Bridge Culvert Inspection

Bridge File Number	76422 -1 Bridge Culvert	Form Type	CULM
Year Built	1967	Lot No.	2
Bridge or Town Name	EDMONTON	Inspector Name	Wade Nanninga
Located Over	GOLD BAR CREEK, 6.80, WATERCRS-ST	Inspector Class	BR CLS A
Located On	SHERWOOD PARK FREEWAY:02 R1 2.107;SHERWOOD PARK FREEWAY:02 L1 2.113	Assistant Name	
		Assistant Class	
Water Body Cl./Year		Inspection Date	14-Jan-2013
Navigabil. Cl./Year		Data Entry By	Lisa Fairhurst
Legal Land Location	SW SEC 29 TWP 52 RGE 23 W4M	Data Entry Date	26-Mar-2013
Longitude, Latitude	-113:21:45, 53:30:57	Reviewer Name	Eric Carcoux
Road Authority	Alberta Transportation (AIT)	Review Date	25-Mar-2013
Contract Main. Area	ANTHONY HENDAY DRIVE	Dept. Reviewer Name	Brent Herrick
Clear Roadway/Skew	25.1 / -20 deg. (LHF)	Dept. Review Date	26-Mar-2013
AADT/Year	33,860 / 2011 (A)	Follow-Up By	
Road Classification	RAD-412.4-120		
Detour Length (km)	3		

Bridge Culvert Information

Number of Culverts	2

Pipe #	Barrel	Span	Rise (or Dia.)	Type	Length	Corr. Profile	Pl./Slab Thickness	Shape
1	MAIN	1829	1118	FP	70.1	68X13	2.8	ARCH
2	MAIN	1829	1118	FP	70.1	68X13	2.8	ARCH

Special Features	
Special Features Comment	

Utilities (Located at)

Utility Attachments			
Telephone		Gas	West approx 50 m D/S.
Power	Street lighting North & South.	Municipal	
Others		Problem (Y/N)	No
Remarks			

Approach Road / Embankment

		Last	Now	Explanation of Condition
Horizontal Alignment		8	8	Site located 500m East of BF 76092.
Vertical Alignment		8	8	
Roadway Width (m)	25.100			
Embankment		N	N	Embankment eroded @ U/S end - photo.-23-Jun-2009
Sideslope (__:1)	4.0			
(Height of Cover(m) : **1.2**)				
Guardrail (Y/N)	No			
Approach Road / Embankment General Rating		**8**	**8**	

Upstream End

Culvert Component		**Last**	**Now**	**Explanation of Condition**
(Pipe # : **1, Span Type: Primary Span**)				
Direction		N		West pipe.
End Treatment (Concrete, Steel, Others, None)	STEEL			
Headwall		X	X	
Collar		X	X	

Upstream End				
Culvert Component		**Last**	**Now**	**Explanation of Condition**
(Pipe # : **1, Span Type: Primary Span**)				
Wingwalls		X	X	
(Shape :)				
Cutoff Wall		X	X	
Bevel End		N	6	
Heaving (mm)	0			
Invert Above/Below Stream Bed				At streambed.
Above/Below (mm)	0			
Scour Protection		N	4	
(Type : **NONE**)				
(Avg. Rock Size(mm) :)				
Scour/Erosion		N	4	Erosion along West bank and slight undermining of bevel.
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): 1829, Rise (mm): 1118, Type: FP**)				
Barrel Last Accessible Date	12-Sep-2007			Rated as seen from ends - 1/2 full of ice.
Special Features				
Special Feature				
(Type :)				
Special Feature				
(Type :)				
Roof		N	3	Minor damage at 11:00 position - photo.-23-Jun-2009 (Rise was 925mm at same point on 12/Nov/2005.) U/S - 1020, D/S - 1045. (20m from D/S - 915. 12/Sept/2007)
Measured Rise (mm)	915			
Measured At Ring No.				
Sag (mm)	178			Estimated sag of 10%
Percent Sag	16			
Sidewall		N	N	U/S - 1877, D/S - 1875. (20m from D/S - 1928. 12/Sept/2007)
Measured Span (mm)	1928			
Measured At Ring No.				
Deflection (mm)	99			
Percent Deflection	5			
Floor		N	N	(Crack on floor - photo. 12/Sept/2007)
Bulge (mm)	25			
Measured At Ring No.				
Abrasion (Y/N)	No			
Circumferential Seams		N	N	(Improper nesting at several seams on floor. 12/Sept/2007)
Separation (mm)	50			
Longitudinal Seams		N	N	
Total No. of Cracked Rings	0			
Total No. of Rings with Two Cracked Seams	0			
Min. Remaining Steel Between Cracks (mm)	0			Riveted.
Proper Lap (Y/N)				
Longitudinal Stagger (Y/N)	Yes			

