



THE CITY OF WINNIPEG

TENDER

TENDER NO. 649-2021

MCDERMOT AND FORT ROUGE SRS WEIR GATE UPGRADES

TABLE OF CONTENTS

PART A - BID SUBMISSION

- Form A: Bid/Proposal
- Form B: Prices
- Form G1: Bid Bond and Agreement to Bond

PART B - BIDDING PROCEDURES

B1. Contract Title	1
B2. Submission Deadline	1
B3. Site Investigation	1
B4. Enquiries	1
B5. Confidentiality	1
B6. Addenda	2
B7. Substitutes	2
B8. Bid Components	3
B9. Bid	3
B10. Prices	4
B11. Disclosure	4
B12. Conflict of Interest and Good Faith	5
B13. Qualification	6
B14. Bid Security	7
B15. Opening of Bids and Release of Information	7
B16. Irrevocable Bid	8
B17. Withdrawal of Bids	8
B18. Evaluation of Bids	8
B19. Award of Contract	8

PART C - GENERAL CONDITIONS

C0. General Conditions	1
------------------------	---

PART D - SUPPLEMENTAL CONDITIONS

General

D1. General Conditions	1
D2. Scope of Work	1
D3. Definitions	2
D4. Contract Administrator	2
D5. Contractor's Supervisor	3
D6. Notices	3
D7. Furnishing of Documents	3

Submissions

D8. Authority to Carry on Business	3
D9. Safe Work Plan	3
D10. Insurance	4
D11. Contract Security	4
D12. Subcontractor List	5

Schedule of Work

D13. Commencement	5
D14. Substantial Performance	6
D15. Total Performance	6
D16. Liquidated Damages	6
D17. COVID-19 Schedule Delays	6

Control of Work

D18. Job Meetings	7
D19. Prime Contractor – The Workplace Safety and Health Act (Manitoba)	7
D20. The Workplace Safety and Health Act (Manitoba) – Qualifications	7

Measurement and Payment

D21. Invoices	7
D22. Payment	8

Warranty

D23. Warranty	8
---------------	---

Third Party Agreements

D24. Funding and/or Contribution Agreement Obligations	8
Form H1: Performance Bond	11
Form H2: Labour and Material Payment Bond	13

PART E - SPECIFICATIONS

General

E1. Applicable Specifications and Drawings	1
--	---

General Requirements

E2. Truck Weight Limits	1
E3. Dangerous Work Conditions	1
E4. Flow Control	2
E5. Shop Drawings	3
E6. Site Development and Restoration	4
E7. Traffic Management	6
E8. Protection of Existing Trees	7
E9. Demolition of Structures	7
E10. Cold Weather Requirements	9
E11. Miscellaneous Metal Fabrications	10
E12. Stainless Steel Slide Weir Gates	12
E13. Operation and Maintenance Manuals Including Spare Parts List	15
E14. Temporary Surface Restoration and Maintenance	16
E15. Backfill Under Temporary Surface Restorations	16
E16. Snow Clearing	16
E17. Extra Work Allowance	16

APPENDIX A: IDENTIFICATION STANDARD

APPENDIX B: WASTEWATER SERVICES CONTRACTOR ENVIRONMENTAL PRESERVATION AND COMPLIANCE PACKAGE

APPENDIX C: REFERENCE DRAWINGS

PART B - BIDDING PROCEDURES

B1. CONTRACT TITLE

B1.1 MCDERMOT AND FORT ROUGE SRS WEIR GATE UPGRADES

B2. SUBMISSION DEADLINE

B2.1 The Submission Deadline is 12:00 noon Winnipeg time, December 14, 2021.

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 Bidder may make an appointment to view the Site by contacting the Contract Administrator.

B3.2 The Bidder is advised that the site investigation is not mandatory, but is highly recommended to view site clearances and restrictions that could impede work progress.

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.

B4. ENQUIRIES

B4.1 All enquiries shall be directed to the Contract Administrator identified in D4.1.

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 he/she has 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 D4.

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 his/her 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.
- B7.6.1 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 he/she wishes to inform.
- B7.7 If the Contract Administrator approves a substitute as an “approved equal”, any Bidder may use the approved equal in place of the specified item.
- B7.8 If the Contract Administrator approves a substitute as an “approved alternative”, any Bidder bidding that approved alternative may base his/her 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.
- B7.9 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.
- B8.3.1 Bids will **only** be accepted electronically through MERX.
- B8.4 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 his/her own name, his/her 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 his/her own, the business name and the name of every partner or corporation who is the owner of such business name shall be inserted.
- B9.2.1 If a Bid is submitted jointly by two or more persons, each and all such persons shall identify themselves in accordance with B9.2.

