Corporate Finance Department
Purchasing Division

Tender 220-2024 ADDENDUM 4

CENTREPORT SOUTH REGIONAL WATER AND WASTEWATER SERVCING – PHASE 1A CONTRACT 4A FEEDER MAIN

ISSUED: May 16, 2024
BY: Tristan Eldridge
TELEPHONE NO. 204 896 1209

URGENT

PLEASE FORWARD THIS DOCUMENT TO WHOEVER IS IN POSSESSION OF THE BID/PROPOSAL

THIS ADDENDUM SHALL BE INCORPORATED INTO THE BID/PROPOSAL AND SHALL FORM A PART OF THE CONTRACT DOCUMENTS

Template Version: Add 2024-02-01

Please note the following and attached changes, corrections, additions, deletions, information and/or instructions in connection with the Bid/Proposal, and be governed accordingly. Failure to acknowledge receipt of this Addendum in Paragraph 10 of Form A: Bid/Proposal may render your Bid/Proposal non-responsive.

FORM B: PRICES

Replace: Tender 220-2024 Form B: Prices with Tender 220-2024 Addendum 4 - Form B: Prices. The following is a summary of changes incorporated in the replacement Bid/Proposal Submission:

Form B(R2): Added E Specification Sections for Item A3 (e), revised Item C3 (b)

Page numbering on some forms may be changed as a result.

PART B – BIDDING PROCEDURES

Add: B13.8 (c) Auger boring with an SBU/RBU installation:

(i) The operator shall have auger boring with an SBU/RBU experience as an operator on at least three successful projects using the same equipment required for this project.

(ii) A detailed description of projects on which this system has been successfully used including the names, addresses and telephone numbers of owner's representatives for these projects as well as length, diameter and pipe material used.

PART D – SUPPLEMENTAL CONDITIONS

Add: D7.1 (v) **"Auger Boring with a Rock Boring Unit/Small Boring Unit"** means a small boring unit (SBU) or rock boring unit (RBU) which consists of a steel frame and cutting face that is welded to a steel casing pipe and propelled forward by a jacking system in the launch shaft. In harder formations such as bedrock, the SBU/RBU cutting face breaks up the material and passes it into the casing. The cutting face includes rollers and cutters designed to cut through hard, dense material, crush it and then remove it from the face. Excavation is achieved by an auger that pulls the material from the face through the casing to the launch shaft.

Revise: D23.1 (a) to read To ensure no conflict between this contract and Contract 2A (Force Main), construction of the 150 mm PVC force main on the west side of Sturgeon Road, as shown on Drawings 13434 to 13436 must be completed by December 1, 2024.

PART E – SPECIFICATIONS

Add: E4.2.4 A land acknowledgement must be included as part of the daily safety meeting before work commences, as described in the HRPP.

Add: E4.2.5 The HRPP included in Appendix C is a draft and is not formally approved by HRB. A finalized document will be provided to the Contractor prior to Commencement.

Add: E10.1 (b) Sturgeon Road is a Regional Street and a designated trucking route. It is a priority to minimize the impact of construction activities related to the Work required to complete this contract.

Add: E10.1 (c) A conceptual traffic management plan (included in Appendix F) has been developed for use in planning traffic control for this Contract.

a) The traffic management plan includes control measures on Sturgeon Road and Saskatchewan Avenue.

b) Traffic management figures have been prepared for the development of two (2) key phases of the Work.:

(i) Phase 1: Installation of cased feeder main pipe by open cut methods through the southbound lanes of Sturgeon Road.

(ii) Phase 2: Installation of cased feeder main pipe by open cut methods through the northbound lanes of Sturgeon Road.

c) The concept plan has not been formally approved by the City's Traffic Services Department and requires a final review by their department.

d) Any modifications to this plan should be submitted to the Contract Administrator for approval minimum 15 days prior to starting the Work.

e) Additional traffic management plans may be required for other aspects of the project. The below traffic requirements must be adhered to within these traffic management plans.

Add: E10.2.1 (b) City of Winnipeg Traffic Services to supply and install detour signage and advanced information signage as required.

Revise: E10.4.1 to read Regional Streets impacted by the Work will include:

(a) Saskatchewan Avenue (West of Sturgeon Road):

(i) No lane closures permitted.

