Bridge Inspection

Bridge File Number	73899 -1 Bridge	Form Type	PT TT
Year Built/Year Supstr	1930/1930	Lot No.	1
		Inspector Name	Garry Roberts
Bridge or Town Name	COCHRANE	Inspector Class	BR CLS A
Located Over	WAIPAROUS CREEK, 2.13.49.4, WATERCRS-ST	Assistant Name	
		Assistant Class	
Located On	40:14 C1 17.039	Inspection Date	26-Mar-2013
Water Body Cl./Year		Data Entry By	Lauren Korte
Navigabil. Cl./Year		Data Entry Date	11-Apr-2013
Legal Land Location	NW SEC 6 TWP 27 RGE 6 W5M	Reviewer Name	Garry Roberts
Longitude, Latitude	-114:50:20, 51:16:59	Review Date	10-Apr-2013
Road Authority	Alberta Transportation (AIT)	Dept. Reviewer Name	Tim Davies
Contract Main. Area	CMA28	Dept. Review Date	06-May-2013
Clear Roadway/Skew	5.5 /	Follow-Up By	
AADT/Year	700 / 2012 (A)		
Road Classification	RAU-209-110		
Detour Length (km)	20		

Allowable Load (t):	Single	CS1 18 STRINGER	Semi	CS2 32 STRINGER	Train	CS3 46 STRINGER	---> On Critical Spans ---->Critical Member
Design Loading:		HS15					---> Primary Span

Posting Information

Required Load Posting (t)			Single	19	Semi	33	Truck Train	47
Posted Loading (t)			Single	19.0	Semi	33.0	Truck Train	47.0
Posted:	Lane	WB	At Junction (Y/N)	No	In Advance (Y/N)	Yes	At Bridge (Y/N)	Yes
Posted:	Lane	EB	At Junction (Y/N)	No	In Advance (Y/N)	Yes	At Bridge (Y/N)	Yes
Remarks								

Hazard Marker At Bridge (Y/N)	Yes
Remarks	
Other Sign Types	Stop if oncoming, narrow bridge, no parking, 30km/hr.

Utilities (Located at)

Utility Attachments			
Telephone	South R/W.	Gas	
Power		Municipal	
Others	WSC gauge SE.	Problem (Y/N)	No
Remarks			

Approach Road

		Last	Now	Explanation of Condition
Horizontal Alignment		3	3	Sharp curves and hills at both ends. Posted @ 30 km/hr.
Vertical Alignment		3	3	Bridge is orientated North - South.
Roadway Width (m)	8.700			Approaches rough- ok for speed traveled.
Approach Bump		5	5	
Guardrail (Y/N)	Yes			Missing 3 splice bolts at NW.
Guardrail		4	4	Minor damage at SE and NE.
Length (m)	8.000			Not thrie beam.
Current Standard (Y/N)	No			
Termination Type	TURNED DOWN			
Drainage		5	5	
Approach Road General Rating		**3**	**3**	

Superstructure

Bridge Component	Last	Now	Explanation of Condition
(Primary Span : **PT, 4 Spans, Lengths(m): 8.5-15.2-15.2-6.1, A-Ident Number: A0155-03;A0155-04**)			
Special Features			
Special Feature		X	
(Type :)			
Special Feature		X	
(Type :)			
Wearing Surface/Deck Top Detail Ratings			
	N (%)	1 (%)	2 (%)	3 (%)	
Last	0	0	0	0	
Now	20.0	0.0	0.0	0.0	Gravel/ice along West side.
Wearing Surface/Deck Top	6	6	
(Material Type : **UNTREATED TIMBER**)			
(Plank Thickness(mm) : **75**)			
(Plank Width(mm) : **305**)			
Deck Rideability	6	6	
Deck Joints	X	X	
Temperature (deg. C)			
(Expansion Type :)			
(Fixed Type :)			
Gap Size (mm)	Gap Location		
Curbs/Wheel Guards	4	4	Rot in wheelguard planks @ West curb @ P2. Split and damaged block at P1 West side.
(Curb Type : **Standard**)			
(Type : **TREATED TIMBER**)			
(Thickness(mm) : **100**)			
(Width(mm) : **300**)			
Bridge Rail	6	6	Minor lattice damage. Double layer flexbeam.
(Type : **GALVANIZED STEEL FLEX BEAM**)			
Bridge Rail Posts/Blocking	4	4	Timber, blocking & steel end posts. Steel posts cracked over pier 1 and 3 have timber posts nearby.
(Type : **TREATED TIMBER;TREATED TIMBER**)			
Bridge Rail/Posts Coating	4	4	Minor corrosion @ lattice.
(Type : **PAINT**)			
Sidewalk	X	X	

