

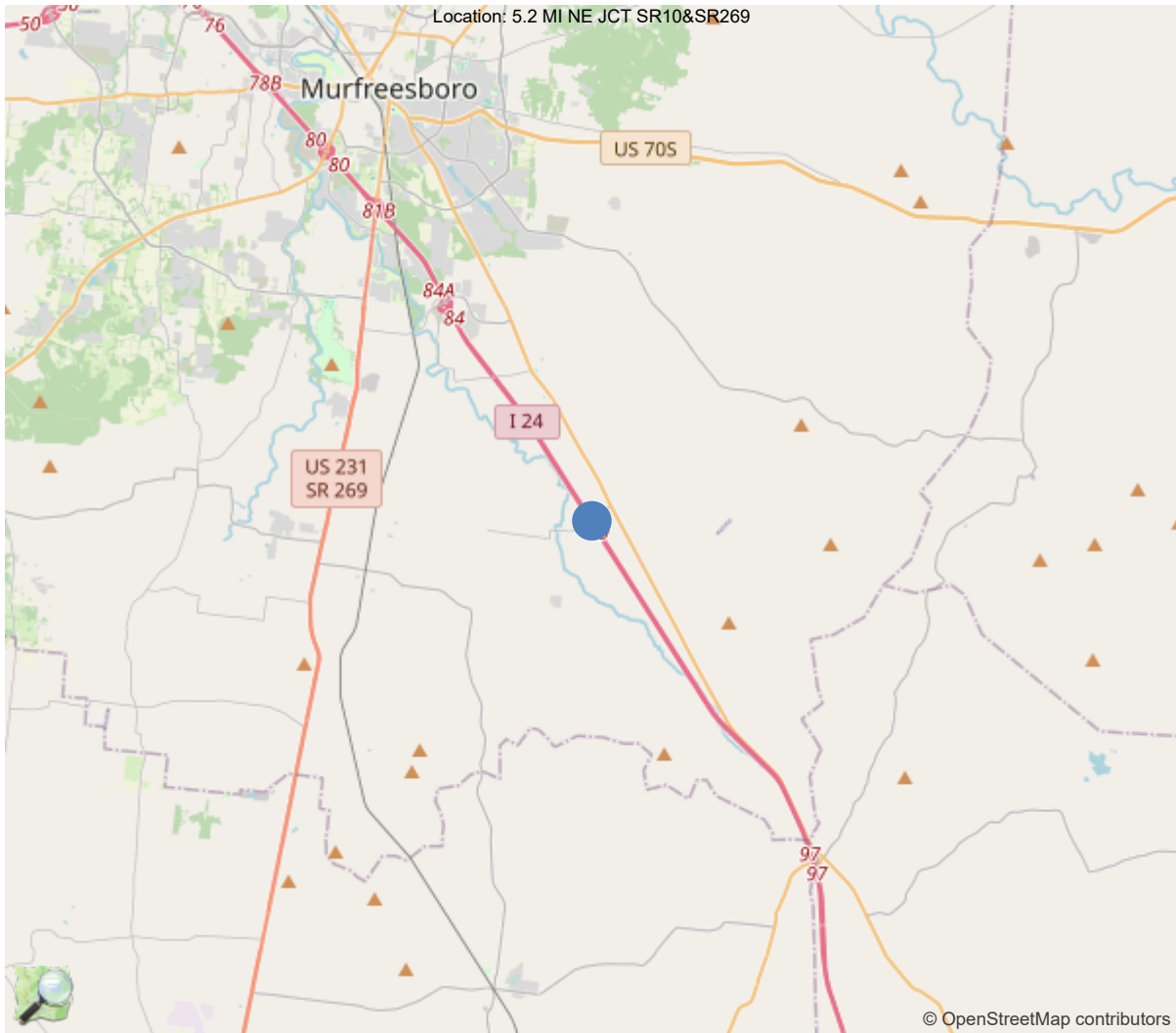


Latitude:35.72240, Longitude:-86.32037

Region 03, 75 - Rutherford County

Team Leader: Carlos Goncalves

Inspectors: Maxwell Benefield, Daryl Ballard, Seth Mechling



EPPS MILL RD. Crossing I24

35.72240, -86.32037

90 - LAST INSPECTION DATE 06/14/2022

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	1	1	N	

41 - STRC OPEN/CLOSED/POSTED P

58 - DECK 6

59 - SUPERSTRUCTURE 6

60 - SUBSTRUCTURE 7

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	17 - LONGITUDE
35.722400	-86.320367

