Bridge Culvert Inspection

Bridge File Number	77195 -1 Bridge Culvert	Form Type	CUL1
Year Built	1970	Lot No.	2
Bridge or Town Name	ENTRANCE	Inspector Name	Shane Hall
Located Over	FOX CREEK, 8.11.118.12.1, WATERCRS-ST	Inspector Class	BR CLS A
		Assistant Name	
Located On	40:32 C1 9.930	Assistant Class	
Water Body Cl./Year		Inspection Date	18-Oct-2012
Navigabil. Cl./Year		Data Entry By	Theresa Lacusta
Legal Land Location	NW SEC 32 TWP 54 RGE 2 W6M	Data Entry Date	26-Nov-2012
Longitude, Latitude	-118:16:03, 53:42:50	Reviewer Name	Eric Carcoux
Road Authority	Alberta Transportation (AIT)	Review Date	19-Nov-2012
Contract Main. Area	CMA05	Dept. Reviewer Name	Brent Herrick
Clear Roadway/Skew	8.3 / -30 deg. (LHF)	Dept. Review Date	06-Dec-2012
AADT/Year	1,090 / 2011 (A)	Follow-Up By	
Road Classification	RAU-209-110		
Detour Length (km)	420		

Bridge Culvert Information

Number of Culverts		1						
Pipe #	Barrel	Span	Rise (or Dia.)	Type	Length	Corr. Profile	Pl./Slab Thickness	Shape
1	MAIN	4390	4841	SPE	64.6	152X51	4.8	ELLIPSE
Special Features		SHOTCRETE BEAM						
Special Features Comment								

Utilities (Located at)

Utility Attachments			
Telephone	West r/w.	Gas	
Power		Municipal	
Others		Problem (Y/N)	No
Remarks	File tag installed in top of West roof.		

Approach Road / Embankment

		Last	Now	Explanation of Condition
Horizontal Alignment		7	7	Land access 100m north.
Vertical Alignment		6	6	In sag curve with limited sight distance both directions. No passing NB.
Roadway Width (m)	8.300			
Embankment		N	6	
Sideslope (__:1)	3.0			
(Height of Cover(m) : **6**)				
Guardrail (Y/N)	Yes			Broken TT post @ NW corner - photo. 2 damaged sections of W-beam @ SE corner.-photo 2 broken TT posts @ SW corner.-photo
Approach Road / Embankment General Rating		**6**	**6**	

Upstream End

Culvert Component		**Last**	**Now**	**Explanation of Condition**
Direction		W		
End Treatment (Concrete, Steel, Others, None)	CONCRETE			
Headwall		X	X	
Collar		N	4	Hairline cracks in collar 1.0 m apart. Concrete on the side of the bevel has settled 500mm. Wide crack at NW corner.
Wingwalls		X	X	
(Shape :)				

Upstream End				
Culvert Component		**Last**	**Now**	**Explanation of Condition**
Cutoff Wall		N	X	No cutoff wall confirmed Oct 18, 2012.
Bevel End		6	6	
Heaving (mm)	50			
Invert Above/Below Stream Bed	BELOW			
Above/Below (mm)	500			
Scour Protection		N	5	Concrete placed over rock in apron is broken up and failed. Riprap functioning.
(Type : **RIP RAP**)				
(Avg. Rock Size(mm) : **250**)				
Scour/Erosion		N	5	
Beavers (Y/N)	No			
Upstream End General Rating		**4**	**4**	

