

Bridge Culvert Inspection				
Bridge File Number	73179 -1 Bridge Culvert		Form Type	CULM
Year Built	1984		Lot No.	1
Bridge or Town Name	MANNVILLE		Inspector Name	Jason Saly
Located Over	TRIBUTARY TO BIRCH CREEK, 6.5.18.1, WATERCRS-ST		Inspector Class	BR CLS A
Located On	16:28 R1 2.949;16:28 L1 2.938		Assistant Name	
Water Body Cl./Year			Assistant Class	
Navigabil. Cl./Year			Inspection Date	19-Jul-2012
Legal Land Location	NE SEC 13 TWP 50 RGE 10 W4M		Data Entry By	Marcia Chavez
Longitude, Latitude	-111:19:50, 53:19:04		Data Entry Date	09-Aug-2012
Road Authority	Alberta Transportation (AIT)		Reviewer Name	John O'Brien
Contract Main. Area	CMA15		Review Date	28-Jul-2012
Clear Roadway/Skew	25 /		Dept. Reviewer Name	Andrew Smikles
AADT/Year	6,300 / 2011 (A)		Dept. Review Date	13-Aug-2012
Road Classification	RFD-412.4-120		Follow-Up By	
Detour Length (km)	1			

Bridge Culvert Information								
Number of Culverts	2							
Pipe #	Barrel	Span	Rise (or Dia.)	Type	Length	Corr. Profile	Pl./Slab Thickness	Shape
1	MAIN	-	2400	MP	83	125X26	2.8	ROUND
2	MAIN	-	1800	MP	84	125X26	2.8	ROUND
Special Features								
Special Features Comment								

Utilities (Located at)			
Utility Attachments			
Telephone	North ditch.	Gas	
Power		Municipal	
Others		Problem (Y/N)	No
Remarks			

Approach Road / Embankment				
		Last	Now	Explanation of Condition
Horizontal Alignment		7	7	Located through long horizontal curves (superelevated).
Vertical Alignment		8	8	
Roadway Width (m)	25.000			
Embankment		7	7	5:1 steepening to 2.5:1 near outlet.
Sideslope (__:1)	2.5			
(Height of Cover(m) : 4)				
Guardrail (Y/N)	Yes			Only on outside shoulders - max length 61 m.
<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		W pipe; pipes drain S to N.
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		7	7	
Heaving (mm)	0			
Invert Above/Below Stream Bed	BELOW			
Above/Below (mm)	400			
Scour Protection		N	7	Some rock (300mm nominal).
(Type : <b>NATURAL, RIP RAP</b> )				
(Avg. Rock Size(mm) : <b>300</b> )				
Scour/Erosion		N	7	
Beavers (Y/N)	No			
<b>Upstream End 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): , Rise (mm): 2400, Type: MP)</b>				
Barrel Last Accessible Date	19-Jul-2012			West pipe.
<b>Special Features</b>				
Special Feature				
(Type : )				
Special Feature				
(Type : )				
Roof		3	3	Roof estimated 10.4%. Unable to measure due to dirt/concrete floor.
Measured Rise (mm)				
Measured At Ring No.				
Sag (mm)	250			
Percent Sag				
Sidewall		3	3	Measured 2720 at distorted circumferential seam out to out. Remainder measured 2650 span @ worst. Two sections at North end have been distorted since time of installation.
Measured Span (mm)	2650			
Measured At Ring No.	5			
Deflection (mm)	250			10.4%
Percent Deflection	10			
Floor		N	N	Not visible. Concrete floor cast throughout to serve as cattlepass & drainage structure. Some oakum jammed into N gaps. Poor fit where culvert was extended in median area with 80mm gap at roof. Wide transverse cracks in concrete floor.
Bulge (mm)	0			
Measured At Ring No.				
Abrasion (Y/N)	No			
Circumferential Seams		4	4	Coupler #6 is cracked on West wall at spring height.
Separation (mm)	100			
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		6	6	
Corrosion By Soil (Y/N)	No			
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): , Rise (mm): 2400, Type: MP)				
Camber POS/ZERO/NEG	NEG			
Ponding (Y/N)	Yes			At D/S half to a depth of 500mm.
Fish Passage Adequacy		X	X	
Baffle		X	X	
(Type : )				
Waterway Adequacy		X	8	Water is flowing into secondary pipe only. Water is backing up from D/S end (North) to half of barrel length.
Icing (Y/N)	No			
Silting (Y/N)	No			
Drift (Y/N)	No			
<b>Barrel General Rating</b>		<b>3</b>	<b>3</b>	

Downstream End					
Culvert Component		Last	Now	Explanation of Condition	
(Pipe # : 1, Span Type: Primary Span)					
Direction		N		West pipe.	
End Treatment (Concrete, Steel, Others, None)	STEEL				
Headwall		X	X		
Collar		X	X		
Wingwalls		X	X		
(Shape : )					
Cutoff Wall		X	X		
Bevel End		N	7		
Heaving (mm)	0				
Invert Above/Below Stream Bed	ABOVE				
Above/Below (mm)	300				
Scour Protection		N	7	Some rock (300mm nominal).	
(Type : <b>NATURAL, RIP RAP</b> )					
(Avg. Rock Size(mm) : <b>300</b> )					
Scour/Erosion		N	7		
Beavers (Y/N)	No				
<b>Downstream End General Rating</b>		<b>7</b>	<b>7</b>		

