

MICHIGAN DEPARTMENT OF TRANSPORTATION

STR 1295

BRIDGE SAFETY INSPECTION REPORT

Facility V DR SO	Latitude / Longitude 42.08626 / -85.269425	MDOT Structure ID 13200004000B010	Structure Condition Fair Condition(5)	
Feature NOTTAWA CREEK	Length / Width 119.82 / 29.53	Owner County: Calhoun(13)		
Location ATHENS TWP SEC 32	Built / Recon. / Paint / Ovly. 1958 / / /	TSC Marshall(5C)	Operational Status P Posted for load(P)	
Region / County Southwest(5) / Calhoun(13)	Material / Design 1 Concrete / 04 Tee Beam	Last NBI Inspection 09/30/2013 / K2J9	Scour Evaluation 5 Stable w/in footing	

NBI INSPECTION

K2J9

Inspector Name	Agency / Company Name	Insp. Freq.	Insp. Date
Angie Kline	Calhoun County Road Department	24	09/30/2013

GENERAL NOTES

Joe Michalsky was lead inspector on site during the inspection. Portals in place. Posting signs in place, 29/37/41. Channel bottom is VERY silty. Silt depositis in span 1w make wadding or walking very difficult.

Posting Signs in Place YES

DECK

09/09 09/11 09/13

1. Surface (SIA-58A)	6	6	5	<p>Bit overlay. Raveling typical at both shoulders. Joints paved over with cracks reflecting thru at supports. W reference line open and unsealed. Many previous patches over both piers. Voids forming around patches, some patches have scaled off. Open crack at first pier from west to 1/8" and at second pier from west to 1/4" wide. Bit has settled into pothole. Gouges in EB lane. Previous patches in span 3w at centerline. Vegetation growth at joints. (09/13)</p> <p>Bit overlay. Raveling typical at both shoulders. Joints paved over with cracks reflecting thru at supports. W reference line open and unsealed. Many previous patches over both piers. Voids forming around patches, some patches have scaled off. Open crack at first pier from west to 1/8" and at second pier from west to 1/4" wide. Bit has settled into pothole. Gouges in EB lane. Previous patches in span 3w at centerline. Vegetation growth at joints. (09/11)</p> <p>Bit overlay. Raveling typical at both shoulders. Joints paved over with cracks reflecting thru at supports. W reference line open and unsealed. Many previous patches over both piers. Voids forming around patches, some patches have scaled off. Open crack at first pier from west to 1/8" and at second pier from west to 1/4" wide. Original concrete deck exposed at Joint 2w. Bit has settled into pothole. Gouges in EB lane. Previous patches in span 3w at centerline. Vegetation growth at joints. (09/09)</p>
2. Expansion Joints	N	N	N	(09/13) (09/11) (09/09)
3. Other Joints	4	4	4	<p>West reference line: Open to 1/8" with no spalling. Over west pier: 90% sealed with HMA & cold patch. Over east pier: 75% sealed with small voids forming. East reference line: 75% sealed. Small voids forming. (09/13)</p> <p>West reference line: Open to 1/8" with no spalling. Over west pier: 90% sealed with HMA & cold patch. Over east pier: 75% sealed with small voids forming. East reference line: 75% sealed. Small voids forming. (09/11)</p> <p>W reference line open and unsealed. Many previous bit repairs over piers. Voids forming around these patches. Open cracks at both piers to a maximum width of 1/4". Deck exposed at both approach joints. (09/09)</p>

