

SCDOT BRIDGE INSPECTION FORM

(008) BRIDGE ID: 4010002600400			(005) ROUTE: RICHLAND I-26		
(420) ASSET NO: 2823			(006) CROSSING: RR CSXT		
(419) RAMP NO:			(009) LOCATION: 4 MI NW OF COLUMBIA		
(026) FUNCTIONAL CLASS: 11			(016) LAT: 34d 1m 34.83s (017) LON: 81d 6m 8.28s		
GENERAL BRIDGE DATA					
EXISTING		REVISED	EXISTING		REVISED
(027) Year Built	1958		(042) Type Serv; On(A) Und(B)	1 2	
(106) Year Recon	1986		(028) Lanes; On(A) Und(B)	6 0	
(031) Design Load	6		(107) Deck Struct	1	
(36A) Railings	0		(108) Wear Surf/Membrane/Prot	6 8 8	0 0
(36B) Transitions	1			MAT-SUP-SUB	MAT-SUP-SUB
(36C) Appr Guard	1		(043) Main Original (A)	1 4 1	
(36D) Appr Guard End	1		Main Reconst (B)	3 02 1	
(037) History	4		(044) Appr Orginal (A)	0 00 0	
(319) Last Paint Date			Appr Reconst (B)	0 00 0	
GEOMETRIC DATA					
EXISTING		REVISED	EXISTING		REVISED
(032) Appr Rdway	124	114	FT	IN	FT IN
(033) Bridge Median	3		(053) Vert Clr Above Deck	99 99	
(034) Skew	7		(54A) Vert Clear Ref	R	
(035) Flared	0		(54B) Vert Clear Right	21 1	
(045) # Main Spans	3		(54C) Vert Clear Left	0 0	
(046) # Appr Spans	0		(10A) Great Min Clr Over/Und	99 99	
(048) Max Span Lgth	60		(10B) Great Min Right	21 1	99 99
(308) Appr Span Lgth	0		(10C) Great Min Left	0 0	99 99
(049) Struct Length	175				
(47A) Horz Clear Right	33	40	(55A) Lat Clear Ref	R	
(47B) Horz Clear Left	0		(55B) Lat Clear Right	12.70	11.50
(47UA) Horz Clear Right	0		(056) Lat Clear Left	0	
(47UB) Horz Clear Left	0				
(50B) Sidewalk Right	0		(038) Navigation Cont	N	
(50A) Sidewalk Left	0		(039) Nav Vert Clear	0	
(051) Curb to Curb	118	114	(040) Nav Horz Clear	0	
(052) Deck Out-Out	124	123.25	(111) Nav Pier Port		
RATINGS DATA					
EXISTING		REVISED	EXISTING		REVISED
(58) Deck	7		(041) Traffic Status	A	
(59) Super Str	5		(063) Rating Method	8	
(60) Sub Str	7		(064) Operating Method	1.29	
(061) Channel	N		(065) Rating Method	8	
(062) Culv Ret	N		(066) Inventory Rating	0.99	
(071) Water Adeq	N		(411) Date Rated	11/2021	
(072) Appr Rdway	8		(418) Conditions During Rating	7 5 7	
(113) Scour Critical	N		Freq Mth/Year	Freq Mth/Year	
(067) Structure	5		(091, 090) Routine Insp	24 12/2019	24 12/2021
(068) Deck Geom	9		(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: 40-1-00026-0-04-00

02 Mar 2022

Abutments and/or Headwalls:

Reinforced Concrete Abutment Walls at End Bents

Water seeping through construction joint, bottom of headwall-top of cap, East end. Hairline to 0.04" cracks with efflorescence in headwalls.

End bent 4 abutment on north end at top corners, (2) spalls (up to 18in x 1ft x full thickness) (Photo 2)

End bent 1 slope at north end, erosion channel (full length x 5ft x 30in) (Photo 8)

Bents and/or Piers:

7-Good: Original Section-Reinforced Concrete Caps at End Bents and at Interior Bents; (4) Reinforced Concrete Columns per Bent at interior bents; Widened Section- (2) Reinforced Concrete Caps at both End Bents; (2) Reinforced Concrete Caps at Interior Bents and (4) Reinforced Concrete Columns at interior bents

Continuous saddles have been installed at bents 2 and 3, both sides, beams 1-10 (Photo 4)

Cap bent 1:

between beams 1 and 3, 8ft long. 1/16in crack .
under beam 3, 2ft vert. h/l crack.
under beam 6, 2ft vert. h/l crack.
under beam 7, 2ft vert. h/l crack.
between beams 12 and 13, 2' long. h/l crack.

