

Inspection Report with SI&A Data

Structure Description: 417.98 Foot - 3 Span Steel continuous Stringer/Multi-beam or Girder

2 District: 09 **3 County:** Carter **16 Latitude:** 38°19'33.00" **7 Longitude:** 83°07'42.00"

7 Facility Carried: I-64

Milepoint: 160.890

6A Feature Intersected: TYGARTS CREEK

9 Location: .50 MI WEST OF US 60 NTRC

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:	81

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:	(3) Steel
44B Approach Span Design:	(02) Stringer / Girder
46 Number of Approach Spans:	1
107 Deck Type:	(1) Concrete-Cast-in-Place
108A Wearing Surface:	(1) Monolithic Concrete
108B Membrane:	(0) None
108C Deck Protection:	(0) None
Overlay Y/N:	Yes
Overlay Type:	PCC
Overlay Thickness:	8.000 in
Overlay Date:	2001

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:	70.0 tons
65 Inventory Type:	(1) Load Factor (LF)
66 Inventory Rating:	42.0 tons
Truck Capacity Type I:	44 tons
Truck Capacity Type II:	46 tons
Truck Capacity Type III:	49 tons
Truck Capacity Type IV:	62 tons

GEOMETRIC DATA

48 Max Length Span:	158.136 ft
49 Structure Length:	417.979 ft
32 Approach Roadway:	37.073 ft
33 Median:	(2) Closed w/o Barrier
34 Skew:	0°
35 Flare:	No Flare
50A Curb/Sidewalk Width L:	0.000 ft
50B Curb/Sidewalk Width R:	0.000 ft
47 Horiz. Clearance:	29.856 ft
51 Width Curb to Curb:	29.856 ft
52 Width Out to Out:	32.999 ft

ADMINISTRATIVE

27 Year Built:	1969
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 II 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:	
Signs Posted Non-Cardinal:	
Field Postings Gross:	-1 tons
Field Postings Type I:	-1 tons
Field Postings Type II:	-1 tons
Field Postings Type III:	-1 tons
Field Postings Type IV:	-1 tons

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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	13,792.76	13,654.83	99%	137.93	1%	0	0%	0	0%
<p>The wearing surface has minor transverse flexure cracking throughout. Overall the wearing surface is in good condition at this time. See photos.</p>									

510: Wearing Surfaces									
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	12,484.41	12,359.57	99%	124.84	1%	0	0%	0	0%
<p>The wearing surface has minor transverse flexure cracking throughout. Overall the wearing surface is in good condition at this time. See photos.</p>									

7358: DO NOT USE Concrete Cracking									
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	124.79	0	0%	124.79	100%	0	0%	0	0%
<p>The wearing surface has minor transverse flexure cracking throughout. Overall the wearing surface is in good condition at this time. See photos.</p>									

7359: DO NOT USE Concrete Efflorescenc									
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	10.76	10.76	100%	0	0%	0	0%	0	0%
<p>The wearing surface has minor transverse flexure cracking throughout. Overall the wearing surface is in good condition at this time. See photos.</p>									

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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	1,672	842	50%	800	48%	30	2%	0	0%

The lower exterior flanges of the exterior beams have bubbling, flaking paint with the exposed steel typically having minor corrosion. The paint is failing and flaking off in large areas between beams 1 & 2 from the south in span 1. Several moderate to large areas of paint failure are present throughout the structure. The interior beam ft.s splice plates on the bottom flanges exhibit minor rusting and corrosion with minor bulging while the exterior beam ft.s have more moderate corrosion and bulging at the bottom flange splice plates. Minor rusting and corrosion are also present in the beam ft.s ends over pier 4. 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	0.3	0.3	100%	0	0%	0	0%	0	0%

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	6	4	67%	1	17%	1	17%	0	0%

The south column of pier 4 has minor to moderate cracking in all the faces. The west face of the south column has a vertical crack that measured up to 1/4 in. wide, a few feet off the ground. This crack extends from the groundline up to the top of the cap and becomes larger with spalling in the top of the cap. The north column of pier 4 also has minor to moderate cracking in all four faces. The east face has a vertical crack that is up to 1/8 in. wide. See photos.

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	66	61	92%	5	8%	0	0%	0	0%

The breast wall of abutment 5 has minor horizontal cracking at the north end for approximately 3 ft.. Water is running down each side of abutment 1 during rain events and this is allowing water to pool up on the breast wall. This is causing accelerated deterioration of the bearings and masonry plates at abutment 1. Some minor cracking is present in the breast wall. See photos.

