90 Inspection Date - 5/27/15
Inspector - AGREINER (154)

006B00053R - **8 Bridge ID**
Standard -**Primary Inspection Type**

Inspection Report with SI&A Data

Structure Description: 339.9 Foot - 3 Span Steel continuous Stringer/Multi-beam or Girder
2 District: 09 **3 County:** Bath **16 Latitude:** 38°07′07.00″ **7 Longitude:** 83°47′53.00″
7 Facility Carried I-64 **Milepoint:** 118.380
6A Feature Intersected: SLATE CREEK
9 Location: EBL 2.8MI E-MONTGOMERY CL

NBI	X
Element	X
Fracture Critical	
Underwater	
Special	

NBI CONDITION RATINGS

58 Deck:	7	**61 Channel:**	7
59 Superstructure:	6	**62 Culvert:**	N
60 Substructure:	6	**Sufficiency Rating:**	91

DESIGN

Substandard:	No
Fracture Critical:	No
43A Main Span Material:	(4) Steel Continuous
43B Main Span Design:	(02) Stringer / Girder
45 Number of Spans Main:	3
44A Approach Span Material:	Not Applicable
44B Approach Span Design:	Not Applicable
46 Number of Approach Spans:	0
107 Deck Type:	(1) Concrete-Cast-in-Place
108A Wearing Surface:	(2) Integral Concrete
108B Membrane:	(0) None
108C Deck Protection:	(0) None
Overlay Y/N:	No
Overlay Type:	None
Overlay Thickness:	0.000 in
Overlay Date:	

APPRAISAL

36A Bridge Railings:	(1) Meets Standards
36B Transitions	(1) Meets Standards
36C Approach Guardrail:	(1) Meets Standards
36D Approach Guardrail Ends:	(1) Meets Standards
71 Waterway Adequacy:	(8) Equal Desirable
72 Approach Alignment:	(8) Equal Desirable Crit
113 Scour Critical:	(8) Stable above footing
Recommended Scour Critical:	(8) Stable above footing

LOAD RATINGS

63 Operating Type:	(1) Load Factor (LF)
64 Operating Rating:	62.9 tons
65 Inventory Type:	(1) Load Factor (LF)
66 Inventory Rating:	37.8 tons
Truck Capacity Type I:	53 tons
Truck Capacity Type II:	54 tons
Truck Capacity Type III:	57 tons
Truck Capacity Type IV:	65 tons

GEOMETRIC DATA

48 Max Length Span:	140.092 ft
49 Structure Length:	339.895 ft
32 Approach Roadway:	37.073 ft
33 Median:	(0) No Median
34 Skew:	20°
35 Flare:	No Flare
50A Curb/Sidewalk Width L:	0.000 ft
50B Curb/Sidewalk Width R:	0.000 ft
47 Horiz. Clearance:	32.999 ft
51 Width Curb to Curb:	32.999 ft
52 Width Out to Out:	36.001 ft

ADMINISTRATIVE

27 Year Built:	1967
106 Year Reconstructed:	-4
42A Type of Service On:	(1) Highway
42B Type of Service Under:	(5) Waterway
37 Historical Significance:	(5) Not Eligible
21 Custodian:	(01) State Hwy Agency
22 Owner:	(01) State Hwy Agency
101 Parallel Structure:	(R) Right of ll Structure

CLEARANCES

10 Vert. Clearance:	99.999 ft
53 Min. Vert. Clearance Over:	99.999 ft
54A Vert. Under Reference:	(N) Feature not hwy or RR
54B Min. Vert. Underclearance:	0.000 ft
55A Lateral Under Reference:	(N) Feature not hwy or RR
55B Min. Lat. Underclearance R:	0.000 ft
56 Min. Lat. Underclearance L:	0.000 ft

POSTINGS

41 Posting Status:	(A) Open, No Restriction
Signs Posted Cardinal:	No
Signs Posted Non-Cardinal:	No
Field Postings Gross:	tons
Field Postings Type I:	tons
Field Postings Type II:	tons
Field Postings Type III:	tons
Field Postings Type IV:	tons

Inspection Report with SI&A Data

12: Re Concrete Deck

Units	Total Qty	Qty. St. 1	% in 1	Qty. St. 2	% in 2	Qty. St. 3	% in 3	Qty. St. 4	% in 4
SQ.FT	12,236.44	11,836.44	97%	400	3%	0	0%	0	0%

The wearing surface has several light to minor transverse cracks throughout. A couple of these cracks in span 2 are beginning to open up with some light chipping along their edges. The left lane has minor sized longitudinal cracks for the majority of the bridges length. The deck overhangs have some minor sized cracks with efflorescence. The majority of the deck underside is not visible due to stay in place forms. See photos.

