

# BRIDGE INSPECTION REPORT

WO CC WE PD  
 BAM

Status: Released

Ver Date 11/21/2012  
 Printed on: 11/21/2012

Agency: Washington State  
 Program Mgr: Harvey L. Coffman

**Bridge No.** 5/712

Page 1 of 7

**Structure Type** STrus CTB

**Bridge Name** SKAGIT RIVER

**Route** 00005

**Location** 0.7 N JCT SR 538

**Structure ID** 0004794A

**MilePost** 228.25

**Intersecting** SKAGIT RIVER

*Richard C Dehl*  
 Inspector's Signature RCD Ident# G0916

*Pier F Perry*  
 Co-Inspector's Signature PFK

							Inspections Performed:					
							IT	NT	HRS	Date	Rep Type	
5	<input type="checkbox"/>	Structural Adqcy (657)	1	<input type="checkbox"/>	Pier/Abut/Protect (679)	1955						
3	<input type="checkbox"/>	Deck Geometry (658)	5	<input type="checkbox"/>	Scour (680)	0						
3	<input type="checkbox"/>	Underclearance (659)	9	<input type="checkbox"/>	Retaining Walls (682)	F 51						
5	<input type="checkbox"/>	Operating Level (660)	9	<input type="checkbox"/>	Pier Protection (683)	F 31						
8	<input type="checkbox"/>	Alignment Adqcy (661)	1	<input type="checkbox"/>	Bridge Rails (684)	A						Special
8	<input type="checkbox"/>	WaterwayAdqcy (662)	0	<input type="checkbox"/>	Transition (685)	1406						
6	<input type="checkbox"/>	Deck Overall (663)	1	<input type="checkbox"/>	Guardrails (686)	1906						Equipment
5	<input type="checkbox"/>	Drains Condition (664)	N	<input type="checkbox"/>	Terminals (687)	H						Damage
5	<input type="checkbox"/>	Superstructure (671)	N	<input type="checkbox"/>	Revise Rating (688)	0.00						Safety
2	<input type="checkbox"/>	Number Utilities (675)		<input type="checkbox"/>	Photos Flag (691)							Short Span
6	<input type="checkbox"/>	Substructure (676)	Y	<input type="checkbox"/>	Soundings Flag (693)	60						
6	<input type="checkbox"/>	7 Chan/Protection (677)		<input type="checkbox"/>	Measure Clearance (694)							
9	<input type="checkbox"/>	Culvert (678)										
							Total:25.0					
							Suff Rating: 46.11 FO <span style="border: 1px solid black; padding: 2px;">46.11 FO</span>					

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**Structure Type** STrus CTB  
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**MilePost** 228.25 **Intersecting** SKAGIT RIVER

## BMS Elements

Element	Element Description	Total	Units	State 1	State 2	State 3	State 4
12	Concrete Deck	62,272	SF	61,971	244	57	0
35	Concrete Deck Soffit	62,272	SF	62,184	23	65	0
110	Concrete Girder	3,248	LF	3,245	0	3	0
113	Steel Stringer	7,040	LF	6,400	0	640	0
126	Steel Thru Truss	1,296	LF	1,166	0	130	0
133	Truss Gusset Plates	108	EA	108	0	0	0
152	Steel Floor Beam	1,701	LF	1,093	0	608	0
205	Concrete Pile/Column	32	EA	30	0	2	0
210	Concrete Pier Wall	70	LF	70	0	0	0
212	Concrete Submerged Pier Wall	280	LF	280	0	0	0
215	Concrete Abutment	126	LF	126	0	0	0
234	Concrete Pier Cap / Crossbeam	806	LF	806	0	0	0
311	Moveable Bearing (roller, sliding, etc)	8	EA	8	0	0	0
313	Fixed Bearing	8	EA	8	0	0	0
331	Concrete Bridge Railing	3,336	LF	3,319	7	10	0
355	Damaged Bolts or Rivets	5	EA	2	0	3	0
356	Steel Cracking	33	EA	0	0	26	7
357	Pack Rust	150	EA	100	50	0	0
361	Scour	4	EA	4	0	0	0
362	Impact Damage	1	EA	1	0	0	0
402	Hot Poured and/or Premolded Joint Filler	1,120	LF	614	504	2	0
409	Steel Sliding Plate w/Raised Bars	112	LF	0	112	0	0
410	Steel Fingers	280	LF	56	224	0	0
803	Modified Concrete Overlay	62,272	SF	61,971	244	57	0
904	Organic Zinc/Urethane Paint System	159,900	SF	119,600	40,000	300	0

## Notes

0 Bridge is oriented south to north.

9 The WSDOT BPO Dive Team conducted an underwater inspection of the Skagit River Bridge on August 29, 2011. Piers 6 through 9 were in the channel and included in this inspection.

Overall, the inspected elements were in good condition with no major structural defects noted. There was no evidence of general or local scour. The channel was defined within man-made levees which were riprap lined and appear to be functioning as designed. There was timber debris found at all piers but no accumulations appeared to be significant.

