HistoricBridges.org - National Bridge Inventory Data Sheet

2013 Inventory

The National Bridge Inventory contains data submitted by state transportion departments to the Federal Highway Administration in coded format.
Form Interface Design: www.historicbridges.org. Data Conversion Assistance By www.bridgehunter.com. None of the involved parties make any guarantee of accuracy.

Basic Information

Washington [53]	Spokane County [063]	Marshall [43780]	0.2 NE MARSHALL	47-34-00.31 = 47.566753	117-29-35.21 = -117.493114

81934000000000 | Highway agency district: 6 | Owner: County Highway Agency [02] | Maintenance responsibility: County Highway Agency [02]

Route: 579 | CHENEY-SPOKANE RD | Toll: On free road [3] | Features intersected: UP&BN RR & MARSHALL CR

Design - main	Concrete [1]	Design - approach	
10	Tee beam [04]	0	Other [00]

Kilometerpoint: 954 km = 591.5 mi

Year built: 1949 | Year reconstructed: N/A [0000]

Skew angle: 0 | Structure Flared:

Historical significance: Bridge is on the NRHP. [1]

Total length: 166.7 m = 546.9 ft | Length of maximum span: 21.9 m = 71.9 ft | Deck width, out-to-out: 9.8 m = 32.2 ft | Bridge roadway width, curb-to-curb: 7.3 m = 24.0 ft

Inventory Route, Total Horizontal Clearance: 7.3 m = 24.0 ft | Curb or sidewalk width - left: 1.2 m = 3.9 ft | Curb or sidewalk width - right: 0 m = 0.0 ft

Deck structure type: Concrete Cast-in-Place [1]

Type of wearing surface: Monolithic Concrete (concurrently placed with structural deck) [1]

Deck protection:

Type of membrane/wearing surface:

Weight Limits

Bypass, detour length: 1 km = 0.6 mi

Method to determine inventory rating: Load and Resistance Factor(LRFR) [3] | Inventory rating: 16.2 metric ton = 17.8 tons

Method to determine operating rating: Load and Resistance Factor(LRFR) [3] | Operating rating: 27 metric ton = 29.7 tons

Bridge posting: Equal to or above legal loads [5] | Design Load: M 13.5 / H 15 [2]

Functional Details

Average Daily Traffic	3301	Average daily truck traffi	12 %	Year	2012	Future average daily traffic	4753
Year	2034						

Road classification	Major Collector (Rural) [07]	Lanes on structure	2	Approach roadway width	10.4 m = 34.1 ft
Type of service on bridge	Highway [1]	Direction of traffic	2 - way traffic [2]	Bridge median	
Parallel structure designation	No parallel structure exists. [N]				
Type of service under bridge	Railroad-waterway [7]	Lanes under structure	0	Navigation control	
Navigation vertical clearanc	0 = N/A	Navigation horizontal clearance	0 = N/A		
Minimum navigation vertical clearance, vertical lift bridge		Minimum vertical clearance over bridge roadway	99.99 m = 328.1 ft		
Minimum lateral underclearance reference feature	Railroad beneath structure [R]				
Minimum lateral underclearance on right	3.9 m = 12.8 ft	Minimum lateral underclearance on left	0 = N/A		
Minimum Vertical Underclearance	7.16 m = 23.5 ft	Minimum vertical underclearance reference feature	Railroad beneath structure [R]		
Appraisal ratings - underclearances	Somewhat better than minimum adequacy to tolerate being left in place as is [5]				

Repair and Replacement Plans

Type of work to be performed

Replacement of bridge or other structure because of substandard load carrying capacity or substantial bridge roadway geometry. [31]

Work done by	Work to be done by contract [1]		
Bridge improvement cost	141000	Roadway improvement cost	14000
Length of structure improvement	166.7 m = 546.9 ft	Total project cost	212000
Year of improvement cost estimate	2013		
Border bridge - state		Border bridge - percent responsibility of other state	
Border bridge - structure number			

Inspection and Sufficiency

Structure status	Open, no restriction [A]	Appraisal ratings - structural	Meets minimum tolerable limits to be left in place as is [4]
Condition ratings - superstructure	Satisfactory [6]	Appraisal ratings - roadway alignment	Equal to present minimum criteria [6]
Condition ratings - substructure	Good [7]	Appraisal ratings - deck geometry	Basically intolerable requiring high priority of replacement [2]
Condition ratings - deck	Poor [4]		

