APPENDIX B

CHER / HIA REPORT

Cultural Heritage Evaluation Report (CHER) and Heritage Impact Assessment (HIA)

Bridge #24 over the Nith River in the Township of Blandford-Blenheim County of Oxford



prepared by

CHC Limited
87 Liverpool Street, Guelph, ON N1H 2L2
(519) 824-3210
email oscott87@rogers.com

September 4, 2025

Table of Contents

EXECUTIVE SUMMARY . . . . . I)

1.0 BACKGROUND - CULTURAL HERITAGE EVALUATION REPORT (CHER) 1

2.0 THE CULTURAL HERITAGE EVALUATION REPORT 3

2.1 Description of the Property 3

2.2 Research & History 12

2.3 Community Engagement 17

2.4 Evaluation 17

2.5 Conclusion 19

2.6 Draft Statement of Cultural Heritage Value 19

3.0 HERITAGE IMPACT ASSESSMENT (HIA) 21

3.1 Description of the Proposed Undertaking 21

3.2 Impact Assessment 21

3.3 Considered Alternatives and Mitigating Measures 21

4.0 RECOMMENDATION 24

REFERENCES 25

Appendix 1 MEA Checklist

Appendix 2 Municipal Structure Inspection Manual - Inspection Form, Bridge #24

Appendix 3 Bridge #24 photos - K. Smart & Associates, September 20, 2022

Appendix 4 Blandford-Blenheim Bridge #24 - excerpt from *Arch Truss & Beam*

Appendix 5 TR-12 Bridge Middle (Bridge #24) inventory from: www.historicbridges.org/bridges/browser/

Appendix 6 Bridge #24 Plans - 1929 and 1980

Appendix 7 Report author's qualifications

all photographs by Owen R. Scott of CHC Limited, April 1, 2025 unless otherwise noted.

EXECUTIVE SUMMARY

Bridge #24 is an eight-panel, rivet-connected, single-span, 40.8 m long x 5.4 m wide, Pratt through truss bridge, crossing the Nith River, a tributary of the Grand River, on Township Road 12, 1.2 km west of Blenheim Road. It was built in 1929 and is one of two remaining bridges on the Township road, with a third (Bridge # 20) having been replaced in 2019-2020, each bridge being one concession apart. The other, Bridge #25, was closed to vehicular traffic in 2018 and converted to a pedestrian crossing. Bridge # 24 is posted with a weight limit of 12 to 26 tonnes, depending on vehicle configuration.

The bridge is not designated under the *Ontario Heritage Act*, and it is not listed on the *Ontario Bridge Inventory*. It is described and evaluated in *Arch, Truss & Beam: The Grand River Watershed Heritage Bridge Inventory* and inventoried in *HistoricBridges.org*.

The structure was evaluated using the criteria of *Ontario Heritage Act Regulation 9/06*. Bridge #24 meets three of the criteria of *Regulation 9/06*, including 'design value or physical value' and 'contextual value' criteria, having artistic merit and being physically, functionally, visually and historically linked to its surroundings and is a familiar structure in the context of the area. It does not meet the 'historical value or associative value' criterion.

Major repairs to the bridge have been carried out over the years, with the most recent in 2020. A 2023 Municipal Structural Inspection found the bridge to be in generally poor condition with a recommendation to replace it within 1 to 5 years due to its deteriorated condition, its deficient loading capacity, and deficient width.

While the bridge is considered to be worthy of designation under the *Ontario Heritage Act*, it is in such poor condition that it requires many replacement elements. If that were accomplished it would still not meet the performance requirements of a river crossing in this location. A replacement bridge may be required. If the bridge is to be replaced, the preferred alternative is documenting the bridge and commemorating it with a plaque on the new structure, and should a need be found, salvageable elements/members of the bridge could be retained for future conservation work.

1.0 BACKGROUND - CULTURAL HERITAGE EVALUATION REPORT (CHER)

This Cultural Heritage Evaluation Report (CHER) has been conducted following the *Municipal Bridges Criteria for Evaluating Potential for Cultural Heritage Resources (revised April 27, 2023)* and the Ministry of Tourism, Culture & Sport's (now Citizenship and Multiculturalism) *Standards & Guidelines for Conservation of Provincial Heritage Properties, Heritage Identification & Evaluation Process, Sept. 1, 2014*.

CHC Limited was contracted by K. Smart Associates Limited, on behalf of the Township of Blandford-Blenheim[1], to conduct this heritage assessment of Bridge #24, Township of Blandford-Blenheim, County of Oxford, Ontario. The bridge crosses the Nith River, a tributary of the Grand River, a Canadian Heritage River, on Township Road 12, 1.2 km west of Blenheim Road at Lots 8 and 9, Con. 11 and 12. Blandford-Blenheim Bridge #24 is described and evaluated in *Arch, Truss & Beam: The Grand River Watershed Heritage Bridge Inventory*.[2] The bridge is slated for replacement.

A CHER is required as the first phase of the work to identify the degree of heritage significance of a bridge as information for the Class Environmental Assessment (EA) process.

This report is presented as part of the planning and design process for municipal roads projects subject to a Schedule "B" Municipal Class Environmental Assessment. The Municipal Class EA provides a decision-making process to ensure that all relevant engineering and environmental features are considered in the planning and design of municipal infrastructure. Bridge #24 is posted with a weight limit of 12-26 tonnes depending on the configuration of the vehicle (Figure 2).

This Class EA study is intended to address its:

1. deficient loading capacity;
2. existing bridge conditions;
3. deficient width & clearance height (Figure 1)
4. options of:
   - do nothing
   - repair / rehabilitate existing bridge
   - replace superstructure
   - replace structure - single span bridge
   - replace structure - three span bridge



Figure 1 Horizon Built Heritage 2023



Figure 2 load limit sign

The objectives of this CHER are to provide an historical overview of the bridge within the broader context of Blandford-Blenheim Township and Oxford County; describe existing conditions and heritage integrity; evaluate the bridge within Ontario's MEA and Ministry of Citizenship and Multiculturalism guidelines (referencing *Ontario Regulation 9/06*) and draw conclusions about the heritage attributes of the structure.

---

[1] K. Smart Associates Limited, February 5, 2025

[2] Lindsay Benjamin *et. al.*, *Arch, Truss & Beam: The Grand River Watershed Heritage Bridge Inventory*, Heritage Resources Centre, University of Waterloo, March 2013, pp. 80-81

In the conduct of this CHER, CHC Limited:

- researched archival and published sources relevant to the history and geographic context of the Bridge;
- conducted a site investigation to inventory and document the Bridge and its surrounding context; and
- evaluated the structure and its context using the criteria prescribed in *Regulation 9/06*.

Primary and secondary sources, including historic maps, aerial photographs, photographs, newspaper articles, online sources, local histories, and research publications, and volumes related to evaluating heritage value were reviewed (see References section).

A site investigation was conducted by Owen R. Scott, CAHP of CHC Limited on April 1, 2025 where photographs were taken as well as notes on observations. Consultations were conducted on several occasions with Trevor Hoard, C.E.T. of K. Smart Associates Limited, the EA project lead consultant, regarding the structure, the Township's plans, archaeological investigations and the history of the bridge.

The *Ontario Heritage Act* (OHA) is the primary piece of legislation that determines policies, priorities and programs for the conservation of Ontario's heritage. There are many other provincial acts, regulations and policies governing land use planning and resource development that support heritage conservation.

- The *Planning Act,* which states that "conservation of features of significant architectural, cultural, historical, archaeological or scientific interest" is a "matter of provincial interest". The *Provincial Policy Statement* (Ministry of Municipal Affairs and Housing, 2024), issued under the *Planning Act*, requires municipalities and the Crown to conserve protected heritage property, which may contain Built Heritage Resources (BHRs) and Cultural Heritage Landscapes (CHLs).
- The *Environmental Assessment Act,* which defines "environment" to include cultural conditions. Cultural heritage resources are important components of those cultural conditions.

Section 2.0 of the OHA expands on the mandate of the Ministry of Citizenship and Multiculturalism (MCM) which is responsible for determining policies, priorities, and programs for the conservation, protection, and preservation of the heritage of Ontario. The *Standards and Guidelines for Conservation of Provincial Heritage Properties* (issued under section 25.2 of the OHA) apply to properties the Government of Ontario owns or controls that have cultural heritage value or interest (CHVI). The Standards and Guidelines provide a series of guidelines that apply to provincial heritage properties in the areas of identification and evaluation; protection; maintenance; use; and disposal. For the purpose of this report, the Standards and Guidelines provide points of reference to aid in determining potential heritage significance in the identification of BHRs and CHLs. While not directly applicable for use in properties not under provincial ownership, the Standards and Guidelines are regarded as best practice for guiding heritage assessments and ensure that additional identification and mitigation measures are considered.

In 2025, MCM published the *Ontario Heritage Tool Kit,* which offers resources and guidance to help conserve Ontario's heritage, including the evaluation of properties.

2.0 THE CULTURAL HERITAGE EVALUATION REPORT

2.1 Description of the Property

The bridge is located on Blandford-Blenheim Township Road 12, the site of two steel truss bridges (#25 & #24) and a former steel truss bridge (#20). Bridge #24 is on Lots 8 and 9, Concessions 11 and 12. (Figure 3).



Figure 3 location of 3 steel truss bridges on Blandford-Blenheim Township Road 12 - *GRCA mapping 2020*

Bridge #24 location just west of Blenheim Road is shown in Figure 4.



Figure 4 location of Bridge #24 - *GRCA mapping 2020*

The immediate environs of Bridge #24 are illustrated in the aerial photograph in Figure 5. North of Township Road 12, the land is wooded, while south is cropland.



Figure 5 Bridge #24 on Township Road 12 - *GRCA mapping 2020*

Bridge # 24 (Figure 6) is an eight-panel, rivet-connected, single-span, 40.8 m long x 5.4 m wide, Pratt through truss bridge with a roadway width of 4.9 metres and a clearance height of 3.5 metres. It was built by Reid Riddell Engineering of Toronto in 1929 of Carnegie Steel. It is one of four remaining steel truss bridges in the Township, the Canning (South East) Bridge, the Oxford-Waterloo Road Bridge, Silver Bridge and Bridge #25. Three of these bridges are now closed to vehicular traffic and used as pedestrian/cyclist/trail crossings. The author of this CHER prepared CHERs/HIAs for two of the remaining bridges and for Bridge #20 which has been replaced. In the Grand River watershed, there are approximately 14 steel through truss bridges remaining.



Figure 6 Bridge # 24 south elevation - *K. Smart & Associates photo*, 2023

The bridge is not a designated property under the *Ontario Heritage Act*. It is a single property within a parcel of land that is in the Grand River watershed, a Canadian Heritage River. The Grand River and its major tributaries - the Conestogo, Eramosa, Nith and Speed Rivers - were designated Canadian Heritage Rivers in 1994. The designation recognizes the outstanding cultural heritage values and excellent recreational opportunities along the rivers. It carries no regulatory or legal authority or restrictions.

As well, it is acknowledged that the Nith River, within the Grand River Canadian Heritage River designation, is identified as a "significant cultural landscape" by the Province and the locally impacted First Nations.

Bridge #25 (Figures 7 & 8) is to the west of Bridge #24 and is now closed to vehicular traffic. Bridge #25 was the subject of a CHER and HIA conducted by the author of this report November 23, 2012.



Figure 7 Bridge #25, eastern approach - 2012



Figure 8 Bridge # 25, eastern approach - 2025

Former Bridge #20 was to the east of Bridge #24. Its replacement is a concrete span that sports a commemorative steel truss pattern in the end post (Figures 9 & 10). Bridge #20 was the subject of a CHER and HIA prepared by the author of this report November 29, 2012.



Fig.9 replacement for Bridge #20 - K. Smart & Associates



Fig. 10 replacement for Bridge #20 - K. Smart & Associates

Township Road 12 is a gravel road in the vicinity of Bridge #24. Approaching the bridge from the east, the road runs through a topographically flat valley landscape (Figure 11). Asphalt aprons extend a few metres from both ends of the bridge.



Figure 11 looking east from the bridge

The approach from the west is similar (Figure 12).



Figure 12 looking west from the bridge

The environs of the bridge are wooded on the north side of the road and on both the east and west sides of the Nith River (Figures 13 & 14). The south side of the road, in contrast is cropland (Figures 15 & 16)



Figure 13 looking northeast from the bridge



Figure 14 looking northwest from the bridge



Figure 15 looking southeast from the bridge



Figure 16 looking southwest from the bridge

Views from the bridge are scenic. The River Nith flows from south to north under Bridge # 24, whereas it flows from north to south under Bridge #25 and the replacement for Bridge #20.



Figure 17 view downstream (north) from the bridge



Figure 18 view upstream (south) from the bridge

2.2 Research & History

The geographical area which is now Blandford-Blenheim was populated with Neutral/Attawandaron longhouse villages for many centuries but was abandoned to First Nations nomadic peoples by the 1650s as a result of warfare with Haudenosaunee and epidemics resulting from European contact. A century later the area was being used for hunting grounds primarily by the Mississaugas First Nation, and it was from them that the land was acquired by the Crown through two treaties, the first signed in 1784, and the second in 1792.[3] [4]

The names of Blandford and Blenheim were given in the 1790s as part of Gov. Simcoe's program to make the new colony of Upper Canada a "mirror of Britain", using place names familiar from England. Blandford was named for Blandford, and Blenheim for Blenheim Palace, both nods to the Duke of Marlborough who was also Marquess of Blandford. Upon Gov. Simcoe's arrival in the province in 1792, his first proclamation, issued while still at Kingston, announced the names and boundaries he had decided upon for county boundaries.

Gov. Simcoe with several other government officers, guided by a party of Six Nations warriors, conducted a wilderness tour on foot down and back up the length of the Thames River in February 1793 and decided to assign additional place names to mirror those they knew along the Thames River in England. Middlesex County was the name to be used for the area around a town site reserved at the "lower forks" in the river, to be called London; Dorchester was the name for a town site at the "middle forks"; and the area around the "upper forks" was to be Oxford - the same sequence of names as found along the Thames in England. Just as in Oxfordshire in England, Blandford and Blenheim were names at the northerly end of the county, around Woodstock, adjacent to the towns of Oxford and Burford. When legislation was passed in 1798 in Upper Canada to implement these new divisions by Gov. Simcoe, Norwich and Dereham were separated from Norfolk County and added to the new Oxford County, which included also Burford, Blenheim, Blandford and Oxford townships.

Blenheim Township was opened up to settlement in 1793 when Gov. Simcoe agreed it should be granted to Thomas Watson from New Jersey who promised to bring in settlers and build mills. This was the start of what became the life's work of his nephew Thomas Hornor, who with Watson's son Thomas Jr. and various others were active developing a settlement around Princeton by 1795. Within the course of the next decade, Hornor was appointed a justice of the peace, then as the land registrar for the county, then as the resident commanding officer for the county militia. He carried on as a leading citizen of the county until his death from cholera in 1834.

Blandford Township was held in reserve by the government until a village began to develop along its southern end in the early 1830s, which took the name Woodstock. The official town plot was surveyed in 1834 by the prolific Crown surveyor Charles Rankin.[5]

The Township was amalgamated in 1975 from the two historic Oxford County townships, Blandford and Blenheim. Bridge #24 is in the former Township of Blenheim. A map of Upper Canada c. 1800 shows the Townships of Blandford and Blenheim. (Figure 19)

---

[3] known as the “Between the Lakes Treaty”, it corrected an error in the earlier treaty which failed to properly describe the western boundary intended.

[4] https://en.wikipedia.org/wiki/Blandford-Blenheim

[5] *Ibid*

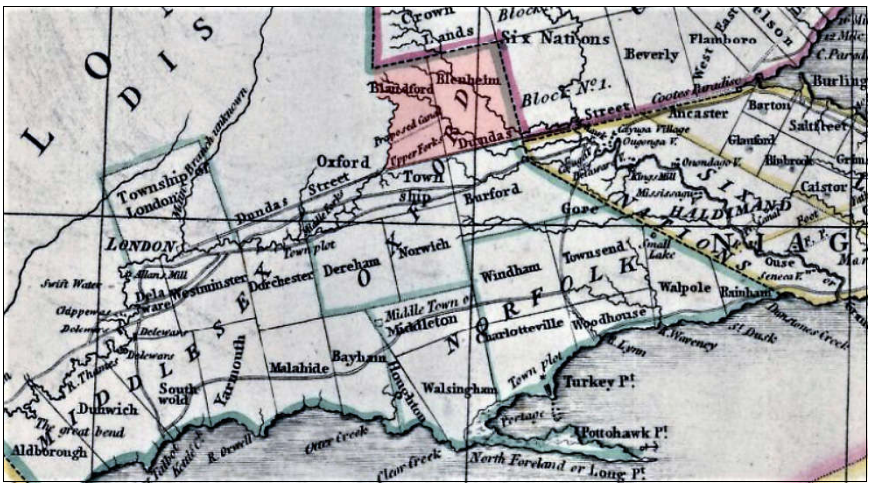


Figure 19 c 1800 map of Upper Canada, Smyth, David William, Sir, 1764-1837

The Nith river, named after the Nith River in Scotland, begins in a woodland northwest of Crosshill and west of Waterloo Regional Road 5 in the township of Wellesley. It heads north into Perth County, then turns sharply southwest and passes through the communities of Fernbank and Millbank in Perth East. It continues south, takes in the right tributary Smith Creek and arrives at the community of Nithburg. The river flows east back into Waterloo Region, takes in the right tributary Silver Creek, and then the left tributary Firella Creek south of the community of Wellesley in the township of Wellesley. The river turns south into the township of Wilmot, takes in the left tributary Bamberg Creek and passes through the communities of Phillipsburg and New Hamburg. The Nith continues south, takes in the left tributaries Baden Creek and Hunsburger Creek, enters into Blandford-Blenheim, Oxford County and reaches the community of Plattsville. The river turns east, takes in the right tributary Black Creek, and left tributaries Hiller Creek, Alder Creek and Eden Creek, passes back into Waterloo Region, and reaches the community of Ayr in the township of North Dumfries, where it takes in the left tributary Cedar Creek. It then turns sharply west, flows back into Oxford County, then turns southeast passing through the communities of Wolverton and Canning. The Nith then flows into Brant County, takes in the right tributary Mud Creek and left tributary Charlie Creek, passing Barker's Bush and reaching its mouth at the Grand River in Paris.[6]

Tremaine's map of 1857 shows the location of where Bridge #24 was built in 1929 and shows the course of the Nith crossing Township Road 12 in three places. (Figure 20)

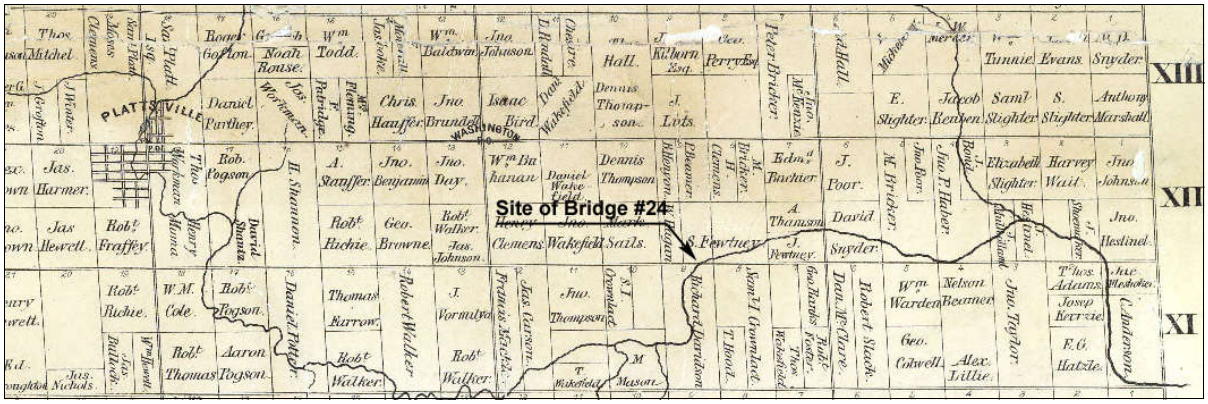


Figure 20 Tremaine's Map of 1857

[6] https://en.wikipedia.org/wiki/Nith_River

Similarly, the 1880 Oxford County Atlas shows the Nith River with the site of Bridge #24 noted. (Figure 21).

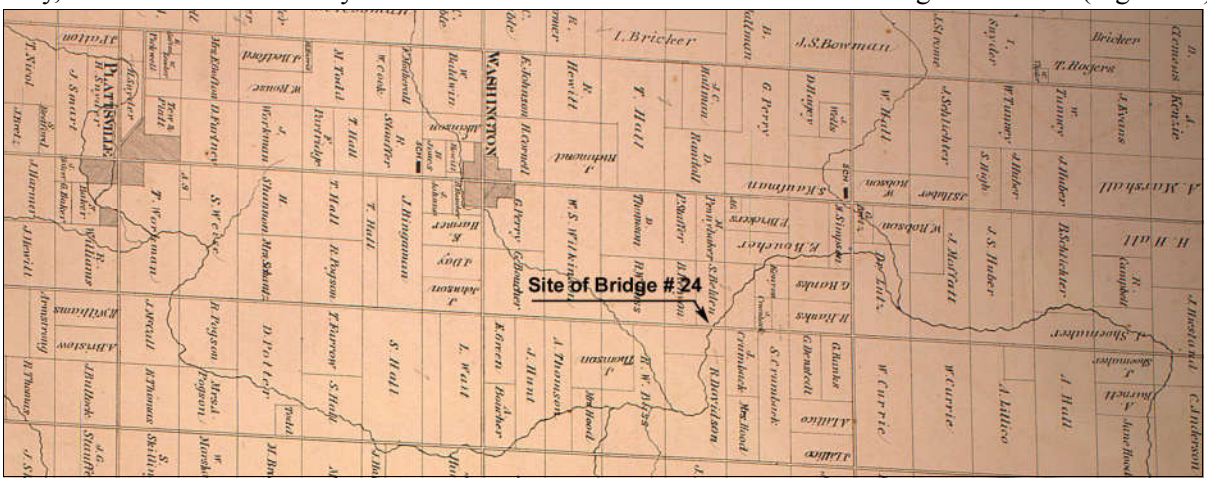


Figure 21 Oxford County Atlas, Blenheim Township - 1880

Since its introduction in 1844, this bridge design (the Pratt Truss) *became part of hundreds of bridges created up to the Second World War. It was designed by the Thomas Willis Pratt (1812 – 1875) and his father Caleb Pratt, a pair of American engineers, just several years after William Howe patented his famous Howe truss design. This bridge design immediately became widely used during the period when many bridges moved from wood components toward all-steel construction designs. Its most compelling feature was the ability was to span great distances using simple construction methods. It was regularly used to span anchor points that are up to 250 feet (76 metres) apart. It was most commonly used in railroad bridge construction, although it was also a preferred choice for creating other types of bridges all around the world until early 20th century.*

Thomas Willis Pratt was born in 1812 in from Boston, Massachusetts. He was schooled at college in Troy, NY at the Rensselaer Institute and Rensselaer Polytechnic Institute, but he never graduated. He instead returned home and worked at Boston and Worcester RR and the Providence & Worcester RR engineering companies when the majority of bridges were built using wood and with truss designs made by S. H. Long, Elias Towne, and William Howe.

Seeing how Howe's designs that were enhanced with vertical metal members started replacing long-used Long and Towne Trusses, Pratt decided to enhance 1840 Howe truss and Long Truss design by making diagonal structures made from steel, verticals from wood switching diagonals to flow into other direction than Howe's. With proper camber and pre-stress, newly created Pratt Truss became structurally stable, enabling it being used over long spans and fixing several disadvantages present in all then commonly used truss designs. Pratt truss patent was accepted on April 4, 1844, under a category of "TRUSS FRAME OF BRIDGES (Truss Bridge)". Although his name was listed first, many speculate that Thomas's father Caleb was listed on the patent application as a form of a tribute to his long career in engineering.

The basic form of Pratt truss includes triangular truss design whose diagonal members slope toward the center of the bridge. When under load, this design makes diagonal members feel tension (the force that expands the object apart), while vertical members feel suspension (the force that pushes objects into one self). If the diagonal members are made from the solid material (such as metal bars), the heavy load of the bridge may cause the need for implementing reinforcements to the center area of the Pratt truss bridge, since that part of the bridge will experience the strongest force loads. Those center areas can be reinforced with stronger materials, or be

subdivided into K or Y-shaped patterns. Pratt truss bridges are statically determinate (all of its support reactions and member forces can be calculated using only the equations of static equilibrium), which made them capable for use in scenarios where bridge designers needed to span great distances.[7]

Photographs and notes on observations were undertaken by Owen R. Scott, CAHP of CHC Limited on April 1, 2025.

