

Bridge Culvert Inspection				
Bridge File Number	83014 -1 Bridge Culvert		Form Type	CULM
Year Built	1980		Lot No.	2
Bridge or Town Name	VERMILION		Inspector Name	Jason Saly
Located Over	VERMILION RIVER, 6.5, WATERCRS-ST		Inspector Class	BR CLS A
Located On	41:20 C1 2.605		Assistant Name	
Water Body Cl./Year			Assistant Class	
Navigabil. Cl./Year			Inspection Date	28-Nov-2012
Legal Land Location	NE SEC 31 TWP 50 RGE 6 W4M		Data Entry By	Marcia Chavez
Longitude, Latitude	-110:51:36, 53:21:39		Data Entry Date	17-Jan-2013
Road Authority	Alberta Transportation (AIT)		Reviewer Name	John O'Brien
Contract Main. Area	CMA15		Review Date	14-Dec-2012
Clear Roadway/Skew	11.8 / 15 deg. (RHF)		Dept. Reviewer Name	Andrew Smikles
AADT/Year	4,670 / 2011 (A)		Dept. Review Date	18-Jan-2013
Road Classification	RAU-211.8-110		Follow-Up By	
Detour Length (km)	6			

Bridge Culvert Information

Number of Culverts	1							
Pipe #	Barrel	Span	Rise (or Dia.)	Type	Length	Corr. Profile	Pl./Slab Thickness	Shape
1	MAIN	27600	4600	BP	23			RECTANGLE
Special Features	WATER LVL CTRL							
Special Features Comment								

Utilities (Located at)

Utility Attachments				
Telephone			Gas	
Power	2 main lines East.		Municipal	
Others			Problem (Y/N)	No
Remarks				

Approach Road / Embankment

		Last	Now	Explanation of Condition
Horizontal Alignment		5	5	Hills and curves both ways. No passing both directions.
Vertical Alignment		5	5	
Roadway Width (m)	12.000			
Embankment		N	N	(Wide transverse cracking in roadway over structure. On West side. 16Aug2009). Snow covered.
Sideslope (_ :1)	3.0			
(Height of Cover(m) : 4)				
Guardrail (Y/N)	Yes			Both sides.
Approach Road / Embankment General Rating		5	5	

Upstream End

Culvert Component		Last	Now	Explanation of Condition
Direction		W		
End Treatment (Concrete, Steel, Others, None)	CONCRETE			
Headwall		6	6	Chainlink fence around wings & barrel. Cracks on South first barrel.
Collar		7	7	
Wingwalls		5	5	Wingwall separating 40mm & in 60mm at SW; wingwall separating 40mm & in 5mm @ NW.
(Shape : FLARE)				
Cutoff Wall		N	N	Buried.

Upstream End				
Culvert Component		Last	Now	Explanation of Condition
Bevel End		X	X	(Water level at 2.6m from water gauge level D/S. 07Mar2011).
Heaving (mm)	0			
Invert Above/Below Stream Bed	BELOW			
Above/Below (mm)	1000			
Scour Protection		N	N	Snow covered.
(Type : RIP RAP)				
(Avg. Rock Size(mm) : 300)				
Scour/Erosion		N	N	Snow covered.
Beavers (Y/N)	No			
Upstream End General Rating		5	5	
Bridge Culvert Barrel				
Culvert Component		Last	Now	Explanation of Condition
(Pipe # : 1, Primary Span, Location Code: MAIN, Span (mm): 4600, Rise (mm): 4600, Type: BP, Cell Sequence: 1)				
Barrel Last Accessible Date	08-Jan-2003			South cell. Open water, could not inspect.
Special Features				
Special Feature		N	N	Spillway on East side. Mostly ice covered.
(Type : WATER LVL CTRL)				
Special Feature				
(Type :)				
Roof		N	N	
Measured Rise (mm)				
Measured At Ring No.				
Sag (mm)	0			
Percent Sag				
Sidewall		N	N	
Measured Span (mm)				
Measured At Ring No.				
Deflection (mm)	0			
Percent Deflection				
Floor		N	N	
Bulge (mm)				
Measured At Ring No.				
Abrasion (Y/N)				
Circumferential Seams		N	N	
Separation (mm)				
Longitudinal Seams		X	X	(Cracks over South cell West side. 03/01/08).
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)	No			
Corrosion By Water (Y/N)	No			
Camber POS/ZERO/NEG	ZERO			
Ponding (Y/N)	No			

