

Bridge Culvert Inspection			
Bridge File Number	73580 -1 Bridge Culvert	Form Type	CULM
Year Built	1971	Lot No.	3
Bridge or Town Name	MORECAMBE	Inspector Name	Jason Saly
Located Over	2ND ORDER TRIBUTARY TO VERMILION RIVER, 6.5.23.2, WATERCRS-ST	Inspector Class	BR CLS A
Located On	45:08 C1 23.130	Assistant Name	
Water Body Cl./Year		Assistant Class	
Navigabil. Cl./Year		Inspection Date	22-Jan-2013
Legal Land Location	SW SEC 16 TWP 54 RGE 10 W4M	Data Entry By	Marcia Chavez
Longitude, Latitude	-111:25:26, 53:39:28	Data Entry Date	27-Feb-2013
Road Authority	Alberta Transportation (AIT)	Reviewer Name	John O'Brien
Contract Main. Area	CMA14	Review Date	13-Feb-2013
Clear Roadway/Skew	8.4 /	Dept. Reviewer Name	Chris Black
AADT/Year	570 / 2011 (A)	Dept. Review Date	14-Mar-2013
Road Classification	RAU-209-110	Follow-Up By	
Detour Length (km)	6		

**Bridge Culvert Information**

Number of Culverts	4							
Pipe #	Barrel	Span	Rise (or Dia.)	Type	Length	Corr. Profile	Pl./Slab Thickness	Shape
1	MAIN	1724	1901	MPE	21.3	68X13	3.5	ELLIPSE
2	MAIN	-	900	MP	21.3	68X13	2.8	ROUND
3	MAIN	-	900	MP	21.3	68X13	2.8	ROUND
4	MAIN	-	900	MP	21.3	68X13	2.8	ROUND
Special Features								
Special Features Comment								

**Utilities (Located at)**

Utility Attachments			
Telephone	Plowed in South ditch.	Gas	13m East of 1829mm culvert.
Power	5 wire OH 20m North of c/l. 2 wire crosses hwy approx 30m East of 1829 dia pipe.	Municipal	
Others		Problem (Y/N)	No
Remarks			

**Approach Road / Embankment**

	Last	Now	Explanation of Condition
Horizontal Alignment	7	7	Access road 30m East of 2 East pipes. Hill 80m East of East pipes.
Vertical Alignment	7	7	
Roadway Width (m)	8.400		
Embankment	5	N	Wide transverse crack in roadway over pipe. 1.1m cover on East 2 pipes. 1.2m on West pipe. Snow covered, but no signs of problems.
Sideslope ( : 1)	3.0		
(Height of Cover(m) : 1)			
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	N		
End Treatment (Concrete, Steel, Others, None)	STEEL		
Headwall	X	X	

Upstream End				
Culvert Component		Last	Now	Explanation of Condition
<b>(Pipe # : 1, Span Type: Primary Span)</b>				
Collar		X	X	
Wingwalls (Shape : )		X	X	
Cutoff Wall		X	X	
Bevel End		5	N	(Bevel recently re-aligned. 05/Sept/2006). (Minor damage to bevel edges. 07Jun2011).
Heaving (mm)	100			
Invert Above/Below Stream Bed	ABOVE			
Above/Below (mm)	150			
Scour Protection (Type : <b>RIP RAP</b> ) (Avg. Rock Size(mm) : <b>150</b> )		7	N	(Well vegetated. 07Jun2011) - Snow covered.
Scour/Erosion		7	N	Snow covered.
Beavers (Y/N)	No			
<b>Upstream End General Rating</b>		<b>5</b>	<b>N</b>	GR was 5 from 07Jun2011.
Bridge Culvert Barrel				
Culvert Component		Last	Now	Explanation of Condition
<b>(Pipe # : 1, Primary Span, Location Code: MAIN, Span (mm): 1724, Rise (mm): 1901, Type: MPE)</b>				
Barrel Last Accessible Date	07-Jun-2011			Thin ice with open water, entry not advisable; shape appears adequate.
<b>Special Features</b>				
Special Feature (Type : )				
Special Feature (Type : )				
Roof		4	N	(Three main areas where roof plates have been dented & deformed but no immediate concern warranted. 1st ring from N sealed with foam. 07Jun2011). (Dents in roof. 07Jun2011).
Measured Rise (mm)				
Measured At Ring No.				
Sag (mm)	51			(2.6%. 01Dec2004).
Percent Sag	3			
Sidewall		4	N	(U/S span 1740. D/S 1715. Numerous large dents in South wall. 07Jun2011).
Measured Span (mm)	1887			
Measured At Ring No.	2			
Deflection (mm)	163			(9.4%. 07Jun2011).
Percent Deflection	9			
Floor		N	N	(Water/silt covered. 07Jun2011).
Bulge (mm)	0			
Measured At Ring No.				
Abrasion (Y/N)	No			(03/03/25).
Circumferential Seams		5	N	(Wide gaps, no infiltration, couplers in place. 07Jun2011).
Separation (mm)	75			

