



THE CITY OF WINNIPEG

TENDER

TENDER NO. 523-2019

KILDONAN SETTLERS BRIDGE - PIER SU4 UNDERWATER CONCRETE REPAIRS

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PART B - BIDDING PROCEDURES

B1. CONTRACT TITLE

B1.1 KILDONAN SETTLERS BRIDGE - PIER SU4 UNDERWATER CONCRETE REPAIRS

B2. SUBMISSION DEADLINE

B2.1 The Submission Deadline is 12:00 noon Winnipeg time, June 25, 2019.

B2.2 Bids determined by the Manager of Materials to have been received later than the Submission Deadline will not be accepted and will be returned upon request.

B2.3 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 view the Site without making an appointment.

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.

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 Bid Opportunities page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgt/bidopp.asp>
- B6.4 The Bidder is responsible for ensuring that he/she has received all addenda and is advised to check the Materials Management Division 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. 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;
 - (b) Form B: Prices; and
 - (c) Form G1: Bid Bond and Agreement to Bond;
- B8.2 Further to B8.1, the Bidder should include the written correspondence from the Contract Administrator approving a substitute in accordance with B7.
- B8.3 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.
- B8.4 The Bid shall be submitted enclosed and sealed in an envelope clearly marked with the Tender number and the Bidder's name and address.
- B8.4.1 Samples or other components of the Bid which cannot reasonably be enclosed in the envelope may be packaged separately, but shall be clearly marked with the Tender number, the Bidder's name and address, and an indication that the contents are part of the Bidder's Bid.
- B8.5 Bidders are advised not to include any information/literature except as requested in accordance with B8.1.
- B8.6 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).
- B8.7 Bids submitted by facsimile transmission (fax) or internet electronic mail (e-mail) will not be accepted.
- B8.8 Bids shall be submitted to:
- The City of Winnipeg
 - Corporate Finance Department
 - Materials Management Division
 - 185 King Street, Main Floor
 - Winnipeg MB R3B 1J1

B9. BID

- B9.1 The Bidder shall complete Form A: Bid, making all required entries.
- B9.2 Paragraph 2 of Form A: Bid 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, 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 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 and the corporate seal, if the corporation has one, should be affixed;
 - (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 should be printed 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 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 D26. Any such costs shall be determined in accordance with D26.
- 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).

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) Dominion Divers Ltd, who provided diving assistance and sonar soundings for the preparation of the report referenced in B11.3(a).

B11.3 Additional Material:

- (a) The Kildonan Settlers Bridge Pier SU4 Repairs Preliminary Design Report and original construction drawings are available for review at the AECOM office located at 99 Commerce Drive, Winnipeg, Manitoba, R3P 0Y7. Bidder to provide 48 hours notice to arrange a date and time to review the report.

B12. CONFLICT OF INTEREST AND GOOD FAITH

B12.1 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://winnipeg.ca/finance/findata/matmgt/listing/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 provide bid security in the form of a 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 the form included in the Bid Submission (Form G1: Bid Bond and Agreement to Bond).

B14.1.1 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.

B14.1.2 All signatures on bid securities shall be original.

B14.1.3 The Bidder shall sign the Bid Bond.

B14.1.4 The Surety shall sign and affix its corporate seal on the Bid Bond and the Agreement to Bond.

B14.2 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 executed by 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.

B14.3 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 be opened publicly, after the Submission Deadline has elapsed, in the office of the Corporate Finance Department, Materials Management Division, or in such other office as may be designated by the Manager of Materials.

B15.1.1 Bidders or their representatives may attend.

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 Closed Bid Opportunities (or Public/Posted Opening & Award Results) page at

The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgt/default.stm>

- B15.3 After award of Contract, the name(s) of the successful Bidder(s), their address(es) and the Contract amount(s) will be available on the Closed Bid Opportunities (or Public/Posted Opening & Award Results) page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgt/default.stm>
- 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.
- 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 executed 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.

B17. WITHDRAWAL OF BIDS

- B17.1 A Bidder may withdraw his/her Bid without penalty by giving written notice to the Manager of Materials at any time prior to the Submission Deadline.
- B17.1.1 Notwithstanding C23.3, the time and date of receipt of any notice withdrawing a Bid shall be the time and date of receipt as determined by the Manager of Materials.
- B17.1.2 The City will assume that any one of the contact persons named in Paragraph 3 of Form A: Bid or the Bidder's authorized representatives named in Paragraph 13 of Form A: Bid, and only such person, has authority to give notice of withdrawal.
- B17.1.3 If a Bidder gives notice of withdrawal prior to the Submission Deadline, the Manager of Materials will:
- (a) retain the Bid until after the Submission Deadline has elapsed;
 - (b) open the Bid to identify the contact person named in Paragraph 3 of Form A: Bid and the Bidder's authorized representatives named in Paragraph 13 of Form A: Bid; and
 - (c) if the notice has been given by any one of the persons specified in B17.1.3(b), declare the Bid withdrawn.
- B17.2 A Bidder who withdraws his/her Bid after the Submission Deadline but before his/her Bid has been released or has lapsed as provided for in B16.2 shall be liable for such damages as are imposed upon the Bidder by law and subject to such sanctions as the Chief Administrative Officer considers appropriate in the circumstances. The City, in such event, shall be entitled to all rights and remedies available to it at law, including the right to retain the Bidder's bid security.

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), where the Total Bid Price exceeds the funds stated in D2.3, the City may determine that no award will be made in accordance with B19.2.1(a).

B18.5 Further to B18.1(c), the Total Bid Price shall be the sum of the quantities multiplied by the unit prices for each item shown on Form B: Prices.

B18.5.1 Further to B18.1(a), in the event that a unit price is not provided on Form B: Prices, the City will determine the unit price by dividing the Amount (extended price) by the approximate quantity, for the purposes of evaluation and payment.

B19. AWARD OF CONTRACT

B19.1 The City will give notice of the award of the Contract or will give notice that no award will be made.

B19.2 The City will have no obligation to award a Contract to a Bidder, even though one or all of the Bidders are determined to be qualified, and the Bids are determined to be responsive.

B19.2.1 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 D26 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 2019 01 15) 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 underwater concrete repairs of Kildonan Settlers Bridge Pier SU4.

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

- (a) Cleaning and surface preparation for underwater repairs
- (b) Installation of reinforcing
- (c) Installation of formwork
- (d) Placement of grout
- (e) Removal of formwork and inspection

D2.3 The funds available for this Contract are \$375,000.