Bridge Culvert Barrel				
Culvert Component		Last	Now	Explanation of Condition
(Pipe # : 1, Primary Span, Location Code: MAIN, Span (mm): 4600, Rise (mm): 4600, Type: BP, Cell Sequence: 1)				
Fish Passage Adequacy		3	3	Due to drop structure.
Baffle		X	X	
(Type :)				
Waterway Adequacy		8	8	
Icing (Y/N)	No			
Silting (Y/N)	No			
Drift (Y/N)	No			
Barrel General Rating		N	N	

Bridge Culvert Barrel				
Culvert Component		Last	Now	Explanation of Condition
(Pipe # : 1, Primary Span, Location Code: MAIN, Span (mm): 4600, Rise (mm): 4600, Type: BP, Cell Sequence: 2)				
Barrel Last Accessible Date	08-Jan-2003			Not accessible, thin ice, open water, E side.
Special Features				
Special Feature				Water Lvl Control. Spillway on E side. Mostly ice covered.
(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	(Scaling & corrosion staining West side. 08/Jan/2003).
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)	No			
Corrosion By Water (Y/N)	No			
Camber POS/ZERO/NEG	ZERO			
Ponding (Y/N)	No			

Bridge Culvert Barrel				
Culvert Component		Last	Now	Explanation of Condition
(Pipe # : 1, Primary Span, Location Code: MAIN, Span (mm): 4600, Rise (mm): 4600, Type: BP, Cell Sequence: 2)				
Fish Passage Adequacy		3	3	Due to drop structure.
Baffle		X	X	
(Type :)				
Waterway Adequacy		8	8	
Icing (Y/N)		No		
Siltting (Y/N)		No		
Drift (Y/N)		No		
Barrel General Rating		N	N	
Bridge Culvert Barrel				
Culvert Component		Last	Now	Explanation of Condition
(Pipe # : 1, Primary Span, Location Code: MAIN, Span (mm): 4600, Rise (mm): 4600, Type: BP, Cell Sequence: 3)				
Barrel Last Accessible Date		08-Jan-2003		Not accessible; thin ice & open water, E side.
Special Features				
Special Feature				Water Lvl Control. Spillway on E side. Mostly ice covered.
(Type :)				
Special Feature				
(Type :)				
Roof		N	N	
Measured Rise (mm)				
Measured At Ring No.				
Sag (mm)				
Percent Sag				
Sidewall		N	N	(Fill drain dripping onto nose has deteriorated concrete - photo. 27/Mar/2008).
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)				
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)		No		
Corrosion By Water (Y/N)		No		
Camber POS/ZERO/NEG		ZERO		
Ponding (Y/N)		No		

Bridge Culvert Barrel				
Culvert Component		Last	Now	Explanation of Condition
(Pipe # : 1, Primary Span, Location Code: MAIN, Span (mm): 4600, Rise (mm): 4600, Type: BP, Cell Sequence: 3)				
Fish Passage Adequacy		3	3	Due to drop structure.
Baffle		X	X	
(Type :)				
Waterway Adequacy		8	8	
Icing (Y/N)	No			
Silting (Y/N)	No			
Drift (Y/N)	No			
Barrel General Rating		N	N	

Bridge Culvert Barrel				
Culvert Component		Last	Now	Explanation of Condition
(Pipe # : 1, Primary Span, Location Code: MAIN, Span (mm): 4600, Rise (mm): 4600, Type: BP, Cell Sequence: 4)				
Barrel Last Accessible Date	08-Jan-2003			Not accessible; thin ice & open water, E side.
Special Features				
Special Feature				Water Lvl Control. Spillway on E side. Mostly ice covered.
(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)				
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)	No			
Corrosion By Water (Y/N)	No			
Camber POS/ZERO/NEG	ZERO			
Ponding (Y/N)	No			

Bridge Culvert Barrel				
Culvert Component		Last	Now	Explanation of Condition
(Pipe # : 1, Primary Span, Location Code: MAIN, Span (mm): 4600, Rise (mm): 4600, Type: BP, Cell Sequence: 4)				
Fish Passage Adequacy		3	3	Due to spillway.
Baffle		X	X	
(Type :)				
Waterway Adequacy		8	8	
Icing (Y/N)		No		
Siltting (Y/N)		No		
Drift (Y/N)		No		
Barrel General Rating		N	N	