Bridge #24 has gone through a series of rehabilitations and repairs in its 96 years. A new concrete deck with curbs was installed and the abutments were re-faced in 1980 (Figures 22 & 23). Abutment wall repairs were made in 1982. In 1993, the east abutment wall and wingwalls were refaced. Deck repairs were made in 2002 and deck expansion joints were reconstructed in 2010. Temporary west floor beam repairs were made in 2020.[8] (See Appendix 2)



Figure 22 concrete deck & curb

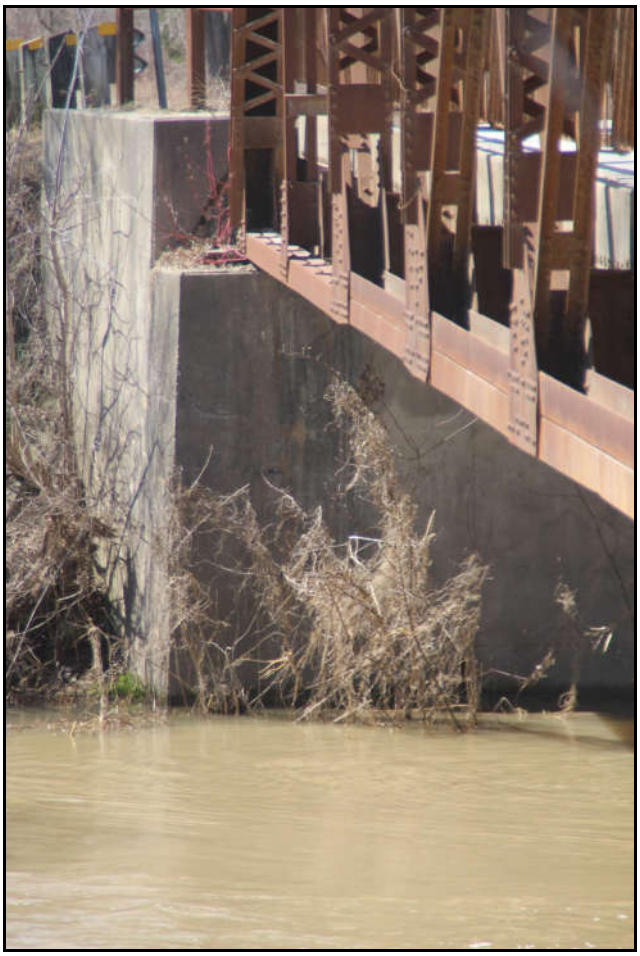


Figure 23 re-faced abutments

[7] https://www.historyofbridges.com/facts-about-bridges/pratt-truss/

[8] *Ontario Structure Inspection Manual — Inspection Form, Bridge 24*, September 22, 2023



Figure 24

The bridge retains its original railings. Rivetted construction is apparent in Figure 24.

Over the years, the bridge has been damaged by flood and hurricane (Hazel 1954) and normal wear and tear. Repairs to the bridge have extended its life; however, a 2023 Inspection Report documents its failings and recommends its replacement (Appendix 2). Figures 25 - 30 illustrate some of the issues.



Figure 25 Rusted Gusset Plate and Rivets on Bottom Chord of North Truss - *K. Smart & Associates 2023*



Figure 26 Bad Gusset Plate and Rivets on Bottom Chord of South Truss - *K. Smart & Associates 2023*



Figure 27 Dented Bottom Chord of South Truss - *K. Smart & Associates 2023*



Figure 28 Rusted and Thinning Verticals of Northeast Bottom Chord (looking east) - K. Smart & Associates 2023



Figure 28 Rusted and Thinning Verticals of Northeast Bottom Chord (looking south) - *K. Smart & Associates 2023*

The 2023 Municipal Structural Inspection Report recommended a series of urgent and 1 to 5 year repairs, with an overall recommendation to replace the bridge within 1 to 5 years.[9]

Although no builder's name or markings were found by the author; there is documentation that indicates the bridge was built by Reid-Riddell Engineering of Toronto in 1929 of Carnegie Steel.[10] The steel is rusty, with a fair amount of perforation.

.

An archaeological site investigation is to be conducted in 2025.[11]

2.3 Community Engagement

Consultation on cultural heritage resource considerations will be conducted through an Environmental Assessment Public Information Centre (PIC) which as yet to be held. Feedback from Indigenous communities, Six Nations of the Grand River, Mississaugas of the Credit First Nation, and Haudenosaunee Development Institute was sought. Mississaugas of the Credit First Nation had no comment on the draft CHER/HIA; the others have no responded. The Township of Blandford-Blenheim, the County of Oxford will also be contacted. A Notice of Study Commencement has been issued (local residents, newspaper, online, agencies). The Township has no heritage planning staff. Local resident responses received so far have been in favour of a new bridge.[12]

---

9 *Ibid,* p. 24

10 Lindsay Benjamin *et. al.*, *Arch, Truss & Beam: The Grand River Watershed Heritage Bridge Inventory*, Heritage Resources Centre, University of Waterloo, March 2013, pp. 80-81 and
Historic Bridges website *https://historicbridges.org/bridges/browser/?bridgebrowser=ontario/bridgest/*

11 Pers. com, Trevor Hoard. K. Smart & Associates, April 3, 2025

12 *Ibid*.

2.4 Evaluation

The structure was evaluated using the criteria of *Ontario Heritage Act Regulation 9/06*. The evaluation is summarized below. To be considered significant and worthy of designation under Part IV of the *Ontario Heritage Act*, the bridge must meet two or more of the criteria.

***Ontario Regulation 9/06* criteria**

Ontario Regulation 9/06 'Criteria for Determining Cultural Heritage Value or Interest'[13] states for a property to be considered of cultural heritage value or interest, it must meet two or more of the following nine criteria. The following table lists the criteria and answers the question "is the criterion met?"

criterion	met?	rationale
1. The property has design value or physical value because it is a rare, unique, representative or early example of a style, type, expression, material or construction method.	no	The bridge is one of five rivet-connected Pratt through truss bridges in the County and perhaps the earliest. It is not unique in the Township or the County. Constructed of Carnegie steel, it is not unique, but somewhat unusual.
2. The property has design value or physical value because it displays a high degree of craftsmanship or artistic merit.	yes	The bridge is of rivet-connected Carnegie steel with a concrete deck and concrete abutments. It does not exhibit a high degree of craftsmanship, although it does have artistic merit .
3. The property has design value or physical value because it demonstrates a high degree of technical or scientific achievement.	no	The Pratt truss was an interim design, improved upon by the Parker truss in terms of cost. The physical structure does not demonstrate a high degree of technical or scientific achievement.
4. The property has historical value or associative value because it has direct associations with a theme, event, belief, person, activity, organization or institution that is significant to a community.	no	There is no known association with an historic theme, event, belief, person, activity, organization or institution.
5. The property has historical value or associative value because it yields, or has the potential to yield, information that contributes to an understanding of a community or culture.	no	The bridge does not yield or have the potential to yield information that would contribute to an understanding of the community or culture.

[13] *Ontario Heritage Act, Ontario Regulation 9/06* as amended by *Ontario Regulation 569/22* 'Criteria for Determining Cultural Heritage Value or Interest' 2023

criterion	met?	rationale
6. The property has historical value or associative value because it demonstrates or reflects the work or ideas of an architect, artist, builder, designer or theorist who is significant to a community.	no	The bridge was built by a known, prolific Ontario builder of steel bridges in the late 19th to early 20th century. The builder is not significant to the local community.
7. The property has contextual value because it is important in defining, maintaining or supporting the character of an area.	yes	The character of the area is not defined or maintained by the bridge; however the bridge does support it.
8. The property has contextual value because it is physically, functionally, visually or historically linked to its surroundings.	yes	The bridge is physically, functionally, visually and historically linked to its surroundings, a significant cultural landscape.
9. The property has contextual value because it is a landmark.	no	The bridge is a familiar structure in the context of the area, however the views are not dramatic and it is not considered a landmark

2.5 Conclusion

Bridge #24 meets three of the criteria, namely it has artistic merit; it supports the character of the area; and it is physically, functionally, visually and historically linked to its surroundings. It is considered significant and worthy of designation under the *Ontario Heritage Act*.

2.6 Draft Statement of Cultural Heritage Value

Description of Property - Bridge #24 is located approximately midway between Oxford County Road 8 and Trussler Road on Blandford-Blenheim Township Road 12 where it crosses the Nith River. Bridge #24 is an eight-panel, rivet-connected, single-span, 40.8 m long x 5.4 m wide, Pratt through truss bridge, with a clearance height of 3.5 metres and a concrete, built in 1929 by Reid-Riddell Engineering of Toronto of Carnegie Steel. The bridge is not designated under the *Ontario Heritage Act* and it is not listed on the *Ontario Bridge Inventory.*

Cultural Heritage Value or Interest - Built in 1929 by Reid Riddell Engineering of Toronto, Carnegie Steel, Bridge #24 is part of a group of (remaining) steel truss bridges in the Township that range in age from the late nineteenth century to1937. This group includes: the Canning (South East) Bridge, the Oxford-Waterloo Road Bridge, Silver Bridge and Bridge #25.[14 & 15] Bridge #24 is one of two remaining bridges on the Township Road. Township Road 12 offers a unique opportunity to observe how bridge designs were adjusted to accommodate different site

[14] *Grand Old Bridges: The Grand River Watershed Bridge Inventory*, April 6, 2004, pp. 21-22

[15] *Spanning the Generations, A Study of Old Bridges in Waterloo Region*, *Phase 3 Heritage Assessment of Truss Bridges of Waterloo Region*, Region of Waterloo, October 2007, p. 2

conditions, such as span lengths and alignment skews. Bridge #24 is an eight-panel, rivet-connected, single-span, 40.8 m long x 5.4 m wide, Pratt through truss bridge, with a clearance height of 3.5 metres and a concrete deck and abutments.

Blandford-Blenheim Bridge #24 is a steel, eight-panel, rivet-connected Pratt through truss that underwent rehabilitation in 1980. Aside from its early date of construction, this bridge, like some of the others in its group, is rare due to its use of Carnegie Steel. Although it is not uncommon for steel used in Ontario's bridges to be sourced from the United States, it is less common to find Carnegie steel in the Grand River watershed. The Carnegie Steel Company, headed by Andrew Carnegie, was located in Pittsburgh, Pennsylvania and was in operation from 1892 to 1901 before it was purchased by the United States Steel Company. Blandford-Blenheim Bridge #24 is considered a rare survivor due to the increasing occurrence of steel truss bridges being demolished but not replaced.

Bridge #24 has artistic merit; it supports the character of the area; and it is physically, functionally, visually and historically linked to its significant cultural landscape surroundings. The bridge is a landmark in the Township and is set in a picturesque, rural, agricultural landscape.

Description of Heritage Attributes - Heritage attributes that contribute to the cultural heritage value or interest of Bridge #24 include, but are not limited to, its:

- original railings
- construction of Carnegie steel
- location spanning the Nith River in a rural setting in Oxford County

Key heritage attributes that embody the contextual heritage value of the bridge include:

- its contribution to the character of the Nith River valley part of the Canadian Heritage Grand River.

In total there are estimated to be 12,000 municipal bridges and 5,400 municipal culverts larger than 3 metres in Ontario. While the Ministry of Transportation Ontario (MTO) has detailed records for the provincial highway system, there is currently no central repository of bridge information for municipal structures. Uniform records on municipal structures have not been kept since 1997 when MTO last managed the municipal road and bridge grant funding program.[16]

The references cited in this report provide supporting documentation for the bridge, its setting, and its type. As well as the *Grand Old Bridges: The Grand River Watershed Bridge Inventory*, April 6, 2004, Bridge #24 was documented by *HistoricBridges.org* (see Appendix 5).

MEA Checklist - Revised April 27, 2023, *This checklist was prepared by the Municipal Engineers Association in consultation with the Ministry of Heritage, Sport, Tourism and Culture Industries (MCM) to assist with undertaking cultural heritage due diligence as per the requirements of the Municipal Class Environmental Assessment.* [17] The checklist determined that a CHER and an HIA are required for this project. (See Appendix 1)

---

[16] *Ontario's Bridges Bridging the gap*, November 2007, MMM Group

[17] *Municipal Heritage Bridges Cultural, Heritage and Archaeological Resources Assessment Checklist* Revised April 27, 2023, Municipal Engineers Association

3.0 HERITAGE IMPACT ASSESSMENT (HIA)

3.1 Purpose and Description of the Proposed Undertaking

The purpose of this CHER/HIA is to determine whether Bridge #24 has cultural heritage value or interest (CHVI), identify the heritage attributes that contribute to its value, and determine whether the proposed Schedule B Municipal Class Environmental Assessment would result in any impacts to the bridge's CHVI and provide recommendations to mitigate these impacts. As the bridge has been determined to retain cultural heritage value, the HIA section evaluates the impacts of the proposed undertaking.

Due to the existing bridge conditions, loading, width and height deficiency issues, the Township of Blandford-Blenheim is looking at improvements to the crossing. The options are:

- do nothing
- repair / rehabilitate the existing bridge
- replace the superstructure
- replace the structure with a single span bridge in its current location or a new location
- replace the structure with a three span bridge in its current location or a new location

3.2 Impact Assessment

The proposal is to replace the existing Bridge #24 because it is in very poor and unsafe condition and would require extensive repair work to make it safe for vehicular travel. However, width, height and load issues would remain.

Replacing the structure in the current location will have a negative impact on the heritage resource as it has been determined to be a significant cultural heritage resource under *Regulation 9/06*. The demolition and removal of the bridge will result in the complete loss of all physical elements that reflected the cultural heritage value or interest of the property.

3.3 Considered Alternatives and Mitigating Measures

Doing nothing is not an option as the condition of the bridge is deficient and will continue to deteriorate (see Appendix 2).

Repairing the bridge will not overcome the load, width and height deficiencies. Repairs would also be extensive, requiring much of the original structure to be replaced (see Appendix 2).

Replacing the bridge superstructure would remove the integrity of the original bridge.

Replacing it in a new location and re-purposing the bridge for pedestrian use by repairing it, would have a minor negative impact on the resource, should that option be viable.

Bridge #24 is in very poor and potentially unsafe condition and would require extensive repair work to make it safe for vehicular travel (see Appendix 2). However, width, height and load issues would remain. When retention of a span *in situ* is practically untenable from transportation, engineering or safety perspectives, relocating it to an

appropriate new site for continued use or adaptive re-use is an appropriate conservation alternative that can satisfy the intent of retaining the span. Adoption of such an option is feasible if:

- the condition of the bridge is sufficiently good or can be made good at reasonable cost to warrant relocation;
- a site can be found where the bridge could be placed as a useful structure, or as a replacement for a bridge in poor condition; and
- this can be accomplished at a reasonable cost.

Should a replacement in a new location be feasible, and if a repaired Bridge #24 could serve a useful purpose as a pedestrian crossing in its current location, the heritage impact would be minimal. If retaining the bridge *in situ* is not practical, relocating the steel truss span of the structure would have a lesser negative impact on the heritage resource than demolition or scrap salvage. A relocation to a use that requires a weight limit that does not exceed the repaired bridge's capacity and would not require a wider roadbed would be required. A farm lane creek crossing, or a pedestrian park bridge, for example, might be ideal uses, should something be found within a reasonable proximity. Relocating the bridge to another place is only feasible, if the bridge condition is such that it can be dismantled, repaired, and re-decked. A site where the bridge could be placed as a useful structure with new abutments would also be required. All of this would need to be accomplished at a reasonable cost.

The preferred alternative at this juncture would appear to be replacement of the bridge in the current location. The impact on the heritage resource will depend on the potential for relocating the existing structure.

With respect to the environs, the CHER identifies the cultural heritage resources associated with the project. None needs to be impacted by the replacement of the bridge if the design of the replacement and especially its relationship to the immediate Nith River landscape is sensitive to the character of the adjacent significant cultural landscape and the historic crossing.

In the opinion of this author, Bridge #24 meets the criteria of *Regulation 9/06* for designation under the *Ontario Heritage Act*. Therefore, alternatives / mitigation options need to be considered. The following options in rank order of preference, based on the Ontario Heritage Bridge Guidelines (MTO, 2008) - Section 4.3 are provided for context.

1. *retention of existing bridge with no major modifications undertaken;*
   not a reasonable alternative as the bridge is structurally unsound (see Appendix 2) and deficient in capacity, width and height.

2. *restoration of missing or deteriorated elements where physical or documentary evidence (e.g. photographs or drawings) exists for their design;*
   feasible, but requires extensive replacement of original fabric without resolving load, width and height issues.

3. *retention of existing bridge with sympathetic modification;*
   feasible, but requires extensive replacement of original fabric without resolving load, width and height issues.

4. *retention of existing bridge with sympathetically designed new structure in proximity;*
   considering the course of the Nith River and the associated extensive floodplain, this may not be feasible.

5. *retention of existing bridge no longer in use for vehicular purposes but adapted for a new use, for example,*

prohibiting vehicle or restricting truck traffic or adapting for pedestrian walkways, cycle paths, scenic viewing, etc.;

Where retention of a span for vehicular use is practically untenable from engineering or safety perspectives this is an appropriate conservation alternative that would satisfy the intent of retaining the span. This option is not feasible considering the need for a vehicular crossing at this location.

6. *retention of bridge as heritage monument for viewing purposes only;*
   not feasible (see notes 4 & 5).

7. *relocation of smaller, lighter single span bridges to an appropriate new site for continued use or adaptive re-use;*

   Where retention of a span *in situ* is practically untenable from transportation, engineering or safety perspectives this is an appropriate conservation alternative that would satisfy the intent of retaining the span. Adoption of such an option is feasible if:
   - the condition of the bridge is sufficiently good or can be made good at reasonable cost to warrant relocation;
   - a site can be found where the bridge could be placed as a useful structure, or as a replacement for a bridge in poor condition; and
   - this can be accomplished at a reasonable cost.

   It is unknown if there is an appropriate site and the bridge would still require extensive replacement of the original fabric to be sound. This option does not appear to be feasible.

8. *bridge removal and replacement with a sympathetically designed structure:*
   a. *where possible, salvage elements/members of bridge for incorporation into new structure or for future conservation work or displays; and*
   b. *undertake full recording and documentation of existing structure.*[18]

   Replacement is planned by the Township. However, should a need be found, salvaged elements/members of the bridge could be retained for future conservation work and a recording and documentation of the existing structure undertaken. Photographs and descriptions gathered during the course of this CHER/HIA and previous documentation by K. Smart & Associates and *historicbridges.org* could be utilized for that purpose. As well, the existing structure could be commemorated with a plaque mounted on the replacement bridge.

[18] *Ontario Heritage Bridge Guidelines (Interim) – Jan 11, 2008,* Ontario Ministry of Transportation

4.0 RECOMMENDATION

After garnering input from the Public Information Centres (community consultation), the foregoing mitigating measures should be taken into consideration during the selection of the preferred alternative in the EA process. Because the bridge is in such poor condition and requires many replacement elements, the preferred alternative appears to be documenting the bridge and commemorating it with a plaque on the new structure, and should a need be found, salvageable elements/members of the bridge could be retained for future conservation work.

This is considered the minimal acceptable level of mitigation.

This CHER and HIA is respectfully submitted

CHC Limited



per: Owen R. Scott, CAHP

REFERENCES

circa 1800 map of Upper Canada, Sir David William Smyth, 1764-1837

Grand Old Bridges: The Grand River Watershed Bridge Inventory, April 6, 2004,

Grand River Conservation Authority mapping, GRCA website *https://www.grandriver.ca/en/Planning-Development/Map-Your-Property.aspx*

Horizon Built Heritage (a division of HAI), *Cultural Heritage Evaluation and Cultural Heritage Impact Assessment Report, Nith Bridge Evaluation of Options Project, Township of Blandford and Blenheim (Oxford County) (Bridge ID #24)*, June 28, 2023

Illustrated historical atlas of the County of Oxford of 1876

Holth, Nathan, *An Introduction to Historic Bridges, http://www.historicbridges.org/info/intro/ithb2.pdf, HistoricBridges.org* website

Lindsay Benjamin *et. al.*, *Arch, Truss & Beam: The Grand River Watershed Heritage Bridge Inventory*, Heritage Resources Centre, University of Waterloo, March 2013

MMM Group, *Ontario's Bridges Bridging the gap*, November 2007

Municipal Engineers Association, *Municipal Heritage Bridges Cultural, Heritage and Archaeological Resources Assessment Checklist* Revised April 27, 2023

Ontario Ministry of Transportation, *Ontario Heritage Bridge Guidelines (Interim) – Jan 11, 2008.*

Ontario Structure Inspection Manual — Inspection Form, Bridge 24, September 22, 2023

Parsons Brinckerhoff and Engineering and Industrial Heritage, *A Context For Common Historic Bridge Types*, Chapter 3 - Historic Context for Common Historic Bridge Types, October 2005

Province of Ontario, *Public Transportation and Highway Improvement Act*, 1997. Section 117 , and *Ontario Standards for Bridges Regulation 104/97* (amended November 23, 2010)

Province of Ontario, *Ontario Heritage Act* and *Ontario Regulation 9/06* as amended by *Ontario Regulation 569/22.*

Province of Ontario, *Environmental Assessment Act.*

Spanning the Generations, A Study of Old Bridges in Waterloo Region, *Phase 3 Heritage Assessment of Truss Bridges of Waterloo Region*, Region of Waterloo, October 2007

The Landplan Collaborative Ltd. *Cultural Heritage Evaluation Report (CHER) & Heritage Impact Assessment (HIA), Bridge No. 20, Township of Blandford-Blenheim*, November 29, 2012

The Landplan Collaborative Ltd. *Cultural Heritage Evaluation Report (CHER) & Heritage Impact Assessment (HIA), Bridge No. 25, Township of Blandford-Blenheim*, November 23, 2012

Wikipedia website, Nith River
https://en.wikipedia.org/wiki/Nith_River

Wikipedia website, Blandford-Blenheim Township
https://en.wikipedia.org/wiki/Blandford-Blenheim

Website
https://www.historyofbridges.com/facts-about-bridges/pratt-truss/

Appendix 1
Municipal Bridges
Criteria for Evaluating Potential for Cultural Heritage Resources
(revised April 27, 2023)

Font Colour **Green – MEA's Advice** **Blue - Instructions**

PART A – MUNICIPAL CLASS EA ACTIVITY SELECTION

Which of the following describes the proposed project?	MCEA Schedule	Selection
1. Normal or emergency operation and maintenance of linear paved facilities cycling lanes/facilities & multi-purpose paths related facilities located within or outside existing rights- of-way • *Related facilities include bridges.* **Maintenance** means work that extends the life of the structure or keeps the structure safe for intended use. **Repairs** means work that fixes or replaces components of the structure to return the structure to its original condition	Schedule A Complete Part C of this checklist to determine whether an archaeological assessment is required.	
24a Retirement of existing roads and road related facilities. • *Related facilities include bridges* • *Proponents should consider cultural heritage value in accordance with MEA's Municipal Heritage Bridge Checklist developed with the Ministry of Citizenship and Multiculturalism (MCM) and posted on the MEA website. Completion of the checklist does not mean approval or permission from MCM to remove a bridge with potential heritage value.* **RETIREMENT** Means the taking out of operation, abandonment, removal, demolition or disposal of a road, bridge, sewage, stormwater management or water facility for which approval under the EAA would have been necessary for its establishment and includes sale, lease, or other transfer of the facility for purposes of taking out of operation, abandonment, removal, demolition or disposal.	Exempt – Schedule A+ Complete Parts B of this checklist if the bridge is > 40 years old and C of this checklist if the project involves excavation activities to determine whether any technical cultural heritage studies are required prior to removal of the bridge	
25b Construction or removal of sidewalks, multi-purpose paths or cycling facilities including water crossings outside existing right-of-way and/or in a utility or rail corridor	Schedule A+ if <$4.1m Schedule B if >$4.1m Schedule C if >$12m *This clause does not include qualifiers such as property requirements or proximity to sensitive features. Instead cost of project triggers classification*	
30. Reconstruction of a water crossing where the reconstructed facility will be for the same purpose, use, capacity and at the same location • Capacity refers to either hydraulic or road capacity but does not include alterations to include or remove	Item 30 applies to bridges <40 yrs old. Exempt – Schedule A+ If the project involves excavation, complete Part C of this checklist to	

