

BRIDGE INSPECTION

BRIDGE NO./NAME **K384: 201 FSR (58.50 KM)**

Inspection Date: September 29th, 2012

Inspected By: M. Hanson

Year Built: 1976

Number of Spans: 1



Span Lengths: 15,200 mm

Superstructure Type: Four glulam slab girders, 275 mm x 1235 mm spaced at 500 mm c/c (pairs), 2900 mm clear distance between groups.

Deck: Pre-cast concrete panels.

Curb: Timber curbs and risers.

Substructure: Creosote treated timber pile, cap beam, ballast wall and wing walls.

BRIDGE INSPECTION

GENERAL BRIDGE CONDITION:

Superstructure Condition:	Fair
Substructure Condition:	Fair
Deck Condition:	Fair
Load Posting:	No sign noted
Date for the Next Close Proximity Inspection:	2015
Projected Replacement Date:	2026

BRIDGE INSPECTION SUMMARY/ RECOMMENDATIONS:

The bridge is generally in fair condition. The downstream camp end wing wall should be monitored for movement as it appears to be continuing to rotate.

INSPECTION NOTES:

Approaches:

- The approaches are generally in good condition.
- Moderate horizontal curve at both approaches
- Older style delineators; limited visibility.
- Small erosion channel on the downstream side of approach embankment.

Deck:

- The deck is generally in fair condition.
- Concrete panels are butted together, resulting in spalling at the joints due to movement between panels.
- 2 minor spalls with exposed reinforcement noted on soffit of deck panel 4. Previous repairs failed.
- Checking along length of curb rail. Two blocks have rot on the bottom edge.
- Gravel is accumulating on the deck near both abutments and outside of the wheel paths.

Abutments:

- The camp end abutment is generally in fair condition.
- Two ballast wall planks have pushed outwards resulting in nominal material loss, still remains functional.
- Cap beam has a slight rotation as noted in the previous inspection.
- All abutment piles sounded, no rot noted.
- Tops of wing wall piles are missing flashing.
- Downstream wing wall Pile 2 has ~ 150 mm of heartwood rot and is rotating. The wing wall plank directly above the pile is also rotten. Condition is similar to previous inspections.
- The downstream wing wall top cross beam is missing and several planks are being pushed outwards, but still remain functional.
- Debris is accumulating cap beam.

BRIDGE INSPECTION

- The woods end abutment is generally in fair condition.
- Cap beam has a slight rotation as noted in the previous inspection.
- All piles sounded, no rot noted.
- Vertical crack, 1 m in length on pile 1.
- Tops of wing wall piles are missing flashing.
- Debris is accumulating on cap beam.

Girders:

Typical Condition:

Span 1 - Girder 1 upstream face, Girder 2 downstream face and Girder 3 upstream face:

- Minimal creosote leaching at laminate joints; girder faces 100% covered by creosote.
- No checking
- Minor damage to bottom of girder 1.

Span 1 - Girder 4 downstream face:

- Creosote leaching; visible creosote on 25-50% of the girder face.
- Minor checking – full length checks noted, typically 30 – 50 mm deep, similar to previous inspections.

Checks on Girders:

Span 1 - Girder 4 downstream face:

Tag Type	Check Start	Check End	Length (mm)	Max. Depth (mm)	Max. Width (mm)	Location (mm)	Condition
No tag	Camp end	Woods end	15,200	50	-	650 mm from bottom of girder	Has not propagated.
No tag	Camp end	Woods end	15,200	50	-	800 mm from bottom of girder	Has not propagated.
No tag	Camp end	Woods end	15,200	30	-	950 mm from bottom of girder	Has not propagated.

LIST OF MAINTENANCE ITEMS TO BE COMPLETED:

Items	Description	Priority
1.	Replace missing top cross beam and install flashing on pile tops.	Medium
2.	Repair camp end ballast wall planks.	Medium

MONITOR DURING FUTURE INSPECTIONS:

1. Monitor erosion of camp end embankment
2. Monitor movement of camp end downstream wing wall

BRIDGE INSPECTION

Prepared by:



Mike Hanson, EIT.
Project Engineer

Reviewed by:

David Chen, P.Eng.
Project Manager



Attached:

1. CBR Report
2. Annotated Photo Sheets

BRIDGE INSPECTION

NOTES:

Directional & Numbering Conventions Used:

Girders and piles are numbered from upstream to downstream. Left end or right end is determined facing downstream (except for delineators). Spans and piers are numbered from the left end when facing downstream.

