

ROAD COMMISSION FOR IONIA COUNTY

170 E. Riverside Drive • P.O. Box 76 • Ionia, Michigan 48846 • Phone (616) 527-1700 • Fax (616) 527-8848

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PAUL A. SPITZLEY, P.E.
County Highway Engineer

September 5, 2019

REQUEST FOR PROPOSAL FOR DESIGN ENGINEERING & CONSTRUCTION ENGINEERING SERVICES

Removal and Replacement of: SN 4060: Cutler Road over Looking Glass River, Danby and Portland Townships, Ionia County

The Ionia County Road Commission (ICRC) is seeking proposals for the cost of design engineering and construction engineering services for removal of the existing bridge and construction of a new bridge/structure with related approach work. The design must be in accordance with Federal Highway Administration (FHWA) and Michigan Department of Transportation (MDOT) standards and specifications and AASHTO LRFD Bridge Design Specifications incorporating HL-93-mod live loading. The proposal must include all necessary work for plan and proposal acceptance by the ICRC and MDOT.

LOCATION:

Cutler Road over Looking Glass River is located near the north corner of section 1, Danby Twp, T5N, R5W, east of the City of Portland and 2 miles east of Grand River Avenue.

The original multiple span timber structure was built in 1980 with a superstructure consisting of 6 timber panel spans with an asphalt deck with a bituminous wearing surface, timber posts and railings, on timber pile piers and abutments. Average Daily Traffic in 2018 was 718 with an average of 4% commercial traffic. The bridge is currently posted for a load restriction of 23/27/45 tons.

This bridge is not on the eligible historic bridge listing.

This project has been approved for \$2,384,000 in the 2021 fiscal year Local Bridge Program. The ICRC and MDOT will be involved in final approval of plans, etc., and acceptance of completed construction.

Provide a proposal for preliminary engineering and related services. The construction proposal and plans must be completed and approved by the ICRC and MDOT in order for a **January 2021 bid letting** (at the latest). The work included within the preliminary engineering proposal shall include, at the minimum, the following:

1. Complete all plans and specifications. They shall be developed to the most current edition of the Michigan Standard Specifications for Construction.
2. Determine in cooperation with the ICRC and MDOT, appropriate design criteria that will govern all design elements for the approach, superstructure replacement, abutment repairs, and scour countermeasures.

3. Surveys and field investigation including, but not limited to, surveys for the design, road alignment, property lines of adjacent riparian owners, river and flood plain cross sections necessary to develop hydraulics for MDEQ permit, topography, establish section line alignments and any other needed information designs, analysis, and applications for obtain any information needed for environmental studies, permits, etc. Northing and Easting coordinates shall be in NAD83 Michigan State Plane South – International Feet. NAVD88 elevations shall be used. It shall also include the location and staking of all horizontal and vertical control points for construction staking, i.e., benchmarks, POT's, PC's, PT's, PI's, section and 1/4 section corners with witnesses, etc. Report all control points with Northing, Easting, Elevation, Station and Offset.
4. Soil borings for abutment investigation and capacity analysis, will be the full responsibility of the consultant, including necessary traffic control, and shall be included in the proposal. Soil borings shall be included on the plans and include any gradation test results, shear tests, etc. Soil borings shall be made for each substructure location.
5. The Preliminary Design shall include a foundation load analysis for proposed structure and scour countermeasures. Also included shall be cost comparison recommendations for alternate designs using AASHTO LRFD Bridge Design Specifications incorporating the HL-93-mod live loading for the following types of structures:
 - Pre-stressed concrete I-Beams with cast in place deck
 - Concrete spread box beams with cast in place deck
 - Alternative recommended structures
6. The consultant shall prepare and submit any and all MDOT & FHWA program applications, all other applications, permits, and reports for environmental, hydraulic analysis, archaeological studies if required, assessments, reviews, etc. as may be required by FHWA, MDOT, Michigan Department of Natural Resources, Michigan Department of Environmental Quality, SHPO clearance, or any other Federal, State, or Local Agency involved in the project.
7. All work associated with new NEPA requirements and guidelines including potential public involvement and threatened and endangered species review, must also be considered in the proposal.
8. Prepare and submit type, size and location (TS&L) plans using the most current MDOT TS&L requirements list, specifications and an estimate of probable construction costs to the ICRC and MDOT for review, comment and approval. Attend the TS&L meeting, if one is necessary.
9. Prepare Preliminary Plans including engineer's opinion of cost, special provisions and additional information required by MDOT. Submit to the ICRC and MDOT for approval. Determine additional right-of-way requirements for the ICRC and prepare property descriptions and documents for any needed temporary grading permits, (easements or property acquisition are not anticipated for this project). Provide any necessary staking required for ROW permits, easements or acquisitions. The ICRC will be responsible for appraisals, grading permits, easements and acquisitions of additional ROW.

