

SCDOT BRIDGE INSPECTION FORM

(008) BRIDGE ID: 4010012620071	(005) ROUTE: RICHLAND I-126
(420) ASSET NO: 7934	(006) CROSSING: SALUDA RIV&I-26&I-126&RR
(419) RAMP NO: 7769	(009) LOCATION: 4 MI NW OF COLUMBIA
(026) FUNCTIONAL CLASS: 11	(016) LAT: 34d 1m 31.30s (017) LON: 81d 5m 54.80s

GENERAL BRIDGE DATA

	EXISTING	REVISED		EXISTING	REVISED
(027) Year Built	1985		(042) Type Serv; On(A) Und(B)	1	8
(106) Year Recon	0		(028) Lanes; On(A) Und(B)	1	12
(031) Design Load	6		(107) Deck Struct	1	
(36A) Railings	0		(108) Wear Surf/Membrane/Prot	1	0 0
(36B) Transitions	1			MAT-SUP-SUB	MAT-SUP-SUB
(36C) Appr Guard	1		(043) Main Original (A)	4	2 1
(36D) Appr Guard End	1		Main Reconst (B)		
(037) History	5		(044) Appr Original (A)	0	00 0
(319) Last Paint Date			Appr Reconst (B)		

GEOMETRIC DATA

	EXISTING	REVISED		EXISTING	REVISED
				FT	IN
(032) Appr Rdway	27		(053) Vert Clr Above Deck	99	99
(033) Bridge Median	0		(54A) Vert Clear Ref	H	
(034) Skew	0		(54B) Vert Clear Right	18	5
(035) Flared	0		(54C) Vert Clear Left	17	8
(045) # Main Spans	18		(10A) Great Min Clr Over/Und	18	8
(046) # Appr Spans	0		(10B) Great Min Right	18	8
(048) Max Span Lgth	183		(10C) Great Min Left	18	7
(308) Appr Span Lgth	0				
(049) Struct Length	2487		(55A) Lat Clear Ref	H	
(47A) Horz Clear Right	27.50		(55B) Lat Clear Right	38.50	
(47B) Horz Clear Left	0		(056) Lat Clear Left	5.50	
(47UA) Horz Clear Right	79				
(47UB) Horz Clear Left	84		(038) Navigation Cont	0	
(50B) Sidewalk Right	0		(039) Nav Vert Clear	0	
(50A) Sidewalk Left	0		(040) Nav Horz Clear	0	
(051) Curb to Curb	27.50		(111) Nav Pier Port		
(052) Deck Out-Out	30.80				

RATINGS DATA

	EXISTING	REVISED		EXISTING	REVISED
(58) Deck	6		(041) Traffic Status	A	
(59) Super Str	6		(063) Rating Method	8	
(60) Sub Str	6		(064) Operating Method	0.74	
(061) Channel	8	7	(065) Rating Method	8	
(062) Culv Ret	N		(066) Inventory Rating	0.57	
(071) Water Adeq	8		(411) Date Rated	11/2020	
(072) Appr Rdway	8		(418) Conditions During Rating	6	6 7
(113) Scour Critical	8			Freq	Mth/Year
(067) Structure	4		(091, 090) Routine Insp	24	12/2021
(068) Deck Geom	3		(92A, 93A) Fracture Critical	N	
(069) Underclear	5		(92B, 93B) Underwater Insp	Y60	10/2017
(070) Bridge Post	5		(92C, 93C) Special Insp	N	08/2018
					Freq Mth/Year

Inspection Leader: JAKE COCHRAN, CONSOR	Reviewed By:
Date:	Date:

Bridge Element Group Textual Data

Bridge ID: 40-1-00126-2-00-71

30 Dec 2022

Abutments and/or Headwalls:

Reinforced Concrete Abutment Walls at End Bents

Top of end bent 1 cap, debris accumulation, falling joint material. (Photo 1)

Between wingwall and abutment, missing joint material with vegetation growth (up to full height). (Photo 2)

Vertical hairline cracks in backwalls. Minor erosion on fill at end bent 1.

Bents and/or Piers:

6-Satisfactory: Reinforced Concrete Cap at all bents and Reinforced Concrete Column per interior bent.

Bent 1 Cap has a minor spall w/rust between beams 2 and 3, 6"x6".

Bent 4 Cap west face under beam 3, diagonal crack (7in x hairline)(Photo 3)

Bent 5 Cap:

east face between beam 2 and 3, 3 and 4, (2) spalls (up to 8in x 1ft x 1in with exposed rebar) (Photo 5)

6" diag. h/l crack w/rust between beams 1 and 2, 3 and 4, East side.

Minor spall w/rust between beams 3 and 4, 3"x3", East side.

Minor spall w/rust between beams 2 and 3, 6"x4", East side.

Bent 8 Cap has a minor spall w/rust under beam 1, 3"x3", East side.

Bent 9 cap east face under beam 1, spall with exposed rebar (4in diameter x 1/2in)

Bent 10 Cap:

west face under beam 1, (2) minor spalls (4in diameter x 1/2in) with exposed rebar

west face between beams 2 and 3, (2) horizontal cracks (2ft x hairline with rust)

(4) 2' vert. h/l cracks w/eff. and rust bleeding through between beams 2 and 3, West side.

(4) 1' vert. h/l crack w/rust between beams 2 and 3, East side.

(2) minor spalls w/rust between beams 1 and 2, East side.

2' vert. h/l crack w/rust between beams 2 and 3, East side.

H/l map cracking between beams 1 and 2 East side.

