Bridge Inspection

Bridge File Number	09905 -1 Bridge	Form Type	TH PT PSR PCS
Year Built/Year Supstr	1950/1950	Lot No.	1
		Inspector Name	Arnold Assenheimer
Bridge or Town Name	ATHABASCA	Inspector Class	BR CLS A
Located Over	ATHABASCA RIVER, 8.11, WATERCRS-ST	Assistant Name	Wade Nanninga
Located On	813:02 C1 1.095	Assistant Class	BR CLS B
Water Body Cl./Year		Inspection Date	06-Jan-2011
Navigabil. Cl./Year		Data Entry By	Theresa Lacusta
Legal Land Location	NW SEC 21 TWP 66 RGE 22 W4M	Data Entry Date	03-Feb-2011
Longitude, Latitude	-113:16:29, 54:43:41	Reviewer Name	Stew Hagan
Road Authority	Alberta Transportation (AIT)	Review Date	13-Jan-2011
Contract Main. Area	CMA10	Dept. Reviewer Name	Brent Herrick
Clear Roadway/Skew	7.3 /	Dept. Review Date	08-Feb-2011
AADT/Year	2,300 / 2009 (A)	Follow-Up By	
Road Classification	RAU-209-110		
Detour Length (km)	100		

Allowable Load (t):	Single		Semi		Train		---> 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)	5.6	In Advance (Y/N)	Yes	Lane	SB	On Bridge (m)	5.6	In Advance (Y/N)	Yes
Remarks	Measured 5.85m both sides.											

Required Load Posting (t)			Single		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	Required.							

Hazard Marker At Bridge (Y/N)	Yes
Remarks	Not in line with truss, approx 300mm out of line, not at ends fo bridge.
Other Sign Types	Slippery When Wet, One Truck, Be Prepared to Stop, 35 kmh. Narrow bridge, 60km/h.

Utilities (Located at)

Utility Attachments			
Telephone	Along U/S side, West r/w.	Gas	
Power	30m crossing road @ South approach.	Municipal	
Others		Problem (Y/N)	Yes
Remarks	Looped to allow for future slide. Cable exposed, hanging at North. Broken conduit both ends.		

Approach Road

		Last	Now	Explanation of Condition
Horizontal Alignment		5	5	OK for speed limit.
Vertical Alignment		5	5	6% grade.
Roadway Width (m)	9.000			
Approach Bump		5	5	
Guardrail (Y/N)	Yes			No thrie beam.
Guardrail		3	4	SE section bent. Missing splice bolts.
Length (m)	68.600			
Current Standard (Y/N)	No			
Termination Type	Turned Down			
Drainage		6	6	

Approach Road			
	Last	Now	Explanation of Condition
Approach Road General Rating	**5**	**5**	

Superstructure			
Bridge Component	**Last**	**Now**	**Explanation of Condition**
(Primary Span : **TH, 8 Spans, Lengths(m): 30.5-61-61-61-30.5-15.2-15.2-4.9, A-Ident Number: A0180-02;A0180-03;A0180-04;A0180-01;A0180-05**)			
Special Features			
Special Feature		X	TH - spans 5,6, & 7.
(Type :)			
Special Feature		X	
(Type :)			

Wearing Surface/Deck Top Detail Ratings				
	N (%)	1 (%)	2 (%)	3 (%)
Last	0	0	0	0
Now				

Wearing Surface/Deck Top	4	4	5% rotten/split ends with missing lag screws (loose planks).
(Material Type : **UNTREATED TIMBER**)			
(Plank Thickness(mm) : **75**)			
(Plank Width(mm) : **300**)			
Deck Rideability	5	5	
Deck Joints	X	N	(Expansion plates are loose and banging when traffic rides over. Missing bolts and lags at north abutment SBL- photo. 17/June/2004) Paved over.
Temperature (deg. C) 0			
(Expansion Type : **SLIDING PLATES**)			
(Fixed Type :)			
Gap Size (mm) / Gap Location			
0			
0			
Curbs/Wheel Guards	7	N	Snow covered.
(Curb Type : **Standard**)			
(Type : **TREATED TIMBER**)			
(Thickness(mm) : **150**)			
(Width(mm) : **300**)			
Bridge Rail	4	3	Missing rail bolt-NBL. Double layer. Localized creases in all TH spans W and E rail. Do not meet standard triple layer. All splices missing bolts. 2 rail blocks missing split/rotted. Rail scratched/nicked & rusting.
(Type : **GALVANIZED STEEL FLEX BEAM**)			
Bridge Rail Posts/Blocking	3	3	
(Type : **TREATED TIMBER;TREATED TIMBER**)			
Bridge Rail/Posts Coating	4	4	
(Type : **GALVANIZED**)			
Sidewalk	X	X	

