



MICHIGAN DEPARTMENT OF TRANSPORTATION

STR 6976

BRIDGE SAFETY INSPECTION REPORT

Facility	Latitude / Longitude	MDOT Structure ID	Structure Condition	
BROOKS ROAD	43.5397 / -84.214	56306H00009B010	Serious Condition(3)	
Feature	Length / Width	Owner		
JO DRAIN	24.9 / 29	County: Midland(56)		
Location	Built / Recon. / Paint / Ovly.	TSC	Operational Status	
0.2 MI W OF SCHREIBER RD	1938 / 1973 / /	Mt. Pleasant(4A)	P Posted for load(P)	
Region / County	Material / Design	Last NBI Inspection	Scour Evaluation	
Bay(4) / Midland(56)	3 Steel / 02 Stringer/Girder	08/25/2015 / JF3Z	3 SC - Unstable	

NBI INSPECTION

JF3Z

Inspector Name	Agency / Company Name	Insp. Freq.	Insp. Date
Eric Rickert	Great Lakes Engineering Group	12	08/25/2015

GENERAL NOTES

Fair/Poor. Posted at 25/34/39. Keep posting.
Lower frequency to 12 months

Posting Signs in Place YES



DECK

	08/11	08/13	08/15	
1. Surface (SIA-58A)	7	7	7	Chip seal over HMA with 1 longitudinal and 3 transverse cracks. Estimate 7" of HMA on deck. (08/15) Chip seal over HMA with 1 longitudinal and 3 transverse cracks. (08/13) 1 longitudinal and 3 transverse crack in bituminous. 7" of HMA on deck (08/11)
2. Expansion Joints	N	N	N	(08/15) Paved over. (08/13) (08/11)
3. Other Joints	N	N	N	(08/15) (08/13) (08/11)
4. Railings	7	7	6	Painted steel posts with W beam panel. Railing height is too short. Surface rust starting. (08/15) Painted steel posts with W beam panel. Railing height is too short. (08/13) W beam guardrail on painted steel posts. Railing posts have been painted. Bridge railing is vertically too short (08/11)
5. Sidewalks or Curbs	N	N	N	(08/15) (08/13) (08/11)
6. Deck Bottom Surface (SIA-58B)	3	3	3	Concrete deck with corrugated steel deck in widened section (bays 1s, 1n and 2n). Concrete deck: original outside bays (2s and 3n) have heavy spalling and delamination with exposed transverse steel. Approximately 30% of original outside bays are spalled or delaminated. Exposed transverse steel has heavy section loss. (08/15) Concrete deck with corrugated steel deck in widened section (bays 1s, 1n and 2n). Concrete deck: original outside bays (2s and 3n) have heavy spalling and delamination with exposed transverse steel. Deep spall in south bay at east end. Approximately 30% of original outside bays are spalled or delaminated. (08/13) Widen section, bays 1S 1N 2N, have corrugated decking. Original deck outside bays, 2S and 3N, have heavy spalling/delaminated concrete with exposed transverse steel. Approx 20-30% of original outside bays spalled delaminated. Deep spall in south bay, eastend. (08/11)

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7. Deck (SIA-58)	4	4	4	<p>Surface: Chip seal over HMA with 1 longitudinal and 3 transverse cracks.</p> <p>Bottom Surface: Concrete deck with corrugated steel deck in widened section (bays 1s, 1n and 2n). Concrete deck: original outside bays (2s and 3n) have heavy spalling and delamination with exposed transverse steel. Approximately 30% of original outside bays are spalled or delaminated. Exposed transverse steel has heavy section loss. (08/15)</p> <p>Surface: Chip seal over HMA with 1 longitudinal and 3 transverse cracks.</p> <p>Bottom Surface: Concrete deck with corrugated steel deck in widened section (bays 1s, 1n and 2n). Concrete deck: original outside bays (2s and 3n) have heavy spalling and delamination with exposed transverse steel. Deep spall in south bay at east end. Approximately 30% of original outside bays are spalled or delaminated. (08/13)</p> <p>Original deck outside bays have heavy spalling/delaminated concrete with exposed steel. Deep spall under EBD lane, eastend, local failure possible. (08/11)</p>
8. Drainage				<p>Off fascias. (08/15)</p> <p>Off fascias. (08/13)</p> <p>(08/11)</p>