Bridge Culvert Barrel				
Culvert Component		Last	Now	Explanation of Condition
(Pipe # : 1, Primary Span, Location Code: MAIN, Span (mm): 4600, Rise (mm): 4600, Type: BP, Cell Sequence: 5)				
Barrel Last Accessible Date		08-Jan-2003		Not accessible; thin ice & open water, E end.
Special Features				
Special Feature				Water Lvl Control. Spillway on E side. Mostly ice covered.
(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)				
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)		No		
Corrosion By Water (Y/N)		No		
Camber POS/ZERO/NEG		ZERO		
Ponding (Y/N)		No		

Bridge Culvert Barrel				
Culvert Component		Last	Now	Explanation of Condition
(Pipe # : 1, Primary Span, Location Code: MAIN, Span (mm): 4600, Rise (mm): 4600, Type: BP, Cell Sequence: 5)				
Fish Passage Adequacy		3	3	Due to spillway.
Baffle		X	X	
(Type :)				
Waterway Adequacy		8	8	
Icing (Y/N)		No		
Siltting (Y/N)		No		
Drift (Y/N)		No		
Barrel General Rating		N	N	
Bridge Culvert Barrel				
Culvert Component		Last	Now	Explanation of Condition
(Pipe # : 1, Primary Span, Location Code: MAIN, Span (mm): 4600, Rise (mm): 4600, Type: BP, Cell Sequence: 6)				
Barrel Last Accessible Date		03-Jan-2003		Not accessible. Viewed from both ends, no problem noted. Open water, E side.
Special Features				
Special Feature				Water Lvl Control. Spillway on E side. Mostly ice covered.
(Type :)				
Special Feature				
(Type :)				
Roof		N	N	Minor delamination at W end.
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)				
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)		No		
Corrosion By Water (Y/N)		No		
Camber POS/ZERO/NEG		ZERO		
Ponding (Y/N)		No		

Bridge Culvert Barrel				
Culvert Component		Last	Now	Explanation of Condition
(Pipe # : 1, Primary Span, Location Code: MAIN, Span (mm): 4600, Rise (mm): 4600, Type: BP, Cell Sequence: 6)				
Fish Passage Adequacy		3	3	Due to spillway.
Baffle		X	X	
(Type :)				
Waterway Adequacy		8	8	
Icing (Y/N)	No			
Silting (Y/N)	No			
Drift (Y/N)	No			
Barrel General Rating		N	N	
Downstream End				
Culvert Component		Last	Now	Explanation of Condition
Direction		E		
End Treatment (Concrete, Steel, Others, None)	CONCRETE			
Headwall		7	6	Minor vertical cracking.
Collar		X	X	
Wingwalls		7	7	Chain link fence around wings & barrel. Continuous with drop structure retaining wall.
(Shape : RIGHT ANGLE)				
Cutoff Wall		N	N	Buried.
Bevel End		X	X	
Heaving (mm)	0			
Invert Above/Below Stream Bed	BELOW			
Above/Below (mm)	1000			
Scour Protection		N	N	Snow covered.
(Type : RIP RAP)				
(Avg. Rock Size(mm) : 300)				
Scour/Erosion		N	N	
Beavers (Y/N)	No			
Downstream End General Rating		6	6	
Structure Usage				
		Last	Now	Explanation of Condition
Channel (U/S and D/S)				
Alignment		8	8	
Bank Stability		N	N	Snow covered.
HWM (m below Top of Culvert)				HWM not visible.
Drift (Y/N)	No			
Channel Bottom Degrading/Aggrading	AGGRADING			(Upstream only. 23/May/2006)
Beavers (Y/N)	No			
(Fish Compensation Measure 1 : NONE)				
(Fish Compensation Measure 2 : NONE)				
Channel General Rating		8	8	

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	Repair spalled area West side. Repair carried forward due to lack of access to inspect. Extend West fill drain & clean pier stains.					
OTHER ACTION	2013	Seal gaps between West wingwall & barrel, both sides - carried forward.					
OTHER ACTION							
OTHER ACTION							
Structural Condition Rating (Last/Now) (%)	55.6/55.6	Sufficiency Rating (Last/Now) (%)	56.1/56.1	Est. Repl. Yr	2034	Maint. Req. (Y/N)	Yes
Special Comments for Next Inspection	Reinspect on ice floor, when accessible.		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 Saly		Previous Assistant's Name				
Next Inspection Date	28-Aug-2014		Previous Inspection Date	07-Mar-2011			
Inspection Cycle (Default) (months)	21						
Comment							