PROJECT FILE

BRIDGE 24 REPLACEMENT
TOWNSHIP OF BLANDFORD-BLENHEIM

OCTOBER 2026

FILE NO. 22-264

K. SMART ASSOCIATES LIMITED
85 MCINTYRE DRIVE
KITCHENER ON N2R 1H6

EXECUTIVE SUMMARY

K. Smart Associates was retained by the Township of Blandford Blenheim to complete a Schedule B Environmental Assessment for Bridge 24. Bridge 24 is located on Township Road 12 and spans Nith River in the Township of Blandford-Blenheim in the County of Oxford. The existing bridge is a steel through truss bridge constructed in approximately 1929. The bridge is deficient in terms of width, height and loading capacity. The bridge is currently closed. The purpose of this study is to consider options to eliminate all deficiencies as well as to provide improved levels of traffic service and overall safety.

A detailed summary of the existing environment around Bridge 24 was compiled. This included descriptions of the socio-economic, adjacent landowners, vehicular traffic, waterway traffic, First Nations / Indigenous peoples, official plans and policies, cycling, source water protection, cultural and heritage, archeological, natural environment, climate change, noise, air quality and dust, surface water and ground water, excess materials management, contaminated sites, utilities, road geometry and capacity, hydrology / hydraulics as well as geotechnical environments. As part of this work, several supplemental studies were prepared. These supplemental studies included a CHER / HIA Report, archeological investigations, scoped environmental study report, hydrology report and a geotechnical investigation. The findings of this work helped guide the decision making process in terms of what alternatives to consider and how to evaluate those alternatives in order to pick a preferred alternative.

As part of this Study, comments and input were requested from a variety of agencies, first nation / indigenous communities and adjacent landowners. This was accomplished by advertising and distributing a Notice of Study Commencement. Copies of the various supplemental studies were also circulated where requested. Further comments and input will be requested by means of advertising and distributing a Notice of Study Completion.

Five (5) alternatives were considered to address the listed deficiencies. These alternatives included doing nothing, repairing or rehabilitating the existing structure, replacing the superstructure, replacing the bridge with a single span structure and replacing the bridge with a three span structure. The five (5) alternatives were evaluated against thirty-five (35) criterion with Alternative 5 (replacing the bridge with a three span structure) having the lowest score. The comparison criteria included considerations for the Natural Environment, Socio-Economic Environment, Cultural Environment and Technical Considerations.

Alternative 5 was further refined in terms of actual structure type, design parameters for Township Road 12, a preferred railing style and a construction cost estimate. Ultimately, it was decided to pursue a three span slab-on-girder bridge with a steel box beam railing for the new bridge. Township Road 12 will be widened to accommodate two traffic lanes with shoulders and designed to meet an 80 km/hr design speed. The estimated price of the work is $ 5,017,415.00.

The Project File lists potential environmental impacts associated with implementation of the preferred alternative along with mitigation measures.

Assuming that all comments received within the commenting period, if any, will be addressed and resolved, the Township will proceed with final engineering and construction.

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1. BACKGROUND, CATEGORY AND PROCESS OF THE ENVIRONMENTAL ASSESSMENT

1.1 Background

1.2 Category and Process of this Environmental Assessment

1.1 Background

The Ontario Environmental Assessment Act (EA Act) is to provide for "*the betterment of the people of the whole or any part of Ontario by providing for the protection, conservation and wise management in Ontario of the environment*" (Ontario Environmental Assessment Act, R.S.O 1990 Part I-Section 2). The EA Act further defines the "environment" as:

a) air, land or water;
b) plant and animal life, including human life;
c) the social, economic and cultural conditions that influence the life of humans or a community;
d) any building, structure, machine or other device or thing made by humans;
e) any solid, liquid, gas, odour, heat, sound, vibration or radiation resulting directly or indirectly from human activities;
f) any part of combination of the foregoing and the interrelationships between any two or more of them

In applying the requirements of the EA Act to an undertaking (i.e. a project such as a road, bridge, etc.), the EA Act identifies two types of environmental assessment planning and approval processes:

- Individual Environmental Assessments

Projects for which a Terms of Reference and an individual environmental assessment is carried out and submitted to the Minister of the Environment for review and approval.

- Class Environmental Assessments

Projects which are approved subject to compliance with an approved class environmental assessment process with respect to a class of undertakings. Provided the approved process followed, a proponent has complied with the EA Act.

The Municipal Engineers Association (MEA) has produced a document titled "Municipal Class Environmental Assessment" which defines a five phase planning procedure that Municipalities (such as the Township of Blandford-Blenheim) can use to plan, design, construct, operate, maintain, rehabilitate and retire the majority of infrastructure projects. The idea is to eliminate the need to seek individual approvals for every project a Municipality may undertake. The five phase planning procedure is as follows:

- Phase 1

Identify the problem or opportunity

- Phase 2

Identify, assess, and evaluate alternative solutions

- Phase 3

Identify and evaluate alternative design concepts for the preferred solution

- Phase 4

Prepare an Environmental Study Report

- Phase 5

Implementation

As projects typically undertaken by municipalities vary in their environmental impact, the following types or schedules of projects have been defined. These schedules are as follows:

- Exempt
    - Some projects, such as various maintenance, operation, rehabilitation, etc., are exempt.
    - These types of projects have minimal adverse environmental effects.
- Eligible for Screening to Exempt
    - Some projects may be eligible for exemption based on the results of a screening process.
    - Screening involves completing the Archeological Screening Process and Collector Road Screening Process.
    - The proponent is strongly encouraged to consider whether notice about the project should be given or consultation should be carried out.
    - Proponents should also address any concerns raised with respect to the project.
- Schedule B
    - In general it includes improvements and minor expansions to existing facilities.
    - There is potential for some adverse environmental impacts.
    - The proponent is required to proceed through a screening process including public and agency consultation.
- Schedule C
    - Generally includes major expansions to existing facilities and construction of new facilities.
    - These projects proceed through the full municipal EA planning process.

Consultation is a major component of the EA process. Communication between the proponent and affected/interested stakeholders provides opportunities for the exchange of information and to allow those affected to influence decisions being made. As per Municipal Class Environmental Assessment, stakeholders include the general public, review agencies, other municipalities as well as First Nations and Indigenous Peoples. The timing and quantity of consultation is also important, the following dictates the minimum level of consultation and with whom for Exempt, Eligible for Screening to Exempt , B and C projects:

- Exempt
    - No contact with the public, review agencies, other municipalities, First Nations and Indigenous Peoples required.
- Eligible for Screening to Exempt
    - Notice and/or consultation strongly recommended.
- Schedule B
    - Two points of contact with the public, review agencies, other municipalities, First Nations and Indigenous Peoples required.
- Schedule C
    - Three points of contact with the public, review agencies, other municipalities, First Nations and Indigenous Peoples required.

1.2 Category and Process of this Environmental Assessment

The potential works involved to reconstruct Bridge 24 falls under a **Schedule B** project as per Activity 35 – Table A, Reconstruction of Bridges with Increase to Travel Lanes, of Municipal Class Environmental Assessment. Item 35 includes the 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).

As such, the following process will be used to satisfy the requirements of the EA Act.

- Phase 1
  - Identify the problem or opportunity
  - 1st point of mandatory public and agency consultation (Notice of Study Commencement)
- Phase 2
  - Identify possible alternative solutions
  - Evaluate alternatives and select a preferred alternative
  - Complete preliminary design
  - Complete Project File Report
  - 2nd point of mandatory public and agency consultation (Notice of Study Completion)
- Phase 3
  - Not applicable for Schedule B projects
- Phase 4
  - Not applicable for Schedule B projects
- Phase 5
  - Complete detailed design (drawings, specifications and tender documents)
  - Proceed to construction and operation

2. PROBLEM DEFINITION OR OPPORTUNITY

2.1 Problem Definition

2.1 Problem Definition

Bridge 24 is an existing structure spanning Nith River on Township Road 12 between Oxford Regional Road 3 and Blenheim Road in the Township of Blandford-Blenheim. The structure consists of a single-span one-lane steel through truss bridge. The bridge was constructed in 1929± and is deficient in width, height and loading capacity in relation to current standards. The bridge was closed in November 2025 due to structural concerns with the bottom chord of one of the trusses.

Given that the existing structure is deficient in terms of loading capacity, height and structure width, the Township of Blandford-Blenheim is considering options to eliminate all deficiencies as well as to provide improved levels of traffic service and overall safety.

3. EXISTING ENVIRONMENT

3.1 Socio-Economic

3.2 Adjacent Landowners

3.3 Vehicular Traffic

3.4 Waterway Traffic

3.5 First Nations / Indigenous Peoples

3.6 Official Plans and Policies

3.7 Cycling

3.8 Source Water Protection

3.9 Cultural and Heritage

3.10 Archeological

3.11 Natural Environment

3.12 Climate Change

3.13 Noise

3.14 Air Quality and Dust

3.15 Surface Water and Ground Water

3.16 Excess Materials Management

3.17 Contaminated Sites

3.18 Utilities

3.19 Roadway Geometry and Capacity

3.20 Hydrology / Hydraulics

3.21 Geotechnical

3.1 Socio-Economic

The general study area is within the lower tier municipality of the Township of Blandford-Blenheim in the County of Oxford. The immediate study area is comprised of a mixture of rural agricultural and rural residential properties. There is also a private airstrip northwest of the structure. The surrounding area is rural agriculture. The communities of Plattsville, Drumbo and Ayr are a short drive away from the immediate study area.

The Township of Blandford-Blenheim is a rural municipality in southwestern Ontario. The primary economic activity in the Township is agriculture. According to Statistics Canada, the 2021 census indicated a Township population of 7,565 people in a land area of 382.03 square kilometres, which is a population density of 19.8 persons per square kilometre. The median age in the Township of Blandford-Blenheim was 42.8 years.

3.2 Adjacent Landowners

There are four (4) adjacent landowners located in the vicinity of the study area. Potential impacts to these residents include property acquisition, alteration of grading, reconstruction of driveways/accesses, removal of existing vegetation, delayed or temporary loss of access and/or short term impacts due to construction (dust, noise, etc.).

3.3 Vehicular Traffic

Based on a Traffic Study conducted in 2023, the Average Annual Daily Traffic (AADT) for Township Road 12 is estimated to be 353. The aforementioned AADT likely did not include truck traffic due to the bridge being load posted.

3.4 Waterway Traffic

Nith River is used for paddled watercraft upstream and downstream of Bridge 24.

A new bridge should provide a vertical navigational clearance at least equivalent to the old bridge.

In addition, adequate signage should be installed upstream and downstream of the new crossing to warn boaters of the construction. Furthermore, the construction needs to be staged such that there are minimal obstacles placed near or in the water which might hinder movement of waterway traffic. Any such obstacles need to be marked with navigational signage.

3.5 First Nations / Indigenous Communities

Nith River is important to the First Nations and is recognized as a significant cultural landscape. Nith River is also designated as a Canadian Heritage River due to cultural and recreational heritage.

The following Indigenous communities were contacted:

- Missisaugas of the Credit First Nation (MCFN)
- Six Nations of the Grand River (SNGR)
- Haudenosaunee Development Institute (HDI)
- Haudenosaunee Confederacy Chiefs Council (HCCC)
- Métis Nation of Ontario

MCFN, SNGR and HCCC expressed interest in the project. This interest included participating in the Stage 1-2 Archeologic Investigations and reviewing the subsequent reports, reviewing the Environmental Study reports as well as possibly attending the site during initial excavation and for environmental restoration.

Métis Nation of Ontario did not express any interest in this project.

A correspondence log documenting the various correspondence with the above Indigenous communities was prepared and is included in the appendices.

3.6 Official Plans and Policies

Reference is made to the County of Oxford Official Plan as the Township of Blandford-Blenheim does not have its own plan. The following is noted:

- The Official Plan is the policy document that establishes the overall land use strategy for both the County and the eight area municipalities that comprise the County
- The eight area municipalities include the Township of Blandford-Blenheim, Township of East Zorra-Tavistock, Township of Zorra, Township of South-West Oxford, Township of Norwich, Town of Ingersoll, Town of Tillsonburg, and the City of Woodstock
- The Official Plan is divided into four (4) major components. These components include:
    - County Development Strategy
    - Natural and Cultural Growth, Growth Management Strategy and Functional
    - Support Elements
    - Lane Use Policies for the various settlements within the County
    - Implementation Measures

- The County Development Strategy represents the fundamental planning principles on which the policies of the Official Plan are based. These include:
    - Growth management
    - Environmental and cultural integrity
    - Protect agriculture and rural natural resources
    - Economic competitiveness
    - Responsible water and waste management
    - Transportation systems and corridors
    - Public participation
    - Monitoring
    - Coordination
- Natural and cultural growth will be addressed by:
    - Ensuring prime agricultural lands are preserved for food and fibre production
    - Adopting a comprehensive, integrated approach to environmental management
    - Adopting a comprehensive approach toward maintaining the cultural heritage of the County
    - Recognizing that the extraction of mineral aggregate resources will continue to be an important industry in the County
- Growth management will be addressed by:
    - Forecasting population and employment growth as the basis for designating.
    - adequate supplies of land for development, for planning capital improvements to infrastructure and for public services such as schools, parks and leisure areas.
    - Identifying and designating appropriate areas to accommodate growth which respecting County objectives to preserve prime agricultural areas and environmental resources.
    - Identifying and designating lands which may be developed over the long term on the basis of logical and economically efficient servicing extensions and establish the criteria to be satisfied prior to utilizing such lands.
    - Requiring that existing designated land supplied and infrastructure be efficiently utilized
    - Establishing sufficient servicing levels for designated growth areas

    - Clearly establishing the parameters and criteria to be satisfied prior to development occurring in designated growth areas

- Functional support elements include:
    - County transportation
    - Public uses, utilities and infrastructure
    - Waste management
    - Regional scale shopping areas
    - Servicing
- Bridge 24 is not located within a rural cluster, village, serviced village, large urban centre or in a future urban growth area
- Implementation measures include general policies, tools, community involvement, planning and development approval processes, monitoring, amendments and public participation
- Upon reviewing the Official Plan, it can be concluded that improvements to Bridge 24 would not be contradictory to the Official Plan

3.7 Cycling

Reference is made to the Oxford County 2021 Cycling Master Plan. The following is noted:

- Township Road 12 is not identified as a current or planned cycling route;
- Township Road 12, due to it being gravel, generally would not accommodate cycling;
- There are no plans to pave Township Road 12 in the foreseeable future.

3.8 Source Water Protection

An online policy mapping tool (Source Protection Information Atlas) was utilized and Ontario Regulation 287/07 (under the Clean Water Act, 2006) was reviewed to determine whether this project is located in a vulnerable area and whether any project activities are a prescribed drinking water threat. The following is noted:

- Bridge 24 is not located within a vulnerable area;
- Reconstruction of a bridge is not an activity identified as a “prescribed drinking water threat”;

- Some aspects of the work, such as refueling of equipment and dewatering, are activities identified as a “prescribed drinking water threat”, however any potential threats can be easily mitigated using best management practices described elsewhere in this Report.

