Bridge Inspection

Bridge File Number	01293 -1 Bridge	Form Type	TH
Year Built/Year Supstr	1908/1907	Lot No.	1
		Inspector Name	Garry Roberts
Bridge or Town Name	GLEICHEN	Inspector Class	BR CLS A
Located Over	BOW RIVER, 2.13, WATERCRS-ST	Assistant Name	
Located On	547:04 C1 16.850	Assistant Class	
Water Body Cl./Year		Inspection Date	03-Jan-2012
Navigabil. Cl./Year		Data Entry By	Anne Roberts
Legal Land Location	NE SEC 9 TWP 21 RGE 23 W4M	Data Entry Date	29-Jan-2012
Longitude, Latitude	-113:07:52, 50:46:19	Reviewer Name	Joel Wozney
Road Authority	Alberta Transportation (AIT)	Review Date	05-Jan-2012
Contract Main. Area	CMA30	Dept. Reviewer Name	Tim Davies
Clear Roadway/Skew	5.1 /	Dept. Review Date	06-Feb-2012
AADT/Year	940 / 2010 (A)	Follow-Up By	
Road Classification	RLU-208-100		
Detour Length (km)	50		

Allowable Load (t):	Single	H 22 STRINGER	Semi	HS 27 U1L2	Train	CS3 29 L3L4	---> On Critical Spans --->Critical Member
Design Loading:		HS20					---> Primary Span

Posting Information

Required Vert. Clearance Posting (m)												
Posted Vertical Clearance (Y/N)				Yes								
Posted:	Lane	NB	On Bridge (m)	4.4	In Advance (Y/N)	Yes	Lane	SB	On Bridge (m)	4.4	In Advance (Y/N)	Yes
Remarks	Measured 4.590 at West and 4.586 at East. East portal sign damaged Minor damage @ north.											

Required Load Posting (t)		Single	22	Semi	27	Truck Train	30
Posted Loading (t)		Single	22.0	Semi	27.0	Truck Train	30.0
Posted:	Lane NB	At Junction (Y/N)	Yes	In Advance (Y/N)	Yes	At Bridge (Y/N)	Yes
Posted:	Lane SB	At Junction (Y/N)	Yes	In Advance (Y/N)	No	At Bridge (Y/N)	Yes
Remarks							

Hazard Marker At Bridge (Y/N)	Yes
Remarks	
Other Sign Types	Narrow bridge, Stop if oncoming traffic on bridge.

Utilities (Located at)

Utility Attachments	TELEPHONE UTILITIES-Telus Fiber placed in duct March 2005		
Telephone	North side in conduit - One conduit is abandoned	Gas	
Power	3 wires 10 m North side. 1 attached to truss	Municipal	
Others	Lights installed along West truss. 400m below braces. Fiber optics East ROW	Problem (Y/N)	Yes
Remarks	Seven lights missing or broken. Conduit seperated along Sp3 and perforated at Sp1.		

Approach Road

		Last	Now	Explanation of Condition
Horizontal Alignment		4	5	Curves both ends. Hills both ends.
Vertical Alignment		5	5	
Roadway Width (m)	8.300			
Approach Bump		6	6	
Guardrail (Y/N)	Yes			Missing 1 splice bolt at SE
Guardrail		5	4	Not thriebeam
Length (m)	23.000			
Current Standard (Y/N)	No			
Termination Type	TURNED DOWN			
Drainage		7	7	
Approach Road General Rating		**4**	**5**	

Superstructure				
Bridge Component		**Last**	**Now**	**Explanation of Condition**
(Primary Span : **TH, 3 Spans, Lengths(m): 53.3-53.3-53.3, A-Ident Number: A0108-04;A0108-05;A0108-06**)				
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
Wearing Surface/Deck Top		4	5	
(Material Type : **UNTREATED TIMBER**)				
(Plank Thickness(mm) : **75**)				
(Plank Width(mm) : **300**)				
Deck Rideability		6	6	
Deck Joints		X	X	
Temperature (deg. C)				
(Expansion Type :)				
(Fixed Type :)				
Gap Size (mm)	Gap Location			
Curbs/Wheel Guards		3	3	21 split blocks 3 wheelguard planks damaged, split or rotten
(Curb Type : **Standard**)				
(Type : **TREATED TIMBER**)				
(Thickness(mm) : **100**)				
(Width(mm) : **300**)				
Bridge Rail		4	4	Double layer of flexbeam not attached to bridge at Sp3- L0S and L0N. 9 bridge rail blocks split or missing. Missing 21 splice bolts
(Type : **GALVANIZED STEEL FLEX BEAM**)				
Bridge Rail Posts/Blocking		4	4	
(Type : **TREATED TIMBER;TREATED TIMBER**)				
Bridge Rail/Posts Coating		7	6	
(Type : **GALVANIZED**)				
Sidewalk		X	X	

