



THE CITY OF WINNIPEG

TENDER

TENDER NO. 54-2024

RENFREW OUTFALL GATE CHAMBER UPGRADES

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PART B - BIDDING PROCEDURES

B1. CONTRACT TITLE

B1.1 RENFREW OUTFALL GATE CHAMBER UPGRADES

B2. SUBMISSION DEADLINE

B2.1 The Submission Deadline is 12:00 noon Winnipeg time, April 3, 2024.

B2.2 The Contract Administrator or the Manager of Materials may extend the Submission Deadline by issuing an addendum at any time prior to the time and date specified in B2.1.

B3. SITE INVESTIGATION

B3.1 Further to C3.1, the Contract Administrator or an authorized representative will be available at the Site at 10:00 am on March 28, 2024 to provide Bidders access to the Site.

B3.2 The Bidder is advised that The Bidder is advised that entry any underground structure will not be permitted. Internal viewings will be conducted from the surface only.

B3.3 The Bidder shall not be entitled to rely on any information or interpretation received at the Site investigation unless that information or interpretation is the Bidder's direct observation, or is provided by the Contract Administrator in writing.

B3.4 The Bidder/Proponent is responsible for inspecting the Site, the nature of the Work to be done and all conditions that might affect their Bid/Proposal or their performance of the Work, and shall assume all risk for conditions existing or arising in the course of the Work which have been or could have been determined through such inspection

B4. ENQUIRIES

B4.1 All enquiries shall be directed to the Contract Administrator identified in D6.1.

B4.2 If the Bidder finds errors, discrepancies or omissions in the Tender, or is unsure of the meaning or intent of any provision therein, the Bidder shall notify the Contract Administrator of the error, discrepancy or omission, or request a clarification as to the meaning or intent of the provision at least five (5) Business Days prior to the Submission Deadline.

B4.3 Responses to enquiries which, in the sole judgment of the Contract Administrator, require a correction to or a clarification of the Tender will be provided by the Contract Administrator to all Bidders by issuing an addendum.

B4.4 Responses to enquiries which, in the sole judgment of the Contract Administrator, do not require a correction to or a clarification of the Tender will be provided by the Contract Administrator only to the Bidder who made the enquiry.

B4.5 The Bidder shall not be entitled to rely on any response or interpretation received pursuant to B4 unless that response or interpretation is provided by the Contract Administrator in writing.

B4.6 Any enquiries concerning submitting through MERX should be addressed to:
MERX Customer Support
Phone: 1-800-964-6379
Email: merx@merx.com

B5. CONFIDENTIALITY

B5.1 Information provided to a Bidder by the City or acquired by a Bidder by way of further enquiries or through investigation is confidential. Such information shall not be used or disclosed in any

way without the prior written authorization of the Contract Administrator. The use and disclosure of the confidential information shall not apply to information which:

- (a) was known to the Bidder before receipt hereof; or
- (b) becomes publicly known other than through the Bidder; or
- (c) is disclosed pursuant to the requirements of a governmental authority or judicial order.

B5.2 The Bidder shall not make any statement of fact or opinion regarding any aspect of the Tender to the media or any member of the public without the prior written authorization of the Contract Administrator.

B6. ADDENDA

B6.1 The Contract Administrator may, at any time prior to the Submission Deadline, issue addenda correcting errors, discrepancies or omissions in the Tender, or clarifying the meaning or intent of any provision therein.

B6.2 The Contract Administrator will issue each addendum at least two (2) Business Days prior to the Submission Deadline, or provide at least two (2) Business Days by extending the Submission Deadline.

B6.3 Addenda will be available on the MERX website at www.merx.com.

B6.4 The Bidder is responsible for ensuring that they have received all addenda and is advised to check the MERX website for addenda regularly and shortly before the Submission Deadline, as may be amended by addendum.

B6.5 The Bidder shall acknowledge receipt of each addendum in Paragraph 10 of Form A: Bid/Proposal. Failure to acknowledge receipt of an addendum may render a Bid non-responsive.

B6.6 Notwithstanding B4, enquiries related to an Addendum may be directed to the Contract Administrator indicated in D6.

B7. SUBSTITUTES

B7.1 The Work is based on the Plant, Materials and methods specified in the Tender.

B7.2 Substitutions shall not be allowed unless application has been made to and prior approval has been granted by the Contract Administrator in writing.

B7.3 Requests for approval of a substitute will not be considered unless received in writing by the Contract Administrator at least five (5) Business Days prior to the Submission Deadline.

B7.4 The Bidder shall ensure that any and all requests for approval of a substitute:

- (a) provide sufficient information and details to enable the Contract Administrator to determine the acceptability of the Plant, Material or method as either an approved equal or alternative;
- (b) identify any and all changes required in the applicable Work, and all changes to any other Work, which would become necessary to accommodate the substitute;
- (c) identify any anticipated cost or time savings that may be associated with the substitute;
- (d) certify that, in the case of a request for approval as an approved equal, the substitute will fully perform the functions called for by the general design, be of equal or superior substance to that specified, is suited to the same use and capable of performing the same function as that specified and can be incorporated into the Work, strictly in accordance with the proposed work schedule and the dates specified in the Supplemental Conditions for Substantial Performance and Total Performance;

- (e) certify that, in the case of a request for approval as an approved alternative, the substitute will adequately perform the functions called for by the general design, be similar in substance to that specified, is suited to the same use and capable of performing the same function as that specified and can be incorporated into the Work, strictly in accordance with the proposed work schedule and the dates specified in the Supplemental Conditions for Substantial Performance and Total Performance.
- B7.5 The Contract Administrator, after assessing the request for approval of a substitute, may in their sole discretion grant approval for the use of a substitute as an “approved equal” or as an “approved alternative”, or may refuse to grant approval of the substitute.
- B7.6 The Contract Administrator will provide a response in writing, at least two (2) Business Days prior to the Submission Deadline, to the Bidder who requested approval of the substitute.
- B7.7 The Contract Administrator will issue an Addendum, disclosing the approved materials, equipment, methods and products to all potential Bidders. The Bidder requesting and obtaining the approval of a substitute shall be responsible for disseminating information regarding the approval to any person or persons they wish to inform.
- B7.8 If the Contract Administrator approves a substitute as an “approved equal”, any Bidder may use the approved equal in place of the specified item.
- B7.9 If the Contract Administrator approves a substitute as an “approved alternative”, any Bidder bidding that approved alternative may base their Total Bid Price upon the specified item but may also indicate an alternative price based upon the approved alternative. Such alternatives will be evaluated in accordance with B18.
- B7.10 No later claim by the Contractor for an addition to the Total Bid Price because of any other changes in the Work necessitated by the use of an approved equal or an approved alternative will be considered.

B8. BID COMPONENTS

- B8.1 The Bid shall consist of the following components:
- (a) Form A: Bid/Proposal;
 - (b) Form B: Prices;
 - (c) Form G1: Bid Bond and Agreement to Bond.
- B8.2 All components of the Bid shall be fully completed or provided, and submitted by the Bidder no later than the Submission Deadline, with all required entries made clearly and completely.
- B8.3 The Bid shall be submitted electronically through MERX at www.merx.com.
- B8.4 Bids will **only** be accepted electronically through MERX.
- B8.5 Bidders are advised that inclusion of terms and conditions inconsistent with the Tender document, including the General Conditions, will be evaluated in accordance with B18.1(a).

B9. BID

- B9.1 The Bidder shall complete Form A: Bid/Proposal, making all required entries.
- B9.2 Paragraph 2 of Form A: Bid/Proposal shall be completed in accordance with the following requirements:
- (a) if the Bidder is a sole proprietor carrying on business in their own name, their name shall be inserted;
 - (b) if the Bidder is a partnership, the full name of the partnership shall be inserted;
 - (c) if the Bidder is a corporation, the full name of the corporation shall be inserted;

- (d) if the Bidder is carrying on business under a name other than their own, the business name and the name of every partner or corporation who is the owner of such business name shall be inserted.

B9.3 If a Bid is submitted jointly by two or more persons, each and all such persons shall identify themselves in accordance with B9.2.

B9.4 In Paragraph 3 of Form A: Bid/Proposal, the Bidder shall identify a contact person who is authorized to represent the Bidder for purposes of the Bid.

B9.5 Paragraph 13 of Form A: Bid/Proposal shall be signed in accordance with the following requirements:

- (a) if the Bidder is a sole proprietor carrying on business in their own name, it shall be signed by the Bidder;
- (b) if the Bidder is a partnership, it shall be signed by the partner or partners who have authority to sign for the partnership;
- (c) if the Bidder is a corporation, it shall be signed by their duly authorized officer or officers;
- (d) if the Bidder is carrying on business under a name other than their own, it shall be signed by the registered owner of the business name, or by the registered owner's authorized officials if the owner is a partnership or a corporation.

B9.6 The name and official capacity of all individuals signing Form A: Bid/Proposal should be entered below such signatures.

B9.7 If a Bid is submitted jointly by two or more persons, the word "Bidder" shall mean each and all such persons, and the undertakings, covenants and obligations of such joint Bidders in the Bid and the Contract, when awarded, shall be both joint and several.

B10. PRICES

B10.1 The Bidder shall state a price in Canadian funds for each item of the Work identified on Form B: Prices.

B10.1.1 Notwithstanding C12.2.3(c), prices on Form B: Prices shall not include the Manitoba Retail Sales Tax (MRST, also known as PST), which shall be extra where applicable.

B10.1.2 Prices stated on Form B: Prices shall not include any costs which may be incurred by the Contractor with respect to any applicable funding agreement obligations as outlined in D37. Any such costs shall be determined in accordance with D37.

B10.2 The quantities listed on Form B: Prices are to be considered approximate only. The City will use said quantities for the purpose of comparing Bids.

B10.3 The quantities for which payment will be made to the Contractor are to be determined by the Work actually performed and completed by the Contractor, to be measured as specified in the applicable Specifications.

B10.4 Payments to Non-Resident Contractors are subject to Non-Resident Withholding Tax pursuant to the Income Tax Act (Canada).

B10.5 The Bidder shall enter the Total Bid Price from Form B: Prices into the Total Bid Price field in MERX.

B10.6 Bidders are advised that the calculation indicated in B18.4 will prevail over the Total Bid Price entered in MERX.

B11. DISCLOSURE

B11.1 Various Persons provided information or services with respect to this Work. In the City's opinion, this relationship or association does not create a conflict of interest because of this full disclosure. Where applicable, additional material available as a result of contact with these Persons is listed below.

B11.2 The Persons are:

(a) N/A

B11.3 Additional Material:

(a) N/A

B12. CONFLICT OF INTEREST AND GOOD FAITH

B12.1 Further to C3.2, Bidders, by responding to this Tender, declare that no Conflict of Interest currently exists, or is reasonably expected to exist in the future.

B12.2 Conflict of Interest means any situation or circumstance where a Bidder or employee of the Bidder proposed for the Work has:

- (a) other commitments;
- (b) relationships;
- (c) financial interests; or
- (d) involvement in ongoing litigation;

that could or would be seen to:

- (i) exercise an improper influence over the objective, unbiased and impartial exercise of the independent judgment of the City with respect to the evaluation of Bids or award of the Contract; or
- (ii) compromise, impair or be incompatible with the effective performance of a Bidder's obligations under the Contract;
- (e) has contractual or other obligations to the City that could or would be seen to have been compromised or impaired as a result of their participation in the Tender process or the Work; or
- (f) has knowledge of confidential information (other than confidential information disclosed by the City in the normal course of the Tender process) of strategic and/or material relevance to the Tender process or to the Work that is not available to other bidders and that could or would be seen to give that Bidder an unfair competitive advantage.

B12.3 In connection with their Bid, each entity identified in B12.2 shall:

- (a) avoid any perceived, potential or actual Conflict of Interest in relation to the procurement process and the Work;
- (b) upon discovering any perceived, potential or actual Conflict of Interest at any time during the Tender process, promptly disclose a detailed description of the Conflict of Interest to the City in a written statement to the Contract Administrator; and
- (c) provide the City with the proposed means to avoid or mitigate, to the greatest extent practicable, any perceived, potential or actual Conflict of Interest and shall submit any additional information to the City that the City considers necessary to properly assess the perceived, potential or actual Conflict of Interest.

B12.4 Without limiting B12.3, the City may, in their sole discretion, waive any and all perceived, potential or actual Conflicts of Interest. The City's waiver may be based upon such terms and conditions as the City, in their sole discretion, requires to satisfy itself that the Conflict of Interest has been appropriately avoided or mitigated, including requiring the Bidder to put into place such policies, procedures, measures and other safeguards as may be required by and be

acceptable to the City, in their sole discretion, to avoid or mitigate the impact of such Conflict of Interest.

- B12.5 Without limiting B12.3, and in addition to all contractual or other rights or rights at law or in equity or legislation that may be available to the City, the City may, in their sole discretion:
- (a) disqualify a Bidder that fails to disclose a perceived, potential or actual Conflict of Interest of the Bidder or any of their employees proposed for the Work;
 - (b) require the removal or replacement of any employees proposed for the Work that has a perceived, actual or potential Conflict of Interest that the City, in their sole discretion, determines cannot be avoided or mitigated;
 - (c) disqualify a Bidder or employees proposed for the Work that fails to comply with any requirements prescribed by the City pursuant to B12.4 to avoid or mitigate a Conflict of Interest; and
 - (d) disqualify a Bidder if the Bidder, or one of their employees proposed for the Work, has a perceived, potential or actual Conflict of Interest that, in the City's sole discretion, cannot be avoided or mitigated, or otherwise resolved.
- B12.6 The final determination of whether a perceived, potential or actual Conflict of Interest exists shall be made by the City, in their sole discretion.

B13. QUALIFICATION

- B13.1 The Bidder shall:
- (a) undertake to be in good standing under The Corporations Act (Manitoba), or properly registered under The Business Names Registration Act (Manitoba), or otherwise properly registered, licensed or permitted by law to carry on business in Manitoba; and
 - (b) be financially capable of carrying out the terms of the Contract; and
 - (c) have all the necessary experience, capital, organization, and equipment to perform the Work in strict accordance with the terms and provisions of the Contract.
 - (d) submit a completed Social Procurement Plan.
- B13.2 The Bidder and any proposed Subcontractor (for the portion of the Work proposed to be subcontracted to them) shall:
- (a) be responsible and not be suspended, debarred or in default of any obligations to the City. A list of suspended or debarred individuals and companies is available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <https://www.winnipeg.ca/matmgt/Templates/files/debar.pdf>
- B13.3 The Bidder and/or any proposed Subcontractor (for the portion of the Work proposed to be subcontracted to them) shall:
- (a) have successfully carried out work similar in nature, scope and value to the Work; and
 - (b) be fully capable of performing the Work required to be in strict accordance with the terms and provisions of the Contract; and
 - (c) have a written workplace safety and health program if required pursuant to The Workplace Safety and Health Act (Manitoba);
 - (d) have completed the Accessible Customer Service online training required by the Accessibility for Manitobans Act (AMA) (see B13.5 and D8)
 - (e) Further to (c), the Bidder shall, within five (5) Business Days of a request by the Contract Administrator, provide proof satisfactory to the Contract Administrator that the Bidder/Subcontractor has a workplace safety and health program meeting the requirements of The Workplace Safety and Health Act (Manitoba), by providing:
 - (f) Written confirmation of a safety and health certification meeting SAFE Work Manitoba's SAFE Work Certified Standard (e.g., COR™ and SECOR™) in the form of:

- (i) a copy of their valid Manitoba COR certificate and Letter of Good Standing (or Manitoba equivalency) as issued under the Certificate of Recognition (COR) Program administered by the Construction Safety Association of Manitoba or by the Manitoba Heavy Construction Association's WORKSAFELY™ COR™ Program; or
 - (ii) a copy of their valid Manitoba SECOR™ certificate and Letter of Good Standing (or Manitoba equivalency) as issued under the Small Employer Certificate of Recognition Program (SECOR™) administered by the Construction Safety Association of Manitoba or by the Manitoba Heavy Construction Association's WORKSAFELY™ COR™ Program.
- (g) a report or letter to that effect from an independent reviewer acceptable to the City. (A list of acceptable reviewers and the review template are available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgt/>).

- B13.4 Further to B13.1(d), the Bidder shall within five (5) Business Days of a request by the Contract Administrator, provide a completed Social Procurement Plan.
- B13.5 Further to B13.3(d), the Bidder acknowledges they and all Subcontractors have obtained training required by the Accessibility for Manitobans Act (AMA) available at <http://www.accessibilitymb.ca/training.html> for anyone that may have any interaction with the public on behalf of the City of Winnipeg.
- B13.6 The Bidder shall submit, within three (3) Business Days of a request by the Contract Administrator, proof satisfactory to the Contract Administrator of the qualifications of the Bidder and of any proposed Subcontractor.
- B13.7 The Bidder shall provide, on the request of the Contract Administrator, full access to any of the Bidder's equipment and facilities to confirm, to the Contract Administrator's satisfaction, that the Bidder's equipment and facilities are adequate to perform the Work.

B14. BID SECURITY

- B14.1 The Bidder shall include in their Bid Submission bid security in the form of a digital bid bond, in the amount of at least ten percent (10%) of the Total Bid Price, and agreement to bond of a company registered to conduct the business of a surety in Manitoba, in Form G1: Bid Bond and Agreement to Bond, available on The City of Winnipeg, Corporate Finance, Materials Management Division website at <https://www.winnipeg.ca/MatMgt/templates/files/eBidsecurity.pdf>.
- B14.2 Bid security shall be submitted in a digital format meeting the following criteria:
- (a) The version submitted by the Bidder must have valid digital signatures and seals;
 - (b) The version submitted by the Bidder must be verifiable by the City with respect to the totality and wholeness of the bond form, including: the content; all digital signatures and digital seals; with the surety company, or an approved verification service provider of the surety company.
 - (c) The version submitted must be viewable, printable and storable in standard electronic file formats compatible with the City, and in a single file. Allowable formats include pdf.
 - (d) The verification may be conducted by the City immediately or at any time during the life of the bond and at the discretion of the City with no requirement for passwords or fees.
 - (e) The results of the verification must provide a clear, immediate and printable indication of pass or fail regarding B14.2(a).
- B14.3 Bonds failing the verification process will not be considered to be valid and the bid shall be determined to be non-responsive in accordance with B18.1(a).
- B14.4 Bonds passing the verification process will be treated as original and authentic.

- B14.5 If the Bidder submits alternative bids, the bid security shall be in the amount of the specified percentage of the highest Total Bid Price submitted.
- B14.6 The bid security of the successful Bidder and the next two lowest evaluated responsive and responsible Bidders will be released by the City when a Contract for the Work has been duly formed with the successful Bidder and the contract securities are furnished as provided herein. The bid securities of all other Bidders will be released when a Contract is awarded.
- B14.7 The bid securities of all Bidders will be released by the City as soon as practicable following notification by the Contract Administrator to the Bidders that no award of Contract will be made pursuant to the Tender.

B15. OPENING OF BIDS AND RELEASE OF INFORMATION

- B15.1 Bids will not be opened publicly.
- B15.2 Following the Submission Deadline, the names of the Bidders and their Total Bid Prices (unevaluated and pending review and verification of conformance with requirements) will be available on the MERX website at www.merx.com.
- B15.3 After award of Contract, the name(s) of the successful Bidder(s) and their Contract amount(s) will be available on the MERX website at www.merx.com.
- B15.4 The Bidder is advised that any information contained in any Bid may be released if required by The Freedom of Information and Protection of Privacy Act (Manitoba), by other authorities having jurisdiction, or by law or by City policy or procedures (which may include access by members of City Council).
- B15.5 To the extent permitted, the City shall treat as confidential information, those aspects of a Bid Submission identified by the Bidder as such in accordance with and by reference to Part 2, Section 17 or Section 18 or Section 26 of The Freedom of Information and Protection of Privacy Act (Manitoba), as amended.

B16. IRREVOCABLE BID

- B16.1 The Bid(s) submitted by the Bidder shall be irrevocable for the time period specified in Paragraph 11 of Form A: Bid/Proposal.
- B16.2 The acceptance by the City of any Bid shall not release the Bids of the next two lowest evaluated responsive Bidders and these Bidders shall be bound by their Bids on such Work until a Contract for the Work has been duly formed and the contract securities have been furnished as herein provided, but any Bid shall be deemed to have lapsed unless accepted within the time period specified in Paragraph 11 of Form A: Bid/Proposal.

B17. WITHDRAWAL OF BIDS

- B17.1 A Bidder may withdraw their Bid without penalty at any time prior to the Submission Deadline.

