BRIDGE INSPECTION REPORT

Status: Released | Printed On: 3/24/2020 | Agency: SEATTLE

CD Guid: 332e0af3-23c2-452e-a859-65ac0e2e34c0 | Release Date: 10/8/2014 | Program Mgr: Roman G. Peralta

Br. No. BRG-131M **SID** 08530200 **Br. Name** WS FREEWAY MAINSPAN

Carrying SW SPOKANE ST **Route On** 01140 **Mile Post** 131.30

Intersecting DUWAMISH RIVER W WATERWY **Route Under** **Mile Post**

Inspector's Signature AM Cert # B1169 Cert Exp Date 5/11/2022 Co-Inspector's Signature PZ

5		Structural Eval	(1657)	64		Operating Tons	(1552)	2		No Utilities	(2675)
8		Deck Geometry	(1658)			Op RF	(1553)	1		Bridge Rails	(1684)
9		Underclearance	(1659)	39		Inventory Tons	(1555)	N		Transition	(1685)
8		Alignment	(1661)			Inv RF	(1556)	N		Guardrails	(1686)
8	6	Deck Overall	(1663)	5		Operating Level	(1660)	N		Terminals	(1687)
5		Superstructure	(1671)	A		Open/Closed	(1293)	0.00		Asphalt Depth	(2610)
8	7	Substructure	(1676)	8		Waterway	(1662)			Design Curb Ht	(2611)
9		Culvert	(1678)	8		Scour	(1680)			Bridge Rail Ht	(2612)
8		Chan/Protection	(1677)			Soundings Flag	(2693)	1983		Year Built	(1332)
1		Pier/Abut/Prot	(1679)			Revise Rating	(2688)	0		Year Rebuilt	(1336)
7		Drain Cond	(7664)			Photos Flag	(2691)			Subj to NBIS	(2614)
1		Drain Status	(7665)			Measure Clrnc	(2694)				
N		Deck Scaling	(7666)	9		Sdwk Cond	(7673)				
0		Scaling Pct	(7667)	9		Paint Cond	(7674)				
8		Deck Rutting	(7669)	9		Approach Cond	(7681)				
8		Exposed Rebar	(7670)	9		Retaining Wall	(7682)				
9		Curb Cond	(7672)	9		Pier Prot	(7683)				

Alpha Span Type:

Sufficiency Rating 69.00

Low Risk

Inspections Performed:

Freq	Hrs	Date	Rep Type
24	1.5	6/28/2013	Routine
			Fract Crit
60	6.0	7/10/2012	UW
24	**2.0**	**5/28/2014**	**Special**
24	**1.5**	**5/28/2014**	**Interim**
			UWI
			Damage
			PRM Safety
			SEC Safety
			Condition
			Short Span
			In Depth
			Geometric

BMS Elements

Element	Element Description	Total	Units	State 1	State 2	State 3	State 4
12	Concrete Deck	0	SF	0	0	0	0
105	Concrete Box Girder	1672	LF	712	0	960	0
205	Concrete Pile/Column	0	EA	0	0	0	0
234	Concrete Pier Cap/Crossbeam	0	LF	0	0	0	0
314	Pot Bearing	0	EA	0	0	0	0
331	Concrete Bridge Railing	0	LF	0	0	0	0
414	Bolt Down - Sliding Plate w/Springs	0	LF	0	0	0	0

Notes

0 Orientation 05/28/2014 Interim Inspection of the interior of the box girder, AM & PZ, 10:00 A.M., Clear, 65°F +/-. 05/15/2013, Annual Routine Inspection with UBIT, HWT & AM, 10:30 A.M., Partly Cloudy, 55^F +/- 06/28/2013 Routine Walk-through Inspection, HWT & JPB, 10:00 A.M., Clear, 70^F +/-. There are 35 segments in the main span, including the pier tables. At Pier 16 the fence around the pier is damaged from truck trailers. Continue to observe. At Pier 15 the fence around the pier is damaged from truck trailers. Continue to observe.

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Intersecting DUWAMISH RIVER W WATERWY **Route Under** **Mile Post**

Notes (Continued)

