

Bridge Culvert Inspection				
Bridge File Number	01484 -1 Bridge Culvert		Form Type	CULE
Year Built	1952		Lot No.	2
Bridge or Town Name	IRVINE		Inspector Name	Tom Carey
Located Over	2ND ORDER TRIBUTARY TO MACKAY CREEK, 28.2.2, WATERCRS-ST		Inspector Class	BR CLS A
Located On	1:22 R1 33.431;1:22 L1 33.425		Assistant Name	
Water Body Cl./Year			Assistant Class	
Navigabil. Cl./Year			Inspection Date	08-Feb-2012
Legal Land Location	NE SEC 27 TWP 11 RGE 2 W4M		Data Entry By	Lauren Korte
Longitude, Latitude	-110:11:37, 49:56:35		Data Entry Date	22-Mar-2012
Road Authority	Alberta Transportation (AIT)		Reviewer Name	Garry Roberts
Contract Main. Area	CMA23		Review Date	26-Feb-2012
Clear Roadway/Skew	26 /		Dept. Reviewer Name	Tim Davies
AADT/Year	5,160 / 2011 (A)		Dept. Review Date	29-Mar-2012
Road Classification	RAD-412.4-120		Follow-Up By	
Detour Length (km)	1			

**Bridge Culvert Information**

Number of Culverts		1						
Pipe #	Barrel	Span	Rise (or Dia.)	Type	Length	Corr. Profile	Pl./Slab Thickness	Shape
1	U/S	8000	2000	MP	46	75X25	2.8	ROUND
1	MAIN	8000	2000	BP	63			RECTANGLE
Special Features								
Special Features Comment								

**Utilities (Located at)**

Utility Attachments					
Telephone	South R/W.			Gas	
Power				Municipal	
Others				Problem (Y/N)	No
Remarks					

**Approach Road / Embankment**

		Last	Now	Explanation of Condition
Horizontal Alignment		8	8	600 median drain 60 m West.
Vertical Alignment		8	8	
Roadway Width (m)	26.000			
Embankment		6	6	
Sideslope (__:1)	3.5			
(Height of Cover(m) : <b>0.8</b> )				
Guardrail (Y/N)	Yes			Flare end damaged @ West @ North side.
<b>Approach Road / Embankment General Rating</b>		<b>7</b>	<b>8</b>	

**Upstream End**

Culvert Component		Last	Now	Explanation of Condition
Direction		S		South. 4 CSP.
End Treatment (Concrete, Steel, Others, None)	CONCRETE			
Headwall		X	X	
Collar		7	6	Concrete between the pipes. Cracked @ top @ East.
Wingwalls		X	X	
(Shape : )				

Upstream End				
Culvert Component		Last	Now	Explanation of Condition
Cutoff Wall		X	X	
Bevel End		4	7	
Heaving (mm)	0			
Invert Above/Below Stream Bed				At streambed.
Above/Below (mm)				
Scour Protection		7	7	
(Type : <b>RIP RAP</b> )				
(Avg. Rock Size(mm) : <b>300</b> )				
Scour/Erosion		7	7	
Beavers (Y/N)	No			
<b>Upstream End General Rating</b>		<b>4</b>	<b>6</b>	
Bridge Culvert Barrel				
Culvert Component		Last	Now	Explanation of Condition
<b>(Pipe # : 1, Primary Span, Location Code: U/S, Span (mm): 2000, Rise (mm): 2000, Type: MP, Cell Sequence: 1)</b>				
Barrel Last Accessible Date	08-Feb-2012			West Pipe. Steel.
<b>Special Features</b>				
Special Feature				
(Type : )				
Special Feature				
(Type : )				
Roof		7	7	
Measured Rise (mm)	2000			
Measured At Ring No.	3			
Sag (mm)	0			
Percent Sag	0			
Sidewall		7	7	Inward.
Measured Span (mm)	1988			
Measured At Ring No.	3			
Deflection (mm)	12			
Percent Deflection	1			
Floor		5	5	Floor has abraision at bevel end.
Bulge (mm)	0			
Measured At Ring No.				
Abrasion (Y/N)	Yes			
Circumferential Seams		7	7	
Separation (mm)	20			
Longitudinal Seams		X	X	
Total No. of Cracked Rings	0			
Total No. of Rings with Two Cracked Seams	0			
Min. Remaining Steel Between Cracks (mm)				
Proper Lap (Y/N)				
Longitudinal Stagger (Y/N)				
Coating		7	5	Superficial corrosion @ South end @ roof exterior.
Corrosion By Soil (Y/N)	No			
Corrosion By Water (Y/N)	Yes			
Camber POS/ZERO/NEG	ZERO			