Superstructure

Bridge Component		Last	Now	Explanation of Condition
(Primary Span : **PT, 4 Spans, Lengths(m): 8.5-15.2-15.2-6.1, A-Ident Number: A0155-03;A0155-04**)				
Wide Load Damage (Y/N)	No			
Top Chord		7	7	
Batter Posts		7	7	
Diagonals		7	7	Span 2 inside vertical gusset at L0E perforated. Corrosion between plates causing distortion and bulging at several connections.
Verticals		7	7	
Connections		3	3	Missing 2 bolts at Sp.2 L4W - Lower floor beam to gusset and bottom lateral.
Floor Beams		5	5	
Bottom Chord		5	5	
Lateral Bracings		5	5	9/bay x 8= 72
(No. of Stringers : **36;36**)				
Stringer Detail Ratings				
	N (count) / 1 (count) / 2 (count) / 3 (count)			
Last				
Now				Heavy corrosion and section loss at top flanges.
Stringers		4	4	
(Type : **STEEL**)				
(Width(mm) : **230**)				
(Depth(mm) : **110**)				
(Spacing(mm) : **730**)				
Paint Condition		3	3	Span 2 at L0E, inside vertical plate is perforated. Silver. (Corrosion @ edges top flanges of floor system. Full thickness of top flange is 0.306"- past UT indicates thickness is 0.184" resulting in 0.120" section loss @ top flange of stringer).
(Colour Description : **SILVER**)				
(Colour Code : **SILVER**)				
Touchup Required (Y/N)	No			
Bearings		5	5	Sliding plates at P2.
Temperature (deg. C)	7			
(Expansion Type : **SLIDING PLATE**)				
(Fixed Type : **PINNED BEARING**)				
Functioning (Y/N)	Yes			
Sub Deck/Deck Underside		5	5	
(Material Type : **TREATED TIMBER**)				
(Plank Thickness(mm) : **100**)				
(Plank Width(mm) : **305**)				
Defects (Percent Area)	2			
Span Alignment Problems				
Vertical (Y/N)	No			
Horizontal (Y/N)	No			
Superstructure General Rating		**3**	**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	0 / 0 / 0 / 0			
Now	0.0 / 0.0 / 0.0 / 0.0			

Superstructure

Bridge Component		Last	Now	Explanation of Condition
(Secondary Span : **TT**)				
Wearing Surface/Deck Top		5	5	Minor wear.
(Material Type : **UNTREATED TIMBER**)				
(Plank Thickness(mm) : **75**)				
(Plank Width(mm) : **305**)				
Deck Rideability		5	5	
Wheel Guards		3	5	Minor grader scrapes.
(Curb Type : **Standard**)				
(Type : **TREATED TIMBER**)				
(Thickness(mm) : **100**)				
(Width(mm) : **300**)				
Bridge Rail		7	7	Double Layer.
(Type : **GALVANIZED STEEL FLEX BEAM**)				
Bridge Rail Posts		7	7	
(Type : **TREATED TIMBER;TREATED TIMBER**)				
Bridge Rail/Posts Coating		6	6	
(Type : **PAINT**)				
(No. of Stringers : **12;9**)				Sp.1 - S9 split from bolt but is curb stringer. Sp.4-S4 is cracked at North end.
Stringer Detail Ratings				
	N (count)	1 (count)	2 (count)	3 (count)
Last	0	0	0	0
Now	0	0	0	1
Stringers		5	3	Sp. 1 South has 12 stringers at 150x400 at 650mm spacing. Sp.4 North has stringers: 195 x 490 at 650mm spacing. Sp.4 - S6 is sistered. Top corner missing from Sp.1 - S9. Curb stringers overhang caps slightly-no problem.
(Type : **TREATED TIMBER**)				
(Width(mm) : **150**)				
(Depth(mm) : **400**)				
(Spacing(mm) : **650**)				
Sub Deck/Deck Underside		6	5	
(Material Type : **TREATED TIMBER**)				
(Plank Thickness(mm) : **100**)				
(Plank Width(mm) : **305**)				
Defects (Percent Area)	0			
Span Alignment Problems				
Vertical (Y/N)	No			
Horizontal (Y/N)	No			
Superstructure General Rating		**5**	**3**	

Substructure

Bridge Component		Last	Now	Explanation of Condition
Abutments				
(Extended Backwall Piles (Y/N) : **Y**)				
(Extended Backwall Piles Spacing(mm) : **1900**)				
(Total Number of Caps/Corbels : **1:1**)				
Bearing Seats/Caps/Corbels Detail Ratings				
	N (count)	1 (count)	2 (count)	3 (count)
Last	0	0	0	0
Now	0	0	0	0
Bearing Seats/Caps/Corbels		6	5	T.T stringers appear to be settling into caps at both abuts.
(Type : **TREATED TIMBER**)				
(Depth(mm) : **305**)				
(Width(mm) : **305**)				

