

Bridge Culvert Inspection				
Bridge File Number	09172 -2 Bridge Culvert		Form Type	CUL1
Year Built	1955		Lot No.	1
Bridge or Town Name	BULWARK		Inspector Name	Owen Salava
Located Over	TRIBUTARY TO NELSON CREEK, 5.18.2, WATERCRS-ST		Inspector Class	BR CLS A
Located On	599:04 C1 25.416		Assistant Name	
Water Body Cl./Year			Assistant Class	
Navigabil. Cl./Year			Inspection Date	17-Sep-2012
Legal Land Location	SW SEC 2 TWP 38 RGE 11 W4M		Data Entry By	Marcia Chavez
Longitude, Latitude	-111:28:24, 52:13:49		Data Entry Date	22-Oct-2012
Road Authority	Alberta Transportation (AIT)		Reviewer Name	John O'Brien
Contract Main. Area	CMA21		Review Date	27-Sep-2012
Clear Roadway/Skew	8.6 /		Dept. Reviewer Name	Andrew Smikles
AADT/Year	730 / 2011 (A)		Dept. Review Date	22-Oct-2012
Road Classification	RCU-208-110		Follow-Up By	
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	U/S	1810	1118	FP	13.2	68X13		ARCH
1	MAIN	1810	1118	FP	20.7	68X13		ARCH
Special Features	VERT TIMBER STRUTS							
Special Features Comment								

Utilities (Located at)			
Utility Attachments			
Telephone		Gas	
Power	3 wire North r/w.	Municipal	
Others		Problem (Y/N)	No
Remarks			

Approach Road / Embankment				
		Last	Now	Explanation of Condition
Horizontal Alignment		8	8	2nd pipe from West; 0.25km from Range Rd. 11-2.
Vertical Alignment		8	8	
Roadway Width (m)	8.600			
Embankment		8	8	
Sideslope (___:1)	3.0			
(Height of Cover(m) : 0.9)				
Guardrail (Y/N)	No			
Approach Road / Embankment General Rating		8	8	

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 :)				

Upstream End				
Culvert Component		Last	Now	Explanation of Condition
Cutoff Wall		X	X	
Bevel End		6	6	
Heaving (mm)	0			
Invert Above/Below Stream Bed	BELOW			
Above/Below (mm)	20			
Scour Protection		7	7	
(Type : RIP RAP)				
(Avg. Rock Size(mm) : 250)				
Scour/Erosion		7	7	
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: U/S, Span (mm): 1810, Rise (mm): 1118, Type: FP)				
Barrel Last Accessible Date	17-Sep-2012			
Special Features				
Special Feature			5	2 struts at R3 (photo).
(Type : VERT TIMBER STRUTS)				
Special Feature				
(Type :)				
Roof		5	2	Localized bulge at strut location stabilized; minimum of 1050 beyond struts.
Measured Rise (mm)	820			
Measured At Ring No.	3			26.7%
Sag (mm)	290			
Percent Sag	27			
Sidewall		6	6	
Measured Span (mm)	1880			
Measured At Ring No.	2			
Deflection (mm)	70			3.9%
Percent Deflection	4			
Floor		5	5	
Bulge (mm)	0			
Measured At Ring No.				
Abrasion (Y/N)	No			
Circumferential Seams		6	6	
Separation (mm)	0			
Longitudinal Seams		X	X	
Total No. of Cracked Rings				
Total No. of Rings with Two Cracked Seams				
Min. Remaining Steel Between Cracks (mm)				
Proper Lap (Y/N)				
Longitudinal Stagger (Y/N)				
Coating		5	5	Floor, minor pitting.
Corrosion By Soil (Y/N)	No			
Corrosion By Water (Y/N)	Yes			
Camber POS/ZERO/NEG	ZERO			

Bridge Culvert Barrel				
Culvert Component		Last	Now	Explanation of Condition
(Pipe # : 1, Primary Span, Location Code: U/S, Span (mm): 1810, Rise (mm): 1118, Type: FP)				
Ponding (Y/N)	No			
Fish Passage Adequacy		6	6	
Baffle		X	X	
(Type :)				
Waterway Adequacy		7	7	
Icing (Y/N)	No			
Silting (Y/N)	No			
Drift (Y/N)	No			
Barrel Extension General Rating		5	4	GR increased by 2 points since roof strutted locally; LRA for roof bulge.
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		6	6	
Heaving (mm)	0			
Invert Above/Below Stream Bed	ABOVE			
Above/Below (mm)	100			
Scour Protection		7	7	
(Type : RIP RAP)				
(Avg. Rock Size(mm) : 200)				
Scour/Erosion		7	7	
Beavers (Y/N)	No			
Downstream End General Rating		6	6	
Structure Usage				
		Last	Now	Explanation of Condition
Channel (U/S and D/S)				
Alignment		8	8	Large slough, no defined banks.
Bank Stability		8	8	
HWM (m below Top of Culvert)				HWM not visible.
Drift (Y/N)	No			
Channel Bottom Degrading/Aggrading	DEGRADING			
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										
OTHER ACTION										
OTHER ACTION										
Structural Condition Rating (Last/Now) (%)	44.4/44.4	Sufficiency Rating (Last/Now) (%)	60.1/60.0	Est. Repl. Yr	2019	Maint. Req. (Y/N)	No			
Special Comments for Next Inspection	LRA for roof bulge emailed to Donald Saunders (AT) on 25Sep2012. Revised CUL1 form per 17Sep2012 inspection; confirm rings measured 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								
Next Inspection Date	17-Sep-2013	Previous Inspection Date	02-Nov-2009							
Inspection Cycle (Modified) (months)	12									
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						
INSTALL CONCRETE COLLAR/CUTOFF						
REPAIR SEAMS						
OTHER ACTION						
OTHER ACTION						
OTHER ACTION						
OTHER ACTION						
Structural Condition Rating (Last/Now) (%)	44.4/44.4	Sufficiency Rating (Last/Now) (%)	60.1/60.0	Est. Repl. Yr	2019	Maint. Req. (Y/N) No
Special Comments for Next Inspection	LRA for roof bulge emailed to Donald Saunders (AT) on 25Sep2012. Revised CUL1 form per 17Sep2012 inspection; confirm rings measured next inspection.		Department Comments	DA		
Maintenance Reviewed By	Darron Ahlstedt		Date	11-Dec-2012	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			
Next Inspection Date	17-Sep-2013		Previous Inspection Date	02-Nov-2009		
Inspection Cycle (Modified) (months)	12					
Comment						