Bridge Inspection Report

056B00250N
Inspector: Colin Quinn
Entered by: CQUINN
01/11/2023
Standard (24 months)

IDENTIFICATION

Structure Num (8):	056B00250N
NBI Number:	056B00250N
Structure Name:	_
Location (9):	0.4 MI W OF RALPH AVE
Carries (7):	I-264
Type of Service (42A):	1 Highway
Feature Crossed (6):	P&L RAILWAY
Type of Service (42B):	2 Railroad
Placecode (4):	Not Applicable
County (3):	Jefferson (056)
State (1):	21 Kentucky
Admin Area:	Inventory
District:	District 5
Latitude (16):	38° 12' 49"
Longitude (17):	85° 49' 23"
Owner (22):	State Highway Agency
Maint. Resp. (21):	State Highway Agency
Year Built (27):	1970
Year Recon (106):	2003
Border State (98A):	Not Applicable (P)
Border Number (99):	
% Responsibility (98B):	-1

Poor **Heath Index:** 84.71

SubStd: No **SubStd Reason:** Not Sub-Standa

Inspection Type	Freq (92)	Last Insp (93)	Next Insp
Routine	24	1/11/2023	1/11/2025
Element	24	1/11/2023	1/11/2025
Fracture Critical (A)		1/1/1901	1/1/1901
Underwater (B)		1/1/1901	1/1/1901
Special Insp (C)		8/11/2020	1/1/1901

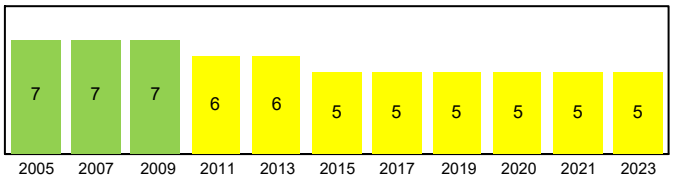
LOAD RATING AND POSTING

Posting Status(41):	A Open, no restriction
Posting (70):	5 At/Above Legal Loads
Signs Posted Cardinal:	No
Signs Posted Non-Cardinal:	No
Recmd Date:	
Posted Date:	

Required Postings (Tons.)		Field Postings (Tons.)	
Gross:		**Gross:**	
Truck Type 1:		**Truck Type 1**	
Truck Type 2:		**Truck Type 2**	
Truck Type 3:		**Truck Type 3**	
Truck Type 4:		**Truck Type 4**	
SUV 5:		**SUV 5:**	
SUV 6:		**SUV 6:**	
SUV 7:		**SUV 7:**	
EV Single Axle:		**EV Gross:**	
EV Tadem Axle:			

DECK GEOMETRY

Deck Geometry (68):	9 Above Desirable Crit
Deck Area:	45,562.00 ft²
Deck Type (107):	1 Concrete-Cast-in-Place
Wearing Surface (108A):	1 Monolithic Concrete
Membrane (108B):	0 None
Deck Protection (108C):	1 Epoxy Coated Reinforci
Approach Roadway width (32):	105.50 ft.
Width Curb to Curb (51):	105.50 ft.
O. to O. Width (52):	111.10 ft.
Curb / Sidewalk Width L (50A):	0.00 ft.
Curb / Sidewalk Width R (50B):	0.00 ft.
Median (33):	3 Closed Med w/Barriers

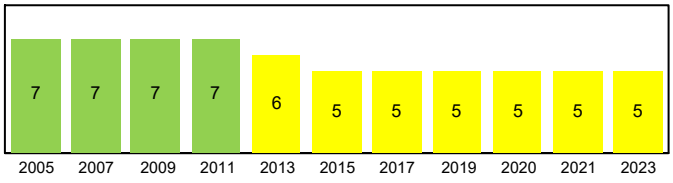


DECK CONDITION

Deck Rating (58):	5 Fair
Bridge Rail (36A):	1 Meets Standards
Transition (36B):	1 Meets Standards
Approach Rail (36C):	1 Meets Standards
Approach Rail Ends (36D):	1 Meets Standards