No repairs recommended at this time. Maintain a 60-month inspection frequency.

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0	1	1	2

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**Intersecting** SKAGIT RIVER

## Notes

11 Notify the load rating engineer of any significant deficiencies to the structural members. The bridge is open to heavy fire trucks and restrictions may need to be implemented.

12 Deck is covered with an overlay, see element note 803.

35 Soffit has transverse, diagonal, and longitudinal leaching cracks. Some of the cracks have rust stains. A few of the cracks are associated with small delaminations.  
 Fillets at the floorbeam interface are spalled.  
 Deck edges have vertical and diagonal hairline cracks.  
 Edges also have a few spalls. The largest is 18" x 8" x 4" deep.  
 Span 5 has 12 SF of spalls.  
 Span 6 has 17 SF of spalls.  
 Span 7 has 2 SF of patches and 18 SF of spalls.  
 Span 8 has 6 SF of patches and 9 SF of spalls.  
 Span 11 has 1 SF of spalls.  
 Span 12 has 15 SF of patches.

110 Girder webs have shear and moment hairline cracks.  
 Some girders have small spalls, up to 10" x 8" x 1-1/2" deep.

113 Several of the stringers have cope cracks. See attached "Stringer Cope Defects" for details. REPAIRS #14329 and #14347.  
 Most of the stringers have laminar rust with scalloping up to 1/8" deep at their connections to the floorbeams. Some connection angles have up to 1/4" pack rust.  
 The expansion joints have rust up to 3/8" in the stringer seats and at the stringer/diaphragm connection angles.  
 Stringer 6-5J bottom flange is bent up 1" over 9".  
 Stringer 8-5J at Floorbeam 8-5 bottom flange is bent up.

126 Panel points are filled with debris. Vegetation is growing in several panels. Worst cases are at L2 and L4 on all trusses. See photo #142. REPAIR #14344.  
 Chords have a few areas of pack rust up to 1/4" thick.  
 Rivet heads have lost up to 40% section in most of the lower connections.  
 Some of the horizontal gussets have rust and are pitted to a knife edge between the connection points.  
 Spans 7 and 8 laterals and associated gusset plates at Floorbeams 1 and 5 are bent, see photo #16.  
 Some bottom lateral gusset plates have up to 1/8" pack rust.

The following sways and portals have high load hits:  
 Span 5 U1 portal has a small dent.  
 Span 6 U2 sway is bent 1" over a 12", see photo #72.  
 Span 6 U5 sway is bent 1" over 8".  
 Span 7 U4 sway is bent 2-1/2" over 10".  
 Span 7 U5 sway is bent 1/2" over 4".  
 Span 8 U0 sway is bent 1" over 15".  
 Span 8 3U sway has two small nicks.  
 Span 8 U5 portal is bent 1/2" over 4" in two places.

See attached "FC Report" for fracture critical inspection notes.

133 In 2010, most gusset plates on the east truss were measured.

152 Floorbeams have laminar rust at the top flange/deck interface with section loss up to 10%.  
 Several transverse stiffeners are bent.  
 Several floorbeams have rust on the bottom flange and stiffeners, see photo #128. This is most prominent over the piers.  
 Floorbeam 5-6, top east corner on the south face, is missing two rivets.  
 Floorbeam 6-6, south transverse stiffener on the east side of Stringer 6I, has a broken rivet head. See photo #98.  
 Floorbeam 7-3, north transverse stiffener on the west side of Stringer 3C, has a broken rivet head. See photo #125.  
 Floorbeam 8-0, transverse stiffener on the west side of Stringer 1C, has a broken rivet head.  
 REPAIR #14343.

205 Columns have hairline cracks and some small delaminations.  
 Column 4B has an 18" x 6" x 2" deep spall with exposed bar at the southeast corner.  
 Column 4C has an 18" x 4" x 3" deep spall with exposed rebar at the southeast corner.  
 See photo #145. REPAIR #14350.  
 Column 10A has a 10" x 3" x 1" deep spall at the southwest corner.

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## Notes

210 Pier 5 has vertical hairline cracks, some are leaching.

212 Piers 6 through 9 have vertical hairline cracks, some are leaching.

234 Pier caps have hairline vertical cracks, some are leaching.  
 Pier 5 and 9 caps are covered with debris and have vegetation growth. See photo #146. REPAIR #14337.  
 Pier 10 cap north bottom edge under Girder 10D has a 6 ft. long delaminating crack.

311 Rocker bearings have debris built up at the base plate.

331 Rails have vertical leaching cracks.  
 There are corner spalls at the truss panel points.  
 Span 5 between L2-L3 has a 3 ft. patch.  
 Span 12 median barrier has a 4 ft. patch.

355 See note 113.

356 See note 113.

357 See notes 113, 126, and 152.

361 Skagit River flows east to west.  
 Log debris is hung up on the upstream nose of Pier 8, see photo #121. REPAIR #14348.

