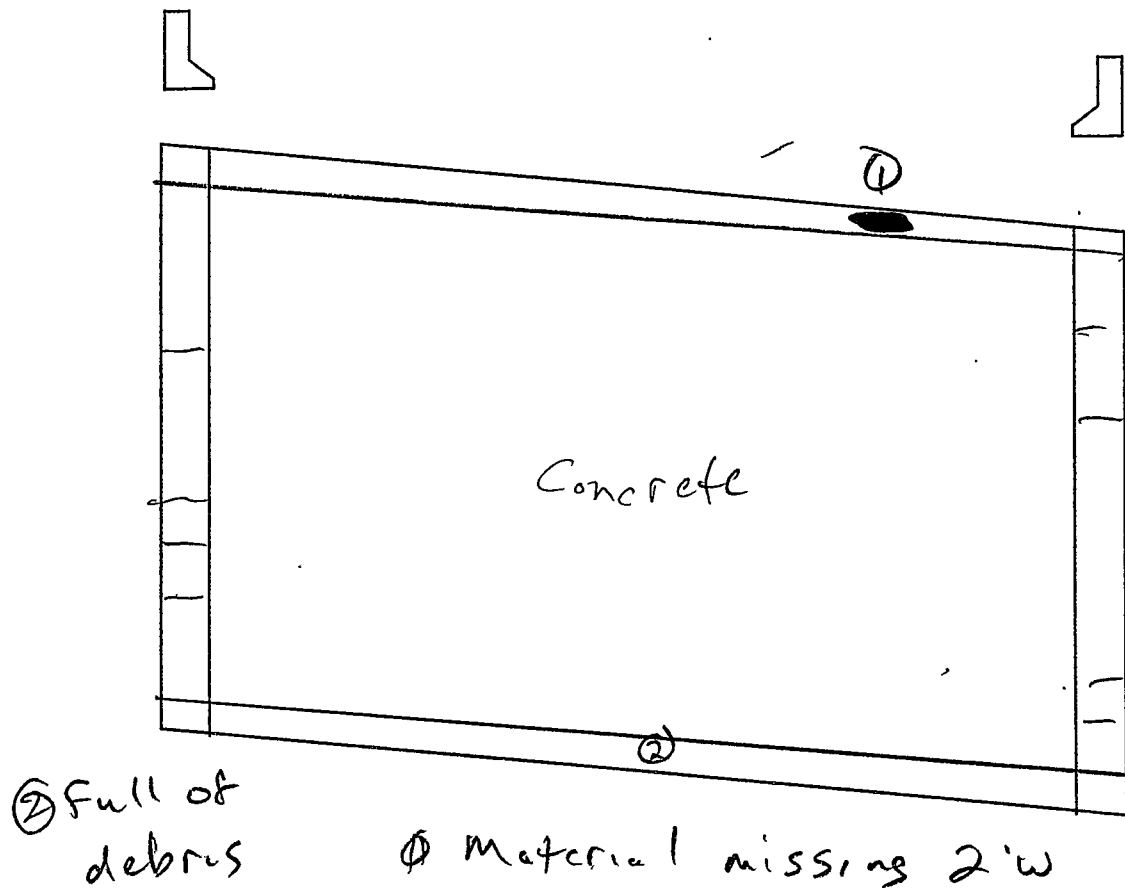
BRIDGE RATING: () () (X) ()

GOOD FAIR POOR CRITICAL

Supervising Bridge Inspector: _____

PRODUCED PURSUANT TO
PUBLIC RECORDS REQUEST
This document is covered by 23 USC §407
And its production pursuant to a public
Document records request does not
Waive the provisions of §407

57 I-40 7.54
 Bridge No. Co. Route Log Mile R/L Skew SPAN. NO. 1

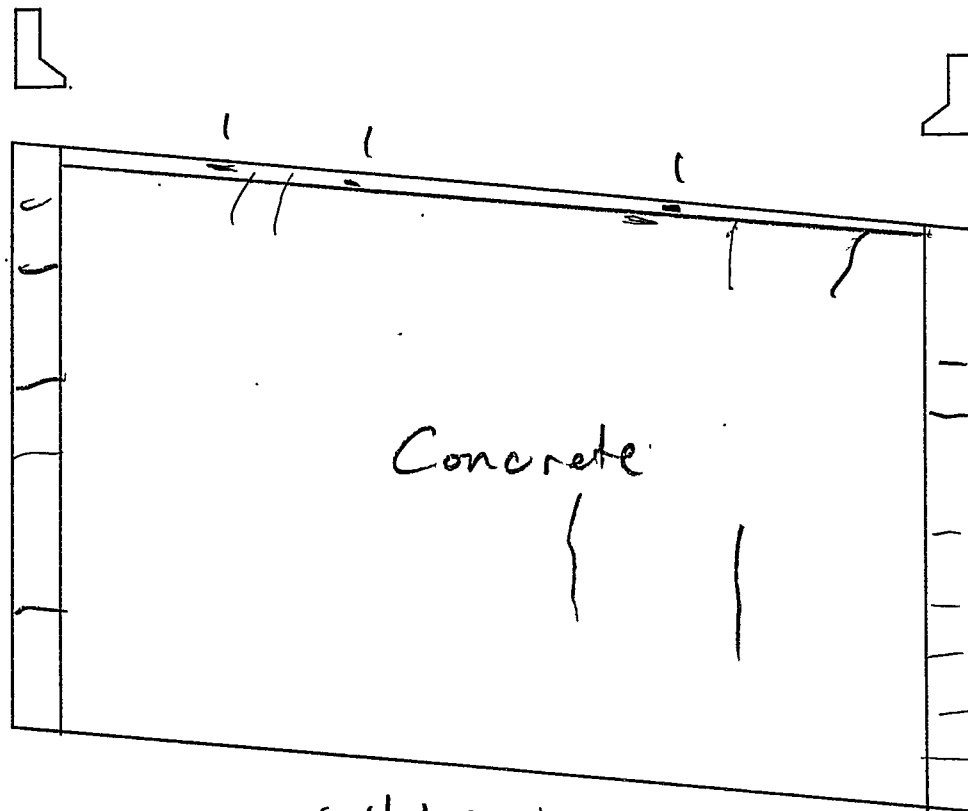


ELEMENT	RATING	COMMENT
TOP DECK	① G F P C	
PARAPET	G ① F P C	Fine cracks
DRAINS	① G F P C	
JOINTS	G F ① P C	① ②
	G F P C	

57 F-40 7.54

Bridge No. Co. Route Log Mile R/L Skew

SPAN. NO. 2



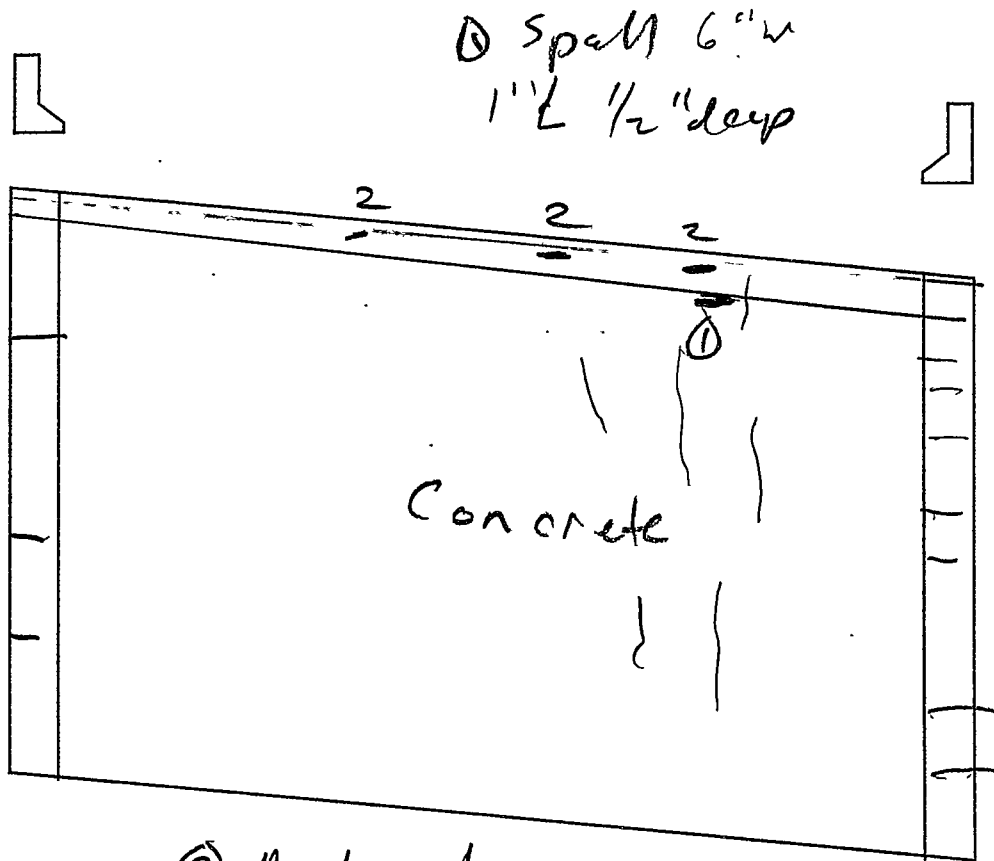
6 Holes in material
6-8" w

ELEMENT	RATING	COMMENT
TOP DECK	G F P C	Hairline cracks Span 6" w 1" L 1/2" deep
PARAPET	G F P C	Fine cracks
DRAINS	G F P C	Nil
JOINTS	G F P C	①
	G F P C	

57 I-40 7.54

Bridge No. Co. Route Log Mile R/L Skew

SPAN. NO. 3



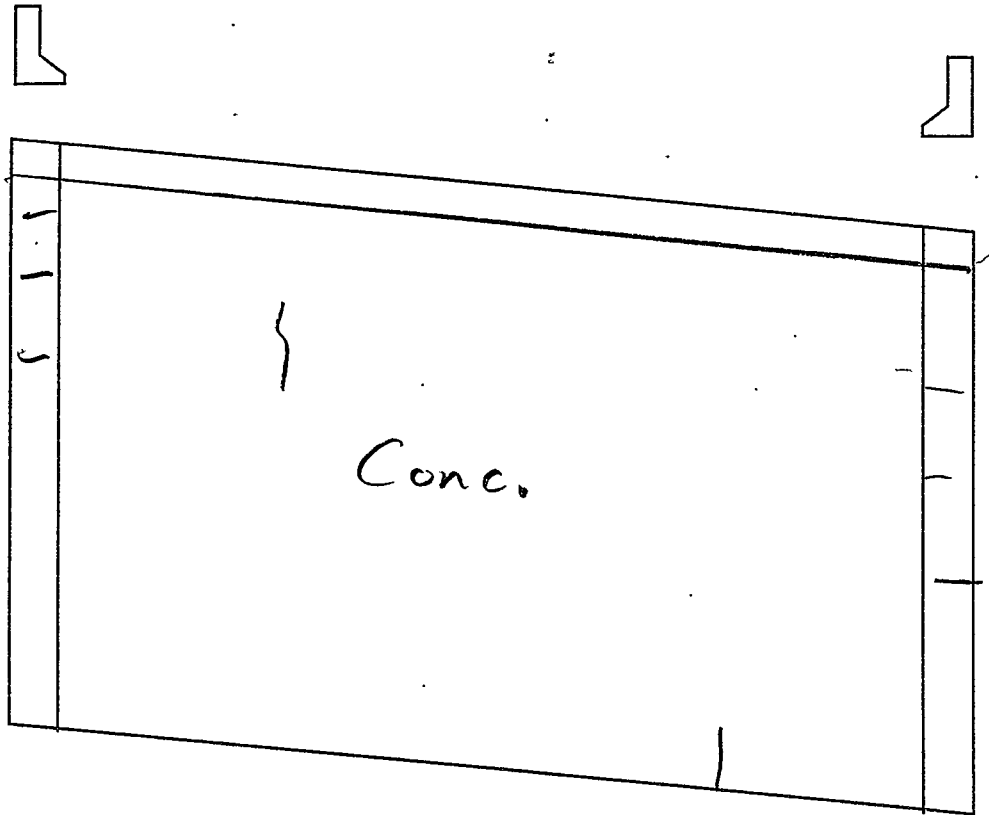
② Material missing 6-8" L

ELEMENT	RATING	COMMENT
TOP DECK	G <u>F</u> P C	Fine cracks ①
PARAPET	G <u>F</u> P C	Fine cracks
DRAINS	G F P C	N/A
JOINTS	G F <u>P</u> C	②
	G F P C	

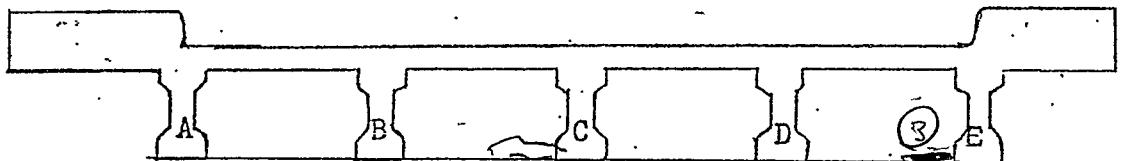
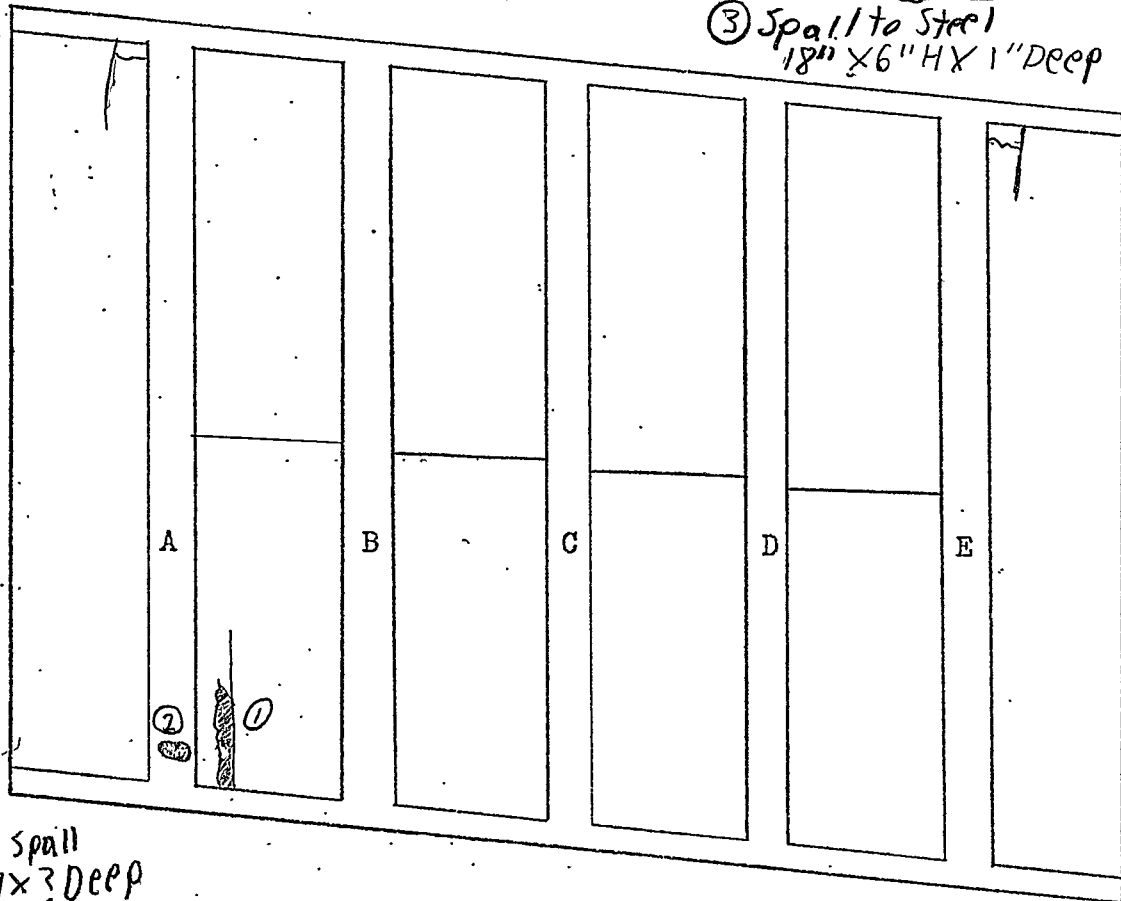
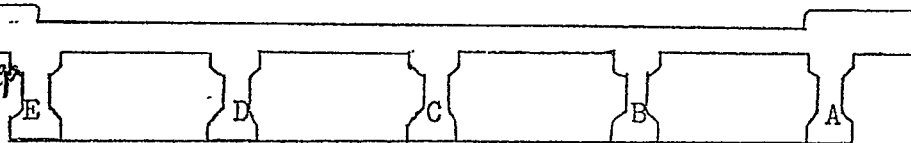
57 I-40 7.54

Bridge No. Co. Route Log Mile R/L Skew

SPAN, NO. 4



ELEMENT	RATING	COMMENT
TOP DECK	G F P C	Hand line cracks
PARAPET	G F P C	Fine cracks
DRAINS	G F P C	
JOINTS	G F P C	100% full of debris
	G F P C	

BR. NO. 57 140 7.54SK. 62° LT.SPAN NO. 1③ Spall to Steel
18" x 6" H x 1" Deep① Impending spall
4' L x 5" H x 3" Deep② Spall to Steel
1' W x 6" L x 1/4" Deep

ELEMENT

RATING

COMMENT

BOTTOM DECK

G F P C

CONC. I. A
BEAMS B

G F P C

see ① + ② + H/L

C

G F P C

D

G F P C

E

G F P C

H/L crack

DIA.