1130: Cracking (RC and Other)

Units	Total Qty	Qty. St. 1	% in 1	Qty. St. 2	% in 2	Qty. St. 3	% in 3	Qty. St. 4	% in 4
SQ.FT	1	1	100%	0	0%	0	0%	0	0%

See element 12 for details.

107: Steel Opn Girder/Beam

Units	Total Qty	Qty. St. 1	% in 1	Qty. St. 2	% in 2	Qty. St. 3	% in 3	Qty. St. 4	% in 4
FT	1,360	910	67%	450	33%	0	0%	0	0%

The protective coatings have large widespread failures where the paint has just "popped" off exposing the steel throughout these girders. Loose paint is peeling/flaking around these locations. The exterior girders have bubbling paint with surrounding rust staining along their top exterior bottom flanges. The ends of the beams at the abutments also have some flaking/ peeling paint with minor to moderate rust/corrosion. The girders need a new protective coating. See photos.

515: Steel Protective Coating

Units	Total Qty	Qty. St. 1	% in 1	Qty. St. 2	% in 2	Qty. St. 3	% in 3	Qty. St. 4	% in 4
FT	8,839.2	7,345.68	83%	152.4	2%	121.92	1%	1,219.2	14%

The paint area for these girders was supplied by Tom Mathews from Central Office. The protective coatings have large widespread failures where the paint has just "popped" off exposing the steel throughout these girders. Loose paint is peeling/flaking around these locations. The exterior girders have bubbling paint along their exterior bottom flanges. The ends of the beams at the abutments also have some flaking/ peeling paint with minor to moderate rust/corrosion. The girders need a new protective coating. See photos.

Inspection Report with SI&A Data

1000: Corrosion									
Units	**Total Qty**	**Qty. St. 1**	**% in 1**	**Qty. St. 2**	**% in 2**	**Qty. St. 3**	**% in 3**	**Qty. St. 4**	**% in 4**
FT	1	1	100%	0	0%	0	0%	0	0%

See element 107 for details.

205: Re Conc Column									
Units	**Total Qty**	**Qty. St. 1**	**% in 1**	**Qty. St. 2**	**% in 2**	**Qty. St. 3**	**% in 3**	**Qty. St. 4**	**% in 4**
EACH	4	4	100%	0	0%	0	0%	0	0%

This bridge has two piers, each with two tall square concrete columns. All four columns are in good condition.

215: Re Conc Abutment									
Units	**Total Qty**	**Qty. St. 1**	**% in 1**	**Qty. St. 2**	**% in 2**	**Qty. St. 3**	**% in 3**	**Qty. St. 4**	**% in 4**
FT	132	121	92%	11	8%	0	0%	0	0%

Abutment 1 has up to a 1/2 inch wide delamination crack along the top south end of the breastwall for approximately 10 ft. The top of the breastwall was wet during this inspection. The joint seal above is allowing leakage. Moderate cracking is present in bearing pedestal 2 from the south at abutment 4. Areas of minor cracking are present within the backwalls of the abutments. Minor cracking is present within some previous patching in the backwall of abutment 4 at the north end. A significant erosion gulley is washing out the embankment in front of abutment 4. This water is coming from the interstates drainage ditch along the south shoulder of the roadway. It runs along the south end of abutment 4, cuts deeply across the embankment in front of the abutment and then runs down behind the north column of pier 3 and enters into Slate Creek in front of pier 3s south column. This water needs to be re-routed to prevent further erosion. See photos See photos.

234: Re Conc Pier Cap									
Units	**Total Qty**	**Qty. St. 1**	**% in 1**	**Qty. St. 2**	**% in 2**	**Qty. St. 3**	**% in 3**	**Qty. St. 4**	**% in 4**
FT	76	76	100%	0	0%	0	0%	0	0%

Both concrete pier caps are in good condition.

Inspection Report with SI&A Data

300: Strip Seal Exp Joint

Units	Total Qty	Qty. St. 1	% in 1	Qty. St. 2	% in 2	Qty. St. 3	% in 3	Qty. St. 4	% in 4
FT	36	0	0%	0	0%	36	100%	0	0%

The strip seal expansion joint at abutment 1 was partially full of gravel and debris. A few tears were noted in the gland and it is allowing leakage onto the abutment below. 1.5 in. was measured between the inside faces along the roadway centerline. The approximate temperature was 70 degrees. See photos.