Bent 13 cap north face, vertical crack (2ft x hairline) (Photo 13)

Bent 14 cap east face under beams 2 through 4, horizontal crack (12ft x 1/16in) with rust and efflorescence, adjacent delamination (6.5ft x 30in) (Photo 14)

Bent 17 cap underside between beams 3 and 4, spall with exposed rebar (9in x 16in x 1.5in) (Photo 16)

Bent 17 cap top northeast corner, delamination (28in x 20in) (Photo 17)

Bent 18 cap top southeast corner, delamination /spall with exposed rebar (16in x 13in x 1.5in) (Photo 18)

Typical vegetation growth full height (Photo 11)

Bent 5 column northeast side, (7) spalls (9in diameter x 1/2in) with exposed rebar (Photo 7)

Bent 5 column northeast face below cap, delamination (30in x full height) with spalls and exposed rebar near base (up to 1ft diameter x 1in) (Photo 8 and 9)

Bent 5, Column has:

(2) minor spalls w/rust mid-column, 3"x6", West side.

6' vert. h/l crack mid-column, North side.

Bent 14 Column has a minor spall w/rust mid-column, 6"x6", East side.

Bent 16 column 1 west face at 5ft and 10ft from waterline, (2) spalls (4in diameter x 1/2in) with exposed rebar (Photo 15)

Bearings:

(52) Movable, (8) Fixed and (4) Elastomeric bearings in Satisfactory Condition.

Elastomeric bearing pad is leaning out of plumb and protruding out of alignment (1/4in) at end bent 19 beam 4 (Photo 19)

Minor/moderate corrosion forming on bearings, dirt/debris around bearing at finger joints. Several anchor bolt nuts loose/missing and blossomed with corrosion.

Loose Anchor Bolts

Beam	Bent	Span	
3	8	8	right side
4	7	6	right side
2	7	6	left side
2	5	5	left side

Missing Anchor Bolts

Beam	Bent	Span	
4	1	1	right side

Girders/Floor Beams/Stringers and/or Beams:

6-Satisfactory: (4) Built-up Plate Girders spaced at (8ft-3in)

Typical paint peeling on beams and splice connection with minor rust. (Photo 4)

Span 5 beam 4 bottom flange and web at bent 5, paint failure with rust scale (4ft x no measurable loss) (Photo 6), similar beam 3, similar span 9 beams 3 and 4 at bent 10, span 13 beam 2 at bent 14 similar, end bent 19 beam 4 similar (1ft)

Span 8 underside of deck bay 1 next to beam 1 at 20ft from bent 9, corrosion with minor section loss on SIP form and top flange (3.5ft) (Photo 12)

Truss Members:

N/A

Expansion Joints:

Compression Seal Joints located at End Bents and Finger Joints located at Bents 5,10 and 14.

End bent 1 joint, joint material missing (full length) (Photo 27)

End bent 19 joint, joint material torn and damaged (full length) (Photo 20)

Typical minor corrosion on finger joints (Photo 22)

Decks and/or Slabs:

6-Satisfactory: (18) Spans; 7-3/4in thick Reinforced Concrete Slab; Spans 1-4, Spans 5-9, spans 10-13 and Spans 14-18 are continuous; No Asphalt Wearing Surface

Transverse hairline cracks with efflorescence on underside of deck at soffit. Minor/moderate/large spalls, with exposed rebar on deck, several patched, hairline to 0.04" transverse and map cracking on deck.

Typical transverse cracking (1/16in) and scattered hairline map cracking on top of deck (Photo 21)

Typical spall/delamination on deck (up to 2in deep) with exposed rebar majority have been patched (Photo 23)

Typical debris accumulation with loose rocks on shoulders (Photo 24)

Span 8 underside of deck bay 1 next to beam 1 at 20ft from bent 9, corrosion with minor section loss on SIP form and top flange (3.5ft) (Photo12)

Span 12 middle of ramp lane near midspan, (3) spalls (up to 4ft x 9ft x 2in) with exposed rebar (Photo 25)

Span 9 deck ramp lane next to white line at approximately 25ft from bent 9, spall/delamination (5.5ft x 12ft x 2in) with exposed rebar (Photo 26)

Deck chain drag preformed, Dec 2016.

Curbs:

N/A

Bridge Railing/Parapets and/or Median Barriers:

36A: 0 - Precast Concrete Parapet Wall; 2ft-8in High; 1ft-5in Wide

36B: 1 - Thrie-Beam Transitions with Metal Posts

36C: 1 - "W" Beam Railing on Approaches

36D: 1 - Approved Terminal Ends

Bridge and approach rail in place. Hairline cracks, several with efflorescence and minor spalls, several with rust in parapet walls. Minor spall in top of parapet wall at 1st finger joint, right side.

Paint Systems:

Protective coating is substantially effective.

Typical paint peeling on beams and splice connection with minor rust. (Photo 4)

Typical paint peeling on bearings (Photo 10)

Paint is starting to peel from beams and diaphragms.

Waterway and Scour:

8-Very Good
Very Good Stream Alignment, with Moderate Current
Well Vegetated Slopes and Stream Banks

Underwater Bridge Inspection performed on 11/21/2022, see Underwater Bridge Inspection Report.

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.

Up to 1/16in transverse, longitudinal, and map cracking in approach slab.

Traffic Signs:

(2) Delineators

Bridge ID Plate on SW corner

Vertical Clearance signs are present on I-126 (WB=17'-8" and EB=17'-11")

Encroachments:

PVC Pipe (8" diameter) at bent 7 has separated on the East side.

