Bridge Culvert Inspection

Bridge File Number	75605 -1 Bridge Culvert	Form Type	CULE
Year Built	1963	Lot No.	2
Bridge or Town Name	EDSON	Inspector Name	Todd Warshawski
Located Over	SUNDANCE CREEK, 8.11.107.30, WATERCRS-ST	Inspector Class	BR CLS B
		Assistant Name	
Located On	16:04 L1 40.935;16:04 R1 41.858	Assistant Class	
Water Body Cl./Year		Inspection Date	09-Aug-2012
Navigabil. Cl./Year		Data Entry By	Theresa Lacusta
Legal Land Location	SW SEC 14 TWP 53 RGE 19 W5M	Data Entry Date	21-Aug-2012
Longitude, Latitude	-116:41:31, 53:34:17	Reviewer Name	Eric Carcoux
Road Authority	Alberta Transportation (AIT)	Review Date	21-Aug-2012
Contract Main. Area	CMA13	Dept. Reviewer Name	Brent Herrick
Clear Roadway/Skew	24.8 / -14 deg. (LHF)	Dept. Review Date	22-Aug-2012
AADT/Year	6,080 / 2011 (A)	Follow-Up By	
Road Classification	RAD-412.4-120		
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	U/S	-	3670	SP	52.4	152X51	2.8	ROUND
1	MAIN	-	3050	SP	54.3	152X51	2.8	ROUND
2	U/S	-	3670	SP	52.4	152X51	2.8	ROUND
2	MAIN	-	3050	SP	48.2	152X51	2.8	ROUND

Special Features	BARREL ELBOW
Special Features Comment	

Utilities (Located at)

Utility Attachments			
Telephone	Buried North r/w.	Gas	
Power	3 wires O/H North r/w.	Municipal	
Others		Problem (Y/N)	No
Remarks	BF tag on SW headwall		

Approach Road / Embankment

		Last	Now	Explanation of Condition
Horizontal Alignment		8	8	Crest to East.
Vertical Alignment		7	7	
Roadway Width (m)	24.800			WBL 12.3m; EBL 12.5m. Cracks in ACP over pipe.
Embankment		7	4	Scour along SE ditch drain over inlet. CSP drain is not working.
Sideslope (__:1)	3.0			
(Height of Cover(m) : **3**)				
Guardrail (Y/N)	Yes			1 side EB, 1 side WB.
Approach Road / Embankment General Rating		**7**	**7**	

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)	CONCRETE			
Headwall		7	7	Several narrow cracks.
Collar		7	7	Several narrow cracks.

Upstream End				
Culvert Component		**Last**	**Now**	**Explanation of Condition**
(Pipe # : **1, Span Type: Primary Span**)				
Wingwalls		X	X	
(Shape :)				
Cutoff Wall		N	N	Under water/riprap
Bevel End		7	7	Drift pile access inlet.
Heaving (mm)	100			
Invert Above/Below Stream Bed	BELOW			
Above/Below (mm)	300			
Scour Protection		7	7	
(Type : **RIP RAP**)				
(Avg. Rock Size(mm) : **300**)				
Scour/Erosion		7	7	
Beavers (Y/N)	No			
Upstream End General Rating		**7**	**7**	

Bridge Culvert Barrel				
Culvert Component		**Last**	**Now**	**Explanation of Condition**
(Pipe # : **1, Primary Span, Location Code: U/S, Span (mm): , Rise (mm): 3670, Type: SP**)				
Barrel Last Accessible Date	27-Sep-2010			West pipe. U/S section. Not accessible due to water level.s
Special Features				
Special Feature				Barrel elbow is in 3670 section.-Sep, 2010
(Type :)				
Special Feature				
(Type :)				
Roof		7	N	Rocks and debris on floor. Could not measure. Roof sag est at less than 5%-Sep 2010 (Also est 2% sag. 15/Oct/2003)
Measured Rise (mm)	3745			
Measured At Ring No.				
Sag (mm)	75			
Percent Sag	2			
Sidewall		7	N	
Measured Span (mm)	3688			
Measured At Ring No.	7			
Deflection (mm)	18			
Percent Deflection	0			
Floor		N	N	Under water. Rocks and debris on floor.-Sep 2010
Bulge (mm)	0			
Measured At Ring No.				
Abrasion (Y/N)	Yes			
Circumferential Seams		6	N	
Separation (mm)	0			
Longitudinal Seams		6	N	Springs or piping along barrel resulting in water squirting into pipe on lower half of pipe. -Sep, 2010
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			

