

Bridge Culvert Inspection			
Bridge File Number	76006 -1 Bridge Culvert	Form Type	CULM
Year Built	1964	Lot No.	1
Bridge or Town Name	SLAVE LAKE	Inspector Name	Wade Nanninga
Located Over	TRIBUTARY TO LESSER SLAVE RIVER, 8.11.80.27, WATERCRS-ST	Inspector Class	BR CLS A
Located On	2:48 C1 2.709	Assistant Name	
Water Body Cl./Year		Assistant Class	
Navigabil. Cl./Year		Inspection Date	27-Mar-2013
Legal Land Location	NW SEC 35 TWP 72 RGE 6 W5M	Data Entry By	Theresa Lacusta
Longitude, Latitude	-114:49:02, 55:17:04	Data Entry Date	16-Apr-2013
Road Authority	Alberta Transportation (AIT)	Reviewer Name	Eric Carcoux
Contract Main. Area	CMA06	Review Date	11-Apr-2013
Clear Roadway/Skew	10.3 /	Dept. Reviewer Name	Brent Herrick
AADT/Year	3,030 / 2012 (A)	Dept. Review Date	23-Apr-2013
Road Classification	RAU-210-110	Follow-Up By	
Detour Length (km)	200		

**Bridge Culvert Information**

Number of Culverts		2						
Pipe #	Barrel	Span	Rise (or Dia.)	Type	Length	Corr. Profile	Pl./Slab Thickness	Shape
1	MAIN	-	1500	SP	27.4	152X51	3.0	ROUND
2	MAIN	-	1500	SP	27.4	152X51	3.0	ROUND
Special Features								
Special Features Comment								

**Utilities (Located at)**

Utility Attachments			
Telephone	North r/w.	Gas	
Power	6 wires north r/w.	Municipal	
Others		Problem (Y/N)	No
Remarks			

**Approach Road / Embankment**

		Last	Now	Explanation of Condition
Horizontal Alignment		7	7	Residential entrance NW.
Vertical Alignment		9	9	
Roadway Width (m)	10.500			
Embankment		6	6	
Sideslope (__:1)	4.5			
(Height of Cover(m) : 1.3)				
Guardrail (Y/N)	No			
<b>Approach Road / Embankment General Rating</b>		<b>7</b>	<b>7</b>	

**Upstream End**

Culvert Component		Last	Now	Explanation of Condition
<b>(Pipe # : 1, Span Type: Primary Span)</b>				
Direction		S		West pipe.
End Treatment (Concrete, Steel, Others, None)	NONE			
Headwall		X	X	
Collar		X	X	
Wingwalls		X	X	
(Shape : )				