Superstructure

Bridge Component		Last	Now	Explanation of Condition
(Primary Span : **TH, 3 Spans, Lengths(m): 53.3-53.3-53.3, A-Ident Number: A0108-04;A0108-05;A0108-06**)				
Wide Load Damage (Y/N)	Yes			Open holes on all vert. & BP's where old bracing was connected. Minor damage at both portals of Sp. 2 & West portal Sp. 1 Minor high & Wide load damage @ Vert., diag. and portals Sp2- L0U1S and Sp3 - U9L10S have bends Sp 3 - U4L 4 top & bottom angle twisted bent & buckled. Sp 3 has moderate at U4S Sp 3 N - U3L4 has bend Sp2- U2L2S, Sp3 N- U4L4, U4L7, U8L8 all have bends or dents. Missing bolts at Sp2- U1S, U9S. Loose bolt at Sp3- U1N. Minor high load damage & isolated corrosion pitting at gussets. 300 x 150 dent Sp. 1 U5L5S and U7L7S 13 bayx30= 390 On set of corrosion on top flanges. Outside line of stringers are misaligned along Sp1 at L9S 100x210 stringers in between +2 channel 255 dp @ exit- 13 total lines.
High Load Damage (Y/N)	Yes			
Top Chord		6	6	
Batter Posts		4	5	
Sway Bracings		4	4	
Diagonals		4	4	
Verticals		5	4	
Portals		5	5	
Connections		4	4	
Floor Beams		7	6	
Bottom Chord		6	6	
(No. of Stringers : **130;130;130**)				
Stringer Detail Ratings				
	N (count)	1 (count)	2 (count)	3 (count)
Last				
Now				
Stringers		5	5	
(Type : **STEEL**)				
(Width(mm) : **100**)				
(Depth(mm) : **255**)				
(Spacing(mm) : **774**)				
Paint Condition		3	3	Some isolated areas up to 1 - 2mm deep corrosion. Splash zone & lower steel @ abutment are rusting 15% - top steel paint is adequate. 10% surface corrosion @ floor system - photo. Corrosion depth comment from past U.T. inspection.
(Colour Description : **BLUE**)				
(Colour Code : **15182**)				
Touchup Required (Y/N)	No			
Bearings		4	4	SW & SE bridge rollers twisted 35mm. to 25mm & 2 broken A/B 4 a/b's broken @ South pier bearings. End of casting has broken piece at Sp1 - L0S and pin retainer plate has minor end cracks Functioning as sliding plates
Temperature (deg. C)	11			
(Expansion Type : **ROLLER NEST BEARING**)				
(Fixed Type : **PINNED BEARING**)				
Functioning (Y/N)	No			
Sub Deck/Deck Underside		5	5	
(Material Type : **TREATED TIMBER**)				
(Plank Thickness(mm) : **100**)				
(Plank Width(mm) : **300**)				
Defects (Percent Area)	5			
Span Alignment Problems				
Vertical (Y/N)	No			
Horizontal (Y/N)	No			
Superstructure General Rating		**4**	**4**	

Substructure

Bridge Component		Last	Now	Explanation of Condition
Abutments				
(Extended Backwall Piles (Y/N) : **N**)				
(Extended Backwall Piles Spacing(mm) :)				