D3. DEFINITIONS

D3.1 When used in this Tender:

- (a) "**Fabricator**" means a person or entity having a direct contract with the Contractor to construct by combining or assembling diverse, typically standardized parts;
- (b) "**Manufacturer**" means a person or entity having a direct contract with the Contractor to manufacture products not worked to a special design for the Work;
- (c) "**Project**" means the underwater concrete repairs of the Kildonan Settler's Bridge Pier SU4 Repairs;

D3.2 Notwithstanding C1.1, when used in this Tender:

- (a) "**ACI**" means American Concrete Institute;
- (b) "**AISC**" means American Institute of Steel Construction;
- (c) "**AISI**" means American Iron and Steel Institute;
- (d) "**ASTM**" means ASTM International (formerly American Society for Testing and Materials).
- (e) "**CAN**" means National Standard of Canada.
- (f) "**CSA**" means Canadian Standards Association.
- (g) "**NBC**" means National Building Code of Canada.
- (h) "**PCA**" means Portland Cement Association.
- (i) "**RSIC**" means Reinforcing Steel Institute of Canada.
- (j) "**TAC**" means Transportation Association of Canada.
- (k) "**WCB**" means Workers Compensation Board.

D4. CONTRACT ADMINISTRATOR

D4.1 The Contract Administrator is AECOM Canada Ltd., represented by:
Eric B. Loewen, P.Eng.

Manager, Bridges

Telephone No. 204 928-8440

Email Address eric.loewen@aecom.com

D4.2 At the pre-construction meeting, Eric Loewen 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. OWNERSHIP OF INFORMATION, CONFIDENTIALITY AND NON DISCLOSURE

D6.1 The Contract, all deliverables produced or developed, and information provided to or acquired by the Contractor are the property of the City and shall not be appropriated for the Contractors own use, or for the use of any third party.

D6.2 The Contractor shall not make any public announcements or press releases regarding the Contract, without the prior written authorization of the Contract Administrator.

D6.3 The following shall be confidential and shall not be disclosed by the Contractor to the media or any member of the public without the prior written authorization of the Contract Administrator;

- (a) information provided to the Contractor by the City or acquired by the Contractor during the course of the Work;
- (b) the Contract, all deliverables produced or developed; and
- (c) any statement of fact or opinion regarding any aspect of the Contract.

D6.4 A Contractor who violates any provision of D6 may be determined to be in breach of Contract.

D7. NOTICES

D7.1 Except as provided for in C23.2.2, 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.

D7.2 All notices, requests, nominations, proposals, consents, approvals, statements, authorizations, documents or other communications to the City, except as expressly otherwise required in D7.3, D7.4 or elsewhere in the Contract, shall be sent to the attention of the Contract Administrator identified in D4.

D7.3 Notwithstanding C21., all notices of appeal to the Chief Administrative Officer shall be sent to the attention of the Chief Financial Officer at the following:

The City of Winnipeg
Attn: Chief Financial Officer
Office of the Chief Administrative Officer
Susan A. Thompson Building
2nd Floor, 510 Main Street
Winnipeg MB R3B 1B9

D7.4 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

D7.5 Bids Submissions must not be submitted to the above facsimile number. Bids must be submitted in accordance with B8.

D8. FURNISHING OF DOCUMENTS

D8.1 Upon award of the Contract, the Contractor will be provided with one (1) complete set of the Tender. If the Contractor requires additional sets of the Tender, they will be supplied to him/her at cost.

SUBMISSIONS

D9. AUTHORITY TO CARRY ON BUSINESS

D9.1 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.

D10. SAFE WORK PLAN

D10.1 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.

D10.2 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>

D10.3 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.

D11. INSURANCE

D11.1 The Contractor shall provide and maintain the following insurance coverage:

- (a) Wrap up Liability Insurance, in the amount of at least two million dollars (\$2,000,000.00) inclusive, covering bodily injury, property damage, damage to the existing structure, and products and completed operations. Such policy to be written in the names of the Contractor. The City of Winnipeg and all sub-contractors, consultants and sub-consultants and include 24 months completed operations which will take effect after Total Performance.
- (b) 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) All risks installation floater adequate to cover all machinery, equipment, supplies and/or materials intended to enter into and form part of any installation in the amount of one hundred percent (100%) of the total Contract Price, written in the name of the Contractor and The City of Winnipeg, at all times during the performance of the Work and until the date of Total Performance.

- (d) Contractor's Pollution Liability (CPL) insurance in the amount of at least one million dollars (\$1,000,000) per occurrence and two million dollars (\$2,000,000) annual aggregate insuring against claims covering third-party injury and property damage claims and including clean-up costs and transported cargo as a result of pollution conditions arising suddenly or gradually from the Contractor operations and completed operations. Such policy to name the City as an additional insured and remain in place for a minimum of twelve (12) months following total completion.
- (e) Should watercraft be required in the performance of the Project and where not covered by Contractor's or sub-contractors commercial general liability policy, watercraft liability or protection and indemnity insurance for owned and non-owned watercraft and/or floating apparatus, of at least two million dollars (\$2,000,000) any one accident or occurrence is required. Such policy will include cross liability, sudden and accidental pollution liability and shall include the City as an additional insured.

D11.2 Deductibles shall be borne by the Contractor.

D11.3 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.

D11.4 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.

D11.5 All policies shall be taken out with insurers licensed to carry on business in the Province of Manitoba.

D12. CONTRACT SECURITY

D12.1 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.

D12.2 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 letter of intent 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.

D12.3 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 D12.1(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.

D13. SUBCONTRACTOR LIST

D13.1 The Contractor shall provide the Contract Administrator with a complete list of the Subcontractors whom the Contractor proposes to engage (Form J: Subcontractor List) at least two (2) Business Days prior to the commencement of any Work on the Site but in no event later than the date specified in C4.1 for the return of the executed Contract.

D14. EQUIPMENT LIST

D14.1 The Contractor shall provide the Contract Administrator with a complete list of the equipment which the Contractor proposes to utilize (Form K: Equipment List) at least two (2) Business Days prior to the commencement of any Work on the Site but in no event later than the date specified in C4.1 for the return of the executed Contract.

D15. DETAILED WORK SCHEDULE

D15.1 The Contractor shall provide the Contract Administrator with a detailed work schedule at least two (2) Business Days prior to the commencement of any Work on the Site but in no event later than the date specified in C4.1 for the return of the executed Contract.

D15.2 The detailed work schedule shall consist of the following:

- (a) a critical path method (C.P.M.) schedule for the Work;
- (b) a Gantt chart for the Work based on the C.P.M. schedule;
- (c) a daily manpower schedule for the Work;

all acceptable to the Contract Administrator.