(b) Silver Avenue:

(i) Maintain minimum one lane for vehicular access in either direction for the duration of the project.

(c) Sturgeon Access:

(i) No lane closures permitted.

(d) Sturgeon Road (South of Sturgeon Access):

(i) Work for the open cut installation of cased feeder main piping beneath Sturgeon Road is described in two phases, one phase for each direction of travel.

(ii) The traffic management plan included in Appendix F shall be adhered to when work the open cut work is being completed.

(iii) Phase 1: Closure of Southbound Sturgeon Road travel lanes at Saskatchewan Avenue

- Sturgeon Road southbound traffic will be prohibited through the Saskatchewan Avenue intersection.
- Sturgeon Road southbound right and left turns will be permitted at Saskatchewan Avenue.

- Saskatchewan Avenue westbound left turn onto southbound Sturgeon Road will be prohibited.

(iv) Phase 2: Closure of Northbound Sturgeon Road travel lanes at Saskatchewan Avenue

- Sturgeon Road northbound traffic will be prohibited from 1200 Sturgeon Road up to Saskatchewan Avenue.
- Road Closed signage with No Exit tabs will be installed at the Sturgeon Road/Murray Park Road Roundabout north exit and bypass lane. Traffic will be permitted to travel on northbound Sturgeon Road up to 1200 Sturgeon Road.

Revise: E30.3.1 to read

Installation of steel casing pipe shall be by down the hole hammer (DTH) or microtunnelling or auger boring with an SBU/RBU in accordance with E31, E32 and E51.

Add: E36.1 (a)(iii)

The following is a list of spool pieces that are to be supplied and installed within the chambers shown on the Drawings:

i. 750 mm diameter spool pieces for both Valve Chambers 1 & 2 to either be installed in place of the Provisional 750 mm butterfly valves and/or used to replace the 750 mm butterfly valves to allow for pigging operations.

ii. 750 mm diameter spool piece in Offtake Structure 3 to replace the 750 mm butterfly valve to allow for pigging operations.

iii. 150 mm diameter spool piece within the Check Valve Chamber.

iv. Where spool pieces are intended for temporary use and are to be replaced by valves, the Contractor shall provide the spool pieces to City operations staff once the Work is complete.

v. All spool pieces shall be considered incidental to the chamber in which they are installed.

Add: E36.3.24

Stainless steel vertical pipe supports within the Air Gap Manhole shall conform to the requirements of the Pipe Anchor Strap Detail shown on City of Winnipeg Standard Construction Specification Detail SD-010D or approved equal in accordance with B7.

Add: E38.6.1 (g)(i)

Contractor is responsible to supply SIM card and coordinate set up of cellular services for the automatic flushing unit.

Revise: E38.9 to read

Commissioning, Training, Operation and Maintenance Manuals

(a) Commissioning:

(i) The automatic flushing unit shall be disinfected in accordance with AWWA standards.

(ii) Test all functions of the automatic flushing unit, including sensors, alarms programmable logic operations, schedule operation and manual operation of all control functions in the presence of the Contract Administrator.

i. Downstream force main piping shall be complete prior to commissioning of the flushing unit in order to properly test and commission the system.

(iii) Coordinate set points for all sensors and alarms with the Contract Administrator and the City's Water Planning group.

(iv) Coordinate with Section E41.

(b) Training:

(i) Trainees: City personnel selected for operating and maintaining this equipment.

i. Trainees will be available for training during later stages of construction for purposes of familiarization with systems. The Contractor shall coordinate times for training with the Contract Administrator.

ii. Two training sessions on separate days shall be provided to ensure that all necessary trainees can receive the training.

(ii) Contractor to provide instruction on the following:
  i. Start-up, operation, and shut-down of equipment, components, and systems.
  ii. Control features, reasons for, results of, implications on associated systems of, adjustment of set points of control and safety devices.
  iii. Instructions on servicing, maintenance, and adjustment of systems, equipment and components.

(iii) Training to be sufficiently detailed and of an appropriate duration to ensure the trainees:
  i. Can provide safe, reliable, cost-effective operation of systems under all conditions.
  ii. Can provide effective on-going inspection, measurements of system performance.
  iii. Can apply proper preventive maintenance, diagnosis and trouble-shooting.
  iv. Has the ability to update documentation.

