

September 12, 2025

Addendum No. 07

File Reference Number: RFP 2025 068

Title: ONTC Culvert Rehabilitation – Culvert Mile 109.8 Kapuskasing Subdivision

RE: Clarifications/Questions

Please refer to the following information/clarification:

CLARIFICATIONS

Item 1: Please be advised that the specifications for the Tunnel Liner Plate, which were previously missing from the RFP, have now been included and are attached to this Addendum as Appendix A.

Item 2: Please be advised that ONTC has extended the submission deadline for this RFP. The revised submission deadline is now **Friday, September 19, 2025 at 2:00:00 p.m.**

QUESTIONS

Item 3: What is the volume of the contaminated soil to be excavated?

Answer: Please consider all the material contaminated.

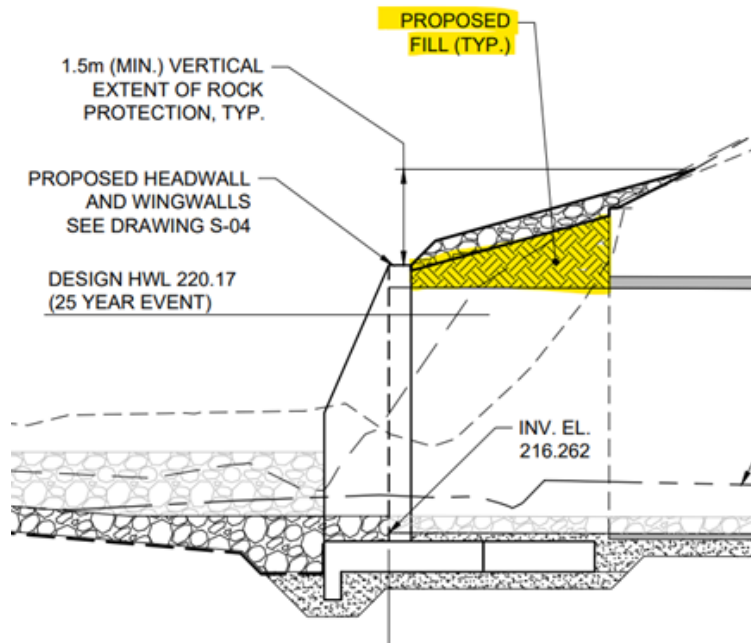
Item 4: Refer to specifications, Section 02201 Part 1.6.2; please describe the limitations of the track monitoring, i.e. how far along the track from the centerline of the culvert?

Answer: Please refer to section 02201 – 3.3.1.1. The contractor shall follow 25 meters on each side of the culvert centerline, along the track.

Item 5: Refer to specification, “section 01561 Part 3.2.1 says don’t operate construction equipment in the water way”. Does this mean contractor to perform all work manually, even after dewatering the construction area with the cofferdam and pumps?

Answer: Yes, the contractor may work in water with equipment where the work area is isolated from the rest of the watercourse (i.e. within a cofferdam). Work within an isolated area still needs to follow the timing window.

Item 6: What is the material to be used to backfill above the extended liner? See below screen shot extracted from drawing S-01.



Answer: This fill shall be the same as backfill, per note 6 under “Concrete head wall notes” on sheet S-02.

Item 7: Please confirm the total 5238.84 kg given in the S-05 reinforcement schedule (Headwalls & Wingwalls) is for both sides of the culvert or one side of the culvert. Looks like some Bar Marks quantity is sufficient only for one side. Ex. Bar mark F2501 needs 100 pcs per one footing

Answer: Please refer to the attached updated drawing S-05 dated 2025/09/08 – Issued for Addendum attached at the end of this Addendum at Appendix B.

Item 8: When will be the awarding date of this contract? This information is needed to do the proper schedule and approach strategy.

Answer: Please be advised that an award date is unknown at this time however; ONTC will advise the Shortlisted Respondent once we have completed the evaluation process and all other Respondents will be notified once a contract has been signed.

Item 9: Is it realistically possible to start the project on Sep 29, 2025

Answer: The September 2025 start date is an estimation and the contractor may start as soon as possible after contract award.

Item 10: There is no item in the schedule of prices to include the snow clearing.

Answer: It is the contractor's responsibility to provide snow clearing and should be included as part of mobilization item.

Item 11: Whose responsibility is to clear the snow on the access roads?

