Bridge Culvert Inspection

Bridge File Number	75624 -1 Bridge Culvert	Form Type	CULM
Year Built	1963	Lot No.	3
Bridge or Town Name	MORNINGSIDE	Inspector Name	Jason Saly
Located Over	WOLF CREEK, 5.56, WATERCRS-ST	Inspector Class	BR CLS A
Located On	2:26 R1 33.593;2:26 L1 33.588	Assistant Name	
Water Body Cl./Year		Assistant Class	
Navigabil. Cl./Year		Inspection Date	19-Mar-2013
Legal Land Location	NE SEC 34 TWP 41 RGE 26 W4M	Data Entry By	Marcia Chavez
Longitude, Latitude	-113:39:45, 52:34:23	Data Entry Date	01-Apr-2013
Road Authority	Alberta Transportation (AIT)	Reviewer Name	John O'Brien
Contract Main. Area	CMA19	Review Date	26-Mar-2013
Clear Roadway/Skew	22.6 / 25 deg. (RHF)	Dept. Reviewer Name	Chris Black
AADT/Year	23,260 / 2011 (A)	Dept. Review Date	09-Apr-2013
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	Pl./Slab Thickness	Shape
1	MAIN	-	2743	SP	80.5	152X51	2.8	ROUND
2	MAIN	2610	2877	SPE	80.5	152X51	2.8,2.8,2.8	ELLIPSE
Special Features								
Special Features Comment								

Utilities (Located at)

Utility Attachments			
Telephone	Yes - no marker.	Gas	
Power		Municipal	
Others	Shaw fibre optics West c/l.	Problem (Y/N)	No
Remarks			

Approach Road / Embankment

		Last	Now	Explanation of Condition
Horizontal Alignment		8	8	Grade rises to North.
Vertical Alignment		8	8	
Roadway Width (m)	22.600			
Embankment		8	N	Snow covered.
Sideslope (__:1)	4.0			
(Height of Cover(m) : **3**)				
Guardrail (Y/N)	Yes			Missing 4 splice bolts at SW bulb end.
Approach Road / Embankment General Rating		**8**	**8**	

Upstream End

Culvert Component		**Last**	**Now**	**Explanation of Condition**
(Pipe # : **1, Span Type: Primary Span**)				
Direction		W		North culvert.
End Treatment (Concrete, Steel, Others, None)	STEEL			
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		5	5	Bevel cut on skew.
Heaving (mm)	0			
Invert Above/Below Stream Bed				
Above/Below (mm)	0			
Scour Protection		4	N	End of roof projects from fill 300mm. Snow covered.
(Type : **RIP RAP**)				
(Avg. Rock Size(mm) : **300**)				
Scour/Erosion		4	N	(Minor scour along & under bevel. 15Sep2011) - Snow covered.
Beavers (Y/N)	Yes			Beaver dam at inlet.
Upstream End General Rating		**4**	**4**	GR carried forward from 15Sep2011 based on scour rating.

Bridge Culvert Barrel				
Culvert Component		**Last**	**Now**	**Explanation of Condition**
(Pipe # : **1, Primary Span, Location Code: MAIN, Span (mm): , Rise (mm): 2743, Type: SP**)				
Barrel Last Accessible Date	19-Mar-2013			North pipe.
Special Features				
Special Feature				
(Type :)				
Special Feature				
(Type :)				
Roof		6	6	Could not measure rise due to ice.
Measured Rise (mm)	2645			
Measured At Ring No.	16			
Sag (mm)	98			3.6%
Percent Sag	4			
Sidewall		6	5	Span at R2=2636=107mm Span at R10=2627=116mm Span at R15=2602=141mm Span at R20=2597=146mm Span at R29=2642=102mm 5.3%
Measured Span (mm)	2597			
Measured At Ring No.	20			
Deflection (mm)	146			
Percent Deflection	5			
Floor		6	N	Ice covered.
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				
Min. Remaining Steel Between Cracks (mm)				
Proper Lap (Y/N)	No			
Longitudinal Stagger (Y/N)	Yes			1N
Coating		5	4	Superficial corrosion @ bevel and sidewall @ waterline with pitting. Some flaking near floor - no action required at this time.
Corrosion By Soil (Y/N)	Yes			
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): 2743, Type: SP**)				
Camber POS/ZERO/NEG	ZERO			
Ponding (Y/N)	No			
Fish Passage Adequacy		7	7	
Baffle		X	X	
(Type :)				
Waterway Adequacy		7	7	
Icing (Y/N)	No			
Silting (Y/N)	No			
Drift (Y/N)	Yes			Minor drift.
Barrel General Rating		**6**	**5**	

Downstream End				
Culvert Component		**Last**	**Now**	**Explanation of Condition**
(Pipe # : **1, Span Type: Primary Span**)				
Direction		E		North pipe.
End Treatment (Concrete, Steel, Others, None)	STEEL			
Headwall		X	X	
Collar		X	X	
Wingwalls		X	X	
(Shape :)				
Cutoff Wall		X	X	
Bevel End		6	5	Bevel cut on skew.
Heaving (mm)	0			
Invert Above/Below Stream Bed				
Above/Below (mm)	0			
Scour Protection		4	N	Snow covered.
(Type : **NONE**)				
(Avg. Rock Size(mm) :)				
Scour/Erosion		4	N	(Erosion under 1st 2m of bevel. 15Sep2011) - Snow covered.
Beavers (Y/N)	No			
Downstream End General Rating		**4**	**4**	GR carried forward from 15Sep2011 based on scour ratings.