3.9 Cultural and Heritage

Cultural heritage resources include built heritage resources, cultural heritage landscapes and archaeological resources.

- Built Heritage Resources and Cultural Heritage Landscapes

As part of this EA Study, a Cultural Heritage Evaluation Report (CHER) and Heritage Impact Assessment (HIA) were completed by CHC Limited for Bridge 24 dated September 4, 2025 (See Appendix B).

The bridge was found to be of cultural heritage value or interest (CHVI). Therefore, a Heritage Impact Assessment of the bridge was completed to assess the impacts of the structure’s proposed replacement and recommend appropriate mitigation measures.

3.10 Archeological

As part of this EA Study, a Stage 1-2 Archeological Assessment and a Marine Archeology Assessment were completed by Detritus Consulting Ltd. and can be found in Appendix C.

- Stage 1-2 Archaeological Assessment
    - The Stage 1 assessment of the Study Area resulted in the finding that portions retain archeological potential and that a Stage 2 assessment was recommended.
    - The subsequent Stage 2 field assessment of the Study Area was completed on July 18, 2025. The field assessment began with a property inspection which found that the hard-packed gravel and asphalt road surfaces retained no, or low, archaeological potential. The remainder of the Study Area were found to be overgrown areas. These overgrown areas were assessed by means of typical test pit surveys at five (5) metre intervals. No archaeological resources were observed. Given the results of the Stage 2 investigation, no further archeological assessment of the land portion of the Study Area is recommended.
    - The Stage 2 investigation also found that Nith River, as it passes through the Study Area, is considered open water and that a marine archeological assessment should be completed.
- Marine Archaeological Assessment
    - Background research identified the entire Study Area has having marine archeological resources.

- A test pit assessment of the river bottom, completed on July 29, 2026, did not result in the identification of any terrestrial or marine archeological resources.

- Given the results of the Marine Archaeological Assessment, no further marine archeological assessment of the Study Area is recommended.

3.11 Natural Environment

As part of this EA Study, a Scoped Environmental Impact Study and a Mitigation Plan for Species at Risk were completed by Natural Resource Solutions Inc. (NRSI) and can be found in Appendix D.

- Scoped Environmental Impact Study

    - This study was completed to inform the overall project with respect to the natural environment.

    - The Study Area falls within the lower Nith River catchment area. A combination of soil types are found within this area which include poor to well-draining sandy loam soils and variable draining bottomlands. The area directly adjacent to NIth River is predominately bottomland. The general landscape is generally flat with a gentle slope towards the river. Bridge 24 is located quite close to the confluence of Washington Creek with Nith River and an unnamed tributary with Nith River. Areas to the east and west of Bridge 24 are considered significant groundwater recharge areas.
      No provincially or regionally significant wetlands or Areas of Natural or Scientific Interest are within the Study Area, however there are wetlands within the study area that are of interest to GRCA.
      In total, seven (7) ELC communities are present in the Study Area which include FOD7, FOD7-4, FOD8-1, MAM2-2, SWT2-9, SWD2-2 and CUM1-1. Sixty-two (62) plant species, consisting of a mixture of trees and shrubs, were identified with many of these species being common in Oxford County. Several clumps of Riverbank Sedge, considered rare in Oxford County, were observed south of the bridge; these plants are well removed from the development footprint and should not be affected by the bridge replacement.
      103 bird species are reported to be in, or near, the Study Area. Site visits confirmed the presence of 11 species near Bridge 24 itself, however all of these species are considered common with secure populations. The Eastern Wood-Pewee was heard calling on June 6, 2023 which indicates that suitable habitat during the breeding season is present which is most likely in the forested areas to the northeast and northwest of Bridge 24. No Species at Risk birds were documented within the study area. A Cliff Swallow nest was noted the underside of the bridge on July 26, 2023.

    - Nith River may provide suitable habitat for Snapping Turtle. Downstream of Bridge 24 there exists a deep pool which could provide overwintering habitat for Snapping Turtle, but this area is outside the proposed construction limits.

    - Several species of Bat have been reported in the Study Area including Little Brown Myotis, Northern Myotis, Silver-haired Bat, Hoary Bat or Eastern Red Bat;

the first 2 are listed as Species at Risk and the last 3 are listed as Species of Conservation Concern.

- No butterfly species were observed during any of the site visits, but 44 species of butterflies are known to occur within the Study Area. This includes Species at Risk Black Dash, Hackberry Emperor and Monarch.

- Silver Shiner, Black Redhorse, Rainbow mussels and Wavy-rayed Lampmussel have been identified as aquatic Species at Risk potentially being present in Nith River adjacent to Bridge 24.

- Mitigation measures will be required during construction.

- Mitigation Plan for Species at Risk

  - The mitigation plan was developed to comply with O. Reg 242/08 under the ESA and includes details such as a description of the proposed activity, names and contact information for the organization responsible for carrying out the activity, qualifications, start and end dates, timeline, listing of Species at Risk, an assessment on potential effects and a description of the proposed mitigation measures.

  - The activity is intended to be the reconstruction of Bridge 24.

  - Names and contact information has been provided. Qualifications are also included for various individuals at NRSI.

  - The mitigation plan suggests that work might occur between August and July.

  - Stages of the activity include mussel relocation, work-site isolation and removal of existing bridge and abutments, cofferdam installations and fish relocation, abutment construction, bridge finalization and road works as well as restoration plantings.

  - Species at Risk are identified and include, but not necessarily limited to, Black Redhorse, Silver Shiner and Wavy-rayed Lampmussel.
  - Proposed mitigation measures include, but are not necessarily limited to, training, use of timing windows, general construction best practices, adherence to DFO protocols as well as general erosion and sediment control measures.

3.12 Climate Change

Based on the scale and nature of this study, a qualitative approach was undertaken when assessing effects on and from climate change.

It can be said that the existing bridge, in its current configuration, contributes to climate change due to its frequent closures (vehicles need to detour around the site instead of crossing the bridge) and its inability to handle large vehicles (again, needing to detour around the site instead of crossing the bridge). Notwithstanding these issues, the existing bridge requires frequent repairs. This further contributes to climate change as workers

routinely need to travel to the bridge to complete these repairs. If significant repairs were made to the structure, positive steps in reducing climate change would be made.

With respect to considering impacts resulting from climate change into the project, this will be addressed by means of appropriately sizing the structure hydraulically should replacement be deemed the preferred alternative. As part of the process to determine flow rates to size a replacement structure, the Single Station Frequency Analysis Method will be used. This flow estimation method relies heavily on historical records including records from the last few years; this takes into account large rainfall events that seem to be more prevalent as of late.

3.13 Noise

Township Road 12 is an existing roadway and noise is generated as traffic travels down the road. It is expected that post-improvement traffic levels will be very similar to pre-improvement traffic levels.

Any improvements to Bridge 24 will result in noise being generated during construction. This noise is anticipated to arise from concrete removal, pumps, generators, construction equipment and trucks. Noise from construction will occur during daylight hours Monday through Friday. No construction is anticipated at night or over weekends. Construction noise will be limited to the duration of construction which could extend for as long as 12 months. This noise is considered temporary and will vanish once the construction is complete.

To mitigate the level of noise during construction, steps such as requiring stationary noise generating equipment be enclosed or construction equipment be fitted with mufflers and maintained in good working order will be required.

3.14 Air Quality and Dust

Township Road 12 is an existing rural gravel roadway. Dust can be generated during dry weather due to vehicular traffic travelling along the roadway. While air quality is mostly good, the air quality will deteriorate (to varying degrees) when vehicular traffic uses the roadway. It is expected that post-improvement air quality and dust will be very similar to pre-improvement levels.

Any improvements to Bridge 24 will result in temporary increases in dust levels and lower air quality. These changes are considered temporary and should reside once construction is complete.

3.15 Surface Water and Ground Water

Bridge 24 is an existing structure that crosses Nith River. Water in Nith River would be considered surface water. Various mitigation measures will be employed to prevent contamination of the river by deleterious materials (silt, sediment, fuel, debris, etc.) while improvements are being completed. Once the site stabilizes upon the completion of construction, the post-improvement conditions should be very similar to the pre-improvement conditions when considering surface water.

Ground water in this area of the Township is known to be very close to the surface. Artesian conditions also exist at this site as this condition was discovered during the geotechnical investigation. If a replacement structure is determined to be the preferred alternative, the structure must be founded above the ground water level and supported on conventional strip footings (deep foundation is not allowed). Provided these requirements are followed, there should be no impacts to ground water.

3.16 Excess Materials Management

Excess materials such as steel, concrete rubble, reinforcing steel, wood and soil will be generated if any improvements are made to Bridge 24. The management of these materials will be as follows:

- Scrap steel materials (steel and reinforcing steel) will be collected and sent for recycling off site
- Concrete rubble will be crushed or broken down into small pieces and reused as fill or rock protection on site
- Wood will be collected and landfilled
- Excess soil will be reused on site wherever possible and any soil which cannot be reused in any beneficial way will be disposed of at a facility licensed to accept such materials in accordance with Ontario Law.

3.17 Contaminated Sites

Township Road 12 and Bridge 24 have been in service for many decades. There are no records of any other land use in this location. There is no reasonable expectation that contaminated soil is present.

Excavated soil from the project will be reused on site wherever possible. Before removing excess soil, the material will be tested to determine its acceptable reuse. Excess soil which cannot be reused in any beneficial way will be disposed of at facility licensed to accept such materials in accordance with Ontario Law.

3.18 Utilities

The following utilities are present in the study area:

- Gas
    - Enbridge has a buried utility line on the south side of Township Road 12. This line has already been relocated away from any proposed construction activities
- Hydro
    - Hydro is overhead on the north side of Township Road 12. These lines do not require relocation
- Telephone
    - Bell lines are overhead on the north side of Township Road 12.
- Fibreoptic
    - There is a new fibreoptic duct underground on the north side of Township Road 12. This duct does not yet have any cable in it. Relocation of this duct will likely be required.

It is not expected that any further infrastructure, such as sewer or water, will be installed or required in this area for the foreseeable future.

3.19 Road Geometry and Capacity

The existing horizontal and vertical alignments of Township Road 12 are satisfactory.

Township Road 12 is deemed to have adequate capacity to handle the current and expected volumes of traffic for the foreseeable future.

3.20 Hydrology / Hydraulics

As part of this EA Study, a Hydrology Report was completed and can be found in Appendix E.

To satisfy hydraulic design standards, a three span structure with openings of 18, 25 and 18 metres and a minimum soffit elevation of 295.00 is required.

3.21 Geotechnical

As part of this EA Study, a Geotechnical Investigation was completed and can be found in Appendix F.

A replacement structure should be founded on spread footings.

4. EXTERNAL INVOLVEMENT

4.1 Notice of Study Commencement

4.2 Notice of Study Completion

4.1 Notice of Study Commencement

The following list identifies the Agencies, Communities, Groups, Organisations and properties that the Notice of Study Commencement was distributed to:

- Canadian Transportation Agency
- Department of Fisheries and Oceans – Habitat Management
- Committee on the Status of Endangered Wildlife in Canada (COSEWIC)
- Indigenous and Northern Affairs Canada
- Environment and Climate Change Canada (ECCC) – Ontario Region
- Ministry of Transportation – Waterloo District Office
- Ministry of Agriculture, Food and Rural Affairs
- Ministry of Citizenship and Multiculturalism
- Ministry of Tourism, Culture and Sport
- Regional Ministry of the Environment, Conservation and Parks – London District Office
- Ministry of Natural Resources and Forests – Aylmer Office
- Grand River Conservation Authority (GRCA)
- Ontario Provincial Police (OPP) – Oxford
- Oxford County Paramedics Services
- Oxford County – Planning
- Township of Blandford-Blenheim
- Drumbo Heritage Society
- Six Nations of the Grand River
- Mississauga's of the Credit First Nation
- Haudenosaunee Development Institute
- Haudenosaunee Confederacy Chiefs Council
- Metis Nation of Ontario
- London District Catholic School Board

- Thames Valley District School Board
- Waterloo Region District School Board
- Hydro One
- Union Gas
- Enbridge Gas Inc.
- Bell Canada
- Rogers
- 907259 Township Rd 12
- 896620 Oxford Rd 3
- 887273 Township Rd 11
- 936685 Blenheim Rd
- 907107 Township Rd 12
- 926982 Oxford Rd 8
- 847275 Township Rd 9
- 896832 Washington Rd
- 927150 Oxford Rd 8
- 887273 Township Rd 11
- 907741 Township Rd 12
- 896505 Oxford Rd 3
- 26 Nicholas Beaver Rd
- 946705 Township Rd 13
- 896565 Oxford Rd 3
- 907168 Township Rd 12
- 8976474 Oxford Rd 3
- 2316 Bridge St
- 907384 Township Rd 12
- 907712 Township Rd 12

- 866876 Township Rd 10
- 896474 Oxford Rd 3
- 907289 Township Rd 12
- 50 Midland Dr Unit 20

The advertisement also appeared in the June 21st, 2023 and June 28, 2023 editions of the Ayr News. A copy of these notices can be found on the following pages.



FACE PAINTING AT BDPS FAMILY CULTURAL FESTIVAL – A Family Cultural Festival held at Blenheim District Public School in Drumbo on Thursday, June 15th featured many free activities including face painting. Shown above is Wyatt McMillan getting a custom design from artist Rylee Nancekivell.



HENNA DESIGNS AT BDPS FAMILY CULTURAL FESTIVAL – Emmett Leet receives a henna design from Hibbah Yousaf of Cambridge. The event was organized by the Planning Team Karina Meier, Vanessa Hnat, and Principal Marina Tersigni and assisted by volunteers from the BDPS School Council.

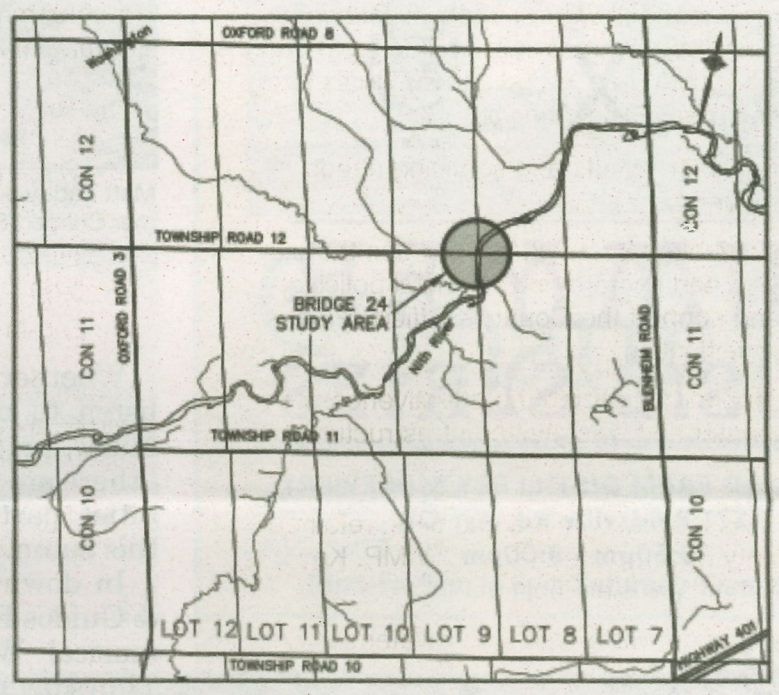


ANISHINAWBEK JINGLE DANCING AT BDPS FAMILY CULTURAL FESTIVAL – Ella Munro (left) received a lesson in Intertribal Jingle Dancing from Robyn Michaud of Woodstock.. Michaud is from the Sagamok Anishinawbek First Nation, located on the north shore of Lake Huron. Jingle Dancing has its origins in Ojibwe cultures, representing a form of healing and celebration. The dresses are known as Prayer Dresses and the jingle dancing mimics the sound of falling rain.

