



BRIDGE INSPECTION REPORT

Routine Inspection

BRIDGE NO.:
10C0095

STRUCTURE NAME:
RANCHERIA CREEK

INSPECTION DATE:
February 15, 2024

BRIDGE LOCATION INFORMATION

(9) LOCATION	4.0 MI E/O RTE 128	(7) FACILITY CARRIED	MOUNTAIN VIEW RD
(11) POSTMILE	0	(6) FEATURE INTERSECTED	RANCHERIA CREEK
(16) LATITUDE	38°59'37.79"	(5) INVENTORY RTE(ON/UNDER)	ON 142000000
(17) LONGITUDE	123°26'05.81"	(104) ON NATIONAL HIGHWAY SYSTEM	NOT ON NHS

STRUCTURAL HEALTH CONDITION SUMMARY INFORMATION

(58) DECK	4 POOR	DECK AREA (M) ²	214
(59) SUPERSTRUCTURE	5 FAIR	SUFFICIENCY RATING	45.7
(60) SUBSTRUCTURE	5 FAIR	PAINT CONDITION	34
(62) CULVERT	N N/A (NBI)	STRUCTURALLY DEFICIENT (SD) STATUS	SD
(67) STRUCTURE EVALUATION	4 MINIMUM TOLERABLE	(113) SCOUR	U UNKNOWN FOUNDATION

PHOTOGRAPH IDENTIFICATION



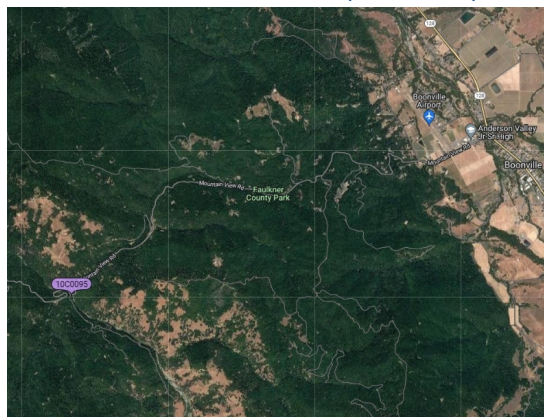
Routine-Roadway View (02/15/2024)



Routine-Elevation View (02/15/2024)



Routine-Underside View (02/15/2024)



Routine-Map View (07/29/2022)

TEAM LEADER Eric Watson

REPORT AUTHOR Eric Watson

INSPECTED BY E.Watson/SW.Kung


Eric Watson (Registered Civil Engineer)

7/11/2024

Date



STRUCTURE OVERVIEW**AGENCY INFORMATION****INSPECTION INFORMATION**

(1) STATE NAME	CALIFORNIA	069	(90) INSPECTION DATE	02/24	(91) FREQUENCY	24	MO
(2) HIGHWAY DISTRICT		01	(92) CRITICAL FEATURE INSPECTION		(93) CFI DATE		
(3) COUNTY CODE	(10)MENDOCINO		A) NSTM INSP	N-NO	MO A)		N/A
(4) PLACE CODE	(00000) _____		B) UNDERWATER INSP	N-NO	MO B)		N/A
(21) MAINTAIN	02 COUNTY HWY AGENCY		C) OTHER SPECIAL INSP	N-NO	MO C)		N/A
(22) OWNER	02 COUNTY HWY AGENCY						
(98) BORDER BRIDGE STATE CODE	N/A	% SHARE					
(99) BORDER BRIDGE STRUCTURE NUMBER		N/A					

CONSTRUCTION INFORMATION

(27) YEAR BUILT	1935	(45) MAIN SPANS	3	(43a) STRUCTURE TYPE MAIN	2: CONCRETE CONT
(106) YEAR MODIFIED	N/A	(46) APPR SPANS	0	(43b) DESIGN TYPE MAIN	04: TEE BEAM
(34) SKEW	0	(48) MAX SPAN (M)	19.5	(44a) STRUCTURE TYPE APPR	0: OTHER/ NOT APPLICABLE
(49) LENGTH (M)	39.3	(35) STR FLARE	0-NO	(44b) DESIGN TYPE APPR	00: OTHER/NOT APPLICABLE
(112) NBIS BR LENGTH	Y	JOINTS	2	NO. OF HINGES	0

STRUCTURE DESCRIPTION

Original Structure (Est. 1935):

Continuous RC T-girder (2), on RC piers and open RC seat abutments with flared monolithic wingwalls. All founded on spread foundations.

