

Bridge Culvert Inspection			
Bridge File Number	72027 -1 Bridge Culvert	Form Type	CULM
Year Built	1966	Lot No.	1
Bridge or Town Name	PATRICIA	Inspector Name	Tom Carey
Located Over	LITTLE SANDHILL CREEK, 3.11, WATERCRS-ST	Inspector Class	BR CLS A
Located On	544:02 C1 22.490	Assistant Name	
Water Body Cl./Year		Assistant Class	
Navigabil. Cl./Year		Inspection Date	15-Feb-2010
Legal Land Location	SE SEC 18 TWP 20 RGE 12 W4M	Data Entry By	Kelsey Roberts
Longitude, Latitude	-111:39:09, 50:41:19	Data Entry Date	03-Mar-2010
Road Authority	Alberta Transportation (AIT)	Reviewer Name	Garry Roberts
Contract Main. Area	CMA23	Review Date	23-Feb-2010
Clear Roadway/Skew	9 / 20 deg. (RHF)	Dept. Reviewer Name	Lorenz Bohnert
AADT/Year	720 / 2008 (A)	Dept. Review Date	08-Mar-2010
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	2490	1755	RPP	33.5	152X51	2.8	PIPE ARCH
2	MAIN	-	1740	SP	34	152X51	2.8	ROUND
Special Features								
Special Features Comment								

**Utilities (Located at)**

Utility Attachments			
Telephone	South	Gas	
Power	3 - wire north	Municipal	
Others		Problem (Y/N)	No
Remarks	3 wire xing 150m E		

**Approach Road / Embankment**

		Last	Now	Explanation of Condition
Horizontal Alignment		8	8	Secondary pipe 2.4 m
Vertical Alignment		7	7	
Roadway Width (m)	8.500			
Embankment		7	N	Snow
Sideslope ( _ :1)	2.0			
(Height of Cover (m) : <b>3.3</b> )				
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		SOUTHWest
End Treatment (Concrete, Steel, Others, None)	STEEL			
Headwall		X	X	
Collar		X	X	

Upstream End				
Culvert Component		Last	Now	Explanation of Condition
<b>(Pipe # : 1, Span Type: Primary Span)</b>				
Wingwalls		X	X	
(Shape : )				
Cutoff Wall		X	X	snow covered
Bevel End		N	N	(CORROSION WITH SOME PITTING. (SOME MISSING BOLTS)
Heaving (mm)	100			
Invert Above/Below Stream Bed	BELOW			
Above/Below (mm)	300			
Scour Protection		N	N	snow covered
(Type : )				
(Avg. Rock Size (mm) : )				
Scour/Erosion		N	N	snow covered
Beavers (Y/N)	No			
<b>Upstream End General Rating</b>		<b>6</b>	<b>N</b>	
Bridge Culvert Barrel				
Culvert Component		Last	Now	Explanation of Condition
<b>(Pipe # : 1, Primary Span, Location Code: MAIN, Span (mm): 2490, Rise (mm): 1755, Type: RPP)</b>				
Barrel Last Accessible Date	18-Jun-2003			(West pipe - extreme flattening @ roof seam. @ ring 10, rise 1465 (16.5%) 2003/06/18
<b>Special Features</b>				
Special Feature				ice 400mm from roof.
(Type : )				
Special Feature				
(Type : )				
Roof		N	N	2 o'clock seam on ring #10 sagging
Measured Rise (mm)	1465			
Measured At Ring No.	10			Sag appears about the same as past inspections. Roof flattens near D/S end @ 2 o'clock looking U/S
Sag (mm)	290			
Percent Sag	16			
Sidewall		N	N	(Cracks, min. steel 60mm) @ ring 10 spsn 2715 (9% defl) 2003/06/18
Measured Span (mm)	2715			
Measured At Ring No.	10			
Deflection (mm)	225			
Percent Deflection	9			
Floor		N	N	(IN 200mm R10-PHOTO. steel. 20mm GAP BETWEEN UPPER LAPPING ON R10.) 2003/16/18
Bulge (mm)				
Measured At Ring No.				
Abrasion (Y/N)	No			
Circumferential Seams		N	N	
Separation (mm)	0			
Longitudinal Seams		N	N	(4 o'clock seam cracked more rings may be cracked but ice is covering part of the seam.) 2003/06/18
Total No. of Cracked Rings	7			
Total No. of Rings with Two Cracked Seams	0			
Min. Remaining Steel Between Cracks (mm)	60			
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): 2490, Rise (mm): 1755, Type: RPP)				
Coating		N	N	(Pitted and flaking rust.) 2003/06/18
Corrosion By Soil (Y/N)				
Corrosion By Water (Y/N)	Yes			
Camber POS/ZERO/NEG	ZERO			
Ponding (Y/N)	No			
Fish Passage Adequacy		9	9	
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>2</b>	<b>2</b>	General rating carried forward- ice to 400mm of roof.
Downstream End				
Culvert Component		Last	Now	Explanation of Condition
(Pipe # : 1, Span Type: Primary Span)				
Direction		N		NORTHWest
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	(SOME MISSING BOLTS)
Heaving (mm)	0			snow covered
Invert Above/Below Stream Bed	BELOW			
Above/Below (mm)	300			
Scour Protection		N	N	snow covered
(Type : )				
(Avg. Rock Size (mm) : )				
Scour/Erosion		N	N	snow covered
Beavers (Y/N)	No			
<b>Downstream End General Rating</b>		<b>7</b>	<b>N</b>	
Upstream End				
Culvert Component		Last	Now	Explanation of Condition
(Pipe # : 2, Span Type: Secondary Span)				
Direction		S		SOUTHEAST
End Treatment (Concrete, Steel, Others, None)	STEEL			Only sees flow during flood cond
Headwall		X	X	
Collar		X	X	

