

MUNICIPAL STRUCTURE INSPECTION FORM

BRIDGE

Site No.: B2

INVENTORY DATA:			
Structure Name	Walley Bridge		
Main Hwy/Road #	Peddlers Drive	Under Structure:	Navigable Water <input type="checkbox"/> Non- Navigable Water <input checked="" type="checkbox"/>
			Rail <input type="checkbox"/> Road <input type="checkbox"/> Pedestrian <input type="checkbox"/> Other <input type="checkbox"/>
Road Name:	Peddlers Drive	On Structure:	Rail <input type="checkbox"/> Road <input checked="" type="checkbox"/> Pedestrian <input type="checkbox"/> Other <input type="checkbox"/>
Structure Location	1.65 km West of Graham Road		
Latitude	46° 14' 33" N	Longitude	78° 55' 07" W
Owner(s)	Township of Calvin	Heritage Designation	Not Cons. <input checked="" type="checkbox"/> Cons./Not App. <input type="checkbox"/> List/Not Desig. <input type="checkbox"/>
			Desig./not List <input type="checkbox"/> Desig. & List <input type="checkbox"/>
MTO Region	-	Road Class:	Freeway <input type="checkbox"/> Arterial <input checked="" type="checkbox"/> Collector <input type="checkbox"/> Local <input type="checkbox"/>
MTO District	-	Posted Speed	- No. of Lanes 1
Old County	-	AADT	- % Trucks -
Geographic Twp.	-	Special Routes	Transit <input type="checkbox"/> Truck <input type="checkbox"/> School <input type="checkbox"/> Bicycle <input type="checkbox"/>
Structure Type	Concrete Slab on Steel I-Girders	Detour Length Around Structure	- (km)
		Total Deck Length	51.8 (m)
Overall Str. Width	5.6 (m)	Fill on Structure	- (m)
Total Deck Area	290.1 (m ²)	Skew Angle	- (Degrees)
Roadway Width	4.5 (m)	Direction of Structure	East/West
Span Lengths	13.1, 26, 12.7 (m)	No. of Spans	3

HISTORICAL DATA			
Year Built	-	Last OSIM Inspection	August 7, 2024
Year of Last Major Rehab.	-	Last Enhanced OSIM Inspection	-
Current Load Limit	- (tonnes)	Last Bridge Master Inspection	-
Load Limit By-Law #	-	Last Evaluation	-
By-Law Expiry Date	-	Last Underwater Inspection	-
Min. Vertical Clearance	- (m)	Last Condition Survey	-
Rehabilitation History: (Date / Description)			

MUNICIPAL STRUCTURE INSPECTION FORM

BRIDGE

Site No.: B2

FIELD INSPECTION INFORMATION			
Date of Inspection:	August 9, 2024	Type of Inspection:	<input checked="" type="checkbox"/> OSIM <input type="checkbox"/> Enhanced OSIM
Inspector:	Tashi Dwivedi, P.Eng., HP Engineering		
Others in Party:	Derick Battrick, P.Eng., HP Engineering		
Access Equipment Used:	Measuring Tape, Digital Camera and Hammer		
Weather:	Overcast		
Temperature:	24 °C		

ADDITIONAL INVESTIGATION REQUIRED	Priority			Estimated Cost
	None	Normal	Urgent	
Rehabilitation/Replacement Study:	X			\$ -
Material Condition Survey	X			\$ -
Detailed Deck Condition Survey:		X		\$ 10,000.00
Non-destructive Delamination Survey of Asphalt- Covered Deck:	X			\$ -
Concrete Substructure Condition Survey:	X			\$ -
Detailed Coating Condition Survey:	X			\$ -
Detailed Timber Investigation:	X			\$ -
Underwater Investigation:	X			\$ -
Fatigue Investigation:	X			\$ -
Seismic Investigation:	X			\$ -
Structure Evaluation:	X			\$ -
Monitoring	X			\$ -
Monitoring of Deformations, Settlement and Movements:	X			\$ -
Monitoring Crack Widths:	X			\$ -
Load Posting – Estimated Load Limit	Total Cost			\$ 10,000.00
Investigation Notes: A deck condition survey is recommended due to the assumed age of the structure and the available rehabilitation history.				

OVERALL STRUCTURAL NOTES:			
Recommended Work on Structure:	<input type="checkbox"/> None	<input checked="" type="checkbox"/> Minor Rehab.	<input type="checkbox"/> Major Rehab. <input type="checkbox"/> Replace
Timing of Recommended Work:	<input checked="" type="checkbox"/> 1 to 5 years	<input type="checkbox"/> 6 to 10 years	
Overall Comments: Approach barrier and deck barrier have been replaced since previous inspection (design by others). Missing barrier posts at transition rail to deck barrier at all 4 corners of deck. Seals at piers exhibit bulging, splits and severe damage at curb edges. Abutment and pier bearings appear to have medium to severe bulging throughout. Spall with exposed reinforcement noted at northeast end of curb. Spall with exposed corroded reinforcement and horizontal and vertical medium to wide cracks noted at south of west pier cap. Medium to wide horizontal crack at east pier and at south end.			
Date of Next Inspection:	June 2026		

1 Suspected Performance Deficiencies

- | | | |
|----------------------------------------------------|------------------------------------------|------------------------------|
| 00 None | 06 Bearing not uniformly loaded/unstable | 12 Slippery surfaces |
| 01 Load carrying capacity | 07 Jammed expansion joint | 13 Flooding/channel blockage |
| 02 Excessive deformations (deflections & rotation) | 08 Pedestrian/vehicular hazard | 14 Undermining of foundation |
| 03 Continuing settlement | 09 Rough riding surface | 15 Unstable embankments |
| 04 Continuing movements | 10 Surface ponding | 16 Other |
| 05 Seized bearings | 11 Deck drainage | |

Maintenance Needs

- | | | |
|--------------------------------------|-------------------------------|------------------------------------------|
| 01 Lift and swing bridge maintenance | 07 Repair of structural steel | 13 Erosion control at bridges |
| 02 Bridge cleaning | 08 Repair of bridge concrete | 14 Concrete sealing |
| 03 Bridge handrail maintenance | 09 Repair of bridge timber | 15 Rout and seal |
| 04 Painting steel bridge structures | 10 Bailey bridges maintenance | 16 Bridge deck drainage |
| 05 Bridge deck joint repair | 11 Animal/pest control | 17 Scaling (loose Concrete or ACR Steel) |
| 06 Bridge bearing maintenance | 12 Bridge surface repair | 18 Other |

MUNICIPAL STRUCTURE INSPECTION FORM

BRIDGE

Site No.: B2

ELEMENT DATA					
Element Group:	Approaches		Length:	14m (NW), 29m (SW), 31m (NE), 29m (SE)	
Element Name:	Barrier		Width:	-	
Location:	East & West of Structure		Height:	-	
Material:	Steel		Count:	4	
Element Type:	Steel Flex Beam on Wood Posts		Total Quantity:	130 m	
Environment:	Severe		Limited Inspection:	<input type="checkbox"/>	
Protection System	None				
Condition Data:	Units	Excellent	Good	Fair	Poor
	m	-	99	-	4
Comments: Generally in good condition. Transition rail from approach barrier to deck barrier is missing a post; this condition is present at all 4 corners of deck.					
Performance Deficiencies: 01			Maintenance Needs: 18 – Install missing posts		
Recommended Work: <input type="checkbox"/> Rehab. <input type="checkbox"/> Replace <input type="checkbox"/> 1 – 5 Years <input type="checkbox"/> 6 – 10 Years			Maintenance Needs: <input checked="" type="checkbox"/> Urgent <input type="checkbox"/> 1 Year <input type="checkbox"/> 2 Years		

Element Group:	Approaches		Length:	6 m	
Element Name:	Wearing Surface		Width:	5.25 m	
Location:	East & West Approaches		Height:	-	
Material:	Asphalt		Count:	2	
Element Type:	Asphalt Wearing Surface		Total Quantity:	63 m ²	
Environment:	Severe		Limited Inspection:	<input type="checkbox"/>	
Protection System	None				
Condition Data:	Units	Excellent	Good	Fair	Poor
	m ²	-	56	7	-
Comments: Moderate ravelling observed throughout the approach. Asphalt polishing and tire rutting on west approach.					
Performance Deficiencies: 00			Maintenance Needs: 00		
Recommended Work: <input type="checkbox"/> Rehab. <input type="checkbox"/> Replace <input type="checkbox"/> 1 – 5 Years <input type="checkbox"/> 6 – 10 Years			Maintenance Needs: <input type="checkbox"/> Urgent <input type="checkbox"/> 1 Year <input type="checkbox"/> 2 Years		

MUNICIPAL STRUCTURE INSPECTION FORM

BRIDGE

Site No.: B2

ELEMENT DATA					
Element Group:	Accessories		Length:	-	
Element Name:	Signs		Width:	-	
Location:	NE, NW, SE & SW of Structure		Height:	-	
Material:	Steel		Count:	6	
Element Type:	Hazard and One Lane Signs		Total Quantity:	6	
Environment:	Severe		Limited Inspection:	<input type="checkbox"/>	
Protection System	Hot Dip Galvanizing				
Condition Data:	Units	Excellent	Good	Fair	Poor
	Each	-	6	-	-
Comments: Signs are generally in good condition. Northeast hazard sign has a bent corner.					
Performance Deficiencies: 00			Maintenance Needs: 00		
Recommended Work: <input type="checkbox"/> Rehab. <input type="checkbox"/> Replace <input type="checkbox"/> 1 – 5 Years <input type="checkbox"/> 6 – 10 Years			Maintenance Needs: <input type="checkbox"/> Urgent <input type="checkbox"/> 1 Year <input type="checkbox"/> 2 Years		

Element Group:	Barriers		Length:	52 m	
Element Name:	Railing Systems		Width:	-	
Location:	North & South Sides of Structure		Height:	-	
Material:	Steel		Count:	2	
Element Type:	Steel Thrie Beam		Total Quantity:	104 m	
Environment:	Severe		Limited Inspection:	<input type="checkbox"/>	
Protection System	None				
Condition Data:	Units	Excellent	Good	Fair	Poor
	m	-	104	-	-
Comments: Generally in good condition. Adequacy of deck barrier configuration (thrie beam railing face mounted on exterior of existing raised concrete curb) has not been reviewed by HP Engineering for adequacy.					
Performance Deficiencies: 00			Maintenance Needs: 00		
Recommended Work: <input type="checkbox"/> Rehab. <input type="checkbox"/> Replace <input type="checkbox"/> 1 – 5 Years <input type="checkbox"/> 6 – 10 Years			Maintenance Needs: <input type="checkbox"/> Urgent <input type="checkbox"/> 1 Year <input type="checkbox"/> 2 Years		

MUNICIPAL STRUCTURE INSPECTION FORM

BRIDGE

Site No.: B2

ELEMENT DATA					
Element Group:	Barriers		Length:	-	
Element Name:	Posts		Width:	-	
Location:	North & South Sides of Structure		Height:	-	
Material:	Steel		Count:	56	
Element Type:	HSS Steel Posts		Total Quantity:	56	
Environment:	Severe		Limited Inspection:	<input type="checkbox"/>	
Protection System	None				
Condition Data:	Units	Excellent	Good	Fair	Poor
	Each	-	56	-	-
Comments: Barrier posts are generally in good condition.					
Performance Deficiencies: 00			Maintenance Needs: 00		
Recommended Work: <input type="checkbox"/> Rehab. <input type="checkbox"/> Replace <input type="checkbox"/> 1 – 5 Years <input type="checkbox"/> 6 – 10 Years			Maintenance Needs: <input type="checkbox"/> Urgent <input type="checkbox"/> 1 Year <input type="checkbox"/> 2 Years		

Element Group:	Joints		Length:	5.6 m	
Element Name:	Armouring / Retaining Devices		Width:	-	
Location:	East & West Ends of Structure		Height:	-	
Material:	Steel		Count:	2	
Element Type:	Armouring / Retaining Devices		Total Quantity:	11.2 m	
Environment:	Severe		Limited Inspection:	<input checked="" type="checkbox"/>	
Protection System	None				
Condition Data:	Units	Excellent	Good	Fair	Poor
	m	-	6	5.2	-
Comments: Joints have been paved over at the ends of deck.					
Performance Deficiencies: 00			Maintenance Needs: 00		
Recommended Work: <input type="checkbox"/> Rehab. <input type="checkbox"/> Replace <input type="checkbox"/> 1 – 5 Years <input type="checkbox"/> 6 – 10 Years			Maintenance Needs: <input type="checkbox"/> Urgent <input type="checkbox"/> 1 Year <input type="checkbox"/> 2 Years		

