

**MICHIGAN DEPARTMENT OF TRANSPORTATION**

**STR 6947**

**BRIDGE SAFETY INSPECTION REPORT**

<b>Facility</b>	<b>Latitude / Longitude</b>	<b>MDOT Structure ID</b>	<b>Structure Condition</b>
9 MILE ROAD	43.5362 / -84.4294	56200055000B010	Fair Condition(6)
<b>Feature</b>	<b>Length / Width</b>	<b>Owner</b>	
PINE RIVER	155.81 / 34.15	County: Midland(56)	
<b>Location</b>	<b>Built / Recon. / Paint / Ovly.</b>	<b>TSC</b>	<b>Operational Status</b>
0.3 MI S OF PINE RIVER RD	2000 / / /	Mt. Pleasant(4A)	A Open, no restriction(A)
<b>Region / County</b>	<b>Material / Design</b>	<b>Last NBI Inspection</b>	<b>Scour Evaluation</b>
Bay(4) / Midland(56)	5 Prestressed Concrete / 06 Single/Spread Box	09/22/2015 / LI4U	5 Stable w/in footing



**NBI INSPECTION**

**LI4U**

<b>Inspector Name</b>	<b>Agency / Company Name</b>	<b>Insp. Freq.</b>	<b>Insp. Date</b>
Eric Rickert	Great Lakes Engineering Group	24	09/22/2015

**GENERAL NOTES**

Good.

**DECK**

	09/11	09/13	09/15	
<b>1. Surface (SIA-58A)</b>	7	7	7	Concrete deck. Noted shrinkage/ASR cracking along both sides under railing. No visible cracks in lanes. In NBD lane at south reference line, 1sft spall, no exposed steel. (09/15) Concrete deck. Noted shrinkage/ASR cracking along both sides under railing. No visible cracks in lanes. In NBD lane at south reference line, 1sft spall, no exposed steel. (09/13) Under railing noted shrinkage/ASR cracking along both sides. No visible cracks in lanes. In NBD lane at south reference line, 1sft spall, no exposed steel. (09/11)
<b>2. Expansion Joints</b>	7	7	6	Hairline shrinkage/ASR cracks in header. Joint is full of dirt and retainers are rusting. Compression joints at abutments. At north abutment, 10% adhesion failure. At south abutment, spall in EBD and estimate 25% of joint material missing. (09/15) Hairline shrinkage/ASR cracks in header. Joint is full of dirt (09/13) Hairline shrinkage/ASR cracks in header. Joint is full of dirt (09/11)
<b>3. Other Joints</b>	8	7	N	Corrected per guidelines. (09/15) Compression joints at abutments. Joint material mostly intact with hot poured rubber over joint. (09/13) Compression joints at abutments. Joint material intact. (09/11)
<b>4. Railings</b>	8	8	8	Concrete open parapet railing. Concrete surface sealer on inside of railing. Hairline shrinkage cracks on outside (09/15) Concrete open parapet railing. Concrete surface sealer on inside of railing. Hairline shrinkage cracks on outside (09/13) Concrete surface sealer on inside of railing. Hairline shrinkage cracks on outside (09/11)
<b>5. Sidewalks or Curbs</b>	N	N	N	(09/15) (09/13) (09/11)
<b>6. Deck Bottom Surface (SIA-58B)</b>	8	8	8	Stay in place forms, no rust noted. (09/15) Stay in place forms, no rust noted. (09/13) Stay in place forms, no rust (09/11)
<b>7. Deck (SIA-58)</b>	8	7	7	Surface: Concrete deck with shrinkage/ASR cracks under railing. Bottom: Stay in place forms with no rust. Fascias: Shrinkage/ASR cracks. (09/15) Surface: Concrete deck with shrinkage/ASR cracks under railing. Bottom: Stay in place forms with no rust. Fascias: Shrinkage/ASR cracks. (09/13) Shrinkage/ASR cracks in top of deck along outside and on fascias, stay in place forms along bottom (09/11)
<b>8. Drainage</b>				(09/15) Off fascias. (09/13) (09/11)

**SUPERSTRUCTURE**

09/11 09/13 09/15



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<b>9. Stringer (SIA-59)</b>	8	8	8	4' wide spread box beams. Cracks on ends of fascia beams at pier. (09/15) 4' wide spread box beams. Cracks on ends of fascia beams at pier. (09/13) 4' wide spread box beams (09/11)
<b>10. Paint (SIA-59A)</b>	N	N	N	(09/15) (09/13) (09/11)
<b>11. Section Loss</b>	N	N	3	(09/15) (09/13) (09/11)
<b>12. Bearings</b>	8	8	8	Elastomeric bearing pads in place. (09/15) Elastomeric bearing pads in place. (09/13) Elastomeric bearing pads in place. (09/11)