Upstream End				
Culvert Component		Last	Now	Explanation of Condition
<b>(Pipe # : 1, Span Type: Primary Span)</b>				
Cutoff Wall		X	X	
Bevel End		X	X	Bevel ripped off during beaver dam removal.
Heaving (mm)	100			
Invert Above/Below Stream Bed	BELOW			
Above/Below (mm)	100			
Scour Protection		N	N	Banks cut near vertical during beaver dam removal.(Aug 9, 2009) Water too deep to confirm
(Type : <b>NONE</b> )				
(Avg. Rock Size(mm) : )				
Scour/Erosion		N	N	Water too deep to confirm
Beavers (Y/N)	No			
<b>Upstream End General Rating</b>		<b>4</b>	<b>4</b>	Gen rating carried over
Bridge Culvert Barrel				
Culvert Component		Last	Now	Explanation of Condition
<b>(Pipe # : 1, Primary Span, Location Code: MAIN, Span (mm): , Rise (mm): 1500, Type: SP)</b>				
Barrel Last Accessible Date	21-Aug-2009			Could not access due to deep water. Likely beaver dam downstream. Ice to roof - inlet appears dented/torn.
<b>Special Features</b>				
Special Feature				
(Type : )				
Special Feature				
(Type : )				
Roof		N	N	(First ring separation, top plate from slab plate at one o'clock. Holes at 11 & 1 o'clock positions. Near D/S end signs of rusting in roof plate. Only able to access 1st 4 rings from each end due to beaver dams in the pipe Aug 21,2009)
Measured Rise (mm)	1417			
Measured At Ring No.	4			
Sag (mm)	83			
Percent Sag	6			
Sidewall		5	N	
Measured Span (mm)	1553			
Measured At Ring No.	4			
Deflection (mm)	53			
Percent Deflection	4			
Floor		N	N	(Covered in silt/water, perforations visible in bevel ends Aug 21,2009)
Bulge (mm)				
Measured At Ring No.				
Abrasion (Y/N)	Yes			(2002/10/25)
Circumferential Seams		N	N	
Separation (mm)	0			
Longitudinal Seams		N	N	
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			
Coating		N	N	(Heavy scaling & loss of section. Perforations in floor at bevels - photo Aug 21 2009)
Corrosion By Soil (Y/N)				
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): , Rise (mm): 1500, Type: SP)					
Camber POS/ZERO/NEG	NEG				
Ponding (Y/N)	Yes			(0.7 m ponding. 17/Mar/2006) Not evident.	
Fish Passage Adequacy		5	5		
Baffle		X	X		
(Type : )					
Waterway Adequacy		4	4	Beaver dams inside barrel blocking flow.-Jun-2011	
Icing (Y/N)	Yes				
Silting (Y/N)	No				
Drift (Y/N)	No				
<b>Barrel General Rating</b>		<b>N</b>	<b>N</b>	GR 5 -21 Aug 2009	
Downstream End					
Culvert Component		Last	Now	Explanation of Condition	
(Pipe # : 1, Span Type: Primary Span)					
Direction		N		West pipe.	
End Treatment (Concrete, Steel, Others, None)	STEEL				
Headwall		X	X		
Collar		X	X		
Wingwalls		X	X		
(Shape : )					
Cutoff Wall		X	X		
Bevel End		N	N	(Bevel end beat up from past beaver dam and drift removal. Perforations in bevel. Aug 21 2009)	
Heaving (mm)	150				
Invert Above/Below Stream Bed	BELOW				
Above/Below (mm)	300				
Scour Protection		N	N	(Small scour at outlet ~4m long x 2m x 0.5m deep. Aug 21 2009)	
(Type : <b>NONE</b> )					
(Avg. Rock Size(mm) : )					
Scour/Erosion		N	N		
Beavers (Y/N)	Yes				
<b>Downstream End General Rating</b>		<b>4</b>	<b>4</b>	General rating carried over	
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)	NONE				
Headwall		X	X		
Collar		X	X		
Wingwalls		X	X		
(Shape : )					
Cutoff Wall		X	X		

Upstream End				
Culvert Component		Last	Now	Explanation of Condition
<b>(Pipe # : 2, Span Type: Secondary Span)</b>				
Bevel End		X	X	Bevel ripped off during beaver dam removal.-Jun-2011
Heaving (mm)	150			
Invert Above/Below Stream Bed	BELOW			
Above/Below (mm)	100			
Scour Protection		N	N	(Banks cut near vertical during beaver dam removal. Aug 21 2009)
(Type : <b>NONE</b> )				
(Avg. Rock Size(mm) : )				
Scour/Erosion		N	N	Water too high
Beavers (Y/N)				
<b>Upstream End General Rating</b>		<b>4</b>	<b>4</b>	Gen rating carried over
Bridge Culvert Barrel				
Culvert Component		Last	Now	Explanation of Condition
<b>(Pipe # : 2, Secondary Span, Location Code: MAIN, Span (mm): , Rise (mm): 1500, Type: SP)</b>				
Barrel Last Accessible Date	21-Aug-2009			(Only able to access 1st 4 rings from each end due to beaver dams in the pipe. Aug 21 2009) Not accessible due to high water/ice.
<b>Special Features</b>				
Special Feature				
(Type : )				
Special Feature				
(Type : )				
Roof		N	N	
Measured Rise (mm)	1425			
Measured At Ring No.	4			
Sag (mm)	75			
Percent Sag	5			
Sidewall		N	N	
Measured Span (mm)	1537			
Measured At Ring No.	4			
Deflection (mm)	37			2.5%
Percent Deflection	3			
Floor		N	N	(Water/silt cover. Perforations in floor of bevels visible. Aug 21 2009)
Bulge (mm)				
Measured At Ring No.				
Abrasion (Y/N)				
Circumferential Seams		N	N	
Separation (mm)				
Longitudinal Seams		N	N	
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		N	N	(Heavy scaling with loss of section & perforations visible in floor of bevel end - photo. Aug 21 2009)
Corrosion By Soil (Y/N)				
Corrosion By Water (Y/N)	Yes			
Camber POS/ZERO/NEG	NEG			