Upstream End				
Culvert Component		Last	Now	Explanation of Condition
<b>(Pipe # : 2, Span Type: Secondary Span)</b>				
Wingwalls		X	X	
(Shape : )				
Cutoff Wall		X	X	
Bevel End		N	4	Heaved with no fill under bevel.
Heaving (mm)	300			
Invert Above/Below Stream Bed	ABOVE			
Above/Below (mm)	800			
Scour Protection		N	3	
(Type : )				
(Avg. Rock Size (mm) : )				
Scour/Erosion		N	3	No fill under or around bevel.
Beavers (Y/N)	No			
<b>Upstream End General Rating</b>		<b>4</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): 1740, Type: SP)</b>				
Barrel Last Accessible Date	15-Feb-2010			
<b>Special Features</b>				
Special Feature				
(Type : )				
Special Feature				
(Type : )				
Roof		6	7	Past measurements
Measured Rise (mm)	1714			
Measured At Ring No.	5			
Sag (mm)	26			
Percent Sag	1			
Sidewall		6	7	
Measured Span (mm)	1780			
Measured At Ring No.	5			
Deflection (mm)	40			
Percent Deflection	2			
Floor		N	N	Ice Covered
Bulge (mm)				
Measured At Ring No.				
Abrasion (Y/N)	No			
Circumferential Seams		6	7	
Separation (mm)	0			
Longitudinal Seams		7	7	
Total No. of Cracked Rings	0			
Total No. of Rings with Two Cracked Seams	0			
Min. Remaining Steel Between Cracks (mm)	0			
Proper Lap (Y/N)	No			
Longitudinal Stagger (Y/N)	Yes			

Bridge Culvert Barrel				
Culvert Component		Last	Now	Explanation of Condition
<b>(Pipe # : 2, Secondary Span, Location Code: MAIN, Span (mm): -, Rise (mm): 1740, Type: SP)</b>				
Coating		6	7	
Corrosion By Soil (Y/N)	No			
Corrosion By Water (Y/N)	No			
Camber POS/ZERO/NEG	ZERO			
Ponding (Y/N)	No			
Fish Passage Adequacy		X	X	
Baffle		X	X	
(Type : )				
Waterway Adequacy		8	9	
Icing (Y/N)	No			
Silting (Y/N)	No			
Drift (Y/N)	No			
<b>Barrel General Rating</b>		<b>6</b>	<b>7</b>	

Downstream End				
Culvert Component		Last	Now	Explanation of Condition
<b>(Pipe # : 2, Span Type: Secondary Span)</b>				
Direction		N		NORTHEast
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	snow covered
Heaving (mm)	50			
Invert Above/Below Stream Bed	ABOVE			
Above/Below (mm)	200			
Scour Protection		N	N	snow covered
(Type : )				
(Avg. Rock Size (mm) : )				
Scour/Erosion		N	N	snow covered
Beavers (Y/N)	No			
<b>Downstream End General Rating</b>		<b>7</b>	<b>N</b>	

Structure Usage				
		Last	Now	Explanation of Condition
<b>Channel (U/S and D/S)</b>				
Alignment		6	6	
Bank Stability		7	N	Snow
HWM (m below Top of Culvert)				
Drift (Y/N)	No			

Structure Usage				
		Last	Now	Explanation of Condition
Channel Bottom Degrading/Aggrading	AGGRADING			Snow and ice
Beavers (Y/N)	No			
(Fish Compensation Measure 1 : <b>NONE</b> )				
(Fish Compensation Measure 2 : <b>NONE</b> )				
<b>Channel General Rating</b>		<b>6</b>	<b>6</b>	G.R. carried forward

Maintenance Recommendations							
Inspector Recommendations	Year	Inspector Comments	Department Comments	Target Year	Est. Cost	Cat #	
SHOTCRETE REPAIRS							
PLACE ADDITIONAL RIP RAP	2010	5m3 class 1 and clay at U/S bevel of secondary pipe.					
REMOVE DRIFT ACCUMULATION							
INSTALL CONCRETE/STEEL LINING							
INSTALL STRUTS							
INSTALL CONCRETE COLLAR/CUTOFF							
REPAIR SEAMS							
OTHER ACTION	2010	Replace main pipe.					
OTHER ACTION							
OTHER ACTION							
OTHER ACTION							
<b>Structural Condition Rating (Last/Now) (%)</b>	<b>22.2/22.2</b>	<b>Sufficiency Rating (Last/Now) (%)</b>	<b>47.9/45.1</b>	Est. Repl. Yr	2010	Maint. Req. (Y/N)	Yes
Special Comments for Next Inspection	Informed A.T. feb. 18/10- scheduled for replacment in 2010.		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	Tim Davies		Previous Assistant's Name				
Next Inspection Date	15-May-2013		Previous Inspection Date	22-Feb-2007			
Inspection Cycle (Default) (months)	39						
Comment							