Superstructure

Bridge Component		Last	Now	Explanation of Condition
(Primary Span : **TH, 8 Spans, Lengths(m): 30.5-61-61-61-30.5-15.2-15.2-4.9, A-Ident Number: A0180-02;A0180-03;A0180-04;A0180-01;A0180-05**)				
Wide Load Damage (Y/N)	Yes			HLD to - S2, S3 & S4. L10 & U9 nicked South side. Nicks from WLD. Could not confirm all dimensions of dents/notches due to traffic and narrow bridge. S5 L0U1W - 2 20mm notches, 15x500mm dent inside flange near U1. S5 l0U1E - 2 20mm notches. S5 U3L4W - 5x300mm dent. S5 U5L6W - 5x450mm dent. S5 U7L6W - 7mm notch. S5 U6LW, U7L7W - 5mm notches at chest height. S7 U5L5W - 16x300mm dent adn 5mm notch. Web has slight buckle at connection. Buckle on U/S corner near bearing from earth pressure, minor.-31-May-2008 Missing 3 bolts at S5 L10W 9 bays x 10 bay/span x 3 spans. Not accessible to measure.
High Load Damage (Y/N)	Yes			
Top Chord		4	4	
Batter Posts		4	4	
Sway Bracings		4	4	
Diagonals		5	5	
Verticals		4	4	
Portals		5	5	
Connections		5	5	
Floor Beams		5	5	
Bottom Chord		5	5	
(No. of Stringers : **270;Null;Null**)				
Stringer Detail Ratings				
	N (count)	1 (count)	2 (count)	3 (count)
Last				
Now				
Stringers		6	6	
(Type : **STEEL**)				
(Width(mm) :)				
(Depth(mm) :)				
(Spacing(mm) : **853**)				
Paint Condition		3	3	Rust blisters and scaling in splash zone, pitting.
(Colour Description :)				
(Colour Code :)				
Touchup Required (Y/N)	No			
Bearings		3	3	No anchor bolt in P1 & P3.-31-May-2008 Missing AB in AZ. Bearings are all non-functional due to corrosion, and to distortion due to earth pressures. Roller nests are jammed against anchor bolts or skewed due to being frozen. Disc and dome bearings dislodged.-31-May-2008 iewed from ice-piers snow covered.
Temperature (deg. C)	23			
(Expansion Type : **ROLLER NEST BEARING**)				
(Fixed Type : **DISC & DOME BEARING**)				
Functioning (Y/N)	No			
Sub Deck/Deck Underside		4	4	Timber clips are loose. South hill pushed against truss. Sub deck clamped down near west abutment, loose chips beyond clamps. Loose planks indicate potential rot, or crushing at pier and joint locations. Crushing caused by movement of S hill.
(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)	Yes			
Superstructure General Rating		**3**	**3**	

Superstructure

Bridge Component		Last	Now	Explanation of Condition
(Secondary Span : **PT**)				
Special Features				
Special Feature			5	Span 4 & 8. Span 8 only; bars are corroded. Special feature - post tension (dwyidag bars)
(Type : **EXT LONGIT POST TENS**)				
Special Feature			X	
(Type :)				

Superstructure

Bridge Component	Last	Now	Explanation of Condition
(Secondary Span : **PT**)			
Wearing Surface/Deck Top Detail Ratings			