Which of the following describes the proposed project?	MCEA Schedule	Selection
facilities for cycling, pedestrians or to support utilities • This includes ferry docks **BRIDGE CAPACITY** Means the number of through travel lanes for vehicles on the bridge. Adjusting lane width to current standards that do not increase the number of travel lanes and cycling, parking or turning lanes are not through travel lanes. Increasing the width of a narrow bridge (one lane with two way traffic) to the current standard to accommodate two way traffic (two lane) is not considered an increase in capacity. **OPERATION** Means use, maintenance, repair, and management of a municipal facility where the purpose, use, capacity and location remain the same. Same purpose, use, capacity and location refers to the replacement or upgrading of a structure or facility or its performance, where the objective and application remain unchanged, and the volume, size and capability do not exceed the minimum municipal standard (defined above), or the existing rated capacity (defined above), and there is no substantial change in location.	determine whether an archaeological assessment is required. *Hydraulic capacity of a bridge is controlled by the openings between abutment walls and piers. The bridge elevation needs to be set a minimum clearance above high-water elevations. Further adjusting the elevation of the bridge to match road grades will not change the hydraulic characteristics. However, if the hydraulic capacity of the bridge is part of the flood control system for the water course and the openings between abutment walls and piers is changing then item 63 "Modify existing water crossings for the purposes of flood control" from the Water/Wastewater table applies and the project is Schedule B.* ***Substantial Change -** Within the existing road allowance or utility corridor, a substantial change could be considered a change of more than approximately >10%. For example, a road allowance 20m wide and 1 km long has an area of 20,000 m^2 and a change of < 2000m^2 would be <10%.* ***Property Acquisition** – No EA process is required for property purchase. If the proponent acquires property through separate process (negotiation with owner or planning policies for minimum width of road allowances) such that the proponent owns the property required for a project before the Notice of Completion then no property acquisition is required for the project. For many project types, this could mean the project would be classified as Schedule A or A+ (exempt). If there is dispute about the property acquisition then a Schedule B process should be followed to support the acquisition (expropriation).*	

Which of the following describes the proposed project?	MCEA Schedule	Selection
	Utility Corridor *– A utility corridor may include property that is nonlinear, for example a rectangular area for a Stormwater Management Pond.*	
31a Reconstruction of, or alteration to a structure or the grading adjacent to it, when the structure is over 40 years old and has been found not to have cultural heritage value or interest *To determine whether a bridge has "cultural heritage value" refer to the MEA's municipal heritage bridge checklist developed with the Ministry of Citizenship and Multiculturalism and posted on the MEA website.*	Item 31 applies to bridges >40 yrs old. Exempt – Schedule A+ Complete Parts B and C of this checklist to determine whether any technical cultural heritage studies are required.	
31b Reconstruction of, or alteration to a structure or the grading adjacent to it when the structure is over 40 years old, the structure is found to have cultural heritage value or interest, and the heritage attributes will be conserved in accordance with the recommendations of a Heritage Impact Assessment *To determine whether a bridge has "cultural heritage value", refer to the MEA's municipal heritage bridge checklist developed with the Ministry of Citizenship and Multiculturalism and posted on the MEA website*	Exempt - Schedule A+ after completing Archaeological Screening Process (ASP) and provided the heritage attributes will be conserved in accordance with the recommendations of a Heritage Impact Assessment Complete Parts B and C of this checklist to determine whether any technical cultural heritage studies are required.	
31c Reconstruction of, or alteration to a structure or the grading adjacent to it, when the structure is over 40 years old the structure is found to have cultural heritage value or interest, but heritage attributes will not be conserved in accordance with the recommendations of a Heritage Impact Assessment. *To determine whether a bridge has "cultural heritage value", refer to the MEA's municipal heritage bridge checklist developed with the Ministry of Citizenship and Multiculturalism and posted on the MEA website*	Schedule B Proponents should always strive to conserve/recognize cultural heritage attributes.	
32a. Construction of underpasses or overpasses for pedestrian, cycling, recreational or agricultural use	Schedule A+ if <$3.0m No qualifiers	
32b Construction of underpasses or overpasses for pedestrian, cycling, recreational or agricultural use, and where the underpass or overpass would not be located in or adjacent to an environmentally sensitive natural area, potential built heritage resource or cultural heritage landscape or other sensitive land use, or on lands with archaeological potential • *To determine whether there is "archaeological potential" refer to MCM's Criteria for Evaluating Archaeological Potential checklist Refer to new definition of "environmentally sensitive natural area" in*	Applies to projects >$3M Schedule A+ after completing Archaeological Screening Process (ASP). Otherwise Schedule B **A1-2 Archaeological Screening Process (ASP)** The projects that are identified as eligible for screening, subject to the archaeological screening process (identified as "ASP") may be exempt from the requirements of the EAA as	

Which of the following describes the proposed project?	MCEA Schedule	Selection
the Glossary	determined by the archaeological screening process set out below. In order to proceed with a project that is identified as eligible for screening, a proponent must either; (I) carry out the process for a Schedule B/C project; or (ii) complete the archaeological screening process and follow the directions set out in the screening process. If the outcome of the screening process is that the project is exempt from the requirements of the EAA, the proponent may proceed with the undertaking/project without further application of the EAA to the project	
32c Construction of underpasses or overpasses for pedestrian, cycling, recreational or agricultural use, and where the underpass or overpass would be located in or adjacent to an environmentally sensitive natural area, potential built heritage resource or cultural heritage landscape or other sensitive land use, or on lands with archaeological potential • *To determine whether there is "archaeological potential" refer to MCM's Criteria for Evaluating Archaeological Potential checklist* *Refer to new definition for "environmentally sensitive natural area" in the Glossary*	Applies to projects >$3M Schedule B	
35 Reconstruction of a water crossing where the reconstructed facility will not be for the same purpose, use, capacity or at the same location • *Capacity refers to either hydraulic or road capacity but does not include alterations to include or remove facilities for cycling, pedestrians or to support utilities* • *This includes ferry docks*	Schedule B Applies to all bridges with an increase to travel lanes.	
36a Reconstruction of, or alteration to a structure or the grading adjacent to it when the structure is over 40 years old and has cultural heritage value or interest and the heritage attributes will **not be** conserved in accordance with the recommendations of a Heritage Impact Assessment • *To determine whether a bridge has "cultural heritage value", refer to the MEA's municipal heritage bridge checklist developed with the Ministry of Citizenship and Multiculturalism and posted on the MEA website*	Schedule B Proponents should always strive to conserve/recognize cultural heritage attributes	

Which of the following describes the proposed project?	MCEA Schedule	Selection
36b Reconstruction of, or alteration to a structure or the grading adjacent to it when the structure is over 40 years old and is not found to have cultural heritage value or interest or is found to have cultural heritage value or interest but the heritage attributes will be conserved in accordance with the recommendations of a Heritage Impact Assessment. • *To determine whether a bridge has "cultural heritage value", refer to the MEA's municipal heritage bridge checklist developed with the Ministry of Citizenship and Multiculturalism and posted on the MEA website*	Schedule B The heading for this group of projects is "RECONSTRUCTION OF BRIDGES WITH INCREASE TO TRAVEL LANES". The increase to travel lanes triggers Schedule B	
37. Construction of new water crossings • This includes ferry docks • This does not apply to culverts. See Projects # 8 and 20.	Schedule B	
38. Construction of new grade separations and interchanges	Schedule B	

PART B – SCREENING FOR BUILT HERITAGE RESOURCES AND CULTURAL HERITAGE LANDSCAPES

Screening Questions	Response	
Part B1: Screening for Recognized Cultural Heritage Value or Interest		
1. Is the proposed undertaking consistent with an approved conservation plan, if one exists?	Yes	NA
2. Has the bridge and the study area been evaluated before and found not be of cultural heritage value or interest (CHVI)?	Yes	No
3. Is the bridge, or a parcel of land in the study area:		
a. designated under the *Ontario Heritage Act*?	Yes	No
b. subject to an agreement, covenant or easement entered into under Parts II or IV of the *Ontario Heritage Act?*	Yes	No
c. included on a register or inventory of heritage properties maintained by the municipality?	Yes	No
d. subject to a notice of • intention to designate (under Part IV of the *Ontario Heritage Act)*? • a Heritage Conservation District study area by-law (under Part V of the *Ontario Heritage Act*)?	Yes	No
e. included in MCM's list of provincial heritage properties?	Yes	No
f. designated under the *Heritage Railway Stations Protection Act*?	Yes	No
g. designated under the *Heritage Lighthouse Protection Act*?	Yes	No
h. identified as a Federal Heritage Building by Federal Heritage Buildings Review Office?	Yes	No
I. a National Historic Site or part of one?	Yes	No

Screening Questions	Response	
j. located within a United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage Site?	Yes	No

Part B2: Screening for potential Cultural Heritage Value or Interest		
4. Will the proposed project involve a bridge structure that was: a) constructed less than 40 years ago?	Yes	No
b) constructed after 1956 with a plain concrete substructure, and the superstructure construction is with common steel and/or concrete products involving one of the following four bridge types? - Rigid Frame - Culvert or Simple Span - Steel Girders/Concrete Deck - Precast Girders with Concrete Deck	Yes	No
5. Will the project involve replacement of a bridge's substructure, or any alteration of adjacent lands?	Yes	No
6. Is the bridge or project area described by an on-site municipal, provincial or federal commemorative or interpretive plaque?	Yes	No
7. Does the project area contain a parcel of land that has or is adjacent to a known burial site or cemetery?	Yes	No
8. Does the proposed project involve a crossing of a Canadian Heritage River?	Yes	No
9. Is there local or Indigenous knowledge or accessible documentation suggesting that the property (or project area) is situated on a parcel of land that:		
a. Is considered a landmark in the local community or contains any structures or sites that are important in defining the character of the area? (For example: buildings or landscape features accessible to the public or readily noticeable and widely known, complexes of buildings, monuments, ruins)	Yes	No
b. Has a special association with a community, person or historical event? (For example: Indigenous sacred site, traditional-use area, battlefield, birthplace of an individual of importance to the community, etc.)	Yes	No
c. Contains or is part of a cultural heritage landscape (for example, an Indigenous trail, historic road or rail corridor, park, designed garden, unique landform, or any other area in which multiple features are valued together for their interrelationship, meaning or association)?	Yes	Yes
B3 Screening for potential Cultural Heritage Impacts to the Bridge Structure		
10. a) Will the proposed project leave the substructure of the bridge unchanged?	Yes	No
b) Is the substructure of the bridge constructed with plain concrete with no untypical elements?	Yes	No

"No" answers to question 10. a) or b) lead to the requirement for a Cultural Heritage Evaluation Report (CHER). At this juncture, the Checklist requires the proponent to answer questions related to archaeology which may result in the need for an archaeological study. A study for this project is to be undertaken in the spring of 2025.

Appendix 2 - Municipal Structure Inspection Manual - Inspection Form (Bridge #24)

Ontario Structure Inspection Manual — Inspection Form

Bridge ID: 24

Inventory Data:

Structure Name	Bridge 24		
Main Hwy/Road #	Twp. Rd. 12 ☑ On ☐ Under	**Crossing Type:** ☑ Navi. Water, ☑ Non-Navi. Water, ☐ Rail, ☐ Road, ☐ Ped., ☐ Other, ☐ Over water, ☐ Over Road, ☐ Under railway, ☐ Unknown, ☐ Over railway, ☐ Under Road	
Hwy/Road Name	Township Road 12		
Structure Location	1.2km West of Blenheim Road		
Latitude		**Longitude**	
Northing		**Easting**	
Owner(s)	Township of Blandford-Blenheim	**Heritage designation:** ☐ Not Cons., ☐ Cons./not App., ☐ List/not Desig., ☐ Desig./not List, ☐ Desig. & List	
MTO Region	Southwestern	**Road Class:** ☐ Freeway, ☐ Arterial, ☐ Collector, ☐ Collector Residential, ☐ Collector Commercial, ☐ Local, ☐ Local Residential, ☐ Local Commercial, ☐ Rural Expressways, ☐ Alleyways, ☐ 4 or more lanes	
MTO District	London/Stratford	**Posted Speed**	80km/h **No. of Lanes** 2
Old County	Oxford/Waterloo	**AADT**	**% Trucks**
Geographic Twp.	Blenheim	**Inspection Route Sequence**	
Structure Type	Steel Through Truss	**Interchange Number**	
Total Deck Length	40.8 (m)	**Interchange Structure Number**	
Overall Str. Width	5.4 (m)	**Min. Vertical Clearance**	(m)
Total Deck Area	220.3 (sq.m)	**Special Routes:**	☐ Transit, ☐ Truck, ☐ School, ☐ Bicycle, ☐ Emergency, ☐ Commuter
Roadway Width	4.9 (m)	**Detour Length Around Bridge**	(km)
Skew Angle	0 (Degrees)	**Direction of Structure**	East-West
No. of Spans	1	**Fill on Structure**	(m)
Span Lengths	40.4 (m)		

Historical Data:

Year Built	1929	**Year of Last Major Rehab.**	1980
Last OSIM Inspection	2021	**Last Evaluation**	
Last Enhanced OSIM Inspection		**Current Load Limit**	12.0 / 19.0 / 26.0 (tonnes)
Enhanced Access Equipment		**Load Limit By-Law #**	/ /
Last Underwater Inspection		**By-Law Expiry Date**	
Last Condition Survey			

Rehab History: (Date/description)

1980 - New concrete deck - Abutments re-faced 2011 - Reconstruction of Deck Joints 2020 - Temporary West Floor Beam Repair

Page 1

Scheduled Improvements:			
Regional Priority Number		**Programmed Work Year**	
Nature of Program Work:			

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

Field Inspection Information:			
Date of Inspection:	September 22, 2023	**Inspection Type**	OSIM
Inspector:	Allan Garnham, P. Eng.		
Others in Party:	Trevor Hoard, C.E.T., and Jaden Postma, E.I.T.		
Access Equipment Used:	Camera, Measuring Tape,		
Weather:	Sun and clouds		
Temperature:	22 °C		

Upcoming Inspections and Investigations:		
Due date	**Priority**	**Comments**

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	✓		
Monitoring of Deformations, Settlements and Movements:			✓
Monitoring Crack Widths:	✓		

Investigation Notes:

None

Overall Structure Notes:	
Recommended Work on Structure:	Replace Structure
Timing of Recommended Work:	☐ Urgent, ☐ Now < 1 year, ☑ 1 - 5 years, ☐ 6 - 10 years, ☐ > 10 years
Overall Comments:	
Date of Next Inspection:	2025

Overall Bridge Condition:	80.7

Recommended inspections and Investigations	Due date	Priority	Comments
Boat Inspection			
Bridge master			
Coating survey			
Detailed condition survey			
Evaluation			
Fatigue			
Monitor Settlements/Movements			
Seismic			
Substructure condition survey			
Underwater			

Suspected Performance Deficiencies

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 drainage
12 Slippery surfaces
13 Flooding/channel blockage
14 Undermining of foundation
15 Unstable embankments
16 Other
17 None

Maintenance Needs

01 Lift and Swing Bridge Maintenance
02 Bridge Cleaning
03 Bridge Handrail Maintenance
04 Painting Steel Bridge Structures
05 Bridge Deck Joint Repair
06 Bridge Bearing Maintenance
07 Repair to Structural Steel
08 Repair of Bridge Concrete
09 Repair of Bridge Timber
10 Bailey bridges - Maintenance
11 Animal/Pest Control
12 Bridge Surface Repair
13 Erosion Control at Bridges
14 Concrete Sealing
15 Rout and Seal
16 Bridge Deck Drainage
17 Scaling (Loose Concrete or ACR Steel)
18 Other

Element Data

Element Group:	Abutments					**Length:**	
Element Name:	Abutment Walls					**Width:**	6.1 (m)
Location:	East & West					**Height:**	2.7 (m)
Element Description:						**Count:**	2
Material:	Cast-in-place concrete					**Total Quantity:**	32.94 (sq.m)
Element Type:	Reinforced concrete					**Not Inspected:**	☐
Environment:	☐ Benign, ☑ Moderate, ☐ Severe					**Limited Inspection:**	☐
Protection System:						**Perform. Deficiencies**	
Condition Data:	**Units**	**Exc.**	**Good**	**Fair**	**Poor***		
	sq.m	0.00	29.94	3.0	0.00	**BCI TEV:** 0.00	**BCI CEV:** 0.00
Comments:	Both abutments have been refaced and are in generally good condition. Several narrow and medium vertical cracks at both abutments. Medium vertical cracks at bearing locations at the west abutment; severe cracking under the NE bearing and at SW bearing.						
Recommended work:						**Maintenance Needs:**	
Comments Chip and patch concrete. **Type** ☑ Rehab, ☐ Repair, ☐ Replace **Timing** ☐ 1 - 5 years, ☐ Now < 1 year, ☑ 6 - 10 years, ☐ Urgent						☐ 1 year, ☐ 2 years, ☐ Urgent	

Element Group:	Abutments					**Length:**	5.4 (m)
Element Name:	Ballast Walls					**Width:**	0.25 (m)
Location:	East & West					**Height:**	
Element Description:						**Count:**	2
Material:	Cast-in-place concrete					**Total Quantity:**	2.7 (sq.m)
Element Type:	Reinforced concrete					**Not Inspected:**	☐
Environment:	☐ Benign, ☐ Moderate, ☑ Severe					**Limited Inspection:**	☐
Protection System:						**Perform. Deficiencies**	
Condition Data:	**Units**	**Exc.**	**Good**	**Fair**	**Poor***		
	sq.m	2.7	0.00	0.00	0.00	**BCI TEV:** 0.00	**BCI CEV:** 0.00
Comments:	Both ballast wall tops patched with expansion joint replacement in 2011.						
Recommended work:						**Maintenance Needs:**	
Comments **Type** **Timing**						☐ 1 year, ☐ 2 years, ☐ Urgent	

Element Group:	Abutments					**Length:**	
Element Name:	Bearings					**Width:**	
Location:	All					**Height:**	
Element Description:						**Count:**	4
Material:	Steel					**Total Quantity:**	4.0
Element Type:	Other					**Not Inspected:**	☐
Environment:	☐ Benign, ☑ Moderate, ☐ Severe					**Limited Inspection:**	☑
Protection System:						**Perform. Deficiencies**	
Condition Data:	**Units**	**Exc.**	**Good**	**Fair**	**Poor***		
	each	0.00	0.00	4.0	0.00	**BCI TEV:** 0.00	**BCI CEV:** 0.00
Comments:	Bearings are in fair condition. There is a build-up of vegetation and debris at each bearing location, possibly causing accelerated corrosion.						
Recommended work:						**Maintenance Needs:** 02. Bridge Cleaning	

Comments

Remove vegetation and debris at bearing locations.

Type

☑ Rehab, ☐ Repair,
☐ Replace

Timing

☐ 1 - 5 years, ☐ Now < 1 year, ☐ 6 - 10 years,
☑ Urgent

☐ 1 year, ☐ 2 years,
☑ Urgent

Clean bearing seats.

Element Group:	Abutments					**Length:**	4.3 (m)
Element Name:	Wingwalls					**Width:**	
Location:	Corners of Structure					**Height:**	3.1 (m)
Element Description:						**Count:**	4
Material:	Cast-in-place concrete					**Total Quantity:**	53.32 (sq.m)
Element Type:	Reinforced concrete					**Not Inspected:**	☐
Environment:	☐ Benign, ☑ Moderate, ☐ Severe					**Limited Inspection:**	☐
Protection System:						**Perform. Deficiencies**	
Condition Data:	**Units**	**Exc.**	**Good**	**Fair**	**Poor***		
	sq.m	0.00	23.41	23.41	6.5	**BCI TEV:** 0.00	**BCI CEV:** 0.00
Comments:	East wingwalls are original while the west wingwalls have been refaced. All wingwalls have some cracking with efflorescence. Northeast wingwall exhibits areas of disintegration and delaminations.						
Recommended work:						**Maintenance Needs:**	

Comments

Chip and patch concrete.

Type

☑ Rehab, ☐ Repair,
☐ Replace

Timing

☐ 1 - 5 years, ☐ Now < 1 year, ☑ 6 - 10 years,
☐ Urgent

☐ 1 year, ☐ 2 years,
☐ Urgent

Element Group:	Approaches					**Length:**	12.5
Element Name:	Barriers					**Width:**	
Location:	North & South					**Height:**	
Element Description:						**Count:**	4
Material:	Steel					**Total Quantity:**	50.0 (m)
Element Type:	Guiderail					**Not Inspected:**	☐
Environment:	☐ Benign, ☐ Moderate, ☑ Severe					**Limited Inspection:**	☐
Protection System:	Galvanized					**Perform. Deficiencies**	
Condition Data:	**Units**	**Exc.**	**Good**	**Fair**	**Poor***		
	m	0.00	0.00	50.0	0.00	**BCI TEV:** 0.00	**BCI CEV:** 0.00
Comments:	SBGR on approaches is in fair condition. SBGR leans away from the roadway and does not connect to structure. There are no end treatments present at all 4 quadrants.						

Recommended work:	**Maintenance Needs:**
Comments Replace steel beam guide rail and install with end treatments and structure connection. **Type** **Timing** ☐ Rehab, ☐ Repair, ☑ Replace ☑ 1 - 5 years, ☐ Now < 1 year, ☐ 6 - 10 years, ☐ Urgent	☐ 1 year, ☐ 2 years, ☐ Urgent

Element Group:	Approaches					**Length:**	16.0 (m)
Element Name:	Wearing Surface					**Width:**	4.9 (m)
Location:	East & West					**Height:**	
Element Description:						**Count:**	2
Material:	Asphalt					**Total Quantity:**	156.8 (sq.m)
Element Type:	Other					**Not Inspected:**	☐
Environment:	☐ Benign, ☐ Moderate, ☑ Severe					**Limited Inspection:**	☐
Protection System:						**Perform. Deficiencies**	
Condition Data:	**Units**	**Exc.**	**Good**	**Fair**	**Poor***	09. Rough riding surface	
	sq.m	0.00	140.8	8.0	8.0	**BCI TEV:** 0.00	**BCI CEV:** 0.00
Comments:	Asphalt at both approaches is in good condition overall with some longitudinal wide cracking along centreline. There is settlement at both approaches next to ballast wall causing a rough riding surface for motorists. Cold patch repairs have been made.						

Recommended work:	**Maintenance Needs:**
Comments Patch repair settlement of approaches next to ballast walls. **Type** **Timing** ☑ Rehab, ☐ Repair, ☐ Replace ☐ 1 - 5 years, ☐ Now < 1 year, ☐ 6 - 10 years, ☑ Urgent	☐ 1 year, ☐ 2 years, ☐ Urgent

Element Group:	Barriers					**Length:**	40.8 (m)
Element Name:	Railing System					**Width:**	
Location:	North & South					**Height:**	
Element Description:						**Count:**	2
Material:	Steel					**Total Quantity:**	81.6 (m)
Element Type:	Railing with lattice					**Not Inspected:**	☐
Environment:	☐ Benign, ☐ Moderate, ☑ Severe					**Limited Inspection:**	☐
Protection System:						**Perform. Deficiencies**	
Condition Data:	**Units**	**Exc.**	**Good**	**Fair**	**Poor***		
	m	0.00	0.00	78.6	3.0	**BCI TEV:** 0.00	**BCI CEV:** 0.00
Comments:	Lattice has minor damage in few locations. Railings are rust covered and in fair condition. Railings do not meet any current standard for loading.						

Recommended work:	**Maintenance Needs:**
Comments Repair lattice. **Type** **Timing** ☑ Rehab, ☐ Repair, ☑ 1 - 5 years, ☐ Now < 1 year, ☐ 6 - 10 years, ☐ Replace ☐ Urgent	☐ 1 year, ☐ 2 years, ☐ Urgent

Element Group:	Beams/Main Longitudinal Elements					**Length:**	5.4 (m)
Element Name:	Floor Beams					**Width:**	
Location:	Underside deck					**Height:**	
Element Description:						**Count:**	7
Material:	Steel					**Total Quantity:**	7.0
Element Type:	I-Type					**Not Inspected:**	☐
Environment:	☐ Benign, ☑ Moderate, ☐ Severe					**Limited Inspection:**	☐
Protection System:						**Perform. Deficiencies**	
Condition Data:	**Units**	**Exc.**	**Good**	**Fair**	**Poor***		
	each	0.00	0.00	6.0	1.0	**BCI TEV:** 0.00	**BCI CEV:** 0.00
Comments:	Severe surface rust on all floor beams. The floor beam end at the northwest corner has previously fully failed in shear as a result of corrosion. Closure of the road was recommended as a result. Temporary support to the stringer has since been installed and appears to be functioning as intended.						