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

Carlos Goncalves

TEAM LEADER SIGNATURE

IDENTIFICATION	
(1) State Names	47 - Tennessee
(8) Structure Number	75I00240041
(5) Inventory Route	1
(2) Highway Agency District	Region 3
(3) County Code	75 - Rutherford
(4) Place Code	00000
(6) Features Intersected	I0024
(7) Facility Carried	NFA 1044 (SA 7516)
(9) Location	5.2 MI NE JCT SR10&SR269
(11) Mile Point	0.480 mi
(12) Base Highway Network	No
(13) LRS Inventory Rte & Subrte	
(16) Latitude	35.722400
(17) Longitude	-86.320367
(98) Border Bridge State Code	
(99) Border Bridge Structure No.	
STRUCTURE TYPE AND MATERIAL	
(43) Main Structure Type	42
Material	4 - Steel continuous
Type	2 - Stringer/Multi-beam or girder
(44) Approach Structure Type	00
Material	0 - Other / None
Type	0 - Other / None
(45) No. of Spans in Main Unit	2
(46) No. of Approach Spans	0
(107) Deck Structure Type	1 - Concrete Cast-in-Place
(108) Wearing Surface/Protective System	
Type of Wearing Surface	6 - Bituminous
Type of Membrane	0 - None
Type of Deck Protection	0 - None
AGE AND SERVICE	
(27) Year Built	1968
(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	3334
(30) Year of ADT	2021
(109) Truck ADT	3 %
(19) Bypass, Detour Length	10 mi
GEOMETRIC DATA	
(48) Length of Maximum Span	149.9 ft
(49) Structure Length	299.9 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	32.5 ft
(32) Approach Roadway Width (W/Shoulders)	31.8 ft
(33) Bridge Median	0 - No median
(34) Skew	80 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	16.17 ft
Ref:	
(55) Min Lat Underclear RT	36.1 ft
Ref:	
(56) Min Lat Underclear LT	52.2 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	5 - Bridge is not eligible for
CONDITION	
(58) Deck	6
(59) Superstructure	6
(60) Substructure	7
(61) Channel & Channel Protection	N
(62) Culverts	N
LOAD RATING AND POSTING	
(31) Design Load	4 - M 18 / H 20
(63) Operating Rating Method	8
(64) Operating Rating	
Type	8 - Load and Resistance Factor Rating (LRF
Rating	23.98
(65) Inventory Rating Method	8 - Load and Resistance Factor
(66) Inventory Rating	
Type	
Rating	18.47
(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	4
(69) Clearances, Vertical/Horizontal	5
(71) Waterway Adequacy	N
(72) Approach Roadway Alignment	8
(36A) Bridge Railings	0 - Inspected feature does not meet
(36B) Transitions	1 - Inspected feature meets current
(36C) Approach Guardrail	1 - Inspected feature meets current
(36D) Approach Guardrail Ends	N - Not applicable or a safety feat
(113) Scour Critical Bridges	N - Bridge not over waterway.
PROPOSED IMPROVEMENTS	
(75) Type of Work	36 - Bridge deck rehabilitatio
(76) Length of Structure Improvement	299.9 ft
(94) Bridge Improvement Cost	\$ 443
(95) Roadway Improvement Cost	\$ 45
(96) Total Project Cost	\$ 665
(97) Year of Improvement Cost Estimate	2022
(114) Future ADT	5334
(115) Year of Future ADT	2042

INSPECTIONS *			
(90) Inspection Date	06/14/2024		
(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 11:02 AM

Weather Conditions SUNNY 88

Vehicles Observed ALL TYPES

LIVE LOAD BEHAVIOR

Sub Horiz./ Vert. Defl (No)

Sub Vibration (No)

Super Horiz./ Vert. Defl (Yes)

Super Vibration (No)

APPROACH

Alignment (Good)

Pavement (Fair)

AC PATCHES AND POTHOLES AT BOTH ENDS

Embankment (Good)

Approach Drains (Good)

MOD DEBRIS BUILD-UP 'A' END RT.

TRAFFIC SAFETY FEATURES

Bridge Railing Rating (Good) SPAN #1 LT.-SPALL, LGT SURFACE SCALE

Transitions Rating (Good)

Guardrail Rating (Good) A END RIGHT - IMPACT DAMAGE

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 40 Tons

Single-unit Vehicle Tons

Multi-unit Vehicle Tons

564 Assigned Bridge Name

DECK

Wearing Surface Type		Asphalt	Wearing Surface Depth	10
Wearing Surface	(Fair)	SP 2--AC PATCHES DOWN CENTERLINE		
Deck - Structural Condition	(Fair)	NUMEROUS MAP CRACKS W/EFF, RANDOM SPALLS		
Curbs	(Good)			
Expansion Joints	(Poor)	MOD DEBRIS BUILD-UP, ANGLED UP 90 DEGRES @ ENDS TRAPPING DEBRIS		

SUPERSTRUCTURE

Bearing Devices	(Fair)	MOD CORR ABUT #1 & #2. ALSO BEARINGS HAVE A TILT UPSTATION OF 2"-2-1/2" @ AB #1, BRG. 'A' @ BENT-LOOSE NUT
Girders	(Fair)	LGT CORR & PITT ON BTM FLANGES, IMPACT DAMAGE- BM 'D' SPAN #2 REPAIRED 2014
Diaphragms	(Good)	IMPACT DAMAGE @ BAY 'C' SPAN #2 REPAIRED 2014
Trusses - Bracing	(Good)	INTERMEDIATE SPANS #1 & #2
Superstructure Paint	(Fair)	FLAKING & AREAS OF ACTIVE CORROSION
Alignment of Members	(Good)	

TEXTURE COAT

ABUTMENTS

Abutment Caps	(Good)	ABUT. #1 & #2-VERT., DIAG, HORIZ. CRACKS UP TO 1/16" OPEN, SPALLS; ABUT 1--DELAM
Abutment Breastwall	(Good)	ABUT #1 & #2-VERT. CRACKS UP TO 1/16" OPEN WITH EFF.
Abutment Wings	(Good)	MAP CRACKS WITH EFF.
Abutment Backwall	(Good)	1/16" VERTICAL CRACKS, ABUTMENT #2 - MAP CRACKING W/EFF.
Abutment Plumb	(Good)	
Abutment Piles	(Not Visible)	
Abutment Embankment	(Good)	
Abutment Bearing Surface	(Good)	
Abutment Slope Paving	(Good)	

BENTS

Bent Caps	(Good)	
Bent Columns	(Good)	
Bent Plumb	(Good)	
Bent Footing	(Not Visible)	
Bent Bearing Surface	(Good)	

Inspection Team's Summary

The 2 span WPG bridge on Epps Mill Road over I0024 was inspected and found to be in overall FAIR condition.

Bridge is posted for 40 tons. Approach traffic safety features are good and standard.

Approach alignment and embankment are good. Approach pavement is fair with a/c patches at both ends.

The asphalt-wearing surface is fair with a/c patches in span #2. The strip seal joints are poor with moderate-heavy debris, corrosion and light section loss. Joints are angled up 90 degrees at ends which is trapping debris in joint. The underside of the deck is fair with numerous map cracks with efflorescence. The bridge rails are good. The current Deck condition rating is Fair (6).

Girders are fair due to light corrosion and pitting on bottom flanges, and impact damage repairs on beam 'D' span #2. Bearings are fair at abutment #1 and #2 with moderate corrosion and 2" to 2.5" of tilt up station. The current Superstructure condition rating is Fair (6).

Abutments are good. The bent cap and columns are good. The current Substructure condition rating is Good (7).

The underpass safety features are good.