Scour	Bridge foundations determined to be stable for assessed or calculated scour condition. [5]
Channel and channel protection	Banks are protected or well vegetated. River control devices such as spur dikes and embankment protection are not required or are in a stable condition. [8]

Appraisal ratings - water adequacy	Equal to present desirable criteria [8]	Status evaluation	Structurally deficient [1]
Pier or abutment protection		Sufficiency rating	49.4

Culverts	Not applicable. Used if structure is not a culvert. [N]
Traffic safety features - railings	
Traffic safety features - transitions	
Traffic safety features - approach guardrail	Inpected feature meets currently acceptable standards. [1]
Traffic safety features - approach guardrail ends	Inpected feature meets currently acceptable standards. [1]

Inspection date	October 2011 [1011]	Designated inspection frequency	24	Months

Underwater inspection	Not needed [N]	Underwater inspection date	
Fracture critical inspection	Not needed [N]	Fracture critical inspection date	
Other special inspection	Not needed [N]	Other special inspection date	

BRIDGE INSPECTION REPORT

Ver Date: 12/03/2013 | Agency: Spokane County

Status: Released | Printed On: 09/30/20 | Program Mgr: Roman G. Peralta

Bridge No. SPOK-2404 | Page: 1/6 | **Structure Type**

Bridge Name CHENEY-SPO OVER UP&BN RR | **Route** 00579 | **Location** 0.2 NE MARSHALL

Structure ID 08193400 | **MilePost** 5.93 | **Intersecting** UP&BN RR & MARSHALL CR

Inspector's Signature DRH IDent# G9924 Co-Inspector's Signature

4		Structural Adqcy	(657)	N		Pier/Abut/Protect	(679)	1949		Year Built	(332)
2		Deck Geometry	(658)	5		Scour	(680)	0		Year Rebuilt	(336)
9	5	Underclearance	(659)	9		Retaining Walls	(682)	30		Oper Rating	(551)
5		Operating Level	(660)	9		Pier Protection	(683)	18		Inv Rating	(554)
6		Alignment Adqcy	(661)	0		Bridge Rails	(684)	A		Open Close	(293)
8		WaterwayAdqcy	(662)	0		Transition	(685)	9999		Vert Over Deck	(360)
4		Deck Overall	(663)	1		Guardrails	(686)	2306		Vert Under	(374)
4		Drains Condition	(664)	1		Terminals	(687)	R		Vert Und Code	(378)
6		Superstructure	(671)	N		Revise Rating	(688)	0.00		Asphalt Depth	
1		Number Utilities	(675)	D		Photos Flag	(691)	35		Speed Limit	
7		Substructure	(676)			Soundings Flag	(693)				
8		Chan/Protection	(677)			Measure Clearance	(694)				
9		Culvert	(678)								

Inspections Performed

IT	NT	HRS	Date	Rep Type
Y	**24**	**2.0**	**10/02/2013**	**Routine**
				Fract Crit
				Underwater
				Special
				Interim
				Equipment
				Damage
				Safety
				Short Span

Total: 8.5

Suff Rating: 50.48 SD 49.39 SD

BMS Elements

Element	Element Description	Total	Units	State 1	State 2	State 3	State 4
12	Concrete Deck	13128	SF	13024	100	2	2
35	Concrete Deck Soffit	13128	SF	13128	0	0	0
110	Concrete Girder	2188	LF	0	0	2188	0
205	Concrete Pile/Column	44	EA	44	0	0	0
219	Concrete Cantilevered Span Abutment	64	LF	64	0	0	0
234	Concrete Pier Cap / Crossbeam	96	LF	96	0	0	0
266	Concrete Sidewalk & Supports	2187	SF	0	0	2187	0
311	Moveable Bearing (roller, sliding, etc)	16	EA	0	12	4	0
321	Concrete Roadway Approach Slab	600	SF	404	196	0	0
331	Concrete Bridge Railing	1094	LF	0	1094	0	0
358	Deck Cracking	1	EA	0	1	0	0
376	Concrete Deck Delamination Testing	13128	SF	13024	100	2	2