Recommended work:	**Maintenance Needs:**
Comments **Type** **Timing** ☐ Rehab, ☐ Repair, ☐ 1 - 5 years, ☐ Now < 1 year, ☐ 6 - 10 years ☐ Replace ☐ Urgent	☐ 1 year, ☐ 2 years, ☐ Urgent

Element Group:	Beams/Main Longitudinal Elements	**Length:**	40.8 (m)
Element Name:	Stringers	**Width:**	
Location:	Underside deck	**Height:**	
Element Description:		**Count:**	0
Material:	Steel	**Total Quantity:**	48.0
Element Type:	I-Type	**Not Inspected:**	☐
Environment:	☐ Benign, ☐ Moderate, ☑ Severe	**Limited Inspection:**	☐
Protection System:		**Perform. Deficiencies**	

Condition Data:	**Units**	**Exc.**	**Good**	**Fair**	**Poor***		
	each	0.00	0.00	48.0	0.00	**BCI TEV:** 0.00	**BCI CEV:** 0.00

Comments:	Severe surface rust on all stringers but no signs of perforations or isolated thinning.

Recommended work:	**Maintenance Needs:**
Comments **Type Timing**	☐ 1 year, ☐ 2 years, ☐ Urgent

Element Group:	Bracing	**Length:**	
Element Name:	Bracing	**Width:**	
Location:	All	**Height:**	
Element Description:		**Count:**	0
Material:	Steel	**Total Quantity:**	16.0
Element Type:	Channel	**Not Inspected:**	☐
Environment:	☐ Benign, ☑ Moderate, ☐ Severe	**Limited Inspection:**	☐
Protection System:		**Perform. Deficiencies**	

Condition Data:	**Units**	**Exc.**	**Good**	**Fair**	**Poor***		
	each	0.00	0.00	13.0	3.0	**BCI TEV:** 0.00	**BCI CEV:** 0.00

Comments:	Cross bracing underneath bridge is covered with rust but appears to be in fair to poor condition. Few areas appear to be thinning at ends at connections. One is perforated at east end. Two braces at west end, north side have one leg each rusted through near connections.

Recommended work:	**Maintenance Needs:**
Comments Repair cross bracing at underside **Type** **Timing** ☑ Rehab, ☐ Repair, ☐ Replace ☑ 1 - 5 years, ☐ Now < 1 year, ☐ 6 - 10 years, ☐ Urgent	☐ 1 year, ☐ 2 years, ☐ Urgent

Element Group:	Coatings					**Length:**	
Element Name:	Railing Systems/Hand Railings					**Width:**	
Location:	All					**Height:**	
Element Description:						**Count:**	1
Material:	Red lead primer/alkyd					**Total Quantity:**	1.0
Element Type:	Other					**Not Inspected:**	☐
Environment:	☐ Benign, ☑ Moderate, ☐ Severe					**Limited Inspection:**	☐
Protection System:						**Perform. Deficiencies**	
Condition Data:	**Units**	**Exc.**	**Good**	**Fair**	**Poor***		
	sq.m	0.00	0.00	0.00	1.0	**BCI TEV: 0.00**	**BCI CEV: 0.00**
Comments:	No signs of coating exist. Bridge is covered with surface rust.						

Recommended work:	**Maintenance Needs:**
Comments Clean and coat structural steel. **Type** **Timing** ☐ Rehab, ☐ Repair, ☐ Replace ☑ 1 - 5 years, ☐ Now < 1 year, ☐ 6 - 10 years, ☐ Urgent	☐ 1 year, ☐ 2 years, ☐ Urgent

Element Group:	Coatings					**Length:**	
Element Name:	Structural Steel					**Width:**	
Location:	All					**Height:**	
Element Description:						**Count:**	1
Material:	Red lead primer/alkyd					**Total Quantity:**	1.0
Element Type:	Other					**Not Inspected:**	☐
Environment:	☐ Benign, ☑ Moderate, ☐ Severe					**Limited Inspection:**	☐
Protection System:						**Perform. Deficiencies**	
Condition Data:	**Units**	**Exc.**	**Good**	**Fair**	**Poor***		
	sq.m	0.00	0.00	0.00	1.0	**BCI TEV: 0.00**	**BCI CEV: 0.00**
Comments:	No signs of coating exist. Bridge is covered with surface rust.						

Recommended work:	**Maintenance Needs:**
Comments Clean and coat structural steel. **Type** **Timing** ☑ Rehab, ☐ Repair, ☐ Replace ☑ 1 - 5 years, ☐ Now < 1 year, ☐ 6 - 10 years, ☐ Urgent	☐ 1 year, ☐ 2 years, ☐ Urgent

Element Group:	Decks					**Length:**	40.8 (m)
Element Name:	Deck top					**Width:**	5.4 (m)
Location:	All					**Height:**	
Element Description:						**Count:**	1
Material:	Cast-in-place concrete					**Total Quantity:**	220.3 (sq.m)
Element Type:	Reinforced concrete					**Not Inspected:**	☐
Environment:	☐ Benign, ☐ Moderate, ☑ Severe					**Limited Inspection:**	☐
Protection System:						**Perform. Deficiencies**	
Condition Data:	**Units**	**Exc.**	**Good**	**Fair**	**Poor***		
	sq.m	0.00	100.3	120.0	0.00	**BCI TEV:** 0.00	**BCI CEV:** 0.00
Comments:	Exposed concrete deck top has medium transverse cracks @ each floor beam location. Concrete has smooth finish with medium to heavy scaling over more than 50% of surface.						

Recommended work:	**Maintenance Needs:**
Comments Consider a non skid epoxy coating to waterproof deck top **Type** **Timing** ☑ Rehab, ☐ Repair, ☐ Replace ☐ 1 - 5 years, ☐ Now < 1 year, ☑ 6 - 10 years, ☐ Urgent	☐ 1 year, ☐ 2 years, ☐ Urgent

Element Group:	Decks					**Length:**	
Element Name:	Drainage					**Width:**	
Location:	Deck slab top					**Height:**	
Element Description:						**Count:**	6
Material:	Steel					**Total Quantity:**	6.0
Element Type:	Metal drain pipes					**Not Inspected:**	☐
Environment:	☐ Benign, ☐ Moderate, ☑ Severe					**Limited Inspection:**	☐
Protection System:	Galvanized					**Perform. Deficiencies**	
Condition Data:	**Units**	**Exc.**	**Good**	**Fair**	**Poor***		
	sq.m	0.00	0.00	6.0	0.00	**BCI TEV:** 0.00	**BCI CEV:** 0.00
Comments:	Deck drains only extend just below soffit level. Deck drains are in fair condition.						

Recommended work:	**Maintenance Needs:**
Comments Extend deck drains. **Type** **Timing** ☑ Rehab, ☐ Repair, ☐ Replace ☑ 1 - 5 years, ☐ Now < 1 year, ☐ 6 - 10 years, ☐ Urgent	☐ 1 year, ☐ 2 years, ☐ Urgent

Element Group:	Decks					**Length:**	40.4 (m)
Element Name:	Soffit					**Width:**	5.4 (m)
Location:	All					**Height:**	
Element Description:						**Count:**	1
Material:	Steel					**Total Quantity:**	218.16 (sq.m)
Element Type:	Corrugated Steel					**Not Inspected:**	☐
Environment:	☐ Benign, ☑ Moderate, ☐ Severe					**Limited Inspection:**	☐
Protection System:						**Perform. Deficiencies**	
Condition Data:	**Units**	**Exc.**	**Good**	**Fair**	**Poor***		
	sq.m	0.00	216.16	1.0	1.0	**BCI TEV:** 0.00	**BCI CEV:** 0.00
Comments:	Galvanized steel deck pans are in good condition with some rusting around deck drains and at fascia ends. Between the 3rd and 4th floor beam from the east, the deck pan is rusted through at the stringer location at the north end.						
Recommended work:						**Maintenance Needs:**	
Comments **Type Timing**						☐ 1 year, ☐ 2 years, ☐ Urgent	

Element Group:	Decks					**Length:**	40.8 (m)
Element Name:	Wearing Surface					**Width:**	4.9 (m)
Location:	All					**Height:**	
Element Description:						**Count:**	1
Material:	Cast-in-place concrete					**Total Quantity:**	199.9 (sq.m)
Element Type:	Reinforced concrete					**Not Inspected:**	☐
Environment:	☐ Benign, ☐ Moderate, ☑ Severe					**Limited Inspection:**	☐
Protection System:						**Perform. Deficiencies**	
Condition Data:	**Units**	**Exc.**	**Good**	**Fair**	**Poor***		
	sq.m	0.00	79.9	120.0	0.00	**BCI TEV:** 0.00	**BCI CEV:** 0.00
Comments:	Wearing surface is the exposed concrete deck top & has medium transverse cracks @ each floor beam location. Concrete has smooth finish with medium to heavy scaling at over 50% of surface.						
Recommended work:						**Maintenance Needs:**	
Comments See deck top note **Type** **Timing** ☑ Rehab, ☐ Repair, ☐ 1 - 5 years, ☐ Now < 1 year, ☑ 6 - 10 years, ☐ Replace ☐ Urgent						☐ 1 year, ☐ 2 years, ☐ Urgent	

Element Group:	Joints					**Length:**	5.4 (m)
Element Name:	Armouring/Retaining Devices					**Width:**	0.3 (m)
Location:	East & West					**Height:**	
Element Description:						**Count:**	2
Material:	Steel					**Total Quantity:**	10.8 (m)
Element Type:	Sliding Plate					**Not Inspected:**	☐
Environment:	☐ Benign, ☐ Moderate, ☑ Severe					**Limited Inspection:**	☐
Protection System:						**Perform. Deficiencies**	
Condition Data:	**Units**	**Exc.**	**Good**	**Fair**	**Poor***		
	m	10.8	0.00	0.00	0.00	**BCI TEV:** 0.00	**BCI CEV:** 0.00
Comments:	Both steel sliding plates were replaced in 2011 and are in good condition. Settlement of deck at west end is compromising seal and joint armouring has been repaired.						
Recommended work:						**Maintenance Needs:**	
Comments **Type Timing**						☐ 1 year, ☐ 2 years, ☐ Urgent	

Element Group:	Signs					**Length:**	
Element Name:	Signs					**Width:**	
Location:	Corners of bridge					**Height:**	
Element Description:						**Count:**	6
Material:						**Total Quantity:**	6.0
Element Type:	Other					**Not Inspected:**	☐
Environment:	☐ Benign, ☑ Moderate, ☐ Severe					**Limited Inspection:**	☐
Protection System:						**Perform. Deficiencies**	
Condition Data:	**Units**	**Exc.**	**Good**	**Fair**	**Poor***		
	each	0.00	5.0	0.00	1.0	**BCI TEV:** 0.00	**BCI CEV:** 0.00
Comments:	Hazard markers are present 3 out of 4 corners (NE corner post and sign missing). 1 Load Limit sign is present at each approach. No "Narrow Bridge" or "One Lane" signs present. Overhead clearance signs to be installed at bridge.						
Recommended work:						**Maintenance Needs:**	
Comments Install "Narrow Bridge" and "One Lane" signs.(Urgent) Install overhead clearance signs on structure (urgent) Install 1 hazard sign **Type** **Timing** ☐ Rehab, ☐ Repair, ☐ 1 - 5 years, ☐ Now < 1 year, ☐ 6 - 10 years, ☐ Replace ☑ Urgent						☐ 1 year, ☐ 2 years, ☐ Urgent	

Element Group:	Trusses/Arches					**Length:**	
Element Name:	Bottom Chords					**Width:**	
Location:	All					**Height:**	
Element Description:						**Count:**	0
Material:	Steel					**Total Quantity:**	16.0
Element Type:	Channel					**Not Inspected:**	☐
Environment:	☐ Benign, ☐ Moderate, ☑ Severe					**Limited Inspection:**	☐
Protection System:						**Perform. Deficiencies**	
Condition Data:	**Units**	**Exc.**	**Good**	**Fair**	**Poor***		
	each	0.00	0.00	6.0	10.0	**BCI TEV:** 0.00	**BCI CEV:** 0.00
Comments:	East end bottom chords have severe surface rust with loss of material @ vertical legs @ ends. At the northeast bottom chords, both the vertical legs are severely thin or rusted away completely. Bottom chords are damaged on North side @ 2nd bay from East & at South side @ 1st,2nd(severe dent),4th,5th & 6th bay from East. Bottom chords @ 4th floor beam from East, vertical legs of all 4 members have 50% loss of material @ gusset plate connection @ both sides of hanger @ North & South side of bridge (now with perforations in bottom chord). Bottom chord @ 2nd floor beam from East, North side is 70% thinning @ vertical leg @ outside @ gusset plate. Bottom chord at NW corner, the inner vertical leg of the angle is very poor; outer vertical leg of angle also has severe thinning. Most bottom chords have severe rust at the connection plates and along the bottom of the chord angle itself.							

Recommended work:		**Maintenance Needs:**
Comments Repair/reinforce most bottom chords Reconfigure concrete at east end so truss separate from conc		☐ 1 year, ☐ 2 years, ☐ Urgent
Type	**Timing**	
☑ Rehab, ☐ Repair, ☐ Replace	☑ 1 - 5 years, ☐ Now < 1 year, ☐ 6 - 10 years, ☐ Urgent	
☑ Rehab, ☐ Repair, ☐ Replace	☑ 1 - 5 years, ☐ Now < 1 year, ☐ 6 - 10 years, ☐ Urgent	

Element Group:	Trusses/Arches					**Length:**	
Element Name:	Connections					**Width:**	
Location:	All					**Height:**	
Element Description:						**Count:**	32
Material:	Steel					**Total Quantity:**	32.0
Element Type:	Other					**Not Inspected:**	☐
Environment:	☐ Benign, ☑ Moderate, ☐ Severe					**Limited Inspection:**	☐
Protection System:						**Perform. Deficiencies**	
Condition Data:	**Units**	**Exc.**	**Good**	**Fair**	**Poor***		
	each	0.00	0.00	32.0	0.00	**BCI TEV:** 0.00	**BCI CEV:** 0.00
Comments:	Connection plates are covered with rust and many are deformed at bottom chord connections. Rivet heads are in poor condition @ few connection plates.						

Recommended work:	**Maintenance Needs:**
Comments Repair/reinforce connection plates at bottom chord locations. **Type** **Timing** ☑ Rehab, ☐ Repair, ☐ Replace ☑ 1 - 5 years, ☐ Now < 1 year, ☐ 6 - 10 years, ☐ Urgent	☐ 1 year, ☐ 2 years, ☐ Urgent

Element Group:	Trusses/Arches					**Length:**	
Element Name:	Top Chords					**Width:**	
Location:	All					**Height:**	
Element Description:						**Count:**	8
Material:	Steel					**Total Quantity:**	8.0
Element Type:	I-Type					**Not Inspected:**	☐
Environment:	☐ Benign, ☑ Moderate, ☐ Severe					**Limited Inspection:**	☐
Protection System:						**Perform. Deficiencies**	
Condition Data:	**Units**	**Exc.**	**Good**	**Fair**	**Poor***		
	each	0.00	0.00	8.0	0.00	**BCI TEV:** 0.00	**BCI CEV:** 0.00
Comments:	Top chords are surface rust covered and in fair condition.						

Recommended work:	**Maintenance Needs:**
Comments **Type** **Timing**	☐ 1 year, ☐ 2 years, ☐ Urgent

Element Group:	Trusses/Arches					**Length:**	
Element Name:	Verticals/Diagonals					**Width:**	
Location:	All					**Height:**	
Element Description:						**Count:**	0
Material:	Steel					**Total Quantity:**	30.0
Element Type:	I-Type					**Not Inspected:**	☐
Environment:	☐ Benign, ☑ Moderate, ☐ Severe					**Limited Inspection:**	☐
Protection System:						**Perform. Deficiencies**	
Condition Data:	**Units**	**Exc.**	**Good**	**Fair**	**Poor***		
	sq.m	0.00	0.00	30.0	0.00	**BCI TEV:** 0.00	**BCI CEV:** 0.00
Comments:	Vertical & diagonal members are covered with surface rust & in fair condition.						
Recommended work:						**Maintenance Needs:**	
Comments **Type Timing**						☐ 1 year, ☐ 2 years, ☐ Urgent	

* A quantity must be estimated using the appropriate unit (e.g. sq.m.). Percent should not be used.

Recommended Work Summary

Element Group	Element Name	Element BCI	Recommended Work
Abutments	Abutment Walls Bearings Wingwalls		**Time:** 6-10 years **Type:** Rehab Chip and patch concrete
Abutments	Bearings		**Time:** Urgent **Type:** Rehab Remove vegetation and debris at bearing locations.
Approaches	Barriers		**Time:** Urgent **Type:** Rehab Replace steel beam guide rail and install with end treatments and structure connection.
Approaches	Wearing Surface		**Time:** Urgent **Type:** Rehab Patch repair settlement of approaches next to ballast walls.
Barriers	Railing System		**Time:** 1 - 5 years **Type:** Rehab Repair lattice.
Bracing	Bracing		**Time:** 1 - 5 years **Type:** Rehab Repair cross bracing at underside
Coatings	Railing Systems/Hand Railings		**Time:** 1 - 5 years **Type:** Clean and coat structural steel.
Coatings	Structural Steel		**Time:** 1 - 5 years **Type:** Rehab Clean and coat structural steel.
Decks	Deck Top Wearing Surface		**Time:** 6 - 10 years **Type:** Rehab Consider a non skid epoxy coating to waterproof deck top.
Decks	Drainage		**Time:** 1 - 5 years **Type:** Rehab Extend deck drains.
Signs	Signs		**Time:** Urgent **Type:** Install “Narrow Bridge” and “One Lane” signs. Install 1 hazard sign and post at northeast

Signs	Signs		**Time:** urgent **Type:** Install overhead clearance signs on structure.
Trusses/Arches	Bottom Chords		**Time:** 1 - 5 years **Type:** Rehab Repair/reinforce most bottom chords
Trusses/Arches	Bottom Chords		**Time:** 1 - 5 years **Type:** Rehab Reconfigure concrete at east end so truss separate from concrete
Trusses/Arches	Connections		**Time:** 1 - 5 years **Type:** Rehab Repair/reinforce connection plates at bottom chord locations.
Abutments	Ballast Walls		
Beams/Main Longitudinal Elements	Stringers		
Decks	Soffit		
Joints	Armouring/ Retaining Devices		
Trusses/Arches	Top Chords		
Trusses/Arches	Verticals/Diagonals		



1. East Approach (looking west)



2. West Approach (looking east)



3. Wearing Surface (looking east)



4. North Barrier (looking east)



5. South Barrier (looking east)



6. North Truss (looking east)



7. South Truss (looking east)



8. Overhead Portal Bracing (looking east)



9. Load Post Sign (looking west)



10. South Elevation



11. East Abutment



12. West Abutment



13. Soffit (looking east)



14. Soffit (looking west)



15. Missing Northeast Hazard Sign



16. Hole in Bottom Chord of South Truss at Midspan Near Gusset Plate



17. Rusted Gusset Plate and Rivets on Bottom Chord of North Truss (typical)



18. Bad Gusset Plate and Rivets on Bottom Chord of South Truss



19. Dented Bottom Chord of South Truss



20. Rusted and Thinning Verticals of Northeast Bottom Chord (looking east)



21. Rusted and Thinning Verticals of Northeast Bottom Chord (looking south)



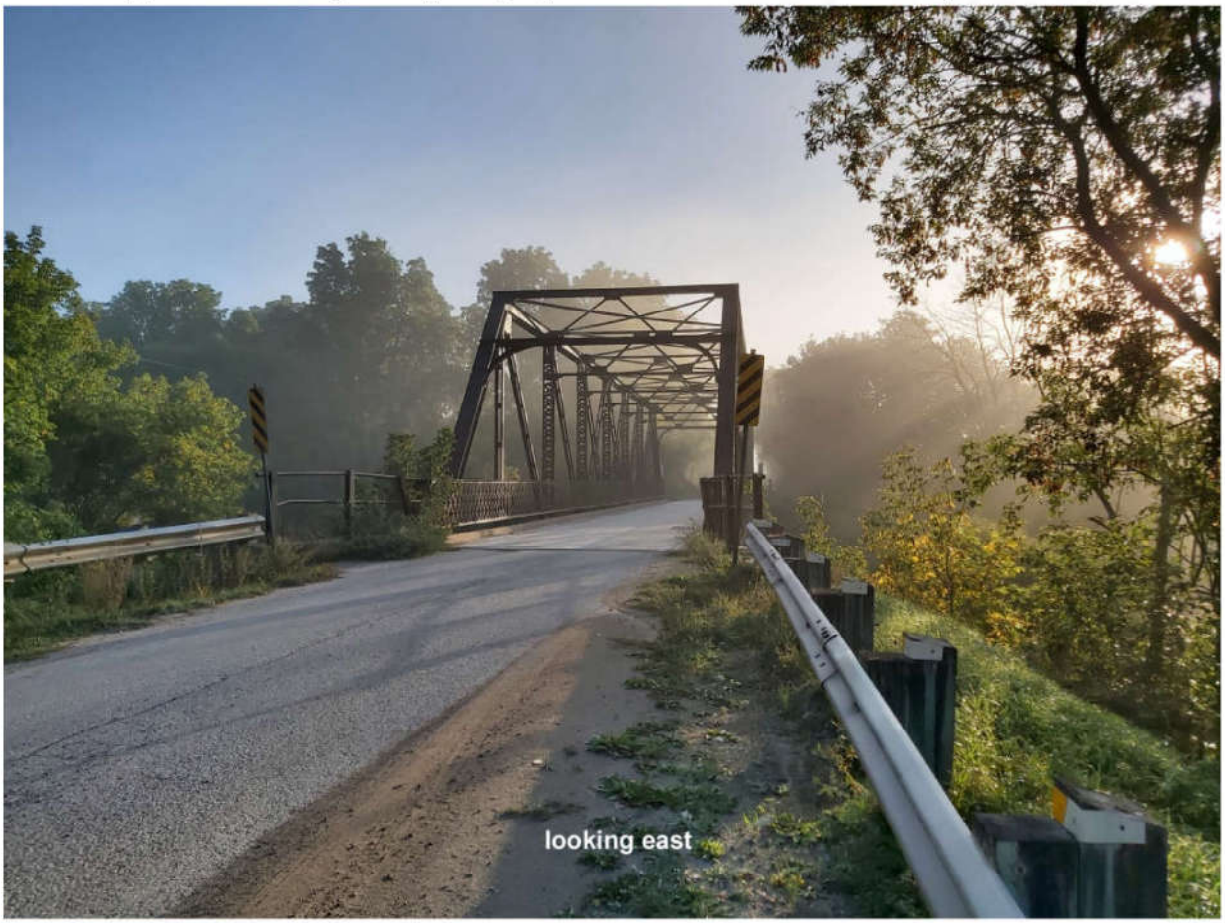
22. Rusted Verticals of Southeast Bottom Chord

