

ADDENDUM 2
Questions for Request for Proposal
RFP 03-2026 BEAVER ROAD EAST AND WEST BRIDGES - ENGINEERING CONSULTING
SERVICES FOR DESIGN PROCESS

- 1. The RFP identifies the "preparation and submission of record and as-built drawings upon project completion" as part of the Engineering Design Services scope (Page 16). Could the Municipality please confirm whether construction administration services are intended to be included within this assignment, and whether the preparation of record/as-built drawings should be included in the proposed fees?**

The project will be completed in two phases:

Phase 1: Engineering design services up to and including the preparation of construction drawings and a Class B cost estimate.

Phase 2: Construction administration services, including the preparation and submission of record/as-built drawings.

Proponents should include pricing for both phases in their submission, with the costs for Phase 1 and Phase 2 provided separately. Please note that there may be a pause between Phase 1 and Phase 2 pending direction from the incoming Council.

- 2. Page 17 of the RFP references permitting requirements. Could the Municipality please clarify whether the Consultant is only expected to address applicable permitting requirements during the design phase, or whether post-design permitting support is also required?**

The Consultant is expected to provide permitting support as required during Phase 2, including any post-design permitting activities necessary to complete the project. These services should be included in the Phase 2 cost proposal.

- 3. Is the consultant to assume structure replacement is MCEA exempt, or is it the responsibility of the consultant to determine the MCEA schedule and needs? Level of effort required in design varies significantly if MCEA exempt or not, please advise.**

The Municipality will rely on the Consultant's professional expertise to determine whether the project triggers the requirements of the Municipal Class Environmental Assessment (MCEA) process and to recommend the appropriate MCEA schedule based on each proposed design.

4. Are there any available Memos or reports available for the existing 10 Tonne Load Postings?

Yes. Information related to the existing 10-tonne load postings is available in the OSIM reports, which are attached.

5. Can the Municipality provide the 2024 OSIM reports?

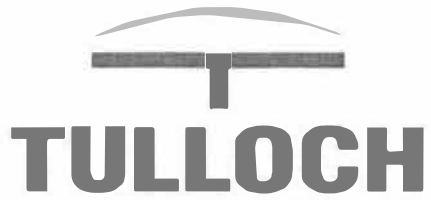
See attached

6. The last point of “PART II – Detailed scope and background information” mentions preparation and submission of as-built drawings upon project completion. Does this mean contract administration is also part of the scope so that the consultant is aware of any changes between the construction drawings and the as-built drawings?

Please refer to the response to Question 1.

7. Does the Municipality have any information regarding excess soil management requirements, soil quality information, or anticipated excess soil handling and disposal considerations for this project?

The Municipality will rely on the Consultant's professional expertise to assess soil quality and identify any excess soil management requirements, including anticipated handling, reuse, transportation, and disposal considerations for the project. The Municipality does not have any specific excess soil management bylaws or requirements beyond applicable provincial legislation and standards. The Consultant will be responsible for ensuring that all excess soil management activities are carried out in accordance with the applicable provincial requirements.



Municipality of Central Manitoulin – 2024 OSIM Inspections



October 2024
TULLOCH Project #: 22-0983

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1. INTRODUCTION

Tulloch Engineering Inc. has been retained by the Municipality of Central Manitoulin to undertake detailed visual inspections of the municipally owned bridges within their jurisdiction. In accordance with Ontario Regulation 104/97 – Standards for Bridges, the structural integrity, safety and condition of every bridge shall be determined through the performance of at least one inspection in every second calendar year under the direction of a professional engineer and in accordance with the Ontario Structure Inspection Manual (OSIM). O. Reg. 472/10, s. 2.

The goal of the structural inspections is to ensure that an acceptable standard is being maintained for each bridge in terms of public safety, comfort, and convenience. The objectives of the inspections are as follows:

- To identify critical maintenance, rehabilitation, and or replacement needs of the bridges;
- To protect and prolong the useful life of the bridges;
- To provide a basis for scheduling and funding of the maintenance, rehabilitation repairs, or replacement of the bridges;

This report contains completed OSIM inspection forms, relevant photographs, suggested repairs, and estimated costs for repairs at each site. The bridges inspected as part of this assignment are shown on the key map provided in Figure 1.0 below.

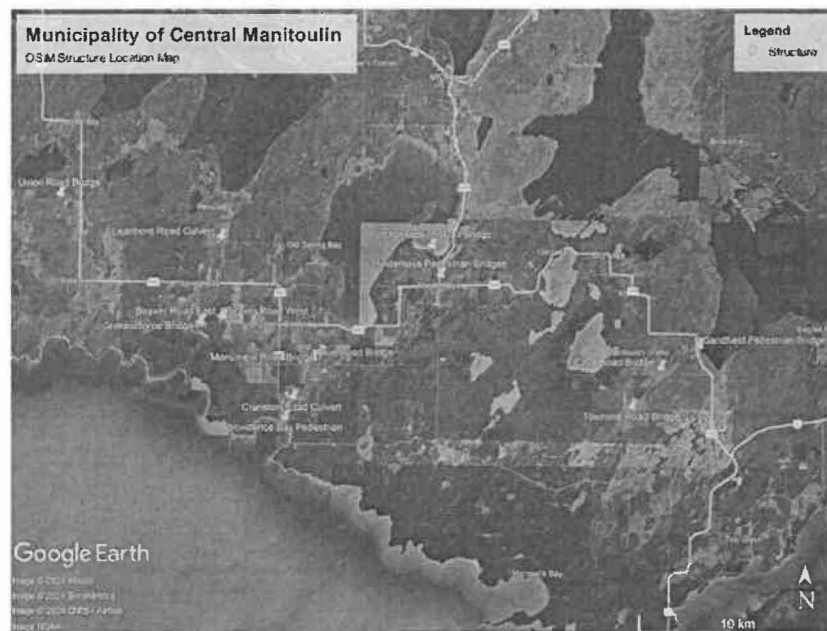


Figure 1: Bridge Locations

1.1 Inspection Procedures

Visual inspections involve review of each primary structural element to the maximum extent possible. The inspections were completed from the road surface, bridge deck and shoreline embankments. Hammer tapping was used to identify delamination of concrete elements. The use of hip waders was utilized to access soffit regions where possible and safe to complete the inspection. The structural elements are identified by primary groupings and sub-groupings of each element. Material defects such as wood rot or concrete spalling were recorded and measured in the field, refer to Appendix A for a full glossary of terms for the material defects. The condition of each element is quantified and assessed with a rating of 'excellent', 'good', 'fair', or 'poor'. The condition ratings are quantified for each structural element as per the OSIM manual.

2. INSPECTION SUMMARIES

The results of the detailed visual inspections are recorded using standard Ontario Structure Inspection Manual (OSIM) forms. The forms provide a report of existing data and conditions at the time of the inspection for each bridge. Results of the previous inspections completed were used as a template for this round of inspections. Updated OSIM forms are located in Appendix B. The reports identify additional inspections required and recommended work to repair deficiencies along with a schedule for such repairs. The following summarizes the results of our inspections.

2.1 Beaver Road East Bridge

Beaver Road East is located approximately 0.8 km east of Grimesthorpe Road on Beaver Road. The structure is a 6.8 m long 6.8 m wide timber stringer bridge. The structure is in overall fair to poor condition with some loss of fill within the cribbing and undermining along the front edges of the cribbing. The structure has an existing load posting of 10 tonnes that should remain in place until wood testing and a renewed load evaluation is completed.

Recommended Maintenance

- Trim vegetation from embankments.
- Clean gravel and debris off bearing and edge of bridge deck

Recommended Repairs

1-5 years

- Clean edges of cribs from algae, replace lost fill and restore undermining.
- Replace railing system as the current post supports are non-standard.
- Seal cracking in surface treatment.
- Replace failed/decayed ballast wall lagging.

2.2 Beaver Road West Bridge

Beaver Road West Bridge is located 0.5 km east of Grimesthorpe Road on Beaver Road. The structure is a single span 5.45 m long 6.8 m wide timber stringer bridge with. Overall, the structure

is in fair to poor condition. The structure has an existing load posting of 10 tonnes that should remain in place until wood testing and a renewed load evaluation is completed.

Recommended Maintenance

- Clean debris and trim vegetation from bearing seats.

Recommended Repairs

1-5 years

- Replace lost fill and restore undermining.
- Replace railing system as the current post supports are non-standard.
- Route and seal cracking in wearing surface.
- Replace failed/decayed ballast wall lagging.

2.3 Blue Road Bridge

Blue Road Bridge is located approximately 400 m west of Monument Road on Blue Road. The structure is a single span 15.25 m long 6.2 m wide steel girder bridge, constructed in 2005. Overall, the structure is in good condition.

Recommended Maintenance

1 year

- Clear debris from abutments, bearing seats and top of wingwall seats.
- Replace missing hazard sign.

Recommended Repairs

1 year

- Replace decayed guiderail posts and spacer blocks

1-5 Years

- Correct rotated approach guiderail posts
- Patch potholes in approaches

2.4 Case Road Bridge

Case Road Bridge is located approximately 550 m west of Trails End Road on Case Road. The structure is a double span 12.2 m long 6.9 m wide steel girder bridge. The structure is in overall good condition.

Recommended Maintenance

1 year

- Remove debris from bearings
- Remove vegetation growth around approach barriers and embankments.
- Replace missing delineator sign on guiderail and hazard signs at corners of bridge.

- Remove excess gravel from curb and edges of deck.

Recommended Repairs

- None

2.5 Cranston Road Culvert

Cranston Road Culvert is located 300 m east from River Road on Cranston Road. The structure is a steel arch culvert that is 21.5 m long and 5.4 m wide. The culvert is in overall fair condition. The culvert has cracking along a joint at the bolt line.

Recommended Maintenance

1 year

- Remove vegetation around inlet

1-5 years

- None

Recommended Repairs

1 year

- Weld rebar to prevent further cracking at bolts
- Install guiderail delineators
- Replace missing cable clips and decayed or broken posts and tighten cables

1-5 years

- Place rock protection on embankments to prevent scour.

2.6 McAllister Bridge (Grimesthorpe Bridge)

McAllister Bridge is located 300 m south of The Beaver Road on Grimethorpe Road. The structure is a double span 20.9 m long 8.4 m wide concrete arch culvert. The structure is in overall excellent to good condition.

Recommended Maintenance

1 year

- Remove gravel buildup and vegetation under guiderail.
- Remove debris from guiderail posts.
- Seal cracking in bridge wearing surface.

Recommended Repairs

- None

2.7 Ketchankookem Trail Bridge

Ketchankookem Trail Bridge is located 500 m west of Old Highway 551 on Ketchankookem Trail Road. The structure is a rectangular voided slab with a length of 10.9 m and a width of 10 m. The structure is in overall excellent to good condition.

Recommended Maintenance

1 year

- Clean curbs and barrier joints of sand and debris
- Route and seal transverse cracks at approaches

Recommended Repairs

1 year

- Route and seal cracks in approach sidewalk
- Remove vegetation around approach guiderail

2.8 Learmont Road Culvert

Learmont Road Culvert is located 550m east of Perivale Road on Learmont Road. The structure is an ellipse steel culvert with a length of 18.5 m and a span of 3.0 m. The structure is in overall good condition.

Recommended Maintenance

1 year

- Monitor gabion baskets to ensure that flow at culvert is not adversely obstructed.
- Patch edge of surface treatment on approaches.

Recommended Repairs

1 year

- Fill and pack erosion channel at northeast quadrant

2.9 Monument Road Bridge

Monument Road Bridge is located 200 m north of Blue Road on Monument Road. The structure is a solid slab concrete bridge with a length of 9.2 m and a width of 9.2 m. The structure is in overall good condition.

Recommended Maintenance

1 year

- Remove vegetation growth adjacent to wingwalls
- Clear gravel and debris from approaches and bridge deck
- Route and seal cracking in approach wearing surfaces

Recommended Repairs

1-5 years

- Install rock protection at bases of embankment slopes

2.10 Townline Road Bridge

The Townline Road Bridge replacement was underway during the time of inspection and therefore could not be inspected as a part of this inspection cycle.

2.11 Union Road Bridge

Union Road Bridge is located on Union Road 1.1 km west of Highway 542 and was replaced in 2019. The structure is a precast Concrete Arch Culvert with a length of 9.9m and a width of 9.3m. The structure is in overall excellent condition.