Supplemental Structure (Pre-1958):

Supplemental steel cap and pile extension (4) bent placed at Abutment 1.

Supplemental Structure (Est. 1958):

Concrete sack slope protection placed on the Abutment 1 embankment. Concrete walls placed under both sides of the Pier 2 foundation.

Supplemental Structure (1974):

Supplemental steel cap and pile extension (4) bent placed at Abutment 4. Concrete sack slope protection placed on the Abutment 4 embankment and keyed around the Pier 3 foundation.

SPAN CONFIGURATION

1 @ 32.0 feet, 1 @ 64.0 feet, 1 @ 32.0 feet (CL Supports - Original)

OPERATIONAL INFORMATION

LOAD CAPACITY

(31) DESIGN LOAD	5 MS 18 (HS 20)	(65) CALC METHOD	8 LRFR RATING FACTOR
(66) INVENTORY RATING	RF= 0.46	(63) CALC METHOD	8 LRFR RATING FACTOR
(64) OPERATING RATING	RF= 0.71	(70) BRIDGE POSTING	5 AT/ABOVE LEGAL LOADS
(41) STRUCTURE STATUS	A-OPEN, NO RESTRICTION	PERMIT RATING	GGOOO
OVERLAY THICKNESS	0 inches		

POSTING LOADS

	Safe Loads	Existing Ordinance/Order	Posting Signs		Additional Ordinance/Order Requirements
Type 3	<u>Legal</u>	<u> </u>	<u> </u>	U.S. Tons	NONE
Type 3S2	<u>Legal</u>	<u> </u>	<u> </u>	U.S. Tons	
Type 3-3	<u>Legal</u>	<u> </u>	<u> </u>	U.S. Tons	
Speed	<u>45</u>	<u> </u>	<u> </u>	MPH	
Posting Order Date					Additional Signs
Load Rating Summary Date 09/30/22					NARROW BRIDGE
Load Rating Type Calculated					
Load Rating Tool - Date BrR 7.2.0 AASHTO - 09/14/22					

MINIMUM VERTICAL CLEARANCE			MINIMUM LATERAL UNDERCLEARANCE		
(53) MIN VERT CLEAR OVER BRIDGE RDWY	Unimpaired		(55) MIN LAT UNDERCLEAR RT REF	N-NOT H/RR	0.0 M
(54) MIN VERT UNDERCLEAR REF	N-NOT H/RR	0.00 M	(56) MIN LAT UNDERCLEAR LT		0.0 M

CONDITION INFORMATION

INSPECTION COMMENTARY

SCOPE AND ACCESS

Clear flowing water up to 6 feet in depth was present under Span 2. The lower portions of the RSP at Bent 2 were submerged. A permanent ladder at the left side of Abutment 1 provided access to the west bank of the channel. Bridge elements that were not buried were visually inspected from the deck or ground at the banks of the channel. A complete routine inspection was performed.

HISTORY

This bridge has a history of scour and settlement. At different times, the embankments in front of the abutments have deteriorated and the abutments have settled. Due to the settlement the concrete girders exhibited cracking. The conditions required supplemental steel bents to be added at the abutments, epoxy injection of the cracks on the concrete girders, and scour countermeasures to be added under Spans 1 and 3 and at the base of Piers 2 and 3.

The 1958 and 1974 plans indicate the high water elevation approximately at the 3/4 point of the piers.

NUMBERING CONVENTION

The western abutment, farther from State Route 128, was designated as Abutment 1 to correlate with SM&I convention. The designation has not been constant on previous reports. The as-built plans do not indicate a designation.

The structure is considered to be and referenced as a continuous 3 span structure. The supplemental bents were not designated as individual substructure locations.

MISCELLANEOUS

The routine roadway, elevation, and underside views were taken during this inspection. See Photos 1-3.

DECK AND ROADWAY

The AC approach at Abutment 1 was repaved prior to the 2012 inspection. During this inspection the approach appeared to be in adequate condition. Refer to photograph 1 from the 02/04/2020 routine inspection report.