G F P C

EQ

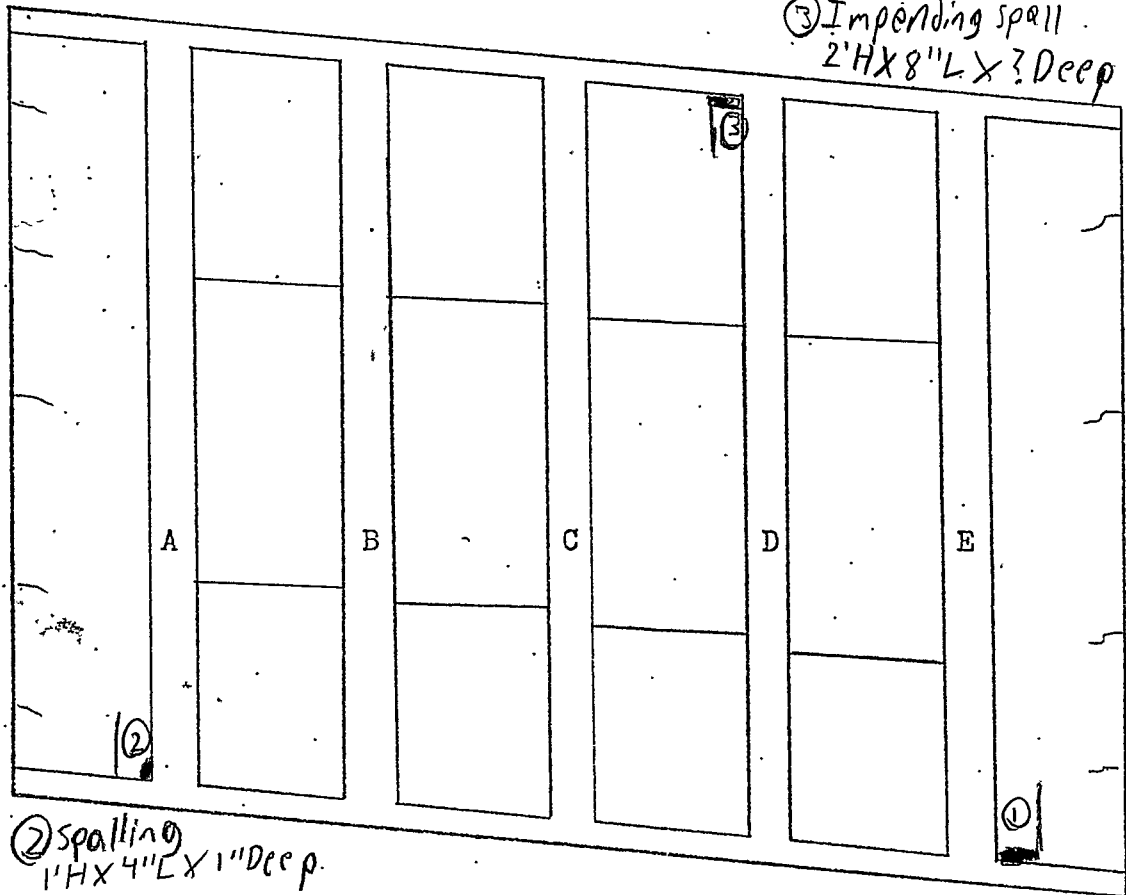
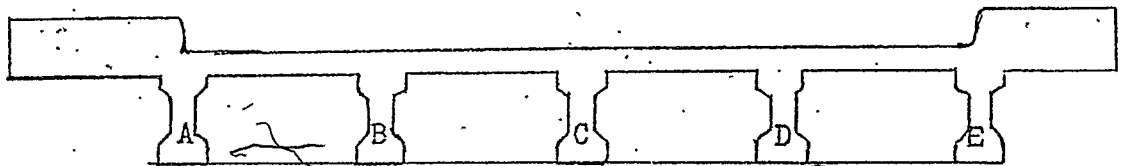
G F P C

BACKWALLS

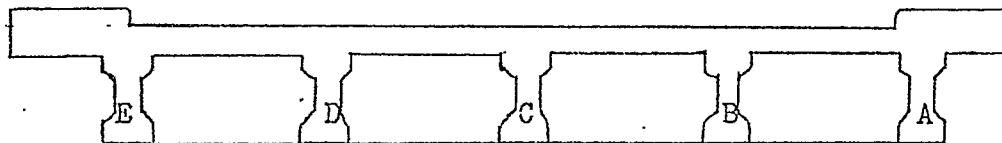
G F P C

up to Fine cracks + see ③ + Impending Spall

BR. NO. 57 1340 7157 SK. 62° LT. SPAN NO. 2



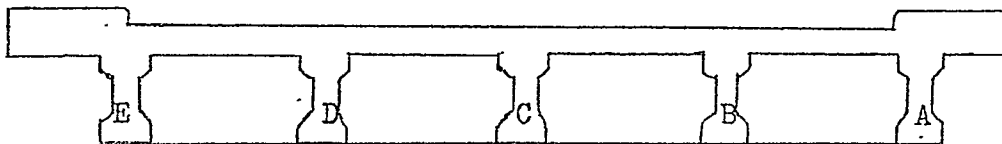
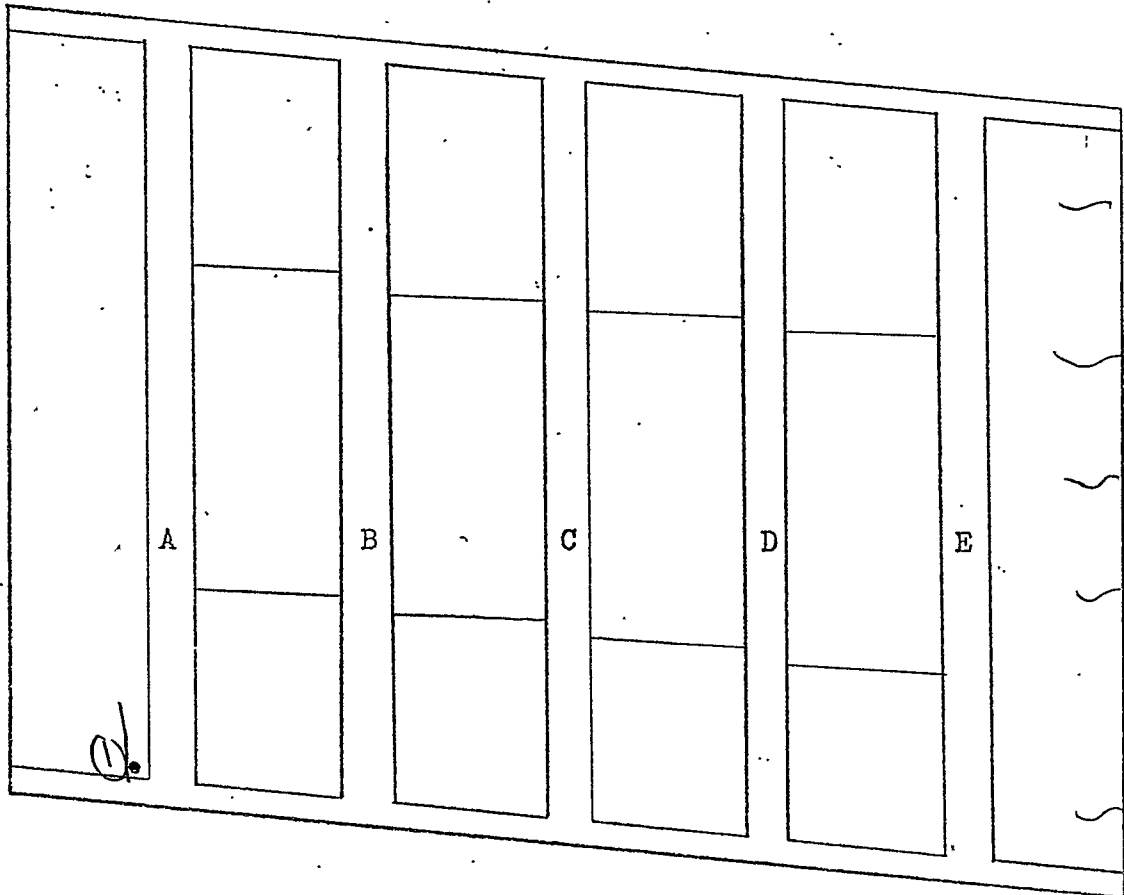
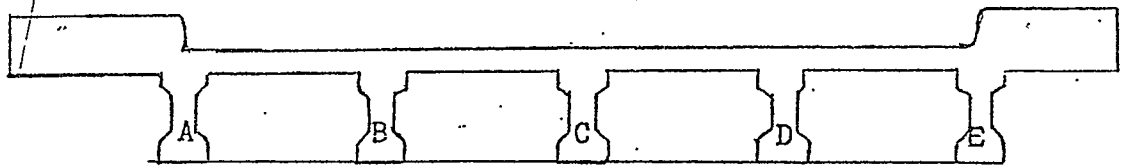
② Spalling
1'H X 4" L X 1" Deep



ELEMENT	RATING	COMMENT
BOTTOM DECK	Ⓒ F P C	H/L eff in over hang
CONC. I. BEAMS	A G Ⓔ F P C	see ②
	B G F P C	
	C G F P C	see ③
	D G F P C	
	E G Ⓔ F P C	see ①
DIA.	Ⓒ F P C	
BACKWALLS EQ	G F P C	

① Spall to Steel
3'H X 6" L X 1" Deep

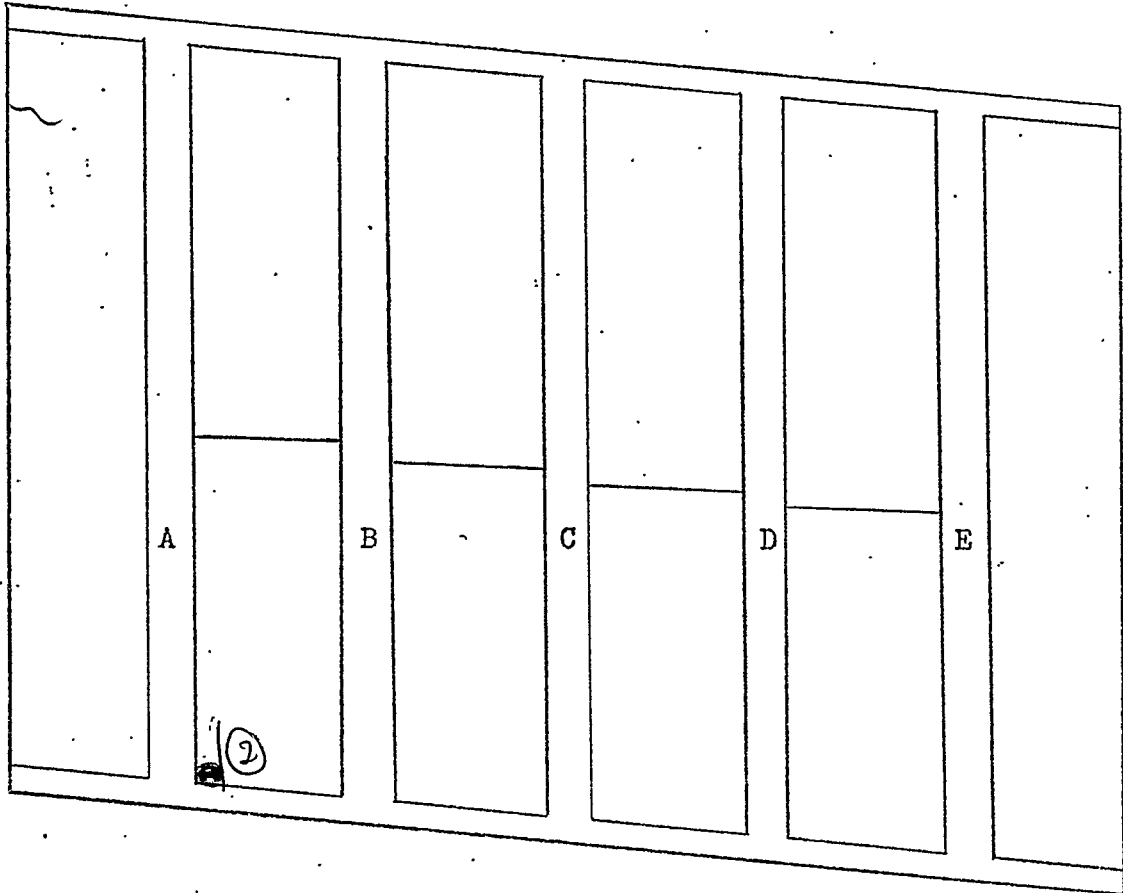
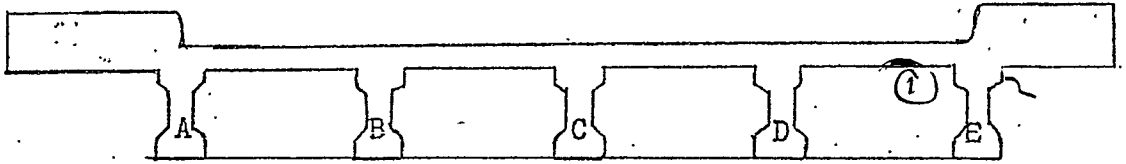
BR. NO. 57 E-40 7-54 SK. 62° LT. SPAN NO. 3



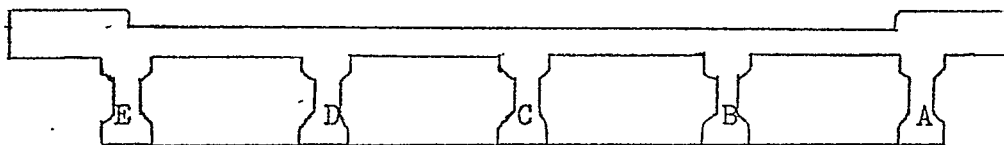
ELEMENT		RATING	COMMENT
BOTTOM DECK		G (F) P C	HL FA
CONC. I. BEAMS	A	G (F) P C	Sec ①
	B	G (F) P C	
	C	G (F) P C	
	D	G (F) P C	
	E	G (F) P C	
DIA.		G (F) P C	
BACKFILL		G (F) P C	

① Span Steel
 $\frac{10''}{h} \times \frac{2''}{w} \times \frac{1}{2}''$

BR. NO. 57 ~~748~~ ~~759~~ SK. 63° LT. SPAN NO. 4



↑
DIR. OF ROUTE



ELEMENT

RATING

COMMENT

BOTTOM DECK

(G) F P C

hl

CONC. I. BEAMS

A
B
C
D
E

(G) F P C
(G) F P C
(G) F P C
(G) F P C
(G) F P C

See (2)

DIA.

EQ

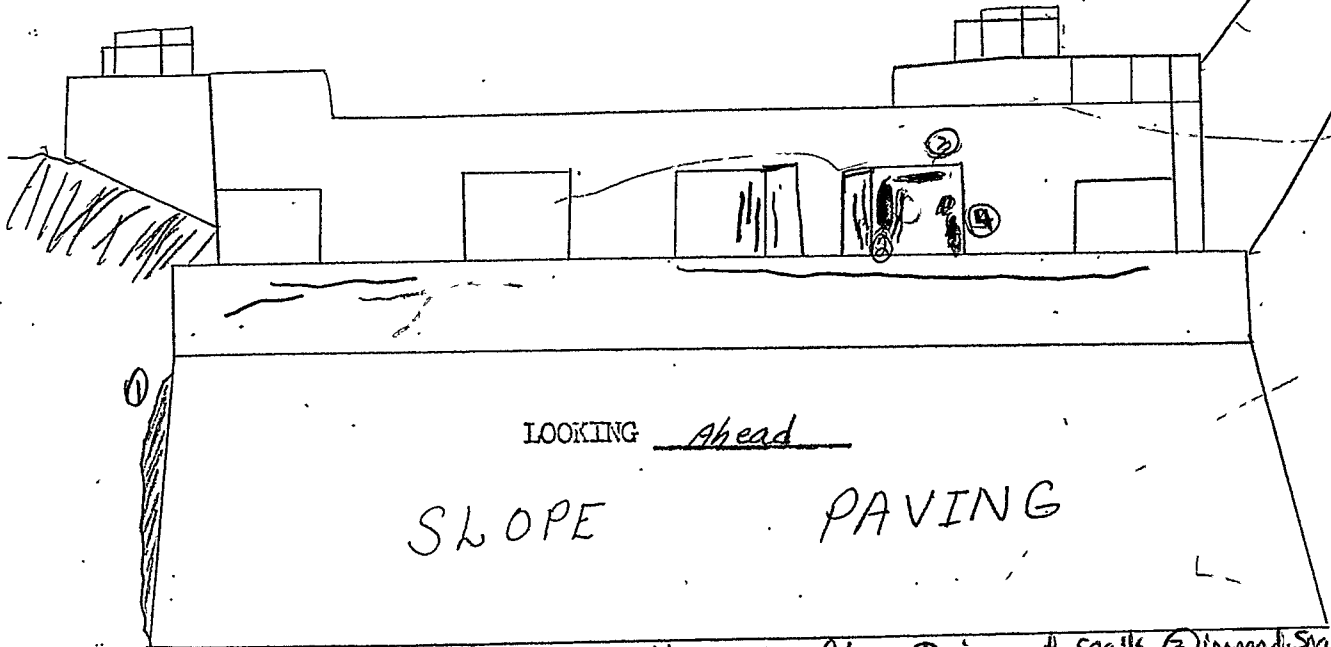
BACKWALLS

(G) F P C
(G) F P C
(G) F P C

See (1), hl

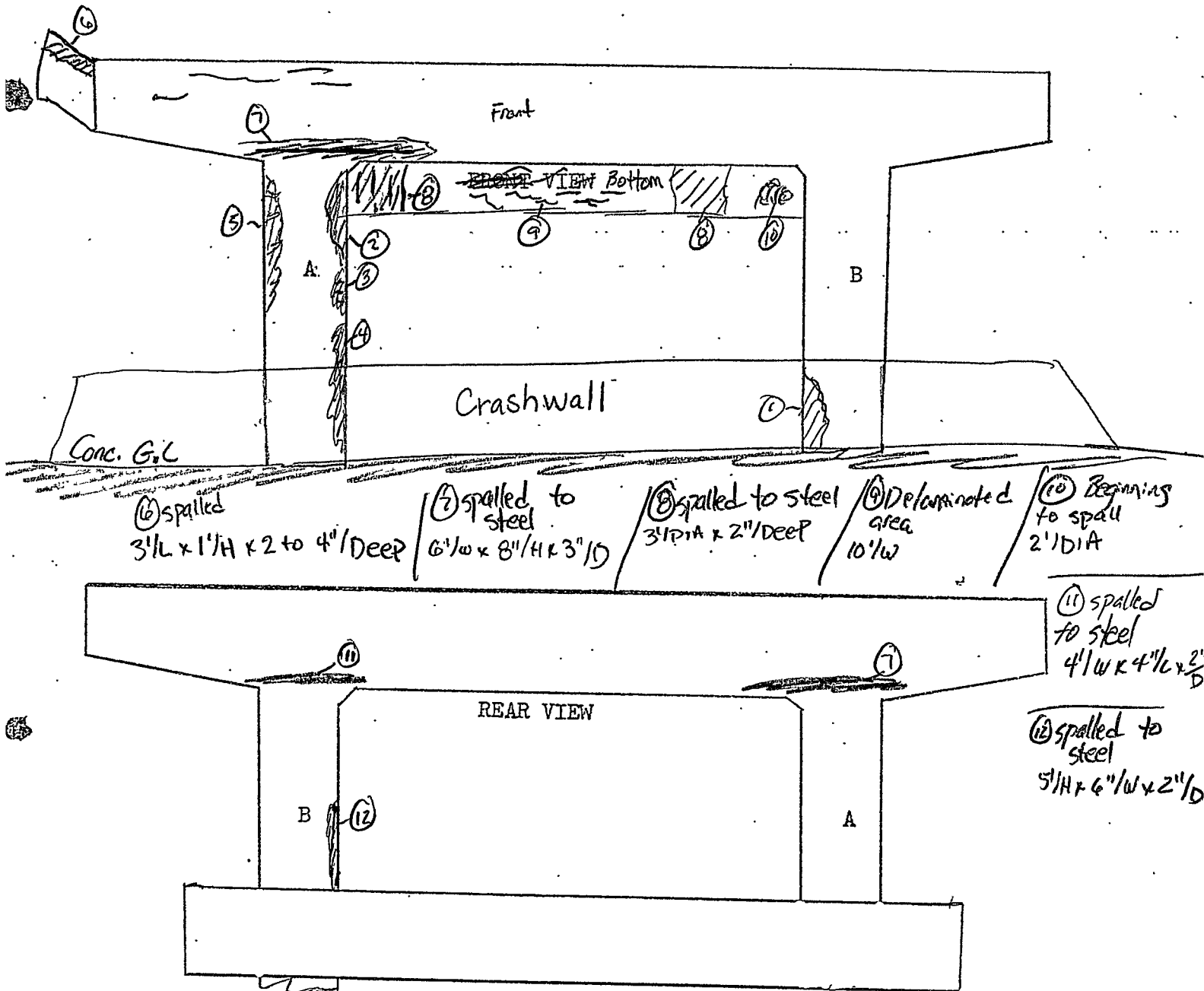
① Spall Steel
 $\frac{1ft}{L} \times \frac{10''}{W} \times \frac{1''}{D}$