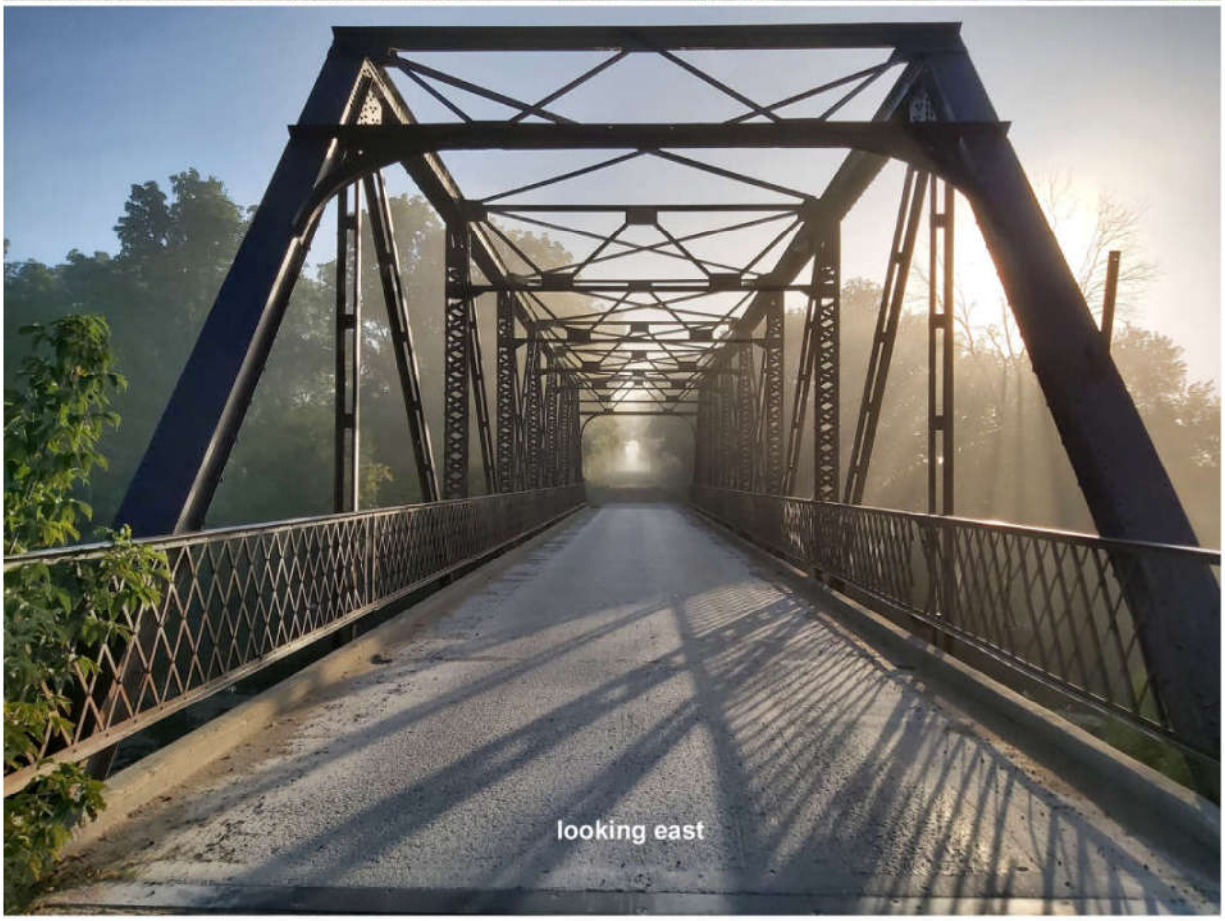
Appendix 3 - Bridge #24 photographs - K. Smart & Associates September 20, 2022





