Bridge Culvert Inspection

Bridge File Number	80543 -1 Bridge Culvert	Form Type	CULM
Year Built	1993	Lot No.	1
Bridge or Town Name	WATERCOURSE CULVERT ON PROVINCIAL HIGHWAY 681 NEAR SILVER	Inspector Name	Russel Vanderschaaf
		Inspector Class	BR CLS B
Located Over	WATERCOURSE, WATERCRS-NI	Assistant Name	
Located On	681:02 C1 15.335	Assistant Class	
Water Body Cl./Year		Inspection Date	06-Mar-2012
Navigabil. Cl./Year		Data Entry By	Theresa Lacusta
Legal Land Location	SW SEC 17 TWP 81 RGE 11 W6M	Data Entry Date	27-Mar-2012
Longitude, Latitude	-119:41:09, 56:00:52	Reviewer Name	Eric Carcoux
Road Authority	Alberta Transportation (AIT)	Review Date	22-Mar-2012
Contract Main. Area	CMA05	Dept. Reviewer Name	David Morrison
Clear Roadway/Skew	9.5 /	Dept. Review Date	28-Aug-2012
AADT/Year	320 / 2011 (A)	Follow-Up By	
Road Classification	RAU-209-110		
Detour Length (km)	6		

Bridge Culvert Information

Number of Culverts	2							
Pipe #	Barrel	Span	Rise (or Dia.)	Type	Length	Corr. Profile	Pl./Slab Thickness	Shape
1	MAIN	-	1200	MP	30	65X13	2.8	ROUND
2	MAIN	-	1200	MP	30	65X13	2.8	ROUND

Special Features	
Special Features Comment	

Utilities (Located at)

Utility Attachments			
Telephone	S r/w.	Gas	
Power	N r/w 3 wire O/H.	Municipal	
Others		Problem (Y/N)	No
Remarks			

Approach Road / Embankment

		Last	Now	Explanation of Condition
Horizontal Alignment		9	9	Up to 50mm W x 40mmD crack in ACP along centerline of E pipe.
Vertical Alignment		9	9	
Roadway Width (m)	9.500			
Embankment		7	7	
Sideslope (__:1)	3.0			
(Height of Cover(m) : **2.5**)				
Guardrail (Y/N)				
Approach Road / Embankment General Rating		**9**	**9**	

Upstream End

Culvert Component		**Last**	**Now**	**Explanation of Condition**
(Pipe # : **1, Span Type: Primary Span**)				
Direction		S		West pipe.
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**
(Pipe # : **1, Span Type: Primary Span**)				
Cutoff Wall		X	X	
Bevel End		4	N	Undermined 2.0L x 1.2W x 0.1D m- 27-Oct-2010 Snow covered
Heaving (mm)	200			
Invert Above/Below Stream Bed	ABOVE			
Above/Below (mm)	100			
Scour Protection		4	N	Undermined 2.0L x 1.2W x 0.1Dm -27-Oct-2010 Snow covered
(Type : **RIP RAP**)				
(Avg. Rock Size(mm) : **300**)				
Scour/Erosion		4	N	Undermined 2.0L x 1.2W x 0.1Dm 27-Oct-2010 Snow covered
Beavers (Y/N)	No			
Upstream End General Rating		**4**	**4**	GR carried over 27-Oct-2010.

Bridge Culvert Barrel				
Culvert Component		**Last**	**Now**	**Explanation of Condition**
(Pipe # : **1, Primary Span, Location Code: MAIN, Span (mm): , Rise (mm): 1200, Type: MP**)				
Barrel Last Accessible Date	06-Mar-2012			West pipe.
Special Features				
Special Feature				
(Type :)				
Special Feature				
(Type :)				
Roof		3	3	Near centerline 17m from u/s end.
Measured Rise (mm)	1063			
Measured At Ring No.				
Sag (mm)	137			
Percent Sag	11			
Sidewall		3	3	Near centerline 17m from u/s end.
Measured Span (mm)	1341			
Measured At Ring No.				
Deflection (mm)	141			
Percent Deflection	12			
Floor		6	6	Near centerline.
Bulge (mm)				
Measured At Ring No.				
Abrasion (Y/N)	No			
Circumferential Seams		6	6	
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		5	5	Superficial rust at 5:00 - 7:00.
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): 1200, Type: MP**)				
Camber POS/ZERO/NEG	ZERO			
Ponding (Y/N)	No			
Fish Passage Adequacy		7	7	
Baffle		X	X	
(Type :)				
Waterway Adequacy		7	7	
Icing (Y/N)	No			
Silting (Y/N)	No			
Drift (Y/N)	No			
Barrel General Rating		**3**	**3**	

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

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	
Collar			X	
Wingwalls			X	
(Shape :)				
Cutoff Wall			X	