10. Timely schedule and attend the grade inspection meeting in accordance with the MDOT FY 2021 Project Planning Guide for the January 2021 letting schedule.
11. Prepare Final Design plans, estimate (including electronic MERL) and special provisions in accordance with the ICRC, MDOT and FHWA recommendations and requirements. Final plans shall be submitted electronically to the ICRC and MDOT for approval. Final electronic plans shall be complete with all necessary information and quantities ready for bid letting by MDOT.
12. If any public hearing is held for the project, the Consultant is expected to prepare any required information; attend and participate in the hearing.
13. The proposal must include all work necessary to obtaining potential temporary grading easements. Permanent easements are not anticipated at this time.
14. Contact, coordinate with, and inform all utilities. ICRC will provide the consultant a list of utilities and contact information.
15. The proposal shall include: proposed bridge/structure type assumption along with the estimated construction cost; and a detailed breakdown of the estimated hours and hourly rates for the various design stages for each proposed bridge/structure type.

Provide a proposal for construction engineering and related services. Consider a construction schedule of 30 weeks in 2021 construction season. This schedule will include all pre-construction and project closeout requirements. The work included within the construction engineering proposal shall include, at the minimum, the following:

1. The preparation and operation of the pre-construction meeting.
2. Review and approval of the contractor's progress schedule.
3. Construction staking will be contractor staking, included in construction bid.
4. Inspection including inspector's daily reports, pay estimates, and contract modifications
5. Storm water and soil erosion and sedimentation control reviews, inspections, quality assurance, and onsite modifications.
6. Construction engineering
 - pile driving calculations
 - shop drawing review
 - fabrication inspection of beams, railing, and other prefabricated materials
 - materials testing
 - new bridge inspection
 - updating of the SI&A form
 - additional as-needed services
7. Final project inspection, completion of any incomplete or out of specification items.

8. The completion and closing out of the project files and related MDOT required documentation.

Any proposed cost increases for engineering shall be approved by the Road Commission before the costs are incurred.

Sealed proposals will be received until 2 p.m. on Thursday, October 2nd, 2019 at 170 E. Riverside Drive, P.O. Box 76, Ionia, Michigan, 48846. Telephone: (616) 527-1700. Emailed proposals will also be accepted at spitzleyp@ioniacountyroads.org.

A decision as to whether to make award of the contract will not be made until the Road Commission and Township Boards meet and decide upon further action. This may require approximately two months before notification.

Professional liability insurance is required.

**BOARD OF COUNTY ROAD COMMISSIONERS
IONIA COUNTY, MICHIGAN**

Charles G. Minkley, Chairman
Robert G. Dunton, Vice Chairman
Karen D. Bota, Member
Kenneth L. Gasper, Member
Nick Bowerman, Member
Dorothy G. Pohl, Managing Director
Paul A. Spitzley, P.E., County Highway Engineer

PDF copies of this RFP, most recent Structure Inventory and Appraisal Form 1717A, Bridge Safety Inspection Report Form P2502, Bridge Inspection Reports, Load Analysis, Scour Analysis, recent photos, and old plans (attached as well) are available on our website at www.ioniacountyroads.org under the "Doing Business" tab. For additional information, please contact Paul Spitzley, County Highway Engineer, by phone at (616) 527-1700, or by email at spitzleyp@ioniacountyroads.org.