1	Special Inspection Notes Bridge Name: WSF High Level Bridge File No.: 131M Inspector: Ainalem Molla Co-Inspector: Pablo Zuleta Equip. Used: Flashlight, crack gauge, marking chalk Hours on Site: 3.0 Weather: Clear Date: 05/28/2014 Scope of Inspection: An Inspection of the segmentally cast in place, post tensioned, box girder from the interior. Findings, Location of Defects, and Recommendations General - This inspection was scheduled to check if the transverse cracks on the outside of the bottom of the main span at the 11th and 12th panels East of Pier 16 and the 11th panel West of Pier 17 are reflected in the interior. They were not last year and are visible on the inside this year. Access was provided through the manhole located in the westbound center lane shoulder at Pier 16. Confined Space procedures were used. Non-Permit Required. Fall Protection procedures were used for entry. All six sections of the box girder have shear cracking in the soffit of the deck at the ends of each section. Continue to observe. The fire suppression system supply pipe has vertical hangars and horizontal brace rods with turnbuckles. Typical in all box sections: The vertical hangars do not appear to be vertical. The horizontal braces are mostly bent and there is at least one that is broken. See Work Order #160505. It South Box, West End 1. Pier 16, west diaphragm, there are four longitudinal cracks with efflorescence visible in the top deck soffit. Continue to Observe (CTO) 2. Pier 15, end diaphragm, the earthquake restrainers indicated approximately 3 ½ inch of movement between anchor rod and restrainer plate. This is visible by looking at the rods for evidence of movement. (CTO) 3. Minor Transverse Leaching Cracks in box top soffit, located approx. 40 feet east of the end diaphragm. 4. Nine longitudinal cracks approximately 80 feet east of the west end diaphragm. Each crack is approx. 3 feet long. They are located in the box top deck soffit and within a closure pour. (CTO) 5. Typical throughout, small cold joint crack like openings occurred during construction and were filled by epoxy injection. These areas did not show any signs of recent cracking. (CTO) The watermain pipe hangers and supports have been damaged through out the box girder. The damage is most promenant at pipe hangers and supports near the wye fittings, which feed the fire hydrant runs. The vertical pipe hangers (Type I on plan sheet 20 of 100) are bent and show signs of stress, while the horizontal pipe hangers (Type II on plan sheet 20 of 100) show signs of stress and some have buckled. This has resulted in several water leaks at the victaulic groove joint fittings. The most promenant leak is at the west most fire hydrant wye and at a pipe joint 50 linear feet to the east. South Box, Main Span 6. Typical, there is an intermittent crack or cold fissure located in the re-entrant corner between the box web and box top deck. It appears to be construction related. (CTO) At all tendon anchorage steps there are hair line cracks from the box girder walls toward the center of the box at approximately a 45° angle. The cracks vary in width from 1/64" to 1/8". The visible cracks were traced with red or yellow marker for tracking. Continue to observe. The watermain pipe hangers and supports have been damaged through out the box girder. The damage is most promenant at pipe hangers and supports near the wye fittings, which feed the fire hydrant runs. The vertical pipe hangers (Type I on plan sheet 20 of 100) are bent and show signs of stress, while the horizontal pipe hangers (Type II on plan sheet 20 of 100) show signs of stress and some have buckled. South Box, East Span 7. The lights are out in this section. See Work Order #160510. 8. Typical, minor Transverse Leaching Cracks located in the box top deck soffit. (CTO) The watermain pipe hangers and supports have been damaged through out the box girder. The damage is most promenant at pipe hangers and supports near the wye fittings, which feed the fire hydrant runs. The vertical pipe hangers (Type I on plan sheet 20 of 100) are bent and show signs of stress, while the horizontal pipe hangers (Type II on plan sheet 20 of 100) show signs of stress and some have buckled. North Box, East Span 9. Typical, minor Transverse Leaching Cracks located in the box top deck soffit. (CTO) North Box, Main Span 10. Typical, minor Transverse Leaching Cracks located in the box top deck soffit. (CTO) At all tendon anchorage steps there are hair line cracks from the box girder walls toward the center of the box at approximately a 45° angle. The cracks vary in width from 1/64" to 1/8". The visible cracks were traced with red or yellow marker for tracking. Continue to observe. The watermain pipe hangers and supports have been damaged through out the box girder. The damage is most promenant at pipe hangers and supports near the wye fittings, which feed the fire hydrant runs. The vertical pipe hangers (Type I on plan sheet 20 of 100) are bent and show signs of stress, while the horizontal pipe hangers (Type II on plan sheet 20 of 100) show signs of stress and some have buckled. North Box, West Span 11. Typical, minor Transverse Leaching Cracks located in the box top deck soffit. (CTO) The watermain pipe hangers and supports have been damaged through out the box girder. The damage is most promenant at pipe hangers and supports near the wye fittings, which feed the fire hydrant runs. The vertical pipe hangers (Type I on plan sheet 20 of 100) are bent and show signs of stress, while the horizontal pipe hangers (Type II on plan sheet 20 of 100) show signs of stress and some have buckled.
9	Underwater Dive Inspection, Dan Stromberg/Matt Donahue, Collins Engineers, Inc. 7/10/2012, 2:30PM. 7/12/2012, 12:10PM.
12	Concrete Deck Between Pier 16 and Pier 17 the deck soffit between the box girders has longitudinal cracks with efflorescence. The number of cracks varies depending upon the box segment being observed but number between zero and eight. Continue to observe. Between Pier 16 and Pier 17, on the North soffit, there are two deep scrapes from a high-load hit. Continue to observe.