- B9.3 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.
- B9.4 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 his/her 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 its duly authorized officer or officers;
 - (d) if the Bidder is carrying on business under a name other than his/her 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.
- B9.4.1 The name and official capacity of all individuals signing Form A: Bid/Proposal should be entered below such signatures.
- B9.5 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 D24. Any such costs shall be determined in accordance with D24.
- 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.
- B10.5.1 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

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 its 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 its 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 its 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 its 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 its 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 its sole discretion:
- (a) disqualify a Bidder that fails to disclose a perceived, potential or actual Conflict of Interest of the Bidder or any of its 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 its 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 its 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 its 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.

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).

B13.4 Further to B13.3(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:

- (a) 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; or
- (b) 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/>.

- B13.5 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.
- B13.6 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 its 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.
- B14.4.1 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.
- B14.5 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.
- B14.6 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).
- B15.4.1 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 his/her 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:
- (a) compliance by the Bidder with the requirements of the Tender, or acceptable deviation there from (pass/fail);
 - (b) qualifications of the Bidder and the Subcontractors, if any, pursuant to B13 (pass/fail);
 - (c) Total Bid Price;
 - (d) 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 his/her Bid or in other information required to be submitted, that he/she is 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.
- B18.4.1 Bidders are advised that the calculation indicated in B18.4 will prevail over the Total Bid Price entered in MERX.

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.
- B19.2.1 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 its 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.
- B19.3 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 D24 shall immediately take effect upon confirmation of such funding, regardless of when funding is confirmed.
- B19.4 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.
- B19.4.1 Following the award of contract, a Bidder will be provided with information related to the evaluation of his/her 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.
- C0.1.1 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
- C0.2 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. SCOPE OF WORK

D2.1 The Work to be done under the Contract shall consist of removal of existing stop log weir structures and the supply and installation of stainless steel slide gate weirs, mechanical actuator operators, and associated hardware located within in the existing SRS valve chambers on McDermot Avenue and in Fort Rouge Park as shown on the drawings. Any deviation of existing conditions from the drawings shall be communicated to the Contract Administrator immediately.

D2.2 The major components of the Work are as follows:

- (a) Removal and disposal of existing stop log weirs, stop log weir framework, and slide gate frames from the existing chambers on McDermot Avenue and Fort Rouge Park.
- (b) Supply and installation of two (2) stainless steel slide gate weirs, mechanical actuator operators and associated hardware. Slide gate weirs to be installed at the McDermot Avenue and Fort Rouge Park SRS Gate Chambers.
- (c) Bypass pumping as required to complete the Work.
- (d) Installation of ladders and manhole access at McDermot Avenue chamber.
- (e) Site restoration and clean up.

D2.3 The Contractor and their Subcontractors shall:

- (a) Comply with the Environmental Management Systems (EMS) contractor's package of the Wastewater Services Division attached as an Appendix B.
- (b) Deliver EMS awareness training to employees and anyone who will be working on projects for the Wastewater Services Division (WWSD) through formal education, online training interactive training or work experience.
- (c) Be aware of their obligation as stated in the Wastewater Services Division's Environmental Policy that provides overall direction for the WWSD's environmental performance and provides a framework for setting environmental objectives and targets. This policy can be found online through the City of Winnipeg Wastewater Services website: <https://www.winnipeg.ca/waterandwaste/sewage/legislation.stm>.
- (d) Provide detailed information of all steps that will be taken to ensure that the EMS requirements are met upon request.
- (e) Identify and understand the environmental impacts of your work. Environmental impacts may include, but are not limited to:
 - (i) Depletion of natural resources
 - (ii) Conservation management and biodiversity
 - (iii) Soil contamination
 - (iv) Air emissions and pollution
 - (v) Water pollution
 - (vi) Noise pollution
 - (vii) Spills and releases
 - (viii) Disturbance to local community and fauna
 - (ix) Use of landfill spaces and waste management
- (f) Be aware that the following Acts, Regulations, and By-laws may apply to the work:

- (i) Canadian Environmental Assessment Act;
 - (ii) Canadian Environmental Protection Act;
 - (iii) Fisheries Act and Regulations;
 - (iv) Pest Control Products Act;
 - (v) Migratory Bird Convention Act; and
 - (vi) Transportation of Dangerous Goods Act and Regulations.
- (g) Provincial
- (i) The Dangerous Goods Handling and Transportation Act;
 - (ii) The Endangered Species Act;
 - (iii) The Environment Act;
 - (iv) The Fire Prevention Act;
 - (v) The Pesticides and Fertilizers Control Act;
 - (vi) The Manitoba Heritage Resources Act;
 - (vii) The Manitoba Noxious Weeds Act;
 - (viii) The Manitoba Nuisance Act;
 - (ix) The Public Health Act;
 - (x) The Red River Floodway Act;
 - (xi) The Water Rights Act;
 - (xii) The Workplace Safety and Health Act; and
 - (xiii) Applicable associated regulations.
- (h) Municipal
- (i) Neighbourhood Liveability By-law
 - (ii) Pesticide Management By-law
 - (iii) Sewer By-law
 - (iv) Solid Waste By-law
 - (v) Water By-law
 - (vi) The City of Winnipeg By-Law

