

Enhancing our communities



Bridge Needs Study

Town of Gravenhurst

File 221519 | August 29, 2024

Document Control

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Issue	Date	Description				
1	August 29, 2024	Inspection Summary Report				

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1 Introduction

The Town of Gravenhurst (Town) has an inventory of bridges and culverts that require regularly scheduled inspections to document their condition and performance to provide maintenance, rehabilitation, and replacement recommendations and associated costs, and to present data to enable compilation of an asset management plan.

Inspections were completed for all structures exceeding 3 metres in span within the Town boundaries as illustrated in Figures 1 to 4. To ensure compliance with Ministry of Transportation (MTO) guidelines and consistency with the previous studies, the inspections were completed in general accordance with the Ontario Structure Inspection Manual (OSIM, Ministry of Transportation, May 2018).

The completed inventories and corresponding assessments will allow the Town to:

- Maintain structures in a safe condition;
- Protect and extend the service life of structures;
- Identify maintenance, rehabilitation and replacement needs; and
- Provide a basis for a structure management system for the planning and funding of the recommendations.

In order to convey the results of the visual inspections, certain terms are used to identify particular deficiencies with respect to material condition and defects. Definitions of these terms can be found in the OSIM document. Material defects and severity are classified and quantified, then the severity is translated to a condition state of Excellent, Good, Fair, or Poor. For example, a defect could consist of concrete scaling with a severity of Light, Medium, Severe or Very Severe. These severities are then translated to the OSIM defined condition states. Typically, elements with no observed defects are categorized as Excellent, a severity of Light are categorized as Good, a severity of Medium are categorized as Fair, etc. Material Defects can be found in Part 1 Section 1.2 Material Defects. Part 1 also provides material defects for various elements and associated materials. Part 2 Section 2.4 Material Condition States, 2.5 Suspected Performance Deficiencies, and Section 2.9 Appendix A – Combined Summary of Material Defects and Condition States provide guidelines for determining the appropriate condition state of Excellent, Good, Fair, or Poor.

2 Structure Investigation

Inspections were completed for the structures within the inventory provided by the Town. In total, 17 structures were inspected: 8 bridges and 9 culverts. One bridge is the snowmobile bridge spanning over Hwy 11. At several structures access was somewhat restricted due to water levels, had a limited inspection of select elements due to lack of access such as larger bridge spans over waterways. This section details the results of the inspections and identifies corresponding deficiencies. The bridge inspection forms are included in Appendix A.

2.1 INVENTORY & APPRAISAL GUIDELINES

The structure inspections were conducted in general accordance with the procedures within the OSIM which sets standards for detailed visual inspections and condition rating of structures and their components. It provides a uniform inspection approach for structures in Ontario. A detailed visual inspection as defined in the OSIM is as follows:

An element-by-element "close-up" visual assessment of material defects, performance deficiencies and maintenance needs of a structure. Close-up is defined as "a distance close enough to determine the condition of the element".

For each structure, a detailed visual inspection was completed including an element-by-element visual assessment of material defects, performance deficiencies and maintenance. Inspection forms, as provided in the OSIM, were completed for each structure, documenting the inspection results.

In particular, the following were observed and recorded:

- field inspection information (date, inspector, weather, etc.);
- structure information (name, location, type and crossing type);
- structure geometry (span, length, width, area and skew);
- approach road characteristics; and
- element data (for each individual structure element abutment, deck, embankment, etc.).

2.2 STRUCTURE ASSESSMENTS

2.2.1 Identification of Needs & Improvements

For each individual structure element, confirmed or suspected condition and performance deficiencies can lead to the identification of maintenance, rehabilitation, or replacement needs. Needs then generally fall into two categories as follows:

Maintenance Needs can typically be completed by the Town's maintenance crews. These works can include annual bridge deck cleaning, installing signage, etc.

One road bridge and one culvert were identified as in need of replacement as summarized in Table 1.

Rehabilitation or Replacement Needs are typically larger scope of work projects that usually require the work to be contracted out for design and construction.

Three roadway bridge, three culverts and one snowmobile bridge were identified as in need of maintenance work as summarized in Table 2.

2.2.2 Maintenance Needs

The maintenance needs would be in addition to, or in conjunction with, routine annual bridge maintenance activities. The OSIM defines that maintenance work is any type of work that does not require the issuing of a capital construction project. It includes routine maintenance items as well as targeted structural repairs to a specific element. OSIM Section 2.6 Maintenance Needs and Table 2.6.1 Maintenance Needs provide a guideline for Routine Maintenance and Structural Maintenance Work. Who completes the Maintenance Needs in Table 2.6.1 can depend on how an owner of the assets approaches maintenance. Some owners may not have the staffing, expertise, or equipment to complete some or all items in the table, and in that case the work may need to be awarded to a contractor through a request for quote, or a tendering process.

Routine annual bridge maintenance could consist of cleaning elements that include decks, curbs and sidewalks, joints, abutment seats and bearings, and drainage systems. Other routine maintenance needs could consist of bridge surface repairs, railing system repairs, and other needs as listed in Table 2.6.1. Maintenance time frames are categorized into Urgent, 1 Year, and 2 Year.

Although there are no firm guidelines on annual maintenance expenditures, the Transportation Association of Canada (TAC) in the past has provided a general target for annual bridge maintenance funding allocation of 0.2% of the replacement value of the assets. For example, if the value of the structure assets is \$10M then \$20,000 could be considered to be set aside for annual maintenance. Each jurisdiction has their own approach to maintenance funding, however, to begin establishing or re-assessing a maintenance program this could be a starting point.

The above are guidelines that can be referenced to establish a more thorough maintenance program beyond bridge cleaning and surface repairs. The types of work within the program need to be established, who will typically complete the work, costs per work activity determined for budgeting purposes, and determining an annual budget. A key is to ensure continuity year over year to maximize the benefit of a maintenance program.

2.2.3 Rehabilitation or Replacement Needs

The Ministry uses the Bridge Condition Index (BCI) to plan rehabilitation and replacement work. A BCI range of 70-100 is considered as good and work is not usually required within the next five years. A BCI range of 40-70 is considered fair and work is usually scheduled within the next five years. A BCI less than 40 is considered poor, and work is usually scheduled within one year which is categorized as Urgent.

For each site the estimated costs include Engineering and Contingency costs, but do not include contract administration or construction inspection. For budgeting purposes, the typical Engineering and Contingency costs are typically 10% and 20% of the estimated cost of work, respectively. The breakdown of the estimated costs can be found in the OSIM forms.

2.2.4 Improvement Costs

Cost estimates for rehabilitation or replacement needs are provided in Table 1. The Table summarizes improvement costs by year, and the total improvement cost is \$1,167,000. The 10-year Capital Plan can be found in Appendix B.

2.2.5 Enhanced OSIM Inspections

The OSIM forms may identify the need for an Enhanced OSIM inspection that can include:

- special access equipment;
- tapping areas of concrete with a hammer to determine the limits of delamination and spalling;
- tapping areas of wood with a hammer to determine limits of rot, as well as selective wood coring to correlate tapping with the presence of inner rot or other damage; and
- cleaning and wire brushing areas of steel, including connections, to ascertain section loss.

No Enhanced OSIM Inspections are recommended at this time.

2.2.6 Additional Investigations

The OSIM forms may identify the need for Additional Investigations. Typical investigations are listed on Page 2 of each OSIM form. These can include:

- Material Condition Survey;
- Underwater Investigation;
- Structure Evaluation; and
- Monitoring.

No Additional Investigations are recommended at this time.

Table 1: Maintenance Needs

NO.	YEAR OF CONST.	URGENT	WITHIN 1 YEAR	WITHIN 2 YEARS
6 - Pinetree Bridge	2010	-	-	Install narrow bridge sign
7 - Narrows Road Bridge	1970	-	Clearing the beaver dam	-
11 - Fire Route A-1 Bridge	-	Install 3 Tonne load post sign	-	-
42-328 - Highway 11 Snowmobile Trail Overpass	2002	-	-	Bridge cleaning, bearing seat cleaning and replace seal at pier joint
201 - Barkway Road Culvert	1960	-	-	Install hazard warning sign
202 - Merkley Road Culvert	1980	_	Tighten cables in barrier, clear vegetation from in front of barrier, regrade road surface	_
203 - Barkway Road Culvert	2014	-	Install two object warning signs, replace damaged section of guide rail	-
C12 - Arthur Schulz Culvert	2020	-	-	Repair hole on the barrel

Table 2: Rehabilitation or Replacement Needs

NO.	YEAR OF CONST.	URG	ENT	WITHIN	1 YEAR	1-5 YE	ARS	6-10 YEARS		
		Description	Estimated Cost	Description	Estimated Cost	Description	Estimated Cost	Description	Estimated Cost	
11 - Fire Route A-1 Bridge	Unknown	-	-	-	-	-	-	Replace structure	\$590,000	
201 - Barkway Road Culvert	1960	-	-	-			\$577,000	0		
Totals		\$(0	\$0		\$577	,000	\$1,167,000		

3 Recommendations & Prioritization

As mentioned in Section 2 of this report, 'maintenance' work refers to those works that could potentially be completed by the owners works department, and 'rehabilitation' and 'replacement' refers to work that may require an engineered design and tendering of the works to a contractor. The costing information is preliminary and is for budgeting purposes only.

3.1 RECOMMENDED IMPROVEMENTS

In the past two years, the Town has replaced two structures and rehabilitated three structures, which has reduced the deficiencies to be addressed in the next 10 years. The recommended improvements total \$1,167,000 in bridge and culvert rehabilitations and replacements over the next 10 years. This value does not include the cost associated with maintenance work. The work can be further broken down as follows:

- \$577,000 in the next 1-5 years
- \$590,000 in the next 6-10 years

3.2 **PRIORITIZATION OF WORK**

It is understood that an owner may not have the funding to complete all the works within the recommended timeframes. The distribution of work through the 10-year timeframe was distributed in a manner that provides a relatively even distribution of funding requirements, however there are opportunities to adjust to suit the owner's needs and availability of funds. For example, replacement of 11 - Fire Route A1 Bridge could potentially be deferred by reducing risks such as load posting, installation of a temporary barrier system, etc.

In accordance with the 2009 Bridge Condition Index (BCI): An Overall Measure of Bridge Condition published by the Ministry of Transportation Ontario Engineering Standards Branch, a BCI, BCIp and BSI value was calculated for each structure. Essentially the BCI is a weighted average of the bridge elements and condition states. The BCIp is limited to only the percentage of poor condition of four main areas of the structure: deck, beams, substructure, and barrier. The BCIp for structural culverts considers culvert barrels to be a substructure element and considers barriers along the roadway. The BCIp for the retaining walls considers the walls to be substructure and considers barriers along the top of the walls to be superstructure. The BSI is the Bridge Sufficiency Index which applies additional factors to the BCI based on sufficiency of the structure for use such as Traffic (AADT and load posting), Economic (economic importance and length of detour), Width (single lane, narrow lane, etc.), and Alignment (profile or alignment).

Table 3 lists the BCI, BCIp and BSI for each structure. It is recommended that prioritization of rehabilitation occur based on the bridge sufficiency index. However, structures that have urgent action items should be addressed first. The 10-year capital plan can be found in Appendix B.

3.3 STUDY UPDATES

Conditions can change based on the effects of the weather, flood events, traffic volume and types of traffic, use of de-icing chemicals, maintenance, unforeseeable circumstances, and continued deterioration. The condition data of the bridge system is updated through the biannual inspections. The inspection results are used to update the effectiveness of strategies, gauge sufficiency of funding levels, identify whether needs are being addressed, document the rate of deterioration of elements, and to ensure accurate information is used to determine improvement needs and implementation timing.

PRIORITY	STRUCTURE NAME	BCIp	BCI	BSI
	11 - Fire Route A1 Bridge	89.40	58.16	41.16
(40 < BSI < 70)	201 - Barkway Road Culvert Lots 15/16, Conc 10	36.25	19.40	17.40
	5 - Kahshe River Bridge	99.41	76.88	68.88
	6 - Pinetree Bridge	100.00	88.27	76.27
	4 - Beau Creek Bridge, Lots 15/16, Conc 6	100.00	78.78	75.78
	1 - Robinson Bridge	100.00	81.15	78.15
	7 - Narrows Road Bridge, Lot 28, Conc 8	100.00	83.04	80.04
	202 – Merkley Road Culvert Lot 6, Conc 10/11	100.00	86.52	84.52
	42-328 - Highway 11 - Snowmobile trail Overpass	100.00	88.05	87.05
(BSI > 70)	C10 - Seehaver Road, Lot 14, Conc 12/13	100.00	95.48	93.48
(631 > 70)	9 - Lots 10/11, Conc 10	100.00	98.59	92.59
	C8 - Sniders Bay Culvert	100.00	100.00	97.00
	203 - Barkway Road Culvert Lots 15/16, Conc 12	100.00	99.48	97.48
	C12 - Arthur Schulz Culvert	99.98	99.39	97.39
	204 - Riley Lake Road Culvert	100.00	100.00	98.00
	South Kashe Lake Rd Culvert	100.00	100.00	98.00
	Laycox Road Culvert	100.00	100.00	98.00

Table 3: Structure Priority List

4 Summary

The inventory of structures is generally in good condition with no Enhanced Inspections or Additional Investigations recommended. However, there is 1 structure that is recommended to be replaced and 1 culvert is recommended to be rehabilitated. There are various maintenance activities recommended with Section 2.

Should the Town have any questions or comments regarding the above, please do not hesitate to contact us.

Figure 1: Location Map 1

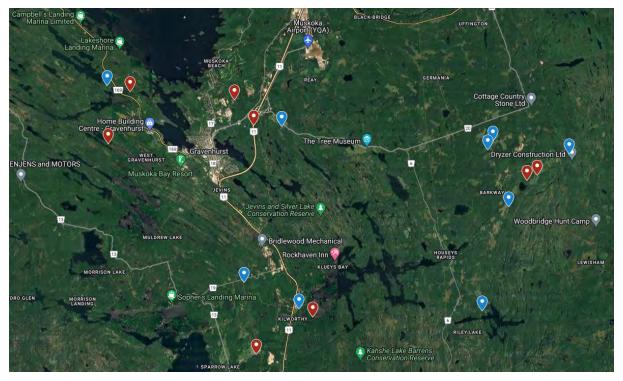
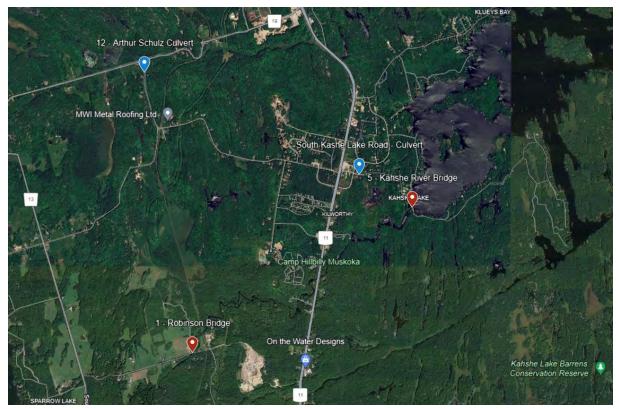


Figure 2: Location Map 2



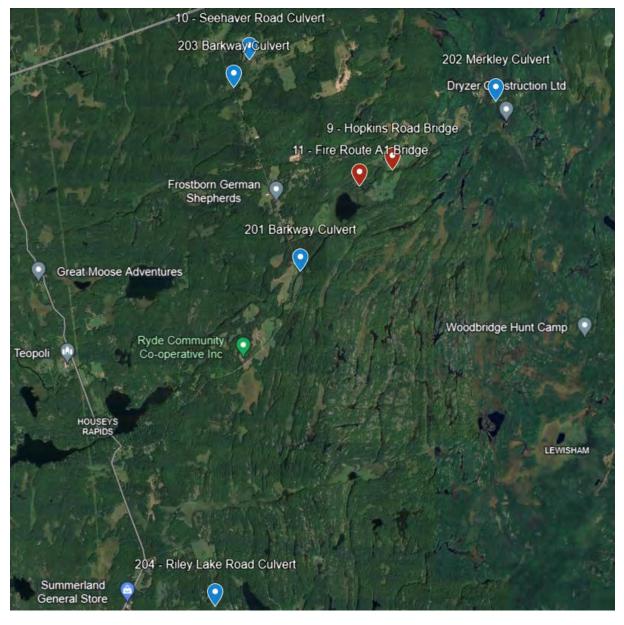


Figure 3: Location Map 3



Figure 4: Location Map 4

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Appendix A: OSIM Forms

						М	TO Site Number:			
Inventory Data:										
Structure Name	1 - Robinson Brid	ge, Lot 2, Conc 6]	
Main Highway #	Sparrow Lake Route "D"	On X or Unde Structure	er 📃	Service on Structure]Navig. Wate]Rail X		Vavig. V Ped.	Vater	ər
Location Description	2.34 km west of Highway 11			Service under:]Navig. Wate]Rail		Navig. V Ped.	Vater	ər
Owner/Custodian	Gravenhurst]						
MTO Region	Northeastern			Latitude	44	1.822642	Longitude		-79.342	598
Regional Engineer			[Heritage Designation:	X Des]Not Cons. sigDe	Cons./Not		List/ ig. & List	Not Desig.
MTO Area			Hw	y Class:	Free	eway 📃 Ai	rterial 🗌 Co	ollector	Lc	ocal X
Old County			Pos	sted Speed		50	No. of Lan	es	2	
Township	Gravenhurst		AA	DT		200	% Tru	ck	0	
Structure Type 1	Box Beam Girder	S								
Structure Material 1	Concrete		Tra	ffic Directional	Bound		E-W]	
Structure Type 2	Concrete Deck									
Structure Material 2	Concrete		Ins	Inspection Frequency			2 (years)			
Total Deck Length	24.8	(m)	Ins	Inspection Year			odd			
Overall Str. Width	10.1	(m)	Ins	Inspection Duration			2 (hrs)		(hrs)	
Culvert Length		(m)								
Total Deck Area	249.4	(sq.m)								
Roadway Width	8.0	(m)	Mir	n. Vertical Clea	irance				(m)	
Skew Angle	30	(Degree) De	Detour Distance			8 ((km)	
No. of Spans	1		Fill	Fill on Structure						
Span Lengths	18.4								(m)	
For retaining wall:										
Total Wall Length		(m)	Ма	x. Wall Height					(m)	
Total Wall Area		(sq.m)	Ave	e. Wall Height			(m)		(m)	
			Ang	gle of Backfill					(Degree	es)
Historical Data										
Year Built	1982		Yea	ar of superstru	ct. Const	tructed				
Last Reg. OSIM Inspe				ar of Last Mino		. 20	23			
Last Enh. OSIM Inspe	ection			ar of Last Majo rrent Load Lim			1	/		(toppoo)
Work History: (Date/d	lescription)		Cu	ment Load Lim		estigation His	, story: (Date/descri	/ iption)		(tonnes)
2018 - replaced joint 2023 - concrete repa	ts, barriers, and ap							<u></u>		

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MTO Site Number:

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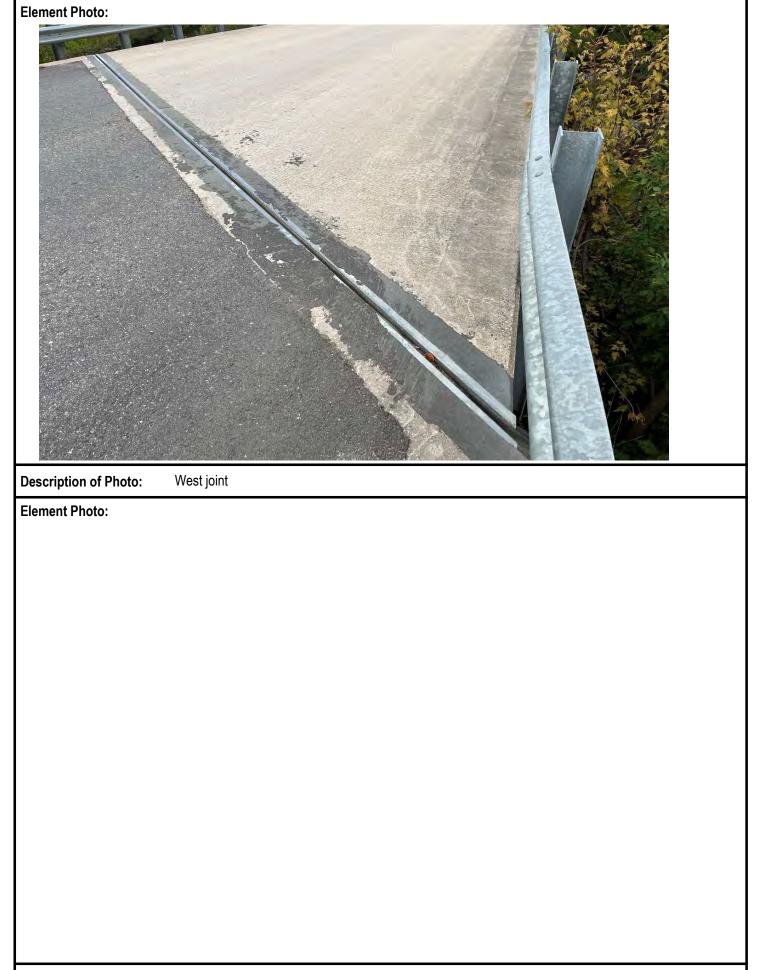
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Field Inspection Infor	mation:							
Date of Inspection:		nber 11, 2023	Type of I	nenectio	n· [X Reg. OS		Enh. OSIM
Inspected By	Junjie	rang						
Others in Party:								
Enh. Access Equipment:								
Special Access Equipment								
Weather	Clear		Temperat	ure				22 °C
Additional Investigation	ons Required:		<u>.</u>			Priority		Estimated Cost
-	•				None	Normal	Urgent	Estimated 665t
Material Condition Survey	- Cumueur				v			
Detailed Deck Condition		halt Cavarad Da			X X			
Non-destructive Delami		bhait-Covered Dec	CK:					
Concrete Substructure	,				X			
Detailed Coating Condit					X			
Detailed Timber Investig					X			
Post-Tensioned Strand	Investigation:				X			
Underwater Investigation					X			
Fatigue Investigation					Х			
Seismic Investigation					X			
Structure Evaluation:					X			
Monitoring								
Deformations, Settleme	nts and Movements				Х			
Crack Widths:					Х			
RSS Horizontal movem	ents of face:				Х			
RSS Vertical movement		9:			X			
RSS Local movements					X			
RSS Horizontal movem					X			
RSS Vertical movement					X			
RSS Lateral earth press					X			
					^			
Investigation Notes:						Total Cost		\$0.00
Overall Structure Note	es:							
Recommended Work on Str	ucture X	None Min	or Rehab.		Major Rehab.	Rep	blace	
Timing of Recommended W	ork	Urgent	1 to 5 yea	rs	6 to 10 ye	ars		
Overall Comments:		structure is in g			·		work at this t	imo
Overall Comments.		structure is in g	enerally g			ommenueu	work at this t	
		-						
Date of Next inspection:	202)						
Overall Bridge Condition								
% Poor in Deck	Poor in Deck % Poor in Beams % Poor in Substructure % I			% P	oor in Barrier	Br		Index (BCI or BCIp)
0%	0%	0%			0%		BClp 100.00	BCI 81.15
Overal Bridge Suf	ficiency							
Traffic	Economic	Width	- T		Alignment		Bridge Sufficie	ency Index (BSI)
0	3	0			0			8.15
, î	v	v			~	1	1	0.10

Element Data:	:													
Element Group:		Decks					Le	ngth:			24.8			
Element Name:		Deck Top					Wi	dth:			8.0			
Location:							He	ight:						
Material:		Concrete						unt:			1			
Element Type:		Distribution	Slab				To	tal Quant	ity:		198.4			
Environment:		Severe					Insp	ected			Ye	s X	No	limited
Protection System	ו:								_					Performance
Oanditian Datas		Units		Exc	ellent		Go	od		Fair		Poor*		Deficiencies
Condition Data:		sq.m					19	8.4						
Comments: The	concrete ha	s a transverse	ely tined	surface	. Light	scalin	g, ty	p. Narrov	N Cra	acks alon	g longi	tudinal d	lirectio	on, note they
		with the interfa												
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Recommended W	/ork:		Reh	ab:] R	eplace:				Mainten	ance Ne	eeds:		
Urgent:		-5 Years:	6-10) Years:			N	one: X	1	Urgent:		1 Yea		2 Year:
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Element Photo	:													
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Description of	Photo:	Concrete de	ck top -	looking	east									



Element Data:															
Element Group:		Joints				Le	ength:			10.1					
Element Name:		Seals/sealan	ts				idth:								
Location:						He	eight:								
Material:		Strip Seal				Co	ount:			2					
Element Type:						Тс	otal Quanti	ity:		2					
Environment:		Severe				Ins	pected			· ·	Yes	K	No	limited	
Protection System	<u>וי</u>							-		_	-		Ē	Performar	
		Units		Exc	ellent	G	ood		Fair			Poor*		Deficienci	
Condition Data:		each			2	-								2010101	
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Comments: No of Recommended W	/ork:	-5 Years:	Reha] Rej	olace:	lone: X		Mainter Urgent:	nance	Needs	s:		2 Year:	
Element Photo	:														
		Fact init													
Description of	Photo:	East joint													

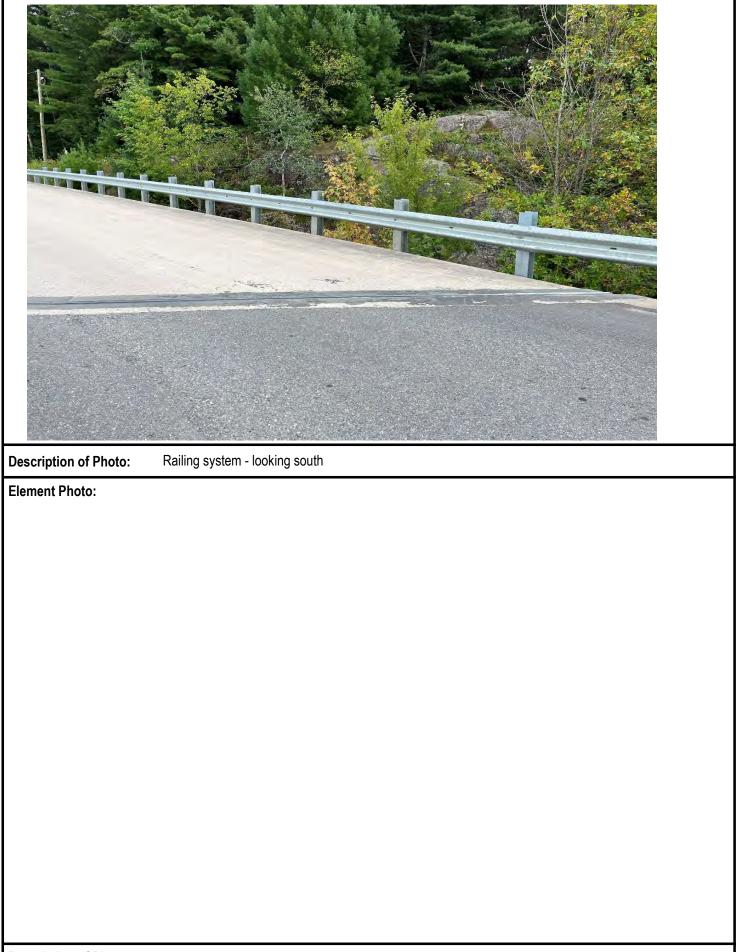


Element Data:																	
Element Group:		Joints						Len	gth:			10.					
Element Name:		Concrete En	d Dams					Wic				0.2					
Location:								Hei	ght:								
Material:		Concrete						Соι				4					
Element Type:								Tot	al Quant	tity:		8.0					
Environment:		Severe						Inspe	ected				Yes	X	No	limited]
Protection System:																Performance	1
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Condition Data:				_	8.0												
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Comments: No of Recommended Wor Urgent:	ſk:	5 Years:	Reh 6-1	ab: [) Year	 ^s: [Rep	lace:		ne: X]	Mainte Urgen		e Nee	eds: 1 Yea		2 Year:]
Element Photo:								13		- And							
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Description of Pl	hoto:	East concre	te end d	am													



Element Data:						
Element Group:	Joints		Length:		10.1	
Element Name:	Armouring/Retainin	g Devices	Width:			
Location:			Height:			
	Steel		Count:		4	
Element Type:			Total Quanti	ty:	40.2	
Environment:	Severe		Inspected		Yes X No	limited
Protection System:						Performance
Condition Data:	Units	Excellent	Good	Fair	Poor*	Deficiencies
Comments: No observed def	m iects.	40.2				
Recommended Work:		hab: Repla	ce:	Mainter	nance Needs:	
Urgent: 1-4		I0 Years:	None: X	Urgent:	1 Year:	2 Year:
Element Photo:						
Description of Photo:						

Element Data:							
Element Group:		Barriers		Length:		24.8	
Element Name:		Railing Systems		Width:			
Location:				Height:			
Material:		Steel		Count:		2	
Element Type:		Side-mounted steel	beam guide rail	Total Quant	ity:	49.6	
Environment:		Severe		Inspected		Yes X No	D limited
Protection System	:	Galvanizing				- -	Performance
Condition Data:		Units	Excellent	Good	Fair	Poor*	Deficiencies
Comments: No c	bearvad da	m facts	49.6				
Recommended W	ork:	Ref	nab: Repla			nance Needs:	
Urgent:	1-	-5 Years: 6-1	0 Years:	None: X	Urgent:	1 Year:	2 Year:
Element Photo:							
Description of I	Photo:	Railing system - loo	king north				



Element Data:	:																
Element Group:		Beams/Main	Longitu	dinal E	Elem	ents			ngth:			18					
Element Name:		Girders						Wic				1.2					
Location:								Hei	ight:			1.2	2				
Material:		Concrete							unt:			7					
Element Type:		Box Girders						Tot	al Quant	tity:		19	8.7				
Environment:		Benign					Τ	Inspe	ected				Yes		No[limited	X
Protection System	n:															Performar	
Condition Data:		Units		E	xcelle	ent		Go			Fair			Poor*		Deficienci	es
		sq.m				_		198									
		ottom of girden crete repairs o												rior gir	ders n	ot visible for	
Recommended W	/ork:		Reh	ab:		Rep	ace:				Maint	enanc	e Nee	eds:			
Urgent:	1-	5 Years:	6-1) Year	s:			No	one: X]	Urger	ıt:		1 Yea	r:	2 Year:	
Element Photo	:																
Description of	Photo:	Concrete bo	x girder	typ.													



Description of Photo: Concrete box girder, typ.



Element Data:																	
Element Group:	Abutments						Le	ngth:									
Element Name:	Abutment W	alls						dth:			8.5						
Location:	East and We	st					He	eight:			3.0 (W), 1.6 (E)						
Material:	Concrete						Co	ount:			2						
Element Type:							То	tal Quan	tity:		39.′	1					
Environment:	Benign						Insp	pected				Yes	Χ	No	limited		
Protection System:	11-24-		E		1	_	0]	-	E a la			D*		Performance		
Condition Data:	Units		E	xcel	llent	-		ood 9.1		Fair			Poor*	_	Deficiencies		
Comments: Light scaling, ty narrow vertical				(5 0	on eas	 st ab			l ne na	arrow lea	chin	g crac	ck on we	est ab	outment, two		
Recommended Work:		Reh	ab:		Re	eplac	ce:]		Mainter	nance	e Need	ds:				
Urgent: 1	-5 Years:	6-1	0 Year	s: [N	one: X]	Urgent:]	1 Year:		2 Year:		
Element Photo:																	
						-						The Shit I		10 4			
		- 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1															
Description of Photo:	East abutme	ent wall															





Element Data:							
Element Group:		Abutments		Length:		3.2	
Element Name:		Wingwalls		Width:			
Location:				Height:		3.0	
Material:		Concrete		Count:		4	
Element Type:				Total Quant	ity:	38.4	
Environment:		Benign		Inspected		Yes X	No
Protection System	1:						Performance
Condition Data:		Units	Excellent	Good	Fair	Poor*	Deficiencies
	l'	sq.m		38.4			
Comments: Ligi	it scanny typ	o. Isolated light hone		onn.			
Recommended W	ork:	Re	nab: 📃 Repl	ace:	Mainten	nance Needs:	
Urgent:	1-	5 Years: 6-2	0 Years:	None: X	Urgent:	1 Year:	2 Year:
Element Photo:	:						
Description of I	Photo:	Southwest wing wa	I				



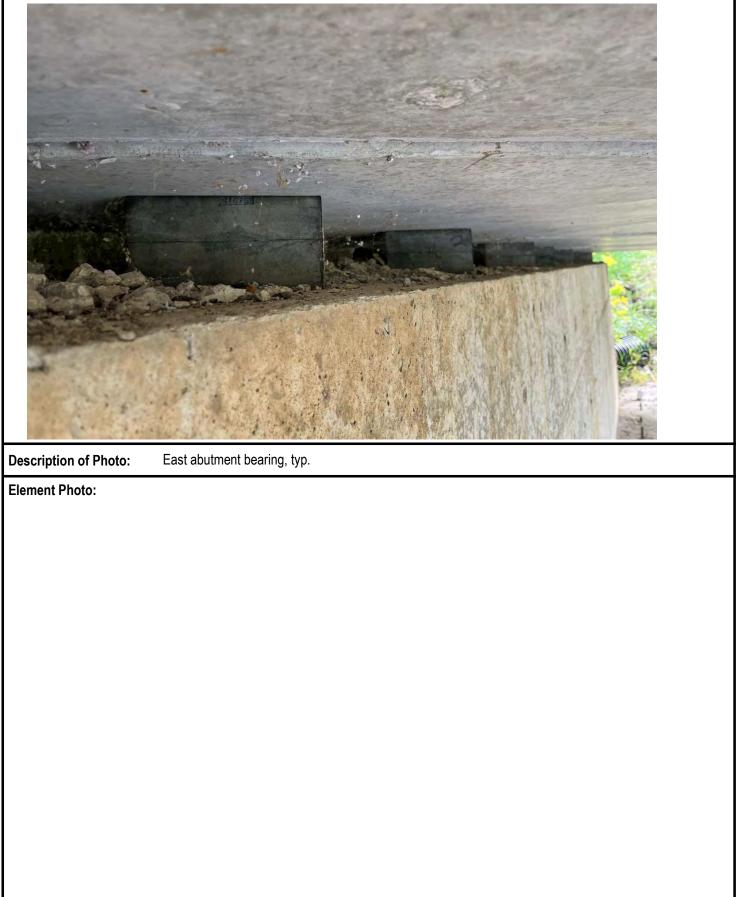
Description of Photo:

Honeycombing at cold joint

Element Photo:

Element Data:												
Element Group:	Abutments				L	ength:						
Element Name:	Bearings					Vidth:						
Location:	East				ŀ	leight:						
Material:	Elastomeric					Count:			14			
Element Type:					٦	otal Quan	tity:		14			
Environment:	Benign					spected			Y	′es X	N	o limited
Protection System:											-	Performance
Condition Data:	Units		Exce	ellent	(Good		Fair		Po	or*	Deficiencies
	each					14						
Comments: Light weatheri	ng of east beari	ngs. There	are 2	bearin	ng pads p	er girder.						
Recommended Work:		Rehab:		Re	eplace:			Mainten	ance l	Needs:		
Urgent:	1-5 Years:	6-10 Ye	ears:			None: X]	Urgent:		1 Y	'ear:	2 Year:
Element Photo:												
Description of Photo:	East abutme	ent bearing,	typ.									





Element Data:													
Element Group:		Abutments					Length:						
Element Name:		Bearings					Width:						
Location:		West					Height:						
Material:		Elastomeric					Count:		14				
Element Type:							Total Quant	ity:	14	4			
Environment:		Benign				Ir	nspected			Yes		No	X limited
Protection System:													Performance
Condition Data:		Units		Exce	ellent		Good	F	air		Poor*		Deficiencies
Condition Data.		each					14						
Comments: West bo	earings no	ot accessible	for insp	ection. It	is assu	med th	nere are 2 b	earing p	ads pe	r girder	, simila	r to tl	he east bearings.
Recommended Work:	:		Reh	ab:	Repl	lace:		Ма	iintenar	nce Nee	ds:		
Urgent:	Urgent: 1-5 Years: 6-10 Years:							Urc	jent:		1 Year:		2 Year:
	<u> </u>						None: X						
Element Photo:													
Description of Pho	bto:	West abutmet	ent bear	ing (not		ble)							

Element Data:	:												
Element Group:		Retaining Wa	alls			Le	ength:			2.4			
Element Name:		Walls					'idth:						
Location:		Northeast an	d South	east Qu	adrants	Н	eight:			1.2 (S), 1.8 (N)		
Material:		Gabion Bask	ets				ount:			2			
Element Type:						T	otal Quant	ity:		7.2			
Environment:		Benign					pected			Ye	es X	No	limited
Protection System	ו:												Performance
Condition Data:		Units		Exc	ellent		ood		Fair		Poor*		Deficiencies
		sq.m					7.2						
		g walls are pre No other obs			theast ar	nd south	east quad	Irant	s. Isolate	ed light	t deforma	tions	of front face of
Recommended Work: Rehab: Replace: Maintenance Needs: Urgent: 1-5 Years: 6-10 Years: None: Vrgent: 1 Year: 2 Year:													
Urgent:	1-	١	lone: X]	Urgent:		1 Yea	r:	2 Year:				
Urgent: 1-5 Years: 6-10 Years: None: X Urgent: 1 Year: Element Photo: Image: Comparison of the second of													
Description of	Photo:	Northeast ga	abion ret	taining v	vall								

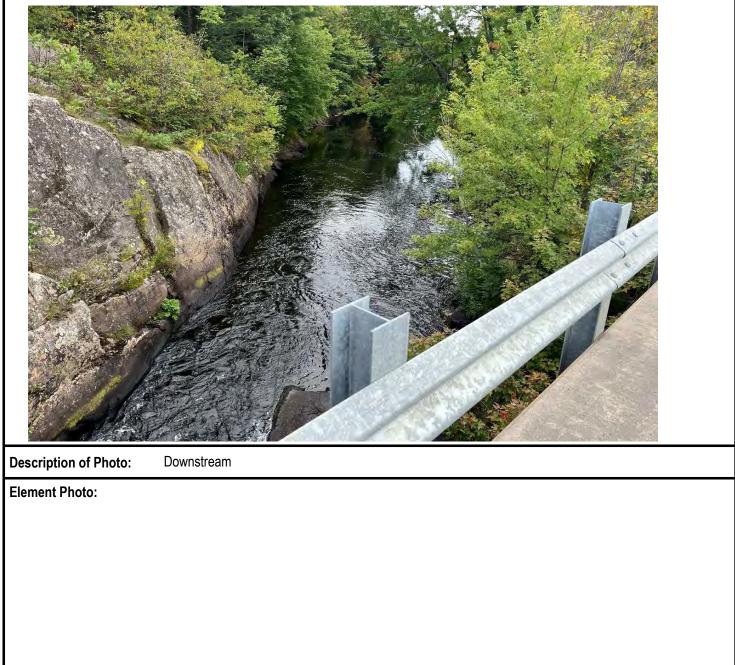


Description of Photo:

Southeast gabion retaining wall

Element Photo:

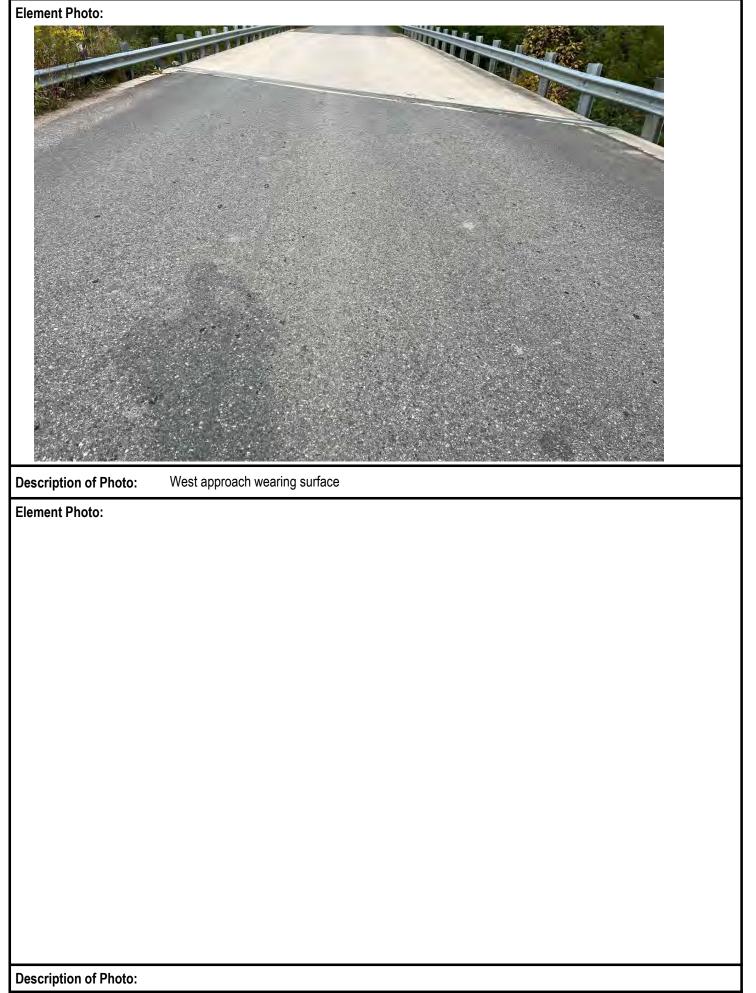
Element Data:																		
Element Group:		Embankmen	ts & Stre	ams			L	ength	:									
Element Name:		Streams and	Waterw	ays			١	Nidth:										
Location:								leight										
Material:								Count:										
Element Type:								Fotal C	Quantity	/:	i	all						
Environment:		Benign			In	specte	ed			`	Yes	Χ	No	l	mited			
Protection System	:															F	erform	ance
Condition Data:		Units		E:	xceller	nt	(Good		Fa	air			Poor'		[Deficier	icies
		all			X													
Comments: No o			Reh	ah: [Renl				Maii	ntena	ance	Neo	de				
	ecommended Work: Rehab: Replace Replac										-		NCC			1		<u> </u>
Urgent:										Urge	ent:			1 Yea	r:		2 Year	
Element Photo:	1																	
Description of I	Photo:	Upstream																



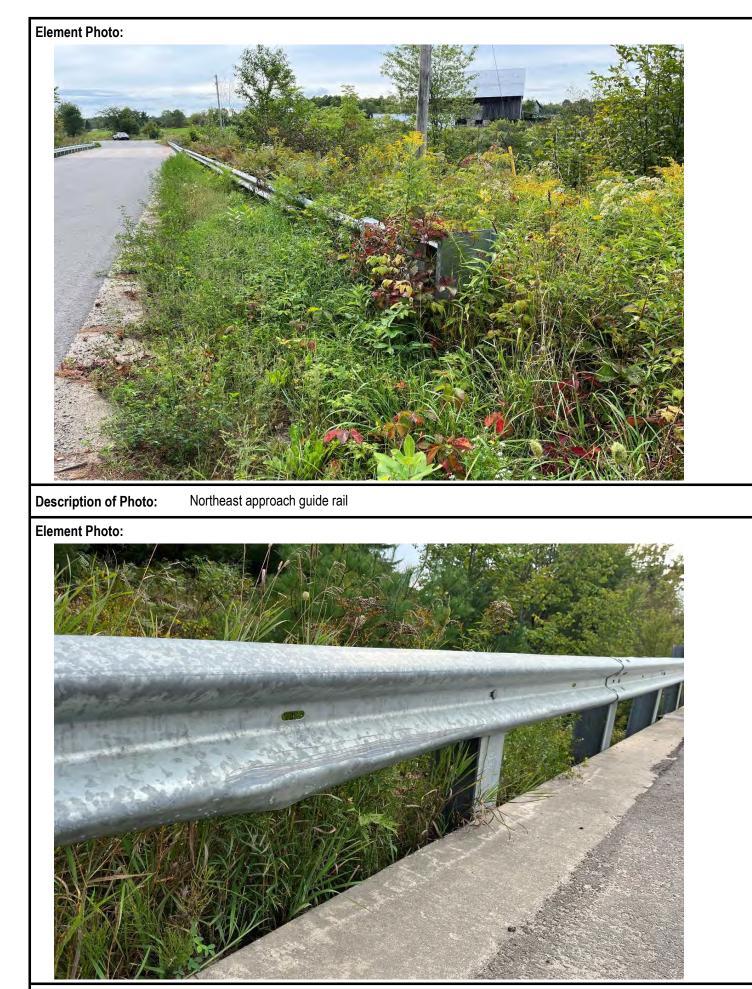
Element Data:																		
Element Group:		Embankmen	ts & Stre	ams				Ler	ngth:									
Element Name:		Embankmen		Wi														
Location:					ight: unt:													
Material:	ement Type: vironment: Benign otection System: Units Excellent											4						
Element Type:								Tot	al Quant	ity:		4						
Environment:			Insp	ected				Yes	Χ	No	li	mited						
Protection System	nent: Benign n System: Excellent n Data: each																erforma	
Condition Data:				E	xce	lent		Go			Fair			Poor'	*	[Deficienc	ies
	n Data:								ļ									
Comments: Los	s of material	is less than 1	0%.															
Recommended Work: Rehab: Replace: Maintenance Needs: Urgent: 1-5 Years: 6-10 Years: None: X Urgent: 1 Year: 2 Years:																		
Urgent:									one: X]	Urgen	t: 🗌]	1 Yea	r:		2 Year:	
Urgent: 1-5 Years: 6-10 Years: None: X Urgent: Element Photo: Image: Additional and the second and the seco																		
Description of I	Photo:	Northeast er	nbankm	ent														

Element Data:							
Element Group:		Accessories		Length:			
Element Name:		Signs		Width:			
Location:				Height:			
Material:		Steel		Count:		4	
Element Type:				Total Quant	ity:	4	
Environment:		Benign		Inspected		Yes X	No
Protection System	1:						Performance
		Units	Excellent	Good	Fair	Poor*	Deficiencies
Condition Data:		each	4				
Comments: No c	bserved det	ects.					
Recommended W	ork:	Reh	ab: Repl	ace:	Mainter	nance Needs:	
Urgent:	1-		0 Years:	None: X	Urgent:	1 Year:	2 Year:
Element Photo:	:						
	Phote:	Hazard warning circle					
Description of I	Photo:	Hazard warning sigr	і, тур.				