MICHIGAN DEPARTMENT OF TRANSPORTATION

STR 4060

BRIDGE SAFETY INSPECTION REPORT

Facility CUTLER ROAD	Latitude / Longitude 42.8572 / -84.8491	MDOT Structure ID 34304H00016B010	Structure Condition Fair Condition(5)	
Feature LOOKING GLASS RIVER	Length / Width / Spans 167 / 31.5 / 6	Owner County: Ionia(34)		
Location 2.0 MILES E OF PORTLAND	Built / Recon. / Paint / Ovly. 1980 / / /	TSC Grand Rapids(11)	Operational Status P Posted for load(232745)	
Region / County Grand(3) / Ionia(34)	Material / Design 7 Wood or Timber / 01 Slab	Last NBI Inspection 10/24/2018 / 7QYT	Scour Evaluation 5 Stable w/in footing	

NBI INSPECTION

7QYT

Inspector Name	Agency / Company Name	Insp. Freq.	Insp. Date
Robert Lothschutz	Scott Civil Engineering Company	24	10/24/2018

GENERAL NOTES

Fair condition. Posted at 23/27/45. Scheduled for replacement in 2021.

Posting signs in place on both ends of bridge YES

DECK

	11/14	11/16	10/18	
1. Surface (SIA-58A)	5	5	5	Longitudinal HMA cracks in each lane with map cracks developing. Transverse cracks at the piers. 2'x1' spall and exposed drift pin over pier 2E. Sand and leaves along edges. (10/18) Longitudinal HMA cracks in each lane with map cracks developing. Transverse cracks at the piers. 2'x1' spall with exposed drift pin over pier 2E. (11/16) Longitudinal HMA cracks in each lane, transverse at the piers. (11/14)
2. Expansion Joints	N	N	N	(10/18) (11/16) (11/14)
3. Other Joints	N	N	N	(10/18) (11/16) (11/14)
4. Railings	5	5	5	Noted checking in the rail timbers. 5' rotten area on north rail in span 2W. Rot starting in south rail at west end of span 4W. Tree growing out of south brush block/scupper in west span. (10/18) Noted checking in the rail timbers. Rotten area on north rail in span 2W. (11/16) Noted checking in the rail timbers. (11/14)
5. Sidewalks or Curbs	N	N	N	(10/18) (11/16) (11/14)
6. Deck Bottom Surface (SIA-58B)	5	5	5	Bottom of boards are mostly even. (10/18) Bottom of boards are mostly even. (11/16) Up to 5 cracked boards found in a span. 20 total noted in 6 spans. (11/14)
7. Deck (SIA-58)	5	5	5	Several cracked/damaged deck boards noted in each span. Deck leaks. (10/18) Deck leaks. (11/16) Up to 5 cracked boards found in a span. 20 total noted in 6 spans. (11/14)
8. Drainage				Scuppers are mostly plugged with leaves and dirt. (10/18) Scuppers are mostly plugged with leaves and dirt. (11/16) Scuppers are mostly plugged with leaves and dirt. (11/14)

SUPERSTRUCTURE

11/14 11/16 10/18

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Location	Built / Recon. / Paint / Ovly.	TSC	Operational Status	
2.0 MILES E OF PORTLAND	1980 / / /	Grand Rapids(11)	P Posted for load(232745)	
Region / County	Material / Design	Last NBI Inspection	Scour Evaluation	
Grand(3) / Ionia(34)	7 Wood or Timber / 01 Slab	10/24/2018 / 7QYT	5 Stable w/in footing	

9. Stringer (SIA-59)	5	5	5	Cracked/damaged boards as follows: Span 1E: 2 west of spreader, 3 east of spreader Span 2E: 1 east of spreader, 3 west of spreader Span 3E: 2 east of spreader, 1 west of spreader Span 4E: 2 east of spreader, 3 west of spreader Span 5E: 2 east of spreader, 2 west of spreader Span 6E: 2 east of spreader, 2 west of spreader Several boards damaged by spikes at panel joints. Small area of rot on south fascia near middle of span 1E. Checking in south fascia near middle of span 1W. (10/18) Cracked/damaged boards as follows: Span 1E: 2 west of spreader, 3 east of spreader Span 2E: 1 east of spreader, 2 west of spreader Span 3E: 2 east of spreader, 1 west of spreader Span 4E: 2 east of spreader, 0 west of spreader Span 5E: 2 east of spreader, 2 west of spreader Span 6E: 2 east of spreader, 2 west of spreader Several boards damaged by drift pins during construction. (11/16) Found 20 cracked/damaged boards: Span 1E: 2 west of spreader, 3 east of spreader Span 2E: 1 east of spreader, 2 west of spreader Span 3E: 2 east of spreader, 1 west of spreader Span 4E: 2 east of spreader, 0 west of spreader Span 5E: 2 east of spreader, 2 west of spreader Span 6E: 1 east of spreader, 2 west of spreader Several boards damaged by drift pins during construction. (11/14)
10. Paint (SIA-59A)	N	N	N	(10/18) (11/16) (11/14)
11. Section Loss	N	N	N	(10/18) (11/16) (11/14)
12. Bearings	N	N	N	(10/18) (11/16) (11/14)

