

MICHIGAN DEPARTMENT OF TRANSPORTATION

STR 13 CULVERT SAFETY INSPECTION REPORT

Facility HURBERT ROAD	Latitude / Longitude 44.8591 / -83.5953	MDOT Structure ID 01200010000B010	Structure Condition Poor Condition(4)	
Feature THUNDER BAY RIVER	Length / Width / Spans 65 / 36.7 / 5	Owner County: Alcona(1)		
Location 1 MI N 6.5 MI W OF SPRUCE	Built / Recon. / Paint / Ovly. 1955 / / /	TSC Alpena(1)	Operational Status P Posted for load(162441)	
Region / County North(2) / Alcona(1)	Material / Design 3 Steel / 19 Culvert	Last NBI Inspection 05/13/2025 / 4ZDC	Scour Evaluation 5 Stable w/in footing	

CULVERT INSPECTION 4ZDC

Inspector Name Joel Thorne	Agency / Company Name Great Lakes Engineering Group	Insp. Freq. 12	Insp. Date 05/13/2025
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GENERAL NOTES

HMA over culvert has a few full width transverse cracks including at east reference line. Settlement in the north shoulder over barrels 2W and 3W.

Weight limit signs in place on both ends of bridge	YES
Weight limit shown on signs at bridge	162441
Required advance warning weight limit signs in place	YES
Weight limit shown on advance warning signs	162441

NBI INSPECTION

	05/23	05/24	05/25	
1. Culvert Rating (SIA-62)	4	4	4	(05/25) (05/24) (05/23)
2. Channel (SIA-61)	5	5	5	Fast flow from south to north through barrels. Riprap in channel along upstream side. Channel deepens to 6'-8' deep 10' downstream of culvert. Timber debris stuck at the inlet of barrels 4W & 5W. Rocky and sandy channel bottom on both ends. (05/25) Fast flow from south to north through barrels. Riprap in channel along upstream side. Channel deepens to 6'-8' deep 10' downstream of culvert. Timber debris stuck at the inlet of barrel 3W removed. Rocky and sandy channel bottom on both ends. (05/24) Fast flow from south to north through barrels. Riprap in channel along upstream side. Channel deepens to 6'-8' deep 10' downstream of culvert. Timber debris stuck at the inlet of barrel 3W, debris is accelerating flow through barrels 1W-3W. Rocky and sandy channel bottom on both ends. Water is roughly 6"-12" higher than previous inspections. (05/23)
3. Scour	4	4	4	Small pockets of undermining up to 6" deep between barrels 1W/2W & 2W/3W on upstream end, and 2W/3W on downstream end. Fast flow through barrels is creating a scour hole 10' downstream of culvert. (05/25) Fast flow through barrels creating a scour hole 10' downstream of culvert. Upstream end, small pockets of undermining up to 6" deep between barrels 1W/2W and 2W/3W, and at downstream end between barrels 2W/3W. (05/24) Fast flow through barrels creating a scour hole 10' downstream of culvert. Upstream end, small pockets of undermining up to 6" deep between barrels 1W/2W and 2W/3W, and at downstream end between barrels 2W/3W. (05/23)

AASHTO ELEMENTS (English Units)

Element Number	Element Name	Total Quantity	Unit	Good CS1	Fair CS2	Poor CS3	Severe CS4
Culvert							
240	Steel Culvert	184	ft	0 0%	0 0%	144 78%	40 22%


5-barrel CMP. Heavy rust and scale below the waterline of all five barrels. Settlement in north shoulder over barrels 2W and 3W.
 Barrel 1W: No holes along either waterline.
 Barrel 2W: Heavier scale along the east waterline with 6 existing hole.
 Barrel 3W: 3 holes along east waterline.
 Barrel 4W: Numerous holes along the full length of east wall.
 Barrel 5W: Numerous holes along the full length of east wall.

863	Culvert Headwall	2		0	0	0	2
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0% 0% 0% 100%

Concrete headwalls. Both have leaching horizontal cracks throughout and heavy spalling/scaling along the top and near the waterline.

MISCELLANEOUS

Guard Rail

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

Other Items

Item	Rating
71. Water Adequacy	7
72. Approach Alignment	8
Special Insp. Equipment	2
Underwater Insp. Method	1


RECOMMENDATIONS & ACTION ITEMS

Recommendation Type	Priority	Description
Seal Cracks	L	Seal cracks in surface as needed.
Header Repair	H	Patch spalls and delamination in headwalls.
Culvert Repl.	H	Schedule replacement.
Other	M	Fill in low spot/settlement along north shoulder.

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North(2) / Alcona(1)	3 Steel / 19 Culvert	05/13/2025 / 4ZDC		

SUPPORTING IMAGES

4ZDC 05/13/2025



Document Name: IMG_0180.JPG
 Category: Elevation
 Span Number:
 Comments: South elevation

Document Name: IMG_0198.JPG
 Category: Elevation
 Span Number:
 Comments: North elevation




Document Name: IMG_0170.JPG
 Category: Posting
 Span Number:
 Comments: WB advanced load posting

Document Name: IMG_0171.JPG
 Category: Posting
 Span Number:
 Comments: EB advanced load posting

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Document Name: IMG_0172.JPG
 Category: Posting
 Span Number:
 Comments: EB load posting



Document Name: IMG_0173.JPG
 Category: Posting
 Span Number:
 Comments: WB load posting



Document Name: IMG_0174.JPG
 Category: Approach
 Span Number:
 Comments: Looking west



Document Name: IMG_0176.JPG
 Category: Railing
 Span Number:
 Comments: South rail

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Document Name: IMG_0178.JPG
 Category: Railing
 Span Number:
 Comments: North rail



