Bridge Culvert Inspection

Bridge File Number	08098 -1 Bridge Culvert	Form Type	CUL1
Year Built	1954	Lot No.	2
Bridge or Town Name	ROCKY MT HOU	Inspector Name	Owen Salava
Located Over	TRIBUTARY TO NORTH SASKATCHEWAN RIVER, 6.158, WATERCRS-ST	Inspector Class	BR CLS A
		Assistant Name	
Located On	752:04 C1 34.218	Assistant Class	
Water Body Cl./Year		Inspection Date	09-Feb-2012
Navigabil. Cl./Year		Data Entry By	Marcia Chavez
Legal Land Location	NW SEC 22 TWP 39 RGE 7 W5M	Data Entry Date	06-Mar-2012
Longitude, Latitude	-114:56:14, 52:22:20	Reviewer Name	John O'Brien
Road Authority	Alberta Transportation (AIT)	Review Date	22-Feb-2012
Contract Main. Area	CMA18	Dept. Reviewer Name	Andrew Smikles
Clear Roadway/Skew	9.8 /	Dept. Review Date	09-Mar-2012
AADT/Year	2,070 / 2010 (A)	Follow-Up By	
Road Classification	RCU-209-110		
Detour Length (km)	5		

Bridge Culvert Information

Number of Culverts		1						
Pipe #	Barrel	Span	Rise (or Dia.)	Type	Length	Corr. Profile	Pl./Slab Thickness	Shape
1	MAIN	-	1800	SP	32.9	152X51	2.8	ROUND
Special Features								
Special Features Comment								

Utilities (Located at)

Utility Attachments			
Telephone	10 West of centreline.	Gas	
Power	East & West 10m from centreline	Municipal	
Others	Waterline running @ right angles through culvert 7m West of c/l.	Problem (Y/N)	No
Remarks			

Approach Road / Embankment

		Last	Now	Explanation of Condition
Horizontal Alignment		6	6	600m from jct. SR 752 & Hwy. 11A 49 Ave. intersection 20m N.
Vertical Alignment		7	7	
Roadway Width (m)	8.500			
Embankment		4	4	Erosion at NW corner.
Sideslope (__:1)	1.0			
(Height of Cover(m) : **2.5**)				
Guardrail (Y/N)	No			Wooden handrails W side only.
Approach Road / Embankment General Rating		**4**	**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		4	4	Bottom of bevel 100mm above streambed - photo.
Heaving (mm)	200			
Invert Above/Below Stream Bed	ABOVE			
Above/Below (mm)	250			
Scour Protection		4	4	
(Type : **NONE**)				
(Avg. Rock Size(mm) :)				
Scour/Erosion		4	4	Minor erosion around bevel due to heaving.
Beavers (Y/N)	No			
Upstream End General Rating		**4**	**4**	

Bridge Culvert Barrel				
Culvert Component		**Last**	**Now**	**Explanation of Condition**
(Pipe # : **1, Primary Span, Location Code: MAIN, Span (mm): , Rise (mm): 1800, Type: SP**)				
Barrel Last Accessible Date	09-Feb-2012			Water line runs N/S through the two sides of the culvert at the D/S end.
Special Features				
Special Feature				
(Type :)				
Special Feature				
(Type :)				
Roof		4	4	Unable to measure due to ice. A dozen bolts missing nuts - minor. (02/06/28) Heavy rock deposit throughout floor. 06Sep2005).
Measured Rise (mm)				
Measured At Ring No.				
Sag (mm)	70			
Percent Sag				
Sidewall		4	4	(Tears in pipe near D/S end - photo. 2.5m from end. Construction damage. 06Sep2005). Midspan.
Measured Span (mm)	1860			
Measured At Ring No.				
Deflection (mm)	50			2.8%
Percent Deflection	3			
Floor		4	N	(1 section bulged 150mm. Slight gap @ 5:00 seam where bulged - photo. Bolts missing. 06Sep2005) - Ice covered.
Bulge (mm)	50			
Measured At Ring No.				
Abrasion (Y/N)	No			
Circumferential Seams		4	4	Missing some nuts.
Separation (mm)	70			
Longitudinal Seams		3	N	(Missing some nuts - photo. 06Sep2005) - Below ice.
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			
Coating		5	5	Superficial rust.
Corrosion By Soil (Y/N)	Yes			
Corrosion By Water (Y/N)	Yes			
Camber POS/ZERO/NEG	ZERO			Looks like neg due to bevel heaving.

