

Bridge Culvert Inspection				
Bridge File Number	72100 -1 Bridge Culvert		Form Type	CULE
Year Built	1994		Lot No.	4
Bridge or Town Name	LETHBRIDGE		Inspector Name	Jason Rusu
Located Over	SMR - IRRIGATION C, WATERCRS-IC		Inspector Class	BR CLS A
Located On	4:06 L1 21.512;4:06 R1 21.510		Assistant Name	
Water Body Cl./Year			Assistant Class	
Navigabil. Cl./Year			Inspection Date	24-Mar-2013
Legal Land Location	SW SEC 24 TWP 8 RGE 21 W4M		Data Entry By	Anne Roberts
Longitude, Latitude	-112:44:01, 49:39:26		Data Entry Date	09-Apr-2013
Road Authority	Alberta Transportation (AIT)		Reviewer Name	Garry Roberts
Contract Main. Area	CMA25		Review Date	07-Apr-2013
Clear Roadway/Skew	28.9 / 45 deg. (RHF)		Dept. Reviewer Name	Tim Davies
AADT/Year	5,970 / 2012 (A)		Dept. Review Date	22-Apr-2013
Road Classification	RFD-412.4-130		Follow-Up By	
Detour Length (km)	1			

Bridge Culvert Information

Number of Culverts	3							
Pipe #	Barrel	Span	Rise (or Dia.)	Type	Length	Corr. Profile	Pl./Slab Thickness	Shape
1	MAIN	-	2400	MP	48	125X26	2.8	ROUND
1	D/S	-	2700	MP	77.6	125X26	2.8	ROUND
2	MAIN	-	2400	MP	48	125X26	2.8	ROUND
2	D/S	-	2700	MP	77.6	125X26	2.8	ROUND
3	MAIN	-	2400	MP	48	125X26	2.8	ROUND
3	D/S	-	2700	MP	77.6	125X26	2.8	ROUND
Special Features								
Special Features Comment								

Utilities (Located at)

Utility Attachments			
Telephone	West ROW.	Gas	
Power	East and West ROW and crossing 5m North.	Municipal	
Others	Fibre optics cable at East ROW.	Problem (Y/N)	No
Remarks			

Approach Road / Embankment

	Last	Now	Explanation of Condition
Horizontal Alignment	7	7	Local road intersection 30 m North.
Vertical Alignment	9	9	
Roadway Width (m)	30.000		
Embankment	8	8	3:1 over pipes.
Sideslope (___:1)	5.0		
(Height of Cover(m) : 1)			
Guardrail (Y/N)	Yes		At West only. East rail at local road.
Approach Road / Embankment General Rating	7	7	

Upstream End

Culvert Component	Last	Now	Explanation of Condition
(Pipe # : 1, Span Type: Primary Span)			
Direction	W		West end South pipe.
End Treatment (Concrete, Steel, Others, None)	STEEL		
Headwall	X	X	

Upstream End				
Culvert Component		Last	Now	Explanation of Condition
(Pipe # : 1, Span Type: Primary Span)				
Collar		X	X	
Wingwalls (Shape :)		X	X	
Cutoff Wall		N	N	
Bevel End		8	8	Bevels project 1.5 m from fill on inside of North and South pipes & center pipe end due to skew.
Heaving (mm)	0			
Invert Above/Below Stream Bed	BELOW			
Above/Below (mm)	300			
Scour Protection (Type : RIP RAP) (Avg. Rock Size(mm) : 350)		8	8	
Scour/Erosion		8	8	
Beavers (Y/N)	No			
Upstream End General Rating		8	8	

Bridge Culvert Barrel				
Culvert Component		Last	Now	Explanation of Condition
(Pipe # : 1, Primary Span, Location Code: MAIN, Span (mm): , Rise (mm): 2400, Type: MP)				
Barrel Last Accessible Date	23-Mar-2013			South pipe. All barrels 80% full flow. All pipes have 1m thick ice on floor.
Special Features				
Special Feature (Type :)				
Special Feature (Type :)				
Roof		N	8	Estimate.
Measured Rise (mm)	2410			
Measured At Ring No.	3			
Sag (mm)	10			
Percent Sag	1			
Sidewall		N	8	Inward.
Measured Span (mm)	2390			
Measured At Ring No.	3			
Deflection (mm)	10			
Percent Deflection				
Floor		N	N	
Bulge (mm)				
Measured At Ring No.				
Abrasion (Y/N)				
Circumferential Seams		N	8	(Foam in seams diff alignment up to 130mm.)
Separation (mm)	130			

