

Bridge Culvert Inspection			
Bridge File Number	77277 -1 Bridge Culvert	Form Type	CULM
Year Built	1971	Lot No.	2
Bridge or Town Name	MUSKEG RIVER	Inspector Name	Shane Hall
Located Over	HENDRICKSON CREEK, 8.11.118.13, WATERCRS-ST	Inspector Class	BR CLS A
Located On	40:32 C1 25.082	Assistant Name	
Water Body Cl./Year		Assistant Class	
Navigabil. Cl./Year		Inspection Date	18-Oct-2012
Legal Land Location	SW SEC 31 TWP 55 RGE 3 W6M	Data Entry By	Theresa Lacusta
Longitude, Latitude	-118:26:46, 53:47:35	Data Entry Date	06-Jan-2013
Road Authority	Alberta Transportation (AIT)	Reviewer Name	Eric Carcoux
Contract Main. Area	CMA05	Review Date	19-Nov-2012
Clear Roadway/Skew	8.1 / -30 deg. (LHF)	Dept. Reviewer Name	Paul Catt
AADT/Year	1,090 / 2011 (A)	Dept. Review Date	18-Jan-2013
Road Classification	RAU-209-110	Follow-Up By	
Detour Length (km)	3		

**Bridge Culvert Information**

Number of Culverts	2							
Pipe #	Barrel	Span	Rise (or Dia.)	Type	Length	Corr. Profile	Pl./Slab Thickness	Shape
1	MAIN	1429	1575	SPE	82.3	152X51	3.5	ELLIPSE
2	MAIN	1429	1575	SPE	82.3	152X51	3.5	ELLIPSE
Special Features								
Special Features Comment								

**Utilities (Located at)**

Utility Attachments			
Telephone	West r/w	Gas	
Power		Municipal	
Others		Problem (Y/N)	No
Remarks	File tag installed on South pipe, West end roof.		

**Approach Road / Embankment**

		Last	Now	Explanation of Condition
Horizontal Alignment		7	7	Land access 75m Northeast.
Vertical Alignment		6	6	Long gradual sag curve. Limited sight distance North.
Roadway Width (m)	8.100			
Embankment		N	6	
Sideslope (__:1)	3.0			
(Height of Cover(m) : 8.4)				
Guardrail (Y/N)	Yes			
<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)	STEEL			
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		5	5	
Heaving (mm)	600			
Invert Above/Below Stream Bed	ABOVE			
Above/Below (mm)	200			
Scour Protection		N	4	Bevel undermined 1m.
(Type : RIP RAP)				
(Avg. Rock Size(mm) : 200)				
Scour/Erosion		N	4	Bevel undermined
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: MAIN, Span (mm): 1429, Rise (mm): 1575, Type: SPE)</b>				
Barrel Last Accessible Date	18-Oct-2012			South barrel.
<b>Special Features</b>				
Special Feature				
(Type : )				
Special Feature				
(Type : )				
Roof		6	6	At c/l. Upward deflection.
Measured Rise (mm)	1580			
Measured At Ring No.				
Sag (mm)	5			
Percent Sag				
Sidewall		6	6	At c/l.
Measured Span (mm)	1427			
Measured At Ring No.				
Deflection (mm)	2			
Percent Deflection				
Floor		6	6	
Bulge (mm)	0			
Measured At Ring No.				
Abrasion (Y/N)	Yes			
Circumferential Seams		4	4	Bolts weren't fully torqued in some locations. Some bolts missing at 3 ply, locations.
Separation (mm)	0			
Longitudinal Seams		6	6	Water seeping in through upper bolt holes for first 3/4 length.
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		4	4	Rust stains through all seams for first 1/4 L. Superficial rust on lower 1/2.
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): 1429, Rise (mm): 1575, Type: SPE)				
Camber POS/ZERO/NEG	NEG			
Ponding (Y/N)	Yes			400mm ponding close to outlet, caused from uplift bevel.
Fish Passage Adequacy		4	4	Drop off invert. Fish can only access pipe when flows are high.
Baffle		X	X	
(Type : )				
Waterway Adequacy		4	4	Scour hole @ outlet evidence of inadequate size pipe.
Icing (Y/N)	No			
Silting (Y/N)	Yes			
Drift (Y/N)	Yes			
<b>Barrel General Rating</b>		<b>6</b>	<b>6</b>	