② Spall Steel
 $\frac{2ft}{L} \times \frac{3ft}{W} \times \frac{2''}{D}$

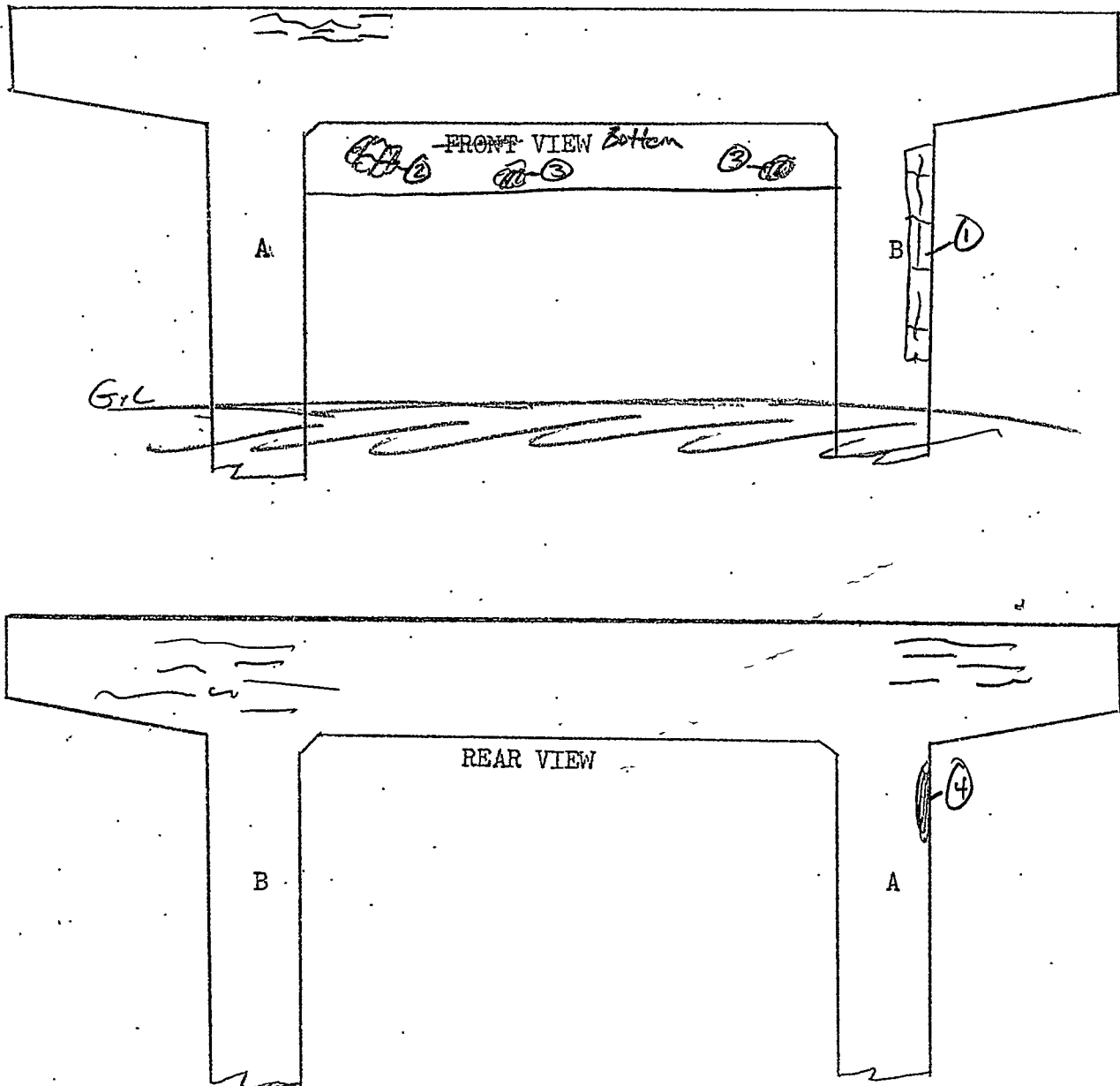


① Embankment washing $\frac{20'}{L} \times \frac{1'}{W} \times \frac{7'}{H} \times \frac{2'}{Btu}$ ② impend. spall $\frac{2'}{H} \times \frac{1'}{W} \times \frac{2'}{D}$ ③ impend. spalls $\frac{8'}{H} \times \frac{1'}{W} \times \frac{2'}{D}$

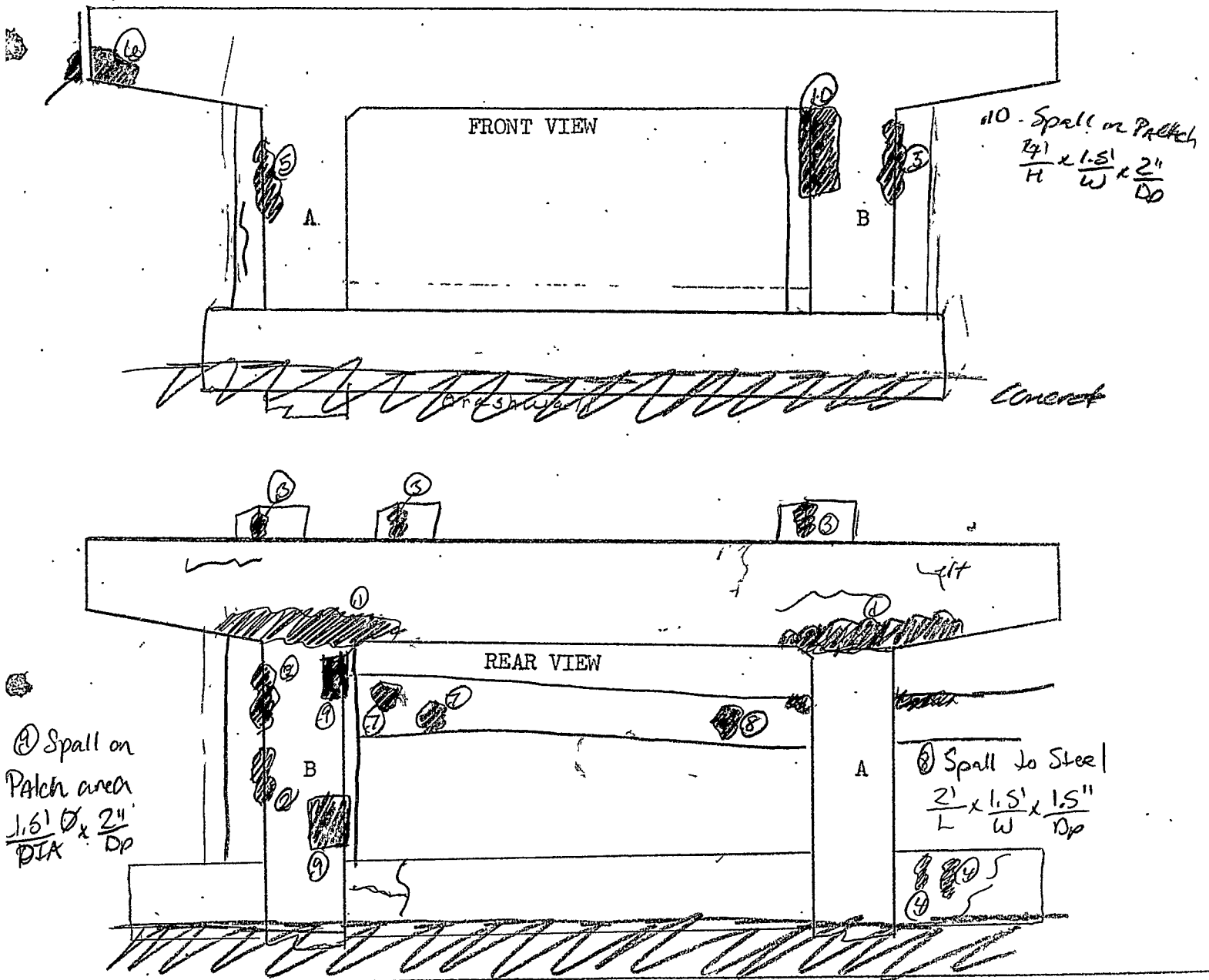
ELEMENT	RATING	COMMENT
BEARINGS	G F P C	heavy corrosion & section loss ④ impend. spall $\frac{1'}{H} \times \frac{8'}{W} \times \frac{2'}{D}$
CAP	G F P C	fine cracks up to $\frac{1}{16}$ " & ② ③ + ④
PILING	G F P C	N/A
WINGS	G F P C	
VEG.	G F P C	tree growth 4/1080
EMBANKMENT	G F P C	see ①
RIP - RIP	G F P C	
SLOPE PAVING	G F P C	Fine cracks, settling



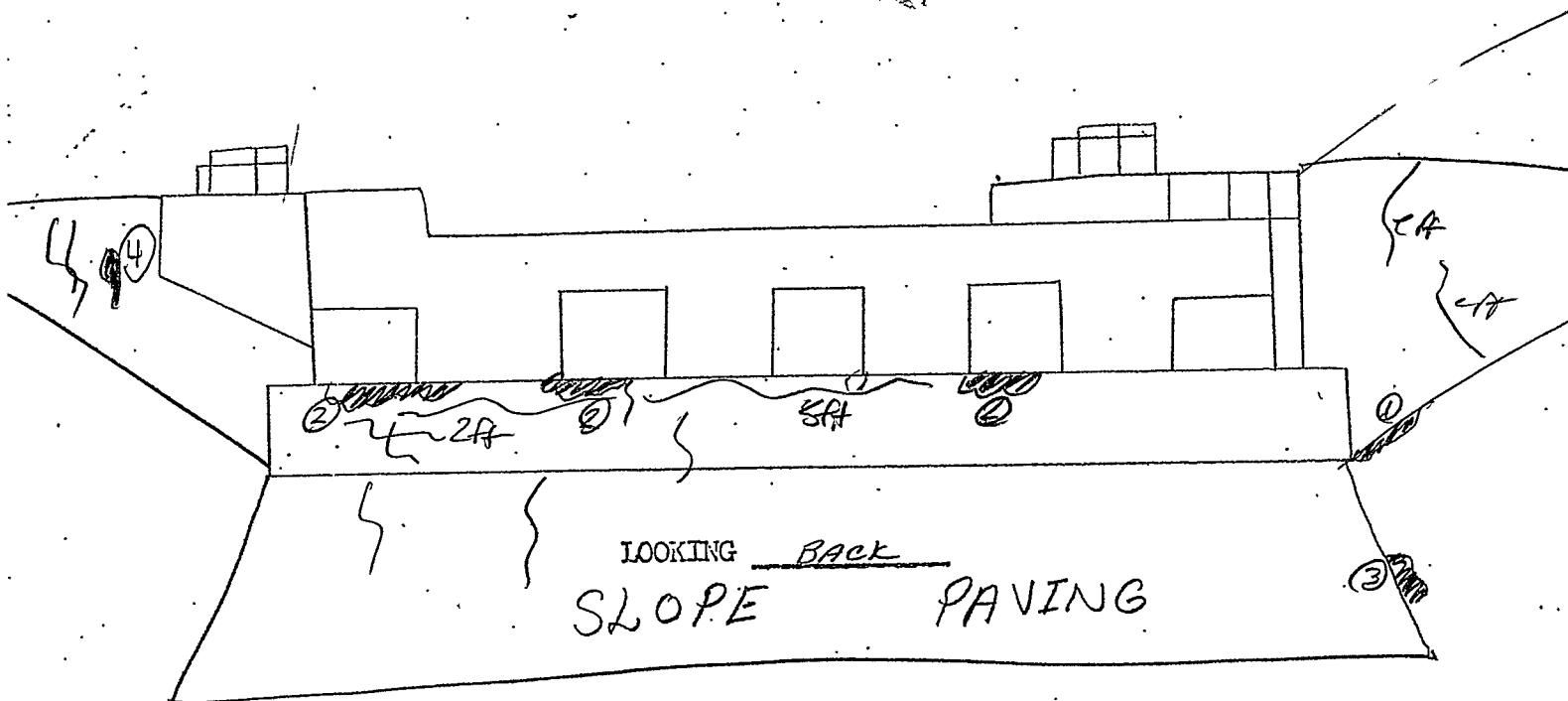
ELEMENT		RATING	COMMENT
BEARINGS		G F P C	
CAP		G F P C	see 6, 7, 8, 9, 10, 11 & fine cracks
COLUMNS	A	G F P C	see 2, 3, 4 & 5
	B	G F P C	see 1
Crashwall		G F P C	



ELEMENT		RATING	COMMENT	
BEARINGS		G (F) P C	Medium Cor	① Patched Area with fine cracks 8' H x 8' wide
CAP		G (F) P C	see ② & ③ + fine cracks	
COLUMNS	A	G (F) P C	see ④	② spalled to steel 2' 1/2 H x 2' deep
	B	G (F) P C	see ①	③ spalled to steel 1' 1/2 H x 2' deep
				④ spalled 3' 1/2 H x 4' 1/2 W x 1' deep



ELEMENT		RATING	COMMENT
BEARINGS		G F (P) C	Heavy Corrosion / Section loss under beam A-E
CAP		G F (P) C	See 1, 10, fine cracks, 3
COLUMNS	A	G F (P) C	see 5, fine cracks
	B	G F (P) C	see 2, 10, 10
Crashwall		(G) F P C	See 1, cracks (Hair/Ans)
Riserblocks		Poor	

BR. NO. 57 7-10 259 SK 62°4 ABUT NO. 2


ELEMENT	RATING	COMMENT
BEARINGS	G F (P) C	Heavy Corrosion / Section Loss, under beam A, D, E
CAP	G (F) P C	Pop out spall, protective coating peeling
PILING	G, F P C	N/A
WINGS	G (E) P C	See (4), fine crack w/leak
VEG.	G F (P) C	Heavy Growth
EMBANKMENT	G (F) P C	See (3), (1)
RIP - RAP	G (F) P C	
SLOPE PAVING	G (F) P C	Fine cracks,
EQ	Good	

Emo. washing under wing

① WING

$\frac{3' \times 0.5'}{L} \times \frac{2'}{below} \times \frac{1'}{back} \times \frac{1'}{under}$

② Sealy (up to)

$\frac{5'}{W} \times \frac{1'}{L} \times \frac{1'}{W}$

③ Em. Washing

$\frac{1.5'}{back} \times \frac{1'}{below} \times \frac{1.2'}{W}$

under pavement

④ Broken

$\frac{8'}{H} \times \frac{5'}{W} \times \frac{1'}{D}$

INSPECTION REPORT FOR UNDERPASS ROUTE

Form BIR 3.0A

(Rev. 9-22-98)

DT-1443

Field Report No. 27Date 4/17/23Previous Report No. 26Date 4-10-21Bridge No. 57I00400011

Eleven Digit No.

57 - I0040 - 0754

Co. Route Log Mile

over/
under57 - 0B290 - 0455

Co. Route Log Mile

or

Co. Route Log Mile

or

Co. Route Log Mile

Railroad/Walkway

County Madison

Structure Name (If Named) _____

Year Constructed 1960

Year Widened _____

Year Rehabilitated _____

GEOMETRIC FEATURES UNDER BRIDGE

(*. * ft. unless otherwise noted)

① W.B.

Divided Highway LEFT RDWY (X) RIGHT RDWY () N.A. ()

Type of Wearing Surface CONCRETE () ASPHALT (X) GRAVEL ()

Width of Approach Traveled Roadway 24' ft. (Does Not Include Shoulders)Width of Median if Divided Highway 59' ft.Approach Shoulder Width 10.5 ft. Right 4 ft. Left*Horizontal Clearance Under Bridge 63 ft. 6 in.*Distance Between Pier Protection
Guardrail and Substructure.5 ft. Right 7' ft. Left

*Width of Sidewalk Under Bridge _____ ft. Right _____ ft. Left

*Minimum Vertical Clearance: 16 ft. 0 in.