Bridge Culvert Barrel				
Culvert Component		Last	Now	Explanation of Condition
(Pipe # : 1, Primary Span, Location Code: MAIN, Span (mm): , Rise (mm): 2400, Type: MP)				
Longitudinal Seams		X	X	
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	6	Minor sidewall corrosion.
Corrosion By Soil (Y/N)	No			
Corrosion By Water (Y/N)	Yes			
Camber POS/ZERO/NEG	ZERO			
Ponding (Y/N)	No			
Fish Passage Adequacy		7	7	
Baffle		X	X	
(Type :)				
Waterway Adequacy		9	9	
Icing (Y/N)	No			
Silting (Y/N)	No			
Drift (Y/N)	No			
Barrel General Rating		N	8	

Bridge Culvert Barrel				
Culvert Component		Last	Now	Explanation of Condition
(Pipe # : 1, Primary Span, Location Code: D/S, Span (mm): , Rise (mm): 2700, Type: MP)				
Barrel Last Accessible Date	23-Mar-2013			South pipe. All barrels 80% full flow. All pipes have 1m thick ice on floor.
Special Features				
Special Feature				
(Type :)				
Special Feature				
(Type :)				
Roof		N	8	Extended 2700mm. Rates 8. Estimated sag 1%.
Measured Rise (mm)	2410			
Measured At Ring No.	3			
Sag (mm)	10			
Percent Sag	1			
Sidewall		N	8	Extended 2700mm. Rates 8. Max def 2650mm. Inward.
Measured Span (mm)	2390			
Measured At Ring No.	3			
Deflection (mm)	10			
Percent Deflection				
Floor		N	N	
Bulge (mm)				
Measured At Ring No.				
Abrasion (Y/N)				
Circumferential Seams		N	8	(Foam in seams diff alignment up to 130mm.)
Separation (mm)	130			

Bridge Culvert Barrel				
Culvert Component		Last	Now	Explanation of Condition
(Pipe # : 1, Primary Span, Location Code: D/S, Span (mm): , Rise (mm): 2700, Type: MP)				
Longitudinal Seams		X	X	
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	6	
Corrosion By Soil (Y/N)	No			
Corrosion By Water (Y/N)	Yes			
Camber POS/ZERO/NEG	ZERO			
Ponding (Y/N)	No			
Fish Passage Adequacy		7	7	
Baffle		X	X	
(Type :)				
Waterway Adequacy		9	9	
Icing (Y/N)	No			
Silting (Y/N)	No			
Drift (Y/N)	No			
Barrel Extension General Rating		N	8	

Downstream End				
Culvert Component		Last	Now	Explanation of Condition
(Pipe # : 1, Span Type: Primary Span)				
Direction		E		East end South pipe.
End Treatment (Concrete, Steel, Others, None)	STEEL			
Headwall		X	X	
Collar		X	X	
Wingwalls		X	X	
(Shape :)				
Cutoff Wall		N	N	
Bevel End		8	8	
Heaving (mm)	0			
Invert Above/Below Stream Bed	BELOW			
Above/Below (mm)	300			
Scour Protection		8	8	
(Type : RIP RAP)				
(Avg. Rock Size(mm) : 300)				
Scour/Erosion		8	8	
Beavers (Y/N)	No			
Downstream End General Rating		8	8	

Upstream End				
Culvert Component		Last	Now	Explanation of Condition
(Pipe # : 2, Span Type: Secondary Span)				
Direction		W		West end, center pipe.
End Treatment (Concrete, Steel, Others, None)	STEEL			
Headwall		X	X	
Collar		X	X	
Wingwalls (Shape :)		X	X	
Cutoff Wall		N	N	
Bevel End		8	8	
Heaving (mm)	0			
Invert Above/Below Stream Bed	BELOW			
Above/Below (mm)	300			
Scour Protection (Type : RIP RAP) (Avg. Rock Size(mm) : 350)		8	8	
Scour/Erosion		8	8	
Beavers (Y/N)	No			
Upstream End General Rating		8	8	
Bridge Culvert Barrel				
Culvert Component		Last	Now	Explanation of Condition
(Pipe # : 2, Secondary Span, Location Code: MAIN, Span (mm): , Rise (mm): 2400, Type: MP)				
Barrel Last Accessible Date	23-Mar-2013			Center Pipe.
Special Features				
Special Feature (Type :)				
Special Feature (Type :)				
Roof		N	8	
Measured Rise (mm)	2410			Estimate.
Measured At Ring No.	3			
Sag (mm)	10			
Percent Sag	1			
Sidewall		N	8	Inward.
Measured Span (mm)	2380			
Measured At Ring No.	3			
Deflection (mm)	20			
Percent Deflection	0			
Floor		N	N	
Bulge (mm)				
Measured At Ring No.				
Abrasion (Y/N)	No			
Circumferential Seams		N	8	Foam in seams.
Separation (mm)	50			