Bridge Culvert Barrel				
Culvert Component		Last	Now	Explanation of Condition
<b>(Pipe # : 1, Primary Span, Location Code: MAIN, Span (mm): 1724, Rise (mm): 1901, Type: MPE)</b>				
Longitudinal Seams		5	N	(Annular type CSP with rivetted seams. 07Jun2011).
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	N	(Galvanize gone on bottom, pitting started. Rating based on sidewall/roof coating only. 07Jun2011).
Corrosion By Soil (Y/N)				
Corrosion By Water (Y/N)	Yes			
Camber POS/ZERO/NEG	ZERO			
Ponding (Y/N)	No			
Fish Passage Adequacy		7	N	
Baffle		X	X	(Type : )
Waterway Adequacy		7	N	
Icing (Y/N)	No			
Silting (Y/N)	Yes			
Drift (Y/N)	No			
<b>Barrel General Rating</b>		<b>4</b>	<b>4</b>	GR was carried forward from 07Jun2011.
Downstream End				
Culvert Component		Last	Now	Explanation of Condition
<b>(Pipe # : 1, Span Type: Primary Span)</b>				
Direction		S		
End Treatment (Concrete, Steel, Others, None)	STEEL			
Headwall		X	X	
Collar		X	X	
Wingwalls		X	X	(Shape : )
Cutoff Wall		X	X	
Bevel End		5	N	(Minor damage to bevel East side, pushed out 100mm. 07Jun2011) - Snow covered.
Heaving (mm)	100			
Invert Above/Below Stream Bed	BELOW			
Above/Below (mm)	300			(03/03/25)
Scour Protection		5	N	(Some rock. 07Jun2011) - Snow covered.
(Type : <b>NATURAL</b> )				
(Avg. Rock Size(mm) : )				
Scour/Erosion		5	N	Snow covered.
Beavers (Y/N)	No			
<b>Downstream End General Rating</b>		<b>5</b>	<b>N</b>	GR was 5 from 07Jun2011.

Upstream End				
Culvert Component		Last	Now	Explanation of Condition
<b>(Pipe # : 2, Span Type: Secondary Span)</b>				
Direction		N		(142m West of 1829. 07Jun2011).
End Treatment (Concrete, Steel, Others, None)	STEEL			
Headwall		X	X	
Collar		X	X	
Wingwalls (Shape : )		X	X	
Cutoff Wall		X	X	
Bevel End		N	N	(Heaving starts 2-3m in from bevel. 09/Sept/2006). (Opening grated; covered by vegetation. 07Jun2011) - Snow covered.
Heaving (mm)	400			
Invert Above/Below Stream Bed	BELOW			
Above/Below (mm)	150			
Scour Protection (Type : <b>RIP RAP</b> ) (Avg. Rock Size(mm) : <b>150</b> )		5	N	Snow covered.
Scour/Erosion		5	N	Snow covered.
Beavers (Y/N)	Yes			(U/S of pipe. 07Jun2011).
<b>Upstream End General Rating</b>		<b>3</b>	<b>3</b>	GR carried forward since 09Sep2006.

