Bridge Culvert Inspection

Bridge File Number	77455 -1 Bridge Culvert	Form Type	CUL1
Year Built	1972	Lot No.	2
Bridge or Town Name	GOODRIDGE	Inspector Name	Wade Nanninga
Located Over	TRIBUTARY TO BEAVER RIVER, 7.15, WATERCRS-ST	Inspector Class	BR CLS A
		Assistant Name	
Located On	55:16 C1 0.122	Assistant Class	
Water Body Cl./Year		Inspection Date	09-Apr-2012
Navigabil. Cl./Year		Data Entry By	Lisa Fairhurst
Legal Land Location	NE SEC 28 TWP 63 RGE 9 W4M	Data Entry Date	25-Apr-2012
Longitude, Latitude	-111:17:50, 54:29:05	Reviewer Name	Eric Carcoux
Road Authority	Alberta Transportation (AIT)	Review Date	25-Apr-2012
Contract Main. Area	CMA08	Dept. Reviewer Name	Brent Herrick
Clear Roadway/Skew	13.5 /	Dept. Review Date	04-May-2012
AADT/Year	1,590 / 2011 (A)	Follow-Up By	
Road Classification	RAU-211.8-110		
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	-	2314	SP	52.4	152X51	3.0,3.0,3.5	ROUND
Special Features		VERT STEEL STRUTS						
Special Features Comment								

Utilities (Located at)

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

Approach Road / Embankment

		Last	Now	Explanation of Condition
Horizontal Alignment		7	7	Intersection with SH 881 (S) is 100 m west. Crest curve to east. Acceleration / deceleration lanes over pipe.
Vertical Alignment		7	7	
Roadway Width (m)	13.500			
Embankment		7	7	
Sideslope (__:1)	3.5			
(Height of Cover(m) : **4**)				
Guardrail (Y/N)	Yes			
Approach Road / Embankment General Rating		**7**	**7**	

Upstream End

Culvert Component		Last	Now	Explanation of Condition
Direction		N		
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	
Heaving (mm)	300			
Invert Above/Below Stream Bed	BELOW			
Above/Below (mm)	300			
Scour Protection		N	N	Beaver dam @ u/s end covering slope protection
(Type : **RIP RAP**)				
(Avg. Rock Size(mm) : **300**)				
Scour/Erosion		5	5	
Beavers (Y/N)	Yes			Large dam @ U/S opening.
Upstream End General Rating		**4**	**4**	G.R. carried over from 15/Nov/2006.

Bridge Culvert Barrel				
Culvert Component		**Last**	**Now**	**Explanation of Condition**
(Pipe # : **1, Primary Span, Location Code: MAIN, Span (mm): , Rise (mm): 2314, Type: SP**)				
Barrel Last Accessible Date	11-Aug-2008			Barrel half full and thin ice
Special Features				
Special Feature		3	N	(Top horizontal strut across North opening is broken & bent - photo. Vertical struts are bending under load - photo. 13Jun10)
(Type : **VERT STEEL STRUTS**)				
Special Feature				
(Type :)				
Roof		N	N	Roof starting to exhibit reverse curvature @ 10:00 seam -11-Aug-2008
Measured Rise (mm)	2330			
Measured At Ring No.				(Measurement taken prior to strutting?)
Sag (mm)	222			
Percent Sag	10			
Sidewall		N	N	
Measured Span (mm)	2695			
Measured At Ring No.				16.5%-11-Aug-2008
Deflection (mm)	381			
Percent Deflection	17			
Floor		N	N	
Bulge (mm)	0			
Measured At Ring No.				
Abrasion (Y/N)	No			
Circumferential Seams		N	N	
Separation (mm)	0			
Longitudinal Seams		N	N	(There are 13 rings in total. Of the 10 with cracks, 8 have 2 cracked seams 25 mm of steel remaining. Water leaking into barrel @ longitudinal seam, U/S end. Superficial rusting. Cracked seams @ 4 & 8 o'clock.-11-Aug-2008)
Total No. of Cracked Rings	10			
Total No. of Rings with Two Cracked Seams	8			
Min. Remaining Steel Between Cracks (mm)	25			
Proper Lap (Y/N)	No			
Longitudinal Stagger (Y/N)	No			
Coating		4	N	(Lower half scaling. 13Jun10)
Corrosion By Soil (Y/N)	No			
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): 2314, Type: SP**)				
Fish Passage Adequacy		3	4	Hampered by large dam @ U/S end.
Baffle		X	X	
(Type :)				
Waterway Adequacy		5	5	(Has flown 3/4 full. 99/07/01) (Iced to within 900mm of roof. 13Jun10)
Icing (Y/N)	No			
Silting (Y/N)	No			
Drift (Y/N)	Yes			
Barrel General Rating		**2**	**2**	General Rating carried over from 11Aug08

Downstream End				
Culvert Component		**Last**	**Now**	**Explanation of Condition**
Direction		S		
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)	200			
Invert Above/Below Stream Bed	ABOVE			
Above/Below (mm)	500			
Scour Protection		4	4	Bevel unsupported for 1.0m.
(Type : **RIP RAP**)				
(Avg. Rock Size(mm) : **300**)				
Scour/Erosion		4	4	Scour hole 5.0m x 5.0m x .6m off bevel. Outfall of 500 mm.
Beavers (Y/N)	Yes			Beaver dam 30 m D/S is okay as is.
Downstream End General Rating		**4**	**4**	

Structure Usage				
		Last	**Now**	**Explanation of Condition**
Channel (U/S and D/S)				
Alignment		7	7	
Bank Stability		8	8	
HWM (m below Top of Culvert)				HWM not visible. (Drift / debris to 1.5m above crown. Not sure if from HW or dam removal.- 13Jul10)
Drift (Y/N)	Yes			
Channel Bottom Degrading/Aggrading	DEGRADING			
Beavers (Y/N)	Yes			
(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	2012	Repair damaged struts and install additional struts.				
OTHER ACTION						
OTHER ACTION						
OTHER ACTION						

Structural Condition Rating (Last/Now) (%)	**22.2/22.2**	**Sufficiency Rating (Last/Now) (%)**	**31.0/31.9**	Est. Repl. Yr	2013	Maint. Reqd. (Y/N)	Yes

Special Comments for Next Inspection	Monitor long. seams leaking into barrel, possibly piping outside barrel - 10Dec02 Monitor scour/erosion @ outlet. Inspect @ 12 month cycle until replaces (LRS issued via email to Brent Herrick on 11Aug08) LRA issued to Brent Herrick on 20Jun10	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	Shane Hall	Previous Assistant's Name			
Next Inspection Date	09-Jan-2014	Previous Inspection Date	14-Jul-2010		
Inspection Cycle (Default) (months)	21				
Comment					