The AC approach within 25 feet of Abutment 4 was not repaved. The AC on the right side of the bridge exhibited pattern cracks and AC patches. The cracks were typically up to 0.125 inch in width, and spaced 8 inches on center. The patched AC areas were typically 1 to 2 feet in diameter and appeared sound. Refer to photograph 2 from the 02/04/2020 routine inspection report.

Type P object markers were present at the corners of the bridge at the end of the bridge rails.

OPERATIONAL SIGNS

Prior to both abutments cautionary signs were in place that indicated:

NARROW BRIDGE

The signs and conditions of the signs appeared to be consistent with recent inspection reports and photographs.

WATERWAY

NBI Item 113, Scour Critical Bridges, is coded U: Bridge with Unknown Foundation for this structure, due to the lack of foundation and/or soil records.

The channel cross section was spot checked and compared with the previous cross section taken on 02/27/2022. There were no significant changes.

A Bridge Scour Evaluation - Plan of Action, dated 8/18/2010, was on file in the bridge book. The evaluation recommends establishing a monitoring plan and a closure plan as necessary. A check of accuracy or thoroughness of the evaluation was not completed during this inspection.

SPECIAL INSPECTION INFORMATION

STEEL INVESTIGATION DETAILS - NOT APPLICABLE FOR THIS BRIDGE.

UNDERWATER INVESTIGATION DETAILS - NOT APPLICABLE FOR THIS BRIDGE.

DECK AND ROADWAY

DECK CROSS SECTION

0.79 feet br & cu, 17.0 feet, 0.79 feet & br

DECK GEOMETRY

(49) LENGTH	39.3 M
(51) NET WIDTH	5.1 M
(52) TOTAL WIDTH	5.4 M
(50) CURB OR SIDEWALK	LEFT 0.2 M RIGHT 0.2 M
(32) APPROACH RDWY WIDTH	5.1 M
(33) BRIDGE MEDIAN	0 NO MEDIAN

DECK ROADWAY/OPERATIONAL INFORMATION

(42a) TYPE OF SERVICE	1-HIGHWAY
(12) BASE HIGHWAY NETWORK	0-NOT ON NET
(13) LRS INVENTORY RTE & SUBRTE	
(104) NATIONAL HIGHWAY SYSTEM	0-NOT ON NHS
(26) FUNCTIONAL CLASS	09-LOCAL RURAL
(100) DEFENSE HIGHWAY	0-NOT STRAHNET
(101) PARALLEL STRUCTURE	N-NONE EXISTS
(102) DIRECTION OF TRAFFIC	3-1 LANE, 2 WAY
(10) INVENTORY ROUTE MIN VERT CLEAR	99.99 M
(47) INVENTORY ROUTE TOTAL HORIZ CLEAR	5.1 M
(68) DECK GEOMETRY	2 INTOLERABLE - REPLACE
(72) APPR ROADWAY ALIGN	3 INTOLERABLE - CORRECT
(105) FEDERAL LANDS HWY	0-NOT APPLICABLE
(110) DESIGNATED NATIONAL NETWORK	0-NOT ON NET
(20) TOLL	3-ON FREE ROAD
(28a) LANES	1
SPEED	45
(103) TEMPORARY STRUCTURE	N/A

DECK STRUCTURE INFORMATION

(107) DECK STRUCTURE TYPE	1-CIP CONCRETE
(108) WEARING SURFACE / PROTECTIVE SYSTEM	
A) TYPE OF WEARING SURFACE	0-NONE
B) TYPE OF MEMBRANE	0-NONE
C) TYPE OF DECK PROTECTION	0-NONE
OVERLAY THICKNESS (inches)	0 inches
(29) AVERAGE DAILY TRAFFIC	195
(30) YEAR OF ADT 2011	(109) TRUCK ADT % 7 %
(19) BYPASS, DETOUR LENGTH	105 KM
(114) FUTURE ADT	164
(115) YEAR OF FUTURE ADT	2042
(37) HISTORICAL SIGNIFICANCE	5: NOT ELIGIBLE FOR NRHP

