

Inspector: Schaub,Mark

Inspection Date: 06/11/2024

Structure Number: 5766796

Facility Carried: SELLARS ROAD M0077

Ohio Bridge Inspection Summary Report

MOT-T0077-0155 (5766796)

2: District 52010 - MORaine (MOT county)
ict
07

5A: Inventory Route 1 00053

21: Major Maint A/B 02 - County Highway Agency /
225 Routine Main A/B 02 - County Highway Agency /
221 Inspection A/B 02 - County Highway Agency /
220: Inv. Location MOR

7: Facility On SELLARS ROAD M0077
6: Feature Ints GREAT MIAMI RIVER
9: Location .25 MILE W OF DRYDEN ROAD
Lat, Lon 39.687567 , -84.232168

Condition

58: Deck **6 - Satisfactory Condition**
58.01 Wearing Surface 5 - Fair (10-15%, 2% asphalt patch)
58.02 Joint 9- Excellent
59: Superstructure **6 - Satisfactory Condition**
59.01 Paint & PCS 7 - Good (1-5% corr.)
60: Substructure **5 - Fair Condition**
61: Channel **7**
61.01 Scour **7 - Good**
62: Culverts **N - Not Applicable**

67.01 GA **5**

Structure Type

43: Bridge Type 4 - Steel continuous
02 - Stringer/Multi-beam or Girder
N- Not Applicable
45: Spans Main / Approach 6 / 0
107: Deck Type 1 - Concrete Cast-in-Place
408: Composite Deck N - Non-composite Construction
414A Joint Type 1 8 - Elastomeric Strip Seal
414B: Joint Type 2 N - None
108A: Wearing Surface 1 - Monolithic Concrete
(concurrently placed with structural deck)
N- Not Applicable

Appraisal

Sufficiency Rating 66.2 SD/FO 0 - ND
36: Rail, Tr, Gd, Term Std 1 0 1 N
72: Approach Alignment 6 - Equal to present minimum criteria
113: Scour Critical 8 - Stable for scour conditions
71: Waterway Adequacy 6 - Occasional Overtopping of Approaches

422: WS Date 01/01/1996
423: WS Thick (in) 1.0
482: Protective Coating 5 - Paint System OZEU
483: PCS Date 10/01/1996
453: Bearing Type 1 2 - Rockers & Bolsters
455: Bearing Type 2 B - Fixed
528: Foundn: Abut Fwd 4 - Spread Footing (on soil)
533: Foundn: Abut Rear 7 - Steel H Piles (HP 10 x 42)
536: Foundn: Pier 1 7 - Steel H Piles (HP 10 x 42)
539: Foundn: Pier 2 4 - Spread Footing (on Soil)

Geometric

48: Max Span Length (ft) 145.0
49: Structure Length (ft) 669.0
52: Deck Width, Out-To-Out (ft) 55.4
424: Deck Area (sf) 37062.6
32: Appr Roadway Width (ft) 55.0
51: Road Width, Curb-Curb (ft) 55.4
50A: Curb/SW Width: Left (ft) 4.9
50A: Curb/SW Width: Right (ft) 4.9
34: Skew (deg) 0
33: Bridge Median 0 - No median
54B: Min Vert Underclearance (ft) 0
336A: Min Vert Clrnce IR Cardinal (ft) 99
336B: Min V Clr IR Non-Cardinal (ft) 0
578: Culvert Length (ft) 0

Age and Service

27: Year Built/ 106 Rehab 1961 / 0000
42A: Service On 5 - Highway-pedestrian
42B: Service Under 5 - Waterway
28A: Lanes on 04
28B: Lanes Under 00
19: Bypass Length 5
29: ADT 12362
109: % Trucks (%) 10

Load Posting

41: Op/Post/Closed A - Open
70: Posting 5 - Equal to or above legal loads
70.01: Date
70.02: Sign Type
734: Percent Legal (%) 135
704: Analysis Date 05/22/2019
63: Analysis Method 8 - Load and Resistance Factor Rating (LRFR) rating report by rating factor (RF) method using HL-93 loadings.

