



301-2024 ADDENDUM 4

CONSTRUCTION OF A NEW WASTEWATER LIFT STATION – CENTREPORT SOUTH REGIONAL WATER AND WASTEWATER SERVICING PHASE 1A (CONTRACT 1A)

URGENT

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

ISSUED: July 29, 2024
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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: 301-2024 Form B: Prices with 301-2024 Addendum 4 - Form B: Prices. The following is a summary of changes incorporated in the replacement Bid/Proposal Submission:

Form B(R1): Item B4 – Revised to include 50 mm SCH 80 PVC piping.

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

PART B – BIDDING PROCEDURES

Revise: B2.1 to read: The Submission Deadline is 12:00 noon Winnipeg time, August 9, 2024.

PART D – SUPPLEMENTAL CONDITIONS

Delete: D14.1

Delete: D14.2

PART E – SPECIFICATIONS

Add: E44 Blasting for Shaft Excavation

E44.1 General

- (a) The Work to be performed under this Special Provision shall consist of the design, supply of all labour, materials and plant, and performing all Work necessary for performing, monitoring, and recording blasting operations, as specified herein, or otherwise required for proper completion of the Work.
- (b) The Contractor will be responsible to design and perform blasting using means, methods, and material that ensures that no damage occurs to existing or new structures.
- (c) The Contractor will be responsible to conduct any necessary repairs due to damages that have resulted because of blasting works.

- (d) All blasting will be in accordance with a blast plan, and will be designed by an experienced professional blasting engineer licensed to practice in Manitoba.

E44.2 Materials

- (a) All explosive materials for use in bedrock excavation shall be low explosive cartridges or approved equivalent subject to review by the Contract Administrator.
- (b) No bulk Ammonium Nitrate and Fuel Oil (ANFO) shall be allowed.
- (c) Explosives, blasting agents, and initiating devices shall be boxed with date codes to allow the Contract Administrator and/or the Contractor's QC inspector to determine the age of the materials.
- (d) All explosives and initiating devices used in the Work shall be aged less than one year from the date of manufacture.
- (e) If in the opinion of the Contract Administrator, a blasting product appears to be in a damaged or deteriorated condition, the suspect product shall not be used until its quality can be determined by the Contractor. Products that are determined to be damaged or deteriorated shall be removed from the site immediately.
- (f) All blasting products, including products in partially used boxes or containers shall be delivered to the Site in their original packaging and manufacturer's code dates shall be clearly visible.

E44.3 Equipment

- (a) Detonation Apparatus
 - (i) Detonation apparatus shall be of the type approved by the detonation system manufacturer for the type of blasting operation to be undertaken. All apparatus shall be kept in working order and shall be thoroughly inspected before and after each blasting operation.
- (b) Monitoring Equipment
 - (i) All monitoring equipment shall be capable of measuring and recording ground vibration Peak Particle Velocity (PPV) up to 200 mm/s in the vertical, transverse, and radial directions. The equipment shall have been calibrated within the six months prior to commencement of any blasting operations. Proof of calibration shall be submitted to the Contract Administrator prior to commencement of any monitoring operations.

E44.4 SUBMITTALS

- (a) The Contractor shall submit in writing to the Contract Administrator for review, a Work Plan of its proposed methods and sequence of excavating including control blasting procedures as necessary, together with the pertinent data for each stage of each area.
- (b) At least two weeks prior to each blast, the Contractor shall submit for review a Work Plan outlining all complete details of the blast to the Contract Administrator. Such data shall include:
 - (i) Drawings showing the location, depth and area of each blast;
 - (ii) Diameter, depth, pattern and inclination of blast holes;
 - (iii) The type, strength, amount, column load and distribution of explosives to be used per hole, per delay and per blast;
 - (iv) The sequence and pattern of delays and the description and purposes of any special methods to be adopted;
- (c) The plan shall demonstrate how the blast will respect the vibration limits specified herein, and shall identify the location of at least three seismographs to monitor and record the vibration data from the blast. The Work Plan shall be developed and sealed by a qualified professional blasting engineer hired by the Contractor and licensed to practice in the Province of Manitoba.
- (d) The Contractor shall submit to the Contract Administrator blasting permits, approvals, and agreements required for the use of explosives or to carry out blasting operations.
- (e) The Contractor shall submit to the Contract Administrator proof of calibration of the monitoring equipment prior to commencement of any monitoring operations.
- (f) Blast plan and calculations shall be sealed by a professional engineer.

