

Bridge Culvert Inspection				
Bridge File Number	00203 -1 Bridge Culvert		Form Type	CULM
Year Built	1969		Lot No.	2
Bridge or Town Name	MUNDARE		Inspector Name	Jason Saly
Located Over	NORRIS CREEK, 6.62.10, WATERCRS-ST		Inspector Class	BR CLS A
Located On	16:22 L1 9.338;16:22 R1 9.340		Assistant Name	
Water Body Cl./Year			Assistant Class	
Navigabil. Cl./Year			Inspection Date	19-Jul-2012
Legal Land Location	NW SEC 11 TWP 53 RGE 19 W4M		Data Entry By	Marcia Chavez
Longitude, Latitude	-112:42:06, 53:34:13		Data Entry Date	31-Jul-2012
Road Authority	Alberta Transportation (AIT)		Reviewer Name	John O'Brien
Contract Main. Area	CMA14		Review Date	28-Jul-2012
Clear Roadway/Skew	25 / 30 deg. (RHF)		Dept. Reviewer Name	Andrew Smikles
AADT/Year	10,610 / 2011 (A)		Dept. Review Date	02-Aug-2012
Road Classification	RFD-412.4-130		Follow-Up By	
Detour Length (km)	1			

Bridge Culvert Information								
Number of Culverts		2						
Pipe #	Barrel	Span	Rise (or Dia.)	Type	Length	Corr. Profile	PI./Slab Thickness	Shape
1	MAIN	-	2430	SP	89	152X51	3.0	ROUND
2	MAIN	-	2438	MP	89	75X25	2.8	ROUND
Special Features								
Special Features Comment								

Utilities (Located at)			
Utility Attachments			
Telephone	Plowed along North shoulder.		Gas
Power	3 wires OH 35 m North of WBL c/l.		Municipal
Others			Problem (Y/N) No
Remarks			

Approach Road / Embankment				
		Last	Now	Explanation of Condition
Horizontal Alignment		7	7	Intersection to local road 150m West. Long sag curve. Access road 200m East.
Vertical Alignment		7	7	
Roadway Width (m)	25.000			
Embankment		7	7	Median width = 25.6 m. Wide transverse crack 10m East on EBL.
Sideslope (__:1)	5.0			
(Height of Cover(m) : 2.4)				
Guardrail (Y/N)	Yes			On outside shoulders only.
Approach Road / Embankment General Rating		7	7	

Upstream End				
Culvert Component		Last	Now	Explanation of Condition
(Pipe # : 1, Span Type: Secondary Span)				
Direction		N		West culvert.
End Treatment (Concrete, Steel, Others, None)	CONCRETE			
Headwall		7	7	
Collar		N	7	
Wingwalls		X	X	
(Shape :)				

Upstream End				
Culvert Component		Last	Now	Explanation of Condition
(Pipe # : 1, Span Type: Secondary Span)				
Cutoff Wall		N	N	
Bevel End		7	7	
Heaving (mm)	100			
Invert Above/Below Stream Bed	BELOW			
Above/Below (mm)	150			
Scour Protection		N	7	Well vegetated.
(Type : RIP RAP)				
(Avg. Rock Size(mm) : 350)				
Scour/Erosion		N	7	
Beavers (Y/N)	No			
Upstream End General Rating		7	7	
Bridge Culvert Barrel				
Culvert Component		Last	Now	Explanation of Condition
(Pipe # : 1, Secondary Span, Location Code: MAIN, Span (mm): , Rise (mm): 2430, Type: SP)				
Barrel Last Accessible Date	19-Jul-2012			West culvert.
Special Features				
Special Feature				
(Type :)				
Special Feature				
(Type :)				
Roof		6	6	Rise at R3=2519=89mm Rise at R11=2546=116mm Rise at R19=2550=120mm=4.9%
Measured Rise (mm)	2550			
Measured At Ring No.	19			
Sag (mm)	120			4.9%
Percent Sag	5			
Sidewall		5	5	R1 small dents with rust E sidewall. Construction dent 2nd ring from S, W sidewall. Span at R3=2348=82mm Span at R11=2331=99mm Span at R19=2315=115mm=4.7%
Measured Span (mm)	2315			
Measured At Ring No.	19			
Deflection (mm)	115			
Percent Deflection	5			
Floor		4	4	Corrosion with heavy scaling on floor (N half and close to being perforated at waterline (photo). 16Dec2010).
Bulge (mm)	0			
Measured At Ring No.				
Abrasion (Y/N)	No			
Circumferential Seams		7	7	
Separation (mm)	0			
Longitudinal Seams		7	7	
Total No. of Cracked Rings	0			
Total No. of Rings with Two Cracked Seams	0			
Min. Remaining Steel Between Cracks (mm)				50% of South half are improperly lapped. 1N
Proper Lap (Y/N)	No			
Longitudinal Stagger (Y/N)	Yes			
Coating		4	4	Rust below waterline. Galvanizing on floor sacrificed & floor is heavily scaled and close to being perforated.
Corrosion By Soil (Y/N)	Yes			
Corrosion By Water (Y/N)	Yes			

