

Inspector: Gerstenslager, Michael  
 Inspection Date: 10/07/2022

Structure Number: 4303482  
 Facility Carried: I-90EB OVER I-271

Bridge Inspection Report

**Ohio Bridge Inspection Summary Report**

**LAK-00090-0243R (4303482)**

2: District 85512 - WILLOUGHBY HILLS (LAK county)  
 District 12

5A: Inventory Route 1 00090

21: Major Maint A/B 01 - State Highway Agency /  
 225 Routine Main A/B 01 - State Highway Agency /  
 221 Inspection A/B 01 - State Highway Agency /  
 220: Inv. Location DISTRICT 12

7: Facility On I-90EB OVER I-271  
 6: Feature Ints UP 271NB TOGO 90WB, DN 27  
 9: Location 1.63 MI E OF SR-84 JCT  
 Lat, Lon 41.591114 , -81.447892

Condition		Structure Type	
<b>58: Deck</b>	<b>8 - Very Good Condition</b>	43: Bridge Type	4 - Steel continuous
58.01 Wearing Surface	7 - Good (1% distress)		02 - Stringer/Multi-beam or Girder
58.02 Joint	5- Fair (obvious leaking, 1" offset)		N- Not Applicable
<b>59: Superstructure</b>	<b>6 - Satisfactory Condition</b>	45: Spans Main / Approach	6 / 0
59.01 Paint & PCS	4 - Poor PCS (15-20% corr.)	107: Deck Type	1 - Concrete Cast-in-Place
<b>60: Substructure</b>	<b>6 - Satisfactory Condition</b>	408: Composite Deck	N - Non-composite Construction
<b>61: Channel</b>	<b>N</b>	414A Joint Type 1	8 - Elastomeric Strip Seal
<b>61.01 Scour</b>	<b>N - Not Applicable</b>	414B: Joint Type 2	N - None
<b>62: Culverts</b>	<b>N - Not Applicable</b>	108A: Wearing Surface	1 - Monolithic Concrete (concurrently placed with structural deck)
			N- Not Applicable
<b>67.01 GA</b>	<b>6</b>	422: WS Date	08/01/2010

Appraisal	
Sufficiency Rating	88.9 SD/FO 2 - FO
36: Rail, Tr, Gd, Term Std	1 1 1 1
72: Approach Alignment	8 - Equal to present desirable criteria
113: Scour Critical	N - Not over waterway
71: Waterway Adequacy	N - Not Applicable

423: WS Thick (in)	0.0
482: Protective Coating	8 - Paint System A with intermediate tie coat
483: PCS Date	07/01/1988
453: Bearing Type 1	2 - Rockers & Bolsters
455: Bearing Type 2	N - None
528: Foundn: Abut Fwd	4 - Spread Footing (on soil)
533: Foundn: Abut Rear	4 - Spread Footing (on Soil)
536: Foundn: Pier 1	4 - Spread Footing (on soil)
539: Foundn: Pier 2	0 - Other

Geometric	
48: Max Span Length (ft)	125.0
49: Structure Length (ft)	594.0
52: Deck Width, Out-To-Out (ft)	38.0
424: Deck Area (sf)	22572
32: Appr Roadway Width (ft)	34.0
51: Road Width, Curb-Curb (ft)	35.0
50A: Curb/SW Width: Left (ft)	2.2
50A: Curb/SW Width: Right (ft)	2.2
34: Skew (deg)	44
33: Bridge Median	0 - No median
54B: Min Vert Underclearance (ft)	15.63
336A: Min Vert Clrnce IR Cardinal (ft)	15.333
336B: Min V Clr IR Non-Cardinal (ft)	0
578: Culvert Length (ft)	0

Age and Service	
27: Year Built/ 106 Rehab	1962 / 2010
42A: Service On	6 - Overpass structure at an interchange or second level of a multilevel interchange
42B: Service Under	1 - Highway, with or w/out pedestrian
28A: Lanes on	02
28B: Lanes Under	04
19: Bypass Length	2
29: ADT	7372
109: % Trucks (%)	9

Load Posting	
41: Op/Post/Closed	A - Open
70: Posting	5 - Equal to or above legal loads
70.01: Date	
70.02: Sign Type	

Inspections		Months
90: Routine Insp.		12 10/07/2022
92A: FCM Insp.	Y	12 10/07/2022
92B: Dive Insp.	N	0
92C: Special Insp.	N	0
92D: UBIT Insp.	N	0

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734: Percent Legal (%) 150

704: Analysis Date 07/01/2009

63: Analysis Method 6 - Load Factor (LF) rating reported by rating factor (RF) method using MS18 loading.