(iv) Training Materials
  i. Instructors to be responsible for content and quality.
  ii. Training materials to include:
    - "As-Built" Drawings.
    - Operating manual.
    - Maintenance manual.
    - Management manual.
  iii. Submit training manuals to the Contract Administrator for review and approval at least three (3) weeks prior to commissioning.
  iv. Training materials to be in a format that permits future training procedures to same degree of detail.

(v) Scheduling
  i. Include in Commissioning Plan time for training.

(vi) Contractor is responsible for:
  i. Implementation of training activities.
  ii. Coordination among instructors.
  iii. Quality of training and training materials.
  iv. The Contract Administrator will evaluate training and materials.
  v. Upon completion of training, provide written report, signed by instructors and witnessed by the Contract Administrator.

(vii) Training Content
  i. Training to include demonstrations by Instructors using the installed equipment and systems.
  ii. Content includes:
    - Functional requirements.
    - System philosophy, limitations of systems, and emergency procedures.
    - Review of system layout, equipment, components, and controls.
    - Equipment and system start-up, operation, monitoring, servicing, maintenance, and shut-down procedures.
    - System operating sequences, including step-by-step directions for starting up, shut-down, operation of valves, switches, adjustment of control settings, and emergency procedures.
    - Maintenance and servicing.

- Trouble-shooting diagnosis.
- Interaction among systems during integrated operation.
- Review of operation and maintenance materials.

iii. Provide specialized training as specified in relevant sections of the Specifications.

(c) Operation and Maintenance Manuals:

(i) An electronic draft copy of the operation and maintenance manuals shall be submitted (word version, if available) two (2) weeks prior to Substantial Performance of the Work for review and comments. Submission of individual data will not be accepted unless directed by the City. Make changes and incorporate the Contract Administrator's review comments as required and re-submit as directed by the Contract Administrator.

(ii) After review and acceptance by the City, five (5) hard copies and one electronic (PDF) copy of the final operation and maintenance manuals shall be submitted. The final electronic copy shall be provided on a flash memory drive.

(iii) Prepare operation and maintenance manuals using personnel experienced in maintenance and operation of described products.

(iv) Operation and maintenance instructions and technical data to be sufficiently detailed with respect to design elements, construction features, component function, correct installation procedure, and maintenance requirements to permit effective start-up, operation, maintenance, repair, modification, extension, and expansion of any portion or feature of installation. Technical data to be in the form of approved Shop Drawings, product data, supplemented by bulletins, component illustrations, exploded views, technical descriptions of items, and parts lists.

(v) For the guidance of the City's operation and maintenance personnel, the Contractor shall prepare operation and maintenance manuals for the Work, describing in detail the construction of each part of the Work and the recommended procedure for operation, servicing, and maintenance.

(vi) All instructions in these operation and maintenance manuals shall be in simple language to guide the City in the proper operation and maintenance of this installation.

(vii) Format

i. Organize data as instructional manual.

ii. Binders: vinyl, hard covered, 3 'D' ring, loose leaf, 8.5" by 11" with spine and face pockets.

iii. When multiple binders are used, correlate data into related consistent groupings. Identify contents of each binder on spine and face.

iv. Cover: identify each binder with title sheet labelled "Operation and Maintenance Instructions", and containing project name and date, facilities covered in the manual, City's Contract number, the name and address of the Contractor, and the issue date.

v. Arrange content by Division and Section numbers and sequence of Table of Contents.

vi. Provide tabbed fly leaf for each separate product and system, with typed description of product and major component parts of equipment.

vii. Text: manufacturer's printed data or type written data.

viii. Drawings: provide with reinforced punched binder tab. Bind in with text; fold larger drawings to size of text pages.