406	Compression Seal / Steel Header	49	LF	49	0	0	0
410	Steel Fingers	28	LF	28	0	0	0
9050	50' UBIT	1	FL	1	0	0	0

Notes

0	Notes: This bridge has 12 spans, orientation is West to East, girders and numbered from left to right, (A-D) (4). The RR contact person is Rob Fletcher- Road Master, cell no. (509) 434-9148. (Call early in the morning.)
12	Concrete Deck: (663) (666) Exposed aggregate, transverse cracking, mud ball voids, rutting in wheel tracks. No exposed rebar was seen, although it appears that the deck is cracking over the transverse steel. Diagonal hairline cracking is occurring at all corners of the finger joint and also at the east end near the sidewalk face. See Element 376 for information on the deck delamination testing. In 2005, the deck was extended 12" to 18" on both ends of the bridge to accommodate new compression seals. Deck was patched when compression seals were replaced. One of the patches over span 6 near the centerline has spall/ delaminated. =1 sq. ft. Span 5: in the east bound lane, a portion of a repaired section has delaminated and spalled, approx. 1 sf. The deck concrete has spalled out around the Steel Fingers on the north side of the deck. Transverse hairline cracks can be seen in several of the deck patches. **Deck Overall was changed to '4' or 'Poor condition' due to advanced deficiencies in the soffit and in the overhang on both sides of the bridge ie. transverse cracks with rust and water stains. Throughout the deck surface, there are transverse cracks as well as deck patching in spans 1,5 and 6; some of these patches are delaminating and spalling. Delamination has also occurred in the deck around some of these older patches. There is also a very high chloride content noted on a 11/08/96 Chloride test document. The summary states: a 100% of samples taken from the deck have a greater than 2 lbs/cy of chloride; the average chloride content = 5.45 lbs/cy. The rebar cover - 100% > 1 1/2" cover.
35	Concrete Deck Soffit: (663) Transverse hairline cracks w/ leaching stains throughout deck. Deck edges: transverse cracks throughout many have orange rust w/ leaching, efflorescence and water stains, they line up with the curb joints. Span 1: Between girders 2A and 2B, the deck is cracked diagonally, w/ rust stains. Crack also has water oozing from crack. Span 2: Between girders 2A and 2B, the deck is cracked diagonally, w/ rust stains. Span 11: diagonal hairline cracks over pier 12, some have rust stains. Span 12: few transverse hairline cracks can be seen in this span. What cracks can be seen are leaching.
110	Concrete Girders: (671) The Condition Code rating for the girders was change to a '6' - 'Satisfactory condition' due to the abundance of flexure cracks in all the girders and showing some minor deterioration such minor rebar exposure in span 6, girder 6D. All the flexure cracks in all girders are hairline. At pier 12, in the bottom face of girder D, in front of rocker bearing, the concrete has spalled and is delaminated.

205	Concrete Columns: Pier 7- Near Column C concrete is delaminating. At Column B concrete is delaminating/spalling with exposed, rusting rebar. Pier 10 Columns C and D - At constr. joint above horiz. struts, concrete is crumbling in NW corners of columns Column D - Delamination/spalling on north face of column Pier 12 Column 12D- Corbel for diagonal brace has patches that are delaminating and spalling. Tie Beams between Col. 12C & 12D is cracking where it connects to Col. 12D. The cap below the rocker on the pier 12, south side, is cracked vertically just above the rocker, also hairline map cracking throughout cap. South face at top has 5" of exposed, rusting wire. Steel diagonal braces at Pier 12 have paint that is peeling. Braces are rusting where paint is gone, brace at Col. 12A is worse than others. Top of Column B, east face has an 8"x10" spall, no exposed rebar.
219	Concrete Cantilevered Span Abutment: (676) Abutment 1(West) In April 2005 a retaining wall was built under the abutment to prevent more embankment material from sloughing off. The approach slab was also moving due to the loss of fill material. The wall is working well and the embankment is stable. The wall has minor rock pockets and spalls. Wall under Abutment 1 has delaminated, approx. 5', and a medium piece of the wall has spalled off, in NW corner. At the centerline of the end diaphragm, at the bottom edge, a medium size delamination has occurred, approx. 24" x 4". End diaphragm has a spall with exposed rebar in NW corner. Abutment 13 (East) has the same type of wall built under the abutment. It is working well, minor rock pockets and spalls. End diaphragm has a spall with exposed rebar in NE corner.
234	Concrete Pier Cap/ Crossbeam: (676)
266	Concrete Sidewalk: (673) In 2005, the SW and SE sidewalk approaches were removed and replaced with longer and wider concrete ones. They are the same length as the concrete approaches.
311	Moveable Bearings: At pier 2, bearings are rusting and grout pads @ these bearings are cracked and minor spalling has occurred. Bearings position was measured in 4/15/90, 7/8" movement had occurred. It measures 3/4", October 26, 2006. The bearings appear to be frozen, rust has formed where steel plate and bearings rest. Pier 7: (mid-bridge expansion joint) there are 8 roller bearings @ this pier, the 4 on the west appear to be at their maximum movement. They are in an expansion state, tipped to the east. Roller 7B: one of the top pintles can be seen just below the top bed plate. The diaphragm in which the rollers are pinned to has cracked, it appears to be due to the maximum movement of the rollers. The 4 rollers bearings on the east side of pier 7 are in the contraction state and only slightly tipped to the east. Pier 11(East): Bearings are near vertical, the paint on the inside bearing looks good, minor rusting on the inside bearings. The south rocker (outside) is bleached and the paint is peeling.
321	Concrete Approach slab: (681) Both approach slabs were repaired in 2005.West side: 4.5' was removed and replaced to facilitate the replacement of the compression seal. Also the delaminated area in the East bound lane was repaired. East side: a 3'-0" section was removed and replaced to facilitate the compression replacement. Both sections are in good condition. Longitudinal cracks have developed in the concrete. They are approx. 3'-0" to 6'-0" apart with one in the center of the slab.
331	Concrete Bridge Rails: (684) Good condition, but weathered, minor damage to top of rail, SW side. North side, railing has had some repair done to it in the past. North side: NW corner area, top edge of rail is delaminating/spalling over rebar, same near center of bridge. Rebar is exposed at NW corner. At center of bridge, the repair is 11'-6" long and all delaminating. The whole top surface has delaminated and partially spalled at the east end of the section. South rail: over the western most R/R tracks, a 9"x9"x2" deep spall is at top of rail post, no exposed rebar.
358	Deck Cracking: Cracks are prevalent throughout the deck but no delaminations or spalling has been seen since 2005, in which all the mapped delaminated area were repaired.