MUNICIPAL STRUCTURE INSPECTION FORM

BRIDGE

Site No.: B2

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ELEMENT DATA					
Element Group:	Joints	Length:	5.6 m		
Element Name:	Seals / Sealants	Width:	-		
Location:	East & West Ends of Structure & At Piers	Height:	-		
Material:	Neoprene / Rubber	Count:	2		
Element Type:	Strip Seal	Total Quantity:	11.2		
Environment:	Severe	Limited Inspection:	<input type="checkbox"/>		
Protection System	None				
Condition Data:	Units	Excellent	Good	Fair	Poor
	Each	-	-	5.6	5.6
Comments:					
Joint seals are generally in fair to poor condition with medium to severe splits and bulges throughout. Seals appear overly compressed.					
Performance Deficiencies: 00			Maintenance Needs: 00		
Recommended Work:			Maintenance Needs:		
<input type="checkbox"/> Rehab. <input checked="" type="checkbox"/> Replace <input checked="" type="checkbox"/> 1 – 5 Years <input type="checkbox"/> 6 – 10 Years			<input type="checkbox"/> Urgent <input type="checkbox"/> 1 Year <input type="checkbox"/> 2 Years		

Element Group:	Sidewalks / Curbs	Length:	52.1 m		
Element Name:	Curbs	Width:	0.56 m		
Location:	North & South Sides of Structure	Height:	0.25 m		
Material:	Concrete	Count:	2		
Element Type:	Concrete Curb	Total Quantity:	84.4 m ²		
Environment:	Severe	Limited Inspection:	<input type="checkbox"/>		
Protection System	None				
Condition Data:	Units	Excellent	Good	Fair	Poor
	m ²	-	71.5	11.9	1.0
Comments:					
Top surface of curb is generally in good condition with narrow cracks and small spalls at ends. Moderate scaling and abrasions from snow removal equipment noted at lower half of the curb face throughout. Spall with exposed reinforcement noted at northeast end of curb.					
Performance Deficiencies: 00			Maintenance Needs: 08 – Repair of Bridge Concrete		
Recommended Work:			Maintenance Needs:		
<input type="checkbox"/> Rehab. <input type="checkbox"/> Replace <input type="checkbox"/> 1 – 5 Years <input type="checkbox"/> 6 – 10 Years			<input type="checkbox"/> Urgent <input checked="" type="checkbox"/> 1 Year <input type="checkbox"/> 2 Years		

MUNICIPAL STRUCTURE INSPECTION FORM

BRIDGE

Site No.: B2

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ELEMENT DATA					
Element Group:	Decks	Length:	-		
Element Name:	Drainage System	Width:	-		
Location:	North & South of Deck	Height:	-		
Material:	Steel	Count:	4		
Element Type:	Round Pipe Deck Drains	Total Quantity:	4		
Environment:	Severe	Limited Inspection:	<input type="checkbox"/>		
Protection System	None				
Condition Data:	Units	Excellent	Good	Fair	Poor
	Each	-	4	-	-
Comments: Generally in good condition with minor corrosion observed.					
Performance Deficiencies: 00			Maintenance Needs: 00		
Recommended Work: <input type="checkbox"/> Rehab. <input type="checkbox"/> Replace <input type="checkbox"/> 1 – 5 Years <input type="checkbox"/> 6 – 10 Years			Maintenance Needs: <input type="checkbox"/> Urgent <input type="checkbox"/> 1 Year <input type="checkbox"/> 2 Years		

Element Group:	Decks	Length:	52 m		
Element Name:	Deck Top	Width:	4.5 m		
Location:	Top of Deck	Height:	-		
Material:	Concrete	Count:	1		
Element Type:	Thin Slab	Total Quantity:	234 m ²		
Environment:	Severe	Limited Inspection:	<input type="checkbox"/>		
Protection System	None				
Condition Data:	Units	Excellent	Good	Fair	Poor
	m ²	-	227.5	5.5	1
Comments: Exposed deck top is generally in good condition with light scaling and minor abrasion throughout and is partially covered in asphalt at the ends of deck. Few small spalls at east end along north curb. Few patched spalls near west end along south curb and few small, exposed spalls noted.					
Performance Deficiencies: 00			Maintenance Needs: 08 – Repair of Bridge Concrete		
Recommended Work: <input type="checkbox"/> Rehab. <input type="checkbox"/> Replace			Maintenance Needs: <input type="checkbox"/> Urgent <input type="checkbox"/> 1 Year <input checked="" type="checkbox"/> 2		

MUNICIPAL STRUCTURE INSPECTION FORM

BRIDGE

Site No.: B2

<input type="checkbox"/> 1 – 5 Years <input type="checkbox"/> 6 – 10 Years	Years
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ELEMENT DATA					
Element Group:	Decks	Length:	2 m		
Element Name:	Soffit – Thin Slab (End)	Width:	5.6 m		
Location:	Underside of Deck	Height:	-		
Material:	Concrete	Count:	6		
Element Type:	Thin Slab	Total Quantity:	67.2 m ²		
Environment:	Moderate	Limited Inspection:	<input type="checkbox"/>		
Protection System	None				
Condition Data:	Units	Excellent	Good	Fair	Poor
	m ²	-	67.2	-	-
Comments: Generally in good condition.					
Performance Deficiencies: 00			Maintenance Needs: 00		
Recommended Work: <input type="checkbox"/> Rehab. <input type="checkbox"/> Replace <input type="checkbox"/> 1 – 5 Years <input type="checkbox"/> 6 – 10 Years			Maintenance Needs: <input type="checkbox"/> Urgent <input type="checkbox"/> 1 Year <input type="checkbox"/> 2 Years		

Element Group:	Decks	Length:	39.8 m		
Element Name:	Soffit – Thin Slab (Exterior)	Width:	1 m		
Location:	Underside of Deck	Height:	-		
Material:	Concrete	Count:	2		
Element Type:	Thin Slab	Total Quantity:	79.6 m ²		
Environment:	Moderate	Limited Inspection:	<input type="checkbox"/>		
Protection System	None				
Condition Data:	Units	Excellent	Good	Fair	Poor
	m ²	-	73.6	4	2
Comments: Generally in good condition with light spalls along drip groove, narrow cracks and damp stains noted.					
Performance Deficiencies: 00			Maintenance Needs: 08 – Repair of Bridge Concrete		

MUNICIPAL STRUCTURE INSPECTION FORM

BRIDGE

Site No.: B2

Comments: Visible portions are generally in good condition with light localized corrosion noted. Rating based on visible condition only.	
Performance Deficiencies: 00	Maintenance Needs: 00
Recommended Work: <input type="checkbox"/> Rehab. <input type="checkbox"/> Replace <input type="checkbox"/> 1 – 5 Years <input type="checkbox"/> 6 – 10 Years	Maintenance Needs: <input type="checkbox"/> Urgent <input type="checkbox"/> 1 Year <input type="checkbox"/> 2 Years

ELEMENT DATA					
Element Group:	Beams / MLEs		Length:	22 m	
Element Name:	Girders (Middle Span – Middle)		Width:	0.3 m	
Location:	Underside of Deck		Height:	0.75 m	
Material:	Steel		Count:	4	
Element Type:	Steel I-Girders		Total Quantity:	211.2 m ²	
Environment:	Benign		Limited Inspection:	<input checked="" type="checkbox"/>	
Protection System	None				
Condition Data:	Units	Excellent	Good	Fair	Poor
	m ²	-	211.2	-	-
Comments: Generally in good condition with light localized corrosion observed.					
Performance Deficiencies: 00			Maintenance Needs: 00		
Recommended Work: <input type="checkbox"/> Rehab. <input type="checkbox"/> Replace <input type="checkbox"/> 1 – 5 Years <input type="checkbox"/> 6 – 10 Years			Maintenance Needs: <input type="checkbox"/> Urgent <input type="checkbox"/> 1 Year <input type="checkbox"/> 2 Years		

Element Group:	Beams / MLEs		Length:	-	
Element Name:	Diaphragms (End Spans – End)		Width:	-	
Location:	East & West Underside of Structure		Height:	-	
Material:	Steel		Count:	12	
Element Type:	Steel I-Beam Diaphragms		Total Quantity:	12	
Environment:	Moderate		Limited Inspection:	<input type="checkbox"/>	
Protection System	None				
Condition Data:	Units	Excellent	Good	Fair	Poor
	Each	-	12	-	-

MUNICIPAL STRUCTURE INSPECTION FORM

BRIDGE

Site No.: B2

Comments: Generally in good condition.	
Performance Deficiencies: 00	Maintenance Needs: 00
Recommended Work: <input type="checkbox"/> Rehab. <input type="checkbox"/> Replace <input type="checkbox"/> 1 – 5 Years <input type="checkbox"/> 6 – 10 Years	Maintenance Needs: <input type="checkbox"/> Urgent <input type="checkbox"/> 1 Year <input type="checkbox"/> 2 Years

ELEMENT DATA					
Element Group:	Beams / MLEs	Length:	-		
Element Name:	Diaphragms (End Spans – Middle)	Width:	-		
Location:	East & West Underside of Structure	Height:	-		
Material:	Steel	Count:	6		
Element Type:	Steel I-Beam Diaphragms	Total Quantity:	6		
Environment:	Benign	Limited Inspection:	<input checked="" type="checkbox"/>		
Protection System	None				
Condition Data:	Units	Excellent	Good	Fair	Poor
	Each	-	6	-	-
Comments: Generally in good condition.					
Performance Deficiencies: 00			Maintenance Needs: 00		
Recommended Work: <input type="checkbox"/> Rehab. <input type="checkbox"/> Replace <input type="checkbox"/> 1 – 5 Years <input type="checkbox"/> 6 – 10 Years			Maintenance Needs: <input type="checkbox"/> Urgent <input type="checkbox"/> 1 Year <input type="checkbox"/> 2 Years		

Element Group:	Beams / MLEs	Length:	-		
Element Name:	Diaphragms (Middle Span – End)	Width:	-		
Location:	Underside of Structure	Height:	-		
Material:	Steel	Count:	6		
Element Type:	Steel I-Beam Diaphragms	Total Quantity:	6		
Environment:	Moderate	Limited Inspection:	<input checked="" type="checkbox"/>		
Protection System	None				

MUNICIPAL STRUCTURE INSPECTION FORM

BRIDGE

Site No.: B2

Condition Data:	Units	Excellent	Good	Fair	Poor
	Each	-	6	-	-
Comments: Generally in good condition.					
Performance Deficiencies: 00			Maintenance Needs: 00		
Recommended Work: <input type="checkbox"/> Rehab. <input type="checkbox"/> Replace <input type="checkbox"/> 1 – 5 Years <input type="checkbox"/> 6 – 10 Years			Maintenance Needs: <input type="checkbox"/> Urgent <input type="checkbox"/> 1 Year <input type="checkbox"/> 2 Years		

ELEMENT DATA					
Element Group:	Beams / MLEs		Length:	-	
Element Name:	Diaphragms (Middle Span – Middle)		Width:	-	
Location:	Underside of Structure		Height:	-	
Material:	Steel		Count:	9	
Element Type:	Steel I-Beam Diaphragms		Total Quantity:	9	
Environment:	Moderate		Limited Inspection:	<input checked="" type="checkbox"/>	
Protection System	None				
Condition Data:	Units	Excellent	Good	Fair	Poor
	Each	-	9	-	-
Comments: Generally in good condition.					
Performance Deficiencies: 00			Maintenance Needs: 00		
Recommended Work: <input type="checkbox"/> Rehab. <input type="checkbox"/> Replace <input type="checkbox"/> 1 – 5 Years <input type="checkbox"/> 6 – 10 Years			Maintenance Needs: <input type="checkbox"/> Urgent <input type="checkbox"/> 1 Year <input type="checkbox"/> 2 Years		

Element Group:	Abutments	Length:	2.1 m
Element Name:	Wingwalls	Width:	-
Location:	NE, NW, SE & SW of Structure	Height:	0.85 m
Material:	Concrete	Count:	4
Element Type:	Reinforced Concrete Wingwall	Total Quantity:	7.1 m ²
Environment:	Benign	Limited Inspection:	<input checked="" type="checkbox"/>

MUNICIPAL STRUCTURE INSPECTION FORM

BRIDGE

Site No.: B2

Protection System	None				
Condition Data:	Units	Excellent	Good	Fair	Poor
	m ²	-	7.1	-	-
Comments: Limited inspection, wingwalls at west side are mostly buried. Generally in good condition					
Performance Deficiencies: 00			Maintenance Needs: 00		
Recommended Work: <input type="checkbox"/> Rehab. <input type="checkbox"/> Replace <input type="checkbox"/> 1 – 5 Years <input type="checkbox"/> 6 – 10 Years			Maintenance Needs: <input type="checkbox"/> Urgent <input type="checkbox"/> 1 Year <input type="checkbox"/> 2 Years		

ELEMENT DATA					
Element Group:	Abutments		Length:	-	
Element Name:	Ballast Walls		Width:	5.62 m	
Location:	East & West Underside of Structure		Height:	0.75 m	
Material:	Concrete		Count:	2	
Element Type:	Reinforced Concrete Wall		Total Quantity:	8.4 m ²	
Environment:	Benign		Limited Inspection:	<input type="checkbox"/>	
Protection System	None				
Condition Data:	Units	Excellent	Good	Fair	Poor
	m ²	-	8.3	0.1	-
Comments: Generally in good condition with honeycombing noted at West ballast wall. Signs of failed joint seal on east ballast wall.					
Performance Deficiencies: 00			Maintenance Needs: 00		
Recommended Work: <input type="checkbox"/> Rehab. <input type="checkbox"/> Replace <input type="checkbox"/> 1 – 5 Years <input type="checkbox"/> 6 – 10 Years			Maintenance Needs: <input type="checkbox"/> Urgent <input type="checkbox"/> 1 Year <input type="checkbox"/> 2 Years		

