Bridge Inspection

Bridge File Number	06754 -1 Bridge	Form Type	TH PT PCS TT
Year Built/Year Supstr	1949/1949	Lot No.	2
		Inspector Name	Jason Rusu
Bridge or Town Name	CLUNY	Inspector Class	BR CLS A
Located Over	BOW RIVER, 2.13, WATERCRS-ST	Assistant Name	
Located On	842:06 C1 22.658	Assistant Class	
Water Body Cl./Year		Inspection Date	16-Feb-2012
Navigabil. Cl./Year		Data Entry By	Alyssa Boynton
Legal Land Location	NE SEC 9 TWP 21 RGE 21 W4M	Data Entry Date	16-Mar-2012
Longitude, Latitude	-112:50:45, 50:46:18	Reviewer Name	Garry Roberts
Road Authority	Alberta Transportation (AIT)	Review Date	24-Feb-2012
Contract Main. Area	CMA30	Dept. Reviewer Name	Tim Davies
Clear Roadway/Skew	6.6 /	Dept. Review Date	22-Mar-2012
AADT/Year	1,330 / 2010 (A)	Follow-Up By	
Road Classification	RCU-208-110		
Detour Length (km)	50		

Allowable Load (t):	Single	CS1 27 STRINGER	Semi	CS2 49	Train	CS3 65 GIRDER	---> On Critical Spans --->Critical Member
Design Loading:		HS20					---> Primary Span

Posting Information

Required Vert. Clearance Posting (m)				ON: 5.8m							
Posted Vertical Clearance (Y/N)				Yes							
Posted:	Lane	NB	On Bridge (m)	5.8	In Advance (Y/N)	Yes	Lane	SB	On Bridge (m)	5.8	In Advance (Y/N)	Yes
Remarks	(Measured 5.98m both ends)										

Required Load Posting (t)			Single	28	Semi		Truck Train	
Posted Loading (t)			Single		Semi		Truck Train	
Posted:	Lane	NB	At Junction (Y/N)	No	In Advance (Y/N)	No	At Bridge (Y/N)	No
Posted:	Lane	SB	At Junction (Y/N)	No	In Advance (Y/N)	No	At Bridge (Y/N)	No
Remarks	Not required.							

Hazard Marker At Bridge (Y/N)	Yes
Remarks	{Low - 1.0m; loose @ North end. July 22, 2009 UT report} Wide load damage to South signs.
Other Sign Types	Narrow bridge, curve, max 1 truck on bridge. 55km/hr on bridge.

Utilities (Located at)

Utility Attachments	TELEPHONE UTILITIES-PHONE LINE		
Telephone	{South, bottom chord. July 22, 2009 UT report}	Gas	
Power		Municipal	
Others		Problem (Y/N)	No
Remarks	Telus unconnected @ NE & @ pier #2 & @ N abutment @ East. Cable is sound, conduit is disconnected.		

Approach Road

		Last	Now	Explanation of Condition
Horizontal Alignment		4	4	Curves both ends, posted 55 km/hr on bridge. Steep grades both sides.
Vertical Alignment		5	5	
Roadway Width (m)	9.500			
Approach Bump		7	7	
Guardrail (Y/N)	Yes			4 missing splice bolts at North East. Not thrie beam.
Guardrail		5	4	
Length (m)	34.000			
Current Standard (Y/N)	No			
Termination Type	Turn Down			
Drainage		7	7	
Approach Road General Rating		**4**	**4**	