SUBSTRUCTURE

	11/14	11/16	10/18	
13. Abutments (SIA-60)	6	6	6	Split in both ends of east abutment cap. (10/18) Split in south end of east abutment cap. (11/16) Nothing noted. (11/14)
14. Piers (SIA-60)	6	6	6	PIER 1E: Checking in bottom of cap. PIER 2E: Split in south end of cap. Checking in bottom of cap - north half. Split in east face of pile 3N at top. PIER 3E: Rot or insect damage to outer 1" of pile 3S above waterline. PIER 4E: Split in south end of cap. (10/18) Split in south end of pier 2E cap and south end of pier 4E cap. Split in east face of pile 3N in pier 2E at top. Insect damage to outer 1" of pile 3S in pier 3E. Debris stuck on piers in stream. (11/16) South end of pier 2E cap split, also south end of pier 4E cap. Debris stuck on piers in stream. (11/14)

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Feature	Length / Width / Spans	Owner		
LOOKING GLASS RIVER	167 / 31.5 / 6	County: Ionia(34)		
Location	Built / Recon. / Paint / Ovly.	TSC	Operational Status	
2.0 MILES E OF PORTLAND	1980 / / /	Grand Rapids(11)	P Posted for load(232745)	
Region / County	Material / Design	Last NBI Inspection	Scour Evaluation	
Grand(3) / Ionia(34)	7 Wood or Timber / 01 Slab	10/24/2018 / 7QYT	5 Stable w/in footing	

15. Slope Protection	6	N	N	(10/18) (11/16) Scattered riprap on the slopes. Some concrete erosion repair at abutments. (11/14)
16. Channel (SIA-61)	7	7	7	Stone and sand bottom. Riprap in end 2 spans each side, some missing west side. Flowable fill placed at each abutment. Debris stuck on piers in stream. (10/18) Stone and sand bottom. (11/16) Stone and sand bottom. (11/14)
17. Scour Inspection	7	7		Small scour hole at upstream end of center pier. (10/18) Minor local scour at piers. (11/16) (11/14)

APPROACH

	11/14	11/16	10/18	
18. Approach Pavement	6	6	6	HMA at bridge and gravel beyond. Transverse cracks in approach pavement, cracked with minor settlement at reference lines. (10/18) HMA at bridge and gravel beyond. (11/16) HMA next to bridge and gravel beyond. (11/14)
19. Approach Shoulders Sidewalks	5	5	6	Gravel/grass shoulders. (10/18) Narrow, covered with vegetation. (11/16) Narrow, HMA near bridge. (11/14)
20. Approach Slopes				Stable embankments. SE approach rail has minor damage. SE end post is broken. (10/18) Stable embankments. SE approach rail is damaged. (11/16) Stable embankments. Newer approach guardrail. SE approach rail is damaged. (11/14)
21. Utilities				Along north brush block. (10/18) Along north brush block. (11/16) Along north brush block. (11/14)
22. Drainage Culverts				None noted. (10/18) None noted. (11/16) None noted. (11/14)

MISCELLANEOUS

Guard Rail		Other Items	
Item	Rating	Item	Rating
36A. Bridge Railings	1	71. Water Adequacy	7
36B. Transitions	0	72. Approach Alignment	7
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)

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

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BRIDGE SAFETY INSPECTION REPORT

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Feature	Length / Width / Spans	Owner	Operational Status	
LOOKING GLASS RIVER	167 / 31.5 / 6	County: Ionia(34)	P Posted for load(232745)	
Location	Built / Recon. / Paint / Ovly.	TSC	Scour Evaluation	
2.0 MILES E OF PORTLAND	1980 / / /	Grand Rapids(11)	5 Stable w/in footing	
Region / County	Material / Design	Last NBI Inspection		
Grand(3) / Ionia(34)	7 Wood or Timber / 01 Slab	10/24/2018 / 7QYT		