B18. EVALUATION OF BIDS

- B18.1 Award of the Contract shall be based on the following bid evaluation criteria:
- compliance by the Bidder with the requirements of the Tender, or acceptable deviation there from (pass/fail);
 - qualifications of the Bidder and the Subcontractors, if any, pursuant to B13 (pass/fail);
 - Total Bid Price;
 - economic analysis of any approved alternative pursuant to B7.

- B18.2 Further to B18.1(a), the Award Authority may reject a Bid as being non-responsive if the Bid is incomplete, obscure or conditional, or contains additions, deletions, alterations or other irregularities. The Award Authority may reject all or any part of any Bid, or waive technical requirements or minor informalities or irregularities, if the interests of the City so require.
- B18.3 Further to B18.1(b), the Award Authority shall reject any Bid submitted by a Bidder who does not demonstrate, in their Bid or in other information required to be submitted, that they are qualified.
- B18.4 Further to B18.1(c), the Total Bid Price shall be the sum of the quantities multiplied by the unit prices for each item shown on Form B: Prices.
- B18.5 Bidders are advised that the calculation indicated in B18.4 will prevail over the Total Bid Price entered in MERX.
- B18.6 Further to B18.1(a), in the event that a unit price is not provided on Form B: Prices, the City may determine the unit price by dividing the Amount (extended price) by the approximate quantity, for the purposes of evaluation and payment.

B19. AWARD OF CONTRACT

- B19.1 The City will give notice of the award of the Contract or will give notice that no award will be made.
- B19.2 The City will have no obligation to award a Contract to a Bidder, even though one or all of the Bidders are determined to be qualified, and the Bids are determined to be responsive.
- B19.3 Without limiting the generality of B19.2, the City will have no obligation to award a Contract where:
- (a) the prices exceed the available City funds for the Work;
 - (b) the prices are materially in excess of the prices received for similar work in the past;
 - (c) the prices are materially in excess of the City's cost to perform the Work, or a significant portion thereof, with their own forces;
 - (d) only one Bid is received; or
 - (e) in the judgment of the Award Authority, the interests of the City would best be served by not awarding a Contract.
- B19.4 If funding for the Work is provided to the City of Winnipeg by the Government of Manitoba and/or the Government of Canada, Bidders are advised that the terms of D37 shall immediately take effect upon confirmation of such funding, regardless of when funding is confirmed.
- B19.5 Where an award of Contract is made by the City, the award shall be made to the qualified Bidder submitting the lowest evaluated responsive Bid, in accordance with B18.
- B19.6 Following the award of contract, a Bidder will be provided with information related to the evaluation of their Bid upon written request to the Contract Administrator.

PART C - GENERAL CONDITIONS

C0. GENERAL CONDITIONS

- C0.1 The *General Conditions for Construction* (Revision 2020-01-31) are applicable to the Work of the Contract.
- C0.2 The *General Conditions for Construction* are available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Division website at http://www.winnipeg.ca/matmgt/gen_cond.stm
- C0.3 A reference in the Tender to a section, clause or subclause with the prefix “**C**” designates a section, clause or subclause in the *General Conditions for Construction*.

PART D - SUPPLEMENTAL CONDITIONS

GENERAL

D1. GENERAL CONDITIONS

D1.1 In addition to the *General Conditions for Construction*, these Supplemental Conditions are applicable to the Work of the Contract.

D2. FORM OF CONTRACT DOCUMENTS

D2.1 Notwithstanding C4.1(c) and C4.4, the Contract Documents will be provided to the Contractor electronically and there will be no requirement for execution and return to the City by the Contractor. Accordingly, the provisions under C4.4(a) and C4.4(b) are no longer applicable.

D3. SCOPE OF WORK

D3.1 The Work to be done under the Contract shall consist of the removal of one slide gate and the removal of two (2) flap gates. The gates are to be replaced with a new slide gate and a single new flap gate. A new flap gate chamber is to be constructed adjacent to the existing slide gate chamber and pump out chamber. A two-pump dewatering system complete with process piping is to be supplied and installed in the existing pump out chamber. A new forcemain is to be constructed from the pump-out chamber to a vault along the Academy Road interceptor. Various chamber modifications will be required.

D3.2 The major components of the Work are as follows:

- (a) Removal of existing gates
- (b) Construction of a new flap gate chamber
- (c) Modification of existing gate chamber and pump chamber
- (d) Supply and installation of new slide and flap gates
- (e) Electrical and instrumentation installations
- (f) Construction of a new forcemain
- (g) Mechanical installations
- (h) Supply and installation of a new duplex pumping system

D4. SITE INVESTIGATION DUE DILIGENCE AND RISK

D4.1 Notwithstanding C3.1, the Contractor acknowledges that the site investigation reports and other site information included in this Tender have been provided to it and may be relied upon by the Contractor to the extent that the Contractor uses Good Industry Practice in interpreting such report(s) and site information and carries out the Work in accordance with Good Industry Practice based upon such report(s) and the information contained in them and such other site information. In the event that a site condition related to:

- (a) the location of any utility which can be determined from the records or other information available at the offices of any public authority or person, including a municipal corporation and any board or commission thereof, having jurisdiction or control over the utility;
- (b) the Site conditions, including but not limited to subsurface hazardous materials or other concealed physical conditions;
- (c) the location, nature, quality or quantity of the materials to be removed or to be employed in the performance of the Work;
- (d) the nature, quality or quantity of the Plant needed to perform the Work;
- (e) all matters concerning access to the Site, power supplies, location of existing services, utilities or materials necessary for the completion of the Work; and

(f) all other matters which could in any way affect the performance of the Work;
that could not have been “properly inferable”, “readily apparent” and readily discoverable” using Good Industry Practice by the Contractor, results in additional Work which is a direct result of this newly discovered site condition, such additional Work will be considered by the City under Changes in Work.

D5. DEFINITIONS

D5.1 When used in this Tender:

- (a) “**ASTM**” means American Society for Testing and Materials;
- (b) “**AWWA**” means American Water Works Association;
- (c) “**CoW**” means City of Winnipeg;
- (d) “**CSA**” means Canadian Standards Association
- (e) “**CSO**” means Combined Sewer Overflow;
- (f) “**I/O**” means Input / Output
- (g) “**PLC**” means Programmable Logic Controller;
- (h) “**PPE**” means Personal Protective Equipment;
- (i) “**SCADA**” means Supervisory Control and Data Acquisition;
- (j) “**SRS**” means Storm Relief Sewer;
- (k) “**Supply Chain Disruption**” means an inability by the Contractor to obtain goods or services from third parties necessary to perform the Work of the Contract within the schedule specified therein, despite the Contractor making all reasonable commercial efforts to procure same. Contractors are advised that increased costs do not, in and of themselves, amount to a Supply Chain Disruption;
- (l) “**TVSS**” means Transient Voltage

D6. CONTRACT ADMINISTRATOR

D6.1 The Contract Administrator is MPE Engineering, A Division of EnGlobe, represented by:
Mark Baker, P.Eng.
Winnipeg Region Manager

Telephone No. 204-688-3805
Email Address mbaker@mpe.ca

D6.2 At the pre-construction meeting, Mr. Baker will identify additional personnel representing the Contract Administrator and their respective roles and responsibilities for the Work.

D7. CONTRACTOR'S SUPERVISOR

D7.1 At the pre-construction meeting, the Contractor shall identify their designated supervisor and any additional personnel representing the Contractor and their respective roles and responsibilities for the Work.

D8. ACCESSIBLE CUSTOMER SERVICE REQUIREMENTS

D8.1 The Accessibility for Manitobans Act (AMA) imposes obligations on The City of Winnipeg to provide accessible customer service to all persons in accordance with the Customer Service Standard Regulation (“CSSR”) to ensure inclusive access and participation for all people who live, work or visit Winnipeg regardless of their abilities.

D8.1.1 The Contractor agrees to comply with the accessible customer service obligations under the CSSR and further agrees that when providing the Goods or Services or otherwise

acting on the City of Winnipeg's behalf, shall comply with all obligations under the AMA applicable to public sector bodies.

- D8.1.2 The accessible customer service obligations include, but are not limited to:
- (a) providing barrier-free access to goods and services;
 - (b) providing reasonable accommodations;
 - (c) reasonably accommodating assistive devices, support persons, and support animals;
 - (d) providing accessibility features e.g. ramps, wide aisles, accessible washrooms, power doors and elevators;
 - (e) inform the public when accessibility features are not available;
 - (f) providing a mechanism or process for receiving and responding to public feedback on the accessibility of all goods and services; and
 - (g) providing adequate training of staff and documentation of same.

D9. UNFAIR LABOUR PRACTICES

- D9.1 Further to C3.2, the Contractor declares that in bidding for the Work and in entering into this Contract, the Contractor and any proposed Subcontractor(s) conduct their respective business in accordance with established international codes embodied in United Nations Universal Declaration of Human Rights (UDHR) <https://www.un.org/en/about-us/universal-declaration-of-human-rights> International Labour Organization (ILO) [https://www.ilo.org/global/lang--en/index.htm](https://www.ilo.org/global/lang-en/index.htm) conventions as ratified by Canada.
- D9.2 The City of Winnipeg is committed and requires its Contractors and their Subcontractors, to be committed to upholding and promoting international human and labour rights, including fundamental principles and rights at work covered by ILO eight (8) fundamental conventions and the United Nations Universal Declaration of Human Rights which includes child and forced labour.
- D9.3 Upon request from the Contract Administrator, the Contractor shall provide disclosure of the sources (by company and country) of the raw materials used in the Work and a description of the manufacturing environment or processes (labour unions, minimum wages, safety, etc.).
- D9.4 Failure to provide the evidence required under D9.3, may be determined to be an event of default in accordance with C18.
- D9.5 In the event that the City, in its sole discretion, determines the Contractor to have violated the requirements of this section, it will be considered a fundamental breach of the Contract and the Contractor shall pay to the City a sum specified by the Contract Administrator in writing ("Unfair Labour Practice Penalty"). Such a violation shall also be considered an Event of Default, and shall entitle the City to pursue all other remedies it is entitled to in connection with same pursuant to the Contract.
- D9.5.1 The Unfair Labour Practice Penalty shall be such a sum as determined appropriate by the City, having due regard to the gravity of the Contractor's violation of the above requirements, any cost of obtaining replacement goods/ services or rectification of the breach, and the impact upon the City's reputation in the eyes of the public as a result of same.
- D9.5.2 The Contractor shall pay the Unfair Labour Practice Penalty to the City within thirty (30) Calendar Days of receiving a demand for same in accordance with D9.5. The City may also hold back the amount of the Unfair Labour Practice Penalty from payment for any amount it owes the Contractor.
- D9.5.3 The obligations and rights conveyed by this clause survive the expiry or termination of this Contract, and may be exercised by the City following the performance of the Work, should the City determine, that a violation by the Contractor of the above clauses has occurred

following same. In no instance shall the Unfair Labour Practice Penalty exceed the total of twice the Contract value.

D10. SOCIAL PROCUREMENT

D10.1 The Contractor shall commit to providing employment opportunities for Equity Groups. Equity Groups are groups that have historically been denied equal access to employment, education, and other opportunities and includes but is not limited to: Indigenous Peoples, Racialized peoples, newcomers (less than 5 years in Canada); Persons with Disabilities; Women; people facing poverty; Veterans, and 2SLGBTQQA+ (Two-spirit, Lesbian, Gay, Bisexual, Trans, Queer, Questioning, Intersex, Asexual plus) Peoples.

D10.2 This commitment is inclusive of subcontractor employment hours and the Contractor will be required to report on their subcontractors employment hours if the subcontractor contract is greater than \$100,000.

D10.3 The Contractor shall commit to providing employment hours with Equity Groups on the delivery of this Contract.

$$X\% = \frac{\# \text{ of employment hours by Equity Groups on this Contract}}{\text{Total \# of employment hours on this Contract}}$$

D10.4 The Contractor shall keep detailed records of the total number of full-time and part-time employees that identify as Equity Groups. The Contractor shall report the total number of employee hours that are delivered by Equity Groups during this Contract.

(a) The Social Value Reporting Template has been included as a resource see Form O: Social Value Clause Reporting Template

D10.5 Employees includes all company employees who are working on this Contract. (Administration, Finance, Project Manager, Safety Officer, Trades, etc.)

D10.6 The Contractor shall provide the Contract Administrator a progress report midway through the Contract period and upon completion of the Contract period.

D10.7 The Employee Voluntary Self Identification Survey has been included as a resource see Form N: Employee Voluntary Self Identification Survey.

D11. FURNISHING OF DOCUMENTS

D11.1 Upon award of the Contract, the Contractor will be provided with 'issued for construction' Contract Documents electronically, including Drawings in PDF format only.

SUBMISSIONS

D12. AUTHORITY TO CARRY ON BUSINESS

D12.1 The Contractor shall be in good standing under The Corporations Act (Manitoba), or properly registered under The Business Names Registration Act (Manitoba), or otherwise properly registered, licensed or permitted by law to carry on business in Manitoba, or if the Contractor does not carry on business in Manitoba, in the jurisdiction where the Contractor does carry on business, throughout the term of the Contract, and shall provide the Contract Administrator with evidence thereof upon request.

D13. SAFE WORK PLAN

D13.1 The Contractor shall provide the Contract Administrator with a Safe Work Plan at least five (5) Business Days prior to the commencement of any Work on the Site but in no event later than the date specified in C4.1 for the return of the executed Contract Documents, if applicable.

D13.2 The Safe Work Plan should be prepared and submitted in the format shown in the City's template which is available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgt/Safety/default.stm>

D13.3 Notwithstanding B13.3(e) at any time during the term of the Contract, the City may, at their sole discretion and acting reasonably, require an updated COR Certificate or Annual Letter of good Standing. A Contractor, who fails to provide a satisfactory COR Certificate or Annual Letter of good Standing, will not be permitted to continue to perform any Work.

D14. INSURANCE

D14.1 The Contractor shall provide and maintain the following insurance coverage:

- (a) commercial general liability insurance, in the amount of at least two million dollars (\$2,000,000.00) inclusive, with The City of Winnipeg added as an additional insured, with a cross-liability clause, such liability policy to also contain contractual liability, unlicensed motor vehicle liability, non-owned automobile liability, broad form property damage cover and products and completed operations, to remain in place at all times during the performance of the Work and throughout the warranty period;
- (b) if applicable, Automobile Liability Insurance covering all motor vehicles, owned and operated and used or to be used by the Contractor directly or indirectly in the performance of the Work. The Limit of Liability shall not be less than \$2,000,000 inclusive for loss or damage including personal injuries and death resulting from any one accident or occurrence.
- (c) an all risks Installation Floater carrying adequate limits to cover all machinery, equipment, supplies and/or materials intended to enter into and form part of any installation.

D14.2 Deductibles shall be borne by the Contractor.

D14.3 The Contractor shall provide the City Solicitor with a certificate(s) of insurance, in a form satisfactory to the City Solicitor, at least two (2) Business Days prior to the commencement of any Work but in no event later than the date specified in C4.1 for the return of the executed Contract Documents, as applicable.

D14.4 The Contractor shall not cancel, materially alter, or cause each policy to lapse without providing at least thirty (30) Calendar Days prior written notice to the Contract Administrator.

D15. CONTRACT SECURITY

D15.1 The Contractor shall provide and maintain the performance bond and the labour and material payment bond until the expiration of the warranty period in the form of:

- (a) a performance bond of a company registered to conduct the business of a surety in Manitoba, in the form attached to these Supplemental Conditions (Form H1: Performance Bond), in the amount of fifty percent (50%) of the Contract Price; and
- (b) a labour and material payment bond of a company registered to conduct the business of a surety in Manitoba, in the form attached to these Supplemental Conditions (Form H2: Labour and Material Payment Bond), in an amount equal to fifty percent (50%) of the Contract Price.

D15.1.1 Where the contract security is a performance bond, it may be submitted in hard copy or digital format. If submitted in digital format the contract security must meet the following criteria:

- (a) the version submitted by the Contractor must have valid digital signatures and seals;
- (b) the version submitted by the Contractor must be verifiable by the City with respect to the totality and wholeness of the bond form, including: the content; all digital signatures and digital seals; with the surety company, or an approved verification service provider of the surety company.

- (c) the version submitted must be viewable, printable and storable in standard electronic file formats compatible with the City, and in a single file. Allowable formats include pdf.
- (d) the verification may be conducted by the City immediately or at any time during the life of the bond and at the discretion of the City with no requirement for passwords or fees.
- (e) the results of the verification must provide a clear, immediate and printable indication of pass or fail regarding D15.1(b).

D15.1.2 Digital bonds failing the verification process will not be considered to be valid and may be determined to be an event of default in accordance with C18.1. If a digital bond fails the verification process, the Contractor may provide a replacement bond (in hard copy or digital format) within seven (7) Calendar Days of the City's request or within such greater period of time as the City in their discretion, exercised reasonably, allows.

D15.2 Digital bonds passing the verification process will be treated as original and authentic.

D15.3 The Contractor shall provide the Contract Administrator identified in D6 with the required performance and labour and material payment bonds within seven (7) Calendar Days of notification of the award of the Contract by way of an award letter and prior to the commencement of any Work on the Site but in no event later than the date specified in C4.1 for the return of the executed Contract Documents, if applicable.

D15.4 The Contractor shall, as soon as practicable after entering into a contract with a Subcontractor:

- (a) give the Subcontractor written notice of the existence of the labour and material payment bond in D15.1(b); and
- (b) post a notice of the bond and/or a copy of that bond in a conspicuous location at the Site of the Work.

D16. SUBCONTRACTOR LIST

D16.1 The Contractor shall provide the Contract Administrator with a complete list of the Subcontractors whom the Contractor proposes to engage (Form J: Subcontractor List) at least two (2) Business Days prior to the commencement of any Work on the Site but in no event later than the date specified in the General Conditions for the return of the executed Contract Documents, if applicable.

D17. REQUIREMENTS FOR SITE ACCESSIBILITY PLAN

D17.1 The Contractor shall provide the Contract Administrator with an Accessibility Plan at least five (5) Business Days prior to the commencement of any Work on the Site but in no event later than the date specified in C4.1 for the return of the executed Contract Documents, if applicable.

D17.2 The Accessibility Plan shall demonstrate how the Contractor will accommodate the safe passage of pedestrians and cyclists in accordance with the Manual of Temporary Traffic Control, the Contract Drawings, Staging Plans, and Streets By-Law No. 1481/77 at all times for the duration of the Construction. Unless noted in the Contract, the Accessibility Plan must include a written plan for the following:

- (a) How the Contractor will maintain at least one crossing in each direction for each intersection (one north/south crosswalk and one east/west crosswalk).
- (b) How the Contractor will maintain access to bus stops within the site.
- (c) How the Contractor will maintain access to pedestrian corridors and half signals.
- (d) How the Contractor will maintain cycling facilities.
- (e) How the Contractor will maintain access to residents and businesses unless otherwise noted in the Contract.

- (f) Any required detour signage at adjacent crossings to facilitate sidewalk or active transportation pathway closures.
- D17.3 The Accessibility Plan may also include figures, sketches, or drawings to demonstrate the proposed plan.
- D17.4 The Accessibility Plan shall include written details on how the Contractor intends to review, maintain, and document all items related to the Accessibility Plan on-site during Construction, including, but not limited to:
- (a) Signage
 - (b) Temporary Ramping
 - (c) Transit Stops
 - (d) Detour Signage
- D17.5 At minimum, the Contractor shall review the site conditions on a daily basis to ensure that all features related to the Accessibility Plan are in place. The site review is intended to correct deficiencies as a result of unforeseen events such as wind, traffic, or the general public. Deficiencies that are direct result of the Contractors actions must be corrected immediately.
- D17.6 Any changes to the Accessibility Plan must be approved by the Contract Administrator.
- D17.7 Upon request from the Contract Administrator, the Contractor shall provide records demonstrating that the site has been maintained.
- D17.8 Deficiencies as a direct result of actions by the Contractor that are not immediately corrected and/or failure to produce records that demonstrate that the site was maintained in compliance with the Accessibility Plan may result in a pay adjustment via the monthly Progress Payment. The rate of pay adjustment will be as per the following schedule:
- (a) First Offence – A warning will be issued and documented in the weekly or bi-weekly site meeting.
 - (b) Second Offence – A field instruction to immediately correct the site will be issued by the Contract Administrator.
- D17.9 Third and subsequent Offences – A pay reduction will be issued in the amount of \$250.00 per instance and per day.
- D18. DETAILED WORK SCHEDULE**
- D18.1 The Contractor shall provide the Contract Administrator with a detailed work schedule (Form L: Detailed Work Schedule) at least two (2) Business Days prior to the commencement of any Work on the Site but in no event later than the date specified in C4.1 for the return of the executed Contract Documents if applicable.
- D18.2 The detailed work schedule shall consist of the following:
- (a) a critical path method (C.P.M.) schedule for the Work;
 - (b) a Gantt chart for the Work based on the C.P.M. schedule;
 - (c) a daily manpower schedule for the Work;
 - (d) all acceptable to the Contract Administrator.
- D18.3 Further to D18.2(a), the C.P.M. schedule shall clearly identify the start and completion dates of all of the following activities/tasks making up the Work as well as showing those activities/tasks on the critical path:
- (a) Mobilization and demobilization;
 - (b) Demolition works;
 - (c) Electrical and Instrumentation work;

- (d) Municipal/ civil site work, bypass pumping;
- (e) Temporary bypass pumping
- (f) Structural and architectural work;
- (g) Equipment start-up;
- (h) Commissioning;
- (i) Substantial Performance;
- (j) Total Performance;
- (k) Training;
- (l) Submission of operation and maintenance manuals and As-Built drawings.