Document Name: IMG_0175.JPG
 Category: Deck
 Span Number:
 Comments: HMA surface



Document Name: IMG_0181.JPG
 Category: Culvert
 Span Number:
 Comments: Barrel 1W, west wall




Document Name: IMG_0182.JPG
 Category: Culvert
 Span Number:
 Comments: Barrel 1W, east wall

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Document Name: IMG_0183.JPG
 Category: Culvert
 Span Number:
 Comments: Barrel 1W, soffit



Document Name: IMG_0184.JPG
 Category: Culvert
 Span Number:
 Comments: Barrel 2W, west wall



Document Name: IMG_0185.JPG
 Category: Culvert
 Span Number:
 Comments: barrel 2W, east wall




Document Name: IMG_0186.JPG
 Category: Culvert
 Span Number:
 Comments: Barrel 2W, soffit

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Document Name: IMG_0187.JPG
 Category: Culvert
 Span Number:
 Comments: Barrel 3W, west wall



Document Name: IMG_0188.JPG
 Category: Culvert
 Span Number:
 Comments: Barrel 3W, east wall



Document Name: IMG_0189.JPG
 Category: Culvert
 Span Number:
 Comments: Barrel 3W, soffit




Document Name: IMG_0190.JPG
 Category: Culvert
 Span Number:
 Comments: barrel 4W, west wall

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Document Name: IMG_0191.JPG
 Category: Culvert
 Span Number:
 Comments: Barrel 4W, east wall



Document Name: IMG_0192.JPG
 Category: Culvert
 Span Number:
 Comments: Barrel 4W, soffit



Document Name: IMG_0193.JPG
 Category: Culvert
 Span Number:
 Comments: Barrel 5W, west wall




Document Name: IMG_0194.JPG
 Category: Culvert
 Span Number:
 Comments: Barrel 5W, east wall

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North(2) / Alcona(1)	3 Steel / 19 Culvert	05/13/2025 / 4ZDC		



Document Name: IMG_0195.JPG
 Category: Culvert
 Span Number:
 Comments: Barrel 5W, soffit



Document Name: IMG_0196.JPG
 Category: Culvert
 Span Number:
 Comments: Hole poked, typical



Document Name: IMG_0197.JPG
 Category: Culvert
 Span Number:
 Comments: Area of heavy rust and scale



Document Name: IMG_0199.JPG
 Category: Culvert
 Span Number:
 Comments: Heavy scale in north headwall

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Document Name: IMG_0201.JPG
 Category: Culvert
 Span Number:
 Comments: Heavy scale in south headwall



Document Name: IMG_0177.JPG
 Category: Channel
 Span Number:
 Comments: South channel



Document Name: IMG_0179.JPG
 Category: Channel
 Span Number:
 Comments: North channel




Document Name: IMG_0200.JPG
 Category: Channel
 Span Number:
 Comments: Timber debris blocking inlet of barrels 4W & 5W

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STRUCTURE INVENTORY AND APPRAISAL

Facility	Latitude / Longitude	MDOT Structure ID	Structure Condition	
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Bridge History, Type, Materials	
27 - Year Built	1955
106 - Year Reconstructed	
202 - Year Painted	
203 - Year Overlay	
43 - Main Span Bridge Type	3 19
44 - Appr Span Bridge Type	
77 - Steel Type	2
78 - Paint Type	3
79 - Rail Type	1
80 - Post Type	0
107 - Deck Type	N
108A - Wearing Surface	N
108B - Membrane	0
108C - Deck Protection	0

Structure Dimensions	
34 - Skew	0
35 - Struct Flared	N
45 - Num Main Spans	5
46 - Num Apprs Spans	0
48 - Max Span Length	12.8
49 - Structure Length	65
50A - Width Left Curb/SW	0
50B - Width Right Curb/SW	0
33 - Median	0
51 - Width Curb to Curb	33.1
52 - Width Out to Out	36.7
112 - NBIS Length	Y

Inspection Data	
90 - Inspection Date	05/13/2025
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	N
58A/B - Deck Surface/Bottom	
59 - Superstructure Rating	N
59A - Paint Rating	
60 - Substructure Rating	N
61 - Channel Rating	5
62 - Culvert Rating	4

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	0000017262 07
19 - Detour Length	1
20 - Toll Facility	3
26 - Functional Class	07
28A - Lanes On	2
29 - ADT	1730
30 - Year of ADT	2003
32 - Appr Roadway Width	33.1
32A/B - Ap Pvt Type/Width	3 31.99
42A - Service Type On	1
47L - Left Horizontal Clear	0.0
47R - Right Horizontal Clear	30.2
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	2375
115 - Year Future ADT	2023
Freeway	0

Structure Appraisal	
36A - Bridge Railing	1
36B - Rail Transition	1
36C - Approach Rail	1
36D - Rail Termination	1
67 - Structure Evaluation	2
68 - Deck Geometry	5
69 - Underclearance	N
71 - Waterway Adequacy	7
72 - Approach Alignment	8
103 - Temporary Structure	
113 - Scour Criticality	5

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	99.9
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	31	1
76 - Length of Improvement	100	
94 - Bridge Cost	675	
95 - Roadway Cost	80	
96 - Total Cost	90	
97 - Year of Cost Estimate	2003	

Load Rating and Posting		
31 - Design Load	0	
41 - Open, Posted, Closed	P	
63 - Fed Oper Rtg Method	6	
64F - Fed Oper Rtg Load	.53	
64MA - Mich Oper Rtg Method	6	
64MB - Mich Oper Rtg	.94	
64MC - Mich Oper Truck	6	
65 - Inv Rtg Method	6	
66 - Inventory Load	.32	
70 - Posting	0	
141 - Posted Loading	162441	
193 - Overload Class		