NOTICE OF STUDY COMMENCEMENT

TOWNSHIP OF BLANDFORD-BLENHEIM
MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT (SCHEDULE B) BRIDGE 24
TOWNSHIP ROAD 12 AT THE NITH RIVER

The Township of Blandford-Blenheim has initiated a Municipal Class Environmental Assessment (EA) Study (Schedule B) to assess the need to rehabilitate or replace Bridge 24, which is located in the Township of Blandford-Blenheim. Bridge 24 crosses the Nith River on Township Road 12 between Oxford County Road 3 and Blenheim Road (please refer to Study Area map). The Study will review existing conditions and provide recommendations related to the rehabilitation or replacement of the existing bridge structure based on current bridge and highway standards in order to achieve an enhanced level of service for vehicles and pedestrians and overall increased safety.



This Study is being undertaken in accordance with the planning and design process for Schedule B projects, as outlined in the Municipal Class Environmental Assessment document (October 2000, as amended in 2007, 2011, 2015 and 2023), which is an approved process under the Ontario Environmental Assessment Act.

Public input and comments are invited and may be incorporated into the planning and design of this project. Subject to comments received and receipt of necessary approvals, the Township of Blandford-Blenheim intends to proceed with the planning, design and construction of this project to be completed by 2026.

If you would like more information on the Study or wish to be added to the project mailing list, please contact:

Mr. Trevor Hoard
Project Manager
K. Smart Associates Limited
85 McIntyre Drive Kitchener ON N2R 1H6
Phone: 519-748-1199 ext. 229
E-mail: thoard@ksmart.ca

or

Mr. Jim Borton
Director of Public Works
Township of Blandford-Blenheim
47 Wilmot Street South Drumbo ON N0J 1G0
Phone: 519-463-5347 ext. 7426
E-mail: jborton@blandfordblenheim.ca

All comments and information received from individuals, stakeholder groups and agencies regarding this project are being collected under the authority of the "Municipal Act" to assist the Township of Blandford-Blenheim in making a decision. Information will be collected in accordance with the Freedom of Information and Protection of Privacy Act. With the exception of personal information, all comments will become part of the public record.

This Notice is issued June 20, 2023.

Subscribe to The Ayr News today!
$50 in print or online
Call 519-632-7432

Blandford-Blenheim will allow ATVs and ORVs on township roads

By Irene Schmidt-Adeney

Blandford-Blenheim Council has approved a request from the Great Lakes ATV Club that a by-law prohibiting ATVs and ORVs on all township roads be rescinded. The decision was made at the meeting held on Wednesday, June 21st. Deputy Mayor Bruce Banbury chaired the meeting in the absence of Mayor Mark Peterson.

In 2020, the province approved ATVs and ORVs on municipal roads and Blandford-Blenheim Township responded by passing a by-law to prohibit the off-road vehicles. In 2021, council amended the by-law for a small portion of Township Road 9, so that the Great Lakes ATV Club could access private trails from a parking lot on Township Road 9. The township also allowed off-road vehicles for agricultural purposes.

At the June 7th meeting, Bright resident Tracy Litt who is a member of the Great Lakes ATV Club, outlined the benefits of allowing off-road vehicles, including an increase in business and tourism.

CAO Rodger Mordue said that staff could monitor the reaction to having ATVs and ORV on the township roads, and if there are complaints, the by-law can be reinstituted.

"I suggest that the existence of having a by-law didn't dissuade people (on off-road vehicles) from using the roads," said Mordue.

Councillor Nancy Demarest was concerned about damage to the roads.

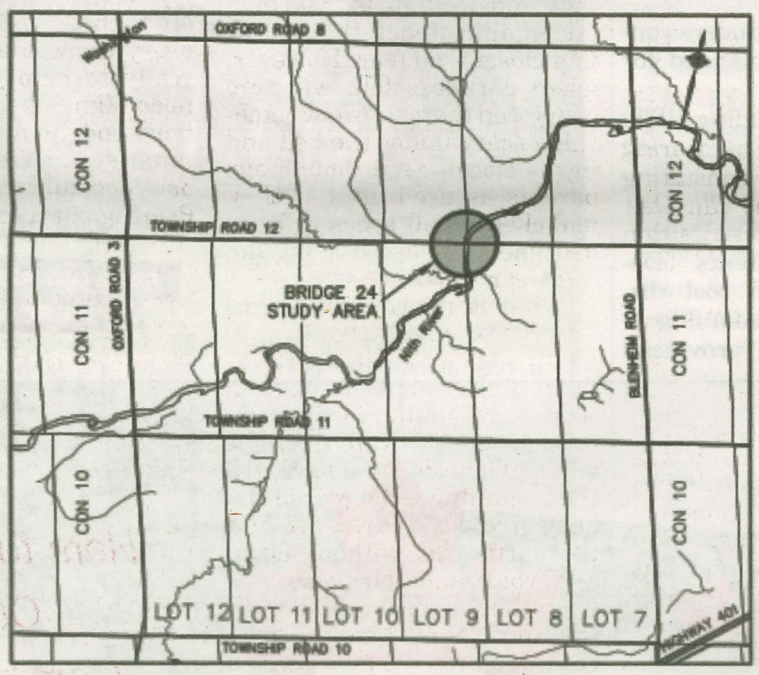
"The people doing the damage to the roads will do it regardless," said Mordue.

Public Works Director Jim Borton said that other municipalities have not seen "an abundance of abuse". He said there have been no "Saturday Night Warriors tearing up the intersections."

NOTICE OF STUDY COMMENCEMENT

TOWNSHIP OF BLANDFORD-BLENHEIM
MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT (SCHEDULE B) BRIDGE 24
TOWNSHIP ROAD 12 AT THE NITH RIVER

The Township of Blandford-Blenheim has initiated a Municipal Class Environmental Assessment (EA) Study (Schedule B) to assess the need to rehabilitate or replace Bridge 24, which is located in the Township of Blandford-Blenheim. Bridge 24 crosses the Nith River on Township Road 12 between Oxford County Road 3 and Blenheim Road (please refer to Study Area map). The Study will review existing conditions and provide recommendations related to the rehabilitation or replacement of the existing bridge structure based on current bridge and highway standards in order to achieve an enhanced level of service for vehicles and pedestrians and overall increased safety.



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If you would like more information on the Study or wish to be added to the project mailing list, please contact:

Mr. Trevor Hoard
Project Manager
K. Smart Associates Limited
85 McIntyre Drive Kitchener ON N2R 1H6
Phone: 519-748-1199 ext. 229
E-mail: thoard@ksmart.ca

or

Mr. Jim Borton
Director of Public Works
Township of Blandford-Blenheim
47 Wilmot Street South Drumbo ON N0J 1G0
Phone: 519-463-5347 ext. 7426
E-mail: jborton@blandfordblenheim.ca

All comments and information received from individuals, stakeholder groups and agencies regarding this project are being collected under the authority of the "Municipal Act" to assist the Township of Blandford-Blenheim in making a decision. Information will be collected in accordance with the Freedom of Information and Protection of Privacy Act. With the exception of personal information, all comments will become part of the public record.

This Notice is issued June 20, 2023.

From the Blandford-Blenheim Council meeting June 21st:

Van Wyk appointed Deputy Director of Protective Services

Council approved the appointment of Michelle Van Wyk to the position of Deputy Director of Protective Services. The position was effective on June 21st.

Van Wyk has been a volunteer firefighter at the Drumbo Station since 2007. She was hired by the township in 2015 in the Protection Service Administration department. Deputy Director is a newly-created position within the Protective Services Department.

Zone change approved

Council approved a zone change application submitted by Tara and Jeff Butcher to rezone their 46-acre property at 706935 Township Road 2, north of Princeton, so that two homes can remain on the property. In 2020, council approved an application for a new home to be built on the property on the condition that the original home be demolished following construction.

The original home is 912 square feet, and the new home is 2,100 square feet. According to new Official Plan policies, the original home will qualify as an ARU (additional residential unit) on the property.

Princeton resident disputes ARU policy

Council adopted new zoning provisions pertaining to ARUs that were adopted by Oxford County Council in February. According to the provisions, properties in Blandford-Blenheim with water and wastewater services will be allowed two ARUs on the property.

Properties in Princeton that are on septic systems and well water will be allowed one ARU if they have 1.48 acres of land.

Princeton resident Bev Beaton appeared before council saying that this is "not a good use of land". He said a garden suite can be installed on a property, but not an ARU. He said that an *ARU can be installed inside of a* house, but not in the backyard.

"This doesn't make any sense," he said.

Councillor Bruce Banbury encouraged planners and residents to submit comments to the county.

Tenders/contracts

– $415,129.32 (plus HST) to Colvoy Enterprises for the purchase of a Energreen Kommunal roadside multi-purpose power unit.

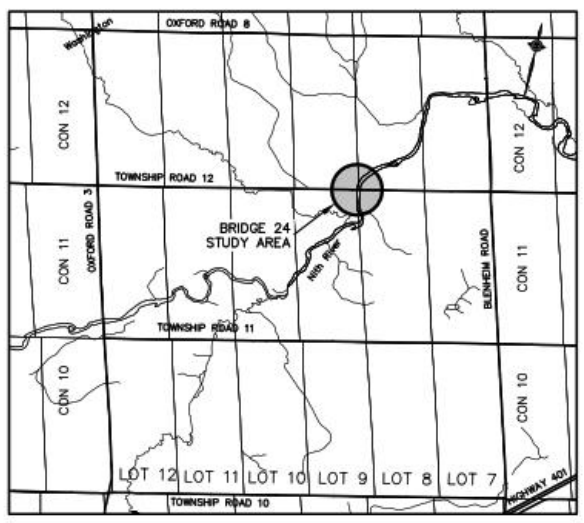


4.2 Notice of Study Completion

The following notice of study completion will be placed in two (2) consecutive editions of the Ayr News. This notice will also be sent to those identified in Section 4.1

NOTICE OF COMPLETION
TOWNSHIP OF BLANDFORD-BLENHEIM
MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT
BRIDGE 24 AT NITH RIVER

The Township of Blandford-Blenheim has completed the Class Environmental Assessment to assess the need to rehabilitate or replace Bridge 24. Bridge 24 is located on Township Road 12 where it intersects Nith River in the Township of Blandford-Blenheim in the County of Oxford. The preferred solution is to replace Bridge 24 with a three span bridge.



The Township has planned this project through the Schedule B process in the Municipal Class Environmental Assessment. As such, public and technical agency input played a key role in developing the study recommendations.

A Project File Report documenting the planning process undertaken, details of the study recommendations as well as potential impacts and mitigation measures, has been completed and is being made available for public review. Subject to comments received following this Notice and the receipt of approvals, the Township intends to proceed with construction of the recommended project, as outlined in the Project File Report.

The Project File Report is available for review on the Township's webpage via the following link:
http://www.blandfordblenheim.ca/building-construction-development/bridge-24-municipal-class-environmental-assessment/

Further information may be obtained from the one of the following members of the project team:

Mr. Trevor Hoard
Project Manager
K. Smart Associates Limited
85 McIntyre Drive
Kitchener ON N2R 1H6
Phone: 519-748-1199 Ext. 229
E-mail: thoard@ksmart.ca

Or

Mr. Adam Degier
Drainage Superintendent/Building Inspector
Township of Blandford-Blenheim
47 Wilmot Street South
Drumbo ON N0J 1G0
Phone: 519-463-5347 Ext. 7433
E-mail: adegier@blandfordblenheim.ca

Interested persons may provide written comments to our project team by December 23, 2026. All comments and concerns should be sent directly to the Township of Blandford-Blenheim at:

Township of Blandford-Blenheim
47 Wilmot Street South
Drumbo, ON N0J 1G0
generalmail@blandfordblenheim.ca

In addition, a request to the Minister of the Environment, Conservation and Parks for an order imposing additional conditions or requiring a comprehensive environmental assessment may be made on the grounds that the requested order may prevent, mitigate or remedy adverse impacts on constitutionally protected Aboriginal and treaty rights. Requests should include your full name and contact information.

Requests should specify what kind of order is being requested (additional conditions or a comprehensive environmental assessment), explain how an order may prevent, mitigate or remedy potential adverse impacts, and can include any supporting information.

The request should be sent in writing or by email to:
Minister of the Environment, Conservation and Parks
Ministry of the Environment, Conservation and Parks
777 Bay Street, 5th Floor
Toronto ON M7A 2J3
minister.mecp@ontario.ca

and
Director, Environmental Assessment Branch
Ministry of Environment, Conservation and Parks
135 St. Clair Ave. W, 1st Floor
Toronto ON M4V 1P5
EABDirector@ontario.ca

Requests should also be sent to the Township of Blandford-Blenheim by mail or email.

Please visit the ministry's website for more information on requests for orders under section 16 of the *Environmental Assessment Act* at:
https://www.ontario.ca/page/class-environmental-assessments-part-ii-order

All personal information included in your request – such as name, address, telephone number and property location – is collected, under the authority of section 30 of the *Environmental Assessment Act* and is collected and maintained for the purpose of creating a record that is available to the general public. As this information is collected for the purpose of a public record, the protection of personal information provided in the *Freedom of Information and Protection of Privacy Act* (FIPPA) does not apply (s.37). Personal information you submit will become part of a public record that is available to the general public unless you request that your personal information remain confidential.

This Notice is issued November 5, 2026.

5. ALTERNATIVES CONSIDERED AND SELECTION OF THE PREFERRED ALTERNATIVE

5.1 Alternatives Considered

5.2 Selection of the Preferred Alternative

5.1 Alternatives Considered

Four (4) alternatives are considered to address the deficiencies associated with the structure. A "Do Nothing" alternative is considered as recommended in the EA Manual. Each alternative and their associated pros and cons are outlined below:

Alternative 1 – Do Nothing

This alternative leaves the structure in its current condition and does not address major deficiencies associated with the existing structure.

Alternative 2 – Repair / Rehabilitate Existing Bridge

This alternative would repair / rehabilitate the existing structure and will address loading capacity but does not address width or height restrictions.

Alternative 3 – Replace Superstructure

This alternative involves replacing the existing steel truss bridge also addressing the loading capacity and height restriction but does not address width restrictions.

Alternative 4 – Replace Structure – Single Span Bridge

This alternative involves replacing the entire structure with a single span bridge. This will address all deficiencies associated with the existing structure.

Alternative 5 – Replace Structure – Three Span Bridge

This alternative involves replacing the entire structure with a three span bridge. This will address all deficiencies associated with the existing structure.