SUPERSTRUCTURE GEOMETRY

# of Main Spans (45):	7
# of Approach Spans (46):	0
Main Material (43 A):	2 Concrete Continuous
Main Design (43 B):	04 Tee Beam
Max Span Length (48):	85.00 ft.
Structure Length (49):	410.10 ft.
NBIS Length (37):	Long Enough
Temp Structure (103):	Not Applicable (P)
Skew (34):	99°
Structure Flared (35):	0 No flare
Parallel Structure (101):	No || bridge exists
Approach Alignment (72):	8 Equal Desirable Crit

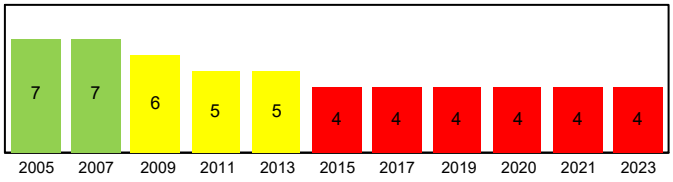


SUPERSTRUCTURE CONDITION

Superstructure Rating (59):	5 Fair
Structure Evaluation (67):	4 Minimum Tolerable

SUBSTRUCTURE GEOMETRY

Navigation Control (38): NA-no waterway
Nav Vert Clearance (39):
Nav Horiz Clearance (40):
Pier Protection (111): Not Applicable (P)
Lift Bridge Vertical Clearance (116):
Scour Rating (113): N Not Over Waterway
Waterway Adequacy (71): N Not applicable



SUBSTRUCTURE CONDITION

Substructure Rating (60): 4 Poor
Channel Rating (61): N N/A (NBI)

KYTC FIELDS

Overlay: No
Overlay Type: None
Overlay Thickness:
Overlay Year:
Cross Section: Not Required
Cross Section Date:

Scour Observed: N/A
Scour Risk : N/A
Scour Analysis/Assessment : Not Required
Scour POA : Not Required
Scour POA Date :
Next Cross Section Due Date :

1ST NON-CARD ROUTE ON: I-264 NC

ROADWAY LOCATION

Pos Prefix (5A): 1st Non-Card Route
Kind of Hwy (5B): 1 Interstate Hwy
Route Num (5D): 00264
LRS Route (13A/B): IO0264_000/00
Milepost (11): 4.65 mi
Suffix (5E): 0 N/A (NBI)
Lanes Under (28B): 6
Detour Length (19):

ROADWAY CLASSIFICATION

Funct Class (26): 11 Urban Interstate
Level Service (5C): 1 Mainline
NHS (104): 1 On the NHS
Defense Hwy (100): 1 On Interstate STRAHNET
Toll Facility (20): 3 On free road
ADT (29): 59,068 Cars/Day
Pct Trucks (109): 10.00%
ADT Year (30): 2021

CLEARANCES

Vertical (10): 99.99 ft.
Min Vert Over (53): 99.99 ft.
Vert Ref (54A): R Railroad beneath struc
Undrclearnce (54B): 23.42 ft.
Horizontal (47): 52.67 ft.
Min Lat Left (56): 0.00 ft.
Min Lat Right (55B): 10.60 ft.
Horiz Ref (55A): R Railroad beneath struc
Underclearance (69): 4 Tolerable

ROUTE ON STRUCTURE: I-264

ROADWAY LOCATION

Pos Prefix (5A): Route On Structure
Kind of Hwy (5B): 1 Interstate Hwy
Route Num (5D): 00264
LRS Route (13A/B): IO0264_000/00
Milepost (11): 4.64 mi
Suffix (5E): 0 N/A (NBI)
Lanes On (28A): 6
Detour Length (19): 0.65 mi

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STRUCTURE NOTES

-In 2003, rehab included a 10" concrete deck-over with epoxy reinforcement, compression joint seals, 3) barrier walls, 4) elastomeric bearing pads, and 5) built up pedestals to accommodate new bearings.
-During the 2020 NBI submittal, it was decided to code the 10" concrete deck as Element 12 instead of 38 due to an error with the FHWA error check. EDV 8/11/2020

INSPECTION NOTES

Routine Inspection by R. Rogers and C. Quinn (Qk4) on 1-11-23.