Cap bent 2:

between columns 1 and 2, east side, 2ft vert. h/l crack.
above column 4, west side, 3ft vert. h/l crack .

Cap bent 3:

above column 1, East side, 3ft vert. h/l crack.
above column 1, East side, 3ft diag. h/l crack.
bottom between columns 1 and 2, (3) 2ft trans. h/l cracks
bottom between columns 1 and 2, (2) 1ft trans. 0.04in crack w/rust.
between columns 1 and 2, west side, 4ft long. 0.04in crack w/rust .
under beam 3, west side, 1ft long. 0.04in crack.
above column 4, west side, 3ft diag. h/l crack.
above column 7, east side, minor spall 3in x 4in x 1/2in.
end of cap, west side, minor spall w/rust 1ft x 6in x 1/2in.

Cap bent 4:

between beams 2 and 3, 3ft long. 0.04in crack .
between beams 3 and 4, 3ft long. 0.04in crack w/eff.
under beam 9, 1ft long. h/l crack.
between beams 9 and 10, 2ft long. h/l crack.

Bearings:

(30) Movable, (50) Fixed, and (40) Elastomeric Bearing

Several elastomeric pads are starting to bulge out past saddles at bents 2 and 3 (span 2 beam 5 at bent 2 shown) (Photo 7)

Minor corrosion on bearings, moderate where saddles have been installed. Several nuts on shim plates at continuous saddles do not have a full nut, bents 2 and 3.

Girders/Floor Beams/Stringers and/or Beams:

5-Fair: (10) W33x201 Steel Girders spaced at various spacing and (10) Reinforced Concrete Deck Girders spaced at 6ft-6in; Cross Section 45in high x 17in wide

Continuous saddles have been installed at bents 2 and 3, both sides, beams 1-10 (Photo 4)

Hairline flexure cracks mid-span on concrete beams.

Saddle connections at bent 2, beams 4-6 are not pulled up tight. Paint starting to peel from beams.

Truss Members:

N/A

Expansion Joints:

Pourable Joints at End Bents in EBL's of I-26; Compression Joint Seal at Interior Bents of EBL's. Joints in WBL's of I-26 are asphalt plug joints.

Expansion material torn, pulled loose, and missing, EBL's of I-26 and filled with dirt/debris/vegetation (end bent 4 joint shown) (Photo 9)

Expansion material torn, pulled loose, and missing, EBL's of I-26 (interior bent 3 joint shown) (Photo 10)

Decks and/or Slabs:

7 Good: (3) Spans at 60ft, 60ft, and 55ft; 9in thick Reinforced Concrete Slab; No Asphalt Wearing Surface in EBL's; 2in Asphalt Wearing Surface in WBL's

Span 1 center lanes at bent 2, (2) patched areas (15sf) that are depressed (up to 1in) on westbound right lane (Photo 1)

Span 1 deck right lane of EBL's of I-26, spalling (up to 1.5in deep) next to bent 2 joint (Photo 10)

(2) EBL's are concrete with hairline to 0.04" transverse and map cracking on deck.

Transverse hairline cracks several with efflorescence on underside of deck.

Curbs:

Approach curbs are broken, both ends, right side.

Bridge Railing/Parapets and/or Median Barriers:

36A - 0: 2'-8" high concrete barrier
36B - 1: Thrie-beam Transitions with Metal Posts
36C - 1: "W" Beam Rail with Metal Posts on Approaches
36D - 1: Approved End Terminals

Bridge and approach rail in place, (2) concrete median barriers separating traffic on I-26. Hairline cracks several with efflorescence and minor spalls in parapet walls. Minor collision damage to parapet wall in EBL of I-26.

Paint Systems:

Paint system is starting to fail on beams (top coat only) (Photo 5)

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.

Minor erosion under approach slab, West end, right side.

