MICHIGAN DEPARTMENT OF TRANSPORTATION

STR 6982 — BRIDGE SAFETY INSPECTION REPORT

Facility	Latitude / Longitude	MDOT Structure ID	Structure Condition
SCHREIBER ROAD	43.5332 / -84.2093	56306H00021B010	Serious Condition(3)
Feature	**Length / Width**	**Owner**	
JO DRAIN	28.9 / 18.7	County: Midland(56)	
Location	**Built / Recon. / Paint / Ovly.**	**TSC**	**Operational Status**
0.4 MI S OF BROOKS RD	1938 / / 2004 /	Mt. Pleasant(4A)	A Open, no restriction(A)
Region / County	**Material / Design**	**Last NBI Inspection**	**Scour Evaluation**
Bay(4) / Midland(56)	3 Steel / 02 Stringer/Girder	08/26/2015 / 7PXJ	3 SC - Unstable

NBI INSPECTION — 7PXJ

Inspector Name	Agency / Company Name	Insp. Freq.	Insp. Date
Eric Rickert	Great Lakes Engineering Group	12	08/26/2015

GENERAL NOTES

Fair. Post at 42/55/65 for abutments.

DECK

	08/11	08/13	08/15	
1. Surface (SIA-58A)	7	7	7	Chip seal surface with no cracks. Vegetation along edges. (08/15) Chip seal surface with no cracks. (08/13) Chip seal surface with no cracks. (08/11)
2. Expansion Joints	N	N	N	(08/15) (08/13) (08/11)
3. Other Joints	N	N	N	(08/15) (08/13) (08/11)
4. Railings	7	6	6	Steel posts with 2 W beam panels and concrete brush block. Railing posts painted with rust starting. East concrete brush block spalled at south end and at post 3S, no exposed steel. West brush block fascia spalled at south and north end. 2 cracks in west brush block. (08/15) Steel posts with 2 W beam panels and concrete brush block. Railing posts painted with rust starting. East concrete brush block spalled at south end and at post 3S, no exposed steel. East brush block fascia spalled at north end. 2 cracks in west brush block. (08/13) Steel posts with 2 W beam panels and concrete brush block. Railing posts painted. Eastside concrete brush block spalled at southend and at post 3S, no exposed steel. East brush block fascia spalled at northend. (08/11)
5. Sidewalks or Curbs	N	N	N	(08/15) (08/13) (08/11)
6. Deck Bottom Surface (SIA-58B)	6	6	6	1 delaminated area in east bay and 1 spalled area in west bay with exposed steel, both are less than 1 sft. Northend of W bay has hairline transverse crack. (08/15) 1 delaminated area in east bay and 1 spalled area in west bay with exposed steel, both are less than 1 sft. Northend of W bay has hairline transverse crack. (08/13) 1 delaminated area in east bay and 1 spalled area in west bay with exposed steel, both are less than 1 sft. Northend of W bay has hairline transverse crack. (08/11)
7. Deck (SIA-58)	6	6	6	Spalled and delaminated areas on bottom, chip seal on top. 25% of east fascia spalled with exposed steel (08/15) Spalled and delaminated areas on bottom, chip seal on top. 25% of east fascia spalled with exposed steel (08/13) Spalled and delaminated areas on bottom, chip seal on top. (08/11)
8. Drainage				(08/15) (08/13) (08/11)

SUPERSTRUCTURE

	08/11	08/13	08/15

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Region / County	**Material / Design**	**Last NBI Inspection**	**Scour Evaluation**
Bay(4) / Midland(56)	3 Steel / 02 Stringer/Girder	08/26/2015 / 7PXJ	3 SC - Unstable

9. Stringer (SIA-59)	5	5	5	Beams have been painted. Noted rust and scale along top flange of east and west fascias. Noted pitted areas along top flange under new paint. (08/15) Beams have been painted. Noted rust starting along top flange of east and west fascias. Noted pitted areas along top flange under new paint. (08/13) Beams have been painted. Noted rust starting along top flange of east and west fascias. Noted pitted areas along top flange under new paint. (08/11)
10. Paint (SIA-59A)	7	7	6	Rust along fascia beams (08/15) Rust starting along fascia beams (08/13) Rust starting along fascia beams (08/11)
11. Section Loss	2	2	2	Rust starting on fascia beams (08/15) Rust starting on fascia beams (08/13) Rust starting on fascia beams (08/11)
12. Bearings	N	N	N	(08/15) (08/13) (08/11)

SUBSTRUCTURE

	08/11	08/13	08/15	
13. Abutments (SIA-60)	4	4	3	NE, SE, NW and SW backwalls cracked, NE backwall has 3.5" (was 3.25") of movement as measured 6" above top of abutment and SW has 3" (was 2.75"). South abutment has a 1/16" vertical crack in bay 3W, a full depth vertical crack 1/2" wide at beam 2W, and a 1'x3' spall at the footing. West end of both abuts cracked at corners. South abutment, west end has 1/2"-3/4" crack extending from abutment corner to wingwall. South abutment has 10" of footing face exposed at center, 16" exposed under east fascia and 0" at west fascia. North abutment has exposed footing along west 1/2, probed down 14" along footing and no undermining noted. (08/15) NE, SE, NW and SW backwalls cracked, NE backwall has 3.25" (was 3") of movement and SW has 2.75" (was 2.5"). South abutment has a 1/16" vertical crack, a full depth vertical crack 1/2" wide, and a 1'x3' spall at the footing. West end of both abuts cracked at corners. South abutment has 10" of footing face exposed at center, 16" exposed under east fascia and 0" at west fascia. North abutment has exposed footing along west 1/2, probed down 14" along footing and no undermining noted . Because of low traffic, keep 24 month freq. (08/13) NE, SE, NW and SW backwalls cracked, NE backwall has 3" of movement and SW has 2.5". South abut has 2 vert cracks, a 1/16" crack and a full depth crack 1/2" wide. West end of both abuts cracked at corners. South abut has 11" of ftg face exposed at center and 16" exposed under east fascia. North abut has exposed footing along west 1/2, no undermining noted . Because of low traffic, keep 24 month freq. (08/11)
14. Piers (SIA-60)	N	N	N	(08/15) (08/13) (08/11)
15. Slope Protection	N	N	N	(08/15) (08/13) (08/11)