Bridge Culvert Barrel				
Culvert Component		**Last**	**Now**	**Explanation of Condition**
(Pipe # : **1, Primary Span, Location Code: MAIN, Span (mm): 1829, Rise (mm): 1118, Type: FP**)				
Coating		N	N	Pitting rust on lower 1/3.-23-Jun-2009
Corrosion By Soil (Y/N)	No			
Corrosion By Water (Y/N)	Yes			
Camber POS/ZERO/NEG	ZERO			
Ponding (Y/N)	No			
Fish Passage Adequacy		X	4	Hanging outlet.
Baffle		X	X	
(Type :)				
Waterway Adequacy		5	5	
Icing (Y/N)	No			
Silting (Y/N)	No			
Drift (Y/N)	No			
Barrel General Rating		**2**	**2**	GR carried fwd from Sep 2007

Downstream End				
Culvert Component		**Last**	**Now**	**Explanation of Condition**
(Pipe # : **1, Span Type: Primary Span**)				
Direction		S		West pipe.
End Treatment (Concrete, Steel, Others, None)	STEEL			
Headwall		X	X	
Collar		X	X	
Wingwalls		X	X	
(Shape :)				
Cutoff Wall		X	X	
Bevel End		N	4	Torn bevel end.
Heaving (mm)	50			
Invert Above/Below Stream Bed	ABOVE			
Above/Below (mm)	700			
Scour Protection		N	4	The streambed is degraded leaving invert above streambed. Rock riprap has been placed on degraded channel @ D/S opening.
(Type : **RIP RAP**)				
(Avg. Rock Size(mm) : **500**)				
Scour/Erosion		N	4	Vertical banks 20m D/S - photo.
Beavers (Y/N)	No			
Downstream End General Rating		**4**	**4**	

Upstream End				
Culvert Component		**Last**	**Now**	**Explanation of Condition**
(Pipe # : **2, Span Type: Secondary Span**)				
Direction		N		East pipe.
End Treatment (Concrete, Steel, Others, None)	STEEL			
Headwall		X	X	
Collar		X	X	

Upstream End				
Culvert Component		**Last**	**Now**	**Explanation of Condition**
(Pipe # : **2, Span Type: Secondary Span**)				
Wingwalls		X	X	
(Shape :)				
Cutoff Wall		X	X	
Bevel End		N	5	
Heaving (mm)	50			
Invert Above/Below Stream Bed	BELOW			
Above/Below (mm)	50			
Scour Protection		N	4	Fill washed out for 3.0m along West side of pipe - photo.
(Type : **NONE**)				
(Avg. Rock Size(mm) :)				
Scour/Erosion		N	4	Barrel exposed for 2m past bevel and undermined.
Beavers (Y/N)	No			
Upstream End General Rating		**3**	**4**	

Bridge Culvert Barrel				
Culvert Component		**Last**	**Now**	**Explanation of Condition**
(Pipe # : **2, Secondary Span, Location Code: MAIN, Span (mm): 1829, Rise (mm): 1118, Type: FP**)				
Barrel Last Accessible Date	12-Sep-2007			Rated as seen from ends 1/2 full of snow/ice.
Special Features				
Special Feature				
(Type :)				
Special Feature				
(Type :)				
Roof		N	3	U/S - 1050, D/S - 1107. (About 20m from D/S - 925. 12/Sept/2007) Est. sag 10%
Measured Rise (mm)	925			
Measured At Ring No.				
Sag (mm)	168			
Percent Sag	15			
Sidewall		N	N	U/S - 1867, D/S - 1844. (About 20m from D/S - 1950. 12/Sept/2007)
Measured Span (mm)	1950			
Measured At Ring No.				
Deflection (mm)	121			
Percent Deflection	7			
Floor		N	N	Majority covered with silt.
Bulge (mm)	25			
Measured At Ring No.				
Abrasion (Y/N)	No			
Circumferential Seams		N	N	(Several damaged riveted joints. 12/Sept/2007)
Separation (mm)	50			
Longitudinal Seams		N	N	Riveted.
Total No. of Cracked Rings	0			
Total No. of Rings with Two Cracked Seams	0			
Min. Remaining Steel Between Cracks (mm)	0			
Proper Lap (Y/N)				
Longitudinal Stagger (Y/N)	Yes			

