

Concept Report Form

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

General Project Information

Project Name	SR 114 (Natchez Trace Road) Bridges over I-40									
PIN	136173.00									
Route Information	Route	NHS (Y/N)	Functional Class			City		County		
	SR114	No	Rural Major Collector			N/A		Henderson/Carroll		
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	
	26.47	26.47	530	79	2.00	45	45	2030	2050	
Project Description & Standard Drawings Used	Demolish and replace 2 bridges over I-40. The existing bridges, because of their structure, cannot provide phased construction, so the bridges will be closed. The proposed bridges will accommodate future widening of I-40, meet clear-zone and vertical clearance requirements. The proposed bridge is a 120' single-span bridge with prestressed concrete superstructure. The proposed bridge cross-section will have 2-11' travel lanes and 5' shoulders on both sides. The 5' shoulders are intended to accommodate a bike lane. The project limits include 1,900 feet of roadway improvements along SR 114 and 1,200 feet along the interchange ramps. The roadway improvements include raising the grade and widening. Minimal ROW and utility impacts are anticipated. See page 7 for additional details RD11-TS-2									
Important Project History or Related Projects	The existing bridge over I-40 WB is a 3-span, 154.5' long structure with a 28.5' width. The existing bridge over I-40 EB is a 3-span, 154.5' long structure with a 28.5' width. Both bridges have 2-12' travel lanes and 2' 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 over I-40 WB condition is Fair and built in 1961 -Bridge over I-40 EB condition is Poor and built in 1966									
Major Environmental Considerations	Natchez Trace State Park tracts can be impacted if the proposed bridges are constructed adjacent to the existing bridges and SR 114 is realigned. The environmental desktop review highly recommends avoidance (all Right-of-Way and easement acquisition) of the state park tracts to keep the project's schedule from experiencing serious adverse impacts. See the environmental desktop review for additional information. The ecology report states the project is within the range of protected bats, water features may be present, and a site visit would be needed to confirm. A bridge survey will be scheduled soon for asbestos. Cultural resources states NAC will be coordinated at Stage 1.									

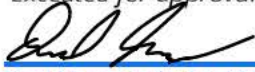
Project Details

Multi-Modal Considerations	All options include widening the shoulders to accommodate bicycles since this state route is currently signed as a bike route.			
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. Option 1's total construction cost in 2025 and 2030 is [REDACTED] and [REDACTED] respectively. Option 2's total construction cost in 2025 and 2030 is [REDACTED] and [REDACTED] respectively. Both options include [REDACTED] worth of utility cost in 2025. According to a notice sign on site, there is a potential need to coordinate with the ongoing TDOT ITS project in this area.			
Concept Estimate and Timeline	Total Current Project Cost		Construction Year Estimate	Preliminary Estimates
	[REDACTED]		[REDACTED]	
	Proposed Construction Year		Estimated Construction Duration	
	2030		TBD	

¹ Traffic numbers reflect identified design year

Approvals

Executed for approval of this Concept Report



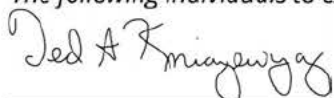
David Duncan (Jul 8, 2025 09:40 CDT)

Engineering Concepts and Statewide Programs Director

07/08/2025

Date

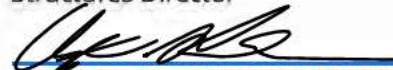
The following individuals to execute if a bridge concept report:



Structures Director

07/08/2025

Date



Clayton Markham (Jul 14, 2025 09:23 CDT)

Alternative Delivery Director

07/14/2025

Date

Action Checklist			
OSD1 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
OEN1 Conduct Environmental Desktop Review			
Complete	NA		Date Completed
✓		Confirm Environmental Desktop Review is Complete	05/15/2025
OMM1 Conduct Multimodal Review			
Complete	NA		Date Completed
	✓	Confirm Multimodal Review is Complete	
	✓	Review Multimodal Considerations & Recommendations	
OTO1 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	
OST1 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	
OSY1 Provide Preliminary Survey Data			
Complete	NA		Date Completed
	✓	Confirm Control Ground Survey Set	
	✓	Review Preliminary Survey Data	
	✓	Determine Time to Complete the Aerial Survey	
OGT1 Conduct Preliminary Geotechnical Assessment			
Complete	NA		Date Completed
	✓	Confirm Geotechnical Division Review is Complete	
ORD1 Provide Roadway Desktop Review			
Complete	NA		Date Completed
	✓	Confirm Roadway Division Review is Complete	

Action Checklist			
0SD2 Develop Draft Concept Report			
Complete	NA		Date Completed
	✓	Conduct Intersection and Interchange Evaluation (IIE)	
	✓	Complete Conceptual Signal Warrants	
	✓	Develop Draft Conceptual Layouts/Crash Figures for Site Visit	
	✓	Compile Initial Divisional Reviews for Site Visit	
✓		Prepare & Send Site Visit Packet	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
0TO2 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	
0RW1 Complete Preliminary Right-of-Way Estimates			
Complete	NA		Date Completed
	✓	Review and Confirm Preliminary Right-of-Way Cost Estimates	
0UT1 Complete Utility Preliminary Estimates			
Complete	NA		Date Completed
	✓	Review and Confirm Preliminary Utility Estimate	
	✓	Review and Confirm Preliminary Railroad Cost Estimate	
0SD3 Finalize Concept Report			
Complete	NA		Date Completed
	✓	Compile and Review Initial Risk Assessment	
✓		Finalize Conceptual Layouts	06/13/2025
✓		Develop Environmental Technical Study Area (ETSA)	06/13/2025
✓		Address Comments and Finalize Concept Report	06/25/2025
	✓	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 0SD3 for additional information)	06/27/2025
✓		Finalize Document and Upload All Needed Electronic Files	07/03/2025
	✓	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
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- 1 crash occurred within the project limits, crash prediction analysis not needed;
 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

Henderson County
SR 114 (Natchez Trace Road) over I-40 at Exit 116 (L.M. 26.47)

Project Description:

The primary work of the project is to demolish and replace two (2) bridges over I-40. The existing bridges, because of their structure, cannot provide phased construction, so the bridges will be closed. The proposed bridges will accommodate future widening of I-40, meet clear-zone and vertical clearance requirements. The proposed bridge is a 120' single-span bridge with prestressed concrete superstructure. Following TDOT's Structural Design Guidelines (SDG), the span length will require wide bulb-tee 54" prestressed girders. The existing structure has a shallow superstructure, and to meet the 17' vertical clearance, the grade will have to rise 3.8'. Outside the clear-zone, MSE walls will be constructed along each abutment. The proposed bridge cross-section will have 2-11' travel lanes and 5' shoulders on both sides. The 5' shoulders are intended to accommodate a bike lane.

The project limits include approximately 1,900 feet of roadway improvements along SR 114 (Natchez Trace Road) and 1,200 feet along the interchange ramps. The roadway improvements include raising the grade to meet the proposed bridge elevations and widening SR 114 (Natchez Trace Road). Widening SR 114 (Natchez Trace Road) will better align with TDOT's current standards and provide sufficient width along the designated bike route.

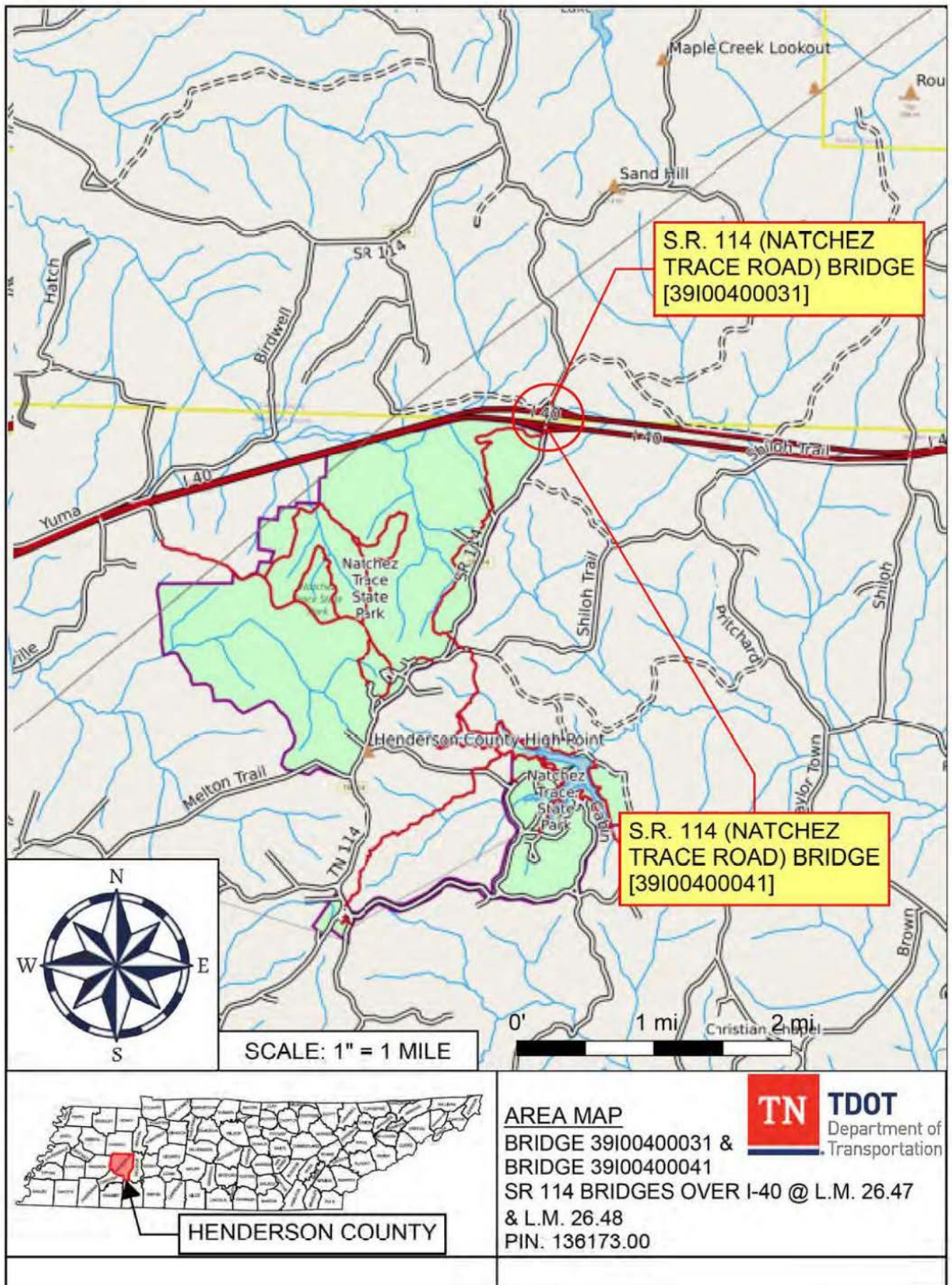
Two options were presented. Option 1 proposes the bridge replacements at the existing bridge locations. Option 2 proposes the bridge replacements adjacent to the existing in order to avoid a road closure. The former option can maintain the environmental desktop review's recommendation to avoid R.O.W. and easement impacts to state park tracts while the latter cannot due to major road realignment work. See page 11 through 14 for detour information. The north side interstate detour's length and time are 17 miles and 16 minutes, respectively. The south side interstate detour's length and time are 20 miles and 20 minutes, respectively. The state route detour's length and time are 41 miles and 1 hour, respectively. The local road detour's length and time are 19 miles and 30 minutes, respectively.

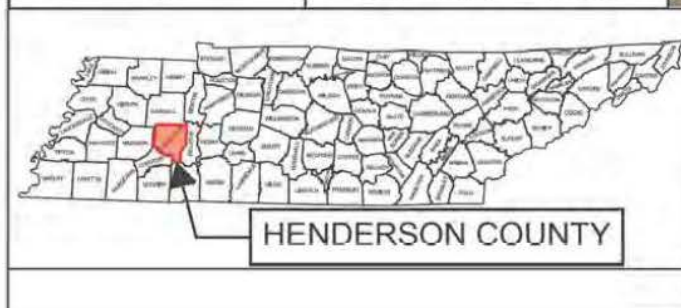
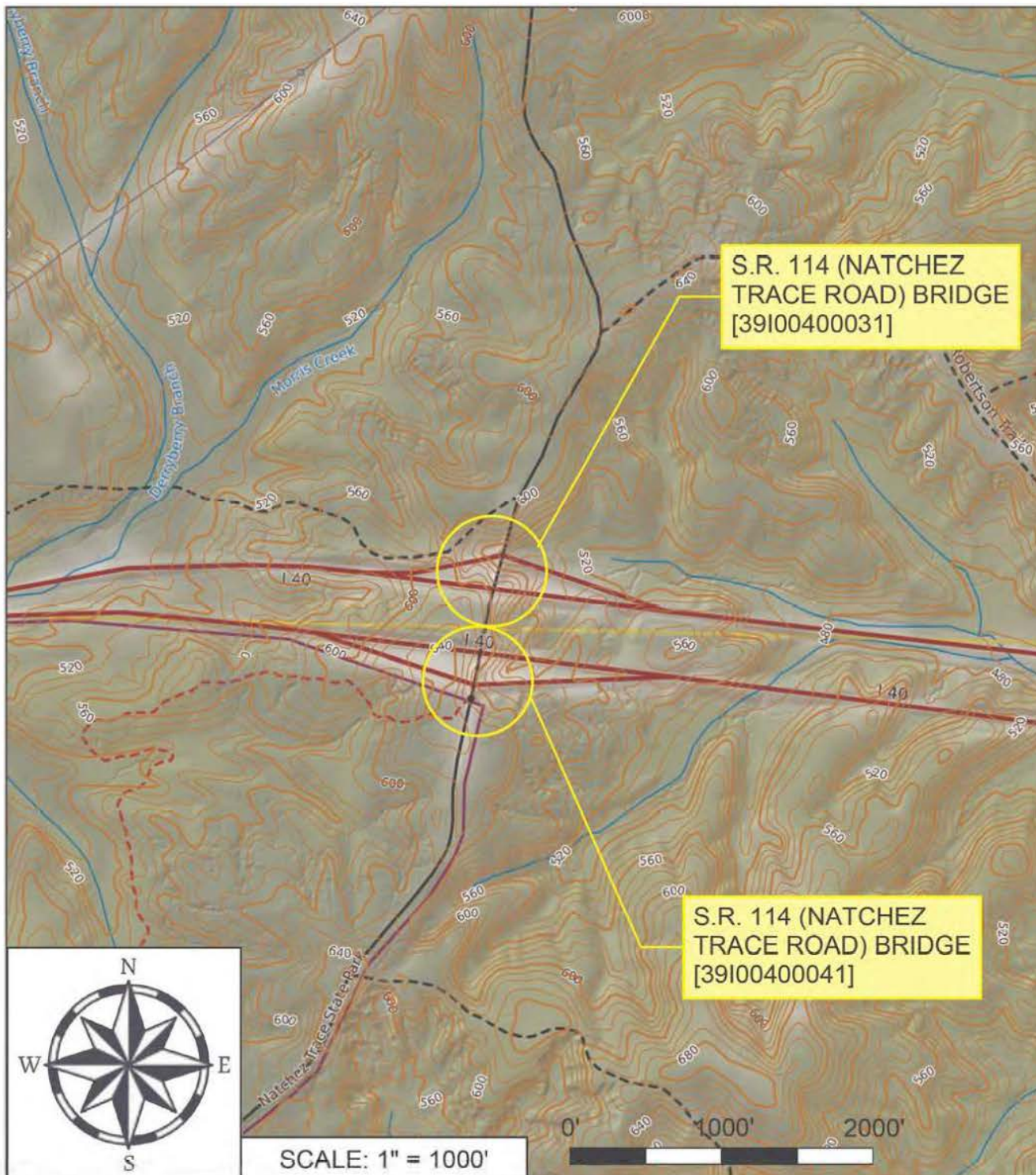
TDOT's resources show SR 114 (Natchez Trace Road) classified as a Rural Major Collector with a design speed of 45 MPH. The traffic data provided by TDOT indicated an AADT of 340 vehicles and 530 vehicles for 2030 and 2050, respectively.

Project Risks:

Natchez Trace State Park tracts can be impacted if the proposed bridges are constructed adjacent to the existing bridges and SR 114 is realigned. According to a notice sign on site, there is a potential need to coordinate with the ongoing TDOT ITS project in this area.







TOPOGRAPHIC MAP

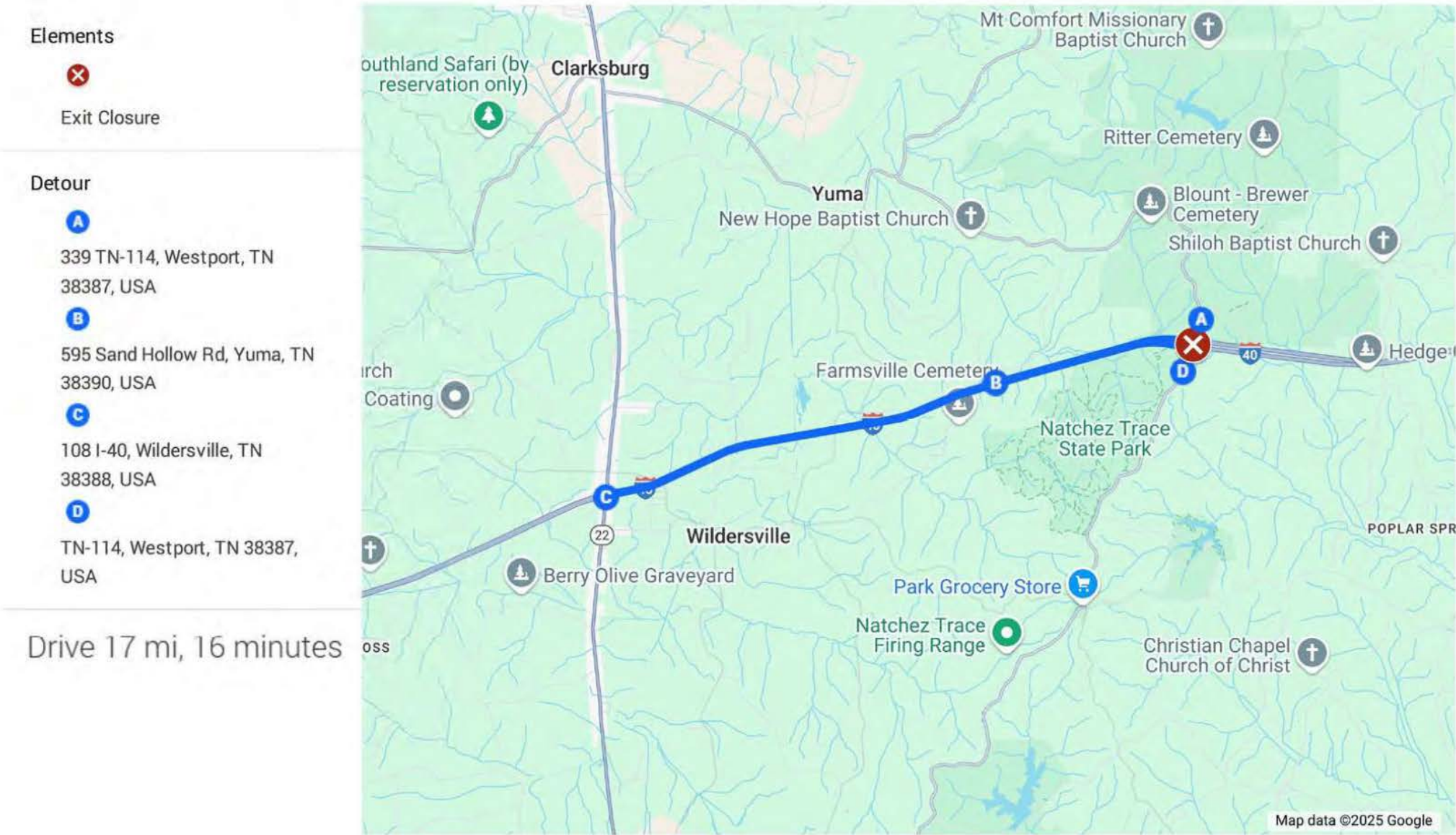
BRIDGE 39I00400031 &
BRIDGE 39I00400041

SR 114 BRIDGES OVER I-40 @ L.M. 26.47
& L.M. 26.48
PIN. 136173.00



TDOT
Department of
Transportation

01 - Henderson Co. North Side Interstate Detour



01 - Henderson Co. South Side Interstate Detour

Elements



Bridge Closure

Detour



Fairview Trail, Westport, TN
38387, USA



I-40, Wildersville, TN 38388,
USA

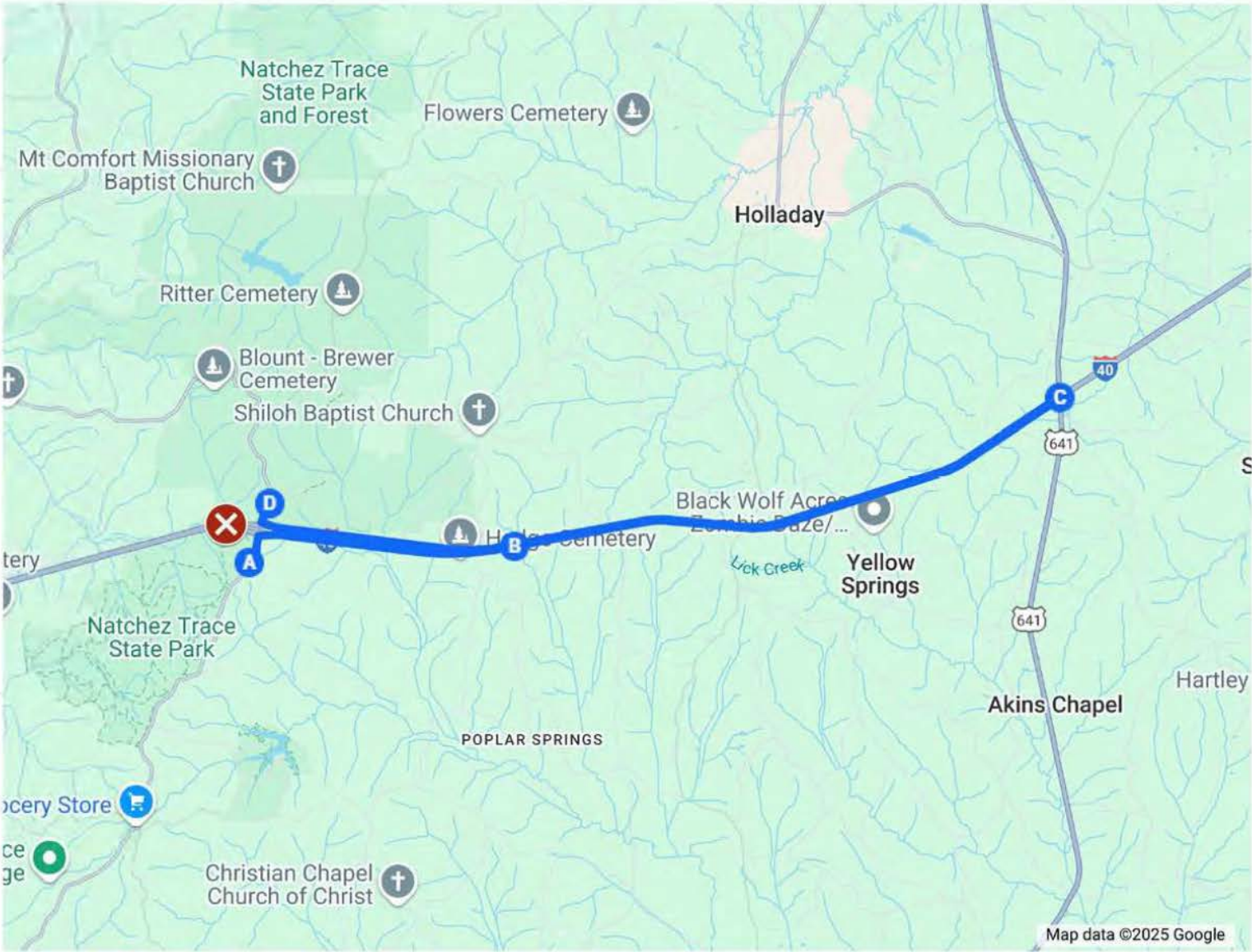


13960 US-641, Holladay, TN
38341, USA



304 TN-114, Westport, TN
38387, USA

Drive 20 mi, 20 minutes



01 - Henderson Co. State Route Detour

Elements



Exit Closure

Directions from TN-114, Westport,
TN 38387, USA to 731 TN-114,
Westport, TN 38387, USA