Recommended Maintenance

1 year

- Install hazard markers on the ends of guiderails
- Clean gravel and debris from sidewalk and guiderail baseplates

2.12 Providence Bay Pedestrian Bridge

Providence Bay Pedestrian Bridge is located on the downtown Providence Bay boardwalk. The structure is a cambered steel bridge with a length of 30.0 m and a width of 2.03 m. The structure is in overall fair to good condition.

Recommended Maintenance

1 year

- Refasten nails in the deck
- Monitor bearings for movement
- Replace broken pickets in railing system
- Clean and touch up paint on handrail

Recommended Repairs

1 Year

- Shim or grout below bridge bearing plates
- Install support for approach header beam over sonotube piers at south end

2.13 Sandfield Pedestrian Bridge

Sandfield Pedestrian Bridge is in Sandfield, Ontario. The structure is a truss bridge with a length of 11.85 m and a width of 2.0 m. The structure is in overall fair to good condition.

Recommended Maintenance

1 year

- Clean bearings of debris buildup
- Repair settlement at south approach to eliminate tripping hazard.

Recommended Repairs

1-5 years

- Restore lost bearing material and stabilize material erosion at front edges of abutments

2.14 Mindemoya Welcome Center Bridge

The Welcome Center Bridge is a pedestrian bridge located at the Mindemoya Welcome Center. The structure is a steel girder bridge that spans 7.3m and has a width of 3.75m. The structure was not engineered and should be reviewed by a professional engineer to determine the structural capacity/load limit for the bridge.

Recommended Maintenance

1 year

- Remove organics from bridge deck yearly
- Museum stairs and railing require review and repairs

Recommended Repairs

1 year

- The furthest platform of the bridge and stairs are leaning. The stairs and landing framing should be replaced and framed with exterior supports.

1-5 years

- Restore bearings at info center foundation

2.15 Mindemoya Pioneer Museum Bridge

The Pioneer Museum Pedestrian Bridge is a Steel I girder bridge with a length of 7.5m and a width of 3.0m. The structure is in overall fair to good condition.

Recommended Repairs

1-5 years

- Shingles require replacement
- Repair broken stud and rotting plywood in enclosure
- Repair elevation difference in approaches

3. IMPROVEMENT COSTS

The tables in Appendix C summarize the estimated cost of the repair and rehabilitation required for the deficiencies identified through the inspection process. Below is a summary of the required repair costs.

Priority Rank	Bridge No. & Description	Bridge Type/Description	Year Built	Comments / Repair & Maintenance Recommendations	Urgent (Within 1 Year)	1-5 Years	5-10 Years	Multi-Phase
1	Beaver Road East	Timber Stringers with Timber Deck	Unknown	Replace guardrail system, repair undermining/loss of fill in ditches, clean ditches off of bearings, trim vegetation from embankments and seal cracking in surface treatment.	\$ -	\$ 50,500	-	-
2	Beaver Road West	Timber Stringers with Timber Deck	Unknown	Replace guardrail post system, repair undermining/loss of fill in ditches, clean ditches off of bearings, trim vegetation from embankments and seal cracking in surface treatment.	\$ -	\$ 50,500	-	-
3	Cranston Road Culvert	Arch Culvert	2010	Place rock protection to prevent further scour, weed repair to prevent further cracking at joint cracks, replace broken guardrail posts and broken cables, install guardrail delineators, cutback embankment vegetation around embankments.	\$ 11,000	\$ 25,000	-	\$ 500
4	Leamont Culvert	Edge Culvert	Unknown	Repair minor washout and erosion at the horizontal embankment and paving shoulder breakdown at each lane edge.	\$ 500	-	-	-
5	Cake Road Bridge	Steel Girders with Timber Deck	Unknown	Replace missing delineator signs, remove overgrown gravel from curbs, clean off bearing, fill potholes in east approach and remove vegetation round embankments.	\$ 500	-	-	-
6	Monument Road Bridge	Gold Slab	2006	Seal cracking in bridge deck wearing surface and cut back encroaching vegetation around the embankments.	\$ 1,500	-	-	-
7	Blue Road Bridge	Steel Girders with Concrete Deck	2005	Replace decayed posts and repair docks, monitor scour of downstream banks, patch potholes in approaches, clean ditches from bearings, correct rotting guardrail posts, remove vegetation around embankments.	\$ 1,500	\$ 6,000	-	-
8	McAlister Bridge	Concrete Arch Culvert	2012	Remove gravel washout built up under the barriers, seal bridge deck and approach cracks, replace missing edge delineator, and trim vegetation around embankments.	\$ 1,500	-	-	\$ 500
9	Ketchikanokum Trail Bridge	Rectangular Voids Slab	2012	Reinforce and seal cracks in approach sidewalk, clean curbs and barrier joints of sand and debris, raise and seal cracks in approach wearing surfaces and remove vegetation around abutments.	\$ 2,000	-	-	-
10	Union Road Bridge	Concrete Arch Culvert	2012	Install flashing/buffers on the ends of the approach to prevent gravel from spreading and guardrail delineators.	-	\$ 500	-	-

Pedestrian Bridges

1	Providence Bay Pedestrian Bridge	Cambered Steel Truss	Unknown	Replace broken railing brackets, touch up paint, pound down popped up fasteners, and stem or grout bearings. Add support to side of approach to support approach spans at south.	\$ 500.00	-	-	-
2	Sarnia Pedestrian Bridge	Cambered Steel Truss	Unknown	Clean bearings of debris and replace lost bearing material and replace subments.	-	\$ 10,000.00	-	-
3	Manitoulin Wildlife Center Bridge	Timber Stringer	Unknown	Structure has no engineering and should be reviewed to confirm load limits and beam adequacy. Organics should be removed from bridge deck, replace bearings at rim, repair foundation, platform and museum stairs. Repair ground slope and rocks.	-	\$ 1,500.00	-	-
4	Manitoulin Pioneer Museum Bridge	Steel Stringer	Unknown	Asphalt on bridge requires replacement, repair broken steel in approach and replace rotting plywood reinforcement. Differences in approaches to eliminate tipping hazard.	-	\$ 4,500.00	-	-

4. CONCLUSIONS AND RECOMMENDATIONS

Upon completion of the biennial structure inspections, a number of recommendations have been identified for both short and long-term planning with the municipal structures.

Critical items have been noted above and should be scheduled to be undertaken by the Town as soon as possible/practical.

We trust that the contents of this report sufficiently outline the requirements for bridge maintenance, repair, and replacement. Should you have any questions or comments on the contents of this report, please do not hesitate to contact our office.

Inventory Data:

Structure Name	Beaver Road West #2		
Main Highway #	N/A	On ☒ or Under ☐ Structure	Service on structure: ☐ Navig. Water ☐ Non-Navig. Water ☐ Rail ☒ Road ☐ Ped. ☐ Other
Location description	Beaver Road, 800m east of Grimesthorpe Rd.	Service under	☐ Navig. Water ☒ Non-Navig. Water ☐ Rail ☐ Road ☐ Ped. ☐ Other
Owner/Custodian	Municipality of Central Manitoulin	LHRS:	LHRS offset:
MTO Region	50 - Northern	Latitude:	45.713548 Longitude: -82.310819
Regional Engineer		Heritage Designation:	☒ Not Cons. ☐ Cons./not App. ☐ List/not Desig. ☐ Desig./not List ☐ Desig. & List
MTO Area		Hwy Class:	Freeway ☐ Arterial ☐ Collector ☐ Local ☒
Old County	46 - Manitoulin	Posted Speed	N/A No. of Lanes 2
Township	657 - Campbell	AADT	% Truck 5
Structure Type 1	Timber Girders	Travel Stream	
Structure Material 1		Traffic Directional Bound	E to W
Structure Type 2		Inspection Route Sequence	
Structure Material 2		Inspection Frequency	2 (years)
Total Deck Length	7.35 (m)	Inspection Year	2024
Overall Str. Width	6.8 (m)	Inspection Duration	(hrs)
Culvert length	(m)	Interchange Number	
Total Deck Area	50 (sq.m)	Interchange Structure Number	
Roadway Width	6.3 (m)	Min. Vertical Clearance	(m)
Skew Angle	0 (Degree)	Detour Distance	8.1 (km)
No. of Spans	1	Fill on Structure	0.15 (m)
Span Lengths	5.45 (m)		
<u>For retaining wall:</u>			
Total Wall Length	(m)	Max. Wall Height	(m)
Total Wall Area	(sq.m)	Ave. Wall Height	(m)
		Angle of Backfill	(Degree)

Historical Data:

Year Built	N/A	Year of superstruct. constructed	
Last Reg OSIM Inspection	2022	Year of Last Minor Rehab.	
Last Enh. OSIM Inspection		Year of Last Major Rehab.	2012
		Current Load Limit	/ / 10 (tonnes)

Work History: (Date/description)

In 2012 the surface treatment was redone.

Investigation History: (Date/description)

Structural Evaluation completed in 2017.

Scheduled Improvements:Regional Priority Number Programmed Work Year

Nature of Program Work:

Appraisal Indices:**Comments**

Fatigue

Seismic

Scour

Flood

Barrier

Curb

Load Capacity

Field Inspection Information:			
Date of Inspection:	2024-06-27	Type of Inspection:	☒ Reg. OSIM ☐ Enh. OSIM
Inspected By:	Matt Kirby, P. Eng		
Others in Party:			
Enh. Access Equipment:	Hammer, measuring tape, hip waders		
Special Access Equipment:			
Weather:	Sun/Clouds	Temperature:	15°C

Additional Investigations Required:		Priority		
		None	Normal	Urgent
Material Condition Survey		☒		
Detailed Deck Condition Survey:		☒		
Non-destructive Delamination Survey of Asphalt-Covered Deck:		☒		
Concrete Substructure Condition Survey:		☒		
Detailed Coating Condition Survey:		☒		
Detailed Timber Investigation			☒	
Post-Tensioned Strand Investigation		☒		
Underwater Investigation:		☒		
Fatigue Investigation:		☒		
Seismic Investigation:		☒		
Structure Evaluation:			☒	
Monitoring		☒		
Deformations, Settlements and Movements:		☒		
Crack Widths:		☒		
RSS Horizontal movements of face:		☒		
RSS Vertical movements of overall structure:		☒		
RSS Local movements or deterioration of facing elements:		☒		
RSS Horizontal movements within overall structure:		☒		
RSS Vertical movements within overall structure:		☒		
RSS Lateral earth pressure at the back of facing elements:		☒		
Investigation Notes: Load evaluation with timber species confirmation.				

Overall Structure Notes:	
Recommended Work on Structure:	☐ None ☐ Minor Rehab. ☐ Major Rehab. ☒ Replace
Timing of Recommended Work:	☒ 1 to 5 years ☐ 6 to 10 years
Overall Comments:	Structure is in overall fair condition with poor railing and decayed ballast wall and undermined toe at cribbing with moderate decay. Replacement should be considered.
Date of Next Inspection:	2026

Suspected Performance Deficiencies

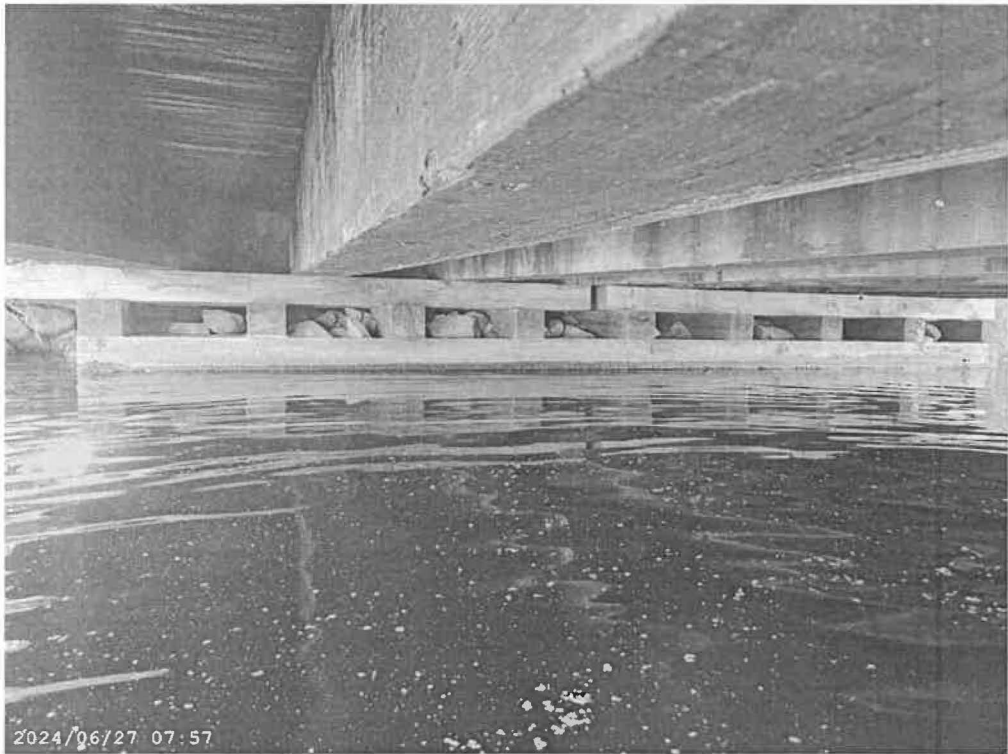
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|---|---|--|
| 01 Load carrying capacity
02 Excessive deformations (deflections & rotations)
03 Continuing settlement
04 Continuing movements
05 Seized bearings | 06 Bearing not uniformly loaded/unstable
07 Jammed expansion joint
08 Pedestrian/vehicular hazard
09 Rough riding surface
10 Surface ponding
11 Deck/Wall drainage | 12 Slippery surfaces
13 Flooding/channel blockage
14 Undermining of foundation
15 Unstable embankments
16 Other performance deficiencies |
|---|---|--|

