STR 6945 BRIDGE SAFETY INSPECTION REPORT					
Facility	Latitude / Longitude	MDOT Structure ID	Structure Condition	Ł	
MAGRUDDER ROAD	43.5855 / -84.5084	56200053000B010	Fair Condition(5)	F	
Feature	Length / Width	Owner			
CHIPPEWA RIVER	161.71 / 34.12	County: Midland(56)			
Location	Built / Recon. / Paint / Ovly.	TSC	Operational Status		
100 FT S OF CHIPPEWA RD	1989 / / /	Mt. Pleasant(4A)	A Open, no restriction(A)		
Region / County	Material / Design	Last NBI Inspection	Scour Evaluation		
Bay(4) / Midland(56)	5 Prestressed Concrete / 05 Multiple Box Beam	09/22/2015 / KERG	5 Stable w/in footing		

NBI INSPECTION					
Inspector Name	Agency / Company Name	Insp. Freq.	Insp. Date		
Eric Rickert	Great Lakes Engineering Group	24	09/22/2015		

GENERAL NOTES

Good/fair. Patch fascia beams over pier. Remove debris on pier.

DECK				
	09/11	09/13	09/15	
1. Surface (SIA-58A)	5	5	5	Chip seal with map cracks in north 20 ft of both lanes. (09/15) Chip seal with reflective map cracks in northbound lane in south span. (09/13) In south span, map cracks in bit throughout northbound lane and in half of southbound lane, in north span map cracks in both lanes. Crack spacing 1'-6'. (09/11)
2. Expansion Joints	5	5	5	Estimate 75% of concrete header spalled/patched. Joint full of sand. Chip seal over joint. (09/15) Estimate 75% of concrete header spalled/patched. Joint full of sand. Chip seal over joint. (09/13) Estimate 75% of concrete header spalled/patched. Joint full of sand (09/11)
3. Other Joints	Ν	Ν	Ν	(09/15) (09/13) (09/11)
4. Railings	7	7	7	Concrete open parapet rail. Surface sealer on inside of railing, hairline cracks on outside. (09/15) Concrete open parapet rail. Surface sealer on inside of railing, hairline cracks on outside. (09/13) Surface sealer on inside of railing, hairline cracks on outside. (09/11)
5. Sidewalks or Curbs	Ν	Ν	Ν	(09/15) (09/13) (09/11)
6. Deck Bottom Surface (SIA-58B)	Ν	N	Ν	Adjacent box beams. (09/15) Adjacent box beams. (09/13) Side by side box beams (09/11)
7. Deck (SIA-58)	7	7	6	Noted efflorescence with stalactites in north and south span grout joints. (09/15) Noted efflorescence in north and south span grout joints. (09/13) Noted efflorescence in north and south span grout joints (09/11)
8. Drainage				(09/15) Off fascias. (09/13) (09/11)

