

Bridge Culvert Inspection				
Bridge File Number	74518 -1 Bridge Culvert		Form Type	CUL1
Year Built	1957		Lot No.	1
Bridge or Town Name	BULWARK		Inspector Name	Owen Salava
Located Over	TRIBUTARY TO NELSON CK, 5.18.3, WATERCRS-ST		Inspector Class	BR CLS A
Located On	599:04 C1 27.148		Assistant Name	
Water Body Cl./Year			Assistant Class	
Navigabil. Cl./Year			Inspection Date	29-Jun-2012
Legal Land Location	SW SEC 1 TWP 38 RGE 11 W4M		Data Entry By	Marcia Chavez
Longitude, Latitude	-111:26:52, 52:13:49		Data Entry Date	15-Jul-2012
Road Authority	Alberta Transportation (AIT)		Reviewer Name	John O'Brien
Contract Main. Area	CMA21		Review Date	05-Jul-2012
Clear Roadway/Skew	8.5 /		Dept. Reviewer Name	Andrew Smikles
AADT/Year	730 / 2011 (A)		Dept. Review Date	19-Jul-2012
Road Classification	RCU-209-110		Follow-Up By	
Detour Length (km)	6			

Bridge Culvert Information								
Number of Culverts	1							
Pipe #	Barrel	Span	Rise (or Dia.)	Type	Length	Corr. Profile	PI./Slab Thickness	Shape
1	MAIN	1829	1118	FP	23.8		3.5	ARCH
Special Features								
Special Features Comment								

Utilities (Located at)			
Utility Attachments			
Telephone	South r/w.	Gas	75m east crossing 5599.
Power		Municipal	
Others		Problem (Y/N)	No
Remarks			

Approach Road / Embankment				
		Last	Now	Explanation of Condition
Horizontal Alignment		8	8	Crest curve 100m West.
Vertical Alignment		7	7	
Roadway Width (m)	8.500			
Embankment		7	7	
Sideslope (__:1)	3.0			
(Height of Cover(m) : 1.8)				
Guardrail (Y/N)	No			
Approach Road / Embankment General Rating		7	7	

Upstream 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	

Upstream End				
Culvert Component		Last	Now	Explanation of Condition
Bevel End		5	5	
Heaving (mm)	0			
Invert Above/Below Stream Bed	BELOW			
Above/Below (mm)	200			
Scour Protection		7	7	Ingrown.
(Type : RIP RAP)				
(Avg. Rock Size(mm) : 250)				
Scour/Erosion		7	7	
Beavers (Y/N)	No			
Upstream End General Rating		5	5	
Bridge Culvert Barrel				
Culvert Component		Last	Now	Explanation of Condition
(Pipe # : 1, Primary Span, Location Code: MAIN, Span (mm): 1829, Rise (mm): 1118, Type: FP)				
Barrel Last Accessible Date	06-Oct-2009			Barrel 1/2 full of water; viewed from ends, no major problems visible.
Special Features				
Special Feature				
(Type :)				
Special Feature				
(Type :)				
Roof		3	N	Previous r=3 & sag=133 used no floor bulge adjustment; check next time.
Measured Rise (mm)	985			
Measured At Ring No.	2			(11.9%. 06Oct2009).
Sag (mm)	133			
Percent Sag	12			
Sidewall		5	N	
Measured Span (mm)	1860			
Measured At Ring No.	2			(1.7%. 06Oct2009).
Deflection (mm)	31			
Percent Deflection	2			
Floor		4	N	(13.4% at bulge extensive corrosion. 06Oct2009).
Bulge (mm)	150			
Measured At Ring No.	3			
Abrasion (Y/N)	No			
Circumferential Seams		4	N	(Extension on D/S end. Second seam from U/S end and D/S end have 120mm separation on floor. Separation from main barrel. 06Oct2009).
Separation (mm)	120			
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		4	N	(Scaling and some pitting. 06Oct2009).
Corrosion By Soil (Y/N)	No			
Corrosion By Water (Y/N)	Yes			
Camber POS/ZERO/NEG	ZERO			
Ponding (Y/N)	No			

Bridge Culvert Barrel				
Culvert Component		Last	Now	Explanation of Condition
(Pipe # : 1, Primary Span, Location Code: MAIN, Span (mm): 1829, Rise (mm): 1118, Type: FP)				
Fish Passage Adequacy		6	6	
Baffle		X	X	
(Type :)				
Waterway Adequacy		6	6	
Icing (Y/N)	No			
Siltting (Y/N)	No			
Drift (Y/N)	No			
Barrel General Rating		3	3	GR carried forward from 06Oct2009.
Downstream 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	
Bevel End		5	5	
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		5	5	
Structure Usage				
		Last	Now	Explanation of Condition
Channel (U/S and D/S)				
Alignment		6	6	
Bank Stability		8	8	
HWM (m below Top of Culvert)				
Drift (Y/N)	Yes			
Channel Bottom Degrading/Aggrading	DEGRADING			
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										
INSTALL CONCRETE COLLAR/CUTOFF										
REPAIR SEAMS										
OTHER ACTION										
OTHER ACTION										
OTHER ACTION										
OTHER ACTION										
Structural Condition Rating (Last/Now) (%)	33.3/33.3	Sufficiency Rating (Last/Now) (%)	48.9/48.7	Est. Repl. Yr	2015	Maint. Req. (Y/N)	No			
Special Comments for Next Inspection	Monitor sag R3,4.		Department Comments							
Maintenance Reviewed By		Date				Estimated Total	0			
Proposed Long-Term Strategy	2009.11.13 Culvert shape is still arching well to carry loads. Recommend replacement in 2015. CB									
On 3-Year Program (Y/N)										
Proposed Action										
Previous Inspector's Name	Owen Salava	Previous Assistant's Name								
Next Inspection Date	29-Sep-2015	Previous Inspection Date	06-Oct-2009							
Inspection Cycle (Default) (months)	39									
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) (%)	33.3/33.3	Sufficiency Rating (Last/Now) (%)	48.9/48.7	Est. Repl. Yr	2015	Maint. Req. (Y/N) No
Special Comments for Next Inspection	Monitor sag R3,4.		Department Comments	Tentatively programmed to be replaced in 2017. AS		
Maintenance Reviewed By	Andrew Smikles	Date	23-Aug-2012	Estimated Total	0	
Proposed Long-Term Strategy	2009.11.13 Culvert shape is still arching well to carry loads. Recommend replacement in 2015. CB					
On 3-Year Program (Y/N)						
Proposed Action						
Previous Inspector's Name	Owen Salava	Previous Assistant's Name				
Next Inspection Date	29-Sep-2015	Previous Inspection Date	06-Oct-2009			
Inspection Cycle (Default) (months)	39					
Comment						