Answer: It is the contractor's responsibility to provide snow clearing and should be included as part of mobilization item.

This Addendum hereby forms part of the RFP.

Regards,

Brinda Ranpura
Procurement Contracts Specialist
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“Appendix A”

PART 1 - GENERAL

1.1 DESCRIPTION

- .1 The Work specified in this Section consists of Design, fabrication, supply, assembly and complete installation of the Tunnel Liner Plate (TLP) that are assembled in the field from structural steel plates, including grouting, bedding and soil requirements around Tunnel Liner Plate as called for in the Contract Documents and this section.

1.2 RELATED WORK

- | | | |
|----|---------------------------------------|---------------|
| .1 | Environmental Protection | Section 01561 |
| .2 | Excavation Trenching and Backfilling | Section 02315 |
| .3 | Backfill for Structures | Section 02316 |
| .4 | Excavating Backfilling and Compacting | Section 02317 |
| .5 | Rip Rap and Rock Protection | Section 02371 |
| .6 | Concrete Formwork and Falsework | Section 03100 |
| .7 | Concrete Reinforcement | Section 03200 |
| .8 | Cast-in-Place Concrete | Section 03300 |

1.3 REFERENCES

- .1 AREMA Manual for Railway Engineering 2024
- .2 American Association of State Highway and Transportation Officials (AASHTO):
- .1 AASHTO LRFD Bridge Design Specifications, 10th Edition, 2024; and
- .2 AASHTO LRFD Bridge Construction Specifications, 4th Edition, 2024.
- .3 Canadian Standards Association:
- .1 CSA G401:24 Corrugated steel pipe and buried structures.
- .4 American Society of Testing and Materials International (ASTM):

- .1 ASTM A1011/A1011M-23, Standard Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength;
- .2 ASTM A761/A761M-24, Standard Specification for Corrugated Steel Structural Plate, Zinc-Coated, for Field-Bolted Pipe, Pipe-Arches, and Arches;
- .3 ASTM A780/A780M-20, Standard Practice for Repair of Damaged and Uncoated Areas of Hot-Dip Galvanized Coatings;
- .4 ASTM C109/C109M-24, Standard Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 50 mm [2 in.] Cube Specimens); and
- .5 ASTM C495/C495M-12 (2019), Standard Test Method for Compressive Strength of Lightweight Insulating Concrete.

1.4 SUBMITTALS

- .1 Design:
 - .1 Complete set of calculations with all assumptions including but not limited to structural calculations, bolt tightening procedure, required inspection milestones during construction, specify bedding requirements at the bottom of the TLP, specify backfill around the TLP etc. The calculations shall be sealed by a Professional Engineer licensed in the Province of Ontario.
- .2 Construction and Fabrication:
 - .1 Material Testing Report (MTR);
 - .2 Shop drawings with all necessary details; and
 - .3 Detailed construction plan including but not limited to the following:
 - .1 Transportation;
 - .2 Assembly of TLP;
 - .3 Grouting Plan;
 - .4 Dewatering and water management during construction;
 - .5 Construction sequence; and

- .6 The detailed construction plan shall be submitted to the SDF and the Engineer for review and acceptance, at least four (4) weeks prior to start of construction.

1.5 QUALITY ASSURANCE

- .1 The Contractor shall employ a Specialty Design Firm (SDF) that have a minimum of 10 years of experience in the design, detailing and construction of TLP. The SDF shall conduct periodic inspections during construction to ensure the construction is per the design intent.
- .2 Design per "AASHTO LRFD Bridge Design Specifications" 10th Edition, Section 12:
 - .1 Live load shall be Cooper E80 per AREMA Manual for Railway Engineering 2024.
- .3 Fabrication, handling, transport, storage and repair shall be per CSA G401: 24
- .4 Installation shall be per "AASHTO LRFD Bridge Construction Specifications" Section 25
- .5 Certification
- .6 Inspection by Owner

1.6 SITE VERIFICATION

- .1 The contractor shall verify location of all relevant structures on site through survey and confirm that the proposed geometry of the liner will fit into the existing space, prior to start of the Work. Any issues shall be reported to the Engineer and the SDF so that appropriate modifications can be made to the Drawings.