DECK ELEMENT INSPECTION RATINGS AND NOTES

(58) DECK RATING = 4

Elem No.	Defect/Prot Defect	Element Description	Env	Total Qty	Units	Qty in each Condition State			
						CS 1	CS 2	CS 3	CS 4
16		Top Flange-RC	2	216	sq.m	0	102	114	0
1080		Delamination/Spall/Patched Area	2	108		0	51	57	0
1130		Cracking (RC and Other)	2	108		0	51	57	0
(16) Top Flange-RC									
The AC from the approaches at both ends of the bridge extended approximately 3 to 6 feet onto the bridge deck. The AC appeared to have been placed to smooth the transition from the approaches to the bridge deck but not protect the deck.									
(16-1080) Delamination/Spall/Patched Area									
The deck of the RC flange throughout the bridge was heavily abraded and exhibited spalls. The distress has been noted since the 1974 inspection and appeared to have slowly deteriorated. The majority of the distress was located on the right/south side of the bridge on the outside of the horizontal curves of the approaching roadway at both abutments.									
The spalling was most severe in two areas as follows:									
- An area 5 feet in width from midspan of Span 1 to midspan of Span 2									
- An area 5 feet in width x 20 feet in length over Span 3.									
Within the noted areas spalls up to 6 inches in diameter x 2 inches in depth were present. The majority of the spalls did not expose rebar.									
An area (2 feet x 2 feet) of the deck over Pier 2 had spalled and exposed rebar. The area exposed 3 rebars up to 10 inches in length and exhibited minor surface corrosion. Refer to photograph 7 from the 02/04/2020 routine inspection report.									
The general distress of the deck of the RC flange did not appear to have significantly changed when compared to inspection reports and photographs since the 2020 inspection.									
Two areas of the deck, approximately 2 feet x 2 feet, were removed at both abutments to place Pile Extensions 2 and 3 of both supplemental bents. The deck was patched and the patches appeared to be in good condition.									
(16-1130) Cracking (RC and Other)									

DECK ELEMENT INSPECTION RATINGS AND NOTES

(58) DECK RATING = 4

Elem No.	Defect/Prot Defect	Element Description	Env	Total Qty	Units	Qty in each Condition State			
						CS 1	CS 2	CS 3	CS 4

(16-1130) Cracking (RC and Other)

Cracks were present throughout the deck of the RC flange as follows:

- transverse, over the piers, up to 0.063 inch in width, full width, and spaced at 2 feet on center
- pattern, throughout the bridge, less than 0.016 inch in width, and spaced as close as 6 inches on center

The cracking on the deck was visible but difficult to quantify due to the abrasion of the deck noted under Defect 1080 and was typically typically filled with dirt.

Sporadic transverse cracks were present in the soffit of the RC flange throughout the bridge. The cracks were estimated to be less than 0.016 inch in width, full width between the girders, spaced as close as 5 to 15 feet on center, and exhibited minor sporadic efflorescence.

The cracking on the deck and soffit of the RC flange did not appear to have significantly changed when compared to inspection reports and photographs since the 2012 inspection.

JOINT - APPROACH - RAIL**RAIL INFORMATION**

(36a) Rail Code 0 (36b) Transition 0 (36c) Appr Guardrail 0 (36d) Appr Guardrail End 0 Roadway Speed 45 MPH

JOINT/APPROACH/RAIL ELEMENT INSPECTION RATINGS AND NOTES

Elem No.	Defect/Prot Defect	Element Description	Env	Total Qty	Units	Qty in each Condition State			
						CS 1	CS 2	CS 3	CS 4

304		Joint-Open Expansion	2	11	m	11	0	0	0
-----	--	----------------------	---	----	---	----	---	---	---

(304) Joint-Open Expansion

Previous inspection reports noted open expansion joints over both abutments. During this inspection, the joints were covered with AC and were not visible for inspection.

Transverse cracks were present in the AC over the joints. The cracks were typically 0.25 to 0.5 inch in width, and have formed into gaps that were 2 to 3 inches in width. The gaps were filled with dirt and debris.

Distress of the joints has not been noted in previous inspection reports.

No significant defects were observed.

332		Railing-Timber	2	79	m	78	1	0	0
1020		Connection	2	1		0	1	0	0
7000		Damage	2	1		0	1	0	0

(332) Railing-Timber

The timber bridge rail on both sides of the bridge were noted to have been replaced prior to the 2012 inspection.

The timber rails and posts appeared to be in adequate condition, and exhibited minor shallow sporadic checks, up to 0.06 inch in width, throughout the bridge. The checking did not warrant a defect.

Spalls were present in the concrete curb throughout the bridge. The spalls were typically 6 inches in diameter x 3 inches in depth, but were up to the full height of the curb x full width of the curb x 8 inches in length.