D15.3 Further to D15.2(a), the C.P.M. schedule shall clearly identify the start and completion dates of all of the following activities/tasks making up the Work as well as showing those activities/tasks on the critical path.

- (a) Substantial Performance by September 30, 2019.
- (b) Total Performance by October 15, 2019.
- (c) Warranty inspection shall be performed by the Contractor on October 15, 2021.

D15.4 Further to D15.2(b), the Gantt chart shall show the time on a weekly basis, required to carry out the Work of each trade, or specification division. The time shall be on the horizontal axis, and the type of trade shall be on the vertical axis.

D15.5 Further to D15.2(c), the daily manpower schedule shall list the daily number of individuals on the Site for each trade.

SCHEDULE OF WORK

D16. COMMENCEMENT

D16.1 The Contractor shall not commence any Work until he/she is in receipt of a letter of intent from the Award Authority authorizing the commencement of the Work.

D16.2 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 D9;
 - (ii) evidence of the workers compensation coverage specified in C6.15;
 - (iii) the Safe Work Plan specified in D10;
 - (iv) evidence of the insurance specified in D11;
 - (v) the contract security specified in D12;
 - (vi) the Subcontractor list specified in D13;
 - (vii) the equipment list specified in D14; and
 - (viii) the detailed work schedule specified in D15.
- (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.

D16.3 The City intends to award this Contract by July 12, 2019.

D16.3.1 If the actual date of award is later than the intended date, the dates specified for Commencement, Critical Stages, Substantial Performance, and Total Performance will be adjusted by the difference between the aforementioned intended and actual dates.

D17. CRITICAL STAGES

D17.1 The Contractor shall achieve critical stages of the Work in accordance with the following requirements:

- (a) Placement of tremie grout material for Type 1 Repairs to be completed by September 14, 2019.
- (b) Removal of formwork and inspection completed by September 30, 2019.

D18. SUBSTANTIAL PERFORMANCE

D18.1 The Contractor shall achieve Substantial Performance by September 30, 2019

D18.2 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.

D18.3 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.

D19. TOTAL PERFORMANCE

D19.1 The Contractor shall achieve Total Performance by October 15, 2019.

D19.2 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.

D19.3 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.

D20. LIQUIDATED DAMAGES

D20.1 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 Thousanddollars (\$1,000) per Calendar Dayfor each and every Calendar Dayfollowing the day fixed herein for Substantial Performance during which such failure continues.

D20.2 The amount specified for liquidated damages in D20.1 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.

D20.3 The City may reduce any payment to the Contractor by the amount of any liquidated damages assessed.

CONTROL OF WORK

D21. JOB MEETINGS

- D21.1 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.
- D21.2 The Contract Administrator reserves the right to cancel any job meeting or call additional job meetings whenever he/she deems it necessary.

D22. PRIME CONTRACTOR – THE WORKPLACE SAFETY AND HEALTH ACT (MANITOBA)

- D22.1 Further to C6.24, 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).

D23. THE WORKPLACE SAFETY AND HEALTH ACT (MANITOBA) – QUALIFICATIONS

- D23.1 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

D24. PAYMENT

- D24.1 Further to C12, the City may at its option pay the Contractor by direct deposit to the Contractor's banking institution.

WARRANTY

D25. WARRANTY

- D25.1 Notwithstanding C13.2, the warranty period shall begin on the date of Total Performance and shall expire two (2) years thereafter unless extended pursuant to C13.2.1 or C13.2.2, in which case it shall expire when provided for thereunder.

THIRD PARTY AGREEMENTS

D26. FUNDING AND/OR CONTRIBUTION AGREEMENT OBLIGATIONS

- D26.1 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.
- D26.2 Further to D26.1, in the event that the obligations in D26 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.
- D26.3 For the purposes of D26:

- (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.

D26.4 Modified Insurance Requirements

- D26.4.1 If not already required under the insurance requirements identified in D11, 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.
- D26.4.2 If not already required under the insurance requirements identified in D11, 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.
- D26.4.3 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.
- D26.4.4 Further to D11.3, 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.
- D26.4.5 All policies must be taken out with insurers licensed to carry on business in the Province of Manitoba.

D26.5 Indemnification By Contractor

- D26.5.1 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.

D26.6 Records Retention and Audits

- D26.6.1 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.
- D26.6.2 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 D26.6.1 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.

D26.7 Other Obligations

- D26.7.1 The Contractor consents to the City providing a copy of the Contract to the Government of Manitoba and/or the Government of Canada upon request from either entity.
- D26.7.2 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.
- D26.7.3 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.
- D26.7.4 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.

FORM H1: PERFORMANCE BOND
(See D12)

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. 523-2019

KILDONAN SETTLERS BRIDGE - PIER SU4 UNDERWATER CONCRETE REPAIRS

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 D12)

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. 523-2019

KILDONAN SETTLERS BRIDGE - PIER SU4 UNDERWATER CONCRETE REPAIRS

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)

FORM K: EQUIPMENT
(See D14)

KILDONAN SETTLERS BRIDGE - PIER SU4 UNDERWATER CONCRETE REPAIRS

1. Category/type: Watercraft	
Make/Model/Year: _____	Serial No.: _____
Registered owner: _____	
Make/Model/Year: _____	Serial No.: _____
Registered owner: _____	
Make/Model/Year: _____	Serial No.: _____
Registered owner: _____	
2. Category/type: Underwater concrete cleaning equipment	
Make/Model/Year: _____	Serial No.: _____
Registered owner: _____	
Make/Model/Year: _____	Serial No.: _____
Registered owner: _____	
Make/Model/Year: _____	Serial No.: _____
Registered owner: _____	
3. Category/type:	
Make/Model/Year: _____	Serial No.: _____
Registered owner: _____	
Make/Model/Year: _____	Serial No.: _____
Registered owner: _____	
Make/Model/Year: _____	Serial No.: _____
Registered owner: _____	

FORM K: EQUIPMENT
(See D14)

KILDONAN SETTLERS BRIDGE - PIER SU4 UNDERWATER CONCRETE REPAIRS

4. Category/type:	
Make/Model/Year: _____	Serial No.: _____
Registered owner: _____	
Make/Model/Year: _____	Serial No.: _____
Registered owner: _____	
Make/Model/Year: _____	Serial No.: _____
Registered owner: _____	
5. Category/type:	
Make/Model/Year: _____	Serial No.: _____
Registered owner: _____	
Make/Model/Year: _____	Serial No.: _____
Registered owner: _____	
Make/Model/Year: _____	Serial No.: _____
Registered owner: _____	