Bridge Culvert Barrel				
Culvert Component		Last	Now	Explanation of Condition
(Pipe # : 1, Primary Span, Location Code: U/S, Span (mm): 2000, Rise (mm): 2000, Type: MP, Cell Sequence: 1)				
Ponding (Y/N)	No			
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			
<b>Barrel Extension General Rating</b>		<b>7</b>	<b>7</b>	
Bridge Culvert Barrel				
Culvert Component		Last	Now	Explanation of Condition
(Pipe # : 1, Primary Span, Location Code: U/S, Span (mm): 2000, Rise (mm): 2000, Type: MP, Cell Sequence: 2)				
Barrel Last Accessible Date	08-Feb-2011			2nd pipe from West.
<b>Special Features</b>				
Special Feature				
(Type : )				
Special Feature				
(Type : )				
Roof		7	7	
Measured Rise (mm)	2010			
Measured At Ring No.	3			
Sag (mm)	10			
Percent Sag	1			
Sidewall		7	7	Inward.
Measured Span (mm)	1950			
Measured At Ring No.	3			
Deflection (mm)	50			
Percent Deflection	2			
Floor		5	5	Abrasion at bevel end.
Bulge (mm)	0			
Measured At Ring No.				
Abrasion (Y/N)	Yes			
Circumferential Seams		7	7	
Separation (mm)	30			
Longitudinal Seams		X	X	
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		5	5	Scaling @ South end @ roof exterior.
Corrosion By Soil (Y/N)	No			
Corrosion By Water (Y/N)	Yes			
Camber POS/ZERO/NEG	ZERO			

Bridge Culvert Barrel				
Culvert Component		Last	Now	Explanation of Condition
<b>(Pipe # : 1, Primary Span, Location Code: U/S, Span (mm): 2000, Rise (mm): 2000, Type: MP, Cell Sequence: 2)</b>				
Ponding (Y/N)	No			
Fish Passage Adequacy		X	X	
Baffle		X	X	
(Type : )				
Waterway Adequacy		8	8	
Icing (Y/N)	No			
Silting (Y/N)	No			
Drift (Y/N)	No			
<b>Barrel Extension General Rating</b>		<b>7</b>	<b>7</b>	

Bridge Culvert Barrel				
Culvert Component		Last	Now	Explanation of Condition
<b>(Pipe # : 1, Primary Span, Location Code: U/S, Span (mm): 2000, Rise (mm): 2000, Type: MP, Cell Sequence: 3)</b>				
Barrel Last Accessible Date	08-Feb-2011			3rd from West.
<b>Special Features</b>				
Special Feature				
(Type : )				
Special Feature				
(Type : )				
Roof		7	7	Perforation not taken to consideration due outside of fill.
Measured Rise (mm)	2015			
Measured At Ring No.	2			
Sag (mm)	15			
Percent Sag	1			
Sidewall		7	7	Inward.
Measured Span (mm)	1950			
Measured At Ring No.	2			
Deflection (mm)	50			
Percent Deflection	2			
Floor		5	5	Abrasion at bevel.
Bulge (mm)	0			
Measured At Ring No.				
Abrasion (Y/N)	Yes			
Circumferential Seams		7	7	
Separation (mm)	30			
Longitudinal Seams		X	X	
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		5	3	Superficial corrosion at bevel end. Scaled and perforated at South end @ roof exterior- outside of fill. Other than @ end of barrel coating is "7".
Corrosion By Soil (Y/N)	No			
Corrosion By Water (Y/N)	Yes			
Camber POS/ZERO/NEG	ZERO			