- (g) The designated blaster must notify the Contract Administrator twenty four hours notice prior to loading.
- (h) A Blast Details Report including layout must be filed prior to every blast.
- (i) The designated blaster must submit a copy of their Manitoba Workplace Safety and Health Blasters license prior to blasting.
- (j) If, in a specific area, a Work Plan which has been previously adopted does not produce rock conditions in accordance with the requirements of these Provisions, the Contractor shall submit a revised Work Plan to the Engineer before continuing excavation in adjacent areas.

E44.5 CONSTRUCTION METHODS

- (a) General – The contractor shall perform the Work in accordance with the most current version of the following standards
 - (i) CSA S107.54 Procedure for Measurement of Sound and Vibration Due to Blasting Operations
 - (ii) Natural Resources Canada Explosives Act (R.S.C., 1985, c. E-17)
 - (iii) Natural Resources Canada Explosives Regulation 2013 (SOR/2013-211)
 - (iv) Government of Canada, Transportation of Dangerous Goods Act, 1992 (S.C. 1992, c. 34)
 - (v) Government of Canada, Transportation of Dangerous Goods Regulations including Amendment SOR/2019-101
- (b) The Lift Station Contractor shall stage and coordinate any blasting work with the Interceptor Contractor (Tender 990-2023B) to ensure no disruptions that could lead to delay claims to work occurring in the adjacent construction contract.
- (c) All excavation by blasting shall be performed in accordance with the best modern practice, using methods and techniques that will reduce overbreak to a minimum beyond the neat lines and grades shown on the Drawings or as directed by the Contract Administrator, and which will preserve, in the soundest possible condition, the rock beyond these lines and grades. Shattering or splitting of rock, or the opening up of seams in rock not required to be excavated, shall be prevented.
- (d) When the use of explosive is necessary to perform the Work, the Contractor shall observe the utmost care as to not endanger life and property. Whenever directed, the number and size of charges shall be reduced.
- (e) Charges shall be subdivided into a series of smaller discrete detonations or explosions using time-delay detonation initiators (a procedure know as decking) to reduce the overall detonation to a series of smaller discrete detonations or explosions.
- (f) Loading of holes and blasting must be overseen by the designated blaster licensed by Manitoba Workplace Safety and Health and Province of Manitoba.
- (g) Excavated rock bed by blasting shall be level, sound, free of any rocks or fragments, earth or debris which would be detrimental to lift station installation.
- (h) The Contractor shall be responsible for the safety of all excavations performed until the final acceptance of the Work and shall perform all remedial work required in excavations through the duration of the Contract to ensure that all excavated rock surfaces are maintained in a stable and safe condition.

E44.6 Monitoring of Blasting

- (a) The Contractor shall monitor all blasting operations utilizing seismographs, survey, and other equipment or methods as deemed necessary. The following measures shall be employed by the Contractor and reviewed by the Contract Administrator.
- (b) A pre-construction video inspection of the visible portions of the shaft excavation completed prior to blasting on site.
- (c) A minimum of three (3) Seismographic event recorders, capable of measuring PPV, and frequency, installed at strategic locations around the shaft and near the existing infrastructure to monitor vibration cause by rock blasting
 - (i) A shallow burial high voltage hydropower line exists adjacent to the site as shown on the Drawings. The approximate horizontal is offset distance from the proposed shaft location is 10 m. At a minimum, vibration monitoring shall be performed at surface within 1 m of the hydropower line.