	N (%)	1 (%)	2 (%)	3 (%)
Last	0	0	0	1
Now	0.0	0.0	0.0	1.0

Wearing Surface/Deck Top	3	3	Loose plank end S8. Some planks split.
(Material Type : **UNTREATED TIMBER**)			
(Plank Thickness(mm) : **75**)			
(Plank Width(mm) : **300**)			
Deck Rideability	6	6	
Deck Joints	N	N	(Loose cover plate at West abutment & over P5, slapping under traffic. 07Aug2007)
Temperature (deg. C) 0			Paved over.
(Expansion Type : **SLIDING PLATES**)			
(Fixed Type :)			
Gap Size (mm) / Gap Location			
Curbs/Wheel Guards	4	N	One split blocking @ SE corner - S8.-31-May-2008
(Curb Type : **Standard**)			
(Type : **TREATED TIMBER**)			
(Thickness(mm) : **150**)			
(Width(mm) : **300**)			
Bridge Rail	4	4	Double layer. Missing splice bolts, typical.
(Type : **GALVANIZED STEEL FLEX BEAM**)			Minor nicks/scratches.
Bridge Rail Posts/Blocking	4	4	Some rust perforations.
(Type : **TREATED TIMBER;TREATED TIMBER**)			
Bridge Rail/Posts Coating	5	5	
(Type : **GALVANIZED**)			
Sidewalk	X	X	
Wide Load Damage (Y/N) No			Missing bolts adn gusset plate at L6E is buckling S4.
Top Chord	6	6	
Batter Posts	4	5	
Diagonals	7	7	Rusting, blistering.
Verticals	7	7	
Connections	4	4	S4 L0W - missing 4 bolts, S4 L6W - missing 4 bolts, S4 L6E - missing 2 bolts at FB connection.
Floor Beams	5	5	9 bay x 6 bay/span x 2 span.
Bottom Chord	5	5	Not accessible to measure.
Lateral Bracings	6	6	
(No. of Stringers : **108;Null**)			
Stringer Detail Ratings			

	N (count)	1 (count)	2 (count)	3 (count)
Last				
Now				

Stringers	6	6	
(Type : **STEEL**)			
(Width(mm) :)			
(Depth(mm) :)			
(Spacing(mm) : **853**)			

Superstructure				
Bridge Component		**Last**	**Now**	**Explanation of Condition**
(Secondary Span : **PT**)				
Paint Condition		3	3	Corroding. Silver.
(Colour Description :)				
(Colour Code :)				
Touchup Required (Y/N)	No			
Bearings		3	3	Girders jammed together. Cracked/spalled South bearing pad on P3. Bearings are all non-funtional due to corrosion and to distortion due to earth pressures. Roller nests are jammed against anchor bolts or skewed due to being frozen. Disc and dome bearings dislodged. Two anchor bolts missing.-31-May-2008
Temperature (deg. C)	18			
(Expansion Type : **ROLLER NEST BEARING**)				
(Fixed Type : **DISC & DOME BEARING**)				
Functioning (Y/N)	No			
Sub Deck/Deck Underside		4	4	Cracked ends, loose clips. Loose strip deck planks may indicate rot in subdeck.
(Material Type : **TREATED TIMBER**)				
(Plank Thickness(mm) : **100**)				
(Plank Width(mm) : **300**)				
Defects (Percent Area)	3			
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 : **PM**)				
Special Features				
Special Feature			X	Span 2 & 3.
(Type :)				
Special Feature			X	
(Type :)				
Wearing Surface/Deck Top Detail Ratings				
	N (%)	1 (%)	2 (%)	3 (%)
Last	0	0	0	0
Now				
Wearing Surface		6	6	
(Material Type : **ACP**)				
(Thickness(mm) : **50**)				
Lateral Connection Problem (Y/N)	Yes			
Deck Top		N	N	
Deck Rideability		7	7	
Deck Joints		N	N	Paved over.
Temperature (deg. C)	0			
(Expansion Type : **SLIDING PLATES**)				
(Fixed Type :)				
Gap Size (mm)	Gap Location			
25	Pier 5			

Superstructure				
Bridge Component		**Last**	**Now**	**Explanation of Condition**
(Secondary Span : **PM**)				
Deck Drainage		7	7	
Drains Clogged (Y/N)	No			
Curbs/Median		4	4	Exposed rebar on a curb, scaling, cracked E curb S2.
(Curb Type : **Standard**)				
Scaling (Percent Area)	15			
Bridge Rail		4	4	Single layer. Missing splice bolts, typical. Missing/loose nuts on 25% of post anchor bolts.
(Type : **GALVANIZED STEEL FLEX BEAM**)				
Bridge Rail Posts		3	3	
(Type : **GALVANIZED POST STEEL;GALVANIZED POST STEEL**)				Dirty.
Bridge Rail/Posts Coating		7	7	
(Type : **GALVANIZED**)				
Sidewalk		X	X	
Girder Detail Ratings				