(viii) Contents

i. For each operation and maintenance manual volume, provide an overall title sheet that includes:

- The title "Operation and Maintenance Instructions";

- Project name and date;
- Facilities covered in the manual;
- City's Contract number;

ii. Addresses and telephone numbers of Consultant and Contractor with name of responsible parties; and

iii. Schedule of products and systems, indexed to content of volume;

iv. For each operation and maintenance manual volume, provide an overall list of contents which includes the contents for all the operation and maintenance manual volumes.

v. In addition to operation and maintenance information required in the individual Specification sections, include:

- Brochures/catalogue excerpts of all components of the Work.
- Product data: mark each sheet to identify specific products and component parts, and data applicable to installation; delete inapplicable information.
- Documentation of all test results.
- Complete set of equipment and assembly drawings.

vi. Installation, start-up, individual equipment operation and maintenance manuals.

vii. Shop Drawings and cutsheets of all equipment and materials.

viii. Do not utilize the cutsheet and Shop Drawing submittals that were sent to the Contract Administrator for review as these may contain inaccurate information and markups. Only provide cutsheets and Shop Drawings representing the final materials and equipment supplied, without any markups from the Contract Administrator.

ix. For generic cutsheets and Shop Drawings that list multiple model numbers or configurations, place a rectangle around the specific model that was supplied and cross out other models.

x. Sections for the record Drawings and as-built Drawings of all installations. Drafted record Drawings and as-built Drawings of size 432x279 mm (11 x 17") will be inserted by the Contract Administrator, based on the as-built Drawings marked up by the Contractor.

xi. Names, addresses, and telephone numbers of all major Subcontractors and suppliers.

xii. Certificate of Inspection from the inspection authority.

xiii. Testing and commissioning documentation.

xiv. Warranty certificate, signed and dated.

xv. Written process narratives outlining the programming of the PLC systems for individual processes or systems.

xvi. Final instrumentation set points including but not limited to:

- Units
- Scale
- Alarm points
- 4-20 mA settings

xvii. Logical sequence of instructions for each procedure, incorporating manufacturer's instructions.

xviii. General catalog data for the operations and maintenance manual is unacceptable. If manufacturer's specification sheets are generalized in any way, they shall be clearly marked to show exactly which item has been supplied, and the project designation for that item (e.g., SF-Y601) is to be noted on manufacturer's specification sheet which includes all

details for this unit, including complete model number, serial number, and construction and performance data.

(ix) Equipment and Systems

i. For each item of equipment and each system include description of unit or system, and component parts.
- Give function, normal operation characteristics, and limiting conditions.
- Include performance curves, with engineering data and tests, and complete nomenclature and commercial number of replaceable parts.

ii. Panel board circuit directories: provide electrical service characteristics, controls, and communications.

iii. Include installed colour coded wiring diagrams.

iv. Operating Procedures: include start-up, break-in, and routine normal operating instructions and sequences.
- Include regulation, control, stopping, shut-down, and emergency instructions.
- Include summer, winter, and any special operating instructions.

v. Maintenance Requirements: include routine procedures and guide for trouble- shooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.

vi. Provide servicing and lubrication schedule, and list of lubricants required.

vii. Include manufacturer's printed operation and maintenance instructions.

viii. Include sequence of operation by controls manufacturer.

ix. Provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.

x. Provide installed control diagrams by controls manufacturer.

xi. Provide Contractor's co-ordination drawings, with installed colour coded piping diagrams.

xii. Provide charts of valve tag numbers, with location and function of each valve, keyed to flow and control diagrams.

xiii. Provide list of original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage.

Revise: E38.10 (a) to read Supply and installation of Automatic Flushing Unit will not be measured and will be paid for at the Lump Sum Price for “Automatic Flushing Unit” which shall be payment in full for supply all materials and performing all operations described herein, including supply and placement of all granular and concrete materials for concrete base pad, all internal and external flushing unit components, commissioning, training, operation and maintenance manuals and all other items incidental to the Work. Note: 50 mm service piping outside of the unit shall be paid for in accordance with Section E27.

Add: E51 Trenchless CPKC Railway Crossing – Auger Boring with Small Boring Unit Install of Steel Casings

E51.1 Description

(a) This Section includes the minimum requirements for the installation of the steel encasement pipe by auger boring with a small boring unit (SBU) or rock boring unit (RBU) for the Trenchless CPKC Railway Crossing.

E51.2 General

(a) Qualifications: The Contractor shall submit the qualifications for the equipment operator as required in B13.

