TOWNSHIP OF BONFIELD

<u>REQUEST FOR QUOTATION – TRUNK ROAD MODULAR BRIDGE</u> <u>REVISION 1</u>

The **Township of Bonfield** is requesting a QUOTE TO PURCHASE A <u>MODULAR BRIDGE STUCTURE</u> F.O.B. supplied and delivered to:

Bonfield Public Works Yard located at 356 Line 3 Rd S, Bonfield, ON POH 1EO

Item	Spec. No.	Item Description	Est. Qty	Unit	Unit Price	e	Total Amount	
1	See below	30'-8" span x 24' wide (9.35m span x 7.32m wide)	1	Each	\$	9	5	
SUB TOTAL _\$								
			H.S.T.		\$			
			GRAND	TOTAL	_\$			
Specification and Data Sheet is provided with submission package: 🗌 Yes 🗌 No								
Expected delivery date in week(s) upon award provided:								
Ī	Description of Payment Schedule from Township to Supplier:							

<u>Notes</u>

- 1. This Modular Bridge Structure is intended for the Trunk Road Bridge replacement located 1.1 km east of trout pond road, Lot 23, Con 9 Bonfield Ontario over Blueseal Creek. The Township of Bonfield reserves the right to change the delivery location from the Public Works Yard to the Construction site, in the event construction is scheduled to start on the date of delivery.
- 2. This quotation is generally for a Steel Deck Modular Bridge in accordance with the dimensions and specifications provided. Any deviation from these specifications will not be accepted. Quotation will require confirmation that all specifications are met or exceeded.
- 3. Design Criteria shall meet CHBDC and Supply engineer shall ensure the bridge deck is adequate for a vehicle loading of the CL-625-ONT Hwy Loading, for the required clear span. Supply engineer shall also clearly provide the structural parameters requested in this document.
- 4. Bidders must quote on all items for a complete bridge deck package, except for: Asphalt, guiderail & posts. Incomplete packages will be disqualified.
- 5. The Township requires a minimum of two site inspections to provide assembly instruction to the selected Supplier and a 'Certificate of Conformance' upon completion, ensuring all has been constructed to meet the intended design.

- 6. The Township does not bind itself to accept the lowest or any quotation and reserves the right to select the preferred structure based on cost, delivery, installation and specifications
- 7. E-mailed quotations shall be received **before noon Friday June 20th, 2025**, at the following email address addressed to the CAO/Clerk of the Bonfield Township:

cao.clerk@bonfieldtownship.com and will be opened on the same day at noon.

Please direct any questions concerning the quote before noon on June 17th, 2025 to:

Antoine Boucher, Municipal Engineer Cell (705) 471-7729. antoine.boucher@eastferris.ca

- 8. Supplier shall provide warranty information on the product regarding replacement cost due to manufacture defects or deficiencies and specify the duration of such a warranty if any.
- 9. The Supplier, in advance of manufacturing the structure shall provide stamped shop drawings by two qualified Engineers to be approved by the Township. The proposed concrete abutment details will be provided to the supply engineers. The Supplier shall also specify the Guiderails OPSD and transition from road to deck to be installed on the proposed structure.
- 10. Quotations will be called, received, evaluated, accepted and processed in accordance with the Township procurement policies.
- 11. Please confirm your expected delivery date in week(s) to be expected upon award by the Township.

Dated at	this	day of	2025	
Signature: _			(for Sup	plier)
Supplier: _				
Address: _				
Postal code _				
Tel no:				
Fax no:				
HST no: _				

Lowest or any Quotations not necessarily be accepted.