SCOUR NOTES

LOAD RATING NOTES

8/26/13 Controlling member for the load rating is any interior beam in the continuous spans for Inventory and Operating and Type 4 at 1.4 (26.1167ft from the beginning of span 1). Controlling member for Types 1-3 is Girder 12 in Span 4 and the critical point is 1.5 (midspan). DGA
7/26/21 Controlling member is the 45.172ft beam in span 4, interior beam in the continuous span for Type 4. All beams with 10 inch concrete overlay and no FWS, DN 25388. DGA
10/31/22 Considered shear. DGA

COMPLIANCE NOTES

ELEM NBR	ELEMENT NAME	ENV	INSP. DATE	QUANTITY	UNITS	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4
12	Re Concrete Deck	3	01/11/2023	45,556.00	sq.ft	21,952.00	684.00	22,920.00	0.00

In 2003, original deck was scarified and a new 10 inch deck with epoxy coated reinforcement was poured on top. Deck over has widespread dense map cracking, some with wide separation. Heavier amounts noted through all but Span 4 of EBL, with similar cracking found the full length of WBL and affecting full lane widths in both directions. There is a fire damaged area of approximately 27 feet X 10 feet in Span 2, near the south barrier wall, that affects mostly the emergency lane and a small portion of the travel lane.
There are several spalls throughout concentrated at the bridge ends and at the intermediate joints.

ELEM NBR	ELEMENT NAME	ENV	INSP. DATE	QUANTITY	UNITS	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4
16	Re Conc Top Flange	3	01/11/2023	45,556.00	sq.ft	44,865.00	680.00	11.00	0.00

Top surface cannot be inspected due to 2003 deck rehabilitation. Top flange soffit has transverse cracking with efflorescence in Span 5 along WB half and in Span 6 along EB and WB, and a few other localized areas. North overhang has deep spalling with exposed rebar over Pier 5, and there are a few other spalls scattered throughout, some with exposed steel reinforcement.

ELEM NBR	ELEMENT NAME	ENV	INSP. DATE	QUANTITY	UNITS	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4
110	Re Conc Opn Girder/Beam	3	01/11/2023	5,741.00	ft	5,673.00	13.00	55.00	0.00

Girders have delaminated areas and spalling with exposed steel reinforcement scattered throughout (worst case at Span 3-Girder 10 at Pier 3 where the main longitudinal reinforcement is exposed, and Span 3 Girder 13 at Pier 3). Girders 9 and 12 have 3 feet of wide longitudinal cracking and delaminated areas near Abutment 1 bearing, while Girder 10 at Abutment 1 is now spalled with exposed steel reinforcement. Wide vertical cracking noted in exterior web of Girder 14 at Pier 2 and Pier 3 over the bearings.

ELEM NBR	ELEMENT NAME	ENV	INSP. DATE	QUANTITY	UNITS	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4
205	Re Conc Column	3	01/11/2023	44.00	each	21.00	3.00	20.00	0.00

Columns have wide vertical cracking (up to 5/8 inch wide), delaminated areas, unsound patches, large spalls, and/or exposed steel reinforcement. Pier 2 Columns 4,6, and 7 have 12" spalls on the Span 1 face. Pier 3 Columns 1-3 and 5-7 have spalls with exposed reinforcement. Column 1 at Pier 4 has 10 feet (vertically) of spalling on the north face. Columns 2-4 also have spalls with exposed steel. All columns at Pier 5 have spalling, with Column 2 having 2 wide vertical cracks, one of which is along a line of epoxy injection completed during 2003 rehab project. Column 5 at Pier 6 has a large spall at the top on the Span 5 side.

ELEM NBR	ELEMENT NAME	ENV	INSP. DATE	QUANTITY	UNITS	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4
215	Re Conc Abutment	3	01/11/2023	250.00	ft	110.00	126.00	14.00	0.00

All bearing pedestals have had concrete repairs, some are cracking. Abutments have moderate to wide vertical cracking, delaminated areas, and a few spalls greater than 6 inches wide with exposed steel reinforcement, some with section loss at Abutment 1 near the south end.