SUPERSTRUCTURE

09/11 09/13 09/15

STR 6945				BRIDGE SAFETY INS	PECTION REPORT	
Facility MAGRUDDER ROA Feature CHIPPEWA RIVER Location 100 FT S OF CHIPP Region / County Bay(4) / Midland(56	PEWA RD		43.58 Lengt 161.7 Built / 1989 Mater 5 Pres	ide / Longitude 55 / -84.5084 th / Width 1 / 34.12 / Recon. / Paint / Ovly. / / / ial / Design stressed Concrete / 05 be Box Beam	MDOT Structure ID 56200053000B010 Owner County: Midland(56) TSC Mt. Pleasant(4A) Last NBI Inspection 09/22/2015 / KERG	Structure Condition Fair Condition(5)Image: Condition(5)Operational Status A Open, no restriction(A) Scour Evaluation 5 Stable w/in footing
9. Stringer (SIA-59)	5	5	5	Stirrups are rusting with he South span: east fascia ha south end and north end, ' spall at north 1/4 point, we North span: east fascia ha north and south ends, eas 2S, 3S, 4S, spalled grout a in west fascia. (09/15) Both east and west fascia Stirrups are rusting with he end and north end, 1'x2' de pocket 2S has a spall in gr fascia has hairline cracks p east fascia post tension po Both east and west fascia Stirrups are rusting with he southend and northend, 1' tension pocket 2S has a sp northend, east fascia has	eavy scale. Is a hairline leaching crack l'x2' delamination at abuth st fascia post tension poch as a 1sft spall near south e t fascia has hairline cracks at east fascia post tension beams over pier have spa eavy scale. South span: h elamination at abutment in rout. North span: hairline propagating from post tens pocket 5S, 2 hairline shear of beams over pier have spa eavy scale. South span: h v2' delamination at abutment pairline grout. North span: hairline cracks propagating	Ils full beam height with exposed stirrups. t, hairline shear crack in west fascia hent in west fascia, west fascia has a 1sft tet 2S has a spall in grout. and, hairline shear crack in east fascia propagating from post tension pockets pocket 5S, 2 hairline shear cracks at pier Ils full beam height with exposed stirrups. hairline shear crack in west fascia south west fascia, west fascia post tension shear crack in east fascia post tension shear crack in east fascia north end, east ison pockets 2S, 3S, 4S, spalled grout at cracks at pier in west fascia. (09/13) Ils full beam height with exposed stirrups. hairline shear crack in east fascia ent in west fascia, west fascia post hairline shear crack in east fascia prom post tension pockets 2S 3S 4S, hairline shear cracks at pier in west
10. Paint (SIA-59A)	Ν	Ν	Ν	(09/15) (09/13) (09/11)		
11. Section Loss	Ν	Ν	Ν	(09/15) (09/13) (09/11)		
12. Bearings	8	8	8	Elastomeric pads in place. Elastomeric pads in place. Elastomeric pads in place	(09/13)	
SUBSTRUCTURE						
	09/11	09/13	09/15			
13. Abutments (SIA-60)	7	7	7	All 4 abutment corners/retr All 4 abutment corners/retr All 4 abutment corners/retr	urnwall have hairline shrinl	kage/ASR cracks. (09/13)
14. Piers (SIA-60)	7	7	6	Hairline to 1/16" vertical cr Hairline to 1/16" vertical cr Hairline to 1/16" vertical cr	ack at west end. (09/13)	uck on pier (09/15)
15. Slope Protection	5	5	5	edges of riprap from roady Estimate 50% of riprap at edges of riprap from roady Estimate 50% of riprap at	vay runoff. At south abutm north abutment has been r vay runoff. At south abutm north abutment has been r	noved into stream. Noted erosion along nent, 5-10% missing. (09/15) noved into stream. Noted erosion along nent, 5-10% missing. (09/13) noved into stream. Noted erosion along nent, 5-10% missing (09/11)
APPROACH						
	09/11	09/13	09/15			
16. Approach Pavement	6	7	6	cracking. (09/15) Chip sealed. Wedging at I	north and south reference	eent. North approach has alligator lines visible through chip seal. (09/13) oproaches have alligator cracking in SBD

STR 6945				BRIDGE SAFETY INS	PECTION REPORT		
Facility			Latit	ude / Longitude	MDOT Structure ID	Structure Condition	1
MAGRUDDER ROAD			43.5	855 / -84.5084	56200053000B010	Fair Condition(5)	
Feature			Leng	gth / Width	Owner		
CHIPPEWA RIVER			161.	71 / 34.12	County: Midland(56)		
Location			Built	: / Recon. / Paint / Ovly.	TSC	Operational Status	
100 FT S OF CHIPPEW	/A RD		1989) / / /	Mt. Pleasant(4A)	A Open, no restriction(A)	
Region / County			Mate	erial / Design	Last NBI Inspection	Scour Evaluation	
Bay(4) / Midland(56)				estressed Concrete / 05 ple Box Beam	09/22/2015 / KERG	5 Stable w/in footing	
17. Approach Shoulders Sidewalks	6	6	6	HMA shoulders with appro	bach curb and gutter. (09/15 bach curb and gutter. (09/13 bach curb and gutter (09/11)	3)	
18. Approach Slopes				Northeast radius rail repaired. (09/15) Northeast radius rail damaged. (09/13) NE radius rail damaged (09/11)			
19. Utilities				Conduit on west side. (09/ Conduit on west side. (09/ Conduit on westside (09/1	/13)		
20. Channel (SIA-61)	7	7	7	Wooded channel banks, d Wooded channel banks. (Wooded channel banks. (
21. Drainage Culverts				(09/15) (09/13) (09/11)			
MISCELLANEOUS							
Guard Rail				(Other Items		