362 See note 126.

402 Several joints are patched and have small D-spalls.  
 PP 5-5 has a 4 ft. x 1 ft. patch that is breaking up. See photo #147. REPAIR #14351.

409 Pier 4 header has a 2 ft. x 8" patch and a 12" x 8" x 1-1/2" spall. See photo #148. REPAIR #14352.  
 Pier 10 joint is patched.

Joints measured at the west fogline:

DATE	PIER 4	PIER 10	TIME	TEMP
8/25/2012	2-1/4"	2-3/8"	8:00 am	60°F
8/29/2010	2-1/4"	2-1/2"	8:00 am	60°F
6/21/2008	2-3/8"	2-1/2"	8:00 am	65°F

410 Pier 5 header has a few small patches.  
 Pier 6 header has a small patch.  
 Pier 7 header is patched.  
 Pier 8 header is patched.

Joints measured at the west fog line:

DATE	Pier 5	Pier 6	Pier 7	Pier 8	Pier 9	TIME	TEMP
8/25/2012	3-5/8"	3-3/4"	4-5/8"	4-1/4"	4-3/4"	8:00 am	60°F
8/29/2010	3-3/4"	4"	4-3/4"	4-1/4"	4-1/2"	7:00 am	58°F
6/21/2008	3-3/4"	3-3/4"	4-5/8"	4-1/4"	4-1/2"	8:00 am	65°F

664 Drains are plugged.

671 Superstructure coded '5' due to corrosion, section loss, and stringer cope cracks. See element notes 113, 126, and 152.

675 Utilities consist of:  
 -One 4" diameter fiberglass conduit suspended from the west overhang.  
 -Three 4" diameter fiberglass conduits mounted to the outside of the east bridge rail.

Conduit suspended from the west overhang is broken in Span 8 at L3W and near Pier 9, see photos #58 and #120.  
 Conduit along the east rail has holes worn into it. See photos #149.  
 REPAIR #14336.

677 Banks are lined with riprap.

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## Notes

680 The bridge should be closed to traffic in the event of a levee failure.  
 Pier 1 has a 2'-6" thick pile cap and a 1'-6" thick seal. Piers 2, 3, 11, and 12 have 3'-3" thick pile caps and 1'-6" thick seals.  
 Piers 4 and 10 have 3'-0" thick pile caps and 3'-0" thick seals. Piers 5, 8, and 9 have 3'-0" thick pile caps and 5'-6" thick seals.  
 Piers 6 and 7 have 3'-3" thick pile caps and 7'-0" thick seals.

686 Guardrail at the southeast corner is damaged, see photo #108. REPAIR #14346.

803 Overlay has hairline map cracks.  
 Span 1 has 3 SF of patches.  
 Span 2 has 2 SF of spalls.  
 Span 3 has 1 SF of patches.  
 Span 4 has 13 SF of patches  
 Span 5 has 6 SF of patches and 20 SF of delaminations. See photo #150. REPAIR #14349.  
 Span 6 has 61 SF of patches and 12 SF of spalls. See photo #127. REPAIR #14349.  
 Span 7 has 32 SF of patches.  
 Span 8 has 6 SF of patches.  
 Span 9 has 36 SF of patches and 19 SF of spalls. REPAIR #14349.  
 Span 10 has 15 SF of patches and 2 SF of spalls.  
 Span 11 has 35 SF of patches and 2 SF of spalls.  
 Span 12 has 36 SF of patches.

904 The 2003 paint contract did not adequately prepare the bridge surface. Rust, dirt, and debris was painted over.  
 Several truss chord members have areas of exposed primer, bare steel, or peeling paint over surface rust.  
 Top flanges of most stringers and floorbeams have areas of bare metal rusting through the paint. This is primarily at the connections.

## Repairs

Repair No	Pr	R	Repair Description	Noted	Maint	Verified																
14329	M	B	Monitor cope cracks in stringers lines B and J. See attached "Stringer Cope Defects" for details.	7/20/1999																		
14336	0	U	Repair broken utility conduit on west side in Span 8 near L3 west and near Pier 9. Replace or patch holes in the east utility conduit.	9/6/2003																		
14337	2	B	Clean debris and vegetation off Pier 5 and 9 caps.	9/7/2003																		
14343	1	B	Replace the missing rivets with high strength bolts at:  <table style="margin-left: 20px; border: none;"> <tr> <td>Span</td> <td>Stringer</td> <td>Floorbeam</td> <td>Note</td> </tr> <tr> <td>6</td> <td>6I</td> <td>6S</td> <td>Top rivet, stiffener to floorbeam, east side.</td> </tr> <tr> <td>7</td> <td>3C</td> <td>3N</td> <td>Top rivet in west side of stiffener just west of Stringer 3C.</td> </tr> <tr> <td>8</td> <td>1C</td> <td>0N</td> <td>Top rivet at west side.</td> </tr> </table> Rivets are 7/8" diameter by 2-1/16" of grip length.	Span	Stringer	Floorbeam	Note	6	6I	6S	Top rivet, stiffener to floorbeam, east side.	7	3C	3N	Top rivet in west side of stiffener just west of Stringer 3C.	8	1C	0N	Top rivet at west side.	6/28/2006		
Span	Stringer	Floorbeam	Note																			
6	6I	6S	Top rivet, stiffener to floorbeam, east side.																			
7	3C	3N	Top rivet in west side of stiffener just west of Stringer 3C.																			
8	1C	0N	Top rivet at west side.																			
14344	1	B	Truss panel points are filled with debris and some have vegetation growth. Remove plants and clean debris from all panel points. In panel points where paint is missing, prep the surface and spot paint.	6/21/2008																		
14346	0	J	Replace damaged guardrail at the southeast bridge corner.	6/21/2008																		