A

TN-114, Westport, TN 38387,
USA

B

13870 Natchez Trace Rd,
Lexington, TN 38351, USA

C

35 Wilson St, Lexington, TN
38351, USA

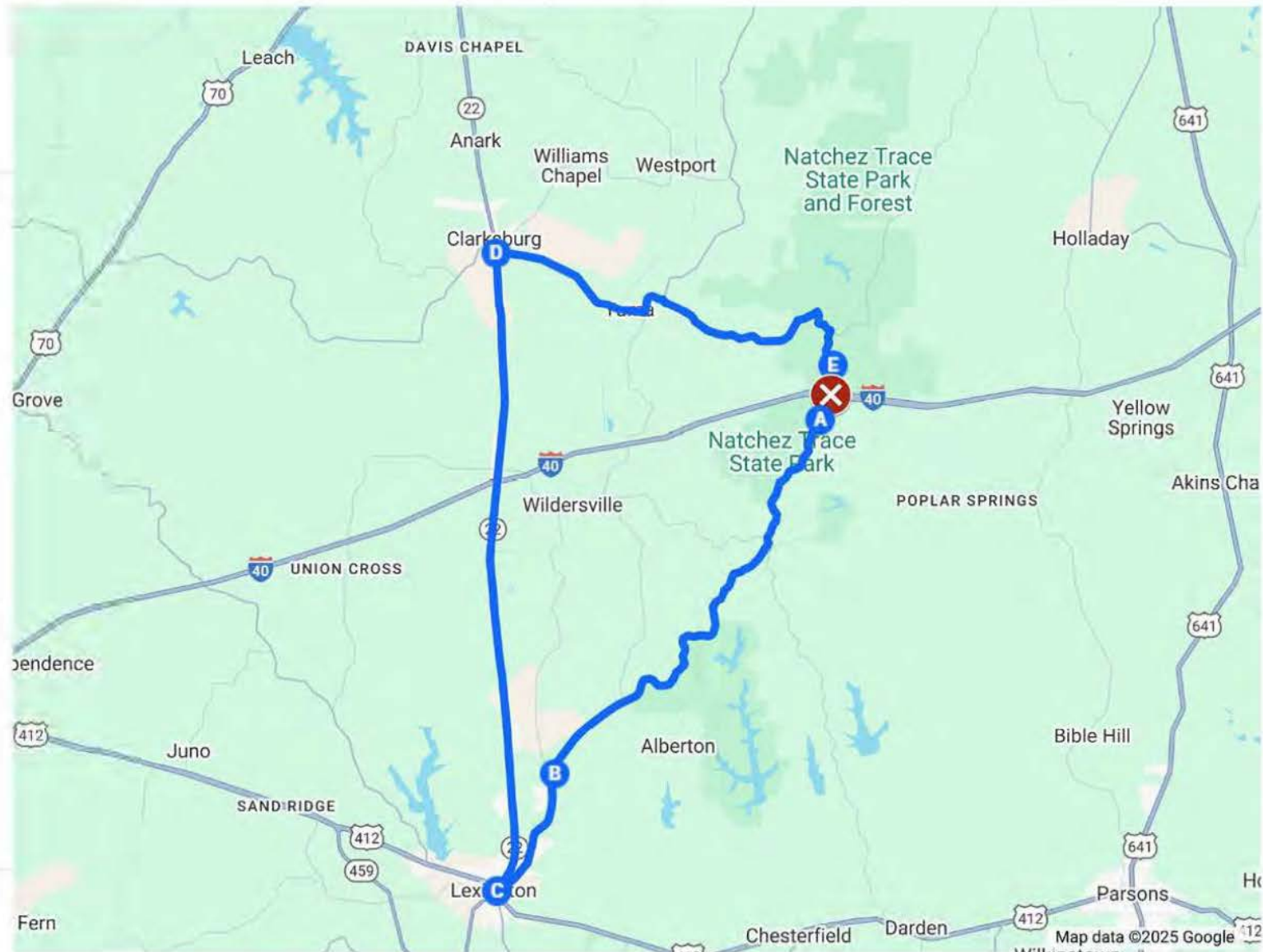
D

12570 TN-424, Clarksburg, TN
38324, USA

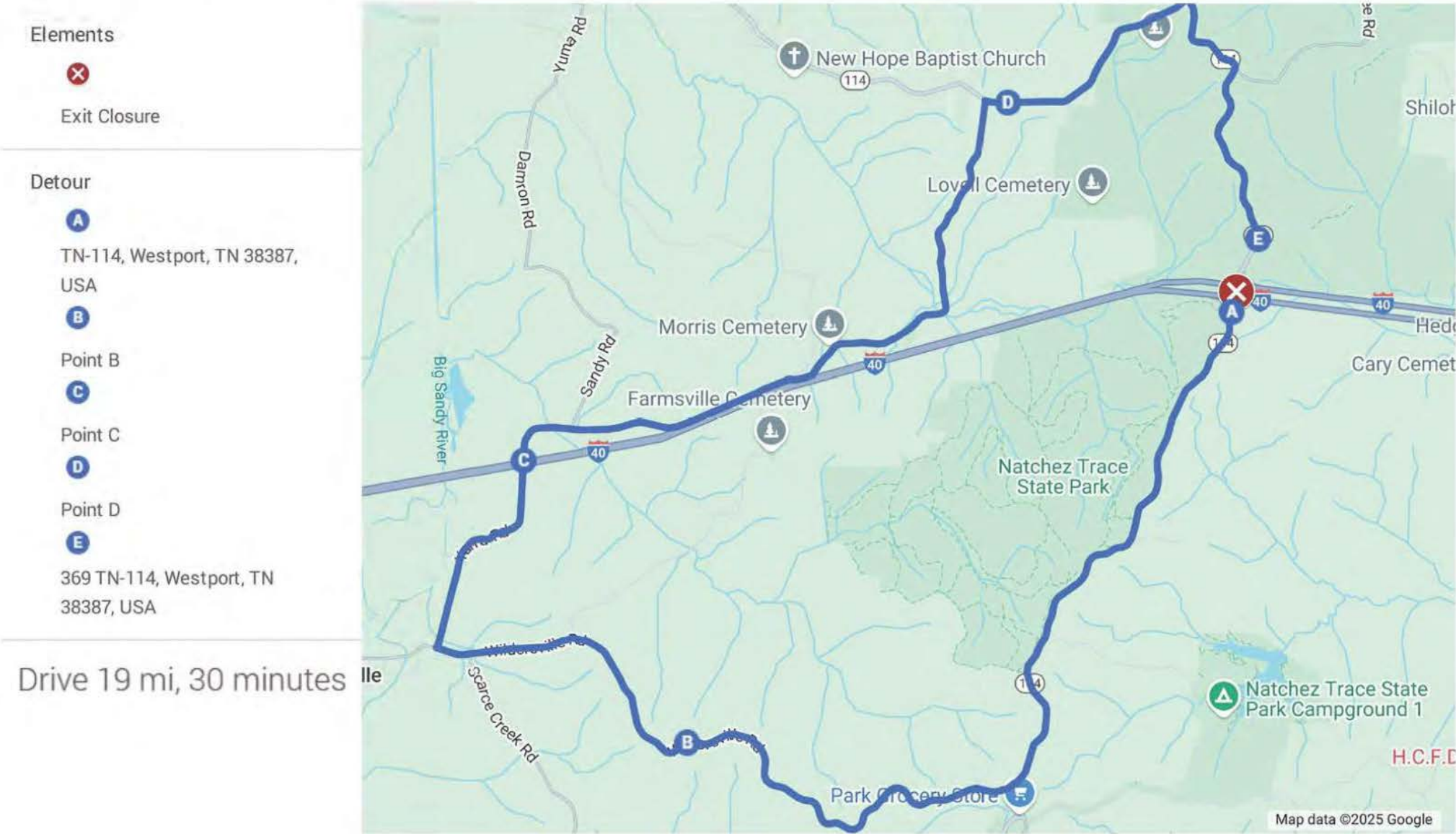
E

731 TN-114, Westport, TN
38387, USA

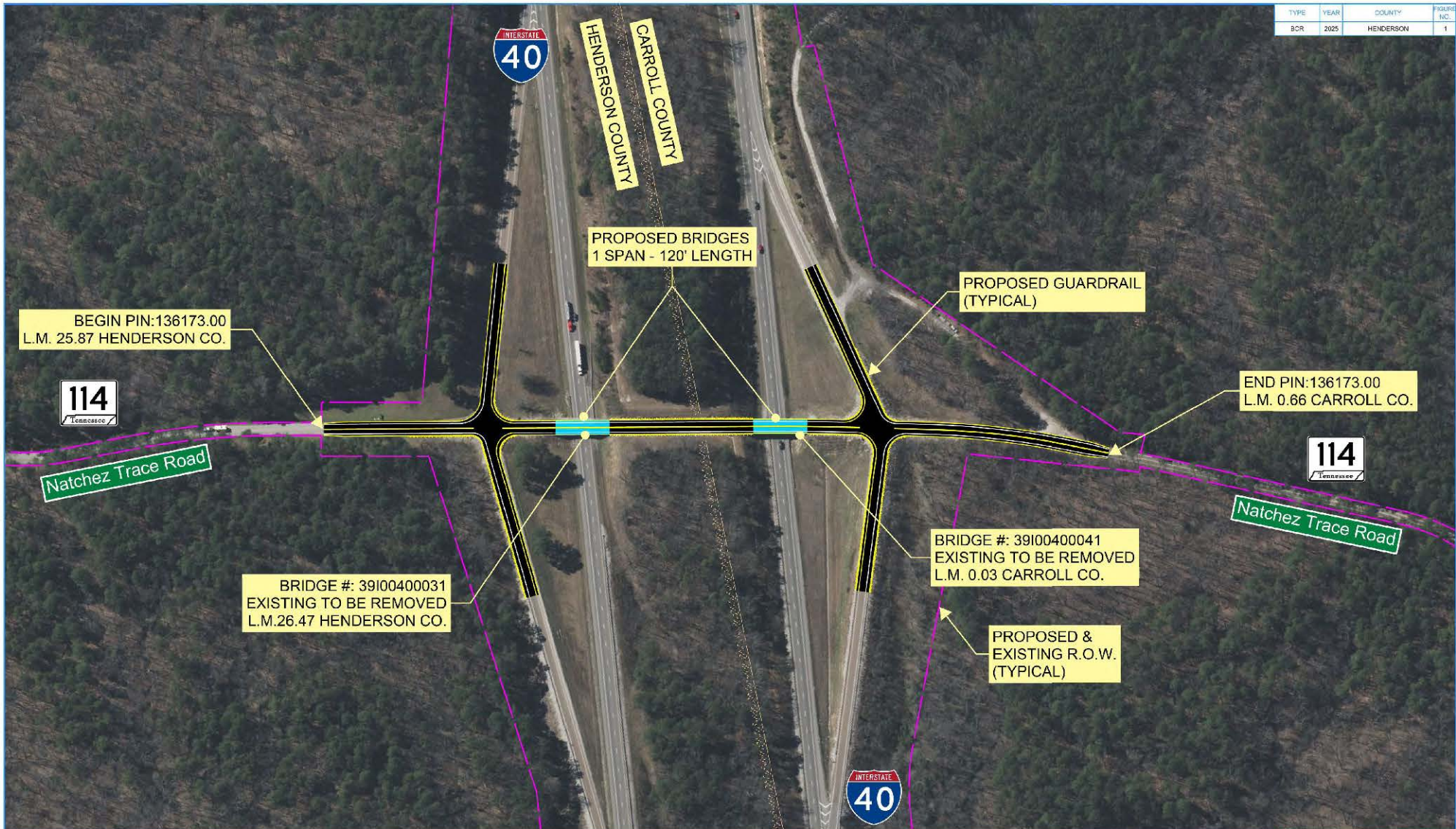
Drive 41 mi, 1 hour



01 - Henderson Co. Local Road Detour



TYPE	YEAR	COUNTY	FIGURE NO.
BCR	2025	HENDERSON	1



BRIDGE CONCEPT REPORT

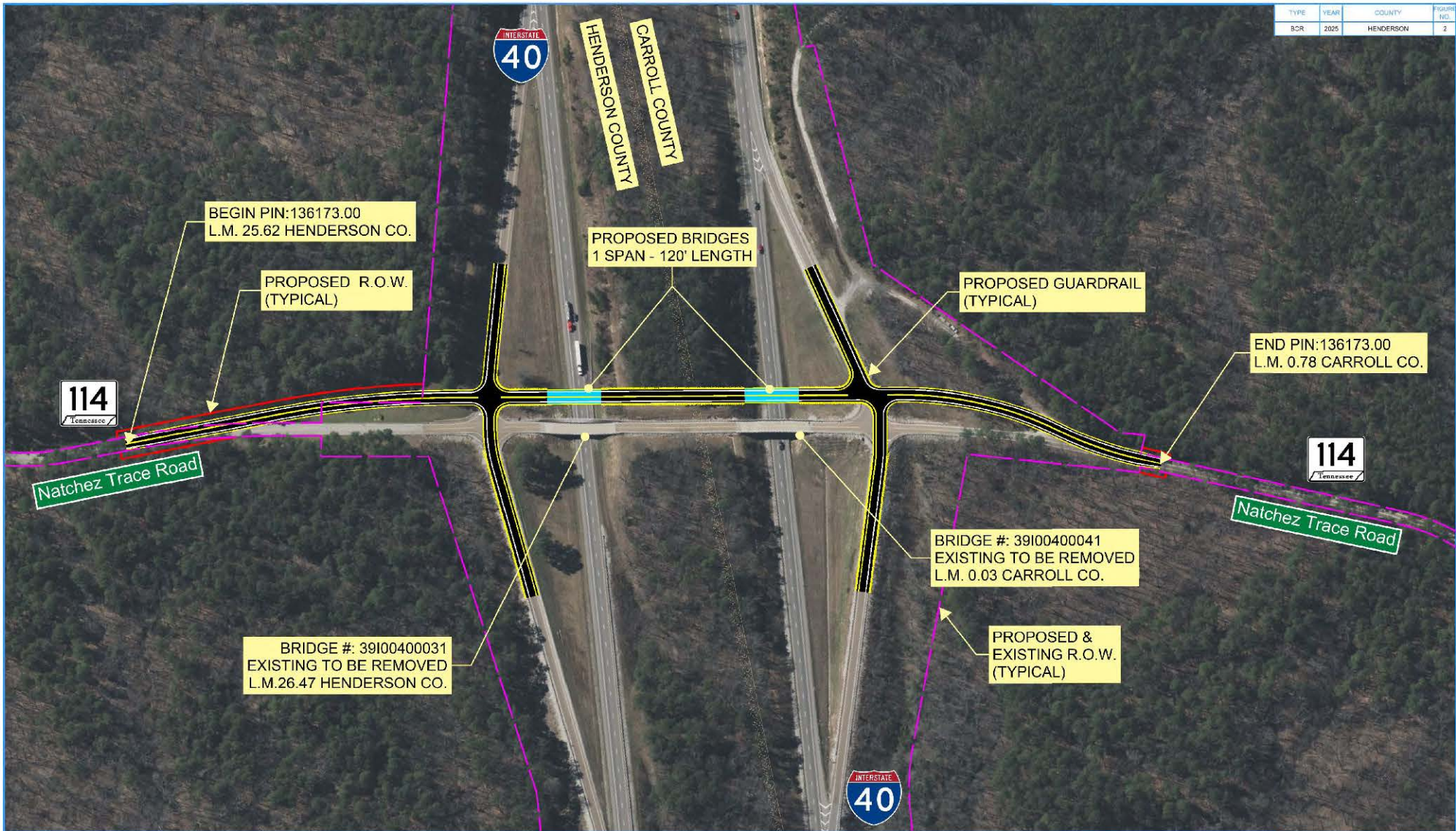
OPTION 1

STATE ROUTE 114 (NATCHEZ TRACE ROAD) OVER I-40 AT EXIT 116 (L.M. 26.47)
HENDERSON COUNTY

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

FIGURE 1
STATE ROUTE 114
(NATCHEZ TRACE ROAD)
OVER I-40 AT
EXIT 116 (L.M. 26.47)

TYPE	YEAR	COUNTY	FIGURE NO.
BCR	2025	HENDERSON	2



BRIDGE CONCEPT REPORT

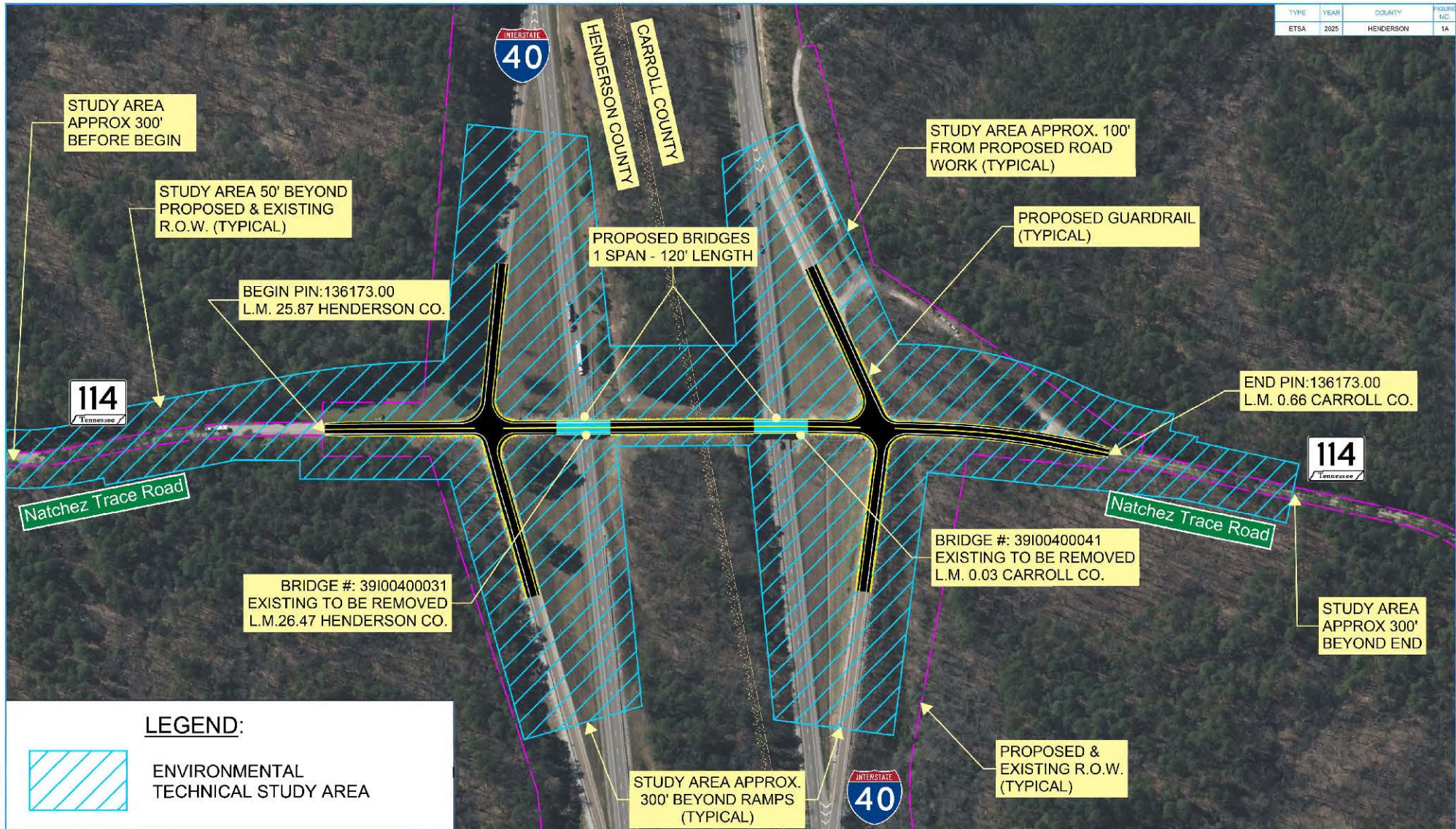
OPTION 2

STATE ROUTE 114 (NATCHEZ TRACE ROAD) OVER I-40 AT EXIT 116 (L.M. 26.47)
HENDERSON COUNTY

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

FIGURE 2
STATE ROUTE 114
(NATCHEZ TRACE ROAD)
OVER I-40 AT
EXIT 116 (L.M. 26.47)

TYPE	YEAR	COUNTY	FIGURE NO.
ETSA	2025	HENDERSON	1A



LEGEND:



ENVIRONMENTAL
TECHNICAL STUDY AREA

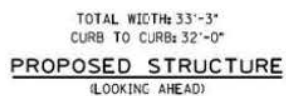


ENVIRONMENTAL TECHNICAL STUDY AREA

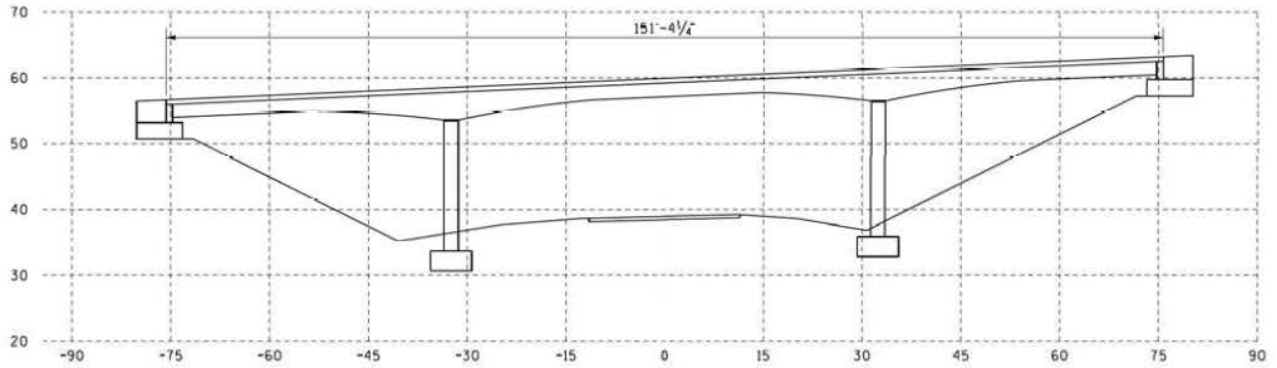
BOTH OPTIONS - OPTION 1 DISPLAYED
STATE ROUTE 114 (NATCHEZ TRACE ROAD) OVER I-40 AT EXIT 116 (L.M. 26.47)
HENDERSON COUNTY

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

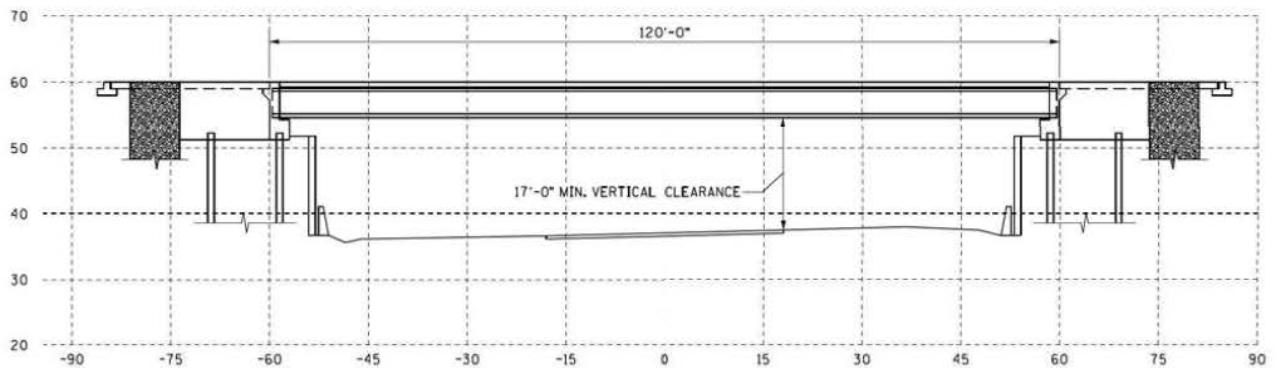
FIGURE 1A
STATE ROUTE 114
(NATCHEZ TRACE ROAD)
OVER I-40 AT
EXIT 116 (L.M. 26.47)

Page 18 of 166

38005



EXISTING STRUCTURE
 (EBL SHOWN WBL SIMILAR)



PROPOSED STRUCTURE
 (EBL SHOWN WBL SIMILAR)

REV.	DATE	BY	CHKD.	DESCRIPTION
1	05/13/2025	SSB	SSB	ISSUED FOR PERMIT
2	05/13/2025	SSB	SSB	ISSUED FOR PERMIT
3	05/13/2025	SSB	SSB	ISSUED FOR PERMIT
4	05/13/2025	SSB	SSB	ISSUED FOR PERMIT
5	05/13/2025	SSB	SSB	ISSUED FOR PERMIT
6	05/13/2025	SSB	SSB	ISSUED FOR PERMIT
7	05/13/2025	SSB	SSB	ISSUED FOR PERMIT
8	05/13/2025	SSB	SSB	ISSUED FOR PERMIT
9	05/13/2025	SSB	SSB	ISSUED FOR PERMIT
10	05/13/2025	SSB	SSB	ISSUED FOR PERMIT

