Bridge Culvert Inspection

Bridge File Number	79184 -1 Bridge Culvert	Form Type	CUL1
Year Built	1979	Lot No.	1
Bridge or Town Name	FINNEGAN	Inspector Name	Jason Saly
Located Over	SPRING CK, 3.20.1, WATERCRS-ST	Inspector Class	BR CLS A
Located On	862:06 C1 9.712	Assistant Name	
Water Body Cl./Year		Assistant Class	
Navigabil. Cl./Year		Inspection Date	31-Mar-2011
Legal Land Location	NW SEC 4 TWP 26 RGE 15 W4M	Data Entry By	Marcia Chavez
Longitude, Latitude	-112:03:06, 51:11:51	Data Entry Date	20-Apr-2011
Road Authority	Alberta Transportation (AIT)	Reviewer Name	Dave Lam
Contract Main. Area	CMA21	Review Date	10-Apr-2011
Clear Roadway/Skew	10.5 / 15 deg. (RHF)	Dept. Reviewer Name	Chris Black
AADT/Year	60 / 2010 (A)	Dept. Review Date	29-Apr-2011
Road Classification	RLU-209G-90	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	2590	2870	SPE	60.4	152X51	3.0,3.0,2.8	ELLIPSE

Special Features	
Special Features Comment	

Utilities (Located at)

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

Approach Road / Embankment

		Last	Now	Explanation of Condition
Horizontal Alignment		8	8	In sharp sag curve with limited sight distance to the S with est 8% grade. 3.4m grade raise since 1988.
Vertical Alignment		4	4	
Roadway Width (m)	10.500			
Embankment		5	N	Steep embankment.
Sideslope (__:1)	1.8			
(Height of Cover(m) : **8.5**)				
Guardrail (Y/N)	No			
Approach Road / Embankment General Rating		**4**	**4**	

Upstream End

Culvert Component		**Last**	**Now**	**Explanation of Condition**
Direction		E		Separate sloped section 3.5m long.
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		7	N	(On walls, floor silted 150mm. 18Aug2009).
Heaving (mm)	0			
Invert Above/Below Stream Bed	BELOW			(18Aug2009)
Above/Below (mm)	300			
Scour Protection		7	N	Snow covered.
(Type :)				
(Avg. Rock Size(mm) :)				
Scour/Erosion		7	N	
Beavers (Y/N)	No			
Upstream End General Rating		**7**	**7**	GR carried forward from 18Feb2009.

Bridge Culvert Barrel				
Culvert Component		**Last**	**Now**	**Explanation of Condition**
(Pipe # : **1, Primary Span, Location Code: MAIN, Span (mm): 2590, Rise (mm): 2870, Type: SPE**)				
Barrel Last Accessible Date	18-Feb-2009			(Measured 2890 x 2635 on R7. 19/10/04). Limited access (R1-5;14-16) due to ice cracking under weight of inspector.
Special Features				
Special Feature				
(Type :)				
Special Feature				
(Type :)				
Roof		4	4	Small 150 x 50 hole in roof R1-2 from construction. Roof not measured due to ice. (19Oct2004)
Measured Rise (mm)	2635			
Measured At Ring No.	7			
Sag (mm)	235			
Percent Sag	8			
Sidewall		3	3	Construction dents in R10 both sides. Rating carried forward from 18Feb2009. Span at R5=2858=268mm=10.3%. Span at R15=2707=117mm=4.5%.
Measured Span (mm)	2883			
Measured At Ring No.	7			
Deflection (mm)	293			
Percent Deflection	11			
Floor		N	N	(#10 panel hole on S side, close to bottom, damaged N side. 19/20/04). Ice. (19Oct2004)
Bulge (mm)	0			
Measured At Ring No.				
Abrasion (Y/N)	No			
Circumferential Seams		4	4	Crack in top bolt at R-11 inclusive. (Worst is R10 with 20mm each side of bolt. 18Feb2009).
Separation (mm)	0			
Longitudinal Seams		6	6	No seam @ springline
Total No. of Cracked Rings	0			
Total No. of Rings with Two Cracked Seams	0			
Min. Remaining Steel Between Cracks (mm)				1N.
Proper Lap (Y/N)	No			
Longitudinal Stagger (Y/N)	Yes			
Coating		5	5	Alkali stains but no corrosion Superficial corrosion
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 # : **1, Primary Span, Location Code: MAIN, Span (mm): 2590, Rise (mm): 2870, Type: SPE**)				
Ponding (Y/N)	No			
Fish Passage Adequacy		5	5	
Baffle		X	X	
(Type :)				
Waterway Adequacy		7	7	
Icing (Y/N)	No			
Silting (Y/N)	No			
Drift (Y/N)	No			
Barrel General Rating		**3**	**3**	GR carried forward from 18Feb2009.

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		7	N	3.75m long
Heaving (mm)	0			
Invert Above/Below Stream Bed	BELOW			(19Oct2004)
Above/Below (mm)	500			
Scour Protection		7	N	Unknown, snow covered.
(Type :)				
(Avg. Rock Size(mm) :)				
Scour/Erosion		7	N	
Beavers (Y/N)	No			
Downstream End General Rating		**7**	**7**	GR carried forward from 18Feb2009.

Structure Usage				
		Last	**Now**	**Explanation of Condition**
Channel (U/S and D/S)				
Alignment		8	8	
Bank Stability		8	N	Snow.
HWM (m below Top of Culvert)				No HWM 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		**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) (%)	**33.3/33.3**	**Sufficiency Rating (Last/Now) (%)**	**49.3/49.4**	Est. Repl. Yr	2025	Maint. Reqd. (Y/N)	No

Special Comments for Next Inspection	Site was discussed with Special Areas Oct 3/88. They indicated grade would not be raised when road rebuilt. This report indicated that grade was raised by 3.4m from 8.8 to 12.2m of cover. Factor of safety for bolted seam is reduced to 2.98 which is less than required by design code. Monitor at regular cycle - no change since last inspection. Inspect at 21mth cycle. Consider installing struts due to previous span deflection measurements.	Department Comments	

Maintenance Reviewed By		Date		Estimated Total	0
Proposed Long-Term Strategy	2004.05.30 Culvert should be ok until 2029. Consider liner in future. Monitor normal BIM.				
On 3-Year Program (Y/N)					
Proposed Action					

Previous Inspector's Name	Garry Roberts	Previous Assistant's Name	
Next Inspection Date	30-Jun-2014	Previous Inspection Date	18-Feb-2009
Inspection Cycle (Default) (months)	39		
Comment			

Maintenance Recommendations

Inspector Recommendations	Year	Inspector Comments	Department Comments	Target Year	Est. Cost	Cat #
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PLACE ADDITIONAL RIP RAP						
REMOVE DRIFT ACCUMULATION						
INSTALL CONCRETE/STEEL LINING						
INSTALL STRUTS						
INSTALL CONCRETE COLLAR/CUTOFF						
REPAIR SEAMS						
OTHER ACTION						
OTHER ACTION						
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Maintenance Reviewed By	Darron Ahlstedt	Date	27-Apr-2012	Estimated Total	0
Proposed Long-Term Strategy	2004.05.30 Culvert should be ok until 2029. Consider liner in future. Monitor normal BIM.				
On 3-Year Program (Y/N)					
Proposed Action					

Previous Inspector's Name	Garry Roberts	Previous Assistant's Name	
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Inspection Cycle (Default) (months)	39		
Comment			