PART E - SPECIFICATIONS

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>
B216-19-01	Cover Sheet and Location Plan
B216-19-02	Existing Footing Details
B216-19-03	Concrete Repair Details

E1.5 Reference Drawings

<u>Drawing No.</u>	<u>Drawing Name/Title</u>
B216-89-20S	River Piers SU-3 and SU-4 Underwater Sub-footings
B216-89-23S	River Pier SU-4 Sheet 1 of 2
B216-89-24S	River Pier SU-4 Sheet 2 of 2

E2. GENERAL REQUIREMENTS

- E2.1 Description of Work
- Work under this Contract covers concrete repairs to the underwater portion of the Kildonan Settlers Bridge Pier SU4 at the locations designated on the attached drawings and as specified herein.
 - The Kildonan Settlers Bridge is located on Chief Peguis Trail over the Red River in Winnipeg, Manitoba.
- E2.2 Codes
- Perform work in accordance with latest edition of National Building Code of Canada (NBC) and CAN/CSA S6-14 Canadian Highway Bridge Design Code including all amendments up to tender closing date and any other code of provincial or local application provided that in any case of conflict or discrepancy, the more stringent requirements shall apply.
 - Meet or exceed requirements of:
 - Contract documents,
 - Specified standards, codes and referenced documents.

E2.3 Documents required

- (a) Maintain at job site, once copy each of the following:
 - (i) Contract drawings
 - (ii) Specifications
 - (iii) Addenda
 - (iv) Reviewed shop drawings
 - (v) Change orders
 - (vi) Other modifications to the contract
 - (vii) Field test reports
 - (viii) Copy of approved work schedule
 - (ix) Manufacturers' installation and application instructions.

E2.4 Work Schedule

- (a) Provide within 10 working days after the Contract award, schedule showing anticipated progress stages and final completion of work within time period required by the Contract documents. Schedule to include dates for submission of shop drawings, material lists and materials.
- (b) When schedule has been approved by the Contract Administrator, carry out the work and adhere to the schedule at all times, unless both parties agree in writing. Do not change the schedule without the Contract Administrator's approval.
- (c) Interim reviews of work progress based on work schedule will be conducted as decided by the Contract Administrator and schedule updated by the Contractor in conjunction with and to approval of the Contract Administrator.

E2.5 Contractor's Use of Site

- (a) Execute work with the least possible interference or disturbance to occupants, normal use of premises and other contractors on site. At no time during the course of the work shall the contractor's work and operations interfere, obstruct the Kildonan Settlers Bridge Structure.
- (b) The Contractor shall cooperate with the City in the coordination of the works of other Contractors employed on the site.
- (c) Contractor shall provide for his storage and working area at the site of the work as approved by the Contract Administrator.
- (d) Obtain and pay for use of additional storage or work areas if required.
- (e) Contractor shall provide for his own sanitary facilities, rest areas, parking and stockpiling, as approved by the Contract Administrator.
- (f) Do not unreasonably encumber site with materials or equipment.
- (g) Move stored products or equipment which interfere with operations of the Contract Administrator or other contractors.
- (h) Arrange, pay for and maintain temporary electrical power supply in accordance with governing regulations and ordinances.
- (i) Install temporary facilities for power, such as pole lines, to approval of local power supply authority.
- (j) Remove temporary services from site when directed by the Contract Administrator.

E2.6 Existing Services

- (a) Where Work involves breaking into or connecting to existing services, carry out work at times directed by authorities having jurisdiction, with minimum of disturbance to pedestrian and vehicular traffic.

- (b) Before commencing work, establish location and extent of service lines in area of Work and notify Contract Administrator of findings. Contractor to make arrangements with applicable authorities to locate all service lines (MTS, Gas, Hydro, etc.) in field.
- (c) Submit schedule to and obtain approval from Contract Administrator for any shut-down or closure of active service or facility. Adhere to approved schedule and provide notice to affected parties.
- (d) Where unknown service encountered, immediately advise Contract Administrator and confirm findings in writing.
- (e) Remove abandoned service lines within 2 m of structures. Cap or otherwise seal lines at cut-off points as directed by the Contract Administrator.
- (f) Record locations of maintained, re-routed and abandoned service lines.
- (g) Take necessary precautions and prevent damage to existing services, equipment and installations.
- (h) Repair or replace services, equipment or installations damaged as a result of Contractor's operations at no additional cost to the Contract Administrator.

E2.7 Additional Drawings

- (a) Contract Administrator may furnish additional drawings for clarification. These additional drawings have same meaning and intent as if they were included with plans referred to in Contract documents.

E2.8 Hours of Work

- (a) Carry out work during normal daytime hours 0800 to 1700 hours or as arranged with the Contract Administrator.

E2.9 Time of Completion

- (a) Complete work before date specified on construction tender. Upon completion of all of the work Contractor shall have removed all construction plant, equipment and materials from the site including all temporary facilities.

E2.10 Examination of Site

- (a) The submission of a tender is deemed to be a confirmation of the fact that the Tenderer has inspected the site and is fully conversant with all conditions under which the work is to be carried out.
- (b) Prior to the start of the work, check field conditions to obtain actual dimensions required to ensure correct execution of the work and notify the Contract Administrator in writing of any discrepancies between field dimensions and those shown on the drawings.

E2.11 Maintenance and Site Cleanup

- (a) Provide for and maintain all site facilities until the date of issuance of the certificate of Substantial Performance.
- (b) The Contractor and the Contract Administrator will perform a pre-mobilization site inspection with a photographic record before the work commences to document current site conditions. The Contractor shall make good any damage caused by the Contractor.
- (c) Keep the site free from accumulation of waste materials and debris as specified.

E2.12 Access to Site

- (a) Access details are provided in Drawing 523-2019_B216-19-01.
- (b) The Contractor shall meet all the requirements from Transport Canada, including the storage location of the barge and/or boat and required buoys, flashing lights and warning signs for boat uses.
- (c) Barge to be east of Pier SU4 for overnight storage.

E2.13 Access Roads

- (a) Be solely responsible for construction and maintenance of access roads. Remove access roads from site upon completion of project. No separate payment to be made for construction, maintenance and removal of access roads.
- (b) Contractor to be responsible for obtaining approval from applicable agencies for using access roads to site.
- (c) Contractor to repair any damage caused to roads or property as a result of hauling operations.

E2.14 Measurement and Payment

- (a) The Work associated with "General Requirements" will be paid for under the Work for "Mobilization and Demobilization" and no additional measurement or payment will be made.