Appendix 3 - Bridge #24 photographs - K. Smart & Associates September 20, 2022





Appendix 3 - Bridge #24 photographs - K. Smart & Associates September 20, 2022

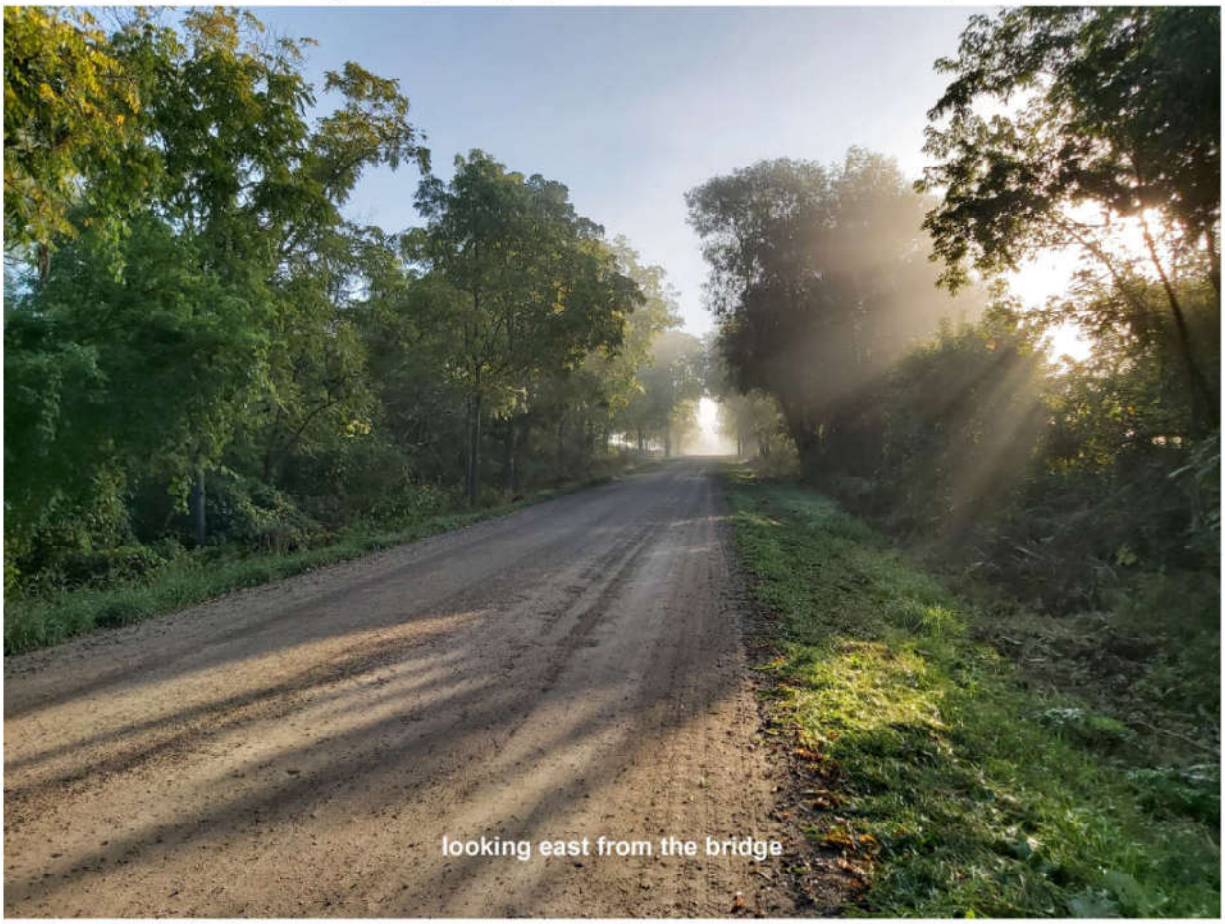


looking east

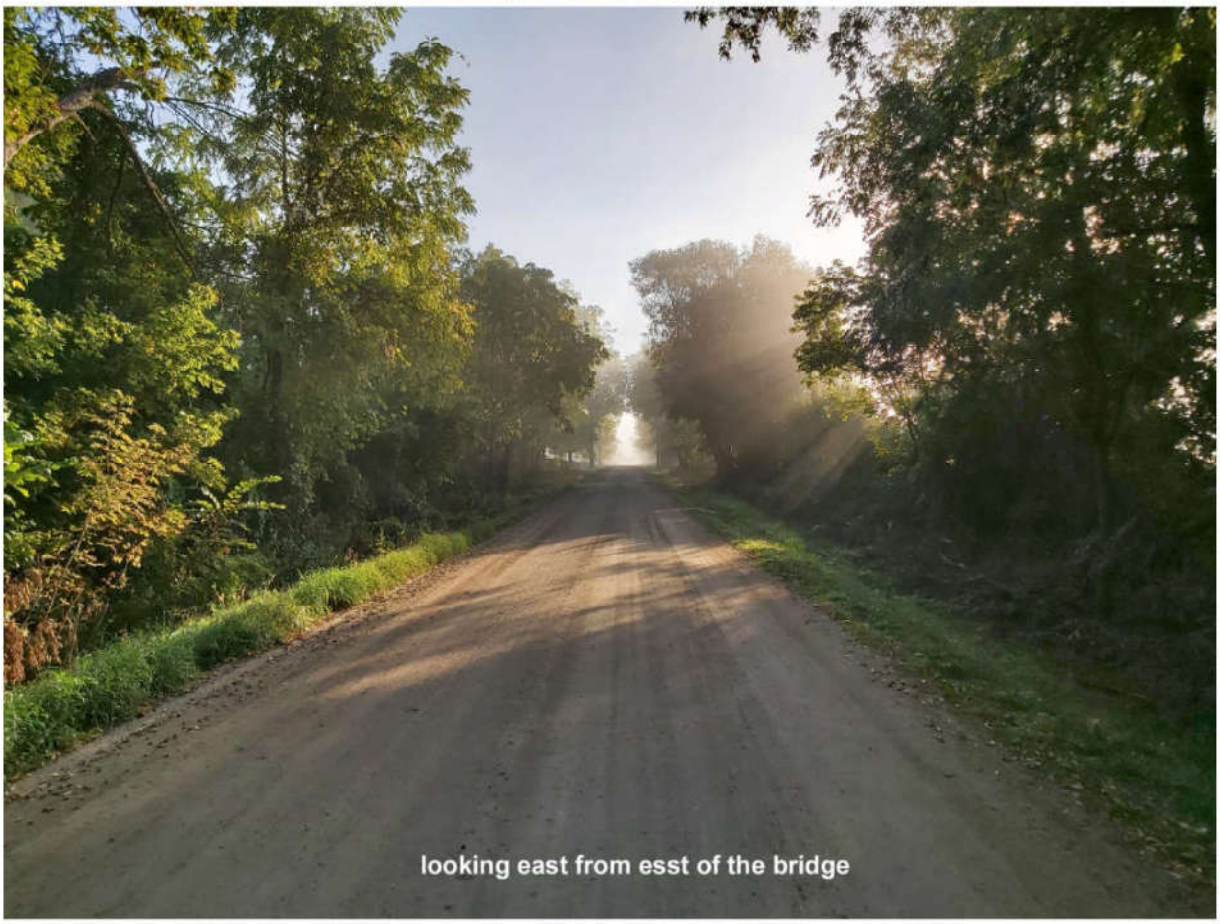


loking east from the bridge

Appendix 3 - Bridge #24 photographs - K. Smart & Associates September 20, 2022

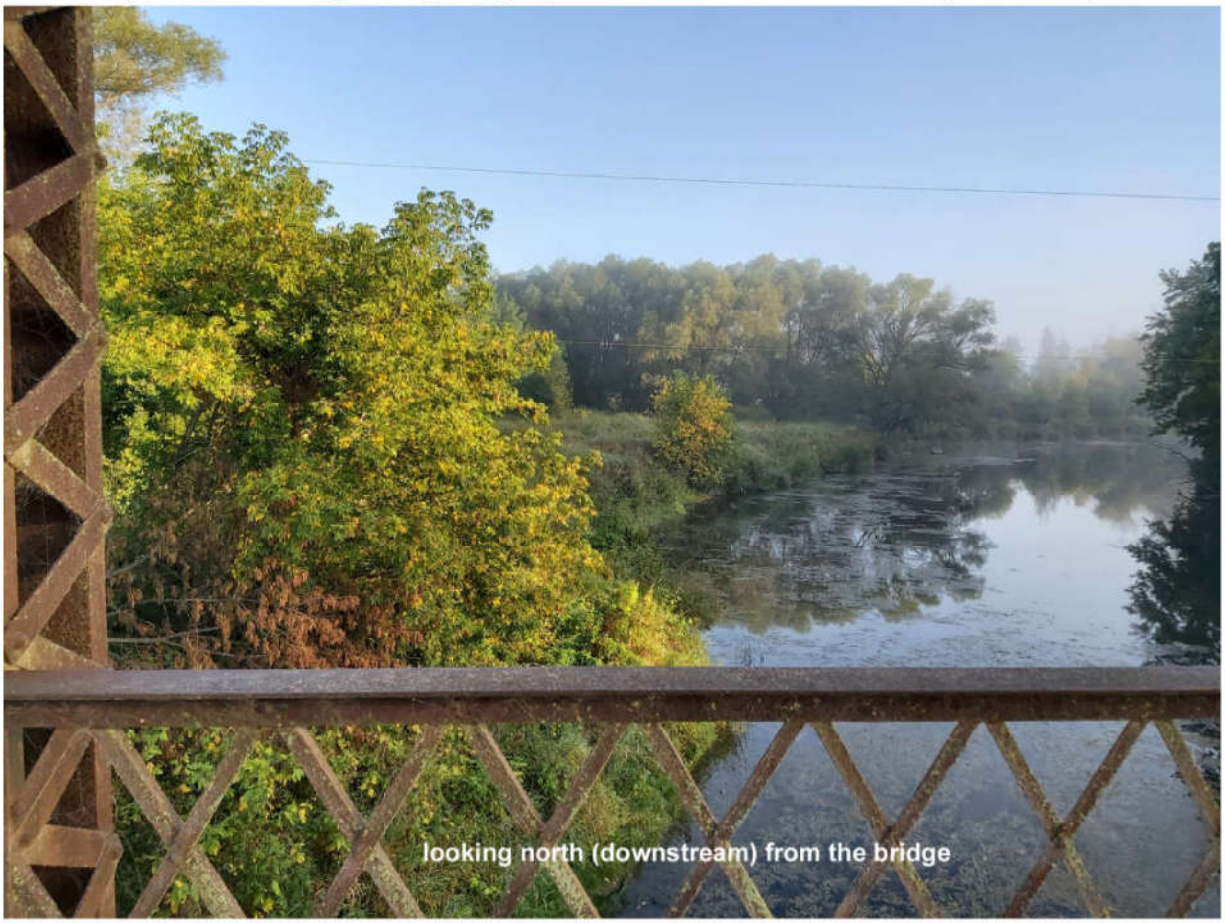


looking east from the bridge

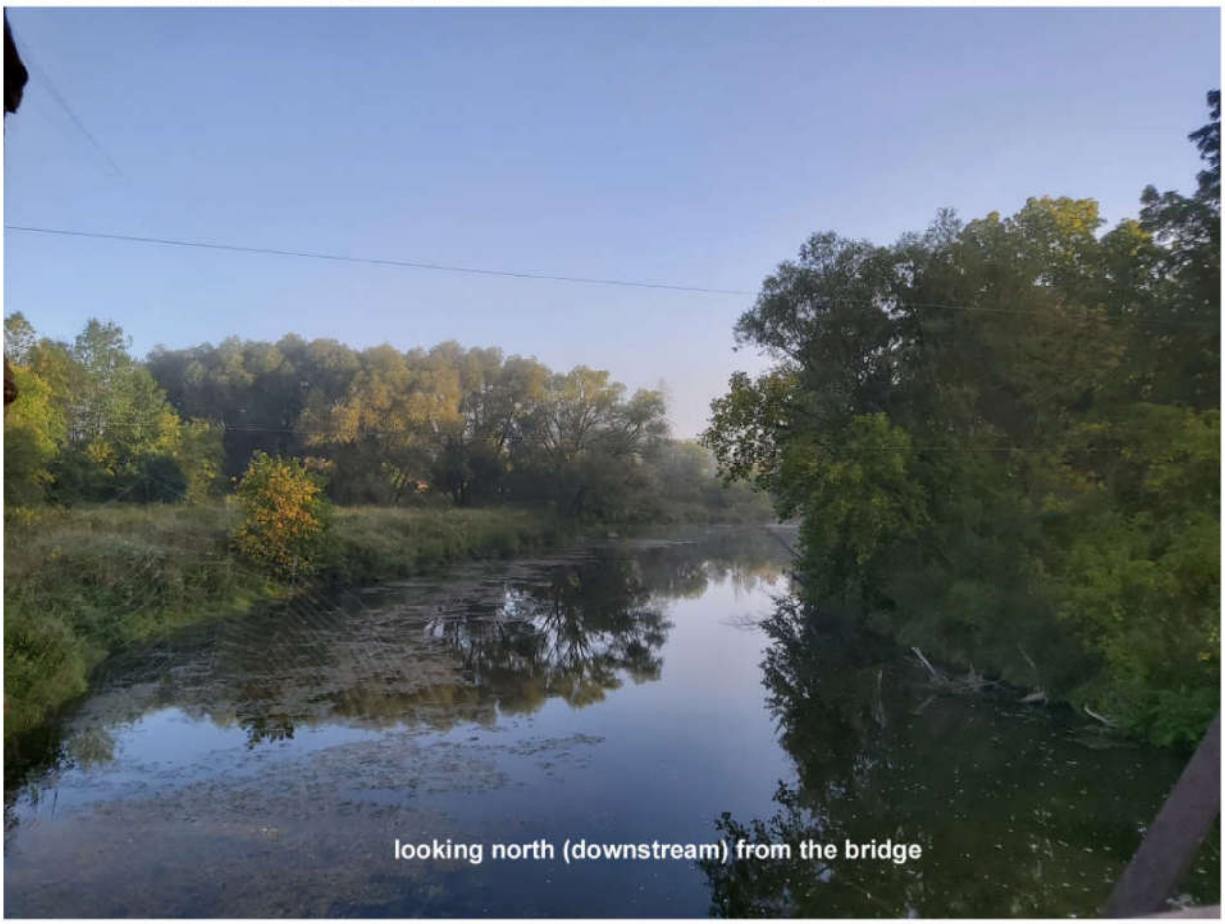


looking east from esst of the bridge

Appendix 3 - Bridge #24 photographs - K. Smart & Associates September 20, 2022

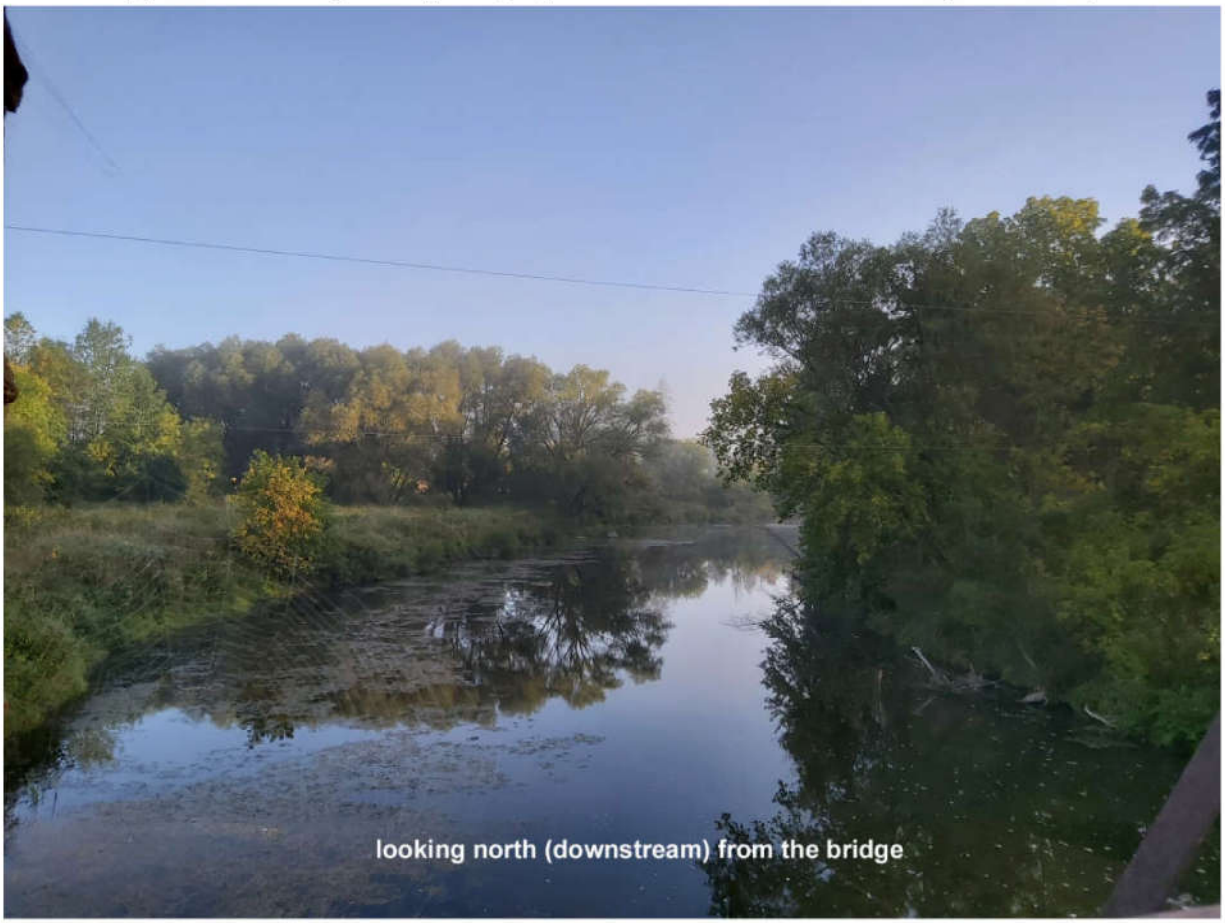


looking north (downstream) from the bridge



looking north (downstream) from the bridge

Appendix 3 - Bridge #24 photographs - K. Smart & Associates September 20, 2022



looking north (downstream) from the bridge

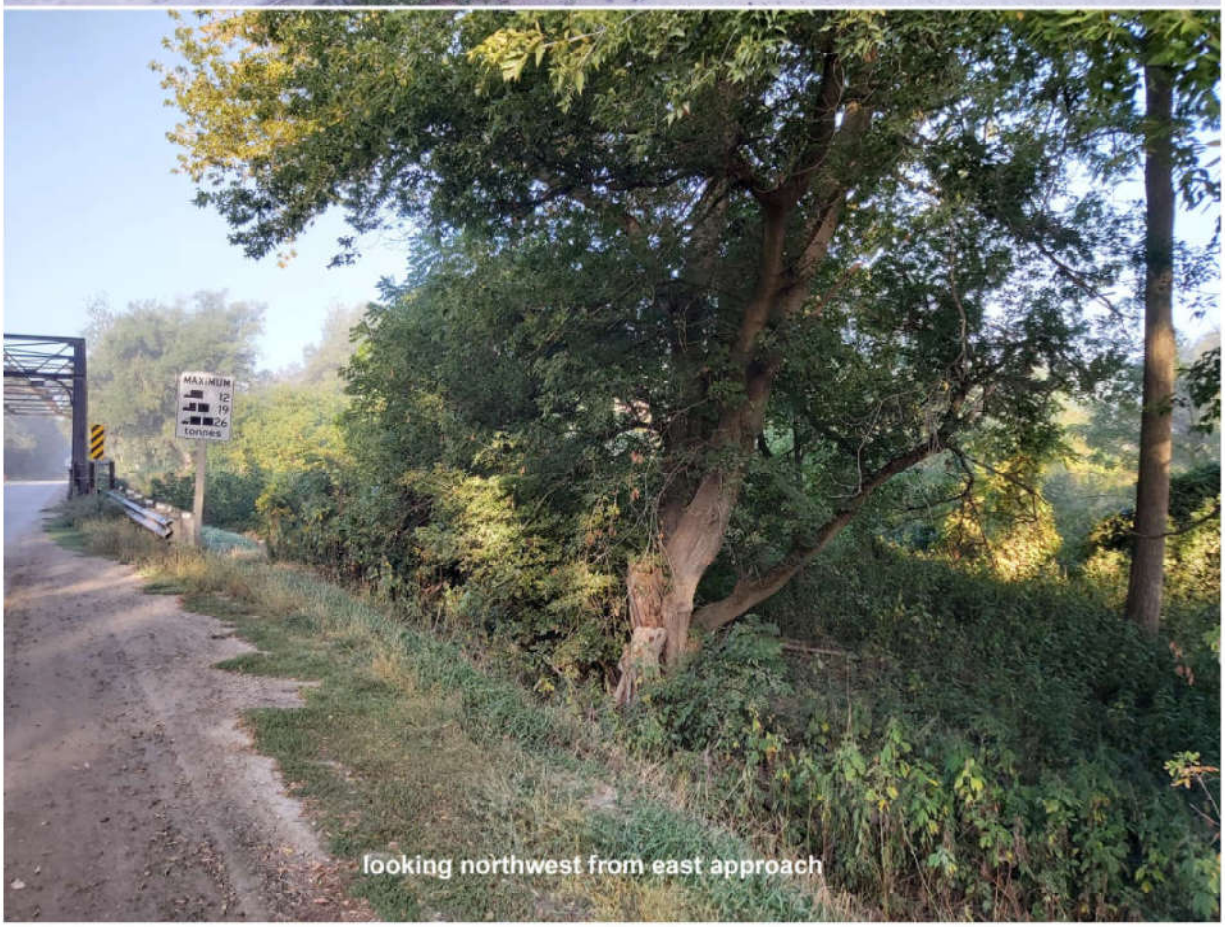


looking north at laneway, northwest of bridge

Appendix 3 - Bridge #24 photographs - K. Smart & Associates September 20, 2022



looking northeast from east end of the bridge

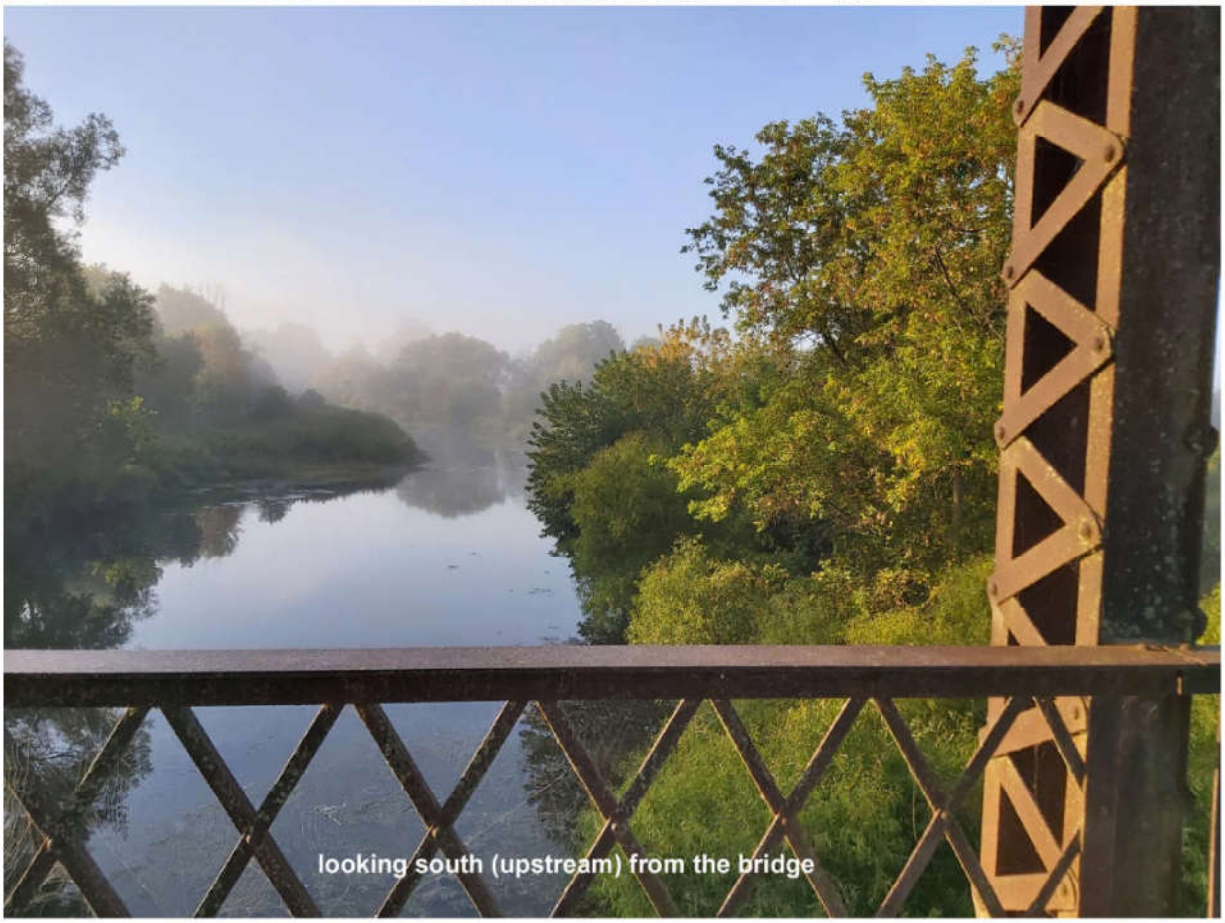


looking northwest from east approach

Appendix 3 - Bridge #24 photographs - K. Smart & Associates September 20, 2022



looking northwest from west end of the bridge

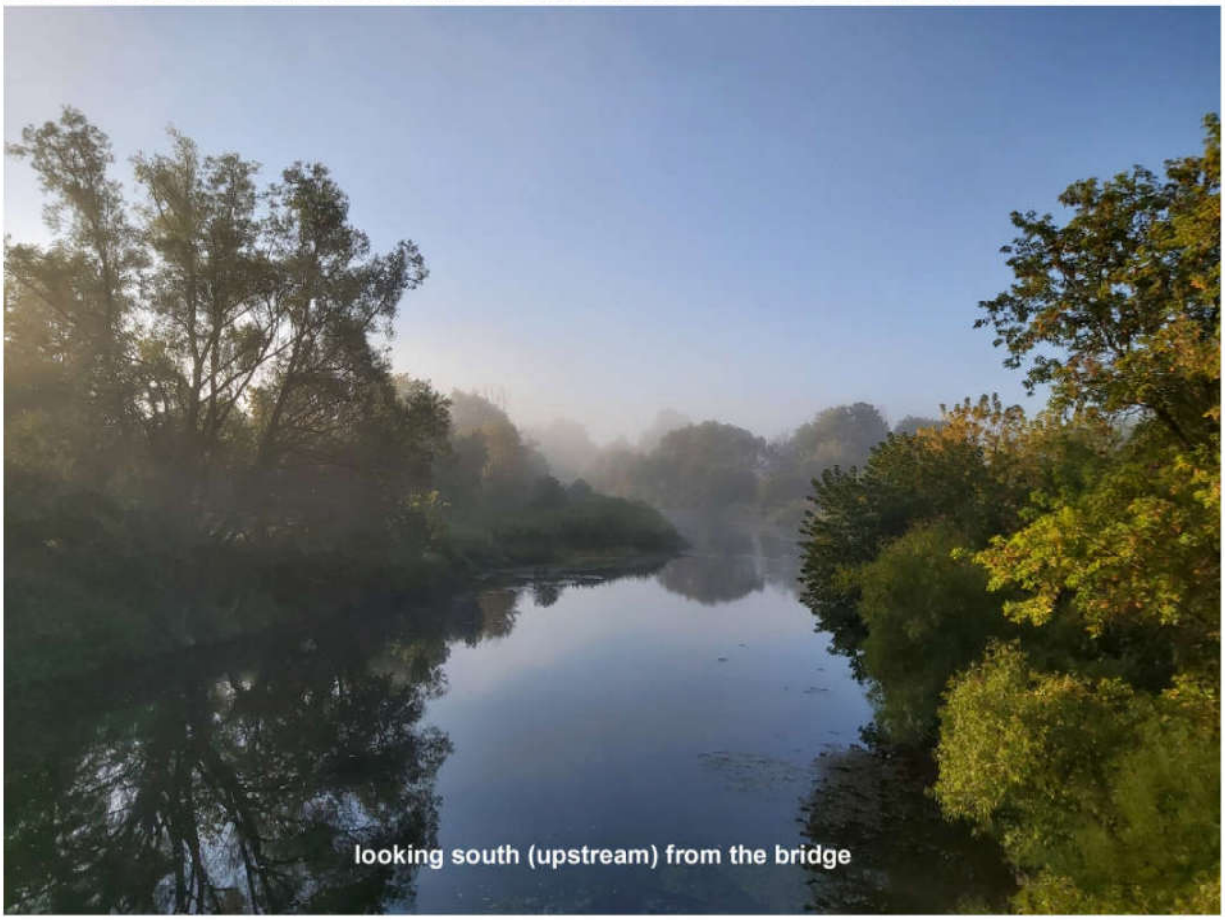


looking south (upstream) from the bridge

Appendix 3 - Bridge #24 photographs - K. Smart & Associates September 20, 2022



looking south (upstream) from the bridge

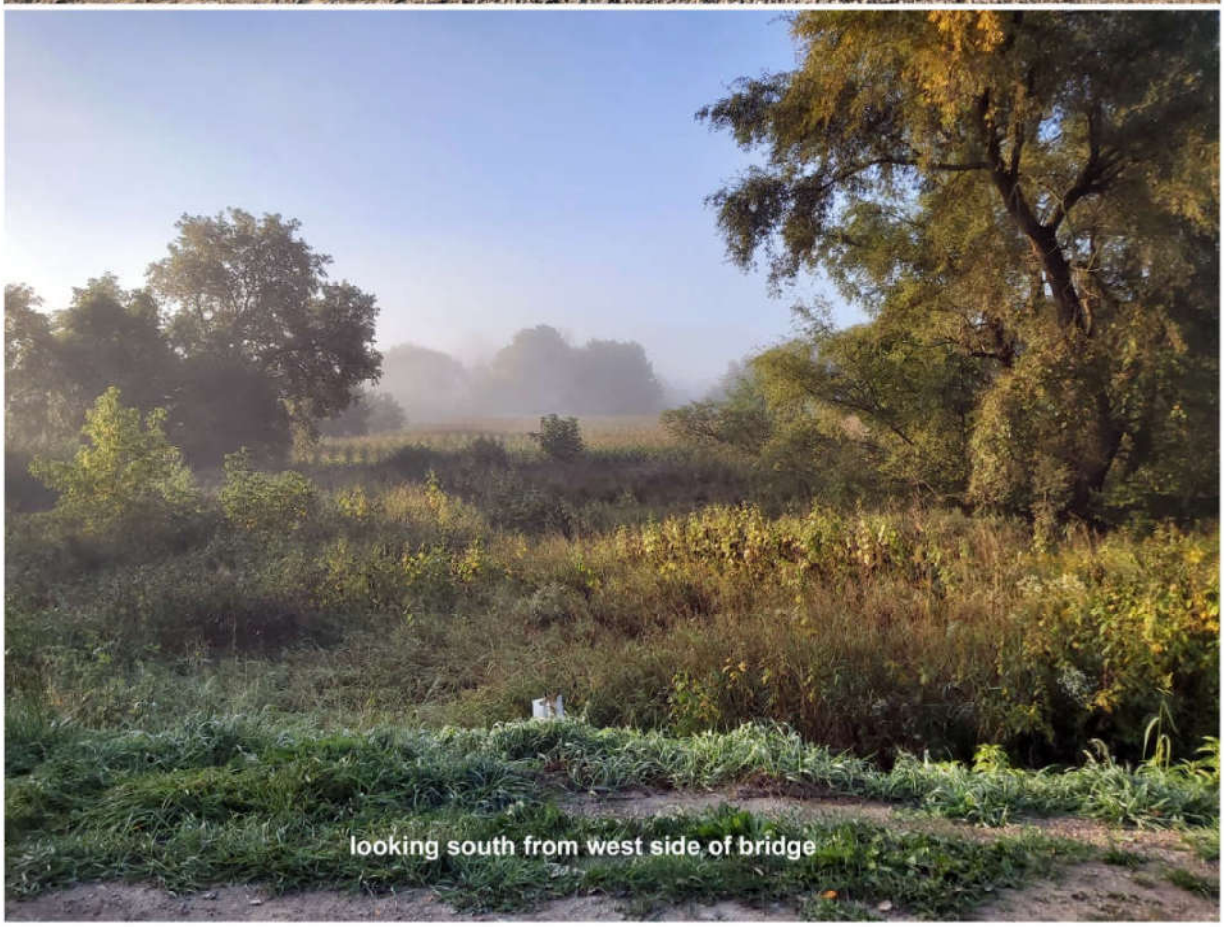


looking south (upstream) from the bridge

Appendix 3 - Bridge #24 photographs - K. Smart & Associates September 20, 2022

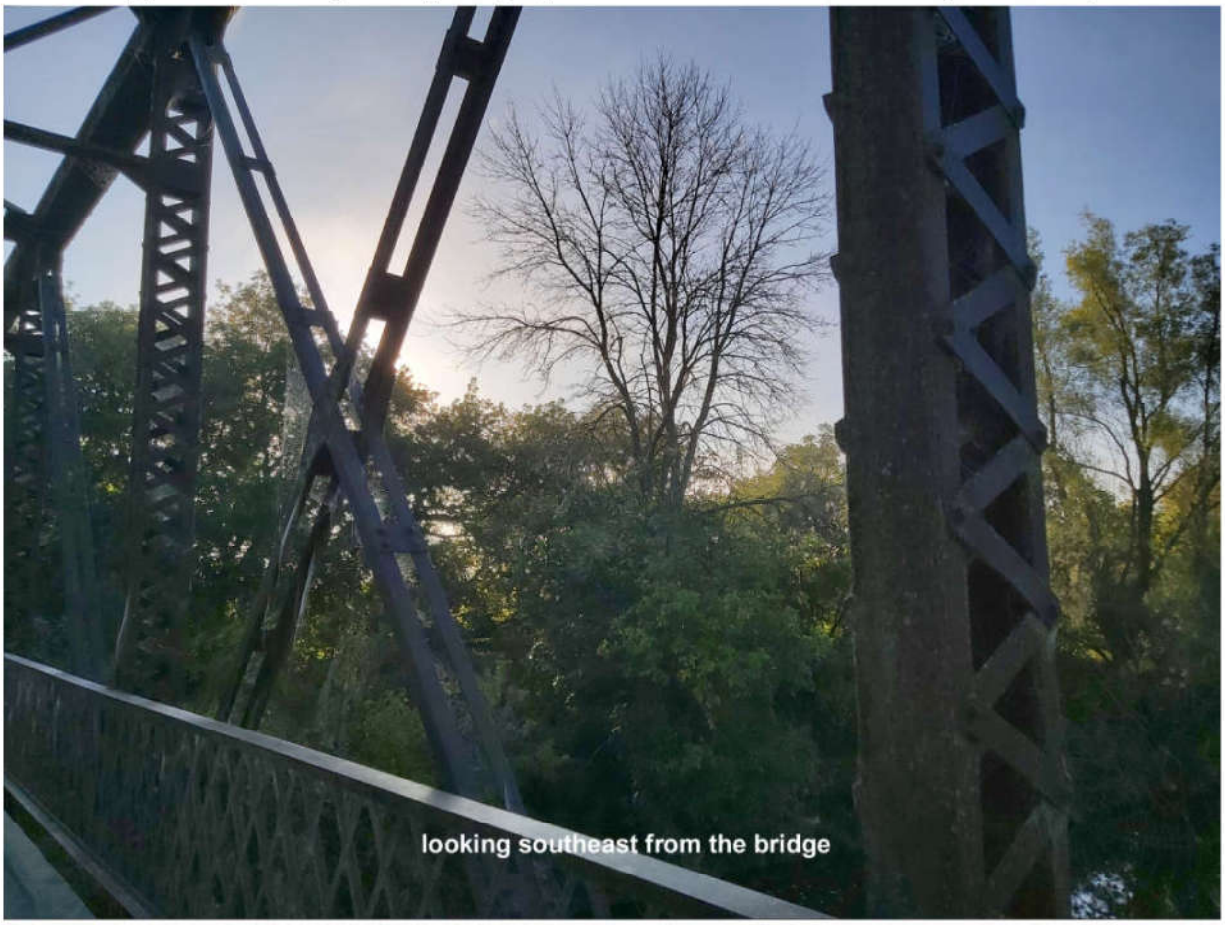


looking south from Township Road 12 at farm lane

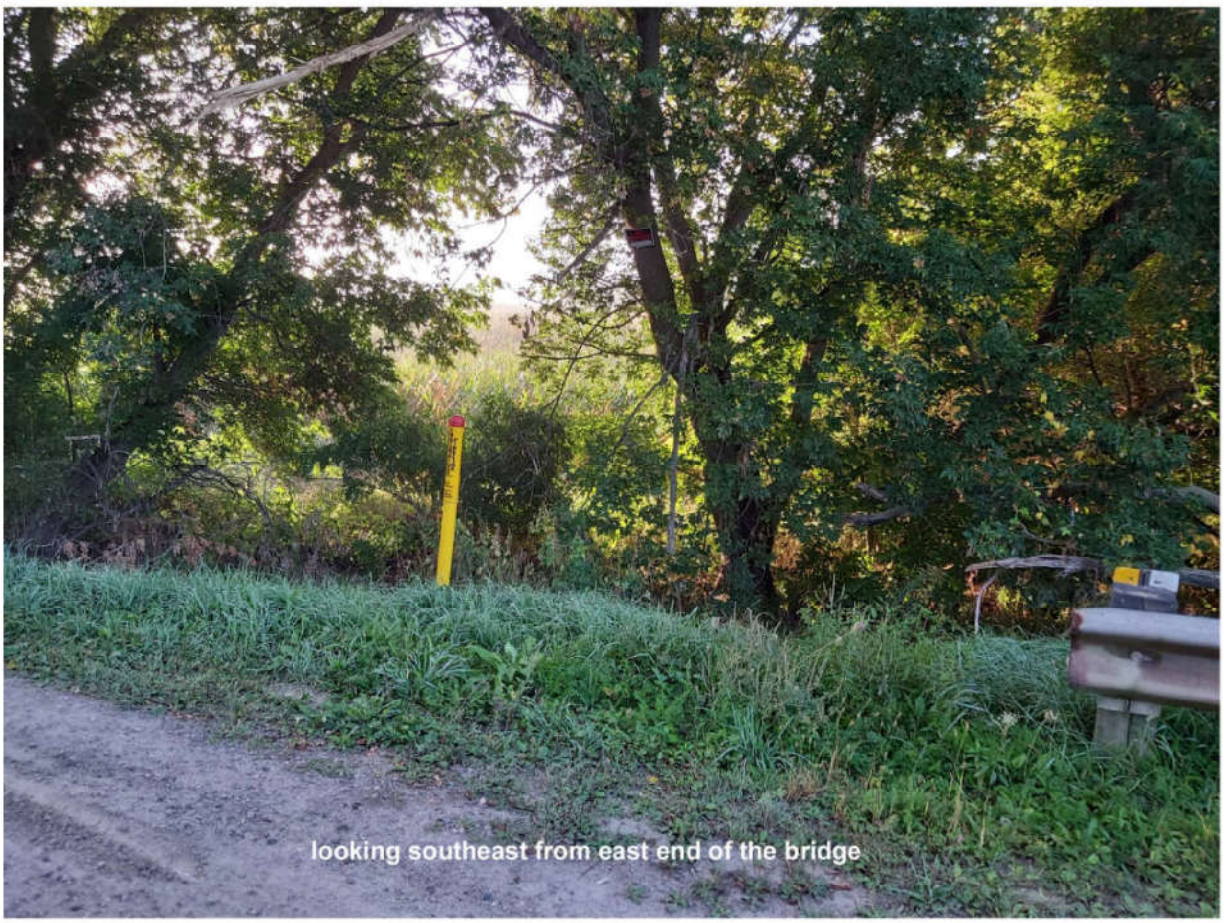


looking south from west side of bridge

Appendix 3 - Bridge #24 photographs - K. Smart & Associates September 20, 2022

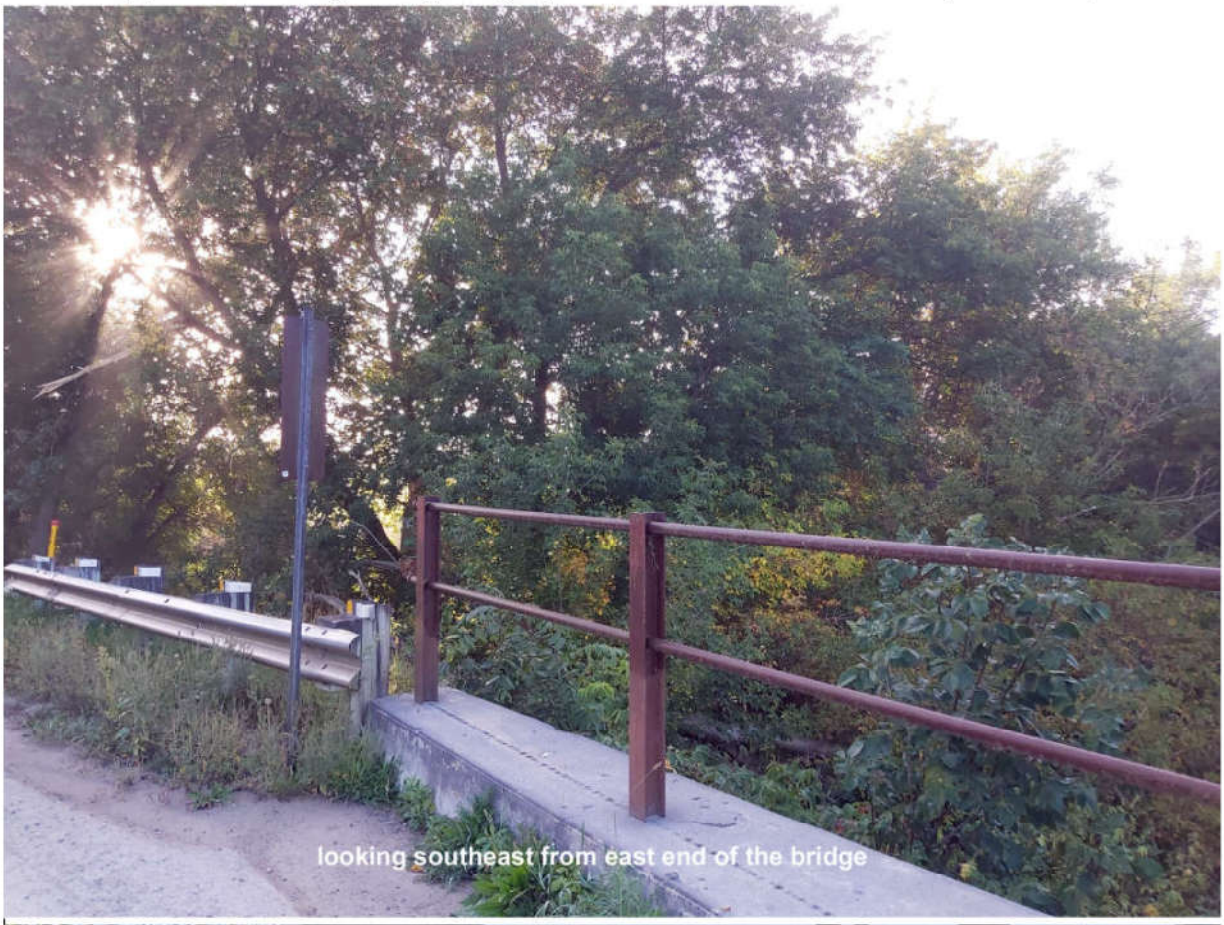


looking southeast from the bridge



looking southeast from east end of the bridge

Appendix 3 - Bridge #24 photographs - K. Smart & Associates September 20, 2022

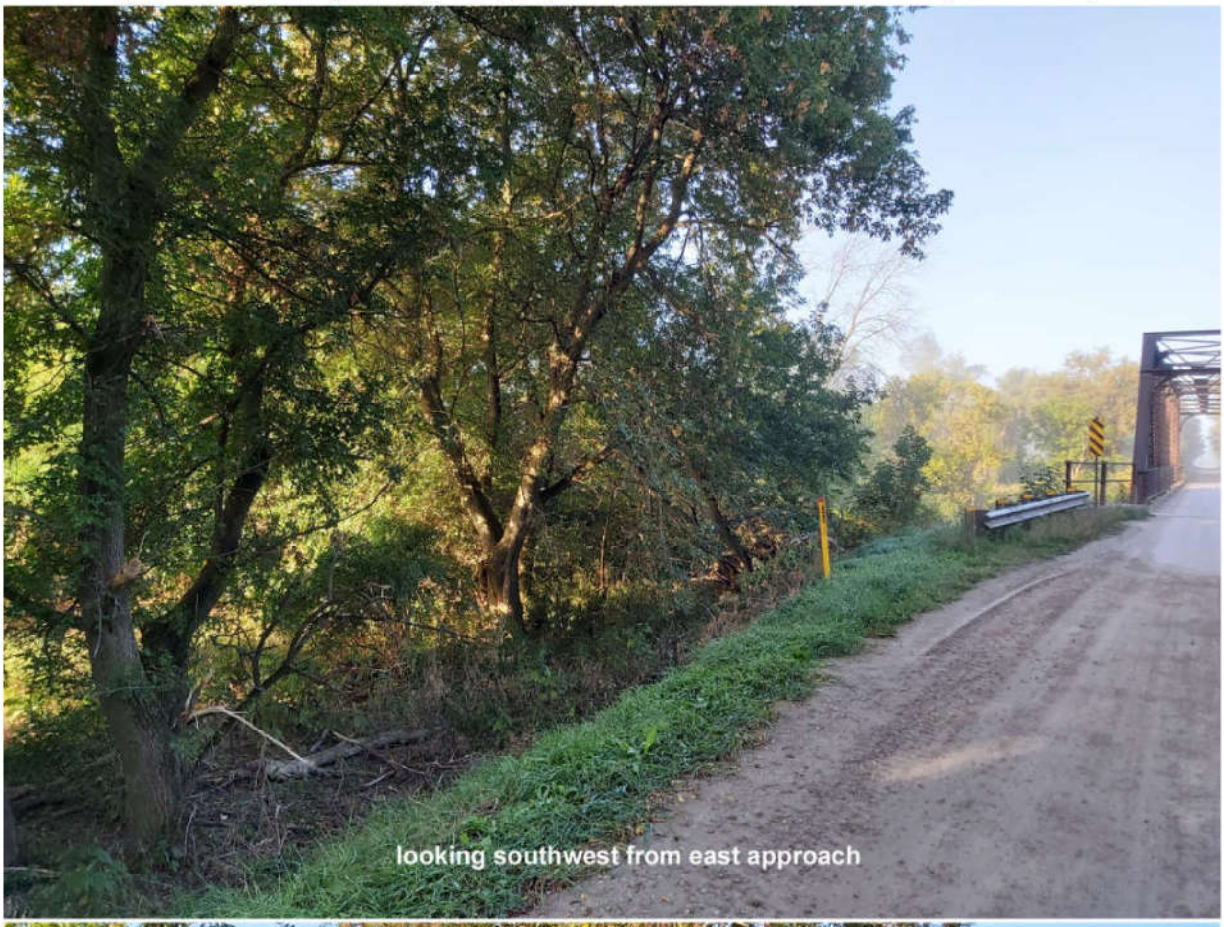


looking southeast from east end of the bridge

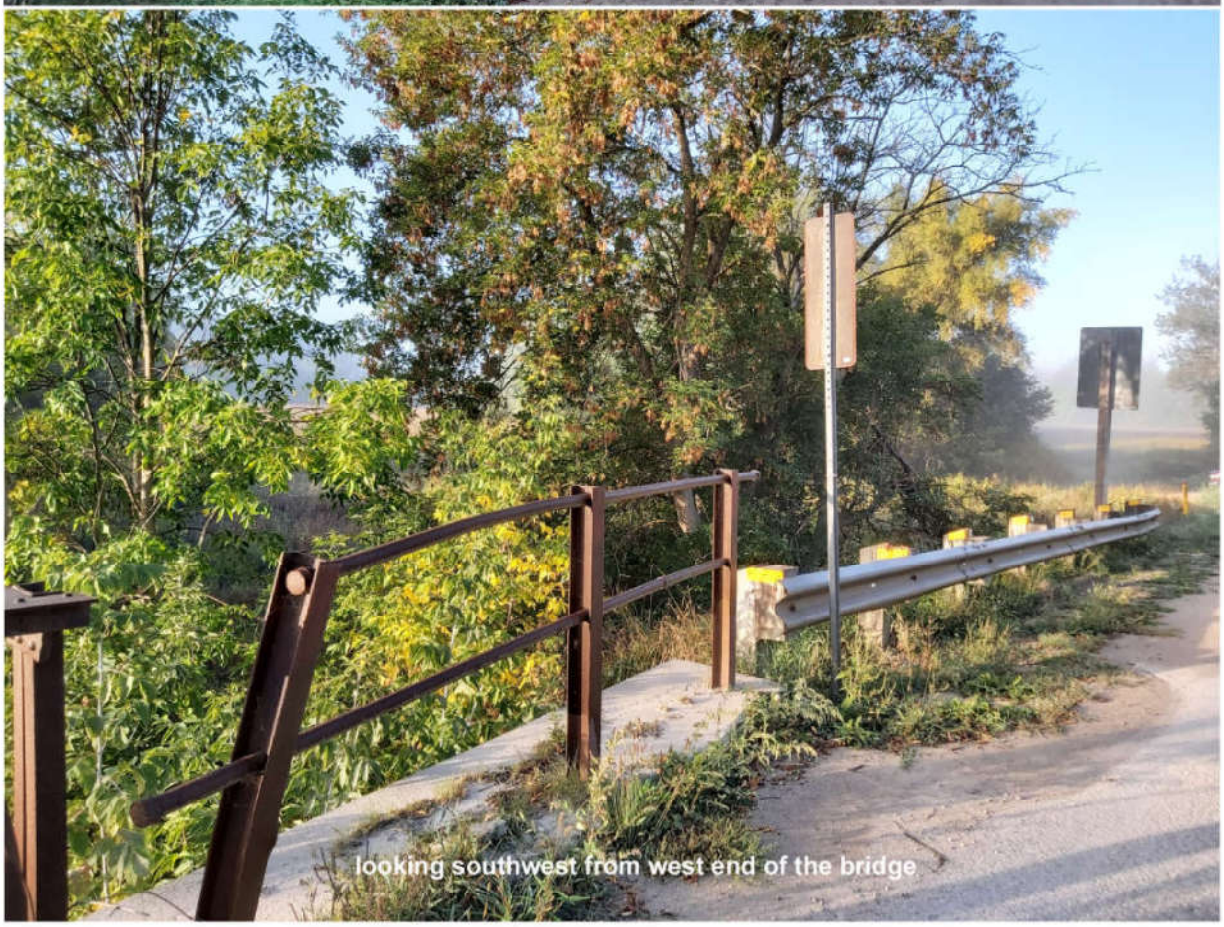


looking southwest from the bridge

Appendix 3 - Bridge #24 photographs - K. Smart & Associates September 20, 2022



looking southwest from east approach



looking southwest from west end of the bridge

Appendix 3 - Bridge #24 photographs - K. Smart & Associates September 20, 2022



looking west to bridge #24



looking west to Bridge #24

Appendix 3 - Bridge #24 photographs - K. Smart & Associates September 20, 2022



looking west from southwest farm lane



looking at Bridge #24 from the west

Blandford-Blenheim Bridge #24



Photograph by Melissa Davies, 2012

General Information	Physical Details
Bridge No. BB5	**Type**: Pratt Through Truss
Ownership: Township of Blandford-Blenheim	**Span**: Single
Construction Date: 1929	**Dimensions**: 40.8m x 5.4m (LxW)
Water Crossing: Nith River	**Materials**: Steel, Concrete

Evaluation Form	Check
Design/Physical Value	
I. Is a rare, unique, representative or early example of a style, type, expression, material or construction method	✓
II. Displays a high degree of craftsmanship or artistic merit	
III. Demonstrates a high degree of technical or scientific achievement	
Historic/Associative Value	
I. Has direct association with a theme, event, belief, person, activity, organization, or institution that is significant to the community	✓
II. Yields, or has the potential to yield, information that contributes to an understanding of the community or culture	
III. Demonstrates or reflects the work or ideas of an architect, artist, engineer, builder, designer or theorist who is significant to a community	
Contextual Value	
I. Is important in defining, maintaining or supporting the character of an area	✓
II. Is physically, functionally, visually or historically linked to its surroundings	✓
III. Is a landmark	

General Description

Blandford-Blenheim Bridge #24 is located on Township Road 12, 1.2 km west of Blenheim Road. It was constructed in 1929 and belongs to a group of six remaining steel truss bridges in the Township that range in age from the late nineteenth century to 1937. This group includes: Canning (South-East) Truss Bridge, Oxford-Waterloo Road Bridge, Blandford-Blenheim Bridge #20, Silver Bridge and Blandford-Blenheim Bridge #25.

Specially, this bridge is grouped with Blandford-Blenheim Bridges #20 and #25. They are located on Township Road 12, each one concession apart, crossing the Nith River. They exhibit similar construction details, although each bridge was constructed nine years apart. However, each bridge has something different in its overall design resulting from the varying conditions at the three river crossings. Township Road 12 offers a unique opportunity to observe how bridge designs were adjusted to accommodate different site conditions, such as span lengths and alignment skews.

Blandford-Blenheim Bridge #24 is a steel, eight-panel, rivet-connected Pratt through truss that underwent rehabilitation in 1980. Aside from its early date of construction, this bridge, like some of the others in its group, is rare due to its use of Carnegie Steel. Although it is not uncommon for steel used in Ontario's bridges to be sourced from the United States, it is less common to find Carnegie steel in the Grand River watershed. The Carnegie Steel Company, headed by Andrew Carnegie, was located in Pittsburg, Pennsylvania and was in operation from 1892 to 1901 before it was purchased by The United States Steel Company.

Blandford-Blenheim Bridge #24 is considered a rare survivor due to the increasing occurrence of steel truss bridges being demolished but not replaced.

Sources: *Township of Blandford-Blenheim OSIM Reports 2011*
GRCA Heritage Bridge Inventory
Historicbridges.org

Appendix 5

TR-12 Bridge Middle (Bridge #24) inventory from: www.historicbridges.org/bridges/browser/[19]