SUPPORTING IMAGES

7QYT 10/24/2018



Document Name: SN 4060_1 EB Posting 2018.JPG
 Category: Posting
 Span Number:
 Comments: EB posting sign 2018



Document Name: SN 4060_2 WB Posting 2018.JPG
 Category: Posting
 Span Number:
 Comments: WB posting sign 2018



Document Name: SN 4060_3 EB Adv Posting 2018.JPG
 Category: Posting
 Span Number:
 Comments: EB advance posting sign 2018



Document Name: SN 4060_4 WB Adv Posting 2018.JPG
 Category: Posting
 Span Number:
 Comments: WB advance posting sign 2018

MICHIGAN DEPARTMENT OF TRANSPORTATION

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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	1980
106 - Year Reconstructed	
202 - Year Painted	
203 - Year Overlay	
43 - Main Span Bridge Type	7 01
44 - Appr Span Bridge Type	
77 - Steel Type	0
78 - Paint Type	0
79 - Rail Type	
80 - Post Type	
107 - Deck Type	8
108A - Wearing Surface	6
108B - Membrane	0
108C - Deck Protection	0

Structure Dimensions

34 - Skew	27
35 - Struct Flared	N
45 - Num Main Spans	6
46 - Num Apprs Spans	0
48 - Max Span Length	31.8
49 - Structure Length	167
50A - Width Left Curb/SW	0
50B - Width Right Curb/SW	0
33 - Median	0
51 - Width Curb to Curb	29.9
52 - Width Out to Out	31.5
112 - NBIS Length	Y

Inspection Data

90 - Inspection Date	10/24/2018
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	1
58 - Deck Rating	5
58A/B - Deck Surface/Bottom	5 5
59 - Superstructure Rating	5
59A - Paint Rating	N
60 - Substructure Rating	6
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	0

Route Carried By Structure(ON Record)

5A - Record Type	1
5B - Route Signing	4
5C - Level of Service	8
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	0000005051 09
19 - Detour Length	7
20 - Toll Facility	3
26 - Functional Class	09
28A - Lanes On	2
29 - ADT	711
30 - Year of ADT	2016
32 - Appr Roadway Width	29.9
32A/B - Ap Pvt Type/Width	2 29.99
42A - Service Type On	1
47L - Left Horizontal Clear	0.0
47R - Right Horizontal Clear	29.9
53 - Min Vert Clr Ov Deck	99 99
100 - STRAHNET	0
102 - Traffic Direct	2
109 - Truck %	4
110 - Truck Network	0
114 - Future ADT	768
115 - Year Future ADT	2036
Freeway	0

Structure Appraisal

36A - Bridge Railing	1
36B - Rail Transition	0
36C - Approach Rail	0
36D - Rail Termination	0
67 - Structure Evaluation	5
68 - Deck Geometry	6
69 - Underclearance	N
71 - Waterway Adequacy	7
72 - Approach Alignment	7
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	0
148 - No. of Pin & Hangers	0

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	0
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	
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	6
41 - Open, Posted, Closed	P
63 - Fed Oper Rtg Method	7
64F - Fed Oper Rtg Load	.92
64MA - Mich Oper Rtg Method	7
64MB - Mich Oper Rtg	.59
64MC - Mich Oper Truck	18
65 - Inv Rtg Method	7
66 - Inventory Load	.6
70 - Posting	0
141 - Posted Loading	232745
193 - Overload Class	

MICHIGAN DEPARTMENT OF TRANSPORTATION

STR 4060

SAFETY INSPECTION REPORT - CORE ELEMENTS

Facility CUTLER ROAD	Latitude / Longitude 42.8572 / -84.8491	MDOT Structure ID 34304H00016B010	Structure Condition Fair Condition(5)	
Feature LOOKING GLASS RIVER	Length / Width / Spans 167 / 31.5 / 6	Owner County: Ionia(34)		
Location 2.0 MILES E OF PORTLAND	Built / Recon. / Paint / Ovly. 1980 / / /	TSC Grand Rapids(11)	Operational Status P Posted for load(232745)	
Region / County Grand(3) / Ionia(34)	Material / Design 7 Wood or Timber / 01 Slab	Last NBI Inspection 10/24/2018 / 7QYT	Scour Evaluation 5 Stable w/in footing	