Element Data:						
Element Group:	Approaches		Length:		6.0	
Element Name:	Wearing Surface		Width:		8.0	
Location:			Height:			
Material:	Asphalt		Count:		2	
Element Type:			Total Quant	ity:	96.0	
Environment:	Severe		Inspected		Yes X N	No limited
Protection System:						Performance
	Units	Excellent	Good	Fair	Poor*	Deficiencies
Condition Data:		Exconorit	96.0	1 411	1 001	
	sq.m		96.0			
Comments: Light ravelling, t	ур.					
Recommended Work:	Reh			-	nance Needs:	
Urgent: 1-	5 Years: 6-1) Years:	None: X	Urgent:	1 Year:	2 Year:
Element Photo:						
Description of Photo:	East approach wear	ing surface				



Element Data:	1														
Element Group:		Approaches					Ler	igth:			18.4	, 33, 5	55.0, 18	3.4	
Element Name:		Barrier					Wic								
Location:							Hei	ght:							
Material:		Steel					Соι	unt:			4				
Element Type:							Tot	al Quant	ity:		124.	8			
Environment:		Severe					Inspe	ected				Yes	X	No	limited
Protection System		Galvanizing							-			-			Performance
		Units		Exc	ellent		Go	bd		Fair			Poor*		Deficiencies
Condition Data:		m			23.8								1.0		
									Ļ				1.0		
		ations noticed													
Recommended W			Reh			place:			1	Mainten					
Urgent:	1	-5 Years:	6-10) Years:			No	one: X		Urgent:			1 Year	:	2 Year:
Element Photo:	:														
Description of I	Photo:	Southeast a	pproach	guide r	ail										



Repair and Reha	bilitation Required:		Pric	ority		Estimated Structural
Element ¹	Repair and Rehabilitation Required ²	6 to 10 Years	1 to 5 Years	Within 1 Year	Urgent	Cost
Structure	Demolition					
Structure	Replacement					
0	R					
Deck	Rehab. =					
Sidewalk/Curb	Rehab. =					
Barrier	Rehab. =					
Joints	Rehab. =					
Beams	Rehab. =					
Abutment	Rehab. =					
Pier	Rehab. =					
Other						
Total Deck L	bilitated or Replacement Structure Dimensions ³ ength (m) Overall Str. Width (m)			Total St	ructural Cost	\$0.00

1 - Indicate specific costs for structure replacement OR for rehabilitation under the given headings.

 $\ensuremath{\mathbf{2}}$ - Give a very brief description of the rehabilitation work required.

 $\ensuremath{\mathsf{3}}\xspace$ - Estimated structure dimensions after completion of the proposed work - if it is expected to change.

Associated Work	Comments	Estimated Associated Work Cost
Approaches		Work Cost
Detours		
Traffic Control		
Utilities		
Other		
	Total Associated Work Cost	\$0.00

	Total Construction Cost	\$0.00

Justification:

The structure was rehabilitated in 2018 and 2023. The structure is in generally good condition. No recommended work at this time.

				MTO Site Number:
Inventory Data:				
Structure Name	4 - Beau Creek B	ridge, Lot 15/16, Conc	6 South	
Main Highway #	Jones Road	On X or Under Structure	Service on Structure	Navig. Water Non-Navig. Water Rail X Road Ped. Other
Location Description	1.5km East of Dist	trict Road 17	Service under:	Navig. Water X Non-Navig. Water
Owner/Custodian	Gravenhurst			
MTO Region			Latitude	44.944131 Longitude -79.357254
Regional Engineer			Heritage Designation:	X Not Cons. Cons./Not App. List/Not Desig. Desig. Desig./Not List Desig. & List
MTO Area			Hwy Class:	Freeway Arterial Collector Local X
Old County			Posted Speed	50 No. of Lanes 2
Township	Gravenhurst		AADT	50-199 % Truck 0
Structure Type 1	Rigid Frame			
Structure Material 1	Concrete		Traffic Directional B	Bound E-W
Structure Type 2				
Structure Material 2			Inspection Frequen	cy 2 (years)
Total Deck Length	7.14	(m)	Inspection Year	odd
Overall Str. Width	9.2	(m)	Inspection Duration	2 (hrs)
Culvert Length		(m)		
Total Deck Area	65.7	(sq.m)		
Roadway Width	8.43	(m)	Min. Vertical Cleara	ance (m)
Skew Angle		(Degree)	Detour Distance	6.0 (km)
No. of Spans	1		Fill on Structure	(m)
Span Lengths	6.45			(m)
For retaining wall:				
Total Wall Length		(m)	Max. Wall Height	(m)
Total Wall Area		(sq.m)	Ave. Wall Height	(m)
			Angle of Backfill	(Degrees)
Historical Data				
Year Built	1976		Year of superstruct	. Constructed
Last Reg. OSIM Insp			Year of Last Minor	
Last Enh. OSIM Insp	ection		Year of Last Major	
Work History: (Date/c	description)		Current Load Limit	/ / / (tonnes
2020 - new pavemen 2023 - scour protection	t	air		2018 - south abutment underwater inspection

MTO Site Number:

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Field Inspection Infor	mation:									
Date of Inspection:	Sept	ember 11, 2023	Type of In	spectio	n: [X Reg. OS	IM 🗌	Enh. OSIM		
Inspected By	Junji	e Yang								
Others in Party:										
Enh. Access Equipment:										
Special Access Equipment										
Weather	Clea		Temperatu	ire				22 °C		
Additional Investigation	ons Required:				None	Priority Normal	Urgent	Estimated Cost		
Material Condition Survey					None	Normai	orgent			
Detailed Deck Condition	n Survev.				X					
Non-destructive Delami		sphalt-Covered De	rk:		X					
Concrete Substructure		spriait-covered De	υ κ .		X					
Detailed Coating Condit					X					
Detailed Coating Condi					X					
Post-Tensioned Strand					X					
	investigation:				X					
Underwater Investigation										
Fatigue Investigation					X					
Seismic Investigation					X					
Structure Evaluation:					X					
Monitoring										
Deformations, Settleme	nts and Movemen	S:			X					
Crack Widths:					X					
RSS Horizontal movem					X					
RSS Vertical movement	ts of overall structu	re:			X					
RSS Local movements	or deterioration of	face elements:			X					
RSS Horizontal movem	ents within overall	structure:			Х					
RSS Vertical movement	ts within overall str	ucture			Х					
RSS Lateral earth press	sure at the back of	facing elements			Х					
Investigation Notes:					•	Total Cost		\$0.00		
Overall Structure Note	es:									
Recommended Work on Str	ucture	None Min	or Rehab.		Major Rehab.	Rep	lace			
Timing of Recommended W	ork	Urgent	1 to 5 year	s	6 to 10 ye	ars				
Overall Comments:		e structure is in g	- ·		·		work at this t	imo		
Overall Comments.		e structure is in g	enerally go			ommenueu	work at this t			
Date of Next inspection:	20	25								
Overall Bridge Co	ndition									
% Poor in Deck	% Poor in Beams	% Poor in Subs	tructure	% Poor in Barrier Bridge Condition Index (BCI						
0	0	0			0		BClp 100.00	BCI 78.78		
Overal Bridge Suf	ficiency			100.00 10.70				10.10		
Traffic	Economic	Width	•	Alignment Bridge Sufficiency Index (BSI)			ency Index (BSI)			
0	3	0		-	0					
<u> </u>	v	Ĭ	1		0 75.78					

Element Data:	:															
Element Group:		Decks					Le	ngth:			7.14					
Element Name:		Wearing Sur	face					dth:			8.43					
Location:							He	ight:								
Material:		Asphalt					Co	unt:			1					
Element Type:							То	tal Quant	ity:		60.2					
Environment:		Severe					Insp	ected			Y	es 🗙	(No[limite	d 🗌
Protection System	1:			_											Perform	
Condition Data:		Units		Ex	cellent	it		bod		Fair		F	°oor*		Deficie	
Commontes Light	nt ravelling a	sq.m Ind wheel trac	k rutting	tvn k	olato	d mor		l.2 ar and a	hras	6.0	م ادما امعا له	atod i	rinnlin	te n	9 - Rough rid	
Comments: Ligt	it ravening a		K Tutting	, typ. is	Solate		aum we		Dias	sion note	u. 1501		ΠΡΡΗΠΙ	gat	both enus.	
Recommended W	/ork:		Reh	ab:		Repla	ce:			Mainten	ance N	Veeds	:			
Urgent:	1-	-5 Years:	6-1	0 Years	:]	N	one: X]	Urgent:		1	Year:		2 Yea	r:
Element Photo	:															
															50	
Description of	Photo:	Wearing sur	face - lo	oking v	vest											

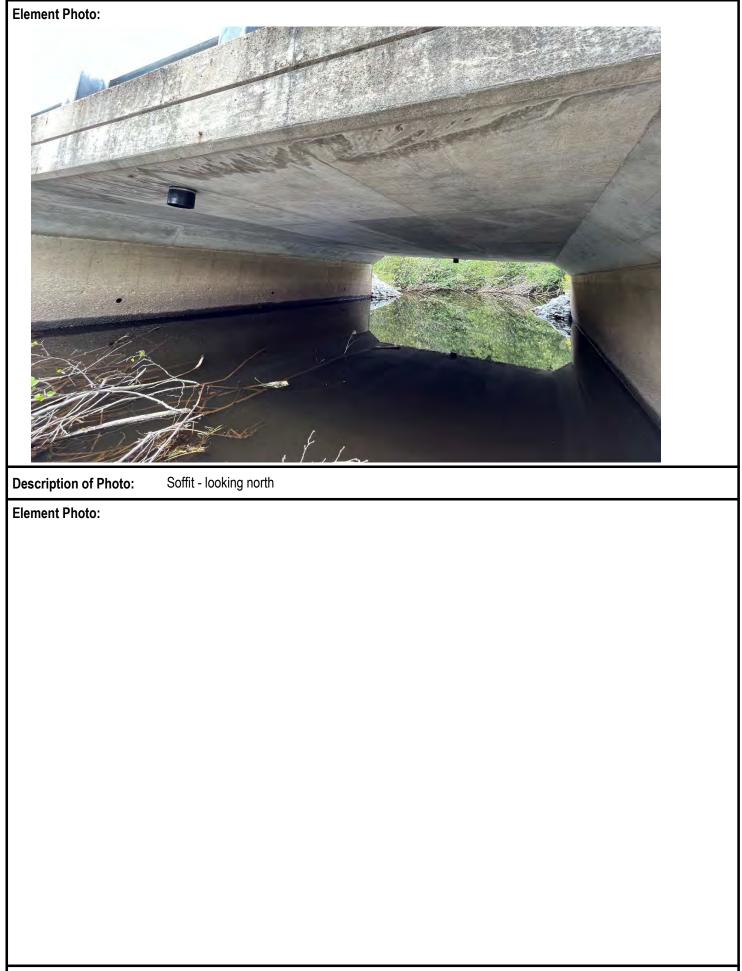


Description of Photo: Ripping, typ.

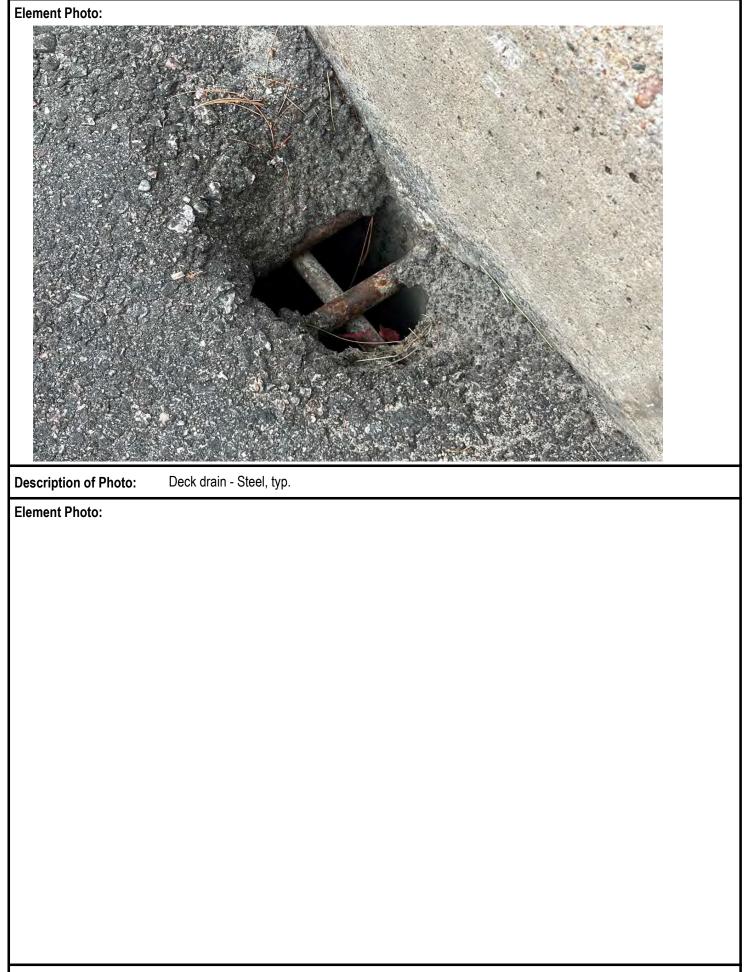
BRIDGE 4 - BEAU CREEK BRIDGE LOT 15/16, CONC 6 SOUTH

Element Data:																	
Element Group:	Deck Top Width: 9.19 ocation: Height:																
Element Name:		Deck Top									9.19						
Location:							He	ight:									
Material:		Concrete						unt:			1						
Element Type:							Tot	al Quant	ity:		65.7						
Environment:		Moderate					Insp	ected			Y	/es		No[XI	imited [
Protection System	1:			-		_	-						~ *			Performa	
Condition Data:		Units		Ex	cellent		Go 65			Fair		ŀ	Poor*			Deficienc	cies
	crete deck to ring surface	sq.m op covered ur and soffit.	nder asp	halt we	aring s	urface.			goo	d conditi	ion ba	ised o	n the c	ond:	ition	of asph	alt
Recommended W	ork:		Reh	ab:	R	eplace:				Mainten	nance l	Needs	5:				
Urgent:	1-	5 Years:	6-1) Years	:		No	one: X		Urgent:		1	Year:			2 Year:	
Element Photo:																	
Description of I	Photo:	Asphalt cove	ered cor	icrete d	eck												

Element Data:																
Element Group:		Decks					Le	ngth:			7.14					
Element Name:		Soffit						dth:			9.19					
Location:							He	ight:								
Material:		Concrete					Со	unt:			1					
Element Type:							To	tal Quanti	ity:		65.7					
Environment:		Benign						ected			Y	/es		No	limited X	
Protection System							- 1-								Performance	
	•	Units		Fv	ellent		Go	od		Fair			Poor*		Deficiencies	
Condition Data:					Chern					1 GII			1 001	-	Denoicheica	
		sq.m					65	./								
Comments: Ligh	t scaling, ty	'p.														
							r	1					_			
Recommended Wo	ork:		Reha			Replace:	-		•	Mainten	ance	Need	ls:			
Urgent:	1	-5 Years:	6-10	Years:			N	one: X		Urgent:			1 Year:		2 Year:	
Element Photo:																
Manufacture and a constant					C. ALC: N		1.00				TOTAL COL	147	BASSA TUBE		- Can 10 /	
	Cor AL	1	- in					14		- Contraction			1			
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and the second								Sec. A		34-16			14 18 4	The second	3ª	
		and the second s		-				and the		3				3	7 to a	
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and the second second					B				1. Ale			1			State .	
Section Constants					à ·	Sa Ar	*	State .								
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						a week	-1:11	Stor Mar			100		1		C. C. S.	
				and the second s	And a s	In any		A STATE							- 16-	
					Tree Ter	BORGER			AL AN	1						
									-	and the second second		See.				
															and the second second	
Description of F	Photo:	Soffit - lookin	ng south													



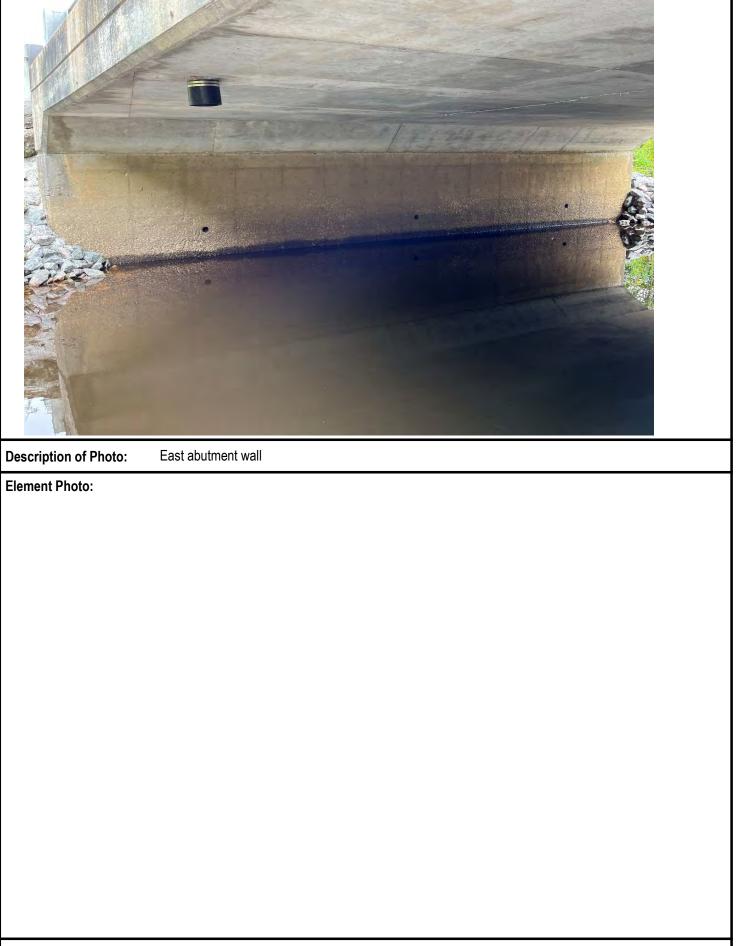
Element Data:																	
Element Group:		Decks						Le	ngth:								
Element Name:		Drainage Sys	stem					W	dth:			0.15	5				
Location:									eight:								
Material:		Steel / Elasto	omeric						ount:			2					
Element Type:								To	tal Quant	tity:		2					
Environment:		Severe						Insp	pected				Yes	<	No[limited	
Protection System	1:						_			_		_				Perform	
Condition Data:		Units		E	Excel	llent			bod		Fair		F	Poor*		Deficien	cies
		each				-1			2								
Comments: Ligh		on the steel. I	10 00561	veu			i the	2023	elastome		extentions	5.					
Recommended W	'ork:		Reh	ab:		R	eplac	e:]		Mainten	ance	e Needs	s:			
Urgent:	1-	5 Years:	6-1	0 Yea	irs:			N	one: X]	Urgent:] 1	Year:		2 Year:	
Element Photo:	:																
Description of I	Photo:	Deck drain -	extensi	on, ty	/p.												



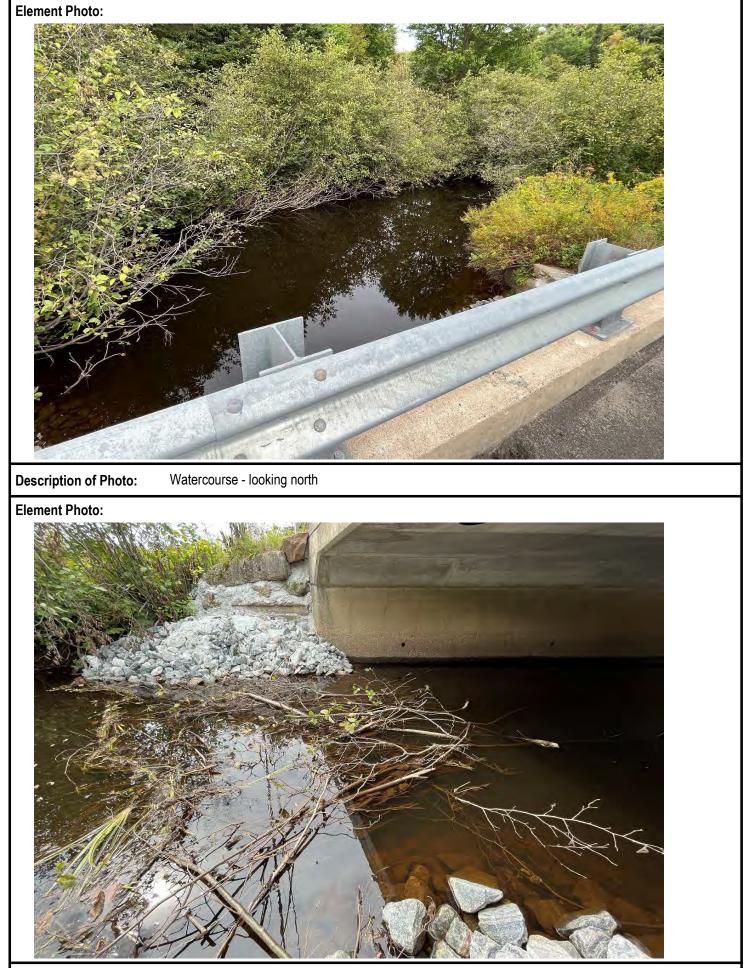
Element Data:							
Element Group:		Barriers		Length:		7.14	
Element Name:		Railing Systems		Width:			
Location:				Height:			
Material:		Steel		Count:		2	
Element Type:		Top mounted steel b	eam guide rail	Total Quant	tity:	14.3	
Environment:		Severe		Inspected		Yes X No	
Protection System	:	Galvanizing					Performance
Condition Data:		Units	Excellent	Good	Fair	Poor*	Deficiencies
		m	14.3				
Comments: No c	bbserved de	fects.					
Recommended W	ork:	Ref	nab: Repla	ace:	Mainter	nance Needs:	
Urgent:	1-	-5 Years: 6-1	0 Years:	None: X	Urgent:	1 Year:	2 Year:
Element Photo:							
Description of I	Photo:	Railing syetem - loo	king south				



Element Data:						
	Abutments		Length:			
Element Name:	Abutment Walls		Width:		9.2	
Location:			Height:		2.0	
Material:	Concrete		Count:		2	
Element Type:			Total Quant	ity:	36.8	
Environment:	Benign		Inspected		Yes	No limited X
Protection System:						Performance
Condition Data:	Units	Excellent	Good	Fair	Poor*	Deficiencies
	sq.m		31.8	5.0		
Comments: Light scaling, typ	o. Medium scaling a	long waterline, typ. B	elow water are	a not inspec	ted due to water de	pth.
Recommended Work:	Re	ehab: Replac	e:	Mainter	nance Needs:	
Urgent: 1-{	5 Years: 6	10 Years:	None: X	Urgent:	1 Year:	2 Year:
Element Photo:						
	West abutment wa					



Element Data:													
Element Group: Embankments & Streams Length: Element Name: Streams and Waterways Width:													
Location:			-			Height:							
Material:						Count:							
Element Type:						Total Quar	ntity:		all				
Environment:	Benign					nspected			Y	es X	No[limited	
Protection System:								<u>ı</u>				Performance	
Condition Data:	Units		Exce	ellent		Good		Fair		Poor*		Deficiencies	
Condition Data.	all		2	x									
Comments: No observed de	fects. Debris I	ouildup a	it upstre	am, hov	vever, i	not affecti	ng flo	ow.					
Recommended Work:		Reha	ab:	Rep	place:			Maintena	ance I	Needs:			
Urgent: 1	-5 Years:	6-10) Years:			None: X		Urgent:		1 Year:		2 Year:	
Element Photo:													
<image/>		e - lookin	g south										
	valercourse		iy south										



Description of Photo: Debris buildup at upstream

BRIDGE 4 - BEAU CREEK BRIDGE LOT 15/16, CONC 6 SOUTH

Element Idrug: Embankments & Streams Lergh: Location: Soil, grass, rock Count: 4 Element Type: Benign Inspected Yes X No	Element Data:														
Element Name: Embankments Width: Image: Constraint of the system	Element Group:	lement Name: Embankments Width:													
Material: Soil, grass, rock Count: 4 Element Type: Total Quantity: 4 Environment: Benign Inspected Yes X No limited Performance Protection System:	Element Name:				Width:										
Element Type: Image: Total Quantity: 4 Environment: Benign Inspected Yes X No<	Location:				Height:										
Environment: Benign Inspected Yes X No limited Protection System:			Soil, grass, rock		Count:										
Protection System: Performance Condition Data: Units Excellent Good Fair Poor* Deficiencies Condition Data: each 4	Element Type:				Total Quan	tity:	4								
Condition Data: Units Excellent Good Fair Poor* Deficiencies Comments: each 4	Environment:		Benign		Inspected		Yes	X No	limited						
Condition Data: each 4 Image: Commentation of the sector of the se	Protection System	:			-										
each 4 Comments: No observed defects. Recommended Work: Rehab: Replace: Urgent: 1-5 Years: 6-10 Years: None: X Urgent: 1 Year: 2 Year:	Condition Data:				Good	Fair		Poor*	Deficiencies						
Recommended Work: Rehab: Replace: Maintenance Needs: Urgent: 1-5 Years: 6-10 Years: None: X Urgent: 1 Year: 2 Year:				4											
Urgent: 1-5 Years: 6-10 Years: None: X Urgent: 1 Year: 2 Year:	Comments: NO														
	Recommended W	ork:	F	Rehab: Re	place:	Mainte	enance Need	ds:							
<section-header></section-header>	Urgent:	1-	-5 Years:	S-10 Years:	None: X	Urgent	:	1 Year:	2 Year:						
<section-header></section-header>															
	Element Photo:	1													
Description of Photo: Northeast embankment	Description of	Depetor	Northeast emban	kment											



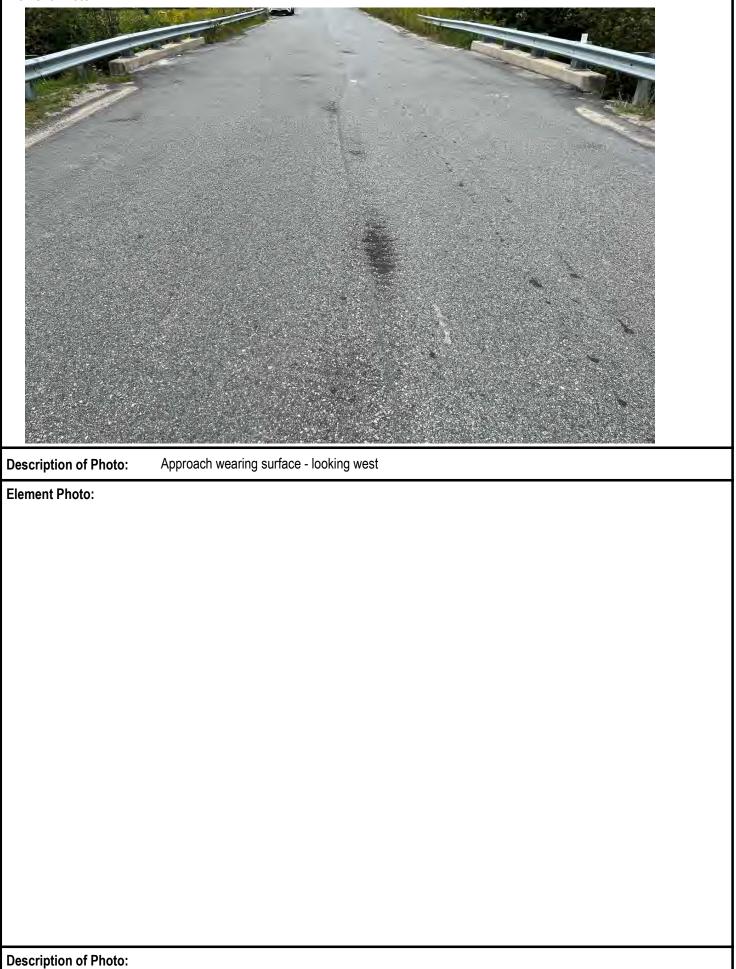
Description of Photo:Northwest embankmentBRIDGE 4 - BEAU CREEK BRIDGE LOT 15/16, CONC 6 SOUTH

Element Data:	:													
Element Group:														
Element Name:					Wi	dth:								
Location:							ight:							
Material:		Rock, grout				Co	unt:			4				
Element Type:						То	tal Quant	ity:		4				
Environment:		Benign				Insp	ected				Yes	Χ	No	limited
Protection System	ו:							_			_			Performance
Condition Data:		Units		Excellen	nt	Go	od		Fair			Poor*		Deficiencies
		each		4										
Comments: No observed defects. Recommended Work: Rehab: Replace: Urgent: 1-5 Years: 6-10 Years: None: X Urgent: 1 Year: 2														
Recommended W	/ork:		Reh	ab:	Repla	ice:			Mainte	enanc	e Nee	ds:		
Urgent:	1-	-5 Years:	6-1	0 Years:		N	one: X]	Urgen	t:]	1 Year:		2 Year:
Element Photo	:													
Description of	Photo:	Northeast sl	ope prot	tection										

Element Data	:							
Element Group:		Accessories		Length:				
Element Name:		Signs		Width:				
Location:				Height:				
Material:		Steel		Count:		4		
Element Type:				Total Quant	ity:	4		
Environment:		Severe		Inspected		Yes	X No	
Protection System	1:							Performance
Condition Data:		Units	Excellent	Good	Fair		Poor*	Deficiencies
		each		4				
Comments: Ligi Recommended W Urgent:		Re	hab: Repl 10 Years:	ace: None: X		ance Nee	eds: 1 Year:	2 Year:
Element Photo	:							
	Phata:		h fur					
Description of	Photo:	Hazard warning sig	n, typ.					

Element Data:													
Element Group:		Approaches				Ler	ngth:			6.0			
Element Name:		Wearing Sur	face			Wie	dth:		8	8.43			
Location:						He	ight:						
Material:		Ashpalt					unt:			2			
Element Type:						Tot	al Quanti	ity:	1	101.2			
Environment:		Severe				Insp	ected			Yes	s X	No	limited
Protection System	1:												Performance
Condition Data:		Units		Exce	llent	Go			Fair		Poor*		Deficiencies
		sq.m				96	.1		5.1				
Comments: Ligh	it ravelling, t	yp. Light to m	iedium v	vheel trac	ck ruttin <u></u>	g, typ.							
Recommended W	ork:		Reh	ab:	Repl	ace:		N	laintena	ince Ne	eds:		
Urgent:	1-	5 Years:	6-1	0 Years:		No	one: X	U	rgent:		1 Year	:	2 Year:
Element Photo:	:												
Description of I	Photo:	Approach we	earing s	urface - I	ooking e	east							





Element Data:	:												
Element Group:		Approaches				Le	ngth:		2	28.4, 23.	0, 64.0, 1	9.2	
Element Name:		Barrier					dth:						
Location:						He	ight:						
Material:		Steel					unt:		4	4			
Element Type:		Steel W-bear	n and W	post		То	tal Quant	ity:	1	134.6			
Environment:		Severe					ected			Yes	X	No	limited
Protection System	ו:	Galvanizing										Ť	Performance
		Units		Exce	ellent	Go	bod		Fair		Poor*		Deficiencies
Condition Data:		m		13	2.6	1	.7				0.3		
Comments: Rec	ently installe	ed barrier. On	e 300mm	ı 1 lona de	formatio	n noted	at the no	rthw	est appro	ach. No	other o	bserv	ed defects.
Commenta.	···· ,												
Recommended W	/ork:		Reh	iab:	Repl	ace:			Maintena	ince Nee	eds:		
Urgent:	1.	-5 Years:	6-1	0 Years:		N	one: X]	Urgent:		1 Year:		2 Year:
								•					
Element Photo:													
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	and the	A State of the second								S. I.		A-27	16
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Description of	Dhoto	Approach a	uido roil	coutho	action	Irant		_				_	
Description of I		Approach gu		- southe	ลอเ ๆนสต	nant							



BRIDGE 4 - BEAU CREEK BRIDGE LOT 15/16, CONC 6 SOUTH

Repair and Reha	bilitation Required:		Pric	ority		Estimated Structural
Element ¹	Repair and Rehabilitation Required ²	6 to 10 Years	1 to 5 Years	Within 1 Year	Urgent	Cost
Structure	Demolition					
Structure	Replacement					
0	R					
Deck	Rehab. =					
Sidewalk/Curb	Rehab. =					
Barrier	Rehab. =					
Joints	Rehab. =					
Beams	Rehab. =					
Abutment	Rehab. =					
Pier	Rehab. =					
Other						
Estimated Rehat Total Deck L	pilitated or Replacement Structure Dimensions ³ ength (m) Overall Str. Width (m)	_		Total Str	ructural Cost	\$0.00

1 - Indicate specific costs for structure replacement OR for rehabilitation under the given headings.

 $\ensuremath{\mathbf{2}}$ - Give a very brief description of the rehabilitation work required.

 $\ensuremath{\mathsf{3}}\xspace$ - Estimated structure dimensions after completion of the proposed work - if it is expected to change.

Associated Work	Comments	Estimated Associated Work Cost
Approaches		Work Cost
Detours		
Traffic Control		
Utilities		
Other		
	Total Associated Work Cost	\$0.00
	Total Construction Cost	\$0.00
	Total Constitución Cost	ψ0:00

Justification:

The structure is in generally good condition. No recommended work at this time.

				MTO Site Number:
Inventory Data:				
Structure Name	5 - Kahshe River I	Bridge, Lot 15, Conc	6	
Main Highway #	South Kahshe Lake Road	On X or Under Structure	Service on Structure	Navig. Water Non-Navig. Water Rail X Road Ped. Other
Location Description	1.22km east of Hig	hway 11	Service under:	Navig. Water X Non-Navig. Water
Owner/Custodian	Gravenhurst			
MTO Region	Northeastern		Latitude	44.840470 Longitude -79.304557
Regional Engineer			Heritage Designation:	Not Cons. X Cons./Not App. List/Not De: Desig. Desig./Not List Desig. & List
MTO Area			Hwy Class:	Freeway 🔄 Arterial 🦳 Collector 🦳 Local 🗴
Old County			Posted Speed	40 No. of Lanes 1
Township	Gravenhurst		AADT [200 % Truck 0
Structure Type 1	I-Beam Girders			
Structure Material 1	Steel		Traffic Directional	Bound N-S
Structure Type 2	Concrete Deck			
Structure Material 2	Concrete		Inspection Freque	ncy 2 (years)
Total Deck Length	30.0	(m)	Inspection Year	odd
Overall Str. Width	8.2	(m)	Inspection Duratio	n 2 (hrs)
Culvert Length		(m)		
Total Deck Area	246.0	(sq.m)		
Roadway Width	5.46	(m)	Min. Vertical Clear	rance (m)
Skew Angle	25	(Degree)	Detour Distance	N/A (km)
No. of Spans	2		Fill on Structure	(m)
Span Lengths	15.0, 15.0			(m)
For retaining wall:				
Total Wall Length		(m)	Max. Wall Height	(m)
Total Wall Area		(sq.m)	Ave. Wall Height	(m)
			Angle of Backfill	(Degrees)
Historical Data				
Year Built	2004		Year of superstruc	xt. Constructed
Last Reg. OSIM Inspe			Year of Last Minor	
Last Enh. OSIM Inspe	ection		Year of Last Major Current Load Limit	
Work History: (Date/d	escription)		Current Load Linn	Investigation History: (Date/description)
Concrete repairs - 20				

Т

MTO Site Number:

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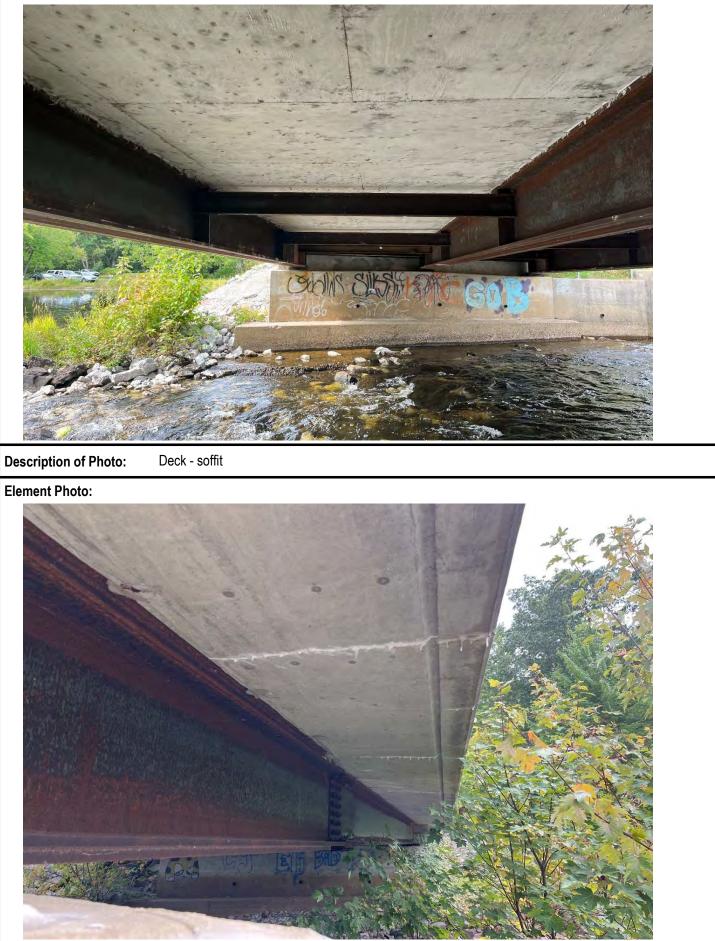
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Field Inspection Inform	mation:							
Date of Inspection:	Septer	nber 11, 2023	Type of I	nspectio	n: [X Reg. OS	SIM	Enh. OSIM
Inspected By	Junjie	Yang	1			-		
Others in Party:								
Enh. Access Equipment:								
Special Access Equipment								
Weather	Clear		Temperat	ure				22 °C
Additional Investigation	ons Required:				None	Priority Normal	Urgent	Estimated Cost
Material Condition Survey					None	Normai	orgoni	
Detailed Deck Condition	Survey:				Х			
Non-destructive Delami		halt-Covered De	ck:		X			
Concrete Substructure (υ κ .		X			
					X			
Detailed Coating Condit					X			
Detailed Timber Investig								
Post-Tensioned Strand	investigation:				X			
Underwater Investigation					X			
Fatigue Investigation					Х			
Seismic Investigation					X			
Structure Evaluation:					Х			
Monitoring								
Deformations, Settleme	nts and Movements				Х			
Crack Widths:					Х			
RSS Horizontal moveme	ents of face:				Х			
RSS Vertical movement	ts of overall structur	e:			Х			
RSS Local movements	or deterioration of fa	ce elements:			Х			
RSS Horizontal moveme					Х			
RSS Vertical movement					X			
RSS Lateral earth press					X			
Investigation Notes:					~	Total Cost	II	\$0.00
Overall Structure Note	?S:							
Recommended Work on Stru		None Min	or Rehab.		Major Rehab.		lace	
							nace	
Timing of Recommended Wo		Urgent	1 to 5 yea		6 to 10 ye			
Overall Comments:	The	structure is in g	enerally g	ood con	dition. No rec	commended	work at this ti	ime.
		-						
Date of Next inspection:	202	5						
Overall Bridge Cor	ndition							
% Poor in Deck	% Poor in Beams	% Poor in Subs	tructure	% P	oor in Barrier	Bri	dge Condition	Index (BCI or BCIp)
1%	0%	2%			0%		BClp 99.41	BCI 76.88
Overal Bridge Suff	ficiency					1	JJ.T I	1 70.00
Traffic	Economic	Width	<u> </u>	Alignment Bridge Sufficiency Index (BSI)				ency Index (BSI)
0	3	5		,	0			8.88
0	J	J	0 00.00					

Element Data:	:										
Element Group:		Decks			Length:			30.0			
Element Name:		Wearing Sur	face		Width:		4	5.5			
Location:					Height:						
Material:		Asphalt			Count:			1			
Element Type:					Total Quar	itity:		163.8			
Environment:		Severe			Inspected			Yes	X	No	limited
Protection System	ו:				•	_		_			Performance
Condition Data:		Units		Excellent	Good		Fair		Poor*		Deficiencies
Comments: Ligh	 ht ravelling, f	sq.m			163.8						
Gomments. — 3		у г .									
Recommended W	/ork:		Reh	nab: Repl	ace:		Maintena	ance Nee	eds:		
Urgent:	1-	5 Years:	6-1	0 Years:	None: X]	Urgent:		1 Year	:	2 Year:
Element Photo	:										
Description of	Photo:	Wearing sur	face								
		wearing sur	1000								

Element Data:																			
Element Group:		Decks						Le	ngth:			30.0							
Element Name:		Deck Top							dth:			8.2							
Location:								He	eight:										
Material:		Concrete							ount:			1							
Element Type:								То	tal Quan	tity:		246.0	0						
Environment:		Moderate							pected			١	Yes		No	X	limi	ed	
Protection System	1:						_			_		_						ormance	
Condition Data:		Units		E	Exce	llent			bod		Fair			Poor*			Defi	ciencies	
		sq.m							6.0										
Comments: Not		spection. Ass	sumea n	I good	u co	manu		1560 0	in the co	nann	on or wea	aring :	Suria		1 5011	п.			
Recommended W	ork:		Reh	ab:		R	eplac	e:]		Mainten	ance	Need	s:					
Urgent:	1-	5 Years:	6-1	0 Yea	rs:			N	one: X]	Urgent:			1 Year	:		2 Ye	ear:	
Element Photo:	1																		
Description of I	Photo:	Asphalt cove	ered dec	ck top															

Element Data:													
Element Group:	Decks			Lei	ngth:		30.0						
Element Name:	Soffit				dth:			8.2					
Location:				He	ight:								
Material:	Concrete			Co	unt:			1					
Element Type:				To	al Quanti	ty:		246.0					
Environment:	Benign			Insp	ected			Yes X	No	limited			
Protection System:						_		_		Performance			
Condition Data:	Units	Exce	ellent	Go			Fair	Po		Deficiencies			
	sq.m			23			12.3	2					
	caling, typ. Isolated na rse cracks with wet ar							ers. Regular	y space	a narrow to mealum			
Recommended Work:	:	Rehab:	Repl	ace:		Ma	aintena	ance Needs:					
Urgent:	1-5 Years:	6-10 Years:		N	one: X	Urę	gent:	1 Y	ear:	2 Year:			
Element Photo:													
Description of Pho	<image/>												

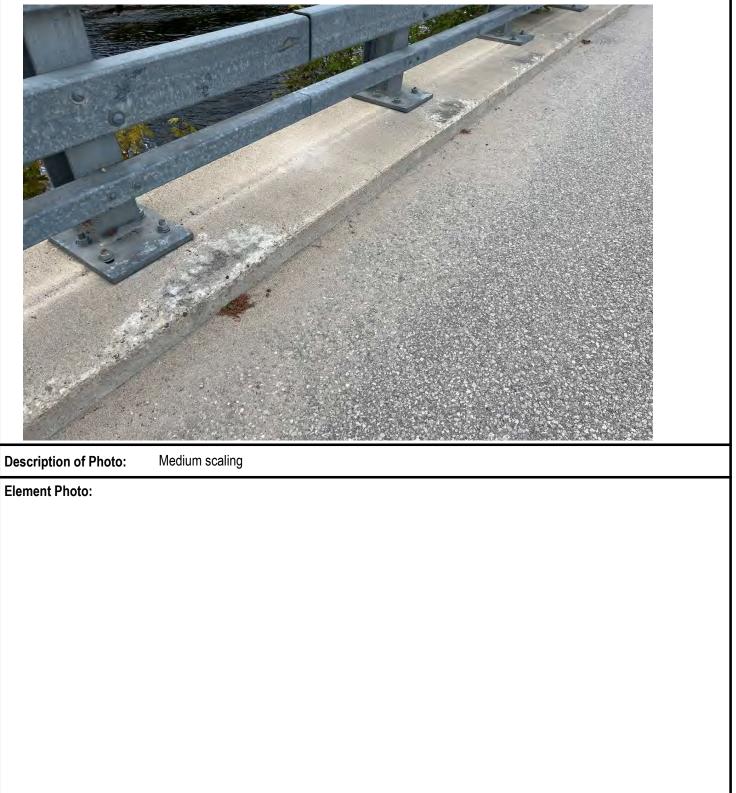


Description of Photo:Efflorescence on exterior soffitBRIDGE 5 - KAHSHE RIVER BRIDGE, LOT 15, CONC 6

Element Data:									
Element Group:	Joints			Length:		9.05			
Element Name:	Seals/sealan	ts		Width:					
Location:				Height:					
Material:	Sealant			Count:		4			
Element Type:				Total Quanti	ity:	4			
Environment:	Severe			Inspected		Ye	s X	No	limited
Protection System:									Performance
	Units	Excell	ent	Good	Fair		Poor*		Deficiencies
Condition Data:	each			4					
Comments [.] Liaht w	ear, typical. Note the a	butments are sem	i-integral.					I	
			•						
Recommended Work	:	Rehab:	Replace	:	Mainte	nance Ne	eeds:		
Urgent:	1-5 Years:	6-10 Years:		None: X	Urgent:		1 Year	:	2 Year:
Element Photo:									
Description of Pho	oto: Joint, typ.								

