

## SCDOT BRIDGE INSPECTION FORM

(008) BRIDGE ID: 4010002640300	(005) ROUTE: RICHLAND I-26
(420) ASSET NO: 8030	(006) CROSSING: I-126
(419) RAMP NO:	(009) LOCATION: 3MI NW OF COLUMBIA
(026) FUNCTIONAL CLASS: 11	(016) LAT: 34d 1m 41s (017) LON: 81d 6m 6s

### GENERAL BRIDGE DATA

	EXISTING	REVISED		EXISTING	REVISED
(027) Year Built	1986		(042) Type Serv; On(A) Und(B)	6	1
(106) Year Recon	0		(028) Lanes; On(A) Und(B)	2	5
(031) Design Load	6		(107) Deck Struct		1
(36A) Railings	0		(108) Wear Surf/Membrane/Prot	1	8 8
(36B) Transitions	1			MAT-SUP-SUB	
(36C) Appr Guard	1		(043) Main Original (A)	3	2 1
(36D) Appr Guard End	1		Main Reconst (B)		4
(037) History	4		(044) Appr Original (A)	0	00 0
(319) Last Paint Date			Appr Reconst (B)		

### GEOMETRIC DATA

	EXISTING	REVISED		EXISTING	REVISED
(032) Appr Rdway	41	40		FT	IN
(033) Bridge Median	0		(053) Vert Clr Above Deck	99	99
(034) Skew	30	0	(54A) Vert Clear Ref		H
(035) Flared	0		(54B) Vert Clear Right	17	5 17 7
(045) # Main Spans	4		(54C) Vert Clear Left	17	5
(046) # Appr Spans	0		(10A) Great Min Clr Over/Und	99	99 18 0
(048) Max Span Lgth	134		(10B) Great Min Right	17	7 18 0
(308) Appr Span Lgth	0		(10C) Great Min Left	17	7
(049) Struct Length	423				
(47A) Horz Clear Right	41	40	(55A) Lat Clear Ref		H
(47B) Horz Clear Left	0		(55B) Lat Clear Right	12	13.50
(47UA) Horz Clear Right	50	52.50	(056) Lat Clear Left	5	
(47UB) Horz Clear Left	51				
(50B) Sidewalk Right	0		(038) Navigation Cont		N
(50A) Sidewalk Left	0		(039) Nav Vert Clear	0	
(051) Curb to Curb	41	40	(040) Nav Horz Clear	0	
(052) Deck Out-Out	43.30		(111) Nav Pier Port		

### RATINGS DATA

	EXISTING	REVISED		EXISTING	REVISED
(58) Deck	6		(041) Traffic Status	A	
(59) Super Str	7		(063) Rating Method	8	
(60) Sub Str	7		(064) Operating Method	0.86	
(061) Channel	N		(065) Rating Method	8	
(062) Culv Ret	N		(066) Inventory Rating	0.66	
(071) Water Adeq	N		(411) Date Rated	07/2020	
(072) Appr Rdway	8		(418) Conditions During Rating	6	7 7
(113) Scour Critical	N			Freq	Mth/Year
(067) Structure	5		(091, 090) Routine Insp	24	12/2019 24 12/2021
(068) Deck Geom	5		(92A, 93A) Fracture Critical	N	
(069) Underclear	5		(92B, 93B) Underwater Insp	N	
(070) Bridge Post	5		(92C, 93C) Special Insp	N	

Inspection Leader: RICARDO CORNEJO, WSP	Reviewed By: RAGHU SURAPANENI, WSP
Date:	Date: 3/2/2022

## **Bridge Element Group Textual Data**

**Bridge ID: 40-1-00026-4-03-00**

02 Mar 2022

### **Abutments and/or Headwalls:**

Reinforced Concrete Abutment Walls at End Bents

End bent 5 vertical abutment on south end at 5ft from ground, spall (7in x 18in x up to 6in deep) with exposed rebar and adjacent delamination (10in x 6ft) (Photo 2)

End bent 5 vertical abutment on north end at top, spall (up to 10in x 6ft) with adjacent delamination (7in x 5ft) (Photo 3)

End bent 1, fallen joint material and debris accumulation (full length) (Photo 4)

End bent 1, between headwalls and wingwalls on both sides, 0.07in cracks and minor spalls.