General Inspection Comment

HQ notes to TL

ELEMENTS	DESCRIPTION	UNITS	TOTAL	CS1	CS2	CS3	CS4
12	Re Concrete Deck	SF	9741	5795	3946	0	0
1080	Delamination/Spall/Patched Area	SF	50	0	50	0	0
1130	Cracking (RC and Other)	SF	3896	0	3896	0	0
510	Wearing Surfaces	SF	8340	7340	1000	0	0
3210	Delamination/Spall/Patched Area/Pothole (Wearing Surfaces)	SF	1000	0	1000	0	0
(12) Element record added 2016-06-06.							
(1080-12) Element record added 7/14/2020							
(510-12) Element record added 2016-06-06.							
107	Steel Opn Girder/Beam	LF	1201	951	200	50	0
1000	Corrosion	LF	250	0	200	50	0
515	Steel Protective Coating	SF	15613	0	0	15313	300
3440	Effectiveness (Steel Protective Coatings)	LF	15613	0	0	15313	300
(107) Element record added 2016-06-06.							
(1000-107) Element record added 2016-06-29.							
(515-107) Element record added 2016-06-06.							
205	Re Conc Column	EA	2	2	0	0	0
(205) Element record added 2016-06-06.							
215	Re Conc Abutment	LF	66	34	32	0	0
1080	Delamination/Spall/Patched Area	LF	2	0	2	0	0
1130	Cracking (RC and Other)	LF	30	0	30	0	0
(215) Element record added 2016-06-06.							
(1080-215) Element record added 2016-06-29.							
234	Re Conc Pier Cap	LF	30	26	4	0	0
1130	Cracking (RC and Other)	LF	4	0	4	0	0
(234) Element record added 2016-06-06.							
303	Assem Jnt With Seal	LF	66	0	0	0	66
2350	Debris Impaction	LF	66	0	0	0	66
(303) Element record added 2016-06-06.							
(2350-303) Element record added 2016-06-29.							
311	Moveable Bearing	EA	8	0	8	0	0
1000	Corrosion	EA	7	0	7	0	0
1020	Connection	EA	1	0	1	0	0

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

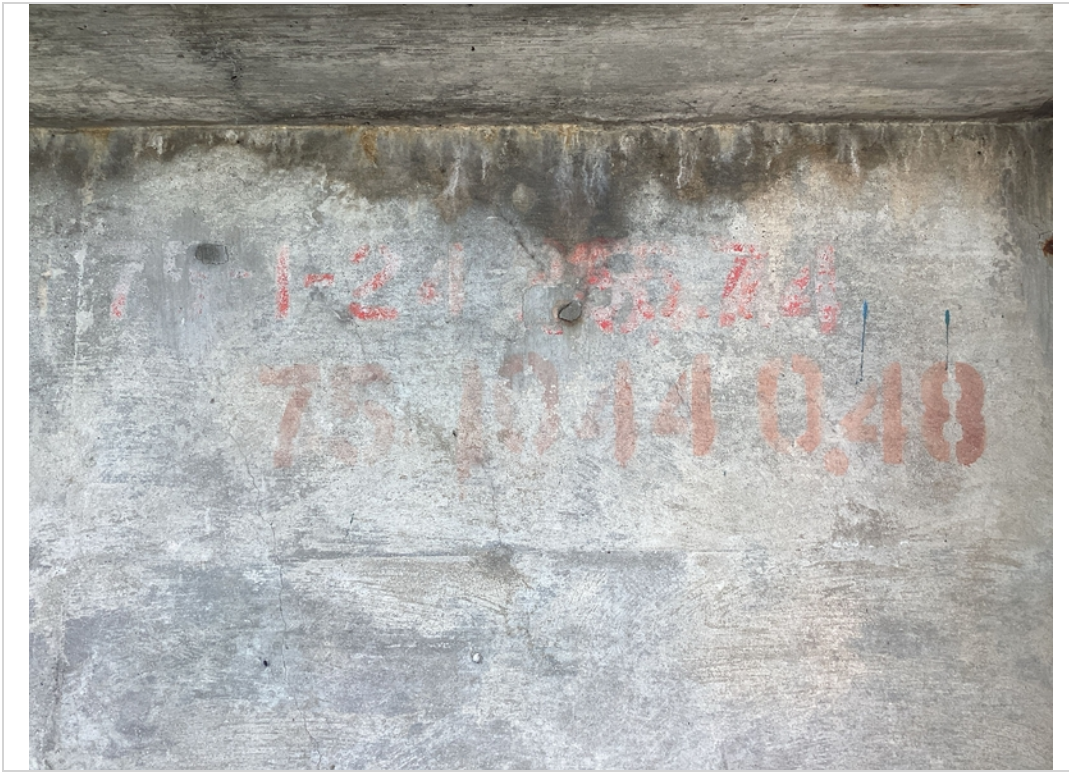
- ☐ Masonry/Wood Ruler
- ☐ 6' Pocket Tape
- ☒ 25' and 100' Tape
- ☐ Calipers
- ☒ Thermometer
- ☐ Carpenter's Level
- ☐ String and Weighted line (plumb bob)

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



Bridge number abutment 1 Lt. side



Left side view



Right side view



B approach weight posted sign



A approach weight posted sign



Elevation Lt Side



Elevation Rt Side



A approach



B approach



A approach pavement A/C patches



A approach pavement pothole



B approach wearing surface left side pothole



B approach wearing surface area of map cracking full length



A approach Rt. side guardrail damage



View along deck



Span 2 near B approach area of small potholes over A/C patches



Span 1 near A approach 1/8" open longitudinal crack



A approach wearing surface A/C patches



Bottom of Deck Span 1



Spall in Bot Deck Bay 2 Span 1



Bottom of Deck Span 2



Bridge parapet right side near B approach joint area of delamination



Bridge parapet left side near A approach joint area of delamination



Bridge parapet right side near A approach joint spall with exposed steel



A approach joint filled with light debris



B approach joint filled with light debris



Abutment 1 moderate corrosion on bearings



Bent 1 Lt. side loose nut at bearing A



Abutment 2 bearings B - D moderate corrosion



Abutment 1 cap random hairline cracks w/EFF. throughout



Abutment 1 cap Lt. side area of delamination



Abutment 1 cap Lt. side spall



Abutment 2 cap Rt. Side spall



Abutment 2 cap random hairline cracks throughout



Abutment 2 cap map cracking



Abutment 2 cap 1/16" vertical cracks throughout



Abutment 1 breastwall Random hairline cracks w/EFF. Throughout



Abutment 1



Abutment 2



Abutment 1 Lt. wing map cracks w/EFF.