Superstructure

Bridge Component	Last	Now	Explanation of Condition
(Primary Span : **TH, 6 Spans, Lengths(m): 8.5-30.5-61-30.5-8.5-6.1, A-Ident Number: A0174-01;A0165-03;A0165-07**)			
Special Features			
Special Feature		X	
(Type :)			
Special Feature		X	
(Type :)			
Wearing Surface/Deck Top Detail Ratings			
	N (%) / 1 (%) / 2 (%) / 3 (%)		
Last			
Now	0.0 / 0.0 / 0.0 / 1.0		
Wearing Surface/Deck Top	4	3	Missing lag bolts at panels 1+10 split/rotten planks at panel 7.
(Material Type : **UNTREATED TIMBER**)			
(Plank Thickness(mm) : **75**)			
(Plank Width(mm) : **305**)			
Deck Rideability	5	5	
Deck Joints	X	X	
Temperature (deg. C)			
(Expansion Type :)			
(Fixed Type :)			
Gap Size (mm) / Gap Location			
Curbs/Wheel Guards	6	4	200 x 200 blocking. Plow damage at Span 1 north side.
(Curb Type : **Standard**)			
(Type : **TREATED TIMBER**)			
(Thickness(mm) : **100**)			
(Width(mm) : **300**)			
Bridge Rail	6	6	Triple layer.
(Type : **GALVANIZED STEEL FLEX BEAM**)			
Bridge Rail Posts/Blocking	5	5	Posts are steel, blocking is timber.
(Type : **POST STEEL;POST STEEL**)			
Bridge Rail/Posts Coating	5	5	
(Type : **PAINT**)			
Sidewalk	X	X	

Superstructure				
Bridge Component		**Last**	**Now**	**Explanation of Condition**
(Primary Span : **TH, 6 Spans, Lengths(m): 8.5-30.5-61-30.5-8.5-6.1, A-Ident Number: A0174-01;A0165-03;A0165-07**)				
Wide Load Damage (Y/N)	Yes			10mm notch @ rail height on U9L10W. Typical where guard rail touches truss. {50mm bends @ cross angles @ U7U7. As constructed. S4-U9L10S has 10mm notch to inside flange at rail height. July 22, 2009 UT report}
High Load Damage (Y/N)	No			
Top Chord		7	7	
Batter Posts		6	5	
Sway Bracings		6	6	
Diagonals		7	7	
Verticals		7	7	
Portals		7	7	
Connections		7	7	
Floor Beams		N	N	
Bottom Chord		7	7	9 x 10 lines
(No. of Stringers : **90**)				
Stringer Detail Ratings				
	N (count)	1 (count)	2 (count)	3 (count)
Last				
Now				
Stringers		N	N	
(Type : **STEEL**)				
(Width(mm) : **140**)				
(Depth(mm) : **380**)				
(Spacing(mm) : **851**)				
Paint Condition		3	3	{Rusting in splash zone approx 10% - photos. Corrosion @ truss members with pitting up to 1mm deep. Lower chord braces spreading. July 22, 2009 UT report} From past U.T report members have thick cross section- no action
(Colour Description : **BLUE**)				
(Colour Code : **502-105**)				
Touchup Required (Y/N)	No			
Bearings		4	4	Anchor bolts at P3 are bent.
Temperature (deg. C)	7			
(Expansion Type : **ROCKER BEARING**)				
(Fixed Type : **DISC & DOME BEARING**)				
Functioning (Y/N)	Yes			
Sub Deck/Deck Underside		N	N	Unable to inspect from shore.
(Material Type : **TREATED TIMBER**)				
(Plank Thickness(mm) : **150**)				
(Plank Width(mm) : **305**)				
Defects (Percent Area)	0			
Span Alignment Problems				
Vertical (Y/N)	No			
Horizontal (Y/N)	No			
Superstructure General Rating		**4**	**4**	

Superstructure				
Bridge Component		**Last**	**Now**	**Explanation of Condition**
(Secondary Span : **PT**)				
Special Features				
Special Feature			X	A165-7
(Type :)				
Special Feature			X	
(Type :)				