TRUNK ROAD BRIDGE SITE LOCATION



TRUNK ROAD EXISTING BRIDGE IMAGERY



EXISTING TRUNK ROAD BRIDGE WIDTH



EXISTING TRUNK ROAD BRIDGE SPAN



DECK SURFACE

















GENERAL NOTES

- 1. THE BRIDGE SUPERSTRUCTURE WILL BE DESIGNED AND CERTIFIED TO MEET THE REQUIREMENTS OF THE CANADIAN HIGHWAY BRIDGE DESIGN CODE. (CHBDC) CAN/CSA S6-19 FOR A VEHICLE WHEEL LOADING OF THE CL-625 ONTARIO TRUCK.
- 2. SUBMISSION MUST CLARIFY ANY CHANGE OR DEVATION FROM THE GENERAL ARRANGEMENT PROVIDED.
- 3. FEATURES OF CONSTRUCTION INCLUDING ABUTMENT 'L" SHAPE WALL NOT FULLY SHOWN ARE FOR REFERENCE PURPOSES.

<u>STEEL</u>

- 1. CONFIRM THAT STRUCTURAL STEEL WILL BE CONFORM TO CSA STANDARD A588.
- 2. CONFIRM THAT STRUCTURAL STEEL WILL BE NEW A588.
- 3. BRIDGE TO BE CONSTRUCTED OF A588 (ATMOSPHERIC TREATED).
- 4. CONFIRM THAT CHANNELS WILL BE A588, AND PLATES TO BE A588 MATERIAL UNLESS NOTED OTHERWISE.
- 4a. TOP PLATE FOR RUNNING SURFACE TO BE 350W.
- 5. CONFIRM THAT WELDING WILL BE AS PER CSA W59 WELDED STEEL CONSTRUCTION, LATEST EDITION.
- 6. CONFIRM FABRICATOR WILL CERTIFY ACCORDING TO CSA STANDARD W47.1 DIVISION 1 OR 2, LATEST EDITION.
- 7. CONFIRM BOLTED CONNECTIONS WILL BE ASTM A325M HIGH STRENGTH, UNLESS NOTED OTHERWISE.
- 8. CONFIRM THAT BOLTS SHALL BE TIGHTENED USING TURN OF NUT METHOD AS SPECIFIED IN CAN/CSA S16-14.
- 9. DESIGN SHALL ENSURE NO DRILLING OR CUTTING AFTER FABRICATION OF STRUCTURAL STEEL BE NECESSARY.
- 10. DESIGN SHALL CONFIRM THAT SURFACES TO BE WELDED WILL BE THOROUGHLY CLEANED OF ALL FOREIGN MATER, PROVIDE REQUIRED NOTE.
- 11. CONFIRM THAT ALL JOINTS WILL BE WELDED USING E49XX LOW HYDROGEN CONTENT ELECTRODES.
- 12. CONFIRM THAT ALL WELDS TO BE CONTINUOUS ALL-AROUND PART TO BE WELDED. MAXIMUM SIZE WELD FOR MATERIAL. (UNLESS NOTED OTHERWISE ON DRAWINGS.)
- 13. CONFIRM THAT GRINDING REQUIRES SMOOTHING ALL ROUGH EDGES PRIOR TO APPLYING COATINGS.
- 14. PROVIDE APPROXIMATE TOTAL WEIGHT PER SECTION OF THE BRIDGE IN POUNDS AND IN KILONEWTON.

STEEL PREPARATION AND COATINGS

- 1. BRIDGE WILL REMAIN UN-PAINTED.
- 2. TOP PLATE ONLY WILL HAVE TWO (2) COATS OF RED OXIDE PRIMER.
- 3. PROVIDE ALTERNATIVE FOR A LONG-TERM PROTECTION SYSTEM FOR EXTENDED SERVICE LIFE OF THE BRIDGE.