Bridge No.	SPOK-2404			**Structure Type**	
Bridge Name	CHENEY-SPO OVER UP&BN RR	**Route**	00579	**Location**	0.2 NE MARSHALL
Structure ID	08193400	**MilePost**	5.93	**Intersecting**	UP&BN RR & MARSHALL CR

376	Concrete Deck Delamination Testing: Has been performed 2011. Delaminated areas were repaired during a rehabilitation project. In 2011, 1 sq. ft. of delamination/spalling was found. Chain dragging: 2006- found approx. 2 sq. ft. in deck over the trail in the west bound lane next to a repaired section. In April 2005 the delaminated areas were chipped out and patched. This 2 squ. ft. area was missed. The patched areas were inspected, several had hairline crack and some of the cracks line up with the existing deck cracks.
406	Compression Seal/Steel Header: Both seals were replaced in 2005. West side: new, seal appears to be separating from steel header (bridge side). Sand and gravel are on the bladder. East side: Good condition, also has sand and gravel on the bladder. Below, it appears that neither seal leaks, the sand and rocks show no sign of water.
410	Steel Fingers - Good condition. Deck has spalled out around this joint. Needs to be repaired.
664	Drains: (664) Drains are badly plugged.
672	Curbs: (672) Spalls, hairline cracks and scraps along edge of curb
675	Utility: (675) Telephone conduit, South side. Utility is company has moved there wires to poles on the south side, below the bridge.
686	Guardrails- Posts were not replaced in SW and SE corners when utility lines were taken off sidewalk
9050	UBIT inspection: Girder 1A: at mid-span, 18" long delamination w/spalls in the fillet (inside face) along a 6'-0" longitudinal narrow crack. Span 2: Intermediate diaphragm- typical vertical hairline cracks. Soffit: transverse hairline cracks, light to heavy leaching, several have light rust stains. Near pier 2, hairline diagonal cracks are present between girders 2A & 2B, with light rust stains. Girders: a few flexure cracks @ mid-span. Piers: construction joints @ top, joint material is exposed. Pier 2: rollers are slightly tipped in the expansion state. (west). Roller 2B is tipped move than the others, also has more superficial rust that the others. Span 3: (over Railroad) Deck; drains are plugged. Soffit: light rust stains in the transverse cracks. Girders: typical flexure cracks through the mid spans and hairline to narrow shear cracks @ the piers. Girder 3A: minor spalls & scrapes from high load hits by trains. Girder 3D: longitudinal crack near deck, seen in several other girders, appear old, possibly poor consolidation of the concrete pour. 15' from pier 3, in the overhang, a short piece of a transverse rebar has been exposed and rusting also, has section loss. Near mid-span, just west of the tracks, multiple hairline flexure cracks are present, spacing is 6" to 9" apart. Also, mid way up the girder, a hairline longitudinal crack measuring 28" long, is present. Span 4: Deck: transverse hairline cracks w/leaching & rust stains. Pier 4: insignificant. Pier 4 & 5 diaphragms between 4B & 4C have vertical hairline cracks. Span 5: (trail below). Soffit: hairline transverse cracks, leaching. Outside edge, minor exposed rebar, not enough cover. The soffit has been patched between girder C & D near pier 6. Girders: typical hairline flexure and shear cracks. Span 6: Soffit: transverse hairline crack w/ light rust stains throughout.