Miscellaneous Notes:

Latitude/Longitude: N 34°01'31.51" / W 81°06'08.06"
Coordinates: 34.025419°, -81.102239°
Inspected on December 16th, 2021. Clear, 55°F
Labelling Diagram Verified; Bridge Inspected from East to West
Historical Orientation: West to East

CLEARANCE OVER I-126
DIVIDED HIGHWAY
VERTICAL CLEARANCE MEASUREMENTS PER BIGD 7.3.8

VERT CL EB (54B):
-AT LEFT: 18'-9"
-AT CENTER LEFT: 18'-5"
-AT CENTER: 18'-5"
-AT CENTER RIGHT: 18'-8"
-AT RIGHT: 19'-0"

VERT CL WB (54C):
-AT LEFT: 18'- 10"
-AT CENTER LEFT: 18'-8"
-AT CENTER RIGHT: 18'-1"
-AT RIGHT: 17'-8"

DIVIDED HIGHWAY
LATERAL CLEARANCE MEASUREMENTS PER BIGD 7.3.8
LAT CL AT RIGHT (55B):
-EB LANE TO BENT: 38'-6"
-WB LANE TO BENT: 43'-0"

LAT CL AT LEFT (56):
-EB LANE TO BENT: 5'-6"
-WB LANE TO BENT: 5'-6"

RAILROAD (SPAN 5)
VERTICAL CLEARANCE MEASUREMENTS PER BIGD 7.3.8
VERT CL (54B):
-LEFT RAIL: 28'-10"
-RIGHT RAIL: 29'-3"

LATERAL CLEARANCE MEASUREMENTS PER BIGD 7.3.8
LAT CL AT RIGHT (55B):
-CENTER OF TRACK TO BENT: 28'-0"

Asset ID Plates - Present (SW corner)
Inspection Team - Ricardo Cornejo BITL, Vinay Janardhan BI

MBI updated traffic status on 11/23/2022. No inspection was performed.

Underwater Inspection performed on November 21, 2022. Sunny, 59°F.
BITL: Jake Cochran, PE
Assistants: Andrew Harrison, Wes Trescott, Scott Rowe

Bridge Element Level Data

30 Dec 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	1211	21	0	1232
107	Steel Open Girder/Beam	feet	4	Yes	8715	1211	21	0	9947
12	Reinforced Concrete Deck	sq feet	4	Yes					
12	Delamination/Spall/Patched Area	sq feet	4	1080	0	5120	316	0	5436
12	Exposed Rebar	sq feet	4	1090	0	44	0	0	44
12	Efflorescence/Rust Staining	sq feet	4	1120	0	320	0	0	320
12	Cracking (RC and Other)	sq feet	4	1130	3570	1800	1100	0	6470
12	Reinforced Concrete Deck	sq feet	4	Yes	67974	7284	1416	0	76674
205	Reinforced Concrete Column	each	4	Yes					
205	Delamination/Spall/Patched Area	each	4	1080	0	0	1	0	1
205	Abrasion/Wear (PSC/RC)	each	4	1190	0	2	0	0	2
205	Reinforced Concrete Column	each	4	Yes	14	2	1	0	17
215	Reinforced Concrete Abutment	feet	4	No	62	0	0	0	62
220	Reinforced Concrete Pile Cap/Footing	feet	4	Yes					
220	Scour	feet	4	6000	0	54	0	0	54
220	Reinforced Concrete Pile Cap/Footing	feet	4	Yes	0	54	0	0	54
234	Reinforced Concrete Pier Cap	feet	4	Yes					
234	Delamination/Spall/Patched Area	feet	4	1080	0	0	29	0	29
234	Exposed Rebar	feet	4	1090	0	6	0	0	6
234	Efflorescence/Rust Staining	feet	4	1120	0	22	0	0	22
234	Cracking (RC and Other)	feet	4	1130	0	20	13	0	33
234	Reinforced Concrete Pier Cap	feet	4	Yes	419	48	42	0	509
302	Compression Joint Seal	feet	3	Yes					
302	Seal Damage	feet	3	2330	0	0	0	40	40
302	Seal Cracking	feet	3	2340	0	12	10	0	22
302	Compression Joint Seal	feet	3	Yes	0	12	10	40	62
305	Assembly Joint Without Seal	feet	3	Yes					
305	Metal Deterioration or Damage	feet	3	2370	0	83	0	0	83
305	Assembly Joint Without Seal	feet	3	Yes	10	83	0	0	93
310	Elastomeric Bearing	each	3	Yes					

310	Bulging, Splitting or Tearing	each	3	2230	0	1	0	0	1
310	Elastomeric Bearing	each	3	Yes	3	1	0	0	4
311	Movable Bearing	each	3	Yes					
311	Corrosion	each	3	1000	0	27	0	0	27
311	Movable Bearing	each	3	Yes	25	27	0	0	52
313	Fixed Bearing	each	3	Yes					
313	Corrosion	each	3	1000	0	4	0	0	4
313	Fixed Bearing	each	3	Yes	4	4	0	0	8
321	Reinforced Concrete Approach Slab	sq feet	2	Yes					
321	Cracking (RC and Other)	sq feet	2	1130	0	0	448	0	448
321	Reinforced Concrete Approach Slab	sq feet	2	Yes	455	0	448	0	903
331	Reinforced Concrete Bridge Railing	feet	2	Yes					
331	Delamination/Spall/Patched Area	feet	2	1080	0	1	0	0	1
331	Exposed Rebar	feet	2	1090	0	2	0	0	2
331	Efflorescence/Rust Staining	feet	2	1120	0	1056	0	0	1056
331	Cracking (RC and Other)	feet	2	1130	297	0	0	0	297
331	Reinforced Concrete Bridge Railing	feet	2	Yes	3915	1059	0	0	4974
515	Steel Protective Coating	sq feet	1	Yes					
515	Peeling/Bubbling/Cracking (Steel Protective Coatings)	sq feet	1	3420	0	9644	0	0	9644
515	Effectiveness (Steel Protective Coatings)	sq feet	1	3440	0	0	0	20430	20430
515	Steel Protective Coating	sq feet	1	Yes	11167	9644	0	20430	141745

1.0 INTRODUCTION

1.1 Purpose and Scope

SCDOT Asset ID 07934 carries Ramp Off I-126 WB over Saluda River in Richland County. On November 21, 2022, Consor Engineers, LLC performed a routine underwater investigation at the bridge to evaluate the condition of all substructure units (SSUs) located in the water. This report includes a general description of the structure and the method of investigation, as well as a detailed description of the conditions noted. In addition, this report contains an element level condition assessment of the bridge components evaluated and presents recommendations for structural repairs.

