

Bridge Culvert Inspection			
Bridge File Number	00402 -1 Bridge Culvert	Form Type	CULM
Year Built	1950	Lot No.	1
Bridge or Town Name	LEDUC	Inspector Name	Todd Warshawski
Located Over	TRIBUTARY TO CONJURING CREEK, 6.107.1, WATERCRS-ST	Inspector Class	BR CLS B
Located On	39:10 C1 17.216	Assistant Name	
Water Body Cl./Year		Assistant Class	
Navigabil. Cl./Year		Inspection Date	07-Jan-2013
Legal Land Location	SE SEC 33 TWP 49 RGE 26 W4M	Data Entry By	Lisa Fairhurst
Longitude, Latitude	-113:44:38, 53:15:54	Data Entry Date	22-Jan-2013
Road Authority	Alberta Transportation (AIT)	Reviewer Name	Eric Carcoux
Contract Main. Area	CMA11	Review Date	16-Jan-2013
Clear Roadway/Skew	14.5 /	Dept. Reviewer Name	Brent Herrick
AADT/Year	8,570 / 2011 (A)	Dept. Review Date	23-Jan-2013
Road Classification	RAU-213.4-120	Follow-Up By	
Detour Length (km)	3		

Bridge Culvert Information

Number of Culverts	3							
Pipe #	Barrel	Span	Rise (or Dia.)	Type	Length	Corr. Profile	Pl./Slab Thickness	Shape
1	MAIN	2337	1651	RPP	30.5	152X51	2.8	PIPE ARCH
2	MAIN	2134	1550	RPP	30.5	152X51	2.8	PIPE ARCH
3	MAIN	-	1200	MP	30.5	68X13	2.8	ROUND
Special Features								
Special Features Comment								

Utilities (Located at)

Utility Attachments			
Telephone	North & South r/w.	Gas	Oil pipeline west outside South r/w.
Power	3 wires West & North. Power crosses 20m North of c/l & 10m West.	Municipal	
Others		Problem (Y/N)	No
Remarks			

Approach Road / Embankment

	Last	Now	Explanation of Condition
Horizontal Alignment	7	7	Farm accesses SW, NE and NW.
Vertical Alignment	9	9	
Roadway Width (m)	13.000		
Embankment	7	7	
Sideslope (___:1)	5.0		
(Height of Cover(m) : 1.2)			
Guardrail (Y/N)	Yes		Strike damage to 5 sections/posts along N side (photo)
Approach Road / Embankment General Rating	7	7	

Upstream End

Culvert Component	Last	Now	Explanation of Condition
(Pipe # : 1, Span Type: Primary Span)			
Direction	S		Middle pipe.
End Treatment (Concrete, Steel, Others, None)	STEEL		
Headwall	X	X	
Collar	X	X	

Upstream End				
Culvert Component		Last	Now	Explanation of Condition
(Pipe # : 1, Span Type: Primary Span)				
Wingwalls		X	X	
(Shape :)				
Cutoff Wall		X	X	
Bevel End		3	3	No bolts in circumferential seam on floor of bevel. Floor rusted with perforation - photo
Heaving (mm)	300			
Invert Above/Below Stream Bed	BELOW			
Above/Below (mm)	100			
Scour Protection		N	N	(Loss of fill on East side.-Jun,2009) Snow covered
(Type : RIP RAP)				
(Avg. Rock Size(mm) : 250)				
Scour/Erosion		N	N	(Loss of fill on East side 0.3 deep, 0.5 wide, 2m long.-Jun-2009)
Beavers (Y/N)	No			
Upstream End General Rating		3	3	

Bridge Culvert Barrel				
Culvert Component		Last	Now	Explanation of Condition
(Pipe # : 1, Primary Span, Location Code: MAIN, Span (mm): 2337, Rise (mm): 1651, Type: RPP)				
Barrel Last Accessible Date	07-Jan-2013			Middle pipe.
Special Features				
Special Feature				
(Type :)				
Special Feature				
(Type :)				
Roof		4	5	Noticable deflection at Rings 2 & 8.- estimated at %5 Not measured due to ice.
Measured Rise (mm)	1600			
Measured At Ring No.	3			
Sag (mm)	51			
Percent Sag	3			
Sidewall		6	6	
Measured Span (mm)	2430			
Measured At Ring No.	3			
Deflection (mm)	93			
Percent Deflection	4			
Floor		N	N	Ice covered
Bulge (mm)	100			
Measured At Ring No.	3			
Abrasion (Y/N)	No			
Circumferential Seams		5	4	Missing 4 bolts @ R3.-photo
Separation (mm)	0			
Longitudinal Seams		5	4	Missing & loose bolts. 1N stagger.
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			