Bridge Culvert Barrel				
Culvert Component		**Last**	**Now**	**Explanation of Condition**
(Pipe # : **1, Primary Span, Location Code: MAIN, Span (mm): 4390, Rise (mm): 4841, Type: SPE**)				
Barrel Last Accessible Date	18-Oct-2012			
Special Features				
Special Feature		7	6	
(Type : **SHOTCRETE BEAM**)				
Special Feature				
(Type :)				
Roof		5	5	
Measured Rise (mm)	4641			
Measured At Ring No.	9			
Sag (mm)	200			
Percent Sag	4			
Sidewall		5	3	
Measured Span (mm)	4558			Could not reach springline to confirm. Measurement taken Nov 24, 2010. 3.8% Sidewall rating affected by cracked rings.
Measured At Ring No.	9			
Deflection (mm)	168			
Percent Deflection	4			
Floor		N	5	Rated visible portions. Majority covered by rock/gravel.
Bulge (mm)	0			
Measured At Ring No.				
Abrasion (Y/N)	Yes			
Circumferential Seams		7	7	What is visible.
Separation (mm)	0			
Longitudinal Seams		4	3	Rings 12, 13 & 14 crack 4:00 S wall. 4:00 seam is poorly torqued. Haunch backfill suspect. Rated visible seams, missing 3 bolts in R2/R3 @ 9 o'clock. Missing nut on one bolt @ 2 o'clock seam in R2.
Total No. of Cracked Rings	3			
Total No. of Rings with Two Cracked Seams				
Min. Remaining Steel Between Cracks (mm)				
Proper Lap (Y/N)	No			
Longitudinal Stagger (Y/N)	No			
Coating		6	6	Some superficial rust along floor.
Corrosion By Soil (Y/N)	No			
Corrosion By Water (Y/N)	Yes			
Camber POS/ZERO/NEG	NEG			

Bridge Culvert Barrel				
Culvert Component		**Last**	**Now**	**Explanation of Condition**
(Pipe # : **1, Primary Span, Location Code: MAIN, Span (mm): 4390, Rise (mm): 4841, Type: SPE**)				
Ponding (Y/N)	No			
Fish Passage Adequacy		5	3	Perched outlet.
Baffle		X	X	
(Type :)				
Waterway Adequacy		5	4	Iced up to 2/5 diameter. (27/June/2007)
Icing (Y/N)	Yes			Large scour hole d/s.
Silting (Y/N)	Yes			
Drift (Y/N)	No			
Barrel General Rating		**4**	**3**	

Downstream End				
Culvert Component		**Last**	**Now**	**Explanation of Condition**
Direction		E		
End Treatment (Concrete, Steel, Others, None)	STEEL			
Headwall		X	X	
Collar		X	X	
Wingwalls		X	X	
(Shape :)				
Cutoff Wall		X	X	
Bevel End		5	5	Bevel perched for 1m.
Heaving (mm)	300			
Invert Above/Below Stream Bed	ABOVE			
Above/Below (mm)	300			
Scour Protection		4	4	Scour @ d/s end.
(Type : **RIP RAP**)				
(Avg. Rock Size(mm) : **500**)				
Scour/Erosion		4	4	10mx10m scour hole @ outlet.
Beavers (Y/N)	No			
Downstream End General Rating		**4**	**4**	

Structure Usage				
		Last	**Now**	**Explanation of Condition**
Channel (U/S and D/S)				
Alignment		8	8	
Bank Stability		8	8	
HWM (m below Top of Culvert)				HWM not visible.
Drift (Y/N)	No			
Channel Bottom Degrading/Aggrading	DEGRADING			(Downstream.
Beavers (Y/N)	No			
(Fish Compensation Measure 1 : **NONE**)				
(Fish Compensation Measure 2 : **NONE**)				
Channel General Rating		**8**	**8**	

Maintenance Recommendations

Inspector Recommendations	Year	Inspector Comments	Department Comments	Target Year	Est. Cost	Cat #
SHOTCRETE REPAIRS						
PLACE ADDITIONAL RIP RAP						
REMOVE DRIFT ACCUMULATION						
INSTALL CONCRETE/STEEL LINING						
INSTALL STRUTS						
INSTALL CONCRETE COLLAR/CUTOFF						
REPAIR SEAMS						
OTHER ACTION						
OTHER ACTION	2013	Replace broken TT posts and damaged with beam section.				
OTHER ACTION						
OTHER ACTION						

Structural Condition Rating (Last/Now) (%)	**44.4/33.3**	**Sufficiency Rating (Last/Now) (%)**	**45.8/29.8**	Est. Repl. Yr	2023	Maint. Reqd. (Y/N)	Yes

Special Comments for Next Inspection	Monitor collar, d/s erosion.	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	Shane Hall	Previous Assistant's Name			
Next Inspection Date	18-Jul-2014	Previous Inspection Date	24-Nov-2010		
Inspection Cycle (Default) (months)	21				
Comment					