End Bent 1, both cheek walls and slope protection exhibit hairline cracks.

End Bent 5, between beams 2 and 3, 3 and 4, and 4 and 5, 3ft vertical hairline crack.

End Bent 5, between beams 1 and 2, 6in diagonal hairline crack and minor spall.

End Bent 5, construction joint exhibit longitudinal hairline cracks.

### **Bents and/or Piers:**

7-Good: Reinforced Concrete Hammerhead Pier Caps at Interior Bents 3 and 4 (38ft Long x 5ft Wide x 5ft high) and Bent 2 (37ft-10in long x 5ft wide x 5ft high); (1) 5ft diameter Column

End Bent 1 Cap, between beams 3 and 4, 1ft diagonal hairline crack.

Hairline cracks with a minor spall in caps.

### **Bearings:**

(12) Moveable Bearing in Satisfactory condition.

Minor corrosion starting to form on bearings, anchor bolts, and anchor bolt nuts (span 1 beam 4 near bearing shown) (Photo 5)

Several loose and missing anchor bolt nuts as follows:

Span 4, Bent 5, Beam 1, right side loose.

Span 4, Bent 5, Beam 5, right side loose.

Span 4, Bent 5, Beam 6, right side missing.

### **Girders/Floor Beams/Stringers and/or Beams:**

7-Good- (6) Curved Steel Built Up Plate Girders spaced at 7ft-4in

Minor corrosion starting to form on beam ends (span 1 beam 4 at end bent 1 shown) (Photo 6)

### **Truss Members:**

N/A

**Expansion Joints:**

Compression Joint Seal at End Bent 1 and End Bent 5.

Expansion material pulling loose and/or missing (Photo 7).

**Decks and/or Slabs:**

6-Satisfactory: Span 1 is 94ft, Span 2 is 109ft, Span 3 is 134ft and Span 4 is 86ft; 7-5/8in Thick Reinforced Concrete Deck

Hairline transverse and map cracking, minor abrasion, moderate spalling with rust, and delamination that has been patched on deck, overlaid coating is starting to peel (Photos 8 and 9).

Span 4 deck left lane near midspan, spall (2ft diameter x 2in deep) with exposed rebar (Photo 10).

Span 4, underside of deck right side soffit exhibit transverse hairline cracks, several with efflorescence and a minor spall with rust.

**Curbs:**

N/A

**Bridge Railing/Parapets and/or Median Barriers:**

36A: 0 - Reinforced Concrete Bridge Rail; 2ft-8in High; 1ft-8in Wide

36B: 1 - Approved Transition

36C: 1 - Reinforced Concrete Railing on Approaches

36D: 1 - Approved Terminal Ends

Bridge and approach rail in place. Hairline cracks, several with efflorescence in parapet walls.

**Paint Systems:**

Paint peeling and rust starting to form on beams (Photo 1).

**Waterway and Scour:**

N/A

**Fender System:**

N/A

**Roadway Alignment:**

8-Very Good: A reduction in speed from the posted limit for the given section of highway is not required.

**Traffic Signs:**

(2) Delineators on I-26.

(2) Vertical Clearance sign: 17'5" above WBL and 16'7" above EBL of I-126 is for structure #4010002640372

**Encroachments:**

(1) 1" metal pipe on left side of span 1, attached to parapet wall with "U" clamps.