Bridge Culvert Barrel					
Culvert Component		Last	Now	Explanation of Condition	
(Pipe # : 1, Primary Span, Location Code: MAIN, Span (mm): 2337, Rise (mm): 1651, Type: RPP)					
Coating		4	4	Pitting rust, 2m wide strip of floor.-Mar 2011	
Corrosion By Soil (Y/N)	No				
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				
Barrel General Rating		4	4		
Downstream End					
Culvert Component		Last	Now	Explanation of Condition	
(Pipe # : 1, Span Type: Primary Span)					
Direction		N		Middle pipe.	
End Treatment (Concrete, Steel, Others, None)	NONE				
Headwall		X	X		
Collar		X	X		
Wingwalls		X	X		
(Shape :)					
Cutoff Wall		X	X		
Bevel End		X	X		
Heaving (mm)	100				
Invert Above/Below Stream Bed	ABOVE				
Above/Below (mm)	200				
Scour Protection		N	N	Snow covered	
(Type : RIP RAP)					
(Avg. Rock Size(mm) : 300)					
Scour/Erosion		N	N	(Scour hole 2.5 x 10 x 0.3.-June -2009)	
Beavers (Y/N)	No				
Downstream End General Rating		4	4	GR carried fwd.	
Upstream End					
Culvert Component		Last	Now	Explanation of Condition	
(Pipe # : 2, Span Type: Secondary Span)					
Direction		S		East pipe.	
End Treatment (Concrete, Steel, Others, None)	STEEL				
Headwall		X	X		
Collar		X	X		

Upstream End				
Culvert Component		Last	Now	Explanation of Condition
(Pipe # : 2, Span Type: Secondary Span)				
Wingwalls		X	X	
(Shape :)				
Cutoff Wall		X	X	
Bevel End		5	5	lower portion not rated
Heaving (mm)	150			
Invert Above/Below Stream Bed	ABOVE			Not contingent with channel.
Above/Below (mm)	500			
Scour Protection		N	N	snow covered
(Type : RIP RAP)				
(Avg. Rock Size(mm) : 250)				
Scour/Erosion		N	N	
Beavers (Y/N)	No			
Upstream End General Rating		5	5	
Bridge Culvert Barrel				
Culvert Component		Last	Now	Explanation of Condition
(Pipe # : 2, Secondary Span, Location Code: MAIN, Span (mm): 2134, Rise (mm): 1550, Type: RPP)				
Barrel Last Accessible Date	07-Jan-2013			East pipe.
Special Features				
Special Feature				
(Type :)				
Special Feature				
(Type :)				
Roof		3	3	Rise not measured due to ice sag estimated
Measured Rise (mm)	1387			
Measured At Ring No.	7			
Sag (mm)	163			
Percent Sag	11			
Sidewall		2	2	Cracked seams on sidewall.
Measured Span (mm)	2260			
Measured At Ring No.	7			
Deflection (mm)	126			
Percent Deflection	6			
Floor		N	2	severe perforations in floor rings 1 & 2
Bulge (mm)	100			
Measured At Ring No.	7			
Abrasion (Y/N)	No			
Circumferential Seams		5	4	Several seams with missing nuts
Separation (mm)	0			
Longitudinal Seams		2	2	Cracked seams ring 5, 7 & 8 - photo. Loose/missing bolts. Bolts pulling through plate @ R7. 30mm steel remaining @ R8, East wall.
Total No. of Cracked Rings	3			
Total No. of Rings with Two Cracked Seams	0			
Min. Remaining Steel Between Cracks (mm)	30			
Proper Lap (Y/N)	No			
Longitudinal Stagger (Y/N)	No			

Bridge Culvert Barrel				
Culvert Component		Last	Now	Explanation of Condition
(Pipe # : 2, Secondary Span, Location Code: MAIN, Span (mm): 2134, Rise (mm): 1550, Type: RPP)				
Coating		4	2	Severe perforations on floor
Corrosion By Soil (Y/N)	No			
Corrosion By Water (Y/N)	Yes			
Camber POS/ZERO/NEG	NEG			
Ponding (Y/N)	No			
Fish Passage Adequacy		7	X	Overflow pipe
Baffle		X	X	
(Type :)				
Waterway Adequacy		7	7	
Icing (Y/N)	No			
Silting (Y/N)	No			
Drift (Y/N)	No			
Barrel General Rating		2	2	
Downstream End				
Culvert Component		Last	Now	Explanation of Condition
(Pipe # : 2, Span Type: Secondary Span)				
Direction		N		East pipe.
End Treatment (Concrete, Steel, Others, None)	STEEL			
Headwall		X	X	
Collar		X	X	
Wingwalls		X	X	
(Shape :)				
Cutoff Wall		X	X	
Bevel End		5	5	Torn NE corner, 2 spots. 100-150 long, 30mm wide.
Heaving (mm)	100			
Invert Above/Below Stream Bed	ABOVE			
Above/Below (mm)	100			
Scour Protection		N	N	
(Type : RIP RAP)				
(Avg. Rock Size(mm) : 300)				
Scour/Erosion		N	N	Snow covered
Beavers (Y/N)	No			
Downstream End General Rating		5	5	
Upstream End				
Culvert Component		Last	Now	Explanation of Condition
(Pipe # : 3, Span Type: Secondary Span)				
Direction		S		West pipe.
End Treatment (Concrete, Steel, Others, None)	STEEL			
Headwall		X	X	
Collar		X	X	

