

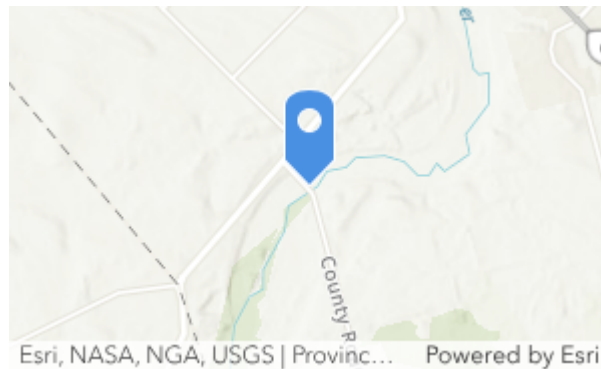
Appendix C

Structure Investigations Report and Site Photos



WELLINGTON COUNTY

Blatchford Bridge
B032085
2025 OSIM Inspection
Wellington Road 32
0.80 km S of Wellington Road 124



Structure_ID: B032085
 MTO Site Number: 35-343
 BCI: 61.67

Inventory Data:

Name:	Blatchford Bridge
Road:	Wellington Road 32
Latitude/Longitude:	43.48445349, -80.28224982
Location:	0.80 km S of Wellington Road 124
Owner(s):	Wellington County

Posted Speed:	80	% Trucks:	0	
AADT:	7,219	2022	No. of Lanes:	2

Structure Type:	Through Truss	Detour Distance (km):	13
Total Deck Length (m):	32.4	Fill on Structure (m):	0
Overall Str. Width (m):	8.1	Skew Angle (°):	0
Total Deck Area (sq. m.):	262	Direction of Structure:	N-S
Roadway Width (m):	7.4	No. of Spans:	1
Span Length (m):	31.7		

Historical Data:

Year Built:	1949	Last Inspection:	September 12, 2023
Current Load Limit:	25 - 37 - 47	Last Bridge Master Inspection:	2019
Load Limit By-Law #:	0	Last Evaluation:	2025
By-Law Expiry Date:	0	Last Underwater Inspection:	0
Min. Vertical Clearance:	0	Last Condition Survey	1991
Rehab History:	2025 - Targeted repairs to NE bottom chord. 2010 - Partial bottom chord replacement at NW and SE end; diagonal members replaced (4 locations); partial replacement of lattice railing 1992 - Deck replacement, new expansion joints, coat structural steel, roc		
Previous OSIM Data:	2023/62.08	2021/62.50	2019/62.54

Field Inspection Information:

Date of Inspection:	May 15, 2025		
Inspector:	Salvatore Costanzo		
Others in Party:	Sarah Berberich		
Equipment Used:	Hammer, Camera, Measuring Tape		
Weather:	Cloudy		
Temperature:	High: 26°C	Low: 15°C	



Additional Investigations:

		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				
	Monitoring of Deformations, Settlements and Movements:			
	Monitoring of Crack Widths:			
Investigation Notes: Recommend for Annual OSIM.				

Overall Structural Notes:

Recommended Work on Structure:	Description:	Evaluate replacement/ rehabilitation.
	Timing:	1 year
Overall Comments:	Structure is in fair to poor condition. MCEA is planned for 2025 and design for the replacement has been initiated. Recommend for Annual OSIM. This structure is on the 10 year plan.	
Date of Next Inspection:	May 15, 2027	

Element Group:		Abutments		Length (m):		0.00
Element Name:		Abutment Bearings		Width (m):		0.00
Location:				Height (m):		0.00
Material:		Steel		Count:		0.00
Type:		Roller		Total Quantity:		4.00
Environment:		Severe		Element BCI:		
Condition Data	Units	Ex.	Good	Fair	Poor	
	Each	0.00	0.00	3.00	1.00	
Comments:		Light to medium corrosion, spall near NE bearing, SW bearing in poor condition.				
Recommended Works:		0		Maintenance Needs:	0	
Recommended Timing:		0		Maintenance Timing:	0	