**Miscellaneous Notes:**

Latitude/Longitude: 34°01'41.0"N /81°06'06.0"W

Coordinates: 34.028056, -81.101667

Inspected on December 2nd, 2021. Clear, 68°F

Labeling diagram orientation verified; bridge inspected from East to West

Historical Orientation: West to East

DIVIDED HIGHWAY

VERTICAL CLEARANCE MEASUREMENTS PER BIGD 7.3.8

VERT CL EB (54B):

-AT LEFT: 18'-1"

-AT CENTER LEFT: 18'-0"

-AT CENTER RIGHT: 17'-10"

-AT RIGHT: 17'-7"

VERT CL WB (54C):

-AT LEFT: 17'-9"

-AT CENTER: 17'-5"

-AT RIGHT: 17'-9"

DIVIDED HIGHWAY

LATERAL CLEARANCE MEASUREMENTS PER BIGD 7.3.8

LAT CL AT RIGHT (55B):

-EB LANE TO BENT: 13'-6"

-WB LANE TO BENT: 21'-6"

LAT CL AT LEFT (56):

-EB LANE TO BENT: 5'-0"

-WB LANE TO BENT: 5'-0"

Asset ID Plates - Present (SW Corner)

Inspection Team - Ricardo Cornejo BITL, Ramesh Mishra BI, Vinay Janardhan BI

## Bridge Element Level Data

02 Mar 2022

<u>Element No</u>	<u>Element Name/Description</u>	<u>Units</u>	<u>Env</u>	<u>Defect</u>	<u>Quantity in Each Condition State</u>				<u>Total Qty</u>
					<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	
107	Steel Open Girder/Beam	feet	4	Yes					
107	Corrosion	feet	4	1000	0	12	0	0	12
107	Steel Open Girder/Beam	feet	4	Yes	2526	12	0	0	2538
12	Reinforced Concrete Deck	sq feet	4	Yes					
12	Delamination/Spall/Patched Area	sq feet	4	1080	0	2050	0	0	2050
12	Efflorescence/Rust Staining	sq feet	4	1120	0	24	0	0	24
12	Cracking (RC and Other)	sq feet	4	1130	0	2500	0	0	2500
12	Reinforced Concrete Deck	sq feet	4	Yes	13755	4575	0	0	18330
205	Reinforced Concrete Column	each	4	No	3	0	0	0	3
215	Reinforced Concrete Abutment	feet	4	Yes					
215	Delamination/Spall/Patched Area	feet	4	1080	0	0	2	0	2
215	Cracking (RC and Other)	feet	4	1130	16	0	0	0	16
215	Reinforced Concrete Abutment	feet	4	Yes	119	0	2	0	121
234	Reinforced Concrete Pier Cap	feet	4	Yes					
234	Delamination/Spall/Patched Area	feet	4	1080	0	1	0	0	1
234	Cracking (RC and Other)	feet	4	1130	1	0	0	0	1
234	Reinforced Concrete Pier Cap	feet	4	Yes	113	1	0	0	114
302	Compression Joint Seal	feet	3	Yes					
302	Seal Damage	feet	3	2330	0	0	0	45	45
302	Compression Joint Seal	feet	3	Yes	49	0	0	45	94
311	Movable Bearing	each	3	Yes					
311	Corrosion	each	3	1000	0	3	0	0	3
311	Connection	each	3	1020	0	3	0	0	3
311	Movable Bearing	each	3	Yes	6	6	0	0	12
321	Reinforced Concrete Approach Slab	sq feet	2	No	2820	0	0	0	2820
331	Reinforced Concrete Bridge Railing	feet	2	Yes					
331	Delamination/Spall/Patched Area	feet	2	1080	0	8	0	0	8
331	Efflorescence/Rust Staining	feet	2	1120	0	35	0	0	35
331	Cracking (RC and Other)	feet	2	1130	105	0	0	0	105
331	Reinforced Concrete Bridge Railing	feet	2	Yes	803	43	0	0	846

515	Steel Protective Coating	sq feet	1	Yes						
515	Effectiveness (Steel Protective Coatings)	sq feet	1	3440	0	0	0	157	157	
515	Steel Protective Coating	sq feet	1	Yes	32239	0	0	157	32396	



# Bridge Inspection QC Form (Consultant Inspection)

REQUIRED STRUCTURE AND INSPECTION INFORMATION	
ASSET ID (08): 08030	TEAM LEADER: Ricardo Cornejo
INSPECTION TEAM MEMBERS: Ramesh Mishra and Vinay Janardhan	INSPECTION TYPE: Routine
CONSULTANT NAME: WSP INC.	
QUALITY CONTROL REVIEWER (QCR): (Print Name): Raghuvveer Surapaneni	

