

Bridge Culvert Inspection				
Bridge File Number	01217 -1 Bridge Culvert		Form Type	CULM
Year Built	1967		Lot No.	2
Bridge or Town Name	KILLAM		Inspector Name	Owen Salava
Located Over	IRON CREEK, 5.16, WATERCRS-ST		Inspector Class	BR CLS A
Located On	36:16 C1 9.606		Assistant Name	
Water Body Cl./Year			Assistant Class	
Navigabil. Cl./Year			Inspection Date	16-Jul-2012
Legal Land Location	SW SEC 16 TWP 45 RGE 13 W4M		Data Entry By	Marcia Chavez
Longitude, Latitude	-111:50:32, 52:52:43		Data Entry Date	01-Aug-2012
Road Authority	Alberta Transportation (AIT)		Reviewer Name	John O'Brien
Contract Main. Area	CMA16		Review Date	31-Jul-2012
Clear Roadway/Skew	12.1 /		Dept. Reviewer Name	Andrew Smikles
AADT/Year	990 / 2011 (A)		Dept. Review Date	02-Aug-2012
Road Classification	RAU-211.8-110		Follow-Up By	
Detour Length (km)	3			

Bridge Culvert Information								
Number of Culverts	2							
Pipe #	Barrel	Span	Rise (or Dia.)	Type	Length	Corr. Profile	PI./Slab Thickness	Shape
1	MAIN	-	4300	SP	37.8	152X51	3.0	ROUND
2	MAIN	-	4300	SP	37.8	152X51	3.0	ROUND
Special Features								
Special Features Comment								

Utilities (Located at)			
Utility Attachments			
Telephone	East r/w.	Gas	
Power	1 line OH East.	Municipal	
Others		Problem (Y/N)	No
Remarks			

Approach Road / Embankment				
		Last	Now	Explanation of Condition
Horizontal Alignment		8	8	Crest curve to the South with limited sight distance.
Vertical Alignment		6	6	
Roadway Width (m)	12.100			
Embankment		N	7	4:1 then 2:1 at pipe.
Sideslope ( __:1)	2.0			
(Height of Cover(m) : 2)				
Guardrail (Y/N)	Yes			There are 7 damaged sections of flexbeam & 6 broken timber guardrail posts along the E guardrail.
<b>Approach Road / Embankment General Rating</b>		<b>6</b>	<b>6</b>	

Upstream End				
Culvert Component		Last	Now	Explanation of Condition
<b>(Pipe # : 1, Span Type: Primary Span)</b>				
Direction		W		South pipe.
End Treatment (Concrete, Steel, Others, None)	CONCRETE			
Headwall		X	X	
Collar		3	3	The slab along collar has settled 280mm and tilted, leaving a 600mm void underneath.

Upstream End				
Culvert Component		Last	Now	Explanation of Condition
<b>(Pipe # : 1, Span Type: Primary Span)</b>				
Wingwalls		X	X	
(Shape : )				
Cutoff Wall		N	N	Buried.
Bevel End		5	5	
Heaving (mm)	150			
Invert Above/Below Stream Bed	BELOW			
Above/Below (mm)	1000			
Scour Protection		N	5	
(Type : <b>RIP RAP</b> )				
(Avg. Rock Size(mm) : <b>300</b> )				
Scour/Erosion		N	5	
Beavers (Y/N)	No			
<b>Upstream End General Rating</b>		<b>3</b>	<b>3</b>	

Bridge Culvert Barrel				
Culvert Component		Last	Now	Explanation of Condition
<b>(Pipe # : 1, Primary Span, Location Code: MAIN, Span (mm): , Rise (mm): 4300, Type: SP)</b>				
Barrel Last Accessible Date	09-Mar-2011			South barrel. 1.2m water in pipe; viewed from ends, shape looks good.
<b>Special Features</b>				
Special Feature				
(Type : )				
Special Feature				
(Type : )				
Roof		6	N	(Roof sag estimated. 31/May/2006).
Measured Rise (mm)	4300			
Measured At Ring No.				
Sag (mm)	0			
Percent Sag	0			
Sidewall		6	N	
Measured Span (mm)	4257			
Measured At Ring No.	8			
Deflection (mm)	43			
Percent Deflection	1			
Floor		N	N	
Bulge (mm)				
Measured At Ring No.				
Abrasion (Y/N)	No			
Circumferential Seams		7	N	
Separation (mm)	0			
Longitudinal Seams		7	N	
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)	Yes			
Longitudinal Stagger (Y/N)	Yes			