Superstructure

Bridge Component	Last	Now	Explanation of Condition
(Secondary Span : **PT**)			
Wearing Surface/Deck Top Detail Ratings			
N (%) 0.0 / 1 (%) 0.0 / 2 (%) 0.0 / 3 (%) 5.0 (Last / Now)			
Wearing Surface/Deck Top	4	3	Split and rotten ends of boards at panel 2 of span 3.
(Material Type : **UNTREATED TIMBER**)			
(Plank Thickness(mm) : **75**)			
(Plank Width(mm) : **305**)			
Deck Rideability	5	5	
Deck Joints	X	X	
Temperature (deg. C)			
(Expansion Type :)			
(Fixed Type :)			
Gap Size (mm) / Gap Location			
Curbs/Wheel Guards	5	5	
(Curb Type : **Standard**)			
(Type : **TREATED TIMBER**)			
(Thickness(mm) : **100**)			
(Width(mm) : **305**)			
Bridge Rail	5	5	Double layer.
(Type : **GALVANIZED STEEL FLEX BEAM**)			
Bridge Rail Posts/Blocking	5	5	Posts are steel, blocking is timber.
(Type : **TREATED TIMBER;TREATED TIMBER**)			
Bridge Rail/Posts Coating	7	7	
(Type : **GALVANIZED**)			
Sidewalk	X	X	
Wide Load Damage (Y/N) Yes			{100mm notch @ L0U1N @ wheelguard. Also top chord lattice 1 bent. U1L1S gusset S5 has minor side load dent. S5-U1L0N has 40mm long sliver at wheelguard height. (Span 5, all bays are missing hanger bolts) Feb 9th 2010 S2-L2L2 missing to bolts. S5-L1L1 has 1mm pits in bottom flange and worst case rust blisters. July 22, 2009 UT report}
Top Chord	7	7	
Batter Posts	5	5	
Diagonals	6	6	
Verticals	6	6	
Connections	7	7	
Floor Beams	7	7	
Bottom Chord	7	7	
Lateral Bracings	7	7	
(No. of Stringers : **54;54**)			
Stringer Detail Ratings			
N (count) / 1 (count) / 2 (count) / 3 (count) (Last / Now)			
Stringers	7	7	
(Type : **STEEL**)			
(Width(mm) : **130**)			
(Depth(mm) : **305**)			
(Spacing(mm) : **851**)			

Superstructure				
Bridge Component		**Last**	**Now**	**Explanation of Condition**
(Secondary Span : **PT**)				
Paint Condition		4	4	{Rock chips, faded bottom chord. Splice plates have heavy rust, poor or missing primer, peeling. July 22, 2009 UT report} Rusting in splash zone approx 10% on verticals @ deck level.
(Colour Description : **BLUE**)				
(Colour Code : **502-105;15182**)				
Touchup Required (Y/N)	No			
Bearings		5	5	Spans 4 & 5 jammed above pier 4. Anchor bolt missing from upstream end on pier #3. S3 rockers are in contracted position.
Temperature (deg. C)	7			
(Expansion Type : **ROCKER BEARING**)				
(Fixed Type : **DISC & DOME BEARING**)				
Functioning (Y/N)	Yes			
Sub Deck/Deck Underside		7	7	
(Material Type : **TREATED TIMBER**)				
(Plank Thickness(mm) : **150**)				
(Plank Width(mm) : **305**)				
Defects (Percent Area)	0			
Span Alignment Problems				
Vertical (Y/N)	No			
Horizontal (Y/N)	No			
Superstructure General Rating		**5**	**5**	

Superstructure				
Bridge Component		**Last**	**Now**	**Explanation of Condition**
(Secondary Span : **HC**)				
Special Features				
Special Feature			X	
(Type :)				
Special Feature			X	
(Type :)				

Wearing Surface/Deck Top Detail Ratings					
	N (%)	1 (%)	2 (%)	3 (%)	
Last					
Now	0.0	0.0	0.0	10.0	

Wearing Surface		4	3	Wide cracks between girders on span 2 - all girder connections have failed.
(Material Type : **CONVENTIONAL CHIP SEAL COAT**)				
(Thickness(mm) :)				
Lateral Connection Problem (Y/N)	Yes			
Deck Top		N	N	
Deck Rideability		5	5	
Deck Joints		N	N	Chip coat covered.
Bump (Y/N)	No			
Deck Drainage		7	7	
Drains Clogged (Y/N)	No			
Curbs/Median		7	6	
(Curb Type : **Standard**)				
Scaling (Percent Area)	0			

Superstructure				
Bridge Component		**Last**	**Now**	**Explanation of Condition**
(Secondary Span : **HC**)				
Bridge Rail		7	6	Single layer. Wrong lap at SW. Accident damage at South side of span 1. First bridge rail post and blocking has been damaged.
(Type : **GALVANIZED STEEL FLEX BEAM**)				
Bridge Rail Posts		7	4	
(Type : **GALVANIZED POST STEEL;GALVANIZED POST STEEL**)				
Bridge Rail/Posts Coating		7	6	
(Type : **GALVANIZED**)				
Sidewalk		X	X	
Girder Detail Ratings				
	N (count)	1 (count)	2 (count)	3 (count)
Last				
Now	0	0	0	3
Girders		5	3	6 girders @ span 2 have wide cracks and spalls all outside the anchorage zone. 11 girders have cracks or spalls in the webs, one has medium crack in AZ with crack in other web. Significant girder deflection under load - several girder connections have failed.
Last Complete Inspection Date	16-Feb-2012			
Cracking (Y/N)	Yes			
Spalling (Percent Area)	10			
Lift or Connector Pocket Grouted (Y/N)	Yes			
(Number Of Girders : **18**)				
Span Alignment Problems				
Vertical (Y/N)	No			
Horizontal (Y/N)	No			
Superstructure General Rating		**5**	**3**	