Inspections

| | | Months | |
|--------------------|---|--------|------------|
| 90: Routine Insp. | | 12 | 06/11/2024 |
| 92A: FCM Insp. | N | 0 | |
| 92B: Dive Insp. | Y | 60 | 04/24/2024 |
| 92C: Special Insp. | N | 0 | |
| 92D: UBIT Insp. | Y | 24 | 06/13/2023 |
| 92E: Drone Insp. | Y | 0 | 05/13/2024 |

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| | Environment | Total Quantity | Units | Condition State 1 | Condition State 2 | Condition State 3 | Condition State 4 |
|---|--------------------|-----------------------|--------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 12-Reinforced Concrete Deck | 3 - Mod. | 37074 | sq. ft. | 0 | 37074 | 0 | 0 |
| 805-Wearing Surface - Monolithic Concrete | | 37074 | sq. ft. | 0 | 37074 | 0 | 0 |
| 210-Reinforced Concrete Pier Wall | 3 - Mod. | 328 | ft. | 0 | 328 | 0 | 0 |
| 215-Reinforced Concrete Abutment | 3 - Mod. | 138 | ft. | 138 | 0 | 0 | 0 |
| 234-Reinforced Concrete Pier Cap | 3 - Mod. | 278 | ft. | 0 | 278 | 0 | 0 |
| 330-Metal Bridge Railing | 3 - Mod. | 1338 | ft. | 0 | 1338 | 0 | 0 |
| 830-Abutment Backwall | 3 - Mod. | 111 | ft. | 0 | 111 | 0 | 0 |

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ODOT District: District 07

MOT-T0077-0155_(5766796)

Date Built: 07/01/1961

Major Maint: 02 - County Highway Agency

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Traffic On: 5 - Highway-pedestrian

Rehab Date:

Routine Maint: 02 - County Highway Agency

Feature Inters: GREAT MIAMI RIVER

Traffic Under: 5 - Waterway

Insp. 02 - County Highway

Resp A: Agency

FIPS Code: 52010 - MORaine (MOT county)

Location: MOR

.25 MILE W OF DRYDEN ROAD

Insp

Resp B:

Inspector

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Reviewer Shields,David

Inspector Comments - Deck and Approach

Deck

Floor/Slab (SF)

- Span 4 at the East end between beams #4 and #5 around a manhole, spalled area 5'W x 5'L with exposed rebar.
- Built up rust (pack rust) 1/4" or more on top flange on fascia beams. This area is below the curb and gutter line. There is evident leakage through the deck in this area.

Bridge Wearing Surface (SF)

- Wearing surface was replaced estimated 1991 - 1996.
- Longitudinal cracks on West bound lanes.
- Map cracking on entire East bound lanes.
- Many 4"W x 18"L average size spalls along West bound lane gutter edge.
- Deteriorating along the North edge of West bound curb lane, spalled 95% of entire length x 4" - 6" wide has been patched with coldpatch and asphalt.
- Delaminated areas throughout the deck W/S, estimated approximately 15% of entire surface.
- Deterioration along South edge of East bound lane, longitudinal cracks, delaminated or spalled 40% of entire length 4" - 6"W.
- New concrete w/s material around expansion joint areas only in 2022.
- Wearing surface appraisal changed to 5 in 2023 due to continuing deterioration along the gutter curb line.

Curbs/Sidewalk (LF)

- Underside of walks on both sides of bridge in general have many delams, spalled areas, and exposed rebar with heavy loss of section, and also thin and broken rebar. The inner sidewalk beam (please see plan detail with this report) has most welds at the cantilever support broken or stressed. Some connection of sidewalk to deck relies upon ties integrated to the steel curb.
- Separation of sidewalk/steel curb .5" up to 1 1/8" + *** (gap separating concrete sidewalk and steel curb has grown by 1/8" in 2024) *** across span 2 on North side due to structural deterioration of sidewalk deck and broken welds at many consecutive cantilever I beams to C channel sidewalk floor beams (see photos). In this area the concrete is very thin allowing a visual through the deck to the river. The general condition of the sidewalk is a (3) with local failures possible. Temporary repairs recommended in this area until a permanent repair can be made. Recommend to program structural repairs of deteriorated sidewalk areas.

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Bridge Railing (LF)

- Parapet walls heavy cracking on face at each guard rail standoff.
- 1 spall at West end of North side 2' x 2' x 2"D each.
- 2 spalls at West 1/3 on South side 2' x 2' x 2"D each.
- Bottom chain link fence bottom lateral base connections replaced in 2022.
- Delam areas throughout.
- Small spalls throughout, some with exposed rebar.

Expansion Joint (LF)

- New expansion joints in 2022. Joints are now "strip seal" type replacing the "sliding metal plate" type.

Approach

Approach Wearing Surface (EA)

- New asphalt in 2022 at West end for 25' from the bridge end.

Approach Guardrail (EA)

- 2 backer blocks missing on Northwest approach rail.
- Last 20' of rail at the Northwest corner of West approach, rail is leaning slightly.

Approach Sidewalk

- Northwest approach walk, spall 2'W x 1'L x 3"D, recommend repair.