*Show on Sketch

TRAFFIC SAFETY FEATURES FOR UNDERPASS ROUTE

					STANDARD	SUB-STANDARD	NON EXIST
Pier Protection Railing or Parapet	(G)	F	P	C	()	(X)	()
Approach Guardrail Transitions	(G)	F	P	C	()	(X)	()
Approach Guardrail	(G)	F	P	C	()	(X)	()
Approach Guardrail Terminal	(G)	F	P	C	(X)	()	()

SIGNING FOR UNDERPASS ROUTE

Paddleboards YES () NO (X) NEEDED ()

Vertical Clearance (<14'-6") YES () NO (X) NEEDED ()

Narrow Passage YES () NO (X) NEEDED ()

One Lane Passage YES () NO (X) NEEDED ()

Other Underpass Signs Needed

INSPECTORS

1. Ellison
2. _____
3. _____
4. _____
5. _____
6. _____

INSPECTION REPORT FOR UNDERPASS ROUTE

Form BIR 3.0A

(Rev. 9-22-98)

DT-1443

Field Report No. 27 Date _____
Previous Report No. 26 Date 4-12-21

Bridge No. 57I00400011 57 - I0040 - 0754 over/ 57 - 0B290 - 0455
 Eleven Digit No. Co. Route Log Mile under Co. Route Log Mile
 or - - or - -
 Railroad/Walkway Co. Route Log Mile Co. Route Log Mile
 County Madison Structure Name (If Named) _____
 Year Constructed 1960
 Year Widened _____ Year Rehabilitated _____

GEOMETRIC FEATURES UNDER BRIDGE (*.ft. unless otherwise noted)

Divided Highway LEFT RDWY () RIGHT RDWY (X) N.A. () E.B. (2)
 Type of Wearing Surface CONCRETE () ASPHALT (X) GRAVEL ()
 Width of Approach Traveled Roadway 24 ft. (Does Not Include Shoulders)
 Width of Median if Divided Highway 59' ft.
 Approach Shoulder Width 10.5' ft. Right 4 ft. Left
 *Horizontal Clearance Under Bridge 63 ft. 6 in.
 *Distance Between Pier Protection Guardrail and Substructure 5' ft. Right 7' ft. Left
 *Width of Sidewalk Under Bridge _____ ft. Right _____ ft. Left
 *Minimum Vertical Clearance: 16 ft. 1 in.
 *Show on Sketch

TRAFFIC SAFETY FEATURES FOR UNDERPASS ROUTE

	STANDARD	SUB-STANDARD	NON EXIST
Pier Protection Railing or Parapet	(G) F P C ()	(X)	()
Approach Guardrail Transitions	(G) F P C ()	(X)	()
Approach Guardrail	(G) F P C ()	(X)	()
Approach Guardrail Terminal	(G) F P C (X)	()	()

SIGNING FOR UNDERPASS ROUTE

Paddleboards YES () NO (X) NEEDED ()
 Vertical Clearance (<14'-6") YES () NO (X) NEEDED ()
 Narrow Passage YES () NO (X) NEEDED ()
 One Lane Passage YES () NO (X) NEEDED ()
 Other Underpass Signs Needed _____

INSPECTORS

1. Elkson
 2. _____
 3. _____
 4. _____
 5. _____
 6. _____

Form BIR 3.0A (Continued)

Date _____

(Rev. 9-22-98)

DT-1443

57 - 10040 - 0754
Co. Route Log Mile

over/
under

57 - 0B290 - 0455
Co. Route Log Mile

or - -
Co. Route Log Mile

or - -
Co. Route Log Mile

Other Signs or Plaques: _____

Comments Regarding any Problems with Signing: _____

BRIDGE FEATURES (*.* ft.)Bridge Skew 62L °Structure Type (Main Span) CONCRETE I. BEAM No. Main Spans 4

Structure Type (Appr.Spans) _____ No. Appr. Spans _____

Maximum Span Length 75.0 (ft.) Total Length 236.0 (ft.)Width of Bridge Out-to-Out 34.7 (ft.) Right Angle to Centerline of Bridge

Width of Bridge Along Skew _____ (ft.) (If Unable to Measure at Right

Number of Lanes/Tracks on Bridge 2 Angle to Centerline of Bridge)**BRIDGE CONDITION:** G F P CDoes Potential Exist for Elements from Bridge Falling on Roadway Beneath YES () NO (☒)Does Potential Exist Because of Deteriorated Condition or Failure of Major Member YES () NO (☒)

Comment on any Conditions of Bridge that would Effect Roadway Beneath:

Note: If Underpass Route is Divided Highway, Use Two of These Forms, One for Each Roadway.

MINIMUM PICTURES REQUIRED

1. Elevation View of Bridge on Both Sides Showing Underpass
2. View Showing Both Approaches to Bridge
3. View Showing Safety Features
4. View Showing Any Problems

BRIDGE LOC. NO. 57 I0040 0754
CO. ROUTE L. M. L/R
LATERAL AND VERTICAL CLEARANCES

DATE: _____

57 - 0B290 - 0455

or - -

or - -

Co. Route Log Mile

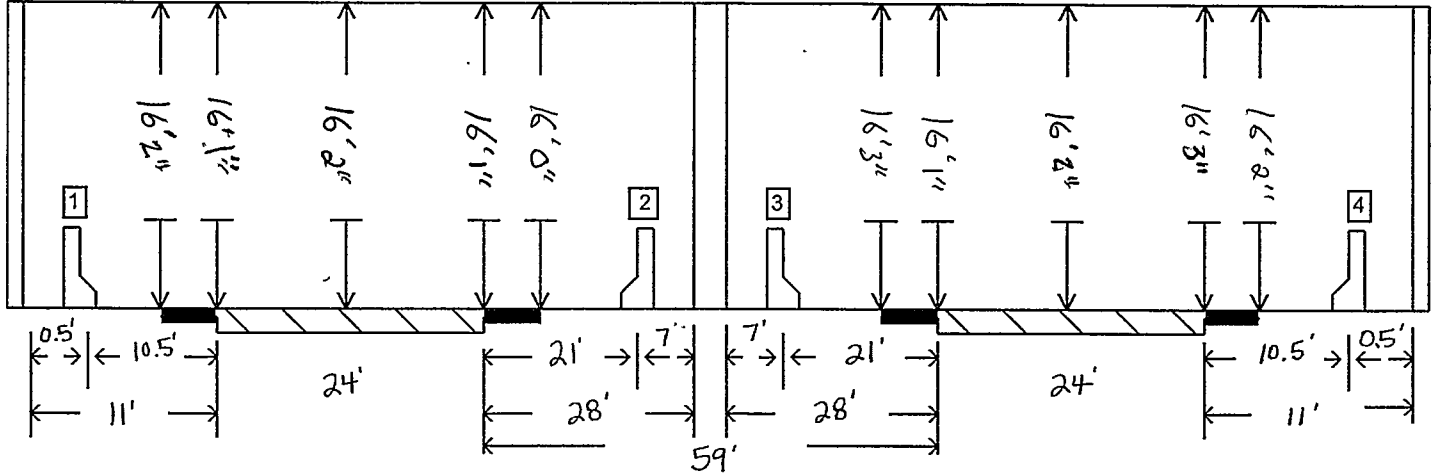
Co. Route Log Mile

Co. Route Log Mile

BENT/ABUT. 3 ① W.B.

BENT 2 ② E.B.

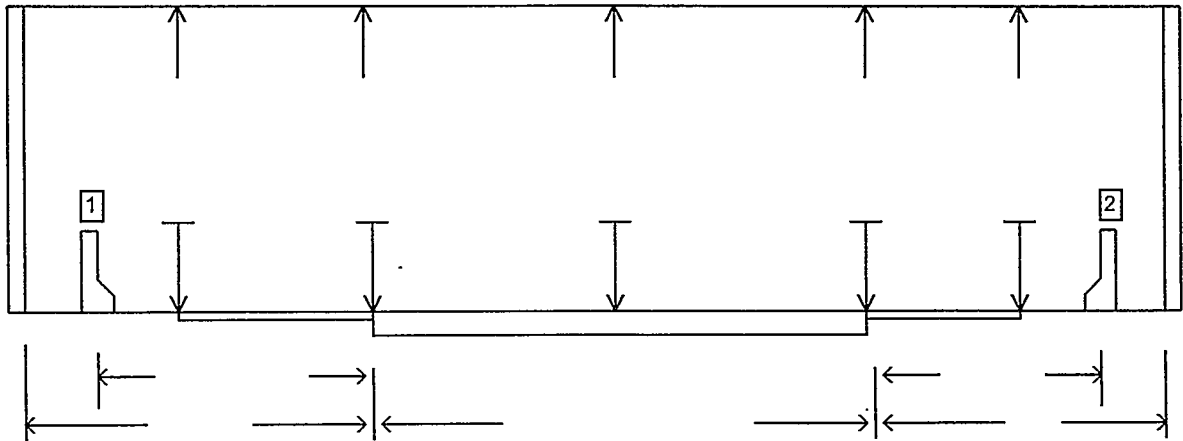
BENT/ABUT. 1



- | | | | | | | |
|-----------------------|---------|--------------------------|---------------|--------------------------|------|--------------------------|
| 1. RAIL/BARRIER TYPE: | W-SHAPE | ☐ | CONC. BARRIER | ☐ | NONE | ☐ |
| 2. RAIL/BARRIER TYPE: | W-SHAPE | ☐ | CONC. BARRIER | ☐ | NONE | ☐ |
| 3. RAIL/BARRIER TYPE: | W-SHAPE | ☐ | CONC. BARRIER | ☐ | NONE | ☐ |
| 4. RAIL/BARRIER TYPE: | W-SHAPE | ☐ | CONC. BARRIER | ☐ | NONE | ☐ |

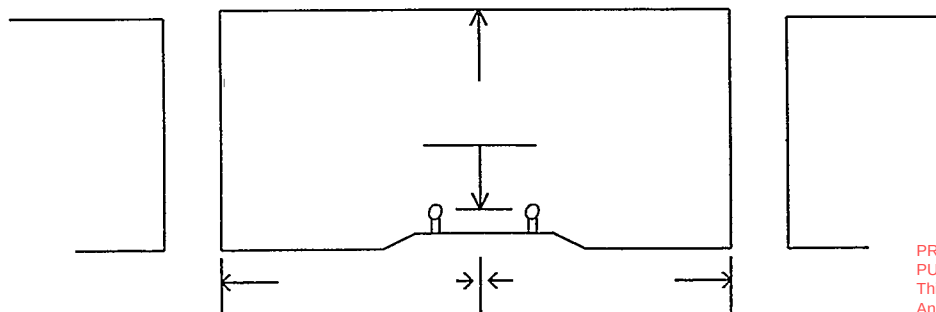
BENT/ABUT. _____

BENT/ABUT. _____



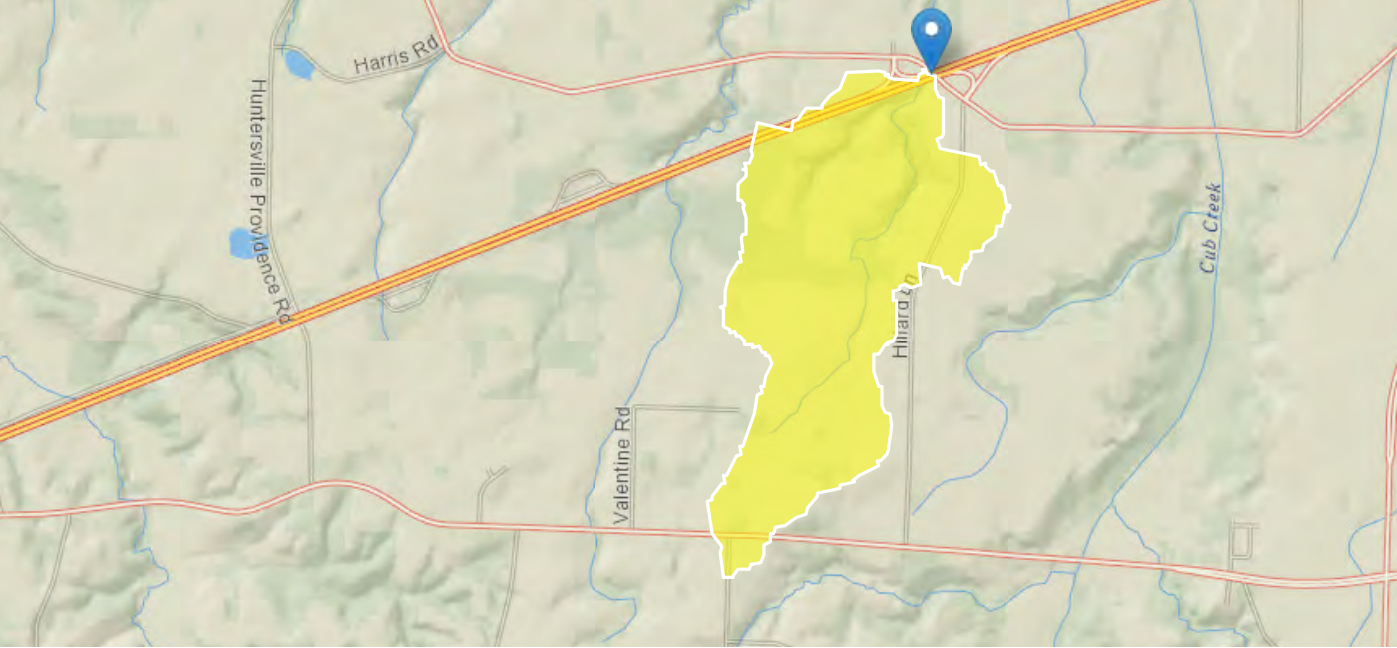
BENT/ABUT. _____

BENT/ABUT. _____



StreamStats for Madison Co.

Region ID: TN
Workspace ID: TN20250314143952593000
Clicked Point (Latitude, Longitude): 35.63306, -88.94948
Time: 2025-03-14 09:40:21 -0500



+ Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
CLIMFAC2YR	Two-year climate factor from Lichy and Karlinger (1990)	2.398	dimensionless
CONTDATA	Area that contributes flow to a point on a stream	0.69	square miles
DRNAREA	Area that drains to a point on a stream	0.69	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	140	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
CONTD A	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 ³ /s
20-percent AEP flood	505	ft ³ /s
10-percent AEP flood	598	ft ³ /s
4-percent AEP flood	712	ft ³ /s
2-percent AEP flood	794	ft ³ /s
1-percent AEP flood	872	ft ³ /s
0.2-percent AEP flood	1050	ft ³ /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
PERMGTE2IN	Percent permeability gte 2 in per hr	37.002	percent	2	98
RECESS	Recession Index	140	days per log cycle	32	350

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	0.00869	ft ³ /s
30 Day 5 Year Low Flow	0.0204	ft ³ /s

Low-Flow Statistics Citations

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

➤ Flow-Duration Statistics

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

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
CLIMFAC2YR	Tennessee Climate Factor 2 Year	2.398	dimensionless	2.307	2.455
DRNAREA	Drainage Area	0.69	square miles	2	2405
PERMGTE2IN	Percent permeability gte 2 in per hr	37.002	percent	2	98
RECESS	Recession Index	140	days per log cycle	32	350
SOILPERM	Average Soil Permeability	1.07	inches per hour	0.97	2.44

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

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

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

Statistic	Value	Unit
99.5 Percent Duration	0.008	ft ³ /s
99 Percent Duration	0.0115	ft ³ /s
98 Percent Duration	0.0154	ft ³ /s
95 Percent Duration	0.0223	ft ³ /s
90 Percent Duration	0.0305	ft ³ /s
80 Percent Duration	0.0444	ft ³ /s
70 Percent Duration	0.0685	ft ³ /s
60 Percent Duration	0.0943	ft ³ /s
50 Percent Duration	0.139	ft ³ /s
40 Percent Duration	0.219	ft ³ /s
30 Percent Duration	0.565	ft ³ /s
20 Percent Duration	0.998	ft ³ /s
10 Percent Duration	1.86	ft ³ /s

Flow-Duration Statistics Citations

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

➤ Annual Flow Statistics

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

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
CLIMFAC2YR	Tennessee Climate Factor 2 Year	2.398	dimensionless	2.307	2.455
DRNAREA	Drainage Area	0.69	square miles	2	2405
PERMGTE2IN	Percent permeability gte 2 in per hr	37.002	percent	2	98
RECESS	Recession Index	140	days per log cycle	32	350

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	0.878	ft ³ /s

Annual Flow Statistics Citations

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

➤ Seasonal Flow Statistics

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
PERMGTE2IN	Percent permeability gte 2 in per hr	37.002	percent	2	98
RECESS	Recession Index	140	days per log cycle	32	350

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	0.191	ft ³ /s

Seasonal Flow Statistics Citations

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

➤ Bankfull Statistics

Bankfull Statistics Parameters [Atlantic Plain D Bieger 2015]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.69	square miles	0.30888	1086.8715

Bankfull Statistics Parameters [USA Bieger 2015]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.69	square miles	0.07722	59927.7393

Bankfull Statistics Flow Report [Atlantic Plain D Bieger 2015]

Statistic	Value	Unit
Bieger_D_channel_width	8.99	ft
Bieger_D_channel_depth	0.95	ft
Bieger_D_channel_cross_sectional_area	8.3	ft ²

Bankfull Statistics Flow Report [USA Bieger 2015]

Statistic	Value	Unit
Bieger_USA_channel_width	10.9	ft
Bieger_USA_channel_depth	1.11	ft
Bieger_USA_channel_cross_sectional_area	14	ft ²

Bankfull Statistics Flow Report [Area-Averaged]

Statistic	Value	Unit
Bieger_D_channel_width	8.99	ft
Bieger_D_channel_depth	0.95	ft
Bieger_D_channel_cross_sectional_area	8.3	ft ²
Bieger_USA_channel_width	10.9	ft
Bieger_USA_channel_depth	1.11	ft
Bieger_USA_channel_cross_sectional_area	14	ft ²

Bankfull Statistics Citations

Bieger, Katrin; Rathjens, Hendrik; Allen, Peter M.; and Arnold, Jeffrey G., 2015, Development and Evaluation of Bankfull Hydraulic Geometry Relationships for the Physiographic Regions of the United States, Publications from USDA-ARS / UNL Faculty, 17p. (https://digitalcommons.unl.edu/usdaarsfacpub/1515?utm_source=digitalcommons.unl.edu%2Fusdaarsfacpub%2F1515&utm_medium=PDF&utm_campaign=PDFCoverPages)

➤ Maximum Probable Flood Statistics

Maximum Probable Flood Statistics Parameters [Crippen Bue Region 3]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.69	square miles	0.1	10000

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

Statistic	Value	Unit
Maximum Flood Crippen Bue Regional	3430	ft ³ /s

Maximum Probable Flood Statistics Citations

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

➤ NHD Features of Delineated Basin

NHD Streams Intersecting Basin Delineation Boundary

This functionality attempts to find the stream name at the delineation point. The name of the nearest intersecting National Hydrography Dataset (NHD) stream is selected by default to appear in the report above. NHD streams do not correspond to the StreamStats stream grid and may not be accurate. If you would like a different stream to appear in the above section, please make a selection below.

Watershed Boundary Dataset (WBD) HUC 8 Intersecting Basin Delineation Boundary

This functionality attempts to find the intersecting HUC 8 of the delineated watershed. HUC boundaries do not correspond to the StreamStats data and may not be accurate.

No WBD HUC8s intersect the delineated basin.

NHD Hydrologic Features Citations

U.S. Geological Survey, 2022, USGS TNM - National Hydrography Dataset, accessed July 21, 2022 at URL <https://hydro.nationalmap.gov/arcgis/rest/services/nhd/MapServer/6>. (<https://hydro.nationalmap.gov/arcgis/rest/services/nhd/MapServer/6>) U.S. Geological Survey, 2022, USGS TNM - National Hydrography Dataset, accessed July 21, 2022 at URL <https://hydro.nationalmap.gov/arcgis/rest/services/wbd/MapServer/4>. (<https://hydro.nationalmap.gov/arcgis/rest/services/wbd/MapServer/4>)

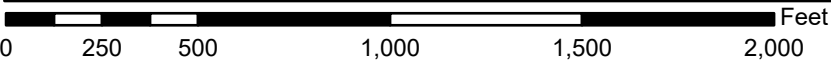
USGS Data Disclaimer: Unless otherwise stated, all data, metadata and related materials are considered to satisfy the quality standards relative to the purpose for which the data were collected. Although these data and associated metadata have been reviewed for accuracy and completeness and approved 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.

