

Bridge Culvert Inspection				
Bridge File Number	71939 -1 Bridge Culvert		Form Type	CUL1
Year Built	1971		Lot No.	1
Bridge or Town Name	THREE HILLS		Inspector Name	Owen Salava
Located Over	TRIBUTARY TO GHOSTPINE CREEK, 3.50.3, WATERCRS-ST		Inspector Class	BR CLS A
Located On	27:10 C1 9.934		Assistant Name	
Water Body Cl./Year			Assistant Class	
Navigabil. Cl./Year			Inspection Date	24-Oct-2012
Legal Land Location	SW SEC 17 TWP 31 RGE 22 W4M		Data Entry By	Marcia Chavez
Longitude, Latitude	-113:05:51, 51:38:56		Data Entry Date	08-Nov-2012
Road Authority	Alberta Transportation (AIT)		Reviewer Name	John O'Brien
Contract Main. Area	CMA20		Review Date	30-Oct-2012
Clear Roadway/Skew	9.5 / 40 deg. (RHF)		Dept. Reviewer Name	Andrew Smikles
AADT/Year	1,910 / 2011 (A)		Dept. Review Date	19-Nov-2012
Road Classification	RAU-210-110		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	2134	2134	SPE	92	152X51	3.0	ELLIPSE
Special Features	VERT STEEL STRUTS							
Special Features Comment								

Utilities (Located at)			
Utility Attachments			
Telephone	At South r/w.	Gas	
Power	3 wires o/h N r/w. Power lines also cross W in n/s r/w.	Municipal	
Others		Problem (Y/N)	No
Remarks			

Approach Road / Embankment				
		Last	Now	Explanation of Condition
Horizontal Alignment		8	8	Approx 300m West is local intersection. Crest curve to West, limited sight distance.
Vertical Alignment		6	6	
Roadway Width (m)	9.500			
Embankment		5	5	Minor NE ditch erosion.
Sideslope ( __:1)	2.5			
(Height of Cover(m) : 7)				
Guardrail (Y/N)	Yes			Guardrail back from edge of roadway, 8m S, 5m N.
<b>Approach Road / Embankment General Rating</b>		<b>6</b>	<b>6</b>	

Upstream End				
<b>Culvert Component</b>		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		5	5	Damaged from equipment - minor dents.
Heaving (mm)	150			
Invert Above/Below Stream Bed	BELOW			
Above/Below (mm)	100			
Scour Protection		N	N	(100mm rock at West side. Geogrid not installed. Geogrid mesh above & @ NW of bevel. 14-Feb-2006). Snow covered.
(Type : <b>RIP RAP, GEOTEXTILE</b> )				
(Avg. Rock Size(mm) : <b>100</b> )				
Scour/Erosion		N	N	(Minor 300mm scour @ NE bevel. Bevel projects average 400mm @ East. 14-Feb-2006). Snow covered.
Beavers (Y/N)	No			
<b>Upstream End General Rating</b>		<b>5</b>	<b>5</b>	
Bridge Culvert Barrel				
Culvert Component		Last	Now	Explanation of Condition
(Pipe # : 1, Primary Span, Location Code: MAIN, Span (mm): 2134, Rise (mm): 2134, Type: SPE)				
Barrel Last Accessible Date	24-Oct-2012			
<b>Special Features</b>				
Special Feature		7	7	At North end of pipe for 6.5 rings.
(Type : <b>VERT STEEL STRUTS</b> )				
Special Feature				
(Type : )				
Roof		2	2	1 o'clock seam reverse curvature of 100mm (photo).
Measured Rise (mm)	2000			
Measured At Ring No.	5			
Sag (mm)	134			
Percent Sag	6			
Sidewall		3	3	Buckling @ corrugations @ West sidewall rings #4 & #5 - photo.
Measured Span (mm)	2310			
Measured At Ring No.	5			
Deflection (mm)	146			
Percent Deflection	7			
Floor		5	5	
Bulge (mm)	0			
Measured At Ring No.				
Abrasion (Y/N)	No			
Circumferential Seams		7	7	
Separation (mm)	0			
Longitudinal Seams		2	2	Cusping inward at R4, 100mm reverse curvature at R5 (photo). 15mm edge separation @ R4,5 longitudinal seams.
Total No. of Cracked Rings	0			
Total No. of Rings with Two Cracked Seams	0			
Min. Remaining Steel Between Cracks (mm)				
Proper Lap (Y/N)	No			
Longitudinal Stagger (Y/N)	No			
Coating		5	5	Corrosion with some pitting at floor at U/S 1/4. Superficial corrosion at exterior of roof and D/S.
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): 2134, Rise (mm): 2134, Type: SPE)				
Ponding (Y/N)	No			
Fish Passage Adequacy		5	5	
Baffle		X	X	
(Type : )				
Waterway Adequacy		8	8	
Icing (Y/N)	No			
Silting (Y/N)	No			
Drift (Y/N)	No			Grass around struts.
<b>Barrel General Rating</b>		<b>4</b>	<b>4</b>	G.R. raised 2 pts due to struts.
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		4	4	(Unsupported for 1.5 m. 14-Feb-2006). Projects from fill 2m E side.
Heaving (mm)	0			
Invert Above/Below Stream Bed				
Above/Below (mm)	0			
Scour Protection		N	N	(Insufficient rock at sides of bevel. 14-Feb-2006). (Some rock seen at SB. 97/06/03). Snow covered.
(Type : <b>RIP RAP</b> )				
(Avg. Rock Size(mm) : <b>300</b> )				
Scour/Erosion		N	N	(1.0 m x 15.0 m x 8.0 m elliptical scour. 14-feb-2006). Snow covered.
Beavers (Y/N)	No			
<b>Downstream End General Rating</b>		<b>3</b>	<b>3</b>	G.R. carried forward from 14Feb2006.
Structure Usage				
		Last	Now	Explanation of Condition
<b>Channel (U/S and D/S)</b>				
Alignment		5	5	
Bank Stability		4	4	SW bank at D/S is eroding - steep cut, monitor.
HWM (m below Top of Culvert)	1.4			Spring line in culvert.
Drift (Y/N)	No			
Channel Bottom Degrading/Aggrading	DEGRADING			
Beavers (Y/N)	No			
(Fish Compensation Measure 1 : <b>NONE</b> )				
(Fish Compensation Measure 2 : <b>NONE</b> )				
<b>Channel General Rating</b>		<b>4</b>	<b>4</b>	