APPROACH

	08/11	08/13	08/15	
16. Approach Pavement	5	5	6	Chip seal with transverse crack in west approach. (08/15) Wedging at both approaches full of cracks (08/13) New wedging at both approaches, no cracks. (08/11)
17. Approach Shoulders Sidewalks	6	6	6	Grass shoulders (08/15) Grass shoulders (08/13) Grass shoulders (08/11)

STR 6982 BRIDGE SAFETY INSPECTION REPORT

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18. Approach Slopes				Vegetated slopes, short approach rail (08/15) Vegetated slopes, short approach rail (08/13) Vegetated slopes, short approach rail (08/11)
19. Utilities				Gas markers on west side, electrical transmission lines north of bridge (08/15) Gas markers on west side, electrical transmission lines north of bridge (08/13) None on bridge (08/11)
20. Channel (SIA-61)	7	7	6	County drain with manmade cross section. All flow along south abutment. (08/15) County drain with manmade cross section (08/13) County drain with manmade cross section (08/11)
21. Drainage Culverts				(08/15) (08/13) (08/11)

MISCELLANEOUS

Guard Rail

Item	Rating
36A. Bridge Railings	1
36B. Transitions	0
36C. Approach Guardrail	0
36D. Approach Guardrail Ends	0

Other Items

Item	Rating
71. Water Adequacy	6
72. Approach Alignment	5
Temporary Support	0 No Temporary Supports
High Load Hit (M)	No
Special Insp. Equipment	2
Underwater Insp. Method	1

False Decking (Timber) Removed to Complete Inspection N/A - No False Decking

Critical Feature Inspections (SIA-92)

	Freq	Date
92A. Fracture Critical		
92B. Underwater		
92C. Other Special		
92D. Fatigue Sensitive		

MICHIGAN DEPARTMENT OF TRANSPORTATION

STR 6982 — STRUCTURE INVENTORY AND APPRAISAL

Facility	Latitude / Longitude	MDOT Structure ID	Structure Condition
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Region / County	**Material / Design**	**Last NBI Inspection**	**Scour Evaluation**
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Bridge History, Type, Materials

27 - Year Built	1938	
106 - Year Reconstructed		
202 - Year Painted	2004	
203 - Year Overlay		
43 - Main Span Bridge Type	3	02
44 - Appr Span Bridge Type		
77 - Steel Type	1	
78 - Paint Type	9	
79 - Rail Type		
80 - Post Type		
107 - Deck Type	1	
108A - Wearing Surface	6	
108B - Membrane	0	
108C - Deck Protection	0	

Structure Dimensions

34 - Skew	0
35 - Struct Flared	0
45 - Num Main Spans	1
46 - Num Apprs Spans	0
48 - Max Span Length	27.9
49 - Structure Length	28.9
50A - Width Left Curb/SW	0
50B - Width Right Curb/SW	0
33 - Median	0
51 - Width Curb to Curb	17.06
52 - Width Out to Out	18.7
112 - NBIS Length	Y

Inspection Data

90 - Inspection Date	08/26/2015	
91 - Inspection Freq	12	
92A - Frac Crit Req/Freq	N	
93A - Frac Crit Insp Date		
92B - Und Water Req/Freq	N	
93B - Und Water Insp Date		
92C - Oth Spec Insp Req/Freq	N	
93C - Oth Spec Insp Date		
92D - Fatigue Req/Freq	N	
93D - Fatigue Insp Date		
176A - Und Water Insp Method	1	
58 - Deck Rating	6	
58A/B - Deck Surface/Bottom	7	6
59 - Superstructure Rating	5	
59A - Paint Rating	6	
60 - Substructure Rating	3	
61 - Channel Rating	6	
62 - Culvert Rating	N	

Navigation Data

38 - Navigation Control	0
39 - Vertical Clearance	0
40 - Horizontal Clearance	0
111 - Pier Protection	
116 - Lift Brdg Vert Clear	

Route Carried By Structure(ON Record)

5A - Record Type	1	
5B - Route Signing	4	
5C - Level of Service	0	
5D - Route Number	00000	
5E - Direction Suffix	0	
10L - Best 3m Unclr-Lt	0	0
10R - Best 3m Unclr-Rt	99	99
PR Number		
Control Section		
11 - Mile Point	0	
12 - Base Highway Network	0	
13 - LRS Route-Subroute	0000008934 10	
19 - Detour Length	1	
20 - Toll Facility	3	
26 - Functional Class	09	
28A - Lanes On	2	
29 - ADT	51	
30 - Year of ADT	1999	
32 - Appr Roadway Width	23.95	
32A/B - Ap Pvt Type/Width	4	24.02
42A - Service Type On	1	
47L - Left Horizontal Clear	0.0	
47R - Right Horizontal Clear	17.4	
53 - Min Vert Clr Ov Deck	99	99
100 - STRAHNET	0	
102 - Traffic Direct	2	
109 - Truck %	0	
110 - Truck Network	0	
114 - Future ADT	76	
115 - Year Future ADT	2019	
Freeway	0	