National Flood Hazard Layer FIRMMette



88°57'16"W 35°38'14"N



1:6,000

88°56'39"W 35°37'45"N

Basemap Imagery Source: USGS National Map 2023

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) Zone A, V, A99
		With BFE or Depth Zone AE, AO, AH, VE, AR
		Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
		Future Conditions 1% Annual Chance Flood Hazard Zone X
		Area with Reduced Flood Risk due to Levee. See Notes. Zone X
		Area with Flood Risk due to Levee Zone D
OTHER AREAS		NO SCREEN Area of Minimal Flood Hazard Zone X
		Effective LOMRs
		Area of Undetermined Flood Hazard Zone D
GENERAL STRUCTURES		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall
OTHER FEATURES		20.2 Cross Sections with 1% Annual Chance
		17.5 Water Surface Elevation
		Coastal Transect
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary
		Coastal Transect Baseline
MAP PANELS		Digital Data Available
		No Digital Data Available
		Unmapped



The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on **3/14/2025 at 2:15 PM** and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

**TENNESSEE DEPARTMENT OF TRANSPORTATION
PLANNING DIVISION**

PROJECT NO.: _____ ROUTE: LOWER BROWNSVILLE ROAD
COUNTY: MADISON CITY: _____
PROJECT PIN NUMBER: 136169.00
PROJECT DESCRIPTION: BRIDGE OVER I-40 @ L.M. 4.54

[1] LOWER BROWNSVILLE ROAD TRAFFIC DATA
[2] I-40 TRAFFIC DATA

DIVISION REQUESTING:

MAINTENANCE	☐	PAVEMENT DESIGN	☐
PROJECT MANAGEMENT	☒	STRUCTURES	☐
PROG. DEVELOPMENT & ADM.	☐	SURVEY & ROADWAY DESIGN	☐
PUBLIC TRANS. & AERO.	☐	TRAFFIC SIGNAL DESIGN	☐
		OTHER _____	☐

YEAR PROJECT PROGRAMMED FOR CONSTRUCTION: 2030
PROJECTED LETTING DATE: 2030

TRAFFIC ASSIGNMENT:

	BASE YEAR		DESIGN YEAR					DESIGN ROADWAY % TRUCKS		DESIGN AVERAGE DAILY LOADS	
	AADT	YEAR	AADT	DHV	%	YEAR	DIR.DIST.	DHV	AADT	FLEX	RIGID
[1]	590	2030	880	115	13	2050	65-35	8	12	51	78
[2]	48,120	2030	68,290	5,617	8	2050	55-45	24	36	6,701	10,694

REQUESTED BY: NAME EMILY BURGESS DATE 2/28/25
DIVISION PROJECT MANAGEMENT
ADDRESS 500 J. K. POLK BUILDING
NASHVILLE TN 47243

REVIEWED BY: RANDY BOGUSKIE *Randy Boguskie* DATE 3/4/2025
TRANSPORTATION MANAGER 1
SUITE 1000, JAMES K. POLK BUILDING

APPROVED BY: TONY ARMSTRONG *Tony Armstrong* DATE 3/4/2025
TRANSPORTATION MANAGER 2
SUITE 1000, JAMES K. POLK BUILDING

COMMENTS:

FURNISH THE 2030-2050 TRAFFIC DATA.

THIS TRAFFIC IS BASED ON A 2024 CYCLE & RAMP COUNTS. THE DESIGN YEAR TRAFFIC IS BASED ON GROWTH RATE FROM THE JACKSON MPO COMPUTER ASSIGNMENT MODEL. AADT's, DHV's AND ADL's ARE INCLUDED.

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. 6/12/24)

TENNESSEE DEPARTMENT OF TRANSPORTATION

PROJECT NO.: _____ ROUTE NO.: LOWER BROWNSVILLE [1]
 COUNTY: MADISON
 PROJECT DESCRIPTION: BRIDGE OVER I-40 @ L.M. 4.54

FAP Rural

Pavement Structural Design

Calculation of Equivalent Daily 18 Kip Single Axle Loads

Type Vehicle		ADT (No. Counted)	Flexible		Rigid	
			18-kip Factor	ADL	18-kip Factor	ADL
Pass. cars and motorcycles (1-2)		457	0.001	0	0.001	0
Pick-up, Panel, Van (3)		190	0.005	1	0.004	1
Sing. Unit	Buses (4)	0	0.300	0	0.300	0
	2-axle, 6-tire (5)	17	0.240	4	0.310	5
	3-axle or more (6-7)	13	1.700	22	2.300	30
	4-axle (8)	11	1.110	12	1.500	17
Comb.	5-axle or more (9-13)	47	1.320	62	2.200	103
Totals (2036 AADT)		735		102		156

Suggested Percentages of Trucks in Design Lane

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

No. of Lanes: 2

% Trucks in Design Lane: 100%

ADL in Design Lane:

FLEX:	0.5	X	1.00	X	101.8	=	51
RIGID:	0.5	X	1.00	X	156.3	=	78

ADL Calculations By: TONY ARMSTRONG Date: 3/3/2025
 Reviewed By: Randy Boguskie Date: 3/4/2025
 [REV. 6/12/24]

**TENNESSEE DEPARTMENT OF TRANSPORTATION
PLANNING DIVISION**

PROJECT NO.: _____ ROUTE NO.: I-40 [2]
COUNTY: MADISON _____ CITY: _____
PROJECT DESCRIPTION: LOWER BROWNSVILLE RD. ROAD BRIDGE OVER I-40 @ L.M. 4.54

Interstate

Pavement Structural Design

Calculation of Equivalent Daily 18 Kip Single Axle Loads

Type Vehicle		ADT (No. Counted)	Flexible		Rigid	
			18-kip Factor	ADL	18-kip Factor	ADL
Pass. cars and motorcycles (1-2)		23,449	0.001	23	0.001	23
Pick-up, Panel, Van (3)		13,782	0.004	55	0.005	69
Sing. Unit	Buses (4)	62	0.300	19	0.300	19
	2-axle, 6-tire (5)	2,263	0.170	385	0.170	385
	3-axle or more (6-7)	716	0.700	501	1.000	716
Comb.	4-axle (8)	228	0.700	160	0.780	178
	5-axle or more (9-13)	17,705	1.100	19,476	1.780	31,515
Totals (2040 AADT)		58,205		20,618		32,904

Suggested Percentages of Trucks in Design Lane

	4 Lane	6 Lane	8 Lane
5,000 or less ADT	90%	75%	70%
5,000 - 10,000 ADT	80%	70%	65%
10,000 - 15,000 ADT	75%	65%	60%
15,000 - 20,000 ADT	75%	65%	55%
20,000 - 30,000 ADT	70%	60%	50%
30,000 Plus ADT	65%	60%	50%

No. of Lanes: 4

% Trucks in Design Lane: 65%

ADL in Design Lane:

FLEX:	0.5	X	0.65	X	20618.2	=	6,701
RIGID:	0.5	X	0.65	X	32904.4	=	10,694

ADL Calculations By: TONY ARMSTRONG Date: 3/3/2025
Reviewed By: _____ Date: _____
[REV. 7-1-14]



Madison County
Lower Brownsville Road @ L.M. 4.54
Bridge over I-40

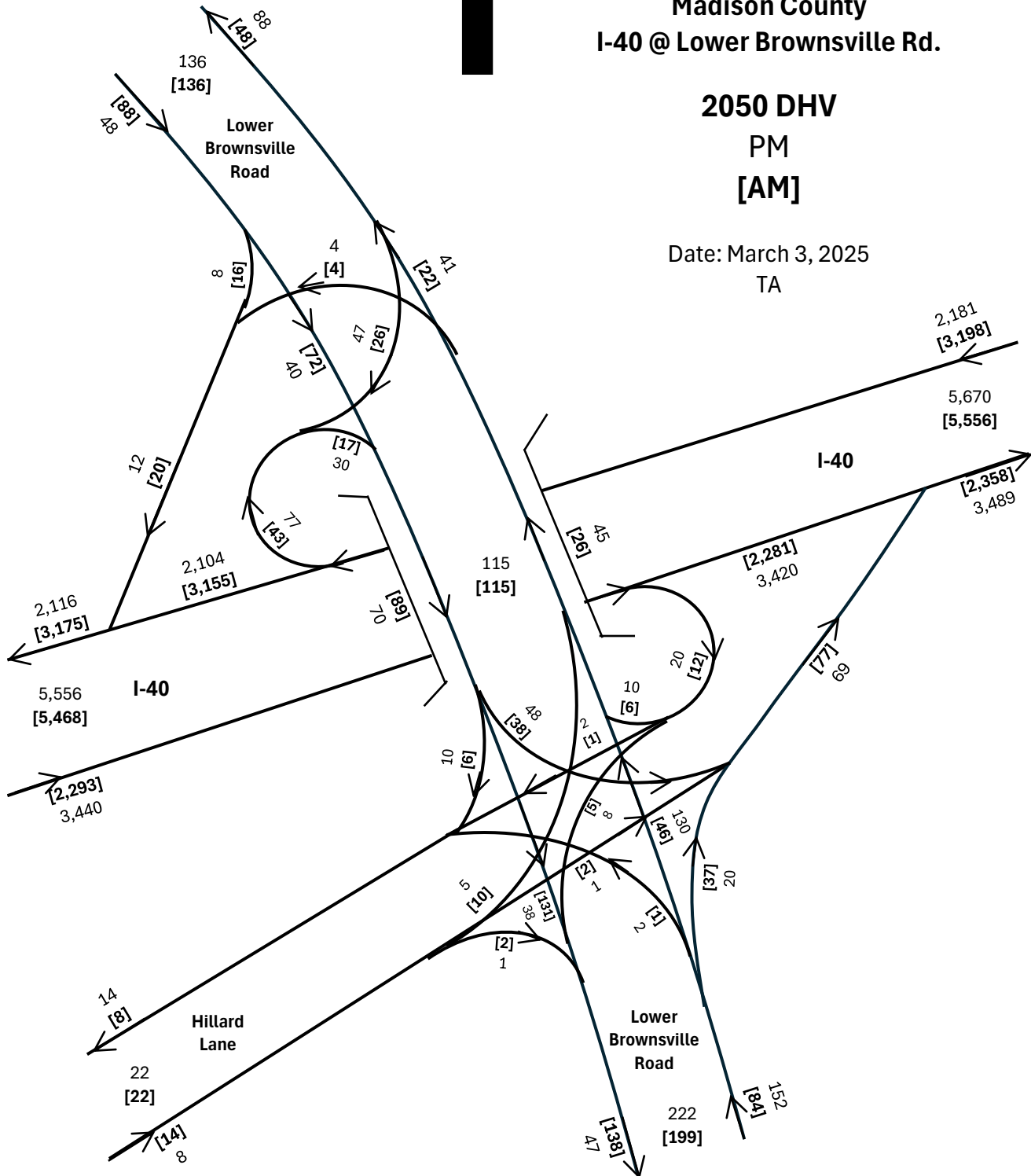


2050 DHV

Madison County
I-40 @ Lower Brownsville Rd.

2050 DHV
PM
[AM]

Date: March 3, 2025
TA





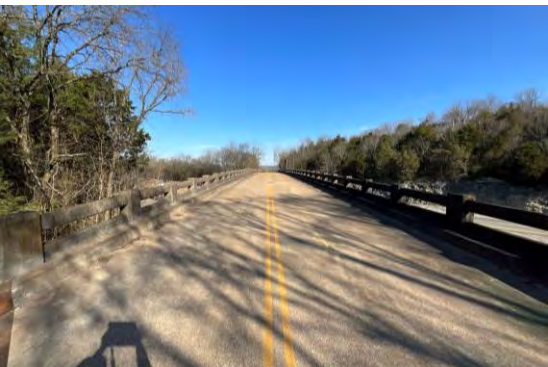
— Virtual Site Visit

Five Bridges

Four Site Visits

One Meeting

BARGE
DESIGN SOLUTIONS





Agenda

Introduction

5 minutes

Site Visit Discussion

60 minutes

Action Items Review

5 minutes

Closing

5 minutes



Bridge Locations

01 – Henderson Co.

S.R. 114 - Natchez Trace Road over I-40 at Exit 116

02 – Madison Co.

Lower Brownsville Road over I-40 at Exit 74

03 – Williamson Co.

I-65 Southbound On Ramp at
S.R. 441 – Moores Lane

04 – Wilson Co.

North Commerce Road over I-40

01

S.R. 114 - Natchez Trace Road Bridges over I-40 at Exit 116

Henderson County / Carroll County

39I00400031: S.R. 114 over I-40 EBL

- Three-span 153'-6" Concrete Haunched Girder Bridge
- 2024 Bridge Inspection Report rated the overall condition: Poor

39I00400041: S.R. 114 over I-40 WBL

- Three-span 153'-6" Concrete Haunched Girder Bridge
- 2024 Bridge Inspection Report rated the overall condition: Fair





01 Henderson Co.

S.R. 114 – Natchez Trace Road
I-40 Eastbound Bridge





01 Henderson Co.

S.R. 114 – Natchez Trace Road
I-40 Westbound Bridge

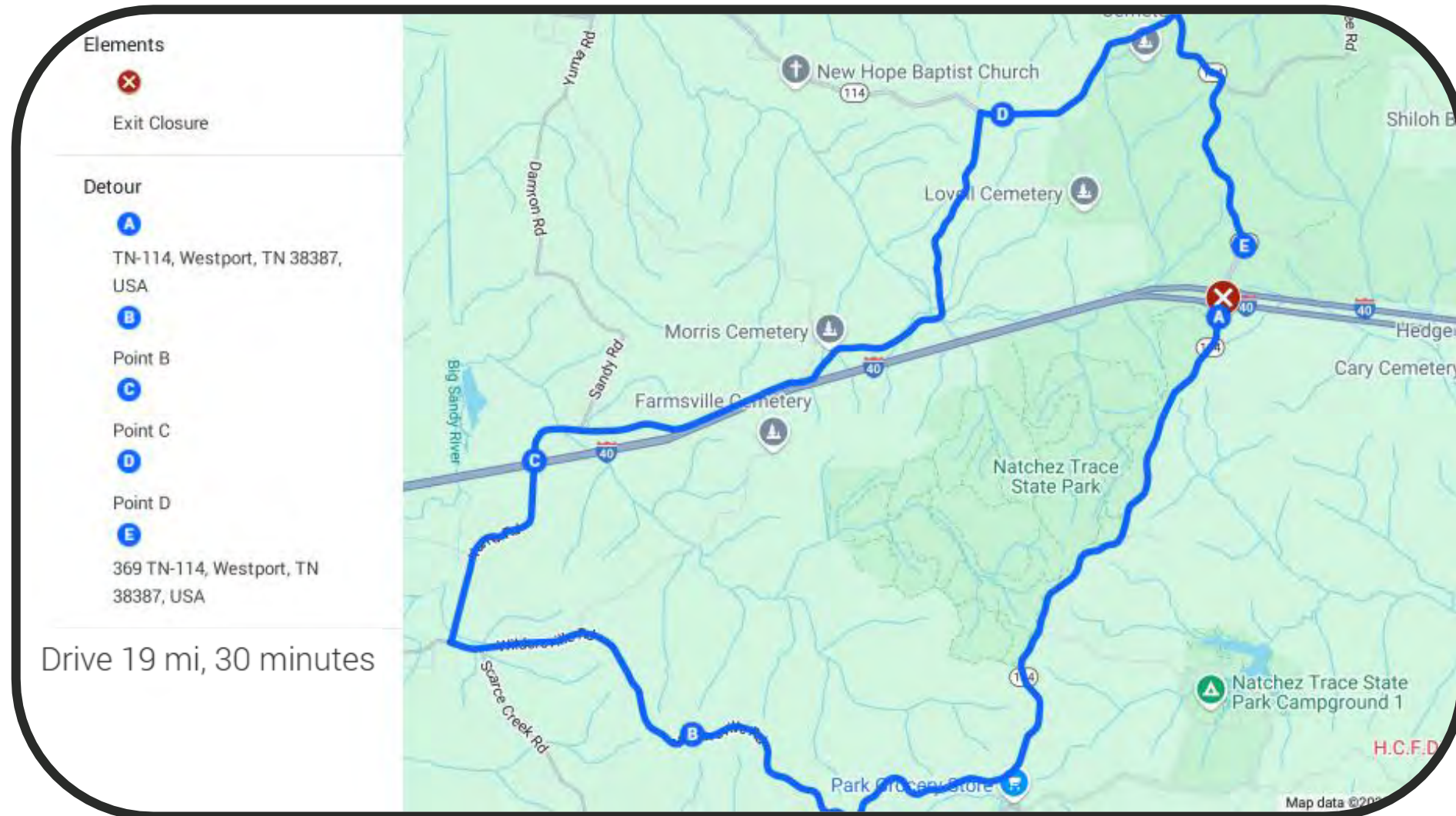


Potential Impacts

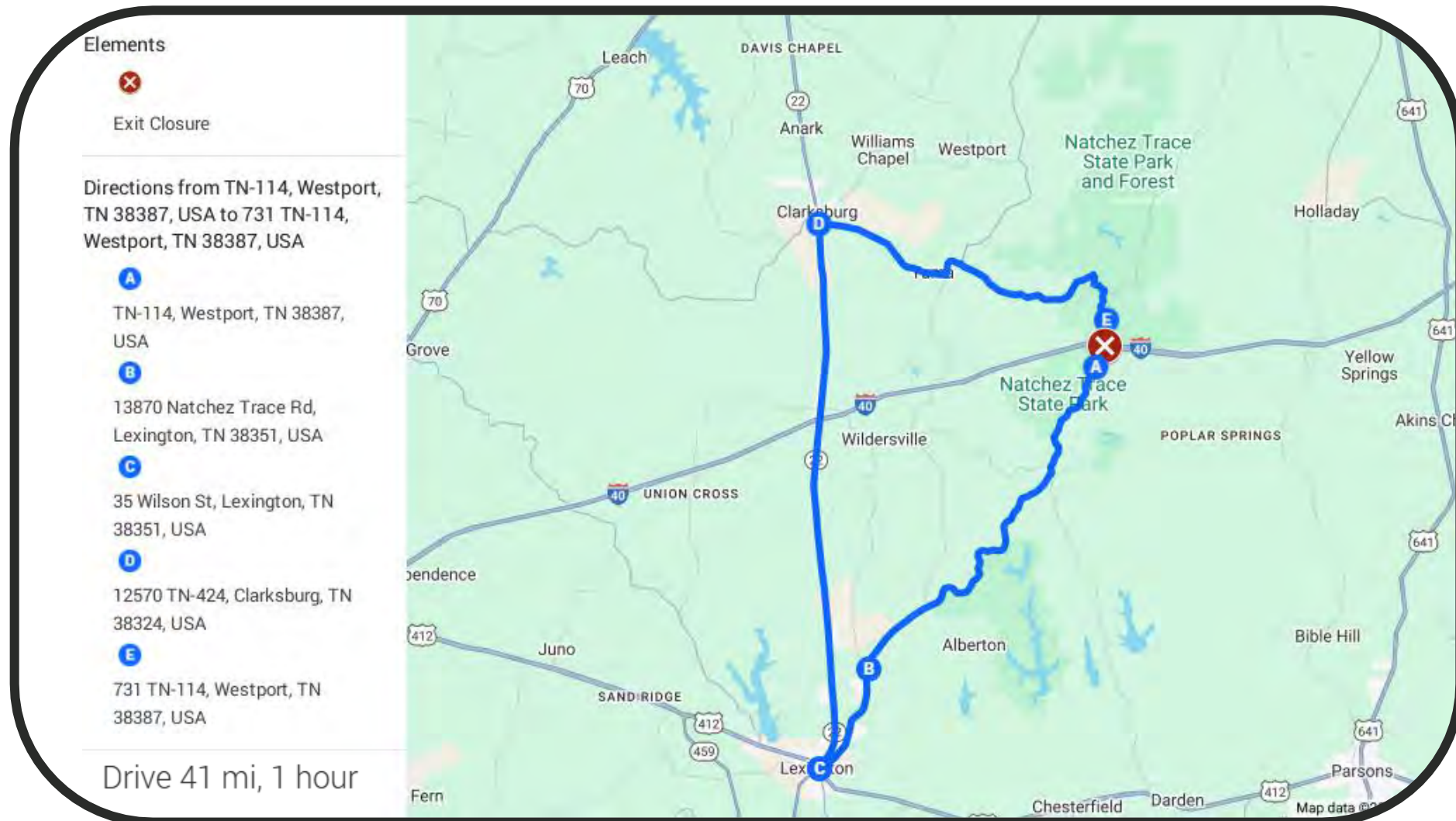
- Bicycle Route and Trail signs (Red Leaves Trail) indicate pedestrian traffic near these bridges. The existing bridge has little to no shoulder or safety measures to facilitate this type of traffic.
- Caution sign warns of log trucks entering the highway. Grades of the bridges may be affected to meet vertical clearance standards. On and off-ramps will likely be closed during construction.
- County Line located between bridges.