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4. Railings	4	4	4	<p>Decorative metal railing on concrete posts. Metal rail exhibits rusting on about 50% of surface. Corrosion has caused holes to form in top and bottom horizontal rails. Some vert spindles have disconnected at S rail. Extensive LOS at S rail between posts 10w and 11w. Cover plate covering railing to post connection is typically unattached. Conc posts have minor surface scaling especially at top and have occasional surface spalls and popouts. Some posts have map cracked areas. Concrete brush block exhibits scaling at beveled edge and minor spalling at corners. Guardrail in all 4 approach quadrants but not attached to bridge rail in NE quadrant. NE approach guardrail meets current standards. Impact damage in approach at NW guardrail. (09/13)</p> <p>Decorative metal railing on concrete posts. Metal rail exhibits rusting on about 50% of surface. Corrosion has caused holes to form in top and bottom horizontal rails. Some vert spindles have disconnected at S rail. Extensive LOS at S rail between posts 10w and 11w. Cover plate covering railing to post connection is typically unattached. Conc posts have minor surface scaling especially at top and have occasional surface spalls and popouts. Some posts have map cracked areas. Concrete brush block exhibits scaling at beveled edge and minor spalling at corners. Guardrail in all 4 approach quadrants but not attached to bridge rail in NE quadrant. NE approach guardrail meets current standards. Impact damage in approach at NW guardrail. (09/11)</p> <p>Decorative metal railing on concrete posts. Metal rail exhibits rusting on about 50% of surface. Corrosion has caused holes to form in top and bottom horizontal rails. Some vert spindles have disconnected at S rail. Extensive LOS at S rail between posts 10w and 11w. Cover plate covering railing to post connection is typically unattached. Conc posts have minor surface scaling especially at top and have occasional surface spalls and popouts. Some posts have map cracked areas. Concrete brush block exhibits scaling at beveled edge and minor spalling at corners. Guardrail in all 4 approach quadrants but not attached to bridge rail in NE quadrant. NE approach guardrail meets current standards. Impact damage in approaches at NE, NW and SE guardrails. (09/09)</p>
5. Sidewalks or Curbs	N	N	N	(09/13) (09/11) (09/09)
6. Deck Bottom Surface (SiA-58B)	7	7	7	<p>East span: Low steel in all bays has revealed bottom of 2 longitudinal bars the full length of the span in every bay. Efflorescence in bay 3s at exposed steel. Diagonal cracking with eff at bay 5s near pier. Eff at weep hole in bay 1s. Steel low at drip line, and is exposed at fascia. Middle span: Low steel exposed longitudinal bars in all bays except bay 3s. Bay 3s has incipient spall. Exposed steel at both fascia drip lines. West span: Incipient spall at N fascia. Low steel in bay 5s, only showing stirrups/vertical steel. 1' of exposed transverse steel in bay 5s near deck drain. (09/13)</p> <p>East span: Low steel in all bays has revealed bottom of 2 longitudinal bars the full length of the span in every bay. Efflorescence in bay 3s at exposed steel. Diagonal cracking with eff at bay 5s near pier. Eff at weep hole in bay 1s. Steel low at drip line, and is exposed at fascia. Middle span: Low steel exposed longitudinal bars in all bays except bay 3s. Bay 3s has incipient spall. Exposed steel at both fascia drip lines. West span: Incipient spall at N fascia. Low steel in bay 5s, only showing stirrups/vertical steel. 1' of exposed transverse steel in bay 5s near deck drain. (09/11)</p> <p>East span: Low steel in all bays has revealed bottom of 2 longitudinal bars the full length of the span in every bay. Efflorescence in bay 3s at exposed steel. Diagonal cracking with eff at bay 5s near pier. Eff at weep hole in bay 1s. Steel low at drip line, and is exposed at fascia. Middle span: Low steel exposed longitudinal bars in all bays except bay 3s. Bay 3s has incipient spall. Exposed steel at both fascia drip lines. West span: Incipient spall at N fascia. Low steel in bay 5s, only showing stirrups/vertical steel. 1' of exposed transverse steel in bay 5s near deck drain. (09/09)</p>

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7. Deck (SIA-58) 7 7 7

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8. Drainage

Deck drains are clear. (09/13)
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Deck drains are clear. (09/09)

SUPERSTRUCTURE

09/09 09/11 09/13

9. Stringer (SIA-59) 6 6 6

6 concrete T beams. East span: Scaling of concrete at beam 6s near deck drain. Trans crack at beam 6s near grouted panel. Cracking and eff at beam 6s near weep holes/drains. Low longitudinal steel at Beam 4s. Beam 1s spalled near pier. Middle span: Horizontal cracks in beam 1s, 3' long and 1/8" wide. West span: Beam 1s has spall to steel below deck drain approx 4 sft exposing longitudinal steel completely. (09/13)