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Repair No	Pr	R	Repair Description	Noted	Maint	Verified																																																																																																						
14347	1	B	<p>The following stringers have cope cracks:</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 15%;">Span</th> <th style="width: 35%;">Stringer</th> <th style="width: 15%;">Floorbeam</th> </tr> </thead> <tbody> <tr><td>5</td><td>1J</td><td>1</td></tr> <tr><td>5</td><td>2B</td><td>1</td></tr> <tr><td>5</td><td>2J</td><td>1</td></tr> <tr><td>5</td><td>2J</td><td>2</td></tr> <tr><td>5</td><td>3B</td><td>2</td></tr> <tr><td>5</td><td>3J</td><td>2</td></tr> <tr><td>5</td><td>4B</td><td>4</td></tr> <tr><td>5</td><td>5B</td><td>4</td></tr> <tr><td>5</td><td>5J</td><td>4</td></tr> <tr><td>5</td><td>5B</td><td>5</td></tr> <tr><td>5</td><td>5J</td><td>5</td></tr> <tr><td>5</td><td>6J</td><td>5</td></tr> <tr><td>6</td><td>1J</td><td>1</td></tr> <tr><td>6</td><td>2J</td><td>1</td></tr> <tr><td>6</td><td>5B</td><td>4</td></tr> <tr><td>6</td><td>5B</td><td>5</td></tr> <tr><td>7</td><td>2B</td><td>1</td></tr> <tr><td>7</td><td>2J</td><td>1</td></tr> <tr><td>7</td><td>2B</td><td>2</td></tr> <tr><td>7</td><td>4J</td><td>3</td></tr> <tr><td>7</td><td>4B</td><td>4</td></tr> <tr><td>7</td><td>4J</td><td>4</td></tr> <tr><td>7</td><td>5B</td><td>4</td></tr> <tr><td>7</td><td>5J</td><td>4</td></tr> <tr><td>7</td><td>5B</td><td>5</td></tr> <tr><td>7</td><td>5J</td><td>5</td></tr> <tr><td>7</td><td>6J</td><td>5</td></tr> <tr><td>8</td><td>1B</td><td>1</td></tr> <tr><td>8</td><td>2J</td><td>2</td></tr> <tr><td>8</td><td>3B</td><td>2</td></tr> <tr><td>8</td><td>4J</td><td>4</td></tr> <tr><td>8</td><td>5B</td><td>4</td></tr> <tr><td>8</td><td>5B</td><td>5</td></tr> </tbody> </table> <p>Repair the cope cracks with the following procedure:</p> <ol style="list-style-type: none"> <li>1. Locate defect/crack termination by dye penetrant testing and field measure to verify repair type.</li> <li>2a. Crack lengths less than 1":                         <ul style="list-style-type: none"> <li>Grind out crack to 3/4" minimum diameter (grind min 1/8" beyond identified tip)</li> <li>Remove all sharp corners in vicinity of repair and polish exposed surfaces</li> <li>Apply paint.</li> </ul> </li> <li>2b. Crack lengths 1" or greater:                         <ul style="list-style-type: none"> <li>Drill a 15/16" diameter hole centered at tip of crack</li> <li>Grind and polish hole</li> <li>Install 7/8" diameter HS (A325) bolt with hardened washers on both sides and tighten bolts per Std. Spec. 6-033(33)</li> <li>Apply paint.</li> </ul> </li> </ol> <p>See attached "Stringer Cope Defects Spreadsheet" for photo call-outs.                      For repair drawings, see attached "Cope Crack Grinding Detail".</p>	Span	Stringer	Floorbeam	5	1J	1	5	2B	1	5	2J	1	5	2J	2	5	3B	2	5	3J	2	5	4B	4	5	5B	4	5	5J	4	5	5B	5	5	5J	5	5	6J	5	6	1J	1	6	2J	1	6	5B	4	6	5B	5	7	2B	1	7	2J	1	7	2B	2	7	4J	3	7	4B	4	7	4J	4	7	5B	4	7	5J	4	7	5B	5	7	5J	5	7	6J	5	8	1B	1	8	2J	2	8	3B	2	8	4J	4	8	5B	4	8	5B	5	9/15/2009		
Span	Stringer	Floorbeam																																																																																																										
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#### Repairs