Pier 7: All the Roller Bearings sit on Pier 7.

Rollers Bearings 6A- 6D: (west side of Pier 7), all appear to be at their maximum movement in the expanded state. Roller 6A -west side, the anchor pins can be seen just below the roller plate.
The concrete diaphragm above the roller bearing 6A has delaminated, north face -8 1/2" H x 24" W x 1 1/2" deep and a small area on the east face.
The concrete diaphragm above roller bearing 6B has spalled off on the east face, it measures 8 1/2" H x 24" W and varies form 0" to 1 1/2" deep. The north face has a 4 1/2" H x 12" W delamination.
Soffit: transverse cracks w/ leaching & rust stains between girders A & B. Over girder D, outside face, deck has 2 small spalled areas w/ exposed rebar, a large spalled area, appears to be over the rebar.
Girders: flexure cracks.

Roller Bearings 7A- 7D: (east side of Pier 7).
The diaphragms above roller 7A & 7C are cracked. The second row of rollers over pier 6 are in a slight canter towards the contracted state (lean east). The Steel Fingers are over Pier 7 which necessitates have 2 sets of bearings.
Span 7:
Girders: east portion- very fine hairline shear & flexure cracks are hard to see. West portion, shear cracks and flexure cracks are more obvious.
Soffit: transverse hairline cracks, several w/ leaching rust stains. Hairline longitudinal cracks are present in this span.

Span 8: (over Railroad)
Soffit: transverse cracks, some w/ leaching stains, some w/ rusty leaching stains.
Girder 8D: east end- heavy efflorescence. West end, near col. 8D, hairline shear crack w/ efflorescence is present.
All girders in this span have hairline shear and flexure cracks.
Span 9:
Soffit: transverse hairline cracks, leaching, w/ light rust stains over the rebar, also several hairline longitudinal cracks are present.
Girders: very few shear and flexure cracks were seen.
Span 10:
Soffit: rust in transverse cracks over the rebar near pier 10 & pier 11.
Longitudinal hairline cracks are present between girders 10A -10 B and 10B - 10 C and 10C- 10D.
Girders: hairline shear and flexure cracks.
Pier 10: exposed isolation material @ the construction joint @ top of columns. Construction joint shear key near top of column and deck is cracked. Hairline cracks in center of pier diaphragm.

Span 11: (last span)
Soffit: transverse hairline cracks are present w/ light rust and efflorescence.
Pier 11: hairline crack in columns @ construction joint and @ hinges.
Girders: hairline shear and flexure cracks.
Girder 11C: shear crack measures .013" wide (north face).
Girder 11D: outside face- shear crack measures .013" wide near pier 11.

Repairs

Repair No	Pr	R	Repair Description	Noted	Maint	Verified
18562	1	B		10/27/11		
18563	1	B		10/27/11		
18564	1	B		10/27/11		
18565	1	B		10/27/11		

BRIDGE INSPECTION REPORT

Ver Date: 12/03/2013 | Agency: Spokane County

Status: Released | Printed On: 09/30/20 | Program Mgr: Roman G. Peralta

Bridge No. SPOK-2404 **Structure Type**

Bridge Name CHENEY-SPO OVER UP&BN RR **Route** 00579 **Location** 0.2 NE MARSHALL

Structure ID 08193400 **MilePost** 5.93 **Intersecting** UP&BN RR & MARSHALL CR

18566	1	B	10/01/13

18567	1	B	10/01/13

Inspections Performed and Resources Required

Report Type	Date	IT	Frq	Hrs	Insp	CertNo	Coinsp	Note
Routine	10/02/13		24	2.0	DRH	G9924		

Resources	Use	Hour	Min	Req	Max	Notes

Report Type	Date	IT	Frq	Hrs	Insp	CertNo	Coinsp	Note
2 Man UBIT	10/02/13		24	6.5	DRH	G9924		

Resources	Use	Hour	Min	Req	Max	Notes

Sticky Notes

Creator	Created	Table Reference	Notes
Spokane County/Harder	11/03/2011	BMS	376- need flagging when chaindragging deck for delaminations.