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Notes (Continued)

105	Concrete Box Girder Exterior of Box Girder Notes: At Pier 15 the lateral restrainers have extruded the PTFE sliding surface. Continue to observe. Between Pier 15 and Pier 16, between the third and fourth box sections from the West the joint has cracked about 1/16 of one inch. The cracks start about three or four feet from the bottom of the box and run vertically up and bend diagonally about one foot below the top flange of the box. These cracks are typical throughout the box section. See Work Order #182935. Between Pier 15 and Pier 16, on the fourth, fifth, and sixth sections from the West there are diagonal hairline cracks on the South face of the South box. Similar cracks also appear on the North face of the South box. The cracks measure 0.2 mm wide. Continue to observe. Between Pier 15 and Pier 16, more severe close to Pier 16, longitudinal and diagonal cracks on the bottom of the box, typical throughout. Continue to observe. At the 11th and 12th panels East of Pier 16 there are transverse cracks on the bottom of the South box. See Work Order #208983. Between Pier 16 and Pier 17, about mid-span between the two piers, on the soffit of the North box, there is poorly consolidated concrete with many cracks. Continue to observe. Between Pier 16 and Pier 17, on the North side of the North box, there is minor damage due to a high-load hit. Continue to observe. Between Pier 16 and Pier 17, diagonal hairline cracks on the South face of the South. The number of cracks varies from two to eight. Continue to observe. Between Pier 16 and Pier 17, the cracks at the joint are limited to the center part of each joint. The cracks are vertical along the joint and are about four feet long. The cracks are between 1/32 and 1/64of an inch wide. See Work Order #182935. At the 11th panel West of Pier 17 there are transverse cracks on the bottom of the North and South boxes. See Work Order #208984. At the 3rd segmwent West of Pier 17, on the South face of the South box, there is an area of delamination. Continue to observe. Just West of Pier 17, in the North face of the North box, there is a crack in the box. There was bondo applied on 06/09/98. On 08/23/06 it was noted that it has recracked. Continue to observe. Between Pier 17 and Pier 18, there are one or two hairline cracks on the soffit of the box. Continue to observe. Between Pier 17 and Pier 18, at the 9th joint between box sections West from Pier 18, the joint is open about 1/8" at the deck-box interface. The opening is about 2' long and 1/2" deep. Continue to observe. Between Pier 17 and Pier 18, at the 10th joint between box sections West from Pier 18, the joint is open about 3/16" at the deck-box interface. The opening is about 2' long and 1/2" deep. Continue to observe. At Pier 18 the lateral restrainers have extruded the PTFE sliding surface. Continue to observe.
205	Concrete Column / Pile
234	Concrete Pier Cap / Crossbeam At Pier 15, at the Northwest corner at the top of the pier cap there is a spall with exposed rebar, 3" x 3" x 1/2". See WO #6112.
314	Pot Bearing At Pier 15 The pot bearings for the box girders have oil stains. Continue to observe. At Pier 15, where the P.C. girders are framed in, the steel bearing plates are corroded. See WO #8530. At Pier 18, where the P.C. girders are framed in, the steel bearing plates are corroded. See WO #8530. At Pier 18 the South pot bearing for the box girder is leaking oil. Continue to observe.
331	ConcreteBridge Railing On the inside of the North barrier there is corroded rebar due to insufficient cover. This is typical. Continue to observe.
414	Bolt Down Panel - Metal At Pier 15 water leaks through the joint. The bearing seat area is wet. Continue to observe.

Repairs

Repair No	Pr	R	Repair Descriptions	Noted	Maint	Verified
			(No repairs for this structure)			

Inspections Performed and Resources Required

Report Type	Date	Freq	Hrs	Insp	CertNo	Coinsp	Note
Routine	6/28/2013	24	1.5	HWT	G0506	JPB	
Underwater	7/10/2012	60	6.0	MJD	G0610		Underwater Dive Inspection, 7/10/2012, Dan Stromberg/Matt Donahue, Collins Engineers, Inc.
Special Feature	5/28/2014	24	2.0	AM	B1169	PZ	05/28/2014 Interim Inspection of the interior of the box girder, AM & PZ, 10:00 A.M., Clear, 65°F +/-.
Interim	5/28/2014	24	1.5	AM	B1169	PZ	05/28/2014 Interim Inspection of the interior of the box girder, AM & PZ, 10:00 A.M., Clear, 65°F +/-.

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Inspections Performed and Resources Required (Continued)

Report Type	Date	Freq	Hrs	Insp	CertNo	Coinsp	Note
Equipment	5/15/2013	24	2.5	HWT	G0506	AM	05/15/2013, Annual Routine Inspection with UBIT, HWT & AM, 10:30 A.M., Partly Cloudy, 58^F +/-

Resources	Hours	Min	Pref	Max	Freq Date	Need Date	Override	Notes
UBIT			ANY	ANY				