



Latitude:35.86202, Longitude:-84.25895

Region 01, 53 - Loudon County

Team Leader: Aaron Blake

Inspectors: Brian Rader, Roger Carico, Alfred Sautner



HICKORY CREEK RD. Crossing I75

35.86202, -84.25895

90 - LAST INSPECTION DATE 09/12/2024

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.
0	N	N	0	30

41 - STRC OPEN/CLOSED/POSTED A

58 - DECK 6

59 - SUPERSTRUCTURE 7

60 - SUBSTRUCTURE 7

61 - CHANL/CHANL PROTECTION N

62 - CULVERT AND RETAIN WALL N

71 - WATERWAY ADEQUACY N

72 - APPROACH RDWY ALIGNMENT 6

521 - OVERALL CONDITION 2 - Fair

16 - LATITUDE	17 - LONGITUDE
35.862017	-84.258950

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

Aaron Blake Digitally signed by Aaron Blake
Date: 2024.10.17 06:18:49
-04'00'

TEAM LEADER SIGNATURE

IDENTIFICATION	
(1) State Names	47 - Tennessee
(8) Structure Number	53I00750037
(5) Inventory Route	1
(2) Highway Agency District	Region 1
(3) County Code	53 - Loudon
(4) Place Code	00000
(6) Features Intersected	175
(7) Facility Carried	NFA 1279
(9) Location	5 M N LENOIR CITY
(11) Mile Point	2.560 mi
(12) Base Highway Network	No
(13) LRS Inventory Rte & Subrte	
(16) Latitude	35.862017
(17) Longitude	-84.258950
(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	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	1 - Monolithic Concrete (concurrently pl
Type of Membrane	0 - None
Type of Deck Protection	0 - None
AGE AND SERVICE	
(27) Year Built	1972
(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	879
(30) Year of ADT	2021
(109) Truck ADT	1 %
(19) Bypass, Detour Length	15 mi
GEOMETRIC DATA	
(48) Length of Maximum Span	65.6 ft
(49) Structure Length	234.9 ft
(50) Curb or Sidewalk Width	
Left	0.0 ft
Right	0.0 ft
(51) Bridge Roadway Width Curb to Curb	27.9 ft
(52) Deck Width Out to Out	34.4 ft
(32) Approach Roadway Width (W/Shoulders)	21.0 ft
(33) Bridge Median	0 - No median
(34) Skew	90 Deg
(35) Structure Flared	0 - No flare
(10) Inventory Route Min Vert Clear	99.99 ft
(47) Inventory Route Total Horiz Clear	27.9 ft
(53) Min Vert Clear Over Bridge Rdwy	99.99 ft
(54) Min Vert Underclear	17.09 ft
Ref:	
(55) Min Lat Underclear RT	7.9 ft
Ref:	
(56) Min Lat Underclear LT	26.9 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	17 - Urban 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	6
(59) Superstructure	7
(60) Substructure	7
(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	48.60
(65) Inventory Rating Method	1 - Load Factor(LF)
(66) Inventory Rating	
Type	
Rating	28.84
(70) Bridge Posting	5 - Equal to or above legal loads
(41) Structure Open/Posted/Closed	A - Open, no restriction
APPRAISAL	
(67) Structural Evaluation	7
(68) Deck Geometry	5
(69) Clearances, Vertical/Horizontal	3
(71) Waterway Adequacy	N
(72) Approach Roadway Alignment	6
(36A) Bridge Railings	0 - Inspected feature does not meet
(36B) Transitions	N - Not applicable or a safety feat
(36C) Approach Guardrail	N - Not applicable or a safety feat
(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	
(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	1406
(115) Year of Future ADT	2042

INSPECTIONS *			
(90) Inspection Date	09/12/2024		
(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 10:25 am

Weather Conditions 70, cloudy

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 (Fair) Moderate curves at both approaches

Pavement (Fair) Asphalt overlay

Embankment (Good)

Approach Drains (Fair) PARTIALLY BLOCKED APPROACH 2

TRAFFIC SAFETY FEATURES

Bridge Railing Rating (Good) SUBSTANDARD

SIGNS POSTED ON ROUTE

Paddleboards	Needed	Weight Limit Posted	Not Needed
Vertical Clearance (<14'-6")	No	Gross	Tons
Posted Height		Single-unit Vehicle	Tons
Narrow Bridge Signs	No	Multi-unit Vehicle	Tons
One Lane Bridge Signs	No	564 Assigned Bridge Name	
Other Signs or Plaques			

