

Bridge Inspection											
Bridge File Number	78814 -1 Bridge					Form Type	TH PCS				
Year Built/Year Supstr	1979/1930					Lot No.	1				
Bridge or Town Name	BIG VALLEY					Inspector Name	Dave Lam				
Located Over	RED DEER RIVER, 3, WATERCRS-ST					Inspector Class	BR CLS A				
Located On	590:04 C1 20.267					Assistant Name					
Water Body Cl./Year						Assistant Class					
Navigabil. Cl./Year						Inspection Date	13-Jul-2011				
Legal Land Location	NW SEC 21 TWP 35 RGE 21 W4M					Data Entry By	Marcia Chavez				
Longitude, Latitude	-112:56:55, 52:01:31					Data Entry Date	31-Aug-2011				
Road Authority	Alberta Transportation (AIT)					Reviewer Name	John O'Brien				
Contract Main. Area	CMA20					Review Date	28-Jul-2011				
Clear Roadway/Skew	5.6 /					Dept. Reviewer Name	Chris Black				
AADT/Year	800 / 2010 (A)					Dept. Review Date	01-Sep-2011				
Road Classification	RCU-209-110					Follow-Up By					
Detour Length (km)	40										
Allowable Load (t):	Single	CS1 28			Semi	CS2 49		Train	CS3 65 STRINGER		----> On Critical Spans ---->Critical Member
Design Loading:	HS25										----> Primary Span

Posting Information													
Required Vert. Clearance Posting (m)													
Posted Vertical Clearance (Y/N)													Yes
Posted:	Lane	EB	On Bridge (m)	4.6	In Advance (Y/N)	Yes	Lane	WB	On Bridge (m)	4.6	In Advance (Y/N)	Yes	
Remarks													4.82m measured.
Required Load Posting (t)			Single			Semi			Truck Train				
Posted Loading (t)			Single			Semi			Truck Train				
Posted:	Lane	EB	At Junction (Y/N)	No	In Advance (Y/N)	No	At Bridge (Y/N)	No					
Posted:	Lane	WB	At Junction (Y/N)	No	In Advance (Y/N)	No	At Bridge (Y/N)	No					
Remarks													Signed for max. 1 truck on bridge. Located away from bridge ends.
Hazard Marker At Bridge (Y/N)		Yes											
Remarks													
Other Sign Types		Stop if oncoming traffic on bridge, narrow bridge, 9% grade, check brakes, 75kph curve ahead. Max. 1 Truck on Bridge.											

Utilities (Located at)										
Utility Attachments										
Telephone	In r/w to South.					Gas				
Power						Municipal				
Others						Problem (Y/N)	No			
Remarks										

Approach Road				
		Last	Now	Explanation of Condition
Horizontal Alignment		3	3	"S" curves to West. Single lane with blind curve; signage in place. 9% grades.
Vertical Alignment		3	3	
Roadway Width (m)	10.000			ACP transition good at E end.
Approach Bump		5	4	Settled at both approaches, worst at SE (photo).
Guardrail (Y/N)	Yes			Accident damage to SW approach rail, damaging 3 posts & 3 flexbeam - (photo.) and 4 splice bolts (photo)
Guardrail		4	6	
Length (m)	49.400			
Current Standard (Y/N)	Yes			
Termination Type	TURNED DOWN			
Drainage		7	4	Run-off creating erosion gullies at hslps.
Approach Road General Rating		3	3	

Superstructure						
Bridge Component		Last	Now	Explanation of Condition		
(Primary Span : TH, 4 Spans, Lengths(m): 8.5-76.2-76.2-8.5, A-Ident Number: A0139-03;A0139-04)						
Special Features						
Special Feature			X			
(Type :)						
Special Feature			X			
(Type :)						
Wearing Surface/Deck Top Detail Ratings						
	N (%)	1 (%)	2 (%)	3 (%)	Loose EKI wood, 2 sections split.	
Last	0	0	0	10		
Now	0.0	0.0	0.0	10.0		
Wearing Surface/Deck Top				3	3	Ekki wood flex under heavy traffic working the lag screws. Strip deck not tight to WG. Split missing section S2 200x50x4500. Loose end with no lag screws.
(Material Type : EKKI WOOD)						
(Plank Thickness(mm) : 50)						
(Plank Width(mm) : 200)						
Deck Rideability			6	6		
Deck Joints			X	X		
Temperature (deg. C)		20				
(Expansion Type :)						
(Fixed Type :)						
Gap Size (mm)		Gap Location				
Curbs/Wheel Guards			4	6		
(Curb Type : Standard)						
(Type : TREATED TIMBER)						
(Thickness(mm) : 150)						
(Width(mm) : 300)						
Bridge Rail			4	7	Unconnected between S3 & S4.	
(Type : GALVANIZED STEEL BRIDGE TUBE)						
Bridge Rail Posts/Blocking			7	7	Green painted STL bracket, rust spots in roughout. Rail galvanized, post painted.	
(Type : POST STEEL;POST STEEL)						
Bridge Rail/Posts Coating			7	7		
(Type : GALVANIZED)						
Sidewalk			X	X		