302: Compressn Joint Seal

Units	Total Qty	Qty. St. 1	% in 1	Qty. St. 2	% in 2	Qty. St. 3	% in 3	Qty. St. 4	% in 4
FT	36	0	0%	34	94%	0	0%	2	6%

The compression seal joint at abutment 4 is partially full of dirt and debris. A few portions of the gland are torn. A small portion of the gland is ripped and torn near the roadway centerline with adhesion failure at this location. The joint seal is allowing seepage. See photos.

311: Moveable Bearing

Units	Total Qty	Qty. St. 1	% in 1	Qty. St. 2	% in 2	Qty. St. 3	% in 3	Qty. St. 4	% in 4
EACH	12	3	25%	4	33%	0	0%	5	42%

This bridge has rocker bearings at the abutments and pier 2 . At abutment 1 these bearing have flaking paint along the lower portions of the bearing. The exposed steel is rusty typically with moderate corrosion in the rockers. The masonry plates of these bearings have heavy rust, moderate to heavy flaking corrosion, and pitting. Several anchor bolts are missing from the bearings at abutment 1. The south bearing is missing both anchor bolts; bearing 2 from the south is missing the north anchor bolt; bearings 3 and 4 are both missing their south anchor bolts. Plumb measurements were taken during this inspection. These measurements were taken on the tapered faces of the rockers so the actual degree of tilt is less. Bearings 1, 3, and 4 are all tilted back toward the backwall of abutment 1 while bearing 2 from the south is almost vertical (bearing-1 16 degrees, bearing-2 9 degrees, bearing-3 16 degrees, and bearing 4 19 degrees. Fretting is present around the pin of bearing 2. The bearings over the pier appear to be in good condition at this time. The north and south exterior bearings at abutment 4 has flaking paint with moderate to heavy corrosion to the lower rocker and anchor bolts. Heavy corrosion with moderate section loss is present within the masonry plates. The interior bearings at this abutment have lesser amounts of flaking paint with minor to moderate rust and corrosion of the exposed steel. The plumb measurements of these bearings were all approximately 6 degrees. See photos.

Inspection Report with SI&A Data

515: Steel Protective Coating									
Units	**Total Qty**	**Qty. St. 1**	**% in 1**	**Qty. St. 2**	**% in 2**	**Qty. St. 3**	**% in 3**	**Qty. St. 4**	**% in 4**
EACH	6.69	3.34	50%	0	0%	1.67	25%	1.67	25%
See element 311 for details.									

313: Fixed Bearing									
Units	**Total Qty**	**Qty. St. 1**	**% in 1**	**Qty. St. 2**	**% in 2**	**Qty. St. 3**	**% in 3**	**Qty. St. 4**	**% in 4**
EACH	4	4	100%	0	0%	0	0%	0	0%
The fixed bearings over pier 3 appear to be in good condition.									

515: Steel Protective Coating									
Units	**Total Qty**	**Qty. St. 1**	**% in 1**	**Qty. St. 2**	**% in 2**	**Qty. St. 3**	**% in 3**	**Qty. St. 4**	**% in 4**
EACH	2.23	2.23	100%	0	0%	0	0%	0	0%
The protective coatings on these bearings are in good condition.									

331: Re Conc Bridge Railing									
Units	**Total Qty**	**Qty. St. 1**	**% in 1**	**Qty. St. 2**	**% in 2**	**Qty. St. 3**	**% in 3**	**Qty. St. 4**	**% in 4**
FT	738	728	99%	10	1%	0	0%	0	0%
This bridge has concrete barriers along both sides. They have typical minor vertical cracks throughout. The west end of the south barrier has a minor spall from recent impact damage. The transition rail was damaged at this location. See photos.									

Inspection Report with SI&A Data

850: 2nd Elem									
Units	**Total Qty**	**Qty. St. 1**	**% in 1**	**Qty. St. 2**	**% in 2**	**Qty. St. 3**	**% in 3**	**Qty. St. 4**	**% in 4**
(EA)	1	0	0%	1	100%	0	0%	0	0%

Some light rusting and corrosion is present within some of the steel diaphragm cross bracings. Heavy rust and corrosion with some section loss is present within the lower steel angle of the center diaphragm at abutment 1. See photos.