Inspector Comments - General Appraisal

Superstructure

Beams/Girders (LF)

- Girders at the ends of structure were repainted in 2022, areas have sealed pitting, old section loss on bottom flange, and lower web portion.
- Perforations of the web and old section loss on web and lower flange at East beam ends over pier. Perforations are behind the bearing stiffener area. These areas were sandblasted and repainted in 2022.
- Vertical web stiffeners over bearings at the East beam ends have old section loss, thin metal, and some perforations. These areas were sandblasted and repainted in 2022.

Diaphragm/X-Frames (EA)

- End frames replace in 2022.

Bearing Devices (EA)

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- West abutment and East beam end rockers have old section loss that was sandblasted and repainted in 2022. Base plates at the East end are pinned to the pier likely with a minor rebar in 1991. At the East end of structure, the rocker seat welded to girder ends, the keeper plate portion of the rocker seat that prevents lateral movement have vertical cracks from lateral stress.

- Rockers under fascia beams at the piers have active corrosion.

Protective Coating System (LF)

- PCS at the beam ends/bearings sandblasted/sealed in 2022, remaining coating of structure is approximately 20+ years old.

- PCS around lower bearing areas and lower flange at the piers have active corrosion.

Utilities (LF)

- Utility line rusted with scale

- Broken bracket at West end

Substructure

Abutment Walls (LF)

- Vertical and horizontal cracks.

Pier Walls (LF)

- Underside of pier hammerheads delaminating and spalling.

- #1 pier spall with exposed steel (1'H x 1'W x 2"D) rear left face.

- #1 pier two spalls with exposed steel (1'H x 1'W x 2"D)(1'H x 6"W x 2"D) forward left.

- #1 pier West face of entire hammerheads cracking and delaminated areas left and right.

- #2 pier spall, (6"W x 4'H x 2"D) rear right.

- #2 pier, spall/delam. area (12'H x 12"W x 2"D total) with exposed steel rear left.

- #2 pier spall with exposed steel (1'W x 15'H x 1"D) forward right.

- #2 pier spall with exposed steel (1'W x 4'H x 1"D) forward left.

- #3 pier has several delamination areas, also South hammerhead cracking on face.

- #3 pier spall with exposed steel (4'H x 1'W x 2"D) rear right.

- #3 pier spall with exposed steel (2'W x 10'H x 2"D) forward left.

- #3 pier delam/spalled area with exposed steel (4'W x 8'H x 2"D) forward right.

- #4 pier has delamination areas on North face 8'H x 2'W.

- #4 pier, 2 spalls on West face at the North end, 2'H x 1' x 2"D, exposed vertical bars with section loss and active rusting.

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- #4 pier, spall/delaminated area 4'W x entire height of pier wall under beams 4 & 5 on forward and rear side of pier wall. (*area is directly under manhole cover that has heavy leakage from top side of deck*)

- Pier 5 had extensive rehab repairs by ODOT in 2020. Large spalled areas have been repaired with this rehab. In 2022 noticeable rusting of repair reinforcing wire mesh has bled through epoxy seal coating.

Pier Caps (LF)

- #2 pier two vertical cracks 2'L and 3'L under beam 1 rear left.

- #2 pier spall with exposed steel (2'W x 6"H x 2"D) on end of right cap.

- #3 pier delam. (4'H x 2'W) rear right.

- #3 pier spall with exposed steel (2'H x 2'W x 2"D) rear right.

- #3 pier spall with exposed steel (1'H x 1'W x 1"D) on end of right cap.

- #3 pier vertical crack on end of right cap - #4 pier delaminated on end of right cap

- #4 pier spall/delam. area near beam 6 on top of cap.

- #4 pier large spall/delam. area with exposed vertical and horizontal rebars with L.O.S. (2'H x 14'W) on forward side at bearings 4 and 5, spall/delam. up to masonry plates, delam. may extend under masonry plate of bearing 5, manhole in deck above deteriorated area allowing drainage on to pier seat.

- Pier 5 had extensive rehab repairs by ODOT in 2020. Spalled areas under bearing areas have been repaired with this rehab.

Backwalls (LF)

- West backwall has minor cracks, some with rust stains.

Substructure Scour (EA)

- October 2019 Underwater Inspection by consultant on file in office.

- April 2024 Underwater Inspection by consultant on file in office.

Culvert

Inspector Comments - Waterway

Waterway Adequacy

Channel Photos are available upon request.

Channel Hydraulic Opening (EA)

- Debris on pier 1, recommend to remove.

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Channel

Scour Critical

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Bridge Inspection Report

Pictures