Superstructure							
Bridge Component		Last	Now	Explanation of Condition			
(Primary Span : TH, 4 Spans, Lengths(m): 8.5-76.2-76.2-8.5, A-Ident Number: A0139-03;A0139-04)							
Wide Load Damage (Y/N)	Yes			All 4 portals have accident damage, 2 severe. 40mm dent U11L10N span 2. (Crushed section at S2U1U1. 14Jul2009). Not accessible. (insuff. thread @ most bolted connections (photo) - 2006). Collision damage at portals and sway braces. Rusting Corrosion heave. Open hole @ U11L11N span 2 & wide load dent @ eye level. Missing angle bracket & bolts at U11S S2 (photo).			
High Load Damage (Y/N)	Yes						
Top Chord		7	7				
Batter Posts		5	5				
Sway Bracings		3	4				
Diagonals		5	5				
Verticals		5	5				
Portals		3	N				
Connections		4	4				
Floor Beams		7	7				
Bottom Chord		6	6				
(No. of Stringers : 132;132)							
Stringer Detail Ratings							
	N (count)	1 (count)	2 (count)			3 (count)	
Last							
Now							
Stringers			5	5			
(Type : STEEL)							
(Width(mm) : 125)							
(Depth(mm) : 310)							
(Spacing(mm) : 585)							
Paint Condition		3	3	20% failed in splash zone, 50% in floor & 2% in top area.			
(Colour Description :)							
(Colour Code :)							
Touchup Required (Y/N)	Yes						
Bearings		3	3	Exp - end piers. Fix - center pier - pier tops should be cleaned. (S2 NW & SW brgs have roller nests twisted up to 20mm. S3 is jammed. 14Jul2009). E pier N end truss bearing spalled compromising bearing stability (photo).			
Temperature (deg. C)	20						
(Expansion Type : ROLLER NEST BEARING)							
(Fixed Type : SLIDING PLATE)							
Functioning (Y/N)	No						
Sub Deck/Deck Underside		3	3	(Punchout of subdeck @ span 3 E. end (photo). 14Jul2009). Signif. staining on underside, 20% deck area flex under truck load. S3 split subdeck plank. (Loose timber clips. 14Jul2009). Not accessible.			
(Material Type : TREATED TIMBER)							
(Plank Thickness(mm) : 100)							
(Plank Width(mm) : 300)							
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 : SM)							
Special Features							
Special Feature			X				
(Type :)							
Special Feature			X				
(Type :)							

Superstructure						
Bridge Component		Last	Now	Explanation of Condition		
(Secondary Span : SM)						
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			6	X	Cracked connection pocket grout - all locations.	
(Material Type :)						
(Thickness(mm) :)						
Lateral Connection Problem (Y/N)		Yes				
Deck Top			X	4	Deck top - girders are wearing surface. Spall/delam at W span G4 from N (photo).	
Deck Rideability			7	7		
Deck Joints			X	4	Buffer angles damaged missing at both approach spans.	
Bump (Y/N)						
Deck Drainage			X	9	Drains btwn girders.	
Drains Clogged (Y/N)						
Curbs/Median			7	7		
(Curb Type : Standard)						
Scaling (Percent Area)		0				
Bridge Rail			7	7	Double layer flexbeam. No transition from S3 to S4.	
(Type : GALVANIZED STEEL FLEX BEAM)						
Bridge Rail Posts			7	7		
(Type : GALVANIZED POST STEEL; GALVANIZED POST STEEL; GALVANIZED POST STEEL)						
Bridge Rail/Posts Coating			6	6		
(Type : GALVANIZED)						
Sidewalk			X	X		
Girder Detail Ratings						
	N (count)	1 (count)	2 (count)	3 (count)		
Last	0	0	0	0		
Now	0	0	0	0		
Girders			6	6	PG curb units - typical both ends with longit. crack in legs. No cracks visible in SM units. Grout cracked at connectors.	
Last Complete Inspection Date		13-Jul-2011				
Cracking (Y/N)		Yes				
Spalling (Percent Area)		0				
Lift or Connector Pocket Grouted (Y/N)		Yes				
(Number Of Girders : 12)						
Span Alignment Problems						
Vertical (Y/N)		No				
Horizontal (Y/N)		No				
Superstructure General Rating			6	6		
Substructure						
Bridge Component		Last	Now	Explanation of Condition		
Abutments						
(Extended Backwall Piles (Y/N) : Y)						
(Extended Backwall Piles Spacing(mm) : 1200)						