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10. Paint (SIA-59A) N N N

(09/13)
(09/11)
(09/09)

11. Section Loss N N N

(09/13)
(09/11)
(09/09)

12. Bearings N N N

Bearings encased in backwall and not visible. (09/13)
Bearings encased in backwall and not visible. (09/11)
not visible. (09/09)

SUBSTRUCTURE

09/09 09/11 09/13

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13. Abutments (SIA-60)	7	7	7	Minor 1 sft spall in NE wingwall. (09/13) Minor 1 sft spall in NE wingwall. (09/11) Minor 1sft spall at NE wingwall. (09/09)
14. Piers (SIA-60)	5	5	5	Two piers. Major spalling, delamination and scaling at top of both and at ends. Pier 1W (East Side): Entire top of pier is delaminated with much efflorescence and cracking. (West Side) 8 sft spall at top of pier at south end. Pier 2W (East Side): Delamination along entire top of pier; much cracking and efflorescence and 27 sft of spalls to steel. (West Side) 8 sft spall at top of pier at south end. (09/13) Two piers. Major spalling, delamination and scaling at top of both and at ends. Pier 1W (East Side): Entire top of pier is delaminated with much efflorescence and cracking. (West Side) 8 sft spall at top of pier at south end. Pier 2W (East Side): Delamination along entire top of pier; much cracking and efflorescence and 27 sft of spalls to steel. (West Side) 8 sft spall at top of pier at south end. (09/11) Pier 2w, east side: Horizontal cracks have deposited large amounts of eff. Prev concrete patches not intact, have spalled to reveal horizontal steel and vertical steel at both ends of pier to 5'. Entire concrete patch could be delaminated. Pier 2w, west side: Horizontal cracking with heavy effl. Pier 1w, east side: Previous repair not intact. spalling at both pier ends. 1/2" wide horizontal crack in patched material. Backwall appears sound. Pier 1w, w side: Cracks with eff and spalling at S nose of pier. Possible delamination accompanies spall in bay 3s at bottom of backwall. (09/09)
15. Slope Protection	5	5	5	No slope protection other than vegetation which appears to be effective. (09/13) No slope protection other than vegetation which appears to be effective. (09/11) No rip rap. (09/09)

APPROACH

09/09 09/11 09/13

16. Approach Pavement	7	6	6	East: Trans cracks typical within 7' of reference line. Some settlement at SE corner of bridge. Alligator cracking at both shoulders extending through centerline. Longitudinal cracking within 50' of ref line. Trans cracks at ref line open up to 1". Patching has been done but is not intact. West: Trans cracks within 15' of deck. Only open to 1/8". Minor raveling of shoulder material. (09/13) East: Trans cracks typical within 7' of reference line. Some settlement at SE corner of bridge. Alligator cracking at both shoulders extending through centerline. Longitudinal cracking within 50' of ref line. Trans cracks at ref line open up to 1". Patching has been done but is not intact. West: Trans cracks within 15' of deck. Only open to 1/8". Minor raveling of shoulder material. (09/11) East: Trans cracks typical within 7' of reference line. Some settlement at SE corner of bridge. Alligator cracking at both shoulders extending through centerline. Longitudinal cracking within 50' of ref line. Trans cracks at ref line open up to 1". Patching has been done but is not intact. West: Trans cracks within 15' of deck. Only open to 1/8". Minor raveling of shoulder material. (09/09)
17. Approach Shoulders Sidewalks	7	7	7	Vegetated. (09/13) Vegetated. (09/11) Vegetated. (09/09)
18. Approach Slopes				Vegetated. (09/13) Vegetated. (09/11) Vegetated. (09/09)
19. Utilities				6in dia and 2in dia conduit attached to S fascia. (09/13) 6in dia and 2in dia conduit attached to S fascia. (09/11) 6in dia and 2in dia conduit attached to S fascia. (09/09)
20. Channel (SIA-61)	5	5	5	Channel only using spans 2W and 3W. Bottom VERY silty. (09/13) Channel only using spans 2W and 3W. Bottom very silty. (09/11) Trees slumping into channel DS. Channel only using spans 2w and 3w. Bottom very silty. (09/09)

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21. Drainage (09/13)
Culverts (09/11)
(09/09)