5.2 Selection of the Preferred Alternative

The following table (Table 1) was used to evaluate the alternatives against a variety of criteria in order to select a preferred alternative.

TABLE 1 – EVALUATION OF ALTERNATIVES – PAGE 1 OF 3

Criteria Group	No.	Criteria	Alternative 1 (Do Nothing)	Alternative 2 (Repair / Rehabilitate Existing Bridge)	Alternative 3 (Replace Superstructure)	Alternative 4 (Replace Structure - Single Span Bridge)	Alternative 5 (Replace Structure - Three Span Bridge)	Comments
Natural Environment	1	Disruption to fish and changes to fish habitat	1	2.5	2.5	4	5	Considers disruption to fish and potential loss of fish habitat.
	2	Changes to vegetation and flora	1	2.5	2.5	5	4	Considers overall loss of vegetation. 1 does not result in any loss of vegetation 5 results in a significant loss of vegetation
	3	Disruption to wildlife and changes to wildlife habitat	1	2.5	2.5	5	4	Considers loss of habitat for wildlife such as birds and animals 1 does not result in any loss of habitat 5 results in a significant loss of habitat
	4	Changes to surface water quality and quantity	1	2	3	5	4	Considers both the increase and level of contamination of runoff. 1 indicates no change 5 indicates significant change
	5	Changes to ground water quality and quantity	2	2	2	4.5	4.5	2 indicates no change 4.5 indicates potential change
	6	Changes to stream flow	1	2.5	2.5	4	5	Considers changes to the overall alignment of the watercourse. 1 indicates the least disruption 5 indicates the most disruption
	7	Potential for ice jams	2.5	2.5	2.5	2.5	5	2.5 indicates no change to the possibility of ice jams 5 indicates greater possibility of ice jams
Socio-Economic Environment	8	Changes to quality and quantity of agriculture	5	4	3	1.5	1.5	Considers change to the quality and quantity of farming
	9	Disruption to community due to frequent or permanent closure(s) of the crossing	5	4	3	1.5	1.5	Considers disruption to the community by not having a permanent crossing 1 if a new bridge is built 5 if no bridge is built
	10	Disruption to local business due to frequent or permanent closure(s) of the crossing	5	4	3	1.5	1.5	Considers disturbance to local business by not having a permanent crossing 1 if a new bridge is built 5 if no bridge is built
	11	Changes to recreation (fishing, boating, sightseeing, etc.) resulting from potential, frequent or permanent closure(s) of the bridge	5	4	3	1	2	Considers potential changes to recreation
	12	Changes to future development due to frequent or permanent closure(s) of the crossing	4.5	4.5	3	1.5	1.5	Considers loss of future development by not having a permanent crossing 1 if a new bridge is built 5 if no bridge is built
	13	Need for property acquisition if a new structure is pursued	1.5	1.5	3	5	4	1 requires no property to be purchased 5 requires the most amount of property to be purchased
	14	Length of construction if work is pursued	1	2	3	5	4	1 is the shortest to construct 5 is the longest to construct
	15	Improvement to traffic movement if a new structure is pursued	5	4	3	2	1	1 will provide improvement 5 will not provide improvement
	16	Changes to noise and vibration if a new structure is pursued	1	2	3	5	4	1 will result in a reduction in noise and vibration 5 will result in changes to noise and vibration

TABLE 1 – EVALUATION OF ALTERNATIVES – PAGE 2 OF 3

Criteria Group	No.	Criteria	Alternative 1 (Do Nothing)	Alternative 2 (Repair / Rehabilitate Existing Bridge)	Alternative 3 (Replace Superstructure)	Alternative 4 (Replace Structure - Single Span Bridge)	Alternative 5 (Replace Structure - Three Span Bridge)	Comments
Socio-Economic Environment	17	Changes to air quality	4.5	4.5	3	2	1	Considers positive change to air quality as a result of quicker travel times 1 if a new bridge is built 5 if no bridge is built
	18	Access to emergency services due to frequent or permanent closure(s) of the crossing	5	4	3	1.5	1.5	Considers response times 1 if a new bridge is built 5 if no bridge is built
	19	Change in aesthetics	1	2	3	5	4	1 will restore aesthetics of Bridge 24 5 indicates the most change to original aesthetics
Cultural Environment	20	Potential impacts to archeological resources or areas of archeological potential within or adjacent to the study area	1	2	3	5	4	1 would be no ground disturbance 5 indicates major ground disturbance
	21	Potential impacts to known or potential cultural heritage landscapes	1	2	3	5	4	1 indicates retention of existing landscape 5 indicates altering current landscape
	22	Potential impacts to known or potential built heritage resources	1	2	3	5	4	1 indicates retention of existing resources 5 indicates altering current resources
Technical Considerations	23	Extent the alternative addresses the problem statement	5	4	3	1.5	1.5	1 meets the problem statement 5 does not meet the problem statement
	24	Effect on existing utilities	1	2	3	5	4	1 indicates least potential to affect utilities 5 indicates most potential to affect utilities
	25	Elimination of height restrictions	5	4	3	1.5	1.5	4 if there is a height limit across the bridge 1 if there is no limit
	26	Elimination of load posting	5	4	3	1.5	1.5	1 eliminates load posting 5 does not eliminate load posting
	27	Elimination of width restrictions	5	4	3	1.5	1.5	5 if the structure is limited in width 1 if there is no limit
	28	Ability to improve geometry of roadway	5	4	3	2	1	1 will allow modifications 5 will not allow modifications
	29	Increase of traffic volume and speed due to overall improved geometry	5	4	3	1.5	1.5	1 indicates improvement to traffic volume and speed 5 indicates no improvements to traffic speed and volume
	30	Need to reconfigure laneways immediately adjacent to bridge	1	2	3	5	4	1 indicates no need for reconfiguration 5 indicates reconfiguration required
	31	Improvements to safety	5	4	3	1.5	1.5	1 provides many improvements 5 provides no improvements
	32	Ability to improve hydrology/hydraulic conditions	5	4	3	2	1	1 allows for improvement 5 does not allow improvement
	33	Constructability	1	2	3	4	5	1 is the easiest to construct 5 is the hardest to construct
	34	Construction timeline	1	2	3	5	4	1 is the shortest to construct 5 is the longest to construct
	35	Lifespan	5	4	3	2	1	1 is the longest lifespan 5 is the shortest lifespan

TABLE 1 – EVALUATION OF ALTERNATIVES – PAGE 3 OF 3

Criteria Group	No.	Criteria	Alternative 1 (Do Nothing)	Alternative 2 (Repair / Rehabilitate Existing Bridge)	Alternative 3 (Replace Superstructure)	Alternative 4 (Replace Structure - Single Span Bridge)	Alternative 5 (Replace Structure - Three Span Bridge)	Comments
Technical Considerations	36	Need for ongoing maintenance	5	4	3	2	1	Assumes replacing the bridge would require little maintenance whereas doing nothing would require frequent maintenance
Cost	37	Purchase of private property	1.5	1.5	3	5	4	1 does not require purchasing property 5 requires purchasing private property
	38	Maintenance costs	5	4	3	1.5	1.5	Assumes a new modern bridge requires little or no maintenance and "doing nothing" would require frequent maintenance
	39	Cost to mitigate impacts to the natural environment	1	2	3	4	5	1 requires no mitigation 5 requires substantial mitigation
	40	Overall construction cost	1	2	3	5	4	1 would be the lowest cost 5 would be the highest cost
		Total:	118.5	120.5	116.5	129	115.5	

Per Table 1, the following final scores were determined:

Alternative 1 – Do Nothing	118.5
Alternative 2 – Repair / Rehabilitate Existing Bridge	120.5
Alternative 3 – Replace Superstructure	116.5
Alternative 4 – Replace Structure – Single Span Bridge	129.0
Alternative 5 – Replace Structure – Three Span Bridge	115.5

From the above listed results, Alternative 5 has the lowest score. Therefore, Alternative 5 is the most viable alternative to address the problem statement. It is recommended to proceed with Alternative 5 – Replace Structure – Three Span Bridge.

6. REFINEMENT OF THE PREFERRED ALTERNATIVE

6.1 Alternative Structure Types Considered

6.2 Design Criteria

6.3 Bridge Railing Style

6.4 Preliminary Construction Cost Estimate

6.1 Alternative Structure Types Considered

As a result of the process followed in Section 5, the decision was made to pursue replacement of the structure with a 3 span bridge. The following provides insight as to how that preferred alternative was further refined

4 Options for a replacement structure were considered as follows:

- Option 1 – Prestressed Concrete Box Girder Bridge
    - Prestressed concrete box girders would span between abutments and piers to support a concrete deck.
- Option 2 – Steel Girder Bridge
    - This option would be very similar to Option 1 except steel girders would be used.
- Option 3 – Bailey Bridge
    - Bailey or modular panels would span between piers and abutments to support floor beams and joists and either a steel or wood deck.
- Option 4 – Steel Through Truss Bridge
    - This option would be similar to Option 3 except the bailey or modular panels would be replaced with steel trusses.

The options listed above were evaluated on the basis of cost, complexity of construction, aesthetics, performance and ability to satisfy hydraulic requirements as this bridge spans a significant river.

It was decided to pursue Option 1 as this type of bridge would offer the lowest cost to the Township and this style of bridge has been successfully constructed elsewhere in the Township.

Sizing of the proposed structure to satisfy hydrologic and hydraulic design requirements was completed and is summarized in the Hydrology Report contained in Appendix B

The proposed structure will be founded on spread footings (to avoid Artesian conditions during construction) and will be semi-integral abutment style to eliminate expansion joints.

6.2 Design Criteria

The following design criteria was compiled to summarize the various roadway design characteristics used for the design of the roadway and bridge.

BRIDGE 24 REPLACEMENT
TOWNSHIP OF BLANDFORD-BLENHEIM
DESIGN CRITERIA

Type of Project: Bridge replacement and roadway approach construction

Location: Township Road 12 at Nith River
Lots 8 and 9, Concessions 11 and 12
Township of Blandford-Blenheim

Design Element	**Present Conditions**	**Design Standards**	**Proposed Standards**
Highway Classification	RLU 50 ±	RLU 80	RLU 80
Minimum Stopping Sight (m)	65	135	135
Equivalent Minimum "K"	8 (sag) 12 (crest)	30 (sag) 35 (crest)	30 (sag) 35 (crest)
Grades Maximum (%)	1.5	8.0	1.5
Minimum Radius (m)	N/A	230	N/A
Number of Lanes	1	2	2
Lane Width (m)	5.5 ±	3.0	3.0
Shoulder Width (m)	--	1.0	1.0
Shoulder Rounding (m)	0.5 ±	0.75	0.75
R.O.W. Width (m)	20	20	20
Posted Speed (km/hr)	--	80	80
Traffic	AADT is estimated to be 1000±		

Remarks:

1. Right-of-way (ROW) is 20m (66') based on the legal survey completed by McKechnie Surveying.

2. Township Road 12 will be designed for a 80 km/hr design speed and posted for 80 km/hr maximum speed.

3. "K" values provided in the table above are accepted values in common use throughout Ontario.

4. Horizontal curves are not required for deflection angles less than 1°.

5. The work involves the replacement of an existing single span steel truss bridge with a new three span slab-on-girder bridge (prestressed concrete box girder).

6. Extent of roadwork will be limited to the approaches to the bridge.

7. Traffic will be diverted away from the site during the construction.

8. There are utilities between the proposed limits of construction:

    - Hydro is overhead on the north side of bridge;
    - Gas is underground on south side of bridge;
    - Bell is overhead, but does not appear to cross the river;
    - New fibre optic (installed 2025±) is underground on north side of bridge.

    Utility relocations will be required.

9. There is one (1) field entrance and one (1) driveway between the proposed limits of construction. The field entrance west of the bridge (south side of road) will need to be moved further west and reconstructed. The driveway on the west side of the bridge (north side of road) will require reconstruction.

10. Steel beam guide rail will be erected adjacent to the shoulders where the vertical drop exceeds 3m or standing water exists.

11. The ends of the steel beam guide rail will be protected with SBEAT end treatments.

6.3 Bridge Railing Style

Railings on the bridge will be 3 rail steel box beam type. This railing style will be identical to the railings on Bridge 20 which is also on Township Road 12.

6.4 Preliminary Construction Cost Estimate

Per the following preliminary construction cost estimate, the estimated construction cost to replace Bridge 24 is $5,017,415.

Bridge 24
Preliminary Construction Cost Estimate

Item No.	Description	Unit	Estimated Quantity	Unit Price	Total Price
1	Mobilization and Demobilization	LS	1	$250,000.00	$250,000.00
2	Bonding and Insurance	LS	1	$100,000.00	$100,000.00
3	Traffic Control	LS	1	$15,000.00	$15,000.00
4	Layout	LS	1	$35,000.00	$35,000.00
5	Assist Owner With Fish Salvage and Transfer	LS	1	$5,000.00	$5,000.00
6	Ditching	m^3	140	$25.00	$3,500.00
7	Earth Borrow and Grading	t	3300	$20.00	$66,000.00
8	HL4 Asphalt	t	300	$150.00	$45,000.00
9	Granular "A" for Road	t	1200	$30.00	$36,000.00
10	Granular "B" for Road	t	1600	$25.00	$40,000.00
11	Concrete Curb and Gutter (OPSD 600.040)	m	24	$250.00	$6,000.00
12	Concrete Gutter and Outlet (OPSD 604.010)	Ea	4	$850.00	$3,400.00
13	150mm DIA Perforated Subdrain	m	70	$100.00	$7,000.00
14	450mm DIA HDPE Culvert	m	14	$450.00	$6,300.00
15	750mm DIA HDPE Culvert	m	24	$750.00	$18,000.00
16	Removal of Existing Wearing Surface	LS	1	$2,500.00	$2,500.00
17	Removal of Existing Structure	LS	1	$400,000.00	$400,000.00
18	Rock Protection	m^3	250	$150.00	$37,500.00
19	Rip Rap Spillways	m^2	30	$75.00	$2,250.00
20	Steel Beam Guide Rail	m	80.97	$350.00	$28,339.50
21	Steel Beam Guide Rail - Structure Connections	Ea	4	$4,000.00	$16,000.00
22	SBEAT End Treatments	Ea	3	$8,500.00	$25,500.00
23	Rounded Terminal End Treatment	Ea	1	$4,500.00	$4,500.00
24	Topsoil from Stockpiles	m^3	140.0	$50.00	$7,000.00
25	Imported Topsoil	m^3	70.0	$75.00	$5,250.00
26	Hydroseeding	m^2	2000	$3.00	$6,000.00
27	Erosion Control Blanket	m^2	500	$7.50	$3,750.00
28	Light Duty Silt Fence Barrier	m	750	$25.00	$18,750.00
29	Straw Bale Flow Check Dam	Ea	8	$500.00	$4,000.00
30	Rootwads	Ea	7	$2,500.00	$17,500.00
31	Boulder Clusters	Ea	7	$1,500.00	$10,500.00