Element Group:	Abutments		Length:	-	
Element Name:	Bearings		Width:	-	
Location:	On Abutment Walls		Height:	-	
Material:	Neoprene / Rubber / Steel		Count:	8	
Element Type:	Elastomeric Bearing / Steel Plate		Total Quantity:	8	

MUNICIPAL STRUCTURE INSPECTION FORM

BRIDGE

Site No.: B2

Environment:	Benign		Limited Inspection:		<input type="checkbox"/>
Protection System	None				
Condition Data:	Units	Excellent	Good	Fair	Poor
	Each	-	-	6	2
Comments: Abutment bearings are moderately to severely compressed and bulging. Light to localized moderate corrosion / corrosion scale noted at bearings.					
Performance Deficiencies: 00			Maintenance Needs: 00		
Recommended Work:			Maintenance Needs:		
<input type="checkbox"/> Rehab. <input checked="" type="checkbox"/> Replace <input checked="" type="checkbox"/> 1 – 5 Years <input type="checkbox"/> 6 – 10 Years			<input type="checkbox"/> Urgent <input type="checkbox"/> 1 Year <input type="checkbox"/> 2 Years		

ELEMENT DATA					
Element Group:	Abutments		Length:	-	
Element Name:	Abutment Walls		Width:	5.62 m	
Location:	East & West Underside of Structure		Height:	0.5 m	
Material:	Concrete		Count:	2	
Element Type:	Reinforced Concrete Abutment		Total Quantity:	5.6 m ²	
Environment:	Benign		Limited Inspection:		<input type="checkbox"/>
Protection System	None				
Condition Data:	Units	Excellent	Good	Fair	Poor
	m ²	-	5.6	-	-
Comments: Generally in good condition. Water stains noted at east and west abutment walls. Light map cracks noted at east abutment wall.					
Performance Deficiencies: 00			Maintenance Needs: 00		
Recommended Work:			Maintenance Needs:		
<input type="checkbox"/> Rehab. <input type="checkbox"/> Replace <input type="checkbox"/> 1 – 5 Years <input type="checkbox"/> 6 – 10 Years			<input type="checkbox"/> Urgent <input type="checkbox"/> 1 Year <input type="checkbox"/> 2 Years		

Element Group:	Piers	Length:	-
Element Name:	Bearings	Width:	-
Location:	On Piers Caps	Height:	-
Material:	Neoprene / Rubber / Steel	Count:	16

MUNICIPAL STRUCTURE INSPECTION FORM

BRIDGE

Site No.: B2

Element Type:	Elastomeric Bearing / Steel Plate			Total Quantity:	16	
Environment:	Moderate			Limited Inspection:	<input checked="" type="checkbox"/>	
Protection System	None					
Condition Data:	Units	Excellent	Good	Fair	Poor	
	Each	-	-	13	3	
Comments: Limited inspection due to height. Neoprene component of pier bearings appear to be moderately to severely compressed and bulging. Some corrosion scaling noted on base plates.						
Performance Deficiencies: 00				Maintenance Needs: 00		
Recommended Work:				Maintenance Needs:		
<input type="checkbox"/> Rehab. <input checked="" type="checkbox"/> Replace <input checked="" type="checkbox"/> 1 – 5 Years <input type="checkbox"/> 6 – 10 Years				<input type="checkbox"/> Urgent <input type="checkbox"/> 1 Year <input type="checkbox"/> 2 Years		

ELEMENT DATA						
Element Group:	Piers			Length:	8.12 m	
Element Name:	Caps			Width:	1 m	
Location:	On Piers			Height:	1.3 m	
Material:	Concrete			Count:	2	
Element Type:	Rectangular Pier Caps			Total Quantity:	79.9 m ²	
Environment:	Moderate			Limited Inspection:	<input type="checkbox"/>	
Protection System	None					
Condition Data:	Units	Excellent	Good	Fair	Poor	
	m ²	-	78.4	1	0.5	
Comments: Generally in good condition with narrow cracks, some light rust and water stains. Spall with exposed corroded reinforcement and horizontal and vertical medium to wide cracks noted at south of west pier cap. Medium to wide horizontal crack at east pier and at south end.						
Performance Deficiencies: 00				Maintenance Needs: 08 – Repair of Bridge Concrete		
Recommended Work:				Maintenance Needs:		
<input type="checkbox"/> Rehab. <input type="checkbox"/> Replace <input type="checkbox"/> 1 – 5 Years <input type="checkbox"/> 6 – 10 Years				<input type="checkbox"/> Urgent <input type="checkbox"/> 1 Year <input checked="" type="checkbox"/> 2 Years		

Element Group:	Piers			Length:	-	
Element Name:	Shafts/Columns/Pile Bents			Width:	-	
Location:	Underside of Structure			Height:	-	

MUNICIPAL STRUCTURE INSPECTION FORM

BRIDGE

Site No.: B2

Material:	Steel		Count:	2	
Element Type:	Pier Column		Total Quantity:	2	
Environment:	Benign		Limited Inspection:	<input checked="" type="checkbox"/>	
Protection System	None				
Condition Data:	Units	Excellent	Good	Fair	Poor
	Each	-	2	-	-
Comments: Steel piles covered in timber crib (piles are inaccessible). Timber sheathing and steel nosing are generally in good condition. Exact number of piles could not be verified due to presence of sheathing. Timber on west pier appears to be coming off. Some separation and weathering of timber crib noted throughout.					
Performance Deficiencies: 00			Maintenance Needs: 00		
Recommended Work: <input type="checkbox"/> Rehab. <input type="checkbox"/> Replace <input type="checkbox"/> 1 – 5 Years <input type="checkbox"/> 6 – 10 Years			Maintenance Needs: <input type="checkbox"/> Urgent <input type="checkbox"/> 1 Year <input type="checkbox"/> 2 Years		

ELEMENT DATA					
Element Group:	Foundations		Length:	-	
Element Name:	Foundation (Below Ground Level)		Width:	-	
Location:	Below Abutment Walls & Piers		Height:	-	
Material:	Concrete		Count:	-	
Element Type:	Strip Footing		Total Quantity:	-	
Environment:	Benign		Limited Inspection:	<input checked="" type="checkbox"/>	
Protection System	None				
Condition Data:	Units	Excellent	Good	Fair	Poor
	N/A	-	-	-	-
Comments: No visible evidence of foundation instability noted at the time of inspection.					
Performance Deficiencies: 00			Maintenance Needs: 00		
Recommended Work: <input type="checkbox"/> Rehab. <input type="checkbox"/> Replace <input type="checkbox"/> 1 – 5 Years <input type="checkbox"/> 6 – 10 Years			Maintenance Needs: <input type="checkbox"/> Urgent <input type="checkbox"/> 1 Year <input type="checkbox"/> 2 Years		

Element Group:	Embankments and Streams		Length:	-	
Element Name:	Embankments		Width:	-	

MUNICIPAL STRUCTURE INSPECTION FORM

BRIDGE

Site No.: B2

Location:	NE, NW N, S, SE, & SW of Structure		Height:	-	
Material:	Native Soil		Count:	6	
Element Type:	Embankment		Total Quantity:	6	
Environment:	Moderate		Limited Inspection:	<input type="checkbox"/>	
Protection System	None				
Condition Data:	Units	Excellent	Good	Fair	Poor
	Each	-	6	-	-
Comments: Embankments are well vegetated with some large random rocks and rock protection in front of abutment walls. Old bridge abutments to north of current bridge.					
Performance Deficiencies: 00			Maintenance Needs: 00		
Recommended Work: <input type="checkbox"/> Rehab. <input type="checkbox"/> Replace <input type="checkbox"/> 1 – 5 Years <input type="checkbox"/> 6 – 10 Years			Maintenance Needs: <input type="checkbox"/> Urgent <input type="checkbox"/> 1 Year <input type="checkbox"/> 2 Years		

ELEMENT DATA					
Element Group:	Embankments and Streams		Length:	-	
Element Name:	Slope Protection		Width:	-	
Location:	East and West Underside of Structure		Height:	-	
Material:	Rock		Count:	2	
Element Type:	Slope Protection		Total Quantity:	2	
Environment:	Moderate		Limited Inspection:	<input type="checkbox"/>	
Protection System	None				
Condition Data:	Units	Excellent	Good	Fair	Poor
	Each	-	2	-	-
Comments: Large rocks placed along the embankments directly in front of both the East and West abutments. Generally in fair condition.					
Performance Deficiencies: 00			Maintenance Needs: 00		
Recommended Work: <input type="checkbox"/> Rehab. <input type="checkbox"/> Replace <input type="checkbox"/> 1 – 5 Years <input type="checkbox"/> 6 – 10 Years			Maintenance Needs: <input type="checkbox"/> Urgent <input type="checkbox"/> 1 Year <input type="checkbox"/> 2 Years		

Element Group:	Embankments and Streams	Length:	-
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MUNICIPAL STRUCTURE INSPECTION FORM

BRIDGE

Site No.: B2

Element Name:	Streams and Waterways	Width:	-		
Location:	Below Structure	Height:	-		
Material:	Native	Count:	-		
Element Type:	Streams	Total Quantity:	All		
Environment:	Benign	Limited Inspection:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Protection System	None				
Condition Data:	Units	Excellent	Good	Fair	Poor
	All	-	All	-	-
Comments: Water flows from south to north with moderate volume and flow; there are no visible flow obstructions.					
Performance Deficiencies: 00			Maintenance Needs: 00		
Recommended Work: <input type="checkbox"/> Rehab. <input type="checkbox"/> Replace <input type="checkbox"/> 1 – 5 Years <input type="checkbox"/> 6 – 10 Years			Maintenance Needs: <input type="checkbox"/> Urgent <input type="checkbox"/> 1 Year <input type="checkbox"/> 2 Years		

REPAIR AND REHABILITATION REQUIRED		Priority			Estimated Cost
Element	Repair and Rehabilitation Required	6 - 10 Years	1 - 5 Years	< 1 year	
Joint	Joint Seal Replacement		X		\$ 28,000.00
Bearings	Abutment and Pier Bearing Replacement		X		\$ 98,000.00
					\$ -
					\$ -
					\$ -
					\$ -
					\$ -
					\$ -
Total Cost					\$ 126,000.00

ASSOCIATED WORK	Comments	Estimated Cost
Approaches		\$ -
Detours		\$ -
Traffic Control	Traffic control	\$ 35,000.00
Utilities		\$ -
Right of Way		\$ -
Environmental Study		\$ -

Structure Condition Summary Form

Structure Name Crothers Bridge
 Structure Number B3
 Date of Inspection August 9, 2024
 Project No.
 Consultant HP Engineering Inc.

Element Group	Element Name	Unit (Qty.)	Unit Price (MTO)	Total Element Quantity	Element Qty. in Excellent Condition (1.00)	Element Quantity in Good Condition (0.75)	Element Quantity in Fair Condition (0.4)	Element Quantity in Poor Condition (0)	Total Replacement Value (TRV)	Current Element Value (CEV)	Element Condition Index	Performance Deficiency	Maintenance Need
Abutment	Abutment Walls	Sq.m	900.00	49.90	0.00	45.90	4.00	0.00	44910	32422	72	00	00
	Ballast Walls	Sq.m	350.00	32.30	0.00	32.30	0.00	0.00	11305	8479	75	00	00
	Bearings	Each	1000.00	12.00	0.00	12.00	0.00	0.00	12000	9000	75	00	00
Approaches	Wingwalls	Sq.m	350.00	42.00	0.00	40.00	2.00	0.00	14700	10780	73	00	00
	Wearing Surface	Sq.m	6.00	103.20	0.00	97.20	3.00	3.00	619	445	72	00	00
	Posts - Timber	Each	50.00	44.00	0.00	44.00	0.00	0.00	2200	1650	75	00	00
Barriers	Railing Systems	m	200.00	85.00	0.00	85.00	0.00	0.00	17000	12750	75	00	00
	Girders	Sq.m	200.00	1,281.70	0.00	1,281.70	0.00	0.00	256340	192255	75	00	00
	Deck Top - Thin Slab	Sq.m	120.00	365.50	0.00	365.50	0.00	0.00	43860	32895	75	00	00
Decks	Soffit - Thin Slab	Sq.m	120.00	403.13	0.00	403.13	0.00	0.00	48376	36282	75	00	00
	Wearing Surface	Sq.m	25.00	365.50	0.00	365.50	0.00	0.00	9138	6853	75	00	02
Joints	Armouring / Retaining Devices	m	1.00	40.40	0.00	40.40	0.00	0.00	40	30	75	00	00
									460488	343841			

75

Bridge Condition Index (BCI)