Bridge Culvert Barrel				
Culvert Component		Last	Now	Explanation of Condition
(Pipe # : 2, Secondary Span, Location Code: MAIN, Span (mm): , Rise (mm): 1500, Type: SP)				
Ponding (Y/N)	Yes			
Fish Passage Adequacy		5	5	
Baffle		X	X	
(Type : )				
Waterway Adequacy		4	4	Beaver dam inside barrel blocking flow.-Jun-2011
Icing (Y/N)	Yes			
Silting (Y/N)	No			
Drift (Y/N)	No			
<b>Barrel General Rating</b>		<b>N</b>	<b>N</b>	GR 5 Aug 21 2009
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		4	N	Bevel side bent inwards. Perforations in bevel.(21 Aug 2009)
Heaving (mm)	150			
Invert Above/Below Stream Bed	BELOW			
Above/Below (mm)	200			
Scour Protection		N	N	
(Type : NONE)				
(Avg. Rock Size(mm) : )				
Scour/Erosion		N	N	Scour hole @ outlet 4m x 2m x 0.5m. (21 Aug 2009)
Beavers (Y/N)	Yes			
<b>Downstream End General Rating</b>		<b>3</b>	<b>3</b>	GR carried over
Structure Usage				
		Last	Now	Explanation of Condition
<b>Channel (U/S and D/S)</b>				
Alignment		6	6	
Bank Stability		7	7	
HWM (m below Top of Culvert)				
Drift (Y/N)	Yes			
Channel Bottom Degrading/Aggrading				
Beavers (Y/N)	Yes			
(Fish Compensation Measure 1 : NONE)				
(Fish Compensation Measure 2 : NONE)				
<b>Channel General Rating</b>		<b>7</b>	<b>6</b>	

Maintenance Recommendations							
Inspector Recommendations	Year	Inspector Comments	Department Comments	Target Year	Est. Cost	Cat #	
SHOTCRETE REPAIRS							
PLACE ADDITIONAL RIP RAP							
REMOVE DRIFT ACCUMULATION	2013	Remove beaver dams from inside barrels. If not done, remove beaver dam downstream					
INSTALL CONCRETE/STEEL LINING							
INSTALL STRUTS							
INSTALL CONCRETE COLLAR/CUTOFF							
REPAIR SEAMS							
OTHER ACTION	2013	Perform assessment if not done.					
OTHER ACTION							
OTHER ACTION							
OTHER ACTION							
<b>Structural Condition Rating (Last/Now) (%)</b>	<b>55.6/55.6</b>	<b>Sufficiency Rating (Last/Now) (%)</b>	<b>45.2/44.5</b>	Est. Repl. Yr	2016	Maint. Req. (Y/N)	Yes
Special Comments for Next Inspection	Monitor corrosion and deflections.		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	Shane Hall		Previous Assistant's Name				
Next Inspection Date	27-Dec-2014		Previous Inspection Date	09-Jun-2011			
Inspection Cycle (Default) (months)	21						
Comment							