92E: Drone Insp. N 0

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	Environment	Total Quantity	Units	Condition State 1	Condition State 2	Condition State 3	Condition State 4
<b>12-Reinforced Concrete Deck</b>	3 - Mod.	22572	sq. ft.	21322	1250	0	0
CS2 - A few cracks.							
<b>805-Wearing Surface - Monolithic Concrete</b>		20790	sq. ft.	19095	1550	145	0
CS2 - Some transverse cracks. Area of scaling near forward in lane 2. CS3 - Few transverse cracks as wide as 1/8" throughout, and at rear and forward along expansion joints.							
<b>107-Steel Open Girder/Beam</b>	3 - Mod.	3120	ft.	701	2340	76	3
Bent stiffener to outside right fascia over NB mainline lane #1. CS2 - Surface rust throughout. CS3 - Heavy section loss at beam ends and along outside of left fascia. Possible crack in lower flange of beam 4 at pier 4 (ground out and painted) CS4 - Rusting through hole to bottom of third stiffener from forward abutment on outside left fascia.							
<b>515-Steel Protective Coating</b>		34749	sq. ft.	0	24329	6950	3470
CS2 - Initiated surface rust. Chalking/Fading. CS3 - Peeling paint coats. Bubbling paint with rust underneath. CS4 - Unprotected steel.							
<b>161-Steel Pin and Pin &amp; Hanger Assembly or both</b>	3 - Mod.	5	each	4	1	0	0
CS2 - #3 has broken washer under hanger bar.							
<b>210-Reinforced Concrete Pier Wall</b>	3 - Mod.	65	ft.	40	10	15	0
Water has flowed into base of P5. CS2 - Cracks. CS3 - Delams under left bearings of P2, P3,P4 and P5. Delam under right bearings of P2, and P4. Other minor delams.							
<b>215-Reinforced Concrete Abutment</b>	3 - Mod.	106	ft.	92	8	6	0
CS2 - Cracks. CS3 - Delam in rear bay 4. Failing patch with spall in forward bay 1.							
<b>231-Steel Pier Cap</b>	3 - Mod.	190	ft.	0	170	20	0
CS 2: 2 drilled out cracks at P3 Beam 4. Areas of surface rust throughout. CS 3: Isolated areas of section loss to some lower flanges.							
<b>303-Assembly Joint with Seal</b>	3 - Mod.	105	ft.	85	14	4	2
CS2 - Some dirt in joint. Some minor rust. CS3 - Few deep gouges to riser bar. Rear joint has cracks in anchor holes and armor in lane 2. CS4 - 1.5' of sliding plate has broken away.							

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<b>311-Movable Bearing</b>	3 - Mod.	18	each	0	17	1	0
CS2 - Surface rust and shallow rusting section loss. Left keeper plate on left bolster of P2 is partially broken off. CS3 - P5 left rocker has large delam below.							
<b>313-Fixed Bearing</b>	3 - Mod.	2	each	0	2	0	0
Bolsters at P2 CS2 - Surface rusting.							
<b>321-Reinforced Concrete Approach Slab</b>	3 - Mod.	1750	sq. ft.	1659	88	3	0
CS2 - Full width cracks in both slabs 12" from exjts. CS3 - Shallow spalls along forward joint.							
<b>331-Reinforced Concrete Bridge Railing</b>	3 - Mod.	1188	ft.	888	300	0	0
Collision scrapes to both sides. Peeling sealer to top of right rail. CS2 - Some full height cracks, some leaching. Some panels have map cracks.							
<b>815-Drainage</b>	3 - Mod.	2	each	2	0	0	0
<b>830-Abutment Backwall</b>	3 - Mod.	106	ft.	101	5	0	0
CS2 - A few cracks.							

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ODOT District: District 12

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Date Built: 07/01/1962  
Rehab Date: 08/15/2010

Major Maint: 01 - State Highway Agency

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Traffic On: 6 - Overpass structure at an interchange or second level of a highway with or without pedestrian

Routine Maint: 01 - State Highway Agency

Feature Inters: UP 271NB TOGO 90WB, DN 27

Traffic Under: 1.63 MI E OF SR-84 JCT

FIPS Code: 85512 - WILLOUGHBY HILLS (LAK county)

Location: DISTRICT 12

1.63 MI E OF SR-84 JCT

Insp. 01 - State Highway Agency  
Resp A:  
Insp  
Resp B:

Inspector

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Reviewer Seif, Youssef

**Inspector Comments - Deck and Approach**

**Deck**

**Approach**

**Approach Relief Joint**

Paved over.

**Approach Embankment**

Erosion to forward-left embankment (covered by vegetation).

**Signs**

Only 1 bridge end marker at rear-left.

**Inspector Comments - General Appraisal**

**Superstructure**

**Diaphragm/X-Frames**

Surface rust, rusting section loss, forward endframe #3 & x-frame in bay 4 over SB mainline lane #1 are bent.

**Fatigue**

Welded moment plates at piers with top flange bolted retrofits at piers 1 & 2, steel pier caps & pin/hanger connections. 4.5" x 4" plates welded at moment areas.

**Substructure**

At 2022 FC inspection. Top of pier delams under some bearings.

**Culvert**

**Inspector Comments - Waterway**

**Waterway Adequacy**

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**Channel**

**Scour Critical**

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**Pictures**