Traffic Signs:

(2) Delineators

Overhead sign at west end of bridge, impact damage area with tear on metal (base of both poles next to EBL's of I-26 shown) (Photo 12)

Encroachments:

(2) 2" metal pipes, right side, attached to side of parapet wall.

(1) 2" metal pipe, left side, attached to bottom of deck.

Miscellaneous Notes:

Latitude/Longitude: 34°01'34.8"N /81°06'08.3"W

Coordinates: 34.026342°, -81.102300°

Inspected on December 2, 2021, Clear, 70°F

Labeling diagram orientation verified; bridge inspected from West to East.

Historical Orientation: West to East

RAILROAD

VERTICAL CLEARANCE MEASUREMENTS PER BIGD 7.3.8

VERT CL (54B):

-LEFT RAIL: 21'-1"

-RIGHT RAIL: 21'-1"

LATERAL CLEARANCE MEASUREMENTS PER BIGD 7.3.8

LAT CL AT RIGHT (55B):

-CENTER OF TRACK TO BENT: 11'-6"

Asset ID Plates - Present (SW Corner)

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

Bridge Element Level Data

02 Mar 2022

Element No	Element Name/Description	Units	Env	Defect	Quantity in Each Condition State				Total Qty
					<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	
107	Steel Open Girder/Beam	feet	4	No	1710	0	0	0	1710
110	Reinforced Concrete Open Girder/Beam	feet	4	Yes					
110	Cracking (RC and Other)	feet	4	1130	0	1100	0	0	1100
110	Reinforced Concrete Open Girder/Beam	feet	4	Yes	550	1100	0	0	1650
12	Reinforced Concrete Deck	sq feet	4	Yes					
12	Delamination/Spall/Patched Area	sq feet	4	1080	0	6	0	0	6
12	Efflorescence/Rust Staining	sq feet	4	1120	0	224	0	0	224
12	Cracking (RC and Other)	sq feet	4	1130	780	562	0	0	1342
12	Reinforced Concrete Deck	sq feet	4	Yes	19286	1436	0	0	20722
205	Reinforced Concrete Column	each	4	No	16	0	0	0	16
215	Reinforced Concrete Abutment	feet	3	Yes					
215	Delamination/Spall/Patched Area	feet	3	1080	0	0	3	0	3
215	Reinforced Concrete Abutment	feet	3	Yes	157	0	3	0	160
234	Reinforced Concrete Pier Cap	feet	4	Yes					
234	Delamination/Spall/Patched Area	feet	4	1080	0	0	2	0	2
234	Exposed Rebar	feet	4	1090	0	1	0	0	1
234	Efflorescence/Rust Staining	feet	4	1120	0	9	0	0	9
234	Cracking (RC and Other)	feet	4	1130	39	25	14	0	78
234	Reinforced Concrete Pier Cap	feet	4	Yes	445	35	16	0	496
301	Pourable Joint Seal	feet	3	Yes					
301	Seal Damage	feet	3	2330	0	0	0	80	80
301	Pourable Joint Seal	feet	3	Yes	296	0	0	80	376
302	Compression Joint Seal	feet	3	Yes					
302	Seal Damage	feet	3	2330	0	0	0	80	80
302	Compression Joint Seal	feet	3	Yes	0	0	0	80	80
310	Elastomeric Bearing	each	3	Yes					
310	Bulging, Splitting or Tearing	each	3	2230	0	18	0	0	18
310	Elastomeric Bearing	each	3	Yes	22	18	0	0	40
311	Movable Bearing	each	3	Yes					
311	Corrosion	each	3	1000	0	21	0	0	21