Substructure					
Bridge Component		Last	Now	Explanation of Condition	
(Total Number of Caps/Corbels : 4:2)				2 at A2, 4 at A1.	
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			8	8	
(Type : TREATED TIMBER)					
(Depth(mm) : 300)					
(Width(mm) : 300)					
Backwalls/Breastwalls			4	4	
Greatest Height (m)		2.40			
Wingwalls			5	5	
(Total Number of Bearing Piles : 7:6)				A1 ligt fire damage. A2 shims are loose. 7 TT at A1; 6 TT at A2; 13 total. A1P3-4 missing 25% top. A2P1 banded.	
Piles Detail Ratings					
	N (count)	1 (count)	2 (count)	3 (count)	
Last	0	0	0	0	
Now	0	0	0	0	
Piles			4	4	
Paint/Coating			X	X	
Abutment Stability			7	7	
Scour/Erosion			4	4	
Seepage below backwalls with erosion gullies. Very minor scour. A1 good gully. A2 utp to 300mm gullies (photo). Seepage behind abuts.					
Piers/Bents					
(Type : PIER-SOLID)					
(Total Number of Caps/Corbels : 2:2:1)				2 CIP conc cap W/Z conc shafts, 2 total 1 mass conc shaft, 1 total 1 300X300 TT and 1 150x300 cap for app span above CIP conc caps, 2 total	
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			5	4	
(Type : CONCRETE)					
(Total Number of Bearing Piles : 0:0:0)				Spalling deteriorion on N end of P3, deterioration under truss torque (photo). Some staining of concrete on piers, finish peeling pier 1 & 3. MOD. scaling @ P1,P2,P3 (photo) Scaled conc @ S. bearing P2 due to F/T.	
Piles Detail Ratings					
	N (count)	1 (count)	2 (count)	3 (count)	
Last	0	0	0	0	
Now	0	0	0	0	
Pier Shaft/Piles			5	5	
Greatest Height (m)		11.00			
Bracing/Struts/Sheathing			X	X	
Nose Plate			7	7	
Paint/Coating			5	4	
Medium scaling.					
(Colour Description :)					
(Colour Code :)					
Pier Stability			7	7	
Scour			7	N	
Under high water.					

Substructure				
Bridge Component		Last	Now	Explanation of Condition
Debris (Y/N)	No			
Substructure General Rating		4	4	
Structure Usage				
		Last	Now	Explanation of Condition
Channel				
(U/S Direction : N)				
(D/S Direction : S)				
Alignment		7	7	
Bank Stability		6	6	
HWM (m below Top of Curb)				HWM not apparent.
Drift (Y/N)	No			
Slope Protection		4	4	Erosion gullies from above.
(Type : NATURAL; NATURAL)				
Guidebank/Spurs		X	X	
Adequacy of Opening		8	8	
(Fish Compensation Measure 1 : NONE)				
(Fish Compensation Measure 2 : NONE)				
Channel General Rating		4	4	

Maintenance Recommendations							
Inspector Recommendations	Year	Inspector Comments	Department Comments	Target Year	Est. Cost	Cat #	
REPAIR/REPLACE BRIDGE RAIL	2011	Connect S3 & S4 bridge rails, both sides. Add clip at U8L7S on S3, if not yet done.					
RETROFIT BRIDGE RAIL							
SEAL CURBS							
PATCH DECK	2011	Repair Ekki wood to sub fasteners and patch deck. Patch subdeck in S3, if not yet done. Repair loose clips.					
SEAL DECK							
OVERLAY DECK							
REPLACE STRIP DECK							
REPLACE SUB DECK							
RESET/ PAINT BEARINGS	2011	Replace all expansion brgs with neoprene pads.					
REPAINT SUPERSTRUCTURE	2012	Repaint bridge.					
STRAIGHTEN/REPLACE MEMBERS	2011	2 portal sections - See 2009 UT report.					
WASHING	2011	Pier tops.					
SHOTCRETE REPAIRS							
CORE TIMBER CAPS/CORBELS							
REPAIR/REPLACE TIMBER CAPS							
REPAIR ABUTMENT SCOUR/EROSION	2011	Erosion gullies at each abutment.					
PLACE ADDITIONAL RIP RAP							
REMOVE DRIFT ACCUMULATION							
OTHER ACTION	2011	Patch both approaches.					
OTHER ACTION	2011	Replace missing clip angle at U11S S2.					
OTHER ACTION	2011	Patch approach settlement.					
OTHER ACTION	2011	Apply sealer to pier caps * patch concrete along brgs. Patch conc. @ N end P3 bearing.					
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) (%)	25.0/26.0	Est. Repl. Yr	2035	Maint. Req. (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	Ed Kowal	Previous Assistant's Name	Garry Griffiths
Next Inspection Date	13-Oct-2014	Previous Inspection Date	14-Jul-2009
Inspection Cycle (Default) (months)	39		
Comment			