32	100mm DIA Freeman Maple Tree	Ea	12	$1,500.00	$18,000.00
33	25 - 50mm DIA Sycamore Tree	Ea	12	$500.00	$6,000.00
34	Shrubs	Ea	635	$10.00	$6,350.00
35	Plugs	Ea	1905	$5.00	$9,525.00
36	Excavation for New Structure and Dewatering	LS	1	$450,000.00	$450,000.00
37	Granular "B" Backfill to Structure	LS	1	$75,000.00	$75,000.00
38	Sheet Pile	m^2	200.0	$800.00	$160,000.00
39	Concrete Working Slab	m^2	350.0	$100.00	$35,000.00
40	Concrete in Abutment Footings	m^3	140.0	$800.00	$112,000.00
41	Concrete in Abutments and Wingwalls	m^3	105.0	$2,000.00	$210,000.00
42	Concrete in Pier Footings	m^3	135.0	$800.00	$108,000.00
43	Concrete in Piers	m^3	84.0	$2,000.00	$168,000.00
44	Concrete in Deck	m^3	110.0	$2,000.00	$220,000.00
45	Concrete in Curbs	m^3	25.0	$2,000.00	$50,000.00
46	Concrete in End Posts	m^3	2.0	$2,000.00	$4,000.00
47	Concrete in Approach Slabs	m^3	25.0	$800.00	$20,000.00
48	Steel Cutwater Assembly	LS	1	$10,000.00	$10,000.00
49	Reinforcing Steel Bar - Black	t	50.0	$4,000.00	$200,000.00
50	Reinforcing Steel Bar - Stainless	t	2.5	$16,000.00	$40,000.00
51	Steel Box Beam Railing	LS	1	$200,000.00	$200,000.00
52	Prestressed Concrete Box Girders	LS	1	$1,300,000.00	$1,300,000.00
53	Bridge Deck Waterproofing	LS	1	$45,000.00	$45,000.00
54	Form and Fill Grooves	LS	1.0	$5,000.00	$5,000.00
55	Plain and Laminated Natural Rubber Bearings	LS	1	$100,000.00	$100,000.00
56	Contingencies	Allow.		$240,000.00	$240,000.00

Total (excluding HST): $ 5,017,415

7. POTENTIAL ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES ASSOCIATED WITH IMPLEMENTATION OF THE PREFERED ALTERNATIVE

7.1 Demolition of Existing Structure

7.2 Construction of New Substructure

7.3 Construction of New Superstructure

7.4 Water Quality and Quantity

7.5 Fuel and Chemical Storage

7.6 Discharge of Excavation Water

7.7 Aquatic Species at Risk

7.8 Roadway Approach Reconstruction

7.9 Adjacent Landowners

7.10 Disruption of Traffic

7.11 Noise Impacts

7.12 Dust Impacts

7.13 Terrestrial Rehabilitation

7.14 Terrestrial Species at Risk

7.15 Cultural, Heritage and Archeological Resources

7.1 Demolition of Existing Structure

The proposed design calls for the demolition of the existing truss structure and removal of the existing substructure and foundations.

The construction of the new structure should start around July 1 and all in-water work should be completed prior to November 15.

The steps involved in accomplishing this task are as follows:

- A nesting structure will be established outside the construction zone;
- Bird netting will be installed on the existing structure prior to nesting season and remain in place until demolition commencement;
- Silt fence will be installed at the perimeter of the construction zone to prevent turtles and other small animals from entering the construction zone;
- Removal of concrete deck, steel stringers and railing system;
- Lifting the steel truss in one piece off the substructure;
- Installing sheet pile cofferdams around the new piers to isolate them from the river;
- Dewatering the area inside the cofferdams;
- Demolition of the concrete of the existing structure;
- Demolition of the foundation (if any).

Removal of the concrete deck, steel stringer, and railing system will produce dust and debris. Temporary floating platforms covered with tarps will be placed underneath the structure to catch this debris before it enters the river. These platforms will be installed prior to starting any bridge demolition. After the deck is completely removed, the platforms will be cleaned to remove the debris.

The steel truss structure will be lifted off its supports and onto the adjacent roadway approach in one single operation by a large crane. This crane would be positioned on the existing roadway in order to complete the lift. Once lifted off its supports and onto the roadway, the truss will then be torch cut into small pieces. Should a need be found, salvaged elements/members of the bridge could be retained for future conservation work. The remaining pieces will be distributed to a recycling facility. Again, temporary floating platforms underneath will prevent debris from entering the watercourse.

Steel sheet piling will then be installed to form a cofferdam around the existing abutments and foundations (if any) in the water. Prior to driving the sheets, a floating silt curtain will be installed to contain any disturbance and prevent its spread throughout the remainder of the water. Once the cofferdam is complete, the area inside will be dewatered. Conventional submersible pumps will be used. All trapped aquatic life will be rescued (with nets) and relocated alive to the adjacent river as required. This work will be completed by a qualified

technician under a ‘License to Collect Fish’ obtained from the Ministry of Northern Development, Mines, Natural Resources and Forestry.

The concrete abutments and foundations will be demolished using a hydraulic breaker. As this work will be contained within the cofferdams, all debris will be contained inside. After demolition, the debris will be removed via hydraulic excavator and used as roadway fill. Reinforcing steel (if any) will be recycled.

7.2 Construction of New Substructure

The new bridge footings, piers and abutments would be constructed either within the cofferdams set in place to remove the existing structure foundations or new cofferdams.

Some excavation will be required to provide sufficient frost and scour cover and to provide room for rock protection. The rock protection would be placed to prevent erosion/scouring of the streambed in front of the abutments and around the piers. This work is all contained within the cofferdams.

The foundation of the new bridge will be spread footings and will be designed for loads of the bridge as well as vehicular loads. Vehicular loads will be current loads as per the Canadian Highway Bridge Design Code. Again, all this work is contained within the cofferdams.

Cast-in-place concrete will be used to construct the pier footings, pier shafts, abutment footings and abutment walls. Formwork comprised of wood and/or steel will be erected to contain the wet concrete. Steel reinforcing bars will be tied within the formwork to reinforce the concrete. After the concrete has cured, all formwork will be removed and disposed of outside the limits of the project. This work is isolated from the water by the cofferdams.

Backfilling of the piers and abutments will then take place. Backfill materials will be Granular “B” obtained from a licensed pit and trucked to the site. Rock protection will be placed in front of the abutments and around the piers as dictated by the design. This work is again all contained within the cofferdams.

Once backfilling is complete, dewatering apparatus will be removed, allowing in the area within the cofferdams to be flooded. After flooding, the cofferdams will be completely removed. Once complete, the floating silt curtain will be removed.

7.3 Construction of New Superstructure

Placement of the prestressed concrete box girders, concrete deck and railings will occur above the river.

The girders will be placed with a crane from the roadway approaches. Before lifting the girders into place, a worker will brush the girders with a broom to remove any mud or loose particles. This procedure will eliminate any debris from entering the river. The very nature of this type of structure (side-by-side concrete box girders) negates the need to construct falsework between the girders to support the deck. This falsework can not only generate

dust and debris during its installation, but also during its removal. Falsework is required along the sides, but this can be installed and removed from the top.

Once the girders are erected and side falsework installed, the bridge deck can be formed and poured. The girders themselves as well as the side falsework will prevent debris and wet concrete from entering the river. All gaps between adjacent girders and formwork will be sealed to prevent concrete spillage into the watercourse below. After the deck is cured, the side falsework will be removed. Again, this will occur from the bridge deck. To prevent dust and debris from entering the river, a floating barge covered with tarps will be employed.

The railings would then be installed. The proposed railing system would be manufactured off site and delivered via truck. The railing would be installed from the bridge deck with no disturbance to the river below.

7.4 Water Quality of Quantity

There are no anticipated impacts to water quality or quantity in the river. The various mitigation measures outlined for the construction components are deemed sufficient to address the potential for aquatic impacts including sedimentation, fuel spillage and other deleterious substances. Proper spill response planning combined with appropriate fuel and chemical best management practices will ensure that precautions are exercised to prevent any spills from entering the river.

7.5 Fuel and Chemical Storage

Proper prevention and spill response procedures are to be put in place to deal with the potential for spills to occur during refuelling and maintenance of equipment. Refuelling, fuel storage and maintenance of equipment is not to occur in or adjacent to watercourses. Any fuel or chemical storage area will not be allowed within 30 metres of the river. In addition, the Contractor will:

- Conduct proper spill response training for all personnel associated with chemical and fuel handling and storage;
- Be responsible for ensuring that all material required for the containment and cleanup of a spill is present, on site, in close proximity to fuelling and maintenance areas; and
- Immediately report any fuel or chemical spills to the Ontario Spills Action Centre (1-800-268-6060).

7.6 Discharge of Excavation Water

All water which is pumped from the cofferdam during the construction will be piped to a dewatering trap. The dewatering trap will prevent sediment from entering the watercourse. The dewatering trap will be designed by the Contractor and would be located well away from the river and the edge of the excavations.

7.7 Aquatic Species at Risk

The following describes Species at Risk that have been identified as possibly being present at the project location.

Silver Shiner and Black Redhorse;
Rainbow Mussel and Wavy-rayed Lampmussel:
The project will use timing windows and exclusion strategies to avoid interactions and mitigate habitat disturbance for these species. Furthermore, the work area along the shoreline near the construction area will be screened for mussels, using standard methods, prior to the commencement of construction. In-water work will take place during the low water period of Summer-Autumn.

Snapping Turtle:
To mitigate against impacts to Snapping Turtle, silt fence will be installed around the project site. Properly installed silt fence (i.e. embedded into the ground) will prevent Snapping Turtles from entering the construction site altogether.

Further details will be determined during the detailed design stage.

7.8 Roadway Approach Reconstruction

In order to match the new bridge, the existing roadway approaches will need to be elevated. This work will be contained within the existing 20m right-of-way owned by the Township. This reconstruction will require the removal of ground vegetation on the sideslopes of the roadway.

The grade change is necessary to achieve a safe, effective approach to the bridge. Not addressing the vertical alignment of the roadway and structure is not an option because the Township is required to adhere to current design criterion for roadways set in place by Regulatory Agencies.

Minimizing the removal of vegetation is a project goal and will be achieved by:

- Minimizing the extent of the work during the design phase of the project
- Identifying the extent of clearing required prior to the commencement of work and demarking the area,
- Restoring disturbed areas as the work progresses.
- Avoiding equipment & material use or storage within restored areas.

The implementation of these measures will minimize the amount of vegetation clearing and maximize the amount of existing vegetation to be retained.

As the roadway construction will create the potential for materials to migrate towards the river, sufficient erosion and sediment control measures must be incorporated into the work. As such, conventional silt fence is proposed. The details of this fence will be depicted on the final engineering drawings. In addition to this silt fencing, erosion control blankets may be placed on disturbed areas adjacent to the river after seeding.

7.9 Adjacent Landowners

There are 4 adjacent landowners in the vicinity of this project.

No substantial impacts are expected to 3 of these landowners.

One landowner will be directly affected by the work as the entrance to this property will require complete reconstruction and relocation to meet the new roadway. Provisions will need to be put into place to ensure access to this property will be maintained throughout the construction.

Communication with all landowners will be essential to ensure project goals are achieved.

7.10 Disruption of Traffic

Overall, no major disruption to traffic is expected as Township Road 12 adjacent to the bridge is already closed. Local residents, as well as Emergency Services, have already become accustomed to the bridge being closed.

7.11 Noise Impacts

Noise is anticipated to arise from removal of the existing structure, dewatering pumps, generators used to supply power to the site, installation of steel piles to support the new bridge structure, and general construction equipment and vehicles (e.g. hydraulic excavators, material handlers, concrete pump trucks, and trucks used to haul material and supplies to the site). The noise is expected to extend throughout the length of the project. No construction is anticipated to occur after dark (unless there are extenuating circumstances), therefore impacts will be limited to the daylight hours. Steps will be taken during the construction to minimize the level of noise, such as requesting that stationary noise generating equipment (e.g. generators) be enclosed and that construction equipment (e.g. hydraulic excavators, trucks, etc.) be fitted with mufflers and maintained in good working order.

Impacts to wildlife are anticipated to be minimal for the same reasons given in the previous paragraph.

7.12 Dust Impacts

Normal construction activities have the potential to generate dust which has the potential to impact nearby vegetation, aquatic habitats and residents. Dust can arise from a range of activities, including vehicular traffic, excavations and removal of the existing structure foundations. Appropriate dust control measures will be implemented to control dust (e.g. use of dust-suppressing materials, enclosures, etc.). As a result of the implementation of dust control measures, significant dust impacts are not anticipated.

7.13 Terrestrial Rehabilitation

All scarred and bare soils including roadway sideslopes and backslopes will be rehabilitated by placing topsoil, hydroseed, and the placement of erosion control blanket (if necessary).

7.14 Terrestrial Species at Risk

Cliff Swallows have been identified as being present underneath the existing structure.

To mitigate against loss of habitat, a temporary nesting structure will be constructed adjacent to the bridge. The new bridge fascia's will provide excellent nesting opportunities after construction is complete.
Potential species at risk bat habitat exists in trees that will need to be removed to facilitate construction of the new bridge. As such, tree removals must be completed between October 1 and March 31.

7.15 Cultural, Heritage and Archeological Resources

Built Heritage Resources and Cultural Heritage Landscapes:
Should a need be found, salvaged elements/members of the existing 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 the CHER/HIA and previous documentation by the Region of Waterloo 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.

Archaeological Resources:
If archaeological resources are impacted by EA project work, notify MHSTCI at archaeology@ontario.ca. All activities impacting archaeological resources must cease immediately and a licensed archaeologist is required to carry out an archaeological assessment in accordance with the Ontario Heritage Act and the Standards and Guidelines for Consultant Archaeologists.

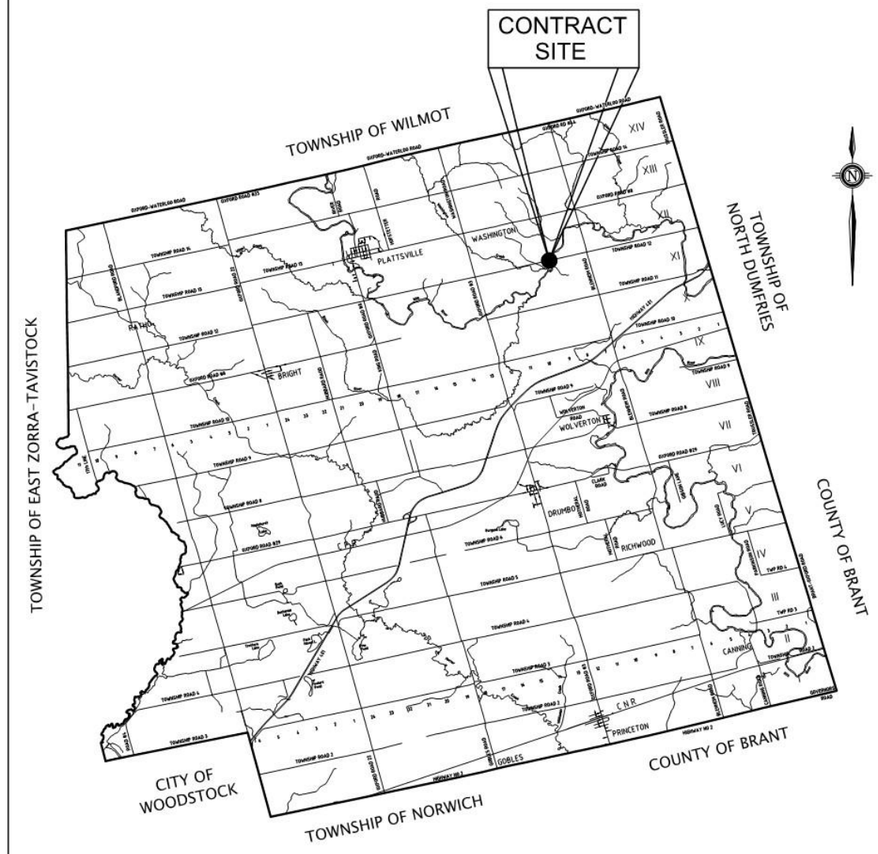
If human remains are encountered, all activities must cease immediately, and the local police and coroner must be contacted. In situations where human remains are associated with archaeological resources, MHSTCI should also be notified (at archaeology@ontario.ca) to ensure that the site is not subject to unlicensed alterations which would be a contravention of the Ontario Heritage Act.