No significant defects were observed.

(332-1020) Connection

Prior to the 2018 inspection, segments of the rails at both sides of Abutment 4 have been replaced due to apparent vehicle impacts. Additionally, the timber post at the left side of Abutment 4 was out of plumb, approximately 15 degrees away from the roadway. Based on previous inspection photographs, the condition appeared to be due to distortion of the bracket at the post to deck connection and appeared to be related due to the impact damage that occurred between the 2016 and 2018 inspections.

The replaced rails appeared to be in adequate condition and did not warrant a defect of Element 332. The quantity of Defect 1020 accounts for the distorted bracket at the right side of Abutment 4.

Refer to photographs 20 through 23 from the 02/04/2020 routine inspection report.

JOINT - APPROACH - RAIL**JOINT/APPROACH/RAIL ELEMENT INSPECTION RATINGS AND NOTES**

Elem No.	Defect/Prot Defect	Element Description	Env	Total Qty	Units	Qty in each Condition State			
						CS 1	CS 2	CS 3	CS 4
(332-7000) Damage									
Defect 7000 has been included to account for the conditions noted under Defect 1020.									

SUPERSTRUCTURE**SUPERSTRUCTURE ELEMENT INSPECTION RATINGS AND NOTES**

(59) SUPERSTRUCTURE RATING = 5

Elem No.	Defect/Prot Defect	Element Description	Env	Total Qty	Units	Qty in each Condition State			
						CS 1	CS 2	CS 3	CS 4
110		Girder/Beam-RC	2	79	m	47	16	16	0
1080		Delamination/Spall/Patched Area	2	5		0	1	4	0
1120		Efflorescence/Rust Staining	2	3		0	3	0	0
1130		Cracking (RC and Other)	2	71		47	12	12	0
(110) Girder/Beam-RC									
Ivy vines were present on exterior side of Girder 1 in Span 1. The condition did not appear to have changed when compared to the 2016 photograph.									
Minor patched areas were present on the bottom of the RC intermediate diaphragm at midspan of Span 2 and Girder 1 in Span 2 at the 3/4 point. The patches were estimated to be typically up to 1 foot x 1 foot, and appeared to be in adequate condition.									
(110-1080) Delamination/Spall/Patched Area									
The installation of the supplemental bent at Abutment 1 caused minor damage to the RC girders as follows:									
- Spall on the interior face of Girder 1. The spall was 8 inches x 6 inches x 2 inches deep and did not exhibit rebar. - Delamination and spalls on the exterior face of Girder 2. The delamination and spalls encompassed an area that was 18 inches x 18 inches x 1 inch deep inches. No rebar was exposed.									
The end concrete girder diaphragm at Abutment 1 exhibited spalls and delaminations as follows:									
- A delamination, 2 feet x 2 feet, on the right side at Girder 1. - A crack, up to 0.05 inch wide and full height, and a delamination 2 feet x 2 feet, on the left side and 6 feet from Girder 2.									
The conditions did not appear to have significantly changed when compared to inspection reports and photographs since the 2012 inspection.									
Spalls were present on the upstream side of Girder 1 in Span 2, and appeared to be due to a high flow impacts. One spall was located at midspan that was estimated to be 2 feet x 8 inches x 2 inches deep with exposed rebar. One spall was located at the 1/4 point that was estimated to be 1 foot x 4 inches x 2 inches deep without rebar exposed. A work recommendation has been created to patch these spalls.									
The conditions did not appear to have significantly changed when compared to inspection reports and photographs since the 2020 inspection.									
(110-1120) Efflorescence/Rust Staining									
Minor efflorescence was present along the lower horizontal portion of the crack on the interior side of Girder 2 in Span 1.									
(110-1130) Cracking (RC and Other)									
Diagonal and horizontal cracks were present on the RC girders in Spans 1 and 3. The cracks were located at the construction joint in the RC flange, appeared to be due to the settlement of the abutments, and have been noted since the original 1972 inspection.									
The main sections of the cracks were diagonal and located under the construction joint in the flange. The lower sections of the cracks turned towards the piers and ran horizontally approximately 6 inches from the bottom of the girders. At the girder to deck interface the upper section of the cracks ran horizontally towards the piers and the abutments.									
The majority of the cracks were epoxy injected in 1974 when the supplemental bent was added at Abutment 4. The 2012 inspection noted the lower section of the crack in Girder 2 in Span 1 had continued to extend towards Pier 2. The crack was epoxy injected prior to the 2014 inspection.									
With the exception of the epoxy injection of the Girder 2 cracks, the conditions did not appear to have significantly changed when compared to the 2012 photographs.									
Vertical and diagonal cracks were present on the RC girders throughout the bridge. The cracks were estimated to be up to 0.03 inch									