Bridge Culvert Barrel				
Culvert Component		**Last**	**Now**	**Explanation of Condition**
(Pipe # : **1, Primary Span, Location Code: U/S, Span (mm): , Rise (mm): 3670, Type: SP**)				
Coating		5	N	
Corrosion By Soil (Y/N)	Yes			
Corrosion By Water (Y/N)	Yes			
Camber POS/ZERO/NEG	ZERO			
Ponding (Y/N)	No			
Fish Passage Adequacy		5	5	
Baffle		X	X	
(Type :)				
Waterway Adequacy		7	6	
Icing (Y/N)	No			Large drift at inlet
Silting (Y/N)	No			
Drift (Y/N)	Yes			
Barrel Extension General Rating		**7**	**N**	PRevious rating from Sep 2010 was '7'

Bridge Culvert Barrel				
Culvert Component		**Last**	**Now**	**Explanation of Condition**
(Pipe # : **1, Primary Span, Location Code: MAIN, Span (mm): , Rise (mm): 3050, Type: SP**)				
Barrel Last Accessible Date	27-Sep-2010			West pipe. D/S section
Special Features				
Special Feature		7	N	Barrel elbow is in 3670 section-Sep 2010
(Type : **BARREL ELBOW**)				
Special Feature				
(Type :)				
Roof		5	N	Rocks and debris on floor. Sag est at 7%. Some flattening of roof apparent at d/s sections.- Sep, 2010
Measured Rise (mm)	2857			
Measured At Ring No.				
Sag (mm)	193			
Percent Sag	6			
Sidewall		5	N	
Measured Span (mm)	3248			
Measured At Ring No.	18			
Deflection (mm)	198			
Percent Deflection	7			
Floor		N	N	Rocks and debris on floor.-Sep, 2010
Bulge (mm)	0			
Measured At Ring No.				
Abrasion (Y/N)	Yes			
Circumferential Seams		6	N	
Separation (mm)				
Longitudinal Seams		6	N	Seepage along seam.-Sep, 2010
Total No. of Cracked Rings	0			
Total No. of Rings with Two Cracked Seams				2N stagger.
Min. Remaining Steel Between Cracks (mm)				
Proper Lap (Y/N)	Yes			
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): 3050, Type: SP**)				
Coating		5	N	Corrosion with pitting on lower 1/4.-Sep, 2010
Corrosion By Soil (Y/N)	Yes			
Corrosion By Water (Y/N)	Yes			
Camber POS/ZERO/NEG	ZERO			
Ponding (Y/N)	No			
Fish Passage Adequacy		5	5	Hanging outlet, 500mm above S.B.
Baffle		X	X	
(Type :)				
Waterway Adequacy		7	6	
Icing (Y/N)	No			
Silting (Y/N)	No			
Drift (Y/N)	Yes			
Barrel General Rating		**5**	**N**	Previous rating from Sep, 2010 was '5'.

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		5	5	
Heaving (mm)	300			
Invert Above/Below Stream Bed	ABOVE			
Above/Below (mm)	500			
Scour Protection		4	4	Loss of fill along bevel.
(Type : **RIP RAP**)				
(Avg. Rock Size(mm) : **300**)				
Scour/Erosion		4	4	Erosion 0.5 x 0.5 x 2.0m along both sides of bevel.
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		S		East pipe.
End Treatment (Concrete, Steel, Others, None)	CONCRETE			
Headwall		7	7	Several narrow cracks.
Collar		7	7	Several narrow cracks.

Upstream End				
Culvert Component		**Last**	**Now**	**Explanation of Condition**
(Pipe # : **2, Span Type: Secondary Span**)				
Wingwalls		X	X	
(Shape :)				
Cutoff Wall		N	N	Under water/rock
Bevel End		7	7	Drift pile access inlet.
Heaving (mm)	100			
Invert Above/Below Stream Bed	BELOW			
Above/Below (mm)	300			
Scour Protection		7	7	Riprap is 600mm above invert in bevel.
(Type : **RIP RAP**)				
(Avg. Rock Size(mm) : **300**)				
Scour/Erosion		7	7	
Beavers (Y/N)	No			
Upstream End General Rating		**7**	**7**	

Bridge Culvert Barrel				
Culvert Component		**Last**	**Now**	**Explanation of Condition**
(Pipe # : **2, Secondary Span, Location Code: U/S, Span (mm): , Rise (mm): 3670, Type: SP**)				
Barrel Last Accessible Date	27-Sep-2010			East pipe. U/S section Not accessible due to water level.
Special Features				
Special Feature				
(Type :)				
Special Feature				
(Type :)				
Roof		7	N	Sag est @ 0%-Sep, 2010
Measured Rise (mm)				
Measured At Ring No.				
Sag (mm)				
Percent Sag				
Sidewall		7	N	
Measured Span (mm)	3660			
Measured At Ring No.	6			
Deflection (mm)	10			
Percent Deflection				
Floor		N	N	Covered with rock.-Sep, 2010
Bulge (mm)				
Measured At Ring No.				
Abrasion (Y/N)	No			
Circumferential Seams		6	N	
Separation (mm)				
Longitudinal Seams		6	N	Water squirting in thru seams.-Sep, 2010
Total No. of Cracked Rings				
Total No. of Rings with Two Cracked Seams				
Min. Remaining Steel Between Cracks (mm)				
Proper Lap (Y/N)	Yes			
Longitudinal Stagger (Y/N)	Yes			

