Bridge Culvert Inspection

Bridge File Number	09103 -1 Bridge Culvert	Form Type	CUL1
Year Built	1956	Lot No.	1
Bridge or Town Name	CAMROSE	Inspector Name	Owen Salava
Located Over	TRIBUTARY TO DRIEDMEAT CREEK, 5.40.2, WATERCRS-ST	Inspector Class	BR CLS A
		Assistant Name	
Located On	26:10 C1 9.220	Assistant Class	
Water Body Cl./Year		Inspection Date	06-Nov-2012
Navigabil. Cl./Year		Data Entry By	Marcia Chavez
Legal Land Location	SE SEC 1 TWP 47 RGE 19 W4M	Data Entry Date	20-Nov-2012
Longitude, Latitude	-112:38:10, 53:01:05	Reviewer Name	John O'Brien
Road Authority	Alberta Transportation (AIT)	Review Date	14-Nov-2012
Contract Main. Area	CMA16	Dept. Reviewer Name	Andrew Smikles
Clear Roadway/Skew	15.2 /	Dept. Review Date	26-Nov-2012
AADT/Year	1,900 / 2011 (A)	Follow-Up By	
Road Classification	RCU-209-110		
Detour Length (km)	6		

Bridge Culvert Information

Number of Culverts		1						
Pipe #	Barrel	Span	Rise (or Dia.)	Type	Length	Corr. Profile	Pl./Slab Thickness	Shape
1	MAIN	2134	1549	RPP	31	152X51	2.8	PIPE ARCH
Special Features		BARREL ELBOW						
Special Features Comment								

Utilities (Located at)

Utility Attachments			
Telephone	South r/w.	Gas	
Power	2 wires 25m North of c/l.	Municipal	
Others		Problem (Y/N)	No
Remarks			

Approach Road / Embankment

		Last	Now	Explanation of Condition
Horizontal Alignment		7	7	"T" intersection from North 15m East, SH 834. Turning lanes, 15.2m over pipe.
Vertical Alignment		9	9	
Roadway Width (m)	15.200			
Embankment		7	7	
Sideslope (__:1)	3.0			
(Height of Cover(m) : **1.6**)				
Guardrail (Y/N)	No			
Approach Road / Embankment General Rating		**7**	**7**	

Upstream End

Culvert Component		Last	Now	Explanation of Condition
Direction		N		
End Treatment (Concrete, Steel, Others, None)	STEEL			
Headwall		X	X	
Collar		X	X	
Wingwalls		X	X	
(Shape :)				
Cutoff Wall		X	X	

Upstream End				
Culvert Component		**Last**	**Now**	**Explanation of Condition**
Bevel End		7	7	
Heaving (mm)	0			
Invert Above/Below Stream Bed	BELOW			
Above/Below (mm)	200			
Scour Protection		6	6	Limited amount of rock, well grassed. Overgrown with vegetation.
(Type : **RIP RAP**)				
(Avg. Rock Size(mm) : **250**)				
Scour/Erosion		6	6	
Beavers (Y/N)	No			
Upstream End General Rating		**6**	**6**	

Bridge Culvert Barrel				
Culvert Component		**Last**	**Now**	**Explanation of Condition**
(Pipe # : **1, Primary Span, Location Code: MAIN, Span (mm): 2134, Rise (mm): 1549, Type: RPP**)				
Barrel Last Accessible Date	06-Nov-2012			600mm water.
Special Features				
Special Feature		5	5	4m in from North end.
(Type : **BARREL ELBOW**)				
Special Feature				
(Type :)				
Roof		4	4	4m from upstream end. Two roof seams are cusping inward from poor nesting & torquing of plates - photo.
Measured Rise (mm)	1490			
Measured At Ring No.				
Sag (mm)	59			3.8%
Percent Sag	3			
Sidewall		6	6	4m from u/s end.
Measured Span (mm)	2170			
Measured At Ring No.				
Deflection (mm)	36			
Percent Deflection	1			
Floor		N	N	~0.5m ice/water. Superficial corrosion below normal waterline.
Bulge (mm)	0			
Measured At Ring No.				
Abrasion (Y/N)	No			
Circumferential Seams		5	5	Rated @ welded bend seam near U/S end.
Separation (mm)	0			
Longitudinal Seams		4	4	4m from upstream end. 3 roof seams are cusping inward from poor nesting & torquing of plates - photo.
Total No. of Cracked Rings	0			
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		4	4	Scaling & pitting rust below waterline lower 1/3. Alkaline stains in bolt holes.
Corrosion By Soil (Y/N)	Yes			
Corrosion By Water (Y/N)	Yes			
Camber POS/ZERO/NEG	NEG			
Ponding (Y/N)	Yes			Barrel at low point between both ends.