INSPECTION REPORT	OTHER
1) <input checked="" type="checkbox"/> <b>SI&amp;A:</b> Reviewed Report Form SI&A Data (specifically ratings for NBI 58, 59, 60, 62, 71, 72	
2) <input checked="" type="checkbox"/> <b>Textual:</b> Reviewed the textual sections of the report for consistency and errors	
3) <input checked="" type="checkbox"/> <b>Element-Level:</b> Element Condition States/Defects reviewed and are consistent with NBI Items	
4) <input checked="" type="checkbox"/> <b>Photographs:</b> Reviewed photographs included in report, all included per BIGD 5.4.4.2	
5) <input checked="" type="checkbox"/> <b>Previous Inspection Report:</b> Reviewed against previous inspection, if there is no previous: N/A: <input type="checkbox"/>	
6) <input type="checkbox"/> <b>Sketch Sheets/Attachments:</b> Required items are included (BIGD 5.4.4.2) & reviewed, or if N/A: <input checked="" type="checkbox"/>	
7) <input type="checkbox"/> <b>Condition Rating (58, 59, 60 or 62) 5 or Less:</b> A photograph or attachment is included, or if N/A: <input checked="" type="checkbox"/>	
	8) <input checked="" type="checkbox"/> <b>Repair Recommendations:</b> Repair Recommendation Form completed and sent to DBIS, or if N/A: <input type="checkbox"/>
	9) <input type="checkbox"/> <b>Critical Finding(s):</b> If critical finding found, the Critical Findings Form was submitted, or if N/A: <input checked="" type="checkbox"/>
	10) <input type="checkbox"/> <b>Requests to BMO (HQ):</b> Load Rating and/or Scour Re-Evaluation Request(s) sent, or if N/A: <input checked="" type="checkbox"/>
	11) <input type="checkbox"/> <b>Posting:</b> Need for load posting / weight restriction signs were coded as "Priority A Flag" - if N/A: <input checked="" type="checkbox"/>
	12) <input type="checkbox"/> <b>Signs:</b> Need for height clearance or narrow bridge signs were coded as "Priority A Flag" - if N/A: <input checked="" type="checkbox"/>

- Initial Inspection Only:**  QCR has reviewed initial element quantities for Element-Level
- Initial Inspection Only:**  QCR has reviewed inventory photos, correctly stored in Bridge File
- FCM Inspection Only:**  Correct documentation was included, procedure followed, required access gained
- UW Inspection Only:**  Correct documentation was included, procedure followed, required access gained
- Complex Bridge Only:**  Bridge with complex component(s) procedure followed

**QC Review Comments:** (use another page if additional comments)

1	QC Subject: 1) Language reviewed for consistency between report content, etc. QC Comment: In the condition comments, please use location first followed by the defect description BITL Response to Comment: Comments Addressed QC Comment Closed? <input checked="" type="checkbox"/>
2	QC Subject: 1) Language reviewed for consistency between report content, etc. QC Comment: Add Historical Orientation in Miscellaneous Notes BITL Response to Comment: Comments Addressed QC Comment Closed? <input checked="" type="checkbox"/>
3	QC Subject: - QC Comment: _____ BITL Response to Comment: _____ QC Comment Closed? <input type="checkbox"/>
4	QC Subject: - QC Comment: _____ BITL Response to Comment: _____ QC Comment Closed? <input type="checkbox"/>

**QC Review Complete**

Signed and Dated by QC Reviewer: \_\_\_\_\_

01/13/2022

(Upload to BIO)

