Bridge Culvert Inspection

Bridge File Number	75073 -1 Bridge Culvert	Form Type	CULM
Year Built	1959	Lot No.	1
Bridge or Town Name	FORT ASSINIB	Inspector Name	Russel Vanderschaaf
Located Over	MORSE RIVER, 8.11.95.2, WATERCRS-ST	Inspector Class	BR CLS B
Located On	33:10 C1 27.822	Assistant Name	
Water Body Cl./Year		Assistant Class	
Navigabil. Cl./Year		Inspection Date	11-Feb-2013
Legal Land Location	SE SEC 1 TWP 64 RGE 8 W5M	Data Entry By	Theresa Lacusta
Longitude, Latitude	-115:04:06, 54:30:18	Data Entry Date	10-Apr-2013
Road Authority	Alberta Transportation (AIT)	Reviewer Name	Eric Carcoux
Contract Main. Area	CMA06	Review Date	07-Apr-2013
Clear Roadway/Skew	9.6 / 0 deg.	Dept. Reviewer Name	
AADT/Year	850 / 2012 (A)	Dept. Review Date	
Road Classification	RAU-210-110	Follow-Up By	
Detour Length (km)	99		

Bridge Culvert Information

Number of Culverts		2						
Pipe #	Barrel	Span	Rise (or Dia.)	Type	Length	Corr. Profile	Pl./Slab Thickness	Shape
1	MAIN	-	3670	SP	83.5	152X51	3.0	ROUND
2	MAIN	-	3670	SP	83.5	152X51	3.0	ROUND
Special Features								
Special Features Comment								

Utilities (Located at)

Utility Attachments			
Telephone	West r/w.	Gas	
Power	4 wires East r/w.	Municipal	
Others		Problem (Y/N)	No
Remarks			

Approach Road / Embankment

		Last	Now	Explanation of Condition
Horizontal Alignment		7	7	Sag curve. Direction of passing changes at bottom of sag. 300m site distance each way.
Vertical Alignment		5	5	
Roadway Width (m)	9.600			
Embankment		4	N	35m long x0.7mx0.7m erosion gully @ SE corner.-25-Oct-2011 Course for erosion control @ NE corner. Washing down ditch exposing filter cloth. Broken post @ NW corner.-25-Oct-2011 Snow covered
Sideslope (__:1)	3.0			
(Height of Cover(m) : **7.6**)				
Guardrail (Y/N)	Yes			
Approach Road / Embankment General Rating		**5**	**5**	

Upstream End

Culvert Component		Last	Now	Explanation of Condition
(Pipe # : **1, Span Type: Primary Span**)				
Direction		E		South pipe.
End Treatment (Concrete, Steel, Others, None)	CONCRETE			
Headwall		X	X	
Collar		N	N	Shoulder slab settled 50m.-24-July-2009 100% concrete end treatment. Covered by drift. Snow covered

Upstream End				
Culvert Component		**Last**	**Now**	**Explanation of Condition**
(Pipe # : **1, Span Type: Primary Span**)				
Wingwalls		X	X	
(Shape :)				
Cutoff Wall		N	N	
Bevel End		5	5	
Heaving (mm)	200			
Invert Above/Below Stream Bed	BELOW			Cannot confirm due to snow/ice.
Above/Below (mm)	800			
Scour Protection		N	N	Scoured 1m back, along embankment.-Appears to be repaired. Riprap placed
(Type : **RIP RAP**)				
(Avg. Rock Size(mm) : **500**)				Snow covered
Scour/Erosion		N	N	
Beavers (Y/N)	Yes			Beaver cuttings on u/s banks.
Upstream End General Rating		**4**	**4**	Gen rating carried over from 24-Jul-2009

Bridge Culvert Barrel				
Culvert Component		**Last**	**Now**	**Explanation of Condition**
(Pipe # : **1, Primary Span, Location Code: MAIN, Span (mm): , Rise (mm): 3670, Type: SP**)				
Barrel Last Accessible Date	11-Feb-2013			South pipe. Level 2 barrel measurement completed.-25-Oct-2011
Special Features				
Special Feature				
(Type :)				
Special Feature				
(Type :)				
Roof		6	6	Minor cusping, several rings @ 11:00 position. Rise=3870@ring 30=5.4%. Under ice - no rise measurement Upward deflection
Measured Rise (mm)	3620			
Measured At Ring No.	10			
Sag (mm)	50			Ice 2.8 from crown.
Percent Sag	1			
Sidewall		7	7	Span =3500@ ring 30=4.6% Inward deflection
Measured Span (mm)	3700			
Measured At Ring No.	8			
Deflection (mm)	30			
Percent Deflection	1			
Floor		5	5	Under ice.
Bulge (mm)	0			
Measured At Ring No.	14			
Abrasion (Y/N)	Yes			
Circumferential Seams		5	5	
Separation (mm)	0			
Longitudinal Seams		6	6	Cusping @ ring 4, 8 & 22, 24,26 @ 11:00 position.
Total No. of Cracked Rings	0			
Total No. of Rings with Two Cracked Seams	0			
Min. Remaining Steel Between Cracks (mm)				1N and 2N stagger.
Proper Lap (Y/N)	No			
Longitudinal Stagger (Y/N)	Yes			