1.7 PROJECT CONDITIONS

- .1 Weather Condition Limitations: Proceed with application and associated work only when weather conditions will permit unrestricted use of materials and adequate quality control of work being installed, in compliance with requirements and with recommendations of primary materials manufacturers.
- .2 Water management: The Contractor shall be responsible for managing from one side of the railway embankment to the other side, during construction, in compliance with all the environmental and project requirements.

1.8 PROTECTION

- .1 Protect all adjacent construction for damage resulting from spillage, dripping and dropping of material. Prevent materials from entering and clogging drains and water conductors. Repair and restore or replace other work that is soiled or damaged in connection with the performance of this work. Protect work of other trades from damage resulting from work of this section. Make good such damage at own expense to satisfaction of the Consultant.

1.9 WARRANTY

- .1 Warranty specified in this Article shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and are in addition to and run concurrent with other warranties made by the Trade Contractor under requirements of the Contract Documents.
- .2 Provide a written warranty, directly to the Owner, for a period of 75 years warranting against corrosion resulting from defects of materials or workmanship. Upon notification of such defects, within the warranty period, make the necessary repairs and replacements, at the convenience of the Owner.

PART 2 - PRODUCTS

2.1 DESIGN CRITERIA

- .1 Manufacturer to design Tunnel Liner Plate in accordance with the methods and criteria as specified in AASHTO LRFD, Bridge Design Manual, Section 12.
- .2 Live load shall be Cooper E80, per AREMA
- .3 Soil parameters necessary for the design shall be determined by the SDF. Any geotechnical investigation for this purpose shall be the Contractor's responsibility.
- .4 Deflection in any direction, measuring greater than 2% from original cross-sectional shape, is not allowed.
- .5 Thickness of the Tunnel Liner Plate shall be determined through analysis and design to obtain adequate joint strength, stiffness, buckling strength and resistance to deflection.
- .6 Minimum design service life = 75-years.

2.2 MATERIALS

- .1 Tunnel Liner Plate: materials used shall be new, unused and suitable for the purpose intended:
 - .1 Liner plate steel shall be hot rolled steel sheet (CS) type D, grade 50ksi per ASTM A1011/A1011M;
 - .2 Liner plates shall have two flanges, fabricated to permit in-place assembly of a continuous steel support system. All plates shall be punched for bolting on both longitudinal and circumferential seams and shall be so fabricated as to permit complete erection from the inside of the tunnel. The longitudinal seam shall be of the lap type, with an offset equal to the gage of the metal for the full width of the plate to allow the cross section of the plate to be continuous through the seam;
 - .3 The two flanged liner plate shall have annular corrugation profile of Structural plate, per CSA G401;
 - .4 Plates shall be accurately curved to suit the tunnel cross section and shall be of uniform fabrication to allow plates of similar curvature to be interchanged. The nominal, gross, and net plate width in the longitudinal direction of the structure shall be 500 mm;
 - .5 Circumferential flange connection bolt hole spacing shall be determined from the design and shall not be greater than 400mm. Grout holes shall be two inches (2") in diameter and shall be provided as shown on the design Drawings, by SDF, to permit grouting as the assembly of the liner plate proceeds. All grout holes shall be plain, tapped or welded with coupling. Tapped holes shall be provided with a pipe plug screwed in place;
 - .6 Protective coating shall be hot dip galvanized or approved equivalent, suitable for the design service life; and
 - .7 Bolts shall be ASTM A449, Type 1, and nuts shall be ASTM A563 grade H, galvanized per ASTM A153 class C, and ASTM F2329, suitable for the design service life.
- .2 Grout:
 - .1 Highly flowable grout shall have compressive strength of 2-3 MPa and a slump of 250mm or greater. Unit weight of the grout shall be 2200 kg/m³. Determine lift height per method of work.

PART 3 - EXECUTION

3.1 GENERAL

- .1 All material, equipment, construction, delivery and erection shall be as per design Drawings by SDF.
- .2 Plates can be shipped nested in bundles, complete with all plates, bolts and nuts necessary for erection. Included with the shipment shall be detailed erection instructions showing the order of assembly and the position of each plate. Bundles are sized so that cranes, forklifts, or other construction equipment already on the job are all that is needed for unloading.
- .3 The Contractor shall undertake the necessary field geotechnical investigation by an Independent Geotechnical Engineer. The Contractor shall obtain recommendations regarding the proposed tunnel liner plate installation and other works. The Contractor shall obtain approval from the ONTC Representative to undertake the geotechnical investigation before commencing any geotechnical field work. All the required details shall be submitted a minimum of 30-days prior to commencing the work.