D3. DEFINITIONS

D3.1 When used in this Tender:

- (a) **Aspect Environmental:** An environmental aspect is an activity, product or service that can interact with the environment while environmental specifications can be implemented to prevent or mitigate these impacts;
- (b) **"ASTM"** means American Society for Testing and Materials;
- (c) **"AWWA"** means American Water Works Association;
- (d) **"CSA"** means Canadian Standards Association;
- (e) **Instream:** Waterway/Waterbody;
- (f) **"SRS"** means Storm Relief Sewer;
- (g) **Watercourse:** A natural or artificial channel through which water flows.

D4. CONTRACT ADMINISTRATOR

D4.1 The Contract Administrator is MPE Engineering Ltd., represented by:

Mark Baker, P.Eng.
Winnipeg Region Manager

Telephone No. (204) 334-3621

Email Address mbaker@mpe.ca

- D4.2 At the pre-construction meeting, the Contract Administrator will identify additional personnel representing the Contract Administrator and their respective roles and responsibilities for the Work.

D5. CONTRACTOR'S SUPERVISOR

- D5.1 At the pre-construction meeting, the Contractor shall identify his/her designated supervisor and any additional personnel representing the Contractor and their respective roles and responsibilities for the Work.

D6. NOTICES

- D6.1 Except as provided for in C22.4, all notices, requests, nominations, proposals, consents, approvals, statements, authorizations, documents or other communications to the Contractor shall be sent to the address or facsimile number identified by the Contractor in Paragraph 2 of Form A: Bid/Proposal.
- D6.2 All notices, requests, nominations, proposals, consents, approvals, statements, authorizations, documents or other communications to the City, except as expressly otherwise required in D6.3 or elsewhere in the Contract, shall be sent to the attention of the Contract Administrator identified in D4.
- D6.3 All notices, requests, nominations, proposals, consents, approvals, statements, authorizations, documents or other communications required to be submitted or returned to the City Solicitor shall be sent to the following facsimile number:

The City of Winnipeg
Legal Services Department
Attn: Director of Legal Services
Facsimile No.: 204 947-9155

D7. FURNISHING OF DOCUMENTS

- D7.1 Upon award of the Contract, the Contractor will be provided with 'issued for construction' Contract Documents electronically, including Drawings in PDF format only.

SUBMISSIONS

D8. AUTHORITY TO CARRY ON BUSINESS

- D8.1 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.

D9. SAFE WORK PLAN

- D9.1 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.
- D9.2 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>

D9.3 Notwithstanding B13.4 at any time during the term of the Contract, the City may, at its 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.

D10. INSURANCE

D10.1 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.

D10.2 Deductibles shall be borne by the Contractor.

D10.3 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.

D10.4 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.

D11. CONTRACT SECURITY

D11.1 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.

D11.1.1 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 D11.1(b).
- D11.1.2 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 its discretion, exercised reasonably, allows.
- D11.1.3 Digital bonds passing the verification process will be treated as original and authentic.
- D11.2 The Contractor shall provide the City Solicitor 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.
- D11.3 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 D11.1(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.

D12. SUBCONTRACTOR LIST

- D12.1 The Contractor shall provide the Contract Administrator with a complete list of the Subcontractors whom the Contractor proposes to engage 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.

SCHEDULE OF WORK

D13. COMMENCEMENT

- D13.1 The Contractor shall not commence any Work until he/she is in receipt of an award letter from the Award Authority authorizing the commencement of the Work.
- D13.2 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 D8;
 - (ii) evidence of the workers compensation coverage specified in C6.15;
 - (iii) the Safe Work Plan specified in D9;
 - (iv) evidence of the insurance specified in D10;
 - (v) the contract security specified in D11; and
 - (vi) the Subcontractor list specified in D12.
 - (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.
- D13.3 The Contractor shall not commence the Work on the Site before November 1, 2022 unless mutually agreed upon by the City and Contractor.
- D13.4 The City intends to award this Contract by February 1, 2022.

D13.4.1 If the actual date of award is later than the intended date, the dates specified for Critical Stages, Substantial Performance, and Total Performance will be adjusted by the difference between the aforementioned intended and actual dates.