E3. SUBMITTALS AND SHOP DRAWINGS

E3.1 Submittals

- E3.1.1 Further to CW 1110, all submissions must be in metric units. Where data is in imperial units, the correct metric values shall also be shown on the submissions for Contract Administrator review.

E3.2 Shop Drawings

- E3.2.1 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.
- E3.2.2 Original drawings shall be prepared by Contractor, Subcontractor, supplier, distributor or manufacturer to illustrate appropriate portion of Work including fabrication, layout, setting or erection details as specified in appropriate sections.
- E3.2.3 Shop Drawings for the following components shall bear the seal of a Professional Engineer registered in the province of Manitoba:
 - (a) Formwork.
 - (b) Tremie Procedures.
 - (c) Reinforcing Steel Layout and Details.
- E3.2.4 Review Shop Drawings, product data and samples prior to submission and stamp and sign Shop Drawings indicating conformance to the Contract requirements.
- E3.2.5 In addition to E3.2.3 the Contractor shall submit to the Contract Administrator for review and acceptance:
 - (a) Barge Operation, Navigation Protection and Procedures.
 - (b) Water Jet Cleaning Equipment Specifications.
 - (c) Injection Grout Equipment Specifications.
 - (d) Emergency Spill Response Plan.
- E3.2.6 Schedule submittals at least fourteen (14) Calendar Days before dates reviewed submittals will be needed and allow for a fourteen (14) Calendar Day period for review by the Contract Administrator of each individual submission and re-submission, unless noted otherwise in the Contract.
- E3.2.7 Submit electronic copy of Shop Drawings in pdf format. The Contract Administrator will return the review copy in electronic format to the Contractor.
- E3.2.8 Accompany submittals with transmittal letter containing:
 - (a) Date.
 - (b) Project title and Bid Opportunity number.

- (c) Contractor's name and address.
- (d) Number of each Shop Drawing, product data and sample submitted.
- (e) Specification Section, Title, Number and Clause.
- (f) Drawing Number and Detail / Section Number.
- (g) Other pertinent data.

E3.2.9 Submittals shall include:

- (a) Date and revision dates.
- (b) Project title and Bid Opportunity number.
- (c) Name of:
 - (i) Contractor.
 - (ii) Subcontractor.
 - (iii) Supplier.
 - (iv) Manufacturer.
 - (v) Detailer (if applicable).
 - (vi) Identification of product or material.
 - (vii) Relation to adjacent structure or materials.
 - (viii) Field dimensions, clearly identified as such.
 - (ix) Specification section name, number and clause number or Drawing number and detail / section number.
 - (x) Applicable standards, such as CSA or CGSB numbers.
 - (xi) Contractor's stamp, initialed or signed, certifying review of submission, verification of field measurements and compliance with Contract.

E3.2.10 After Contract Administrator's review and return of copies, distribute copies to Subcontractors and others as appropriate.

E3.2.11 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.

E3.3 Other Considerations

E3.3.1 Fabrication, erection, or installation may require modifications to equipment or systems to conform to the design intent. Revise pertinent Shop Drawings and resubmit.

E3.3.2 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.

E3.3.3 Incomplete Shop Drawing information will be considered as stipulated deductions for the purposes of progress payment certificates.

E3.3.4 No delay or cost claims will be allowed that arise because of delays in submissions, resubmissions and review of Shop Drawings.

E3.4 Measurement and Payment

- (a) The Work associated with "Submittals and Shop Drawings" will be paid for under the Work for "Underwater Placed Grout" and no additional measurement or payment will be made.

E4. MOBILIZATION AND DEMOBILIZATION

E4.1 Description of the Work

E4.1.1 General

- (a) This Specification covers all operations relating to the mobilization and demobilization of the Contractor to the Site, as specified herein.

- (b) The Work to be done by the Contractor under this Specification 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 hereinafter specified.

E4.1.2 Scope of Work

- (a) The Work under this Specification shall include but not be limited to:
 - i) Mobilizing and demobilizing on-site Work facilities;
 - ii) Supplying, setting up, laying out, and removing site office facilities as detailed in E6 "Office Facilities";
 - iii) Maintaining and removing any access roadway.
 - iv) Pedestrian protection/accommodation.

E4.2 Materials

- (a) All materials supplied under this Specification shall be of a type approved by the Contract Administrator, and shall be subject to inspection and testing by the Contract Administrator.
- (b) The Contractor shall be responsible for the supply, safe storage and handling of all materials as set forth in this Specification. All materials shall be handled in a careful and workmanlike manner, to the satisfaction of the Contract Administrator.

E4.3 Equipment

- (a) All equipment shall be of a type acceptable to the Contract Administrator and shall be kept in good working order.

E4.4 Construction Methods

E4.5 General

E4.5.1 Layout of On-Site Work Facilities

- (a) The Contractor shall mobilize all on-site Work and other temporary facilities where noted on the Drawings or as directed by the Contract Administrator.
- (b) Upon completion of construction activities, the Contractor shall remove all on-site Work and other temporary facilities.

E4.5.2 Cellular Telephone Communication

- (a) The Contractor's site supervisor is required to carry, at all times, a cellular telephone, with voice mail.

E4.5.3 Access Roadway

- (a) The Contractor shall maintain any access roadway they install.
- (b) The access road shall be maintained on a regular basis to provide continual unrestricted site access, to the satisfaction of the Contract Administrator.
- (c) Upon completion of the Work, the area shall be restored to its original condition.

E4.5.4 Restoration of Existing Facilities

- (a) Upon completion of the Work and demobilization, the Contractor shall restore existing facilities.

E4.6 Measurement and Payment

E4.6.1 Mobilization and Demobilization

- (a) Mobilization and demobilization will not be measured. This Item of Work will be paid for at a percentage of the Contract Lump Sum Prices for "Mobilization and Demobilization", which price shall be payment in full for supplying all materials and for completing all operations herein described and all other items incidental to the work included in this Specification, accepted and measured by the Contract Administrator. These percentages shall be as follows:

- i) When Contract Administrator is satisfied that construction has commenced 30%
- ii) During construction 60%
- iii) Upon Total Performance 10%

E5. ENVIRONMENTAL PROCEDURES

E5.1 Description

- (a) This section specifies requirements for protection of air, water, soil, vegetation, aquatic and terrestrial life.

E5.2 Measurement for Payment

- (a) No separate measurement will be made for work of this section. Work is incidental to project costs.

E5.3 Fires

- (a) Fires and burning of rubbish on site not permitted.