SUPERSTRUCTURE**SUPERSTRUCTURE ELEMENT INSPECTION RATINGS AND NOTES**

(59) SUPERSTRUCTURE RATING = 5

Elem No.	Defect/Prot Defect	Element Description	Env	Total Qty	Units	Qty in each Condition State			
						CS 1	CS 2	CS 3	CS 4
(110-1130) Cracking (RC and Other)									
in width, full height of the girders, appeared to be more predominant/severe in the deeper portions of the girders, predominantly located in the web of the girders, spaced at 8 to 15 feet on center, and did not exhibit efflorescence or staining. The cracks have been noted since the 1974 inspection, and did not appear to have significantly changed.									
Refer to photographs 8 through 10 from the 02/04/2020 routine inspection report.									
Vertical cracks were present on the end concrete end girder diaphragms at both abutments. The cracks were less than but up to 0.016 inch in width, spaced as close as 1 foot on center, and were full height of the diaphragms.									
310		Bearing-Elastomeric	2	2	each	2	0	0	0
(310) Bearing-Elastomeric									
Element 310 was included to account for the neoprene bearings at the supplemental bent at Abutment 4. The bearings appeared to be in adequate condition and functioning as designed.									
No significant defects were observed.									
Bearings were not present at the supplemental bent at Abutment 1.									
311		Bearing-Moveable	2	2	each	0	2	0	0
1000		Corrosion	2	2		0	2	0	0
(311) Bearing-Moveable									
Element 311 was included to account for the steel plates in place between the end RC girder diaphragm and the RC abutment seat at Abutment 1.									
(311-1000) Corrosion									
The plates exhibited heavy rust and corrosion, and were impacted with dirt. Section loss could not be determined or quantified. The conditions did not appear to have significantly changed when compared to inspection reports and photographs since the 2012 inspection. A work recommendation has been created to remove the dirt and mitigate the rust and corrosion at the bearing plates.									

SUBSTRUCTURE**DESCRIPTION UNDER STRUCTURE**

(42b) TYPE OF SERVICE UNDER	5-WATERWAY	(38) NAVIGATION CONTROL	0: NO CONTROL
(69) UNDERCLEARANCES V - H	N NOT APPLICABLE (NBI)	(111) PIER PROTECTION	N/A
(71) WATER ADEQUACY	8 EQUAL DESIRABLE	(39) NAVIGATION VERTICAL CLEARANCE	0.0 M
(61) CHANNEL PROTECTION	7 MINOR DAMAGE	(116) VERT-LIFT BRIDGE NAV MIN VERTICAL CLEAR	M
(113) SCOUR	U UNKNOWN FOUNDATION	(40) NAVIGATION HORIZONTAL CLEARANCE	0.0 M
SCOUR POA DATE	08/18/2010		

CHANNEL DESCRIPTION

Sand and gravel

SUBSTRUCTURE ELEMENT INSPECTION RATINGS AND NOTES

(60) SUBSTRUCTURE RATING = 5

Elem No.	Defect/Prot Defect	Element Description	Env	Total Qty	Units	Qty in each Condition State			
						CS 1	CS 2	CS 3	CS 4
202		Column-Steel	2	8	each	0	8	0	0
1000		Corrosion	2	8		0	8	0	0
515		Steel Coating-Paint	2	15	sq.m	7	0	0	8
		3450 Paint Sys Breakdown (Steel PC)	2	8		0	0	0	8
(202-1000) Corrosion									
The paint system on the supplemental pile extensions at both abutments exhibited minor paint loss, minor to moderate surface rust at the locations of the paint loss, and freckled rust. The paint loss consisted of areas less than 3 inches in diameter. The distress was predominantly located at the edges of the flanges, and encompassed approximately 5% of the total surface area of the pile extensions.									