3.2 PRE-INSTALLATION MEETING

- .1 If required, Prior to the start of the Work, and at the Trade Contractor's direction, meet at the Project site to review methods and sequence of TLP assembly, grouting, water management, special details and conditions, standard of workmanship, testing and quality control requirements, job organization and other pertinent topics related to the Work. The meeting shall include the Engineer, the Contractor, TLP manufacturer's representative, and any other subtrades whose work requires coordination with this Work.

3.3 PREPARATION

- .1 Work shall not begin until all the submittals are reviewed and accepted by the Engineer and the detailed construction plan is accepted by the SDF.
- .2 The subgrade for TLP shall be furnished as required by the SDF.
- .3 Following the preparation work and prior to the assembly of the TLP, the subgrade shall be inspected and approved by a qualified geotechnical engineer employed by the contractor and the Engineer to ensure the preparatory works are satisfactory and the finished subgrade meets the required standard.
- .4 Measures shall be in place to avoid disturbing the finished subgrade. The contractor shall be ready to re-establish the subgrade to the requirements in case it is disturbed during assembly.

- .5 Water management and environmental measures shall be per rules and regulations of the relevant jurisdiction and authority.
- .6 The Contractor's method of work and sequencing shall account for the reinforced concrete footings below the TLP at each end.

3.4 INSTALLATION

- .1 Assembly:
 - .1 Assembly of the structure shall be in accordance with Section 25 (when applicable) of AASHTO LRFD construction specifications and any supplemental recommendations provided by the manufacturer. Maintaining the design cross sectional shape during assembly shall be a key objective;
 - .2 All plates shall be unloaded and handled with reasonable care. Plates shall not be rolled or dragged over gravel rock and shall be prevented from striking rock or other hard objects during installation. Plates shall not be dropped, twisted, dented or otherwise carelessly handled. Protect the protective coating. Galvanized coatings that have been compromised shall be restored with a minimum of two coats of cold galvanizing compound (spray or paint) in accordance with ASTM A761, Section 7 or other measures as described in ASTM A 780;
 - .3 Any obstructions that may prevent the assembly of the new tunnel liner plate need to be removed by the contractor at the direction of the Engineer;
 - .4 The span and rise of the structure should be checked frequently during the early stages of assembly to verify that assembly tolerances are being achieved and to allow for adjustments to procedures, if necessary, before assembly is complete;
 - .5 Assembly of the first ring may be completed in whole or in part on the ground and erected into place using means and methods determined most suitable by the Contractor;
 - .6 Longitudinal lap joints of adjacent rings should be staggered per the design Drawings by SDF;
 - .7 Bolts should be preinstalled by the contractor in the no-offset ends with bolt heads oriented to the outside and held in place with push-on spring clips. No-offset ends are fabricated with square holes. The bolts have square shoulders which seat into the holes and prevent them from turning when the nuts are installed from the inside. Nuts shall be placed with the rounded face in contact with the plates unless noted otherwise;

- .8 Tighten the bolts per the recommended bolt torque by the SDF;
 - .9 Gaps may be present at the flanged connection between rings. Field caulking of the joints or other strategies to prevent leaking of the grout may be required to provide an adequate seal. This may vary depending on the properties of the grout material selected;
 - .10 Longitudinal seams shall be staggered between rings when possible. Voids occurring between liner plate and existing structure or ground shall be pressure grouted until filled. Grout material and method of grouting shall be approved by the Engineer; and
 - .11 Adequate temporary support shall be provided by the Contractor.
- .2 Grouting:
- .1 Voids occurring between the liner plate and the existing structure (or ground) shall be grouted until they are filled. The contractor shall prepare a grouting plan detailing the proposed grout mix design, number and depth of individual grout lifts, grout port locations, details for blocking and bracing the structure (if required), and all proposed equipment and procedures used to ensure that the annular space will be filled entirely without damaging the structure. The grouting plan will be reviewed and approved by the Engineer;
 - .2 The grout material and locations of grout port shall be as specified by the SDF. The grout material shall be low-shrinkage and shall have a minimum compressive strength of 2.0 to 3.0 MPa in 28-days when tested in accordance with ASTM C495 or ASTM C109;
 - .3 Grouting equipment shall be capable of filling the entire annular space along the length of the structure.
 - .4 Bulkheads are used to block off the annular space at each end of the structure to retain grout. Air vents may need to be incorporated into the bulkheads to allow air to escape during grouting operations bulkhead shall be designed by the Contractor to entirely retain the grout material. Bulkhead design should be based on the fluid properties of the grout material utilized;
 - .5 The grout shall be mixed and pumped according to the approved grouting plan. The gauged pumping pressure at the exterior of the liner pipe wall shall not exceed 5 psi at the point of injection, or the published limit for the specific product being used, whichever is less. If it becomes necessary to change the rate of pumping, the pressure will be increased at a rate not to exceed 1 psi per minute up to the equipment rate;