D18.4 Further to D18.2(b), the Gantt chart shall show the time on a weekly basis, required to carry out the Work of each trade, or specification division. The time shall be on the horizontal axis, and the type of trade shall be on the vertical axis.

D18.5 Further to D18.2(c), the daily manpower schedule shall list the daily number of individuals on the Site for each trade.

D19. SOCIAL PROCUREMENT PLAN TEMPLATE

D19.1 The Contractor shall provide the Contract Administrator with a Social Procurement Plan Template (Form M: Social Procurement Plan Template) within five (5) Business Days of a request by the Contract Administrator.

SCHEDULE OF WORK

D20. COMMENCEMENT

D20.1 The Contractor shall not commence any Work until they are in receipt of an award letter from the Award Authority authorizing the commencement of the Work.

D20.2 The Contractor shall not commence any Work on the Site until:

- (a) the Contract Administrator has confirmed receipt and approval of:
 - (i) evidence of authority to carry on business specified in D12;
 - (ii) evidence of the workers compensation coverage specified in C6.15;
 - (iii) the Safe Work Plan specified in D13;
 - (iv) evidence of the insurance specified in D14;
 - (v) the contract security specified in D15;
 - (vi) the Subcontractor list specified in D16;
 - (vii) the Requirements for Site Accessibility Plan specified in D17;
 - (viii) the Social Procurement Plan; and
 - (ix) the direct deposit application form specified in D32
- (b) the Contractor has attended a pre-construction meeting with the Contract Administrator, or the Contract Administrator has waived the requirement for a pre-construction meeting.

D20.3 The Contractor shall not commence the Work on the Site before November 1, 2024 unless mutually agreed upon by the City and Contractor.

D21. WORK BY OTHERS

D21.1 Further to C6.25, the Contractor's attention is directed to the fact that other Contractors, the personnel of Utilities and the staff of the City may be working within the project limit, approach roadway, adjacent roadways or right-of-way. The activities of these agencies may coincide with

the Contractors execution of Work and it will be the Contractor's responsibility to cooperate to the fullest extent with other personnel working in the area, and such cooperation is an obligation of the Contractor under the terms of Contract.

D21.2 Further to D21.1 the Contractor shall cooperate and coordinate all activities with all parties performing required Work by Others identified in D21.1 and accommodate the necessary area on Site required for the Work by Others to complete the Work

D22. CRITICAL STAGES

D22.1 The Contractor shall achieve critical stages of the Work in accordance with the following requirements:

- (a) All work necessary for the operation of the new flap gate and slide gate, including construction of the new concrete chamber, installation of the gates and operators, installation of new pumps and forcemain, and any other activities impacting the operation of the gates to their intended use shall be complete by February 28, 2025.

D23. SUBSTANTIAL PERFORMANCE

D23.1 The Contractor shall achieve Substantial Performance by March 15, 2025.

D23.2 When the Contractor considers the Work to be substantially performed, the Contractor shall arrange, attend and assist in the inspection of the Work with the Contract Administrator for purposes of verifying Substantial Performance. Any defects or deficiencies in the Work noted during that inspection shall be remedied by the Contractor at the earliest possible instance and the Contract Administrator notified so that the Work can be reinspected.

D23.3 The date on which the Work has been certified by the Contract Administrator as being substantially performed to the requirements of the Contract through the issue of a certificate of Substantial Performance is the date on which Substantial Performance has been achieved.

D23.4 The Contractor shall commence the Work on the Site no later than the date of Substantial Performance less the number of Working Days bid as Initial Span for Site Occupancy. For purposes of establishing this date, Working Days will be applied assuming five (5) Working Days per calendar week, and not including Statutory Holidays. If the Contractor has not commenced work by this date, Working Days will be assessed for each day following this date, at the rate of five (5) Working Days per calendar week, not including Statutory Holidays.

D24. TOTAL PERFORMANCE

D24.1 The Contractor shall achieve Total Performance by June 30, 2025.

D24.2 When the Contractor or the Contract Administrator considers the Work to be totally performed, the Contractor shall arrange, attend and assist in the inspection of the Work with the Contract Administrator for purposes of verifying Total Performance. Any defects or deficiencies in the Work noted during that inspection shall be remedied by the Contractor at the earliest possible instance and the Contract Administrator notified so that the Work can be reinspected.

D24.3 The date on which the Work has been certified by the Contract Administrator as being totally performed to the requirements of the Contract through the issue of a certificate of Total Performance is the date on which Total Performance has been achieved.

D25. LIQUIDATED DAMAGES

D25.1 If the Contractor fails to achieve, Critical Stages, Substantial Performance or Total Performance in accordance with the Contract by the days fixed herein for same, the Contractor shall pay the

City the following amounts per Working Day for each and every Working Day following the days fixed herein for same during which such failure continues:

- (a) All work necessary for the operation of the new flap gate and slide gate, including construction of the new concrete chamber, installation of the gates and operator, installation of new pumps and forcemain and any other activities impacting the operation of the gates to their intended use – three thousand dollars (\$3,000);
- (b) Substantial Performance – one thousand five hundred dollars (\$1,500);
- (c) Total Performance – one thousand five hundred dollars (\$1,500).

D25.2 The amounts specified for liquidated damages in D25.1 are based on a genuine pre-estimate of the City's losses in the event that the Contractor does not achieve, Critical Stages, Substantial Performance or Total Performance by the days fixed herein for same.

D25.3 The City may reduce any payment to the Contractor by the amount of any liquidated damages assessed.

D26. SUPPLY CHAIN DISRUPTION SCHEDULE DELAYS

D26.1 The City acknowledges that the schedule for this Contract may be impacted by the Supply Chain Disruption. Commencement and progress of the Work shall be performed by the Contractor with due consideration to the delivery requirements and schedule identified in the Contract in close consultation with the Contract Administrator.

D26.2 If the Contractor is delayed in the performance of the Work by reason of the Supply Chain Disruption, the Work schedule may be adjusted by a period of time equal to the time lost due to such delay and costs related to such delay will be determined as identified herein.

D26.3 A minimum of seven (7) Calendar Days prior to the commencement of Work, the Contractor shall declare whether a Supply Chain Disruption will affect the start date. The Contractor shall provide sufficient evidence that the delay is directly related to a Supply Chain Disruption, including but not limited to ordering of Material or Goods, production and/or manufacturing schedules or availability of staff as appropriate.

D26.4 For any delay related to Supply Chain Disruption and identified after Work has commenced, the Contractor shall within seven (7) Calendar Days of becoming aware of the anticipated delay declare the additional delay and shall provide sufficient evidence as indicated in D26.3. Failure to provide this notice will result in no additional time delays being considered by the City.

D26.5 The Work schedule, including the durations identified in D22 to D24 where applicable, will be adjusted to reflect delays accepted by the Contract Administrator. No additional payment will be made for adjustment of schedules except where seasonal work, not previously identified in the Contract, is carried over to the following construction season.

D26.6 Where Work not previously identified is being carried over solely as a result of delays related to Supply Chain Disruption, as confirmed by the Contract Administrator, the cost of temporary works to maintain the Work in a safe manner until Work recommences, will be considered by the Contract Administrator. Where the Work is carried over only partially due to Supply Chain Disruption, a partial consideration of the cost of temporary works will be considered by the Contract Administrator.

D26.7 Any time or cost implications as a result of Supply Chain Disruption and in accordance with the above, as confirmed by the Contract Administrator, shall be documented in accordance with C7.

D27. SCHEDULED MAINTENANCE

D27.1 The Contractor shall perform the following scheduled maintenance in the manner and within the time periods required by the Specifications:

- (a) Landscaping maintenance as specified in CW3510;

- D27.2 Determination of Substantial Performance and Total Performance shall be exclusive of scheduled maintenance identified herein. All scheduled maintenance shall be completed prior to the expiration of the warranty period. Where the scheduled maintenance cannot be completed during the warranty period, the warranty period shall be extended for such period of time as it takes the Contractor to complete the scheduled maintenance.

CONTROL OF WORK

D28. JOB MEETINGS

- D28.1 Regular weekly job meetings will be held at the Site. These meetings shall be attended by a minimum of one representative of the Contract Administrator, one representative of the City and one representative of the Contractor. Each representative shall be a responsible person capable of expressing the position of the Contract Administrator, the City and the Contractor respectively on any matter discussed at the meeting including the Work schedule and the need to make any revisions to the Work schedule. The progress of the Work will be reviewed at each of these meetings.
- D28.2 The Contract Administrator reserves the right to cancel any job meeting or call additional job meetings whenever they deem it necessary.

D29. PRIME CONTRACTOR – THE WORKPLACE SAFETY AND HEALTH ACT (MANITOBA)

- D29.1 Further to C6.26, the Contractor shall be the Prime Contractor and shall serve as, and have the duties of the Prime Contractor in accordance with The Workplace Safety and Health Act (Manitoba).

D30. THE WORKPLACE SAFETY AND HEALTH ACT (MANITOBA) – QUALIFICATIONS

- D30.1 Further to B13.3(e), the Contractor/Subcontractor must, throughout the term of the Contract, have a Workplace Safety and Health Program meeting the requirements of The Workplace Safety and Health Act (Manitoba). At any time during the term of the Contract, the City may, at their sole discretion and acting reasonably, require updated proof of compliance, as set out in B13.3(e).

MEASUREMENT AND PAYMENT

D31. INVOICES

- D31.1 Further to C12, the Contractor shall submit an invoice for each portion of Work performed. to:
The City of Winnipeg
Corporate Finance - Accounts Payable
4th Floor, Administration Building, 510 Main Street
Winnipeg MB R3B 1B9
Facsimile No.: 204-949-0864
Send Invoices to CityWpgAP-INVOICES@winnipeg.ca
Send Invoice Inquiries to CityWpgAP-INQUIRIES@winnipeg.ca
- D31.2 Invoices must clearly indicate, as a minimum:
- (a) the City's purchase order number;
 - (b) date of delivery;
 - (c) delivery address;
 - (d) type and quantity of work performed;
 - (e) the amount payable with GST and MRST shown as separate amounts; and
 - (f) the Contractor's GST registration number.

D31.3 The City will bear no responsibility for delays in approval of invoices which are improperly submitted.

D32. PAYMENT

D32.1 Further to C12, the City shall make payments to the Contractor by direct deposit to the Contractor's banking institution, and by no other means. Payments will not be made until the Contractor has made satisfactory direct deposit arrangements with the City. Direct deposit application forms are at https://winnipeg.ca/finance/files/Direct_Deposit_Form.pdf.

D33. FUEL PRICE ADJUSTMENT

D33.1 The Contract is subject to a fuel price adjustment which will be calculated monthly based on eligible Work completed utilizing the following mathematical formulas;

- (a) where the price of fuel has increased - $((CFI/BFI)-1.15) \times Q \times FF$; and
- (b) where the price of fuel has decreased - $((CFI/BFI)-0.85) \times Q \times FF$; where
 - (i) BFI = base fuel index
 - (ii) CFI = current fuel index
 - (iii) FF = fuel factor
 - (iv) Q = monetary value of Work applied in the calculation.

D33.2 Eligible Work will be determined in accordance with D33.5.

D33.3 The base fuel index (BFI) will be the retail price of fuel identified on the Submission Deadline based on latest published "Monthly average retail prices for gasoline and fuel by geography" for Winnipeg, published by Statistics Canada, Table 18-10-0001-01. The BFI is a blended rate based on 15% regular unleaded gasoline at self-service filling stations and 85% diesel fuel at self-service filling stations.

D33.4 The current fuel index (CFI) based on the above blended rate will be determined for each monthly progress estimate and applied on the following progress estimate as a change order once rates are published by Statistics Canada.

D33.5 A Fuel Factor (FF) rate of the monetary value of all eligible Work completed that month based on the Contract unit prices will be used to calculate the assumed apportioned cost of fuel.

D33.6 Fuel cost adjustments may result in additional payment to the Contractor or credit to the City within the Contract by way of a monthly change order.

D33.7 The fuel escalation or de-escalation adjustment will not be applied if the CFI is within $\pm 15\%$ of the BFI.

D33.8 Fuel escalation adjustments will not be considered beyond the Substantial Performance/Critical Stages except where those dates/Working Days are adjusted by change order. Fuel de-escalation adjustments will apply for Work that extends beyond the dates/Working Days specified for Substantial Performance/Critical Stages.

D33.9 The Fuel Factor (FF) rates will be set as follows:

D33.10 The Fuel Factor rate shall be set at 2.7% of the monetary value of all Work based on unit prices except for the portions of the Contract identified below.

WARRANTY

D34. WARRANTY

- D34.1 Notwithstanding C13.2, the warranty period shall begin on the date of Total Performance and shall expire one (1) year thereafter, except where longer warranty periods are specified in the respective Specification sections, unless extended pursuant to C13.2.1 or C13.2.2, in which case it shall expire when provided for thereunder.
- D34.2 For the purpose of contract security, the warranty period shall be one (1) year.
- D34.3 Notwithstanding C13.2, the Contract Administrator may permit the warranty period for a portion or portions of the Work to begin prior to the date of Total Performance if a portion of the Work cannot be completed because of unseasonable weather or other conditions reasonably beyond the control of the Contractor but that portion does not prevent the balance of the Work from being put to its intended use.
- D34.4 In such case, the date specified by the Contract Administrator for the warranty period to begin shall be substituted for the date specified in C13.2 for the warranty period to begin.

DISPUTE RESOLUTION

D35. DISPUTE RESOLUTION

- D35.1 If the Contractor disagrees with any opinion, determination, or decision of the Contract Administrator, the Contractor shall act in accordance with the Contract Administrator's opinion, determination, or decision unless and until same is modified by the process followed by the parties pursuant to D35.
- D35.2 The entire text of C21.4 is deleted, and amended to read: "Intentionally Deleted"
- D35.3 The entire text of C21.5 is deleted, and amended to read:
- (a) If Legal Services has determined that the Disputed Matter may proceed in the Appeal Process, the Contractor must, within ten (10) Business Days of the date of the Legal Services Response Letter, submit their written Appeal Form, in the manner and format set out on the City's Materials Management Website, to the Chief Administrative Officer, and to the Contract Administrator. The Contractor may not raise any other disputes other than the Disputed Matter in their Appeal Form.
- D35.4 Further to C21, prior to the Contract Administrator's issuance of a Final Determination, the following informal dispute resolution process shall be followed where the Contractor disagrees with any opinion, determination, or decision of the Contract Administrator ("Dispute"):
- (a) In the event of a Dispute, attempts shall be made by the Contract Administrator and the Contractor's equivalent representative to resolve Disputes within the normal course of project dealings between the Contract Administrator and the Contractor's equivalent representative.
 - (b) Disputes which in the reasonable opinion of the Contract Administrator or the Contractor's equivalent representative cannot be resolved within the normal course of project dealings as described above shall be referred to a without prejudice escalating negotiation process consisting of, at a minimum, the position levels as shown below and the equivalent Contractor representative levels:
 - (i) The Contract Administrator;
 - (ii) Supervisory level between the Contract Administrator and applicable Department Head;
 - (iii) Department Head.

- D35.4.1 Names and positions of Contractor representatives equivalent to the above City position levels shall be determined by the Contractor and communicated to the City at the pre-commencement or kick off meeting.
- D35.4.2 As these negotiations are not an adjudicative hearing, neither party may have legal counsel present during the negotiations.
- D35.4.3 Both the City and the Contractor agree to make all reasonable efforts to conduct the above escalating negotiation process within twenty (20) Business Days, unless both parties agree, in writing, to extend that period of time.
- D35.4.4 If the Dispute is not resolved to the City and Contractor's mutual satisfaction after discussions have occurred at the final escalated level as described above, or the time period set out in D35.4.3, as extended if applicable, has elapsed, the Contract Administrator will issue a Final Determination as defined in C1.1(v), at which point the parties will be governed by the Dispute Resolution process set out in C21.

INDEMNITY

D36. INDEMNITY

- D36.1 Indemnity shall be as stated in C17.
- D36.2 Notwithstanding C17.1, the Contractor shall save harmless and indemnify the City in the amount of twice the Contract Price or five million dollars (\$5,000,000), whichever is greater, against all costs, damages or expenses arising from actions, claims, demands and proceedings, by whomsoever brought, made or taken as a result of negligent acts or negligent omissions of the Contractor, their Subcontractors, employees or agents in the performance or purported performance of the Work, and more particularly from:
- (a) accidental injury to or death of any person whether retained by or in the employ of the contractor or not, arising directly or indirectly by reason of the performance of the Work, or by reason of any trespass on or damage to property;
 - (b) damage to any property owned in whole or in part by the City, or which the City by duty or custom is obliged, directly or indirectly, in any way or to any degree, to construct, repair or maintain;
 - (c) damage to, or trespass or encroachment upon, property owned by persons other than the City;
 - (d) any claim for lien or trust claim served upon the City pursuant to The Builders' Liens Act;
 - (e) failure to pay a Workers Compensation assessment, or Federal or Provincial taxes;
 - (f) unauthorized use of any design, device, material or process covered by letters patent, copyright, trademark or trade name in connection with the Work;
 - (g) inaccuracies in any information provided to the City by the Contractor.
- D36.3 Further to C17, The City shall save harmless and indemnify the Contractor in the amount of twice the Contract Price or five million dollars (\$5,000,000), whichever is greater, against all costs, damages or expenses arising from actions, claims, demands and proceedings, by whomsoever brought, made or taken as a result of negligent acts or negligent omissions of the City, their employees or agents in the performance of its obligation under the Contract.

THIRD PARTY AGREEMENTS

D37. FUNDING AND/OR CONTRIBUTION AGREEMENT OBLIGATIONS

- D37.1 In the event that funding for the Work of the Contract is provided to the City of Winnipeg by the Government of Manitoba and/or the Government of Canada, the following terms and conditions shall apply, as required by the applicable funding agreements.

- D37.2 Further to D37.1, in the event that the obligations in D37 apply, actual costs legitimately incurred by the Contractor as a direct result of these obligations (“Funding Costs”) shall be determined by the actual cost to the Contractor and not by the valuation method(s) outlined in C7.4. In all other respects Funding Costs will be processed in accordance with Changes in Work under C7.
- D37.3 For the purposes of D37:
- (a) “**Government of Canada**” includes the authorized officials, auditors, and representatives of the Government of Canada; and
 - (b) “**Government of Manitoba**” includes the authorized officials, auditors, and representatives of the Government of Manitoba.
- D37.4 Modified Insurance Requirements
- D37.4.1 If not already required under the insurance requirements identified in D14, the Contractor will be required to provide wrap-up liability insurance in an amount of no less than two million dollars (\$2,000,000) inclusive per occurrence. Such policy will be written in the joint names of the City, Contractor, Consultants and all sub-contractors and sub-consultants and include twelve (12) months completed operations. The Government of Manitoba and their Ministers, officers, employees, and agents shall be added as additional insureds.
- D37.4.2 If not already required under the insurance requirements identified in D14, the Contractor will be required to provide builders’ risk insurance (including boiler and machinery insurance, as applicable) providing all risks coverage at full replacement cost, or such lower level of insurance that the City may identify on a case-by-case basis, such as an installation floater.
- D37.4.3 The Contractor shall obtain and maintain third party liability insurance with minimum coverage of two million dollars (\$2,000,000.00) per occurrence on all licensed vehicles operated at the Site. In the event that this requirement conflicts with another licensed vehicle insurance requirement in this Contract, then the requirement that provides the higher level of insurance shall apply.
- D37.4.4 Further to D14.3, insurers shall provide satisfactory Certificates of Insurance to the Government of Manitoba prior to commencement of Work as written evidence of the insurance required. The Certificates of Insurance must provide for a minimum of thirty (30) days’ prior written notice to the Government of Manitoba in case of insurance cancellation.
- D37.4.5 All policies must be taken out with insurers licensed to carry on business in the Province of Manitoba.
- D37.5 Indemnification By Contractor
- D37.5.1 In addition to the indemnity obligations outlined in C17 of the General Conditions for Construction, the Contractor agrees to indemnify and save harmless the Government of Canada and the Government of Manitoba and each of their respective Ministers, officers, servants, employees, and agents from and against all claims and demands, losses, costs, damages, actions, suit or other proceedings brought or pursued in any manner in respect of any matter caused by the Contractor or arising from this Contract or the Work, or from the goods or services provided or required to be provided by the Contractor, except those resulting from the negligence of any of the Government of Canada’s or the Government of Manitoba’s Ministers, officers, servants, employees, or agents, as the case may be.
- D37.5.2 The Contractor agrees that in no event will Canada or Manitoba, their respective officers, servants, employees or agents be held liable for any damages in contract, tort (including negligence) or otherwise, for:
- (a) any injury to any person, including, but not limited to, death, economic loss or infringement of rights;
 - (b) any damage to or loss or destruction of property of any person; or

- (c) any obligation of any person, including, but not limited to, any obligation arising from a loan, capital lease or other long term obligation;

in relation to this Contract or the Work.