8. DRAWINGS OF THE PREFERRED ALTERNATIVE

The following drawings are provided showing the preliminary design of the preferred alternative.

BRIDGE 24 REPLACEMENT

TOWNSHIP OF BLANDFORD – BLENHEIM



KEY PLAN
N.T.S.

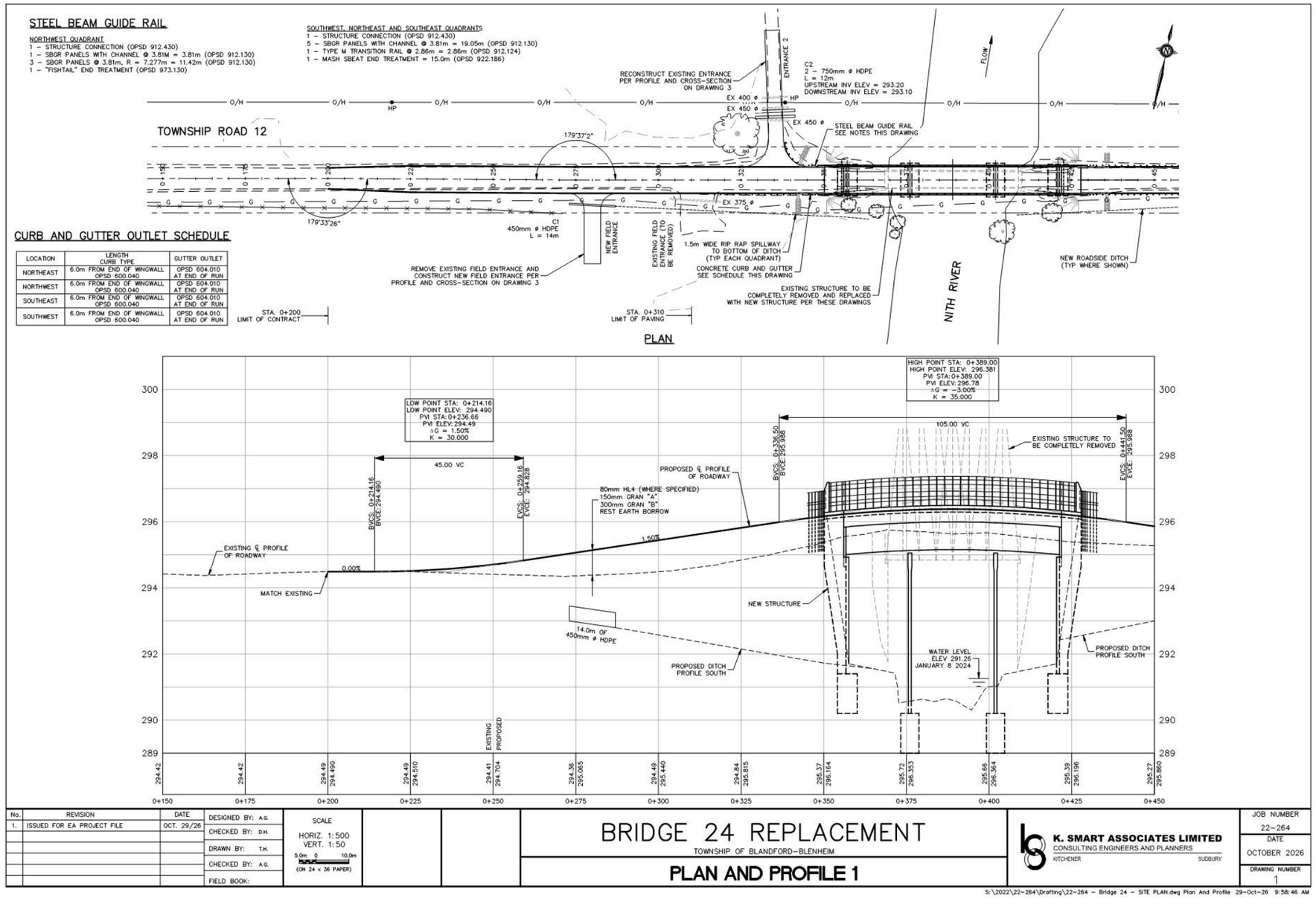
LIST OF DRAWINGS

1. PLAN AND PROFILE 1
2. PLAN AND PROFILE 2
3. ENTRANCES
4. GENERAL ARRANGEMENT
5. EROSION AND SEDIMENT CONTROL
6. RESTORATION PLAN

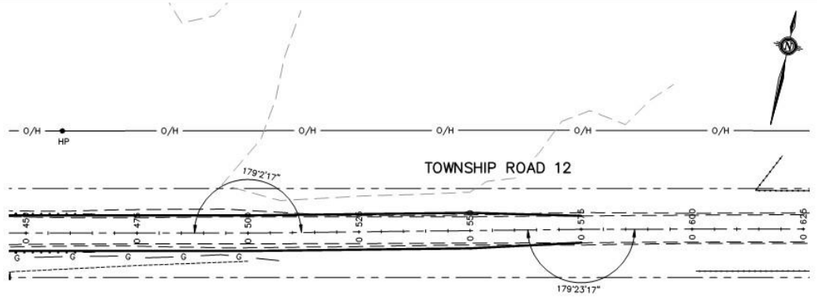
K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS
KITCHENER SUDBURY

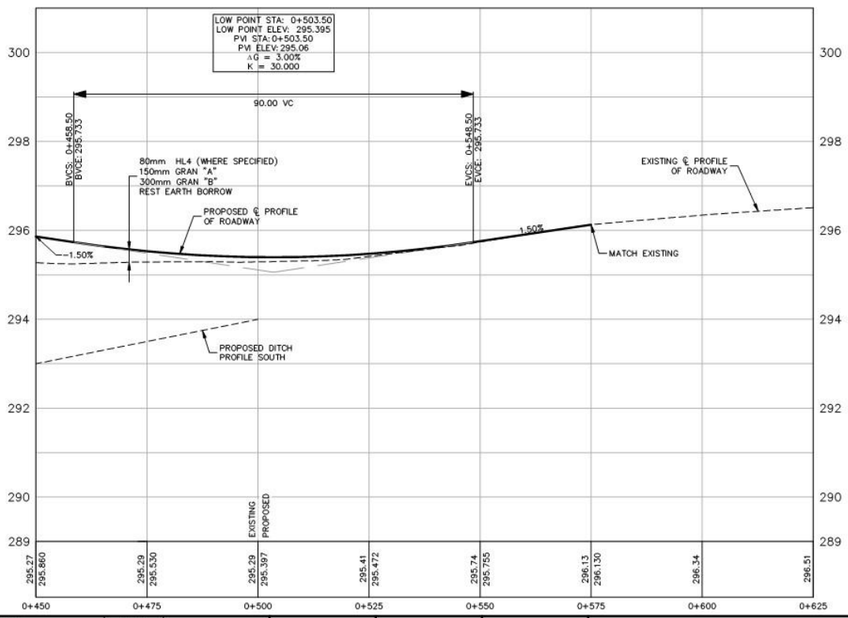
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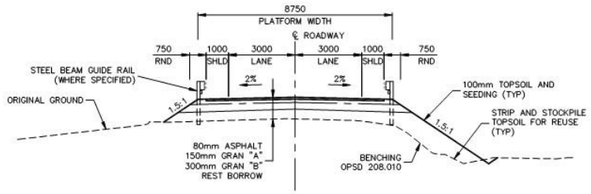
BRIDGE 24 – DRAWING 1



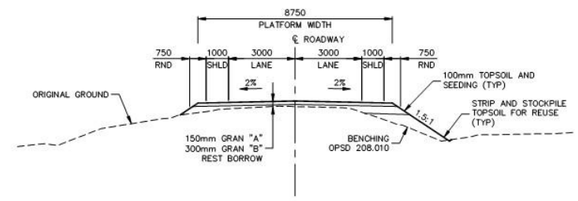
BRIDGE 24 – DRAWING 2







TYPICAL ROADWAY SECTION
STA 0+285 TO BRIDGE
BRIDGE TO STA 0+470
SCALE 1:100



TYPICAL ROADWAY SECTION
REMAINDER
SCALE 1:100

No.	REVISION	DATE
1.	ISSUED FOR EA PROJECT FILE	OCT. 29/26

DESIGNED BY: A.G.
CHECKED BY: D.H.
DRAWN BY: T.H.
CHECKED BY: A.G.
FIELD BOOK:

SCALE
HORIZ. 1:500
VERT. 1:50
5.0m 0 10.0m
(ON 24 x 36 PAPER)

BRIDGE 24 REPLACEMENT
TOWNSHIP OF BLANDFORD-BLENHEIM

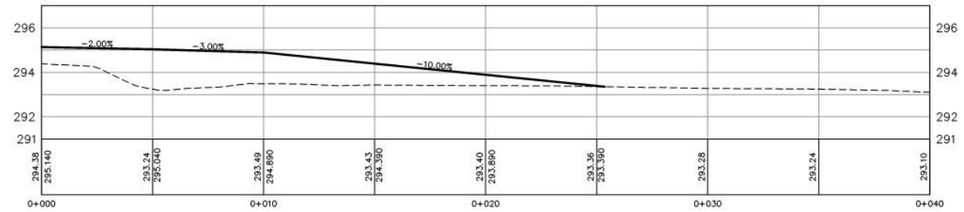
PLAN AND PROFILE 2

K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS
KITCHENER SUDBURY

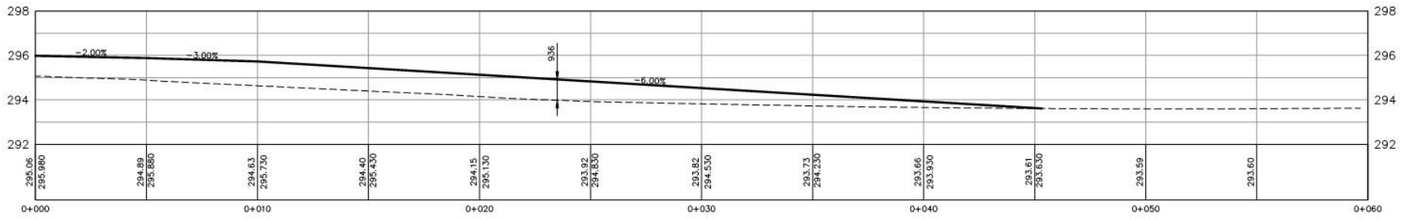
JOB NUMBER 22-264
DATE OCTOBER 2026
DRAWING NUMBER 2

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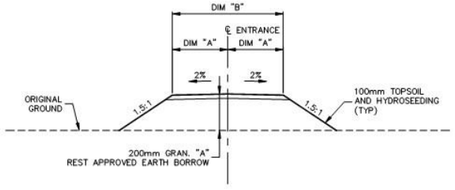
BRIDGE 24 – DRAWING 3



FIELD ENTRANCE 1 PROFILE
SCALE 1:100



ENTRANCE 2 PROFILE
SCALE 1:100



TYPICAL ENTRANCE CROSS-SECTION
SCALE 1:100

LOCATION	DIM "A"	DIM "B"
FIELD ENTRANCE 1	2.5m	5.0m
ENTRANCE 2	2.25m	4.5m

No.	REVISION	DATE
1.	ISSUED FOR EA PROJECT FILE	OCT. 29/26

DESIGNED BY: A.G.
CHECKED BY: D.H.
DRAWN BY: T.H.
CHECKED BY: A.G.
FIELD BOOK:

SCALE
1:100
1.0m 0 2.0m
(ON 24 x 36 PAPER)

