Bridge Culvert Inspection

Bridge File Number	81190 -1 Bridge Culvert	Form Type	CUL1
Year Built	1988	Lot No.	1
Bridge or Town Name	DUHAMEL	Inspector Name	Owen Salava
Located Over	TRAIL-ANIMAL, OVER SP	Inspector Class	BR CLS A
Located On	21:22 C1 31.133	Assistant Name	
Water Body Cl./Year		Assistant Class	
Navigabil. Cl./Year		Inspection Date	20-Sep-2012
Legal Land Location	NE SEC 27 TWP 45 RGE 21 W4M	Data Entry By	Marcia Chavez
Longitude, Latitude	-112:57:56, 52:54:45	Data Entry Date	03-Oct-2012
Road Authority	Alberta Transportation (AIT)	Reviewer Name	John O'Brien
Contract Main. Area	CMA16	Review Date	27-Sep-2012
Clear Roadway/Skew	13 /	Dept. Reviewer Name	Andrew Smikles
AADT/Year	2,570 / 2011 (A)	Dept. Review Date	19-Nov-2012
Road Classification	RAU-213.4-120	Follow-Up By	
Detour Length (km)	3		

Bridge Culvert Information

Number of Culverts	1

Pipe #	Barrel	Span	Rise (or Dia.)	Type	Length	Corr. Profile	Pl./Slab Thickness	Shape
1	MAIN	-	2200	MP	27	125X26	2.8	ROUND

Special Features	
Special Features Comment	Both ends extended 2.7m with 2400MP; total length = 32.4m.

Posting Information

Required Vert. Clearance Posting (m)	
Posted Vertical Clearance (Y/N)	No

Posted:	Lane	NB	On Bridge (m)		In Advance (Y/N)		Lane	SB	On Bridge (m)		In Advance (Y/N)	

Remarks	Not required.

Utilities (Located at)

Utility Attachments			
Telephone	West r/w.	Gas	70 m South.
Power		Municipal	
Others	Fibre optic E r/w.	Problem (Y/N)	No
Remarks			

Approach Road / Embankment

		Last	Now	Explanation of Condition
Horizontal Alignment		6	6	Built over curve, approaches to field access on South end. No passing NB due to hill. Superelevated.
Vertical Alignment		6	6	
Roadway Width (m)	13.000			
Embankment		6	6	
Sideslope (__:1)	3.0			
(Height of Cover(m) : **1.5**)				
Guardrail (Y/N)	Yes			Approx. 450mm high, typical both sides.
Approach Road / Embankment General Rating		**6**	**6**	

Upstream End

Culvert Component		**Last**	**Now**	**Explanation of Condition**
Direction		W		
End Treatment (Concrete, Steel, Others, None)	NONE			
Headwall		X	X	
Collar		X	X	

Upstream End				
Culvert Component		**Last**	**Now**	**Explanation of Condition**
Wingwalls		X	X	
(Shape :)				
Cutoff Wall		X	X	
Bevel End		X	X	
Heaving (mm)	0			
Invert Above/Below Stream Bed	BELOW			
Above/Below (mm)	200			
Scour Protection		7	7	
(Type : **NATURAL**)				
(Avg. Rock Size(mm) :)				
Scour/Erosion		7	7	
Beavers (Y/N)	No			
Upstream End General Rating		**7**	**7**	

Bridge Culvert Barrel				
Culvert Component		**Last**	**Now**	**Explanation of Condition**
(Pipe # : **1, Primary Span, Location Code: MAIN, Span (mm): , Rise (mm): 2200, Type: MP**)				
Barrel Last Accessible Date	20-Sep-2012			
Special Features				
Special Feature				
(Type :)				
Special Feature				
(Type :)				
Roof		4	3	1750 to floor.
Measured Rise (mm)				
Measured At Ring No.	2			
Sag (mm)	250			Est. deflection. 11.4%
Percent Sag	11			
Sidewall		3	3	Barrel shape still has some arching ability -photo.
Measured Span (mm)	2510			
Measured At Ring No.	2			
Deflection (mm)	310			14.1%
Percent Deflection	14			
Floor		N	N	Covered with concrete floor, mud.
Bulge (mm)	0			
Measured At Ring No.				
Abrasion (Y/N)	No			
Circumferential Seams		5	5	1st seam from E end, sealed with expanding foam.
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		7	7	
Corrosion By Soil (Y/N)	No			
Corrosion By Water (Y/N)	No			