BRIDGE ELEVATION

S.R. 114 OVER I-40 EBL & S.R. 114 OVER I-40 WBL
 HENDERSON/CARROL COUNTY

PRELIMINARY
 PLANS

BARGE
 DESIGN SOLUTIONS

CRASH SUMMARY REPORT

Henderson Co - SR 114 Bridges

Created on April 16, 2025

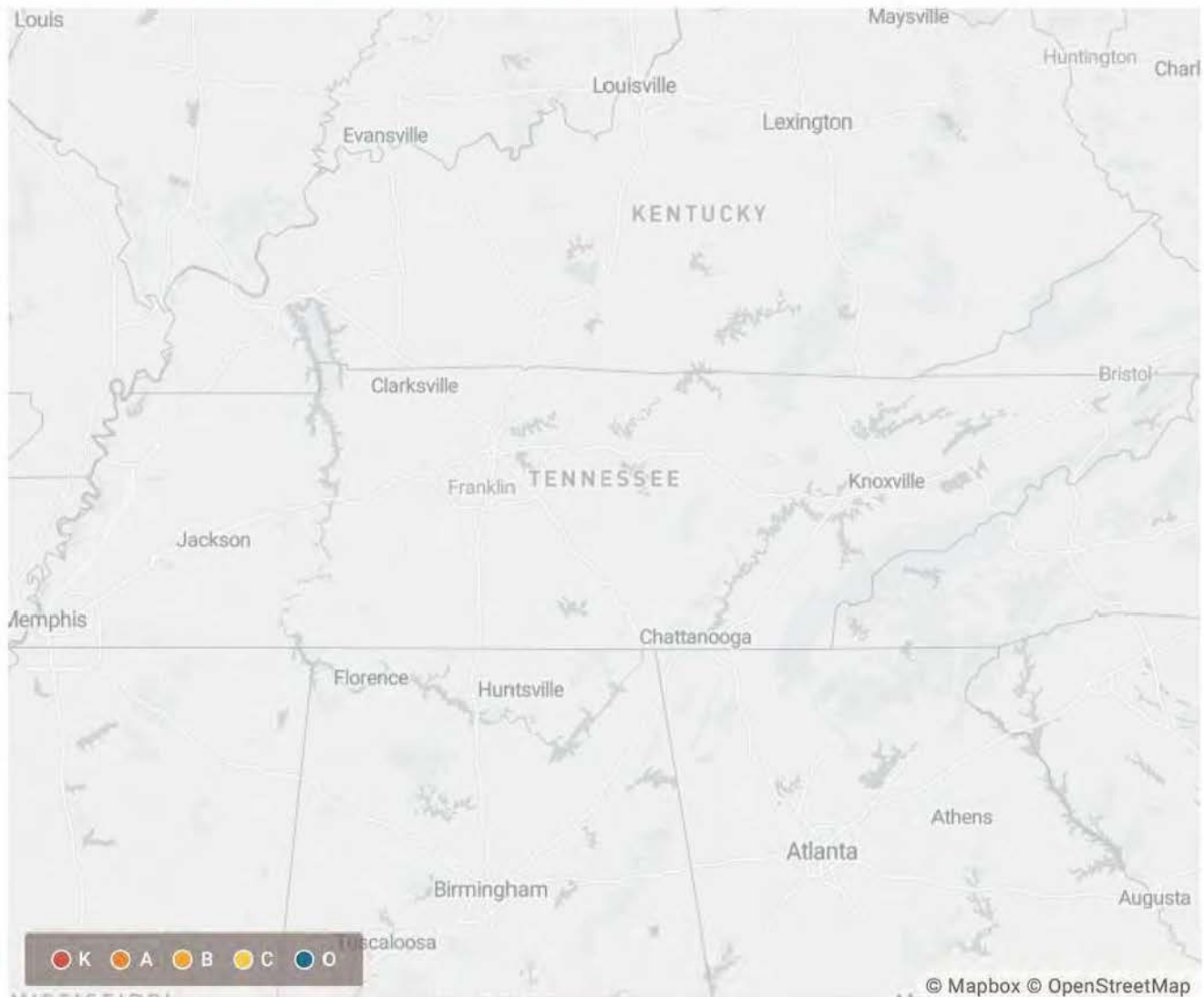
Created by Geneva Dowdy

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



Applied Filters

County	=	Henderson	Route	=	SR114	Log Mile	≤	26.37 - 26.57
--------	---	-----------	-------	---	-------	----------	---	---------------



Total Crashes	0	Fatal Crashes	0
---------------	---	---------------	---

Summary	Crash
Alcohol Involved	0
Distracted Driver Involved	
Motorcycle Involved	
Pedestrian Involved	
Total Crashes	

Truck/Bus Involved

Type of Crash	Crash
---------------	-------

+ 5 more	0
----------	---

Date of Crash (Year)	Crash
----------------------	-------

+ 12 more	0
-----------	---

Manner of First Collision	Crash
---------------------------	-------

+ 10 more	0
-----------	---

First Harmful Event	Crash
---------------------	-------

+ 66 more	0
-----------	---

Crash Location	Crash
----------------	-------

+ 7 more	0
----------	---

Light Conditions	Crash
------------------	-------

+ 8 more	0
----------	---

Weather Conditions	Crash
--------------------	-------

+ 12 more	0
-----------	---

DRAFT Environmental Desktop Review Form

Part 1 – Project Information

PIN	136173.00
Project Number (if available)	
County	Henderson
Route	
Termini	SR-114 Bridges over I-40
Type of Document	
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 Henderson 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 previously recorded cultural resources.

Historic Preservation: Review of both design options and their corresponding ETSA Layouts indicate this proposed project will require right-of-way acquisition, which will necessitate a Section 106 report. There are two above-ground resources aged 50 years or older located within the study area, Bridge #: 39I00400031 and Bridge #: 39I00400041. Should new ROW or easements become necessary, then further Section 106 review will be required.

Native American Coordination (NAC): NAC will be coordinated with all tribes interested in Henderson County at Stage 1 of the proposed project.

Ecology

Aerial imagery suggests that water features may be present within the project footprint and a site visit will be needed to identify any features within the project footprint.

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 for 39I00400031 has been scheduled and the report is due by 2 July 2025.

However, bridge 39I00400041 is not listed in Project Search as being part of this project even though the Concept Report has it. This bridge survey will be scheduled soon.

NEPA

After reviewing both of the design options and corresponding ETSA Layouts, the NEPA Unit highly recommends avoiding all ROW and easement acquisition on the Natchez Trace State Park and State Forest tracts (north and south of I-40). Since Natchez Trace State Park has received multiple LWCF grants, acquiring any ROW or easements from the Natchez Trace State Park and Forest tracts could result in a permanent conversion under Section 6(f), and would have serious adverse impacts to the project's schedule. TDOT would have to purchase replacement recreational property, and would have to coordinate with TDEC, TDOA, FHWA, and the National Park Service – this could take up to two years to complete, after Functional Field Review Plans are developed.

The Natchez Trace State Park's official map shows the Red Leaves Trail crossing across both bridges, and the Red Leaves Trail is marked with signage on both sides of I-40 (confirming the map's route is correct). It would appear that closing this trail during project construction would result in Section 4(f) impacts to the recreational resource (i.e. the trail), and would require Section 4(f) consultation with TDEC, TDOA, and the FHWA.

The Henderson County State Route detour, while unavoidable, would also likely be considered a major traffic disruption (due to it significantly exceeding 25 miles), and would require the development of a D-List CE.

There do not appear to be any FEMA floodplain concerns, according to the FIRM maps.

Avoidance of the Natchez Trace State Park and Forest tracts is highly recommended to keep the project's schedule from experiencing serious adverse impacts.

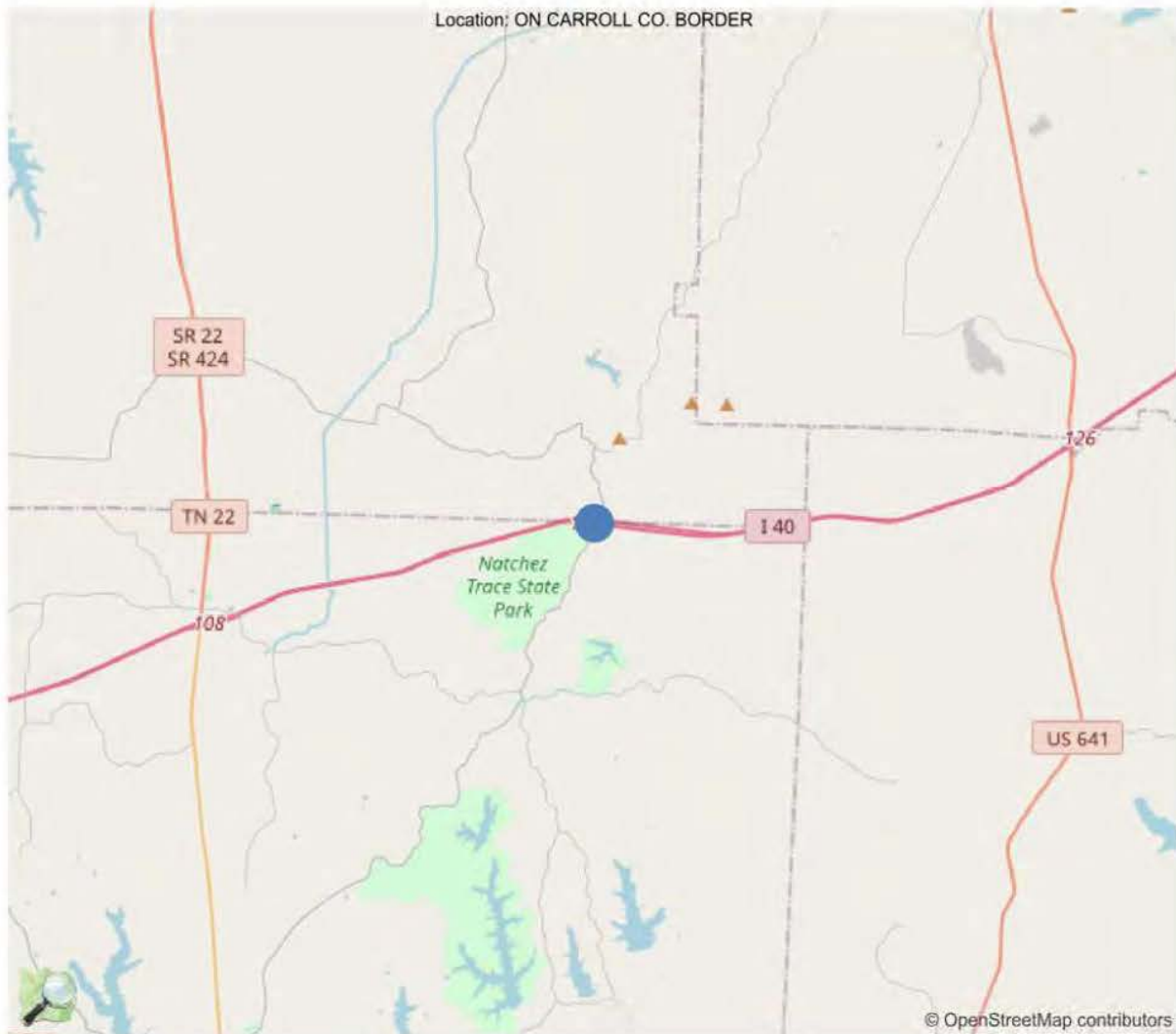


Latitude:35.81767, Longitude:-88.25261

Region 04, 39 - Henderson County

Team Leader: Jacob Kee

Inspectors: Jaylan Cox, Nathan Bedford, Jordan Fitts, Shayne Hayes, Ty Patrick



NATCHEZ TRACE RD. Crossing SR-114 / I-40 EBL

35.81767, -88.25261

90 - LAST INSPECTION DATE 06/03/2024

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	45

41 - STRC OPEN/CLOSED/POSTED P

58 - DECK 5

59 - SUPERSTRUCTURE 5

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 35.817667
17 - LONGITUDE -88.252611

JACOB KEE
Digitally signed
by JACOB KEE
Date: 2024.06.05
11:03:01 -05'00'

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	39I00400031
(5) Inventory Route	1
(2) Highway Agency District	Region 4
(3) County Code	39 - Henderson
(4) Place Code	00000
(6) Features Intersected	SR-114 / I-40 EBL
(7) Facility Carried	FAS 114
(9) Location	ON CARROLL CO. BORDER
(11) Mile Point	26.470 mi
(12) Base Highway Network	No
(13) LRS Inventory Rte & Subrte	
(16) Latitude	35.817667
(17) Longitude	-88.252611
(98) Border Bridge State Code	
(99) Border Bridge Structure No.	
STRUCTURE TYPE AND MATERIAL	
(43) Main Structure Type	24
Material	2 - Concrete continuous
Type	4 - Tee beam
(44) Approach Structure Type	00
Material	0 - Other / None
Type	0 - Other / None
(45) No. of Spans in Main Unit	3
(46) No. of Approach Spans	0
(107) Deck Structure Type	1 - Concrete Cast-in-Place
(108) Wearing Surface/Protective System	
Type of Wearing Surface	2 - Integral Concrete (separate non-mo
Type of Membrane	0 - None
Type of Deck Protection	0 - None
AGE AND SERVICE	
(27) Year Built	1966
(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	256
(30) Year of ADT	2021
(109) Truck ADT	5 %
(19) Bypass, Detour Length	8 mi
GEOMETRIC DATA	
(48) Length of Maximum Span	62.0 ft
(49) Structure Length	154.5 ft
(50) Curb or Sidewalk Width	
Left	0.0 ft
Right	0.0 ft
(51) Bridge Roadway Width Curb to Curb	26.5 ft
(52) Deck Width Out to Out	28.5 ft
(32) Approach Roadway Width (W/Shoulders)	20.0 ft
(33) Bridge Median	0 - No median
(34) Skew	84 Deg
(35) Structure Flared	0 - No flare
(10) Inventory Route Min Vert Clear	99.99 ft
(47) Inventory Route Total Horiz Clear	26.5 ft
(53) Min Vert Clear Over Bridge Rdwy	99.99 ft
(54) Min Vert Underclear	16.33 ft
Ref:	
(55) Min Lat Underclear RT	23.5 ft
Ref:	
(56) Min Lat Underclear LT	12.0 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	7 - Rural Major Collector
(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	5
(59) Superstructure	5
(60) Substructure	4
(61) Channel & Channel Protection	N
(62) Culverts	N
LOAD RATING AND POSTING	
(31) Design Load	2 - M 13.5 / H 15
(63) Operating Rating Method	8
(64) Operating Rating	
Type	8 - Load and Resistance Factor Rating (LRF
Rating	31.43
(65) Inventory Rating Method	8 - Load and Resistance Factor
(66) Inventory Rating	
Type	
Rating	22.03
(70) Bridge Posting	5 - Equal to or above legal loads
(41) Structure Open/Posted/Closed	P - Posted for load (may inclu
APPRAISAL	
(67) Structural Evaluation	6
(68) Deck Geometry	2
(69) Clearances, Vertical/Horizontal	6
(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	33 - Widening of existing brid
(76) Length of Structure Improvement	155.8 ft
(94) Bridge Improvement Cost	\$ 367
(95) Roadway Improvement Cost	\$ 37
(96) Total Project Cost	\$ 551
(97) Year of Improvement Cost Estimate	2022
(114) Future ADT	392
(115) Year of Future ADT	2042

INSPECTIONS *			
(90) Inspection Date	06/03/2024		
(91) Frequency	24		
(92) Critical Feature Inspection	Done	Freq. (Mon)	Date
A: Fracture Critical Detail	No		
B: Underwater Inspection	No		
C: Other Special Inspection	No		
* 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 11:15 am

Weather Conditions 82°F sunny

Vehicles Observed Personal

LIVE LOAD BEHAVIOR

Sub Horiz./ Vert. Defl (No)

Sub Vibration (No)

Super Horiz./ Vert. Defl (No)

Super Vibration (No)

APPROACH

Alignment (Good)

Pavement (Fair) 1/8" cracks and pothole

Embankment (Good)

TRAFFIC SAFETY FEATURES

Bridge Railing Rating (Fair)

Transitions Rating (Good)

Guardrail Rating (Fair) Approach 2 right - light damage

Guardrail Terminal Rating (Poor) Approach 1 right - broken post

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 Yes

Gross Tons

Single-unit Vehicle 40 Tons

Multi-unit Vehicle 40 Tons

564 Assigned Bridge Name

ATTACHED SIGNS

Sign No	Location	Text on Sign	Noted Defects
---------	----------	--------------	---------------

DECK

Wearing Surface Type		Concrete	Wearing Surface Depth
Wearing Surface	(Fair)	Hairline cracks and damaged areas	
Deck - Structural Condition	(Fair)	Hairline cracks with efflorescence & spalling Span 2 - impending spall over roadway	
Parapet	(Fair)	Up to 1/16" cracks and spall to steel	

SUPERSTRUCTURE

Bearing Devices	(Good)	
Girders	(Fair)	Spalling
Diaphragms	(Good)	
Alignment of Members	(Good)	

TEXTURE COAT

ABUTMENTS

Abutment Caps	(Fair)	Impending spall & 1/32" cracks
Abutment Wings	(Good)	
Abutment Backwall	(Good)	
Abutment Plumb	(Good)	
Abutment Piles	(Not Visible)	
Abutment Embankment	(Good)	
Abutment Slope Paving	(Good)	

PIERS

BENTS

Bent Columns	(Poor)	Spalling & 1/8" crack Bent 1 B - poor - large spall to rebar
Bent Plumb	(Good)	
Bent Footing	(Not Visible)	

Inspection Team's Summary

This is a 3 span Concrete Deck Girder bridge with metal approach rails and concrete parapets. The asphalt roadway has up to 1/8" cracks and minor potholes. The concrete wearing surface has hairline cracks and spalling. The bottom deck has hairline cracks with efflorescence and spalling. Span 2 right overhang has an impending spall area over the roadway. The CDGs have spalled areas. The substructure has up to 1/8" cracks and spall to steel. Bent 1 column "B" has a large spall to steel area and impending spall under the bearing.

The minimum vertical clearance is 16' 4".

Bridge is posted at 40/40-ton weight limit at Approach 1.

General Inspection Comment

HQ notes to TL

ELEMENTS	DESCRIPTION	UNITS	TOTAL	CS1	CS2	CS3	CS4
12	Re Concrete Deck	SF	4404	4129	275	0	0
1080	Delamination/Spall/Patched Area	SF	125	0	125	0	0
1090	Exposed Rebar	SF	40	0	40	0	0
1120	Efflorescence/Rust Staining	SF	2	0	2	0	0
1130	Cracking (RC and Other)	SF	108	0	108	0	0
(12) Element record added 2016-08-03.							
(1080-12) Element record added 2016-08-03.							
(1090-12) Element record added 4/7/2022							
(1120-12) Element record added 4/7/2022							
(1130-12) Element record added 4/7/2022							
110	Re Conc Opn Girder/Beam	LF	309	287	22	0	0
1080	Delamination/Spall/Patched Area	LF	2	0	2	0	0
1090	Exposed Rebar	LF	20	0	20	0	0
(110) Element record added 2016-08-03.							
(1080-110) Element record added 2016-08-03.							
(1090-110) Element record added 2016-08-03.							
205	Re Conc Column	EA	4	1	2	0	1
1080	Delamination/Spall/Patched Area	EA	1	0	1	0	0
1090	Exposed Rebar	EA	2	0	1	0	1
(205) Element record added 2016-08-03.							
(1080-205) Element record added 4/7/2022							
(1090-205) Element record added 2016-08-03.							
215	Re Conc Abutment	LF	60	26	34	0	0
1080	Delamination/Spall/Patched Area	LF	4	0	4	0	0
1130	Cracking (RC and Other)	LF	30	0	30	0	0
(215) Element record added 2016-08-03.							
(1080-215) Element record added 4/7/2022							
(1130-215) Element record added 2016-08-03.							
311	Moveable Bearing	EA	4	4	0	0	0
(311) Element record added 2016-08-03.							
313	Fixed Bearing	EA	4	4	0	0	0
(313) Element record added 4/7/2022							

ELEMENTS	DESCRIPTION	UNITS	TOTAL	CS1	CS2	CS3	CS4
331	Re Conc Bridge Railing	LF	309	288	21	0	0
1090	Exposed Rebar	LF	3	0	3	0	0
1130	Cracking (RC and Other)	LF	18	0	18	0	0
(331) Element record added 2016-08-03.							
(1130-331) Element record added 4/7/2022							

Equipment List

General Inspection

- ☐ Pocket knife
- ☐ Sounding/chipping hammer
- ☐ Chain drag
- ☐ Range pole
- ☒ 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
- ☐ Waders
- ☐ Machete or bush axe

Comment

Tools For Measuring

- ☒ Masonry/Wood Ruler
- ☐ 6' Pocket Tape
- ☐ 25' and 100' Tape
- ☐ Calipers
- ☒ Thermometer
- ☐ Carpenter's Level
- ☐ String and Weighted line (plumb bob)

Special Purpose Equipment

- ☐ Reach All
- ☐ Bucket Truck
- ☐ Traffic control
- ☐ Boat
- ☐ Sonar depth finder
- ☐ Increment borer
- ☐ Survey equipment
- ☐ Safety Harness
- ☐ Climbing equipment
- ☐ Dye penetrant
- ☐ Drone
- ☐ Air Meter