Bridge Culvert Barrel				
Culvert Component		Last	Now	Explanation of Condition
(Pipe # : 2, Secondary Span, Location Code: MAIN, Span (mm): , Rise (mm): 2400, Type: MP)				
Longitudinal Seams		X	X	
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	6	Sidewall corrosion-minor.
Corrosion By Soil (Y/N)	No			
Corrosion By Water (Y/N)	Yes			
Camber POS/ZERO/NEG	ZERO			
Ponding (Y/N)	No			
Fish Passage Adequacy		7	7	
Baffle		X	X	
(Type :)				
Waterway Adequacy		9	9	
Icing (Y/N)	No			
Silting (Y/N)	No			
Drift (Y/N)	No			
Barrel General Rating		N	8	

Bridge Culvert Barrel				
Culvert Component		Last	Now	Explanation of Condition
(Pipe # : 2, Secondary Span, Location Code: D/S, Span (mm): , Rise (mm): 2700, Type: MP)				
Barrel Last Accessible Date	23-Mar-2013			Center Pipe.
Special Features				
Special Feature				
(Type :)				
Special Feature				
(Type :)				
Roof		N	8	1% sag estimate.
Measured Rise (mm)	2410			
Measured At Ring No.	3			
Sag (mm)	10			
Percent Sag	1			
Sidewall		N	8	2745mm span. @ 1/2 length of ext. 1% deflection.
Measured Span (mm)	2380			
Measured At Ring No.	3			
Deflection (mm)	20			
Percent Deflection	0			
Floor		N	N	
Bulge (mm)				
Measured At Ring No.				
Abrasion (Y/N)	No			
Circumferential Seams		N	8	Foam in seams.
Separation (mm)	50			

Bridge Culvert Barrel				
Culvert Component		Last	Now	Explanation of Condition
(Pipe # : 2, Secondary Span, Location Code: D/S, Span (mm): , Rise (mm): 2700, Type: MP)				
Longitudinal Seams		X	X	
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	6	
Corrosion By Soil (Y/N)	No			
Corrosion By Water (Y/N)	Yes			
Camber POS/ZERO/NEG	ZERO			
Ponding (Y/N)	No			
Fish Passage Adequacy		7	7	
Baffle		X	X	
(Type :)				
Waterway Adequacy		9	9	
Icing (Y/N)	No			
Silting (Y/N)	No			
Drift (Y/N)	No			
Barrel Extension General Rating		N	8	
Downstream End				
Culvert Component		Last	Now	Explanation of Condition
(Pipe # : 2, Span Type: Secondary Span)				
Direction		E		East end of center pipe.
End Treatment (Concrete, Steel, Others, None)	CONCRETE			
Headwall		X	X	
Collar		8	8	Concrete around center pipe @ bottom half.
Wingwalls		X	X	
(Shape :)				
Cutoff Wall		N	N	
Bevel End		8	8	
Heaving (mm)	0			
Invert Above/Below Stream Bed	BELOW			
Above/Below (mm)	300			
Scour Protection		8	8	
(Type : RIP RAP)				
(Avg. Rock Size(mm) : 300)				
Scour/Erosion		8	8	
Beavers (Y/N)	No			
Downstream End General Rating		8	8	

Upstream End				
Culvert Component		Last	Now	Explanation of Condition
(Pipe # : 3, Span Type: Secondary Span)				
Direction		W		West end, North Pipe.
End Treatment (Concrete, Steel, Others, None)	STEEL			
Headwall		X	X	
Collar		X	X	
Wingwalls (Shape :)		X	X	
Cutoff Wall		N	N	
Bevel End		8	8	
Heaving (mm)	0			
Invert Above/Below Stream Bed	BELOW			
Above/Below (mm)	300			
Scour Protection (Type : RIP RAP) (Avg. Rock Size(mm) : 350)		8	8	
Scour/Erosion		8	8	
Beavers (Y/N)	No			
Upstream End General Rating		8	8	
Bridge Culvert Barrel				
Culvert Component		Last	Now	Explanation of Condition
(Pipe # : 3, Secondary Span, Location Code: MAIN, Span (mm): , Rise (mm): 2400, Type: MP)				
Barrel Last Accessible Date	23-Mar-2013			North Pipe.
Special Features				
Special Feature (Type :)				
Special Feature (Type :)				
Roof		N	8	(Local 180mm bulge @ 4th section from d/s) 16-Oct-2007
Measured Rise (mm)	2410			200mm local distortion from installation @ R4. 0% estimated sag.
Measured At Ring No.	3			
Sag (mm)	10			
Percent Sag	0			
Sidewall		N	8	Inward. 2695mm @ R4. 0% estimated sag.
Measured Span (mm)	2380			
Measured At Ring No.	3			
Deflection (mm)	20			
Percent Deflection	0			
Floor		N	N	
Bulge (mm)				
Measured At Ring No.				
Abrasion (Y/N)				
Circumferential Seams		N	8	Foam in seams.
Separation (mm)	100			