ELEM NBR	ELEMENT NAME	ENV	INSP. DATE	QUANTITY	UNITS	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4
234	Re Conc Pier Cap	3	01/11/2023	665.00	ft	263.00	100.00	302.00	0.00

All bearing pedestals have had concrete repairs, some are cracking. Piers 2-5 have widespread spalling and wide cracking. Pier 3 has spalling on the underside with exposed steel for nearly the full length. CS3 spalling also is present for roughly 50% of Pier 2, 75% of Pier 4, and 75% of Pier 5.

ELEM NBR	ELEMENT NAME	ENV	INSP. DATE	QUANTITY	UNITS	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4
301	Pourable Joint Seal	3	01/11/2023	265.00	ft	0.00	212.00	53.00	0.00

Relief cuts over Piers 2-4 EBL and Piers 2-3 WBL have what appears to be a pourable sealant material across 53 feet of the deck at each pier. Edge failure noted along each location with approximately 40 feet affected by sealant failure in EBL and 13 feet in WBL.

ELEM NBR	ELEMENT NAME	ENV	INSP. DATE	QUANTITY	UNITS	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4
302	Compressn Joint Seal	3	01/11/2023	360.00	ft	0.00	90.00	190.00	80.00

Compression joint seals have majority of length affected by adhesion failure at the EB Abutment 1 and Pier 5 joints. Partial adhesion loss in a portion of WB Pier 5 and full length along Abutment 8 joints. All joints have debris in both shoulders, and WB Pier 5 joint has debris throughout.

ELEM NBR	ELEMENT NAME	ENV	INSP. DATE	QUANTITY	UNITS	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4
310	Elastomeric Bearing	3	01/11/2023	154.00	each	0.00	154.00	0.00	0.00

Bearing assemblies have freckling rust. At Abutment 8, anchor bolts at Girders 1, 8, 10, 11, 13, and 14 appear to have been installed out of vertical plumb. Elastomeric pads for all girders except Girder 12 show no signs of eastward expansion (50 degrees at time of inspection). Beam 5 at Abutment 8 has a missing nut on anchor bolt.

ELEM NBR	ELEMENT NAME	ENV	INSP. DATE	QUANTITY	UNITS	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4
331	Re Conc Bridge Railing	3	01/11/2023	1,640.00	ft	1,261.00	350.00	29.00	0.00

Barrier walls have moderate to wide vertical cracks, some with efflorescence, and horizontal cracking in WB median rail. The eastbound exterior railing has roughly 27 feet of heavy scaling from collision and fire damage in Span 2, and two wide cracks.

ELEM NBR	ELEMENT NAME	ENV	INSP. DATE	QUANTITY	UNITS	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4
850	2nd Elem	3	01/11/2023	1.00	(EA)	0.00	0.00	1.00	0.00

Diaphragms have cracking and spalling, some areas with exposed steel reinforcement.

ELEM NBR	ELEMENT NAME	ENV	INSP. DATE	QUANTITY	UNITS	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4
851	Transitions	3	01/11/2023	1.00	(EA)	0.00	0.00	1.00	0.00

Abutment 1 WBL transition repair (concrete repairs to approach roadway) left the fast lane with transition unchanged (approximately 3/4")