D14. SUBSTANTIAL PERFORMANCE

D14.1 The Contractor shall achieve Substantial Performance by January 13, 2023.

D14.2 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.

D14.3 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.

D15. TOTAL PERFORMANCE

D15.1 The Contractor shall achieve Total Performance by May 31, 2023.

D15.2 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.

D15.3 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.

D16. LIQUIDATED DAMAGES

D16.1 If the Contractor fails to achieve Substantial Performance in accordance with the Contract by the day fixed herein for Substantial Performance, the Contractor shall pay the City one thousand five hundred dollars (\$1,500) per Working Day for each and every Working Day following the day fixed herein for Substantial Performance during which such failure continues.

D16.2 The amount specified for liquidated damages in D16.1 is based on a genuine pre-estimate of the City's damages in the event that the Contractor does not achieve Substantial Performance by the day fixed herein for same.

D16.3 The City may reduce any payment to the Contractor by the amount of any liquidated damages assessed.

D17. COVID-19 SCHEDULE DELAYS

D17.1 The City acknowledges that the schedule for this Contract may be impacted by the COVID-19 pandemic. Commencement and progress of the Work shall be performed by the Contractor with due consideration to the health and safety of workers and the public, directives from health authorities and various levels of government and in close consultation with the Contract Administrator.

D17.2 If the Contractor is delayed in the performance of the Work by reason of the COVID-19 pandemic, 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.

D17.3 A minimum of seven (7) Calendar Days prior to the commencement of Work, the Contractor shall declare whether COVID-19 will affect the start date. The Contractor shall provide sufficient

evidence that the delay is directly related to COVID-19, including but not limited to evidence related to availability of staff, availability of Material or work by others.

- D17.4 For any delay related to COVID-19 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 D17.3. Failure to provide this notice will result in no additional time delays being considered by the City.
- D17.5 The Work schedule, including the durations identified in D14 to D15 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.
- D17.6 Where Work not previously identified is being carried over solely as a result of delays related to COVID-19, 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 COVID-19, a partial consideration of the cost of temporary works will be considered by the Contract Administrator.
- D17.7 Any time or cost implications as a result of COVID-19 and in accordance with the above, as confirmed by the Contract Administrator, shall be documented in accordance with C7.

CONTROL OF WORK

D18. JOB MEETINGS

- D18.1 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.
- D18.2 The Contract Administrator reserves the right to cancel any job meeting or call additional job meetings whenever he/she deems it necessary.

D19. PRIME CONTRACTOR – THE WORKPLACE SAFETY AND HEALTH ACT (MANITOBA)

- D19.1 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).

D20. THE WORKPLACE SAFETY AND HEALTH ACT (MANITOBA) – QUALIFICATIONS

- D20.1 Further to B13.4, 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 its sole discretion and acting reasonably, require updated proof of compliance, as set out in B13.4.

MEASUREMENT AND PAYMENT

D21. INVOICES

- D21.1 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

D21.2 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.

D21.3 The City will bear no responsibility for delays in approval of invoices which are improperly submitted.

D22. PAYMENT

D22.1 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. Warranty

D23. WARRANTY

D23.1 Warranty is as stated in C13.

THIRD PARTY AGREEMENTS

D24. FUNDING AND/OR CONTRIBUTION AGREEMENT OBLIGATIONS

D24.1 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.

D24.2 Further to D24.1, in the event that the obligations in D24 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.

D24.3 For the purposes of D24:

- (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.

D24.4 Modified Insurance Requirements

D24.4.1 If not already required under the insurance requirements identified in D10, 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 its Ministers, officers, employees, and agents shall be added as additional insureds.

- D24.4.2 If not already required under the insurance requirements identified in D10, 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.
- D24.4.3 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.
- D24.4.4 Further to D10.3, 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.
- D24.4.5 All policies must be taken out with insurers licensed to carry on business in the Province of Manitoba.
- D24.5 Indemnification By Contractor
- D24.5.1 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.
- D24.6 Records Retention and Audits
- D24.6.1 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.
- D24.6.2 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 D24.6.1 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.
- D24.7 Other Obligations
- D24.7.1 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.
- D24.7.2 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.