D37.6 Records Retention and Audits

D37.6.1 The Contractor shall maintain and preserve accurate and complete records in respect of this Contract and the Work, including all accounting records, financial documents, copies of contracts with other parties and other records relating to this Contract and the Work during the term of the Contract and for at least six (6) years after Total Performance. Those records bearing original signatures or professional seals or stamps must be preserved in paper form; other records may be retained in electronic form.

D37.6.2 In addition to the record keeping and inspection obligations outlined in C6 of the General Conditions for Construction, the Contractor shall keep available for inspection and audit at all reasonable times while this Contract is in effect and until at least six (6) years after Total Performance, all records, documents, and contracts referred to in D37.6.1 for inspection, copying and audit by the City of Winnipeg, the Government of Manitoba and/or the Government of Canada and their respective representatives and auditors, and to produce them on demand; to provide reasonable facilities for such inspections, copying and audits, to provide copies of and extracts from such records, documents, or contracts upon request by the City of Winnipeg, the Government of Manitoba, and/or the Government of Canada and their respective representatives and auditors, and to promptly provide such other information and explanations as may be reasonably requested by the City of Winnipeg, the Government of Manitoba, and/or the Government of Canada from time-to-time.

D37.7 Other Obligations

D37.7.1 The Contractor consents to the City providing a copy of the Contract Documents to the Government of Manitoba and/or the Government of Canada upon request from either entity.

D37.7.2 If the Lobbyists Registration Act (Manitoba) applies to the Contractor, the Contractor represents and warrants that it has filed a return and is registered and in full compliance with the obligations of that Act, and covenants that it will continue to comply for the duration of this Contract.

D37.7.3 The Contractor shall comply with all applicable legislation and standards, whether federal, provincial, or municipal, including (without limitation) labour, environmental, and human rights laws, in the course of providing the Work.

D37.8 The Contractor shall properly account for the Work provided under this Contract and payment received in this respect, prepared in accordance with generally accepted accounting principles in effect in Canada, including those principles and standards approved or recommended from time-to-time by the Chartered Professional Accountants of Canada or the Public Sector Accounting Board, as applicable, applied on a consistent basis.

D37.9 The Contractor represents and warrants that no current or former public servant or public office holder, to whom the Value and Ethics Code for the Public Sector, the Policy on Conflict of Interest and Post Employment, or the Conflict of Interest Act applies, shall derive direct benefit from this Contract, including any employment, payments, or gifts, unless the provision or receipt of such benefits is in compliance with such codes and the legislation.

D37.10 The Contractor represents and warrants that no member of the House of Commons or of the Senate of Canada or of the Legislative Assembly of Manitoba is a shareholder, director or officer of the Contractor or of a Subcontractor, and that no such member is entitled to any benefits arising from this Contract or from a contract with the Contractor or a Subcontractor concerning the Work.

FORM H1: PERFORMANCE BOND
(See D15)

KNOW EVERYONE BY THESE PRESENTS THAT

_____ ,
(hereinafter called the "Principal"), and

_____ ,
(hereinafter called the "Surety"), are held and firmly bound unto **THE CITY OF WINNIPEG** (hereinafter called the "Obligee"), in the sum of

_____ dollars (\$_____)

of lawful money of Canada to be paid to the Obligee, or its successors or assigns, for the payment of which sum the Principal and the Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS the Principal has entered into a written contract with the Obligee for

TENDER NO. 54-2024

RENFREW GATE CHAMBER 2024 UPGRADES

which is by reference made part hereof and is hereinafter referred to as the "Contract".

NOW THEREFORE the condition of the above obligation is such that if the Principal shall:

- (a) carry out and perform the Contract and every part thereof in the manner and within the times set forth in the Contract and in accordance with the terms and conditions specified in the Contract;
- (b) perform the Work in a good, proper, workmanlike manner;
- (c) make all the payments whether to the Obligee or to others as therein provided;
- (d) in every other respect comply with the conditions and perform the covenants contained in the Contract; and
- (e) indemnify and save harmless the Obligee against and from all loss, costs, damages, claims, and demands of every description as set forth in the Contract, and from all penalties, assessments, claims, actions for loss, damages or compensation whether arising under "The Workers Compensation Act", or any other Act or otherwise arising out of or in any way connected with the performance or non-performance of the Contract or any part thereof during the term of the Contract and the warranty period provided for therein;

THEN THIS OBLIGATION SHALL BE VOID, but otherwise shall remain in full force and effect. The Surety shall not, however, be liable for a greater sum than the sum specified above.

AND IT IS HEREBY DECLARED AND AGREED that the Surety shall be liable as Principal, and that nothing of any kind or matter whatsoever that will not discharge the Principal shall operate as a discharge or release of liability of the Surety, any law or usage relating to the liability of Sureties to the contrary notwithstanding.

IN WITNESS WHEREOF the Principal and Surety have signed and sealed this bond the

_____ day of _____, 20____.

SIGNED AND SEALED
in the presence of:

(Witness as to Principal if no seal)

(Name of Principal)

Per: _____ (Seal)

Per: _____

(Name of Surety)

By: _____ (Seal)
(Attorney-in-Fact)

FORM H2: LABOUR AND MATERIAL PAYMENT BOND
(See D15)

KNOW EVERYONE BY THESE PRESENTS THAT

his/its heirs, executors, administrators, successors or assigns (hereinafter called the "Principal"), and

his/its heirs, executors, administrators, successors or assigns (hereinafter called the "Surety"), are held and firmly bound unto **THE CITY OF WINNIPEG** (hereinafter called the "Obligee"), for the use and benefit of claimants as herein below defined, in the amount of

_____ dollars (\$_____)

of lawful money of Canada, for the payment whereof we, the Principal and the Surety jointly and severally bind ourselves firmly by these presents.

WHEREAS the Principal has entered into a written contract with the Obligee for

TENDER NO. 54-2024

RENFREW OUTFALL GATE CHAMBER UPGRADES

which is by reference made part hereof and is hereinafter referred to as the "Contract".

NOW THEREFORE the condition of the above obligation is such that if the Principal shall promptly make payment to all claimants as hereinafter defined, for all labour, service and material used or reasonably required for use in the performance of the Contract, then this obligation shall be void, otherwise it shall remain in full force and effect subject, however, to the following conditions:

- (a) A claimant is defined as one having a direct contract with the Principal for labour, service and material, or any of them, used or reasonably required for use in the performance of the contract, labour, service and material being construed to include that part of water, gas, power, light, heat, oil, gasoline, telephone service or rental of equipment (but excluding rent of equipment where the rent pursuant to an agreement is to be applied towards the purchase price thereof) directly applicable to the Contract;
- (b) The above-named Principal and Surety hereby jointly and severally agree with the Obligee that every claimant as herein defined, who has not been paid in full before the expiration of a period of ninety (90) days after the date on which the last of such claimant's work, labour or service was done or performed, or materials were furnished by such claimant, may sue on this bond, prosecute the suit to final judgment for such sum or sums as may be justly due claimant, and have execution thereon;
- (c) No suit or action shall be commenced hereunder by any claimant
 - (i) unless claimant shall have given written notice to the Principal and the Surety above-named, within one hundred and twenty (120) days after such claimant did or performed the last of the work, labour or service, or furnished the last of the materials for which said claim is made, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were furnished, or for whom the work, labour or service was done or performed. Such notice shall be served by mailing the same by registered mail to the Principal, and Surety, at any place where an office is regularly maintained for the transaction of business, or served in any manner in which legal process may be served in the Province of Manitoba;

- (ii) after the expiration of one (1) year following the date on which Principal ceased work on said Contract; including work performed under the guarantees provided in the Contract;
 - (iii) other than in a court of competent jurisdiction in the Province of Manitoba.
- (d) The amount of this bond shall be reduced by and to the extent of any payment or payments made in good faith hereunder, inclusive of the payment by Surety of mechanics liens which may be filed of record against said improvement, whether or not claim for the amount of such lien be presented under and against this bond.
- (e) The Surety shall not be liable for a greater sum than the specified penalty of this bond.

The Principal and Surety hereby agree that The Guarantors' Liability Act (Manitoba) shall apply to this Bond.

IN TESTIMONY WHEREOF, the Principal has hereunto set its hand affixed its seal, and the Surety has caused these presents to be sealed and with its corporate seal duly attested by the authorized signature of its signing authority this

_____ day of _____, 20____.

SIGNED AND SEALED
in the presence of:

(Witness as to Principal if no seal)

(Name of Principal)

Per: _____ (Seal)

Per: _____

(Name of Surety)

By: _____ (Seal)
(Attorney-in-Fact)

FORM M: SOCIAL PROCUREMENT PLAN

Every purchase has an economic, social, environmental, and cultural impact. Sustainable Procurement is about capturing the economic, social, environmental, and cultural impacts of purchasing decisions to foster healthy and vibrant communities.

Historically, procurement has been about choosing the supplier offering the lowest price while still meeting technical requirements of providing high quality products or services with minimal risk. By expanding the premise of 'best value' in procurement, to include the generation of positive societal benefits, alongside high quality and competitive bids, the City of Winnipeg is working to maximize community benefits and deliver improved socio-economic returns for stakeholders, within the existing spend.

The Contractor shall provide the Contract Administrator with a Social Procurement Plan Template (Form M: Social Procurement Plan Template) within five (5) Business Days of a request by the Contract Administrator.

Both Question 1 and 2 must be filled out responding to all criteria. Question 2 must explain the commitment to Question 1 within the context of the Contract.

1. The Contractor commits to _____ % of employment hours with Equity Groups on the delivery of this Contract.

$$X\% = \frac{\# \text{ of employment hours by Equity Groups on this Contract}}{\text{Total \# of employment hours on this Contract}}$$

Please reconfirm your commitment here.

2. Provide a detailed strategy for how the Contractor's current and planned efforts to employ Equity Groups will ensure the Contractor meets the commitment on the Contract.

Employment responses could include: We partner with Equity Group employment organizations to recruit Indigenous Rightsholders and other Equity Groups. When employees are onboarded, they are asked if they identify as an Indigenous Rightsholder or Equity Group. We track this and report on aggregate employment levels across our business each year per our Diversity and Inclusion Policy.

Please describe your strategy and/or plans to meet the above requirement.

FORM N: EMPLOYEE VOLUNTARY SELF-IDENTIFICATION SURVEY

The City of Winnipeg is committed to supporting a workforce that is representative of the community the City serves. The City is focused on human rights and ensuring full and equitable representation, success, and advancement of all people, and in particular, the equity groups that are under-represented.

Our company is in support of the goals above and are asking employees to participate in this survey to collect data on the demographics of our workforce.

Employee identity data collected by this survey will be shared with the City of Winnipeg in aggregate. All employee identity data will only be shared with our designated HR or management staff.

This data will be submitted to the City of Winnipeg as part of our Reporting requirements under City of Winnipeg Contracts.

Your response to the self-declaration questions is voluntary.

Thank you for participating in this self-identified and voluntary survey to help assess and measure the inclusion of equity groups in the workforce.

Company Name _____

Employee Name _____

1. Do you wish to participate in this survey?

Yes No

2. Do you identify as an Indigenous person?

Yes No

**3. Do you identify as any of the following Equity Groups, also known as under-represented groups?
Check all that apply.**

- Racialized peoples;
- Newcomers;
- Persons with disabilities;
- Women;
- Peoples facing poverty;
- Veterans;
- 2SLGBTQQIA+ (Two-Spirit, Lesbian, Gay, Bisexual, Transgender, Queer, Questioning, Intersex, Asexual, plus) Peoples;

Indigenous refers to “Aboriginal Peoples of Canada” as defined in Section 35(2) of the Constitution Act, 1982 to include the First Nations, Inuit and Métis Peoples of Canada. (Source: [Our Winnipeg 2045](#))

Racialized peoples refers to a group of people who have identifiable characteristics that differ from those of the majority or dominant population. Previously known as Visible Minority and although the term “visible minority” is used in legal (e.g. *Employment Equity Act*) and statistical (e.g. Census) contexts, it is considered outdated and no longer recommended because the word “visible” suggests being white is the standard, and the word “minority” limits the concept to numbers. The term is increasingly being replaced by “racialized” individuals or groups. (Source: [Immigration, Refugees and Citizenship Canada](#))

Newcomers refers to new residents including people arriving from countries outside Canada, such as recent immigrants (less than five years in Canada), refugees, refugee claimants or asylum seekers, and temporary residents. (Source: [Our Winnipeg 2045](#))

Persons with disabilities refers to individuals who have a long-term or recurring physical, mental, psychiatric, sensory, or learning impairment which may limit certain kinds of activity or could be perceived as a limitation. These include visible and non-visible disabilities. (Source: [City of Winnipeg](#))

Women refers to all people who identify as women, whether they are cisgender or transgender women. (Source: [Department of Justice, Government of Canada](#))

People facing poverty refers to people, given the size and region of residents, that do not have enough income to buy a set of goods and services considered to represent a modest, basic standard of living (Source: [Market Basket Measure, Stats Canada](#))

Veterans refers to any former member of the Canadian Armed Forces who successfully underwent basic training and is honorably discharged. (Source: [Veteran Affairs Canada](#))

2SLGBTQIA+ peoples refer to Two-Spirit, Lesbian, Gay, Bisexual, Trans, Queer, Questioning, Intersex, Asexual, Plus peoples. (Source: [Government of Canada](#))

FORM O: SOCIAL VALUE REPORTING TEMPLATE

Every purchase has an economic, social, environmental, and cultural impact. Sustainable Procurement is about capturing the economic, social, environmental, and cultural impacts of purchasing decisions to foster healthy and vibrant communities.

The data reported here is a contractual requirement to encourage and measure social, Indigenous, and environmental outcomes from the City's procurement. The City reserves the right to verify the information reported.

Company Name _____

Contract Number _____

Reporting Period Start Date _____

Reporting Period End Date _____

1. Employment of Equity Groups (# of employee hours)

The Contractor shall list the percentage (%) of employment hours they plan to commit with Equity Groups on the delivery of this Contract.

A. Total number of employment hours for all employees working on the project during the reporting period	_____ hours
B. Total number of employment hours for Equity Group employees working on the project during the reporting period	_____ hours
C. Percentage for the reporting period (B/A) (C = B / A)	_____ %

Please describe any successes or challenges related to your commitment for the reporting period.

PART E - SPECIFICATIONS

GENERAL

E1. APPLICABLE SPECIFICATIONS AND DRAWINGS

- E1.1 These Specifications shall apply to the Work.
- E1.2 *The City of Winnipeg Standard Construction Specifications* in their entirety, whether or not specifically listed on Form B: Prices, shall apply to the Work.
- E1.2.1 *The City of Winnipeg Standard Construction Specifications* is available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgt/Spec/Default.stm>
- E1.2.2 The version in effect three (3) Business Days before the Submission Deadline shall apply.
- E1.2.3 Further to C2.4(d), Specifications included in the Tender shall govern over *The City of Winnipeg Standard Construction Specifications*.
- E1.3 Bidders are reminded that requests for approval of substitutes as an approved equal or an approved alternative shall be made in accordance with B7. In every instance where a brand name or design specification is used, the City will also consider approved equals and/or approved alternatives in accordance with B7.
- E1.4 The following are applicable to the Work:

Specification No.

Specification Title

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Division 01 – General Requirements

NMS Section 013300	Submittal Procedures
NMS Section 013529.06	Health and Safety Requirements
NMS Section 014500	Quality Control
NMS Section 015200	Construction Facilities
NMS Section 015600	Temporary Barriers and Enclosures
NMS Section 017300	Execution
NMS Section 017400	Cleaning
NMS Section 017419	Waste Management and Disposal
NMS Section 017800	Closeout Submittals
NMS Section 019113	General Commissioning Requirements
NMS Section 019113.13	Commissioning Plan
NMS Section 019113.16	Commissioning Forms
NMS Section 019113.18	Commissioning Training

Division 05 - Metals

NMS Section 055000	Metal Fabrication
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Division 22 - Mechanical

NMS Section 22 14 29.16	Pumps
NMS Section 22 14 29.17	Discharge Piping

Division 25 Instrumentation and Controls

NMS Section 25 05 01	Controls General Requirements
NMS Section 25 05 54	Controls General Identification
NMS Section 25 30 02	Controls Instrumentation

Division 26 – Electrical

NMS Section 26 05 01	Common Work Results – Electrical
NMS Section 26 05 21	Wires and Cables (0-1000V)
NMS Section 26 05 28	Grounding – Secondary

NMS Section 26 05 29	Hangers and Supports for Electrical Systems
NMS Section 26 05 31	Splitters, Junction, Pull Boxes and Cabinets
NMS Section 26 05 32	Outlet Boxes, Conduit Boxes and Fittings
NMS Section 26 05 34	Conduits, Conduit Fastenings and Fittings
NMS Section 26 05 44	Installation of Cables in Ducts in Trenches
NMS Section 26 08 05	Acceptable Testing
NMS Section 26 12 17	Dry Type Transformers up to 600 V Primary
NMS Section 26 24 17	Panelboards Breaker Type
NMS Section 26 27 26	Wiring Devices
NMS Section 26 28 21	Moulded Case Circuit Breakers
NMS Section 26 29 03	Control Devices
NMS Section 26 29 10	Motor Starters to 600 V
NMS Section 26 50 00	Lighting
NMS Section 26 52 01	Emergency Lighting
NMS Section 26 91 90	Instrumentation

Division 40 – Automation

NMS Section 40 05 01	Common Work Results – Automation
NMS Section 40 80 11	Automation – Commissioning
NMS Section 40 92 00	Automation – Primary Control Devices
NMS Section 40 94 43	Programable Logic Controller (PLC)
NMS Section 40 95 13	Control Panels
NMS Section 40 99 01	Training
NMS Section 40 99 90	Maintenance and Support

Drawing No.