Structure Appraisal

36A - Bridge Railing	1
36B - Rail Transition	0
36C - Approach Rail	0
36D - Rail Termination	0
67 - Structure Evaluation	4
68 - Deck Geometry	3
69 - Underclearance	N
71 - Waterway Adequacy	6
72 - Approach Alignment	5
103 - Temporary Structure	
113 - Scour Criticality	3

Miscellaneous

37 - Historical Significance	5
98A - Border Bridge State	
98B - Border Bridge %	
101 - Parallel Structure	N
EPA ID	
Stay in Place Forms	
143 - Pin & Hanger Code	
148 - No. of Pin & Hangers	

Route Under Structure (UNDER Record)

5A - Record Type		
5B - Route Signing		
5C - Level of Service		
5D - Route Number		
5E - Direction Suffix		
10L - Best 3m Unclr-Lt		
10R - Best 3m Unclr-Rt		
PR Number		
Control Section		
11 - Mile Point		
12 - Base Highway Network		
13 - LRS Route-Subroute		
19 - Detour Length		
20 - Toll Facility		
26 - Functional Class		
28B - Lanes Under		
29 - ADT		
30 - Year of ADT		
42B - Service Type Under	5	
47L - Left Horizontal Clear		
47R - Right Horizontal Clear		
54A - Left Feature		
54B - Left Underclearance	99	99
54C - Right Feature		
54D - Right Clearance	99	99
Under Clearance Year		
55A - Reference Feature	N	
55B - Right Horiz Clearance	327.8	
56 - Left Horiz Clearance	0	
100 - STRAHNET		
102 - Traffic Direct		
109 - Truck %		
110 - Truck Network		
114 - Future ADT		
115 - Year Future ADT		
Freeway		

Proposed Improvements

75 - Type of Work		
76 - Length of Improvement		
94 - Bridge Cost		
95 - Roadway Cost		
96 - Total Cost		
97 - Year of Cost Estimate		

Load Rating and Posting

31 - Design Load	6
41 - Open, Posted, Closed	A
63 - Fed Oper Rtg Method	1
64F - Fed Oper Rtg Load	45.3
64MA - Mich Oper Rtg Method	1
64MB - Mich Oper Rtg	87
64MC - Mich Oper Truck	18
65 - Inv Rtg Method	1
66 - Inventory Load	21.3
70 - Posting	5
141 - Posted Loading	
193 - Overload Class	

MICHIGAN DEPARTMENT OF TRANSPORTATION

STR 6982 — WORK RECOMMENDATIONS

Facility	Latitude / Longitude	MDOT Structure ID	Structure Condition
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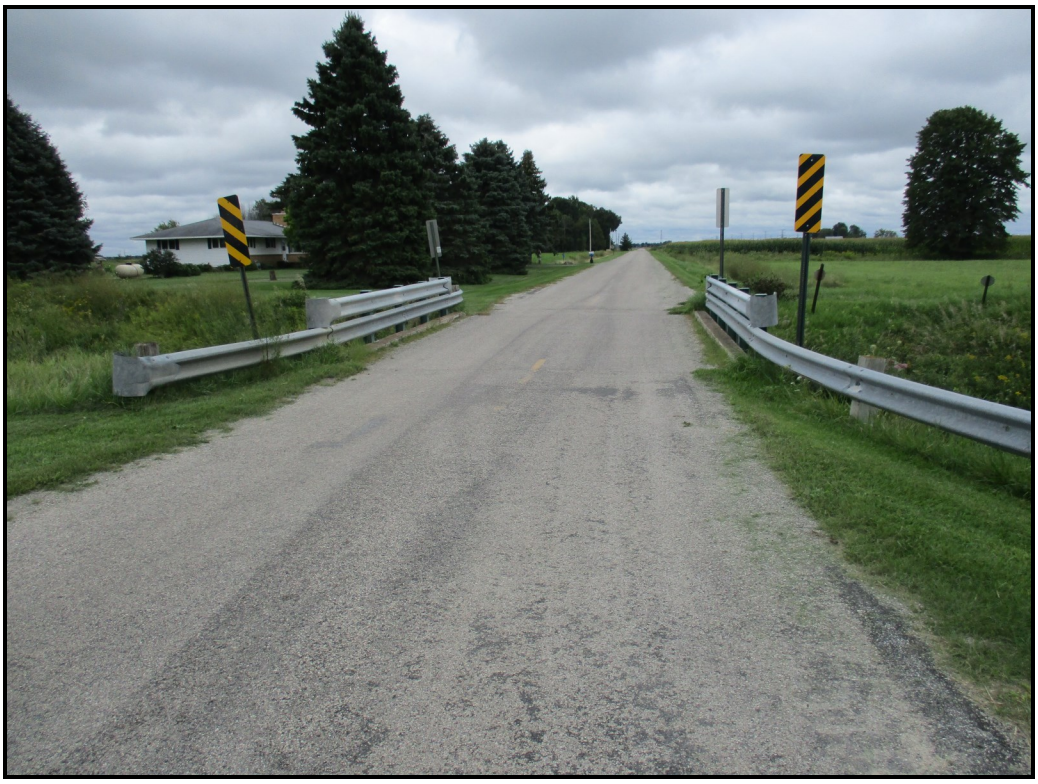
WORK RECOMMENDATIONS — 7PXJ

Inspector Name	Agency / Company Name	Insp. Freq.	Insp. Date
Eric Rickert	Great Lakes Engineering Group	12	08/26/2015