E5.4 Disposal of Wastes

- (a) Do not bury rubbish and materials on site unless approved by the Contract Administrator.
- (b) Do not dispose of waste or volatile materials, such as mineral spirits, oil or paint thinner into waterways. Hazardous wastes including fuels, oils, and lubricants to be disposed of by a licensed hazardous waste carrier/handler in accordance with Manitoba Environment Legislation.
- (c) Sewage waste to be disposed of at a licensed/approved waste treatment facility.
- (d) Do not allow debris, grout, or deleterious materials of any kind to enter waterway.

E5.5 Plant Protection

- (a) Protect trees and plants on site and adjacent properties.
- (b) Avoid disturbance of topsoil and vegetation unless otherwise specified.

E5.6 Work Adjacent to Waterways

- (a) Do not operate construction equipment in waterways.
- (b) Do not dump waste material or debris in waterways.
- (c) Design and construct temporary crossings to minimize erosion to waterways.
- (d) Use existing roadways or previously disturbed areas to the extent possible.
- (e) Avoid damage to river banks.
- (f) Reclaim and restore disturbed areas to previous or better condition.
- (g) Ensure that machinery arrives on site in a clean condition and is maintained free of fluid leaks, invasive species and noxious weeds.
- (h) Operate machinery on land above the high-water mark or from a floating barge in a manner that minimizes disturbance to the banks and bed of the waterbody.
- (i) Operate barge in accordance with Transport Canada requirements.
- (j) Monitor grout and formwork during pour/injection, if leaking is observed, stop work immediately and contact the Contract Administrator.
- (k) Any water intake from the river shall have a fish screen.

E5.7 Pollution Control

- (a) Maintain temporary erosion and pollution control features installed under this Contract.
- (b) Control emissions from equipment and plant to local authorities emission requirements.

- (c) Cover or wet down dry materials and rubbish to prevent blowing dust and debris. Provide dust control for temporary roads.
- (d) Locate temporary fuel storage 100 m from the river bank and comply with Manitoba Environment Legislation. Use drip pans and absorbents to contain spills.
- (e) No maintenance of vehicles or equipment in construction areas.
- (f) Use drip pans to catch leaking oil from compressors, pumps, etc.
- (g) Avoid use of treated wood in the river.

E5.8 Measurement and Payment

- (a) The Work associated with "Environmental Procedures" will be paid for under the Work for "Underwater Placed Grout" and no additional measurement or payment will be made.

E6. OFFICE FACILITIES

E6.1 The Contractor shall supply office facilities meeting the following requirements:

- (a) The building shall be conveniently located near the site of the Work.
- (b) The building shall have a minimum floor area of 25 square metres, a height of 2.4m with a window and a door entrance with a suitable lock.
- (c) The building shall be suitable for all weather use. It shall be equipped with an electric heater and air conditioner so that the room temperature can be maintained between either 16-18°C or 24-25°C.
- (d) The building shall be adequately lighted with fluorescent fixtures and have a minimum of three wall outlets.
- (e) The building shall be furnished with one desk, one drafting table, table 3m x 1.2m, one stool, one four drawer legal size filing cabinet, and a minimum of eight chairs.
- (f) A portable toilet shall be located near the field office building. The toilet shall have a locking door and be for the exclusive use of the Contract Administrator and other personnel from the City.
- (g) The field office building and the portable toilet shall be cleaned on a weekly basis immediately prior to each site meeting. The Contract Administrator may request additional cleaning when he deems it necessary.

E6.2 The Contractor shall be responsible for all installation and removal costs, all operating costs, and the general maintenance of the office facilities.

E6.3 The office facilities will be provided from the date of the commencement of the Work to the date of Total Performance.

E6.4 Measurement and Payment

- (a) The Work associated with "Office Facilities" will be paid for under the Work for "Mobilization and Demobilization" and no additional measurement or payment will be made.

E7. CLEANING

E7.1 General

- (a) This section specifies requirements for maintenance and cleaning of site during construction and final clean-up.
- (b) Store volatile waste in covered metal containers and remove from premises at end of each working day.

E7.2 Cleaning During Construction

- (a) Maintain project grounds and public properties free from accumulations of waste materials and rubbish.

- (b) Provide on-site containers for collection of waste materials, and debris.
- (c) Dispose of waste materials, and debris off site.

E7.3 Final Cleaning

- (a) At completion of work conduct inspection of site.
- (b) Remove debris and surplus materials from site.
- (c) Broom clean paved surfaces; rake clean other surfaces of grounds.

E7.4 Measurement and Payment

- (a) The Work associated with "Cleaning" will be paid for under the Work for "Mobilization and Demobilization" and no additional measurement or payment will be made.

E8. PROJECT RECORD DOCUMENTS

E8.1 Record Drawings

- (a) Contract Administrator will provide two sets of white prints for record drawing purposes.
- (b) Maintain project record drawings and record accurately deviations from Contract documents.
- (c) Record following information:
 - (i) Field changes of dimension and detail.
 - (ii) Changes made by Change Order or Field Order.
- (d) At completion of project and prior to final inspection, neatly transfer "as-built" notations to a second set and submit both sets.

E8.2 Measurement and Payment

- (a) The Work associated with "Project Record Documents" will be paid for under the Work for "Mobilization and Demobilization" and no additional measurement or payment will be made.

E9. UNDERWATER PLACED GROUT

E9.1 General

- (a) This Specification covers all operations relating to the supply, fabrication, anchoring and placement of the anchors, reinforcing, formwork and grout, and specifies general requirements for repair of the underwater spalls and voids.
- (b) The Work to be done by the Contractor under this Specification 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 work as hereinafter specified.

E9.2 Materials

E9.2.1 General

- (a) The Contractor shall be responsible for the supply, safe storage, handling, and placement of all materials set forth in this Specification. All materials supplied under this Specification shall be subject to inspection and acceptance by the Contract Administrator.
- (b) Storage of materials shall be in accordance with the requirements of CSA Standard CAN/CSA-A23.1, Storage of Materials, except as otherwise specified herein.

E9.2.2 Coarse Aggregate

- (a) Coarse aggregate to meet requirement of ASTM C33.

- (b) Aggregate to consist of hard, dense, durable uncoated 10mm (3/8") pea gravel free of injurious amount of soft, friable, thin, elongated or laminated pieces, alkali, and organic or other deleterious materials, meeting the gradation requirements from the grout manufacturer.
- (c) Aggregate to be washed clean prior to placement.
- (d) Maximum size of aggregate not to exceed 10 mm and as per manufacturer's instructions.