Bridge Culvert Barrel				
Culvert Component		Last	Now	Explanation of Condition
<b>(Pipe # : 1, Primary Span, Location Code: U/S, Span (mm): 2000, Rise (mm): 2000, Type: MP, Cell Sequence: 3)</b>				
Ponding (Y/N)	No			
Fish Passage Adequacy		X	X	
Baffle		X	X	
(Type : )				
Waterway Adequacy		8	8	
Icing (Y/N)	No			
Silting (Y/N)	No			
Drift (Y/N)	No			
<b>Barrel Extension General Rating</b>		<b>7</b>	<b>7</b>	
Bridge Culvert Barrel				
Culvert Component		Last	Now	Explanation of Condition
<b>(Pipe # : 1, Primary Span, Location Code: U/S, Span (mm): 2000, Rise (mm): 2000, Type: MP, Cell Sequence: 4)</b>				
Barrel Last Accessible Date	08-Feb-2012			East pipe.
<b>Special Features</b>				
Special Feature				
(Type : )				
Special Feature				
(Type : )				
Roof		7	7	Perforations not taken into consideration due to outside of fill.
Measured Rise (mm)	2020			
Measured At Ring No.	2			
Sag (mm)	20			
Percent Sag	1			
Sidewall		7	7	
Measured Span (mm)	1970			
Measured At Ring No.	2			
Deflection (mm)	30			
Percent Deflection	1			
Floor		7	7	Abrasion at bevel end.
Bulge (mm)	0			
Measured At Ring No.				
Abrasion (Y/N)	Yes			
Circumferential Seams		7	7	
Separation (mm)	30			
Longitudinal Seams		X	X	
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		7	3	Scaled and perforations starting @ roof exterior @ South end- outside fill other than barrel coating is "7".
Corrosion By Soil (Y/N)	No			
Corrosion By Water (Y/N)	Yes			
Camber POS/ZERO/NEG	ZERO			

Bridge Culvert Barrel				
Culvert Component		Last	Now	Explanation of Condition
<b>(Pipe # : 1, Primary Span, Location Code: U/S, Span (mm): 2000, Rise (mm): 2000, Type: MP, Cell Sequence: 4)</b>				
Ponding (Y/N)	No			
Fish Passage Adequacy		X	X	
Baffle		X	X	
(Type : )				
Waterway Adequacy		8	8	
Icing (Y/N)	No			
Silting (Y/N)	No			
Drift (Y/N)	No			
<b>Barrel Extension General Rating</b>		<b>7</b>	<b>7</b>	

Bridge Culvert Barrel				
Culvert Component		Last	Now	Explanation of Condition
<b>(Pipe # : 1, Primary Span, Location Code: MAIN, Span (mm): 2000, Rise (mm): 2000, Type: BP, Cell Sequence: 1)</b>				
Barrel Last Accessible Date	08-Feb-2011			West Pipe. Concrete.
<b>Special Features</b>				
Special Feature				
(Type : )				
Special Feature				
(Type : )				
Roof		6	6	
Measured Rise (mm)	2000			
Measured At Ring No.				
Sag (mm)				
Percent Sag				
Sidewall		6	6	
Measured Span (mm)	2000			
Measured At Ring No.				
Deflection (mm)				
Percent Deflection				
Floor		5	5	Floor has abrasion - some section loss. No visible steel. Heavy scaling.
Bulge (mm)				
Measured At Ring No.				
Abrasion (Y/N)	Yes			
Circumferential Seams		X	X	
Separation (mm)				
Longitudinal Seams		X	X	
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		X	X	
Corrosion By Soil (Y/N)				
Corrosion By Water (Y/N)				
Camber POS/ZERO/NEG	ZERO			

