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BRIDGE INSPECTION REPORT

GLULAM BRIDGE INSPECTION SUMMARY

Ministry of Forests and Range Forest Service

Business Area	Location	Road Name	Project #	Sta. (km)	Easting	350663
		Bone Creek	2013-0731	0.10	Northing	5793010

Bridge Name	Site ID	Stream Name	Class.	Inspected By	Inspection Date
K698	K698	North Thompson River		L.Thiessen/C. Rousseau	7-Oct-13

Superstructure Type	Deck Type	Substructure Type	Live Load Rating			
Glulam	Timber	Timber Piles	Present	63	New	63

Bridge Length	# Spans	Span Length(s)	Deck Width	Bridge Use	Installation Date
80.2 m	4	8.5, 24.2, 36.3, 8.5 m	4.4 m	Permanent	1987

Reference Drawings	

NOTES: Excellent : New or almost new condition and properly installed
Good : Structurally sound, in good repair and have minimal wear
Fair : Structurally sound, but show moderate wear or preliminary indications of rot or corrosion
Poor : Structurally unsound, major items in need of repair or replacement, or bridge load rating should be reduced

Abutment, spans, piers numbered from left bank, facing downstream.

BRIDGE ELEMENT		CONDITION	REMARKS
APPROACH	Approach Road	Good	
	Alignment	Good	
	Visibility	Good	
	Signage	Good	
	Delineators	Good	
	Overall	Good	
DECK	Timber Deck	Good	Deck: 1500x250x100 Running strips (600 gap) untreated
	Ties & Subdeck	Good	Ties 200x300@400 c/c creosote Subdeck: 75x290 creosote treated diagonally installed
	Nails	Good	
	Deck to Girder Bolts	Good	
	Curbs & Blocks	Fair	Curbs: 140x240, Blocks: 240x150x700 creosote treated, some grader damage evident.
	Hand Rails	Fair	Two type of rails: 60x190 & 105x150 on posts 1430 x 190 x 135 @ 2020 c/c. RBDS rail is retrofitted with untreated oversized posts (200x200) and were found to be substantially rotten in centre from top. Remainder of post and rails are treated and in good condition.
	Hardware	Good	
	Overall	Fair	

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SUPER STRUCTURE

Glulam Girder Dimensions (mm)

Span #	No.Girders	Species	b	h	h_{block}	x_{inset}	Additional Information
1	1-9		290	600			Timber stringers, 4900 o/o (transverse); Ties 160D x 140W @ 400 c/c
2	1-2		368	1850	380	54	2700 space between #1 and #2 girder.
3	1-4		360	2035	400	70	Lams 220 and 140, web 220 In pairs at 540 c/c, 2140 space between #2 and #3 girder.
4	1-9		290	600			Timber stringers, 4900 o/o (transverse); Ties 160D x 140W @ 400 c/c

Cracks/Checks in Glulam Girders (mm) *Girders numbered from upstream side*

Span #	Girder #	Tag Start	Tag End	Cr. Length	Cr.Growth	Depth	Width	Additional Information
3	4 DS	AE 2968		3400	n/a	50	1	15m from Pier 3, 470 from top
2	2 DS	AE 2981	2990	7800	n/a	50-65	2-4	9.2m from Pier 2, 80 from top

Girders		Good	Overall girders are in good condition with most girders faces 100% covered by creosote, no checking. Those with less than 100% coverage are noted below under specific girder comments.
Span #	Girder #		
2	1 DS	Fair	Creosote leaching; Visible creosote on 50-75% of the girder face. Minor checking, few checks noted.
3	4 DS	Fair	Creosote leaching; Visible creosote on 25-50% of the girder face. Minor checking, few checks noted.
3	1 US	Good	Creosote leaching; Visible creosote >75% of the girder face. No checking.
4	9 DS	Good	Creosote leaching; Visible creosote on 50-75% of the girder face. No checking.
Diaphragms		Good	
Bracing		Good	
Hardware		Good	
Overall		Good	

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K698	K698	North Thompson River		L.Thiessen/C. Rousseau		7-Oct-13

ABUTMENT LEFT END	Bearings	Good	
	Sill	Good	200 dirt accumulaton
	Piles / Posts	Good	Cap 400x400, 6 piles 450 dia, 1000 c/c
	Bracing	N/A	
	Bulkhead/Wingwalls	Fair	
	Fill	Good	
	Riprap	N/A	Some natural angular rock on banks
	Overall	Fair	
ABUTMENT RIGHT END	Bearings	Good	
	Sill	Good	
	Piles / Posts	Fair	RBUS 3 soldier piles; RBDS 1 soldier pile, damaged top.
	Bracing	N/A	
	Bulkhead/Wingwalls	Fair	RBUS wingwall timber missing. Minor sloughing.
	Fill	Good	
	Riprap	N/A	
	Overall	Good	
PIER 1	Bearings	N/A	
	Caps	Good	
	Piles or Posts	Good	RB cap 490w x 400d one 10mm x 170 long check DS end; LB cap 380 x 380
	Bracing / Sheathing	Good	
	Hardware	Good	
	Overall	Good	
PIER 2	Bearings	N/A	
	Sills	Fair	RB sill 500w x 280h - timber; LB sill 500wx280h -- timber, 25mm check DS end.
	Caps	Fair	Sills resting on 1200W x 800D and 700D concrete cap (100 step) see fig 1-23
	Piles or Posts	Good	
	Concrete	Good	Timber sill is on top of concrete cap.
	Bracing / Sheathing	Good	
PIER 3	Bearings	N/A	
	Caps	Good	RB Cap 380W x 380D LB Cap 510W x 380D
	Piles or Posts	Good	
	Bracing / Sheathing	Good	
	Hardware	Good	
	Overall	Good	

