

Inspector: Kronander, Mike

Inspection Date: 05/09/2024

Structure Number: 1505408

Facility Carried: SR 518

# Ohio Bridge Inspection Summary Report

## COL-00518-0099 (1505408)

2: District 28238 - FRANKLIN TWP (COL county)  
ict  
11

5A: Inventory Route 1 00518

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 11

7: Facility On SR 518  
6: Feature Ints WILLARD RUN (BRUSH CR)  
9: Location 0.99 MI E OF SR 644  
Lat, Lon 40.7016028 , -80.866564

Condition	
<b>58: Deck</b>	<b>4 - Poor Condition</b>
58.01 Wearing Surface	7 - Good (1% distress)
58.02 Joint	N- Not Applicable
<b>59: Superstructure</b>	<b>4 - Poor Condition</b>
59.01 Paint & PCS	N - Not Applicable
<b>60: Substructure</b>	<b>6 - Satisfactory Condition</b>
<b>61: Channel</b>	<b>6</b>
61.01 Scour	7 - Good
<b>62: Culverts</b>	<b>N - Not Applicable</b>
<b>67.01 GA</b>	<b>4</b>

Structure Type	
43: Bridge Type	2 - Concrete continuous 01 - Slab N- Not Applicable
45: Spans Main / Approach	3 / 0
107: Deck Type	1 - Concrete Cast-in-Place
408: Composite Deck	U - Unknown
414A Joint Type 1	N - None
414B: Joint Type 2	N - None
108A: Wearing Surface	6 - Bituminous N- Not Applicable

Appraisal	
Sufficiency Rating	59.8 SD/FO 1 - SD
36: Rail, Tr, Gd, Term Std	1 1 1 1
72: Approach Alignment	8 - Equal to present desirable criteria
113: Scour Critical	8 - Stable for scour conditions
71: Waterway Adequacy	8 - Bridge Above Approaches

422: WS Date	04/08/2004
423: WS Thick (in)	1.2
482: Protective Coating	N - None or Not Applicable
483: PCS Date	
453: Bearing Type 1	N - None
455: Bearing Type 2	N - None
528: Foundn: Abut Fwd	6 - Rock (including Spread Footing on Rock)
533: Foundn: Abut Rear	6 - Rock (Including Spread Footing on Rock)
536: Foundn: Pier 1	6 - Rock (including Spread Footing on Rock)
539: Foundn: Pier 2	U - Unknown

Geometric	
48: Max Span Length (ft)	27.0
49: Structure Length (ft)	73.0
52: Deck Width, Out-To-Out (ft)	36.0
424: Deck Area (sf)	2628
32: Appr Roadway Width (ft)	22.0
51: Road Width, Curb-Curb (ft)	36.0
50A: Curb/SW Width: Left (ft)	0
50A: Curb/SW Width: Right (ft)	0
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	1968 / 2008
42A: Service On	1 - Highway
42B: Service Under	5 - Waterway
28A: Lanes on	02
28B: Lanes Under	00
19: Bypass Length	20
29: ADT	481
109: % Trucks (%)	22

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 (%)	122
704: Analysis Date	02/15/2024
63: Analysis Method	6 - Load Factor (LF) rating reported by rating factor (RF) method using MS18 loading.