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)	Brushed concrete, hairline map cracks, light scale, few aggregate voids, area moderate scale on deck 4 right	
Deck - Structural Condition	(Good)	POPOUT IN LEFT OVERHANG ; .HAIRLINE CRACKS WITH LEACHING IN BOTH OVERHANGS AND AT THE CONSTRUCTION JOINTS ; SPAN 1 BETWEEN BEAMS A & B - TRANSVERSE CRACK 1/8"	
Curbs	(Good)		
Railing	(Fair)	Substandard, Deck 4 right and left loose with missing and loose nuts; several post anchors missing bolt and nuts throughout	
Expansion Joints	(Fair)	WATER SEEPAGE AT ABUTMENTS	

SUPERSTRUCTURE

Bearing Devices	(Fair)	SLIDING PLATES SLIPPED SLIGHTLY BEARINGS A/B ABUTMENT 2, MODERATE CORROSION ON BEARING A AT ABUTMENT 1 AND BEARINGS A & D AT ABUTMENT 2
Beams	(Good)	
Diaphragms	(Good)	
Superstructure Paint	(Good)	
Alignment of Members	(Good)	

TEXTURE COAT

ABUTMENTS

Abutment Caps	(Good)	Abutment cap 1&2 - Hairline cracks; Abutment cap 2 - Cracks up to 1/16" & hairline cracks w/ leaching
Abutment Wings	(Good)	
Abutment Backwall	(Good)	Hairline cracks; Backwall abutment 1 left - Crack up to 1/8"; Backwall abutment 2 left - Crack up to 1/16"
Abutment Plumb	(Good)	
Abutment Footing	(Not visible)	
Abutment Piles	(Not Visible)	
Abutment Embankment	(Good)	
Abutment Bearing Surface	(Good)	
Abutment Slope Paving	(Good)	Separated 1.25" from cap

PIERS

BENTS

Bent Caps	(Good)	
Bent Columns	(Good)	Column B right bent 2 - Popout
Bent Plumb	(Good)	
Bent Footing	(Not Visible)	
Bent Piles	(Not Visible)	
Bent Bearing Surface	(Good)	

Inspection Team's Summary

The subject bridge was inspected on the above date and found to be in FAIR condition.

Approach roadway alignment is fair, moderate curves at both approaches. Approach wearing surface is fair, asphalt overlay, asphalt patches, and cracks to 1/4". There are no approach rails. The approach drain is poor, approach 2 left only, and plugged. There is no bridge signage.

The deck wearing surface is fair, brushed concrete, hairline to 1/16" map cracks, light scale, area of moderate scale, tire marks, and few aggregate voids. Bridgerails are fair, substandard, loose on deck 4 left and right, and several post anchors missing bolt and nuts throughout.

The bottom of the deck is good, a 1/8" crack, popout, hairline cracks with leaching in overhangs and construction panel lines. Beams are good. Bearings are fair, light corrosion, and some with moderate corrosion and flaking. Diaphragms are good.

Abutments are good, hairline to 1/8", hairline cracks with leaching. Wings are good. Bents are good, popout.

The underpass pier protection is good, standard.

A. Blake

General Inspection Comment

HQ notes to TL

ELEMENTS	DESCRIPTION	UNITS	TOTAL	CS1	CS2	CS3	CS4
16	Re Conc Top Flange	SF	8108	8008	100	0	0
1130	Cracking (RC and Other)	SF	8100	8000	100	0	0
(16) Element record added 2016-07-28.							
110	Re Conc Opn Girder/Beam	LF	942	942	0	0	0
(110) Element record added 2015-02-13.							
205	Re Conc Column	EA	6	6	0	0	0
(205) Element record added 2016-07-28.							
215	Re Conc Abutment	LF	56	52	0	4	0
1130	Cracking (RC and Other)	LF	24	20	0	4	0
(215) Element record added 2015-02-13.							
(1130-215) Element record added 2016-07-28.							
234	Re Conc Pier Cap	LF	82	82	0	0	0
(234) Element record added 2015-02-13.							
311	Moveable Bearing	EA	16	0	13	3	0
1000	Corrosion	EA	16	0	13	3	0
(311) Element record added 2015-02-13.							
(1000-311) Element record added 2016-07-28.							
313	Fixed Bearing	EA	4	4	0	0	0
(313) Element record added 2016-07-28.							
330	Metal Bridge Railing	LF	470	412	10	48	0
1020	Connection	LF	58	0	10	48	0
(330) Element record added 2015-02-13.							