Drawing Name/Title

General Drawings

1-0240G-D0001-001	Cover Sheet and Site Location
1-0240G-D0002-001	Drawing Index

Civil Drawings

1-0240G-C0001-001	Forcemain Plan
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Electrical Drawings

1-0240G-E0001-001	Electrical Legend
1-0240G-E0002-001	Electrical Single Line Diagram - and Schedules
1-0240G-E0003-001	Electrical Site Plan - Utility Service and Details
1-0240G-E0004-001	Electrical Vault Layout and Section
1-0240G-E0005-001	Electrical Enclosure Layout - Details and Bill of Materials
1-0240G-E0006-001	Motor Starter Schematic – Pump P-G01
1-0240G-E0007-001	Motor Connection Diagram – Pump P-G01
1-0240G-E0008-001	Motor Starter Schematic – Pump P-G02
1-0240G-E0009-001	Motor Connection Diagram – Pump P-G02
1-0240G-E0010-001	Electrical Grounding Details
1-0240G-E0011-001	Hazardous Location Plan

Automation Drawings

1-0240G-A001-001	Automation Plan – Plan and Sections
1-0240G-A002-001	Panel Layout and Bill of Materials – PLC Control Panel CP-G81
1-0240G-A003-001	Power Distribution Wiring Schematic – PLC Control Panel CP-G81
1-0240G-A004-001	Network Block Diagram
1-0240G-A005-001	PLC I/O Wiring - PLC Control Panel CP-G81
1-0240G-A006-001	PLC I/O Wiring - PLC Control Panel CP-G81
1-0240G-A007-001	PLC I/O Wiring - PLC Control Panel CP-G81
1-0240G-A008-001	PLC I/O Wiring - PLC Control Panel CP-G81
1-0240G-A009-001	Automatic Pump Control Wiring Schematic - PLC Control Panel CP-G81
1-0240G-A010-001	Panel Layout and Bill of Materials – Intrinsically Safe Junction Box
1-0240G-A011-001	Panel Layout and Bill of Materials – CSO Instrument Panel

1-0240G-A012-001	Loop Diagram – Level Transmitter
1-0240G-A013-001	Loop Diagram – Low Level Float Switch
1-0240G-A014-001	Loop Diagram – Electrical Cabinet Temperature Transmitter
1-0240G-A015-001	Loop Diagram – 600 VAC Power Fail Relay
1-0240G-A016-001	Loop Diagram – TVSS Status Relay
1-0240G-A017-001	Loop Diagram – CSO Monitoring

Process Drawings

1-0240G-P001-001	Process and Instrumentation Legend
1-0240G-P002-001	Process and Instrumentation Diagram
1-0240G-P003-001	Process and Instrumentation - Plans and Elevations
	Process and Instrumentation – CSO Isometric

Structural Drawings

1-0240G-S001-001	Structural Demolition Plan
1-0240G-S002-001	Structural Plans
1-0240G-S003-001	Structural Sections
1-0240G-S004-001	Structural Sections
1-0240G-S005-001	Structural Details
1-0240G-S006-001	Structural Details
1-0240G-S007-001	Structural Details

Appendix A: Geotechnical Investigation Report
Appendix B: City of Winnipeg Electrical Design Guide
Appendix C: City of Winnipeg Identification Standard
Appendix D: Reference Drawings
Appendix E: Instrument List

E2. SOILS INVESTIGATION REPORT

E2.1 Further to C3.1,

- (a) A Geotechnical test hole has been drilled in the vicinity of the proposed Works at the Renfrew SRS Outfall Chamber site to determine the character of subsurface soil to facilitate the design of the Work. The information listed is considered accurate at the location indicated in the Site Plan and at the time of the investigation. However, considerable variations in the soil conditions may exist between the test hole and fluctuations in ground water levels can be expected seasonally. The test hole log and associated Geotechnical Design Memorandum is included in Appendix A.
- (b) Bidders are responsible for any interpretation they place on the supplied information and are expected to make such additional investigation of the soil at the Site as they feel necessary to satisfy themselves.
- (c) Any test borings made by the Bidder shall be done in accordance with the requirements of the appropriate authority of the City of Winnipeg. Bidders shall notify the Contract Administrator prior to starting any soil boring operation.

E3. UNDERGROUND STRUCTURES TEMPORARY RELOCATIONS

E3.1 Further to C3.1,

- (a) It is the responsibility of the Contractor to locate all underground utilities in the vicinity of the Work and temporarily relocate as required for the proposed Construction methods.

GENERAL REQUIREMENTS

E4. OFFICE FACILITIES

E4.1 The Contractor shall supply a site trailer with available space for intermittent use by the Contract Administrator.

E4.2 The Contractor shall supply office facilities meeting the following requirements:

- (a) The building shall be conveniently located near the Site of the Work.
- (b) The building shall have a minimum floor area of 25 square metres, two windows and a door entrance with a suitable lock.
- (c) The building shall be suitable for all weather use. It shall be equipped with an electric heater and air conditioner so that the room temperature can be maintained between either 16-180C or 24-250C.
- (d) The building shall be adequately lighted with fluorescent fixtures and have a minimum of three wall outlets.
- (e) The building shall be furnished with a drafting table, a table 2.5m X 1.2m, and a minimum of 8 chairs.
- (f) A portable toilet shall be located near the field office building. The toilet shall have a locking door.
- (g) The field office building and the portable toilet shall be cleaned on a weekly basis.

E4.3 Measurement and Payment

- (a) Providing Office Facilities shall be considered incidental to the Works of this Contract and no measurement or payment will be made for this item.

E5. MOBILIZATION AND DEMOBILIZATION PAYMENT

E5.1 Description

- (a) This Specification shall govern mobilization and demobilization from site.

E5.2 Measurement and Payment

E5.2.1 Mobilization and Demobilization

- (a) Mobilization and demobilization will be measured on a lump sum basis and paid for at the Contract Lump Sum Price for "Mobilization and Demobilization". Payment for Mobilization and demobilization shall include all costs associated with mobilization and demobilization, site set up, and cleanup. Payment will be made on the following schedule:
- (b) 25% payment of the Mobilization and Demobilization lump sum price will be paid once sewer cleaning and preparation crews arrive on site and commence with cleaning and sewer preparation works.
- (c) 50% payment of the Mobilization and Demobilization lump sum price will be paid once lining crews arrive on site and commence CIPP liner installations.
- (d) 100% of the Mobilization and Demobilization lump sum price will be paid subsequent to completion of the liner installation, liner repairs (if necessary), and site cleanup.

E6. TRUCK WEIGHT LIMITS

- E6.1 The City shall not pay for any portion of material which results in the vehicle exceeding the maximum gross vehicle weight allowed under The City of Winnipeg Traffic By-Law, unless such vehicle is operating under special permit.

E7. DANGEROUS WORK CONDITIONS

- E7.1 Further to clause C6.24 of the General Conditions, the Contractor shall be aware that underground chambers, manholes, and sewers are considered a confined space and shall follow the "Guidelines for confined Entry Work" as published by the Manitoba Workplace Safety and Health Division.
- E7.2 The Contractor shall be aware of the potential hazards that can be encountered in gate chambers, manholes and sewers such as explosive gases, toxic gases and oxygen deficiency.
- E7.3 The air in a confined space must be tested before entry and continuously during the time that personnel are inside the space. Equipment for continuous monitoring of gases must be explosion-proof and equipped with a visible and audible alarm. The principal tests are for oxygen deficiency, explosion range and toxic gases. Testing equipment must be calibrated in accordance with manufacturer's specifications.
- E7.4 The Contractor shall ventilate all confined spaces including underground chambers, tunnels, pipes and shafts as required and approved by the Manitoba Workplace Safety and Health Act (the "Act"). If no ventilation is supplied, a Worker must wear a respirator or supplied air to enter the confined space.
- E7.5 Workers must wear a respirator or supplied air at all times when entering a chamber, manhole or sewer where live sewage is present.
- E7.6 If products containing volatile organic carbons (VOCs) are used, the Contractor shall provide a photoionization detector (PID) on Site to monitor potential VOCs in the confined spaces. The gas detector and safety equipment conforming to the Act shall be made available to the Contract Administrator for his use during inspections. In addition, the Contract Administrator may collect discrete air samples for laboratory analysis.
- E7.7 The Contract Administrator may issue a Stop Work order to the Contractor if the above guidelines are not being followed. The Contractor shall not resume his operations until the Contract Administrator is satisfied the Contractor is following the appropriate procedures. The Contractor shall have no claim for extra time or costs due to the Stop Work order for not following these safety guidelines.

E8. WATERWAYS PERMIT

E8.1 The Contractor shall note that all Works associated with this Bid Opportunity falls within 100 meters of the Assiniboine River regulated summer water level, and therefore will require a Waterways Permit. The Contract Administrator will apply and pay for required Waterway Permits for the project. The Contractor will strictly adhere to the conditions imposed by the approved permit.

E9. FLOW CONTROL

E9.1 During winter months, land drainage and storm relief sewers can receive flow of an undetermined amount from groundwater infiltration, watermain breaks, snow melt and other unforeseen sources.

E9.2 Provide flow control measures to contend with and maintain flows in both the 2,819 mm diameter storm relief sewer and 2,400 mm diameter storm relief sewer upstream of each of the respective existing flap gates.

(a) Construct cofferdams upstream of the existing flap gates within the SRS pipes. The cofferdams are to be constructed to a maximum height of 0.9 m. The cofferdams are to be constructed in accordance with "Sandbag Dike Construction Instructions" as published by the Government of Manitoba Emergency Measures Organization.

(b) Supply and maintain submersible pumps and discharge piping to route intercepted upstream flows and groundwater infiltration to the Academy Road interceptor via the new forcemain and gravity sewer constructed during the project.

(c) The flows to the combined sewer are limited to 54 L/s.

E9.3 Provide flow control measures within the gate chamber excavation to contend with overland flows and groundwater within the shored excavation. Flow control measures shall include but are not limited to diversions, flumes and by-pass pumping. All dewatering shall occur within the shoring.

E9.4 Provide a cofferdam just downstream of the work area as required to prevent river water from entering the excavation. The cofferdam shall be constructed in accordance with "Sandbag Dike Construction Instructions" as published by the Government of Manitoba Emergency Measures Organization. Cofferdams shall be constructed with 6 mil polyethylene sheeting to ensure watertightness. Maintain a 150mm (6") freeboard at all times. Downstream cofferdams shall not be constructed to more than one-half of the pipe diameter as to not restrict flows in the case of an emergency condition (e.g. watermain break).

E9.5 All intercepted flow water from upstream sources must be discharged to the combined sewer.

E9.6 Discharge hoses for by-pass pumping shall not be laid across vehicle or pedestrian traffic areas and must be protected from freezing during winter months. Pumping equipment if used shall be set-up in a location and in such a way to not be a noise problem for nearby residences.

E9.7 Provide a flow control plan to the Contract Administrator for review at least two (2) weeks prior to commencement of any demolition work.

E9.8 In the event the river level becomes higher than the gate chamber activation level and the flow in the sewer system is expected to exceed the sewer capacity due to spring runoff, the Contract Administrator may suspend Work activities that require temporary by-pass pumping. Suspension of these activities will continue until the high flow diminishes in the sewer.

E9.9 If in the opinion of the Contract Administrator suspension of Work activities that require temporary by-pass pumping cause a delay in completion of the Work through no fault of the Contractor, the completion date of the Work will be adjusted accordingly.

E9.10 Measurement and Payment

- (a) Flow Control shall be considered incidental to the Works of this Contract and no measurement or payment will be made for this item.

E10. SHOP DRAWINGS

E10.1 Description

- (a) This Specification shall revise, amend and supplement the requirements of CW1110.
 - (i) The term 'shop drawings' means drawings, diagrams, illustrations, schedules, performance charts, brochures, and other data, including site erection drawings which are to be provided by the Contractor to illustrate details of a portion of the work.
 - (ii) The Contractor shall submit specified shop drawings to the Contract Administrator for review. All submissions must be in metric units. Where data is in imperial units, the correct metric equivalent shall also be on all submissions for Engineering review.
 - (iii) Provision of Shop Drawings will be considered incidental to the price for supply and delivery of equipment and materials.
- (b) Shop Drawings
 - (i) Original drawings are to be prepared by Contractor, Subcontractor, supplier, distributor, or manufacturer, which illustrate appropriate portion of work; showing fabrication, layout, setting or erection details as specified in appropriate sections.
 - (ii) Shop drawings for the following structural components shall bear the seal of a Professional Engineer registered to practice in the Province of Manitoba.
 - (i) Shoring;
 - (ii) Metal Fabrications.
- (c) Contractor's Responsibilities
 - (i) Review shop drawings, product data and samples prior to submission and stamp and sign drawings indicating conformance to the Contract requirements.
 - (ii) Verify:
 - (i) Field Measurements
 - (ii) Field Construction criteria
 - (iii) Catalogue numbers and similar data
 - (iii) Coordinate each submission with requirements of Work and Contract Documents. Individual shop drawings will not be reviewed until all related drawings are available.
 - (iv) Notify Contract Administrator, in writing at time of submission, of deviations from requirements of Contract Documents.
 - (v) Responsibility for deviations in submission from requirements of Contract Documents is not relieved by Contract Administrator's review of submission, unless the Contract Administrator gives written acceptance of specified deviations.
 - (vi) Responsibility for errors and omissions in submission is not relieved by the Contract Administrator's review of submittals.
 - (vii) The Contractor shall make any corrections required by the Contract Administrator and shall resubmit the required number of corrected copies of Shop Drawings. The Contractor shall direct specific attention in writing or on resubmitted Shop Drawings to revisions other than the corrections requested by the Contract Administrator on the previous submission.
 - (viii) After Contract Administrator's review and return of copies, distribute copies to sub-trades as required.
 - (ix) Maintain one (1) complete set of reviewed shop drawings, filed by Specification Section Number, at the site of the work for use and reference of the Contract Administrator and Subcontractors.
- (d) Submission Requirements

- (i) Schedule submissions at least seven (7) calendar days before dates reviewed submissions will be needed, and allow for a seven (7) calendar day period for review by the Contract Administrator of each individual submission and re-submission, unless noted otherwise in the Contract Documents.
- (ii) Submit five (5) paper prints of shop drawings. The Contractor is advised that the Contract Administrator will retain three (3) copies of all submittals and return two (2) copies to the Contractor.
- (iii) Accompany submissions with transmittal letter, containing:
 - (i) Date
 - (ii) Project Title and Bid Opportunity Number
 - (iii) Contractor's name and address
 - (iv) Number of each shop drawing, product data and sample submitted
 - (v) Specification Section, Title, Number and Clause
 - (vi) Drawing Number and Detail/Section Number
 - (vii) Other pertinent data
- (iv) Submission shall include:
 - (i) Date and revision dates.
 - (ii) Project Title and Bid Opportunity Number.
 - (iii) Name of:
 - ◆ Contractor
 - ◆ Subcontractor
 - ◆ Supplier
 - ◆ Manufacturer
 - ◆ Separate detailer when pertinent
 - (iv) Identification of product material.
 - (v) Relation of adjacent structure or materials
 - (vi) Field dimensions, clearly identified as such
 - (vii) Specification section name, number and clause number or drawing number and detail/section number.
 - (viii) Applicable standards, such as CSA or CGSB numbers.
 - (ix) Contractor's stamp, initialed or signed, certifying review of submission, verification of field measurements and compliance with Contract Documents.
- (e) Other Considerations
 - (i) Fabrication, erection, installation or commissioning may require modifications to equipment or systems to conform to the design intent. Revise pertinent shop drawings and resubmit.
 - (ii) Material and equipment delivered to the site of the works will not be paid for at least until pertinent shop drawings have been submitted and reviewed.
 - (iii) Incomplete shop drawing information will be considered as stipulated deductions or the purposes of progress payment certificates.
 - (iv) No delay or cost claims will be allowed that arise because of delays in submission, re-submissions and review of shop drawings.

E10.2 Measurements and Payment

- (a) Preparation and submittal of Shop Drawings shall be considered incidental to the Works of this Contract and no measurement or payment will be made for this item.

E11. SITE DEVELOPMENT AND RESTORATION

E11.1 Description

- (a) This Specification shall supplement the requirements of CW1130.
- (b) This Specification shall cover all aspects of the Site Development and Restoration Work, including:
 - (i) Erection, maintenance and removal of safety fencing;
 - (ii) Snow clearing;
 - (iii) Water/flow control;
 - (iv) General access development;
 - (v) Start-up costs;
 - (vi) Equipment setup and removal;
 - (vii) Office facilities;
 - (viii) Access maintenance; and
 - (ix) Site restoration.

E11.1.1 This Specification shall amend and supplement Standard Specification CW 3510 and CW 3520.

E11.2 Materials

E11.2.1 Equipment

- (a) All equipment, implements, tools and facilities used shall be of a size and type as required to complete the Work in a reasonable time, approved by the Contract Administrator. The Contractor shall keep all equipment in good working order, and have sufficient standby equipment available at all times, as required.

E11.3 Construction Methods

E11.3.1 Site and Construction Access

- (a) The Contractor shall be responsible to develop suitable Site access. This includes but is not limited to, temporary bridging over structures, temporary removal and reinstallation of safety fencing, any landscaping and grading repairs, restoration of vegetation, etc. necessary to restore any Site and construction access area to their pre-existing condition.

E11.3.2 Site Security

- (a) At the end of each Work Day, all excavations and underground structure openings shall be secured to prevent access. Safety fence shall also be closed and secured to prevent public access.

E11.3.3 Environmental Regulations

- (a) The Contractor shall adhere to all relevant Federal and Provincial environmental regulations.
- (b) The Contractor shall plan to Work in accordance with the current environmental regulations of "Manitoba Stream Crossing Guidelines for Protection of Fish and Fish Habitat", Fisheries and Oceans, and Manitoba Natural Resources.
- (c) The Contractor shall supply, in writing, prior to the commencement of Work on-Site to cleanup minor spills, should they occur. The Contractor shall supply the name, address and phone number of a local supplier, where additional kits are available on short notice.

E11.4 Staging and Laydown Areas

- (a) Prior to mobilization to site, the Contractor shall identify and propose to the City for approval, the areas requested for laydown, staging materials, and placement of the site trailer.
- (b) Staging and laydown areas to comply with the waterways permit as described in E8.

E11.5 General Site Cleanup and Restoration

- (a) All areas of the construction Site shall be restored to a condition at least equivalent to its original condition prior to initiation of Work. This may include, but is not necessarily limited to the Contractor's lay down area, and removal of all temporary fencing.

E11.6 Permanent Surface Restorations

- (a) If required, permanently restore all existing surface areas disturbed by construction activities including but not limited to areas disturbed by; construction equipment, placement of equipment trailers and where construction materials were stockpiled, shall be restored as follows:
 - (i) Boulevards, ditches and grassed areas – sodding using imported topsoil in accordance with CW 3510.
 - (ii) Asphalt surfaces – match existing base course and asphalt thickness or a minimum of 150 millimetres of base course and 75 millimetres of Type 1A Asphaltic Concrete, whichever is greater, in accordance with CW 3410.
 - (iii) Miscellaneous concrete slabs, including sidewalk - in accordance with CW 3235.
 - (iv) Concrete curb and gutter – in accordance with CW 3240.

E11.7 Method and Measurement of Payment

E11.7.1 The site development and restoration shall be measured on a lump sum basis and paid for at the Contract Lump Sum Price for "Site Development and Restoration," which prices shall be payment in fill for supplying all materials and for performing all operations herein described and all other items incidental to the Work included in this Specification.

- (a) 33% of the Site Development and Restoration unit price will be paid for on the first progress payment following commencement of the work on the specific Site being developed.
- (b) The remaining 66% of the Site Development and Restoration unit price will be paid subsequent to the completion of the Work and restoration and cleanup of the Site.

E11.7.2 Any site restoration required to restore laydown areas, or similar temporary work areas, shall be considered incidental to Site Development and Restoration. No separate payment shall be made for these areas.

E12. EXTRA WORK ALLOWANCE

E12.1 Additional Work may be necessitated due to unforeseen circumstances that may arise during the course of the project due to:

- (a) Additions to the scope of Work by the Contract Administrator, beyond that defined herein.

E12.2 A cash allowance has been included on Form B: Prices.

E12.3 The City reserves the right to delete any or all of the Cash Allowance from the Contract if the Work intended to be covered by the Cash Allowance is not required, or if the Works intended are found to be more extensive than the provisional Cash Allowance.

E12.4 Cost of additional work shall be evaluated by the methods outlined in C7.4, and a Change Order prepared by the Contract Administrator. Cost of the Change Order will be paid on the Progress Estimate and deducted from the Cash Allowance. If the valuation of the authorized work exceeds the Value of the Cash Allowance, the Contract Value will be adjusted by the shortfall.

E12.5 Additional services and/or Work will not be initiated for:

- (a) Reasons of lack of performance or errors in execution.
- (b) Scheduling changes initiated by the City, where at least 24 hours' notice is given prior to the Contractors schedule time to be on Site.

E12.6 Should it be determined that additional material or services are required, the Contract Administrator shall approve the Work, prior to commencement of the additional Work.

E12.7 Material Mark-Up Factors in accordance with C7:

- (a) The base cost is to be the wholesale cost of the material, regardless of the Contractor or Subcontractor supplying the material.
- (b) In general, the party (Contractor or Subcontractor) supplying the material is the party that purchases the material from a supplier who does not perform any work on Site, unless otherwise determined by the Contract Administrator.
- (c) Where the Contractor is supplying the material, the mark-up on the material is limited to fifteen percent (15%).
- (d) Where the Contractor's immediate Subcontractor is supplying the material the total mark-up on the material including all Subcontractors and the Contractor is limited to twenty-five percent (25%)
 - (i) The Subcontractor's mark-up on the material is limited to fifteen percent (15%);
 - (ii) The Contractor's mark-up on the material is limited to ten percent (10%).
- (e) A Third-Level Subcontractor is a Subcontractor of a Subcontractor of the Contractor.
 - (i) No Third-Level Subcontractors on this project are approved for additional mark-up.
 - (ii) In the event that a Third-Level Subcontractor is utilized, that is not approved for additional mark-up, the Contractor is responsible for coordinating the split of the maximum approved mark-up between the Contractor and Subcontractors.