Bridge Culvert Barrel				
Culvert Component		**Last**	**Now**	**Explanation of Condition**
(Pipe # : **2, Secondary Span, Location Code: U/S, Span (mm): , Rise (mm): 3670, Type: SP**)				
Coating		5	N	Pitting rust on lower 1/4.-Sep, 2010
Corrosion By Soil (Y/N)	Yes			
Corrosion By Water (Y/N)	Yes			
Camber POS/ZERO/NEG	ZERO			
Ponding (Y/N)	No			
Fish Passage Adequacy		5	5	
Baffle		X	X	
(Type :)				
Waterway Adequacy		7	6	
Icing (Y/N)	No			
Silting (Y/N)	No			Drift pile at inlet.
Drift (Y/N)	Yes			
Barrel Extension General Rating		**6**	**N**	Previous rating was '6' Sep, 2010.

Bridge Culvert Barrel				
Culvert Component		**Last**	**Now**	**Explanation of Condition**
(Pipe # : **2, Secondary Span, Location Code: MAIN, Span (mm): , Rise (mm): 3050, Type: SP**)				
Barrel Last Accessible Date	27-Sep-2010			East pipe. D/S section
Special Features				
Special Feature		7	N	Elbow is on 3670 section-Sep, 2010
(Type : **BARREL ELBOW**)				
Special Feature				
(Type :)				
Roof		6	N	
Measured Rise (mm)	2849			
Measured At Ring No.	5			
Sag (mm)	201			
Percent Sag	7			
Sidewall		6	N	
Measured Span (mm)	3216			
Measured At Ring No.	5			
Deflection (mm)	166			
Percent Deflection	5			
Floor		N	N	Under water and rock.
Bulge (mm)				
Measured At Ring No.				
Abrasion (Y/N)	No			
Circumferential Seams		6	N	Several loose nuts.-Sep, 2010
Separation (mm)				
Longitudinal Seams		6	N	
Total No. of Cracked Rings				
Total No. of Rings with Two Cracked Seams				
Min. Remaining Steel Between Cracks (mm)				2N stagger.
Proper Lap (Y/N)	Yes			
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): 3050, Type: SP**)				
Coating		5	N	(Pitting & scaling lower floor. -Sep, 2010
Corrosion By Soil (Y/N)	Yes			
Corrosion By Water (Y/N)	Yes			
Camber POS/ZERO/NEG	ZERO			
Ponding (Y/N)	No			
Fish Passage Adequacy		5	5	Outlet above streambed.
Baffle		X	X	
(Type :)				
Waterway Adequacy		7	6	
Icing (Y/N)	No			
Silting (Y/N)	No			
Drift (Y/N)	Yes			
Barrel General Rating		**6**	**N**	Previous rating was '6' Sep, 2010

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		6	6	
Heaving (mm)	300			
Invert Above/Below Stream Bed	ABOVE			
Above/Below (mm)	300			
Scour Protection		4	4	Bevel projects 2m with loss of fill in haunch area.
(Type : **RIP RAP**)				
(Avg. Rock Size(mm) : **300**)				
Scour/Erosion		4	4	It appears there is a loss of clay under bevel end x 2m+
Beavers (Y/N)	No			
Downstream End General Rating		**4**	**4**	

Structure Usage				
		Last	**Now**	**Explanation of Condition**
Channel (U/S and D/S)				
Alignment		6	6	Gradual bend before entrance.
Bank Stability		6	6	Exposed face on U/S South bank.
HWM (m below Top of Culvert)				HWM not visible. Large drift pile at inlets.
Drift (Y/N)	Yes			

Structure Usage				
		Last	**Now**	**Explanation of Condition**
Channel Bottom Degrading/Aggrading	DEGRADING			
Beavers (Y/N)	No			
(Fish Compensation Measure 1 : **NONE**)				
(Fish Compensation Measure 2 : **NONE**)				
Channel General Rating		**6**	**6**	

Maintenance Recommendations

Inspector Recommendations	Year	Inspector Comments	Department Comments	Target Year	Est. Cost	Cat #
SHOTCRETE REPAIRS						
PLACE ADDITIONAL RIP RAP	2012	40m3 CL 2 at inlets & outlet bevels.				
REMOVE DRIFT ACCUMULATION	2012	Remove drift from inlets.				
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) (%)	**55.6/55.6**	**Sufficiency Rating (Last/Now) (%)**	**62.5/59.3**	Est. Repl. Yr	2040	Maint. Reqd. (Y/N)	Yes

Special Comments for Next Inspection		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	Todd Warshawski	Previous Assistant's Name			
Next Inspection Date	09-May-2014	Previous Inspection Date	27-Sep-2010		
Inspection Cycle (Default) (months)	21				
Comment					