SUBSTRUCTURE NOTES

- 1. CONFIRM THAT THE BRIDGE SUBSTRUCTURE SUPPORTING THIS STEEL MODULAR BRIDGE CAN BE DESIGNED TO PROVIDE A MINIMUM OF 300mm CONTINUOUS SUPPORT TO BRIDGE END BEAMS.
- 2. CONFIRM THAT THE MODULAR BRIDGE IS COMPATIBLE AND MAY BE USED WITH THE MINISTRY OF NATURAL RESOURCES AND FORESTRY STANDARD BRIDGE ABUTMENT AND BEARING DRAWINGS.
- 3. CONFIRM THAT THE CONTINUOUS END PLATE ALONG THE ENDS OF THE GIRDERS WILL BE DESIGNED TO ACCEPT LATERAL EARTH PRESSURE IN ADDITION TO THE HORIZONTAL LOAD INDUCED BY WHEEL LOADING.
- 4. PROVIDE THE MAXIMUM WORST CASE FACTORED BEARING END REACTIONS PER SINGLE GIRDER EQUALS IN POUNDS AND KILONEWTON.
- 5. PROVIDE MAXIMUM FACTORED TOTAL END REACTION (FULL BRIDGE WIDTH) EQUALS IN POUNDS AND KILONEWTON INCLUDING BOTH DEAD AND LIVE LOADS AND APPROPRIATE LOAD FACTORS AND DYNAMIC LOAD ALLOWANCE.
- 6. INFORMATION PROVIDED WILL BE USED TO ENSURE SUBSTRUCTURE IS DESIGNED (BY OTHERS) TO BE CAPABLE OF SUPPORTING THE REACTIONS PROVIDED ABOVE

MUNICIPAL APPLICATIONS USING THIS STRUCTURF

- 1. THIS MODULAR BRIDGE IS FOR USE ON LOW VOLUME MUNICIPAL ROADS THE GUIDELINES AS DETAILED IN THE 2021 MTO EXCEPTIONS TO THE CANADIAN HIGHWAY BRIDGE DESIGN CODE CSA S6-19 FOR ONTARIO AS PER DIVISION 1 OF THE 2021 MTO STRUCTURAL MANUAL.
- 2. THE BRIDGE WILL BE DESIGNED TO MEET LIVE LOAD AND LIVE LOAD DEFLECTION (L/360) REQUIREMENTS AS NOTED IN THE GUIDELINES FOR BRIDGES ON LOW VOLUME ROADS.
- 3. CURB POST ANCHOR SHALL MEET THE REQUIREMENTS OF TL-1 LOADING.
- 4. MODULAR BRIDGE TO FOLLOW ALL RELEVANT MUNICIPAL APPLICATIONS.
- 5. MODULAR BRIDGE MUST BE DESIGNED FOR A TWO-LANE APPLICATION WITH THE SUBSTRUCTURE REACTIONS PROVIDED

STANDARD SPECIFICATIONS

The following specifications are considered the standard specifications required for the Supply, Handling, Preparation, Fabrication and Delivery of the Structural Steel and Vendor Supplied Bridge Superstructure submission for this request for quote for the Township of Bonfield

1.0 Applicable Design and Fabrication Standards

- 1.1 All components, materials composition and manufacturing process, including the supply or prefabricated or modular (portable bridge superstructures) products must conform to the requirements of CSA G40.20-13/G40.21-13, General Requirements for Rolled or Welded Structural Quality Steel / Structural Quality Steel.
- 1.2 All welded components identified within this request for quotation must be completed by a welding shop certified through the Canadian Welding Bureau to the requirements of CSA W47.1, Division 1 or 2.
 - 1.2.1 Proof of CSA CWB certification to be submitted as part of this request for quotation.
- 1.3 Vendors must employ and be registered with an ISO certified Quality Management System. The Registration must cover the Quality Management System for Welding and fabricating of portable bridges, structural steel and other general and custom fabrication.
 - 1.3.1 Proof of ISO accreditation to be submitted as part of this request for quotation.
- In instances where the 'product' being supplied is a proprietary 'prefabricated bridge superstructure', the product must be clearly certified as complying with CSA S6-19 (CHBDC) using the Ontario CL-625 truck loading configuration. Additionally, the following conditions are also applicable to this request for quotation:
 - 1.4.1 Vendors will be required to submit sealed General Arrangement and/or Shop Drawings verifying the products compliance with code and applicable standards
 - 1.4.2 For all bridges located on Crown Land within Ontario, the prefabricated bridge superstructure products must be certified as complying with the 2008 Ministry of Natural Resources and Forestry "Crown Land Bridge Management Guidelines".
 - 1.4.3 For all bridges located within Ontario on roads identified within provincial regulation (provincial and municipal roadways) the prefabricated bridge superstructure products must be certified as meeting the requirements of the "2016 MTO Exceptions To The Canadian Highway Bridge Design Code, CSA S6-14, For Ontario"
- 1.5 Vendors will be required to submit sealed General Arrangement and/or Shop Drawings verifying the products compliance with the Crown Land Bridge Management Guidelines and/or the 2016 MTO Exceptions to The Canadian Highway Bridge Design Code, CSA S6-14, for Ontario.