E13. TRAFFIC CONTROL

E13.1 In accordance with the Manual of Temporary Traffic Control on City Streets (MTTC), the Contract Administrator shall make arrangements with the Traffic Services Branch of the City of Winnipeg to place, maintain, and remove all regulatory signs and traffic control devices authorized and/or required by the Traffic Management Branch in the following situations:

- (a) Parking restrictions,
- (b) Stopping restrictions,
- (c) Turn restrictions,
- (d) Diamond lane removal,
- (e) Full or directional closures on a Regional Street,
- (f) Traffic routed across a median,
- (g) Full or directional closure of a non-regional street where there is a requirement for regulatory signs (turn restrictions, bus stop relocations, etc.) to implement the closure.
- (h) Approved Designated Construction Zones with a temporary posted speed limit reduction. Traffic Services will be responsible for placing all of the advance signs and 'Construction Ends' (TC-4) signs. The Contractor is still responsible for all other temporary traffic control including but not limited to barricades, barrels and tall cones.

E13.2 Further to (c), the Contractor shall make arrangement with the Traffic Services Branch of the City of Winnipeg to supply regulatory signs as required.

E13.3 Upon request from the Contract Administrator, the Contractor shall provide records demonstrating that the Site has been maintained.

E13.4 Further to E13.1(c) and E13.1(d) the Contractor shall make arrangements with the Traffic Services Branch of the City of Winnipeg to reinstall the permanent regulatory signs after the Contract Work is complete. At this time the Contractor shall make arrangements to drop off the stockpiled materials to Traffic Services at 495 Archibald Street.

E13.5 Any changes to the approved traffic management plan must be submitted to the Contract Administrator a minimum of (five) 5 Working Days prior to the required change for approval.

E13.6 If the Contract Administrator determines that the Contractor is not performing Traffic Control in accordance with this specification, Traffic Services Branch may be engaged to perform the Traffic Control. In this event the Contractor shall bear the costs associated charged to the project by the Traffic Services Branch of the City of Winnipeg in connection with the required Works undertaken by the Contractor.

E14. TRAFFIC MANAGEMENT

E14.1 Further to clause 3.7 of CW1130:

E14.1.1 Partial closure of Academy Road will be required during the Works. The Contractor shall give the Contract Administrator a minimum of ten (10) Working Days' notice prior to the closure to coordinate with the City of Winnipeg.

E14.1.2 No stockpiling of material will be permitted on the roadway.

E14.1.3 Intersecting street and private approach access shall be maintained at all times. Note: there is no rear access to homes on south side of Burrows Avenue.

E14.1.4 Should the Contractor be unable to maintain pedestrian or vehicular access to a residence or business, they shall review the planned disruption with the residence and the Contract Administrator, and take reasonable measures to minimize the impact. The Contractor shall provide a minimum of 24 hours notification to the affected residence or business and the Contract Administrator, prior to disruption of access.

E14.1.5 Pedestrian access and ambulance/emergency vehicle access must be maintained at all times.

E14.1.6 Pedestrian access shall be restricted by maintaining a security fence around the perimeter of the Work site.

E14.2 Payment

(a) Traffic Management shall be considered incidental to the Works of this Contract and no separate payment will be made for this item.

E15. PROTECTION OF EXISTING TREES

E15.1 Description

E15.1.1 Tree removal that is required will be coordinated by the City.

E15.1.2 The Contractor shall take the following precautionary steps to avoid damage from construction activities to any existing trees within the limits of the construction area.

E15.1.3 Do not stockpile materials and soil or park vehicles and equipment within 2 metres of trees.

E15.1.4 Strap mature tree trunks with 38 x 140 x 2400 wood planks. Smaller trees shall be similarly protected using appropriately sized wood planks.

E15.1.5 Excavations shall be carried out in a manner to minimize damage to existing root systems. Where roots must be cut to facilitate an excavation they shall be neatly pruned at the face of the excavation.

E15.1.6 Work on Site shall be carried out in a manner to minimize damage to existing tree branches. Where damage to tree branches does occur, the Contractor shall neatly prune the damaged branch.

E15.1.7 American elm trees shall not be pruned between April 1st and August 1st and Siberian elm trees between April 1st and July 1st of any year under provisions of The Dutch Elm Disease Act.

E15.2 All damage to existing trees due to construction activities shall be repaired to the requirements and satisfaction of the City of Winnipeg, Public Works Department and Forestry Branch at the Contractor's expense.

E15.3 Payment

- (a) Protection of Existing Trees shall be considered incidental to the Works of this Contract and no separate payment will be made for this item.

E16. FORCEMAIN

E16.1 Forcemain Description

E16.1.1 This Specification shall cover the installation of the 200 mm diameter forcemain. This Specification shall amend and supplement Standard Specifications CW 2110 as follows:

- (a) The term “forcemain” shall be considered equivalent to the term “watermain”.
- (b) Class 4 or Class 5 backfill shall be in accordance with SD-001 and SD-002
- (c) Disinfection of the forcemain pipe will not be required.

E16.2 Materials

E16.2.1 Forcemain Pipe

- (a) The forcemain shall be constructed using PE4710 DR17 HDPE pipe, PVC C900 pipe or equivalent product from the City of Winnipeg Approved Product list and as per Section B7.
- (b) Forcemain fittings including bends, couplings, flange adapters, and restrainers.

E16.3 Equipment

- (a) All equipment, implements, tools and facilities used shall be of a size and type as required to complete the Work in a reasonable time, approved by the Contract Administrator. The Contractor shall keep all equipment in good Working order, and have sufficient standby equipment available at all times, as required.

E16.4 Construction Methods

E16.4.1 Connection to Manholes

- (a) The Contractor shall connect the forcemain to the manhole as directed by the Contract Administrator and in the project drawings.
- (b) The Contractor shall install manholes in accordance with CW SD-010.
- (c) The Contractor shall align the forcemain as to avoid the combined sewer weir structure located on Academy Road as shown in the reference drawings in Appendix D (Drawing LD-263).

E16.4.2 Trench Shoring And Excavation

- (a) Work must be completed in accordance with CW 2030, unless otherwise indicated by the Contract Administrator.
- (b) The Contractor shall take precautionary steps to prevent damage from construction activities to adjacent properties. All damage to adjacent properties caused by the Contractor's activities shall be repaired to, equal or better condition than prior to construction, as approved by the Contract Administrator. No separate measurement or payment will be made for the protection of adjacent private property.

E16.5 Method of Measurement and Payment

E16.5.1 Sewer Pipe Installation

- (a) Forcemain installation will be measured on a length basis for each size, method of installation, type of bedding and type of backfill and paid for at the Contract Unit Price per metre for “200 mm Forcemain Pipe Installation”. Length to be paid for will be the total number of linear metres supplied and installed in accordance with this Specification, accepted and measured by the Contract Administrator.
- (b) All pipe fittings including bends, transition couplers, restrainers, required for the installation shall be included in the per linear meter price.

- (c) Measurement for length of pipe installed using trenchless methods will be made horizontally at grade above the centreline of pipe through shafts. Measurement where the type of backfill used in shafts changes will be from the midpoint distance between adjacent shafts.
- (d) Extraction of existing pipe required to install new pipe will be included with payment for trenchless method of installation.
- (e) Measurement for length of forcemain installed using trenchless methods between pipes installed in a trench will be made horizontally at grade above the centreline of pipe from face to face of the trench excavation.
- (f) Pipe specified to be installed using trenchless methods but were installed in a trench due to field conditions will be paid at the Contract Unit Price per metre for trenchless installation.
- (g) Correction of alignment and grade exceeding the allowable variance will be at the Contractor's own expense.

E17. GRAVITY SEWER

E17.1 Gravity Sewer Description

E17.1.1 This Specification shall cover the installation of the 250 mm diameter gravity sewer.

- (a) Install 250 mm PVC sewer in accordance with CW 2130.
- (b) Backfill shall be Class 1 in accordance with CW 2030.

E17.2 Materials

- (a) Gravity sewer shall be construction using materials of the Approved Products for Underground Use in accordance with CW 2130 – Gravity Sewers.

E17.3 Equipment

- (a) All equipment, implements, tools and facilities used shall be of a size and type as required to complete the Work in a reasonable time, approved by the Contract Administrator. The Contractor shall keep all equipment in good Working order, and have sufficient standby equipment available at all times, as required.

E17.4 Construction Methods

- (a) Install gravity sewer in accordance with CW 2130 – Gravity Sewers.
 - (i) The gravity sewer shall be connected to the manhole in accordance with SD-010.
 - (ii) The gravity sewer shall be connected to the Academy Road Interceptor in accordance with SD-009.
- (b) The Contractor shall connect the forcemain to the manhole as directed by the Contract Administrator and in the project drawings.
- (c) The Contractor shall install manholes in accordance with CW SD-010.
- (d) The Contractor shall align the gravity sewer as to avoid the combined sewer weir structure located on Academy Road as shown in the reference drawings in Appendix D (Drawing LD-263).

E17.4.1 Trench Shoring And Excavation

- (a) Work must be completed in accordance with CW 2030, unless otherwise indicated by the Contract Administrator.
- (b) The Contractor shall take precautionary steps to prevent damage from construction activities to adjacent properties. All damage to adjacent properties caused by the Contractor's activities shall be repaired to, equal or better condition than prior to construction, as approved by the Contract Administrator. No separate measurement or payment will be made for the protection of adjacent private property.

E17.5 Method of Measurement and Payment

E17.5.1 Sewer Pipe Installation

- (a) Gravity sewer installation will be measured on a length basis for each size, method of installation, type of bedding and type of backfill and paid for at the Contract Unit Price per metre for "250 mm Gravity Sewer Pipe Installation". Length to be paid for will be the total number of linear metres supplied and installed in accordance with this Specification, accepted and measured by the Contract Administrator.
- (b) All pipe fittings including bends, transition couplers, restrainers, required for the installation shall be included in the per linear meter price.
- (c) Measurement for length of pipe installed using trenchless methods will be made horizontally at grade above the centreline of pipe through shafts. Measurement where the type of backfill used in shafts changes will be from the midpoint distance between adjacent shafts.
- (d) Extraction of existing pipe required to install new pipe will be included with payment for trenchless method of installation.
- (e) Measurement for length of forcemain installed using trenchless methods between pipes installed in a trench will be made horizontally at grade above the centreline of pipe from face to face of the trench excavation.
- (f) Pipe specified to be installed using trenchless methods but were installed in a trench due to field conditions will be paid at the Contract Unit Price per metre for trenchless installation.
- (g) Correction of alignment and grade exceeding the allowable variance will be at the Contractor's own expense.

E18. SUPPLY AND INSTALLATION OF TEMPORARY SHORING

E18.1 Description

- (a) This Specification shall cover shoring requirements for the Works related to the excavation and construction of the new Gate Chamber, as shown on the Drawings.

E18.2 Construction Methods

E18.2.1 Excavation

- (a) Remove excavated material from the site immediately. Excavated material shall not be stockpiled on-site unless it will be used as backfill the same day it is excavated.
- (b) Stockpiling of excavated soils, if required, shall be placed at a safe distance away from the excavation to minimize the potential of excavation instability. A designated stockpile area should be identified on the contractor's construction plan and shall be submitted to Contract Administrator for approval prior to proceeding.
- (c) Any groundwater seepage into the excavation shall be properly managed to protect the bearing surface from disturbance or loss of resistance. Groundwater seepage management may consist of sumps and pumps at the exterior of the bearing surface in the excavation.
- (d) Place a minimum 75mm thick lean mix concrete slab in the bottom of the excavation to provide a clean working base upon completion of the excavation to the required limits. Allow the concrete to set for twenty-four (24) hours before setting up forms or placing reinforcing steel.
- (e) Lean mix concrete shall be well-tamped and screened to give a level working platform for setting up forms and placing reinforcing steel.
- (f) Supply and place lean mix concrete, as directed by the Contract Administrator, as backfill for any portions of the excavation, carried beyond the required limits of excavation. The limits of excavation shall be considered to be the inside face of the shoring system and the underside of the working base slab.

- (g) All working areas below grade shall be kept adequately and securely supported during and after excavation until the shoring and bracing is in place to prevent loss of ground or injury to any person from falling material.

E18.2.2 Excavation Security Fence

- (a) Further to Clause 3.1 of CW 1130, provide a security fence to completely surround the excavation when unattended generally in accordance with the following.
- (b) Security fence shall be chain link fence or approved equal, a minimum 1.80 metres high with metal support posts embedded far enough into the ground and spaced close enough together so the fence will not sag or collapse.
- (c) Attach fencing securely to posts.
- (d) Secure the gate or end of the fencing to a post with chain and a padlock.
- (e) Provide alternate security fence proposal to Contract Administrator for approval.

E18.2.3 Shoring

- (a) The type, strength, amount of shoring and bracing shall be determined by the Contractor's Professional Engineer/Geoscientists registered in Manitoba. The design should consider the nature of the ground and attendance conditions that may be required, taking into account property lines, existing slopes, utilities, railroads, roadways and existing structures.
- (b) Shoring and bracing shall be so spaced, embedded, and dimensioned as to prevent the failure of the shoring system, caving, loss of ground, base heave, surface settlement, or squeezing of the soil beyond the neat lines of excavation and to provide control of seepage emanating from the overburden soil layers, including piping through and/or below the shoring system. Shoring structures shall be free from defects that might impair its strength or suitability for the Work. Sheeting/shoring and bracing shall conform to the latest revisions of the "Construction Safety Act" of the Department of Labour of the Government of Manitoba and in accordance with Province of Manitoba "W210 The Workplace Safety and Health Act" and "Guidelines for Excavation Work".
- (c) Shoring design must consider surcharge loading of construction equipment and railroads at a minimum.
- (d) Supporting design calculations as required to facilitate review of the submission for conformance with the Contract Documents.
- (e) Submit AutoCAD Shop Drawings and design calculations for the shoring/excavation system designed and sealed by a Professional Engineer registered or licensed to practice in the Province of Manitoba and experienced in the structural design of shoring systems. The designer of the shoring system shall inspect the system during construction and certify, in writing to the Contract Administrator, that construction is in conformance with the approved design.
- (f) Shoring and bracing shall be installed such that the structure size and wall thickness shown on the shop drawings can be obtained subsequent to installation of the shoring system.
- (g) Shoring and bracing shall be designed and installed to prevent settlement and damage to existing structures. In the event of damage, the Contractor will be held liable, and shall be required to provide appropriate restoration at his cost, to the satisfaction of the Contract Administrator.
- (h) Shoring and bracing shall remain in place until concrete has attained 75% of the design strength.

E18.2.4 Monitoring Movement of Shoring

- (a) The Contractor shall submit to the Contract Administrator a plan for monitoring the movement of shoring during construction a minimum of two (2) Working Days prior to the installation of shoring. The monitoring plan shall be performed by approved survey methods for vertical or horizontal movement of the shoring, acceptable to the Contract Administrator. Costs for monitoring shall be incidental to the installation of the temporary shoring.

E18.2.5 Measurement and Payment

- (a) Shoring will be paid for at the Contract Lump Sum Price for "Temporary Shoring". Said price shall be payment in full for supplying all materials and performing all operations herein described and all other items incidental to the Work included in this Specification.

E19. DEMOLITION OF STRUCTURES

E19.1 Description of Work

The Work required under this section shall include, but is not limited to, the following:

- (a) Partial demolition of the existing gate chamber concrete, wye chamber concrete and SRS pipe to specified limits shown on the drawings.
- (b) Removal and disposal of debris and silt found within the existing chamber and wye chamber.
- (c) Removal and disposal of the existing slide gate, associated hardware, and thimble.
- (d) Removal and disposal of the existing flap gates in the wye chamber.
- (e) Removal and disposal of construction debris.

E19.1.1 The Work required under this section shall include, but is not limited to, the following:

- (a) Removal of existing concrete, performing saw cutting, demolition, existing equipment to be maintained, demolition and disposal of existing concrete, and clean-up of work site in anticipation of new work for those demolition areas indicated on the drawings.

E19.1.2 The work to be done by the Contractor under this section shall include the furnishing of all superintendence, overhead, labour, materials, equipment, tools, supplies, and all things necessary for and incidental to the satisfactory performance and completion of all Works as described hereinafter.

E19.2 References

- E19.2.1 CSA S350-M1980, Code of Practice for Safety in Demolition of Structures.
- E19.2.2 Manitoba Workplace Safety and Health Act, and all applicable National, Provincial and Municipal regulations.

E19.3 Protection

- E19.3.1 Prevent damage of existing gates and structure to remain. Provide bracing and shoring as required. Make good any damage caused by the demolition Work.
- E19.3.2 Take precautions to support affected structures and, if safety of structure being demolished or adjacent structures appears to be endangered, cease operations and notify the Contract Administrator.
- E19.3.3 The Contractor shall take precautions during demolition works to prevent damage to existing structures and adjacent property. In the event of damage, the Contractor will be held liable, and shall be required to provide appropriate restoration at his cost, to the satisfaction of the Contract Administrator.

E19.4 Execution

E19.4.1 Commencement

- (a) Demolition shall commence after certification of the shoring system as outlined in E17.

E19.4.2 Inspection

- (a) Inspect Site with Contract Administrator and verify extent of items for removal, disposal, salvage and items to remain.
- (b) Notify and obtain approval of Contract Administrator before starting demolition.

E19.4.3 Safety Code and Requirements

- (a) Unless otherwise specified, carry out demolition in accordance with the City of Winnipeg Safety Directives and Guidelines.

E19.4.4 Demolition

- (a) Demolish structures to permit construction of new work as required.
- (b) Remove existing equipment, services, and obstacles where required for refinishing or making good of existing surfaces, and replace as Work progresses.
- (c) At end of each day's Work, leave Work in safe condition so that no part is in danger of toppling or falling.
- (d) Do not sell or burn materials on Site.
- (e) Damage to concrete that is to remain shall be minimized. Concrete shall be demolished by sawcutting and subsequent jackhammering using hand-held breakers or jack hammers (maximum 10 kgs/20 lbs.). Other methods of performing concrete demolition may be submitted for review and approval to the Contract Administrator. The Contractor shall take measures to ensure that the concrete beyond the limits of demolition is not fractured or shattered. The Contractor shall remove using acceptable methods and replace any concrete which is deemed to be fractured as a result of demolition methods employed by the Contractor. This repair Work shall be performed at no additional cost to the City of Winnipeg.

E19.4.5 Demolition Tolerances

- (a) All demolition shall be done using equipment and procedure to prevent over-breakage of the existing structure.
- (b) Final demolition surfaces must remain locally within (25 mm) of the demolition lines, alignments, or limits shown on the drawings. Demolition beyond the limits shown shall be reviewed by the Contract Administrator. The Contractor shall repair excess demolition to the satisfaction of the Contract Administrator, and at no cost to the City where required.
- (c) All protrusions into the defined limits of demolition shall be removed if they interfere with the placement and alignment of embedded components or reinforcing steel.

E19.4.6 Abrasive Wiresaw and Sawcutting

- (a) Areas of demolition shall be delineated from existing concrete that is to remain using either abrasive disc sawcutting, or abrasive wiresawing.
- (b) All sawcuts shall be performed straight and normal to the surface being cut, following the locations shown on the drawings, or as directed by the Contract Administrator.
- (c) Overruns at the junctions of sawcuts, and mis-starts shall be cleaned and filled with dry patching mortar of matching colour, as directed by the Contract Administrator.
- (d) Minimum depths of sawcuts shall be 50 mm (2") unless otherwise shown on drawings.

E19.4.7 Disposal of Demolished Materials

- (a) The Contractor shall be responsible for removal of debris and waste from the Work area to the location to an appropriate solid waste disposal area approved by the contract administrator.
- (b) Metal debris, which may include reinforcing steel, shall be removed from Site and disposed of by the Contractor.

E19.5 Measurement and Payment

E19.5.1 Demolition

Demolition of existing sewer pipe and partial demolition of the gate chamber concrete will be measured on a lump sum basis and paid for at the Contract Lump Sum Price for "Demolition." No payment shall be made for demolition beyond the limits specified, or those otherwise approved by the Contract Administrator. The separation, as necessary of embedded and structural steel shall be considered incidental to the Work. The installation

of temporary supports, shoring or hangers shall also be considered incidental to the Work. Sawcutting of concrete and removal of construction debris shall be considered incidental to the Work.

E20. REMOVAL OF EXISTING SLIDE GATE

E20.1 Description of Work

E20.1.1 This specification shall cover the removal, salvaging, and delivery of the existing slide gate and associated accessories as outlined below, but should not be limited to this description. The Contractor shall be responsible for all labour, equipment, transportation, and associated costs.

- (a) Carefully remove the existing slide gate along with mechanical lift operator and stem from the existing Renfrew Outfall Chamber.
- (b) Carefully remove the existing thimble from the existing Renfrew Outfall Chamber.
- (c) Transport and deliver the removed slide gate, mechanical lift operator and stem, and associated accessories to City of Winnipeg's Water Services Division shop located at 598 Plinguet Street.
- (d) Necessary precautions shall be taken to minimize damage to the slide gate, mechanical lift operator and stem and associated accessories.