Special Purpose Equipment

Dump truck w/ attenuator

Reach-All Approval and Comments



Approach 2 weight limit sign @ 26.48 bridge



Span 1 beam A spall to steel



Span 1 bottom deck impending spall typical



Span 1 beam B spall to steel



Right elevation



Bottom deck span 2 spall to steel



Bottom deck span 2 typical with spall to steel in deck and girders



Parapet crack typical



Span 3 crack



Span 3 spall



Opposite direction of route



Approach 2 asphalt



View across top deck



Span 1 spall



Approach 1 asphalt



Approach 1 right terminal damage



Direction of route approach 1 weight limit sign



Spall steel bent 1 column b



Bent 2



Abut 2



Abutment #1



Bent #1 looking forward



Span 2 right overhang impending spall



Bent #1 looking back



Bent #1 column B spalling



Left elevation



Right elevation



Bottom deck of span #3



Impending spall on bottom deck of span #3



Impending spall on bottom deck of span #3

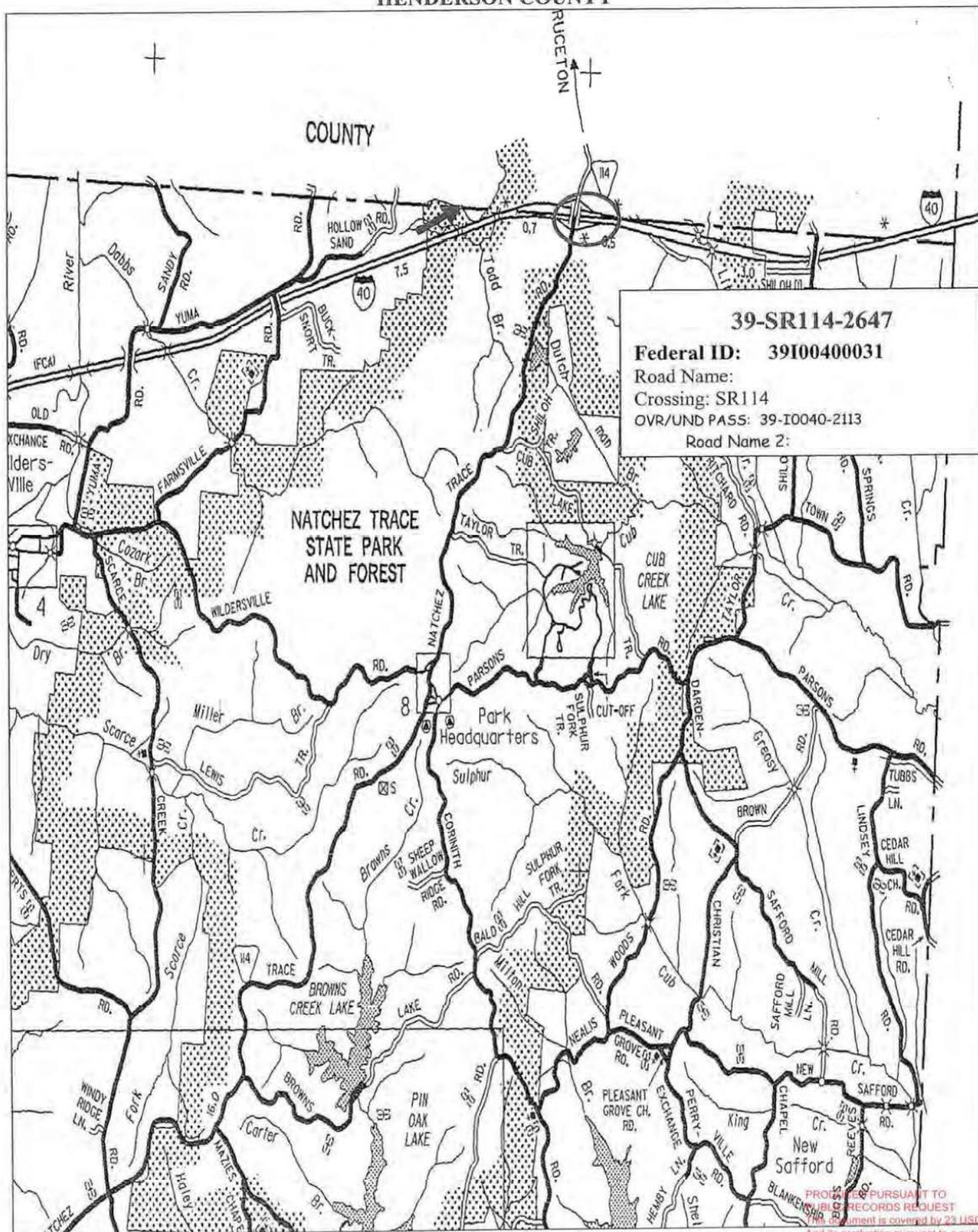


Impending spall on bottom deck of span #3

Maintenance Recommendations

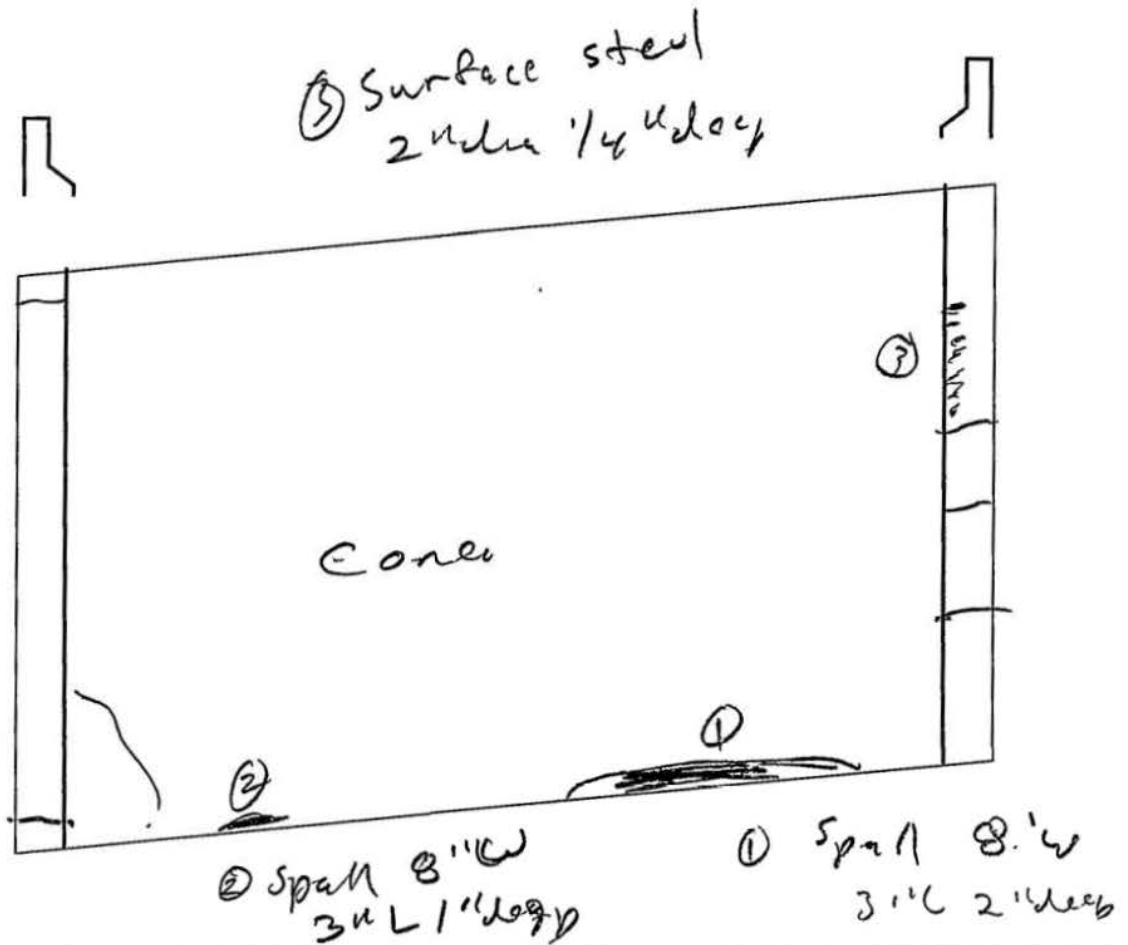
525 - Repair List # N 523 - Repair List Add Date 524 - Repair List Revise Date 4/7/2022 1

Date Added	Recommendation	Priority
07/14/2003	UNDERPASS SUBSTRUCTURE PROTECTION GUARDRAILS ARE SUBSTANDARD	
04/08/2022	REPAIR CONCRETE GIRDER "B" IN SPAN NO.2	
06/03/2024	REPAIR BENT #1 COLUMN "B"	2
06/03/2024	Repair approach 1 right guardrail terminal	
06/03/2024	Repair texture coat on concrete parapets.	



39 114 26.47
 Bridge No. Co. Route Log Mile R/L Skew

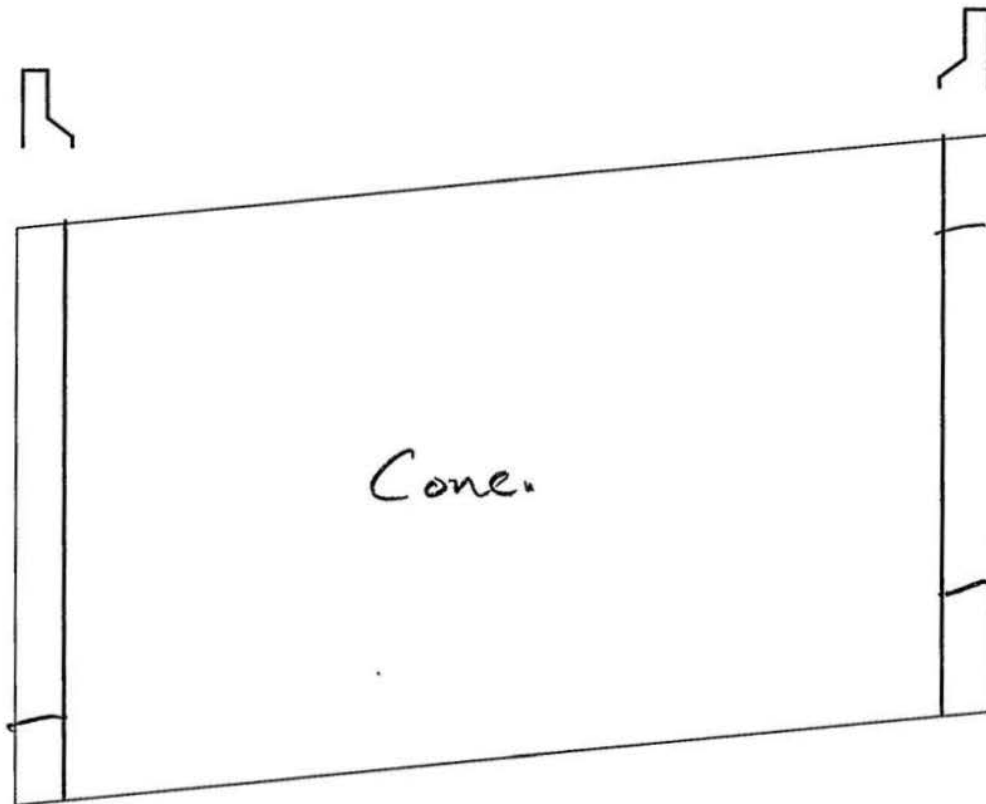
SPAN. NO. 1



ELEMENT	RATING	COMMENT
TOP DECK	G F P C	① ② Hairline crack
PARAPET	G F P C	Up to 1/16 inch cracks
DRAINS	G F P C	N/A
	G F P C	
	G F P C	

39 114 26.47
 Bridge No. Co. Route Log Mile R/L Skew

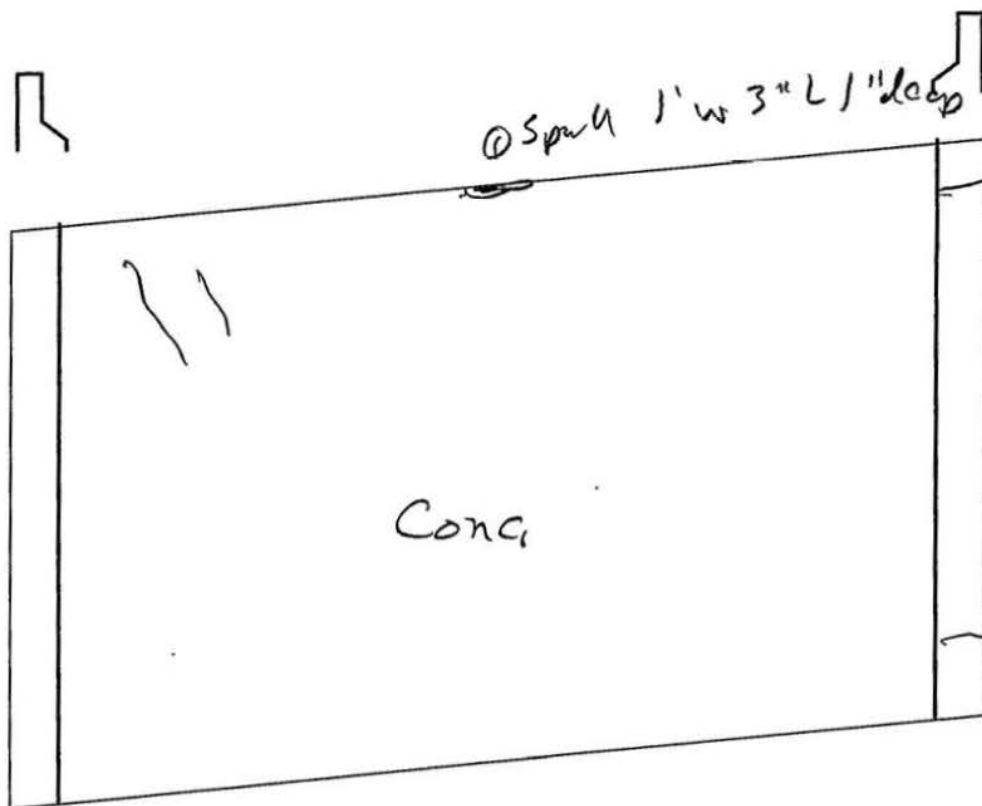
SPAN. NO. 2



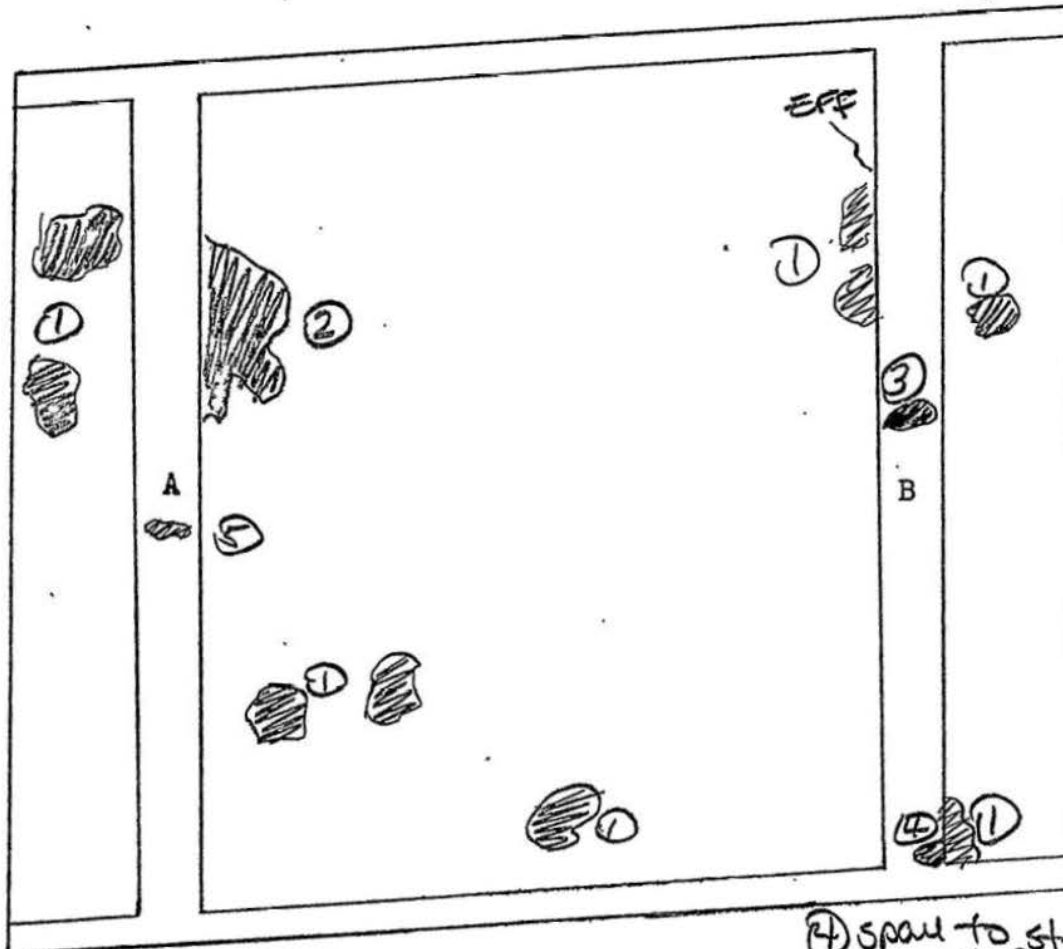
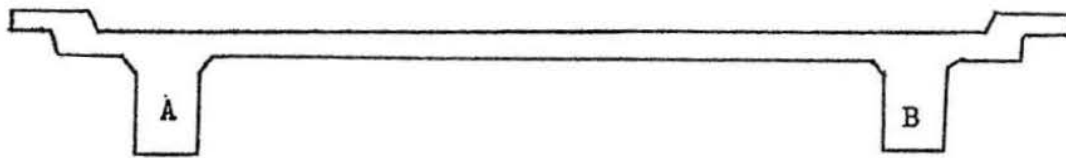
ELEMENT	RATING	COMMENT
TOP DECK	G F P C	
PARAPET	G F P C	Up to 1/16" cracks
DRAINS	G F P C	With
	G F P C	
	G F P C	

39 114 26.47
 Bridge No. Co. Route Log Mile R/L Skew

SPAN. NO. 3



ELEMENT	RATING	COMMENT
TOP DECK	G F P C	Horizontal cracks ①
PARAPET	G F P C	Up to 1/16" cracks
DRAINS	G F P C	N/A
	G F P C	
	G F P C	



④ span to steel
6" DIA x 1/2" D

⑤ span to steel
18" L x 5" W x 1/2" D

ELEMENT

RATING

COMMENT

BOTTOM DECK

G (F) P C

①② HL EFF Crack ① Imp. Spall

GIRDER A

G (F) P C

⑤

15" - 18" D x ? D

B:

G (F) P C

④

② Imp. Spall

BACKWALLS

(G) F P C

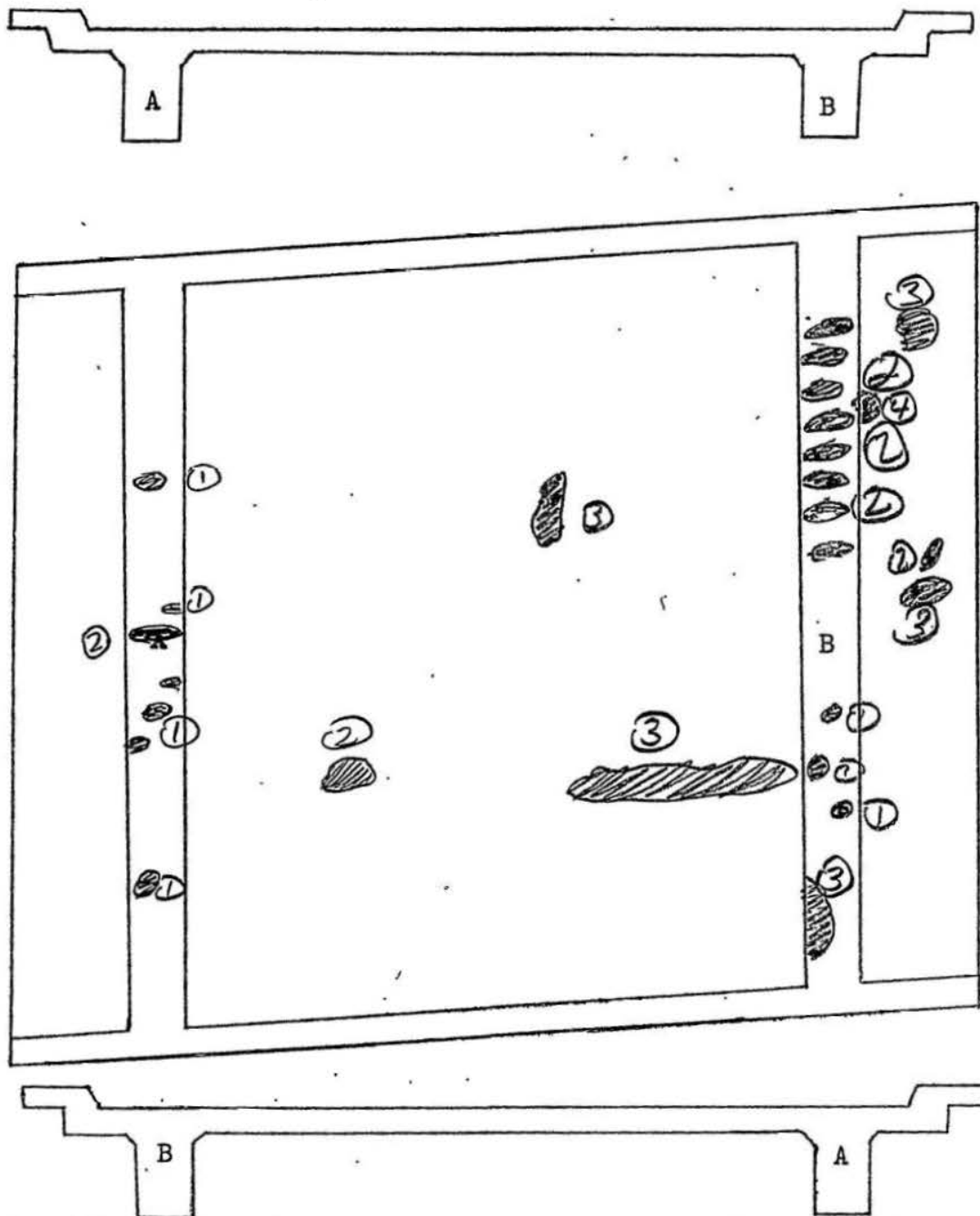
4' DIA x ? D.

DIA.

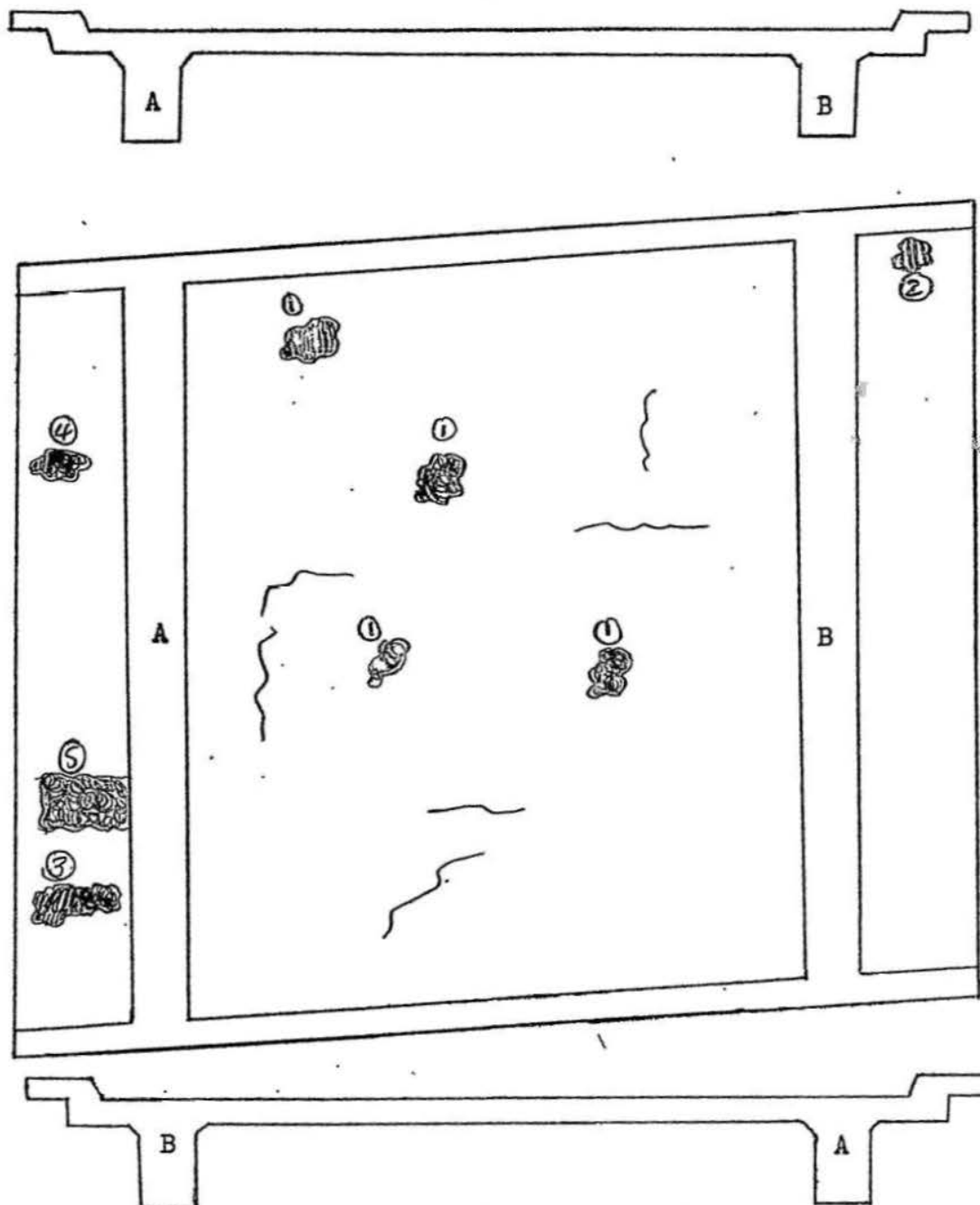
(G) F P C

③ Imp. Spall

15" L x 5" W x ? D



ELEMENT	RATING	COMMENT
BOTTOM DECK	G F P C (2) (3) (4)	① Spave to steel ≤ 8" DIA x 1"
GIRDER A	G F P C (1) (2)	② Spave to steel 24" W x 8" L x 1"
B	G F P C (1) (2) (3)	③ Spave to steel 24"-36" W x 24"-48" L x 1-1.5"
BACKWALLS	G F P C	④ Spave to steel / Emp. rebar 18" DIA x 2"
DIA.	G F P C	



ELEMENT

RATING

COMMENT

BOTTOM DECK

G F P C

See 1-5, hairline cracks

① 2' in dia x ? D
Impending Spall

GIRDER A

G F P C

② 1' in dia x 2" D
Spall to Steel

B:

G F P C

③ 4' w x 2' L x ? D
Impending Spall

BACKWALLS

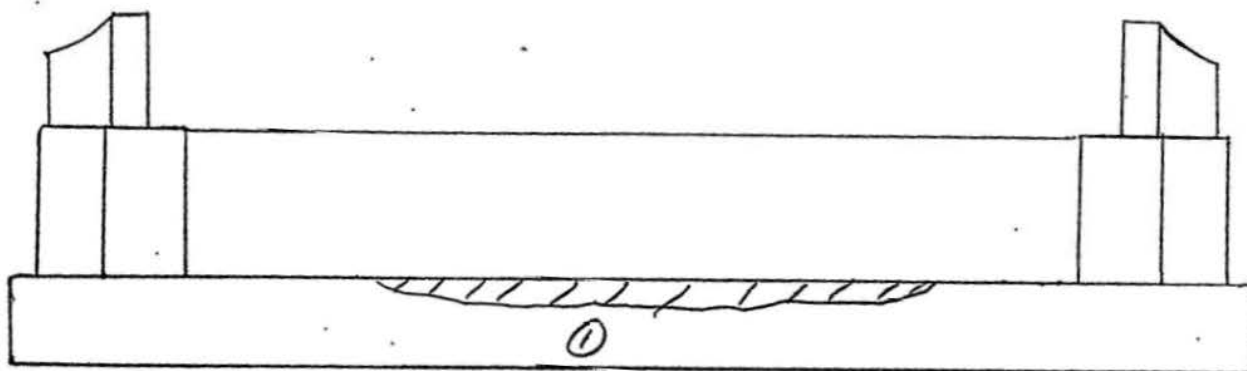
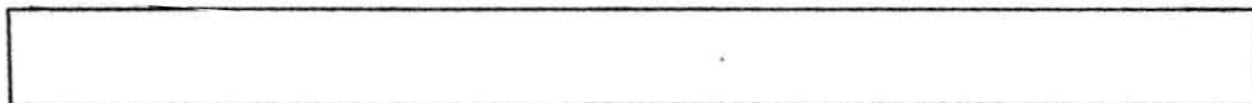
G F P C

④ 3' in dia x ? D
Impending Spall

DIA.