311	Movable Bearing	each	3	Yes	9	21	0	0	30
313	Fixed Bearing	each	3	Yes					
313	Corrosion	each	3	1000	0	27	0	0	27
313	Fixed Bearing	each	3	Yes	23	27	0	0	50
321	Reinforced Concrete Approach Slab	sq feet	2	No	2400	0	0	0	2400
331	Reinforced Concrete Bridge Railing	feet	2	Yes					
331	Delamination/Spall/Patched Area	feet	2	1080	0	16	0	0	16
331	Efflorescence/Rust Staining	feet	2	1120	0	32	0	0	32
331	Cracking (RC and Other)	feet	2	1130	39	3	0	0	42
331	Reinforced Concrete Bridge Railing	feet	2	Yes	623	51	0	0	674
510	Wearing Surfaces	sq feet	3	Yes					
510	Delamination/Spall/Patched Area/Pothole (Wearing Surfaces)	sq feet	3	3210	0	0	15	0	15
510	Wearing Surfaces	sq feet	3	Yes	12195	0	15	0	12210
515	Steel Protective Coating	sq feet	1	Yes					
515	Peeling/Bubbling/Cracking (Steel Protective Coatings)	sq feet	1	3420	0	0	238	0	238
515	Steel Protective Coating	sq feet	1	Yes	15875	0	238	0	16113



Bridge Inspection QC Form (Consultant Inspection)

BIGD Attachment 5.25
Version 1.0, JUL2020
Page 1 of 1

REQUIRED STRUCTURE AND INSPECTION INFORMATION	
ASSET ID (08): 02823	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): Raghuveer Surapaneni	

INSPECTION REPORT	OTHER
1) <input checked="" type="checkbox"/> SI&A: Reviewed Report Form SI&A Data (specifically ratings for NBI 58, 59, 60, 62, 71, 72)	
2) <input checked="" type="checkbox"/> Textual: Reviewed the textual sections of the report for consistency and errors	
3) <input checked="" type="checkbox"/> Element-Level: Element Condition States/Defects reviewed and are consistent with NBI Items	
4) <input checked="" type="checkbox"/> Photographs: Reviewed photographs included in report, all included per BIGD 5.4.4.2	
5) <input checked="" type="checkbox"/> Previous Inspection Report: Reviewed against previous inspection, if there is no previous: N/A: <input type="checkbox"/>	
6) <input type="checkbox"/> Sketch Sheets/Attachments: Required items are included (BIGD 5.4.4.2) & reviewed, or if N/A: <input checked="" type="checkbox"/>	
7) <input checked="" type="checkbox"/> Condition Rating (58, 59, 60 or 62) 5 or Less: A photograph or attachment is included, or if N/A: <input type="checkbox"/>	
	8) <input checked="" type="checkbox"/> Repair Recommendations: Repair Recommendation Form completed and sent to DBIS, or if N/A: <input type="checkbox"/>
	9) <input type="checkbox"/> Critical Finding(s): If critical finding found, the Critical Findings Form was submitted, or if N/A: <input checked="" type="checkbox"/>
	10) <input type="checkbox"/> Requests to BMO (HQ): Load Rating and/or Scour Re-Evaluation Request(s) sent, or if N/A: <input checked="" type="checkbox"/>
	11) <input type="checkbox"/> Posting: Need for load posting / weight restriction signs were coded as "Priority A Flag" - if N/A: <input checked="" type="checkbox"/>
	12) <input type="checkbox"/> Signs: 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: 2) SI&A data reviewed (specifically Condition Ratings for NBI Items 58, 59, 60, 62, 71, 72) QC Comment: Please check SI&A Item 51. Also, Item 10A, 10B and 10 C should all be 99 99 for RR under the bridge BITL Response to Comment: Comments have been 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 have been 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: _____

R Surapaneni

01/18/2022

(Upload to BIO)

Part I – Bridge Data <i>Complete at all times with bridge data.</i>					
Asset ID (NBI 08):	02823	Facility Carried (NBI 07):	I-26	Inspection Date:	12-02-2021
Structure Number:	4010002600400	Feature Intersected (NBI 06):	C.N. AND L. RAILROAD	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 checked="" type="checkbox"/>	BRIDGE ORIENTATION: Labeling diagram orientation is same direction as the historic orientation of the bridge.				
<input 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 & location for maintenance to be aware of the deficiency)</i>	Pile Repair Report Needed? (A5.27)	Photo Number (if used)	DBIS: Already in HMMS?
C	603	Overhead sign at west end of bridge, impact damage area with tear on metal (base of both poles next to EBL's of I-26 shown)	<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"> This transmittal section shall be used to transmit repair recommendations from a consultant inspectors to the DBIS. Prior to the submittal of this form, the form should be reviewed by the reporting party. The reporting party shall electronically sign below using the reporting party signature line prior to submitting. The reporting party shall submit the signed form using the "Transmit Repair Recommendations" button. 					
ProjectWise Link to Photos for Repair Recommendations (if used):			<input type="text"/>		
ELECTRONIC SIGNATURE (Reporting Party):			Transmit Repair Recommendations:		
Part VI – DBIS Confirmation of Repair Recommendation Entry into HMMS					
<ol style="list-style-type: none"> This section shall be used to confirm the entry of consultant repair recommendations into HMMS by the DBIS (or designee). The DBIS (or designee) shall electronically sign below using the DBIS signature line after entering this document into HMMS. The DBIS (or designee) shall return the signed form to the consultant inspector. 					
ELECTRONIC SIGNATURE (DBIS or designee):			Return Form to Consultant:		
<input type="text"/>					