NBI INSPECTION

SNGM

Inspector Name Ryan Worden	Agency / Company Name Scott Civil Engineering	Insp. Freq. 24	Insp. Date 11/14/2008
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CoRE ELEMENTS

(English Units)

Element Number	Element Name	Total Quantity	Unit	State 1	State 2	State 3	State 4	State 5
Decks/Slabs								
32/ 2	Timber Deck HMA Ovly	5296	(SF)	0 0%	0 0%	5296 100%	0 0%	xxxxx xxxxx
Superstructure								
332/ 2	Timber Bridge Rail	331	(LF)	322 97%	10 3%	0 0%	xxxxx xxxxx	xxxxx xxxxx
Substructure								
206/ 2	Timber Column	42	(EA)	39 93%	3 7%	0 0%	0 0%	xxxxx xxxxx
216/ 2	Timber Abutment	72	(LF)	72 100%	0 0%	0 0%	0 0%	xxxxx xxxxx
235/ 2	Timber Pier Cap	499	(LF)	499 100%	0 0%	0 0%	0 0%	xxxxx xxxxx

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WORK RECOMMENDATIONS

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WORK RECOMMENDATIONS

7QYT

Inspector Name	Agency / Company Name	Insp. Freq.	Insp. Date
Robert Lothschutz	Scott Civil Engineering Company	24	10/24/2018

RECOMMENDATIONS & ACTION ITEMS

Recommendation Type	Priority	Description
Channel Repair	M	Remove debris from piers.
Railing Repair	M	Replace rotting rail member on north side in span 2W and south side in span 4W.
HMA Overlay	M	Mill and resurface HMA over bridge.
Bridge Repl.	M	Scheduled for replacement in 2021.
Other	M	Clean edges of deck. Remove tree growing out of south brush block in west span.

MICHIGAN DEPARTMENT OF TRANSPORTATION

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SCOUR CRITICAL BRIDGE ACTION PLAN

Facility	Latitude / Longitude	MDOT Structure ID	Structure Condition	
CUTLER ROAD	42.8572 / -84.8491	34304H00016B010	Fair Condition(5)	
Feature	Length / Width / Spans	Owner		
LOOKING GLASS RIVER	167 / 31.5 / 6	County: Ionia(34)		
Location	Built / Recon. / Paint / Ovly.	TSC	Operational Status	
2.0 MILES E OF PORTLAND	1980 / / /	Grand Rapids(11)	P Posted for load(232745)	
Region / County	Material / Design	Last NBI Inspection	Scour Evaluation	
Grand(3) / Ionia(34)	7 Wood or Timber / 01 Slab	10/24/2018 / 7QYT	5 Stable w/in footing	

No plan available for bridge key 34304H00016B010

MICHIGAN DEPARTMENT OF TRANSPORTATION

STR 4060

LOAD RATING ASSUMPTIONS

Facility CUTLER ROAD	Latitude / Longitude 42.8572 / -84.8491	MDOT Structure ID 34304H00016B010	Structure Condition Fair Condition(5)	
Feature LOOKING GLASS RIVER	Length / Width / Spans 167 / 31.5 / 6	Owner County: Ionia(34)		
Location 2.0 MILES E OF PORTLAND	Built / Recon. / Paint / Ovly. 1980 / / /	TSC Grand Rapids(11)	Operational Status P Posted for load(232745)	
Region / County Grand(3) / Ionia(34)	Material / Design 7 Wood or Timber / 01 Slab	Last NBI Inspection 10/24/2018 / 7QYT	Scour Evaluation 5 Stable w/in footing	

Rating Considers Field Condition of Members: Yes Inspection Date: 11/07/2016

Deterioration:

Several cracked and damaged deck boards.

Most Recent Year Construct / Reconstruct / Overlay: 1980

History of Work Impacting Load Rating:

None known.