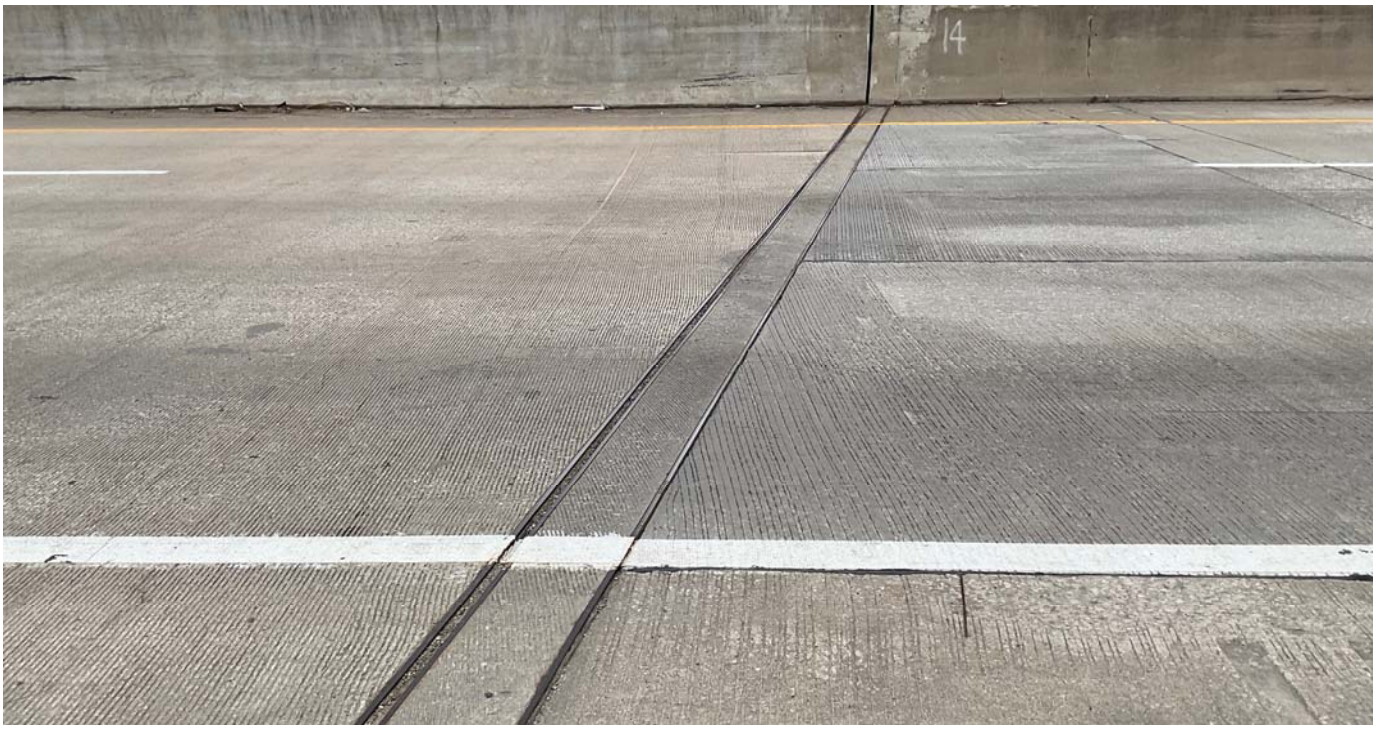
ELEM NBR	ELEMENT NAME	ENV	INSP. DATE	QUANTITY	UNITS	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4
859	Vegetation	3	01/11/2023	1.00	(EA)	0.00	0.00	1.00	0.00

Cut brush is piled at the south side of Spans 4 and 5, restricting inspection in these areas.

Cardinal Approach EB

Cardinal Approach WB

Cardinal Transition EB



Cardinal Transition WB

Joint at Pier 2

Joint at Pier 3

Joint at Pier 5

Non-Cardinal Approach EB

Non-Cardinal Approach WB

Non-Cardinal Transition EB

Non-Cardinal Transition WB

North Elevation

Looking North

South Elevation

Looking South

Typical Wearing Surface EB

Typical Wearing Surface WB

Abutment 1

Pier 2 Span 1

Pier 2 Span 2

Pier 3 Span 2

Pier 3 Span 3

Pier 4 Span 3

Pier 4 Span 4

Pier 5 Span 4

Pier 5 Span 5

Pier 6 Span 5

Pier 6 Span 6

Pier 7 Span 6

Pier 7 Span 7

Abutment 8

Span 1 Soffit

Span 2 Soffit

Span 3 Soffit

Span 4 Soffit

Span 5 Soffit - note cracking with efflorescence

Span 6 Soffit

Span 7 Soffit

Typical bearing - Abutment 8

Typical bearing - Pier 7

Spall - Pier 7 Span 7 under Beam 14.

Vertical crack in Pier 5 - Column 2

Spalling in Column 1 - Pier 4

Spalling along underside of Pier 3 cap

Pier 3 Column 1 spalling

Spalling along Pier 2 cap

Pier 3 - Column 6 spalling at top

Pier 2 - north end

Diaphragm at Abutment 1 between Beams 11 and 12.

Barrier wall is scaled - EB barrier – Span 2