Abutment 1 Rt. Wing map cracks w/EFF.



Abutment 1 backwall Lt. side 1/16" vertical crack



Abutment 1 backwall Rt. Side 1/16" vertical crack



Abutment 2 Rt. Side backwall map cracking w/EFF



Abutment 2 backwall Lt. side 1/16" vertical crack



Bent 1 frontside



Bent 1 backside

Maintenance Recommendations

525 - Repair List # N 523 - Repair List Add Date 524 - Repair List Revise Date 6/14/2022

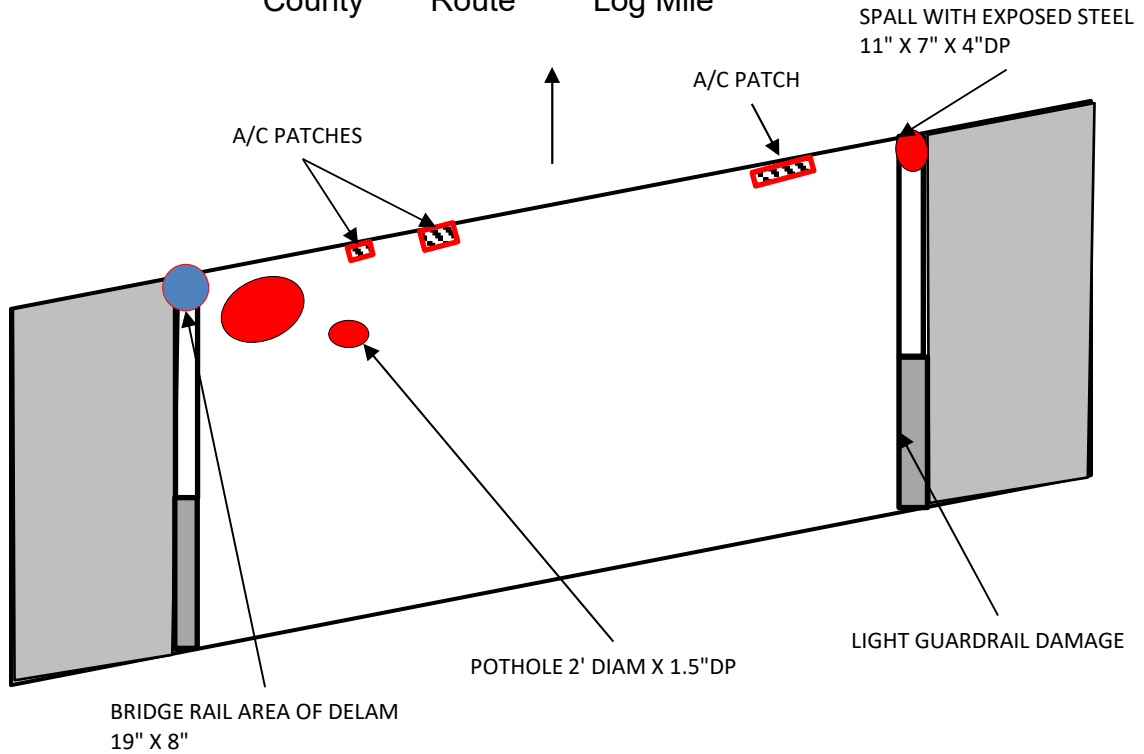
Date Added	Recommendation	Priority
06/22/2016	CLEAN EXPANSION JOINTS AT BOTH ENDS	
06/22/2016	REPAIR DETERIORATING DECK AREAS	
06/22/2016	CLEAN & PAINT ALL STRUCTURAL STEEL	
06/14/2022	REPAIR APPROACH PAVEMENT @ BOTH ENDS.	2
06/22/2016	EXTEND EXPANSION JOINTS OUT BEYOND BRIDGE RAIL	
06/09/2020	REPAIR JOINT ARMOR @ 'A' & 'B' ENDS	1

Approach 'A'