SUBSTRUCTURE

SUBSTRUCTURE ELEMENT INSPECTION RATINGS AND NOTES

(60) SUBSTRUCTURE RATING = 5

Elem No.	Defect/Prot Defect	Element Description	Env	Total Qty	Units	Qty in each Condition State			
						CS 1	CS 2	CS 3	CS 4
(202-515-3450) Paint Sys Breakdown (Steel PC)									
Defect 3450 was included to account for the distress noted under Defect 1000 of Element 202.									
210		Pier Wall-RC	3	11	m	0	11	0	0
1190		Abrasion (PS Conc./RC)	3	11		0	11	0	0
(210) Pier Wall-RC									
Minor vertical cracks were present in the pierwalls. The cracks were typically less than 0.016 inch in width, were partial to full height of the piers, spaced as close as 3 to 8 feet on center, and did not exhibit efflorescence or staining. The condition is co-located with the abrasion.									
(210-1190) Abrasion (PS Conc./RC)									
The lower portions of the piers exhibited minor to moderate abrasion. Coarse aggregate was visible but appeared sound.									
215		Abutment-RC	2	17	m	0	14	3	0
1130		Cracking (RC and Other)	2	4		0	1	3	0
4000		Settlement	2	13		0	13	0	0
(215) Abutment-RC									
The length of the monolithic wingwalls have been included in the quantity of Element 215.									
The concrete wingwall on the right side of Abutment 1 was undermined 3 inches x 3 inches vertically along a section 18 inches in length along the wingwall.									
The concrete wingwall on the left side of Abutment 1 was undermined 1 foot x 1 foot vertically along the full length of the 5 foot long wingwall. Additionally, erosion was removing soil from the end of the wingwall.									
The conditions did not appear to have significantly changed when compared to recent inspection reports or photographs.									
The condition appeared to be due to erosion, and did not warrant Defect 6000, Scour.									
(215-1130) Cracking (RC and Other)									
A diagonal crack was present at the top of the wingwall at the right side of Abutment 1. The crack was located at the abutment to wingwall interface, covered with moss, and estimated to be up to 0.125 inch in width.									
A vertical crack was present on the face of Abutment 4 at the centerline of the bridge. The crack was previously noted to be up to 0.08 inch in width, full height of the face, was behind the supplement bent cap. The crack was first noted in 2000 and noted to have been epoxy injected in 2004. The conditions did not appear to have significantly changed when compared to recent inspection reports or photographs.									
(215-4000) Settlement									
Defect 4000 was included to account for the settlement of the abutments at both ends of the bridge.									
The settlement appeared to be effectively mitigated by the supplemental steel bents.									
The 2012 inspection report noted the gap between the RC diaphragms and the RC seat abutments were measured as follows:									
	Abutment 1	Abutment 4							
Left	1.75 inches	1.25 inches							
Centerline	1.75 inches	1.00 inch							
Right	1.75 inches	1.25 inches							
The gap did not appear to have changed when re-measured during this inspection.									
220		Pile Cap/Footing-RC	2	11	m	0	11	0	0
6000		Scour	2	11		0	11	0	0
(220-6000) Scour									
The foundations at both abutments were exposed along the full length of the abutment faces. The vertical sides of the foundations were exposed approximately 8 inches above the concrete sack slope protection. Refer to photographs 11 and 14 from the 02/04/2020 routine inspection report.									
The previously noted exposed sections of the top of the Pier 2 foundation on the Span 1 side and both sides of the pier were not exposed during this inspection.									