01 – Henderson Co. Local Roads Detour Map

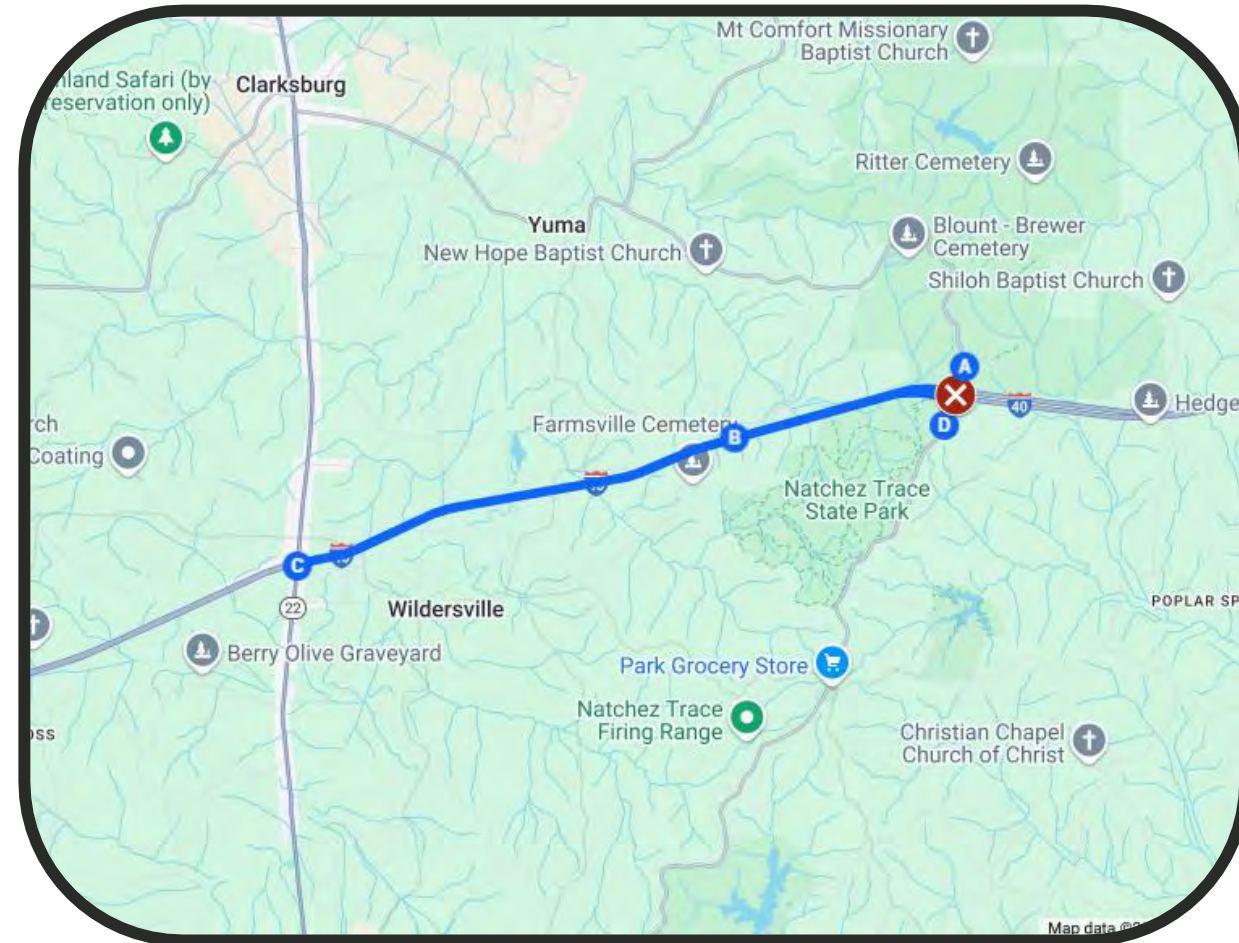


01 – Henderson Co. State Routes Detour Map



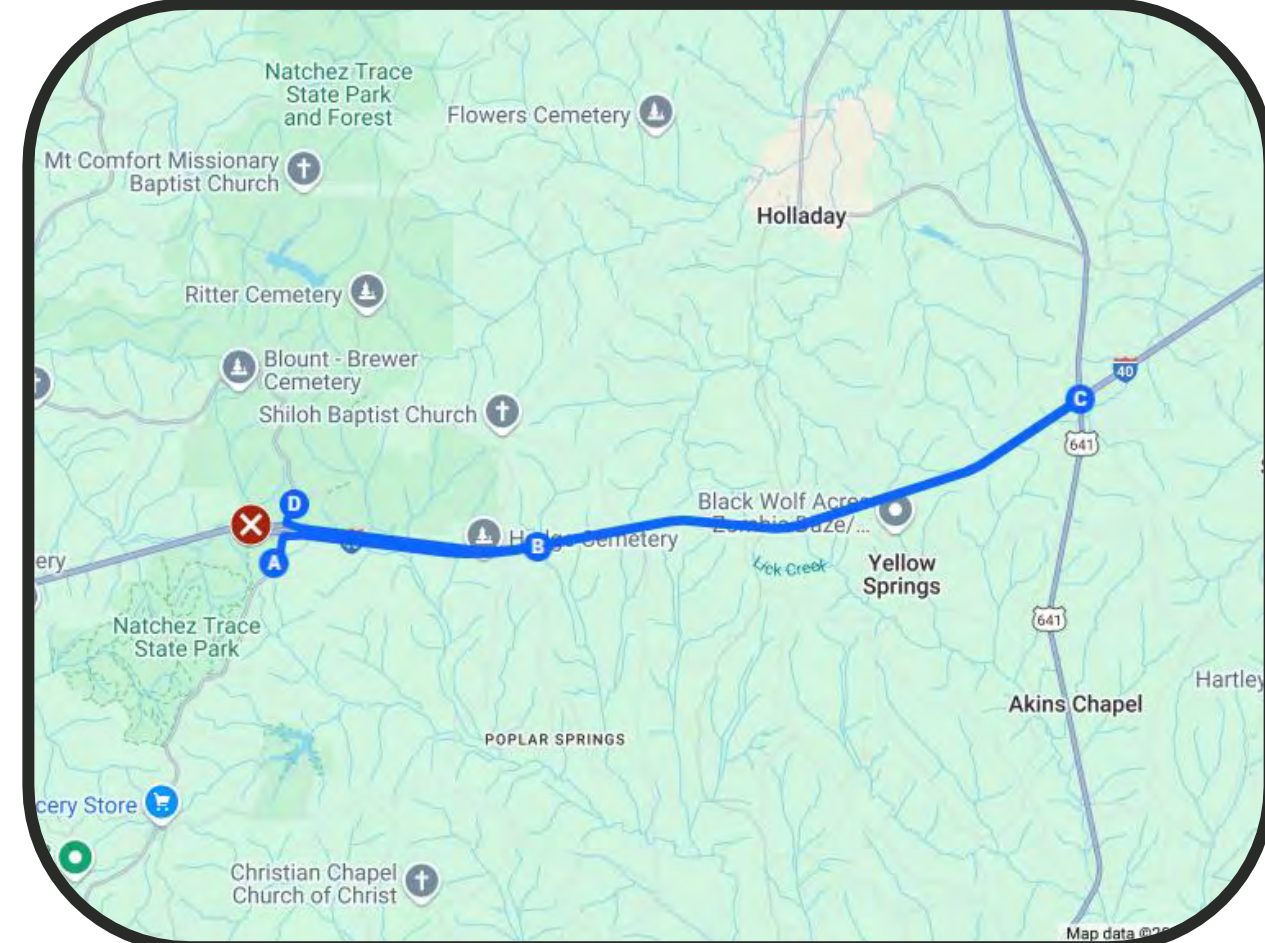
01 – Henderson Co. Interstate Detour Maps

North Side Detour



Drive 17 mi, 16 minutes

South Side Detour



Drive 20 mi, 20 minutes

01 – Henderson Co.

S.R. 114 over I-40 EB & WB: Structure Summary

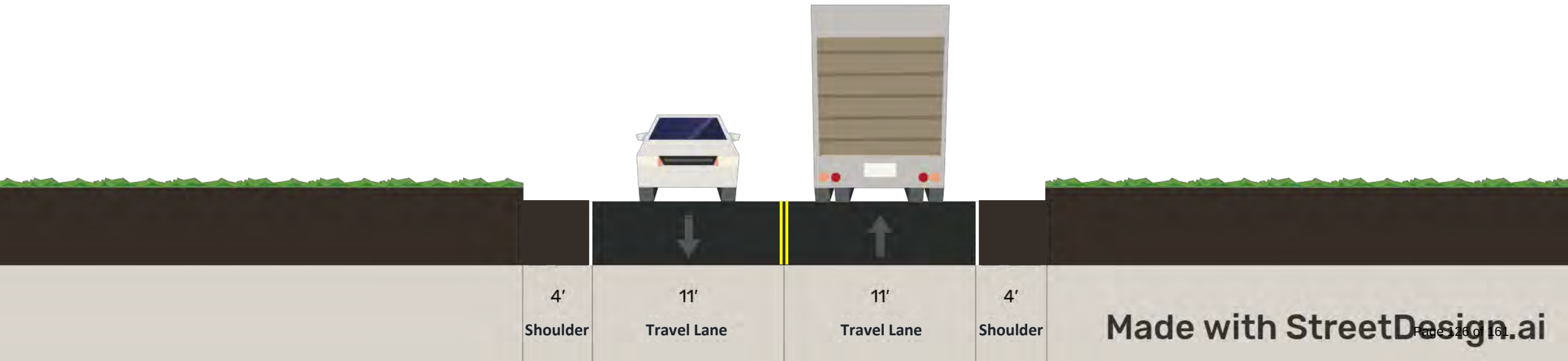
Existing:

- Existing Traffic (2030): AADT 340 veh./day
- Year constructed: 1963
- Structural Layout:
 - Length: 151'-6"
 - Spans: 3 spans
 - Max. Span Length: 60'-6"
 - Width (Curb-to-curb): 26'-6"
 - Travel Lanes: 2 – 12'-0"
 - Skew: 84-degree skew
 - Weight Limit: 40 Tons
 - Min. Vertical Clearance: 16'-8"
- Roadway Approach: 20'-0" w/ shoulder

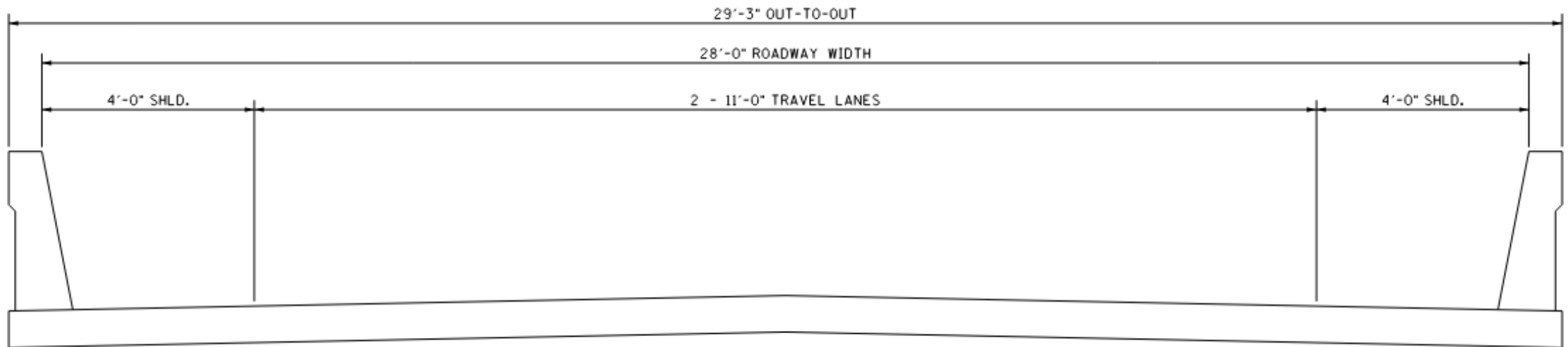
Proposed:

- Projected Traffic (2050): 530 veh./day
- Design Speed: 45 mph
- Structural Layout:
 - Length: 182'-0"
 - Spans: 3 spans (58.5' – 65' – 58.5')
 - AASHTO I-Beams Type III
 - Max. Span Length: 65'-0"
 - Width (Curb-to-curb): 28'-0"
 - Width (Out-to-out): 29'-3"
 - Travel Lanes: 2 – 11'-0"
- Roadway Approach
- Lane width: 2 - 11'-0" lanes
- Shoulder Width: 4'-0" Shoulder
- Potential Grade raise: 3'-0"
- Bridge Deck Area: 5,324 SF
- Approximate Cost (\$240/SF): \$1,278,000

01 – Henderson Co. Approach Road Typical Section



01 – Henderson Co. Typical Bridge Cross-Section



TYPICAL CROSS-SECTION

02

Lower Brownsville Road over I-40

Madison County

57I00400011: Lower Brownsville Rd. I-40

- Four-span 236'-0" Prestressed Concrete I-beam Bridge
- 2023 Bridge Inspection Report rated the overall condition: Poor





02

Madison Co.

Lower Brownsville Road over I-40 at
Exit 74

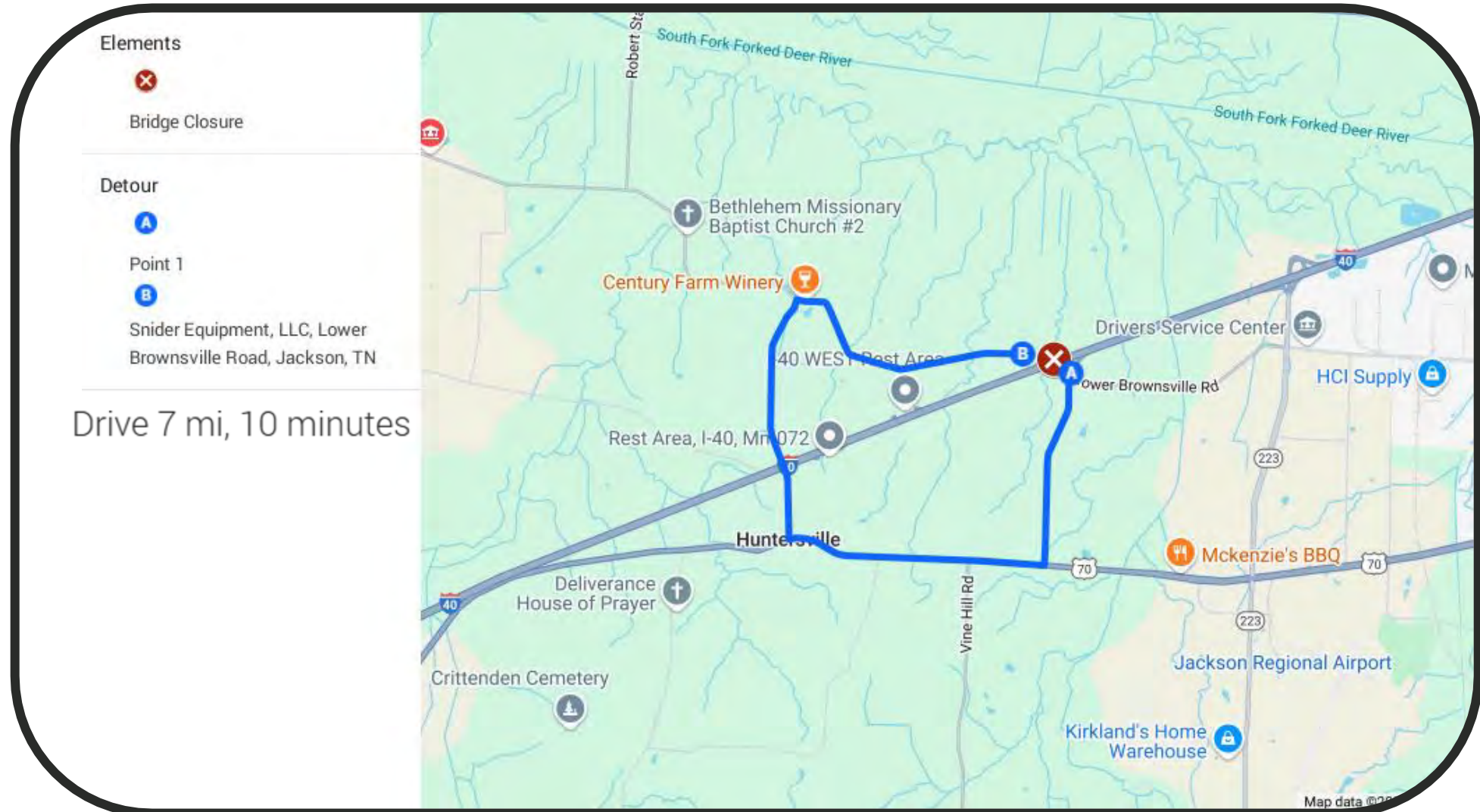


Potential Impacts

- During the inspection we noted several large tractors and semi-trailers crossing over the bridge. Detour for this farm equipment may be unfeasible.
- Drainage culvert under highway and bridge. Embankment issues noticed along I-40 East.
- CCTV Tower placed along I-40 EBL
- Fiber optic cable runs across Lower Brownsville Road (Approach 1).