Bridge Culvert Barrel				
Culvert Component		Last	Now	Explanation of Condition
(Pipe # : 1, Primary Span, Location Code: MAIN, Span (mm): , Rise (mm): 4300, Type: SP)				
Coating		3	N	Alkaline stains and rust stains through seams. (Lower wall scaling. 27Aug2009). Rating based on past inspection info.
Corrosion By Soil (Y/N)	Yes			
Corrosion By Water (Y/N)	Yes			
Camber POS/ZERO/NEG	NEG			
Ponding (Y/N)	No			
Fish Passage Adequacy		7	7	
Baffle		X	X	
(Type : )				
Waterway Adequacy		7	7	
Icing (Y/N)	No			
Silting (Y/N)	No			
Drift (Y/N)	No			
<b>Barrel General Rating</b>		<b>6</b>	<b>N</b>	GR was 6 from 09Mar2011.
Downstream End				
Culvert Component		Last	Now	Explanation of Condition
(Pipe # : 1, Span Type: Primary Span)				
Direction		E		South pipe.
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	Minor dents.
Heaving (mm)	100			
Invert Above/Below Stream Bed	BELOW			
Above/Below (mm)	1000			
Scour Protection		N	4	
(Type : RIP RAP)				
(Avg. Rock Size(mm) : 300)				
Scour/Erosion		N	4	Along lower edge of bevel at SE bevel - minor.
Beavers (Y/N)	No			
<b>Downstream End General Rating</b>		<b>6</b>	<b>4</b>	
Upstream End				
Culvert Component		Last	Now	Explanation of Condition
(Pipe # : 2, Span Type: Secondary Span)				
Direction		W		North pipe.
End Treatment (Concrete, Steel, Others, None)	CONCRETE			
Headwall		X	X	
Collar		3	3	Slab alongside collar has settled 300mm & separated 100mm & tilted slightly.

Upstream End				
Culvert Component		Last	Now	Explanation of Condition
<b>(Pipe # : 2, Span Type: Secondary Span)</b>				
Wingwalls		X	X	
(Shape : )				
Cutoff Wall		N	N	Buried.
Bevel End		6	6	
Heaving (mm)	150			
Invert Above/Below Stream Bed	BELOW			
Above/Below (mm)	1000			
Scour Protection		N	6	
(Type : <b>RIP RAP</b> )				
(Avg. Rock Size(mm) : <b>300</b> )				
Scour/Erosion		N	6	
Beavers (Y/N)	No			
<b>Upstream End General Rating</b>		<b>3</b>	<b>3</b>	

Bridge Culvert Barrel				
Culvert Component		Last	Now	Explanation of Condition
<b>(Pipe # : 2, Secondary Span, Location Code: MAIN, Span (mm): , Rise (mm): 4300, Type: SP)</b>				
Barrel Last Accessible Date	09-Mar-2011			1.2m water in barrel; viewed from ends, shape looks good.
<b>Special Features</b>				
Special Feature				
(Type : )				
Special Feature				
(Type : )				
Roof		6	N	(Roof sag estimated. 09Mar2011).
Measured Rise (mm)				
Measured At Ring No.				
Sag (mm)	0			
Percent Sag	0			
Sidewall		6	N	
Measured Span (mm)	4269			
Measured At Ring No.	6			
Deflection (mm)	31			
Percent Deflection	1			
Floor		N	N	
Bulge (mm)				
Measured At Ring No.				
Abrasion (Y/N)	No			
Circumferential Seams		7	N	
Separation (mm)	0			
Longitudinal Seams		7	N	
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)	Yes			
Longitudinal Stagger (Y/N)	Yes			