Maintenance Recommendations										
Inspector Recommendations	Year	Inspector Comments	Department Comments	Target Year	Est. Cost	Cat #				
SHOTCRETE REPAIRS										
PLACE ADDITIONAL RIP RAP	2013	20 cu.m / Class I @ D/S scour.								
REMOVE DRIFT ACCUMULATION										
INSTALL CONCRETE/STEEL LINING										
INSTALL STRUTS										
INSTALL CONCRETE COLLAR/CUTOFF										
REPAIR SEAMS										
OTHER ACTION										
OTHER ACTION										
OTHER ACTION										
OTHER ACTION										
<b>Structural Condition Rating (Last/Now) (%)</b>	<b>44.4/44.4</b>	<b>Sufficiency Rating (Last/Now) (%)</b>	<b>55.0/54.9</b>	<b>Est. Repl. Yr</b>	<b>2020</b>	<b>Maint. Req. (Y/N)</b>	<b>Yes</b>			
Special Comments for Next Inspection	Culvert struttred so no action for sag or deflection. LRA emailed to Donald Saunders 29Oct2012.		Department Comments							
Maintenance Reviewed By			Date			Estimated Total	0			
Proposed Long-Term Strategy	2003.08.19 Culvert should be good until 2015.									
On 3-Year Program (Y/N)										
Proposed Action										
Previous Inspector's Name	Owen Salava	Previous Assistant's Name								
Next Inspection Date	24-Jul-2014	Previous Inspection Date	21-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	2013	20 cu.m / Class I @ D/S scour.	To operations			
REMOVE DRIFT ACCUMULATION						
INSTALL CONCRETE/STEEL LINING						
INSTALL STRUTS						
INSTALL CONCRETE COLLAR/CUTOFF						
REPAIR SEAMS						
OTHER ACTION						
OTHER ACTION						
OTHER ACTION						
OTHER ACTION						
<b>Structural Condition Rating (Last/Now) (%)</b>	<b>44.4/44.4</b>	<b>Sufficiency Rating (Last/Now) (%)</b>	<b>55.0/54.9</b>	Est. Repl. Yr	2020	Maint. Req. (Y/N) Yes
Special Comments for Next Inspection	Culvert strutted so no action for sag or deflection. LRA emailed to Donald Saunders 29Oct2012.		Department Comments	Currently programmed to be replaced in 2017		
Maintenance Reviewed By	Andrew Smikles		Date	07-Jan-2013	Estimated Total	0
Proposed Long-Term Strategy	2003.08.19 Culvert should be good until 2015.					
On 3-Year Program (Y/N)						
Proposed Action						
Previous Inspector's Name	Owen Salava	Previous Assistant's Name				
Next Inspection Date	24-Jul-2014	Previous Inspection Date	21-Dec-2010			
Inspection Cycle (Default) (months)	21					
Comment						