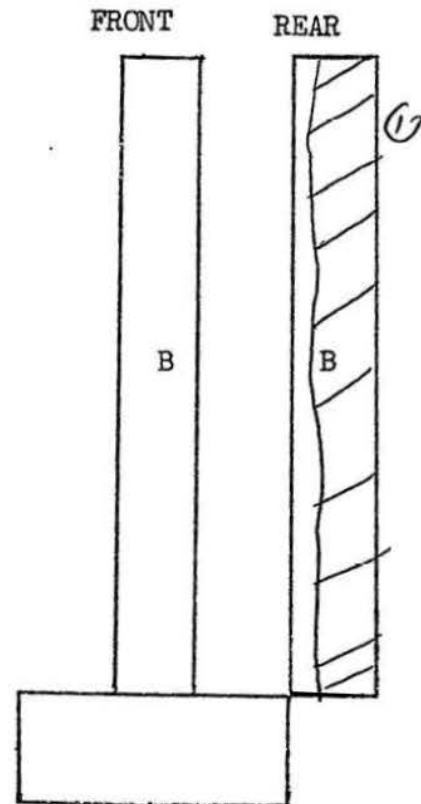
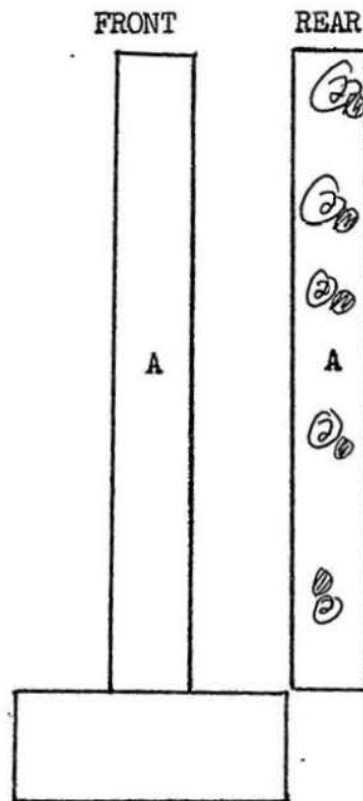
G F P C

⑤ 3' w x 4' L x ? D
Impending Spall

LOOKING BACK

PLAN VIEW

ELEMENT	RATING	COMMENT
BEARINGS	G F P C	
CAP	G F P C	①
PILING	G F P C	N/V
WINGS	G F P C	
EMB.	G F P C	
VEG.	G F P C	
RIP RAP	G F P C	
Dim Spall 14.5' wide 6" tall 6" long		

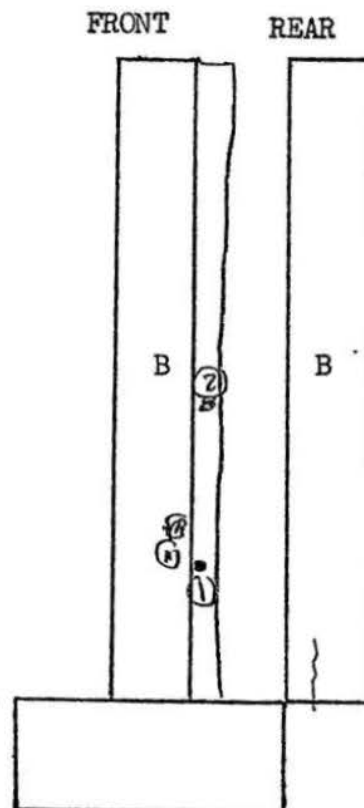
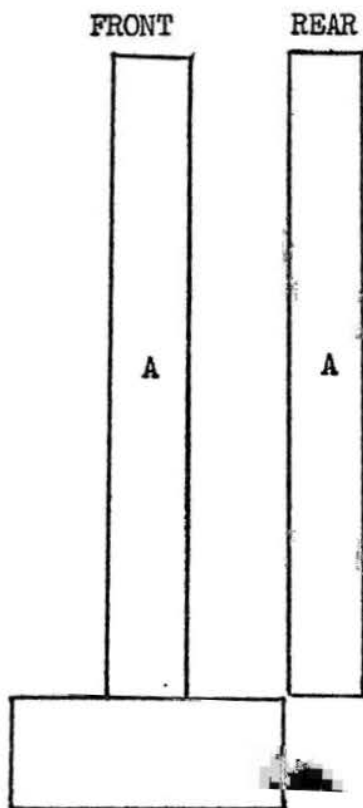


① imp spall/spall to steel 20'tall 24"wide 3'deep
 ② spall to steel 18'dia 1'deep

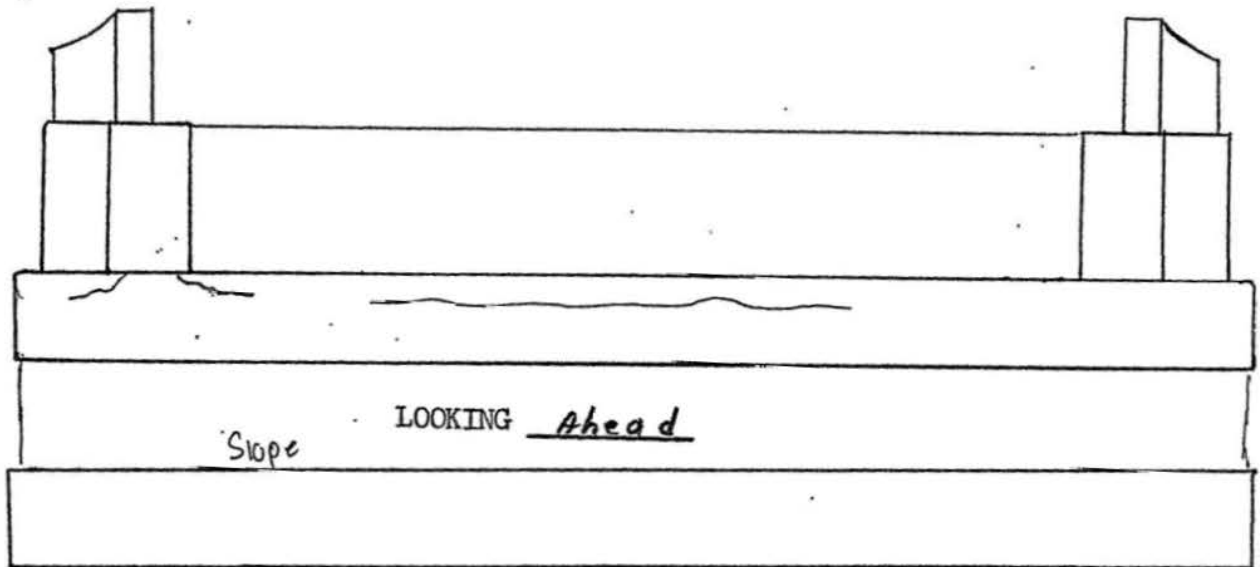
ELEMENT		RATING	COMMENT
COLUMN	A	G (F) P C	②
COLUMN	B	G (F) P C	①
FOOTING		G F P C	n/v
BEARINGS		(G) F P C	

① Spec Steel
 $\frac{6''}{D.C. \times \frac{1}{8}}$

② $\frac{1.5}{V \times \frac{1}{4} \times \frac{1}{8}}$
 Spec Steel



ELEMENT	RATING		COMMENT
COLUMN	A	G F P C	
COLUMN	B	G F P C	See ①②, $\frac{1}{8}''$ crack
FOOTING		G F P C	N/U
BEARINGS		G F P C	High surface rust

BR. NO. 37 ~~114~~ 2647ABUT. NO. 2

PLAN VIEW

ELEMENT	RATING	COMMENT
BEARINGS	(G) F P C	
CAP	G (F) P C	1/32" cracks
PILING	G F P C	N/A
WINGS	(G) F P C	
EMB.	(G) F P C	
VEG.	(G) F P C	
RIP RAP	G F P C	
Slope pave	(G)	

INSPECTION REPORT FOR UNDERPASS ROUTE

Form BIR 3.0A

Field Report No. _____

Date _____

(Rev. 9-22-98)

Previous Report No. _____

Date _____

DT-1443

Bridge No. 39I00400031

Eleven Digit No.

39 - SR114 - 2647

Co. Route Log Mile

over/u
nder39 - I0040 - 2113

Co. Route Log Mile

or

- -

Co. Route Log Mile

or

- -

Co. Route Log Mile

Railroad/Walkway

County Henderson

Road Name: _____

Year Constructed 1966

Structure Name (If Named) _____

Year Widened _____

Year Rehabilitated _____

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

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

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 _____ ft.

Approach Shoulder Width 12 ft. Right 12 ft. Left*Horizontal Clearance Under Bridge 60 ft. _____ in.*Distance Between Pier Protection Guardrail and Substructure 12' ft. Right 0.5 ft. Left

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

*Minimum Vertical Clearance: 16 ft. 4 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. Lee
2. _____
3. _____
4. _____
5. _____
6. _____

Form BIR 3.0A (Continued)
(Rev. 9-22-98)
DT-1443

Page No. _____

Date _____

39 - SR114 - 2647

Co. Route Log Mile

over/u
nder

39 - I0040 - 2113

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 84R °

Structure Type (Main Span) C. D. G. No. Main Spans 3

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

Maximum Span Length 62.0 (ft.) Total Length 154.5 (ft.)

Width of Bridge Out-to-Out 28.6 (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) C

Does Potential Exist for Elements from Bridge Falling on Roadway Beneath? YES (X) NO ()

Does Potential Exist Because of Deteriorated Condition or Failure of Major Members YES (X) NO ()

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

Span # Rt overhang impending spalling

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. 39 SR114 2647
CO. ROUTE L. M. L/R
LATERAL AND VERTICAL CLEARANCES

DATE: _____

39 - I0040 - 2113

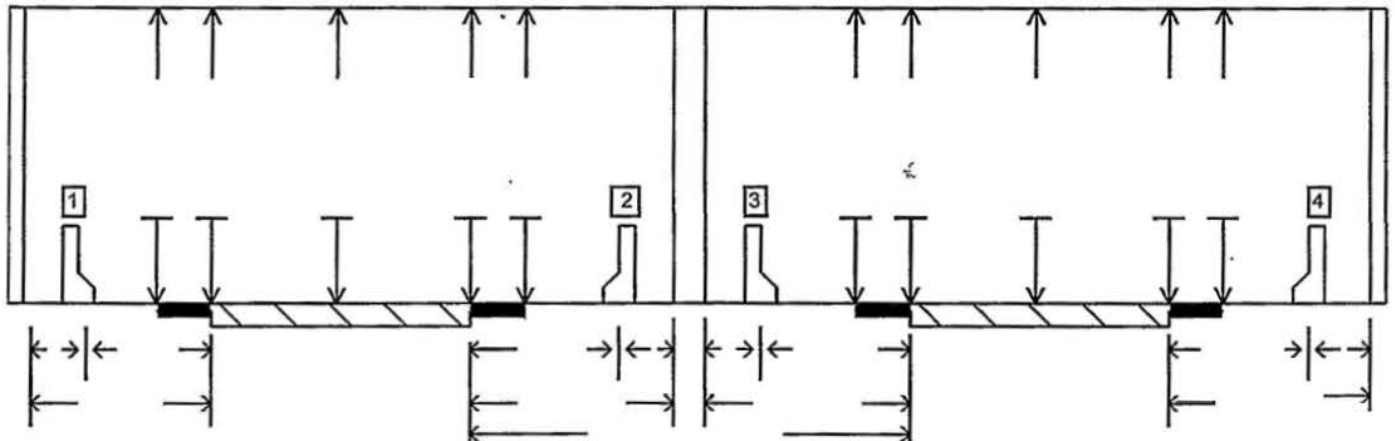
or - - -
Co. Route Log Mile

or - - -
Co. Route Log Mile

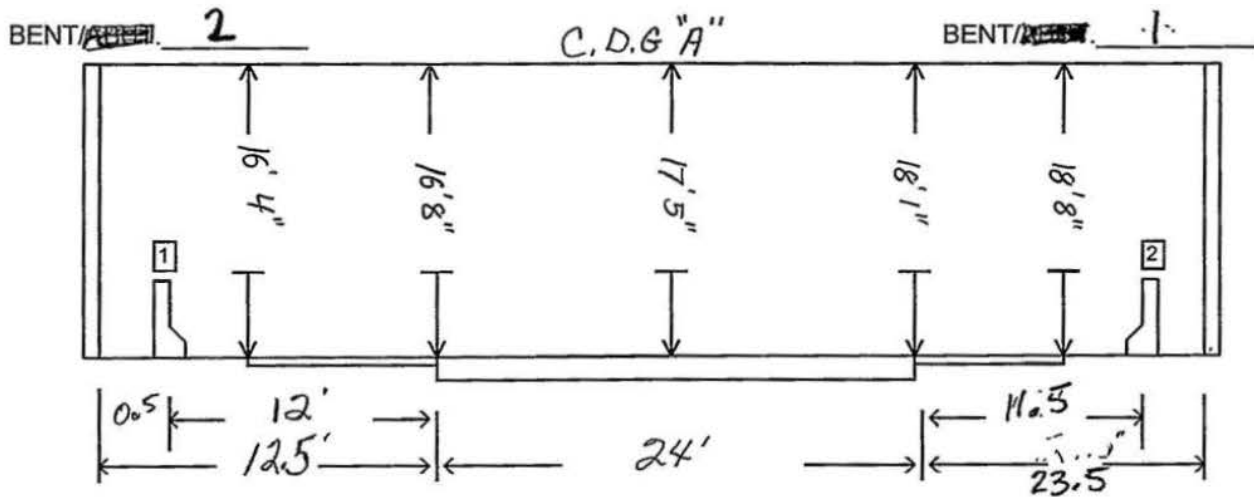
BENT/ABUT. _____

BENT _____

BENT/ABUT. _____

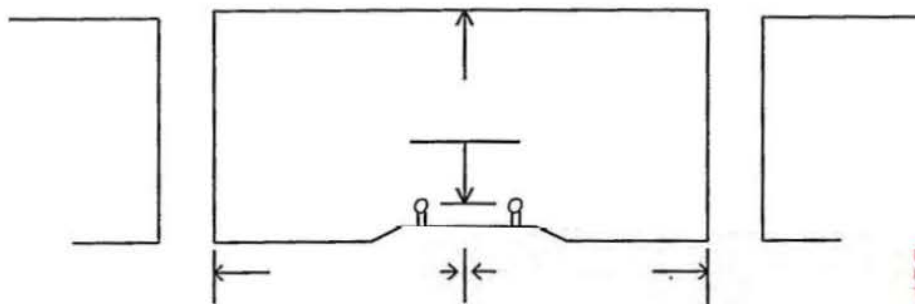


- | | | | | | | |
|-----------------------|---------|-------------------------------------|---------------|-------------------------------------|------|--------------------------|
| 1. RAIL/BARRIER TYPE: | W-SHAPE | ☒ | CONC. BARRIER | ☐ | NONE | ☐ |
| 2. RAIL/BARRIER TYPE: | W-SHAPE | ☐ | CONC. BARRIER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



BENT/ABUT. _____

BENT/ABUT. _____



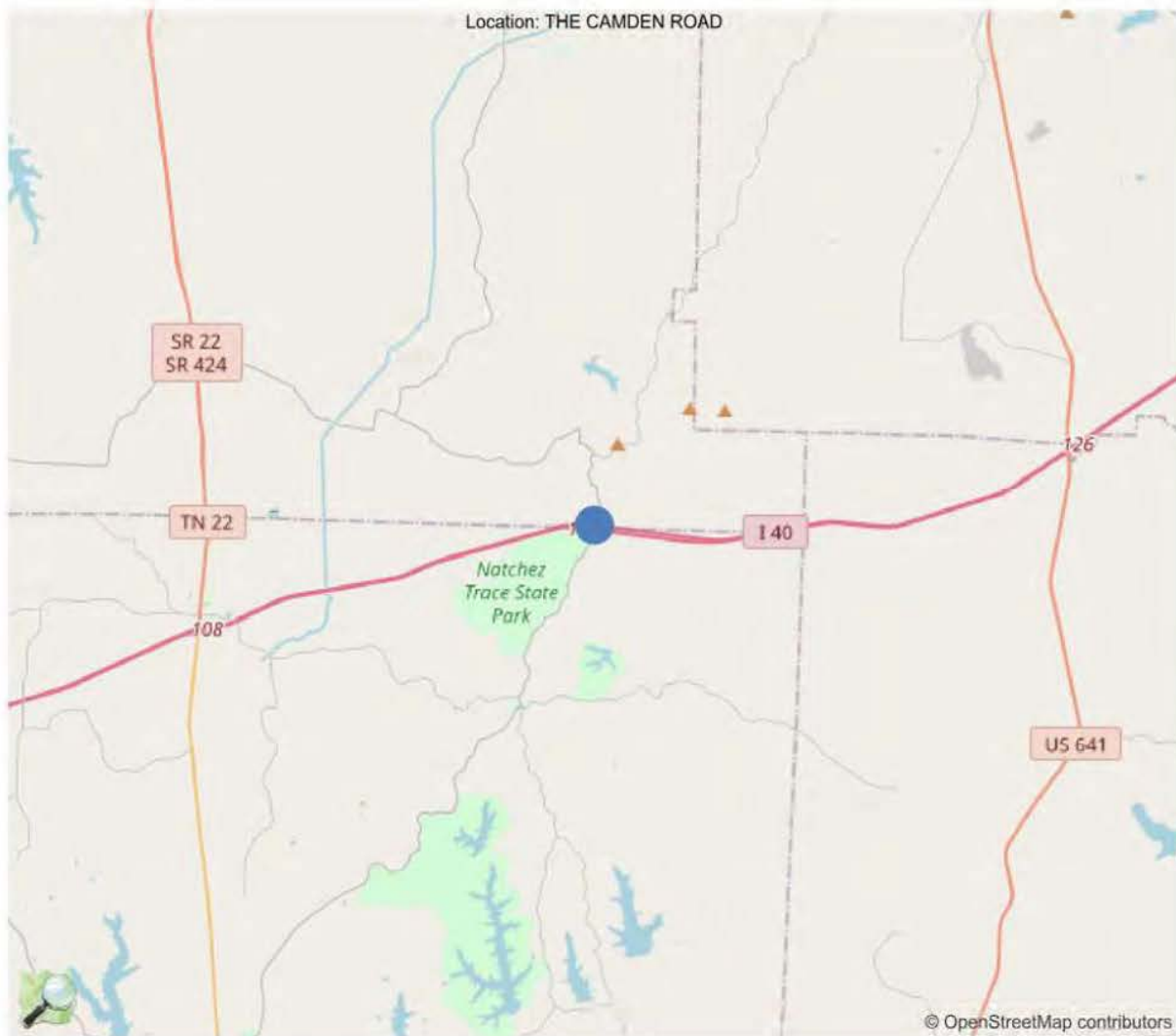


Latitude:35.81875, Longitude:-88.25208

Region 04, 39 - Henderson County

Team Leader: Jacob Kee

Inspectors: Jaylan Cox, Nathan Bedford, Jordan Fitts, Shayne Hayes, Ty Patrick



NATCHEZ TRACE RD. Crossing SR-114 / I-40 WBL

35.81875, -88.25208

90 - LAST INSPECTION DATE 06/04/2024

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

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

36 - TRAFFIC SAFETY FEATURES

Br. Rail	Trans.	Appr. Rail	Terminal	SPEED LIM.
1	1	0	0	45

41 - STRC OPEN/CLOSED/POSTED P

58 - DECK 5

59 - SUPERSTRUCTURE 7

60 - SUBSTRUCTURE 5

61 - CHANL/CHANL PROTECTION N

62 - CULVERT AND RETAIN WALL N

71 - WATERWAY ADEQUACY N

72 - APPROACH RDWY ALIGNMENT 8

521 - OVERALL CONDITION 2 - Fair

16 - LATITUDE 35.818750
17 - LONGITUDE -88.252083

JACOB KEE
Digitally signed
by JACOB KEE
Date: 2024.06.05
14:46:49 -05'00'

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	39I00400041
(5) Inventory Route	1
(2) Highway Agency District	Region 4
(3) County Code	39 - Henderson
(4) Place Code	00000
(6) Features Intersected	SR-114 / I-40 WBL
(7) Facility Carried	FAS 114
(9) Location	THE CAMDEN ROAD
(11) Mile Point	26.480 mi
(12) Base Highway Network	No
(13) LRS Inventory Rte & Subrte	
(16) Latitude	35.818750
(17) Longitude	-88.252083
(98) Border Bridge State Code	
(99) Border Bridge Structure No.	
STRUCTURE TYPE AND MATERIAL	
(43) Main Structure Type	24
Material	2 - Concrete continuous
Type	4 - Tee beam
(44) Approach Structure Type	00
Material	0 - Other / None
Type	0 - Other / None
(45) No. of Spans in Main Unit	3
(46) No. of Approach Spans	0
(107) Deck Structure Type	1 - Concrete Cast-in-Place
(108) Wearing Surface/Protective System	
Type of Wearing Surface	2 - Integral Concrete (separate non-mo
Type of Membrane	0 - None
Type of Deck Protection	0 - None
AGE AND SERVICE	
(27) Year Built	1961
(106) Year Reconstructed	0
(42) Type of Service	11
On	1 - Highway
Under	1 - Highway, with or without pedestrian
(28) Lane	
On	2
Under	2
(29) Average Daily Traffic	256
(30) Year of ADT	2021
(109) Truck ADT	5 %
(19) Bypass, Detour Length	8 mi
GEOMETRIC DATA	
(48) Length of Maximum Span	62.0 ft
(49) Structure Length	154.5 ft
(50) Curb or Sidewalk Width	
Left	0.0 ft
Right	0.0 ft
(51) Bridge Roadway Width Curb to Curb	26.5 ft
(52) Deck Width Out to Out	28.5 ft
(32) Approach Roadway Width (W/Shoulders)	20.0 ft
(33) Bridge Median	0 - No median
(34) Skew	84 Deg
(35) Structure Flared	0 - No flare
(10) Inventory Route Min Vert Clear	99.99 ft
(47) Inventory Route Total Horiz Clear	26.5 ft
(53) Min Vert Clear Over Bridge Rdwy	99.99 ft
(54) Min Vert Underclear	16.08 ft
Ref:	
(55) Min Lat Underclear RT	17.0 ft
Ref:	
(56) Min Lat Underclear LT	27.0 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	7 - Rural Major Collector
(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	5
(59) Superstructure	7
(60) Substructure	5
(61) Channel & Channel Protection	N
(62) Culverts	N
LOAD RATING AND POSTING	
(31) Design Load	2 - M 13.5 / H 15
(63) Operating Rating Method	8
(64) Operating Rating	
Type	8 - Load and Resistance Factor Rating (LRF
Rating	27.22
(65) Inventory Rating Method	8 - Load and Resistance Factor
(66) Inventory Rating	
Type	
Rating	21.06
(70) Bridge Posting	5 - Equal to or above legal loads
(41) Structure Open/Posted/Closed	P - Posted for load (may inclu
APPRAISAL	
(67) Structural Evaluation	5
(68) Deck Geometry	5
(69) Clearances, Vertical/Horizontal	6
(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	0 - Inspected feature does not meet
(36D) Approach Guardrail Ends	0 - Inspected feature does not meet
(113) Scour Critical Bridges	N - Bridge not over waterway.
PROPOSED IMPROVEMENTS	
(75) Type of Work	35 - Bridge rehabilitation bec
(76) Length of Structure Improvement	155.8 ft
(94) Bridge Improvement Cost	\$ 711
(95) Roadway Improvement Cost	\$ 72
(96) Total Project Cost	\$ 1067
(97) Year of Improvement Cost Estimate	2022
(114) Future ADT	392
(115) Year of Future ADT	2042

INSPECTIONS *			
(90) Inspection Date	06/04/2024		
(91) Frequency	24		
(92) Critical Feature Inspection	Done	Freq. (Mon)	Date
A: Fracture Critical Detail	No		
B: Underwater Inspection	No		
C: Other Special Inspection	No		
* 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 10:10 am

Weather Conditions 74°F cloudy

Vehicles Observed Personal

LIVE LOAD BEHAVIOR

Sub Horiz./ Vert. Defl (No)

Sub Vibration (No)

Super Horiz./ Vert. Defl (No)

Super Vibration (No)

APPROACH

Alignment (Good)

Pavement (Fair) Up to 1/8" cracks

Embankment (Good)

Approach Drains (Good)

TRAFFIC SAFETY FEATURES

Bridge Railing Rating (Fair)

Transitions Rating (Good)

Guardrail Rating (Fair) Light damage at approach 1 right

Guardrail Terminal Rating (Good)

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 Yes

Gross Tons

Single-unit Vehicle 40 Tons

Multi-unit Vehicle 40 Tons

564 Assigned Bridge Name

ATTACHED SIGNS

Sign No	Location	Text on Sign	Noted Defects
---------	----------	--------------	---------------

DECK

Wearing Surface Type		Concrete	Wearing Surface Depth
Wearing Surface	(Fair)	Hairline cracks and damaged areas	
Deck - Structural Condition	(Fair)	Spalling and hairline map cracking with efflorescence	
Parapet	(Fair)	Up to 1/16" cracks w/ efflorescence	

SUPERSTRUCTURE

Bearing Devices	(Good)	
Girders	(Good)	
Diaphragms	(Good)	
Alignment of Members	(Good)	

TEXTURE COAT

ABUTMENTS

Abutment Caps	(Fair)	Spalling & 1/32" cracks
Abutment Wings	(Good)	
Abutment Backwall	(Good)	
Abutment Plumb	(Good)	
Abutment Piles	(Not Visible)	
Abutment Embankment	(Good)	
Abutment Slope Paving	(Good)	

PIERS

BENTS

Bent Columns	(Fair)	Spalling
Bent Plumb	(Good)	

Inspection Team's Summary

This is a 3 span concrete deck girder bridge. Safety features are metal approach rails and concrete parapets. Asphalt roadway has up to 1/8" cracks along the overpass route. Concrete wearing surface has hairline cracks and spalling. Bottom deck has hairline cracks with efflorescence and spalling. Concrete deck girders have no problems. Substructure has hairline cracks with efflorescence and spalling.