The scope of the investigation included a visual inspection of all accessible substructure units located in the water from the high-water mark to the channel bottom. Depth soundings were also taken along the upstream and downstream fascias of the bridge to assist in the identification and documentation of scour conditions.

The underwater investigation generally consisted of a Level I, “swim-by,” visual inspection over 100 percent of the accessible substructure unit surfaces from the high-water mark to the channel bottom. A Level II visual/tactile inspection was performed on at least 10 percent of the substructure units, which included cleaning marine growth at the waterline, mid-depth, and channel bottom to facilitate an evaluation of the underlying surfaces. Particular attention was given to any observed areas of excessive deterioration or apparent distress, and the condition of any repairs was noted.

An assessment of the waterway and streambed conditions in the vicinity of the bridge was conducted. The channel bottom material was noted, as well as the location and extent of any observed scour, riprap or debris.

The location of the waterline with respect to a fixed reference on the bridge was noted at the time of the inspection. Depth soundings were taken along the bridge fascias and around each substructure unit using a digital depth sounder.

Ramp Off I-126 WB over Saluda River

1.2 General Description of the Structure

A description of the bridge that was inspected can be found in Table 1. Refer to Figures 1 through 3 for a plan and elevation of the bridge and the typical substructure layout.

Table 1: Bridge Description

Date of Design Plans:	October 1983
Length of Bridge:	2487 ft.
Number of Spans:	18
SSUs Inspected:	Bents 16 through 18
Superstructure Type:	Steel Continuous Girders
Substructure Type:	Reinforced Concrete Hammerhead Piers
Foundation Type:	Reinforced Concrete Spread and Steel Pile Supported Footings
Direction of Stationing:	North to South

1.3 Evaluation of Conditions Encountered

A summary of the environmental conditions encountered during the inspection can be found in Table 2.

Table 2: Environmental Conditions

Tidal: Yes/No	No
Time of Soundings (if tidal):	N/A
Tide Status:	N/A
Maximum Water Depth:	16.2 ft. @ U/S Bent 17
Maximum Current:	1 fps.
Visibility:	4 ft.
Weather:	Sunny, 59°F
Waterline Reference:	27.9 ft. Below Top of Deck, D/S Bent 17
Reference Point Elevation:	191.2 (Plans)
Waterline Elevation:	163.3
High Water Elevation:	166.3

1.4 Access and Procedures

A dive team led by a South Carolina-registered professional engineer-diver conducted the underwater inspection. All members of the team are ADCI commercial divers with associated required NHI training courses. Refer to Table 3 for the list of team members that conducted the inspection and to Table 4 for a summary of the access methods and equipment used to inspect the bridge.

Table 3: Inspection Team

Engineer/Team Leader:	Jake Cochran, PE
	Scott Rowe
Divers/Inspectors:	Wes Trescott
	Andrew Harrison

Table 4: Inspection Access

Method of Inspection:	Commercial SCUBA
Dive Platform:	Shore
Access Location:	Southeast embankment
Equipment Required:	Standard underwater inspection equipment

2.0 INSPECTION FINDINGS

2.1 Item 61: Channel

Based on the Routine Inspection, the NBI Item 61 (Channel and Channel Protection) condition rating is 8.

Based on the Underwater Inspection, the NBI Item 61 condition rating is 7.

NBI Item 61 should decrease to 7 based on the Underwater Inspection.

- The north and south embankments are stable and well vegetated; however, under the bridge both banks are cut, up to 3 ft. high (Photos 5 and 6).
- The stream flow is well aligned with the bents in the waterway.
- The channel bottom primarily consists of sand and silt.
- Bent 18, upstream nose, timber debris, up to 1 ft. diameter [5 CY].

2.2 Item 113: Scour

Due to a combination of local and general scour since construction, the footings are exposed at all bents located in the waterway. Refer to Table 5 for a listing of the sounding measurements and to Figure 1 for an illustration of the channel bottom profiles. Refer to Table 6 for a complete listing of observed footing exposures.

Ramp Off I-126 WB over Saluda River

2.3 Item 60: Substructure

Based on the Routine and Underwater Inspections, the NBI Item 60 (Substructure) condition rating is 6.

NBI Item 60 should remain as assigned by the Routine Inspection.

General Notes:

- All inspected bents, from high watermark to channel bottom, abrasion, up to 1/4 in. deep, with exposed secure aggregate (Photos 8 and 9). [CS2]

Bent 16								
Element	Defect	Element/Defect Description	Total Qty.	Units	Condition State Quantity			
					CS1	CS2	CS3	CS4
205		Reinforced Concrete Columns	1	EA		1		
	1190	Abrasion/Wear	1	EA		1		
220		Reinforced Concrete Pile Cap/Footing	10	LF		10		
	6000	Scour	10	LF		10		

- No additional significant deficiencies observed.

Bent 17								
Element	Defect	Element/Defect Description	Total Qty.	Units	Condition State Quantity			
					CS1	CS2	CS3	CS4
205		Reinforced Concrete Columns	1	EA			1	
	1080	Spalls/Delaminations/Patch Areas	1	EA			1	
220		Reinforced Concrete Pile Cap/Footing	26	LF		26		
	6000	Scour	26	LF		26		

- Column, northeast corner, at column/footing interface, spall, 1.3 ft. wide x 2 ft. high x 4 in. deep. [CS3]
- Column, east face, 1 ft. above footing, two [2] spalls, up to 12 in. diameter x 5 in. deep. [CS3]

Ramp Off I-126 WB over Saluda River

Bent 18								
Element	Defect	Element/Defect Description	Total Qty.	Units	Condition State Quantity			
					CS1	CS2	CS3	CS4
205		Reinforced Concrete Columns	1	EA		1		
	1190	Abrasion/Wear	1	EA		1		
220		Reinforced Concrete Pile Cap/Footing	18	LF		18		
	6000	Scour	18	LF		18		

- No additional significant deficiencies observed.