(b) SBU/RBU assisted auger boring work plan:

(i) Submit a detailed description of the casing installation procedure at least twenty (20) working days prior to the scheduled mobilization for the crossing. The equipment selected by the contractor shall be compatible with the geologic conditions described within the geotechnical investigation. The Contractor is solely responsible for evaluating the ground conditions and ensuring the appropriate equipment and installations procedures are employed during the work. The work plan shall include:

.1 Description of the tooling that will be used to excavate the materials identified in the Geotechnical Report and SBU/RBU specifications from the manufacturer.

.2 Procedure for personnel access into the casing pipe for the purpose of SBU/RBU stabilizer pad adjustments or mid-drive tooling changes.

.3 Frequency of planned accesses and adjustments to ensure line and grade and prevent cutterhead wobbling.

.4 Frequency of planned accesses to change/replace tooling.

.5 Description of the support of excavation system including thrust walls.

.6 Site layout plan including locations and dimensions of all trenchless working pits.

.7 Working pit excavation Shop Drawings detailing support structures or alternative methods for stabilizing the walls. Support structure Shop Drawings and specifications are required to be authenticated by a professional engineer registered to practice in the Province of Manitoba, as required by Manitoba OH&S Legislation.

.8 Groundwater management plan for working pit excavations.

.9 Casing pipe jointing procedure, including welding procedure data sheets (WPDSs) and/or welding procedure specifications (WPS) to CSA W47.1.

.10 Welder qualifications.

.11 Carrier pipe insertion plan, including carrier pipe jointing procedures and mitigation strategies to limit carrier pipe joint damage and over-insertion/over-belling (where applicable).

.12 Contact grout mix design and grouting plan including injection port (locations, type, frequency/spacing, and closure details), and injection pressures.

.13 Settlement monitoring plan.

.14 Contingency procedures to address the following:

.1 Inadvertent utility strikes, including power, natural gas, water, sewer, or telecommunication lines.

.2 Obstruction, inability to advance, or damaged tooling/equipment.

.3 Unexpected ground conditions.

.4 Deviation from the design line and grade exceeding the specified tolerances.

.5 Ground movement exceeding the specified tolerances.

.15 Schedule of the work including sequence of working pit excavations, casing pipe installation, carrier pipe insertion, contact grouting (where applicable), backfill grouting (if specified), and working pit backfill.

(ii) Product Data:

.1 Submit mill test certificates/mill test reports for the casing pipe steel.

.2 Submit manufacturer's instructions, printed product literature and data sheets for carrier pipes, casing spacers, casing end seals, joint restraint systems, and working pit backfill materials.

(c) The Contractor shall be responsible for the auger boring with SBU/RBU method and equipment. The Contractor shall confirm that augering systems will be of sufficient capacity to successfully complete the installation taking into consideration the installation length, product type and diameter, and ground and groundwater conditions that can be reasonably foreseen. The Contractor shall confirm that the SBU and selected tooling will be of sufficient capacity to successfully complete the installation taking into consideration the installation length, diameter, and ground and groundwater conditions that can be reasonable foreseen.

51.3 Closeout Submittals

(a) Redline Drawings:

(i) Submit final surveyed information noting the casing end locations with northing, easting, and invert elevations.

(ii) Contractor shall indicate any horizontal or vertical deviations between the design line and grade and the actual installation in red colored ink.

(b) Field Notes:

(i) A daily logbook must be kept for all installations and submitted upon crossing completion. The daily logbook shall include, at a minimum:

(ii) The position of the casing pipe in relation to the design line and grade.

(iii) The date, starting time, and finish time for each casing pipe segment installed.

(iv) Advance rates.

(v) Jacking forces strokes per minute.

(vi) Quantity and type of lubrication, if used.

(vii) Quantity of spoil excavated.

(viii) Quantity of contact grout, if used, per port, and locations of ports.

(ix) Settlement monitoring survey results.

E51.4 Materials

(a) Steel Casing Pipe

(i) Steel Casing Pipe as per Section E30

(b) Carrier Pipe

(i) Carrier pipe as per Section E30

(c) Casing Spacers

(i) Casing Spacers as per Section E30

(d) End Seals

(i) End Seals as per Section E30

(e) Contact and Backfill Grouts

(i) Compressive Strength: minimum 2 MPa at 28-days, unless specified elsewhere.

