Bridge Inspection Report

056B00211N
Inspector: Daniel Coulter
Entered by: DCOULTER
12/03/2024
Standard (24 months)

IDENTIFICATION

Structure Num (8):	056B00211N
NBI Number	056B00211N
Structure Name:	
Location (9):	0.6 MI N OF I-264
Carries (7):	I-65
Type of Service (42A):	1 Highway
Feature Crossed (6):	KFEC GATE 6 DR
Type of Service (42B):	1 Highway
Placecode (4):	Not Applicable
County (3):	Jefferson (056)
State (1):	21 Kentucky
Admin Area:	Inventory
District:	District 5
Latitude (16):	38° 11' 56"
Longitude (17):	85° 44' 3"
Owner (22):	State Highway Agency
Maint. Resp. (21):	State Highway Agency
Year Built (27):	1957
Year Recon (106):	1985
Border State (98A):	Not Applicable (P)
Border Number (99):	
% Responsibility (98B):	

Fair **Heath Index:** 69.15

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

Inspection Type	Freq (92)	Last Insp (93)	Next Insp
Routine	24	12/3/2024	12/3/2026
Element	24	12/3/2024	12/3/2026
Fracture Critical (A)		1/1/1901	1/1/1901
Underwater (B)		1/1/1901	1/1/1901
Special Insp (C)		1/1/1901	1/1/1901

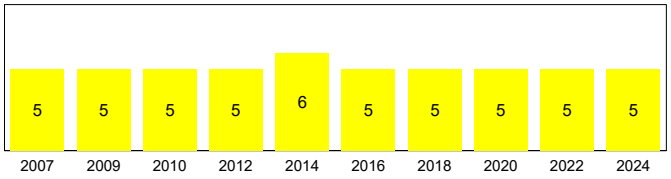
LOAD RATING AND POSTING

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 Single Axle:**	
EV Tadem Axle:		**EV Tadem Axle:**	
EV Gross:		**EV Gross:**	

DECK GEOMETRY

Deck Geometry (68):	7 Above Min Criteria
Deck Area:	18,863.00 ft²
Deck Type (107):	1 Concrete-Cast-in-Place
Wearing Surface (108A):	6 Bituminous
Membrane (108B):	0 None
Deck Protection (108C):	1 Epoxy Coated Reinforci
Approach Roadway width (32):	120.00 ft.
Width Curb to Curb (51):	119.30 ft.
O. to O. Width (52):	125.00 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):	0 Substandard
Transition (36B):	0 Substandard
Approach Rail (36C):	0 Substandard
Approach Rail Ends (36D):	0 Substandard

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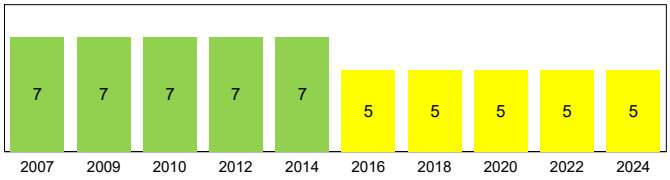
SUPERSTRUCTURE GEOMETRY

# of Main Spans (45):	3
# of Approach Spans (46):	0
Main Material (43 A):	4 Steel Continuous
Main Design (43 B):	02 Stringer/Girder
Max Span Length (48):	65.50 ft.
Structure Length (49):	150.90 ft.
NBIS Length (37):	Long Enough
Temp Structure (103):	Not Applicable (P)
Skew (34):	2°
Structure Flared (35):	0 No flare
Parallel Structure (101):	No || bridge exists
Approach Alignment (72):	8 Equal Desirable Crit

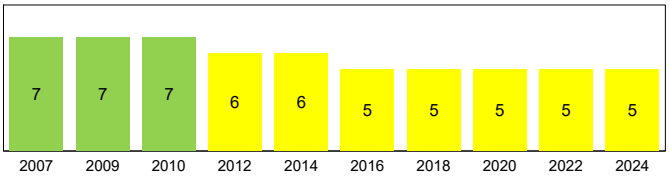


SUPERSTRUCTURE CONDITION

Superstructure Rating (59):	5 Fair
Structure Evaluation (67):	5 Above Min Tolerable

