



**MICHIGAN DEPARTMENT OF TRANSPORTATION**

**STR 6961**

**BRIDGE SAFETY INSPECTION REPORT**

<b>Facility</b>	<b>Latitude / Longitude</b>	<b>MDOT Structure ID</b>	<b>Structure Condition</b>	
SMITHS CROSSING RD	43.5166 / -84.1897	56200071000B030	Fair Condition(5)	
<b>Feature</b>	<b>Length / Width</b>	<b>Owner</b>		
JO DRAIN	39.99 / 29.2	County: Midland(56)		
<b>Location</b>	<b>Built / Recon. / Paint / Ovly.</b>	<b>TSC</b>	<b>Operational Status</b>	
0.4 MI N OF KENT RD	1961 / / / 2002	Mt. Pleasant(4A)	P Posted for load(P)	
<b>Region / County</b>	<b>Material / Design</b>	<b>Last NBI Inspection</b>	<b>Scour Evaluation</b>	
Bay(4) / Midland(56)	1 Concrete / 04 Tee Beam	08/27/2015 / R464	5 Stable w/in footing	

**NBI INSPECTION**

**R464**

<b>Inspector Name</b>	<b>Agency / Company Name</b>	<b>Insp. Freq.</b>	<b>Insp. Date</b>
Eric Rickert	Great Lakes Engineering Group	24	08/27/2015

**GENERAL NOTES**

Fair. Posted at 73 tons. Install advance posting signs.

**Posting Signs in Place** NO



**DECK**

	08/11	08/13	08/15	
<b>1. Surface (SIA-58A)</b>	6	6	6	Chip seal over concrete. Estimate 20-30% of chip seal missing, vegetation growing along edges. Visible concrete has 3 transverse cracks. (08/15) Chip seal over concrete. Estimate 10-20% of chip seal missing, vegetation growing along edges. (08/13) Chip seal over concrete. Estimate 10-20% of chip seal missing, vegetation growing along edges. (08/11)
<b>2. Expansion Joints</b>	N	N	N	(08/15) (08/13) (08/11)
<b>3. Other Joints</b>	N	N	N	(08/15) (08/13) (08/11)
<b>4. Railings</b>	7	6	4	Thrie beam retrofit. Original rail sits on concrete brush block. Face of both brush blocks spalled/scaling along length. West brush block has a full depth spall behind a deck drain. (08/15) Thrie beam retrofit. Original rail sits on concrete brush block. Face of both brush blocks spalled/scaling along length. (08/13) Thrie beam retrofit. Original rail sits on concrete brush block. Face of both brush blocks spalled/scaling along length. (08/11)
<b>5. Sidewalks or Curbs</b>	N	N	N	(08/15) (08/13) (08/11)
<b>6. Deck Bottom Surface (SIA-58B)</b>	5	5	5	Every bay has hairline cracks with efflorescence. Approximately 5% cracked with leakage. Deck drains have exposed resteel with delaminated concrete along bottom. In center bay, longitudinal crack with efflorescence along length of bay and southend has spall/delaminated area approximately 3'x3'. (08/15) Every bay has hairline cracks with efflorescence. Approximately 5% cracked with leakage. Deck drains have exposed resteel with delaminated concrete along bottom. In center bay, longitudinal crack with efflorescence along length of bay and southend has spall/delaminated area approximately 3'x3'. (08/13) Every bay has hairline cracks with efflorescence. Approx 2-5% cracked with leakage. Deck drains have exposed resteel with delaminated concrete along bottom. In center bay, longitudinal crack with efflorescence along length of bay and southend has spall/delaminated area approx 2'x2' (08/11)
<b>7. Deck (SIA-58)</b>	5	5	5	Bottom of deck is cracked with leakage in every bay. South 10' of west fascia spalled with exposed steel. Chip seal on top with 20-30% missing. (08/15) Bottom of deck is cracked with leakage in every bay. South 10' of west fascia spalled with exposed steel. New chip seal on top. (08/13) Bottom of deck is cracked with leakage in every bay. South 10' of west fascia spalled with exposed steel. New chip seal on top. (08/11)

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**8. Drainage**      Deck drains open (08/15)  
                          Deck drains open (08/13)  
                          Deck drains open (08/11)