(ii) Portland cement: to CSA A3000, Type HS, low heat of hydration.

(iii) Water: to CSA A23.1.

(iv) Aggregates: to CSA A23.1, normal-density fine aggregates.

(v) Admixtures: subject to the approval of the Engineer.

(f) Casing Pipe Bedding and Surround Material

(i) Flowable cement-stabilized fill to CW 2160.

(g) Working Pit Backfill Material

(i) Flowable cement-stabilized fill to CW 2160.

(h) Crossing Warning Signs

(i) Warning signs to CSA Z662 or local requirements, whichever is more stringent.

E31.5 Construction Methods

(a) Pre-Commencement

(i) All subsurface utilities within 25 m of the proposed alignment must be identified and location marked on the surface. Owners of subsurface utilities within 25 m of the proposed alignment must be notified of the impending work through Click Before You Dig Manitoba or directly if not a member of the service.

(ii) Contractor to daylight and protect utility crossings in accordance with the relevant crossing agreements.

(b) Working Pit Excavations

(i) Do excavation Work in accordance with CW 2030 and all relevant Manitoba OH&S Legislation.

(ii) Working pit dimensions and means of wall support shall be determined by the Contractor based on the site conditions and constraints, anticipated ground and groundwater conditions, and the proposed trenchless installation equipment.

(iii) Working pit dimensions shall conform to constraints specified on the Drawings.

(iv) Support structures shall be designed and authenticated by a professional engineer registered to practice in the Province of Manitoba, as required by Manitoba OH&S Legislation and E20.

(v) The Contractor shall manage the inflow of groundwater and surface water as required to keep working pits free of water during the performance of the work.

(c) SBU/RBU Auger Boring Casing Installation

(i) The Engineer must be notified 48 hours in advance of starting work. Trenchless crossings shall not begin until the Engineer is present at the job site and agrees that proper preparations for the operation have been made. The Engineer's approval for beginning the installation shall in no way relieve the Contractor of the ultimate responsibility for the satisfactory completion of the work as authorized under the Contract.

(ii) The Contractor is responsible to establish and use benchmarks to furnish and maintain all reference lines and grades for any guidance systems used and is fully responsible for the accuracy of the work and any corrections. Guidance systems shall be mounted independently from the thrust block and jacking frame.

(iii) Install casing pipe as required to satisfy the line and grade of the carrier pipe as shown on the Drawings, the tolerance for line shall be ± 100 mm horizontal deviation and the tolerance for grade shall be ± 100 mm vertical deviation.

(iv) If the casing pipe installation does not meet the specified tolerances for line and grade, the Contractor shall correct the installation including any necessary redesign

of the pipeline or structures and acquisition of necessary easements. Corrective work shall be completed at no additional cost to the Owner and is subject to approval by the Engineer.

(v) Trenchless installations shall be executed such that settlement and/or heave is minimized, the in-place steel casing shall have full bearing against earth, and no voids are left in any portion of the Work.

(vi) The Contractor shall monitor spoil material, quantity, and consistency, and make suitable changes to the trenchless installation method to control ground movements and minimize over excavation as required.

(vii) Spoil material from the trenchless operations shall be disposed of off-site by the Contractor at an appropriate facility.

(viii) Spoil material demonstrating unexpected ground conditions must be stored on site for review by the Engineer.

(ix) The Contractor shall monitor jacking and ensure that installation forces remain below the axial capacity of the casing pipe and welded pipe joints.

(x) The Contractor is responsible for the inspection of all welds. Support the pipe segments in the working pit and tack weld as required to ensure a straight joint before full circumferential welding. Complete welding in accordance with the submitted WPS and/or WPDSs.

(xi) On completion of trenchless crossings, contact grout the annular space between the casing pipe and the ground and any voids outside the casing pipe.

(xii) If it is necessary to abandon a crossing, the casing and any overcut shall be filled with grout. Equipment that is not internally retrievable in locations where surface intervention/rescue is not permitted will be abandoned in place.

(d) Carrier Pipe Insertion

(i) Handle and join carrier pipes in accordance with CW 2110 and E23.

(ii) Use approved blocking method to guide carrier pipe into casing in true alignment.

(iii) Place casing spacers within 0.3 m of carrier pipe joints or immediately outside of external mechanical joint restraints (if used).