	N (count)	1 (count)	2 (count)	3 (count)
Last	0	0	0	0
Now				

Girders		4	4	Corrosin stains, minor. Curb girder with spot corrosion - both spans. Shallow delams in G9 of both spans.
Cracking (Y/N)	No			
Spalling (Percent Area)	0			
(Number Of Girders : **18**)				
Diaphragms/Cross Frame		X	X	
Bearings		5	4	P3 - Neoprene Strip. P2 - 100 x 300 timbers on flat stacked 4 high.-split/cracked and leaning.
Temperature (deg. C)	0			
(Expansion Type : **ROLLER NEST BEARING**)				
(Fixed Type : **DISC & DOME BEARING**)				
Coating Adequate (Y/N)	Yes			
Functioning (Y/N)	Yes			
Deck Underside		N	N	
Stains (Percent Area)				
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 : **HC**)				
Special Features				
Special Feature			X	S1
(Type :)				
Special Feature			X	
(Type :)				
Wearing Surface/Deck Top Detail Ratings				

	N (%)	1 (%)	2 (%)	3 (%)
Last	0	0	0	0
Now				

Superstructure

Bridge Component		Last	Now	Explanation of Condition
(Secondary Span : **HC**)				
Wearing Surface		6	6	Longitudinal crack in ACP.
(Material Type : **ACP**)				
(Thickness(mm) : **50**)				
Lateral Connection Problem (Y/N)	Yes			
Deck Top		N	N	
Deck Rideability		7	7	
Deck Joints		N	N	
Bump (Y/N)	No			
Deck Drainage		7	7	
Drains Clogged (Y/N)	No			
Curbs/Median		4	4	Cracked E curb. Scaling, rebar exposed. Delams along E curb.
(Curb Type : **Standard**)				
Scaling (Percent Area)	25			
Bridge Rail		4	4	Single layer. Spliced incorrectly. Rail transition truss to precast poor. Missing/loose nuts on 50% of posts.
(Type : **GALVANIZED STEEL FLEX BEAM**)				
Bridge Rail Posts		3	3	
(Type : **GALVANIZED POST STEEL**)				
Bridge Rail/Posts Coating		7	7	
(Type : **GALVANIZED**)				
Sidewalk		X	X	
Girder Detail Ratings				

	N (count)	1 (count)	2 (count)	3 (count)
Last	0	0	0	2
Now	0	0	0	2

S1 G6 has spall and wide cracks in both legs with sound concrete around exposed rebar. S1 G7 has wide crack with sound concrete in one leg and spall with sound concrete in the other leg.
G8 WLC 1 leg sound concrete.

Girders		3	3	Small crawl space between roof slab & girder. West end of girders supported by 100 x 300 timber stacked 5 high on flat sitting on concrete slab. Grout deteriorated G1 W curb.-31-May-2008
Last Complete Inspection Date	06-Jan-2011			
Cracking (Y/N)	Yes			
Spalling (Percent Area)	5			
Lift or Connector Pocket Grouted (Y/N)	Yes			
(Number Of Girders : **9**)				
Span Alignment Problems				
Vertical (Y/N)	No			The south hill pushes the bridge.
Horizontal (Y/N)	Yes			
Superstructure General Rating		**3**	**3**	

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**)							S abutment not visible.
Bearing Seats/Caps/Corbels Detail Ratings							
	N (count)	1 (count)	2 (count)	3 (count)			
Last	0	0	0	0			
Now							
Bearing Seats/Caps/Corbels					5	5	
(Type : **CONCRETE**)							
(Depth(mm) :)							
(Width(mm) :)							
Backwalls/Breastwalls					4	4	N breastwall, heavy scaling. N abutment. Tops of ww at North scaling.
Greatest Height (m)	0.50						
Wingwalls					5	5	
(Total Number of Bearing Piles : **0:0**)							
Piles Detail Ratings							
	N (count)	1 (count)	2 (count)	3 (count)			
Last	1	0	0	0			
Now	1	0	0	0			
Piles					N	N	
Paint/Coating					X	X	
Abutment Stability					4	4	South is moving.
Scour/Erosion					7	4	Erosion gully at N & S headslopes.
Piers/Bents							
(Type : **PIER-SOLID**)							4 river piers, 1 conc. pier, 2 pile piers. Pier 6 missing part of the nose and concrete abraded exposing rebar. Spalled cap at P2 over PM girder. P6 cap cracked/spalled. P1 supported by 100 x 300 timber on flat. Stacked 5 high on concrete slab, rotating, leaning, split at E end. Pier 7 spalled at bearing anchorage repairs.
(Total Number of Caps/Corbels : **19:1:1:1:1:1:1**)							
Bearing Seats/Caps/Corbels Detail Ratings							
	N (count)	1 (count)	2 (count)	3 (count)			
Last	0	0	0	1			
Now	0	0	0	2			
Bearing Seats/Caps/Corbels					3	3	
(Type : **CONCRETE**)							
(Total Number of Bearing Piles : **14:5:0:0:0:0:0**)							P2, P3 have pinned bearings @ base of piles/columns. Spalled/delam @ base of P3, typical both columns.
Piles Detail Ratings							
	N (count)	1 (count)	2 (count)	3 (count)			
Last	0	0	0	0			
Now							
Pier Shaft/Piles					4	4	
Greatest Height (m)	12.60						
Bracing/Struts/Sheathing					5	5	
Nose Plate					3	3	Missing part of nose plate P6.
Paint/Coating					4	4	P2 column bearings corroding and paint peeling from pipe piles.
(Colour Description : **BLUE**)							
(Colour Code : **15182**)							
Pier Stability					4	4	S slope movment rotating timber caps at P1. P2W - leaning 95mm uphill. P2E - leaning 115mm uphill. P3W - leaning 45mm uphill. P3E - leaning 5mm downhill.-31-May-2008
Scour					N	N	
Debris (Y/N)	No						