I_t	0	Importance Factor for Traffic
I_c	0	Importance Factor for Economic Impacts
I_w	0	Importance Factor for Bridge Width
I_p	0	Importance Factor for Bridge Profile or Alignment

75

Bridge Sufficiency Index (BSI)

MUNICIPAL STRUCTURE INSPECTION FORM

BRIDGE

Site No.: B3

INVENTORY DATA:			
Structure Name	Crothers Bridge		
Main Hwy/Road #	Adams Road	Under Structure:	Navigable Water <input type="checkbox"/> Non-Navigable Water <input checked="" type="checkbox"/>
			Rail <input type="checkbox"/> Road <input type="checkbox"/> Pedestrian <input type="checkbox"/> Other <input type="checkbox"/>
Road Name:	Adams Road	On Structure:	Rail <input type="checkbox"/> Road <input checked="" type="checkbox"/> Pedestrian <input type="checkbox"/> Other <input type="checkbox"/>
Structure Location	0.84 km east of Pratt Road		
Latitude	46° 13' 17.7" N	Longitude	78° 55' 18.6" W
Owner(s)	Township of Calvin	Heritage Designation	Not Cons. <input checked="" type="checkbox"/> Cons./Not App. <input type="checkbox"/> List/Not Desig. <input type="checkbox"/>
			Desig./not List <input type="checkbox"/> Desig. & List <input type="checkbox"/>
MTO Region	-	Road Class:	Freeway <input type="checkbox"/> Arterial <input type="checkbox"/> Collector <input type="checkbox"/> Local <input type="checkbox"/>
MTO District	-	Posted Speed	- No. of Lanes 2
Old County	-	AADT	- % Trucks -
Geographic Twp.	-	Special Routes	Transit <input type="checkbox"/> Truck <input type="checkbox"/> School <input type="checkbox"/> Bicycle <input type="checkbox"/>
Structure Type	Steel Girder Bridge	Detour Length Around Structure	- (km)
		Total Deck Length	42.5 (m)
Overall Str. Width	10.1 (m)	Fill on Structure	- (m)
Total Deck Area	429.3 (m ²)	Skew Angle	- (Degrees)
Roadway Width	8.6 (m)	Direction of Structure	East/West
Span Lengths	42.5 (m)	No. of Spans	1

HISTORICAL DATA			
Year Built	1988	Last OSIM Inspection	June 04, 2022
Year of Last Major Rehab.	-	Last Enhanced OSIM Inspection	-
Current Load Limit	- (tonnes)	Last Bridge Master Inspection	-
Load Limit By-Law #	-	Last Evaluation	-
By-Law Expiry Date	-	Last Underwater Inspection	-
Min. Vertical Clearance	- (m)	Last Condition Survey	-
Rehabilitation History: (Date / Description)			

MUNICIPAL STRUCTURE INSPECTION FORM

BRIDGE

Site No.: B3

FIELD INSPECTION INFORMATION	
Date of Inspection:	August 9, 2024
Inspector:	Tashi Dwivedi, P.Eng., HP Engineering
Others in Party:	Derick Battrick, P.Eng., HP Engineering
Access Equipment Used:	Measuring Tape, Digital Camera and Hammer
Weather:	Partly Cloudy
Temperature:	24 °C
Type of Inspection:	<input checked="" type="checkbox"/> OSIM <input type="checkbox"/> Enhanced OSIM

ADDITIONAL INVESTIGATION REQUIRED	Priority			Estimated Cost
	None	Normal	Urgent	
Rehabilitation/Replacement Study:	X			\$ -
Material Condition Survey	X			\$ -
Detailed Deck Condition Survey:		X		\$ 10,000.00
Non-destructive Delamination Survey of Asphalt- Covered Deck:	X			\$ -
Concrete Substructure Condition Survey:	X			\$ -
Detailed Coating Condition Survey:	X			\$ -
Detailed Timber Investigation:	X			\$ -
Underwater Investigation:	X			\$ -
Fatigue Investigation:	X			\$ -
Seismic Investigation:	X			\$ -
Structure Evaluation:	X			\$ -
Monitoring	X			\$ -
Monitoring of Deformations, Settlement and Movements:	X			\$ -
Monitoring Crack Widths:	X			\$ -
Load Posting – Estimated Load Limit	Total Cost			\$ 10,000.00

Investigation Notes:
Deck condition survey is recommended due to the age of the structure.

OVERALL STRUCTURAL NOTES:	
Recommended Work on Structure:	<input type="checkbox"/> None <input type="checkbox"/> Minor Rehab. <input type="checkbox"/> Major Rehab. <input type="checkbox"/> Replace
Timing of Recommended Work:	<input type="checkbox"/> 1 to 5 years <input type="checkbox"/> 6 to 10 years
Overall Comments: Overall structure is generally in good condition. A One missing sign observed on the southeast corner. Narrow to medium map cracks observed at northeast and southeast wingwall.	
Date of Next Inspection:	June 2026

1 Suspected Performance Deficiencies

- | | | |
|----------------------------------------------------|------------------------------------------|------------------------------------------|
| 00 None | 06 Bearing not uniformly loaded/unstable | 12 Slippery surfaces |
| 01 Load carrying capacity | 07 Jammed expansion joint | 13 Flooding/channel blockage |
| 02 Excessive deformations (deflections & rotation) | 08 Pedestrian/vehicular hazard | 14 Undermining of foundation |
| 03 Continuing settlement | 09 Rough riding surface | 15 Unstable embankments |
| 04 Continuing movements | 10 Surface ponding | 16 Other |
| 05 Seized bearings | 11 Deck drainage | |
| Maintenance Needs | | |
| 01 Lift and swing bridge maintenance | 07 Repair of structural steel | 13 Erosion control at bridges |
| 02 Bridge cleaning | 08 Repair of bridge concrete | 14 Concrete sealing |
| 03 Bridge handrail maintenance | 09 Repair of bridge timber | 15 Rout and seal |
| 04 Painting steel bridge structures | 10 Bailey bridges maintenance | 16 Bridge deck drainage |
| 05 Bridge deck joint repair | 11 Animal/pest control | 17 Scaling (loose Concrete or ACR Steel) |
| 06 Bridge bearing maintenance | 12 Bridge surface repair | 18 Other |

MUNICIPAL STRUCTURE INSPECTION FORM

BRIDGE

Site No.: B3

ELEMENT DATA					
Element Group:	Approaches		Length:	NE 37.5m, NW 33.3m, SE 38.4, SW 33.9m	
Element Name:	Barrier		Width:	-	
Location:	NE, NW, SE & SW of Structure		Height:	-	
Material:	Steel		Count:	4	
Element Type:	Steel Flex Beam on steel Posts		Total Quantity:	144 m	
Environment:	Severe		Limited Inspection:	<input type="checkbox"/>	
Protection System	None				
Condition Data:	Units	Excellent	Good	Fair	Poor
	m	-	144	-	-
Comments: Generally in good condition. Vegetation is overgrowing the end treatments of the approach guide rails at all 4 ends.					
Performance Deficiencies: 00			Maintenance Needs: 02		
Recommended Work: <input type="checkbox"/> Rehab. <input type="checkbox"/> Replace <input type="checkbox"/> 1 – 5 Years <input type="checkbox"/> 6 – 10 Years			Maintenance Needs: <input type="checkbox"/> Urgent <input checked="" type="checkbox"/> 1 Year <input type="checkbox"/> 2 Years		

Element Group:	Approaches		Length:	6 m	
Element Name:	Wearing Surface		Width:	8.6 m	
Location:	East & West of Structure		Height:	-	
Material:	Gravel / Surface Treatment		Count:	2	
Element Type:	Gravel / Surface Treatment Wearing Surface		Total Quantity:	103.2 m ²	
Environment:	Severe		Limited Inspection:	<input type="checkbox"/>	
Protection System	None				
Condition Data:	Units	Excellent	Good	Fair	Poor
	m ²	-	97.2	3	3
Comments: Generally in good condition. Loose gravel throughout wearing surface noted. Accumulation of dirt along shoulder of roadway is preventing water run-off from reaching ditches; causing water to channel and cause minor erosion along the edges of the roadway.					
Performance Deficiencies: 00			Maintenance Needs: 18 – Re-grade approaches		
Recommended Work: <input type="checkbox"/> Rehab. <input type="checkbox"/> Replace <input type="checkbox"/> 1 – 5 Years <input type="checkbox"/> 6 – 10 Years			Maintenance Needs: <input type="checkbox"/> Urgent <input type="checkbox"/> 1 Year <input checked="" type="checkbox"/> 2 Years		

MUNICIPAL STRUCTURE INSPECTION FORM

BRIDGE

Site No.: B3

ELEMENT DATA					
Element Group:	Accessories	Length:	-		
Element Name:	Signs	Width:	-		
Location:	NE, NW, SE & SW of Structure	Height:	-		
Material:	Plastic	Count:	4		
Element Type:	Snow Plow Markers	Total Quantity:	4		
Environment:	Severe	Limited Inspection:	<input type="checkbox"/>		
Protection System	None				
Condition Data:	Units	Excellent	Good	Fair	Poor
	Each	-	3	-	1
Comments: One missing sign observed on the southeast corner. Others are generally in good condition.					
Performance Deficiencies: 00			Maintenance Needs: 18- Install hazard sign		
Recommended Work: <input type="checkbox"/> Rehab. <input type="checkbox"/> Replace <input type="checkbox"/> 1 – 5 Years <input type="checkbox"/> 6 – 10 Years			Maintenance Needs: <input checked="" type="checkbox"/> Urgent <input type="checkbox"/> 1 Year <input type="checkbox"/> 2 Years		

Element Group:	Barriers	Length:	42.5 m		
Element Name:	Railing Systems	Width:	-		
Location:	North & South Sides of Structure	Height:	-		
Material:	Steel	Count:	2		
Element Type:	Steel Flex Beam	Total Quantity:	85 m		
Environment:	Severe	Limited Inspection:	<input type="checkbox"/>		
Protection System	None				
Condition Data:	Units	Excellent	Good	Fair	Poor
	m	-	85	-	-
Comments: Generally in good condition.					
Performance Deficiencies: 00			Maintenance Needs: 00		
Recommended Work: <input type="checkbox"/> Rehab. <input type="checkbox"/> Replace <input type="checkbox"/> 1 – 5 Years <input type="checkbox"/> 6 – 10 Years			Maintenance Needs: <input type="checkbox"/> Urgent <input type="checkbox"/> 1 Year <input type="checkbox"/> 2 Years		

MUNICIPAL STRUCTURE INSPECTION FORM

BRIDGE

Site No.: B3

ELEMENT DATA					
Element Group:	Barriers		Length:	-	
Element Name:	Posts		Width:	-	
Location:	North & South of Structure		Height:	-	
Material:	Steel		Count:	44	
Element Type:	Steel Post		Total Quantity:	44	
Environment:	Severe		Limited Inspection:	<input type="checkbox"/>	
Protection System	None				
Condition Data:	Units	Excellent	Good	Fair	Poor
	Each	-	44	-	-
Comments: Barrier posts are generally in good condition.					
Performance Deficiencies: 00			Maintenance Needs: 00		
Recommended Work: <input type="checkbox"/> Rehab. <input type="checkbox"/> Replace <input type="checkbox"/> 1 – 5 Years <input type="checkbox"/> 6 – 10 Years			Maintenance Needs: <input type="checkbox"/> Urgent <input type="checkbox"/> 1 Year <input type="checkbox"/> 2 Years		

Element Group:	Joints		Length:	10.1 m	
Element Name:	Armouring / Retaining Devices		Width:	-	
Location:	East & West Ends of Structure		Height:	-	
Material:	Steel		Count:	4	
Element Type:	Steel Armouring		Total Quantity:	40.4 m	
Environment:	Severe		Limited Inspection:	<input checked="" type="checkbox"/>	
Protection System	None				
Condition Data:	Units	Excellent	Good	Fair	Poor
	m	-	40.4	-	-
Comments: Joint armouring covered by gravel wearing surface at time of inspection. Condition assumed based on previous inspection and condition of exposed ballast wall.					
Performance Deficiencies: 00			Maintenance Needs: 00		
Recommended Work: <input type="checkbox"/> Rehab. <input type="checkbox"/> Replace <input type="checkbox"/> 1 – 5 Years <input type="checkbox"/> 6 – 10 Years			Maintenance Needs: <input type="checkbox"/> Urgent <input type="checkbox"/> 1 Year <input type="checkbox"/> 2 Years		

MUNICIPAL STRUCTURE INSPECTION FORM

BRIDGE

Site No.: B3

ELEMENT DATA					
Element Group:	Joints		Length:	10.1 m	
Element Name:	Seals / Sealants		Width:	-	
Location:	East & West Ends of Structure		Height:	-	
Material:	Neoprene / Rubber		Count:	2	
Element Type:	Strip Seal		Total Quantity:	2	
Environment:	Severe		Limited Inspection:	<input checked="" type="checkbox"/>	
Protection System	None				
Condition Data:	Units	Excellent	Good	Fair	Poor
	Each	-	2	-	-
Comments: Joint seal covered at the time of inspection. Appear generally in good condition with no evidence of leakage.					
Performance Deficiencies: 00			Maintenance Needs: 02 – Bridge Cleaning		
Recommended Work: <input type="checkbox"/> Rehab. <input type="checkbox"/> Replace <input type="checkbox"/> 1 – 5 Years <input type="checkbox"/> 6 – 10 Years			Maintenance Needs: <input type="checkbox"/> Urgent <input checked="" type="checkbox"/> 1 Year <input type="checkbox"/> 2 Years		

