Bridge Culvert Inspection

Bridge File Number	73229 -1 Bridge Culvert	Form Type	CUL1
Year Built	1960	Lot No.	1
Bridge or Town Name	WINFIELD	Inspector Name	Owen Salava
Located Over	TRIBUTARY TO POPLAR CREEK, 6.132.12, WATERCRS-ST	Inspector Class	BR CLS A
		Assistant Name	
Located On	13:04 C1 27.783	Assistant Class	
Water Body Cl./Year		Inspection Date	25-Jun-2012
Navigabil. Cl./Year		Data Entry By	Marcia Chavez
Legal Land Location	SE SEC 13 TWP 46 RGE 5 W5M	Data Entry Date	08-Aug-2012
Longitude, Latitude	-114:35:36, 52:57:36	Reviewer Name	John O'Brien
Road Authority	Alberta Transportation (AIT)	Review Date	05-Jul-2012
Contract Main. Area	CMA17	Dept. Reviewer Name	Andrew Smikles
Clear Roadway/Skew	8.8 / 0 deg.	Dept. Review Date	13-Aug-2012
AADT/Year	1,000 / 2011 (A)	Follow-Up By	
Road Classification	RAU-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	1724	1901	SP	28	152X51		ELLIPSE

Special Features	
Special Features Comment	VE 5%

Utilities (Located at)

Utility Attachments			
Telephone	South r/w.	Gas	
Power	2 wires 23 m North r/w.	Municipal	
Others		Problem (Y/N)	No
Remarks			

Approach Road / Embankment

		Last	Now	Explanation of Condition
Horizontal Alignment		7	7	Approaches both ends.
Vertical Alignment		7	7	
Roadway Width (m)	8.800			
Embankment		4	4	Only 2:1 over pipe, South end and embankment is sloughing. Erosion / void at SW corner - photo.
Sideslope (__:1)	2.0			
(Height of Cover(m) : **3.5**)				
Guardrail (Y/N)	Yes			
Approach Road / Embankment General Rating		**4**	**7**	

Upstream End

Culvert Component		Last	Now	Explanation of Condition
Direction		S		
End Treatment (Concrete, Steel, Others, None)	NONE			
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		4	4	Bevel torn off - photo.
Heaving (mm)	300			
Invert Above/Below Stream Bed	ABOVE			Water undermining bevel end. Rock too big, not uniform.
Above/Below (mm)	300			
Scour Protection		4	4	1400 mm dia x 300 mm rock at sides and top.
(Type : **RIP RAP**)				
(Avg. Rock Size(mm) : **400**)				
Scour/Erosion		4	4	Eroding behind rocks creating large void - photos. Bank sloughing around inlet (photo).
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): 1724, Rise (mm): 1901, Type: SP**)				
Barrel Last Accessible Date	25-Jun-2012			
Special Features				
Special Feature				
(Type :)				
Special Feature				
(Type :)				
Roof		5	5	
Measured Rise (mm)	1792			
Measured At Ring No.	3			
Sag (mm)	109			5.7%
Percent Sag	6			
Sidewall		3	3	Tear in W side 8m from South end @ 9 o'clock plate - photo. Hole in E side R2 - photo.
Measured Span (mm)	1808			
Measured At Ring No.	3			
Deflection (mm)	84			4.8%
Percent Deflection	5			
Floor		N	5	
Bulge (mm)	0			
Measured At Ring No.				
Abrasion (Y/N)	No			
Circumferential Seams		3	3	Missing 3 nuts R4/5 seam. Flow through floor at R8/9 circular seam.
Separation (mm)	0			
Longitudinal Seams		3	3	Lower seam bolts corroding - photo. Missing 5 nuts R4 at 10o'clock. Missing 9 nuts R5 at 11 o'clock (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)	Yes			
Coating		4	3	Some pitting. Heavy corrosion in bottom 1/3 - photo. Floor perforations R2,6,7,9,10 (photo).
Corrosion By Soil (Y/N)	Yes			
Corrosion By Water (Y/N)	Yes			
Camber POS/ZERO/NEG	NEG			
Ponding (Y/N)	No			