Date 6/14/2024

MB

Bridge Location No. 75 1044 0.48
County Route Log Mile

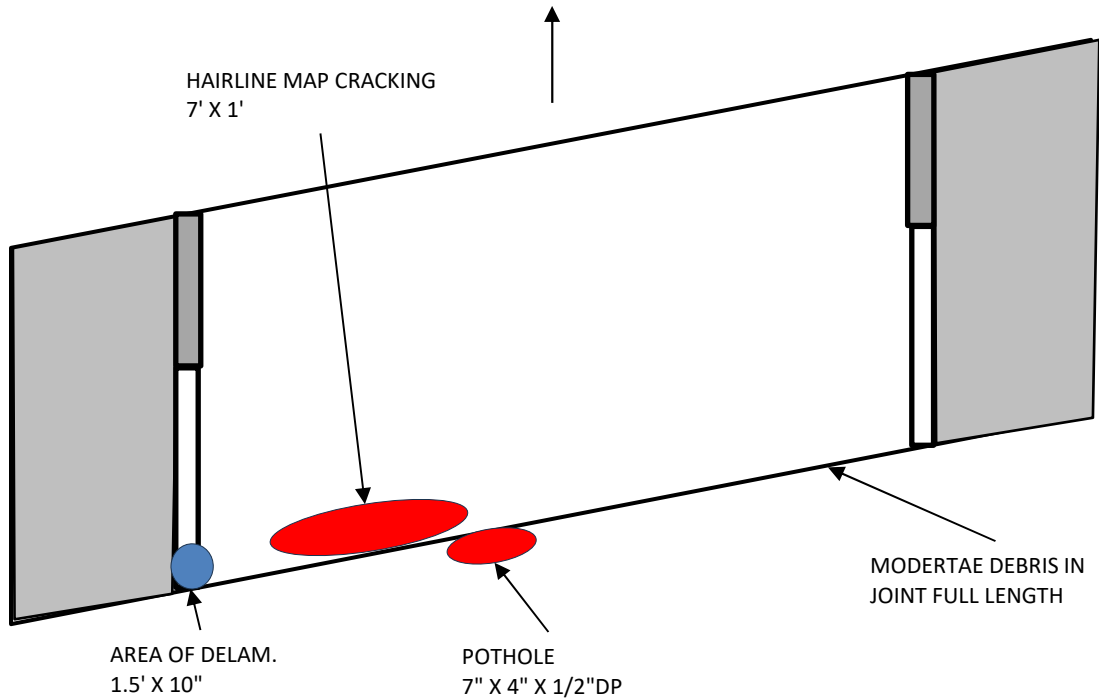


PAVEMENT	FAIR	AC PATCHES; POTHOLE
EMBANKS	GOOD	
DRAINS	FAIR	MOD. DEBRIS BLD-UP-RT SIDE
G-RAILS	GOOD	LIGHT DAMAGE
BR RAILS	GOOD	LIGHT SCALE, AREA OF DELAM., SPALL WITH EXPOSED STEEL

Approach 'B'