E9.2.3 Reinforcing Steel

- (a) Anchors and reinforcement shall be plain reinforcing bars and deemed to include all reinforcing bars, tie-bars, and dowels.
- (b) All plain reinforcing shall conform to the requirements of CSA Standard CAN/CSA G30.18, Grade 400W, Billet-Steel Bars for Concrete Reinforcement. If, in the opinion of the Contract Administrator, any reinforcing steel provided for the grout Works exhibits flaws in manufacture or fabrications, such material shall be immediately removed from the site and replaced with acceptable reinforcing steel at no cost to the Contract.
- (c) All plain reinforcing shall be free from paint, oil, millscale, and injurious defects. Rust, surface seams, or surface irregularities will not be cause for rejection provided that the minimum dimensions, cross-sectional area, and tensile properties of the hand wire-brushed specimen are not less than the requirements of CSA Standard CAN/CSA G30.18.
- (d) Bar accessories shall be of a type acceptable to the Contract Administrator. They shall be made from a non-rusting material, and they shall not stain, blemish, or spall the grout surface for the life of the grout.
- (e) Bar chairs, bolsters, and bar supports shall be cementitious material. No plastic, PVC, or Galvanized bar chairs will be used.
- (f) Approved bar accessories products are as supplied by Con Sys Inc., Box 341, Pinawa, Manitoba, Canada R0R 1L0 (204) 753-2404, or equal as accepted by the Contract Administrator.
- (g) Bar accessories are not included in the Drawings and shall include bar chairs, spacers, clips, wire tires, wire (16 gauge minimum), or other similar devices and are to be acceptable to the Contract Administrator. Bar accessories shall be of the types suitable for use with plain reinforcing steel and acceptable to the Contract Administrator.

E9.2.4 Cementitious Grout

- (a) Cementitious Grout to be EUCO Tremie Grout or equivalent as approved by the Contract Administrator to meet requirements of ASTM C 1107 and suitable for underwater use (tremie placement) with a minimum strength of 30MPa at 28 days.
- (b) Mixing and pumping to be performed as per approved manufacturer's instructions.
- (c) Injection port valves for Type 2 and 3 repairs shall be suitable for grout injection (Stainless steel/ brass/zinc/plastic) with shaft and rubberized expandable grommet.

E9.2.5 Epoxy Injection for Reinforcing Anchorage

- (a) Epoxy material to be KEMKO 038 Regular IR or equivalent as approved by the Contract Administrator to meet ASTM C 881 and suitable for underwater use.
- (b) Mixing, pumping and cold weather requirements to be performed as per approved manufacturer's instructions.

E9.3 Construction Methods

E9.3.1 Sequence of Work

- (a) All existing concrete surfaces to be repaired to be properly cleaned by removing all loose material, dirt, debris and surface laitance.

- (b) Contractor to perform video inspection with 300 x 150 x 300 mm clear water box for 10% of the area to be repaired as directed by the Contract Administrator after pressure washing and prior to placement of the formwork. Inspection video to be recorded and provided to the Contract Administrator.
- (c) Install the reinforcing steel as shown on the drawings.
- (d) Install and seal formwork as required to perform concrete repairs.
- (e) Perform placement of the grout as per Contract documents.
- (f) Remove all formwork.
- (g) Upon completion of the work, Contractor to perform underwater video inspection with clear water box for 25% of the repaired area as directed by the Contract Administrator. Inspection video to be recorded and provided to the Contract Administrator. The inspection is to include:
 - (i) Inspect vertically every fourth in-pan of the sheetpile formwork for Type 1 Repairs.
 - (ii) Inspect each of the Type 2 and Type 3 Repairs.

E9.3.2 Surface Preparation

- (a) All existing concrete surfaces to be repaired with grout or patching material to be properly cleaned. Clean surfaces of all marine growth, sediment, debris, surface laitance, and loose or deteriorated concrete with water jet just prior to closing of forms and grout placement.
- (b) Water jets to have a pressure of 25,000 psi to remove marine growth, sediment, debris and deteriorated concrete.
- (c) Perform video inspection after surface preparation and prior to closing of forms.
- (d) If closing of forms is not completed within 72 hours of cleaning, contractor to clean surface of sediment and silt with a water jet of 5,000 psi prior to closing the forms.

E9.3.3 Reinforcing

- (a) Fabrication of Reinforcing Steel shall be in accordance with CSA Standard CAN/CSA G30.18 to lengths and shapes as shown on the Drawings.
- (b) The supply of steel reinforcement shall be bent to the proper shape in a plant that has suitable devices for bending as recommended in the Reinforcing Steel Institute of Canada (RSIC) Manual at Standard Practice. Heating shall not be used as an aid in bending.
- (c) The Contractor shall handle and store the reinforcement in a manner that ensures it is not damaged or contaminated with dirt or other materials.
- (d) The reinforcement shall not be placed directly on the ground. Timber pallets, platforms, skids or other supports shall be placed under the reinforcement to keep it free from dirt and mud and to provide easy handling.
- (e) Prior to concrete placement, the Contractor and Contract Administrator shall inspect the reinforcement for surface damage.
- (f) The Contractor shall supply and place all necessary support accessories to ensure proper placement of reinforcement. All reinforcement shall be accurately placed in the positions shown on the Drawings and firmly tied and chaired before placing the concrete.
- (g) Distances from the forms shall be maintained by means of stays, spacers, or other approved supports. Spacers and supports for holding reinforcement at the required location and ensuring the specified grout cover over the reinforcement shall be made from precast concrete or non-rusting metal. Precast concrete supports of approved shape and dimensions, with compressive strengths equal to or exceeding the placed grout, are acceptable. Any non-rusting metal chairs protruding through the surface of the hardened concrete shall be cut back at least 25 mm, and the holes filled. The use

of pebbles, pieces of broken stone or brick, plastic, metal pipe, and wooden blocks as spacers/supports, will not be permitted.

- (h) Immediately before placing, the reinforcement shall be free of all material that would reduce the bond to grout.
- (i) Reinforcing steel shall be free of all foreign material in order to ensure a positive bond between the grout and steel. The Contractor shall also remove any dry grout which has been deposited on the steel from previous pouring operations before additional grout may be placed. Intersecting bars shall be tied positively at each intersection.
- (j) Place reinforcing bars to provide a clear space between the reinforcing bars as shown on the Drawings. Reinforcing steel shall not be straightened or rebent in a manner that will injure the metal. Bars with bends not shown on the Drawings shall not be used. Heating of reinforcing steel will not be permitted without prior acceptance by the Contract Administrator.
- (k) Bars shall be tied at all intersections, except where spacing is less than 250 mm in each direction, when alternate intersections shall be tied. Welding or tack welding or reinforcing steel will not be allowed. Unless otherwise shown on the Drawings, the minimum distance between bars shall be 40 mm.
- (l) Proper cutting pliers shall be used and the bending and typing of the wires done as neatly as possible. Twisted ends of the tie wire shall be bent away from forms and surfaces so that they do not project into the concrete cover over the reinforcement.
- (m) Splices shall only be provided as shown on the Drawings. Splices other than as shown on the Drawings will not be permitted without the written approval of the Contract Administrator. Welded splices will not be permitted.
- (n) For lapped splices, the bars shall be placed in contact and wired together in such a manner as to maintain a clearance of not less than the required minimum clear distance to other bars, and the required minimum distance to the surface of the concrete. In general, suitable lap lengths shall be supplied as detailed on the Drawings. If this information is not detailed on the Drawings, a minimum of 35 bar diameters lap length shall be provided.