Element Group:		Abutments		Length (m):		8.10
Element Name:		Abutment Walls		Width (m):		0.00
Location:				Height (m):		2.45
Material:		Cast-in-place concrete		Count:		2.00
Type:		Legs of rigid frame		Total Quantity:		39.69
Environment:		Moderate		Element BCI:		
Condition Data	Units	Ex.	Good	Fair	Poor	
	Sq. m.	0.00	35.69	2.00	2.00	
Comments:		Large spall with exposed rebars at South abutment, spall with exposed rebar at East end of South ballast wall, light scaling on North abutment, spall near NE bearing, narrow horizontal crack along North abutment.				
Recommended Works:		0		Maintenance Needs:	0	
Recommended Timing:		0		Maintenance Timing:	0	

Element Group:		Abutments		Length (m):		0.00
Element Name:		Wingwalls		Width (m):		4.70
Location:				Height (m):		1.63
Material:		Cast-in-place concrete		Count:		4.00
Type:		Reinforced concrete		Total Quantity:		30.65
Environment:		Moderate		Element BCI:		
Condition Data	Units	Ex.	Good	Fair	Poor	
	Sq. m.	0.00	21.65	6.00	3.00	
Comments:		Medium scaling, spalling, delamination and map cracks with efflorescence at SW, spalling, delamination and cracks with efflorescence at NW, horizontal cracking and scaling at SW, scaling and spall at NE.				
Recommended Works:		0		Maintenance Needs:	0	
Recommended Timing:		0		Maintenance Timing:	0	

Element Group:		Approaches		Length (m):		6.00
Element Name:		Wearing Surface (app)		Width (m):		7.44
Location:				Height (m):		0.00
Material:		Asphalt		Count:		2.00
Type:				Total Quantity:		89.28
Environment:		Severe		Element BCI:		
Condition Data	Units	Ex.	Good	Fair	Poor	
	Sq. m.	0.00	87.28	1.00	1.00	
Comments:		Transverse alligator cracks at end of South approach.				
Recommended Works:		0		Maintenance Needs:	0	
Recommended Timing:		0		Maintenance Timing:	0	

Element Group:		Barriers		Length (m):		15.00
Element Name:		Railing Systems		Width (m):		0.00
Location:				Height (m):		0.00
Material:		Steel		Count:		4.00
Type:		Steel Flex Beam on steel post		Total Quantity:		60.00
Environment:		Severe		Element BCI:		
Condition Data	Units	Ex.	Good	Fair	Poor	
	m.	0.00	42.98	14.59	2.43	
Comments:		Light to medium corrosion, disconnected and missing panels at SE, impact damage at SW.				
Recommended Works:		0		Maintenance Needs:	0	
Recommended Timing:		0		Maintenance Timing:	0	

Element Group:		Barriers		Length (m):		31.70
Element Name:		Railing Systems		Width (m):		0.00
Location:				Height (m):		0.00
Material:		Steel		Count:		2.00
Type:		Steel post and lattice		Total Quantity:		63.39
Environment:		Severe		Element BCI:		
Condition Data	Units	Ex.	Good	Fair	Poor	
	m.	0.00	45.41	15.41	2.57	
Comments:		Corrosion in railings over approximately 50% of the area, numerous areas of impact damage (~30% replaced) Traffic impact damage to railing at Northeast and Northwest corners.				
Recommended Works:		0		Maintenance Needs:	0	
Recommended Timing:		0		Maintenance Timing:	0	

Element Group:		Beams/MLE's		Length (m):		8.10	
Element Name:		Floor Beams		Width (m):		0.25	
Location:				Height (m):		0.70	
Material:		Steel		Count:		9.00	
Type:		T-type		Total Quantity:		138.51	
Environment:		Benign		Element BCI:			
Condition Data	Units	Ex.	Good	Fair		Poor	
	Sq. m.	0.00	123.51	15.00		0.00	
Comments:		Rust staining at connection plates, light to medium corrosion at soffit connections, perforation at NE end floor beams,,					
Recommended Works:		0		Maintenance Needs:		0	
Recommended Timing:		0		Maintenance Timing:		0	