RECOMMENDATIONS & ACTION ITEMS

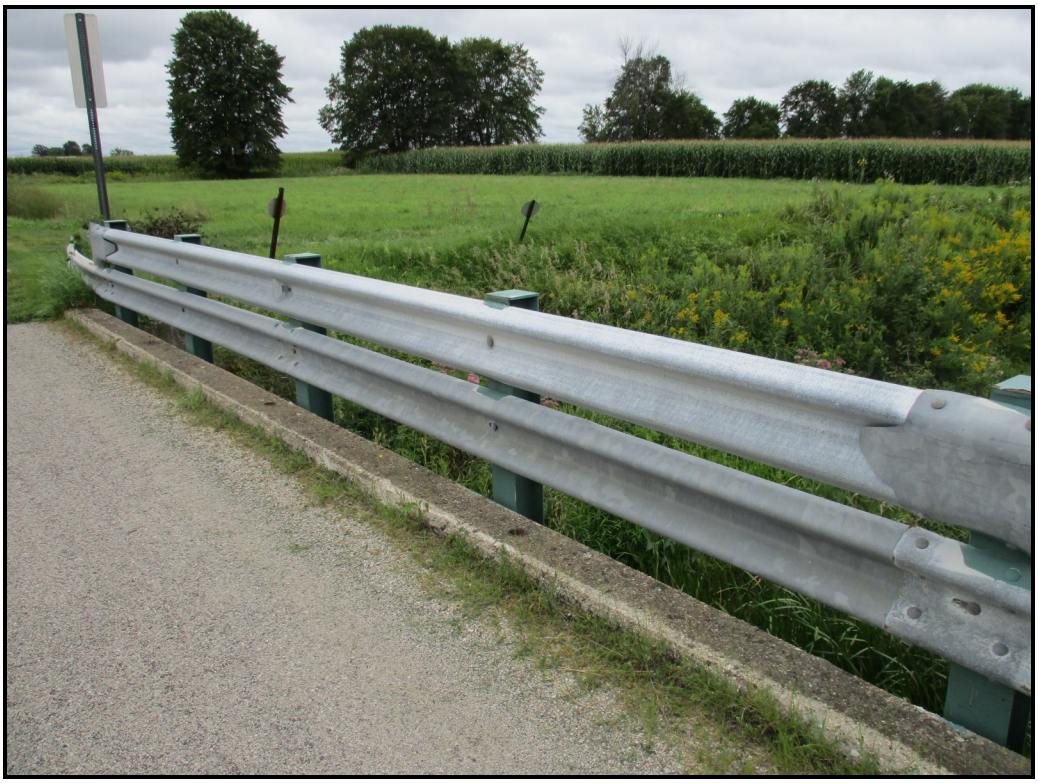
Recommendation Type	Priority	Description
Detailed Insp.	M	Watch cracks in abut backwalls
Slope Repair	H	Riprap around the abutments to above footing
Bridge Repl.	H	Replacement is best option