Upstream End				
Culvert Component		Last	Now	Explanation of Condition
(Pipe # : 3, Span Type: Secondary Span)				
Wingwalls		X	X	
(Shape :)				
Cutoff Wall		X	X	
Bevel End		4	3	Floor perforated - photo. Bevel section ois loose and lifted
Heaving (mm)	300			
Invert Above/Below Stream Bed	ABOVE			
Above/Below (mm)	800			
Scour Protection		N	N	Snow covered
(Type : RIP RAP)				
(Avg. Rock Size(mm) : 250)				
Scour/Erosion		N	N	
Beavers (Y/N)	No			
Upstream End General Rating		4	3	

Bridge Culvert Barrel				
Culvert Component		Last	Now	Explanation of Condition
(Pipe # : 3, Secondary Span, Location Code: MAIN, Span (mm): , Rise (mm): 1200, Type: MP)				
Barrel Last Accessible Date	07-Jan-2013			West pipe.
Special Features				
Special Feature				
(Type :)				
Special Feature				
(Type :)				
Roof		3	3	At c/l.
Measured Rise (mm)	1070			
Measured At Ring No.				
Sag (mm)	120			
Percent Sag	10			
Sidewall		3	3	At c/l.
Measured Span (mm)	1330			
Measured At Ring No.				
Deflection (mm)	130			
Percent Deflection	11			
Floor		3	3	Extensive corrosion, U/S bevel perforated - photo. Perforations along floor
Bulge (mm)	100			
Measured At Ring No.				
Abrasion (Y/N)	No			
Circumferential Seams		4	3	Perforated, exposing fill, second ring from D/S end.
Separation (mm)	160			
Longitudinal Seams		X	X	
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			

Bridge Culvert Barrel				
Culvert Component		Last	Now	Explanation of Condition
(Pipe # : 3, Secondary Span, Location Code: MAIN, Span (mm): , Rise (mm): 1200, Type: MP)				
Coating		3	3	Extensive perforations in floor.
Corrosion By Soil (Y/N)	Yes			
Corrosion By Water (Y/N)	Yes			
Camber POS/ZERO/NEG	NEG			
Ponding (Y/N)	No			
Fish Passage Adequacy		4	X	Above streambed, overflow pipe
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 # : 3, Span Type: Secondary Span)				
Direction		N		West pipe.
End Treatment (Concrete, Steel, Others, None)	STEEL			
Headwall		X	X	
Collar		X	X	
Wingwalls (Shape :)		X	X	
Cutoff Wall		X	X	
Bevel End		5	5	
Heaving (mm)	200			
Invert Above/Below Stream Bed	ABOVE			
Above/Below (mm)	800			
Scour Protection (Type : RIP RAP) (Avg. Rock Size(mm) : 300)		N	N	(Scour hole D/S.-June, 2009) Snow covered
Scour/Erosion		N	N	
Beavers (Y/N)		No		
Downstream End General Rating		4	4	GR carried fwd.
Structure Usage				
		Last	Now	Explanation of Condition
Channel (U/S and D/S)				
Alignment		5	5	90 degree turn at inlets
Bank Stability		N	N	(Vertical banks D/S.-June 2009)
HWM (m below Top of Culvert)				HWM not visible.
Drift (Y/N)		No		

Structure Usage				
		Last	Now	Explanation of Condition
Channel Bottom Degrading/Aggrading				
Beavers (Y/N)	No			
(Fish Compensation Measure 1 : NONE)				
(Fish Compensation Measure 2 : NONE)				
Channel General Rating		5	5	

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	2013	Replace culverts.					
OTHER ACTION							
OTHER ACTION							
OTHER ACTION							
Structural Condition Rating (Last/Now) (%)	22.2/22.2	Sufficiency Rating (Last/Now) (%)	31.7/37.5	Est. Repl. Yr	2014	Maint. Reqd. (Y/N)	Yes
Special Comments for Next Inspection	Assessment completed 1998, recommends replacement by 2008. Monitor condition until replaced. Region advised of 2 rating on Jan 14/13. Reduce inspection cycle to 12 months until replaced		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	Todd Warshawski		Previous Assistant's Name				
Next Inspection Date	07-Oct-2014		Previous Inspection Date	24-Mar-2011			
Inspection Cycle (Default) (months)	21						
Comment							