

Bridge Culvert Inspection				
Bridge File Number	01710 -1 Bridge Culvert		Form Type	CULM
Year Built	1956		Lot No.	1
Bridge or Town Name	PENHOLD		Inspector Name	Owen Salava
Located Over	TRIBUTARY TO THREEHILLS CK, 3.50.2.25, WATERCRS-ST		Inspector Class	BR CLS A
Located On	42:08 C1 15.396		Assistant Name	
Water Body Cl./Year			Assistant Class	
Navigabil. Cl./Year			Inspection Date	26-Nov-2012
Legal Land Location	NE SEC 28 TWP 36 RGE 26 W4M		Data Entry By	Marcia Chavez
Longitude, Latitude	-113:39:31, 52:07:42		Data Entry Date	06-Dec-2012
Road Authority	Alberta Transportation (AIT)		Reviewer Name	John O'Brien
Contract Main. Area	CMA19		Review Date	04-Dec-2012
Clear Roadway/Skew	8.5 /		Dept. Reviewer Name	Andrew Smikles
AADT/Year	2,020 / 2011 (A)		Dept. Review Date	10-Dec-2012
Road Classification	RAU-210-110		Follow-Up By	
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	-	1200	MP	50	68X13	2.8,2.8	ROUND
2	MAIN	-	1200	MP	35	68X13		ROUND
Special Features								
Special Features Comment								

Utilities (Located at)			
Utility Attachments			
Telephone	South r/w.	Gas	
Power	3W 25m N of c/l.	Municipal	
Others		Problem (Y/N)	No
Remarks			

Approach Road / Embankment				
		Last	Now	Explanation of Condition
Horizontal Alignment		8	8	Farm access 100 m SE. In the bottom of a sag curve, no passing EB.
Vertical Alignment		6	6	
Roadway Width (m)	10.800			
Embankment		7	7	
Sideslope (:1)	3.5			
(Height of Cover(m) : 3)				
Guardrail (Y/N)	No			
Approach Road / Embankment General Rating		6	6	