- D24.7.3 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.
- D24.7.4 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.
- D24.7.5 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.
- D24.7.6 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 D11)

KNOW ALL MEN 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. 649-2021

MCDERMOT AND FORT ROUGE SRS WEIR GATE 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 D11)

KNOW ALL MEN 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. 649-2021

MCDERMOT AND FORT ROUGE SRS WEIR GATE 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
 - (ii) 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;

- (iii) 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;
 - (iv) 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)

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 its 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:

<u>Drawing No.</u>	<u>Drawing Name/Title</u>
1-0303G-D0001-001	McDermot and Fort Rouge SRS Weir Gate Upgrades – Coversheet
1-0303G-D0002-001	McDermot and Fort Rouge SRS Weir Gate Upgrades – Index Page
1-0218G-S0001-001	McDermot and Fort Rouge SRS Weir Gate Upgrades – McDermot Avenue SRS Outfall Chamber Plan, Elevation and Sections
1-0204G-S0001-001	McDermot and Fort Rouge SRS Weir Gate Upgrades – Fort Rouge SRS Outfall Chamber Site and Chamber Plan
1-0204G-S0002-001	McDermot and Fort Rouge SRS Weir Gate Upgrades – Fort Rouge SRS Outfall Chamber Elevation and Sections

Appendix A: City of Winnipeg Identification Standard

Appendix B: Wastewater Services Contractor Environmental Preservation and Compliance Package

Appendix C: Reference Drawing

GENERAL REQUIREMENTS

E2. TRUCK WEIGHT LIMITS

- E2.1 The City shall not pay for any portion of material which results in the vehicle exceeding the maximum gross vehicle weight under The City of Winnipeg Traffic By-Law, unless such vehicle is operating under special permit.

E3. DANGEROUS WORK CONDITIONS

- E3.1 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.
- E3.2 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.

- E3.3 The air in 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 visible and audible alarm. The principle tests are for oxygen deficiency, explosion range and toxic gases. Testing equipment must be calibrated in accordance with manufacturer's specifications.
- E3.4 The Contractor shall ventilate all confined spaces including underground chambers, tunnels, pipes, and shafts in conformance with the Manitoba Workplace Safety and Health Act (the "Act").
- E3.5 A Worker must wear a respirator or supplied air to enter the confined space in conformance with the Manitoba Workplace Safety and Health Act
- E3.6 Workers must wear a respirator or supplied air when entering a chamber, manhole or sewer where live sewage is present in conformance with the Manitoba Workplace Safety and Health Act
- E3.7 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.
- E3.8 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.

E4. FLOW CONTROL

- E4.1 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.
- E4.2 Provide flow control measures to contend with and maintain flows in the 2,700 mm diameter storm relief sewer at McDermot and 2,400 mm diameter storm relief sewer at Fort Rouge upstream of the existing gate chamber structures.
- (a) Maintain the existing pumps in their respective chambers to route intercepted upstream flows to the combined sewer.
- E4.3 All intercepted flow water from upstream sources must be discharged to the combined sewer.
- E4.4 Discharge hoses for by-pass pumping, if required, 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.
- E4.5 Provide a flow control plan to the Contract Administrator for review prior to commencement of any demolition work.
- E4.6 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.
- E4.7 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.

E4.8 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.

E5. SHOP DRAWINGS

E5.1 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) Metal fabrications including hatches, ladders and gates.
- (c) Contractor 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 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:
 - (i) Contractor
 - (ii) Subcontractor
 - (iii) Supplier
 - (iv) Manufacturer
 - (v) Separate detailer when pertinent
 - (iv) Identification of product of material
 - (v) Relation to adjacent structure or materials
 - (vi) Field dimensions, clearly identified as such
 - (vii) Specification section name, number and clause number or drawings 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 or 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.

E5.2 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.

E6. SITE DEVELOPMENT AND RESTORATION

E6.1 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) Access maintenance; and
 - (viii) Surface restoration.
- E6.1.1 Additional site specific Works included within this Specification are the temporary removal, relocating, and replacing existing site furniture, fencing, and other obstructions within easement right-of-ways or as required for site access.
- E6.2 Materials
- E6.2.1 Equipment
- 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.
- E6.3 Construction Methods
- E6.3.1 Site and Construction Access
- 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.
- E6.3.2 Site Security
- 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.
- E6.3.3 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.
- E6.4 Staging and Laydown Areas
- 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.
- E6.5 General Site Cleanup and Restoration

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.

E6.6 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.

E6.7 Method of Measurement and Payment

E6.7.1 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.

E6.7.2 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.

E7. TRAFFIC MANAGEMENT

E7.1 Further to clause 3.7 of CW 1130:

E7.1.1 Partial closure of McDermot Avenue and River Avenue 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.

E7.1.2 No stockpiling of material will be permitted on the roadway.

E7.1.3 Intersecting street and private approach access shall be maintained at all times.

E7.1.4 Should the Contractor be unable to maintain pedestrian or vehicular access to a residence or business, he 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.

E7.1.5 Pedestrian access and ambulance/emergency vehicle access must be maintained at all times.

E7.1.6 Pedestrian access shall be restricted by maintaining a security fence around the perimeter of the Work site.