Maintenance Needs

- | | | |
|---|--|--|
| 01 N/A
02 Bridge Cleaning
03 Railing System Repair
04 N/A
05 Bridge Deck Joint Repair
06 N/A | 07 Structural Steel Repair
08 Concrete Repair
09 Timber Repair
10 Works for Modular bridges
11 Animal/Pest Control
12 Bridge Surface Repair | 13 Erosion Control at Bridges
14 Concrete Sealing
15 N/A
16 Works for Drainage System
17 Sealing (Loose Concrete or ACR Steel)
18 Other Maintenance |
|---|--|--|

Element Data

Element Group:	Abutments		Length:	1.9 (m)		
Element Name:	Abutment Walls		Width:	6.75 (m)		
Location:	East and West of Bridge		Height:	1.4 (m)		
Material:	Wood and rock fill		Count:	2		
Element Type:	Timber Cribbing with fill		Total Quantity:	18.9 (sq. m)		
Environment:	Benign ☒ Moderate ☐ Severe		Inspected:	Yes ☐ No ☐ Limited ☒		
Protection System:						Perform. Deficiencies
Condition Data:	Units	Exc.	Good	Fair	Poor*	
	m ² m / each / % / all			14.2	4.7	00. None
Comments: Moderate localized decay, wide splits at vertical dowels between cribbing courses. Undermining at front footings with 1 foot deep that goes along the full width of the abutment. Northwest ballast wingwall is decayed. Shims have been used to rotate center beam in, causing a gap at the bearing. Northeast ballast wall is soft causing fill material to spill onto bearing seats.						
Recommended Work:			Maintenance Needs:			
☐ Rehab ☒ Replace			02. Bridge Cleaning			
☒ 1-5 years ☐ 6-10 years			☐ Urgent ☒ 1 year ☐ 2 year			
Timber cribbing to be replaced and undermining repaired.			Clean debris from and trim vegetation near bearing seats.			



East abutment general arrangement

Element Data

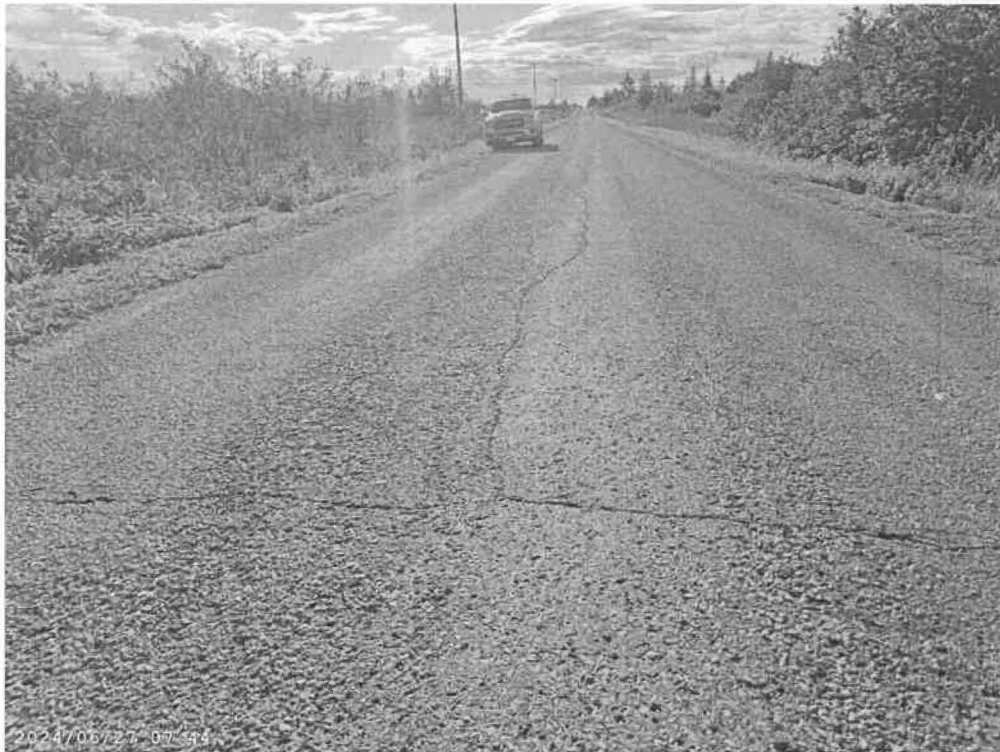
Element Group:	Accessories	Length:				
Element Name:	Signs	Width:				
Location:	East and West	Height:				
Material:	Steel	Count:	5			
Element Type:		Total Quantity:	5 (each)			
Environment:	Benign / Moderate / Severe	Inspected:	Yes ☒ No ☐ Limited ☐			
Protection System:						Perform. Deficiencies
Condition Data:	Units m ² / m (each) % / all	Exc.	Good	Fair	Poor*	
			5			00. None
Comments: Single load posting installed on west approach (east side is governed by adjacent bridge). 4 hazard signs are present.						
Recommended Work:			Maintenance Needs:			
☐ Rehab ☐ Replace ☐ 1-5 years ☐ 6-10 years			01. N/A ☐ Urgent ☐ 1 year ☐ 2 year			



Looking West across structure

Element Data

Element Group:	Approaches	Length:	10.0 (m)			
Element Name:	Wearing Surface	Width:	6.3 (m)			
Location:	East and West of bridge	Height:				
Material:	Surface Treatment	Count:	2			
Element Type:		Total Quantity:	126.0 (sq. m)			
Environment:	Benign / Moderate / Severe	Inspected:	Yes ☒ No ☐ Limited ☐			
Protection System:						Perform. Deficiencies
Condition Data:	Units	Exc.	Good	Fair	Poor*	
	m ² / m / each / % / all		123.5	1.5	1	00. None
Comments: There are medium transverse cracks near the deck as well as medium centerline cracking in both approaches.						
Recommended Work:			Maintenance Needs:			
☐ Rehab ☐ Replace ☐ 1-5 years ☐ 6-10 years			18. Other ☐ Urgent ☒ 1 year ☐ 2 year			
			Seal approach cracks			



Transverse and longitudinal crack in East approach

Element Data

Element Group:	Barriers	Length:	1.05 (m)			
Element Name:	Posts	Width:	0.19 (m)			
Location:		Height:	0.19 (m)			
Material:	Wood	Count:	8			
Element Type:	Timber Posts	Total Quantity:	8 (each)			
Environment:	Benign / Moderate / Severe	Inspected:	Yes ☐ No ☐ Limited ☐			
Protection System:	Pressure Treatment					Perform. Deficiencies
Condition Data:	Units m ² / m (each) % / all	Exc.	Good	Fair	Poor*	
					8	08.
Comments: Posts are rolling and have been impacted. Posts have a spacing of 2.3-2.5m and are supported off a 3-ply 2x4 outrigger.						
Recommended Work: ☐ Rehab ☒ Replace ☒ 1-5 years ☐ 6-10 years Replace railing system.			Maintenance Needs: 01. N/A ☐ Urgent ☐ 1 year ☐ 2 year			



Typical railing posts and supports

Element Data

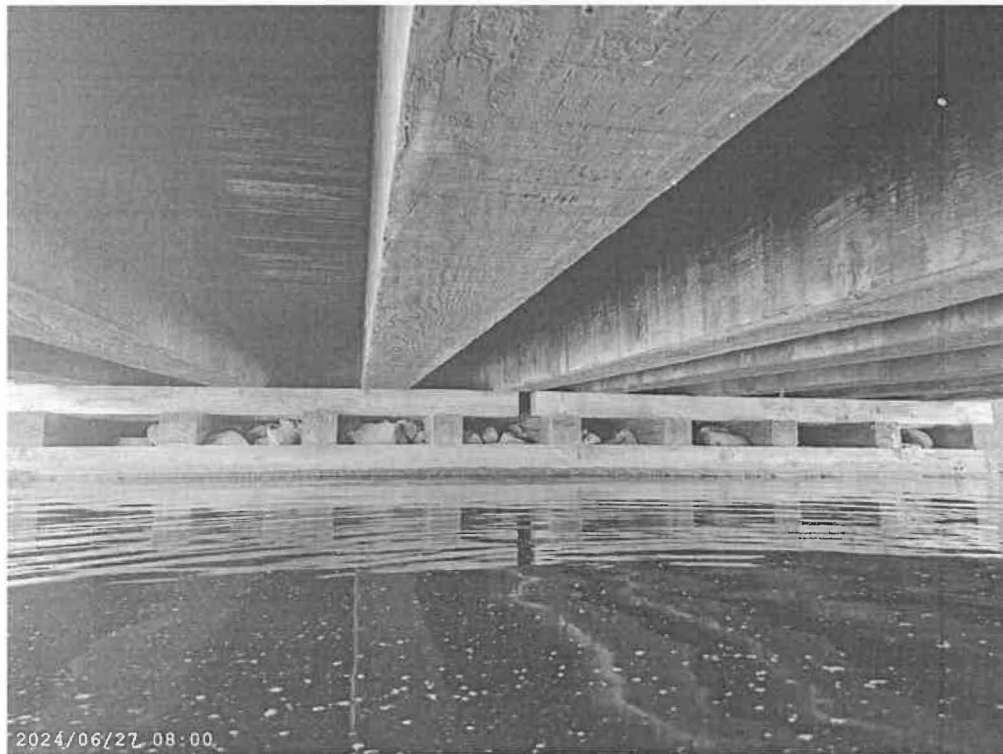
Element Group:	Barriers	Length:	8.0 (m)			
Element Name:	Railing Systems	Width:				
Location:	North and South sides of bridge	Height:	0.3 (m)			
Material:	Steel	Count:	2			
Elcment Type:	Flex Beam	Total Quantity:	16.0 (m)			
Environment:	Benign / Moderate / Severe		Inspected:	Yes ☒ No ☐ Limited ☐		
Protection System:						Perform. Deficiencies
Condition Data:	Units	Exc.	Good	Fair	Poor*	
	m ² (m) each / % / all				16	00. None
Comments: Steel railings in general good condition, however govern by non-standard support posts.						
Recommended Work:		☐ Rehab ☒ Replace ☒ 1-5 years ☐ 6-10 years		Maintenance Needs: 01. N/A ☐ Urgent ☐ 1 year ☐ 2 year		
Upgrade railing system.						



