

Bridge Culvert Inspection				
Bridge File Number	71982 -1 Bridge Culvert		Form Type	CUL1
Year Built	1982		Lot No.	2
Bridge or Town Name	MARLBORO		Inspector Name	Shane Hall
Located Over	TRIBUTARY TO MCLEOD RIVER, 8.11.107.35, WATERCRS-ST		Inspector Class	BR CLS A
Located On	16:04 R1 23.963;16:04 L1 23.951		Assistant Name	
Water Body Cl./Year			Assistant Class	
Navigabil. Cl./Year			Inspection Date	11-Aug-2012
Legal Land Location	SE SEC 6 TWP 53 RGE 20 W5M		Data Entry By	Theresa Lacusta
Longitude, Latitude	-116:56:03, 53:32:34		Data Entry Date	28-Aug-2012
Road Authority	Alberta Transportation (AIT)		Reviewer Name	Eric Carcoux
Contract Main. Area	CMA13		Review Date	27-Aug-2012
Clear Roadway/Skew	25.2 / -23 deg. (LHF)		Dept. Reviewer Name	Brent Herrick
AADT/Year	6,080 / 2011 (A)		Dept. Review Date	30-Aug-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	MAIN	2905	3203	SPE	173.2	152X51	3.0	ELLIPSE
Special Features	BARREL ELBOW							
Special Features Comment								

**Utilities (Located at)**

Utility Attachments							
Telephone	North r/w			Gas	30 m U/S.		
Power				Municipal			
Others				Problem (Y/N)	No		
Remarks	File tag U/S, North.						

**Approach Road / Embankment**

		Last	Now	Explanation of Condition
Horizontal Alignment		7	7	Between curves
Vertical Alignment		7	7	Rise to East
Roadway Width (m)	25.200			EBL 12.6; WBL 12.6
Embankment		4	4	Erosion gullies SE and SW, fabric and rock placed. SW appears stable & vegetated. Gully @ NE. 1m deep, 2m wide, 40m long and stable. SE ditch erosion, not stable-but not affecting roadway embankments. Approx 2.5m x 1.8 deep x 40m long - photo.
Sideslope ( __:1)	3.0			
(Height of Cover(m) : 15)				North embankment rutted from vehicle.-photo
Guardrail (Y/N)	Yes			Southside -2 split posts & 2 displaced posts. 1 split post and 5 sections on W-beam pushed out at North side.
<b>Approach Road / Embankment General Rating</b>		<b>7</b>	<b>7</b>	

**Upstream End**

Culvert Component		Last	Now	Explanation of Condition
Direction		N		
End Treatment (Concrete, Steel, Others, None)	CONCRETE			
Headwall		X	X	
Collar		5	4	Shoulders settling 300mm at top. (Spall @ top & midsection of NW collar.
Wingwalls		X	X	
(Shape : )				

Upstream End				
Culvert Component		Last	Now	Explanation of Condition
Cutoff Wall		N	N	
Bevel End		5	5	Minor tear NW. Distortation from collar movement.
Heaving (mm)	100			
Invert Above/Below Stream Bed	BELOW			
Above/Below (mm)	300			
Scour Protection		7	7	Mostly sandstone.
(Type : <b>RIP RAP</b> )				
(Avg. Rock Size(mm) : <b>600</b> )				
Scour/Erosion		7	7	
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): 2905, Rise (mm): 3203, Type: SPE)</b>				
Barrel Last Accessible Date	21-Jul-2005			Viewed from ends, shape and condition appear ok. Water running too deep and fast to safely access.
<b>Special Features</b>				
Special Feature		N	N	(Welded seam intact. 09/Mar/2007) (16 rings D/S to barrel elbow. 09/Mar/2007)
(Type : <b>BARREL ELBOW</b> )				
Special Feature				
(Type : )				
Roof		N	N	(R7 - 3065-S. 09/Mar/2007) Poorly nested roof seam on D/S barrel.-19-Nov-2008
Measured Rise (mm)				
Measured At Ring No.				
Sag (mm)	105			
Percent Sag	4			
Sidewall		N	N	(R10 from D/S. 09/Mar/2007)
Measured Span (mm)	3065			
Measured At Ring No.	10			
Deflection (mm)	160			
Percent Deflection	6			
Floor		N	N	
Bulge (mm)	0			
Measured At Ring No.				
Abrasion (Y/N)	Yes			
Circumferential Seams		N	N	
Separation (mm)	0			
Longitudinal Seams		N	N	(Seepage along East & West upper longitudinal floor seam. Surface rust, not pitting. 09/Mar/2007)
Total No. of Cracked Rings	0			
Total No. of Rings with Two Cracked Seams				(Longitudinal seams staggered at roof, sidewall and roof, floor seams which is problem for an elliptical pipe.-19-Nov-2008)
Min. Remaining Steel Between Cracks (mm)				(Extension staggered (1N) but not under WBL. 09/Mar/2007)
Proper Lap (Y/N)	No			
Longitudinal Stagger (Y/N)	No			
Coating		N	N	(Minor superficial rust lower 1/3, no pitting. 09/Mar/2007)
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): 2905, Rise (mm): 3203, Type: SPE)				
Camber POS/ZERO/NEG	ZERO			
Ponding (Y/N)	No			
Fish Passage Adequacy		8	8	(Fish noted in pipe. 100mm long. 2003/10/16)
Baffle		X	X	
(Type : )				
Waterway Adequacy		7	7	
Icing (Y/N)	Yes			
Silting (Y/N)	No			
Drift (Y/N)	No			
<b>Barrel General Rating</b>		<b>N</b>	<b>N</b>	(G.R. was "5" based on sidewall from 09/Mar/2007)
Downstream End				
Culvert Component		Last	Now	Explanation of Condition
Direction		S		
End Treatment (Concrete, Steel, Others, None)	CONCRETE			
Headwall		6	6	Several wide cracks. Poorly consolodated concrete.
Collar		6	6	Several wide cracks on both sides.
Wingwalls		X	X	
(Shape : )				
Cutoff Wall		6	6	
Bevel End		6	6	
Heaving (mm)	0			
Invert Above/Below Stream Bed	ABOVE			
Above/Below (mm)	100			
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>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	CNR double box culvert 50m D/S. 75% blocked by drift.-photo
Bank Stability		7	7	
HWM (m below Top of Culvert)				HWM not visible.
Drift (Y/N)	No			
Channel Bottom Degrading/Aggrading	DEGRADING			
Beavers (Y/N)	No			
(Fish Compensation Measure 1 : <b>NONE</b> )				
(Fish Compensation Measure 2 : <b>NONE</b> )				
<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	2013	Construct armour ditch erosion SW.					
OTHER ACTION	2013	Remove drift from inlet of CN structure to lower water levels.					
OTHER ACTION							
OTHER ACTION							
<b>Structural Condition Rating (Last/Now) (%)</b>	<b>55.6/55.6</b>	<b>Sufficiency Rating (Last/Now) (%)</b>	<b>63.1/62.1</b>	Est. Repl. Yr	2043	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	Todd Warshawski		Previous Assistant's Name				
Next Inspection Date	11-May-2014		Previous Inspection Date	28-Sep-2010			
Inspection Cycle (Default) (months)	21						
Comment							