Repair No	Pr	R	Repair Description	Noted	Maint	Verified
14348	1	S	Remove the tree and debris build up from the upstream nose of the bridge piers.	8/29/2010		
14349	2	B	Deck overlay in Spans 5, 6, and 9 has areas of spalls and delaminations. Remove all loose concrete, clean and epoxy paint exposed rebar, and patch for a smooth riding surface.	8/29/2010		
14350	2	B	Columns 4B and 4C are spalled with exposed rebar. Remove loose concrete, clean exposed rebar, coat with rust inhibitor, and patch with an approved material.	8/25/2012		
14351	1	B	Joint header at PP 5-5 has a patch that is breaking up. Remove loose material, clean exposed rebar, coat with rust inhibitor, and patch with an approved material to provide a smooth driving surface..	8/25/2012		
14352	1	B	Pier 4 joint header is spalled. Remove loose material, clean exposed rebar, coat with rust inhibitor, and patch with an approved material to provide a smooth driving	8/25/2012		

#### Inspections Performed and Resources Required

Report Type	Date	IT	Frq	Hrs	Insp	CertNo	Coinsp	Note
Routine	8/25/2012		24	1.0	RCD	G0916	PFK	
Fracture Critical	8/25/2012		24	24.0	RCD	G0916	PFK	
<b>Resources</b>	<b>Used</b>	<b>Hours</b>	<b>Min</b>	<b>Pref</b>	<b>Max</b>	<b>Notes</b>		
UBIT	62	6.0	50			Two UB50 and the A62 were used.		
UBIT	50	12.0	50			Two UB50 and the A62 were used.		
Bucket	BK	6.0				Bucket truck used to inspect truss above the deck.		
Flagging	ST	14.0				Contact NWR to schedule traffic control.		
Scheduling Restrictions	SEAS					Schedule inspection for late June or early July in order to maximize daylight hours during the work window.		
Underwater	8/29/2011	D	60	3.0	JRH	G0911	MBS	Underwater inspection by WSDOT Dive Team. Frequency revised to reflect structural condition.
<b>Resources</b>	<b>Used</b>	<b>Hours</b>	<b>Min</b>	<b>Pref</b>	<b>Max</b>	<b>Notes</b>		
Boat	D	2.0	D	D	D	D Boat needed for access.		
Interim	5/21/2011		24	9.0	WDS	G0910	TJN	Interim inspection is to monitor stringer cope defects.
<b>Resources</b>	<b>Used</b>	<b>Hours</b>	<b>Min</b>	<b>Pref</b>	<b>Max</b>	<b>Notes</b>		
UBIT	50	9.0	50	50	60	Two UB50's used in 2011 - Deployed from both sides of bridge.		
Flagging	ST	20.0	ST	ST	ST			
Scheduling Restrictions	TRFC					2011 Traffic Windows: Daylight until 9:00 am Saturday and daylight until noon on Sunday. Heavy traffic back-up may shorten these times. Southbound work should be done on Saturday.		

WASHINGTON STATE DEPARTMENT OF TRANSPORTATION  
NBI STRUCTURE INVENTORY AND APPRAISAL REPORT (ENGLISH UNITS)