Bridge Culvert Barrel				
Culvert Component		**Last**	**Now**	**Explanation of Condition**
(Pipe # : **1, Primary Span, Location Code: MAIN, Span (mm): , Rise (mm): 3670, Type: SP**)				
Coating		4	4	Pitting and scaling 5-7 o'clock.-24-July-2009 Under ice
Corrosion By Soil (Y/N)	Yes			
Corrosion By Water (Y/N)	Yes			
Camber POS/ZERO/NEG	ZERO			
Ponding (Y/N)	No			
Fish Passage Adequacy		4	4	Outlet above streambed.
Baffle		3	N	90% missing. 4 left.-24-July-2009 Under ice
(Type : **WEIR**)				
Waterway Adequacy		4	4	Drift near Ring 4 and at d/s end of pipe.
Icing (Y/N)	No			
Silting (Y/N)	No			
Drift (Y/N)	Yes			
Barrel General Rating		**6**	**6**	

Downstream End				
Culvert Component		**Last**	**Now**	**Explanation of Condition**
(Pipe # : **1, Span Type: Primary Span**)				
Direction		W		South pipe.
End Treatment (Concrete, Steel, Others, None)	STEEL			
Headwall		X	X	
Collar		X	X	
Wingwalls		X	X	
(Shape :)				
Cutoff Wall		X	X	
Bevel End		5	5	
Heaving (mm)	100			
Invert Above/Below Stream Bed	ABOVE			
Above/Below (mm)	300			
Scour Protection		4	4	Bevel projects 300mm from fill. Undermined fro 0.5m-photo
(Type : **RIP RAP**)				
(Avg. Rock Size(mm) : **400**)				Riprap washed downstream-25-Oct-2011 - snow/ice covered
Scour/Erosion		4	4	20mx10m long x 1m, deep scour @ d/s end.-photo
Beavers (Y/N)	No			
Downstream End General Rating		**4**	**4**	

Upstream End				
Culvert Component		**Last**	**Now**	**Explanation of Condition**
(Pipe # : **2, Span Type: Secondary Span**)				
Direction		E		North pipe.
End Treatment (Concrete, Steel, Others, None)	CONCRETE			
Headwall		X	X	
Collar		N	N	Cracks due to loss of fill underneath concrete.-24-July-2009 90% covered by snow.

Upstream End				
Culvert Component		**Last**	**Now**	**Explanation of Condition**
(Pipe # : **2, Span Type: Secondary Span**)				
Wingwalls		X	X	
(Shape :)				
Cutoff Wall		N	X	
Bevel End		5	5	
Heaving (mm)	300			Cannot confirm due to snow.
Invert Above/Below Stream Bed	BELOW			
Above/Below (mm)	800			
Scour Protection		N	N	Scoured 1m back, along embankment.-Snow covered
(Type : **RIP RAP**)				Appears to be reapired and riprap placed.
(Avg. Rock Size(mm) : **500**)				
Scour/Erosion		N	N	Snow covered
Beavers (Y/N)	Yes			Beaver cuttings on u/s banks.
Upstream End General Rating		**4**	**4**	Gen rating carried over from 27-Jul-2009