Element Group:	Decks		Length:	42.5 m	
Element Name:	Wearing Surface		Width:	8.6 m	
Location:	Top of Deck		Height:	-	
Material:	Gravel		Count:	1	
Element Type:	Gravel Wearing Surface		Total Quantity:	365.5 m ²	
Environment:	Severe		Limited Inspection:	<input type="checkbox"/>	
Protection System	None				
Condition Data:	Units	Excellent	Good	Fair	Poor
	m ²	-	365.5	-	-
Comments: Generally in good condition. Dirt buildup observed along edges of deck. Loose gravel noted at the edges of deck.					
Performance Deficiencies: 00			Maintenance Needs: 02 - Bridge Cleaning		
Recommended Work: <input type="checkbox"/> Rehab. <input type="checkbox"/> Replace <input type="checkbox"/> 1 – 5 Years <input type="checkbox"/> 6 – 10 Years			Maintenance Needs: <input type="checkbox"/> Urgent <input checked="" type="checkbox"/> 1 Year <input type="checkbox"/> 2 Years		

MUNICIPAL STRUCTURE INSPECTION FORM

BRIDGE

Site No.: B3

ELEMENT DATA					
Element Group:	Decks		Length:	42.5 m	
Element Name:	Deck Top (Covered)		Width:	8.6 m	
Location:	Top of Deck		Height:	-	
Material:	Concrete		Count:	1	
Element Type:	Thin Slab		Total Quantity:	365.5 m ²	
Environment:	Severe		Limited Inspection:	<input checked="" type="checkbox"/>	
Protection System	Gravel Wearing Surface				
Condition Data:	Units	Excellent	Good	Fair	Poor
	m ²	-	365.5	-	-
Comments: Deck top is covered by wearing surface and only exposed at edges of deck. Assumed to be in good condition based on condition of wearing surface and the underside of deck.					
Performance Deficiencies: 00			Maintenance Needs: 00		
Recommended Work: <input type="checkbox"/> Rehab. <input type="checkbox"/> Replace <input type="checkbox"/> 1 – 5 Years <input type="checkbox"/> 6 – 10 Years			Maintenance Needs: <input type="checkbox"/> Urgent <input type="checkbox"/> 1 Year <input type="checkbox"/> 2 Years		

Element Group:	Decks		Length:	2 m	
Element Name:	Soffit – Thin Slab (End)		Width:	10.1 m	
Location:	East & West Underside of Deck		Height:	0.25 m	
Material:	Concrete		Count:	-	
Element Type:	Thin Slab		Total Quantity:	20.1 m ²	
Environment:	Moderate		Limited Inspection:	<input type="checkbox"/>	
Protection System	None				
Condition Data:	Units	Excellent	Good	Fair	Poor
	m ²	-	20.1	-	-
Comments: Generally in good condition.					
Performance Deficiencies: 00			Maintenance Needs: 00		
Recommended Work: <input type="checkbox"/> Rehab. <input type="checkbox"/> Replace <input type="checkbox"/> 1 – 5 Years <input type="checkbox"/> 6 – 10 Years			Maintenance Needs: <input type="checkbox"/> Urgent <input type="checkbox"/> 1 Year <input type="checkbox"/> 2 Years		

MUNICIPAL STRUCTURE INSPECTION FORM

BRIDGE

Site No.: B3

ELEMENT DATA					
Element Group:	Decks		Length:	38.5 m	
Element Name:	Soffit – Thin Slab (Exterior)		Width:	0.4 m	
Location:	North & South Sides of Deck		Height:	0.25 m	
Material:	Concrete		Count:	2	
Element Type:	Thin Slab		Total Quantity:	25.03 m ²	
Environment:	Moderate		Limited Inspection:	<input type="checkbox"/>	
Protection System	None				
Condition Data:	Units	Excellent	Good	Fair	Poor
	m ²	-	25.03	-	-
Comments: Generally in good condition.					
Performance Deficiencies: 00			Maintenance Needs: 00		
Recommended Work: <input type="checkbox"/> Rehab. <input type="checkbox"/> Replace <input type="checkbox"/> 1 – 5 Years <input type="checkbox"/> 6 – 10 Years			Maintenance Needs: <input type="checkbox"/> Urgent <input type="checkbox"/> 1 Year <input type="checkbox"/> 2 Years		

Element Group:	Decks		Length:	38.5 m	
Element Name:	Soffit – Thin Slab (Interior)		Width:	9.3 m	
Location:	Underside of Deck		Height:	0.25 m	
Material:	Concrete		Count:	1	
Element Type:	Thin Slab		Total Quantity:	358 m ²	
Environment:	Benign		Limited Inspection:	<input type="checkbox"/>	
Protection System	None				
Condition Data:	Units	Excellent	Good	Fair	Poor
	m ²	-	358	-	-
Comments: Generally in good condition.					
Performance Deficiencies: 00			Maintenance Needs: 00		
Recommended Work: <input type="checkbox"/> Rehab. <input type="checkbox"/> Replace <input type="checkbox"/> 1 – 5 Years <input type="checkbox"/> 6 – 10 Years			Maintenance Needs: <input type="checkbox"/> Urgent <input type="checkbox"/> 1 Year <input type="checkbox"/> 2 Years		

MUNICIPAL STRUCTURE INSPECTION FORM

BRIDGE

Site No.: B3

ELEMENT DATA					
Element Group:	Beams / MLEs		Length:	2 m	
Element Name:	Girders (End)		Width:	0.65 m	
Location:	East & West Underside of Structure		Height:	1.46 m	
Material:	Concrete		Count:	12	
Element Type:	Concrete I-Girders		Total Quantity:	116.9 m ²	
Environment:	Moderate		Limited Inspection:	<input type="checkbox"/>	
Protection System	None				
Condition Data:	Units	Excellent	Good	Fair	Poor
	m ²	-	116.9	-	-
Comments: Girder ends are generally in good condition.					
Performance Deficiencies: 00			Maintenance Needs: 00		
Recommended Work: <input type="checkbox"/> Rehab. <input type="checkbox"/> Replace <input type="checkbox"/> 1 – 5 Years <input type="checkbox"/> 6 – 10 Years			Maintenance Needs: <input type="checkbox"/> Urgent <input type="checkbox"/> 1 Year <input type="checkbox"/> 2 Years		

Element Group:	Beams / MLEs		Length:	38.5 m	
Element Name:	Girders (Middle)		Width:	0.65 m	
Location:	Underside of Structure		Height:	1.46 m	
Material:	Concrete		Count:	6	
Element Type:	Concrete I-Girders		Total Quantity:	1125 m ²	
Environment:	Benign		Limited Inspection:	<input type="checkbox"/>	
Protection System	None				
Condition Data:	Units	Excellent	Good	Fair	Poor
	m ²	-	1125	-	-
Comments: Girders are generally in good condition.					
Performance Deficiencies: 00			Maintenance Needs: 00		
Recommended Work: <input type="checkbox"/> Rehab. <input type="checkbox"/> Replace <input type="checkbox"/> 1 – 5 Years <input type="checkbox"/> 6 – 10 Years			Maintenance Needs: <input type="checkbox"/> Urgent <input type="checkbox"/> 1 Year <input type="checkbox"/> 2 Years		

MUNICIPAL STRUCTURE INSPECTION FORM

BRIDGE

Site No.: B3

ELEMENT DATA					
Element Group:	Beams / MLEs	Length:	1.5 m		
Element Name:	Diaphragms (End)	Width:	0.25 m		
Location:	East & West Underside of Structure	Height:	1.2 m		
Material:	Concrete	Count:	10		
Element Type:	Rectangular Concrete Diaphragms	Total Quantity:	39.8 m ²		
Environment:	Moderate	Limited Inspection:	<input type="checkbox"/>		
Protection System	None				
Condition Data:	Units	Excellent	Good	Fair	Poor
	m ²	-	39.8	-	-
Comments: End diaphragms are generally in good condition.					
Performance Deficiencies: 00			Maintenance Needs: 00		
Recommended Work: <input type="checkbox"/> Rehab. <input type="checkbox"/> Replace <input type="checkbox"/> 1 – 5 Years <input type="checkbox"/> 6 – 10 Years			Maintenance Needs: <input type="checkbox"/> Urgent <input type="checkbox"/> 1 Year <input type="checkbox"/> 2 Years		

Element Group:	Beams / MLEs	Length:	1.5 m		
Element Name:	Diaphragms (Intermediate)	Width:	0.25 m		
Location:	Underside of Structure	Height:	1.2 m		
Material:	Concrete	Count:	5		
Element Type:	Rectangular Concrete Diaphragms	Total Quantity:	19.9 m ²		
Environment:	Benign	Limited Inspection:	<input type="checkbox"/>		
Protection System	None				
Condition Data:	Units	Excellent	Good	Fair	Poor
	m ²	-	19.9	-	-
Comments: Diaphragms are generally in good condition.					
Performance Deficiencies: 00			Maintenance Needs: 00		
Recommended Work: <input type="checkbox"/> Rehab. <input type="checkbox"/> Replace <input type="checkbox"/> 1 – 5 Years <input type="checkbox"/> 6 – 10 Years			Maintenance Needs: <input type="checkbox"/> Urgent <input type="checkbox"/> 1 Year <input type="checkbox"/> 2 Years		

MUNICIPAL STRUCTURE INSPECTION FORM

BRIDGE

Site No.: B3

ELEMENT DATA					
Element Group:	Abutments		Length:	7 m	
Element Name:	Wingwalls		Width:	-	
Location:	NE, NW, SE & SW of Structure		Height:	1.5 m	
Material:	Concrete		Count:	4	
Element Type:	Reinforced Concrete Wingwall		Total Quantity:	42 m ²	
Environment:	Moderate		Limited Inspection:	<input type="checkbox"/>	
Protection System	None				
Condition Data:	Units	Excellent	Good	Fair	Poor
	m ²	-	40	2	-
Comments: Generally in good condition with narrow to medium map cracks observed at northeast and southeast wingwall.					
Performance Deficiencies: 00			Maintenance Needs: 00		
Recommended Work: <input type="checkbox"/> Rehab. <input type="checkbox"/> Replace <input type="checkbox"/> 1 – 5 Years <input type="checkbox"/> 6 – 10 Years			Maintenance Needs: <input type="checkbox"/> Urgent <input type="checkbox"/> 1 Year <input type="checkbox"/> 2 Years		

Element Group:	Abutments		Length:	-	
Element Name:	Ballast Walls		Width:	10.1 m	
Location:	East & West Underside of Structure		Height:	1.6 m	
Material:	Concrete		Count:	2	
Element Type:	Reinforced Concrete Ballast		Total Quantity:	32.3 m ²	
Environment:	Benign		Limited Inspection:	<input checked="" type="checkbox"/>	
Protection System	None				
Condition Data:	Units	Excellent	Good	Fair	Poor
	m ²	-	32.3	-	-
Comments: Limited inspection due to end diaphragms. Generally in good condition with narrow vertical crack on visible sections of East and West ballast walls.					
Performance Deficiencies: 00			Maintenance Needs: 00		
Recommended Work: <input type="checkbox"/> Rehab. <input type="checkbox"/> Replace <input type="checkbox"/> 1 – 5 Years <input type="checkbox"/> 6 – 10 Years			Maintenance Needs: <input type="checkbox"/> Urgent <input type="checkbox"/> 1 Year <input type="checkbox"/> 2 Years		

MUNICIPAL STRUCTURE INSPECTION FORM

BRIDGE

Site No.: B3

ELEMENT DATA					
Element Group:	Abutments	Length:	-		
Element Name:	Bearings	Width:	-		
Location:	East & West (On Abutment Walls)	Height:	-		
Material:	Neoprene / Rubber	Count:	12		
Element Type:	Elastomeric Bearing	Total Quantity:	12		
Environment:	Benign	Limited Inspection:	<input type="checkbox"/>		
Protection System	None				
Condition Data:	Units	Excellent	Good	Fair	Poor
	Each	-	12	-	-
Comments: Bearings are generally in good condition.					
Performance Deficiencies: 00			Maintenance Needs: 00		
Recommended Work: <input type="checkbox"/> Rehab. <input type="checkbox"/> Replace <input type="checkbox"/> 1 - 5 Years <input type="checkbox"/> 6 - 10 Years			Maintenance Needs: <input type="checkbox"/> Urgent <input type="checkbox"/> 1 Year <input type="checkbox"/> 2 Years		