Upstream End				
Culvert Component		Last	Now	Explanation of Condition
(Pipe # : 1, Span Type: Primary Span)				
Direction		N		East pipe.
End Treatment (Concrete, Steel, Others, None)	NONE			
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		X	X	Bevel removed. Inlet crown bent inward restricting opening.
Heaving (mm)	0			
Invert Above/Below Stream Bed	ABOVE			
Above/Below (mm)	200			
Scour Protection		N	N	Snow covered.
(Type : NATURAL)				
(Avg. Rock Size(mm) :)				
Scour/Erosion		N	4	Snow covered. Appears to have possible erosion around pipe.
Beavers (Y/N)	No			
Upstream End General Rating		N	4	
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	26-Nov-2012			East pipe.
Special Features				
Special Feature				
(Type :)				
Special Feature				
(Type :)				
Roof		N	5	Midspan.
Measured Rise (mm)	1120			
Measured At Ring No.				
Sag (mm)	80			
Percent Sag	6			
Sidewall		N	4	Midspan.
Measured Span (mm)	1310			
Measured At Ring No.				
Deflection (mm)	110			
Percent Deflection	9			
Floor		N	N	Ice/water covered.
Bulge (mm)	0			
Measured At Ring No.				
Abrasion (Y/N)	No			
Circumferential Seams		N	5	
Separation (mm)	0			
Longitudinal Seams		N	5	Riveted.
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	5	Minor rusting.
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	NEG			
Ponding (Y/N)	No			
Fish Passage Adequacy		4	4	Outlet perched 0.3m.
Baffle		X	X	
(Type :)				
Waterway Adequacy		5	5	
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 # : 1, Span Type: Primary Span)				
Direction		S		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		3	3	Crown torn, damage along shoulder (photo).
Heaving (mm)	0			
Invert Above/Below Stream Bed	ABOVE			
Above/Below (mm)	500			
Scour Protection		4	4	
(Type : NONE)				
(Avg. Rock Size(mm) :)				
Scour/Erosion		4	4	Pipe overhangs embankment - minor erosion.
Beavers (Y/N)	No			
Downstream End General Rating		3	3	
Upstream End				
Culvert Component		Last	Now	Explanation of Condition
(Pipe # : 2, Span Type: Secondary Span)				
Direction		N		West pipe. Overflow pipe.
End Treatment (Concrete, Steel, Others, None)	STEEL			
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		4	4	Crown dented downwards est. 200mm (photo).
Heaving (mm)	0			
Invert Above/Below Stream Bed	ABOVE			
Above/Below (mm)	1200			
Scour Protection		4	4	
(Type : NATURAL)				
(Avg. Rock Size(mm) :)				
Scour/Erosion		4	4	Bevel protruding from fill, gap under bevel.
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): 1200, Type: MP)				
Barrel Last Accessible Date	26-Nov-2012			West barrel.
Special Features				
Special Feature				
(Type :)				
Special Feature				
(Type :)				
Roof		2	2	Midspan. 15.4%
Measured Rise (mm)	1015			
Measured At Ring No.				
Sag (mm)	185			
Percent Sag	15			
Sidewall		2	2	Barrel shape is uniform with adequate arching capability. Midspan. 15.7%.
Measured Span (mm)	1380			
Measured At Ring No.				
Deflection (mm)	180			
Percent Deflection	15			
Floor		N	5	
Bulge (mm)	0			
Measured At Ring No.				
Abrasion (Y/N)	No			
Circumferential Seams		4	5	No infiltration.
Separation (mm)	125			
Longitudinal Seams		X	6	Rivetted.
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		5	5	Superficial rusting on floor.
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)	No			
Fish Passage Adequacy		3	3	Outlet 1m above streambed; no flow.
Baffle		X	X	
(Type :)				
Waterway Adequacy		6	6	
Icing (Y/N)	No			
Silting (Y/N)	No			
Drift (Y/N)	No			
Barrel General Rating		2	2	
Downstream End				
Culvert Component		Last	Now	Explanation of Condition
(Pipe # : 2, Span Type: Secondary Span)				
Direction		S		
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	Minor damage
Heaving (mm)	0			
Invert Above/Below Stream Bed	ABOVE			
Above/Below (mm)	1000			
Scour Protection		4	4	
(Type : NONE)				
(Avg. Rock Size(mm) :)				
Scour/Erosion		4	4	Overhang over embankment, erosion around bevel.
Beavers (Y/N)	No			
Downstream End General Rating		4	4	
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)				HWN not visible.
Drift (Y/N)	No			
Channel Bottom Degrading/Aggrading				Unknown.
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	2013	15m3 CL1 at ends.				
REMOVE DRIFT ACCUMULATION						
INSTALL CONCRETE/STEEL LINING						
INSTALL STRUTS						
INSTALL CONCRETE COLLAR/CUTOFF						
REPAIR SEAMS						
OTHER ACTION	2020	Replace culvert.				
OTHER ACTION	2013	Jack out bends in bevels. Cut-off torn roof at outlet.				
OTHER ACTION						
OTHER ACTION						
OTHER ACTION						
Structural Condition Rating (Last/Now) (%)	22.2/22.2	Sufficiency Rating (Last/Now) (%)	29.9/29.9	2016	Maint. Req'd. (Y/N)	Yes
Special Comments for Next Inspection	No need to shorten inspection cycle at this time; current inspection frequency is sufficient, but measure span & rise at each inspection. No action on outlet crown of E pipe. LRA sent to Donald Saunders on 03Dec2012.		Department Comments			
Maintenance Reviewed By			Date		Estimated Total	0
Proposed Long-Term Strategy	Culverts should be good until 2020.RS					
On 3-Year Program (Y/N)						
Proposed Action						
Previous Inspector's Name	Owen Salava	Previous Assistant's Name				
Next Inspection Date	26-Aug-2014	Previous Inspection Date	12-Apr-2011			
Inspection Cycle (Default) (months)	21					
Comment						

Maintenance Recommendations

Inspector Recommendations	Year	Inspector Comments	Department Comments	Target Year	Est. Cost	Cat #
SHOTCRETE REPAIRS						
PLACE ADDITIONAL RIP RAP	2013	15m3 CL1 at ends.	Defer until replacement	2023		
REMOVE DRIFT ACCUMULATION						
INSTALL CONCRETE/STEEL LINING						
INSTALL STRUTS						
INSTALL CONCRETE COLLAR/CUTOFF						
REPAIR SEAMS						
OTHER ACTION	2020	Replace culvert.	Defer until replacement	2023		
OTHER ACTION	2013	Jack out bends in bevels. Cut-off torn roof at outlet.	Defer until replacement	2023		
OTHER ACTION						
OTHER ACTION						
OTHER ACTION						

Structural Condition Rating (Last/Now) (%)	22.2/22.2	Sufficiency Rating (Last/Now) (%)	29.9/29.9	Est. Repl. Yr	2016	Maint. Req. (Y/N)	Yes
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Special Comments for Next Inspection	No need to shorten inspection cycle at this time; current inspection frequency is sufficient, but measure span & rise at each inspection. No action on outlet crown of E pipe. LRA sent to Donald Saunders on 03Dec2012.	Department Comments	Currently scheduled for replacement in 2023. DA
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Maintenance Reviewed By	Darron Ahlstedt	Date	04-Mar-2013	Estimated Total	0
Proposed Long-Term Strategy	Culverts should be good until 2020.RS				
On 3-Year Program (Y/N)					
Proposed Action					
Previous Inspector's Name	Owen Salava	Previous Assistant's Name			
Next Inspection Date	26-Aug-2014	Previous Inspection Date	12-Apr-2011		
Inspection Cycle (Default) (months)	21				
Comment					