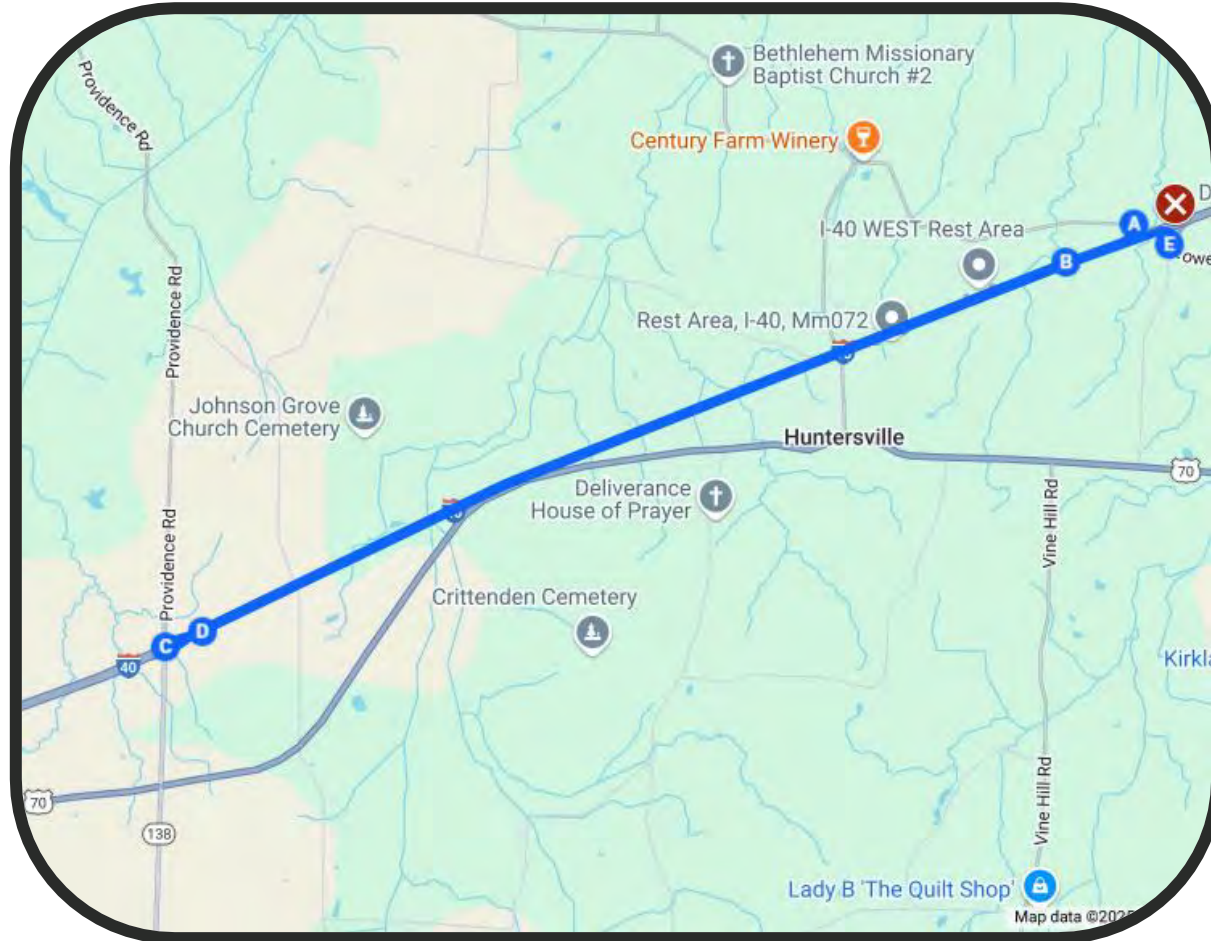


02 – Madison Co. Local Roads Detour Map



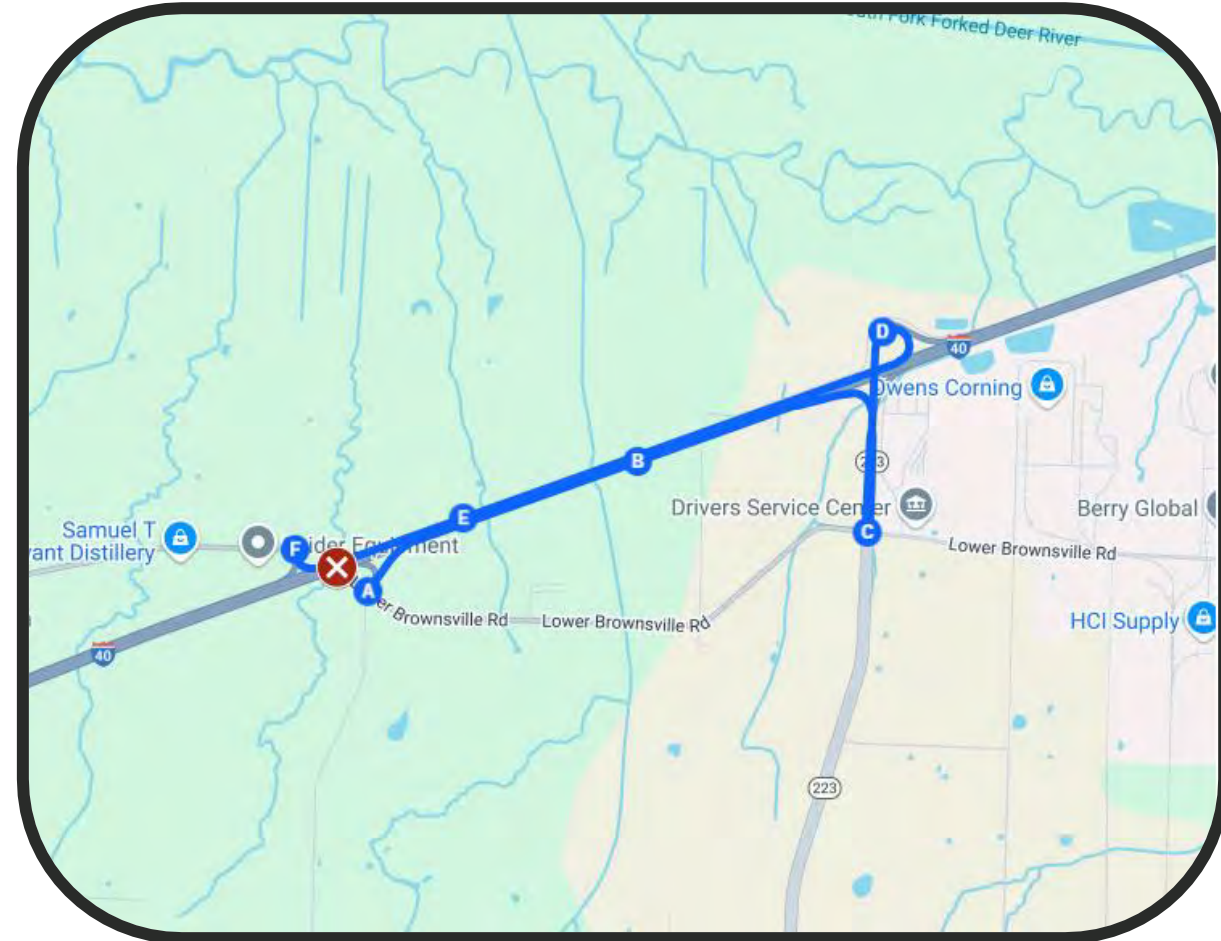
02 – Madison Co. Interstate Detour Maps

North Side Detour



Drive 13 mi, 12 minutes

South Side Detour



Drive 5 mi, 5 minutes

02 – Madison Co.

Lower Brownsville Road over I-40: Structure Summary

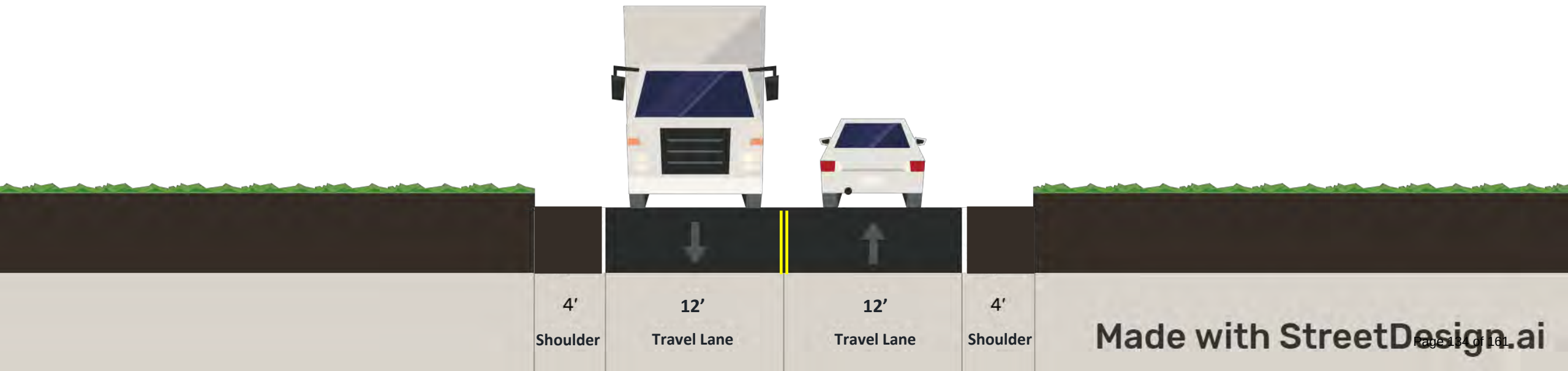
Existing:

- Existing Traffic (2030): 590 veh./day
- Year constructed: 1960
- Structural Layout:
 - Length: 236'-0"
 - Spans: 4 spans (AASHTO Type IV)
 - Max. Span Length: 75'-0"
 - Width (Curb-to-curb): 32'-8"
 - Travel Lanes: 2 – 12'-0"
 - Skew: 62-degree skew
 - Weight Limit: 34 Tons
 - Min. Vertical Clearance: 16'-2"
- Roadway Approach: 22'-0" w/ shoulder
- I-40 AADT (2030): 48,120 veh./day

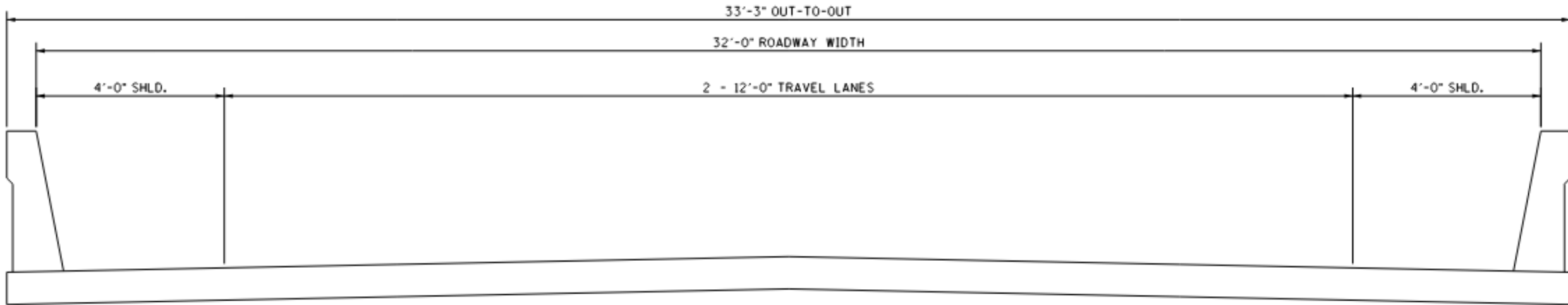
Proposed:

- Projected Traffic (2050): 590 veh./day
- Design Speed: 30 mph
- Structural Layout:
 - Length: 236'-0"
 - Spans: 2 Spans (118' – 118')
 - Bulb-Tee 63 (6" web)
 - Max. Span Length: Approx. 118'
 - Width (Curb-to-curb): 32'-0"
 - Width (Out-to-out): 33'-3"
 - Travel Lanes: 2 – 12'-0"
- Roadway Approach
- Lane width: 2 - 12'-0" lanes
- Shoulder Width: 4'-0" Shoulder
- Potential Grade raise: 1.71'
- Bridge Deck Area: 7,847 SF
- Approximate Cost (\$240/SF) = \$1,884,000
- I-40 AADT (2050): 68,290 veh./day

02 – Madison Co. Approach Road Typical Section



02 – Madison Co. Typical Bridge Cross-Section



TYPICAL CROSS-SECTION

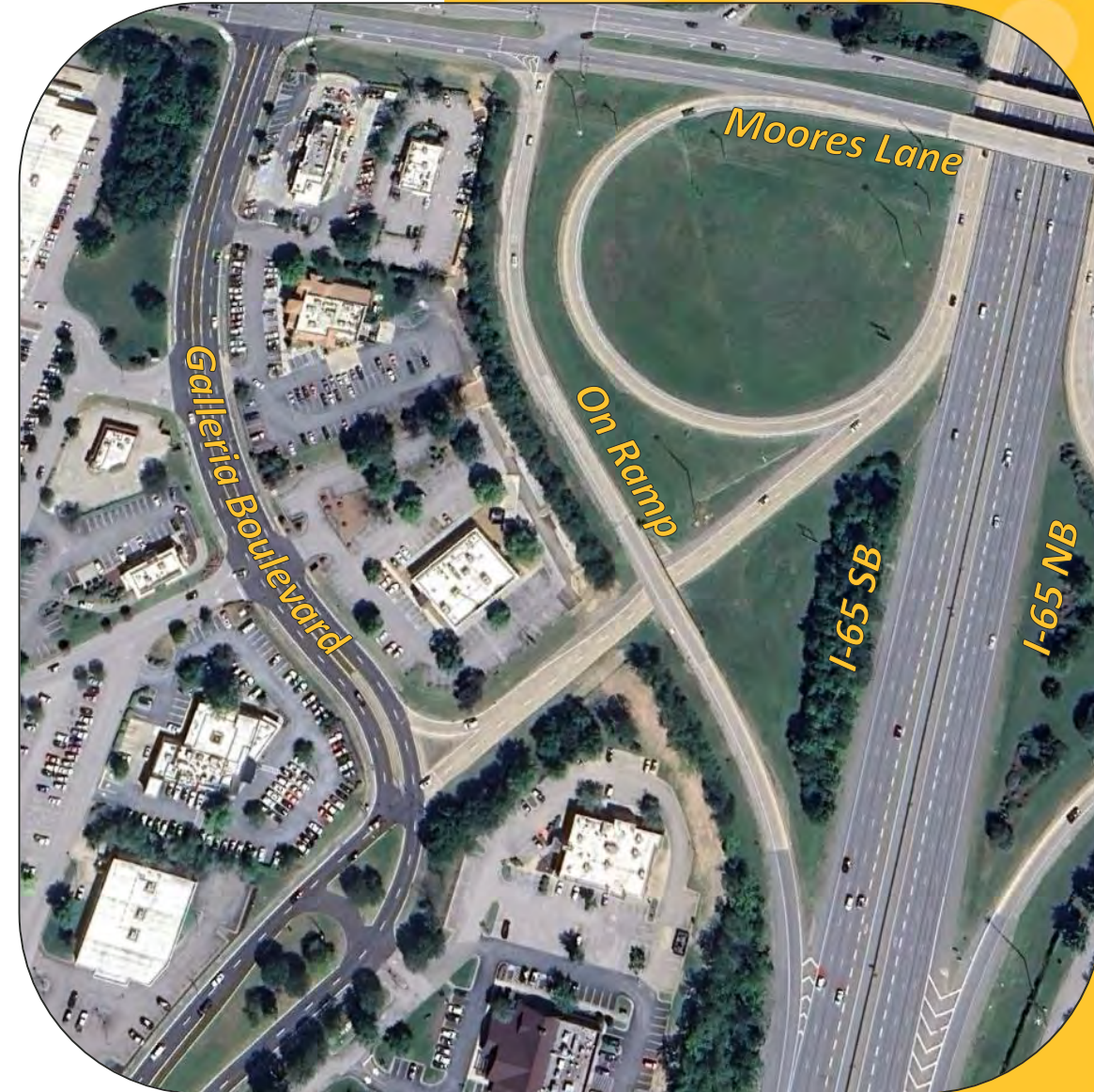
03

I-65 Southbound On Ramp at S.R. 441 – Moores Lane

Williamson County

94I00650037: S.R. 441 I-65 SB On Ramp over Ramps B & C

- Three-span 149'-6" Prestressed Box Beam Bridge
- 2023 Bridge Inspection Report rated the overall condition: Poor





03

Williamson Co.

I-65 Southbound On Ramp at
S.R. 441 – Moores Lane



Potential Impacts

- Stormwater system on both sides of the North abutment.
- CCTV Tower located on the North side of the bridge with fiber optic cable markers.
- Drainage area along I-65 South with a culvert crossing under ramp.
- Environmental features would need to be evaluated.



03 – Williamson Co.