Guard Rail		Other Items	
Item	Rating	Item	Rating
36A. Bridge Railings	1	71. Water Adequacy	8
36B. Transitions	1	72. Approach Alignment	6
36C. Approach Guardrail	1	Temporary Support	0 No Temporary Supports
36D. Approach Guardrail Ends	1	High Load Hit (M)	No
		Special Insp. Equipment	2
		Underwater Insp. Method	1

N/A - No False Decking

False Decking (Timber) Removed to Complete Inspection

Freq

Date

Critical Feature Inspections (SIA-92)

92A. Fracture Critical 92B. Underwater

92C. Other Special

92D. Fatigue Sensitive

STR 6945		STRUCTURE INVENTOR	Y AND APPRAIS	AL	
Facility	Latitu	ide / Longitude	MDOT Structure I	D Structure Condition	
MAGRUDDER ROAD	43.58	55 / -84.5084	56200053000B010	Fair Condition(5)	
Feature	Length / Width		Owner		
CHIPPEWA RIVER	161.7	1 / 34.12	County: Midland(56	6)	
Location	Built	/ Recon. / Paint / Ovly.	TSC	Operational Status	
100 FT S OF CHIPPEWA RI		-	Mt. Pleasant(4A)	A Open, no restriction(A	۹)
Region / County		rial / Design	Last NBI Inspectio		-7
Bay(4) / Midland(56)		stressed Concrete / 05	09/22/2015 / KER		
		ble Box Beam	00/22/2010 / 11211		
Bridge History, Type,	Materials	Route Carried By Strue	cture(ON Record)	Route Under Structure (UN	DER Record)
27 - Year Built	1989	5A - Record Type	1	5A - Record Type	
106 - Year Reconstructed		5B - Route Signing	4	5B - Route Signing 5C - Level of Service	
202 - Year Painted 203 - Year Overlay		5C - Level of Service 5D - Route Number	00000	5D - Route Number	
43 - Main Span Bridge Type	5 05	5E - Direction Suffix	0	5E - Direction Suffix	
44 - Appr Span Bridge Type	0 00	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	1	Control Section		Control Section	
80 - Post Type	0	11 - Mile Point	0	11 - Mile Point	
107 - Deck Type	2	12 - Base Highway Network		12 - Base Highway Network	
108A - Wearing Surface	6	13 - LRS Route-Subroute	0000008853 01	13 - LRS Route-Subroute	
108B - Membrane 108C - Deck Protection	1	19 - Detour Length	8 3	19 - Detour Length	
		20 - Toll Facility 26 - Functional Class	09	20 - Toll Facility 26 - Functional Class	
Structure Dimens		28A - Lanes On	2	28B - Lanes Under	
34 - Skew	0	29 - ADT	305	29 - ADT	
35 - Struct Flared	0	30 - Year of ADT	1999	30 - Year of ADT	
45 - Num Main Spans 46 - Num Apprs Spans	2	32 - Appr Roadway Width	34.12	42B - Service Type Under	5
48 - Max Span Length	81	32A/B - Ap Pvt Type/Width	4 33.99	47L - Left Horizontal Clear	
49 - Structure Length	161.7	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 Clea	r <u>31.8</u> 99 99	54B - Left Underclearance	99 99
33 - Median	0	53 - Min Vert Clr Ov Deck 100 - STRAHNET	0	54C - Right Feature 54D - Right Clearance	99 99
51 - Width Curb to Curb	32.15	102 - Traffic Direct	2	Under Clearance Year	00 100
52 - Width Out to Out	34.12	109 - Truck %	5	55A - Reference Feature	Ν
112 - NBIS Length	Υ	110 - Truck Network	0	55B - Right Horiz Clearance	327.8
Inspection Dat		114 - Future ADT	453	56 - Left Horiz Clearance	0
90 - Inspection Date	09/22/2015	115 - Year Future ADT	2019	100 - STRAHNET	
91 - Inspection Freq	24	Freeway	0	102 - Traffic Direct	
92A - Frac Crit Req/Freq	N	Structure Ap	prai <u>sal</u>	109 - Truck % 110 - Truck Network	
93A - Frac Crit Insp Date 92B - Und Water Reg/Freg	N	36A - Bridge Railing	1	114 - Future ADT	
93B - Und Water Insp Date		36B - Rail Transition	1	115 - Year Future ADT	
92C - Oth Spec Insp Reg/Freg	N	36C - Approach Rail	1	Freeway	
93C - Oth Spec Insp Date		36D - Rail Termination	1	Proposed Improve	monte
92D - Fatigue Req/Freq	Ν	67 - Structure Evaluation 68 - Deck Geometry	5	75 - Type of Work	
93D - Fatigue Insp Date		69 - Underclearance	N	76 - Length of Improvement	
176A - Und Water Insp Method	1	71 - Waterway Adequacy	8	94 - Bridge Cost	
58 - Deck Rating	6	72 - Approach Alignment	6	95 - Roadway Cost	
58A/B - Deck Surface/Bottom	5 N	103 - Temporary Structure		96 - Total Cost	
59 - Superstructure Rating 59A - Paint Rating	5 N	113 - Scour Criticality	5	97 - Year of Cost Estimate	
60 - Substructure Rating	6	Miscellan	eous	Load Rating and Po	ostina
61 - Channel Rating	7	37 - Historical Significance	5	31 - Design Load	6
62 - Culvert Rating	N	98A - Border Bridge State		41 - Open, Posted, Closed	Ā
Navigation Dat		98B - Border Bridge %		63 - Fed Oper Rtg Method	4
38 - Navigation Control	0	101 - Parallel Structure	Ν	64F - Fed Oper Rtg Load	57.1
39 - Vertical Clearance	0	EPA ID		64MA - Mich Oper Rtg Method	
40 - Horizontal Clearance	0	Stay in Place Forms		64MB - Mich Oper Rtg	77
111 - Pier Protection		143 - Pin & Hanger Code		64MC - Mich Oper Truck	4
116 - Lift Brdg Vert Clear		148 - No. of Pin & Hangers		65 - Inv Rtg Method 66 - Inventory Load	34.2
				00 - Inventory Luau	J7.2

