

Bridge Culvert Inspection				
Bridge File Number	80744 -1 Bridge Culvert		Form Type	CULM
Year Built	1983		Lot No.	1
Bridge or Town Name	LAMONT		Inspector Name	Owen Salava
Located Over	TRIBUTARY TO LAMONT CREEK, 6.55.4.2, WATERCRS-ST		Inspector Class	BR CLS A
Located On	29:02 C1 1.526		Assistant Name	
Water Body Cl./Year			Assistant Class	
Navigabil. Cl./Year			Inspection Date	08-Nov-2012
Legal Land Location	SE SEC 30 TWP 55 RGE 19 W4M		Data Entry By	Marcia Chavez
Longitude, Latitude	-112:48:25, 53:46:27		Data Entry Date	21-Nov-2012
Road Authority	Alberta Transportation (AIT)		Reviewer Name	John O'Brien
Contract Main. Area	CMA14		Review Date	15-Nov-2012
Clear Roadway/Skew	11.5 /		Dept. Reviewer Name	Andrew Smikles
AADT/Year	2,460 / 2011 (A)		Dept. Review Date	26-Nov-2012
Road Classification	RCU-209-110		Follow-Up By	
Detour Length (km)	5			

Bridge Culvert Information								
Number of Culverts	2							
Pipe #	Barrel	Span	Rise (or Dia.)	Type	Length	Corr. Profile	Pl./Slab Thickness	Shape
1	MAIN	2790	1630	RPE	23.8	152X51	3.0	ELLIPSE
2	MAIN	2790	1630	RPE	23.8	152X51	3.0	ELLIPSE
Special Features								
Special Features Comment								

Utilities (Located at)			
Utility Attachments			
Telephone	South ditch.	Gas	30m South parallel to Hwy 29.
Power	4 wires 20m North of c/l.	Municipal	
Others		Problem (Y/N)	No
Remarks			

Approach Road / Embankment				
		Last	Now	Explanation of Condition
Horizontal Alignment		7	7	Culverts are located just west of RR195 intersection, 20m.
Vertical Alignment		8	8	
Roadway Width (m)	11.500			
Embankment		6	6	ACP crack above pipe - sealed. Rest of embankment is 3:1.
Sideslope (___:1)	2.0			
(Height of Cover(m) : 1.2)				
Guardrail (Y/N)	No			
Approach Road / Embankment General Rating		7	7	

Upstream End				
Culvert Component		Last	Now	Explanation of Condition
(Pipe # : 1, Span Type: Primary Span)				
Direction		S		East culvert.
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
(Pipe # : 1, Span Type: Primary Span)				
Cutoff Wall		X	X	
Bevel End		5	5	
Heaving (mm)	200			
Invert Above/Below Stream Bed	ABOVE			
Above/Below (mm)	100			
Scour Protection		N	N	(Bevel undermined 1st 800mm. Some small rock. Evidence of piping. 13Aug2009). Snow covered.
(Type : RIP RAP)				
(Avg. Rock Size(mm) : 250)				
Scour/Erosion		N	N	
Beavers (Y/N)	No			
Upstream End General Rating		4	4	GR carried forward from 13Aug2009.
Bridge Culvert Barrel				
Culvert Component		Last	Now	Explanation of Condition
(Pipe # : 1, Primary Span, Location Code: MAIN, Span (mm): 2790, Rise (mm): 1630, Type: RPE)				
Barrel Last Accessible Date	08-Nov-2012			East culvert.
Special Features				
Special Feature				
(Type :)				
Special Feature				
(Type :)				
Roof		3	3	Roof flattening - photo. Unable to measure due to ice.
Measured Rise (mm)	1395			
Measured At Ring No.	3			
Sag (mm)	235			(14.4%. 07Dec2010).
Percent Sag	14			
Sidewall		3	3	Buckling could be from fabrication of tight radius bend. R2-4 sidewall starting to buckle (photo). E sidewall sounds hollow to centre R1.
Measured Span (mm)	2920			
Measured At Ring No.	3			
Deflection (mm)	130			
Percent Deflection	4			
Floor		N	N	Ice and silt.
Bulge (mm)				
Measured At Ring No.				
Abrasion (Y/N)				
Circumferential Seams		6	6	
Separation (mm)	0			
Longitudinal Seams		4	4	(Lower seam not visible, under water. East wall seam 10mm vertical gap and bolts pulling through. 07Dec2012).
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)	No			
Coating		5	5	Efflorescence and rust at joints.
Corrosion By Soil (Y/N)	Yes			
Corrosion By Water (Y/N)	Yes			