Bridge Culvert Barrel				
Culvert Component		**Last**	**Now**	**Explanation of Condition**
(Pipe # : **1, Primary Span, Location Code: MAIN, Span (mm): , Rise (mm): 1800, Type: SP**)				
Ponding (Y/N)	No			
Fish Passage Adequacy		4	4	Perched outlet.
Baffle		X	X	
(Type :)				
Waterway Adequacy		5	5	Previously ran full.
Icing (Y/N)	Yes			
Silting (Y/N)	No			
Drift (Y/N)	No			
Barrel General Rating		**3**	**3**	GR carried forward from 06Sep2005.

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		5	5	
Heaving (mm)	120			
Invert Above/Below Stream Bed	ABOVE			Bevel perched.
Above/Below (mm)	1000			
Scour Protection		4	4	
(Type : **NONE**)				
(Avg. Rock Size(mm) :)				
Scour/Erosion		4	4	Scour around D/S end of culvert.
Beavers (Y/N)	No			
Downstream End General Rating		**4**	**4**	

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)				Previously ran full. Drift caught on top of waterline through pipe.
Drift (Y/N)	Yes			
Channel Bottom Degrading/Aggrading				Unknown.
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	2012	Armour both bevels, 30m3 CL1.				
REMOVE DRIFT ACCUMULATION						
INSTALL CONCRETE/STEEL LINING						
INSTALL STRUTS						
INSTALL CONCRETE COLLAR/CUTOFF						
REPAIR SEAMS						
OTHER ACTION	2012	Repair NW embankment erosion.				
OTHER ACTION	2012	Patch tears in sidewalls (2), if not yet done.				
OTHER ACTION	2012	Install nuts on bolts where missing, if not yet done.				
OTHER ACTION						
OTHER ACTION						
OTHER ACTION						
OTHER ACTION						
OTHER ACTION						
OTHER ACTION						
OTHER ACTION						
OTHER ACTION						
OTHER ACTION						

Structural Condition Rating (Last/Now) (%)	**33.3/33.3**	**Sufficiency Rating (Last/Now) (%)**	**26.3/36.3**	Est. Repl. Yr	2015	Maint. Reqd. (Y/N)	Yes

Special Comments for Next Inspection	Check bulge near d/s end.	Department Comments	

Maintenance Reviewed By		Date		Estimated Total	0
Proposed Long-Term Strategy	2004.05.29 Structure should be ok until 2014. Monitor on normal BIM.				
On 3-Year Program (Y/N)					
Proposed Action					

Previous Inspector's Name	Dave Lam	Previous Assistant's Name	
Next Inspection Date	09-May-2015	Previous Inspection Date	06-Sep-2005
Inspection Cycle (Default) (months)	39		
Comment			

Maintenance Recommendations

Inspector Recommendations	Year	Inspector Comments	Department Comments	Target Year	Est. Cost	Cat #
SHOTCRETE REPAIRS						
PLACE ADDITIONAL RIP RAP	2012	Armour both bevels, 30m3 CL1.	Programmed	2013		
REMOVE DRIFT ACCUMULATION						
INSTALL CONCRETE/STEEL LINING						
INSTALL STRUTS						
INSTALL CONCRETE COLLAR/CUTOFF						
REPAIR SEAMS						
OTHER ACTION	2012	Repair NW embankment erosion.	Defer, Low priority @ outlet			
OTHER ACTION	2012	Patch tears in sidewalls (2), if not yet done.	Programmed	2013		
OTHER ACTION	2012	Install nuts on bolts where missing, if not yet done.	Programmed	2013		
OTHER ACTION						
OTHER ACTION						
OTHER ACTION						
OTHER ACTION						
OTHER ACTION						
OTHER ACTION						
OTHER ACTION						
OTHER ACTION						
OTHER ACTION						

Structural Condition Rating (Last/Now) (%)	**33.3/33.3**	**Sufficiency Rating (Last/Now) (%)**	**26.3/36.3**	Est. Repl. Yr	2015	Maint. Reqd. (Y/N)	Yes

Special Comments for Next Inspection	Check bulge near d/s end.	Department Comments	Currently programmed to be replaced in 2022.

Maintenance Reviewed By	Andrew Smikles	Date	31-Oct-2012	Estimated Total	0
Proposed Long-Term Strategy	2004.05.29 Structure should be ok until 2014. Monitor on normal BIM.				
On 3-Year Program (Y/N)					
Proposed Action					
Previous Inspector's Name	Dave Lam	Previous Assistant's Name			

Next Inspection Date	09-May-2015	Previous Inspection Date	06-Sep-2005
Inspection Cycle (Default) (months)	39		
Comment			