Element Group:		Beams/MLE's		Length (m):		31.70	
Element Name:		Stringers		Width (m):		0.15	
Location:				Height (m):		0.30	
Material:		Steel		Count:		6.00	
Type:		T-type		Total Quantity:		171.18	
Environment:		Benign		Element BCI:			
Condition Data	Units	Ex.	Good	Fair		Poor	
	Each	0.00	154.18	17.00		0.00	
Comments:		Good to fair condition.					
Recommended Works:		0		Maintenance Needs:		0	
Recommended Timing:		0		Maintenance Timing:		0	

Element Group:		Bracing		Length (m):		0.00	
Element Name:		Bracings		Width (m):		0.00	
Location:				Height (m):		0.00	
Material:		Steel		Count:		0.00	
Type:		Rectangular-solid		Total Quantity:		4.00	
Environment:		Benign		Element BCI:			
Condition	Units	Ex.	Good	Fair	Poor		
Data	Each	0.00	4.00	0.00	0.00		
Comments:		Corrosion at connections, light rust on bracings.					
Recommended Works:		0		Maintenance Needs:	0		
Recommended Timing:		0		Maintenance Timing:	0		

Element Group:		Coatings		Length (m):		0.00	
Element Name:		Structural Steel		Width (m):		0.00	
Location:				Height (m):		0.00	
Material:		Other		Count:		0.00	
Type:		Epoxy zinc/vinyl		Total Quantity:		307.30	
Environment:		Benign		Element BCI:			
Condition	Units	Ex.	Good	Fair	Poor		
Data	Sq. m.	0.00	227.30	40.00	40.00		
Comments:		Flaking of coating at diagonal and bottom chords.					
Recommended Works:		0		Maintenance Needs:	0		
Recommended Timing:		0		Maintenance Timing:	0		

Element Group:		Decks		Length (m):		31.70	
Element Name:		Soffit Thin Slab		Width (m):		0.00	
Location:		Exterior		Height (m):		0.24	
Material:		Cast-in-place concrete		Count:		2.00	
Type:				Total Quantity:		15.22	
Environment:		Benign		Element BCI:			
Condition	Units	Ex.	Good	Fair	Poor		
Data	Sq. m.	0.00	14.72	0.50	0.00		
Comments:		Cracking with efflorescence at drain (typ), cold joint at West and East.					
Recommended Works:		0		Maintenance Needs:	0		
Recommended Timing:		0		Maintenance Timing:	0		

Element Group:		Decks		Length (m):		31.70	
Element Name:		Soffit Thin Slab		Width (m):		8.10	
Location:		Interior		Height (m):		0.00	
Material:		Cast-in-place concrete		Count:		0.00	
Type:				Total Quantity:		231.09	
Environment:		Benign		Element BCI:			
Condition Data	Units	Ex.	Good	Fair	Poor		
	Sq. m.	0.00	231.09	0.00	0.00		
Comments:							
Recommended Works:		0		Maintenance Needs:	0		
Recommended Timing:		0		Maintenance Timing:	0		

Element Group:		Decks		Length (m):		32.40	
Element Name:		Wearing Surface		Width (m):		7.44	
Location:				Height (m):		0.00	
Material:		Cast-in-place concrete		Count:		1.00	
Type:				Total Quantity:		241.06	
Environment:		Severe		Element BCI:			
Condition	Units	Ex.	Good	Fair	Poor		
Data	Sq. m.	0.00	241.06	0.00	0.00		
Comments:		In good condition.					
Recommended Works:		0		Maintenance Needs:	0		
Recommended Timing:		0		Maintenance Timing:	0		

Element Group:		Embankments and Streams		Length (m):		0.00	
Element Name:		Embankments		Width (m):		0.00	
Location:				Height (m):		0.00	
Material:		Weathering Soil		Count:		0.00	
Type:				Total Quantity:		4.00	
Environment:				Element BCI:			
Condition	Units	Ex.	Good	Fair		Poor	
Data	Each	0.00	4.00	0.00		0.00	
Comments:		Previous bridge abutments on East embankments.					
Recommended Works:		0		Maintenance Needs:		0	
Recommended Timing:		0		Maintenance Timing:		0	