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

Reach-All Approval and Comments



Deck 4 left bridge rail post back - missing nuts (also missing one on front)



Deck 4 left bridge rail - loose



Deck 2 left rail post front- missing nut (also missing nut on back side)



Deck 2 right rail post front- missing bolt (also missing nut on back side)



Deck 3 right rail post - missing nut



Deck 4 right at approach 2 - area moderate scale



Deck 4 right bridge rail post - loose, missing nut



Deck 4 right bridge rail - loose



Approach 2 right drain - debris and plugged



Back on log



Approach 2 left drain - debris and plugged



Approach 1 wearing surface - patches, cracks to 1/4"



Deck 3 wearing surface - hairline to 1/16" map cracks, light scale, tire marks



Deck 2 wearing surface - hairline to 1/16" map cracks, light scale, few aggregate voids



Deck 1 wearing surface - hairline map cracks, light scale, few aggregate voids



View across deck



Approach 1 wearing surface - patch, cracks to 1/8"



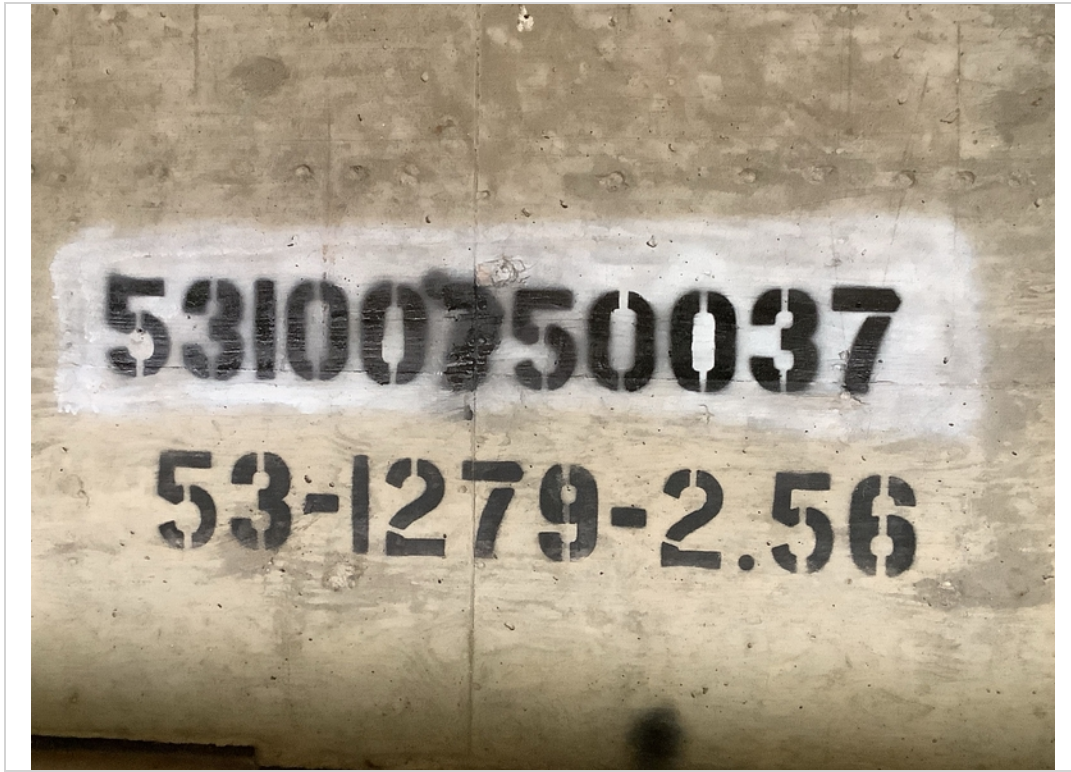
Approach on log



I-75 NB - Underpass forward



I-75 NB - Underpass back



Abutment 1 left - bridge number



I-75 SB - Underpass forward and elevation right



I-75 SB - Underpass back and elevation left



From bent 1 - View underneath



Abutment cap 2 - Cracks up to 1/16" & hairline cracks w/ leaching



Abutment cap 1 - Hairline cracks (Typical abutment 2)