- (d) Post-blast inspection and review of the monitoring results, with incorporation into adjustments for subsequent blasts, as required.
- (e) The PPV shall not exceed 10 mm/s as measured at existing or newly constructed structure and on the ground surface within a 30 m radius from the shaft excavation work.
- (f) On the basis of the observations made of the structures after each blast, the limits specified herein may be revised by the Contract Administrator.
- (g) Utilization and Disposal
 - (i) All blasted excavation material shall be come the property of the Contractor and shall be removed from site by the Contractor.

E44.7 MEASUREMENT AND PAYMENT

- (a) Blasting required for shaft construction to complete the Work will be incidental to “Lift Station Shaft (incl. backfill)”. No additional payment will be made for supplying materials and performing all operations herein described and all other items incidental to the Work included in this Specification. Coordination with Manitoba Hydro as it relates to blasting in proximity of Hydro infrastructure will be considered incidental to this item. The Contractor is responsible for confirming with Manitoba Hydro if blasting is permitted within the distances required for hydro lines prior to commencing with blasting operations. No additional compensation will be provided to the contractor if Hydro does not permit blasting in the proximity of their infrastructure and excavation is required to be completed using other means.

Revise: E18.2.2.(b) to read: Depressurization can be considered to address basal heave and facility the excavation and foundations for the shafts.

Revise: E24.4.(a).(i) to read: The force main shall be constructed using AWWA C900 PVC DR 25 pipe, Sch 80 PVC piping is acceptable only for 50 mm PVC Valve Chamber Sump Discharge. An equivalent product may be used from the City of Winnipeg Approved Product list as per Section B8.

DRAWINGS

Replace: 301-2024_Drawing_1-0124L-A00043-002-R1 with 301-2024_Addendum_4-Drawing_1-0124L-A0002-002-R2

Replace: 301-2024_Drawing_1-0124L-B0006-001-R0 with 301-2024_Addendum_4-Drawing_1-0124L-B0006-001-R1

Replace: 301-2024_Drawing_1-0124L-C0004-001-R0 with 301-2024_Addendum_4-Drawing_1-0124L-C0004-001-R1

NMS SPECIFICATIONS

Section 09 67 23 – RESINOUS EPOXY FLOORING

Revise 2.1.5.1.1 to read: Material Basis: Stonhard Standard Primer, approved equals in accordance with B8 Sherwin Williams Duraplate 2300

Revise 2.1.5.2.1 to read: Material design basis: Stonclad GS; approved equal in accordance with B8 Resuflor 3561

Revise 2.1.5.2.1 to read: Material design basis: Stonkote GS4; approved equal in accordance with B8 Resuflor 3746

Add 2.1.5.4 Floor Patch Materials (if required) will be Sherwin Williams Duraplate 2300 or approved equal in accordance with B8.

Section 09 91 23 – INTERIOR PAINTING

Revise Section 1.2.1 to read: Prepare surfaces which are to be receive finish. Surfaces include gypsum board ceiling and concrete unit masonry.

Add 2.1.11 The following products have been allowed as approved equals per B8:
Doors, Frames and Drywall
Primer: Pro-Industrial Procryl Primer
Topcoat: Waterbased Urethane Alkyd Enamel

Misc. Metals and Crane Members
Primer and Topcoat: Macropoxy 646

CMU and Concrete
Primer and Topcoat: Macropoxy 646

Revise Section 3.4 Process, Mechanical and Electrical Equipment to read:

- .1 Refer to Process, Mechanical, and Electrical Sections with respect to painting and finishing requirements.
- .2 Finish paint primed equipment.
- .3 Replace identification markings on mechanical or electrical equipment when painted over or spattered.
- .4 Paint both sides and edges of plywood backboards for electrical equipment before installing backboards and before mounting equipment on them.
- .5 Paint all exposed exterior mechanical and electrical equipment that has not been factory finished.

Section 09 96 50 – GRAFFITI RESISTANT COATING

Revise 2.1.2 to read: Acceptable products: Fabrikem Fabrishield Paint Repellant PR-60 for stone; approved equal in accordance with B8 2K Waterbased Anti-Graffiti Coating Satin

Section 23 33 15 – DAMPERS - OPERATING

Add the following to Section 2.1 Outdoor Air and Exhaust Dampers

- .12 Acceptable Product: TAMCO 9000SC or approved equal in accordance with B8.
 - .1 Approved Equals: Alumavent 3900 series.