Bridge Culvert Barrel				
Culvert Component		Last	Now	Explanation of Condition
<b>(Pipe # : 2, Secondary Span, Location Code: MAIN, Span (mm): , Rise (mm): 900, Type: MP)</b>				
Barrel Last Accessible Date				Three 900 mm CSP's located 142m West of 1829. Pipe covered by snow, not viewed.
<b>Special Features</b>				
Special Feature (Type : )				
Special Feature (Type : )				
Roof		N	N	(Mower damage to crown. 07Jun2011).
Measured Rise (mm)				
Measured At Ring No.				
Sag (mm)				
Percent Sag				
Sidewall		N	N	
Measured Span (mm)				
Measured At Ring No.				
Deflection (mm)				
Percent Deflection				
Floor		N	N	
Bulge (mm)	0			
Measured At Ring No.				
Abrasion (Y/N)	No			
Circumferential Seams		N	N	
Separation (mm)				

Bridge Culvert Barrel					
Culvert Component		Last	Now	Explanation of Condition	
(Pipe # : 2, Secondary Span, Location Code: MAIN, Span (mm): , Rise (mm): 900, Type: MP)					
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		N	N	(Viewed from ends. Some soil corrosion as well. 07Jun2011).	
Corrosion By Soil (Y/N)		Yes			
Corrosion By Water (Y/N)		Yes			
Camber POS/ZERO/NEG		ZERO			
Ponding (Y/N)		No			
Fish Passage Adequacy		X	X		
Baffle		X	X		
(Type : )					
Waterway Adequacy		4	N	(Flow hampered by drift @ North opening. 07Jun2011).	
Icing (Y/N)		No			
Siltting (Y/N)		No			
Drift (Y/N)		Yes			
<b>Barrel General Rating</b>		<b>3</b>	<b>3</b>	GR carried over since 09Sep2006.	
Downstream End					
Culvert Component		Last	Now	Explanation of Condition	
(Pipe # : 2, Span Type: Secondary Span)					
Direction		S		(West pipe 142m West of 1829. 07Jun2011).	
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	(Minor mower damage to bevel. Hole in roof. 07Jun2011) - Snow covered.	
Heaving (mm)		0			
Invert Above/Below Stream Bed		ABOVE			
Above/Below (mm)		300			
Scour Protection		4	N	(Bevel perched. Riprap under bevel. 07Jun2011) - Snow covered.	
(Type : <b>NATURAL</b> )					
(Avg. Rock Size(mm) : )					
Scour/Erosion		4	N	(Channel about 0.9m below the d/s invert. 07Jun2011) - Snow covered.	
Beavers (Y/N)		No			
<b>Downstream End General Rating</b>		<b>4</b>	<b>4</b>	GR carried forward from 07Jun2011.	

Upstream End				
Culvert Component		Last	Now	Explanation of Condition
<b>(Pipe # : 3, Span Type: Secondary Span)</b>				
Direction		N		(Pipe 167m East of 1829. 07Jun2011).
End Treatment (Concrete, Steel, Others, None)	STEEL			
Headwall		X	X	
Collar		X	X	
Wingwalls (Shape : )		X	X	
Cutoff Wall		X	X	
Bevel End		6	N	(Overgrown with vegetation. 07Jun2011) - Snow covered.
Heaving (mm)	0			
Invert Above/Below Stream Bed	BELOW			
Above/Below (mm)	100			
Scour Protection (Type : <b>RIP RAP</b> ) (Avg. Rock Size(mm) : <b>150</b> )		7	N	(Well vegetated. 07Jun2011) - Snow covered.
Scour/Erosion		7	N	Snow covered.
Beavers (Y/N)	No			
<b>Upstream End General Rating</b>		<b>6</b>	<b>N</b>	GR was 6 from 07Jun2011.
Bridge Culvert Barrel				
Culvert Component		Last	Now	Explanation of Condition
<b>(Pipe # : 3, Secondary Span, Location Code: MAIN, Span (mm): , Rise (mm): 900, Type: MP)</b>				
Barrel Last Accessible Date				(To small to enter, confined space. 07Jun2011). Snow covered completely; not viewed.
<b>Special Features</b>				
Special Feature (Type : )				
Special Feature (Type : )				
Roof		N	N	(Roof sagged locally 10m from ends. 07Jun2011).
Measured Rise (mm)				
Measured At Ring No.				
Sag (mm)				
Percent Sag				
Sidewall		N	N	
Measured Span (mm)				
Measured At Ring No.				
Deflection (mm)				
Percent Deflection				
Floor		N	N	
Bulge (mm)				
Measured At Ring No.				
Abrasion (Y/N)				
Circumferential Seams		N	N	
Separation (mm)				