Bridge Culvert Barrel				
Culvert Component		Last	Now	Explanation of Condition
(Pipe # : 3, Secondary Span, Location Code: MAIN, Span (mm): , Rise (mm): 2400, Type: MP)				
Longitudinal Seams		X	X	
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)	No			
Corrosion By Water (Y/N)	Yes			
Camber POS/ZERO/NEG	ZERO			
Ponding (Y/N)	No			
Fish Passage Adequacy		7	7	
Baffle		X	X	
(Type :)				
Waterway Adequacy		9	9	
Icing (Y/N)	No			
Silting (Y/N)	No			
Drift (Y/N)	No			
Barrel General Rating		N	8	
Bridge Culvert Barrel				
Culvert Component		Last	Now	Explanation of Condition
(Pipe # : 3, Secondary Span, Location Code: D/S, Span (mm): , Rise (mm): 2700, Type: MP)				
Barrel Last Accessible Date	23-Mar-2013			North Pipe.
Special Features				
Special Feature				
(Type :)				
Special Feature				
(Type :)				
Roof		N	8	(Local 180mm bulge @ 4th section from d/s) 16-Oct-2007
Measured Rise (mm)	2410			
Measured At Ring No.	3			Estimate.
Sag (mm)	10			
Percent Sag	0			
Sidewall		N	8	Inward.
Measured Span (mm)	2380			
Measured At Ring No.	3			
Deflection (mm)	20			
Percent Deflection	0			
Floor		N	N	
Bulge (mm)				
Measured At Ring No.				
Abrasion (Y/N)				
Circumferential Seams		N	8	Foam in seams.
Separation (mm)	100			

Bridge Culvert Barrel				
Culvert Component		Last	Now	Explanation of Condition
(Pipe # : 3, Secondary Span, Location Code: D/S, Span (mm): , Rise (mm): 2700, Type: MP)				
Longitudinal Seams		X	X	
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)	No			
Corrosion By Water (Y/N)	Yes			
Camber POS/ZERO/NEG	ZERO			
Ponding (Y/N)	No			
Fish Passage Adequacy		7	7	
Baffle		X	X	
(Type :)				
Waterway Adequacy		9	9	
Icing (Y/N)	No			
Silting (Y/N)	No			
Drift (Y/N)	No			
Barrel Extension General Rating		N	8	

Downstream End				
Culvert Component		Last	Now	Explanation of Condition
(Pipe # : 3, Span Type: Secondary Span)				
Direction		E		East end of North pipe.
End Treatment (Concrete, Steel, Others, None)	STEEL			
Headwall		X	X	
Collar		X	X	
Wingwalls		X	X	
(Shape :)				
Cutoff Wall		N	N	
Bevel End		8	8	
Heaving (mm)	0			
Invert Above/Below Stream Bed	BELOW			
Above/Below (mm)	300			
Scour Protection		8	8	
(Type : RIP RAP)				
(Avg. Rock Size(mm) : 300)				
Scour/Erosion		8	8	
Beavers (Y/N)	No			
Downstream End General Rating		8	8	

Structure Usage				
		Last	Now	Explanation of Condition
Channel (U/S and D/S)				
Alignment		8	8	(4) 2100 CSP below tracks 20m U/S.
Bank Stability		8	8	
HWM (m below Top of Culvert)	0.6			No HWM visible.
Drift (Y/N)	No			
Channel Bottom Degrading/Aggrading	NONE			
Beavers (Y/N)	No			
(Fish Compensation Measure 1 : NONE)				
(Fish Compensation Measure 2 : NONE)				
Channel General Rating		8	8	

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) (%)	55.6/88.9	Sufficiency Rating (Last/Now) (%)	74.9/91.4	Est. Repl. Yr	2030	Maint. Req. (Y/N)	No
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	Jon Davies		Previous Assistant's Name				
Next Inspection Date	24-Dec-2014		Previous Inspection Date	22-Jun-2011			
Inspection Cycle (Default) (months)	21						
Comment							