Element Group:		Embankments and Streams		Length (m):		0.00	
Element Name:		Streams and Waterways		Width (m):		0.00	
Location:				Height (m):		0.00	
Material:		Weathering Soil		Count:		0.00	
Type:				Total Quantity:		1.00	
Environment:				Element BCI:			
Condition	Units	Ex.	Good	Fair	Poor		
Data	All	1.00	0.00	0.00	0.00		
Comments:							
Recommended Works:		0		Maintenance Needs:	0		
Recommended Timing:		0		Maintenance Timing:	0		

Element Group:		Joints		Length (m):		7.44	
Element Name:		Armouring/ retaining devices		Width (m):		0.00	
Location:				Height (m):		0.00	
Material:		Steel		Count:		6.00	
Type:				Total Quantity:		44.64	
Environment:		Benign		Element BCI:			
Condition	Units	Ex.	Good	Fair	Poor		
Data	m.	0.00	40.64	4.00	0.00		
Comments:		Localized abrasions, settlement of North steel armorings of South joint on deck, filled with debris, snow plow damage present on South and North joint.					
Recommended Works:		0		Maintenance Needs:	0		
Recommended Timing:		0		Maintenance Timing:	0		

Element Group:		Joints		Length (m):		7.44	
Element Name:		Concrete End Dams		Width (m):		0.25	
Location:				Height (m):		0.00	
Material:		Cast-in-place concrete		Count:		2.00	
Type:				Total Quantity:		3.72	
Environment:		Severe		Element BCI:			
Condition	Units	Ex.	Good	Fair		Poor	
Data	Sq. m.	0.00	0.00	3.22		0.50	
Comments:		Minor popouts and rust staining.					
Recommended Works:		0		Maintenance Needs:		0	
Recommended Timing:		0		Maintenance Timing:		0	

Element Group:		Joints		Length (m):		0.00	
Element Name:		Seals/Sealants		Width (m):		0.00	
Location:				Height (m):		0.00	
Material:		Hybrid		Count:		0.00	
Type:		Strip seal		Total Quantity:		2.00	
Environment:		Severe		Element BCI:			
Condition	Units	Ex.	Good	Fair		Poor	
Data	Each	0.00	0.00	2.00		0.00	
Comments:		Joints filled with debris (typ).					
Recommended Works:		0		Maintenance Needs:		0	
Recommended Timing:		0		Maintenance Timing:		0	

Element Group:		Sidewalks and curbs		Length (m):		31.70	
Element Name:		Curbs		Width (m):		0.15	
Location:				Height (m):		0.15	
Material:		Cast-in-place concrete		Count:		2.00	
Type:				Total Quantity:		19.02	
Environment:		Severe		Element BCI:			
Condition	Units	Ex.	Good	Fair	Poor		
Data	Sq. m.	0.00	17.02	1.00	1.00		
Comments:		Delamination on West curb at South end, medium vertical cracks at East curb, spalls at exterior connection with diagonal chords at NE & SE, abrasion typical on curbs.					
Recommended Works:		0		Maintenance Needs:	0		
Recommended Timing:		0		Maintenance Timing:	0		

Element Group:		Trusses/Arches		Length (m):		31.70	
Element Name:		Bottom Chords		Width (m):		0.20	
Location:				Height (m):		0.20	
Material:		Steel		Count:		2.00	
Type:		Channel		Total Quantity:		76.08	
Environment:		Benign		Element BCI:			
Condition Data	Units	Ex.	Good	Fair	Poor		
	Sq. m.	0.00	13.58	25.00	37.50		
Comments:		Perforation at SW, NW & SE corner, light to medium corrosion through-out, severe corrosion with perforation at North end of East chord (Targeted repairs were completed to this section after the inspection).					
Recommended Works:		0		Maintenance Needs:	0		
Recommended Timing:		0		Maintenance Timing:	0		

Element Group:		Trusses/Arches		Length (m):		0.00	
Element Name:		Connections		Width (m):		0.00	
Location:				Height (m):		0.00	
Material:		Steel		Count:		0.00	
Type:		Riveted		Total Quantity:		32.00	
Environment:		Benign		Element BCI:			
Condition	Units	Ex.	Good	Fair		Poor	
Data	Each	0.00	22.00	6.00		4.00	
Comments:		Rusting with perforation on top at all four supports.					
Recommended Works:		0		Maintenance Needs:		0	
Recommended Timing:		0		Maintenance Timing:		0	