E20.2 The Contractor shall not remove the existing slide gate, mechanical lift operator or stem until the new flap gate is successfully operational and tested. The Contractor shall request authorization from the Contract Administrator a minimum of five (5) working days prior to removal of the existing slide gate and associated hardware.

E20.3 Measurement and Payment

- (a) Removal of Existing Slide Gate will be paid for at the Contract Lump Sum Price for "Removal of Existing Slide Gate". Said price shall be payment in full for supplying all materials and performing all operations herein described and all other items incidental to the Work included in this Specification.

E21. REMOVAL OF EXISTING FLAP GATES

E21.1 Description of Work

E21.1.1 This specification shall cover the removal, salvaging, and delivery of the existing flap gates and associated accessories as outlined below, but should not be limited to this description. The Contractor shall be responsible for all labour, equipment, transportation, and associated costs.

- (a) Carefully remove the existing flap gates from the existing Renfrew Outfall wye Chamber.
- (b) Transport and deliver the removed flap gates and associated accessories to City of Winnipeg's Water Services Division shop located at 598 Plinguet Street.
- (c) Necessary precautions shall be taken to minimize damage to the flap gates associated accessories.

E21.2 Measurement and Payment

- (a) Removal of Existing Flap Gates will be paid for at the Contract Lump Sum Price for "Removal of Existing Flap Gates". Said price shall be payment in full for supplying all materials and performing all operations herein described and all other items incidental to the Work included in this Specification.

E22. CAST-IN-PLACE CONCRETE GATE CHAMBER CONSTRUCTION

E22.1 Description

E22.1.1 This specification will cover construction of cast-in-place concrete gate chamber and shall supplement, revise and amend CW 2160.

E22.2 Materials

(a) Concrete Mix Design

The Contractor shall be responsible for the design and performance of all concrete mixes supplied under this Specification. Concrete shall be supplied in accordance with the requirements of CSA A23.1-14, with the minimum properties as provided below:

(i) Cast-In-Place Concrete Gate Chamber Construction

Class of Exposure	S-1
Maximum Size of Aggregate	20 mm
Cement Type	Type HS
Maximum Water/Cementing Materials Ratio	0.40
Compressive Strength at 7 Days	20 MPa
Compressive Strength at 28 Days	35 MPa
Slump/Flow	80 mm +/- 20 mm
Air Content	5.0% to 8.0%

(ii) Lean Mix Concrete

Cement Type	Type HS
Maximum Water/Cementing Materials Ratio	0.49
Compressive Strength at 28 Days	15 MPa
Slump/Flow	80 mm
Air Content	nil

(b) Provide a "Mix Design Statement" for each type of concrete to be used certifying constituent materials and mixing proportions to the Contract Administrator at least 2 weeks prior to delivery of Concrete to the Site. Supply reasonable evidence to the Contract Administrator that the mix proportions selected will produce concrete meeting the specified strength, workability and yield.

(c) Admixtures

- (i) All admixtures shall be compatible.
- (ii) Air entraining agent shall meet ASTM C260.
- (iii) Chemical water reducing admixtures shall meet ASTM C494.

(d) Grout

- (i) Grout shall be Sika Grout 212 SR or approved equivalent in accordance with B7.

(e) Reinforcing Steel

- (i) New deformed billet steel bars conforming to CSA G30.18 (latest). Grade to be 400 MPa.
- (ii) Bar accessories:
 - (i) To be made of a non-corroding material
 - (ii) Shall not stain, blemish or spall the concrete surface for the life of the concrete
 - (iii) Shall be approved by the Contract Administrator
 - (iv) Bar chairs shall be PVC.

(f) Bonding Agent shall be Sika Latex R or approved equivalent in accordance with B7.

(g) Waterproofing

- (i) Provide two coats bitumen waterproofing emulsion to all below grade exterior concrete surfaces.
- (ii) Approved product: Mapai Plastimul or approved equal in accordance with B7.

(h) Waterstop

- (i) Waterstop shall be 150 mm wide by 10 mm thick vinyls ribbed-center bulb or approved equal in accordance with B7.
- (i) Cast Iron Sluice Gate
 - (i) Cast iron slide gates, wall thimbles, mechanical lift operator, stems, wall brackets and accessories shall be in accordance with E25 of this specification.
- (j) Cast Iron Flap Gates
 - (i) Cast iron flap gates and wall thimbles shall be in accordance with E26 of this specification.
- (k) Miscellaneous Metals and Accessories
 - (i) In accordance with E24 of this specification and as shown on the Drawings.
- (l) Shop Drawings
 - (i) Provide shop drawings in accordance with E10 of this specification.
 - (ii) Submit shop drawings for reinforcing steel a minimum of two (2) weeks prior to the fabrication of any reinforcing steel.
- (m) Backfill
 - (i) Minimum 1 m of Class 4 or 5 backfill in a radius to undisturbed ground around the gate chamber walls in accordance with CW 2030.

E22.3 Construction Methods

E22.3.1 Construction Method Submission

- (a) No Work shall commence on construction of cast-in-place concrete chamber until after the Contract Administrator's review of the Contractor's Construction Method submission.
- (b) Excavation for the construction of the gate chambers shall be by the shored excavation method.
- (c) The Contractor shall prepare for the Contract Administrators review a Construction Method submission detailing:
 - (i) Construction sequence to be followed including all methods to be employed.
 - (ii) Shoring system to be used.
 - (iii) Proposed method of chamber construction.
 - (iv) Specialized equipment to be used.
 - (v) Any design revisions proposed to accommodate the Contractor's proposed construction method.
 - (vi) Water control consideration including details on the Contractor's proposed method of groundwater, pipe flows and surface runoff control.
- (d) The Contractor shall respond to any concerns that may be raised by the Contract Administrator after review of Construction Method submission.

E22.3.2 Cast-in-place Concrete Gate Chamber Construction

- (a) Construct cast in place concrete gate chamber in accordance with CW 2160, except as supplemented, revised or amended in this specification and as indicated in the construction notes on the Drawings.
- (b) Adjust the location of reinforcing steel adjacent to openings to frame those openings in accordance with good practice, and maintain the bar spacing intent.
- (c) Do not use welded splices for reinforcing steel.
- (d) Order all wall reinforcement steel in lengths to best suit the spacing of walers so that reinforcing bars will not be bent or misformed in order to remove the walers.
- (e) Reinforcing steel shall be clean, free of rust, dirt, loose scale, oil, grease or any other material which would reduce bond with concrete.

- (f) Tie, support, and space all reinforcing steel with proper approved devices designed for use in reinforced concrete, to prevent displacement of reinforcing and ensure specified concrete cover.
- (g) Provide minimum concrete cover for reinforcing steel as follows:
 - (i) Base slab (exterior faces): 75 mm
 - (ii) Base slab (interior faces): 50 mm
 - (iii) Foundation Walls (exterior face): 75 mm
 - (iv) Foundation Walls (interior face): 50 mm
 - (v) Chamber Roof Slab (top and bottom): 50 mm
 - (vi) Interior Walls: 50 mm
- (h) The Contractor shall note that existing formwork may be present around the existing gate chamber and will have to be removed prior to placement of the gate chamber at the Contractor's expense.

E22.3.3 Backfill

- (a) Place and compact a minimum of 1 m of Class 4 or 5 backfill material, from the chamber walls outward until undisturbed material for all excavations around the chamber, in accordance with CW 2030.
- (b) Do not place backfill material on frozen ground.
- (c) Do not place backfill material in a frozen state.
- (d) Supply heating and hoarding in accordance with CW 2160 if required to ensure material does not freeze before compaction is complete.
- (e) Notify the Contract Administrator at least one (1) full Working Day in advance of any backfilling operation. No Backfill shall be placed against concrete until approved by the Contract Administrator and in no case before field cured test cylinders show the concrete strength to be 75% of that specified.

E22.3.4 Grout

- (a) Mix and apply grout in accordance with the manufacturer's instructions. Consistency is to be suitable for the intended application.

E22.3.5 Slide Gate Installation

- (a) Install slide gates, wall thimbles, mechanical lift operator, stem and accessories as shown on the Drawings and in accordance with E25 of this specification.
- (b) Slide gates shall be left in the open position at all times except when on site working on the gate.

E22.3.6 Flap Gate Installation

- (a) Install flap gates, wall thimbles, mechanical lift operator, stem and accessories as shown on the Drawings and in accordance with E26 of this specification.

E22.3.7 Miscellaneous Metal Fabrications

- (a) Install miscellaneous metal fabrications as shown on the Drawings and in accordance with E24 of this specification.

E22.3.8 Measurement and Payment

- (a) Construction of the cast-in-place concrete gate chamber will be paid for at the Contract Lump Sum Price for "Cast-In-Place Concrete Gate Chamber Construction." Said price shall be payment in full for supplying all materials and performing all operations herein described and all other items incidental to the Work included in this specification.

E23. COLD WEATHER REQUIREMENTS

- E23.1 Should any concrete Work be required to be carried out when the daily mean temperature is below 5°C or anticipated to be below 5°C within the next 24 hours, cold weather requirements will be specified herein.
- E23.2 All freshly placed concrete shall be protected from the elements and from defacements due to construction operations.
- E23.3 The following are minimum requirements for protecting concrete during and after placement during freezing weather, but mere adherence to these requirements will not relieve the Contractor of the necessity for producing concrete which has not been weakened or injured by frost or freezing, or replacing such damaged Work at no additional cost to the City;
- (a) Before any concrete is placed, all ice, snow, and frost shall be completely removed from all formwork, and other surfaces against which concrete temperatures of such surfaces raised above 7°C for twenty-four (24) hours minimum prior to concreting. Where concrete Work is to come in contact with the earth, the surface of the earth shall be completely free of frost when concrete is placed thereon.
 - (b) Concrete aggregates shall be heated to not over 80°C. Concrete shall be not less than 20°C or more than 30°C in temperature when deposited. Concrete when placed during freezing weather, or if freezing is anticipated during curing period, shall be fully enclosed and the temperature of same maintained at not less than 20°C for five (5) days nor less than 5°C for an additional five (5) days.
 - (c) Heating enclosures shall be strong and wind-proof, well ventilated with heating units so located as to prevent local overheating or drying of the concrete or damage from combustion gases. Only indirect fired heaters will be accepted. Units must be vented outside the enclosure. No direct fired units will be accepted.
 - (d) The Contractor shall inform the Contract Administrator well in advance as to the methods of enclosure and frost protection he proposes to employ.
- E23.4 Measurement and Payment
- (a) Cold weather requirements shall be considered incidental to the Contract Lump Sum Price for "Cast-In-Place Concrete Gate Chamber Construction" and no separate payment will be made for this item.

E24. MISCELLANEOUS METALS

E24.1 Description

E24.1.1 General

- (a) This Specification shall cover the supply, fabrication, transportation, handling, delivery and placement of metal fabrications.
- (b) This Specification shall also cover the replacement of all existing galvanized steel hatches with aluminum hatches to match existing. The existing embedded galvanized steel frames are to remain in place. The Contractor is responsible for detailed measurements of all existing hatches.

E24.2 Materials

- (a) All materials shall be of a type acceptable to the Contract Administrator, and shall be subject to inspection and testing by the Contractor Administrator.
- (b) Material intended for use in the various assemblies shall be new, straight, clean, with sharply defined profiles.
- (c) Steel Sections and Plates: to CAN/CSA G40.20/G40.21, Grade 300 W, except W, HP and HSS sections, which shall be Grade 350 W.

- (d) Stainless Steel Sections: to ASTM A276/A276M-17 type 304 or 304L. Stainless Steel Plates: to ASTM A240/A240M-17 type 304 or 304L.
- (e) Steel Pipe: to ASTM A53/A53M, seamless, galvanized, as specified by item.
- (f) Welding materials: to CSA W59.
- (g) Hot dipped galvanized steel repair material: Galvalloy and Gal-Viz.
- (h) Stud Anchors: to ASTM A108, Grade 1020.
- (i) Aluminum: to CAN/CSA S157 and the Aluminum Association 'Specifications for Aluminum Structures'. Aluminum for plates shall be Type 6061-T651. Aluminum plate shall have an approved raised oval or multi-grip pattern.
- (j) Isolating sleeves shall be "Nylite" – headed sleeve as manufactured by SPAE-Naur of Kitchener, Ontario, or approved equal in accordance with B7.
- (k) Anchor bolts and fasteners: ASTM A276, Type 316 stainless steel, of ample section to safely withstand the forces created by operation of the equipment or the load to which they will be subjected.
- (l) Paint: Amerlock 2 epoxy or approved equivalent in accordance with B7; Colour: neutral grey.

E24.3 Construction Methods

E24.3.1 Submittals

- (a) Submit the qualifications of the fabricator and welders to the Contractor Administrator for acceptance.
- (b) Submit shop drawings in accordance with E10 clearly indicating materials, core thickness, finishes, connections, joints, method of anchorage, number of anchors, supports, reinforcement, details and, accessories. Indicate field measurements on shop drawings.

E24.3.2 Fabrication

- (a) Fabricate work square, true, straight and accurate to required size, with joints closely fitted and properly secured. Assemble work in such a way that no disfigurements will show in the finished work, or impair the strength.
- (b) Confirm measurements for all fabrications before fabricating.
- (c) Cut aluminum plate with edges straight and true, and as far as practical, maintain continuity of the pattern at abutting edges.
- (d) Pieces shall be of the sizes indicated on the Drawings and shall not be built up from scrap pieces. Confirm sizes with field measurements.
- (e) Where possible, fit work and shop assemble, ready for erection.
- (f) Angle frames shall be of the same material as the cover plate, and cover plates shall be hinged and be supplied with lifting handles, as shown on the Drawings. Exterior covers shall be supplied with a hasp for a padlock.
- (g) Remove and grind smooth burrs, filings, sharp protrusions, and projections from metal fabrications to prevent possible injury. Correct any dangerous or potentially harmful installations as directed by Contract Administrator.
- (h) All steel welding shall conform to CSA Standard W.59. Fabricator shall be fully approved by the Canadian Welding Bureau, in conformance with CSA Standard W.47.1. Welding shall be done by currently licensed welders only.
- (i) All aluminum welding shall conform to Welding shall be in accordance with the requirements of CSA W59.2. The fabricator shall be fully certified in conformance with CSA Standard W47.2. All welding shall be done in a licensed welding shop, and no field welding will be permitted unless approved in writing, in advance, by the Contract Administrator.

- (j) Ensure exposed welds are continuous for length of each joint. File or grind exposed welds smooth and flush.
- (k) All steel shall be hot-dip galvanizing after fabrication, in accordance with CAN/CSAG164, to a minimum net retention of 600 gm/m².
- (l) Seal exterior steel fabrications to provide corrosion protection in accordance with CAN3-S16.1.
- (m) Use self-tapping shake-proof flat-headed screws on items requiring assembly by screws.

E24.3.3 Coating

- (a) Surface prepare steel fabrications requiring epoxy coating to SSPC SP6 (Commercial Blast).
- (b) Apply two coats of Amerlock 2 Epoxy paint, 150 µm per coat dry film thickness. Colour: Neutral Black.
- (c) Recoating and curing times shall be as per coating manufacturers recommendations.

E24.3.4 Erection

- (a) Do steel welding work in accordance with CSA W59 and aluminum welding work in accordance with CSA W59.2.
- (b) Erect metalwork in accordance with reviewed shop drawings, square, plumb, straight, and true, accurately fitted, with tight joints and intersections.
- (c) Provide suitable means of anchorage acceptable to Contract Administrator such as dowels, anchor clips, bar anchors, expansion bolts and shields, and toggles where not specifically indicated on the Drawings.
- (d) Provide components for building in accordance with shop drawings and schedule.
- (e) Make field connections with bolts to CAN/CSA-S16, or weld.
- (f) Touch-up rivets, bolts and burnt or scratched surfaces that are to receive paint finish, with zinc primer after completion of erection.
- (g) Repair damaged galvanized surfaces and field welds with self-fluxing, low temperature, zinc-based alloy rods in accordance with ASTM A780, Repair of Damaged Hot Dip Galvanizing Coatings. The general procedure shall be to allow a small amount of the repair alloy to flow then spread by brushing briskly with a wire brush. Brushing shall be sufficient to obtain a bright finish. Repeat process three times to ensure a proper thickness is achieved. Temperatures shall be kept below 177°C (350°F) at all times. All heating of structural steelwork shall be done in the presence of the Contract Administrator.
- (h) Install access hatch frames square and level at the locations shown on the Drawings. Embed anchors in concrete as shown on the Drawings. Install covers and adjust hardware to proper function.
- (i) All aluminum surfaces in contact with concrete shall be isolated using alkali-resistant bituminous paint meeting the requirements of CGSB 31-GP-3M.
- (j) Install electrochemical isolation gaskets and sleeves to electrically isolate dissimilar metals.
- (k) Install 50 mm rigid insulation on the underside of all surface hatches to the pump chamber.

E24.4 Measurement and Payment

- (a) Supply, fabrication, transportation, handling, delivery and placement of metal fabrications will be paid for at the Contract Lump Sum Price for "Miscellaneous Metals." Said price shall be payment in full for supplying all materials and performing all operations herein described and all other items incidental to the Work included in this specification.

E25. CAST IRON SLIDE GATE

E25.1 Description

- (a) This Specification shall cover the procurement, installation and testing of the cast iron slide gate, wall thimble, mechanical lift operator, stems, wall brackets and all associated accessories.
- (b) The Contractor shall be solely responsible for all transportation, labour, and equipment to procure, store, and install the cast iron slide gate, wall thimble, mechanical lift operator, stem, wall brackets and accessories after being notified by the Contract Administrator of their availability.
- (c) The Contractor shall verify and confirm that the correct type and quantities of the cast iron slide gate, wall thimble, mechanical lift operator, stem, wall brackets and accessories have been received. In addition, the Contractor shall verify that the cast iron slide gate, wall thimble, mechanical lift operator, stem, wall brackets and accessories are free of any visible damage or defects. The Contractor shall inform the Contract Administrator of any visible damage or defects within 24 hours of receipt of the components.
- (d) The Contractor shall be solely responsible for the cast iron slide gate, wall thimble, mechanical lift operator, stem, wall brackets and accessories in his possession.

E25.2 Submittals

- (a) Submit Shop Drawings of cast iron flap gate, wall thimble, and accessories in accordance with E10.
- (b) Submit Operating and Maintenance Manuals in accordance with E27.
- (c) Provide five (5) copies of all the manufacturer's brochures and technical literature detailing correct installation procedure and recommended operating and maintenance instructions. Manuals shall be bound with the project title and gate description identified in the front cover. One set of manuals shall be provided for each size of gate. Final payment for slide gates will not be made until the above information has been provided to the Contract Administrator.
- (d) Provide the following information to the Contact Administrator prior to the delivery of slide gate and operator assemblies in accordance with E10.
 - (i) A certified copy of the Chemical and Physical Analysis on all materials used in the manufacture of the flap gate, wall thimbles, and accessories or certification that the materials used are in strict accordance with this specification.
 - (ii) Copies of the shop test reports for Performance and Leakage tests. Included on the report shall be the signature of the official who is responsible for the gate assembly and testing.

E25.3 General Design

- (a) Specification Standard: AWWA C560-14
- (b) Size: 2134 mm x 2134 mm (84" X 84")
- (c) Type: Rising stem with stop nut, flange back with standard bottom closure.
- (d) Mounting: Type F wall thimble.
- (e) Seating Head: Maximum design seating head for all slide gates will be from centreline of the gate to the top of the gate chamber roof which shall be a minimum of 10.2 meters.
- (f) Unseating Head: Maximum design unseating head shall be 4 meters.
- (g) Operator and Lift: Enclosed rising stem gear lift with pedestal. Operators to be finished with a 50 millimetre x 50 millimetre square nut suitable for attachment of an electric portable drill for opening. Operator shall turn counter clock wise to open.

- (h) Stem Cover: Gear lift to be complete with stem cover with acrylic window with gradations in 152mm (6") increments for the entire range of gate operation.
- (i) Stem Guides: Adjustable in both the horizontal and vertical directions.
- (j) Stem: The stainless steel stem shall be designed so the slenderness ratio (kL/r) does not exceed 150.
- (k) Acceptable Leakage: As per AWWA C560-14.
- (l) Seal: Butyl rubber mastic shall be used to form a seal between the frame and thimble.
- (m) Paint: Frame and gate shall be surface prepared to SSPC SP10 (near-white blast) and painted with two coats of Intergard FP, Amerlock 2 Epoxy Coating or an approved equivalent high-build epoxy coating in accordance with B6. Epoxy coatings shall be 150 µm per coat dry film thickness. Above-ground components exposed to sunlight shall be coated with one finish coat of polyurethane enamel. Polyurethane enamel coatings shall be 100 µm per coat dry film thickness.
- (n) Fastening: Quantity and spacing of fasteners shall be as recommended by the gate manufacturer.
- (o) Manufacturer: The slide gate shall be as manufactured by Hydro Gate, Rodney Hunt, Waterman or approved equivalent in accordance with B7.
- (p) Touch-up: Field touch-up chips and scratches of the cast-iron gate coating system shall be completed with coating(s) to match the shop applied coating(s).