1.6 Vendor supplied (proprietary) products must have minimum life expectancy of 75 years in accordance with section "1.4.2.3 Design life" (page 96 of CSA S6-19).

2.0 Condition and Origin of Materials

- 2.1 All structural Steel to be new and will come complete with a certified mill material test report that verifies the material's chemical and physical properties and its compliance with applicable CSA/ISO/ANSI standards.
- 2.2 Reconditioned, repurposed or reused structural steel will not be accepted.
- 2.3 Unless otherwise noted, the following material properties shall be used for the supply of structural steel and structural bolts:

DESCRIPTION	GRADES
Girders and any material welded to girders; Any bracing member considered a Primary	A588
component and bolted to the girders	
Any bracing member considered a secondary component and bolted to the girders.	A588
Bolts for weathering steel structural connections.	20 mm diameter ASTM A325M

3.0 Materials Preparation, Processing and Finishes

- 3.1 Deck to be 350W and to be coated with 2 applications of high performance primer suitable for paving with 50mm of HM/HL asphalt.
- 3.2 Deck to come complete with 50mm asphalt retention angle along span perimeter.
- 3.3 All products to be shop assembled to ensure all components are true and square, fit properly and to avoid field assembly issues.
 - 3.3.1 The purchaser may wish to be present during shop assembly and/or may ask for photos of shop assembly to be submitted for review prior to shipment.
- 3.4 Upon completion of product fabrication, the vendor will affix a bridge identification plate that will contain a serial number, weight (for transportation and handling), date of manufacture and structural capacity.
- 3.5 The vendor will supply the purchaser with a 'Certificate of Conformance' corresponding to the serial identification affixed to the proprietary 'prefabricated bridge superstructure'. The Certificate of conformance will be sealed and signed by the design Engineer and shall state the mill certificates have been reviewed and the vender supplied (proprietary) bridge has been inspected to ensure conformity with sealed working drawings and applicable CWB standards.

- 1.7 Compatibility For Use With Standard MNRF Substructures on Crown Land
- 1.8 All Vendor supplied (proprietary) bridge superstructure products must be compatible with MNRF standard substructures.
- 1.9 Vendors will be required to submit sealed General Arrangement and/or Shop Drawings which will include notations that certify the product is compatible with MNRF standard substructures.
- 1.10 The purchaser may require Sealed calculations verifying the statement on the drawings related to 4.1.1
- 1.11 Sealed drawings will also verify the dead weight of the superstructure and end reactions under CL625 ONT (design vehicle) loading conditions.
- 1.12 MTO Exceptions To The Canadian Highway Bridge Design Code, CSA S6-14, For Ontario
- 1.13 Vendor supplied (proprietary) bridge superstructure products to be installed on low volume roads under Provincial regulation must meet the requirements of the "2016 MTO Exceptions to The Canadian Highway Bridge Design Code, CSA S6-14, For Ontario"
- 1.14 Vendors will be required to submit sealed General Arrangement and/or Shop Drawings which includes notations that certify Vendor supplied (proprietary) bridge superstructure is compliant with the MTO exceptions.
- 1.15 The purchaser may require Sealed calculations verifying the statement on the drawings related to 5.1.1
- 1.16 Sealed drawings will also verify the dead weight of the superstructure, design deflection and end reactions under ONT625L (design vehicle) loading conditions.