Bridge Culvert Barrel				
Culvert Component		Last	Now	Explanation of Condition
(Pipe # : 1, Primary Span, Location Code: MAIN, Span (mm): 2790, Rise (mm): 1630, Type: RPE)				
Camber POS/ZERO/NEG	ZERO			
Ponding (Y/N)	Yes			Ponding 300mm.
Fish Passage Adequacy		X	X	
Baffle		X	X	
(Type :)				
Waterway Adequacy		7	7	
Icing (Y/N)	No			
Silting (Y/N)	No			
Drift (Y/N)	No			
Barrel General Rating		3	3	
Downstream End				
Culvert Component		Last	Now	Explanation of Condition
(Pipe # : 1, Span Type: Primary Span)				
Direction		N		East culvert.
End Treatment (Concrete, Steel, Others, None)	STEEL			
Headwall		X	X	
Collar		X	X	
Wingwalls		X	X	
(Shape :)				
Cutoff Wall		X	X	
Bevel End		7	7	
Heaving (mm)	0			
Invert Above/Below Stream Bed	BELOW			
Above/Below (mm)	300			
Scour Protection		7	N	(Some small rock. Well vegetated. 07Dec2010) - Snow covered.
(Type : RIP RAP)				
(Avg. Rock Size(mm) : 300)				
Scour/Erosion		7	N	
Beavers (Y/N)	No			
Downstream End General Rating		7	7	
Upstream End				
Culvert Component		Last	Now	Explanation of Condition
(Pipe # : 2, Span Type: Secondary Span)				
Direction		S		West culvert.
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
(Pipe # : 2, Span Type: Secondary Span)				
Bevel End		N	7	
Heaving (mm)	300			
Invert Above/Below Stream Bed				
Above/Below (mm)	0			
Scour Protection		N	N	(Some rock. Unsupported for 1.2m due to heaving and undermining. Evidence of piping. 07Dec2010) - Snow covered.
(Type : RIP RAP)				
(Avg. Rock Size(mm) : 250)				
Scour/Erosion		N	N	
Beavers (Y/N)	No			
Upstream End General Rating		4	4	GR carried forward from 13Aug2009.
Bridge Culvert Barrel				
Culvert Component		Last	Now	Explanation of Condition
(Pipe # : 2, Secondary Span, Location Code: MAIN, Span (mm): 2790, Rise (mm): 1630, Type: RPE)				
Barrel Last Accessible Date	08-Nov-2012			West culvert.
Special Features				
Special Feature				
(Type :)				
Special Feature				
(Type :)				
Roof		3	3	Roof flattening - photo. Unable to measure due to ice.
Measured Rise (mm)	1415			
Measured At Ring No.	3			
Sag (mm)	215			(13.2%. 07Dec2010).
Percent Sag	13			
Sidewall		3	3	East wall starting to buckle possibly from fabrication bend (photo).
Measured Span (mm)	2905			
Measured At Ring No.	3			
Deflection (mm)	115			4.3% deflection.
Percent Deflection	4			
Floor		N	N	Ice and silt.
Bulge (mm)				
Measured At Ring No.				
Abrasion (Y/N)				
Circumferential Seams		6	6	
Separation (mm)	0			
Longitudinal Seams		4	4	Lower seam not visible, under water. West roof seam bolts cusping and 7mm vertical gap @ R3, poor nesting.
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)	No			
Coating		6	6	Efflorescence at joints.
Corrosion By Soil (Y/N)	Yes			
Corrosion By Water (Y/N)	Yes			
Camber POS/ZERO/NEG	ZERO			