BRIDGE 24 REPLACEMENT

TOWNSHIP OF BLANDFORD-BLENHEIM

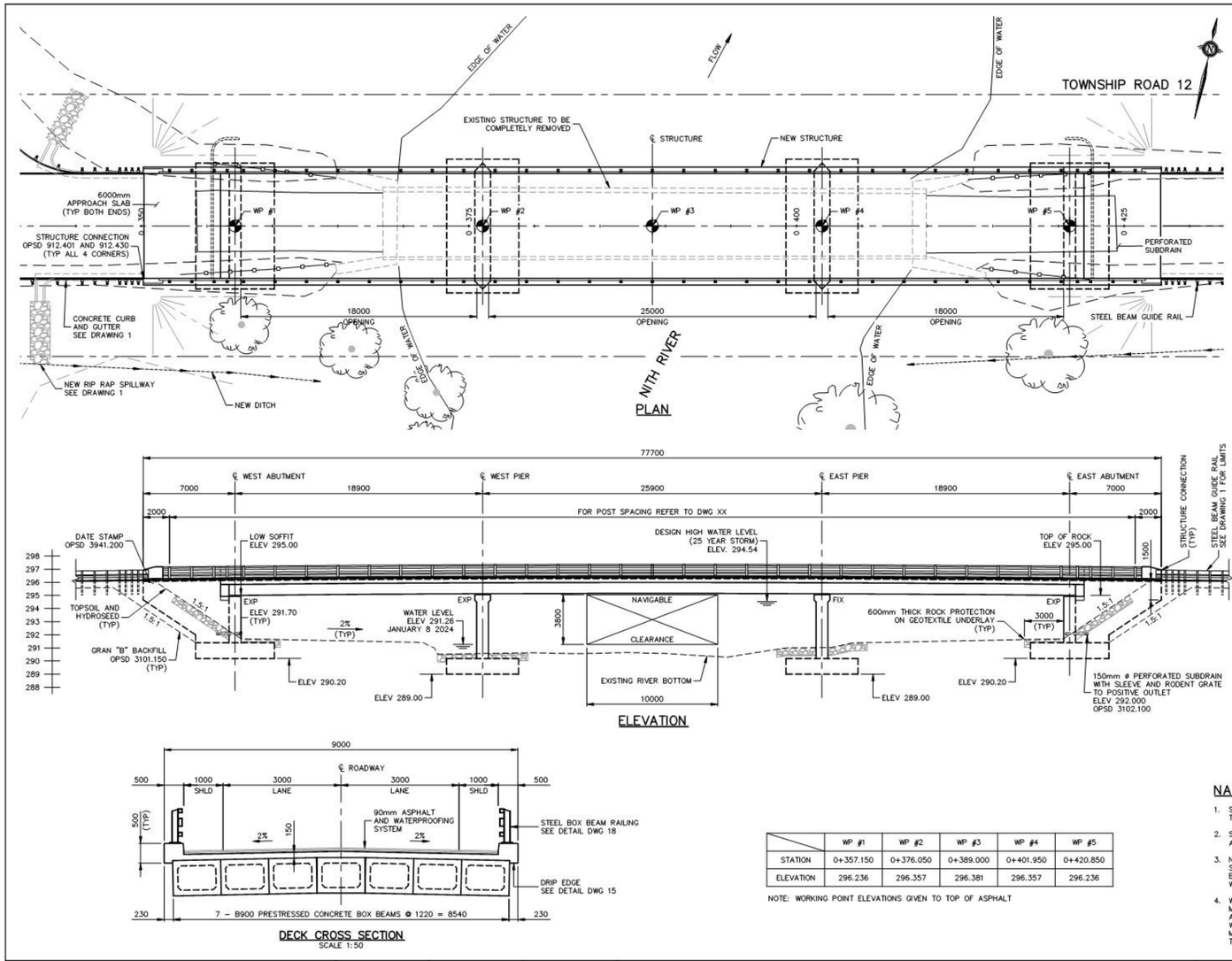
ENTRANCES

K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS
KITCHENER SUDBURY

JOB NUMBER 22-264
DATE OCTOBER 2026
DRAWING NUMBER 3

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BRIDGE 24 – DRAWING 4



CONSTRUCTION NOTES

1. STRUCTURE DESIGNED FOR CL-625 (ONT) LOADING PLUS 90mm OF ASPHALT IN ACCORDANCE WITH THE CANADIAN HIGHWAY BRIDGE DESIGN CODE (CHBDC) 2019.
2. WORK ON THE STRUCTURE MUST NOT BE COMMENCED UNTIL MONUMENTS TO FIX CONTROL POINTS HAVE BEEN ERECTED AND CHECKED BY THE CONTRACT ADMINISTRATOR.
3. STRUCTURE TO BE BUILT IN ACCORDANCE WITH THE MOST CURRENT OPS SPECIFICATIONS AND DRAWINGS AS WELL AS THE CONTRACT ADMINISTRATOR'S SPECIFICATIONS.
4. THE COMPLETE SOIL INVESTIGATION BY PETO MACCALLUM LTD. FORM PART OF THE CONTRACT DOCUMENTS. THE CONTRACT ADMINISTRATOR DOES NOT GUARANTEE THE ACCURACY OF THIS REPORT. THE CONTRACTOR SHALL REVIEW THE REPORT AND DETERMINE HIS OWN METHOD TO CONTROL GROUND WATER DURING THE EXCAVATION.
5. THE CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS ON THE JOB AND REPORT ANY DISCREPANCIES TO THE CONTRACT ADMINISTRATOR BEFORE PROCEEDING WITH THE WORK.
6. CLASS OF CONCRETE
   CAST-IN-PLACE CONCRETE 30 MPa
   PRESTRESSED CONCRETE REFER TO RELEVANT DRAWINGS
   ALL CONCRETE SHALL INCLUDE AN APPROVED AIR ENTRAINING ADMIXTURE
7. CLEAR COVER TO REINFORCING STEEL TO BE:

FOOTINGS	100 ± 25mm
REMAINDER (UNLESS NOTED OTHERWISE)	70 ± 20mm
PRESTRESSED CONCRETE	SEE PRESTRESSED DWGS

8. REINFORCING STEEL SHALL BE GRADE 400. BARS MARKED WITH POSTFIX "S" DENOTE STAINLESS STEEL BARS. UNLESS OTHERWISE SHOWN, TENSION LAP LENGTHS NOT INDICATED ON THE CONTRACT DRAWINGS SHALL BE CLASS "B". BAR HOOKS SHALL BE MINIMUM LENGTH AND STIRRUPS SHALL HAVE MINIMUM HOOKS, UNLESS INDICATED OTHERWISE.
9. STAINLESS STEEL REINFORCING BARS SHALL BE TYPE 316 LN OR DUPLEX 2205 WITH A MINIMUM YIELD STRENGTH OF 500 MPa.
10. MINIMUM LAP OF REINFORCING STEEL SHALL BE IN ACCORDANCE WITH CHBDC (2019)
11. ALL CONCRETE SHALL BE PLACED IN THE DRY.
12. NO CONCRETE SHALL BE PLACED BEFORE MATERIALS, FORMWORK AND REINFORCING HAVE BEEN CHECKED AND APPROVED BY THE CONTRACT ADMINISTRATOR.
13. ALL EXPOSED EDGES SHALL BE CHAMFERED 19mm UNLESS OTHERWISE NOTED. ALL ACUTE ANGLES TO BE FILLED AS INDICATED.
14. CONSTRUCTION JOINTS NOT SHOWN ON THE PLANS MUST BE APPROVED BY THE CONTRACT ADMINISTRATOR.
15. FOOTING DEPTHS ARE SUBJECT TO REVISION BY THE CONTRACT ADMINISTRATOR. FOOTINGS DESIGNED FOR A BEARING CAPACITY OF 300 kPa (ULS) AND 200 kPa (SLS).
16. BEARING SEATS TO BE FINISHED DEAD LEVEL TO THE SPECIFIED ELEVATIONS TO A TOLERANCE OF ±3mm.
17. THE BRIDGE DECK SHALL BE FINISHED USING AN APPROVED FINISHING MACHINE IN ACCORDANCE WITH OPSS.MUNI 904.
18. ANY EXCAVATED OR IMPORTED MATERIAL SHALL BE STOCKPILED WELL AWAY FROM THE EDGE OF THE EXCAVATION AND AT APPROVED LOCATIONS.
19. NO BACKFILL SHALL BE PLACED UNLESS APPROVED BEFOREHAND BY THE CONTRACT ADMINISTRATOR. NATIVE MATERIAL SHALL NOT BE REMOVED FROM THE CONSTRUCTION SITE WITHOUT WRITTEN APPROVAL FROM THE CONTRACT ADMINISTRATOR.
20. ROCK PROTECTION SHALL BE 300mm NOMINAL SIZE WITH 50% LARGER THAN 300mm AND 50% SMALLER THAN 300mm. ROCK PROTECTION SHALL BE PLACED ON GEOTEXTILE UNDERLAY.
21. ALL AREAS AFFECTED/DISTURBED BY THE CONSTRUCTION SHALL BE FULY RESTORED TO A PRECONSTRUCTION STATE OR BETTER TO THE SATISFACTION OF THE CONTRACT ADMINISTRATOR.

	WP #1	WP #2	WP #3	WP #4	WP #5
STATION	0+357.150	0+376.050	0+389.000	0+401.950	0+420.850
ELEVATION	296.236	296.357	296.381	296.357	296.236

NOTE: WORKING POINT ELEVATIONS GIVEN TO TOP OF ASPHALT

NAVIGATION

1. SIGNS TO BE PLACED 50m UPSTREAM AND DOWNSTREAM WARNING BOATERS OF THE CONSTRUCTION WORK AHEAD..
2. SILT CURTAINS OR DEWATERING BERMS, INSTALLED DURING NAVIGATION SEASON, ARE TO BE MARKED WITH YELLOW BUOYS AND/OR YELLOW LIGHTS.
3. NO PERSON SHALL PERMIT ANY TOOLS, EQUIPMENT, VEHICLES, TEMPORARY STRUCTURES OR PARTS THEREOF USED OR MAINTAINED FOR THE PURPOSE OF BUILDING OR PLACING A WORK IN A NAVIGABLE WATER TO REMAIN IN SUCH WATER AFTER THE COMPLETION OF THE PROJECT.
4. WHERE A WORK OR PORTION OF A WORK THAT IS BEING CONSTRUCTED OR MAINTAINED IN A NAVIGABLE WATER CAUSES DEBRIS OR OTHER MATERIAL TO ACCUMULATE ON THE BED OR SURFACE OF THE WATER, THE OWNER OF THAT WORK OR PORTION OF THAT WORK SHALL CAUSE THE DEBRIS OR OTHER MATERIAL TO BE REMOVED TO THE SATISFACTION OF THE MINISTER OF TRANSPORT, INFRASTRUCTURE AND COMMUNITIES.

No.	REVISION	DATE
1.	ISSUED FOR EA PROJECT FILE	OCT. 29/26

DESIGNED BY: A.G.
CHECKED BY: D.H.
DRAWN BY: T.H.
CHECKED BY: A.G.
FIELD BOOK:

SCALE 1:150 U.N.O
1.5m 0 3.0m
(ON 24 x 36 PAPER)

BRIDGE 24 REPLACEMENT

TOWNSHIP OF BLANDFORD-BLENHEIM

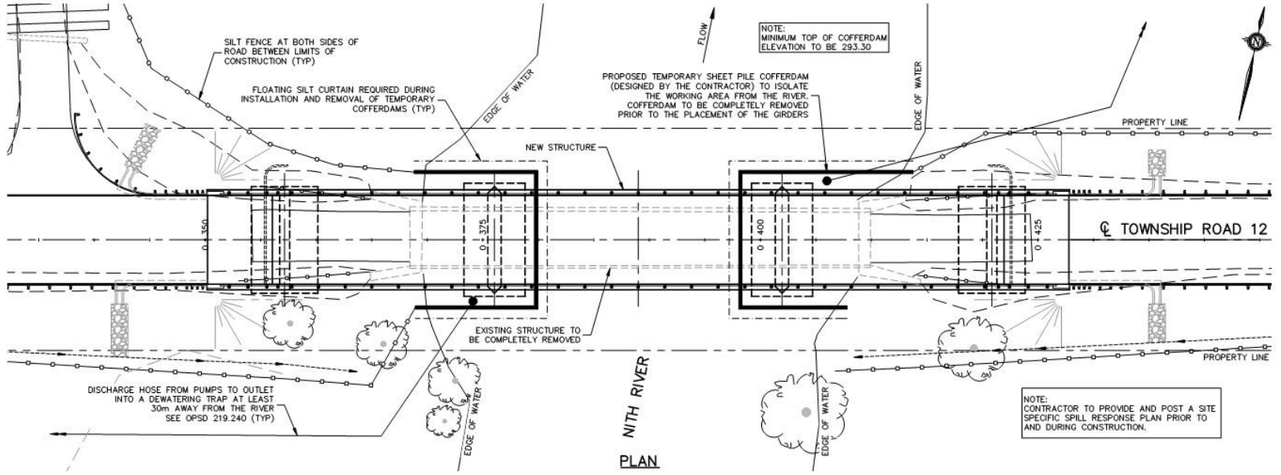
GENERAL ARRANGEMENT

K. SMART ASSOCIATES LIMITED
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KITCHENER SUDBURY

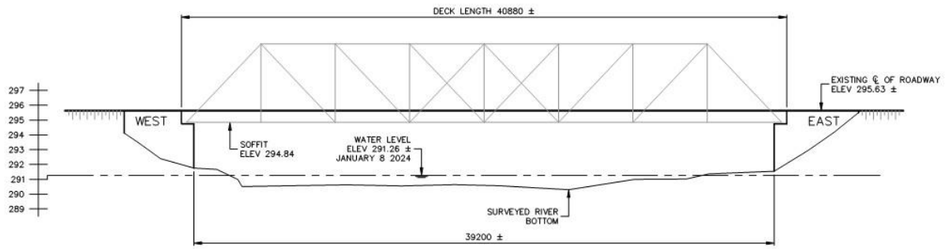
JOB NUMBER 22-264
DATE OCTOBER 2026
DRAWING NUMBER 4

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BRIDGE 24 – DRAWING 5



PLAN



EXISTING STRUCTURE
SCALE 1:150

CONTINGENCY PLAN FOR STORMS BEYOND 2 YEAR EVENT

1. IN-WATER WORK IS TO TAKE PLACE DURING WATERCOURSE LOW FLOW PERIODS.
2. CONTRACTOR IS TO SIGN UP FOR GRAND RIVER CONSERVATION AUTHORITY ALERTS.
3. CONTRACTOR IS TO AVAIL THEMSELVES OF CURRENT AND FUTURE WEATHER FORECASTS.
4. LOOSE CONSTRUCTION MATERIALS, TOOLS, DEBRIS, ETC., SHALL NOT BE LEFT BELOW THE HIGH WATER MARK OVERNIGHT, OVER WEEKENDS, OR ANY OTHER TIME WHEN THE CONTRACTOR WILL NOT BE ON SITE
5. WORKING AREAS SHALL BE KEPT FREE OF DELETERIOUS MATERIALS.
6. IF A LARGE STORM EVENT IS FORECAST, THE FOLLOWING MEASURES SHALL BE TAKEN:

   CONSTRUCTION WORK SHALL CEASE BELOW THE HIGH WATER MARK SO THAT THE FOLLOWING CAN TAKE PLACE:
   - IF CONCRETE WORK WAS PLANNED TO BE PLACED IT SHALL BE POSTPONED UNTIL AFTER THE STORM EVENT
   - THE AREAS SURROUNDING THE BRIDGE ON THE BANKS AND FLOODPLAIN AREA SHALL BE CLEARED OF ALL TOOLS AND CONSTRUCTION MATERIALS
   - IF IT IS SAFE AND REASONABLE TO DO SO, THE CONTRACTOR SHALL MONITOR THE FLOWS DURING AND AFTER THE STORM EVENT
7. AFTER THE HIGH FLOW EVENT HAS PASSED AND IT IS SAFE AND REASONABLE TO DO SO, THE CONTRACTOR SHALL EXAMINE ALL EROSION AND SEDIMENT CONTROLS, MAKE ALL REQUIRED REPAIRS AND RE-COMMENCE THE WORK.
8. IF THERE IS ANY DAMAGE THAT RESULTED IN MISSING CONSTRUCTION MATERIALS THE EXTENT OF DAMAGE AND MISSING MATERIAL IS TO BE REPORTED TO GRCA AND THE MATERIALS SHALL BE RETRIEVED BY THE CONTRACTOR WHEN AND IF IT IS SAFE AND REASONABLE TO DO SO

DEWATERING SEQUENCE

1. ATTEND A PRE-CONSTRUCTION MEETING WITH THE OWNER AND CONTRACT ADMINISTRATOR PRIOR TO COMMENCEMENT OF CONSTRUCTION.
2. INSTALL SILT FENCE, STRAW BALE CHECK DAMS AND ANY OTHER EROSION CONTROL MEASURES WHICH MAY BE REQUIRED.
3. CONSTRUCT DEMOLITION PLATFORM UNDERNEATH EXISTING BRIDGE AND REMOVE EXISTING CONCRETE DECK.
4. LIFT TRUSS SUPERSTRUCTURE OFF OF FOUNDATIONS AND STORE ON SITE FOR REMOVAL BY OTHERS.
5. CLEAN DEBRIS, DUST AND SLURRY FROM DEMOLITION PLATFORM AND REMOVE PLATFORM.
6. PLACE SILT FENCE AND/OR FLOATING SILT CURTAINS OUTSIDE OF PLANNED COFFERDAM LOCATIONS.
7. INSTALL TEMPORARY COFFERDAMS OR OTHER CONTAINMENT SYSTEM AS REQUIRED.
8. DEWATER EXCAVATIONS AND COMPLETE FISH SALVAGE AND TRANSFER OPERATIONS.
9. COMPLETE DEMOLITION OF THE EXISTING BRIDGE.
10. EXCAVATE AS REQUIRED IN ORDER TO CONSTRUCT NEW STRUCTURE.
11. CONSTRUCT PIER FOOTINGS, PIERS, ABUTMENT FOOTINGS AS WELL AS ABUTMENTS AND WINGWALLS TO BEARING SEAT ELEVATIONS.
12. PLACE BACKFILL AND ROCK PROTECTION AS REQUIRED TO FACILITATE REMOVAL OF COFFERDAMS. PLACE ROCK PROTECTION.
13. REMOVE COFFERDAMS.
14. REMOVE FLOATING SILT CURTAINS.
15. COMPLETE REMAINING CONSTRUCTION OF THE BRIDGE.
16. COMPLETE ROADWORK.
17. MAINTAIN SILT FENCE AND STRAW BALE CHECK DAMS UNTIL SITE STABILIZES AND NEW VEGETATION IS WELL ESTABLISHED. REMOVE WHEN NO LONGER REQUIRED.