SUBSTRUCTURE GEOMETRY

Navigation Control (38):	NA-no waterway
Nav Vert Clearance (39):	0.00 ft.
Nav Horiz Clearance (40):	0.00 ft.
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):	5 Fair
Channel Rating (61):	N N/A (NBI)

KYTC FIELDS

Overlay:	Yes	**Scour Observed:**	N/A
Overlay Type:	L T Polymer Asph	**Scour Risk :**	N/A
Overylay Thickness:	2.25 in.	**Scour Analysis/Assessment :**	Not Required
Overlay Year:	2012	**Scour POA :**	Not Required
Cross Section:	Not Required	**Scour POA Date :**	
Cross Section Date:		**Next Cross Section Due Date :**	

1ST NON-CARD ROUTE ON: I-65 NC

ROADWAY LOCATION

Pos Prefix (5A):	1st Non-Card Route
Kind of Hwy (5B):	1 Interstate Hwy
Route Num (5D):	00065
LRS Route (13A/B):	IO0065_000/00
Milepost (11):	131.40 mi
Suffix (5E):	0 N/A (NBI)
Lanes Under (28B):	8
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):	129,829 Cars/Day
Pct Trucks (109):	12.00%
ADT Year (30):	2022

CLEARANCES

Vertical (10):	99.99 ft.
Min Vert Over (53):	99.99 ft.
Vert Ref (54A):	H Hwy beneath struct
Undrclearnce (54B):	14.75 ft.
Horizontal (47):	59.67 ft.
Min Lat Left (56):	0.00 ft.
Min Lat Right (55B):	5.30 ft.
Horiz Ref (55A):	H Hwy beneath struct
Underclearance (69):	3 Intolerable - Correct

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ROUTE UNDER STRUCTURE: KFEC GATE6 DR

ROADWAY LOCATION

Pos Prefix (5A):	One Route Under
Kind of Hwy (5B):	7 State Lands Road
Route Num (5D):	08402
LRS Route (13A/B):	
Milepost (11):	0.08 mi
Suffix (5E):	0 N/A (NBI)
Lanes Under (28B):	4
Detour Length (19):	

ROADWAY CLASSIFICATION

Funct Class (26):	19 Urban Local
Level Service (5C):	0 None of the below
NHS (104):	0 Not on NHS
Defense Hwy (100):	0 Not a STRAHNET hwy
Toll Facility (20):	3 On free road
ADT (29):	1,558 Cars/Day
Pct Trucks (109):	-1.00%
ADT Year (30):	2006

CLEARANCES

Vertical (10):	14.83 ft.
Min Vert Over (53):	99.99 ft.
Vert Ref (54A):	H Hwy beneath struct
Undrclearnce (54B):	14.75 ft.
Horizontal (47):	48.00 ft.
Min Lat Left (56):	0.00 ft.
Min Lat Right (55B):	5.30 ft.
Horiz Ref (55A):	H Hwy beneath struct
Underclearance (69):	3 Intolerable - Correct

ROUTE ON STRUCTURE: I-65

ROADWAY LOCATION

Pos Prefix (5A):	Route On Structure
Kind of Hwy (5B):	1 Interstate Hwy
Route Num (5D):	00065
LRS Route (13A/B):	IO0065_000/00
Milepost (11):	131.40 mi
Suffix (5E):	0 N/A (NBI)
Lanes On (28A):	8
Detour Length (19):	0.00 mi

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):	129,829 Cars/Day
Pct Trucks (109):	12.00%
ADT Year (30):	2022