E7.2 Payment

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

E8. PROTECTION OF EXISTING TREES

- E8.1 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.
- E8.1.1 Do not stockpile materials and soil or park vehicles and equipment within 2 metres of trees.
- E8.1.2 Strap mature tree trunks with 38 x 140 x 2400 wood planks. Smaller trees shall be similarly protected using appropriately sized wood planks.
- E8.1.3 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.
- E8.1.4 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.
- E8.1.5 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.
- E8.2 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.
- E8.3 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.

E9. DEMOLITION OF STRUCTURES

- E9.1 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 components including the vault lid, surface concrete or asphalt to specified limits shown on the drawings.
- (b) Removal of and disposal of stop log weirs and stop log weir frames within the existing chambers.
- (c) Removal and disposal of remaining existing gate frame components within the existing chambers
- (d) Removal and disposal of debris and silt found within the existing chambers and the SRS pipes at Fort Rouge and McDermot Avenue.
- (e) Removal and disposal of construction debris.
- E9.1.1 The Work required under this section shall include, but is not limited to, the following:
Removal of existing concrete or asphalt, 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.
- E9.1.2 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.
- E9.2 References

- E9.2.1 CSA S350-M1980, Code of Practice for Safety in Demolition of Structures.
- E9.2.2 Manitoba Workplace Safety and Health Act, and all applicable National, Provincial and Municipal regulations.
- E9.3 Protection
- E9.3.1 Prevent damage of existing gates and structure to remain. Provide bracing and shoring as required. Make good any damage caused by the demolition Work.
- E9.3.2 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.
- E9.3.3 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.
- E9.4 Execution
- E9.4.1 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.
- E9.4.2 Safety Code and Requirements
- (a) Unless otherwise specified, carry out demolition in accordance with the City of Winnipeg Safety Directives and Guidelines.
- E9.4.3 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.
- E9.4.4 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.

E9.4.5 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.

E9.4.6 Disposal of Demolished Material

- (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.

E9.5 Measurement and Payment

E9.5.1 Demolition

Demolition work to facilitate of the gate chamber components 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.

E10. COLD WEATHER REQUIREMENTS

E10.1 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.

E10.2 All freshly placed concrete shall be protected from the elements and from defacements due to construction operations.

E10.3 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.

E10.4 Measurement and Payment

- (a) Cold weather requirements shall be considered incidental to the Contract and no separate payment will be made for this item.

E11. MISCELLANEOUS METAL FABRICATIONS

E11.1 Description

E11.1.1 General

- (a) This Specification shall cover the supply, fabrication, transportation, handling, delivery and placement of metal fabrications.

E11.1.2 The Work required under this section shall include, but is not limited to, the following:

- (a) Chamber Ladder at McDermot.
- (b) Galvanized steel ring and plate to seal existing opening at McDermot.
- (c) Supports for new manhole opening at McDermot.

E11.2 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 Ladders: to PIP STF05501.
- (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) 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.

E11.3 Construction Methods

E11.3.1 Submittals

- (a) Submit the qualifications of the fabricator and welders to the Contractor Administrator for acceptance.
- (b) Submit shop drawings in accordance with E5 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.

E11.3.2 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.

E11.3.3 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.

E11.4 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.

E12. STAINLESS STEEL SLIDE WEIR GATES

E12.1 Description

- (a) This Specification shall cover the supply, delivery, installation and testing of the stainless steel slide weir gates, mechanical lift operator, stems, wall brackets and all associated accessories.

E12.2 Submittals

E12.2.1 Submit Shop Drawings of stainless-steel slide weir gate, mechanical lift operator, stem, wall brackets, and accessories in accordance with E5.

E12.2.2 Submit Operating and Maintenance Manuals in accordance with E13.

E12.2.3 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.

E12.3 General Design

- (a) Specification Standard: AWWA C561-14

E12.3.2 McDermot SRS Gate Chamber:

- (a) Gate Size: 2743 mm x 762 mm (108" x 30")
- (b) Type: Overtopping, Self-Contained, Tandem Rising Stem with stop nut.
- (c) Mounting: Face Wall Mounted.
- (d) Seating Head: 0 m
- (e) Unseating Head: 0.762 m
- (f) Operator and Lift: Auxiliary gear with non-rising shaft to cast iron floor box with 50 mm x 50 mm square nut operator nut. Operator to turn counter clock wise to open.
- (g) Stem Cover: Clear plastic stem covers with position indicator.
- (h) Stem Guides: Adjustable in both the horizontal and vertical positions.
- (i) Stem, stem supports, gate and stem couplings: Type 316 Stainless Steel. Stem size to be designed by manufacturer. Stem supports and couplings to be

designed by the gate manufacturer. Stem must be designed to be put together and taken apart for maintenance within the underground chamber and access through typical manhole.