SUPERSTRUCTURE

	08/11	08/13	08/15	
9. Stringer (SIA-59)	6	6	6	<p>Painted steel beams of different sizes. Rust starting on top flanges of original beams. Pitting noted below paint on top flanges of original beams. Plate between original fascia beams and first widening beam with steel plate on top of bottom flanges. Efflorescence around plate and bottom flanges. (08/15)</p> <p>Painted steel beams of different sizes. Rust starting on top flanges of original beams. Pitting noted below paint on top flanges of original beams. Plate between original fascia beams and first widening beam with steel plate on top of bottom flanges. Efflorescence around plate and bottom flanges. (08/13)</p> <p>Steel beams have been painted. Noted rust just starting along top flange of original beam. Noted pitting along top flanges of original beams (08/11)</p>
10. Paint (SIA-59A)	7	6	6	<p>Rust starting along top flanges of original beams. Less than 1% failure. (08/15)</p> <p>Rust starting along top flanges of original beams. Less than 1% failure. (08/13)</p> <p>Rust starting along top flanges (08/11)</p>
11. Section Loss	2	2	2	<p>Rust with pitted steel on original beam flanges at ends. (08/15)</p> <p>Rust with pitted steel on original beam flanges at ends. (08/13)</p> <p>Rust with pitted steel on original beam flanges. (08/11)</p>
12. Bearings	6	6	6	<p>Painted steel bearings. (08/15)</p> <p>Painted steel bearings. (08/13)</p> <p>Painted steel bearings (08/11)</p>

SUBSTRUCTURE

	08/11	08/13	08/15	
13. Abutments (SIA-60)	3	3	3	<p>Both abutments have been widened on both ends. In original section, 6 to 12" of footing face is exposed with 1' of soft silt below surface, but no undermining. East abutment has full depth 3/8" vertical crack at beam 5s. West abutment has a 1/16" vertical crack at beam 3s and a 1/4" vertical crack with a spall along the bottom at beam 5s. (08/15)</p> <p>Both abutments have been widened on both ends. In original section, 6 to 12" of footing face is exposed with 1' of soft silt below surface, but no undermining. East abutment has full depth 3/8" vertical crack at beam 5s. West abutment has a 1/16" vertical crack at beam 3s and a 1/4" vertical crack with a spall along the bottom at beam 5s. Keep inspection frequency at 24 months due no change in condition. (08/13)</p> <p>Both abutments, 12"-14" of face of footing exposed, no undermining noted. East abut has full depth crack 3/8" wide at beam 5S. West abut have a 1/16" wide vert crack at beam 3S and a 1/4" wide vert crack with spall along the bottom at beam 5S. Because of low traffic volumes, keep 24 month freq. (08/11)</p>
14. Piers (SIA-60)	N	N	N	<p>(08/15)</p> <p>(08/13)</p> <p>(08/11)</p>

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BRIDGE
WEIGHT LIMIT
XX TON
XX MILES AHEAD

15. Slope Protection	N	N	N	(08/15) (08/13) (08/11)
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APPROACH

08/11 08/13 08/15

16. Approach Pavement	6	6	6	Chip seal over HMA. Reflective cracks at reference lines. WB posting sign replaced (08/15) Chip seal over HMA. Reflective cracks at reference lines. Missing westbound posting sign. (08/13) HMA has transverse crack at east reference line and in west approach. (08/11)
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17. Approach	6	6	6	Grass shoulders. (08/15)
Shoulders				Grass shoulders. (08/13)
Sidewalks				Grass shoulders (08/11)

18. Approach Slopes	Short approach rail. (08/15)
	Short approach rail. (08/13)
	Short approach rail (08/11)

19. Utilities High voltage overhead electric just east of structure.
Steel conduit along north side. (08/15)
High voltage overhead electric just east of structure.
Steel conduit along north side. (08/13)
Steel conduit along northside (08/11)

20. Channel (SIA-61)	7	7	7	County drain with grass banks. No flow during inspection. (08/15)
				County drain with grass banks. No flow during inspection. (08/13)
				County drain with grass banks, no flow during inspection. (08/11)