CLEARANCES

Vertical (10):	99.99 ft.
Min Vert Over (53):	99.99 ft.
Vert Ref (54A):	H Hwy beneath struct
Undrclearnce (54B):	14.75 ft.
Horizontal (47):	59.70 ft.
Min Lat Left (56):	0.00 ft.
Min Lat Right (55B):	5.30 ft.
Horiz Ref (55A):	H Hwy beneath struct
Underclearance (69):	3 Intolerable - Correct

STRUCTURE NOTES

-In 2023, AECOM used infrared thermography to identify and locate areas of concrete delamination and overlay debonding in the deck, plus they obtained core samples for testing to determine chloride ion levels in the concrete. See Media tab for results.
-2017 project (CID 174301) included asphalt plug joints.
-2012 project (CID 121305) included the following: 1. 2.25" asphalt waterproofing mix overlay (low temp. product by "Road Science" - not Rosphalt), 2. median barriers were replaced with single taller barrier, 3. asphalt plug joints were installed over the existing joints, and 4. repair of "distressed" areas.
-In 2001, a detailed visual inspection was performed on this structure.
-Structure was widened in 1987 (Drawing No. 18877). Field measurements do not match plan dimensions.
-The deck was overlaid in 1981.

INSPECTION NOTES

-Routine inspection performed by Daniel Coulter and Stephanie Stoops.
-DBE was notified on 12/03/24 about the erosion hole along the roadway at the NW corner.

SCOUR NOTES

LOAD RATING NOTES

8/31/2015 Controlling member is original beams 3-6 in SB or NB or beam 3 SB/ beam 7 NB with 2.25" asphalt, 1.5" latex overlay, modified barriers, and no provision for FWS. Critical point is 2.5 (midspan of span 2) for all trucks. Rating SU4: 47.2 tons (RF 1.75) SU5: 49.8 tons (RF 1.61) SU6: 50.3 tons (RF 1.45) SU7: 52.0 tons (RF 1.34). 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**	**12/03/2024**	**18,877.00**	**sq.ft**	**14,277.00**	**4,000.00**	**600.00**	**0.00**

The top of the deck cannot be inspected due to asphalt overlay. The underside has transverse cracks with efflorescence and moderate width cracks at the bridge ends. The underside of the deck adjacent to the Abutment 1 joint is in poor condition, especially from Bays 15 through 17, and has spalling with exposed rebar with portions of spalls resting on top of the diaphragms. There are a few other spalls with exposed rebar, mostly below the longitudinal joint, and haunch spalls along the beam top flanges. Separation of deck and top flange was observed at several beam ends at Abutment 1 (deck deflected under live load while beams remained stationary).

813	AC Wearing Surf w/ Membrane	3	12/03/2024	18,002.00	sq.ft	18,000.00	0.00	2.00	0.00

Asphalt overlay has cracking in the SB right lane at the north bridge end. There is minor debris in the shoulders.

ELEM NBR	ELEMENT NAME	ENV	INSP. DATE	QUANTITY	UNITS	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4
107	**Steel Opn Girder/Beam**	**3**	**12/03/2024**	**3,319.00**	**ft**	**1,541.00**	**1,503.00**	**275.00**	**0.00**

The beams have painted over pitting, with some areas of minor section loss, in the bottom flange scattered throughout. The beam ends have laminating corrosion at the abutments and at haunch spalls. The beams have scattered surface corrosion throughout, mostly along the top and bottom flanges. Beam 17 has a 3/8" T x 1'-3" L distortion in the bottom flange near Abutment 1. The welded bottom cover plates contain a fatigue sensitive detail, Category E, and Beam 5 in Span 1 near Pier 2 has some surface corrosion at the end weld. Previous in-depth inspections noted cracks in the stiffener to top flange tack welds (some are visible from the abutments) (concurrent CS2).

515	Steel Protective Coating	3	12/03/2024	26,552.00	sq.ft	16,852.00	8,000.00	200.00	1,500.00

The steel protective coating has areas of dulling (8000 sq.ft CS2) and has no effectiveness where corrosion is present (1500 sq.ft CS4). The paint is flaking and peeling in a few areas, mostly on the top of the bottom flanges near the abutments (200 sq.ft CS3).