Element Group:		Trusses/Arches		Length (m):		23.78	
Element Name:		Top Chords		Width (m):		0.20	
Location:				Height (m):		0.20	
Material:		Steel		Count:		2.00	
Type:		I-type (tc)		Total Quantity:		57.06	
Environment:		Benign		Element BCI:			
Condition	Units	Ex.	Good	Fair	Poor		
Data	Sq. m.	0.00	43.06	10.00	4.00		
Comments:		Localized surface corrosion, corrosion at bracing panels.					
Recommended Works:		0		Maintenance Needs:	0		
Recommended Timing:		0		Maintenance Timing:	0		

Element Group:		Trusses/Arches		Length (m):		5.60	
Element Name:		Verticals/Diagonals		Width (m):		0.20	
Location:				Height (m):		0.20	
Material:		Steel		Count:		16.00	
Type:		I-type (v/d)		Total Quantity:		107.59	
Environment:		Benign		Element BCI:			
Condition	Units	Ex.	Good	Fair	Poor		
Data	Sq. m.	0.31	80.10	18.53	8.65		
Comments:		Corrosion at connection plates of railings, corrosion at bracing panels members, impact damage at NE & S, rusting with perforation at NE.					
Recommended Works:		0		Maintenance Needs:	0		
Recommended Timing:		0		Maintenance Timing:	0		

Element Group:		Trusses/Arches		Length (m):		3.96	
Element Name:		Verticals/Diagonals		Width (m):		0.20	
Location:				Height (m):		0.20	
Material:		Steel		Count:		14.00	
Type:		I-type (v/d)		Total Quantity:		66.57	
Environment:		Benign		Element BCI:			
Condition	Units	Ex.	Good	Fair		Poor	
Data	Sq. m.	0.19	49.56	11.47		5.35	
Comments:		Vertical.					
Recommended Works:		0		Maintenance Needs:		0	
Recommended Timing:		0		Maintenance Timing:		0	



View from South.



West elevation.



View from North.



East elevation.



SW bearing.



SE bearing.



SE bearing plate.



NW bearing.



NE bearing with minor spall.



South abutment.



Narrow vertical cracking on South abutment.



Concrete staining on South abutment.



Large spall on South abutment.



Spall at NE.



Horizontal crack along North abutment.



SW wingwall spalls with delamination.



SW wingwall scaling and delamination.



SW wingwall vertical stained cracking.



Typical cracking on wingwalls.



SE wingwall.



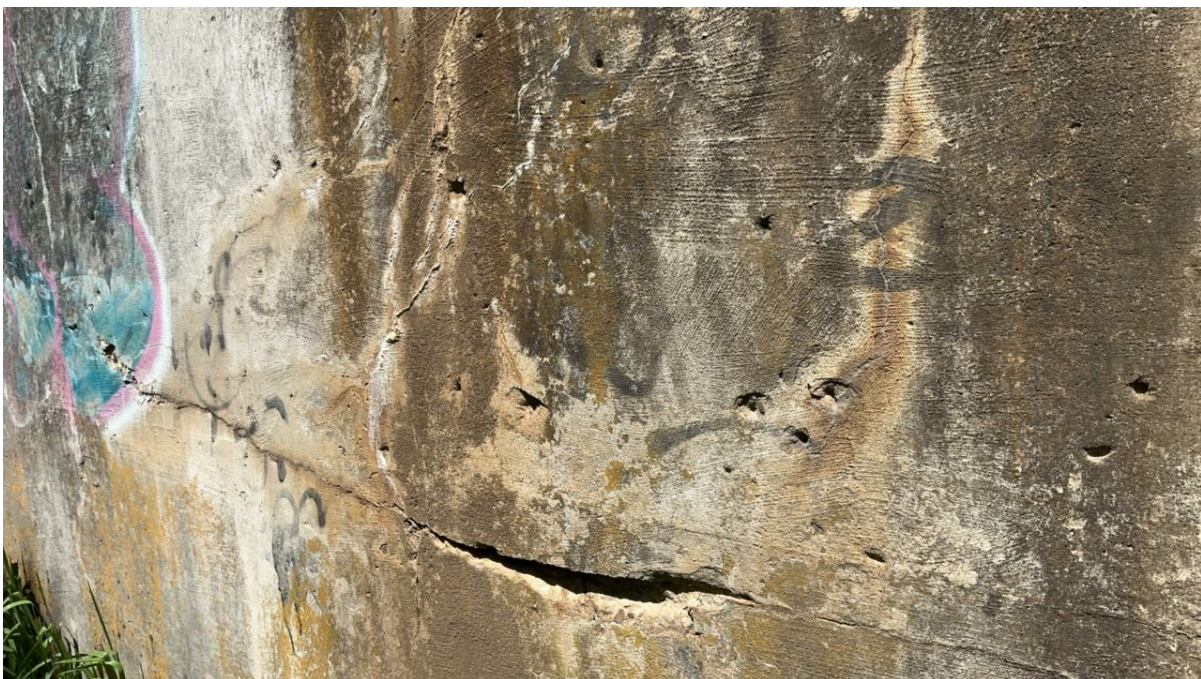
SW cracking.