- (j) Acceptable Leakage: As per AWWA C561-14.
- (k) Guides and Side Seals: Ultra high molecular weight polyethylene (UHMWPE) to ASTM D-4020.0
- (l) Bottom Seal: Ultra high molecular weight polyethylene (UHMWPE) to ASTM D-4020.0
- (m) Compression Cord: EPDM
- (n) Slide and Frame: Stainless Steel ASTM A-240 Type 316L.
- (o) Hardware: ASTM F593 Type 316 Stainless Steel
- (p) Fasteners and Anchors: ASTM F593 Type 316 Stainless Steel
- (q) Manufacturer: HydroGate, Fontaine Aquanox, or approved equal.

E12.3.3 Fort Rouge SRS Gate Chamber:

- (a) Gate Size: 2134 mm x 762 mm (84" x 30")
- (b) Type: Overtopping, Self-Contained, Tandem Rising Stem with stop nut.
- (c) Mounting: Face Wall Mounted.
- (d) Seating Head: 0 m
- (e) Unseating Head: 0.762 m
- (f) Operator and Lift: Auxiliary gear with non-rising shaft to cast iron floor box with 50 mm x 50 mm square nut operator nut. Operator to turn counter clock wise to open.
- (g) Stem Cover: Clear plastic stem covers with position indicator.
- (h) Stem Guides: Adjustable in both the horizontal and vertical positions.
- (i) Stem, stem supports, gate and stem couplings: Type 316 Stainless Steel. Stem size to be designed by manufacturer. Stem supports and couplings to be designed by the gate manufacturer. Stem must be designed to be put together and taken apart for maintenance within the underground chamber and access through typical manhole.
- (j) Acceptable Leakage: As per AWWA C561-14.
- (k) Guides and Side Seals: Ultra high molecular weight polyethylene (UHMWPE) to ASTM D-4020.0
- (l) Bottom Seal: Ultra high molecular weight polyethylene (UHMWPE) to ASTM D-4020.0
- (m) Compression Cord: EPDM
- (n) Slide and Frame: Stainless Steel ASTM A-240 Type 316L.
- (o) Hardware: ASTM F593 Type 316 Stainless Steel
- (p) Fasteners and Anchors: ASTM F593 Type 316 Stainless Steel
- (q) Manufacturer: HydroGate, Fontaine Aquanox, or approved equal.

E12.4 Shop Drawings:

- (a) Submit Shop Drawings of stainless-steel slide weir gates and wall mounts in accordance with E13 of this specification.

E12.5 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.

E12.6 Shop Testing

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

E12.7 Construction Methods

E12.7.1 Installation

- (a) Install the stainless steel slide weir gates, mechanical lift operators, stems, wall brackets and accessories as shown on the drawings and in accordance with the manufacturer's recommendations.
- (b) The Contractor shall arrange for a qualified factory-trained field representative of the slide gate supplier/manufacturer to give instruction and inspect the installation during and after completion. The Contractor's gate supplier shall complete Form 201 Certificate of Instruction, attached at the end of this section, when he is satisfied that the installation contractor has received adequate instruction in the installation of the Supplier's equipment. The completed Form 201 shall be submitted to the Contract Administrator prior to the commencement of equipment installation.
- (c) The Contractor's suppliers factory-trained representative shall visit the site as required to ensure that the installation work is being performed in a proper and workmanlike manner. The Contractor and the Supplier's representative shall complete Form 202 Certificate of Satisfactory Installation, attached at the end of this section, following installation of the equipment. The completed Form 202 shall be submitted to the Contract Administrator prior to the commencement of leakage testing.

E12.7.2 Inspection and Field Testing

- (a) The Contractor and the Supplier's factory-trained representative shall be present to supervise the commissioning, initial operation, and functional testing of the equipment. The Contractor shall be required to complete Form 203 Certificate of Equipment Satisfactory Performance, attached at the end of this section, stating that his qualified representative has checked the installed equipment and found the equipment to be satisfactorily installed and in specified working operation. The completed Form 203 shall be received by the Contract Administrator prior to commencement of the Warranty period.
- (b) Perform leakage tests in the Contract Administrator's presence once the slide weir gates have been installed to ensure compliance with the allowable leakage rate indicated in the latest edition of AWWA C561.
- (c) Generally, the test will be performed by closing the gate and letting the upstream side fill up to the weir height and measuring the leakage rate through the gate.
- (d) If a gate fails the field leakage test, the Contractor shall undertake adjustments, replacements, or other modifications recommended by the gate supplier/manufacturer and repeat the test. The sequence shall be repeated until the gate passes no more than the allowable leakage rate.
- (e) Operating equipment and systems shall be performance tested by the Contractor in the presence of the Contract Administrator to demonstrate compliance with the

specified operating requirements. Functional testing shall be conducted under the specified design operating conditions or under such simulated operating conditions as recommended or approved by the Contract Administrator.