Element Data	:												
Element Group:		Sidewalk/Curb				Len	gth:		41.	6			
Element Name:		Sidewalks				Wid			2.0				
Location:						Heig	ght:		0.1				
Material:		Cast-in-place co	ncrete			Cou			1				
Element Type:						Tota	al Quanti	ty:	87.	4			
Environment:		Severe				Inspe	ected			Yes	X	No	limited
Protection System	ו:									-	-	Ī	Performance
		Units		Excellent		Goo	bd	Fair			Poor*		Deficiencies
Condition Data:		sq.m				83.	0	4.4					
	l htscaling tv	p. Light to mediu	m abrasio	on along t	on eda								
Recommended W			Rehab:		eplace:			Maint	enanc	e Nee	ds [,]		
		5 Voars:							_	7			2 Voor:
Urgent:	L 1-	5 Years:	6-10 Yea			NO	ne: X	Urgen	ι <u> </u>		1 Year		2 Year:
Element Photo	:												
Description of	Photo:	Concrete sidewa	alk										

Element Data:							
Element Group:		Sidewalk/Curb		Length:		41.6	
Element Name:		Curbs		Width:		0.7	
Location:				Height:		0.1	
Material:		Cast-in-place concre	ete	Count:		1	
Element Type:				Total Quant	ity:	33.3	
Environment:		Severe		Inspected		Yes X No	limited
Protection System	:				-		Performance
Condition Data:		Units	Excellent	Good	Fair	Poor*	Deficiencies
Condition Data.		sq.m		30.3	3.0		
Comments: Ligh	it scaling, ty	pical. Isolated areas o	of medium scaling				
Recommended W	ork:	Re	nab: Repla	ace:	Mainten	ance Needs:	
Urgent:	1-	5 Years: 6-1	0 Years:	None: X	Urgent:	1 Year:	2 Year:
Element Photo:							
Description of l		Concrete sidewalk					
Description of I	Photo:	Concrete sidewalk					



Element Data:								
Element Group:		Barriers			Length:		2.29	
Element Name:		Barrier/Parap	pet Walls	;	Width:		0.3	
Location:					Height:		1.05	
Material:		Cast-in-place	e concre	te	Count:		4	
Element Type:					Total Quant	ity:	10.1	
Environment:		Severe			Inspected	·	Yes X No	DIImited
Protection System	<u>ו</u> י				mopootou			Performance
		Units		Excellent	Good	Fair	Poor*	Deficiencies
Condition Data:		sq.m			9.6	0.5		
Comments: Ligh	l nt scaling, tv		dium at	rasion.		0.0		
Comments3		Pg						
Recommended W	/ork:		Reh	ab: Rep	ace:	Mainter	nance Needs:	
Urgent:	1-	-5 Years:	6-1	0 Years:	None: X	Urgent:	1 Year:	2 Year:
Element Photo	:							
Description of	Photo:	Southeast e	nd wall					
Beschption of								

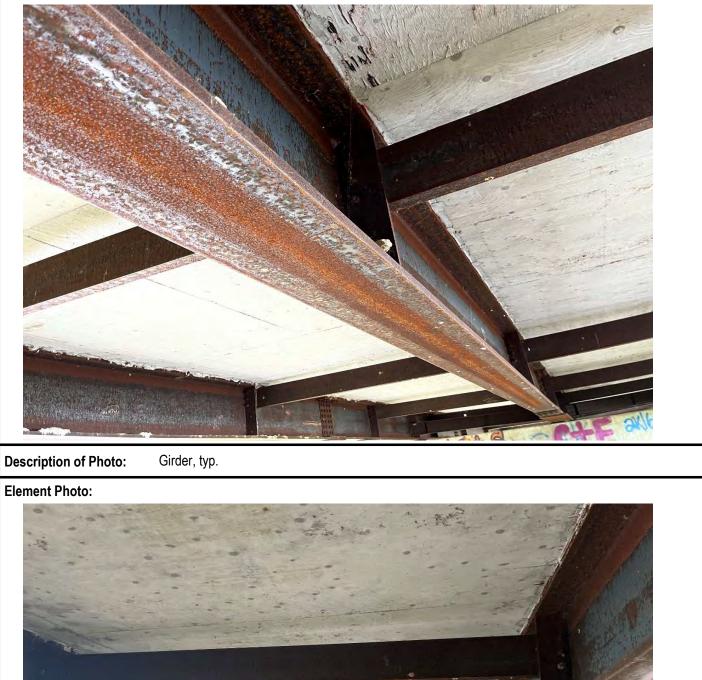


Element Data:							
Element Group:		Barriers		Length:		37.03	
Element Name:		Railing Systems		Width:			
Location:				Height:			
Material:		Steel		Count:		2	
Element Type:				Total Quant	ity:	74.1	
Environment:		Severe		Inspected		Yes X	No limited
Protection System	1:	Galvanizing					Performance
Condition Data:		Units	Excellent	Good	Fair	Poor*	Deficiencies
Condition Data.		m		74.1			
Comments: Ligh Recommended W Urgent:	ork:	f galvanized coating, Reh 5 Years:6-1		ace: None: X		nance Needs:	: 2 Year:
Element Photo:							
Description of I	Photo:	East barrier					





Element Data:															
Element Group:	Beams/Main	Longitu	dinal Elements	s	Length:			30.0							
Element Name:	Girders				Width:			0.33							
Location:					Height:			0.62							
Material:	Steel				Count:			3							
Element Type:	I-Beam				Total Qua	ntity:		200.7							
Environment:	Benign				Inspected			Ye	es X	No	limited				
Protection System:											Performance				
Condition Data:	Units		Excellent		Good		Fair		Poor*		Deficiencies				
	sq.m	-			200.7										
	, typ. This may	be atm	ospheric corro	osion re	sistant ste	el (AC	CR) i.e. we	eatherin	ng steel, h	oweve	er unknown at this				
time.															
Recommended Work:		Reh	ab: R	eplace:	\square		Mainter	nance N	eeds:						
Urgent:1	-5 Years:	0-1	0 Years:		None:	<u>`</u>	Urgent:		1 Year	·	2 Year:				
Element Photo:															
Element Photo:															
Section 1998															
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in the second second	1200							A Start	Alless and		Sec. 1				
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Description of Photo:	Girder, typ.														



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Element Data:														
Element Group:	Beams/Main	ongitu	dinal E	lemen	nts		ength:			2.6				
Element Name:	Diaphragms						idth:			0.05				
Location:						He	eight:			0.23				
Material:	Steel					C	ount:			24				
Element Type:	Channels					Τc	otal Quanti	ity:		24				
Environment:	Benign						pected			<u> </u>	Yes	Χ	No[
Protection System:						_				_		_		Performance
Condition Data:	Units		Ex	cellent	t		ood		Fair			Poor*		Deficiencies
	each						24		<u></u>		<u>.</u>			
Comments: Light corrosion, time.	typ. I his may	pe atm	ospher		rosion	resist	ant steel	(AC	к) I.e. we	eathe	ring s	steel, h	owev	er unknown at this
Recommended Work:		Reh	ab:		Replac	e:]		Mainten	ance	Need	ds:		
Urgent: 1-	5 Years:	6-10) Years	:]	N	lone: X	[Urgent:			1 Year:		2 Year:
Element Photo:														
				NWCS -										
Description of Photo:	Diaphragm, t	ур.												

Element Data:											
Element Group:	Abutments				Length	1:					
Element Name:	Abutment \	Valls			Width:			8.2			
Location:					Height	:		1.05			
Material:	Cast-in-pla	ce concret	e		Count:			2			
Element Type:					Total C	Quantity:		17.2			
Environment:	Benign				Inspecte			Yes	X	No	limited
Protection System:											Performance
Condition Data:	Units		Excellent	t	Good		Fair		Poor*		Deficiencies
	sq.m scaling, typ. Two narro				15.5		1.7				
Recommended Wor	rk:	Reha		Replace				ance Neo			
Urgent:	1-5 Years:	6-10) Years:		None	X	Urgent:		1 Year:		2 Year:
Element Photo:											
					BA						
Description of Pl	hoto: South abut	ment wall									



Narrow vertical crack

Description of Photo:

Element Data:																		
Element Group:		Abutments						Len	gth:			5.0						
Element Name:		Wingwalls						Wid										
Location:								Hei	ght:			1.2						
Material:		Cast-in-place	e concre	te				Сог	unt:			4						
Element Type:								Tota	al Quanti	ity:		24.0						
Environment:		Benign					h	nspe	ected			, v	Yes	X	No	lim	ited	1
Protection System	<u>.</u>														Ť		formance	1
1 roteotion bysten		Units		F	celle	ant		God	hd		Fair			Poor*			iciencies	
Condition Data:						5111					i ali	-						
		sq.m						23						1.0				
		p. Isolated de						wes	t wingwa	all, i	solated s	spall ((0.4 x	0.4 x ().1) at	southe	ast	
wing	gwall. Water	leaking on fac	ce of So	utheas	t wii	ngwall.												
														_				
Recommended W	ork:		Reh	ab:		Repl	ace:				Mainten	ance	Need	ls:				
							L			1								1
Urgent:	1-	5 Years:	6-10) Year	s: [No	ne: X		Urgent:			1 Year		2 Y	'ear:	
Element Photo:																		
				- and	-	-	100		1.2									
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4		Beer Will Law			0.5	A AND A					-							
		5 5 4 1	the start of		1	Contraction of the second			100							-		
	A second	Carlos and a second			1	To Barrier				- Col		1						
A		X	De	-	A	p.	and the second			College and					4.13	1		
	the state			24					1.34	-				AL STRAT	-			
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			NT SAL		16		Contraction of the second		there a		7		all a	23				
	and the second	Star 1									N.				Set			
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Description of I	Photo:	Southeast w	vingwall															



Description of Photo: Southwest wingwall

BRIDGE 5 - KAHSHE RIVER BRIDGE, LOT 15, CONC 6

Element Data:														
Element Group:		Abutments			Length:									
Element Name:		Bearings			Width:									
Location:					Height:									
Material:		Elastomeric			Count:			6						
Element Type:					Total Qua	ntity:		6						
Environment:		Benign			Inspected			Ye	s X	No	limited			
Protection System:										Ť	Performance			
Condition Data:		Units		Excellent	Good		Fair		Poor*		Deficiencies			
		each			6									
Comments: Light	weathering	g, typ.												
Recommended Work: Rehab: Replace: Maintenance Needs: Urgent: 1-5 Years: 6-10 Years: None: Vrgent: 1 Year: 2 Year:														
Urgent: 1-5 Years: 6-10 Years: None: X Urgent: 1 Year: 2 Year														
Urgent: 1-5 Years: 6-10 Years: None: X Urgent: 1 Year: 2 Year:														
Description of Ph	noto:	Bearing, typ.												

Element Data:							
Element Group:	Piers			Length:		8.6	
Element Name:	Shafts/Colur	nns/Pile	Bents	Width:		0.6	
Location:				Height:		1.2	
Material:	Cast-in-place	e concret	te	Count:		1	
Element Type:				Total Quant	ity:	22.1	
Environment:	Benign			Inspected		Yes X No	limited
Protection System:							Performance
Condition Data:	Units		Excellent	Good	Fair	Poor*	Deficiencies
	sq.m			20.1	2.0		
Comments: Light sca	lling, typ. Isolated mo	edium sc	aling around bas	se of pier wall. Tw	o medium v	ertical cracks on the n	orth face.
Recommended Work:		Reh	ab: Repl	ace:	Mainte	nance Needs:	
Urgent:	1-5 Years:	6-10) Years:	None: X	Urgent:	1 Year:	2 Year:
Element Photo:							
Description of Phot	o: Pier - north	face					



Description of Photo:

Medium vertical crack

Element Photo:

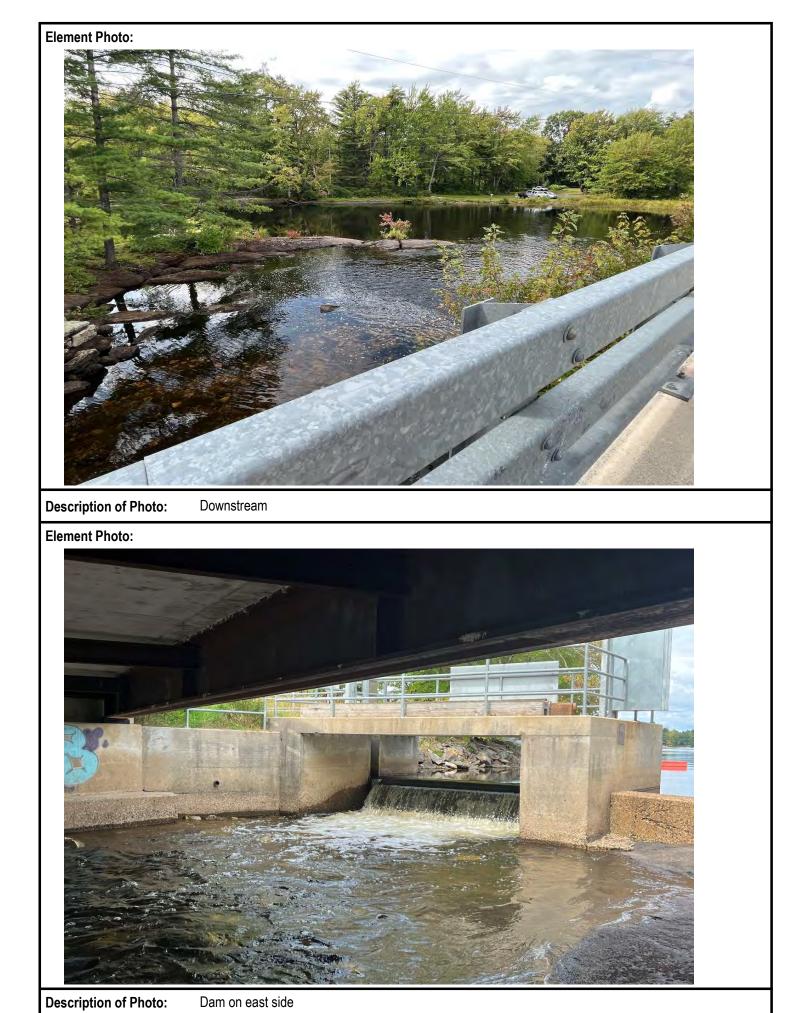


Description of Photo: Medium vertical crack

BRIDGE 5 - KAHSHE RIVER BRIDGE, LOT 15, CONC 6

Element Data:														
Element Group:	Piers						_ength:							
Element Name:	Bearings					1	Nidth:							
Location:						1	Height:							
Material:	Elastomeric						Count:			3				
Element Type:						-	Fotal Quar	ntity:		3				
Environment:	Benign						spected			\ \	Yes	X	No	limited
Protection System:	J													Performance
	Units		F	VCO	llent		Good		Fair			Poor*	_	Deficiencies
Condition Data:									1 ali	_		1 001		Deliciencies
	each						3							
Comments: Light weathering	g, typ.													
Recommended Work:		Deb	ahi [De				Mainten		Nood			
Recommended work.		Reh			Re	place:			wanten	lance	neeu	15.		
Urgent: 1-	5 Years:	6-1	0 Yea	rs:			None: X		Urgent:			1 Year:		2 Year:
Element Photo:														
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and the second second			and the second se											
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Description of Photo:	Bearing, typ													

Element Data:													
Element Group:	Embankment	s & Stre	ams		Length:								
Element Name:	Streams and	Naterw	ays		Width:								
Location:					Height:								
Material:					Count:								
Element Type:					Total Quant	tity:		all					
Environment:	Benign				Inspected			Y	es X	No	limited		
Protection System:											Performance		
Condition Data:	Units		Exc	ellent	Good		Fair		Poor*		Deficiencies		
	all			x									
Comments: No observed de	fects.					-							
Recommended Work:		Reh	ab:	Rep	ace:		Mainten	ance N	leeds:				
Urgent: 1	-5 Years:	6-10	0 Years:		None: X]	Urgent:		1 Year:		2 Year:		
Element Photo:													
Element Photo:													
Urgent: 1-5 Years: 6-10 Years: None: X Urgent: 1 Year: 2 Year:													
Element Photo:													
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	l la altre e												
Description of Photo:	Upstream												



Element Data:	:														
Element Group:		Embankmen	ts & Stre	ams		Lei	ngth:								
Element Name:		Embankmen	ts			Wi	dth:								
Location:							ight:								
Material:		Soil, rock, gr	ass				unt:			6					
Element Type:						To	al Quant	ity:		6					
Environment:		Benign				Insp	ected				Yes	Χ	No[limited	
Protection System	1:													Performar	
Condition Data:		Units		Exce	ellent	Go			Fair			Poor*		Deficienc	ies
Comments: Los		each					6								
Recommended W			Reh	ab:	Rep	ace:			Mainter	nance	Need	ds:			
Urgent:		-5 Years:	61	0 Years:			one: X	1	Urgent:		1	1 Year		2 Year:	
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Element Photo	Element Photo:														
Description of	Photo:	Northeast er		ent											
Description of		NUI (Neast ef	nuankin												





Element Data:	:															
Element Group:		Embankmen	ts & Stre	ams		Le	ngth:									
Element Name:		Slope Protec	tion			Wi	dth:									
Location:						He	ight:									
Material:		Rock				Co	unt:			6						
Element Type:						То	tal Quant	tity:		6						
Environment:		Benign				Insp	ected				Yes	X	No	lim	nited	
Protection System	ו:														rforman	
Condition Data:		Units		Exce	ellent		od		Fair			Poor*		De	ficiencie	es
		each					6									
Comments: Los Recommended W			Reh	ab:	Repl	ace:			Mainte	nance	e Need	IS:				
Urgent:	1.	-5 Years:	6-10	0 Years:		N	one: X]	Urgent:			1 Year:		2	Year:	
								-			<u> </u>					
Element Photo	:															
Description of	Photo:	South slope	protecti	on												

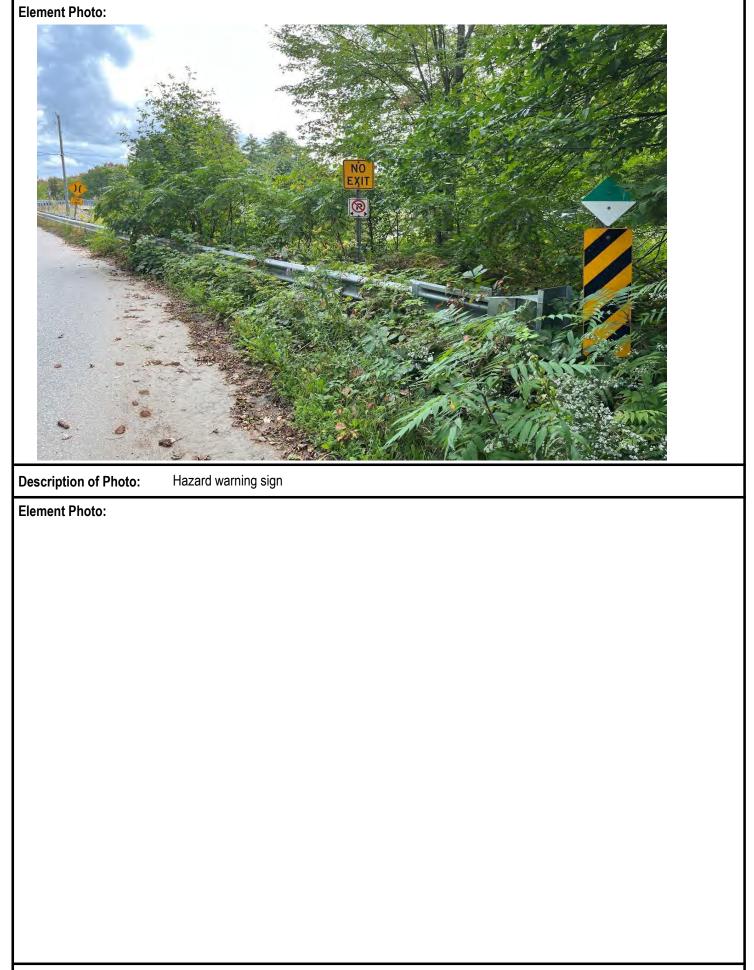


Element Photo:



Description of Photo: Northwest scope protection

Element Data:	:										
Element Group:		Accessories				Length:					
Element Name:		Signs				Width:					
Location:						Height:					
Material:		Steel				Count:		6			
Element Type:						Total Quant	ity:	6			
Environment:		Severe				Inspected			Yes X	No	limited
Protection System	n:								T	Ī	Performance
Condition Data:		Units		Excellent		Good	Fair		Poor'	*	Deficiencies
		each		6							
Comments: 4-H	Hazard warni	ng sign, 1 - na	irrow br	idge ahead si	gns, and	l 1 - no exit s	ign. No obs	erved	l defects.		
Recommended W	/ork:		Reh	ab: F	Replace:		Mainte	nance	e Needs:		
Urgent:	1-	5 Years:	6-1	0 Years:		None: X	Urgent] 1 Yea	r:	2 Year:
Element Photo	:										
								One Ane			
Description of	Photo:	One lane sig	n								



Element Data:																	
Element Group:		Approaches					Le	ength:			6.0						
Element Name:		Wearing Sur	face					/idth:			8.0						
Location:							H	eight:									
Material:		Asphalt						ount:			2						
Element Type:							T I	otal Quant	tity:		96.0						
Environment:		Severe					Ins	pected			Y	/es	Χ	No	lir	nited	
Protection System	:								_							erforman	
Condition Data:		Units		E	xcelle	ent		lood		Fair			Poor*		D	eficienci	es
		sq.m						6.0									
		typ. Narrow tra						ı. 									
Recommended W	ork:		Reh	ab:		Rep	ace:	<u> </u>		Mainten	ance	Need	ds:				
Urgent:	1-	-5 Years:	6-10) Year	s:		١	None: X		Urgent:			1 Year	:	2	Year:	
Element Photo:																	
Description of I	Photo:	South appro	ach wea	iring s	surfa	ce											



Element Data:															
Element Group:		Approaches				Le	ength:			25.0	, 78.0, 3	32.0, 3	2.0		
Element Name:		Barrier	W	idth:											
Location:							eight:								
Material:		Steel					ount:			4					
Element Type:							otal Quant	tity:		167.					
Environment:		Severe				Ins	pected				Yes X		No	limite	ed 📃
Protection System	1:	Galvanizing												Perfor	mance
Condition Data:		Units		Exc	ellent	G	ood		Fair		Р	oor*		Defici	encies
Condition Data:		m		16	7.0										
Comments: No o	bserved de	fects.				•									
Recommended W Urgent:		-5 Years:	Reha 6-10	b:		lace:] Ione: X		Mainter Urgent:			Year:		2 Yea	ar:
			0 10	Touro.				1				Tour.L		2 100	
Element Photo:	:														
Description of I	Photo:	Northwest appro	roach g	guide ra	ail										



Description of Photo:

Northeast approach guide rail



Repair and Reha	bilitation Required:		Pric	ority		Estimated Structural
Element ¹	Repair and Rehabilitation Required ²	6 to 10 Years	1 to 5 Years	Within 1 Year	Urgent	Cost
Structure	Demolition					
Structure	Replacement					
0	R					
Deck	Rehab. =					
Sidewalk/Curb	Rehab. =					
Barrier	Rehab. =					
Joints	Rehab. =					
Beams	Rehab. =					
Abutment	Rehab. =					
Pier	Rehab. =					
Other						
Estimated Rehat Total Deck L	pilitated or Replacement Structure Dimensions ³ ength (m) Overall Str. Width (m)	_		Total Str	ructural Cost	\$0.00

1 - Indicate specific costs for structure replacement OR for rehabilitation under the given headings.

 $\ensuremath{\mathbf{2}}$ - Give a very brief description of the rehabilitation work required.

 $\ensuremath{\mathsf{3}}\xspace$ - Estimated structure dimensions after completion of the proposed work - if it is expected to change.

Associated Work	Comments	Estimated Associated Work Cost
Approaches		Work Cost
Detours		
Traffic Control		
Utilities		
Other		
	Total Associated Work Cost	\$0.00
		<u> </u>
	Total Construction Cost	\$0.00

Justification:

The structure was rehabilitated in 2023 with concrete repairs along the sidewalk and end walls. The structure is in generally good condition. No recommended work at this time.

				MTO Site Number:
Inventory Data:				
Structure Name	6 - Pinetree Bridg	ge, Lot 31, Conc 4/5		
Main Highway #	Pinetree Road	On X or Under Structure	Service on Structure	Navig. Water Non-Navig. Water
Location Description	2.44km north of N	orth Muldrew Lake Roa	id Service under:	Navig. Water XNon-Navig. Water
Owner/Custodian	Gravenhurst			
MTO Region	Northeastern		Latitude	44.923203 Longitude -79.442609
Regional Engineer			Heritage Designation:	Not Cons. X Cons./Not App. List/Not De
MTO Area	Gravenhurst		Hwy Class:	Freeway Arterial Collector Local
Old County			Posted Speed	60 No. of Lanes 1
Township	Gravenhurst		AADT	20 % Truck 0
Structure Type 1	I-beam Girders			
Structure Material 1	Steel		Traffic Directional	Bound W-E
Structure Type 2	Steel Deck			
Structure Material 2	Steel		Inspection Freque	ency 2 (years)
Total Deck Length	12.6	(m)	Inspection Year	odd
Overall Str. Width	4.7	(m)	Inspection Duration	on 2 (hrs)
Culvert Length	0	(m)		
Total Deck Area	59.22	(sq.m)		
Roadway Width	4.2	(m)	Min. Vertical Clea	irance (m)
Skew Angle	0	(Degree)	Detour Distance	N/A (km)
No. of Spans	1		Fill on Structure	0 (m)
Span Lengths	12.6			(m)
For retaining wall:				
Total Wall Length		(m)	Max. Wall Height	(m)
Total Wall Area		(sq.m)	Ave. Wall Height	(m)
			Angle of Backfill	(Degrees)
Historical Data				
Year Built	2010		Year of superstrue	ct. Constructed
Last Reg. OSIM Inspe			Year of Last Mino	
Last Enh. OSIM Inspe	ection		Year of Last Majo Current Load Limi	
Work History: (Date/d	escription)			Investigation History: (Date/description)
	tation including four	ndation replacement, ne	ew retaining walls an	

MTO Site Number:

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Field Inspection Infor	mation:											
Date of Inspection:	May	10, 2024	Type of Ir	nspectio	n:	X Reg. O	SIM	Enh. OSIM				
Inspected By	Greg	McLachlan	!									
Others in Party:												
Enh. Access Equipment:												
Special Access Equipment												
Weather	sun/c	loud	Temperat	ure				25 °C				
Additional Investigation	ons Required:				None	Priority Normal	Urgent	Estimated Cost				
Material Condition Survey					Hono							
Detailed Deck Condition	n Survev:				Х							
Non-destructive Delami		sphalt-Covered Dec	ck:		X							
Concrete Substructure				Х								
Detailed Coating Condi			Х									
Detailed Timber Investi					Х							
Post-Tensioned Strand					Х							
Underwater Investigation					Х							
Fatigue Investigation					Х							
Seismic Investigation					X							
Structure Evaluation:					X							
Monitoring												
Deformations, Settleme	ents and Movement	S:			Х							
Crack Widths:					Х							
RSS Horizontal movem	ents of face:				X							
RSS Vertical movemen		re:			X							
RSS Local movements					X							
RSS Horizontal movem					X							
RSS Vertical movemen					X							
RSS Lateral earth press					X							
Investigation Notes:		-			~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	Total Cost		\$0.00				
Overall Structure Not	ge movement shou es:	Id be monitored du	e to crib co	ndition				·				
Recommended Work on Str		None Min	or Rehab.		Major Rehab.		place					
			-		,		piace					
Timing of Recommended W		Urgent	1 to 5 yea		6 to 10 y							
Overall Comments:			-				-	lls and approach guide				
	rai	. The modular bri	dge is in g	ood coi	ndition, no re	commende	d work at this	time.				
Date of Next inspection:	202	25										
Overall Bridge Co			0/ F									
% Poor in Deck	% Poor in Beams	% Poor in Subs	tructure	% P	oor in Barrier			ion Index (BCI or BCIp)				
0	0 0 0%						0 BClp BC 100.00 88.3					
Overal Bridge Suf	ficiency				· · ·							
Traffic	Alignment Bridge Sufficiency Index (BSI)											
0	2	5			5 76.27							

Element Data:	:									
Element Group:		Decks				Length:		12.		
Element Name:		Wearing Surfa	ace			Width:		4.7		
Location:						Height:				
Material:		Steel				Count:		1		
Element Type:		Primer				Total Quant	ity:	59.	2	
Environment:		Moderate				Inspected			Yes X N	o
Protection System	ו: ו	l la la		Freedlant	_	Quad	E alia		D*	Performance
Condition Data:		Units		Excellent	-	Good 59.2	Fair		Poor*	Deficiencies
Comments: Ligh	l nt corrosion,	sq.m typ.				J J .Z				
Recommended W	/ork:		Reh	ab: 📃 Re	eplace:		Maint	enanc	e Needs:	
Urgent:	1-	5 Years:	6-1	0 Years:		None: X] Urgen	t:	1 Year:	2 Year:
Element Photo	:									
Description of	Photo:	Wearing surf	ace, typ).						

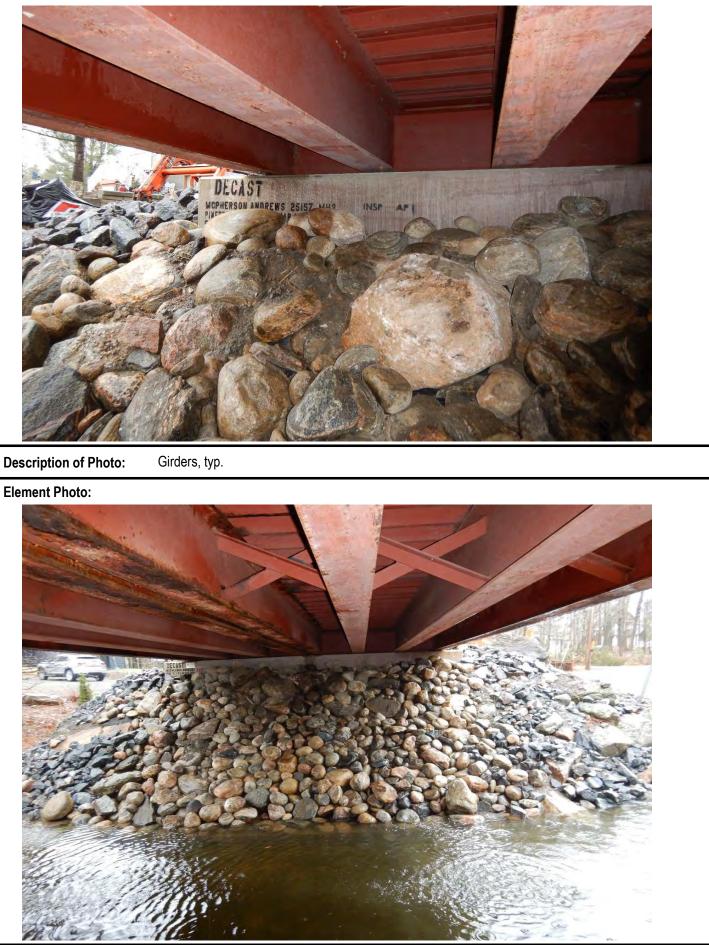
Element Data:													
Element Group:		Decks			Le	ength:			12.6				
Element Name:		Soffit			W	idth:			4.7				
Location:				eight:									
Material:		Steel				ount:			1				
Element Type:		Primer			Тс	otal Quant	tity:		59.2				
Environment:		Benign			Ins	pected			Y	/es		No	limited X
Protection System	1:												Performance
Condition Data:		Units		ellent		ood		Fair		F	Poor*		Deficiencies
		sq.m).6		9.6							
Comments: Ligh Recommended W Urgent:	′ork:	5 Years:	Reh	 	ace:	lone: X		Mainten		Needs	_		2 Year:
Element Photo:	:												
Description of I	Photo:	Soffit, typ.											
200011011011													

Element Data:																	
Element Group:		Barriers	ngth:			12.6											
Element Name:		Railing Syste			Wi	dth:											
Location:		West and Ea						ight:									
Material:		Steel and Wo						unt:			2						
Element Type:		W-beam guid	de rail				To	tal Quant	ity:		25.2						
Environment:		Moderate					Insp	ected				Yes	Χ	No[nited	
Protection System	1:	Galvanized	_	_		_					_	_				erforma	
Condition Data:		Units		Exc	ellent		Good Fair 20.2 2.0						Poor*	D	eficien	cies	
	m									2.0			3.0				
Comments: Light weathering, typ. Light to medium checks and splits long abrasion/scrape, and 3 isolated deformations noted									ost	s with iso	olated	l rot	on top	of sev	veral p	osts. 2	? m
Recommended Work: Rehab: Replace: Maintenance Needs:																	
Urgent:	1.	-5 Years:	6-10	Years:			N	one: X]	Urgent:			1 Year	:	2	Year:	
Element Photo:	:																
Description of F	Photo:	Bridge barrie	ers										YL.				



Element Data:						
Element Group:	Beams/Main Longit	udinal Elements	Length:		12.6	
Element Name:	Girders		Width:		0.15	
Location:			Height:		0.45	
Material:	Steel		Count:		8	
Element Type:	I-Beam		Total Quanti	ty:	136.1	
Environment:	Benign		Inspected		Yes N	o limited X
Protection System:	Primer					Performance
Condition Data:	Units	Excellent	Good	Fair	Poor*	Deficiencies
Condition Data.	sq.m	34.0	102.1			
	rosion, typ. Isolated loss of ater level.	coating on bottom	of bottom flange	es, generally	along the full lengtl	n. Limited inspection
Recommended Work:	Re	hab: Repla	ice:	Mainter	nance Needs:	
Urgent:	1-5 Years: 6-	10 Years:	None: X	Urgent:	1 Year:	2 Year:
Element Photo:						
Description of Phot	b: Girders, typ.					

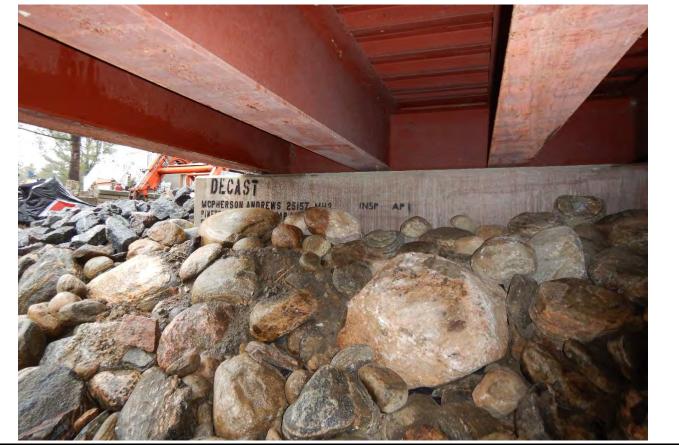




Description of Photo: Light corrosion along girders, typ.

Element Data:						
Element Group:	Beams/Main Longitu	dinal Elements	Length:		0.4	
Element Name:	Diaphragms		Width:		0.075	
Location:			Height:		0.075	
Material:	Steel		Count:		12	
Element Type:			Total Quant	ity:	12	
Environment:	Benign		Inspected		Yes No	Dimited X
Protection System:	primer		•			Performance
Condition Data:	Units	Excellent	Good	Fair	Poor*	Deficiencies
	each		12			
Comments: Light corrosion,						
Recommended Work:	Reh	ab: Replac		-	nance Needs:	
Urgent: 1-	5 Years: 6-1	0 Years:	None: X	Urgent:	1 Year:	2 Year:
Element Photo:						
<image/>						
	Diaprilagins					

Element Data:	:											
Element Group:		Abutments				Length:						
Element Name:		Abutment Wa	alls			Width:		5.3				
Location:						Height:		1.6	5			
Material:		Concrete				Count:		2				
Element Type:		Precast				Total Quant	tity:	8.7				
Environment:		Benign				Inspected			Yes	<u>с</u> и	0	limited
Protection System	ו:						_					Performance
Condition Data:		Units		Excellent		Good		Fair	F	^D oor*		Deficiencies
Condition Data.		sq.m		8.7								
	bbserved de	fects.										
Recommended W	Ork:		Rer	ab: Re	place:			/laintenance		5:		
Urgent:	1-	5 Years:	6-1	0 Years:		None: X	U	rgent:	11	Year:		2 Year:
Element Photo	:									_		
Description of		Bracet as										
Description of	Photo:	Precast cond	crete ab	utment								



Description of Photo:

Precast concrete abutment

Element Data:																
Element Group:		Retaining Wa	alls			Le	ngth:			5.3						
Element Name:		Walls					dth:									
Location:					He	eight:			0.9							
Material:		Concrete				Co	ount:			4						
Element Type:		Precast bloc	ks			То	tal Quant	tity:		19.1						
Environment:		Moderate				Insp	pected			· ·	Yes	Χ	No	lir	nited	
Protection System	1:							_							erforman	
Condition Data:		Units		Excelle		Go	bod		Fair			Poor*		D	eficiencie	es
October No.	mments: No observed defects.															
					Deal		1		Mainter		Need	4				
Recommended W			Reh		Repla		<u> </u>			_						_
Urgent: 1-5 Years: 6-10 Years:							one: X]	Urgent:			1 Year	:	2	Year:	
Element Photo:	:															
								The second se								
Description of	Photo:	Redi-rock bl	ock reta	ining wall,	typ.											



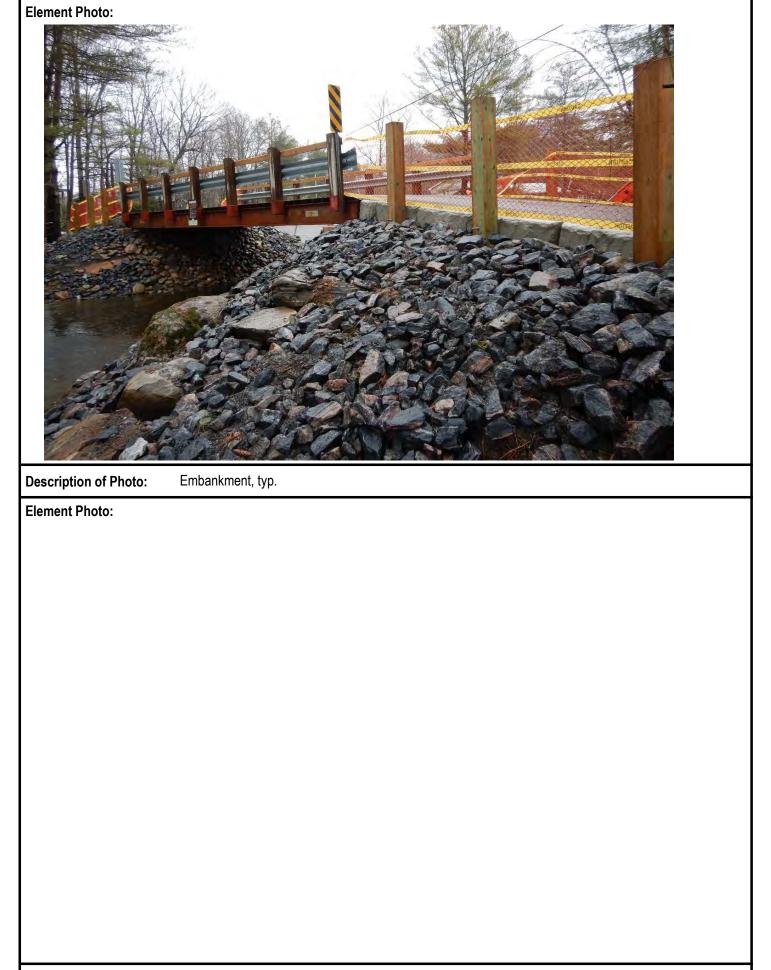
Description of Photo:

Redi-rock block retaining wall, typ.

Element Data:																
Element Group:		Embankmen	ts & Stre	ams		L	ength:									
Element Name:		Streams and	Waterw	ays		V	Vidth:									
Location:							leight:									
Material:							ount:									
Element Type:							otal Quant	tity:		all						
Environment:		Benign				Ins	spected				Yes X No limited					
Protection System														Performance		
Condition Data:		Units		Exce	ellent	(Good		Fair			Poor*		Deficiencies		
		all		x	(
Comments: No o Recommended Wo Urgent:	bserved de prk: 1-	Repl] None: X]	Mainte Urgent:		e Need	ds: 1 Year:		2 Year:					
Element Photo:																
Description of P	Photo:	Watercourse	9													



Element Data:	:															
Element Group:		Embankment	ts & Stre	ams		Le	ngth:									
Element Name:		Embankment	s			W	dth:									
Location:		All Quadrant	S			He	eight:									
Material:		Riprap					ount:			6						
Element Type:						To	tal Quant	ity:		6						
Environment:		Benign					ected			, I	Yes	(No	lim	ited	
Protection System	ו:							_		_					formance	
Condition Data:		Units		Exce 6		G	bod		Fair		F	^D oor*		De	ficiencies	
Comments: No o	observed de	each														
Comments. Nov																
Recommended W	/ork:		Reh	ab:	Repl	ace:]		Mainten	nance	Needs	5 :				
Urgent:	1-	5 Years:	6-1	0 Years:		N	one: X]	Urgent:		1	Year:		2	Year:	
Element Photo:	:															
Description of	Photo:	Embankmen	t tur													
Description of	P11010:	Embankmen	ı, ıур.													



Element Data:											
Element Group:	Accessories				Le	ength:					
Element Name:	Signs					idth:					
Location:	All Quadrant	s			H	eight:					
Material:	Steel				C	ount:			4		
Element Type:					Т	otal Quant	ity:		4		
Environment:	Benign					pected			Yes X	No	limited
Protection System:											Performance
	Units		Ev	cellent	G	ood		Fair	Do	or*	Deficiencies
Condition Data:						000		Fall	FU		Deliciencies
	each			4							
Comments: No observed de	efects. Recom	mend ins	stalling	narrow br	idge wa	rning sigi	ns o	n approa	iches.		
				_							
Recommended Work:		Reh	ab:	Rep	lace:			Mainten	nance Needs:	18 -	Other Maintenance
						_ , [1				
Urgent: 1	-5 Years:	6-1	0 Years:		N	lone: X]	Urgent:	L 1Y	'ear: X	2 Year:
								Install n	arrow bridge	signage	
Element Photo:											
	A.	3.0	5 40	10		And an		11		WAN'	
	1		15.					1	1.718 1.1	N M	
		AN CE	the state								
	A A	and deserve					1.		and the		
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Decorintion of Dhoto	Hazardwar	nina ciar	, tur								
Description of Photo:	Hazard warr	my sigi	i, iyp.								

Element Data:										
Element Group:	Approaches		Length:	6.	0					
Element Name:	Wearing Surface		Width:	4.	2					
Location:	North and South		Height:							
Material:	Gravel		Count:	2						
Element Type:			Total Quantity:	50).4					
Environment:	Moderate		Inspected		Yes X No limited					
Protection System:			·			Performance				
Condition Data:	Units	Excellent	Good	Fair	Poor*	Deficiencies				
	sq.m	50.4								
Comments: No observed d	efects.									
Recommended Work:	F	Rehab: Replace	e:	Maintenan	ce Needs:					
Urgent:	-5 Years:	6-10 Years:	None: X	Urgent:	1 Year:	2 Year:				
Element Photo:										
Description of Photo:	Approach wearin	g surface								



Description of Photo:

Approach wearing surface

Element Data:										
Element Group:	Approaches		Length:		8.3 / 12.3 / 8.3 / 12.3					
Element Name:	Barrier		Width:							
Location:			Height:							
Material:	Steel / Timber		Count:		4					
Element Type:	W-beam guide rail /	post	Total Quanti	ity:	42.0					
Environment:	Moderate		Inspected		Yes X No					
Protection System:	Galvanizing	F oreallant	Quad	Fair	D**	Performance				
Condition Data:	Units	Excellent	Good	Fair	Poor*	Deficiencies				
Comments: No observed de	m	X								
Comments: No observed de	nects.									
Recommended Work:	Re	hab: Repla	ace:	Mainter	nance Needs:					
Urgent: 1	-5 Years: 6-*	10 Years:	None: X	Urgent:	1 Year:	2 Year:				
Element Photo:										
Description of Photo:	Approach guide rai	l, typ.								



nd Rehabilitation Required ² on ment	6 to 10 Years	1 to 5 Years	Within 1 Year	Urgent	Cost
			1001	orgonit	
ment					
=					
=					
=					
=					
=					
Rehab abutment cribs					
=					
acement Structure Dimensions ³			Total Str		\$0.00
	acement Structure Dimensions ³		acement Structure Dimensions ³	acement Structure Dimensions ³	acement Structure Dimensions ³

1 - Indicate specific costs for structure replacement OR for rehabilitation under the given headings.

 $\ensuremath{\mathbf{2}}$ - Give a very brief description of the rehabilitation work required.

3 - Estimated structure dimensions after completion of the proposed work - if it is expected to change.

Associated Work	Comments	Estimated Associated Work Cost
Approaches		Work Cost
Detours		
Traffic Control		
Utilities		
Other		
	Total Associated Work Cost	\$0.00

	Total Construction Cost	\$0.00

Justification:

The structure was recently rehabilitated with a new foundation, retaining walls and approach guide rail. The modular steel bridge is in good condition, no recommended work at this time.