857: Embankment Erosion									
Units	**Total Qty**	**Qty. St. 1**	**% in 1**	**Qty. St. 2**	**% in 2**	**Qty. St. 3**	**% in 3**	**Qty. St. 4**	**% in 4**
(EA)	1	0	0%	0	0%	0	0%	1	100%

A significant erosion gully is washing out the embankment in front of abutment 4. This water is coming from the interstates drainage ditch along the south shoulder of the roadway. It runs along the south end of abutment 4, cuts deeply across the embankment in front of the abutment and then runs down behind the north column of pier 3 and enters into Slate Creek in front of pier 3s south column. This water needs to be re-routed to prevent further erosion. See photos.

859: Vegetation									
Units	**Total Qty**	**Qty. St. 1**	**% in 1**	**Qty. St. 2**	**% in 2**	**Qty. St. 3**	**% in 3**	**Qty. St. 4**	**% in 4**
(EA)	1	0	0%	0	0%	1	100%	0	0%

Vegetation growing around and on the bridge needs to be cut and sprayed. See photos.

STRUCTURE NOTES
-57.6

INSPECTION NOTES
This is a routine 24 month walk over inspection. The notes and NBI ratings reflect what can only be reasonably observed during this type of inspection. Binoculars were utilized for better visual observations. Inspected by A.Greiner.

Inspection Report with SI&A Data

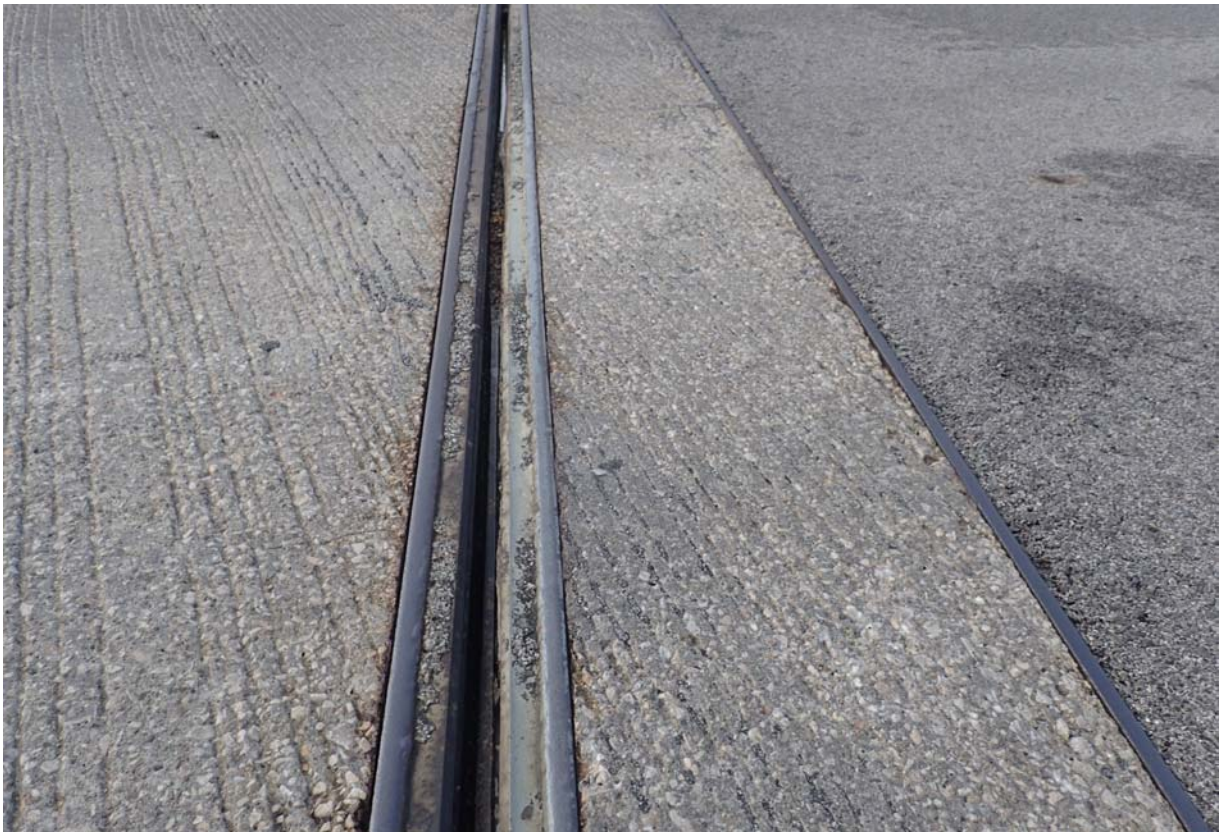
WORK	
Action:	1011 - Bearings-Rehabiliatation
Some bearings need the anchor bolts replaced and they all should be cleaned and coated. Generated by user "agreiner" on 5/28/2015	

Action:	1041 - Drainage-Repair Washouts / Erosion
The erosion gully at abutment 4 needs to be repaired. Generated by user "agreiner" on 5/28/2015	

Action:	1056 - Misc-Remove Vegetation
vegetation should be cut and sprayed on/around the bridge. Generated by user "agreiner" on 5/28/2015	

Action:	7 - Paint Bridge
The Girders should be painted. Generated by user "agreiner" on 5/28/2015	

View from the approach to abutment 1.