DATE 11/21/2012

IDENTIFICATION		WSBIS DATA	
(1) STATE NAME - WASHINGTON	530	BRIDGE NUMBER	5/712
(8) STRUCTURE NUMBER	# 0004794A0000000	BRIDGE NAME	SKAGIT RIVER
(5) INVENTORY ROUTE (ON/UNDER) - On	1 1 1 00005	CUSTODIAN	Washington State
(2) HIGHWAY AGENCY DISTRICT - NW Region	01	CROSSING DESC	SKAGIT RIVER
(3) COUNTY CODE 57 - Skagit County	(4) PLACE CODE 47560	CROSSING KEY	00005 05 22825 00 M Y
(6) FEATURES INTERSECTED	SKAGIT RIVER	SUFFICIENCY RATING	46.11 FO
(7) FACILITY CARRIED	I-5	CLASSIFICATION	
(9) LOCATION	0.7 N JCT SR 538	(112) NBIS BRIDGE LENGTH	Y
(11) MILEPOINT	228.25	(104) HIGHWAY SYSTEM - On the NHS	1
(12) BASE HIGHWAY NETWORK - Part of network	1	(26) FUNCTIONAL CLASS - Principal Arterial - I/S	11
(13) LRS INV ROUTE AND SUB ROUTE	000000000500	(100) DEFENSE HIGHWAY - Is an Interstate STRAHNET route	1
(16) LATITUDE	48 Deg 26 Min 35.80 Sec	(101) PARALLEL STRUCTURE - Not a parallel bridge	N
(17) LONGITUDE	122 Deg 20 Min 27.90 Sec	(102) DIRECTION OF TRAFFIC - 2-way traffic	2
(98) BORDER BRIDGE STATE CODE - Not a border bridge		(103) TEMPORARY STRUCTURE - Not Applicable	
(99) BORDER BRIDGE STRUCTURE NO. - Not a border bridge		(105) FEDERAL LANDS HIGHWAY - Indian Res Road (IRR)	1
STRUCTURE TYPE AND MATERIAL		(110) DESIGNATED NATIONAL NETWORK - Part of network	1
(43) STRUCTURE TYPE MAIN: MATERIAL - Steel		(20) TOLL - Non-toll structure	3
DESIGN - Truss - Thru	310	(21) MAINTAIN - State Highway Agency	1
(44) STRUCTURE TYPE APPR: MATERIAL - Concrete continuous		(22) OWNER - State Highway Agency	1
DESIGN - Tee beam	204	(37) HISTORICAL SIGNIFICANCE - No significance	5
(45) NO. OF SPANS IN MAIN UNIT	4	CONDITION	
(46) NO. OF APPROACH SPANS	8	(58) DECK	6
(107) DECK STRUCT TYPE - Conc. CIP	1	(59) SUPERSTRUCTURE	5
(108) WEARING SURFACE / PROTECTIVE SYSTEM:		(60) SUBSTRUCTURE	6
(A) TYPE OF WEARING SURFACE - LMC or similar	3	(61) CHANNEL AND CHANNEL PROTECTION	7
(B) TYPE OF MEMBRANE - None	0	(62) CULVERTS	N
(C) TYPE OF DECK PROTECTION - None	0	LOAD RATING AND POSTING	
AGE AND SERVICE		(31) DESIGN LOAD - HS 20	5
(27) YEAR BUILT	1955	(63) OPERATING RATING METHOD - Load Factor (LF)	1
(106) YEAR RECONSTRUCTED	0000	(64) OPERATING RATING	51 T
(42) TYPE OF SERVICE ON - Highway	1	(65) INVENTORY RATING METHOD - Load Factor (LF)	1
UNDER - Highway & waterway	6	(66) INVENTORY RATING	31 T
(28) LANES: ON STRUCTURE 4	UNDER STRUCTURE 4	(70) BRIDGE POSTING - Equal or above legal loads	5
(29) AVERAGE DAILY TRAFFIC	70925	(41) STRUCT OPEN, POSTED, CLOSED - Open, no restrictions	A
(30) YEAR OF ADT 2010	(109) TRUCK ADT 11%	APPRAISAL	
(19) BYPASS, DETOUR LENGTH	1.0 mi	(67) STRUCTURAL EVALUATION	5
GEOMETRIC DATA		(68) DECK GEOMETRY	3
(48) LENGTH OF MAXIMUM SPAN	160 ft	(69) UNDERCLEARANCES, VERTICAL & HORIZONTAL	3
(49) STRUCTURE LENGTH	1112 ft	(71) WATERWAY ADEQUACY	8
(50) CURB OR SIDEWALK: LEFT 0.0 ft	RIGHT 0.0 ft	(72) APPROACH ROADWAY ALIGNMENT	8
(51) BRIDGE ROADWAY WIDTH CURB TO CURB	56.0 ft	(36) TRAFFIC SAFETY FEATURES	101N
(52) DECK WIDTH OUT TO OUT	60.0 ft	(113) SCOUR CRITICAL BRIDGE	5
(32) APPROACH ROADWAY WIDTH (W/SHOULDERS)	72 ft	PROPOSED IMPROVEMENTS	
(33) BRIDGE MEDIAN - Closed median non-m	3	(75) TYPE OF WORK - Rehab By contract	351
(34) SKEW 0 Deg	(35) STRUCTURE FLARED No 0	(76) LENGTH OF STRUCTURE IMPROVEMENT	1162.0 ft
(10) INVENTORY ROUTE MIN VERT CLEAR	17 ft 06 in	(94) BRIDGE IMPROVEMENT COST	\$31,607,000
(47) INVENTORY ROUTE TOTAL HORIZ CLEAR	27 ft 09 in	(95) ROADWAY IMPROVEMENT COST	\$6,321,000
(53) MIN VERT CLEAR OVER BRIDGE RDW	14 ft 06 in	(96) TOTAL PROJECT COST	\$63,213,000
(54) MIN VERT UNDERCLEAR	19 ft 06 in	(97) YEAR OF IMPROVEMENT COST ESTIMATE	2010
(55) MIN LAT UNDERCLEAR RT	2.0 ft	(114) FUTURE ADT	99295
(56) MIN LAT UNDERCLEAR LT	0.0 ft	(115) YEAR OF FUTURE ADT	2030
NAVIGATION DATA		INSPECTIONS	
(38) NAVIGATION CONTROL - Navigation control	1	(90) INSPECTION DATE 08/12	(91) FREQUENCY 24 MO
(111) PIER PROTECTION -	1	(92) CRITICAL FEATURE INSPECTION:	(93) CFI DATE
(39) NAVIGATION VERTICAL CLEARANCE	8 ft	(A) FRACTURE CRIT DETAIL - YES -	24 Month (A) 08/12
(116) VERT-LIFT BRIDGE NAV MIN VERT CLR		(B) UNDERWATER INSP - YES -	60 Month (B) 08/11
(40) NAVIGATION HORIZONTAL CLR	110 ft	(C) OTHER SPECIAL INSP - NO -	Month (C) ___/___