Refer to Table 7 for a summary of the elements inspected and defects observed during the underwater inspection. Refer to Figure 1 for detailed inspection notes and a plan view showing the existing conditions at each of the inspected bents.

Table 5: Bridge Soundings

SSU	Upstream Fascia			Downstream Fascia		
	Waterline To Channel Bottom (ft)	Top of Deck To Waterline (ft)	Top of Deck To Channel Bottom (ft)	Waterline To Channel Bottom (ft)	Top of Deck To Waterline (ft)	Top of Deck To Channel Bottom (ft)
3/4	0.0	35.4	35.4	1.0	35.4	36.4
Bent 16	6.9	33.6	40.5	10.4	33.6	44.0
1/4	10.2	31.9	42.1	12.4	31.9	44.3
1/2	13.7	30.4	44.1	13.9	30.4	44.3
3/4	16.0	29.1	45.1	14.0	29.1	43.1
Bent 17	16.2	27.9	44.1	10.5	27.9	38.4
1/4	11.1	26.9	38.0	12.1	26.9	39.0
1/2	10.3	26.1	36.4	9.5	26.1	35.6
3/4	1.7	25.4	27.1	3.6	25.4	29.0
Bent 18	2.4	24.9	27.3	3.9	24.9	28.8
1/4	4.8	24.7	29.5	2.7	24.7	27.4
1/2	1.6	24.5	26.1	-	-	20.5

Note: The numbers listed in this table represent distances and not elevations. Based on the available SCDOT design plans dated October 1983, the waterline elevation at the time of the readings was 163.3 based on a measurement taken in the field and calculations using the existing plans.

Ramp Off I-126 WB over Saluda River

Table 6: Vertical Footing Exposures

SSU	Northeast Corner (ft.)		Northwest Corner (ft.)		Southeast Corner (ft.)		Southwest Corner (ft.)	
	2017	2022	2017	2022	2017	2022	2017	2022
Bent 16	Covered	Covered	Covered	Covered	0.2 (F)	0.6 (F)	0.0 (F)	Covered
Bent 17	0.4 (F)	2.0 (F)	2.0 (F)	0.0 (F)	0.1 (F)	0.5 (F)	0.5 (F)	1.2 (F)
Bent 18	2.4 (F)	1.8 (F)	1.0 (F)	2.0 (F)	0.5 (F)	1.2 (F)	0.4 (F)	0.4 (F)

3.0 (F)	Partial footing exposure, measurements taken from the top of the footing to the channel bottom
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Table 7: Underwater Inspection Elements

NATIONAL BRIDGE ELEMENTS RECORDING SHEET *								
	Asset ID: 07934	By: Consor Engineers, LLC	Date: 11/21/2022					
Element	Defect	Element/Defect Description	Total Qty.	Units	Condition State Quantity			
					CS1	CS2	CS3	CS4
SUBSTRUCTURE								
205		Reinforced Concrete Columns	3	EA		2	1	
	1080	Spalls/Delaminations/Patch Areas	1	EA			1	
	1190	Abrasion/Wear	2	EA		2		
220		Reinforced Concrete Pile Cap/Footing	54	LF		54		
	6000	Scour	54	LF		54		

*Includes only defects on the elements inspected during the underwater inspection.



Photo 1: Upstream/West Fascia



Photo 2: Downstream/East Fascia



Photo 3: View Upstream from Under Bridge



Photo 4: View Downstream from Under Bridge



Photo 5: North Channel Bank



Photo 6: South Channel Bank



Photo 7: Bent 17, South Face (Bents 16 through 18 Similar)



Photo 8: Bent 17, Upstream Nose, Typical Concrete Condition at Waterline



Photo 9: Bent 17, Upstream Nose, Typical Concrete Condition Below Waterline

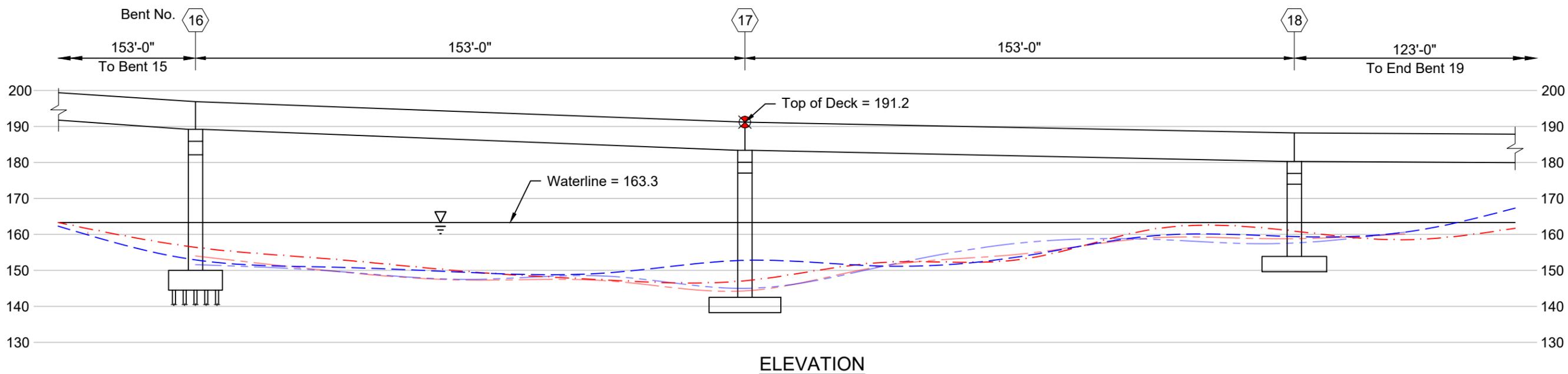
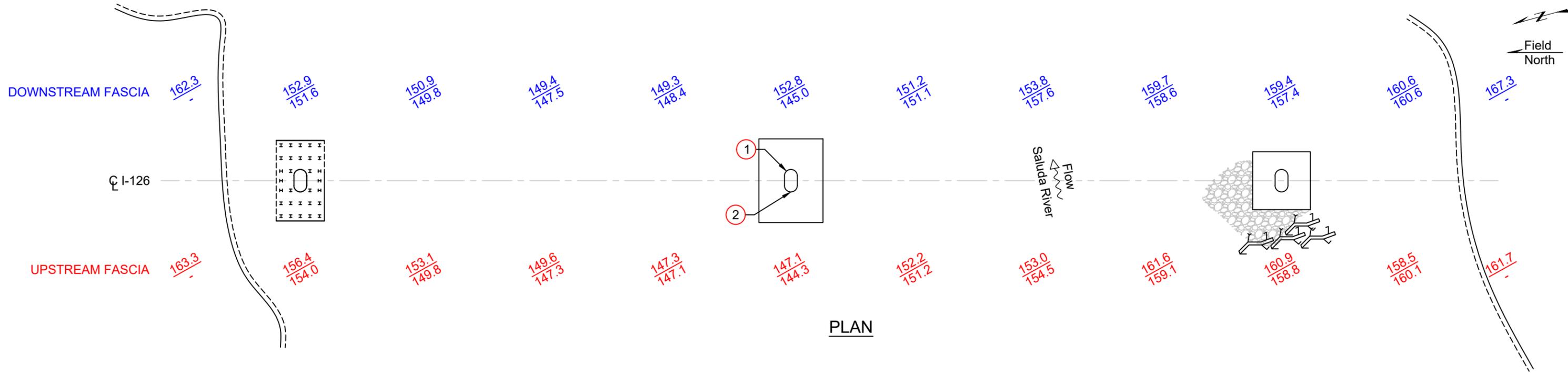