Bridge Culvert Barrel				
Culvert Component		Last	Now	Explanation of Condition
(Pipe # : 1, Secondary Span, Location Code: MAIN, Span (mm): , Rise (mm): 2430, Type: SP)				
Camber POS/ZERO/NEG	ZERO			
Ponding (Y/N)	No			
Fish Passage Adequacy		6	6	Fish can navigate through pipe.
Baffle		X	X	
(Type :)				
Waterway Adequacy		7	7	
Icing (Y/N)	No			
Silting (Y/N)	No			
Drift (Y/N)	No			
Barrel General Rating		4	5	
Downstream End				
Culvert Component		Last	Now	Explanation of Condition
(Pipe # : 1, Span Type: Secondary Span)				
Direction		S		West culvert.
End Treatment (Concrete, Steel, Others, None)	CONCRETE			
Headwall		X	X	
Collar		X	6	
Wingwalls		X	X	
(Shape :)				
Cutoff Wall		X	N	
Bevel End		4	5	
Heaving (mm)	0			
Invert Above/Below Stream Bed	ABOVE			
Above/Below (mm)	500			
Scour Protection		N	6	
(Type : RIP RAP)				
(Avg. Rock Size(mm) : 300)				
Scour/Erosion		N	5	
Beavers (Y/N)	No			
Downstream End General Rating		4	5	
Upstream End				
Culvert Component		Last	Now	Explanation of Condition
(Pipe # : 2, Span Type: Primary Span)				
Direction		N		East culvert.
End Treatment (Concrete, Steel, Others, None)	CONCRETE			
Headwall		7	7	
Collar		N	7	
Wingwalls		X	X	
(Shape :)				
Cutoff Wall		N	N	