Road and bridge section facing south

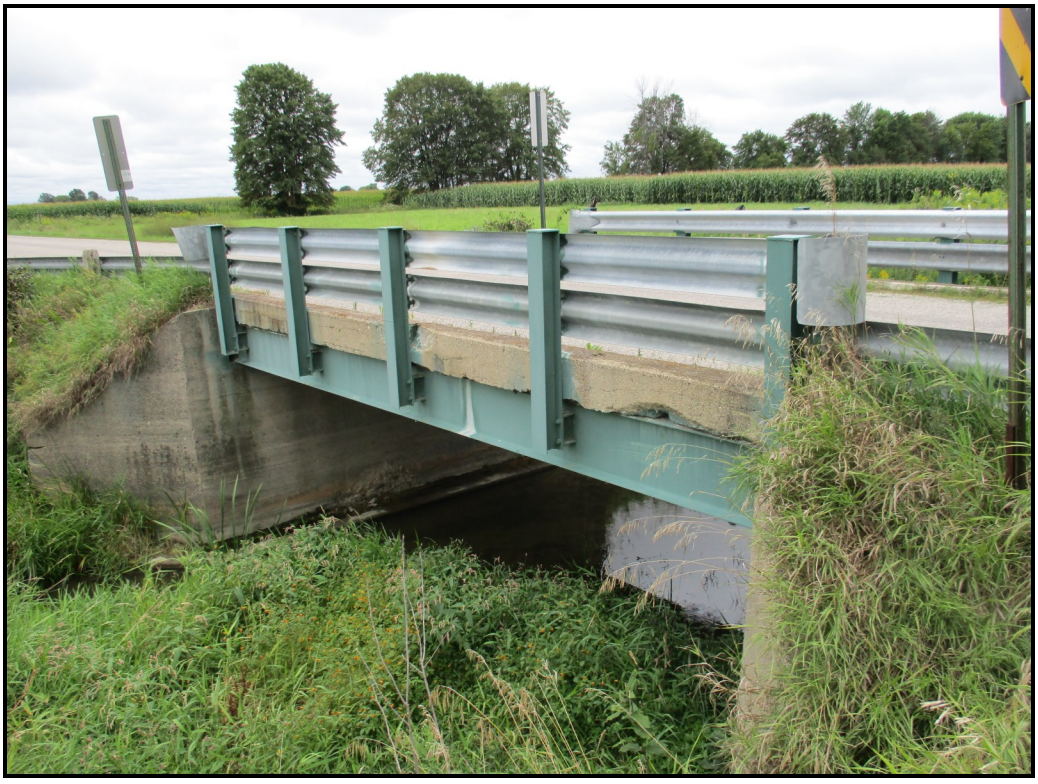


Chip seal surface

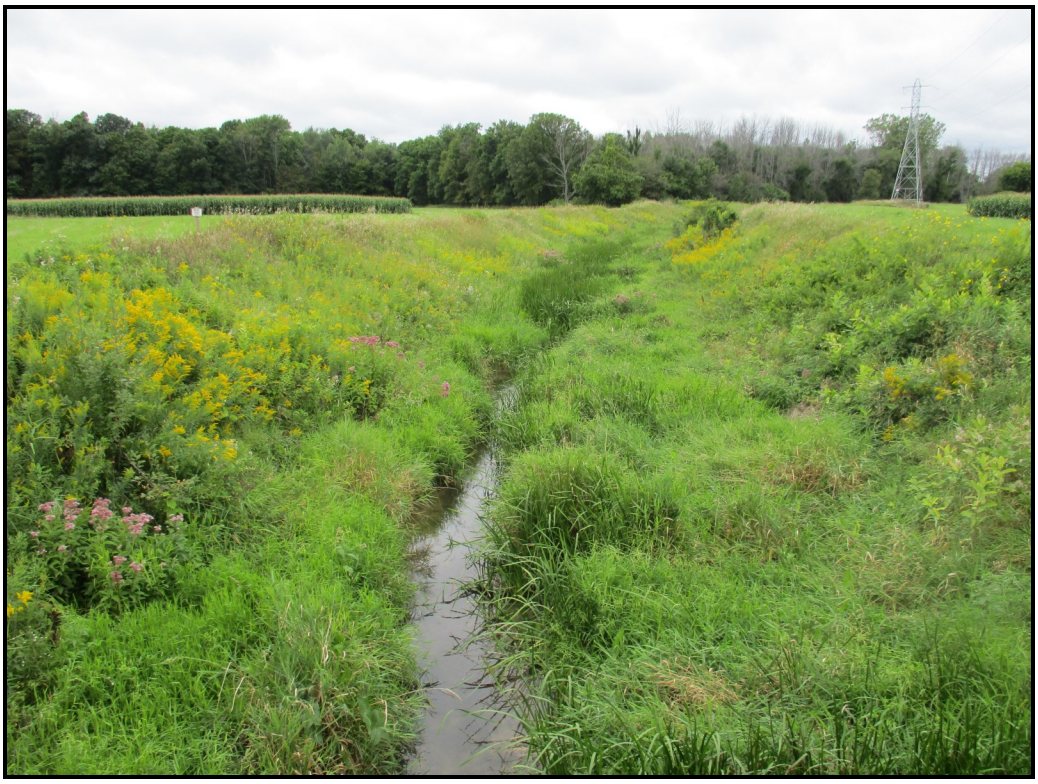
Bridge railing



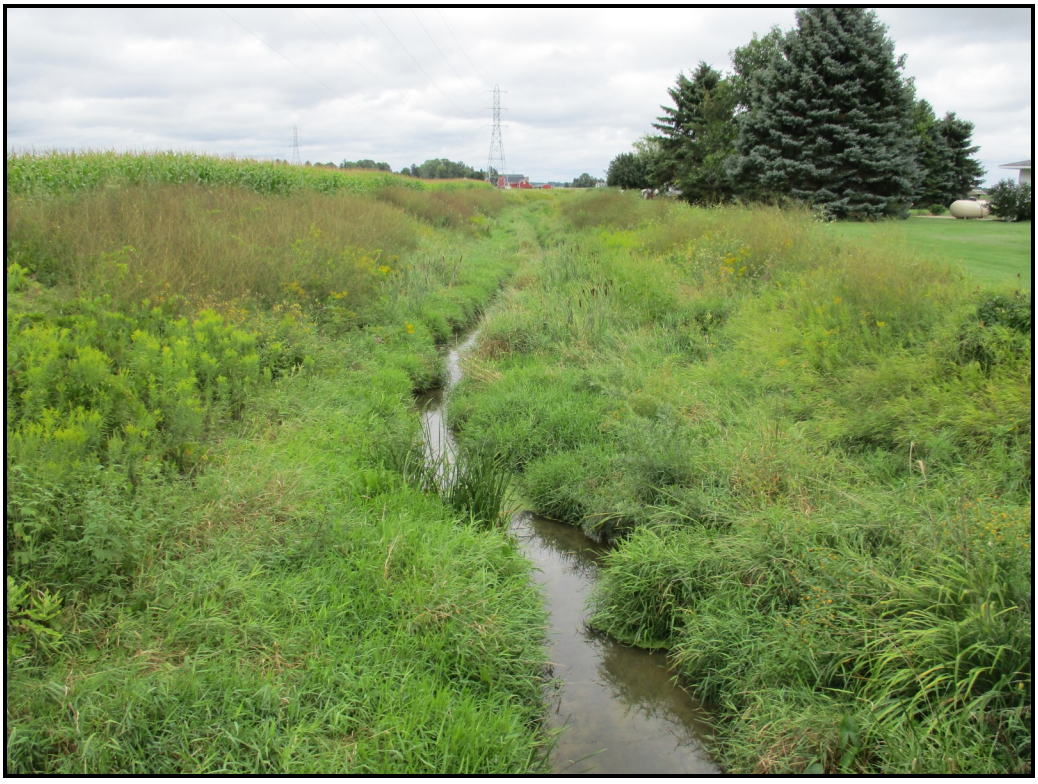
East elevation of bridge



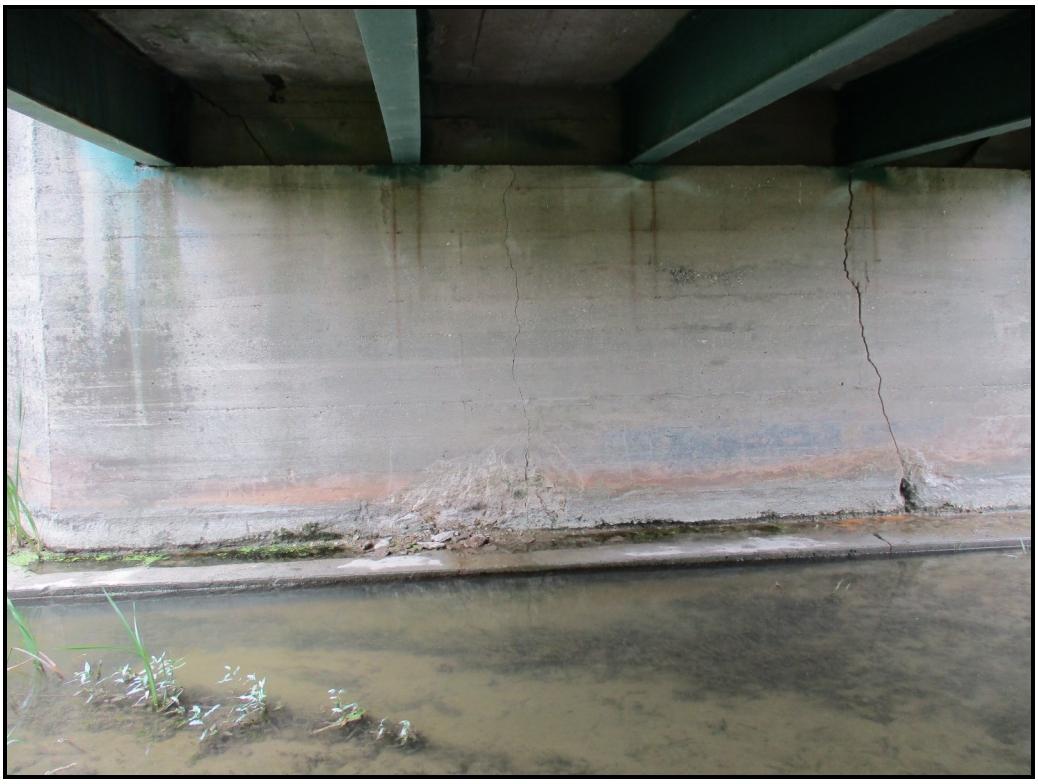
Upstream channel section



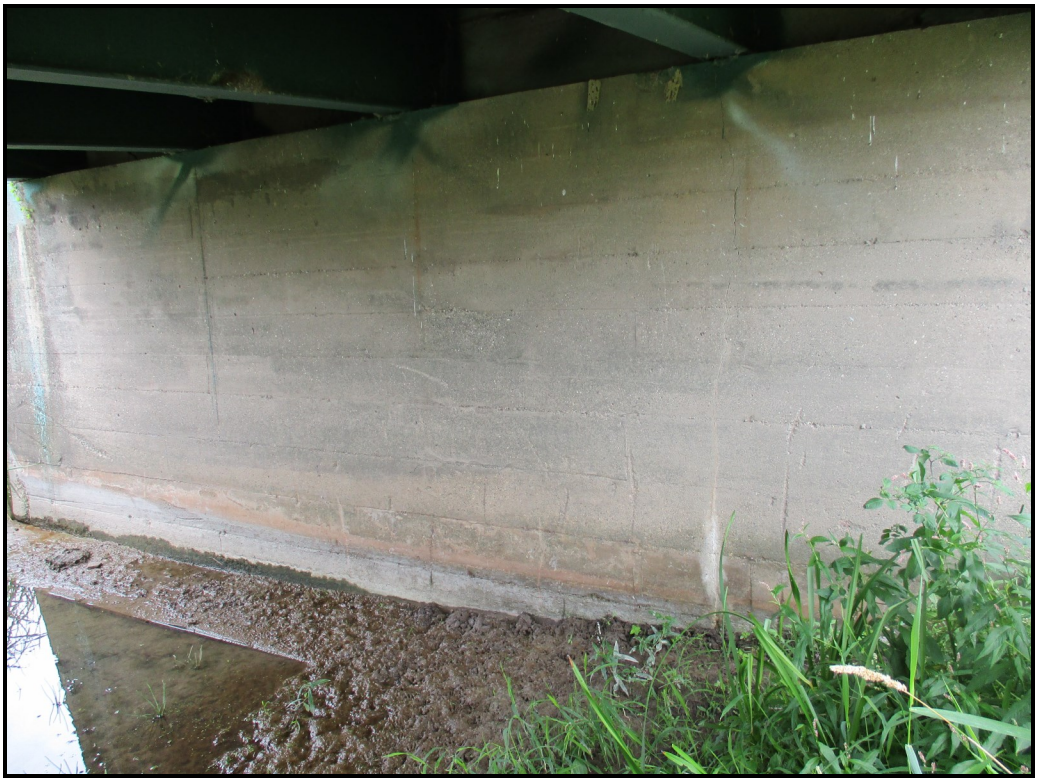
Downstream channel section



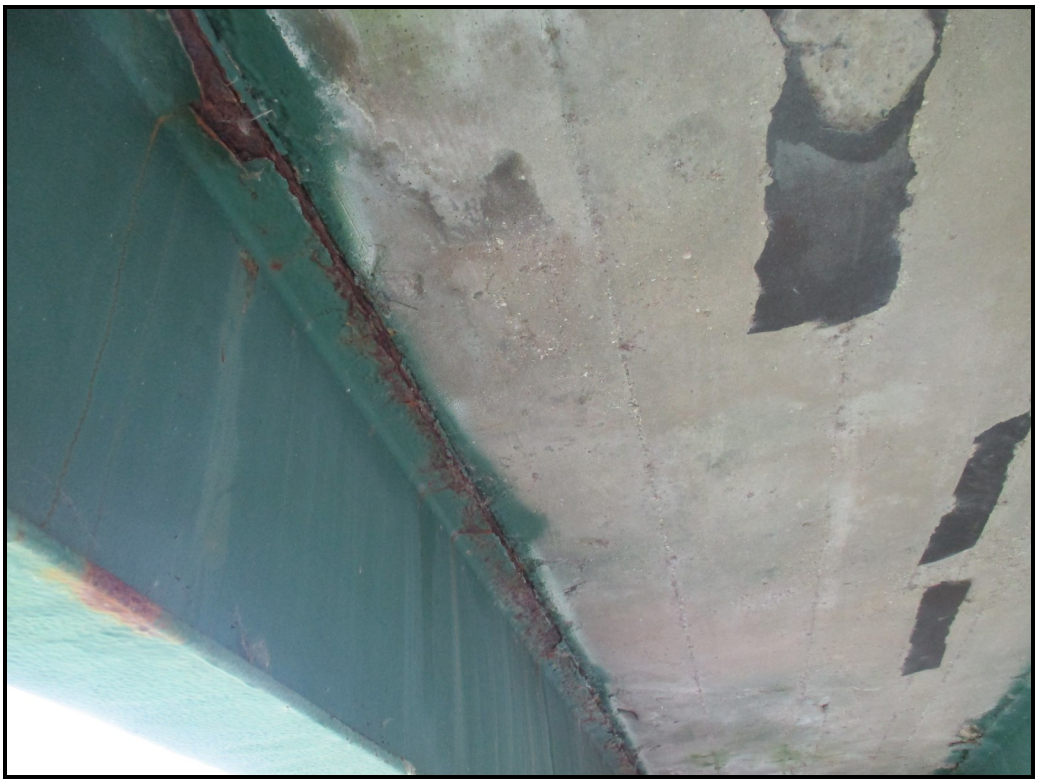
South abutment



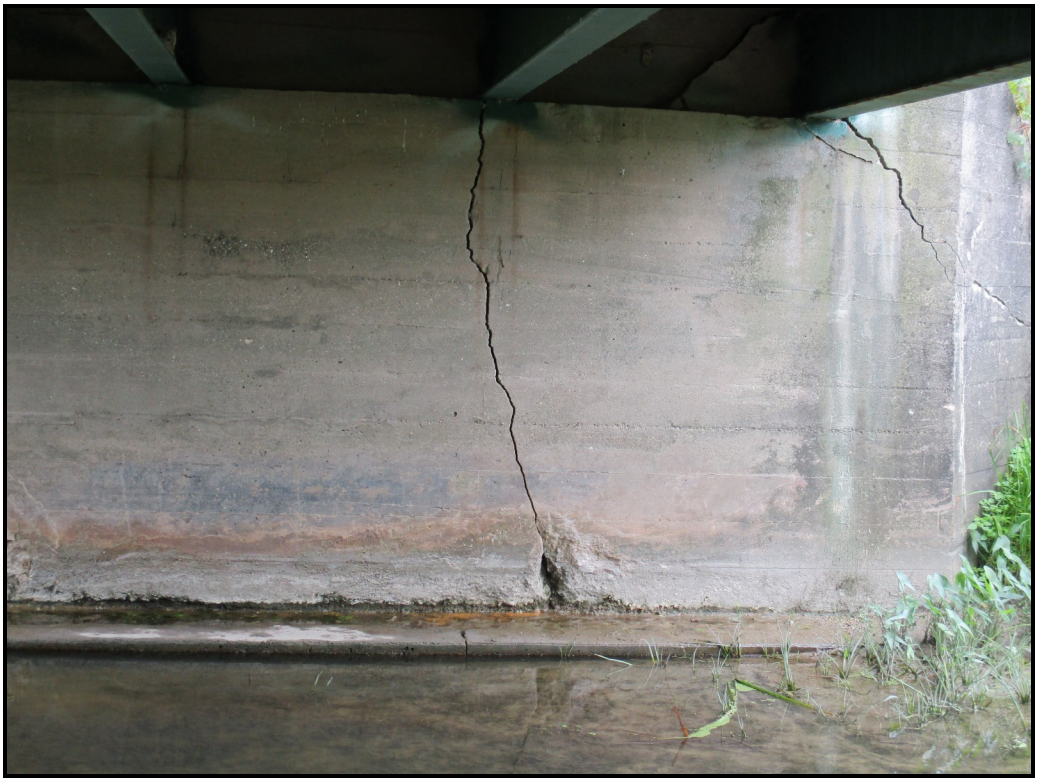
North abutment



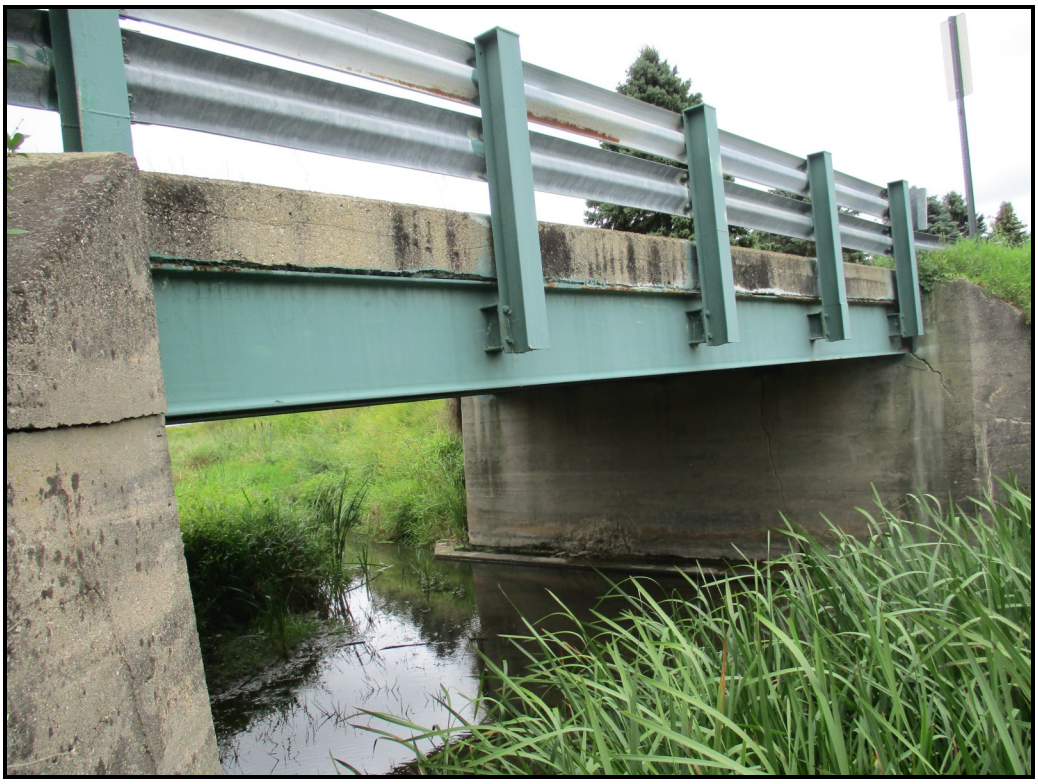
Rust and scale along top flange



Crack in south abutment



West elevation of bridge



Crack in SW wingwall

MICHIGAN DEPARTMENT OF TRANSPORTATION

STR 6982 — REQUEST FOR ACTION

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REQUEST FOR ACTION 06982-09112015

Submitted By	Agency / Company Name	RFA#	RFA Date
Eric Rickert	Great Lakes Engineering Group	06982-09112015	09/11/2015

Problems/Comments

The backwalls at the east end of the north abutment and the west end of the south abutment have full depth cracks with movement. Over the past 4 years, the amount of displacement at the cracks has increased. Recommend the bridge be posted because of the possible movement in the abutments. (Eric Rickert 09/11/2015)