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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	99	68	69%	28	28%	3	3%	0	0%

The south end of pier cap 4 has moderate spalling with exposed steel and vertical cracking that extends down into the column. The north end of the pier cap has some shallow spalling with exposed steel. The underside of pier cap 4 has minor to moderate cracking for the visible length of the cap underside. See photos.

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	33	30	91%	3	9%	0	0%	0	0%

The transverse joint over pier 4 has some minor scattered debris and a 3 ft. section at the south end is partially detached and sagging down. 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	66	44	67%	22	33%	0	0%	0	0%

The transverse joints over abutments 1 and 5 have some local adhesion failures. 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	16	16	100%	0	0%	0	0%	0	0%

The moveable bearings appear to have rusting and minor corrosion.

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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	0.09	0.09	100%	0	0%	0	0%	0	0%

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	8	4	50%	4	50%	0	0%	0	0%
<p>The bearings at abutment 5 have some flaking paint with minor rusting in the lower bearings. The bearings masonry plates at abutment 5 have minor rusting corrosion. The lower portions of the bearings at abutment 1 have minor rusting and corrosion. The masonry plates and anchor bolts at the abutment 1 bearings have moderate to heavy corrosion. These bearings should be cleaned and protected. See photos.</p>									

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	0.09	0.09	100%	0	0%	0	0%	0	0%

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	894	894	100%	0	0%	0	0%	0	0%
<p>The concrete bridge railing has minor spalling with minor vertical cracking. A moderate spall is present on top of the downstream barrier wall near abutment 1.</p>									

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852: Drains

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%

Some of the drains are open and some are blocked. Moderate corrosion is present at the bottom of some downspouts. 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%	1	100%	0	0%	0	0%

Vegetation in the form of vines are growing up the north side of pier 3. See photos.

STRUCTURE NOTES

-75

INSPECTION NOTES

This is a routine 24 month inspection and the NBI ratings reflect only what can be visibly seen from the ground. Binoculars were utilized for a closer visual inspection. Inspected by A.Greiner.

WORK

Action: -1 - Converted Work Candidates

Drains should be cleaned out. Generated by agreiner on 03/12/2014

Action: -1 - Converted Work Candidates

Spot painting or replacing the paint system should be considered. Generated by agreiner on 03/12/2014

Action: -1 - Converted Work Candidates

The bearings at the abutment 1 and pier 4 should be cleaned and coated. Generated by agreiner on 03/12/2014

Action: -1 - Converted Work Candidates

Vines should be removed from pier 3. Generated by agreiner on 03/12/2014

022B00095R



View from the north end of abutment 5.



View of the north bearing at abutment 5.



View of minor corrosion at the end of the bottom flange of the north beam at abutment 5.



View of bubbling and flaking paint with minor rusting corrosion along the bottom flange of the north beam in span 4.

022B00095R



View of flaking paint and minor corrosion in the bottom flange of the south exterior beam at abutment 5.



View of bubbling and flaking paint with minor rusting corrosion along the bottom flange of the south beam in span 4.



View of minor horizontal cracking in the north end of abutment 5's breastwall.



View of minor cracking at the south end of pier cap 4 in span 4.

022B00095R



View of minor cracking in the east face of the south column of pier 4.



View of a large spall with exposed steel in the south overhang over pier 4.



View of minor cracking and spalling with exposed steel at the north end of pier cap 4 in span 4.



View of up to a 1/8" wide vertical crack in the east face of the north column of pier 4.

022B00095R



View of span 3 and pier 3. Notice the vines on the north column.



View of minor to moderate cracking along the underside of pier cap 4.



View of a large area of paint failure on beam 2 from the south in span 3 near pier 3.



View of moderate cracking and spalling in the west face of the south column and pier cap 4.

022B00095R



View of moderate spalling with exposed steel in the south end of pier cap 4.



View of moderate vertical cracking (measured up to 1/4") in the west face of the south column of pier 4.



View at the south end of pier 4. Notice the rusting and corrosion along the bottom flange and the area of paint failure.



View of span 2 and pier 2.

022B00095R



View of the bearings over pier 4.



View of the transverse joint over abutment 5. It has some local adhesion failures.



View of some minor cracking in the wearing surface of span 5.



View of the transverse joint over pier 4. It has some minor debris.

022B00095R



View at the south end of the transverse joint over pier 4. It is partially detached and sagging for ~3'.



View of a block north drain.



View of the transverse joint over abutment 1. It has some local adhesion failures.



View of the painted date on the north beam at abutment 1.

022B00095R



View of paint that has flaked off onto the ground in span 1.



View of a large area of paint failure on beam 2 from the south in span 1.



Typical view of moderate to heavy corrosion of the masonry plate and anchor bolts on the bearings at abutment 1.