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REPAIR DESCRIPTION AND COST ESTIMATE:

No.	Description	Priority	Cost Estimate
1	Re-attach LBDS rail.	High	$500
2	Replace rotten retrofitted posts at RBDS.	High	$1,500
		Total	$2,000

NOTES:
High : Immediate, non-recurring repair to assure public safety
Medium : Ongoing, regular maintenance items to protect capital investment
Low : Minor maintenance items or improvements to extend service live

MONITORING ITEMS:

No.	Description
1	Minor sloughing through ballast wall at RBUS.
2	Grader curb damage

LIVE LOAD ASSESSMENT: *(In accordance with MoFR Requirements)*

Vehicle	Vehicle			Comment
Off-Road				Based on this inspection, there is no reason to reduce the load rating.
Highway	CL-1	CL-2	CL-3	

COMMENTS:

This bridge is generally in good conditon except for some minor hand rail maintenance.

The anticipated replacement based on current condition is >10 years.

SEAL:

PROFESSIONAL ENGINEER
L. D. T...

05.03.14

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Figure 1-1 Left bank upstream.



Figure 1-2 Downstream elevation.



Figure 1-3 Looking upstream.



Figure 1-4 Looking downstream.



Figure 1-5 Right bank (town) approach.



Figure 1-6 Left bank (bush) approach.

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Figure 1-7 Bridge load limit sign.

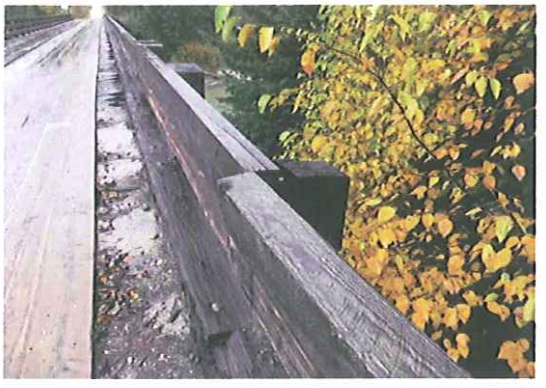


Figure 1-8 Right bank downstream curb detached.



Figure 1-9 Left bank downstream rail detached.



Figure 1-10 Hole in deck left bank.



Figure 1-11 Typical minor grader damage to curbs.



Figure 1-12 Right bank downstream rail repair used non-standard post size.

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Figure 1-13 Deck viewed from LB.

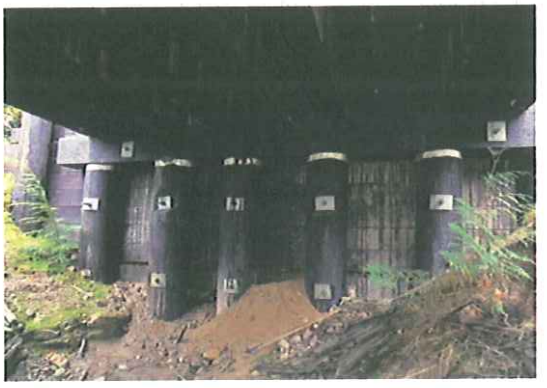


Figure 1-14 Left bank abutment.



Figure 1-15 Left bank downstream - dirt accumulating on sill.



Figure 1-16 View from left bank downstream.



Figure 1-17 Pier 1 left side.



Figure 1-18 Pier 1 right side.

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Figure 1-19 Pier 1 upstream.



Figure 1-20 Pier 1 downstream cap beam.



Figure 1-21 Pier 2 left side.



Figure 1-22 Pier 2 right side.



Figure 1-23 Pier 2 downstream cap beam.



Figure 1-24 Pier 3 left side.

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Figure 1-25 Pier 3 right side.



Figure 1-26 Pier 1 right bank broken timber

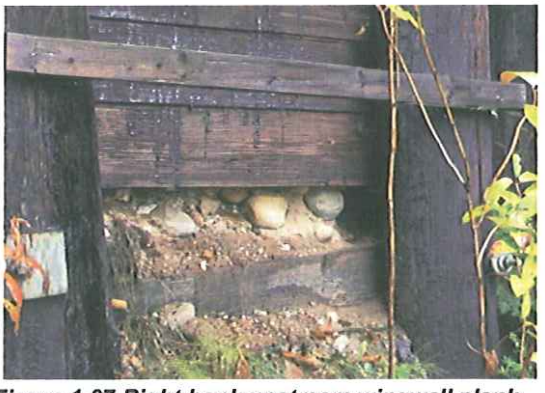


Figure 1-27 Right bank upstream wingwall plank missing.



Figure 1-28 Span 1 downstream checking.



Figure 1-29 Span 2 girder 2 (inside) upstream typical.



Figure 1-30 Span 2 girder 1 downstream 65 mm checking.

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Figure 1-31 Span 2 between girder 1 & 2 typical.



Figure 1-32 Span 2 upstream typical.



Figure 1-33 Span 3 downstream typical.



Figure 1-34 Under deck typical.