Bridge Culvert Barrel				
Culvert Component		Last	Now	Explanation of Condition
<b>(Pipe # : 3, Secondary Span, Location Code: MAIN, Span (mm): , Rise (mm): 900, Type: MP)</b>				
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	N	(Some soil side. Superficial @ sidewall. 07Jun2011).
Corrosion By Soil (Y/N)	Yes			
Corrosion By Water (Y/N)	Yes			
Camber POS/ZERO/NEG	ZERO			
Ponding (Y/N)	No			
Fish Passage Adequacy		X	X	
Baffle		X	X	
(Type : )				
Waterway Adequacy		5	N	
Icing (Y/N)	No			
Silting (Y/N)	No			
Drift (Y/N)	No			
<b>Barrel General Rating</b>		<b>N</b>	<b>N</b>	GR previously rated "5" from 09Sept2006.
Downstream End				
Culvert Component		Last	Now	Explanation of Condition
<b>(Pipe # : 3, Span Type: Secondary Span)</b>				
Direction		S		(Pipe 167m East of 1829. 07Jun2011).
End Treatment (Concrete, Steel, Others, None)	STEEL			
Headwall		X	X	
Collar		X	X	
Wingwalls		X	X	
(Shape : )				
Cutoff Wall		X	X	
Bevel End		6	N	
Heaving (mm)	0			
Invert Above/Below Stream Bed	ABOVE			
Above/Below (mm)	100			
Scour Protection		7	N	
(Type : <b>NATURAL</b> )				
(Avg. Rock Size(mm) : )				
Scour/Erosion		7	N	
Beavers (Y/N)	No			
<b>Downstream End General Rating</b>		<b>6</b>	<b>N</b>	GR was 6 from 07Jun2011.

Upstream End				
Culvert Component		Last	Now	Explanation of Condition
<b>(Pipe # : 4, Span Type: Secondary Span)</b>				
Direction		N		(Pipe 175m East of 1829. 07Jun2011).
End Treatment (Concrete, Steel, Others, None)	STEEL			
Headwall		X	X	
Collar		X	X	
Wingwalls (Shape : )		X	X	
Cutoff Wall		X	X	
Bevel End		6	N	
Heaving (mm)	0			
Invert Above/Below Stream Bed	BELOW			
Above/Below (mm)	100			
Scour Protection (Type : <b>RIP RAP</b> ) (Avg. Rock Size(mm) : <b>150</b> )		7	N	
Scour/Erosion		7	N	
Beavers (Y/N)	No			
<b>Upstream End General Rating</b>		<b>6</b>	<b>N</b>	GR was 6 from 07Jun2011.