Part I – Bridge Data *Completed on Page 1*

Asset ID (NBI 08):	02823	Structure Number:	4010002600400	Inspection Date:	12-02-2021
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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: Overhead sign at west end of bridge, impact damage area with tear on metal (base of both poles next to EBL's of I-26 shown)

Photo #: 2 Caption:

Photo #: 3 Caption:

Photo #: 4 Caption:




Photo #: 5 Caption:

Photo #: 6 Caption:

Photo #: 7 Caption:



Photo #: 8 Caption:




Asset ID Number:	02823	Bridge Inspection Date:	12-02-2021
#1	 <p>Span 1 center lanes at bent 2, (2) patched areas (15sf) that are depressed (up to 1in) on westbound right lane</p>	#2	 <p>End bent 4 abutment on north end at top corners, (2) spalls (up to 18in x 1ft x full thickness)</p>
#3	 <p>Hairline to 1/16in cracks in caps (end bent 4 cap between beams 2 and 3 shown)</p>	#4	 <p>Continuous saddles have been installed at bents 2 and 3, both sides, beams 1-10</p>
#5	 <p>Paint system is starting to fail on beams top coat only</p>	#6	 <p>Interior bent 3 cap at south end, (2) spalls (up to 6in x 1ft x 1/2in deep) with exposed rebar</p>

Asset ID Number:	02823	Bridge Inspection Date:	12-02-2021
			
#7	Several elastomeric pads are starting to bulge out past saddles at bents 2 and 3 (span 2 beam 5 at bent 2 shown)	#8	End bent 1 slope at north end, erosion channel (full length x 5ft x 30in)
			
#9	Expansion material torn, pulled loose, and missing, EBL's of I-26 and filled with dirt/debris/vegetaion (end bent 4 joint shown)	#10	Expansion material torn, pulled loose, and missing, EBL's of I-26 (interior bent 3 joint shown)
			
#11	Span 1 deck right lane of EBL's of I-26, spalling (up to 1.5in deep) next to bent 2 joint	#12	Overhead sign at west end of bridge, impact damage area with tear on metal (base of both poles next to EBL's of I-26 shown)

Asset ID Number:	02823	Bridge Inspection Date:	12-02-2021
			
#1	West Approach Looking East	#2	East Approach Looking West
			
#3	Backstation (West Approach Looking West)	#4	Upstation (East Approach Looking East)
			
#5	North Profile Looking South	#6	South Profile Looking North

Asset ID Number: 02823		Bridge Inspection Date: 12-02-2021	
#7 Feature Intersected (Looking North)		#8 Feature Intersected (Looking South)	
#9 Asphalt Wearing Surface		#10 Typical Superstructure (Span 2 Shown)	
#11 North Bridge Rail		#12 Typical Rail Transition (Southeast Shown)	

Asset ID Number: 02823		Bridge Inspection Date: 12-02-2021	
			
#13 Expansion joint, end bent 1 EBL		#14 End Bent 1 Joint (WBL)	
			
#15 Typical Bridge Joint WBL (Bent 3 Shown)		#16 Typical End Bent (End Bent 1 Shown)	
			
#17 Typical Substructure (Bent 2 Shown)		#18 Expansion joint, bent 2 EBL	

Asset ID Number: 02823		Bridge Inspection Date: 12-02-2021	
			
#19	(2) 2in dia utility pipes	#20	Asset ID plaque, SW corner
			
#21	Top of deck EBL, Concrete Bridge Deck	#22	
#23		#24	