Typical curb and railing system

Element Data

Element Group:	Beams/MLE	Length:	7.35 (m)			
Element Name:	Stringers	Width:	0.25 (m)			
Location:		Height:	0.3 (m)			
Material:	Wood	Count:	11			
Element Type:	Sawn Timber	Total Quantity:	64.7 (sq. m)			
Environment:	Benign / Moderate / Severe		Inspected:			Yes ☐ No ☐ Limited ☒
Protection System:	Creosote					Perform. Deficiencies
Condition Data:	Units	Exc.	Good	Fair	Poor*	
	m ² m / each / % / all		41.18	17.64	6.0	00. None
Comments: the 2nd stringer from north has a check that's 2.5" deep and 90" long from east abutment, the 5th stringer from north has 0.25" check that's 0.5" deep and full span, the 6th stringer from north has 0.25" check that's 1" deep and 7' long from east abutment, and the 7th stringer from north has 6mm check that's 1" deep and full length of the stringer. Active wet areas and water staining.						
Recommended Work:			Maintenance Needs:			
☐ Rehab ☐ Replace ☐ 1-5 years ☐ 6-10 years			01. N/A ☐ Urgent ☐ 1 year ☐ 2 year			



Stringer and soffit general arrangement

Element Data

Element Group:	Decks	Length:	7.35 (m)			
Element Name:	Deck Top	Width:	6.75 (m)			
Location:		Height:	0.1 (m)			
Material:	Wood	Count:	0			
Element Type:	Laminated Deck	Total Quantity:	49.6 (sq. m)			
Environment:	Benign <u>Moderate</u> Severe	Inspected:	Yes ☐ No ☐ Limited ☒			
Protection System:						Perform. Deficiencies
Condition Data:	Units	Exc.	Good	Fair	Poor*	
	(m ²) m / each / % / all			39.7	9.9	01.
Comments: Deck was medium-soft in areas where scupper drains were dug out. Algae growing along edges of decking.						
Recommended Work:			Maintenance Needs:			
☐ Rehab ☐ Replace ☐ 1-5 years ☐ 6-10 years			01. N/A ☐ Urgent ☐ 1 year ☐ 2 year			

Element Data

Element Group:	Decks	Length:	7.35 (m)			
Element Name:	Wearing Surface	Width:	6.15 (m)			
Location:		Height:				
Material:	Gravel	Count:	1			
Element Type:	Surface Treatment	Total Quantity:	45.2 (sq. m)			
Environment:	Benign / Moderate / Severe	Inspected:	Yes ☐ No ☐ Limited ☐			
Protection System:						Perform. Deficiencies
Condition Data:	Units	Exc.	Good	Fair	Poor*	
	m ² / m / each / % / all		43.2	3.8		00. None
Comments: Localized moderate raveling and light rutting throughout. 6m long medium-wide crack in centerline of road. There are small potholes in the wheel paths of the South lane. Light ruts in wheel paths.						
Recommended Work:			Maintenance Needs:			
☐ Rehab ☐ Replace ☐ 1-5 years ☐ 6-10 years			01. N/A ☐ Urgent ☐ 1 year ☐ 2 year			



Wearing surface with light raveling, wear and rutting in wheel paths

Element Data

Element Group:	Sidewalks/Curbs	Length:	7.3 (m)			
Element Name:	Curbs	Width:	0.3 (m)			
Location:	North and South of bridge	Height:	0.15 (m)			
Material:	Wood	Count:	2			
Element Type:	Timber	Total Quantity:	8.8 (sq. m)			
Environment:	Benign / Moderate / <u>Severe</u>	Inspected:	Yes ☐ No ☐ Limited ☒			
Protection System:						Perform. Deficiencies
Condition Data:	Units	Exc.	Good	Fair	Poor*	
<u>m²</u> m / each / % / all				8.8		00. None
Comments: Curb is constantly wet due to partial coverage.						
Recommended Work:			Maintenance Needs:			
☐ Rehab ☐ Replace ☐ 1-5 years ☐ 6-10 years			02. Bridge Cleaning ☐ Urgent ☒ 1 year ☐ 2 year			
			Remove debris from drainage.			



Deck drain to original scupper

Element Data

Element Group:	Decks	Length:	1.0 (m)			
Element Name:	Soffit	Width:	6.30 (m)			
Location:	Ends	Height:	-			
Material:	Wood	Count:	2			
Element Type:		Total Quantity:	12.6 (sq. m)			
Environment:	Benign / Moderate / Severe		Inspected:	Yes ☒ No ☐ Limited ☐		
Protection System:						Perform. Deficiencies
Condition Data:	Units	Exc.	Good	Fair	Poor*	
	m ² m / each / % / all			12.6		00. None
Comments: Active wet areas						
Recommended Work:			Maintenance Needs:			
☐ Rehab ☐ Replace ☐ 1-5 years ☐ 6-10 years			01. N/A ☐ Urgent ☐ 1 year ☐ 2 year			

Element Data

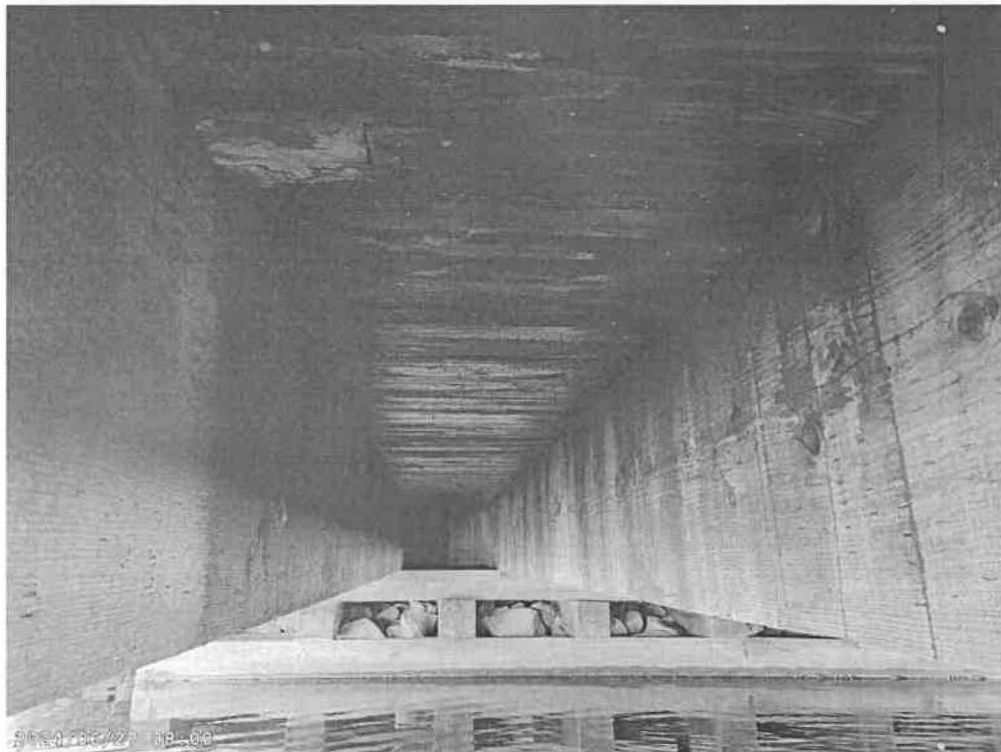
Element Group:	Decks	Length:	3.35 (m)			
Element Name:	Soffit	Width:	1.0 (m)			
Location:	Exterior	Height:				
Material:	Wood	Count:	2			
Element Type:		Total Quantity:	6.7 (sq. m)			
Environment:	Benign / Moderate / Severe		Inspected:	Yes ☒ No ☐ Limited ☐		
Protection System:						Perform. Deficiencies
Condition Data:	Units	Exc.	Good	Fair	Poor*	
	(m ²) m / each / % / all			6.7		00. None
Comments: Active wet areas throughout.						
Recommended Work:			Maintenance Needs:			
☐ Rehab ☐ Replace ☐ 1-5 years ☐ 6-10 years			01. N/A ☐ Urgent ☐ 1 year ☐ 2 year			



North exterior soffit

Element Data

Element Group:	Decks	Length:	5.35 (m)			
Element Name:	Soffit	Width:	4.80 (m)			
Location:	Interior	Height:				
Material:	Wood	Count:	1			
Element Type:		Total Quantity:	25.68 (sq. m)			
Environment:	Benign <u>Moderate</u> Severe	Inspected:	Yes ☐ No ☐ Limited ☐			
Protection System:						Perform. Deficiencies
Condition Data:	Units	Exc.	Good	Fair	Poor*	
	(m ²) m / each / % / all			25.68		00. None
Comments: Active wet areas throughout.						
Recommended Work:			Maintenance Needs:			
☐ Rehab ☐ Replace ☐ 1-5 years ☐ 6-10 years			01. N/A ☐ Urgent ☐ 1 year ☐ 2 year			



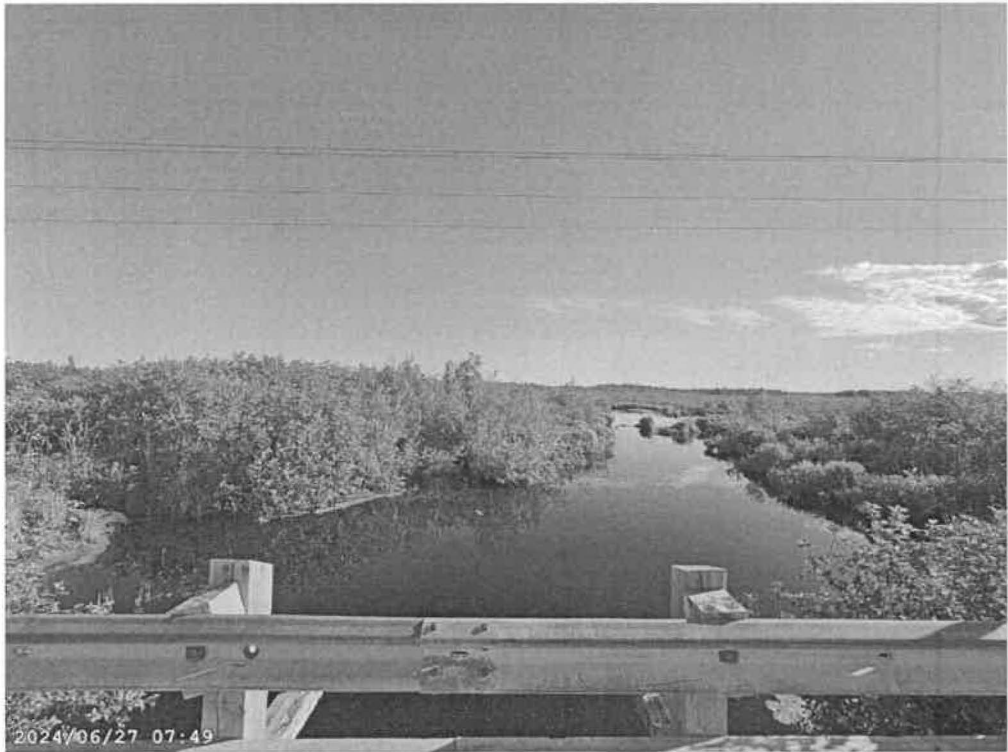
Interior soffit

Element Data

Element Group:	Embankments and Streams	Length:				
Element Name:	Embankments	Width:				
Location:			Height:			
Material:			Count:	4		
Element Type:			Total Quantity:	4 (each)		
Environment:	Benign <u>Moderate</u> Severe		Inspected:	Yes ☐ No ☐ Limited ☐		
Protection System:						Perform. Deficiencies
Condition Data:	Units	Exc.	Good	Fair	Poor*	
	m ² / m <u>each</u> % / all		4.0			00. None
Comments: Embankments in overall good condition with no signs of erosion.						
Recommended Work:			Maintenance Needs:			
☐ Rehab ☐ Replace ☐ 1-5 years ☐ 6-10 years			01. N/A ☐ Urgent ☐ 1 year ☐ 2 year			

Element Data

Element Group:	Embankments and Streams		Length:			
Element Name:	Streams and Waterways		Width:			
Location:			Height:			
Material:			Count:	1		
Element Type:			Total Quantity:	1 (all)		
Environment:	Benign / Moderate / Severe		Inspected:	Yes ☐ No ☐ Limited ☐		
Protection System:						Perform. Deficiencies
Condition Data:	Units	Exc.	Good	Fair	Poor*	
	m² / m / each / % (all)		1.0			00. None
Comments: No evidence of scour and waterway is generally unobstructed.						
Recommended Work:			Maintenance Needs:			
☐ Rehab ☐ Replace			01. N/A			
☐ 1-5 years ☐ 6-10 years			☐ Urgent ☐ 1 year ☐ 2 year			



Upstream

Municipal Structure Inspection Form
MTO Site Number:

Repair and Rehabilitation Required:		Priority				Estimated Construction Cost
Element	Repair and Rehabilitation Required	6 to 10 years	1 to 5 years	Within 1 year	Urgent	
Posts	Replace guiderail		X			\$20,000
Abutments	Repair undermining/loss of fill in cribs		X			\$30,000
Abutments	Clean debris and trim vegetation from bearing		X			Maintenance
	seats					
Approaches	Route and seal cracking			X		\$500
Total Cost						\$50,500