I-65 Southbound On Ramp at S.R. 441 – Moores Lane: Structure Summary

Existing:

- Existing Traffic (2030): 11,910 veh./day
- Year constructed: 1990
- Structural Layout:
 - Length: 149'-6 ¼ "
 - Spans: 3 spans (Prestressed Box Beams)
 - Max. Span Length: 69'-6 ¼ "
 - Width (Curb-to-curb): 30'-0"
 - Travel Lanes: 1 – 16'-0"
 - Skew: 80-degree skew
 - Weight Limit: Not Posted
 - Min. Vertical Clearance: 16'-9"
- Roadway Approach: 26.9' w/ shoulder

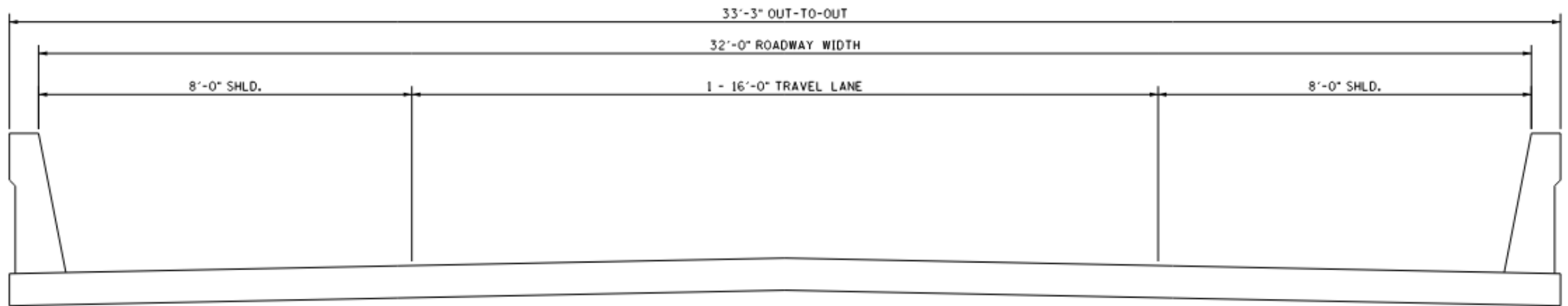
Proposed:

- Projected Traffic (2050): 15,840 veh./day
- Design Speed: Varying Speed
- Structural Layout:
 - Length: 168'-0"
 - Spans: 3 spans (58.5' + 65' + 58.5')
 - AASHTO I-Beams Type III
 - Max. Span Length: 65'-0"
 - Width (Curb-to-curb): 30'-0"
 - Width (Out-to-out): 33'-3"
 - Travel Lanes: 1 – 16'-0"
- Roadway Approach
- Lane width: 1 - 16'-0" lanes
- Shoulder Width: 6'-0" & 8'-0" Shoulder
- Potential Grade raise: 1.25'
- Bridge Deck Area: 5,586 SF
- Approximate Cost (\$240/SF) = \$1,341,000

03 – Williamson Co. Approach Road Typical Section



03 – Williamson Co. Typical Bridge Cross-Section



TYPICAL CROSS-SECTION

04

North Commerce Road over I-40

Wilson County

95I00400047: N. Commerce Rd. over I-40

- Four-span 320'-11" Steel Girder Bridge
- 2023 Bridge Inspection Report rated the overall condition: Poor





04 Wilson Co.

North Commerce Road over I-40

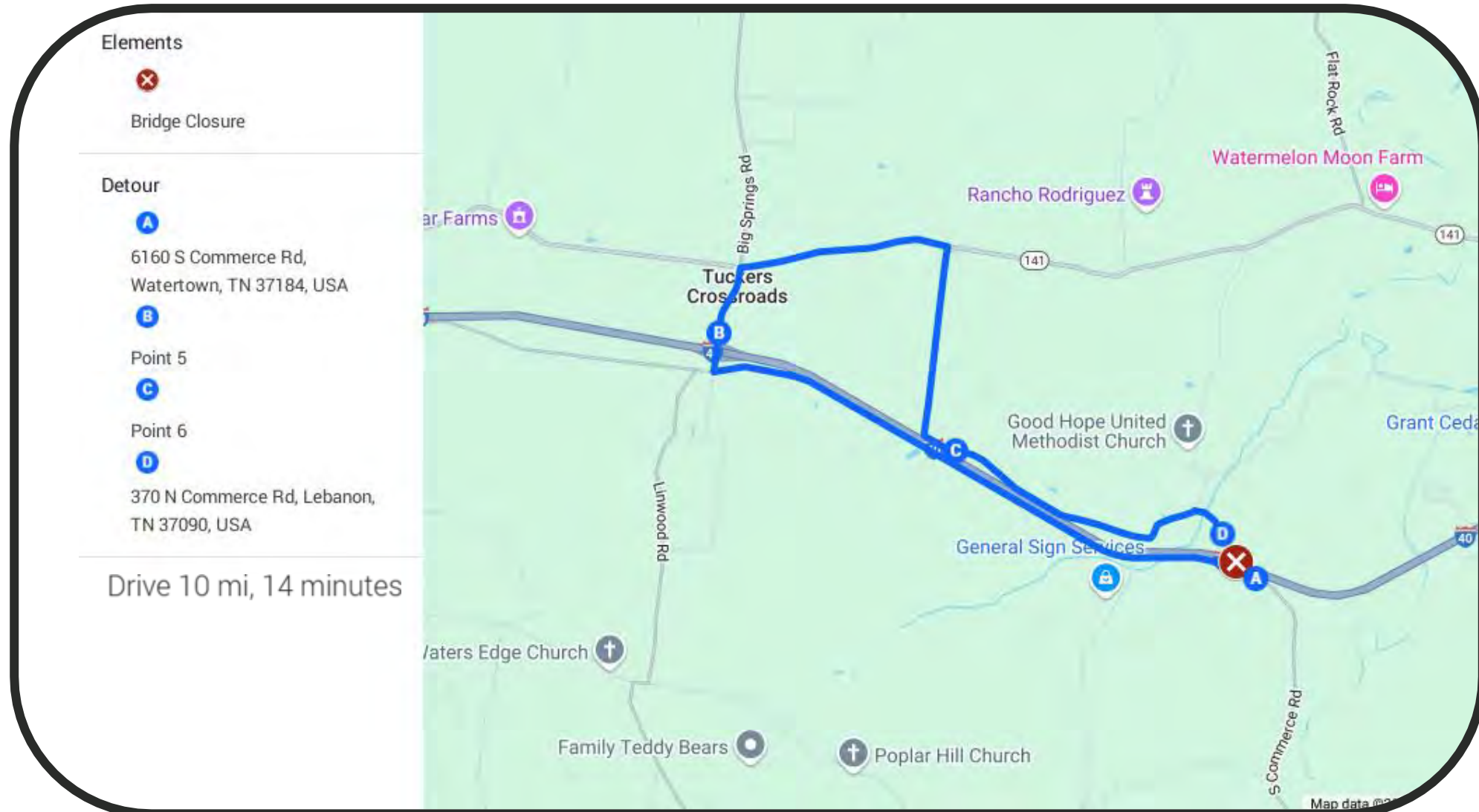


Potential Impacts

- Overhead power line poles located on both approaches.
- At the end of the bridge there is an immediate turn (East Saulsbury Rd.) that is a dead end. This road is the only access route for homeowners and the quarry.
- Beginning of the bridge there is a blind curve that leads to a 3-way intersection (Blue Bird Rd.)
- The existing superstructure steel beams (33" depth) is shallow and may need to be increased. Clearance requirements may lead to raising the bridge.



04 – Wilson Co. Local Roads & State Routes Detour Map



04 – Wilson Co.

North Commerce Road over I-40: Structure Summary

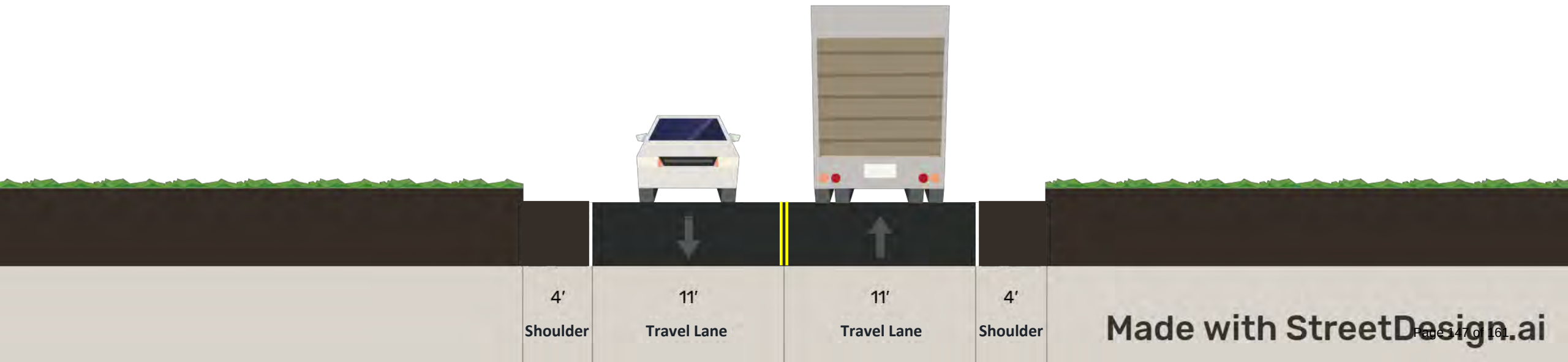
Existing:

- Existing Traffic (2030): 370 veh./day
- Year constructed: 1962
- Structural Layout:
 - Length: 320.9'
 - Spans: 4 spans (Steel W-Shape)
 - Max. Span Length: 92.8'
 - Width (Curb-to-curb): 24'-0"
 - Travel Lanes: 2 – 12'-0"
 - Skew: 45-degree skew
 - Weight Limit: 10 Tons
 - Min. Vertical Clearance: 16'-3"
- Roadway Approach: 29.9' w/ shoulder
- I-40 AADT (2030): 51,780 veh./day

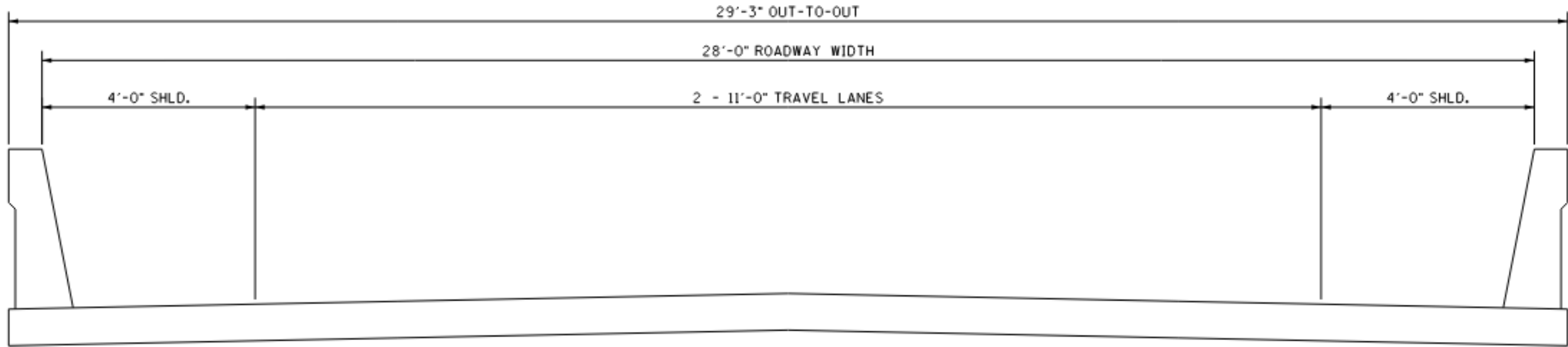
Proposed:

- Projected Traffic (2050): 670 veh./day
- Design Speed: 45 mph
- Structural Layout:
 - Length: 350'
 - Spans: 4 spans (75' - 100 - 100 - 75')
 - Max. Span Length: 95'-0"
 - Width (Curb-to-curb): 30'-0"
 - Width (Out-to-out): 29'-3"
 - Travel Lanes: 2 – 11'-0"
- Roadway Approach
- Lane width: 2 - 11'-0" lanes
- Shoulder Width: 4'-0" Shoulder
- Potential Grade raise: $\approx$ 1'-0"
- Bridge Deck Area: 10,238 SF
- Approximate Cost (\$350/SF): \$3,584,000
- I-40 AADT (2050): 72,490 veh./day

04 – Wilson Co. Approach Road Typical Section



04 – Wilson Co. Typical Bridge Cross-Section



TYPICAL CROSS SECTION

Action Items Review

Next:

Bridge Selection
Coordination &
Receive Bridge Plans

April:

Draft
Concept
Bridge Report



3/28:

Preliminary
Cost Estimate

June:

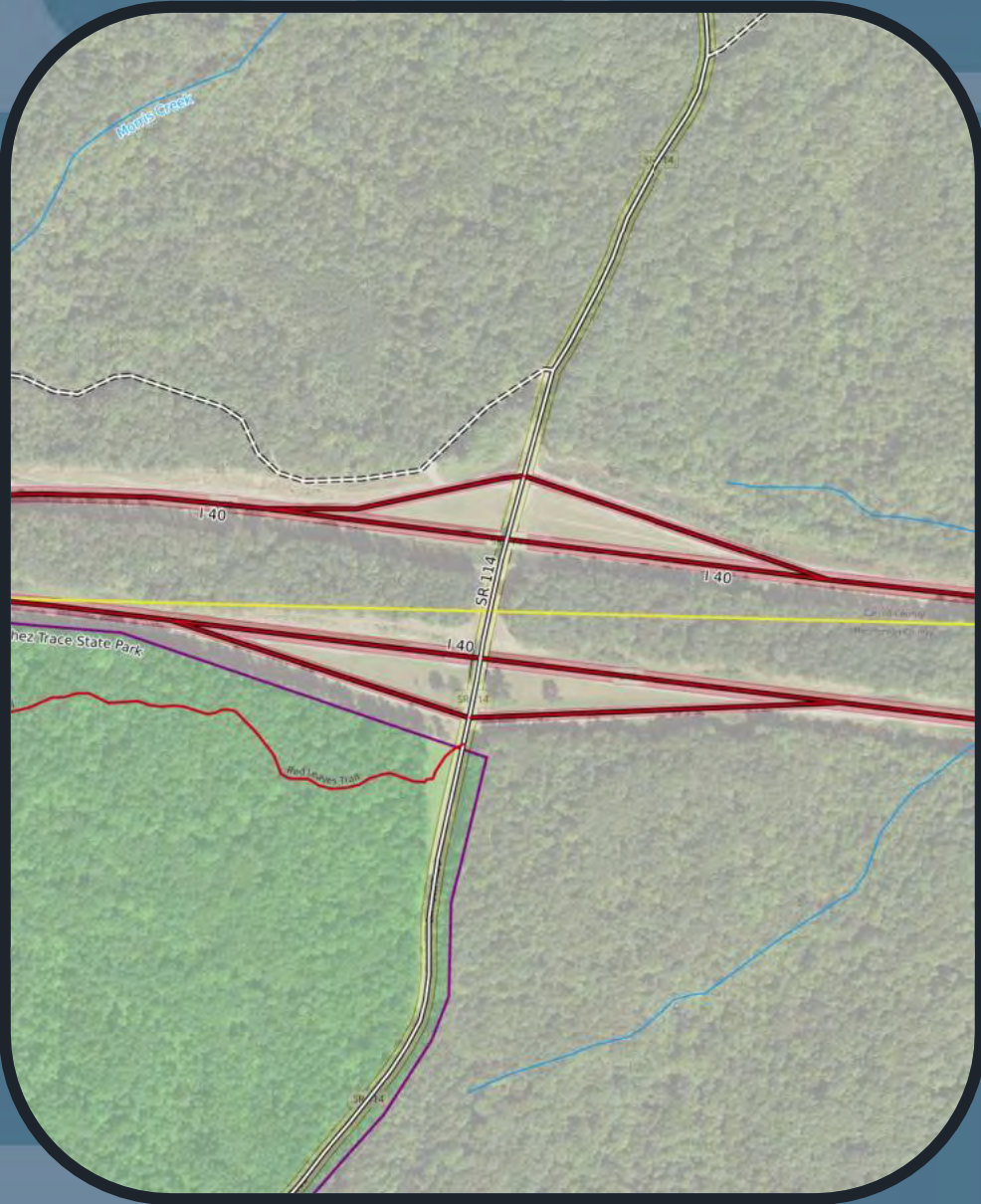
Final Concept
Bridge Report

Questions





615 3rd Avenue South // SUITE 700
Nashville // Tennessee // 37210
Phone // 615-254-1500 // BargeDesign.com



01 – Henderson Co. Feature Map

- Yellow County Line
- Red Leaves Trail



02 – Madison Co. Feature Map

- Stream - Merriweather Branch
- FEMA Zone A



03 – Williamson Co. Feature Map

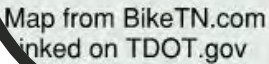
- Urban Area
- Large Light Pole Nearby



04 – Wilson Co. Feature Map

- Dead End Road – Quarry & Homes

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02 - Madison Co. Culvert



Embankment Erosion Along I-40 EB



Rotation at Endwall

MEETING MINUTES

Date of Meeting: 3/21/25

Project: TDOT PM On-Call Bridge Concept Reports (Henderson, Madison, Williamson, and Wilson Counties)

Subject: Virtual Site Visit Meeting

Meeting Location: Microsoft Teams

Barge Project No.: 3877101, 3877102, 3877103, 3877104

PARTICIPANTS:

Barge Design Solutions: Robby Dickenson, Kevin McAlister, John Hunter, Andrea Hall, Nick Petrella, Jack Yuill

TDOT: David Duncan, Emily Burgess, Dan Shike, Kim Welch, Miller Bernhardt

Copy to: Attendees, Michael Davis (Barge)

ITEMS DISCUSSED:

The purpose of this virtual site visit was for Barge Design Solutions staff to present site visit findings and to discuss detour routes, phasing, bridge size/type, and other recommendations as well as preliminary bridge costs.

1. SR 114 Bridges (2) over I-40 @ LM 26.47 (Henderson Co.)
 - a. Phasing is not possible because this is a two (2) beam bridge
 - b. David requested the Barge team to include five (5) foot shoulders to accommodate bike lanes.
 - c. Ramps may need to be closed during construction because of the need to raise the grade to accommodate deeper beams.
 - d. Emily requested the Barge team to provide bridge concepts that accommodate a third interstate lane in each direction on I-40 for future widening. This applies to all of the bridges that cross I-40.
 - e. The Barge team will propose two (2) alternative bridge concepts. The first will consist of closing the bridges and removing/replacing them in the same location.

The second option will consist of building new bridges parallel to the existing bridges on a new alignment.

2. Lower Brownsville Rd. Bridge over I-40 @ LM 4.54 (Madison Co.)
 - a. This bridge will be closed and removed/replaced in the same location.
 - b. Interchange ramps should remain open during construction.
 - c. It was noted that large farm equipment appeared to frequent this bridge. Any proposed detour would be difficult for them to traverse.
3. SR 441/I-65 SB On-Ramp over Ramps B & C @ LM 1.49 (Williamson Co.)
 - a. The Barge team proposes building a new bridge parallel to the existing bridge on a new alignment. For concept purposes, the new bridge will be offset a minimum of three (3) feet from the existing bridge.
 - b. David asked if the new bridge will be tangent or curved. Andrea said that the plan will be for a tangent bridge, but the Barge team won't know until the alignment is further developed.
4. N. Commerce Rd. Bridge over I-40 @ LM 25.98 (Wilson Co.)
 - a. This bridge presents problems because of the proximity of intersecting roads to the bridge, especially East Saulsbury Rd., which is the only access to/from a rock quarry and homes.
 - b. The current bridge uses steel beams. If the new bridge uses concrete beams, it may raise the bridge grade too much to be able to tie in to the intersecting roads. In that case, steel beams may need to be proposed. The Barge team will investigate this further. Dan mentioned that TDOT prefers a minimum bridge clearance of 17'-0", but in this case, the minimum bridge clearance can be 16'-6" if it will make the bridge replacement and cost more feasible.
 - c. David asked if the bridge might need to be superelevated if the horizontal curve carries onto the bridge. The Barge team will avoid that if possible, but they will know more as the bridge concept is developed.

ACTION ITEMS:

1. Bridge concepts for Henderson, Madison and Wilson County bridges will accommodate a third lane in each direction of I-40 for future widening.
2. Henderson County bridge will include a five (5) foot wide bike lane on the bridge as well as the approaches to accommodate the signed bike route.
3. Barge to review latest standard guidelines and drawings to make sure that bridge typical sections include the proper shoulder width to the bottom of the parapet rather than the top as previously shown.
4. Barge will submit preliminary cost estimates on 3/28/25. These cost estimates will include a summary of recommendations for each bridge that corresponds to the cost estimates.

5. Barge will provide information on accelerated bridge construction (ABC) tools used by other states to provide guidance to TDOT if they would like to consider it on any of these or other projects.
6. Barge will submit the draft bridge concept reports by the end of April.
7. Barge will submit the final bridge concept reports by the end of June.

These notes represent my understanding of items discussed and conclusions reached. Participants are requested to review these items and advise of necessary corrections or revisions.

Signed:  Date: 3/21/25