Inspections	
	Months
90: Routine Insp.	12 05/09/2024
92A: FCM Insp.	N 0
92B: Dive Insp.	N 0
92C: Special Insp.	N 0
92D: UBIT Insp.	N 0
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>38-Reinforced Concrete Slab</b>	3 - Mod.	2628	sq. ft.	876	1190	282	280
<p>SPAN 1: CS4- 24 SF SPALL NEAR PIER 1 WITH 360 DEGREE REBAR EXPOSURE. CS3- 184 SF OF AREAS THAT ARE SPALLED WITH REBAR EXPOSED AND AREAS CRACKED AND DELAMINATED WITH RUST STAINS. SPAN 2: CS4- 256 SF OF SPALLS WITH 360 DEGREE REBAR EXPOSURE OR SEVERE SECTION LOSS TO STEEL. CS3- 68 SF OF SPALL WITH REBAR EXPOSED.</p> <p>SPAN 1 AND 2 CS2: REMAINING PORTIONS OF THE SLAB IN SPAN 1 AND 2 IN CS2 DUE TO CRACKS AT EVERY LOCATION AT THE LONGITUDINAL BARS, 1,046 SF.</p> <p>SPAN 3: CS3- 30 SF OF SPALLED AREA AND AREAS THAT ARE CRACKED, DELAMINATED, AND LOOSE.</p> <p>CS2- 72 SF OF DARK AND DISCOLORED AREA AT CL. 72 SF OR AREAS WITH LONGITUDINAL CRACKS.</p> <p>HISTORICAL COMMENTS: NEW EDGES 2'3" BOTH SIDES 2008. 40% DARK DISCOLORED AREAS CENTER SPAN WITH MAP CRACKING, WORST AREAS AROUND REAR PIER @ MIDDLE OF DECK AND IN CENTER SPAN WITH MUCH RUST STAINING AND EFFLORESCENCE AND STALACTITES. SPALLING IN FWD SPAN WITH RUSTED REBAR EXPOSED. NO DAMPNESS IN DARK AREAS DUE TO WEARING SURFACE REPLACEMENT. DELAMINATION AND SPALLS IN REAR AND FWD SPANS WITH REBAR EXPOSED AND RUSTING 6' LONG IN REAR SPAN. DELAMINATION &amp; SPALLING AT REAR AND FORWARD DECK JOINT.</p> <p>2024: Few reinforcement bars are hanging in span 2 near the centerline of the bridge.</p>							
<b>510-Wearing Surfaces</b>		2628	sq. ft.	2116	511	1	0
<p>New monolithic concrete wearing surface 2008. CS2- 7 LONGITUDINAL CRACKS (511 SF). CS3- 1 SF BROKEN OFF AT LT FWD CORNER.</p> <p>2024: No change.</p>							
<b>210-Reinforced Concrete Pier Wall</b>	3 - Mod.	72	ft.	33	31	8	0
<p>PATCHED AND SEALED 2008. CS2 - SOME VERTICAL CRACKS. SOME PATCHES STARTING TO DETERIATE ON piers 1 and 2. Forward side pier 2 vertical crack (1 LF) and on the rear side of pier 2 15' long x 1' delamination. Pier 1 forward side has 2 vertical cracks (2 LF) and rear side 1 vertical crack (1 LF) and horizontal crack 6" below join (12 LF). CS3- 8 LF FWD FACE PIER 2 SPALLED AREA/CRACKED AND LOOSE WITH EXPOSED REINFORCING STEEL.</p> <p>2024: No change.</p>							
<b>215-Reinforced Concrete Abutment</b>	3 - Mod.	72	ft.	32	26	14	0
<p>Abutments were patched and sealed in 2008. CS3- 3 LF SPALL AT LT REAR END OF ABUTMENT AND 3 LF AT RT FWD. 8 LF AT SPALLED AT FWD CENTER AT DECK JOINT. CS2- 14 LF HORIZONTAL CRACK AT REAR AND 12 LF OF LEAKING AND CRACKED AT FWD.</p> <p>2024: No change except, the forward abutment on the right has a spall with exposed and corroded reinforcement.</p>							
<b>321-Reinforced Concrete Approach Slab</b>	3 - Mod.	880	sq. ft.	0	880	0	0

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	<b>Environment</b>	<b>Total Quantity</b>	<b>Units</b>	<b>Condition State 1</b>	<b>Condition State 2</b>	<b>Condition State 3</b>	<b>Condition State 4</b>
<b>330-Metal Bridge Railing</b>	3 - Mod.	146	ft.	146	0	0	0
<b>815-Drainage</b>	3 - Mod.	2	each	2	0	0	0
<b>840-Approach Slab: Termination or Joint</b>	3 - Mod.	72	ft.	0	72	0	0
2024: Full width, transverse cracking at both joints.							

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ODOT District: District 11

**COL-00518-0099\_(1505408)**

Date Built: 07/01/1968

Major Maint: 01 - State Highway Agency

Facility Carried: SR 518

Traffic On: 1 - Highway

Rehab Date: 07/01/2008

Routine Maint: 01 - State Highway Agency

Feature Inters: WILLARD RUN (BRUSH CR)

Traffic Under: 5 - Waterway

Insp. Resp A: 01 - State Highway Agency

FIPS Code: 28238 - FRANKLIN TWP (COL county)

Location: DISTRICT 11

0.99 MI E OF SR 644

Insp Resp B:

Inspector

Kronander, Mike

Inspection Date 05/09/2024

Reviewer Kronander, Mike

**Inspector Comments - Deck and Approach**

**Deck**

**Floor/Slab (SF)**

NEW EDGES 2'3" BOTH SIDES '08. 40% DARK DISCOLORED AREAS CENTER SPAN WITH MAP CRACKING, WORST AREAS AROUND REAR PIER @ MIDDLE OF DECK AND IN CENTER SPAN WITH MUCH RUST STAINING AND EFFLORESCENCE AND STALACTITES. SPALLING IN FWD SPAN WITH RUSTED REBAR EXPOSED. NO DAMPNESS IN DARK AREAS