**SUPERSTRUCTURE**

	08/11	08/13	08/15	
<b>9. Stringer (SIA-59)</b>	5	5	5	Concrete tee beams are cracked with efflorescence mainly at haunch and sides. Beam 2W has heavy cracking with efflorescence at in south 5'. Beam 3W, at south 1/4 span, 12' section delaminated/spalled along bottom and the north 5' has heavy cracking with efflorescence along btm. Beam 4W, south 10' has heavy cracking with efflorescence and spalls along bottom. (08/15) Concrete tee beams are cracked with efflorescence mainly at haunch and sides. Beam 2W has heavy cracking with efflorescence at in south 5'. Beam 3W, at south 1/4 span, 12' section delaminated along bottom and the north 5' has heavy cracking with efflorescence along btm. Beam 4W, south 10' has heavy cracking with efflorescence and delaminations along bottom. (08/13) Concrete tee beams are cracked with efflorescence mainly at haunch and sides. Beam 3W, at south 1/4 span, 10' section delaminated along btm and the north 5' has heavy cracking with efflorescence along btm. Beam 4W, south 10' has heavy cracking with efflorescence and delaminations along btm. (08/11)
<b>10. Paint (SIA-59A)</b>	N	N	N	(08/15) (08/13) (08/11)
<b>11. Section Loss</b>	N	N	N	(08/15) (08/13) (08/11)
<b>12. Bearings</b>	N	N	N	(08/15) (08/13) (08/11)

**SUBSTRUCTURE**

	08/11	08/13	08/15	
<b>13. Abutments (SIA-60)</b>	6	6	6	Vertical crack in center of each abutment, 1/16" wide with leakage and hairline-1/16" vertical cracks in SE, NW, NE, and SW abut outside bearing area. (08/15) Vertical crack in center of each abutment, 1/16" wide with leakage and hairline-1/16" vertical cracks in SE, NW, NE, and SW abut outside bearing area. (08/13) Vertical crack in center of each abut, 1/16" wide with leakage and hairline-1/16" vertical cracks in SE, NW, and SW abut outside bearing area. (08/11)
<b>14. Piers (SIA-60)</b>	N	N	N	(08/15) (08/13) (08/11)
<b>15. Slope Protection</b>	N	N	N	(08/15) (08/13) (08/11)



**APPROACH**

	08/11	08/13	08/15	
<b>16. Approach Pavement</b>	7	6	7	New HMA approaches, 1 transverse crack in south approach. No advance posting signs. (08/15) Chip seal, transverse crack in each approach. Patch/settlement in N approach SBD lane. No advance posting signs (08/13) Chip seal, no visible cracks. Patch/settlement in N approach SBD lane. No advance posting signs (08/11)

**MICHIGAN DEPARTMENT OF TRANSPORTATION**

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<b>17. Approach Shoulders Sidewalks</b>	6	6	6	HMA/gravel shoulders (08/15) HMA/gravel shoulders (08/13) HMA/gravel shoulders (08/11)
<b>18. Approach Slopes</b>				SW and NW approach rail is damaged, vegetated approach slopes (08/15) SW and NW approach rail is damaged, vegetated approach slopes (08/13) SW and NW approach rail is damaged, vegetated approach slopes (08/11)
<b>19. Utilities</b>				Steel conduit along east side and overhead west of bridge (08/15) Steel conduit along east side and overhead west of bridge (08/13) Steel conduit along eastside (08/11)
<b>20. Channel (SIA-61)</b>	7	7	7	County drain with manmade cross section (08/15) County drain with manmade cross section (08/13) County drain with manmade cross section (08/11)
<b>21. Drainage Culverts</b>				(08/15) (08/13) (08/11)

**MISCELLANEOUS**

<b>Guard Rail</b>		<b>Other Items</b>	
<u>Item</u>	<u>Rating</u>	<u>Item</u>	<u>Rating</u>
36A. Bridge Railings	0	71. Water Adequacy	8
36B. Transitions	0	72. Approach Alignment	8
36C. Approach Guardrail	0	Temporary Support	0 No Temporary Supports
36D. Approach Guardrail Ends	0	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		