Figure Notes:

1. At the time of inspection, the waterline was located approximately 27.9 ft. below the top of the deck at the downstream side of Bent 17. This translates to a waterline elevation of 163.3 according to the available design plans.
2. Soundings across the channel were taken parallel to the bridge at the bents and are actual channel bottom elevations in feet determined on November 21, 2022.
3. This figure was developed from field notes, sketches, and South Carolina Department of Transportation design plans dated October 1983.

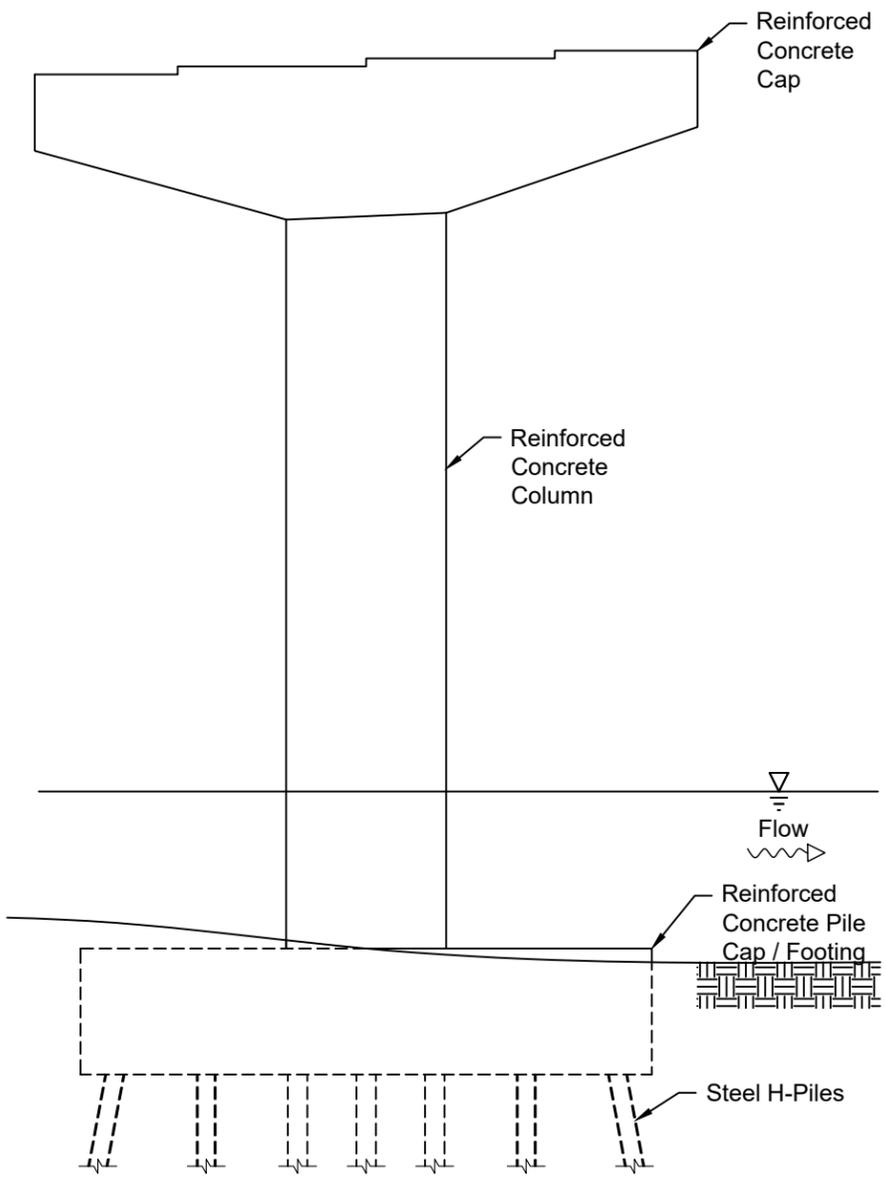
Inspection Notes:

- GN** All inspected bents, from high watermark to channel bottom, abrasion, up to 1/4 in. deep, with exposed and secure aggregate.
- 1** Bent 17, Column, northeast corner, at column/footing interface, spall, 1.3 ft. wide x 2 ft. high x 4 in. deep.
- 2** Bent 17, Column, east face, 1 ft. above footing, [2] spalls, up to 12 in. diameter x 5 in. deep.