Part I – Bridge Data <i>Complete at all times with bridge data.</i>				
Asset ID (NBI 08):	08030	Facility Carried (NBI 07):	I-26 WB	Inspection Date: 12-02-2021
Structure Number:	4010002640300	Feature Intersected (NBI 06):	I-126	Consultant: WSP
District # (NBI 02):	1	Bridge Owner (NBI 22):	1	Consultant BITL: Ricardo Cornejo
County (NBI 03):	RICHLAND	Consultant BITL Email:	Ricardo.cornejo@wsp.com	Photo Format Used: Photos on This Form
<input type="checkbox"/>	BRIDGE ORIENTATION: Labeling diagram orientation is same direction as the historic orientation of the bridge.			
<input checked="" type="checkbox"/>	BRIDGE ORIENTATION: Labeling diagram orientation is opposite direction from the historic orientation of the bridge.			
<input type="checkbox"/>	BRIDGE ORIENTATION: Asset ID placard moved during inspection by consultant to Bent 1.			

Part II – Repair Recommendations					
Flag Type (A, B or C)	HMMS Deficiency Code	Deficiency Description <i>(include approximate quantity &amp; location for maintenance to be aware of the deficiency)</i>	Pile Repair Report Needed? (A5.27)	Photo Number (if used)	<b>DBIS:</b> Already in HMMS?
C	801	Span 4 deck left lane near midspan, spall (2ft diameter x 2in deep) with exposed rebar	<input type="checkbox"/>	1	<input type="checkbox"/>
			<input type="checkbox"/>	2	<input type="checkbox"/>
			<input type="checkbox"/>	3	<input type="checkbox"/>
			<input type="checkbox"/>	4	<input type="checkbox"/>
			<input type="checkbox"/>	5	<input type="checkbox"/>
			<input type="checkbox"/>	6	<input type="checkbox"/>
			<input type="checkbox"/>	7	<input type="checkbox"/>
			<input type="checkbox"/>	8	<input type="checkbox"/>
			<input type="checkbox"/>	9	<input type="checkbox"/>
			<input type="checkbox"/>	10	<input type="checkbox"/>
			<input type="checkbox"/>	11	<input type="checkbox"/>

Part III – Repair Recommendations Transmittal	
<ol style="list-style-type: none"> <li>1. This transmittal section shall be used to transmit repair recommendations from a consultant inspectors to the DBIS.</li> <li>2. Prior to the submittal of this form, the form should be reviewed by the reporting party.</li> <li>3. The reporting party shall electronically sign below using the reporting party signature line prior to submitting.</li> <li>4. The reporting party shall submit the signed form using the "Transmit Repair Recommendations" button.</li> </ol>	
<b>ProjectWise Link to Photos for Repair Recommendations (if used):</b>	
<b>ELECTRONIC SIGNATURE (Reporting Party):</b> <div style="border: 1px solid black; padding: 5px; width: 300px; margin-top: 10px;"> </div>	<b>Transmit Repair Recommendations:</b>

Part VI – DBIS Confirmation of Repair Recommendation Entry into HMMS	
<ol style="list-style-type: none"> <li>1. This section shall be used to confirm the entry of consultant repair recommendations into HMMS by the DBIS (or designee).</li> <li>2. The DBIS (or designee) shall electronically sign below using the DBIS signature line after entering this document into HMMS.</li> <li>3. The DBIS (or designee) shall return the signed form to the consultant inspector.</li> </ol>	
<b>ELECTRONIC SIGNATURE (DBIS or designee):</b> <div style="border: 1px solid black; height: 40px; width: 300px; margin-top: 10px;"></div>	<b>Return Form to Consultant:</b>

**Part I – Bridge Data** *Completed on Page 1*

Asset ID (NBI 08):	08030	Structure Number:	4010002640300	Inspection Date:	12-02-2021
--------------------	-------	-------------------	---------------	------------------	------------

**Repair Recommendations Form Photographs**

- Consultants may:
1. Add photos to the Photograph Form (Attachment 5.20) or another form with captioned photographs and upload the document to ProjectWise. See instructions on Attachment 5.6 instructions page. Link the ProjectWise location of the document on Page 1.
  2. Add photos to this form and send to the DBIS.