Date 6/14/2024
MB

Bridge Location No. 75 1044 0.48
County Route Log Mile

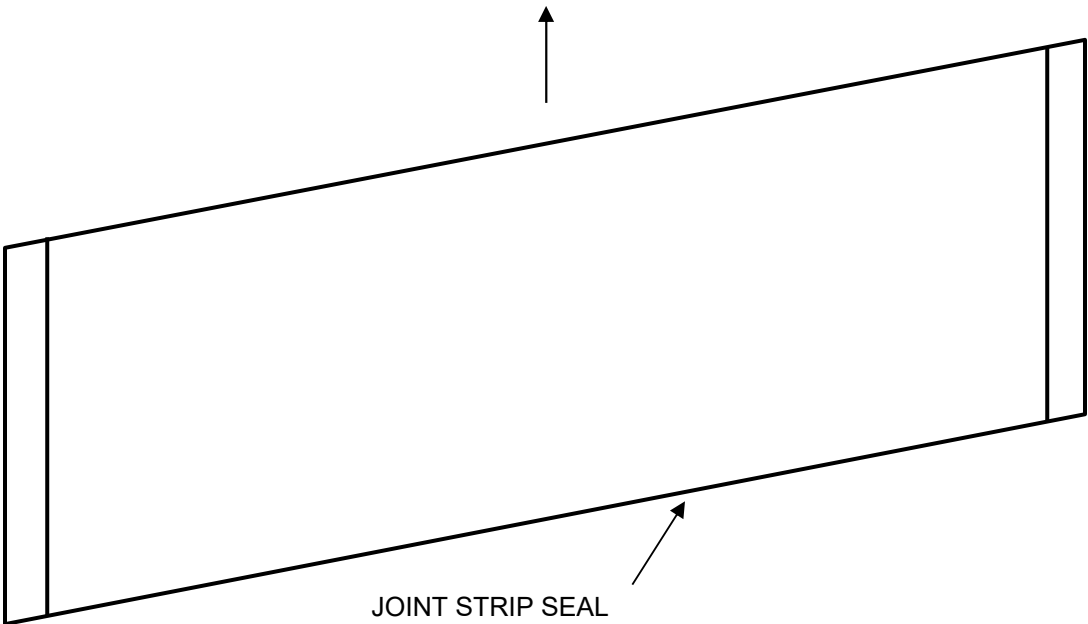


PAVEMENT	FAIR	POTHOLE, HAIRLINE MAP CRACKING
EMBANKS	GOOD	
DRAINS	GOOD	
G-RAILS	GOOD	
BR RAILS	GOOD	LT SCALE

Top of Deck Span No. 1

Date 6/14/2024
MB

Bridge Location No. 75 1044 0.48
County Route Log Mile

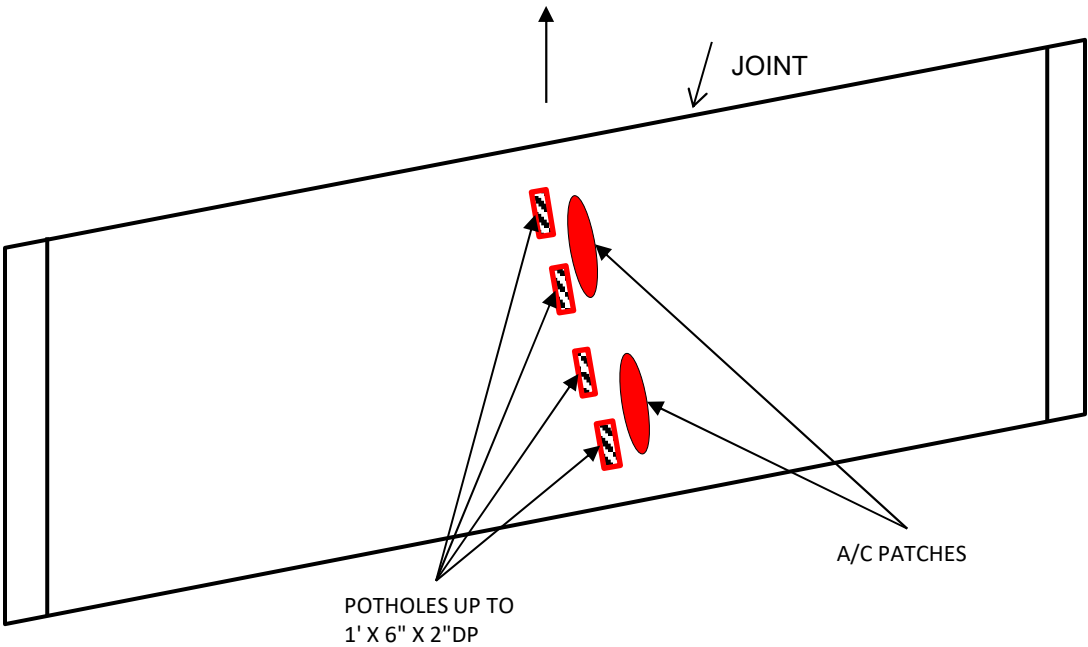


DECK	NV	A/C OVERLAY- GOOD
CURBS	GOOD	
RAILS	GOOD	LGH. SURFACE SCALE
JOINT	POOR	HVY. DEBRIS BUILD UP

Top of Deck Span No.2

Date 6/14/2024
MB

Bridge Location No. 75 1044 0.48
County Route Log Mile



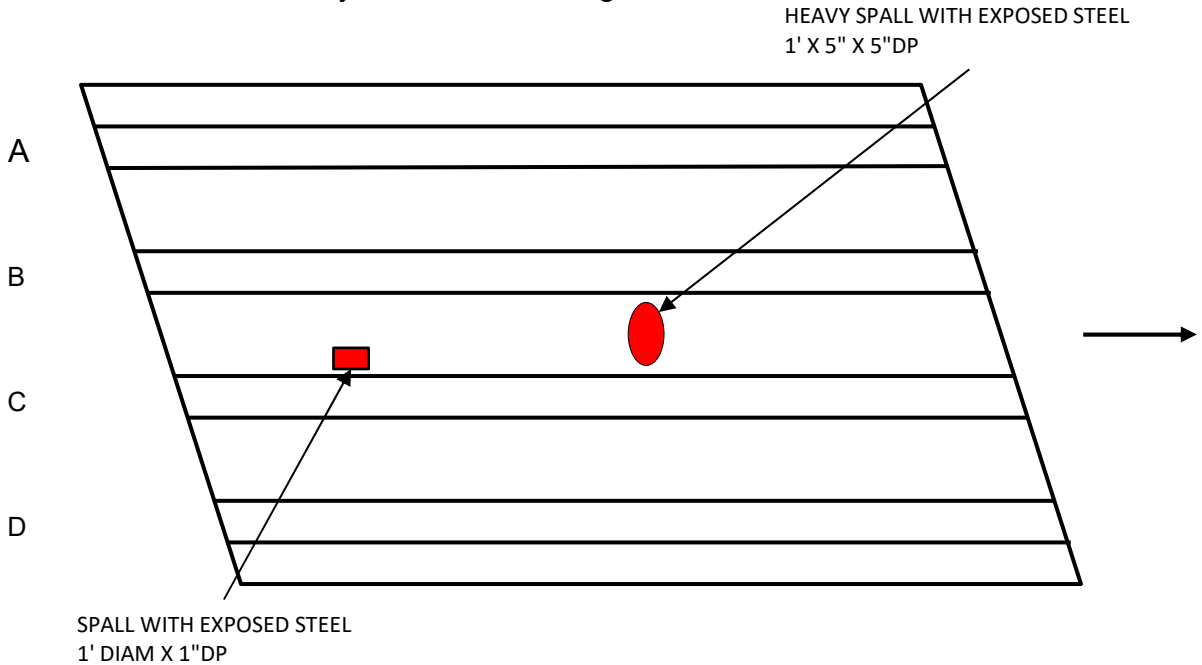
DECK	N/V	A/C OVERLAY-FAIR; AC PATCHES, POTHOLES
CURBS	GOOD	
RAILS	GOOD	LGH. SURFACE SCALE
JOINT	POOR	HVY. DEBRIS BUILD UP

Bottom of Slab Span No. 1

Date 6/14/2024

DB2

Bridge Location No. 75 1044 0.48
County Route Log Mile



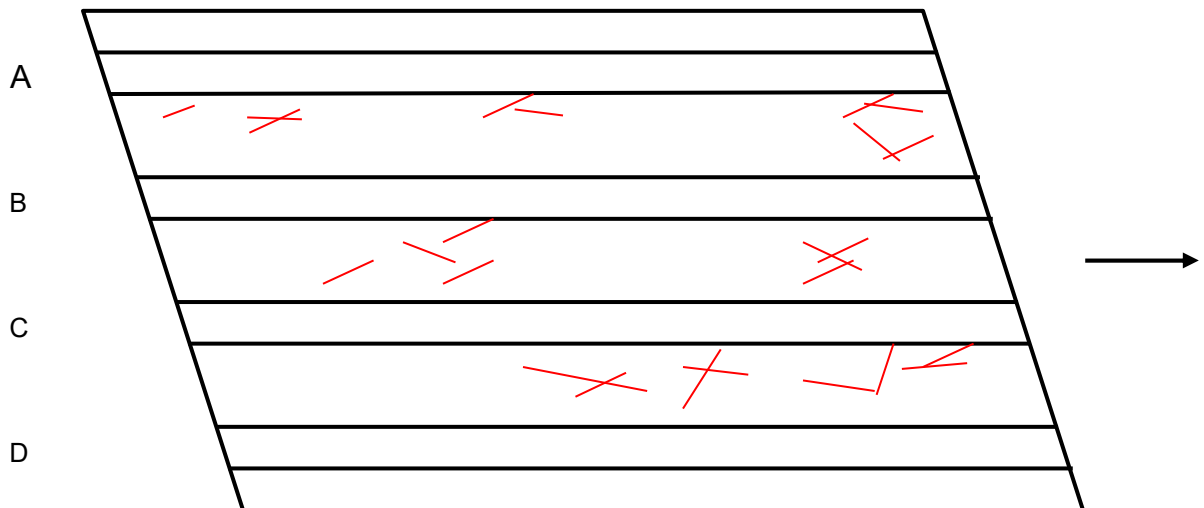
DECK	FAIR	SPALL /EXP STL 1'DIA X 1"D,
		CONC. REPAIR @ ABUT. #1 AT ALL BAYS
BRACING	GOOD	INTERMEDIATE
DIAPH.	GOOD	
GIRDER A	GOOD	MOD CORR TOP FLANG 3' FROM ABUT #1
GIRDER B	FAIR	MOD CORR BTM FLANGE OVER ROAD
GIRDER C	FAIR	MOD CORR BOTTOM FLANGE- OVER ROAD
GIRDER D	FAIR	MOD. CORRO. TOP FLANGE 3' FROM ABUT. # 1, MOD CORR
		BOTT FLANGE-OVER ROAD
OVERHANGS	GOOD	RDM. H.C.'S W/EFF., RUST STAINS
PAINT	POOR	PEELING BM'S "B"-"D", FADING ALL BMS & DIAPHRAMS