**SUBSTRUCTURE**

	09/11	09/13	09/15	
<b>13. Abutments (SIA-60)</b>	8	8	7	Curtainwall abutments. Shrinkage/ASR cracks in both abutments/slopedwalls outside of bearing area. (09/15) Curtainwall abutments. Shrinkage/ASR cracks in both abutments/slopedwalls outside of bearing area. (09/13) Shrinkage/ASR cracks in both abutments/slopedwalls outside of bearing area (09/11)
<b>14. Piers (SIA-60)</b>	8	7	6	Solid wall pier. East & west 3'-4' and bottom 3'-4' has shrinkage/ASR cracks. East 1' has honeycomb concrete with exposed steel. Riprap around pier. (09/15) Solid wall pier. East & west 3'-4' and bottom 3'-4' has shrinkage/ASR cracks. East 1' has honeycomb concrete. Riprap around pier. (09/13) East & west 3'-4' and bottom 3'-4' has shrinkage/ASR cracks. East 1' has honeycomb concrete. Riprap around pier. (09/11)
<b>15. Slope Protection</b>	7	7	7	Riprap in place. (09/15) Riprap in place. (09/13) Riprap in place (09/11)

**APPROACH**

	09/11	09/13	09/15	
<b>16. Approach Pavement</b>	7	7	6	Both approach slabs have shrinkage/ASR cracking mainly at ref lines. Transverse crack in south approach SBD lane. (09/15) Both approach slabs have shrinkage/ASR cracking mainly at ref lines. (09/13) Both approach slabs have shrinkage/ASR cracking mainly at ref lines (09/11)
<b>17. Approach Shoulders Sidewalks</b>	8	8	8	Concrete with approach curb and gutter then HMA shoulders (09/15) Concrete with approach curb and gutter then HMA shoulders (09/13) Concrete then HMA shoulders (09/11)
<b>18. Approach Slopes</b>				Vegetated approach slopes. (09/15) Vegetated approach slopes. (09/13) Vegetated approach slopes (09/11)
<b>19. Utilities</b>				None noted on bridge. (09/15) None noted on bridge. (09/13) None noted on bridge (09/11)
<b>20. Channel (SIA-61)</b>	7	7	7	Braided channel up and down stream with an island upstream of the bridge. (09/15) Braided channel up and down stream with an island upstream of the bridge. (09/13) Braided channel up and down stream (09/11)
<b>21. Drainage Culverts</b>				(09/15) (09/13) (09/11)



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**MISCELLANEOUS**

**Guard Rail**

<u>Item</u>	<u>Rating</u>
36A. Bridge Railings	1
36B. Transitions	1
36C. Approach Guardrail	1
36D. Approach Guardrail Ends	1

**Other Items**

<u>Item</u>	<u>Rating</u>
71. Water Adequacy	9
72. Approach Alignment	6
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)**

	<u>Freq</u>	<u>Date</u>
92A. Fracture Critical		
92B. Underwater		
92C. Other Special		
92D. Fatigue Sensitive		



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**STRUCTURE INVENTORY AND APPRAISAL**