E9.3.4 Formwork

- (a) Steel, wood or fiber glass forms and connections to be constructed to withstand without distortion all forces to which they will be subjected.
- (b) Formwork to be built tightly to ensure no leakage of grout, cement paste, or aggregate can occur.
- (c) Forms to be smooth and flush with existing surfaces and extend to channel bottom in areas shown on the drawings.
- (d) Fill local depressions or scour holes in channel bottom in front of formwork with cement filled grout bags. Seal bottom of forms for Type 1 Repairs to channel bottom with cement filled grout bags. Supply and placement of grout bags is incidental to the Work.
- (e) Voids created by mechanical connections of formwork to be patched after removal of formwork.

E9.3.5 Mixing and Placing of Grout

- (a) Mixing to be done as per manufacturers specifications and approved equipment.
- (b) All oil, rust, inhibitors, dirt and deleterious materials to be removed from equipment in contact with grout.
- (c) Ensure pressure at point of injection is sufficient to force grout into voids at such a rate to fill all voids without causing damage to forms.
- (d) Grout to be injected into areas to be repaired commencing at lowest point. To prevent segregation in Type 1 Repairs, grout shall be carefully placed in a compact mass, in its final position by means of a grout pump. When specifically reviewed and accepted by the Contract Administrator, a properly designed and operated tremie shall be used.

As pumping of grout under low pressure progresses, ensure injection point is raised. Ensure injection point is always below level of grout to prevent the formation of air pockets and voids. The grout shall not be disturbed after being deposited. Still water shall be maintained at the point of deposit and any formwork underwater shall be watertight, except the top face of Type 1 Repairs.

- (e) For Type 1 Repairs, the discharge end of the grout pump line shall be lowered to the bottom of the form. Pumping shall then proceed with the end of the discharge line being continually buried no less than 500mm below the surface of fresh grout at all times, to maintain a seal until the form is completely filled with fresh uncontaminated grout.
- (f) A tremie, when reviewed and accepted by the Contract Administrator, shall consist of a rigid tube having a diameter not less than 250mm, and if constructed in sections it shall have flanged coupling fitted with gaskets. The discharge end shall be closed at the start of the work to prevent water entering the tube. The tremie tube shall be kept full to the bottom of the hopper, and water shall be kept out at all times. When a batch is dumped into the hopper, the flow of grout shall be induced by slightly raising the discharge end, always keeping it in the deposited grout. The flow shall be continuous until the work is completed. Sufficient tremie tube locations shall be used to place the grout under water such that it is not necessary to move any of the tremie tubes from one position of the pour to another. The use of non-rigid tremie tubes will not be permitted unless previously approved by the Contract Administrator as part of the Tremie Procedures.
- (g) Pumping to be done slowly and continuously to prevent the formation of air pockets and voids. Provide vent holes/tubes as required.
- (h) For Type 1 Repairs sufficient tremie placement points are to be used to ensure the entire volume is filled, maximum spacing 2.7m. For Type 2 and 3 Repairs sufficient injection ports are to be used to ensure the entire volume is filled.
- (i) For Type 1 Repairs, a method shall be employed to monitor grout depth from above the water level at minimum, every second flute.
- (j) For Type 1 Repairs, all grout shall be mechanically vibrated.
- (k) A diver shall be in the water during all grout placement to carefully monitor the Work.

E9.3.6 Testing

- (a) Samples of concrete for test specimens shall be taken in accordance with CSA Standard Test Method CSA-A23.2-1C-09, "Sampling Plastic Concrete".
- (b) Test specimens shall be made and cured in accordance with CSA Standard Test Method A23.2-3C-09, "Making and Curing Concrete Compression and Flexure Test Specimens".
- (c) Compressive strength tests at twenty-eight (28) days shall be the basis for acceptance of all grout supplied by the Contractor. For each twenty-eight (28) day strength test, the strength of two companion standard-cured test specimens shall be determined in accordance with CSA Standard Test Method A23.2-9C-09, "Compressive Strength of Cylindrical Concrete Specimens", and the test result shall be the average of the strengths of the two specimens. A compressive strength test at seven (7) days shall be taken, the strength of which will be used only as a preliminary indication of the grout strength, a strength test being the strength of a single standard cured specimen.
- (d) Compressive strength tests on specimens cured under the same conditions as the concrete Works shall be made to check the strength of the in-place grout so as to determine if the grout has reached the minimum allowable working compressive strength as specified in this Specification.

E9.3.7 Formwork Removal

- (a) The Contractor shall notify the Contract Administrator at least one (1) Working Day prior to form removal. The Contractor shall not commence any form removal operations without the prior written acceptance of the Contract Administrator.

- (b) All forms shall remain in place and the grout shall not be loaded for a minimum of seven (7) days after initial grout placement, unless otherwise authorized by the Contract Administrator in writing.
- (c) Notwithstanding the above, the minimum strength of grout prior to removal of vertical forms shall be 25 MPa, with the added provision that the member shall be of sufficient strength to safely carry its own weight.
- (d) Field-cured test specimens representative of the grout area being stripped shall be tested as specified in this Specification to verify the grout strength.

E9.3.8 Measurement and Payment

- (a) Grouting repairs including surface preparation, inspection, reinforcing, forming, and testing will be measured on an area basis, as computed from the Contract Drawings and will be paid for at the Contract Unit Price per meter square for the "Item of Work" listed here below, which price shall be payment in full for supplying all materials and for satisfactorily completing all operations herein described for "Underwater Placed Grout" and all other items incidental to the work included in this Specification, and accepted by the Contract Administrator.
- (b) Items of Work:
 - (i) Type 1 Repairs
 - (ii) Type 2 Repairs
 - (iii) Type 3 Repairs
- (c) The Warranty will be incidental to the Work for "Underwater Placed Grout" and no additional measurement or payment will be made.