- .6 The grout shall be pumped in such a manner that the grout does not dilute or separate. The contractor should "sound" the structure to be able to determine grout placement and ensure all voids are filled;
 - .7 Fluid grout will impose buoyant forces on the structure causing it to lift and potentially deform if not controlled. Buoyant forces can be managed by grouting in multiple lifts. Each lift shall reach initial set prior to the placement of subsequent lifts. Blocking or bracing of the structure may be utilized during grouting to prevent movement and deformation of the structure. The bracing design should consider the rate at which the grout is placed, the volume of grout being placed, the resulting lift height(s) of the grout, and the fluid unit weight of the grout;
 - .8 Grout should be placed evenly on both sides of the structure. The grout elevation on opposite sides of the structure should have a maximum vertical offset of 350mm. Each grout lift must achieve initial set, to lessen the buoyant forces of subsequent lifts. The initial lift height may only be a minimal amount to prevent uplift of the new structure. Depending on the specific grout plan, a second, third or fourth short lift may also be necessary.
- .3 Finalizing the installation:
- .1 Remove formwork at the bulkhead and construct the reinforced concrete headwall and wing walls at each end; and
 - .2 Sequencing of backfill between the grout face and the backside of the wing walls shall be done such that adequate space is available for proper compaction.

3.5 FIELD QUALITY CONTROL

- .1 An inspection agency may be engaged by the Owner to inspect work specified herein. The presence of the Inspection Agency is for the Owner's own Purposes and any information or assistance furnished by his Inspection Agency shall not relieve the Contractor of the responsibility for the Work.
- .2 The Contractor's Responsibility is as follows:
 - .1 Upon award of Contract, complete the form furnished by the Inspection Agency;
 - .2 Provide the Inspection Agency with safe access to the Work;
 - .3 Notify the Inspection Agency whenever work is to be done, in sufficient time to arrange inspection;

- .4 Discontinue any practice immediately when notified which, in the Inspection Agency's opinion, is not in accordance with the Specifications or will act to the detriment of the system. The Inspection Agency will notify the Owner, the Consultant, the Contractor, the SDF and the TLP manufacturer immediately of all violations. Any work affected by the practice will be subject to complete replacement; and
- .5 Give written notice to the Inspection Agency stating that the installation has been completed in accordance with the Contract Documents and requesting that a final inspection be conducted.
- .3 Observations and testing during assembly & grouting shall include but not be limited to the following:
 - .1 Structure alignment;
 - .2 Plate tightness observations;
 - .3 Bolt torque measurements;
 - .4 Initial structure shape measurements (prior to starting to grout);
 - .5 Confirm that the structure has not uplifted (floated);
 - .6 Periodic structure shape measurements (during grouting);
 - .7 Grouting material sampling and testing;
 - .8 Observations of proper pumping pressure, proper grout placement and sounding procedures; and
 - .9 Dewatering

3.6 LETTER OF COMPLIANCE

- .1 Upon completion of the TLP, including grouting and backfilling, the SDF shall furnish a letter of compliance stating that the design, fabrication and installation is per the contract requirements. The letter shall be sealed by a Professional Engineer licensed in the Province of Ontario.

PART 4 - MEASUREMENT AND PAYMENT

4.1 MEASUREMENT

- .1 No Measurement of Tunnel Liner Plate will be made.

4.2 PAYMENT

- .1 Payment for the Tunnel Liner Plate will be made at the Lump sum price bid for "Tunnel Plate Liner", as outlined in the Schedule of Quantities and Prices, and shall be full compensation for all labour, equipment, and material required to complete the work of this section.

*****END OF SECTION*****

“Appendix B”