NE wingwall spall and scaling.



NW wingwall.



NW wingwall spall and cracking.



Impact damage on SW guide rail.



Impact damage at SE guide rail end.



West railing with rust and impact damage.



East railing with rust and impact damage.



Floor beam rusted connection with bottom and vertical cord (typ).



Typical stringers.



Light bracing rust.



Flaking (typ).



Cold joint on West exterior soffit.



East exterior soffit cold joint.



Load restriction sign.



SE embankment with previous bridge structure.



NE embankment.



East upstream.



West downstream.



South joint with chip marks from snow plows.



North armour damage.



Scaling on South dam.



South end dam.



Concrete spalled from North joint.



South joint filled with debris.



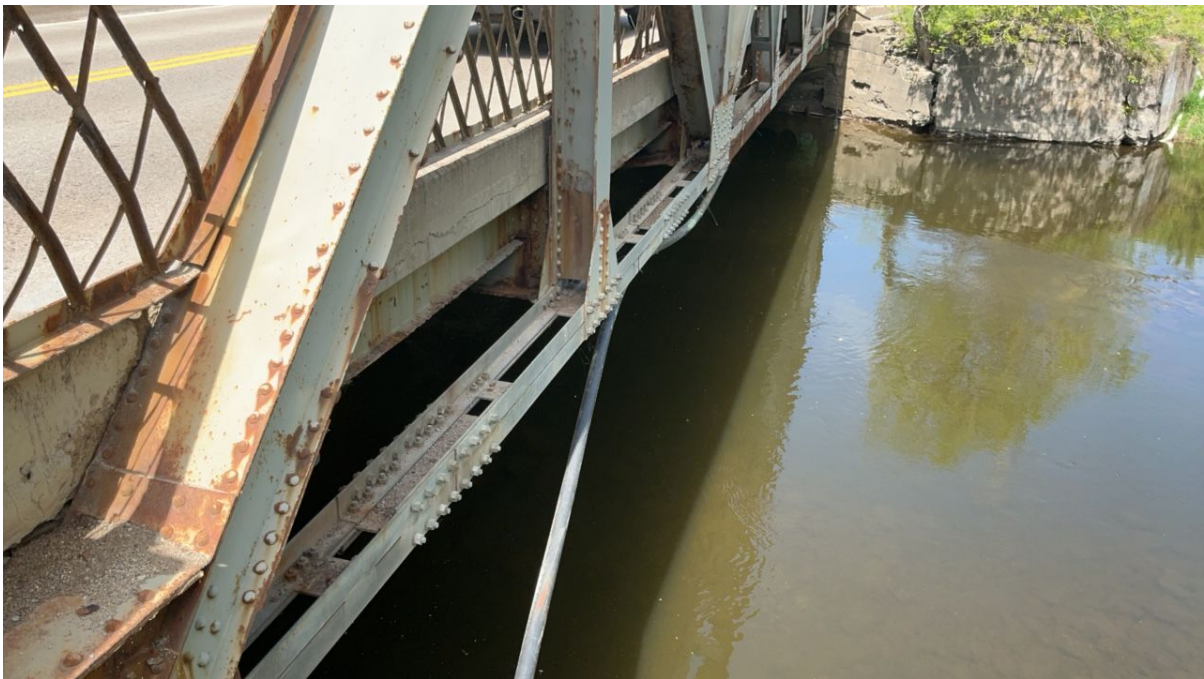
North seal.