Backwall abutment 1 - Hairline cracks



Slope paving abutment 2 - Separated from cap 1.25" (Typical abutment 1)



Column B right bent 2 - Popout



Abutment 2 left Backwall at beam A left - 1/16"



Abutment 2 - Bearings A & D - moderate corrosion



Span 2 left overhang - Popout and Hairline cracks with leaching



Span 1 bottom deck between beams A & B - Cracking up to 1/8" with leaching at the construction joints



Abutment 1 back wall - Cracking up to 1/8"



Abutment 1 - Bearing A - moderate corrosion

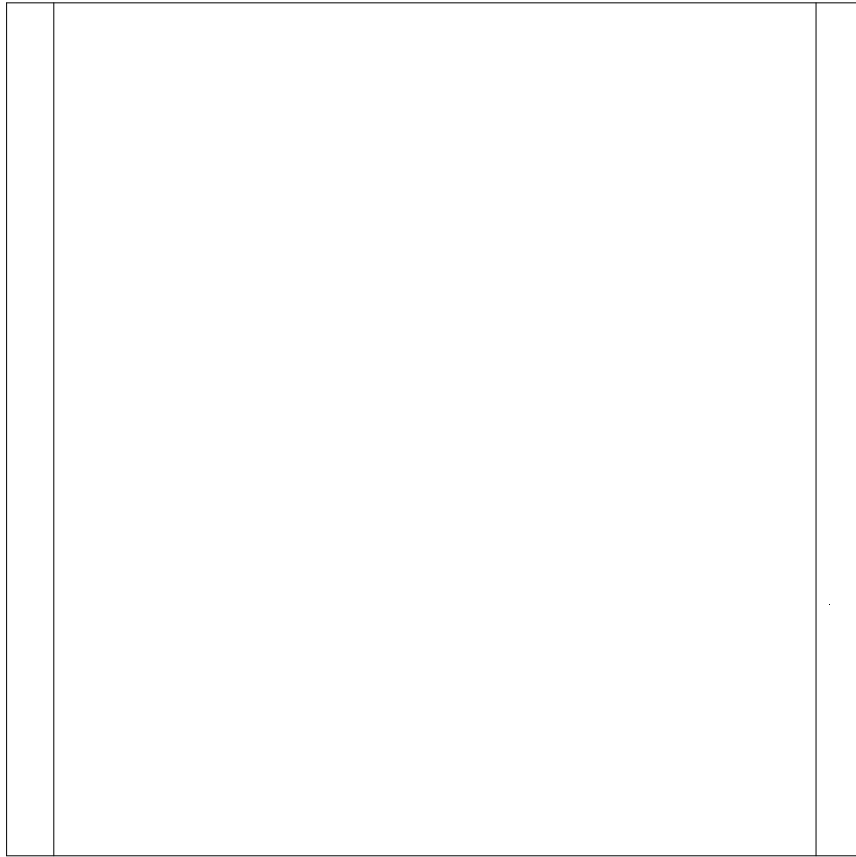


Beam A - abutment 1 - graffiti

Maintenance Recommendations

525 - Repair List # N 523 - Repair List Add Date 524 - Repair List Revise Date 9/23/2022

Date Added	Recommendation	Priority
09/21/1998	BRIDGERAILS ARE SUBSTANDARD	
09/21/1998	APPROACH GUARDRAILS ARE NON-EXISTENT	
10/05/2004	INSTALL PADDLEBOARD SIGNS AT APPROPRIATE LOCATIONS	
09/07/2006	CLEAN APPROACH 2 DRAINS	
10/15/2008	UNDERPASS GUARDRAIL TRANSITIONS ARE SUBSTANDARD	
10/15/2008	UNDERPASS GUARDRAILS ARE SUBSTANDARD	
09/12/2024	SEAL CRACKS IN CONCRETE WEARING SURFACE	
09/12/2024	Cut vegetation at abutment 2	
09/12/2024	REPAIR DECK 4 RIGHT RAIL - LOOSE	3
09/12/2024	REPAIR DECK 4 LEFT RAIL - LOOSE	
09/12/2024	INSTALL NUTS WHERE MISSING ON BRIDGE RAIL POST ANCHORS	