Bottom of Slab Span No. 2

Date 6/14/2024

DB2

Bridge Location No. 75 1044 0.48
 County Route Log Mile

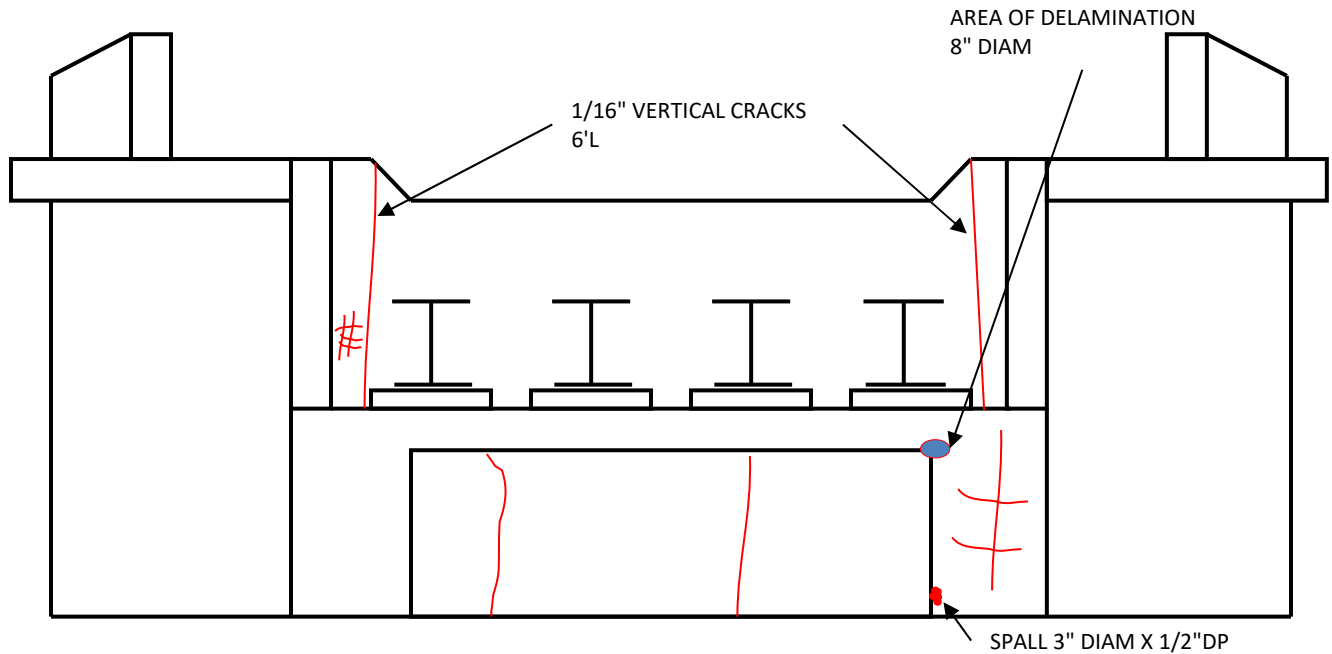


DECK	FAIR	H.L. MAP CRACKS W/EFF, CONC.
		REPAIRS AT ABUT #2 AT ALL BAYS
BRACING	GOD	INTERMEDIATE
DIAPH.	GOOD	
GIRDER A	FAIR	LIGHT CORR--BOT FLANGE, TOP FLANGE AT ABUT 2
GIRDER B	GOOD	LIGHT CORROSION
FIRDER C	GOOD	LIGHT CORROSION
GIRDER D	FAIR	REPAIRED SECTION FROM IMPACT DAMAGE, LGT. CORR.
		OUTSIDE OF TOP & BTM. FLANGE 3'L, LGH CORR. BOTT
		FLANGE 25'L OVER RD, TOP FLANGE AT ABUT 2
OVERHANGS	FAIR	MAP CRACKS W/EFF, H.C.'S W/EFF
PAINT	FAIR	FADING, PEELING ON ALL BEAMS

Abutment No. 1

Date: 6/14/2024
SM

Bridge Location No. 75 1044 0.48
County Route Log Mile



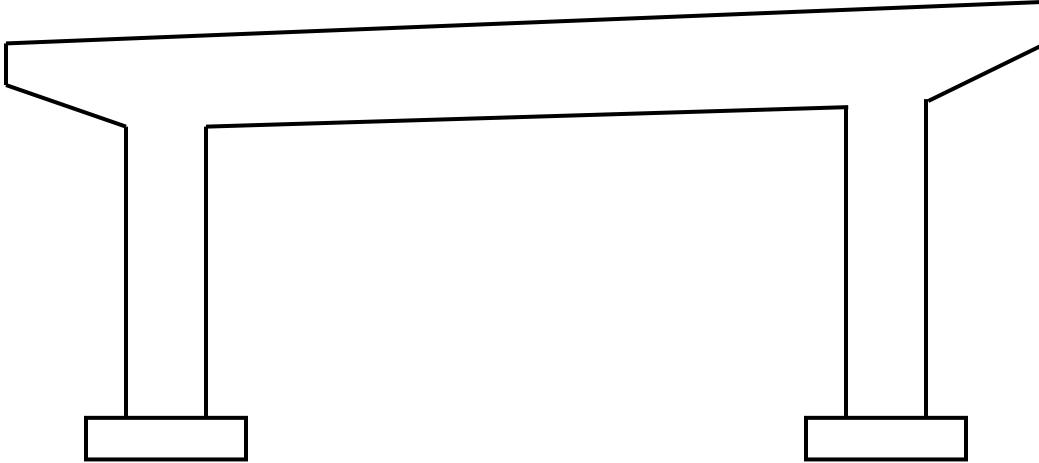
WALL	GOOD	OPEN CRACK UP TO 1/16" OPEN- 6'L W/ H.L. PATTERN CRACKS
CAP	GOOD	HORIZ/VERT H.C.'S W/EFFL
		LGT RUST STAINS; IMPACT DMG; AREA OF DELAM. 8"DIA
BEARING	FAIR	MOD. CORROSION ON ALL - PAINTED W/ MOD.RUST STAINS
LT. WING	GOOD	RDM MAP CRACK W/EFF
RT. WING	GOOD	RDM MAP CRACKS W/EFF
EMBANKMNT	GOOD	