Projected Replacement Date:

The projected date for the bridge replacement is based on the remaining service life of the bridge. We estimate the remaining service life as the greater of:

For Glulam Girder Bridges:

1. Original design life, typically 50 years.
2. If a bridge is nearing the end of its estimated service life but is still in fair condition, we recommend that the Ministry assume a remaining service life of five years.

For Steel and Concrete Bridges:

1. Original design life, typically 60 years.
2. If a bridge is nearing the end of its estimated service life but is still in fair condition, we recommend that the Ministry assume a remaining service life of ten years.

Condition Ratings:

Excellent:	New or almost new condition and properly installed
Good:	Structurally sound, in good repair with minimal wear
Fair:	Structurally functional, shows moderate wear or preliminary indications of deterioration
Poor:	Structurally unsound, items typically in need of repair or replacement

Maintenance Priority (Typical Usage):

High:	Critical items that need to be addressed to protect safety of users (curbs, structural decks, delineators, major structural repairs, etc.); schedule work immediately.
Medium:	Items that maintain the service life of the bridge (wearing planks, deck joints, etc.)
Low:	Items that will extend the service life of the structure or general maintenance.

Cost Estimate:

The cost estimate for individual maintenance items, shown in the CBR report, reflects the cost of materials and labour for completing a task; it does not include any costs associated with mobilization, demobilization, engineering or contract administration.



BC Ministry of Forests and Range

Permanent Bridge Inspection Report

Page 1 of 3
Date Printed: 2013/03/15
User Id: BCEID\WRILEY1
Database: PROD
Report Id: CBR001A

Structure #:	K384	Site #:	K384	Road Name:	201	Inspection Date:	2012/09/29
KM:	43.83	User km:	58.50	Crossing Name:	Wilkinson Cr	Next Inspection Date:	2013/10/12
Project File ID #:	7654	Br.	01	Forest District:	Okanagan Shuswap Forest District		
Deck Type:	Concrete			Running Surface:	Concrete		
Superstructure	Glulam Girder			Abutments (Left/Right):	Pile -Permanent Materials		
Total Length (metres):	15.2	# Spans:	1	Span Length(s) (metres):	15.2		
UTM Zone:	11	UTM Easting:	335374	UTM Northing:	5501010		
Inspector Name:	M.Hanson			Year Built:	1976		
Access:							

ABUTMENTS

Bearings	Not Applicable	
Bracing	Not Applicable	
Ballast Wall	Fair	Two ballast wall planks on camp end have pushed outwards resulting in nominal material loss, still remains functional.
Corrosion Protection	Not Applicable	
Caps or Sills	Fair	Both cap beams have a slight rotation as noted in the previous inspection. Debris accumulating on both cap beams.
Fill	Good	
Hardware	Good	
Piles or Posts	Fair	All abutment piles sounded, no rot. Vertical crack, 1 m in length on woods end abutment pile 1.
Riprap	Not Applicable	
Wing Wall	Poor	Tops of wing wall piles are missing flashing. Camp end downstream wing wall Pile 2 has ~ 150 mm of heartwood rot and is rotating. The wing wall plank directly above the pile is also rotten. Condition is similar to previous inspections. The camp end downstream wing wall top cross beam is missing and several planks are being pushed outwards, but still remain functional.

APPROACHES

Alignment	Fair	Moderate horizontal curve at both approaches.
Bridge Ahead Signs Missing	0	
Brushing Required	No	
Delineator Missing Left	0	Older style delineators; limited visibility.
Delineator Missing Right	0	Older style delineators; limited visibility.
Fender Condition	Good	
Road Surface	Good	Small erosion channel on the downstream side of approach embankment.

DECK



BC Ministry of Forests and Range

Permanent Bridge Inspection Report

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Date Printed: 2013/03/15
User Id: BCEID\WRILEY1
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Structure #:	K384	Site #:	K384	Road Name:	201	Inspection Date:	2012/09/29
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Span 1

Concrete Deck	Fair	2 minor spalls with exposed reinforcement noted on soffit of deck panel 4. Previous repairs failed.
Curb Rail/Blocks/Posts	Fair	Checking along length of curb rail. Two blocks have rot on the bottom edge.
Deck Joints	Fair	Concrete panels are butted together, resulting in spalling at the joints due to movement between panels.
Grout Pockets	Not Applicable	
Hardware	Good	
Hand Rails/Walkouts	Not Applicable	
Overall Deck Condition	Fair	
Running Surface	Good	Gravel is accumulating on the deck near both abutments and outside of the wheel paths.