Upstream End				
Culvert Component		Last	Now	Explanation of Condition
(Pipe # : 2, Span Type: Secondary Span)				
Direction		S		East 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		7	7	
Heaving (mm)	150			
Invert Above/Below Stream Bed	BELOW			
Above/Below (mm)	150			
Scour Protection		N	7	Some rock (300mm nominal).
(Type : <b>NATURAL, RIP RAP</b> )				
(Avg. Rock Size(mm) : <b>300</b> )				
Scour/Erosion		N	7	
Beavers (Y/N)	No			
<b>Upstream End General Rating</b>		<b>7</b>	<b>7</b>	
Bridge Culvert Barrel				
Culvert Component		Last	Now	Explanation of Condition
<b>(Pipe # : 2, Secondary Span, Location Code: MAIN, Span (mm): , Rise (mm): 1800, Type: MP)</b>				
Barrel Last Accessible Date	19-Jul-2012			E pipe.
<b>Special Features</b>				
Special Feature				
(Type : )				
Special Feature				
(Type : )				
Roof		7	5	Rise at S end=1779=21mm Rise at midpipe=1678=122mm=6.8% Rise at N end=1754=46mm
Measured Rise (mm)	1678			
Measured At Ring No.				
Sag (mm)	122			6.8%
Percent Sag	7			
Sidewall		N	5	Span at S end=1809=9mm Span at midpipe=1904=104mm=5.8% Span at N end=1831=31mm
Measured Span (mm)	1904			
Measured At Ring No.				
Deflection (mm)	104			5.8%
Percent Deflection	6			
Floor		6	6	
Bulge (mm)	0			
Measured At Ring No.				
Abrasion (Y/N)	No			
Circumferential Seams		5	5	
Separation (mm)	100			
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	
Corrosion By Soil (Y/N)	No			
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): , Rise (mm): 1800, Type: MP)				
Ponding (Y/N)	Yes			At D/S half to a depth of 650mm.
Fish Passage Adequacy		6	6	
Baffle		X	X	
(Type : )				
Waterway Adequacy		6	6	
Icing (Y/N)	No			
Silting (Y/N)	No			
Drift (Y/N)	No			
<b>Barrel General Rating</b>		<b>7</b>	<b>5</b>	
Downstream End				
Culvert Component		Last	Now	Explanation of Condition
(Pipe # : 2, Span Type: Secondary Span)				
Direction		N		
End Treatment (Concrete, Steel, Others, None)	STEEL			
Headwall		X	X	
Collar		X	X	
Wingwalls		X	X	
(Shape : )				
Cutoff Wall		X	X	
Bevel End		N	7	
Heaving (mm)	100			
Invert Above/Below Stream Bed	BELOW			
Above/Below (mm)	600			
Scour Protection		N	7	Some rock (300mm nominal).
(Type : <b>NATURAL, RIP RAP</b> )				
(Avg. Rock Size(mm) : <b>300</b> )				
Scour/Erosion		N	7	
Beavers (Y/N)	No			
<b>Downstream End General Rating</b>		<b>7</b>	<b>7</b>	
Structure Usage				
		Last	Now	Explanation of Condition
<b>Channel (U/S and D/S)</b>				
Alignment		6	6	Alignment of 2400 at outlet requires flow to make "S" curve to enter 1800mm channel.
Bank Stability		6	6	
HWM (m below Top of Culvert)				HWM not visible.
Drift (Y/N)	No			
Channel Bottom Degrading/Aggrading				Unknown.
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>	

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										
OTHER ACTION										
OTHER ACTION										
<b>Structural Condition Rating (Last/Now) (%)</b>	<b>33.3/33.3</b>	<b>Sufficiency Rating (Last/Now) (%)</b>	<b>52.2/52.0</b>	<b>Est. Repl. Yr</b>	<b>2029</b>	<b>Maint. Req. (Y/N)</b>	<b>No</b>			
Special Comments for Next Inspection	Monitor extension jint; span measured & written on wall for future comparisons. No action on cracked coupler at this time. No action for sag or deflection at this time.		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	Owen Salava	Previous Assistant's Name								
Next Inspection Date	19-Apr-2014	Previous Inspection Date	17-Dec-2010							
Inspection Cycle (Default) (months)	21									
Comment										

**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						
OTHER ACTION						
OTHER ACTION						

<b>Structural Condition Rating (Last/Now) (%)</b>	<b>33.3/33.3</b>	<b>Sufficiency Rating (Last/Now) (%)</b>	<b>52.2/52.0</b>	Est. Repl. Yr	2029	Maint. Req. (Y/N)	No
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Special Comments for Next Inspection	Monitor extension jnt; span measured & written on wall for future comparisons. No action on cracked coupler at this time. No action for sag or deflection at this time.	Department Comments	Replacement programmed for 2022
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Maintenance Reviewed By	Andrew Smikles	Date	21-Nov-2012	Estimated Total	0
Proposed Long-Term Strategy					
On 3-Year Program (Y/N)					
Proposed Action					
Previous Inspector's Name	Owen Salava	Previous Assistant's Name			
Next Inspection Date	19-Apr-2014	Previous Inspection Date	17-Dec-2010		
Inspection Cycle (Default) (months)	21				
Comment					