Superstructure				
Bridge Component		**Last**	**Now**	**Explanation of Condition**
(Secondary Span : **TT**)				
Special Features				
Special Feature			X	
(Type :)				
Special Feature			X	
(Type :)				
Wearing Surface/Deck Top Detail Ratings				
	N (%)	1 (%)	2 (%)	3 (%)
Last				
Now	0.0	0.0	0.0	1.0
Wearing Surface/Deck Top		5	3	Loose and rotted. Plank at center. Split and broken at east.
(Material Type : **UNTREATED TIMBER**)				
(Plank Thickness(mm) : **75**)				
(Plank Width(mm) : **305**)				
Deck Rideability		5	5	
Wheel Guards		6	6	
(Curb Type : **Standard**)				
(Type : **TREATED TIMBER**)				
(Thickness(mm) : **100**)				
(Width(mm) : **305**)				

Superstructure					
Bridge Component			**Last**	**Now**	**Explanation of Condition**
(Secondary Span : **TT**)					
Bridge Rail			7	7	Single layer.
(Type : **GALVANIZED STEEL FLEX BEAM**)					
Bridge Rail Posts			7	7	
(Type : **TREATED TIMBER;TREATED TIMBER**)					
Bridge Rail/Posts Coating			7	7	
(Type : **GALVANIZED**)					
(No. of Stringers : **11**)					Lateral beams added to strengthen stringers.
Stringer Detail Ratings					
	N (count)	1 (count)	2 (count)	3 (count)	
Last					
Now	0	0	0	0	
Stringers			7	7	
(Type : **TREATED TIMBER**)					
(Width(mm) : **200**)					
(Depth(mm) : **510**)					
(Spacing(mm) : **700**)					
Sub Deck/Deck Underside			7	7	Strutted longitudinally and transversely.
(Material Type : **TREATED TIMBER**)					
(Plank Thickness(mm) : **100**)					
(Plank Width(mm) : **305**)					
Defects (Percent Area)	1				
Span Alignment Problems					
Vertical (Y/N)	No				
Horizontal (Y/N)	No				
Superstructure General Rating			**7**	**7**	

Substructure					
Bridge Component			**Last**	**Now**	**Explanation of Condition**
Abutments					
(Extended Backwall Piles (Y/N) : **Y**)					
(Extended Backwall Piles Spacing(mm) : **1600**)					
(Total Number of Caps/Corbels : **1:3**)					{East abutment modified to accept struts. E abutment leaning West. Strutted to P5. E timber struts 150 x 340mm - photos. W abutment leaning East. Strutted to P1. July 22, 2009 UT report} Checked at South up to 20mm wide.
Bearing Seats/Caps/Corbels Detail Ratings					
	N (count)	1 (count)	2 (count)	3 (count)	
Last					
Now	0	0	0	0	
Bearing Seats/Caps/Corbels			5	5	
(Type : **TREATED TIMBER**)					
(Depth(mm) : **305**)					
(Width(mm) : **305**)					
Backwalls/Breastwalls			5	5	
Greatest Height (m)	2.20				
Wingwalls			5	5	
(Total Number of Bearing Piles : **8:5**)					
Piles Detail Ratings					
	N (count)	1 (count)	2 (count)	3 (count)	
Last					
Now	0	0	0	0	
Piles			5	5	
Paint/Coating			X	X	