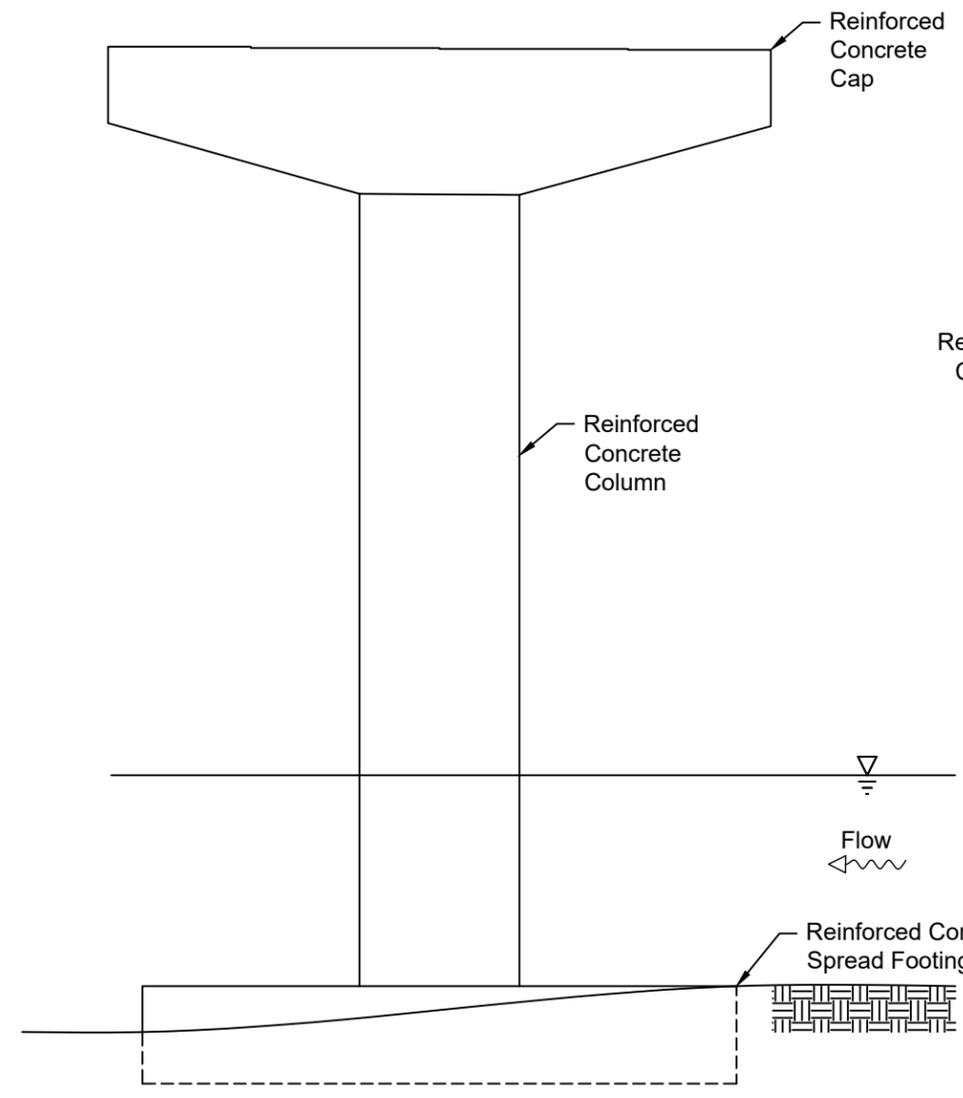
Legend

- 2017 Upstream Fascia
- .- 2022 Upstream Fascia
- Original Groundline
- 2017 Downstream Fascia
- .- 2022 Downstream Fascia
- Shoreline
- GN** General Note
- #** Inspection Note
- ⊗** Waterline Reference Point
- #** Photograph
- 2022/2017** Channel Bottom Elevation
- Timber Debris
- Riprap

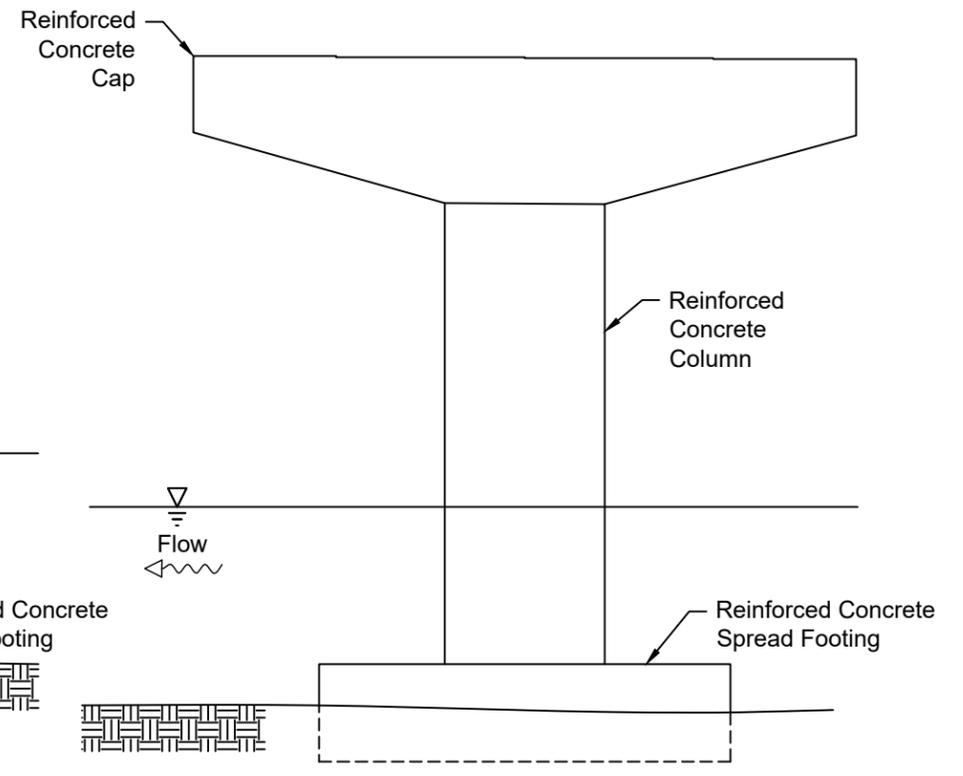
<p>GRAPHIC SCALE</p> <p>0 30' 60'</p>	DATE	<p>40 Concourse Way Greer, SC 29650 PH: 864.595.8030</p>	<p>SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION</p> <p>Asset ID: 07934</p>	<p>Ramp Off I-126 over Saluda River</p>	<p>FIG NO. 1</p>
	November 2022				