Bridge Culvert Barrel				
Culvert Component		Last	Now	Explanation of Condition
<b>(Pipe # : 1, Primary Span, Location Code: MAIN, Span (mm): 2000, Rise (mm): 2000, Type: BP, Cell Sequence: 1)</b>				
Ponding (Y/N)	No			
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			
<b>Barrel General Rating</b>		<b>6</b>	<b>6</b>	

Bridge Culvert Barrel				
Culvert Component		Last	Now	Explanation of Condition
<b>(Pipe # : 1, Primary Span, Location Code: MAIN, Span (mm): 2000, Rise (mm): 2000, Type: BP, Cell Sequence: 2)</b>				
Barrel Last Accessible Date	08-Feb-2012			2nd pipe from West.
<b>Special Features</b>				
Special Feature				
(Type : )				
Special Feature				
(Type : )				
Roof		6	5	Isolated spalling @ North.
Measured Rise (mm)	2000			
Measured At Ring No.				
Sag (mm)				
Percent Sag				
Sidewall		6	6	
Measured Span (mm)	2000			
Measured At Ring No.				
Deflection (mm)				
Percent Deflection				
Floor		5	5	Medium scaling.
Bulge (mm)				
Measured At Ring No.				
Abrasion (Y/N)	Yes			
Circumferential Seams		X	X	
Separation (mm)				
Longitudinal Seams		X	X	
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		X	X	
Corrosion By Soil (Y/N)				
Corrosion By Water (Y/N)				
Camber POS/ZERO/NEG	ZERO			

Bridge Culvert Barrel				
Culvert Component		Last	Now	Explanation of Condition
<b>(Pipe # : 1, Primary Span, Location Code: MAIN, Span (mm): 2000, Rise (mm): 2000, Type: BP, Cell Sequence: 2)</b>				
Ponding (Y/N)	No			
Fish Passage Adequacy		X	X	
Baffle		X	X	
(Type : )				
Waterway Adequacy		8	8	
Icing (Y/N)	No			
Silting (Y/N)	No			
Drift (Y/N)	No			
<b>Barrel General Rating</b>		<b>6</b>	<b>5</b>	

Bridge Culvert Barrel				
Culvert Component		Last	Now	Explanation of Condition
<b>(Pipe # : 1, Primary Span, Location Code: MAIN, Span (mm): 2000, Rise (mm): 2000, Type: BP, Cell Sequence: 3)</b>				
Barrel Last Accessible Date	08-Feb-2012			3rd from West.
<b>Special Features</b>				
Special Feature				
(Type : )				
Special Feature				
(Type : )				
Roof		6	5	Isolated spalling @ North.
Measured Rise (mm)	2000			
Measured At Ring No.				
Sag (mm)				
Percent Sag				
Sidewall		6	6	
Measured Span (mm)	2000			
Measured At Ring No.				
Deflection (mm)				
Percent Deflection				
Floor		5	5	Medium scaling.
Bulge (mm)	0			
Measured At Ring No.				
Abrasion (Y/N)	Yes			
Circumferential Seams		X	X	
Separation (mm)				
Longitudinal Seams		X	X	
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		X	X	
Corrosion By Soil (Y/N)				
Corrosion By Water (Y/N)				
Camber POS/ZERO/NEG	ZERO			



Bridge Culvert Barrel				
Culvert Component		Last	Now	Explanation of Condition
<b>(Pipe # : 1, Primary Span, Location Code: MAIN, Span (mm): 2000, Rise (mm): 2000, Type: BP, Cell Sequence: 3)</b>				
Ponding (Y/N)	No			
Fish Passage Adequacy		X	X	
Baffle		X	X	
(Type : )				
Waterway Adequacy		8	8	
Icing (Y/N)	No			
Silting (Y/N)	No			
Drift (Y/N)	No			
<b>Barrel General Rating</b>		<b>6</b>	<b>5</b>	