Bridge Name	Facility Carried / Feature Intersected	Location ?	Structure Type	Structure Dimensions	Construction Date / Builder or Contractor	Description	Thumbnail
TR-12 Bridge Middle (***Bridge #24***)	TR-12 Over Nith River	Rural: Oxford County, ON	Metal 8 Panel Rivet-Connected Pratt Through Truss, Fixed	Total Length: 132.5 ft. 40.4 m Main Spans: 1	1929 by: Reid-Riddell Engineering of Toronto, Ontario	One of three truss bridges on this road, which form an interesting group of truss bridges.*	

This bridge is significant as one of a group of three heritage bridges*. One unique feature of this road is it has three truss bridges all within a relatively short distance, crossing the Nith River. There is the west, middle, and east* bridges. Each bridge appears to date to the same period, and has similar construction details, yet each bridge has something different in its overall design caused by the varying conditions at each of the river crossings. This road offers a unique experience to observe how a bridge design would be adjusted for different site conditions.

This bridge is an eight panel Pratt through truss, making it a fairly long example of its type, yet the truss is not as deep (tall) as one would expect for a span of this length, which visually makes the bridge look even longer. It is an interesting comparison to the west bridge which is only seven panels yet has deeper trusses. Traditionally, longer bridges have deeper trusses, because a deeper truss is a stronger truss.

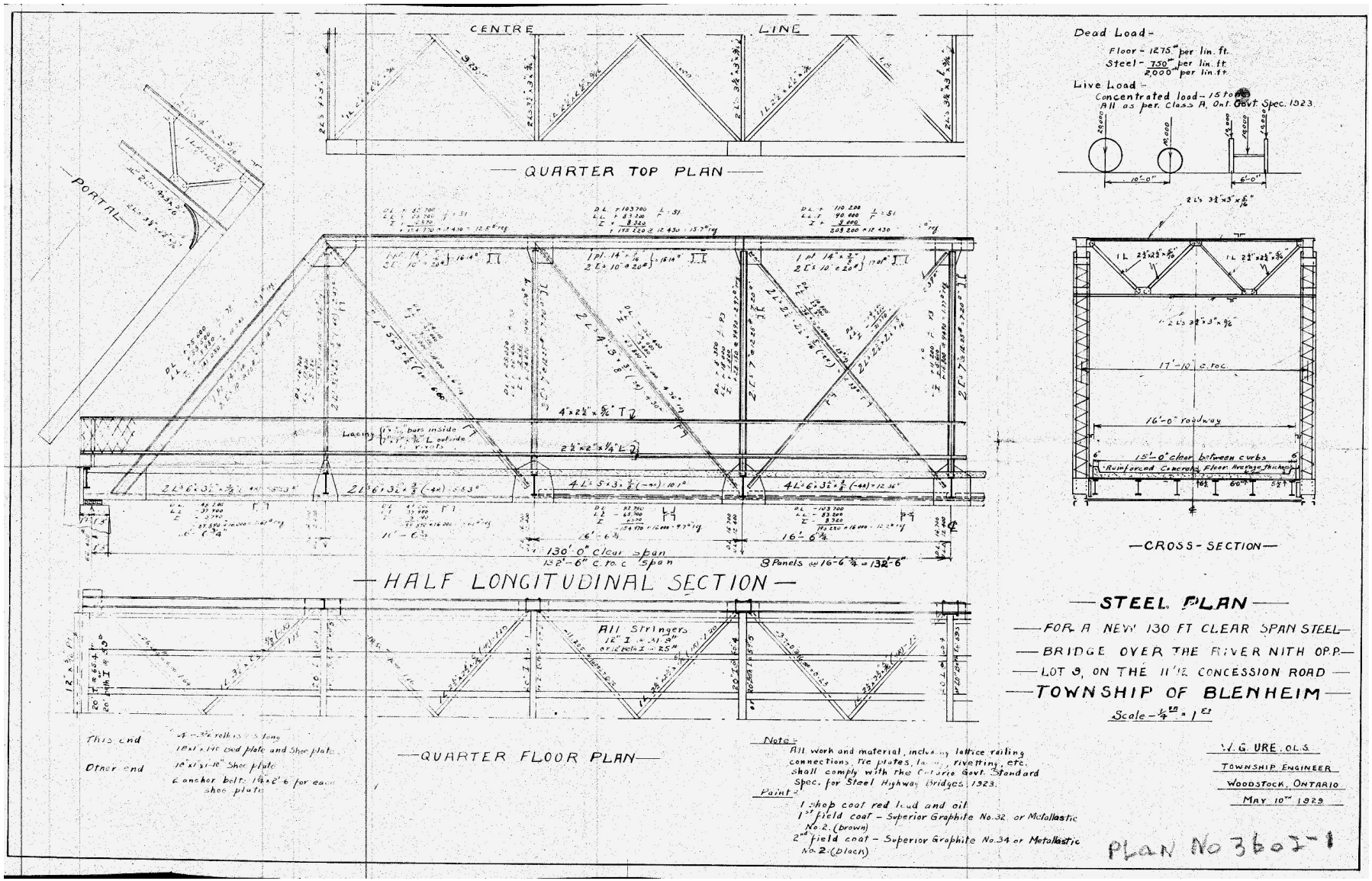
* NOTE: When this inventory was taken, there were three bridges. In 2019-2020, the east bridge was replaced with a new concrete span, and in 2018 upon the completion of the Hofstetter Road Extension, the west bridge was decommissioned as a vehicular bridge and converted for pedestrian use.



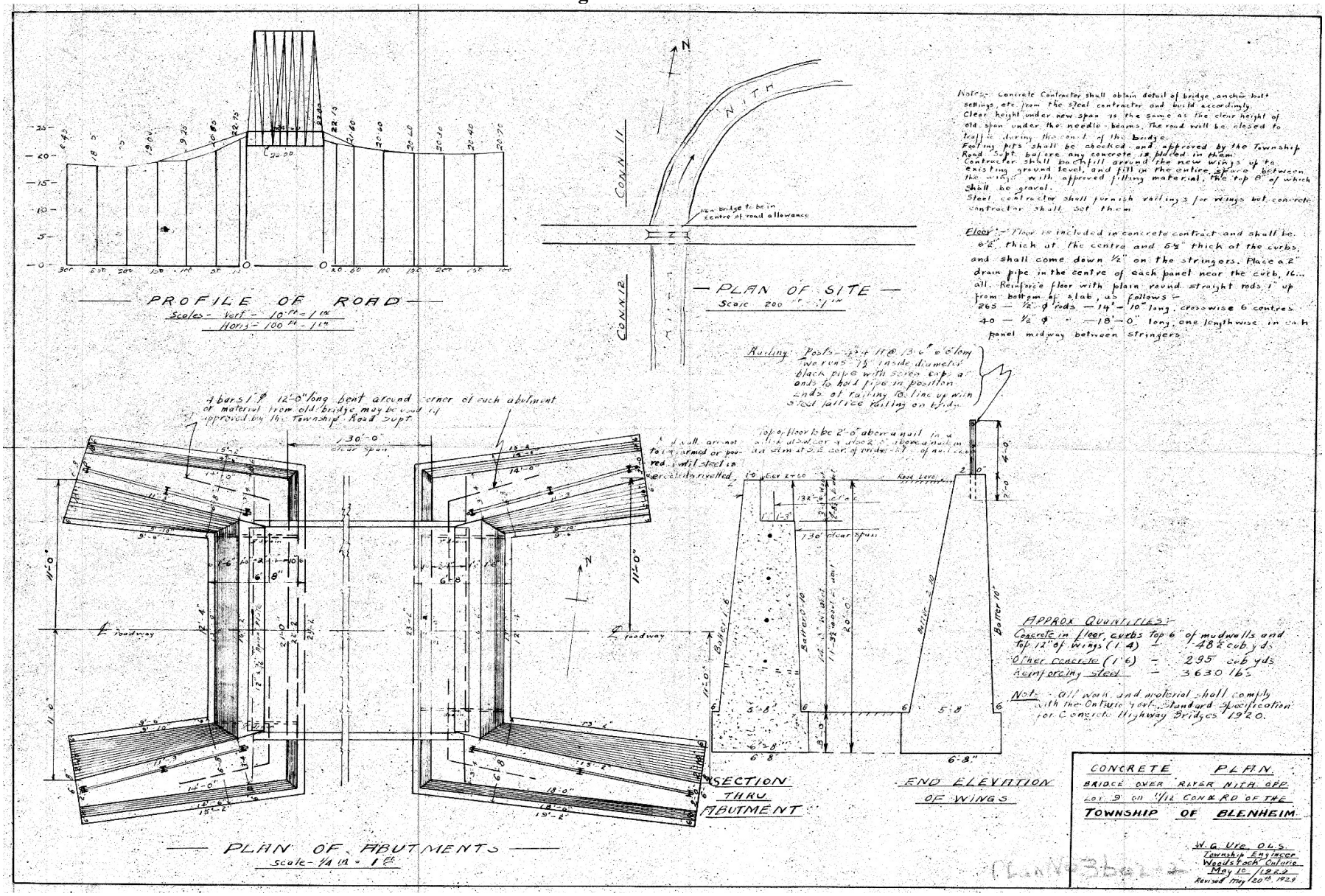
K. Smart Associates Limited

[19] For details, photographs, videos, see: http://www.historicbridges.org/bridges/browser/?bridgebrowser=ontario/12middle/#photosvideos

Appendix 6
Bridge Plans - 1929 & 1980

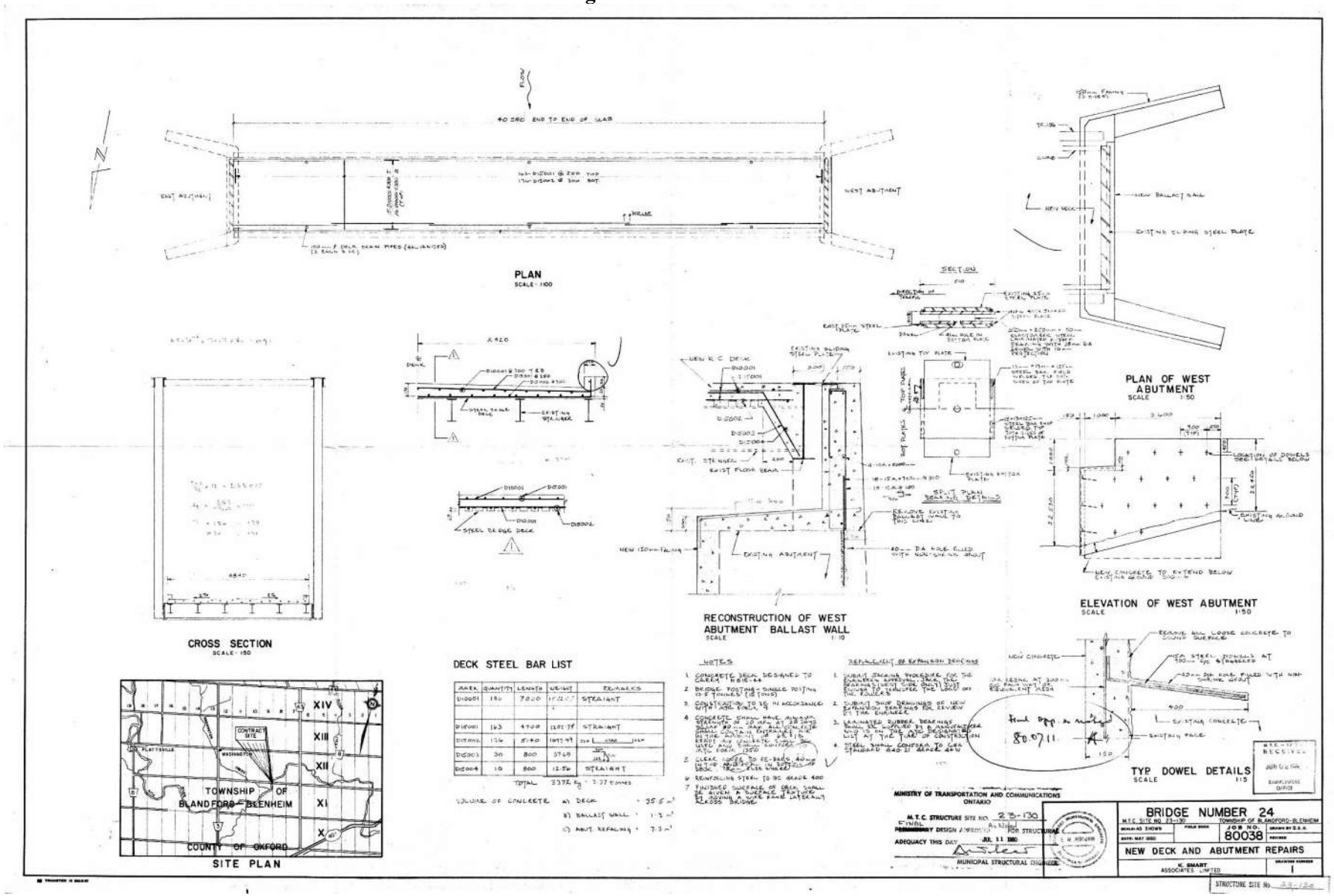


Steel Plan for a new 130 Ft. Clear Span Over the Nith River, W. G. Ure, O.L.S.,Township Engineer, Blenheim Township - May 10, 1029



Concrete Plan for a new 130 Ft. Clear Span Over the Nith River, W. G. Ure, O.L.S.,Township Engineer, Blenheim Township - May 20, 1029

Appendix 6
Bridge Plans - 1929 & 1980



Bridge #24, New Deck and Abutment Repairs, K. Smart Associates Limited - May 1980

Appendix 7 - Report author's qualifications

OWEN R. SCOTT, ***OALA, FCSLA, CAHP***

Education:
Master of Landscape Architecture (MLA) University of Michigan, 1967
Bachelor of Science in Agriculture (Landscape Horticulture), (BSA) University of Guelph, 1965

Professional Experience:

1965 - present	President, CHC Limited, Guelph, ON
1977 - 2018	President, The Landplan Collaborative Ltd., Guelph, ON
1977 - 1985	Director, The Pacific Landplan Collaborative Ltd., Vancouver and Nanaimo, BC
1975 - 1981	Editor and Publisher, *Landscape Architecture Canada*, Ariss, ON
1969 - 1981	Associate Professor, School of Landscape Architecture, University of Guelph
1975 - 1979	Director and Founding Principal, Ecological Services for Planning Limited, Guelph, ON
1964 - 1969	Landscape Architect, Project Planning Associates Limited, Toronto, ON

Historical Research, Heritage Planning and Conservation Experience and Expertise

Current Professional and Professional Heritage Associations Affiliations:
Member: Alliance for Historic Landscape Preservation (AHLP) - 1978 -
Member: Canadian Association of Heritage Professionals (CAHP) - 1987 -
Member: Ontario Association of Landscape Architects (OALA) - 1968 - (Emeritus 2016)
Member: Canadian Society of Landscape Architects (FCSLA) - 1969 - (Fellow 1977, Life Member 2016)

Community and Professional Society Service (Heritage):
Director: Canadian Association of Heritage Professionals (CAHP), 2002 - 2003
Member: Advisory Board, Architectural Conservancy of Ontario, 1980 - 2002
Member: City of Guelph Local Architectural Conservation Advisory Committee (LACAC), 1987 - 2000 (Chair 1988 - 1990)
Member: Advisory Council, Centre for Canadian Historical Horticultural Studies, 1985 - 1988

Professional Honours and Awards (Heritage):

Merit Award	2016	Canadian Association of Heritage Professionals Awards, City of Kitchener Cultural Heritage Landscapes
National Award	2016	Canadian Society of Landscape Architects (CSLA), City of Kitchener Cultural Heritage Landscapes
Mike Wagner Award	2013	Heritage Award - Breithaupt Block, Kitchener, ON
People's Choice Award	2012	Brampton Urban Design Awards, Peel Art Gallery, Museum and Archives, Brampton, ON
Award of Excellence	2012	Brampton Urban Design Awards, Peel Art Gallery, Museum and Archives, Brampton, ON
National Award	2009	Heritage Canada Foundation National Achievement, Alton Mill, Alton, ON
Award of Merit	2009	Canadian Association of Heritage Professionals Awards, Alton Mill, Alton, ON
Award	2007	Excellence in Urban Design Awards, Heritage, Old Quebec Street, City of Guelph, ON
Award	2001	Ontario Heritage Foundation Certificate of Achievement
Award	1998	Province of Ontario, Volunteer Award (10 year award)
Award	1994	Province of Ontario, Volunteer Award (5 year award)
Regional Merit	1990	CSLA Awards, Britannia School Farm Master Plan
National Honour	1990	CSLA Awards, Confederation Boulevard, Ottawa
Citation	1989	City of Mississauga Urban Design Awards, Britannia School Farm Master Plan
Honour Award	1987	*Canadian Architect*, Langdon Hall Landscape Restoration, Cambridge, ON
Citation	1986	*Progressive Architecture*, The Ceremonial Routes (Confederation Boulevard), Ottawa,
National Citation	1985	CSLA Awards, Tipperary Creek Heritage Conservation Area Master Plan, Saskatoon, SK
National Merit	1984	CSLA Awards, St. James Park Victorian Garden, Toronto, ON
Award	1982	Ontario Ministry of Municipal Affairs Ontario Renews Awards, Millside, Guelph, ON

Appendix 7 - Report author's qualifications

Selected Heritage Publications:

Scott, Owen R., The Southern Ontario "Grid", *ACORN* Vol XXVI-3, Summer 2001. *The Journal of the Architectural Conservancy of Ontario*.