Bridge Culvert Barrel				
Culvert Component		**Last**	**Now**	**Explanation of Condition**
(Pipe # : **1, Primary Span, Location Code: MAIN, Span (mm): 2134, Rise (mm): 1549, Type: RPP**)				
Fish Passage Adequacy		7	7	
Baffle		X	X	
(Type :)				
Waterway Adequacy		7	7	
Icing (Y/N)	No			
Silting (Y/N)	No			
Drift (Y/N)	No			
Barrel General Rating		**4**	**4**	

Downstream End				
Culvert Component		**Last**	**Now**	**Explanation of Condition**
Direction		S		
End Treatment (Concrete, Steel, Others, None)	STEEL			
Headwall		X	X	
Collar		X	X	
Wingwalls		X	X	
(Shape :)				
Cutoff Wall		X	X	
Bevel End		7	6	
Heaving (mm)	0			
Invert Above/Below Stream Bed	BELOW			
Above/Below (mm)	200			
Scour Protection		6	6	Overgrown with vegetation.
(Type : **RIP RAP**)				
(Avg. Rock Size(mm) : **250**)				
Scour/Erosion		6	6	
Beavers (Y/N)	No			
Downstream End General Rating		**6**	**6**	

Structure Usage				
		Last	**Now**	**Explanation of Condition**
Channel (U/S and D/S)				
Alignment		6	6	Bends, curves to highway ditch @ both ends.
Bank Stability		6	6	
HWM (m below Top of Culvert)				HWM not visible.
Drift (Y/N)	No			
Channel Bottom Degrading/Aggrading				Unknown.
Beavers (Y/N)	No			
(Fish Compensation Measure 1 : **NONE**)				
(Fish Compensation Measure 2 : **NONE**)				
Channel General Rating		**6**	**6**	

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	2013	Strut pipe if replacement not upcoming.				
INSTALL CONCRETE COLLAR/CUTOFF						
REPAIR SEAMS						
OTHER ACTION	2015	Replace pipe.				
OTHER ACTION						
OTHER ACTION						
OTHER ACTION						

Structural Condition Rating (Last/Now) (%)	**44.4/44.4**	**Sufficiency Rating (Last/Now) (%)**	**58.3/58.3**	Est. Repl. Yr	2015	Maint. Reqd. (Y/N)	Yes

Special Comments for Next Inspection	(Replace pipe if hwy widened due to corrosion. 30May2006). Monitor roof seam cusping at future inspections until pipe is replaced.	Department Comments	

Maintenance Reviewed By		Date		Estimated Total	0
Proposed Long-Term Strategy	2004.05.28 Monitor normal BIM. Should be good until 2015.				
On 3-Year Program (Y/N)					
Proposed Action					
Previous Inspector's Name	Dave Lam	Previous Assistant's Name			
Next Inspection Date	06-Aug-2014	Previous Inspection Date	10-Dec-2010		
Inspection Cycle (Default) (months)	21				
Comment					

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	2013	Strut pipe if replacement not upcoming.	Defer, deflection not an issue at the present time			
INSTALL CONCRETE COLLAR/CUTOFF						
REPAIR SEAMS						
OTHER ACTION	2015	Replace pipe.	Programmed	2022		
OTHER ACTION						
OTHER ACTION						
OTHER ACTION						

Structural Condition Rating (Last/Now) (%)	**44.4/44.4**	**Sufficiency Rating (Last/Now) (%)**	**58.3/58.3**	Est. Repl. Yr	2015	Maint. Reqd. (Y/N)	Yes

Special Comments for Next Inspection	(Replace pipe if hwy widened due to corrosion. 30May2006). Monitor roof seam cusping at future inspections until pipe is replaced.	Department Comments	Replacement programmed for 2022

Maintenance Reviewed By	Andrew Smikles	Date	19-Dec-2012	Estimated Total	0
Proposed Long-Term Strategy	2004.05.28 Monitor normal BIM. Should be good until 2015.				
On 3-Year Program (Y/N)					
Proposed Action					

Previous Inspector's Name	Dave Lam	Previous Assistant's Name	
Next Inspection Date	06-Aug-2014	Previous Inspection Date	10-Dec-2010
Inspection Cycle (Default) (months)	21		
Comment			