Section 23 34 00 – HVAC FANS

Add the following to Section 2.3 Centrifugal Fans

- .5 Acceptable Product: Greenheck SQ-VG or approved equal in accordance with B8.
 - .1 Approved Equals: Cook SQND-[XP/HP] VF.

Add the following to Section 2.4 In-Line Centrifugal Fans

- .3 Acceptable Product: Greenheck QEI, QEID-FJ or approved equal in accordance with B8.
 - .1 Approved Equals: Cook QMX.

Section 23 37 13 – DIFFUSERS, REGISTERS AND GRILLES

Add the following to section 2.4 Supply Grilles and Registers

- .5 Acceptable Product: Price 610 or approved equal in accordance with B8.
 - .1 Approved Equals: Nailor 51SH-O.

Add the following to Section 2.5 Return and Exhaust Grilles and Registers

- .5 Acceptable Product: Price 610Z or approved equal in accordance with B8.
 - .1 Approved Equals: Nailor 51FH-HD-O.

Section 23 37 20 – LOUVERS, INTAKES AND VENTS

Add the following to Section 2.4 Fixed Louvres – Aluminum

- .7 Refer to equipment schedule on Contract drawings for additional details.
- .8 Acceptable Product: Price DE439 or approved equal in accordance with B8.
 - .1 Approved Equals: Ventex 2435.

Section 23 82 16.14 – ELECTRIC RESISTANCE AIR COILS

Add the following to section 2.2 Open Coil Duct Heaters

- .7 Refer to equipment schedule on Contract drawings for additional details.
- .8 Acceptable Product: Price DF C100H or approved equal in accordance with B8.
 - .1 Approved Equals: Thermolec, Neptronic.

Section 26 05 34 CONDUITS, CONDUIT FASTENINGS AND CONDUIT FITTINGS

Revise Clause 2.1.1 to read: Superstructure Main Floor and lower level non-hazardous circuits: PVC.

Revise Clause 2.1.2 to read: Superstructure Main floor to wet well hazardous circuits: Rigid Aluminum (threaded)

Revise Clause 2.1.4 to read: Superstructure Main floor to valve chamber hazardous circuits: Rigid Aluminum (threaded)

Section 26 27 16 ELECTRICAL CABINETS AND ENCLOSURES

Revise 2.2.1 to read: 600V, 600A, 3 Phase, 4 Wire, 25kA (as indicated on drawings)

Revise 2.2.4 to read: Type 12 Enclosure

Add 2.2.12 Service entrance rated

Revise 2.3.1 to read: 600V, 600A, 3 Phase, 3 Wire, 25kA (as indicated on drawings)

Add 2.3.12 Provide additional enclosure attached to DP-L72 to allow for the installation of the load bank current transformers as indicated on drawings.

Revise 2.4.1 to read: 600V, 200HP, (as indicated on drawings)

Revise 2.4.3 to read: Type 12 Enclosure

Section 40 23 20 – PROCESS PIPING

Replace Section 2.4 Finish with the following:

- .1 All valve chamber carbon steel pipe, fittings, and flanges shall be liquid epoxy coated on the interior and exterior.
- .2 Liquid Epoxy Coatings
 - .1 Liquid epoxy coatings shall be shop-applied in accordance with AWWA C210. Holiday testing is required.

.2 All coatings shall be applied in a minimum of two (2) or more layers a minimum of 6mils dry film thickness for each coat. Final coating dry film thickness shall be minimum 18 mils or the thickness recommended by the manufacturer for immersion service, whichever is greater.

.3 Conform to manufacturer's requirements regarding:

.1 Surface preparation including sand blasting.

.2 Conditions under which coating system may be applied.

.3 Prime and final coat thicknesses.

.4 Acceptable Products:

.1 Primer: Devoe Bar Rust 236, two(2) coats, 6 mils DFT per coat.

