Bridge Culvert Inspection

Bridge File Number	74365 -1 Bridge Culvert	Form Type	CULM
Year Built	1954	Lot No.	2
Bridge or Town Name	ENTWISTLE	Inspector Name	Wade Nanninga
Located Over	TRIBUTARY TO PEMBINA RIVER, 8.11.84.55, WATERCRS-ST	Inspector Class	BR CLS A
		Assistant Name	
Located On	22:30 C1 42.139	Assistant Class	
Water Body Cl./Year		Inspection Date	30-Sep-2011
Navigabil. Cl./Year		Data Entry By	Theresa Lacusta
Legal Land Location	SW SEC 9 TWP 52 RGE 7 W5M	Data Entry Date	26-Oct-2011
Longitude, Latitude	-114:59:03, 53:28:15	Reviewer Name	Eric Carcoux
Road Authority	Alberta Transportation (AIT)	Review Date	25-Oct-2011
Contract Main. Area	CMA12	Dept. Reviewer Name	Brent Herrick
Clear Roadway/Skew	11 / -15 deg. (LHF)	Dept. Review Date	14-Nov-2011
AADT/Year	3,100 / 2010 (A)	Follow-Up By	
Road Classification	RAU-211.8-110		
Detour Length (km)	3		

Bridge Culvert Information

Number of Culverts		2						
Pipe #	Barrel	Span	Rise (or Dia.)	Type	Length	Corr. Profile	Pl./Slab Thickness	Shape
1	MAIN	-	1525	MP	36.6	68X13	3.0	ROUND
2	MAIN	-	800	WP	36.6			ROUND
Special Features								
Special Features Comment								

Utilities (Located at)

Utility Attachments			
Telephone		Gas	
Power	5 wires 25m from c/l, East r/w.	Municipal	
Others		Problem (Y/N)	No
Remarks	File tag @ West end.		

Approach Road / Embankment

		Last	Now	Explanation of Condition
Horizontal Alignment		8	8	Vertical curves both sides with limited sight distance.
Vertical Alignment		6	6	
Roadway Width (m)	11.300			
Embankment		6	5	1:1 just over 1500 mm pipe both ends. No problem.
Sideslope (__:1)	2.5			
(Height of Cover(m) : **3**)				
Guardrail (Y/N)	Yes			West side only.
Approach Road / Embankment General Rating		**6**	**6**	

Upstream End

Culvert Component		**Last**	**Now**	**Explanation of Condition**
(Pipe # : **1, Span Type: Primary Span**)				
Direction		E		North 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		3	3	Excessive heaving. Wire to stop beavers, attached to U/S end. One side of the bevel is not attached to the barrel and is dented in.
Heaving (mm)	400			
Invert Above/Below Stream Bed	ABOVE			
Above/Below (mm)	1300			
Scour Protection		4	4	1:1 slope over 1500mm pipe.
(Type : **NONE**)				
(Avg. Rock Size(mm) :)				
Scour/Erosion		4	4	6m wide x 0.5m deep x 10m long scour.
Beavers (Y/N)	Yes			
Upstream End General Rating		**3**	**3**	

Bridge Culvert Barrel				
Culvert Component		**Last**	**Now**	**Explanation of Condition**
(Pipe # : **1, Primary Span, Location Code: MAIN, Span (mm): , Rise (mm): 1525, Type: MP**)				
Barrel Last Accessible Date	30-Sep-2011			North pipe.
Special Features				
Special Feature				
(Type :)				
Special Feature				
(Type :)				
Roof		4	4	At centerline.
Measured Rise (mm)	1395			
Measured At Ring No.				
Sag (mm)	130			
Percent Sag	9			
Sidewall		3	4	At centerline.
Measured Span (mm)	1675			
Measured At Ring No.				
Deflection (mm)	150			
Percent Deflection	10			
Floor		5	5	
Bulge (mm)	50			
Measured At Ring No.	2			
Abrasion (Y/N)	No			
Circumferential Seams		4	3	Infiltration at one seam at mid span and another 5m from inlet.
Separation (mm)	80			
Longitudinal Seams		6	6	Riveted seams.
Total No. of Cracked Rings	0			
Total No. of Rings with Two Cracked Seams				
Min. Remaining Steel Between Cracks (mm)				
Proper Lap (Y/N)	Yes			
Longitudinal Stagger (Y/N)	Yes			
Coating		4	4	Superficial rust on floor. Bolt holes rusted, some water corrosion. Soil side corrosion perforated coupler.
Corrosion By Soil (Y/N)	Yes			
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): 1525, Type: MP**)				
Camber POS/ZERO/NEG	NEG			
Ponding (Y/N)	No			
Fish Passage Adequacy		4	4	Pipe above streambed. Approximately 1m.
Baffle		X	X	
(Type :)				
Waterway Adequacy		7	7	
Icing (Y/N)	No			
Silting (Y/N)	No			
Drift (Y/N)	No			
Barrel General Rating		**3**	**4**	