EROSION CONTROL – BRIDGE RECONSTRUCTION

1. ALL WORK SHALL BE DONE IN THE DRY.
2. IN-WATER WORK SHALL ONLY TAKE PLACE BETWEEN JULY 15 AND MARCH 14. NO IN-WATER WORK MAY OCCUR OUTSIDE OF THESE DATES FOR ANY REASON.
3. DEWATERING OF THE SITE SHALL BE ACHIEVED BY THE INSTALLATION OF COFFERDAMS TO ISOLATE THE WORKING AREA, AND THE PLACEMENT OF CONVENTIONAL SUMP PUMPS WHERE REQUIRED. THE CONTRACTOR'S SPECIFIC METHOD SHALL BE APPROVED BEFOREHAND BY THE CONTRACT ADMINISTRATOR.
4. DISCHARGE FROM PUMPING OPERATIONS SHALL FIRST OUTLET INTO A SILTING POND OR SEDIMENT TRAP BEFORE THE WATER IS ALLOWED TO RE-ENTER THE STREAM OR ANOTHER WATERCOURSE.
5. COFFERDAMS SHALL BE DESIGNED BY THE CONTRACTOR AND SUBMITTED TO THE CONTRACT ADMINISTRATOR FOR REVIEW PRIOR TO CONSTRUCTION. TOP OF COFFERDAM ELEVATION TO BE NOT LESS THAN ELEV. 312.00
6. ALL DISTURBED AREAS INCLUDING BANKS ABOVE WATER LEVEL SHALL BE REGRADED, TOPSOILED AND SEEDED TO THE SATISFACTION OF THE CONTRACT ADMINISTRATOR AS SOON AS POSSIBLE.
7. ALL EROSION CONTROL MEASURES (SILT FENCE, ROCK DAMS, SILTATION POND/DEWATERING TRAP, ETC.) SHALL BE CHECKED DAILY DURING ON-SITE WORK AND BE MAINTAINED IN GOOD STATE SO THAT THEY ARE FUNCTIONING PROPERLY. SILT FENCE AND STRAW BALE CHECK DAMS TO BE LEFT IN PLACE FOR 12 MONTHS OR UNTIL SUCH TIME AS THE SITE STABILIZES (THESE ARE LOCATED ABOVE HIGH WATER LEVEL).
8. NO MACHINERY SHALL CROSS THE RIVER AT ANY TIME. ANY MACHINERY THAT IS REQUIRED ON THE OTHER SIDE OF THE RIVER WHILE THE BRIDGE IS DISMANTLED OR UNDER CONSTRUCTION SHALL BE HAULED BY FLOAT OR DRIVEN AROUND ON THE ROADS. MACHINERY, VEHICLES, EQUIPMENT PUMPS, ETC., WILL NOT BE REFUELED WITHIN 30 METRES OF THE WATERCOURSE. MACHINERY SHALL NOT BE CLEANED WITHIN 30 METRES OF THE RIVER.
9. ALL WASTE MATERIAL FROM CONSTRUCTION SHALL BE STORED AWAY AND ABOVE THE HIGH WATERMARK AND AT NO TIME SHALL SUCH MATERIAL ENTER IN THE WATER.
10. FOR TYPICAL CHECK DAMS REFER TO OPSD 219.210
11. FOR SILT FENCE REFER TO OPSD 219.130 HEAVY DUTY.
12. SEED MIX TO BE STANDARD ROADSIDE MIX PER OPSS.MUNI 804.

ADDITIONAL ENVIRONMENTAL MEASURES TO BE ADHERED TO:

1. SEDIMENT AND EROSION CONTROL MEASURES SHOULD BE IMPLEMENTED PRIOR TO WORK, AND MAINTAINED DURING THE WORK PHASE, TO PREVENT THE ENTRY OF SEDIMENT INTO THE WATER OR THE MOVEMENT OF RE-SUSPENDED SEDIMENT.
2. A FLOATING TURBIDITY CURTAIN OR SILT FENCE SHOULD BE PLACED IMMEDIATELY AROUND THE WORK SITE PRIOR TO THE INSTALLATION OF COFFERDAMS.
3. ALL DISTURBED WORK AREAS SHOULD BE STABILIZED AND RE-VEGETATED AS REQUIRED UPON THE COMPLETION OF WORK AND RESTORED TO A PRE-DISTURBED STATE OR BETTER.
4. SEDIMENT AND EROSION CONTROL MEASURES SHOULD BE LEFT IN PLACE UNTIL ALL DISTURBED AREAS HAVE BEEN STABILIZED.
5. EXISTING STREAM FLOWS SHOULD BE MAINTAINED DOWNSTREAM OF THE DE-WATERED WORK AREA WITHOUT INTERRUPTION, DURING ALL STAGES OF WORK. THERE SHOULD BE NO INCREASE IN WATER LEVELS UPSTREAM OF THE DE-WATERED WORK AREA.
6. FISH SHOULD BE REMOVED FROM THE WORK AREA PRIOR TO DE-WATERING AND RELEASED ALIVE IMMEDIATELY DOWNSTREAM.
7. SILT OR DEBRIS THAT HAS ACCUMULATED AROUND THE TEMPORARY COFFERDAMS SHOULD BE REMOVED PRIOR TO THE WITHDRAWAL.
8. NATURAL STRUCTURES SUCH AS LOGJAMS AND IN-STREAM WOODY COVER SHOULD NOT BE REMOVED UNLESS THEY REPRESENT A BARRIER TO FLOWS OR FISH MOVEMENT.
9. OPERATE HEAVY MACHINERY ON LAND AND IN A MANNER THAT MINIMIZES DISTURBANCE TO THE BANKS OR BED OF THE STREAM.
10. ENSURE THAT MACHINERY ARRIVES ON SITE IN A CLEAN, WASHED CONDITION AND IS MAINTAINED FREE OF FLUID LEAKS.
11. WASH, REFUEL AND SERVICE MACHINERY AND STORE FUEL AND OTHER MATERIALS FOR THE MACHINERY AT LEAST 30m AWAY FROM THE WATER TO PREVENT ANY DELETERIOUS SUBSTANCE FROM ENTERING THE WATER OR SPREADING ONTO THE ICE SURFACE.
12. KEEP AN EMERGENCY SPILL KIT ON SITE IN CASE OF FLUID LEAKS OR SPILLS FROM MACHINERY.
13. STABILIZE ANY WASTE MATERIALS REMOVED FROM THE WORK SITE TO PREVENT IT FROM ENTERING THE RIVER. THIS COULD INCLUDE COVERING STOCKPILES WITH BIODEGRADABLE MATS OR TARPS, OR PLANTING STOCKPILES WITH GRASS OR SHRUBS.
14. ALL UNSTABLE BANKS OF THE WATERCOURSE SHOULD BE STABILIZED AND SIDE RUN-OFF DITCHES SHOULD BE CONSTRUCTED TO DIVERT ROAD RUN-OFF THROUGH THE GREENBELT BEFORE ENTERING THE STREAM.
15. VEGETATE AND STABILIZE ANY DISTURBED AREAS BY SEEDING AND PLANTING TREES, SHRUBS, OR GRASSES PER SPECIFICATIONS. SEE SEED MIX REQUIREMENTS IN NOTE 12 ABOVE.
16. STREAM CROSSINGS SHOULD ALLOW FOR UNIMPEDED UPSTREAM AND DOWNSTREAM MOVEMENT OF FISH.
17. CONCRETE LEACHATE IS ALKALINE AND HIGHLY TOXIC TO FISH AND AQUATIC LIFE AND MEASURES MUST BE TAKEN TO PREVENT ANY INCIDENCE OF CONCRETE OR CONCRETE LEACHATE FROM ENTERING THE RIVER. ALL CAST-IN-PLACE CONCRETE, GROUT, MORTARS, ETC. SHOULD BE TOTALLY ISOLATED FROM PRECIPITATION AND THE WATERS OF THE WATERCOURSE FOR A MINIMUM 48 HOUR PERIOD OR UNTIL SIGNIFICANTLY CURED TO ALLOW THE pH TO REACH NEUTRAL LEVELS. CONTAINMENT FACILITIES SHOULD BE PROVIDED AT THE SITE FOR THE WASH-DOWN FROM CONCRETE DELIVERY TRUCKS, CONCRETE PUMPING EQUIPMENT, AND OTHER TOOLS AND EQUIPMENT AS REQUIRED.

No.	REVISION	DATE
1.	ISSUED FOR EA PROJECT FILE	OCT. 29/26

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BRIDGE 24 REPLACEMENT

TOWNSHIP OF BLANDFORD-BLENHEIM

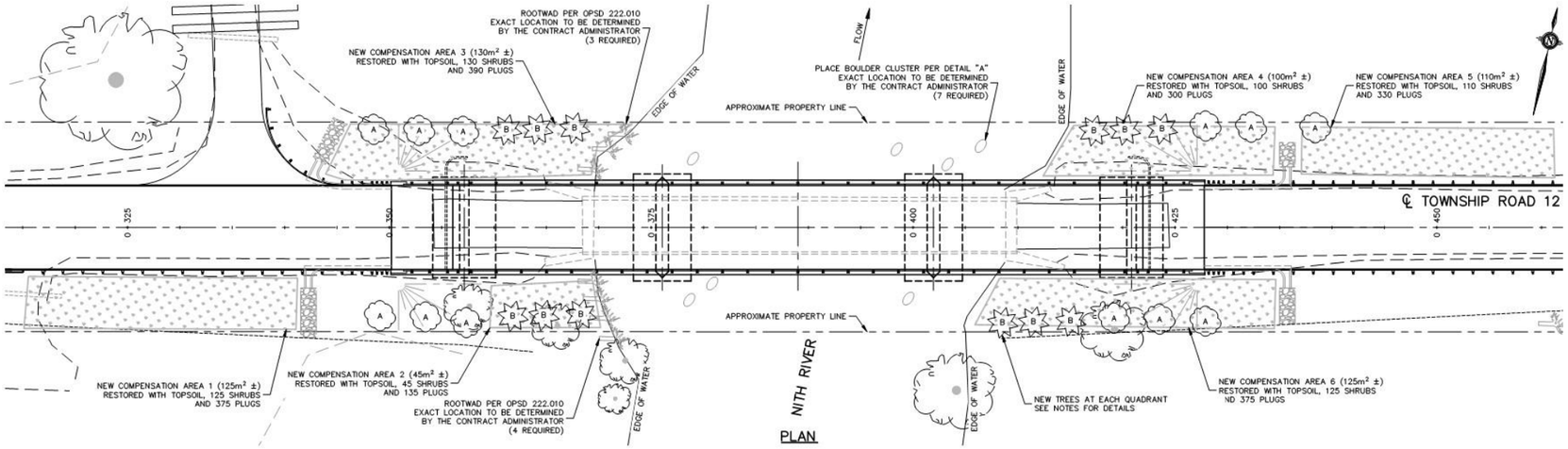
EROSION AND SEDIMENT CONTROL

K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS
KITCHENER SUDBURY

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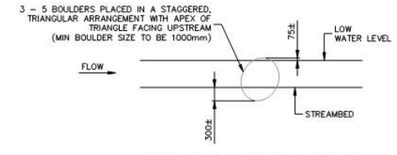
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BRIDGE 24 – DRAWING 6



PLAN

NOTE:
BOULDERS TO BE SMOOTH NATIVE LIMESTONE.
FRACTURED, BLASTED OR BROKEN ROCK IS
NOT ACCEPTABLE.
BOULDERS SHALL NOT HAVE SHARP EDGES



DETAIL "A" – BOULDER CLUSTER
SCALE 1:50

RESTORATION NOTES

TREES SHALL BE AS FOLLOWS:

◯ – TYPE "A" TREES SHALL BE 100mm FREEMAN'S MAPLE (ACER x FREEMANII)

☼ – TYPE "B" TREES SHALL BE 25–50mm SYCAMORE (PLANTANUS OCCIDENTALIS)

TREES SHALL NOT BE GARDEN CULTIVARS

TYPE "A" AND TYPE "B" TREES SHALL BE PLANTED AS FOLLOWS:

ALL QUADRANTS
3 TYPE "A" AND 3 TYPE "B"

COMPENSATION AREAS ARE TO BE RESTORED WITH A MIXTURE OF THE FOLLOWING PLANTINGS. QUANTITIES SHALL BE AS NOTED. SHRUBS AND PLUGS SHALL BE AS FOLLOWS:

COMMON NAME	SCIENTIFIC NAME	TYPE
BEBB'S WILLOW	SALIX BEBBIANA	SHRUB
PUSSY WILLOW	SALIX DISCOLOR	SHRUB
RED–OSIER DOGWOOD	CORNUS STOLONIFERA	SHRUB
SILKY DOGWOOD	CORNUS AMOMUM	SHRUB
COMMON ARROWHEAD	SAGITTARIA LATIFOLIA	PLUG
SQUARE–STEMMED MONKEY FLOWER	MIMULUS RINGENS	PLUG
BLUE FLAG IRIS	IRIS VERSICOLOR	PLUG
CATTAIL	TYPHA LATIFOLIA	PLUG
SPOTTED JOE–PYE WEED	EUPATORIUM MACULATUM	PLUG
WATER PLANTAIN	ALISMA PLANTAGO–AQUATICA	PLUG
SOFTSTEM BULRUSH	SCOENOPLECTUS TABERNAEMONTANI	PLUG
FOX SEDGE	CAREX VULPINOIDEA	PLUG
SOFT RUSH	JUNCUS EFFUSUS	PLUG

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RESTORATION PLAN

K. SMART ASSOCIATES LIMITED
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