BENT # 1

Date 6/14/2024
SM

Bridge Location No. 75 1044 0.48
County Route Log Mile

FRONT



BACK

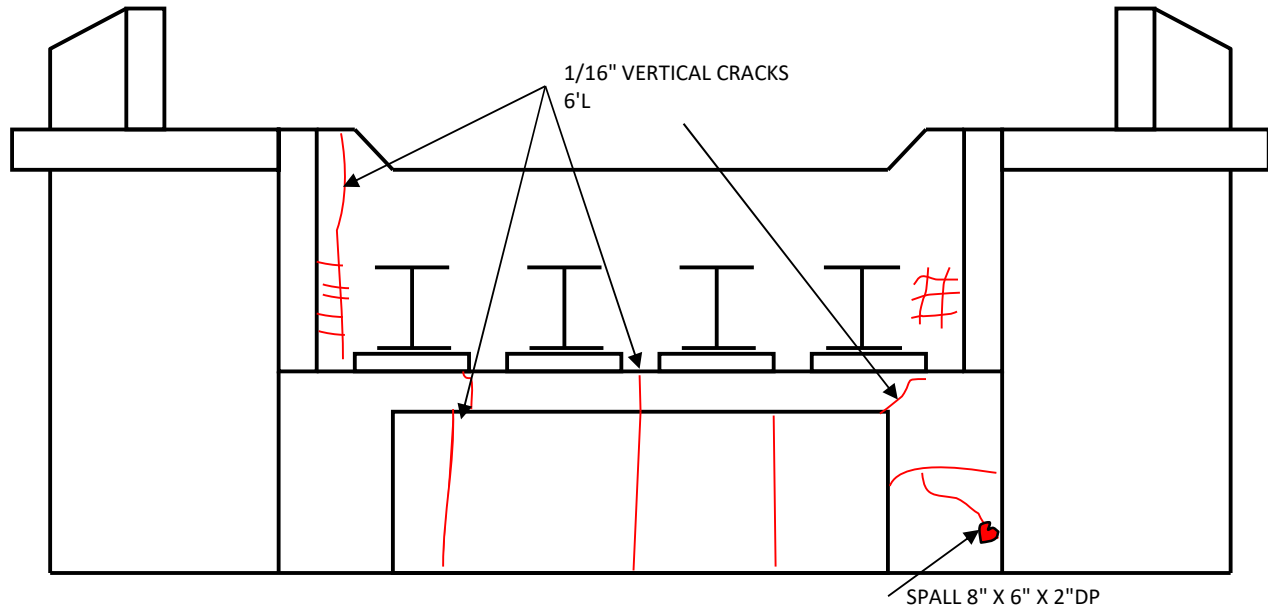


CAP	GOOD	
COLUMN	GOOD	
BEARINGS	GOOD	LIGHT RUST, LOOSE NUT @ 'A'

Abutment No. 2

Date: 6/14/2024
SM

Bridge Location No. 75 1044 0.48
County Route Log Mile



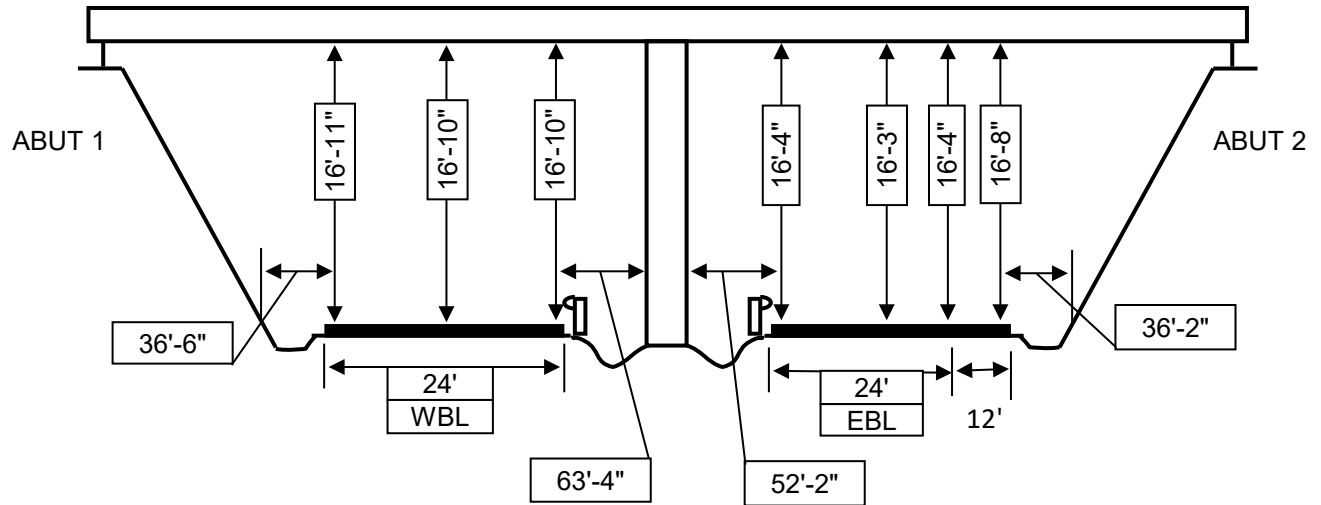
WALL	GOOD	PATTERN H.C.'S, VERT CRACK UP TO 1/16" OPEN,
		FULL HEIGHT
CAP	GOOD	VERT CRACKS UP TO 1/16" OPEN-UP TO FULL HEIGHT,
		RANDOM DIAG/HORIZ H.C.'S, SPALL
BEARING	FAIR	MOD. CORROSION AT "B, C, & D"
LT. WING	GOOD	RANDOM H.L. PATTERN CRACKS
RT. WING	GOOD	

Clearances

Date: 6/14/2024

Bridge Location No. 75 1044 0.48
County Route Log Mile

EPPS MILL RD



U.P. 75-I0024-25.73