				MTO Site Number:
Inventory Data:				
Structure Name	7 - Narrows Road	Bridge, Lot 28, Conc	8 South	
Main Highway #	Narrows Road	On X or Under Structure	Service on Structure	Navig. Water Non-Navig. Water Rail X Road Ped. Other
Location Description	0.22 km east of Hig	ghway 169	Service under:	Navig. Water X Non-Navig. Water
Owner/Custodian	Gravenhurst			
MTO Region			Latitude	44.948109 Longitude -79.427636
Regional Engineer			Heritage Designation:	X Not Cons. Cons./Not App. List/Not D Desig. Desig./Not List Desig. & List
MTO Area			Hwy Class:	Freeway Arterial Collector Local
Old County			Posted Speed	50 No. of Lanes 2
Township	Gravenhurst		AADT	40 % Truck 0
Structure Type 1	I-beam Girders			
Structure Material 1	Steel		Traffic Directional	Bound E-W
Structure Type 2	Concrete Deck			
Structure Material 2	Concrete		Inspection Freque	ency 2 (years)
Total Deck Length	4.6	(m)	Inspection Year	odd
Overall Str. Width	7.6	(m)	Inspection Duration	on 2 (hrs)
Culvert Length		(m)		
Total Deck Area	35.0	(sq.m)		
Roadway Width	7.0	(m)	Min. Vertical Clea	arance (m)
Skew Angle		(Degree)	Detour Distance	None (km)
No. of Spans	1		Fill on Structure	(m)
Span Lengths	4.3			(m)
For retaining wall:				
Total Wall Length		(m)	Max. Wall Height	(m)
Total Wall Area		(sq.m)	Ave. Wall Height	(m)
			Angle of Backfill	(Degrees)
Historical Data				
Year Built	1970		Year of superstrue	ct. Constructed 2014
Last Reg. OSIM Inspe			Year of Last Mino	
Last Enh. OSIM Inspe	ection		Year of Last Majo	
Work History: (Date/d	escription)		Current Load Lim	it / / (ton Investigation History: (Date/description)
2014 Superstructure		abutment refacing		

MTO Site Number:

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Field Inspection Inform	nation:												
Date of Inspection:		nber 11, 2023	Type of I	anastia	pection: X Reg. OSIM Enh. OSIM								
			Type of f	Ispeciio	n. L	A Rey. US							
Inspected By	Junjie	Yang											
Others in Party:													
Enh. Access Equipment:													
Special Access Equipment													
Weather	Clear		Temperat	ure				22 °C					
Additional Investigation	ons Required:					Priority		Estimated Cost					
Material Condition Survey	•				None	Normal	Urgent						
Material Condition Survey	C				v								
Detailed Deck Condition		halt Covered De	alu		X X								
Non-destructive Delami		Dhait-Covered De											
Concrete Substructure (X										
Detailed Coating Condit				X									
Detailed Timber Investig					X								
Post-Tensioned Strand	Investigation:				X								
Underwater Investigation					X								
Fatigue Investigation					X								
Seismic Investigation					Х								
Structure Evaluation:					X								
Monitoring													
Deformations, Settleme	nts and Movements	:			Х								
Crack Widths:					Х								
RSS Horizontal moveme	ents of face:				Х								
RSS Vertical movement	s of overall structure	9:			Х								
RSS Local movements					X								
RSS Horizontal moveme					X								
RSS Vertical movement					X								
RSS Lateral earth press					X								
Investigation Notes:													
						Total Cost		\$0.00					
Overall Structure Note	es:												
Recommended Work on Stru	ucture X	None Min	or Rehab.		Major Rehab.	Rep	lace						
Timing of Recommended Wo	ork	Urgent]1 to 5 yea	rs	6 to 10 ye	ears							
Overall Comments:	The	structure is gen	erallv in ex	cellent	to good cond	lition. The b	eaver dam sh	ould be cleared.					
			••••••										
Date of Next inspection:	202	5											
Overall Bridge Cor													
% Poor in Deck	% Poor in Beams	% Poor in Subs	tructure	% P	oor in Barrier	Bri		Index (BCI or BCIp)					
0%	0%	0%		0% BClp 100.00				BCI 83.04					
Overal Bridge Suff	iciency					<u> </u>	100.00	00.04					
Traffic	Economic	Width	μ	Alignment Bridge Sufficiency Index (BS									
0	3												
0	J	0		0 80.04									

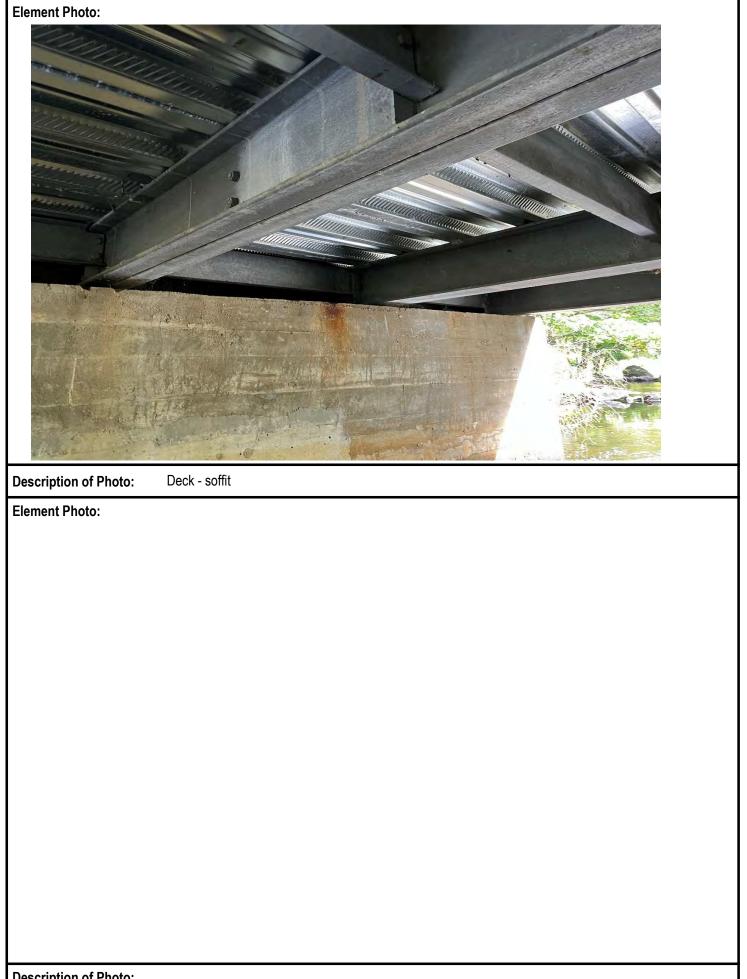
Element Data:	:												
Element Group:		Decks			Length:			62					
Element Name:		Wearing Surf	ace		Width:		7.	0					
Location:					Height:								
Material:		Asphalt			Count:			1					
Element Type:					Total Qu	antity:	32	2.3					
Environment:		Severe			Inspected			Yes X No limited					
Protection System	ו:								Performance				
Condition Data:		Units		Excellent	Good 32.3		Fair	Poor*	Deficiencies				
Comments: Ligh	 ht ravelling, f	sq.m	ack alor	l ng road centerline									
Somments3		, , , , , , , , , , , , , , , , , , ,											
Recommended W	/ork:		Reh	lab: Repl	ace:		Maintenan	ce Needs:					
Urgent:	1-	5 Years:	6-1	0 Years:	None:	X	Urgent:	1 Year:	2 Year:				
Element Photo	:												
	Photo:												
Description of	Photo:	Wearing surf	ace - lo	oking south									



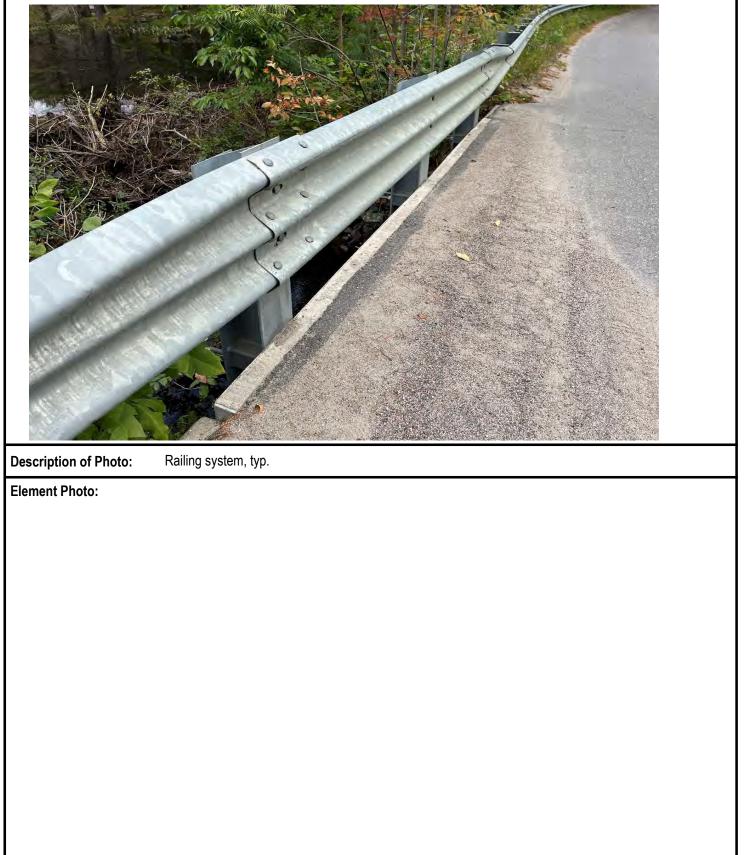


Element Data:															
Element Group:		Decks					Lei	ngth:			4.62				
Element Name:		Deck Top						dth:			7.0				
Location:							He	ight:							
Material:		Concrete						unt:			1				
Element Type:							To	tal Quanti	ity:		32.3				
Environment:		Moderate					Insp	ected			Yes No X limited				
Protection System	1:														Performance
Condition Data:		Units		E:	xcelle	nt		od		Fair		F	Poor*	_	Deficiencies
	vicible for in	sq.m spection, ass	umod in	aad	0000	lition		.3	ditio	n of con	halt a	nd 0.0	£\$;4		
Comments: Not		ispection, ass	umeu m	good	cond				uitio	in or aspi	nait ai		m.		
Recommended W	ork:		Reh	ab:		Repl	ace:			Mainten	ance I	Needs	5:		
Urgent:	1-	5 Years:	6-1) Year	s:		N	one: X		Urgent:		1	Year:		2 Year:
Element Photo:	:														
Description of I	Photo:	Asphalt cove	ered cor	crete	deck										

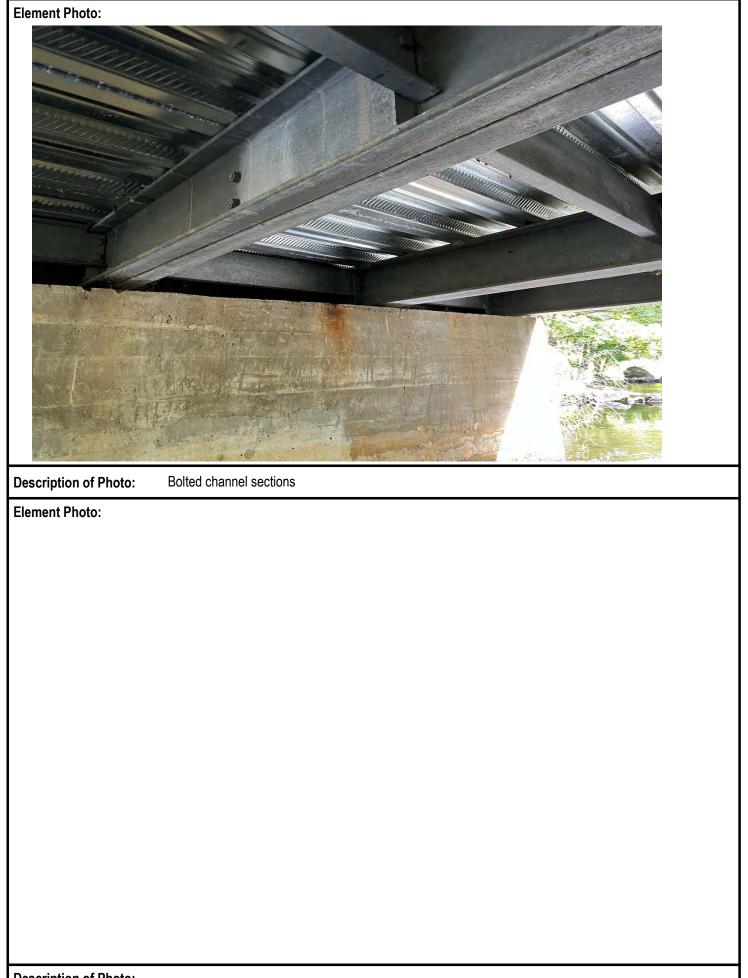
Element Data:	:															
Element Group:		Decks					Ler	ngth:			4.62					
Element Name:		Soffit					Wio	dth:			7.0					
Location:							He	ight:								
Material:		Steel						unt:			1					
Element Type:							Tot	al Quant	tity:		32.3					
Environment:		Benign					Insp	ected			`	Yes	Χ	No	limited	
Protection System	1:	Galvanizing				 _	•		_			_			Performar	
Condition Data:		Units		ł	Excel		Go	od		Fair			Poor*		Deficienci	es
		sq.m fects. Note the			32.		. 41									
Comments: No o		iecis. Note th			ig we				e ue	Mainten		Noo	do.			
			Reh	-		olace:			1		_	nee			F	
Urgent:	1·	-5 Years:	6-1	0 Yea	ars:		No	one: X		Urgent:			1 Yea	:	2 Year:	
Element Photo	:															
Description of	Photo:	Deck - soffit														



Element Data:										
Element Group:		Barriers	Length:		4.6					
Element Name:		Railing Systems	Width:							
Location:				Height:						
Material:		Steel		Count:		2				
Element Type:		Side mounted thrie	beam	Total Quant	ity:	9.2				
Environment:		Severe		Inspected		Yes X No limited				
Protection System	1:	Galvanizing					Performance			
Condition Data:		Units Excellent		Good	Fair	Poor*	Deficiencies			
		m		9.2						
Comments: Light chalking of galvanized coating, typ. Recommended Work: Rehab: Replace: Urgent: 1-5 Years: 6-10 Years: None: Virgent: 1 Year: 2 Ye										
Element Photo:	:									
<section-header></section-header>										
Description of I	Photo:	Railing system								



Element Data:														
Element Group:	Beams/Main Longitudinal Elements				Length:				4.6					
Element Name:	Girders			V	Width:			0.25						
Location:					Height:			0.3						
Material:	Steel				ount:			5						
Element Type:	I-Beam / Chanr	nel sec	ction	Т	otal Quan	tity:		29.9						
Environment:	Benign			Ins	Inspected			Yes X No limited						
Protection System: Galvanizing													Performanc	
Condition Data:		Units	Excellent	G	iood	Fair		P	oor*		Deficiencie	S		
		sq.m		29.9										
Comments: No observed defects. 4 - I-Beam and 2 - Bolted channel sections. Recommended Work: Rehab: Replace: Maintenance Needs:														
							1	r				_		7
Urgent:	1.	-5 Years:	6-1	0 Years:	1	None: X]	Urgent:		1	Year:		2 Year:	
Element Photo:														
Description of I	Photo:	Girder, typ.												



Element Data:	1																
Element Group:		Beams/Main	Longitu	dinal E	lemen	nts	Le	ngth:			1.7						
Element Name:		Diaphragms						dth:			0.06	65					
Location:								eight:			0.2						
Material:		Steel						ount:			12						
Element Type:		Channel sec	tion					tal Quant	tity:		12						
Environment:		Benign					Insp	pected				Yes	Χ	No[lir	nited	
Protection System	1:	Galvanizing				_										erforma	
Condition Data:		Units		E:	kcellent	t	Go	bod		Fair			Poor*		D	eficienc	ies
		each			12												
Comments: No o	observed de	fects.															
Recommended W	/ork:		Reh	ab:		Replace	e:]		Mainter	nance	e Nee	ds:				
Urgent:	1	-5 Years:	6-1	0 Year	s:]	N	one: X]	Urgent:			1 Year	:	2	Year:	
Element Photo	:																
IIIIII		- And															
Description of	Photo:	Diaphragm															

Element Data:	:																
Element Group:		Abutments					Le	ngth:									
Element Name:		Abutment W	alls					dth:			7.2						
Location:							He	ight:			1.8						
Material:		Cast-in-place	e concret	e			Co	unt:			2						
Element Type:							То	tal Quant	tity:		25.9	9					
Environment:		Benign					Insp	ected				Yes	X	No	llir	nited	
Protection System	וי	Ŭ										L		Ì		erforma	
		Units		E	kcellen	t	Go	bod		Fair			Poor*			eficienc	
Condition Data:								5.9		1 un			1 001				
	(sq.m	112.14														
Comments: Ligh	it scaling, ty	p. Staining an		rosion	raionę	j the v	wateriin	e.									
Recommended W	/ork:		Reha	ab:		Repla	ice:			Mainte	nance	e Nee	ds:				
Urgent:	1	-5 Years:	6-10) Years	s:]	N	one: X]	Urgent:]	1 Yea	r: 📃	2	Year:	
Element Photo:	:																
										11100							
Description of	Photo:	North abutm	ent wall														



Element Data:									
Element Group:		Abutments		Length	1:	1	1.4		
Element Name:		Wingwalls		Width:					
Location:				Height			1.2		
Material:		Cast-in-place concre	te	Count:			4		
Element Type:				Total C	Quantity:	6	6.7		
Environment:		Benign		Inspecte	ed		Yes X	No lir	nited
Protection System	1:								erformance
Condition Data:		Units	Excellent	Good		Fair	Poor*	D	eficiencies
		sq.m		6.7					
Comments: Ligh	it scaling, ty	р.							
Recommended W	ork:	Ref	nab: Repla	ace:		Maintena	ince Needs:		
Urgent:	1-	5 Years: 6-1	0 Years:	None	X	Urgent:	1 Year:	2	Year:
Element Photo:	:								
	Phote:								
Description of I	-noto:	Northeast wing wall							

Element Photo:



Description of Photo:

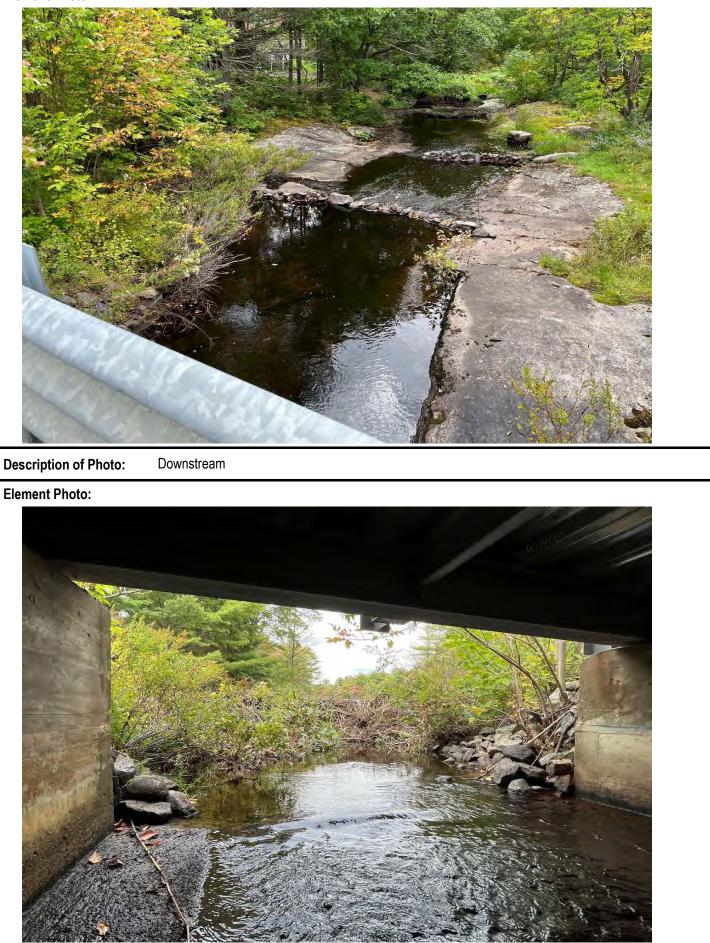
Southeast wing wall

Element Photo:

Element Data:	:													
Element Group:		Abutments				Le	ngth:							
Element Name:		Bearings				Wi	dth:							
Location:							ight:							
Material:		Steel and Ela				Co	unt:			10				
Element Type:		Plate and Ela	stomeri	c Bearing	g	То	tal Quant	tity:		10				
Environment:		Benign				Insp	ected				Yes	X	No	limited
Protection System	ו:	-									-		Ĩ	Performance
Condition Data:		Units			ellent	Go	od		Fair			Poor*		Deficiencies
		each		1	0									
	observed de						1			_				
Recommended W	/ork:		Reh	ab:	Repl	ace:			Mainter	nance	Need	IS:		
Urgent:	1.	-5 Years:	6-10) Years:		N	one: X		Urgent:			1 Year:		2 Year:
Element Photo	:													
	Dhata:	Baarings by												
Description of	Photo:	Bearings, ty	0.											

Element Data:																	
Element Group:		Embankmen	ts & Stre	ams				Ler	igth:								
Element Name:		Streams and	Waterw	ays				Wic	lth:								
Location:								Hei									
Material:		L						Cou		1.		- 11					
Element Type:									al Quant	ity:		all					
Environment:		Benign						Inspe	ected				Yes X	No		limite	
Protection System	1:	Units		F	Excel	lont		Go	od		Fair		Poo	r*	-	Perforr Deficie	
Condition Data:		all			EXCEL			x			Fall		FUU			Delicie	IICIES
Comments: Bea	ver dam buil	dup on upstro	eam. No	l other	obs	erved	 defects										
Comments. Dou																	
Recommended W	ork:		Reh	ab:		Rep	lace:				Mainte	nance	e Needs:	11 -	Anima	I / Pest	Control
Urgent:	1-	5 Years:	6-1	0 Yea	rs:			Nc	one: X]	Urgent:		1 Ye	ar: X]	2 Yea	r:
													beaver da	am			
Element Photo:	:																
Description of	Photo:																
Description of I	-noto:	opstream															



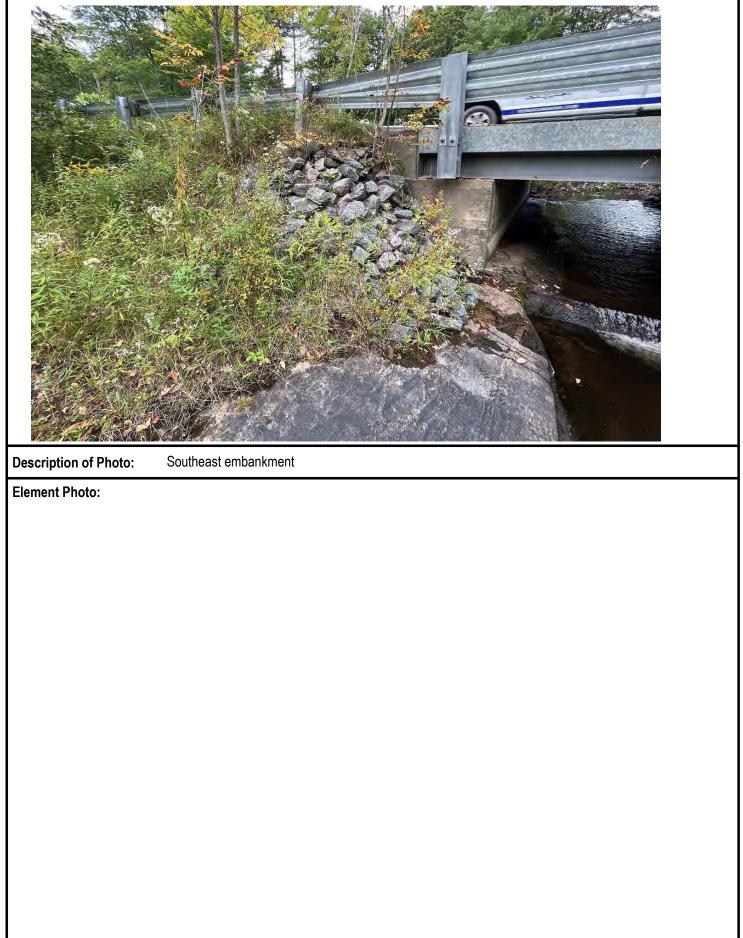


Description of Photo: Beaver dam on upstream

BRIDGE 7 - NARROWS ROAD BRIDGE, LOT 28, CONC 8 SOUTH

Element Data:	:															
Element Group:		Embankmen	ts & Stre	ams			Le	ngth:								
Element Name:		Embankmen						dth:								
Location:								ight:								
Material:		Soil, Rock, G	Grass					unt:								
Element Type:							То	tal Quant	tity:		4					
Environment:		Benign					Insp	ected				Yes	X	No[limited	
Protection System	n:								_						Performan	
Condition Data:		Units		Ex	cellent	t	Go	od		Fair			Poor*		Deficienci	es
		each			4											
Comments: No o	observed de	fects.														
Recommended W	/ork:		Reh	ab:		Repla	ce:			Mainte	nance	e Need	ds:			
Urgent:	1-	-5 Years:	6-1	0 Years	;:]	N	one: X]	Urgent]	1 Year:		2 Year:	
Element Photo	:															
Description of	Photo:	Northeast er	mbankm	ent												

Element Photo:



Element Data:																
Element Group:		Embankmen		ams			L	ength:								
Element Name:		Slope Protec	tion				V	Vidth:								
Location:							ŀ	leight:								
Material:		Rock						Count:			4					
Element Type:							٦	otal Qu	antity	:	4					
Environment:		Benign					In	spected				Yes	X	No	lin	nited
Protection System	1:										<u> </u>					formance
Condition Data:		Units		E	Excel		(Good		Fair			Poor*		De	ficiencies
		each			4											
Comments: No c	bbserved de	lects.														
Recommended W	'ork:		Reh	ab:		Repl	ace:			Mainter	nance	e Need	ds:			
Urgent:	1-	5 Years:	6-1	0 Yea	rs:			None:	X	Urgent:]	1 Year	:	2	Year:
Element Photo:	:															
												den				
Description of I	Photo:	Southeast s	lope pro	tectio	n											

Element Photo:



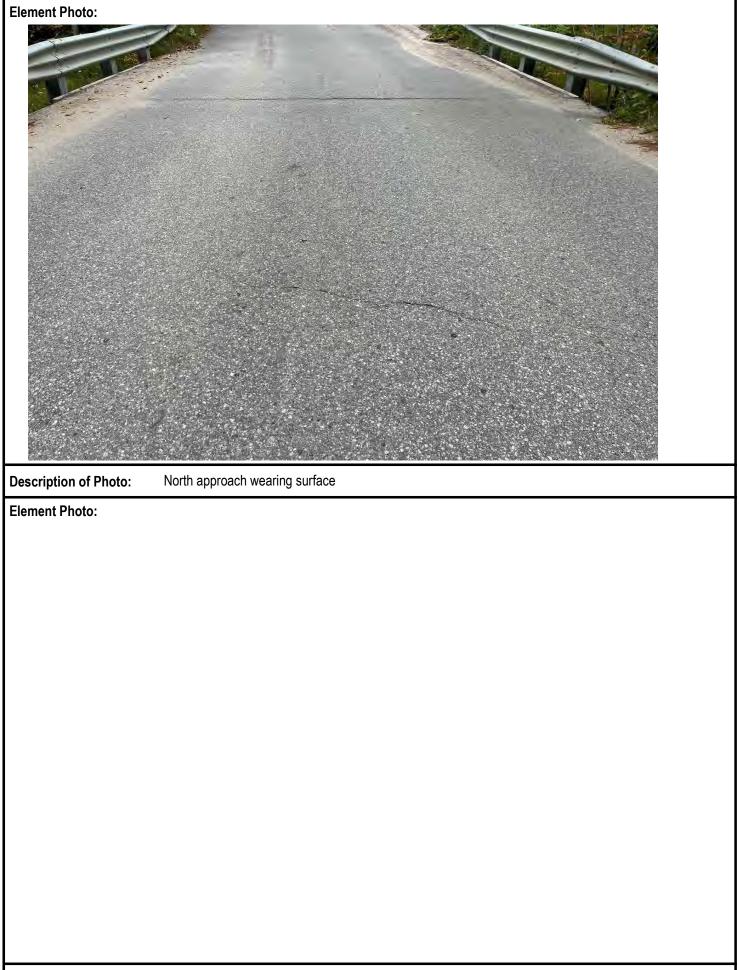
Description of Photo:

Northeast slope protection

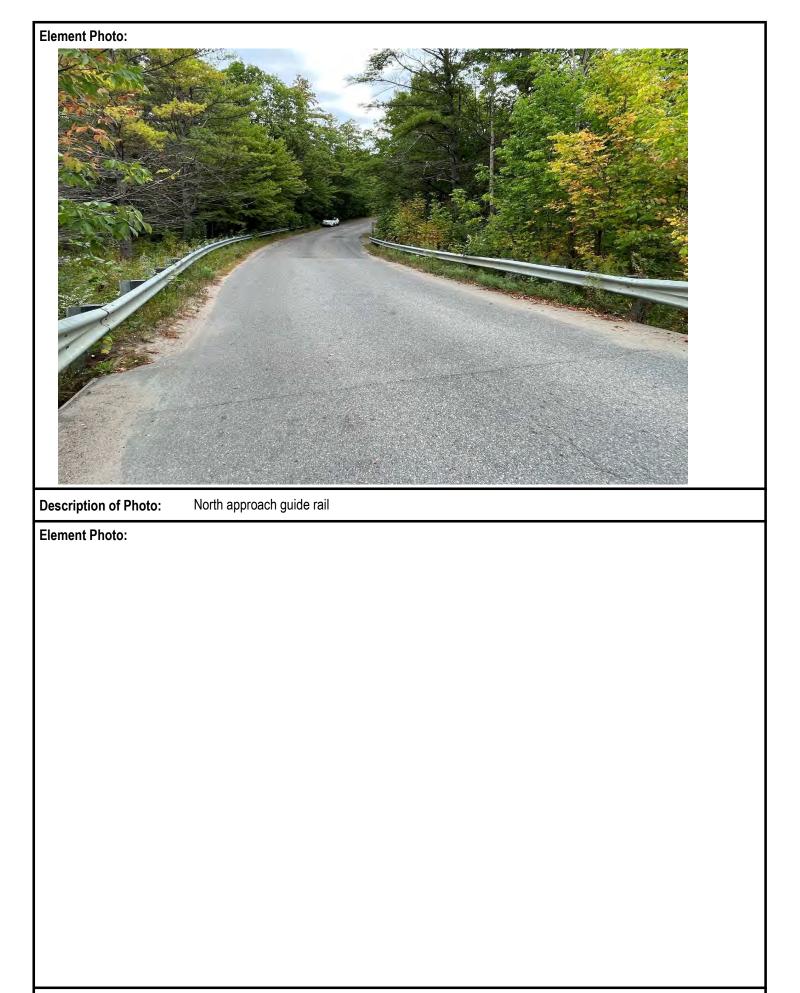
Element Photo:

Element Data:														
Element Group:		Accessories				Le	ngth:							
Element Name:		Signs					dth:							
Location:							ight:							
Material:		Steel					unt:			4				
Element Type:							tal Quant	ity:		4				
Environment:		Severe				Insp	ected				Yes	Χ	No[limited
Protection System	:									_				Performance
Condition Data:		Units			ellent	Go	bod		Fair			Poor*	_	Deficiencies
	bserved de	each			4									
Comments: No o			Reh	-h:					Mainter		Nood			
					Repl			1						
Urgent:	1-	-5 Years:	6-10) Years:		N	one: X		Urgent:			1 Year:		2 Year:
Element Photo:	1													
Description of I	Photo:	Hazard warr	ning sign	, typ.										

Element Data:																		
Element Group:		Approaches						Lei	ngth:			6.0						
Element Name:		Wearing Sur	face					Wi	dth:			7.0						
Location:								He	ight:									
Material:		Asphalt							unt:			2						
Element Type:								To	tal Quan	tity:		83.8						
Environment:		Severe						Insp	ected				Yes	X	No	lir	nited	
Protection System	1:	-										-			Ī		erforma	nce
Condition Data:		Units		E	Excell	lent		Go	od		Fair			Poor*		D	eficienc	ies
		sq.m							.8									
Comments: Ligh	nt ravelling, t	typ. Medium t	ransvers	ie cra	cks a	at wes	st ends	s of k	oridge.									
Recommended W	ork:		Reh	iab:		Re	place:				Mainter	nance	Need	ds:				
Urgent:	1-	-5 Years:	6-1	0 Yea	irs:		<u> </u>	N	one: X]	Urgent:			1 Year:		2	Year:	
Element Photo:	1																	
Description of I	Photo:	South appro	ach wea	aring	surfa	ace												



Element Data:															
Element Group:		Approaches					Length:			49, 2	4, 25, 2	5			
Element Name:		Barrier					Width:								
Location:							Height:								
Material:		W-Beam and	post				Count:			4					
Element Type:							Total Quant	tity:		123.0)				
Environment:		Severe					Inspected				res X	1 [٧o	limited	
Protection System	:	Galvanizing										-	Ī	Performa	nce
Condition Data:		Units		Exce	ellent		Good		Fair		Po	oor*		Deficienc	ies
		m					123.0								
Comments: Ligh	It chalking o	f galvanized o	coating, t	typ.											
Recommended W	ork:		Reh	ab:	Rej	place:			Mainten	ance	Needs:				
Urgent:	1-	-5 Years:	6-1	0 Years:			None: X		Urgent:		1 \	Year:		2 Year:	
Element Photo:															
	Dete:														
Description of I	Photo:	South appro	ach guio	de rail											



Repair and Reha	bilitation Required:		Pric	ority		Estimated Structural
Element ¹	Repair and Rehabilitation Required ²	6 to 10 Years	1 to 5 Years	Within 1 Year	Urgent	Cost
Structure	Demolition					
Structure	Replacement					
0	R					
Deck	Rehab. =					
Sidewalk/Curb	Rehab. =					
Barrier	Rehab. =					
Joints	Rehab. =					
Beams	Rehab. =					
Abutment	Rehab. =					
Pier	Rehab. =					
Other						
Total Deck L	ilitated or Replacement Structure Dimensions ³ ength (m) Overall Str. Width (m)			Total Str	ructural Cost	\$0.00

1 - Indicate specific costs for structure replacement OR for rehabilitation under the given headings.

 $\ensuremath{\mathbf{2}}$ - Give a very brief description of the rehabilitation work required.

3 - Estimated structure dimensions after completion of the proposed work - if it is expected to change.

Associated Work	Comments	Estimated Associated Work Cost
Approaches		Work Cost
Detours		
Traffic Control		
Utilities		
Other		
	Total Associated Work Cost	\$0.00

	Total Construction Cost	\$0.00

Justification:

The structure is generally in excellent to good condition. Maintenance: the beaver dam is affecting the flow and should be cleared within 1 year.

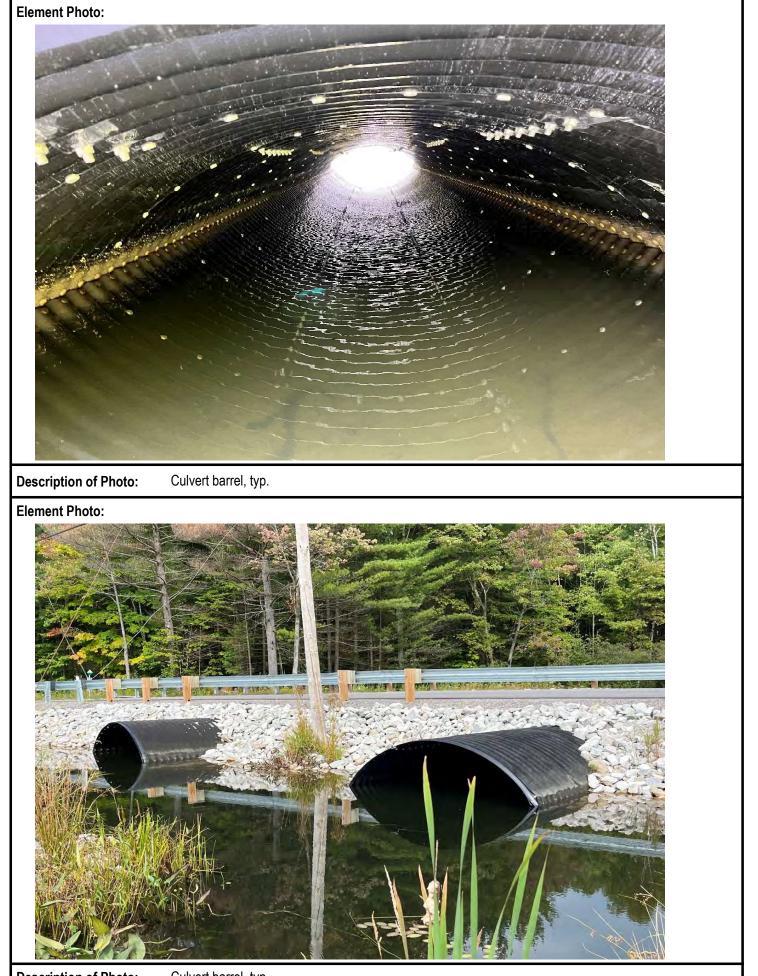
				MTO Site Number:
Inventory Data:				
Structure Name	8 - Sniders Bay C	ulvert, Lot 31, Conc 7	South	
Main Highway #	Sniders Bay Road	On X or Under Structure	Service on Structure	Navig. Water Non-Navig. Water
Location Description	0.5 km west of Dis	trict Road 169	Service under:	Navig. Water X Non-Navig. Water
Owner/Custodian	Gravenhurst			
MTO Region	Northeastern		Latitude	44.950927 Longitude -79.443086
Regional Engineer			Heritage Designation:	Not Cons. X Cons./Not App. List/Not Desig Desig. Desig./Not List Desig. & List
MTO Area			Hwy Class:	Freeway Arterial Collector Local X
Old County			Posted Speed	50 No. of Lanes 2
Township			AADT	50-199 % Truck 0
Structure Type 1	Twin SPCSP Pipe	Arch		
Structure Material 1	Polymer Coated	Galvanized Steel	Traffic Directional B	Bound E/W
Structure Type 2				
Structure Material 2			Inspection Frequen	cy 2 (years)
Total Deck Length		(m)	Inspection Year	odd
Overall Str. Width		(m)	Inspection Duration	2 (hrs)
Culvert Length	20.0	(m)		
Total Deck Area		(sq.m)		
Roadway Width	6.71	(m)	Min. Vertical Cleara	ince (m)
Skew Angle	10	(Degree)	Detour Distance	None (km)
No. of Spans	2		Fill on Structure	0.6 (m)
Span Lengths	3.4, 3.4			(m)
For retaining wall:				
Total Wall Length		(m)	Max. Wall Height	(m)
Total Wall Area		(sq.m)	Ave. Wall Height	(m)
			Angle of Backfill	(Degrees)
Historical Data				
Year Built	2020		Year of superstruct.	Constructed 2020
Last Reg. OSIM Inspe			Year of Last Minor I	
Last Enh. OSIM Inspe	ection		Year of Last Major F Current Load Limit	
Work History: (Date/d	escription)		Current Load Limit	/ / (tonnes)
2020 - structure repl 2021 - new asphalt				

MTO Site Number:

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Field Inspection Inform	nation:							
-		1 40 0000						
Date of Inspection:		nber 13, 2023	Type of In	spectio	n:	X Reg. OS		Enh. OSIM
Inspected By	Junjie	Yang						
Others in Party:								
Enh. Access Equipment:								
Special Access Equipment								
Weather	Clear		Temperatu	ire				22 °C
Additional Investigation	ons Required:					Priority		Estimated Cost
-	•				None	Normal	Urgent	
Material Condition Survey	0				X			
Detailed Deck Condition					X			
Non-destructive Delamir		phalt-Covered De	CK:		X			
Concrete Substructure (X			
Detailed Coating Condit					X			
Detailed Timber Investig					X			
Post-Tensioned Strand	Investigation:				X			
Underwater Investigation					X			
Fatigue Investigation					Х			
Seismic Investigation					Х			
Structure Evaluation:					Х			
Monitoring								
Deformations, Settlemer	nts and Movements				Х			
Crack Widths:					X			
RSS Horizontal moveme	ents of face				X			
RSS Vertical movement		· ·			X			
RSS Local movements of					X			
RSS Horizontal moveme					X			
RSS Vertical movement					× X			
RSS Lateral earth press	ure at the back of ta	acing elements			X			
Investigation Notes:						Total Cost		\$0.00
Overall Structure Note	s:							
Recommended Work on Stru	ucture X	None Min	or Rehab.		Major Rehab.	Rep	lace	
Timing of Recommended Wo	ork	Urgent	1 to 5 year	s	6 to 10 ye	ars		
Overall Comments:	Stru	cture was recent	tly replaced	d and is	in excellent	condition.		
Date of Next inspection:	202	5						
Overall Bridge Cor		,						
-	% Poor in Beams	% Poor in Subs	tructure	% P	oor in Barrier	Bri	dae Condition	Index (BCI or BCIp)
				701			BClp	BCI
0%	0%	0%			0%		100.00	100.00
Overal Bridge Suff								
Traffic	Economic					Alignment Bridge Sufficiency Index (BSI)		
0	3	0			0		97	7.00

Element Data:												
Element Group:							Length:		2	20		
Element Name:		Barrels					Width:		3	3.4		
Location:							Height:			2.03		
Material:		Steel					Count:			2		
Element Type:		Pipe Arch					Total Quantity:			341.1		
Environment:							Inspected			Yes No limited X		
Protection System:		Polymer Coa	ting									Performance
Condition Data:		Units		Ex	cellent		Good		Fair	Poor*		Deficiencies
		sq.m			41.1							
Comments: Insid	le of pipe ar	nd below wate	r level w	vere not	inspect	ed du	e to water de	epth.	No observ	ved defects fron	ı visil	ble areas.
Recommended Wo	ork:		Reh	iab:	Re	place:			Maintena	ince Needs:		
Urgent:	1-	5 Years:	6-1	0 Years			None: X]	Urgent:	1 Year:		2 Year:
Element Photo:												
Description of P	hoto:	Culvert barre	el, typ.									



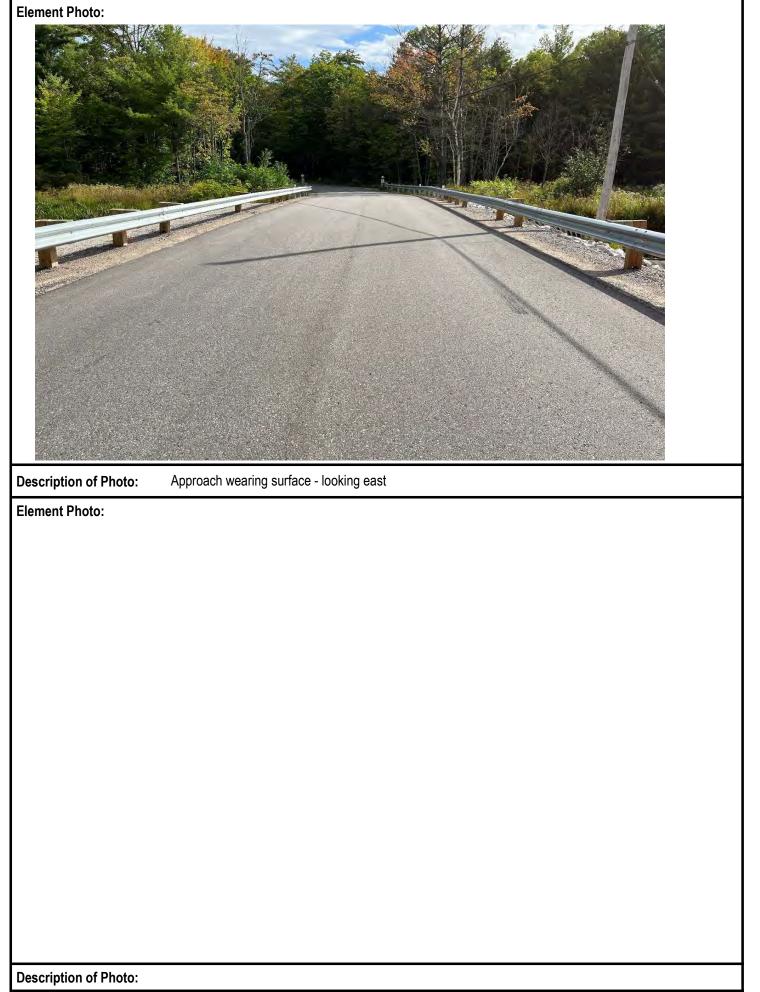
Element Data:										
Element Group:		Embankments	s & Stre	ams	Length:					
Element Name:		Streams and V	Naterw	ays	Width:					
Location:					Height:					
Material:					Count:					
Element Type:					Total Quant	tity:	all			
Environment:		Benign			Inspected	•	Y	es X	No	limited
Protection System	•	g								Performance
	•	Units		Excellent	Good	Fair		Poor*		Deficiencies
Condition Data:		all		X		-				
Comments: No c	bserved de									
Recommended W	ork:		Reh	ab: Repl	ace:	Mainter	nance N	Needs:		
Urgent:	1-	5 Years:	6-10) Years:	None: X	Urgent:	\square	1 Year	:	2 Year:
Element Photo:	1									
Description of I	Photo:	Watercourse								

Element Data:	:									
Element Group:		Embankments & Stro	eams	Length:						
Element Name:		Embankments		Width:						
Location:				Height:						
Material:		Granular and Rock		Count:						
Element Type:				Total Qu	antity:		6			
Environment:		Benign		Inspected			Yes	X	No	limited
Protection System	1:						-		Ī	Performance
		Units	Excellent	Good		Fair		Poor*		Deficiencies
Condition Data:		each	6							
Comments: No o	bserved de		-							
Recommended W Urgent:	<u> </u>		nab: Repla 0 Years:	ace: None: [X	Maintena Urgent:	ince Nee	eds: 1 Year	:	2 Year:
Element Photo:										
					シージョンション					
Description of	Photo:	Embankment, typ.								

Element Data:	:											
Element Group:		Embankmen	ts & Stre	eams		Length:						
Element Name:		Slope Protec	tion			Width:						
Location:						Height:						
Material:		Rock				Count:		6				
Element Type:		Riprap				Total Quant	Total Quantity:					
Environment:		Benign	Benign			Inspected			Yes	X	No	limited
Protection System	ו:	-									Ī	Performance
Condition Data:		Units		Excellen	it	Good		Fair		Poor*		Deficiencies
Comments: Los		each				6						
Recommended W	/ork:		Reh		Replac		_	Maintenan	_			
Urgent:	1·	5 Years:	6-1	0 Years:]	None: X		Jrgent:		1 Year:		2 Year:
Element Photo	:											
Description of	Photo:	Slope proteo	tion for									
Description of		Sione hiored		J.								

Element Data	:															
Element Group:		Accessories				L	ength:									
Element Name:		Signs					/idth:									
Location:						H	eight:									
Material:		Steel				С	ount:			5						
Element Type:						Т	otal Quant	tity:		5						
Environment:		Severe				Ins	pected			, ·	Yes	X	No	lin	nited	
Protection System	1:			-						<u> </u>					rforma	
Condition Data:		Units			ellent	G	ood		Fair			Poor*		De	eficienc	ies
		each			5											
Comments: 4 - I	nazard warni	ng sign, 1 nar	row bric	lge sign.	No obse	rved de	fects.									
Recommended W	/ork:		Reh	nab:	Repl	ace:			Mainten	nance	Need	ls:				
Urgent:	1-	5 Years:	6-1	0 Years:		١	lone: X]	Urgent:			1 Year:		2	Year:	
Element Photo	:															
Description of	Photo:	Narrow bridg	ge sign													

Element Data:							
Element Group:		Approaches		Length:		23.7	
Element Name:		Wearing Surface		Width:		6.71	
Location:				Height:			
Material:		Asphalt		Count:		1	
Element Type:				Total Quant	ity:	159.0	
Environment:		Severe		Inspected		Yes X No	
Protection System	:						Performance
Condition Data:		Units	Excellent	Good	Fair	Poor*	Deficiencies
		sq.m	159.0				
Comments: No c	bbserved def	fects.					
Recommended W	ork:	Ret	nab: Repla	ace:	Mainter	nance Needs:	
Urgent:	1-	5 Years: 6-1	0 Years:	None: X	Urgent:	1 Year:	2 Year:
Element Photo:							
Description of I	Photo:	Approach wearing s	urface - looking w	vest			



Element Data:							
Element Group:	Approaches		Length:		51.0		
Element Name:	Barrier		Width:				
Location:			Height:				
Material:	Steel		Count:		2		
Element Type:	Post and W-beam		Total Quanti	ity:	102.0		
Environment:	Severe		Inspected		Yes	X No	limited
Protection System:	Galvanizing						Performance
Condition Data:	Units	Excellent	Good	Fair		Poor*	Deficiencies
	m	102.0					
Comments: No observed d	erects.						
Recommended Work:	F	ehab: Replac	e:	Mainter	nance Nee	eds:	
Urgent:	1-5 Years: 6	-10 Years:	None: X	Urgent:		1 Year:	2 Year:
Element Photo:							
Description of Photo:		il - looking oost					
Description of Photo:	Approach guide ra	all - looking east					

Repair and Reha	bilitation Required:		Pric	ority		Estimated Structural
Element ¹	Repair and Rehabilitation Required ²	6 to 10 Years	1 to 5 Years	Within 1 Year	Urgent	Cost
Structure	Demolition					
Structure	Replacement					
0	R					
Deck	Rehab. =					
Sidewalk/Curb	Rehab. =					
Barrier	Rehab. =					
Joints	Rehab. =					
Beams	Rehab. =					
Abutment	Rehab. =					
Pier	Rehab. =					
Other						
Estimated Rehab Total Deck L	pilitated or Replacement Structure Dimensions ³ ength (m) Overall Str. Width (m)	_		Total Str	ructural Cost	\$0.00

1 - Indicate specific costs for structure replacement OR for rehabilitation under the given headings.

 $\ensuremath{\mathbf{2}}$ - Give a very brief description of the rehabilitation work required.

 $\ensuremath{\mathsf{3}}\xspace$ - Estimated structure dimensions after completion of the proposed work - if it is expected to change.

Associated Work	Comments	Estimated Associated Work Cost
Approaches		Work Cost
Detours		
Traffic Control		
Utilities		
Other		
	Total Associated Work Cost	\$0.00
	Total Construction Cost	\$0.00
	Total Constitución Cost	ψ0:00

Justification:

The structure was replaced in 2021, and is in excellent condition. No work is recommended at this time.