DUE TO WEARING SURFACE REPLACEMENT. DELAMINATION AND SPALLS IN REAR AND FWD SPANS WITH REBAR EXPOSED AND RUSTING 6' LONG IN REAR SPAN. DELAMINATION & SPALLING AT REAR DECK JOINT. NBIS QAR 2018 11-09 FOUND IN REAR

SPAN 7' FROM REAR PIER CENTER. NBIS QAR 2018 11-09 FOUND IN REAR SPAN 7' FROM REAR PIER CENTER.

**SPAN 1: CS4-** 24 SF SPALL NEAR PIER 1 WITH 360 DEGREE REBAR EXPOSURE. **CS3-** 184 SF OF AREAS THAT ARE SPALLED WITH REBAR EXPOSED AND AREAS CRACKED AND DELAMINATED WITH RUST STAINS.

**SPAN 2: CS4-** 256 SF OF SPALLS WITH 360 DEGREE REBAR EXPOSURE OR SEVERE SECTION LOSS TO STEEL. **CS3-** 68 SF OF SPALL WITH REBAR EXPOSED. FEW REBARS ARE HANGING.

SPAN 1 AND 2 **CS2:** REMAINING PORTIONS OF THE SLAB IN SPAN 1 AND 2 IN CS2 DUE TO CRACKS AT EVERY LOCATION AT THE LONGITUDINAL BARS, 1,046 SF.

**SPAN 3: CS3-** 30 SF OF SPALLED AREA AND AREAS THAT ARE CRACKED, DELAMINATED, AND LOOSE. **CS2-** 72 SF OF DARK AND DISCOLORED AREA AT CL. 72 SF OR AREAS WITH LONGITUDINAL CRACKS.

2024: Few rebars are hanging in span 2 near CL of bridge.

**Bridge Wearing Surface (SF)**

NEW MSC WEARING SURFACE '08. LONGITUDINAL CRACKING 20 SF. 2 SPOTS BROKEN @ LT REAR & FWD. **CS3-** 1 SF BROKEN OFF AT LT FWD CORNER. **CS2-** 7 LONGITUDINAL CRACKS (511 SF).

2024: No change.

**Bridge Railing (LF)**

Guardrail with steel tubular backup. NEW PANELS IN 2022.

2024: No change.

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### **DRAINAGE (EA)**

Deck drainage is over the side drainage with metal drip edge.

2024: No change.

### **Approach**

#### **Approach Wearing Surface (EA)**

NEW ASPHALT 2019. HL TRANSVERSE CRACK AT FWD AND REAR.

2024: No change.

#### **Approach Slab (SF)**

NEW ASPHALT 2019. Joints at abutment have sealer applied. Asphalt beginning to crack and break up on a narrow strip along joints. **CS2** - Condition rating based on previous rating prior to asphalt overlay.

2024: No change.

#### **Approach Guardrail (EA)**

NEW RAIL AND POST IN 2022.

2024: No change.

### **Inspector Comments - General Appraisal**

#### **Superstructure**

##### **Slab (SF)**

NEW EDGES 2'3" BOTH SIDES '08. 40% DARK DISCOLORED AREAS CENTER SPAN WITH MAP CRACKING, WORST AREAS AROUND REAR PIER @ MIDDLE OF DECK AND IN CENTER SPAN WITH MUCH RUST STAINING AND EFFLORESCENCE AND STALACTITES. SPALLING IN FWD SPAN WITH RUSTED REBAR EXPOSED. NO DAMPNESS IN DARK AREAS DUE TO WEARING SURFACE REPLACEMENT. DELAMINATION AND SPALLS IN REAR AND FWD SPANS WITH REBAR EXPOSED AND RUSTING 6' LONG IN REAR SPAN. DELAMINATION & SPALLING AT REAR DECK JOINT. NBIS QAR 2018 11-09 FOUND IN REAR SPAN 7' FROM REAR PIER CENTER. NBIS QAR 2018 11-09 FOUND IN REAR SPAN 7' FROM REAR PIER CENTER.

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**SPAN 1 AND 2 CS2:** REMAINING PORTIONS OF THE SLAB IN SPAN 1 AND 2 IN CS2 DUE TO

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CRACKS AT EVERY LOCATION AT THE LONGITUDINAL BARS, 1,046 SF.