Upstream End				
Culvert Component		Last	Now	Explanation of Condition
(Pipe # : 2, Span Type: Primary Span)				
Bevel End		5	5	Heavy scaling rust on floor.
Heaving (mm)	50			
Invert Above/Below Stream Bed	BELOW			
Above/Below (mm)	150			
Scour Protection		N	6	Well vegetated.
(Type : RIP RAP)				
(Avg. Rock Size(mm) : 350)				
Scour/Erosion		N	7	
Beavers (Y/N)	No			
Upstream End General Rating		4	5	
Bridge Culvert Barrel				
Culvert Component		Last	Now	Explanation of Condition
(Pipe # : 2, Primary Span, Location Code: MAIN, Span (mm): , Rise (mm): 2438, Type: MP)				
Barrel Last Accessible Date	19-Jul-2012			E culvert.
Special Features				
Special Feature				
(Type :)				
Special Feature				
(Type :)				
Roof		6	6	Rise at N end=2506=68mm Rise at midpipe=2526=83mm=3.4% Rise S end=2421=17mm
Measured Rise (mm)	2526			
Measured At Ring No.				
Sag (mm)	83			3.4%
Percent Sag	3			
Sidewall		5	5	(at 2 X 3 length. 16Dec2010). Span at N end=2357=81mm Span at midpipe=2276=162mm=6.6% Span at S end=2421=17mm
Measured Span (mm)	2276			
Measured At Ring No.				
Deflection (mm)	162			6.6%
Percent Deflection	7			
Floor		4	4	Corrosion with heavy scaling on floor.
Bulge (mm)	0			
Measured At Ring No.				
Abrasion (Y/N)	No			
Circumferential Seams		6	6	
Separation (mm)	100			
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		4	4	Galvanizing on floor sacrificed & floor is heavily scaled with possible perforations.
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, Primary Span, Location Code: MAIN, Span (mm): , Rise (mm): 2438, Type: MP)				
Ponding (Y/N)	No			
Fish Passage Adequacy		6	6	Fish can navigate through pipe.
Baffle		X	X	
(Type :)				
Waterway Adequacy		7	7	
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 # : 2, Span Type: Primary Span)				
Direction		S		E culvert.
End Treatment (Concrete, Steel, Others, None)	STEEL			
Headwall		X	X	
Collar		X	X	
Wingwalls		X	X	
(Shape :)				
Cutoff Wall		X	X	
Bevel End		5	4	Loose trim from W bevel; bevel hanging ~500mm.
Heaving (mm)	0			
Invert Above/Below Stream Bed	ABOVE			
Above/Below (mm)	600			
Scour Protection		N	7	Well vegetated.
(Type : RIP RAP)				
(Avg. Rock Size(mm) : 300)				
Scour/Erosion		N	7	
Beavers (Y/N)	No			
Downstream End General Rating		5	4	
Structure Usage				
		Last	Now	Explanation of Condition
Channel (U/S and D/S)				
Alignment		6	6	120 degree bend at outlet with channel parallel to hwy for 800m.
Bank Stability		6	6	
HWM (m below Top of Culvert)				HWM not visible.
Drift (Y/N)	Yes			
Channel Bottom Degrading/Aggrading	DEGRADING			(Degrading channel has led to sideslope failure approx 300 m D/S. Retaining wall installed. 97.03.13).
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										
REMOVE DRIFT ACCUMULATION										
INSTALL CONCRETE/STEEL LINING										
INSTALL STRUTS										
INSTALL CONCRETE COLLAR/CUTOFF										
REPAIR SEAMS										
OTHER ACTION	2012	Install concrete floor N half of SPCSP and full length CSP while floor still has some metal.								
OTHER ACTION	2012	Re-attach bevel trim at SW of E pipe.								
OTHER ACTION										
Structural Condition Rating (Last/Now) (%)	44.4/44.4	Sufficiency Rating (Last/Now) (%)	54.0/54.8	Est. Repl. Yr	2020	Maint. Req'd. (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	Owen Salava		Previous Assistant's Name							
Next Inspection Date	19-Apr-2014		Previous Inspection Date	16-Dec-2010						
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						
REMOVE DRIFT ACCUMULATION						
INSTALL CONCRETE/STEEL LINING						
INSTALL STRUTS						
INSTALL CONCRETE COLLAR/CUTOFF						
REPAIR SEAMS						
OTHER ACTION	2012	Install concrete floor N half of SPCSP and full length CSP while floor still has some metal.	Programmed	2012		
OTHER ACTION	2012	Re-attach bevel trim at SW of E pipe.	Defer, Low priority			
OTHER ACTION						
OTHER ACTION						
Structural Condition Rating (Last/Now) (%)	44.4/44.4	Sufficiency Rating (Last/Now) (%)	54.0/54.8	Est. Repl. Yr	2020	Maint. Req. (Y/N) Yes
Special Comments for Next Inspection			Department Comments	Replacement programmed for 2022		
Maintenance Reviewed By	Andrew Smikles		Date	27-Nov-2012	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	19-Apr-2014		Previous Inspection Date	16-Dec-2010		
Inspection Cycle (Default) (months)	21					
Comment						