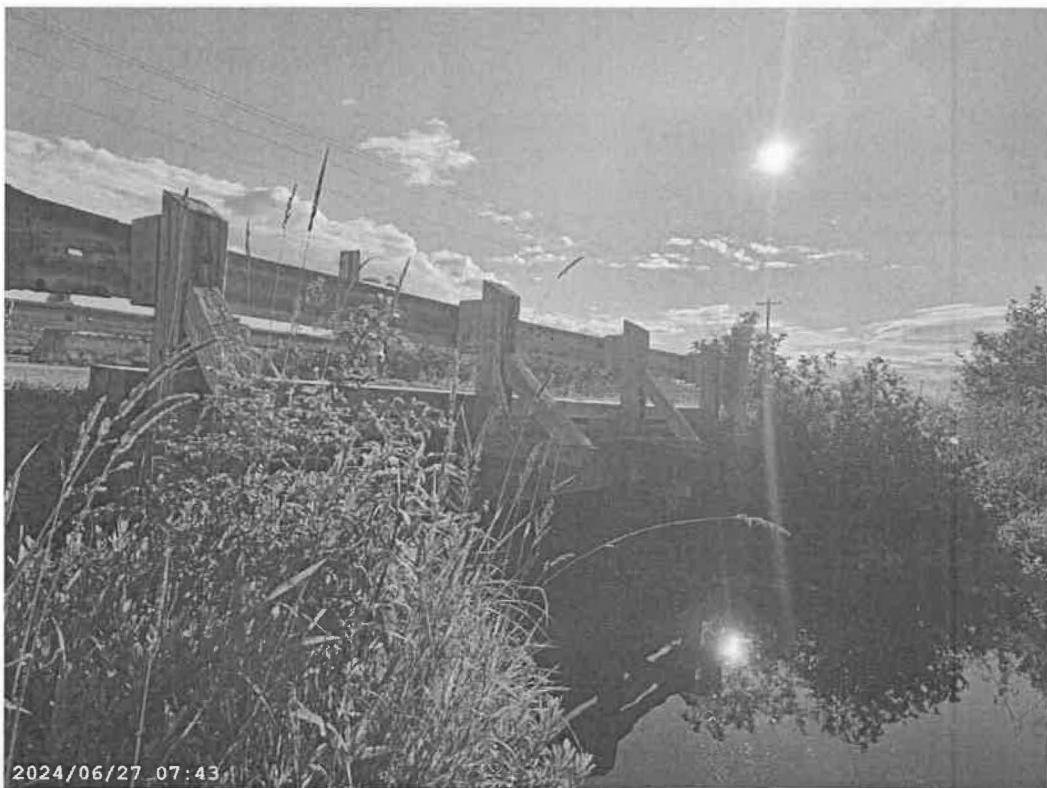
Associated Work:	Comments	Estimated Cost
Approaches:		
Detours:		
Traffic Control:		
Utilities:		
Right of Way:		
Environmental Study:		
Other:	Eng. Design and Supervision	
Contingencies:		
Total Cost		

Justification: Structural evaluation (with confirmed wood species through testing) to confirm load posting. Replacement may be necessary to eliminate load posted structure.
--

ADDITIONAL PHOTOS



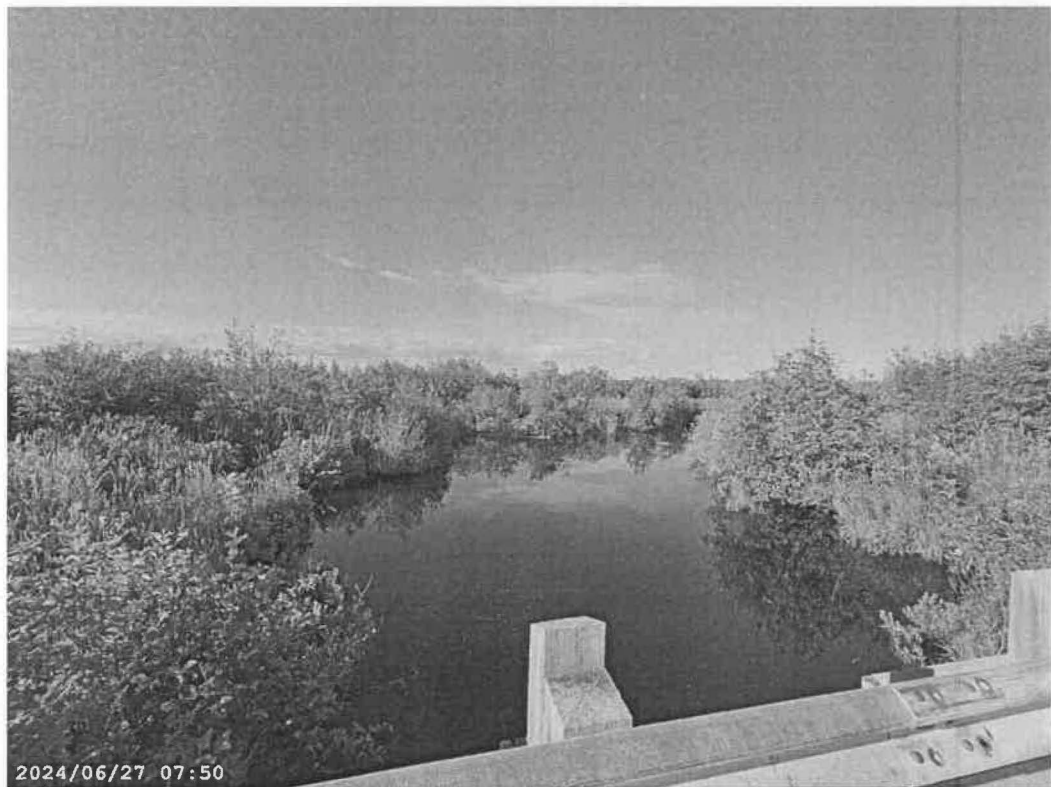
Looking East over structure



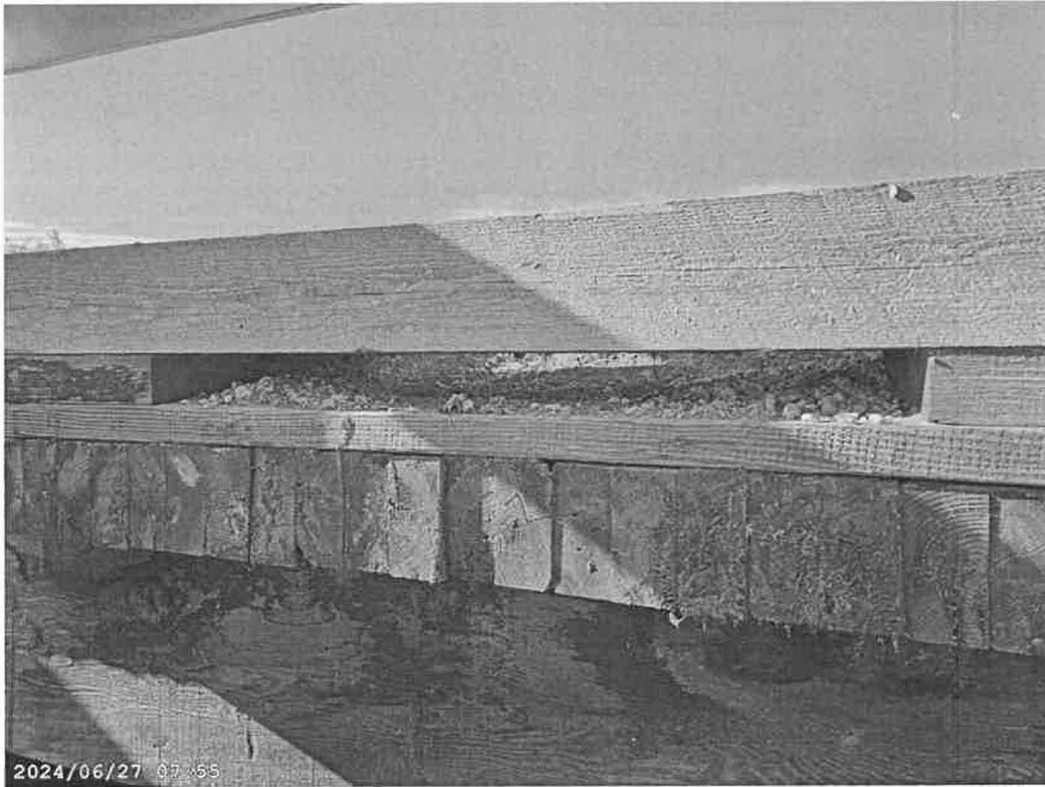
South elevation



North elevation



Downstream



2" x 4" pressure treated decking and scupper drain in curb



Failed ballast wall



West abutment general arrangement



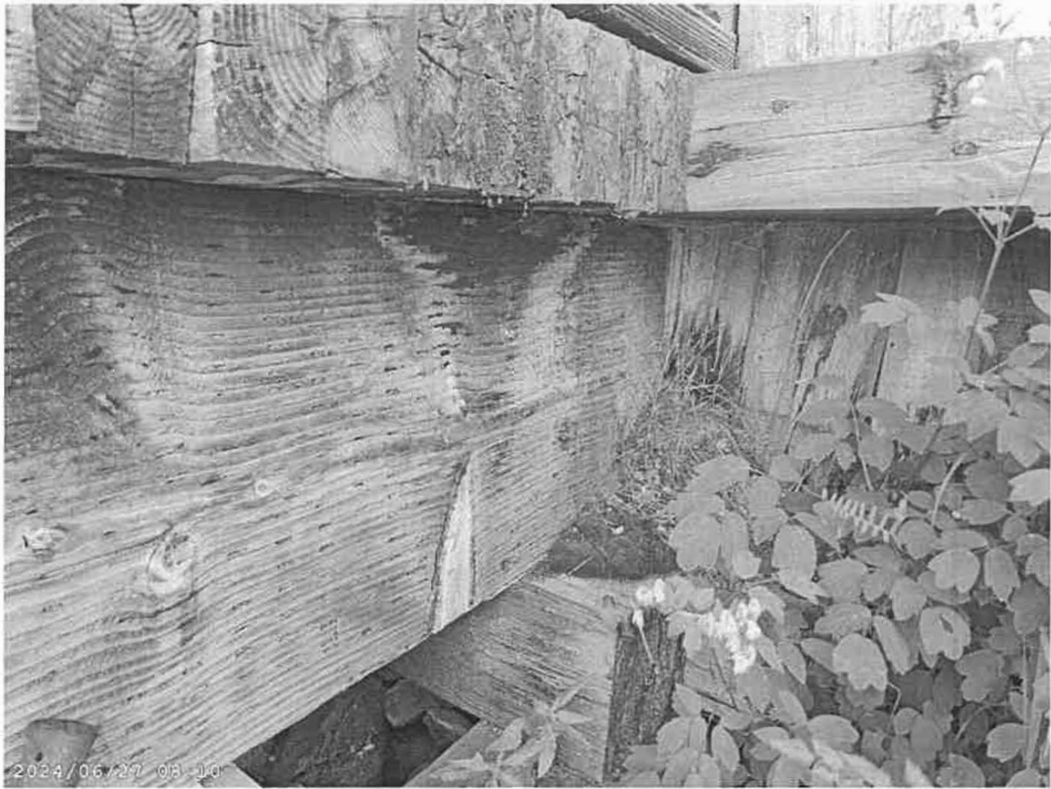
Exposed projection at front of crib with undermining



Interior bearing/ballast wall



Light debris at bearing



Debris at Southeast corner exterior bearing



Moderate decay of ballast wall at Northeast corner



Loss of rock upstream (end of east abutment)



Loss of rock in crib

Ontario Structure Inspection Manual – Inspection Form

MTO Site Number:

Inventory Data:

Structure Name	Beaver Road West #3		
Main Highway #	N/A	On ☒ or Under ☐ Structure	Service on structure: ☐ Navig. Water ☐ Non-Navig. Water ☐ Rail ☒ Road ☐ Ped. ☐ Other
Location description	Beaver Road, 500m east of Grimesthorpe Rd.	Service under	☒ Navig. Water ☐ Non-Navig. Water ☐ Rail ☐ Road ☐ Ped. ☐ Other
Owner/Custodian	Municipality of Central Manitoulin	LHRS:	LHRS offset:
MTO Region	50 - Northern	Latitude:	Longitude:
Regional Engineer		Heritage Designation:	☒ Not Cons. ☐ Cons./not App. ☐ List/not Desig. ☐ Desig./not List ☐ Desig. & List
MTO Area		Hwy Class:	Freeway ☐ Arterial ☐ Collector ☐ Local ☒
Old County	49 - Manitoulin	Posted Speed	N/A
Township	657 - Campbell	No. of Lanes	2
Structure Type 1	Timber Girder	AADT	
Structure Material 1		% Truck	
Structure Type 2		Travel Stream	
Structure Material 2		Traffic Directional Bound	E to W
Total Deck Length	7.4 (m)	Inspection Route Sequence	
Overall Str. Width	6.8 (m)	Inspection Frequency	2 (years)
Culvert length		Inspection Year	2024
Total Deck Area	50.3 (sq.m)	Inspection Duration	
Roadway Width	6.1 (m)	Interchange Number	
Skew Angle	0 (Degree)	Interchange Structure Number	
No. of Spans	1	Min. Vertical Clearance	
Span Lengths	6.8	Detour Distance	8.1 (km)
		Fill on Structure	0.15 (m)
<u>For retaining wall:</u>			
Total Wall Length		Max. Wall Height	
Total Wall Area		Ave. Wall Height	
		Angle of Backfill	

Historical Data:

Year Built	N/A	Year of superstruct. constructed	2012
Last Reg OSIM Inspection	2022	Year of Last Minor Rehab.	
Last Enh. OSIM Inspection		Year of Last Major Rehab.	
		Current Load Limit	/ / 10 (tonnes)

Work History: (Date/description)
2012 Surface treatment

Investigation History: (Date/description)
2017 Load Evaluation

Scheduled Improvements:

Regional Priority Number Programmed Work Year

Nature of Program Work:

Appraisal Indices:		Comments
Fatigue		
Seismic		
Scour		
Flood		
Barrier		
Curb		
Load Capacity		

Ontario Structure Inspection Manual – Inspection Form

MTO Site Number:

Field Inspection Information:	
Date of Inspection:	2024-06-27
Type of Inspection:	☒ Reg. OSIM ☐ Enh. OSIM
Inspected By:	Matt Kirby, P. Eng
Others in Party:	
Enh. Access Equipment:	Hammer, measuring tape, hip waders
Special Access Equipment:	
Weather:	Sun/Clouds
Temperature:	15°C

Additional Investigations Required:	Priority		
	None	Normal	Urgent
Material Condition Survey	☒		
Detailed Deck Condition Survey:	☒		
Non-destructive Delamination Survey of Asphalt-Covered Deck:	☒		
Concrete Substructure Condition Survey:	☒		
Detailed Coating Condition Survey:	☒		
Detailed Timber Investigation		☒	
Post-Tensioned Strand Investigation	☒		
Underwater Investigation:	☒		
Fatigue Investigation:	☒		
Seismic Investigation:	☒		
Structure Evaluation:		☒	
Monitoring	☒		
Deformations, Settlements and Movements:	☒		
Crack Widths:	☒		
RSS Horizontal movements of face:	☒		
RSS Vertical movements of overall structure:	☒		
RSS Local movements or deterioration of facing elements:	☒		
RSS Horizontal movements within overall structure:	☒		
RSS Vertical movements within overall structure:	☒		
RSS Lateral earth pressure at the back of facing elements:	☒		
Investigation Notes: Structural evaluation with wood testing to confirm wood species.			

Overall Structure Notes:	
Recommended Work on Structure:	☐ None ☒ Minor Rehab. ☐ Major Rehab. ☐ Replace
Timing of Recommended Work:	☒ 1 to 5 years ☐ 6 to 10 years
Overall Comments:	Clean bearing seats, change railing/posts and replace decayed ballast wall.
Date of Next Inspection:	2026

Suspected Performance Deficiencies

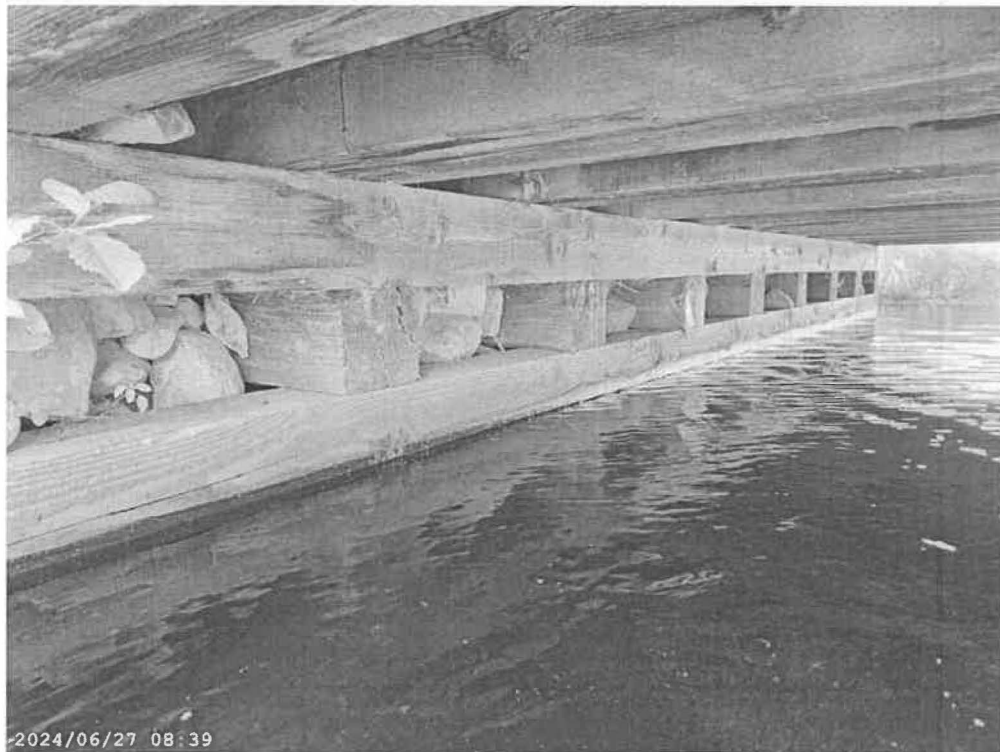
- | | | |
|--|--|---|
| <p>01 Load carrying capacity</p> <p>02 Excessive deformations (deflections & rotations)</p> <p>03 Continuing settlement</p> <p>04 Continuing movements</p> <p>05 Seized bearings</p> | <p>06 Bearing not uniformly loaded/unstable</p> <p>07 Jammed expansion joint</p> <p>08 Pedestrian/vehicular hazard</p> <p>09 Rough riding surface</p> <p>10 Surface ponding</p> <p>11 Deck/Wall drainage</p> | <p>12 Slippery surfaces</p> <p>13 Flooding/channel blockage</p> <p>14 Undermining of foundation</p> <p>15 Unstable embankments</p> <p>16 Other performance deficiencies</p> |
|--|--|---|

Maintenance Needs

- | | | |
|--|---|---|
| <p>01 N/A</p> <p>02 Bridge Cleaning</p> <p>03 Railing System Repair</p> <p>04 N/A</p> <p>05 Bridge Deck Joint Repair</p> <p>06 N/A</p> | <p>07 Structural Steel Repair</p> <p>08 Concrete Repair</p> <p>09 Timber Repair</p> <p>10 Works for Modular bridges</p> <p>11 Animal/Pest Control</p> <p>12 Bridge Surface Repair</p> | <p>13 Erosion Control at Bridges</p> <p>14 Concrete Sealing</p> <p>15 N/A</p> <p>16 Works for Drainage System</p> <p>17 Sealing (Loose Concrete or ACR Steel)</p> <p>18 Other Maintenance</p> |
|--|---|---|

Element Data

Element Group:	Abutments	Length:	1.4 (m)			
Element Name:	Abutment Walls	Width:	6.8 (m)			
Location:	East and West Ends of Bridge	Height:	1.2 (m)			
Material:	Wood	Count:	16.3 (sq. m)			
Element Type:	Timber Cribbing with fill	Total Quantity:				
Environment:	Benign ☒ Moderate ☐ Severe	Inspected:	Yes ☐ No ☐ Limited ☒			
Protection System:						Perform. Deficiencies
Condition Data:	Units	Exc.	Good	Fair	Poor*	
	m ² / m / each / % / all			13.6	2.7	01.
Comments: A new pressure treated 8x8 was installed on front face of cribbing and shimmed tight to stringers. Beam cribbing is only half bearing at butt joint at the girder fourth from the south as the newly installed timber crib member was not installed properly and does not meet the other timber member. There are wide splits at the drift pins. Algae growth at water level. Corners of ballast walls decayed.						
Recommended Work:			Maintenance Needs:			
☐ Rehab ☐ Replace ☐ 1-5 years ☐ 6-10 years			02. Bridge Cleaning ☐ Urgent ☐ 1 year ☒ 2 year Trim vegetation from exterior cribs.			



East abutment general arrangement

Element Data

Element Group:	Accessories	Length:				
Element Name:	Signs	Width:				
Location:	East and West Abutment	Height:				
Material:	Steel	Count:	5			
Element Type:		Total Quantity:	5 (each)			
Environment:	Benign / Moderate / Severe	Inspected:	Yes ☒ No ☐ Limited ☐			
Protection System:						Perform. Deficiencies
Condition Data:	Units m ² / m (each) % / all	Exc.	Good	Fair	Poor*	
			5			00. None
Comments: Edge delineations in place. Only one load posting sign present at east approach. West approach signage controlled by signs at adjacent bridge to the west.						
Recommended Work:			Maintenance Needs:			
☐ Rehab ☐ Replace ☐ 1-5 years ☐ 6-10 years			01. N/A ☐ Urgent ☐ 1 year ☐ 2 year			



Looking East over structure

Element Data

Element Group:	Approaches	Length:	6.0 (m)			
Element Name:	Wearing Surface	Width:	6.1 (m)			
Location:	East and west of bridge	Height:				
Material:	Surface treatment	Count:	2			
Element Type:		Total Quantity:	122 (sq. m)			
Environment:	Benign / Moderate / Severe	Inspected:	Yes ☒ No ☐ Limited ☐			
Protection System:						Perform. Deficiencies
Condition Data:	Units	Exc.	Good	Fair	Poor*	
	m ² / m / each / % / all		118.75	3.25	3.25	00. None
Comments: Center line wide crack in east approach. Wide transverse crack in west approach. Light to medium ravelling and wheel rutting throughout.						
Recommended Work: ☐ Rehab ☐ Replace ☐ 1-5 years ☐ 6-10 years			Maintenance Needs: 12. Bridge Surface Repair ☐ Urgent ☒ 1 year ☐ 2 year Seal cracking in bridge deck			



Medium transverse crack at end of deck

Element Data

Element Group:	Barriers	Length:	1.1 (m)			
Element Name:	Posts	Width:	0.2 (m)			
Location:	North and South of Bridge	Height:	0.2 (m)			
Material:	Wood	Count:	8			
Element Type:	8x8 timber posts	Total Quantity:	8 (each)			
Environment:	Benign / Moderate / Severe	Inspected:	Yes ☒ No ☐ Limited ☐			
Protection System:						Perform. Deficiencies
Condition Data:	Units m ² / m (each) % / all	Exc.	Good	Fair	Poor*	
					8	08. Pedestrian/Vehicu
Comments: Non-standard post connection onto deck and girders.						
Recommended Work:			☐ Rehab ☒ Replace ☒ 1-5 years ☐ 6-10 years		Maintenance Needs: 01. N/A	
Replace barrier posts.					☐ Urgent ☐ 1 year ☐ 2 year	