				MTO Site Number:
Inventory Data:				
Structure Name	9 - Lot 10/11, Cor	ic 10		
Main Highway #	Hopkins Road	On X or Under Structure	Service on Structure	Navig. Water Non-Navig. Water Rail X Road Ped. Other
Location Description	0.57 km south of M	ferkley Road	Service under:	Navig. Water X Non-Navig. Water
Owner/Custodian	Gravenhurst			
MTO Region	Northeastern		Latitude	44.908187 Longitude -79.153010
Regional Engineer			Heritage Designation:	X Not Cons. Cons./Not App. List/Not Des Desig. Desig./Not List Desig. & List
MTO Area			Hwy Class:	Freeway Arterial Collector Local 🗴
Old County			Posted Speed	60 No. of Lanes 1
Township			AADT [10 % Truck 0
Structure Type 1	I-Beam			
Structure Material 1	Steel		Traffic Directional	Bound N-S
Structure Type 2	Steel Deck			
Structure Material 2	Steel		Inspection Freque	ency 2 (years)
Total Deck Length	15.24	(m)	Inspection Year	odd
Overall Str. Width	5.44	(m)	Inspection Duratio	on 2 (hrs)
Culvert Length		(m)		
Total Deck Area	71.2	(sq.m)		
Roadway Width	4.67	(m)	Min. Vertical Clear	rance (m)
Skew Angle		(Degree)	Detour Distance	None (km)
No. of Spans	1		Fill on Structure	(m)
Span Lengths	13.4			(m)
For retaining wall:				
Total Wall Length		(m)	Max. Wall Height	(m)
Total Wall Area		(sq.m)	Ave. Wall Height	(m)
			Angle of Backfill	(Degrees)
Historical Data				
Year Built	2020		Year of superstruc	ct. Constructed
Last Reg. OSIM Inspe			Year of Last Minor	
Last Enh. OSIM Inspe	ection		Year of Last Major	
Work History: (Date/d	lescription)		Current Load Limit	it / / (tonne Investigation History: (Date/description)
Troncing (Date/0				

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MTO Site Number:

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Field Inspection Information:										
Date of Inspection:	Se	September 13, 2023 Type of Inspection: X Reg. OSIM Enh. OSII						Enh. OSIM		
Inspected By	Ju	Junjie Yang								
Others in Party:										
Enh. Access Equipment:										
Special Access Equipment										
Weather	Cle	Clear Temperature 22 °C								
Additional Investigati	d:	Priority None Normal Urgent Estimated								
Material Condition Survey		none	Normai	Urgent						
Detailed Deck Condition	n Survey.		X							
Non-destructive Delam		f Asphalt-Covered De	X							
Concrete Substructure					X					
Detailed Coating Condi		J.			X					
Detailed Timber Investi					X					
Post-Tensioned Strand					X					
Underwater Investigation	inteeliguteni				X					
Fatigue Investigation					X					
Seismic Investigation					X					
Structure Evaluation:					X					
Monitoring					X					
Deformations, Settleme	ents and Movem	ents:			Х					
Crack Widths:					X					
RSS Horizontal movem	ents of face.				X					
RSS Vertical movemen		cture.			X					
RSS Local movements		X								
RSS Horizontal movem					X					
RSS Vertical movemen					X					
RSS Lateral earth pres					X					
Investigation Notes:	or racing elements	Λ		1						
Investigation Notes: Total Cost \$0.								\$0.00		
Overall Structure Note	es:									
Recommended Work on Str	ucture [X None Min	or Rehab.		Major Rehab	. Rep	place			
Timing of Recommended W	/ork [Urgent	1 to 5 yea	ars	6 to 10 y	ears				
Overall Comments:		The structure is in e	xcellent c	ondition	. No recomm	ended work	at this time.			
Date of Next inspection:										
Overall Bridge Condition										
% Poor in Deck	% Poor in Bear	in Beams % Poor in Substructure %				Br	ridge Condition Index (BCI or BCIp)			
0%	0%				0% BClp 100.00			BCI 98.59		
Overal Bridge Suf	ficiency					<u> </u>	100.00	00.00		
Traffic Economic Width					Alignment Bridge Sufficiency Ind			ency Index (BSI)		
0					0 92.59					
, v	•				~		52			

Element Data:														
Element Group: Decks						L	Length:			15.24				
Element Name:		Deck Top					Width:			.67				
Location:		· ·					Height:							
Material:		Steel					ount:		1					
Element Type:		Diamond plate					otal Quant	ity:	7	/1.2				
Environment:							pected			Yes	s X	No	limited	
Protection System	:	Primer											Performance	
Condition Data:	Units Ex				ellent	Good			Fair Poor*			Deficiencies		
		sq.m		71	.2									
Comments: No c	bserved de	iects.												
Recommended W	ork:		Reh	ab:	Rep	lace:	Maintenance Needs:							
Urgent:	1-	5 Years:	6-10) Years:		1	None: X]	Urgent:		1 Year	:	2 Year:	
Element Photo:														
Description of I	Photo:	Deck top												

Element Data:						
Element Group:	Barriers		15.24			
Element Name:	Railing Systems		Width:			
Location:			Height:			
Material:	Wood		Count:		2	
Element Type:	Raised curb		Total Quant	ity:	30.5	
Environment:	Moderate		Inspected		Yes X No	limited
Protection System:	Pressure treated				-	Performance
Condition Data:	Units	Excellent	Good	Fair	Poor*	Deficiencies
	m	30.5				
Comments: No observed d	lefects.					
Recommended Work:	Reh	ab: Repla			nance Needs:	
Urgent:	1-5 Years: 6-10) Years:	None: X	Urgent:	1 Year:	2 Year:
Element Photo:						
<image/>	<image/>					

Element Data	:															
Element Group:		Beams/Main	Longitu	dinal Eler	nents	L	ength:			15.24	ŀ					
Element Name:		Girders	-				Vidth:			0.23						
Location:							leight:			0.60						
Material:		Steel					Count:			8						
Element Type:		W-beam					otal Quant	tity:		230.8	}					
Environment:		Benign					spected				/es	Χ	No	lir	nited	
Protection System	ו:	Primer													erformance	
Condition Data:		Units		Exce			Good		Fair			Poor*		D	eficiencie	es
		sq.m	•	207			23.1									
Comments: Isol	ated light co	rrosion along	bottom	flange. N	o other	observ	ed defects	3.								
Recommended W	/ork:		Reh	ab:	Repl	ace:			Maintena	ance I	Need	ds:				
Urgent:	1-	-5 Years:	6-1	0 Years:			None: X]	Urgent:			1 Year	:	2	Year:	
Element Photo	:															
Description of	Photo:	Girder, typ.														

Element Data:						
Element Group:	Beams/Main Longitu	dinal Elements	Length:			
Element Name:	Diaphragms		Width:			
Location:			Height:			
Material:	Steel		Count:		12	
Element Type:	Channel section		Total Quant	ity:	12	
Environment:	Benign		Inspected		Yes X No	limited
Protection System:	Primer					Performance
Condition Data:	Units	Excellent	Good	Fair	Poor*	Deficiencies
	each	12				
Comments: No observed det Recommended Work:	fects.	ab: Repla		Majatan	nance Needs:	
Urgent: 1-	-5 Years: 6-10	0 Years:	None: X	Urgent:	1 Year:	2 Year:
Element Photo:						
<image/>	<image/>					

Element Data:							
Element Group:		Abutments		Length:		2.1	
Element Name:		Abutment Walls		Width:		5.44	
Location:				Height:		0.8	
Material:		Timber and rock		Count:		2	
Element Type:		Cribs with rock fill		Total Quant	ity:	8.7	
Environment:		Benign		Inspected		Yes X No	limited
Protection System	:	Pressure treated				•	Performance
O and the Data		Units	Excellent	Good	Fair	Poor*	Deficiencies
Condition Data:		sq.m	8.7				
Comments: No of Recommended W		Ret	nab: Repla 0 Years:	ace: None: X		nance Needs:	2 Year:
Element Photo:							
Description of I	Photo:	Timber crib abutme	nt				

Element Data:	:															
Element Group:		Embankmen	ts & Stre	ams		Le	ngth:									
Element Name:		Streams and	Waterw	ays		Wi	dth:									
Location:						He	ight:									
Material:						Co	unt:									
Element Type:						То	tal Quant	tity:		all						
Environment:		Benign				Insp	ected				Yes	X	No[lir	nited	
Protection System	1:										-				rforma	
Condition Data:		Units		Excellent	t	Go	bod		Fair			Poor*		D	eficienc	ies
		all		X												
Comments: No o			Reh	ah:	Replace		1		Mainter	nance		e.				
					1			1							. г	
Urgent:	L 1-	-5 Years:	6-10) Years:]	N	one: X]	Urgent:			1 Year		2	Year:	
Element Photo:	:															
Description of	Photo:	Watercourse	;													

Element Knung: Embankments & Streams Leight Image: Control of the second	Element Data:										
Element Name: Embankments Width: Image: Construct of the sector o	Element Group:		Embankments & Str	eams	Length:						
Location: Height: Height: Granular Material: Granular Count: 6 Element Type: Benign Inspected Yes X No limited Protection System: Protection System: Inspected Good Fair Poor* Deficiencies Condition Data: Units Excellent Good Fair Poor* Deficiencies Condition Data: each 6 Image: State	Element Name:		Embankments								
Material: Granular Count: 6 Element Type: Benign Total Quantity: 6 Environment: Benign Inspected Yes X No limited	Location:										
Environment: Benign Inspected Yes X No Immited Protection System: Units Excellent Good Fair Poor* Defroimance Condition Data: each 6 Immited Defroimance Defroimance Comments: No observed defects. Replace: Maintenze Virgent: 1 Year: 2 Year: Urgent: 1-5 Years: 6-10 Years: None: X Urgent: 1 Year: 2 Year:			Granular		Count:						
Protection System: Performance Condition Data: Units Excellent Good Fair Poor* Deficiencies each 6 Image: Comment in the image: Comments: No observed defects. Maintenance Needs: Image: Comment in the image	Element Type:				Total Qu	antity:	e	6			
Protection System: Performance Condition Data: each 6 Fair Poor* Deficiencies Comments: No observed defects. Rehab: Replace: Maintenance Needs: 2 Year: 2 Year: 2 Year: 2 Year: 2 Year: 1 Year:	Environment:		Benign		Inspected			Yes	X	No	limited
Condition Data: Units Excellent Good Fair Poor* Deficiencies Comments: No observed defects. 6 Image: Comment in the im	Protection System	:								Ī	
each 6 Comments: No observed defects. Recommended Work: Rehab: Replace: Urgent: 1-5 Years: 6-10 Years: None: X Urgent: 1 Year: 2 Year:			Units	Excellent	Good		Fair		Poor*		Deficiencies
Recommended Work: Rehab: Replace: Maintenance Needs: Urgent: 1-5 Years: 6-10 Years: None: X Urgent: 1 Year: 2 Year:	Condition Data:		each	6							
<section-header></section-header>	Recommended W	ork:	Ref			X	-	ance Nee		:	2 Year:
	Element Photo:					a state of the sta					
Description of Photo: Embankment, typ.	Description of F	Photo:	Embankment, typ.								

Element Data:	:									
Element Group:		Embankments &		ms	Length:					
Element Name:		Slope Protection	n		Width:					
Location:					Height:					
Material:		Rock			Count:		6			
Element Type:					Total Quant	ity:	6			
Environment:		Benign			Inspected			Yes X	No	limited
Protection System	n:									Performance
		Units		Excellent	Good	Fair		Poor*		Deficiencies
Condition Data:		each		6			_			
	l observed de									
Recommended W	<u></u>		Rehat			_		e Needs:		
Urgent:	<u> </u>	-5 Years:	6-10	Years:	None: X	Urgent:		1 Year:		2 Year:
Element Photo:	:									
Description of	Photo:	Slope protection								
			n, typ.							

Element Data:																
Element Group:		Accessories				Le	ngth:									
Element Name:		Signs					dth:									
Location:						He	eight:									
Material:		Steel					ount:			4						
Element Type:						То	tal Quant	ity:		4						
Environment:		Moderate				Insp	pected			Y	/es 🕽	X	No	lin	nited	
Protection System	:										-		Ī		formance	
Condition Data:		Units		Exce	ellent	Go	bod		Fair		l	Poor*		De	ficiencies	
		each			4											
Comments: No c	ork:	fects.	Reha	ah:	Bonl	ace:	1		Vaintena	ance	Need	2.				
								_	r						,	_
Urgent:	1-	5 Years:	6-10) Years:		N	one: X		Jrgent: [1	l Year:		2	Year:	
Element Photo:								•								
Description of I	Photo:	Hazard warnin	ng sign	, typ.												

Element Kame: Wearing Surface Height 4.67 Location: Gravel Count 2 Element Name: Wearing Surface Height 2 Location: Gravel Count 2 Environment: Moderate Inspected Yes X No Protection System: Continuo 100 S6.0 Paformance Constitue Data s.g.m 56.0 Environment: No observed defects. Recommended Work: Reclass: Reclass: None X Urgent: 1 Year: 2 Year: Element Photo: E	Element Data:																
Element Name: Wearing Surface Width: 4.67 Location: Height: Material: Gravel Count: 2 Element Type: Total Quantity: 56.0 Fair Yes X No<	Element Group:		Approaches				Le	ngth:									
Material: Gravel Count: 2 Element Type: Total Quantity: 56.0 Environment: Moderate Inspected Yes X No limited Performance Protection System:	Element Name:		Wearing Surface	e			W	dth:			4.67						
Element Type: Moderate Total Quantity: 56.0 Environment: Moderate Inspected Yes X No limited Performance Protection System:																	
Environment: Moderate Inspected Yes X No Itimited Protection System:			Gravel														
Protection System: Performance Condition Data: Units Excellent Good Fair Poor* Deficiencies Sq.m 56.0 Image: Comment in the image: Comments: No observed defects. Maintenance Needs: Image: Comment in the im	Element Type:						Tc	tal Quant	tity:		56.0						
Condition Data: Units Excellent Good Fair Poor* Deficiencies Comments: sq.m 56.0	Environment:		Moderate				Insp	pected			Y	′es 🗋	X	No	lim	nited	
Condition Data: sq.m 56.0 Image: Commentation of the sector of the	Protection System	:															
sq.m 56.0 Comments: No observed defects. Recommended Work: Rehab: Replace: Urgent: 1-5 Years: 6-10 Years: None: Urgent: 1 Year: 2 Year:	Condition Data:						G	bod		Fair			Poor*		De	ficienci	es
Recommended Work: Rehab: Replace: Maintenance Needs: Urgent: 1-5 Years: 6-10 Years: None: X Urgent: 1 Year: 2 Year:					56	.0											
Urgent: 1-5 Years: 6-10 Years: None: X Urgent: 1 Year: 2 Year:	Comments: NO C	observed det	iects.														
	Recommended W	ork:		Reha	ab:	Repl	ace:]		Mainten	ance N	Veed	s:				
<section-header></section-header>	Urgent:	1-	5 Years:	6-10) Years:		N	one: X]	Urgent:			1 Year:		2	Year:	
<section-header></section-header>																	
	Element Photo:																
Description of Photo: Approach wearing surface	Description of F	Photo:	Approach wear		urface												

Repair and Reha	bilitation Required:		Pric	ority		Estimated Structural
Element ¹	Repair and Rehabilitation Required ²	6 to 10 Years	1 to 5 Years	Within 1 Year	Urgent	Cost
Structure	Demolition					
Structure	Replacement					
0	R					
Deck	Rehab. =					
Sidewalk/Curb	Rehab. =					
Barrier	Rehab. =					
Joints	Rehab. =					
Beams	Rehab. =					
Abutment	Rehab. =					
Pier	Rehab. =					
Other						
Total Deck L	bilitated or Replacement Structure Dimensions ³ ength (m) Overall Str. Width (m)			Total St	ructural Cost	\$0.00

1 - Indicate specific costs for structure replacement OR for rehabilitation under the given headings.

 $\ensuremath{\mathbf{2}}$ - Give a very brief description of the rehabilitation work required.

 $\ensuremath{\mathsf{3}}\xspace$ - Estimated structure dimensions after completion of the proposed work - if it is expected to change.

Associated Work	Comments	Estimated Associated Work Cost
Approaches		WOR COSt
Detours		
Traffic Control		
Utilities		
Other		
	Total Associated Work Cost	\$0.00
		<u> </u>
	Total Construction Cost	\$0.00

Justification:

The bridge was replaced in 2020. No recommended work at this time.

				MTO Site Number:
Inventory Data:				
Structure Name	11 - Fire Route A	1 Bridge		
Main Highway #	Fire Route A1	On X or Under Structure	Service on Structure	Navig. Water Non-Navig. Water Rail X Road Ped. Other
Location Description	1 km south of Mer	kley Road	Service under:	Navig. Water X Non-Navig. Water
Owner/Custodian	Gravenhurst			
MTO Region	Northeastern		Latitude	44.905793 Longitude -79.159892
Regional Engineer			Heritage Designation:	X Not Cons. Cons./Not App. List/Not Des Desig. Desig./Not List Desig. & List
MTO Area			Hwy Class:	Freeway Arterial Collector Local X
Old County			Posted Speed	No. of Lanes 1
Township	Gravenhurst		AADT	10 % Truck 0
Structure Type 1	Soild Slab			
Structure Material 1	Concrete		Traffic Directional B	Bound W-E
Structure Type 2				
Structure Material 2			Inspection Frequen	cy 2 (years)
Total Deck Length	11.4	(m)	Inspection Year	odd
Overall Str. Width	2.84	(m)	Inspection Duration	2 (hrs)
Culvert Length		(m)		
Total Deck Area	33.06	(sq.m)		
Roadway Width	2.84	(m)	Min. Vertical Cleara	ance 0.3 (m)
Skew Angle		(Degree)	Detour Distance	None (km)
No. of Spans	1		Fill on Structure	(m)
Span Lengths	7.1			(m)
For retaining wall:				
Total Wall Length		(m)	Max. Wall Height	(m)
Total Wall Area		(sq.m)	Ave. Wall Height	(m)
			Angle of Backfill	(Degrees)
Historical Data				
Year Built	Unkown		Year of superstruct.	. Constructed
Last Reg. OSIM Insp			Year of Last Minor F	
Last Enh. OSIM Insp	ection		Year of Last Major F Current Load Limit	
Work History: (Date/c	lescription)			Investigation History: (Date/description)

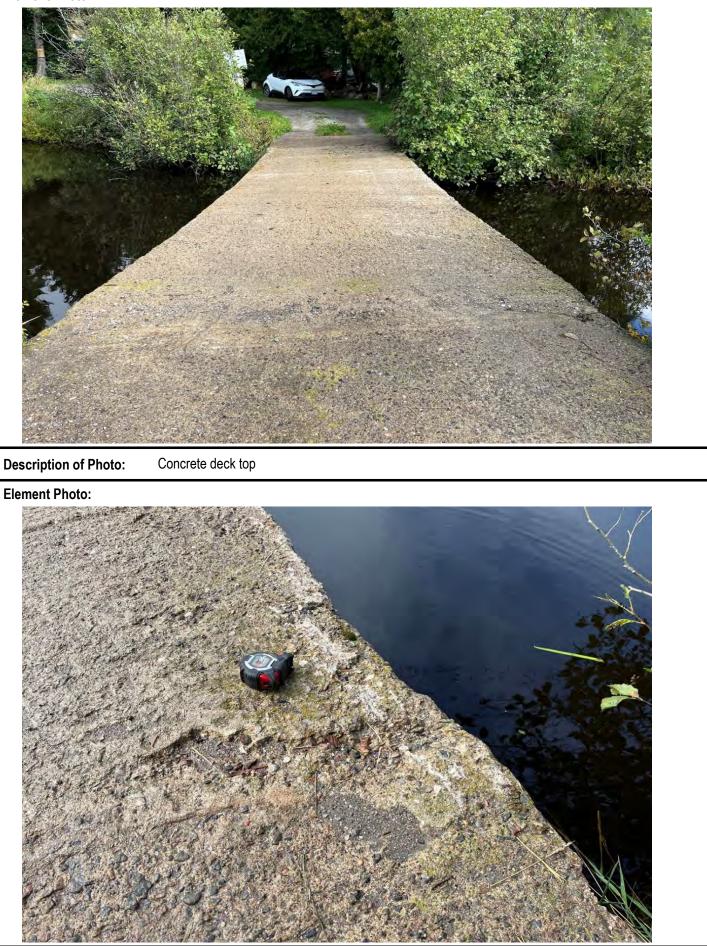
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MTO Site Number:

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Field Inspection Infor	mation:							
Date of Inspection:	Septe	ember 13, 2023	Type of	Inspectio	n:	X Reg. OS	IM	Enh. OSIM
Inspected By	Junji	e Yang						
Others in Party:								
Enh. Access Equipment:								
Special Access Equipment								
Weather	Clear		Tempera	ture				22 °C
Additional Investigati	ons Required:				None	Priority Normal	Urgent	Estimated Cost
Material Condition Survey						Horman	orgoni	
Detailed Deck Conditio	n Survey				Х			
Non-destructive Delam		sphalt-Covered De	ck:		X			
Concrete Substructure			OK.		X			
Detailed Coating Condi					X			
Detailed Timber Investi					X			
Post-Tensioned Strand					X			
Underwater Investigation	i investigation.				X			
Fatigue Investigation					X			
Seismic Investigation					X			
Structure Evaluation:					X			
Monitoring					^			
Deformations, Settleme	ants and Movement	c.			Х			
Crack Widths:		3.			X			
RSS Horizontal movem	pents of face:				X			
RSS Vertical movemen		ro:			X			
RSS Local movements					X			
RSS Local movements RSS Horizontal movem					X			
RSS Honzontal movemen					X			
					X			
RSS Lateral earth pres	nitor for signs of mo		nte until hi	idao io	^			
investigation notes.		replaced		luge is		Total Cost		\$0.00
Overall Structure Not	es:							
Recommended Work on Str	ructure	None Min	or Rehab.		Major Rehab	. XRep	lace	
Timing of Recommended W	/ork	Urgent	1 to 5 year	ars	X 6 to 10 y	ears		
Overall Comments:	Th	e structure does r	not meet o	current g	eometric des	sign standard	ls, no approa	ch or bridge barriers
	ро	sing a risk to use	rs. Sag in	the decl	k, no visible r	elated cracks	s therefore lik	ely constructed to this
	sh	ape, forms possib	ly sagged	during	construction	. A 3 tonne lo	oad posting s	hould be installed. The
		ucture is recomm						
Date of Next inspection:	202			•	,			
Overall Bridge Co	ondition							
% Poor in Deck	% Poor in Beams	% Poor in Subs	tructure	% F	oor in Barrier	Bri		Index (BCI or BCIp)
9.7%	0%	13.3%			0%		BClp 89.40	BCI 58.16
Overal Bridge Suf	ficiency					<u> </u>	00.10	00.10
Traffic	Economic	Width	·		Alignment		Bridge Suffici	ency Index (BSI)
5	2	5			5			1.16
	-	ı ř			~	I	1	-

Element Data:													
Element Group:		Decks				Length:			11.4				
Element Name:		Deck Top				Width:			2.84				
Location:						Height:							
Material:		Concrete				Count:			1				
Element Type:						Total Quanti	ity:		33.1				
Environment:		Moderate				Inspected			Y	es X	No	limite	ed 🔄 🗠
Protection System:	:											Perfor	mance
Condition Data:		Units		Excellent		Good		Fair		Poo	or*	Defic	iencies
		sq.m				21.1		10.0		2.			
Comments: Light abut	t to severe s ment. Crack	scaling typ. (2 continues ar	sq.m in ound sid	severe, 4 sq.n de of deck.	n in me	dium). 3 - 300) x 3(00mm sp	oalls. I	Full widt	h mediu	ım crack a	t west
Recommended Wo	ork:		Reh	ab: 🗌 R	eplace:	X		Mainten	ance l	Needs:			
Urgent:		5 Years:	6-1	0 Years: X		None:		Urgent:		1 Ye	ear:	2 Ye	ar:
Replace the bridg	le												
Element Photo:													
Description of P	Photo:	Concrete de	ck top										



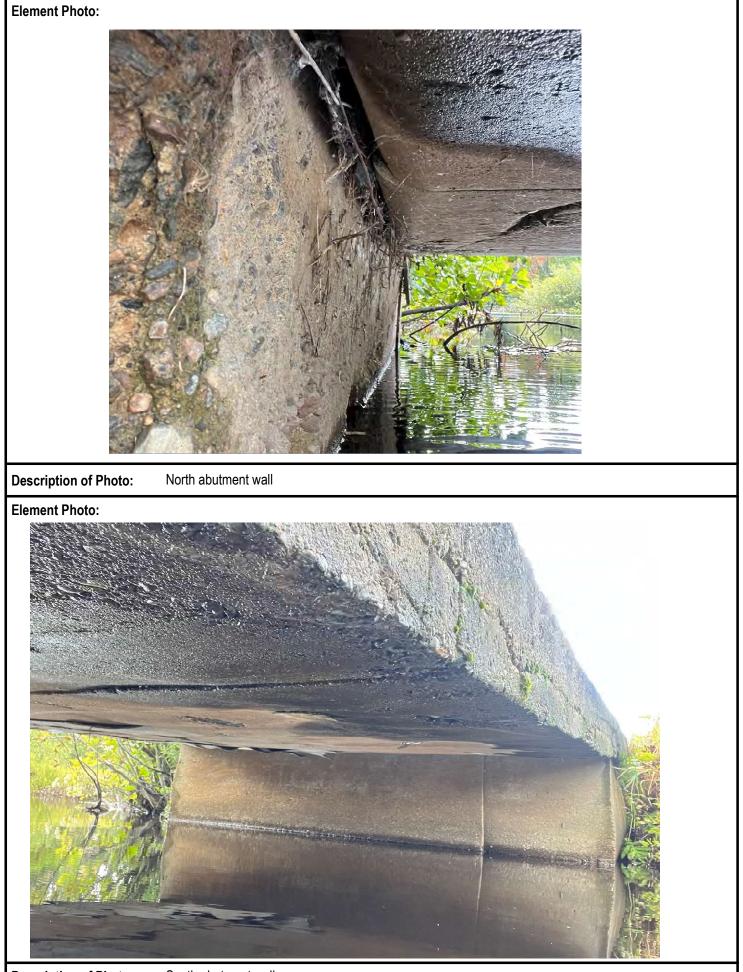


Element Data:	:										
Element Group:	Deck	(S		Length: 7.1							
Element Name:	Soffi	t		Width:	1	2.9					
Location:				Height:							
Material:	Cond	crete		Count:		1					
Element Type:				Total Quant	ity:	20.6					
Environment:	Beni	gn		Inspected		Yes No	limited X				
Protection System				-			Performance				
Canditian Data:	Uni	ts	Excellent	Good	Fair	Poor*	Deficiencies				
Condition Data:	sq.	m		10.6	8.0	2.0					
Comments: Ligh Recommended W		Ret		lace: X		ance Needs:					
Urgent:	1-5 Yea	rs:6-1	0 Years: X	None:	Urgent:	1 Year:	2 Year:				
Replace the bride	ge.										
Element Photo:											
Description of I	Photo: Decl	< - soffit									



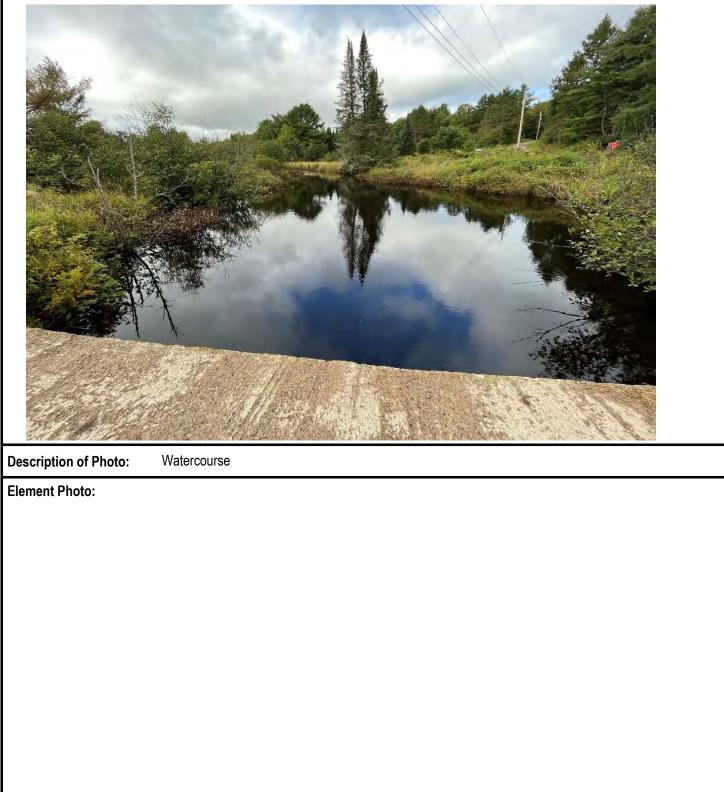
Description of Photo: Deck - soffit

Element Data:																	
Element Group:		Abutments					Length: 2.9										
Element Name:		Abutment W	alls				Wie				1.3						
Location:							He	ight:			1.0						
Material:		Concrete					Со	unt:			2						
Element Type:							Tot	al Quan	tity:		7.54	l –					
Environment:		Benign					Insp	ected				Yes		No	lin	nited	X
Protection System	· ·													i		rformar	
1 Toteotion Oysten		Units		Evo	cellent		Go	od		Fair			Poor*			ficienci	
Condition Data:															De		103
		sq.m					4.			2.0			1.0				
		el not inspect		o water	depth.	Light	to me	dium so	calin	ig, typ. S	Sever	e 600>	(600x6	00mm	n spall a	and co	ncrete
disi	ntegration at	t north abutm	ent.														
Recommended W	ork:		Reh	nab:] R∉	eplace	e: X			Mainter	nance	Need	ls:				
									-			1					
Urgent:	1-	5 Years:	6-1	0 Years:	X		No	one:		Urgent:			1 Year:		2	Year:	
Concrete repair										1							
Element Photo:																	
									いたので、「ない」で、「ない」で、								
Description of I	Photo:	North abutm	ent wall	1													



Description of Photo: South abutment wall

Element Data:	:											
Element Group:		Embankmen	ts & Stre	eams	Length:							
Element Name:		Streams and	Waterw	ays	Width:							
Location:					Height:							
Material:					Count:							
Element Type:					Total Quant	tity:	all					
Environment:		Benign			Inspected	•	Y	Yes X No limited				
Protection System	<u></u>									Performance		
		Units		Excellent	Good	Fair		Poor*		Deficiencies		
Condition Data:		all		X	0000	T Gin		1 001		2010/010/00		
Comments: No o	bserved de	fects. Water d	epth ove									
Recommended W	/ork:		Reh	iab: Rep	lace:	Mainter	nance N	leeds:				
								-	_			
Urgent:	1-	5 Years:	6-1	0 Years:	None: X	Urgent:		1 Year:		2 Year:		
Element Photo:	:					·						
	Photo:											
Description of I	Photo:	Watercourse	;									



Description of Photo:

Element Data:														
Element Group:		Embankment	ts & Stre	ams		Leng	jth:							
Element Name:		Embankment				Widt								
Location:						Heig								
Material:		Soil, Rock, G	rass			Cour	nt:		4					
Element Type:						Tota	I Quantity:	:	4					
Environment:		Benign				Inspec	cted		· ·	Yes	K	No	limited	
Protection System:		-											Performar	nce
		Units		Excel	lent	Goo	d	Fair		F	Poor*		Deficienci	
Condition Data:		each				4	~						2011010110	
					!									
Comments: Very s		eavily vegeta	tea. No		erved de	erects.								
Recommended Wor	·k:		Reh	ab:	Repla	ace:		Mainter	nance	Needs	s:			
Urgent:	1-5	Years:	6-1	0 Years:		Non	ne: X	Urgent:		1	Year:		2 Year:	
Element Photo:														
Description of Ph	noto:	Embankmen	t, typ.											



Description of Photo: Embankment, typ.

Element Data:								
Element Group:		Accessories			Length:			
Element Name:		Signs			Width:			
Location:					Height:			
Material:		Steel			Count:			
Element Type:					Total Quant	ity:	2	
Environment:		Benign			Inspected		Yes X	No limited
Protection System	1:				•			Performance
		Units		Excellent	Good	Fair	Poor*	
Condition Data:		each			2			
Comments: Ligh	nt weathering							
Recommended W			Reh	nab: Repl	ace:	Mainter	nance Needs:	18 - Other Maintenance
Urgent:	1-	5 Years:	6-1	0 Years:	None: X	Urgent:	X 1 Yea	r: 2 Year:
							a 3 Tonne load p	
Element Photo:	:							
						USE THIS BRID IS NOT	GANEANARS AT DYIN RISK GE NOT ASSU MAINTAINED NO® GRAVENHUR	Dimme
Description of I	Photo:	Sign						

Element Data	:														
Element Group:		Approaches					Length: 6								
Element Name:		Wearing Sur	face				Nidth:			2.9					
Location:						-	leight:								
Material:		Gravel				(Count:			2					
Element Type:							Fotal Quant	tity:		34.8					
Environment:		Benign					spected			Y	res	X	No	limited	
Protection System	n.												1	Performance	
T TOLECTION OYSTEM	l.	Units		Eve	ellent		Good		Fair			Poor*		Deficiencies	
Condition Data:												1001		Deliciencies	
		sq.m					29.8		5.0						
Comments: Ear	th and grave	l approaches	light to ı	nedium e	erosion	at NE c	orner. Ligh	nt se	ttlement	at the	e abı	utments	S.		
											_	_			
Recommended W	/ork:		Reh	ab:	Rep	ace:			Maintena	ance l	Nee	ds:			
							<u> </u>	1	Г						
Urgent:	1.	-5 Years:	6-1	0 Years:			None: X		Urgent:			1 Year	:	2 Year:	
Element Photo	:														
Ista West	Carl Store				and a st	al Transfer		.**		No. The A	10		V	e.	
SALLAN .		States - States	Service and												
	NUBER'S ALLER T	A CONTRACTOR	A REAL	-			and the second sec				100	1	Term		
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	4.301%		A COMPANY		1 miles										
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				C VIII	a Diek		ALC: NO	E A	X			No.	YS		
		A		f .e											
Description of	Photo:	Approach w	earing s	urrace											



Repair and Reha	abilitation Required:		Pric	ority		Estimated Structural	
Element ¹	Repair and Rehabilitation Required ²	6 to 10 Years	1 to 5 Years	Within 1 Year	Urgent	Cost	
Structure	Demolition	X				\$20,000.00	
Structure	Replacement	x				\$500,000.00	
O	R						
Deck	Rehab. =						
Sidewalk/Curb	Rehab. =						
Barrier	Rehab. =						
Joints	Rehab. =						
Beams	Rehab. =						
Abutment	Rehab. =						
Pier	Rehab. =						
Other							
Total Deck L	bilitated or Replacement Structure Dimensions ³ ength (m) Overall Str. Width (m)			Total St	ructural Cost	\$520,000.00	

1 - Indicate specific costs for structure replacement OR for rehabilitation under the given headings.

2 - Give a very brief description of the rehabilitation work required.

3 - Estimated structure dimensions after completion of the proposed work - if it is expected to change.

Associated Work	Comments	Estimated Associated Work Cost
Approaches		
Detours		
Traffic Control	Full closure	\$10,000.00
Utilities		
Other	Engineering and Contingency	\$60,000.00
	Total Associated Work Cost	\$70,000.00
	Total Construction Cost	\$590,000.00

Justification:

The bridge is in generally fair to poor condition. It is geometrically inadequate, there are no approach or bridge barriers posing a risk to users. There is a sag in the deck but no visible related cracks, therefore likely constructed to this shape, forms possibly sagged during construction. Adjacent homeowner noted the bridge can be occasionally overtopped during flood events. Note: A "Review for Load Posting" letter by Tatham Engineering dated August 11, 2016 recommended a 3 Tonne Load posting should be installed prior to replacement to reduce risk, this work is not completed. The estimated replacement cost is based on a single lane prefabricated bridge structure with a new substructure, deck and barrier system, plus approach barrier system.

Inventory Data:				
Structure Name	42-328 - Highway 11 - Snow	vmobile Tra	ail Overpass	
Main Highway #	11 On Structur] or Under e	r X Service on Navig. V Structure Rail	Water Non-Navig. Water Non-Navig. Water Road X Ped. X Other
Location Description	Over Hwy 11, 800m South of	Doe Lake F	Road Service Navig. \ under: Rail	Water Non-Navig. Water Non-Navig. Water
Owner/Custodian	Town of Gravenhurst			
MTO Region			Latitude 44.931926	Longitude -79.344299
Regional Engineer			Heritage X Not Cor Designation: Desig.	ns. Cons./Not App. List/Not Desig.
MTO Area			Hwy Class: Freeway	Arterial Collector Local X
Old County			Posted Speed N/A	No. of Lanes 1
Township			AADT N/A	% Truck N/A
Structure Type 1	Half-Through (Pony) Truss			
Structure Material 1	Steel		Traffic Directional Bound	E-W
Structure Type 2	Deck			
Structure Material 2	Concrete		Inspection Frequency	2 (years)
Total Deck Length	73.0] (m)	Inspection Year	Odd
Overall Str. Width	3.8] (m)	Inspection Duration	2 (hrs)
Culvert Length] (m)		
Total Deck Area	277.4] (sq.m)		
Roadway Width	3.4] (m)	Min. Vertical Clearance	(m)
Skew Angle] (Degree)	Detour Distance	(km)
No. of Spans	2]	Fill on Structure	(m)
Span Lengths	40.0 / 33.0			(m)
For retaining wall:				
Total Wall Length] (m)	Max. Wall Height	(m)
Total Wall Area] (sq.m)	Ave. Wall Height	(m)
			Angle of Backfill	(Degrees)
Historical Data				
Year Built	2002]	Year of superstruct. Constructed	
Last Reg. OSIM Insp]	Year of Last Minor Rehab.	
Last Enh. OSIM Insp	ection]	Year of Last Major Rehab	
Work History: (Date/c	description)		Current Load Limit	/ 10 / (tonnes) n History: (Date/description)
	of one bearing and pier concrete	e repair		

MTO Site Number:

42-328

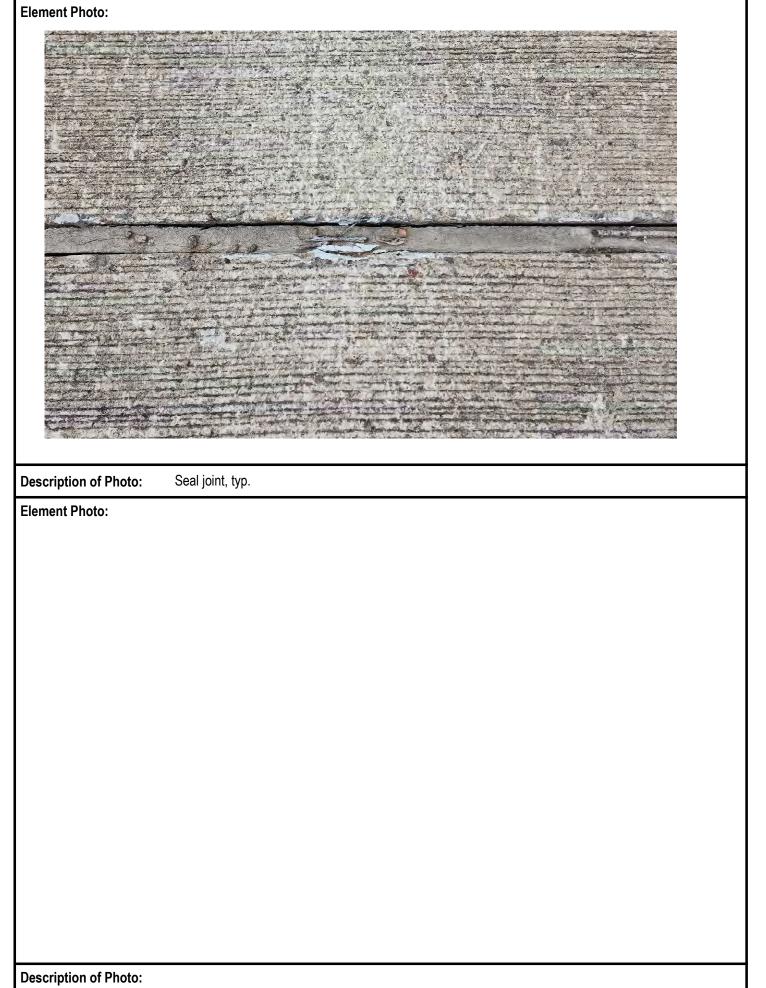
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Field Increation Inform	metien.									•_•
Field Inspection Inform	mation:									
Date of Inspection:	Octob	er 18, 2023	Type of	Inspectio	n:	Χ	Reg. OSI	M	Enh. OS	SIM
Inspected By	David	Middlebrook								
Others in Party:										
Enh. Access Equipment:										
Special Access Equipment										
Weather	Cloud	y 1	Tempera	ture						5 °C
Additional Investigation	ons Required:				None		iority	Uneent	Est	imated Cost
Material Condition Survey					X		ormal	Urgent		
Detailed Deck Condition					X	-				
Non-destructive Delami		nhalt Covered Deek	<i>·</i> ·		X					
Concrete Substructure			\ .		X	-				
Detailed Coating Condit	,				X					
Detailed Coating Condition					X	-				
Post-Tensioned Strand					X	-				
	investigation.				X	-				
Underwater Investigation					X					
Fatigue Investigation					X					
Seismic Investigation										
Structure Evaluation:					X X					
Monitoring	nto and Mayamanta									
Deformations, Settleme	nts and movements				X X					
Crack Widths:						<u> </u>				
RSS Horizontal movem					X					
RSS Vertical movement					X					
RSS Local movements					X	<u> </u>				
RSS Horizontal movem					X					
RSS Vertical movement					X					
RSS Lateral earth press	sure at the back of the	acing elements			Х					
Investigation Notes:						Tota	l Cost			\$0.00
Overall Structure Note	es:									
Recommended Work on Str	ucture X	None Minor	r Rehab.		Major Rehab). [Repl	ace		
Timing of Recommended W	ork	Urgent 1	1 to 5 ye	ars	6 to 10	ears				
Overall Comments:		s bridge is in gene							e centre	joint
	con	pression seal, bri	dge sur	face clea	ning, and be	earing	seat cle	aning.		
Date of Next inspection:	202	5								
Overall Bridge Con	ndition									
% Poor in Deck	% Poor in Beams	% Poor in Substru	0 (
0%	0%	0%						BCI 90.53		
Overall Bridge Suf	fficiency								I	
Traffic	Economic	Width			Alignment	Т		Bridge Sufficio	encv Ind	ex (BSI)
0	1	0		0 89.53						

Element Data:											
Element Group:		Decks		Length:		73.4					
Element Name:		Deck Top		Width:		3.8					
Location:				Height:							
Material:		Cast-in-place concre	ete	Count:		1					
Element Type:				Total Quanti	ity:	278.9					
Environment:		Moderate		Inspected		Yes X No	limited				
Protection System:							Performance				
Condition Data:		Units	Excellent	Good	Fair	Poor*	Deficiencies				
		sq.m		278.9							
		p. Debris on both sid									
Recommended Wo	ork:	Ret	nab: Repla		Mainte	nance Needs: 2	2 - Bridge Cleaning				
Urgent:	1-	5 Years: 6-1	0 Years:	None: X	Urgent:		2 Year: X				
					Bridge	Cleaning					
Element Photo:											
Description of P	hoto:	Deck top									

Element Data:																	
Element Group:		Decks					Length: 73.4										
Element Name:		Soffit						dth:			3.8						
Location:							He	ight:									
Material:		Cast-in-place	e concre	te			Count: 1										
Element Type:							Tot	tal Quant	ity:		278.	9					
Environment:		Benign						ected				Yes		No	lin	nited	X
Protection System	1:												rforma				
Condition Data:		Units			cellent			Good		Fair		Poor*			De	eficienc	ies
	sq.m				110.4			8.5	Ļ								
																	aicht
		at welded co												nspec	cion d	ue to h	leignt
and	traffic volum	ne: Condition	data, co	mmen	ts, and p	notos	carri	led over	Tron	n the 202	1 ins	респ	on.				
Recommended W	/ork:		Reh	ab:	R	eplace:				Mainten	nance	Need	ds:				
Urgent:		5 Years:		0 Year				one: X	1	Urgent:		1	1 Year:		n	Year:	
orgent.			0-1		». 🛄		INC		J	orgeni.			i i eal.		2	redi.	
	_																
Element Photo:																	
Description of	Photo:	Deck - soffit															

Element Data:																		
Element Group: Joints									Length: 3.8									
Element Name:		Seals/sealan	ts						dth:									
Location:								Height:										
Material:		Elastomeric	0.1					Count: 3										
Element Type:		Compressio	n Seal						tal Quan	tity:		3						
Environment:		Moderate						Insp	pected			Yes	S X	No	limited			
Protection System	1: 	Units		Ę٧	رمماا	lont		G	bod		Fair		Poor*	Performance Deficiencies				
Condition Data:		each		L^	Excellent			00			2		1		Denciencies			
fund	ctioning. Cei		er has a g	gap an		s leak	ing.		deteriora	tion	noted, h		abutme		ts appear to be			
Recommended W	/ork:		Reh		<u> </u>	Re	place		 		Mainten	ance Ne	eds:	18 -	3 - Other Maintenance			
Urgent:	1·	-5 Years:	6-10) Years	s: [N	one: X		Urgent:		1 Yea	r:	2 Year: X			
											Replace	e centre :	seal					
Element Photo	:																	
Description of	Photo:	Seal joint, ty	γp															



Element Data:													
Element Group:		Sidewalk/Curb	Length:		73.4								
Element Name:		Curbs		Width:		0.15							
Location:				Height:		0.2							
Material:		Cast-in-place concre	te	Count:		2							
Element Type:		Barrier Curb		Total Quant	ity:	51.4							
Environment:		Moderate		Inspected		Yes X No	limited						
Protection System): 						Performance						
		Units	Excellent	Good	Fair	Poor*	Deficiencies						
Condition Data:		sq.m		51.4									
Comments: Ligh	t scaling, ty	p. No other observed	defects.										
Recommended W	'ork:	Reh	iab: Repl	ace:	Mainter	nance Needs:							
Urgent:	1-	5 Years: 6-1	0 Years:	None: X	Urgent:	1 Year:	2 Year:						
Element Photo:	:												
Description of I	Photo:	Curb, typ.											
		Յաթ, ւյբ.											

Element Data:																		
Element Group:		Barriers						Length: 73.4										
Element Name:		Railing System	ems					Width:										
Location:								Height:										
Material:		Steel						Count: 2										
Element Type:		Thrie Beam						Total		146.								
Environment:		Moderate						Inspected					Yes	X	No		nited	
Protection System	1:	Galvanizing Units		Г	Vool	lont		Good	1		Fair			Poor*	r		erformance eficiencies	
Condition Data:		m		Excellent 146.8			6000			Fall			F'001		י ט	enciencies		
obs	erved defect	barrier is faste		he tru		ising w			ce stair	ning				_	iss we	atherir	ıg steel. No	0
Recommended W			Reh		<u> </u>	Rep	lace:			1	Mainte					1		
Urgent:	1-	-5 Years:	6-1	0 Year	s:			None	e: X		Urgent:			1 Yea	r:	2	Year:	
Element Photo:																		
Description of I	Photo:	Railing, typ.																