E12.8 Measurement and Payment

- (a) Procurement, installation and testing of the stainless-steel slide gate weirs, mechanical lift operator, stems, wall brackets and accessories will be paid for at the Contract Lump Sum price for "Stainless Steel Slide Weir Gates" for each SRS chamber.

E13. OPERATION AND MAINTENANCE MANUALS INCLUDING SPARE PARTS LIST

E13.1 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.

E13.2 All instructions in these manuals shall be in the English language to guide the City in the proper operation and maintenance of the equipment.

E13.3 Bind contents in a three (3)-"D-Ring", hard-covered, plastic-jacketed binder with full cover and spine insert. Organize contents into applicable sections of work, parallel to Specifications breakdown.

E13.4 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 USB storage drive labelled in type, with the following:

- (a) Tender number,
- (b) Job Title, and
- (c) Description of Equipment

E13.5 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.

E13.6 The Contractor shall modify and supplement the manual as required by the Contract Administrator. When accepted, six (6) additional copies, including electronic versions, 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 delivery as per the dates set out in D10. The Contract shall not be considered complete until the above manuals have been completed and submitted to the satisfaction of the Contract Administrator.

E13.7 Measurement and Payment

- E13.7.1 Supply and delivery of operation and maintenance manuals including spare parts lists shall be considered incidental to the Works of this Contract and should be included in the pay item for the Stainless Steel Weir Gates. No direct measurement or payment will be made for this item.

E14. TEMPORARY SURFACE RESTORATION AND MAINTENANCE

- E14.1 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.
- E14.2 The Contractor shall monitor and maintain temporarily restored surfaces as required until permanent restoration is complete.
- E14.3 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.
- E14.4 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.

E15. BACKFILL UNDER TEMPORARY SURFACE RESTORATIONS

- E15.1 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.
- E15.2 Class 2 backfill may be compacted in 600mm lifts where backhoe operated pneumatic plate compactors are used.
- E15.3 Jet and flood Class 2, Class 3 and Class 5 backfilled excavations in spring when ground is not frozen prior to permanent restoration.
- E15.4 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.

E16. SNOW CLEARING

- E16.1 All required snow clearing shall be performed by the Contractor at his own expense.
- E16.2 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.
- E16.3 Snow built-up on sidewalks and roadway shall be maintained to the condition of the surrounding sidewalks and roadways.

E17. EXTRA WORK ALLOWANCE

- E17.1 Description
- (a) The Extra Work Cash Allowance is intended to be used for unforeseen or additional scope items directed and authorized by the Contract Administrator.
 - (b) 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.

E17.2 Method of Measurement and Basis of Payment

- (a) Cost of extra 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

FORM 201:
CERTIFICATE OF INSTRUCTION

I have completed instruction of the installation of the equipment listed below:

Project: _____
Item of Equipment: _____
Tag No.: _____
Reference Specification: _____

(Authorized Signing Representative of the Supplier)

(Date)

I certify that the party responsible for the installation of the equipment listed below has received instructions from the Supplier.

(Authorized Signing Representative of the Installation Contractor)

(Date)

FORM 202:
CERTIFICATE OF SATISFACTORY INSTALLATION

I have completed my check and inspection of the installation listed below and confirm that it is satisfactory and that defects have been remedied to my satisfaction except any as noted below:

Project: _____

Item of Equipment: _____

Tag No.: _____

Reference Specification: _____

Outstanding Defects : _____

(Authorized Signing Representative of the Supplier) (Date)

(Authorized Signing Representative of the Installation Contractor) (Date)

FORM 203:
CERTIFICATE OF EQUIPMENT SATISFACTORY PERFORMANCE

We certify that the equipment listed below has been validated and has been operated for at least seven (7) consecutive days and that the equipment operated satisfactory and meet its Basic Design Criteria. No defects in the equipment were found. The equipment is therefore classed as "conforming"

Project: _____

Item of Equipment: _____

Tag No.: _____

Reference Specification: _____

(Authorized Signing Representative of the Supplier)

(Date)

(Authorized Signing Representative of the Installation Contractor)

(Date)

(Authorized Signing Representative of the Contract Administrator)

(Date)

APPENDIX A – IDENTIFICATION STANDARD

**APPENDIX B – WASTEWATER SERVICES CONTRACTOR ENVIRONMENTAL PRESERVATION
AND COMPLIANCE PACKAGE**

APPENDIX C – REFERENCE DRAWINGS