**SPAN 3: CS3-** 30 SF OF SPALLED AREA AND AREAS THAT ARE CRACKED, DELAMINATED, AND LOOSE. **CS2-** 72 SF OF DARK AND DISCOLORED AREA AT CL. 72 SF OR AREAS WITH LONGITUDINAL CRACKS.

2024: Few rebars are hanging in span 2 near CL of bridge.

### Substructure

#### Abutment Walls (LF)

PATCHED AND SEALED '08. 2'x 2' DELAMINATED AREA WITH SPALLING & REBAR EXPOSED RT FWD UNDER EDGE OF DECK. CS3- 3 LF SPALL AT LT REAR END OF ABUTMENT AND 3 LF AT RT FWD. 8 LF AT SPALLED AT FWD CENTER AT DECK JOINT. CS2- 14 LF HORIZONTAL CRACK AT REAR AND 12 LF OF LEAKING AND CRACKED AT FWD.

2024: Right end of FWD abutment has spall with exposed, corroding rebar.

#### Pier Walls (LF)

PATCHED AND SEALED '08. SOME VERTICAL CRACKS. SOME PATCHES STARTING TO DELAMINATE AT FWD SIDE OF FWD PIER. PATCHED AND SEALED 2008. CS2 - SOME VERTICAL CRACKS. SOME PATCHES STARTING TO DELAMINATE ON piers 1 and 2. Forward side pier 2 vertical crack (1 LF) and on the rear side of pier 2 15' long x 1' delamination. Pier 1 forward side has 2 vertical cracks (2 LF) and rear side 1 vertical crack (1 LF) and horizontal crack 6" below join (12 LF). CS3- 8 LF FWD FACE PIER 2 SPALLED AREA/CRACKED AND LOOSE WITH EXPOSED REBAR.

2024: No change.

#### Wingwalls (EA)

SOME MINOR EDGE SPALLS, SEALED '08. LEFT REAR SPALLED OFF ON BACKSIDE WITH REBAR EXPOSED. RT FWD SPALLED REAR SIDE W/2 REBAR EXPOSED.

2024: No change.

#### Substructure Scour (EA)

SOME MINOR SCOUR AT REAR PIER. CLEAR WATER. FILLED IN '09 WITH STONE. NO SCOUR 2016. HIGH WATER IN 2017. NO NOTABLE SCOUR 2021, 2022, OR 2023.

2024: No change.

#### Slope Protection (EA)

STONE IS DETERIORATING. BROKEN CONCRETE FROM EDGES OF 2008 DECK REHAB AT EDGES OF SLOPE PROTECTION.

2024: No change.

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**Culvert**

**Inspector Comments - Waterway**

**Waterway Adequacy**

**Channel**

**Channel Hydraulic Opening (EA)**

DEGRADATION OF STREAM BED.

2024: No change.

**Channel Protection (LF)**

COVERED WITH VEGETATION OR GONE, EROSION OF REAR BANKS.

2024: No change.

**Scour Critical**

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### Bridge Inspection Report

## Pictures



PHOTO 1

Description Looking northwest at the deck wearing surface.



PHOTO 1

Description Looking south at the downstream channel.

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### Bridge Inspection Report

## Pictures



PHOTO 1

Description Looking southwest at the rear abutment.



PHOTO 1

Description Looking southeast at the span 1 slab underside. Note: large area of cracking, spalling with exposed and corroded reinforcement and adjacent delaminations.

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### Bridge Inspection Report

## Pictures



PHOTO 1

Description Looking northwest at the south fascia.



PHOTO 2

Description Looking southwest at the north fascia.

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### Bridge Inspection Report

## Pictures



PHOTO 2

Description Looking south at the transition over the rear abutment. Note: cracking in the approach roadway along the transition.



PHOTO 2

Description Looking east at the forward abutment wall on the right side. Note: spall with exposed and corroded reinforcement.

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### Bridge Inspection Report

## Pictures



PHOTO 2

Description NBIS QAR



PHOTO 2

Description Looking north at the upstream channel.

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### Bridge Inspection Report

## Pictures



PHOTO 3

Description Looking southeast at the span 2 slab underside mostly on the right half. Note: large area of cracking, spalling with exposed and corroded reinforcement and adjacent delaminations. Multiple reinforcement bars are hanging down from the slab.



PHOTO 3

Description Looking west at the bridge end view.

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### Bridge Inspection Report

## Pictures



PHOTO 3

Description Looking west at pier 1.



PHOTO 4

Description Looking southwest at the underside in span 2.

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### Bridge Inspection Report

### Pictures



PHOTO 4

Description Looking east at the bridge end view.