Upstream End				
Culvert Component		**Last**	**Now**	**Explanation of Condition**
(Pipe # : **2, Span Type: Secondary Span**)				
Direction		W		South culvert. (Home made gauge at North bank. 15Sep2011).
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		6	6	Bevel cut on skew. End of roof projects 300mm above fill.
Heaving (mm)	0			
Invert Above/Below Stream Bed				
Above/Below (mm)	0			
Scour Protection		4	N	Snow covered.
(Type : **RIP RAP**)				
(Avg. Rock Size(mm) : **300**)				
Scour/Erosion		4	N	(Minor scour along North edge of bevel. 15Sep2011) - Snow covered.
Beavers (Y/N)	Yes			Beaver dam at bevel.
Upstream End General Rating		**4**	**4**	GR carried forward from 15Sep2011 based on scour ratings.

Bridge Culvert Barrel				
Culvert Component		**Last**	**Now**	**Explanation of Condition**
(Pipe # : **2, Secondary Span, Location Code: MAIN, Span (mm): 2610, Rise (mm): 2877, Type: SPE**)				
Barrel Last Accessible Date	19-Mar-2013			South pipe.
Special Features				
Special Feature				
(Type :)				
Special Feature				
(Type :)				
Roof		7	7	Could not measure rise due to ice. (15Sep2011)
Measured Rise (mm)	2851			
Measured At Ring No.	10			
Sag (mm)	26			
Percent Sag	1			
Sidewall		7	7	Span at R2=2621=11mm Span at R10=2602=8mm Span at R15=2582=28mm Span at R20=2601=9mm Span at R29=2592=8mm 1.1% inwards.
Measured Span (mm)	2582			
Measured At Ring No.	15			
Deflection (mm)	28			
Percent Deflection	1			
Floor		6	N	Ice covered.
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				
Min. Remaining Steel Between Cracks (mm)				
Proper Lap (Y/N)	No			
Longitudinal Stagger (Y/N)	Yes			1N
Coating		5	5	Minor superficial corrosion @ bevel sidewall @ waterline with some pitting.
Corrosion By Soil (Y/N)	No			
Corrosion By Water (Y/N)	Yes			

Bridge Culvert Barrel				
Culvert Component		**Last**	**Now**	**Explanation of Condition**
(Pipe # : **2, Secondary Span, Location Code: MAIN, Span (mm): 2610, Rise (mm): 2877, Type: SPE**)				
Camber POS/ZERO/NEG	ZERO			
Ponding (Y/N)	No			
Fish Passage Adequacy		7	4	Would rate 7 if no beaver dam present.
Baffle		X	X	
(Type :)				
Waterway Adequacy		7	7	
Icing (Y/N)	No			Minor.
Silting (Y/N)	No			
Drift (Y/N)	Yes			
Barrel General Rating		**7**	**7**	

Downstream End				
Culvert Component		**Last**	**Now**	**Explanation of Condition**
(Pipe # : **2, Span Type: Secondary Span**)				
Direction		E		South pipe.
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	Bevel cut on skew.
Heaving (mm)	0			
Invert Above/Below Stream Bed				
Above/Below (mm)	0			
Scour Protection		4	N	
(Type : **NONE**)				
(Avg. Rock Size(mm) :)				
Scour/Erosion		4	N	(Erosion under last 2m of bevel. 15Sep2011).
Beavers (Y/N)	No			
Downstream End General Rating		**4**	**4**	GR carried forward from 15Sep2011 based on scour rating.

Structure Usage				
		Last	**Now**	**Explanation of Condition**
Channel (U/S and D/S)				
Alignment		6	6	Curve at U/S end.
Bank Stability		6	6	Minor slumping North bank D/S.
HWM (m below Top of Culvert)				HWM not visible.
Drift (Y/N)	No			
Channel Bottom Degrading/Aggrading				
Beavers (Y/N)	Yes			
(Fish Compensation Measure 1 : **NONE**)				
(Fish Compensation Measure 2 : **NONE**)				

Structure Usage				
		Last	Now	Explanation of Condition
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	2013	Place riprap at bevel end at both pipes.				
REMOVE DRIFT ACCUMULATION						
INSTALL CONCRETE/STEEL LINING						
INSTALL STRUTS						
INSTALL CONCRETE COLLAR/CUTOFF						
REPAIR SEAMS						
OTHER ACTION	2013	Remove beaver dam.				
OTHER ACTION	2013	Add 4 splice bolts to SW bulb end.				
OTHER ACTION						
OTHER ACTION						
OTHER ACTION						
OTHER ACTION						

Structural Condition Rating (Last/Now) (%)	**66.7/55.6**	**Sufficiency Rating (Last/Now) (%)**	**63.0/51.2**	Est. Repl. Yr	2028	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	Owen Salava	Previous Assistant's Name			
Next Inspection Date	19-Dec-2014	Previous Inspection Date	15-Sep-2011		
Inspection Cycle (Default) (months)	21				
Comment					