Element Data:													
Element Group:		Barriers		Length:		73.0	73.0						
Element Name:		Railing Systems		Width:		0.1							
Location:				Height:		0.1							
Material:		Steel		Count:		6							
Element Type:		HSS section		Total Quar	itity:	438.0							
Environment:		Moderate		Inspected		Yes X No	D limited						
Protection System	:	ACR steel				- -	Performance						
Condition Data:		Units	Excellent	Good	Fair	Poor*	Deficiencies						
Comments: No c	bserved de	m	438.0										
Recommended W			nab: Repl			nance Needs:							
Urgent:	1-	5 Years: 6-1	0 Years:	None: X	Urgent:	1 Year:	2 Year:						
Element Photo:													
Description of I	Photo:	Railing, typ.											

Element Data:																		
Element Group:		Beams/Main	Longitu	dinal Ele	ements		Len	gth:			3.8							
Element Name:		Floor Beams					Wid	th:			0.1							
Location:							Hei		0.2									
Material:		Steel					Cou				31							
Element Type:		HSS						Total Quantity:				70.7						
Environment:		Benign					Inspected			Yes N				No[nited X		
Protection System	:	ACR steel		F	allart		0-	d		Felm			Deart			formance		
Condition Data:		Units sa m			ellent 0.0	F	Goo 10.			Fair			Poor*		De	ficiencies		
		sq.m m patina. Son c volume: Cor		louratio	n at weld		onne	ctions. I							l inspec	tion due to		
Recommended W	ork:		Reh	iab:	Rep	lace:				Mainten	ance	Need	ds:					
Urgent:	1-	5 Years:	6-1	0 Years:			No	ne: X		Urgent:			1 Year	:	2`	Year:		
Element Photos																		
Description of I	Photo:	Floor beam,	typ.															

Element Data:							
Element Group:		Trusses/Arches		Length:		69.7	
Element Name:		Top Chords		Width:		0.25	
Location:				Height:		0.25	
Material:		Steel		Count:		2	
Element Type:		HSS		Total Quant	ity:	139.4	
Environment:		Moderate		Inspected		Yes X No	
Protection System	1:	ACR steel					Performance
Condition Data:		Units	Excellent	Good	Fair	Poor*	Deficiencies
	observed de	sq.m	139.7				
Comments: No c Recommended W Urgent:	ork:	Rel	nab: Repla 0 Years:	ace: None: X		nance Needs:	2 Year:
Element Photo:							
Description of I	Photo:	Truss - top chord					

Element Data:						
Element Group:	Trusses/Arches		Length:	7	3.4	
Element Name:	Bottom Chords		Width:	0	.25	
Location:			Height:	0	.25	
Material:	Steel		Count:	2		
Element Type:	HSS		Total Quantity:	1	46.8	
Environment:	Moderate		Inspected		Yes No	limited X
Protection System:	ACR steel					Performance
Condition Data:	Units	Excellent	Good	Fair	Poor*	Deficiencies
	sq.m	120.0	26.8	<u> </u>		increation due to
height and traffi	c volume: Condition	blouration at welded c data, comments, and p	ohotos carried ov	er from the	e 2021 inspection.	
Recommended Work:	Rel	hab: Replace:		Maintenar	nce Needs:	
Urgent: 1-	-5 Years: 6-1	I0 Years:	None: X	Urgent:	1 Year:	2 Year:
Element Photo:						
Description of Photo:	Truss - bottom chor	ď				

Element Data:	ł							
Element Group:		Trusses/Arches		Length:		2.		
Element Name:		Verticals/Diagonals		Width:		0.1		
Location:				Height:			15	
Material:		Steel		Count:		10		
Element Type:		HSS		Total Qua	antity:	16	<u>52.0</u>	
Environment:		Moderate		Inspected			Yes X No	limited
Protection System	1:	ACR steel						Performance
Condition Data:		Units	Excellent	Good		Fair	Poor*	Deficiencies
Condition Data.		sq.m	166.9					
Comments: No o Recommended W Urgent:		Reh	nab: Replac 0 Years:	ce: None:	_	Maintenand	ce Needs: 1 Year:	2 Year:
Element Photo:								
Description of I	Photo:	Truss - vertical / dia	gonal member					

Element Data:							
Element Group:		Trusses/Arches		Length:			
Element Name:		Connections		Width:			
Location:		Exterior		Height:			
Material:		Steel		Count:		182	
Element Type:		Welded Connections	5	Total Quant	ity:	182	
Environment:		Moderate		Inspected		Yes X No	D limited
Protection System	:	ACR steel				· · ·	Performance
Condition Data:		Units	Excellent	Good	Fair	Poor*	Deficiencies
Comments: No c		each	182				
Recommended W Urgent:			ab: Repla 0 Years:	ace: None: X	_	nance Needs:	2 Year:
Element Photo:							
Description of I	Photo:	Weld Connections					

Element Data:											
Element Group:	Bracing					Length:			6.3		
Element Name:	Bracing					Width:).1		
Location:						Height:).1		
Material:	Steel					Count:			5		
Element Type:	HSS					Total Quant	ity:	1	5		
Environment:	Benign				Inspected			Yes] No		
Protection System:	ACR steel		-			Card		F -ir		*	Performance
Condition Data:	Units		Exc	cellent		Good		Fair	P	oor*	Deficiencies
	each					15	<u> </u>	4		N1	
Comments: Relatively unifor due to height an											cess for inspection
			annon u	, 60	ciil	o, and prioros	Juai			- i iiishe	
Recommended Work:		Reh	ab:	R	eplace:			Maintena	nce Needs:		
Urgent: 1-	5 Years:	6-1	0 Years:			None: X]	Urgent:	1`	Year:	2 Year:
						-					
Element Photo:											
Element Photo:											
Description of Photo:	Bracing	and the	Ser.	aut.	21 7	e al Solo	2.			At 1.	

Element Data:	:												
Element Group:		Abutments				Length:							
Element Name:		Abutment W	alls			Width:			5.05				
Location:						Height:			2.5				
Material:		Cast-in-place	e concre	te		Count:			2				
Element Type:		Conventiona	I Closed			Total Qua	ntity:		25.3				
Environment:		Benign				Inspected			Ye	s X	No	limited	
Protection System	ו:						_					Performa	
Condition Data:		Units		Excellent		Good		Fair		Poor*		Deficien	cies
	t cooling tu	sq.m	otoinina	near bearing s		25.3							
Comments: Ligh	it scaling, ty						yc.						
Recommended W	/ork:		Reh	iab: 🔄 F	Replace:			Maintena	ance Ne	eeds:			
Urgent:	1-	5 Years:	6-1	0 Years:		None:	<	Urgent:		1 Year	:	2 Year:	
Element Photo	:												
		ŕ						•••	Ì				
Description of	Photo:	Abutment w	all										

Element Data:	:												
Element Group:		Abutments					Length:						
Element Name:		Ballast Walls	;				Width:			5.05			
Location:							Height:			0.5			
Material:		Cast-in-place	e concre	te			Count:			2			
Element Type:							Total Qua	ntity:		5.1			
Environment:		Moderate				-	nspected			Ň	Yes X	No	limited
Protection System	וי						•						Performance
		Units		Exce	ellent		Good		Fair		Poo	r*	Deficiencies
Condition Data:				2,000			3.1		2.0			•	
		sq.m		L					2.0				
Comments: Ligh	nt scanng, ty	p. isolated en	Iorescei		-up, and	u ngnt i	staning.						
Recommended W	/ork:		Reh	iab:	Rep	place:			Maintena	ance	Needs:		
Urgent:	1	-5 Years:	6-1	0 Years:			None:	(Urgent:		1 Ye	ar:	2 Year:
Element Photo	:												
Description of	Photo:	Ballast wall,	typ.										

Element Data:	:																
Element Group:		Abutments					Le	ngth:			3.0						
Element Name:		Wingwalls					Wi	dth:									
Location:							He	ight:			1.3						
Material:		Cast-in-place	e concre	te			Co	unt:			4						
Element Type:		Reinforced C	oncrete				То	tal Quant	ity:		15.6						
Environment:		Benign						ected				Yes	X	No	lin	nited	
Protection System	וי	J									-					rforman	
		Units		E F	xceller	nt	G	bod		Fair			Poor*			ficiencie	
Condition Data:								5.6		1 dil			1 001				
		sq.m		Ļ		.			L_								
Comments: Ligh		p. Light water							geu								
Recommended W	<u> </u>		Reh			Repla		 		Mainter	,,	Nee					
Urgent:	1-	5 Years:	6-1	0 Years	s:		Ν	one: X		Urgent:			1 Year:	:	2	Year:	
Element Photo	:																
	Photo:																
Description of	Photo:	Wing wall, ty	γp.														

Element Data:													
Element Group:		Abutments				Le	ngth:						
Element Name:		Bearings				Wi	dth:						
Location:						He	ight:						
Material:		Neoprene				Co	unt:		4	4			
Element Type:		Elastomeric	Pad			То	tal Quant	ity:	4	4			
Environment:		Benign					ected			Yes		No	limited X
Protection System	1:										JJ		Performance
Condition Data:		Units		Exc	ellent	Go	od		Fair		Poor	*	Deficiencies
		each					4						
Comments: Son	ne debris bui	ild-up around	bearing	seat. Li	ght weath	ering of	the elast	ome	er. No oth	er obse	rved de	efects.	
Recommended W	'ork:		Reh	ab:	Repl	ace:			Maintena	ance Ne	eds:	2 -	Bridge Cleaning
Urgent:	1-	5 Years:	6-1	0 Years:		N	one: X		Urgent:		1 Yea	ar:	2 Year: X
									Clean be	earing s	eat.		
Element Photo:	:												
Description of	Photo:	Bearing pad	, typ.										
	1010.	bearing pau	, чур.										

Element Data:						
Element Group:	Piers		Length:	1.0		
Element Name:	Shafts/Columns/Pile	Bents	Width:	2.0		
Location:			Height:	4.0		
Material:	Cast-in-place concre	ete	Count:	1		
Element Type:	Reinforced concrete		Total Quantity:	24.	.0	
Environment:	Severe		Inspected		Yes No	limited X
Protection System:						Performance
Condition Data:	Units	Excellent	Good	Fair	Poor*	Deficiencies
	sq.m		24.0			
		ection due to height a over from the 2021 ins		. 2019 concr	rete repair to bearir	ng seat. Condition
Recommended Work:	Rel	nab: Replace:		Maintenanc	e Needs:	
Urgent: 1	-5 Years: 6-1	0 Years:	None: X	Urgent:	1 Year:	2 Year:
Element Photo:						
Description of Photo:	Concrete Pier					

Element Data:								
Element Group:	Piers			Len			1.45	
Element Name:	Caps			Wid			5.05	
Location:				Heig			1.3	
Material:	Cast-in-place			Cou			1	
Element Type:	Reinforced c	oncrete			al Quantity	y:	31.5	
Environment:	Moderate			Inspe	ected		Yes	No limited X
Protection System:	Units		cellent	Goo	d I	Fair	Poor*	Performance Deficiencies
Condition Data:			cellent			Fall	P001	Deliciencies
	sq.m			31.				
	aling, typ. Light corro o access for inspectio				at bearing	g seat and i	norizontal concre	te crack repaired in
Recommended Work:		Rehab:	Rep	olace:		Mainten	ance Needs:	
Urgent:	1-5 Years:	6-10 Years	s:	No	ne: X	Urgent:	1 Year:	2 Year:
Element Photo:								
Description of Pho	to: Pier cap, typ).						

Element Data:	:														
Element Group:		Piers					Leng	gth:							
Element Name:		Bearings					Widt								
Location:							Heig	ıht:							
Material:		Neoprene					Cour				4				
Element Type:		Elastomeric	Pad			_	Tota	l Quanti	ity:		4				
Environment:		Benign				Ir	nspeo	cted				Yes		No[X limited
Protection System	ı:														Performance
Condition Data:		Units		Exce	ellent		Goo	d		Fair			Poor*		Deficiencies
		each					4								
		veathering, ty over from the				tion due	e to h	neight a	and f	traffic vo	olumo	e: Cor	ndition d	lata,	comments, and
Recommended W	/ork:		Reha	b:] Re	eplace:				Mainte	nance	e Need	ds:		
Urgent:	1-	-5 Years:	6-10	Years:			Non	ne: X		Urgent:]	1 Year:		2 Year:
Element Photo	:														
Description of	Photo:	Bearing, typ													

Element Data:	1								
Element Group:		Accessories		Length:					
Element Name:		Signs		Width:					
Location:				Height:					
Material:		Steel		Count:	Count: 6				
Element Type:				Total Quant	ity:	6			
Environment:		Benign		Inspected			Yes X	No	limited
Protection System	ı:		1		-				Performance
Condition Data:		Units	Excellent	Good	Fair		Poor*		Deficiencies
		each	6		- 4-				
Comments: 4 na	izaro marker	s present, 2-10 ton	ie load limit signs.	NO ODSERVED DETE	cts.				
Recommended W	/ork:	F	ehab: Repl	ace:	Mainter	nance	Needs:		
Urgent:	1-	5 Years: 6	-10 Years:	None: X	Urgent:		1 Year:		2 Year:
Element Photo:	:								
	Phate:					AXIMUM 10 Danes			
Description of I	Photo:	Load post sign an	d hazard warning s	sign					

Element Data:						
Element Group:	Approaches		Length:		6.0	
Element Name:	Wearing Surface		Width:		3.8	
Location:			Height:		0.1	
Material:	Gravel		Count:		2	
Element Type:			Total Quant	ity:	45.6	
Environment:	Moderate		Inspected		limited	
Protection System:						Performance
Condition Data:	Units	Excellent	Good	Fair	Poor*	Deficiencies
	sq.m	45.6				
Comments: No observed de Recommended Work:	efects.	lab: Replac	e:	Mainte	nance Needs:	
] 2 Vear
Urgent: 1	-5 Years: 6-1	0 Years:	None: X	Urgent:	1 Year:	2 Year:
Element Photo:						
<image/>		<image/> <image/>				
	Approach wearing s					

Element Photo:



Element Photo:

Element Data:	:												
Element Group:		Approaches				Le	ength:			19.0			
Element Name:		Barrier					idth:						
Location:			He	eight:			0.7						
Material:		Steel				Co	Count: 4						
Element Type:		W-Beam with	steel p	osts		Тс	Total Quantity: 76.0						
Environment:		Moderate											limited
Protection System		Galvanizing											Performance
		Units		Exce	ellent	G	ood		Fair		Poor*		Deficiencies
Condition Data:		m				7	6.0						
Comments: Trar	nsitions fron	n thrie-beam o	n the br	dge to V	V-beam.	Several	missing I	bolts	s noted or	1 the ea	st appro	ach p	ost connections. No
	er observed			•			•					•	
Recommended W	/ork:		Reh	ab:	Rep	ace:			Maintena	ance Ne	eds:		
Urgent:	1-	-5 Years:	6-10) Years:		Ν	lone: X]	Urgent:		1 Year	:	2 Year:
								-					
Element Photo:													
	•												
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Description of	Photo:	Approach gu	ide rail	tvn									
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Repair and Reha	bilitation Required:		Pric	ority		Estimated Structural	
Element ¹	Repair and Rehabilitation Required ²	6 to 10 Years	1 to 5 Years	Within 1 Year	Urgent	Cost	
Structure	Demolition						
Structure	Replacement						
0	R						
Deck	Rehab. =						
Sidewalk/Curb	Rehab. =						
Barrier	Rehab. =						
Joints	Rehab. =						
Beams	Rehab. =						
Abutment	Rehab. =						
Pier	Rehab. =						
Other							
Estimated Rehat Total Deck L	pilitated or Replacement Structure Dimensions ³ ength (m) Overall Str. Width (m)	_		Total Str	ructural Cost	\$0.00	

1 - Indicate specific costs for structure replacement OR for rehabilitation under the given headings.

 $\ensuremath{\mathbf{2}}$ - Give a very brief description of the rehabilitation work required.

3 - Estimated structure dimensions after completion of the proposed work - if it is expected to change.

Associated Work	Comments	Estimated Associated Work Cost
Approaches		WOR COSt
Detours		
Traffic Control		
Utilities		
Other		
	Total Associated Work Cost	\$0.00
		<u> </u>
	Total Construction Cost	\$0.00

Justification:

The structure is in generally excellent to good condition. No rehabilitation work is recommended at this time. Maintenance: replace centre joint seal, bridge surface cleaning and bearing seat cleaning.

				MTO Site Number:	
Inventory Data:					
Structure Name	201 - Lots 15/16, Co	onc 10			
Main Highway #	Dealers Deal	On X or Under Structure	Service on Structure	Navig. Water Non-Navig. Water	
Location Description	1.5 km south of Mer	kley Road	Service under:	Navig. Water X Non-Navig. Water	
Owner/Custodian	Gravenhurst				
MTO Region	Northeastern		Latitude	44.893186 Longitude -79.172277	
Regional Engineer			Heritage Designation:	X Not Cons. Cons./Not App. List/Not I Desig. Desig./Not List Desig. & List	Desig.
MTO Area			Hwy Class:	Freeway Arterial Collector Local	Χ
Old County			Posted Speed	50 No. of Lanes 2	
Township	Gravenhurst		AADT	200-499 % Truck 0	
Structure Type 1	SPCSP Pipe Arch				
Structure Material 1	Steel		Traffic Directional Bo	ound N-S	
Structure Type 2					
Structure Material 2			Inspection Frequence	cy 2 (years)	
Total Deck Length	6.4	(m)	Inspection Year	odd	
Overall Str. Width		(m)	Inspection Duration	2 (hrs)	
Culvert Length	24.4	(m)			
Total Deck Area	156.2	(sq.m)			
Roadway Width	6.2	(m)	Min. Vertical Clearar	nce 3.6 (m)	
Skew Angle		(Degree)	Detour Distance	20 (km)	
No. of Spans	1		Fill on Structure	2 (m)	
Span Lengths	6.4			(m)	
For retaining wall:					
Total Wall Length		(m)	Max. Wall Height	(m)	
Total Wall Area		(sq.m)	Ave. Wall Height	(m)	
			Angle of Backfill	(Degrees)	
Historical Data					
Year Built	1960		Year of superstruct.		
Last Reg. OSIM Inspe			Year of Last Minor R		
Last Enh. OSIM Inspe			Year of Last Major R Current Load Limit		onnes)
Work History: (Date/d	escription)			Investigation History: (Date/description)	

MTO Site Number:

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Field Inspection Inform	mation:							
Date of Inspection:	Septe	mber 13, 2023	Type of	Inspectio	n:	X Reg. OS	SIM	Enh. OSIM
Inspected By	Junjie	Yang						
Others in Party:								
Enh. Access Equipment:								
Special Access Equipment			-					
Weather	Drizzl	9	Tempera	ture				20 °C
Additional Investigation	ons Required:				None	Priority Normal	Urgent	Estimated Cost
Material Condition Survey					X	Normai	Orgeni	
Detailed Deck Condition	n Survev				X			
Non-destructive Delami		phalt-Covered Dec	ck.		X			
Concrete Substructure					X			
Detailed Coating Condit	· ·				X			
Detailed Timber Investig					X			
Post-Tensioned Strand					X			
Underwater Investigation					X			
Fatigue Investigation					X			
Seismic Investigation					X			
Structure Evaluation:					X			
Monitoring					X			
Deformations, Settleme	ents and Movements	•			X			
Crack Widths:		•			X			
RSS Horizontal movem	ents of face.				X			
RSS Vertical movement		e.			X			
RSS Local movements					X			
RSS Horizontal movem					X			
RSS Vertical movement					X			
RSS Lateral earth press					X			
Investigation Notes:		acing elements			Λ			
						Total Cost		\$0.00
Overall Structure Note	es:							
Recommended Work on Str	ucture	None Min	or Rehab.	X	Major Rehab	Rep	blace	
Timing of Recommended W	ork	Urgent X]1 to 5 ye	ars	6 to 10 y	ears		
Overall Comments:	This	culvert is gener	ally in fai	r to pooi	condition. S	evere corros	ion and perfo	orations noted along
	wat	erline. Isolated se	ection los	s at inle	t. We expect	the rate of co	orrosion will le	ead to increasing
	per	orations, and reh	nabilitatio	n should	be planned	for 1-5 years	5.	-
		·			•	•		
Date of Next inspection:	202	5						
Overall Bridge Co	ndition							
% Poor in Deck	% Poor in Beams	% Poor in Subst	tructure	% P	oor in Barrier	Bri	dge Condition	Index (BCI or BCIp)
0% 0% 75%							BClp 36.25	BCI 19.40
Overal Bridge Suf	ficiency					·		
Traffic		Alignment Bridge Sufficiency Index (BS			ency Index (BSI)			
0	Economic 2	Width 0			٥ ٥			7.40

Element Data:														
Element Group:		Culverts					Length:		24.4					
Element Name:		Barrels					Width:			6.4				
Location:							Height:			4.0				
Material:		Steel					Count: 1 Total Quantity: 398.4							
Element Type:		Pipe Arch					Total Quant	ity:						
Environment:		Benign					Inspected			Yes X No limited				
Protection System	1: 	Galvanizing Units		Evo	ellent	1	Good		Fair		Poor*		Performance Deficiencies	
Condition Data:		sq.m		EXC	enent		Good		99.6		298.8		1 - Load carrying capacity	
fron	n 100mm to 4		e waterlir ating sta	ne for ful arting 400	l length Omm abo	of cu	lvert. Assum		d section ght to se	evere c	it culvert i orrosion a		Medium corrosion	
Recommended W	/ork:		Reh	ab: X	Rep	lace:			Mainten	ance N	leeds:			
Urgent:	1-	-5 Years: X	6-1	0 Years:			None:		Urgent:		1 Year	:	2 Year:	
Culvert lining														
Element Photo:	:													
Description of	Photo:	Culvert barr	el outlet											
Description of I		Cuivent barr												

Element Photo:



Description of Photo:

Severe corrosion and deterioriation

Element Photo:



Element Photo:



Description of Photo:

Severe deterioration and perforation

Element Photo:



Element Data:	:														
Element Group:		Embankmen	ts & Stre	ams		Le	ngth:								
Element Name:		Streams and	Waterw	ays			idth:								
Location:							eight:								
Material:							ount:								
Element Type:						Тс	tal Quanti	ity:		all					
Environment:		Benign				Ins	pected			`	Yes	(No[lim	ited
Protection System	n:														formance
Condition Data:		Units		Exc	cellent	G	bod		Fair		F	Poor*		Def	iciencies
		all					X								
Comments: 1 fa	llen tree is n	ear culvert inl	et. Vege	tation a	nd branc	hes in cu	lvert inle	t. No	o other o	bserv	ved de	fects.			
Recommended W	/ork:		Reh	ab:	Rep	olace:]		Mainten	nance	Needs	5:			
Urgent:	1-	5 Years:	6-1	0 Years:		Ν	one: X		Urgent:		1	Year:		2 Y	′ear:
Element Photo:	:														
Description of I	Photo:	Upstream													



BRIDGE 201 - LOTS 15/16, CONC 10

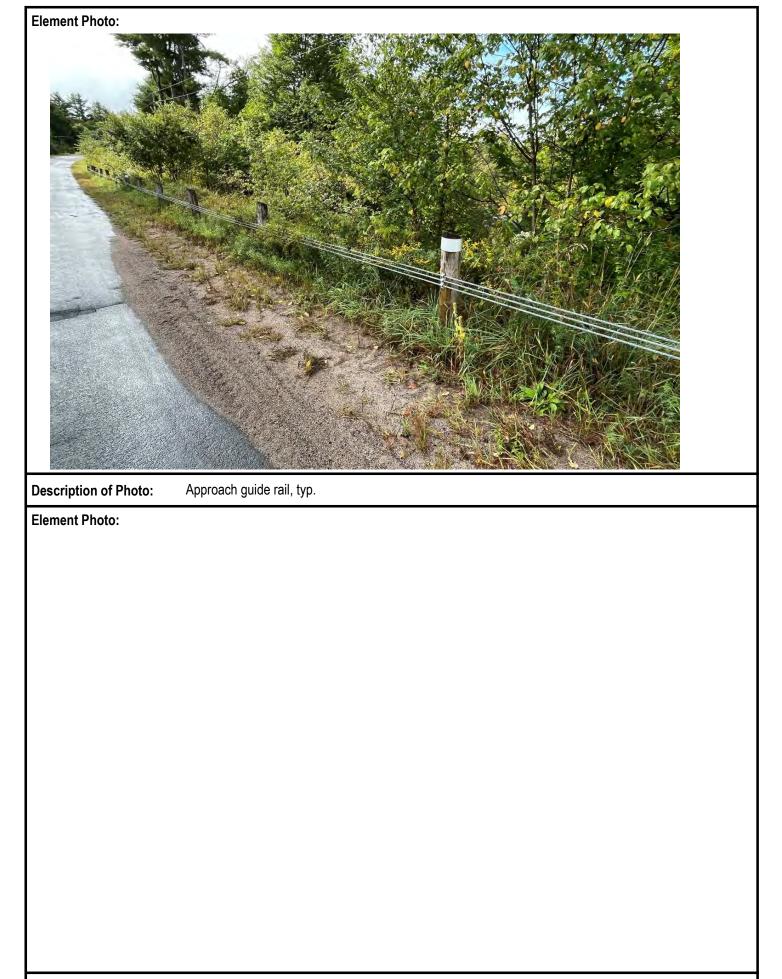
Element Data:	:									
Element Group:		Embankments & Str	eams	Length:						
Element Name:		Embankments		Width:						
Location:				Height:						
Material:		Soil, grass and rock		Count:						
Element Type:				Total Quant	tity:	4				
Environment:		Benign		Inspected		Yes	X No	limited		
	<u>.</u>						<u> </u>			
Protection System	l.	Units	Excellent	Good	Fair		Poor*	Performance Deficiencies		
Condition Data:			Excellent		ган		P001	Deliciencies		
		each		4						
Comments: Los	s of materia	l is less than 10%. Ste	ep slopes with he	avy vegetation.						
e en mente.				, ,						
							_			
Recommended W	/ork:	Re	hab: Repl	ace:	Mainten	nance Need	ls:			
					-					
Urgent:	1-	-5 Years: 6-´	10 Years:	None: X	Urgent:		1 Year:	2 Year:		
Element Photo	:									
		or X Sectors				JE Sol	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1			
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Description of	Dhata	Embookmont								
Description of	rnoto:	Embankment, typ.								

Element Data:						
Element Group:	Approaches		Length:		18.4	
Element Name:	Wearing Surface		Width:		6.2	
Location:			Height:			
Material:	Asphalt		Count:		1	
Element Type:			Total Quantit	ty:	114.1	
Environment:	Severe		Inspected		Yes X N	lo limited
Protection System:						Performance
	Units	Eveellent	Good	Fair	Poor*	Deficiencies
Condition Data:		Excellent				Deliciencies
	sq.m		111.6	2.0	0.5	
Comments: Light ravelling,	typ. 1 medium 6.2 m	long transverse crac	k. 1 light 5.0 m l	ong crack. Is	solated severe abra	sion noted at 1
location.		•	•	•		
Recommended Work:	P	ehab: Replac	<u>,</u>	Mainten	ance Needs:	
	I. I.		, ^{c.}	Mainten		
Urgent: 1-	-5 Years: 6	-10 Years:	None: X	Urgent:	1 Year:	2 Year:
Element Photo:						
	Research of the			A treas		and a
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Description of Director	Annroach					
Description of Photo:	Approach wearing					





Element Data:											
Element Group:	Lei	Length: 43.0									
Element Name:		Approaches Barrier				Width:					
Location:					He	ight:					
Material:		Wood and Steel				Count: 2					
Element Type:	Cable	able Total Quantity:			8	86.0					
Environment:		Severe			Insp	ected			Yes	X No	limited
Protection System:											Performance
Condition Data:		Units		Excellent		Good 86.0		Fair		Poor*	Deficiencies
Comments: No c	damage to st	m teel cables. Some	area	of cables saggin			s ha	ve light sp	lolitting. N	o other obs	erved defects.
Recommended W	ork:		Reha	ab: Repla	ace:			Maintena	ance Need	ls: 18 -	Other Maintenance
Urgent:	1-	5 Years:	6-10) Years:	N	one: X		Urgent:		1 Year:	2 Year: X
								Install ha	azard war	ning sign.	
Element Photo:								•			
	Phata:			<image/>							
Description of I	Photo:	Approach guide	raıl, t	typ.							



Repair and Reha	abilitation Required:		Pric	Estimated Structural		
Element ¹	Repair and Rehabilitation Required ²	6 to 10 Years	I 1 to 5 Years I		Urgent	Cost
Structure	Demolition					
Structure	Replacement					
0	R					
Deck	Rehab. =					
Sidewalk/Curb	Rehab. =					
Barrier	Rehab. =					
Joints	Rehab. =					
Beams	Rehab. =					
Abutment	Rehab. =					
Pier	Rehab. =					
Other	Culvert lining		X			\$350,000.00
Total Deck L	bilitated or Replacement Structure Dimensions ³ ength (m) Overall Str. Width (m) cture replacement OR for rehabilitation under the given headings.			Total Str	ructural Cost	\$350,000.00

1 - Indicate specific costs for structure replacement OR for rehabilitation under the given heading

2 - Give a very brief description of the rehabilitation work required.

3 - Estimated structure dimensions after completion of the proposed work - if it is expected to change.

Associated Work	Comments	Estimated Associated	
		Work Cost	
Approaches	Install hazard signs	\$2,000.00	
Detours			
Traffic Control	Road closure	\$10,000.00	
Utilities			
Other	Engineering	\$55,000.00	
	Contingency	\$80,000.00	
	Dewatering	\$80,000.00	
	Total Associated Work Cost	\$227,000.00	
	Total Construction Cost	\$577,000.00	

Justification:

This culvert is generally in fair to poor condition. Severe corrosion and perforation noted along waterline, and section loss noted at the inlet. We expect the rate of corrosion will lead to increasing perforations and separation, and rehabilitation should be planned for 1-5 years. The pricing above assumes cast in place culvert relining across the bottom and extending above waterline. Maintenance: Hazard warning signs be installed at the ends of the guide rail for improved roadside safety.

					MTO Site Number:			
Inventory Data:								
Structure Name	202 - Lot 6, Conc	10/11						
Main Highway #	Merkley Road	On X or Unde Structure	er 📃	Service on Structure	Navig. Water Non-Na	avig. Water dOther		
Location Description	n 4.1km east of Barkway Road			Service under:				
Owner/Custodian	Gravenhurst]				
MTO Region	Northeastern			Latitude	44.918352 Longitude	-79.131408		
Regional Engineer			[Heritage Designation:	Not Cons. X Cons./Not A Desig. Desig./Not List	vpp. List/Not Desig.		
MTO Area			Hw	y Class:	Freeway Arterial Coll	ector Local X		
Old County			Pos	sted Speed	50 No. of Lane	s 2		
Township	Gravenhurst		AA	DT	50 % Truc	k 0		
Structure Type 1	CSP Round Pipe							
Structure Material 1	Steel		Tra	ffic Directional	Bound N-S			
Structure Type 2								
Structure Material 2			Ins	pection Freque	acy 2	(years)		
Total Deck Length	10.0	(m)	Ins	pection Year	odd			
Overall Str. Width		(m)	Ins	pection Duratio	2	(hrs)		
Culvert Length	20.0	(m)						
Total Deck Area	106.1	(sq.m)						
Roadway Width	7.5	(m)	Mir	n. Vertical Clea	ance	(m)		
Skew Angle		(Degree) Det	tour Distance	None	(km)		
No. of Spans	3		Fill	on Structure	1.0 / 2.0	(m)		
Span Lengths	3.6 / 1.5 / 1.5					(m)		
For retaining wall:								
Total Wall Length		(m)	Ма	x. Wall Height		(m)		
Total Wall Area		(sq.m)	Ave	e. Wall Height		(m)		
			Ang	gle of Backfill		(Degrees)		
Historical Data								
Year Built	1980		Yea	ar of superstru	t. Constructed			
Last Reg. OSIM Inspe			ar of Last Mino					
Last Enh. OSIM Inspe	ection			ar of Last Majo rrent Load Lim		/ (tonnes)		
Work History: (Date/d	lescription)		Cu	neni Luau Lilli	Investigation History: (Date/descrip			
2018 - Structure Repl CSP's.		coated CSP alongside	e two ex	kisting galvaniz				

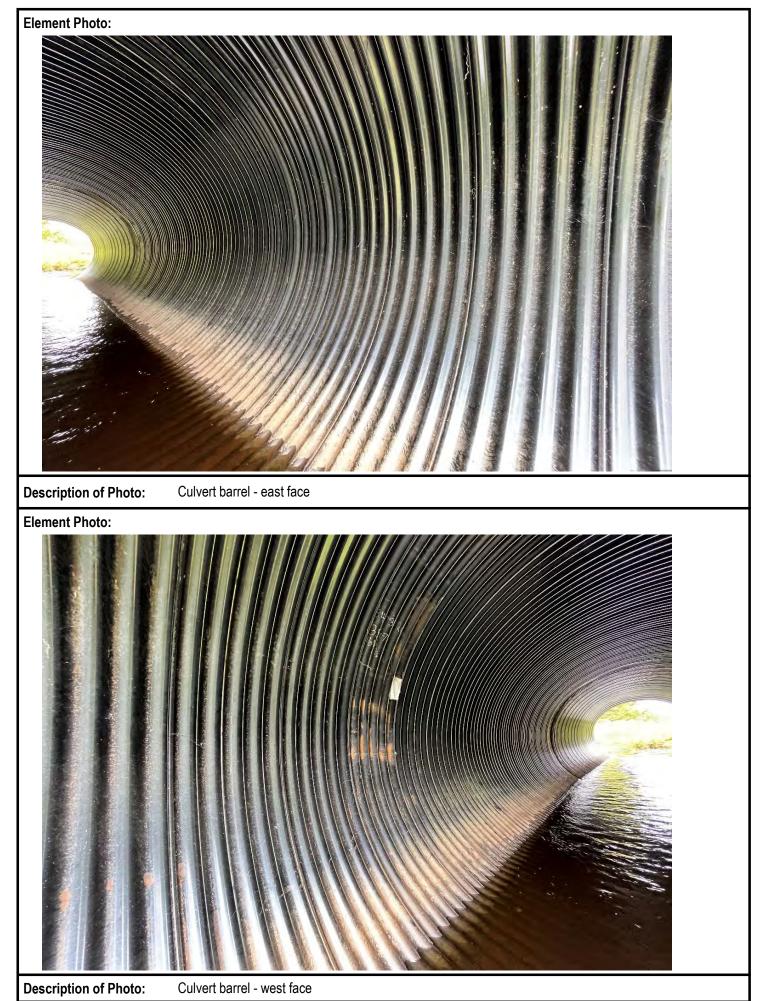
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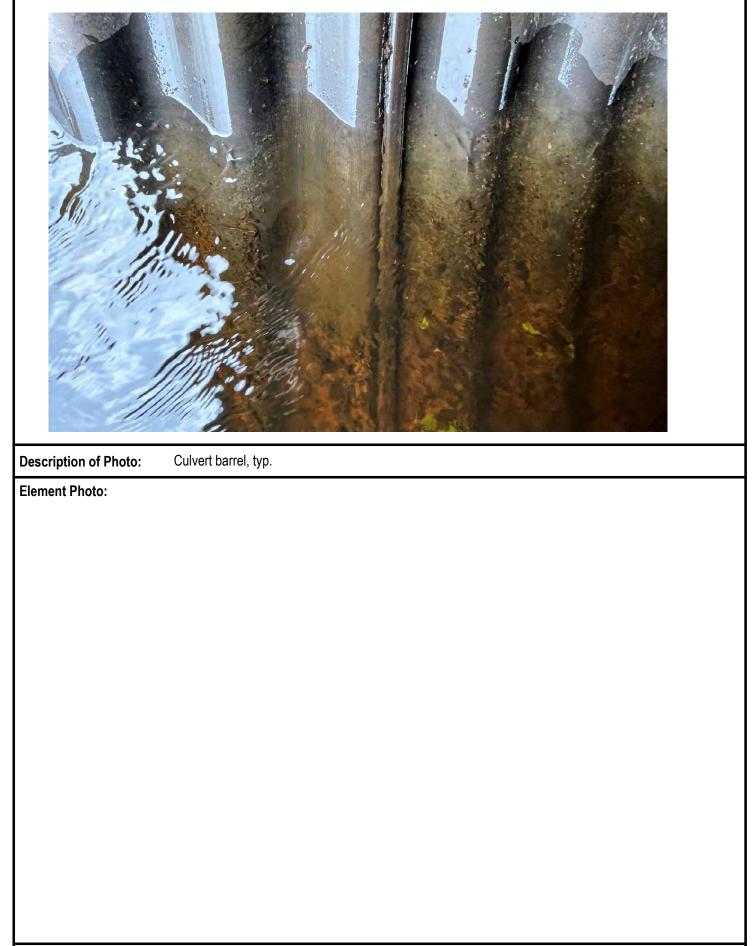
MTO Site Number:

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Field Inspection Inform	ation:									
Date of Inspection:		nber 13, 2023	Type of I	nenectio	n: X Reg. OSIM Enh. OSIM					
· .		September 13, 2023 Type of Inspection: X Reg. OSIM Enh. OSIM Junjie Yang								
Inspected By	Junjie	Yang								
Others in Party:										
Enh. Access Equipment:										
Special Access Equipment										
Weather	Clear		Temperat	ure				25 °C		
Additional Investigations Required:						Priority Estimated Co				
· ·					None	Normal	Urgent			
Material Condition Survey Detailed Deck Condition S					v					
		abolt Covered De	alu		X X					
Non-destructive Delamina		phait-Covered De	CK:							
Concrete Substructure Co					X					
Detailed Coating Conditio					X					
Detailed Timber Investiga					X					
Post-Tensioned Strand In	vestigation:				X					
Underwater Investigation					Х					
Fatigue Investigation					Х					
Seismic Investigation					X					
Structure Evaluation:					X					
Monitoring										
Deformations, Settlement	s and Movements	:			Х					
Crack Widths:					Х					
RSS Horizontal movemer	ts of face:				Х					
RSS Vertical movements	of overall structur	э:			Х					
RSS Local movements or					X					
RSS Horizontal movemer					X					
RSS Vertical movements					X					
RSS Lateral earth pressu					X					
Investigation Notes:		cong cicinento			~					
investigation Notes.						Total Cost		\$0.00		
Overall Structure Notes	:									
Recommended Work on Struc	ture X	None Min	or Rehab.		Major Rehab.					
Timing of Recommended Wor	k 🗌	Urgent	1 to 5 yea	rs	6 to 10 y	ears				
Overall Comments:	The	new 3.6 m nolvn	- ner coated	CSP ci	Ivert is in ex	cellent cond	ition The two	1.5 m galvanized		
Overali Comments.								aired, loose cable on		
			-			•	-			
	the	approach guide	rail should	i be tigr	itened to imp	rove road si	de safety with	1 year.		
Date of Next inspection: 2025										
Overall Bridge Cond		, 								
						Poor in Barrier Bridge Condition Index (BCI or BCI				
			70 F			BClp BCl				
0	0	0						86.52		
Overal Bridge Suffic	-									
Traffic	Economic	Width			Alignment			ency Index (BSI)		
0	2	0			0		8	4.52		

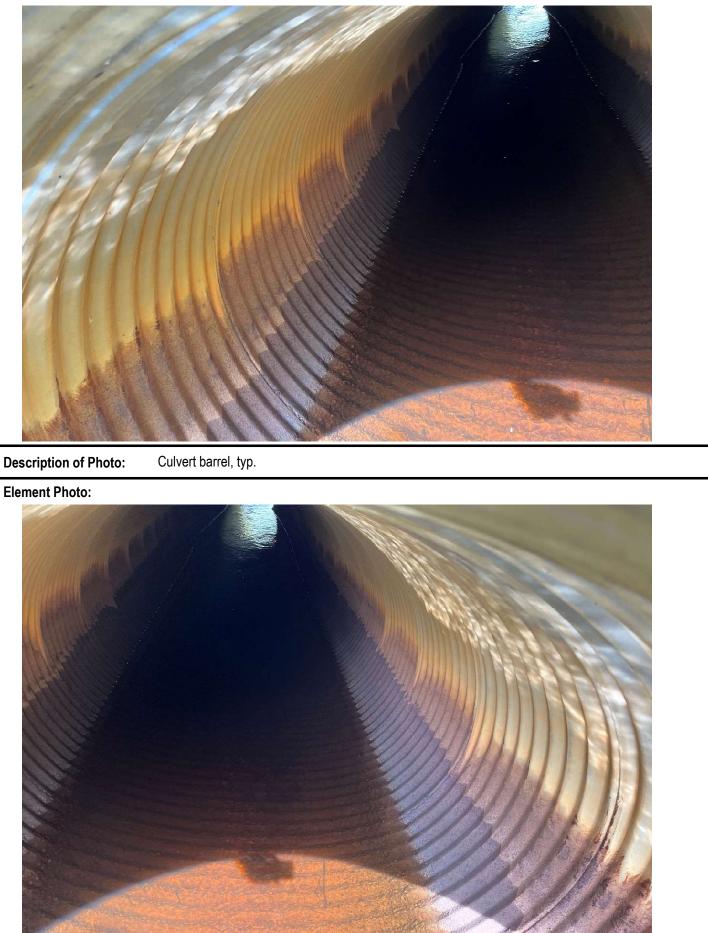
Element Data:											
Element Group: Culverts								20.0			
Element Name:		Barrels				Length: Width:		3.6			
Location:						Height:		3.6			
Material:				Count:			1				
Element Type:					Total Quant	ity:		226.1			
Environment:	Benign				Inspected		Yes X No limited				
Protection System	:					Good				Performance	
Condition Data:		Units		Excellent			Fair		Poor*	Deficiencies	
	sq.m		226.1								
Comments: No o	ork:		Reh	ab:	Replace:		Mainter	nance l	Needs:		
Urgent:	1-	5 Years:	<u></u> б-1	0 Years:	1	None: X	Urgent:		1 Year:	2 Year:	
Element Photo:							I				
Description of F	Photo:	Culvert barre	l outlet								



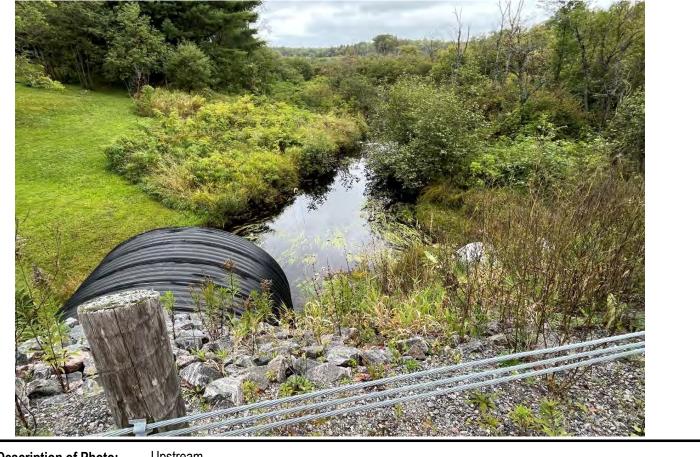




Description of Photo: Culvert barrel, typ.



Description of Photo: Culvert barrel, typ.



Description of Photo:

Element Photo:

Upstream

Description of Photo:

Element Data:	:									
Element Group:		Embankments & Stre	ams	Le	ngth:					
Element Name:		Embankments		Wi	dth:					
Location:					ight:					
Material:		Rocks, grass			unt:		8			
Element Type:		Riprap		То	tal Quant	ity:	8			
Environment:		Benign			ected			Yes X	No	limited
Protection System	ו:	-								Performance
Condition Data:		Units	Excellent	Go	bod	F	Fair	Poor*		Deficiencies
		each	8							
Comments: No o										
Recommended W	/ork:	Ref	ab: Repla	-			aintenanc	ce Needs:		
Urgent:	1-	-5 Years: 6-1	0 Years:	N	one: X	Urę	gent:	1 Year:		2 Year:
Element Photo:	:									
Description of I	Photo:	Embankment at gal	anized CSP culv	verts						



Description of Photo: Embankment at polymer coated CSP culvert

Element Data:															
Element Group:		Approaches						Le	ngth:			22.0)		
Element Name:		Wearing Sur						Wi	dth:			6.7			
Location:								He	ight:						
Material:		Gravel							unt:			1			
Element Type:								To	tal Quant	ity:		147	.4		
Environment:		Moderate						Insp	ected				Yes X	No	limited
Protection System										-					Performance
		Units		E	xcel	lent		Go	od		Fair		Poo	or*	Deficiencies
Condition Data:		sq.m					-		3.4		3.0	_	1.		9 - Rough riding surface
Comments: Ligh				un Mi		la 10 0 4			5.4		5.0			•	
			utting, tj	yp. W	unip		loies								
Recommended W	/ork:		Reha	ab:		Rep	place:			-	Mainter	nance	e Needs:	12 - B	ridge Surface Repair
Urgent:	1.	-5 Years:	6-10) Yeai	rs:			N	one: X		Urgent:		1 Y	ear: X	2 Year:
										-	Regrad	e gra	vel		
Element Photo:	:														
Description of	Photo:	Approach w		urface	b	ooking	east								
Description of I	Photo:	Approach w	earing su	urface	e - lo	oking	east								



Element Data:													
Element Group:		Approaches			Lei	ngth:		59	9.6				
Element Name:		Barrier				dth:							
Location:					He	ight:							
Material:		Steel and wood			Co	unt:		2					
Element Type:		Wood post and st	teel cable		To	tal Quant	ity:	11	19.2				
Environment:		Moderate			Insp	ected			Yes X No limited				
Protection System	1:	Galvanizing									Performance		
Condition Data:		Units	Ex	cellent		od	Fa	air	Po	or*	Deficiencies		
		m roughout. No othe			11	9.2							
Recommended W	ork:	F	Rehab:	Rep	ace:		Mai	ntenan	ice Needs:	3 - R	ailing System Repair		
Urgent:	1-	5 Years:	6-10 Years	:	N	one: X	Urge	ent:	1 Y	ear: X	2 Year:		
							Tigh barr		ables, clear	vegetati	on from in front of		
Element Photo:	:												
Description of I	Photo:	Approach guide r	rail										

Repair and Reha	bilitation Required:		Pric	ority		Estimated Structural
Element ¹	Repair and Rehabilitation Required ²	6 to 10 Years	1 to 5 Years	Within 1 Year	Urgent	Cost
Structure	Demolition					
Structure	Replacement					
0	R					
Deck	Rehab. =					
Sidewalk/Curb	Rehab. =					
Barrier	Rehab. =					
Joints	Rehab. =					
Beams	Rehab. =					
Abutment	Rehab. =					
Pier	Rehab. =					
Other						
Total Deck L	bilitated or Replacement Structure Dimensions ³ ength (m) Overall Str. Width (m)			Total St	ructural Cost	\$0.00

1 - Indicate specific costs for structure replacement OR for rehabilitation under the given headings.

 $\ensuremath{\mathbf{2}}$ - Give a very brief description of the rehabilitation work required.

3 - Estimated structure dimensions after completion of the proposed work - if it is expected to change.

Associated Work	Comments	Estimated Associated Work Cost
Approaches		Work Cost
Detours		
Traffic Control		
Utilities		
Other		
	Total Associated Work Cost	\$0.00
	Total Construction Cost	\$0.00
	Total Constitución Cost	ψ0:00

Justification:

The polymer coated CSP culvert is in excellent condition. The galvanized CSP culverts are in good condition. Maintenance: potholes should be repaired, loose cable on the approach guide rail should be tightened to improve road side safety with 1 year.

