

Bridge Culvert Inspection				
Bridge File Number	70295 -1 Bridge Culvert		Form Type	CUL1
Year Built	1957		Lot No.	1
Bridge or Town Name	BOWDEN		Inspector Name	Owen Salava
Located Over	TRIBUTARY TO RED DEER RIVER, 3.87, WATERCRS-ST		Inspector Class	BR CLS A
Located On	2:22 L1 18.551;2:22 R1 18.542		Assistant Name	
Water Body Cl./Year			Assistant Class	
Navigabil. Cl./Year			Inspection Date	13-Mar-2013
Legal Land Location	SE SEC 36 TWP 34 RGE 1 W5M		Data Entry By	Marcia Chavez
Longitude, Latitude	-114:00:46, 51:57:34		Data Entry Date	28-Mar-2013
Road Authority	Alberta Transportation (AIT)		Reviewer Name	John O'Brien
Contract Main. Area	CMA19		Review Date	16-Mar-2013
Clear Roadway/Skew	35.8 / -45 deg. (LHF)		Dept. Reviewer Name	Chris Black
AADT/Year	28,800 / 2011 (A)		Dept. Review Date	09-Apr-2013
Road Classification	RFD-412.4-130		Follow-Up By	
Detour Length (km)	10			

Bridge Culvert Information

Number of Culverts	1							
Pipe #	Barrel	Span	Rise (or Dia.)	Type	Length	Corr. Profile	Pl./Slab Thickness	Shape
1	MAIN	-	1524	MP	88	68X13	3.5	ROUND
Special Features	STORM WATER DRAIN							
Special Features Comment								

Utilities (Located at)

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

Approach Road / Embankment

	Last	Now	Explanation of Condition
Horizontal Alignment	6	6	Turnout lane, NBL.
Vertical Alignment	9	9	
Roadway Width (m)	35.800		
Embankment	6	6	
Sideslope (__:1)	5.0		
(Height of Cover(m) : 2.5)			
Guardrail (Y/N)	No		
Approach Road / Embankment General Rating	6	6	

Upstream End

Culvert Component	Last	Now	Explanation of Condition
Direction	E		
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
Bevel End		6	6	3:1 step bevel, slightly bent @ invert.
Heaving (mm)	75			
Invert Above/Below Stream Bed	BELOW			
Above/Below (mm)	100			
Scour Protection		6	6	
(Type : RIP RAP)				
(Avg. Rock Size(mm) : 300)				
Scour/Erosion		6	6	
Beavers (Y/N)	No			
Upstream End General Rating		6	6	
Bridge Culvert Barrel				
Culvert Component		Last	Now	Explanation of Condition
(Pipe # : 1 , Primary Span, Location Code: MAIN , Span (mm): , Rise (mm): 1524 , Type: MP)				
Barrel Last Accessible Date	11-Aug-2011			CSP riveted, extended with CSP. 0.5m ice, partially entered, low clearance at middle; looks OK.
Special Features				
Special Feature		6	N	
(Type : STORM WATER DRAIN)				
Special Feature				
(Type :)				
Roof		3	N	(Roof flattened out. Construction dent in CSP section. 11Aug2011).
Measured Rise (mm)	1350			(2/5 L. 11Aug2011).
Measured At Ring No.				
Sag (mm)	174			(11.4%. 11Aug2011).
Percent Sag	11			
Sidewall		4	N	(Some water staining at riveted seams. SBL section is slightly lower than NBL section. 11Aug2011).
Measured Span (mm)	1650			(2/5 L. 11Aug2011).
Measured At Ring No.				
Deflection (mm)	126			(8.3%. 11Aug2011).
Percent Deflection	8			
Floor		4	N	(Some corrosion flaking and pitting. Medium corrosion in various floor sections. Dented & slightly separated @ 2 seams from U/S end. 11Aug2011) - Ice.
Bulge (mm)	0			
Measured At Ring No.				
Abrasion (Y/N)	No			
Circumferential Seams		5	N	(2nd joint from W infiltration and deformation. Riveted. 03/05/15). Infiltration, if any, underwater.
Separation (mm)	150			
Longitudinal Seams		6	N	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		4	N	(Corrosion on floor, some pitting - photo. 50% of floor. 11Aug2011).
Corrosion By Soil (Y/N)	Yes			
Corrosion By Water (Y/N)	Yes			
Camber POS/ZERO/NEG	NEG			
Ponding (Y/N)	No			

Bridge Culvert Barrel				
Culvert Component		Last	Now	Explanation of Condition
(Pipe # : 1, Primary Span, Location Code: MAIN, Span (mm): , Rise (mm): 1524, Type: MP)				
Fish Passage Adequacy		4	4	Trickle flow.
Baffle		X	X	
(Type :)				
Waterway Adequacy		4	4	(Ice is up to springline. Unknown Date).
Icing (Y/N)	Yes			(300mm silt & gravel @ D/S 1/3. Flowline merges with roof at mid-length. 11Aug2011).
Silting (Y/N)	Yes			
Drift (Y/N)	No			
Barrel General Rating		3	3	GR carried forward from 11Aug2011.
Downstream End				
Culvert Component		Last	Now	Explanation of Condition
Direction		W		
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	Long bevel.
Heaving (mm)	0			
Invert Above/Below Stream Bed	BELOW			
Above/Below (mm)	50			
Scour Protection		6	N	Snow covered.
(Type : RIP RAP)				
(Avg. Rock Size(mm) : 300)				
Scour/Erosion		6	N	Snow covered.
Beavers (Y/N)	No			
Downstream End General Rating		6	6	
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)				HWM not visible.
Drift (Y/N)	No			
Channel Bottom Degrading/Aggrading				
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							
REMOVE DRIFT ACCUMULATION							
INSTALL CONCRETE/STEEL LINING							
INSTALL STRUTS							
INSTALL CONCRETE COLLAR/CUTOFF							
REPAIR SEAMS							
OTHER ACTION	2015	Consider concrete floor if invert perforates or softens.					
OTHER ACTION							
OTHER ACTION							
OTHER ACTION							
Structural Condition Rating (Last/Now) (%)	33.3/33.3	Sufficiency Rating (Last/Now) (%)	32.0/32.0	Est. Repl. Yr	2020	Maint. Req. (Y/N)	Yes
Special Comments for Next Inspection	(Roof has flattened out & floor has lost some section due to corrosion; 2 seams allow minor infiltration. 11Aug2011). Pipe still arching capabilities but the pipe is important & strutting at this time for another 20yrs life is justified.		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	Owen Salava		Previous Assistant's Name				
Next Inspection Date	13-Dec-2014		Previous Inspection Date	11-Aug-2011			
Inspection Cycle (Default) (months)	21						
Comment							