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**	**12/03/2024**	**20.00**	**each**	**0.00**	**17.00**	**3.00**	**0.00**

The columns have moderate width vertical and horizontal cracks, abrasion with exposed coarse aggregate, scrapes, and small spalls with occasional exposed tie wire. Pier 2 Column 3 has scaling with missing coarse aggregate at the bottom. Pier 2 Column 10 has a shallow spall in the east face. Pier 3 Column 9 has a shallow spall.

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	12/03/2024	252.00	ft	89.00	60.00	103.00	0.00

Abutment 1 backwall has wide diagonal cracks at the ends and a spall with exposed rebar adjacent to Beam 11. Abutment 1 has heavy debris on top of the cap, especially near the east end. The Abutment 4 backwall has widespread patching with some large unsound areas, spalling with exposed rebar, and moderate width cracks. The Abutment 4 cap has wide horizontal cracks in the front face below Beams 15, 17 and 20.

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	12/03/2024	238.00	ft	216.00	21.00	1.00	0.00

Pier caps have moderate width vertical cracks, delaminations, and shallow spalls. The Pier 3 cap has a wide crack in the bottom face between Columns 1 and 2 adjacent to the construction joint.

ELEM NBR	ELEMENT NAME	ENV	INSP. DATE	QUANTITY	UNITS	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4
306	Other Joint	3	12/03/2024	240.00	ft	0.00	26.00	40.00	174.00

The asphalt plug joints are located at Abutments 1 & 4, installed over the existing joints in 2012, and redone in 2017. The plug joints have failed in several areas of the traffic lanes, exposing portions of the original joints and allowing free flow of water through the joints. The Abutment 4 joint on the NB side has some areas where the joint is starting to break up. The joints are partially filled with debris and have some minor cracking.

ELEM NBR	ELEMENT NAME	ENV	INSP. DATE	QUANTITY	UNITS	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4
311	Moveable Bearing	3	12/03/2024	66.00	each	0.00	7.00	58.00	1.00

Abutment 1 bearings are over-expanded and all bearings have corrosion, many with section loss. At Abutment 1, several girder sole plates are not fully bearing on the rocker bearings and bang under live load (most notably at Girders 15, 17, and 18). Many bearings at Abutment 1 are slightly misaligned, and some of the masonry plates no longer sit flush on the abutment seat due to extensive pack rust. Rocker bearings are over-expanded at Pier 2 and some bearings have freckling rust. Abutment 4 bearings have corrosion, some with section loss. Abutment 4 bearings have inconsistent rotations throughout.

515	Steel Protective Coating	3	12/03/2024	330.00	sq.ft	0.00	0.00	110.00	220.00

The protective coating has no effectiveness at the abutments (220 sq.ft CS4) and limited effectiveness at Pier 2 (110 sq.ft CS3).

ELEM NBR	ELEMENT NAME	ENV	INSP. DATE	QUANTITY	UNITS	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4
313	**Fixed Bearing**	**3**	**12/03/2024**	**22.00**	**each**	**20.00**	**2.00**	**0.00**	**0.00**

The exterior fixed bearings at Pier 3 have surface corrosion.

515	Steel Protective Coating	3	12/03/2024	44.00	sq.ft	40.00	0.00	0.00	4.00

Steel protective coating has no effectiveness on the exterior bearings where surface corrosion is present (4 sq.ft CS4).

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**	**12/03/2024**	**453.00**	**ft**	**313.00**	**115.00**	**25.00**	**0.00**

The east railing has several spalls deeper than 1". The railings have moderate width vertical cracks and small spalls throughout.

ELEM NBR	ELEMENT NAME	ENV	INSP. DATE	QUANTITY	UNITS	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4
853	**Utilities**	**3**	**12/03/2024**	**1.00**	**each**	**0.00**	**0.00**	**1.00**	**0.00**

There is a deteriorated/broken utility conduit with exposed wires at the west end of Abutment 4. There are missing utility access covers in the railing near the NE, SE, and NW corners.