Minimum vertical clearance is 16'1".

Bridge is posted at 40/40-ton weight limit along the overpass route.

General Inspection Comment

HQ notes to TL

ELEMENTS	DESCRIPTION	UNITS	TOTAL	CS1	CS2	CS3	CS4
12	Re Concrete Deck	SF	4404	3641	763	0	0
1080	Delamination/Spall/Patched Area	SF	38	0	38	0	0
1090	Exposed Rebar	SF	75	0	75	0	0
1120	Efflorescence/Rust Staining	SF	50	0	50	0	0
1130	Cracking (RC and Other)	SF	600	0	600	0	0
(12) Element record added 2016-08-11.							
(1080-12) Element record added 2016-08-11.							
(1090-12) Element record added 2016-08-11.							
(1120-12) Element record added 4/7/2022							
(1130-12) Element record added 4/7/2022							
110	Re Conc Opn Girder/Beam	LF	309	309	0	0	0
(110) Element record added 2016-08-11.							
205	Re Conc Column	EA	4	2	2	0	0
1090	Exposed Rebar	EA	2	0	2	0	0
(205) Element record added 2016-08-11.							
(1090-205) Element record added 5/6/2020							
215	Re Conc Abutment	LF	60	35	20	5	0
1090	Exposed Rebar	LF	5	0	0	5	0
1120	Efflorescence/Rust Staining	LF	20	0	20	0	0
(215) Element record added 2016-08-11.							
(1090-215) Element record added 2016-08-11.							
(1120-215) Element record added 4/7/2022							
311	Moveable Bearing	EA	4	2	2	0	0
1000	Corrosion	EA	2	0	2	0	0
(311) Element record added 2016-08-11.							
(1000-311) Element record added 5/6/2020							
313	Fixed Bearing	EA	4	4	0	0	0
(313) Element record added 4/7/2022							
331	Re Conc Bridge Railing	LF	309	282	27	0	0
1120	Efflorescence/Rust Staining	LF	2	0	2	0	0
1130	Cracking (RC and Other)	LF	25	0	25	0	0
(331) Element record added 2016-08-11.							

ELEMENTS	DESCRIPTION	UNITS	TOTAL	CS1	CS2	CS3	CS4
(1120-331)	Element record added 4/7/2022						
(1130-331)	Element record added 4/7/2022						

Equipment List

General Inspection

- ☐ Pocket knife
- ☐ Sounding/chipping hammer
- ☐ Chain drag
- ☐ Range pole
- ☒ 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
- ☐ Waders
- ☐ Machete or bush axe

Comment

Tools For Measuring

- ☒ Masonry/Wood Ruler
- ☐ 6' Pocket Tape
- ☐ 25' and 100' Tape
- ☐ Calipers
- ☒ Thermometer
- ☐ Carpenter's Level
- ☐ String and Weighted line (plumb bob)

Special Purpose Equipment

- ☐ Reach All
- ☐ Bucket Truck
- ☐ Traffic control
- ☐ Boat
- ☐ Sonar depth finder
- ☐ Increment borer
- ☐ Survey equipment
- ☐ Safety Harness
- ☐ Climbing equipment
- ☐ Dye penetrant
- ☐ Drone
- ☐ Air Meter

Special Purpose Equipment

Dump truck and attenuator

Reach-All Approval and Comments



Approach 1 weight limit sign @ 26.47 bridge



Left side



Approach 2 weight limit sign



Opposite direction of route



Approach 2 asphalt



Span 3 cracks



Span 3 spall



Span 2 crack



View across top deck



Span 1 spall



Span 1 parapet crack



Direction of route



Approach 1 right guardrail damage



Approach 1 asphalt



Right side



Bottom deck of span #2



Impending spall on bottom deck of span #3



Spall to steel on bottom deck of span #3



Spall to steel on bottom deck of span #2



Spall to steel on bottom deck of span #2



Span 1 bottom deck typical



Span 2 bottom deck spall to steel



Span 1 bottom deck impending spalls and spall to steel



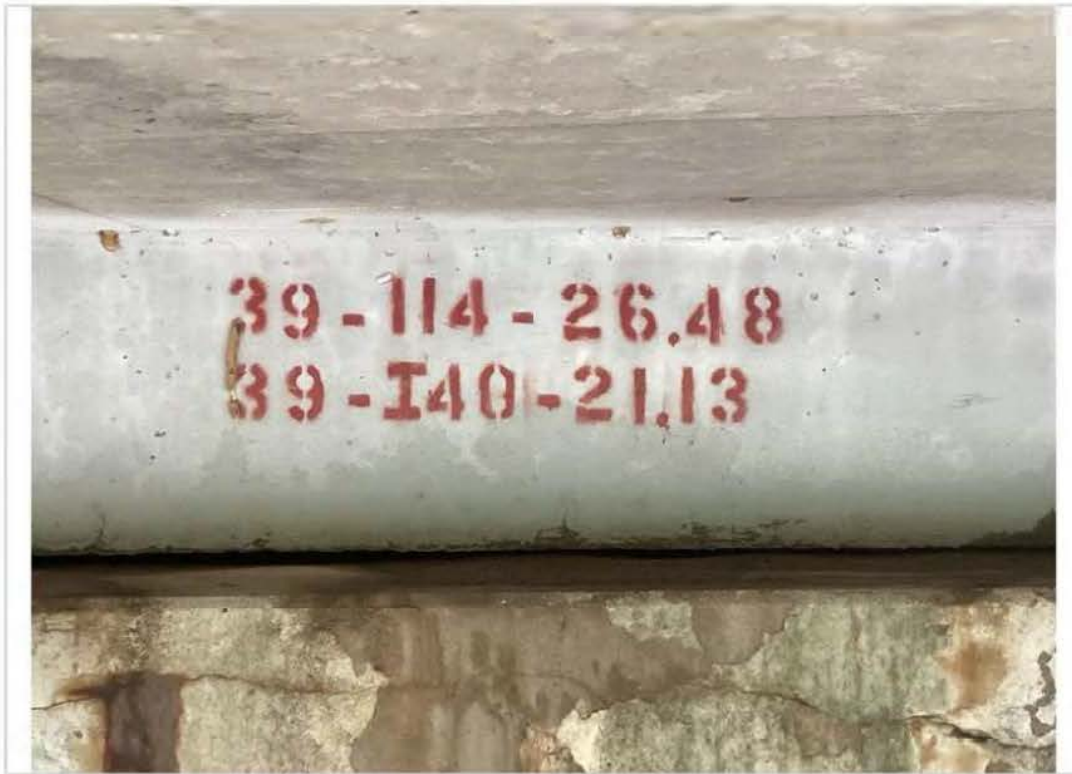
Bent #2 looking forward



Abutment #1



Bent #1 looking forward



Bridge number



Left elevation



Right elevation



Abut 2



Bent 2



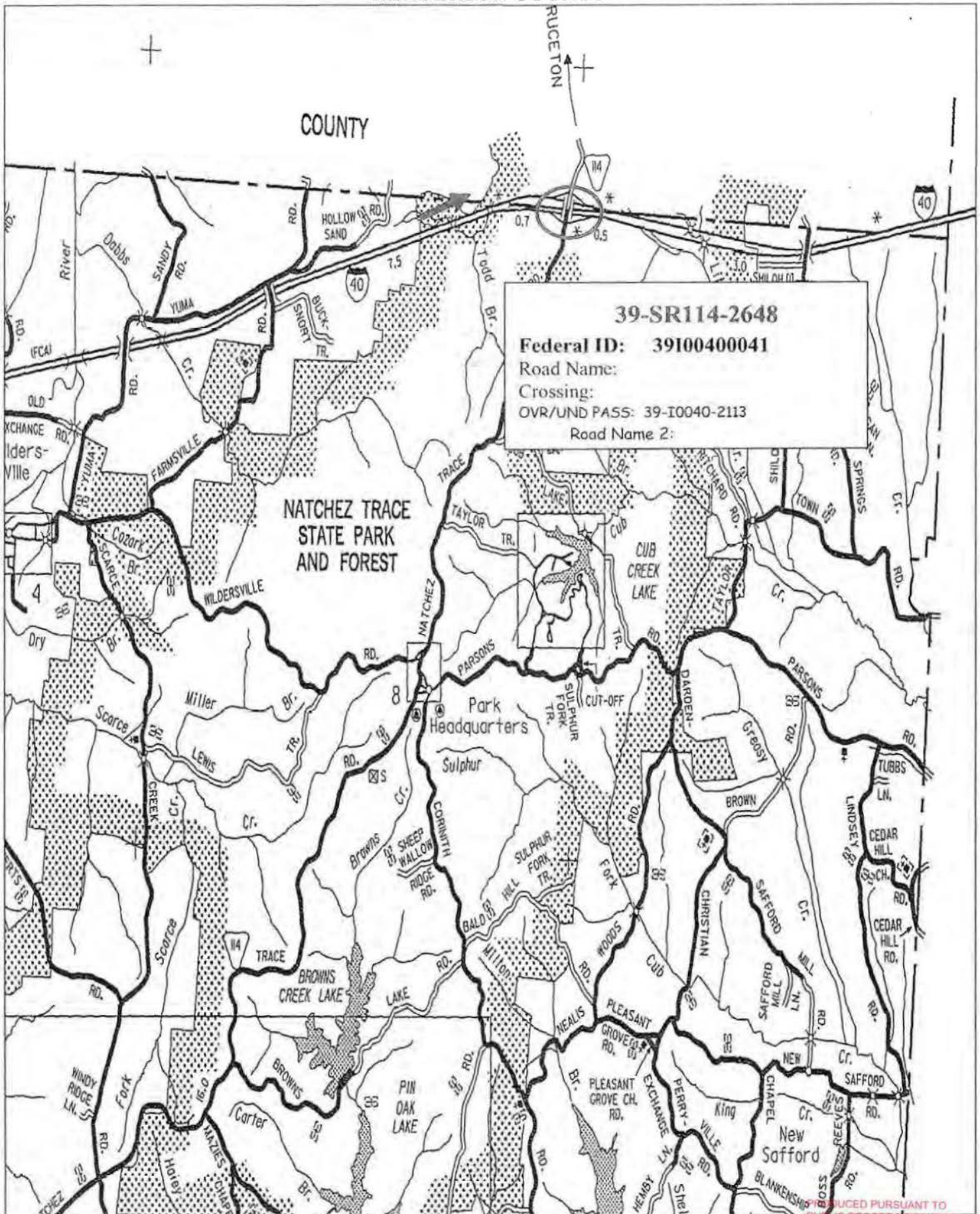
Spall steel abut 2

Maintenance Recommendations

525 - Repair List # N 523 - Repair List Add Date 524 - Repair List Revise Date 4/7/2022 1

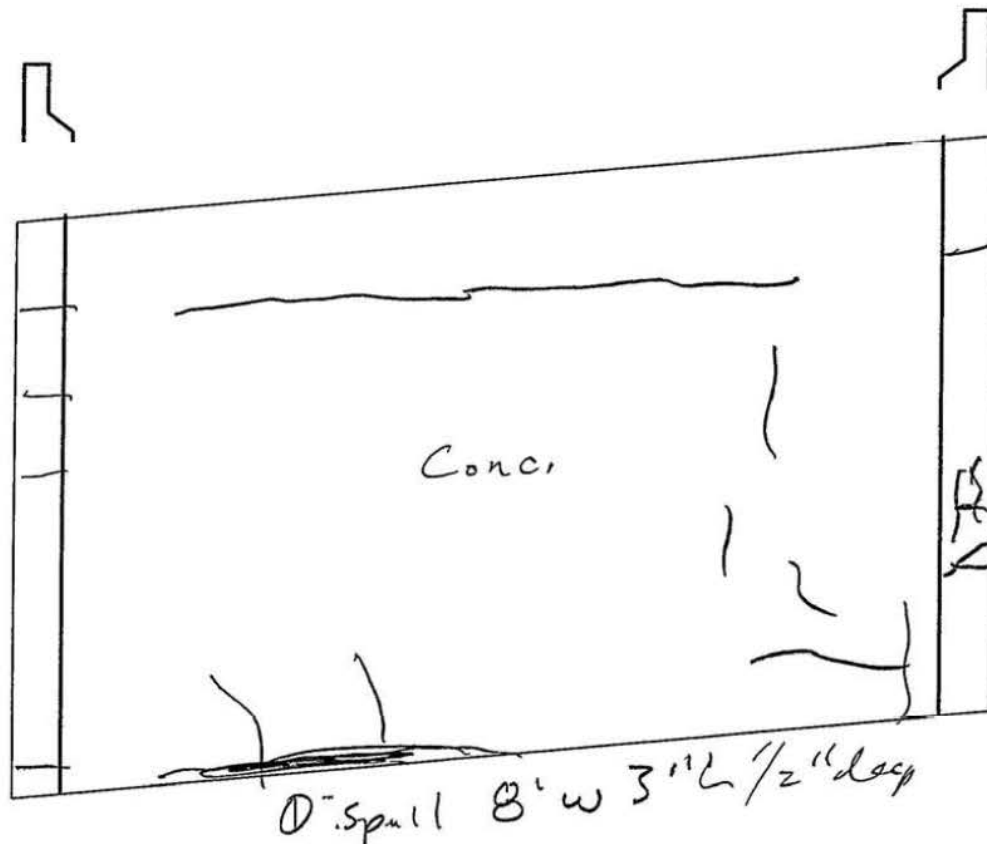
Date Added	Recommendation	Priority
11/19/2001	APPROACH GUARDRAILS ARE SUBSTANDARD	
07/14/2003	UNDERPASS SUBSTRUCTURE PROTECTION GUARDRAILS ARE SUBSTANDARD	
05/07/2020	APPROACH GUARDRAIL TERMINALS ARE SUBSTANDARD	
06/04/2024	PATCH BOTTOM OF DECK IN ALL SPANS	
06/04/2024	REPAIR BOTH ABUTMENT CAPS	
04/08/2022	CLEAN AND PAINT BEARINGS AT ABUTMENT NO.2	

HENDERSON COUNTY



39 114 26.48
 Bridge No. Co. Route Log Mile R/L Skew

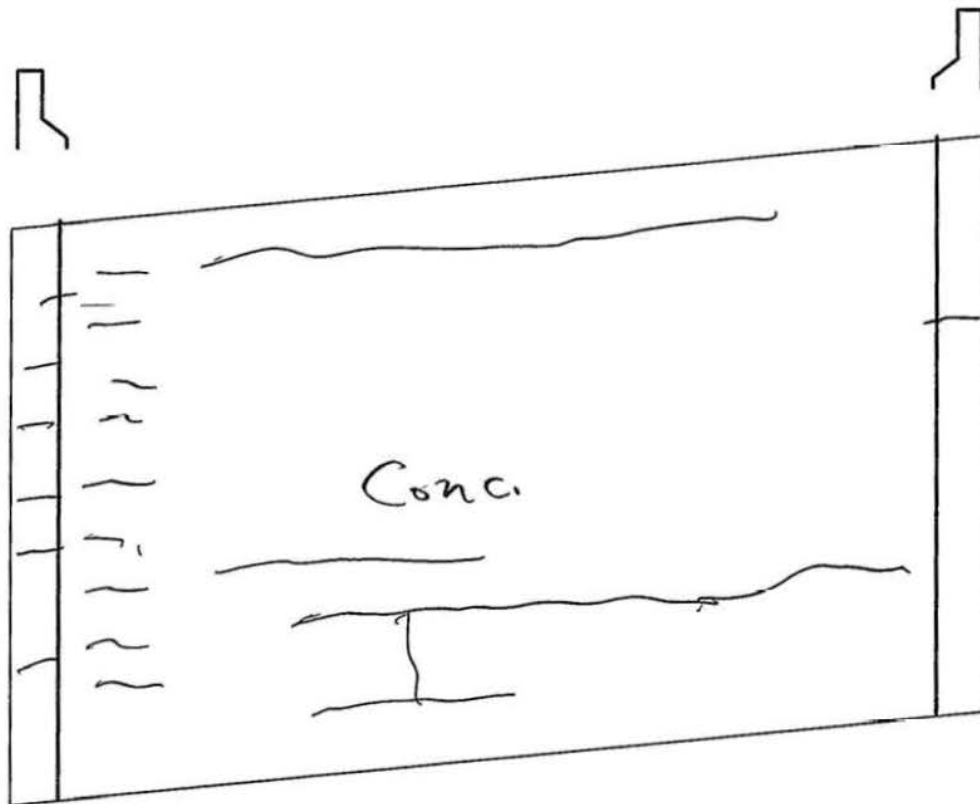
SPAN. NO. 1



ELEMENT	RATING	COMMENT
TOP DECK	G F P C	Hairline cracks ①
PARAPET	G F P C	up to 1/16" cracks with reb
DRAINS	G F P C	N/A
	G F P C	
	G F P C	

39 114 26.48
 Bridge No. Co. Route Log Mile R/L Skew

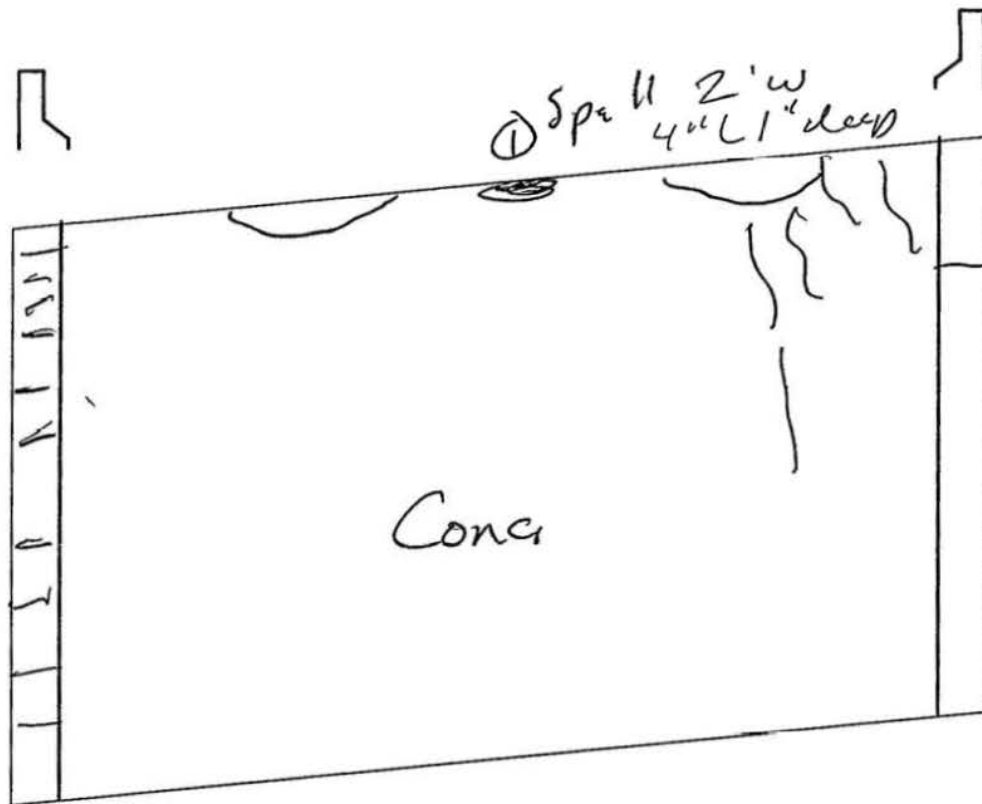
SPAN. NO. 2



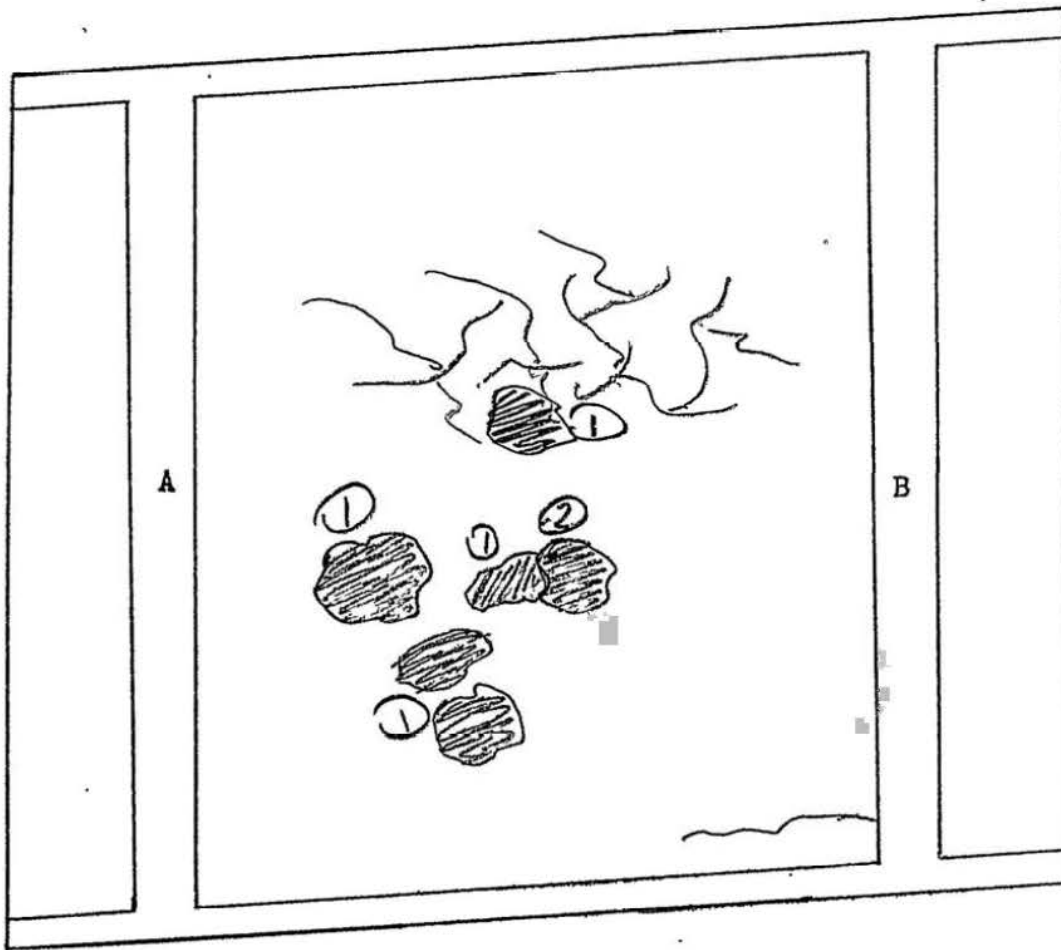
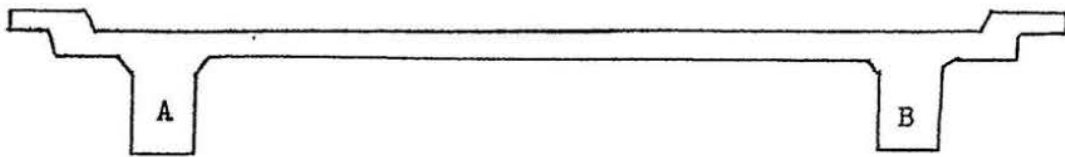
ELEMENT	RATING	COMMENT
TOP DECK	G ^F P C	Hamline cracks
PARAPET	G ^F P C	Up to 1/16" cracks with eff
DRAINS	G F P C	N/A
	G F P C	
	G F P C	