Bridge Culvert Barrel				
Culvert Component		**Last**	**Now**	**Explanation of Condition**
(Pipe # : **1, Primary Span, Location Code: MAIN, Span (mm): , Rise (mm): 2200, Type: MP**)				
Camber POS/ZERO/NEG	NEG			
Ponding (Y/N)	No			
Fish Passage Adequacy		X	X	
Baffle		X	X	
(Type :)				
Waterway Adequacy		X	X	
Icing (Y/N)	No			
Silting (Y/N)	No			
Drift (Y/N)	No			
Barrel General Rating		**3**	**3**	

Downstream End				
Culvert Component		**Last**	**Now**	**Explanation of Condition**
Direction		E		2400 MP extended 2.7m.
End Treatment (Concrete, Steel, Others, None)	NONE			
Headwall		X	X	
Collar		X	X	
Wingwalls		X	X	
(Shape :)				
Cutoff Wall		X	X	
Bevel End		X	X	
Heaving (mm)	0			
Invert Above/Below Stream Bed	BELOW			
Above/Below (mm)	300			
Scour Protection		7	7	
(Type : **NATURAL**)				
(Avg. Rock Size(mm) :)				
Scour/Erosion		7	7	
Beavers (Y/N)	No			
Downstream End General Rating		**7**	**7**	

Structure Usage				
		Last	**Now**	**Explanation of Condition**
Grade Separation				
Road Alignment		7	7	
Roadway Surface		7	7	
(Type : **CONCRETE**)				
Icing (Y/N)	No			
Traffic Safety Features		X	X	
Type	None			
Lighting		X	X	
Barrel Leakage (Y/N)	No			

Structure Usage				
		Last	**Now**	**Explanation of Condition**
Drainage		7	7	
Structure In Use (Y/N)	Yes			
Grade Separation 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	2012	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) (%)**	**61.0/60.9**	Est. Repl. Yr	2035	Maint. Reqd. (Y/N)	Yes

Special Comments for Next Inspection	Consider raising guardrail to meet std height. Deflection increase of 65mm or 3% since 08Nov2010; at that rate could be r=2 in next cycle.	Department Comments	

Maintenance Reviewed By		Date		Estimated Total	0
Proposed Long-Term Strategy	Cattle pass being used. Water ponds in culvert. Has sagged but appears ok. Repair joint separation with foam. Should be OK until 2038. No bridge work required with overlay. RS				
On 3-Year Program (Y/N)					
Proposed Action					
Previous Inspector's Name	Dave Lam	Previous Assistant's Name			
Next Inspection Date	20-Jun-2014	Previous Inspection Date	08-Nov-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	2012	Install struts.	Department to monitor every 6 months			
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) (%)**	**61.0/60.9**	Est. Repl. Yr	2035	Maint. Reqd. (Y/N)	Yes

Special Comments for Next Inspection	Consider raising guardrail to meet std height. Deflection increase of 65mm or 3% since 08Nov2010; at that rate could be r=2 in next cycle.	Department Comments	Replacement programmed for 2022. Department to review and record sag every 6 months.

Maintenance Reviewed By	Andrew Smikles	Date	10-Dec-2012	Estimated Total	0
Proposed Long-Term Strategy	Cattle pass being used. Water ponds in culvert. Has sagged but appears ok. Repair joint separation with foam. Should be OK until 2038. No bridge work required with overlay. RS				
On 3-Year Program (Y/N)					
Proposed Action					
Previous Inspector's Name	Dave Lam	Previous Assistant's Name			
Next Inspection Date	20-Jun-2014	Previous Inspection Date	08-Nov-2010		
Inspection Cycle (Default) (months)	21				
Comment					