Bridge Culvert Inspection

Bridge File Number	78878 -1 Bridge Culvert	Form Type	CULM
Year Built	1977	Lot No.	2
Bridge or Town Name	Millarville	Inspector Name	Calvin Roberts
Located Over	TRAIL-ANIMAL, OVER SP	Inspector Class	BR CLS B
Located On	549:02 C1 8.513	Assistant Name	
Water Body Cl./Year		Assistant Class	
Navigabil. Cl./Year		Inspection Date	30-Jan-2013
Legal Land Location	NW SEC 1 TWP 21 RGE 4 W5M	Data Entry By	Lauren Korte
Longitude, Latitude	-114:25:59, 50:45:21	Data Entry Date	01-Mar-2013
Road Authority	Alberta Transportation (AIT)	Reviewer Name	Garry Roberts
Contract Main. Area	CMA27	Review Date	03-Feb-2013
Clear Roadway/Skew	9 / 0 deg.	Dept. Reviewer Name	Tim Davies
AADT/Year	1,510 / 2011 (A)	Dept. Review Date	04-Mar-2013
Road Classification	RCU-209-110	Follow-Up By	
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	MAIN	-	2134	MP	22	68X13	3.5	ROUND
2	MAIN	-	914	MP	88.4	68X13	1.6	ROUND
Special Features								
Special Features Comment								

Posting Information

Required Vert. Clearance Posting (m)											
Posted Vertical Clearance (Y/N)		No									
Posted:	Lane	NB	On Bridge (m)		In Advance (Y/N)		Lane	SB	On Bridge (m)		In Advance (Y/N)
Remarks	Not Required.										

Utilities (Located at)

Utility Attachments			
Telephone	South ditch.	Gas	
Power		Municipal	
Others		Problem (Y/N)	No
Remarks			

Approach Road / Embankment

		Last	Now	Explanation of Condition
Horizontal Alignment		7	7	
Vertical Alignment		7	7	
Roadway Width (m)	9.000			
Embankment		4	4	Sloughin @ D/S @ Secondary but 25m from road. 3.5m cover over secondary.
Sideslope (__:1)	3.0			
(Height of Cover(m) : **0.8**)				
Guardrail (Y/N)	Yes			
Approach Road / Embankment General Rating		**7**	**7**	

Upstream End

Culvert Component		**Last**	**Now**	**Explanation of Condition**
(Pipe # : **1, Span Type: Primary Span**)				
Direction				South.
End Treatment (Concrete, Steel, Others, None)	NONE			

Upstream End				
Culvert Component		**Last**	**Now**	**Explanation of Condition**
(Pipe # : **1, Span Type: Primary Span**)				
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)	200			
Scour Protection		7	N	Snow covered.
(Type : **NATURAL**)				
(Avg. Rock Size(mm) :)				
Scour/Erosion		7	N	
Beavers (Y/N)	No			
Upstream End General Rating		**7**	**N**	P.R 7.

Bridge Culvert Barrel				
Culvert Component		**Last**	**Now**	**Explanation of Condition**
(Pipe # : **1, Primary Span, Location Code: MAIN, Span (mm): , Rise (mm): 2134, Type: MP**)				
Barrel Last Accessible Date	30-Jan-2013			
Special Features				
Special Feature				
(Type :)				
Special Feature				
(Type :)				
Roof		7	7	Estimate.
Measured Rise (mm)	2180			
Measured At Ring No.	1			
Sag (mm)	47			
Percent Sag	2			
Sidewall		6	7	Inward.
Measured Span (mm)	2080			
Measured At Ring No.	1			
Deflection (mm)	54			
Percent Deflection	3			
Floor		N	N	150mm gravel on floor.
Bulge (mm)	0			
Measured At Ring No.				
Abrasion (Y/N)	No			
Circumferential Seams		5	5	255mm @ haunch, 120mm @ roof. Misaligned @ install at R2.
Separation (mm)	255			

Bridge Culvert Barrel				
Culvert Component		**Last**	**Now**	**Explanation of Condition**
(Pipe # : **1, Primary Span, Location Code: MAIN, Span (mm): , Rise (mm): 2134, Type: MP**)				
Longitudinal Seams		X	X	
Total No. of Cracked Rings	0			
Total No. of Rings with Two Cracked Seams	0			
Min. Remaining Steel Between Cracks (mm)	0			
Proper Lap (Y/N)				
Longitudinal Stagger (Y/N)				
Coating		4	4	Isolated Scaling and Pitting @ Haunches.
Corrosion By Soil (Y/N)	No			
Corrosion By Water (Y/N)	Yes			
Camber POS/ZERO/NEG	ZERO			
Ponding (Y/N)	No			
Fish Passage Adequacy		X	X	
Baffle		X	X	
(Type :)				
Waterway Adequacy		7	X	
Icing (Y/N)	No			
Silting (Y/N)	No			
Drift (Y/N)	No			
Barrel General Rating		**6**	**7**	

Downstream End				
Culvert Component		**Last**	**Now**	**Explanation of Condition**
(Pipe # : **1, Span Type: Primary Span**)				
Direction				North.
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	ABOVE			
Above/Below (mm)	100			
Scour Protection		7	N	Snow covered.
(Type : **NATURAL**)				
(Avg. Rock Size(mm) :)				
Scour/Erosion		7	N	
Beavers (Y/N)	No			
Downstream End General Rating		**7**	**N**	P.R 7.