Bridge Name: Skagit River Bridge  
 Bridge No: 5/712  
 Structure ID: 0004794A  
 Structure Type: ST CTB  
 Agency: WSDOT  
 Milepost: 228.25

Date: 8/25/2012  
 Hours: 24.0  
 Inspector ID #: G0916  
 Lead Inspector Initials: RCD  
 Co-Inspector Initials: PFK

Lead Inspector Signature: *Richard C. Bell*  
 Co-Inspector Signature: *Pis F Kay*

Inspected items: Truss Tension Members

**Procedures:**

**Riveted Truss**

1. As required, use mirrors or other equipment to check inside surfaces of FCM's.
2. Check for loose or unevenly loaded member sub-elements.
3. Check all rivets at connection plates, with emphasis on first row. The first row is the row closest to the edge of the connection or gusset plate.
4. Check for any welds, including plug, tack, or repair welds. Record location of welds, regardless of condition, and document weld type and category.
5. Check FC members and associated connection or gusset plates for areas of heavy or pitted corrosion, nicks, gouges, sharp bends, and collision damage. Record location of all these conditions and estimated section loss, if applicable.
6. Check all heat straightened or repaired areas. Record location of these areas, regardless of condition.

**Pins and Anchor Bolts**

1. As required, use mirrors or other equipment to check inside surfaces of FCM's.
2. Check for pitting, laminar rust, surface deformation, and pack rust. It is important to check the pin, pin nuts, and all members surrounding the pin for this kind of steel deterioration.
3. Check for mobility and noise of pin and surrounding members. If the pin is physically "frozen" it is important to note this because the added stress can affect other members in the structure.
4. Observe and record abnormalities like; alignment, pin wear, loose pin nuts, and amount of nut engagement. It's important to note that full nut engagement is when the nut is flush with the pin or the pin is extending past the nut.
5. Check for paint system failure on pin nuts, pin, and surrounding members.

FCM Location	FCM Type	FCM Per Girder or Truss Line	'Beist' Server Plans		
			Sh. No.	Contr.	Sh. Name
Span 5	Truss Tension Members	11	2	4794	Layout
	Riveted		14	4794	Truss Spans-Stress Sht
			15		Truss Details
Span 6	Truss Tension Members	11	2	4794	Layout
	Riveted		14	4794	Truss Spans-Stress Sht
			15		Truss Details
Span 7	Truss Tension Members	11	2	4794	Layout
	Riveted		14	4794	Truss Spans-Stress Sht
			15		Truss Details
Span 8	Truss Tension Members	11	2	4794	Layout
	Riveted		14	4794	Truss Spans-Stress Sht
			15		Truss Details