Element Group:	Abutments	Length:	-		
Element Name:	Abutment Walls	Width:	10.1 m		
Location:	East & West Underside of Structure	Height:	2.47 m		
Material:	Concrete	Count:	2		
Element Type:	Reinforced Concrete Abutment	Total Quantity:	49.9 m ²		
Environment:	Benign	Limited Inspection:	<input type="checkbox"/>		
Protection System	None				
Condition Data:	Units	Excellent	Good	Fair	Poor
	m ²	-	45.9	4	-
Comments: Medium full height narrow vertical crack noted at middle of both abutment walls. Narrow map cracks noted at east abutment wall. Shear key between girders #3 and #4 at each abutment wall.					
Performance Deficiencies: 00			Maintenance Needs: 00		
Recommended Work: <input type="checkbox"/> Rehab. <input type="checkbox"/> Replace <input type="checkbox"/> 1 - 5 Years <input type="checkbox"/> 6 - 10 Years			Maintenance Needs: <input type="checkbox"/> Urgent <input type="checkbox"/> 1 Year <input type="checkbox"/> 2 Years		

MUNICIPAL STRUCTURE INSPECTION FORM

BRIDGE

Site No.: B3

ELEMENT DATA					
Element Group:	Foundations		Length:	-	
Element Name:	Foundation (Below Ground Level)		Width:	-	
Location:	Below Abutment Walls		Height:	-	
Material:	Concrete		Count:	-	
Element Type:	Strip Footing		Total Quantity:	-	
Environment:	Benign		Limited Inspection:	<input checked="" type="checkbox"/>	
Protection System	None				
Condition Data:	Units	Excellent	Good	Fair	Poor
	N/A	-	-	-	-
Comments: No visible evidence of foundation instability noted at time of inspection.					
Performance Deficiencies: 00			Maintenance Needs: 00		
Recommended Work: <input type="checkbox"/> Rehab. <input type="checkbox"/> Replace <input type="checkbox"/> 1 – 5 Years <input type="checkbox"/> 6 – 10 Years			Maintenance Needs: <input type="checkbox"/> Urgent <input type="checkbox"/> 1 Year <input type="checkbox"/> 2 Years		

Element Group:	Embankments and Streams		Length:	-	
Element Name:	Embankments		Width:	-	
Location:	NE, NW, E, SE, SW & W of Structure		Height:	-	
Material:	Native Soil		Count:	6	
Element Type:	Embankment		Total Quantity:	6	
Environment:	Moderate		Limited Inspection:	<input type="checkbox"/>	
Protection System	Stone used against abutment				
Condition Data:	Units	Excellent	Good	Fair	Poor
	Each	-	6	-	-
Comments: NE, NW, SE & SW embankments are well vegetated and appear to be stable. Slope protection present on E and W embankments in front of abutment walls. All embankments are generally in good condition.					
Performance Deficiencies: 00			Maintenance Needs: 00		
Recommended Work: <input type="checkbox"/> Rehab. <input type="checkbox"/> Replace <input type="checkbox"/> 1 – 5 Years <input type="checkbox"/> 6 – 10 Years			Maintenance Needs: <input type="checkbox"/> Urgent <input type="checkbox"/> 1 Year <input type="checkbox"/> 2 Years		

MUNICIPAL STRUCTURE INSPECTION FORM

BRIDGE

Site No.: B3

ELEMENT DATA					
Element Group:	Embankments and Streams		Length:	-	
Element Name:	Slope Protection		Width:	-	
Location:	East & West Underside of Structure		Height:	-	
Material:	Rock		Count:	2	
Element Type:	Slope Protection		Total Quantity:	2	
Environment:	Moderate		Limited Inspection:	<input type="checkbox"/>	
Protection System	None				
Condition Data:	Units	Excellent	Good	Fair	Poor
	Each	-	2	-	-
Comments: Rocks used to protect embankments in front of East and West abutments; generally in good condition.					
Performance Deficiencies: 00			Maintenance Needs: 00		
Recommended Work: <input type="checkbox"/> Rehab. <input type="checkbox"/> Replace <input type="checkbox"/> 1 – 5 Years <input type="checkbox"/> 6 – 10 Years			Maintenance Needs: <input type="checkbox"/> Urgent <input type="checkbox"/> 1 Year <input type="checkbox"/> 2 Years		

Element Group:	Embankments and Streams		Length:	-	
Element Name:	Streams and Waterways		Width:	-	
Location:	Below Structure		Height:	-	
Material:	Native		Count:	-	
Element Type:	Streams		Total Quantity:	All	
Environment:	Benign		Limited Inspection:	<input type="checkbox"/>	
Protection System	None				
Condition Data:	Units	Excellent	Good	Fair	Poor
	All	-	All	-	-
Comments: High volume and fast flow from south to north with no visible flow obstructions noted in the stream at the time of inspection.					
Performance Deficiencies: 00			Maintenance Needs: 00		
Recommended Work: <input type="checkbox"/> Rehab. <input type="checkbox"/> Replace <input type="checkbox"/> 1 – 5 Years <input type="checkbox"/> 6 – 10 Years			Maintenance Needs: <input type="checkbox"/> Urgent <input type="checkbox"/> 1 Year <input type="checkbox"/> 2 Years		

MUNICIPAL STRUCTURE INSPECTION FORM

BRIDGE

Site No.: B3

REPAIR AND REHABILITATION REQUIRED		Priority			Estimated Cost
Element	Repair and Rehabilitation Required	6 - 10 Years	1 - 5 Years	< 1 year	
Total Cost					\$ -

ASSOCIATED WORK	Comments	Estimated Cost
Approaches		
Detours		
Traffic Control		
Utilities		
Right of Way		
Environmental Study		
Other		
Contingencies		
Total Cost		\$ -