Substructure

Bridge Component		Last	Now	Explanation of Condition
Backwalls/Breastwalls		4	4	Not low enough at both abutments Breastwalls added at both abuts. No active loss of fill.
Greatest Height (m)	2.00			
Wingwalls		6	6	
(Total Number of Bearing Piles : **4:4**)				
Piles Detail Ratings				
	N (count)	1 (count)	2 (count)	3 (count)
Last	0	0	0	0
Now	0	0	0	0
Piles		5	5	
Paint/Coating		X	X	
Abutment Stability		6	6	
Scour/Erosion		6	4	Minor erosion at SE.
Piers/Bents				
(Type : **PIER-SOLID**)				Minor delam under bearing at East end of P1. 305 x 305mm TT caps on pier 1 plus shim under each stringer. Suspect rot in P3 cap.
(Total Number of Caps/Corbels : **2:1:2**)				
Bearing Seats/Caps/Corbels Detail Ratings				
	N (count)	1 (count)	2 (count)	3 (count)
Last	0	0	0	0
Now	0	0	0	0
Bearing Seats/Caps/Corbels		4	4	
(Type : **CONCRETE**)				
(Depth(mm) :)				
(Width(mm) :)				
(Total Number of Bearing Piles : **0:0:0**)				Heavy scaling @ bottom of center pier & East end of pier 1.
Piles Detail Ratings				
	N (count)	1 (count)	2 (count)	3 (count)
Last	0	0	0	0
Now	0	0	0	0
Pier Shaft/Piles		4	4	Massive concrete.
Greatest Height (m)	5.30			
Bracing/Struts/Sheathing		X	X	
Nose Plate		X	X	
Paint/Coating		X	X	
(Colour Description :)				
(Colour Code :)				
Pier Stability		7	7	
Scour		5	5	
Debris (Y/N)	No			
Substructure General Rating		**4**	**4**	

Structure Usage

		Last	Now	Explanation of Condition
Channel				
(U/S Direction : **W**)				Meandering stream (water to deck 6.6m SB to deck 8.2m).
(D/S Direction : **E**)				
Alignment		5	5	90 degree bends up and down stream

Structure Usage				
		Last	**Now**	**Explanation of Condition**
Bank Stability		6	6	
HWM (m below Top of Curb)	2.0			HWM not visible (Date of measurement unknown) Minor drift in channel and at P2.
Drift (Y/N)	Yes			
Slope Protection		5	5	Natural rockwall at South.
(Type : **NATURAL**)				
Guidebank/Spurs		X	X	
Adequacy of Opening		7	7	
(Fish Compensation Measure 1 : **NONE**)				
(Fish Compensation Measure 2 : **NONE**)				
Channel General Rating		**5**	**5**	

Maintenance Recommendations

Inspector Recommendations	Year	Inspector Comments	Department Comments	Target Year	Est. Cost	Cat #
REPAIR/REPLACE BRIDGE RAIL						
RETROFIT BRIDGE RAIL						
PATCH DECK						
REPLACE STRIP DECK						
REPLACE SUB DECK						
RESET/ PAINT BEARINGS						
REPAINT SUPERSTRUCTURE	2015	Floor system.				
STRAIGHTEN/REPLACE MEMBERS	2015	Replace clips and hardware at floor beams.				
WASHING						
CORE TIMBER CAPS/CORBELS						
REPAIR/REPLACE TIMBER CAPS						
REPAIR ABUTMENT SCOUR/EROSION						
PLACE ADDITIONAL RIP RAP						
REMOVE DRIFT ACCUMULATION						
OTHER ACTION	2015	2- 2900x300x100 T.T. wheel guard planks.				
OTHER ACTION	2015	Lower backwall/ breastwall sheathing.				
OTHER ACTION	2015	Patch piers next major rehab.				
OTHER ACTION						
OTHER ACTION	2015	Assess gusset plate in span 2 at L0S, design retro fit.				
OTHER ACTION	2013	Install posted loading signs in advance EB and at junctions.				
OTHER ACTION	2013	Repair and replace cracked T.T stringer.				
OTHER ACTION	2014	Assess for repair vs. replacement.				
OTHER ACTION	2015	Install 5 bolts Sp.2 L4W.				
OTHER ACTION						
OTHER ACTION						
OTHER ACTION						
OTHER ACTION						
OTHER ACTION						
OTHER ACTION						
OTHER ACTION						
OTHER ACTION						
OTHER ACTION						

Structural Condition Rating (Last/Now) (%)	**38.9/38.9**	**Sufficiency Rating (Last/Now) (%)**	**28.5/28.8**	Est. Repl. Yr	2016	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	Garry Roberts	Previous Assistant's Name	
Next Inspection Date	26-Dec-2014	Previous Inspection Date	14-Jun-2011
Inspection Cycle (Default) (months)	21		
Comment			