ELEM NBR	ELEMENT NAME	ENV	INSP. DATE	QUANTITY	UNITS	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4
857	**Embankment Erosion**	**3**	**12/03/2024**	**1.00**	**each**	**0.00**	**0.00**	**1.00**	**0.00**

NW embankment has a large erosion hole along the roadway shoulder just north of the bridge.

ELEM NBR	ELEMENT NAME	ENV	INSP. DATE	QUANTITY	UNITS	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4
859	**Vegetation**	**3**	**12/03/2024**	**1.00**	**each**	**0.00**	**0.00**	**1.00**	**0.00**

Poison ivy is growing at the northeast corner, spreading along the exterior beam, and restricts inspection access. Trees and shrubs are also dense at each corner.

ELEM NBR	ELEMENT NAME	ENV	INSP. DATE	QUANTITY	UNITS	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4
860	**Erosion Ctrl/Prt**	**3**	**12/03/2024**	**1.00**	**each**	**0.00**	**1.00**	**0.00**	**0.00**

The Abutment 1 slope protection has a spall with 9" deep settlement at the top between Beams 5 & 6 and some undermining at the top at the east end. The Abutment 4 slope protection has cracks along the top.

Looking north along I-65 NB toward Eastern Pkwy.

South bridge joint over Abutment 1 for NB traffic.

East barrier has a few impact spalls.

North bridge joint over Abutment 4 for NB traffic.

Looking south along I-65 NB toward I-264.

Looking north along I-65 SB toward Eastern Pkwy.

South bridge joint over Abutment 1 for SB traffic.

Close up

Typical barrier vertical cracking.

North bridge joint over Abutment 4 for SB traffic.

Asphalt overlay has cracking in the SB right lane at the north bridge end.

Looking south along I-65 SB toward I-264.

NW embankment has a large erosion hole along the roadway shoulder.

East profile

Vertical clearance sign in place for WB traffic.

West profile

Vertical clearance sign in place for EB traffic.

Abutment 1

Abutment 1 spall with exposed rebar below Beam 3.

Abutment 1 has heavy debris on the cap, especially near the east end.

The underside of the deck adjacent to the Abutment 1 joint has spalling with exposed rebar, especially from Bays 15 through 17. Bay 15 shown.

Another view of last photo.

Abutment 1 backwall has moderate to wide diagonal cracks at the ends.

Abutment 1 bearings have corrosion, many with section loss.

Several beam sole plates at Abutment 1 are not fully bearing on the rocker bearings and bang under live load. Beam 2 shown.

Some of the masonry plates at Abutment 1 no longer sit flush on the abutment seat due to extensive pack rust.

Abutment 1 bearings are over-expanded.

Beam 17 has distortion in the bottom flange near Abutment 1.

Large deck soffit spall with exposed rebar in Bay 13 of Span 1 near Pier 2.

South face of Pier 2.

Typical expanded Pier 2 bearings.

North face of Pier 2.

Span 2

Underside of the deck has several haunch spalls along the beam top flanges.

South face of Pier 3.

Pier 3 cap has a wide crack between Columns 1 and 2.

Pier 3-Column 9 spall.

North face of Pier 3.

Typical Pier 3 bearings.

Span 3

Abutment 4

Abutment 4 backwall has widespread patching with some large unsound areas and spalling with exposed rebar.

Abutment 4 moderate cracking with rust staining below the longitudinal joint.

Large area of unsound patching and spalling with exposed rebar in Bay 14 of Abutment 4.

Abutment 4 cap has wide horizontal cracks in the front face. Bay 15 shown.

Abutment 4 backwall wide vertical crack in Bay 19.

Close up of last photo.

Typical Abutment 4 bearing with corrosion.

Beam 1 at Abutment 4 with corrosion along the top flange.