39 114 26.48
 Bridge No. Co. Route Log Mile R/L Skew

SPAN. NO. 3

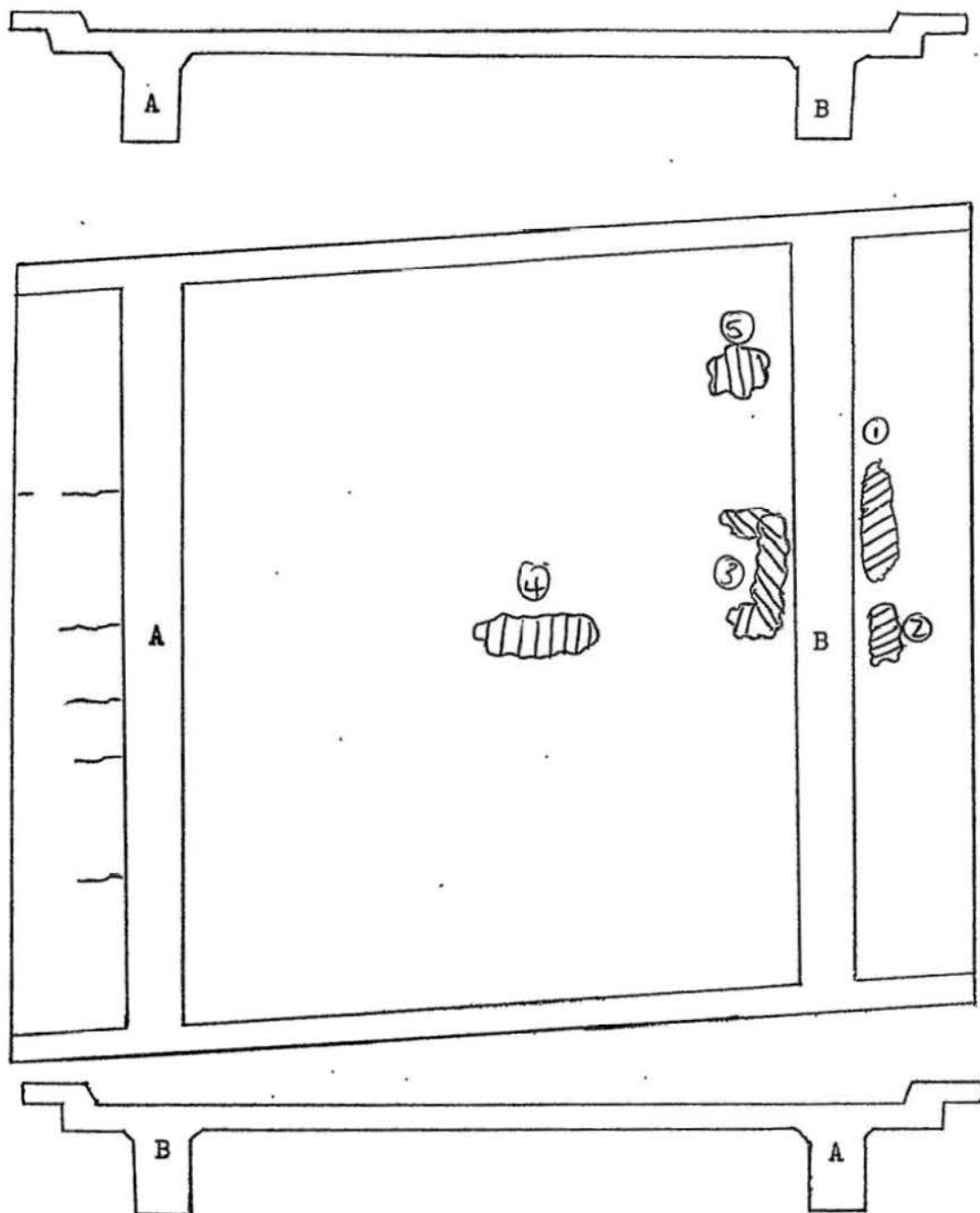


ELEMENT	RATING	COMMENT
TOP DECK	G Ⓔ P C	Hairline cracks
PARAPET	G Ⓕ P C	Up to 1/16" cracks with eff
DRAINS	G F P C	with
	G F P C	
	G F P C	



① Imp Spall ② Spall to Steel
1.5-2' DIA X 1.0 15" DIA X 1.5" D

ELEMENT		RATING	COMMENT
BOTTOM DECK		G F P C	①② HL map Cracks w/ EFF
GIRDER	A	G F P C	
	B	G F P C	
BACKWALLS		G F P C	
DIA.		G F P C	



ELEMENT

RATING

COMMENT

BOTTOM DECK

G F P C

hairline cracks w/eff, see 1-5

GIRDER

A

G F P C

B

G F P C

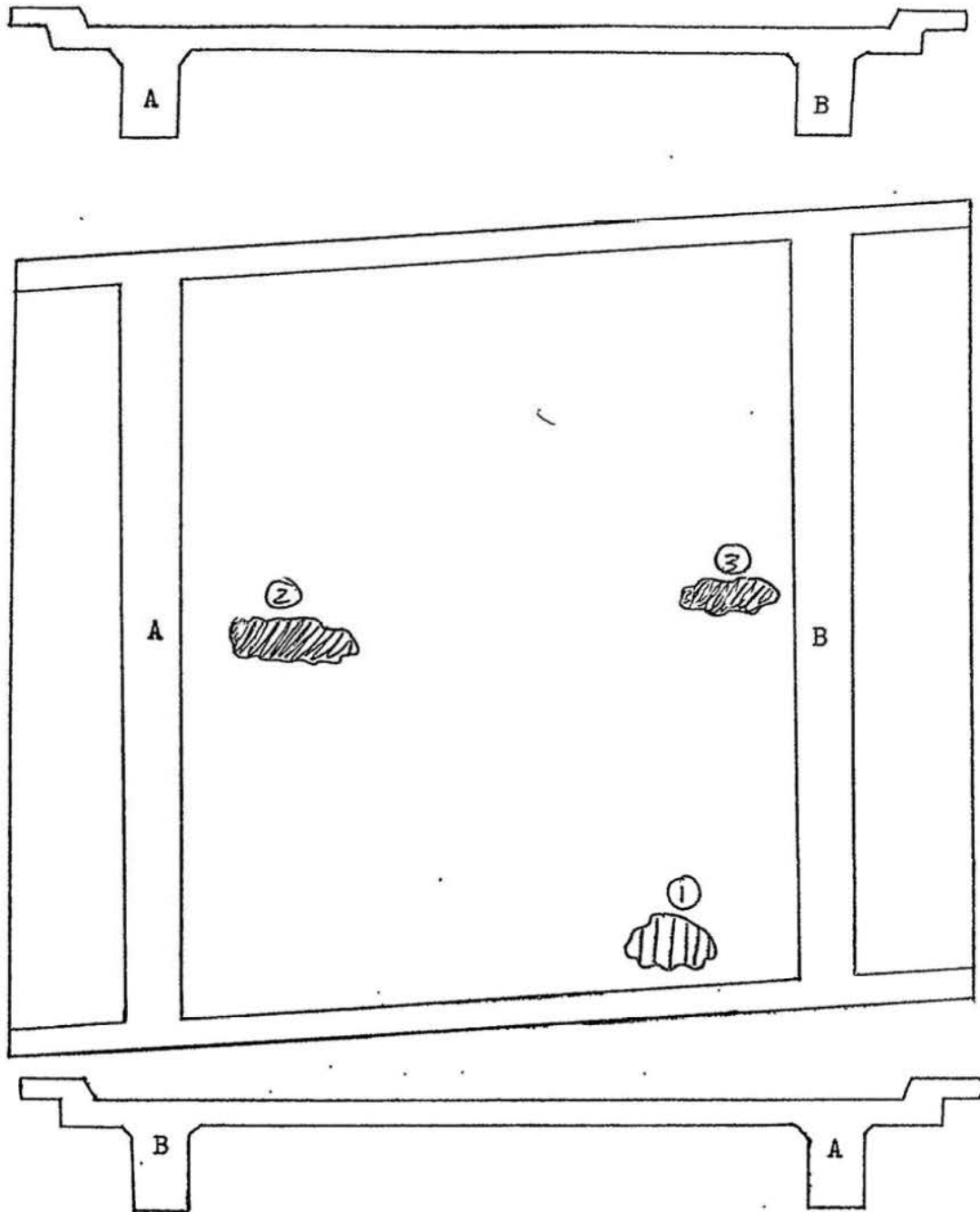
BACKWALLS

G F P C

DIA.

G F P C

- ① 4' L x 2' W x 1 1/2" D
Spall to steel
- ② 2' in dia x 1 1/2" D
Spall to steel
- ③ 5' L x 2' W x 1 1/2" D
Spall to steel
- ④ 3' W x 1 1/2" D
Spall to steel
- ⑤ 3' in dia x 1 1/2" D
Spall to steel



ELEMENT	RATING	COMMENT
---------	--------	---------

BOTTOM DECK

G ^(F) F P C

See 1-3

GIRDER

A

G F P C

B

G F P C

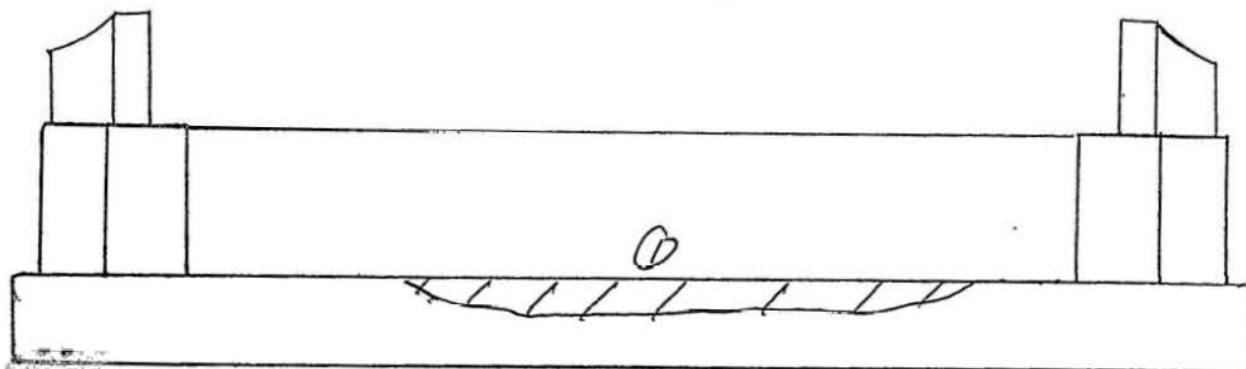
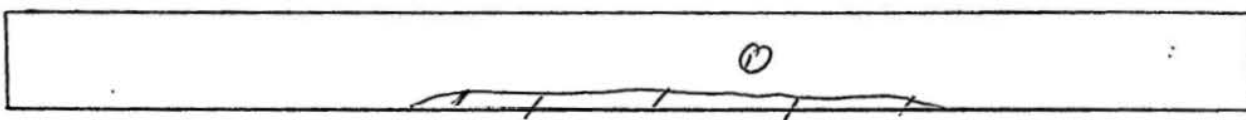
BACKWALLS

G F P C

DIA.

G F P C

- ① 2 1/2' in dia x 1 1/2" D
Spall to Steel
- ② 3 1/2' w x 1 1/2' L x ? D
Depending Spall
- ③ 2' L x 2 1/2' w x ? D
Depending Spall

LOOKING BACK

PLAN VIEW

ELEMENT	RATING	COMMENT
---------	--------	---------

BEARINGS

G F P C

CAP

G F P C

PILING

G F P C

WINGS

G F P C

EMB.

G F P C

VEG.

G F P C

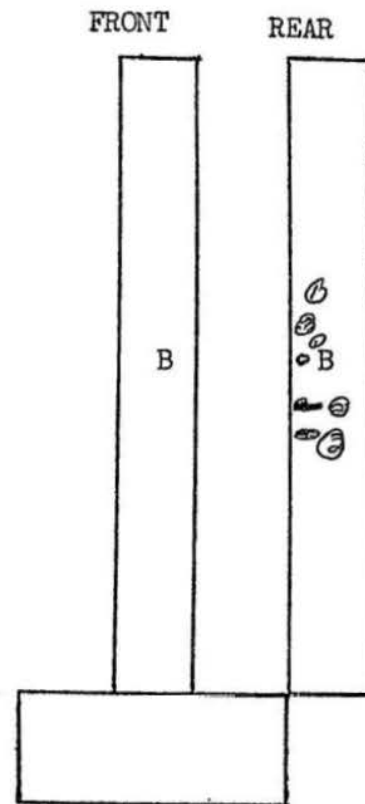
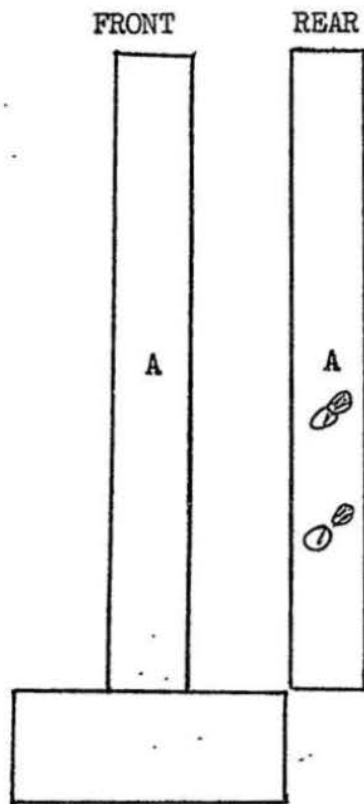
~~REF RAP~~
Slope Paving

G F P C

① imp spill 11' wide
8' tall 14' long

①

N/V



ELEMENT	RATING	COMMENT
---------	--------	---------

COLUMN	A	G (F) P C
--------	---	-----------

COLUMN	A	G (F) P C
--------	---	-----------

COLUMN	B	G (F) P C
--------	---	-----------

COLUMN	B	G (F) P C
--------	---	-----------

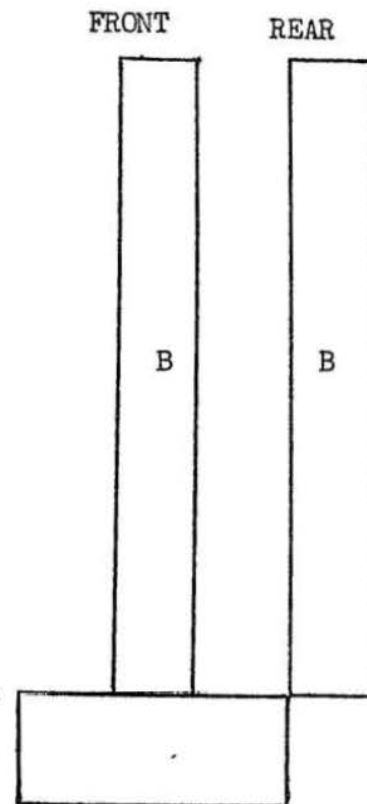
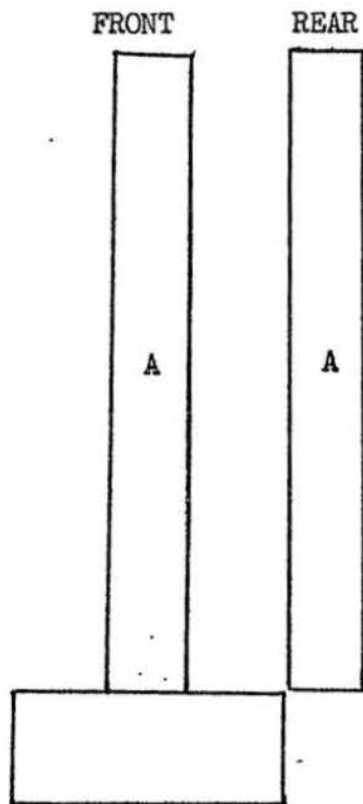
FOOTING		G F P C
---------	--	---------

FOOTING		G F P C
---------	--	---------

BEARINGS		G (F) P C
----------	--	-----------

BEARINGS		G (F) P C
----------	--	-----------

① Spall to steel 6" dia
1/2" deep
② Spall to steel
16" wide 1/2" deep



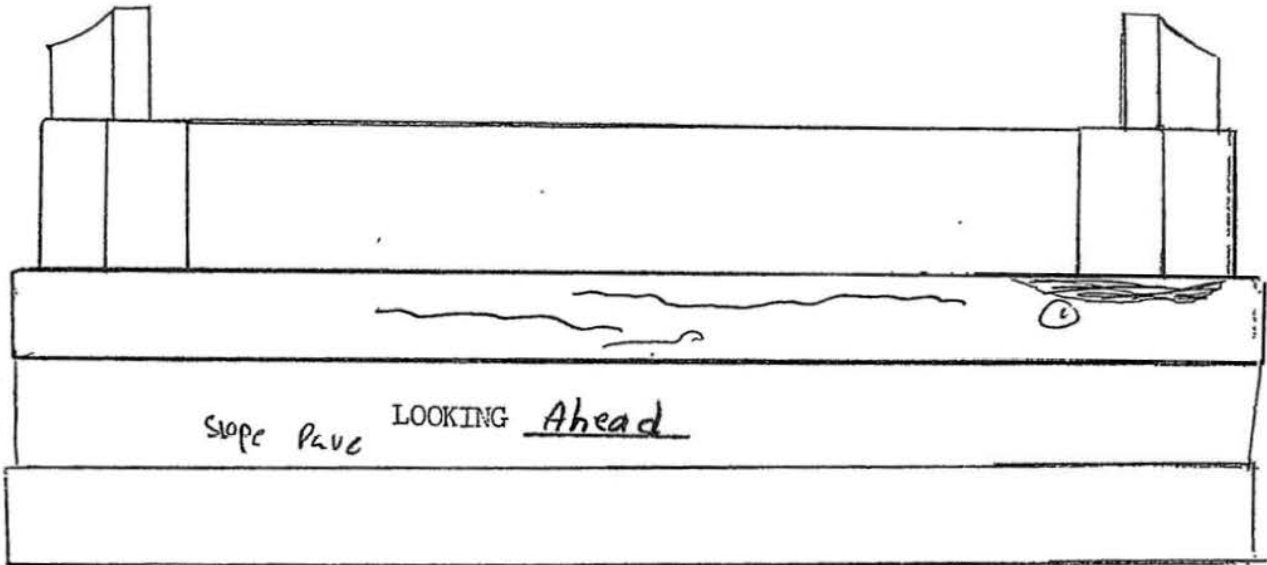
ELEMENT	RATING	COMMENT
---------	--------	---------

COLUMN	A	G F P C
--------	---	---------

COLUMN	B	G F P C
--------	---	---------

FOOTING	G F P C	N/N
---------	---------	-----

BEARINGS	G F P C	
----------	---------	--



PLAN VIEW

ELEMENT	RATING	COMMENT
BEARINGS	G (F) P C	rust
CAP	G (F) P C	see (1) 1 1/2" cracks
PILING	G F P C	NV
WINGS	G F P C	
EMB.	G F P C	
VEG.	G F P C	
RIP RAP	G F P C	
Slope pave	G	

Form BIR 3.0A

(Rev. 9-22-98)

DT-1443

Field Report No. _____

Date _____

Previous Report No. _____

Date _____

Bridge No. 39I00400041

Eleven Digit No.

39 - SR114 - 2648

Co. Route Log Mile

Over/
Under39 - I0040 - 2113 2

Co. Route Log Mile

or

Co. Route Log Mile

or

Co. Route Log Mile

Railroad/Walkway

County Henderson

Road Name: _____

Year Constructed 1961

Structure Name (If Named) _____

Year Widened _____

Year Rehabilitated _____

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

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

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

Width of Approach Traveled Roadway 24 ft. (Does Not Include Shoulders)

Width of Median if Divided Highway _____ ft.

Approach Shoulder Width 12 ft. Right 5 ft. Left*Horizontal Clearance Under Bridge 68 ft. 0 in.*Distance Between Pier Protection
Guardrail and Substructure5 ft. Right 22 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 <u>(F)</u> P C ()	()	(X)	()
Approach Guardrail Transitions	G F P C ()	()	()	(X)
Approach Guardrail	G <u>(F)</u> P C ()	()	(X)	()
Approach Guardrail Terminal	<u>(G)</u> F P C (X)	(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. Lee
2. _____
3. _____
4. _____
5. _____
6. _____

Form BIR 3.0A (Continued)
(Rev. 9-22-98)
DT-1443

Page No. _____

Date _____

39 - SR114 - 2648

Co. Route Log Mile

or

Co. Route Log Mile

over/u
nder

39 - I0040 - 2113

Co. Route Log Mile

or

Co. Route Log Mile

Other Signs or Plaques: _____

Comments Regarding any
Problems with Signing: _____

BRIDGE FEATURES (*.* ft.)

Bridge Skew 84R °

Structure Type (Main Span) C.D.G.

No. Main Spans 3

Structure Type (Appr. Spans) _____

No. Appr. Spans _____

Maximum Span Length 62.0 (ft.) Total Length 154.5 (ft.)

Width of Bridge Out-to-Out 28.6 (ft.) Right Angle to Centerline of Bridge

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

Number of Lanes/Tracks on Bridge 2

BRIDGE CONDITION:

G (F) P C

Does Potential Exist for Elements from Bridge Falling on Roadway Beneath? YES () NO (☒)

Does Potential Exist Because of Deteriorated Condition or Failure of Major Members 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. 39 SR114 2648
CO. ROUTE L. M. L/R

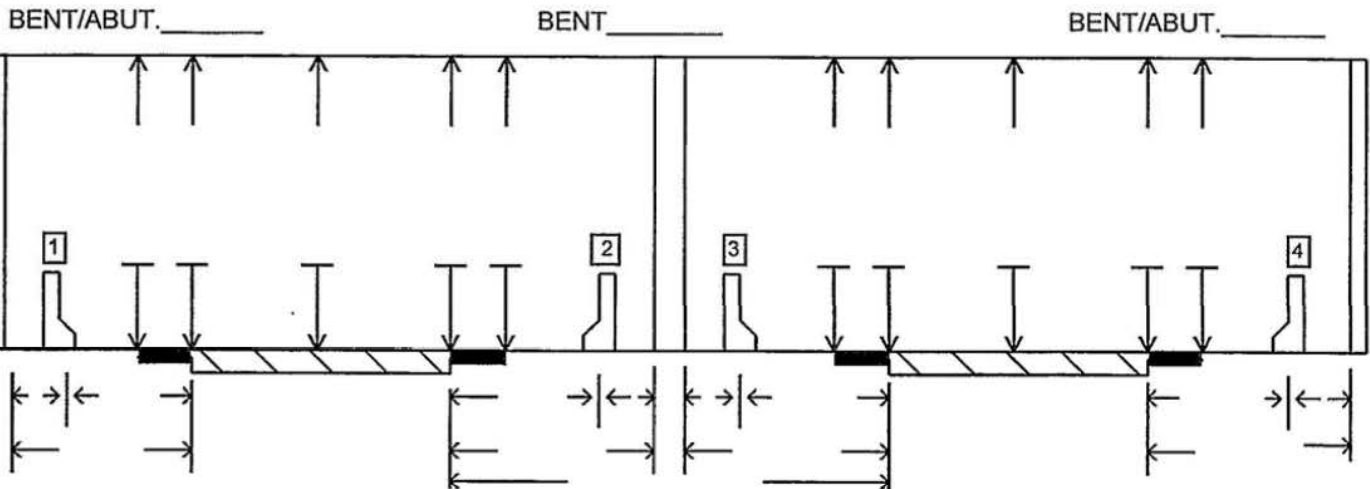
DATE: _____

LATERAL AND VERTICAL CLEARANCES

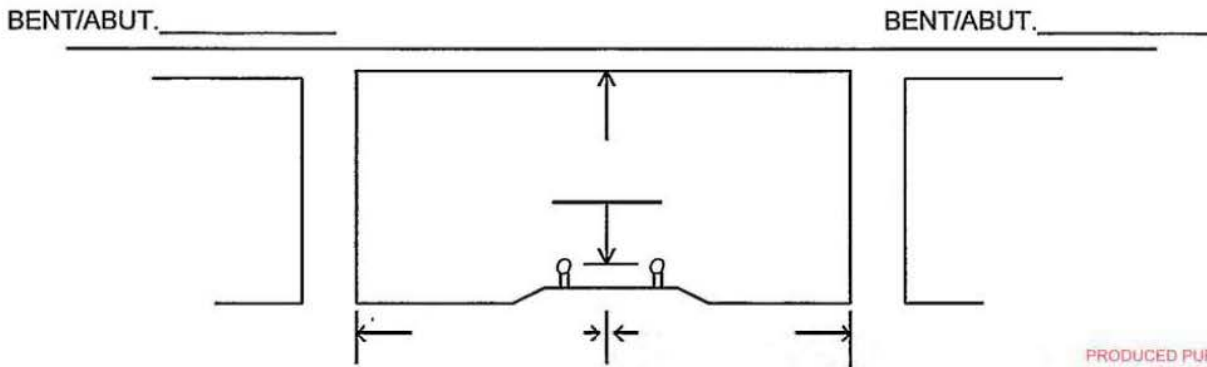
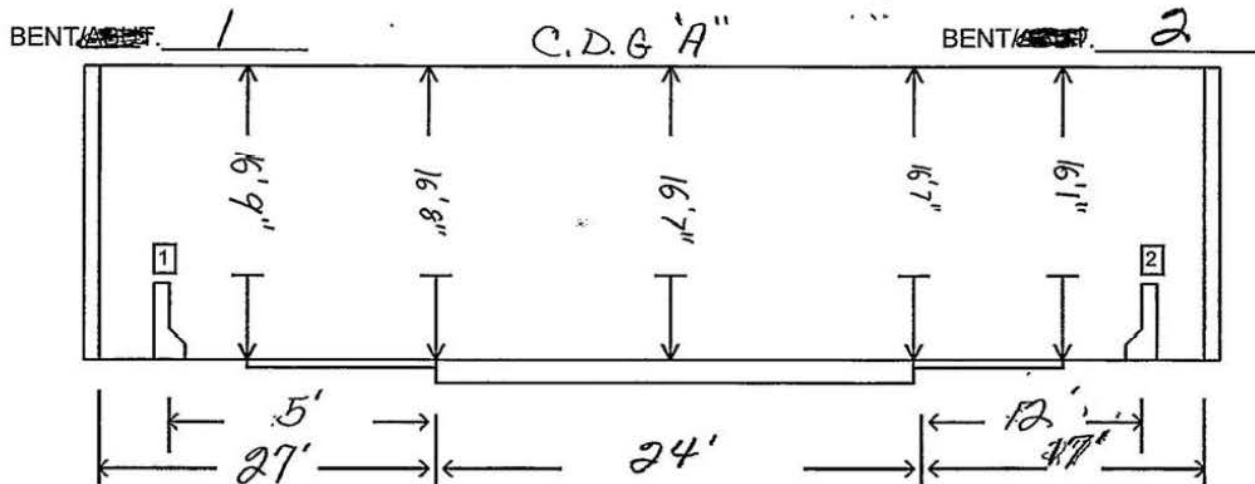
39 - I0040 - 2113
Co. Route Log Mile

or - -
Co. Route Log Mile

or - -
Co. Route Log Mile



- | | | | | | | |
|-----------------------|---------|-------------------------------------|---------------|--------------------------|------|--------------------------|
| 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 | ☐ |