Substructure				
Bridge Component		**Last**	**Now**	**Explanation of Condition**
Substructure General Rating		**3**	**3**	

Structure Usage				
		Last	**Now**	**Explanation of Condition**
Channel				
(U/S Direction : **W**)				
(D/S Direction : **E**)				
Alignment		7	7	
Bank Stability		4	4	South hill slides putting entire bridge under stress.
HWM (m below Top of Curb)				HWM not visible.
Drift (Y/N)	No			
Slope Protection		7	7	
(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	Replace timber blocks; add splice bolts, place/tighten anchor bolt nuts.				
GALVANIZE/PAINT BRIDGE RAIL						
RETROFIT BRIDGE RAIL						
SEAL CURBS	2011	Replace 1 TT block. Repair curb faced spans 1-3, if not done.				
PATCH DECK	2011	Replace old planks, secure loose planks.				
SEAL DECK						
OVERLAY DECK						
REPAIR/REPLACE DECK JOINTS						
REPLACE STRIP DECK						
REPLACE SUB DECK	2011	Patch subdeck next major rehab. Tighten subdeck clips.				
RESET/ PAINT BEARINGS	2011	Replace all expansion bearings, reset fixed bearings. Replace missing A/Bs @ bearing, pull back spans to create space.				
REPAINT SUPERSTRUCTURE						
STRAIGHTEN/REPLACE MEMBERS	2011	Install 36 bolts. Grind out nicks and heat straighten as detaile din 2008 UT report.				
WASHING						
SHOTCRETE REPAIRS						
CORE TIMBER CAPS/CORBELS						
REPAIR/REPLACE TIMBER CAPS	2011	Replace 100 x 300 timber caps @ P1.				
REPAIR ABUTMENT SCOUR/EROSION						
PLACE ADDITIONAL RIP RAP						
REMOVE DRIFT ACCUMULATION						
INSTALL STRUTS						
OTHER ACTION	2011	Advise Telus of separated conduit.				
OTHER ACTION	2011	Patch spalled/cracked pier caps.				
OTHER ACTION	2011	Replace P6 nose plate.				
OTHER ACTION	2011	Reset HMs to standard.				
OTHER ACTION	2011	Assess load capacity, post load limit if necessary.				
OTHER ACTION						
OTHER ACTION						
OTHER ACTION						
OTHER ACTION						
OTHER ACTION						
OTHER ACTION						
OTHER ACTION						
OTHER ACTION						
OTHER ACTION						
OTHER ACTION						

Maintenance Recommendations						
OTHER ACTION						
OTHER ACTION						

Structural Condition Rating (Last/Now) (%)	**33.3/33.3**	**Sufficiency Rating (Last/Now) (%)**	**36.2/36.2**	Est. Repl. Yr	2020	Maint. Reqd. (Y/N)	Yes

Special Comments for Next Inspection	Monitor girders for any deterioration from current condition. Monitor South headslope movements.	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	Randy Bredo	Previous Assistant's Name	Bryce Clayton
Next Inspection Date	06-Apr-2014	Previous Inspection Date	31-May-2008
Inspection Cycle (Default) (months)	39		
Comment			