E25.4 Materials

- (a) Frame, Slide, guides and yoke: ASTM A48 Cast Iron, (Class 30) or ASTM A126 Cast Iron (Class B)
- (b) Seating Faces: ASTM B21 Naval Bronze, Alloy 482 or ASTM B98, Alloy 655
- (c) Wall Thimble: ASTM A48 Cast Iron (Class 30) or ASTM A126 Cast Iron (Class B)
- (d) Wedges: ASTM B564 Manganese Bronze, Alloy 865
- (e) Wedge Blocks: ASTM A48 Cast Iron (Class 30) or ASTM A126 Cast Iron (Class B)
- (f) Fasteners & Anchors: ASTM A276 Type 316 Stainless Steel
- (g) Hardware: ASTM F593 Type 316 Stainless Steel
- (h) Stem: ASTM A276 Type 304 Stainless Steel
- (i) Stem Couplings: ASTM A276 Type 304 Stainless Steel or ASTM B584 Bronze, Alloy 873
- (j) Stem Guide: ASTM A48 Cast iron (Class 30) or ASTM A126 Cast Iron (Class B) with Bronze bushings
- (k) Operator Pedestal: ASTM A48 Cast Iron (Class 30) or ASTM A126 Cast Iron (Class B) or Steel
- (l) Stem cover: Aluminium or galvanized steel

E25.5 Shop Drawings

- (a) Submit Shop Drawings of cast iron slide gates, wall thimbles, mechanical lift operator, stems, wall brackets and accessories in accordance with E10 of this specification.

E25.6 Operating and Maintenance Manuals

- (a) Provide five (5) copies of all the manufacturer's brochures and technical literature detailing correct installation procedure and recommended operating and maintenance instructions. Manuals shall be bound with the project title and gate description identified on the front

cover. One set of manuals shall be provided for each size of gate. Final payment for slide gate will not be made until the above information has been provided to the Contract Administrator.

E25.7 Delivery and Shipping

- (a) The Contract Administrator will examine the slide gate assembly, thimble, frame, stem, operator and accessories upon delivery and will reject any equipment that is found to be damaged to the extent that, in the Contract Administrator's opinion, it cannot be put to the use for which it was intended. The Contractor shall arrange with the gate supplier to repair any superficially damaged equipment to the satisfaction of the Contract Administrator.
- (b) It shall be the responsibility of the Contractor to negotiate any claims for damage with the carrier and to make arrangements to have any rejected equipment replaced as soon as possible at no extra expense to the City.

E25.8 Shop Testing

- (a) The fully assembled gate shall be shop inspected, adjusted and tested for operation and leakage at the design head before shipping.

E25.9 Construction Methods

E25.9.1 Installation

- (a) Install the cast iron slide gate, wall thimble, mechanical lift operator, stem, wall brackets and accessories as shown on the drawings and in accordance with the manufacturer's recommendations.
- (b) The Contractor will not be allowed to form a block-out in the wall for the installation of the wall thimble. The wall thimble shall be set in place prior to constructing any portion of the wall.
- (c) The Contractor will coordinate to have the field representative of the slide gate supplier/manufacturer to inspect the installation during and after completion and provide a Certificate of Satisfactory Installation.

E25.9.2 Field Testing

- (a) Wall thimbles to be inspected in the concrete form prior to placing concrete and after.
- (b) The Contractor shall coordinate and arrange for a qualified field representative of the slide gate supplier/manufacturer to be present prior to and during field testing. The field representative shall complete required adjustments prior to field testing. If the gate fails the field leakage test, the field representative shall undertake adjustments, replacements or other modifications prior to repeating the test. The sequence shall be repeated until the gate passes the allowable leakage test.
- (c) Perform leakage tests in the presence of the Contract Administrator and supplier/manufacturer field representative once slide gate has been installed to ensure compliance with the allowable leakage rate indicated in the latest edition of AWWA C501.
- (d) Generally, the test for seating head will be performed by closing the gate against high river levels in the spring and measuring the leakage rate through the gate.
- (e) If it is not possible to use high river level, install an inflatable plug in the outfall, fill the chamber with water to the specified head and measure the leakage rate through the gate. Inflatable plug shall be inflated from, anchored to and removable from the ground surface.
- (f) The leakage test for the flap and slide gate will be performed concurrently by closing the slide gate and filling the flap gate chamber to the specified slide gate unseating head. The leakage rate will be assessed by measuring the combined leakage rate through both the slide gate and flap gate. Visual assessments of leakage will be obtained on either side of the control gates.

- (g) Water used for testing purposes must be chlorine free. Potable drinking water shall be dechlorinated if used for testing purposes.
- (h) The Contractor will be responsible to pump water from the Red River or supply potable water from a delivery truck or hydrant into the chamber for testing purposes.
- (i) If a gate fails the field leakage test, the Contractor shall undertake adjustments, replacements or other modifications recommended by the slide gate supplier/manufacturer's field representative and repeat the test. The sequence shall be repeated until the gate passes the allowable leakage rate.

E25.10 Measurement and Payment

- (a) Installation and testing of the cast iron slide gate, wall thimble, mechanical lift operator, stem, wall brackets and accessories will be paid for at the Contract Lump Sum price for "Supply, Installation and Field Testing of Cast Iron Slide Gate".
 - (i) 85% of the Supply, Installation and Field Testing of Cast Iron Slide Gate will be paid upon installation.
 - (ii) The remaining 15% of the Supply, Installation and Field Testing of Cast Iron Slide Gate will be paid upon completion of successful field testing of the slide gate and acceptable to the Contract Administrator.

E26. CAST IRON FLAP GATE

E26.1 Description

- (a) Wall thimbles to be inspected in the concrete form prior to placing concrete and after.
- (b) This Specification shall cover the procurement, installation and testing of the cast iron flap gate, wall thimble and accessories.
- (c) The Contractor shall be solely responsible for all transportation, labour, and equipment to collect the cast iron flap gate, wall thimble and accessories after being notified by the Contract Administrator of their availability.
- (d) The Contractor shall verify and confirm that the correct type and quantities of the cast iron flap gate, wall thimble and accessories have been received. In addition, the Contractor shall verify that the cast iron flap gate, wall thimble and accessories are free of any visible damage or defects. The Contractor shall inform the Contract Administrator of any visible damage or defects within 24 hours of receipt of the components.
- (e) The Contractor shall be solely responsible for the cast iron flap gate, wall thimble, and accessories in his possession.

E26.2 Submittals

- (a) Submit Shop Drawings of cast iron flap gate, wall thimble, and accessories in accordance with E10.
- (b) Submit Operating and Maintenance Manuals in accordance with E27.
- (c) Provide five (5) copies of all the manufacturer's brochures and technical literature detailing correct installation procedure and recommended operating and maintenance instructions. Manuals shall be bound with the project title and gate description identified in the front cover. One set of manuals shall be provided for each size of gate. Final payment for slide gates will not be made until the above information has been provided to the Contract Administrator.
- (d) Provide the following information to the Contract Administrator prior to the delivery of slide gate and operator assemblies in accordance with E10.
 - (i) A certified copy of the Chemical and Physical Analysis on all materials used in the manufacture of the flap gate, wall thimbles, and accessories or certification that the materials used are in strict accordance with this specification.

- (ii) Copies of the shop test reports for Performance and Leakage tests. Included on the report shall be the signature of the official who is responsible for the gate assembly and testing.

E26.3 Gate Design

- (a) Type: Flange Back for mounting on a wall thimble.
- (b) Gate Size: 2134 mm x 2134 mm (84" X 84")
- (c) Mounting: Type F cast iron wall thimble
- (d) Seating Head: Maximum design seating head for all flap gates will be 10.2 meters as measured from centreline of the gate to the top of the gate chamber.
- (e) Cover: One piece cast iron with lifting eye for manual operation
- (f) Seat: Raised brass surface and inclined to assure positive closure. Resilient rubber seats are not acceptable.
- (g) Links: Complete with grease nipples at pivot pints and adjusting screws to align seating faces.
- (h) Pivot Lugs: One piece ductile iron adjustable in the horizontal plane without removal of cover, complete with grease nipples.
- (i) Acceptable Leakage: 1.24 litres per meter of seated perimeter.
- (j) Paint: Frame and gate shall be surface prepared to SSPCSP10 (near white blast) and painted with two coats of Intergard FP, Amerlock 2 Epoxy Coating or an approved equivalent high-build epoxy coating in accordance with B6. Epoxy coatings shall be 150 µm per coat dry film thickness. Above-ground components exposed to sunlight shall be coated with one finish coat of polyurethane enamel. Polyurethane enamel coatings shall be 100 µm per coat dry film thickness.
- (k) Manufacturer: The flap gate shall be as manufactured by Hydro Gate, Rodney Hunt or Waterman or approved equivalent in accordance with B7.
- (l) Touch-up: Field touch-up chips and scratches of the cast-iron gate coating system shall be completed with coating(s) to match the shop applied coating(s).

E26.4 Materials

- (a) Cast Iron pieces: ASTM A48 Cast Iron, (Class 30) or ASTM A126 Cast Iron (Class B)
- (b) Seating Faces: ASTM B21 Bronze, Alloy 482
- (c) Links: Cast iron or high tensile Bronze B584 – C865
- (d) Bushings: Bronze B21, Alloy 482
- (e) Hinge Pins: ASTM A276, Type 316 stainless steel or silicon Bronze B98 CA655
- (f) Fasteners: ASTM A276, Type 316 stainless steel
- (g) Grease Nipples: Stainless Steel

E26.5 Shop Drawings

- (a) Submit Shop Drawings of cast iron flap gates and wall thimbles in accordance with E10 of this specification.

E26.6 Operating and Maintenance Manuals

- (a) Provide five (5) copies of all the manufacturer's brochures and technical literature detailing correct installation procedure and recommended operating and maintenance instructions. Manuals shall be bound with the project title and gate description identified on the front cover. One set of manuals shall be provided for each size of gate. Final payment for flap gates will not be made until the above information has been provided to the Contract Administrator.

E26.7 Delivery and Shipping

- (a) The Contract Administrator will examine the flap gate assemblies and wall thimbles upon delivery and will reject any equipment that is found to be damaged to the extent that, in the Contract Administrator's opinion, it cannot be put to the use for which it was intended. The Contractor shall arrange with the gate supplier to repair any superficially damaged equipment to the satisfaction of the Contract Administrator.
- (b) It shall be the responsibility of the Contractor to negotiate any claims for damage with the carrier and to make arrangements to have any rejected equipment replaced as soon as possible at no extra expense to the City.

E26.8 Shop Testing

- (a) The fully assembled gate shall be shop inspected, adjusted and tested for operation and leakage at the design head before shipping.
- (b) Provide the following information to the Contract Administrator prior to delivery of flap gate and wall thimble:
 - (i) A certified copy of the Chemical and Physical Analysis on all materials used in the manufacture of the flap gate and wall thimble or certification that the materials used are in strict accordance with this specification.
 - (ii) Copies of the test reports for Performance and Leakage tests. Included on the report shall be the signature of the official who is responsible for the gate assembly and testing.

E26.9 Construction Methods

E26.9.1 Installation

- (a) Install the cast iron flap gate and wall thimble as shown on the drawings and in accordance with the manufacturer's recommendations.
- (b) The Contractor will not be allowed to form a block-out in the wall for the installation of the wall thimble. The wall thimble shall be set in place prior to constructing any portion of the wall.
- (c) The Contractor will coordinate to have the field representative of the flap gate supplier/manufacturer to inspect the installation during and after completion and provide a Certificate of Satisfactory Installation.

E26.9.2 Field Testing

- (a) Wall thimbles to be inspected in the concrete form prior to placing concrete and after.
- (b) The Contractor shall coordinate and arrange for a qualified field representative of the slide gate supplier/manufacturer to be present prior to and during field testing. The field representative shall complete required adjustments prior to field testing. If the gate fails the field leakage test, the field representative shall undertake adjustments, replacements or other modifications prior to repeating the test. The sequence shall be repeated until the gate passes the allowable leakage test.
- (c) Perform leakage tests in the presence of the Contract Administrator and gate supplier/manufacturer field representative once flap gate has been installed to ensure compliance with the allowable leakage rate of 1.24L/min per meter of seated perimeter at any head.
- (d) Generally, the test for seating head will be performed by closing the gate against high river levels in the spring and measuring the leakage rate through the gate.
- (e) If it is not possible to use high river level, install an inflatable plug in the outfall, fill the chamber with water to the specified head and measure the leakage rate through the gate. Inflatable plug shall be inflated from, anchored to and removable from the ground surface.
- (f) The leakage test for the flap and slide gate will be performed concurrently by closing the slide gate and filling the flap gate chamber to the specified slide gate unseating

head. The leakage rate will be assessed by measuring the combined leakage rate through both the slide gate and flap gate. Visual assessments of leakage will be obtained on either side of the control gates.

- (g) Water used for testing purposes must be chlorine free. Potable drinking water shall be dechlorinated if used for testing purposes.
- (h) The Contractor will be responsible to pump water from the Red River or supply potable water from a delivery truck or hydrant into the chamber for testing purposes.
- (i) If a gate fails the field leakage test, the Contractor shall undertake adjustments, replacements or other modifications recommended by the slide gate supplier/manufacturer's field representative and repeat the test. The sequence shall be repeated until the gate passes the allowable leakage rate.

E26.10 Measurement and Payment

- (a) Supply, installation and testing of the cast iron flap gate and associated wall thimble will be paid for at the Contract Lump Sum price for "Installation and Field Testing of Cast Iron Flap Gate".
- (b) 85% of the Supply, Installation and Field Testing of Cast Iron Flap Gate will be paid upon installation.
- (c) The remaining 15% of the Installation and Field Testing of Cast Iron Flap Gate will be paid upon completion of successful field testing of the flap gate and acceptable to the Contract Administrator

E27. OPERATION AND MAINTENANCE MANUALS INCLUDING SPARE PARTS LIST

- E27.1 For each type of equipment, five (5) sets of Operation and Maintenance Manuals shall be submitted to the Contract Administrator for review. The Contractor shall provide these manuals ten (10) Calendar Days in advance before commencement of equipment startup and commissioning. Provision of Operation and Maintenance Manuals shall be considered incidental to the price paid for supply of equipment.
- E27.2 All instructions in these manuals shall be in the English language to guide the City in the proper operation and maintenance of the equipment.
- E27.3 Bind contents in a five (5)-"D-Ring", hard-covered, plastic-jacketed binder with full cover and spine insert. Organize contents into applicable sections of work, parallel to Specifications breakdown.
- E27.4 Provide all required data in electronic format. Text documents shall be Microsoft Word or Adobe format. Drawings, scanned documents, parts lists, test forms shall be in Adobe format. If possible, documents shall be an original electronic format. Documents that require scanning shall be high quality scans and fully legible. Documents shall be submitted on a high quality USB. USB and case shall be labelled in type, with the following:
 - (a) Tender number,
 - (b) Job Title, and
 - (c) Description of Equipment.
- E27.5 In addition to information called for in the Specifications, the following shall be included:
 - (a) Title sheet, labelled "Operation and Maintenance Instructions", containing project name and date,
 - (b) List of contents;
 - (c) Reviewed Shop Drawings of all equipment,
 - (d) Certified factory test results;
 - (e) Names, addresses, and telephone numbers of all major sub-contractors and suppliers;

- (f) Detailed specification and operating and maintenance instructions for all items of equipment provided including a preventative maintenance program;
- (g) An itemized list of spare parts recommended for five years of service, particularly those components where failure of which will render the equipment supplied inoperative. Any special tools or other ancillary items necessary for commissioning and/or proper operation and maintenance shall also be listed. These prices shall be available to the City at any time prior to the issuance of the Certificate of Acceptance;
- (h) Part books that illustrate and list all assemblies, sub-assemblies, and components.
- (i) Routine test procedures for all electronic and electrical circuits;
- (j) Troubleshooting chart covering the complete controls/electrical power systems, showing description of trouble, probable cause, and suggested remedy;

E27.6 The Contractor shall modify and supplement the manual as required by the Contract Administrator. When accepted, five (5) copies, including electronic versions on USB, shall be provided by the Contractor for distribution purposes. The City's staff shall be in receipt of these manuals prior to the date set out for substantial performance as per the dates set out in D22. The Contract shall not be considered complete until the above manuals have been completed and submitted to the satisfaction of the Contract Administrator.

E27.7 Measurement and Payment

- (a) Supply and delivery of operation and maintenance manuals including spare parts lists shall be considered incidental to the Works of this Contract. No direct measurement or payment will be made for this item.

E28. TRAINING

E28.1 The Contractor shall include costs for providing four (4) on-site training sessions to City staff by a factory-trained representative on the operation of all new equipment including recommended maintenance tasks and schedules.

E28.2 Training for the equipment shall be conducted before the operation period as described in Form 203 Certificate of Equipment Satisfactory Performance. The training session shall be conducted on site, in conjunction with commissioning. The Contractor shall provide a qualified instructor as well as the necessary course materials.

E28.3 At the request of the Contract Administrator, training shall be provided in one session for operation and maintenance staff. The training shall cover operation and maintenance.

E28.4 If requested by the Contract Administrator, training shall be completed in conjunction with commissioning of the equipment. The Contract shall not be considered complete until the training has been provided and Form 204 Certificate of Training has been signed.

- (a) Further to E10.4, if the Contract Administrator waives the requirement of training, submission of Form 204 Certificate of Training will not be required.

E28.5 Measurement and Payment

E28.5.1 Training of City Staff will be measured and paid for in accordance for Item No. 20 on Form B: Prices, executed in accordance with this specification and accepted by the Contract Administrator.

E28.5.2 If the Contract Administrator waives the requirement for training of City Staff, no payment will be made for this item.

E29. TEMPORARY SURFACE RESTORATION AND MAINTENANCE

E29.1 Further to CW 1130, if the Contractor fails to maintain disturbed surfaces as directed and within the time period given by the Contract Administrator, the City or its designate may perform the work required and the cost may be deducted from payments owed.

- E29.2 The Contractor shall monitor and maintain temporarily restored surfaces as required until permanent restoration is complete.
- E29.3 If, in the opinion of the Contract Administrator, temporarily restored surfaces are not being adequately maintained or were not properly constructed and pose a danger to the public, maintenance or reconstruction will be done by the City forces with no advance notification to the Contractor.
- E29.4 Temporary Surface Restoration and Maintenance shall be considered incidental to the Works of this Contract and no separate payment will be made for this item.

E30. BACKFILL UNDER TEMPORARY SURFACE RESTORATIONS

- E30.1 Use class 2 backfill in excavation under temporary street pavement and sidewalk where Class 3 backfill cannot be jetted and flooded due to cold weather.
- E30.2 Class 2 backfill may be compacted in 600mm lifts where backhoe operated pneumatic plate compactors are used.
- E30.3 Jet and flood Class 2, Class 3 and Class 5 backfilled excavations in spring when ground is not frozen prior to permanent restoration.
- E30.4 Backfill Under Temporary Surface Restorations shall be considered incidental to the Works of this Contract and no separate payment will be made for this item.

E31. SNOW CLEARING

- E31.1 All required snow clearing shall be performed by the Contractor at his own expense.
- E31.2 The Contractor will be required to perform snow clearing and sanding operations on City streets and sidewalks within the Site where access to City snow clearing and sanding crews is blocked due to construction activities or where construction activities have created unsafe, icy conditions.
- E31.3 Snow built-up on sidewalks and roadway shall be maintained to the condition of the surrounding sidewalks and roadways.

E32. CONCRETE CURB RENEWALS

- E32.1 Construct concrete curb renewal in accordance with CW 3240. Barrier curb and modified barrier curb will be considered as same for this Contract, and no differentiation will be made for measurement and payment. Concrete curb renewal shall be measured on a length basis and paid for at the Contract Unit Price per metre for "Concrete Curb Renewal"

E33. PARTIAL SLAB PATCHES

- E33.1 Construct full depth partial slab patches in accordance with CW 3230.
- E33.2 Full depth partial slab patches shall be measured on an area basis and paid for at the Contract Unit price per square meter for "Partial Slab Patches" for each type of pavement.
- E33.3 No differentiation will be made for class of patch. No separate measurement of payment will be made for Drilled Dowels or Tie Bars, the cost for which shall be included in the prices bid for "Partial Slab Patches".