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Bridge History, Type, Materials		Route Carried By Structure(ON Record)		Route Under Structure (UNDER Record)	
27 - Year Built	2000	5A - Record Type	1	5A - Record Type	
106 - Year Reconstructed		5B - Route Signing	4	5B - Route Signing	
202 - Year Painted		5C - Level of Service	0	5C - Level of Service	
203 - Year Overlay		5D - Route Number	05637	5D - Route Number	
43 - Main Span Bridge Type	5 06	5E - Direction Suffix	0	5E - Direction Suffix	
44 - Appr Span Bridge Type		10L - Best 3m Unclr-Lt	0 0	10L - Best 3m Unclr-Lt	
77 - Steel Type		10R - Best 3m Unclr-Rt	99 99	10R - Best 3m Unclr-Rt	
78 - Paint Type		PR Number		PR Number	
79 - Rail Type	6	Control Section		Control Section	
80 - Post Type	1	11 - Mile Point	0	11 - Mile Point	
107 - Deck Type	1	12 - Base Highway Network	0	12 - Base Highway Network	
108A - Wearing Surface	1	13 - LRS Route-Subroute	0000008900 10	13 - LRS Route-Subroute	
108B - Membrane	0	19 - Detour Length	3	19 - Detour Length	
108C - Deck Protection	1	20 - Toll Facility	3	20 - Toll Facility	
Structure Dimensions		26 - Functional Class	07	26 - Functional Class	
34 - Skew	0	28A - Lanes On	2	28B - Lanes Under	
35 - Struct Flared	0	29 - ADT	444	29 - ADT	
45 - Num Main Spans	2	30 - Year of ADT	1999	30 - Year of ADT	
46 - Num Apprs Spans	0	32 - Appr Roadway Width	25.92	42B - Service Type Under	5
48 - Max Span Length	77.8	32A/B - Ap Pvt Type/Width	4 25.98	47L - Left Horizontal Clear	
49 - Structure Length	155.8	42A - Service Type On	1	47R - Right Horizontal Clear	
50A - Width Left Curb/SW	0	47L - Left Horizontal Clear	0.0	54A - Left Feature	
50B - Width Right Curb/SW	0	47R - Right Horizontal Clear	22.0	54B - Left Underclearance	99 99
33 - Median	0	53 - Min Vert Clr Ov Deck	99 99	54C - Right Feature	
51 - Width Curb to Curb	30.84	100 - STRAHNET	0	54D - Right Clearance	99 99
52 - Width Out to Out	34.15	102 - Traffic Direct	2	Under Clearance Year	
112 - NBIS Length	Y	109 - Truck %	5	55A - Reference Feature	N
Inspection Data		110 - Truck Network	0	55B - Right Horiz Clearance	327.8
90 - Inspection Date	09/22/2015	114 - Future ADT	660	56 - Left Horiz Clearance	0
91 - Inspection Freq	24	115 - Year Future ADT	2019	100 - STRAHNET	
92A - Frac Crit Req/Freq	N	Freeway	0	102 - Traffic Direct	
93A - Frac Crit Insp Date		Structure Appraisal		109 - Truck %	
92B - Und Water Req/Freq	N	36A - Bridge Railing	1	110 - Truck Network	
93B - Und Water Insp Date		36B - Rail Transition	1	114 - Future ADT	
92C - Oth Spec Insp Req/Freq	N	36C - Approach Rail	1	115 - Year Future ADT	
93C - Oth Spec Insp Date		36D - Rail Termination	1	Freeway	
92D - Fatigue Req/Freq	N	67 - Structure Evaluation	7	Proposed Improvements	
93D - Fatigue Insp Date		68 - Deck Geometry	6	75 - Type of Work	
176A - Und Water Insp Method	1	69 - Underclearance	N	76 - Length of Improvement	0
58 - Deck Rating	7	71 - Waterway Adequacy	9	94 - Bridge Cost	0
58A/B - Deck Surface/Bottom	7 8	72 - Approach Alignment	6	95 - Roadway Cost	0
59 - Superstructure Rating	8	103 - Temporary Structure		96 - Total Cost	0
59A - Paint Rating	N	113 - Scour Criticality	5	97 - Year of Cost Estimate	
60 - Substructure Rating	6	Miscellaneous		Load Rating and Posting	
61 - Channel Rating	7	37 - Historical Significance	5	31 - Design Load	9
62 - Culvert Rating	N	98A - Border Bridge State		41 - Open, Posted, Closed	A
Navigation Data		98B - Border Bridge %		63 - Fed Oper Rtg Method	1
38 - Navigation Control	0	101 - Parallel Structure	N	64F - Fed Oper Rtg Load	99.9
39 - Vertical Clearance	0	EPA ID		64MA - Mich Oper Rtg Method	
40 - Horizontal Clearance	0	Stay in Place Forms	1	64MB - Mich Oper Rtg	161
111 - Pier Protection		143 - Pin & Hanger Code	1	64MC - Mich Oper Truck	
116 - Lift Brdg Vert Clear		148 - No. of Pin & Hangers		65 - Inv Rtg Method	1
				66 - Inventory Load	69.7
				70 - Posting	5
				141 - Posted Loading	
				193 - Overload Class	A 0



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**WORK RECOMMENDATIONS**

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**WORK RECOMMENDATIONS**

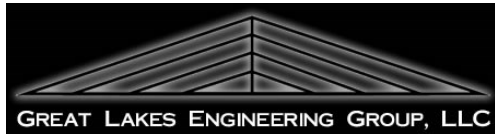
**LI4U**

<b>Inspector Name</b>	<b>Agency / Company Name</b>	<b>Insp. Freq.</b>	<b>Insp. Date</b>
Eric Rickert	Great Lakes Engineering Group	24	09/22/2015

**RECOMMENDATIONS & ACTION ITEMS**

<b>Recommendation Type</b>	<b>Priority</b>	<b>Description</b>
Detailed Insp.	M	Investigate cause of cracking in abutments and pier
Joint Repair	L	Blow out joint yearly
Deck Patching	L	Place healer sealer on deck
Substr Repair	L	Patch east end of pier





Midland County 2015 Bridge Inspections  
9 Mile Rd over Pine River  
SN 6947  
GLEG Project No. 1015-2-336  
September 22, 2015

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*Road and  
bridge section  
facing north*

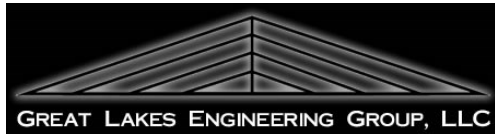


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*Spalls along  
south end joint*







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*Concrete  
surface*

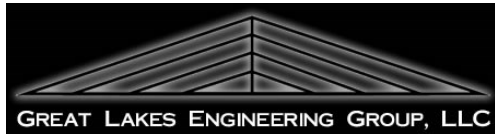


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*Expansion  
joint over pier*







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*Upstream  
channel section*

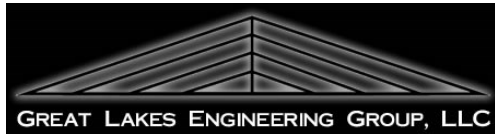


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*Downstream  
channel section*







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*West elevation  
of bridge*



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*North  
abutment*





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*Spread box  
beams*



---

*Center pier*





---

*Spalls with  
exposed steel at  
east end of pier*



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*South  
abutment*