JUSTIFICATION

MUNICIPAL STRUCTURE INSPECTION FORM

BRIDGE

SITE PHOTOGRAPHS

Site No.:B3



Photo 1 Structure from east approach



Photo 2 Structure from west approach

MUNICIPAL STRUCTURE INSPECTION FORM

BRIDGE

SITE PHOTOGRAPHS

Site No.:B3



Photo 3 East approach from center of structure

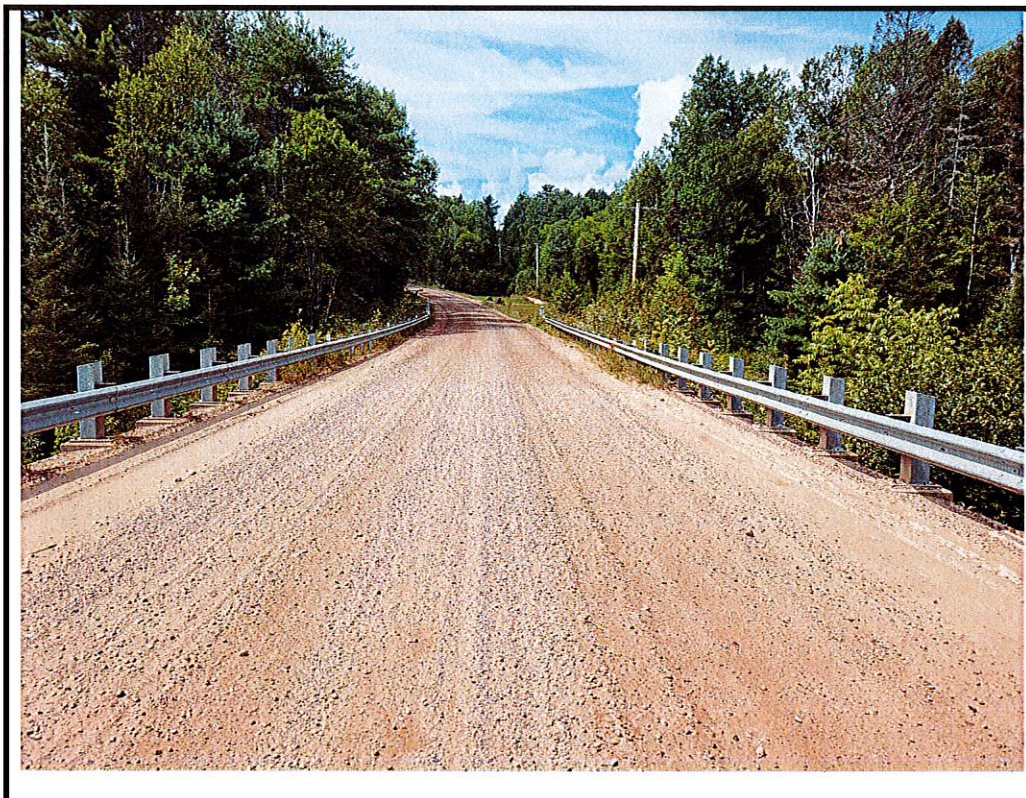


Photo 4 West approach from center of structure

MUNICIPAL STRUCTURE INSPECTION FORM

BRIDGE

SITE PHOTOGRAPHS

Site No.:B3

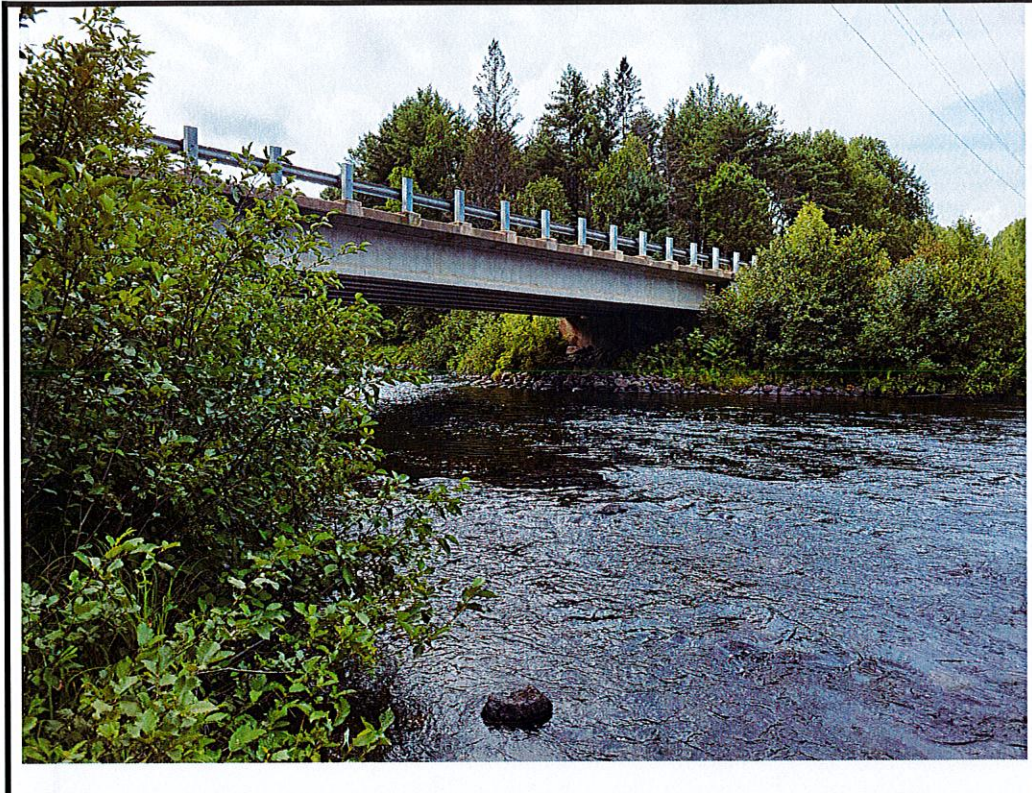


Photo 5 North elevation

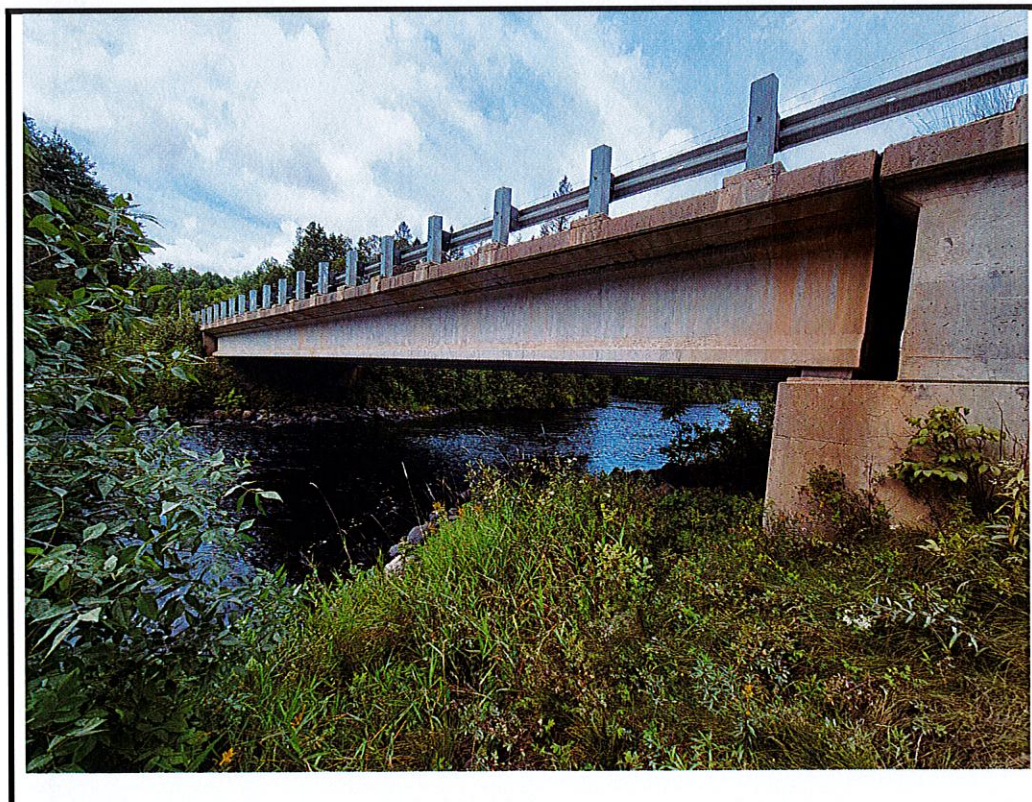


Photo 6 South elevation

MUNICIPAL STRUCTURE INSPECTION FORM

BRIDGE

SITE PHOTOGRAPHS

Site No.:B3



Photo 7 Accumulation of dirt below approach guide rail



Photo 8 Vegetation overgrowing approach guide rail

MUNICIPAL STRUCTURE INSPECTION FORM

BRIDGE

SITE PHOTOGRAPHS

Site No.:B3



Photo 9 Light corrosion of anchor bolts on deck post base-plates



Photo 10 Narrow vertical crack on east ballast wall



Photo 11 General view of girders and soffit



Photo 12 Isolated small spalls and rust staining on exterior soffit

MUNICIPAL STRUCTURE INSPECTION FORM

BRIDGE

SITE PHOTOGRAPHS

Site No.:B3



Photo 13 Damp staining and rust staining on east abutment wall



Photo 14 Narrow vertical crack on abutment wall

Structure Condition Summary Form

Structure Name Stewarts Bridge
 Structure Number B4
 Date of Inspection August 9, 2024
 Project No.
 Consultant HP Engineering Inc.

Element Group	Element Name	Unit (Qty.)	Unit Price (MTO)	Total Element Quantity	Element Qty. in Excellent Condition (1.00)	Element Quantity in Good Condition (0.75)	Element Quantity in Fair Condition (0.4)	Element Quantity in Poor Condition (0)	Total Replacement Value (TRV)	Current Element Value (CEV)	Element Condition Index	Performance Deficiency	Maintenance Need
Abutment	Abutment Walls	Sq.m	900.00	10.60	0.00	9.50	1.10	0.00	9540	6809	71	00	00
	Ballast Walls	Sq.m	350.00	3.18	0.00	2.83	0.25	0.10	1113	778	70	00	08
	Wingwalls	Sq.m	350.00	6.30	0.00	5.70	0.60	0.00	2205	1580	72	00	13
Approaches	Wearing Surface	Sq.m	6.00	57.00	0.00	0.00	55.00	2.00	342	132	39	09	12
	Girders - Timber	Sq.m	50.00	36.26	0.00	20.00	16.26	0.00	1813	1075	59	00	00
Decks	Deck - Timber	Sq.m	50.00	61.74	0.00	38.44	22.00	1.30	3087	1882	61	00	09, 02
Sidewalks/ Curbs	Curbs	Sq.m	40.00	3.92	0.00	1.46	1.96	0.50	157	75	48	00	09
										18257	12330		

Bridge Condition Index (BCI) **68**

- I_t Importance Factor for Traffic 0
- I_e Importance Factor for Economic Impacts 0
- I_w Importance Factor for Bridge Width 0
- I_p Importance Factor for Bridge Profile or Alignment 0

Bridge Sufficiency Index (BSI) **68**

MUNICIPAL STRUCTURE INSPECTION FORM

BRIDGE

Site No.: B4

INVENTORY DATA:			
Structure Name	Stewarts Bridge		
Main Hwy/Road #	Stewart Road	Under Structure:	Navigable Water <input type="checkbox"/> Non-Navigable Water <input checked="" type="checkbox"/>
			Rail <input type="checkbox"/> Road <input type="checkbox"/> Pedestrian <input type="checkbox"/> Other <input type="checkbox"/>
Road Name:	Stewart Road	On Structure:	Rail <input type="checkbox"/> Road <input checked="" type="checkbox"/> Pedestrian <input type="checkbox"/> Other <input type="checkbox"/>
Structure Location	0.98 km south of Homestead Road		
Latitude	46° 13' 45.5" N	Longitude	78° 51' 8.8" W
Owner(s)	Township of Calvin	Heritage Designation	Not Cons. <input checked="" type="checkbox"/> Cons./Not App. <input type="checkbox"/> List/Not Desig. <input type="checkbox"/>
			Desig./not List <input type="checkbox"/> Desig. & List <input type="checkbox"/>
MTO Region	-	Road Class:	Freeway <input type="checkbox"/> Arterial <input type="checkbox"/> Collector <input type="checkbox"/> Local <input type="checkbox"/>
MTO District	-	Posted Speed	- No. of Lanes 1
Old County	-	AADT	- % Trucks -
Geographic Twp.	-	Special Routes	Transit <input type="checkbox"/> Truck <input type="checkbox"/> School <input type="checkbox"/> Bicycle <input type="checkbox"/>
Structure Type	Timber Girder Bridge		
		Detour Length Around Structure	- (km)
Total Deck Length	4.9 (m)	Fill on Structure	- (m)
Overall Str. Width	5.3 (m)	Skew Angle	- (Degrees)
Total Deck Area	25.97 (m ²)	Direction of Structure	North/South
Roadway Width	4.75 (m)	No. of Spans	1
Span Lengths	4.9 (m)		

HISTORICAL DATA			
Year Built	-	Last OSIM Inspection	May 30, 2022
Year of Last Major Rehab.	-	Last Enhanced OSIM Inspection	-
Current Load Limit	18 (tonnes)	Last Bridge Master Inspection	-
Load Limit By-Law #	-	Last Evaluation	-
By-Law Expiry Date	-	Last Underwater Inspection	-
Min. Vertical Clearance	- (m)	Last Condition Survey	-
Rehabilitation History: (Date / Description)			
Structural evaluation carried out by HP Engineering in 2012 (20 Tonnes load posting recommended, currently an 18 Tonnes posting is provided).			

MUNICIPAL STRUCTURE INSPECTION FORM

BRIDGE

Site No.: B4

FIELD INSPECTION INFORMATION			
Date of Inspection:	August 9, 2024	Type of Inspection:	<input checked="" type="checkbox"/> OSIM <input type="checkbox"/> Enhanced OSIM
Inspector:	Tashi Dwivedi, P.Eng., HP Engineering		
Others in Party:	Derick Battrick, P.Eng., HP Engineering		
Access Equipment Used:	Measuring Tape, Digital Camera and Hammer		
Weather:	Sun and Cloud		
Temperature:	24 °C		

ADDITIONAL INVESTIGATION REQUIRED	Priority			Estimated Cost
	None	Normal	Urgent	
Rehabilitation/Replacement Study:		X		\$ 5,000.00
Material Condition Survey	X			\$ -
Detailed Deck Condition Survey:	X			\$ -
Non-destructive Delamination Survey of Asphalt- Covered Deck:	X			\$ -
Concrete Substructure Condition Survey:	X			\$ -
Detailed Coating Condition Survey:	X			\$ -
Detailed Timber Investigation:	X			\$ -
Underwater Investigation:	X			\$ -
Fatigue Investigation:	X			\$ -
Seismic Investigation:	X			\$ -
Structure Evaluation:	X			\$ -
Monitoring	X			\$ -
Monitoring of Deformations, Settlement and Movements:	X			\$ -
Monitoring Crack Widths:	X			\$ -
Load Posting – Estimated Load Limit	Total Cost			\$ 5,000.00
Investigation Notes: Rehabilitation/replacement study is for traffic barrier only.				

OVERALL STRUCTURAL NOTES:			
Recommended Work on Structure:	<input type="checkbox"/> None	<input checked="" type="checkbox"/> Minor Rehab.	<input type="checkbox"/> Major Rehab. <input type="checkbox"/> Replace
Timing of Recommended Work:	<input checked="" type="checkbox"/> 1 to 5 years	<input type="checkbox"/> 6 to 10 years	
Overall Comments: Structure is generally in fair condition. No barriers were present at the time of the inspection; review an adequacy of the approach barrier and install code compliant deck barriers. Some minor scaling on the abutment and foundation footing. Splits, shakes, checks and rot noted on the timber curb. Honeycombing at north ballast wall and wide horizontal crack at south ballast wall.			
Date of Next Inspection:	June 2026		

1 Suspected Performance Deficiencies

- | | | |
|----------------------------------------------------|------------------------------------------|------------------------------------------|
| 00 None | 06 Bearing not uniformly loaded/unstable | 12 Slippery surfaces |
| 01 Load carrying capacity | 07 Jammed expansion joint | 13 Flooding/channel blockage |
| 02 Excessive deformations (deflections & rotation) | 08 Pedestrian/vehicular hazard | 14 Undermining of foundation |
| 03 Continuing settlement | 09 Rough riding surface | 15 Unstable embankments |
| 04 Continuing movements | 10 Surface ponding | 16 Other |
| 05 Seized bearings | 11 Deck drainage | |
| Maintenance Needs | | |
| 01 Lift and swing bridge maintenance | 07 Repair of structural steel | 13 Erosion control at bridges |
| 02 Bridge cleaning | 08 Repair of bridge concrete | 14 Concrete sealing |
| 03 Bridge handrail maintenance | 09 Repair of bridge timber | 15 Rout and seal |
| 04 Painting steel bridge structures | 10 Bailey bridges maintenance | 16 Bridge deck drainage |
| 05 Bridge deck joint repair | 11 Animal/pest control | 17 Scaling (loose Concrete or ACR Steel) |
| 06 Bridge bearing maintenance | 12 Bridge surface repair | 18 Other |

MUNICIPAL STRUCTURE INSPECTION FORM

BRIDGE

Site No.: B4

ELEMENT DATA					
Element Group:	Approaches	Length:	-		
Element Name:	Barrier	Width:	-		
Location:	NE, NW, SE & SW of Structure	Height:	-		
Material:	-	Count:	-		
Element Type:	-	Total Quantity:	-		
Environment:	-	Limited Inspection:	<input type="checkbox"/>		
Protection System	-				
Condition Data:	Units	Excellent	Good	Fair	Poor
	N/A	-	-	-	-
Comments: No approach barrier presents at the time of inspection. Adequacy of the approach barrier should be reviewed.					
Performance Deficiencies: 08			Maintenance Needs: 00		
Recommended Work: <input type="checkbox"/> Rehab. <input type="checkbox"/> Replace <input type="checkbox"/> 1 – 5 Years <input type="checkbox"/> 6 – 10 Years			Maintenance Needs: <input type="checkbox"/> Urgent <input type="checkbox"/> 1 Year <input type="checkbox"/> 2 Years		

Element Group:	Approaches	Length:	6 m		
Element Name:	Wearing Surface	Width:	4.75 m		
Location:	North & South of Structure	Height:	-		
Material:	Gravel	Count:	2		
Element Type:	Gravel Wearing Surface	Total Quantity:	57 m ²		
Environment:	Severe	Limited Inspection:	<input type="checkbox"/>		
Protection System	None				
Condition Data:	Units	Excellent	Good	Fair	Poor
	m ²	-	-	55	2
Comments: Gravel road (not winter maintained) is generally in fair condition with some light rutting on both approaches. Rough transition from the approach to the runners on the bridge deck. Loose gravel noted on approaches. Large pothole noted at south approach.					
Performance Deficiencies: 09			Maintenance Needs: 12		
Recommended Work: <input type="checkbox"/> Rehab. <input type="checkbox"/> Replace <input type="checkbox"/> 1 – 5 Years <input type="checkbox"/> 6 – 10 Years			Maintenance Needs: <input type="checkbox"/> Urgent <input checked="" type="checkbox"/> 1 Year <input type="checkbox"/> 2 Years		

MUNICIPAL STRUCTURE INSPECTION FORM

BRIDGE

Site No.: B4

ELEMENT DATA					
Element Group:	Accessories		Length:	-	
Element Name:	Signs		Width:	-	
Location:	NE, NW, SE & SW of Structure		Height:	-	
Material:	Steel		Count:	8	
Element Type:	Hazard, Single-Lane, & Load Posting Signs		Total Quantity:	8	
Environment:	Severe		Limited Inspection:	<input type="checkbox"/>	
Protection System	Hot Dip Galvanizing				
Condition Data:	Units	Excellent	Good	Fair	Poor
	Each	-	2	3	2
Comments: Four hazard signs at corners of structure, two single-lane signs on approaches, and 1 load posting sign on north approach are generally in good condition. Northeast single-lane sign is leaning away from roadway. Hazard signs are in fair condition with peeling paint and cracking. A load posting sign should also be present on the south approach					
Performance Deficiencies: 00			Maintenance Needs: 18 – Repair Hazard, Missing Load Posting		
Recommended Work: <input type="checkbox"/> Rehab. <input type="checkbox"/> Replace <input type="checkbox"/> 1 – 5 Years <input type="checkbox"/> 6 – 10 Years			Maintenance Needs: <input checked="" type="checkbox"/> Urgent <input type="checkbox"/> 1 Year <input type="checkbox"/> 2 Years		