STREAMSTATS IMAGE SHOWING NO BLUE LINES WITHIN PROJECT AREA



National Flood Hazard Layer FIRMette



88°15'29"W 35°49'19"N



0 250 500 1,000 1,500 2,000 Feet

1:6,000

88°14'51"W 35°48'50"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
GENERAL STRUCTURES		Area of Undetermined Flood Hazard Zone D
		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall
OTHER FEATURES		20.2 Cross Sections with 1% Annual Chance Water Surface Elevation
		17.5 Coastal Transect
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary
		Coastal Transect Baseline
		Profile Baseline
		Hydrographic Feature
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 2:11 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: S.R. 114
COUNTY: HENDERSON CITY: _____
PROJECT PIN NUMBER: _____
PROJECT DESCRIPTION: BRIDGES OVER I-40 @ L.M. 26.47

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
340	2030	530	79	15	2050	60-40	1	2	SEE	NOTE

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

REVIEWED BY: RANDY BOGUSKIE Randy Boguskie DATE 2/26/2025
TRANSPORTATION MANAGER 1
SUITE 1000, JAMES K. POLK BUILDING

APPROVED BY: TONY ARMSTRONG Tony Armstrong DATE 2/26/2025
TRANSPORTATION MANAGER 2
SUITE 1000, JAMES K. POLK BUILDING

COMMENTS:

FURNISH THE 2030-2050 TRAFFIC DATA.

THIS TRAFFIC IS BASED ON 2024 CYCLE AND RAMP COUNTS. THE DESIGN YEAR TRAFFIC IS BASED ON GROWTH RATE FROM THE TN-TIMES LINEAR REGRESSION TOOL. ADL'S ARE NOT REQUIRED.

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.

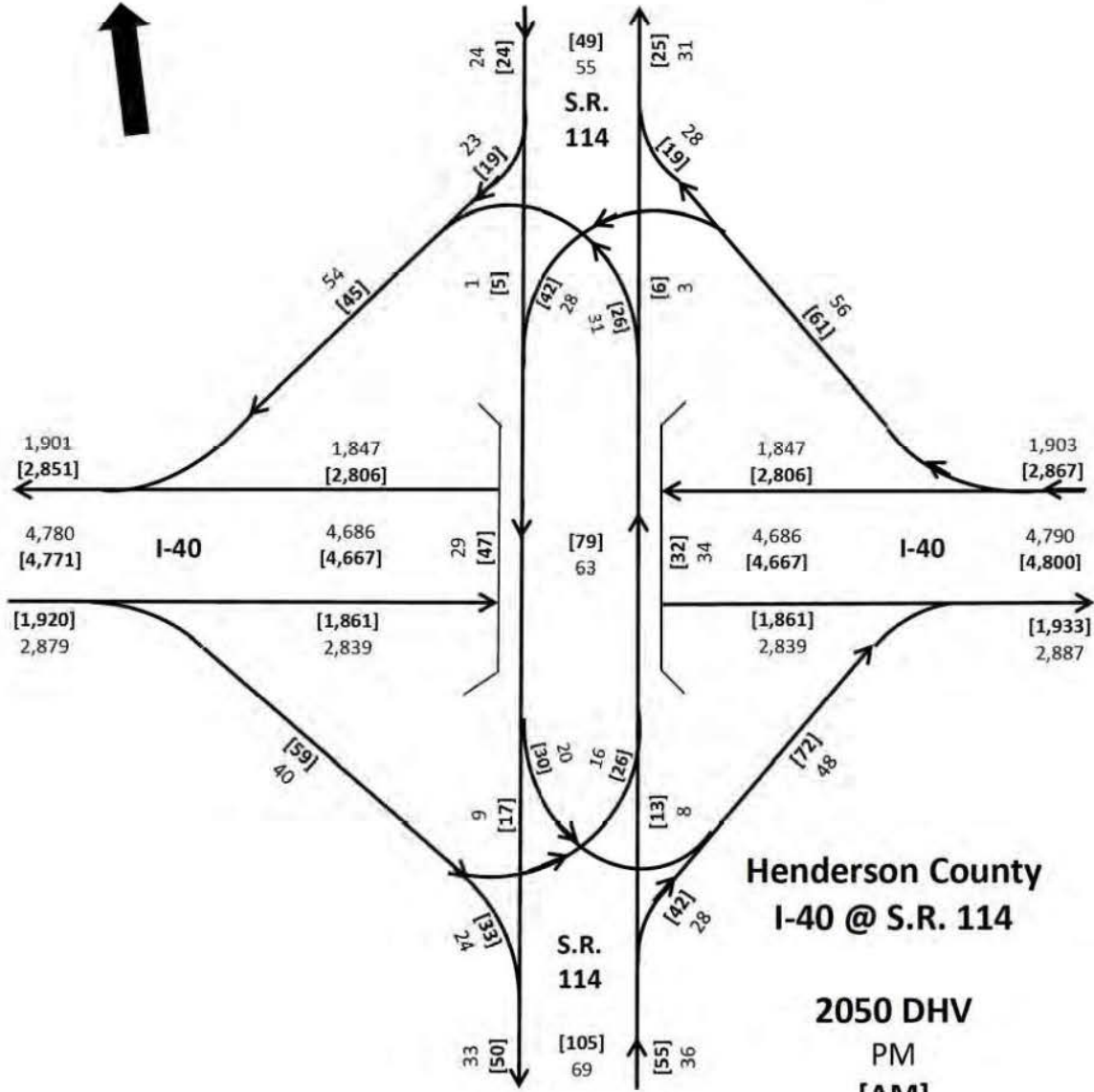
(REV. 6/12/24)



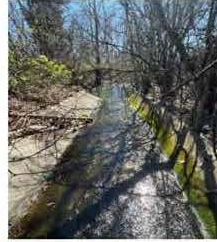
Henderson County
S.R. 114 @ L.M. 26.47
Bridges over I-40



2050 DHV



Date: February 26, 2025
TA



BARGE
DESIGN SOLUTIONS

Virtual Site Visit

Five Bridges
Four Site Visits
One Meeting





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

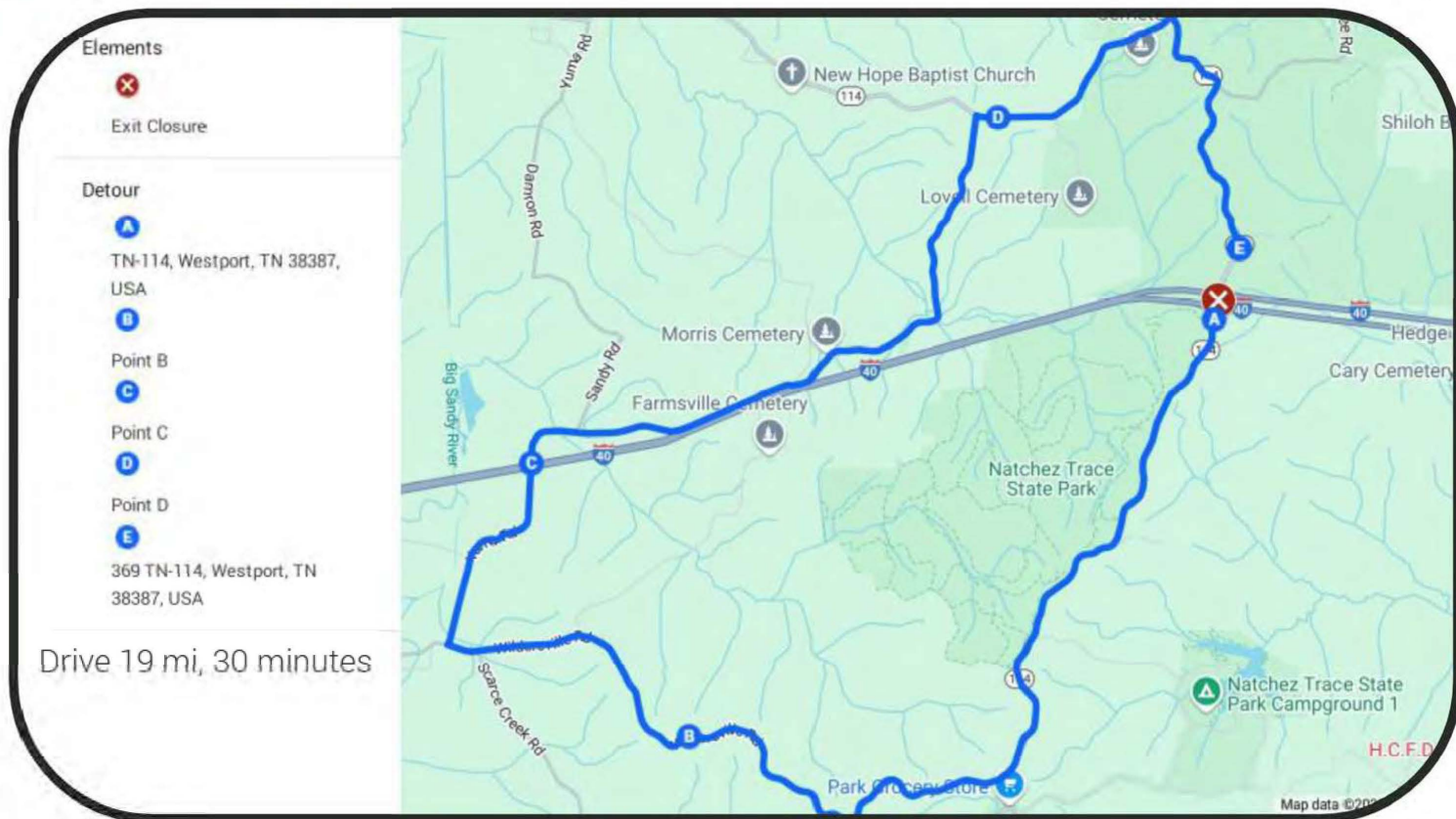


Potential Impacts

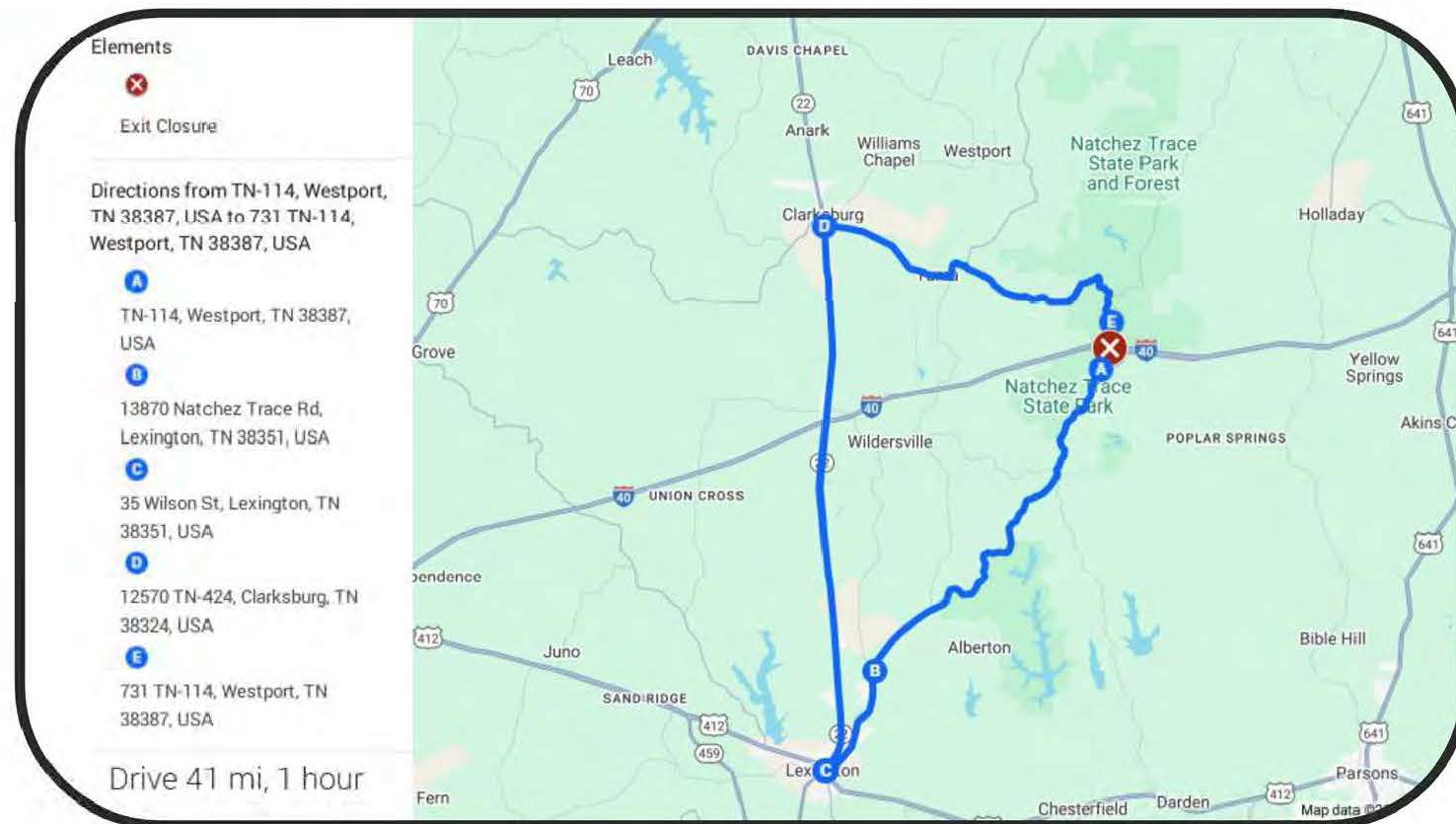
- Bicycle Route and Trail signs (Red Leaves Trail) indicate pedestrian traffic near these bridges. The existing bridge has little to no shoulder or safety measures to facilitate this type of traffic.
- Caution sign warns of log trucks entering the highway. Grades of the bridges may be affected to meet 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

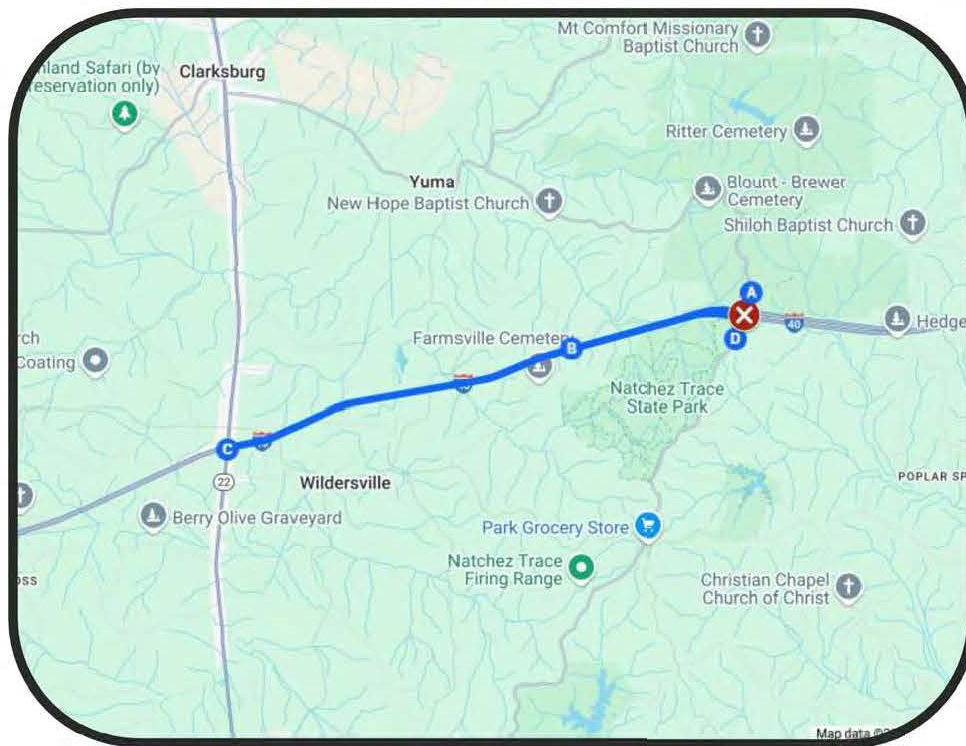


01 – Henderson Co. State Routes Detour Map



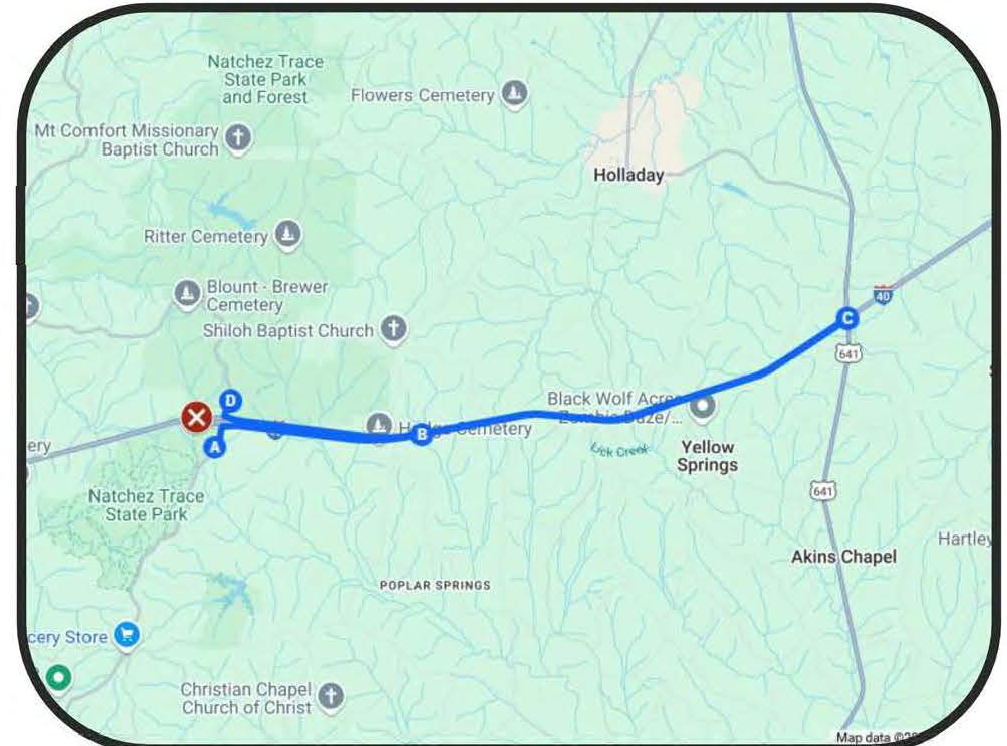
01 – Henderson Co. Interstate Detour Maps

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

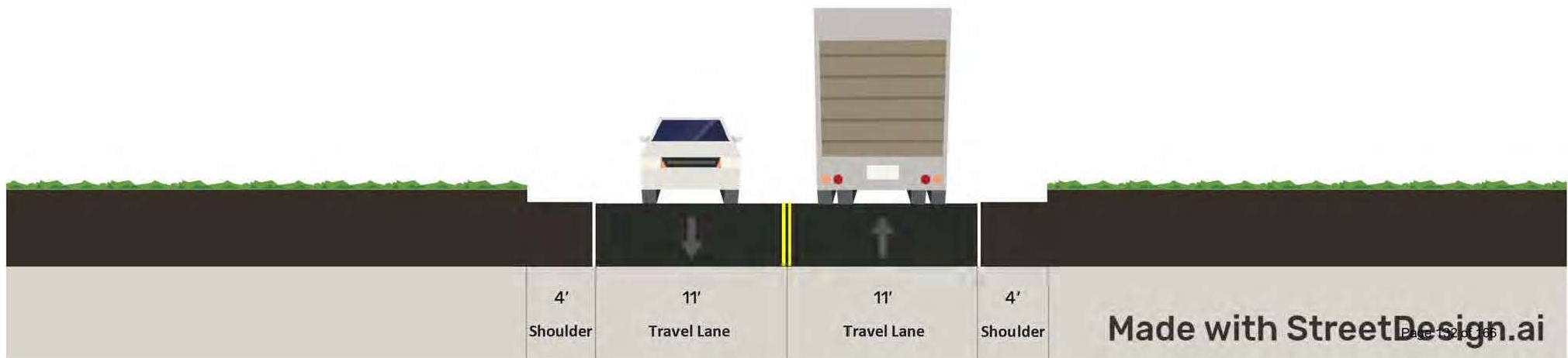
Existing:

- 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

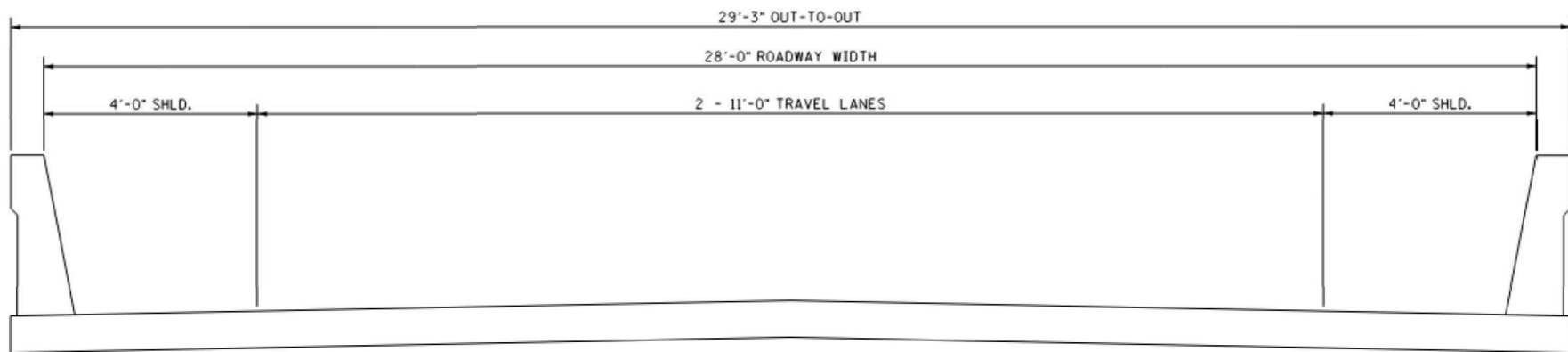
Proposed:

- 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



01 – Henderson Co. Feature Map

- Yellow County Line
- Red Leaves Trail

01 - Bike Routes in Proximity to S.R. 114 over I-40