Substructure			
Bridge Component	**Last**	**Now**	**Explanation of Condition**
Abutment Stability	5	5	
Scour/Erosion	6	6	
Piers/Bents			
(Type : **PIER-SOLID**)			Cracked & leaching under bearing areas. Exposed rebar @ pier #2 @ North face. Scaling @ tops of some @ piers #3, 4 & 5. East bearing seat at P3 spalled and cracked under through truss bearing.
(Total Number of Caps/Corbels : **6:5:1:1:3**)			
Bearing Seats/Caps/Corbels Detail Ratings			
Bearing Seats/Caps/Corbels	4	4	
(Type : **TREATED TIMBER;CONCRETE**)			
(Total Number of Bearing Piles : **5:0:0:0:0**)			Only piles seen are timber pier at P1. All other piers concrete.
Piles Detail Ratings			
Pier Shaft/Piles	5	5	
Greatest Height (m) 5.50			
Bracing/Struts/Sheathing	X	X	
Nose Plate	6	6	
Paint/Coating	4	4	Steel rusty. Nose plates piers #3 & #4.
(Colour Description :)			
(Colour Code :)			
Pier Stability	7	7	
Scour	N	N	Iced over.
Debris (Y/N) No			
Substructure General Rating	**4**	**4**	

Piers/Bents Detail Ratings	N (count)	1 (count)	2 (count)	3 (count)
Last				
Now	0	0	0	0

Piles Detail Ratings	N (count)	1 (count)	2 (count)	3 (count)
Last				
Now	0	0	0	0

Structure Usage			
Bridge Component	**Last**	**Now**	**Explanation of Condition**
Channel			
(U/S Direction : **N**)			(Deck to water 7.4m. 99/07/12)
(D/S Direction : **S**)			
Alignment	7	7	
Bank Stability	5	5	
HWM (m below Top of Curb) 4.0			HWM not visible.
Drift (Y/N) Yes			
Slope Protection	7	7	
(Type : **NATURAL; NATURAL**)			
Guidebank/Spurs	X	X	
Adequacy of Opening	7	7	
(Fish Compensation Measure 1 : **NONE**)			
(Fish Compensation Measure 2 : **NONE**)			
Channel General Rating	**7**	**7**	

Maintenance Recommendations

Inspector Recommendations	Year	Inspector Comments	Department Comments	Target Year	Est. Cost	Cat #
REPAIR/REPLACE BRIDGE RAIL						
RETROFIT BRIDGE RAIL						
SEAL CURBS						
PATCH DECK						
SEAL DECK						
OVERLAY DECK						
REPLACE STRIP DECK	2012	Approx 8 planks 75mm X 305mm X 2.5m				
REPLACE SUB DECK						
RESET/ PAINT BEARINGS	2012	Reset bearings, allow for design thermal movements.				
REPAINT SUPERSTRUCTURE	2016	Consider painting of bridge is to remain in service.				
STRAIGHTEN/REPLACE MEMBERS						
WASHING						
SHOTCRETE REPAIRS						
CORE TIMBER CAPS/CORBELS						
REPAIR/REPLACE TIMBER CAPS						
REPAIR ABUTMENT SCOUR/EROSION						
PLACE ADDITIONAL RIP RAP						
REMOVE DRIFT ACCUMULATION						
INSTALL STRUTS						
OTHER ACTION	2012	Recast SE bearing seat of through truss @ Pier 4.				
OTHER ACTION	2012	Add hanger bolt to span 5.				
OTHER ACTION						
OTHER ACTION	2012	S3-L2L2 fill open holes with bolts.				
OTHER ACTION	2012	Restore HC span connector pockets.				
OTHER ACTION	2012	Reset hazard markers to standard.				
OTHER ACTION	2012	Contact Telus about conduit.				
OTHER ACTION						
OTHER ACTION						
OTHER ACTION						
OTHER ACTION						
OTHER ACTION						
OTHER ACTION						
OTHER ACTION						

Structural Condition Rating (Last/Now) (%)	**44.4/38.9**	**Sufficiency Rating (Last/Now) (%)**	**33.8/31.3**	Est. Repl. Yr	2028	Maint. Reqd. (Y/N)	Yes

Special Comments for Next Inspection		Department Comments	

Maintenance Reviewed By		Date		Estimated Total	0
Proposed Long-Term Strategy					
On 3-Year Program (Y/N)					
Proposed Action					
Previous Inspector's Name	Paul Carter	Previous Assistant's Name			
Next Inspection Date	16-May-2015	Previous Inspection Date	09-Feb-2010		
Inspection Cycle (Default) (months)	39				
Comment					