Scott, Owen R. *19th Century Gardens for the 20th and 21st Centuries*. Proceedings of "Conserving Ontario's Landscapes" conference of the ACO, (April 1997). Architectural Conservancy of Ontario Inc., Toronto, 1998.

Scott, Owen R. *Landscapes of Memories, A Guide for Conserving Historic Cemeteries.* (19 of 30 chapters) compiled and edited by Tamara Anson-Cartright, Ontario Ministry of Citizenship, Culture and Recreation, 1997.

Scott, Owen R. Cemeteries: A Historical Perspective, *Newsletter, The Memorial Society of Guelph*, September 1993.

Scott, Owen R. The Sound of the Double-bladed Axe, *Guelph and its Spring Festival*. edited by Gloria Dent and Leonard Conolly, The Edward Johnson Music Foundation, Guelph, 1992. 2 pp.

Scott, Owen R. Woolwich Street Corridor, Guelph, *ACORN* Vol XVI-2, Fall 1991. Newsletter of the Architectural Conservancy of Ontario Inc. (ACO)

Scott, Owen R. guest editor, *ACORN*, Vol. XIV-2, Summer 1989. Cultural Landscape Issue, Newsletter of the ACO.

Scott, Owen R. Heritage Conservation Education, Heritage Landscape Conservation, *Momentum 1989*, Icomos Canada, Ottawa, p.31.

Scott, Owen R. Cultivars, pavers and the historic landscape, *Historic Sites Supplies Handbook*. Ontario Museum Association, Toronto, 1989. 9 pp.

Scott, Owen R. Landscape preservation - What is it? *Newsletter,* American Society of Landscape Architects - Ontario Chapter, vol. 4 no.3, 1987.

Scott, Owen R. Tipperary Creek Conservation Area, Wanuskewin Heritage Park. *Landscape Architectural Review*, May 1986. pp. 5-9.

Scott, Owen R. Victorian Landscape Gardening. Ontario Bicentennial History Conference, McMaster University, 1984.

Scott, Owen R. Canada West Landscapes. *Fifth Annual Proceedings Niagara Peninsula History Conference (1983)*. 1983. 22 pp.

Scott, Owen R. Utilizing History to Establish Cultural and Physical Identity in the Rural Landscape. *Landscape Planning*, Elsevier Scientific Press, Amsterdam, 1979. Vol. 6, No. 2, pp. 179-203.

Scott, Owen R. Changing Rural Landscape in Southern Ontario. *Third Annual Proceedings Agricultural History of Ontario Seminar (1978)*. June 1979. 20 pp.

Scott, Owen R., P. Grimwood, M. Watson. George Laing - Landscape Gardener, Hamilton, Canada West 1808-187l. *Bulletin, The Association for Preservation Technology*, Vol. IX, No. 3, 1977, 13 pp. (also published in *Landscape Architecture Canada*, Vol. 4, No. 1, 1978).

Scott, Owen R. The Evaluation of the Upper Canadian Landscape. Department of Landscape Architecture, University of Manitoba. 1978. (Colour videotape).

Following is a **representative listing of some of the heritage consultations undertaken by Owen R. Scott** in his capacity as a principal of The Landplan Collaborative Ltd., and principal of CHC Limited.

<u>Cultural Heritage Evaluation Reports & Heritage Impact Assessments - Bridges</u>

- Adams Bridge (Structure S20) Cultural Heritage Evaluation Report & Heritage Impact Assessment, Southgate Township, ON
- Belanger Bridge Cultural Heritage Evaluation Report & Heritage Impact Assessment, Casey Township, ON
- Bridge #9-WG Cultural Heritage Evaluation Report & Heritage Impact Assessment, Township of Centre Wellington, ON
- Bridge #20 Cultural Heritage Evaluation Report & Heritage Impact Assessment, Blandford-Blenheim Township, ON
- Bridge #25 Cultural Heritage Evaluation Report & Heritage Impact Assessment, Blandford-Blenheim Township, ON
- Bridge Street Bridge Cultural Heritage Evaluation Report & Heritage Impact Assessment, Wilmot Township, ON
- Holland Mills Road Bridge Cultural Heritage Evaluation Report & Heritage Impact Assessment, Wilmot Township, ON
- Irvine Street (Watt) Bridge Cultural Heritage Evaluation Report & Heritage Impact Assessment, Township of Centre Wellington, ON
- Oxford-Waterloo Bridge Cultural Heritage Evaluation Report & Heritage Impact Assessment, Wilmot Township, ON
- Uno Park Road Bridge, Cultural Heritage Evaluation Report & Heritage Impact Assessment, Harley Township, ON

Appendix 7 - Report author's qualifications

Heritage Master Plans and Landscape Plans

- Alton Mill Landscape, Caledon, ON
- Black Creek Pioneer Village Master Plan, Toronto, ON
- Britannia School Farm Master Plan, Peel Board of Education/Mississauga, ON
- Confederation Boulevard (Sussex Drive) Urban Design, Site Plans, NCC/Ottawa, ON
- Doon Heritage Crossroads Master Plan and Site Plans, Region of Waterloo/Kitchener, ON
- Downtown Guelph Private Realm Improvements Manual, City of Guelph, ON
- Downtown Guelph Public Realm Plan, City of Guelph, ON
- Dundurn Castle Landscape Restoration Feasibility Study, City of Hamilton, ON
- Elam Martin Heritage Farmstead Master Plan, City of Waterloo, ON
- Exhibition Park Master Plan, City of Guelph, ON
- George Brown House Landscape Restoration, Toronto, ON
- *Grand River Corridor Conservation Plan*, GRCA/Regional Municipality of Waterloo, ON
- Greenwood Cemetery Master Plan, Owen Sound, ON
- Hamilton Unified Family Courthouse Landscape Restoration Plan, Hamilton, ON
- John Galt Park, City of Guelph, ON
- Judy LaMarsh Memorial Park Master Plan, NCC/Ottawa, ON
- Langdon Hall Gardens Restoration and Site Plans, Cambridge, ON
- London Psychiatric Hospital Cultural Heritage Stewardship Plan, London, ON
- McKay / Varley House Landscape Restoration Plan, Markham (Unionville), ON
- Museum of Natural Science/Magnet School 59/ Landscape Restoration and Site Plans, City of Buffalo, NY
- Muskoka Pioneer Village Master Plan, MNR/Huntsville, ON
- Peel Heritage Centre Adaptive Re-use, Landscape Design, Brampton, ON
- Phyllis Rawlinson Park Master Plan (winning design competition), Town of Richmond Hill, ON
- Prime Ministerial Precinct and Rideau Hall Master Plan, NCC/Ottawa, ON
- Queen/Picton Streets Streetscape Plans, Town of Niagara-on-the-Lake, ON
- Regional Heritage Centre Feasibility Study and Site Selection, Region of Waterloo, ON
- Rockway Gardens Master Plan, Kitchener Horticultural Society/City of Kitchener, ON
- St. George's Square, City of Guelph, ON
- St. James Cemetery Master Plan, Toronto, ON
- St. James Park Victorian Garden, City of Toronto, ON
- Tipperary Creek (Wanuskewin) Heritage Conservation Area Master Plan, Meewasin Valley Authority, Saskatoon, SK
- Whitehern Landscape Restoration Plan, Hamilton, ON
- Woodside National Historic Park Landscape Restoration, Parks Canada/Kitchener, ON

Cultural Heritage Evaluation Reports (CHER), Cultural Heritage Inventories and Cultural Heritage Landscape Evaluations

- Belfountain Area Heritage Inventory for Environmental Assessment, Peel Region, ON
- Chappell Estate / Riverside / Mississauga Public Garden Heritage Inventory, Mississauga, ON
- 8895 County Road 124 Cultural Heritage Opinion Report, Erin (Ospringe), ON
- County of Waterloo Courthouse Building Cultural Heritage Evaluation Report, Kitchener, ON
- Cruickston Park Farm & Cruickston Hall - Cultural Heritage Resources Study, Cambridge, ON
- Doon Valley Golf Course - Cultural Heritage and Archaeological Resources Inventory, Kitchener/Cambridge, ON
- Government of Ontario Light Rail Transit (GO-ALRT) Route Selection, Cultural and Natural Resources Inventory for Environmental Assessment, Hamilton/Burlington, ON
- Hancock Woodlands Cultural Heritage Assessment, City of Mississauga, ON
- Hespeler West Secondary Plan - Heritage Resources Assessment, City of Cambridge, ON
- Highway 400 to 404 Link Cultural Heritage Inventory for Environmental Assessment, Bradford, ON
- Highway 401 to 407 Links Cultural Heritage Inventory for Environmental Assessment, Pickering/Ajax/Whitby/ Bowmanville, ON
- Homer Watson House Cultural Heritage Evaluation Report, Kitchener, ON
- Lakewood Golf Course Cultural Landscape Assessment, Tecumseh, ON
- Landfill Site Selection, Cultural Heritage Inventory for Environmental Assessment, Region of Halton, ON
- 960 Nashville Road Cultural Heritage Evaluation Report, City of Vaughan (Nashville), ON

- Niska Road Cultural Heritage Landscape Addendum, City of Guelph, ON
- 180-B Nith River Way Cultural Heritage Evaluation Report, Ayr, ON
- 154 Ontario Street, Historical - Associative Evaluation, Guelph, ON
- 35 Sheldon Avenue North, Cultural Heritage Evaluation Report, Kitchener, ON
- 43 Sheldon Avenue North, Cultural Heritage Evaluation Report, Kitchener, ON
- Silvercreek (LaFarge Lands) Cultural Landscape Assessment, Guelph, ON
- South Kitchener Transportation Study, Heritage Resources Assessment, Region of Waterloo, ON
- 53 Surrey Street East and 41, 43, 45 Wyndham Street South Cultural Heritage Evaluation Guelph, ON
- Swift Current CPR Station Gardens condition report and feasibility study for rehabilitation/reuse, Swift Current, SK
- University of Guelph, McNaughton Farm House, Cultural Heritage Resource Assessment, Puslinch Township, ON
- University of Guelph, Trent Institute Cultural Heritage Resource Assessment, Guelph, ON
- University of Guelph, 1 and 10 Trent Lane Cultural Heritage Resource Assessments, Guelph, ON
- 2007 Victoria Road South Heritage Evaluation, Guelph, ON
- Waterloo Valleylands Study, Heritage and Recreational Resources mapping and policies, Region of Waterloo
- 69 Woolwich Street (with references to 59, 63-67, 75 Woolwich Street) Cultural Heritage Evaluation Report, Guelph, ON

Cultural Heritage Resource Impact Assessments (CHRIA/CHIA/HIS/HIA) and Cultural Landscape Heritage Impact Statements

- 2972 Alps Road Heritage Impact Assessment, Ayr, ON
- 33 Arkell Road Heritage Impact Assessment, Guelph, ON
- 86 Arthur Street, Heritage Impact Assessment, Guelph, ON
- William Barber House, 5155 Mississauga Road , Heritage Impact Assessment, Mississauga, ON
- Barra Castle Heritage Impact Assessment, Kitchener, ON
- 72 Beaumont Crescent Heritage Impact Assessment, Guelph, ON
- Biltmore Hat Factory Heritage Impact Assessment, Guelph, ON
- 140 Blue Heron Ridge Heritage Impact Assessment, Cambridge, ON
- 25 Breithaupt Street Heritage Impact Assessment, Kitchener, ON
- 51 Breithaupt Street Heritage Impact Assessment, Kitchener, ON
- 215 Broadway Street Heritage Impact Statement, Mississauga, ON
- Cambridge Retirement Complex on the former Tiger Brand Lands, Heritage Impact Assessment, Cambridge, ON
- Cambridge Retirement Complex on the former Tiger Brand Lands, Heritage Impact Assessment Addendum, Cambridge, ON
- 27-31 Cambridge Street, Heritage Impact Assessment, Cambridge, ON
- 3075 Cawthra Road Heritage Impact Statement, Mississauga, ON
- 58 Church Street Heritage Impact Assessment, Churchville Heritage Conservation District, Brampton, ON
- City Centre Heritage Impact Assessment, Kitchener, ON
- 175 Cityview Drive Heritage Impact Assessment, Guelph, ON
- 12724 Coleraine Drive Cultural Heritage Impact Statement, Caledon (Bolton), ON
- 12880 Coleraine Drive Cultural Heritage Impact Statement, Caledon (Bolton), ON
- Cordingly House Heritage Impact Statement, Mississauga, ON
- 264 Crawley Road Heritage Impact Assessment (farmstead, house & barn), Guelph, ON
- 31-43 David Street (25 Joseph Street) Heritage Impact Assessment, Kitchener, ON
- 35 David Street (Phase II) Heritage Impact Assessment, Kitchener, ON
- 75 Dublin Street Heritage Impact Assessment, Guelph, ON
- 24, 26, 28 and 32 Dundas Street East Heritage Impact Statement, Mississauga, (Cooksville), ON
- 1261 Dundas Street South Heritage Impact Assessment, Cambridge, ON
- 172 - 178 Elizabeth Street Heritage Impact Assessment, Guelph, ON
- 19 Esandar Drive, Heritage Impact Assessment, Toronto, ON
- 70 Fountain Street Cultural Heritage Impact Assessment, Guelph, ON
- 14 Forbes Avenue Heritage Impact Assessment, Guelph, ON
- 369 Frederick Street Heritage Impact Assessment, Kitchener, ON
- 42 Front Street South Heritage Impact Assessment, Mississauga, ON
- 1654 Glenburnie Drive, Heritage Impact Assessment, Mississauga, ON

Appendix 7 - Report author's qualifications

- Grey Silo Golf Course/Elam Martin Farmstead Heritage Impact Assessment, City of Waterloo, ON
- GRCA Lands, 748 Zeller Drive Heritage Impact Assessment Addendum, Kitchener, ON
- Hancock Woodlands Heritage Impact Statement, City of Mississauga, ON
- 132 Hart's Lane, Hart Farm Heritage Impact Assessment, Guelph, ON
- 9675, 9687, 9697 Keele Street Heritage Impact Assessment, City of Vaughan (Maple) ON
- 13165 Keele Street Cultural Heritage Resource Impact Assessment, King Township (King City), ON
- 151 King Street North Heritage Impact Assessment, Waterloo, ON
- 4924 King Street Heritage Impact Assessment, Beamsville, ON
- Kip Co. Lands Developments Ltd. Cultural Heritage Resource Impact Assessment - Woodbridge Heritage Conservation District, City of Vaughan (Woodbridge) ON
- 20415 Leslie Street Heritage Impact Assessment, East Gwillimbury, ON
- 117 Liverpool Street Heritage Impact Assessment, Guelph, ON
- 36-46 Main Street Heritage Impact Assessment, Mississauga, ON
- 30 - 40 Margaret Avenue Heritage Impact Assessment, Kitchener, ON
- 19 - 37 Mill Street Scoped Heritage Impact Assessment, Kitchener, ON
- 1376 Mississauga Road, Cultural Landscape Heritage Impact Statement addendum, Mississauga, ON
- 2610, 2620 and 2630 Mississauga Road, Cultural Landscape Heritage Impact Statement, Mississauga, ON
- 4067 Mississauga Road, Cultural Landscape Heritage Impact Statement, Mississauga, ON
- 1142 Mona Road, Heritage Impact Assessment, Mississauga, ON
- 1245 Mona Road, Heritage Impact Statement, Mississauga, ON
- 15 Mont Street, Heritage Impact Assessment, Guelph, ON
- Proposed Region of Waterloo Multimodal Hub at 16 Victoria Street North, 50 & 60 Victoria Street North, and 520 & 510 King Street West, Heritage Study and Heritage Impact Assessment, Kitchener, ON
- 89 and 99 Nashville Road Heritage Impact Assessment, City of Vaughan (Kleinburg), ON
- 6671 Ninth Line Heritage Impact Statement, Cordingley House Restoration & Renovation, Mississauga, ON
- 266-280 Northumberland Street (The Gore) Heritage Impact Assessment, North Dumfries (Ayr), ON
- 30 Oakdale Avenue, Heritage Impact Assessment, St. Catharines, ON
- 324 Old Huron Road Heritage Impact Assessment, Kitchener, ON
- 15, 19, 23 & 27 Pearl Street, Heritage Impact Assessment, Mississauga (Streetsville), ON
- 40 Queen Street South Heritage Impact Statement, Mississauga, (Streetsville), ON
- Rockway Holdings Limited Lands north of Fairway Road Extension Heritage Impact Assessment, Kitchener, ON
- 259 St. Andrew Street East Cultural Heritage Assessment, Fergus, ON
- 968 St. David Street North & 6581 Highway 6, Heritage Impact Assessment, Centre Wellington (Fergus), ON
- 43 Sheldon Avenue North, Heritage Impact Assessment, Kitchener, ON
- 35 & 43 Sheldon Avenue North, Heritage Impact Assessment, Kitchener, ON
- 1720 Sherwood Forrest Circle Heritage Impact Assessment, Mississauga, ON
- 2300 Speakman Drive Heritage Impact Assessment, Mississauga, ON
- 10431 The Gore Road Heritage Impact Assessment, Brampton, ON
- 18, 20, 30 & 34 Thomas Street, Streetsville Heritage Impact Assessment, Mississauga, ON
- Thorny-Brae Heritage Impact Statement, Mississauga, ON
- 7 Town Crier Lane, Heritage Impact Assessment, Markham, ON
- University of Guelph, 3 - 7 Gordon Street Houses, Heritage Impact Assessment, Guelph, ON
- University of Guelph, Harrison House, Heritage Impact Assessment, Guelph, ON
- Victoria Park Proposed Washroom Cultural Heritage Impact Assessment, Kitchener, ON
- 927 Victoria Road South (barn) Heritage Impact Assessment, Guelph, ON
- 85 Victoria Street Heritage Impact Assessment, Churchville Heritage Conservation District, Brampton, ON
- 272-274 Victoria Street Heritage Impact Assessment, Mississauga, ON
- 26 - 32 Water Street North Heritage Impact Assessment, Cambridge (Galt), ON
- Winzen Developments Heritage Impact Assessment, Cambridge, ON
- 248-260 Woodbridge Avenue Cultural Heritage Resource Impact Assessment, Woodbridge Heritage Conservation District, City of Vaughan (Woodbridge)
- 35 Wright Street Cultural Heritage Resource Impact Assessment, Richmond Hill, ON
- 1123 York Road Heritage Impact Assessment, Guelph, ON

- 14288 Yonge Street, Heritage Impact Assessment, Aurora, ON

Heritage Conservation Plans

- William Barber House, 5155 Mississauga Road , Heritage Conservation Plan, Mississauga, ON
- 51 Breithaupt Street Heritage Conservation Plan, Kitchener, ON
- Hamilton Psychiatric Hospital Conservation Plan, for Infrastructure Ontario, Hamilton, ON
- Harrop Barn Heritage Conservation Plan, Milton, ON
- 120 Huron Street Conservation Plan, Guelph, ON
- 324 Old Huron Road Conservation Plan, Kitchener, ON
- Sixth Line Cultural Heritage Landscape Conservation Plan, Oakville, ON
- 264 Woolwich Street Heritage Conservation Plan, Guelph, ON
- 14288 Yonge Street Heritage Conservation Plan, Aurora, ON
- 1123 York Road Heritage Conservation Plan, Guelph, ON

Heritage Conservation District Studies and Plans and Conformity Reports

- Review and Critique of Brooklyn and College Hill Heritage Conservation District Study Plan and Guidelines, Guelph, ON
- Downtown Whitby Heritage Conservation District Study and Plan, Town of Whitby, ON
- MacGregor/Albert Heritage Conservation District Study and Plan, City of Waterloo, ON
- Queen Street East Heritage Conservation District Study, Toronto, ON
- University of Toronto & Queen's Park Heritage Conservation District Study, City of Toronto, ON
- 10680 Islington Avenue Heritage Conservation District Conformity Report, City of Vaughan, (Kleinburg) ON
- 248-260 Woodbridge Avenue Heritage Conservation District Conformity Report, Woodbridge Heritage Conservation District, City of Vaughan (Woodbridge)

Cultural Heritage Landscape Inventories/Studies

- Cultural Heritage Landscape Study, City of Kitchener, ON
- Cultural Heritage Landscape Inventory, City of Mississauga, ON
- Cultural Heritage Scoping Study, Township of Centre Wellington, ON

Peer Reviews

- Acton Quarry Cultural Heritage Landscape & Built Heritage Study & Assessment Peer Review, Acton, ON
- Belvedere Terrace - Peer Review, Assessment of Proposals for Heritage Property, Parry Sound, ON
- Forbes Estate Heritage Impact Assessment Peer Review, Cambridge (Hespeler), ON
- Heritage Square Heritage Impact Assessment Peer Review for Township of Centre Wellington (Fergus), ON
- Little Folks Heritage Impact Assessment Peer Review for Township of Centre Wellington (Elora), ON
- Potter Foundry and the Elora South Condos Heritage Impact Assessment Peer Review for Township of Centre Wellington (Elora), ON
- Tytler School for the Upper Grand District School Board, (Part IV Designation proposal), Guelph, ON
- 558 Welbanks Road, Quinte's Isle, miscellaneous heritage assessment documents, Prince Edward County, ON

Expert Witness Experience

- Oelbaum Ontario Municipal Board Hearing, Eramosa Township, ON, 1988
- Roselawn Centre Conservation Review Board Hearing, Port Colborne, ON, 1993
- Halton Landfill, Joint Environmental Assessment Act and Environmental Protection Act Board Hearing, 1994
- OPA 129 Ontario Municipal Board Hearing, Richmond Hill, ON, 1996
- Diamond Property Ontario Municipal Board Hearing, Aurora, ON, 1998
- Harbour View Investments Ontario Municipal Board Hearing, Town of Caledon, ON, 1998
- Aurora South Landowners Ontario Municipal Board Hearing, Aurora, ON, 2000
- Ballycroy Golf Course Ontario Municipal Board Hearing, Palgrave, ON, 2002
- Doon Valley Golf Course Ontario Municipal Board Hearing, Cambridge, ON, 2002
- Maple Grove Community Ontario Municipal Board Hearing, North York, ON, 2002
- Maryvale Crescent Ontario Municipal Board Hearing, Richmond Hill, ON, 2003
- LaFarge Lands Ontario Municipal Board Mediation, Guelph, ON, 2007

Appendix 7 - Report author's qualifications

- 255 Geddes Street, Elora, ON, heritage opinion evidence - Ontario Superior Court of Justice, 2010
- Downey Trail Ontario Municipal Board Hearing, Guelph, ON, 2010
- Wilson Farmhouse Conservation Review Board Hearing, Guelph, ON, 2014
- 85 Victoria Street, Churchville Heritage Conservation District, Ontario Municipal Board Hearing, Brampton, ON, 2016
- Haylock / Youngblood Development OMB Mediation Hearing, Centre Wellington, ON, 2018
- Riverbank Drive LPAT Mediation Hearing, Cambridge, ON, 2019
- 50 Brookside Drive Ontario Land Tribunal Hearing, Kitchener, ON, 2021
- 70 Fountain Street, Skydevco Ontario Land Tribunal Hearing, Guelph, ON, 2022

September 2025