

Bridge Culvert Inspection				
Bridge File Number	73109 -1 Bridge Culvert		Form Type	CUL1
Year Built	1977		Lot No.	1
Bridge or Town Name	BIG VALLEY		Inspector Name	Dave Lam
Located Over	TRIBUTARY TO RED DEER RIVER, 3.62, WATERCRS-ST		Inspector Class	BR CLS A
Located On	590:04 C1 26.789		Assistant Name	
Water Body Cl./Year			Assistant Class	
Navigabil. Cl./Year			Inspection Date	13-Jul-2011
Legal Land Location	SW SEC 30 TWP 35 RGE 20 W4M		Data Entry By	Marcia Chavez
Longitude, Latitude	-112:51:13, 52:01:35		Data Entry Date	16-Aug-2011
Road Authority	Alberta Transportation (AIT)		Reviewer Name	John O'Brien
Contract Main. Area	CMA20		Review Date	27-Jul-2011
Clear Roadway/Skew	11 /		Dept. Reviewer Name	Chris Black
AADT/Year	650 / 2010 (A)		Dept. Review Date	30-Aug-2011
Road Classification	RCU-209-110		Follow-Up By	
Detour Length (km)	5			

Bridge Culvert Information								
Number of Culverts	1							
Pipe #	Barrel	Span	Rise (or Dia.)	Type	Length	Corr. Profile	Pl./Slab Thickness	Shape
1	U/S	2134	2134	MP	21	75X25	3.5	ROUND
1	MAIN	2134	2134	MP	17.6	75X25	3.5	ROUND
1	D/S	2134	2134	MP	18	75X25	3.5	ROUND
Special Features	VERT TIMBER STRUTS							
Special Features Comment								

Utilities (Located at)			
Utility Attachments			
Telephone	South of c/l.	Gas	
Power	2 wires 30m North of c/l.	Municipal	
Others		Problem (Y/N)	No
Remarks			

Approach Road / Embankment				
		Last	Now	Explanation of Condition
Horizontal Alignment		9	9	700m W of intersection on SH 590.
Vertical Alignment		7	7	
Roadway Width (m)	11.000			
Embankment		7	7	
Sideslope ( __:1)	2.0			
(Height of Cover(m) : 6)				
Guardrail (Y/N)	Yes			Guardrail damaged N side 1st post from turndown end - no problem.
<b>Approach Road / Embankment General Rating</b>		<b>7</b>	<b>7</b>	

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		5	5	Bevel projecting 0.5m.
Heaving (mm)	0			
Invert Above/Below Stream Bed				
Above/Below (mm)	0			
Scour Protection		N	4	Not much rock.
(Type : <b>NONE</b> )				
(Avg. Rock Size(mm) : )				
Scour/Erosion		N	4	Signs of erosion due to insufficient rock.
Beavers (Y/N)	No			
<b>Upstream End General Rating</b>		<b>5</b>	<b>4</b>	
Bridge Culvert Barrel				
Culvert Component		Last	Now	Explanation of Condition
<b>(Pipe # : 1, Primary Span, Location Code: U/S, Span (mm): 2134, Rise (mm): 2134, Type: MP)</b>				
Barrel Last Accessible Date	13-Jul-2011			
<b>Special Features</b>				
Special Feature			7	Wooden struts. Struts installed 1991.
(Type : <b>VERT TIMBER STRUTS</b> )				
Special Feature				
(Type : )				
Roof		2	2	
Measured Rise (mm)				
Measured At Ring No.				
Sag (mm)	431			Sag estimated.
Percent Sag				
Sidewall		2	2	
Measured Span (mm)	2565			Measured 2565 3rd section from S & 2477mm at circ. seam. 16.8% deflection. 2 cracked corrugations - 2nd section from S & 2nd circ seam.
Measured At Ring No.				
Deflection (mm)	431			
Percent Deflection	20			
Floor		N	N	Water. (19Mar2005).
Bulge (mm)	50			
Measured At Ring No.				
Abrasion (Y/N)				
Circumferential Seams		3	5	2 seams repaired.
Separation (mm)	105			
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		6	6	
Corrosion By Soil (Y/N)				
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): 2134, Rise (mm): 2134, Type: MP)				
Ponding (Y/N)	Yes			
Fish Passage Adequacy		X	2	Blocked by drift at u/s opening.
Baffle		X	X	
(Type : )				
Waterway Adequacy		5	3	Blocked by drift at u/s opening.
Icing (Y/N)	No			
Silting (Y/N)	No			Pipe continues to get worse but raised 1 point due to good condition of struts.
Drift (Y/N)	No			
<b>Barrel Extension General Rating</b>		<b>3</b>	<b>3</b>	
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)	100			
Invert Above/Below Stream Bed	ABOVE			
Above/Below (mm)	100			
Scour Protection		4	4	Bevel lacks material in haunch area (photo).
(Type : <b>NONE</b> )				
(Avg. Rock Size(mm) : )				
Scour/Erosion		4	4	Scour hole at outlet.
Beavers (Y/N)	No			
<b>Downstream End General Rating</b>		<b>4</b>	<b>4</b>	
Structure Usage				
		Last	Now	Explanation of Condition
<b>Channel (U/S and D/S)</b>				
Alignment		7	7	
Bank Stability		7	7	
HWM (m below Top of Culvert)				HWM not visible.
Drift (Y/N)	No			
Channel Bottom Degrading/Aggrading	DEGRADING			U/S.
Beavers (Y/N)	No			
(Fish Compensation Measure 1 : <b>NONE</b> )				
(Fish Compensation Measure 2 : <b>NONE</b> )				
<b>Channel General Rating</b>		<b>7</b>	<b>7</b>	