IMMEDIATE ACTION

No immediate actions noted.

INTERMEDIATE ACTION

Request For	Contact/User	Agency/Company Name	Review Date	Priority	Complete Date
Load Rating	Eric Rickert	Great Lakes Engineering Group	09/11/2015	2	

No. of Locations	Engineering Costs ($)	Temp. Repair Costs ($)	Perm. Repair Costs ($)	Estimate Date

Comments

FINAL ACTION COMPLETED

Comment	RFA Complete
	No

RFA COMMITTEE

Committee Review Date	Estimated Repair Date

Comments

SUPPORTING IMAGES

MICHIGAN DEPARTMENT OF TRANSPORTATION

STR 6982 — LOAD RATING ASSUMPTIONS

Facility	Latitude / Longitude	MDOT Structure ID	Structure Condition
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0.4 MI S OF BROOKS RD	1938 / / 2004 /	Mt. Pleasant(4A)	B Posting Recommended(B)
Region / County	**Material / Design**	**Last NBI Inspection**	**Scour Evaluation**
Bay(4) / Midland(56)	3 Steel / 02 Stringer/Girder	08/26/2015 / 7PXJ	3 SC - Unstable

Rating Considers Field Condition of Members: Yes **Inspection Date:** 08/26/2015

Deterioration:

Used 15% section loss

Most Recent Year Construct / Reconstruct / Overlay: 1938

History of work that impacts Load rating:

Year of HMA overlay unknown

Superstructure Component: 3 Steel **Beam fy:** 33.0 **ksi** **Beam f'c / fb:** **ksi**

Composite: No **Number of Beams:** 5 **Shop Drawings Verified:** No

Size of Beams/Beam #'s and spans: Steel beams 20"x65.4 lbs/ft

Deck: **Thickness (in.):** 7.0 **Fy / fc':** / ksi **Deck Design Load > H15:** No

Wearing Surface: **Mat'l:** HMA **Thickness (in.):** 1.5 **Unit Weight (pcf.):** 150.0

	LEFT	CENTER	RIGHT
Barrier: Type / Weight (plf.):	guardrail / 150.0	/	guardrail / 150.0
Sidewalk: Width / Thick (in.):	12.0 / 5.0	/	12.0 / 5.0

Clear Roadway (ft.):

Additional Loads:

Unique Factors That Affect Capacity:

Structure is posted for movement in abutment backwalls. Crack widths in NE and SW backwall have increased since previous inspection. Post bridge at 42/55/65.

Analyzed By: Eric Rickert **Date:** 01/20/2016

MICHIGAN DEPARTMENT OF TRANSPORTATION

STR 6982 — LOAD RATING SUMMARY