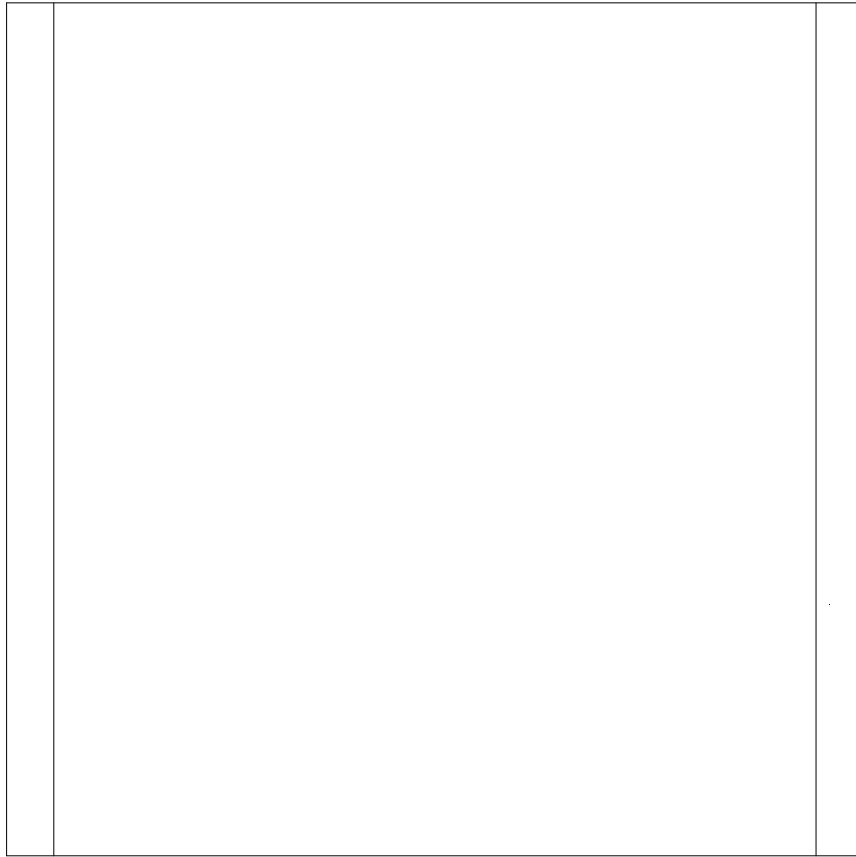


Bridge No. 53-1279-02.56

09-12-24 AB

Span No. 1

TOP DECK	F	HAIRLINE MAP CRACKS; LIGHT SCALE; FEW AGGREGATE VOIDS
BRIDGE RAIL	F	

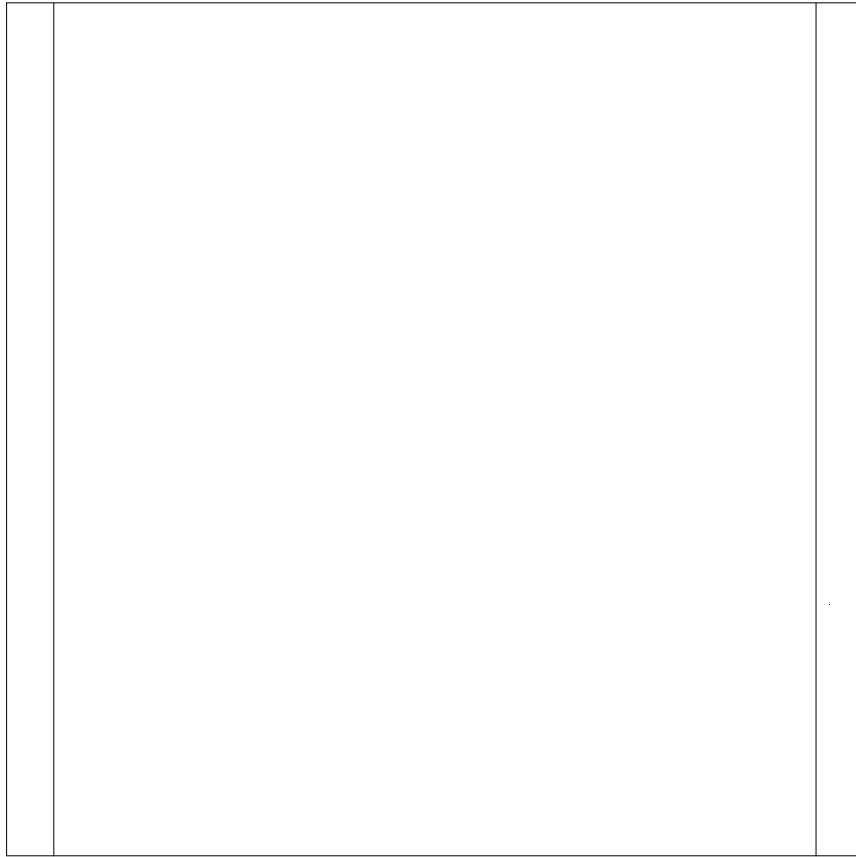


Bridge No. 53-1279-02.56

09-12-24 AB

Span No. 2

TOP DECK	F	HAIRLINE TO 1/16" MAP CRACKS; LIGHT SCALE; FEW AGGREGATE VOIDS
BRIDGE RAIL	F	MISSING NUTS & BOLT

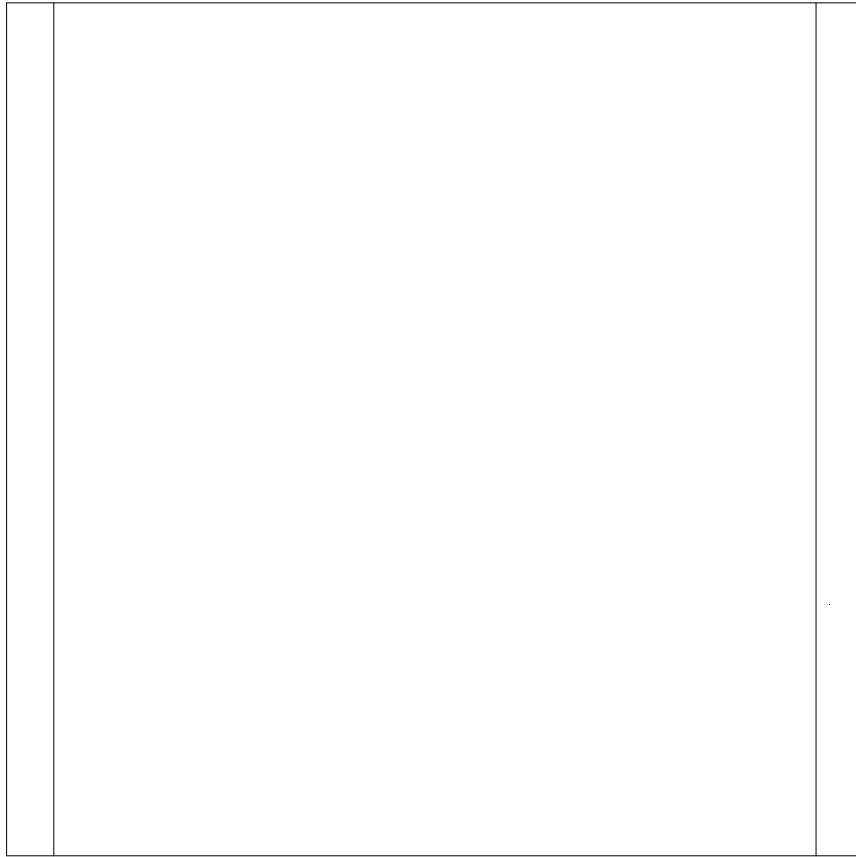


Bridge No. 53-1279-02.56

09-12-24 AB

Span No. 3

DECK	F	HAIRLINE TO 1/16" MAP CRACKS; LIGHT SCALE; TIRE MARKS
BRIDGE RAIL	F	RIGHT – MISSING NUT



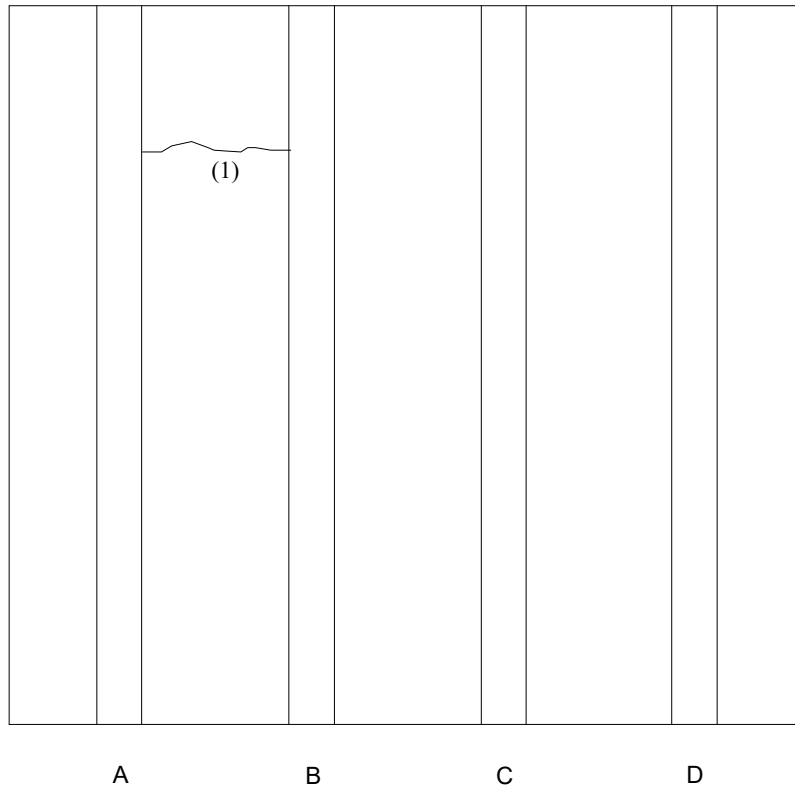
Bridge No. 53-1279-02.56

09-12-24 AB

Span No. 4