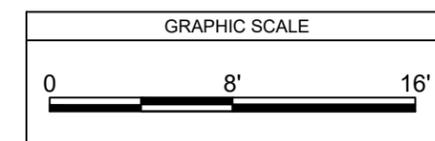
South Elevation
Bent 16



North Elevation
Bent 17



North Elevation
Bent 18



DATE
November 2022



Ramp Off I-126 over
Saluda River

Typical Bent Elevations

FIG NO.
2



Inspection Out-of-Frequency Form

REQUIRED STRUCTURE INFORMATION		
ASSET ID NUMBER: (NBI 08) 07934	DISTRICT # (NBI 02): District 1	COUNTY (NBI 03): Richland
LOCATION (NBI 09): 4 MI NW OF COLUMBIA	FACILITY CARRIED (NBI 07): I-126	FEATURE INTERSECTED (NBI 06): SALUDA RIVER
STRUCTURE TYPE (MAIN, NBI 43): 4 - Steel Continuous		STRUCTURE TYPE (APPROACH, NBI 44): -

INSPECTION OCCURRING OUT OF FREQUENCY

SUBJECT INSPECTION TYPE:
-

INSPECTION DUE DATE (IF INSPECTION IS LATE) : 10/31/2022	INSPECTION COMPLETION DATE (IF KNOWN): 11/21/2022
--	--

REPORT DUE DATE (IF REPORT IS LATE) :	REPORT COMPLETION DATE (IF KNOWN):
--	------------------------------------

WRITTEN EXPLANATION OUT OF FREQUENCY:
DUE TO LATE LNTP, BRIDGE WAS UNABLE TO BE INSPECTED IN OCTOBER 2022.

NAME/POSITION OF PARTY NOTIFYING OUT-OF-FREQUENCY OCCURRENCE (blank if made by DBIS or Consultant PM)

Name: _____ Position: _____

Signed: _____

SCDOT DBIS from District where bridge is located OR Consultant Project Manager (Consultant Inspection Only), Signature Required:

Signed: _____

Comments: _____

SCDOT BIPM, Signature Required:

Signed: _____

Comments from SCDOT BIPM or from BMO: _____

FHWA ACKNOWLEDGEMENT AND/OR APPROVAL: A cknowledgem Approval

Signed: _____

Comments from FHWA: _____



Bridge Inspection QC Form (Consultant Inspection)

REQUIRED STRUCTURE AND INSPECTION INFORMATION	
ASSET ID (08): 07934	TEAM LEADER: Jake Cochran, PE
INSPECTION TEAM MEMBERS: Scott Rowe, Wesley Trescott, Andrew Harrison	INSPECTION TYPE: Underwater
CONSULTANT NAME: Conzor Engineers, LLC	
QUALITY CONTROL REVIEWER (QCR): (Print Name): Heath K. Pope, PE	

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 checked="" type="checkbox"/> Sketch Sheets/Attachments: Required items are included (BIGD 5.4.4.2) & reviewed, or if N/A: <input type="checkbox"/>	
7) <input type="checkbox"/> Condition Rating (58, 59, 60 or 62) 5 or Less: A photograph or attachment is included, or if N/A: <input checked="" type="checkbox"/>	
	8) <input type="checkbox"/> Repair Recommendations: Repair Recommendation Form completed and sent to DBIS, or if N/A: <input checked="" 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, BSIP followed, required access gained
- UW Inspection Only:** Correct documentation was included, BSIP followed, required access gained
- Complex Bridge Only:** BSIP followed

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

1	QC Subject: <u>SI&A Data</u> QC Comment: <u>Minor revisions to SI&A Data</u> BITL Response to Comment: <u>Changes to be made during BIO entry.</u> QC Comment Closed? <input checked="" type="checkbox"/>
2	QC Subject: <u>Element and Defect Quantities</u> QC Comment: <u>Minor revisions to element and defect quantities.</u> BITL Response to Comment: <u>Changes to be made during BIO entry.</u> QC Comment Closed? <input checked="" type="checkbox"/>
3	QC Subject: <u>-</u> QC Comment: _____ BITL Response to Comment: _____ QC Comment Closed? <input type="checkbox"/>
4	QC Subject: <u>-</u> QC Comment: _____ BITL Response to Comment: _____ QC Comment Closed? <input type="checkbox"/>

QC Review Complete

Signed and Dated by QC Reviewer: Heath K. Pope (Upload to BIO)

Digitally signed by Heath K. Pope
 DN: C=US, E=hpope@consoreng.com, O="CONSOR Engineers, LLC",
 OU=Structural Assessment, CN=Heath K. Pope
 Date: 2022.12.30 10:49:40-08'00'