Bridge Culvert Barrel				
Culvert Component		Last	Now	Explanation of Condition
<b>(Pipe # : 4, Secondary Span, Location Code: MAIN, Span (mm): , Rise (mm): 900, Type: MP)</b>				
Barrel Last Accessible Date				(175m E of 1829. 07Jun2011). (Not accessible, too small; shape appears adequate. 07Jun2011). Snow covered, not viewed.
<b>Special Features</b>				
Special Feature (Type : )				
Special Feature (Type : )				
Roof		N	N	
Measured Rise (mm)				
Measured At Ring No.				
Sag (mm)				
Percent Sag				
Sidewall		N	N	
Measured Span (mm)				
Measured At Ring No.				
Deflection (mm)				
Percent Deflection				
Floor		N	N	
Bulge (mm)				
Measured At Ring No.				
Abrasion (Y/N)				
Circumferential Seams		N	N	
Separation (mm)				



Bridge Culvert Barrel				
Culvert Component		Last	Now	Explanation of Condition
(Pipe # : 4, Secondary Span, Location Code: MAIN, Span (mm): , Rise (mm): 900, Type: MP)				
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	N	(Superficial, viewed from ends. 07Jun2011).
Corrosion By Soil (Y/N)	Yes			
Corrosion By Water (Y/N)	Yes			
Camber POS/ZERO/NEG	ZERO			
Ponding (Y/N)	No			
Fish Passage Adequacy		X	X	
Baffle		X	X	
(Type : )				
Waterway Adequacy		5	N	
Icing (Y/N)	No			
Silting (Y/N)	No			
Drift (Y/N)	No			
<b>Barrel General Rating</b>		<b>N</b>	<b>N</b>	GR previously rated "5" from 09Sept2006.
Downstream End				
Culvert Component		Last	Now	Explanation of Condition
(Pipe # : 4, Span Type: Secondary Span)				
Direction		S		(Pipe 175m East of 1829mm. 07Jun2011).
End Treatment (Concrete, Steel, Others, None)	STEEL			
Headwall		X	X	
Collar		X	X	
Wingwalls		X	X	
(Shape : )				
Cutoff Wall		X	X	
Bevel End		6	N	Snow covered.
Heaving (mm)	0			
Invert Above/Below Stream Bed	ABOVE			
Above/Below (mm)	100			
Scour Protection		7	N	Snow covered.
(Type : <b>NATURAL</b> )				
(Avg. Rock Size(mm) : )				
Scour/Erosion		7	N	Snow covered.
Beavers (Y/N)	No			
<b>Downstream End General Rating</b>		<b>6</b>	<b>N</b>	GR was 6 from 07Jun2011.

Structure Usage				
		Last	Now	Explanation of Condition
<b>Channel (U/S and D/S)</b>				
Alignment		7	N	(U/S & D/S channel has been reworked on 900mm pipe West of 1800mm pipe, & also on 1800mm pipe. 09/June/2008). Pipes completely submerges.
Bank Stability		7	N	(Stable. 07Jun2011).
HWM (m below Top of Culvert)				HWM not visible.
Drift (Y/N)	Yes			(Minor U/S of 1829. 07Jun2011).
Channel Bottom Degrading/Aggrading				(Beaver dams u/s of pipes 1 & 2. 07Jun2011).
Beavers (Y/N)	Yes			
(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>	GR carried forward from 07Jun2011.

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	Remove beaver dam u/s of pipe 1, if not yet done.					
OTHER ACTION							
OTHER ACTION							
OTHER ACTION							
<b>Structural Condition Rating (Last/Now) (%)</b>	<b>33.3/33.3</b>	<b>Sufficiency Rating (Last/Now) (%)</b>	<b>40.7/56.2</b>	Est. Repl. Yr	2019	Maint. Req. (Y/N)	Yes
Special Comments for Next Inspection	The three 900 dia. pipes should not be part of this site (1724x1901)?? Continue regular crack sealing practices.		Department Comments				
Maintenance Reviewed By			Date			Estimated Total	0
Proposed Long-Term Strategy	Culverts should be adequate until 2021. CB						
On 3-Year Program (Y/N)							
Proposed Action							
Previous Inspector's Name	Jason Saly		Previous Assistant's Name				
Next Inspection Date	22-Oct-2014		Previous Inspection Date	07-Jun-2011			
Inspection Cycle (Default) (months)	21						
Comment							