4.0 Handling and Options

- 4.1 For Vendor supplied (proprietary) bridge superstructure products, each unit will come with a minimum of 4 main lifting points (2 each side, evenly located along the length of the product). Additional reinforced lifting points will also be provided at the end of each product length.
 - 4.1.1 New CSA load rated straps (with tags affixed) will be supplied by the vendor for each of the main lifting points.
- 4.2 Vendor supplied (proprietary) bridge superstructure products will come complete with secure cover plates for all exposed connection and bridge lifting openings.
- 4.3 For Vendor supplied (proprietary) bridge superstructure products, the purchaser may require bolted and/or laterally reinforced steel Guidepost pockets. All Guidepost pockets are to measure 8" x 8" and be spaced at 6' 3" O/C.
 - 4.3.1 Post pockets anchors (welded or bolted) for barrier posts must be certified to meet the lateral (impact) loading identified for either a TL1 or TL0 barrier as specified in Appendix A of the 2016 MTO Exceptions To The Canadian Highway Bridge Design Code, CSA S6-14, For Ontario.

- 4.4 Purchaser may require either a flat surface, square end or a tapered end on a vendor supplied (proprietary) prefabricated bridge superstructure product.
- 4.5 Vendor supplied (proprietary) bridge superstructure products shall be manufactured with closed ends for soil retention. The soil retention system shall either be fabricated into the bridge ends or be delivered with the bridge for field installation.

5.0 Methodologies for Analysis

- 5.1 Over their service life, structural analysis of bridge superstructure installations will be required. To facilitate rapid and economical review and condition rating, the bridge products to be provided must be capable of being assessed using the simplified analysis procedure outlined in CSA S6-19 Canadian Highway Bridge Design Code. Products designed using only Finite Element Analysis or other computer modeling methods may not be accepted, since:
 - 5.1.1 Development of computer models by future structural evaluators will be at considerable cost;
 - 5.1.2 The property model may not be available to future structural evaluators, or
 - 5.1.3 The computer model used to confirm the compliance of the bridge superstructure design may not be compatible with modeling systems available to future structural evaluators.
 - 5.1.4 All bridges must be capable of analysis using "The Simplified method of analysis for longitudinal load effects" detailed in section 5.6 (page 237), and
 - 5.1.5 Conditions for use analysis of dead & live loads outlined in sect 5.6.2 (pg. 237).
 - 5.1.6 Modular bridges must have an orthotropic deck (pg. 74) system for simplified analysis.

6.0 Summary of Deliverables

- 6.1 The following minimal submittals are required as part of this request for pricing:
 - 6.1.1 Proof of CSA CWB certification;
 - 6.1.2 Proof of ISO accreditation;
 - 6.1.3 Sealed General Arrangement and/or Shop Drawings verifying compliance of the prefabricated product with code and applicable standards;
 - 6.1.4 Pricing for product and cost of transportation; and
 - 6.1.5 Details related to shipping, delivery of the vendor supplied (proprietary) product.

- 6.2 In addition to the product purchase, the vendor will provide the following additional deliverables at time of purchase and at no additional cost:
 - 6.2.1 Vendor supplied (proprietary) bridge superstructure complete with load rated lifting straps;
 - 6.2.2 Sealed General Arrangement and/or Shop Drawings of the prefabricated product with unique serial number of the vendor supplied (proprietary) product identified thereon;
 - 6.2.3 Vendors Instructions related to the purchase, including recommended maintenance procedures and schedules; and
 - 6.2.4 Sealed 'Certificate of Conformance' signed by the bridge designer clearly indicating that the bridge product has been fabricated in accordance with their design and meets the requirements of the current Canadian Highway Bridge Design Code (CSA S6-19).
 - 6.2.5 Detailed Quality Assurance Package which provides fabrication details, checks and signoffs, production photos taken during fabrication and mill tests certificates in accordance with ISO9001:2015.