Bridge Culvert Barrel				
Culvert Component		**Last**	**Now**	**Explanation of Condition**
(Pipe # : **2, Secondary Span, Location Code: MAIN, Span (mm): , Rise (mm): 3670, Type: SP**)				
Barrel Last Accessible Date	11-Feb-2013			North pipe. Level 2 barrel measurement.-25-Oct-2011 completed.
Special Features				
Special Feature				Ice 3.2 from crown.
(Type :)				
Special Feature				
(Type :)				
Roof		2	2	Reverse curvature rings 4, 6, 8, 10, 14, 16, 18, 20, 22 & 24- photo. Worst is ring 22
Measured Rise (mm)				Rise = 3870 @ ring 30=5.5%.-25-oct-2011- Ice covered
Measured At Ring No.				
Sag (mm)				Upward deflection
Percent Sag				
Sidewall		3	3	Cracked seams @ Rings 4 & 6.
Measured Span (mm)	3880			
Measured At Ring No.	4			
Deflection (mm)	210			
Percent Deflection	6			
Floor		5	N	Ice covered.
Bulge (mm)	50			
Measured At Ring No.	22			
Abrasion (Y/N)	Yes			
Circumferential Seams		5	5	
Separation (mm)	0			
Longitudinal Seams		3	3	Cracks in ring 4 at 9 o'clock. Ring 6 cracks at 9 o'clock.
Total No. of Cracked Rings	2			
Total No. of Rings with Two Cracked Seams	0			At ring 4.
Min. Remaining Steel Between Cracks (mm)	85			2N stagger.
Proper Lap (Y/N)	No			
Longitudinal Stagger (Y/N)	Yes			

Bridge Culvert Barrel				
Culvert Component		**Last**	**Now**	**Explanation of Condition**
(Pipe # : **2, Secondary Span, Location Code: MAIN, Span (mm): , Rise (mm): 3670, Type: SP**)				
Coating		4	4	Pitting rust 5-7 o'clock.
Corrosion By Soil (Y/N)	Yes			Perforations at 5:00 in rings 29-31 and d/s bevel. -under snow/ice , heavy abrasion 5-7 o'clock.
Corrosion By Water (Y/N)	Yes			
Camber POS/ZERO/NEG	ZERO			
Ponding (Y/N)	No			
Fish Passage Adequacy		4	4	Outlet above S.B.
Baffle		X	X	
(Type :)				
Waterway Adequacy		4	4	Drift blocking u/s end.
Icing (Y/N)	No			
Silting (Y/N)	No			
Drift (Y/N)	Yes			
Barrel General Rating		**2**	**2**	

Downstream End				
Culvert Component		**Last**	**Now**	**Explanation of Condition**
(Pipe # : **2, Span Type: Secondary Span**)				
Direction		W		North pipe.
End Treatment (Concrete, Steel, Others, None)	STEEL			
Headwall		X	X	
Collar		X	X	
Wingwalls		X	X	
(Shape :)				
Cutoff Wall		X	X	
Bevel End		6	6	
Heaving (mm)	0			
Invert Above/Below Stream Bed	ABOVE			
Above/Below (mm)	300			
Scour Protection		4	4	Bevel projecting 1m from fill. Bevel undermined 0.5m-photo
(Type : **RIP RAP**)				
(Avg. Rock Size(mm) : **400**)				Riprap washed d/s.-photo-25-Oct-2011 - SNow/ice covered
Scour/Erosion		4	4	Scour hole 20mx15mLx1m deep @ d/s end.-photo
Beavers (Y/N)	No			
Downstream End General Rating		**4**	**4**	

Structure Usage				
		Last	**Now**	**Explanation of Condition**
Channel (U/S and D/S)				
Alignment		4	4	Stream meandering and impinging on corners of structure on U/S end.-05-Apr-2011 - U/S repaired. 90 deg turn to South @ d/s end.
Bank Stability		4	4	Sloughing banks U/S & D/S.
HWM (m below Top of Culvert)				No HWM visible
Drift (Y/N)	No			

Structure Usage				
		Last	**Now**	**Explanation of Condition**
Channel Bottom Degrading/Aggrading	DEGRADING			Cannot confirm, appears to be degrading d/s and aggrading u/s.-25-Oct-2011
Beavers (Y/N)	Yes			
(Fish Compensation Measure 1 : **NONE**)				
(Fish Compensation Measure 2 : **NONE**)				
Channel General Rating		**4**	**4**	

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						

Structural Condition Rating (Last/Now) (%)	**22.2/22.2**	**Sufficiency Rating (Last/Now) (%)**	**23.8/23.7**	Est. Repl. Yr	2017	Maint. Reqd. (Y/N)	No

Special Comments for Next Inspection	Assessment completed 27-Feb-2012. Monitor scour on d/s end. Monitor North pipe closely, monitoring rings with reverse curvature and cracked seams. Low rating advisory sen to Alan Saunders 06-Mar-2013.	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	Shane Hall	Previous Assistant's Name			
Next Inspection Date	11-May-2014	Previous Inspection Date	25-Oct-2011		
Inspection Cycle (Modified) (months)	15				
Comment					