North elevation and railing support

Element Data

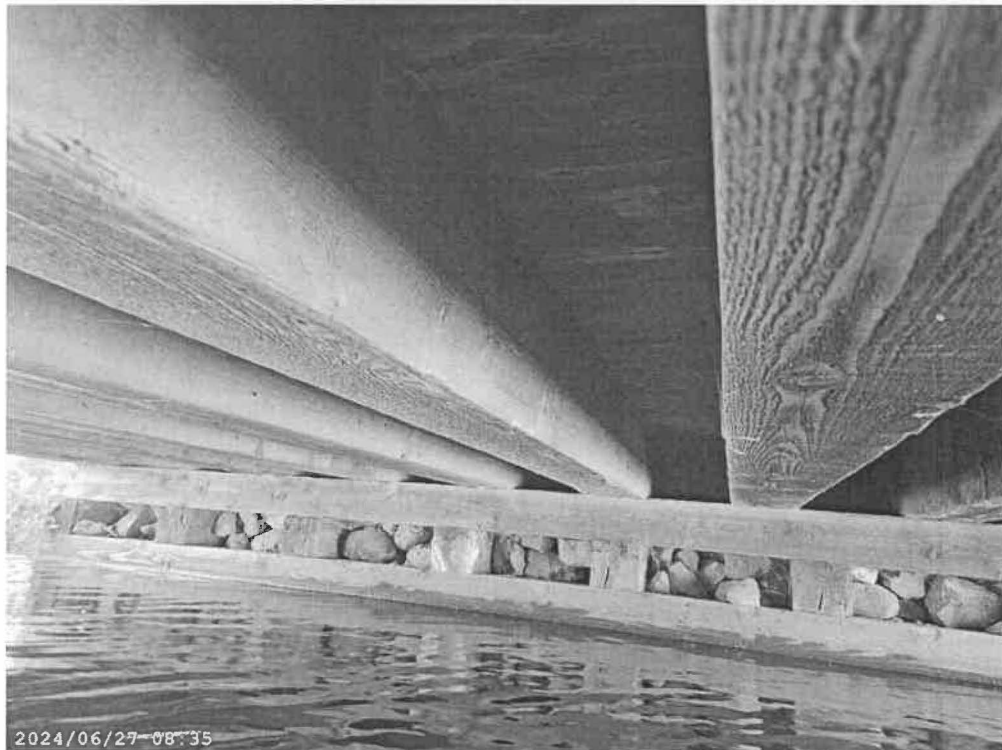
Element Group:	Barriers	Length:	8.0 (m)			
Element Name:	Railing Systems	Width:				
Location:	North and South of Bridge	Height:	0.3 (m)			
Material:	Steel	Count:	2			
Element Type:	Steel guiderail	Total Quantity:	16.0 (m)			
Environment:	Benign / Moderate / <u>Severe</u>	Inspected:	Yes ☒ No ☐ Limited ☐			
Protection System:						Perform. Deficiencies
Condition Data:	Units	Exc.	Good	Fair	Poor*	
	m ² / m / each / % / all				16	00. None
Comments:						
Rail is in overall good condition however it is controlled by the condition of the posts. Excess gravel on bridge deck is blocking the drainage in the curbs. Localized scupper drains have been created at the curbs.						
Recommended Work:		☐ Rehab ☐ Replace ☐ 1-5 years ☐ 6-10 years		Maintenance Needs: 01. N/A		
				☐ Urgent ☐ 1 year ☐ 2 year		



Typical curb and railing system

Element Data

Element Group:	Beams/MLE	Length:	7.4 (m)			
Element Name:	Stringers	Width:	0.3 (m)			
Location:		Height:	0.5 (m)			
Material:	Wood	Count:	8			
Element Type:	Timber Stringer	Total Quantity:	71.0 (sq. m)			
Environment:	Benign / Moderate / Severe		Inspected:	Yes ☐ No ☐ Limited ☒		
Protection System:						Perform. Deficiencies
Condition Data:	Units	Exc.	Good	Fair	Poor*	
(m ²) m / each / % / all			35.48	11.84	23.68	00. None
Comments:						
The second stringer from the north at the east abutment has a 3mm check with a 44.5mm depth for 125mm. The 3rd stringer from north at the west bearing has a check with 1" depth and 16" in length on one side only. There is a 4" deep check on the 4th stringer from south bearing that's 30" long and 1" from front edge of cribbing. Side split in exterior South girder.						
Recommended Work:			Maintenance Needs:			
☐ Rehab ☐ Replace ☐ 1-5 years ☐ 6-10 years			01. N/A ☐ Urgent ☐ 1 year ☐ 2 year			



Stringer general arrangement

Element Data

Element Group:	Decks	Length:	7.4 (m)			
Element Name:	Deck Top	Width:	6.8 (m)			
Location:		Height:	0.1 (m)			
Material:		Count:	0			
Element Type:	Laminated Deck	Total Quantity:	50.3 (sq. m)			
Environment:	Benign <u>Moderate</u> Severe	Inspected:	Yes ☐ No ☐ Limited ☒			
Protection System:						Perform. Deficiencies
Condition Data:	Units	Exc.	Good	Fair	Poor*	
	<u>m²</u> m / each / % / all			50.3		00. None
Comments:						
Recommended Work:						
☐ Rehab ☐ Replace ☐ 1-5 years ☐ 6-10 years						
Maintenance Needs:						
☐ Urgent ☐ 1 year ☐ 2 year						
01. N/A						

Element Data

Element Group:	Decks	Length:	7.4 (m)			
Element Name:	Wearing Surface	Width:	6.2 (m)			
Location:		Height:				
Material:	Gravel	Count:				
Element Type:	Surface Treatment	Total Quantity:	45.9 (sq. m)			
Environment:	Benign / Moderate / Severe	Inspected:	Yes ☐ No ☐ Limited ☐			
Protection System:						Perform. Deficiencies
Condition Data:	Units	Exc.	Good	Fair	Poor*	
	(m ²) m / each / % / all		34.9	10	1	00. None
Comments: Wide crack at east limit. Light to moderate raveling and wheel rutting throughout. Patching and small holes present in the South wheel path.						
Recommended Work:			Maintenance Needs:			
☐ Rehab ☐ Replace ☐ 1-5 years ☐ 6-10 years			01. N/A ☐ Urgent ☐ 1 year ☐ 2 year			



Patching and rutting in wheel path on deck

Element Data

Element Group:	Sidewalks/Curbs	Length:	7.3 (m)			
Element Name:	Curbs	Width:	0.3 (m)			
Location:	North and South of Bridge	Height:	0.14 (m)			
Material:	Wood	Count:	2			
Element Type:	Squared Timber	Total Quantity:	8.4 (sq. m)			
Environment:	Benign / Moderate / <u>Severe</u>	Inspected:	Yes ☐ No ☐ Limited ☒			
Protection System:						Perform. Deficiencies
Condition Data:	Units	Exc.	Good	Fair	Poor*	
	(m ²) m / each / % / all			8.4		00. None
Comments:						
Recommended Work:			Maintenance Needs:			
☐ Rehab ☐ Replace ☐ 1-5 years ☐ 6-10 years			01. N/A ☐ Urgent ☐ 1 year ☐ 2 year			



Curb and deck drain clear of gravel at scupper

Element Data

Element Group:	Decks	Length:	5.4 (m)			
Element Name:	Soffit	Width:	2.8 (m)			
Location:	Interior	Height:	0.2 (m)			
Material:	Wood	Count:	1			
Element Type:	3x8"	Total Quantity:	15.12 (sq. m)			
Environment:	Benign / Moderate <u>Severe</u>		Inspected:	Yes ☒ No ☐ Limited ☐		
Protection System:	Creosote					Perform. Deficiencies
Condition Data:	Units	Exc.	Good	Fair	Poor*	
	<u>m²</u> / m / each / % / all			15.12		00. None
Comments: Active wet areas throughout.						
Recommended Work:			Maintenance Needs:			
☐ Rehab ☒ Replace ☒ 1-5 years ☐ 6-10 years			01. N/A			
Replace decking.			☐ Urgent ☐ 1 year ☐ 2 year			



Interior deck soffit

Element Data

Element Group:	Decks	Length:	5.4 (m)			
Element Name:	Soffit	Width:	1.0 (m)			
Location:	Exterior	Height:				
Material:	Wood	Count:	2			
Element Type:	3x8"	Total Quantity:	10.8 (sq. m)			
Environment:	Benign / Moderate <u>Severe</u>		Inspected:	Yes ☐ No ☐ Limited ☒		
Protection System:	Creosote					Perform. Deficiencies
Condition Data:	Units	Exc.	Good	Fair	Poor*	
	(m ²) m / each / % / all			10.8		00. None
Comments: Active wet areas throughout.						
Recommended Work:			Maintenance Needs:			
☐ Rehab ☒ Replace ☒ 1-5 years ☐ 6-10 years			01. N/A			
Replace decking.			☐ Urgent ☐ 1 year ☐ 2 year			



Exterior soffit and water staining on edge of stringer

Element Data

Element Group:	Decks	Length:	1.0 (m)			
Element Name:	Soffit	Width:	2.8 (m)			
Location:	Ends	Height:				
Material:	Wood	Count:	2			
Element Type:	3x8"	Total Quantity:	5.6 (sq. m)			
Environment:	Benign / Moderate / <u>Severe</u>		Inspected:	Yes ☒ No ☐ Limited ☐		
Protection System:						Perform. Deficiencies
Condition Data:	Units	Exc.	Good	Fair	Poor*	
	(m ²) m / each / % / all			5.6		00. None
Comments: Active wet areas throughout.						
Recommended Work:			Maintenance Needs:			
☐ Rehab ☐ Replace ☐ 1-5 years ☐ 6-10 years			01. N/A ☐ Urgent ☐ 1 year ☐ 2 year			

Element Data

Element Group:	Embankments and Streams		Length:			
Element Name:	Embankments		Width:			
Location:			Height:			
Material:			Count:	4		
Element Type:			Total Quantity:	4.0 (each)		
Environment:	Benign <u>Moderate</u> Severe		Inspected:	Yes ☒ No ☐ Limited ☐		
Protection System:						Perform. Deficiencies
Condition Data:	Units m ² / m <u>each</u> % / all	Exc.	Good	Fair	Poor*	
			4.0			00. None
Comments: Embankments are in overall good condition with no signs of erosion.						
Recommended Work:			Maintenance Needs:			
☐ Rehab ☐ Replace ☐ 1-5 years ☐ 6-10 years			01. N/A ☐ Urgent ☐ 1 year ☐ 2 year			

Element Data

Element Group:	Embankments and Streams	Length:				
Element Name:	Streams and Waterways	Width:				
Location:		Height:				
Material:		Count:	1			
Element Type:		Total Quantity:	1.0 (all)			
Environment:	Benign / Moderate / Severe	Inspected:	Yes ☐ No ☐ Limited ☒			
Protection System:						Perform. Deficiencies
Condition Data:	Units m ² / m / each / % / all	Exc.	Good 1.0	Fair	Poor*	00. None
Comments: Waterway is generally unobstructed with no signs of scour.						
Recommended Work:			Maintenance Needs:			
☐ Rehab ☐ Replace ☐ 1-5 years ☐ 6-10 years			☐ Urgent ☐ 1 year ☐ 2 year			

Element Data

Element Group:	Signs/Accessories		Length:			
Element Name:	Signs		Width:			
Location:	4 corners of bridge		Height:			
Material:			Count:	5		
Element Type:			Total Quantity:	5.0 (each)		
Environment:	Benign / Moderate / <u>Severe</u>		Inspected:	Yes ☒ No ☐ Limited ☐		
Protection System:						Perform. Deficiencies
Condition Data:	Units m ² / m (each) % / all	Exc.	Good	Fair	Poor*	
			5.0			00. None
Comments: Four hazard markers and one load posting sign present on bridge.						
Recommended Work:			Maintenance Needs:			
☐ Rehab ☐ Replace ☐ 1-5 years ☐ 6-10 years			01. N/A ☐ Urgent ☐ 1 year ☐ 2 year			

Municipal Structure Inspection Form

MTO Site Number:

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Repair and Rehabilitation Required:		Priority				Estimated Construction Cost
Element	Repair and Rehabilitation Required	6 to 10 years	1 to 5 years	Within 1 year	Urgent	
Posts	Replace guiderail		X			\$20,000
Abutments	Repair undermining/loss of fill in cribs		X			\$30,000
Embankments	Trim vegetation from embankments		X			Maintenance
Bearings	Clean gravel and debris off bearings		X			Maintenance
Approaches	Seal cracking in surface treatment		X			\$500
Total Cost						\$50,500

Associated Work:	Comments	Estimated Cost
Approaches:		
Detours:		
Traffic Control:		
Utilities:		
Right of Way:		
Environmental Study:		
Other:	Eng. Design and Supervision	
Contingencies:		
Total Cost		

Justification.