SUBSTRUCTURE

SUBSTRUCTURE ELEMENT INSPECTION RATINGS AND NOTES

(60) SUBSTRUCTURE RATING = 5

Elem No.	Defect/Prot Defect	Element Description	Env	Total Qty	Units	Qty in each Condition State			
						CS 1	CS 2	CS 3	CS 4
(220-6000) Scour									
The top and the vertical face of the Pier 2 foundation, on the Span 2 side, were exposed behind the rock slope protection. The vertical face was exposed up to 13 inches along the full width of the bridge, but no undermining was evident. Refer to photograph 16 from the 02/04/2020 routine inspection report.									
The top and the vertical face of the Pier 3 foundation, on the Span 2 side of the pier, were exposed where the concrete sack protection was not placed. The top was exposed along the full length of the foundation, and the vertical face was exposed 12 inches along a 3 foot section on the right side of the bridge. No undermining was evident. Refer to photograph 17 from the 02/04/2020 routine inspection report.									
The conditions did not appear to have significantly changed when compared to inspection reports and photographs since the 2012 inspection.									
231		Pier Cap-Steel	2	13	m	0	13	0	0
1000		Corrosion	2	13		0	13	0	0
515		Steel Coating-Paint	2	17	sq.m	4	0	0	13
		3450 Paint Sys Breakdown (Steel PC)	2	13		0	0	0	13
(231) Pier Cap-Steel									
The supplemental steel cap at Abutment 1 was out of plumb approximately 2 to 5 degrees. The condition as more severe at the left side of the bridge. The top of the cap was closer to Abutment 1. Inspection reports since 2012 have noted the condition, but the condition was not quantified until this inspection.									
The cap appeared to have been placed in the configuration. The condition did not warrant a defect of Element 231, and has been noted for future reference.									
(231-1000) Corrosion									
The paint system on the supplement bent caps at both abutments exhibited distress throughout the caps but appeared to have been most severe on the top face of the top and bottom flanges.									
The distress included peeling, surface rust, and minor pitting, but the caps did not exhibit significant section loss. Although the distress was present on approximately 10% of the total surface area of the caps, the distress was present along the full length of the caps.									
The conditions did not appear to have significantly changed when compared to inspection reports and photographs since the 2012 inspection.									
(231-515-3450) Paint Sys Breakdown (Steel PC)									
Defect 3450 was included to account for the distress noted under Defect 1000 of Element 231.									
256		Slope Protection	2	2	ea.	2	0	0	0
(256) Slope Protection									
The concrete sack slope protection, under Spans 1 and 3, and on the Span 2 side of Pier 3 appeared to be functioning as designed. No notable distress was observed.									
The RSP on the Span 2 side of Pier 2 appeared to be functioning as designed. No notable distress was observed. The placement date of the current RSP on the Span 2 side of Pier 2 was not on record.									
No significant defects were observed.									

OTHER PHOTOGRAPHS

Photo 1
Roadway view taken from Abutment 1.



Photo 2
Elevation view taken from the right side of the bridge.



Photo 3
Underside view of Span 2 taken from the right side of Pier 2.

WORK RECOMMENDATIONS**DECK WORK RECOMMENDATIONS**

Rec Date	01/31/2012	Work By	LOCAL AGENCY	Est Cost		Dist Target
Status	PROPOSED	Action	Deck-Patch spalls	Str Target	ROUTINE	EA
Resurface the entire concrete deck, or remove unsound concrete, clean rebar, and patch the distressed areas of the concrete deck.						

JOINT/APPR/RAIL WORK RECOMMENDATIONS**SUPERSTRUCTURE WORK RECOMMENDATIONS**

Rec Date	02/27/2022	Work By	LOCAL AGENCY	Est Cost		Dist Target
Status	PROPOSED	Action	Bearings-Rehab	Str Target	ROUTINE	EA

Remove the dirt and mitigate the rust and corrosion at the bearing plates.

Rec Date	02/27/2022	Work By	LOCAL AGENCY	Est Cost		Dist Target
Status	PROPOSED	Action	Super-Patch spalls	Str Target	ROUTINE	EA

Clean and patch the spalls present (at the midspan and 1/4 point) on the upstream side of Girder 1 in Span 2.

SUBSTRUCTURE WORK RECOMMENDATIONS - NONE**OTHER WORK RECOMMENDATIONS**

Rec Date	02/27/2022	Work By	LOCAL AGENCY	Est Cost		Dist Target
Status	PROPOSED	Action	Paint Bridge Substru	Str Target	ROUTINE	EA

For the preservation of structure, clean and repaint the steel supplemental caps and pile extensions. This WR was originally created 02/17/2016 (Action code 91) and has been updated for a new action code (Action code 95).

WORK RECOMMENDATIONS

OTHER WORK RECOMMENDATIONS

Rec Date	02/17/2016	Work By	LOCAL AGENCY	Est Cost		Dist Target	
Status	PROPOSED	Action	Remove Vegetation	Str Target	ROUTINE	EA	
Remove the vegetation on the exterior side of Girder 1 in Span 1.							



Photo #1

Roadway view taken from Abutment 1.



Photo #2

Elevation view taken from the right side of the bridge.



Photo #3

Underside view of Span 2 taken from the right side of Pier 2.