21. Drainage	(08/15)
Culverts	(08/13)
	(08/11)

MISCELLANEOUS

Other Items

Item	Rating
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71. Water Adequacy 6

72. Approach Alignment 8

Temporary Support 0 No Temporary Supports

High Load Hit (M)	No
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Special Insp. Equipment 2

Underwater Insp. Method 1

N/A - No False Decking

Critical Feature Inspections (SIA-92)

Freq	Date
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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

27 - Year Built	1938
106 - Year Reconstructed	1973
202 - Year Painted	
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	1
80 - Post Type	0
107 - Deck Type	1
108A - Wearing Surface	6
108B - Membrane	0
108C - Deck Protection	0

Structure Dimensions

34 - Skew	30
35 - Struct Flared	0
45 - Num Main Spans	1
46 - Num Apprs Spans	0
48 - Max Span Length	23
49 - Structure Length	24.9
50A - Width Left Curb/SW	0
50B - Width Right Curb/SW	0
33 - Median	0
51 - Width Curb to Curb	28.87
52 - Width Out to Out	29
112 - NBIS Length	Y

Inspection Data

90 - Inspection Date	08/25/2015
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	4
58A/B - Deck Surface/Bottom	7 3
59 - Superstructure Rating	6
59A - Paint Rating	6
60 - Substructure Rating	3
61 - Channel Rating	7
62 - Culvert Rating	N

Navigation Data

38 - Navigation Control	0
39 - Vertical Clearance	0
40 - Horizontal Clearance	0
111 - Pier Protection	
116 - Lift Brgd 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	0000008935 08
19 - Detour Length	1
20 - Toll Facility	3
26 - Functional Class	09
28A - Lanes On	2
29 - ADT	163
30 - Year of ADT	1999
32 - Appr Roadway Width	25.92
32A/B - Ap Pvt Type/Width	4 25.98
42A - Service Type On	1
47L - Left Horizontal Clear	0.0
47R - Right Horizontal Clear	28.5
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	242
115 - Year Future ADT	2019
Freeway	0

Structure Appraisal

36A - Bridge Railing	0
36B - Rail Transition	0
36C - Approach Rail	0
36D - Rail Termination	0
67 - Structure Evaluation	3
68 - Deck Geometry	6
69 - Underclearance	N
71 - Waterway Adequacy	6
72 - Approach Alignment	8
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	37 1
76 - Length of Improvement	24.9
94 - Bridge Cost	89
95 - Roadway Cost	10
96 - Total Cost	110
97 - Year of Cost Estimate	1993



Load Rating and Posting

31 - Design Load	6
41 - Open, Posted, Closed	P
63 - Fed Oper Rtg Method	1
64F - Fed Oper Rtg Load	26.4
64MA - Mich Oper Rtg Method	1
64MB - Mich Oper Rtg	57.2
64MC - Mich Oper Truck	18
65 - Inv Rtg Method	1
66 - Inventory Load	15.8
70 - Posting	1
141 - Posted Loading	253439
193 - Overload Class	

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WORK RECOMMENDATIONS

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WORK RECOMMENDATIONS

JF3Z

Inspector Name	Agency / Company Name	Insp. Freq.	Insp. Date
Eric Rickert	Great Lakes Engineering Group	12	08/25/2015

RECOMMENDATIONS & ACTION ITEMS

Recommendation Type	Priority	Description
Railing Repair	M	Install new rail and approach rail
Deck Patching	L	Seal cracks in bituminous
Substr Repair	H	Grout cracks in abutment
Bridge Repl.	M	Full replacement
Other	H	Place riprap at both abutments.



Midland County 2015 Bridge Inspections
Brooks Rd over Jo Drain
SN 6976
GLEG Project No. 1015-2-336
August 25, 2015

*Road and
bridge section
facing west*



Posting sign





Midland County 2015 Bridge Inspections
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*Chip seal
surface*



Bridge railing





*Upstream
channel section*



*Downstream
channel section*





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*North elevation
of bridge*



East abutment



West abutment



*Exposed
footing, typical*



*Spall with
exposed steel in
deck bottom*



*Vertical crack
in east
abutment*





Midland County 2015 Bridge Inspections
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*Spalls in deck
bottom*



*North elevation
of bridge*



East abutment



West abutment