View of the transverse joint at abutment 1. It measured ~ 1.5" along the dashed white line. The gland is partially full of debris, it has a few tears, and it is allowing leakage.

Typical view of the wearing surface.

View of impact damage to the south approach railing at abutment 1.

View of the stamps on the south face of the south barrier.

Vi

View of a large area of flaking/peeling paint on the exterior face of the south girder

View of the south bearing at abutment 1. Notice the moderate to heavy corrosion in the lower rocker and masonry plate. Both anchor bolts are missing.

View of a large amount of flaking/peeling paint along the embankment in front of abutment 1.

View of large widespread areas of flaking/peeling paint on the south face of girder 2 from the south in span 1.

View of up to a 1/2" wide horizontal crack in the top south end of abutment 1s breastwall.

View of several large areas of flaking/peeling paint on the south face of girder 3 from the south in span 1.

View of flaking paint with heavy corrosion and pitting of the lower angle of the cross bracing of the diaphragm between girders 2 and 3 from the south at abutment 1.

View of bearing 2 from the south at abutment 1. Notice the fretting, moderate to heavy corrosion, and the north anchor bolt is missing.

View of bearing 2 from the south at abutment 1. Notice the fretting.

View of bearing 2 from the south at abutment 1. It is tilted toward the backwall ~ 9 degrees. The measurement was taken on a tapered surface so the actual rotation is a little less.

View of bearing 2 from the south at abutment 1 tilted toward the backwall ~ 9 degrees. The measurement was taken on a tapered surface so the actual rotation is a little less.

View of bearing 3 from the south at abutment 1. It is missing the south anchor bolt and is tilted toward the backwall ~ 16 degrees. The measurement was taken on a tapered surface so the actual rotation is a little less.

View of large widespread areas of flaking/peeling paint on the south face of the north girder in span 1.

View of the north bearing at abutment 1. Notice the moderate to heavy corrosion. It is missing the south anchor bolt and is tilted toward the backwall ~ 19 degrees. The measurement was taken on a tapered surface so the actual rotation is a little less.

View of a large area of paint failure on the exterior face of the north girder at abutment 1.

View of bubbling paint along the top of the exterior bottom flange of the north girder in span 1.

Typical view of span 1 and pier 2.

Typical view of span 2 and pier 3.

View of a significant eroison gulley in span 3.

View of a significant eroison gulley in span 3 in front of abutment 4.

View of a significant eroison gulley in span 3 in front of abutment 4.

View of a significant eroison gulley in span 3 at the south end of abutment 4.

View of the south bearing of abutment 4. Notice the moderate to heavy corrosion in the lower portions of the bearing. Notice the flaking paint and corrosion along the bottom flange of the girder.

View of the south bearing at abutment 4. It is tilted toward the backwall ~ 6 degrees. The measurement was taken on a tapered surface so the actual rotation is a little less.

View of a significant eroison gulley in span 3 at the south end of abutment 4.

View of bearing 2 from the south at abutment 4. It is tilted toward the backwall ~ 6 degrees. The measurement was taken on a tapered surface so the actual rotation is a little less.

View of bearing 3 from the south at abutment 4. It is tilted toward the backwall ~ 6 degrees. The measurement was taken on a tapered surface so the actual rotation is a little less.

View of large areas of paint failure on girder 3 from the south near abutment 4.

View of large areas of paint failure on the interior face of the north girder near abutment 4.

View of the north bearing at abutment 4. Notice the heavy corrosion in the lower rocker and masonry plate. It is tilted toward the backwall ~ 6 degrees. The measurement was taken on a tapered surface so the actual rotation is a little less.

View from the north end of abutment 4.

View from near abutment 4.

View of the transverse joint at abutment 4. It is partially full of debris and has some small tears.

Typical view of some minor sized longitudinal cracking in the left lane.

View of a minor sized transverse crack in the wearing surface in span 2 near midspan.