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Bay(4) / Midland(56)	3 Steel / 02 Stringer/Girder	08/26/2015 / 7PXJ	3 SC - Unstable

Assigned Tier: No Tier Assigned
Verified No Tier: No
The above structure was analyzed using: Other
Version or Other: Eng Judgement

Rating Considers Field Condition of Members: Yes **Inspection Date:** 08/26/2015

Controlling component and failure mode:

Movement in abutment backwalls

NEW INVENTORY CODING

NBI Item 63- Operating Rating Method 0 Judgment in mTons

NBI Item 64F- Federal Operating Rating 31.1

MDOT Item 64MA- Michigan Operating Method 0 Judgment in Rtg Factor

MDOT Item 64MB- Michigan Operating Rating 55.0

MDOT Item 64MC- Michigan Operating Truck 18

NBI Item 65- Inventory Rating Method 0 Judgment in mTons

NBI Item 66- Federal Inventory Rating 23.3

NBI Item 41- Structure Open Posted Closed B B Posting Recommended

NBI Item 70- Bridge Posting 2 2 - 79% - 70%

NBI Item 141- Posted Loading 425565

MDOT Item 193A- Michigan Overload Class

MDOT Item 193C- Overload Status

Analyzed By: Eric Rickert **Date:** 01/20/2016
Checked By: Casey Collings **Date:** 01/20/2016