TOP DECK	F	APPROACH 2 RIGHT - AREA MODERATE SCALE
BRIDGE RAIL	F	MISSING & LOOSE NUTS; LOOSE

LOG



BRIDGE NO. 53-1279-2.56

09-12-24 BR

BOTTOM DECK SPAN 1-4

BOTTOM DECK	G	LEACHING AT CONSTRUCTION PANEL LINES (1) SPAN 1 BETWEEN BEAMS A/B - CRACKS UP TO 1/8"
		SPALLS W/ EXPOSED REBAR OVERHANGS & HAIRLINE CRACKS
BEAMS	G	HAIRLINE CRACKS
DIAPHRAGMS	G	
BEARINGS	G	MODERATE CORROSION BEARINGS A/D ABUTMENT 2
		MODERATE CORROSION BEARING A ABUTMENT 1

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Bridge No. 53-1279-02.56

09-12-24 ACSIII

Abut. No. 1

CAP	G	HAIRLINE CRACKS
BACKWALL	G	HAIRLINE CRACKS; LEFT - CRACK UP TO 1/8"
BEARING AREA	G	
WINGS	G	
		SLOPE PAVEMENT SEPARATED 1.25" AWAY FROM CAP

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Bridge No. 53-1279-02.56

09-12-24 ACSIII

Abut. No. 2

CAP	G	HAIRLINE CRACKS W/ LEACHING; CRACKS UP TO 1/16"
BACKWALL	G	HAIRLINE CRACKS; LEFT - CRACK UP TO 1/16"
BEARING AREA	G	
WINGS	G	
		SLOPE PAVEMENT SEPARATED 1.25" AWAY FROM CAP

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Front



Rear



Bridge No. 53-1279-02.56

09-12-24 ACSIII

Bent No. 1 thru 3

Cap	G	
Risers	G	
Columns	G	COLUMN B RIGHT BENT 2 - POPOUTS

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OVERHEAD ROAD NAME = HICKORY VALLEY RD.
09-12-24 BR

09-12-24 BR



1