5

70 - Posting 141 - Posted Loading 193 - Overload Class

STR 6945				
Facility	Latitude / Longitude	MDOT Structure ID	Structure Condition	<u>e</u> r
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CHIPPEWA RIVER	161.71 / 34.12	County: Midland(56)		
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Region / County	Material / Design	Last NBI Inspection	Scour Evaluation	
Bay(4) / Midland(56)	5 Prestressed Concrete / 05 Multiple Box Beam	09/22/2015 / KERG	5 Stable w/in footing	

WORK RECOMMENDATIONS

WORK RECOMMENDATIONS KE							
Inspector Name	Agency / Company Name	Insp. Freq.	Insp. Date				
Eric Rickert	Great Lakes Engineering Group	24	09/22/2015				
RECOMMENDATIONS & ACTION	RECOMMENDATIONS & ACTION ITEMS						
Recommendation Type	Priority	Description					
Slope Repair	L	Place riprap at north slope and repair eroded areas					
Scour Repair	Н	Remove debris stuck on pier					
Joint Repair	М	Replace joint					
Overlay	М	Mill and apply waterproofing membrane and repave					
Super Repl.	Н	Patch beam ends over pier an	d replace joint.				





Road and bridge section facing north

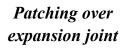


Chip seal surface



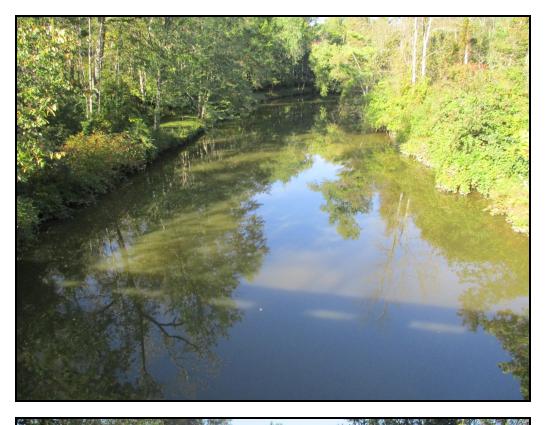


Bridge railing









Upstream channel section

Downstream channel section







East elevation of bridge

Leaching shear crack in east fascia beam





South abutment



Pier





Bottom of box beams

Spall in west fascia, south span





Exposed resteel in east fascia over pier



Spall and leaching crack in east fascia, north span







Bottom of box beams



North abutment





ASR cracks in north abutment



North abutment