Upstream End				
Culvert Component		**Last**	**Now**	**Explanation of Condition**
(Pipe # : **2, Span Type: Secondary Span**)				
Bevel End			2	Bevel end broken off due to scour-photo 7mLx5mWx1mD scour-photo
Heaving (mm)				
Invert Above/Below Stream Bed	ABOVE			
Above/Below (mm)	1000			
Scour Protection			2	Bevel end broken off due to scour-photo 7mLx5mWx1mD scour-photo
(Type : **RIP RAP**)				
(Avg. Rock Size(mm) : **300**)				
Scour/Erosion			2	Bevel end broken off due to scour-photo 7mLx5mWx1mD scour-photo
Beavers (Y/N)	No			
Upstream End General Rating			**2**	

Bridge Culvert Barrel				
Culvert Component		**Last**	**Now**	**Explanation of Condition**
(Pipe # : **2, Secondary Span, Location Code: MAIN, Span (mm): , Rise (mm): 1200, Type: MP**)				
Barrel Last Accessible Date	06-Mar-2012			East pipe
Special Features				
Special Feature				
(Type :)				
Special Feature				
(Type :)				
Roof		4	4	near centerline 15m from u/s end.
Measured Rise (mm)	1093			
Measured At Ring No.				
Sag (mm)	107			
Percent Sag	9			
Sidewall		4	4	Near centerline 15m from u/s end.
Measured Span (mm)	1316			
Measured At Ring No.				
Deflection (mm)	116			
Percent Deflection	10			
Floor		7	7	near centerline.
Bulge (mm)				
Measured At Ring No.				
Abrasion (Y/N)	No			
Circumferential Seams		3	3	4 seams damaged (photo). 5th seam disconnected.
Separation (mm)	150			
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	Superficial rust 5:00 - 7:00
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 # : **2, Secondary Span, Location Code: MAIN, Span (mm): , Rise (mm): 1200, Type: MP**)				
Ponding (Y/N)	Yes			75mm u/s end for 10m.
Fish Passage Adequacy		7	7	
Baffle		X	X	
(Type :)				
Waterway Adequacy		7	7	
Icing (Y/N)	No			
Silting (Y/N)	No			
Drift (Y/N)	No			
Barrel General Rating		**4**	**4**	

Downstream End				
Culvert Component		**Last**	**Now**	**Explanation of Condition**
(Pipe # : **2, Span Type: Secondary Span**)				
Direction		N		East pipe.
End Treatment (Concrete, Steel, Others, None)	STEEL			
Headwall		X	X	
Collar		X	X	
Wingwalls		X	X	
(Shape :)				
Cutoff Wall		X	X	
Bevel End		7	7	
Heaving (mm)	0			
Invert Above/Below Stream Bed	ABOVE			
Above/Below (mm)	100			
Scour Protection		7	7	
(Type : **RIP RAP**)				
(Avg. Rock Size(mm) : **300**)				
Scour/Erosion		7	7	
Beavers (Y/N)	No			
Downstream End General Rating		**7**	**7**	

Structure Usage				
		Last	**Now**	**Explanation of Condition**
Channel (U/S and D/S)				
Alignment		7	7	
Bank Stability		7	7	
HWM (m below Top of Culvert)				No HWM visible.
Drift (Y/N)	No			
Channel Bottom Degrading/Aggrading	DEGRADING			D/S stable and u/s degrading.
Beavers (Y/N)	No			
(Fish Compensation Measure 1 : **NONE**)				
(Fish Compensation Measure 2 : **NONE**)				
Channel General Rating		**7**	**7**	

Maintenance Recommendations						
Inspector Recommendations	Year	Inspector Comments	Department Comments	Target Year	Est. Cost	Cat #
SHOTCRETE REPAIRS						
PLACE ADDITIONAL RIP RAP	2012	Place 35m3 of class 1 Riprap at u/s end of east pipe and 5m3 at west pipe.				
REMOVE DRIFT ACCUMULATION						
INSTALL CONCRETE/STEEL LINING						
INSTALL STRUTS	2012	Install struts				
INSTALL CONCRETE COLLAR/CUTOFF						
REPAIR SEAMS	2012	Repair seams in east pipe.				
OTHER ACTION	2012	Repair crack in ACP				
OTHER ACTION	2012	Repair embankment with 30m3 of fill at East pipe.				
OTHER ACTION	2012	Repair undermined bevel and disconnected bevel at u/s end.				
OTHER ACTION						

Structural Condition Rating (Last/Now) (%)	**33.3/33.3**	**Sufficiency Rating (Last/Now) (%)**	**54.3/52.4**	Est. Repl. Yr	2019	Maint. Reqd. (Y/N)	Yes

Special Comments for Next Inspection	Consider replacement of pipes. Assessment completed 2011. AT advised of low rating 23-Mar-2012	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	Russel Vanderschaaf	Previous Assistant's Name			
Next Inspection Date	06-Jun-2015	Previous Inspection Date	27-Oct-2010		
Inspection Cycle (Default) (months)	39				
Comment					