Typical soffit.



West joint.



East bottom chord.



Utilities along East chord.



SE end perforation.



SW end perforation.



NE end perforations.



NW end perforations.



East top chord.



West top chord.



East vertical/ diagonals with rust (typ).



Rust staining on vertical and diagonals (typ).



North abutment.



South abutment.



NW wingwall.



SW wingwall.



NE wingwall.



South approach.



North approach.



SW guide rail.



SE guide rail.



NW guide rail.



NE guide rail.



South floor beams.



North floor beams.



South stringers.



South stringers middle.



North stringers.



North stringers middle.



South bracing.



South bracing middle.



North bracing.



West exterior soffit.



East exterior soffit.



Interior soffit.



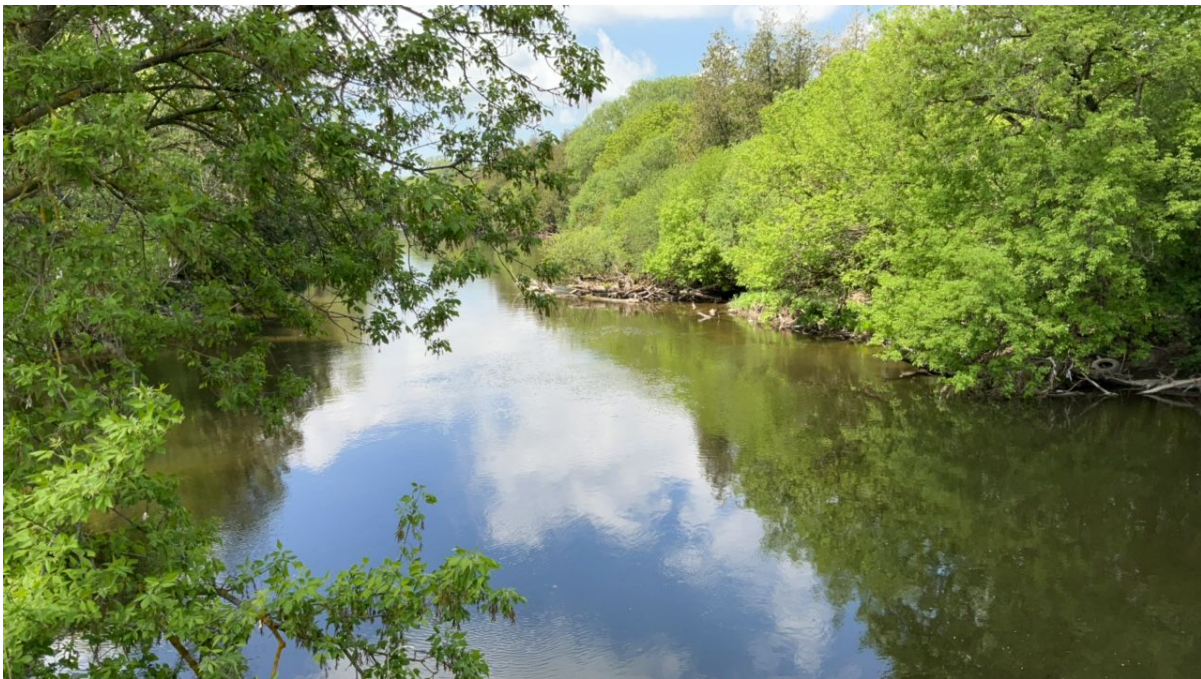
Wearing surface.



NW embankment.



SW embankment.



West waterway.



East curb.



West bottom chords.



West abandoned utilities.



East bottom chord.



West top chords.



East top chords.



NE bottom chord repair