Bridge Culvert Barrel					
Culvert Component		Last	Now	Explanation of Condition	
(Pipe # : 2, Secondary Span, Location Code: MAIN, Span (mm): , Rise (mm): 4300, Type: SP)					
Coating		3	N	(Lower wall scaling. 27Aug2009). Alkaline stains and rust stains through seams. Rating based o scaling comment.	
Corrosion By Soil (Y/N)	Yes				
Corrosion By Water (Y/N)	Yes				
Camber POS/ZERO/NEG	NEG				
Ponding (Y/N)	No				
Fish Passage Adequacy		7	7		
Baffle		X	X		
(Type : )					
Waterway Adequacy		7	7		
Icing (Y/N)	No				
Silting (Y/N)	No				
Drift (Y/N)	No				
<b>Barrel General Rating</b>		<b>6</b>	<b>N</b>	GR was 6 from 09Mar2011.	
Downstream End					
Culvert Component		Last	Now	Explanation of Condition	
(Pipe # : 2, Span Type: Secondary Span)					
Direction		E		North pipe.	
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)	150				
Invert Above/Below Stream Bed	BELOW				
Above/Below (mm)	1000				
Scour Protection		N	4	Substrate below rock settled approx 1.0m along bevel, riprap ok.	
(Type : RIP RAP)					
(Avg. Rock Size(mm) : 300)					
Scour/Erosion		N	4	Erosion at SE bevel.	
Beavers (Y/N)	No				
<b>Downstream End General Rating</b>		<b>6</b>	<b>4</b>		
Structure Usage					
		Last	Now	Explanation of Condition	
<b>Channel (U/S and D/S)</b>					
Alignment		7	7	Gently meandering.	
Bank Stability		N	4	D/S North bank failing.	
HWM (m below Top of Culvert)				HWM not visible.	
Drift (Y/N)	No				

Structure Usage				
		Last	Now	Explanation of Condition
Channel Bottom Degrading/Aggrading	NONE			
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 #	Structural Condition Rating (Last/Now) (%)	Sufficiency Rating (Last/Now) (%)	Est. Repl. Yr	Maint. Req. (Y/N)	Yes
SHOTCRETE REPAIRS											
PLACE ADDITIONAL RIP RAP	2012	10m3 Class 1 @ North outlet.					66.7/55.6	64.7/57.8	2024		
REMOVE DRIFT ACCUMULATION											
INSTALL CONCRETE/STEEL LINING											
INSTALL STRUTS											
INSTALL CONCRETE COLLAR/CUTOFF											
REPAIR SEAMS											
OTHER ACTION	2012	Place foam fill btwn collars & apron.									
OTHER ACTION											
OTHER ACTION											
OTHER ACTION											
<b>Special Comments for Next Inspection</b>	View coating next inspection.										
<b>Maintenance Reviewed By</b>	Department Comments										
<b>Proposed Long-Term Strategy</b>	Date										
<b>On 3-Year Program (Y/N)</b>	Estimated Total 0										
<b>Proposed Action</b>											
<b>Previous Inspector's Name</b>	Jason Saly		Previous Assistant's Name								
<b>Next Inspection Date</b>	16-Apr-2014		Previous Inspection Date		09-Mar-2011						
<b>Inspection Cycle (Default) (months)</b>	21										
<b>Comment</b>											

**Maintenance Recommendations**

Inspector Recommendations	Year	Inspector Comments	Department Comments	Target Year	Est. Cost	Cat #
SHOTCRETE REPAIRS						
PLACE ADDITIONAL RIP RAP	2012	10m3 Class 1 @ North outlet.	Programmed	2013		
REMOVE DRIFT ACCUMULATION						
INSTALL CONCRETE/STEEL LINING						
INSTALL STRUTS						
INSTALL CONCRETE COLLAR/CUTOFF						
REPAIR SEAMS						
OTHER ACTION	2012	Place foam fill btwn collars & apron.	Programmed	2013		
OTHER ACTION						
OTHER ACTION						
OTHER ACTION						

<b>Structural Condition Rating (Last/Now) (%)</b>	<b>66.7/55.6</b>	<b>Sufficiency Rating (Last/Now) (%)</b>	<b>64.7/57.8</b>	Est. Repl. Yr	2024	Maint. Req. (Y/N)	Yes
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Special Comments for Next Inspection	View coating next inspection.	Department Comments	Items moved to 2013. DA
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Maintenance Reviewed By	Darron Ahlstedt	Date	27-Nov-2012	Estimated Total	0
Proposed Long-Term Strategy					
On 3-Year Program (Y/N)					
Proposed Action					
Previous Inspector's Name	Jason Saly	Previous Assistant's Name			
Next Inspection Date	16-Apr-2014	Previous Inspection Date	09-Mar-2011		
Inspection Cycle (Default) (months)	21				
Comment					