Element Group:	Sidewalks/Curbs		Length:	4.9 m	
Element Name:	Curbs		Width:	0.2 m	
Location:	East & West of Structure		Height:	0.2 m	
Material:	Timber		Count:	2	
Element Type:	Timber Curb		Total Quantity:	3.92 m ²	
Environment:	Severe		Limited Inspection:	<input type="checkbox"/>	
Protection System	Creosote Treated				
Condition Data:	Units	Excellent	Good	Fair	Poor
	m ²	-	1.46	1.96	0.5
Comments: Splits, shakes, checks, splinters and minor to medium rot noted along exposed edge. Some damage to west timber curb at ends. Adequacy of existing barrier should be reviewed. The existing layout of the curb is 8"x8" timber curb resting on 4"x6" blocks to facilitate deck drainage on the low volume road.					
Performance Deficiencies: 00			Maintenance Needs: 00		
Recommended Work: <input type="checkbox"/> Rehab. <input type="checkbox"/> Replace <input type="checkbox"/> 1 – 5 Years <input type="checkbox"/> 6 – 10 Years			Maintenance Needs: <input type="checkbox"/> Urgent <input type="checkbox"/> 1 Year <input type="checkbox"/> 2 Years		

MUNICIPAL STRUCTURE INSPECTION FORM

BRIDGE

Site No.: B4

ELEMENT DATA					
Element Group:	Decks		Length:	4.9 m	
Element Name:	Deck Top (Exposed)		Width:	1 m	
Location:	Top of Deck		Height:	-	
Material:	Timber		Count:	2	
Element Type:	Timber Wearing Surface (Longitudinal)		Total Quantity:	9.8 m ²	
Environment:	Severe		Limited Inspection:	<input checked="" type="checkbox"/>	
Protection System	Pressure Treated				
Condition Data:	Units	Excellent	Good	Fair	Poor
	m ²	-	4.5	5.3	-
Comments: Limited inspection due to debris/dirt accumulations. Appears to be in generally in good to fair condition with some abrasions and minor rot noted on the surface.					
Performance Deficiencies: 00			Maintenance Needs: 02 - Bridge Cleaning		
Recommended Work: <input type="checkbox"/> Rehab. <input type="checkbox"/> Replace <input type="checkbox"/> 1 - 5 Years <input type="checkbox"/> 6 - 10 Years			Maintenance Needs: <input type="checkbox"/> Urgent <input checked="" type="checkbox"/> 1 Year <input type="checkbox"/> 2 Years		

Element Group:	Decks		Length:	5.3 m	
Element Name:	Deck Top (Exposed)		Width:	4.9 m	
Location:	Top of Deck		Height:	-	
Material:	Timber		Count:	1	
Element Type:	Timber Wearing Surface (Transverse)		Total Quantity:	25.97 m ²	
Environment:	Severe		Limited Inspection:	<input checked="" type="checkbox"/>	
Protection System	Creosote Treated				
Condition Data:	Units	Excellent	Good	Fair	Poor
	m ²	-	12.97	11.7	1.3
Comments: Limited inspection due to debris accumulation. Transverse timber planks are not exposed below running boards. Generally weathered with some local minor rot at ends of deck.					
Performance Deficiencies: 00			Maintenance Needs: 09 / 02		
Recommended Work: <input type="checkbox"/> Rehab. <input type="checkbox"/> Replace <input type="checkbox"/> 1 - 5 Years <input type="checkbox"/> 6 - 10 Years			Maintenance Needs: <input type="checkbox"/> Urgent <input type="checkbox"/> 1 Year <input checked="" type="checkbox"/> 2 Years		

MUNICIPAL STRUCTURE INSPECTION FORM

BRIDGE

Site No.: B4

ELEMENT DATA					
Element Group:	Decks	Length:	4.9 m		
Element Name:	Soffit	Width:	5.3 m		
Location:	Underside of Deck	Height:	-		
Material:	Timber	Count:	1		
Element Type:	Timber Soffit	Total Quantity:	25.97 m ²		
Environment:	Benign	Limited Inspection:	<input type="checkbox"/>		
Protection System	Creosote Treated				
Condition Data:	Units	Excellent	Good	Fair	Poor
	m ²	-	20.97	5	-
Comments: Timber soffit is weathered but generally in good condition.					
Performance Deficiencies: 00			Maintenance Needs: 00		
Recommended Work: <input type="checkbox"/> Rehab. <input type="checkbox"/> Replace <input type="checkbox"/> 1 – 5 Years <input type="checkbox"/> 6 – 10 Years			Maintenance Needs: <input type="checkbox"/> Urgent <input type="checkbox"/> 1 Year <input type="checkbox"/> 2 Years		

Element Group:	Beams / MLEs	Length:	4.9 m		
Element Name:	Girders	Width:	0.15 (4), 0.25 (2), 0.3 (3)		
Location:	Underside of Structure	Height:	0.3 m		
Material:	Timber	Count:	9		
Element Type:	Timber Beams	Total Quantity:	36.26 m ²		
Environment:	Benign	Limited Inspection:	<input type="checkbox"/>		
Protection System	Creosote Treated				
Condition Data:	Units	Excellent	Good	Fair	Poor
	m ²	-	20	16.26	-
Comments: Timber girders are seated directly on top of abutment wall and are generally in good to fair condition; there is weathering throughout.					
Performance Deficiencies: 00			Maintenance Needs: 00		
Recommended Work: <input type="checkbox"/> Rehab. <input type="checkbox"/> Replace <input type="checkbox"/> 1 – 5 Years <input type="checkbox"/> 6 – 10 Years			Maintenance Needs: <input type="checkbox"/> Urgent <input type="checkbox"/> 1 Year <input type="checkbox"/> 2 Years		

MUNICIPAL STRUCTURE INSPECTION FORM

BRIDGE

Site No.: B4

ELEMENT DATA					
Element Group:	Abutments		Length:	1.77 m	
Element Name:	Wingwalls		Width:	-	
Location:	NE, NW, SE & SW of Structure		Height:	0.89 m	
Material:	Concrete		Count:	4	
Element Type:	Reinforced Concrete Wingwall		Total Quantity:	6.30 m ²	
Environment:	Moderate		Limited Inspection:	<input type="checkbox"/>	
Protection System	None				
Condition Data:	Units	Excellent	Good	Fair	Poor
	m ²	-	5.70	0.6	-
Comments: Generally in good condition with moderate scaling and some moss growth observed on surface.					
Performance Deficiencies: 00			Maintenance Needs: 13		
Recommended Work: <input type="checkbox"/> Rehab. <input type="checkbox"/> Replace <input type="checkbox"/> 1 – 5 Years <input type="checkbox"/> 6 – 10 Years			Maintenance Needs: <input type="checkbox"/> Urgent <input checked="" type="checkbox"/> 1 Year <input type="checkbox"/> 2 Years		

Element Group:	Abutments		Length:	-	
Element Name:	Ballast Walls		Width:	5.3 m	
Location:	North & South Underside of Structure		Height:	0.3 m	
Material:	Concrete		Count:	2	
Element Type:	Reinforced Concrete		Total Quantity:	3.18 m ²	
Environment:	Benign		Limited Inspection:	<input checked="" type="checkbox"/>	
Protection System	None				
Condition Data:	Units	Excellent	Good	Fair	Poor
	m ²	-	2.83	0.25	0.1
Comments: Water leakage through ballast wall noted at northeast, northwest, and southwest corners of abutment walls. Honeycombing at north ballast wall and wide horizontal crack at south ballast wall.					
Performance Deficiencies: 00			Maintenance Needs: 08		
Recommended Work: <input type="checkbox"/> Rehab. <input type="checkbox"/> Replace <input type="checkbox"/> 1 – 5 Years <input type="checkbox"/> 6 – 10 Years			Maintenance Needs: <input type="checkbox"/> Urgent <input type="checkbox"/> 1 Year <input checked="" type="checkbox"/> 2 Years		

MUNICIPAL STRUCTURE INSPECTION FORM

BRIDGE

Site No.: B4

ELEMENT DATA					
Element Group:	Abutments		Length:	-	
Element Name:	Abutment Walls		Width:	5.3 m	
Location:	North & South Underside of Structure		Height:	1 m	
Material:	Concrete		Count:	2	
Element Type:	Reinforced Concrete Abutment		Total Quantity:	10.6 m ²	
Environment:	Benign		Limited Inspection:	<input type="checkbox"/>	
Protection System	None				
Condition Data:	Units	Excellent	Good	Fair	Poor
	m ²	-	9.5	1.1	-
Comments: Generally in good condition with some popouts near the bearing seat. Moderate scaling noted below highwater line on abutments. Moderate scaling throughout exposed concrete strip footing.					
Performance Deficiencies: 00			Maintenance Needs: 00		
Recommended Work: <input type="checkbox"/> Rehab. <input type="checkbox"/> Replace <input type="checkbox"/> 1 – 5 Years <input type="checkbox"/> 6 – 10 Years			Maintenance Needs: <input type="checkbox"/> Urgent <input type="checkbox"/> 1 Year <input type="checkbox"/> 2 Years		

Element Group:	Foundations		Length:	-	
Element Name:	Foundation (Below Ground Level)		Width:	-	
Location:	Below Abutment Walls		Height:	-	
Material:	Unknown		Count:	-	
Element Type:	Unknown		Total Quantity:	-	
Environment:	Benign		Limited Inspection:	<input type="checkbox"/>	
Protection System	None				
Condition Data:	Units	Excellent	Good	Fair	Poor
	N/A	-	-	-	-
Comments: No visible evidence of foundation instability noted at the time of inspection.					
Performance Deficiencies: 00			Maintenance Needs: 00		
Recommended Work: <input type="checkbox"/> Rehab. <input type="checkbox"/> Replace <input type="checkbox"/> 1 – 5 Years <input type="checkbox"/> 6 – 10 Years			Maintenance Needs: <input type="checkbox"/> Urgent <input type="checkbox"/> 1 Year <input type="checkbox"/> 2 Years		

MUNICIPAL STRUCTURE INSPECTION FORM

BRIDGE

Site No.: B4

ELEMENT DATA					
Element Group:	Embankments and Streams		Length:	-	
Element Name:	Embankments		Width:	-	
Location:	NE, NW, SE & SW of Structure		Height:	-	
Material:	Native Soil		Count:	4	
Element Type:	Embankment		Total Quantity:	4	
Environment:	Moderate		Limited Inspection:	<input type="checkbox"/>	
Protection System	None				
Condition Data:	Units	Excellent	Good	Fair	Poor
	Each	-	4	-	-
Comments: Moderately sloped embankment, well vegetated with some loose rock. Embankments appear stable and in good condition.					
Performance Deficiencies: 00			Maintenance Needs: 00		
Recommended Work: <input type="checkbox"/> Rehab. <input type="checkbox"/> Replace <input type="checkbox"/> 1 – 5 Years <input type="checkbox"/> 6 – 10 Years			Maintenance Needs: <input type="checkbox"/> Urgent <input type="checkbox"/> 1 Year <input type="checkbox"/> 2 Years		

Element Group:	Embankments and Streams		Length:	-	
Element Name:	Streams and Waterways		Width:	-	
Location:	Under Structure		Height:	-	
Material:	Native		Count:	-	
Element Type:	Streams		Total Quantity:	All	
Environment:	Benign		Limited Inspection:	<input type="checkbox"/>	
Protection System	None				
Condition Data:	Units	Excellent	Good	Fair	Poor
	All	-	All	-	-
Comments: Moderate volume and flow from west to east with no visible flow obstructions at time of inspection.					
Performance Deficiencies: 00			Maintenance Needs: 00		
Recommended Work: <input type="checkbox"/> Rehab. <input type="checkbox"/> Replace <input type="checkbox"/> 1 – 5 Years <input type="checkbox"/> 6 – 10 Years			Maintenance Needs: <input type="checkbox"/> Urgent <input type="checkbox"/> 1 Year <input type="checkbox"/> 2 Years		

MUNICIPAL STRUCTURE INSPECTION FORM

BRIDGE

Site No.: B4

REPAIR AND REHABILITATION REQUIRED		Priority			Estimated Cost
Element	Repair and Rehabilitation Required	6 - 10 Years	1 - 5 Years	< 1 year	
Barrier	Install approved traffic barrier			X	\$ 21,500.00
Approach Barrier	Install code compliant approach barrier and end treatments			X	\$ 60,000.00
					\$ -
					\$ -
					\$ -
					\$ -
					\$ -
					\$ -
					\$ -
Total Cost					\$ 81,500.00

ASSOCIATED WORK	Comments	Estimated Cost
Approaches		
Detours		
Traffic Control		
Utilities		
Right of Way		
Environmental Study		
Other		
Contingencies		
Total Cost		\$ -

JUSTIFICATION