Bridge Culvert Barrel				
Culvert Component		**Last**	**Now**	**Explanation of Condition**
(Pipe # : **2, Secondary Span, Location Code: MAIN, Span (mm): 1829, Rise (mm): 1118, Type: FP**)				
Coating		N	N	Pitting rust on lower 1/3.-23-Jun-2009
Corrosion By Soil (Y/N)	No			
Corrosion By Water (Y/N)	Yes			
Camber POS/ZERO/NEG	ZERO			
Ponding (Y/N)	No			
Fish Passage Adequacy		N	4	Hanging outlet.
Baffle		X	X	
(Type :)				
Waterway Adequacy		5	5	
Icing (Y/N)	No			
Silting (Y/N)	No			
Drift (Y/N)	No			
Barrel General Rating		**3**	**3**	GR carried fwd from Sep 2007

Downstream End				
Culvert Component		**Last**	**Now**	**Explanation of Condition**
(Pipe # : **2, Span Type: Secondary Span**)				
Direction		S		East pipe.
End Treatment (Concrete, Steel, Others, None)	STEEL			
Headwall		X	X	
Collar		X	X	
Wingwalls		X	X	
(Shape :)				
Cutoff Wall		X	X	
Bevel End		N	5	
Heaving (mm)	50			
Invert Above/Below Stream Bed	ABOVE			
Above/Below (mm)	800			
Scour Protection		N	4	The streambed is degraded leaving invert above S.B. Rock riprap has been placed on degraded channel.
(Type : **RIP RAP**)				
(Avg. Rock Size(mm) : **500**)				
Scour/Erosion		N	4	
Beavers (Y/N)	No			
Downstream End General Rating		**4**	**4**	

Structure Usage				
		Last	**Now**	**Explanation of Condition**
Channel (U/S and D/S)				
Alignment		N	4	Sharp bend U/S & D/S. Poor channel alignment @ North end causing erosion - photo.
Bank Stability		N	4	Vertical banks @ NE corner due to erosion. Vertical banks @ SE corner due to erosion.
HWM (m below Top of Culvert)				HWM not visible.
Drift (Y/N)	Yes			

Structure Usage				
		Last	**Now**	**Explanation of Condition**
Channel Bottom Degrading/Aggrading	DEGRADING			
Beavers (Y/N)	No			
(Fish Compensation Measure 1 : **NONE**)				
(Fish Compensation Measure 2 : **NONE**)				
Channel General Rating		**4**	**4**	

Maintenance Recommendations						
Inspector Recommendations	Year	Inspector Comments	Department Comments	Target Year	Est. Cost	Cat #
SHOTCRETE REPAIRS						
PLACE ADDITIONAL RIP RAP	2013	20m3 of riprap upstream end both pipes.				
REMOVE DRIFT ACCUMULATION						
INSTALL CONCRETE/STEEL LINING						
INSTALL STRUTS						
INSTALL CONCRETE COLLAR/CUTOFF						
REPAIR SEAMS						
OTHER ACTION	2013	Trim U/S banks before placing rock.				
OTHER ACTION						
OTHER ACTION						
OTHER ACTION						

Structural Condition Rating (Last/Now) (%)	**22.2/22.2**	**Sufficiency Rating (Last/Now) (%)**	**29.6/24.3**	Est. Repl. Yr	2017	Maint. Reqd. (Y/N)	Yes

Special Comments for Next Inspection	Repeat measurement for pipe #2 at mark 20m from d/s end. Monitor shape. Monitor d/s erosion. Low rating advisory sent.	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	Wade Nanninga	Previous Assistant's Name			
Next Inspection Date	14-Oct-2017	Previous Inspection Date	07-Mar-2011		
Inspection Cycle (Default) (months)	57				
Comment					