ADDITIONAL PHOTOS



Looking West over structure



South elevation



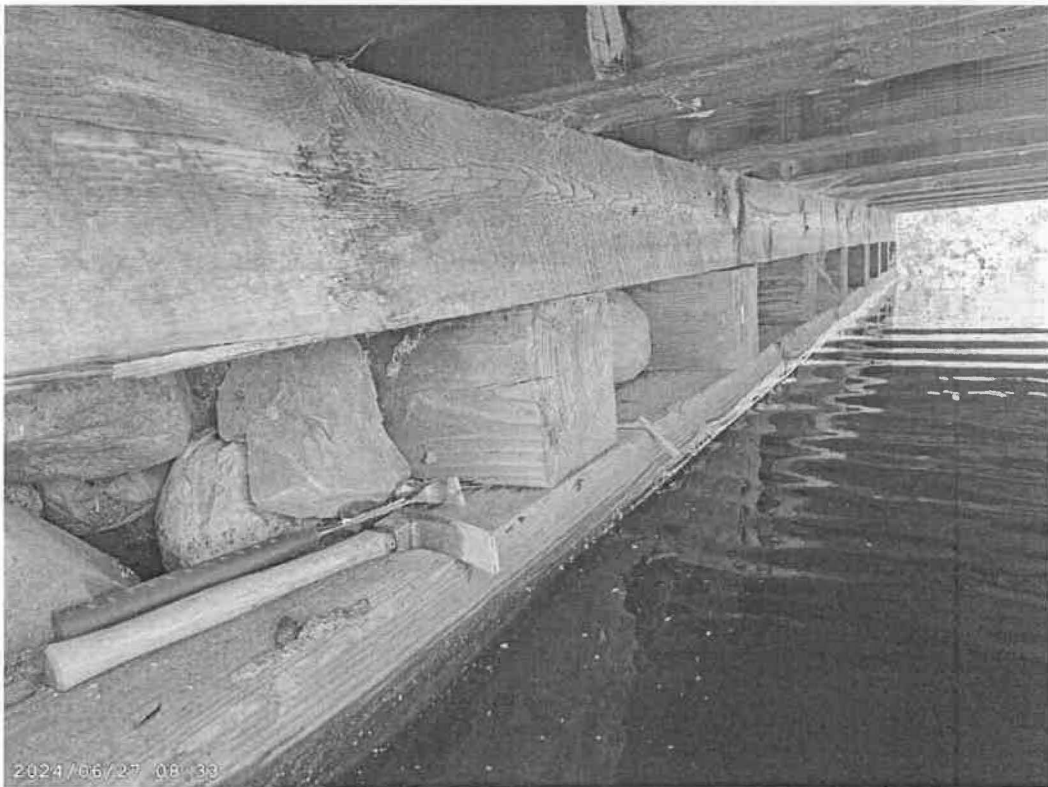
Medium longitudinal crack and typical wearing surface



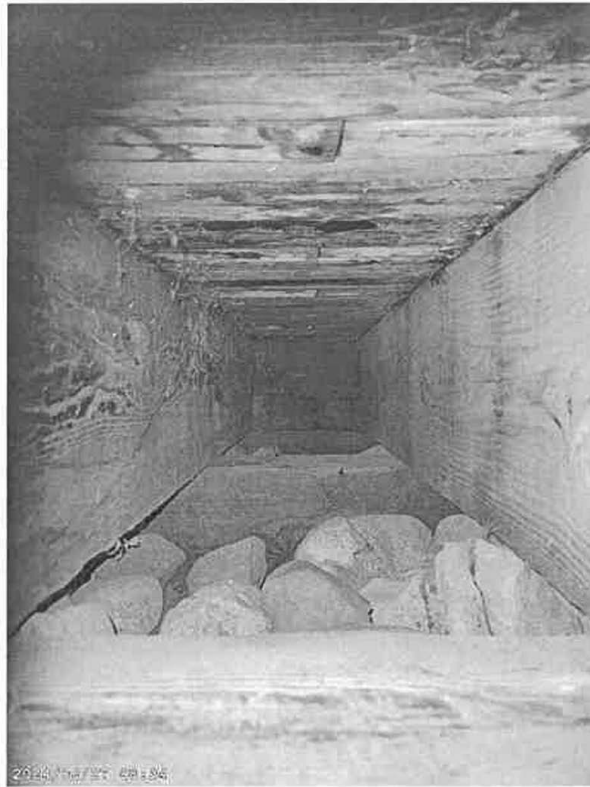
Wide splits in West crib at drift pins



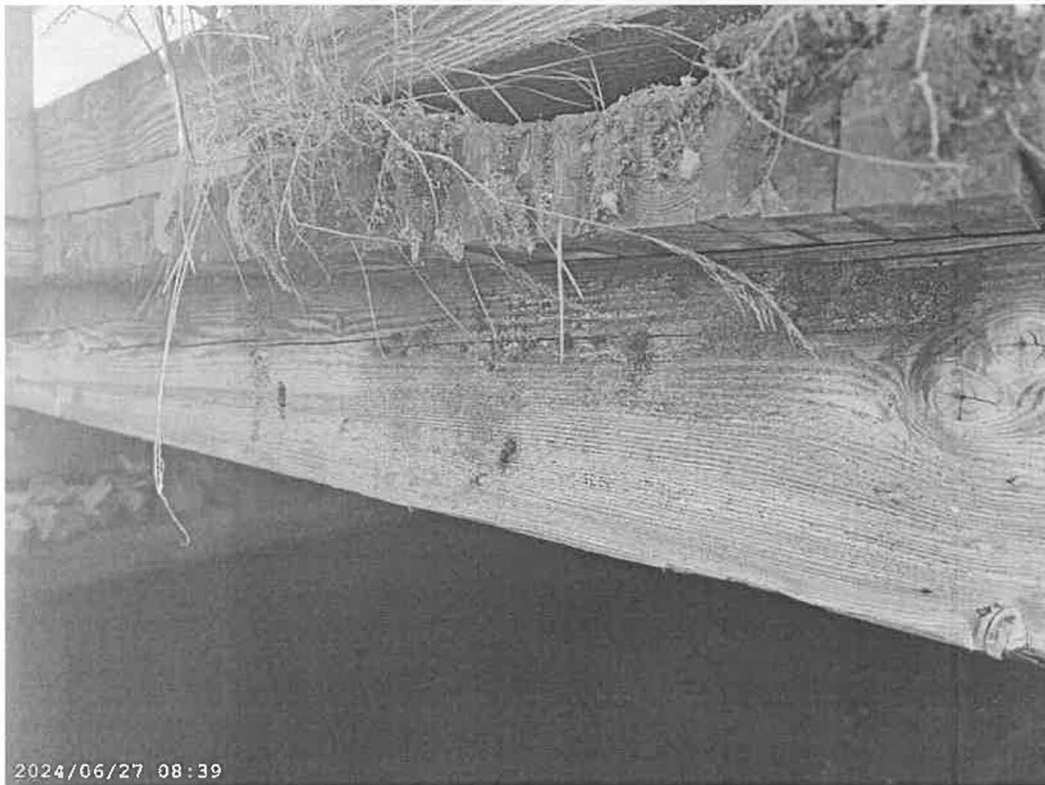
Failed ballast wall corners causing loss of fill onto bearing timber



West abutment



Bearings over cribbing at West abutment



Algae growth on edge of decking



Exposed toe of cribbing bottom course bearing pad



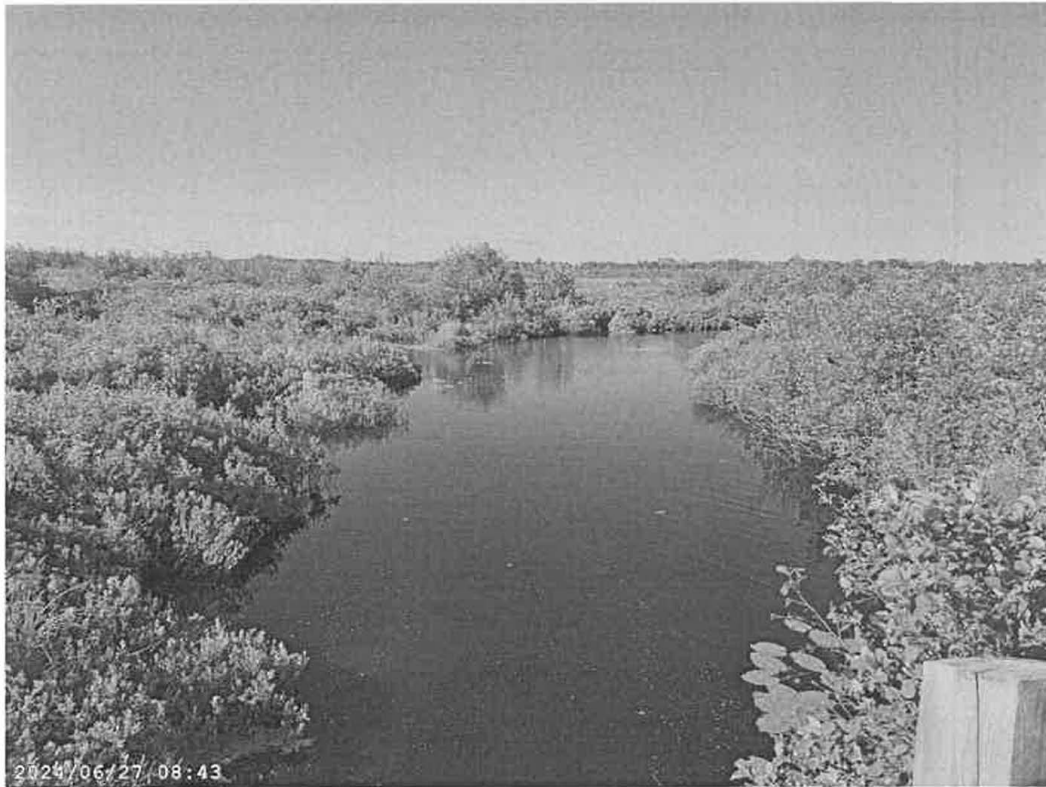
Water staining at edge of deck soffit



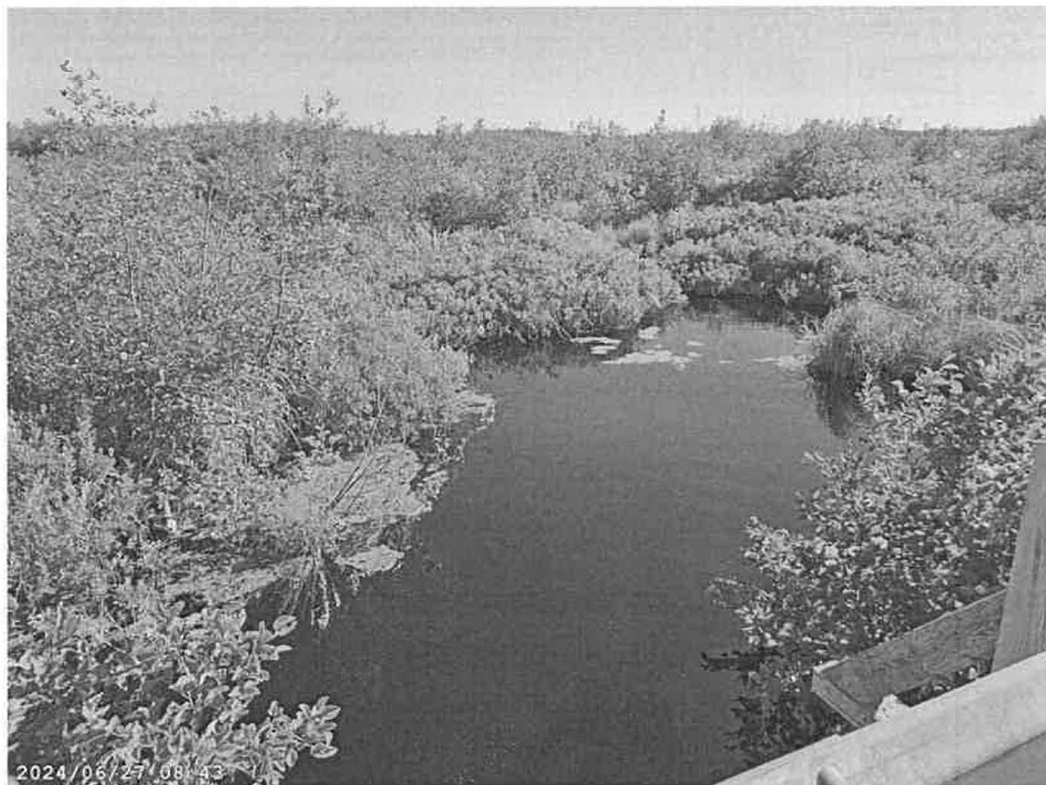
West abutment general layout



Algae growth on edge of East abutment cribbing



Looking downstream



Looking upstream