				MTO Site Number:
Inventory Data:				
Structure Name	203 - Lots 15/16,	Conc 12		
Main Highway #	Barkway Road	On X or Under Structure	Service on Structure	Navig. Water Non-Navig. Water Rail X Road Ped. Other
Location Description	0.33km South of S	eehaver Road	Service under:	Navig. Water X Non-Navig. Water
Owner/Custodian	Gravenhurst			
MTO Region	Northeastern		Latitude	44.920392 Longitude -79.186214
Regional Engineer			Heritage Designation:	Not Cons. X Cons./Not App. List/Not De Desig. Desig./Not List Desig. & List
MTO Area			Hwy Class:	Freeway Arterial Collector Local
Old County			Posted Speed	50 No. of Lanes 2
Township	Gravenhurst		AADT [92 % Truck 0
Structure Type 1	Twin SPCSP Arcl	n Pipe		
Structure Material 1	Steel		Traffic Directional I	Bound N-S
Structure Type 2				
Structure Material 2			Inspection Frequer	ncy 2 (years)
Total Deck Length	11.0	(m)	Inspection Year	odd
Overall Str. Width		(m)	Inspection Duration	n 2 (hrs)
Culvert Length	18.6	(m)		
Total Deck Area	163.7	(sq.m)		
Roadway Width	6.75	(m)	Min. Vertical Clear	ance (m)
Skew Angle		(Degree)	Detour Distance	18 (km)
No. of Spans	2		Fill on Structure	0.75 (m)
Span Lengths	4.4, 4.4			(m)
For retaining wall:				
Total Wall Length		(m)	Max. Wall Height	(m)
Total Wall Area		(sq.m)	Ave. Wall Height	(m)
			Angle of Backfill	(Degrees)
Historical Data				
Year Built	2014		Year of superstruct	
Last Reg. OSIM Inspe			Year of Last Minor	
Last Enh. OSIM Inspe			Year of Last Major Current Load Limit	
Work History: (Date/d	escription)			Investigation History: (Date/description)

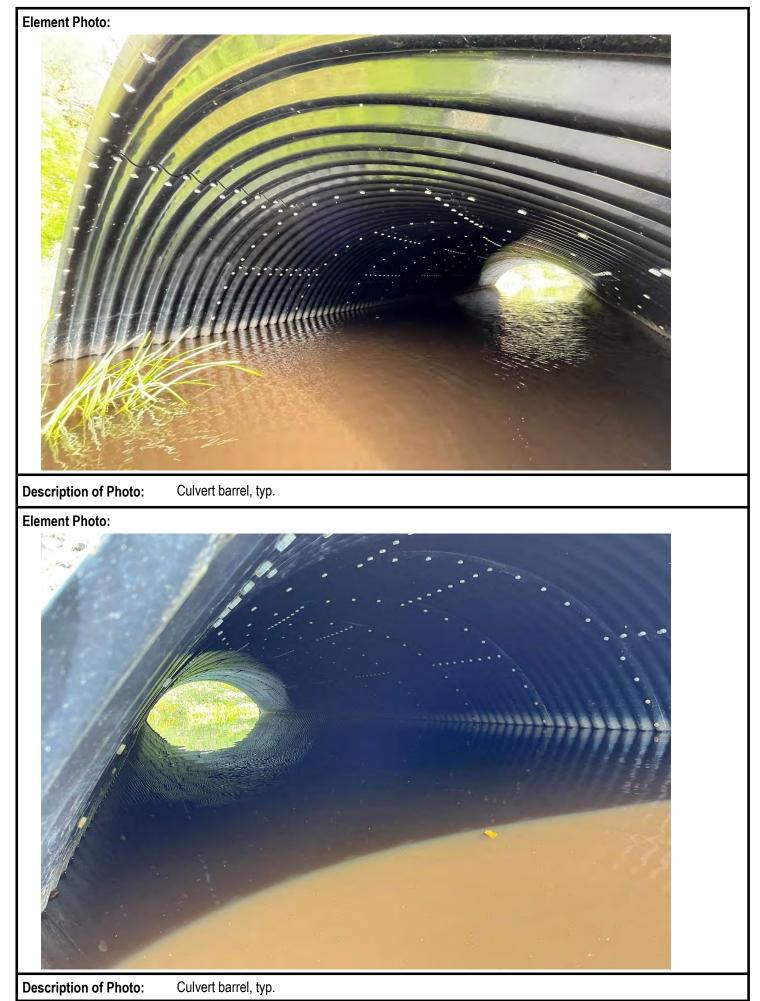
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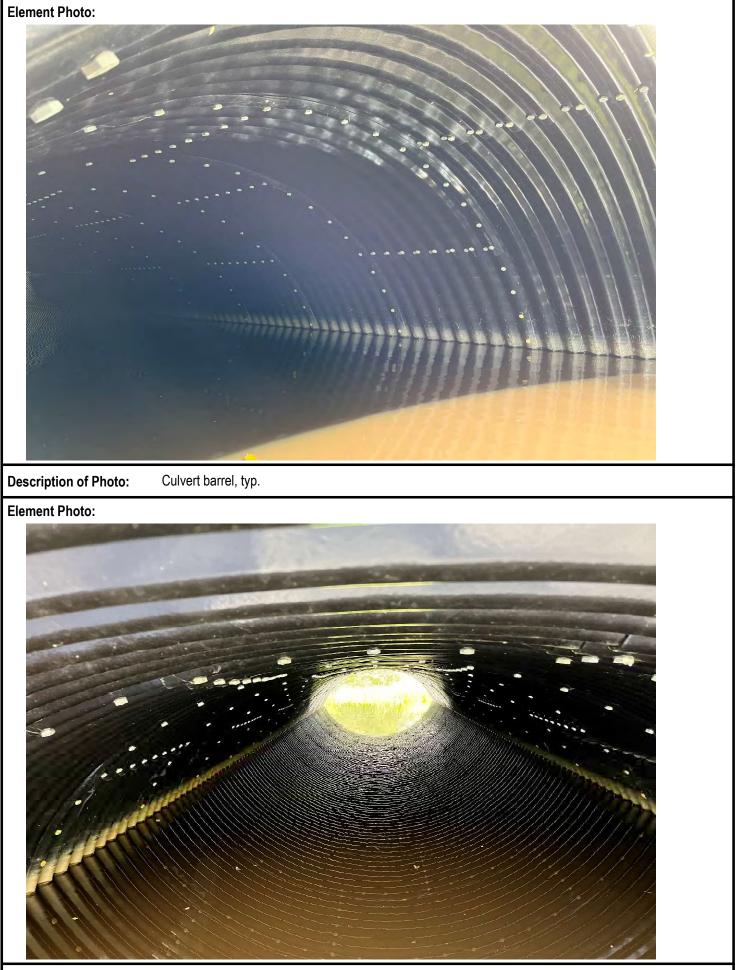
MTO Site Number:

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Field Inspection Infor	mation:										
Date of Inspection:	Septe	mber 13, 2023	Type of I	nspectio	on: X Reg. OSIM Enh. OSIM						
Inspected By	Junjie	Yang									
Others in Party:											
Enh. Access Equipment:											
Special Access Equipment											
Weather	Clear		Temperat	ure				22 °(С		
Additional Investigati	ons Required:				None	Priority Normal	Urgent	Estimated Cost			
Material Condition Survey					NOTE	NOTTIAL	Orgeni		-		
Detailed Deck Conditio	n Survey:				X						
Non-destructive Delam		nhalt-Covered Dec	nk:		X						
Concrete Substructure			JR.		X						
Detailed Coating Condi					X						
Detailed Coating Condi Detailed Timber Investi					<u>х</u>						
	0										
Post-Tensioned Strand	investigation:				X						
Underwater Investigation					X						
Fatigue Investigation					X						
Seismic Investigation					X						
Structure Evaluation:					Х						
Monitoring											
Deformations, Settleme	ents and Movements	:			Х						
Crack Widths:					Х						
RSS Horizontal mover					Х						
RSS Vertical movemen					Х						
RSS Local movements	or deterioration of fa	ace elements:			Х						
RSS Horizontal movem	nents within overall s	tructure:			Х						
RSS Vertical movemen	nts within overall stru	cture			Х						
RSS Lateral earth pres	sure at the back of f	acing elements			Х						
Investigation Notes:						Total Cost		\$0.00			
Overall Structure Not	es:								_		
Recommended Work on Str	ructure X	None Min	or Rehab.		Major Rehab	Rep	blace				
Timing of Recommended W	/ork	Urgent	1 to 5 yea	ars	6 to 10 y	ears					
Overall Comments:					·		dos ropairs to	the damaged section			
Overall Comments.							•	o the damaged sectio	л		
	oft	ne guide rail, alor	ng with in	stallatio	n of hazard v	arning sign	S.				
Date of Next inspection:	202	5									
Overall Bridge Co			L			_					
% Poor in Deck	% Poor in Beams	% Poor in Subs	tructure	% P	oor in Barrier	Br		Index (BCI or BCIp)			
0%	0%	0%			0%		BClp BCl 100.00 99.48				
Overal Bridge Suf	ficiency					•					
Traffic	Economic	Width		Alignment Bridge Sufficiency Index (E		ency Index (BSI)	—				
0	2	0			٥ ٥			7.48			
							-				

Element Data:	:						
Element Group:		Culverts		Length:		18.5	
Element Name:		Barrels		Width:		4.4	
Location:				Height:		2.9	
Material:		Steel		Count:		2	
Element Type:		Pipe Arch		Total Quant	ity:	424.1	
Environment:		Benign		Inspected		Yes X No	D limited
Protection System	n:	Polymer Coated				•	Performance
Condition Data:		Units	Excellent	Good	Fair	Poor*	Deficiencies
Condition Data.		sq.m	424.1				
Comments: No o	observed def	fects.					
Recommended W	/ork:	R	ehab: Repla	ce:	Mainter	nance Needs:	
Urgent:	1-	5 Years: 6	10 Years:	None: X	Urgent:	1 Year:	2 Year:
Element Photo:							
Description of I	Photo:	Culvert barrel, typ.					





Element Data:															
Element Group:		Embankmen	ts & Stre	ams			Length:								
Element Name:		Streams and	Waterw	ays			Width:								
Location:							Height:								
Material:							Count:								
Element Type:							Total Quant	ity:		all					
Environment:		Benign					Inspected			, I	Yes	X	No	limi	ted
Protection System:						_				I					ormance
		Units		Exc	ellent		Good		Fair			Poor*			ciencies
Condition Data:		all					0000		1 411			1 001		2011	
					X										
Comments: No o	bserved de	rects.													
Recommended Wo	ork:		Reh	ab:	Rep	lace:		_	Mainten	ance	Nee	ds:			
Urgent:	1-	5 Years:	6-1	0 Years:			None: X		Urgent:			1 Yea	r:	2 Y	ear:
Element Photo:															
Description of P	'hoto:	Watercourse)			eshi'i				100		n 14 49	er en altar	ALC: NO.	

Element Data:						
Element Group:	Embankments & St	reams	Length:			
Element Name:	Embankments		Width:			
Location:			Height:			
Material:	Rocks		Count:		6	
Element Type:	Riprap		Total Quanti	ity:	6	
Environment:	Benign		Inspected		Yes X No	limited
Protection System:						Performance
	Units	Excellent	Good	Fair	Poor*	Deficiencies
Condition Data:	each	6				
Comments: No observe		v				
Comments. No obcorre						
Recommended Work:	Re	ehab: Repla	ace:	Mainten	ance Needs:	
Urgent:	1-5 Years: 6-	10 Years:	None: X	Urgent:	1 Year:	2 Year:
Element Photo:						
Description of Photo:	West embankment					



Description of Photo: Embankment, typ.

Element Data:	:													
Element Group:	Element Group: Accessories Length:													
Element Name:		Signs				V	Vidth:							
Location:						H	leight:							
Material:		Steel				C	ount:			2				
Element Type:						Т	otal Quant	tity:		2				
Environment:		Severe					spected				/es	No	limited	
Protection System	<u>.</u>											Performance		
FIDIECTION System	l.	Units		Ev	cellent		Good		Fair		Po	vr*	Deficiencies	
Condition Data:							5000				FU	א	Deliciencies	
		each			1				1					
Comments: Two	hazard war	ning signs are	emissin	g. One I	nazard wa	rning s	ign is defo	orme	ed.					
							_		1					
Recommended W	/ork:		Reh	ab:	Rep	ace:			Mainten	nance	Needs:	18 -	Other Maintenance	
Uraanti		-5 Years:	C 1	0 Years			None: X	1	Urgent			ear: X	2 Year:	
Urgent:			0-1					1	Urgent:					
									Install tv	wo ha	zard wa	rning sig	ins.	
Element Photo														
	•													
				NS 10029358				~	1					
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	A CARE	A Contraction	Georgian			m. (A)	A AM	1		T	A			
885条图 科		TOR AN	ANK.		Sec. 1	and the second	1 the			2 -		16		
A ANTINA			Ser in				March Line	1- 1			S STA	12/2/24	15	
		14 m				al.					2 1	1	X	
		North Contraction				2	Con all	19 A.S.					A	
	and the second s			an.				E ISA		and the second				
	A TET	A CONTRACTOR					A STREET		The P		F. S. J.	-		
		W. Andrews		al de la		2		e June / (e	And A Line		and the second second	R	Constant of the second s	
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		S. Stand	5.1	C.	Cal A				1.11		and the second	Sector Con A		
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32 24			ALT .						and the second					
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	C. S. South			1.5	X				at these					
NCIA			E.K.					S. S. C.					2	
			11 Se		1						-C			
Description of	Photo [.]	Hazard warr	nina siar	n tvn										
			ing sign	·, ·yp.										

Element Data:	Element Data:																
Element Group:		Approaches						igth:			23.0						
Element Name:		Wearing Sur	face				Wic				6.7	5					
Location:								ght:									
Material:		Asphalt					Со				1						
Element Type:							Tot	al Quant	tity:		155.3						
Environment:		Severe					Inspe	ected			Yes X No limited						
Protection System	1:													Ī	Performance		
Condition Data:		Units			ellent		Go			Fair			Poor*		Deficiencies		
		sq.m	5.	0													
Comments: No observed defects. Isolated light alligator cracking. Recommended Work: Rehab: Replace: Maintenance Needs:																	
Urgent:	1-	5 Years:	6-1	0 Years:			No	one: X		Urgent:			1 Year:		2 Year:		
Element Photo:	:																
Description of I	Photo:	Approach w	earing s	urface -	looking) nortl	h										



Description of Photo: Alligator crack

Element Data	:											
Element Group:	Approac	nes		Length:		85.0, 70.0						
Element Name:	Barrier			Width:								
Location:				Height:								
Material:	Steel			Count:		2						
Element Type:	Posts an	d W-beam		Total Quant	ity:	155.0						
Environment:	Severe			Inspected		Yes X	No	limited				
Protection System		ng						Performance				
Condition Data:	Units		Excellent	Good	Fair	Poo		Deficiencies				
Comments: Imp	m act damage to the W-b	oam with th	151.0	 on the west side o	f the road N	4.		ote				
Comments. ""P												
Recommended W	/ork:	Ref	nab: 📃 Rep	lace:	Mainten	ance Needs:	3 - Ra	illing System Repair				
Urgent:	1-5 Years:	6-1	0 Years:	None: X	Urgent:	1 Ye	ear:	2 Year: X				
					Replace posts.	section with	damage	d rail and tilted				
Element Photo	:											
Description of		si quadrant	approach guide	Idli								



Description of Photo: Approach guide rail - impacted damage

Repair and Reha	bilitation Required:		Pric	ority		Estimated Structura		
Element ¹	Repair and Rehabilitation Required ²	6 to 10 Years	1 to 5 Years	Within 1 Year	Urgent	Cost		
Structure	Demolition							
Structure	Replacement							
0	R							
Deck	Rehab. =							
Sidewalk/Curb	Rehab. =							
Barrier	Rehab. =							
Joints	Rehab. =							
Beams	Rehab. =							
Abutment	Rehab. =							
Pier	Rehab. =							
Other								
Estimated Rehat Total Deck L	pilitated or Replacement Structure Dimensions ³ ength (m) Overall Str. Width (m)	-		Total Str	ructural Cost	\$0.00		

1 - Indicate specific costs for structure replacement OR for rehabilitation under the given headings.

 $\ensuremath{\mathbf{2}}$ - Give a very brief description of the rehabilitation work required.

3 - Estimated structure dimensions after completion of the proposed work - if it is expected to change.

Associated Work	Comments	Estimated Associated Work Cost
Approaches		Work Cool
Detours		
Traffic Control		
Utilities		
Other		
	Total Associated Work Cost	\$0.00
		<u>*0 00</u>
	Total Construction Cost	\$0.00

Justification:

The structure is generally in excellent condition. Maintenance includes repairing the damaged section of the guide rail, and installation of two harzard warning signs.

				MTO Site Number:
Inventory Data:				
Structure Name	204 - Riley Lake R	oad Culvert		
Main Highway #	Riley Lake Road	On X or Under Structure	Service on Structure	Navig. Water Non-Navig. Water Rail X Road Ped. Other
Location Description	1.7km east of Hous	ey's Rapids Road	Service under:	Navig. Water X Non-Navig. Water
Owner/Custodian	Gravenhurst			
MTO Region	Northeastern		Latitude	44.843573 Longitude -79.190106
Regional Engineer			Heritage Designation:	X Not Cons. Cons./Not App. List/Not Desig Desig. Desig./Not List Desig. & List
MTO Area			Hwy Class:	Freeway Arterial Collector Local X
Old County			Posted Speed	50 No. of Lanes 2
Township	Gravenhurst		AADT [168 % Truck 0
Structure Type 1	Twin CSP Round	Pipe		
Structure Material 1	Steel		Traffic Directional	Bound E-W
Structure Type 2				
Structure Material 2			Inspection Freque	ncy 2 (years)
Total Deck Length	6	(m)	Inspection Year	odd
Overall Str. Width		(m)	Inspection Duratio	n 2 (hrs)
Culvert Length	23.1	(m)		
Total Deck Area	138.6	(sq.m)		
Roadway Width	6.1	(m)	Min. Vertical Clear	rance (m)
Skew Angle	20	(Degree)	Detour Distance	None (km)
No. of Spans	2		Fill on Structure	0.6 (m)
Span Lengths	2.0, 2.0			(m)
For retaining wall:				
Total Wall Length		(m)	Max. Wall Height	(m)
Total Wall Area		(sq.m)	Ave. Wall Height	(m)
			Angle of Backfill	(Degrees)
Historical Data				
Year Built	2015		Year of superstruc	t. Constructed
Last Reg. OSIM Inspe			Year of Last Minor	
Last Enh. OSIM Inspe	ection		Year of Last Major	
Work History: (Date/d	escription)		Current Load Limit	t / / (tonnes)
Culvert was replaced				

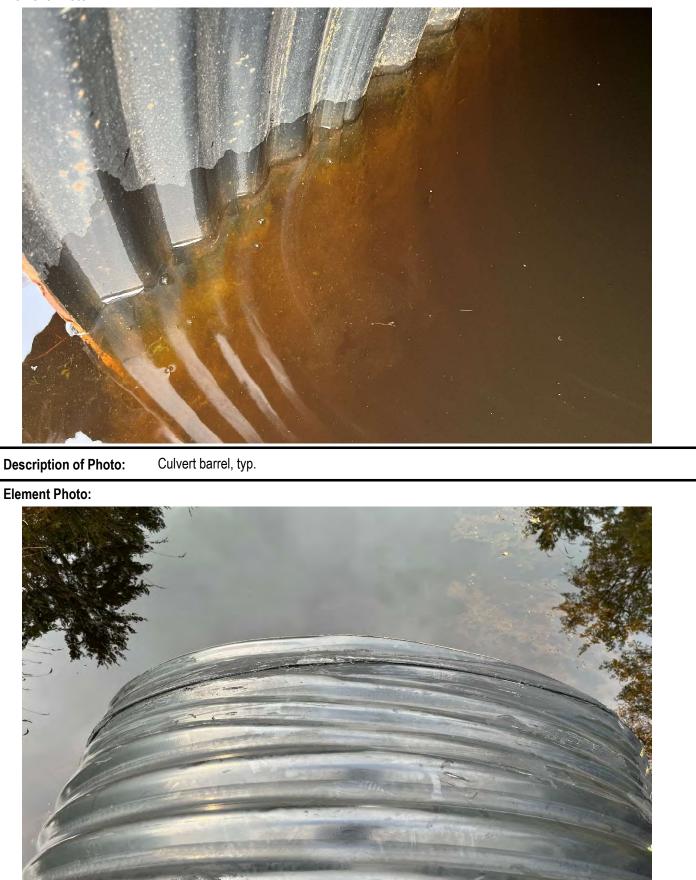
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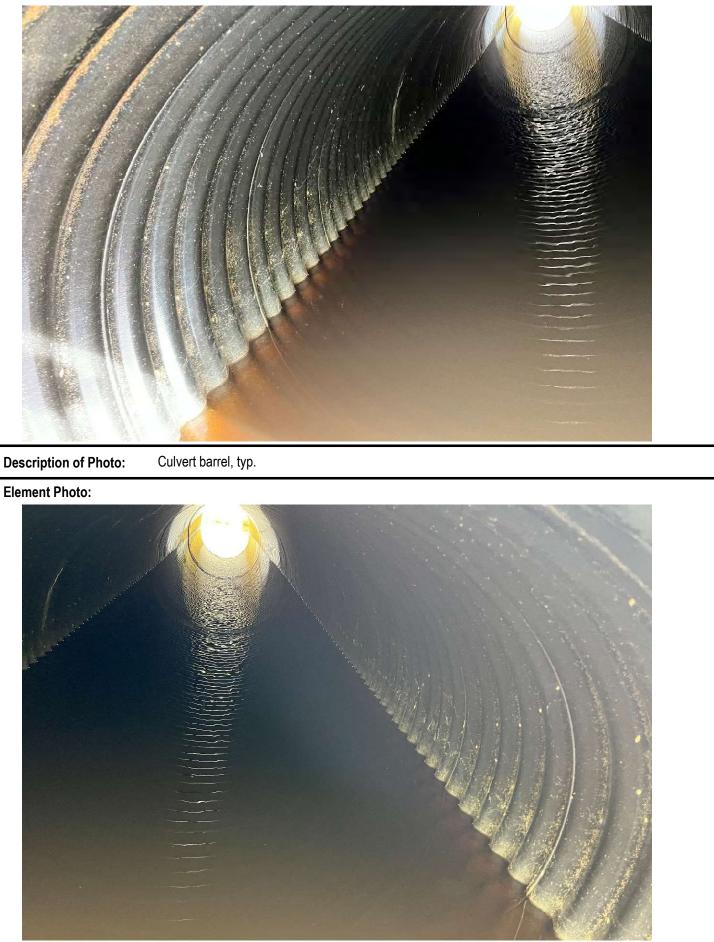
MTO Site Number:

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Field Inspection Information:														
Date of Inspection:		mber 13, 2023	Type of	nspectio	ion: X Reg. OSIM Enh. OSIM									
			Type of	пэресио	n. L	A [Neg. 00								
Inspected By	Junjie	rang												
Others in Party:														
Enh. Access Equipment:														
Special Access Equipment														
Weather	Clear		Tempera	ture	22 °C Priority Estimated Cast									
Additional Investigation	ons Required:					Estimated Cost								
-	•				None	Normal	Urgent							
Material Condition Survey Detailed Deck Condition					X X									
Non-destructive Delami		nhalt Covered Dec	X											
Concrete Substructure		phall-Covered Dec		X										
Detailed Coating Condi					X									
Detailed Timber Investi					X									
Post-Tensioned Strand					X									
Underwater Investigation	investigation.				X									
Fatigue Investigation					X									
Seismic Investigation					X									
Seisinic investigation					X									
Monitoring					X									
Deformations, Settleme	onts and Movements				X									
Crack Widths:		•			X									
RSS Horizontal movem	ents of face:				X									
RSS Vertical movemen		0.			X									
RSS Local movements					X		<u>├</u>							
RSS Horizontal movem					X									
RSS Vertical movemen					X									
					X									
RSS Lateral earth press	Sure at the back of h	acing elements			^									
Investigation Notes:						Total Cost		\$0.00						
Overall Structure Note	es:													
Recommended Work on Str	ucture X	None Min	or Rehab.		Major Rehab.	Rep	lace							
Timing of Recommended W	′ork	Urgent	1 to 5 yea	ars	6 to 10 ye	ars								
Overall Comments:	Cul	vert was replaced	- 1 in 2015.	is polyn	ner coated, an	d is in exce	llent condition							
			•,											
Date of Next inspection:	202	5												
Overall Bridge Co	ndition													
% Poor in Deck	% Poor in Beams	% Poor in Subs	tructure	% P	oor in Barrier	Bri		ndex (BCI or BCIp)						
0	0	0			0		BClp BCl 100.00 100.00							
Overal Bridge Suf	ficiency					1	100.00	100.00						
Traffic	Economic	Width	I		Alignment Bridge Sufficiency Index (BSI)									
0	2	0			0			3.00						
0	۷	U V			U		90							

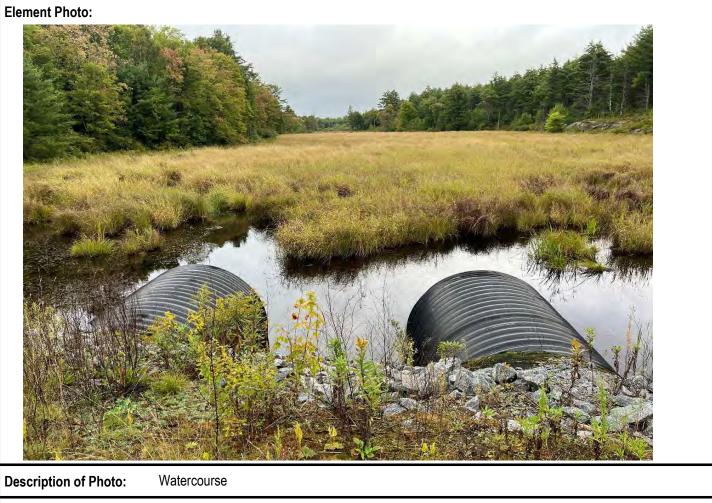
Element Data:	:																
Element Group:		Culverts					Ler	ngth:			23.1						
Element Name:		Barrels					Wio				2.0						
Location:							Hei	ight:			2.0						
Material:		Steel					Со	unt:			2						
Element Type:		Round Pipe					Tot	al Quant	ity:		290.1						
Environment:		Benign					Inspected Yes No						No	limited X			
Protection System	ן. וי													Ē	Performance		
		Units		Exc	ellent		Go	od		Fair		F	oor*		Deficiencies		
Condition Data:					90.1			04		i un				_	Denoionoioo		
	<u> </u>	sq.m					1										
		nd below wate											_				
Recommended W	/ork:		Reh	ab:	Re	eplace:				Maintena	ance	Needs	:				
Urgent:	1-	-5 Years:	6-1	0 Years:			No	one: X		Urgent:		1	Year:		2 Year:		
Element Photo	:																
	Bhada:																
Description of	Photo:	Culvert barro	els ,typ.														





Description of Photo: Culvert barrel, typ.

Element Data:														
Element Group:		Embankments & Stre	ams	Length:										
Element Name:		Streams and Waterwa		Width:										
Location:				Height:										
Material:				Count:										
Element Type:				Total Quant	ity:	all								
Environment:		Benign		Inspected		Yes X	No							
Protection System	ו:						Performance							
		Units	Excellent	Good	Fair	Poor*	Deficiencies							
Condition Data:		all	x											
Comments: No o	observed de	iects.												
Recommended Work: Rehab: Replace: Maintenance Needs:														
Recommended Work: Rehab: Replace: Maintenance Needs:														
Urgent:	1-	-5 Years: 6-10) Years:	None: X	Urgent:	1 Year:	2 Year:							
					I									
Element Photo:	:													
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	1 mart 1		13 A 10 1	A TN	WE LOOK									
	1. 25		CAR ZEAN	COLPA CHAR		Ma 201								
Description of	Photo:	Watercourse												



Description of Photo:

Element Data:	:										
Element Group:		Embankments & S	reams	Le	ngth:						
Element Name:		Embankments			idth:						
Location:				He	eight:						
Material:		Grass, rock			ount:		6				
Element Type:				To	tal Quant	ity:	6				
Environment:		Benign		Insp	pected			Yes	X	No	limited
Protection System	ו:		_					_			Performance
Condition Data:		Units	Excellent 6	G	bod		Fair		Poor*		Deficiencies
	observed de	each									
Recommended W Urgent:			ehab: F -10 Years:	Replace: N] one: X		/aintenar Irgent:	nce Nee	eds: 1 Year:		2 Year:
Element Photo:			and an and a state of the state	The states wet							
Description of I	Photo:	Embankment, typ.									



Description of Photo: Embankment, typ.

Element Data:	:															
Element Group:		Embankment	ts & Stre	ams		L	Length:									
Element Name:		Slope Protec	tion				/idth:									
Location:						ŀ	eight:									
Material:		Rip rap					ount:			6						
Element Type:		Angular rock				Т	otal Quant	tity:		6						
Environment:		Benign				Ins	Inspected				Yes	X	No	lin	nited	
Protection System	וי	<u> </u>											Ē		erforma	
1 rotootion oyoton	•	Units		Exce	ellent	(Good		Fair			Poor*			eficienc	
Condition Data:									i un	_		1 001	_			
-	each 6 hents: Loss of material is less than 20%.															
Comments: LOS	s of material	is less than 2	.0%.													
Recommended W	/ork:		Reh	ab:	Repl	ace:			Maintena	ance	Need	ls:				
Urgent:	1-	-5 Years:	6-1	0 Years:			None: X]	Urgent:			1 Year:		2	Year:	
Element Photo:	:															
								国家がある								
Description of I	Photo:	Slope protec	tion, typ).												

Element Data:								
Element Group:		Approaches			Length:		18.0	
Element Name:		Wearing Sur	face		Width:		6.2	
Location:					Height:			
Material:		Asphalt			Count:		1	
Element Type:					Total Quant	tity:	111.6	
Environment:		Severe			Inspected		Yes X N	o limited
Protection System	:				-			Performance
Condition Data:		Units		Excellent	Good	Fair	Poor*	Deficiencies
Comments: No c	beerved de	sq.m fects. One nar	row tran	111.1 Isverse crack.	0.5			
Comments. No C								
Recommended W	ork:		Reh	ab: Rep	lace:	Mainter	nance Needs:	
Urgent:	1-	5 Years:	6-1	0 Years:	None: X	Urgent:	1 Year:	2 Year:
Element Photo:	1							
	Dhoto:				nast			
Description of I	Photo:	Approach we	earing s	urface - looking	east			





Repair and Reha	bilitation Required:		Prio	ority		Estimated Structural
Element ¹	Repair and Rehabilitation Required ²	6 to 10 Years	1 to 5 Years	Within 1 Year	Urgent	Cost
Structure	Demolition					
Structure	Replacement					
0	R					
Deck	Rehab. =					
Sidewalk/Curb	Rehab. =					
Barrier	Rehab. =					
Joints	Rehab. =					
Beams	Rehab. =					
Abutment	Rehab. =					
Pier	Rehab. =					
Other						
Total Deck L	bilitated or Replacement Structure Dimensions ³ ength (m) Overall Str. Width (m) cture replacement OR for rehabilitation under the given headings.			Total Str	uctural Cost	\$0.00

1 - Indicate specific costs for structure replacement OR for rehabilitation under the given headings.

 $\ensuremath{\mathbf{2}}$ - Give a very brief description of the rehabilitation work required.

 $\ensuremath{\mathsf{3}}\xspace$ - Estimated structure dimensions after completion of the proposed work - if it is expected to change.

Associated Work	Comments	Estimated Associated Work Cost
Approaches		
Detours		
Traffic Control		
Utilities		
Other		
	Total Associated Work Cost	\$0.00
		<u>*0.00</u>
	Total Construction Cost	\$0.00

Justification:

The structure was recently replaced and is in excellent condition. No recommended work at this time.

				MTO Site Number:
Inventory Data:				
Structure Name	C10 - Seehaver R	oad, Lot 14, Conc 12/	13	
Main Highway #	Seehaver Road	On X or Under Structure	Service on Structure	Navig. Water Non-Navig. Water Rail X Road Ped. Other
Location Description	0.35km east of Bar	kway Road	Service under:	Navig. Water X Non-Navig. Water
Owner/Custodian	Gravenhurst			
MTO Region	Northeastern		Latitude	44.924497 Longitude -79.182953
Regional Engineer			Heritage Designation:	X Not Cons. Cons./Not App. List/Not Des Desig. Desig./Not List Desig. & List
MTO Area			Hwy Class:	Freeway Arterial Collector Local 🗴
Old County			Posted Speed	50 No. of Lanes 2
Township	Gravenhurst		AADT [50-199 % Truck 0
Structure Type 1	Twin SPCSP Arch	Culvert		
Structure Material 1	Steel		Traffic Directional I	Bound E-W
Structure Type 2				
Structure Material 2			Inspection Frequer	ncy 2 (years)
Total Deck Length	7.6	(m)	Inspection Year	odd
Overall Str. Width		(m)	Inspection Duration	n 2 (hrs)
Culvert Length	18.7	(m)		
Total Deck Area	142.1	(sq.m)		
Roadway Width	5.8	(m)	Min. Vertical Clear	ance (m)
Skew Angle		(Degree)	Detour Distance	6 (km)
No. of Spans	2		Fill on Structure	0.6 (m)
Span Lengths	3.8, 3.8			(m)
For retaining wall:				
Total Wall Length		(m)	Max. Wall Height	(m)
Total Wall Area		(sq.m)	Ave. Wall Height	(m)
			Angle of Backfill	(Degrees)
Historical Data				
Year Built	2012		Year of superstruc	t. Constructed
Last Reg. OSIM Inspe			Year of Last Minor	
Last Enh. OSIM Inspe	ection		Year of Last Major Current Load Limit	
Work History: (Date/d	escription)		Current Load Limit	t / / (tonne Investigation History: (Date/description)
	<u></u>			

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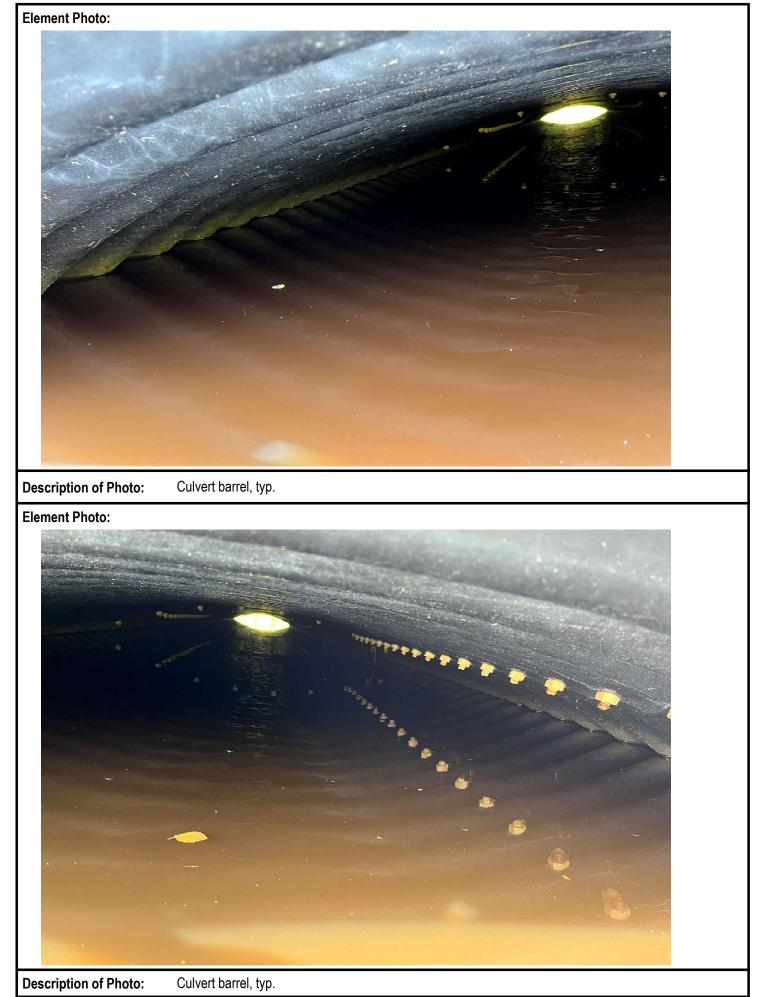
MTO Site Number:

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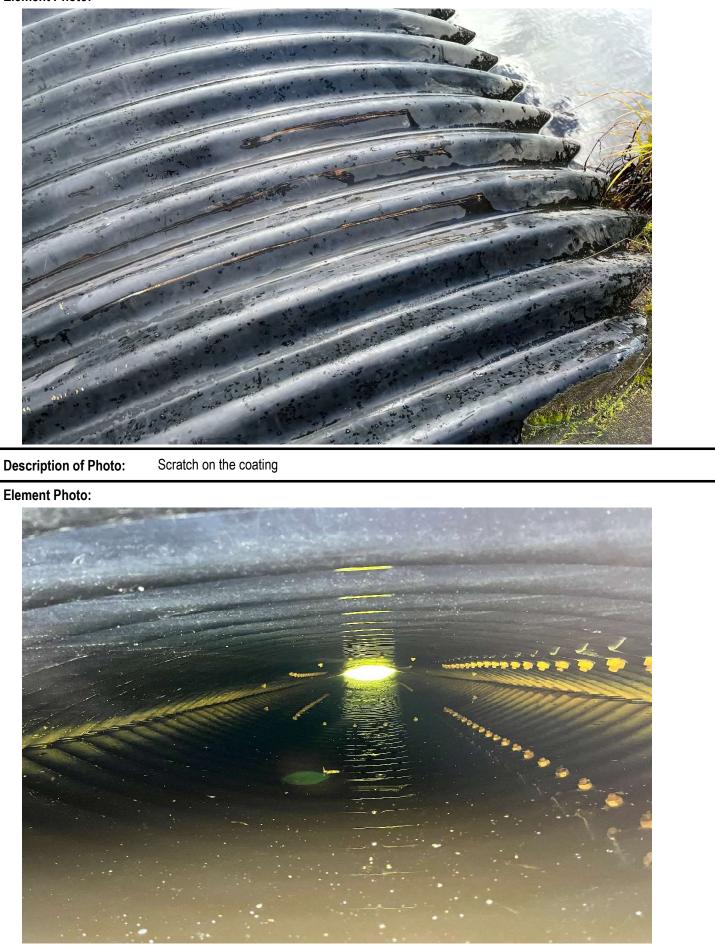
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Field Inspection Inform	nation:							
-		nhar 12, 2022	Type of I	noncotio	<u>г.</u> Г	X Reg. OS		Enh. OSIM
Date of Inspection:		nber 13, 2023	Type of I	Ispeciio	n. L	Keg. US		
Inspected By	Junjie	Yang						
Others in Party:								
Enh. Access Equipment:								
Special Access Equipment								
Weather	Clear		Temperat	ure				22 °C
Additional Investigation	ons Required:		•			Priority		Estimated Cost
-	•				None	Normal	Urgent	
Material Condition Survey	C				v			
Detailed Deck Condition			-1		X			
Non-destructive Delamin		onalt-Covered De	CK:		X			
Concrete Substructure (X			
Detailed Coating Condit					X			
Detailed Timber Investig					X			
Post-Tensioned Strand	Investigation:				Х			
Underwater Investigation					Х			
Fatigue Investigation					Х			
Seismic Investigation					Х			
Structure Evaluation:					Х			
Monitoring								
Deformations, Settlemer	nts and Movements				Х			
Crack Widths:					Х			
RSS Horizontal moveme	ents of face:				Х			
RSS Vertical movement		9:			Х			
RSS Local movements of					X			
RSS Horizontal moveme					X			
RSS Vertical movement					X			
RSS Lateral earth press					X			
Investigation Notes:	al life back of it	iong elements			^			
investigation notes.						Total Cost		\$0.00
Overall Structure Note	S:							
Recommended Work on Stru	ucture X	None Min	or Rehab.		Major Rehab.	Rep	lace	
Timing of Recommended Wo	ork	Urgent]1 to 5 yea	irs	6 to 10 ye	ars		
Overall Comments:	Cub	verts are in exce	- lent condi	tion, no	recommende	d work at th	nis time.	
	- Curr					a non at ti		
Date of Next inspection:	202	5						
Overall Bridge Cor		·						
-	% Poor in Beams	% Poor in Subs	I tructure	% P	oor in Barrier	Bri	dae Condition I	ndex (BCI or BCIp)
0%	0%	0%		701	0%		BClp	BCI
					0 /0		100.00	95.48
Overal Bridge Sufficiency								
Traffic	Economic	Width			Alignment			ency Index (BSI)
0	2	0		0 93.48				

Element Data:	1															
Element Group:		Culverts						Lengtl	า:		18.7					
Element Name:		Barrels						Width			3.8					
Location:								Heigh			2.7					
Material:		Steel						Count			2					
Element Type:		Pipe Arch						Total	Quantity:	:	387.	7				
Environment:		Benign					Ir	nspect	ed		·	Yes		No[limited X	:
Protection System	1:	Polymer Coa	ited												Performance	e
		Units		Ex	celle	ent		Good		Fair			Poor*		Deficiencies	s
Condition Data:		sq.m		;	385.7	7		2.0								
Comments: Limi	ited inspecti		er depth				visibl		olts. Sc	ratches in	the c	oatin	a with	liaht	corrosion on to	n
		e at the south										outin	g man	ingine		4
CAP		, at the south	cast chu.	10 01		003014	cuuc	10013.								
Recommended W	ork:		Reha	ab:	٦	Repl	ace:			Mainter	nance	Need	s:			
					ᆜ											
Urgent:	1.	-5 Years:	6-10) Years	s: L			None	: X	Urgent:			Year:		2 Year:	
Element Photo:																
				_												
	- Oracon			10.10										1.3.6	Print Car	
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		and the second		-	-		<u></u>	1-4-6	er er er	and the second	New York		d-++-	-		
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				1			6.25									
Description of I	Photo:	Culvert barro	el, typ.													







Description of Photo:Culvert barrel, typ.BRIDGE C10 - SEEHAVER ROAD, LOT 14, CONC 12/13

Element Data:	:							
Element Group:		Embankments & Stre	ams	Length:				
Element Name:		Streams and Waterw	ays	Width:				
Location:				Height:				
Material:				Count:				
Element Type:				Total Quant	tity:	all		
Environment:		Benign		Inspected		Yes	X No	limited
Protection System	<u>וי</u>							Performance
		Units	Excellent	Good	Fair		Poor*	Deficiencies
Condition Data:		all	X					
Comments: No o	bserved def		~					
Comments. No v								
Recommended W	/ork:	Reh	ab: Repla	ace:	Mainter	nance Ne	eds:	
Urgent:	1-	5 Years: 6-1	0 Years:	None: X	Urgent:		1 Year:	2 Year:
Element Photo:	:							
Description of I	Photo:	Watercourse						



Description of Photo:

Watercourse

Element Data:											
Element Group:		Embankmen	s & Stre	eams		Length:					
Element Name:		Embankment	S			Width:					
Location:						Height:					
Material:		Rocks				Count:		6			
Element Type:		Riprap				Total Quant	ity:	6			
Environment:		Benign				Inspected		Y	es X	No	limited
Protection System	:							_			Performance
Condition Data:		Units		Exceller	nt	Good	Fair		Poor*		Deficiencies
		each		6							
Comments: No o Recommended W Urgent:		5 Years:	Reh	lab: 0 Years:	Replace	e: None: X	Mainter Urgent:		Needs: 1 Year		2 Year:
Element Photo:											
								にあった			
Description of I	Photo:	Embankmen	t, typ.								



Description of Photo:

Embankment, typ.

Element Data:																
Element Group:	E	Embankment	ts & Stre	ams		Le	ength:									
Element Name:	S	Slope Protect	tion				idth:									
Location:		-				H	eight:									
Material:	R	Rock					ount:			6						
Element Type:						Тс	tal Quant	tity:		6						
Environment:	В	Benign					pected				Yes	X	No	lir	nited	
Protection System		- J													rforma	
1 Toteotion Cysten		Units		Exce	llent	G	ood		Fair			Poor*			eficienc	
Condition Data:									i ali			1 001				103
		each					6									
Comments: Los Recommended W Urgent:	ork:	Years:	Reh	ab:) Years: [Repl] Ione: X]	Mainte Urgent:		7	ds: 1 Year	:	2	Year:	
Element Photo:																
Description of I	Photo: S	Slope protec	tion, typ).												

Element Data:	:														
Element Group:		Approaches					_ength:			19.6					
Element Name:		Wearing Sur	face				Nidth:			5.8					
Location:							Height:								
Material:		Asphalt					Count:			1					
Element Type:							Total Quant	tity:		113.	7				
Environment:		Severe				Ir	spected			`	Yes	X	No	limi	ted
Protection System	1:					_		_		_					ormance
Condition Data:		Units		E>	cellent	_	Good		Fair			Poor*	_	Def	ciencies
Comments: Ligh	nt ravelling, f	sq.m typ. 5 - full wid	th light	to mec	lium tran		110.1 racks.		3.6						
Comments3															
Recommended W	/ork:		Reh	ab:	Re	place:			Mainten	ance	Needs	s:			
Urgent:	1-	-5 Years:	6-1	0 Years			None: X]	Urgent:		1	Year:		2 Y	ear:
Element Photo	:														
Description of	Phota:														
Description of	Photo:	Approach w	earing s	urface	- looking	east									



Description of Photo:Transverse crackBRIDGE C10 - SEEHAVER ROAD, LOT 14, CONC 12/13

Element Data	:							
Element Group:		Approaches		Length:		86.0		
Element Name:		Barrier		Width:				
Location:				Height:				
Material:		Steel and Wood		Count:		2		
Element Type:		Wood post and stee	el cable	Total Quant	ity:	172.0		
Environment:		Severe		Inspected		Yes X	No	limited
Protection System	1:					ļ		Performance
		Units	Excellent	Good	Fair	P	oor*	Deficiencies
Condition Data:		m		162.0	10.0			
Comments: Ligi	ı ht to medium	splits in posts, typ.	No other observed					
Sommente. S								
Recommended W	/ork:	Re	hab: Repl	ace:	Mainten	ance Needs:		
Urgent:	1-	-5 Years: 6-	10 Years:	None: X	Urgent:	1	Year:	2 Year:
Element Photo	:							
Description of	Photo:	<image/>	ide rail					



Description of Photo:Post deterioriation, typ.BRIDGE C10 - SEEHAVER ROAD, LOT 14, CONC 12/13

Repair and Reha	bilitation Required:		Pric		Estimated Structural	
Element ¹	Repair and Rehabilitation Required ²	6 to 10 Years	1 to 5 Years	Within 1 Year	Urgent	Cost
Structure	Demolition					
Structure	Replacement					
0	R					
Deck	Rehab. =					
Sidewalk/Curb	Rehab. =					
Barrier	Rehab. =					
Joints	Rehab. =					
Beams	Rehab. =					
Abutment	Rehab. =					
Pier	Rehab. =					
Other						
Estimated Rehat Total Deck L	pilitated or Replacement Structure Dimensions ³ ength (m) Overall Str. Width (m)	_		Total Str	ructural Cost	\$0.00

1 - Indicate specific costs for structure replacement OR for rehabilitation under the given headings.