(iv) Spacers for the remaining pipe barrel shall not exceed a separation of 1.8 m, or less, as based on manufacturer’s recommendations for carrier pipe support.

(v) Place casing spacers within 0.3 m of each end of the casing.

(vi) Clearance between casing spacer risers and the casing pipe shall be a maximum of 25 mm when carrier pipe is in position in a centered and restrained spacer configuration.

(vii) Join carrier pipes one length at a time outside of the casing. Push or pull the carrier pipe into position.

.1 Prevent over-insertion/over-belling of the carrier pipe joints if the pipe is pushed into position.

.2 Prevent separation of the carrier pipe joints if the pipe is pulled into position.

(viii) Place end seals on each end of the casing.

(ix) Manufacturer’s recommendations for installation shall be followed where applicable.

(e) Working Pit Backfill

(i) Backfill working pits with flowable cement-stabilized fill.

(ii) The Contractor shall implement measures to avoid flotation of the carrier pipe within the working pit; measures may include placement of unshrinkable fill in small lifts, ballasting/weighting of the carrier pipe, and/or anchoring/blocking of carrier pipe.

(f) Surface Restoration

(i) After backfilling working pits, restore the ground surface as indicated on the Drawings.

E31.6 Measurement and Payment

(a) There shall be no separate measurement or payment for the work associated with Auger Boring with Small Boring Unit Install of Steel Casings. Payment for Auger Boring with Small Boring Unit Install of Steel Casings and all associated works shall be included in the price for Trenchless CPKC Railway Crossing.

APPENDICES

Replace: Appendix_A Geotechnical Data Report

The following is a summary of changes incorporated in the replacement Appendix:

Grounding water monitoring data has been updated within Table 3-2.

Bidder's selection of methodology and equipment for the Trenchless CPKC Railway Crossing shall consider this data.

Replace: Appendix_E Commissioning Plan

Add: Appendix_F Conceptual Traffic Management Plan

DRAWINGS

Replace: Tender 220-2024 _Drawing_1-0798F-C0018-001 with Tender 220-2024 _Addendum_4 _Drawing 1-0798F-C0018-001

Tender 220-2024 _Drawing_1-0798F-C0019-001 with Tender 220-2024 _Addendum_4 _Drawing 1-0798F-C0019-001

Tender 220-2024 _Drawing_1-0798F-C0020-001 with Tender 220-2024 _Addendum_4 _Drawing 1-0798F-C0020-001

Tender 220-2024 _Drawing_1-0798F-S0001-001 with Tender 220-2024 _Addendum_4 _Drawing 1-0798F-S0001-001

Tender 220-2024 _Drawing_1-0798F-S0002-001 with Tender 220-2024 _Addendum_4 _Drawing 1-0798F-S0002-001

Tender 220-2024 _Drawing_1-0798F-S0003-001 with Tender 220-2024 _Addendum_4 _Drawing 1-0798F-S0003-001

Tender 220-2024 _Drawing_1-0798F-S0004-001 with Tender 220-2024 _Addendum_4 _Drawing 1-0798F-S0004-001

QUESTIONS AND ANSWERS

Q1: Drawing 1-0798F-S0004-001 Section E shows a 400 mm deep sump in the Offtake Structures, but all other drawings indicate a 300 mm deep sump. Please clarify which is correct.

A1: The detail on Drawing 1-0798F-S0004-001 Section E shows the correct dimension, offtake structure sumps shall be 400 mm deep.

Q2: Drawing 1-0798F-S0001-001 Concrete Note 11 states “Waterstop to be 150mm Type 2 by Durajoint”. Please clarify whether Type 2 (100mm wide) or Type 5 (150mm wide) is required.

A2: Waterstops are to be Durajoint Type 2 (100mm wide).

Q3: For microtunnelling installation of the CPKC Railway Crossing, is manned entry and face access required?

A3: No, face access is not required for microtunnelling installation.

Q4: In regard to Specification E37.3.1, I’d like to request that the Bermad C30 Combination Air Valve be approved as an equal to the Valmatic VMC-38 air release valve.

A4: The Bermad C30-C (ductile iron, fusion bonded epoxy coated body) is approved as an equal to the Valmatic VMC-38.