SUPERSTRUCTURE

Span 1

Bracing	Not Applicable	
Diaphragms	Good	
Girders	Fair	Refer to AE Inspection Summary 2012.
Hardware	Good	
Under Trussing	Not Applicable	

CHANNEL

Estimated Present Water Level Depth:		Estimated Present Water Level Width:	
Estimated High Water Level Clearance:			

HAZARDS

High Water:	No	Scour:	No	Ice:	No	Debris:	No	Aggradation:	No
Comment:									

REPAIRS

#	Status	Priority	Estimate	Description
1	Recommended	Medium	\$1,000.00	Replace missing top cross beam and install flashing on pile tops.
2	Recommended	Medium	\$1,000.00	Repair camp end ballast wall planks.

MONITORS

#	Description
1	Monitor erosion of camp end embankment.
2	Monitor movement of camp end downstream wing wall.

GENERAL

Professional Inspection Required?	No	Regional Review Date:		P. Eng Reviewer Name:	
Replacement Date for full log haul traffic (year):	2026	Replacement Date for light vehicle traffic (year):	2026		
Current Load Rating GVW (tonnes):	68	Design Load GVW (tonnes):	0	Design Vehicle Config.:	
Inspector's Estimated Full Log Haul Replacement (year):	2026				



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Page 3 of 3
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	Inspector's Comment:	The bridge is generally in fair condition. The downstream camp end wing wall should be monitored for movement as it appears to be continuing to rotate.					
	PEng Reviewer's Comment:						
	District Staff Comment:						

Structure #	Crossing Name	Forest Service Road	User km	CBR km		
K384	Wilkinson Cr	201	58.50	43.8		



Figure 1-1: Downstream elevation.



Figure 1-2: Looking towards woods end.



Figure 1-3: Looking towards camp end.



Figure 1-4: Looking upstream.



Figure 1-5: Looking downstream.

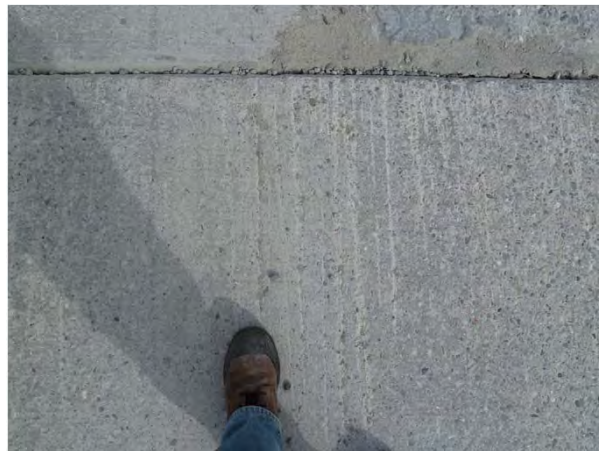


Figure 1-6: Typical deck condition.

Structure #	Crossing Name	Forest Service Road	User km	CBR km		
K384	Wilkinson Cr	201	58.50	43.8		



Figure 1-7: Typical guardrail condition.



Figure 1-8: Erosion channel, downstream side of camp end approach embankment.



Figure 1-9: Typical underside of deck condition, note spalling at joint.



Figure 1-10: Typical upstream face of girder 1.



Figure 1-11: Damaged girder 1.



Figure 1-12: Typical downstream face of girder 4.

Structure #	Crossing Name	Forest Service Road	User km	CBR km		
K384	Wilkinson Cr	201	58.50	43.8		



Figure 1-13: Camp end abutment.



Figure 1-14: Downstream camp end wing wall, note missing top cap beam.



Figure 1-15: Downstream camp end wingwall rotating outwards.



Figure 1-16: Upstream camp end wing wall and abutment.



Figure 1-17: Camp end abutment downstream, note damaged ballast wall plank.



Figure 1-18: Woods end abutment.

Structure #	Crossing Name	Forest Service Road	User km	CBR km		
K384	Wilkinson Cr	201	58.50	43.8		



Figure 1-19: Split in pile 1 woods end.