Substructure						
Bridge Component					**Last**	**Now**	**Explanation of Condition**
(Total Number of Caps/Corbels : **1:1**)							Several areas of concrete cracked and spalling - Massive concrete
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) :)							
Backwalls/Breastwalls					5	5	Wide map cracking. Worst at S abut
Greatest Height (m)	6.00						
Wingwalls					5	4	Wide map cracking
(Total Number of Bearing Piles : **0:0**)							
Piles Detail Ratings							
	N (count)	1 (count)	2 (count)	3 (count)			
Last	10						
Now	10	0	0	0			
Piles					N	N	
Paint/Coating					X	X	
Abutment Stability					7	6	
Scour/Erosion					8	8	
Piers/Bents							
(Type : **PIER-SOLID**)							Wide horizontal & map cracks. Horizontal crack under bearings, concrete is cracked and scaling on top of all piers.
(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					4	4	
(Type : **CONCRETE**)							
(Total Number of Bearing Piles : **0:0**)							Wide horizontal map cracks
Piles Detail Ratings							
	N (count)	1 (count)	2 (count)	3 (count)			
Last	10	0	0	0			
Now	10	0	0	0			
Pier Shaft/Piles					5	5	
Greatest Height (m)	5.50						
Bracing/Struts/Sheathing					X	X	
Nose Plate					7	7	
Paint/Coating					4	4	100% surface corrosion @ nose plates.
(Colour Description :)							
(Colour Code :)							
Pier Stability					7	7	
Scour					N	N	Ice
Debris (Y/N)	Yes						Old piling D/S of pier 1 Beaver dam under Sp. 1

Substructure				
Bridge Component		**Last**	**Now**	**Explanation of Condition**
Substructure General Rating		**4**	**4**	

Structure Usage				
		Last	**Now**	**Explanation of Condition**
Channel				
(U/S Direction : **W**)				The North bank is lined up 10m behind abutment.
(D/S Direction : **E**)				
Alignment		5	5	
Bank Stability		5	4	Vertical banks U/S and D/S Erosion at North end bank on U/S side
HWM (m below Top of Curb)				HWM not visible Drift at Pier 1
Drift (Y/N)	Yes			
Slope Protection		5	5	Class I @ both abutments.
(Type : **RIP RAP; RIP RAP**)				
Guidebank/Spurs		X	X	
Adequacy of Opening		7	7	
(Fish Compensation Measure 1 : **NONE**)				
(Fish Compensation Measure 2 : **NONE**)				
Channel General Rating		**5**	**4**	

Maintenance Recommendations

Inspector Recommendations	Year	Inspector Comments	Department Comments	Target Year	Est. Cost	Cat #
REPAIR/REPLACE BRIDGE RAIL	2012	Replace damaged rail blocks - 9 in total and 21 splice bolts				
RETROFIT BRIDGE RAIL						
SEAL CURBS	2012	Replace 1- 1.5m, 1-1.9m, 6-5.6m wheelguard planks c/w 21 100x300 blocks				
PATCH DECK						
SEAL DECK						
OVERLAY DECK						
REPLACE STRIP DECK						
REPLACE SUB DECK						
RESET/ PAINT BEARINGS	2015	Replace bearings with neoprence pads next major rehab.				
REPAINT SUPERSTRUCTURE	2012	Assess paint or monitor				
STRAIGHTEN/REPLACE MEMBERS	2012	Sp2- L0U1S, U2L2S, and Sp 3 - U9L10S, U4L4N, U7L7N, U8L8N, U3L4N. Replace top and bottom sway brace angles at sp 3- U4U4. Salvage cross frame bracing				
WASHING						
SHOTCRETE REPAIRS						
CORE TIMBER CAPS/CORBELS						
REPAIR/REPLACE TIMBER CAPS						
REPAIR ABUTMENT SCOUR/EROSION						
PLACE ADDITIONAL RIP RAP						
REMOVE DRIFT ACCUMULATION	2012					
OTHER ACTION	2012	Add bolts at Sp2- U1S, U9S and sp3 U1N				
OTHER ACTION	2012	Replace broken lights at NW at West side				
OTHER ACTION	2015	Patch substructure next major rehab				
OTHER ACTION	2012	Assess for replacement vs. repair				
OTHER ACTION						
OTHER ACTION						
OTHER ACTION						
OTHER ACTION						
OTHER ACTION						
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OTHER ACTION						
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OTHER ACTION						
OTHER ACTION						

Structural Condition Rating (Last/Now) (%)	**44.4/44.4**	**Sufficiency Rating (Last/Now) (%)**	**16.5/23.7**	Est. Repl. Yr	2023	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	Owen Salava	Previous Assistant's Name	Ed Kowal		
Next Inspection Date	03-Apr-2015	Previous Inspection Date	08-Jun-2010		
Inspection Cycle (Default) (months)	39				
Comment					