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		5	5	Bevel undermined for 1m.	
Heaving (mm)	150				
Invert Above/Below Stream Bed	ABOVE			Outfall of 400mm.	
Above/Below (mm)	400				
Scour Protection		4	4	Scour hole off D/S end. 1.0m deep x 2.0 m wide x 4.0 m long.	
(Type : RIP RAP)					
(Avg. Rock Size(mm) : 300)					
Scour/Erosion		4	4	Scour hole and bevel undermined.	
Beavers (Y/N)	No				
<b>Downstream End General Rating</b>		<b>4</b>	<b>4</b>		

Upstream End				
Culvert Component		Last	Now	Explanation of Condition
(Pipe # : 2, Span Type: Secondary Span)				
Direction		W		North pipe. Overflow pipe
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
<b>(Pipe # : 2, Span Type: Secondary Span)</b>				
Bevel End		N	N	Covered by dirt/grass - photo.
Heaving (mm)	0			
Invert Above/Below Stream Bed	ABOVE			
Above/Below (mm)	1000			
Scour Protection		N	5	
(Type : <b>RIP RAP</b> )				
(Avg. Rock Size(mm) : <b>200</b> )				
Scour/Erosion		N	5	
Beavers (Y/N)	No			
<b>Upstream End General Rating</b>		<b>6</b>	<b>5</b>	
Bridge Culvert Barrel				
Culvert Component		Last	Now	Explanation of Condition
<b>(Pipe # : 2, Secondary Span, Location Code: MAIN, Span (mm): 1429, Rise (mm): 1575, Type: SPE)</b>				
Barrel Last Accessible Date	18-Oct-2012			North barrel. Accessed barrel from D/S end.
<b>Special Features</b>				
Special Feature				
(Type : )				
Special Feature				
(Type : )				
Roof		6	6	Upwards def. At c/l.
Measured Rise (mm)	1621			
Measured At Ring No.				
Sag (mm)	46			
Percent Sag	0			
Sidewall		6	6	Inwards defl..
Measured Span (mm)	1369			
Measured At Ring No.				
Deflection (mm)	60			
Percent Deflection				
Floor		5	5	Scaling rust on lower 1/4.
Bulge (mm)	0			
Measured At Ring No.				
Abrasion (Y/N)	No			
Circumferential Seams		6	6	
Separation (mm)	0			
Longitudinal Seams		6	6	
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	Corrosion/scaling on lower 1/4..
Corrosion By Soil (Y/N)	Yes			
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): 1429, Rise (mm): 1575, Type: SPE)				
Ponding (Y/N)	Yes			Standing water in barrel when not high water due to negative camber.
Fish Passage Adequacy		4	4	Require high water for fish passage.
Baffle		X	X	
(Type : )				
Waterway Adequacy		4	4	U/S end partially blocked by silt/drift.
Icing (Y/N)	No			
Silting (Y/N)	Yes			
Drift (Y/N)	Yes			
<b>Barrel General Rating</b>		<b>6</b>	<b>6</b>	
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)	0			
Invert Above/Below Stream Bed	ABOVE			
Above/Below (mm)	1000			
Scour Protection		N	6	
(Type : RIP RAP)				
(Avg. Rock Size(mm) : 300)				
Scour/Erosion		N	6	
Beavers (Y/N)	No			
<b>Downstream End General Rating</b>		<b>6</b>	<b>6</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)	0.5			Drift 0.5m below South pipe u/s crown.-photo
Drift (Y/N)	Yes			
Channel Bottom Degrading/Aggrading	DEGRADING			Degrading D/S. Small dam @ D/S channel.
Beavers (Y/N)	Yes			
(Fish Compensation Measure 1 : NONE)				
(Fish Compensation Measure 2 : NONE)				
<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							
INSTALL CONCRETE/STEEL LINING							
INSTALL STRUTS							
INSTALL CONCRETE COLLAR/CUTOFF							
REPAIR SEAMS							
OTHER ACTION							
OTHER ACTION	2013	Removesilt/ debris @ U/S end of secondary barrel.					
OTHER ACTION							
OTHER ACTION							
<b>Structural Condition Rating (Last/Now) (%)</b>	<b>66.7/66.7</b>	<b>Sufficiency Rating (Last/Now) (%)</b>	<b>51.1/49.9</b>	Est. Repl. Yr	2023	Maint. Req. (Y/N)	Yes
Special Comments for Next Inspection	Monitor scour/erosion at u/s & d/s ends of primary culvert.		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	18-Jul-2014		Previous Inspection Date	23-Nov-2010			
Inspection Cycle (Default) (months)	21						
Comment							