MISCELLANEOUS

Guard Rail

Item	Rating
36A. Bridge Railings	0
36B. Transitions	0
36C. Approach Guardrail	0
36D. Approach Guardrail Ends	0

Other Items

Item	Rating
71. Water Adequacy	8
72. Approach Alignment	8
Temporary Support	0 No Temporary Supports
High Load Hit (M)	No
Special Insp. Equipment	2
Underwater Insp. Method	0

Critical Feature Inspections (SIA-92)

	Freq	Date
92A. Fracture Critical		
92B. Underwater		
92C. Other Special		
92D. Fatigue Sensitive		

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STRUCTURE INVENTORY AND APPRAISAL

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BRIDGE
WEIGHT LIMIT
XX TON
XX MILES AHEAD

Bridge History, Type, Materials

27 - Year Built	1958
106 - Year Reconstructed	
202 - Year Painted	
203 - Year Overlay	
43 - Main Span Bridge Type	1 04
44 - Appr Span Bridge Type	
77 - Steel Type	0
78 - Paint Type	0
79 - Rail Type	4
80 - Post Type	4
107 - Deck Type	1
108A - Wearing Surface	1
108B - Membrane	0
108C - Deck Protection	0

Structure Dimensions

34 - Skew	0
35 - Struct Flared	0
45 - Num Main Spans	3
46 - Num Apprs Spans	0
48 - Max Span Length	40
49 - Structure Length	119.8
50A - Width Left Curb/SW	1.31
50B - Width Right Curb/SW	1.31
33 - Median	0
51 - Width Curb to Curb	24.0
52 - Width Out to Out	29.53
112 - NBIS Length	Y

Inspection Data

90 - Inspection Date	09/30/2013
91 - Inspection Freq	24
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	0
58 - Deck Rating	7
58A/B - Deck Surface/Bottom	5 7
59 - Superstructure Rating	6
59A - Paint Rating	N
60 - Substructure Rating	5
61 - Channel Rating	5
62 - Culvert Rating	

Navigation Data

38 - Navigation Control	0
39 - Vertical Clearance	0
40 - Horizontal Clearance	0
111 - Pier Protection	
116 - Lift Brdg Vert Clear	

Route Carried By Structure(ON Record)

5A - Record Type	1
5B - Route Signing	4
5C - Level of Service	0
5D - Route Number	01304
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	0.0
12 - Base Highway Network	0
13 - LRS Route-Subroute	0000013172.08
19 - Detour Length	17
20 - Toll Facility	3
26 - Functional Class	08
28A - Lanes On	2
29 - ADT	1229
30 - Year of ADT	1995
32 - Appr Roadway Width	29.0
32A/B - Ap Pvt Type/Width	4 29.0
42A - Service Type On	1
47L - Left Horizontal Clear	0.0
47R - Right Horizontal Clear	24.0
53 - Min Vert Clr Ov Deck	99 99
100 - STRAHNET	0
102 - Traffic Direct	2
109 - Truck %	14
110 - Truck Network	0
114 - Future ADT	2199
115 - Year Future ADT	2023
Freeway	0

Structure Appraisal

36A - Bridge Railing	0
36B - Rail Transition	0
36C - Approach Rail	0
36D - Rail Termination	0
67 - Structure Evaluation	4
68 - Deck Geometry	4
69 - Underclearance	N
71 - Waterway Adequacy	8
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	N
54B - Left Underclearance	99 99
54C - Right Feature	N
54D - Right Clearance	99 99
Under Clearance Year	
55A - Reference Feature	N
55B - Right Horiz Clearance	0
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	
76 - Length of Improvement	
94 - Bridge Cost	
95 - Roadway Cost	
96 - Total Cost	
97 - Year of Cost Estimate	

Load Rating and Posting

31 - Design Load	2
41 - Open, Posted, Closed	P
63 - Oper Rtg Method	1
64F - Fed Rtg Method	27.4
64M - Mich Oper Rtg	9 47
65 - Inv Rtg Method	1
66 - Inventory Load	16.4
70 - Posting	0
141 - Posted Loading	293741
195 - Analysis ID	
193 - Overload Class	