Photo #: 1 Caption: Span 4 deck left lane near midspan, spall (2ft diameter x 2in deep) with exposed rebar

Photo #: 2 Caption:

Photo #: 3 Caption:

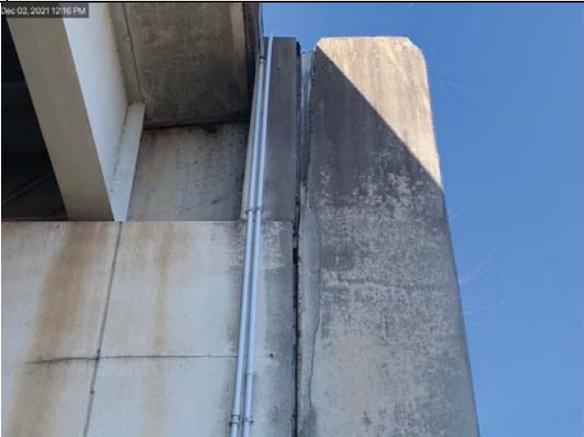
Photo #: 4 Caption:

Photo #: 5 Caption:

Photo #: 6 Caption:

Photo #: 7 Caption:

Photo #: 8 Caption:

Asset ID Number:	08030	Bridge Inspection Date:	12-02-2021
	#1		#2
	Paint peeling and rust starting to form on beams		End bent 5 vertical abutment on south end at 5ft from ground, spall (7in x 18in x up to 6in deep) with exposed rebar and adjacent delamination (10in x 6ft)
	#3		#4
	End bent 5 vertical abutment on north end at top, spall (up to 10in x 6ft) with adjacent delamination (7in x 5ft)		End bent 1, fallen joint material and debris accumulation (full length)
	#5		#6
	Minor corrosion starting to form on bearings, anchor bolts, and anchor bolt nuts (span 1 beam 4 near bearing shown)		Minor corrosion starting to form on beam ends (span 1 beam 4 at end bent 1 shown)

Asset ID Number: 08030		Bridge Inspection Date: 12-02-2021	
			
#7	End bent 1 joint, expansion material pulling loose and/or missing	#8	Hairline transverse and map cracking, minor abrasion, moderate spalling with rust, and delamination that has been patched on deck, overlaid coating is starting to peel
			
#9	Hairline transverse and map cracking, minor abrasion, moderate spalling with rust, and delamination that has been patched on deck, overlaid coating is starting to peel	#10	Span 4 deck left lane near midspan, spall (2ft diameter x 2in deep) with exposed rebar
#11		#12	

Asset ID Number:	08030	Bridge Inspection Date:	12-02-2021
------------------	-------	-------------------------	------------



#1	East Approach Looking West	#2	West Approach Looking East
----	----------------------------	----	----------------------------



#3	Backstation (East Approach Looking East)	#4	Upstation (West Approach Looking West)
----	--	----	--



#5	North Profile Looking South	#6	South Profile Looking North
----	-----------------------------	----	-----------------------------

Asset ID Number:	08030	Bridge Inspection Date:	12-02-2021
------------------	-------	-------------------------	------------



#7	Feature Intersected (Looking South)	#8	Feature Intersected (Looking North)
----	-------------------------------------	----	-------------------------------------



#9	Concrete Bridge Deck	#10	Typical Superstructure (Span 1 Shown)
----	----------------------	-----	---------------------------------------



#11	Typical Bridge Rail (North Shown)	#12	North bridge rail, 1in dia utility pipe
-----	-----------------------------------	-----	---

Asset ID Number:	08030	Bridge Inspection Date:	12-02-2021
------------------	-------	-------------------------	------------



#13	I-126 WBL, Clearance Sign	#14	End Bent 1 Joint
-----	---------------------------	-----	------------------



#15	Asset ID plaque, SW corner	#16	End Bent 1
-----	----------------------------	-----	------------



#17	Typical Substructure (Bent 2 Shown)	#18	End Bent 5
-----	-------------------------------------	-----	------------

Asset ID Number:	08030	Bridge Inspection Date:	12-02-2021
			
#19	I-126 EBL, Clearance Sign	#20	
#21		#22	
#23		#24	