.2 Finish: Devoe Devgrip 238, one(1) coat, 6 mils DFT per coat.

.3 Or approved equal in accordance with B8.

.3 Field applied coatings and touch-up for valve chamber piping shall be liquid epoxy.

.4 Contractor shall add additional flanged breaks as required to complete interior lining of pipe spools with elbows.

QUESTIONS AND ANSWERS

Q1: Please confirm if all new galvanized steel is to be painted, or if the intention is to have a galvanized finish?

A1: The intent is not to paint galvanized surfaces, but to leave them as galvanized finish.

Q2: What is the start date scheduled for this project?

A2: Per D22.3 the City intends to award this Contract by October 18, 2024.

Q3: Is there any prep and paint required in the dry well?

A3: No prep/paint is required in the dry well.

Q4: Section 40 05 59, Clause 2.1.8.1 Stem Guide states in part that "...the length to radius of gyration ratio (l/r) does not exceed 100." This requirement could double the number of stem guides. Can a gyration of 200 be used to reduce the number of stem guides.

A4: No, a gyration ratio (l/r) of 100 is required.

Q5: BOM on Dwg. 1-02L-A0043-002 indicates that a 120/240V Load Center is required for items #9 and items #30. Only Item #9 is shown in the layout. Is only (1) load center required?

A5: Only one load center (Item #9) is required. Item #30 is a duplicate and can be deleted. See revised drawing attached.

Q6: Will the Bearing Vibration Sensors (VT-L010-1, VT-L010-2, VT-L020-1, VT-L020-2) and Bearing Temperature Sensors (TE-L010-1, TE-L010-2, TE-L020-1, TE-L020-2) be provided by the motor/pump supplier?

A6: No, the pump/motor supplier is providing only mountings for these sensors.

Q7: As per the room finish schedule (sheet 16/120; 1-024L-B0006-001), the west wall calls for concrete block finish, will this be painted?

A7: The west wall is to be painted. See updated schedule as part of revised sheet 1-024L-B0006-01 attached herein.

Q8: Will the limestone cladding receive anti graffiti coating.

A8: Yes, see NMS Specification Section 09 96 50, Clause 3.3.1.

Q9: Specification Section 09 91 23 specifies exposed pipes, guard rails, conduits, boxes, hangers, brackets, collars, air ducts, baseboard heating cabinets, and colour banding to be painted. Which of these if not all will be specific to this project?

A9: Exposed pipes, guard rail, conduit, boxes, hangers, brackets, collars, air ducts, baseboard heating cabinets, and colour banding will not be required to be painted for this project. The specification has been updated as part of this addendum.

Q10: Specification Section 09 91 23 Item 1.2.1 refers to steel deck but the room finish schedule calls for GWB ceiling. Clarification is required.

A10: The Room Finish Schedule is correct, the GWB ceiling is to be painted. The steel deck and trusses are within the attic and will not require painting. The specification has been updated as part of this addendum.

Q11: Item B4 of Form B calls for 50 mm DR 25 PVC piping, 50 mm DR 25 PVC is not available, can this requirement be changed?

A11: Yes, Sch 80 PVC may be used. The Form B has been revised to reflect this change.

Q11: In appendix G – 2023 KGS group hydrogeological assessment memo item 4.2.2 Aquifer monitoring and aquifer testing – indicates that the pump test in PW23-02 at a rate of 5USgpm achieved a stable draw down of PW23-02 of 1.7m in 26 mins. To properly assess a dewatering plan for the project, what is the site variability that the contractor must consider from the data presented.

A11: The Contractor should expect variable aquifer conditions and aquifer conditions over the reach of the project may vary from the test given. The Contractor can refer to the following published studies available in the City of Winnipeg for additional information:

Baracos, A., Shields, D.H., and Kjartanson, B., 1983. Geological engineering report for urban development of Winnipeg. University of Manitoba.

Little J., 1974 (revised 1980). Province of Manitoba Groundwater Availability Map Series – Winnipeg Area (62-H). <https://www.gov.mb.ca/sd/research-data-and-maps/maps/index.html?wg=groundwater>