**MICHIGAN DEPARTMENT OF TRANSPORTATION**

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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	1961	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	2002	5D - Route Number	00000	5D - Route Number	
43 - Main Span Bridge Type	1 04	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	0	10R - Best 3m Unclr-Rt	99 99	10R - Best 3m Unclr-Rt	
78 - Paint Type	0	PR Number		PR Number	
79 - Rail Type	4	Control Section		Control Section	
80 - Post Type	0	11 - Mile Point	0	11 - Mile Point	
107 - Deck Type	1	12 - Base Highway Network	0	12 - Base Highway Network	
108A - Wearing Surface	2	13 - LRS Route-Subroute	0000008935 01	13 - LRS Route-Subroute	
108B - Membrane	0	19 - Detour Length	1	19 - Detour Length	
108C - Deck Protection	0	20 - Toll Facility	3	20 - Toll Facility	
Structure Dimensions		26 - Functional Class	09	26 - Functional Class	
34 - Skew	45	28A - Lanes On	2	28B - Lanes Under	
35 - Struct Flared	0	29 - ADT	1933	29 - ADT	
45 - Num Main Spans	1	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	37.7	32A/B - Ap Pvt Type/Width	4 25.98	47L - Left Horizontal Clear	
49 - Structure Length	40	42A - Service Type On	1	47R - Right Horizontal Clear	
50A - Width Left Curb/SW	1.31	47L - Left Horizontal Clear	0.0	54A - Left Feature	
50B - Width Right Curb/SW	1.31	47R - Right Horizontal Clear	24.0	54B - Left Underclearance	99 99
33 - Median	0	53 - Min Vert Clr Ov Deck	99 99	54C - Right Feature	
51 - Width Curb to Curb	23.95	100 - STRAHNET	0	54D - Right Clearance	99 99
52 - Width Out to Out	29.2	102 - Traffic Direct	2	Under Clearance Year	
112 - NBIS Length	Y	109 - Truck %	7	55A - Reference Feature	N
Inspection Data		110 - Truck Network	0	55B - Right Horiz Clearance	327.8
90 - Inspection Date	08/27/2015	114 - Future ADT	2872	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	0	110 - Truck Network	
93B - Und Water Insp Date		36B - Rail Transition	0	114 - Future ADT	
92C - Oth Spec Insp Req/Freq	N	36C - Approach Rail	0	115 - Year Future ADT	
93C - Oth Spec Insp Date		36D - Rail Termination	0	Freeway	
92D - Fatigue Req/Freq	N	67 - Structure Evaluation	5	Proposed Improvements	
93D - Fatigue Insp Date		68 - Deck Geometry	4	75 - Type of Work	
176A - Und Water Insp Method	1	69 - Underclearance	N	76 - Length of Improvement	
58 - Deck Rating	5	71 - Waterway Adequacy	8	94 - Bridge Cost	
58A/B - Deck Surface/Bottom	6 5	72 - Approach Alignment	8	95 - Roadway Cost	
59 - Superstructure Rating	5	103 - Temporary Structure		96 - Total Cost	
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	6
62 - Culvert Rating	N	98A - Border Bridge State		41 - Open, Posted, Closed	P
Navigation Data		98B - Border Bridge %		63 - Fed Oper Rtg Method	2
38 - Navigation Control	0	101 - Parallel Structure	N	64F - Fed Oper Rtg Load	82.9
39 - Vertical Clearance	0	EPA ID		64MA - Mich Oper Rtg Method	
40 - Horizontal Clearance	0	Stay in Place Forms		64MB - Mich Oper Rtg	144
111 - Pier Protection		143 - Pin & Hanger Code		64MC - Mich Oper Truck	
116 - Lift Brdg Vert Clear		148 - No. of Pin & Hangers		65 - Inv Rtg Method	2
				66 - Inventory Load	39.7
				70 - Posting	4
				141 - Posted Loading	73NNNN
				193 - Overload Class	

**MICHIGAN DEPARTMENT OF TRANSPORTATION**

**STR 6961**

**WORK RECOMMENDATIONS**

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**WORK RECOMMENDATIONS**

**R464**

<b>Inspector Name</b>	<b>Agency / Company Name</b>	<b>Insp. Freq.</b>	<b>Insp. Date</b>
Eric Rickert	Great Lakes Engineering Group	24	08/27/2015

**RECOMMENDATIONS & ACTION ITEMS**

Recommendation Type	Priority	Description
Apr. Pavement	H	Install advance posting signs
Railing Repair	M	Install newer approach rail. Fix west approach rail
Deck Patching	L	Place new chip seal on deck and clean edges
Super Repl.	M	Patch spalls/delaminated areas on tee beams
Other	M	Place down spouts on deck drains





Midland County 2015 Bridge Inspections  
Smiths Crossing Rd over Jo Drain  
SN 6961  
GLEG Project No. 1015-2-336  
August 27 2015

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*Road and  
bridge section  
facing south*



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*Chip seal  
peeling off of  
concrete  
surface*





---

*Bridge railing*



---

*Spalled brush  
block face at  
deck drain*







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*Upstream  
channel section*



---

*Downstream  
channel section*





---

*East elevation  
of bridge*



---

*South  
abutment*





---

*North  
abutment*



---

*Concrete tee  
beams*





---

*Leaching in tee  
beam*



---

*Deck bottom*





---

*Leaching in tee  
beam*



---

*Leaching  
cracks in  
bottom of tee  
beam*





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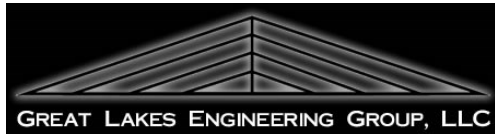
*Spall with  
exposed steel in  
beam 3W*



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*Spall in deck  
bottom with  
exposed steel*





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*West elevation  
of bridge*