Bridge Culvert Barrel				
Culvert Component		Last	Now	Explanation of Condition
<b>(Pipe # : 1, Primary Span, Location Code: MAIN, Span (mm): 2000, Rise (mm): 2000, Type: BP, Cell Sequence: 4)</b>				
Barrel Last Accessible Date	08-Feb-2012			East pipe.
<b>Special Features</b>				
Special Feature				
(Type : )				
Special Feature				
(Type : )				
Roof		6	6	
Measured Rise (mm)	2000			
Measured At Ring No.				
Sag (mm)				
Percent Sag				
Sidewall		6	6	
Measured Span (mm)	2000			
Measured At Ring No.				
Deflection (mm)				
Percent Deflection				
Floor		5	5	
Bulge (mm)	0			
Measured At Ring No.				
Abrasion (Y/N)	Yes			
Circumferential Seams		X	X	
Separation (mm)				
Longitudinal Seams		X	X	
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		X	X	
Corrosion By Soil (Y/N)				
Corrosion By Water (Y/N)				
Camber POS/ZERO/NEG	ZERO			

Bridge Culvert Barrel				
Culvert Component		Last	Now	Explanation of Condition
(Pipe # : 1, Primary Span, Location Code: MAIN, Span (mm): 2000, Rise (mm): 2000, Type: BP, Cell Sequence: 4)				
Ponding (Y/N)	No			
Fish Passage Adequacy		X	X	
Baffle		X	X	
(Type : )				
Waterway Adequacy		8	8	
Icing (Y/N)	No			
Silting (Y/N)	No			
Drift (Y/N)	No			
<b>Barrel General Rating</b>		<b>6</b>	<b>6</b>	
Downstream End				
Culvert Component		Last	Now	Explanation of Condition
Direction		E		North end of concrete boxes.
End Treatment (Concrete, Steel, Others, None)	CONCRETE			
Headwall		4	4	Isolated medium scaling @ East box and spalling -@ headwall and common wall @ cell 3 to 4.
Collar		X	X	
Wingwalls		5	5	Large angle crack at N.E 6 mm wide.
(Shape : <b>FLARE</b> )				
Cutoff Wall		X	X	
Bevel End		X	X	
Heaving (mm)	0			
Invert Above/Below Stream Bed	BELOW			
Above/Below (mm)	100			
Scour Protection		7	7	
(Type : <b>NATURAL</b> )				
(Avg. Rock Size(mm) : )				
Scour/Erosion		7	7	
Beavers (Y/N)	No			
<b>Downstream End General Rating</b>		<b>4</b>	<b>4</b>	
Structure Usage				
		Last	Now	Explanation of Condition
<b>Channel (U/S and D/S)</b>				
Alignment		5	5	CPR bridge 40 m D/S North. Ditch drainage at 90 degree angle at U/S end.
Bank Stability		7	7	
HWM (m below Top of Culvert)				No visible HWM.
Drift (Y/N)	No			
Channel Bottom Degrading/Aggrading	AGGRADING			
Beavers (Y/N)	No			
(Fish Compensation Measure 1 : <b>NONE</b> )				
(Fish Compensation Measure 2 : <b>NONE</b> )				
<b>Channel General Rating</b>		<b>5</b>	<b>5</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	2013	Repair headwall between last box and next westerly box culvert @ outlet - 0.1m3 grout/concrete.					
OTHER ACTION	2013	Repair West end of North guardrail.					
OTHER ACTION							
OTHER ACTION							
OTHER ACTION							
OTHER ACTION							
<b>Structural Condition Rating (Last/Now) (%)</b>	<b>66.7/55.6</b>	<b>Sufficiency Rating (Last/Now) (%)</b>	<b>64.2/61.0</b>	Est. Repl. Yr	2030	Maint. Req. (Y/N)	Yes
Special Comments for Next Inspection			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	Jason Rusu		Previous Assistant's Name				
Next Inspection Date	08-Nov-2013		Previous Inspection Date	07-Aug-2010			
Inspection Cycle (Default) (months)	21						
Comment							