Bridge Culvert Barrel				
Culvert Component		Last	Now	Explanation of Condition
(Pipe # : 2, Secondary Span, Location Code: MAIN, Span (mm): 2790, Rise (mm): 1630, Type: RPE)				
Ponding (Y/N)	Yes			300mm.
Fish Passage Adequacy		X	X	
Baffle		X	X	
(Type :)				
Waterway Adequacy		7	7	
Icing (Y/N)	No			
Silting (Y/N)	No			
Drift (Y/N)	No			
Barrel General Rating		3	3	
Downstream End				
Culvert Component		Last	Now	Explanation of Condition
(Pipe # : 2, Span Type: Secondary Span)				
Direction		N		West culvert.
End Treatment (Concrete, Steel, Others, None)	STEEL			
Headwall		X	X	
Collar		X	X	
Wingwalls		X	X	
(Shape :)				
Cutoff Wall		X	X	
Bevel End		7	7	
Heaving (mm)	0			
Invert Above/Below Stream Bed	BELOW			
Above/Below (mm)	400			
Scour Protection		7	N	(Well vegetated. 07Dec2010) - Snow covered.
(Type : RIP RAP)				
(Avg. Rock Size(mm) : 300)				
Scour/Erosion		7	N	
Beavers (Y/N)	No			
Downstream End General Rating		7	7	
Structure Usage				
		Last	Now	Explanation of Condition
Channel (U/S and D/S)				
Alignment		7	7	
Bank Stability		7	7	
HWM (m below Top of Culvert)				HWM not visible.
Drift (Y/N)	No			
Channel Bottom Degrading/Aggrading	AGGRADING			(D/S. 13Aug2009). Snow covered.
Beavers (Y/N)	No			
(Fish Compensation Measure 1 : NONE)				
(Fish Compensation Measure 2 : NONE)				
Channel General Rating		7	7	

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	2013	Both culverts full length.								
INSTALL CONCRETE COLLAR/CUTOFF										
REPAIR SEAMS										
OTHER ACTION	2013	Lvl 2 inspection - confirm rise, top plate curvature & side plate radii with chord offset measurements. Check structural capacity if struts not placed.								
OTHER ACTION	2013	Assess need to restore clay seal & fill sidewall void at inlet if piping is still a problem.								
OTHER ACTION										
Structural Condition Rating (Last/Now) (%)	33.3/33.3	Sufficiency Rating (Last/Now) (%)	51.1/51.1	Est. Repl. Yr	2020	Maint. Req. (Y/N)	Yes			
Special Comments for Next Inspection	Monitor rise & span. (Assess & determine if struts can be accommodated, if so install struts. Verify if buckling is from fabrication * not excessive loading next inspection. 10Aug2008).		Department Comments							
Maintenance Reviewed By			Date			Estimated Total	0			
Proposed Long-Term Strategy										
On 3-Year Program (Y/N)										
Proposed Action										
Previous Inspector's Name	Dave Lam	Previous Assistant's Name								
Next Inspection Date	08-Aug-2014	Previous Inspection Date	07-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						
REMOVE DRIFT ACCUMULATION						
INSTALL CONCRETE/STEEL LINING						
INSTALL STRUTS	2013	Both culverts full length.	Continue to monitor			
INSTALL CONCRETE COLLAR/CUTOFF						
REPAIR SEAMS						
OTHER ACTION	2013	Lvl 2 inspection - confirm rise, top plate curvature & side plate radii with chord offset measurements. Check structural capacity if struts not placed.	Defer			
OTHER ACTION	2013	Assess need to restore clay seal & fill sidewall void at inlet if piping is still a problem.	Defer			
OTHER ACTION						
OTHER ACTION						
Structural Condition Rating (Last/Now) (%)	33.3/33.3	Sufficiency Rating (Last/Now) (%)	51.1/51.1	Est. Repl. Yr	2020	Maint. Req. (Y/N) Yes
Special Comments for Next Inspection	Monitor rise & span. (Assess & determine if struts can be accommodated, if so install struts. Verify if buckling is from fabrication * not excessive loading next inspection. 10Aug2008).		Department Comments	Continue to monitor on regular BIM inspection cycle. Rise and span have not changed since 2008 so the pipes appear to be static. Currently programmed to be replaced in 2022.		
Maintenance Reviewed By	Andrew Smikles		Date	19-Dec-2012	Estimated Total	0
Proposed Long-Term Strategy						
On 3-Year Program (Y/N)						
Proposed Action						
Previous Inspector's Name	Dave Lam		Previous Assistant's Name			
Next Inspection Date	08-Aug-2014		Previous Inspection Date	07-Dec-2010		
Inspection Cycle (Default) (months)	21					
Comment						