Superstructure Component: 7 Wood or Timber Beam fy: ksi Beam f'c / fb: 1.0 ksi

Composite: No Number of Beams: Shop Drawings Verified: No

Beam Size(s) & Names (each span):
Center 2 spans: 3"x14" nail-laminated deck, 31' design span
End spans: 3"x12" nail-laminated deck, 25' design span

Deck: Thickness (in.): Fy / f'c: / ksi Deck Design Load > H15: No

Wearing Surface: Mat'l: HMA Thickness (in.): 3.0 Unit Weight (pcf.): 150.0

	LEFT	CENTER	RIGHT
Barrier: Type / Weight (plf.):	Timber / 75.0	/	Timber / 75.0

Sidewalk: Width / Thick (in.): / / /

Clear Roadway (ft.): 30.0

Additional Loads:

Unique Factors That Affect Capacity:

Used deterioration factor of 0.07 corresponding to one broken board in analysis section (3"/46"). Shop drawings have fire damage and grade of lumber is not visible. Shop drawings indicate design load is HS-20. Lumber is Douglas Fir, assumed No. 1.

Analyzed By: Robert Lothschutz, P.E.

Date: 12/12/2016

MICHIGAN DEPARTMENT OF TRANSPORTATION

STR 4060

LOAD RATING SUMMARY

Facility	Latitude / Longitude	MDOT Structure ID	Structure Condition
CUTLER ROAD	42.8572 / -84.8491	34304H00016B010	Fair Condition(5)
Feature	Length / Width / Spans	Owner	
LOOKING GLASS RIVER	167 / 31.5 / 6	County: Ionia(34)	
Location	Built / Recon. / Paint / Ovly.	TSC	Operational Status
2.0 MILES E OF PORTLAND	1980 / / /	Grand Rapids(11)	P Posted for load(232745)
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Grand(3) / Ionia(34)	7 Wood or Timber / 01 Slab	10/24/2018 / 7QYT	5 Stable w/in footing



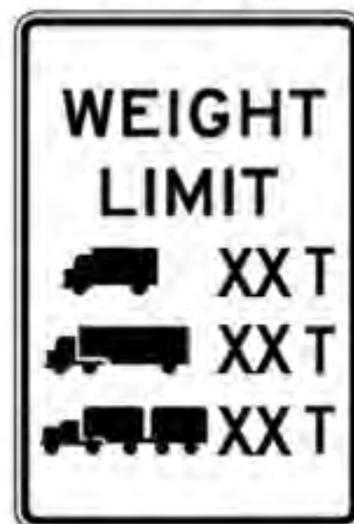
Compliance Issue: None
Compliance Verified: No
The above structure was analyzed using: Hand Calcs
Version or Other: Mathcad
Rating Considers Field Condition of Members: Yes **Inspection Date:** 11/07/2016
Controlling component and failure mode:

Nail-laminated deck in flexure. Center spans control.

NEW INVENTORY CODING

NBI Item 63 - Operating Rating Method 7 ASR in Rating Factor
NBI Item 64F - Federal Operating Ratings 0.92
MDOT Item 64MA - Michigan Operating Method 7 ASR in Rating Factor
MDOT Item 64MB - Michigan Operating Rating 0.59
MDOT Item 64MC - Michigan Operating Truck 18
NBI Item 65 - Inventory Rating Method 7 ASR in Rating Factor
NBI Item 66 - Federal Inventory Rating 0.6
NBI Item 41 - Structure Open Posted Closed P P Posted for load
NBI Item 70 - Bridge Posting 0 0 - 59% or less
Posted By Truck Type
MDOT Item 141 - Posted Loading 232745
MDOT Item 193A - Michigan Overload Class
MDOT Item 193C - Overload Status

Sample Sign



R12-5

Analyzed By: Robert Lothschutz, P.E. **Date:** 12/12/2016
Checked By: Ryan Worden, P.E. **Date:** 12/12/2016

MICHIGAN DEPARTMENT OF TRANSPORTATION

STR 4060

REQUEST FOR ACTION

Facility	Latitude / Longitude	MDOT Structure ID	Structure Condition	
CUTLER ROAD	42.8572 / -84.8491	34304H00016B010	Fair Condition(5)	
Feature	Length / Width / Spans	Owner		
LOOKING GLASS RIVER	167 / 31.5 / 6	County: Ionia(34)		
Location	Built / Recon. / Paint / Ovly.	TSC	Operational Status	
2.0 MILES E OF PORTLAND	1980 / / /	Grand Rapids(11)	P Posted for load(232745)	
Region / County	Material / Design	Last NBI Inspection	Scour Evaluation	
Grand(3) / Ionia(34)	7 Wood or Timber / 01 Slab	10/24/2018 / 7QYT	5 Stable w/in footing	