Note: FCM = Fracture Critical Member



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**Milepost:** 228.25

**Date:** 8/25/2012  
**Hours:** 24  
**Inspector ID #:** G0916  
**Lead Inspector:** RCD  
**Co-Inspector:** PFK

Truss / Girder	Span	Location	Feature Inspected	Detail Description	Remarks
East	5	L0-L1	Bottom Chord	Two C's and two PI's	No defects noted
East	5	L1-L2	Bottom Chord	Two C's and two PI's	No defects noted
East	5	L2-L3	Bottom Chord	Two C's and two PI's	L3 exterior vertical gusset plate bottom seam has 1/16" pack rust. Interior rivets at L2 have up to 5% section loss.
East	5	L3-L4	Bottom Chord	Two C's and two PI's	No defects noted
East	5	L4-L5	Bottom Chord	Two C's and two PI's	Seam rust between plates and chord channels.
East	5	L5-L6	Bottom Chord	Two C's and two PI's	L5 exterior vertical gusset plate bottom seam has 1/16" pack rust.
East	5	U1-L1	Vertical member	Four L's and one PI	No defects noted
East	5	U1-L2	Diagonal member	Four L's and one PI	L2 is full of dirt and vegetation. The connection cannot be inspected.
East	5	U3-L3	Vertical member	Four L's and one PI	Seam rust on angles at sways
East	5	U5-L4	Diagonal member	Four L's and one PI	L4 is full of dirt and vegetation. The connection cannot be inspected.
East	5	U5-L5	Vertical member	Four L's and one PI	Seam rust on angles below sways
West	5	L0-L1	Bottom Chord	Two C's and two PI's	Seam rust between plates and chord channels.
West	5	L1-L2	Bottom Chord	Two C's and two PI's	Bottom flange is pushed up 1" over 2 ft. at L2.
West	5	L2-L3	Bottom Chord	Two C's and two PI's	L2 is full of dirt and vegetation. The connection cannot be inspected.
West	5	L3-L4	Bottom Chord	Two C's and two PI's	Seam rust between plates and chord channels.
West	5	L4-L5	Bottom Chord	Two C's and two PI's	Laminar rust with < 10% section loss in bottom cover plate.
West	5	L5-L6	Bottom Chord	Two C's and two PI's	No defects noted
West	5	U1-L1	Vertical member	Four L's and one PI	No defects noted
West	5	U1-L2	Diagonal member	Four L's and one PI	L2 is full of dirt and vegetation. The connection cannot be inspected.
West	5	U3-L3	Vertical member	Four L's and one PI	6" seam rust between angles at sways.
West	5	U5-L4	Diagonal member	Four L's and one PI	L4 is full of dirt and vegetation. The connection cannot be inspected.
West	5	U5-L5	Vertical member	Four L's and one PI	No defects noted
East	6	L0-L1	Bottom Chord	Two C's and two PI's	No defects noted
East	6	L1-L2	Bottom Chord	Two C's and two PI's	No defects noted
East	6	L2-L3	Bottom Chord	Two C's and two PI's	No defects noted
East	6	L3-L4	Bottom Chord	Two C's and two PI's	No defects noted



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**Date:** 8/25/2012  
**Hours:** 24  
**Inspector ID #:** G0916  
**Lead Inspector:** RCD  
**Co-Inspector:** PFK

Truss / Girder	Span	Location	Feature Inspected	Detail Description	Remarks
East	6	L4-L5	Bottom Chord	Two C's and two PI's	Seam Rust
East	6	L5-L6	Bottom Chord	Two C's and two PI's	No defects noted
East	6	U1-L1	Vertical member	Four L's and one PI	No defects noted
East	6	U1-L2	Diagonal member	Four L's and one PI	L2 is full of dirt and vegetation. The connection cannot be inspected.
East	6	U3-L3	Vertical member	Four L's and one PI	No defects noted
East	6	U5-L4	Diagonal member	Four L's and one PI	L4 is full of dirt and vegetation. The connection cannot be inspected.
East	6	U5-L5	Vertical member	Four L's and one PI	No defects noted
West	6	L0-L1	Bottom Chord	Two C's and two PI's	Seam rust between plates and chord channels.
West	6	L1-L2	Bottom Chord	Two C's and two PI's	Seam rust between plates and chord channels.
West	6	L2-L3	Bottom Chord	Two C's and two PI's	Seam rust between plates and chord channels.
West	6	L3-L4	Bottom Chord	Two C's and two PI's	Pack rust up to 3/16" for 5 ft. along the top west seam near L4.
West	6	L4-L5	Bottom Chord	Two C's and two PI's	Pack rust up to 1/4" for 6 ft. along the top west seam near L4.
West	6	L5-L6	Bottom Chord	Two C's and two PI's	Seam rust between plates and chord channels.
West	6	U1-L1	Vertical member	Four L's and one PI	No defects noted
West	6	U1-L2	Diagonal member	Four L's and one PI	L2 is full of dirt and vegetation. The connection cannot be inspected.
West	6	U3-L3	Vertical member	Four L's and one PI	No defects noted
West	6	U5-L4	Diagonal member	Four L's and one PI	L4 is full of dirt and vegetation. The connection cannot be inspected.
West	6	U5-L5	Vertical member	Four L's and one PI	No defects noted
East	7	L0-L1	Bottom Chord	Two C's and two PI's	Seam rust between plates and chord channels.
East	7	L1-L2	Bottom Chord	Two C's and two PI's	Seam rust between plates and chord channels.
East	7	L2-L3	Bottom Chord	Two C's and two PI's	Seam rust between plates and chord channels.
East	7	L3-L4	Bottom Chord	Two C's and two PI's	Seam rust between plates and chord channels.
East	7	L4-L5	Bottom Chord	Two C's and two PI's	Seam rust between plates and chord channels.
East	7	L5-L6	Bottom Chord	Two C's and two PI's	Seam rust between plates and chord channels.
East	7	U1-L1	Vertical member	Four L's and one PI	No defects noted
East	7	U1-L2	Diagonal member	Four L's and one PI	L2 is full of dirt and vegetation. The connection cannot be inspected.
East	7	U3-L3	Vertical member	Four L's and one PI	No defects noted



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**Date:** 8/25/2012  
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**Lead Inspector:** RCD  
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Truss / Girder	Span	Location	Feature Inspected	Detail Description	Remarks
East	7	U5-L4	Diagonal member	Four L's and one PI	L4 is full of dirt and vegetation. The connection cannot be inspected. Bent east top and bottom flange (1/4" over 1 ft).