Bridge Culvert Barrel				
Culvert Component		**Last**	**Now**	**Explanation of Condition**
(Pipe # : **1, Primary Span, Location Code: MAIN, Span (mm): 1724, Rise (mm): 1901, Type: SP**)				
Fish Passage Adequacy		4	4	Outlet flows through perforations in floor at outlet.
Baffle		X	X	
(Type :)				
Waterway Adequacy		6	6	(Ice to within 0.3m of roof. 12Dec2005).
Icing (Y/N)	Yes			
Silting (Y/N)	No			
Drift (Y/N)	No			
Barrel General Rating		**3**	**3**	

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		4	4	Bevel's sides pushing inward. Large perforations in floor (photo). Perched 0.2m.
Heaving (mm)	150			
Invert Above/Below Stream Bed	ABOVE			
Above/Below (mm)	200			
Scour Protection		5	4	
(Type : **RIP RAP**)				
(Avg. Rock Size(mm) : **500**)				
Scour/Erosion		4	4	Scour hole 1.3 m deep x 8.0 m x 20 m long. Scour alongside & under bevel.
Beavers (Y/N)	No			
Downstream End General Rating		**4**	**4**	

Structure Usage				
		Last	**Now**	**Explanation of Condition**
Channel (U/S and D/S)				
Alignment		4	4	Exits culvert and turns 90 deb 20m d/s.
Bank Stability		5	5	Rock armouring D/S bank appears holding and adequate.
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		**4**	**4**	

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	2015	Replace.				
OTHER ACTION						
OTHER ACTION						
OTHER ACTION						
OTHER ACTION						
OTHER ACTION						
OTHER ACTION						
OTHER ACTION						
OTHER ACTION						
OTHER ACTION						

Structural Condition Rating (Last/Now) (%)	**33.3/33.3**	**Sufficiency Rating (Last/Now) (%)**	**29.5/38.9**	Est. Repl. Yr	2015	Maint. Reqd. (Y/N)	Yes

Special Comments for Next Inspection	No actio for circ. seams or longit. seams.	Department Comments	

Maintenance Reviewed By		Date		Estimated Total	0
Proposed Long-Term Strategy	2005.04.09 Replace in 2010 on Spot program. Could defer if required. Monitor normal BIM.				
On 3-Year Program (Y/N)					
Proposed Action					
Previous Inspector's Name	Owen Salava	Previous Assistant's Name			
Next Inspection Date	25-Mar-2014	Previous Inspection Date	24-Aug-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						
INSTALL CONCRETE COLLAR/CUTOFF						
REPAIR SEAMS						
OTHER ACTION	2015	Replace.	Programmed	2014		
OTHER ACTION						
OTHER ACTION						
OTHER ACTION						
OTHER ACTION						
OTHER ACTION						
OTHER ACTION						
OTHER ACTION						
OTHER ACTION						
OTHER ACTION						

Structural Condition Rating (Last/Now) (%)	**33.3/33.3**	**Sufficiency Rating (Last/Now) (%)**	**29.5/38.9**	Est. Repl. Yr	2015	Maint. Reqd. (Y/N)	Yes

Special Comments for Next Inspection	No actio for circ. seams or longit. seams.	Department Comments	Replacement programmed for 2014

Maintenance Reviewed By	Andrew Smikles	Date	03-Dec-2012	Estimated Total	0
Proposed Long-Term Strategy	2005.04.09 Replace in 2010 on Spot program. Could defer if required. Monitor normal BIM.				
On 3-Year Program (Y/N)					
Proposed Action					

Previous Inspector's Name	Owen Salava	Previous Assistant's Name	
Next Inspection Date	25-Mar-2014	Previous Inspection Date	24-Aug-2010
Inspection Cycle (Default) (months)	21		

Comment	