No inspections available for bridge key 34304H00016B010

MICHIGAN DEPARTMENT OF TRANSPORTATION

STR 4060

OUTSTANDING WORK

Facility CUTLER ROAD	Latitude / Longitude 42.8572 / -84.8491	MDOT Structure ID 34304H00016B010	Structure Condition Fair Condition(5)	
Feature LOOKING GLASS RIVER	Length / Width / Spans 167 / 31.5 / 6	Owner County: Ionia(34)		
Location 2.0 MILES E OF PORTLAND	Built / Recon. / Paint / Ovly. 1980 / / /	TSC Grand Rapids(11)	Operational Status P Posted for load(232745)	
Region / County Grand(3) / Ionia(34)	Material / Design 7 Wood or Timber / 01 Slab	Last NBI Inspection 10/24/2018 / 7QYT	Scour Evaluation 5 Stable w/in footing	

WORK RECOMMENDATIONS

DECK/SLABS

Request For	Contact/User	Agency/Company Name	Estimated Quantity	Unit
HMA Overlay				
Activity	Material	Other Material	Actual Quantity	Unit
Personnel Hours	Equipment			Complete Date
Comments Mill and resurface HMA over bridge. (Robert Lothschutz 11/16/2018)				

CHANNEL/SCOUR

Request For	Contact/User	Agency/Company Name	Estimated Quantity	Unit
Channel Repair				
Activity	Material	Other Material	Actual Quantity	Unit
Personnel Hours	Equipment			Complete Date
Comments Remove debris from piers. (Robert Lothschutz 11/16/2018)				

OTHER

Request For	Contact/User	Agency/Company Name	Estimated Quantity	Unit
Railing Repair				
Activity	Material	Other Material	Actual Quantity	Unit
Personnel Hours	Equipment			Complete Date
Comments Replace rotting rail member on north side in span 2W and south side in span 4W. (Robert Lothschutz 11/16/2018)				

Request For	Contact/User	Agency/Company Name	Estimated Quantity	Unit
Other				
Activity	Material	Other Material	Actual Quantity	Unit
Personnel Hours	Equipment			Complete Date
Comments Clean edges of deck. Remove tree growing out of south brush block in west span. (Robert Lothschutz 11/16/2018)				

Request For	Contact/User	Agency/Company Name	Estimated Quantity	Unit
Bridge Repl.				
Activity	Material	Other Material	Actual Quantity	Unit
Personnel Hours	Equipment			Complete Date
Comments Scheduled for replacement in 2021. (Robert Lothschutz 11/16/2018)				



BRIDGE SECTION LOOKING WEST



POSTING SIGN



LONGITUDINAL CRACKS IN HMA SURFACE OVER BRIDGE WITH MAP CRACKS DEVELOPING



BRIDGE RAIL ELEVATION



TRANSVERSE CRACKS IN HMA SURFACE OVER PIER



ROTTING AREA ON NORTH RAILING IN SPAN 2W



CRACKING AND SETTLEMENT AT WEST REFERENCE LINE



CRACKING WITH SPALL AND EXPOSED DRIFT PIN OVER PIER 2E



SOUTH BRIDGE ELEVATION



ROT STARTING IN SOUTH FASCIA NEAR MIDDLE OF SPAN 1E



SPLIT AT SOUTH END OF EAST ABUTMENT CAP



EAST ABUTMENT ELEVATION



CHECKING ALONG BOTTOM OF PIER 1E CAP



BROKEN DECK BOARD IN SPAN 1E WEST OF SPREADER



CRACKED DECK BOARD IN SPAN 1E WEST OF SPREADER



PIER ELEVATION



SPLIT IN EAST FACE OF PILE 3N IN PIER 2E



SPLIT AT SOUTH END OF PIER 2E CAP



ROT STARTING ON PILE 3S IN PIER 3E



CHECKING IN SOUTH FASCIA NEAR MIDDLE OF SPAN 1W



WEST ABUTMENT ELEVATION