Downstream End				
Culvert Component		**Last**	**Now**	**Explanation of Condition**
(Pipe # : **1, Span Type: Primary 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		4	4	Erosion under bevel. Bevel unsupported for 2m.
Heaving (mm)	100			
Invert Above/Below Stream Bed	ABOVE			
Above/Below (mm)	1000			
Scour Protection		4	4	Insufficient rock.
(Type : **NONE**)				
(Avg. Rock Size(mm) :)				
Scour/Erosion		4	4	Scour hole off end, 1 x 2 x 4.0m long, end is being undercut. Approx 1m outfall.
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		South pipe. Wood culvert.
End Treatment (Concrete, Steel, Others, None)	NONE			
Headwall		X	X	
Collar		X	X	
Wingwalls		X	X	
(Shape :)				
Cutoff Wall		X	X	

Upstream End				
Culvert Component		**Last**	**Now**	**Explanation of Condition**
(Pipe # : **2, Span Type: Secondary Span**)				
Bevel End		X	X	Steel end detached 5m upstream.
Heaving (mm)	0			
Invert Above/Below Stream Bed	BELOW			
Above/Below (mm)	100			
Scour Protection		4	4	
(Type : **NONE**)				
(Avg. Rock Size(mm) :)				
Scour/Erosion		4	4	4m x 5m x 1m deep scour hole.
Beavers (Y/N)	No			
Upstream End General Rating		**4**	**4**	

Bridge Culvert Barrel				
Culvert Component		**Last**	**Now**	**Explanation of Condition**
(Pipe # : **2, Secondary Span, Location Code: MAIN, Span (mm): , Rise (mm): 800, Type: WP**)				
Barrel Last Accessible Date				Barrel too small to access. Viewed from ends, shape looks good.
Special Features				
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)				
Longitudinal Seams		N	N	
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	
Corrosion By Soil (Y/N)				
Corrosion By Water (Y/N)				
Camber POS/ZERO/NEG				

Bridge Culvert Barrel				
Culvert Component		**Last**	**Now**	**Explanation of Condition**
(Pipe # : **2, Secondary Span, Location Code: MAIN, Span (mm): , Rise (mm): 800, Type: WP**)				
Ponding (Y/N)	No			
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			
Barrel General Rating		**N**	**N**	

Downstream End				
Culvert Component		**Last**	**Now**	**Explanation of Condition**
(Pipe # : **2, Span Type: Secondary Span**)				
Direction		W		
End Treatment (Concrete, Steel, Others, None)	NONE			
Headwall		X	X	
Collar		X	X	
Wingwalls		X	X	
(Shape :)				
Cutoff Wall		X	X	
Bevel End		X	X	
Heaving (mm)	0			
Invert Above/Below Stream Bed	BELOW			
Above/Below (mm)	50			
Scour Protection		4	4	Protrudes from sideslope 3m.
(Type : **NONE**)				
(Avg. Rock Size(mm) :)				
Scour/Erosion		4	4	10m long x 1m deep x 3m wide scour hole.
Beavers (Y/N)	No			
Downstream End General Rating		**4**	**4**	

Structure Usage				
		Last	**Now**	**Explanation of Condition**
Channel (U/S and D/S)				
Alignment		5	5	90 degree bend D/S.
Bank Stability		5	5	1m vertical slopes downstream.
HWM (m below Top of Culvert)				No HWM visible.
Drift (Y/N)	Yes			
Channel Bottom Degrading/Aggrading	DEGRADING			
Beavers (Y/N)	Yes			
(Fish Compensation Measure 1 : **NONE**)				
(Fish Compensation Measure 2 : **NONE**)				
Channel General Rating		**5**	**5**	

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	2011	Remove the U/S bevel @ 1500 pipe.				
OTHER ACTION						
OTHER ACTION						
OTHER ACTION						

Structural Condition Rating (Last/Now) (%)	**33.3/44.4**	**Sufficiency Rating (Last/Now) (%)**	**36.9/42.0**	Est. Repl. Yr	2014	Maint. Reqd. (Y/N)	Yes

Special Comments for Next Inspection	Monitor upstream and sownstream scour.	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	Kris Bosters	Previous Assistant's Name	Sara Wadlow		
Next Inspection Date	30-Jun-2013	Previous Inspection Date	05-Nov-2009		
Inspection Cycle (Default) (months)	21				
Comment					