Upstream End				
Culvert Component		**Last**	**Now**	**Explanation of Condition**
(Pipe # : **2, Span Type: Secondary Span**)				
Direction				South. Located 10m west of primary.
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)				
Invert Above/Below Stream Bed	BELOW			
Above/Below (mm)	400			
Scour Protection		5	N	(Small scourhole) (260mm DP). October 11, 2009. Snow Covered.
(Type : **NATURAL**)				
(Avg. Rock Size(mm) :)				
Scour/Erosion		5	N	
Beavers (Y/N)	No			
Upstream End General Rating		**5**	**N**	P.R 5.

Bridge Culvert Barrel				
Culvert Component		**Last**	**Now**	**Explanation of Condition**
(Pipe # : **2, Secondary Span, Location Code: MAIN, Span (mm): , Rise (mm): 914, Type: MP**)				
Barrel Last Accessible Date	19-Sep-2006			Pipe too small to enter.
Special Features				
Special Feature				Runs @ 45 Deg under primary. Viewed from Ends.
(Type :)				
Special Feature				
(Type :)				
Roof		2	N	(Entered d/s 5m to roof sag measured @ ring #3 from North Local roof sag 1m long @ 5m from D/S) Sept 19/06 Remaining 95% of pipe appears good. Likely from construction.
Measured Rise (mm)	750			
Measured At Ring No.	2			
Sag (mm)	164			
Percent Sag	17			
Sidewall		N	N	
Measured Span (mm)	970			
Measured At Ring No.	2			
Deflection (mm)	56			
Percent Deflection	6			
Floor		N	N	Corrosion with pitting @ floor.
Bulge (mm)				
Measured At Ring No.				
Abrasion (Y/N)	No			
Circumferential Seams		N	N	
Separation (mm)				

Bridge Culvert Barrel				
Culvert Component		**Last**	**Now**	**Explanation of Condition**
(Pipe # : **2, Secondary Span, Location Code: MAIN, Span (mm): , Rise (mm): 914, Type: MP**)				
Longitudinal Seams		X	X	
Total No. of Cracked Rings	0			
Total No. of Rings with Two Cracked Seams	0			
Min. Remaining Steel Between Cracks (mm)	0			
Proper Lap (Y/N)				
Longitudinal Stagger (Y/N)				
Coating		4	4	Corrosion at floor with light pitting.
Corrosion By Soil (Y/N)	No			
Corrosion By Water (Y/N)	Yes			
Camber POS/ZERO/NEG	NEG			
Ponding (Y/N)	No			
Fish Passage Adequacy		X	5	
Baffle		X	X	
(Type :)				
Waterway Adequacy		3	3	Under sized for flow that caused D/S scour.
Icing (Y/N)	No			
Silting (Y/N)	No			
Drift (Y/N)	No			
Barrel General Rating		**2**	**2**	Carried forward.

Downstream End				
Culvert Component		**Last**	**Now**	**Explanation of Condition**
(Pipe # : **2, Span Type: Secondary Span**)				
Direction				North.
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)				
Invert Above/Below Stream Bed	ABOVE			2m of pipe hanging unsupported over scour hole.
Above/Below (mm)	200			
Scour Protection		3	3	25m x 6m x 2m Deep severe scour @ d/s end.
(Type : **NATURAL**)				
(Avg. Rock Size(mm) :)				
Scour/Erosion		3	3	
Beavers (Y/N)	No			
Downstream End General Rating		**3**	**3**	

Structure Usage				
		Last	**Now**	**Explanation of Condition**
Grade Separation				
Road Alignment		X	X	
Roadway Surface		5	5	No visible HWM at secondary.
(Type :)				
Icing (Y/N)	Yes			Approximately 150mm ice in pipe.
Traffic Safety Features		X	X	
Type				
Lighting		X	X	
Barrel Leakage (Y/N)	No			
Drainage		5	5	
Structure In Use (Y/N)	No			
Grade Separation General Rating		**5**	**5**	

Maintenance Recommendations						
Inspector Recommendations	Year	Inspector Comments	Department Comments	Target Year	Est. Cost	Cat #
SHOTCRETE REPAIRS						
PLACE ADDITIONAL RIP RAP	2013	20m³ Class 2 @ d/s secondary and 30m³ pit run.				
REMOVE DRIFT ACCUMULATION						
INSTALL CONCRETE/STEEL LINING						
INSTALL STRUTS						
INSTALL CONCRETE COLLAR/CUTOFF						
REPAIR SEAMS						
OTHER ACTION	2013	Replace damaged 2nd from D/S section of 914mm secondary				
OTHER ACTION						
OTHER ACTION						
OTHER ACTION						

Structural Condition Rating (Last/Now) (%)	**22.2/22.2**	**Sufficiency Rating (Last/Now) (%)**	**31.8/31.8**	Est. Repl. Yr	2025	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	Garry Roberts	Previous Assistant's Name			
Next Inspection Date	30-Apr-2016	Previous Inspection Date	01-Oct-2009		
Inspection Cycle (Default) (months)	39				
Comment					