Maintenance Recommendations										
Inspector Recommendations	Year	Inspector Comments	Department Comments	Target Year	Est. Cost	Cat #				
SHOTCRETE REPAIRS										
PLACE ADDITIONAL RIP RAP										
REMOVE DRIFT ACCUMULATION	2011	Remove drift at u/s opening. Needs regular maintenance and during high water events.								
INSTALL CONCRETE/STEEL LINING										
INSTALL STRUTS										
INSTALL CONCRETE COLLAR/CUTOFF										
REPAIR SEAMS										
OTHER ACTION	2011	Hold all repairs until pipe is replaced.								
OTHER ACTION										
OTHER ACTION										
OTHER ACTION										
<b>Structural Condition Rating (Last/Now) (%)</b>	<b>33.3/33.3</b>	<b>Sufficiency Rating (Last/Now) (%)</b>	<b>45.9/28.4</b>	2015			Maint. Req'd. (Y/N)	No		
Special Comments for Next Inspection	Struts installed 1991. Though strutted, pipe has developed cracks indicating collapse is continuing. Pipe is stable till next inspection, but monitor for more cracks & continued deflection.		Department Comments							
Maintenance Reviewed By			Date		Estimated Total	0				
Proposed Long-Term Strategy	2004.05.30 Monitor normal BIM. Culvert should be ok until 2015. Consider liner when replacing during winter.									
On 3-Year Program (Y/N)										
Proposed Action										
Previous Inspector's Name	Randy Bredo	Previous Assistant's Name								
Next Inspection Date	13-Oct-2014	Previous Inspection Date	19-Mar-2005							
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	2011	Remove drift at u/s opening. Needs regular maintenance and during high water events.	To operations			
INSTALL CONCRETE/STEEL LINING						
INSTALL STRUTS						
INSTALL CONCRETE COLLAR/CUTOFF						
REPAIR SEAMS						
OTHER ACTION	2011	Hold all repairs until pipe is replaced.	Agreed			
OTHER ACTION						
OTHER ACTION						
OTHER ACTION						
<b>Structural Condition Rating (Last/Now) (%)</b>	<b>33.3/33.3</b>	<b>Sufficiency Rating (Last/Now) (%)</b>	<b>45.9/28.4</b>	Est. Repl. Yr	2015	Maint. Req. (Y/N) No
Special Comments for Next Inspection	Struts installed 1991. Though strutted, pipe has developed cracks indicating collapse is continuing. Pipe is stable till next inspection, but monitor for more cracks & continued deflection.		Department Comments	Tentatively programmed for replacement in 2017. AS		
Maintenance Reviewed By	Andrew Smikles		Date	22-Aug-2012	Estimated Total	0
Proposed Long-Term Strategy	2004.05.30 Monitor normal BIM. Culvert should be ok until 2015. Consider liner when replacing during winter.					
On 3-Year Program (Y/N)						
Proposed Action						
Previous Inspector's Name	Randy Bredo		Previous Assistant's Name			
Next Inspection Date	13-Oct-2014		Previous Inspection Date	19-Mar-2005		
Inspection Cycle (Default) (months)	39					
Comment						