 $\ensuremath{\mathbf{2}}$ - Give a very brief description of the rehabilitation work required.

 $\ensuremath{\mathsf{3}}\xspace$ - Estimated structure dimensions after completion of the proposed work - if it is expected to change.

Associated Work	Comments	Estimated Associated Work Cost
Approaches		WOIN COSt
Detours		
Traffic Control		
Utilities		
Other		
	Total Associated Work Cost	\$0.00
		<u> </u>
	Total Construction Cost	\$0.00

Justification:

Culverts are in excellent condition. No recommended work at this time.

				MTO Site Number:
Inventory Data:				
Structure Name	C12 - Arthur Schu	Iz Culvert		
Main Highway #	Arthur Schulz Road	On X or Under Structure	Service on Structure	Navig. Water Non-Navig. Water Rail X Road Ped. Other
Location Description	0.1 km South of Be (Muskoka Road 19		Service under:	Navig. Water XNon-Navig. Water
Owner/Custodian	Gravenhurst			
MTO Region	Northeastern		Latitude	44.857054 Longitude -79.350935
Regional Engineer			Heritage Designation:	X Not Cons. Cons./Not App. List/Not Desig Desig. Desig./Not List Desig. & List
MTO Area			Hwy Class:	Freeway Arterial Collector Local X
Old County			Posted Speed	50 No. of Lanes 2
Township	Gravenhurst		AADT	300 % Truck
Structure Type 1	CSP Round Pipe			
Structure Material 1	Steel		Traffic Directional	Bound N-S
Structure Type 2				
Structure Material 2			Inspection Freque	ency 2 (years)
Total Deck Length	15.4	(m)	Inspection Year	odd
Overall Str. Width	8.1	(m)	Inspection Duration	on 2 (hrs)
Culvert Length	15.0	(m)		
Total Deck Area	124.74	(sq.m)		
Roadway Width	7.1	(m)	Min. Vertical Clea	rance (m)
Skew Angle		(Degree)	Detour Distance	8.0 (km)
No. of Spans	3		Fill on Structure	(m)
Span Lengths	3.3, 3.3, 3.3			(m)
For retaining wall:				
Total Wall Length		(m)	Max. Wall Height	(m)
Total Wall Area		(sq.m)	Ave. Wall Height	(m)
			Angle of Backfill	(Degrees)
Historical Data				
Year Built	2020		Year of superstrue	ct. Constructed
Last Reg. OSIM Inspe			Year of Last Mino	
Last Enh. OSIM Inspe	ection		Year of Last Majo	
Work History: (Date/d	escription)		Current Load Limi	it / / (tonnes)
2020: Culvert was rep				

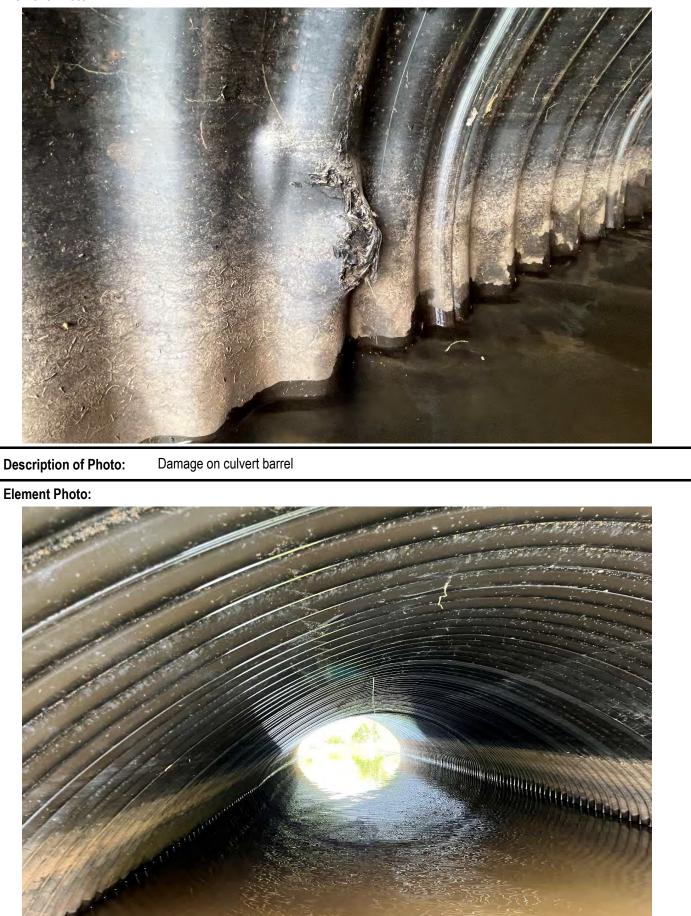
MTO Site Number:

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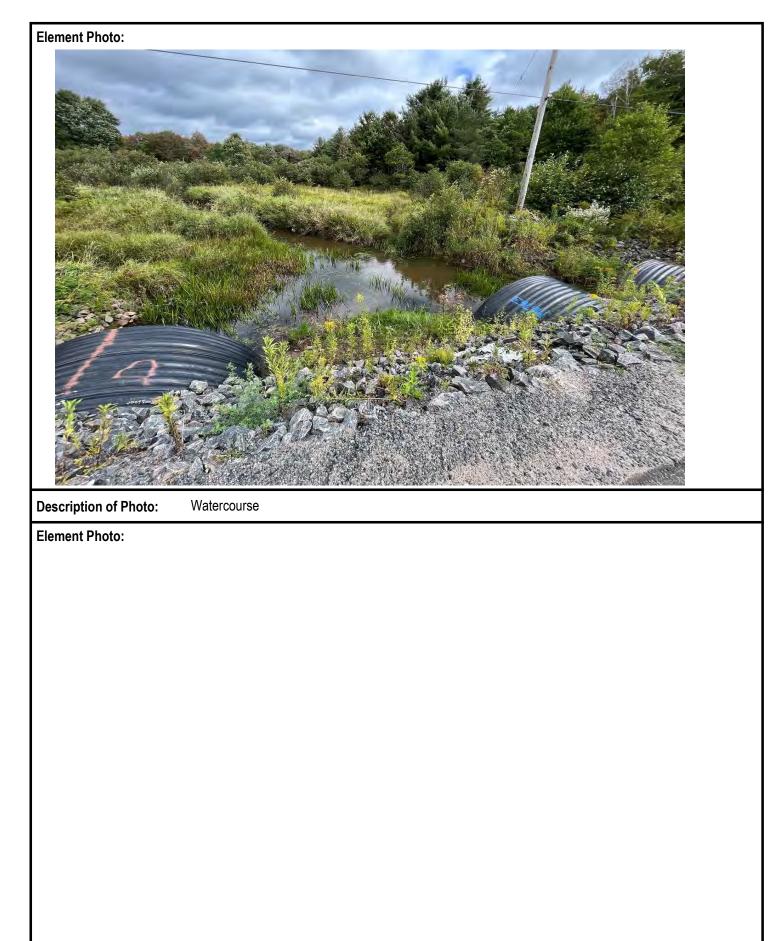
Field Inspection Infor	mation:								
Date of Inspection:	Septe	mber 13, 2023	Type of	Inspectio	n:	X Reg. OS	SIM	Enh. OSIM	-
Inspected By	Junjie	Yang							_
Others in Party:									
Enh. Access Equipment:									
Special Access Equipment									_
Weather	Clear		Tempera	ture				22 °C	;
Additional Investigati	ons Required:					Priority		Estimated Cost	٦
Material Condition Survey					None	Normal	Urgent		_
Material Condition Survey Detailed Deck Condition					X X				_
Non-destructive Delami		nhalt Covered De	alu		X				
Concrete Substructure		phail-Covered Dec	JK.		X				
Detailed Coating Condi					<u>х</u>				
Detailed Coaling Condi					<u>х</u>				
Post-Tensioned Strand	<u>v</u>				X				—
Underwater Investigation	investigation.				X		+ +		—
~					Х		+ +		—
Fatigue Investigation Seismic Investigation					Х				
Structure Evaluation:					<u>л</u> Х				
Monitoring					<u>л</u> Х				
Deformations, Settleme	nte and Movement				<u>л</u> Х				
Crack Widths:					Х				
RSS Horizontal movem	onto of faco:				<u>л</u> Х				
RSS Vertical mov SPC					X		+ +		—
RSS Local movements		aca alamanta:			X				—
RSS Horizontal movem					Х		+ +		—
RSS Vertical movemen					Х		+ +		—
RSS Lateral earth press					Х		+ +		
Investigation Notes:		acing elements			Λ				
investigation notes.						Total Cost		\$0.00	
Overall Structure Note	es:								
Recommended Work on Str	ucture X	None Min	or Rehab.		Major Rehab.	Re	place		
Timing of Recommended W	′ork	Urgent]1 to 5 yea	ars	6 to 10 y	ears			
Overall Comments:	The	structure is in ex	cellent c	ondition	. Small hole	on the north	culvert wall to	be repaired.	
								•	
Date of Next inspection:	202	5							_
Overall Bridge Co									
% Poor in Deck	% Poor in Beams	% Poor in Subs	tructure	% P	oor in Barrier	Br	idge Condition I	Index (BCI or BCIp)	—
0%	0%						BClp 99.98	BCI 99.39	_
Overall Bridge Sufficiency						<u> </u>	00.00	1 00.00	
Traffic	Economic	-				Alignment Bridge Sufficiency Index (BS			_
0	2	0			0			7.39	
-	-	L V			÷	1	01		┛

Element Data:	:														
Element Group:		Culverts						Len	gth:			15.0)		
Element Name:		Barrels						Wid	th:			3.3			
Location:								Heig	ght:			3.3			
Material:		Steel						Cou				3			
Element Type:		CSP Round	Pipe					Tota	al Quant	tity:		466	.3		
Environment:		Benign						Inspe	cted				Yes X	limited	
Protection System	ו:	Polymer Coa	ted				_			_					Performance
Condition Data:		Units			xcell			Goo			Fair		Po		Deficiencies
Comments: A 1		sq.m nole noted on Light deform		h culv		east er			ccurred					middle o	culvert is slightly sag
Recommended W	/ork:		Reh	ab:		Rep	blace:				Mainte	nance	e Needs:	18 -	Other Maintenance
Urgent:	1-	5 Years:	6-1	0 Year	s:			No	ne: X]	Urgent:		1 Y	ear:	2 Year: X
											Repair				
Element Photo	:														
Description of	Photo:	Culvert barro	el, typ.												





Element Data:							
Element Group:		Embankments & St	reams	Length:			
Element Name:		Streams and Water	ways	Width:			
Location:				Height:			
Material:				Count:			
Element Type:				ity:	all		
Environment:		Benign		Inspected		Yes X N	o limited
Protection System	1:					•	Performance
Condition Data:		Units all	Excellent	Good	Fair	Poor*	Deficiencies
Comments: No o	observed def		X				
Recommended W	ork:	Re	ehab: Repl	ace:	Mainten	ance Needs:	
Urgent:	1-	5 Years: 6-	10 Years:	None: X	Urgent:	1 Year:	2 Year:
Element Photo:	:						
Description of I	Photo:	Watercourse					



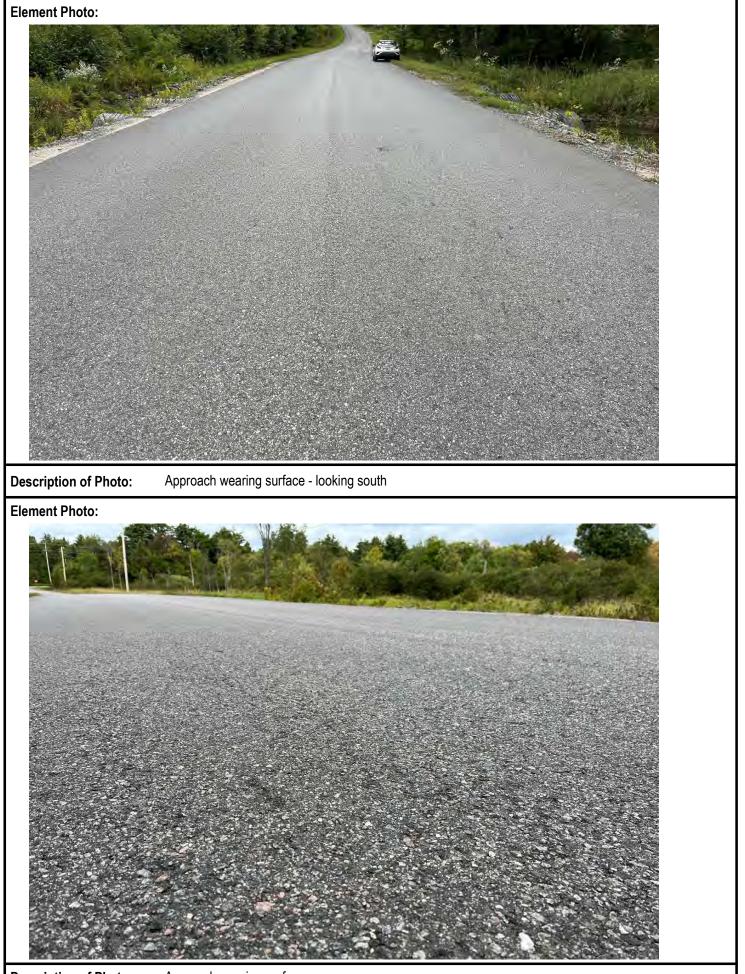
Element Data:	:							
Element Group:		Embankments & Stre	ams	Length:				
Element Name:		Embankments		Width:				
Location:				Height:				
Material:		Stone		Count:		8		
Element Type:				Total Quan	itity:	8		
Environment:		Benign		Inspected		Yes	X No	limited
Protection System	ו:	Rip Rap						Performance
Condition Data:		Units	Excellent	Good	Fair		Poor*	Deficiencies
		each	8					
Comments: No o	observed de	fects.						
Recommended W	/ork:	Reh	iab: Repla	ace:	Mainte	nance Nee	eds:	
Urgent:	1-	5 Years: 6-1	0 Years:	None: X	Urgent:		1 Year:	2 Year:
Element Photo:	:							
Description of	Photo:	<image/>						
Description of	rnoto:	Emparikment, typ.						



Description of Photo: Embankment, typ.

Element Data:	:									
Element Group:		Embankment	ts & Stre	ams	Length:					
Element Name:		Slope Protect	tion		Width:					
Location:					Height:					
Material:		Rock			Count:		8			
Element Type:	lement Type:				Total Q	8	8			
Environment:		Benign			Inspecte	d		Yes X	No[limited
Protection System	ו:					_				Performance
Condition Data:		Units		Excellent	Good		Fair	F	oor*	Deficiencies
Comments: Los	s of matorial	each is less than 2	0%		8					
Recommended W			Reh		place:		Maintena	Ince Needs		
		<u> </u>					-			
Urgent:	L 1-	5 Years:	6-1	0 Years:	None:	X	Urgent:	1	Year:	2 Year:
Element Photo	:									
Description of	Photo:	Slope protec	tion							

Element Data:												
Element Group:		Approaches				Length:			26.6			
Element Name:		Wearing Surf	ace			Width:			7.1			
Location:						Height:						
Material:		Asphalt				Count:			1			
Element Type:						Total Quanti	ity:	·	189.2			
Environment:		Severe				Inspected			Yes X No limited			
Protection System	1:											Performance
Condition Data:		Units		Excellent		Good		Fair		Poor*		Deficiencies
Comments: No o	beerved det	sq.m		189.2								
Comments: NO												
Recommended W	'ork:		Reh	ab: 📃 Re	eplace:			Maintena	ance Ne	eeds:		
Urgent:	1-	5 Years:	6-1	0 Years:		None: X	l	Jrgent:		1 Year	:	2 Year:
Element Photo:	:											
Description of I	Photo:	Approach we	aring s	urface - lookin	ig north							



Repair and Reha	bilitation Required:		Pric	ority		Estimated Structural
Element ¹	Repair and Rehabilitation Required ²	6 to 10 Years	1 to 5 Years	Within 1 Year	Urgent	Cost
Structure	Demolition					
Structure	Replacement					
OI	R					
Deck	Rehab. =					
Sidewalk/Curb	Rehab. =					
Barrier	Rehab. =					
Joints	Rehab. =					
Beams	Rehab. =					
Abutment	Rehab. =					
Pier	Rehab. =					
Other						
	bilitated or Replacement Structure Dimensions ³	_		T () O(
Total Deck				Total Sti	ructural Cost	\$0.00

1 - Indicate specific costs for struct (.1

2 - Give a very brief description of the rehabilitation work required.

 $\ensuremath{\mathsf{3}}\xspace$ - Estimated structure dimensions after completion of the proposed work - if it is expected to change.

Associated Work	Comments	Estimated Associated Work Cost
Approaches		
Detours		
Traffic Control		
Utilities		
Other		
	Total Associated Work Cost	\$0.00
	Total Construction Cost	\$0.00

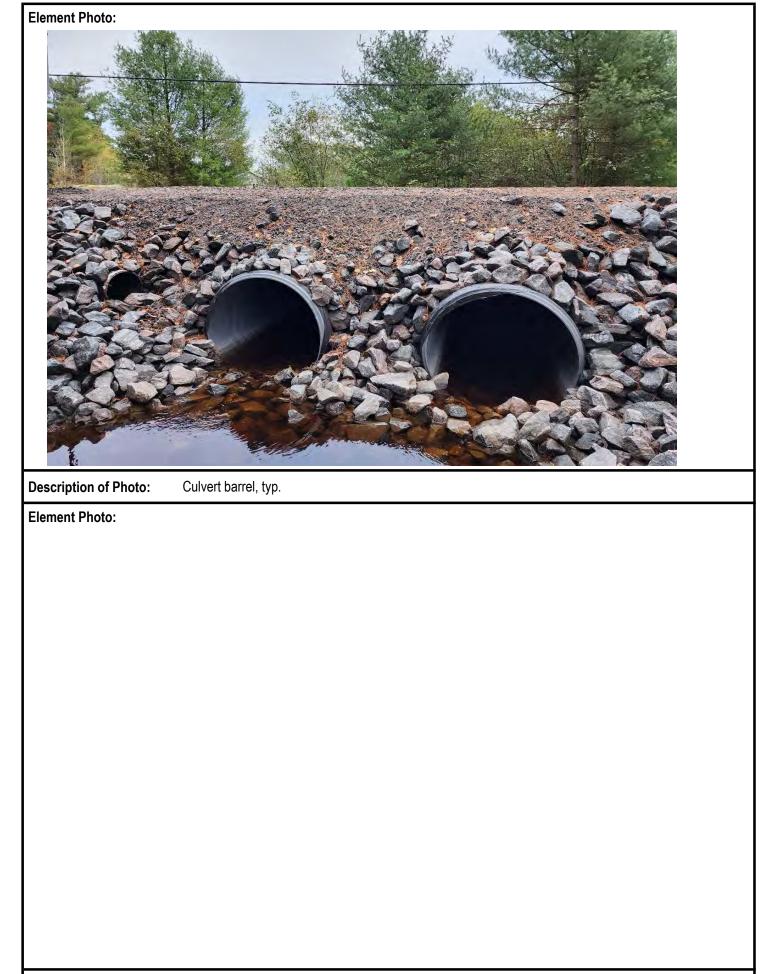
Justification:

Culvert was replaced in 2020 with 3 polymer coated culvert barrels. Maintenance: repairs to the hole on the north barrel. Otherwise structure is in excellent condition.

				MTO Site Number:
Inventory Data:				
Structure Name	Laycox Road Cu	lvert		
Main Highway #	11	On X or Under Structure	Service on Structure	Navig. Water Non-Navig. Water Rail X Road Ped. Other
Location Description	0.17 km south of	Doe Lake Rd	Service under:	Navig. Water X Non-Navig. Water
Owner/Custodian	Township of Grav	renhurst		
MTO Region			Latitude	44.931585 Longitude -79.325326
Regional Engineer			Heritage Designation:	X Not Cons. Cons./Not App. List/Not Desig. Desig. Desig./Not List Desig. & List
MTO Area			Hwy Class:	Freeway Arterial Collector Local X
Old County			Posted Speed	50 No. of Lanes 2
Township	Gravenhurst		AADT	0-49 % Truck
Structure Type 1	Round Pipe			
Structure Material 1	HDPE		Traffic Directional B	Bound N-S
Structure Type 2				
Structure Material 2			Inspection Frequen	cy 2 (years)
Total Deck Length	14.9	(m)	Inspection Year	odd
Overall Str. Width		(m)	Inspection Duration	2 (hrs)
Culvert Length	8.6	(m)		
Total Deck Area	128.1	(sq.m)		
Roadway Width	7.0	(m)	Min. Vertical Cleara	ance (m)
Skew Angle		(Degree)	Detour Distance	0.6 (km)
No. of Spans	2		Fill on Structure	0.9 (m)
Span Lengths	1.2 / 1.2			(m)
For retaining wall:				
Total Wall Length		(m)	Max. Wall Height	(m)
Total Wall Area		(sq.m)	Ave. Wall Height	(m)
			Angle of Backfill	(Degrees)
Historical Data				
Year Built	2023		Year of superstruct.	. Constructed
Last Reg. OSIM Insp			Year of Last Minor I	Rehab.
Last Enh. OSIM Insp	ection		Year of Last Major I	
Martellister (Dete/	less substitutions)		Current Load Limit	/ / (tonnes
<u>Work History: (Date/c</u> Structure was replace				Investigation History: (Date/description)

					MTO Site	e Number:	
Field Inspection Info	rmation:						
Date of Inspection:	Octob	er 18, 2023	Type of Inspe	ection:	X Reg. OS	IM	Enh. OSIM
Inspected By	David	Middlebrook	1				
Others in Party:							
Enh. Access Equipment:							
Special Access Equipment							
Weather	Clear		Temperature				10 °C
Additional Investigat					Priority		Estimated Cost
				None	Normal	Urgent	
Material Condition Survey							
Detailed Deck Condition							
Non-destructive Delan		phalt-Covered De	CK:				
Concrete Substructure							
Detailed Coating Cond							
Detailed Timber Invest							
Post-Tensioned Strand	a investigation:						
Underwater Investigation							
Fatigue Investigation							
Seismic Investigation							
Structure Evaluation:							
Monitoring	anto and Mayomonto						
Deformations, Settlem	ents and Movements	5.					
Crack Widths:							
RSS Horizontal mover							
RSS Vertical movement							
RSS Local movements							
RSS Horizontal mover							
RSS Vertical movement							
RSS Lateral earth pres	ssure at the back of t	acing elements					
-					Total Cost		\$0.00
Overall Structure Not	tes:						
Recommended Work on St	tructure X	None Mir	nor Rehab.	Major Rehat	o. 🗌 Rep	lace	
Timing of Recommended V	Vork	Urgent	1 to 5 years	6 to 10	years		
Overall Comments:	The	structure was re	eplaced in 202	3, and is in exce	llent conditio	n.	
Date of Next inspection:	202	5	_				
Overall Bridge Co	ondition						
% Poor in Deck	% Poor in Beams	% Poor in Subs	% Poor in Barrie	r Bri		Index (BCI or BCIp)	
0%	0%	0%		0%	0% BClp 100.00		
Overal Bridge Su	fficiency		<u> </u>				100.00
Traffic	Economic	Width	· · · · ·	Alignment		Bridge Suffic	iency Index (BSI)
0	2	0		0			98.00

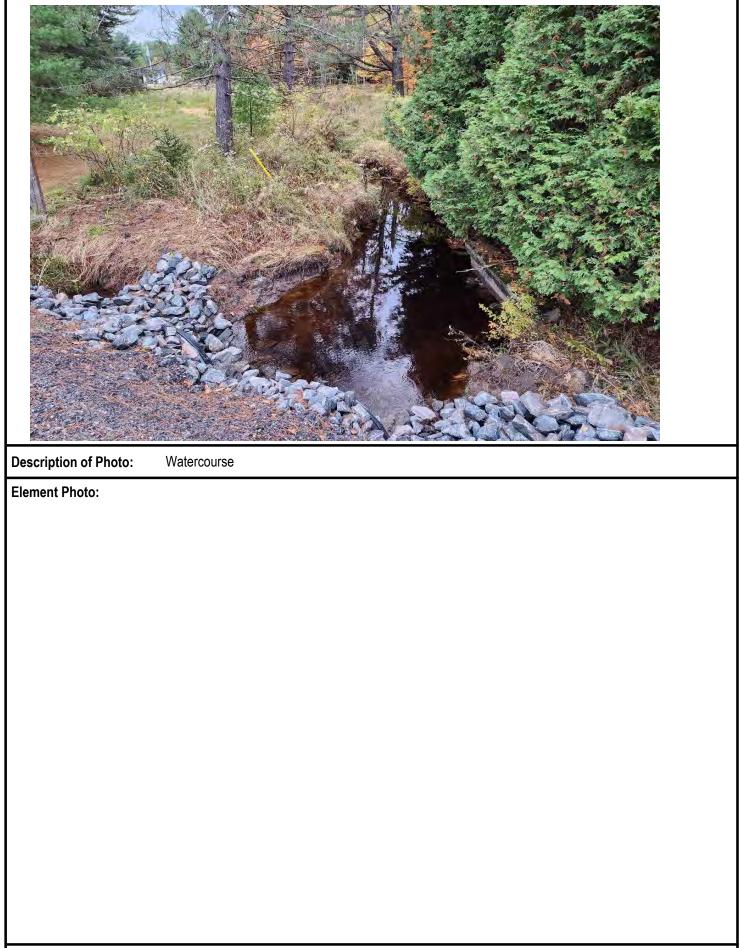
Element Data:																
Element Group:	Culverts						Length:				8.6					
Element Name:		Barrels					Width:			1.2						
Location:							Height:			1.2 2						
Material:		HDPE														
Element Type:		Round Pipe					otal Quan	tity:		64.8						
Environment: Benign						Ins	pected				Yes X No			limited		
Protection System								_	1			Perform				
Condition Data:		Units sq.m	Excellent 64.8		(Good		Fair		Poor*			Deficiencies			
Comments: No c		04.0														
					1 –		7					I				
Recommended W	ork:		Reh	nab: Replace:					Maintenance Ne		Needs:	Needs:				
Urgent:	1-	5 Years:	6-1	0 Years:			None: X		Urgent:		1١	/ear:		2 Year:		
Element Photo:	:															
Description of I	Photo:	Culvert barre	əl, typ.													



Description of Photo:

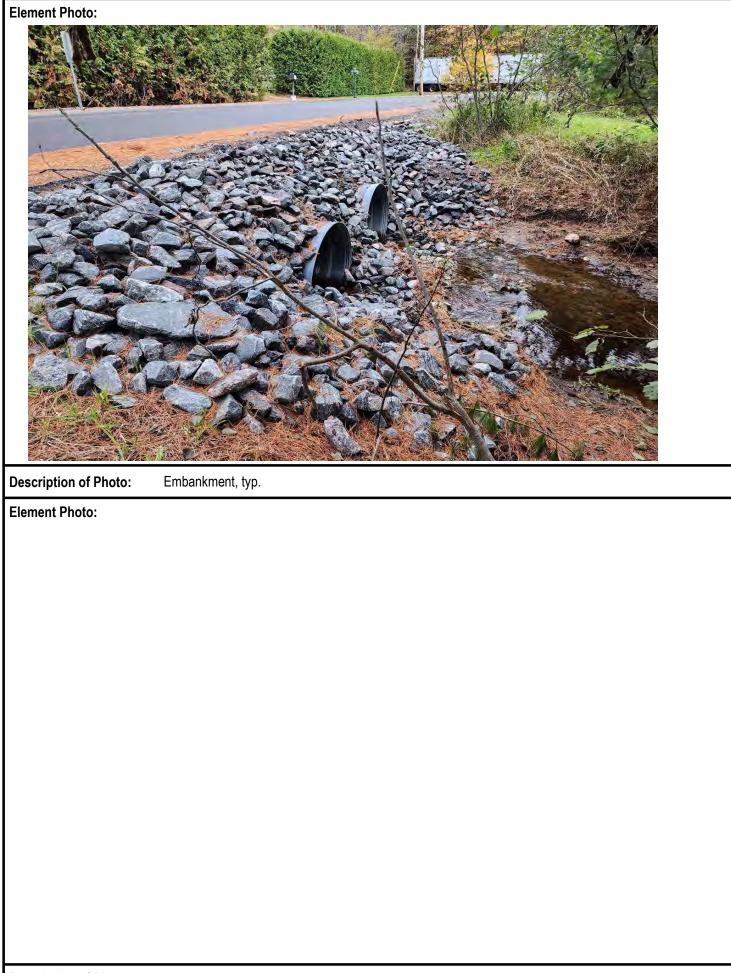
Element Data:														
Element Group:	Embankmen	ts & Stre	Length:											
Element Name:	Streams and	Waterw	Width:											
Location:				Height:										
Material:					Count:		all							
Element Type:					Total Quantity:									
Environment: Benign						Inspected			Yes X No limited					
Protection System	:										Performance			
Condition Data:		Units all	Excellent x		it	Good	Fai	r	Poor*		Deficiencies			
Comments: No c		^												
Recommended W	ork:		Dob	ah:	Replace:		Main	tonanc	o Noods:					
									enance Needs:					
Urgent:	1-	5 Years:	6-1	0 Years:		None: X Urgent:			1 Ye	ear:	2 Year:			
Element Photo:														
										「「「「「「「「」」」				
Description of I	Photo:	Watercourse	9											

Element Photo:



Description of Photo:

Element Data:						
Element Group:		ents & Streams	Length:			
Element Name:	Embankme	nts	Width:			
Location:			Height:			
Material:			Count:	6		
Element Type:			Total Quar	ntity: 6		
Environment:	Benign		Inspected		Yes X No	o limited
Protection System:	:					Performance
	Units	Excellen	t Good	Fair	Poor*	Deficiencies
Condition Data:	each	6				
Comments: No o		Dahahi [Doplace	Maintanan	ce Needs:	
Recommended Wo	лк: 	Rehab:	Replace:	_		
Urgent:	1-5 Years:	6-10 Years:	None: X	Urgent:	1 Year:	2 Year:
Element Photo:						
Description of P	Photo: Embankme	ent, typ.				



Description of Photo:

Element Data:													
Element Group:		Embankmen	ts & Stre	eams		Length:							
Element Name:		Slope Protec	tion			Width:							
Location:						Height:							
Material:		Rock				Count:		6					
Element Type:		Riprap				Total Quant	ity:	6					
Environment:		Benign				nspected			Yes	X	No	limited	
Protection System	1:											Perform	ance
Condition Data:		Units		Excellent	t	Good	F	Fair		Poor*		Deficier	ncies
Comments: No c		each		6									
Recommended W	ork:		Reh		Replace:		_	aintenar	nce Nee	eds:			
Urgent:	1-	-5 Years:	6-1	0 Years:		None: X	Urę	gent:		1 Year	r:	2 Year	:
							<u> </u>						
Element Photo:													
Description of I	Photo:	Slope protect	ction, typ	Э.									

Element Data:							
Element Group:	Approaches		Length:		14.9		
Element Name:	Wearing Surface		Width:		7.0		
Location:			Height:				
Material:	Asphalt		Count:		1		
Element Type:			Total Quant	ity:	104.3		
Environment:	Severe		Inspected		Yes X	No	limited
Protection System:							Performance
Condition Data:	Units	Excellent	Good	Fair	Poor*		Deficiencies
Comments: No observed d	sq.m efects.	104.3					
Recommended Work:		akaki 🗔 Daal		Maintan	nance Needs:		
		ehab: Repl					
Urgent:	1-5 Years: 6	10 Years:	None: X	Urgent:	1 Yea	r:	2 Year:
Element Photo:							
Description of Photo:	Approach wearing	surface - looking r	north				
		-					

Repair and Reha	abilitation Required:		Prio		Estimated Structural	
Element ¹	Repair and Rehabilitation Required ²	6 to 10 Years	1 to 5 Years	Within 1 Year	Urgent	Cost
Structure	Demolition					
Structure	Replacement					
C	R					
Deck	Rehab. =					
Sidewalk/Curb	Rehab. =					
Barrier	Rehab. =					
Joints	Rehab. =					
Beams	Rehab. =					
Abutment	Rehab. =					
Pier	Rehab. =					
Other						
Estimated Reha Total Deck I	bilitated or Replacement Structure Dimensions ³ .ength (m) Overall Str. Width (m)	_		Total St	ructural Cost	\$0.00

1 - Indicate specific costs for structure replacement OR for rehabilitation under the given headings.

 $\ensuremath{2}$ - Give a very brief description of the rehabilitation work required.

3 - Estimated structure dimensions after completion of the proposed work - if it is expected to change.

Associated Work	Comments	Estimated Associated Work Cost
Approaches		Work Oost
Detours		
Traffic Control		
Utilities		
Other		
	Total Associated Work Cost	\$0.00
	T-t-l O-r-t-r-t-r-O-r-t	00.00
	Total Construction Cost	\$0.00

Justification:

The structure was replaced in 2023, and is in excellent condition. No recommended work at this time.

				MTO Site Number:
Inventory Data:				
Structure Name	South Kashe Lak	e Road Culvert		
Main Highway #	11	On X or Under Structure	Service on Structure	Navig. Water Non-Navig. Water Rail X Road Ped. Other
Location Description	0.08km east of Tr	yon Dr	Service under:	Navig. Water X Non-Navig. Water
Owner/Custodian	Township of Grav	enhurst		
MTO Region			Latitude	44.844513 Longitude -79.313739
Regional Engineer			Heritage Designation:	X Not Cons. Cons./Not App. List/Not Desig Desig. Desig./Not List Desig. & List
MTO Area			Hwy Class:	Freeway Arterial Collector Local X
Old County			Posted Speed	40 No. of Lanes 2
Township	Gravenhurst		AADT	50-199 % Truck
Structure Type 1	Round Pipe			
Structure Material 1	HDPE		Traffic Directional E	Bound E-W
Structure Type 2				
Structure Material 2			Inspection Frequen	ncy 2 (years)
Total Deck Length	13.5	(m)	Inspection Year	odd
Overall Str. Width		(m)	Inspection Duration	2 (hrs)
Culvert Length	21.0	(m)		
Total Deck Area	283.5	(sq.m)		
Roadway Width	7.0	(m)	Min. Vertical Cleara	ance (m)
Skew Angle		(Degree)	Detour Distance	None (km)
No. of Spans	1		Fill on Structure	0.6 (m)
Span Lengths	1.5			(m)
For retaining wall:				
Total Wall Length		(m)	Max. Wall Height	(m)
Total Wall Area		(sq.m)	Ave. Wall Height	(m)
			Angle of Backfill	(Degrees)
Historical Data				
Year Built	2023		Year of superstruct	. Constructed
Last Reg. OSIM Inspe			Year of Last Minor	
Last Enh. OSIM Inspe	ection		Year of Last Major	
Work History: (Date/d	lescription)		Current Load Limit	/ / (tonnes)
The structure was rep				

MTO Site Number:

						MTO Sit	e Number:			
Field Inspection Infor	rmation:									
Date of Inspection:	00	ctober 18, 2023	Type of In	spectio	n:	X Reg. OS	SIM	Enh. OSIM		
Inspected By	Da	avid Middlebrook								
Others in Party:										
Enh. Access Equipment:										
Special Access Equipment										
Weather	Cl	ear	Temperatu	ıre				10 °C		
Additional Investigati	ions Require	d:	<u> </u>		None	Priority Normal	Urgent	Estimated Cost		
Material Condition Survey					NULLE	Normai	Orgeni			
Detailed Deck Condition	on Survey.									
Non-destructive Delam		f Asphalt-Covered De	ck:							
Concrete Substructure										
Detailed Coating Cond										
Detailed Timber Invest										
Post-Tensioned Strand										
Underwater Investigation										
Fatigue Investigation										
Seismic Investigation										
Structure Evaluation:										
Monitoring										
Deformations, Settleme	ents and Movem	ents:								
Crack Widths: Grav	venhurst									
RSS Horizontal moven	nents of face:									
RSS Vertical mov Rou	nd Pipe									
RSS Local movements	or deterioration	of face elements:								
RSS Horizontal moven	nents within over	all structure:								
RSS Vertical movemer	nts within overall	structure								
RSS Lateral earth pres	sure at the back	of facing elements								
Investigation Notes:		-				Total Cost		\$0.00		
Overall Structure Not	tes:									
Recommended Work on St	ructure	X None Min	or Rehab.		Major Rehab	. Rep	olace			
Timing of Recommended W	Vork	Urgent	1 to 5 year	S	6 to 10 y	vears				
Overall Comments:		The structure was re	- placed in 2	2023. ai	nd is in exce	llent conditio	n.			
everal commente.				, u						
Date of Next inspection:		2025								
Overall Bridge Co	ondition									
% Poor in Deck	% Poor in Bear	ms % Poor in Subs	tructure	% P	oor in Barrier	Bri		Index (BCI or BCIp)		
0%	0%	0%			0%		BClp 100.00	BCI 100.00		
Overal Bridge Sut	fficiency						100.00	100.00		
Traffic	Economic	Width			Alignment		Bridge Suffici	ency Index (BSI)		
0	2	o i i i i i i i								

Element Data:	:								
Element Group:		Culverts		Length	:	21			
Element Name:		Barrels		Width:		1.	5		
Location:				Height:		1.	5		
Material:		HDPE		Count:		1			
Element Type:		Round Pipe		Total C	Quantity:	98	3.9		
Environment:		Benign		Inspecte	ed		Yes X	No	limited
Protection System	ו:								Performance
Condition Data:		Units	Excellent	Good		Fair	Poor*		Deficiencies
		sq.m	98.9						
Comments: No o	observed de	fects.							
Recommended W	/ork:	Reh	nab: Repl	ace:		Maintenan	ce Needs:		
Urgent:	1-	-5 Years: 6-1	0 Years:	None:	X	Urgent:	1 Year:		2 Year:
Element Photo:	: Graven	hurst							
Description of	Photo:	Culvert barrel, typ.							

Element Photo:



Description of Photo:

Culvert barrel, typ.

Element Photo:

Element Name: Streams and Waterways Height:	Element Data:														
Element Name: Streams and Waterways Width:	Element Group:		Embankments	& Stre	ams		Len	gth:							
Material: Count: Element Type: Total Quantity: all Environment: Benign Inspected Yes X No Protection System: Performance Condition Data: Units Excellent Good Fair Poor* Deficiencies Condition Data: all x Comments: No observed defects. s Recommended Work: Rehab: Replace: Maintenance Needs: 2 Year: Urgent: 1-5 Years: 6-10 Years: None: X Urgent: 1 Year: 2 Year:	Element Name:		Streams and W	aterwa	ays										
Element Type: Inspected Yes X No limited Protection System: Inspected Yes X No limited Performance Condition Data: Units Excellent Good Fair Poor* Deficiencies Condition Data: all x -<	Location:						Hei	ght:							
Environment: Benign Inspected Yes X No<															
Protection System: Performance Condition Data: Units Excellent Good Fair Poor* Deficiencies Condition Data: all x Deficiencies Comments: No observed defects. Rehab: Replace: Maintenance Needs: Urgent: 1-5 Years: 6-10 Years: None: Vurgent: 1 Year: 2 Year:	Element Type:						Tota	al Quant	ity:		all				
Condition Data: Units Excellent Good Fair Poor* Deficiencies all x </td <td>Environment:</td> <td></td> <td>Benign</td> <td></td> <td></td> <td></td> <td>Inspe</td> <td>ected</td> <td></td> <td></td> <td> \</td> <td>Yes</td> <td>Χ</td> <td>No[</td> <td>limited</td>	Environment:		Benign				Inspe	ected			\	Yes	Χ	No[limited
Condition Data: all x output Comments: No observed defects. Recommended Work: Rehab: Replace: Urgent: 1-5 Years: 6-10 Years: None: X Urgent: 1 Year: 2 Year:	Protection System	:									· ·	_			
Comments: No observed defects. Recommended Work: Rehab: Replace: Maintenance Needs: Urgent: 1-5 Years: 6-10 Years: None: X Urgent: 1 Year: 2 Year:	Condition Data:						Goo	bd		Fair	_		Poor*		Deficiencies
Recommended Work: Rehab: Replace: Maintenance Needs: Urgent: 1-5 Years: 6-10 Years: None: X Urgent: 1 Year: 2 Year:	Commonto: NO	hserved de			X										
Urgent: 1-5 Years: 6-10 Years: None: X Urgent: 1 Year: 2 Year:	Comments: NO														
	Recommended W	ork:		Reh	ab: 🗌 Re	eplace:				Mainten	ance	Nee	ds:		
Element Photo: Gravenhurst	Urgent:	1-	5 Years:	6-10) Years:		No	ne: X		Urgent:			1 Year	:	2 Year:
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	Element Photo:	Graven	hurst												
Description of Photo: Watercourse	Description of I	Photo:													

Element Photo:



Description of Photo: Watercourse

Element Photo:

Element Data:																
Element Group:		Embankmen	ts & Stre	ams		Le	ngth:									
Element Name:		Embankmen	ts			W	idth:									
Location:						He	eight:									
Material:							ount:			4						
Element Type:						Тс	tal Quanti	ity:	4	4						
Environment:		Benign				Insp	pected			Ň	Yes X	()	No	lin	nited	
Protection System	:													Pe	rforma	nce
Condition Data:		Units		Exce	ellent	G	bod		Fair		F	°oor*		De	eficienc	ies
		each			4											
Comments: No c	bbserved de	fects.														
Recommended W	ork:		Reh	ab:	Repl	ace:]	ſ	Maintena	ance	Needs	:				
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Element Photo:	1															
								,		State Market						
Description of I	Photo:	Embankmer	nt, typ.													

Element Data:	:															
Element Group:		Embankment	ts & Stre	ams		L	ength:									
Element Name:		Slope Protec	tion				Vidth:									
Location:						ŀ	leight:									
Material:		Rock					Count:			4						
Element Type:		Riprap				-	otal Quan	tity:		4						
Environment:		Benign				In	spected			`	Yes	X	No	lir	nited	
Protection System	1:			-		_				<u> </u>					erformar	
Condition Data:		Units		Exce		(Good		Fair			Poor*		D	eficienci	es
		each		4	ļ											
Comments: No o	observed de	fects.														
Recommended W	/ork:		Reh	ab:	Repl	ace:			Mainten	nance	Nee	ds:				
Urgent:	1-	-5 Years:	6-1	0 Years:			None: X]	Urgent:			1 Yea	r:	2	Year:	
								_								
Element Photo:	: Graven	hurst														
Description of	Photo:	Share protect	tion for													
Description of I	Photo:	Slope protec	aion, typ).												ĺ

Element Data:							
Element Group:		Approaches		Length:		13.5	
Element Name:		Wearing Surface		Width:		7.0	
Location:				Height:			
Material:		Asphalt		Count:		1	
Element Type:				Total Quant	ity:	94.5	
Environment:		Severe		Inspected		Yes X No	limited
Protection System	1:						Performance
Condition Data:		Units	Excellent	Good	Fair	Poor*	Deficiencies
	observed def	sq.m	94.5				
Comments: No o		6013.					
Recommended W	'ork:	Reh	ab: Repla	ace:	Mainten	nance Needs:	
Urgent:	1-	5 Years: 6-1	0 Years:	None: X	Urgent:	1 Year:	2 Year:
Element Photo:	Graven	hurst					
Description of I	Photo:	Approach wearing s	urface, typ.				

Repair and Rehabilita		Prio	Estimated Structural					
Element ¹	Repair and Rehabilitation Required ²	6 to 10 Years	1 to 5 Years	Within 1 Year	Urgent	Cost		
Structure	Demolition							
Structure	Replacement							
OR								
Deck	Rehab. =							
Sidewalk/Curb	Rehab. =							
Barrier	Rehab. =							
Joints	Rehab. =							
Beams	Rehab. =							
Abutment Rou	Rehab. =							
Pier	Rehab. =							
Other								
Estimated Rehabilitate Total Deck Length 1 - Indicate specific costs for structure rep		\$0.00						

1 - Indicate specific costs for structure replacement OR for rehabilitation under the given headings.

 $\ensuremath{\mathbf{2}}$ - Give a very brief description of the rehabilitation work required.

 $\ensuremath{\mathsf{3}}\xspace$ - Estimated structure dimensions after completion of the proposed work - if it is expected to change.

Associated Work	Comments	Estimated Associated Work Cost
Approaches		WOR COSt
Detours		
Traffic Control		
Utilities		
Other		
	\$0.00	
		<u> </u>
	Total Construction Cost	\$0.00

Justification:

Structure was replaced in 2023, and is in excellent condition. No recommended work at this time.

Appendix B: 10-Year Capital Plan

2023 Inspection Cycle: 10 Year Implementation Plan																		
			Current															
		Structure	Load							1 - 5 Years	s				6 - 10 Years			
Project Title and description	OSIM ID	Туре	Limit	Year Built	Major Rehab	Time of Need	BSI	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	Total
Bridges and Culverts																		
Replacement																		
Fire Route A1 Bridge	11	bridge	-	unknown	n/a	6 - 10 Years	41.16								\$ 590,000			\$ 590,000
Rehabilitation				-		-				-				-				
Barkway Road Culvert	201	culvert	-	1960	n/a	1 - 5 Years	17.40				\$ 577,000							\$ 577,000
No Work Recommended				-						-				-				-
Robinson's Bridge	1	bridge	-	1982	2023	n/a	78.15											\$ -
Beau Creek Bridge	4	bridge	-	1976	2023	n/a	75.78											\$ -
Kahshe River Bridge	5	bridge	-	2004	2023	n/a	68.88											\$ -
Pinetree Bridge	6	bridge	-	2010	2024	n/a	76.27											\$ -
Narrows Road Bridge	7	bridge	-	1970	2014	n/a	80.04											\$ -
Hopkins Road Bridge	9	bridge	-	2020	n/a	n/a	92.59											\$ -
Highway 11 Snowmobile Bridge	42-328	bridge	-	2002	2019	n/a	89.53											\$ -
Merkley Road Culvert	202	culvert	-	2018	2018	n/a	84.52											\$ -
Barkway Road Culvert	203	culvert	-	2014	n/a	n/a	97.48											\$ -
Riley Lake Culvert	204	culvert	-	2015	n/a	n/a	98.00											\$ -
Sniders Bay Culvert	C8	culvert	-	2020	n/a	n/a	97.00											\$ -
Seehaver Road Culvert	C10	culvert	-	2014	n/a	n/a	93.48											\$ -
Arthur Schulz Road Culvert	C12	culvert	-	2019	n/a	n/a	97.39											\$ -
South Kashe Lake Rd Culvert	None	culvert	-	2023	n/a	n/a	98.00											\$ -
Laycox Road Culvert	None	culvert	-	2023	n/a	n/a	98.00											\$ -
Total				-		2												\$ 1,167,000